

By virtue of this seal and signature, all supporting documents included in this package are accurate and support the design presented herein.









GENERAL CONSTRUCTION SEQUENCE

THE FOLLOWING IS A GENERAL SEQUENCE FOR EARTHMOVING ACTIVITIES ASSOCIATED WITH CONSTRUCTION OF THE PIPELINE:

- 1. INSTALL TEMPORARY EROSION AND SEDIMENT CONTROLS PRIOR TO EARTH DISTURBANCE. REFER TO BEST MANAGEMENT PRACTICES (BMP) INSTALLATION AND REMOVAL NOTES. APPROPRIATE BMPs SHOULD BE PLACED AROUND SENSITIVE AREAS PRIOR TO EARTH DISTURBANCE...
2. INSTALL TEMPORARY E&S CONTROLS FOR STREAM CROSSINGS AT LOCATIONS SHOWN ON THE E&S PLAN SHEETS...
3. GENERAL CLEARING AND GRUBBING OF THE TREES AND BRUSH ALONG THE RIGHT-OF-WAY (ROW) FOR PIPELINE TRENCHING MAY COMMENCE TO THE WIDTH SPECIFIED IN THE ROW AGREEMENTS OR CONSTRUCTION ALIGNMENT SHEETS...
4. INSTALL CLEAN WATER DIVERSIONS AND CLEAN WATER DIVERSION PIPES IN ACCORDANCE WITH VESCH STD & SPEC 3.09 AND MVP-ES50 AND MCP-ES50.1...
5. INSTALL TEMPORARY AND PERMANENT RIGHT-OF-WAY DIVERSIONS/WATERBARS IMMEDIATELY AFTER INITIAL DISTURBANCE OF THE SOIL...
6. EXCAVATE PIPELINE TRENCH AND BEGIN GRADING OF PROPOSED METER AND RECTIFIER ANODE BED SITES...
7. PIPELINE SECTIONS WILL BE TRANSPORTED TO THE WORK AREA AND STRUNG ALONG THE WORKING SIDE OF THE ROW...
8. STREAM PIPELINE CROSSING CONSTRUCTION METHODS WILL BE INSTALLED AT LOCATIONS SHOWN ON THE E&S PLAN SHEETS...
9. INSTALL TRENCH BREAKERS AT LOCATIONS SHOWN ON THE DRAWINGS OR AS DIRECTED BY MVP AND AS SPECIFIED ON THE DETAIL SHEET...
10. THE TRENCH WILL SUBSEQUENTLY BE BACKFILLED WITH SUITABLE EXCAVATED MATERIAL...
11. STABILIZE EXPOSED AND UNWORKED SOILS BY APPLICATION OF EFFECTIVE BMPs THAT PROTECT THE SOIL FROM THE EROSIIVE FORCES OF RAINDROPS...
12. ANY EXCESS EXCAVATED MATERIALS REMAINING AFTER THE TRENCH HAS BEEN BACKFILLED WILL BE DISPOSED OF WITHIN THE EXISTING ROW...
13. CONSTRUCT PERMANENT RIGHT-OF-WAY DIVERSION/WATERBARS AFTER COMPLETION OF GRADING IN ACCORDANCE WITH THE WATERBAR SPACING...
14. PRIOR TO SEEDING MVP WILL DISC AREAS TO A DEPTH OF 4-6" TO FACILITATE REVEGETATION...
15. REVEGETATE DISTURBED AREA PER THE TABLES ON DETAILS MVP-ES11.1 TO 11.9 AND MVP-ES12.1 TO 12.4 ON THIS SHEET...
16. RE-ESTABLISH APPROPRIATE DRAINAGE IN EXISTING ROAD CHANNELS PRIOR TO SEEDING AND MULCHING...
17. CONDUCTING INSPECTIONS OF TEMPORARY ESC CONTROLS AND SWM BMPs ON AT LEAST THE FOLLOWING FREQUENCIES...
18. ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE DURING CONSTRUCTION SHALL BE HANDLED AND LEGALLY DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF SURFACE WATERS...

FOR STREAM CROSSINGS, REFER TO THE FOLLOWING STEPS:

- 1. INSTALL TEMPORARY EQUIPMENT BRIDGE, BYPASS HOSE, FLUME, PUMP, OR COFFERDAM AS DESCRIBED IN STREAM CROSSING DETAILS AROUND THE WORK AREA...
2. DEWATER WORK AREA UTILIZING PUMP WATER FILTER BAGS. WHERE POSSIBLE, EXCAVATION WILL BE FROM THE TOP OF THE STREAM BANK...
3. INSTALL TRENCH PLUGS, PIPE, AND BACKFILL...
4. STABILIZE CHANNEL EXCAVATION AND STREAM BANKS PRIOR TO REDIRECTING STREAM FLOW...
5. REMOVE BYPASS HOSE, FLUME, PUMP, AND TEMPORARY DAM AS NEEDED

FOR STREAM CROSSINGS WHERE CONVENTIONAL BORE TECHNIQUES PROPOSED, REFER TO THE FOLLOWING STEPS:

- 1. EXCAVATE LAUNCHING AND RECEIVING PITS LOCATED IN WORKSPACE ON EACH SIDE OF THE FEATURE BEING CROSSED...
2. STABILIZE AND/OR PROVIDE APPROPRIATE E&S CONTROLS AROUND THE RESULTING SPOIL PILES IN ACCORDANCE WITH REQUIREMENTS APPLICABLE TO SOIL STOCKPILES...
3. LOWER BORING MACHINE INTO LAUNCHING PIT, AND BORE HORIZONTAL HOLE TO A DIAMETER EQUAL TO THE DIAMETER OF THE PIPE ( OR CASING, IF REQUIRED) AT THE DEPTH OF THE PIPELINE INSTALLATION...
4. PUSH THE PIPELINE SECTION AND/OR CASING THROUGH THE BORE FROM THE LAUNCHING PIT TO THE RECEIVING PIT. IF ADDITIONAL PIPELINE SECTIONS ARE REQUIRED TO SPAN THE LENGTH OF THE BORE, THEY WILL BE WELDED TO THE FIRST SECTION OF THE PIPELINE IN THE LAUNCHING PIT BEFORE BEING PUSHED THROUGH THE BORE.

- 5. DEWATER LAUNCHING AND RECEIVING PITS UTILIZING PUMP WATER FILTER BAGS AS NEEDED DURING BORE OPERATIONS...
6. BACKFILL AND STABILIZE LAUNCHING AND RECEIVING PITS UPON COMPLETION OF THE BORE.

IF WORKING WITHIN A WETLAND AREA, FOLLOW THE GENERALIZED CONSTRUCTION SEQUENCE BELOW:

- 1. INSTALL EITHER SUPER SILT FENCE, ORANGE CONSTRUCTION FENCE, OR COMPOST FILTER SOCKS ALONG THE PERIMETERS OF THE SITE AS SHOWN ON THE CONSTRUCTION DRAWINGS...
2. MATS, PADS, OR SIMILAR DEVICES WILL BE USED DURING THE CROSSINGS OF WETLANDS...
3. SOIL EXCAVATED FROM WETLAND AREAS WILL BE CAREFULLY REMOVED WITH THE ROOTS INTACT...
4. DEWATER WORK AREA UTILIZING PUMPED WATER FILTER BAGS...
5. INSTALL PIPE...
6. INSTALL TRENCH PLUGS IN WETLAND AREAS TO PREVENT THE TRENCH FROM DRAINING THE WETLAND OR CHANGING ITS HYDROLOGY...
7. BACKFILL PIPE TRENCH. BACKFILL THE TOP 12-INCHES OF THE EXCAVATED TRENCH WITH THE STOCKPILED WETLAND SOIL...
8. COMPACT BACKFILL AND GRADE THE SURFACE OF THE TRENCH AREA TO ALLOW FOR POSITIVE DRAINAGE TO SOIL E&S AND TO PREPARE DISTURBED AREAS FOR PERMANENT TRENCH RESTORATION...
9. MAINTAIN ALL E&S DEVICES UNTIL SITE WORK IS COMPLETE AND A GROUND COVER IS ACHIEVED THAT IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION...
10. REMOVE ALL SOIL AND E&S MEASURES UPON ESTABLISHMENT OF A GROUND COVER THAT IS UNIFORM AND MATURE ENOUGH TO SURVIVE AND INHIBIT EROSION...

BMP MAINTENANCE

- TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL BMPs SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION...
IN NON-AGRICULTURAL AREAS THE VISUAL SURVEY SHALL BE COMPARED TO THE DENSITY AND COVER OF ADJACENT UNDISTURBED LANDS...
WETLANDS ALONG THE PROPOSED PIPELINE ARE EXPECTED TO EXHIBIT VARYING DEGREES OF SATURATION AND WATER ELEVATION...
CONDUCTING INSPECTIONS OF TEMPORARY ESC CONTROLS AND SWM BMPs AT LEAST ONCE EVERY FOUR BUSINESS DAYS.

TEMPORARY BMPs WILL BE REMOVED UPON ACHIEVING VEGETATIVE STABILIZATION, WHICH IS DEFINED AS "A GROUND COVER IS ACHIEVED THAT IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION".

- TEMPORARY EROSION AND SEDIMENT CONTROL BMPs SHOULD BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPs ARE NO LONGER NEEDED.

KARST FEATURES

MVP'S KARST HAZARDS ASSESSMENT (KHA) AND KARST MITIGATION PLAN (KMP) ARE CONSISTENT WITH APPLICABLE SECTIONS OF THE VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION (DCR) TECHNICAL BULLETIN NO. 2, HYDROLOGIC MODELING AND DESIGN IN KARST GUIDANCE.

THE KHA WAS INITIALLY PREPARED AS PART OF THE FERC ENVIRONMENTAL REPORT (RESOURCE REPORT #6 GEOLOGICAL RESOURCES), WITH THE MOST RECENT UPDATE SUBMITTED TO THE FERC IN FEBRUARY 2017.

THE KMP WAS MOST RECENTLY UPDATED IN OCTOBER 2017 TO INCORPORATE FERC ENVIRONMENTAL CONDITIONS (IMPLEMENTATION PLAN #21). THE KHA WAS ALSO INCORPORATED IN THE PS&S, WHICH IS REVIEWED BY THE DEQ ON AN ANNUAL BASIS.

DURING PLANNING OF THE PROJECT, MVP ROUTE SURVEY AND DEVELOPMENT SPECIFICALLY AVOIDED CONSTRUCTION CONSTRAINTS INVOLVING SENSITIVE KARST FEATURES, BASED ON THE RESULTS OF THE KHA, BECAUSE OF THE POTENTIAL DIFFICULTIES ASSOCIATED WITH CONSTRUCTION IN THE VICINITY OF SENSITIVE KARST FEATURES.

MVP PROVIDED THE KHA AND KMP TO THE DCR - KARST PROTECTION COORDINATOR FOR REVIEW, AND INCORPORATED RECOMMENDATIONS FROM THE AGENCY. MVP ALSO COLLABORATED WITH THE DCR - KARST PROTECTION COORDINATOR TO COMPLETE SUPPLEMENTAL KARST HYDROGEOLOGIC EVALUATIONS (INCLUDING DYE TRACE STUDIES) IN THE VICINITY OF THE PROPOSED ALIGNMENT.

THE KMP DIRECTS, BASED ON OBSERVATIONS OF THE KARST SPECIALIST INSPECTORS, ADDITIONAL AVOIDANCE OR MITIGATION THAT MAY BE NECESSARY IF ANY NEW KARST FEATURES ARE ENCOUNTERED DURING LAND DISTURBANCE.

PER SECTION 4.0, ITEM 5 OF THE KARST MITIGATION PLAN, THE INTENT OF ESC AND RELATED BEST MANAGEMENT PRACTICES (BMPs) IS TO CONFINE PROJECT-RELATED DISTURBANCE TO THE LOD, PROTECT SENSITIVE KARST FEATURES, AND MINIMIZE EROSION AND ENHANCE REVEGETATION IN THOSE AREAS.

RESTORATION BMP PHASING

THE FOLLOWING IS THE SEQUENCE OF EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE REMOVAL AND INSTALLATION RELATED TO RESTORATION ACTIVITIES. THIS WORK WILL OCCUR BETWEEN RESTORATION OF PIPELINE LIMIT OF DISTURBANCE TO PRE-CONSTRUCTION GRADES AND FINAL CLOSURE OF THE PROJECT DEFINED AS "ACHIEVING VEGETATIVE STABILIZATION".

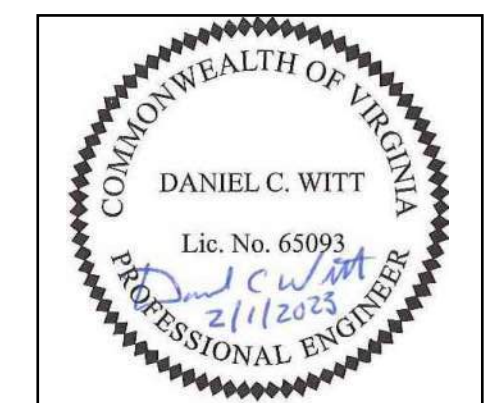
- 1. REMOVE AND GRADE OUT THE CLEAN WATER DIVERSION DIKE...
2. REMOVE DOWNSLOPE BMPs UTILIZED DURING CONSTRUCTION AND IMMEDIATELY REPLACE WITH 12-IN COMPOST FILTER SOCK...
3. APPLY SPECIALTY SEEDS AS REQUIRED THAT WILL NOT BE HANDLED IN THE MULCH PHASE...
4. APPLY MULCH IN THE FORM OF ORGANIC MULCH (PER MVP-ES45), SOIL STABILIZATION MATTING (PER VADEQ STD & SPEC 3.36), OR HYDRAULIC EROSION CONTROL PRODUCT (PER MVP-ES40)...
5. FOLLOWING A DETERMINATION THAT THE SITE HAS ACHIEVED VEGETATIVE STABILIZATION, THE COMPOST FILTER SOCK WILL BE "OPENED" AND THE MULCH CONTAINED WITHIN WILL BE SPREAD WITHIN THE LIMITS OF DISTURBANCE.

Table with columns: ADDRESS, VIDEO, COMMENTS ON CROSSING, METHOD CHANGE, CONVENTIONAL BORE SEQUENCE FOR INITIAL DEQ REVIEW, ADDED DETAILS FOR ROADS AND PADS, ADDRESS VADEQ COMMENTS, ADDRESS VADEQ COMMENTS, ADDRESS VADEQ COMMENTS, ADDRESS VADEQ COMMENTS, DATE, CHKD., APPD., DESCRIPTION, REVISIONS.

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GENERAL DETAILS SET



THIS SEAL APPLIES ONLY TO REVISIONS DATED 02-01-23

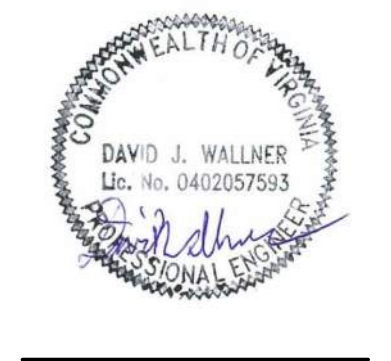


Table with columns: DRAWN BY, CHECKED BY, APPROVED BY, DATE, SCALE, NARRATIVE. Values include GAR, TD, DCW, 02/01/2023, AS SHOWN, 4 OF 4.