





SITE SUMMARY

OWNER: VIRGINIA RECREATIONAL FACILITIES AUTHORITY  
C/O BRIAN CARTER - FINANCE  
P.O. BOX 29800  
ROANOKE, VA 24018

DEVELOPER: ROANOKE COUNTY PARKS, RECREATION, & TOURISM  
1206 KESSLER MILL ROAD  
SALEM, VA 24153

TAX MAP NUMBER: 080.00-05-24.00-0000

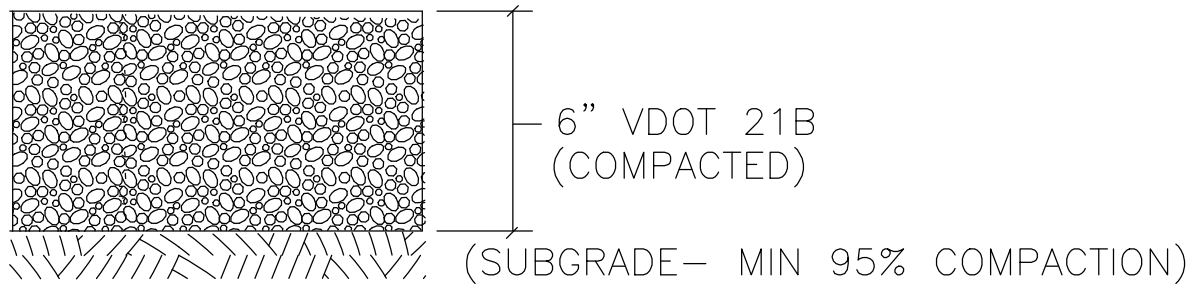
SITE AREA: APPROX. 431 ACRES

ZONING: EP

DISTURBED AREA: APPROX. 0.4 AC.

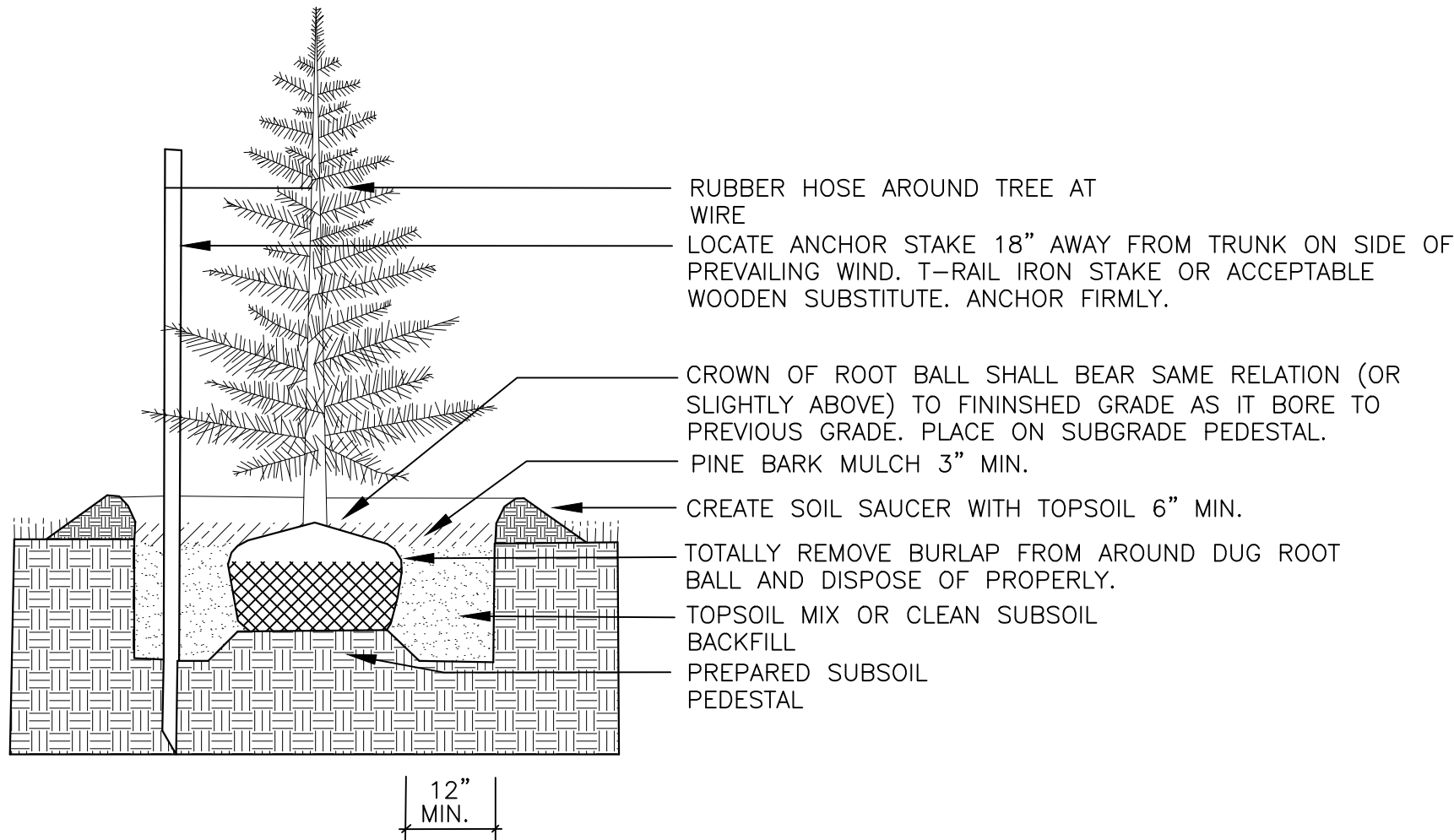
SITE NOTES:

- G.C. SHALL ENSURE THAT ALL NECESSARY PERMITS ARE IN PLACE PRIOR TO THE START OF CONSTRUCTION.
- NO CONSTRUCTION/FIELD CHANGES WITHOUT THE APPROVAL OF THE CONSULTING ENGINEER AND ROANOKE COUNTY.
- ALL BUILDING DIMENSIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS.
- CONTRACTOR TO ENSURE POSITIVE DRAINAGE AWAY FROM THE PROPOSED BUILDING.
- ALL GRADING WORK SHALL BE IN ACCORDANCE WITH THE GRADING NOTES ON SHEET C4.
- ANY BUILDING LIGHTING SHALL BE FULL CUTOFF FIXTURES.
- G.C. SHALL BE RESPONSIBLE FOR COORDINATING DIRECTLY WITH A.E.P. TO EXTEND 3-PHASE POWER TO THE LIFT STATION AND FOR TEMPORARY POWER DURING THE CONSTRUCTION PROCESS. G.C. SHALL BE RESPONSIBLE FOR INSTALLING ANY CONDUIT REQUIRED.
- PROPOSED EVERGREEN SCREENING TREES SHALL BE THUJA X 'GIGANTEOIDES' (GREEN GIANT ARBORVITAE) AND SHALL BE A MINIMUM 6' HEIGHT AT PLANTING.
- REFER TO SHEET C6 FOR BUILDING AND FOUNDATION DETAILS AND SPECS.
- REFER TO SHEETS C7 THROUGH C11 FOR LIFT STATION DETAILS AND SPECS.

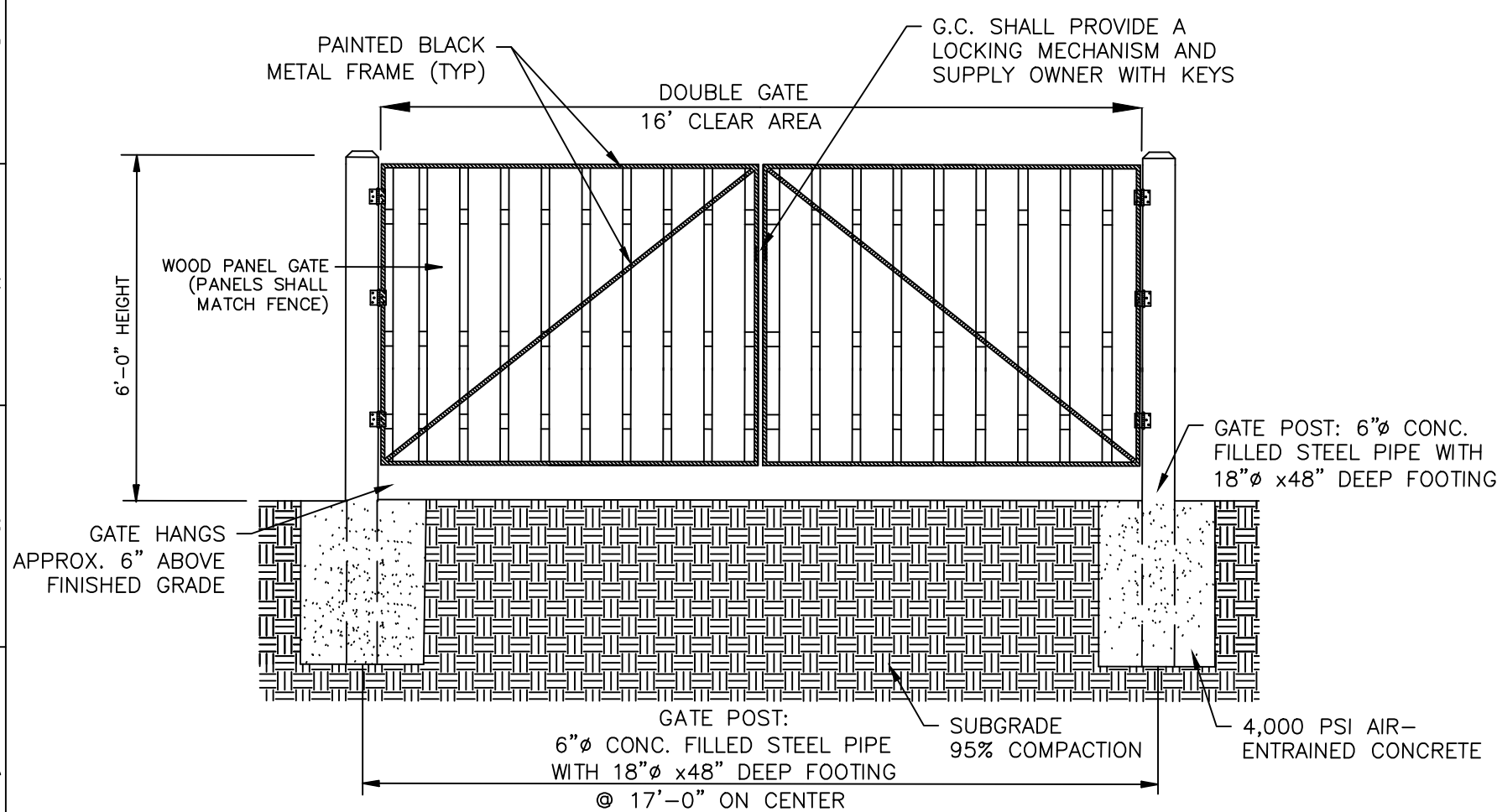


GRAVEL PAVEMENT SECTION

- 6" STONE BASE MUST BE PLACED IN TWO LIFTS OF NO MORE THAN 4" EACH.
- G.C. TO ENSURE A MINIMUM OF 95% COMPACTION OF THE SUBGRADE PRIOR TO STONE/ASPHALT PLACEMENT.

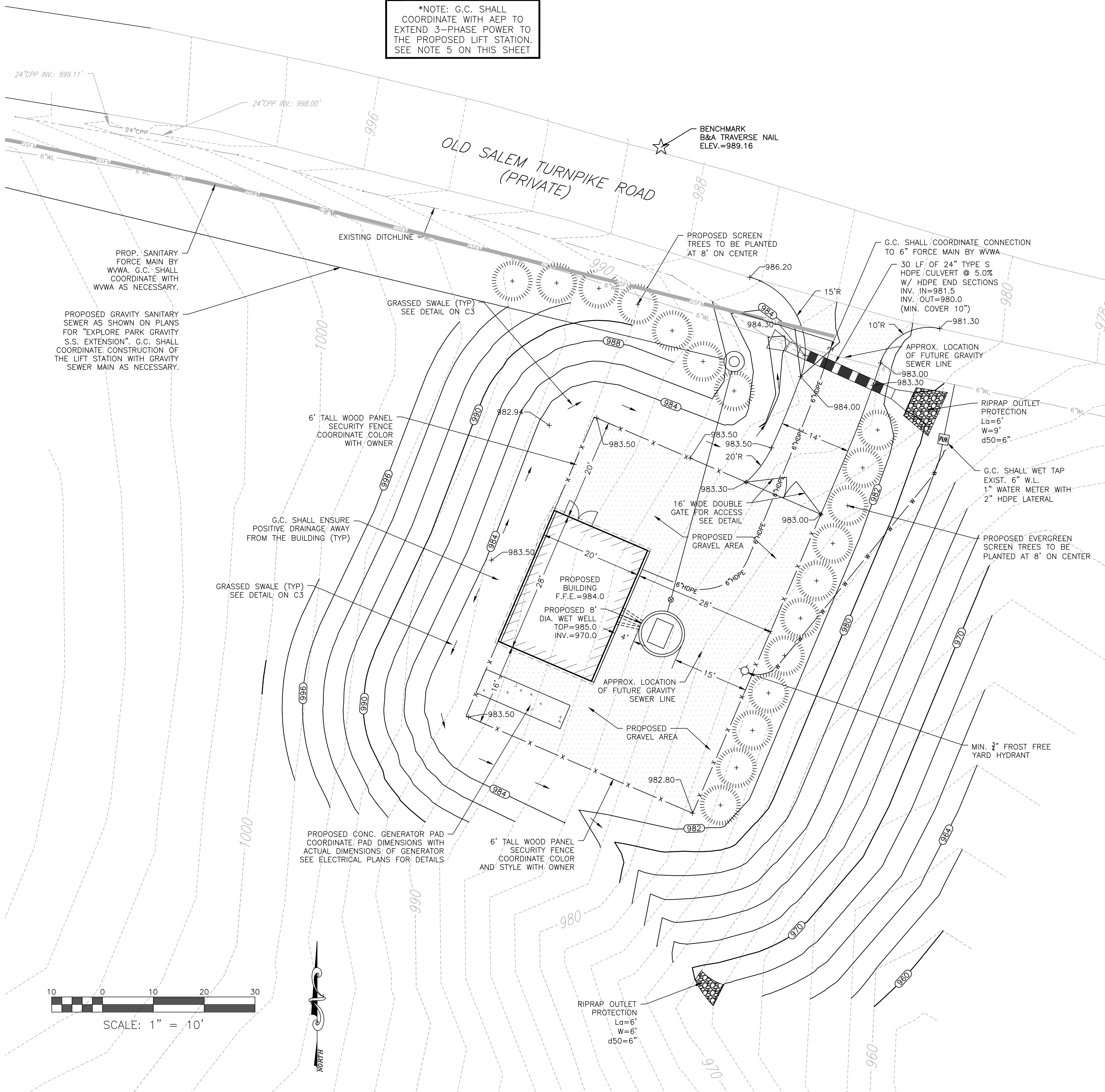


EVERGREEN TREE PLANTING DETAIL



WOODEN GATE DETAIL

\*NOTE: G.C. SHALL COORDINATE WITH AEP TO EXTEND 3-PHASE POWER TO THE PROPOSED LIFT STATION. SEE NOTE 5 ON THIS SHEET

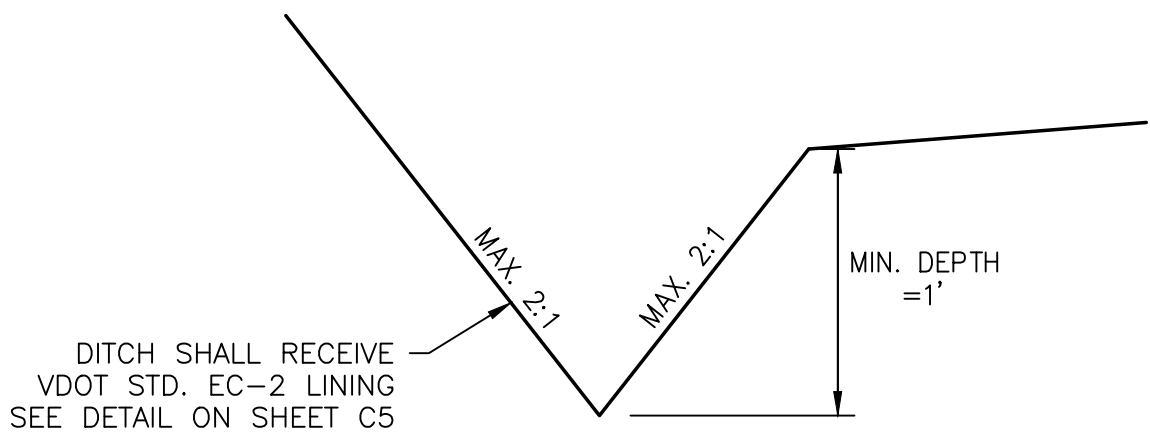




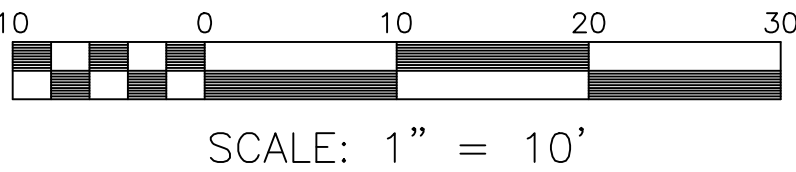
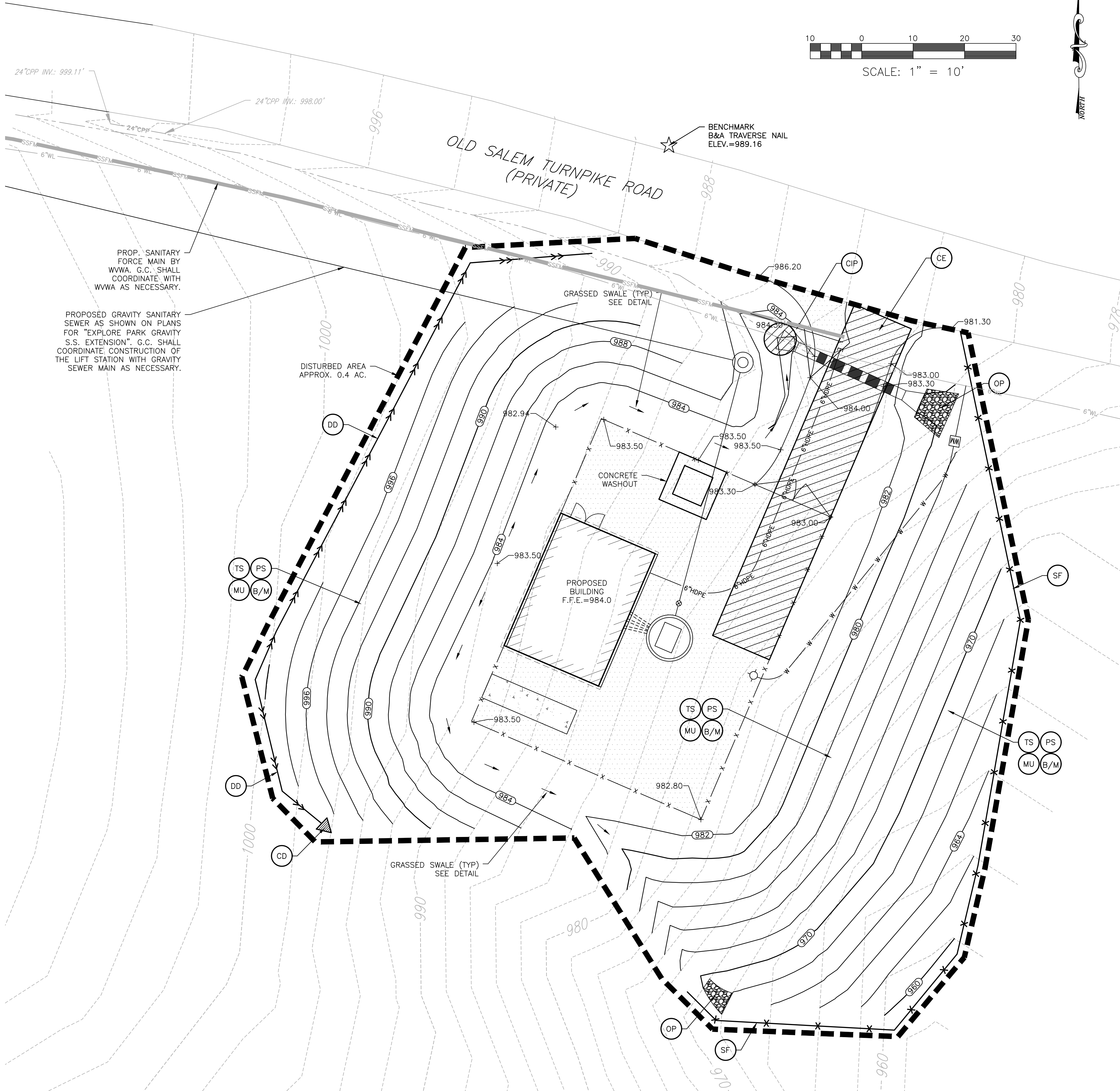
- CONSTRUCTION SEQUENCING NOTES:
1. THE ENTRANCE CULVERT AND CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS THE FIRST STEPS. G.C. SHALL PAY SPECIAL ATTENTION TO ENSURE THERE IS NO MUD "TRACKING" FROM THE CONSTRUCTION AREA ONTO THE ROADWAY. THE ENTRANCE CULVERT SHALL RECEIVE CULVERT INLET PROTECTION AND OUTLET PROTECTION AS INDICATED ON THE PLAN.
  2. PERIMETER DIVERSION DIKES SHALL BE INSTALLED WITH CHECK DAM TO CONVEY UPSTREAM RUNOFF AROUND THE CONSTRUCTION AREA.
  3. SILT FENCE SHALL BE INSTALLED WHERE APPLICABLE AROUND THE PERIMETER OF THE SITE AND MAINTAINED THROUGHOUT THE PROJECT.
  4. EXISTING TREES MAY BE REMOVED AT THIS TIME AND TOPSOIL STOCKPILED ON-SITE.
  5. MAJOR GRADING OPERATIONS AND SITE CONSTRUCTION SHALL TAKE PLACE AT THIS TIME. THE SWALES SHALL BE ESTABLISHED TO PROVIDE POSITIVE DRAINAGE AROUND THE PROPOSED BUILDING AND GRAVEL ACCESS AREA. OUTLET PROTECTION SHALL BE INSTALLED WHERE APPLICABLE.
  6. THE CONCRETE WASHOUT SHALL BE INSTALLED AND MADE FUNCTIONAL PRIOR TO ANY CONCRETE IMPROVEMENTS ON-SITE. IT SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.
  7. ALL SLOPES THAT ARE 3:1 OR GREATER SHALL RECEIVE BLANKET MATTING AND PERMANENT STABILIZATION AS SOON AS POSSIBLE AFTER REACHING FINAL GRADE.
  8. CONSTRUCTION OF THE LIFT STATION AND OTHER SITE IMPROVEMENTS SHALL TAKE PLACE AT THIS TIME.
  9. AFTER LIFT STATION CONSTRUCTION IS COMPLETE, THE GRAVEL PAVEMENT SHALL BE INSTALLED AND THE CONSTRUCTION ENTRANCE REMOVED.
  10. FENCING AND LANDSCAPING SHALL BE INSTALLED ANY REMAINING AREAS OF THE SITE SHALL RECEIVE PERMANENT STABILIZATION.
  11. AFTER PERMANENT STABILIZATION OF THE SITE, THE DIVERSION DIKES, CHECK DAM, AND SILT FENCE MAY BE REMOVED.
- \*NOTE: ROANOKE COUNTY INSPECTION AND APPROVAL IS REQUIRED PRIOR TO THE REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES.
12. G.C. SHALL ENSURE THAT THE LIMITS OF DISTURBANCE ARE STRICTLY ADHERED TO DURING THE PROJECT.
  13. NO DEVIATIONS TO THE PLANS SHALL TAKE PLACE UNLESS PRIOR APPROVAL FROM THE OWNER, PROJECT ENGINEER, AND THE APPROPRIATE REVIEW AGENCIES.

ESC LEGEND:

3.02	TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	3.20	ROCK CHECK DAM	CD
3.05	SILT FENCE	SF	3.31	TEMPORARY SEEDING	TS
3.08	CULVERT INLET PROTECTION	CIP	3.32	PERMANENT SEEDING	PS
3.09	TEMPORARY DIVERSION DIKE	DD	3.35	MULCHING	MU
3.18	OUTLET PROTECTION	OP	3.36	SOIL STABILIZATION BLANKETS & MATTING	B/M



GRASSED SWALE DETAIL  
N.T.S.









Erosion & Sediment Control Technical Bulletin No. 4  
Nutrient Management for Development Sites

C. When applying maintenance fertilizer on established sod,

Pounds of nitrogen per 1,000 sq. ft. if the fertilizer is less than 50 percent WIN					
Month	Type of Grass				
	Tall Fescue Perennial Rye	Kentucky Bluegrass	Bermudagrass	Zoysiagrass	
September	1	1	0	0	
October	1	1	0	0	
Early November	0	0	0	0	
April	0	0	0	0	
May	0-0.5	0-0.05	1	1	
June	0	0	1	0	
July/August	0	0	0	1	
Yearly Lbs. N/1000 sf	2.5	2.5	2	2	

Pounds of nitrogen per 1,000 sq. ft. if the fertilizer is more than 50 percent WIN					
Month	Type of Grass				
	Tall Fescue Perennial Rye	Kentucky Bluegrass	Bermudagrass	Zoysiagrass	
August 15	1.5	1.5	0	0	
October 1	1.5	1.5	0	1.5	
April	0	0	1.5	1.5	
May 15	0	0	0	0	
June	0	0	1.5	1.5	
Yearly Lbs. N/1000 sf	3	3	3	3	

FERTILIZER SPECIFICATIONS AND  
RATES FOR MANAGEMENT

TABLE 3.32-C (Revised June 2003) PERMANENT SEEDING SPECIFICATIONS FOR APPALACHIAN/MOUNTAIN AREA		
LAND USE	SEED <sup>1</sup> SPECIES	APPLICATION RATES
Minimum Care Lawn (Commercial or Residential)	Tall Fescue <sup>1</sup> Perennial Ryegrass <sup>2</sup> Kentucky Bluegrass <sup>3</sup>	50-100% 0-10% 0-10% TOTAL: 200-250 lbs.
High-Maintenance Lawn	Minimum of three (3) up to five (5) varieties of Kentucky Bluegrass from approved list for use in Virginia <sup>4</sup>	TOTAL: 125 lbs.
General Slope (3:1 or less)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>3</sup>	125 lbs. 2 lbs. 20 lbs. TOTAL: 150 lbs.
Low-Maintenance Slope (Steeper than 3:1)	Tall Fescue <sup>1</sup> Red Top Grass or Creeping Red Fescue Seasonal Nurse Crop <sup>3</sup> Crownvetch <sup>4</sup>	100 lbs. 2 lbs. 20 lbs. 20 lbs. TOTAL: 150 lbs.
NOTE: 1 - When selecting varieties of turfgrass, use the Virginia Crop Improvement Association (Vicia) recommended turfgrass variety list. Quality seed will bear a label indicating that they are approved by Vicia. A current turfgrass variety list is available at the local County Extension office or through Vicia at 804-746-4884 or at <a href="http://audan.ces.vt.edu/html/turfpublications/publications2.htm">http://audan.ces.vt.edu/html/turfpublications/publications2.htm</a> 2 - Perennial Ryegrass will germinate faster and at lower soil temperatures than Tall Fescues, thereby providing cover and erosion resistance for seedbed. 3 - Use seasonal nurse crop in accordance with seeding dates as stated below: March, April - May 15 <sup>th</sup> ..... Annual Rye May 16 <sup>th</sup> - August 15 <sup>th</sup> ..... Foxtail Millet August 16 <sup>th</sup> - September, October ..... Annual Rye November - February ..... Winter Rye 4 - All legume seed must be properly inoculated. If Flatpea is used, increase to 30 lbs/acre. If Weeping Lovegrass is used, include in any slope or low maintenance mixture during warmer seeding periods, increase to 50-70 lbs/acre.		
FERTILIZER & LIME • Apply 10-20-10 fertilizer at a rate of 500 lbs. / acre (or 12 lbs. / 1,000 sq. ft.) • Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)		
NOTE: 1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site. 2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means. 3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at <a href="http://www.dor.state.va.us/sw/e&amp;s.htm#pubs">http://www.dor.state.va.us/sw/e&amp;s.htm#pubs</a>		

PS PERMANENT SEEDING  
SPECIFICATIONS

TEMPORARY DIVERSION DIKE

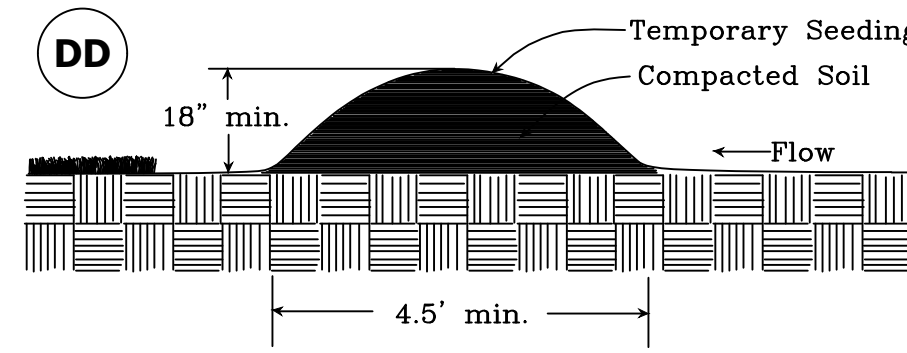


TABLE 3.31-B  
(Revised June 2003)  
TEMPORARY SEEDING SPECIFICATIONS  
QUICK REFERENCE FOR ALL REGIONS

SEED		
APPLICATION DATES	SPECIES	APPLICATION RATES
Sept. 1 - Feb. 15	50/50 Mix of Annual Ryegrass (lolium multi-florum) & Cereal (Winter) Rye (Secale cereale)	50 -100 (lbs/acre)
Feb. 16 - Apr. 30	Annual Ryegrass (lolium multi-florum)	60 - 100 (lbs/acre)
May 1 - Aug. 31	German Millet	50 (lbs/acre)

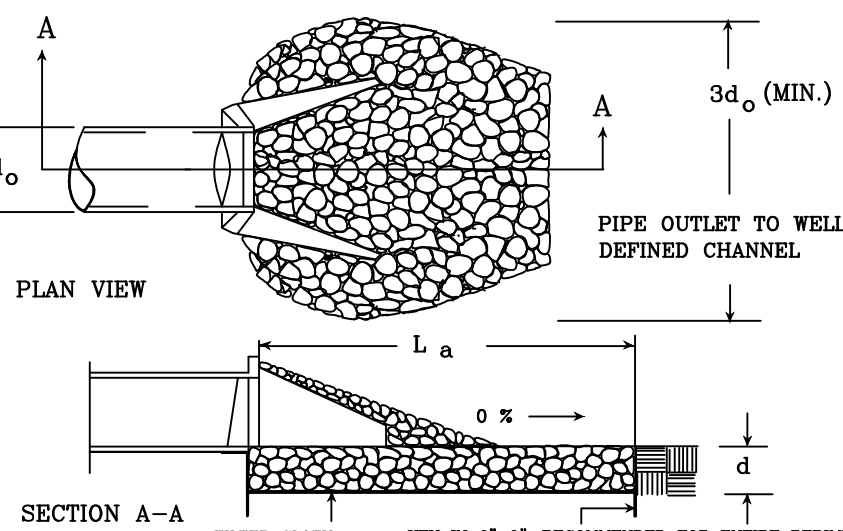
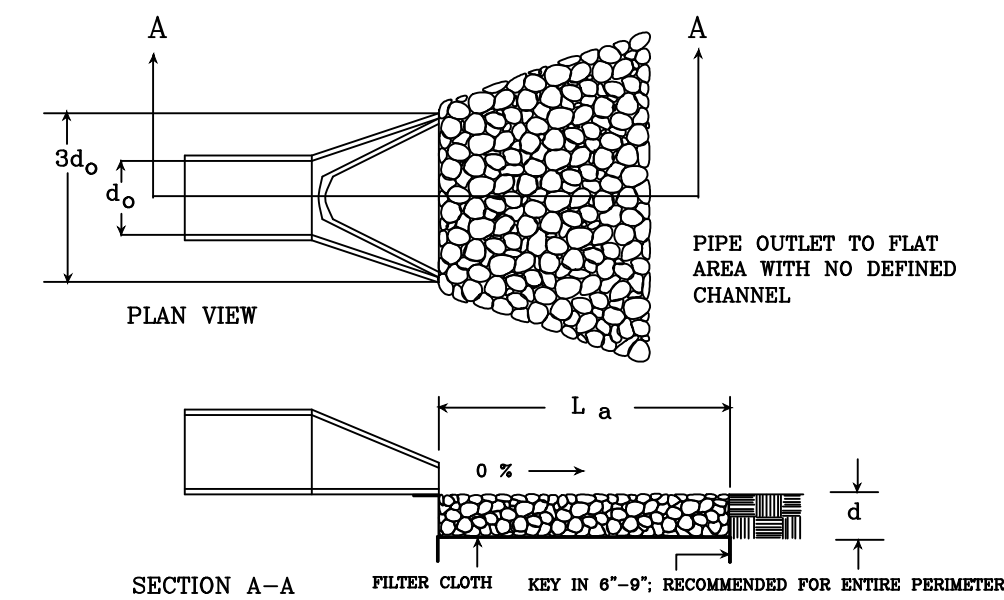
FERTILIZER & LIME

- Apply 10-10-10 fertilizer at a rate of 450 lbs. / acre (or 10 lbs. / 1,000 sq. ft.)
- Apply Pulverized Agricultural Limestone at a rate of 2 tons/acre (or 90 lbs. / 1,000 sq. ft.)

NOTE:  
1 - A soil test is necessary to determine the actual amount of lime required to adjust the soil pH of site.  
2 - Incorporate the lime and fertilizer into the top 4 - 6 inches of the soil by disking or by other means.  
3 - When applying Slowly Available Nitrogen, use rates available in Erosion & Sediment Control Technical Bulletin # 4, 2003 Nutrient Management for Development Sites at <http://www.dor.state.va.us/sw/e&s.htm#pubs>

TS TEMPORARY SEEDING  
SPECIFICATIONS

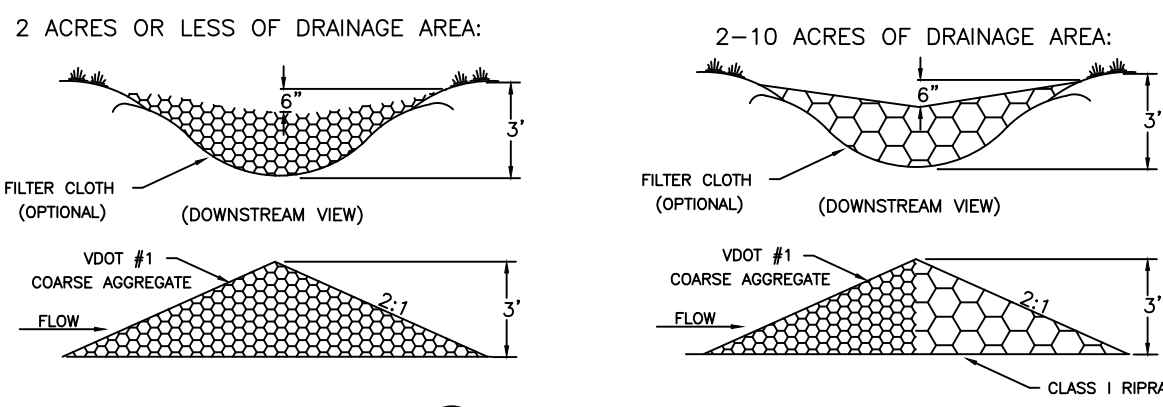
PIPE OUTLET CONDITIONS



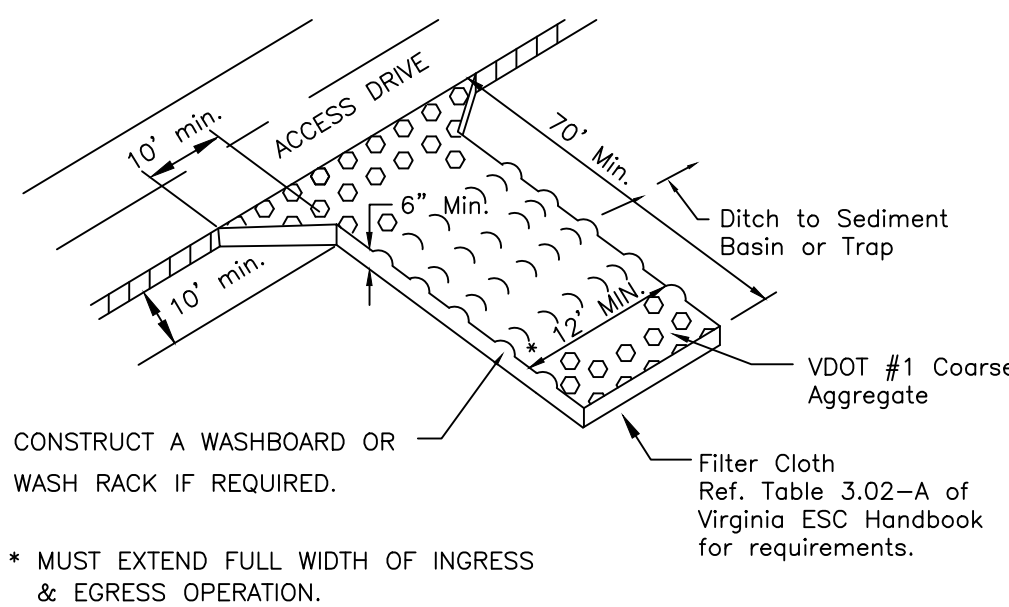
NOTES: 1. APRON LINING MAY BE RIPRAP, GROUTED RIPRAP, GABION BASKET, OR CONCRETE.  
2. La IS THE LENGTH OF THE RIPRAP APRON AS CALCULATED USING PLATES 3.18-3 AND 3.18-4.  
3. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER, BUT NOT LESS THAN 6 INCHES.

Source: Va. DSWC

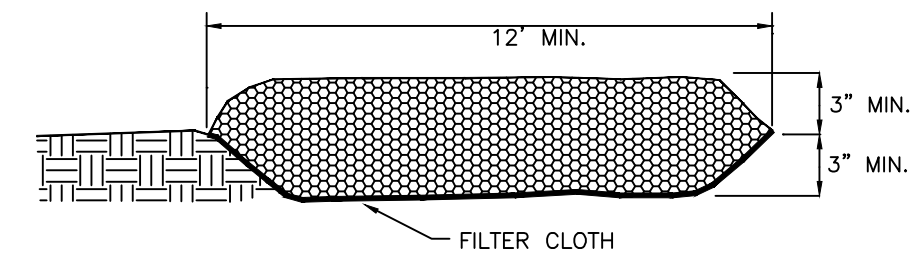
OP OUTLET PROTECTION



CD ROCK CHECK DAM

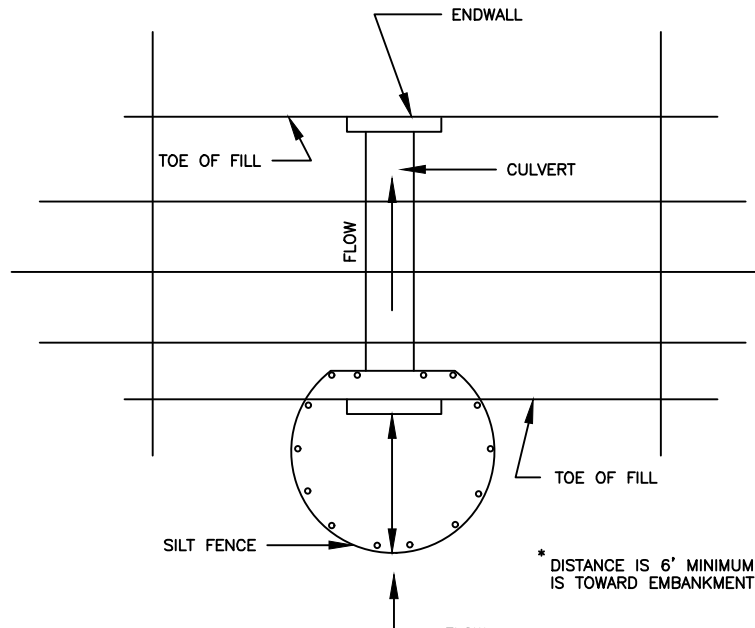


CONSTRUCT A WASHBOARD OR WASH RACK IF REQUIRED.  
\* MUST EXTEND FULL WIDTH OF INGRESS & EGRESS OPERATION.

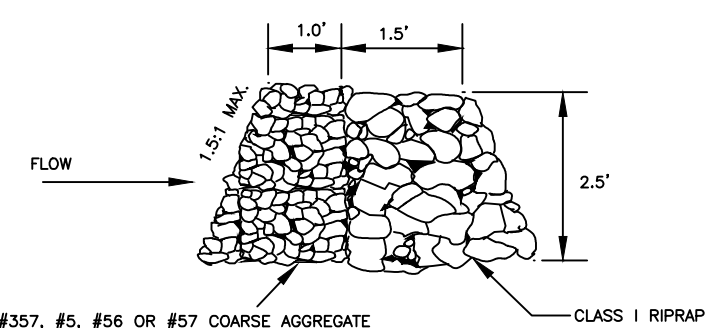


CE TEMPORARY GRAVEL  
CONSTRUCTION ENTRANCE

SILT FENCE CULVERT INLET  
PROTECTION



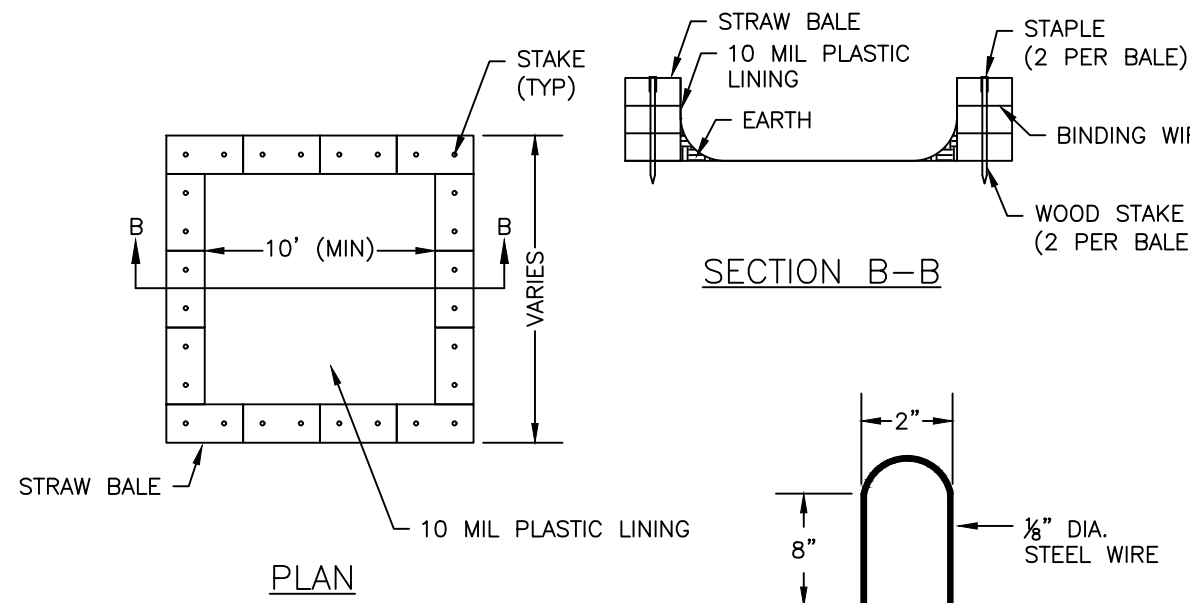
\*OPTIONAL STONE COMBINATION



SOURCE: ADAPTED FROM VDOT STANDARD SHEETS AND VA. DSWC

PLATE 3.08-1

CIP CULVERT INLET  
PROTECTION



CONCRETE TRUCK WASHOUT DETAIL  
NTS

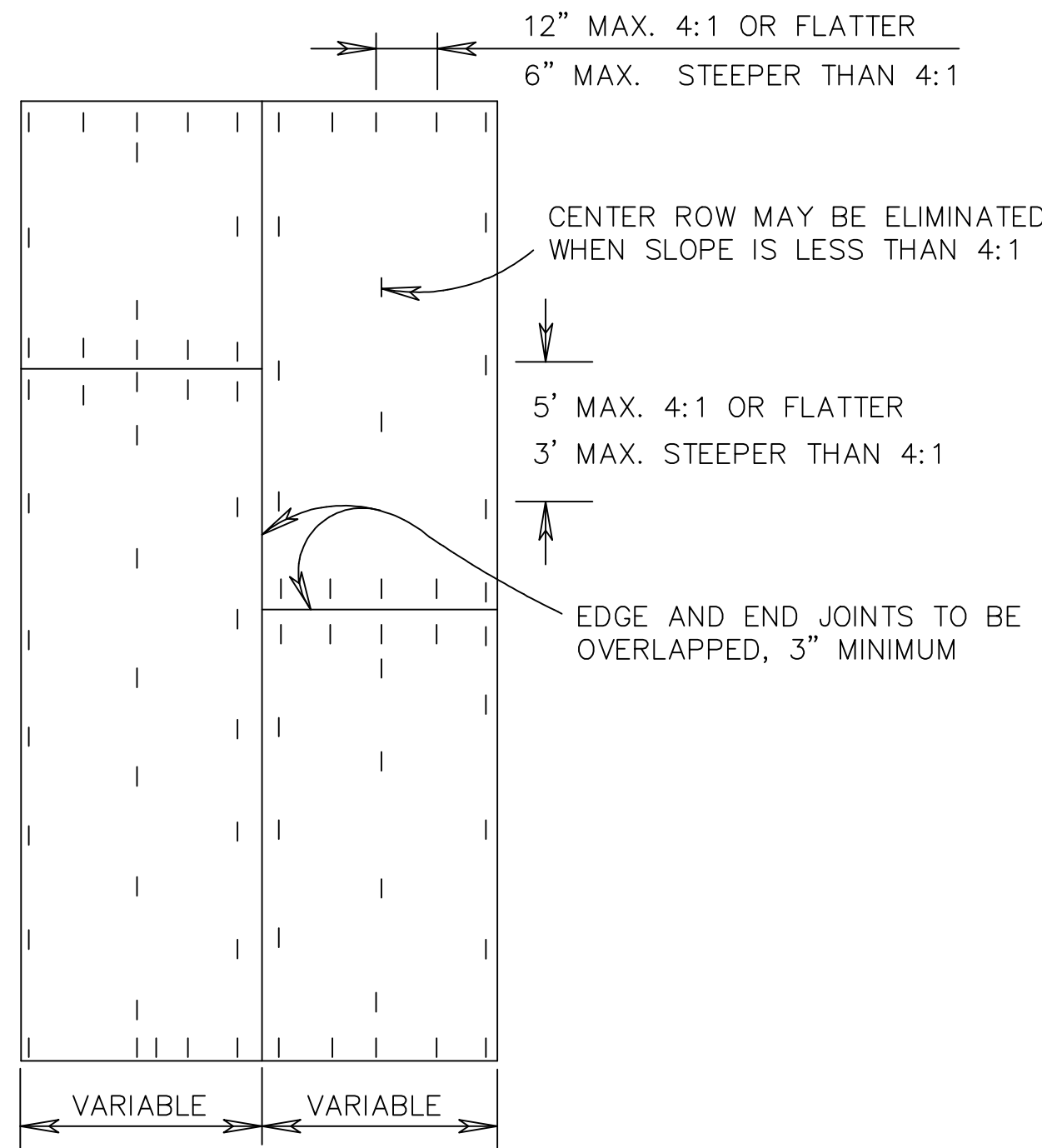
GENERAL NOTES:

1. ACTUAL SIZE TO BE DETERMINED IN FIELD. A MINIMUM OF 10' WIDE BY 10' LONG AND SIZED TO CONTAIN ALL LIQUID AND SOLID WASTE. A MINIMUM OF 12" FREEBOARD SHALL BE INCLUDED.
2. THE CONCRETE WASHOUT SHALL NOT BE PLACED WITHIN 50' OF STORM DRAINS.
3. EXCESS AND SLUMP TEST SOLIDS SHALL BE PLACED ON PLASTIC LINER UNTIL HARDENED. CONTRACTOR MAY CONSIDER INSTALLING WIRE OR REBAR HOOD FOR LATER PICKUP REMOVAL.
4. INSPECTORS SHALL USE THE WASHOUT FACILITY OR PLASTIC FOR CLEANING OF THEIR TOOLS.

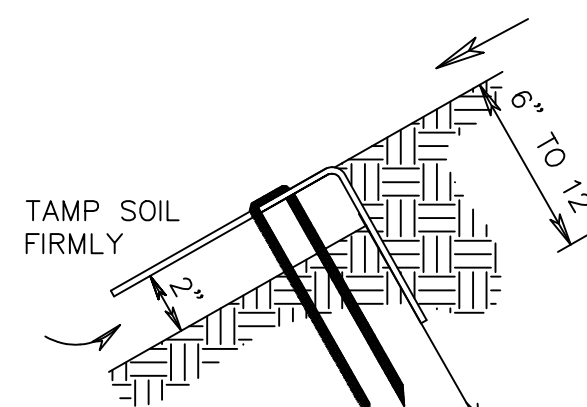
MAINTENANCE NOTES:

1. CHECK ALL CONCRETE WASHOUT FACILITIES DAILY TO DETERMINE IF THEY HAVE BEEN FILLED TO 75% CAPACITY. THE FACILITY SHALL BE CLEANED OUT OR CHANGED WHEN 75% FULL.
2. INSPECT LINERS DAILY TO ENSURE THAT LINERS ARE INTACT AND SIDEWALLS HAVE NOT BEEN DAMAGED BY CONSTRUCTION ACTIVITIES. LINERS SHALL BE REPLACED IF THERE ARE HOLES OR TEARS OBSERVED.
3. CONCRETE WASTE SHALL BE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN. THE HARDENED CONCRETE SHALL BE BROKEN UP AND DISPOSED OF OFFSITE PER APPLICABLE VA. DEO RULES AND REGULATIONS. LIQUIDS SHALL NOT BE DISCHARGED DIRECTLY INTO WATERWAYS, STORM DRAINS, SWALES, OR DIRECTLY ONTO THE GROUND.
4. REMOVE LIQUIDS OR COVER STRUCTURE BEFORE PREDICTED STORMS TO PREVENT OVERFLOWS.
5. INSTALL A NEW PLASTIC LINER AFTER EVERY CLEANING.

B/M SOIL STABILIZATION  
BLANKET

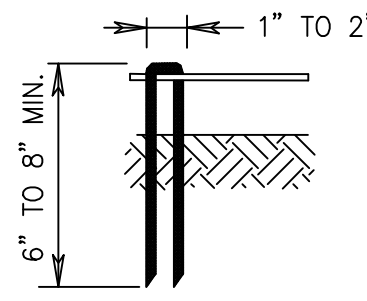


PLAN VIEW



ANCHOR SLOT

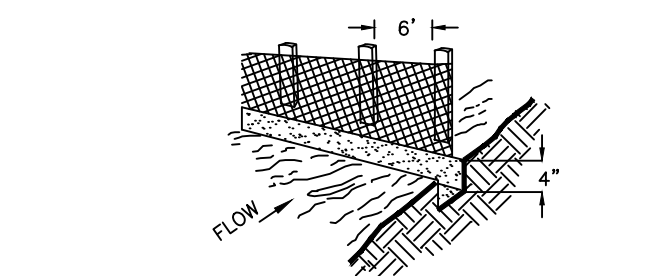
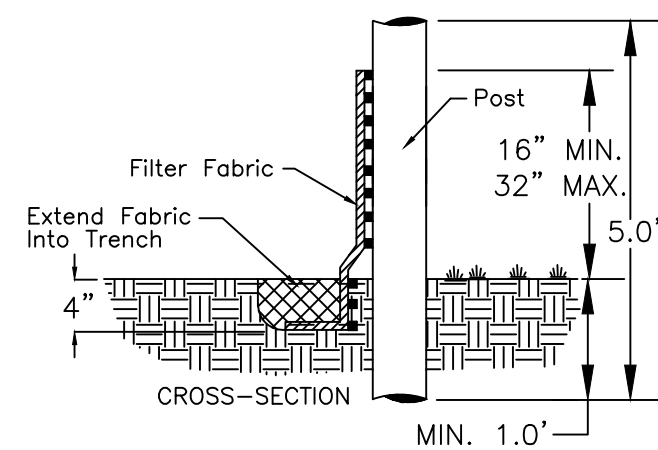
JUNCTION SLOT



STAPLES FORMED FROM NO. 11 STEEL WIRE  
8" STAPLE MIN. LENGTH FOR SANDY SOIL  
6" STAPLE MIN. LENGTH FOR OTHER SOIL

STAPLE DETAIL

TERMINAL FOLD



SF CONSTRUCTION OF A SILT FENCE  
EROSION AND SEDIMENT CONTROL STANDARD - 3.05



BUILDING NOTES AND SPECIFICATIONS

GENERAL NOTES

- A. THE GENERAL CONTRACTOR SHALL FURNISH AND INSTALL A PRECAST, EASI-SET CONCRETE BUILDING, OR APPROVED EQUAL. SEE BUILDING SPECIFICATIONS LISTED ON THIS SHEET.
- B. INTERIOR DIMENSIONS OF THE BUILDING SHALL BE 28'-0"L x 20'-0"W x 12'-0"H.
- C. BUILDING SHALL BE PLACED ON POURED-IN-PLACE FOUNDATION AND FLOOR SLAB. SEE DETAILS ON THIS SHEET.
- D. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING PERMITS PRIOR TO CONSTRUCTION.
- E. GENERAL CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM THE PROPOSED BUILDING.

QUALITY ASSURANCE

- A. ACI-318-02, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", CONCRETE REINFORCING INSTITUTE, "MANUAL OF STANDARD PRACTICE".
- B. ANSI/ASCE-7-02 "BUILDING CODE REQUIREMENT FOR MINIMUM DESIGN LOADS IN BUILDINGS AND OTHER STRUCTURES".
- C. 2012 VIRGINIA CONSTRUCTION CODE (VCC)
- D. CONCRETE REINFORCING INSTITUTE, "MANUAL OF STANDARD PRACTICE".
- E. FABRICATOR MUST BE CERTIFIED PRODUCER/MEMBER OF THE PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI), NATIONAL PRECAST CONCRETE ASSOCIATION (NPCA) OR EQUAL.

DESIGN REQUIREMENTS

- A. DESIGN LOADS:
- SEISMIC LOAD PERFORMANCE CATEGORY 'C', EXPOSURE GROUP III
  - STANDARD LIVE ROOF LOAD - 20 PSF
  - STANDARD ROOF GROUND SNOW LOAD - 30 PSF
  - STANDARD FLOOR LOAD - 250 PSF (IF PRECAST FLOOR PROVIDED BY BUILDING MANUFACTURER)
  - STANDARD WIND LOADING - 115MPH
- B. ROOF: ROOF PANEL SHALL HAVE A MINIMUM OF 8" SLOPE FROM PEAK TO EDGE. THE ROOF SHALL EXTEND 4" BEYOND THE WALL PANEL AND HAVE A TURNDOWN DESIGN WHICH EXTENDS 1/2" BELOW THE TOP EDGE OF THE WALL PANELS TO PREVENT WATER MIGRATION INTO THE BUILDING ALONG TOP OF WALL PANELS. ROOF SHALL ALSO HAVE AN INTEGRAL ARCHITECTURAL RIBBED EDGE.
- C. KEYWAY ROOF JOINTS: GROUT IN KEYWAYS SHALL BE POLYMER CONCRETE PLACED AFTER COATING KEYWAYS WITH METHYL METHACRYLATE RESIN AND ISOCYANATE RESIN. TOP OF KEYWAY MUST BE COATED WITH PRIMER FOLLOWED BY A FIBERGLASS RESIN FABRIC FOLLOWED BY A SECOND COAT OF POLYMERIC JOINT SEALANT.
- D. CONTRACTOR SUPPLIED POURED-IN-PLACE SLAB MUST HAVE A 1/4" STEP-DOWN AROUND THE ENTIRE PERIMETER TO PREVENT WATER MIGRATION INTO THE BUILDING ALONG THE BOTTOM WALL PANELS.

SUBMITTALS

- A. ENGINEERING CALCULATIONS THAT ARE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER, LICENSED TO PRACTICE IN VIRGINIA, SHALL BE SUBMITTED FOR APPROVAL.

MATERIALS

- A. CONCRETE: STEEL-REINFORCED, 5000 PSI MINIMUM 28-DAY COMPRESSIVE STRENGTH, AIR-ENTRAINED (ASTM C260).
- B. REINFORCING STEEL: ASTM A615, GRADE 60 UNLESS OTHERWISE SPECIFIED.
- C. POST-TENSIONING STRAND: ROOF SHALL BE POST-TENSIONED IN FIELD AFTER GROUT KEYWAY IS FILLED AND HAS CURED TO REQUIRED PSI STRENGTH. POST-TENSIONING CABLE SHALL BE 41K POLYSTRAND CP50, .50", 270 KSI, 7-WIRE STRAND, ENCLOSED WITHIN A GREASED PLASTIC SHEATH (ASTMA416), OR APPROVED EQUAL. THERE WILL BE A MINIMUM OF THREE POST-TENSIONING CABLES CONNECTING ROOFS AND FLOORS TOGETHER TO PROVIDE A WATERTIGHT JOINT.
- D. CAULKING: ALL JOINTS BETWEEN PANELS SHALL BE CAULKED ON THE EXTERIOR AND INTERIOR SURFACE OF JOINTS. CAULKING SHALL BE ELASTIC SEALANT OR EQUAL. EXTERIOR CAULK JOINT TO BE 3/8" X 3/8" SQUARE SO THAT SIDES OF JOINT ARE PARALLEL FOR CORRECT CAULK TO PARALLEL SIDES OF JOINT AND NOT THE BACK.
- E. PANEL CONNECTIONS: ALL PANELS SHALL BE SECURELY FASTENED TOGETHER WITH A 3/8" THICK STEEL BRACKETS. STEEL IS TO BE STRUCTURAL QUALITY, HOT-ROLLED CARBON COMPLYING WITH ASTM A283, GRADE C AND HOT DIPPED GALVANIZED AFTER FABRICATION. ALL FASTENERS TO BE 1/2" DIAMETER BOLTS COMPLYING WITH ASTM A307 FOR LOW-CARBON STEEL BOLTS. CAST-IN ANCHORS USED FOR PANEL CONNECTIONS TO BE DAYTONOSUPERIOR #F-63 OR EQUAL. ALL INSERTS FOR CORNER CONNECTIONS MUST BE BOLTED DIRECTLY TO FORM BEFORE CASTING PANELS. NO FLOATING-IN OF CONNECTION INSERTS SHALL BE ALLOWED. WALL PANELS SHALL BE CONNECTED TO FLOOR SLAB WITH 4" EXPANSION ANCHORS BY MANUFACTURER.

ACCESSORIES

- A. DOORS AND FRAMES: SHALL COMPLY WITH STEEL DOOR INSTITUTE "RECOMMENDED SPECIFICATIONS FOR STANDARD STEEL DOORS AND FRAMES" (SDI-100) AND AS HEREIN SPECIFIED. THE BUILDING SHALL BE EQUIPPED WITH DOUBLE 3'-0" X 8'-0" X 1-3/4", 18-GAUGE GALVANIZED/INSULATED DOMINION IMPERIAL RIGHT HAND REVERSE METAL DOORS WITH 16-GAUGE GALVANIZED FRAMES. DOORS AND FRAMES SHALL BE BONDERIZED AND PAINTED ONE COAT OF RUST INHIBITIVE PRIMER AND ONE FINISH COAT OF ENAMEL PAINT, COLOR TO BE SELECTED BY OWNER.
- B. DOOR HARDWARE:
- HANDLE: LINDSTROM STAINLESS STEEL, 8-1/2" X 2" OR EQUAL.
  - HINGES: PB-31/NRP/26D 4 1/2" X 4 1/2" (CHROME-PLATED WITH NON-REMOVABLE HINGE PINS), 3 PER DOOR OR EQUAL.
  - LOCK SET: PDQ INDUSTRIES KRT116 - 32D (STAINLESS STEEL FINISH) OR EQUAL.
  - SURFACE BOLT, UPPER: CAL-ROYAL 045901426D (SATIN CHROME FINISH) OR EQUAL.
  - SURFACE BOLT, LOWER: CAL-ROYAL 045901426D (SATIN CHROME FINISH) OR EQUAL.
  - ASTRAGAL: A4441/68R OR EQUAL.
  - THRESHOLD: NATIONAL GUARD 897V60 RAISED INTERIOR, EXTRUDED ALUMINUM THRESHOLD WITH NEOPRENE SEAL OR EQUAL.
  - DOOR HOLDER: GLYNN-JOHNSON 904H US32D (STAINLESS STEEL FINISH), OVERHEAD SLIDE TYPE SURFACE MOUNTED DOOR HOLDER OR EQUAL.
  - DRIP CAP: NATIONAL GUARD 15D72 OR EQUAL.
  - DOOR STOP: IVES 445B26D (INACTIVE LEAF ONLY) OR EQUAL.

FINISHES

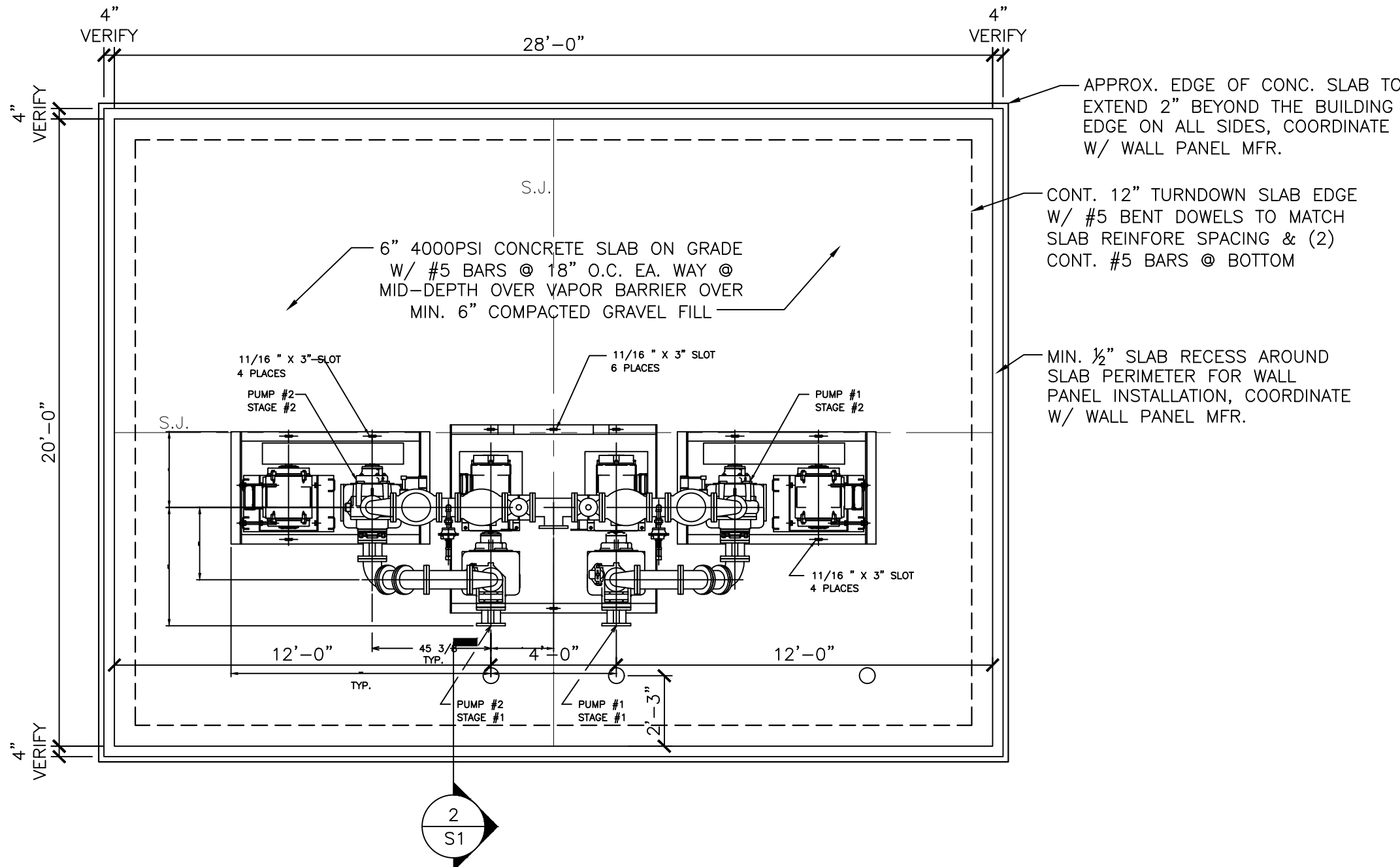
- A. INTERIOR OF BUILDING: SMOOTH STEEL FORM FINISH ON ALL INTERIOR PANEL SURFACES.
- B. EXTERIOR OF BUILDING: FORM LINER SIMULATED HORIZONTAL BARN BOARD EXTERIOR WALL FINISH, 6" BOARD PATTERN. ENTIRE WALL COLOR TO BE SELECTED BY OWNER.
- C. ROOF: FORM LINER PATTERN AND COLOR TO BE SELECTED BY OWNER.

SITE PREPARATION REQUIREMENTS

- A. SLAB ON GRADE TO BE MINIMUM 6" THICK AND 4,000 PSI STEEL REINFORCED CONCRETE. SLAB TO BE LEVEL WITHIN 1/8" IN BOTH DIRECTIONS AND CAPABLE OF SUPPORTING LOADS IMPOSED BY THE STRUCTURE, WITH A 1/2" STEP-DOWN ALONG THE PERIMETER EDGE. SEE DETAILS ON THIS SHEET.

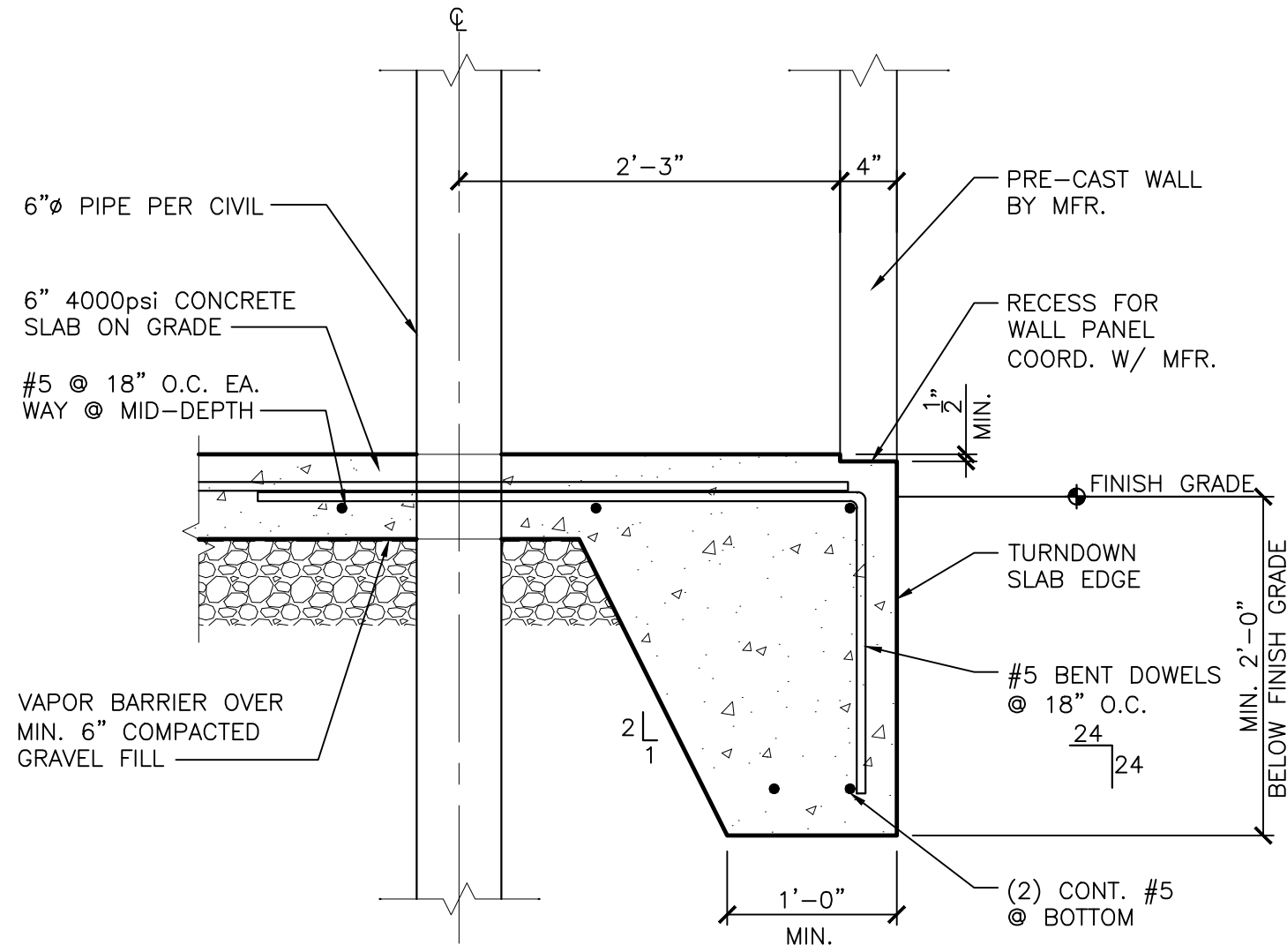
ACCESS

- A. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT PROPER ACCESS CAN BE PROVIDED AT THE SITE AS REQUIRED FOR PLACEMENT AND/OR CONSTRUCTION OF THE BUILDING. CONTRACTOR SHALL COORDINATE CONSTRUCTION TRAFFIC AND ACCESS WITH ROANOKE COUNTY.



FOUNDATION PAD PLAN

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



FOOTING SECTION

SCALE = 1"=1'-0"



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Roanoke  
New River Valley  
Richmond  
Staunton  
Harrisonburg

RESIDENTIAL LAND DEVELOPMENT ENGINEERING  
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ENVIRONMENTAL & SOIL SCIENCE  
WETLAND DELINEATIONS & STREAM EVALUATIONS

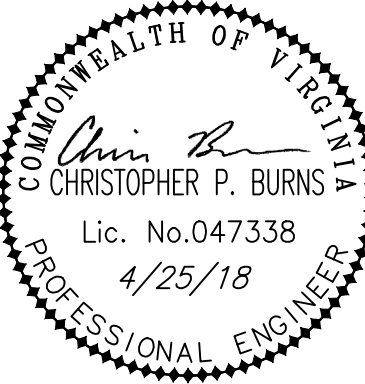
Balzer and Associates, Inc.

1208 Corporate Circle

Roanoke, VA 24018

540-772-9580

FAX 540-772-8050



EXPLORE PARK LIFT STATION

EXPLORE PARK

BUILDING & FOUNDATION DETAILS

VINTON DISTRICT  
ROANOKE COUNTY, VIRGINIA

DRAWN BY CPB

DESIGNED BY CPB

CHECKED BY SMH

DATE 4/14/2017

SCALE AS NOTED

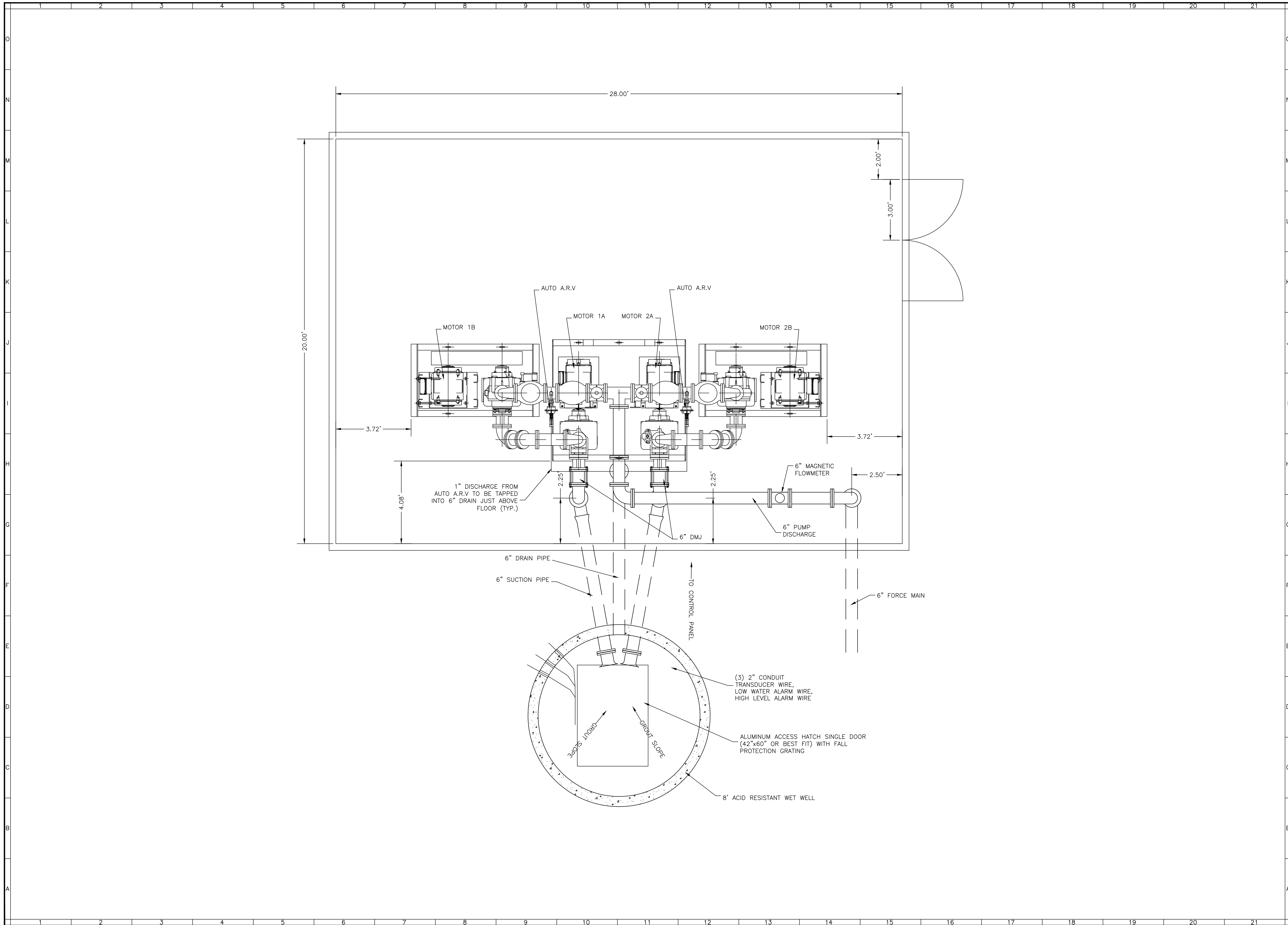
REVISIONS:  
5/5/2017  
5/12/2017  
8/9/2017  
4/25/2018

SHEET NO.

C6

JOB NO. 04170002.00



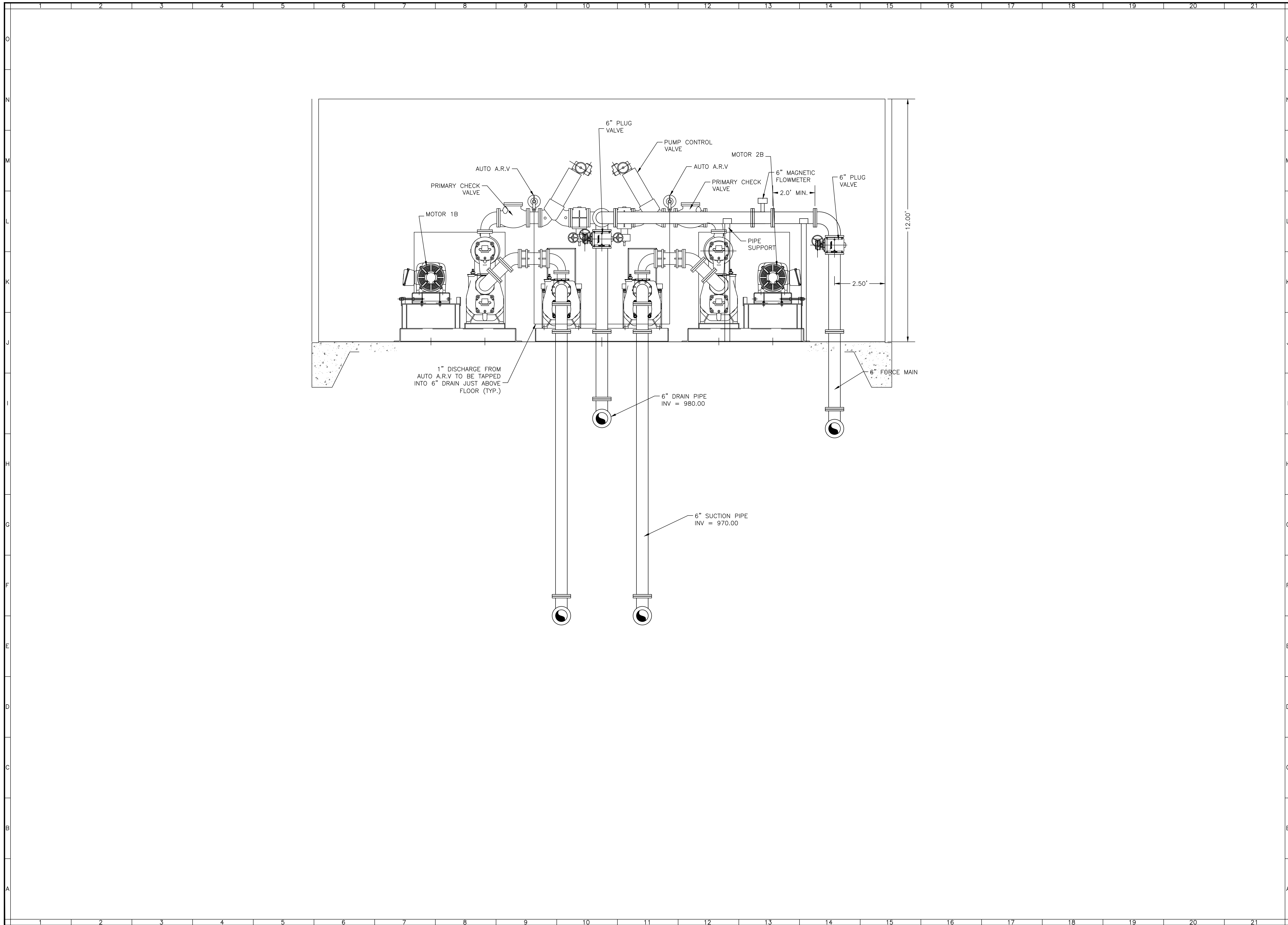


**EXPLORE PARK LIFT STATION**  
EXPLORE PARK  
**LIFT STATION PLAN VIEW**  
VINTON DISTRICT  
ROANOKE COUNTY, VIRGINIA

DRAWN BY CPB  
DESIGNED BY CPB  
CHECKED BY SMH  
DATE 4/14/2017  
SCALE 1"=2'

REVISIONS:  
5/5/2017  
5/12/2017  
8/9/2017  
4/25/2018





**EXPLORE PARK LIFT STATION**

EXPLORE PARK

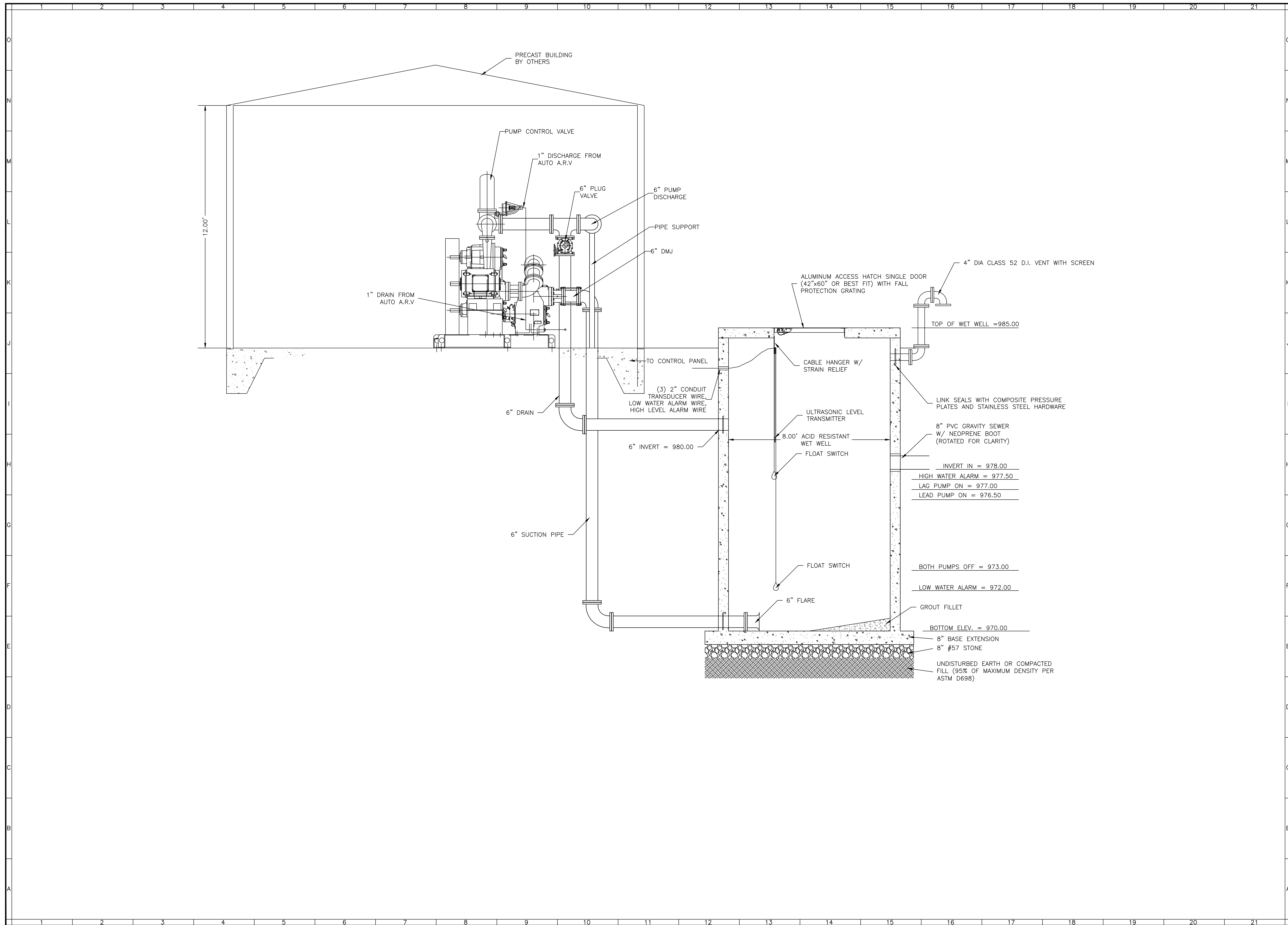
**LIFT STATION SIDE VIEW**

VINTON DISTRICT  
ROANOKE COUNTY, VIRGINIA

DRAWN BY CPB  
DESIGNED BY CPB  
CHECKED BY SMH  
DATE 4/14/2017  
SCALE AS NOTED

REVISIONS:  
5/5/2017  
5/12/2017  
8/9/2017  
4/25/2018











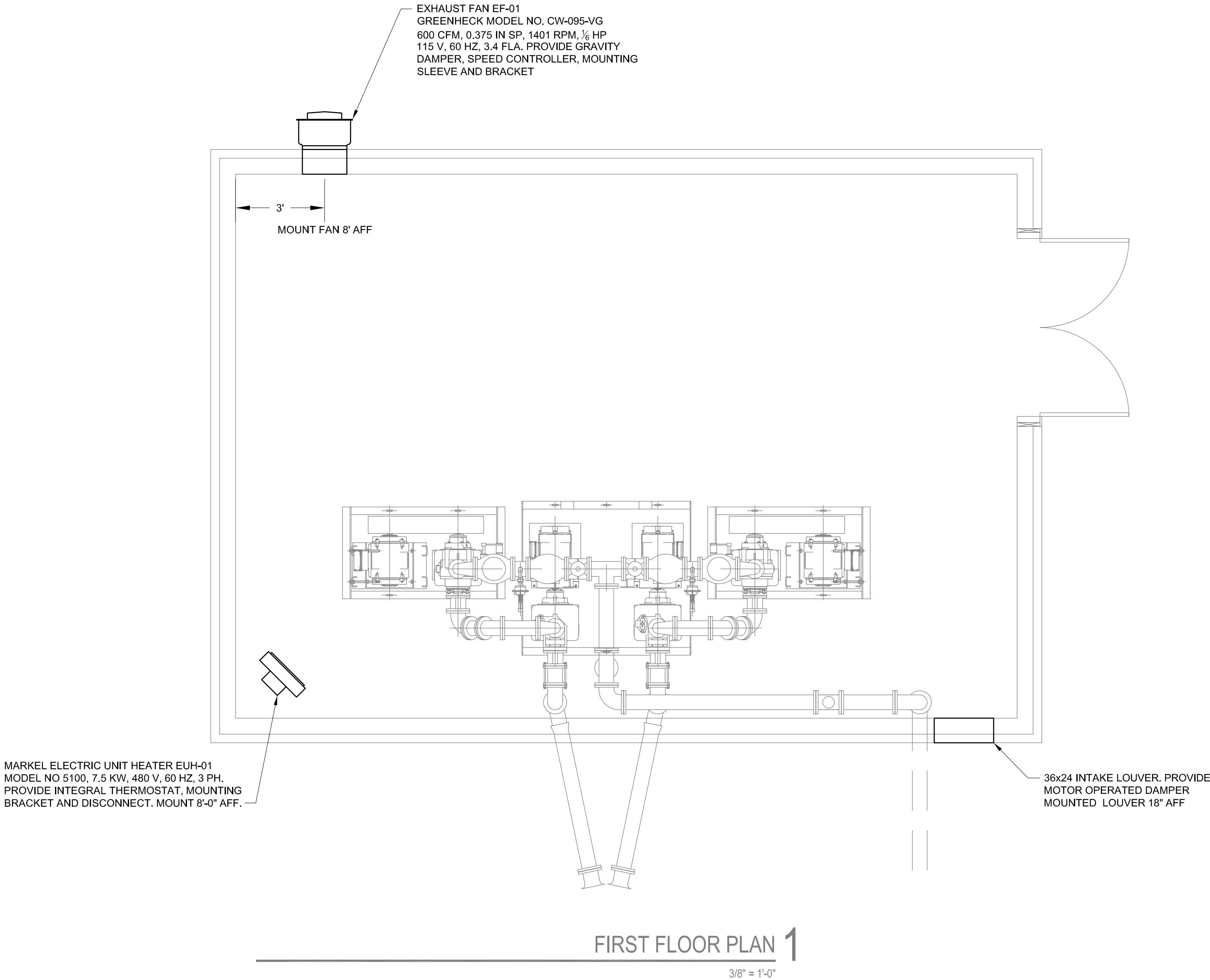


			
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RESIDENTIAL LAND DEVELOPMENT ENGINEERING SITE DEVELOPMENT ENGINEERING LAND USE PLANNING & ZONING LANDSCAPE ARCHITECTURE LAND SURVEYING ARCHITECTURE STRUCTURAL ENGINEERING TRANSPORTATION ENGINEERING ENVIRONMENTAL & SOIL SCIENCE WETLAND DELINEATIONS & STREAM EVALUATION			
<b>Balzer and Associates, Inc.</b>			
1208 Corporate Circle Roanoke, VA 24018 540-772-9580 FAX 540-772-8050			
			
<b>EXPLORE PARK LIFT STATION</b> EXPLORE PARK			
<b>LIFT STATION SPECIFICATIONS</b>			
VINTON DISTRICT ROANOKE COUNTY, VIRGINIA			
DRAWN BY	CPB		
DESIGNED BY	CPB		
CHECKED BY	SMH		
DATE	4/14/2017		
SCALE	N/A		
REVISIONS: 5/5/2017 5/12/2017 8/9/2017 4/25/2018			
SHEET NO.			
<b>C11</b>			
JOB NO. 04170002			



MECHANICAL GENERAL NOTES

- ALL PERSONS PROPOSING TO SUBMIT QUOTATIONS IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS ARE EXPECTED TO VISIT THE SITE OF THE WORK COVERED BY THE DOCUMENTS AND ARE TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AS THEY AFFECT THE PROJECT. CLAIMS RESULTING FROM A FAILURE TO VISIT THE SITE OR INSPECT THE EXISTING CONDITIONS WILL NOT BE CONSIDERED.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS BEFORE COMMENCING WORK AND SHALL NOTIFY THE ARCHITECT IF A CONDITION EXISTS WHICH PREVENTS THE CONTRACTOR FROM ACCOMPLISHING THE INTENT OF THE DOCUMENTS. FAILURE TO NOTIFY THE ARCHITECT IN A TIMELY MANNER SHALL MEAN THE CONTRACTOR HAS PROCEEDED AT HIS OWN EXPENSE. NO ADDITIONAL COST WILL BE CONSIDERED FOR ANY REWORK REQUIRED BECAUSE OF EXISTING CONDITIONS NOT BEING AS INDICATED.
- THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT FOR THE COMPLETION OF ALL MECHANICAL WORK SHOWN ON THE DRAWINGS AND/OR SPECIFIED. THIS WILL INCLUDE ANY INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE WORK COMPLETE IN ALL RESPECTS AND READY FOR OPERATION.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, PRODUCT DATA AND SAMPLES TO THE ARCHITECT/ENGINEER FOR APPROVAL. WRITTEN SUBMITTALS SHALL BE FORWARDED IN SIX (6) COPIES AND CLEARLY MARKED TO INDICATE SPECIFIC ITEM, PERFORMANCE OR CAPACITIES, SIZE, COLOR AND LOCATION OF USE. ALL SUBMITTALS SHALL BE CHECKED, DATED, PRESENTED AND LABELED IN A CLEAR AND THOROUGH MANNER. SUBMITTALS SHALL INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING: EXHAUST FANS, UNIT HEATERS, DUCT ACCESSORIES, AIR DEVICES. ALL ITEMS LISTED ON DRAWINGS AND/OR IN SPECIFICATIONS ARE NOT INTENDED TO PRECLUDE THE USE OF OTHER PRODUCTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MODIFICATIONS, REROUTING, RELOCATION AND VARIATIONS AT NO EXTRA COST TO THE OWNER WHEN AND IF SUBSTITUTED ITEMS ARE APPROVED FOR USE. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE STATE AND LOCAL CODES, THE NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE LOCAL AUTHORITIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF TRADES WITH STRUCTURAL, PLUMBING, MECHANICAL, ELECTRICAL AND SPRINKLER SYSTEMS AND PROVIDING NECESSARY OFFSETS, TRANSITIONS, PIPE REROUTING, MATERIALS AND LABOR TO ARRANGE EQUIPMENT, DUCTWORK AND PIPING AS REQUIRED FOR A PROPER AND ACCESSIBLE INSTALLATION. CLOSE COORDINATION WILL BE REQUIRED FOR ALL SERVICES ABOVE CEILING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOW VOLTAGE WIRING AND CONDUITS SERVING ANY AUTOMATIC TEMPERATURE CONTROLS RELATED ITEMS. THIS INCLUDES BUT IS NOT LIMITED TO THERMOSTATS, TIMECLOCKS, MOTOR OPERATED DAMPER ACTUATORS, SMOKE DETECTORS, STATIC PRESSURE CONTROLLERS, END SWITCHES, FAN INTERLOCKS, CONTACTORS AND ALL ACCESSORIES FOR A FULLY FUNCTIONING AUTOMATIC TEMPERATURE CONTROLS SYSTEM.
- ALL PENETRATIONS SHALL BE SLEEVED. PENETRATIONS IN RATED ENCLOSURES SHALL BE SEALED WITH APPROVED FIRE RESISTIVE MATERIALS. PENETRATIONS IN EXTERIOR ENCLOSURES SHALL BE SEALED WEATHERTIGHT. PENETRATIONS IN FINISHED AREAS SHALL HAVE ESCUTCHEON PLATES OR FINISHED FLANGES.



5243 HICKORY PARK DRIVE,  
SUITE C  
GLEN ALLEN, VA 23059  
P: 804.925.2600 F: 804.925.2170  
WWW.LSENGINEERS.NET

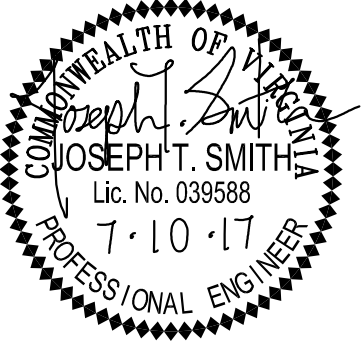


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Balzer and Associates, Inc  
15871 City View Drive  
Suite 200  
Midlothian, VA 23113  
804-794-0571  
FAX 804-794-2635



MECHANICAL PLAN

DRAWN BY LSE  
DESIGNED BY LSE  
CHECKED BY  
DATE 2017.07.10  
SCALE  
REVISIONS:

SHEET NO.

M1.1

JOB NO. 17055



LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	CATALOG NUMBER	VOLTS	VOLT-AMPS	FIXT EFF	LAMPS		DESCRIPTION	REMARKS
						QTY	TYPE		
A	METALUX	4VT2-LD4-4-DR-UNV-L840-CD-1 WL	120/277	38		N/A	LED	4-SURFACE MOUNTED, SEALED AND GASKETED FIXTURE SUITABLE FOR WET LOCATIONS	PROVIDE WITH STAINLESS STEEL MOUNTING BRACKETS CAT VT2-SS-MBK
B	SPAULDING LIGHTING	LCC-12LU-2-PC1	120/277	12.8		N/A	LED	WALL MOUNTED FULL CUT-OFF EXTERIOR LED FIXTURE WITH 820 NOMINAL LUMENS; FIXTURE IS CONTROLLED BY INTEGRAL PHOTO-EYE	

- 1 CONTRACTOR SHALL VERIFY THAT FIXTURES SPECIFIED ARE SUITABLE FOR CEILING TYPE AND REVISE IF NECESSARY PRIOR TO ORDERING
- 2 CONTRACTOR SHALL USE 4100K COLOR CHARACTERISTICS FOR LIGHTING OR CLOSEST AVAILABLE
- 3 ALL FIXTURES ARE BASIS FOR DESIGN UNLESS OTHERWISE NOTED; CONTRACTOR SHALL SUBMIT ALTERNATE FIXTURES TO ENGINEER SO EQUIVALENCY CAN BE VERIFIED

PANEL PSB SCHEDULE

PANELBOARD CHARACTERISTICS					PHASE TO PHASE VOLTS					277				
VOLTS 480/277V					MAIN LUGS 000A									
PHASES 3					MINIMUM SHORT CIRCUIT RATING 5K RMS SYM AMPS									
WIRES 4					SERIES RATED WITH UPSTREAM DEVICE									
SOLID NEUTRAL, GROUND BAR														
CKT NO	POLE NO	DESCRIPTION	LOAD TYPE	CONN KVA	CONN AMPS			BREAKER		NO. & WIRE SIZE			COND. SIZE	
					A	B	C	P	AT	PHASE	NEUT	GND		
3	1 3 5 7	PUMP 1, STAGE 1 VIA CONTROL PANEL	E	43.23	52.0	52.0	52.0	3	90	3 12		8 12	1"	
9	9 11 13 15 17 19	PUMP 1, STAGE 2 VIA CONTROL PANEL	E	79.81	9.0	9.0	9.0	3	125	3 12		12 12	1-1/2"	
15	15 17 19	PSL VIA 30 KVA XFMR		2.88	3.5	3.5	3.5	3	50	SEE RISER DIAGRAM				
21	21 23 25 27 29	UH-1	E	7.5		9.0	9.0	3	20	3 12	12 12	12 12	3/4"	
27	27 29	TVSS			0.0	0.0	0.0	3	10	3 12	12 12	12 12	3/4"	
31	31	SPACE			0.0		0.0							
33	33	SPACE				0.0								
35	35	SPACE					0.0							
37	37	SPACE				0.0								
39	39	SPACE					0.0							
41	41	SPACE					0.0							
4	2 4 6 8	PUMP 2, STAGE 1 VIA CONTROL PANEL	E	43.23	52.0	52.0	52.0	3	90	3 12		8 12	1"	
10	10 12	PUMP 2, STAGE 2 VIA CONTROL PANEL	E	79.81	9.0	9.0	9.0	3	125	3 12		12 12	1-1/2"	
14	14	SPACE			0.0		9.0							
16	16	SPACE				0.0								
18	18	SPACE					0.0							
20	20	SPACE			0.0									
22	22	SPACE				0.0								
24	24	SPACE					0.0							
26	26	SPACE			0.0									
28	28	SPACE				0.0								
30	30	SPACE					0.0							
32	32	SPACE			0.0									
34	34	SPACE				0.0								
36	36	SPACE					0.0							
38	38	SPACE				0.0								
40	40	SPACE					0.0							
42	42	SPACE					0.0							
TOTALS				25.4	308.5	308.5	308.5							

SIZING CALCULATIONS		
CONNECTED LOADS		
RECEPTACLE	0.90	DEMAND FACTOR FIRST 10 KVA 100%, REMAINDER 50%
LIGHTING	0.27	100%
MECHANICAL	0.5	100%
EQUIPMENT	254.8	100%
TOTAL KVA CONNECTED	25.5	TOTAL KVA DEMAND 25.4
FEEDER DEMAND AMPS	308.5	AMPS
FEEDER SIZE AT 80%	385	AMPS
25% SPARE CAPACITY	482	AMPS

PANEL PSL SCHEDULE

PANELBOARD CHARACTERISTICS				PHASE TO NEUT.VOLTS				120					
VOLTS 120/208													
PHASES 3				MAIN CIRCUIT BREAKER 100A									
WIRES 4				MINIMUM SHORT CIRCUIT RATING 5K RMS SYM AMPS									
SOLID NEUTRAL, GROUND BAR				SERIES RATED WITH UPSTREAM DEVICE									
CKT NO	POLE NO	DESCRIPTION	LOAD TYPE	CONN KVA	CONN AMPS			BREAKER		NO. & WIRE SIZE			COND. SIZE
					A	B	C	P	AT	PHASE	NEUT	GND	
1	1	BLOCK HEATER	E	1	8.3			1	20	1-12	12	12	
3	3	BATTERY CHARGER	E	0.1			0.8	1	20	1-12	12	12	
5	5	CONTROL PANEL	E	0.1			0.8	1	20	1-12	12	12	
7	7	RECEPTACLES	R	0.3	3.0			1	20	1-12	12	12	
9	9	RECEPTACLES	R	0.54		4.5		1	20	1-12	12	12	
11	11	MOTORIZED LOUVER	M	0.1			0.8	1	20	1-12	12	12	
13	13	EXHAUST FAN EF-1	M	0.41	3.4			1	20	1-12	12	12	
15	15	LIGHTING	L	0.27		2.3		1	20	1-12	12	12	
17	17	SPACE											
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JOB NO. 04170002.0



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**Richmond**  
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**Shenandoah Valley**

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WETLAND DELINEATIONS & STREAM EVALUATION

**Balzer and Associates, Inc**

448 Peppers Ferry Road

Chirstiansburg, VA 24073

540-381-4290

FAX 540-381-4291



# EXPLORE PARK LIFT STATION

## EXPLORE PARK SPECIFICATIONS

VINTON DISTRICT  
ROANOKE COUNTY, VIRGINIA

DRAWN BY JTP

DESIGNED BY WRJ

CHECKED BY WRJ

DATE 08/09/2017

SCALE	AS NOTED
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REVISIONS:

SHEET NO.

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JOB NO. 04470000.0











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Richmond  
Roanoke  
Shenandoah Valley**

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EXPLORE PARK LIFT STATION

EXPLORE PARK

SPECIFICATIONS

VINTON DISTRICT

ROANOKE COUNTY, VIRGINIA

DRAWN BY JTP

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