

PROJECT NOTES:

- PARCEL DATA:
TAX MAP #: 14-007.00-028
PLUS #: N/A
DNREC TRACKING NUMBER:
SITE ADDRESS: 660 CAMPUS DRIVE TOWNSEND, DE 19734
LATITUDE/LONGITUDE: N39°26'26"/E75°39'18"
(BENCHMARK REFERENCED BELOW)
EXISTING SITE AREA: 271.72 ACRES
PROPOSED SITE AREA: 271.72 ACRES
EXISTING WETLAND AREA: SEE NOTE 6
PROPOSED CONDITION: BULK GRADING SITE FOR FUTURE DEVELOPMENT
PROPOSED DISCHARGE LOCATIONS AS DELINEATED ON THE PLAN IN SAS REPORT:
POA#1 IS 20.83± ACRES
POA#2 IS 11.93± ACRES
POA#3 IS 38.22± ACRES
POA#4 IS 22.11± ACRES
POA#5 IS 27.13± ACRES
POA#6 IS 26.69± ACRES
POA#7 IS 30.27± ACRES
POA#8 IS 21.13± ACRES
POA#9 IS 33.26± ACRES
POA#10 IS 45.44± ACRES



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TOPOGRAPHIC SURVEY:
A TOPOGRAPHIC SURVEY VIA AERIAL AND GROUND SURVEYS WAS COMPLETED BY VANDEMARK & LYNCH, INC. IN MAY 2010.

DATUM: NAVD 1988

BENCHMARK: CHISEL CUT ON TOP NORTH END OF HEADWALL ON WEST SIDE OF OLD STATE ROAD APPROXIMATELY 48± FEET IN A NORTHWESTERLY DIRECTION FROM UTILITY POLE NO 45814/32181
ELEVATION: 30.91

- OWNER DATA:
APPOQUINIMINK SCHOOL DISTRICT
118 S. SIXTH STREET
ODESSA DE, 19703
(302) 376-4125 (PHONE)
- LAND DEVELOPER DATA:
SAME AS OWNER
- SITE DESIGNER DATA:
TED C. WILLIAMS, P.E.
LANDMARK SCIENCE & ENGINEERING
100 W. COMMONS BOULEVARD
NEW CASTLE, DELAWARE 19720
302-323-9377 EXT. 141
- REVIEW AGENCY DATA:
ELAINE WEBB, P.E.
DNREC DIVISION OF WATERSHED STEWARDSHIP
SEDIMENT AND STORMWATER PROGRAM
89 KINGS HIGHWAY
DOVER, DELAWARE, 19901
302-739-9921

- WETLANDS: THIS SITE WAS EVALUATED IN ACCORDANCE WITH THE PROCEDURES SET FORTH IN THE 1987 CORPS OF ENGINEERS WETLAND DELINEATION MANUAL (TECHNICAL REPORT Y-87-1), AND SUBSEQUENT PUBLIC NOTICES, TO IDENTIFY THE PRESENCE OF JURISDICTIONAL WETLANDS, AND THE WETLANDS FOUND TO EXIST ON THE SITE, TOTALING IN AREA 62.0981 ACRES OF LAND, ARE SHOWN ON THIS PLAN. SEE WETLAND REPORT PREPARED BY LANDMARK/JCM DATED MAY, 2010 FOR A METES AND BOUNDS DESCRIPTION OF THESE WETLANDS. NO WETLAND DISTURBANCE IS PROPOSED BY THIS PLAN.

SEDIMENT AND STORMWATER CONSTRUCTION NOTES:

- A PRE-CONSTRUCTION MEETING (UNLESS WAIVED IN WRITING BY DNREC) MUST BE HELD PRIOR TO COMMENCING CONSTRUCTION. CONTACT DNREC SEDIMENT AND STORMWATER PROGRAM AT (302-739-9921) TO SCHEDULE MEETING. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
- REVIEW AND OR APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE REQUIREMENTS OF THE SEDIMENT AND STORMWATER REGULATIONS, NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS IN THE APPROVED PLAN.
- IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER CONTROL MEASURES MAY BE REQUIRED AS DEEMED NECESSARY BY DNREC OR THE DELEGATED AGENCY.
- FOLLOWING SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED FOR ALL PERIMETER SEDIMENT CONTROLS, SOIL STOCKPILES, AND ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE WITHIN 14 CALENDAR DAYS UNLESS MORE RESTRICTIVE REQUIREMENTS APPLY.
- ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL COMPLY WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.
- AT ANY TIME A DEWATERING OPERATION IS USED, IT SHALL BE PREVIOUSLY APPROVED BY THE AGENCY CONSTRUCTION SITE REVIEWER FOR A NON-EROSIVE POINT OF DISCHARGE, AND A DEWATERING PERMIT SHALL BE APPROVED BY THE DNREC WELL PERMITTING BRANCH.
- APPROVED PLANS REMAIN VALID FOR 5 YEARS FROM THE STAMPED DATE OF APPROVAL.
- POST-CONSTRUCTION VERIFICATION DRAWINGS (AS-BUILTS) ARE TO BE SUBMITTED TO AND APPROVED BY NEW CASTLE COUNTY DEPARTMENT OF LAND USE ENGINEERING SECTION WITHIN 60 DAYS OF STORMWATER MANAGEMENT FACILITY COMPLETION AND PRIOR TO CERTIFICATE OF OCCUPANCY ISSUANCE.
- APPROVAL OF A SEDIMENT AND STORMWATER PLAN DOES NOT GRANT OR IMPLY A RIGHT TO DISCHARGE STORMWATER RUNOFF. THE OWNER/DEVELOPER IS RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC., NECESSARY TO COMPLY WITH STATE DRAINAGE AND OTHER APPLICABLE LAWS.
- THE NOTICE OF INTENT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER A NPDES GENERAL PERMIT FOR THIS PROJECT IS #3570 (ISSUED 11/15/2010). AT ANY TIME THE OWNERSHIP FOR THIS PROJECT CHANGES, A TRANSFER OF AUTHORIZATION OR A CO-PERMITTEE APPLICATION MUST BE SUBMITTED TO DNREC. THE PERMITTEE OF RECORD SHALL NOT BE RELIEVED OF THEIR RESPONSIBILITIES UNTIL A NOTICE OF TERMINATION HAS BEEN PROCESSED BY DNREC.
- THE OWNER SHALL BE FAMILIAR WITH AND COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION GENERAL PERMIT ASSOCIATED WITH THE PROJECT, INCLUDING, BUT NOT LIMITED TO, PERFORMING WEEKLY SITE INSPECTIONS DURING CONSTRUCTION AND AFTER RAIN EVENTS, AND MAINTAINING WRITTEN LOGS OF THESE INSPECTIONS.
- BEFORE ANY EARTHWORK OR EXCAVATION TAKES PLACE, THE CONTRACTOR SHALL CALL MISS UTILITY AT 811 OR 1-800-282-8555 AT LEAST 48 HOURS PRIOR TO CONSTRUCTION, TO HAVE ALL EXISTING UTILITIES MARKED ON SITE.
- THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR DEBRIS LADEN WIND FROM LEAVING THE SITE. PERIMETER CONTROLS SHALL BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED TO FULLY CONTAIN AND CONTROL SEDIMENT FROM LEAVING THE SITE. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR ALTER MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE AGENCY SITE REVIEWER.
- BEST AVAILABLE TECHNOLOGY (BAT) SHALL BE EMPLOYED TO MANAGE TURBID DISCHARGES IN ACCORDANCE WITH REQUIREMENTS OF 7. DEL. C. CH 60, REGULATIONS GOVERNING THE CONTROL OF WATER POLLUTION, SECTION 9.1.02, KNOWN AS SPECIAL CONDITIONS FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES AND DEPARTMENT POLICIES, PROCEDURES, AND GUIDANCE.
- DOCUMENTATION OF SOIL TESTING AND MATERIALS USED FOR TEMPORARY OR PERMANENT STABILIZATION INCLUDING BUT NOT LIMITED TO SOIL TEST RESULTS, SEED TAGS, SOIL AMENDMENT TAGS, ETC., SHALL BE PROVIDED TO THE DEPARTMENT OR DELEGATED AGENCY TO VERIFY THAT THE PERMANENT OR TEMPORARY STABILIZATION HAS BEEN COMPLETED IN ACCORDANCE WITH THE APPROVED PLAN AND THE STANDARDS AND SPECIFICATIONS OF THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION. THE DEPARTMENT OF THE DELEGATED AGENCY SHALL HAVE THE DISCRETION TO REQUIRE ADDITIONAL SOIL TESTING AND REAPPLICATION OF PERMANENT OR TEMPORARY STABILIZATION IN ACCORDANCE WITH THE SPECIFICATION PROVIDED WITHIN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, LATEST EDITION.

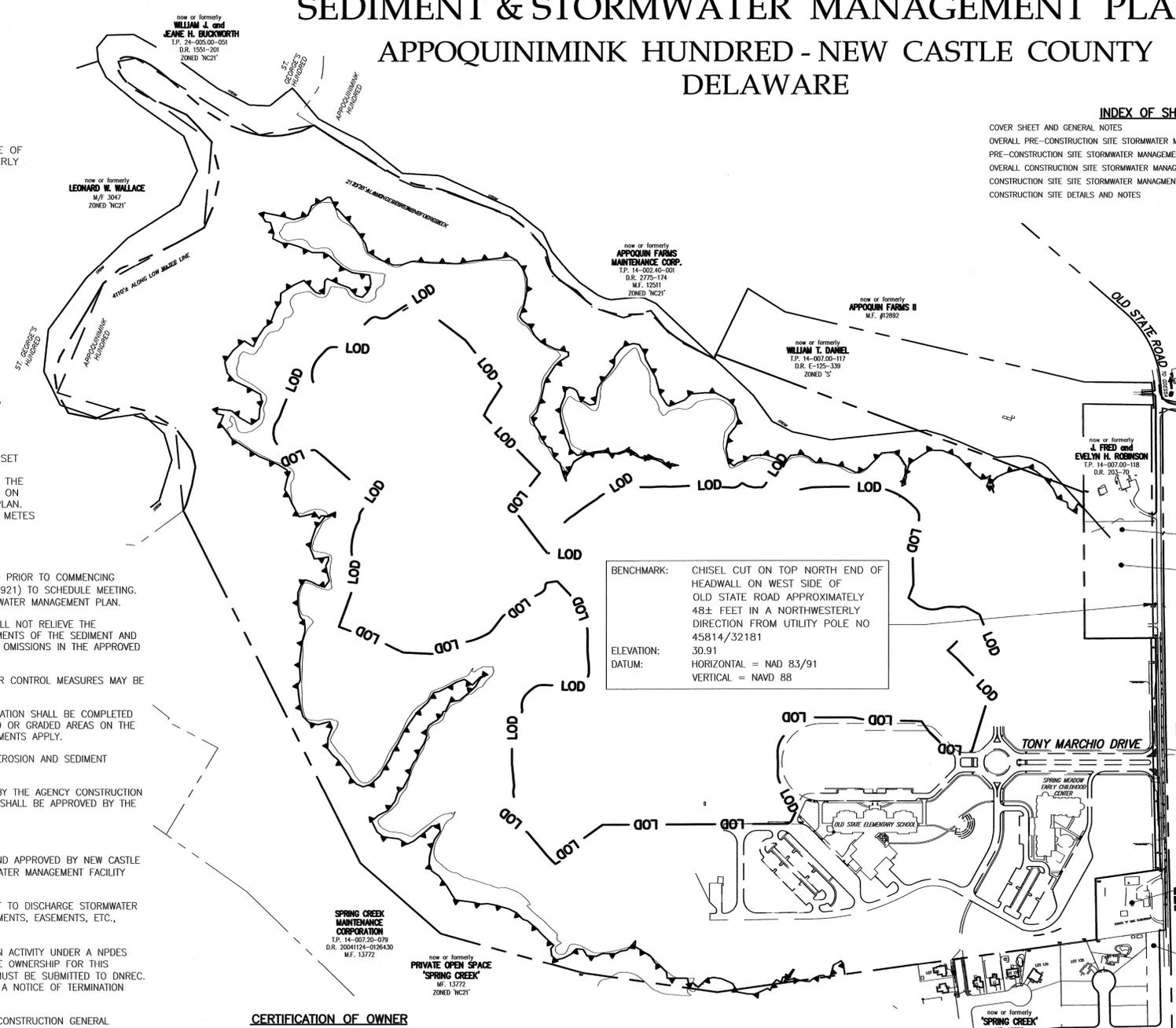
COVER SHEET AND GENERAL NOTES

FOR

FAIRVIEW CAMPUS

SEDIMENT & STORMWATER MANAGEMENT PLANS

APPOQUINIMINK HUNDRED - NEW CASTLE COUNTY DELAWARE



BENCHMARK: CHISEL CUT ON TOP NORTH END OF HEADWALL ON WEST SIDE OF OLD STATE ROAD APPROXIMATELY 48± FEET IN A NORTHWESTERLY DIRECTION FROM UTILITY POLE NO 45814/32181
ELEVATION: 30.91
DATUM: HORIZONTAL = NAD 83/91
VERTICAL = NAVD 88

THE PURPOSE OF THIS PLAN IS TO INSTALL PERIMETER CONTROLS TO ALLOW FOR THE REMOVAL OF THE EXISTING OVERBURDEN STOCKPILE. A PORTION WILL BE RESERVED IN NEW STOCKPILES TO USE FOR BUILDING PAD SUBGRADE, THE REMAINDER WILL BE USED TO BULK GRADE THE REMAINING AREAS OF THE SITE THAT ARE DESIGNATED TO BE DISTURBED.

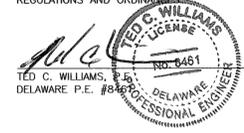
CERTIFICATION OF OWNER

I, ROBERT D. HERSHEY, HEREBY CERTIFY THAT APPOQUINIMINK SCHOOL DISTRICT IS THE OWNER OF THE PROPERTY WHICH IS THE SUBJECT OF THIS PLAN AND THAT THE LAND USE ACTION PROPOSED BY THIS PLAN IS MADE AT MY DIRECTION AND THAT I AUTHORIZE THIS PLAN TO BE APPROVED PURSUANT TO THE RECORD PLAN (INST. NUMBER 20110713-0034980) IN ACCORDANCE WITH THE REGULATIONS OF THE NEW CASTLE COUNTY UNIFIED DEVELOPMENT CODE.

FURTHERMORE, I HEREBY CERTIFY THAT ALL LAND CLEARING, CONSTRUCTION, AND DEVELOPMENT SHALL BE DONE PURSUANT TO THE APPROVED PLAN AND THAT ALL RESPONSIBLE PERSONNEL (I.E. CLUE CARD HOLDER) INVOLVED IN THE LAND DISTURBANCE WILL HAVE A CERTIFICATE OF TRAINING PRIOR TO INITIATION OF THE PROJECT, AT A DNREC SPONSORED OR APPROVED TRAINING COURSE FOR THE CONTROL OF EROSION AND SEDIMENT DURING CONSTRUCTION. IN ADDITION, I GRANT THE DNREC SEDIMENT AND STORMWATER PROGRAM AND/OR THE RELEVANT DELEGATED AGENCY (NEW CASTLE COUNTY) THE RIGHT TO CONDUCT ON-SITE REVIEWS, AND I UNDERSTAND MY RESPONSIBILITIES UNDER THE NPDES CONSTRUCTION GENERAL PERMIT, AS REFERENCED ON THIS COVER SHEET.

ROBERT D. HERSHEY, CONSTRUCTION PROJECT MANAGER
APPOQUINIMINK SCHOOL DISTRICT
118 S. SIXTH STREET
ODESSA DE, 19703
(302) 376-4125
(302) 376-5155

TED C. WILLIAMS, P.E.
LANDMARK SCIENCE & ENGINEERING
100 W. COMMONS BOULEVARD
NEW CASTLE, DE 19720
(302) 323-9377 EXT. 141



CERTIFICATION OF ACCURACY

I, TED C. WILLIAMS, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF DELAWARE, HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLIES WITH THE APPLICABLE STATE AND LOCAL REGULATIONS AND ORDINANCES.

3/29/17

WETLANDS CERTIFICATION

THIS PROPERTY, TAX PARCEL #14-007.00-028, HAS BEEN EXAMINED BY LANDMARK/JCM ENVIRONMENTAL FOR THE PRESENCE OF WATERS OF THE UNITED STATES, INCLUDING WETLANDS (SECTION 404 AND SECTION 10), STATE SUBAQUEOUS LANDS AND STATE REGULATED WETLANDS AS ESTABLISHED BY THE REVIEWING AGENCIES IN THE FORM OF MANUALS, POLICIES AND PROCEDURES IN PLACE AT THE TIME THAT THE INVESTIGATION WAS CONDUCTED. THE WETLAND INFORMATION CONTAINED IN THIS PLAN SET IS IN ACCORDANCE WITH THIS CRITERIA.

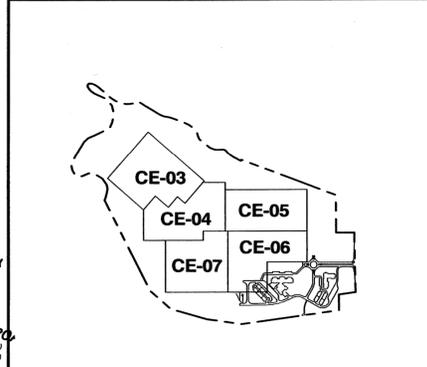
CRAIG SMITH

DATE

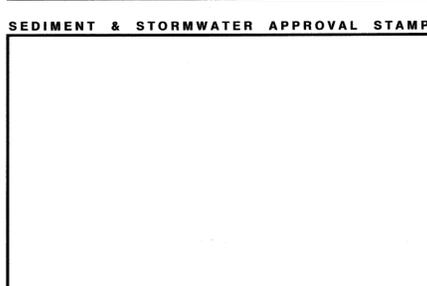
INDEX OF SHEETS

- COVER SHEET AND GENERAL NOTES CE-01
- OVERALL PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN CE-02
- PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLANS CE-03 TO CE-07
- OVERALL CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN CE-08
- CONSTRUCTION SITE SITE STORMWATER MANAGEMENT PLANS CE-09 TO CE-13
- CONSTRUCTION SITE DETAILS AND NOTES CE-14 TO CE-18

LOCATION MAP MAP NO. 22, 25 & 26 **1"=2000'**



KEY MAP **1"=1,500'**



LEGEND

- EXISTING WATER MAIN AND WATER VALVE
- PROPOSED WATER MAIN AND WATER VALVE
- PROPOSED DRAINAGE FLOW PATH
- EXISTING VERTICAL P.C.C. CURB
- EXISTING FLUSH P.C.C. CURB
- EXISTING P.C.C. SIDEWALK
- EXISTING BUILDING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING SANITARY SEWER AND MANHOLE
- EXISTING STORM DRAIN AND CATCH BASIN
- EXISTING GAS MAIN AND GAS VALVE
- EXISTING FIRE HYDRANT
- EXISTING SOILS BOUNDARY
- PROPOSED SEDIMENT BASIN TOPOGRAPHY
- PROPOSED STABILIZATION MATTING AREA
- PROPOSED TEMPORARY EARTH BERM
- PROPOSED SILT FENCE
- PROPOSED REINFORCED SILT FENCE
- PROPOSED ORANGE SAFETY FENCE
- PROPOSED HAUL ROAD

NO.	REVISIONS

COVER SHEET AND GENERAL NOTES
FAIRVIEW CAMPUS
SEDIMENT & STORMWATER MANAGEMENT PLANS
APPOQUINIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE

100 WEST COMMONS BOULEVARD
NEW CASTLE, DE 19709
PHONE (302) 323-9377
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CELEBRATING 30 YEARS

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DRAWN BY: ARP SCALE: 1"=300'
DESIGNED BY: JAW DATE: 3/27/17
CHECKED BY: TCW LAST MODIFIED: 3/28/17
COMMISSION NO: C2228-8
DRAWING NAME: Bulk Grade S&I.dwg
SHEET NO: CE-01 of 18

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE DEPARTMENT OF CONSTRUCTION SAFETY.

CE-01

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SEDIMENT TRAP #6
 TYPE: RST
 D.A.: 9.7± AC
 VOLUME REQUIRED: 34,920 CF
 VOLUME PROVIDED: 36,673 CF
 CHANNEL INVERT: 15.0
 EMBANKMENT HT.: 4.0'
 EMBANKMENT WIDTH: 4'
 T.O.B.: 19.0
 CHANNEL DEPTH: 3.0'
 WEIR LENGTH: 12'
 CLEANOUT ELEV.: 16.5
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB) AS NEEDED TO DRAIN SEDIMENT LADEN WATER FROM SEDIMENT TRAP (SEE DETAIL ON SHEET CE-10)

IF DEWATERING IS REQUIRED, PUMP TO A GEOTEXTILE BAG SEE DETAIL ON SHEET CE-10

INSTALL STABILIZATION MATTING-SLOPE (SM-S) WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR CURLEX 1 OR APPROVED EQUIVALENT (TYP.)

PLACE TEMPORARY BERM A1 (TB) AS SHOWN AND PER DETAIL TO DIVERT RUNOFF TO ST#1

PLACE TEMPORARY BERM A1 (TB) AS SHOWN AND PER DETAIL TO DIVERT RUNOFF TO ST#1

IF DEWATERING IS REQUIRED, PUMP TO A GEOTEXTILE BAG SEE DETAIL ON SHEET CE-10

PLACE TEMPORARY BERM A1 (TB) AS SHOWN AND PER DETAIL TO DIVERT RUNOFF TO ST#6

INSTALL STABILIZATION MATTING-SLOPE (SM-S) WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR CURLEX 1 OR APPROVED EQUIVALENT (TYP.)

INSTALL ORANGE SAFETY FENCE ALONG HAUL ROADS TO PROVIDE GUIDANCE FOR TRUCK TRAFFIC

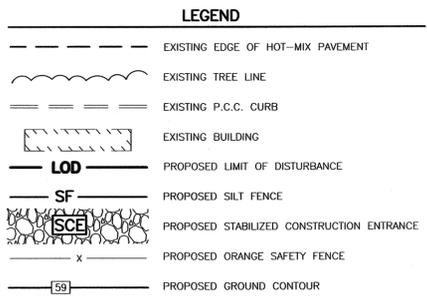
FOLLOW HAUL ROADS WHENEVER TRANSPORTING MATERIAL ACROSS THE SITE

MATCH LINE SEE SHEET CE-04

SEDIMENT TRAP #1 DRAINAGE AREA = 6.4± ACRES

TOPSOIL STOCKPILE AREA

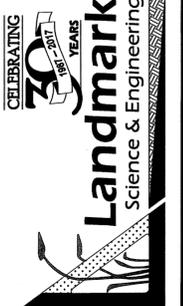
KEY MAP 1"=1,500'



CE-03	CE-04	CE-05	CE-06	CE-07
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PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN FOR
FAIRVIEW CAMPUS
 SEDIMENT & STORMWATER MANAGEMENT PLANS
 APPQUINIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE
 APPQUINIMINK SCHOOL DISTRICT
 118 S. SIXTH STREET
 GEORGETOWN, DE 19622
 (302) 378-4123
 (302) 378-5155

100 WEST COMMONS BOULEVARD
 NEW CASTLE, DE 19720
 PHONE (302) 338-8877
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 HARRINGTON, DE 19941
 PHONE (410) 899-5844
 (302) 378-4123
 INFO @ LANDMARK-SEC.COM



THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN ACCORDANCE WITH THE EXISTING AND THE LATEST EDITIONS OF THE DELAWARE CONSTRUCTION ACT OF 1970 AND THE RULES AND REGULATIONS THEREOF. APPROVED BY: [Signature]

DRAWN BY: ARP	SCALE: 1"=50'	DATE: 3/27/17	SHEET NO. CE-03 of 18
DESIGNED BY: JAW	LAST MODIFIED: 3/29/17	COMMISSION NO: C2226-8	DRAWING NAME: Bulk Grade S&E.dwg
CHECKED BY: TOW			



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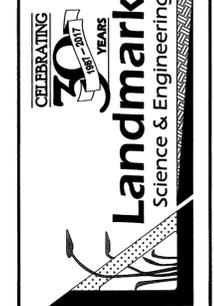


NO.	DATE	DESCRIPTION

PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
 FOR
FAIRVIEW CAMPUS
 SEDIMENT & STORMWATER MANAGEMENT PLANS
 APPQUINIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE

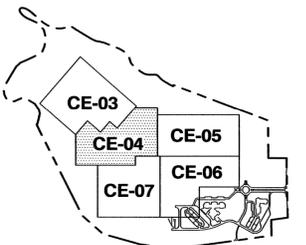
OWNER: APPQUINIMINK SCHOOL DISTRICT
 PROJECT: FAIRVIEW CAMPUS
 ADDRESS: 100 WEST COMMONS BOULEVARD, SUITE 901, NEW CASTLE, DE 19720
 PHONE: (302) 376-4125
 FAX: (302) 376-5155

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 NEW CASTLE, DE 19720
 PHONE: (302) 376-4125
 FAX: (302) 376-5155
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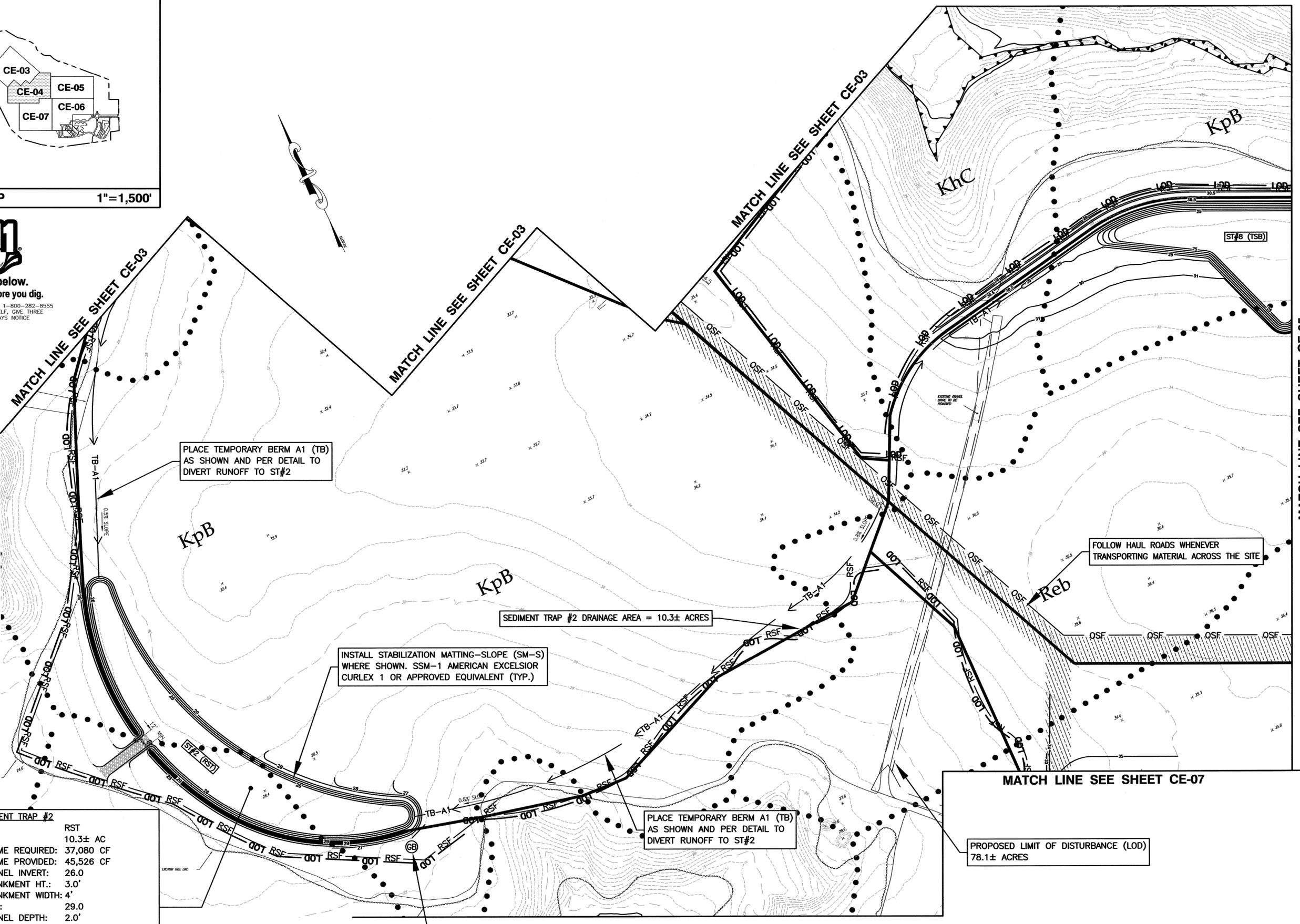


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DRAWN BY: ARP	SCALE: 1"=50'	SHEET NO. CE-04
DESIGNED BY: JAV	DATE: 3/27/17	OF 18
CHECKED BY: TCW	LAST MODIFIED: 3/29/17	
COMMISSION NO: C2228-8		
DRAWING NAME: Bulk Grade Set.dwg		



KEY MAP 1"=1,500'



SEDIMENT TRAP #2
 TYPE: RST
 D.A.: 10.3± AC
 VOLUME REQUIRED: 37,080 CF
 VOLUME PROVIDED: 45,526 CF
 CHANNEL INVERT: 26.0
 EMBANKMENT HT.: 3.0'
 EMBANKMENT WIDTH: 4'
 T.O.B.: 29.0
 CHANNEL DEPTH: 2.0'
 WEIR LENGTH: 12'
 CLEANOUT ELEV.: 27.0
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB) AS NEEDED TO DRAIN SEDIMENT LADEN WATER FROM SEDIMENT TRAP (SEE DETAIL ON SHEET CE-10)

PLACE TEMPORARY BERM A1 (TB) AS SHOWN AND PER DETAIL TO DIVERT RUNOFF TO ST#2

SEDIMENT TRAP #2 DRAINAGE AREA = 10.3± ACRES

INSTALL STABILIZATION MATTING—SLOPE (SM-S) WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR CURLEX 1 OR APPROVED EQUIVALENT (TYP.)

PLACE TEMPORARY BERM A1 (TB) AS SHOWN AND PER DETAIL TO DIVERT RUNOFF TO ST#2

IF DEWATERING IS REQUIRED, PUMP TO A GEOTEXTILE BAG SEE DETAIL ON SHEET CE-10

FOLLOW HAUL ROADS WHENEVER TRANSPORTING MATERIAL ACROSS THE SITE

PROPOSED LIMIT OF DISTURBANCE (LOD) 78.1± ACRES

MATCH LINE SEE SHEET CE-05

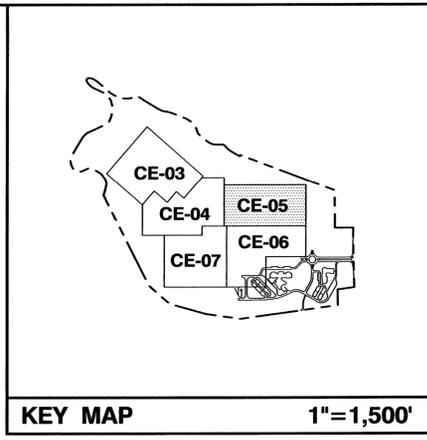
MATCH LINE SEE SHEET CE-07

P:\C2228-8 FAIRVIEWCAMPUS\DWG\BULK GRADE SET.DWG

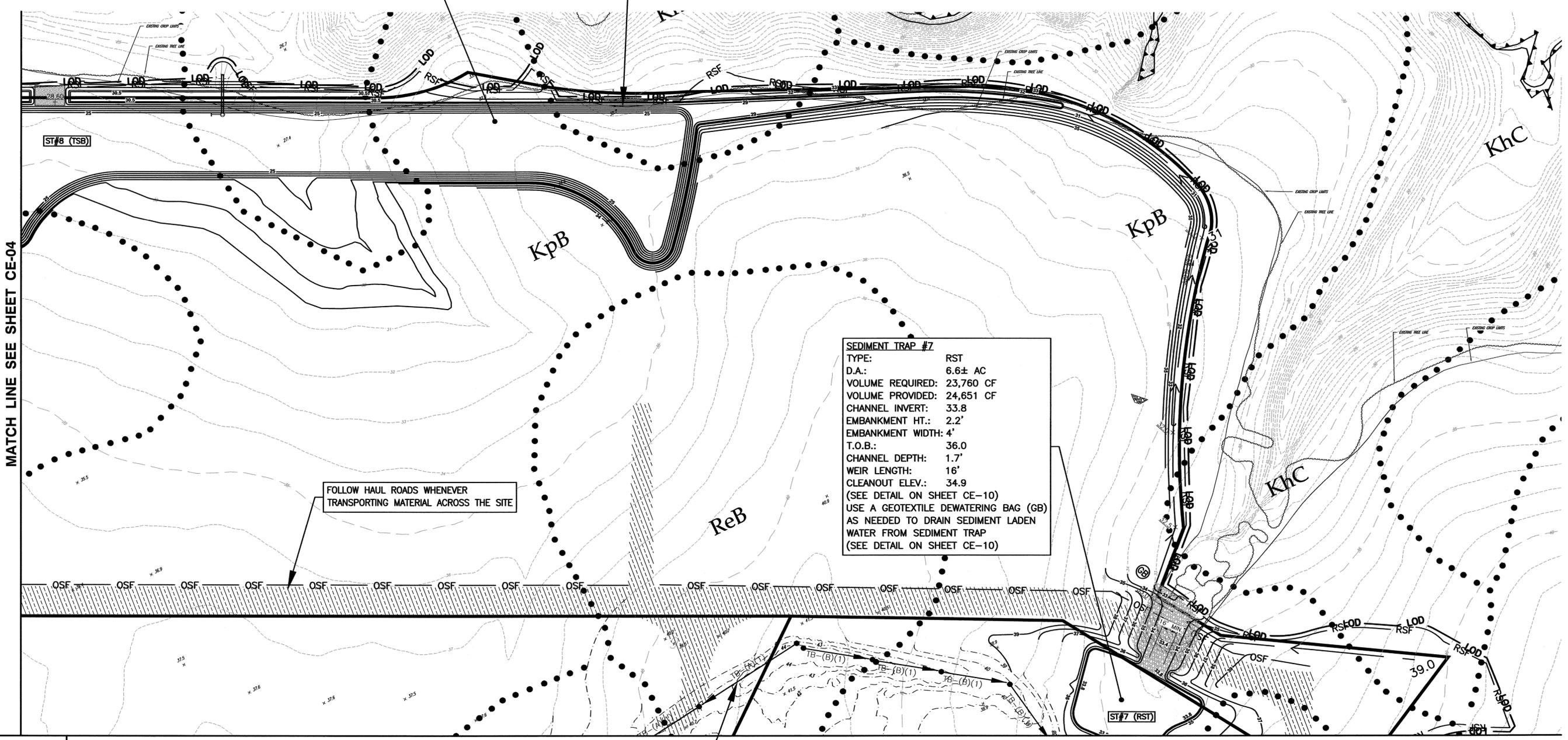


SEDIMENT TRAP #8
 TYPE: TSB
 D.A.: 37.0± AC
 VOLUME REQUIRED: 133,200 CF
 VOLUME PROVIDED: 415,055 CF
 RISER: (SEE DETAIL ON SHEET 18)
 TOP OF RISER: 27.60
 E.S. CREST: 28.60
 TOP OF BANK: 30.5
 ATTACH SKIMMER: 25.0
 CLEANOUT ELEV.: 26.2
 (SEE DETAILS ON SHEET CE-18)

INSTALL STABILIZATION MATTING—SLOPE (SM-S)
 WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR
 CURLEX 1 OR APPROVED EQUIVALENT (TYP.)



NO.	DATE	DESCRIPTION



SEDIMENT TRAP #7
 TYPE: RST
 D.A.: 6.6± AC
 VOLUME REQUIRED: 23,760 CF
 VOLUME PROVIDED: 24,651 CF
 CHANNEL INVERT: 33.8
 EMBANKMENT HT.: 2.2'
 EMBANKMENT WIDTH: 4'
 T.O.B.: 36.0
 CHANNEL DEPTH: 1.7'
 WEIR LENGTH: 16'
 CLEANOUT ELEV.: 34.9
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB)
 AS NEEDED TO DRAIN SEDIMENT LADEN
 WATER FROM SEDIMENT TRAP
 (SEE DETAIL ON SHEET CE-10)

FOLLOW HAUL ROADS WHENEVER
 TRANSPORTING MATERIAL ACROSS THE SITE

CONTRACTOR TO REMOVE OLD
 TEMPORARY BERMS AND TRAPS AS
 DIRECTED BY DNREC INSPECTOR (TYP.)

MATCH LINE SEE SHEET CE-04

MATCH LINE SEE SHEET CE-06

MATCH LINE SEE SHEET CE-07

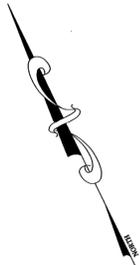
811
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GRAPHIC SCALE
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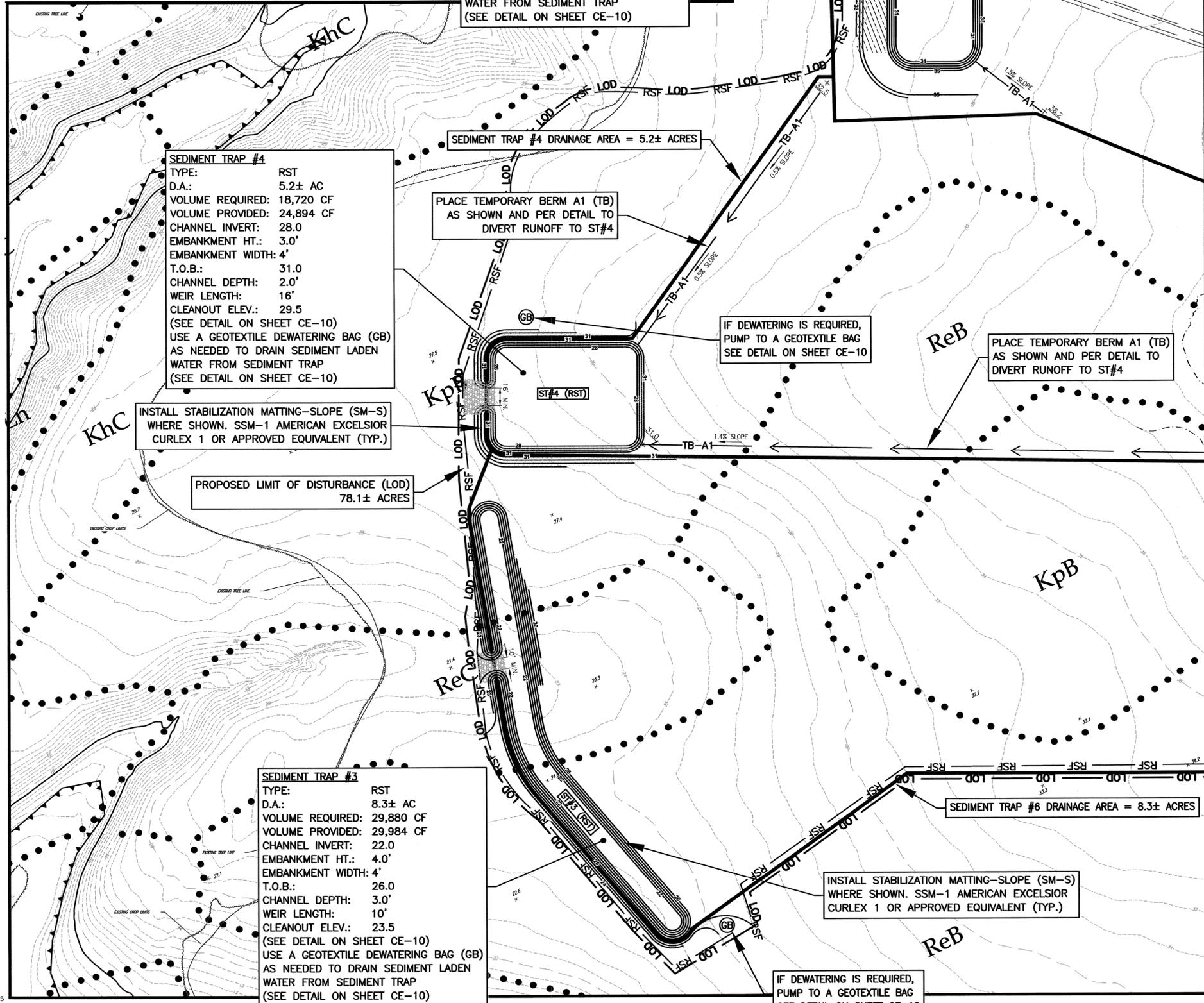
DRAWN BY: ARP	SCALE: 1"=50'	DATE: 3/27/17	SHEET NO. CE-05 of 18
DESIGNED BY: JAV	LAST MODIFIED: 3/29/17	COMMISSION NO: C2228-B	DRAWING NAME: Bulk Grade Set.dwg



SEDIMENT TRAP #5
 TYPE: RST
 D.A.: 12.3± AC
 VOLUME REQUIRED: 44,280 CF
 VOLUME PROVIDED: 47,614 CF
 CHANNEL INVERT: 31.0
 EMBANKMENT HT.: 4.0'
 EMBANKMENT WIDTH: 20' (HAUL ROAD)
 T.O.B.: 35.0
 CHANNEL DEPTH: 2.0'
 WEIR LENGTH: 16'
 CLEANOUT ELEV.: 33.0
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB)
 AS NEEDED TO DRAIN SEDIMENT LADEN
 WATER FROM SEDIMENT TRAP
 (SEE DETAIL ON SHEET CE-10)

MATCH LINE SEE SHEET CE-04

FOLLOW HAUL ROADS WHENEVER
 TRANSPORTING MATERIAL ACROSS THE SITE



SEDIMENT TRAP #4
 TYPE: RST
 D.A.: 5.2± AC
 VOLUME REQUIRED: 18,720 CF
 VOLUME PROVIDED: 24,894 CF
 CHANNEL INVERT: 28.0
 EMBANKMENT HT.: 3.0'
 EMBANKMENT WIDTH: 4'
 T.O.B.: 31.0
 CHANNEL DEPTH: 2.0'
 WEIR LENGTH: 16'
 CLEANOUT ELEV.: 29.5
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB)
 AS NEEDED TO DRAIN SEDIMENT LADEN
 WATER FROM SEDIMENT TRAP
 (SEE DETAIL ON SHEET CE-10)

INSTALL STABILIZATION MATTING-SLOPE (SM-S)
 WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR
 CURLEX 1 OR APPROVED EQUIVALENT (TYP.)

PROPOSED LIMIT OF DISTURBANCE (LOD)
 78.1± ACRES

SEDIMENT TRAP #4 DRAINAGE AREA = 5.2± ACRES

PLACE TEMPORARY BERM A1 (TB)
 AS SHOWN AND PER DETAIL TO
 DIVERT RUNOFF TO ST#4

IF DEWATERING IS REQUIRED,
 PUMP TO A GEOTEXTILE BAG
 SEE DETAIL ON SHEET CE-10

PLACE TEMPORARY BERM A1 (TB)
 AS SHOWN AND PER DETAIL TO
 DIVERT RUNOFF TO ST#4

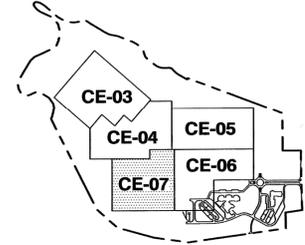
SEDIMENT TRAP #3
 TYPE: RST
 D.A.: 8.3± AC
 VOLUME REQUIRED: 29,880 CF
 VOLUME PROVIDED: 29,984 CF
 CHANNEL INVERT: 22.0
 EMBANKMENT HT.: 4.0'
 EMBANKMENT WIDTH: 4'
 T.O.B.: 26.0
 CHANNEL DEPTH: 3.0'
 WEIR LENGTH: 10'
 CLEANOUT ELEV.: 23.5
 (SEE DETAIL ON SHEET CE-10)
 USE A GEOTEXTILE DEWATERING BAG (GB)
 AS NEEDED TO DRAIN SEDIMENT LADEN
 WATER FROM SEDIMENT TRAP
 (SEE DETAIL ON SHEET CE-10)

INSTALL STABILIZATION MATTING-SLOPE (SM-S)
 WHERE SHOWN. SSM-1 AMERICAN EXCELSIOR
 CURLEX 1 OR APPROVED EQUIVALENT (TYP.)

IF DEWATERING IS REQUIRED,
 PUMP TO A GEOTEXTILE BAG
 SEE DETAIL ON SHEET CE-10

SEDIMENT TRAP #6 DRAINAGE AREA = 8.3± ACRES

MATCH LINE SEE SHEET CE-06



KEY MAP 1"=1,500'



NO.	DATE	DESCRIPTION

PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
 FOR
FAIRVIEW CAMPUS
 SEDIMENT & STORMWATER MANAGEMENT PLANS
 APPQUINIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE

OWNER: APPQUINIMINK COLLEGE DISTRICT
 ADDRESS: 197103
 DESSA, DE 19703
 (302) 378-4125
 (302) 378-9125

100 WEST COMMONS BOULEVARD
 SUITE 201
 NEW CASTLE, DE 19720
 PHONE: (302) 323-8477
 FAX: (302) 323-8477
 WWW.LANDMARK-SE.COM
 INFO @ LANDMARK-SE.COM

P.O. BOX 402
 HAYRE DE GRACE, MD 21778
 PHONE: (410) 834-1414
 FAX: (410) 834-2824
 INFO@LANDMARK-SE.COM



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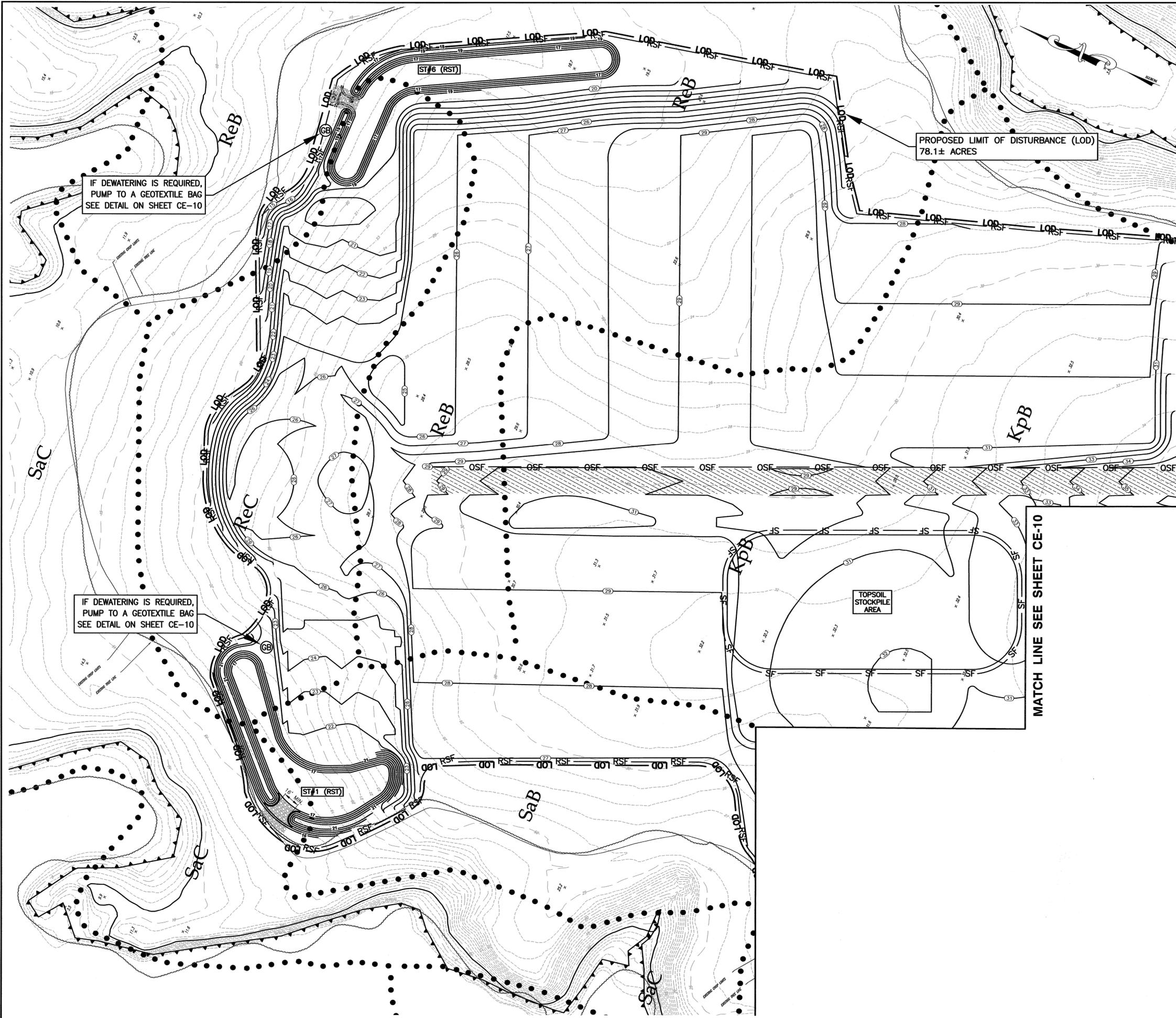
THIS DRAWING DOES NOT INCLUDE NECESSARY
 CONDITIONS FOR CONSTRUCTION SAFETY.
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR
 OBTAINING ALL NECESSARY PERMITS AND
 REGULATIONS BEFORE CONSTRUCTION.

DRAWN BY: ARP	SCALE: 1"=10'	SHEET NO. CE-07
DESIGNED BY: JAV	DATE: 3/27/17	
CHECKED BY: TCW	LAST MODIFIED: 3/29/17	
COMMISSION NO: C2226-8		
DRAWING NAME: Bulk Grade Set.dwg		

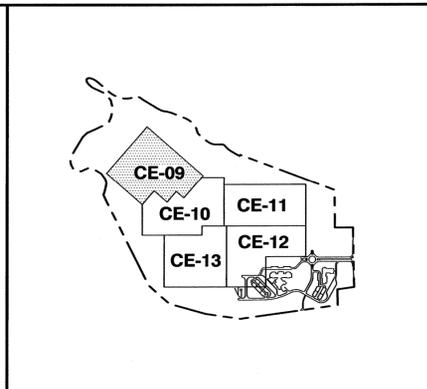
P:\C2226-8 FAIRVIEWCAMPUS(DWG)\BULK GRADE\BULK GRADE SET.DWG



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MATCH LINE SEE SHEET CE-10



KEY MAP 1"=1,500'

- LEGEND**
- EXISTING EDGE OF HOT-MIX PAVEMENT
 - EXISTING TREE LINE
 - EXISTING P.C.C. CURB
 - EXISTING BUILDING
 - LOD** PROPOSED LIMIT OF DISTURBANCE
 - RSF** PROPOSED REINFORCED SILT FENCE
 - PROPOSED STABILIZED CONSTRUCTION ENTRANCE
 - PROPOSED ORANGE SAFETY FENCE
 - PROPOSED GROUND CONTOUR

NO.	DATE	DESCRIPTION

CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN FOR FAIRVIEW CAMPUS
SEDIMENT & STORMWATER MANAGEMENT PLANS
 APPQUINIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE

APPOQUINIMINK SCHOOL DISTRICT
 OWNER
 1000 S. WILKINS AVE.
 DESSA, DE 19713
 (302) 374-4123
 (302) 374-5155

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 SUITE 201
 NEW CASTLE, DE 19720
 TEL (302) 323-8877
 WWW.LANDMARK-SE.COM
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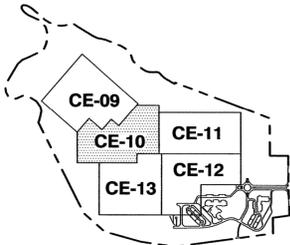
CELEBRATING 30 YEARS

Landmark
 Science & Engineering

P.O. BOX 605
 HAVRE DE GRACE, MD 21078
 PHONE (410) 894-8144
 FAX (410) 894-8144
 INFO@LANDMARK-SE.COM

DRAWN BY: ARP	SCALE: 1"=50'	1:00
DESIGNED BY: JAV	DATE: 3/27/17	GRAPHIC SCALE
CHECKED BY: TCW	LAST MODIFIED: 3/29/17	0 25 50 100
COMMISSION NO: C2228-8	DRAWING NAME: Bulk Grade Set.dwg	THIS DRAWING AND THE DESIGN SHOWN ARE THE EXCLUSIVE PROPERTY OF LANDMARK SCIENCE & ENGINEERING. NO PART OF THIS DRAWING MAY BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT WRITTEN PERMISSION.
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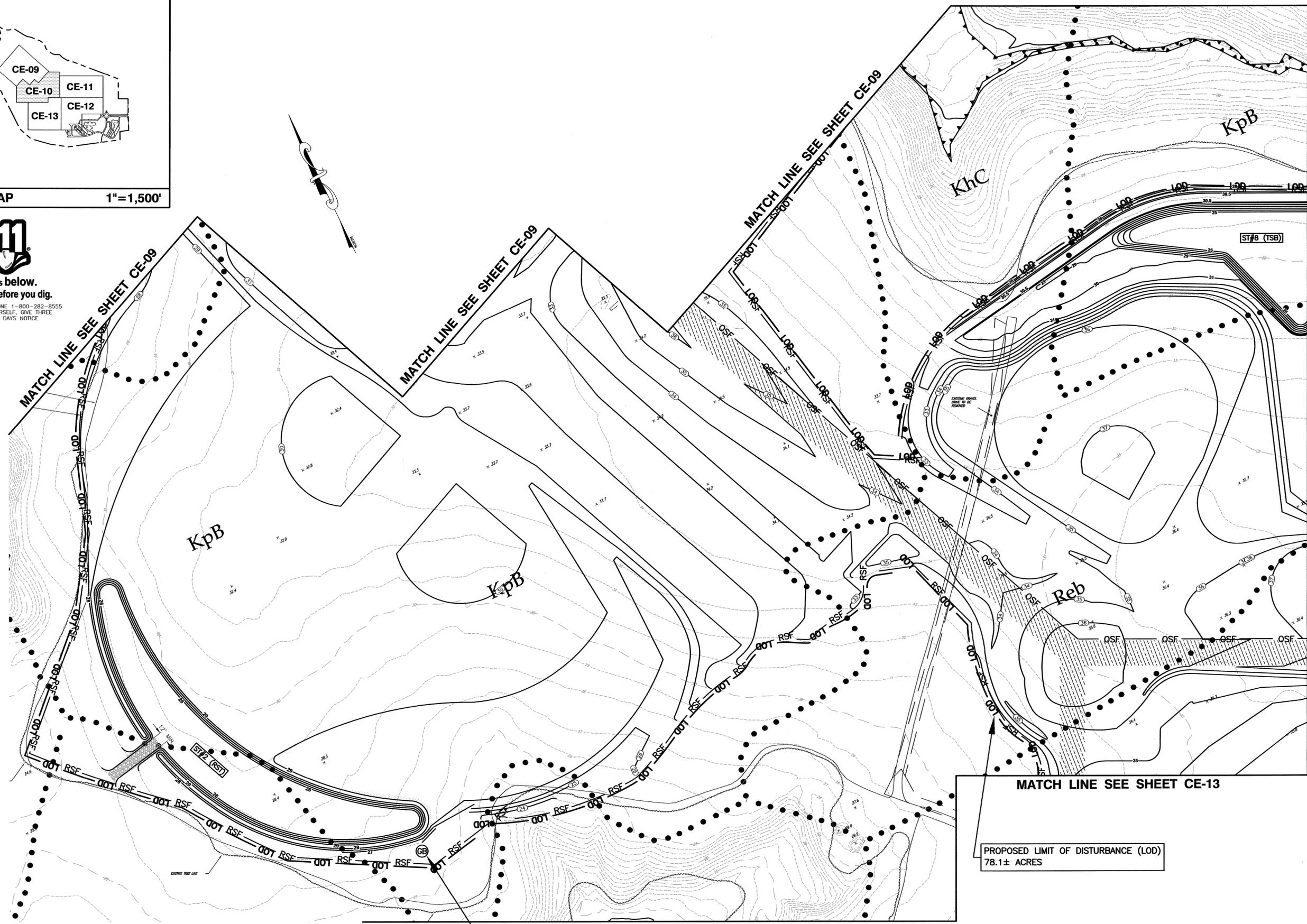
811
 Know what's below.
 Call before you dig.
 MISS UTILITY PHONE 1-800-282-8555
 PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE



KEY MAP 1"=1,500'



Know what's below.
Call before you dig.
MISS UTILITY PHONE 1-800-282-8555
PROTECT YOURSELF. GIVE THREE WORKING DAYS NOTICE.



IF DEWATERING IS REQUIRED,
PUMP TO A GEOTEXTILE BAG
SEE DETAIL ON SHEET CE-10

PROPOSED LIMIT OF DISTURBANCE (LOD)
78.1± ACRES

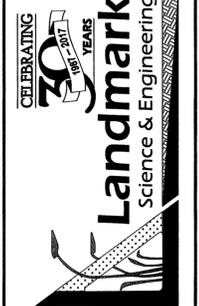


NO.	DATE	REVISIONS

CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN
FOR
FAIRVIEW CAMPUS
SEDIMENT & STORMWATER MANAGEMENT PLANS
APPOQUIMINK HUNDRED - NEW CASTLE COUNTY, DELAWARE

APPOQUIMINK SCHOOL DISTRICT
100 WEST COMMONS BOULEVARD
SUITE 901
NEW CASTLE DE 19720
WWW.LANDMARK-SE.COM
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CELEBRATING 30 YEARS

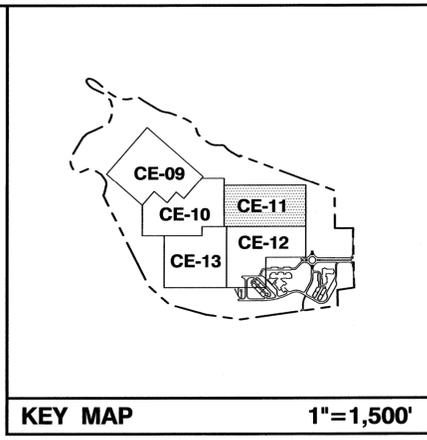
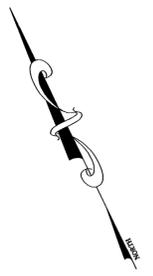
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DRAWN BY: ARP	SCALE: 1"=50'	SHEET NO. CE-10 of 18
DESIGNED BY: JAV	DATE: 3/27/17	
CHECKED BY: TCW	LAST MODIFIED: 3/29/17	
COMMISSION NO: C2228-8		
DRAWING NAME: Bulk Grade S&E.dwg		

P:\C2228-8 FAIRVIEWCAMPUS\DWG\BULK GRADE\BULK GRADE SET.DWG



NO.	DATE	DESCRIPTION



MATCH LINE SEE SHEET CE-10

MATCH LINE SEE SHEET CE-12

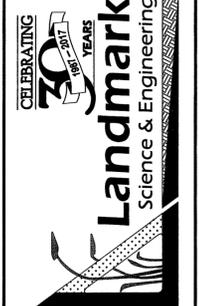
MATCH LINE SEE SHEET CE-13



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PROTECT YOURSELF, GIVE THREE
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THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. CONSULT WITH THE DESIGNER FOR CONSTRUCTION SAFETY AND HEALTH ACT OF 1970 AND THE RULES AND REGULATIONS, WHERE APPLICABLE.

DRAWN BY: ARP	SCALE: 1"=50'	SHEET NO. CE-11 of 18
DESIGNED BY: JAV	DATE: 3/27/17	
CHECKED BY: TCW	LAST MODIFIED: 3/29/17	
COMMISSION NO: C2228-8		
DRAWING NAME: Bulk Grace Sal.dwg		

CE-11

Standard Detail & Specifications Mulching

1. Materials and Amounts

- Wood fiber mulch shall be unrotted small grain straw applied at the rate of 1-1/2 to 2 tons per acre, or 70 to 90 pounds live bale per 1,000 square feet. Mulch materials shall be relatively free of weeds and shall be free of noxious weeds such as: Bidens, Xanthoxgrass, and grasses. Spread mulch uniformly by hand or mechanically. For uniform distribution of hand spread mulch, divide area into approximately 1,000 square foot sections and place 70-90 pounds live bale of mulch in each section.
- Wood chips - Apply at the rate of approximately 6 tons per acre or 275 pounds per 1,000 square feet when available and when feasible. These are particularly well suited for utility and road rights-of-way. Wood chips are used to increase the application rate of nitrogen fertilizer by 20 pounds of N per one (500 pounds of 10-10-10 or 66 pounds of 30-0-0 per acre).
- Hydraulically applied mulch - The following conditions apply to hydraulically applied mulch:
 - Delimitations:
 - Wood fiber mulch shall consist of specially prepared wood that has been processed to a uniform state, is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment, and consists of a minimum of 70% virgin or recycled wood fiber combined with 30% paper fiber and additives.
 - Blended fiber mulch shall consist of any hydraulic mulch that contains greater than 30% paper fiber. The paper component must consist of specially prepared paper that has been processed to a uniform fibrous state and is packaged for sale as a hydraulic mulch for use with hydraulic seeding equipment.
 - A blended fiber matrix (BFM) consists of long strand, specially prepared wood fibers that have been processed to a uniform state held together by a water resistant bonding agent. BFM's shall contain no paper (cellulose) mulch but may contain small percentages of synthetic fibers to enhance performance.
 - Refer to Figure 3.4.5.a for conditions and limitations of use for each of the above categories of hydraulic mulch.
 - All components of the hydraulically applied mulches shall be pre-packaged by the manufacturer to assure material performance. Field mixing of the mulch components is acceptable, but must be done per manufacturer's recommendations to ensure the proper results.
 - Hydraulic mulches shall be applied with a viable seed and at manufacturer's recommended rates. Increased rates may be necessary based on site conditions.
 - Hydraulically applied mulches and additives shall be mixed according to manufacturer's recommendations.
 - Materials within this category shall only be used when hydraulically applied mulch has been specified for use on the approved Sediment and Stormwater Plan, or supplemental approval from the plan approval agency has been obtained in writing for a specific area.

Source: Delaware ESC Handbook & Filtracore International
 Symbol:
 Detail No. DE-ESC-3.4.5 Sheet 1 of 3
 Date: 05/15

Standard Detail & Specifications Mulching

- Application:
 - Apply product to geotechnically stable slopes that have been designed and constructed to divert runoff away from the face of the slope.
 - Do not apply to saturated soils, or if precipitation is anticipated within 24-48 hours.
 - During the spring (March 1 to May 31) and September 1 to November 30 seasons, hydraulic mulches may be applied in a one-step process where all components are mixed together in single tank loads. It is recommended that the product be applied from opposing directions to achieve optimum soil coverage.
 - During the summer (June 1 to August 31) and winter (December 1 to February 28) seasons, the following two-step process is required:
 - Step One - fiber and apply seed and soil amendments with a small amount of mulch for visual marketing.
 - Step Two - mix and apply mulch at manufacturer's recommended rates over freshly seeded surfaces. Apply from opposing directions to achieve optimum soil coverage.
 - Minimum curing temperature is 40°F (4°C). The best results and more rapid curing are achieved at temperatures exceeding 60°F (15°C). Curing times may be accelerated in high temperatures, low humidity conditions on dry soils.
- Recommended application rates are for informational purposes only. Conformance with this standard and specification shall be performance-based and requires 100% soil coverage. Any areas with bare soil showing shall be top dressed until full coverage is achieved.
- Compost blanket (CB) - loosely applied with a maximum wet weight that a 1' compost blanket uniformly covers the soil with 100% coverage. This application can be used with seed to promote germination by applying the approved seed mix directly into the loosely trowed compost. The compost blanket performs best on slopes less than 2:1 and requires no anchoring.

2. Anchoring method - Mulch must be anchored immediately to minimize loss by wind or water. This may be done by one of the following methods, depending upon size of area, erosion hazard, and cost:

- Crimping - A crimper is a tractor drawn implement designed to punch and anchor mulch into the top two (2) inches of soil. This practice offers maximum erosion control but is limited to flatter slopes where equipment can operate safely. On sloping land, crimping should be done on the contour whenever possible.
- Tracking - In the process of cutting mulch (usually straw) into the soil using a bulldozer or other equipment that runs on cleared tracks. Tracking is used primarily on slopes 3:1 or steeper and should be done up and down the slope with clear marks running across the slope.
- Liquid mulch binders - Applications of liquid mulch binders should be heavier at edges, in valleys, and at crests of banks and other areas where the mulch will be moved by wind or water. All other areas should have a uniform application of binder. The use of synthetic binders is the preferred method of mulch binding and should be applied at the rates recommended by the manufacturer.
- Paper fiber - The fiber binder shall be applied at a net dry weight of 750 lbs./ac. The wood cellulose fiber shall be mixed with water, and the mixture shall contain a maximum of 50 lbs. of wood cellulose fiber per 100 gallons.
- Netting - Synthetic or organic nettings may be used to secure straw mulch. Install and secure according to the manufacturer's recommendations.

Source: Delaware ESC Handbook & Filtracore International
 Symbol:
 Detail No. DE-ESC-3.4.5 Sheet 2 of 3
 Date: 05/15

MULCHING MATERIAL SELECTION GUIDE

Percent Slope	Type of Mulch / App. Rate*	Dec. 1 to Feb. 28/29	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30
Less than 2%	Wood Fiber @ 2000 lbs./ac. min. BPM @ 2000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
2% to 5.9%	Wood Fiber @ 2500 lbs./ac. min. BPM @ 2500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
6% to 9.9%	Wood Fiber @ 3000 lbs./ac. min. BPM @ 3000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
10% to 24.9%	Wood Fiber @ 3500 lbs./ac. min. BPM @ 3500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
25% to 39%	Wood Fiber @ 4000 lbs./ac. min. BPM @ 4000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
40% and up	Wood Fiber @ 4500 lbs./ac. min. BPM @ 4500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK

*Note: Manufacturer's Recommended Rates for informational purposes only. Perform own standard requires 100% soil coverage.
 **Note: Stabilization Matting may be applied in accordance with Section 3.4.4 of the Delaware ESC Handbook.
 ***Note: Straw applied on slopes greater than 3:1 may require a netting (this does not require a netting).
 OK = Applicable to use during the 6m period.
 X = Not applicable to use during the 6m period.
 # Application rates are minimums.

Source: Delaware ESC Handbook & Filtracore International
 Symbol:
 Detail No. DE-ESC-3.4.5 Sheet 3 of 3
 Date: 05/15

Standard Detail & Specifications Skimmer Dewatering Device

Source: Adapted from drawing by Vandemark & Lynch, Inc.
 Symbol:
 Detail No. DE-ESC-3.2.3.1 Sheet 1 of 2
 Date: 12/03

Standard Detail & Specifications Skimmer Dewatering Device

Construction Notes:

- Pipe flotation section shall be solvent welded to ensure an airtight assembly. Contractor to conduct a test to check for leaks prior to installation.
- Skimmer section shall have (12) rows of 1/2" dia. holes, 1-1/4" on center. If additional filtration is necessary, the filtering media shall consist of a Type GD-II geotextile fabric wrapped around the perforated portion of the skimmer and attached with plastic snap ties, bands, etc.
- Flexible pipe shall be inserted into solid pipe and fastened with (2) #8 wood screws.
- At a minimum, the structure shall be inspected after each rain and repairs made as needed. If vandalism is a problem, more frequent inspection may be necessary.
- Construction operations shall be carried out in such a manner that erosion and water pollution are minimized.
- The structure shall only be removed when the contributing drainage area has been properly stabilized.

Materials:

- Solid pipe - 4" Sched. 40 PVC
- Perforated pipe - 4" Sched. 40 PVC
- 90° Tee (1 ea.) - 4" Sched. 40 PVC
- 90° Elbow (2 ea.) - 4" Sched. 40 PVC
- Cap (1 ea.) - 4" Sched. 40 PVC, solid
- Flexible pipe - 4" corrugated plastic tubing (non-perforated)

Source: Delaware ESC Handbook
 Symbol:
 Detail No. DE-ESC-3.2.3.1 Sheet 2 of 2
 Date: 12/03

Standard Detail & Specifications Mulching

MULCHING MATERIAL SELECTION GUIDE

Percent Slope	Type of Mulch / App. Rate*	Dec. 1 to Feb. 28/29	March 1 to May 31	June 1 to Aug. 31	Sept. 1 to Nov. 30
Less than 2%	Wood Fiber @ 2000 lbs./ac. min. BPM @ 2000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
2% to 5.9%	Wood Fiber @ 2500 lbs./ac. min. BPM @ 2500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
6% to 9.9%	Wood Fiber @ 3000 lbs./ac. min. BPM @ 3000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
10% to 24.9%	Wood Fiber @ 3500 lbs./ac. min. BPM @ 3500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
25% to 39%	Wood Fiber @ 4000 lbs./ac. min. BPM @ 4000 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK
40% and up	Wood Fiber @ 4500 lbs./ac. min. BPM @ 4500 lbs./ac. min. Straw @ 2 Tons/ac. min. (Stabilization Matting*) (1" Compost Blanket (CB))	OK	OK	OK	OK

*Note: Manufacturer's Recommended Rates for informational purposes only. Perform own standard requires 100% soil coverage.
 **Note: Stabilization Matting may be applied in accordance with Section 3.4.4 of the Delaware ESC Handbook.
 ***Note: Straw applied on slopes greater than 3:1 may require a netting (this does not require a netting).
 OK = Applicable to use during the 6m period.
 X = Not applicable to use during the 6m period.
 # Application rates are minimums.

Source: Delaware ESC Handbook & Filtracore International
 Symbol:
 Detail No. DE-ESC-3.4.5 Sheet 3 of 3
 Date: 05/15

I. GENERAL

APPOQUINIMK SCHOOL DISTRICT PROPOSES TO FURTHER DEVELOP THIS 272.2± ACRE PARCEL LOCATED ALONG OLD STATE ROAD IN APPOQUINIMK HUNDRED, NEW CASTLE COUNTY, DELAWARE. THE PURPOSE OF THIS PLAN IS TO PROVIDE FOR THE BULK GRADING OF THE REMAINING UNDEVELOPED PORTION OF THIS SITE. NO BUILDINGS ARE PROPOSED TO BE CONSTRUCTED.

PROPOSED CONSTRUCTION WILL BE COMPLETED IN TWO (2) PHASES.

THIS PLAN SET REFLECTS THE PRE-CONSTRUCTION AND CONSTRUCTION BEST MANAGEMENT PRACTICES (CBMP'S) NECESSARY TO REMOVE THE EXISTING "OVERBURDEN" STOCKPILE AND TO BULK GRADE THE REMAINDER OF THE SITE. ALL FACILITIES HAVE BEEN DESIGNED IN ACCORDANCE WITH THE DELAWARE EROSION AND SEDIMENT CONTROL MANUAL AND NO WAIVERS ARE BEING REQUESTED.

SOILS ON THIS SITE ARE MAPPED AS BROADKILL-APPOQUINIMK (S₀), KEYPORT (K₀), LENNI (L₀), LENAPE-NANTICOKE (L₁), REYBOLD (R₀, R₁), AND SASSAFRASS (S₀, S₁). MAPPING UNITS ON SHEET 26 OF THE SCS SOIL SURVEY OF NEW CASTLE COUNTY, DELAWARE.

BROADKILL-APPOQUINIMK IS CLASSIFIED AS HYDROLOGIC SOIL GROUP D, KEYPORT IS CLASSIFIED AS HYDROLOGIC SOIL GROUP C, LENAPE-NANTICOKE IS CLASSIFIED AS HYDROLOGIC SOIL GROUP C, REYBOLD IS CLASSIFIED AS HYDROLOGIC SOIL GROUP B, AND SASSAFRASS IS CLASSIFIED AS HYDROLOGIC SOIL GROUP B.

THE BROADKILL-APPOQUINIMK SERIES TYPICALLY CONSISTS OF VERY FREQUENTLY FLOODED TIDAL AREAS. THESE SOILS ARE TYPICALLY DIFFICULT TO WORK WITH DUE TO THEIR HIGH MOISTURE CONTENT.

THE KEYPORT SERIES CONSISTS OF DEEP, MODERATELY DRAINED SOILS IN UPPER COASTAL PLAINS OF NEW CASTLE COUNTY. THESE SOILS ARE NOT DIFFICULT TO WORK WITH IF MOISTURE CONTENT IS FAVORABLE. HIGH MOISTURE CONTENT MAKES THIS SOIL FAVORABLE FOR CROPS.

THE LENNI SERIES CONSISTS OF FLAT, POORLY DRAINED SOILS USUALLY IN SWALES OR DEPRESSED AREAS WITH HIGH MOISTURE CONTENT.

THE LENAPE-NANTICOKE SERIES EXISTS IN VERY FREQUENTLY FLOODED AREAS SUCH AS FLOOD PLAINS AND SWAMP AREAS.

THE REYBOLD SERIES CONSISTS OF WELL DRAINED SOILS WITH DEEP WATER TABLES MAKING THIS SERIES EASY TO MANIPULATE AND WORK WITH.

THE SASSAFRASS SOILS ARE EASY TO WORK, AND THEY WARM UP QUICKLY IN SPRING. THEY HAVE MODERATE AVAILABLE MOISTURE CAPACITY. IN SLOPING AREAS, HOWEVER, USE IS LIMITED BY THE EROSION HAZARD.

II. TEMPORARY SEDIMENTATION AND EROSION CONTROL MEASURES:

- SILT FENCE: THIS STRUCTURE WILL FILTER RUNOFF CARRYING THE SEDIMENT, RETAIN THE SEDIMENT, AND ALLOW THE FILTERED RUNOFF TO PASS.
- REINFORCED SILT FENCE: THIS STRUCTURE IS REINFORCED WITH FIBER MESH AND WILL FILTER RUNOFF CARRYING THE SEDIMENT, RETAIN THE SEDIMENT, AND ALLOW THE FILTERED RUNOFF TO PASS.
- STABILIZED CONSTRUCTION ENTRANCE: THIS CRUSHED STONE MAT PREVENTS THE "TRACKING" OR FLOWING OF SEDIMENT OFF-SITE ONTO THE EXISTING ROADWAY.
- INLET PROTECTION TYPE 1: THIS SEDIMENT CONTROL DEVICE CONSISTS OF A FRAMEWORK OF 2 x 4'S WITH SILT FENCE PLACED AROUND THE TOP OF A CATCHBASIN LOCATED IN A CURB ROADWAY.
- INLET PROTECTION TYPE 2: THIS SEDIMENT CONTROL DEVICE CONSISTS OF A GEOTEXTILE FABRIC POUCH INSERTED INTO A CATCH BASIN FOR THE PURPOSE OF CAPTURING SEDIMENT AS IT ENTERS THE CATCH BASIN.
- TEMPORARY BERM: CONSISTS OF MOUNDING EARTHEN MATERIALS OR A COMBINATION OF MOUNDING AND DITCHING EARTHEN MATERIALS TO CONVEY SEDIMENT LADEN RUNOFF INTO A SEDIMENT TRAP OR SEDIMENT BASIN.
- SEDIMENT TRAP: AN EXCAVATION OR COMBINATION OF EXCAVATION AND EMBANKMENT, APPROPRIATELY SIZED FOR SMALLER WATERSHEDS, WHICH TRAPS SEDIMENT LADEN RUNOFF AND PROVIDES TIME FOR SEDIMENT PARTICLES TO SETTLE OUT PRIOR TO DISCHARGE TO A RECEIVING OUTLET.
- SEDIMENT BASIN: AN EXCAVATION OR COMBINATION OF EXCAVATION AND EMBANKMENT, APPROPRIATELY SIZED FOR ANY DRAINAGE AREA, WHICH TRAPS SEDIMENT LADEN RUNOFF AND PROVIDES TIME FOR SEDIMENT PARTICLES TO SETTLE OUT PRIOR TO DISCHARGE TO A RECEIVING OUTLET.
- SLOPE STABILIZATION MATTING: STRAW OR CURLED WOOD MATTING PLACED AFTER FINE GRADING AND SEEDING (TEMPORARY OR PERMANENT) ON ALL SLOPES 3:1 OR STEEPER AND ALL OPEN CHANNELS.

III. VEGETATIVE PRACTICES - TEMPORARY AND PERMANENT

- AREAS DESIGNATED TO BE TEMPORARILY STABILIZED SHALL BE SEEDED WITH THE FOLLOWING SEED MIXTURE: (MIX #5 FROM DESCH TEMPORARY SEEDING SPEC.) ANNUAL RYEGRASS APPLIED AT THE RATE OF 125 LBS. PER ACRE.
- AREAS DESIGNATED TO BE PERMANENTLY STABILIZED SHALL BE SEEDED WITH THE FOLLOWING SEED MIXTURE: (MIX #7 FROM DESCH PERMANENT SEEDING SPEC.) OR THEY MAY RECEIVE SOD AS DIRECTED BY THE OWNER.
- TALL FESCUE 80%
KENTUCKY BLUEGRASS BLEND 10%
PERENNIAL RYEGRASS 10%
(% BY WEIGHT TOTAL MIXTURE)
- SEED APPLICATION RATE: 190 LBS. PER ACRE
- FERTILIZATION: FERTILIZER SHALL BE THE FOLLOWING FORMULATION AND APPLIED AT THE FOLLOWING RATE:
10-10-10; 250 LBS PER ACRE (FORMULATION AND RATES MAY BE MODIFIED BASED ON SOIL TEST RECOMMENDATIONS).
- STRAW MULCH SHALL BE APPLIED IN ACCORDANCE WITH DNREC STANDARD AND SPECIFICATIONS FOR MULCHING DE-ESC-3.4.5.
- LIME-APPLY DOLOMITIC LIMESTONE AT 2 TONS PER ACRE.
- COPIES OF SEED TAGS SHALL BE SAVED AND PROVIDED TO C.C.R.
- SEEDBED PREPARATION: IT IS IMPORTANT TO PREPARE A FOOD SEEDBED PRIOR TO ESTABLISHING VEGETATION. THE SEEDBED SHOULD BE WELL PREPARED, LOOSE TOPSOIL, FREE OF SIZABLE ROCKS, DEBRIS, PETRIED WOOD ETC. THE SOIL SURFACE SHOULD NOT BE COMPACTED OR CRUSTED OVER WHEN SEED IS APPLIED.
- CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.

IV. CONSTRUCTION STAGING

- SCHEDULE AND ATTEND A PRE-CONSTRUCTION MEETING WITH THE STATE OF DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL (DNREC), THE DELAWARE DEPARTMENT OF TRANSPORTATION AND THE CIVIL ENGINEER UNLESS WAIVED BY WRITTEN NOTICE. A CERTIFIED CONSTRUCTION REVIEWER (CCR) WILL BE REQUIRED FOR THE INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES. NOTIFY DNREC (1-302-739-9921) AND THE DESIGNATED CCR AT LEAST 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ITEM THAT WILL REQUIRE THEIR INSPECTION.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
- AREAS WITHIN THE LIMITS OF DISTURBANCE SHOWN ON THIS PLAN ARE KNOWN TO CONTAIN BURIED HISTORIC ARTIFACTS. IF, DURING LAND DISTURBANCE, THE CONTRACTOR FINDS PREHISTORIC OR HISTORIC ARTIFACTS, THE CONTRACTOR AND THE SCHOOL DISTRICT MUST NOTIFY THE STATE OF DELAWARE DEPARTMENT OF HISTORICAL AND CULTURAL AFFAIRS OF THE FINDINGS AT (302) 736-7400 SO THAT THE STATE CAN DETERMINE IF THEY DESIRE TO COLLECT THE ITEMS.
- INSTALL PERMETER CONTROLS AS SHOWN ON THE PRE-CONSTRUCTION SITE STORMWATER MANAGEMENT PLAN. ONLY THOSE AREAS WHERE THESE CONTROLS ARE INITIALLY INSTALLED SHALL BE DISTURBED. THE CONTROL MEASURES ARE AS FOLLOWS:
 - MARK ALL LIMITS OF DISTURBANCE AS SHOWN. DNREC ALLOWS STAKING OF THE LOD A MINIMUM OF EVERY 100 LF TO DEMARCATHE THE LIMITS OF DISTURBANCE. CONTRACTOR SHOULD BE PREPARED TO INSTANTLY ADDITIONAL MEASURES OF DEMARCATION AS MAY BE DETERMINED BY DNREC UPON THEIR PERMETER CONTROL INSPECTION.
 - INSTALL STABILIZED CONSTRUCTION ENTRANCE WHERE SHOWN AND IN ACCORDANCE WITH STANDARD DETAIL.
 - INSTALL REINFORCED SILT FENCE AS SHOWN AROUND ENTIRE LOD IN ACCORDANCE WITH STANDARD DETAIL.
 - STRIP TOPSOIL FROM AREAS TO BE USED FOR STOCKPILING OF EXCESS EXCAVATED MATERIALS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - STRIP TOPSOIL FROM AREAS OF SEDIMENT TRAPS #1 & #6 AND THEIR ASSOCIATED TEMPORARY BERMS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL. INSTALL SEDIMENT TRAPS #1 AND #6 AND THEIR ASSOCIATED TEMPORARY BERMS IN ACCORDANCE WITH PLANS AND DETAILS, INCLUDING STABILIZATION. STOCKPILE ANY EXCESS MATERIAL WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - STRIP TOPSOIL FROM AREA OF SEDIMENT TRAP #2 AND ITS ASSOCIATED TEMPORARY BERMS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL. INSTALL SEDIMENT TRAP #2 ITS ASSOCIATED TEMPORARY BERMS IN ACCORDANCE WITH PLANS AND DETAILS, INCLUDING STABILIZATION. STOCKPILE EXCESS MATERIAL WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - STRIP TOPSOIL FROM AREA OF SEDIMENT BASIN #8 AND ITS ASSOCIATED TEMPORARY BERMS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL. INSTALL SEDIMENT TRAP #8 AND ITS ASSOCIATED TEMPORARY BERMS IN ACCORDANCE WITH PLANS AND DETAILS, INCLUDING STABILIZATION. STOCKPILE ANY EXCESS MATERIAL WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - STRIP TOPSOIL FROM AREA OF SEDIMENT TRAPS #3 & #4 AND THEIR ASSOCIATED TEMPORARY BERMS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL. INSTALL SEDIMENT TRAPS #3 AND #4 AND THEIR ASSOCIATED TEMPORARY BERMS IN ACCORDANCE WITH PLANS AND DETAILS, INCLUDING STABILIZATION. STOCKPILE ANY EXCESS MATERIAL WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - STRIP TOPSOIL FROM AREA OF SEDIMENT TRAPS #5 & #7 AND THEIR ASSOCIATED TEMPORARY BERMS AND STOCKPILE WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL. INSTALL SEDIMENT TRAPS #5 AND #7 AND THEIR ASSOCIATED TEMPORARY BERMS IN ACCORDANCE WITH PLANS AND DETAILS, INCLUDING STABILIZATION. STOCKPILE EXCESS MATERIAL WHERE SHOWN AND IN ACCORDANCE WITH STOCKPILE DETAIL.
 - PROVIDE STABILIZATION TO ALL DISTURBED AREAS AS REQUIRED AND IN ACCORDANCE WITH DETAILS. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - ALL PERMETER CONTROLS MUST BE INSTALLED, STABILIZED, INSPECTED BY THE CCR AND DNREC PRIOR TO BULK GRADING. PRIOR TO THIS PRE-CONSTRUCTION SITE INSPECTION, NO DISTURBANCE MAY OCCUR ON-SITE OTHER THAN THOSE AREAS DESIGNATED AS PERMANENT PERMETER EROSION AND SEDIMENT CONTROLS. ALL PERMETER CONTROLS, INCLUDING SOIL STOCKPILES, SHALL BE VEGETATIVELY STABILIZED IN ACCORDANCE WITH DETAILS. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - UPON SATISFACTORY PRE-CONSTRUCTION SITE INSPECTION BY THE AGENCY CONSTRUCTION SITE REVIEWER, COMMENCE RELOCATION OF 25,000± CUBIC YARDS OF MATERIAL FROM THE OVERBURDEN STOCKPILE TO BULK GRADE THE SITE AS SHOWN. CONTRACTOR TO PLACE MATERIAL IN MAXIMUM 8' LIFTS AND ENSURE THAT SUBGRADE REQUIREMENTS ARE MET. MINIMUM COMPACTION AS DEFINED BY STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM-0698) SHALL BE:
 - BUILDING AND PAVEMENT SUBGRADE: 95 PERCENT
 - SUBGRADE AND LAWN SUBGRADE: 90 PERCENT
 BULK GRADING OF AREAS SHALL BE PERFORMED AS FOLLOWS:
 - STRIP TOPSOIL FROM AREAS DRAINING TO SEDIMENT TRAPS #1 & #6 AND STOCKPILE IN ACCORDANCE WITH STOCKPILE DETAIL. BULK GRADE THIS AREA IN ACCORDANCE WITH PLAN GRADES AND PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS IN ACCORDANCE WITH DETAILS BEFORE DISTURBING ADDITIONAL AREA. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - STRIP TOPSOIL FROM AREA DRAINING TO SEDIMENT TRAP #2 AND STOCKPILE IN ACCORDANCE WITH STOCKPILE DETAIL. BULK GRADE THIS AREA IN ACCORDANCE WITH PLAN GRADES AND PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS IN ACCORDANCE WITH DETAILS BEFORE DISTURBING ADDITIONAL AREA. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - STRIP TOPSOIL FROM AREA DRAINING TO SEDIMENT BASIN #8 AND STOCKPILE IN ACCORDANCE WITH STOCKPILE DETAIL. BULK GRADE THIS AREA IN ACCORDANCE WITH PLAN GRADES AND PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS IN ACCORDANCE WITH DETAILS BEFORE DISTURBING ADDITIONAL AREA. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - STRIP TOPSOIL FROM AREAS DRAINING TO SEDIMENT TRAPS #3 & #4 AND STOCKPILE IN ACCORDANCE WITH STOCKPILE DETAIL. BULK GRADE THIS AREA IN ACCORDANCE WITH PLAN GRADES AND PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS IN ACCORDANCE WITH DETAILS BEFORE DISTURBING ADDITIONAL AREA. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - STRIP TOPSOIL FROM AREAS DRAINING TO SEDIMENT TRAPS #5 & #7 AND STOCKPILE IN ACCORDANCE WITH STOCKPILE DETAIL. BULK GRADE THIS AREA IN ACCORDANCE WITH PLAN GRADES AND PLACE TOPSOIL, SEED AND MULCH ON ALL DISTURBED AREAS IN ACCORDANCE WITH DETAILS. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - TOPSOIL SEED AND MULCH ANY REMAINING DISTURBED AREAS AND IN ACCORDANCE WITH DETAILS. CONTRACTOR IS RESPONSIBLE FOR WATERING SEEDED AREAS AS NECESSARY TO ACHIEVE THE REQUIRED VEGETATIVE STABILIZATION.
 - CONTRACTOR IS TO ENSURE THAT ALL RUNOFF IS DIRECTED TOWARD THE PROPER SEDIMENT CONTROL MEASURES PREVIOUSLY INSTALLED. CONTRACTOR IS NOT TO REMOVE ANY TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES MEASURES WITHOUT WRITTEN AUTHORIZATION FROM DNREC.
 - PERIODICALLY MAINTAIN THE PERMETER CONTROL MEASURES, AS NEEDED. THE CONTRACTOR SHALL AT ALL TIMES PROTECT AGAINST SEDIMENT OR DEBRIS LADEN RUNOFF OR WIND DEBRIS FROM LEAVING THE SITE. PERMETER CONTROLS ARE TO BE CHECKED DAILY AND ADJUSTED AND/OR REPAIRED AS REQUIRED TO FULLY CONTAIN AND CONTROL.
 - SEDIMENTATION ON THE SITE ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN WHEN IT HAS REACHED HALF OF THE EFFECTIVE CAPACITY OF THE CONTROL. IN ADDITION, THE CONTRACTOR MAY NEED TO ADJUST OR REPAIR MEASURES IN TIMES OF ADVERSE WEATHER CONDITIONS, OR AS DIRECTED BY THE DELEGATED AGENCY.
 - ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN (OTHER THAN SILT FENCE AROUND STOCK PILES) ARE TO REMAIN IN PLACE FOR CONTINUED USE DURING SITE CONSTRUCTION. SHOULD THE CONTRACTOR WISH TO REMOVE ANY MEASURES, WRITTEN AUTHORIZATION FROM DNREC IS REQUIRED.
 - UPON COMPLETION OF BULK GRADING, AN AS-BUILT SURVEY OF THE SITE IS TO BE PERFORMED. SITE AS-BUILT IS TO BE COORDINATED WITH AND PERFORMED USING THE SERVICES OF THE ENGINEER OF RECORD.

GENERAL SEDIMENT AND STORMWATER NOTES

- A PRE-CONSTRUCTION MEETING MUST BE HELD PRIOR TO COMMENCING CONSTRUCTION. CONTACT DNREC AT (1-302-739-9921) TO SCHEDULE MEETING. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
- THE DNREC SEDIMENT AND STORMWATER PROGRAM MUST BE NOTIFIED IN WRITING FIVE (5) DAYS PRIOR TO COMMENCING WITH CONSTRUCTION. FAILURE TO DO SO CONSTITUTES A VIOLATION OF THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN.
- DNREC AND NEW CASTLE COUNTY (NCC) PERSONNEL SHALL HAVE THE RIGHT TO CONDUCT ON-SITE INSPECTIONS OF LAND DISTURBING ACTIVITIES AT ANY TIME.
- ALL PERMETER CONTROLS MUST BE INSTALLED, STABILIZED, INSPECTED BY NCC PRIOR TO BULK GRADING, BUILDING PERMIT ISSUANCE, OR ANY UTILITY INSTALLATION ON NON-RESIDENTIAL PROJECTS. PRIOR TO THIS PRE-CONSTRUCTION SITE INSPECTION, NO DISTURBANCE MAY OCCUR ON-SITE OTHER THAN THOSE AREAS NECESSARY TO ESTABLISH THE PERMETER EROSION AND SEDIMENT CONTROLS. INSTALL THE PERMETER CONTROLS PURSUANT TO THIS PLAN. ALL PERMETER SEDIMENT CONTROLS, INCLUDING SOIL STOCKPILES, SHALL BE VEGETATIVELY STABILIZED.
- RESERVED.
- RESERVED.
- RESERVED.
- REVIEW AND APPROVAL OF THE SEDIMENT AND STORMWATER MANAGEMENT PLAN SHALL NOT RELIEVE THE CONTRACTOR FROM HIS OR HER RESPONSIBILITIES FOR COMPLIANCE WITH THE SEDIMENT AND STORMWATER REGULATIONS NOR SHALL IT RELIEVE THE CONTRACTOR FROM ERRORS OR OMISSIONS ON THE APPROVED PLAN. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR ACQUIRING ANY AND ALL AGREEMENTS, EASEMENTS, ETC. NECESSARY TO COMPLY WITH ALL APPLICABLE REGULATIONS, CODES, STANDARDS, GUIDELINES AND POLICIES. ANY DEVIATION FROM THE APPROVED PLAN REQUIRES WRITTEN APPROVAL FROM NCC.
- UNLESS OTHERWISE AUTHORIZED BY NCC, ALL WORK MUST BE DONE IN ACCORDANCE WITH THE LATEST APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN. IF THE APPROVED PLAN NEEDS TO BE MODIFIED, ADDITIONAL SEDIMENT AND STORMWATER PRACTICES MAY BE REQUIRED AS DEEMED NECESSARY BY THE NEW CASTLE COUNTY DEPARTMENT OF LAND USE. IF NCC DETERMINES THE APPROVED PLAN TO BE DEFICIENT, THAT PLAN WILL BE VOIDED. THE SITE ISSUED A STOP WORK ORDER AND THE SUBMISSION OF A REVISED PLAN WILL BE REQUIRED FOR REVIEW AND APPROVAL BY NCC.
- THE THIRD PARTY CCR IS REQUIRED FOR THIS PROJECT AND IS RESPONSIBLE FOR REVIEWING THE CONSTRUCTION OF ANY PERMANENT STORMWATER MANAGEMENT FACILITIES AND SUBMITTING AN APPROPRIATE INSPECTION CHECKLIST, SIGNED BY A P.E., FOR CERTIFICATION OF THAT WORK. IF THE SEQUENCE OF CONSTRUCTION CALLS FOR A PERMANENT STORMWATER FACILITY TO BE INSTALLED AS AN ELEMENT OF THE PERMETER CONTROLS, THAT CHECKLIST AND STORMWATER AS-BUILT WILL BE REQUIRED PRIOR TO BUILDING PERMIT ISSUANCE.
- ALL INSPECTION REPORTS FROM THE CCR SHALL BE ELECTRONICALLY SUBMITTED WEEKLY TO ALL PARTIES INCLUDED ON THE CONSTRUCTION INFORMATION SHEET. THESE REPORTS SHALL INCLUDE A DATE BY WHICH ALL DEFICIENCIES MUST BE RESOLVED. FAILURE TO RESOLVE THE DEFICIENCIES INDICATED ON THE INSPECTION REPORT BY THE GIVEN DATE MAY RESULT IN ENFORCEMENT ACTION CONSIDERED APPROPRIATE BY THE DEPARTMENT.
- THE CCR MUST BE NOTIFIED 48 HOURS PRIOR TO ALL ELEMENTS OF SITE WORK WHICH REQUIRE DISTURBED AREAS - 78± ACRES. THE LIMITS OF DISTURBANCE MAY RESULT IN THE CONTRACTOR EXCAVATING SUFFICIENT MATERIAL TO VERIFY CONSTRUCTION IN ACCORDANCE WITH THE APPROVED SEDIMENT AND STORMWATER MANAGEMENT PLAN. SHOULD ANY PART OF A STORMWATER MANAGEMENT BASIN EMBANKMENT CALLS FOR A PERMANENT STORMWATER FACILITY TO BE EXCAVATED, THE ENTIRE EMBANKMENT MUST BE RECONSTRUCTED (IF APPLICABLE).
- LIMITS OF DISTURBANCE MUST BE DELINEATED IN THE FIELD. TOTAL DISTURBED ACREAGE = 78± ACRES. THE LIMITS OF DISTURBANCE SHALL BE CLEARLY DEFINED AT ALL TIMES DURING CONSTRUCTION.
- ALL DISTURBED SOIL SURFACES, INCLUDING SOIL STOCKPILES AND PERMETER CONTROL AREAS, MUST BE SUBJECT TO EROSION AND SHOULD BE EITHER PERMANENTLY OR TEMPORARILY STABILIZED WITHIN FOURTEEN (14) DAYS.
- ALL PROPOSED EROSION AND SEDIMENT CONTROLS WILL BE INSTALLED IN ACCORDANCE WITH THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, 2013, OR AS AMENDED.
- EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAINFALL. MAINTENANCE MUST BE PERFORMED AFTER EACH INSPECTION AS NECESSARY. ANY ERODED AREAS SHALL BE STABILIZED AND ANY ACCUMULATED SEDIMENT SHALL BE REMOVED AND DISPOSED OF ACCORDING TO PLAN.
- SHOULD QUESTIONS ARISE REGARDING THE MAINTENANCE OF EROSION AND SEDIMENT CONTROL PRACTICES, THE SITE CONTRACTOR SHALL CONTACT THE CONSULTING ENGINEER EXPEDITIOUSLY FOR TECHNICAL ASSISTANCE.
- UPON RECEIPT OF TWO CONSECUTIVE UNSATISFACTORY CCR AND/OR NCC EROSION AND SEDIMENT CONTROL INSPECTION REPORTS, THE SITE MAY BE ISSUED A STOP WORK ORDER AND A SHOW CAUSE HEARING SCHEDULED.
- RESERVED.
- PURSUANT TO SECTION 8, PLAN APPLICATION AND APPROVAL PROCESS OF THE DELAWARE SEDIMENT AND STORMWATER REGULATIONS, AS AMENDED, ALL APPROVED S&S PLANS EXPIRE THREE (3) YEARS FROM THE DATE OF PLAN APPROVAL OR DATE OF PLAN RECORDED IF NO PLAN APPROVALS ISSUED AFTER PLAN RECORDED DATE, UNLESS SPECIFICALLY AUTHORIZED BY THE DEPARTMENT. ANY APPROVED S&S PLAN SUPERCEDED BY ANOTHER APPROVED S&S PLAN SHALL BE CONSIDERED EXPIRED AND WILL NOT BE RECOGNIZED UNLESS SPECIFICALLY AUTHORIZED BY THE DEPARTMENT.
- THE APPROVED S&S PLAN INCORPORATES POLLUTION PREVENTION PRACTICES LISTED UNDER STANDARDS AND SPECIFICATIONS FOR CONSTRUCTION SITE POLLUTION PREVENTION IN THE DELAWARE EROSION AND SEDIMENT CONTROL HANDBOOK, DATED DECEMBER 2003 AND ITS REVISIONS.
- RESERVED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND STABILIZE ALL EROSION AND SEDIMENT CONTROLS AND STORMWATER PRACTICES DURING CONSTRUCTION, INCLUDING THOSE THAT ARE DISTURBED BY UTILITY COMPANIES.
- ALL ROCK/STONE, WITH THE EXCEPTION OF CHECK DAMS, MUST BE UNDERLINED WITH A GEOTEXTILE FABRIC.
- IN THE EVENT EARTHWORK OPERATIONS ARE HALTED FOR THE WINTER MONTHS, BEFORE FINAL GRADING AND SEEDING OF ALL DISTURBED AREAS ARE COMPLETED, THOSE AREAS SHALL BE EITHER SEEDDED OR STABILIZED WITH MULCH AND TACKED WITH A CHEMICAL ADHESIVE.
- THE CONTRACTOR SHALL USE ALL MEANS NECESSARY TO CONTROL DUST ON AND NEAR THE WORK AREA IF SUCH DUST IS CAUSED BY THE CONTRACTOR'S OPERATIONS DURING THE WORK, OR IF RESULTING FROM THE CONDITIONS IN WHICH THE CONTRACTOR LEAVES THE SITE. IF DUST BECOMES A PROBLEM, SPRAY DISTURBED AREAS WITH WATER HOURLY OR APPLY CALCIUM CHLORIDE.
- THE CONTRACTOR SHALL CONTROL TRACKING OF SEDIMENT OFF-SITE ONTO PUBLIC PAVED SURFACES. SHOULD TRACKING OCCUR, THE CONTRACTOR SHALL SWEEP OR REMOVE THE SEDIMENT BY OTHER MEANS SO AS TO PREVENT SEDIMENTATION OF OFF-SITE DRAINAGE SYSTEMS OR WATER BODIES.
- ALL SITE IMPROVEMENTS INCLUDING LANDSCAPING, PERMANENT SITE STABILIZATION AND PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE IN PLACE AND APPROVED PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.

FOR CONSTRUCTION SITE DETAILS AND NOTES FOR FAIRVIEW CAMPUS APPOQUINIMK HUNDRED - NEW CASTLE COUNTY, DELAWARE

100 WEST COLUMBIA BOULEVARD SUITE 101 NEW CASTLE, DE 19720 NEW CASTLE, DE 19720 WWW.LANDMARK-SCIENCE.COM FAX (302) 368-8877 INFO @ LANDMARK-SCIENCE.COM

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THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE PROFESSIONAL ENGINEERING BOARD OF DELAWARE.

DRAWN BY: JAV SCALE: NONE
 DESIGNED BY: JAV DATE: 3/27/17
 CHECKED BY: TOW LAST MODIFIED: 4/13/17
 COMMISSION NO: C2228-8

DRAWING NAME: Bulk Grading E&S Details.dwg
 SHEET NO. CE-14 OF 18
 DATE: 05/15/17

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811 Know what's below. Call before you dig.

MISS AUSTIN PHONE 1-800-282-8555 PROTECT YOURSELF, GIVE THREE WORKING DAYS NOTICE

Standard Detail & Specifications

Silt Fence

Source: Adapted from MD Sids. & Specs. for ESC

Symbol: SF

Detail No.: DE-ESC-3.1.2.1 Sheet 1 of 2

Date: 6/05

Standard Detail & Specifications

Silt Fence

Construction Detail

Source: Adapted from MD Sids. & Specs. for ESC

Symbol: SF

Detail No.: DE-ESC-3.1.2.1 Sheet 2 of 2

Date: 6/05

Standard Detail & Specifications

Reinforced Silt Fence

Source: Adapted from Transco, Inc.

Symbol: RSF

Detail No.: DE-ESC-3.1.2.2 Sheet 1 of 2

Date: 6/05

Standard Detail & Specifications

Reinforced Silt Fence

Construction Notes:

- Welded wire fabric to be fastened securely to the fence posts with wire ties or staples.
- Filter cloth to be fastened securely to woven wire fence with ties spaced every 24 inches at top and mid-section.
- When two sections of fabric adjoin each other, they shall be overlapped by six inches and folded.
- Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.

Materials:

- Posts: Steel either T or U or 2" x 2" hardwood
- Geotextile Fabric: Type GD-1
- Prefabricated Unit: Geotab, Enviroloac, or approved equivalent
- Backing: Woven welded wire, 14 Ga., 2" x 4" mesh opening

Source: Adapted from Transco, Inc.

Symbol: RSF

Detail No.: DE-ESC-3.1.2.2 Sheet 2 of 2

Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Slope

Source: Adapted from North American Green, Inc.

Symbol: SM-S

Detail No.: DE-ESC-3.4.6.1 Sheet 1 of 2

Date: 6/05

Standard Detail & Specifications

Stabilization Matting - Slope

Stapling Patterns

Source: Adapted from North American Green, Inc.

Symbol: SM-S

Detail No.: DE-ESC-3.4.6.1 Sheet 2 of 2

Date: 6/05

Standard Detail & Specifications

Dust Control

Temporary Methods:

- Mulches - See DE-ESC-3.4.5, Standard Detail and Specifications for Mulching.
- Vegetative cover - See DE-ESC-3.4.3, Std. Detail and Specifications for Vegetative Stabilization.
- Adhesives - Use on mineral soils only not effective on muck soils. Keep traffic off these areas. The following table may be used for general guidance.

Type of Emulsion	Water Dilution	Type of Nozzle	Apply Gal/Ac.
Latex emulsion	12:5:1	Fine spray	235
Resin-in-water emulsion	4:1	Fine spray	300
Acrylic emulsion (non-traffic)	7:1	Coarse spray	450
Acrylic emulsion (traffic)	3.5:1	Coarse spray	350

Source: Adapted from VA ESC Handbook

Symbol: SF

Detail No.: DE-ESC-3.4.8 Sheet 1 of 1

Date: 12/05

Standard Detail & Specifications

Site Pollution Prevention

Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

- Material Inventory**
 - Document the storage and use of the following materials:
 - Concrete
 - Detergents
 - Paints (enamel and latex)
 - Cleaning solvents
 - Pesticides
 - Wood scraps
 - Fertilizers
 - Petroleum based products
- Good housekeeping practices**
 - Store only enough product required to do the job.
 - All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
 - Substances shall not be mixed.
 - When possible, all of a product shall be used up prior to disposal of the container.
 - Manufacturers' instructions for disposal shall be strictly adhered to.
 - The site foreman shall designate someone to inspect all BMPs daily.
- Waste management practices**
 - All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
 - Waste materials shall be salvaged and/or recycled whenever possible.
 - The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002

Symbol: SF

Detail No.: DE-ESC-3.6.1 Sheet 1 of 3

Date: 6/05

Standard Detail & Specifications

Site Pollution Prevention

Notes (cont.):

- Trash shall be disposed of in accordance with all applicable Delaware laws.
- Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
- If fertilizer bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheathing which is overlapped and anchored.

Source: Adapted from USEPA Pub. 840-B-92-002

Symbol: SF

Detail No.: DE-ESC-3.6.1 Sheet 2 of 3

Date: 6/05

Standard Detail & Specifications

Site Pollution Prevention

Notes (cont.):

- Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.
- Best management practices for construction site pollution control shall be a part of regular progress meetings.
- Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

CONTACT INFORMATION

DNREC 24-Hour Toll Free Number 800-662-8802

DNREC Solid & Hazardous Waste Branch 302-739-9403

Source: Adapted from USEPA Pub. 840-B-92-002

Symbol: SF

Detail No.: DE-ESC-3.6.1 Sheet 3 of 3

Date: 6/05

Standard Detail & Specifications

Stabilized Construct. Entrance

Source: Adapted from VA ESC Handbook

Symbol: SCE

Detail No.: DE-ESC-3.4.7 Sheet 1 of 2

Date: 12/05

Standard Detail & Specifications

Stabilized Construct. Entrance

Construction Notes:

- Stone size - Use DE #3 stone.
- Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
- Thickness - Not less than size (4) inches.
- Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
- Geotextile - Type GS-1 placed over the entire area prior to placing of stone.
- Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a removable berm with 5:1 slopes will be permitted.
- Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or removal of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
- Washing - Vehicle wheels shall be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
- Inspection - Periodic inspection and needed maintenance shall be provided after each rain.

Source: Adapted from VA ESC Handbook

Symbol: SCE

Detail No.: DE-ESC-3.4.7 Sheet 2 of 2

Date: 12/05

Standard Detail & Specifications

Temporary Earth Berm

Source: Adapted from MD Sids. & Specs. for ESC

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.3.2 Sheet 1 of 2

Date: 12/03

Standard Detail & Specifications

Temporary Earth Berm

FLOW CHANNEL STABILIZATION CHART

Stabilization Method	Channel Grade	Type A	Type B
1	0.5-3.0%	Seed & straw mulch	Seed & straw mulch
2	3.1-5.0%	Seed & straw mulch	Seed using stab, blanket, sod, DE #2 stone, lined K-4 riprap
3	5.1-10.0%	Seed with stab, blanket, sod, DE #2 stone, lined K-4 riprap	Engineering design
4	8.1-20%		Engineering design

Source: Adapted from MD Sids. & Specs. for ESC

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.3.2 Sheet 2 of 2

Date: 12/03

Standard Detail & Specifications

Vegetative Stabilization

TEMPORARY SEEDING BY RATES, DEPTHS AND DATES

Mix #	Species ^a	Seeding Rate ^b	Optimum Seeding Dates ^c	Planting Depth ^d
1	Grass	100 lbs/acre	April 15 - May 15	1/2" - 3/4"
2	Grass	100 lbs/acre	June 15 - July 15	1/2" - 3/4"
3	Grass	100 lbs/acre	August 15 - September 15	1/2" - 3/4"
4	Grass	100 lbs/acre	October 15 - November 15	1/2" - 3/4"

Source: Delaware ESC Handbook

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.4.3 Sheet 1 of 4

Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES

Seeding Mixtures	Seeding Rate ^a	Optimum Seeding Dates ^b	Remarks
1	100 lbs/acre	April 15 - May 15	Grass
2	100 lbs/acre	June 15 - July 15	Grass
3	100 lbs/acre	August 15 - September 15	Grass
4	100 lbs/acre	October 15 - November 15	Grass

Source: Delaware ESC Handbook

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.4.3 Sheet 2 of 4

Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

PERMANENT SEEDING AND SEEDING DATES

Seeding Mixtures	Seeding Rate ^a	Optimum Seeding Dates ^b	Remarks
1	100 lbs/acre	April 15 - May 15	Grass
2	100 lbs/acre	June 15 - July 15	Grass
3	100 lbs/acre	August 15 - September 15	Grass
4	100 lbs/acre	October 15 - November 15	Grass

Source: Delaware ESC Handbook

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.4.3 Sheet 3 of 4

Date: 12/05

Standard Detail & Specifications

Vegetative Stabilization

Construction Notes:

- Site Preparation
 - Prior to seeding, install needed erosion and sediment control practices such as diversions, grade stabilization structures, berms, dikes, graded waterways, and sediment basins.
 - Final grading and shaping is not necessary for temporary seedings.
- Seedbed Preparation
 - It is important to prepare a good seedbed to insure the success of establishing vegetation. The seedbed should be well prepared, loose, uniform, and free of large clods, rocks, and other objectionable material. The soil surface should not be compacted or crusted.
- Soil Amendments
 - Lime - Apply liming materials based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply dolomitic limestone at the rate of 1 to 2 tons per acre. Apply limestone uniformly and incorporate into the top 4 to 6 inches of soil.
 - Fertilizer - Apply fertilizer based on the recommendations of a soil test in accordance with the approved nutrient management plan. If a nutrient management plan is not required, apply a formulation 10-20-30 at the rate of 600 pounds per acre. Apply fertilizer uniformly and incorporate into the top 4 to 6 inches of soil.
- Seeding
 - For temporary stabilization, select a mixture from Sheet 1. For a permanent stabilization, select a mixture from Sheet 2 or Sheet 3 depending on the conditions.
 - Apply seed uniformly with a broadcast seeder, drill, cultipacker seeder or hydroseeder. All seed will be applied at the recommended rate and planting depth.
 - Seed that has been broadcast should be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseeding is used and the seed and fertilizer is mixed, they will be mixed on site and the seeding shall be done immediately and without interruption.
- Mulching
 - All mulching shall be done in accordance with detail DE-ESC-3.4.5.

Source: Delaware ESC Handbook

Symbol: TB-(A/B)(1-4)

Detail No.: DE-ESC-3.4.3 Sheet 4 of 4

Date: 12/05

CONSTRUCTION SITE DETAILS AND NOTES

FOR

FAIRVIEW CAMPUS

APPOQUINIMK HUNDRED - NEW CASTLE COUNTY, DELAWARE

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SHEET NO. CE-15 OF 18
CE-15

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Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

DATA TO BE PROVIDED

- Volume of Potential Pollution
- Height of containment
- Area of containment
- Volume of containment

Source: Delaware ESC Handbook
 Symbol: **DE-ESC-3.6.1**
 Detail No. Sheet 1 of 5
 Date: 03/13

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Pollution Prevention - Spill Prevention

- Fueling should only take place in signed designated areas, away from downstream drainage facilities and watercourses.
- Fueling must be with nozzles equipped with automatic shut-off to control drips. Do not top off.
- Protect the areas where equipment or vehicles are being repaired, maintained, fueled or parked from storm water run-on and runoff.
- Use barriers such as berms to prevent storm water run-on and runoff, and to contain spills.
- Place a "Fueling Area" sign next to each fueling area.
- Store hazardous materials such as fuel, solvents, oil and chemicals in secondary containment.
- Inspect vehicles and equipment for leaks on each day of use. Repair fluid and oil leaks immediately.
- Absorbent spill clean-up materials and spill kits must be available in fueling areas and on fuel trucks.
- If fueling is to take place at night, make sure the fueling area is sufficiently illuminated.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.

CLEAN UP SPILLS

- If it is safe to do so, immediately contain and clean up any chemical and/or hazardous material spills.
- Properly dispose of used oil, fluids, lubricants and spill clean-up materials.
- Do not bury spills or wash them down with water.

LEAKS AND DRIPS

- Use drip pans or absorbent pads at all times. Place under and around leaky equipment.
- Do not allow oil, grease, fuel or chemicals to drip onto the ground.
- Have spill kits and clean up material on-site.
- Repair leaky equipment promptly or remove problem vehicles and equipment from the site. Clean up contaminated soil immediately.
- Store contaminated waste in sealed containers constructed of suitable material. Label these containers properly.
- Clean up all spills and leaks. Promptly dispose of waste and spent clean up materials.

Source: Delaware ESC Handbook
 Symbol: **DE-ESC-3.6.1**
 Detail No. Sheet 2 of 5
 Date: 03/13

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes:

The Construction Site Pollution Prevention Plan should include the following elements:

- Material Inventory**
 Document the storage and use of the following materials:
 - Concrete
 - Detergents
 - Paints (enamel and latex)
 - Cleaning solvents
 - Pesticides
 - Wood scraps
 - Fertilizers
 - Petroleum based products
- Good housekeeping practices**
 - Store only enough product required to do the job.
 - All materials shall be stored in a neat, orderly manner in their original labeled containers and covered.
 - Substances shall not be mixed.
 - When possible, all of a product shall be used up prior to disposal of the container.
 - Manufacturers' instructions for disposal shall be strictly adhered to.
 - The site foreman shall designate someone to inspect all BMPs daily.
- Waste management practices**
 - All waste materials shall be collected and stored in securely lidded dumpsters in a location that does not drain to a waterbody.
 - Waste materials shall be salvaged and/or recycled whenever possible.
 - The dumpsters shall be emptied a minimum of twice per week, or more if necessary. The licensed trash hauler is responsible for cleaning out dumpsters.

Source: Adapted from USEPA Pub. 840-B-92-002
 Symbol: **DE-ESC-3.6.1**
 Detail No. Sheet 3 of 5
 Date: 03/13

Standard Detail & Specifications

Riprap Outlet Protection - 1

DATA

- Pipe diameter (D_p)
- Apron length (L_a)
- Apron width (W)
- Riprap size (R No.)
- Riprap thickness (T)

NOTE: Depress centerline of apron slightly to prevent edge-cutting.

NOTE: Key into exist. grid

NOTE: $T_{rip} < 0.5 D_p$

Source: Adapted from MD Sdks. & Specs. for ESC
 Symbol: **ROP-1**
 Detail No. DE-ESC-3.3.10.1 Sheet 1 of 2
 Date: 6/05

RIPRAP DETAILS

LOCATION	Q (cfs)	d 50	d MAX	BLANKET THICKNESS (T)	D _o	L _a	W	NSA #	TYPE
TSB #8	21	6"	12"	18"	24"	14'	16'	R-4	1

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes (cont.)

- Trash shall be disposed of in accordance with all applicable Delaware laws.
- Trash cans shall be placed at all lunch spots and littering is strictly prohibited. Recycle bins shall be placed near the construction trailer.
- If fertilizer bags can not be stored in a weather-proof location, they shall be kept on a pallet and covered with plastic sheeting which is overlapped and anchored.

- Equipment maintenance practices**
 - If possible, equipment should be taken to off-site commercial facilities for washing and maintenance.
 - If performed on-site, vehicles shall be washed with high-pressure water spray without detergents in an area contained by an impervious berm.
 - Drip pans shall be used for all equipment maintenance.
 - Equipment shall be inspected for leaks on a daily basis.
 - Washout from concrete trucks shall be disposed of in a temporary pit for hardening and proper disposal.
 - Fuel nozzles shall be equipped with automatic shut-off valves.
 - All used products such as oil, antifreeze, solvents and tires shall be disposed of in accordance with manufacturers' recommendations and local, state and federal laws and regulations.
- Spill prevention practices**
 - Potential spill areas shall be identified and contained in covered areas with no connection to the storm drain system.
 - Warning signs shall be posted in hazardous material storage areas.
 - Preventive maintenance shall be performed on all tanks, valves, pumps, pipes and other equipment as necessary.
 - Low or non-toxic substances shall be prioritized for use.

Source: Adapted from USEPA Pub. 840-B-92-002
 Symbol: **DE-ESC-3.6.1**
 Detail No. Sheet 4 of 5
 Date: 03/13

Standard Detail & Specifications

Riprap Outlet Protection - 1

Construction Notes:

- The subgrade for the riprap shall be prepared to the required lines and grades as shown on the plan. Any fill required in the subgrade shall be compacted to a density of approximately that of the surrounding undisturbed material.
- The riprap shall conform to the grading limits as shown on the plan.
- Filter cloth shall be protected from punching, cutting or tearing. Any damage other than an occasional small hole shall be repaired by placing another piece of cloth over the damaged area. All connecting joints should overlap a minimum of 1 ft. If the damage is extensive, replace the entire filter cloth.
- Stone for the riprap or gabion outlets may be placed by equipment. Riprap shall be placed in a manner to prevent damage to the filter cloth. Hand placement will be required to the extent necessary to prevent damage to the conduits, structures, etc.

Source: Adapted from MD Sdks. & Specs. for ESC
 Symbol: **ROP-1**
 Detail No. DE-ESC-3.3.10.1 Sheet 2 of 2
 Date: 6/05

Standard Detail & Specifications

Construction Site Waste Mgt & Spill Control

Notes (cont.)

- Contact information for reporting spills through the DNREC 24-Hour Toll Free Number shall be prominently posted.

- Education**
 - Best management practices for construction site pollution control shall be a part of regular progress meetings.
 - Information regarding waste management, equipment maintenance and spill prevention shall be prominently posted in the construction trailer.

CONTACT INFORMATION

DNREC 24-Hour Toll Free Number: 800-662-8802
 DNREC Solid & Hazardous Waste Branch: 302-739-9403

Source: Adapted from USEPA Pub. 840-B-92-002
 Symbol: **DE-ESC-3.6.1**
 Detail No. Sheet 5 of 5
 Date: 03/13

Standard Detail & Specifications

Riprap Outlet Sediment Trap

DATA

- Drainage area (D.A.)
- Required storage (V_r)
- Design dimensions (L x W x D)
- Embankment height (H)
- Channel depth (a)
- Weir length (b)

Source: Adapted from MD Sdks. & Specs. for ESC
 Symbol: **RST**
 Detail No. DE-ESC-3.1.3.3 Sheet 1 of 2
 Date: 6/05

RIPRAP OUTLET SEDIMENT TRAP DATA

FACILITY	D.A.	REQ'D STORAGE	EMBANKMENT HEIGHT	CREST ELEV.	CHANNEL DEPTH	WEIR LENGTH
RST #1	6.1± ACRES	21,960 C.F.	3.5 FT.	17.5	2.5 FT.	16.0 FT.
RST #2	10.3± ACRES	37,080 C.F.	3.0 FT.	26.0	2.0 FT.	12.0 FT.
RST #3	8.3± ACRES	29,880 C.F.	4.0 FT.	22.0	3.0 FT.	10.0 FT.
RST #4	5.2± ACRES	18,720 C.F.	3.0 FT.	28.0	2.0 FT.	16.0 FT.
RST #5	12.3± ACRES	44,280 C.F.	4.0 FT.	31.0	2.0 FT.	16.0 FT.
RST #6	9.7± ACRES	34,920 C.F.	4.0 FT.	15.0	3.0 FT.	12.0 FT.
RST #7	6.6± ACRES	23,760 C.F.	2.2 FT.	33.8	1.7 FT.	16.0 FT.

Standard Detail & Specifications

Geotextile Dewatering Bag

Source: Adapted from ACF Products, Inc.
 Symbol: **GB**
 Detail No. DE-ESC-3.2.1.2 Sheet 1 of 2
 Date: 12/03

Standard Detail & Specifications

Riprap Outlet Sediment Trap

Construction Notes:

- The area under embankment shall be cleared, grubbed and stripped of any vegetation and root mat. The pool area shall be cleared.
- The fill material for the embankment shall be free of roots or other woody vegetation as well as over-sized stones, rocks, organic material or other objectionable material. The embankment shall be compacted by traversing with equipment while it is being constructed. Maximum height of embankment shall be four (4) feet, measured at centerline of the embankment.
- All fill slopes shall be 2:1 or flatter; cut slopes 1:1 or flatter.
- Elevation of the top of any dike directing water into trap must equal or exceed the height of embankment.
- Storage area provided shall be figured by computing the volume available behind the outlet channel up to the elevation of the crest of the outlet weir channel.
- Filter cloth shall be placed over the bottom and sides of the outlet channel prior to placement of stone. Sections of fabric must overlap at least one (1) foot with section nearest the entrance placed on top. Fabric shall be embedded at least six (6) inches into existing ground at entrance of outlet channel.
- Stone used in the outlet shall be R-4 riprap with a thickness of 14".
- An approved dewatering device shall be considered an integral part of the trap. Dewatering operations shall be conducted in accordance with any and all regulatory requirements.
- Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
- The structure shall be inspected after each rain and repaired as needed.
- Construction operations shall be carried out in such a manner that erosion and water pollution are minimized. Disturbed areas shall be stabilized in accordance with the Standards and Specifications for vegetative Stabilization contained in this Handbook.
- The structure shall be removed and the area stabilized when the contributing drainage area has been properly stabilized.

MAXIMUM DRAINAGE AREA: 15 ACRES

Source: Adapted from MD Sdks. & Specs. for ESC
 Symbol: **RST**
 Detail No. DE-ESC-3.1.3.3 Sheet 2 of 2
 Date: 6/05

Standard Detail & Specifications

Geotextile Dewatering Bag

Construction Notes:

- The dewatering bag should be placed so the incoming water flows into and through the bag, and then flow off the site without creating more erosion. The neck should be tied off tightly to stop the water from flowing out of the bag without going through the walls. The dewatering bag should be placed on a gravel bed to allow water to flow in all directions.
- The dewatering bag is considered full and should be disposed when it is impractical for the bag to filter the sediment out of a reasonable flow rate. At this point, it should be replaced with a new bag.
- Disposal may be accomplished as directed by the construction reviewer. If the site allows, the bag may be buried on site and seeded, visible fabric removed and seeded or removed from site to a proper disposal area.

Materials:

- The geotextile fabric shall be a type GD-IV.
- The dewatering bag shall be sewn with a double needle machine using high strength thread. All structural seams will be sewn with high strength, double stitched "J" type. Seam strength test will have the following minimum average roll values:

Type	TEST METHOD	TEST RESULT
Heavy duty	ASTM D-4884	100 lb / in
- The dewatering bag shall have an opening large enough to accommodate a four (4) inch discharge hose with attached strap to tie off the hose to prevent the pumped water from escaping from the bag without being filtered.

Source: Adapted from ACF Products, Inc.
 Symbol: **GB**
 Detail No. DE-ESC-3.2.1.2 Sheet 2 of 2
 Date: 12/03

Standard Detail & Specifications

Geotextile Dewatering Bag

Notes:

THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN ACCORDANCE WITH THE ACT OF 1970 AND THE RULES AND REGULATIONS, WHERE APPROPRIATE.

Source: Adapted from ACF Products, Inc.
 Symbol: **GB**
 Detail No. DE-ESC-3.2.1.2 Sheet 2 of 2
 Date: 12/03

CELEBRATING 30 YEARS

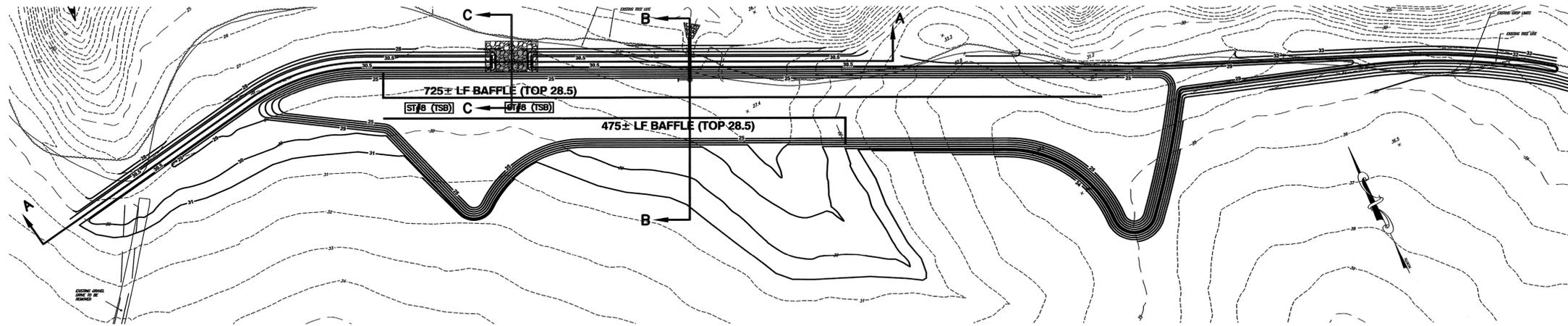
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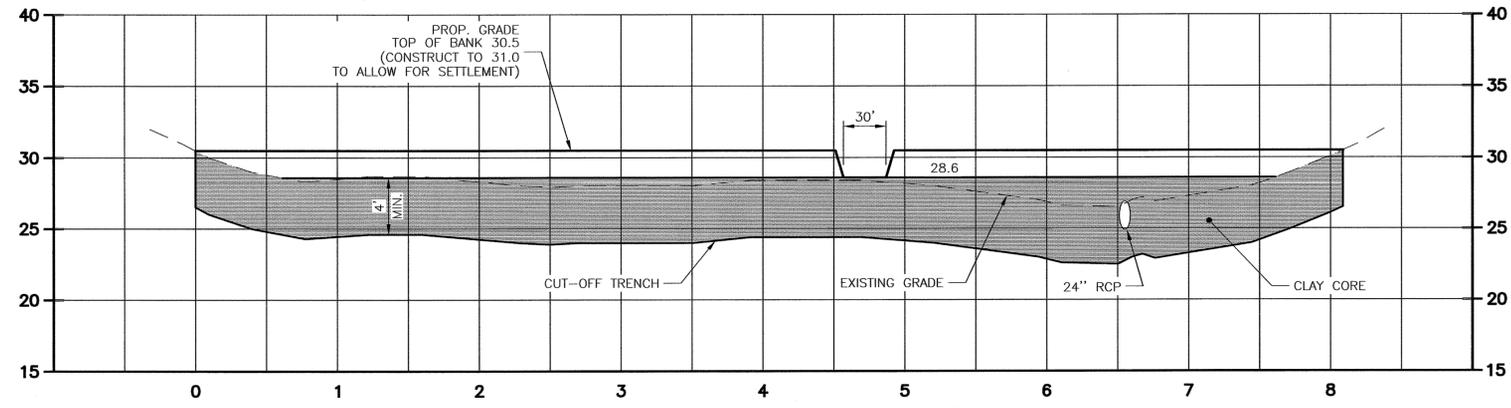
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 (302) 378-6155

APPOINTING SCHOOL DISTRICT
 FOR
FAIRVIEW CAMPUS
 CONSTRUCTION SITE DETAILS AND NOTES
 APPQUINIMK HUNDRED - NEW CASTLE COUNTY, DELAWARE

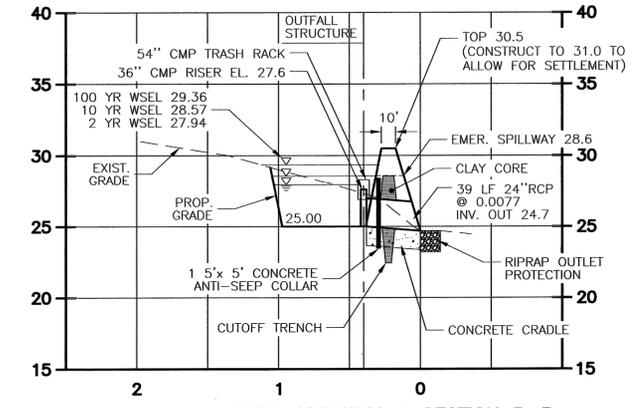
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 DESIGNED BY: JAV DATE: 3/27/17
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 COMMISSION NO: C2228-8
 DRAWING NAME: Bulk Grading E&S Details (DWG)
 SHEET NO. CE-16 of 18
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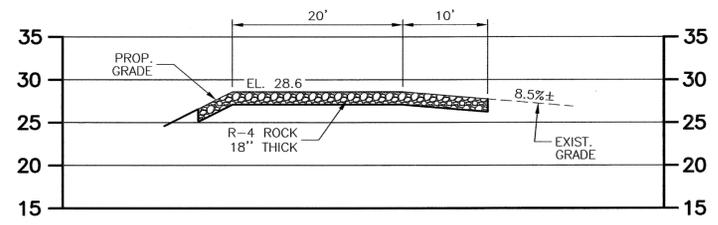
TEMPORARY SEDIMENT BASIN - PLAN VIEW
1" = 60'



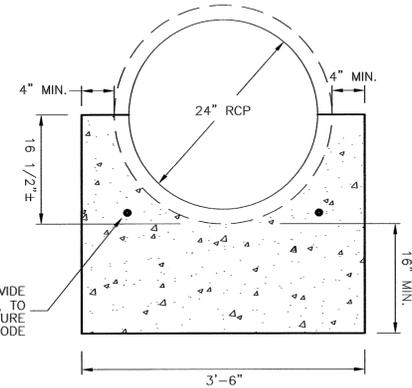
BASIN EMBANKMENT CENTERLINE - SECTION A-A
1" = 60' HORIZ.
1" = 6' VERT.



BASIN SECTION THRU SPILLWAY - SECTION B-B
1" = 60' HORIZ.
1" = 6' VERT.



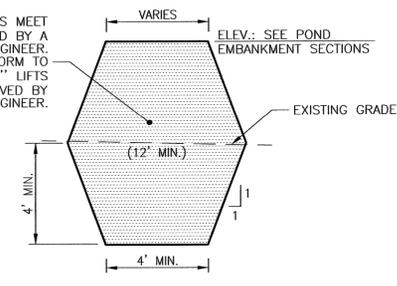
EMERGENCY SPILLWAY PROFILE - SECTION C-C
1" = 10' HORIZ.
1" = 10' VERT.



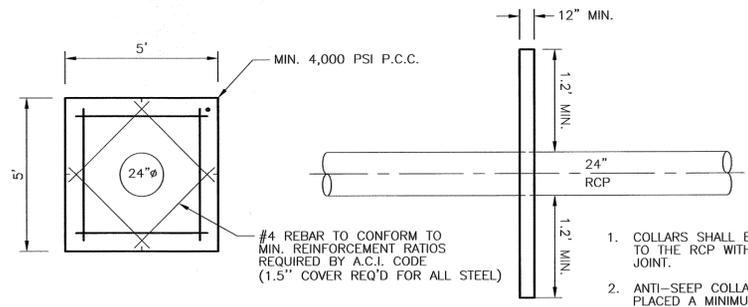
CONTRACTOR WILL PROVIDE REINFORCEMENT, AS REQ'D, TO MEET MINIMUM TEMPERATURE REINFORCEMENT PER A.C.I. CODE

CONCRETE CRADLE DETAIL
NO SCALE

CUTOFF TRENCH, UNLESS IN SITU SOILS MEET PERMEABILITY REQ'TS AS DETERMINED BY A SOILS SCIENTIST OR GEOTECHNICAL ENGINEER, CUTOFF TRENCH MATERIAL TO CONFORM TO USCS SC OR CL, COMPACTED IN 8"-12" LIFTS (MAX.) TO 95% PROCTOR OR AS APPROVED BY GEOTECHNICAL ENGINEER.



CLAY CORE/CUTOFF TRENCH DETAIL
NO SCALE



CONCRETE ANTI-SEEP COLLAR DETAIL FOR TEMPORARY SEDIMENT BASIN
NO SCALE

1. COLLARS SHALL BE CONNECTED TO THE RCP WITH A WATER TIGHT JOINT.
2. ANTI-SEEP COLLARS SHALL BE PLACED A MINIMUM OF 2 FT. FROM PIPE JOINTS.



NO.	DATE	DESCRIPTION

CONSTRUCTION SITE DETAILS AND NOTES
FOR
FAIRVIEW CAMPUS
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DESIGNED BY: JRB	LAST MODIFIED: 3/29/17	COMMISSION NO: C2228-B
CHECKED BY: TOW	DRAWING NAME: Bulk Grading E&S Details.dwg	SHEET NO. CE-18 of 18
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