APPLICATION IDENTIFICATION		N.C. DEPARTMENT OF TRANSPORTATION
Driveway Permit No. D022-054-23-00036	Date of Application 4/27/2023	STREET AND DRIVEWAY ACCESS PERMIT APPLICATION
County: Lenoir		
Development Name: Tick Bite Mine		

LOCATION OF PROPERTY:

Route/Road: 5265 Tick Bite Road - SR 1800

Exact Distance 6,760 ☐ Miles ■ Feet N ☐ S ☒ E ☒ W ☐

From the Intersection of Route No. SR-1800 and Route No. SR-1801 Toward dead-end of SR-1800

Property Will Be Used For: ☐ Residential /Subdivision ☐ Commercial ☐ Educational Facilities ☐ TND ☐ Emergency Services ■ Other

Property: ☐ is ■ is not within Kinston City Zoning Area.

AGREEMENT

- I, the undersigned property owner, request access and permission to construct driveway(s) or street(s) on public right-of-way at the above location.
- I agree to construct and maintain driveway(s) or street entrance(s) in absolute conformance with the current "Policy on Street and Driveway Access to North Carolina Highways" as adopted by the North Carolina Department of Transportation.
- I agree that no signs or objects will be placed on or over the public right-of-way other than those approved by NCDOT.
- I agree that the driveway(s) or street(s) will be constructed as shown on the attached plans.
- I agree that that driveway(s) or street(s) as used in this agreement include any approach tapers, storage lanes or speed change lanes as deemed necessary.
- I agree that if any future improvements to the roadway become necessary, the portion of driveway(s) or street(s) located on public right-of-way will be considered the property of the North Carolina Department of Transportation, and I will not be entitled to reimbursement or have any claim for present expenditures for driveway or street construction.
- I agree that this permit becomes void if construction of driveway(s) or street(s) is not completed within the time specified by the "Policy on Street and Driveway Access to North Carolina Highways".
- I agree to pay a $50 construction inspection fee. Make checks payable to NCDOT. This fee will be reimbursed if application is denied.
- I agree to construct and maintain the driveway(s) or street(s) in a safe manner so as not to interfere with or endanger the public travel.
- I agree to provide during and following construction proper signs, signal lights, flaggers and other warning devices for the protection of traffic in conformance with the current "Manual on Uniform Traffic Control Devices for Streets and Highways" and Amendments or Supplements thereto. Information as to the above rules and regulations may be obtained from the District Engineer.
- I agree to indemnify and save harmless the North Carolina Department of Transportation from all damages and claims for damage that may arise by reason of this construction.
- I agree that the North Carolina Department of Transportation will assume no responsibility for any damages that may be caused to such facilities, within the highway right-of-way limits, in carrying out its construction.
- I agree to provide a Performance and Indemnity Bond in the amount specified by the Division of Highways for any construction proposed on the State Highway system.
- The granting of this permit is subject to the regulatory powers of the NC Department of Transportation as provided by law and as set forth in the N.C. Policy on Driveways and shall not be construed as a contract access point.
- I agree that the entire cost of constructing and maintaining an approved private street or driveway access connection and conditions of this permit will be borne by the property owner, the applicant, and their grantees, successors, and assignees.
- **I AGREE TO NOTIFY THE DISTRICT ENGINEER WHEN THE PROPOSED WORK BEGINS AND WHEN IT IS COMPLETED.**

SIGNATURES OF APPLICANT

PROPERTY OWNER (APPLICANT)		WITNESS	
COMPANY	Valentine Amusement Park, Inc.- Melton Valentine	NAME	Michael Blakley - Drafting and Design Services Inc.
SIGNATURE		SIGNATURE	
ADDRESS	414 North Main Street, Tarboro, NC 27886	ADDRESS	6728 Carbonton Road, Sanford, NC 27330
	Phone No. (919)395-4592		

AUTHORIZED AGENT		WITNESS	
COMPANY	Valentine Amusement Park, Inc.- Melton Valentine	NAME	Michael Blakley - Drafting and Design Services, Inc.
SIGNATURE		SIGNATURE	
ADDRESS	414 North Main Street, Tarboro, NC 27886	ADDRESS	6728 Carbonton Road, Sanford, NC 27330
	Phone No. (919)395-4592		

APPROVALS

APPLICATION RECEIVED BY DISTRICT ENGINEER

DocuSigned by: Robby L. Taylor EE1BFCED479F467...

SIGNATURE | DATE: 04-27-23

APPLICATION APPROVED BY LOCAL GOVERNMENTAL AUTHORITY (when required)

SIGNATURE | TITLE | DATE

APPLICATION APPROVED BY NCDOT

DocuSigned by: Robby L. Taylor EE1BFCED479F467...

SIGNATURE | TITLE: District Engineer | DATE: 06/05/2023

INSPECTION BY NCDOT

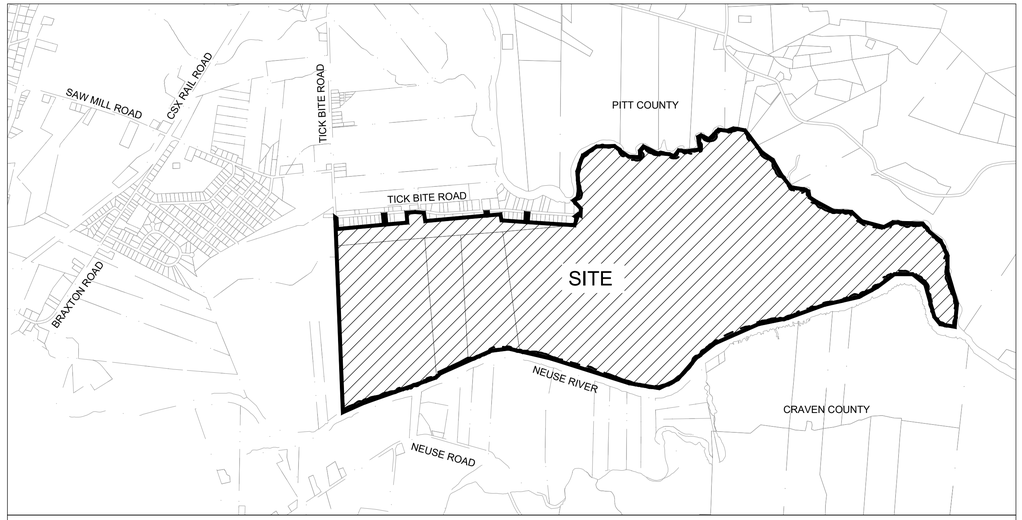
SIGNATURE | TITLE | DATE

COMMENTS:

1. An approved copy of the permit, plans and attachments shall be on-site during all times of construction.
2. All workmanship and materials shall conform to NCDOT standards and specifications.
3. The owner shall make satisfactory arrangements to adjust any utilities in conflict with proposed construction.
4. Traffic control devices shall be in accordance with the Manual on Uniform Traffic Control Devices.
5. The permit applicant must comply with all state, federal and local environmental regulations and shall obtain all necessary state, federal and local permits, including but not limited to, those related to sediment control, storm water, wetlands, streams, endangered species and historical sites.
6. Call NCDOT District 2 Office at 252-649-6500 at least 48 hours prior to beginning construction and once completed or Email D2D2notifications@ncdot.gov.
7. Page 9 of the Policy on Street and Driveway Access Manual states "Access connections and building construction must start within one year after the approval date of the permit." "At the discretion of the District Engineer, an extension of time not to exceed 90 days may be granted." This time extension request must be submitted in writing to the District Engineer.

TICK BITE MINE
PERMIT

5265 TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA



LOCATION MAP
SCALE: NTS

NORTH

SHEET INDEX

SITE DEVELOPER/OWNER

VALENTINE AMUSEMENT PARK, INC.
1500 SUNDAY DR. SUITE 300
RALEIGH, NC, 27607
CONTACT: MELTON "SKIP" VALENTINE
PHONE: (919) 395-4592

MARCH 2022

RAFTING AND DESIGN SERVICES, INC.
6728 Carbonton Road
Sanford, North Carolina 27330
(919) 499-8759 phone
draftinganddesign@ymail.com

HILLIARD ENGINEERING, PLLC
3417 Winterwind Circle, Sanford, NC 27330
PO Box 249, Sanford, NC 27331
Phone: (919) 352-2834
e-mail: jhilliard@hilliardengineering.com
NC License #: P-0836

AGENCY REVIEW ONLY
NOT FOR CONSTRUCTION

project no. 2022-15

SITE DATA TABLE	
OWNER:	VALENTINE AMUSEMENT PARK, INC. 414 NORTH MAIN ST., TARBORO, NC 27886 RALEIGH, NC, 27607 CONTACT: MELTON "SKIP" VALENTINE PHONE: (919) 395-4592
PIN: 4568-00-62-5815; 4568-00-73-7156; 4568-00-74-9956; 4568-00-83-7491; 4578-00-34-9552	
PARCEL ID: 99657 99655	
DEED BOOK: 1035;1378;1035 PAGE #: 41;747;41	
TOTAL PARCELS AREA: 1,210 AC +/-	
EXISTING ZONING: RURAL	
PROPOSED ZONING: RURAL SPECIAL USE	
PROPOSED USE: BORROW PIT (SAND & GRAVEL)	

GENERAL NOTES:

1. WETLAND LOCATIONS ARE PER A WETLAND DELINEATION PERFORMED BY WETLAND SOLUTIONS, LLC. (DATED 2/27/2023).
2. EXISTING TOPO PER LENOIR COUNTY GIS DATA.
3. BOUNDARY SURVEY PER LENOIR COUNTY GIS DATA.
4. AREAS WITHIN FLOODWAY NOT TO BE DEVELOPED IN FUTURE PHASES.
5. SITE TO BE RECLAMATED TO MEET THE NCDEQ MINE PERMIT RECLAMATION BOND REQUIREMENTS.
6. AS PART OF THE NCDEQ MINE PERMIT THE OWNER IS REQUIRED TO BOND THE RECLAMATION OF THE AFFECTED AREA OF PROJECT BASED ON THE STATE MINING PROGRAM REQUIRED AMOUNTS.
7. A PROPOSED 50 FOOT MINIMUM UNDISTURBED BUFFER WITH AN ADDITIONAL 50 FT WIDE x 6.25 FT HIGH VEGETATED BERM FOR A TOTAL OF 100 FOOT MINIMUM BUFFER WILL BE MAINTAINED BETWEEN THE EXCAVATION AND PLANT SITE AREAS AND ANY ADJOINING PROPERTY BOUNDARY AND WETLANDS.
8. THERE ARE FEMA FLOODPLAINS CONTAINED ON THIS SITE PER FIRM PANEL: 3720456800L PANEL 4568, 3720457800L PANEL 4578, EFFECTIVE DATE APR. 16, 2013.
9. A 50' NEUSE RIVER RIPARIAN BUFFER IS REQUIRED ALONG THE NEUSE RIVER AND CONTENTNEA CREEK.
10. A FLOOD PLAIN PERMIT IS REQUIRED FOR THE SITE WITH A FLOOD PLAIN ELEVATION CERTIFICATION.
11. THE PROPOSED SCALE HOUSE WILL REQUIRE A FLOOD PLAIN ELEVATION CERTIFICATION IF CONSTRUCTED. INITIALLY THE SCALES AND SCALE HOUSE WILL NOT BE REQUIRED.

1. BANKS, BOBBY F SR PIN: 4568000522037 ZONED: RURAL
2. MITCHELL, ALAN W PIN: 4568000542945 ZONED: RURAL
3. LENOIR COUNTY PIN: 4568000553088 ZONED: RURAL
4. LENOIR COUNTY PIN: 4568000550519 ZONED: RURAL
5. JOHNSON,CHISTOPHER FROST PIN: 4568000560019 ZONED: RURAL
6. GRIFFIN, MARY IDA PIN: 4568000557110 ZONED: RURAL
7. HUMPHREY, MARY PENNY PIN: 4568000558121 ZONED: RURAL
8. LENOIR COUNTY PIN: 4568000559111 ZONED: RURAL
9. LENOIR COUNTY PIN: 4568000650173 ZONED: RURAL
10. LENOIR COUNTY PIN: 4568000651123 ZONED: RURAL
11. LENOIR COUNTY PIN: 4568000652123 ZONED: RURAL
12. LENOIR COUNTY PIN: 4568000653175 ZONED: RURAL
13. LENOIR COUNTY PIN: 4568000654176 ZONED: RURAL
14. LENOIR COUNTY PIN: 4568000656136 ZONED: RURAL
15. LENOIR COUNTY PIN: 4568007535200 ZONED: RURAL
16. HORTON,CAROL MITCHELL PIN: 4568007541559 ZONED: RURAL
17. HORTON,CAROL MITCHELL PIN: 4568007561139 ZONED: RURAL
18. TALLEY,MARY JANE PIN: 4568007582221 ZONED: RURAL
19. SANDERSON,DEBRA H PIN: 4568008502242 ZONED: RURAL
20. DAWSON,ROBERT C/O PAUL DAWSON PIN: 4568008522294 ZONED: RURAL
21. CURRY,ROBERT LEE PIN: 4568008552556 ZONED: RURAL
22. HOBBS, BOBBY G HEIRS PIN: 4568008582269 ZONED: RURAL
23. STOTLER,ROBERT L & MELISSA D PIN: 4568000950283 ZONED: RURAL
24. BEAVERS,TIMOTHY DWAYNE PIN: 4568000951282 ZONED: RURAL
25. LENOIR COUNTY PIN: 4568000952282 ZONED: RURAL
26. HERRING,CINDY HUGHES PIN: 4568000953281 ZONED: RURAL
27. JONES,EVELYN H PIN: 4568000954271 ZONED: RURAL
28. JONES,EVELYN H PIN: 4568000955270 ZONED: RURAL
29. LENOIR COUNTY PIN: 4568000957139 ZONED: RURAL
30. LENOIR COUNTY PIN: 4568000958138 ZONED: RURAL
31. LENOIR COUNTY PIN: 4568000959126 ZONED: RURAL
32. LENOIR COUNTY PIN: 4578000050146 ZONED: RURAL
33. LENOIR COUNTY PIN: 4578000051135 ZONED: RURAL
34. BARRENTINE,ALFORD E PIN: 4578000052136 ZONED: RURAL
35. SMITH,ANN C PIN: 4578000053136 ZONED: RURAL
36. COUNTY OF LENOIR PIN: 4578000054135 ZONED: RURAL
37. MOORE,CHRISTOPHER JR PIN: 4578000055124 ZONED: RURAL
38. LENOIR COUNTY PIN: 4578000056193 ZONED: RURAL
39. SIMMONS,BARBARA JOANNE PIN: 4578000058326 ZONED: RURAL
40. LENOIR COUNTY PIN: 4568000958485 ZONED: RURAL
41. STROUD,JOSHUA B PIN: 4568000957426 ZONED: RURAL
42. COUNTY OF LENOIR PIN: 4568000955496 ZONED: RURAL
43. JERNIGAN,ESTHER H PIN: 4568008575110 ZONED: RURAL
44. BAYS RANDALL EUGENE & JUDY L PIN: 456800756794 ZONED: RURAL
45. MOORE,CHRISTOPHER & RHONDA LT PIN: 4568007534444 ZONED: RURAL
46. MOORE,KIRBY WARD HEIRS PIN: 4566807052423 ZONED: RURAL
47. BAYS, RANDALL EUGENE & JUDY L PIN: 4568007504403 ZONED: RURAL
48. BAYS, RANDALL EUGENE & JUDY L PIN: 4568006857491 ZONED: RURAL
49. LENOIR COUNTY PIN: 4568006853358 ZONED: RURAL
50. LENOIR COUNTY PIN: 4568006850396 ZONED: RURAL
51. BAYS RANDALL EUGENE PIN: 4568007505678 ZONED: RURAL
52. LENOIR COUNTY PIN: 4568005553390 ZONED: RURAL
53. CONTENTNEA METROPOLITAN SEWAGE PIN: 4578181542 ZONED: IND
54. CONTENTNEA METROPOLITAN SEWAGE PIN: 4578282662 ZONED: IND
55. ORDUNA RUBI KARIN BLANCAS PIN: 4578381433 ZONED: RA-20
56. LANGSTON SANDRA KAY PIN: 4578389107 ZONED: RA-20
57. CMD INVESTMENTS LLC PIN: 4578484176 ZONED: RA
58. WADE KEVIN E & WADE LISA E PIN: 4578477887 ZONED: RA
59. CHAVIS TALENA & RICHARDS DANIEL PIN: 4578570642 ZONED: RA
60. GASKINS SUSAN BURCH PIN: 4578574463 ZONED: RA
61. GASKINS LANDING LLC PIN: 4578665638 ZONED: RA
62. EXUM EMILY NELSON PIN: 4588266414 ZONED: RA
63. BELCHER JAMES B & KATHERINE PIN: 3-046-026 PITT COUNTY
64. BANKS BOBBY FAULKNER JR PIN: 3-046-025 PITT COUNTY

PROPOSED MINING AREAS	
PIT #1	102.2 AC
PIT #2	0.75 AC
OVERBURDEN AREA	6.5 AC
UNDISTURBED BUFFER	1,036.1 AC
OTHER MISC. AREA *(BERMS, TEMP. DIVERSIONS, ETC.)*	49.9 AC
TOTAL PROJECT AREA	1,210 AC

NORTH

500 0 250 500 1000

SCALE: 1" = 500'

LEGEND

- PERMIT BOUNDARY.
- WETLAND
- PROPOSED PIT
- BUFFER
- AFFECTED AREA
- BERM

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NC License #: P-0836

PROFESSIONAL ENGINEER'S SEAL

TICK BITE MINE
SPECIAL USE PERMIT

TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

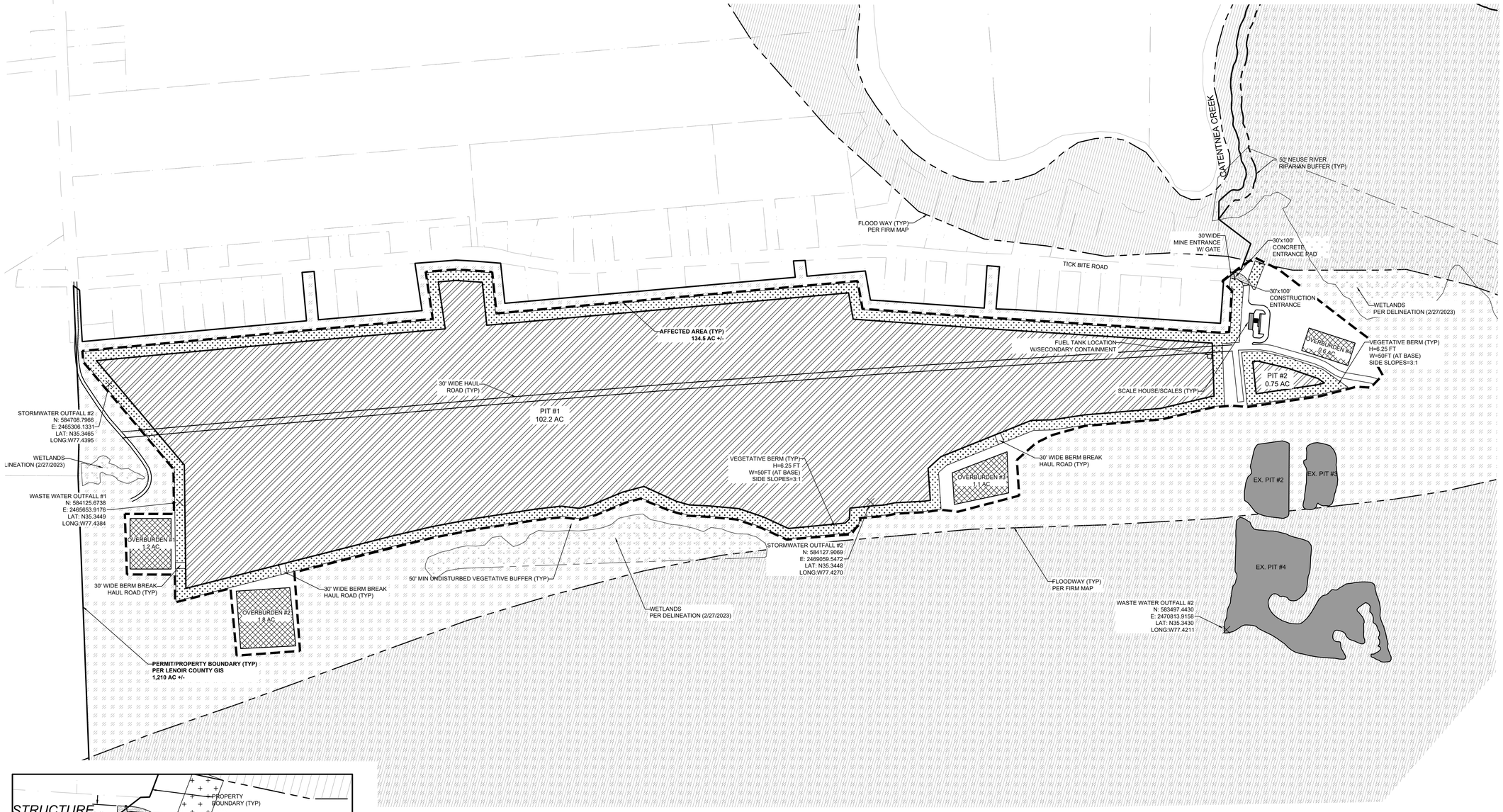
OVERALL MINE LAYOUT PLAN

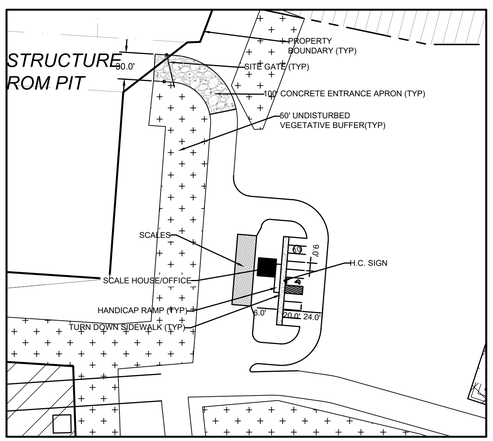
REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: 1"=500'	Drawn by: MDK
Sheet: C2 of 15	Designed by: MDK
Project Number: DDS JOB #: 2022-15	Reviewed by: JEH
	Date: MAR 2022

File: Z:\2022\2022-15 Valentine Mine - Lenoir, NC\2023.04.27 Valentine Mine - Mine Permit.dwg Print Date: 4/27/2023





INSET "A"
TYPICAL SITE ENTRANCE & SCALE HOUSE/OFFICE W/PARKING
SCALE: 1"=80'

GENERAL NOTES:

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7. A PROPOSED 50 FOOT MINIMUM UNDISTURBED BUFFER WITH AN ADDITIONAL 50 FT WIDE x 6.25 FT HIGH VEGETATED BERM FOR A TOTAL OF 100 FOOT MINIMUM BUFFER WILL BE MAINTAINED BETWEEN THE EXCAVATION AND PLANT SITE AREAS AND ANY ADJOINING PROPERTY BOUNDARY AND WETLANDS.
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PROPOSED MINING AREAS	
PIT #1	102.2 AC
PIT #2	0.75 AC
OVERBURDEN AREA	4.7 AC
UNDISTURBED BUFFER	1,075.5 AC
OTHER MISC. AREA *(BERMS, TEMP. DIVERSIONS, ETC.)*	26.9 AC
TOTAL PROJECT AREA	1,210 AC

NORTH

250 0 125 250 500

SCALE: 1" = 250'

LEGEND

- PERMIT BOUNDARY.
- WETLAND
- PROPOSED PIT
- BUFFER
- AFFECTED AREA
- BERM

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PROFESSIONAL ENGINEER'S SEAL

TICK BITE MINE
SPECIAL USE PERMIT

TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

MINE LAYOUT PLAN

REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: 1"=250'	Drawn by: MDK
Sheet: C3 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

File: Z:\2022\2022-15 Valentine Mine - Lenoir, NC\2023.04.27 Valentine Mine - Mine Permit.dwg Print Date: 4/27/2023

EROSION CONTROL LEGEND

SEDIMENT BASIN

TOP OF BERM
WIER

ROCK CHECK DAMS

SILT FENCE — SF —

TEMPORARY DIVERSION DITCH

OUTLET PROTECTION

J-HOOK W/ SILT FENCE OUTLET

SILT FENCE OUTLET

NOTES:

1. PROPOSED PERMANENT BERM SHALL BE CONSTRUCTED TO ENCOMPASS EXCAVATION AREA THROUGHOUT EACH STAGE AS PER THE PROPERTY/WETLANDS BOUNDARY VEGETATIVE BUFFER/BERM CROSS-SECTION BELOW.
2. ALL EXCAVATION ADJACENT TO JURISDICTIONAL WETLANDS WILL BE BUFFERED WITH A 50' WIDE UNDISTURBED BUFFER AND A 50 FT WIDE x 6.25 FT HIGH VEGETATIVE BERM AS PER THE PROPERTY/WETLANDS BOUNDARY VEGETATIVE BUFFER/BERM CROSS-SECTION BELOW.
3. AREAS WITHIN FLOODWAY NOT TO BE DEVELOPED IN FUTURE PHASES.
4. WETLAND LOCATIONS ARE PER A WETLAND DELINEATION PERFORMED BY WETLAND SOLUTIONS, LLC. (DATED 2/27/2023).
5. ALL ADJACENT STRUCTURES ON THE NORTH SITE OF THE PROPERTY ARE SERVICED BY COUNTY/MUNICIPAL WATER LINES ALONG TICK BITE ROAD. NO ACTIVE WELLS HAVE BEEN LOCATED.

PROPOSED BASIN TABLE

BASIN ID	TOP DIM	BOTTOM DIM	POOL DEPTH	TOP EL.	BOTTOM EL.	VOLUME REQUIRED	VOLUME PROPOSED	WEIR LENGTH	WEIR DEPTH	WEIR LINING	RISER SIZE	BARREL SIZE	RISER BASE	SKIMMER ORIFICE	SKIMMER SIZE	BAFFLES
SB#1	105x210	55x110	5	20.0	14.0	19,296 CF	51,250 CF	12	2	A	NA	NA	NA	NA	NA	NA
SB#2	180x360	130x260	5	20.0	14.0	70,776 CF	212,500 CF	45	2	A	NA	NA	NA	NA	NA	NA
SB#3	140x280	90x180	5	20.0	14.0	39,762 CF	112,500 CF	30	2	A	NA	NA	NA	NA	NA	NA
SB#4	180x360	130x260	5	20.0	14.0	72,954 CF	212,500 CF	50	2	A	NA	NA	NA	NA	NA	NA

SB - SEDIMENT BASIN
STABILIZE AND SEED ALL SLOPES IMMEDIATELY
EMERGENCY SPILLWAY TO BE CONSTRUCTED IN CUT ONLY
SEE DETAIL CROSS-SECTION FOR ELEVATIONS

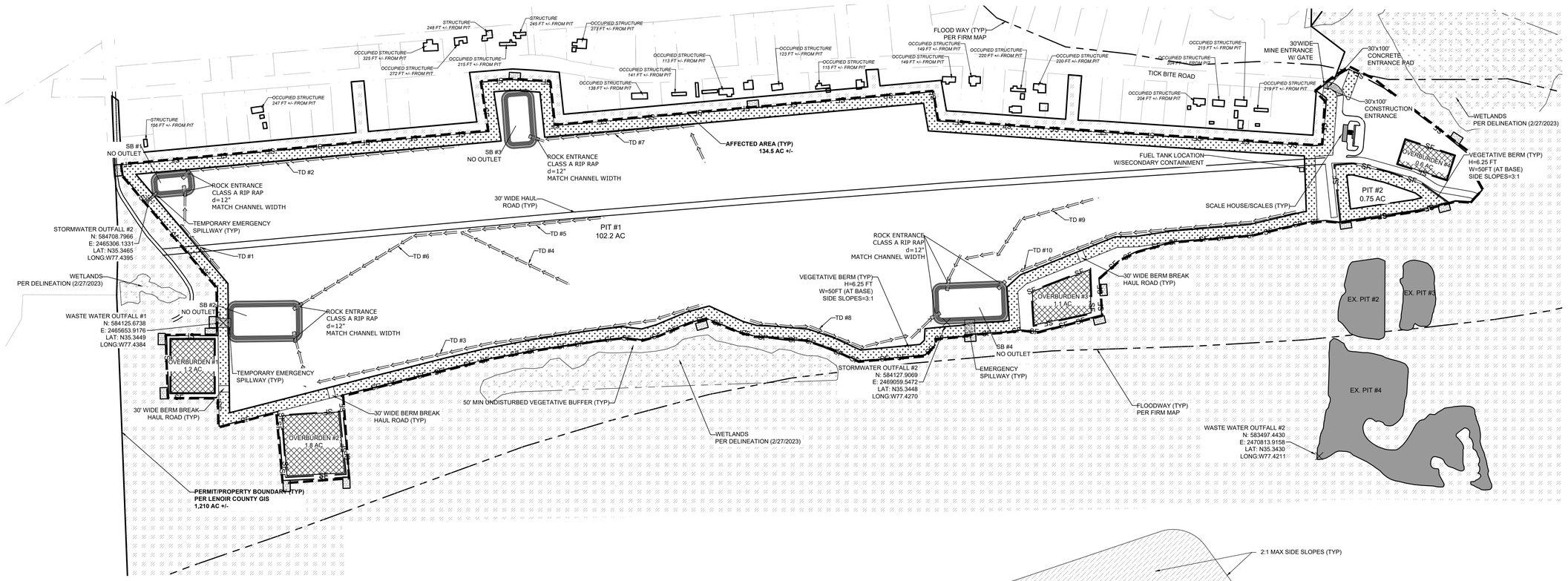
PROPOSED DIVERSION TABLE

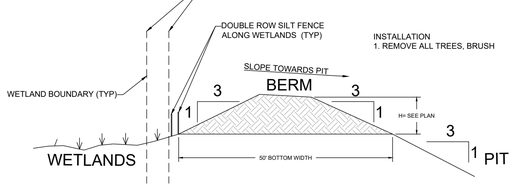
CHANNEL ID	CHANNEL SLOPE	SIDE SLOPES	CHANNEL DEPTH	BOTTOM WIDTH	TEMPORARY LINING	PERMANENT LINING	LINING DEPTH
TD#1	0.8 %	3:1	1.5 FT	0.0	NAG S75BN	BERMUDAGRASS	-
TD#2	0.1 %	3:1	2.5 FT	0.0	NAG S75BN	BERMUDAGRASS	-
TD#3	0.1 %	3:1	2.5 FT	0.0	NAG S75BN	BERMUDAGRASS	-
TD#4	0.4 %	3:1	2.0 FT	0.0	NAG S75BN	BERMUDAGRASS	-
TD#5	0.3 %	3:1	2.0 FT	0.0	NAG S75BN	BERMUDAGRASS	-
TD#6	0.2 %	3:1	2.0 FT	5.0	NAG S75BN	BERMUDAGRASS	-
TD#7	0.1 %	3:1	2.0 FT	10.0	NAG S75BN	BERMUDAGRASS	-
TD#8	0.01 %	3:1	2.5 FT	10.0	NAG S75BN	BERMUDAGRASS	-
TD#9	0.1 %	3:1	2.0 FT	10.0	NAG S75BN	BERMUDAGRASS	-
TD#10	0.1 %	3:1	2.0 FT	0.0	NAG S75BN	BERMUDAGRASS	-

INSTALL CHECK DAMS IN CHANNELS WITH STRAW W/ NETTING

DISTURBED AREAS	
TAILINGS/SEDIMENT PONDS *(AREAS INCLUDED IN MINE EXCAVATION)*	4.4 AC
STOCKPILES *(AREAS INCLUDED IN MINE EXCAVATION)*	3.0 AC
OVERBURDEN	6.5 AC
PROCESSING AREA/HAUL ROADS	3.0 AC
MINE EXCAVATION	103.0 AC
OTHER MISC EXCAVATION *(BERMS, DIVERSIONS, ETC.)*	22.0 AC
TOTAL AFFECTED AREA	134.5 AC

INTERNAL DRAINAGE = 109.8 AC
EXTERNAL DRAINAGE= 24.7 AC





NOTE
1. SEE PLAN SHEET FOR WIDTH HEIGHT DETERMINED BY SIDE SLOPES.
2. WIDTH INDICATED ON PLAN IS BOTTOM WIDTH.
3. SEED PER TEMPORARY/PERMANENT SEEDING SCHEDULE.
4. NATURAL VOLUNTEER VEGETATION SHALL REMAIN.
5. BERM ENDS SHALL BE 4:1 SLOPES LIKE SIDE SLOPES.
6. SLOPES SHALL BE TRACKED WITH A DOZER DURING CONSTRUCTION TO AID IN THE ESTABLISHMENT OF VEGETATIVE COVER.
7. ALL EXPOSED AREA SHALL BE STABILIZED BY ESTABLISHING PERENNIAL VEGETATIVE COVER.

MAINTENANCE

1. INSPECT ALL PERIMETER BERMS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REPAIR ERODED SLOPES, RESTORE ERODED SLOPES TO THEIR ORIGINAL CONDITION AS SHOWN ON THIS DETAIL AND RE-ESTABLISH VEGETATION.

WETLANDS BOUNDARY VEGETATIVE BUFFER/BERM CROSS-SECTION

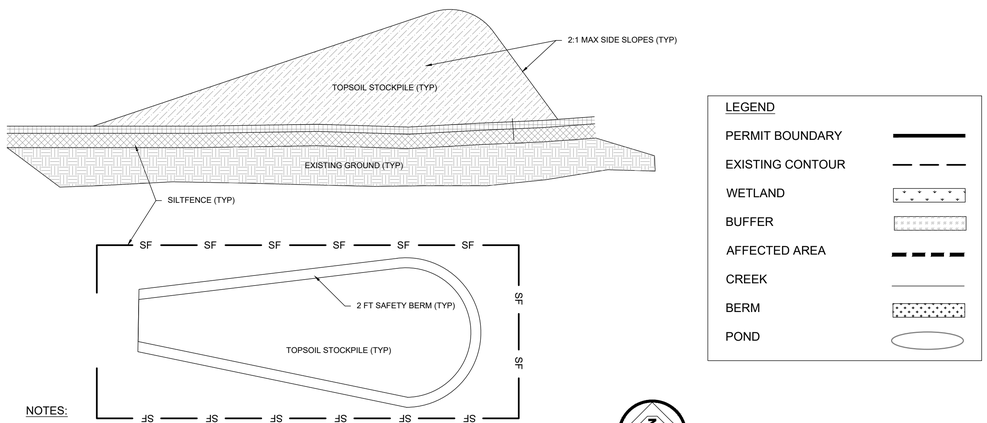
NTS

CONSTRUCTION SEQUENCE MINING ACTIVITY

SITE ENTRANCE (PREVIOUSLY INSTALLED)
1. INSTALL SILT FENCE BELOW ALL DISTURBED AREAS WITH SILT FENCE OUTLETS PER PLAN.
2. MAINTAIN SILT FENCE AND SILT FENCE OUTLETS DOWN STREAM UNTIL TEMPORARY/PERMANENT LINING, AND GOOD GROUND COVER ON FILL SLOPES IS ESTABLISHED.

EROSION CONTROL
1. CLEAR AND GRUB PIT AREA ENSURING POSITIVE DRAINAGE TO SEDIMENT BASINS
2. STABILIZE AND SEED ALL SLOPES IMMEDIATELY.
3. INSTALL PERMANENT BERM AROUND PITS.
4. MAINTAIN POSITIIVE DRAINAGE TO PITS.
5. REMOVE OVERBURDEN AND PLACE IN OVERBURDEN AREA.
6. INSTALL SILT FENCE PER PLAN BELOW ALL PERMANENT/TEMPORARY DIVERSIONS AND BASIN/TRAPS W/ SILT FENCE OUTLETS IN LOW AREAS PER PLAN.
7. INSTALL SEDIMENT BASINS PER PLAN. STABILIZE AND SEED ALL SLOPES IMMEDIATELY.
8. INSTALL TEMPORARY DIVERSIONS. STABILIZE AND SEED ALL SLOPES IMMEDIATELY. ONLY CLEAR AS NECESSARY TO INSTALL DIVERSIONS. MAINTAIN SILT FENCE AND SILT FENCE OUTLETS DOWN STREAM UNTIL TEMPORARY/PERMANENT LINING, AND GOOD GROUND COVER ON FILL SLOPES IS ESTABLISHED.
9. ONCE BERMS ARE COMPLETE AROUND EXCAVATION AREA AND ARE STABILIZED AND SEEDED. MAINTAIN SILT FENCE UNTIL THIS ACHIEVED. MAINTAIN ALL DOWNSTREAM DIVERSIONS AND SILT FENCE UNTIL GOOD GROUND COVER IS ESTABLISHED. PROVIDE BREAK IN BERM AT BASIN EMERGENCY SPILLWAYS DURING INITIAL PHASES OF CONSTRUCTION.
10. ONCE GOOD GROUND COVER IS ESTABLISHED AND NO RUTTING OF SLOPES IS OCCURRING REMOVE ALL EROSION CONTROL MEASURES WHILE MAINTAINING SILT FENCE ON DOWNSTREAM SIDE.
11. DEWATER ALL SKIMMER/SEDIMENT BASINS FOR MAINTENANCE AND REMOVAL WITH SILT BAG PER DETAIL, IF NEEDED.
12. MAINTAIN SILT FENCE AFTER MAJOR RAIN EVENTS.
13. STABILIZE AND SEED ALL DENUDED AREAS IN WHICH WORK WILL NOT RECOMMENCE WITHIN 7 WORKING DAYS OR 14 CALENDAR DAYS.

MINING
1. BEGIN MINING ACTIVITIES.
2. AS EXCAVATION AREA IS EXPANDED POSITIVE DRAINAGE TO BE MAINTAINED TO EXCAVATION PIT.
3. ONCE BASINS ARE TWO TIMES THE ORIGINAL SIZE, REMOVE SPILLWAY AND CLOSE BERM.
4. TEMPORARY SEED STOCKPILE AREAS THAT WILL BE DENUDED FOR 30 DAYS OR MORE.
5. MAINTAIN ALL EROSION CONTROL DEVICES WEEKLY AND AFTER MAJOR STORM EVENTS.



NOTES:

STABLIZE AND SEED ALL SLOPES PER NCDEQ STANDARDS FOR TIME FRAMES FOR DENUDED SLOPES

INSTALL SILT FENCE PER SILT FENCE DETAIL

STOCKPILE AREA (TYP)

NTS

LEGEND

- PERMIT BOUNDARY
- EXISTING CONTOUR
- WETLAND
- BUFFER
- AFFECTED AREA
- CREEK
- BERM
- POND

NORTH

200 0 100 200 400

SCALE: 1" = 200'

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PROFESSIONAL ENGINEER'S SEAL

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TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

MINE MAP

REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: **1"=200'**	Drawn by: **MDK**
Sheet: **C4** of **15**	Designed by: **MDK**
	Reviewed by: **JEH**
Project Number: **DDS JOB #: 2022-15**	Date: **MAR 2022**

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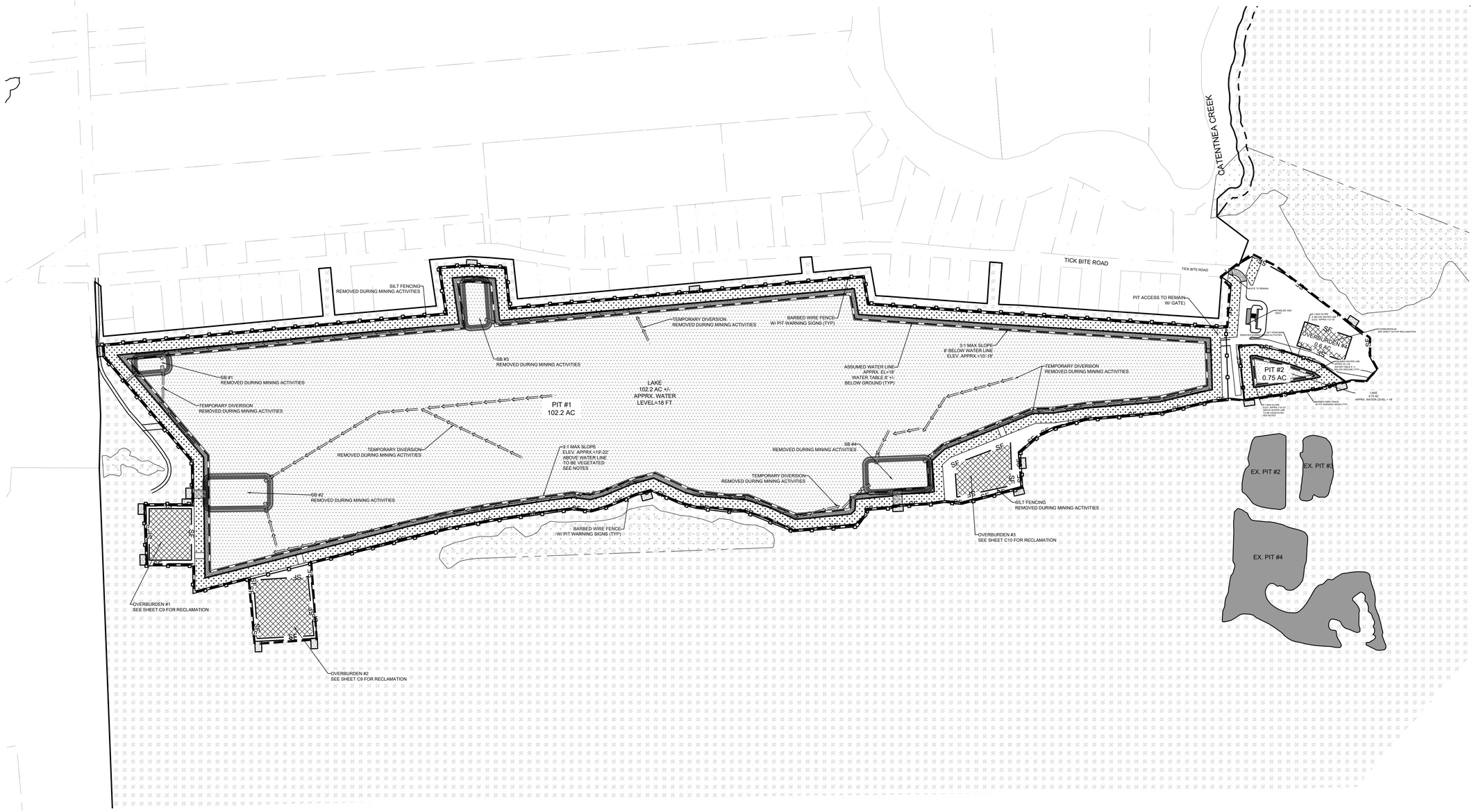


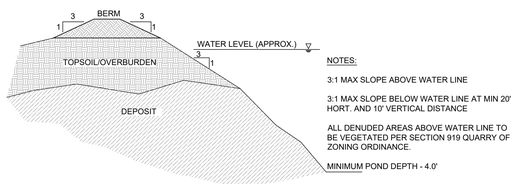
NOTES:

1. EXISTING TOPO IS STATE LIDAR FROM LENOIR COUNTY GIS DATA.
2. AS PART OF THE NCDEQ MINE PERMIT THE OWNER IS REQUIRED TO BOND THE RECLAMATION OF THE TOTAL PROJECT BASED ON THE STATE MINING PROGRAM REQUIRED AMOUNTS.

DISTURBED AREAS	
TAILINGS/SEDIMENT PONDS *(AREAS INCLUDED IN MINE EXCAVATION)*	4.4 AC
STOCKPILES *(AREAS INCLUDED IN MINE EXCAVATION)*	3.0 AC
OVERBURDEN	6.5 AC
PROCESSING AREA/HAUL ROADS	3.0 AC
MINE EXCAVATION	103.0 AC
OTHER MISC EXCAVATION *(BERMS, DIVERSIONS, ETC.)*	22.0 AC
TOTAL AFFECTED AREA	134.5 AC

PROPOSED MINING AREAS	
PIT #1	102.2 AC
PIT #2	0.75 AC
OVERBURDEN AREA	6.5 AC
UNDISTURBED BUFFER	1,036.1 AC
OTHER MISC. AREA *(BERMS, TEMP. DIVERSIONS, ETC.)*	49.9 AC
TOTAL PROJECT AREA	1,210 AC

INTERNAL DRAINAGE = 109.8 AC
EXTERNAL DRAINAGE= 24.7 AC



PIT SIDE WALL RECLAMATION (TYP)

NTS

LEGEND

- PERMIT BOUNDARY
- EXISTING CONTOUR
- PROPOSED BUFFER
- AFFECTED AREA
- CREEK
- BERM
- POND

NORTH

200 0 100 200 400

HORIZONTAL SCALE: 1" = 200'

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RECLAMATION PLAN

REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: 1"=200'	Drawn by: MDK
Sheet: C5 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

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Table 6.32a
Size of Slope Drain

Maximum Drainage Area per Pipe (acres)	Pipe Diameter (inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed

*Inlet design becomes more complex beyond this size.

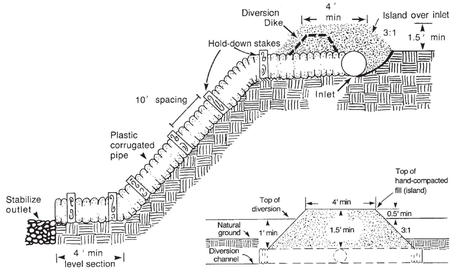
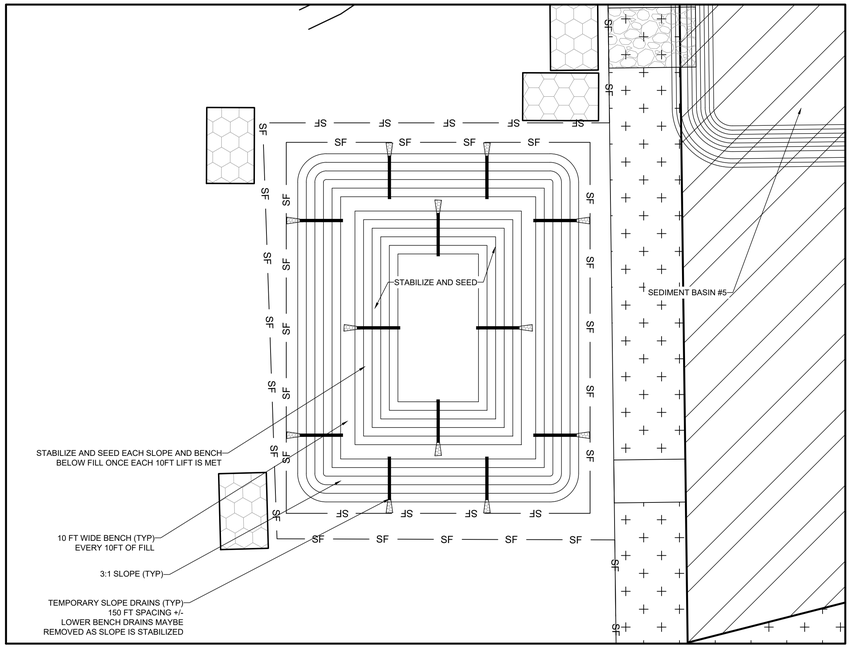


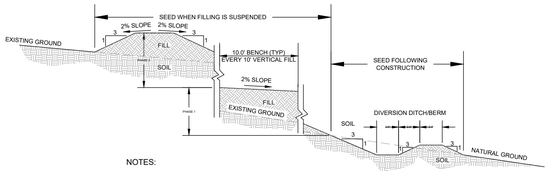
Figure 6.32a Cross section of temporary slope drain.

Maintenance Inspect the slope drain and supporting diversion after every rainfall, and promptly make necessary repairs. When the protected area has been permanently stabilized, temporary measures may be removed, materials disposed of properly, and all disturbed areas stabilized appropriately.

SLOPE DRAIN INSTALLATION (TYP)



OVERBURDEN #1 RECLAMATION PLAN
SCALE: 1"=50'

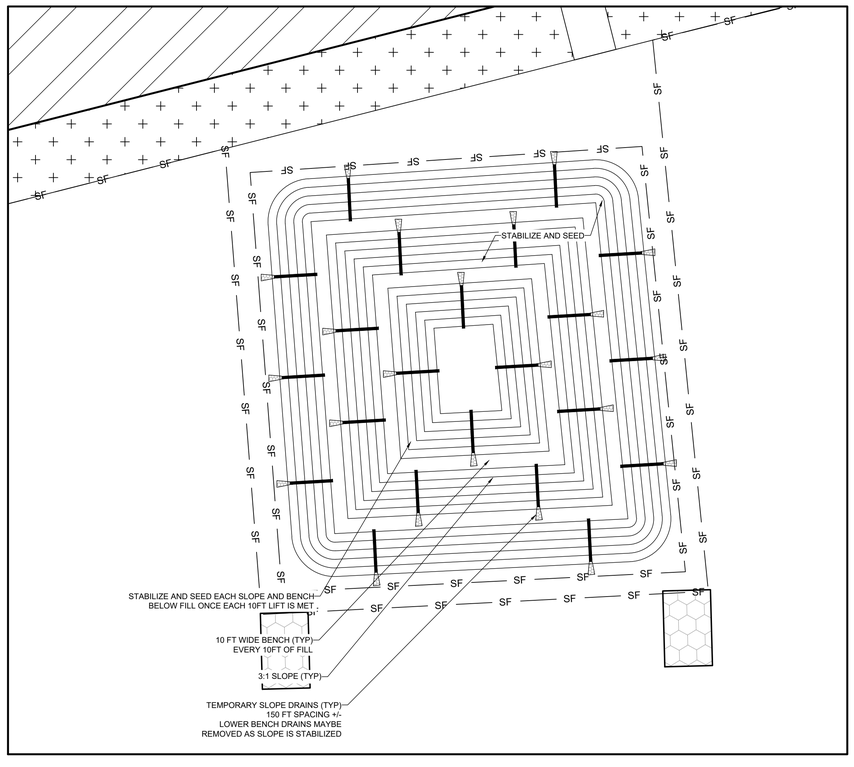


NOTES:

1. ALL DENUDED AREAS LEFT INACTIVE BETWEEN PERIODS OF GRADING ACTIVITY SHALL BE TEMPORARILY SEEDED WITH IN 15 WORKINGS DAYS OR 30 CALENDAR DAYS, SHICHEVER IS SHORTER. SEE SEEDING SCHEDULE IN DETAILS.
2. OVERBURDEN PILE TO BE CONSTRUCTED AND STABILIZED FROM BOTTOM PER ABOVE DETAIL AS FILLED. ONCE FINAL LIFT IS REACHED THE LOWER SLOPES AND BENCHES SHALL BE COMPLETED (MEETING THE RECLAMATION PLAN).
3. FOR FINAL STABILIZATION OF FILL SLOPES, GRADE TO 3:1 SLOPE, COVER WITH TOPSOIL, SEED AND MULCH.

WASTE PILE RECLAMATION (TYP)

NTS



OVERBURDEN #2 RECLAMATION PLAN
SCALE: 1"=50'

EROSION CONTROL LEGEND

SEDIMENT BASIN (TOP OF BERM, WIER)
ROCK CHECK DAMS
SILT FENCE (SF)
TEMPORARY DIVERSION DITCH
OUTLET PROTECTION
J-HOOK W/ SILT FENCE OUTLET
SILT FENCE OUTLET

LEGEND
- PERMIT BOUNDARY
- EXISTING CONTOUR
- PROPOSED BUFFER
- AFFECTED AREA
- CREEK
- BERM
- POND

NORTH

40 0 20 40 80
HORIZONTAL SCALE: 1" = 40'

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RECLAMATION PLAN - OVERBURDEN AREAS #1 & 2

REVISIONS

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Scale: 1"=40'	Drawn by: MDK
Sheet: C6 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

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Table 6.32a
Size of Slope Drain

Maximum Drainage Area per Pipe (acres)	Pipe Diameter (inches)
0.50	12
0.75	15
1.00	18
>1.00*	as designed

*Inlet design becomes more complex beyond this size.

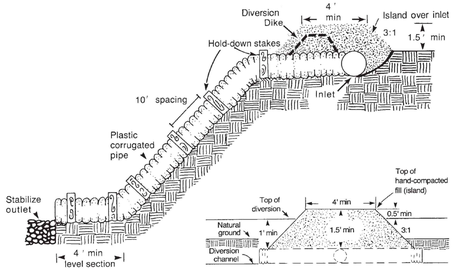
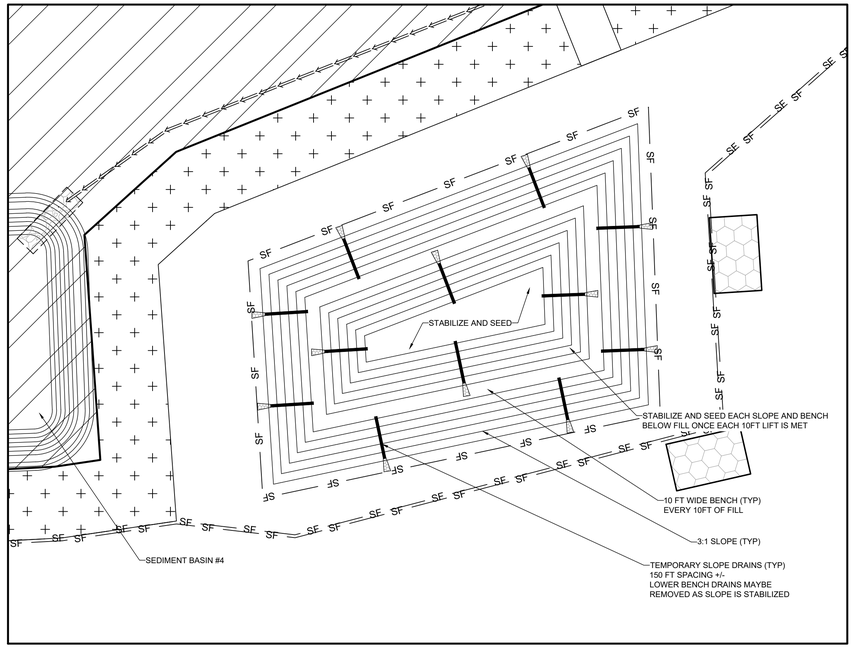


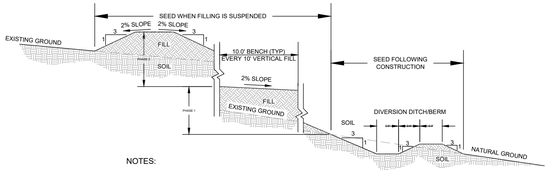
Figure 6.32a Cross section of temporary slope drain.

Maintenance Inspect the slope drain and supporting diversion after every rainfall, and promptly make necessary repairs. When the protected area has been permanently stabilized, temporary measures may be removed, materials disposed of properly, and all disturbed areas stabilized appropriately.

SLOPE DRAIN INSTALLATION (TYP)



OVERBURDEN #3 RECLAMATION PLAN
SCALE: 1"=50'



NOTES:

1. ALL DENUDED AREAS LEFT INACTIVE BETWEEN PERIODS OF GRADING ACTIVITY SHALL BE TEMPORARILY SEEDED WITH IN 15 WORKINGS DAYS OR 30 CALENDAR DAYS, SHICHEVER IS SHORTER. SEE SEEDING SCHEDULE IN DETAILS.
2. OVERBURDEN PILE TO BE CONSTRUCTED AND STABILIZED FROM BOTTOM PER ABOVE DETAIL AS FILLED. ONCE FINAL LIFT IS REACHED THE LOWER SLOPES AND BENCHES SHALL BE COMPLETED (MEETING THE RECLAMATION PLAN).
3. FOR FINAL STABILIZATION OF FILL SLOPES, GRADE TO 3:1 SLOPE, COVER WITH TOPSOIL, SEED AND MULCH.

WASTE PILE RECLAMATION (TYP)

NTS

EROSION CONTROL LEGEND

SEDIMENT BASIN — TOP OF BERM, WIER

ROCK CHECK DAMS

SILT FENCE — SF

TEMPORARY DIVERSION DITCH

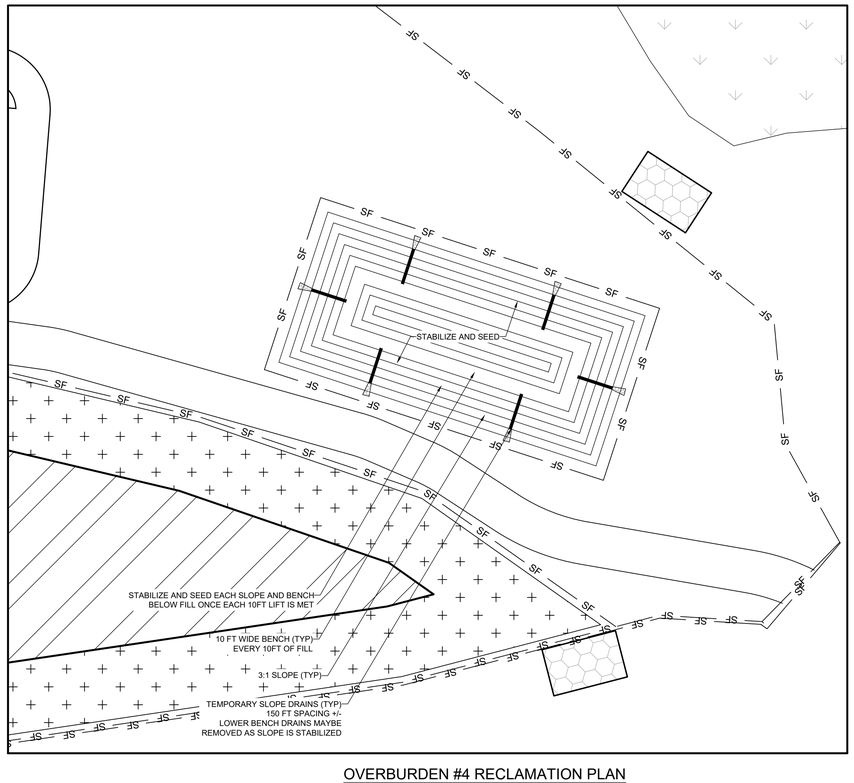
OUTLET PROTECTION

J-HOOK W/ SILT FENCE OUTLET

SILT FENCE OUTLET

LEGEND

- PERMIT BOUNDARY
- EXISTING CONTOUR
- PROPOSED BUFFER
- AFFECTED AREA
- CREEK
- BERM
- POND



OVERBURDEN #4 RECLAMATION PLAN
SCALE: 1"=50'

NORTH

40 0 20 40 80

HORIZONTAL SCALE: 1" = 40'

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RECLAMATION PLAN - OVERBURDEN AREA #3 & 4

REVISIONS

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Scale: 1"=40'	Drawn by: MDK
Sheet: C7 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

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MAINTENANCE PLAN

THE OPERATOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES THROUGHOUT THE PROJECT DURATION.

ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN ALL DEVICES AS DESIGNED.

SKIMMER BASINS:

1. BASINS ARE TO BE CLEANED OF SEDIMENT WHEN ITS STORAGE CAPACITY IS REDUCED BY 50%. PLACE SEDIMENT REMOVED FROM THE BASIN IN A STOCKPILE AREA AS SHOWN ON THE PLAN OR AN AREA THAT HAS ADEQUATE EROSION CONTROL MEASURES.
2. CHECK BERM STRUCTURE, SPILLWAYS, AND SKIMMER PIPE EVERY WEEK FOR EROSION AND PIPING.
3. MAINTAIN BAFFLES AS DIRECTED BELOW.
4. ANY RIP RAP DISPLACED FROM SPILLWAY MUST BE REPLACED IMMEDIATELY.
5. AFTER ALL AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE BASIN (PHASE 2 OF CONSTRUCTION SEQUENCE) AND ALL UNSTABLE SEDIMENT. GRADE ACCORDING TO GRADING PLAN OR BLEND IN WITH ADJACENT GRADES - ADDITIONAL COMPACTION EFFORTS MAY BE REQUIRED IF STRUCTURE IS PROPOSED FOR THAT AREA. STABILIZE AREA.

BAFFLES:

1. MAINTAIN ACCESS TO BAFFLES. SHOULD THE FABRIC COLLAPSE, DECOMPOSE, TEAR, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
2. REMOVE BUILDUP SEDIMENT WHEN IT REACHES ONE-HALF FULL. TAKE CARE NOT TO DISTURB BAFFLES DURING CLEANOUT.

SILT FENCE:

1. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES ABOUT 0.5 FT DEEP AT THE FENCE. THE FENCE SHALL BE REPAIRED AS REQUIRED TO MAINTAIN A SUFFICIENT BARRIER.
2. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, DECOMPOSE, TEAR, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. AFTER ALL AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT. GRADE AREA TO GRADING PLAN OR BLEND WITH ADJACENT GRADES. STABILIZE AREA.

TEMPORARY DIVERSIONS:

1. IMMEDIATELY REMOVE EXCESS SEDIMENT FROM FLOW AREA AND REPAIR DIVERSION RIDGE.
2. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED.
3. AFTER ALL AREAS HAVE BEEN STABILIZED REMOVE THE RIDGE AND THE CHANNEL AND GRADE ACCORDING TO GRADING PLAN OR BLEND WITH ADJACENT GRADES. STABILIZE AREA.

RIP RAP LINED DITCHES/CHANNELS/OUTLETS:

1. PAY CLOSE ATTENTION TO INLET AND OUTLET SECTIONS WHERE CONCENTRATED FLOW ENTERS.
2. INSPECT FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY.
3. MAINTAIN VEGETATION ADJACENT TO THE ROCK LINING IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR.

GRASS LINED DITCHES/CHANNELS/SWALES:

1. DURING GRASS ESTABLISHMENT PERIOD, INSPECT AFTER EVERY RAINFALL.
2. AFTER GRASS HAS ESTABLISHED, INSPECT PERIODICALLY AND AFTER HEAVY RAINFALL. IMMEDIATELY MAKE REPAIRS.
3. PAY CLOSE ATTENTION TO INLET AND OUTLET SECTIONS WHERE CONCENTRATED FLOW ENTERS.
4. GRASS SHOULD BE MAINTAINED IN A HEALTHY VIGOROUS CONDITION AT ALL TIMES, SINCE IT IS THE PRIMARY EROSION PROTECTION.

TEMPORARY SEEDING

PROVIDE TEMPORARY SEEDING TO ALL DENUDED AREAS THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN THE FOLLOWING SCHEDULE:

PERMANENT DITCHES --> IMMEDIATELY (ROCK LINED)
SLOPES 4:1 OR STEEPER --> 7 DAYS
ALL OTHER AREAS --> 14 DAYS

IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES.

SEEDBED PREPARATION:

LIME: APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE SOIL PH IS NOT KNOWN, APPLY AT A RATE OF 1 TO 1 ½ TONS PER ACRE ON COARSE-TEXTURED SOILS AND 2-3 TONS PER ACRE OF FINE-TEXTURED SOILS. APPLY LIME UNIFORMLY AND INCORPORATE INTO THE TOP 4-6 INCHES OF SOIL. SOILS WITH PH HIGHER THAN 6 DO NOT NEED LIME.

FERTILIZER: FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS. WHERE SOIL TESTS ARE NOT AVAILABLE, APPLY A 10-10-10 GRADE FERTILIZER AT 700-1,000 LB/ACRE. INCORPORATE FERTILIZER INTO THE TOP 4-6 INCHES OF SOIL. IF A HYDRAULIC SEEDER IS USED, DO NOT MIX SEED AND FERTILIZER MORE THAN 30 MINUTES BEFORE APPLICATION.

SURFACE ROUGHENING: IF AREAS TO BE SEEDED BECOME HARDENED, SEALED, OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING OR OTHER SUITABLE METHODS. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.

PLANT SELECTION:

SELECT THE APPROPRIATE SPECIES BASED ON THE PLANTING SEASON.

SEEDING:

APPLY SEED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. USE SEEDING RATES GIVEN IN TABLES. BROADCAST SEEDING AND HYDROSEEDING IS ACCEPTABLE ON STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED.

SMALL GRAINS SHOULD BE PLANTED NO MORE THAN ONE INCH DEEP AND GRASSES AND LEGUMES ON MORE THAN ½ INCH. BROADCAST SEED MUST BE COVERED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRMED WITH A ROLLER OR CULTIPACKER. HYDROSEEDED MIXTURES SHOULD NOT INCLUDE A WOOD FIBER MULCH.

MULCHING:

MULCHING IS REQUIRED FOR ALL TEMPORARY SEEDING AT A MIN RATE OF 2 TONS/ACRE WITH ASPHALT TACK.

MAINTENANCE:

CONTRACTOR TO MONITOR GRASS ESTABLISHMENT. PROMPTLY RESEEED AREAS WHERE A HEALTHY, DENSE GROWTH DOES NOT ESTABLISH. CONTRACTOR MAY NEED TO PROVIDE NETTING OR TEMPORARY LINERS TO AREAS WHERE GRASS CANNOT BE ESTABLISHED DUE TO EROSION.

PERMANENT SEEDING

SEE SEEDING SCHEDULE FOR SEED TYPE AND RATE.

PROVIDE PERMANENT SEEDING TO ALL DENUDED AREAS THAT WILL NOT BE COVERED BY PAVING, BUILDINGS, OR OTHER LANDSCAPING. AREAS RECEIVING PERMANENT VEGETATION MUST BE STABILIZED WITHIN THE FOLLOWING TIMEFRAMES AFTER FINAL GRADE IS REACHED, UNLESS TEMPORARY STABILIZATION IS APPLIED.

PERMANENT DITCHES --> IMMEDIATELY (ROCK LINED)
SLOPES 4:1 OR STEEPER --> 7 DAYS
ALL OTHER AREAS --> 14 DAYS

COMPLETE GRADING BEFORE PREPARING SEEDBEDS. IF SOILS BECOME COMPACTED DURING GRADING, LOOSEN THEM TO A DEPTH OF 6-8 INCHES.

SEEDBED REQUIREMENTS:

THE SOIL SHOULD MEET THE FOLLOWING MINIMUM CRITERIA FOR VEGETATION ESTABLISHMENT:

- ENOUGH FINE-GRAINED (SILT AND CLAY) MATERIAL TO MAINTAIN ADEQUATE MOISTURE AND NUTRIENT SUPPLY (AVAILABLE WATER CAPACITY OF AT LEAST 0.05 INCHES OF WATER TO 1 INCH OF SOIL
- SUFFICIENT PORE SPACE TO PERMIT ROOT PENETRATION.
- SUFFICIENT DEPTH OF SOIL TO PROVIDE AN ADEQUATE ROOT ZONE. THE DEPTH OF ROCK OR IMPERMEABLE LAYERS SUCH AS HARDPANS SHOULD BE 12 INCHES OR MORE, EXCEPT ON SLOPES STEEPER THAN 2:1 WHERE THE ADDITION OF SOIL IS NOT FEASIBLE.
- A FAVORABLE PH RANGE FOR PLANT GROWTH, USUALLY 6.0-6.5.
- NO LARGE ROOTS, BRANCHES, STONES, LARGE CLODS OF EARTH, AND TRASH. CLODS AND STONES MAY BE LEFT ON SLOPES STEEPER THAN 3:1 IF THEY ARE TO BE HYDROSEEDED.

IF THE ABOVE CRITERIA CANNOT BE MET, SPECIAL SOIL CONDITIONERS OR TOPSOIL MAY BE APPLIED.

SEEDBED PREPARATION:

LIME: APPLY LIME ACCORDING TO SOIL TEST RECOMMENDATIONS. IF THE SOIL PH IS NOT KNOWN, FOLLOW RATES ON THE SEEDING SPEC TABLE.

FERTILIZER: FERTILIZE ACCORDING TO SOIL TEST RECOMMENDATIONS. WHERE SOIL TESTS ARE NOT AVAILABLE, FOLLOW RATES ON THE SEEDING SPEC TABLE.

SURFACE ROUGHENING: IF AREAS TO BE SEEDED BECOME HARDENED, SEALED, OR CRUSTED, LOOSEN IT JUST PRIOR TO SEEDING BY DISKING, RAKING, HARROWING OR OTHER SUITABLE METHODS. GROOVE OR FURROW SLOPES STEEPER THAN 3:1 ON THE CONTOUR BEFORE SEEDING.

PLANT SELECTION:

SELECT THE APPROPRIATE SPECIES BASED ON THE PLANTING SEASON, SOIL TYPE, SLOPES, AND LAND USES. SEE SEEDING SPEC TABLES IN PLANS FOR RECOMMENDED PERMANENT SEEDING MIXTURE.

SEEDING:

USE CERTIFIED SEED (INSPECTED BY THE NORTH CAROLINA CROP IMPROVEMENT ASSOCIATION).

APPLY SEED WITH A BROADCAST SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER ON A FIRM, FRIABLE SEEDBED. USE SEEDING RATES GIVEN IN TABLES.

WHEN USING A DRILL OR CULTIPACKER SEEDER, SMALL GRAINS SHOULD BE PLANTED NO MORE THAN ONE INCH DEEP AND GRASSES AND LEGUMES ON MORE THAN ½ INCH.

WHEN BROADCAST SEEDING, SUBDIVIDE AREA INTO WORKABLE SECTIONS AND DETERMINE THE AMOUNT OF SEED NEEDED FOR EACH SECTION. APPLY ONE-HALF THE SEED WHILE MOVING BACK AND FORTH ACROSS THE AREA AND APPLY THE REMAINING SEED IN THE SAME MANNER BUT AT RIGHT ANGLES TO THE FIRST PASS. COVER SEED BY RAKING OR CHAIN DRAGGING, AND THEN LIGHTLY FIRM WITH A ROLLER OR CULTIPACKER.

MULCH AREAS IMMEDIATELY AFTER SEEDING IN ACCORDANCE WITH RATES GIVEN IN TABLES. ANCHOR MULCH WITH NETTING OR LIQUID ASPHALT AT A RATE OF 0.10 GALLON PER SQUARE YARD (10 GAL / 1000 SQ FT).

HYDROSEEDING:

SURFACE ROUGHENING IS REQUIRED. FINE SEEDBED PREPARATION IS NOT NECESSARY.

RATE OF WOOD FIBER APPLICATION SHOULD BE AT LEAST 4,000-6,000 LB/ACRE.

APPLY LEGUME INOCULANTS AT FOUR TIMES THE RECOMMENDED RATE WHEN ADDING INOCULANT TO HYDROSEEDER SLURRY.

APPLY LIME IN DRY FORM.

APPLICATION

STEP 1 -1/3 MULCH RATE, ALL SEEDING AND ALL INOCULANT SPREAD IN ONE DIRECTION
STEP 2 - 2/3 MULCH RATE APPLIED IN OPPOSING DIRECTION

MAINTENANCE:

IF STAND IS INADEQUATE, RE-EVALUATE PLANT CHOICE AND QUANTITIES OF LIME AND FERTILIZER. REESTABLISH THE STAND AFTER SEEDBED PREPARATION OR OVER-SEED THE STAND. CONSIDER SEEDING TEMPORARY, ANNUAL SPECIES IF THE TIME OF YEAR IS NOT APPROPRIATE FOR PERMANENT SEEDING.

TEMPORARY SEEDING SCHEDULE

WINTER & EARLY SPRING

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120
Annual lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains)	50

Omit annual lespedeza when duration of temporary cover is not to extend beyond June.

Seeding dates
Mountains—Above 2500 feet: Feb. 15 - May 15
Below 2500 feet: Feb. 1- May 1
Piedmont—Jan. 1 - May 1
Coastal Plain—Dec. 1 - Apr. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

TEMPORARY SEEDING SCHEDULE

FALL

Seeding mixture

Species	Rate (lb/acre)
Rye (grain)	120

Seeding dates
Mountains—Aug. 15 - Dec. 15
Coastal Plain and Piedmont—Aug. 15 - Dec. 30

Soil amendments
Follow soil tests or apply 2,000 lb/acre ground agricultural limestone and 1,000 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Repair and refertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extent temporary cover beyond June 15, overseed with 50 lb/acre Kobe (Piedmont and Coastal Plain) or Korean (Mountains) lespedeza in late February or early March.

TEMPORARY SEEDING SCHEDULE

SUMMER

Seeding mixture

Species	Rate (lb/acre)
German millet	40

In the Piedmont and Mountains, a small-stemmed Sudangrass may be substituted at a rate of 50 lb/acre.

Seeding dates
Mountains—May 15 - Aug. 15
Piedmont—May 1 - Aug. 15
Coastal Plain—Apr. 15 - Aug. 15

Soil amendments
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

Mulch
Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

Maintenance
Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

PERMANENT SEEDING SCHEDULE

SOURCE: NCDEQ EROSION CONTROL MANUAL 6.11b

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization — Table 6.11.b

Successful development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NON-NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	Broadcast Seeding Rates lbs/acre	Fertilization/ limestone Rates/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Serices Lespedeza	*Lespedeza cuneata Dumont'*	I	15 lbs	By soil test	9/1 - 5/1	9/1 - 5/1	10/1 - 4/1	Sun	NR	NR	Yes	Responds well to controlled burns.	Severe Threat invasive species
Crown Vetch	*Securigera varia* (Coronilla varia)	I	15 lbs	By soil test	3/15-4/30	NR	NR	Sun	NR	NR	Yes	Highly competitive, not recommended unless an acceptable alternative is not available.	Prefers neutral soils
Centipede Grass	*Eremochloa ophiuroid*	I	5 lbs 10 lbs. for road shoulders	By soil test	NR	Eastern only	9/1 - 5/1	Sun	NR	NR	No	Significant maintenance may be required to obtain desired cover	Does not tolerate high traffic. Acceptable for sodding
KY 31 Tall Fescue	*Schedonorus phoenix* (Festuca arundinacea)	I	100 lbs	By soil test	8/15-5/1	9/1-4/15	9/30 - 3/15	Sun / mod. Shade	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Acceptable for sodding
KY Blue Grass	*Poa pratensis*	I	15 lbs	By soil test	8/15-5/1	NR	NR	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Prefers neutral soils, highly competitive, not recommended unless an acceptable alternative is not available. Acceptable for sodding
Hard Fescue	*Festuca brevipila* (Festuca longifolia)	I	15 lbs	By soil test	8/1 - 6/1	NR	NR	Shade	NR	NR	No	Not recommended for slopes greater than 5%	Low growing, bunch grass
Bermuda Grass	*Cynodon dactylon*	I	25 lbs	By soil test	NR	4/15-6/30	4/15-6/30	Sun	NR	NR	Yes	If utilized, it is imperative that maintenance includes a containment plan	Extremely aggressive, not recommended and should be avoided unless an acceptable alternative is not available. May be sodded or sprigged

6.11.16

HERBACEOUS PLANTS-Seeding recommendations for primary stabilization — Table 6.11.c

Successful development depends on planting date (effectiveness goal: 6 mo. - 3 yrs. without an ongoing maintenance program)

NATIVE SPECIES

Common Name	Botanical Name / Cultivar	Native / Introduced	See Table 6.11.a for seeding rates	Fertilization/ limestone Rates/acre	Optimal Planting Dates: Mountains	Piedmont	Coastal Plains	Sun/Shade tolerant	Wetlands	Riparian Buffers	Invasive Yes or No	Installation / Maintenance Considerations	Other information, commentary
Switchgrass	Panicum virgatum / Cave-in-Rock	N	A	By soil test	12/1-4/15	NR	12/1-4/15	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	Panicum virgatum / Blackwell	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	Panicum virgatum / Shelter	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained only	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	Panicum virgatum / Carthage	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	Yes	Yes	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	Panicum virgatum / Cardinal	N	A	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Switchgrass	Panicum virgatum / Nano	N	A	By soil test	NR	12/1 - 5/1	12/1 - 5/1	Sun	No	Poorly drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	
Indiangrass	Sorghastrum nutans / Rumsey	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only
Indiangrass	Sorghastrum nutans / Osage	N	B	By soil test	12/1-4/15	12/1 - 4/1	12/1-4/1	Sun	NR	Well drained	No	Responds well to controlled burns. Mix with 3 to 5 other seed varieties that have similar soil drainage adaptations.	Western coastal plain only

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Rev. 6.96

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PROFESSIONAL ENGINEER'S SEAL

TICK BITE MINE
SPECIAL USE PERMIT

TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

EROSION CONTROL NOTES

REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: NTS	Drawn by: MDK
Sheet: C8 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

File: Z:\2022\2022-15 Valentine Mine - Lenoir, NC\2023.04.27 Valentine Mine - Mine Permit.dwg Print Date: 4/27/2023

NOTE:

NCG01 PERMIT PROVISIONS HAVE BEEN PROVIDED AS GENERAL GUIDE WITH MINING OPERATIONS DURING THE CONSTRUCTION PORTION OF THE PROJECT AS A BEST MANAGEMENT PRACTICE.
HOWEVER, MINING OPERATIONS ARE CURRENTLY EXEMPT FROM THESE REQUIREMENTS UNDER THE NCG02 PERMIT.

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Required Ground Stabilization Timeframes		
Site Area Description	**Stabilize within this many calendar days after ceasing land disturbance**	**Timeframe variations**
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the prOVERBURDENlem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

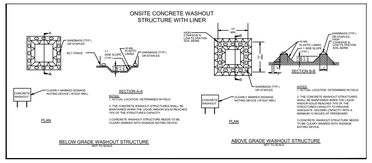
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (and this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframe or an assurance that they will be provided as soon as possible.

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be documented in the manner described:

Item to Document	Documentation Requirements
(a) Each E&SC Measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC Plan.	Initial and date each E&SC Measure on a copy of the approved E&SC Plan or complete, date and sign an inspection report that lists each E&SC Measure shown on the approved E&SC Plan. This documentation is required upon the initial installation of the E&SC Measures or if the E&SC Measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC Plan.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC Measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC Measures.	Initial and date a copy of the approved E&SC Plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation

In addition to the E&SC Plan documents above, the following items shall be kept on the site

and available for agency inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This general permit as well as the certificate of coverage, after it is received.

(b) Records of inspections made during the previous 30 days. The permittee shall record the required OVERBURDENservations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

(c) All data used to complete the Notice of Intent and older inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that must be reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(a) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(b) Anticipated bypasses and unanticipated bypasses.

(c) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at (800) 662-7956, (800) 858-0368 or (919) 733-3300.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the site stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible***. The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6). • Division staff may waive the requirement for a written report on a case-by-case basis.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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PROFESSIONAL ENGINEER'S SEAL

TICK BITE MINE
SPECIAL USE PERMIT
TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

NCG01 PERMIT NOTES

REVISIONS

AGENCY REVIEW ONLY
NOT FOR CONSTRUCTION

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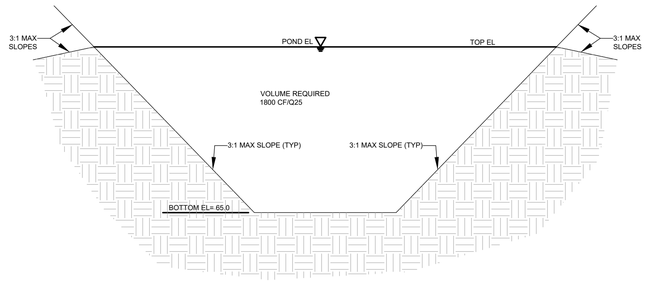
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

File: Z:\2022\2022-15 Valentine Mine - Lenoir, NC\2023.04.27 Valentine Mine - Mine Permit.dwg Print Date: 4/27/2023



NOTES

1. BASIN TO BE INSTALLED WITHOUT OUTLETS.
2. BASIN IS TO BE EXCAVATED BELOW EXISTING GROUND.
3. INSTALL TEMPORARY DIVERSIONS TO BASIN.
3. BASINS ARE TO BE INSTALLED AND MARKET MATERIAL STOCKPILED.
4. OVERBURDEN TO BE USED TO CONSTRUCT BERMS ADJACENT TO BASIN.
5. INSTALL PERIMETER BERMS BELOW BASIN THROUGH LOW LYING AREAS TO PREVENT RUNOFF FROM LEAVING THE SITE.
6. WHEN BASINS OVERFILL THE WATER WILL POND INSIDE THE PERIMETER BERM AND INFILTRATE AND EVAPORATE.
7. PIT TO BE EXCAVATED FROM BASIN OUT. BASIN SIZE WILL INCREASE WITH EXCAVATION.
8. MATERIAL WILL BE EXCAVATED WET NO PIT DEWATERING.
9. BASIN HAVE BEEN DESIGNED WITH TWICE THE VOLUME CAPACITY THAN REQUIRED.
10. BASINS TO BE INSPECTED WEEKLY.
11. ALL SLOPES THAT ARE DENUDED MORE THAN 7 WORKING DAYS OR 14 CALENDAR DAYS SHALL BE STABILIZED AND SEEDED.
12. ONCE SEDIMENT REACHES 1 FT DEPTH THE SEDIMENT SHALL BE REMOVED.

SEDIMENT BASIN NO OUTLET

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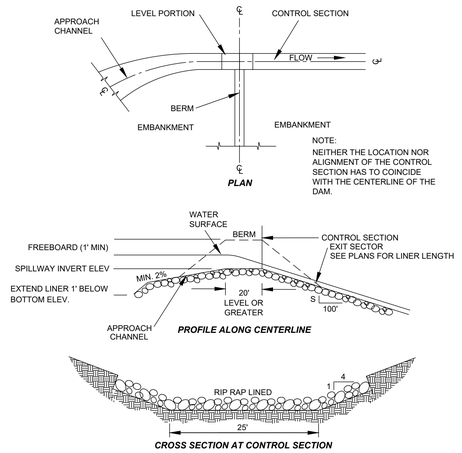

TYPICAL EXCAVATED EARTH SPILLWAY

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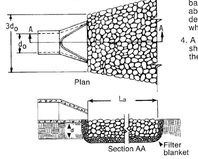
6

Pipe Outlet to Flat Area—No Well-defined Channel



Pipe Outlet to Well-defined Channel

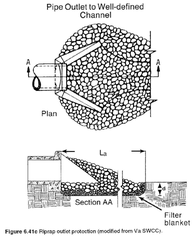


Figure 6.41c Riprap outlet protection (modified from Va SWCC).

Notes

1. L_a is the length of the riprap apron.
2. d = 1.5 times the maximum stone diameter but not less than 6".
3. In a well-defined channel extend the apron up the channel banks to an elevation of 6" above the maximum tailwater depth or to the top of the bank, whichever is less.
4. A filter blanket or filter fabric should be installed between the riprap and soil foundation.

Construction Specifications

1. Ensure that the subgrade for the filter and riprap follows the required lines and grades shown in the plan. Compact any fill required in the subgrade to the density of the surrounding undisturbed material. Low areas in the subgrade on undisturbed soil may also be filled by increasing the riprap thickness.

2. The riprap and gravel filter must conform to the specified grading limits shown on the plans.

3. Filter cloth, when used, must meet design requirements and be properly protected from punching or tearing during installation. Repair any damage by removing the riprap and placing another piece of filter cloth over the damaged area. All connecting joints should overlap so the top layer is above the downstream layer a minimum of 1 foot. If the damage is extensive, replace the entire filter cloth.

4. Riprap may be placed by equipment, but take care to avoid damaging the filter.

5. The minimum thickness of the riprap should be 1.5 times the maximum stone diameter.

6. Riprap may be field stone or rough quarry stone. It should be hard, angular, highly weather-resistant and well graded.

7. Construct the apron on zero grade with no overfill at the end. Make the top of the riprap at the downstream end level with the receiving area or slightly below it.

8. Ensure that the apron is properly aligned with the receiving stream and preferably straight throughout its length. If a curve is needed to fit site conditions, place it in the upper section of the apron.

9. Immediately after construction, stabilize all disturbed areas with vegetation (Practices 6.10, *Temporary Seeding*, and 6.11, *Permanent Seeding*).

Maintenance

Inspect riprap outlet structures weekly and after significant (1/2 inch or greater) rainfall events to see if any erosion around or below the riprap has taken place, or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

References

Surface Stabilization
6.10, Temporary Seeding
6.11, Permanent Seeding
6.15, Riprap

Appendix:
8.06, Design of Riprap Outlet Protection

Rice, C.E., Kadavy, K.C. "Riprap Design for Pipe Spillways at -1 < TW/D <0.7" Presented at the December 13, 1994 International Winter Meeting, American Society of Agricultural Engineers, Paper Number 942541.

Rice, C.E. and K.C. Kadavy. 1994, Plunge Pool Design at Submerged Pipe Spillway Outlets. Transactions of the ASAE 37(4):1167-1173.

FHWA. 1983. Hydraulic Design of Energy Dissipaters for Culverts and Channels. Hydraulic Engineering Circular Number 14.

6.41.4

OUTLET PROTECTION

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EROSION CONTROL DETAILS

REVISIONS

AGENCY REVIEW ONLY NOT FOR CONSTRUCTION

Scale: NTS	Drawn by: MDK
Sheet: C10 of 15	Designed by: MDK
	Reviewed by: JEH
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Construction Specifications

1. Clear the foundation area of trees, stumps, roots, loose rock, and other objectionable material.

2. Excavate the cross section to the lines and grades of the foundation of the liner as shown on the plans. Bring over-excavated areas to grade by increasing the thickness of the liner or by backfilling with moist soil compacted to the density of the surrounding material.

3. Concrete linings:

- Place concrete linings to the thickness shown on the plans and finish them in a workmanlike manner.
- Take adequate precautions to protect freshly placed concrete from extreme temperatures to ensure proper curing.
- Ensure that subgrade is moist when concrete is poured.
- Install foundation drains or weep holes where needed to protect against uplift and piping.
- Provide transverse (contraction) joints to control cracking at approximately 20-feet intervals. These joints may be formed by using a 1/2-inch thick removable template or by sawing to a depth of at least 1 inch.
- Install expansion joints at intervals not to exceed 100 feet.

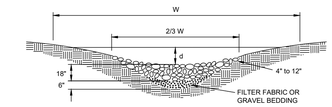
4. Rock riprap linings: Practice 6.15, *Riprap.*

5. Place filters, beddings, and foundation drains to line and grade in the manner specified. Place filter and bedding materials immediately after slope preparation. For synthetic filter fabrics, overlap the downstream edge by at least 12 inches with the upstream edge which is buried a minimum 12 inches in a trench. See figure 6.14a, page 6.14.6. Space anchor pins every 3 feet along the overlap. Spread granular materials in a uniform layer. When more than one gradation is required, spread the layers so there is minimal mixing. Filter material should consist of at least 3 inches of material on all sides of the drain pipe. The drain pipe conduit should be a minimum of 4 inches in diameter. Acceptable materials include perforated, continuous, closed-joint conduits of clay, concrete, metal, plastic, or other suitable material (Practice 6.81, *Subsurface Drain*).

6. Perform all channel construction to keep erosion and water pollution to a minimum. Immediately upon completion of the channel, vegetate all disturbed areas or otherwise protect them against soil erosion. Where channel construction will take longer than 30 days, stabilize channels by reaches.

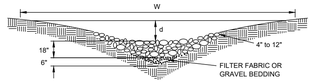
Maintenance

Inspect channels at regular intervals as well as after major rains, and make repairs promptly. Give special attention to the outlet and inlet sections and other points where concentrated flow enters. Carefully check stability at road crossings, and look for indications of piping, scour holes, or bank failures. Make repairs immediately. Maintain all vegetation adjacent to the channel in a healthy, vigorous condition to protect the area from erosion and scour during out-of-bank flow.



PARABOLIC-SHAPED WATERWAY WITH STONE CENTER DRAIN

(SHAPED BY BULLDOZER)



V-SHAPED WATERWAY WITH STONE CENTER DRAIN

(SHAPED BY MOTOR GRADER)

TRAPEZOIDAL

RIP RAP LINED TEMPORARY/PERMANENT DIVERSION DITCH

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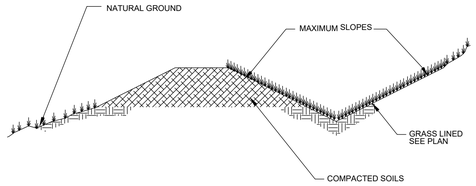

Construction Specifications

1. Remove all trees, brush, stumps, and other objectionable material from the foundation area, and dispose of properly.

2. Excavate the channel, and shape it to neat lines and dimensions shown on the plans plus a 0.2-foot overcut around the channel perimeter to allow for bulking during seedbed preparations and sod buildup.

3. Remove and properly dispose of all excess soil so that surface water may enter the channel freely.

4. The procedure used to establish grass in the channel will depend upon the severity of the conditions and selection of species. Protect the channel with mulch or a temporary liner sufficient to withstand anticipated velocities during the establishment period (*Appendix 8.05*).

Maintenance

During the establishment period, check grass-lined channels after every rainfall. After grass is established, periodically check the channel; check it after every heavy rainfall event. Immediately make repairs. It is particularly important to check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes. Remove all significant sediment accumulations to maintain the designed carrying capacity. Keep the grass in a healthy, vigorous condition at all times, since it is the primary erosion protection for the channel (Practice 6.11, *Permanent Seeding*).

GRASS LINED TEMPORARY/PERMANENT DIVERSION DITCH

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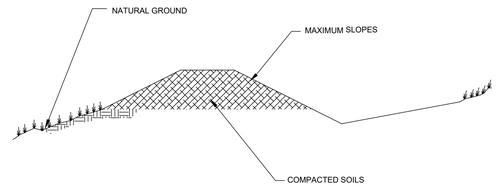

PERMANENT DIVERSION BERM

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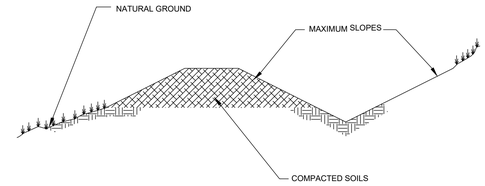


TEMPORARY/PERMANENT DIVERSION DITCH

NTS

Figure 6.17e Channel Installation and Slope Installation; Washington State Ecology Department

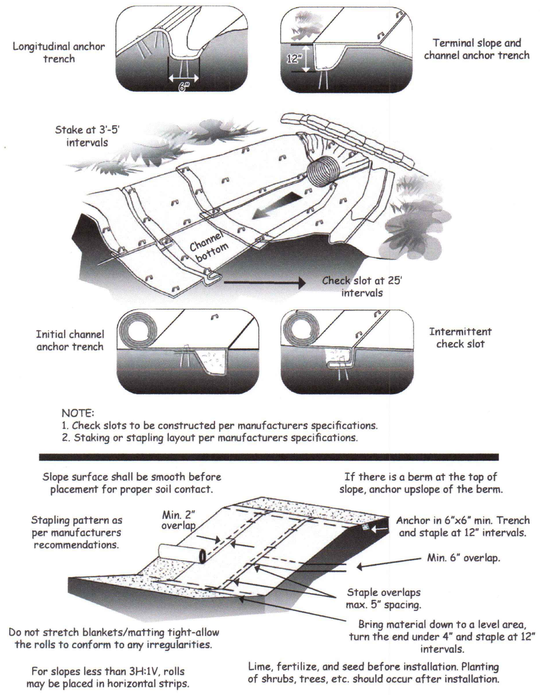
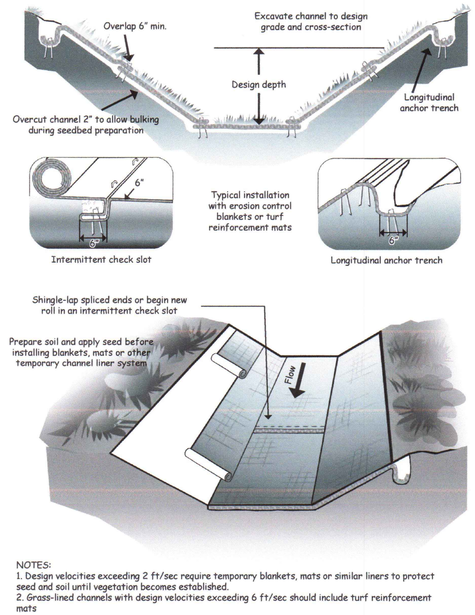


Figure 6.17d Temporary Channel Liners; Washington State Department of Ecology



TEMPORARY LINING FOR TEMPORARY/PERMANENT DIVERSION DITCH

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Construction Specifications

Construction

Even if properly designed, if not properly installed, RECP's will probably not function as desired. Proper installation is imperative. Even if properly installed, if not properly timed and nourished, vegetation will probably not grow as desired. Proper seed/vegetation selection is also imperative.

Grade the surface of installation areas so that the ground is smooth and loose. When seeding prior to installation, follow the steps for seed bed preparation, soil amendments, and seeding in *Surface Stabilization*, 6.1. All gullies, rills, and any other disturbed areas must be fine graded prior to installation. Spread seed before RECP installation. (**Important**: Remove all large rocks, dirt clods, stumps, roots, grass clumps, trash, and other obstructions from the soil surface to allow for direct contact between the soil surface and the RECP.)

Terminal anchor trenches are required at RECP ends and intermittent trenches must be constructed across channels at 25-foot intervals. Terminal anchor trenches should be a minimum of 12 inches in depth and 6 inches in width, while intermittent trenches need be only 6 inches deep and 6 inches wide.

Installation for Slopes— Place the RECP 2-3 feet over the top of the slope and into an excavated end trench measuring approximately 12 inches deep by 6 inches wide. Pin the RECP at 1 foot intervals along the bottom of the trench, backfill, and compact. Unroll the RECP down (or along) the slope maintaining direct contact between the soil and the RECP. Overlap adjacent rolls a minimum of 3 inches. Pin the RECP to the ground using staples or pins in a 3 foot center-to-center pattern. Less frequent stapling/pinning is acceptable on moderate slopes.

Installation in Channels— Excavate terminal trenches (12 inches deep and 6 inches wide) across the channel at the upper and lower end of the lined channel sections. At 25-foot intervals along the channel, anchor the RECP across the channel either in 6 inch by 6 inch trenches or by installing two closely spaced rows of anchors. Excavate longitudinal trenches 6 inches deep and wide along channel edges (above water line) in which to bury the outside RECP edges. Place the first RECP at the downstream end of the channel. Place the end of the first RECP in the terminal trench and pin it at 1 foot intervals along the bottom of the trench.

Note: The RECP should be placed upside down in the trench with the roll on the downstream side of the bench.

Once pinned and backfilled, the RECP is deployed by wrapping over the top of the trench and unrolling upstream. If the channel is wider than the provided rolls, place ends of adjacent rolls in the terminal trench, overlapping the adjacent rolls a minimum of 3 inches. Pin at 1 foot intervals, backfill, and compact. Unroll the RECP in the upstream direction until reaching the first intermittent trench. Fold the RECP back over itself, positioning the roll on the downstream side of the trench, and allowing the mat to conform to the trench.

Then pin the RECP (two layers) to the bottom of the trench, backfill, and compact. Continue up the channel (wrapping over the top of the intermittent trench) repeating this step at other intermittent trenches, until reaching the upper terminal trench.

At the upper terminal trench, allow the RECP to conform to the trench, secure with pins or staples, backfill, compact and then bring the mat back over the top of the trench and onto the existing mat (2 to 3 feet overlap in the downstream direction), and pin at 1 foot intervals across the RECP. When starting installation of a new roll, begin in a trench or shingle-lap ends of rolls a minimum of 1 foot with upstream RECP on top to prevent uplifting. Place the outside edges of the RECP(s) in longitudinal trenches, pin, backfill, and compact.

Anchoring Devices—11 gauge, at least 6 inches length by 1 inch width staples or 12 inch minimum length wooden stakes are recommended for anchoring the RECP to the ground.

Drive staples or pins so that the top of the staple or pin is flush with the ground surface. Anchor each RECP every 3 feet along its center. Longitudinal overlaps must be sufficient to accommodate a row of anchors and uniform along the entire length of overlap and anchored every 3 feet along the overlap length. Roll ends may be spliced by overlapping 1 foot (in the direction of water flow), with the upstream/upslope mat placed on top of the downstream/downslope RECP. This overlap should be anchored at 1 foot spacing across the RECP. When installing multiple width mats heat seamed in the factory, all factory seams and field overlaps should be similarly anchored.

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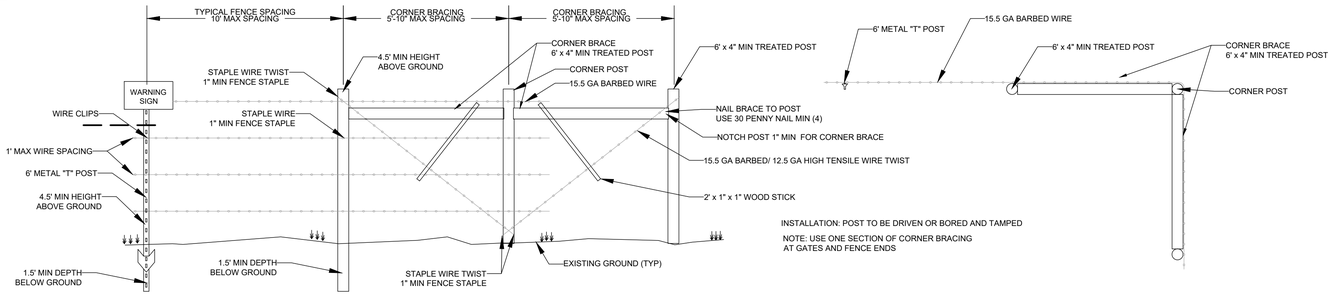

ELEVATION VIEW

4 STRAND BARBED WIRE FENCE

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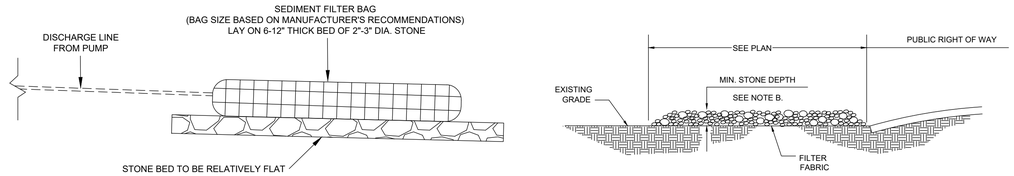

SEDIMENT FILTER BAG

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NOTES:

A) MINIMUM WIDTH OF CONSTRUCTION ENTRANCE PAD SHALL BE 20 FT.

B) STONE SHALL BE 2-3" WASHED STONE, 12" THICK.

C) THE ENTRANCE SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

D) INSTALL PADS WHERE SHOWN ON PLANS OR OTHERWISE DIRECTED BY ENGINEER.

TEMPORARY CONSTRUCTION ENTRANCE PAD

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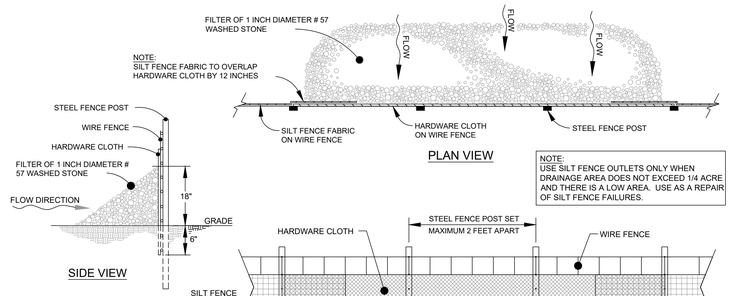

Installation: Refer to the approved erosion control plan for location, extent, and specifications. If silt fence is not installed correctly the first time, it will have to be reconstructed. Determine the exact location of the outlet before completing installation of the silt fence, taking into consideration:

1. Installation at the lowest point(s) in the fence where water will pond.
2. Maximum allowable drainage area restriction for silt fence.
3. Installation where the outlet is accessible for installation, maintenance and removal.
4. Placement of the outlet so that water flowing through it will not create an erosion hazard below – avoid steep slopes below the outlet and areas without protective vegetation. Use slope drains if necessary.

The silt fence outlet shall be installed in accordance with the standard detail, and the approved erosion control plan.

Maintenance Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.

Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly.

Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.

Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

SILT FENCE OUTLET

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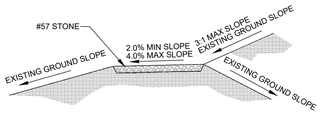

TEMPORARY INTERNAL SITE ROAD

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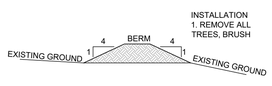
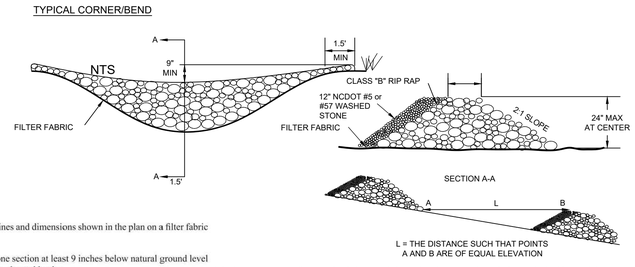


NOTE
1. SEE PLAN SHEET C-2 FOR WIDTH HEIGHT DETERMINED BY SIDE SLOPES.
2. WIDTH INDICATED ON PLAN IS BOTTOM WIDTH.
3. SEED PER TEMPORARY/PERMANENT SEEDING SCHEDULE ON SHEET C-7.
4. NATURAL VOLUNTEER VEGETATION SHALL REMAIN.
5. BERM ENDS SHALL BE 4:1 SLOPES LIKE SIDE SLOPES.

VEGETATIVE BERM (TYP)

NTS

TYPICAL CORNER/BEND



Construction Specifications

1. Place stone to the lines and dimensions shown in the plan on a filter fabric foundation.
2. Keep the center stone section at least 9 inches below natural ground level where the dam abuts the channel banks.
3. Extend stone at least 1.5 feet beyond the ditch bank (Figure 6.83b) to keep water from cutting around the ends of the check dam.
4. Set spacing between dams to assure that the elevation at the top of the lower dam is the same as the toe elevation of the upper dam.
5. Protect the channel after the lowest check dam from heavy flow that could cause erosion.
6. Make sure that the channel reach above the most upstream dam is stable.
7. Ensure that other areas of the channel, such as culvert entrances below the check dams, are not subject to damage or blockage from displaced stones.

Maintenance Inspect check dams and channels at least weekly and after each significant (1/2 inch or greater) rainfall event and repair immediately. Clean out sediment, straw, limbs, or other debris that could clog the channel when needed.

Anticipate submergence and deposition above the check dam and erosion from high flows around the edges of the dam. Correct all damage immediately. If significant erosion occurs between dams, additional measures can be taken such as, installing a protective riprap liner in that portion of the channel (Practice 6.31, *Riprap-line and Paved Channels*).

Remove sediment accumulated behind the dams as needed to prevent damage to channel vegetation, allow the channel to drain through the stone check dam, and prevent large flows from carrying sediment over the dam. Add stones to dams as needed to maintain design height and cross section.

CHECK DAM

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SEDIMENT FENCE INSTALLATION USING THE SLICING METHOD
Instead of excavating a trench, placing fabric and then backfilling trench, sediment fence may be installed using specially designed equipment that inserts the fabric into a cut sliced in the ground with a disc (Figure 6.62b).

Installation Specifications

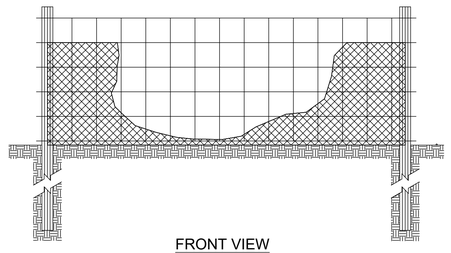
1. The base of both end posts should be at least one foot higher than the middle of the fence. Check with a level if necessary.
2. Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
3. Install posts 2 feet deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
4. Install posts with the nipples facing away from the silt fabric.
5. Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Also, each tie should be positioned to hang on a post nipple when tightened to prevent sagging.
6. Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
7. No more than 24 inches of a 36 inch fabric is allowed above ground level.
8. The installation should be checked and corrected for any deviations before compaction.
9. Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first, and then each side twice for a total of 4 trips.

Maintenance Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.

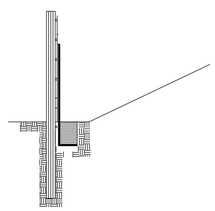
Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly.

Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.

Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.



FRONT VIEW



NOTE:
DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW
-USE SILT FENCE ONLY WHEN DRAINAGE AREA
-END OF SILT FENCE NEEDS TO BE TURNED UPHILL.

SECTION VIEW

* FOR REPAIR OF SILT FENCE FAILURES, USE No. 57 WASHED STONE. FOR ANCHOR WHEN SILT FENCE IS PROTECTING CATCH BASIN.

SILT FENCE

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PROFESSIONAL ENGINEER'S SEAL

TICK BITE MINE
SPECIAL USE PERMIT

TICK BITE ROAD
LENOIR COUNTY, NORTH CAROLINA

EROSION CONTROL DETAILS

REVISIONS

AGENCY REVIEW ONLY
NOT FOR CONSTRUCTION

Scale: NTS	Drawn by: MDK
Sheet: C12 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

File: Z:\2022\2022-15 Valentine Mine - Lenoir, NC\2023.04.27 Valentine Mine - Mine Permit.dwg Print Date: 4/27/2023

Sediment Basin # 1

Calculate Flow - Rational Method

10-Yr Storm
Q_{10} = CIA — C= 0.30, I= 8.23, A= 10.72
Q_{10} = 26.47

25-Yr Storm
Q_{25} = CIA — C= 0.30, I= 9.28, A= 10.72
Q_{25} = 29.84

2-Yr Storm
Q_2 = CIA — C= 0.30, I= 6.36, A= 10.72
Q_2 = 20.45

Calculate Required Surface Area

$SA=Q_{25}$ x 435 sf/cfs — Q_{25} = 29.84

SA= 12982.35 ft^2

Side Slopes = 3.00 :1
Pond Depth= 5.00 ft

Basin Dims (Per SA)

Top =	105	x	210	=	22050 sf
Weir=	85	x	170	=	14450 sf
Bottom =	55	x	110	=	6050 sf

Volume Required

V_R=Ax1800 cf/ac — A= 10.72 ac

V_R= 19296.00 ft^3

Volume Proposed

V_P=((Top Area + Bottom Area)/2)xD — Weir= 14450.00 sf, Bottom= 6050.00 sf, D= 5.00 ft

V_P= 51250.00 ft^3

Basin has no outlet - to be permanent pond dug out with excavation

Weir Sizing

Per AutoCad Hydraflow Software

L= 12 ft
D= 2 ft
d_{water}= 0.79 ft
Q_{25}= 29.84 cfs
Velocity= 2.64 ft/s

Sediment Basin # 2

Calculate Flow - Rational Method

10-Yr Storm
Q_{10} = CIA — C= 0.30, I= 8.23, A= 39.32
Q_{10} = 97.08

25-Yr Storm
Q_{25} = CIA — C= 0.30, I= 9.28, A= 39.32
Q_{25} = 109.47

2-Yr Storm
Q_2 = CIA — C= 0.30, I= 6.36, A= 39.32
Q_2 = 75.02

Calculate Required Surface Area

$SA=Q_{25}$ x 435 sf/cfs — Q_{25} = 109.47

SA= 47618.09 ft^2

Side Slopes = 3.00 :1
Pond Depth= 5.00 ft

Basin Dims (Per SA)

Top =	180	x	360	=	64800 sf
Weir=	160	x	320	=	51200 sf
Bottom =	130	x	260	=	33800 sf

Volume Required

V_R=Ax1800 cf/ac — A= 39.32 ac

V_R= 70776.00 ft^3

Volume Proposed

V_P=((Top Area + Bottom Area)/2)xD — Weir= 51200.00 sf, Bottom= 33800.00 sf, D= 5.00 ft

V_P= 212500.00 ft^3

Basin has no outlet - to be permanent pond dug out with excavation

Weir Sizing

Per AutoCad Hydraflow Software

L= 45 ft
D= 2 ft
d_{water}= 0.83 ft
Q_{25}= 109.47 cfs
Velocity= 2.78 ft/s

Sediment Basin # 3

Calculate Flow - Rational Method

10-Yr Storm
Q_{10} = CIA — C= 0.30, I= 8.23, A= 22.09
Q_{10} = 54.54

25-Yr Storm
Q_{25} = CIA — C= 0.30, I= 9.28, A= 22.09
Q_{25} = 61.50

2-Yr Storm
Q_2 = CIA — C= 0.30, I= 6.36, A= 22.09
Q_2 = 42.15

Calculate Required Surface Area

$SA=Q_{25}$ x 435 sf/cfs — Q_{25} = 61.50

SA= 26751.87 ft^2

Side Slopes = 3.00 :1
Pond Depth= 5.00 ft

Basin Dims (Per SA)

Top =	140	x	280	=	39200 sf
Weir=	120	x	240	=	28800 sf
Bottom =	90	x	180	=	16200 sf

Volume Required

V_R=Ax1800 cf/ac — A= 22.09 ac

V_R= 39762.00 ft^3

Volume Proposed

V_P=((Top Area + Bottom Area)/2)xD — Weir= 28800.00 sf, Bottom= 16200.00 sf, D= 5.00 ft

V_P= 112500.00 ft^3

Basin has no outlet - to be permanent pond dug out with excavation

Weir Sizing

Per AutoCad Hydraflow Software

L= 30 ft
D= 2 ft
d_{water}= 0.74 ft
Q_{25}= 61.50 cfs
Velocity= 2.58 ft/s

Sediment Basin # 4

Calculate Flow - Rational Method

10-Yr Storm
Q_{10} = CIA — C= 0.30, I= 8.23, A= 40.53
Q_{10} = 100.07

25-Yr Storm
Q_{25} = CIA — C= 0.30, I= 9.28, A= 40.53
Q_{25} = 112.84

2-Yr Storm
Q_2 = CIA — C= 0.30, I= 6.36, A= 40.53
Q_2 = 77.33

Calculate Required Surface Area

$SA=Q_{25}$ x 435 sf/cfs — Q_{25} = 112.84

SA= 49083.45 ft^2

Side Slopes = 3.00 :1
Pond Depth= 5.00 ft

Basin Dims (Per SA)

Top =	180	x	360	=	64800 sf
Weir=	160	x	320	=	51200 sf
Bottom =	130	x	260	=	33800 sf

Volume Required

V_R=Ax1800 cf/ac — A= 40.53 ac

V_R= 72954.00 ft^3

Volume Proposed

V_P=((Top Area + Bottom Area)/2)xD — Weir= 51200.00 sf, Bottom= 33800.00 sf, D= 5.00 ft

V_P= 212500.00 ft^3

Basin has no outlet - to be permanent pond dug out with excavation

Weir Sizing

Per AutoCad Hydraflow Software

L= 50 ft
D= 2 ft
d_{water}= 0.79 ft
Q_{25}= 112.84 cfs
Velocity= 2.73 ft/s

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EROSION CONTROL CALCULATIONS

REVISIONS

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Scale: NTS	Drawn by: MDK
Sheet: C13 of 15	Designed by: MDK
	Reviewed by: JEH
Project Number: DDS JOB #: 2022-15	Date: MAR 2022

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Temporary Diversion/Berm # 1 => DA # 101

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 9.28 in/hr
Q_{25} = 8.88 A= 3.19 ac

Channel Slope=	0.80
Channel Depth=	1.50
Bottom width=	0.00
Side Slopes=	3.00
Velocity=	5.41
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 0.74 ft
T= 0.369408 lbs/ft^2 s= 0.008 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 2 => DA # 102

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 16.99 A= 6.37 ac

Channel Slope=	0.08
Channel Depth=	2.50
Bottom width=	0.00
Side Slopes=	3.00
Velocity=	2.69
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.45 ft
T= 0.072384 lbs/ft^2 s= 0.0008 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 3 => DA # 201

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 9.28 in/hr
Q_{25} = 23.75 A= 8.53 ac

Channel Slope=	0.05
Channel Depth=	2.50
Bottom width=	0.00
Side Slopes=	3.00
Velocity=	2.47
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.79 ft
T= 0.05848 lbs/ft^2 s= 0.001 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 4 => DA # 202

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 17.18 A= 6.44 ac

Channel Slope=	0.30
Channel Depth=	2.50
Bottom width=	0.00
Side Slopes=	3.00
Velocity=	4.73
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.1 ft
T= 0.24024 lbs/ft^2 s= 0.0035 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 5 => DA # 203

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 14.75 A= 5.53 ac

Channel Slope=	0.33
Channel Depth=	2.00
Bottom width=	0.00
Side Slopes=	1.00
Velocity=	4.29
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.03 ft
T= 0.2069808 lbs/ft^2 s= 0.0031 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 6 => DA # 204

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 34.14 A= 12.80 ac

Q = TD4 + TD5 + TD6
66.06

Channel Slope=	0.23
Channel Depth=	2.00
Bottom width=	0.00
Side Slopes=	1.00
Velocity=	5.47
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.34 ft
T= 0.1923168 lbs/ft^2 s= 0.0023 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 7 => DA # 301

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 9.28 in/hr
Q_{25} = 53.98 A= 19.39 ac

Channel Slope=	0.05
Channel Depth=	2.00
Bottom width=	10.00
Side Slopes=	3.00
Velocity=	2.82
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.36 ft
T= 0.042432 lbs/ft^2 s= 0.001 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 8 => DA # 401

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 9.28 in/hr
Q_{25} = 35.86 A= 12.88 ac

Channel Slope=	0.01
Channel Depth=	2.50
Bottom width=	10.00
Side Slopes=	3.00
Velocity=	1.41
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.69 ft
T= 0.0105456 lbs/ft^2 s= 0.000 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 9 => DA # 402

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 51.47 A= 19.30 ac

Channel Slope=	0.11
Channel Depth=	2.00
Bottom width=	10.00
Side Slopes=	3.00
Velocity=	3.64
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.07 ft
T= 0.0734448 lbs/ft^2 s= 0.0011 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

Temporary Diversion/Berm # 10 => DA # 403

Calculate Flow - Rational Method
25-Yr Storm
Q_{25} = CIA

C= 0.30
I= 8.89 in/hr
Q_{25} = 12.21 A= 4.58 ac

Channel Slope=	0.14
Channel Depth=	2.00
Bottom width=	0.00
Side Slopes=	3.00
Velocity=	3.08
Soil Type @	sandy loam

Slopes= 0-10%

Channel Lining

Shear Calculation

T=yds

γ= 62.4 lbs
d_{water}= 1.15 ft
T= 0.0975936 lbs/ft^2 s= 0.00136 ft/ft

Temporary= NAG S75BN
Permanent= Bermudagrass

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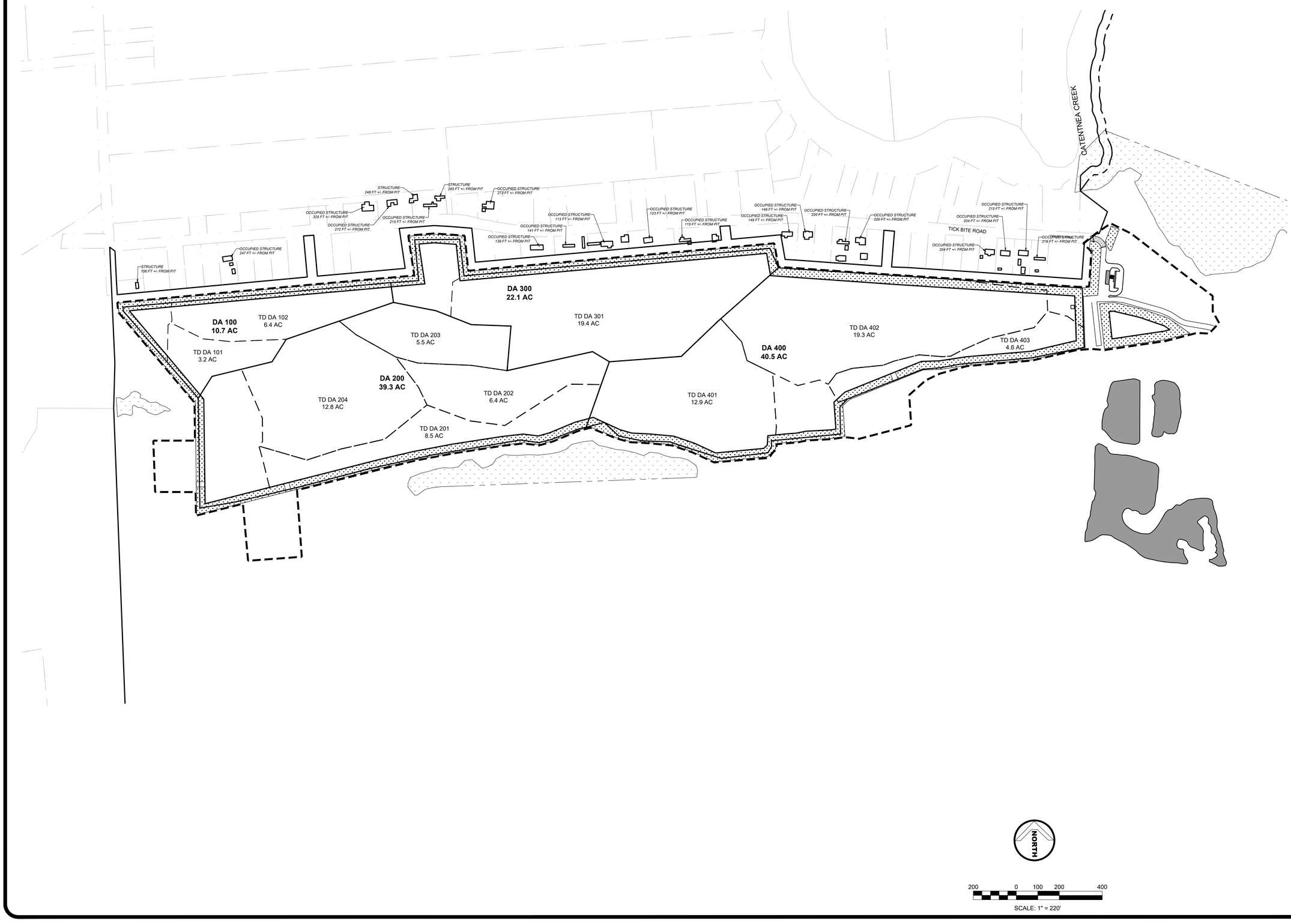

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DRAINAGE MAP

REVISIONS

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Scale: 1"=200'	Drawn by: MDK
Sheet: C15 of 15	Designed by: MDK
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