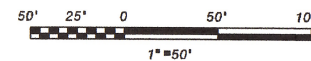


PLAT MAP AND ADJACENT PROPERTY  
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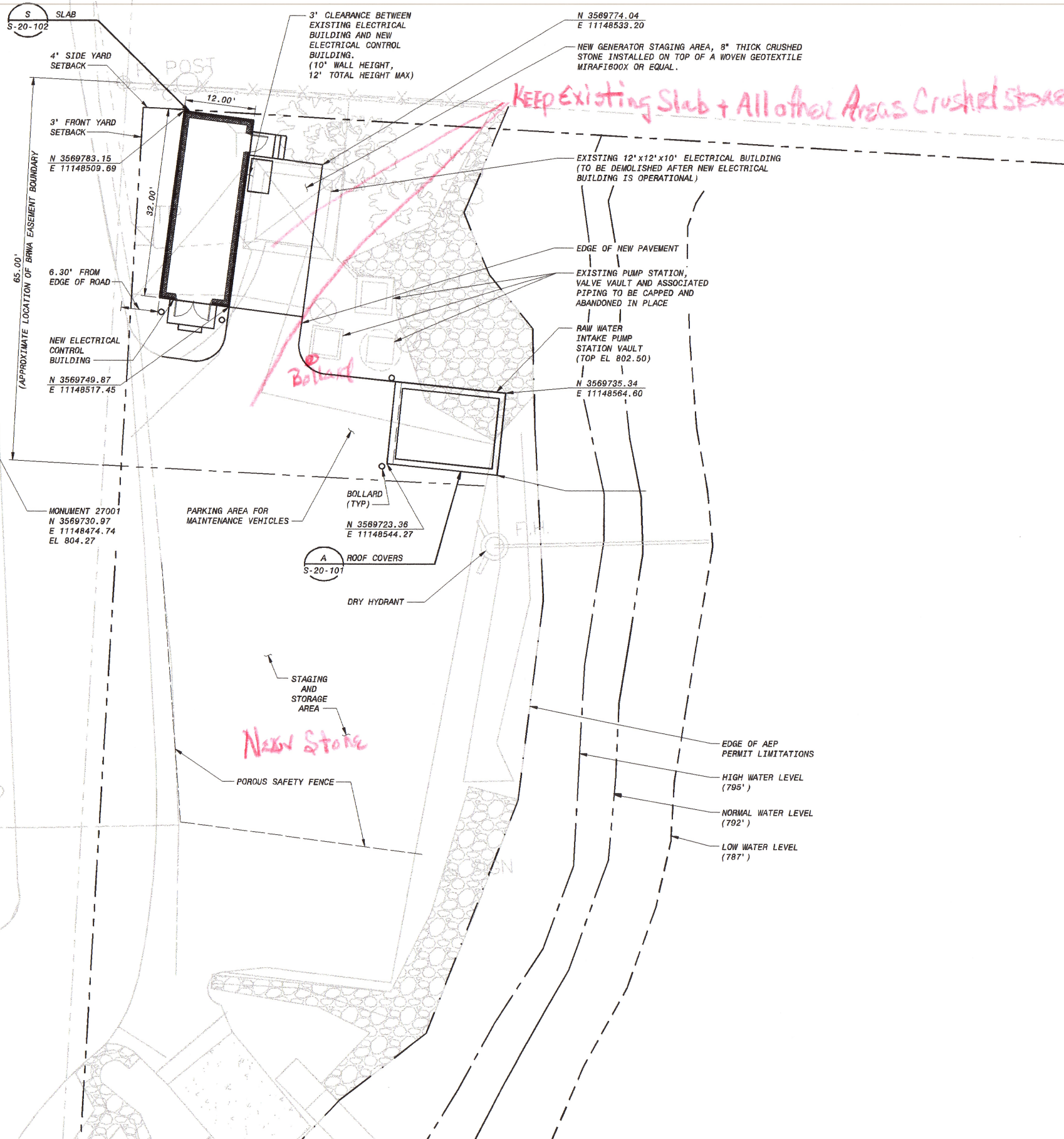


ISSUED FOR CONSTRUCTION

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DETAILED: MAK		DATE	
CHECKED: MBS		12/04/15	
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DATE: 12/04/15		0 MBS PJD	
PROJECT NO. 182262		REVISED AND RECORD OF ISSUE	
C-20-100		NO. BY CK APP	
SHEET OF		0	
BEDFORD REGIONAL WATER AUTHORITY SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE		XREF1: INTAKE.dwg	
CIVIL PLAT MAP AND ADJACENT PROPERTY		XREF2: 2D-C-20-INTAKE.dwg	
BLACK & VEATCH Building a world of difference		XREF3: BORDER.dwg	
Black & Veatch Corporation Virginia Beach, VA		XREF4: Delphos Seal.dwg	
VER: 1000		USER: KOF48353	





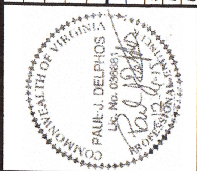


- NOTES:**
1. STRIP AND SAVE TOP SOIL.
  2. REPAIR ALL DAMAGED GRAVEL SURFACING TO LIKE NEW CONDITION.
  3. DO NOT DISTURB GROUND BELOW THE 800 FT CONTOUR EXCEPT FOR INTAKE PIPE INSTALLATION.
  4. NO WORK SHOULD BE PERFORMED ON THIS SITE BETWEEN MEMORIAL DAY AND LABOR DAY.
  5. NO WORK CAN BE PERFORMED BELOW THE 800FT CONTOUR BETWEEN DATES OF FEBRUARY 14TH AND JUNE 14TH.
  6. NEW ELECTRICAL CONTROL BUILDING TO BE CMU BLOCK WALL WITH STONE VENEER TO MATCH EXISTING BUILDING.

- UTILITY NOTES:**
1. NO POTABLE WATER SERVICE PROVIDED TO SITE.
  2. NO SEWER SERVICE PROVIDED TO SITE.
  3. CONTRACTOR TO MAINTAIN ACCESS TO DRY HYDRANT AT ALL TIMES.

- SITE LIGHTING:**
1. NO SITE AREA LIGHTING IS PROPOSED.
  2. EGRESS LIGHTING INTO THE PROPOSED ELECTRICAL BUILDING WILL BE PROVIDED AT EACH BUILDING EXIT AND WILL BE ACTIVATED BY MOTION SENSORS AND SWITCHABLE FROM INSIDE THE ELECTRICAL BUILDING.
  3. EGRESS LIGHTING SHALL BE LED WALL MOUNT FIXTURES WITH ONE ENGINE (10 Leds), 4000K TYPE IV DISTRIBUTION, EMERGENCY BATTERY BACKUP, 120V.
  4. LIGHTING SHALL BE INSTALLED IN SUCH THAT THE LIGHTING LEVELS AT THE LAKEWOOD DRIVE RIGHT-OF-WAY DOES NOT EXCEED 0.5 FOOTCANDLES.

ISSUED FOR CONSTRUCTION	DATE	REVISIONS AND RECORD OF ISSUE	NO.	BY	CHK	APP.
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12/04/15	19	MAX MBS	19	MAX	MBS	19
12/04/15	20	MAX MBS	20	MAX	MBS	20



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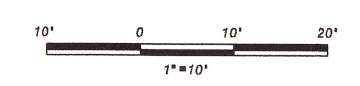
**BEDFORD REGIONAL WATER AUTHORITY**  
**SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE**  
**CIVIL INTAKE STRUCTURE SITE PLAN**

DESIGNED: MBS  
DETAILED: MAK  
CHECKED: MBS  
APPROVED: FJD  
DATE: 12/04/15

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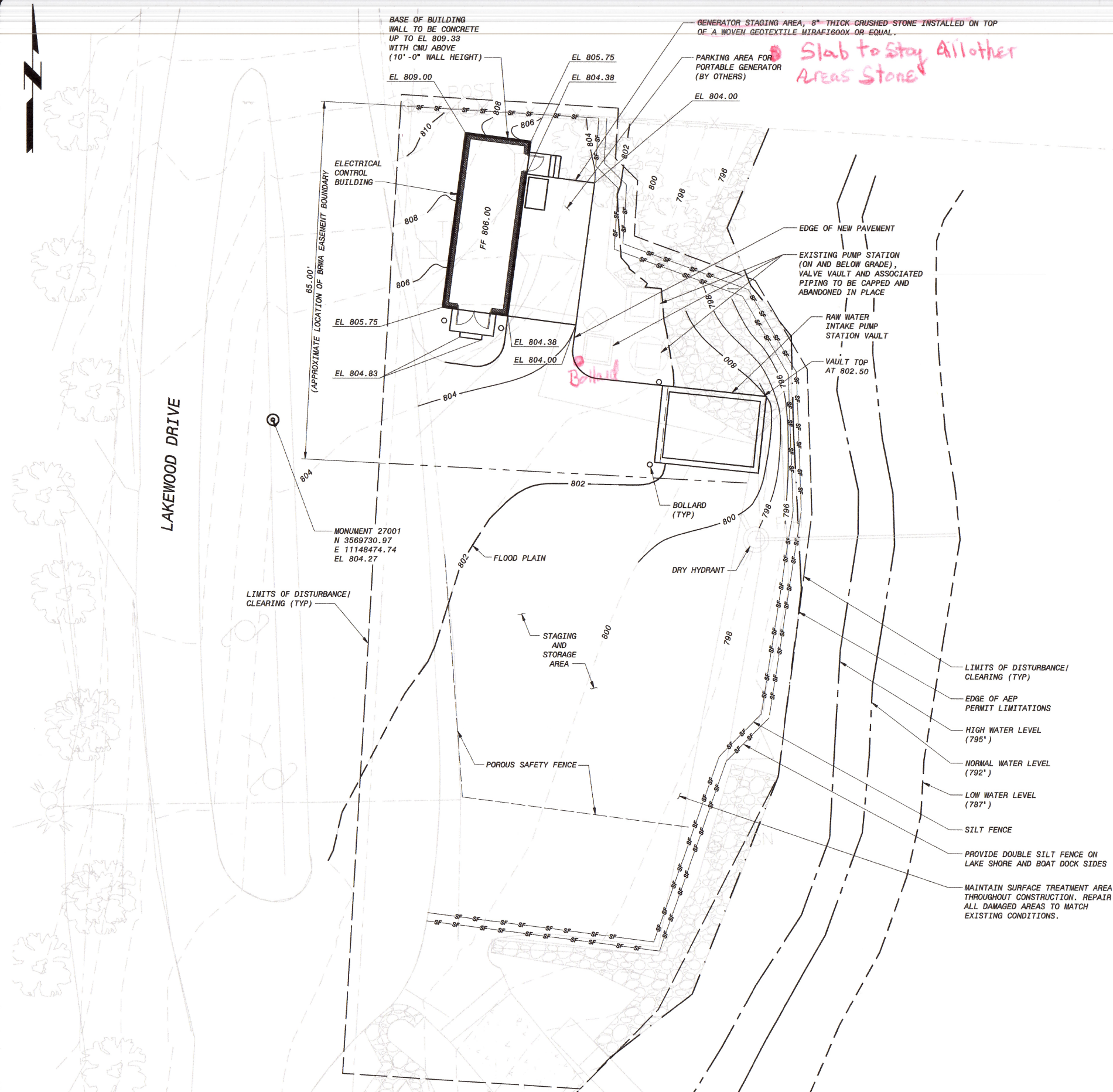
PROJECT NO.  
182262

C-20-101  
SHEET OF



**ISSUED FOR CONSTRUCTION**





SMITH MOUNTAIN LAKE

- NOTES:
1. STRIP AND SAVE TOP SOIL.
  2. REPAIR ALL DAMAGED GRAVEL SURFACING TO LIKE NEW CONDITION.
  3. DO NOT DISTURB GROUND BELOW THE 800 FT CONTOUR EXCEPT FOR INTAKE PIPE INSTALLATION.
  4. NO WORK SHOULD BE PERFORMED ON THIS SITE BETWEEN MEMORIAL DAY AND LABOR DAY.
  5. NO WORK CAN BE PERFORMED BELOW THE 800FT CONTOUR BETWEEN DATES OF FEBRUARY 14TH AND JUNE 14TH.
  6. NEW ELECTRICAL CONTROL BUILDING TO BE CMU BLOCK WALL WITH STONE VENEER.
  7. SEE DRAWING C-20-501 THROUGH C-20-504 FOR EROSION CONTROL REQUIREMENTS.

ISSUED FOR CONSTRUCTION		REVISIONS AND RECORD OF ISSUE		XREF1:	
12/04/15	DATE	50.3130 - CIVIL Drawings		C-20-102.dwg	
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		PLOTTED:		XREF3:	
		USER: K0E49353		DWG VER: 1.000	XREF4:

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Virginia Beach, VA

**BEDFORD REGIONAL WATER AUTHORITY**  
**SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE**

CIVIL  
INTAKE STRUCTURE - EROSION AND SEDIMENTATION CONTROL AND GRADING PLAN

DESIGNED: MBS  
DETAILED: MAK  
CHECKED: MBS  
APPROVED: PJD  
DATE: 12/04/15

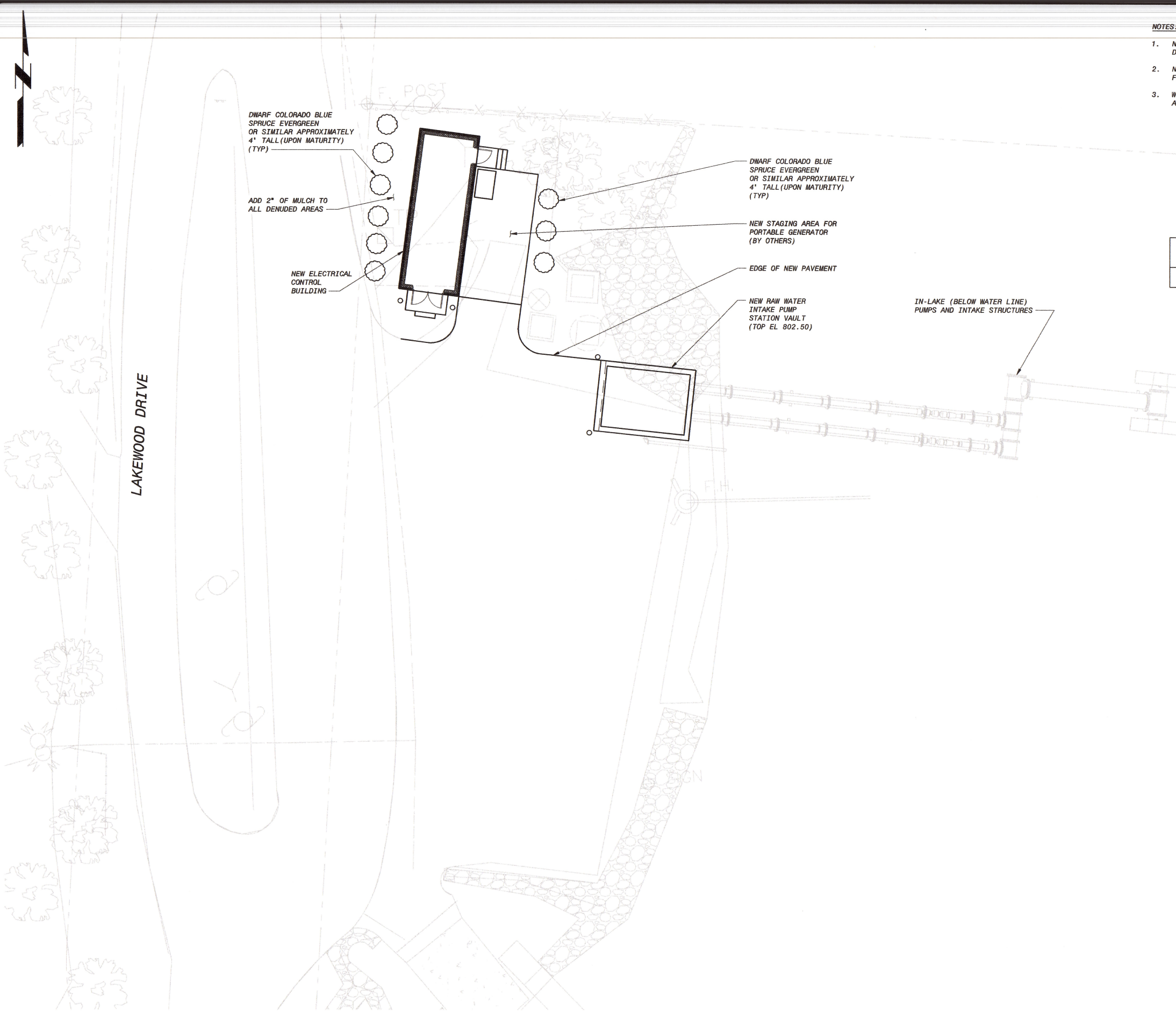
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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.  
182262

**C-20-102**  
SHEET  
OF

ISSUED FOR CONSTRUCTION

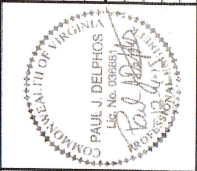




- NOTES:
- 1. NO WORK SHOULD BE PERFORMED ON THIS SITE BETWEEN MEMORIAL DAY AND LABOR DAY.
  - 2. NO WORK CAN BE PERFORMED BELOW THE 800FT CONTOUR BETWEEN DATES OF FEBRUARY 14TH AND JUNE 14TH.
  - 3. WHERE LANDSCAPING IS REQUIRED BY THIS ORDINANCE, THE FOLLOWING SHALL APPLY:
    - A. EXISTING VEGETATION WITHIN BUFFER YARDS SHALL BE CONSIDERED AS A SUBSTITUTE FOR OTHERWISE REQUIRED LANDSCAPING IF IN THE OPINION OF THE ZONING ADMINISTRATOR THE TYPE, SIZE AND DENSITY OF THE EXISTING VEGETATION COMPLIES WITH THE FOLLOWING STANDARDS AND THE INTENT OF THIS SECTION.
    - B. IF SPACING REQUIREMENTS ARE NOT SPECIFIED, REQUIRED LANDSCAPING SHALL BE ARRANGED WITHIN A BUFFER YARD AND/OR STREET YARD TO ACHIEVE THE INTENT OF THIS SECTION.
    - C. THE CHART BELOW SHALL BE USED TO DETERMINE TREE SPACING, THE MINIMUM HEIGHT AT PLANTING AND THE ULTIMATE HEIGHT OF MATURITY.

TREE TYPE	TREE SPACING IN BUFFER YARD	MINIMUM HEIGHT AT PLANTING (ABOVE GRADE)	ULTIMATE HEIGHT AT MATURITY (ABOVE GRADE)
EVERGREEN SHRUB	5 FEET ON CENTER OR LESS	1.5 FEET	6 FEET

ISSUED FOR CONSTRUCTION	REVISIONS AND RECORD OF ISSUE	DATE	NO.	BY	CHK	APP
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PLOTTER: HP DesignJet 5000						
USER: H0540353						
DWG VER: 1.000						



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**BEDFORD REGIONAL WATER AUTHORITY**  
**SMITH MOUNTAIN LAKE WTP &**  
**RAW WATER PUMPING STATION / INTAKE**

CIVIL  
INTAKE STRUCTURE  
LANDSCAPING PLAN

DESIGNED: MBS  
DETAILED: MAK  
CHECKED: MBS  
APPROVED: PJD  
DATE: 12/04/15

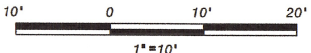
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PROJECT NO.  
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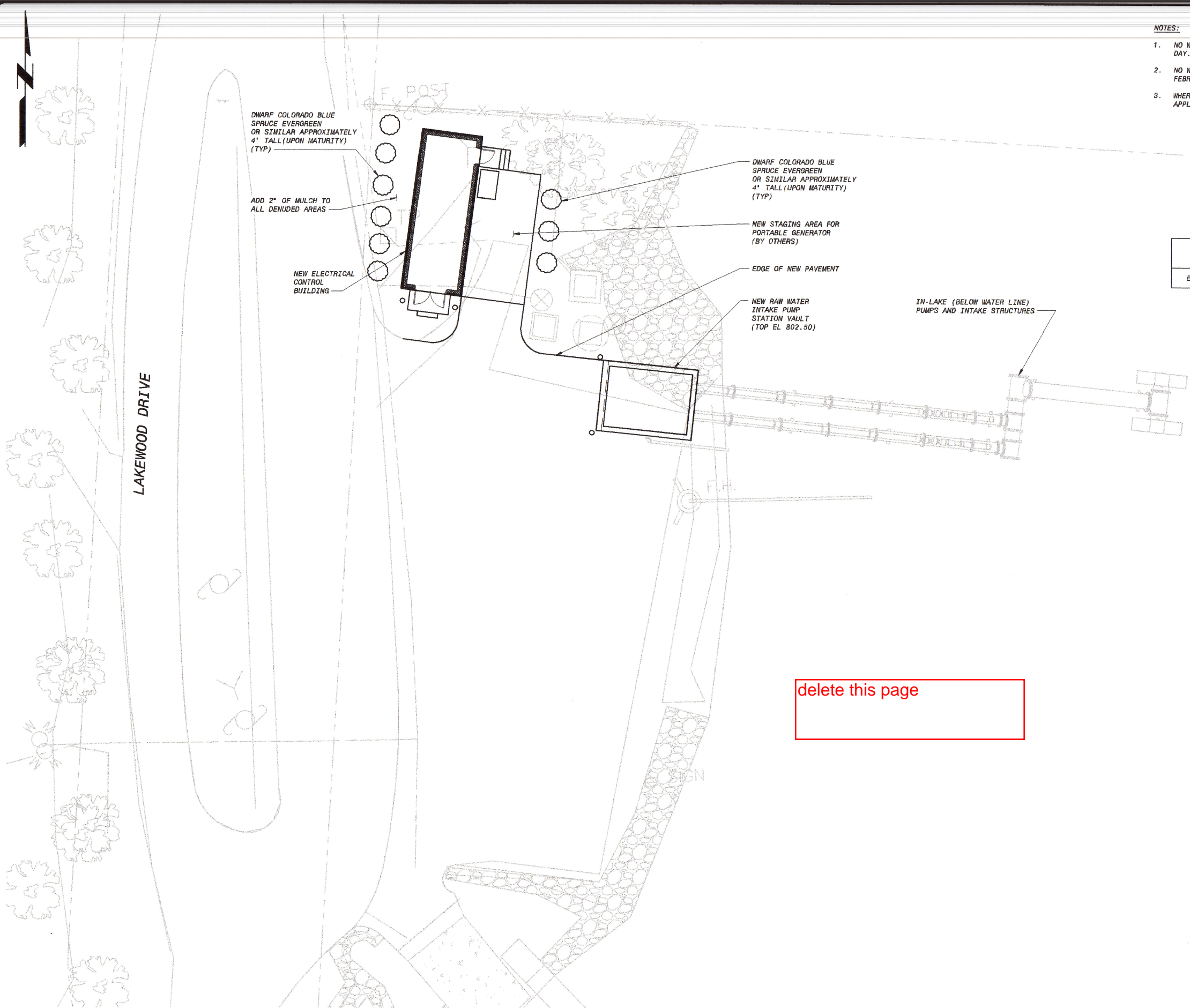
**C-20-103**  
SHEET  
OF

INTAKE STRUCTURE - LANDSCAPING PLAN  
1" = 10'-0"

ISSUED FOR CONSTRUCTION



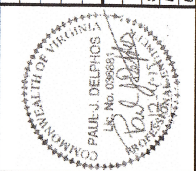





- NOTES:
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  2. NO WORK CAN BE PERFORMED BELOW THE 800FT CONTOUR BETWEEN DATES OF FEBRUARY 14TH AND JUNE 14TH.
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    - C. THE CHART BELOW SHALL BE USED TO DETERMINE TREE SPACING, THE MINIMUM HEIGHT AT PLANTING AND THE ULTIMATE HEIGHT OF MATURITY.

TREE TYPE	TREE SPACING IN BUFFER YARD	MINIMUM HEIGHT AT PLANTING (ABOVE GRADE)	ULTIMATE HEIGHT AT MATURITY (ABOVE GRADE)
EVERGREEN SHRUB	5 FEET ON CENTER OR LESS	1.5 FEET	6 FEET

12/04/15	DATE	ISSUED FOR CONSTRUCTION
50.3170 - CIVIL Drawings	REVISIONS AND RECORD OF ISSUE	
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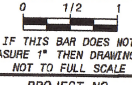


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**BEDFORD REGIONAL WATER AUTHORITY**  
**SMITH MOUNTAIN LAKE WTP & INTAKE**  
**RAW WATER PUMPING STATION / INTAKE**

CIVIL  
INTAKE STRUCTURE  
LANDSCAPING PLAN

DESIGNED: MBS  
DETAILED: MAK  
CHECKED: MBS  
APPROVED: PJD  
DATE: 12/04/15



IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.  
**182262**

**C-20-103**  
SHEET  
OF

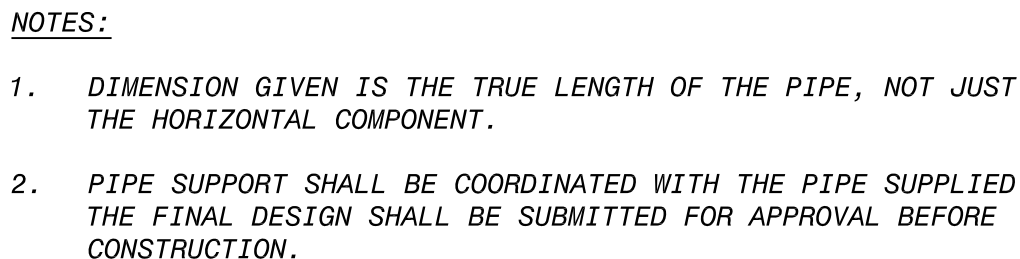
**INTAKE STRUCTURE - LANDSCAPING PLAN**  
1" = 10'-0"

**ISSUED FOR CONSTRUCTION**










COMMONWEALTH OF VIRGINIA  
PAUL J. DELPHOS  
Lic. No. 6939881  
PROFESSIONAL ENGINEER  
8/1/96

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BEDFORD REGIONAL WATER AUTHORITY SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE	CIVIL INTAKE STRUCTURE PIPING PLAN
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DESIGNED: LRO
DETAILED: MAK
CHECKED: TJS
APPROVED: PJD
DATE: 12/04/15
 <p>IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE</p>
PROJECT NO. 182262
C-20-105 SHEET OF



ECN 3  
Revised

- NOTES:
1. DIMENSION GIVEN IS THE TRUE LENGTH OF THE PIPE, NOT JUST THE HORIZONTAL COMPONENT.
  2. PIPE SUPPORT SHALL BE COORDINATED WITH THE PIPE SUPPLIED. THE FINAL DESIGN SHALL BE SUBMITTED FOR APPROVAL BEFORE CONSTRUCTION.

RFI 30

RFI 27

CHANGE ELBOW TO A 18"X18"X18" TEE. CAP THE TEE TO THE SOUTH.

EXISTING 8" RAW WATER MAIN

ELECTRICAL CONTROL BUILDING

RAW WATER INTAKE PUMP STATION VAULT  
TERMINATE 6" DIP PIPE ABOVE GRADE BAT WITHIN THE RIP RAP

63'-6" (NOTE 1, TYP)

A CONCRETE PIPE S-20-503 SUPPORT

A H-PILE PIPE S-20-504 SUPPORT (TYP OF 3)

CLASS A1 RIP RAP WITHIN BOUNDARY

24" DIP CAN PUMP (TYP OF 2) (BELOW WATER SURFACE)

36" x 24" REDUCING TEE (TYP OF 2) (BELOW WATER SURFACE)

4" COPPER PIPE FIELD ROUTED ON TOP OF 24" DIP AND 36" HDPE PIPE FROM AIR RECEIVER TO SCREENS

RAW WATER INTAKE SCREEN (TYP OF 2) (BELOW WATER SURFACE)

HOLD PIPE SUPPORT ONLY - SEE NOTE 2

36" HDPE

SMITH MOUNTAIN LAKE

LAKEWOOD DRIVE

ECN-003

OPEN

10' 0 10' 20'  
1"=10'

INTAKE STRUCTURE - PIPING PLAN  
1" = 10'-0"

ISSUED FOR CONSTRUCTION

GENERAL REVISIONS		REVISIONS AND RECORD OF ISSUE		XREF1:	
01/08/16	ISSUED FOR CONSTRUCTION	DATE	NO. BY CK APP	1	MAK TJS PJD
12/04/15	DATE	NO. BY CK APP	0	MAK TJS PJD	
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**BEDFORD REGIONAL WATER AUTHORITY**  
SMITH MOUNTAIN LAKE WTP &  
RAW WATER PUMPING STATION / INTAKE

CIVIL  
INTAKE STRUCTURE  
PIPING PLAN

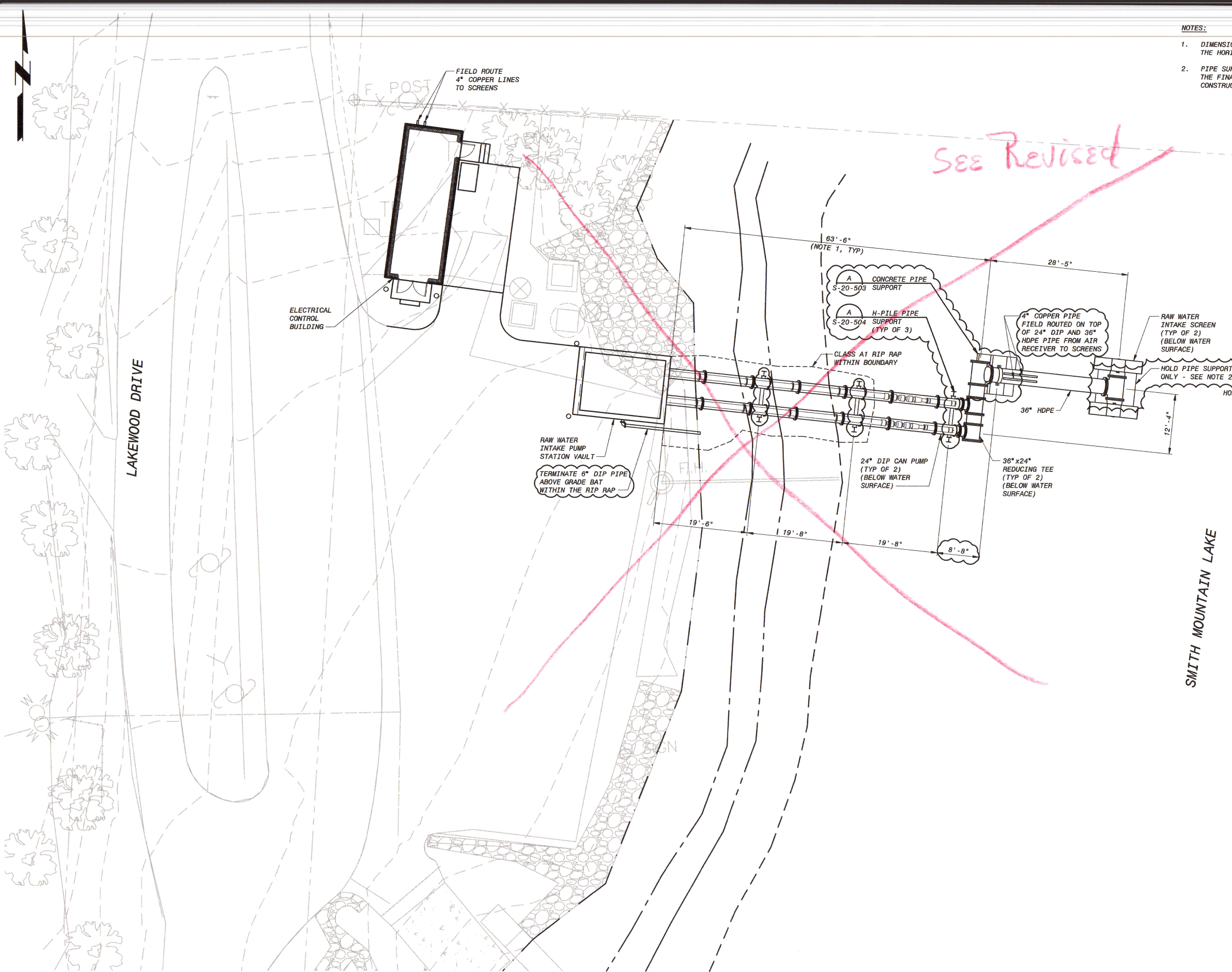
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APPROVED: PJD  
DATE: 12/04/15

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.  
189317

C-20-105  
SHEET  
OF





- NOTES:
1. DIMENSION GIVEN IS THE TRUE LENGTH OF THE PIPE, NOT JUST THE HORIZONTAL COMPONENT.
  2. PIPE SUPPORT SHALL BE COORDINATED WITH THE PIPE SUPPLIED. THE FINAL DESIGN SHALL BE SUBMITTED FOR APPROVAL BEFORE CONSTRUCTION.

See Revised

GENERAL REVISIONS		DATE		REVISIONS AND RECORD OF ISSUE		XREF1:		XREF2:		XREF3:		XREF4:	
01/08/16	ISSUED FOR CONSTRUCTION	12/04/15	DATE	80.3130 - CIVIL Drawings	NO.	BY	CK	APP					
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PLOTTER: USER: K0E49353 DWG VER: 1000													

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**BEDFORD REGIONAL WATER AUTHORITY**  
**SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE**

CIVIL  
INTAKE STRUCTURE  
PIPING PLAN

DESIGNED: LRD  
DETAILED: MAK  
CHECKED: TJS  
APPROVED: PJD  
DATE: 12/04/15

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

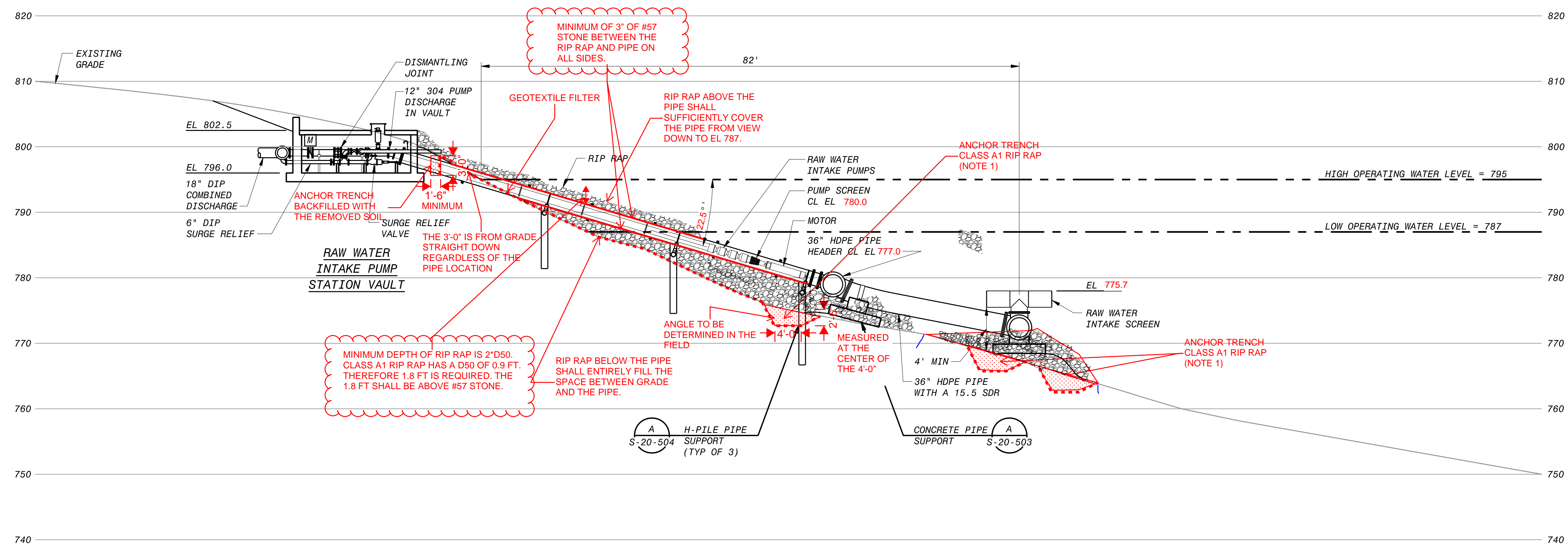
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1"=10'

PROJECT NO.  
182262

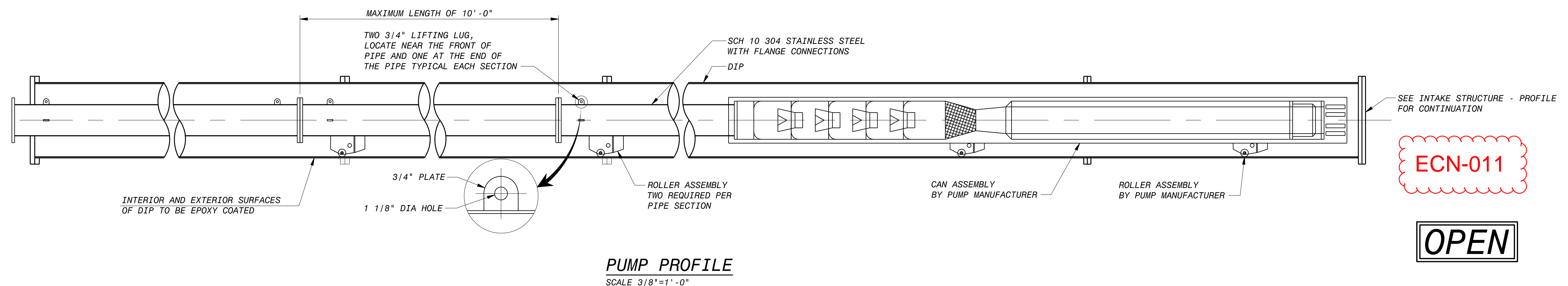
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ISSUED FOR CONSTRUCTION



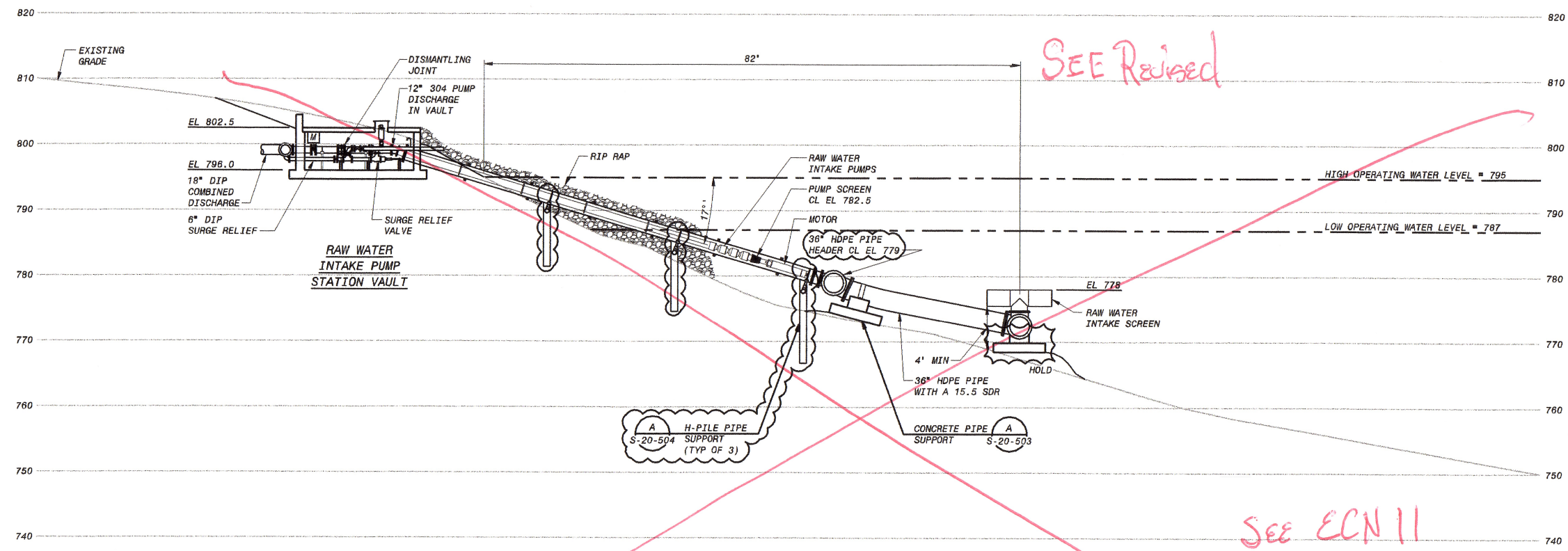


INTAKE STRUCTURE - PROFILE  
SCALE 1"=10'

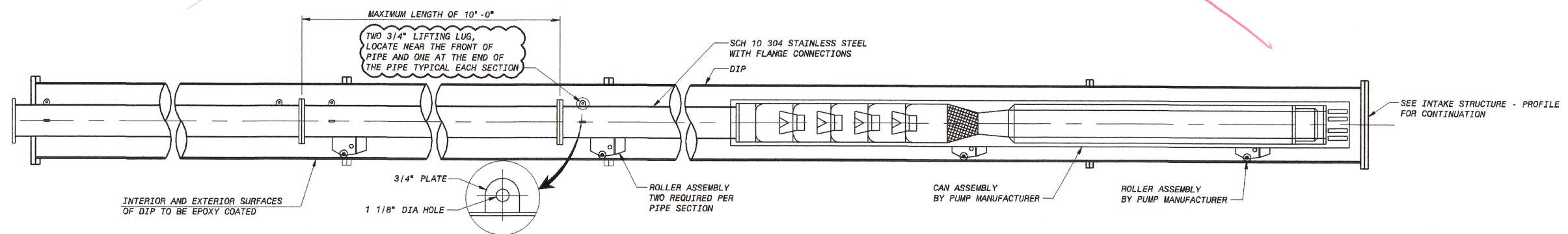


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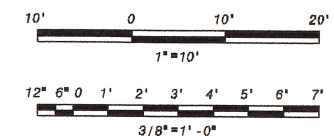




**INTAKE STRUCTURE - PROFILE**  
SCALE 1\"/>



**PUMP PROFILE**  
SCALE 3/8\"/>



**ISSUED FOR CONSTRUCTION**

<b>REVISIONS</b> 01/08/16 GENERAL REVISIONS 01/05/16 GENERAL REVISIONS 12/04/15 ISSUED FOR CONSTRUCTION DATE 50.3170 - CIVIL Drawings C-20-301.dwg SAVED: X0649353, 1/8/2016 1:04:19 PM PLOTTED: USER: X0649353 DWG VER: 1000		2 MAX 1 MAX 0 MAX NO. BY DATE XREF1: XREF2: XREF4:
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DESIGNED: LRO DETAILED: MAX CHECKED: TJS APPROVED: PJD DATE: 12/04/15		PROJECT NO. 182262 C-20-301 SHEET OF



FD7000  
D7000

SMITH MOUNTAIN LAKE WATER SUPPLY INTAKE AND PUMP STATION

EROSION AND SEDIMENT CONTROL NARRATIVE

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A NEW WATER SUPPLY INTAKE IMMEDIATELY ADJACENT TO THE EXISTING INTAKE AT 308 LAKEWOOD DRIVE, HUDDLESTON, VA 24104. THE PROPERTY IS OWNED BY THE HIGH POINT PROPERTY OWNERS ASSOCIATION, AND THEY LEASE A PORTION OF THE SITE TO THE BEDFORD REGIONAL WATER AUTHORITY FOR THE WATER INTAKE AND PUMPING STATION. THE PROJECT INCLUDES A NEW RAW WATER VAULT AND ELECTRICAL BUILDING ON SHORE AND TWO INTAKE SCREENS AND TWO RAW WATER PUMP CANS LOCATED IN THE LAKE. THE TOTAL DISTURBED AREA FOR THE PROJECT IS 0.1 ACRES.

EXISTING SITE CONDITIONS

THE PROPERTY ABUTS SMITH MOUNTAIN LAKE AND INCLUDES A PAVED PARKING AREA, DOCK ACCESS, THE EXISTING RAW WATER SUPPLY FACILITIES, WHICH INCLUDES INTAKE SCREENS AND RAW WATER PIPING IN THE LAKE AND A PUMP STATION AND ELECTRICAL BUILDING. THE SITE SLOPES FROM LAKEWOOD DRIVE INTO THE LAKE, WITH NO MAJOR DRAINAGE FEATURES. THE SLOPES ARE APPROXIMATELY 7% NEAR LAKEWOOD DRIVE AND TRANSITION INTO THE STEEP SLOPES NEAR THE WATERS EDGE. THE IMPERVIOUS SURFACE AREA COVERS 73% OF THE SITE.

ADJACENT PROPERTY

THE SITE IS BOUND ON THE EAST BY SMITH MOUNTAIN LAKE. THE OTHER SURROUNDING PROPERTIES ARE EXISTING SINGLE FAMILY RESIDENTIAL PROPERTIES.

OFF-SITE STORAGE AREAS

THE PROJECT INCLUDES EXCAVATION FOR TWO STRUCTURES. THE SPOIL MATERIAL TO BE HAULED OFF-SITE FOR DISPOSAL IS ESTIMATED TO BE LESS THAN THE 50 CY. THE SPOIL WILL BE DISPOSED OF ON A SMALL OFF-SITE PROPERTY, IMPACTING LESS THAN 0.1 ACRES. DUE TO THE SMALL NATURE OF THE OFF-SITE IMPACTS, A SEPARATE EROSION AND SEDIMENT CONTROL APPLICATION IS NOT REQUIRED.

SOILS

THE PREDOMINANT SOILS ON THIS SITE ARE CECIL FINE SANDY LOAM. TYPICAL PROPERTIES FOR THIS CLASS OF SOILS INCLUDE WELL DRAINED SOILS WITH MODERATELY HIGH TO HIGH PERMEABILITY AND SLOPES RANGING FROM 7% TO 15%.

CRITICAL EROSION AREAS

THE LAKE SHORE IS LINED WITH RIP-RAP TO PROTECT THE SHORELINE FROM EROSION. THE RIP-RAP WILL BE MAINTAINED AT ALL TIMES, EXCEPT DURING INSTALLATION OF THE RAW WATER VAULT AND UNDERWATER FEATURES. THE DESIGN INCLUDES ADDITIONAL RIP-RAP COVERING THE NEW IN-LAKE PIPING TO PROVIDE LONG-TERM PROTECTION. THE RIP RAP WILL BE RESTORED IMMEDIATELY UPON INSTALLATION OF THE FACILITIES.

EROSION AND SEDIMENT CONTROL MEASURES

DUE TO THE SMALL SIZE OF THE DISTURBANCE, SILT FENCE WILL BE USED AS THE PRIMARY EROSION CONTROL FEATURE. THE TOTAL DRAINAGE AREA FLOWING ACROSS THE PROPERTY IS 18,000 SF, AND THE MAXIMUM UPSTREAM LENGTH OF DISTURBED AREA UPSTREAM OF ANY SECTION OF SILT FENCE IS 65 FEET. TO PROVIDE ENHANCED PROTECTION OF THE LAKE, A SECOND ROW OF SILT FENCE WILL BE INSTALLED ALONG THE SHORE-LINE. TYPICALLY, A CONSTRUCTION ENTRANCE IS PROVIDED FOR TO MINIMIZE SEDIMENT DEPOSITED ON NEARBY ROADWAYS. HOWEVER, A STANDARD CONSTRUCTION ENTRANCE WILL NOT FIT ON THE PROJECT SITE. ALSO, THE MAJORITY OF THE SITE IS CURRENTLY PAVED AND THE CONSTRUCTION PLAN IS TO SALVAGE THAT PAVEMENT. TRUCKS THAT HAUL MATERIAL OFF SITE WILL STAY ON THE PAVED AREA OF THE SITE. VEHICLES WITH VISIBLE SEDIMENT WILL BE WASHED DOWN PRIOR TO LEAVING THE SITE. ANY SEDIMENT ON NEIGHBORING STREETS WILL BE REMOVED BY STREET SWEEPING AS NECESSARY.

STRUCTURAL MEASURES

SILT FENCE - 3.05: THE ONLY STRUCTURAL MEASURE EMPLOYED WILL BE SILT FENCE, WHICH WILL SURROUND THE CONSTRUCTION AREA. A SECOND ROW OF SILT FENCE WILL BE INSTALLED ALONG THE SHORELINE.

VEGETATIVE PRACTICES

TEMPORARY SEEDING -3.31: ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR EXTENDED PERIODS OF TIME SHALL BE SEEDED WITH FAST GERMINATING TEMPORARY VEGETATION IMMEDIATELY FOLLOWING GRADING. SELECTION OF THE SEED MIXTURE WILL DEPEND ON THE TIME OF YEAR IT IS APPLIED. PERMANENT SEEDING -3.32: ALL DENUDED AREAS WHICH WILL BE LEFT DORMANT FOR A YEAR OR MORE SHALL BE SEEDED WITH PERMANENT VEGETATIVE COVER. MULCHING - 3.35: LANDSCAPED AREAS WILL BE MULCHED AFTER PLANTING AS INDICATED ON THE LANDSCAPING PLAN.

MANAGEMENT STRATEGIES

SILT FENCE WILL BE THE FIRST ITEM INSTALLED ON THE SITE. EXCAVATION OF THE RAW WATER VAULT WILL BE DOWN TO APPROXIMATE ELEVATION 794, WHICH IS APPROXIMATELY 2 FEET ABOVE NORMAL WATER LEVEL. SOME MINOR GROUNDWATER MAY BE ENCOUNTERED IN THE EXCAVATION, WHICH WILL BE REMOVED BY SUMP PUMP. ANY WATER PUMPED OUT OF THE SUMP WILL BE DISCHARGED THROUGH A SEDIMENT BAG TO REMOVE SEDIMENT PRIOR TO FLOWING INTO THE LAKE. THE EXCAVATION AND CONSTRUCTION OF THE VAULT WILL BE COMPLETELY AS EXPEDITIOUSLY AS POSSIBLE TO MINIMIZE THE TIME OF THE DISTURBANCE. THE RIP-RAP APRON AROUND THE VAULT WILL BE RESTORED AS SOON AS POSSIBLE. THE FOUNDATION OF THE ELECTRICAL BUILDING WILL REQUIRE AN AREA OF LESS THAN 1,000 SF TO BE EXCAVATED. THE AREAS OUTSIDE THE LIMITS OF THE BUILDING WILL HAVE TEMPORARY SEEDING APPLIED IMMEDIATELY FOLLOWING THE CONSTRUCTION OF THE BUILDING FOUNDATION. TRUCKS THAT HAUL MATERIAL OFF SITE WILL STAY ON THE PAVED AREA OF THE SITE. VEHICLES WITH VISIBLE SEDIMENT WILL BE WASHED DOWN PRIOR TO LEAVING THE SITE. ANY SEDIMENT ON NEIGHBORING STREETS WILL BE REMOVED BY STREET SWEEPING AS NECESSARY.

PERMANENT STABILIZATION

THE RIP-RAP APRON WILL BE MAINTAINED THROUGHOUT CONSTRUCTION, WITH REPAIRS MADE AS SOON AS POSSIBLE AT ANY AREAS WHERE THE RIP-RAP MUST BE REMOVED FOR CONSTRUCTION. THE ASPHALT AREAS WILL BE MAINTAINED TO THE MAXIMUM EXTENT PRACTICAL. DAMAGES AREA WILL BE REPAIRED TO PROVIDE A SMOOTH ASPHALT SURFACE AT THE COMPLETION OF THE PROJECT. THE LANDSCAPED AREAS WILL BE MULCHED IMMEDIATELY FOLLOWING PLANTING.

STORMWATER MANAGEMENT

RUN-OFF CALCULATIONS INDICATE A MINOR INCREASE IN RUNOFF RELATED TO THE NEW ELECTRICAL BUILDING. NO STORMWATER FEATURES ARE INCLUDED BECAUSE THE SITE COMPRISES LESS THAN 1% OF THE TOTAL WATERSHED AREA.NOTE THAT A VARIANCE (VP140002) WAS APPROVED THAT ALLOWED FOR A MAXIMUM LOT COVERAGE OF 87%.

MAINTENANCE

THE SILT FENCE BARRIER WILL BE CHECKED REGULARLY FOR UNDERMINING OR DETERIORATION OF THE FABRIC. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT DEPOSITION REACHES HALF-WAY TO THE TOP OF THE BARRIER. SEEDED AREAS WILL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STAND IS MAINTAINED. AREAS WILL BE FERTILIZED AND RE-SEEDED AS NECESSARY TO DEVELOP AND MAINTAIN A GOOD STAND.

INSPECTIONS

THE GENERAL CONTRACTOR SHALL INSPECT DISTURBED AREAS OF THE SITE THAT HAVE NOT BEEN FINALLY STABILIZED, AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION, STRUCTURAL CONTROL MEASURES, AND THE AREA OF CONSTRUCTION VEHICLE ACCESS AT LEAST EVERY FOURTEEN (14) CALENDAR DAYS, AND WITHIN FORTY-EIGHT (48) HOURS OF THE END OF A STORM EVENT PRODUCING 1/2" OR GREATER OF PRECIPITATION. WHERE AREAS HAVE BEEN FINALLY OR TEMPORARILY STABILIZED OR RUNOFF IS UNLIKELY DUE TO WINTER CONDITIONS (SITE IS COVERED WITH SNOW, ICE, OR FROZEN GROUND EXISTS) SUCH INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH.

INSPECT DISTURBED AREAS AND AREAS OF MATERIALS STORAGE THAT ARE EXPOSED TO PRECIPITATION FOR EVIDENCE OF, OR THE POTENTIAL FOR SEDIMENT ENTERING THE STORM DRAIN SYSTEM. INSPECT E&S CONTROLS IN ACCORDANCE WITH REQUIREMENTS STATED HEREIN, AND INSPECT POINTS OF STORM DRAIN DISCHARGE FOR EXCESSIVE SEDIMENTATION. CORRECT SITE CONTROLS AS REQUIRED TO REDUCE SEDIMENTATION OF STORM DRAINS, CULVERTS, AND RECEIVING CHANNELS.IF CONTROLS OR SEDIMENT PREVENTION AREAS ARE FOUND TO BE IN NEED OF REPAIR OR MODIFICATION, THE GENERAL CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES AS REQUIRED. ANY ADDITIONAL MEASURES OR MODIFICATIONS TO EXISTING MEASURES SHALL BE RECORDED AS FIELD REVISIONS TO THESE PLANS. IN THE EVENT THAT ADDITIONAL CONTROLS ARE FOUND TO BE REQUIRED, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE CONTROLS BEFORE THE NEXT ANTICIPATED STORM EVENT. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICAL, THEY SHALL BE IMPLEMENTED AS SOON AS PRACTICAL.

A REPORT SUMMARIZING THE SCOPE OF INSPECTIONS, NAME OF INSPECTOR, INSPECTOR'S QUALIFICATIONS, DATES OF INSPECTIONS, MAJOR OBSERVATIONS PERTAINING TO THE IMPLEMENTATION OF THESE EROSION CONTROL PLANS, AND ACTIONS TAKEN SHALL BE MADE AND RETAINED AS A PART OF THESE PLANS. MAJOR OBSERVATIONS OF THESE REPORTS SHALL INCLUDE: THE LOCATIONS OF EXCESSIVE SEDIMENTATION FROM THE SITE; LOCATIONS OF CONTROLS IN NEED OF REPAIR; LOCATIONS OF FAILED OR INADEQUATE CONTROLS; AND LOCATIONS WHERE ADDITIONAL CONTROLS ARE NEEDED.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

ES-1: UNLESS OTHERWISE INDICATED, CONSTRUCT AND MAINTAIN ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES 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: INSPECTORS WILL MAKE A CONTINUING REVIEW AND EVALUATION OF THE METHODS AND EFFECTIVENESS OF THE E.S.C. PLAN.

ES-3: PLACE ALL EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO OR AS THE FIRST STEP IN CLEARING, GRADING, OR LAND DISTURBANCE.

ES-4: MAINTAIN A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN 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, OFFSITE BORROW OR WASTE AREA), SUBMIT A SUPPLEMENTARY EROSION CONTROL PLAN TO THE ARCHITECT/ENGINEER FOR REVIEW AND ACCEPTANCE.

ES-6: PROVIDE ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE LOCAL AUTHORITY HAVING JURISDICTION.

ES-7: ALL DISTURBED AREAS SHALL DRAIN TO APPROVED SEDIMENT CONTROL MEASURES AT ALL TIMES DURING LAND-DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT.

ES-8: DURING DEWATERING OPERATIONS, PUMP WATER INTO AN APPROVED FILTERING DEVICE.

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

12/04/15

DATE

ISSUED FOR CONSTRUCTION

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MAX

MBS

PJD

REVISIONS AND RECORD OF ISSUE

NO

BY

CK

APP

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COMMONWEALTH OF VIRGINIA

PAUL J. DELPHOS

License No. 0000000000

Professional Engineer

09/27/2015

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Virginia Beach, VA

BEDFORD REGIONAL WATER AUTHORITY

SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE

CIVIL

EROSION AND SEDIMENT CONTROL NARRATIVE AND DETAILS - SHEET 1 OF 2

DESIGNED: MBS

DETAILED: MAK

CHECKED: MBS

APPROVED: PJD

DATE: 12/04/15

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IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

PROJECT NO.

182262

C-20-501

SHEET OF

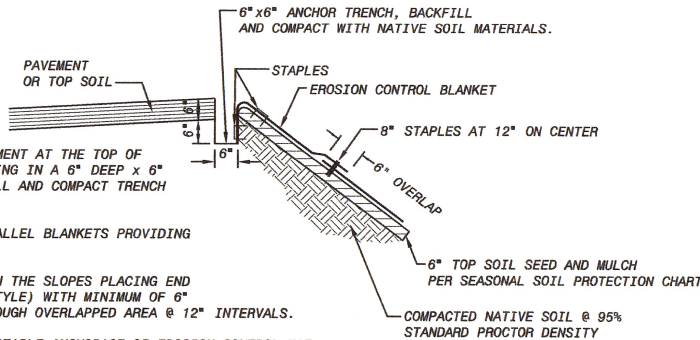


THE FOLLOWING STANDARDS ARE TO BE PROVIDED OR ADDRESSED ON EVERY DEVELOPMENT PROJECT EXCEEDING 10,000 SF IN AREA OF DISTURBANCE. THESE STANDARDS ARE CONSIDERED A MINIMUM AND MAY REQUIRE ADDITIONAL MEASURES AS DEEMED NECESSARY BY THE LOCAL APPROVING AUTHORITY OR THE CONSULTING ENGINEER.

NO.	CRITERIA, TECHNIQUE OR METHOD	PRACTICES PROVIDED
1	PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE HAS BEEN REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN THIRTY (30) DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT DORMANT FOR MORE THAN 1 YEAR.	<div style="display: flex; justify-content: space-around;"> <div>TS</div> <div>PS</div> <div>MU</div> </div> FOR ALL DENUDED AREAS
2	DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TAPPING MEASURES. THE CONTRACTOR IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.	NO ONSITE STOCKPILES, OFFSITE STOCKPILES WILL BE PERMITTED SEPARATELY ONLY IF GREATER THAN 10,000 SF
3	A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE WYMA, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.	<div style="display: flex; justify-content: space-around;"> <div>TS</div> <div>PS</div> <div>MU</div> </div> FOR ALL DENUDED AREAS
4	SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE AND DISTURBANCE TAKES PLACE.	<div style="display: flex; justify-content: space-around;"> <div>SF</div> </div> FOR ENTIRE SITE
5	STABILIZATION METHODS SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.	NOT APPLICABLE
6	SEDIMENT TRAPS AND BASINS SHALL BE DESIGNED AND CONSTRUCTED BASED UPON THE TOTAL DRAINAGE AREA TO BE SERVED BY THE TRAP OR BASIN.	NOT APPLICABLE
7	CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SLOPES THAT ARE FOUND TO BE ERODING EXCESSIVELY WITHIN ONE YEAR OF PERMANENT STABILIZATION SHALL BE PROVIDED WITH ADDITIONAL SLOPE STABILIZATION MEASURES UNTIL THE PROBLEM IS CORRECTED.	<div style="display: flex; justify-content: space-around;"> <div>TS</div> <div>PS</div> <div>MU</div> </div> FOR ALL ERODING SLOPES
8	CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAINAGE STRUCTURE.	MAINTAIN SHEET FLOW ACROSS SITE
9	WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.	SHOULD STEEPS OCCUR IN ANY EXISTING OR NEW CUT OR FILL SLOPE, THE CONTRACTOR SHALL FIRST INSURE THAT THERE ARE NOT AREAS OF PONDED WATER AT THE SLOPES, AND THEN SHALL CONTACT BOTH THE DESIGN ENGINEER AND THE PROJECT GEOTECHNICAL ENGINEER FOR ON-SITE EVALUATION OF THE AREAS OF SEEPAGE.
10	ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.	NOT APPLICABLE
11	BEFORE NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.	NOT APPLICABLE
12	WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.	<div style="display: flex; justify-content: space-around;"> <div>RR</div> </div> MAINTAIN EXISTING RIPRAP TO MAXIMUM EXTENT POSSIBLE. INSTALL NEW RIPRAP IMMEDIATELY FOLLOWING INSTALLATION OF UNDERWATER FACILITIES
13	WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES MORE THAN TWICE IN ANY SIX (6) MONTH PERIOD, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL.	NOT APPLICABLE
14	ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET. THE BEDS AND BANKS OF ANY WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	<div style="display: flex; justify-content: space-around;"> <div>RR</div> </div> MAINTAIN EXISTING RIPRAP TO MAXIMUM EXTENT POSSIBLE. INSTALL NEW RIPRAP IMMEDIATELY FOLLOWING INSTALLATION OF UNDERWATER FACILITIES
15	THE BEDS AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.	<div style="display: flex; justify-content: space-around;"> <div>RR</div> </div> MAINTAIN EXISTING RIPRAP TO MAXIMUM EXTENT POSSIBLE. INSTALL NEW RIPRAP IMMEDIATELY FOLLOWING INSTALLATION OF UNDERWATER FACILITIES
16	UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA: 1) NO MORE THAN 500 LINEAR FEET OF ANY TRENCH MAY BE OPENED AT ONE TIME. 2) EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES. 3) EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICES OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY. 4) MATERIAL USED FOR BACKFILLING TRENCHES SHALL BE PROPERLY COMPACTED IN ORDER TO MINIMIZE EROSION AND PROMOTE STABILIZATION. 5) RE-STABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS. 6) APPLICABLE SAFETY REGULATIONS SHALL BE COMPLIED WITH.	<div style="display: flex; justify-content: space-around;"> <div>DS</div> </div> ALL UTILITY LINES ON SITE PROTECTED BY SILT FENCE BARRIER FILTER ANY TRENCH DEWATERING
17	WHERE CONSTRUCTION VEHICLES ACCESS ROUTES INTERSECT PAVED OR PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY VEHICULAR TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PAVED OR PUBLIC ROAD SURFACE, THE ROAD SURFACE SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.	<div style="display: flex; justify-content: space-around;"> <div>CE</div> </div> MAINTAIN TRAFFIC ON PAVED AREAS OF SITE TO MAXIMUM EXTENT. INSPECT VEHICLES FOR SEDIMENT AND WASH SEDIMENT AS NECESSARY. MONITOR LAKEWOOD DRIVE AND SWEEP SEDIMENT THAT FALLS ON STREET.
18	ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, UNLESS OTHERWISE AUTHORIZED BY THE LOCAL PROGRAM ADMINISTRATOR. TRAPPED SEDIMENT AND THE DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.	<div style="display: flex; justify-content: space-around;"> <div>TS</div> <div>PS</div> <div>MU</div> </div>
19	PROPERTIES AND WATERWAYS DOWNSTREAM FROM DEVELOPMENT SITES SHALL BE PROTECTED FROM SEDIMENT DISPOSITION, EROSION AND DAMAGE DUE TO INCREASES IN VOLUME, VELOCITY AND PEAK FLOW RATE OF STORMWATER RUNOFF FOR THAT STATED FREQUENCY STORM OF 24-HOUR DURATION IN ACCORDANCE WITH THE APPLICABLE CRITERIA.	ALL WATER FLOWS TO SMITH MOUNTAIN LAKE. NO IMPACT FROM RUNOFF VOLUME OR VELOCITY EMPLOY ALL PRACTICES IN THIS ESC PLAN TO PROTECT LAKE FROM SEDIMENT

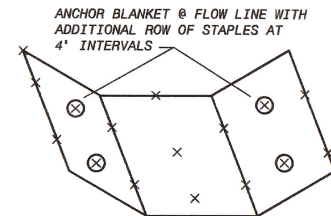
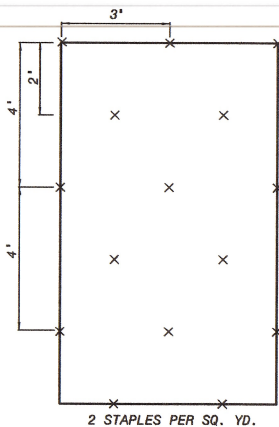
## 1. B.

1. BEGIN BLANKET PLACEMENT AT THE TOP OF THE SLOPE BY ANCHORING IN A 6" DEEP x 6" WIDE TRENCH. BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. STAPLE EDGES OF PARALLEL BLANKETS PROVIDING 2" OVERLAP MINIMUM.
3. SPLICE BLANKETS DOWN THE SLOPES PLACING END OVER END (SHINGLE STYLE) WITH MINIMUM OF 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA @ 12" INTERVALS.
4. SEE DETAIL D-2 FOR STAPLE ANCHORAGE OF EROSION CONTROL MAT.



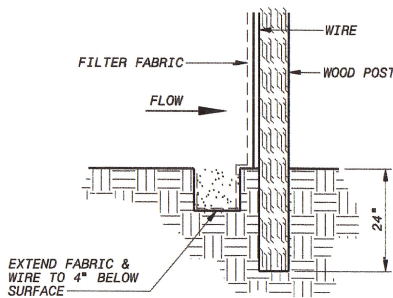
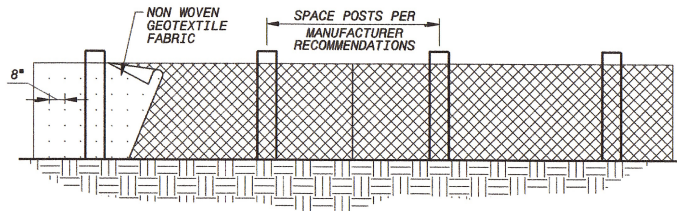
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1. DURING VEGETATIVE ESTABLISHMENT INSPECT AFTER STORM EVENTS FOR ANY EROSION BELOW THE BLANKET.
2. IF ANY AREA SHOWS EROSION PULL BACK THAT PORTION OF THE BLANKET COVERING IT, ADD SOIL, RE-SEED THE AREA, AND RE-LAY AND STAPLE THE BLANKET.
3. AFTER VEGETATIVE ESTABLISHMENT, CHECK THE TREATED AREA WEEKLY.



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1. CHANNEL LININGS UTILIZE STAPLE PATTERN WITH ADDITIONAL STAPLES ON SIDE SLOPES AT PROJECTED WATER LINE. STAPLE PATTERNS APPLY TO ALL NORTH AMERICAN GREEN EROSION CONTROL BLANKETS. STAPLE PATTERNS MAY VARY DEPENDING UPON SOIL TYPE AND AVERAGE RAINFALL.

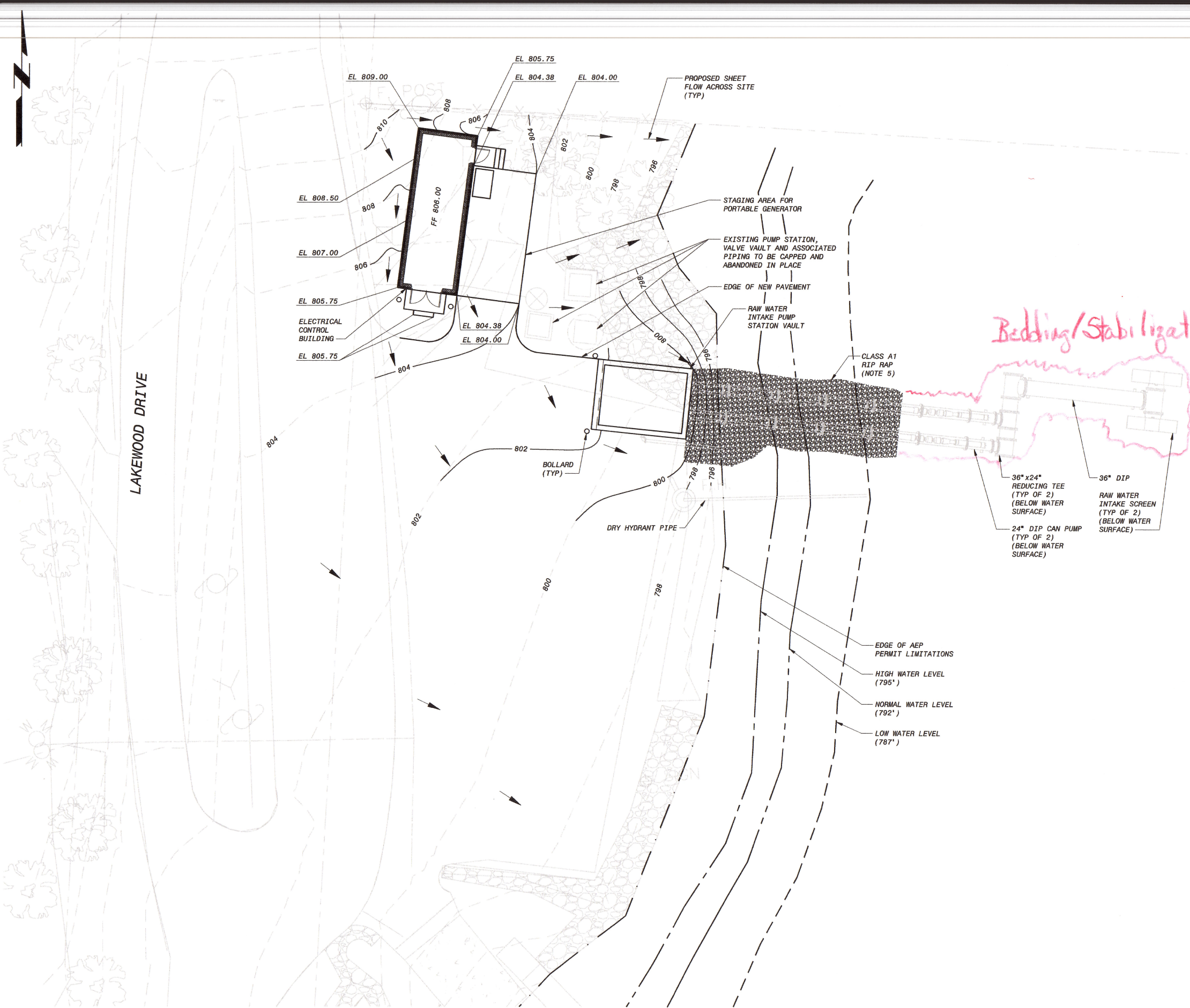


- NOTES:**
1. POSTS SHALL HAVE A MINIMUM LENGTH OF 36 INCHES PLUS BURIAL DEPTH. POST MATERIAL SHALL BE WOOD, STEEL, OR SYNTHETIC, AND SHALL BE OF SUFFICIENT STRENGTH TO RESIST DAMAGE DURING INSTALLATION AND TO SUPPORT APPLIED LOADS.
  2. FABRIC SHALL BE A WOVEN GEOTEXTILE FABRIC CONSISTING OF STRONG, ROT RESISTANT, MATERIALS RESISTANT TO DETERIORATION FROM ULTRAVIOLET AND HEAT EXPOSURE.









- NOTES AND CALCULATIONS:**
1. WATERSHED AREA FOR ADJACENT COVE OF SMITH MOUNTAIN LAKE IS 1,290,000 SQ FT.
  2. PROJECT SITE AREA OF 4,400 SQ FT IS LESS THAN 1% OF TOTAL WATERSHED AREA.
  3. VARIANCE PROVIDED BY BEDFORD COUNTY ALLOWS MAXIMUM COVERAGE OF 87%.
  4. TOTAL POST DEVELOPMENT COVERAGE IS 76%.
  5. RIP RAP SHALL EXTEND A MINIMUM OF 2 FEET PAST THE EDGE OF THE PIPE TO THE NORTH AND SOUTH. IT SHALL EXTEND FROM THE VAULT TO THE LOW WATER LEVEL. AFTER THE LOW WATER LEVEL THE RIP RAP SHALL SLOPE OFF PER MANUFACTURER RECOMMENDATIONS.

DESIGNED: MBS		DATE: 12/04/15	
DETAILED: MAK		PROJECT NO. 182262	
CHECKED: MBS		SHEET OF	
APPROVED: PJD		ISSUED FOR CONSTRUCTION	
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE		C-20-504	
BEDFORD REGIONAL WATER AUTHORITY SMITH MOUNTAIN LAKE WTP & RAW WATER PUMPING STATION / INTAKE		CIVIL STORMWATER MANAGEMENT PLAN PROPOSED SITE	
BLACK & VEATCH Building a world of difference		Black & Veatch Corporation Virginia Beach, VA	
PAUL J. DELPHOS Lic. No. 000848 Professional Engineer		XREF1: C-20-504.dwg XREF2: 10/28/2015 8:50:44 AM XREF3: XREF4: DWS VER: 1000	