MATCH LINE (SEE DRAWING ESC-3)

1c TEMPORARY DIVERSION

1c AREA TO BE CLEAN CLOSED

1c TEMPORARY 36"Ø CHDPE CULVERT

PROPOSED STD. VDOT 10'x10' BOX CULVERT WITH STD. VDOT WINGWALLS (3 SWM-5) 1b

SEE DRAWING ESC-11 FOR LAND DISTURBANCE IN FORMER COAL YARD 1a

GABION ARMORING

RIPRAP DOWNCHUTE

EAST ASH POND

TEMPORARY LOW BASIN DURING CONSTRUCTION (SEE DRAWING ESC-11) 1a

EXISTING TOWER TO REMAIN

MW-5 MW-6 MW-7 MW-8 MW-9 (DRY WELL) MW-10 MW-16 MW-17 MW-18

EX. VPDES OUTFALL 006

24" CULVERT

1b OUTLET PROTECTION (CLASS 1 RIP RAP) La = 31', W = 16', T = 24"

CSX RAILROAD

~ JAMES RIVER ~

TEMPORARY LOW BASIN DURING CONSTRUCTION (SEE DRAWING ESC-11) 1a

POND OUTLET AND EMERGENCY SPILLWAY

EAST STORMWATER DETENTION POND

MATCH LINE (SEE DRAWING ESC-6)

LEGEND

- DOMINION PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS)
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING RAILROAD
- WETLANDS
- CREEK / STREAM CENTERLINE
- APPROXIMATE EDGE OF SURFACE WATER
- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING OVERHEAD UTILITY LINE
- MW-8 EXISTING MONITORING WELL LOCATION AND IDENTIFICATION
- MH EXISTING MANHOLE
- FEMA BASE FLOOD ELEVATION
- RIPARIAN PRESERVATION AREA (PER FLUVANNA COUNTY ORDINANCE)
- LIMITS OF DISTURBANCE
- SIDESLOPE DIVERSION BERM (1/24)
- TOP DECK PERIMETER DIVERSION BERM (2/24)
- TOP DECK DIVERSION BERM (3/24)
- CE CONSTRUCTION ENTRANCE (MIN. STD. 3.02)
- SF SILT FENCE (MIN. STD. 3.05)
- SSF SUPER SILT FENCE (MIN. STD. 3.05)
- TC TURBIDITY CURTAIN (MIN. STD. 3.27)
- CIP CULVERT INLET PROTECTION (MIN. STD. 3.08)
- OP OUTLET PROTECTION (MIN. STD. 3.18)
- CD CHECK DAM (MIN. STD. 3.20)
- BM EROSION CONTROL MATTING (MIN. STD. 3.36)
- MU MULCH (MIN. STD. 3.35)
- PS PERMANENT SEEDING (MIN. STD. 3.32)
- SW SILT WATTLE (SEE ESC-8) 1a

NOTE:
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE MINIMUM STANDARDS AS DESCRIBED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

SEE DRAWING ESC-11 FOR INTERIM GRADING AND STORMWATER MANAGEMENT DURING CONSTRUCTION. 1a

1a - DENOTES REVISIONS PER FLUVANNA COUNTY E&S COMMENTS

1b - DENOTES REVISION PER DEQ STORMWATER MANAGEMENT COMMENTS

1c - DENOTES ADDITIONAL PLAN REVISION

N

SCALE 100 0 100 200 FEET

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	1/20/16	JRD	REV. PER COUNTY AND DEQ COMMENTS	ABM	ATN	JRD

COMMONWEALTH OF VIRGINIA JAMES R. DIFRANCESCO Lic. No. 032960 PROFESSIONAL ENGINEER 1-20-16

PROJECT
DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN
FLUVANNA COUNTY, VIRGINIA

TITLE
E & S CONTROL PLAN
(4 OF 5)

PROJECT No.		15-20347
FILE No.		1520347J_ESC2-6
REV. 0	SCALE	AS SHOWN
DESIGN	JRD	08/18/15
CADD	ATN	08/18/15
CHECK	DPM	10/14/15
REVIEW	JRD	10/14/15

DRAWING
ESC-5

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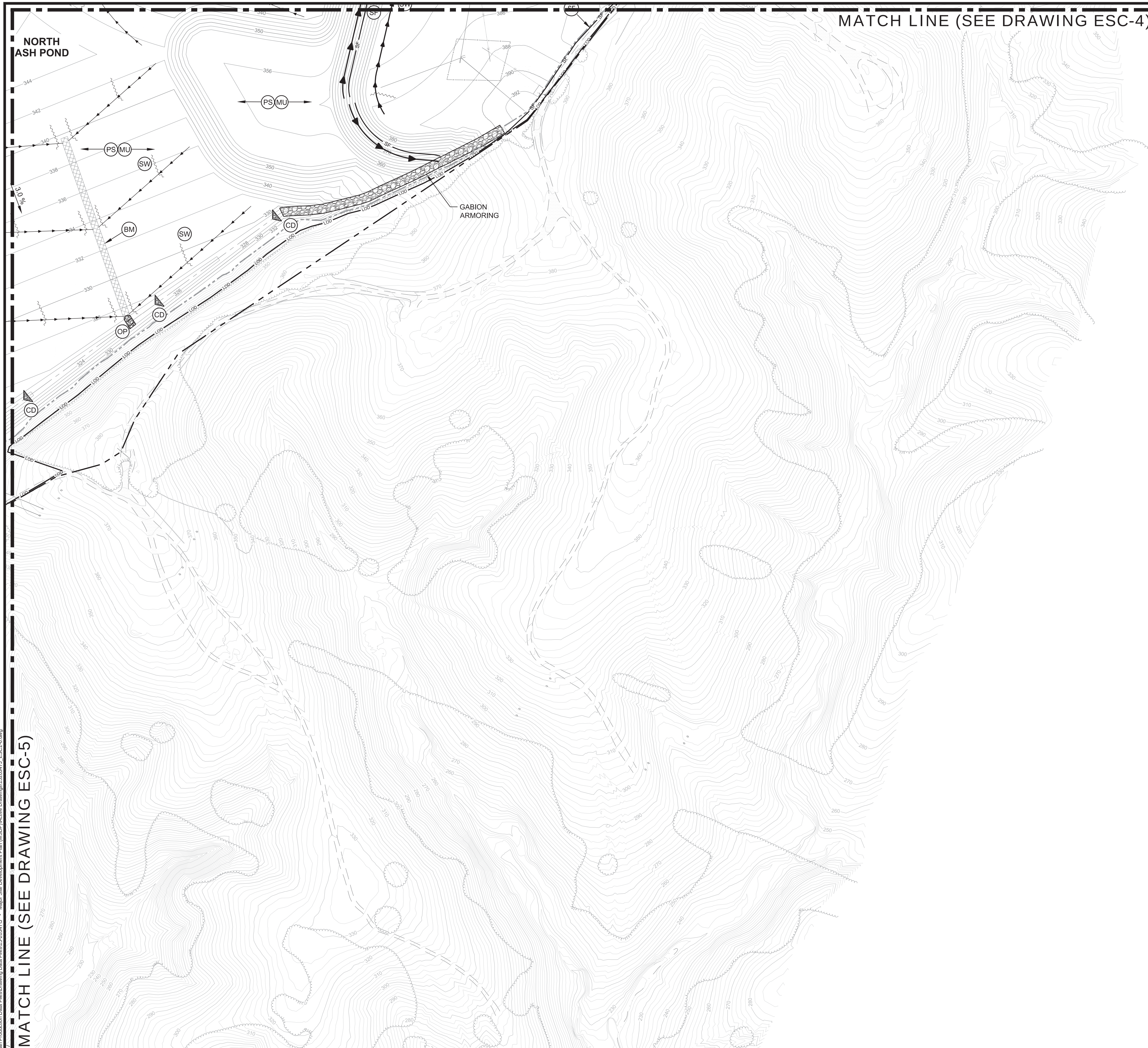

LEGEND

- DOMINION PROPERTY BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- EXISTING TOPOGRAPHIC CONTOURS (2' INTERVALS)
- EXISTING PAVED ROAD
- EXISTING UNPAVED ROAD
- EXISTING RAILROAD
- WETLANDS
- CREEK / STREAM CENTERLINE
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- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING OVERHEAD UTILITY LINE
- MW-8 EXISTING MONITORING WELL LOCATION AND IDENTIFICATION
- MH EXISTING MANHOLE
- FEMA BASE FLOOD ELEVATION
- RPA RIPARIAN PRESERVATION AREA (PER FLUVANNA COUNTY ORDINANCE)
- LOD LIMITS OF DISTURBANCE
- SIDESLOPE DIVERSION BERM (1/24)
- TOP DECK PERIMETER DIVERSION BERM (2/24)
- TOP DECK DIVERSION BERM (3/24)
- CE CONSTRUCTION ENTRANCE (MIN. STD. 3.02)
- SF SILT FENCE (MIN. STD. 3.05)
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- CIP CULVERT INLET PROTECTION (MIN. STD. 3.08)
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- MU MULCH (MIN. STD. 3.35)
- PS PERMANENT SEEDING (MIN. STD. 3.32)
- SW SILT WATTLE (SEE ESC-8) 1a

NOTE:
ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE MINIMUM STANDARDS AS DESCRIBED IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

SEE DRAWING ESC-11 FOR INTERIM GRADING AND STORMWATER MANAGEMENT DURING CONSTRUCTION. 1a

- 1a - DENOTES REVISIONS PER FLUVANNA COUNTY E&S COMMENTS
- 1b - DENOTES REVISION PER DEQ STORMWATER MANAGEMENT COMMENTS
- 1c - DENOTES ADDITIONAL PLAN REVISION

100 0 100 200
SCALE FEET

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	1/20/16	JRD	REV. PER COUNTY AND DEQ COMMENTS	ABM	ATN	JRD

COMMONWEALTH OF VIRGINIA — PROFESSIONAL ENGINEER

PROJECT
DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN
FLUVANNA COUNTY, VIRGINIA

TITLE
E & S CONTROL PLAN (5 OF 5)

PROJECT No.		15-20347
FILE No.		1520347J_ESC2-6
REV. 0	SCALE	AS SHOWN
DESIGN	JRD	08/18/15
CADD	ATN	08/18/15
CHECK	DPM	10/14/15
REVIEW	JRD	10/14/15

DRAWING
ESC-6

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EROSION CONTROL NARRATIVE

PROJECT DESCRIPTION
THE PURPOSE OF THE PROJECT IS TO CLOSE AND CAP THE CCR IMPOUNDMENTS AT THE BREMO POWER STATION WITH A GEOSYNTHETIC CAP AND GRASS SEEDED SOIL COVER. THE PROPOSED PLAN IS LIMITED TO SHAPING THE SITE GRADES FOR POSITIVE DRAINAGE AND INSTALLATION OF DRAINAGE FEATURES TO DIRECT AND ATTENUATE STORMWATER RUNOFF. THE LIMITS OF DISTURBANCE FOR THE PROJECT IS APPROXIMATELY 147.0 ACRES AND THE PROJECT WILL LOWER THE IMPERVIOUS ACREAGE AT THE SITE FROM 101.3 TO 32.3 ACRES. 1b 1a

EXISTING SITE CONDITIONS
CURRENTLY, THE CCR IMPOUNDMENTS ENCOMPASS ONE QUARTER OF THE TOTAL BREMO POWER STATION PROPERTY AND ARE MADE UP OF COMPACTED ASH AND OPEN POOLS. THESE AREAS ORIGINATED AS THREE COAL ASH COLLECTION PONDS THAT FILLED IN OVER TIME. SOME HAVE BEEN COVERED WITH SOIL AND RESHAPED. EACH POND CURRENTLY CONTAINS SOME ASH AND WATER. THE FORMER COAL YARD ON THE SITE HAS BEEN PREVIOUSLY CAPPED AND CLOSED. THE PROPERTY GENERALLY SLOPES FROM NORTH TO SOUTH AND DRAINS TO THREE STORMWATER CONVEYANCES UNDER THE CSX RAILROAD TRACKS AND INTO THE JAMES RIVER.

ADJACENT AREAS
THE SITE IS BOUND TO THE NORTH BY BREMO ROAD AND UNDEVELOPED FOREST LAND; TO THE EAST BY FOREST AND OPEN LAND; TO THE SOUTH BY A RAILROAD EMBANKMENT ADJACENT TO THE JAMES RIVER; AND TO THE WEST BY UNDEVELOPED RURAL PROPERTIES.

OFF-SITE AREAS
SOIL FOR THE COVER WILL BE IMPORTED FROM A YET-TO-BE DETERMINED OFF-SITE AREA. ONCE THE CONTRACTOR IS IDENTIFIED AND LOCATES A BORROW SOURCE, THE CONTRACTOR SHALL PROVIDE EVIDENCE OF E&S PLAN COVERAGE OF THE SOIL BORROW SOURCE TO THE PLAN APPROVING AUTHORITY.

ON-SITE SOIL STOCKPILE AREAS
ON-SITE SOIL STOCKPILES MAY BE UTILIZED FOR THE STORAGE OF EXCAVATED OR IMPORTED MATERIALS DURING CONSTRUCTION. THESE AREAS ARE SHOWN ON THE DRAWINGS. SILT FENCING WILL BE INSTALLED ON THE DOWNHILL PERIMETER OF EACH STOCKPILE. STOCKPILES WILL BE SEEDED IF LEFT DORMANT FOR MORE THAN 7 DAYS.

SOILS
EXISTING SOILS ON THE SITE CONSIST MAINLY OF MIXED GRAVELS AND OTHER IMPORTED MATERIALS FOR THE OPERATION AND MAINTENANCE OF THE STATION.

CRITICAL AREAS
DISTURBED AREAS ADJACENT TO WATER FEATURES HAVE BEEN IDENTIFIED AS CRITICAL AREAS. SPECIAL CARE WILL BE TAKEN IN THE CONTAINMENT AND FILTERING OF RUNOFF THROUGH SILT FENCE DURING CONSTRUCTION AND STABILIZATION WHERE WATER BODIES ARE NOT OTHERWISE PROTECTED BY THE SURROUNDING TERRAIN.

1a 1b EROSION AND SEDIMENT CONTROL MEASURES AND SEQUENCING (INITIAL)

1. INSTALL CONSTRUCTION ENTRANCES AS INDICATED ON PLANS (VESCH 3.02)
2. INSTALL SILT FENCE AS INDICATED ON THE PLANS TO COLLECT AND FILTER RUNOFF (VESCH 3.05).
3. INSTALL ROCK CHECK DAMS (VESCH 3.20) AND INLET PROTECTION IN EXISTING DRAINAGE DITCH BY THE 48" STONE ARCH CULVERT AS INDICATED ON PLANS.
4. APPLY CONSTRUCTION ROAD STABILIZATION (VESCH 3.03) AS NEEDED THROUGHOUT THE PROJECT TO PREVENT RUTTING AND SOIL TRANSPORT.

1a 1b WEST TREATMENT POND (WTP) AREA CONSTRUCTION:
1. MOVE CCR MATERIAL AS NECESSARY TO EXPOSE POND SUBGRADE.
2. IMPORT SOIL TO CONSTRUCT THE INTERIOR EMBANKMENT.
3. INSTALL GEOMEMBRANE LINER AND INTAKE TOWER MODIFICATIONS.
4. REMOVE REMAINING CCR MATERIALS.
5. PRIOR TO EXTERIOR EMBANKMENT REMOVAL, CONSTRUCT WEST STORMWATER DETENTION POND EMBANKMENT, OUTFALL STRUCTURE AND RIPRAP OUTLET PROTECTION (VESCH 3.18).
6. REMOVE EXTERIOR EMBANKMENTS, GRADE AREAS TO DRAIN AS SHOWN.
7. APPLY SEEDING AND STABILIZATION TO AREAS AS THEY ARE BROUGHT TO FINAL GRADES.
8. PERMANENT SEEDING WILL BE ESTABLISHED ON FINISHED SURFACES AND WHERE PRE-EXISTING GRASS SURFACES WERE DISTURBED. SEED SHALL BE APPLIED AS SPECIFIED ON THIS SHEET (VESCH 3.32). MULCH WILL BE APPLIED AS A FINAL STEP (VESCH 3.35).

1a 1b EAST POND CONSTRUCTION:
1. MOVE CCR MATERIAL AS NECESSARY TO EXPOSE POND SUBGRADE AT THE EASTERN PORTION OF THE EAST ASH POND.
2. CONSTRUCT THE EAST STORMWATER DETENTION POND AND OUTFALL STRUCTURE AND INSTALL RIPRAP OUTLET PROTECTION (VESCH 3.18).
3. GRADE CCR POND CLOSURE AREAS TO CREATE TEMPORARY LOW BASIN TO COLLECT STORMWATER DURING THE GRADING AND SHAPING PROCESS. SEE DRAWING ESC-11 FOR ADDITIONAL DETAILS ON THE INTERIM GRADING AND STORMWATER MANAGEMENT DURING CONSTRUCTION.
4. INSTALL ROCK CHECK DAMS (VESCH 3.20) AND EROSION CONTROL MATTING (VESCH 3.36) IN NEWLY CREATED CHANNELS AS CONSTRUCTION PROGRESSES.
5. BRING CCR AREAS TO LINER SUBGRADE ELEVATIONS.
6. INSTALL GEOMEMBRANE CAP COMPONENTS.
7. INSTALL 24" COVER SOIL, EROSION CONTROL MATTING, SEEDING AND STABILIZATION AS THE WORK PROGRESSES.
8. PERMANENT SEEDING WILL BE ESTABLISHED ON FINISHED SURFACES AND WHERE PRE-EXISTING GRASS SURFACES WERE DISTURBED. SEED SHALL BE APPLIED AS SPECIFIED ON THIS SHEET (VESCH 3.32). MULCH WILL BE APPLIED AS A FINAL STEP (VESCH 3.35).

1a 1b NORTH POND CONSTRUCTION:
1. GRADE CCR POND CLOSURE AREAS TO CREATE TEMPORARY LOW BASIN TO COLLECT STORMWATER DURING THE GRADING AND SHAPING PROCESS. SEE DRAWING ESC-11 FOR ADDITIONAL DETAILS ON THE INTERIM GRADING AND STORMWATER MANAGEMENT DURING CONSTRUCTION.
2. INSTALL ROCK CHECK DAMS (VESCH 3.20) AND EROSION CONTROL MATTING (VESCH 3.36) IN NEWLY CREATED CHANNELS AS CONSTRUCTION PROGRESSES.
3. BRING CCR AREAS TO LINER SUBGRADE ELEVATIONS.
4. CONSTRUCT NORTH POND BOX CULVERT, OUTFALL CHANNEL AND STILLING BASIN.
5. INSTALL GEOMEMBRANE CAP COMPONENTS.
6. INSTALL 24" COVER SOIL, EROSION CONTROL MATTING, SEEDING AND STABILIZATION AS THE WORK PROGRESSES.
7. PERMANENT SEEDING WILL BE ESTABLISHED ON FINISHED SURFACES AND WHERE PRE-EXISTING GRASS SURFACES WERE DISTURBED. SEED SHALL BE APPLIED AS SPECIFIED ON THIS SHEET (VESCH 3.32). MULCH WILL BE APPLIED AS A FINAL STEP (VESCH 3.35).

1a 1b EROSION AND SEDIMENT CONTROL MEASURES AND SEQUENCING (FINAL)

1. DURING AND AFTER SITE DEMOBILIZATION, APPLY PERMANENT SEEDING AND MULCH / MATTING TO OTHER FINISHED SURFACES AND WHERE PRE-EXISTING GRASS SURFACES WERE DISTURBED.
2. APPLY CONSTRUCTION ROAD STABILIZATION (VESCH 3.03) TO ROADS TO PREVENT RUTTING AND SOIL EROSION.
3. MAINTAIN E&S CONTROLS UNTIL VEGETATION IS ESTABLISHED AND REMOVAL OF MEASURES IS ALLOWED BY THE COUNTY INSPECTOR.

PERMANENT STABILIZATION
ALL DISTURBED AREAS IN WHICH NATURAL COVER IS TO REMAIN SHALL BE SEEDED AND MULCHED ACCORDING TO THE SPECIFICATIONS. AFTER ADEQUATE STABILIZATION HAS BEEN ACHIEVED, ALL TEMPORARY E&S MEASURES SHALL BE REMOVED.

STORMWATER TREATMENT 1b
INSTALLATION OF THE VEGETATIVE COVER ON THE CCR IMPOUNDMENT AREAS WILL DECREASE THE STORMWATER RUNOFF FROM THE SITE DUE TO A DECREASE IN THE RUNOFF CURVE NUMBER (CN). THE EXPOSED CCR MATERIAL IS ESTIMATED TO BE CN=91 (IMPERVIOUS); WHEREAS, THE FINISHED COVER SYSTEM IS ESTIMATED TO BE CN=58 (MEADOW, HSG B). AN ADDITIONAL CONTRIBUTOR TO LOWER RUNOFF FOR THE FINISHED SYSTEM IS AN OVERALL REDUCTION IN TOTAL IMPERVIOUS AREA OF APPROXIMATELY 32 PERCENT.

STANDARD EROSION AND SEDIMENT CONTROL & POLLUTION PREVENTION PLAN NOTES

1. PRIOR TO COMMENCEMENT OF ANY LAND DISTURBANCE ACTIVITIES, A LAND DISTURBANCE PERMIT MUST BE ISSUED BY THE BUILDING INSPECTIONS OFFICE. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN AND BONDING OF THE EROSION AND SEDIMENT CONTROL MEASURES IS REQUIRED FOR PERMIT ISSUANCE.
2. A SEPARATE LAND DISTURBANCE PERMIT OR AN ESC PLAN AMENDMENT TO THIS PLAN MUST BE SUBMITTED TO, AND APPROVED BY THE FLUVANNA COUNTY BUILDING INSPECTIONS OFFICE PRIOR TO ANY OFF-SITE LAND DISTURBANCE (BORROW / FILLING / DISPOSAL ACTIVITIES) ASSOCIATED WITH THIS PROJECT IF NOT OTHERWISE PERMITTED PREVIOUSLY. IF THE OFF-SITE PORTION OF THE PROJECT IS LOCATED WITHIN FLUVANNA COUNTY, ADDITIONAL E&S INSPECTION FEES WILL BE REQUIRED.
3. NOTIFY THE FLUVANNA COUNTY BUILDING INSPECTIONS OFFICE AT 434-591-1935 AT LEAST THREE DAYS IN ADVANCE TO SCHEDULE AN ON-SITE PRE-CONSTRUCTION MEETING.
4. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.
5. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN FOURTEEN DAYS.
6. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES.
7. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES, AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
8. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND INSTALLED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE. INITIAL CLEARING MUST BE THE MINIMUM REQUIRED TO INSTALL EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES. SHOULD EITHER THE EROSION AND SEDIMENT CONTROL NARRATIVE OR SEQUENCE OF CONSTRUCTION CONFLICT WITH THIS REQUIREMENT, THE CONFLICTING PORTIONS OF EITHER WILL BE DETERMINED TO BE INVALID.
9. 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 COUNTY INSPECTOR, IS UNIFORM MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
10. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

 10.1. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME
 10.2. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES
 10.3. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
 10.4. RESTABILIZATION SHALL BE IN ACCORDANCE WITH THE ABOVE NOTES.

11. ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS PERTAINING TO WORKING IN OR CROSSING LIVE WATERCOURSES SHALL BE MET.
12. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE, THE ROAD 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 DISPOSAL AREA.
13. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSPECT EROSION CONTROL DEVICES PERIODICALLY AND AFTER EVERY ERODIBLE RAINFALL. ANY NECESSARY REPAIRS OR CLEAN UP TO MAINTAIN THE EFFECTIVENESS OF THE EROSION CONTROL DEVICES SHALL BE MADE IMMEDIATELY.
14. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES AND DEVICES MAY BE REQUIRED BY THE DIRECTOR OF BUILDINGS INSPECTION OR THEIR DESIGNATED AGENT IF DEEMED NECESSARY.
15. THE OWNER SHALL INSTALL ADDITIONAL EROSION AND SEDIMENT CONTROL DEVICES AND MEASURES IF THE REGISTERED LAND DISTURBER DETERMINES THAT SUCH ADDITIONAL DEVICES AND MEASURES ARE NECESSARY.
16. ALL EROSION CONTROL DEVICES SHALL BE IN PLACE AND FUNCTIONAL AT ALL TIMES AND IF REMOVED FOR CONSTRUCTION PROGRESS, SHALL BE REPLACED BY THE CLOSE OF EACH WORKDAY.
17. FINAL REMOVAL OF EROSION CONTROL DEVICES SHALL NOT OCCUR UNTIL THE DIRECTOR OF BUILDINGS INSPECTION OR HIS DESIGNATED AGENT DEEMS THE SITE STABILIZED.
18. PERMANENT SEEDING IS TO BE IN ACCORDANCE WITH THE ACCOMPANYING SEEDING SCHEDULE.
19. CONSTRUCTION SITE OPERATORS ARE REQUIRED TO CONTROL WASTE SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASHOUT, CHEMICALS, LITTER, AND SANITARY WASTE AT THE CONSTRUCTION SITE THAT MAY CAUSE ADVERSE IMPACTS TO WATER QUALITY.
20. CONSTRUCTION SITE OPERATORS ARE REQUIRED TO CONTROL THE TRANSPORT OF DUST AND OTHER WIND BORN CONTAMINANTS AS A RESULT OF LAND-DISTURBING, DEMOLITION AND CONSTRUCTION ACTIVITIES. THE OPERATOR SHALL PREVENT THE SURFACE AND AIR MOVEMENT OF AIRBORNE SUBSTANCES IN ACCORDANCE WITH STD AND SPEC 3.39 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK OR AS APPROVED BY THE BUILDING INSPECTIONS OFFICE OR THEIR DESIGNATED AGENT.

1a 1b 1c

ENGINEER'S ESTIMATE OF TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

ITEM DESCRIPTION	U/M	# OF UNITS
DISTURBED AREA	AC	147.0
PERMANENT SEEDING	AC	135
MULCH	AC	135
WATTLES	L.F.	4,751
SILT FENCE	L.F.	9,748
SUPER SILT FENCE	L.F.	2,694
TURBIDITY CURTAIN	LF.	95
EC-2 MATTING	S.Y.	106,565
EC-3 MATTING	S.Y.	64,985
CULVERT INLET PROTECTION	EACH	3
GABION OUTLET PROTECTION	S.Y.	4,184
GABION ARMORING	S.Y.	4,286
GEOTEXTILE UNDER GABIONS	S.Y.	8,470
CONSTRUCTION ENTRANCE	EACH	3
ROCK CHECK DAMS	EACH	32

CONSTRUCTION NOTES

1. ALL EXISTING GRAVEL ACCESS ROADS AROUND THE CONSTRUCTION AREA SHALL BE MAINTAINED IN SERVICEABLE CONDITION THROUGHOUT THE PROJECT, INCLUDING REGRADING AND DRESSING WITH STONE AS NECESSARY.
2. DUST CONTROL BY USE OF WATER TRUCKS OR OTHER METHODS SHALL BE MAINTAINED BY THE CONTRACTOR AS NOTED IN STANDARD E&S NOTE #20.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING FLUVANNA COUNTY'S BUILDING INSPECTIONS OFFICE AND SCHEDULING A PRE-CONSTRUCTION MEETING AT LEAST THREE DAYS PRIOR TO STARTING ANY WORK ON THIS PROJECT. ALL WORK SHALL BE SUBJECT TO INSPECTION BY COUNTY INSPECTORS.
4. DISTURBED AREAS SHALL BE KEPT TO A MINIMUM, AND RESTORATION OF SUCH AREAS SHALL BE DONE BY THE CONTRACTOR AS QUICKLY AS POSSIBLE. ALL DISTURBED AREAS SHALL BE SEEDED OR PAVED WITHIN SEVEN DAYS AFTER BEING DISTURBED OR BACKFILLED, OR AS DIRECTED BY THE INSPECTOR ASSIGNED TO THE PROJECT.
5. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE LATEST EDITION OF THE V.D.O.T. ROAD AND BRIDGE SPECIFICATIONS AND ROAD AND BRIDGE STANDARDS.
6. ALL EROSION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK, AND SECTION 1.5 OF THE E&S REGULATIONS OF THE VIRGINIA DIVISION OF SOIL AND WATER CONSERVATION (VR625-02-00).
7. FINAL ACCEPTANCE BY THE OWNER SHALL NOT BE MADE UNTIL ALL WORK SHOWN ON THE APPROVED PLANS IS COMPLETED.
8. WHERE UNSUITABLE MATERIAL IS ENCOUNTERED, IT SHALL BE REMOVED WHERE NECESSARY, AND REPLACED WITH SUITABLE MATERIAL IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
9. LOCATIONS OF ALL UNDERGROUND UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL CALL "MISS UTILITY" AT 811 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION. IF PROPOSED WORK CONFLICTS WITH ANY UTILITIES, CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY, CONTRACTOR WILL BE RESPONSIBLE FOR ANY DAMAGE TO UNDERGROUND UTILITIES OR STRUCTURES.
10. THE RESPONSIBLE LAND DISTURBER FOR THIS PROJECT SHALL BE DESIGNATED BY THE CONTRACTOR.

TEMPORARY SEEDING NOTES

1. ALL SEEDING, FERTILIZING AND LIMING SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION 3.31 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), THIRD EDITION, 1992. MULCHING SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION 3.31 OF THE VESCH.
2. TEMPORARY SEEDING WILL BE APPLIED WITHIN 7 DAYS TO DENUDED AREAS WHICH MAY NOT BE AT FINAL GRADE BUT WILL REMAIN DORMANT (UNDISTURBED) FOR LONGER THAN 14 DAYS. FOR TEMPORARY SEEDING USE 50% OF THE RECOMMENDED RATES OF FERTILIZER, LIME AND FULL AMOUNT OF SEED AND MULCH REQUIRED FOR REGULAR SEEDING.
3. ALL TEMPORARY EARTH BERMS, DIVERSIONS, AND SILT DAMS ARE TO BE MULCHED AND SEEDED FOR VEGETATIVE COVER IMMEDIATELY AFTER GRADING. STRAW OR HAY MULCH IS REQUIRED. THE SAME APPLIES TO ALL STOCKPILES, ON SITE AS WELL AS SOIL (INTENTIONALLY) TRANSPORTED FROM THE PROJECT SITE.

TEMPORARY SEEDING MIXTURES FOR ALL AREAS

PLANTING DATES	SPECIES	RATE (LBS/AC.)
SEPT 1 - FEB 15	50/50 MIX OF ANNUAL RYE & CEREAL WINTER RYE	50-100
FEB 16 - APR 30	ANNUAL RYE	60-100
MAY 1 - AUG 31	GERMAN MILLET	50-100

PERMANENT SEEDING NOTES

1. ALL SEEDING, FERTILIZING AND LIMING SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION 3.32 OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH), THIRD EDITION, 1992. MULCHING SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION 3.35 OF THE VESCH.
2. CONDUCT SOIL TESTING PER SECTION 02936 OF THE TECHNICAL SPECIFICATIONS. THE AREA TO BE SEEDED SHALL FIRST BE FERTILIZED AND TREATED WITH AGRICULTURAL LIME IN ACCORDANCE WITH THE SOIL TESTING RESULTS. SOIL ADDITIVES SHALL BE WORKED INTO THE SURFACE A MINIMUM DEPTH OF ONE INCH.
3. PERMANENT SEEDING SHALL BE DONE ONLY BETWEEN THE DATES OF FEBRUARY 15 AND JUNE 15 OR BETWEEN SEPTEMBER 15 AND DECEMBER 15, EXCEPT AS OTHERWISE DIRECTED BY THE ENGINEER. ABSENT OF SITE-SPECIFIC SOIL TESTING AND SEED MIXTURE RECOMMENDATIONS, FOLLOW THE SEEDING SCHEDULE BELOW:

SEEDING MIXTURES FOR THE PIEDMONT REGION

SPECIES	RATE (LBS/AC.)
KENTUCKY 31 FESCUE	128
RED TOP GRASS	2
SEASONAL NURSE CROP*	20
	150 LBS.

*USE SEASONAL NURSE CROP IN ACCORDANCE WITH SEEDING DATES AS STATED BELOW:

PLANTING DATES	SPECIES
FEBRUARY 16 - APRIL 30	ANNUAL RYE
MAY 1 - AUGUST 15	FOXTAIL MILLET
AUGUST 16 - OCTOBER 31	ANNUAL RYE
NOVEMBER 1 - FEBRUARY 15	WINTER RYE

4. AFTER SEEDING, THE SURFACE SHALL BE COVERED WITH STRAW OR HAY AT THE RATE OF 70-90 LBS PER 1,000 SQ. FT.
5. LIME AND FERTILIZER SCHEDULE

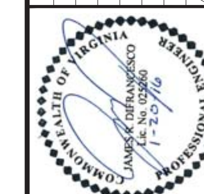
LIME
2 TON/ACRE PULVERIZED AGRICULTURAL GRADE LIMESTONE (MAXIMUM 100 LBS/1,000 SQ. FT.)

FERTILIZER
1000 LBS/ACRE 12-12-12 OR EQUIVALENT NUTRIENTS, (23 LBS/1,000 SQ. FT.)

1a - DENOTES REVISIONS PER FLUVANNA COUNTY E&S COMMENTS
1b - DENOTES REVISION PER DEQ STORMWATER MANAGEMENT COMMENTS
1c - DENOTES ADDITIONAL PLAN REVISION

Golder Associates

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	1/20/16	JRD	REV. PER COUNTY AND DEQ COMMENTS	ABM	ATN	JRD



PROJECT
DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN
FLUVANNA COUNTY, VIRGINIA

TITLE
E & S CONTROL
NOTES AND NARRATIVE

PROJECT No.		15-20347
FILE No.		1520347J_ESC7-9
REV. 0	SCALE	AS SHOWN
DESIGN	JRD	08/18/15
CADD	ATN	08/18/15
CHECK	DPM	10/14/15
REVIEW	JRD	10/14/15

DRAWING
ESC-7

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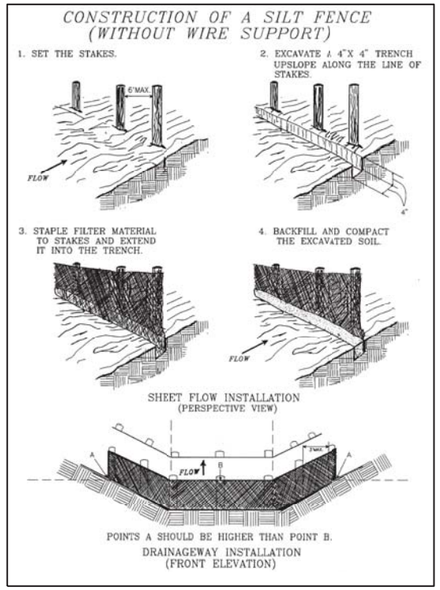
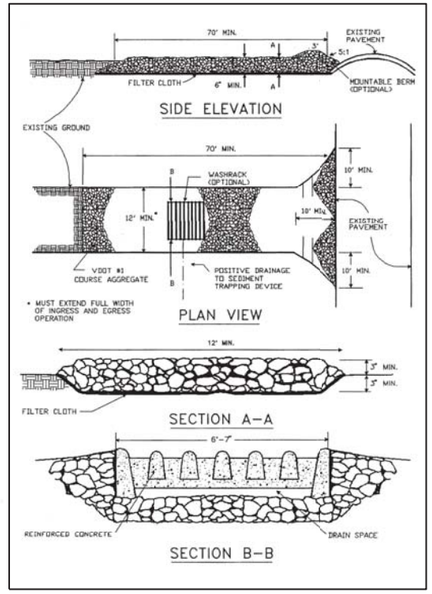


SF **SILT FENCE DETAIL**
NOT TO SCALE



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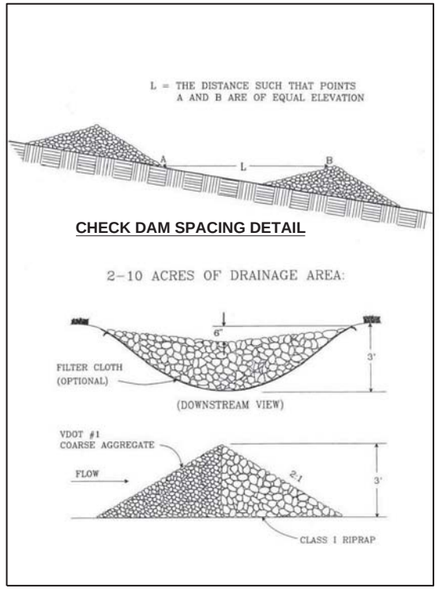

CD **ROCK CHECK DAM DETAIL**
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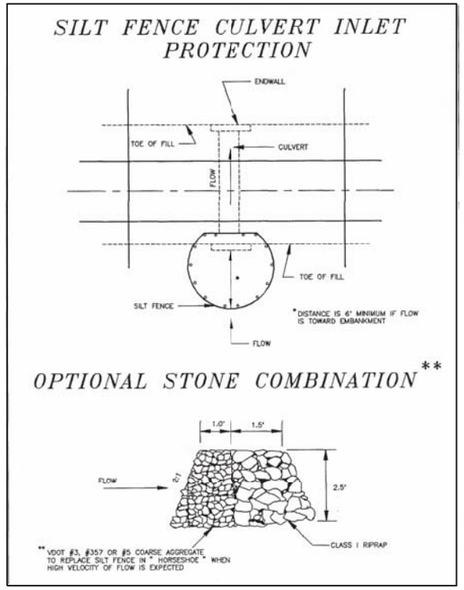

CIP **INLET PROTECTION DETAIL**
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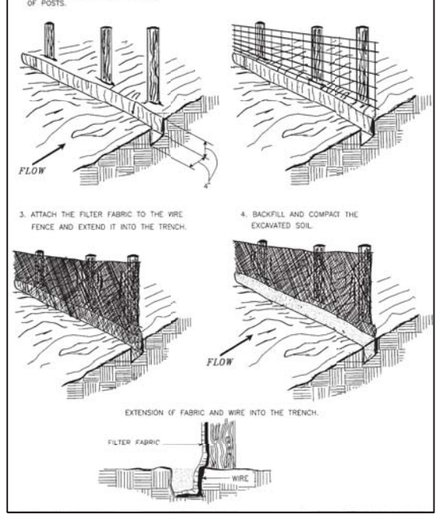
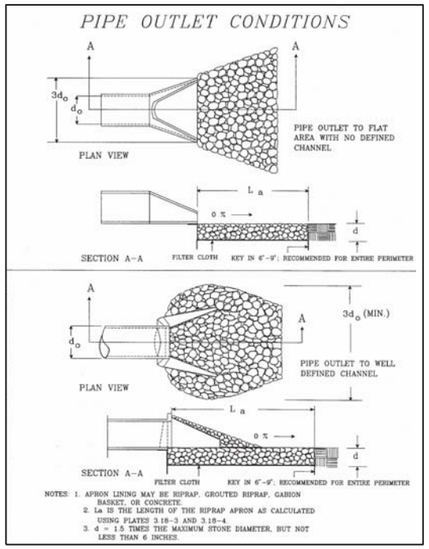


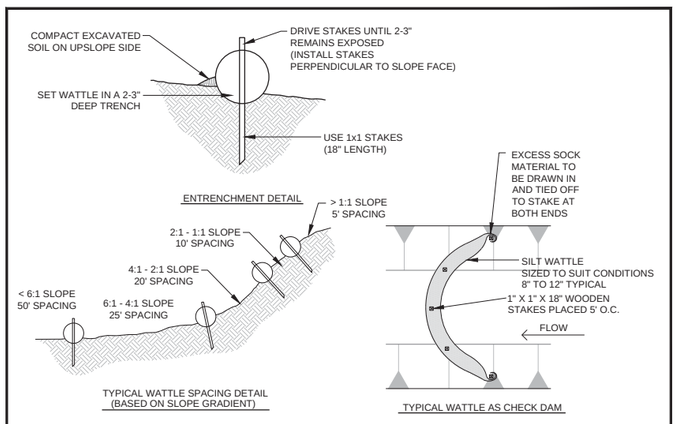
SSF **SUPER SILT FENCE DETAIL**
NOT TO SCALE

SILT FENCE NOTES

1. SILT FENCE AND FILTER FABRIC MUST BE ENTRENCHED.
2. POST FOR SILT FENCES SHALL BE EITHER 2-INCH OAK, 4-INCH PINE OR 1.33 POUNDS PER LINEAR FOOT STEEL WITH A MINIMUM LENGTH OF 5 FEET.
3. WIRE FENCE REINFORCEMENT FOR SILT FENCES USING STANDARD STRENGTH FILTER CLOTH SHALL BE A MINIMUM OF 42 INCHES IN HEIGHT, A MINIMUM OF 14 GAUGE AND SHALL HAVE A MAXIMUM MESH SPACING OF 6 INCHES.
4. POST SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MIN. OF 12 INCHES) WHEN EXTRA STRENGTH FABRIC IS USED. WITHOUT THE WIRE SUPPORT FENCE, POST SHALL NOT EXCEED 6 FEET.
5. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POST.
6. SEDIMENT MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
7. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
8. UNDER NO CIRCUMSTANCES SHOULD SILT FENCE BE CONSTRUCTED IN LIVE STREAMS. SILT FENCE SHALL BE REMOVED UPON COMPLETION OF THE PROJECT.



OP **OUTLET PROTECTION DETAIL**
NOT TO SCALE



INSTALLATION NOTES:

1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2-3" DEEP x 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UPSLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.
3. SECURE THE WATTLE WITH 18-24" STAKES EVERY 3-4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2-3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO THE SLOPE FACE.

1B SW **SILT WATTLE DETAIL**
NOT TO SCALE

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REV	DATE	DES.	REVISION DESCRIPTION	CADD	CHK.	RVW
1	1/20/16	JRD	REV. PER COUNTY AND DEQ COMMENTS	ABM	ATN	JRD

COMMONWEALTH OF VIRGINIA
JAMES R. DEFRANCISCO
Lic. No. 052060
1-20-16
PROFESSIONAL ENGINEER

PROJECT
DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN
FLUVANNA COUNTY, VIRGINIA

TITLE
E & S CONTROL DETAILS
(1 OF 2)

PROJECT No.		15-20347
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REVIEW	JRD	10/14/15

DRAWING
ESC-8

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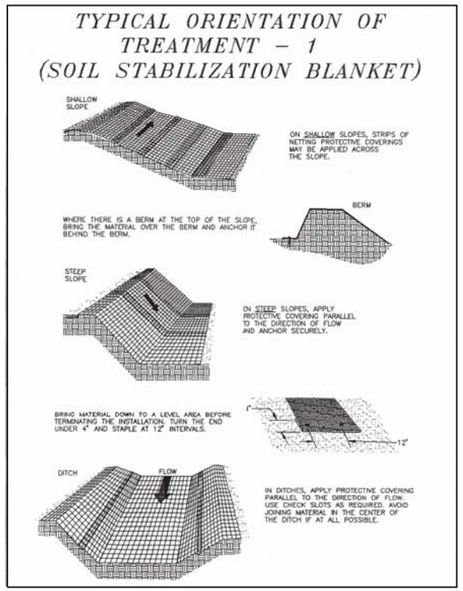
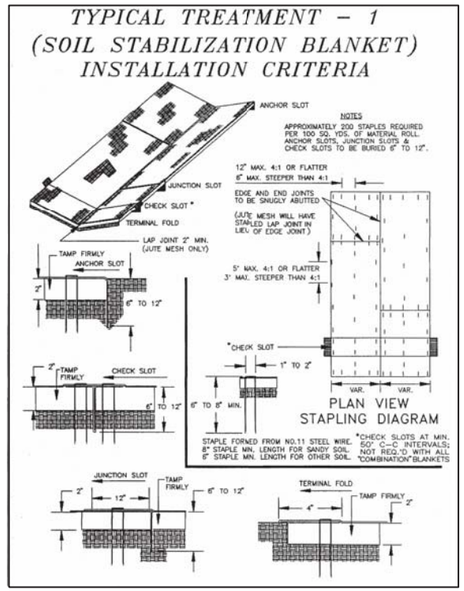


BM **TEMPORARY SOIL STABILIZATION MATTING DETAIL**
NOT TO SCALE



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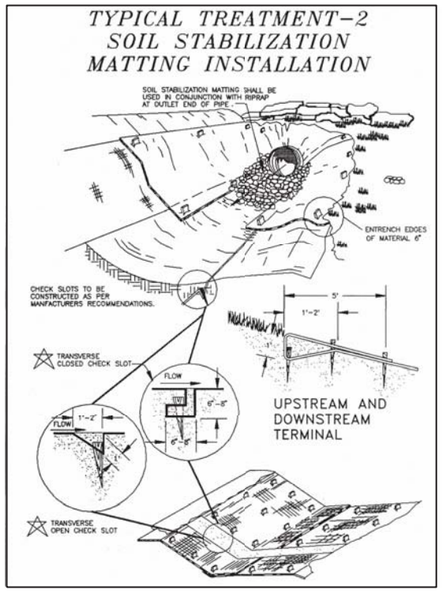

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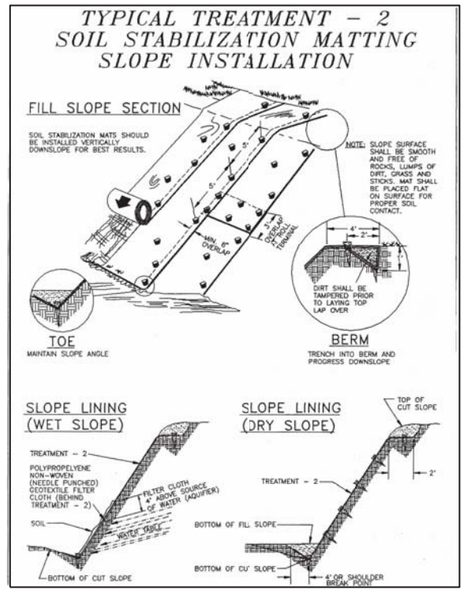

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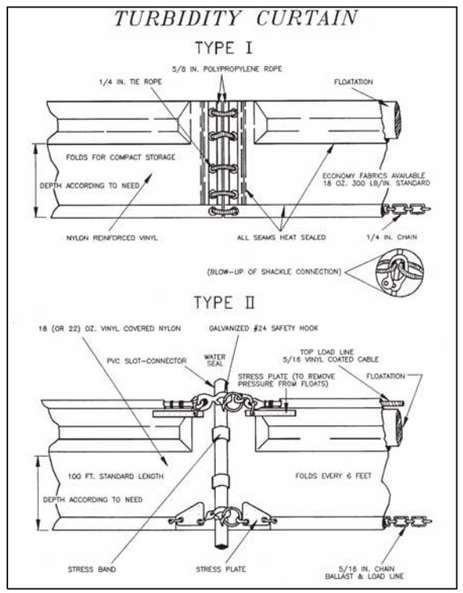

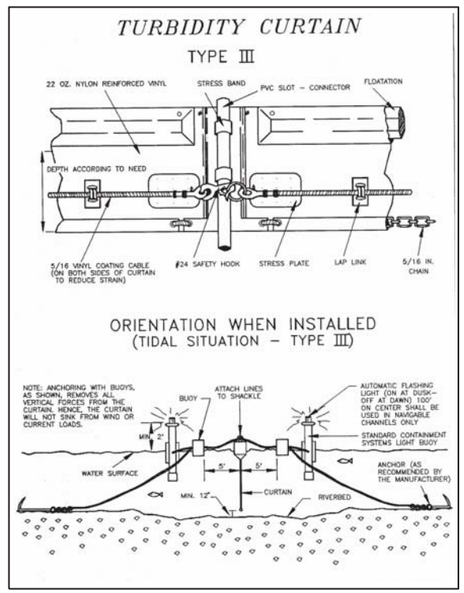

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NOT TO SCALE

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REV	DATE	DES.	REVISION DESCRIPTION	CADD	CHK.	RVW
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COMMONWEALTH OF VIRGINIA — JAMES R. DEFRANCISCO — Lic. No. 052960 — 1-20-16 — PROFESSIONAL ENGINEER

PROJECT
DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN
FLUVANNA COUNTY, VIRGINIA

TITLE
E & S CONTROL DETAILS (2 OF 2)

PROJECT No.		15-20347
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REVIEW	JRD	10/14/15

DRAWING ESC-9

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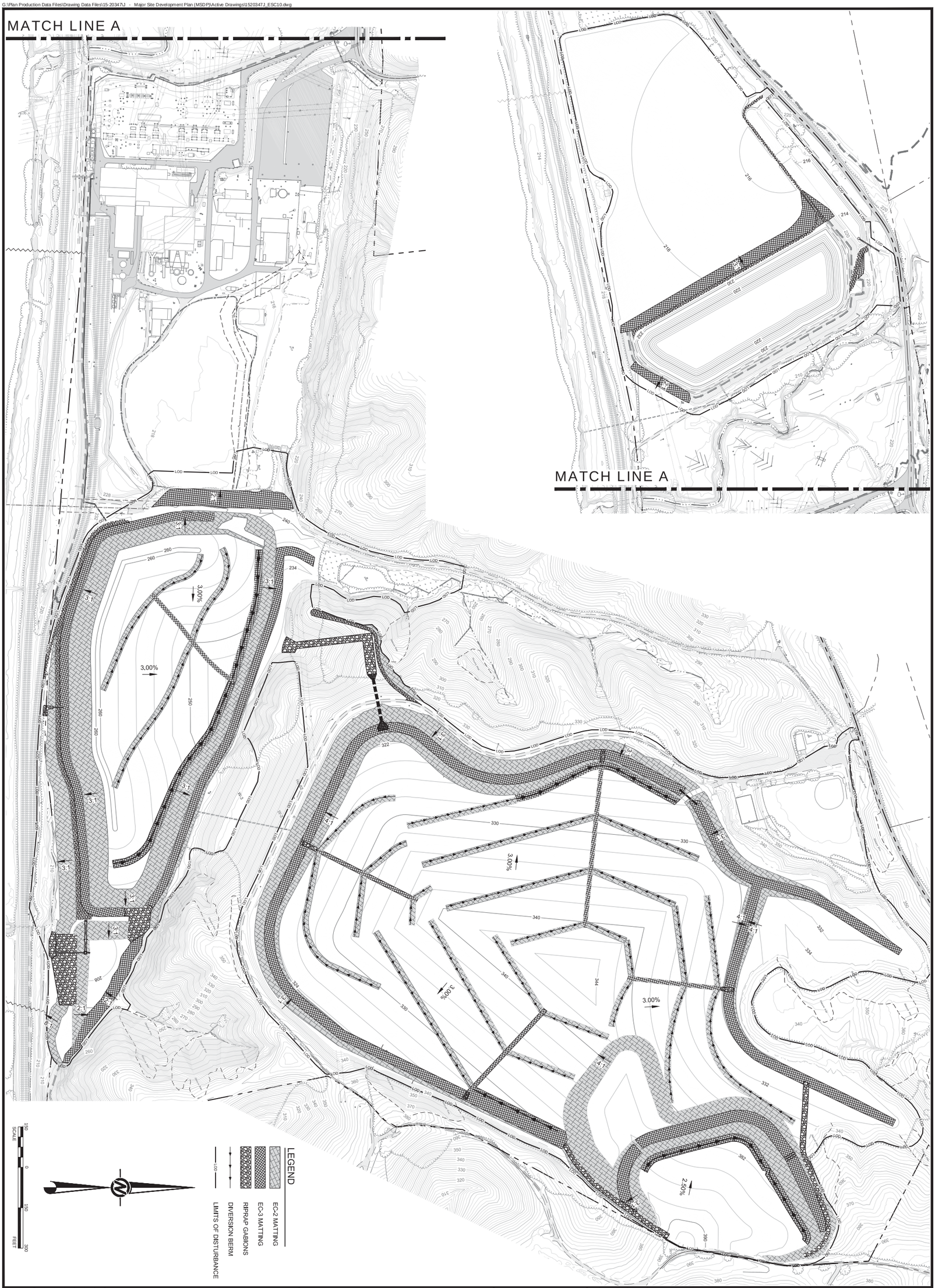

DRAWING
ESC-10

PROJECT No.	15-20347
FILE No.	1520347J ESC10
REV. 0	SCALE AS SHOWN
DESIGN	3RD 09/21/15
CADD	ATN 09/21/15
CHECK	DPM 10/14/15
REVIEW	3RD 10/14/15

TITLE

EROSION AND SEDIMENT CONTROL MATTING PLAN

PROJECT

DOMINION
BREMO POWER STATION
CCR SURFACE IMPOUNDMENT
CLOSURE PLAN

FLUVANNA COUNTY, VIRGINIA

COMMONWEALTH OF VIRGINIA
JAMES R. DIFRANCESCO
Lic. No. 025260
1-7-2016
PROFESSIONAL ENGINEER

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW
1	1/20/16	JRD	REV. PER COUNTY AND DEQ COMMENTS	ABM	ATN	JRD

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