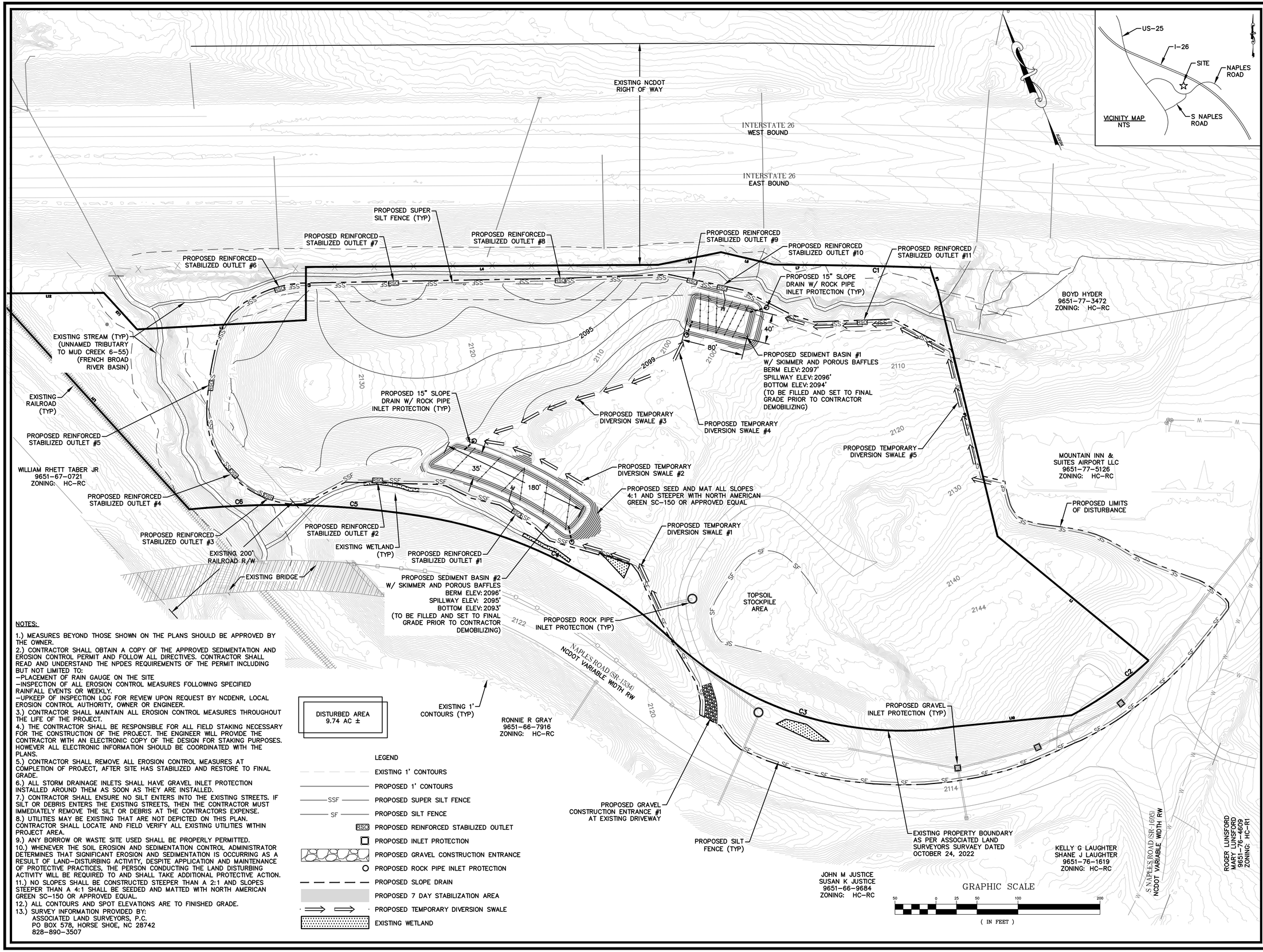


NOTES:

1.) MEASURES BEYOND THOSE SHOWN ON THE PLANS SHOULD BE APPROVED BY THE OWNER.
2.) CONTRACTOR SHALL OBTAIN A COPY OF THE APPROVED SEDIMENTATION AND EROSION CONTROL PERMIT AND FOLLOW ALL DIRECTIVES. CONTRACTOR SHALL READ AND UNDERSTAND THE NPDES REQUIREMENTS OF THE PERMIT INCLUDING BUT NOT LIMITED TO:
-PLACEMENT OF RAIN GAUGE ON THE SITE
-INSPECTION OF ALL EROSION CONTROL MEASURES FOLLOWING SPECIFIED RAINFALL EVENTS OR WEEKLY.
-UPKEEP OF INSPECTION LOG FOR REVIEW UPON REQUEST BY NCDENR, LOCAL EROSION CONTROL AUTHORITY, OWNER OR ENGINEER.
3.) CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE LIFE OF THE PROJECT.
4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD STAKING NECESSARY FOR THE CONSTRUCTION OF THE PROJECT. THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH AN ELECTRONIC COPY OF THE DESIGN FOR STAKING PURPOSES. HOWEVER ALL ELECTRONIC INFORMATION SHOULD BE COORDINATED WITH THE PLANS.
5.) CONTRACTOR SHALL REMOVE ALL EROSION CONTROL MEASURES AT COMPLETION OF PROJECT, AFTER SITE HAS STABILIZED AND RESTORE TO FINAL GRADE.
6.) ALL STORM DRAINAGE INLETS SHALL HAVE GRAVEL INLET PROTECTION INSTALLED AROUND THEM AS SOON AS THEY ARE INSTALLED.
7.) CONTRACTOR SHALL ENSURE NO SILT ENTERS INTO THE EXISTING STREETS. IF SILT OR DEBRIS ENTERS THE EXISTING STREETS, THEN THE CONTRACTOR MUST IMMEDIATELY REMOVE THE SILT OR DEBRIS AT THE CONTRACTORS EXPENSE.
8.) UTILITIES MAY BE EXISTING THAT ARE NOT DEPICTED ON THIS PLAN. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES WITHIN PROJECT AREA.
9.) ANY BORROW OR WASTE SITE USED SHALL BE PROPERLY PERMITTED.
10.) WHENEVER THE SOIL EROSION AND SEDIMENTATION CONTROL ADMINISTRATOR DETERMINES THAT SIGNIFICANT EROSION AND SEDIMENTATION IS OCCURRING AS A RESULT OF LAND-DISTURBING ACTIVITY, DESPITE APPLICATION AND MAINTENANCE OF PROTECTIVE PRACTICES, THE PERSON CONDUCTING THE LAND DISTURBING ACTIVITY WILL BE REQUIRED TO AND SHALL TAKE ADDITIONAL PROTECTIVE ACTION.
11.) NO SLOPES SHALL BE CONSTRUCTED STEEPER THAN A 2:1 AND SLOPES STEEPER THAN A 4:1 SHALL BE SEEDED AND MATTED WITH NORTH AMERICAN GREEN SC-150 OR APPROVED EQUAL.
12.) ALL CONTOURS AND SPOT ELEVATIONS ARE TO FINISHED GRADE.
13.) SURVEY INFORMATION PROVIDED BY:
ASSOCIATED LAND SURVEYORS, P.C.
PO BOX 578, HORSE SHOE, NC 28742
828-890-3507

WGLA Engineering
WGLA ENGINEERING, PLLC
724 5th AVENUE WEST
HENDERSONVILLE, NC 28739
(828) 687-7177
WGLA.COM
NC LICENSE P-1342

ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

Preliminary Not For Construction

REVISIONS	
DATE	DESCRIPTION

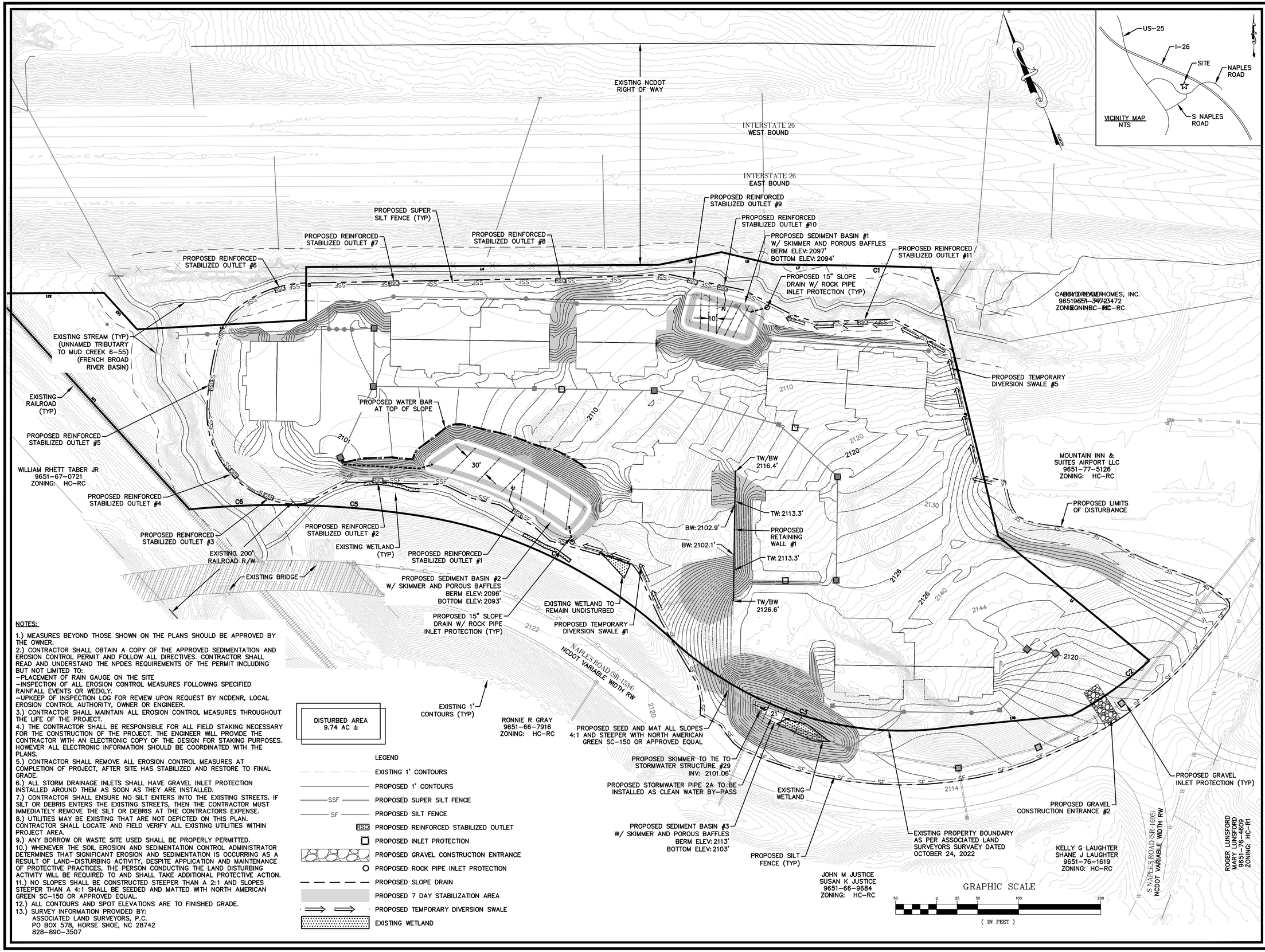
811 Know what's below. Call before you dig.

PROJECT NUMBER: 23150
DATE: 6-10-25

INITIAL GRADING AND EROSION CONTROL PLAN

C-300

SCALE: 1"=50'



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6.) ALL STORM DRAINAGE INLETS SHALL HAVE GRAVEL INLET PROTECTION INSTALLED AROUND THEM AS SOON AS THEY ARE INSTALLED.
7.) CONTRACTOR SHALL ENSURE NO SILT ENTERS INTO THE EXISTING STREETS. IF SILT OR DEBRIS ENTERS THE EXISTING STREETS, THEN THE CONTRACTOR MUST IMMEDIATELY REMOVE THE SILT OR DEBRIS AT THE CONTRACTORS EXPENSE.
8.) UTILITIES MAY BE EXISTING THAT ARE NOT DEPICTED ON THIS PLAN. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES WITHIN PROJECT AREA.
9.) ANY BORROW OR WASTE SITE USED SHALL BE PROPERLY PERMITTED.
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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

Preliminary Not For Construction

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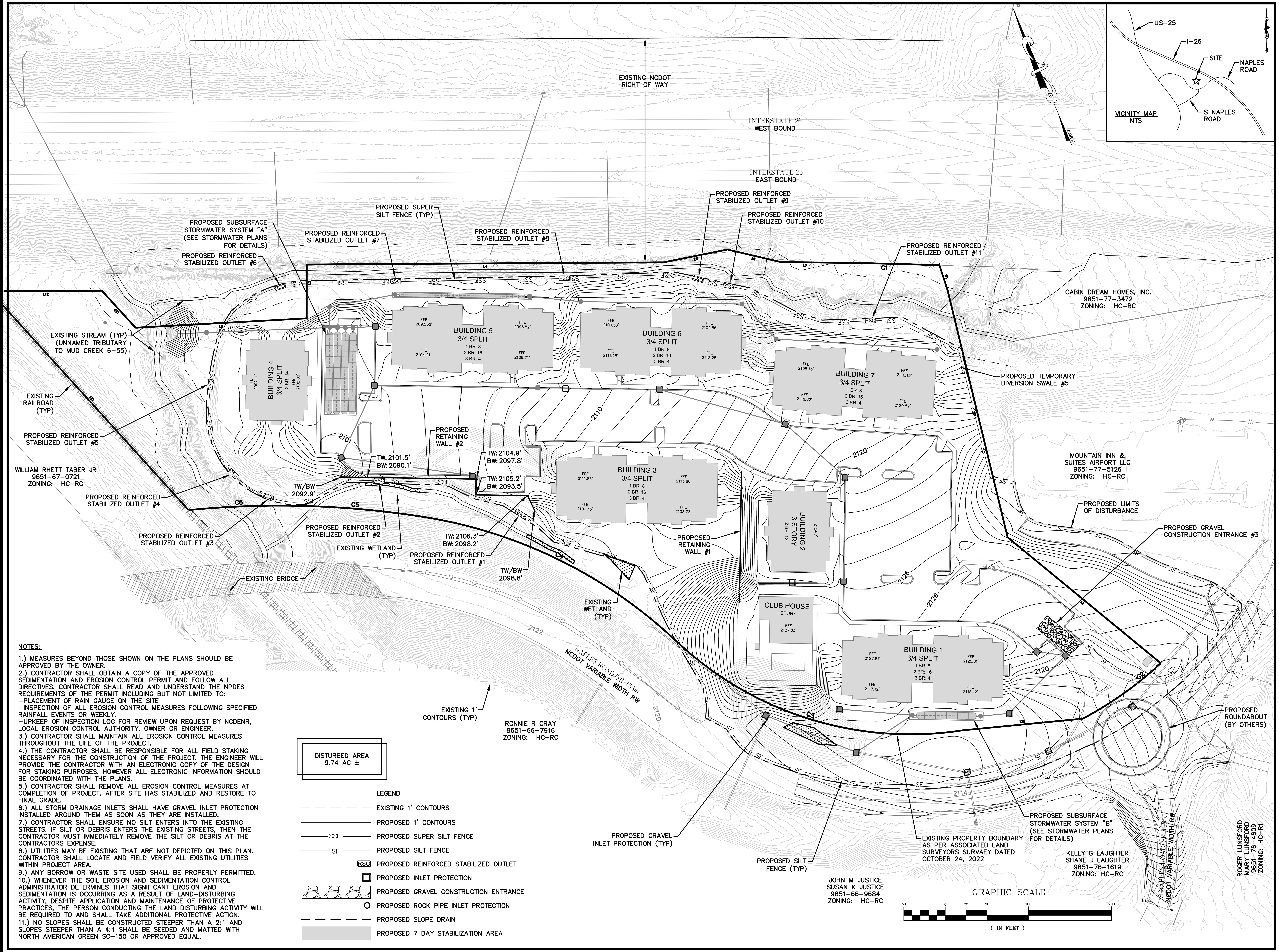
811 Know what's below. Call before you dig.

PROJECT NUMBER: 23150
DATE: 6-10-25

INTERMEDIATE GRADING AND EROSION CONTROL PLAN

C-301

SCALE: 1"=50'



NOTES:

1.) MEASURES BEYOND THOSE SHOWN ON THE PLANS SHOULD BE APPROVED BY THE OWNER.

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-UPKEEP OF INSPECTION LOG FOR REVIEW UPON REQUEST BY NCDENR, LOCAL EROSION CONTROL AUTHORITY, OWNER OR ENGINEER.

3.) CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES THROUGHOUT THE LIFE OF THE PROJECT.

4.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIELD STAKING NECESSARY FOR THE CONSTRUCTION OF THE PROJECT. THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH AN ELECTRONIC COPY OF THE DESIGN FOR STAKING PURPOSES. HOWEVER ALL ELECTRONIC INFORMATION SHOULD BE COORDINATED WITH THE PLANS.

5.) CONTRACTOR SHALL REMOVE ALL EROSION CONTROL MEASURES AT COMPLETION OF PROJECT, AFTER SITE HAS STABILIZED AND RESTORE TO FINAL GRADE.

6.) ALL STORM DRAINAGE INLETS SHALL HAVE GRAVEL INLET PROTECTION INSTALLED AROUND THEM AS SOON AS THEY ARE INSTALLED.

7.) CONTRACTOR SHALL ENSURE NO SILT ENTERS INTO THE EXISTING STREETS. IF SILT OR DEBRIS ENTERS THE EXISTING STREETS, THEN THE CONTRACTOR MUST IMMEDIATELY REMOVE THE SILT OR DEBRIS AT THE CONTRACTORS EXPENSE.

8.) UTILITIES MAY BE EXISTING THAT ARE NOT DEPICTED ON THIS PLAN. CONTRACTOR SHALL LOCATE AND FIELD VERIFY ALL EXISTING UTILITIES WITHIN PROJECT AREA.

9.) ANY BORROW OR WASTE SITE USED SHALL BE PROPERLY PERMITTED.

10.) WHENEVER THE SOIL EROSION AND SEDIMENTATION CONTROL ADMINISTRATOR DETERMINES THAT SIGNIFICANT EROSION AND SEDIMENTATION IS OCCURRING AS A RESULT OF LAND-DISTURBING ACTIVITY, DESPITE APPLICATION AND MAINTENANCE OF PROTECTIVE PRACTICES, THE PERSON CONDUCTING THE LAND DISTURBING ACTIVITY WILL BE REQUIRED TO AND SHALL TAKE ADDITIONAL PROTECTIVE ACTION.

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DISTURBED AREA
9.74 AC ±

LEGEND

Symbol	Description
	EXISTING 1' CONTOURS
	PROPOSED 1' CONTOURS
SSF	PROPOSED SUPER SILT FENCE
SF	PROPOSED SILT FENCE
RSO	PROPOSED REINFORCED STABILIZED OUTLET
	PROPOSED INLET PROTECTION
	PROPOSED GRAVEL CONSTRUCTION ENTRANCE
	PROPOSED ROCK PIPE INLET PROTECTION
	PROPOSED SLOPE DRAIN
	PROPOSED 7 DAY STABILIZATION AREA

WGLA Engineering

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

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REVISIONS

DATE	DESCRIPTION

811
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PROJECT NUMBER: 23150
DATE: 6-10-25

FINAL GRADING AND EROSION CONTROL PLAN

C-302

SCALE: 1"=50'

MAXIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I		CLASS II		CLASS III
	COMPACTED	DUMPED	95%	90%	95%
4" (100mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	18 (5.5m)
6" (150mm)	44 (13.4m)	20 (6.1m)	29 (8.8m)	20 (6.1m)	21 (6.4m)
8" (200mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
10" (250mm)	38 (11.6m)	18 (5.5m)	26 (7.9m)	18 (5.5m)	18 (5.5m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
15" (375mm)	38 (11.6m)	17 (5.2m)	25 (7.6m)	17 (5.2m)	18 (5.5m)
18" (450mm)	36 (11.0m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	17 (5.2m)
24" (600mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
30" (750mm)	28 (8.5m)	13 (4.0m)	20 (6.1m)	13 (4.0m)	14 (4.3m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	13 (4.0m)	13 (4.0m)
42" (1050mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
48" (1200mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	25 (7.6m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

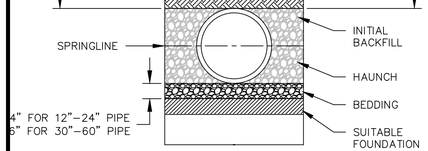
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING TO THE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

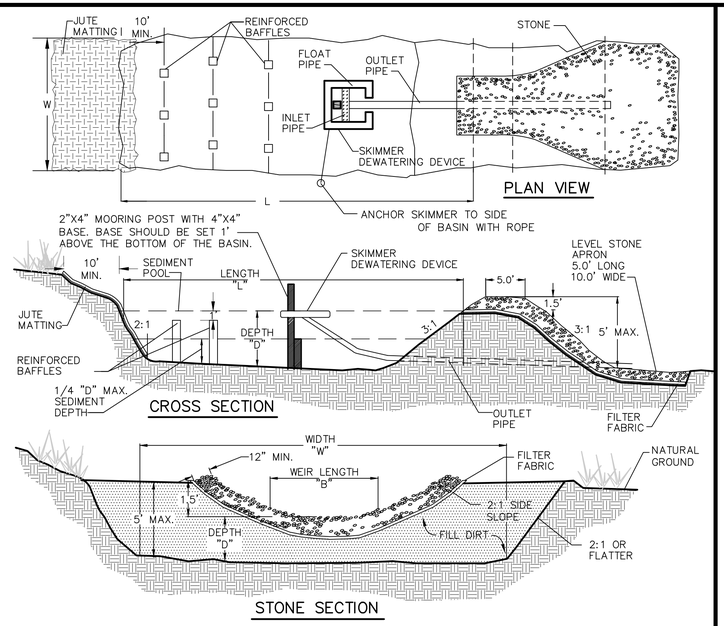


RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

HDPE TRENCH DETAIL

12-20-2022 NOT TO SCALE 3.08



CONSTRUCTION SPECIFICATIONS

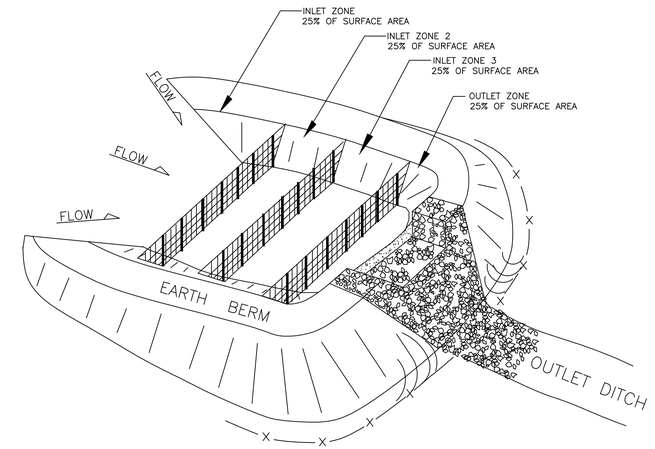
1. CLEAR GRUB & STRIP THE AREA UNDER THE EMBANKMENT OF ALL VEGETATION AND ROOT MAT.
2. CLEAR BASIN AREA.
3. USE FILL MATERIAL FREE OF ROOTS, WOODY VEGETATION AND ORGANIC MATTER. PLACE FILL IN LIFTS NOT TO EXCEED 9" AND MACHINE COMPACT.
4. CONSTRUCT BERM AND STONE SPILLWAY TO DIMENSIONS, SLOPES AND ELEVATIONS SHOWN.
5. ENSURE THAT THE SPILLWAY CREST IS LEVEL AT LEAST 1.5' BELOW THE TOP OF THE BERM AT ALL POINTS.
6. STONE USED FOR SPILLWAY SECTION & LEVEL STONE APRON CLASS "B" EROSION CONTROL STONE.
7. STONE USED ON INSIDE SPILLWAY FACE TO CONTROL DRAINAGE – D.O.T. #57 WASHED STONE.
8. EXTEND STONE OUTLET SECTION ON ZERO GRADE WITH TOP ELEVATION OF STONE LEVEL WITH BOTTOM OF DRAIN.
9. ENSURE THAT THE TOP OF THE DAM AT ALL POINTS IS 0.5' ABOVE NATURAL SURROUNDING GROUND.
10. STABILIZE THE EMBANKMENT AND ALL DISTURBED AREA ABOVE THE SEDIMENT POOL AS SHOWN IN THE PLANS
11. ALL SEDIMENT BASIN EMBANKMENTS SHALL BE PROVIDED WITH ADEQUATE GROUND COVER IMMEDIATELY UPON CONSTRUCTION.
12. AFTER THE DRAINAGE AREA HAS BEEN STABILIZED, DEWATER THE BASIN. FILL THE BASIN WITH STOCKPILED SOIL AND BRING TO FINISHED GRADE IN COMPACTED LIFTS. SMOOTH THE BASIN SITE TO BLEND WITH SURROUNDING AREA TO ENSURE BASIN SITE DOES NOT POND WATER AND IMMEDIATELY STABILIZED

NOTES: 1.) ALL VALUES FOR "L", "W", "D" & "B" ARE IN FEET.
2.) FLOAT PIPE SIZE IS EQUAL TO INLET PIPE SIZE.

BASIN #	"L"	"W"	"D"	"B"	SURFACE AREA REQUIRED (S.F.)	SURFACE AREA PROVIDED (S.F.)	BERM ELEVATION	SPILLWAY ELEVATION	BASIN BOTTOM ELEVATION	SKIMMER INLET ORIFICE SIZE (ø)	SKIMMER PIPE SIZE (ø)
1	80	40	2	14	3184	3200	2097	2096	2094	1.40	1.50"
2	187	35	2	23	4964	6545	2096	2095	2093	2.00	1.80
3	159	56	6	39	8694	8904	2113	2112	2103	1.50	1.50

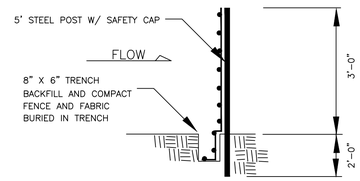
SKIMMER SEDIMENT BASIN

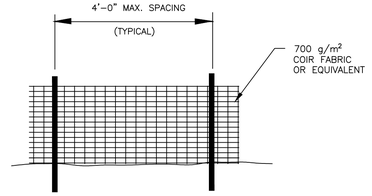
12-20-2022 NOT TO SCALE 3.02



GENERAL NOTES:

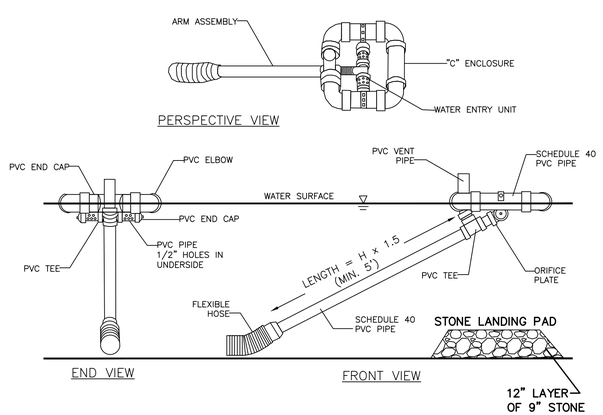
1. DRIVE 5' STEEL POST AT LEAST 24" INTO SOLID GROUND.
2. USE STAPLES 1' APART HORIZONTALLY AND VERTICALLY TO ATTACH THE FILTER FABRIC TO THE WIRE FENCE.
3. PROVIDE 4 TREATMENT ZONES, 25% OF SURFACE AREA IN EACH ZONE (3 BAFFLES). FOR BASINS LESS THAN 40 FEET LONG, PROVIDE 3 TREATMENT ZONES, 33% OF SURFACE AREA EACH ZONE (2 BAFFLES)
4. THE FLOOR OF THE BASIN IN THE OUTLET ZONE AND BERMS SHOULD BE SEEDED IMMEDIATELY AFTER THE BASIN IS CONSTRUCTED.
5. REFER TO NCESCPDM SECTION #6.65 FOR ADDITIONAL SPECIFICATIONS.





SEDIMENT BASIN BAFFLE INSTALLATION

12-20-2022 NOT TO SCALE 3.03



SKIMMER

12-20-22 NOT TO SCALE 3.04

BASIN MAINTENANCE:
1. INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CALL. MAKE SURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

2. REPAIR THE BAFFLES IF THEY ARE DAMAGED (PER POROUS BAFFLE MAINTENANCE). RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.

3. IF SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USUALLY JERKING ON THE ROPE WILL MAKE THE SKIMMER BOB UP AND DOWN AND DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS.

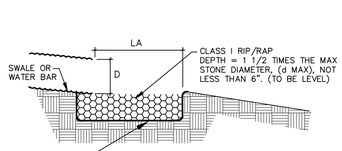
4. CHECK THE FABRIC LINED SPILLWAY (IF APPLICABLE) FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER, RISER AND POOL AREA.

5. FREEZING WEATHER CAN RESULT IN ICE FORMING IN THE BASIN. SOME SPECIAL PRECAUTIONS SHOULD BE TAKEN IN THE WINTER TO PREVENT THE SKIMMER FROM PLUGGING WITH ICE.

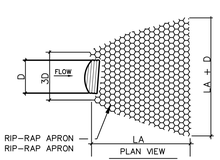
POROUS BAFFLE MAINTENANCE:
1. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
4. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

SEDIMENT BASIN MAINTENANCE

3-18-24 NOT TO SCALE



NUMBER	D	LA	d50 SIZE
21B	24"	15'	6"



NOTES
1) d50 = MEDIAN STONE SIZE dMAX = 1.5 X d50
2) OUTLET PROTECTION TO BE INSTALLED LEVEL BOTH LONGITUDINALLY (LA) AND HORIZONTALLY

MAINTENANCE:
INSPECT RIPRAP OUTLET STRUCTURE 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.

RIP RAP OUTLET PROTECTION

9-12-23 NOT TO SCALE 3.06

WGLA Engineering

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

Preliminary Not For Construction

REVISIONS

DATE	DESCRIPTION

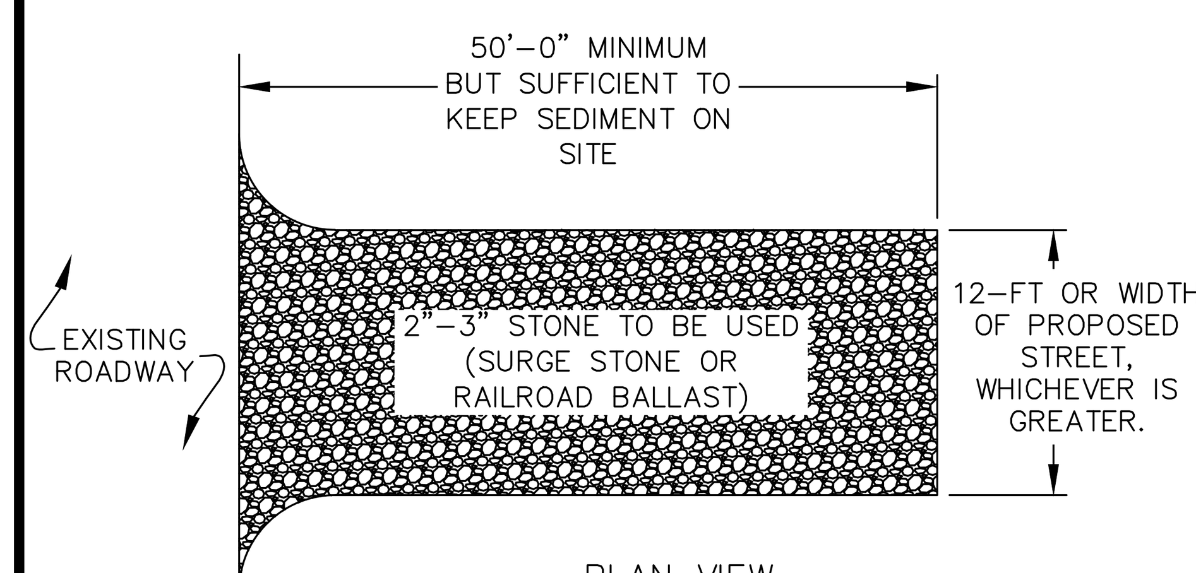
Know what's below. Call before you dig.

PROJECT NUMBER: 23150
DATE: 6-10-25

GRADING AND EROSION CONTROL DETAILS

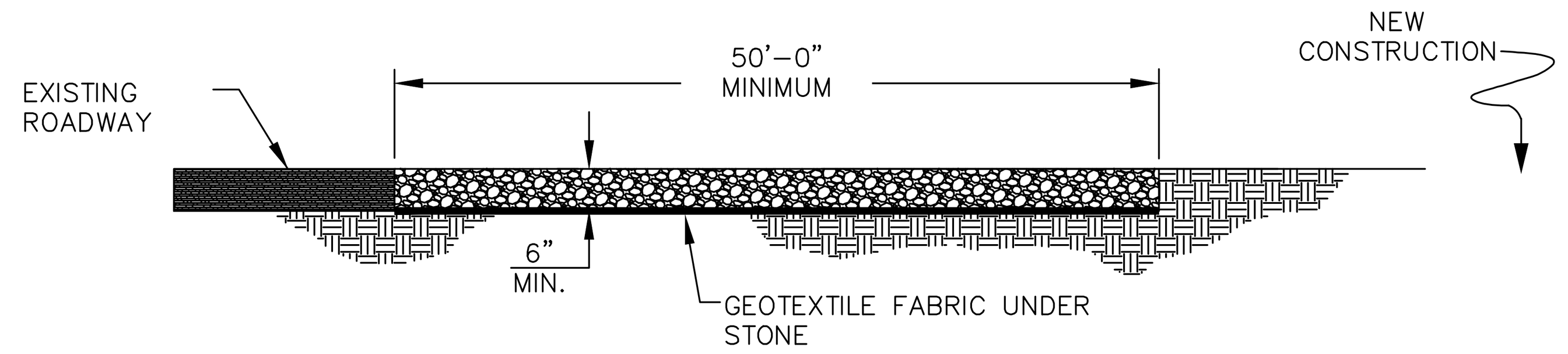
C-303

SCALE: AS NOTED



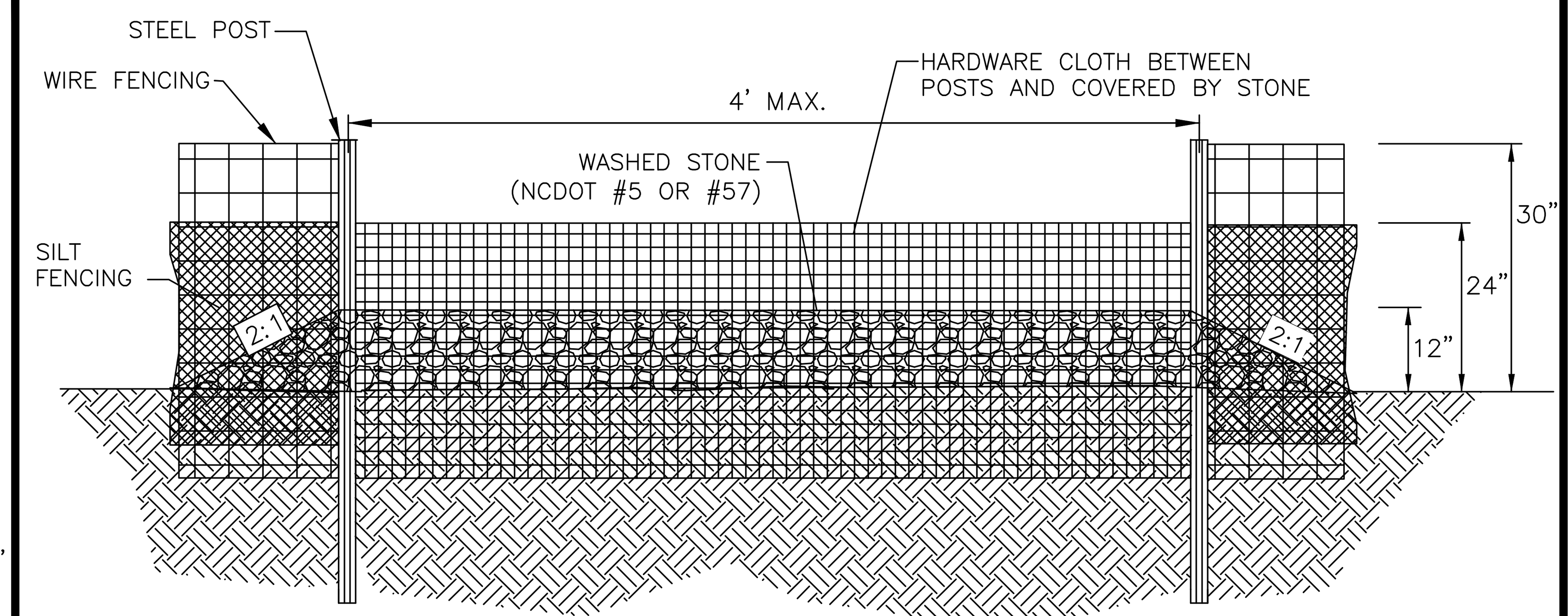
NOTES:
1) PUT SILT FENCE OR TREE PROTECTION FENCE UP TO ENSURE CONSTRUCTION ENTRANCE IS USED.
2) IF CONSTRUCTION ON THE SITES ARE SUCH THAT THE MUD IS NOT REMOVED BY THE VEHICLE TRAVELING OVER THE STONE, THEN THE TIRES OF THE VEHICLES MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD.
4) WHEN CONSTRUCTION ENTRANCE CROSSES A SIDEWALK **ADA** REQUIREMENTS REMAIN INTACT.

MAINTENANCE:
MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2 INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.



GRAVEL CONSTRUCTION ENTRANCE

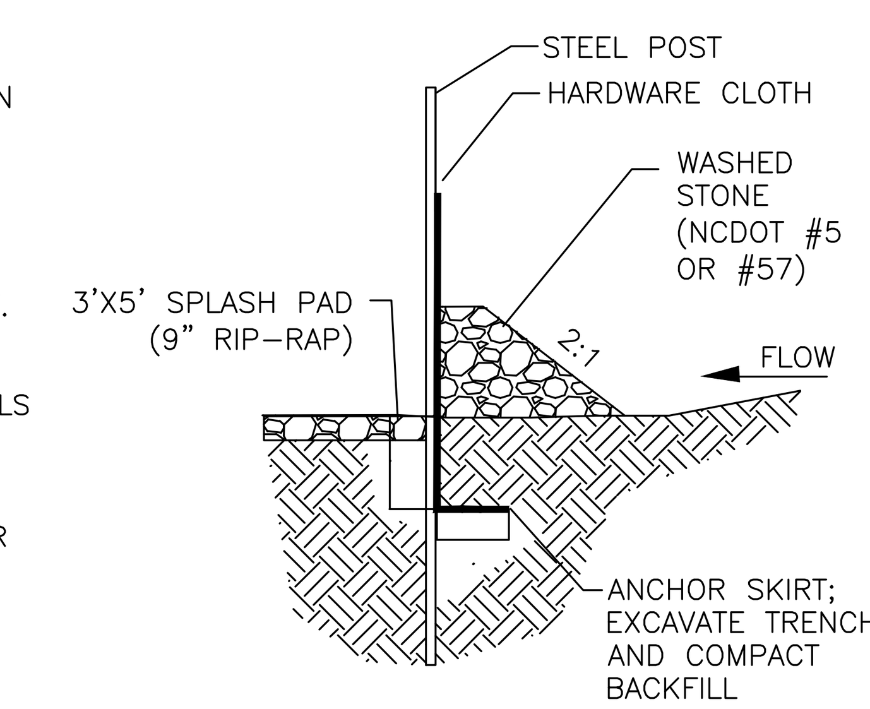
12-20-2022 NOT TO SCALE 3.05



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 DEPOSIT 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.

GENERAL NOTES:

1. SEDIMENT FILTER OUTLET HARDWARE CLOTH SHALL BE 24" HIGH AND STONE SHALL BE A MINIMUM OF 12" HIGH.
2. HARDWARE CLOTH SHALL BE ANCHORED TO THE STEEL POSTS SECURELY USING APPROPRIATE ANCHORS. HARDWARE CLOTH SHALL BE KEYED IN A MINIMUM OF 12 INCHES IN LENGTH AND BACKFILLED PROPERLY AS SHOWN IN ABOVE DETAIL. HARDWARE CLOTH TO BE SAME AS STD. #30.09 (19 GAUGE, 1/4" SPACING).
3. POSTS SHALL BE NO MORE THAN 4 FEET APART.
4. SITE OUTLETS AT LOW AREAS IN CONJUNCTION WITH AND ALONG LONG RUNS OF SILT FENCE AT INTERVALS NO CLOSER THAN 100 FEET. DRAINAGE AREA TO OUTLETS SHALL NOT EXCEED 1/4 ACRE.
5. EQUIVALENT ALTERNATIVES MAY BE USED WITH PRIOR CITY APPROVAL.

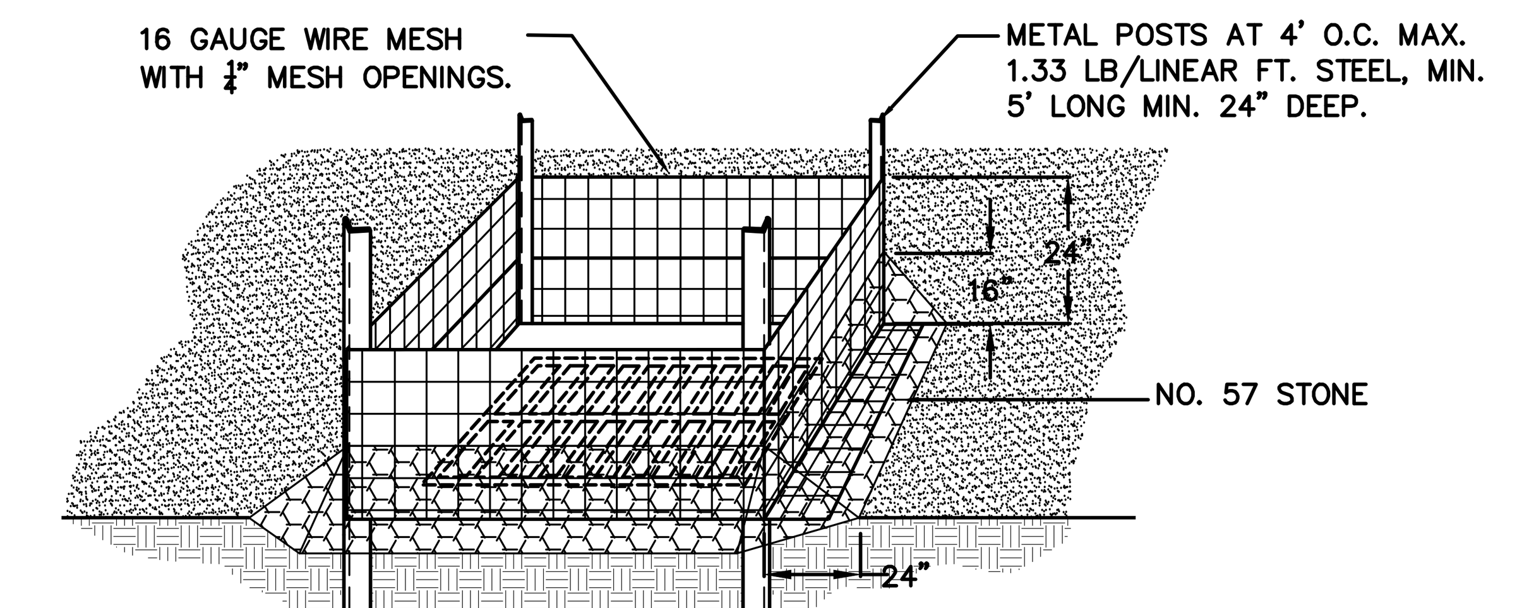


REINFORCED STABILIZED OUTLET

5-7-2025 NOT TO SCALE 3.09

NOTES:
1. EXCAVATE AROUND INLET MIN. 1', MAX. 2' BELOW TOP OF INLET FOR SEDIMENT STORAGE.
2. INSPECT INLETS AT LEAST WEEKLY AND AFTER SIGNIFICANT (1/2 INCH OR GREATER) RAIN FALL EVENT
3. CLEAR THE MESH WIRE OF ANY DEBRIS OF OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS.
4. TAKE CARE NOT TO DAMAGE OF UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL.
5. REPLACE STONE AS NEEDED

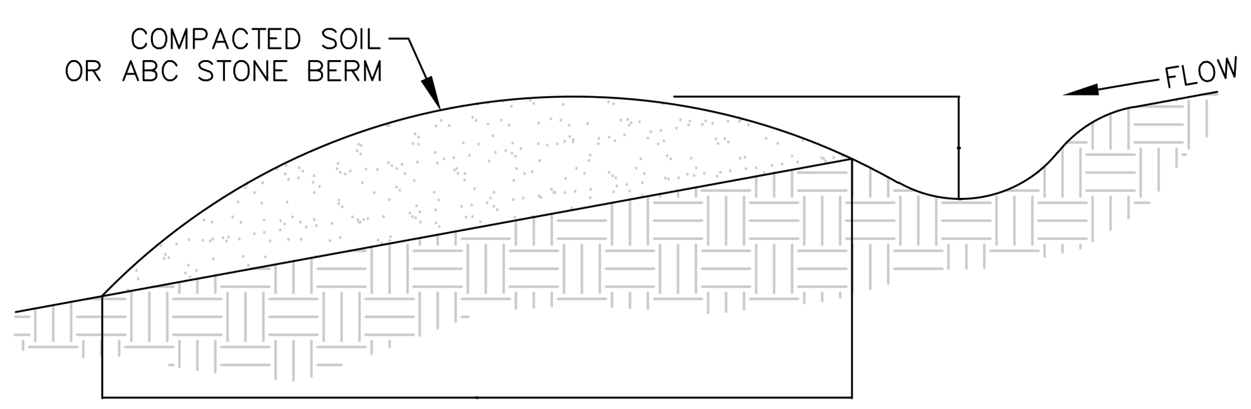
MAINTENANCE:
INSPECT THE STONE BARRIER AFTER EACH RAIN AND MAKE REPAIRS AS NEEDED.
REMOVE SEDIMENT FROM POOL AND IN FRONT OF STONE AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN. TAKE CARE NOT TO DAMAGE OR UNDERCUT STONE AND WIRE MESH DURING SEDIMENT REMOVAL.
WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SEDIMENT AND DISPOSE OF THEM PROPERLY. BRING THE DISTURBED AREA TO GRADE OF THE INLET AND SMOOTH AND COMPACT IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.



INLET PROTECTION

DROP INLET

12-20-2022 NOT TO SCALE 3.15



SLOPE (%)	SPACING (FT)
<5	125
5 TO 10	100
10 TO 20	75
20 TO 35	50
>35	25

CONSTRUCTION
1. INSTALL THE DIVERSION AS SOON AS THE RIGHT OF WAY HAS BEEN CLEARED AND GRADED.
2. DISK THE BASE FOR THE CONSTRUCTED RIDGE BEFORE PLACING FILL.
3. TRACK THE RIDGE TO COMPACT IT TO THE DESIGN CROSS SECTION.
4. LOCATE THE OUTLET ON AN UNDISTURBED AREA. ADJUST FIELD SPACING OF THE DIVERSION TO USE THE MOST STABLE OUTLET AREAS. WHEN NATURAL AREAS ARE NOT DEEMED SATISFACTORY, PROVIDE OUTLET PROTECTION.
5. IMMEDIATELY SEED AND MULCH THE PORTION OF THE DIVERSIONS NOT SUBJECT TO CONSTRUCTION TRAFFIC. STABILIZED WITH GRAVEL AREAS TO BE CROSSED BY VEHICLES.
6. PROVIDE A POSITIVE GRADE NOT TO EXCEED 2%.

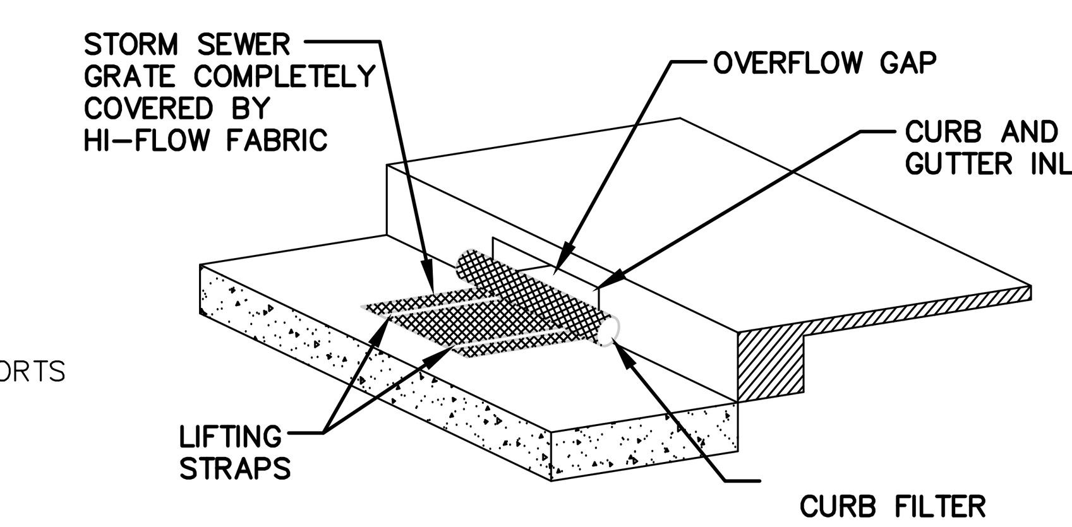
MAINTENANCE
PERIODICALLY INSPECT WATER BARS FOR WEAR AND AFTER EVERY HEAVY RAINFALL FOR EROSION DAMAGE. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA, REPAIR THE DIKE, CHECK OUTLET AREAS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN PERMANENT ROAD DRAINAGE IS ESTABLISHED AND THE AREA ABOVE THE WATER BAR IS PERMANENTLY STABILIZED, REMOVE THE DIKE, AND FILL THE CHANNEL TO BLEND THE NATURAL GROUND AND APPROPRIATELY STABILIZE THE DISTURBED AREA.

WATER BAR

4-24-2024 NOT TO SCALE 3.24

INSTALLATION:
1. PLACE THE EMPTY UNIT OVER THE GRATE AS THE GRATE STANDS ON END.
2. TUCK THE ENCLOSURE FLAP INSIDE TO COMPLETELY ENCLOSE THE GRATE.
3. HOLDING THE LIFTING DEVICES, BEING CAREFUL NOT TO DAMAGE THE SEWN FABRIC UNIT, INSERT THE GRATE INTO ITS FRAME, STREET SIDE FIRST, THEN LOWER THE BACK EDGE WITH CYLINDRICAL TUBE INTO PLACE. THE CYLINDRICAL TUBE SHOULD BE PARTIALLY BLOCKING THE CURB HOOD OPENING WHEN INSTALLED PROPERLY.

MAINTENANCE:
1. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE SURFACE AND VICINITY OF THE UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER/INSPECTOR. DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.

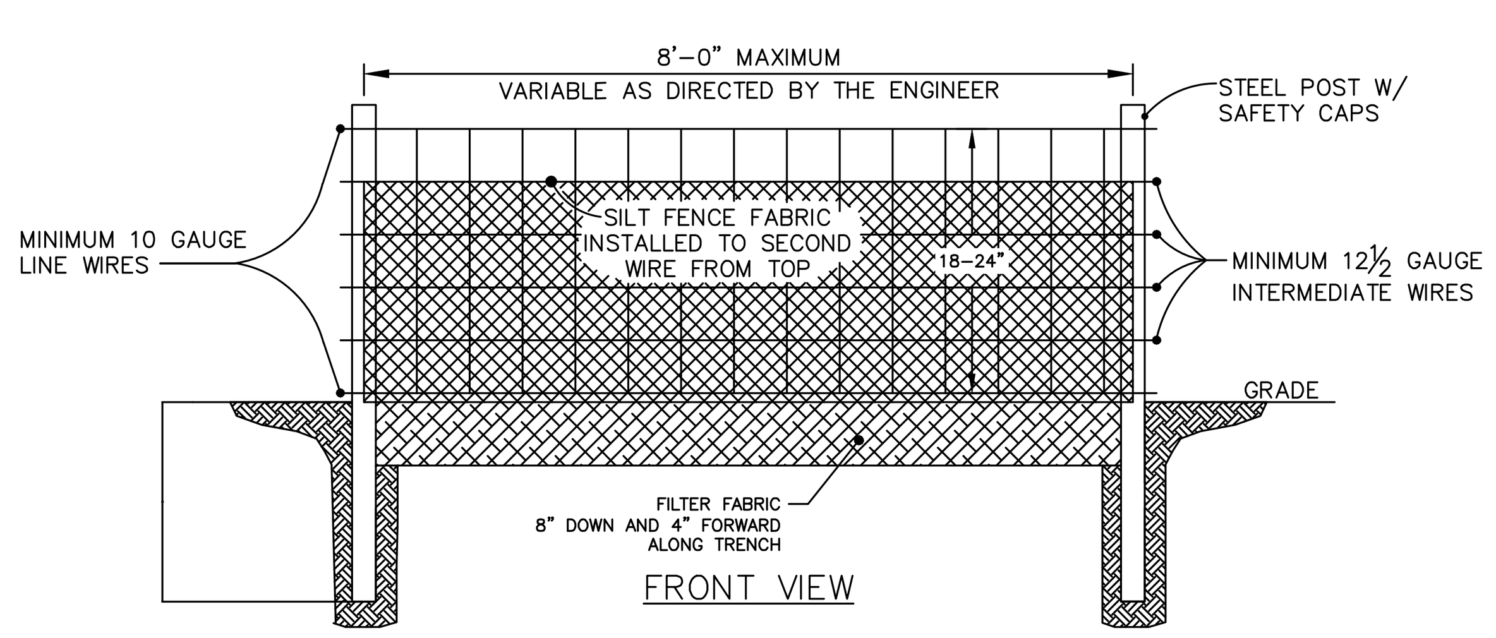


NOTE:
SILT SAC SHALL HAVE OVERFLOW BYPASS PORTS

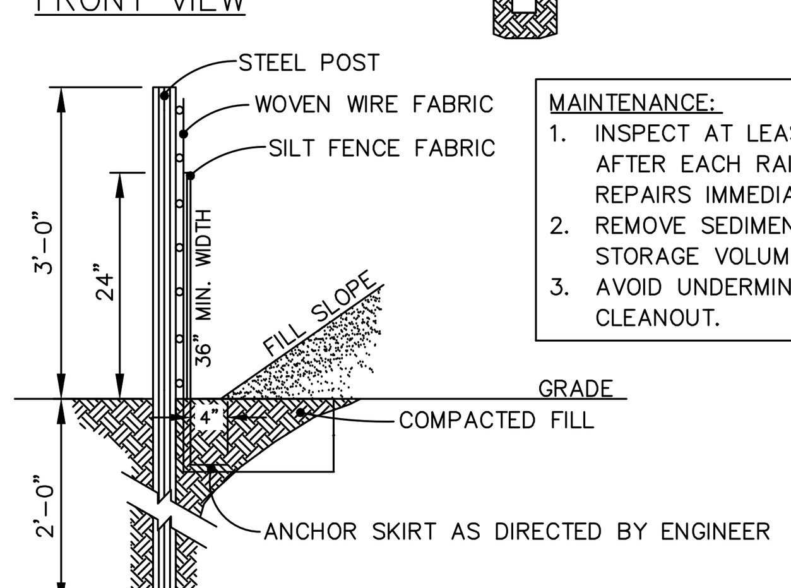
INLET PROTECTION

CURB INLET

8-13-24 NOT TO SCALE 3.14



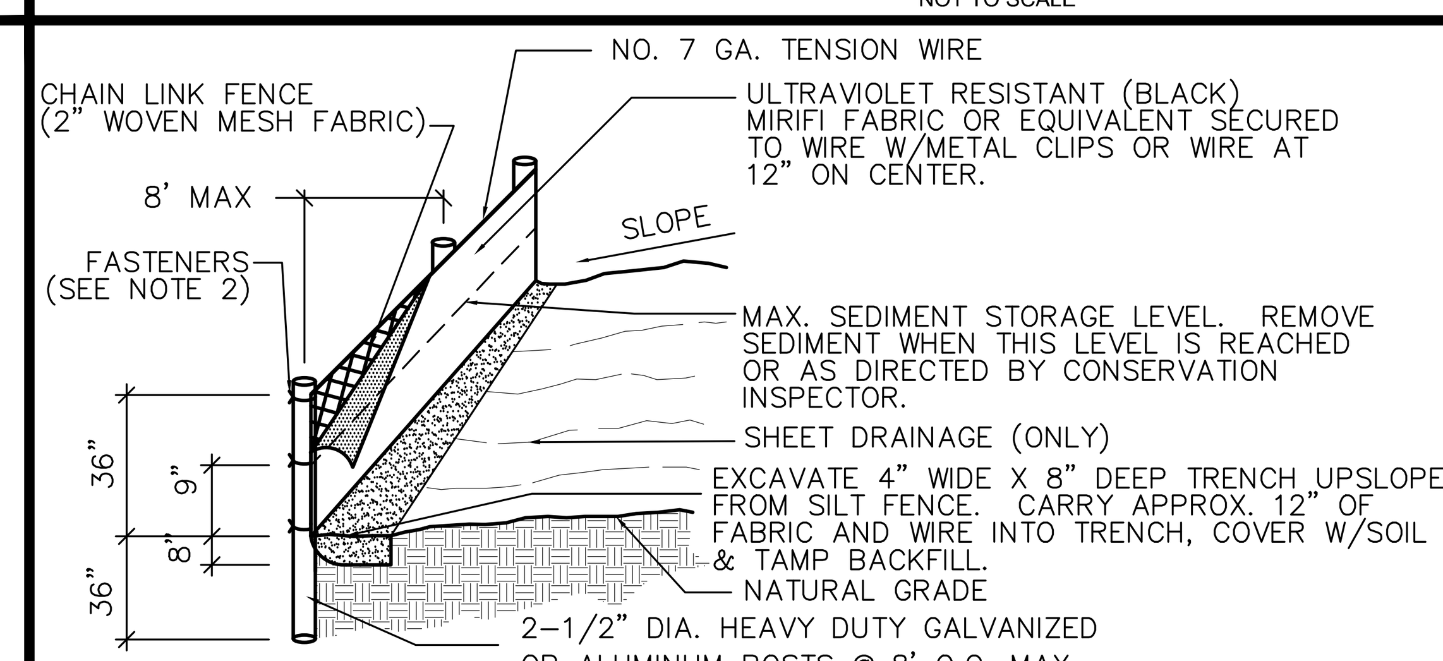
NOTES:
1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE PER 100 ft. OF FENCE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. OVERLAP 12 INCHES WHEN SPLICING FABRIC.



MAINTENANCE:
1. INSPECT AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE REQUIRED REPAIRS IMMEDIATELY.
2. REMOVE SEDIMENT TO PROVIDE ADEQUATE STORAGE VOLUME FOR NEXT RAIN.
3. AVOID UNDERMINING THE FENCE DURING CLEANOUT.

SILT FENCE

7-9-2024 NOT TO SCALE 3.11

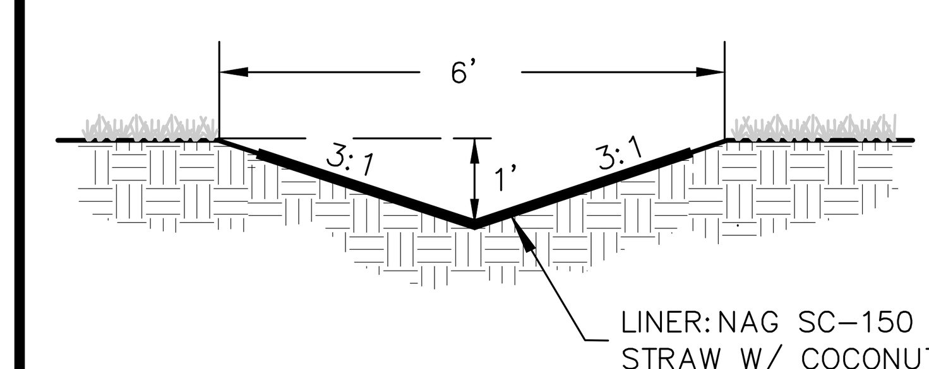


NOTES:
1) SILT FENCES SHOULD NOT BE USED IN AREAS OF CONCENTRATED FLOW (CREEKS, SWALES, ETC.)
2) FASTENERS USED TO FASTEN CHAIN LINK FENCE TO POSTS SHALL BE SPACED AT 14" MAX, USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL PRE-FORMED CLIPS. FASTENERS USED TO FASTEN CHAIN LINK TO TENSION WIRE TO BE SPACED AT 60" MAX, USE NO. 13.5 GA. GALVANIZED STEEL WIRE. FASTENERS USED TO FASTEN FABRIC TO CHAIN LINK TO BE SPACED AT 24" O.C. USE 13.5 GA. GALVANIZED STEEL WIRE.

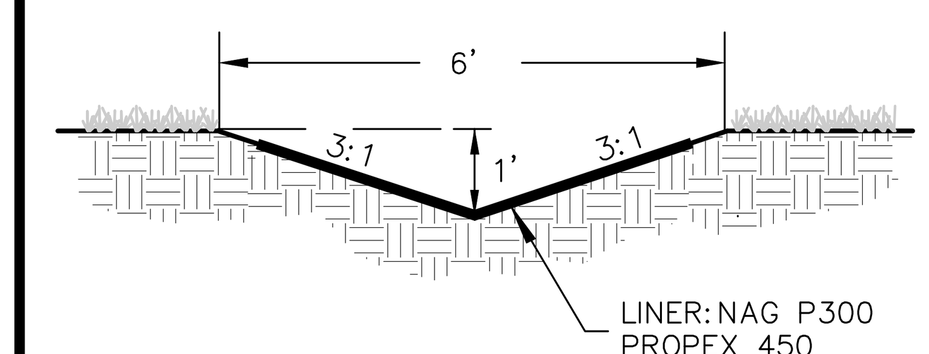
CONSTRUCTION SPECIFICATIONS
1. CONSTRUCT THE SEDIMENT BARRIER OF STANDARD OR EXTRA STRENGTH SYNTHETIC FILTER FABRIC.
2. ENSURE THAT THE HEIGHT OF THE SEDIMENT FENCE DOES NOT EXCEED 24 INCHES ABOVE THE GROUND SURFACE.
3. CONSTRUCT THE FILTER FABRIC FROM A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS. WHEN JOINTS ARE NECESSARY, SECURELY FASTEN THE FILTER CLOTH ONLY AT A SUPPORT POST WITH 4 FEET MINIMUM OVERLAP TO THE NEXT POST.
4. SUPPORT STANDARD STRENGTH FILTER FABRIC BY WIRE MESH FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS. EXTEND THE WIRE MESH SUPPORT TO THE BOTTOM OF THE TRENCH. FASTEN THE WIRE REINFORCEMENT, THEN FABRIC ON THE UPSLOPE SIDE OF THE FENCE POST. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUNDS TENSILE STRENGTH.
5. WHEN A WIRE MESH SUPPORT FENCE IS USED, SPACE POSTS A MAXIMUM OF 8 FEET APART. SUPPORT POSTS SHOULD BE DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
6. EXTRA STRENGTH FILTER FABRIC WITH 6 FEET POST SPACING DOES NOT REQUIRE WIRE MESH SUPPORT FENCE. SECURELY FASTEN THE FILTER FABRIC DIRECTLY TO POSTS. WIRE OR PLASTIC ZIP TIES SHOULD HAVE MINIMUM 50 POUND TENSILE STRENGTH.
7. EXCAVATE A TRENCH APPROXIMATELY 4 INCHES WIDE AND 8 INCHES DEEP ALONG THE PROPOSED LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
8. PLACE 12 INCHES OF THE FABRIC ALONG THE BOTTOM AND SIDE OF THE TRENCH.
9. BACKFILL THE TRENCH WITH SOIL PLACED OVER THE FILTER FABRIC AND COMPACT. THOROUGH COMPACTION OF THE BACKFILL IS CRITICAL TO SILT FENCE PERFORMANCE.
10. DO NOT ATTACH FILTER FABRIC TO EXISTING TREES.

SUPER SILT FENCE

12-20-2022 NOT TO SCALE 3.12



DIVERSION SWALE # 1, 2, 3 & 4



DIVERSION SWALE # 5

TEMPORARY DIVERSION MAINTENANCE (PER NCDENR SPECIFICATIONS)
INSPECT TEMPORARY DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.

DIVERSION SWALES

TEMPORARY & PERMANENT

12-20-2022 NOT TO SCALE 3.20

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

Preliminary
Not For
Construction

REVISIONS

DATE	DESCRIPTION

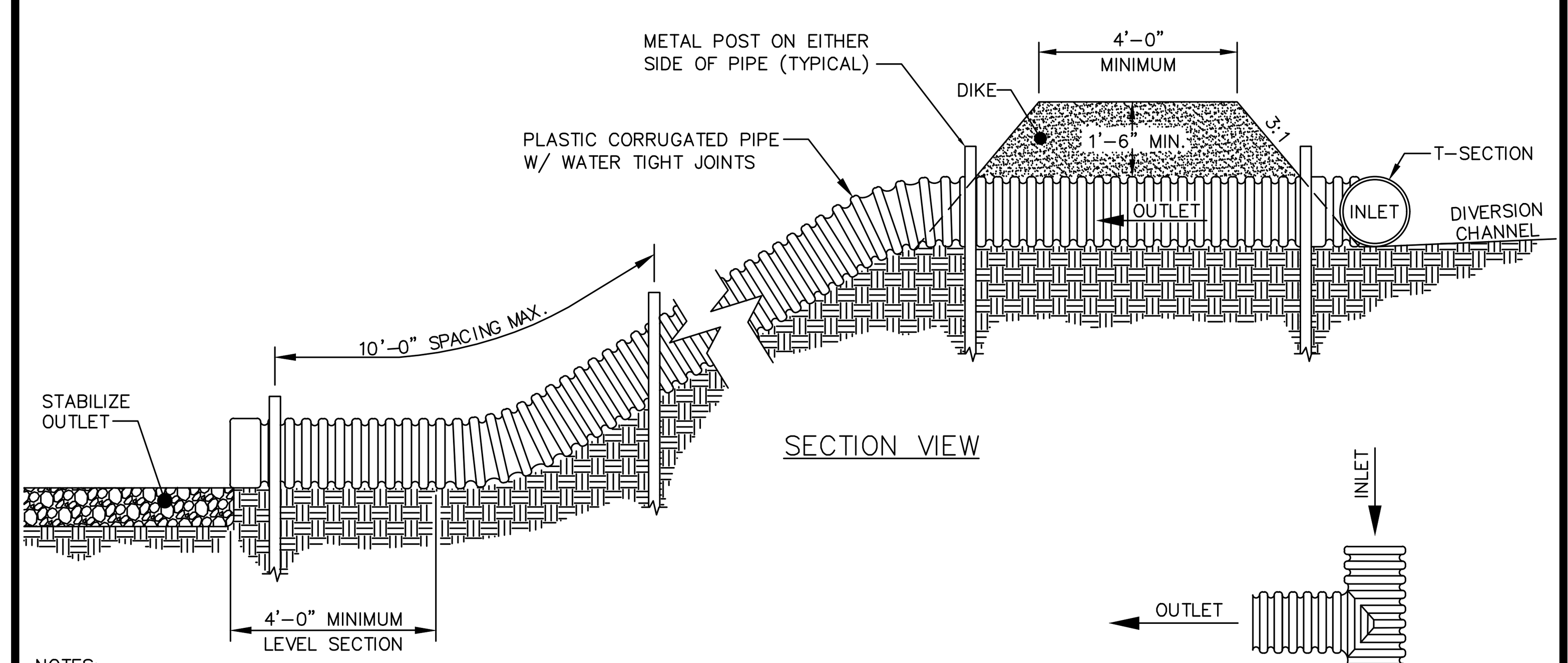
Know what's **below.**
Call before you dig.

PROJECT NUMBER: 23150
DATE: 6-10-25

GRADING AND EROSION CONTROL DETAILS

C-304

SCALE: AS NOTED



NOTES:

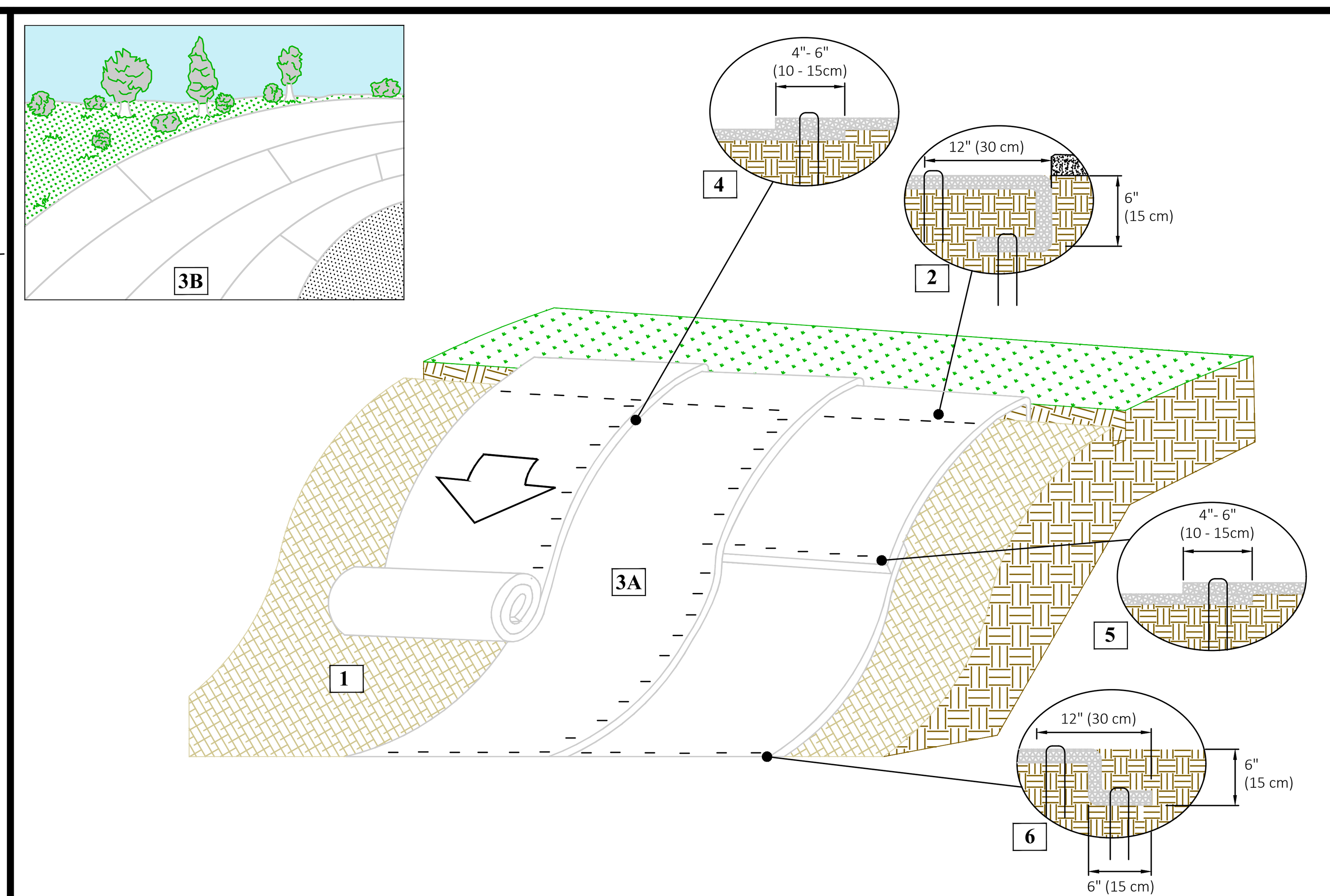
1. TEMPORARY DIVERSION: GENERALLY, USE AN EARTHEN DIVERSION WITH A DIKE RIDGE TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE RIDGE OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FEET AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING RIDGE ON EITHER SIDE. THE LOWEST POINT OF THE DIVERSION RIDGE SHOULD BE A MINIMUM OF 1 FOOT ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
2. OUTLET PROTECTION: PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION.
3. MINIMUM OF 10 INCH PIPE OR GREATER BASED ON AREA OF DRAINAGE.
4. EXTEND SLOPE DRAIN/INLET/OUTLET TO TOP AND BOTTOM OF THE SLOPE AS GRADING ACTIVITIES PROGRESS OR AT THE END OF EACH WORKDAY (WHICHEVER COMES FIRST).

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.

TEMPORARY SLOPE DRAIN

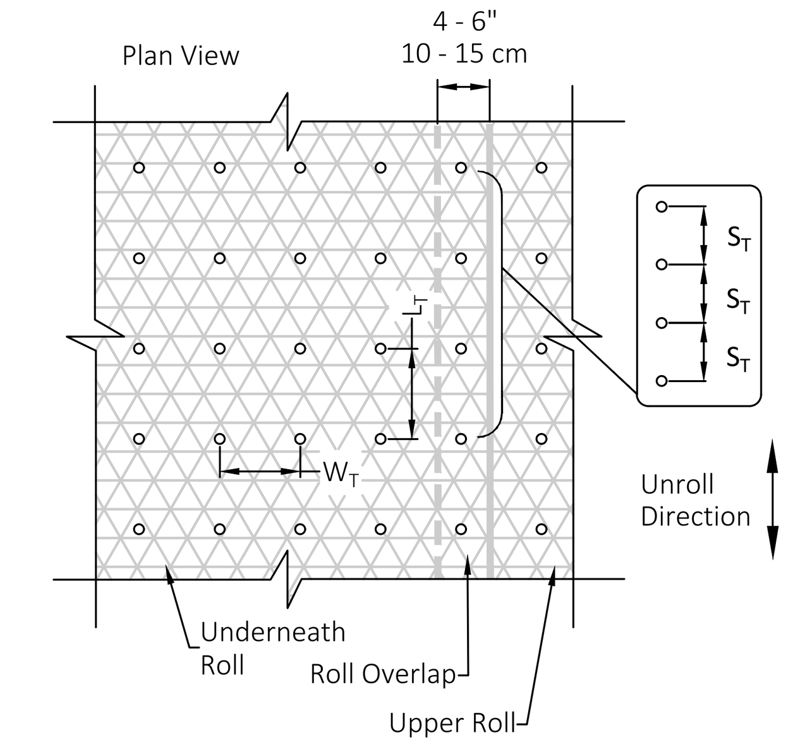
4–24–24 NOT TO SCALE 3.19



SLOPE MATTING
ON EMBANKMENT

12–20–2022 NOT TO SCALE 3.21A

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
2. Begin at the top of the slope by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench. Anchor the RECPs with a row of staples/stakes/pins spaced at S_T apart in the bottom of the trench. Backfill and compact the trench after stapling and fold the roll over downslope. Secure RECPs over compacted soil with a row of staples/stakes/pins spaced at S_T apart across the width of the RECPs.
3. Roll the RECPs (A) down or (B) horizontally across the slope. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide. RollMax RECPs and ECBs should utilize Staple Pattern C, TRMs and VMax materials should utilize Staple Pattern D.
4. The edges of parallel RECPs must be stapled with approximately 4" - 6" (10 - 15 cm) overlap.
5. Consecutive RECPs spliced down the slope must overlapped with the upstream mat atop the downstream mat (shingle style). The overlap should be 4" - 6" (10 - 15 cm).
6. At the terminal end, secure each mat across the width with a row of staples/stakes/pins spaced at S_T. If exposed to flow, foot traffic, wind uplift or other disruption, trench the terminal end in as shown in detail.
7. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may by used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMax (TRM) or TMax (HPTRM) materials.



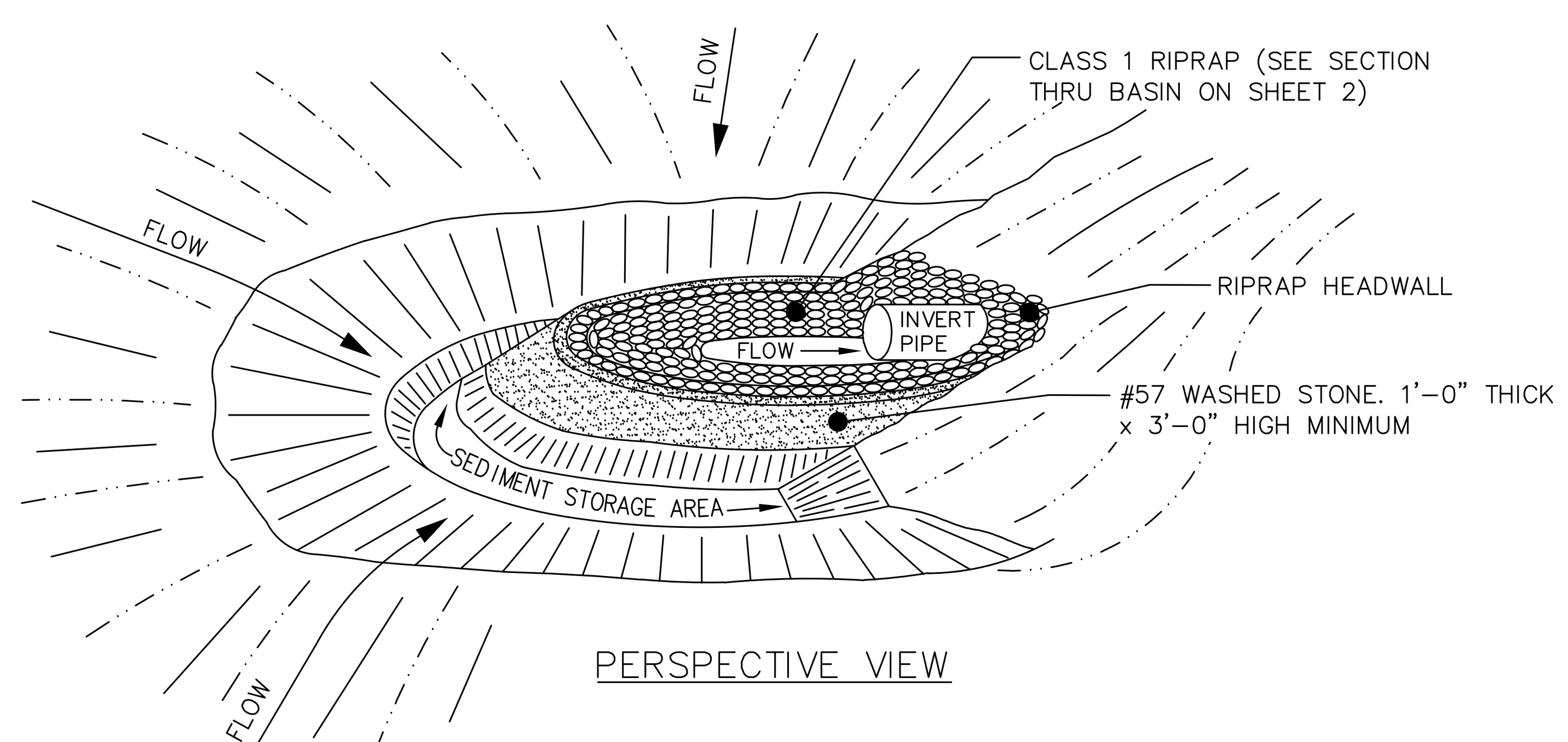
∘ Pin / Staple / Twist Pin, as appropriate for field conditions

Dimension	Staple Pattern C	Staple Pattern D
W_T	30" (75 cm)	24" (60 cm)
L_T	30" (75 cm)	20" (50 cm)
S_T	18" (45 cm)	18" (45 cm)
Nominal Frequency	1.7 / SY	3.0 / SY
Application	ECB (Degradable)	TRM (Permanent)

*Note: Staple Pattern A and B used prior to 8/2019 have been discontinued.

SLOPE MATTING
ON EMBANKMENT

12–20–2022 NOT TO SCALE 3.21B

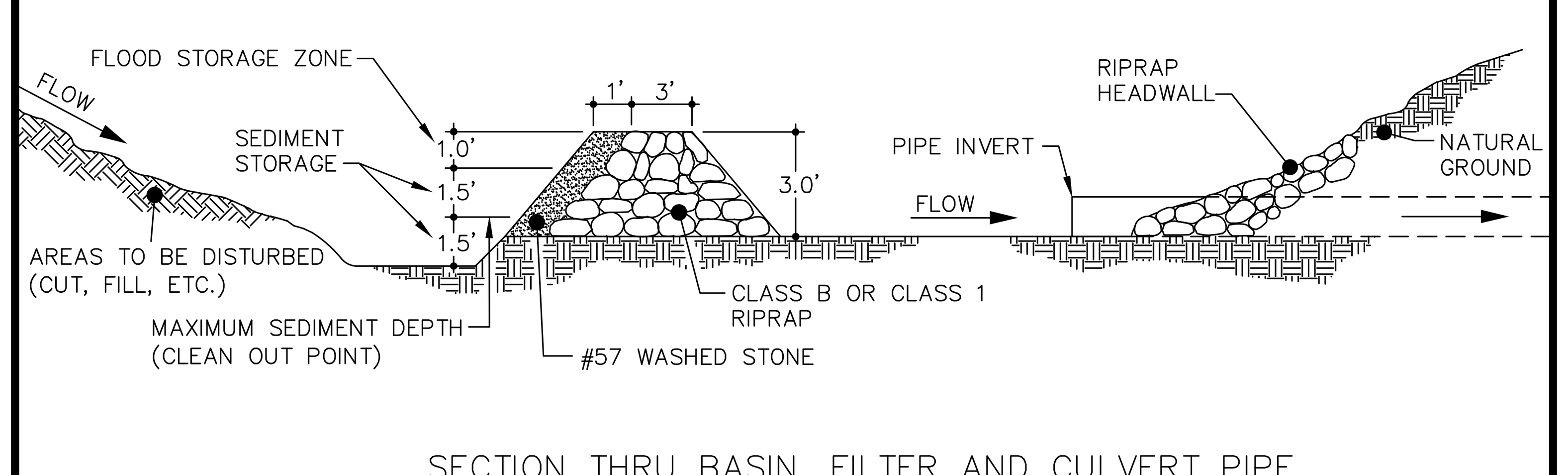


NOTES:

1. GRAVEL & RIPRAP FILTER BERM BASIN DETAIL IS DESIGNED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN FIVE ACRES OR LESS.
2. DIMENSIONS ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE NOTED.

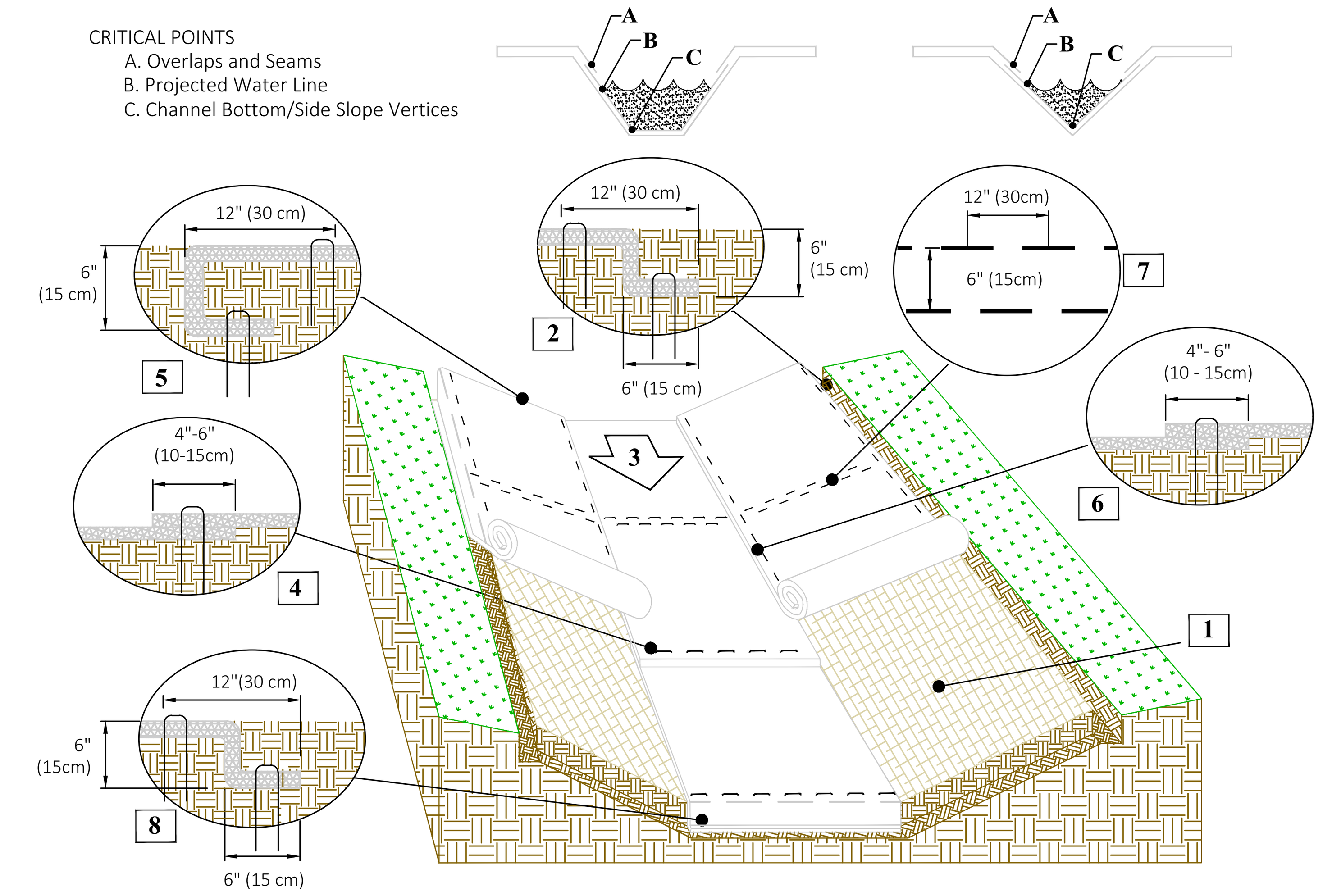
MAINTENANCE:

1. INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE–HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.
2. CHECK THE STRUCTURE FOR DAMAGE. ANY RIP–RAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.
3. AFTER ALL THE SEDIMENT–PRODUCING AREAS HAVE BEEN PERMANENTLY STABILIZED, REMOVE THE STRUCTURE AND ALL THE UNSTABLE SEDIMENT. SMOOTH THE AREA TO BLEND WITH THE ADJOINING AREAS AND PROVIDE PERMANENT GROUND COVER.



ROCK PIPE INLET PROTECTION

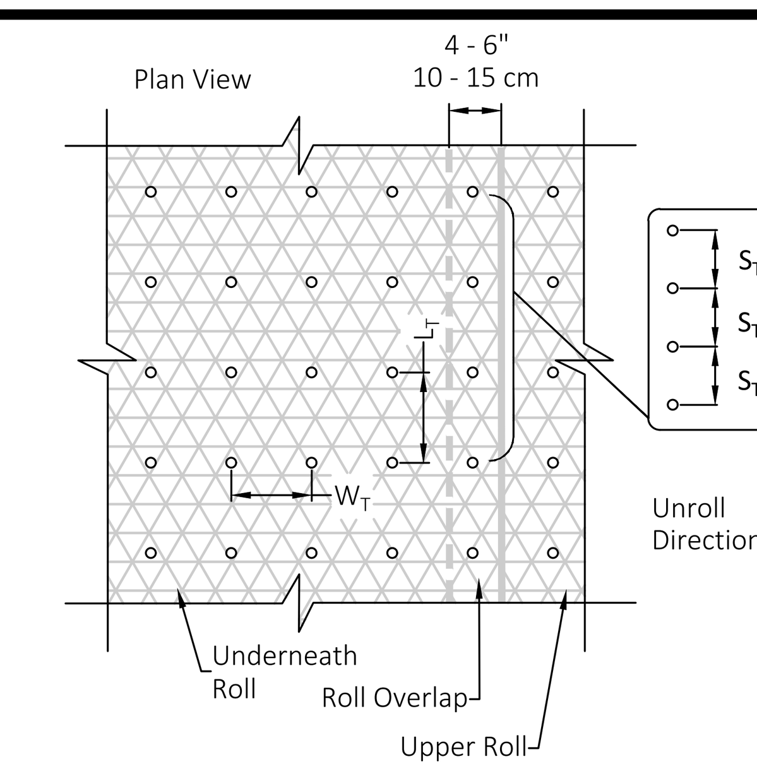
12–20–2022 NOT TO SCALE 3.17



SLOPE MATTING
IN CHANNEL

12–20–2022 NOT TO SCALE 3.22A

1. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
2. Begin at the top of the channel by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench with approximately 12" (30 cm) of RECPs extended beyond the up-slope portion of the trench. Use ShoreMax mat at the channel/culvert outlet as supplemental scour protection as needed. Anchor the RECPs with a row of staples/stakes/pins approximately 12" (30 cm) apart in the bottom of the trench. Backfill and compact the trench after stapling. Apply seed to the compacted soil and fold the remaining 12" (30 cm) portion of RECPs back over the seed and compacted soil. Secure RECPs over compacted soil with a row of staples/stakes/pins spaced approximately 12" (30 cm) apart across the width of the RECPs.
3. Roll center RECPs in direction of water flow in bottom of channel. RECPs will unroll with appropriate side against the soil surface. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide.
4. Place consecutive RECPs end-over-end (Shingle style) with a 4"- 6" (10 - 15 cm) overlap. Use a double row of staples staggered 4" apart and 4" on center to secure RECPs.
5. Full length edge of RECPs at top of side slopes must be anchored with a row of staples/stakes/pins spaced at S_T apart in a 6" (15 cm) deep X 6"(15 cm) wide trench. Backfill and compact the trench after stapling.
6. Adjacent RECPs must be overlapped approximately 4"- 6" (10 - 15 cm) and secured with staples/stakes/pins at S_T.
7. In high flow channel applications a staple check slot is recommended at 30 to 40 foot (9 -12m) intervals. Use a double row of staples staggered 6" (15 cm) apart and 12" (30 cm) on center over entire width of the channel.
8. The terminal end of the RECPs must be anchored with a row of staples/stakes/pins spaced at S_T apart in a 6" (15 cm) deep X 6" (15 cm) wide trench. Backfill and compact the trench after stapling.
9. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may by used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMax (TRM) or TMax (HPTRM) materials.

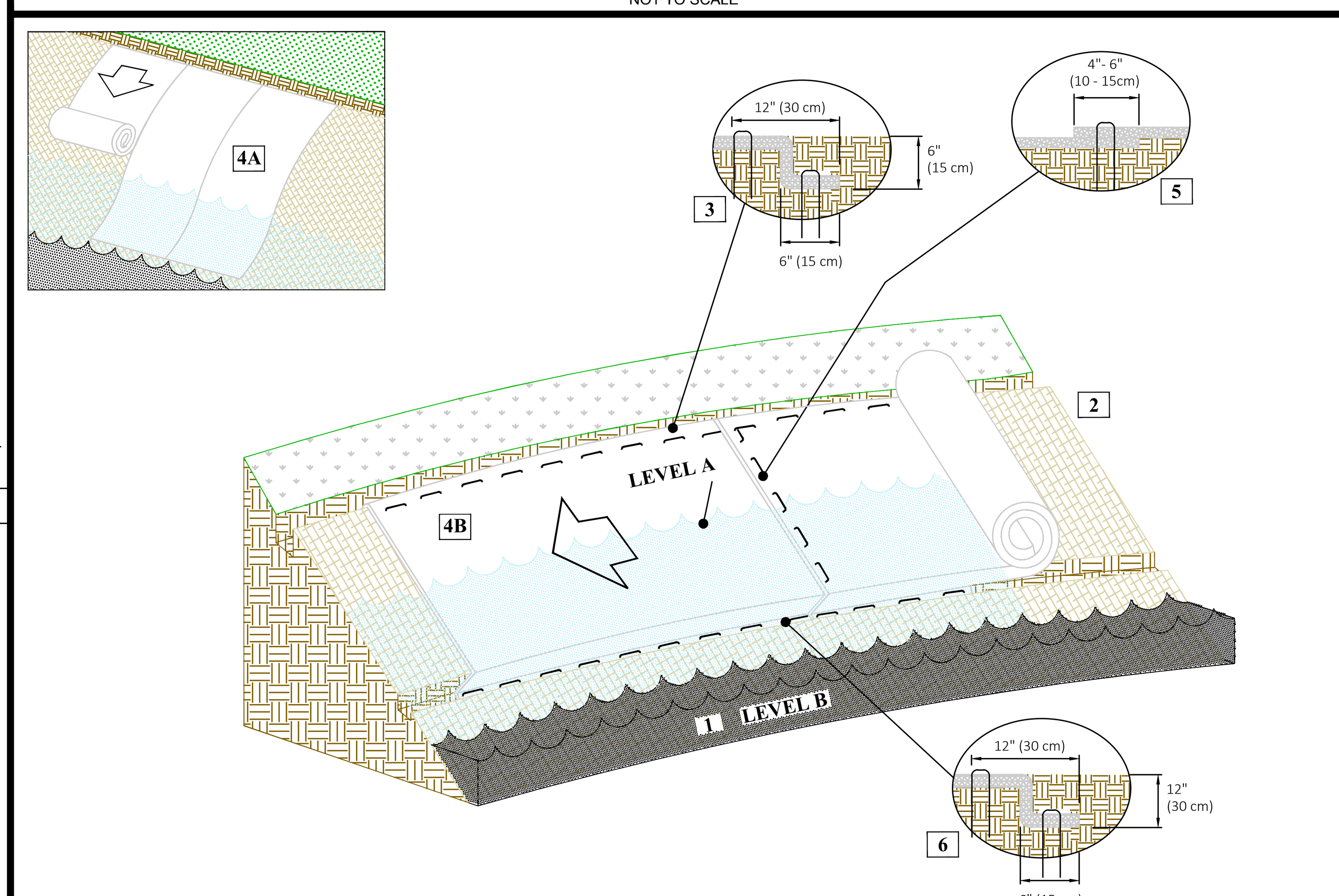


∘ Pin / Staple / Twist Pin, as appropriate for field conditions

Dimension	Staple Pattern E
W_T	20" (50 cm)
L_T	20" (50 cm)
S_T	18" (45 cm)
Nominal Frequency	3.8 / SY

SLOPE MATTING
IN CHANNEL

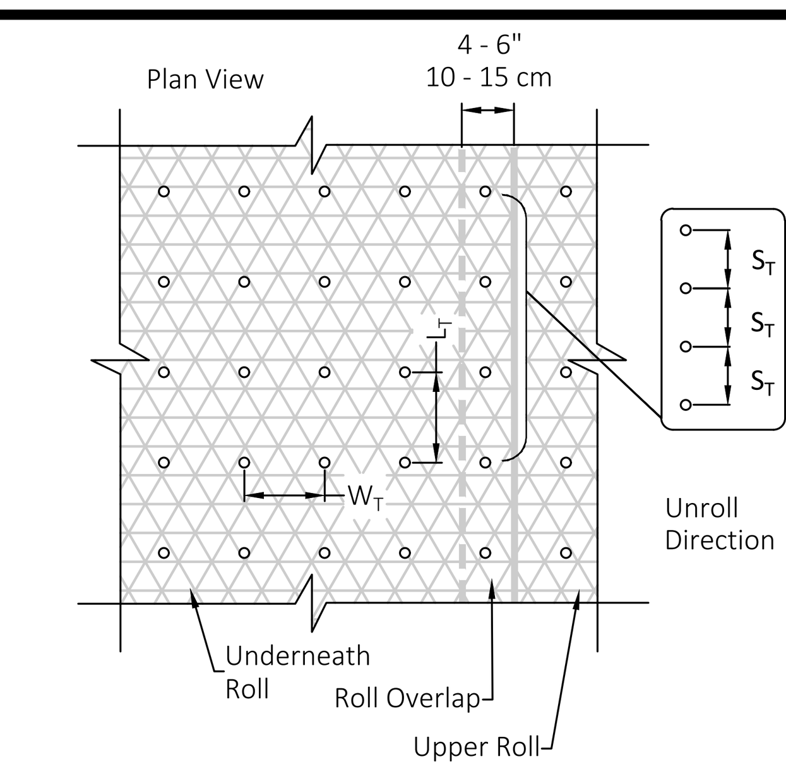
12–20–2022 NOT TO SCALE 3.22B



SLOPE MATTING
NEAR POND

12–20–2022 NOT TO SCALE 3.23A

1. For easier installation, lower water level from Level A to Level B before installation.
2. Prepare soil before installing rolled erosion control products (RECPs), including any necessary application of lime, fertilizer, and seed. Ground surface must be free of debris, rocks, clay clods and raked smooth sufficient to allow intimate contact of the RECP with the soil over the entirety of the installation.
3. Begin at the top of the shoreline by anchoring the RECPs in a 6" (15 cm) deep X 6" (15 cm) wide trench. Anchor the RECPs with a row of staples/stakes/pins spaced at S_T apart in the bottom of the trench. Backfill and compact the trench after stapling.
4. Roll RECPs either (A) down the shoreline for long banks (top to bottom) or (B) horizontally across the shoreline slope. RECPs will unroll with appropriate side against the soil surface. VMax TRMs should always be installed parallel to flow. All RECPs must be securely fastened to soil surface by placing staples/stakes/pins in appropriate locations as shown in the staple pattern guide.
5. The edges of all horizontal and vertical seams must be stapled with approximately 4" - 6" (10 - 15 cm) overlap. Note: *In streambank applications, seam overlaps should be shingled in the predominant flow direction.
6. The edges of the RECPs at or below normal water level must be anchored by placing the RECP's in a 12" (30 cm) deep X 6" (15 cm) wide anchor trench. Anchor the RECPs with a row of staples/stakes/pins spaced approximately 12"(30cm) apart in the trench. Backfill and compact the trench after stapling (stone or soil may be used as backfill). For installation at or below normal water level, use of ShoreMax mat on top of the RECP or geotextile underneath is likely required for sections below the normal water line.
7. Fasteners should provide a minimum of twenty pounds of pullout resistance. Six-inch (10 cm) X one-inch (2.5 cm) eleven gauge staples are typically adequate. In loose soils, longer staples may be necessary, twist pins can provide the greatest pullout resistance. In hard or rocky soils, straight pins may by used where staples or twist pins are refused, provided the minimum pullout requirements are met. Bio-degradable fasteners shall not be used with VMax (TRM) or TMax (HPTRM) materials.



∘ Pin / Staple / Twist Pin, as appropriate for field conditions

Dimension	Staple Pattern E
W_T	20" (50 cm)
L_T	20" (50 cm)
S_T	18" (45 cm)
Nominal Frequency	3.8 / SY

SLOPE MATTING
NEAR POND

12–20–2022 NOT TO SCALE 3.23B

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

Preliminary Not For Construction

REVISIONS

DATE	DESCRIPTION

Know what's below. Call before you dig.

PROJECT NUMBER: 23150
DATE: 6-10-25

GRADING AND EROSION CONTROL DETAILS

C-305

SCALE: AS NOTED

GENERAL CONSTRUCTION NOTES

1. ALL WORK AND CONSTRUCTION ACTIVITIES ON THE PROJECT SITE SHALL COMPLY WITH ALL APPLICABLE OSHA REGULATIONS AND REQUIREMENTS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN A SAFE WORK SITE.

2. THE ENGINEER AND OWNER RESERVE THE RIGHT TO MODIFY PROJECT WORK ITEMS (INCLUDING GRADING) AS DEEMED NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE PROJECT. THE CONTRACTOR MAY SUGGEST ADJUSTMENTS TO GRADING OR OTHER WORK ITEMS TO BE APPROVED BY THE ENGINEER OR OWNER.

3. THE CONTRACTOR SHALL COMPLY WITH THE GEOTECHNICAL REPORT FOR THE PLACEMENT OF FILL AND COMPACTION REQUIREMENTS. IF NO REPORT IS AVAILABLE, THE FOLLOWING MINIMUM STANDARDS SHALL APPLY:

PLACEMENT OF FILL:
A. PLACE THE MATERIAL IN SUCCESSIVE HORIZONTAL LAYERS NOT EXCEEDING 8" FOR THE FULL WIDTH OF THE CROSS SECTION.
B. FILL SHALL BE PLACED ONLY WHEN IT IS WITHIN 3% OF ITS OPTIMUM MOISTURE CONTENT AS DETERMINED BY A STANDARD PROCTOR ASTM D 698.
C. EACH LAYER OF FILL SHALL BE SPREAD EVENLY AND SHALL BE COMPACTED TO ITS SPECIFIED DENSITY AS DETERMINED BY STANDARD PROCTOR ASTM D 698 BEFORE NEW LAYERS ARE PLACED AND COMPACTED.
D. SLOPED GROUND SURFACES STEEPER THAN ONE VERTICAL TO FOUR HORIZONTAL, ON WHICH FILL IS TO BE PLACED, SHALL BE STEPPED OR BENCHED SUCH THAT FILL MATERIAL WILL BOND TO THE EXISTING SURFACES.
E. EMBANKMENT SLOPES SHALL BE CONSTRUCTED BY FILLING ONE (1) FOOT BEYOND THE PROPOSED FINISHED SLOPE SURFACE FOR EACH LIFT. COMPACTION EQUIPMENT SHALL WORK TO THE EDGE OF EACH LIFT. AFTER THE ENTIRE FILL IS PLACED AND COMPACTED, THE OUTSIDE FOOT OF THE SLOPE SHALL BE TRIMMED TO THE DESIGN SLOPE WITH A DOZER. UNLESS INDICATED ON THE DRAWINGS, NO FILL SLOPES SHALL BE STEEPER THAN 2 HORIZONTAL TO 1 VERTICAL.

COMPACTION:
A. STRUCTURAL FILL UNDER BUILDINGS AND WITHIN 10' OF BUILDING PERIMETER, 100% OF STANDARD PROCTOR THE ENTIRE DEPTH OF FILL.
B. UNDER WALKS, DRIVES, PADS, AND PAVED AREAS: 95% OF STANDARD PROCTOR EXCEPT 100% OF STANDARD PROCTOR IN THE UPPER 2'.
C. UNDER LAWNS AND PLANTING AREAS BEYOND 10' FROM BUILDING: 95% OF STANDARD PROCTOR.
D. BACKFILL IN TRENCHES: COMPLY WITH COMPACTION REQUIREMENTS FOR THE AREA THROUGH WHICH THE TRENCH RUNS.
4. ALL EROSION CONTROL DEVICES SUCH AS SILT FENCES, DIVERSIONS, SEDIMENT TRAPS, ETC. SHALL BE MAINTAINED IN WORKABLE CONDITIONS FOR THE LIFE OF THE PROJECT AND SHALL BE REMOVED AT THE COMPLETION OF THE PROJECT ONLY WITH THE ENGINEER'S APPROVAL. SEE THE NPDES REQUIREMENTS ON THIS PLAN SHEET FOR MORE DETAIL. IF DURING THE LIFE OF THE PROJECT A STORM CAUSES SOIL EROSION WHICH CHANGES THE FINISHED GRADES OR CREATES "GULLIES" AND "WASHED AREAS", THESE SHALL BE REPAIRED BY THE CONTRACTOR AT NO EXTRA COST. THE CONTRACTOR SHALL ADHERE TO THE APPROVED EROSION CONTROL PLAN AND TAKE ANY ADDITIONAL MEASURES NECESSARY TO PREVENT SEDIMENT FROM LEAVING THE SITE.

4. DISPOSABLE MATERIALS:
A. CLEARING AND GRUBBING WASTES SHALL BE REMOVED FROM THE SITE AND PROPERLY DISPOSED OF BY THE CONTRACTOR AT THEIR EXPENSE, UNLESS OTHERWISE SPECIFIED.
B. SOLID WASTES TO BE REMOVED SUCH AS SIDEWALKS, CURBS, PAVEMENT, ETC. MAY BE PLACED IN SPECIFIED DISPOSAL AREAS IF PERMITTED BY THE APPROPRIATE AGENCIES AND APPROVED BY THE OWNER. THIS MATERIAL SHALL BE SPREAD AND MIXED WITH DIRT ELIMINATING ALL VOIDS. THIS MATERIAL SHALL HAVE A MINIMUM COVER OF 2'. THE CONTRACTOR SHALL MAINTAIN SPECIFIED COMPACTION REQUIREMENTS IN THESE AREAS. WHEN DISPOSAL SITES ARE NOT PROVIDED, THE CONTRACTOR SHALL REMOVE THIS WASTE FROM THE SITE AND PROPERLY DISPOSE OF IT AT THEIR EXPENSE.
C. ABANDONED UTILITIES SUCH AS CULVERTS, WATER PIPE, HYDRANTS, CASTING, PIPE APPURTENANCES, UTILITY POLES, ETC. SHALL BE THE PROPERTY OF THE SPECIFIED UTILITY AGENCY OR COMPANY HAVING JURISDICTION. BEFORE THE CONTRACTOR CAN REMOVE, DESTROY, SALVAGE, RE-USE, SELL OR STORE FOR THEIR OWN USE ANY ABANDONED UTILITY, THEY MUST PRESENT TO THE OWNER WRITTEN PERMISSION FROM THE UTILITY INVOLVED.
D. UNLESS OTHERWISE NOTED ON THE PLANS, BURNING WILL NOT BE ALLOWED ON THIS PROJECT. SHOULD BURNING BE ALLOWED BY THE OWNER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL NECESSARY PERMITS (AT THEIR EXPENSE) AND FOLLOW ALL APPLICABLE RULES AND REGULATIONS.

6. UNLESS OTHERWISE SPECIFIED, ALL BASE, PAVING, CURBING AND OTHER CONCRETE WORK SHALL CONFORM TO THE LOCAL MUNICIPALITY OR NCDOT SPECIFICATIONS FOR CONSTRUCTION. ALL WATER AND SEWER CONSTRUCTION SHALL CONFORM TO THE LOCAL UTILITY REQUIREMENTS AND/OR THE NCDENR MINIMUM STANDARDS.

7. IN THE EVENT EXCESSIVE GROUND WATER OR SPRINGS ARE ENCOUNTERED WITHIN THE LIMITS OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL NECESSARY UNDERDRAINS AND STONE AS DIRECTED BY THE ENGINEER. ALL WORK SHALL BE PAID BASED UPON THE UNIT PRICES UNLESS OTHERWISE SPECIFIED.

8. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ADJUSTMENT OF ALL UTILITY SURFACE ACCESSES (INCLUDING MANHOLE COVERS, VALVE BOXES, ETC.) WHETHER HE PERFORMS THE WORK OR THE UTILITY COMPANY PERFORMS THE WORK.

9. THE CONTRACTOR SHALL CONTROL ALL "DUST" BY PERIODIC WATERING AND SHALL PROVIDE ACCESS AT ALL TIMES FOR PROPERTY OWNERS WITHIN THE PROJECT AND FOR EMERGENCY VEHICLES. ALL OPEN DITCHES AND HAZARDOUS AREAS SHALL BE CLEARLY MARKED IN ACCORDANCE WITH OSHA REGULATIONS.

10. ALL AREAS OF EXPOSED SOIL SHALL BE SEEDED, FERTILIZED AND MULCHED ACCORDING TO THE SPECIFICATIONS. THE FINISHED SURFACE SHALL BE TO GRADE AND SMOOTH, FREE OF ALL ROCKS LARGER THAN 3", EQUIPMENT TRACKS, DIRT CLODS, BUMPS, RIDGES, AND GOUGES PRIOR TO SEEDING. THE SURFACE SHALL BE LOOSENED TO A DEPTH OF 1"+/- TO ACCEPT SEED. THE CONTRACTOR SHALL NOT PROCEED WITH SEEDING OPERATIONS WITHOUT FIRST OBTAINING THE ENGINEER'S APPROVAL OF THE GRADED SURFACE. ALL SEEDING SHALL BE PERFORMED BY A MECHANICAL "HYDRO-SEEDER". THE ENGINEER PRIOR TO SEEDING MUST APPROVE HAND SEEDING ON ANY AREA.

11. GRADED SLOPES AND FILLS SHALL BE PROTECTED WITH ROLLED EROSION CONTROL PRODUCT IF COMPLETED OUTSIDE OF OPTIMUM GERMINATION SEASON WHEN UNFAVORABLE WEATHER CONDITIONS PREVENT ESTABLISHMENT OF VEGETATIVE GROUND COVER.

GENERAL CONSTRUCTION NOTES

12-20-2022 NOT TO SCALE 3.28

EROSION CONTROL CONSTRUCTION SEQUENCE
1. OBTAIN PLAN APPROVAL AND APPLICABLE PERMITS.
2. HOLD PRE CONSTRUCTION CONFERENCE. (PLEASE SEE NPDES REQUIREMENTS ON THIS SHEET).
3. INSTALL RAIN GAUGE.
4. INSTALL PERMIT BOX (INSPECTION REPORT AND PERMITS TO BE PLACED IN BOX).
5. INSTALL STABILIZED CONSTRUCTION ENTRY/EXIT
6A. INSTALL PERIMETER MEASURES INCLUDING SILT FENCE AND REINFORCED STABILIZED OUTLETS.
6B. INSTALL AND STABILIZE SKIMMER SEDIMENT BASIN AND BASIN INLETS. CONTRACTOR TO ENSURE GRADING OR BASIN INSTALLATION DURING ANTICIPATED WET-WEATHER CONDITIONS DOES NOT OCCUR. GROUND COVER IS TO BE ESTABLISHED IMMEDIATELY.
6C. CLEAR ONLY THE AREAS NECESSARY FOR THE INSTALLATION OF EROSION CONTROL MEASURES.
7. CLEAR AND GRUB SITE. STOCK PILE TOP SOIL ON SITE AS DIRECTED BY ENGINEER. ALL STUMPS AND WOODCHIPS TO BE REMOVED OFFSITE.
8. ROUGH GRADE SITE IN A MANNER THAT DIRECTS RUNOFF TOWARDS THE PROPOSED SEDIMENT BASIN THROUGHOUT THE DURATION OF THE PROJECT.
9. ANY DENUDED AREA THAT WILL NOT BE BROUGHT TO FINAL GRADE WITHIN THE NPDES STABILIZATION TIME FRAME SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING TO TEMPORARILY STABILIZE THE AREA. IF THE SEASON OR HARSH CONDITIONS PREVENT THE ESTABLISHMENT OF A TEMPORARY COVER, DISTURBED AREAS SHALL BE MULCHED WITH STRAW OR EQUIVALENT MATERIAL ACCORDING TO SPECIFICATIONS.
10. CONSTRUCT STORM DRAINAGE SYSTEM AND INSTALL INLET PROTECTION AROUND EACH CATCH BASIN AS THEY ARE INSTALLED.
11. FINAL GRADE SITE.
12. ALL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSPECTED IN ACCORDANCE WITH NPDES REGULATIONS, NEEDED REPAIRS SHALL BE MADE IMMEDIATELY.
13. AFTER SITE IS FINE GRADED, PERMANENT VEGETATION SHALL BE INSTALLED IN ACCORDANCE WITH NPDES REQUIREMENTS.
14. ABANDON SEDIMENT BASINS, SET FINAL GRADE AND ADD FINAL STORMWATER INFRASTRUCTURE ALL WITH THE APPROVAL OF NCDEQ.
15. CONTRACTOR SHALL NOTIFY THE HENDERSON COUNTY INSPECTOR AT 828-694-6521 WHEN PROJECT IS READY FOR CLOSE OUT INSPECTION.
16. FILE FOR NPDES NCG010000 e-NOT WHEN PROJECT CLOSE OUT INSPECTION IS RECEIVED FROM LQS.
17. AT THE END OF EACH WORK DAY, THE CONTRACTOR SHALL ESTABLISH A BERM OR DITCH AT THE TOP OF ALL FILL SLOPES. THE BERM OR DITCH SHALL BE CONSTRUCTED TO PREVENT POTENTIAL RUNOFF FROM SHEET FLOWING OVER AND DOWN THE SLOPE. POSITIVE DRAINAGE SHALL BE ESTABLISHED TO THE INLETS OF ANY SLOPE DRAINS.

EROSION CONTROL SEQUENCE

9-12-23 NOT TO SCALE 3.07

SEEDING SPECIFICATIONS

I. TEMPORARY COVER

A. LIME & FERTILIZER
CONTRACTOR SHALL FURNISH AND APPLY LIME AND FERTILIZER TO THE SOIL AS REQUIRED TO PROVIDE SATISFACTORY CONDITIONS FOR SEED GERMINATION.

A NORTH CAROLINA DEPARTMENT OF AGRICULTURE SOILS TEST OR EQUAL SHALL BE OBTAINED FOR ALL AREAS TO BE SEEDED. RECOMMENDED FERTILIZER AND pH ADJUSTING PRODUCTS SHALL BE INCORPORATED INTO APPLICABLE AREAS BASED ON THE TEST RESULTS.

THESE MATERIALS SHALL BE SPREAD UNIFORMLY OVER THE AREA TO BE PLANTED. THE SOIL SHALL BE TILLED TO A DEPTH OF 3 - 4 INCHES WITH EQUIPMENT APPROVED BY THE ENGINEER.

B. TEMPORARY COVER
SEEDING - CONTRACTOR SHALL SELECT A QUICK GROWING GRASS WITH HIGH SEEDING VIGOR THAT IS SUITED TO THE AREA, THE TIME OF PLANTING, AND THAT WILL NOT INTERFERE WITH PLANT TO BE SOWN LATER FOR PERMANENT COVER.

MAY THROUGH AUGUST	
SUNDANGRASS	50 LB / AC
OR GERMAN MILLET	40 LB / AC
SEPT. THROUGH APRIL	
RYEGRAIN	120 LB / AC

ALL SEEDS SHALL HAVE BEEN TESTED NOT MORE THAN 6 MONTHS PRIOR TO THE DATE OF SEEDING.

CONTRACTOR SHALL APPLY SEED UNIFORMLY BY HAND, CYCLONE SEEDER, DRILL, CULTIPACKER SEEDER, OR HYDRAULICALLY.

A SLURRY MIXTURE OF WATER, FERTILIZER, SEED AND CELLULOSE FIBER MULCH IS ACCEPTABLE ON THIS PROJECT.

C. MULCHING
IN ORDER TO REDUCE DAMAGE FROM WATER RUN-OFF AND IMPROVE MOISTURE CONDITIONS FOR SEEDLINGS, A MULCH MATERIAL SHALL BE FURNISHED WHEN TEMPORARY SEEDING IS TO BE DONE. ACCEPTABLE MATERIALS ARE:
-DRY UNCHOPPED, UNWEATHERED SMALL GRAIN STRAW OR HAY FREE OF SEEDS OF COMPETING PLANTS - 1-2 TONS / ACRE
-WOOD FIBER (EXCELSIOR)
-WOOD CELLULOSE FIBER - 500 LBS / ACRE WITHOUT STRAW
-JUTE MATTING

II. PERMANENT COVER

A. CONTRACTOR SHALL FURNISH AND APPLY

1- A NORTH CAROLINA DEPARTMENT OF AGRICULTURE SOILS TEST OR EQUAL SHALL BE OBTAINED FOR ALL AREAS TO BE SEEDED. RECOMMENDED FERTILIZER AND pH ADJUSTING PRODUCTS SHALL BE INCORPORATED INTO APPLICABLE AREAS BASED ON THE TEST RESULTS.

2- 2.3 LBS / 1000 SF OF KENTUCKY 31 TALL FESCUE (100 LBS / ACRE)

IN THE MANNER DESCRIBED ABOVE IN PARTS 1, 2 AND 3.

APPLY NURSE CROP AS FOLLOWS:
MAY 1 - AUG 15 - 10 LBS / AC GERMAN MILLET OR
- 15 LBS / AC SUNDANGRASS
AUG 15 - MAY 1 - 40 LBS / AC RYE (GRAIN)

B. SEEDING DATES: KY.31 TALL FESCUE
(BELOW 2500' ELEV)
AUG 20 - SEPT 15
MARCH 1 - MAY 1

(ABOVE 2500' ELEV)
JULY 15 - AUG 30
MARCH 5 - MAY 15

C. MULCHING
APPLY 4000 LB / AC OF GRAIN STRAW SUITABLY TACKED DOWN. ADD NETTING TO STEEP SLOPES AND STAPLE PER MANUFACTURERS RECOMMENDATIONS

III. SOIL PREPARATION

A. GENERAL REQUIREMENTS
1-PREPARATION FOR PRIMARY/PERMANENT STABILIZATION SHALL NOT BEGIN UNTIL ALL CONSTRUCTION AND UTILITY WORK WITHIN THE PREPARATION AREA IS COMPLETE. HOWEVER, IT MAY BE NECESSARY TO PREPARE FOR NURSE CROPS PRIOR TO COMPLETION OF CONSTRUCTION AND INSTALLATION OF UTILITIES.

2-A NORTH CAROLINA DEPARTMENT OF AGRICULTURE SOILS TEST (OR EQUAL) SHALL BE OBTAINED FOR ALL AREAS TO BE SEEDED, SPRIGGED, SODDED OR PLANTED. RECOMMENDED FERTILIZER AND pH ADJUSTING PRODUCTS SHALL BE INCORPORATED INTO THE PREPARED AREAS AND BACKFILL MATERIAL PER THE TEST.

3-ALL AREAS TO BE SEEDED OR PLATED SHALL BE TILLED OR RIPPED TO A DEPTH OF 4". RIPPING CONSISTS OF CREATING FISSURES IN A CRISS-CROSS PATTERN OVER THE ENTIRE SURFACE AREA USING AN IMPLEMENT THAT WILL NOT GLAZE THE SIDE WALLS OF THE FISSURES. SITE PREPARATION THAT DOES NOT COMPLY WITH THESE DOCUMENTS SHALL NOT BE ACCEPTABLE. THE DEPTH OF SOIL PREPARATION MAY BE ESTABLISHED AS A RANGE BASED ON THE APPROVAL OF THE REVIEW AGENCY. ONCE TILLED OR RIPPED ACCORDING TO THE APPROVED PLAN, ALL AREAS ARE TO BE RETURNED TO FINAL GRADE. pH MODIFIERS AND/OR OTHER SOIL AMENDMENTS SPECIFIED IN THE SOIL TESTS CAN BE ADDED DURING THE SOIL PREPARATION PROCEDURE OR AS DESCRIBED BELOW.

4-ALL STONES LARGER THAN 3" ON ANY SIDE, STICKS, ROOTS, AND OTHER EXTRANEOUS MATERIALS THAT SURFACE DURING THE BED PREPARATION SHALL BE REMOVED.

B. AREAS TO BE SEEDED
1-TILL OR DISC THE PREPARED AREAS TO BE SEEDED TO A MINIMUM DEPTH OF 4". REMOVE STONES LARGER THAN 3" ON ANY SIDE, STICKS, ROOTS, AND OTHER EXTRANEOUS MATERIALS THAT SURFACE. IF NOT INCORPORATED IN THE RIPPING PROCESS, ADD pH MODIFIERS AND FERTILIZERS AT THE RATE SPECIFIED.

2-RECOMPACT THE AREA UTILIZING A CULTIPACKER ROLLER. THE FINISHED GRADE SHALL BE SMOOTH EVEN SOIL SURFACE WITH LOOSE, UNIFORMLY FINE TEXTURE. ALL RIDGES AND DEPRESSIONS SHALL BE REMOVED AND FILLED TO PROVIDE THE APPROVED SURFACE DRAINAGE. SEEDING THE GRADED AREAS IS TO BE DONE IMMEDIATELY AFTER FINISHED GRADES ARE OBTAINED AND SEEDBED PREPARATION IS COMPLETE.

C. AREAS TO BE SPRIGGED, SODDED, AND/OR PLANTED
1-AT THE TIME OF PLANTING, TILL OR DISC THE PREPARED AREA TO A DEPTH OF 4"-6" BELOW THE APPROVED FINISHED GRADE. REMOVE ALL STONES LARGER THAN 3" ON ANY SIDE, STICKS, ROOTS AND OTHER EXTRANEOUS MATERIALS THAT SURFACE. IF NOT INCORPORATED DURING THE RIPPING PROCESS, ADD pH MODIFIERS, FERTILIZER AND OTHER RECOMMENDED SOIL AMENDMENTS.

2-RECOMPACT THE AREA UTILIZING A CULTIPACKER ROLLER AND PREPARE FINAL GRADES AND DESCRIBED ABOVE. INSTALL SPRIGS, SOD AND PLANTS AS DIRECTED IMMEDIATELY AFTER FINE GRADING IS COMPLETE. MULCH, MAT AND/OR TACK AS SPECIFIED.

IV. CLOSEOUT

1-REFER TO NCG01 REQUIREMENTS AND CONSTRUCTION SEQUENCE FOR GROUND STABILIZATION TIMEFRAMES.

2-CONTRACTOR RESPONSIBLE FOR ESTABLISHING GROUND COVER PRIOR TO CLOSE OUT OF EROSION CONTROL PERMIT OR ACCEPTANCE BY OWNER. GROUND COVER WILL BE CONSIDERED ESTABLISHED WHEN ALL EXPOSED SOILS HAVE BEEN STABILIZED WITH A PERMANENT PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 80% WITH NO CONTIGUOUS BARE AREAS GREATER THAN ONE SQUARE YARD. VEGETATION DENSITY SHALL BE DETERMINED BY THE ENGINEER OR EROSION CONTROL INSPECTOR.

3-MULTIPLE SEEDING EFFORTS BY THE CONTRACTOR MAY BE REQUIRED FOR PORTIONS OF OR THE ENTIRE SITE TO ESTABLISH SUITABLE GROUND COVER.

SEEDING SPECIFICATIONS

11-15-23 NOT TO SCALE 3.10

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1505 DAVID L. DERRICK
Preliminary Not For Construction

REVISIONS	
DATE	DESCRIPTION

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

PROJECT NUMBER: 23150
DATE: 6-10-25

GRADING AND EROSION CONTROL DETAILS

C-306

SCALE: AS NOTED

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.
(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 kept on site and available for inspection at all times during normal business hours.

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 to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for 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 twelve months. The permittee shall record the required observations 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.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all 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).

(c) 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.

(d) Anticipated bypasses and unanticipated bypasses.

(e) 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 Department's Environmental Emergency Center personnel at (800) 858-0368.

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 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.

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

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ORCHARDS AT NAPLES ROAD APARTMENTS

HENDERSON COUNTY
NORTH CAROLINA

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
DONALD L. DERIDDER
Preliminary Not For Construction

REVISIONS

DATE	DESCRIPTION

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

PROJECT NUMBER: 23150
DATE: 6-10-25

GRADING AND EROSION CONTROL DETAILS

C-307

SCALE: AS NOTED

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 problem 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

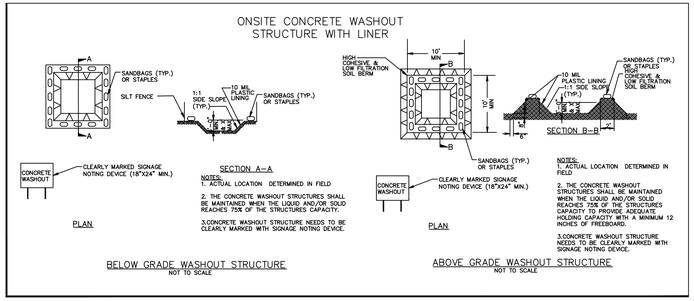
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, 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

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