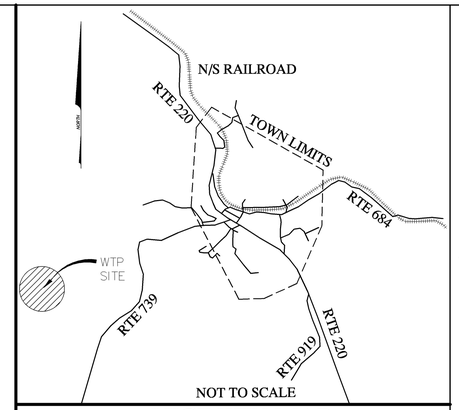
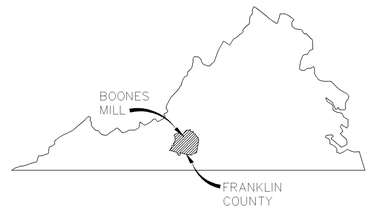
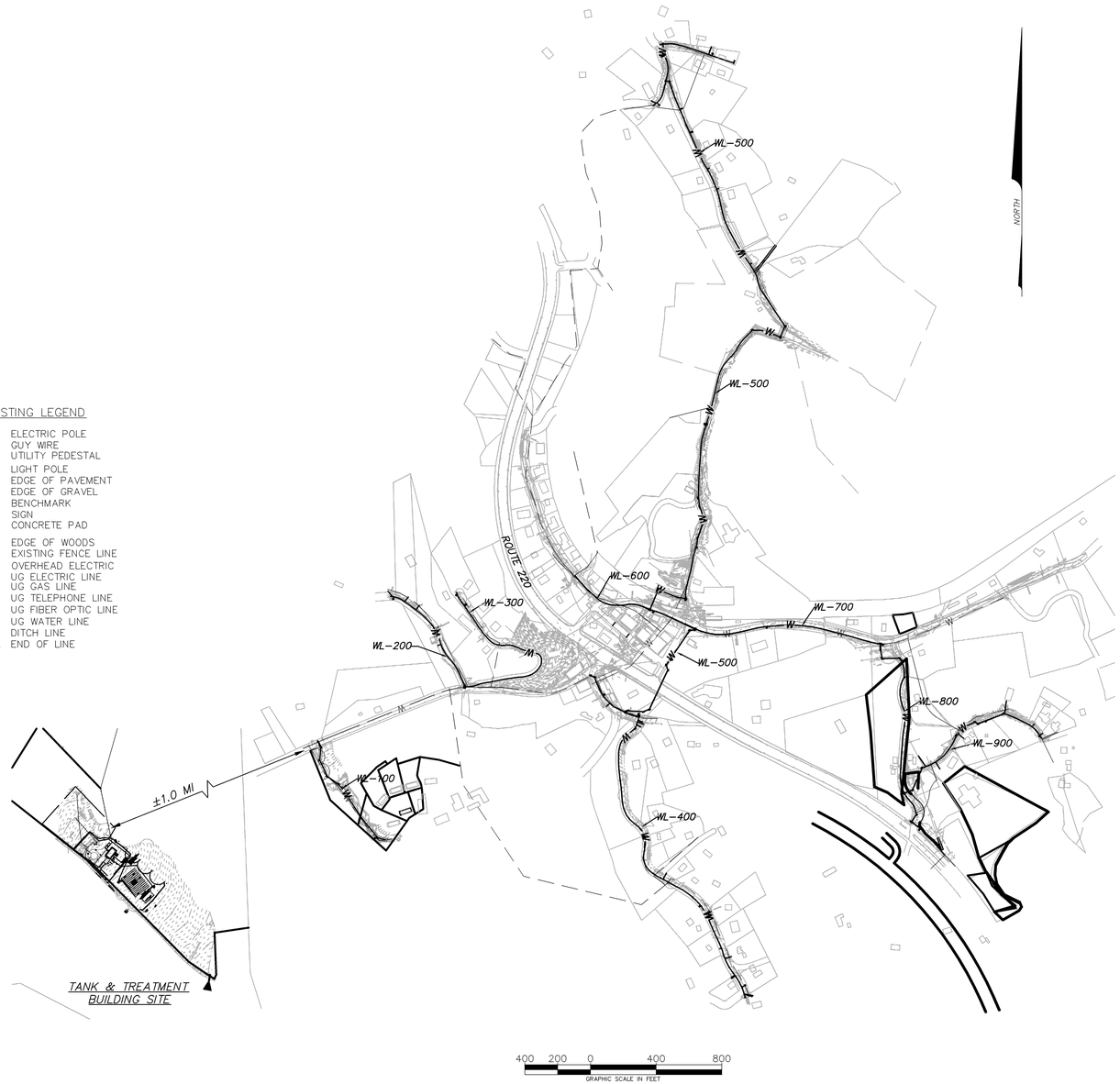
TOWN OF BOONES MILL
WATER SYSTEM REPLACEMENT, VOLUME 2-ASBUILT
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VIRGINIA



VICINITY MAP





PROPOSED LEGEND

- WATER METER
- WATER LINE
- BLOW OFF ASSEMBLY
- AIR RELEASE
- FIRE HYDRANT
- CONCRETE ANCHOR
- GATE VALVE
- STEEL CASING

EXISTING LEGEND

- ELECTRIC POLE
- GUY WIRE
- UTILITY PEDESTAL
- LIGHT POLE
- EDGE OF PAVEMENT
- EDGE OF GRAVEL
- BENCHMARK
- SIGN
- CONCRETE PAD
- EDGE OF WOODS
- EXISTING FENCE LINE
- OH E — OVERHEAD ELECTRIC
- UG E — UG ELECTRIC LINE
- UG G — UG GAS LINE
- UG T — UG TELEPHONE LINE
- UG FO — UG FIBER OPTIC LINE
- W — UG WATER LINE
- DITCH LINE
- E.O.L. — END OF LINE

VIRGINIA UNIFORM CODING SYSTEM FOR EROSION AND SEDIMENT CONTROL PRACTICES
* CHART TAKEN FROM THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (JULY 1992)

- (SF) SILT FENCE
- (TS) TEMPORARY SEEDING
- (PS) PERMANENT SEEDING
- (MU) MULCHING
- (CE) TEMPORARY CONSTRUCTION ENTRANCE
- (CIP) CULVERT INLET PROTECTION
- (IP) INLET PROTECTION
- (B/M) BLANKET MATTING
- (SR) SURFACE ROUGHING
- (OP) OUTLET PROTECTION

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E1	SITE PLAN AND SERVICE RISER DIAGRAM
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E3	WATER TREATMENT BUILDING MECHANICAL PLAN
E4	WELL HOUSE PLAN AND DETAILS

THE ENGINEER AND/OR SURVEYOR TAKES NO RESPONSIBILITY FOR THE LOCATION OR ACCURACY OF THE UTILITIES AS SHOWN HEREON OR ANY UTILITIES WITHIN THE PROJECT THAT MAY NOT BE SHOWN HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES TO SEE IF ANY UTILITIES EXIST WITHIN THE AREA OF THE PROJECT BEFORE ANY CONSTRUCTION BEGINS. ANY COST INCURRED BY DAMAGING ANY UTILITY WITHIN THE PROJECT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

48 WORKING HOURS PRIOR TO STARTING THE WORK, THE CONTRACTOR SHALL CALL MISS UTILITY AT PHONE NUMBER 811 AND ADVISE THE NATURE AND LOCATION OF THE WORK.

ALWAYS CARE BEFORE YOU DIG — CALL MISS UTILITY — KEEP VIRGINIA SAFE 1 (811)

PLAN REVISIONS

#	DATE	DESCRIPTION OF REVISION	SHEETS
1	8/28/09	VDH/OWNER COMMENTS	ALL
2	9/3/09	VDH/OWNER COMMENTS	ALL
3	10/7/09	ADDENDUM #2	C0.0, 1.0, 1.1, 1.2, 1.3, 1.6, 1.7, 1.8, 1.11, 2.0, S1.2, E1, E2, E3, E4
4	11/17/09	FRANKLIN COUNTY COMMENTS	ALL
5	3/14/12	ASBUILTS	ALL

HURT & PROFFITT
INCORPORATED
*ENGINEERING >> SURVEYING >> PLANNING
2524 LANGHORNE ROAD
LYNCHBURG VA 24501
800.242.4906 TOLL FREE
434.847.7796 MAIN
434.847.0047 FAX

COVER SHEET-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	WCH
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
C0.0

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS AND SPECIFICATIONS AND STANDARD DETAILS. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE DRAWINGS AND SPECIFICATIONS AT THE SITE AT ALL TIMES DURING CONSTRUCTION. EARTHWORK, GRADING, STORM DRAINAGE, AND PAVING SPECIFICATIONS AND DETAILS NOT COVERED BY THESE DRAWINGS AND THE SPECIFICATIONS SHALL CONFORM TO THE VDOT 2007 ROAD AND BRIDGE SPECIFICATIONS AND THE VDOT 2001 ROAD AND BRIDGE STANDARDS.

2. THE TOPOGRAPHICAL INFORMATION SHOWN HEREON FOR HURT & PROFFITT SECTION OF PROJECT WAS PREPARED FROM AN ACTUAL FIELD SURVEY AS PER JULY 7, 2009.

3. THE LOCATION, ELEVATION AND DIMENSIONS OF EXISTING STRUCTURES, PIPING AND UTILITIES SHOWN ARE BASED ON THE BEST AVAILABLE DATA AND ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DATA IN THE FIELD PRIOR TO CONSTRUCTION. THE DIAMETERS OF EXISTING PIPING ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO PERFORMING FINAL CONNECTIONS. CONTACT MISS UTILITY (TELEPHONE NO. (800) 552–7001) 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION TO HAVE UNDERGROUND UTILITIES MARKED. THE CONTRACTOR SHALL PERFORM ANY TEST PIT WORK OR PROVIDE LOCATION SERVICES AS REQUIRED TO AVOID CONFLICTS WITH EXISTING UTILITIES.

4. MINIMUM COVER OVER DOMESTIC WATER LINE IS TO BE 3 FEET. PIPING SHALL BE INSTALLED TO ALLOW MINIMUM 18" VERTICAL SEPARATION BETWEEN NEW UTILITIES AND EXISTING UTILITIES.

5. PROVIDE ALL CONNECTING PIECES AND TRANSITION PIECES REQUIRED TO MAKE FINAL PIPING CONNECTIONS. PROVIDE RESTRAINED JOINTS FOR ALL CARRIER PIPE INSTALLED IN CASING PIPE. ALL PIPING UNDER STRUCTURES SHALL BE PROVIDED WITH RETRAINED JOINTS.

6. EROSION AND SEDIMENT CONTROL MEASURES SHALL COMPLY WITH THE VESCH, 1992 EDITION OR LATER. THE CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES AS NECESSARY AND SHALL BE RESPONSIBLE FOR ALL ADDITIONAL MEASURES AS DETERMINED BY FRANKLIN COUNTY.

7. CONSTRUCTION LIMITS SHALL INCLUDE ALL DISTURBED AREAS. ALL DISTURBED AREAS SHALL BE SEEDED AND PROVIDED WITH EROSION CONTROL DURING AND AT THE END OF CONSTRUCTION.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERFORMING ALL TESTS AND PAYING ALL FEES & BONDS AS DEEMED NECESSARY BY FRANKLIN COUNTY.

9. CONTRACTOR RESPONSIBLE FOR COORDINATING WITH THE VIRGINIA DEPARTMENT OF TRANSPORTATION, FRANKLIN COUNTY, AND OTHER GOVERNING BODY, PERMITS AND INSPECTIONS AS REQUIRED. ALL WORK DONE WITHIN THE RIGHT OF WAY WILL BE GOVERNED BY THE SPECIAL PROVISIONS INCLUDED IN THE LAND USE PERMIT. CONTRACTOR RESPONSIBLE FOR OBTAINING LAND USE PERMIT. TOWN OF BOONES MILL IS TO BE SHOWN AS OWNER AND CONTRACTOR AS AGENT. PERMIT AND INSPECTION FEES WILL BE WAIVED BUT BOND WILL BE REQUIRED.

10. VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED AND MAINTAINED FOR ALL DISTURBED AREAS IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS AND THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. ALL EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED AS A FIRST STEP IN CONSTRUCTION AND BEFORE EXCAVATION BEGINS.

11. ALL SLOPES STEEPER THAN 2:1 SHALL BE PROTECTED WITH VDOT EC–2 EROSION CONTROL MATTING FROM TOP OF SLOPE TO TOE OF SLOPE. THE CONTRACTOR SHALL ENSURE THE PROPER INSTALLATION OF SUCH MEASURES IN ACCORDANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS AND THE MANUFACTURER'S WRITTEN RECOMMENDATIONS.

12. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL CONFINED SPACE ENTRY REGULATIONS.

13. MAINTAIN ALL OVERHEAD AND UNDERGROUND ELECTRICAL, TELEPHONE, WATER AND GAS SERVICES AND ALL OTHER UTILITIES DURING ENTIRE CONSTRUCTION PERIOD. UTILITY OUTAGES WILL NOT BE ALLOWED.

14. THE CONTRACTOR SHALL MAINTAIN SURFACE DRAINAGE DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL PUMPS AND PIPING REQUIRED TO MAINTAIN SURFACE DRAINAGE.

15. CONSTRUCT EXCAVATION SUPPORT SYSTEMS AS REQUIRED BY OSHA AND U.S. ARMY CORPS OF ENGINEERS SAFETY & HEALTH REQUIREMENTS MANUAL EM 385–1–1, AND SECTIONS 23 A AND 23 B TO ADEQUATELY SUPPORT EXISTING SOIL AND ADJACENT STRUCTURES DURING EXCAVATION ACTIVITIES. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH INSTALLATION DRAWINGS, SPECIFICATIONS, AND DESIGN CALCULATIONS STAMPED BY PROFESSIONAL ENGINEER LICENSED BY THE COMMONWEALTH OF VIRGINIA FOR ALL EXCAVATION SUPPORT SYSTEMS.

16. SUBSURFACE EXPLORATION HAS NOT BEEN PERFORMED FOR THE PROJECT SITE. ALL EARTHWORK EXCAVATION SHALL BE UNCLASSIFIED AND SHALL BE PERFORMED TO THE INDICATED ELEVATIONS AT NO ADDITIONAL COST TO THE OWNER. SEE PROJECT MANUAL FOR ADDITIONAL INFORMATION.

17. THE CONTRACTOR SHALL BE FULLY LIABLE FOR REPAIR OF ANY DAMAGES ON PUBLIC OR PRIVATE PROPERTY CAUSED BY HIS CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL REPLACE ALL DISTURBED SURFACES IN KIND, INCLUDING PAVEMENT, STONE, DITCHES, MAILBOXES, STORM CULVERTS, FENCING, ETC. AT NO ADDITIONAL COST TO THE OWNER.

18. ALL EXISTING SIGNS, CURBS, GUARDRAIL FENCING, STONE, STRUCTURES, LANDSCAPING, PLANTERS, SHRUBS, AND OTHER PHYSICAL IMPROVEMENTS TEMPORARILY REMOVED BY THE CONTRACTOR SHALL BE REPLACED TO ORIGINAL CONDITION.

19. ALL ASPHALT DRIVEWAYS, PARKING LOTS AND ROADS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE SAW CUT AND REPLACED TO ORIGINAL CONDITION. ALL ASPHALT AND GRAVEL DRIVEWAYS DISTURBED BY CONSTRUCTION ACTIVITIES SHALL BE REPLACED TO ORIGINAL CONDITION.

20. THE CONTRACTOR SHALL PROTECT EXISTING PAVED SURFACES. ANY DAMAGED PAVEMENT SHALL BE REPAIRED TO MATCH EXISTING. TRACKED EQUIPMENT WILL NOT BE ALLOWED ON PAVED SURFACES. ANY PAVEMENT MARKINGS DAMAGED BY CONSTRUCTION SHALL BE REPLACED IN KIND BY A PAVEMENT MARKING CONTRACTOR FROM THE VDOT PRE–QUALIFICATION LIST.

21. ALL PROPERTY PINS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED BY A LAND SURVEYOR LICENSED IN THE COMMONWEALTH OF VIRGINIA AT CONTRACTOR'S EXPENSE.

22. DISPOSE OF SURPLUS SOIL MATERIAL OFF THE OWNER'S PROPERTY IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS.

23. THE CONTRACTOR MAY USE FIELD–LOK GASKETS WITHIN THE STEEL CASING PIPE FOR ROAD/RAILROAD CROSSINGS IN LIEU OF RESTRAINED JOINT PIPE.

24. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM PROPERTY OWNERS FOR USE OF ANY ACCESS POINTS OTHER THAN THOSE LOCATED WITHIN RIGHT–OF–WAYS AND OBTAINED EASEMENTS. WRITTEN PERMISSION SHALL CONTAIN CONDITIONS FOR USE AND RESTORATION AGREEMENTS BETWEEN PROPERTY OWNER AND CONTRACTOR.

25. TREES AND SHRUBS TO REMAIN IN PLACE SHALL BE ROPED OFF DURING GRADING OPERATIONS TO KEEP EQUIPMENT AWAY FROM ROOT SYSTEMS. THE CONTRACTOR SHALL MAKE SELECT CUTTING OF TREES, TAKING THE SMALLEST TREES FIRST, THAT ARE MANDATORY FOR WATER LINE CONSTRUCTION.

26. ANY FENCING DISTURBED BY CONSTRUCTION SHALL BE IMMEDIATELY REPLACED OR SUPPLEMENTED BY TEMPORARY FENCING SUITABLE FOR INTENDED PURPOSE OF EXISTING FENCING. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE DISTURBED FENCING TO ORIGINAL CONDITION.

27. ALL CONSTRUCTION ACTIVITIES ASSOCIATED WITH WORKING IN OR CROSSING A LIVE STREAM SHALL BE UNDER THE JURISDICTIONAL AUTHORITY OF THE U.S. ARMY CORPS OF ENGINEERS. THE CONTRACTOR SHALL MAINTAIN AND PROTECT AREAS DESIGNATED AS STREAMS, AND COMPLY WITH ALL CONDITIONS IN THE APPLICABLE CORPS NATIONWIDE PERMITS, AS WELL AS ALL APPLICABLE STATE AND LOCAL REGULATIONS. CONSTRUCTION ACTIVITIES IN THESE AREAS SHALL BE LIMITED TO STREAM CROSSINGS REQUIRED FOR WATERLINE PIPING. THE CONTRACTOR SHALL PROVIDE ALL DIVERSION STRUCTURES, PUMPS, PIPING AND OTHER EQUIPMENT REQUIRED TO MAINTAIN AN ACCESSIBLE CONSTRUCTION AREA WHILE WORKING IN OR CROSSING A LIVE STREAM.

28. ALL CLEARED MATERIALS TO BE REMOVED FROM SITE AND DISPOSED OF LEGALLY AT THE CONTRACTOR'S EXPENSE.

29. PROPER TRAFFIC CONTROL IS TO BE PROVIDED BY CONTRACTOR. PROTECTION STANDARDS ARE TO FOLLOW VDOT'S WORK AREA PROTECTION MANUAL.

30. CONTRACTOR TO COORDINATE WITH TOWN AND NORFOLK SOUTHERN RAILROAD OFFICIALS FOR ALL RAILROAD CROSSINGS.

31. CONTOUR INTERVAL ON ALL PLAN AND PROFILE, AND SITE PLAN SHEETS ARE 2'.

32. UPON SITE INSPECTION, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED BY FRANKLIN COUNTY PERSONNEL IF INSTALLED MEASURES ARE DEEMED INADEQUATE.

WATER LINE NOTES:

1. ANY VARIATION IN WATER LINE ALIGNMENT MUST BE APPROVED BY ENGINEER AND/OR OWNER.

2. WATER LINE TO BE LOCATED AS SHOWN ON PLAN IN ALL CASES.

3. SEPTIC SYSTEM DRAINFIELDS SHALL BE A MINIMUM OF 30 HORIZONTAL FEET FROM THE WATER LINE.

4. 2" POLYETHYLENE CASING IS REQUIRED FOR EACH 1" SERVICE LINE THAT CROSSES UNDER PAVEMENT. SERVICE LINES CROSSING ROAD CAN NOT BE OPEN CUT.

5. DOMESTIC WATER LINE SHALL BE CONSTRUCTED USING PVC C900 OR C909.

6. ALL SERVICE LINES WILL BE 1" DIAMETER PE TUBING.

7. ALL METER SETTINGS ARE TO FOLLOW DETAILS PROVIDED IN PLANS.

8. TRANSITION COUPLINGS ARE TO BE USED AT ALL TRANSITIONS.

9. MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATER LINE AND ANY STORM STRUCTURE OR PIPE.

10. WHERE WATER LINE IS SHOWN DEFLECTING WITHOUT FITTINGS, THE CONTRACTOR IS TO FOLLOW THE PIPE MANUFACTURERS RECOMMENDATIONS. IF THE DEFLECTION CANNOT BE MADE, THE CONTRACTOR IS TO CONTACT THE ENGINEER FOR ASSISTANCE IN DETERMINING APPROPRIATE FITTING.

11. PRESSURE REDUCING VALVES (PRV'S) ARE TO BE INSTALLED ON ALL SERVICE CONNECTIONS TO REDUCE THE PRESSURE TO 80 PSI AS SHOWN IN THE PLANS.

12. ALL PIPE, FITTINGS, AND APPURTENANCES SHALL BE RESTRAINED AND ANCHORED IN ACCORDANCE WITH THE STANDARD DETAILS. THRUST RESTRAINTS ARE REQUIRED FOR ALL BENDS AND TEES. IF MECHANICAL JOINT RESTRAINT SYSTEMS ARE USED, INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS RELATED TO NUMBER OF JOINTS RESTRAINED.

13. WATER LINES SHALL BE TESTED AT A PRESSURE OF 200 PSI.

14. DOMESTIC WATER LINES SHALL HAVE A MINIMUM COVER OF 3 FEET AND BE LAID DEEPER WHERE SHOWN ON THE PROFILES TO PROVIDE GRADES TO AIR RELEASES AND BLOW OFF VALVES, AND AS REQUIRED TO ALLOW FOR 18 INCHES OF SEPARATION BETWEEN PROPOSED WATER LINES AND EXISTING STORM SEWER LINES.

15. GATE VALVES AND BOXES: PROVIDE AN EXTENDED VALVE STEM WHERE DEPTH TO TOP OF NUT EXCEEDS 5 FEET.

16. CONTRACTOR TO DETERMINE FIRE HYDRANT RISER LENGTH FOR EACH HYDRANT LOCATION PRIOR TO ORDERING HYDRANTS.

17. 12 GAUGE COPPER WIRE TO BE INSTALLED 12" ABOVE ALL WATER LINES. COPPER WIRE TO BE COILED AROUND VALVES SO LOCATORS CAN BE CONNECTED IN THE FUTURE TO LOCATE WATER LINES.

18. FIRE HYDRANT WEEP DRAINS SHALL BE DRAINED TO THE GROUND SURFACE OR TO DRY WELLS PROVIDED EXCLUSIVELY FOR THIS PURPOSE. WHERE FIRE HYDRANTS ARE LOCATED IN AREAS SUBJECT TO HIGH GROUNDWATER LEVELS OR FLOODING, THE WEEP HOLES WILL BE PLUGGED AND THE TOWN NOTIFIED WHICH HYDRANTS HAVE PLUGGED WEEP HOLES.

19. ANY LOT THAT HAS AN EXISTING WELL MUST DISCONNECT FROM THIS WATER SOURCE BEFORE CONNECTING TO THE PUBLIC WATER SYSTEM. NO PHYSICAL INTERCONNECTION BETWEEN THE WELL AND PUBLIC WATER SYSTEM MAY EXIST.

20. MEGALUGS, OR APPROVED EQUIVALENT, MAY BE USED AND ARE THE PREFERRED METHOD OF RESTRAINT. ADEQUATE LENGTHS OF PIPE MUST BE RESTRAINED WHEN USING MEGALUGS.

21. ALL HYDRANTS ARE TO BE INSTALLED BEHIND THE EXISTING DITCH LINE EXCEPT AS NOTED.

22. TRENCH BEDDING DETAIL SHOWN ON WL–2 MUST BE FOLLOWED AT ALL TIMES.

23. ALL FIRE HYDRANTS TO BE INSTALLED WITH PUMPER CONNECTION FACING ROAD OR STREET.

VDOT GENERAL NOTES

V1. ALL WORK ON THIS PROJECT SHALL CONFORM TO THE CURRENT EDITIONS OF AND LATEST REVISIONS TO THE VIRGINIA DEPARTMENT OF TRANSPORTATION (VDOT) ROAD AND BRIDGE SPECIFICATIONS AND STANDARDS, THE VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS, AND ANY OTHER APPLICABLE STATE, FEDERAL OR LOCAL REGULATIONS. IN CASE OF A DISCREPANCY OR CONFLICT BETWEEN THE STANDARDS OR SPECIFICATIONS AND REGULATIONS, THE MOST STRINGENT SHALL GOVERN.

V2. ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA), AND VIRGINIA OCCUPATIONAL SAFETY HEALTH (VOSH) RULES AND REGULATIONS.

V3. WHEN WORKING WITHIN VDOT RIGHT–OF–WAY, ALL TRAFFIC CONTROL, WHETHER PERMANENT OR TEMPORARY, SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF VDOT'S WORK AREA PROTECTION MANUAL. FURTHERMORE, ALL TRAFFIC CONTROL FLAGGERS MUST BE CERTIFIED IN ACCORDANCE WITH SECTION 104.04(C) OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS.

V4. DESIGN FEATURES RELATING TO FIELD CONSTRUCTION, REGULATIONS, AND CONTROL OR SAFETY OF TRAFFIC MAY BE SUBJECT TO CHANGE AS DEEMED NECESSARY BY VDOT. ANY ADDITIONAL EXPENSES INCURRED AS A RESULT OF ANY FIELD REVISION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER.

V5. PRIOR TO INITIATION OF WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY VDOT LAND USE PERMITS FOR ANY WORK WITHIN VDOT RIGHT–OF–WAY.

V6. IF REQUIRED BY THE LOCAL VDOT RESIDENCY OFFICE, A PRE–CONSTRUCTION CONFERENCE SHALL BE ARRANGED AND HELD BY THE ENGINEER AND OWNER WITH THE ATTENDANCE OF THE CONTRACTOR, VARIOUS COUNTY AGENCIES, UTILITY COMPANIES AND VDOT PRIOR TO INITIATION OR WORK.

V7. THE CONTRACTOR SHALL NOTIFY THE LOCAL VDOT RESIDENCY OFFICE WHEN WORK IS TO BEGIN OR CEASE FOR ANY UNDETERMINED LENGTH OF TIME. VDOT REQUIRES AND SHALL RECEIVE 48 HOURS ADVANCE NOTICE PRIOR TO ANY REQUIRED OR REQUESTED INSPECTION.

V8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ADEQUATE ACCESS TO THE PROJECT FROM THE ADJACENT PUBLIC ROADWAY VIA A CONSTRUCTION ENTRANCE THAT IS CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH SECTION 3.02 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. FURTHERMORE, ACCESS TO OTHER PROPERTIES AFFECTED BY THIS PROJECT SHALL BE MAINTAINED THROUGH CONSTRUCTION. THE OWNER SHALL HAVE, WITHIN THE LIMITS OF THE PROJECT, AN EMPLOYEE CERTIFIED BY THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (VDCR) IN EROSION AND SEDIMENT CONTROL WHO SHALL INSPECT EROSION AND SILTATION CONTROL DEVICES AND MEASURES ON A CONTINUOUS BASIS FOR PROPER INSTALLATION AND OPERATION. DEFICIENCIES SHALL BE PROMPTLY RECTIFIED.

V9. CONTRACTOR SHALL ENSURE DRAINAGE IS ACHIEVED AND MAINTAINED ON THE SITE DURING AND AT THE END OF CONSTRUCTION.

V10. ALL WATER AND SEWER LINES WITHIN EXISTING OR PROPOSED VDOT RIGHT–OF–WAY SHALL HAVE A MINIMUM THIRTY–SIX (36) INCH COVER AND WHEN POSSIBLE SHALL BE INSTALLED UNDER ROADWAY DRAINAGE FACILITIES AT CONFLICT POINTS.

V11. ANY UNUSUAL SUBSURFACE CONDITIONS (E.G. UNSUITABLE SOILS, SPRINGS, SINKHOLES, VOIDS, CAVES, ETC.) ENCOUNTERED DURING THE COURSE OF CONSTRUCTION SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER AND VDOT. WORK SHALL CEASE IN THE VICINITY UNTIL AN ADEQUATE DESIGN CAN BE DETERMINED BY THE ENGINEER AND APPROVED BY VDOT.

V12. ALL FILL AREAS, BORROW MATERIAL AND UNDERCUT AREAS SHALL BE INSPECTED AND APPROVED BY A VDOT REPRESENTATIVE PRIOR TO PLACEMENT OF FILL. WHERE CBR TESTING IS REQUIRED, A VDOT REPRESENTATIVE SHALL BE PRESENT TO INSURE THE SAMPLE OBTAINED IS REPRESENTATIVE OF THE LOCATION. WHEN SOIL SAMPLES ARE SUBMITTED TO PRIVATE LABORATORIES FOR TESTING, THE SAMPLES SHALL BE CLEARLY IDENTIFIED AND LABELED AS BELONGING TO A PROJECT TO BE ACCEPTED BY VDOT AND THAT TESTING SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE VDOT STANDARDS AND PROCEDURES.

V13. ALL ROADWAY FILL, BASE SUBGRADE MATERIAL, AND BACKFILL IN UTILITY/STORM SEWER TRENCHES SHALL BE COMPACTED IN SIX (6) INCH LIFTS TO 95% OF THEORETICAL MAXIMUM DENSITY AS DETERMINED BY AASHTO T–99 METHOD A, WITHIN PLUS OR MINUS 2% OF OPTIMUM MOISTURE FOR THE FULL WIDTH OF ANY DEDICATED STREET RIGHT–OF–WAY. AT THE DIRECTION OF VDOT, DENSITY REST SHALL BE PERFORMED BY A QUALIFIED INDEPENDENT AGENCY IN ACCORDANCE WITH VDOT ROAD AND BRIDGE SPECIFICATIONS. CERTIFIED COPIES OF TEST REPORTS SHALL BE SUBMITTED TO VDOT DAILY, UNLESS SPECIFIED OTHERWISE.

V14. VDOT STANDARD CD AND UD UNDERDRAINS SHALL BE INSTALLED WHERE INDICATED ON THESE PLANS AND/OR AS SPECIFIED BY VDOT.

V15. THE INSTALLATION OF ANY ENTRANCES AND MAILBOXES WITHIN ANY DEDICATED STREET RIGHT–OF–WAY SHALL MEET VDOT MINIMUM DESIGN STANDARDS AND IS THE RESPONSIBILITY OF THE DEVELOPER.

V16. ASPHALT CONCRETE PAVEMENTS SHALL BE PLACED IN ACCORDANCE WITH SECTION 315 OF THE VDOT ROAD AND BRIDGE SPECIFICATIONS. DENSITY SHALL BE DETERMINED USING THE DENSITY CONTROL STRIP AS SPECIFIED IN SECTION 315 AND VTM–76. A CERTIFIED COMPACTION TECHNICIAN SHALL PERFORM THESE TESTS. CERTIFIED COPIES OF TEST REPORTS SHALL BE SUBMITTED TO VDOT DAILY, UNLESS SPECIFIED OTHERWISE. A VDOT REPRESENTATIVE SHALL BE NOTIFIED AND GIVEN THE OPPORTUNITY TO BE PRESENT DURING THE CONSTRUCTION AND TESTING OF THE CONTROL STRIP.

V17. APPROVAL OF THESE PLANS SHALL EXPIRE THREE (3) YEARS FORM THE DATE OF THE APPROVAL LETTER.

V18. VDOT STANDARD CG–12 CURB RAMPS SHALL BE INSTALLED WHERE INDICATED ON THESE PLANS AND/OR AS SPECIFIED BY VDOT.

V19. VDOT STANDARD GUARDRAIL SHALL BE INSTALLED WHERE WARRANTED AND/OR AS PROPOSED ON THESE PLANS IN ACCORDANCE WITH VDOT'S INSTALLATION CRITERIA. FINAL APPROVAL OF THE GUARDRAIL LAYOUT TO BE GIVEN BY VDOT AFTER GRADING IS MOSTLY COMPLETE.

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

HURT & PROFFITT
INCORPORATED
*ENGINEERING >> SURVEYING >> PLANNING
2524 LANGHORNE ROAD
LYNCHBURG VA 24501
800.242.4906 TOLL FREE
434.847.7796 MAIN
434.847.0047 FAX

NOTES-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	WCH
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
C0.1

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION:
THIS PROJECT CONSISTS OF CONSTRUCTION OF WATER LINE, WATER TREATMENT PLANT, WELL DEVELOPMENT AND TWO TANKS LOCATED IN THE TOWN OF BOONES MILL. THE PROJECT INCLUDES GRADING AND ASSOCIATED EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO CONSTRUCT WATERLINE, WATER TREATMENT PLANT, WELL DEVELOPMENT AND THE TWO OTHER TANKS. APPROXIMATELY 4.88 ACRES WILL BE DISTURBED AS PART OF THE CONSTRUCTION. A VSMP PERMIT WILL BE REQUIRED FOR THIS PORTION OF THE PROJECT.

EXISTING SITE CONDITIONS:
CURRENTLY THE SPRING SITE HAS A TREATMENT BUILDING, A SMALL CONCRETE TANK AND A 250,000 GALLON WATER TANK ON IT. THE SPRING SITE HAS BEEN CLEARED OF ALL TREES. THE LOCATION OF THE FUTURE WATER TREATMENT BUILDING IS LOCATED JUST BELOW THE SPRING SITE AND IS CURRENTLY AN APPLE ORCHARD.

ADJACENT PROPERTIES:
THE SURROUND PROPERTY IS ZONED AGRICULTURAL. ALL MEASURES SHALL BE TAKEN TO ENSURE THAT THE SITE IS STABILIZED AND NO ADDITIONAL SEDIMENT IS DEPOSITED INTO THE DRAINAGE CHANNEL.

OFFSITE AREAS:
ALL GRADING SHALL OCCUR ON-SITE. ANY ADDITIONAL DIRT BORROWED OR WASTED FROM THE SITE WILL BE EITHER STOCKPILED OR REMOVED FROM A LOCATION CHOSEN BY THE CONTRACTOR AT A LATER DATE.

CRITICAL AREAS:
THE CRITICAL AREAS FOR THIS PROJECT WILL BE THE AREA AROUND THE SPRING AND THE PLACE WHERE THE WATERLINE CROSSES ANY STREAMS OR CREEKS. THE CONTRACTOR SHALL ENSURE THAT SILT FENCE IS INSTALLED AT ANY AREA NEAR THE SPRING AND CREEK.

SOILS:
ALL SOILS AROUND THE SPRING AND WATER TREATMENT PLANT SITE ARE CLASSIFIED AS WINTERGREEN LOAM, 8-15% SLOPES. SOILS IN THE REMAINDER OF THE PROJECT AREA VARY BETWEEN CLIFFORD-HICKORY KNOB COMPLEX AND HAYESVILLE LOAM.

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 SPECIFICATION OF THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. THE MINIMUM STANDARDS OF THE HANDBOOK SHALL BE ADHERED TO UNLESS OTHERWISE WAIVED OR APPROVED BY VARIANCE.

SECTION 3.02- TEMPORARY STONE CONSTRUCTION ENTRANCE
MAINTENANCE
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

SECTION 3.05- SILT FENCE
MAINTENANCE
1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.
3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.

SECTION 3.08- CULVERT INLET PROTECTION
MAINTENANCE
1. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
2. AGGREGATE SHALL BE REPLACED OR CLEANED WHEN INSPECTION REVEALS THAT CLOGGED VOIDS ARE CAUSING PONDING PROBLEMS WHICH INTERFERE WITH ON-SITE CONSTRUCTION.
3. SEDIMENT SHALL BE REMOVED AND THE IMPOUNDMENT RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA IN SUCH A MANNER THAT IT WILL NOT ERODE AND CAUSE SEDIMENTATION PROBLEMS.
4. TEMPORARY STRUCTURES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

SECTION 3.12- DIVERSION

MAINTENANCE
1. BEFORE FINAL STABILIZATION, THE DIVERSION SHOULD BE INSPECTED AFTER EVERY RAINFALL AND AT LEAST ONCE EVERY TWO WEEKS. SEDIMENT SHALL BE REMOVED FROM THE CHANNEL AND REPAIRS MADE AS NECESSARY. SEEDED AREAS WHICH FAIL TO ESTABLISH A VEGETATIVE COVER SHALL BE RESEEDED AS NECESSARY.

SECTION 3.18- OUTLET PROTECTION
MAINTENANCE
1. OUTLET PROTECTION SHOULD BE CHECKED FOR SEDIMENT ACCUMULATION AFTER EACH RUNOFF-PRODUCING STORM EVENT. IT SHOULD BE INSPECTED PERIODICALLY TO DETERMINE IF HIGH FLOWS HAVE CAUSED SCOUR BENEATH THE RIPRAP OR FILTER FABRIC OR DISLODGED ANY OF THE STONE. CARE MUST BE TAKEN TO PROPERTY CONTROL SEDIMENT-LADEN CONSTRUCTION RUNOFF WHICH MAY DRAIN TO THE POINT OF THE NEW INSTALLATION. IF REPAIRS ARE NEEDED, THEY SHOULD BE ACCOMPLISHED IMMEDIATELY.

SECTION 3.31- TEMPORARY SEEDING
ESTABLISHMENT OF TEMPORARY VEGETATIVE COVER BY PLANTING SEED ON ROUGH-GRADED AREAS THAT WILL BE BROUGHT TO FINAL GRADE BETWEEN 6 MONTHS AND A YEAR.

SECTION 3.32- PERMANENT SEEDING
MAINTENANCE
1. EVEN WITH CAREFUL, WELL-PLANNED SEEDING OPERATIONS, FAILURES CAN OCCUR. WHEN IT IS CLEAR THAT PLANTS HAVE NOT GERMINATED ON AN AREA OR HAVE DIED THESE AREAS MUST BE RESEEDED IMMEDIATELY TO PREVENT EROSION DAMAGE. HOWEVER, IT IS EXTREMELY IMPORTANT TO DETERMINE FOR WHAT REASON GERMINATION DID NOT TAKE PLACE AND MAKE ANY CORRECTIVE ACTION NECESSARY PRIOR TO RESEEDING THE AREA. HEALTHY VEGETATION IS THE MOST EFFECTIVE EROSION CONTROL AVAILABLE.

SECTION 3.35- MULCHING
MAINTENANCE
1. ALL MULCHES AND SOIL COVERINGS SHOULD BE INSPECTED PERIODICALLY (PARTICULARLY AFTER RAINSTORMS) TO CHECK FOR EROSION. WHERE EROSION IS OBSERVED IN MULCHED AREAS, ADDITIONAL MULCH SHOULD BE APPLIED. NETS AND MATS SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, RE-INSTALL NETTING OR MATTING AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE OR DITCH. INSPECTIONS SHOULD TAKE PLACE UP UNTIL GRASSES ARE FIRMLY ESTABLISHED. WHERE MULCH IS USED IN CONJUNCTION WITH ORNAMENTAL PLANTINGS, INSPECT PERIODICALLY THROUGHOUT THE YEAR TO DETERMINE IF MULCH IS MAINTAINING COVERAGE OF THE SOIL SURFACE; REPAIR AS NEEDED.

VEGETATIVE PRACTICES:

TEMPORARY SEEDING / PERMANENT STABILIZATION:
SEEDING MEASURES SHALL BE TAKEN ON DISTURBED SOIL AT CUT / FILL SLOPES, DITCH LINES, OR AREAS OUTSIDE OF ON-GOING CONSTRUCTION PRACTICES WITHIN SEVEN (7) DAYS OF COMPLETED GRADING. ALL AREAS DISTURBED BY CONSTRUCTION WILL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINAL GRADING.

SITE MAINTENANCE:

1. SILT FENCE BARRIERS SHALL BE CHECKED WEEKLY AND ESPECIALLY AFTER EACH RAINFALL EVENT, TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. IF ANY BARRIER IS DAMAGED DUE TO CONSTRUCTION ACTIVITIES, NATURAL CAUSES, OR ANY OTHER REASON, THE BARRIER SHALL BE REPAIRED OR REPLACED IMMEDIATELY. IF TRASH OR SEDIMENTATION REACHES ONE-HALF THE HEIGHT OF THE BARRIER, THE BARRIER SHALL BE CLEANED, AND RESTORED TO PROPER FUNCTIONING CONDITION.
2. ALL OTHER STRUCTURAL MEASURES ARE TO BE CHECKED WEEKLY AND ESPECIALLY AFTER EACH RAINFALL EVENT TO INSURE THAT THEY ARE FUNCTIONING PROPERLY. ANY DAMAGED OR CLOGGED MEASURE SHALL BE CLEANED OUT OR REPAIRED IMMEDIATELY.
3. ALL SEDIMENT REMOVED FROM THE CONTROL DEVICES SHALL BE RE-SPREAD ON THE SITE ABOVE THE CONTROL DEVICES.
4. VEGETATION SHALL BE CHECKED WEEKLY TO INSURE PROPER AND ADEQUATE COVERAGE. BARE OR WASHED AREAS SHALL BE SCARIFIED AND RESEEDED UNTIL PERMANENT STABILIZATION HAS BEEN ACHIEVED.
5. ONCE SITE HAS ESTABLISHED AND SEDIMENT HAS CEASED TO BE CONVEYED ON THE SITE, ALL SILT FENCE BARRIERS AND INLET PROTECTION SHALL BE REMOVED FROM THE SITE.
6. OTHER CONTROLS.
   A. NO SOLID MATERIALS, INCLUDING BUILDING MATERIALS, GARBAGE AND DEBRIS SHALL BE DISCHARGED TO SURFACE WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A CWA SECTION 404 PERMIT.
   B. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, MINIMIZATION OF TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ON THE PAVEMENT WILL BE PREVENTED BY PROPER USE AND MAINTENANCE OF THE CONSTRUCTION ENTRANCES AND CLEANING THE ROAD AT THE END OF EACH DAY.
   C. STORAGE OF ONSITE MATERIALS WILL BE DONE TO MINIMIZE EXPOSURE OF THE MATERIALS TO STORMWATER AND SPILL PREVENTION AND RESPONSE.
   D. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM.

INSPECTIONS AND REPORTING:
FACILITY PERSONNEL WHO ARE FAMILIAR WITH THE CONSTRUCTION ACTIVITY, THE BMPS AND THE STORMWATER POLLUTION PREVENTION PLAN WILL INSPECT DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROLS AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE. THESE INSPECTIONS SHALL BE CONDUCTED EVERY 14 DAYS OR WITHIN 48 HOURS OF THE END OF A STORM EVENT THAT IS 0.5 INCHES OR GREATER.

SEEDING SPECIFICATIONS:

TEMPORARY SEEDING-

WINTER - 40 LBS. ANNUAL RYE/40 LBS. CEREALE RYE (PER ACRE)
SUMMER - 40 LBS. ANNUAL RYE/40 LBS. FOXTAIL MILLET (PER ACRE)

FERTILIZER - 1500 LBS. 10-18-10/ACRE
LIME - 2 TONS/ACRE

PERMANENT SEEDING-

SEASONAL SPECIFICATION - PER ACRE

2/1 TO 5/15	100 LBS. TALL FESCUE 15 LBS. ANNUAL RYE 2 LBS. RED CLOVER
5/16 TO 7/31	120 LBS. TALL FESCUE 10 LBS. FOXTAIL MILLET 2 LBS. RED CLOVER
8/1 TO 9/15	100 LBS. TALL FESCUE 15 LBS. ANNUAL RYE 2 LBS. RED CLOVER
9/16 TO 1/31	120 LBS. TALL FESCUE 10 LBS. CEREALE RYE 2 LBS. RED CLOVER

SOD-
REFER TO THE LANDSCAPE SPECIFICATION SECTIONS FOR AN APPROVED SOD MATERIAL.

FERTILIZER - ALL SEASONS - 1500 LBS. 10-18-10/ACRE
LIME - ALL SEASONS - 2 TONS/ACRE

* A MULCH COVER IS REQUIRED ON TEMPORARY AND FINAL SEEDING

* STRAW AT 80 BALES PER ACRE OR AN APPROVED MANUFACTURED MULCH/STABILIZATION MATTING MATERIAL.

VIRGINIA EROSION AND SEDIMENT CONTROL REGULATIONS MINIMUM STANDARD #1

PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.
TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN ONE YEAR.

GENERAL EROSION AND SEDIMENT CONTROL NOTES
TABLE 6-1

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 PRE-CONSTRUCTION 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 SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

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 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.

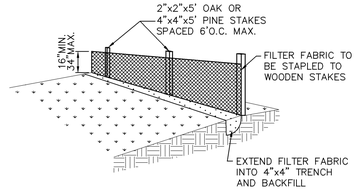
ES-9: THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES PERIODICALLY AND AFTER EACH RUNOFF PRODUCING RAINFALL EVENT. ANY NECESSARY REPAIRS OR CLEANUP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.

EROSION AND SEDIMENT CONTROL DEVICES:

PERIMETER EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITY. AS CONSTRUCTION PROCEEDS, ALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS SOON AS POSSIBLE. EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN ARE A MINIMUM AND THE PROJECT CONDITION MAY DICTATE ADDITIONAL CONTROL.. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

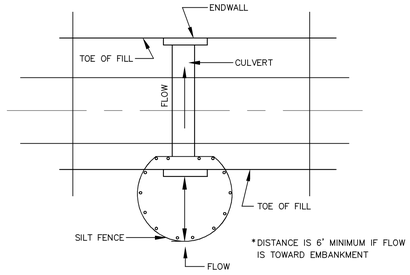
EROSION AND SEDIMENT CONTROL MAINTENANCE:

THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CHECKED WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL TO INSURE THAT ALL DEVICES ARE IN PLACE AND FUNCTIONING AS REQUIRED. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED PER THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK. IN GENERAL, IF THE SILT BUILT UP BEHIND A BARRIER BECOMES AS DEEP AS 9 INCHES, THE SILT IS TO BE REMOVED AND THE BARRIER REPAIRED OR REPLACED. AFTER COMPLETION OF THE PROJECT, AND PERMANENT SEEDING HAS BEEN ESTABLISHED, EROSION CONTROL DEVICES AND ANY SILT BUILT UP SHALL BE REMOVED. DISTURBED AREAS DUE TO THIS CLEANUP OPERATION SHALL BE REPAIRED, RESEEDED AND REMULCHED.



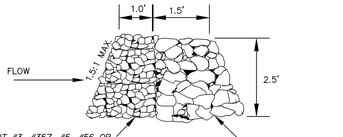
SF SILT FENCE
(WITHOUT WIRE SUPPORT)
N.T.S.

CIP SILT FENCE CULVERT INLET PROTECTION



*DISTANCE IS 6' MINIMUM IF FLOW IS TOWARD EMBANKMENT

* OPTIONAL STONE COMBINATION

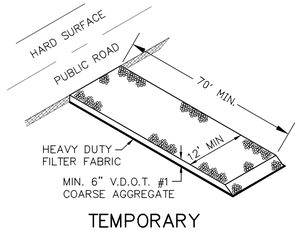


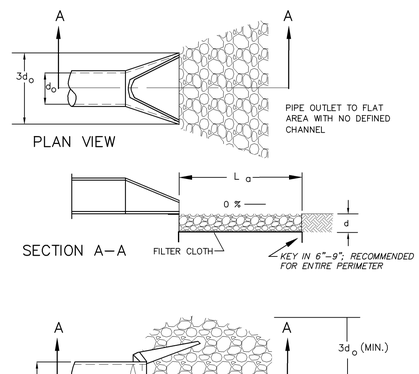
* VDOT #3, #357, #5, #56 OR #57 COARSE AGGREGATE TO REPLACE SILT FENCE IN "HORSESHOE" WHEN HIGH VELOCITY OF FLOW IS EXPECTED.

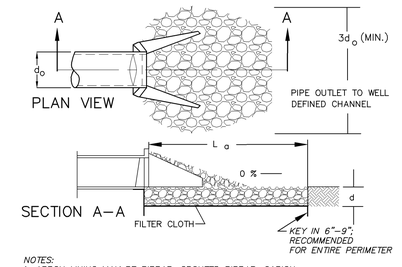
SOURCE: ADAPTED from VDOT Standard Sheets and Va. DSWC

PLATE. 3.08-1

CE TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.

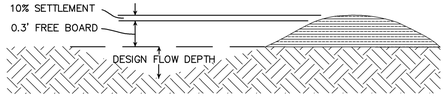






NOTES:
1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

OP PIPE OUTLET PROTECTION
N.T.S.



DV TYPICAL VEE-SHAPED DIVERSION
N.T.S.

HURT & PROFFITT
INCORPORATED
*ENGINEERING >> SURVEYING >> PLANNING
2524 LANGHORNE ROAD
LYNCHBURG VA 24501
800.242.4906 TOLL FREE
434.847.7796 MAIN
434.847.0047 FAX

E&S NARRATIVE AND DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

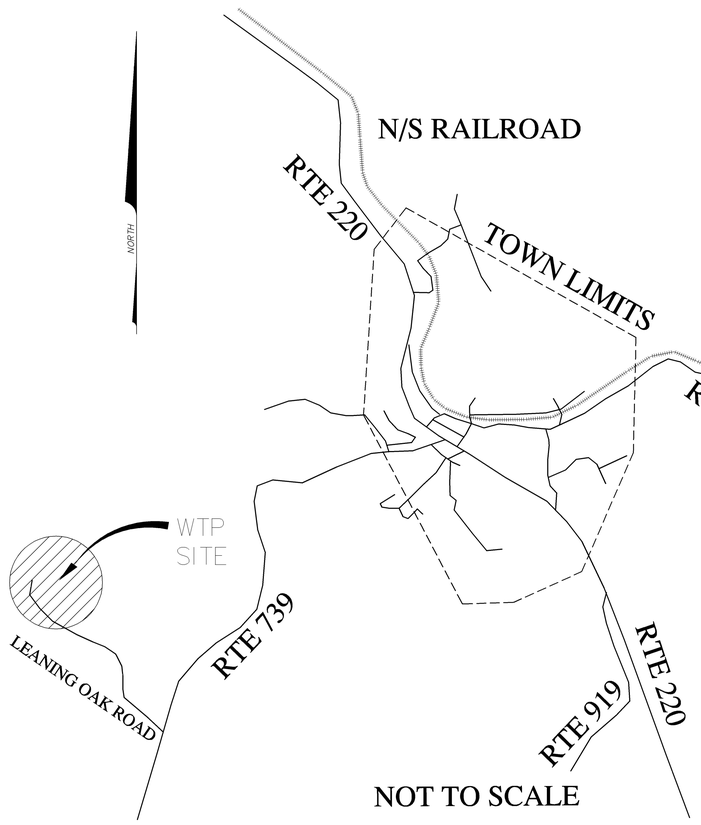
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	WCH
CHECKED BY:	BLC

HURT & PROFFITT

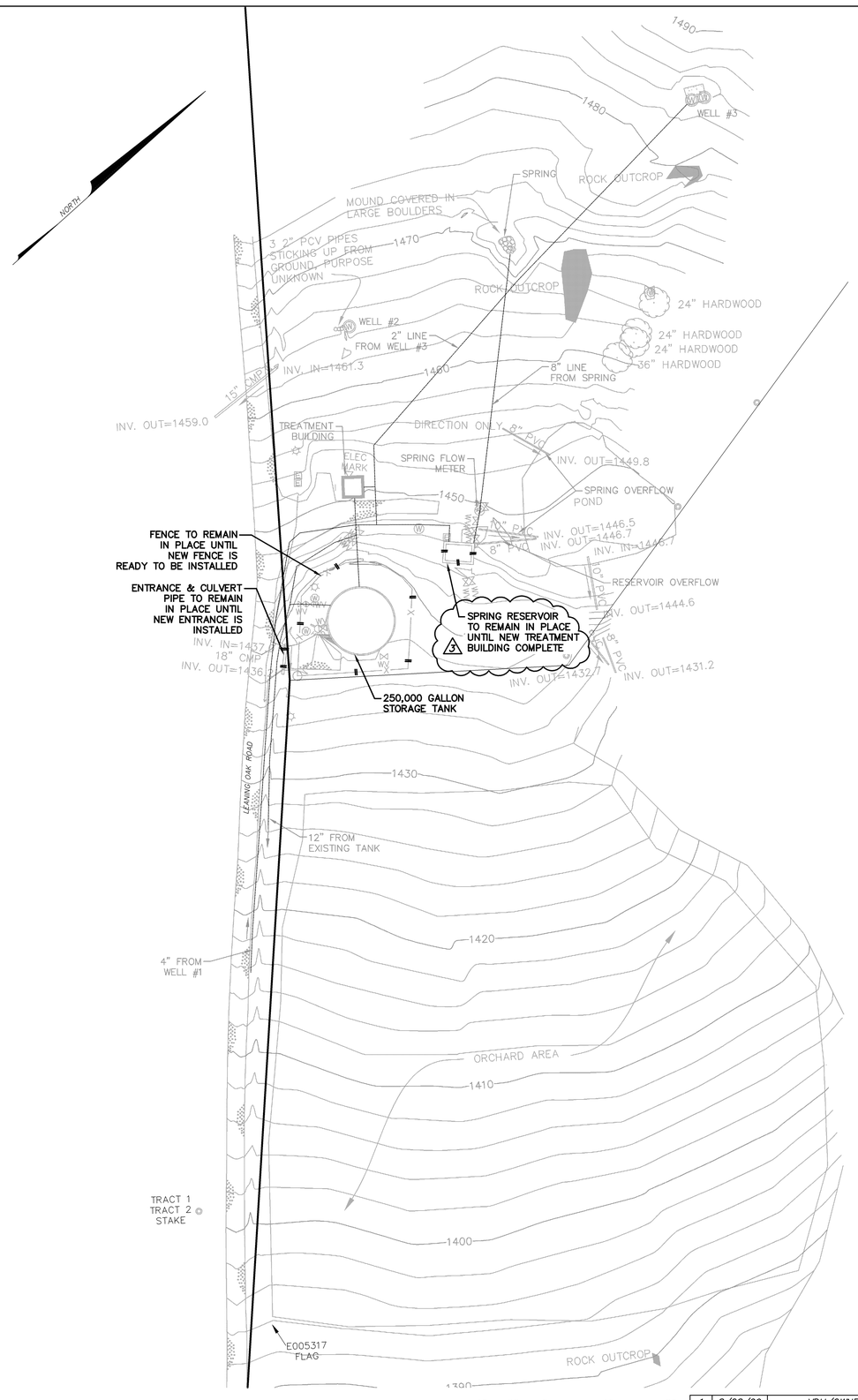
1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

SHEET NO.
C0.2



NOT TO SCALE

VICINITY MAP



1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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TANK SITE EXISTING CONDITIONS-ASBUILT

FOR

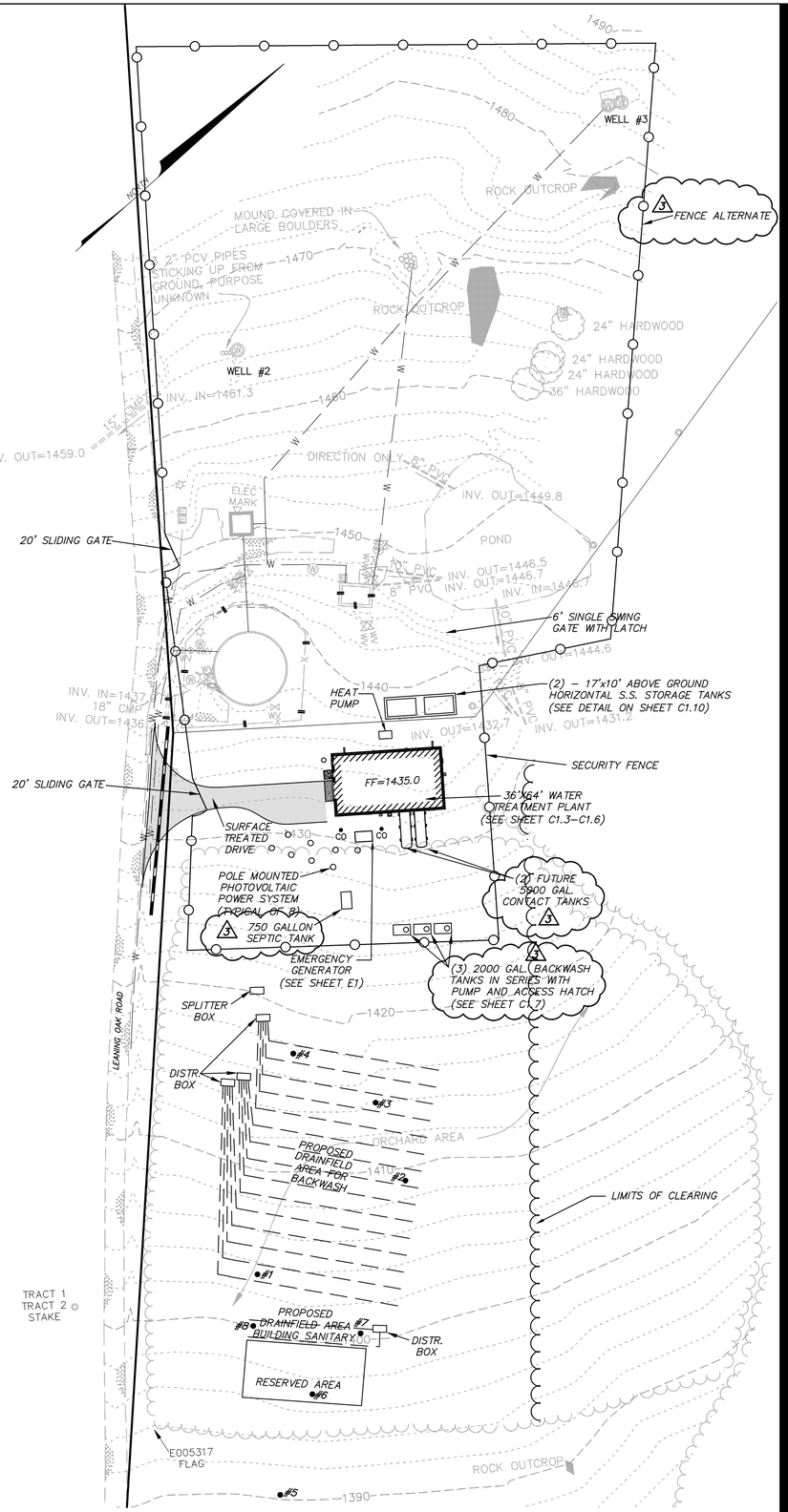
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

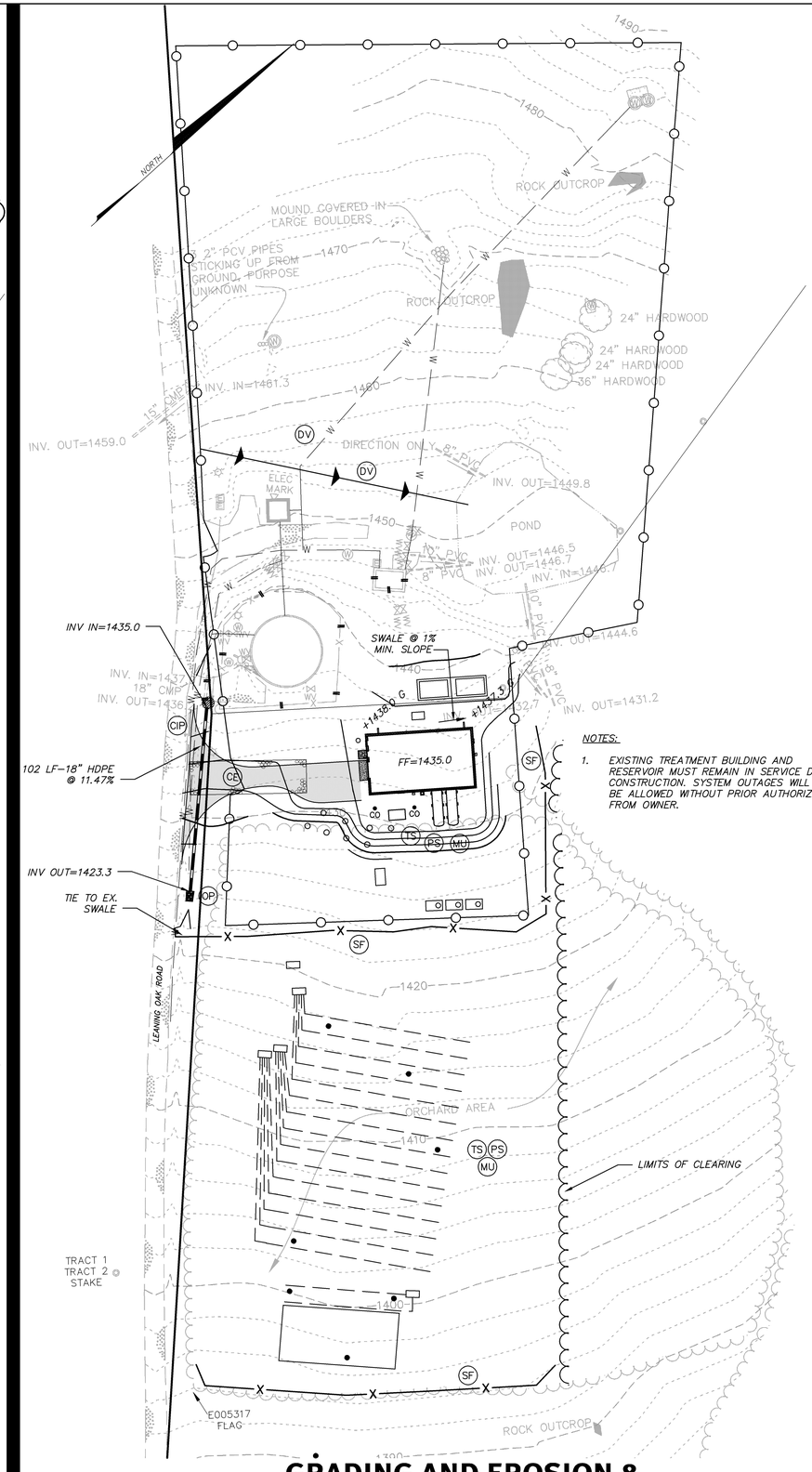
PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
C1.0



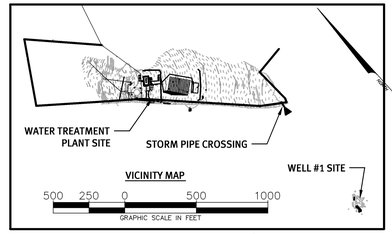
SITE PLAN

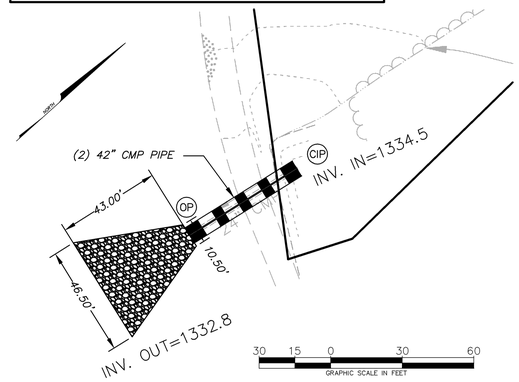


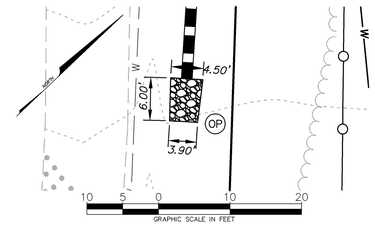
GRADING AND EROSION & SEDIMENT CONTROL PLAN

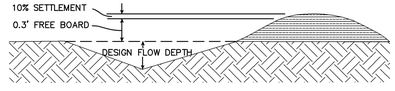
NOTES:

1. *EXISTING TREATMENT BUILDING AND RESERVOIR MUST REMAIN IN SERVICE DURING CONSTRUCTION. SYSTEM OUTAGES WILL NOT BE ALLOWED WITHOUT PRIOR AUTHORIZATION FROM OWNER.*









DV TYPICAL VEE–SHAPED DIVERSION
N.T.S.

THE ENGINEER AND/OR SURVEYOR TAKES NO RESPONSIBILITY FOR THE LOCATION OR ACCURACY OF THE UTILITIES AS SHOWN HEREON OR ANY UTILITIES WITHIN THE PROJECT THAT MAY NOT BE SHOWN HEREON. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE UTILITY COMPANIES TO SEE IF ANY UTILITIES EXIST WITHIN THE AREA OF THE PROJECT BEFORE ANY CONSTRUCTION BEGINS. ANY COST INCURRED BY DAMAGING ANY UTILITY WITHIN THE PROJECT SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

48 WORKING HOURS PRIOR TO STARTING THE WORK, THE CONTRACTOR SHALL CALL MISS UTILITY AT PHONE NUMBER 811 AND ADVISE THE NATURE AND LOCATION OF THE WORK.

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

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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INCORPORATED
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TANK SITE AND GRADING PLAN-ASBUILT

FOR

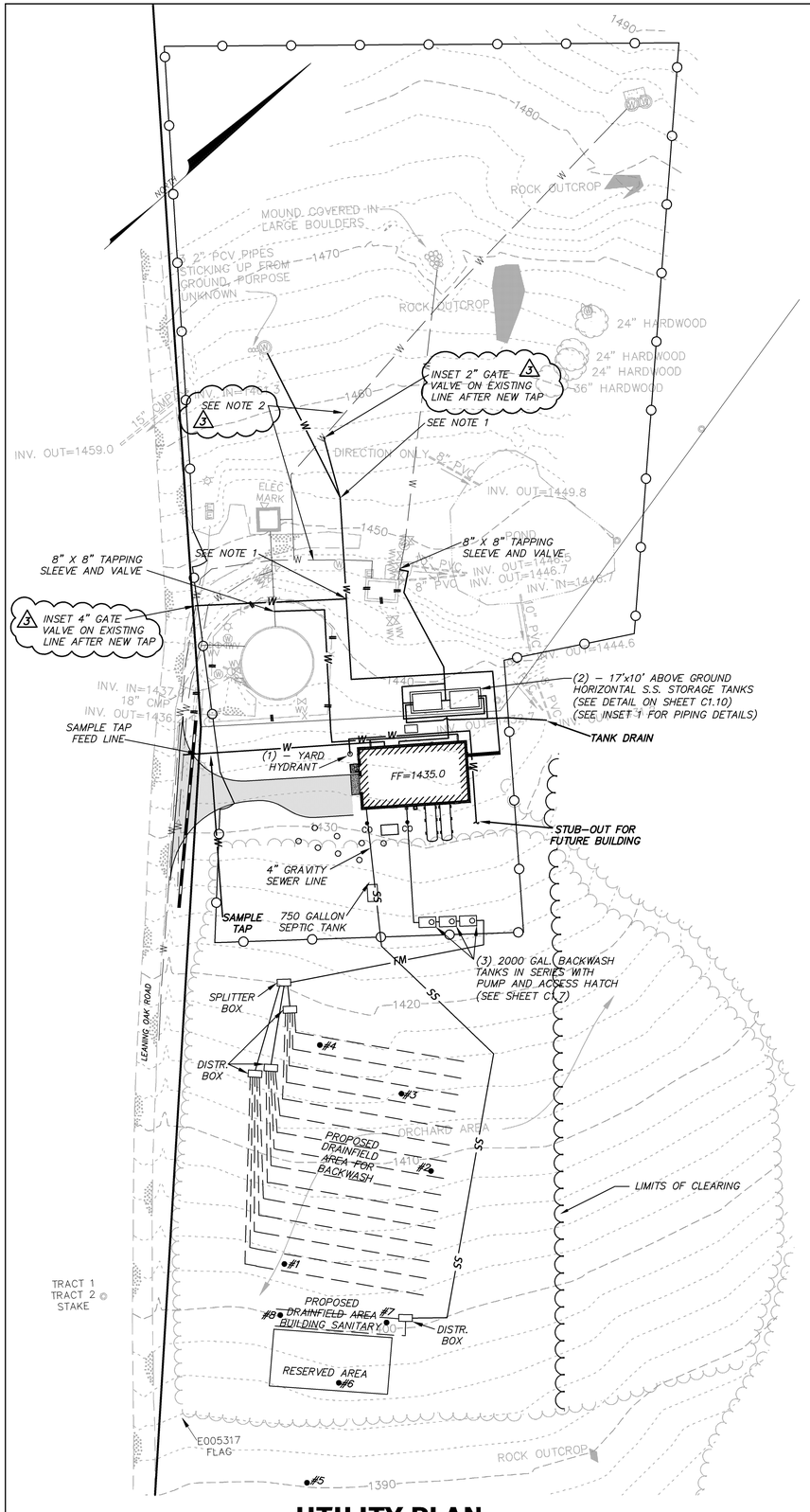
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

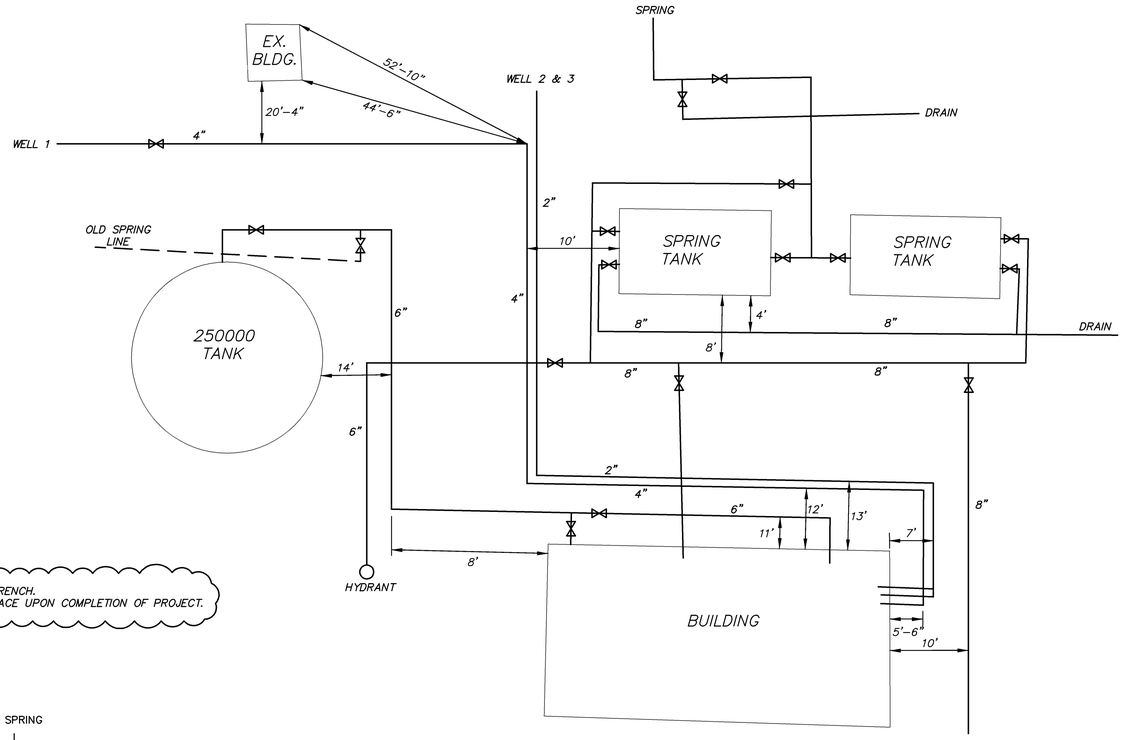
PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

HURT & PROFFITT

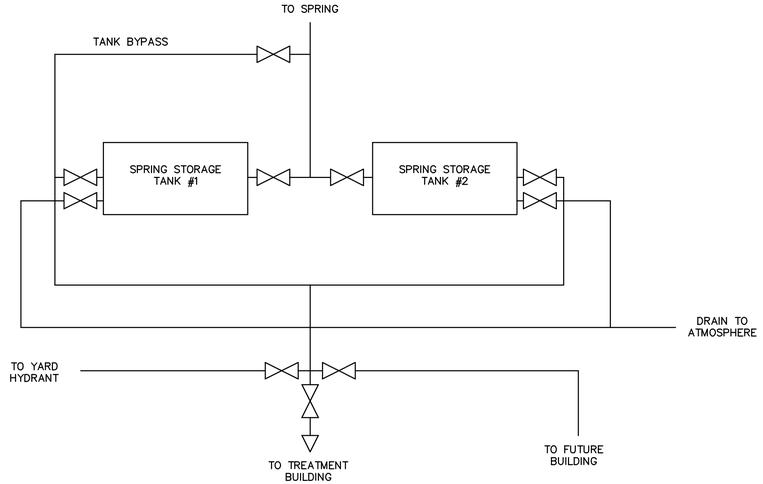
SHEET NO.
C1.1



UTILITY PLAN



NOTES:
1. RAW WELL LINES TO BE RUN IN COMMON TRENCH.
2. RAW WATER LINE TO BE ABANDONED IN PLACE UPON COMPLETION OF PROJECT.



NOTES:
1. ALL PIPING AND VALVES SHOWN ARE TO BE 8".
2. ALL PIPING IS TO BE INSTALLED AT MINIMUM OF 1% SLOPE TO ALLOW GRAVITY FLOW.
3. 8" X 4" REDUCER TO BE INSTALLED ON LINE TO TREATMENT BUILDING.
4. 2" TAPPED PLUG INSTALLED ON LINE TO YARD HYDRANT.

INSET 1

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

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TANK SITE UTILITY PLAN-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

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G.L. NO.	297-03-A3.9
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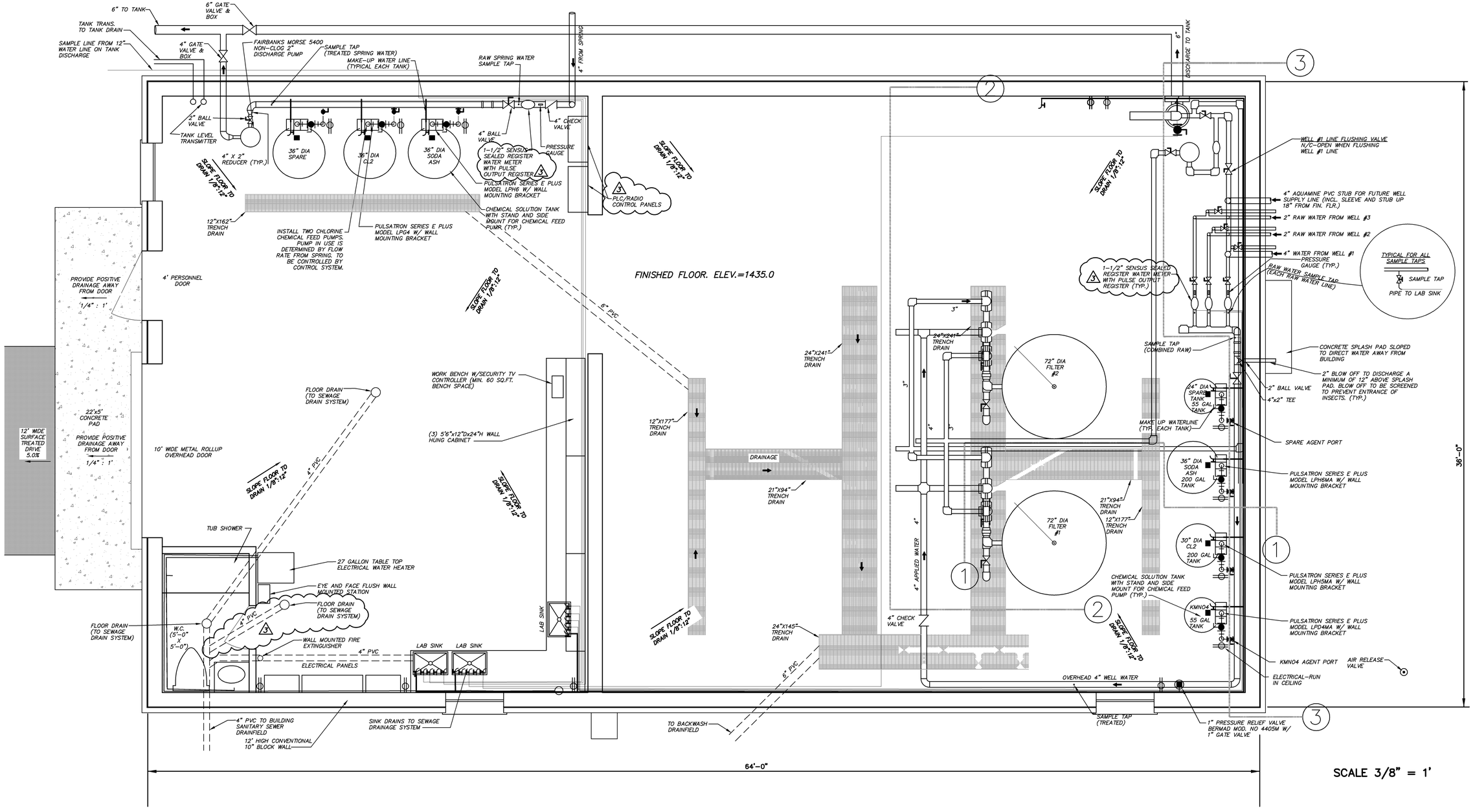
HURT & PROFFITT

SHEET NO.
C1.2

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

Mar 14, 2012 – 4:08pm V:\LandProjects\20080815\dwg\Asbuilts-WTP\ASBUILT-SITE-TANK.dwg



SCALE 3/8" = 1'

SECTIONS 1 AND 3 ARE SHOWN ON SHEET C1.5

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
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WATER TREATMENT DETAILS-PHASE 1-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
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SHEET NO.
C1.3

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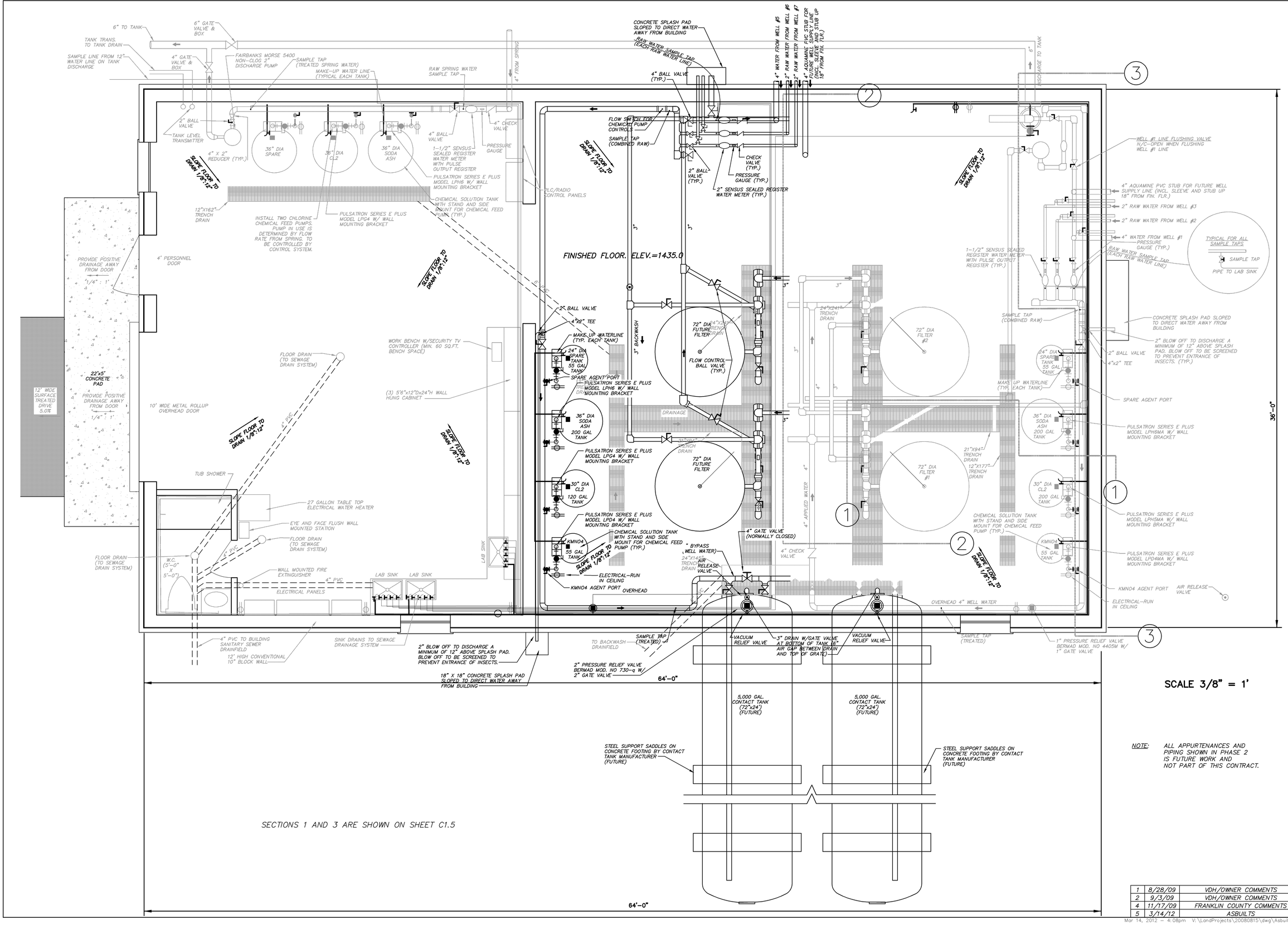

SCALE 3/8" = 1'

NOTE: ALL APPURTENANCES AND PIPING SHOWN IN PHASE 2 IS FUTURE WORK AND NOT PART OF THIS CONTRACT.

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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WATER TREATMENT DETAILS-PHASE 2 (FUTURE)-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
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HURT & PROFFITT

SHEET NO.
C1.4

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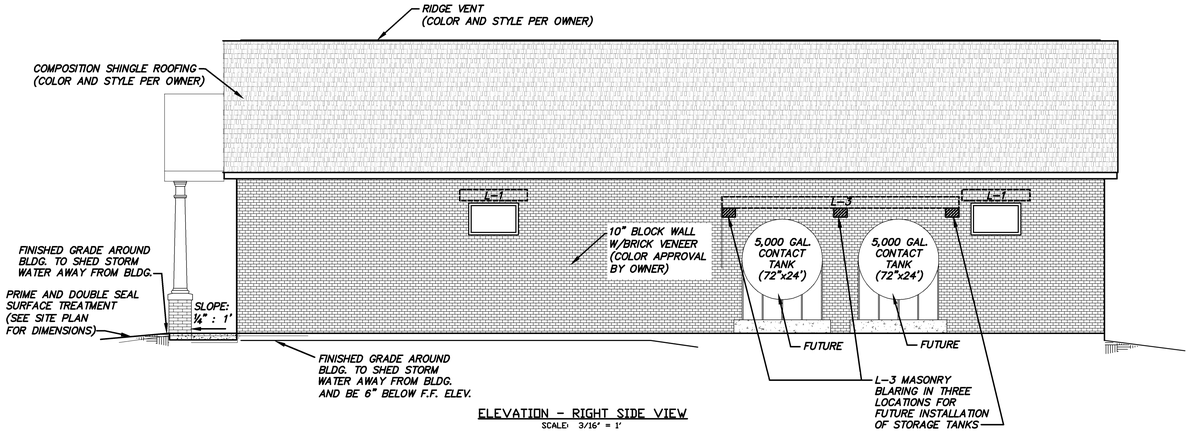
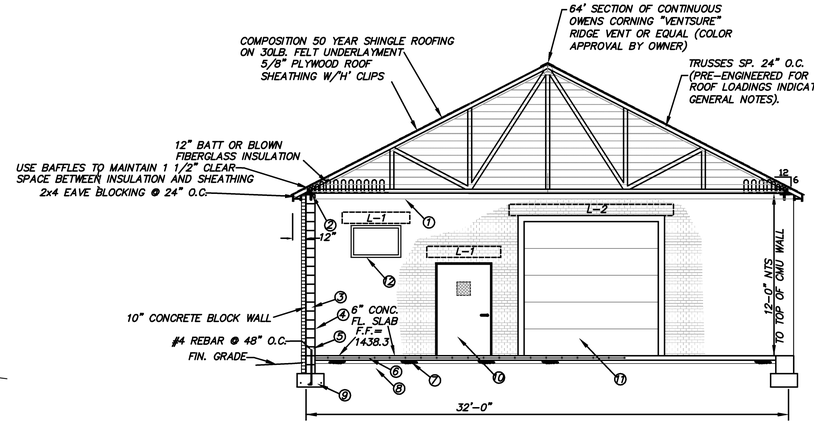


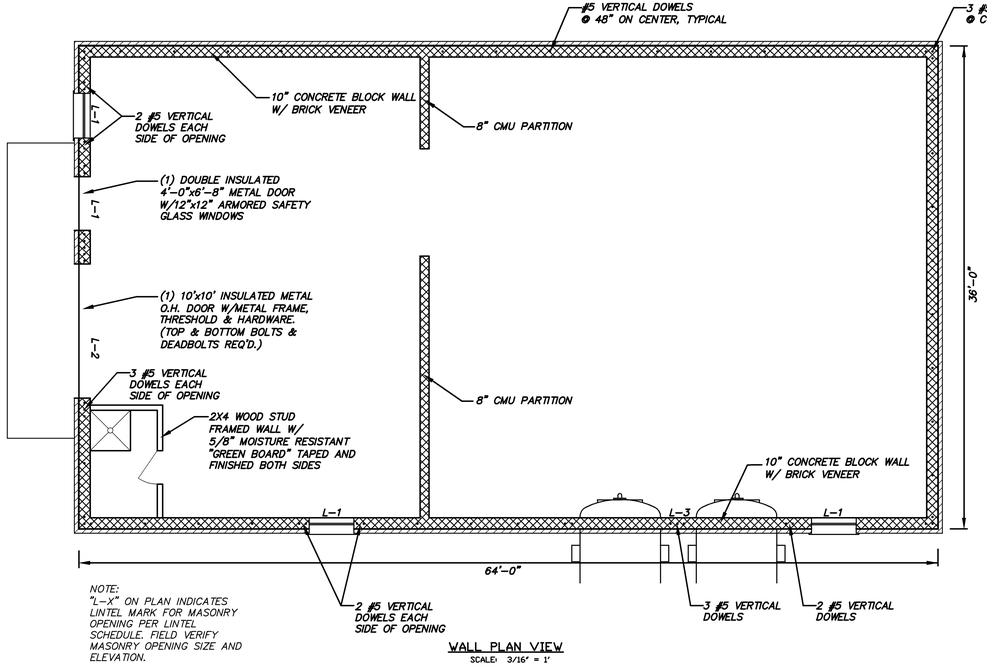
ELEVATION - RIGHT SIDE VIEW
SCALE: 3/16" = 1'



ELEVATION - FRONT VIEW
SCALE: 3/16" = 1'

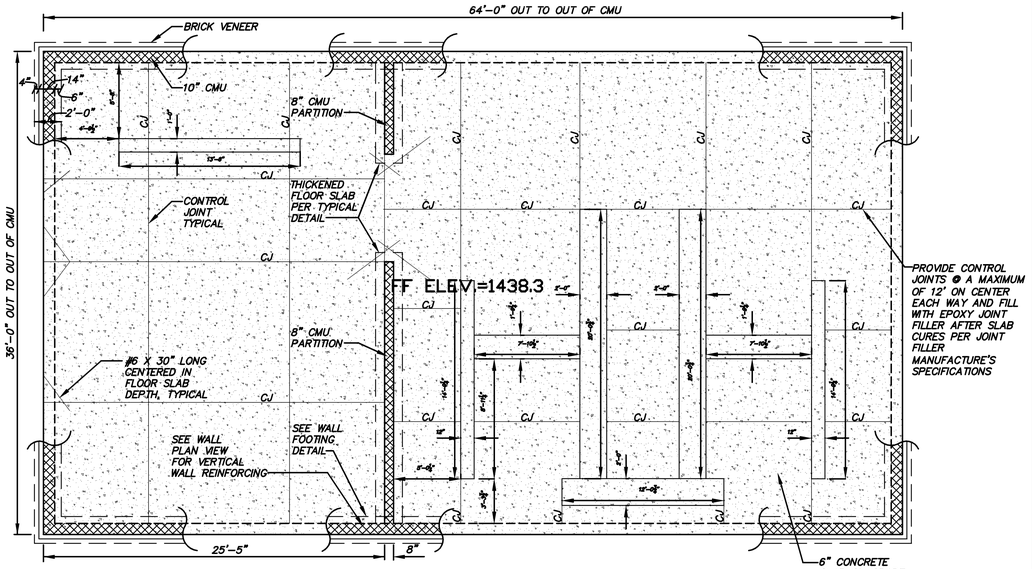
ALL RAKE, FACIA, & CORNICE WORK TO BE ALUMINUM COVERED, WOOD SHALL BE PRIME COATED PRIOR TO ALUM. COVERING

1. FIN. CEILING: 5/8" MOISTURE RESISTANT GYPSUM BOARD TAPED, FINISHED, & PAINTED
2. PRESSURE TREATED (2) 2x8 BOLTED W/ 5/8"ø "J" ANCHOR BOLTS @ 48" O.C. (EMBEDDED IN BOND BEAM GROUT.)
3. FILL BLOCK VOIDS WITH INSULATION
4. MTL.- WIRE REINFORCEMENT CONTIN. (COURSES 16" O.C.)
5. GROUT REBAR FILLED COURSE (ONLY)
6. 6X6 - W1.4 x W1.4
7. 4" STONE FILL
8. COMPACTED, LEVELED SUB-GRADE
9. NOT USED
10. (1) 4'x7' INSULATED STEEL DOOR W/METAL FRAME, THRESHOLD & HARDWARE. (DEADBOLTS REQ'D.) SIMILAR TO JEN-WELD GLADIATOR STEEL ENTRANCE DOOR 6 PANEL DOOR W/ GLASS INSERT
11. (1) 10'x10' INSULATED METAL O.H. DOOR W/METAL FRAME, THRESHOLD & HARDWARE. (TOP & BOTTOM BOLTS & DEADBOLTS REQ'D.) SIMILAR TO OVERHEAD DOOR CO. BANNER 313/319 SERIES W/ MOTORIZED DOOR OPERATOR
12. AWNING TYPE VINYL WINDOW W/ ¾" INSULATED GLASS SIMILAR TO JEN-WELD 48" X 30" AWNING WINDOW



NOTE:
"L-X" ON PLAN INDICATES LINTEL MARK FOR MASONRY OPENING. PER LINTEL SCHEDULE. FIELD VERIFY MASONRY OPENING SIZE AND ELEVATION.

WALL PLAN VIEW
SCALE: 3/16" = 1'



FOUNDATION & SLAB PLAN
SCALE: 3/16" = 1'

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
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WATER TREATMENT DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
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SHEET NO.
C1.5

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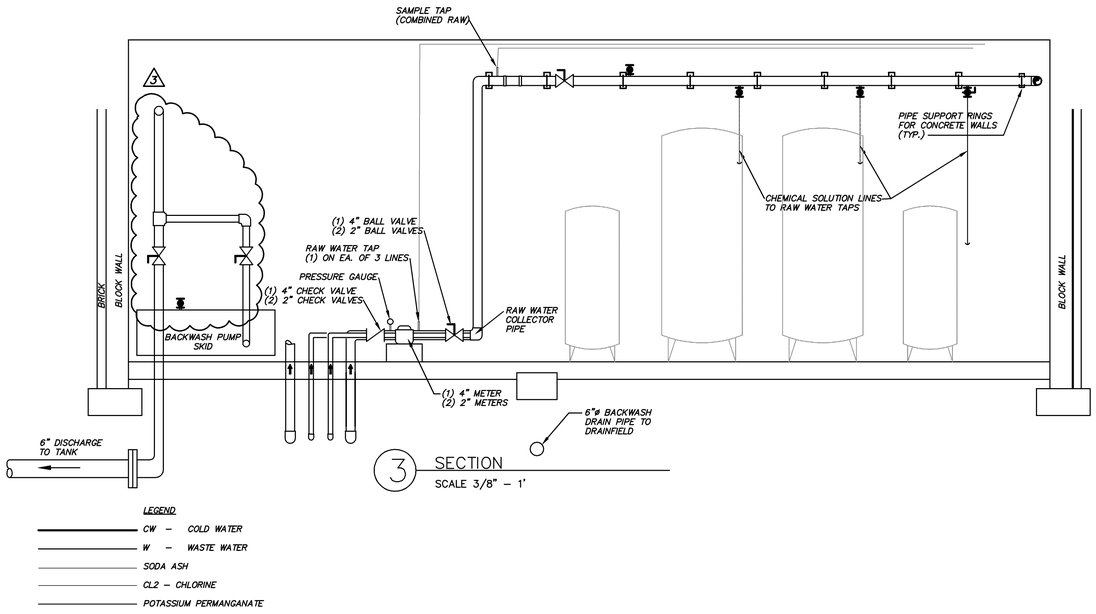
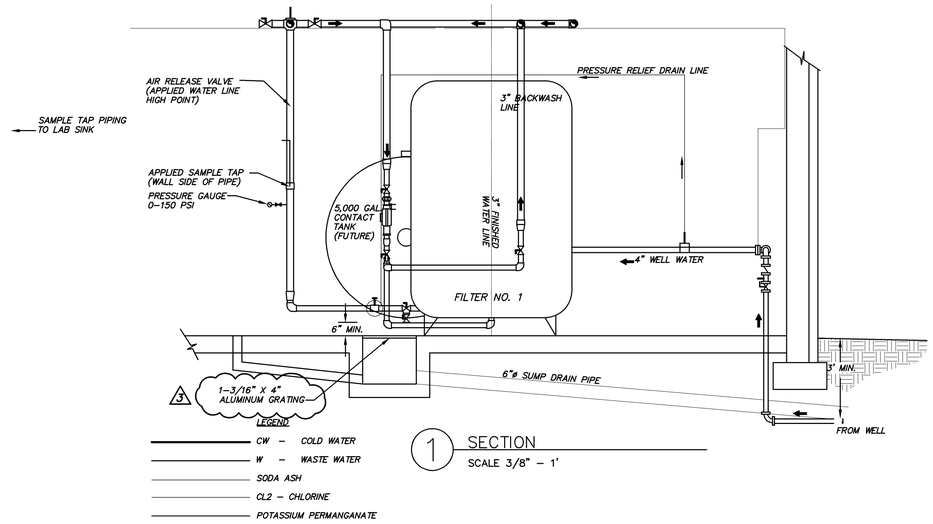
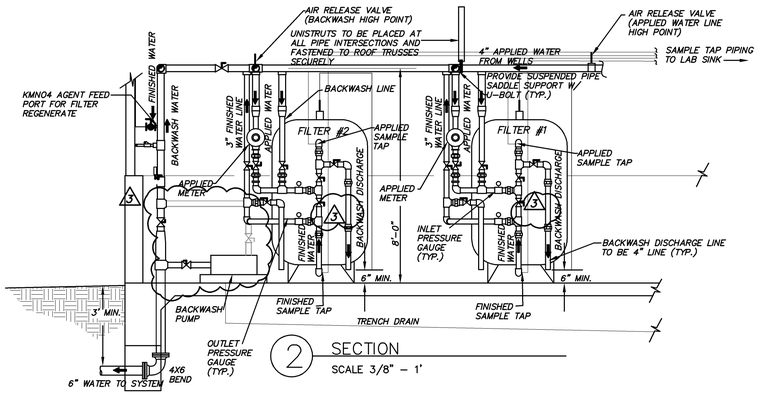
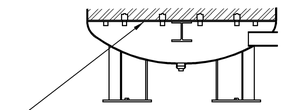


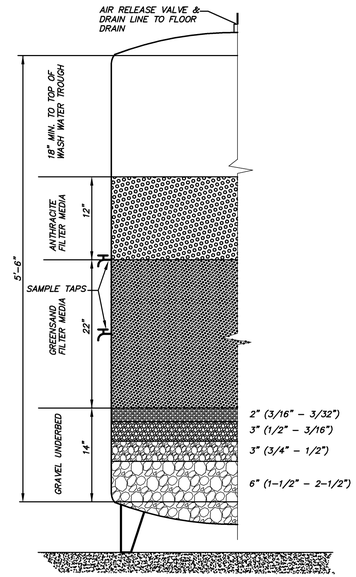






3/8" STEEL FALSE BOTTOM UNDERDRAIN WITH NOZZLES LOCATED ON 12" CENTERS.

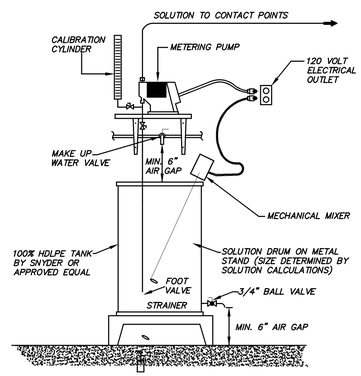
NOTES:
1. CONFIGURATION OF UNDERDRAIN SYSTEM SPECIFIC TO TANK MANUFACTURER. APPROVED EQUAL WILL ALSO BE ACCEPTED.
2. INTERIOR COATINGS OF PRESSURE VESSELS (CONTACT AND GREENSAND TANKS) ARE TO HAVE NSF STANDARD 61 INTERIOR COATINGS.



FILTER SYSTEM (TYP.)
N.T.S

MEDIA AND GRAVEL SPECIFICATIONS

LAYER	DEPTH	SIZE	DESCRIPTION	UNIFORMITY COEFFICIENT
TOP	12"	0.8–2.0mm	ANTHRACITE	LESS THAN 1.7
2ND	22"	0.3–0.35mm	GREENSAND	LESS THAN 1.7
3RD	2"	3/16"–3/32"	GRADED GRAVEL	LESS THAN 1.7
4TH	3"	1/2"–3/16"	GRADED GRAVEL	–
5TH	3"	3/4"–1/2"	GRADED GRAVEL	–
BOTTOM	6"	$1\frac{1}{2}$"–$2\frac{1}{2}$"	GRADED GRAVEL	–



CHEMICAL FEED SYSTEM (TYP.)
N.T.S

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WATER TREATMENT DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

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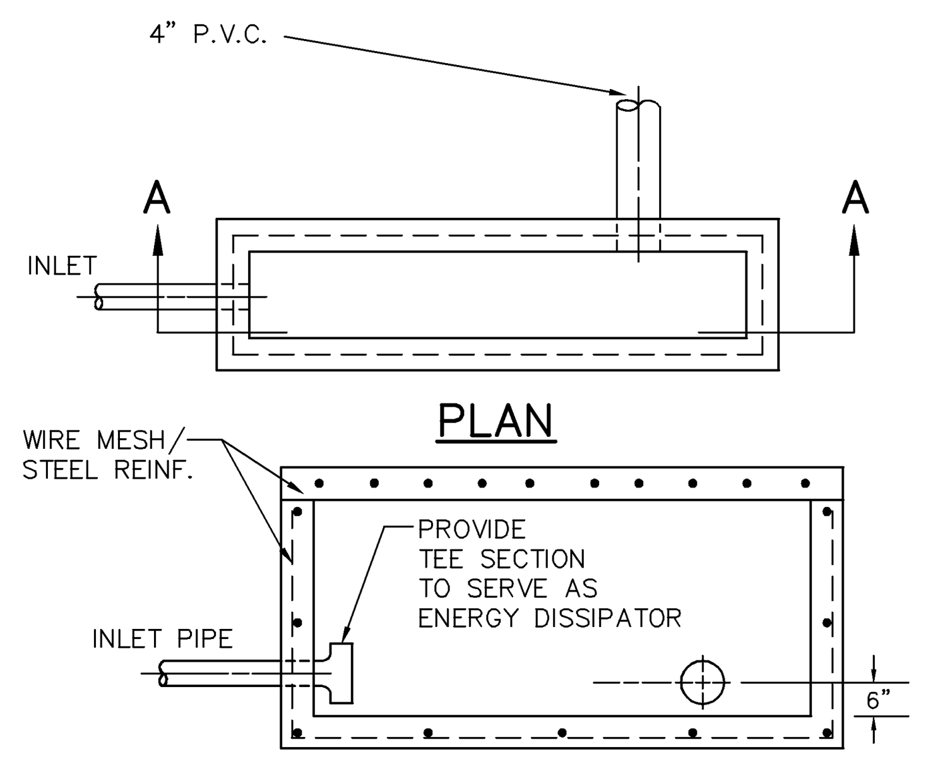
SHEET NO.
C1.6



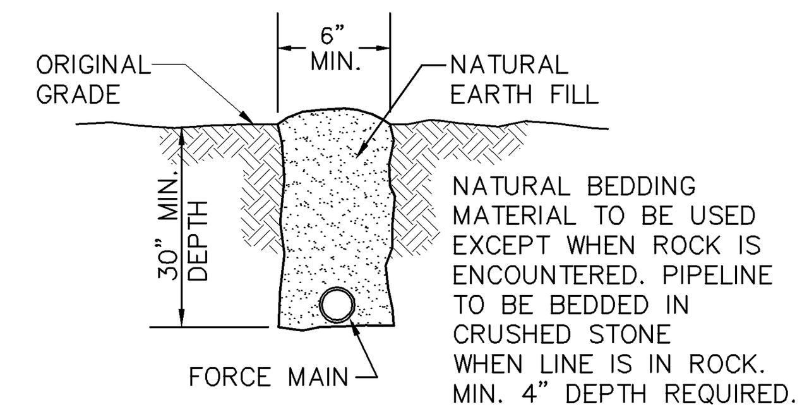
PLAN

SECTION A–A

FLOW RECEIVING TANK

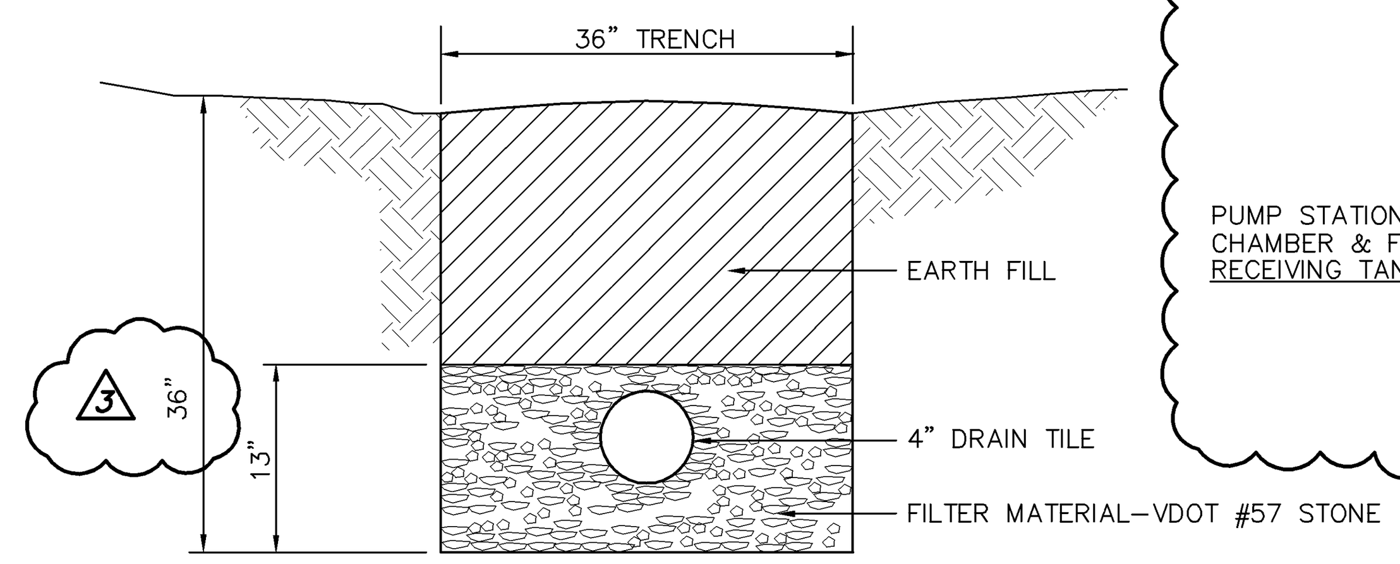
N.T.S.

TANKS MUST BE CONSTRUCTED USING A CONCRETE MIXTURE THAT ACHIEVES A FINAL COMPRESSIVE STRENGTH OF NO LESS THAN 3,000 PSI IN A 28 DAY CURING PERIOD.



FORCE MAIN TRENCH

N.T.S.



DRAIN TILE TRENCH CROSS–SECTION

N.T.S.

EFFLUENT SPECIFICATIONS

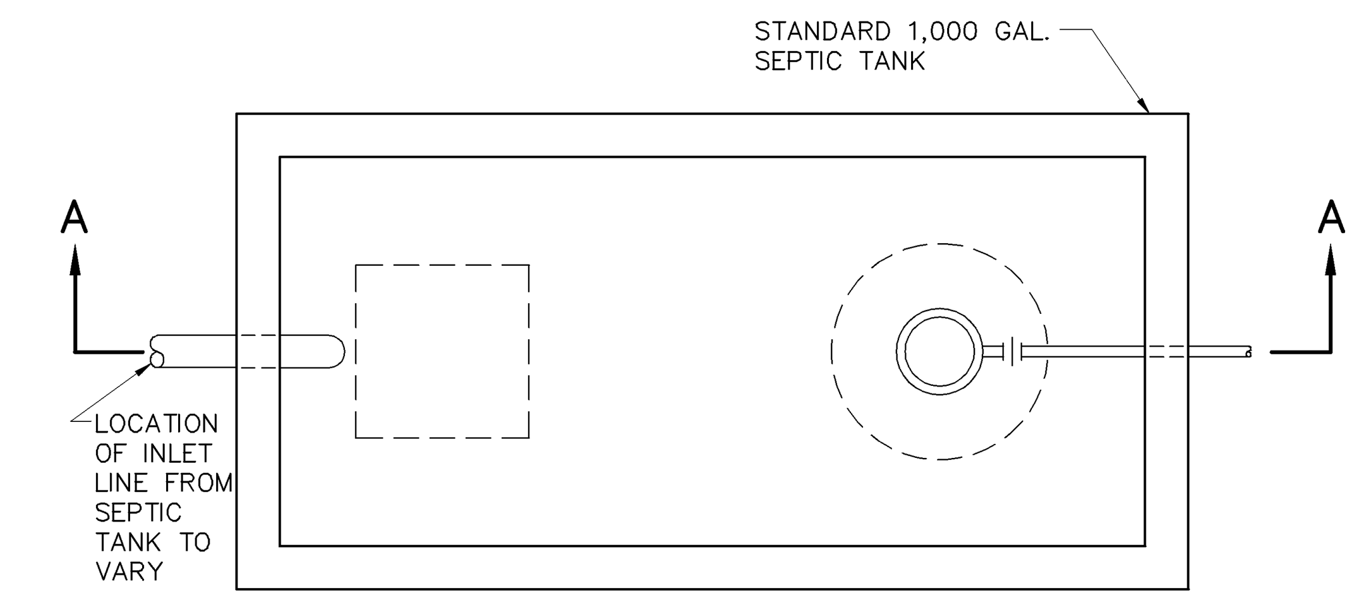
EFFLUENT PUMP: THE EFFLUENT PUMP SHALL BE EQUAL TO GOULDS SUBMERSIBLE EFFLUENT PUMP MODEL 3885 – WE0511H CAPABLE OF DELIVERING 45 GALLONS PER MINUTE AGAINST A TOTAL DYNAMIC HEAD OF 20 FEET. THE MOTOR SHALL BE SINGLE PHASE, 115 VOLTS, 3,450 R.P.M., 1/2 H.P.

CONTROL PANEL: THE CONTROL PANEL SHALL BE AN ORENCO MVP–S2 SERIES OR AQUAWORX BY INFILTRATOR OR EQUIVALENT. THE TIMER SHALL BE SET TO OPERATE THE PUMP FOR APPROX. 13.5 MINUTES (PUMPING 602 GAL. PER CYCLE @ 45 GPM) THE PUMP SHALL OPERATE 2 TIMES PER DAY (TOTAL RUN TIME OF 27 MIN. PER DAY), TOTAL PUMPED PER DAY IS 1204 GALLONS. A FLOAT SHALL BE SET 1" BELOW THE 'PUMP OFF' POSITION TO DEACTIVATE THE PUMP, SHOULD THE TIMER MALFUNCTION OR THE EFFLUENT LEVEL DROP TOO LOW. A SINGLE FLOAT SET AT THE 'ALARM ON' POSITION SHALL ACTIVATE THE ALARM. THE TIMER SHALL AUTOMATICALLY RESET TO NORMAL OPERATION WHEN LIQUID LEVELS RETURN TO NORMAL LEVELS. (3)

PIPING & VALVE: ALL PIPING WITHIN THE PUMP STATION SHALL BE SCHEDULE 40 P.V.C. WITH FITTINGS. THE FORCE MAIN SHALL HAVE A LIFT–OUT ADAPTER PLACED JUST BEYOND THE 90° ELBOW ON THE RISER PIPE. ON THE OUTLET SIDE OF THE ADAPTER SHALL BE A 2" CHECK VALVE. THE CHECK VALVE SHALL BE GOULDS MODEL A9–2I. THE P.V.C. FORCE MAIN SHALL BE SCHEDULE 40 WITH PRESSURE RATED JOINTS. ALL FORCE MAIN PIPING SHALL BE 2" DIAMETER. THE LIFT–OUT ADAPTER SHALL BE GOULDS MODEL AF–20. THE CONTRACTOR SHALL PROVIDE CONCRETE ANCHOR BLOCKS AT ALL BENDS IN FORCE MAIN.

PUMP STATION CHAMBER & FLOW RECEIVING TANK: THE PUMP STATION CHAMBER SHALL BE A 2,000 GALLON SEPTIC TANK WITH A 36" DIAMETER CONCRETE PIPE SET OVER ONE ACCESS HOLE. THE 36" DIAMETER ACCESS SHALL HAVE A FITTED ALUM. TOP SET ON THE PIPE. THE FLOW RECEIVING TANK SHALL BE A STANDARD DISTRIBUTION BOX WITH ONLY AN INLET AND OUTLET PORT OPENED. ALL ELECTRICAL CONNECTIONS SHALL BE MADE IN A GOULDS JUNCTION BOX, MODEL 8J–1J. ALL ELECTRICAL CONNECTIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL CODES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY BUILDING PERMITS THAT ARE APPLICABLE. THE ALUM. OR CONC. TOP SHALL HAVE A FITTED RING ANCHORED TO THE END OF THE CONC. ENTRY TUBE. THE TOP SHALL BE REMOVABLE WITH A LOCK ASSEMBLY PROVIDED.

*THIS IS NOT A PERMIT.
REFER TO PERMIT DRAWING (BY OTHERS) FOR COMPLETE DRAINFIELD LOCATIONS DIMMENSIONS AND SPECIFICATIONS.



PLAN

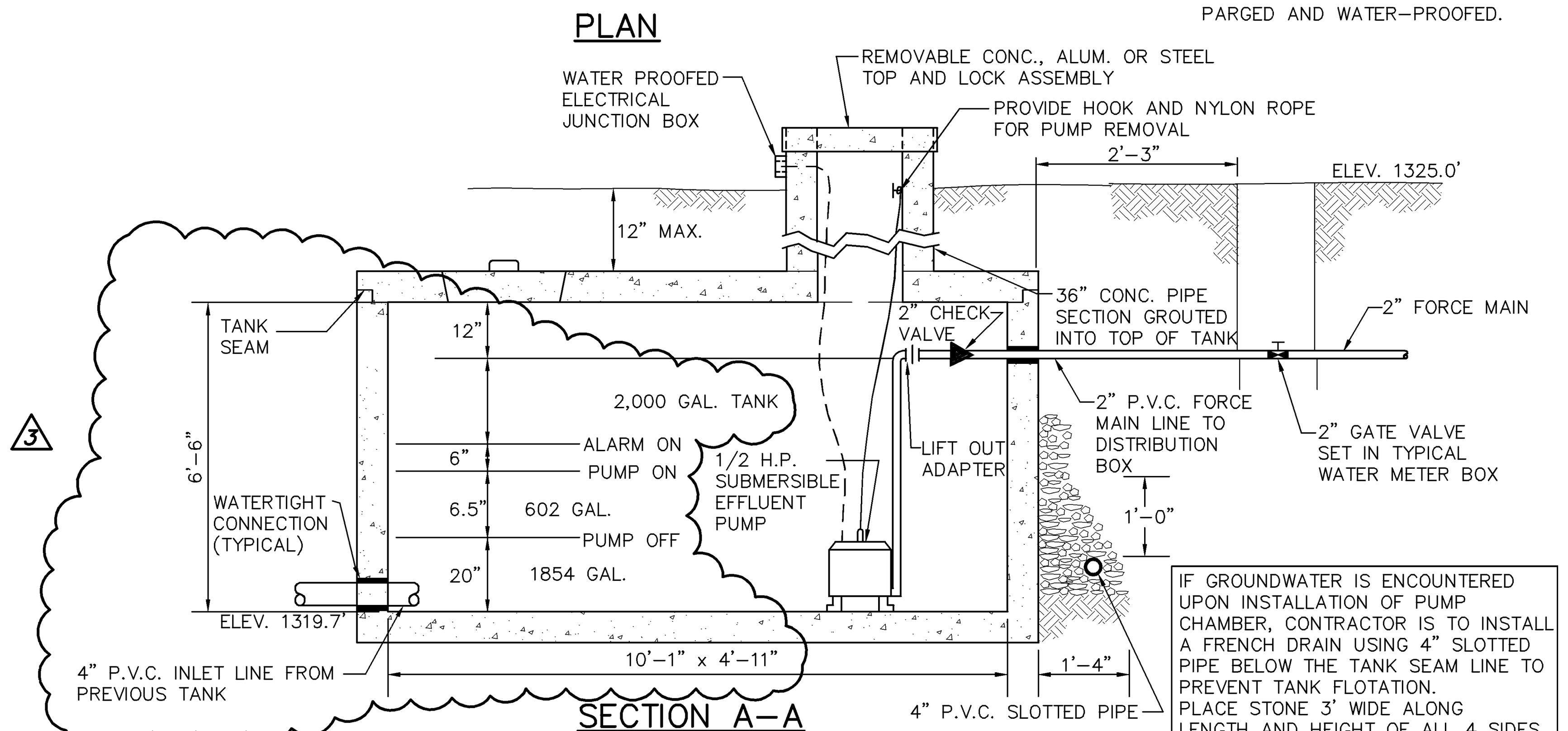
IF THE LOCATION OF THE PUMP STATION AND/OR THE FLOW RECEIVING TANK IS MOVED FROM THE POSITION AS SHOWN ON THIS PLAN. THE CONTRACTOR AND/OR OWNER MUST CONTACT THE AOSE TO DETERMINE IF THE EFFLUENT PUMP WILL STILL SATISFY THE PUMP HEAD CONDITIONS.

IF THE POSITION IS CHANGED IN THE FIELD & THE AOSE IS NOT NOTIFIED, THE AOSE WILL NOT BE RESPONSIBLE FOR THE OPERATION OF THE PUMP AND ITS COMPONENTS.

IF GROUNDWATER OR SWELLING CLAYS ARE ENCOUNTERED DURING TANK EXCAVATION, CONTACT THE AOSE OR A PROFESSIONAL ENGINEER AS BRACING MAY BE NECESSARY INSIDE THE CHAMBER OR SEPTIC TANK DUE TO INCREASED LATERAL LOADING.

CONNECTIONS TO BE MADE IN WATER–PROOFED JUNCTION BOX.

NOTE: ALL SEALS & OPENINGS ARE TO BE PARGED AND WATER–PROOFED.

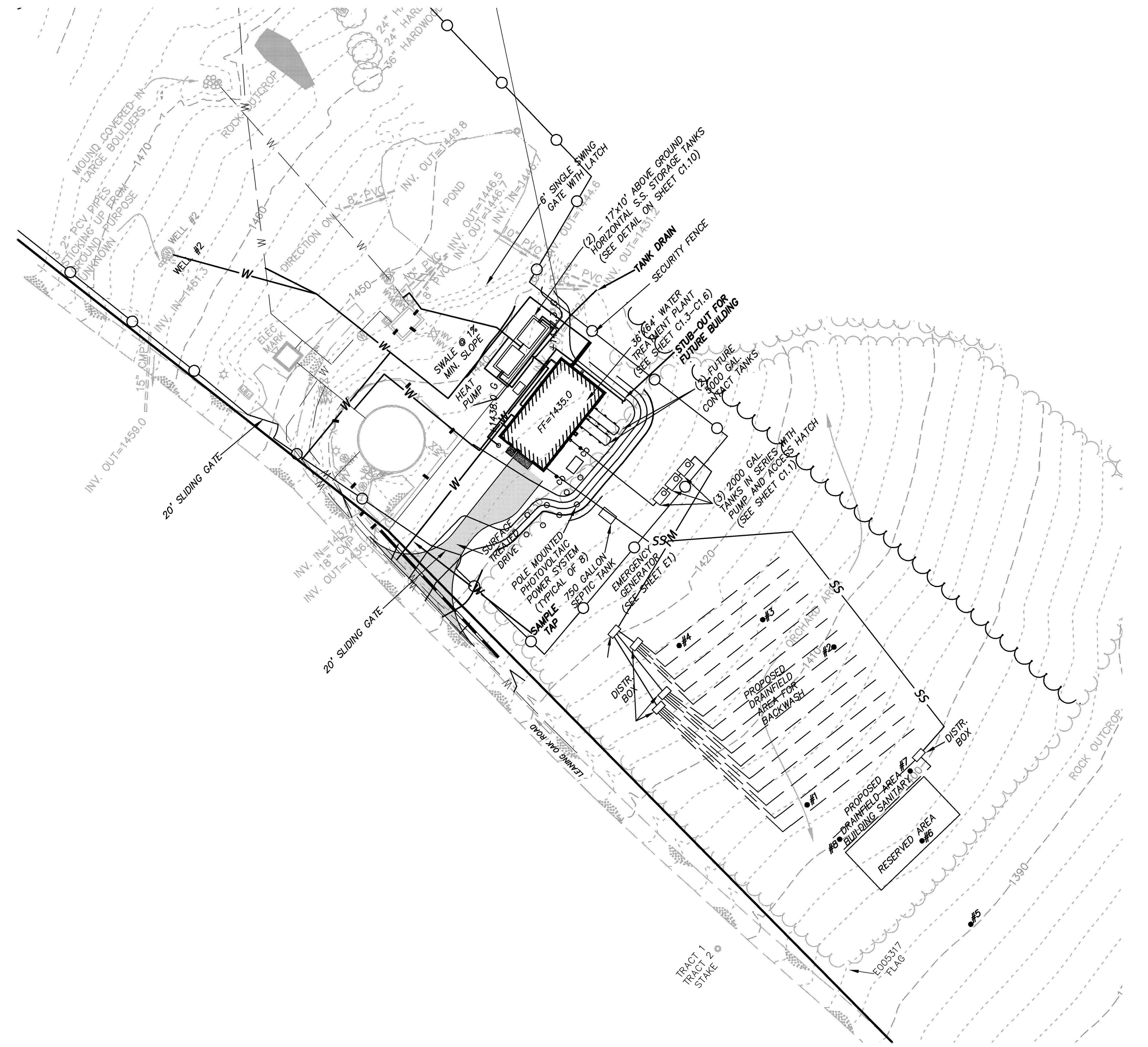


IF GROUNDWATER IS ENCOUNTERED UPON INSTALLATION OF PUMP CHAMBER, CONTRACTOR IS TO INSTALL A FRENCH DRAIN USING 4" SLOTTED PIPE BELOW THE TANK SEAM LINE TO PREVENT TANK FLOTATION. PLACE STONE 3' WIDE ALONG LENGTH AND HEIGHT OF ALL 4 SIDES OF TANK. INSTALL DRAIN TO ALLOW DISCHARGE ONTO GRADE.

SECTION A–A

BACKWASH EFFLUENT PUMPING STATION

N.T.S.



SCHEMATIC SITE PLAN

50 25 0 50 100
GRAPHIC SCALE IN FEET

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
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EFFLUENT PUMP PLAN DETAILS-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

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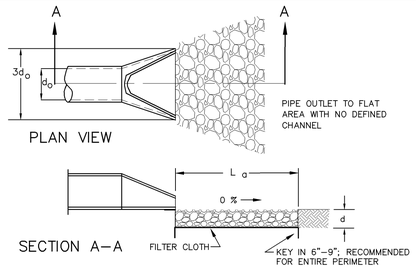
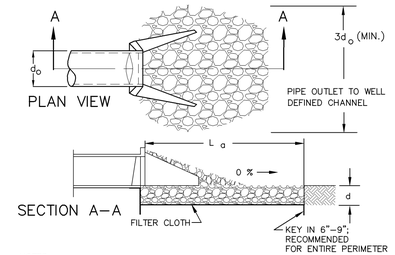
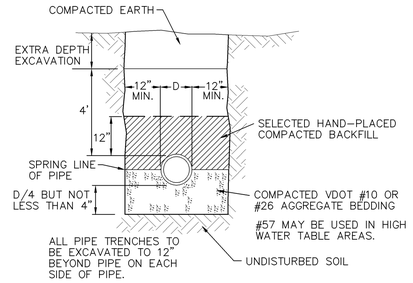
SHEET NO.
C1.7



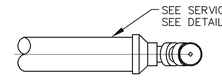


NOTES:
1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18–3 AND 3.18–4.
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

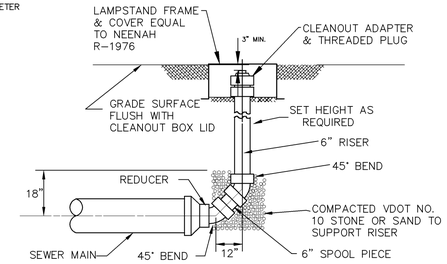
PIPE OUTLET PROTECTION
N.T.S.



SANITARY SEWER TRENCH
N.T.S.



PLAN

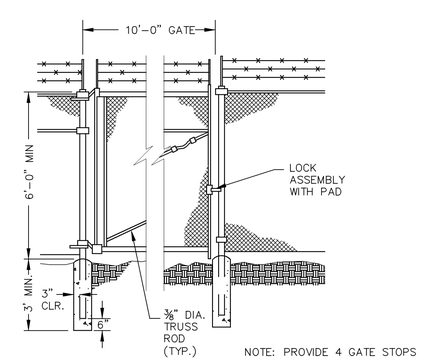


ELEVATION

FITTINGS REQUIRED FOR EACH CLEANOUT

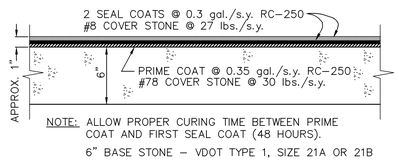
	ϕ	WYE	45° BEND	22 1/2° BEND	11 1/4° BEND	CLEANOUT ADAPT.
STRAIGHT THRU	0	0	2	0	0	1

LAMPSTAND SANITARY CLEANOUT TYPE I TERMINAL LINE CLEANOUT
N.T.S.



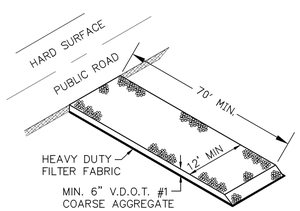
NOTE: PROVIDE 4 GATE STOPS

SINGLE GATE
NOT TO SCALE
N.T.S.

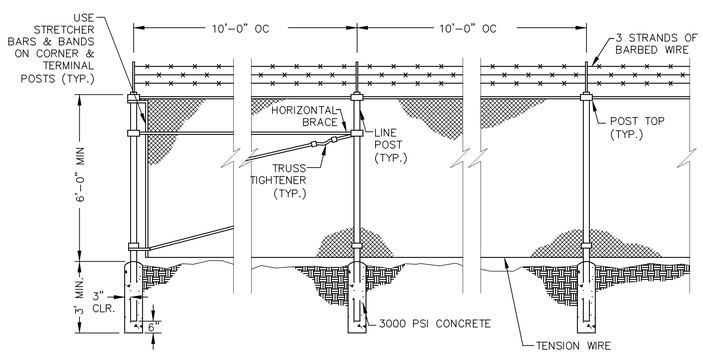


NOTE: ALLOW PROPER CURING TIME BETWEEN PRIME COAT AND FIRST SEAL COAT (48 HOURS).
6" BASE STONE – VDOT TYPE 1, SIZE 21A OR 21B

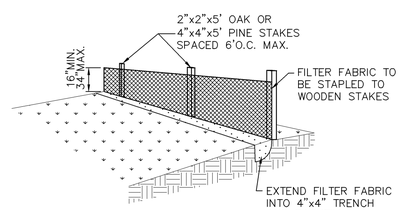
PRIME AND DOUBLE SEAL SURFACE TREATMENT
N.T.S.



TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.



FENCE DETAIL
NOT TO SCALE
N.T.S.



SILT FENCE
(WITHOUT WIRE SUPPORT)
N.T.S.

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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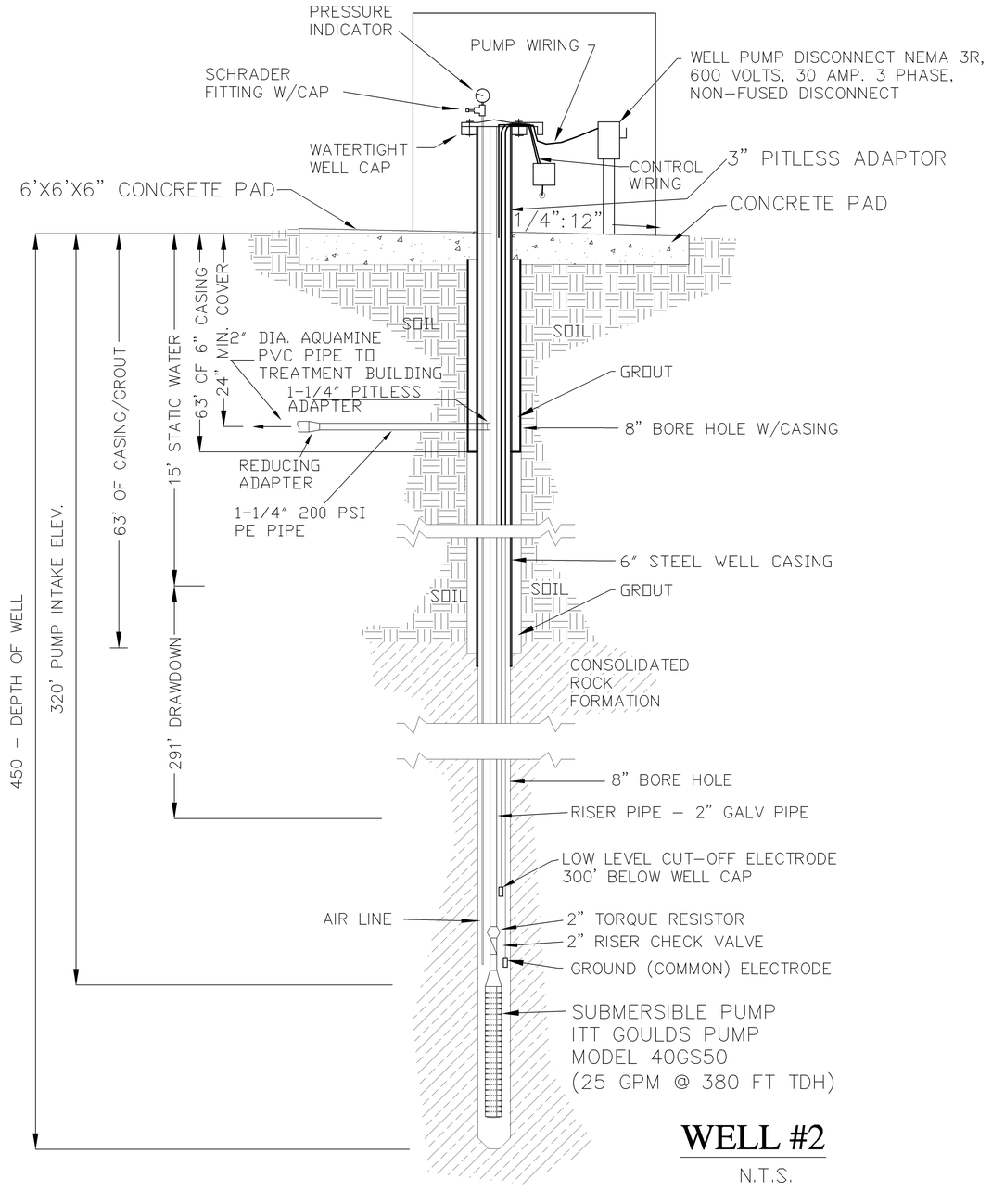
TANK SITE DETAILS-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
C1.8



WELL #2

N.T.S.

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WELL DEVELOPMENT DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
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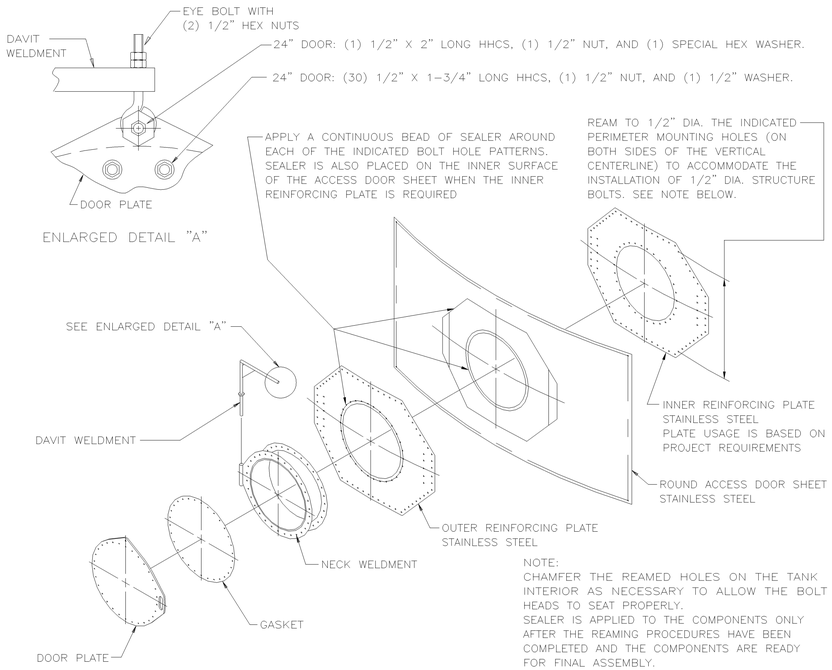
CHECKED BY:	BLC

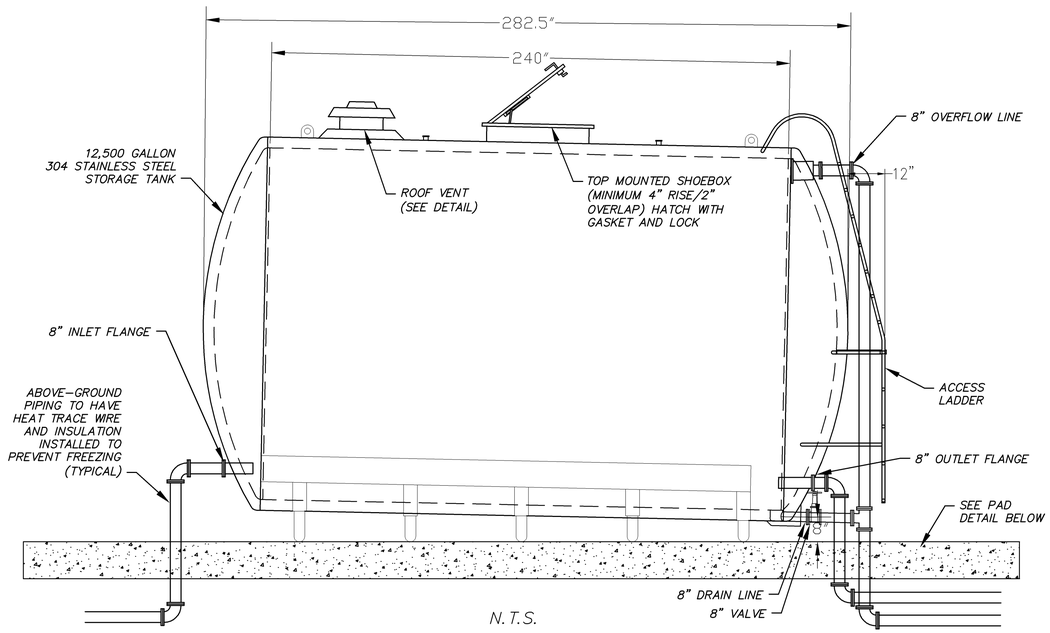
HURT & PROFFITT

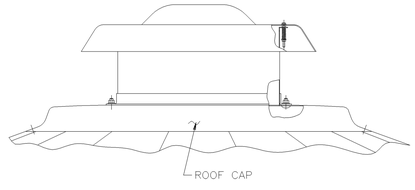
SHEET NO.
C1.9

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

Mar 14, 2012 - 4:10pm V:\LandProjects\20080815\dwg\Asbuilts-WTP\ASBUILT-SITE-TANK.dwg

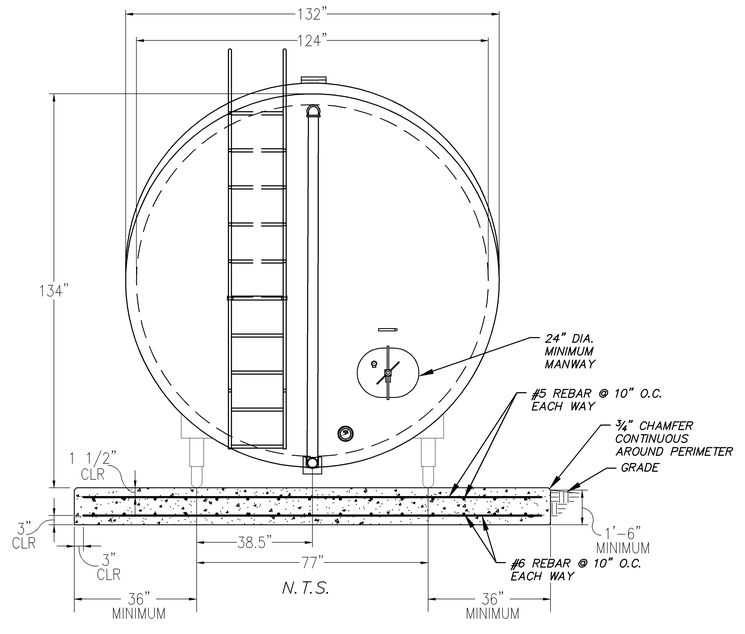






GRAVITY VENTILATOR GENERAL CONSTRUCTION
HOUSING COVER AND SUPPORT MEMBERS – ALUMINUM
INSECT SCREEN – 23 TO 25 MESH .0135"/.0145" DIA. POLYESTER MONOFILAMENT WIRE
BIRD SCREEN – .063 THICK ALUMINUM, .5 X .75 EXPANDED MESH

CONSTRUCTION DETAIL
GRAVITY VENTILATOR
INSTALLATION ONTO
ROOF CAP



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SPRING DISTRIBUTION BOX DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

HURT & PROFFITT

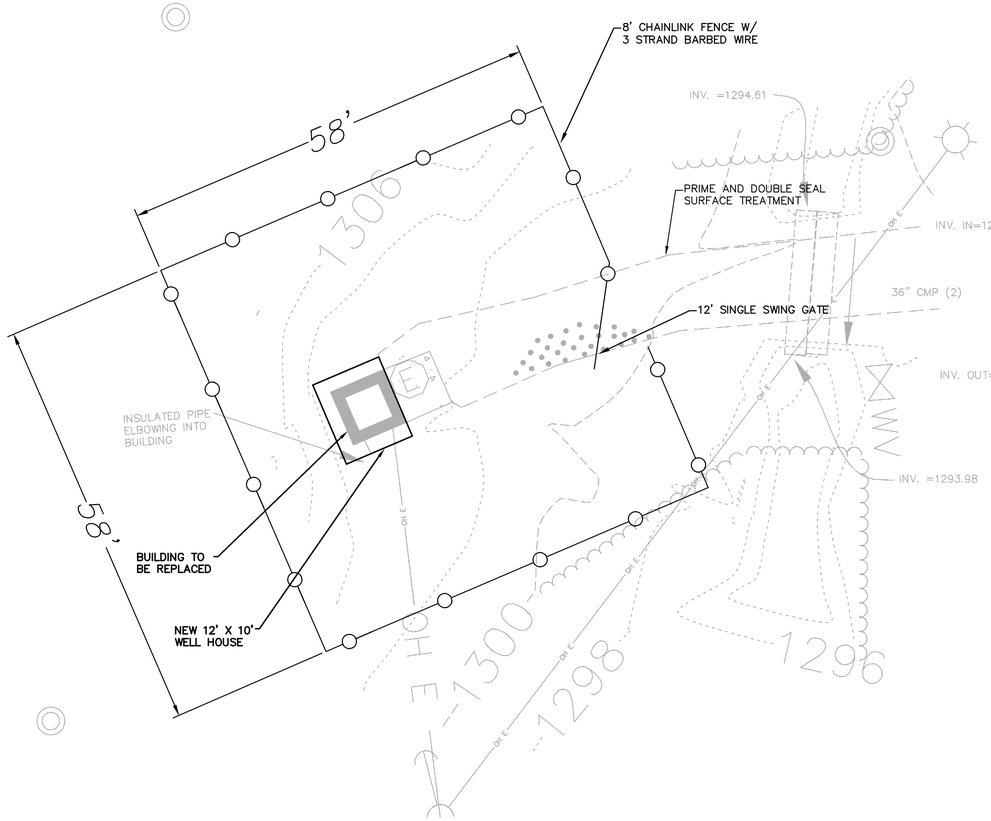
SHEET NO.
C1.10

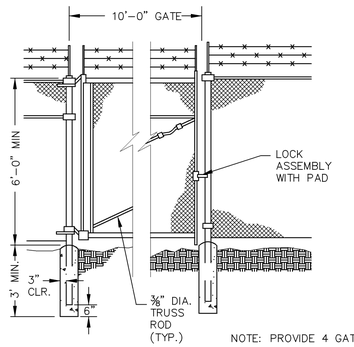
1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

WELL 1 SITE PLAN

10 5 0 10 20
GRAPHIC SCALE IN FEET

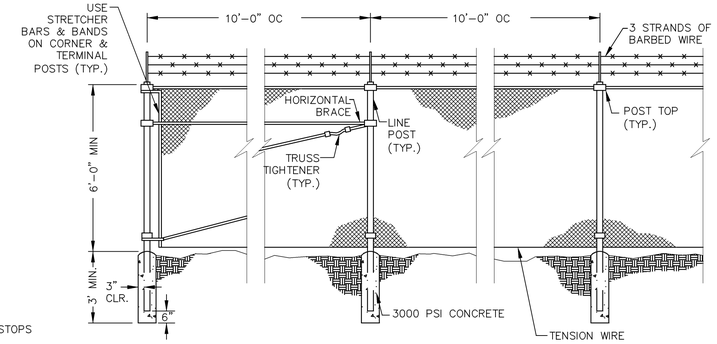
NORTH



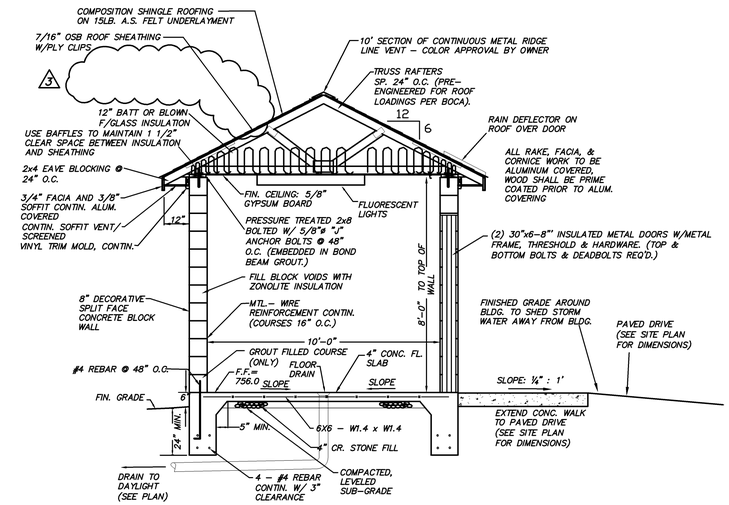


NOTE: PROVIDE 4 GATE STOPS

SINGLE GATE
NOT TO SCALE
N.T.S.

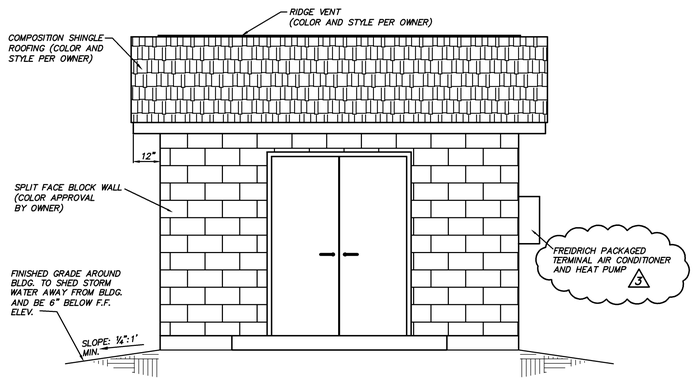


FENCE DETAIL
NOT TO SCALE
N.T.S.

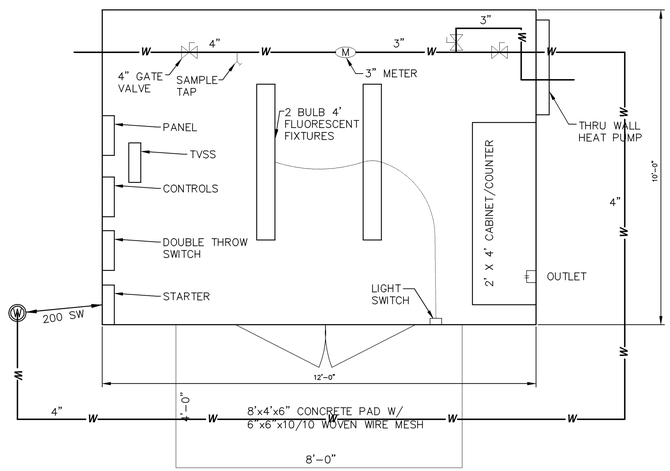


SECTION – MAIN WALL & ROOF
N.T.S.

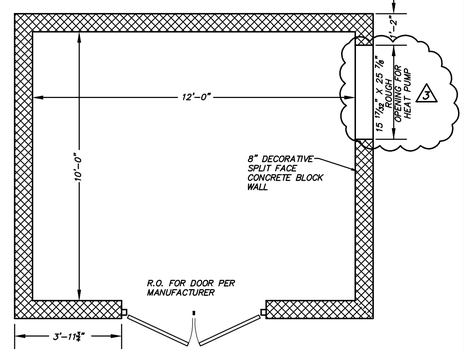
WELL 1 BUILDING



ELEVATION – FRONT VIEW
N.T.S.



WELL 1 LAYOUT
N.T.S.



WALL PLAN VIEW
N.T.S.

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
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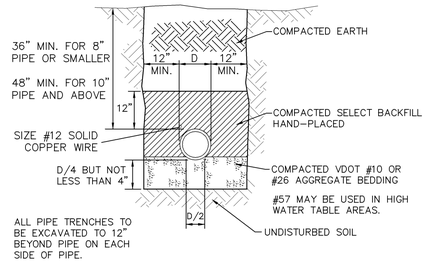
WELL #1 SITE PLAN AND DETAILS-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	WCH
CHECKED BY:	BLC

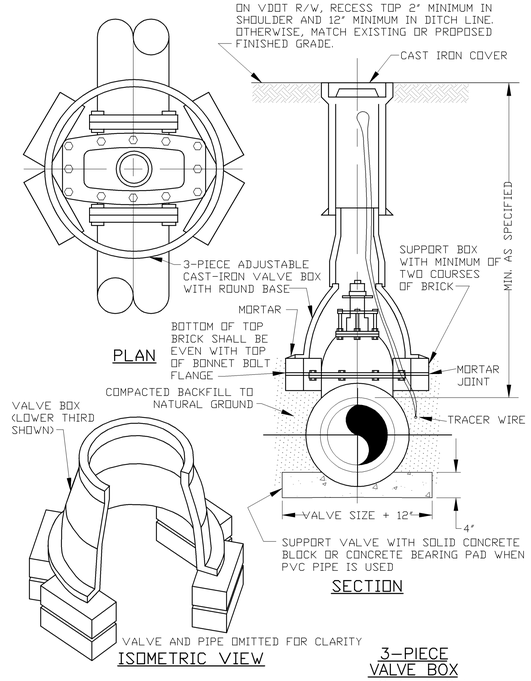
HURT & PROFFITT

SHEET NO.
C1.11



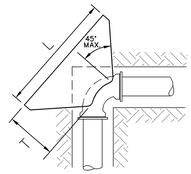
WATER LINE TRENCH

N.T.S.

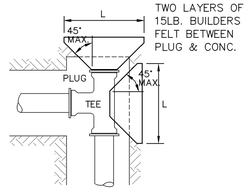


3-PIECE VALVE BOX INSTALLATION

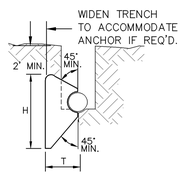
NTS



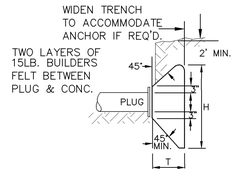
FOR ALL BENDS



FOR TEE AND PLUG FITTINGS



SECTION FOR BEND AND TEE ANCHORS



SECTION FOR PLUG ANCHORS

TYPE "F" ANCHOR BLOCK FOR 250 PSI WORKING PRESSURE

TYPE FITTING	PIPE SIZE, INCH	DIMENSIONS (FT) L	H	T	VOL. CONC. CU. YARDS
90°	4	2.33	2.33	2.81	0.19
45°	4	1.33	1.83	2.42	0.08
22.5°	4	1.33	1.83	2.35	0.07
11.25°	4	1.33	1.83	2.33	0.07
TEE	4	1.83	2.08	2.33	0.11
PLUG	4	1.83	2.08	2.33	0.11
90°	6	3.50	3.00	3.01	0.41
45°	6	2.50	2.50	2.60	0.21
22.5°	6	1.50	2.00	2.52	0.10
11.25°	6	1.50	2.00	2.50	0.10
TEE	6	3.00	2.75	2.50	0.26
PLUG	6	3.00	2.75	2.50	0.26
90°	8	4.75	3.74	3.21	0.71
45°	8	3.66	3.16	2.77	0.42
22.5°	8	2.40	2.41	2.69	0.19
11.25°	8	1.80	2.16	2.67	0.13
TEE	8	4.16	3.41	2.66	0.49
PLUG	8	4.16	3.41	2.66	0.49

CONCRETE ANCHOR BLOCK

N.T.S.

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WATER LINE DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	WCH
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
C2.0

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	VDH/OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

GENERAL:

1. GOVERNING BUILDING CODE:
   2006 VIRGINIA UNIFORM STATEWIDE BUILDING CODE
   (2006 INTERNATIONAL BUILDING CODE)

2. UNIFORM FLOOR LIVE LOADS:
   ALL FLOORS, EXCEPT AS NOTED 250 PSF

3. ROOF LIVE LOAD (NON-REDUCIBLE) 20 PSF

4. WIND LOAD CRITERIA:
   BASIC WIND SPEED 90 MPH
   WIND IMPORTANCE FACTOR (IW) 1.15
   WIND EXPOSURE CONDITION C
   INTERNAL PRESSURE COEFFICIENT (GCPI) 0.18
   BUILDING CATEGORY III

5. SNOW LOAD CRITERIA:
   GROUND SNOW LOAD (PG) 25 PSF
   FLAT ROOF SNOW LOAD (PF) 20 PSF
   SNOW EXPOSURE FACTOR (CE) 1.0
   SNOW IMPORTANCE FACTOR (IS) 1.1
   SNOW THERMAL FACTOR (CT) 1.0

6. SEISMIC LOAD CRITERIA:
   SEISMIC IMPORTANCE FACTOR (IE) 1.25
   SEISMIC OCCUPANCY CATEGORY III
   MAPPED SPECTRAL RESPONSE COEFFICIENT, (SS) 0.25
   MAPPED SPECTRAL RESPONSE COEFFICIENT, (S1) 0.07
   SITE CLASS (ASSUMED/PER GEOTECHNICAL REPORT) D
   SPECTRAL RESPONSE COEFFICIENT, (SDS) 0.267
   SPECTRAL RESPONSE COEFFICIENT, (SD1) 0.112
   SEISMIC DESIGN CATEGORY C
   DESIGN BASE SHEAR 14 KIPS
   SEISMIC RESPONSE COEFFICIENT, (CS) 0.11
   RESPONSE MODIFICATION FACTOR (R) 3

7. SUBMIT SHOP DRAWINGS AND MATERIAL CERTIFICATIONS FOR REVIEW FOR THE FOLLOWING ITEMS. DO NOT FABRICATE MATERIALS UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND ALL EXCEPTIONS HAVE BEEN RESOLVED.
   A. CONCRETE MIX DESIGNS, TESTS AND CERTIFICATES
   B. CONCRETE REINFORCING STEEL SHOP DRAWINGS
   C. MASONRY UNIT TESTS AND CERTIFICATES
   D. MASONRY REINFORCING STEEL SHOP DRAWINGS
   E. MASONRY MORTAR AND GROUT MIX DESIGNS, TESTS AND CERTIFICATES
   F. ROOF TRUSS SHOP DRAWINGS AND DESIGN CALCULATION BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER.

8. CONTRACT DRAWINGS SHALL NOT BE MARKED AND SUBMITTED AS SHOP DRAWINGS.

9. THE CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS, DIMENSIONS, AND ELEVATIONS BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES AND PROTECT FROM DAMAGE DURING EXCAVATION AND BACKFILLING OPERATIONS.

10. STRUCTURAL FRAMING SHALL BE TEMPORARILY BRACED UNTIL ERECTION IS COMPLETE AND PERMANENT CONNECTIONS AND BRACING MEMBERS ARE INSTALLED.

11. ALL STRUCTURAL MATERIALS, COMPONENTS AND SYSTEMS SHALL BE TESTED AND INSPECTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE BUILDING CODE. SUBMIT INSPECTION REPORTS FOR REVIEW BY THE A/E. CONTRACTOR SHALL PROVIDE TEST AND INSPECTION SERVICES BY A QUALIFIED TESTING AND INSPECTION FIRM.

FOUNDATIONS:

1. DESIGN SOIL BEARING CAPACITY: 2,000 PSF (ASSUMED).

2. WHERE FOOTING OR SLAB ON GRADE IS TO BE PLACED ON FILL, ALL TOPSOIL, ROOTS TRASH AND OTHER EXTRANEOUS MATERIALS SHALL BE REMOVED AND REPLACED WITH SELECT FILL COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY AT ITS OPTIMUM MOISTURE CONTENT AS MEASURED BY THE TOP 12" SHALL BE COMPACTED TO A MINIMUM OF 98% EACH LAYER OF FILL SHALL BE NO GREATER THAN 8" THICK AND SHALL BE COMPACTED AS SPECIFIED PRIOR TO PLACEMENT OF THE FOLLOWING LAYER.

3. THE CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING AGENCY WITH A QUALIFIED GEOTECHNICAL ENGINEER LICENSED IN THE COMMONWEALTH OF VIRGINIA TO INSPECT AND APPROVE THE SUBGRADE INCLUDING FILL AND BACKFILL MATERIALS AND OPERATIONS. ALL FOUNDATION BEARING STRATA SHALL BE INSPECTED AND APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO ANY CONCRETE PLACEMENT. IF UNSUITABLE SOILS ARE ENCOUNTERED, THE GEOTECHNICAL ENGINEER AND THE A/E SHALL DETERMINE THE MEANS OF CORRECTIVE ACTION INCLUDING BUT, NOT LIMITED TO ITEMS 4 OR 5 BELOW.

4. FOOTING BEARING ELEVATIONS SHALL BE LOWERED WHERE REQUIRED TO OBTAIN THE DESIGN SOIL BEARING CAPACITY HEREIN SPECIFIED.

5. FOOTINGS MAY BE UNDERCUT AND BACKFILLED WITH COMPACTED STONE OR INCREASED IN THICKNESS AS REQUIRED.

6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WELL-BRACED SHORING AT EXCAVATIONS NEAR EXISTING BUILDINGS AND CONSTRUCTION TO PREVENT SETTLEMENT AND TO PREVENT CAVE-INS.

7. ALL SLABS ON GRADE SHALL BE PLACED 10 MIL POLYETHYLENE VAPOR BARRIER OVER 4" BASE OF WELL-COMPACTED GRAVEL. THE GRAVEL SHALL BE PLACED ON ORIGINAL SOIL OR ON COMPACTED EARTH FILL AS DESCRIBED ABOVE.

8. PLACE CONCRETE FOR SLAB ON GRADE IN CONTINUOUS STRIPS AND PROVIDE CRACK CONTROL JOINTS AT LOCATIONS A MAXIMUM SPACING OF 15 FEET ON CENTER, UNLESS OTHERWISE NOTED.

CONCRETE:

1. ALL CONCRETE SHALL BE 145 PCF NORMAL WEIGHT WITH A COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS:

2. ALL DETAILING, FABRICATION AND PROCEDURES OF CONCRETE PLACEMENT SHALL CONFORM WITH THE LATEST EDITIONS OF ACI 301 – "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS", ACI 315 – "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT", AND ACI 318 – "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.

3. REINFORCING BARS SHALL BE ROLLED FROM NEW BILLET STEEL CONFORMING WITH ASTM A615/A615M, GRADE 60, UNLESS OTHERWISE NOTED.

4. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND A82.

5. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR ALL REINFORCEMENT, UNLESS OTHERWISE NOTED:
   A. CONCRETE CAST AGAINST AND PERMANENTLY
      EXPOSED TO EARTH 3"
   B. CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 THROUGH #18 BARS 2"
      #5 BAR AND SMALLER 1 1/2"
   C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
      SLABS, WALLS, AND JOISTS 3/4"
      BEAMS AND COLUMNS 1 1/2"

6. ISOLATION JOINT MATERIAL SHALL BE 1/2" THICK, UNLESS OTHERWISE NOTED.

7. PROVIDE CORNER BARS AT ALL FOOTING STEPS AND CORNERS UNLESS OTHERWISE NOTED. BARS SHALL BE A MINIMUM OF 2'-6" LONG AND SHALL HAVE THE SAME SIZE AND SPACING AS THE HORIZONTAL REINFORCING.

8. LAP ALL REINFORCING SPLICES AT LEAST 48 BAR DIAMETERS (24" MINIMUM) UNLESS OTHERWISE NOTED.

9. WELDED WIRE FABRIC SHALL HAVE END LAPS OF ONE FULL MESH PLUS 2" BETWEEN CROSS WIRES AND EDGE LAPS OBTAINED BY OVERLAPPING LONGITUDINAL SELVAGE WIRES 2" AND WIRING ALL LAPS SECURELY TOGETHER. WELDED WIRE FABRIC SHALL EXTEND INTO SUPPORT BEAMS AND WALLS FOR ANCHORAGE UNLESS AN EXPANSION JOINT IS INDICATED.

10. ALL REINFORCING SHALL BE SECURELY WIRED TOGETHER IN FORMS AS CALLED FOR IN "PLACING REINFORCING BARS" BY CRSI.

11. CHAMFER EXPOSED EDGES OF CONCRETE 3/4" UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL:

1. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING SPECIFICATIONS:
   STRUCTURAL SHAPES AND PLATES ASTM A992/A992M, GRADE 50
   ANCHOR BOLTS ASTM A307 OR A36/A36M
   HIGH STRENGTH BOLTS ASTM A325

2. DESIGN, FABRICATION, ERECTION, AND WORKMANSHIP SHALL CONFORM TO THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN," AISC ASD, NINTH EDITION.

3. ALL SHOP AND FIELD WELDING SHALL BE EXECUTED BY WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TEST AS PRESCRIBED IN THE "CODE FOR WELDING IN BUILDING CONSTRUCTION", AWS D1.1, OF THE AMERICAN WELDING SOCIETY TO PERFORM THE TYPES OF WELDS REQUIRED ON THIS PROJECT.

4. ALL WELDING ELECTRODES SHALL BE E70XX SERIES.

5. SHOP PAINTING: ALL SURFACES SHALL BE PRIME PAINTED IN THE SHOP WITH AN APPROVED PRIMER COMPATIBLE WITH THE TOP COAT. PRIMER COAT SHALL HAVE A MINIMUM OF 2 MILS DRY FILM THICKNESS. SPOT PAINT ALL FIELD WELDS AND SERIOUS ABRASIONS TO THE SHOP COAT WITH PAINT COMPATIBLE WITH THE SHOP COAT. DO NOT PAINT STEEL SURFACES THAT ARE TO BE EMBEDDED IN CONCRETE OR MORTAR OR WHICH ARE TO RECEIVE SPRAYED-ON FIREPROOFING.

6. ALL EXPOSED STEEL SHALL BE PAINTED.

7. FLOOR GRATING SHALL BE GALVANIZED STEEL, WELDED TYPE WITH 1 3/4" X 1/8" BEARING BARS AT 1 3/16" ON CENTER AND CROSS BARS AT 4" ON CENTER, UNLESS OTHERWISE NOTED. METAL GRATING SHALL BE GALVANIZED COATING IN ACCORDANCE WITH ASTM A123/A123M, G90.

CONCRETE/BRICK MASONRY:

1. ALL DETAILING, FABRICATION, AND PROCEDURES OF CONCRETE MASONRY SHALL CONFORM WITH THE LATEST EDITIONS OF ACI 530.1 – "SPECIFICATIONS FOR MASONRY STRUCTURES", AND ACI 530 – "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES"

2. CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N-1 UNLESS OTHERWISE NOTED. COMPRESSIVE STRENGTH ON NET CROSS SECTIONAL AREA OF INDIVIDUAL MASONRY UNIT SHALL BE 1900 PSI. NET AREA COMPRESSIVE STRENGTH OF MASONRY (F'M) SHALL BE 1500 PSI.

3. MASONRY SHALL BE LAID IN ASTM C270, TYPE "S" MORTAR, UNLESS NOTED AND SHALL HAVE FULL MORTAR COVERAGE OF THE FACE SHELLS IN BOTH HORIZONTAL AND VERTICAL JOISTS.

4. GROUT FOR REINFORCED MASONRY SHALL CONFORM TO ASTM C476.

5. GROUT FOR REINFORCED MASONRY SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS AND A SLUMP OF 8" TO 11".

6. MAXIMUM HEIGHT TO WHICH MASONRY SHALL BE LAID BEFORE FILLING IS 3 FEET FOR PEA GRAVEL CONCRETE AND 6 FEET FOR FINE GROUT.

7. PROVIDE CLEANOUT OPENINGS AT THE BOTTOM OF EACH GROUT LIFT. CLEANOUT OPENINGS SHALL BE PROVIDED AT EACH CELL TO BE FILLED WITH GROUT.

8. REINFORCING GRADE AND DETAILS SHALL BE THE SAME AS FOR CONCRETE. TIE IN POSITION AND PLACE CONCRETE AROUND REINFORCING DURING CONSTRUCTION OF MASONRY. DO NOT PUSH REINFORCING DOWN INTO PREVIOUSLY PLACED GROUT FILL. SET BOLT SIMILARLY.

9. HORIZONTAL BARS MAY BE SPLICED WITH A MINIMUM LAP OF 48 TIMES THE BAR DIAMETER, UNLESS OTHERWISE NOTED.

10. PROVIDE HORIZONTAL REINFORCING AT 16" ON VERTICAL CENTER AND IN JOINTS IMMEDIATELY ABOVE AND BELOW ALL OPENINGS. EXTEND REINFORCEMENT A MINIMUM OF 2'-0" BEYOND THE JAMB ON EACH SIDE OF AN OPENING. HORIZONTAL JOINT REINFORCING SHALL BE LAPPED A MINIMUM OF 8". JOINT REINFORCING SHALL STOP AT CONTROL JOINTS. HORIZONTAL REINFORCING SHALL BE GALVANIZED LADDER TYPE JOINT REINFORCEMENT WITH (2) 9 GAGE (W1.7) RODS AND 9 GAGE CROSS RODS, HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A153 – CLASS B-2.

11. SPLICED VERTICAL REINFORCING BARS SHALL OCCUPY THE SAME CELL. MINIMUM LAP SPLICE SHALL BE 24" FOR #3 AND #4 BARS AND 36" FOR #5 AND #6 BARS. SPLICED BARS SHALL BE TIED TOGETHER.

12. VERTICAL REINFORCEMENT IN WALLS SHALL BE SUPPORTED AND SECURED AGAINST DISPLACEMENT AT 4 FOOT MAXIMUM INTERVALS.

13. IN ADDITION TO VERTICAL REINFORCING DETAILED ON THE DRAWINGS, PROVIDE VERTICAL REINFORCING TO MATCH SIZE DETAILED AT THE FOLLOWING LOCATIONS:
   a. CELLS EACH SIDE OF OPENINGS (SUCH AS DOORS, WINDOWS, ETC.)
   b. CELLS EACH SIDE OF CONTROL JOINTS.
   c. CELL AT END OF A WALL.
   d. AT INTERSECTIONS (CELL WITHIN 8" OF INTERSECTION).
   e. THREE BARS EACH CORNER (CORNER CELL AND ADJACENT CELLS IN EACH DIRECTION).

14. THE MASONRY CONTRACTOR SHALL PROVIDE AND PLACE SUCH SPECIAL UNITS AS MAY BE REQUIRED TO FORM ALL CORNERS, RETURNS, AND OFFSETS WHILE MAINTAINING THE PROPER BOND.

15. WHERE INTERIOR CONCRETE MASONRY PARTITIONS INTERSECT WITH OTHER INTERIOR PARTITIONS OR EXTERIOR WALLS, A MASONRY BOND, OR THE EQUIVALENT IN APPROVED METAL TIES, SHALL BE PROVIDED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

16. FACE SHELL BEDDING SHALL BE USED WITH COMPLETE COVERAGE OF FACE SHELLS. FURROWING OF THE MORTAR SHALL NOT BE PERMITTED.

17. MORTAR JOINTS SHALL BE 3/8" THICK WITH FULL MORTAR COVERAGE ON VERTICAL AND HORIZONTAL FACE SHELLS.

18. PROVIDE BOND BEAMS AT MASONRY ELEVATIONS AS SHOWN ON THE DRAWINGS. BOND BEAMS SHALL HAVE TWO #5 BARS, CONTINUOUS, UNLESS OTHERWISE NOTED. BOND BEAMS SHALL BE CONTINUOUS AROUND THE PERIMETER OF THE BUILDING AND ALONG INTERIOR PARTITIONS, UNLESS OTHERWISE NOTED. BOND BEAM REINFORCING SHALL BE CONTINUOUS THROUGH CONTROL JOINTS. CUT IN OR RAKE OUT A VERTICAL JOINT MATCHING THE CONTROL JOINT AS REQUIRED.

19. LINTELS OVER ALL OPENINGS IN INTERIOR MASONRY PARTITIONS, NOT OTHERWISE DETAILED, SHALL BE OF PRECAST CONCRETE MASONRY WITH THICKNESS EQUAL TO THE WALL THICKNESS. DEPTH SHALL BE 8" FOR SPANS UP TO 6'-0" REINFORCED WITH ONE (1) #5 BAR FOR EACH 4" OF WALL THICKNESS.

WOOD FRAMING AND PLYWOOD:

1. ALL WOOD FRAMING SHALL BE KILN DRIED NO. 2 DENSE (OR BETTER) DIMENSION SOUTHERN YELLOW PINE CONFORMING TO SOUTHERN PINE INSPECTION BUREAU GRADING RULES, AND SHALL KILN DRIED TO 19% MAXIMUM MOISTURE CONTENT, UNLESS OTHERWISE NOTED.

2. PLYWOOD FOR SHEATHING SHALL CONFORM TO THE GRADING RULES OF U.S. PRODUCT STANDARD PS 1, LATEST EDITION, AND SHALL HAVE APPROPRIATE GRADE TRADE MARK OF AN AMERICAN PLYWOOD ASSOCIATION APPROVED AGENCY ON EACH PLYWOOD PANEL. SHEATHING SHALL BE APA STRUCTURAL I RATED, EXTERIOR GRADE, IN THICKNESS SHOWN ON DRAWINGS. SHEATHING SHALL BE APPLIED IN FULL SHEETS, OR AS SHOWN ON THE PLANS OR IN LARGEST PIECES FOR THE AREA BEING COVERED WITH A MINIMUM TWO SPAN CONTINUOUS CONDITION WITH LONGER FACTORY EDGE PERPENDICULAR TO THE FRAMING MEMBERS, WITH END JOINTS STAGGERED, AND SHEET ENDS BEARING ON FRAMING MEMBERS.

3. ALL NAILING FOR WOOD CONSTRUCTION SHALL BE IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE'S FASTENING SCHEDULE (TABLE 2304.9.1).

WOOD TRUSSES:

1. SUBMIT WOOD TRUSS DESIGN CALCULATIONS AND SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. SHOP DRAWING FOR WOOD TRUSSES SHALL BEAR THE SEAL OF AN ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED AND SHALL BE APPROVED BY THE ENGINEER OR ARCHITECT BEFORE FABRICATION. SHOP DRAWINGS SHALL SHOW SPECIES AND MOISTURE CONTENT OF WOOD BEING USED. ALLOWABLE STRESSES SHALL CONFORM TO THE LATEST EDITION OF "NATIONAL DESIGN SPECIFICATION FOR STRESS-GRADE LUMBER AND ITS FASTENING", AS RECOMMENDED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.

2. LUMBER IN TRUSSES SHALL BE GRADE MARKED, NO. 2 DIMENSION, KILN-DRIED SOUTHERN ONE, OR BETTER, UNLESS OTHERWISE INDICATED ON THE DETAILS EXCEPT TRUSS WEB MEMBERS MAY BE NO. 3, KILN-DRIED, GRADE MARKED, SOUTHERN PINE. MAXIMUM ALLOWABLE MOISTURE CONTENT =15%.

3. PROVIDE WASHERS BETWEEN ALL BOLT HEADS AND WOOD AND BETWEEN ALL NUTS AND WOOD.

4. MAXIMUM TRUSS SPACING = 2'-0" ON CENTER, UNLESS OTHERWISE NOTED.

5. CENTROIDAL LINES OF MEMBERS SHALL INTERSECT AT A POINT UNLESS OTHERWISE NOTED.

6. ENDS OF ALL COMPRESSION MEMBERS SHALL BE CUT TO FIT INTERSECTING MEMBERS FOR POSITIVE END BEARING.

7. TRUSS JOINT CONNECTIONS SHALL BE MADE USING GALVANIZED STEEL CONNECTOR PLATES, 20 GAGE MINIMUM THICKNESS. THE TRUSS JOINT CONNECTOR PLATES SHALL BE SIZED BY THE FABRICATOR USING THE TRUSS MEMBER FORCES RESULTING IN THE DESIGN LOADS SHOWN BELOW AND IN THE DESIGN CRITERIA.

8. THE LUMBER SPECIES, TRUSS OVERALL CONFIGURATION AND MINIMUM MEMBER SIZES AND TRADE'S SHALL NOT BE ALTERED OR REDUCED. MEMBER SPECIES, SIZE AND GRADES OF EQUAL OF GREATER STRENGTH ARE ACCEPTABLE.

9. THE CONTRACTOR SHALL PROVIDE ALL CONNECTION MATERIALS, CONNECTOR PLATES, FRAMING ANCHORS AND ACCESSORIES AS REQUIRED FOR THE SUPPORT OF THE WOOD TRUSSES AND WOOD FRAMING.

10. WOOD TRUSSES SHALL BE CAMBERED AS REQUIRED TO OFFSET THE FULL DEAD LOAD DEFLECTION.

11. WOOD TRUSSES SHALL BE DESIGNED BY THE MANUFACTURER FOR THE WIND AND SEISMIC LOADS INDICATED IN THE DESIGN CRITERIA ALONG WITH THE FULL TRUSS DEAD LOAD AND THE FOLLOWING SUPERIMPOSED GRAVITY LOADS:
   A. SUPERIMPOSED DEAD LOADS:
      TOP CHORD 15 PSF
      BOTTOM CHORD 10 PSF
   B. LIVE LOADS:
      TOP CHORD 20 PSF
      BOTTOM CHORD 20 PSF (CENTER 1/3 OF TRUSS LENGTH)

2	9/3/09	OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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GENERAL STRUCTURAL NOTES-ASBUILT
FOR
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BC

HURT & PROFFITT

SHEET NO.
S1.0

BRICK VENEER:

1. FACE BRICK SHALL CONFORM TO ASTM C 216 WITH A GRADE OF SW AND BE TYPE FBS. SIZE OF BRICK SHALL BE 3 5/8 INCHES WIDE BY 2 1/4 INCHES HIGH BY 7 5/8 INCHES LONG. USE SPECIAL SHAPES FOR APPLICATIONS WHERE SHAPES PRODUCED BY SAWING WOULD RESULT IN SAWED SURFACES BEING EXPOSED TO VIEW.

2. MORTAR SHALL CONFORM TO ASTM C 270 PROPORTION SPECIFICATION. DO NOT USE CALCIUM CHLORIDE IN MORTAR. USE TYPE S MORTAR. FOR FACE BRICK USE COLORED CEMENT OR CEMENT–LIME MIX OF COLOR SELECTED.

3. JOINT REINFORMENT SHALL CONFORM TO ASTM A 951. REINFORMENT SHALL BE HOT–DIP GALVANIZED. THE WIRE DIAMETER FOR SIDE RODS SHALL BE W2.8 OR 0.188 INCHES. THE WIRE DIAMETER FOR CROSS RODS SHALL BE W2.8 OR 0.188 INCHES. FOR MULTIWYTHE MASONRY, PROVIDE LADDER DESIGN WITH THREE SIDE RODS.

4. SHEET METAL FLASHING SHALL BE COPPER WITH 10–OZ/SQ. FT WEIGHT OR 0.0135 INCH THICK FOR FULLY CONCEALED FLASHING, 16 OZ/SQ. FT. WEIGHT OR 0.0216 INCH THICK ELSWHERE.

5. LAMINATED FLASHING SHALL BE 7 OZ/SQ. FT. COPPER SHEET BONDED WITH ASPHALT BETWEEN 2 LAYERS OF GLASS–FIBER CLOTH.

6. WEEP HOLES SHALL BE COTTON OR POLYESTER ROPE, 1/4 TO 3/8 INCH IN DIAMETER AND 24 INCHES LONG.

7. PROPIETARY ACIDIC MASONRY CLEANER SHALL BE A PRODUCT EXPRESSLY APPROVED FOR INTENDED USE BY CLEANER MANUFACTURER AND MANUFACTURER OF MASONRY UNITS.

8.GENERAL INSTALLATION:
- A. CUT MASONRY UNITS WITH SAW. INSTALL WITH CUT SURFACES AND, AND WHERE POSSIBLE, CUT EDGES CONCEALED.
- B.MIX UNITS FOR EXPOSED UNIT MASONRY FROM SEVERAL PALLETS OR CUBES AS THEY ARE PLACED TO PRODUCE UNIFORM BLEND OF COLORS AND TEXTURES.
- C.MATCH EXISTING MASONRY BY MATCHING THE COURSING, BONDING, COLOR, AND TEXTURE OF EXISTING MASONRY.
- D.WHEN STOPPING AND RESUMING WORK, RACK BACK UNITS AND DO NOT TOOTH.
- E.TOOL EXPOSED JOINTS SLIGHTLY CONCAVE WHEN THUMBPRINT HARD, UNLESS OTHERWISE INDICATED.
- F.KEEP CAVITIES CLEAN OF MORTAR DROPPINGS AND OTHER MATERIALS DURING CONSTRUCTION.

9.LINTELS:
- A. INSTALL LINTELS WHERE INDICATED.
- B. MINIMUM BEARING OF 8 INCHES AT EACH JAMB, UNLESS OTHERWISE INDICATED.

10. FLASHING AND WEEP HOLES:
1. INSTALL EMBEDDED FLASHING AND WEEP HOLES IN MASONRY AT SHELF ANGLES, LINTELS, LEDGES, OTHER OBSTRUCTIONS TO THE DOWNWARD FLOW OF WATER IN THE WALL, AND WHERE INDICATED.
2. PLACE THROUGH–WALL FLASHING ON SLOPING BED OF MORTAR AND COVER WITH MORTAR. SEAL PENETRATIONS IN FLASHING BEFORE COVERING WITH MORTAR. EXTEND FLASHING 4 INCHES INTO MASONRY AT EACH END AND TURN UP 2 INCHES TO FORM A PAN.
3. TRIM WICKING MATERIAL USED IN WEEP HOLES FLUSH WITH OUTSIDE FACE OF WALL AFTER MORTAR HAS SET.

11. CLEANING:
1. CLEAN MASONRY AS WORK PROGRESSES. REMOVE MORTAR FINS AND SMEARS BEFORE TOOLING JOINTS.
2. FINAL CLEANING MAY BE STARTED AFTER MORTAR IS THROROUGHLY CURES. CLEAN EXPOSED MASONRY. IF ACIDIC CLEANER IS TO BE USED, WET WALL SURFACES WITH WATER BEFORE APPLYING ACIDIC CLEANER, THEN REMOVE CLEANER PROMPTLY BY RINSING THOROUGHLY WITH CLEAR WATER. CLEAN MASONRY WITH A PROPRIETARY ACIDIC CLEANER APPLIED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

12. BUILDING INSULATION:
- A. INSULATION PRODUCTS:

1. KRAFT–FACED, GLASS–FIBER BLANKET INSULATION: ASTM C 665, TYPE II (NON–REFLECTIVE FACED), CLASS C (FACED SURFACE NOT RATED FOR FLAME PROPAGATION), CATEGORY 1 (MEMBRANE IS A VAPOR BARRIER).
2. FOAMED–IN–PLACE BUILDING INSULATION FOR EXTERIOR CMU WALLS. ACCEPTABLE PRODUCTS/MANUFACTURERS OR APPROVED EQUALS:
   - a.TRIPOLYMER BY C.P. CHEMICAL CO., INC., WWW.TRIPOLYMER.COM
   - b.POLYMASTER R–501 FOAM INSULATION BY POLYMASTER, INC., WWW.POLYMASTER.COM
   - c.THERMOCO BY THERMAL CORPORATION OF AMERICA, WWW.THERMCOFOAM.COM

B.ACCESSORIES:

1. EAVE VENTILATION TROUGHS SHALL BE PREFORMED, RIGID FIBERBOARD OR PLASTIC SHEETS DESIGNED TO FIT BETWEEN ROOF FRAMING MEMBERS AND TO PROVIDE CROSS–VENTILATION BETWEEN ATTIC SPACES AND VENTED EAVES.

C.INSTALLATION:

1. INSTALL INSULATION IN AREAS AND IN THICKNESSES INDICATED OR REQUIRED TO PRODUCE R–VALUES INDICATED. CUT AND FIT TIGHTLY AROUND OBSTRUCTIONS AND FILL VOIDS WITH INSULATION.
2. EXCEPT FOR LOOSE–FILL INSULATION AND INSULATION THAT IS FRICTION FITTED IN STUD CAVITIES, BOND UNITS TO SUBSTRATE WITH ADHESIVE OR USE MECHANICAL ANCHORAGE TO PROVIDE PERMANENT PLACEMENT AND SUPPORT OF UNITS.

ASPHALT SHINGLES:

1. FIBERGLASS SHINGLES SHALL COMPLY WITH ASTM D 3462 AND BE MULTITAB–STRIP ASPHALT SHINGLES SHALL BE MINERAL–GRANULE SURFACED AND SELF–SEALING. THREE TABS, REGULARLY SPACED WITH STAGGER CUT BUTT EDGE.
2. ACCESSORIES:
   - a.FELTS SHALL COMPLY WITH ASTM D 226, TYPE I, ASPHALT–SATURATED ORGANIC FELTS.
   - b.SELF–ADHERING SHEET UNDERLAYMENT SHALL COMPLY WITH ASTM D 1970, SBS–MODIFIED ASPHALT, MINERAL–GRANULE OR SLIP–RESISTING–POLYETHYLENE SURFACED, WITH RELEASE PAPER BACKING, AND COLD–APPLIED.
   - c.RIDGE–VENT SHALL BE RIGID UV–STABILIZED PLASTIC RIDGE–VENT WITH NONWOVEN GEOTEXTILE FILTER STRIPS, FOR USE UNDER RIDGE SHINGLES.
   - d.ROOFING NAILS SHALL BE ALUMINUM, STAINLESS STEEL, OR HOT–DIP GALVANIZED–STEEL SHINGLE NAILS, MINIMUM 0.120 INCH DIAMETER, OF SUFFICIENT LENGTH TO PENETRATE 3/4 INCH INTO SOLID WOOD DECKING OR EXTEND AT LEAST 1/8 INCH THROUGH OSB OR PLYWOOD SHEATHING.
3. SHEET METAL FLASHING AND TRIM:
   - a.SHEET METAL SHALL BE COPPER.
   - b.FABRICATE SHEET METAL FLASHING AND TRIM TO COMPLY WITH RECOMMENDATIONS IN SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL."
   - c.DRIP EDGE SHALL BE FORMED SHEET METAL WITH AT LEAST A 2 INCH ROOF DECK FLANGE AND A 1–1/2 INCH FASCIA FLANGE WITH A 3/8 INCH DRIP AT LOWER EDGE.
4. INSTALLATION:
   - A. COMPLY WITH RECOMMENDATIONS IN ARMA'S "RESIDENTIAL ASPHALT ROOFING MANUAL" AND WITH ASPHALT SHINGLE RECOMMENDATIONS IN NRCA'S "THE NRCA ROOFING AND WATERPROOFING MANUAL."
   - B.APPLY SELF–ADHERING SHEET UNDERLAYMENT AT EAVES AND RAKES FROM EDGES TO ROOF TO AT LEAST 24 INCHES INSIDE EXTERIOR WALL LINE.
   - C.INSTALL FIRST AND REMAINING COURSES OF ASPHALT SHINGLES STAIR–STEPPING DIAGONALLY ACROSS ROOF DECK WITH MANUFACTURER'S RECOMMENDED OFFSET PATTERN AT SUCCEEDING COURSES, MAINTAINING UNIFORM EXPOSURE.

GYPSUM BOARD:

1. PANEL PRODUCTS:
   - A. PROVIDE IN MAXIMUM LENGTHS AVAILABLE TO MINIMIZE END–TO–END BUTT JOINTS.
   - B.MOISTURE RESISTANT GYPSUM BOARD: WATER–RESISTANT GYPSUM BACKING BOARD SHALL COMPLY WITH ASTM C 630 OR ASTM C 1396, IN THICKNESS INDICATED. REGULAR TYPE UNLESS OTHERWISE INDICATED.

2. ACCESSORIES:
   - A. JOINT TREATMENT MATERIALS SHALL COMPLY WITH ASTM C 475.
   - B.JOINT TAPE SHALL BE PAPER UNLESS OTHERWISE RECOMMENDED BY PANEL MANUFACTURER.
   - C.JOINT COMPOUNDS SHALL BE SETTING–TYPE TAPING COMPOUND AND DRYING–TYPE, READY–MIXED, COMPOUNDS FOR TOPPING.

3. INSTALLATION:
   - A. INSTALL GYPSUM BOARD TO COMPLY WITH ASTM C 840.
   - B.FOR SINGLE–LAYER FASTENING METHODS, FASTEN GYPSUM PANELS TO SUPPORTS WITH SCREWS.
   - C.FINISHING GYPSUM BOARD SHALL COMPLY WITH ASTM C 840.
   - D.AT CONCEALED AREAS, UNLESS A HIGHER LEVEL OF FINISH IS REQUIRED FOR FIRE–RESISTANCE–RATED ASSEMBLIES, PROVIDE LEVEL 1 FINISH: EMBED TAPE AT JOINTS.
   - E.UNLESS OTHERWISE INDICATED, PROVIDE LEVEL 4 FINISH: EMBED TAPE AND APPLY SEPARATE FIRST, FILL, AND FINISH COATS OF JOINT COMPOUND TO TAPE, FASTENERS, AND TRIM FLANGES.

PAINTING:

1. PAINT PRODUCTS AND MATERIALS SHALL BE COMPATIBLE WITH ONE ANOTHER AND WITH SUBSTRATES.

2. FOR EACH COAT IN A PAINT SYSTEM, PROVIDE PRODUCTS RECOMMENDED IN WRITING BY MANUFACTURERS OF TOPCOAT FOR USE IN PAINT SYSTEM AND ON SUBSTRATE INDICATED.

3. COLOR SHALL BE AS SELECTED FROM MANUFACTURER'S FULL RANGE.

4. SURFACE PREPARATION:
- A. REMOVE HARDWARE, LIGHTING FIXTURES, AND SIMILAR ITEMS THAT ARE NOT TO BE PAINTED. MASK ITEMS THAT CANNOT BE REMOVED. REINSTALL ITEMS IN EACH AREA AFTER PAINTING IS COMPLETE.
- B.CLEAN AND PREPARE SURFACES IN AN AREA BEFORE BEGINNING PAINTING IN THAT AREA. SCHEDULE PAINTING SO CLEANING OPERATIONS WILL NOT DAMAGE NEWLY PAINTED SURFACES.

5. PAINT APPLICATION:
- A. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
- B.USE BRUSHES ONLY FOR EXTERIOR PAINTING AND WHERE THE USE OF OTHER APPLICATORS IS NOT PRACTICAL.
- C.USE ROLLERS FOR FINISH COAT ON INTERIOR WALLS AND CEILINGS.
- D.APPLYING PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
- E.IF UNDERCOATS OR OTHER CONDITIONS SHOW THROUGH TOPCOAT, APPLY ADDITIONAL COATS UNTIL CURED FILM HAS A UNIFORM PAINT FINISH, COLOR, AND APPEARANCE.

6. EXTERIOR PAINT APPLICATION SCHEDULE:
- A. STEEL (LINTELS, DOORS, FRAMES, ETC.): SEMIGLOSS, ALKYD ENAMEL SHALL HAVE TWO COATS OVER RUST–INHIBITIVE PRIMER THAT COMPLIES WITH MPI EXT 5.1D.
- B.GALVANIZED METAL: SEMIGLOSS, ALKYD ENAMEL SHALL HAVE TWO COATS OVER CEMENTITIOUS GALVANIZED–METAL PRIMER THAT COMPLIES WITH MPI EXT 5.3B.
- C.HARDIE BOARD SIDING FOR FASCIA AND SOFFIT: PAINT WITH MANUFACTURER'S RECOMMENDED PAINT SYSTEM.

7. INTERIOR PAINT APPLICATION SCHEDULE:
- A. CONCRETE MASONRY UNITS (ALL INTERIOR MASONRY WALLS:
- B.SEMIGLOSS LATEX SHALL HAVE TWO COATS OVER LATEX BLOCK FILLER THAT COMPLIES WITH MPI INT 4.2C.
- C.STEEL: SEMIGLOSS, ALKYD ENAMEL SHALL HAVE TWO COATS OVER ALKYD ANTICORROSIVE PRIMER THAT COMPLIES WITH MPI INT 5.1E.
- D.GALVANIZED METAL: SEMIGLOSS, ALKYD ENAMEL SHALL HAVE TWO COATS OVER CEMENTITIOUS GALVANIZED–METAL PRIMER THAT COMPLIES WITH MPI INT 5.1C.
- E.GYPSUM BOARD: EGGSHELL ALKYD SHALL HAVE TWO COATS OVER LATEX PRIMER/SEALER THAT COMPLIES WITH MPI INT 9.2C.

2	9/3/09	OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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GENERAL STRUCTURAL NOTES-ASBUILT

FOR

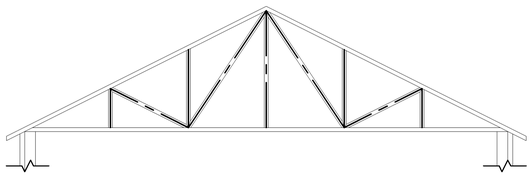
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

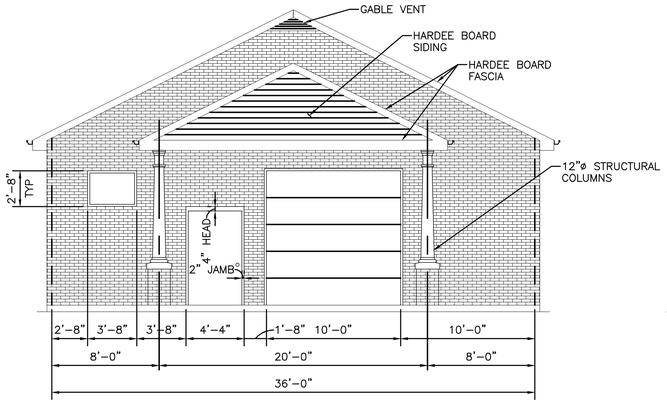
PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BC

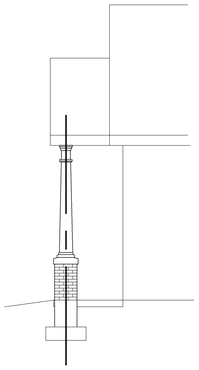
HURT & PROFFITT

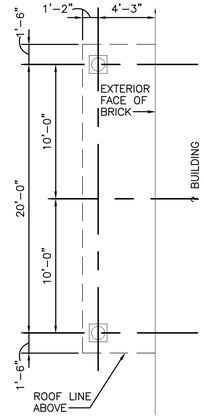
SHEET NO.
S1.1



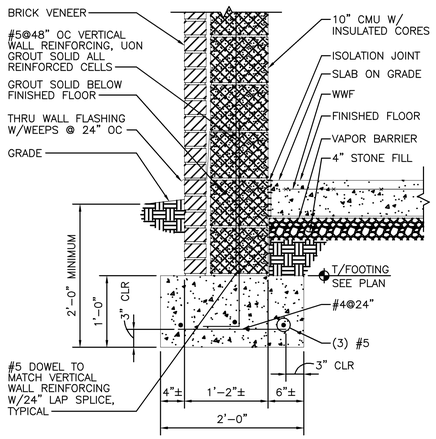
TRUSS ROFILE
SCALE: 3/16"=1'-0"



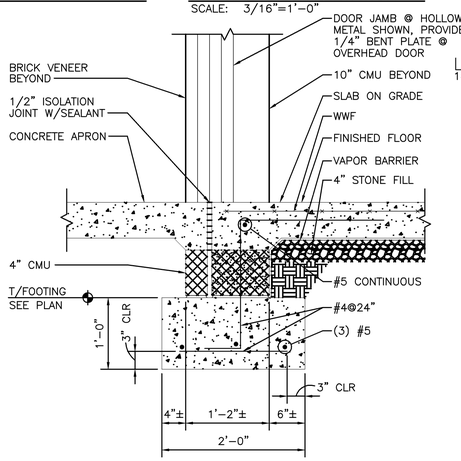




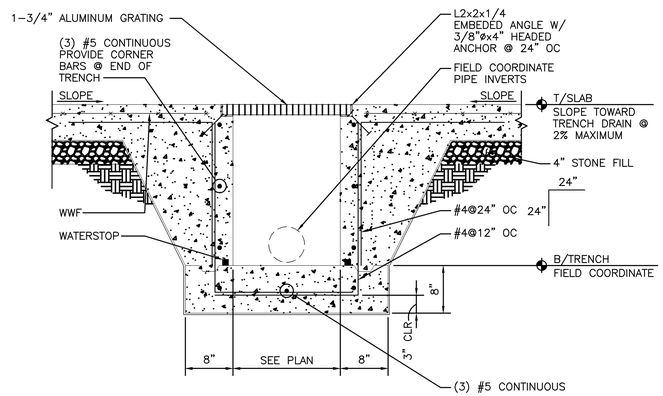
ELEVATION – FRONT VIEW
SCALE: 3/16"=1'-0"



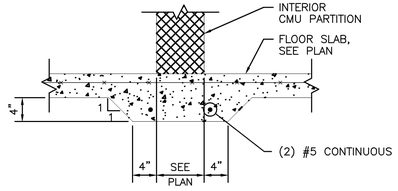
PARTIAL SIDE ELEVATION
SCALE: 3/16"=1'-0"



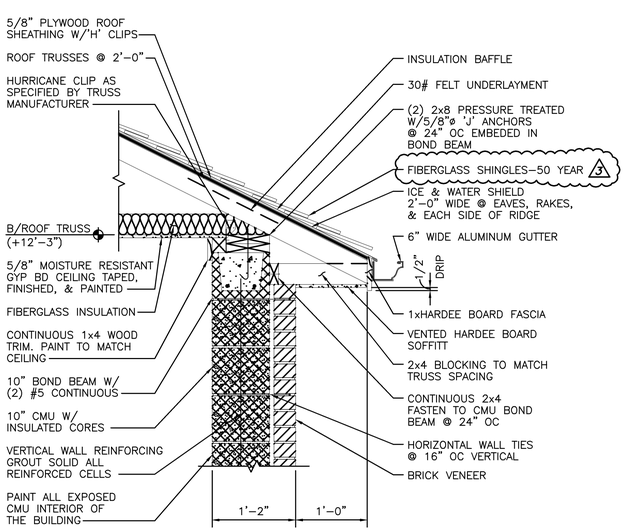
PORCH PLAN VIEW
SCALE: 3/16"=1'-0"



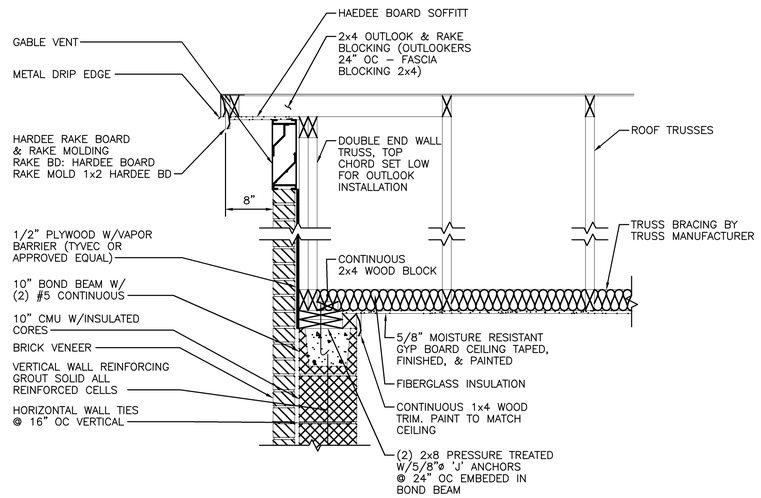
THICKENED SLAB DETAIL
SCALE: 1"=1'-0"



WALL AND FOOTING SECTION
SCALE: 1"=1'-0"



WALL AND FOOTING SECTION AT DOOR
SCALE: 1"=1'-0"



CAST-IN-PLACE TRENCH DETAIL
SCALE: 1"=1'-0"

LINTEL SCHEDULE

MARK	TYPE	DESCRIPTION	BOTTOM OF LINTEL	MASONRY OPENING
L-1		10" BOND BEAM W/(2) #5 CONTINUOUS W/L4x3 1/2x1/4 LLV. 8" BEARING @ EACH END.	7'-4" @ DOORS 10'-0" @ WINDOWS	4'-4"Wx7'-4"T @ DOORS 3'-8"Wx2'-8"T @ WINDOWS
L-2		(2) 10" BOND BEAM W/(4) #5 CONTINUOUS W/L6x4x3/8 LLV & 5/8"ø HILTI @ 24" OC. 8" BEARING @ EACH END.	10'-0"	10'-0"x10'-0"
L-3		(2) 10" BOND BEAM W/(4) #5 CONTINUOUS W/L6x4x3/8 LLV & 5/8"ø HILTI @ 24" OC. 8" BRG @ EACH END & @ MIDDLE.	9'-4"± FIELD VERIFY W/FUTURE TANKS	FUTURE OPENINGS IN MASONRY WALL FOR FUTURE CONTACT TANKS

NOTE: PROVIDE THRU WALL FLASHING WITH WEEPS @ 24" OC ABOVE ALL DOOR AND WINDOW OPENINGS.

EAVE WALL SECTION
SCALE: 1"=1'-0"

GABLE WALL SECTION
SCALE: 1"=1'-0"

2	9/3/09	OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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WATER TREATMENT BUILDING DETAILS-ASBUILT

FOR

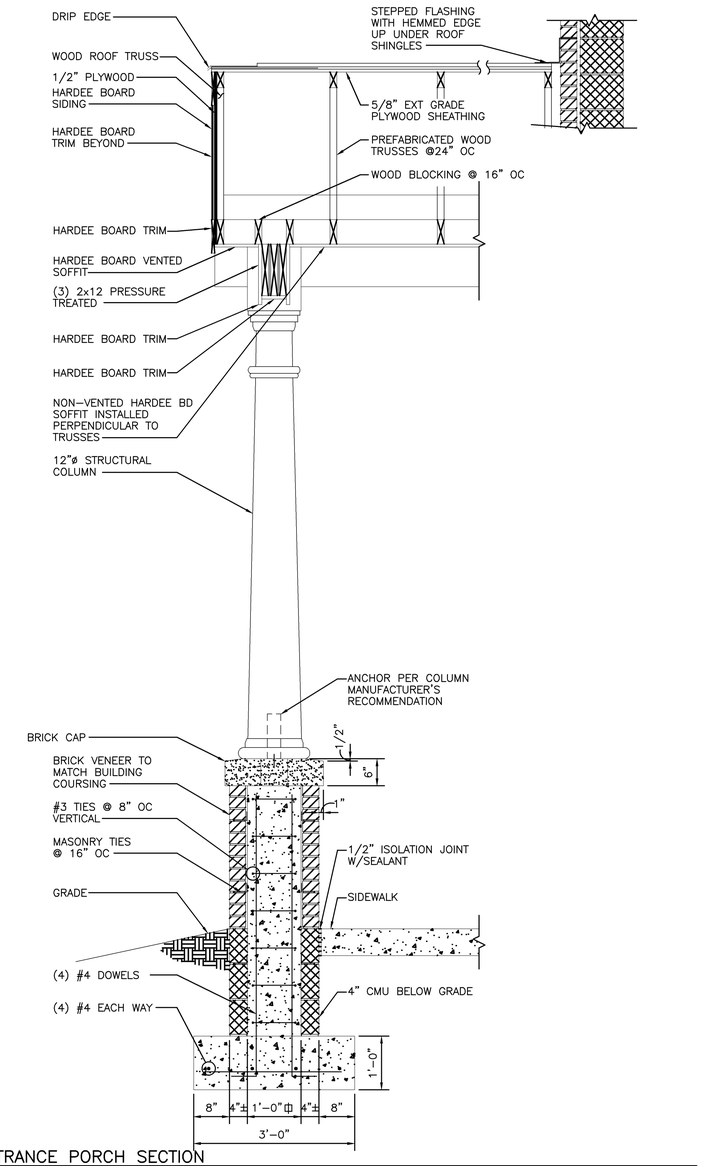
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3.9
FILE NO.	G-12675
DATE:	7/31/09
DRAWN BY:	ASK
CHECKED BY:	BLC

HURT & PROFFITT

SHEET NO.
S1.2



ENTRANCE PORCH SECTION

SCALE: 3/4"=1'-0"

2	9/3/09	OWNER COMMENTS
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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WATER TREATMENT BUILDING DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT, VOLUME 2

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

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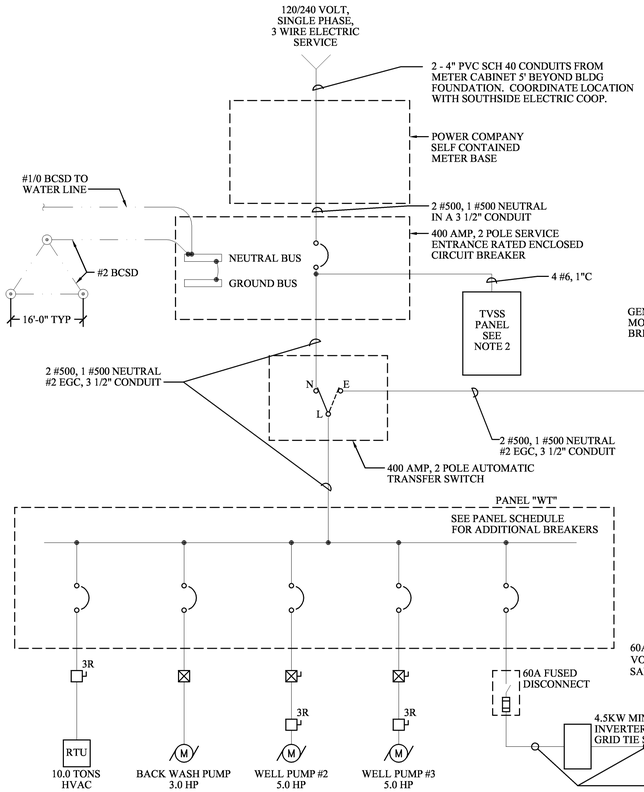
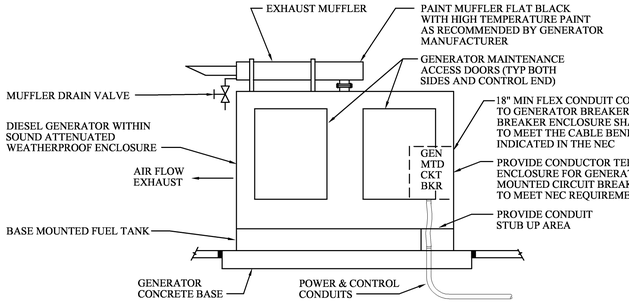
SHEET NO.
S1.3

Mar 14, 2012 - 4:11pm V:\LandProjects\20080815\dwg\Asbuilts-WTP\ASBUILT-SITE_TANK-DETAILS.dwg



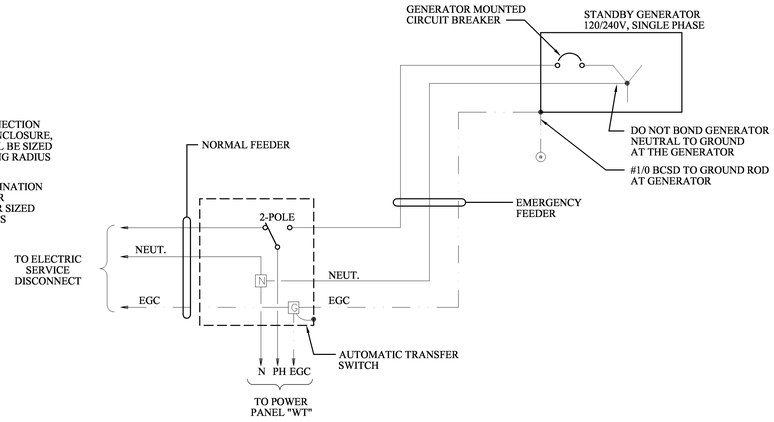
ELECTRICAL SERVICE RISER DIAGRAM

NO SCALE



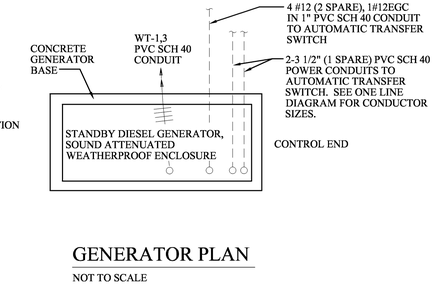
GENERATOR ELEVATION

NOT TO SCALE



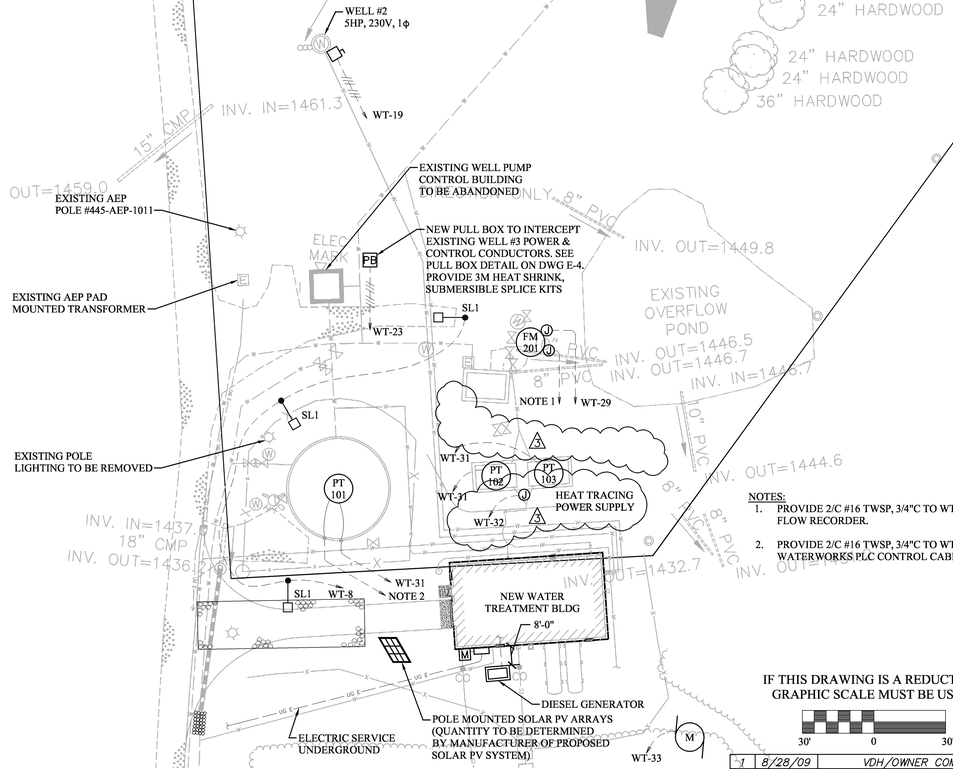
CONNECTION DIAGRAM - NEUTRAL & GROUND CONDUCTORS

NO SCALE



GENERATOR PLAN

NOT TO SCALE



SITE PLAN

SCALE: 1" = 30'-0"

NOTES:

1. PROVIDE 2/C #16 TWSP, 3/4"C TO WTB FLOW RECORDER.
2. PROVIDE 2/C #16 TWSP, 3/4"C TO WTB WATERWORKS PLC CONTROL CABINET.

IF THIS DRAWING IS A REDUCTION, GRAPHIC SCALE MUST BE USED.

30' 0 30'

ABBREVIATIONS

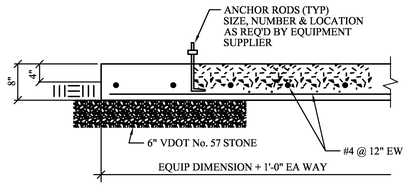
A,AMP	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GROUND
ATS	AUTOMATIC TRANSFER SWITCH
BCSD	BARE COPPER SOFT DRAWN
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
CONC	CONCRETE
DWG	DRAWING
EGC	EQUIPMENT GROUNDING CONDUCTOR
FM	FLOW METER
GEN	GENERATOR
GFI	GROUND FAULT INDICATOR
HP	HORSEPOWER
HZ	HERTZ
kcmil	THOUSAND CIRCULAR MILS
kVA	KILOVOLT AMPERE
kW	KILOWATT
MCA	MINIMUM CIRCUIT AMPS
MIN	MINIMUM
MISC	MISCELLANEOUS
MOCP	MINIMUM OVER CURRENT PROTECTION
MTD	MOUNTED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
N, NEUT	NEUTRAL
OHE	OVERHEAD ELECTRIC
PH	PHASE
PSKVA	PEAK STARTING KILOVOLT AMPERES
PT	PRESSURE TRANSDUCER
PVC	POLYVINYL CHLORIDE CONDUIT
RMS	ROOT MEAN SQUARE
SCH	SCHEDULE
SYM	SYMMETRICAL
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TWSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
V	VOLTS
W	WIRE
WP	WEATHERPROOF
WTB	WATER TREATMENT BUILDING
XFMR	TRANSFORMER

LEGEND

- HOMERUN TO POWER PANEL
- CONDUIT RUN
- CONDUIT RUN BELOW GRADE
- TICK MARKS: INDICATE NUMBER CONDUCTORS IN A CONDUIT IN ADDITION TO EGC. NO TICK MARKS INDICATE TWO CONDUCTORS IN ADDITION TO EGC.
- CONDUIT TURNING UP
- CONDUIT TURNING DOWN
- POLE MOUNTED LIGHT FIXTURE
- S — SINGLE POLE SWITCH
- DUPLEX RECEPTACLE
- J — JUNCTION BOX
- M — MOTOR
- WELL PUMP MOTOR MINDER W/ CONTACTOR
- SAFETY SWITCH, NONFUSIBLE
- MOLDED CASE CIRCUIT BREAKER
- N, E, L — AUTOMATIC TRANSFER SWITCH
- COPPER CLAD ¾" DIAMETER X 10' LONG GROUND ROD, PROVIDE 24" OF COVER
- GROUND
- PT — PRESSURE TRANSDUCER
- FM — FLOW METER
- LSL — LEVEL SWITCH LOW
- LSH — LEVEL SWITCH HIGH

GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL UNDERGROUND WORK WITH ALL OTHER CONTRACT DRAWINGS.
2. TRANSIENT VOLTAGE SURGE SUPPRESSION PANEL (TVSS) SHALL BE MODEL NUMBER CURRENT GUARD #CGP100-120/240-2G ENCLOSURE AS MANUFACTURED BY CURRENT TECHNOLOGY OR APPROVED EQUAL.



GENERATOR BASE DETAIL

NOT TO SCALE

NOTES:

CONCRETE COMPRESSIVE STRENGTH, fc' = 4,000 psi @ 28 DAYS
REINFORCING STEEL, fy = 60,000 psi

PROVIDE WIRING FROM THE FOLLOWING CONTACTS TO THE PLC PANEL FOR GENERATOR ALARMS:

GENERATOR FAILURE
AUTOMATIC TRANSFER SWITCH STANDBY POSITION
WATER PLANT ON GENERATOR
GENERATOR BATTERY CHARGER FAILURE
GENERATOR LOW FUEL LEVEL
GENERATOR FUEL LEAK DETECTION

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SITE PLAN & SERVICE RISER DIAGRAM-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3
FILE NO.	G-12675
DATE:	09/24/09
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CHECKED BY:	WKH/BLC

HURT & PROFFITT

SHEET NO.
E1

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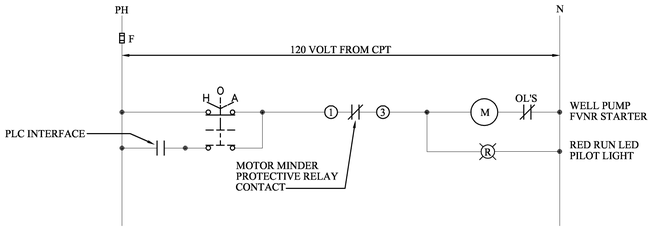
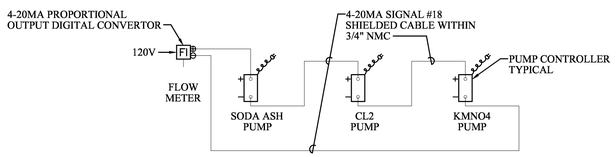
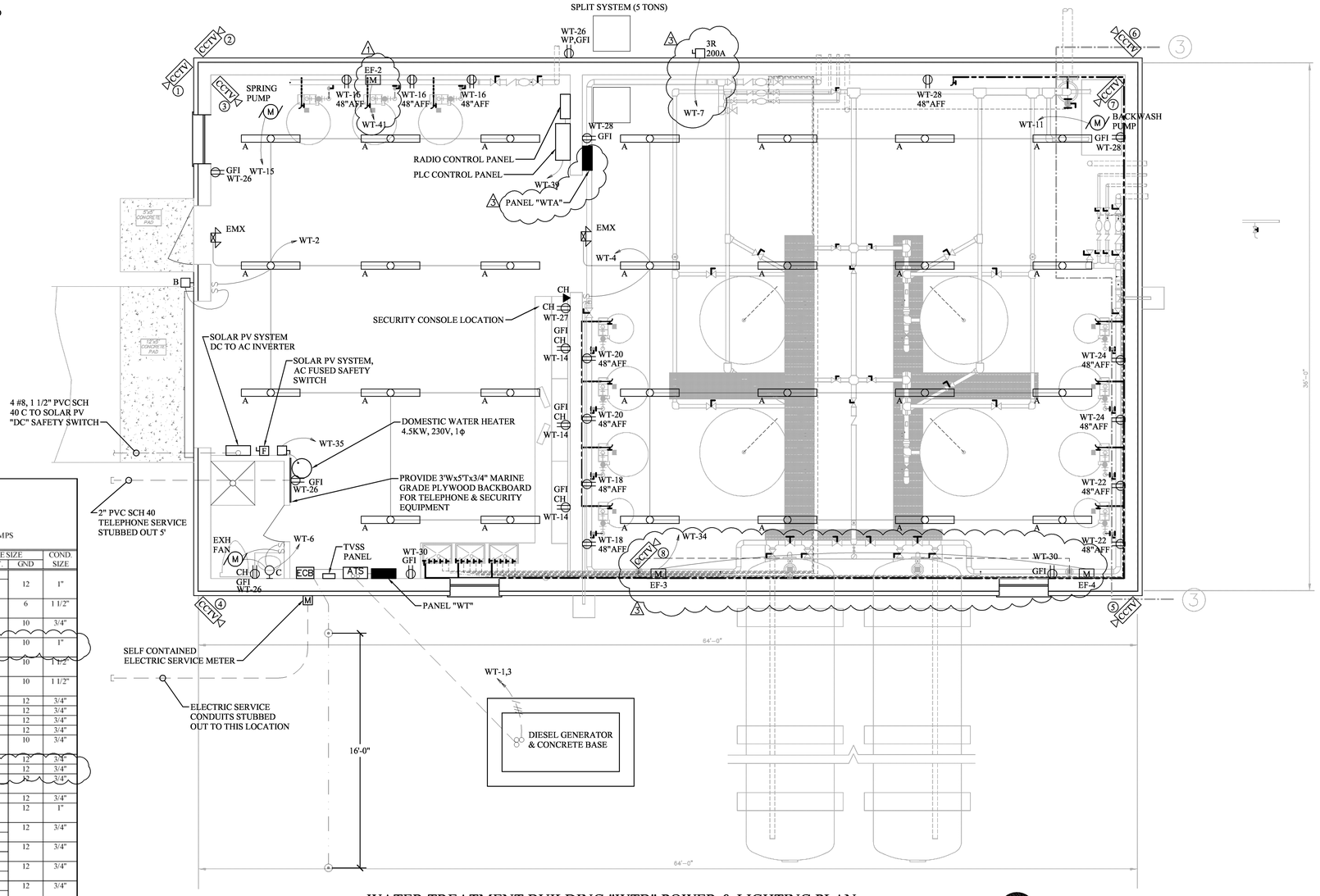


WELL PUMP #2 & #3 CONTROL DIAGRAM



CHEMICAL FEED PUMPS CONTROL DIAGRAM

RTU-1, 5 TONS, 240V, 1ϕ
MCA = 140.1A
MOCP = 150



WATER TREATMENT BUILDING "WTB" POWER & LIGHTING PLAN

SCALE: 1/4" = 1'-0"

PANEL "WT" SCHEDULE

PANELBOARD CHARACTERISTICS:
VOLTS: 120/240
PHASES: 1
WIRES: 3
SOLID NEUTRAL, GROUND BAR

PHASE TO PHASE VOLTS: 240
PHASE TO NEUT. VOLTS: 120

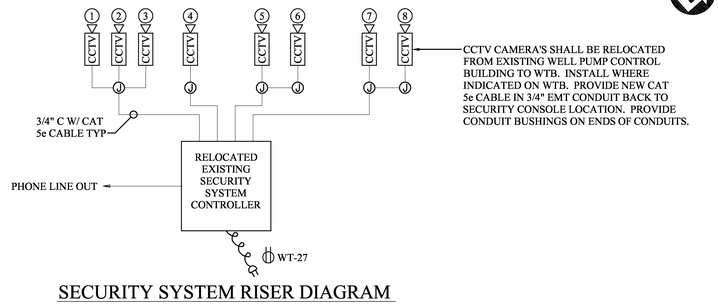
400 AMP MAIN LUGS ONLY
MINIMUM SHORT CIRCUIT RATING: 18,000 RMS SYM AMPS
WATER TREATMENT

CKT. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS A	CONN. AMPS B	BREAKER P	BREAKER AT	NO. & WIRE SIZE PHASE	NO. & WIRE SIZE NEUT.	NO. & WIRE SIZE GND	COND. SIZE
1	1	GENERATOR BATTERY CHARGER	E	1.0	8.3		1	20	10	10		
3	3	GENERATOR BLOCK HEATER	E	2.0		8.3	2	20	10	-	12	1"
	5				8.3				10			
7	7	PACKAGE RTU-1, 5 TONS, 18KW	M	25.8		107.5	2	150	1/0	-	6	1 1/2"
	9				107.5				1/0			
11	11	BACKWASH PUMP - 3.0HP	E	3.9		16.3	2	40	10	-	10	3/4"
	13				16.3				10			
15	15	WATER PUMP - 1 1/2 HP	E	2.3		9.6	2	30	10	-	10	1"
	17				9.6				10			
19	19	WELL PUMP #2 - 5HP	E	6.4		26.7	2	50	4	-	10	1 1/2"
	21				26.7				4			
23	23	WELL PUMP #3 - 5 HP	E	6.4		26.7	2	50	4	-	10	1 1/2"
	25				26.7				4			
27	27	SECURITY SYSTEM - RECEPTACLE	E	1.0		8.3	1	20	12	12	12	3/4"
29	29	FLOW METER	E	0.3	2.5		1	20	12	12	12	3/4"
31	31	TANK LEVEL INSTRUMENT	E	0.3		2.5	1	20	12	12	12	3/4"
33	33	SEPTIC DOSING PUMP	E	0.9	7.5		1	20	12	12	12	3/4"
35	35	DOMESTIC WATER HEATER	M	4.5		18.8	2	30	10	-	10	3/4"
	37				18.8				10			
39	39	PLC & RADIO CONTROL PANEL	L	1.0		8.3	1	20	12	12	12	3/4"
41	41	EXHAUST FAN EF-2	E	0.5	4.2		1	20	12	12	12	3/4"
2	2	LIGHTING - LAB	L	1.0	8.3		1	20	12	12	12	3/4"
4	4	LIGHTING - LAB	L	1.3		10.8	1	20	12	12		
6	6	LIGHTING & FAN TOILET	L	1.0	8.3		1	20	12	12	12	3/4"
8	8	SITE LIGHTING	L	1.5		6.3	2	20	8	-	12	1"
	10				6.3				8			
12	12	RECEPTACLES - LAB ROOM	R	1.0		8.3	1	20	12	12	12	3/4"
14	14	RECEPTACLES - LAB	R	1.0	8.3		1	20	12	12		
16	16	RECEPTACLES - MNO4, CL2, SODA ASH	R	1.5		12.5	1	20	12	12	12	3/4"
18	18	RECEPTACLES - KMNO4, CL2	R	1.0	8.3		1	20	12	12		
20	20	RECEPTACLES - SODA ASH, SPARE TANK	R	1.0		8.3	1	20	12	12	12	3/4"
22	22	RECEPTACLES - KMNO4, CL2	R	1.0	8.3		1	20	12	12		
24	24	RECEPTACLES - SODA ASH, SPARE TANK	R	1.0		8.3	1	20	12	12	12	3/4"
26	26	RECEPTACLES - TOILET & MISC.	R	0.5	4.2		1	20	12	12		
28	28	RECEPTACLES - TANK ROOM	R	0.5		4.2	1	20	12	12	12	3/4"
30	30	RECEPTACLES - MISC.	R	0.5	4.2		1	20	12	12		
32	32	HEAT TRACING @ TANK	E	1.2		10.0	1	* 20	12	12	12	3/4"
34	34	EF-3 & EF-4	E	1.0	8.3		1	20	12	12	12	3/4"
36	36	PANEL WTA					2	100	1	1	6	1 1/4"
	38								1			
40	40	SOLAR PV SYSTEM INPUT BREAKER						60	6	6	6	1 1/8"
	42	4.5KW SYSTEM							6			
		TOTALS		72.3	300.8	301.7						

* GROUND FAULT BREAKER

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	FIXTURE VOLTAGE	LAMPS No.	LAMPS TYPE	MOUNTING	REMARKS
A	LITHONIA	DM-3-32-MVOLT-GEB101S	120	3	F32T8/SPX35	SURFACE	
B	LITHONIA	TWS-42TRT-MVOLT-LPI	120	1	CF42TRT	WALL	EXTERIOR @ DOORS
C	LITHONIA	WP-2-17-MVOLT-WHITE	120	2	F17T8-24"	WALL	TOILET
SLI	LITHONIA	FIXTURE: KAD-400M-R4-240-SPD04-LPI-DF-PE1-DDBT	240	1	400WMH	POLE	METAL HALIDE
		POLE: COMPOSITE DIRECT BURY-RTFDB-30-8-3X-DM19-DDBT	-	-	-		25' NOM. MH
EMX	LITHONIA	LHQM-S-W-1-R-120-N	120	2+		WALL	COMBINATION EXIT/EMERG.



SECURITY SYSTEM RISER DIAGRAM

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WATER TREATMENT BUILDING ELEC. PLAN-ASBUILT
FOR
WATER SYSTEM REPLACEMENT
TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

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SHEET NO.
E2

ROOFTOP PACKAGE HEAT PUMP	
MARK	RTU-1
MANUFACTURER	TRANE
MODEL NUMBER	WSC060
DESIGNATION	RTU-1
POWER (V/PH/HZ) *	240/1/60
DRIVE	BELT
CFM	2,000
FAN MOTOR HP	1
EXTERNAL S.P.-IN. W.G.	5/8
COOLING CAPACITIES	
AMBIENT E.A.T., °F DB	95.0
EVAP. E.A.T.-°F DB/WB	79.0/65.0
NET SENSIBLE CAPY.-(MBH)	47.1
NET TOTAL CAPY-(MBH)	59.7
HEATING CAPACITY	
COND. E.A.T.-°F DB	47.0
HEATING E.A.T.-°F DB	61.0
HEATING L.A.T.-°F DB	74.9
TOTAL HTG CAPY.-MBH	28.5
ELECTRIC RESISTANCE HEATER	
NO. STAGES	2
POWER (V/PH/HZ) *	240/1/60
TOTAL HTG CAPY.-KW	17.4
OUTSIDE AIR QTY (CFM)	400

REMARKS: HORIZONTAL DUCT CONNECTIONS; SINGLE-PT POWER CONN.; FACTORY-INSTALLED ELEC. DISCONN.; LOW AMBIENT CONTROLS; WALL-MTD THERMOSTAT W/ AUTO. SWITCHOVER CAPABILITY.

EXHAUST FANS		
MARK	EF-1	EF-2; EF-3; EF-4
MANUFACTURER	GREENHECK	GREENHECK
MFR. MODEL NUMBER	SP-B90	SE1-10-428-P
FLOW RATE (CFM)	75	400
S.P. (IN. W.G.)	1/8	1/8
MOTOR POWER	50 W	1/20 HP
POWER *	120/1/60	120/1/60
REMARKS:	ELEC. DISCONNECT; HANGING VIBRATION ISOLATORS; GREENHECK MODEL WC-6 HOODED WALL CAP; SPEED CONTROLLER	ELEC. DISCONNECT; WALL HOUSING W/ HOUSING GUARD; GRAV. DAMPER; WEATHERHOOD W/ BIRD SCREEN; SPEED CONTROLLER

LOUVERS	
MARK	L-1
MANUFACTURER	RUSKIN
MFR. MODEL NO.	ELF375DX
SIZE	18" X 18"
FLOW RATE (CFM)	600
S.P. (IN. W.G.)	0.07
CONSTRUCTION	ALUMINUM
REMARKS: EXTRUDED DRAINABLE BLADES; BIRD SCREEN; CLEAR ANODIZED FINISH.	

AIR INLETS / OUTLETS								
MARK	TYPE	SHAPE	CONSTRUCTION	FINISH	NECK SIZE	CFM RANGE	ACCESSORIES	SELECTION BASED ON
CD-1	CEILING LAY-IN ADJUSTABLE PATTERN	SQUARE	ALUMINUM	WHITE	8	135-270	OPPOSED BLADE BALANCING DAMPER	TITUS MODEL TDCA (12"X12" BACKPAN)
RG-1	SURFACE MOUNT GRILLE	SQUARE	HEAVY DUTY ALUMINUM	WHITE	18X18	100-900	N/A	TITUS MODEL 63FL
RG-2	SURFACE MOUNT GRILLE	SQUARE	HEAVY DUTY ALUMINUM	WHITE	24X20	100-1,600	N/A	TITUS MODEL 63FL

DRAWING NOTES:

① O.A. INTAKE LOUVER, GRAVITY DAMPER & GRILLE TO BE ATTACHED TO SHEETMETAL SLEEVE.

② CONCRETE PAD, MIN. 4" ABOVE GRADE; 4" LARGER THAN RTU, ALL SIDES.

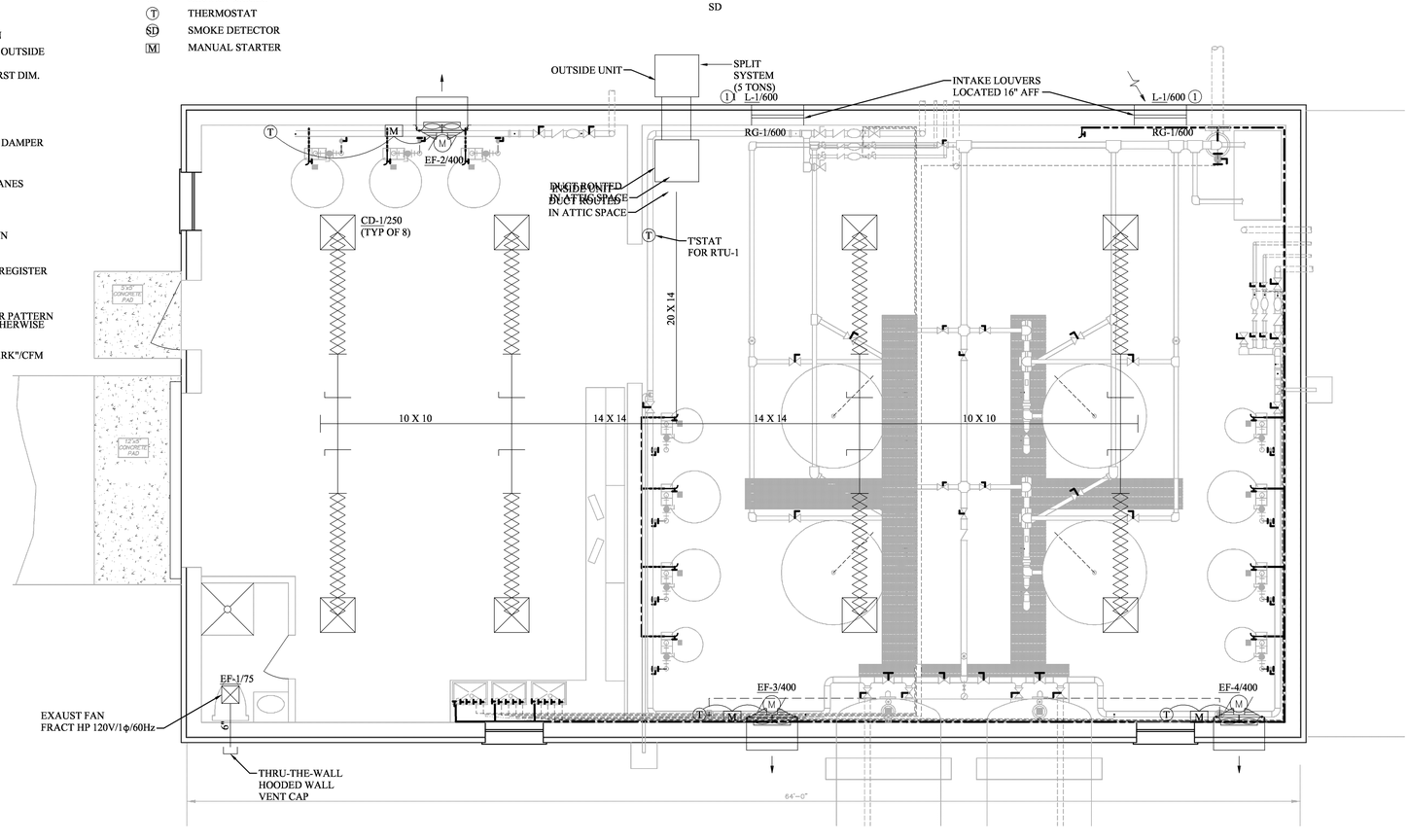
③ ALL EXTERIOR DUCT 12" MIN. ABOVE GRADE.

ABBREVIATIONS:

AFF	ABOVE FINISHED FLOOR
CD	CEILING MTD SUPPLY AIR DIFFUSER
DN	DOWN
EL	ELEVATION
O.A.	OUTSIDE AIR
RG	RETURN GRILLE
(T)	THERMOSTAT
SD	SMOKE DETECTOR
M	MANUAL STARTER

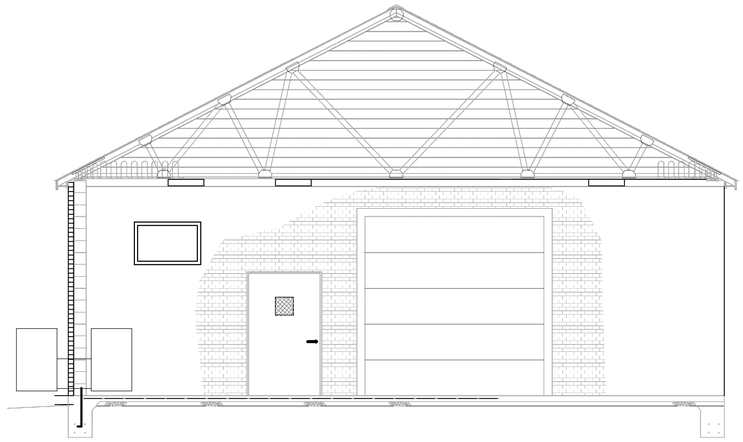
LEGEND:

- SUPPLY DUCT SECTION
- RETURN, EXHAUST OR OUTSIDE AIR DUCT SECTION
- 12X6 DUCT SIZE, INCHES, FIRST DIM. IS SIDE SHOWN
- MANUAL DAMPER
- BD GRAVITY BACKDRAFT DAMPER
- SQUARE ELBOW WITH MULTIPLE TURNING VANES
- ELBOW TURNING UP
- ELBOW TURNING DOWN
- RETURN OR EXHAUST REGISTER
- DIFFUSER W/ 4-WAY AIR PATTERN UNLESS INDICATED OTHERWISE
- XX-X/XXX INLET OR OUTLET "MARK"/CFM
- NEW DUCT



WATER TREATMENT BUILDING MECHANICAL PLAN

SCALE: 1/4" = 1'-0"



WATER TREATMENT BUILDING MECHANICAL SECTION

SCALE: 1/4" = 1'-0"

MECHANICAL NOTES:

1. EXTENT OF THE WORK: CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, CONTROLS, & DEVICES NEEDED TO PROVIDE A COMPLETE SYSTEM TESTED AND OPERATING AS SHOWN ON PLANS AND AS SPECIFIED.

2. COORDINATION: THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE BUILDING STRUCTURE AND WORK OF THE OTHER CONTRACTORS & INSTALLERS. THE CONTRACTOR SHALL INFORM OR SUPPLY THE OTHER TRADES WITH ALL APPLICABLE INFORMATION CONCERNING LOCATIONS AND SIZES OF ALL OPENINGS & CLEARANCES NEEDED FOR ALL EQPT, PIPING, & ACCESSORIES SO AS NOT TO HOLD UP BUILDING CONSTRUCTION.

3. COMPLIANCE: ALL WORK & MATERIALS SHALL CONFORM TO ALL APPLICABLE CODES, APPLICABLE PROVISIONS OF LATEST EDITION OF NATIONAL FIRE PROTECTION ASSOCIATION, LOCAL UTILITY REGULATIONS, GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION, LOCAL CODES AND MANUFACTURERS' WRITTEN INSTRUCTIONS.

4. SUBMITTALS: SUBMIT DRAWINGS AND PRODUCT INFORMATION WHICH INCLUDE COMPLETE SUBMITTALS OF ASSOCIATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN ONE COMPLETE SUBMITTAL.

5. DRAWINGS: THESE DRAWINGS ARE ILLUSTRATIVE AND ONLY SHOW THE OVERALL ARRANGEMENT OF SYSTEMS AND WORK. IT IS NOT THE INTENT OF THE DRAWINGS TO INCLUDE EVERY ASPECT OF CONSTRUCTION.

6. ACCESS: LOCATE ALL EQUIPMENT, CONTROLS & DAMPERS IN POSITIONS W/ EASY ACCESS FOR SERVICE & ADJUSTMENT.

7. CLEANING: MECHANICAL SYSTEMS SHALL BE PROVIDED FREE OF ALL DIRT AND FOREIGN MATERIALS. FURNISH TEMPORARY FILTERS FOR ANY EQUIPMENT OPERATED DURING CONSTRUCTION. SEAL OPENINGS IN THE EQUIPMENT & DUCTWORK UNTIL THEY ARE INSTALLED. REMOVE ALL UNUSED MATERIAL AND WASTE FROM THE JOB SITE RESULTING FROM THE INSTALLATION OF MECHANICAL SYSTEMS.

8. SYSTEM NOISE: SYSTEMS SHALL FUNCTION WITHOUT ABNORMAL OR EXCESSIVE NOISE AND/OR VIBRATION.

9. TESTING & BALANCING: THE COMPLETE HVAC SYSTEM SHALL BE TESTED, BALANCED & ADJUSTED. A REPORT SHALL BE GIVEN TO THE PROJECT ENGINEER UPON COMPLETION OF WORK.

10. OPERATION & MAINTENANCE INSTRUCTIONS: PROVIDE THE OWNER WITH 2 COMPLETE SETS OF OPERATIONS AND MAINTENANCE INSTRUCTIONS FOR THE EQUIPMENT AND SYSTEMS PROVIDED. MANUALS PROVIDED WITH THE EQUIPMENT SHALL BE LEFT WITH THE EQUIPMENT. A COPY OF THESE DOCUMENTS SHALL BE INCLUDED WITH THE SETS GIVEN TO THE OWNER.

11. GUARANTEE: EQUIPMENT, MATERIALS, AND LABOR REQUIRED BY THESE DRAWINGS AND SPECIFICATIONS SHALL BE GUARANTEED TO BE FREE FROM DEFECTIVE MATERIALS FOR ONE (1) YEAR AFTER FINAL ACCEPTANCE OF THE PROJECT UNLESS SPECIFIED FOR A LONGER PERIOD IN OTHER PORTIONS OF THESE SPECIFICATIONS. DEFECTIVE MATERIALS OR WORKMANSHIP OCCURRING DURING THIS PERIOD SHALL BE CORRECTED AT NO ADDITIONAL COST. ANY GUARANTEE GIVEN BY THE MANUFACTURERS SHALL BE HONORED (BY THE MANUFACTURER, MANUFACTURERS' REPRESENTATIVE, & INSTALLER) FOR THE PERIOD STATED IN THE MANUFACTURERS' LITERATURE.

12. SQUARE & RECTANGULAR DUCTWORK:
   A. GENERAL - DUCTWORK SHALL BE ZINC-COATED SHEET STEEL OR ALUMINUM, CONSTRUCTED AND INSTALLED AS RECOMMENDED BY THE LATEST EDITION OF SMACNA.
   B. DUCT CLEARANCE SHALL BE ESTABLISHED AT THE JOB SITE BEFORE ANY DUCTS ARE FABRICATED.
   C. MANUAL VOLUME CONTROL DAMPERS SHALL HAVE ACCESSIBLE OPERATING MECHANISM.
   D. ANY DAMPERS IN SQUARE DUCT OVER 12" TO BE MANUFACTURED PARALLEL OR OPPOSED BLADE, COMPLETE W/ HAND QUADRANTS.
   E. TURNING VANES SHALL BE PROVIDED IN ALL SQUARE ELBOWS. DOUBLE THICKNESS VANES TO BE PROVIDED IN DUCTWORK OVER 14".
   F. PROVIDE FLEXIBLE DUCT CONNECTION BETWEEN THE SUPPLY AND RETURN DUCTS FROM AIR HANDLING EQUIPMENT.
   G. ROUND DUCT TAKEOFFS IN SUPPLY ARE TO BE MADE WITH SIDE TAKEOFFS ONLY. NO SPIN-INS OR STAB-INS PERMITTED.

13. INSULATION & SEALANT:
   A. THE FINISHED DUCT SYSTEM SHALL MEET THE REQUIREMENTS OF NFPA 90A & 90B. ALL MATERIALS USED SHALL NOT HAVE A COMPOSITE FLAME SPREAD RATING OF OVER 25 AND A SMOKE DEVELOPED RATING EXCEEDING 50.
   B. DUCT WRAP INSULATION SHALL MEET THE REQUIREMENTS OF ASTM C 1290, TYPE III, TO MAXIMUM SERVICE TEMPERATURE OF 250°F. FACING MATERIAL SHALL MEET THE REQUIREMENTS OF ASTM C 1136, TYPE II, WHEN SURFACE BURNING CHARACTERISTICS ARE DETERMINED IN ACCORDANCE WITH ASTM 84 WITH THE FOIL SURFACE OF THE MATERIAL EXPOSED TO THE FLAME AS IT IS IN THE FINAL COMPOSITE.
   C. ALL EXTERIOR LOW PRESSURE DUCTWORK SHALL BE INSULATED WITH DUCT BOARD WITH AS-INSTALLED MIN. R-8 RATING. SEALED W/ WEATHER PROOF MASTIC SEALER & COVERED W/ A WATER-TIGHT 0.032" THK ALUMINUM JACKET W/ 2-1/2"X5/8" CORRUGATIONS.
   D. ALL LOW PRESSURE SUPPLY, RETURN, & RELIEF DUCTWORK SHALL BE INSULATED W/ MIN. R-5 AS INSTALLED DUCT WRAP INSULATION, W/ KRAFT PAPER VAPOR BARRIER RETARDER WITH A 2" MIN. STAPLING & TAPING ON ONE EDGE. ALL JOINTS SHALL BE SEALED W/ PRESSURE SENSITIVE TAPE MATCHING THE INSULATION FACING.
   E. ALL DUCTWORK IS TO BE SEALED WITH A WATER BASED SEALANT MEETING APPROPRIATE U.L. LISTINGS & ASTM REQUIREMENTS.

14. SUPPLY AIR FLEX. DUCT & ROUND DUCT SIZE SHALL MATCH THAT OF ASSOCIATED CEILING DIFFUSER NECK.

15. FLEX DUCT RUNOUT SHALL NOT EXCEED 8 FT. IN LENGTH.

16. DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS.

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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WATER TREATMENT BUILDING MECH. PLAN-ASBUILT

FOR

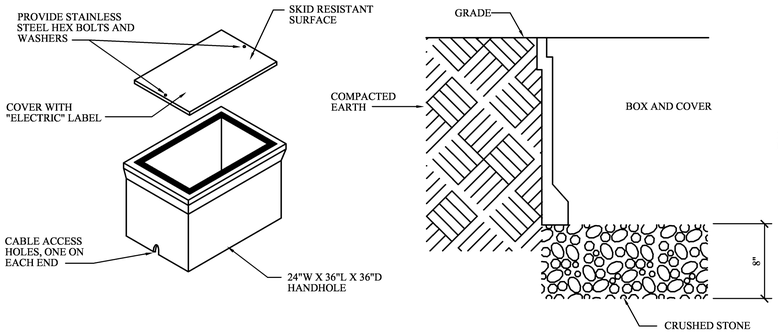
TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3
FILE NO.	G-12675
DATE:	09/24/09
DRAWN BY:	WKH/RNM
CHECKED BY:	WKH/BLC

HURT & PROFFITT

SHEET NO.
E3



HANDHOLE REQUIREMENTS:

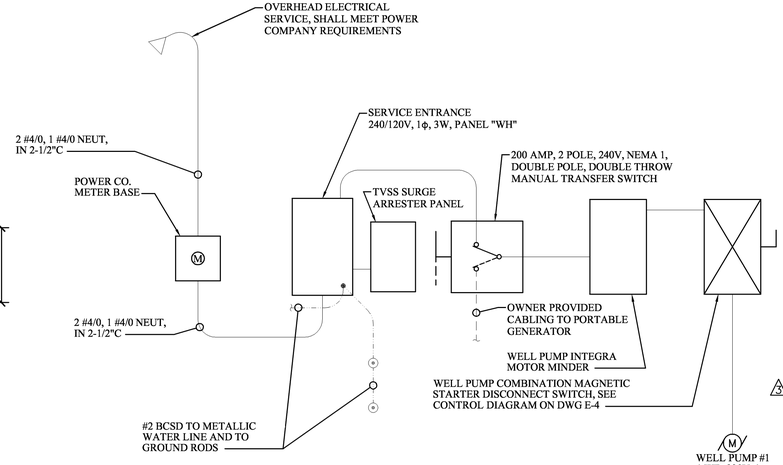
1. HOUSING SHALL BE POLYMER CONCRETE REINFORCED WITH A HEAVY FIBERGLASS REINFORCING WITH COMPRESSIVE STRENGTH OF NO LESS THAN 10,000 PSI

2. COVER SHALL WITHSTAND A SERVICE LOAD OF NO LESS THAN 15,000 LBS OVER A 10" X 10" AREA FOR HEAVY DUTY LOADING.

3. PROVIDE STAINLESS STEEL BOLTS AND INSERTS.

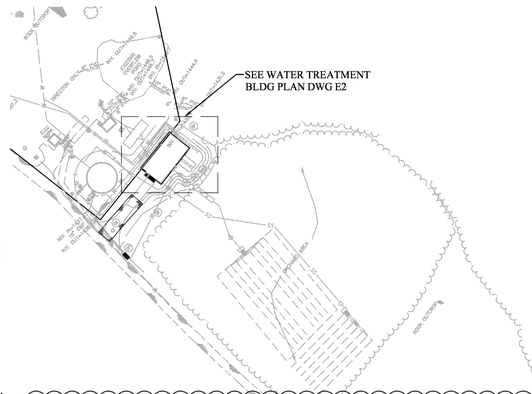
COMPOSITE FIBERGLASS HANDHOLE/PULLBOX

NOT TO SCALE



WELL HOUSE #1 ELECTRIC SERVICE RISER DIAGRAM

NOT TO SCALE



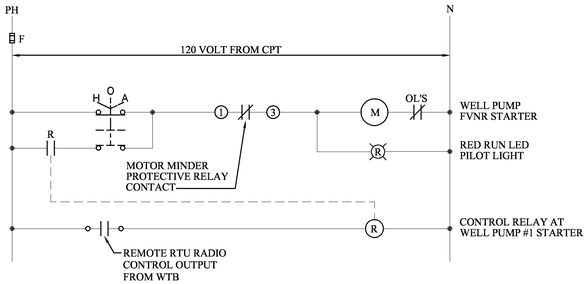
PANEL "WTA" SCHEDULE

PANELBOARD CHARACTERISTICS:
VOLTS: 120/240
PHASES: 1
WIRES: 3
SOLID NEUTRAL, GROUND BAR

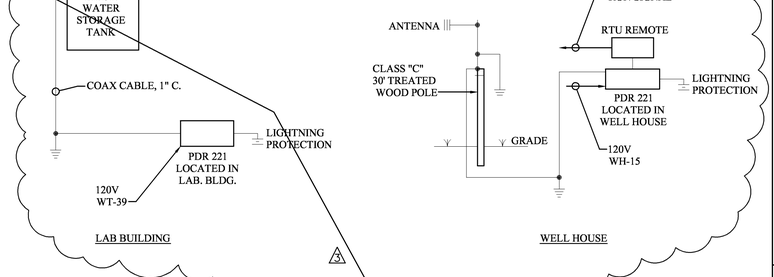
PHASE TO PHASE VOLTS: 240
PHASE TO NEUT. VOLTS: 120

100 AMP MAIN LUGS ONLY
MINIMUM SHORT CIRCUIT RATING: 10,000 RMS SYM AMPS
WATER TREATMENT

CKT. NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS A	CONN. AMPS B	BREAKER P	BREAKER AT	NO. & WIRE SIZE PHASE	NEUT.	GND	COND. SIZE
1	1	SPARE					1	20				
3	3	SPARE					1	20				
5	5	SPARE					1	20				
7	7	SPARE					1	20				
9	9	SPARE					1	20				
11	11	SPARE					1	20				
13	13	SPARE					1	20				
15	15	SPARE					1	20				
17	17	SPARE					1	20				
2	2	SPARE					2	20				
	4											
6	6	SPARE					2	30				
	8											
10	10	SPARE					1	20				
12	12	SPARE					1	20				
14	14	SPARE					1	20				
16	16	SPARE					1	20				
18	18	SPARE					1	20				
		TOTALS										



WELL PUMP #1 CONTROL DIAGRAM



RADIO CONTROL RISER DIAGRAM

NOT TO SCALE

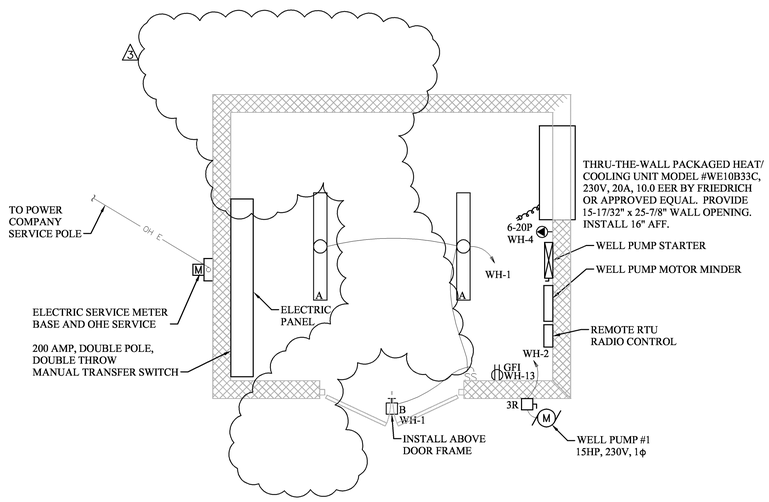
PANEL "WH" SCHEDULE

PANELBOARD CHARACTERISTICS:
VOLTS: 120/240
PHASES: 1
WIRES: 3
SOLID NEUTRAL, GROUND BAR

PHASE TO PHASE VOLTS: 240
PHASE TO NEUT. VOLTS: 120

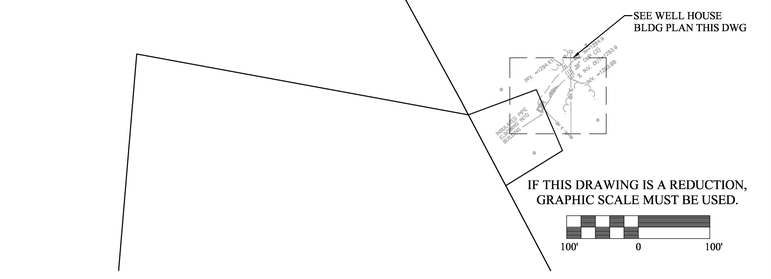
200 AMP MAIN CIRCUIT BREAKER
MINIMUM SHORT CIRCUIT RATING: 14,000 RMS SYM AMPS
"WELL HOUSE"

CKT NO.	POLE NO.	DESCRIPTION	LOAD TYPE	CONN. KVA	CONN. AMPS A	CONN. AMPS B	BREAKER P	BREAKER AT	NO. & WIRE SIZE PHASE	NEUT.	GND	COND. SIZE
1	1	LIGHTS	E	1.2	9.3		1	20	12	12	12	3/4"
3	3	SPARE					1	20				
5	5	HEAT PUMP - PACKAGED	M	3.0	12.5		2	20	12		12	3/4"
	7					12.5						
9	9	TVSS PANEL	E				2	60	6	6	6	1"
	11								6			
13	13	RECEPTACLE	R	0.6	5.0		1	20	12	12	12	3/4"
15	15	RADIO PDR & RTU	E	0.2		1.7	1	20	12	12	12	3/4"
17	17	SPARE					1	20				
19	19	SPARE					1	20				
21	21	SPARE					1	20				
23	23	SPARE					1	20				
25	25	SPARE					1	20				
27	27	SPARE					1	20				
29	29	SPARE					1	20				
31	31	SPARE					1	20				
33	33	SPARE					1	20				
35	35	SPARE					1	20				
37	37	SPARE					1	20				
39	39	SPARE					1	20				
2	2	WELL PUMP #1 - 15.0HP	E	18.4	76.7		2	150	1	-	6	1 1/2"
	4					76.7			1			
6	6	TIMER					2	20	12	-	12	3/4"
	8								12			
10	10	SHOP	E				2	30	10	10	10	1"
	12								10			
14	14	SPACE & BUS					1					
16	16	SPACE & BUS					1					
18	18	SPACE & BUS					1					
20	20	SPACE & BUS					1					
22	22	SPACE & BUS					1					
24	24	SPACE & BUS					1					
26	26	SPACE & BUS					1					
28	28	SPACE & BUS					1					
30	30	SPACE & BUS					1					
32	32	SPACE & BUS					1					
34	34	SPACE & BUS					1					
36	36	SPACE & BUS					1					
38	38	SPACE & BUS					1					
40	40	SPACE & BUS					1					
		TOTALS		23.2	102.5	90.8						



WELL HOUSE #1 BUILDING PLAN - POWER & LIGHTING

SCALE: 3/8" = 1'-0"



PARTIAL SITE PLAN

SCALE: 1" = 100'-0"

1	8/28/09	VDH/OWNER COMMENTS
2	9/3/09	OWNER COMMENTS
3	10/7/09	ADDENDUM #2
4	11/17/09	FRANKLIN COUNTY COMMENTS
5	3/14/12	ASBUILTS

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WELL HOUSE PLAN & DETAILS-ASBUILT

FOR

TOWN OF BOONES MILL WATER SYSTEM REPLACEMENT

TOWN OF BOONES MILL, BOONE DISTRICT, FRANKLIN COUNTY, VA

PROJECT NO.	20080815
G.L. NO.	297-03-A3
FILE NO.	G-12675
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SHEET NO.
E4