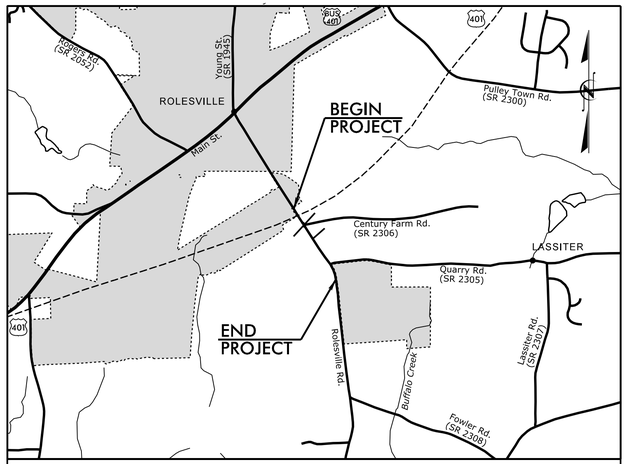
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	E. YOUNG ST. PH. II	EC-1	

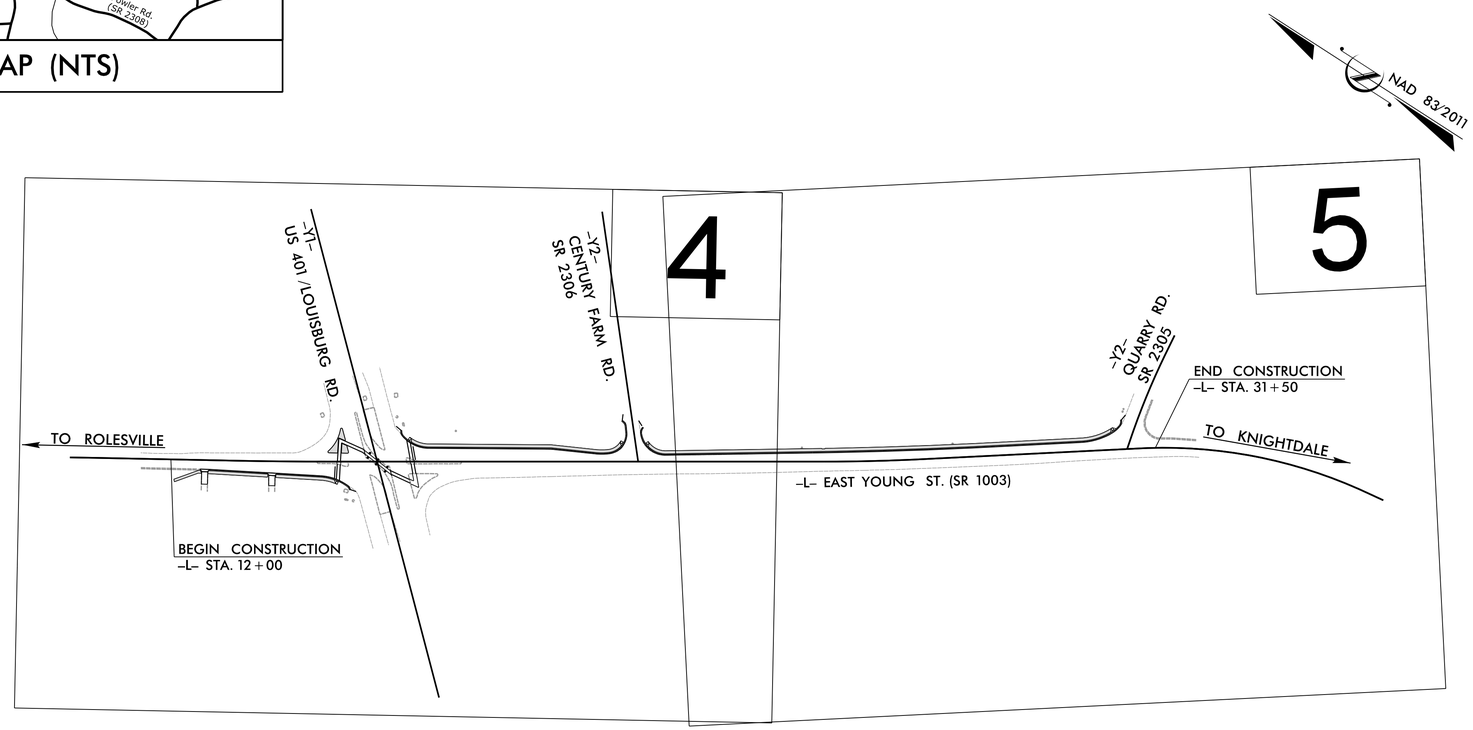
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

STATE OF NORTH CAROLINA
TOWN OF ROLESVILLE
PLAN FOR PROPOSED EROSION CONTROL



CITY LIMITS

VICINITY MAP (NTS)



NAD 83/2011

THIS PROJECT CONTAINS EROSION CONTROL PLANS FOR CLEARING AND GRUBBING PHASE OF CONSTRUCTION.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TOWN OF ROLESVILLE

GRAPHIC SCALE

0 50 100
PLANS

0 50 100
PROFILE (HORIZONTAL)

0 10 20
PROFILE (VERTICAL)

THESE EROSION AND SEDIMENT CONTROL PLANS COMPLY WITH THE REGULATIONS SET FORTH BY THE NCG-010000 GENERAL CONSTRUCTION PERMIT EFFECTIVE AUGUST 3, 2011 AND ISSUED BY THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES DIVISION OF WATER RESOURCES.

Prepared in the Office of:

AMT
NCBELS LICENSE # F-1049

A. MORTON THOMAS AND ASSOCIATES, INC.
CONSULTING ENGINEERS
6131 FALLS OF NEUSE ROAD, SUITE 106, RALEIGH, NC 27609
(919) 855-9989 FAX (919) 855-5687
EMAIL: AMT1@AMTENGINEERING.COM

Designed by:

James A. Crouse, PE — NAME
3267 — LEVEL III CERTIFICATION NO.

Reviewed in the Office of:

ROADSIDE ENVIRONMENTAL UNIT
1 South Wilmington St.
Raleigh, NC 27611

2018 STANDARD SPECIFICATIONS

Reviewed by:

TBD

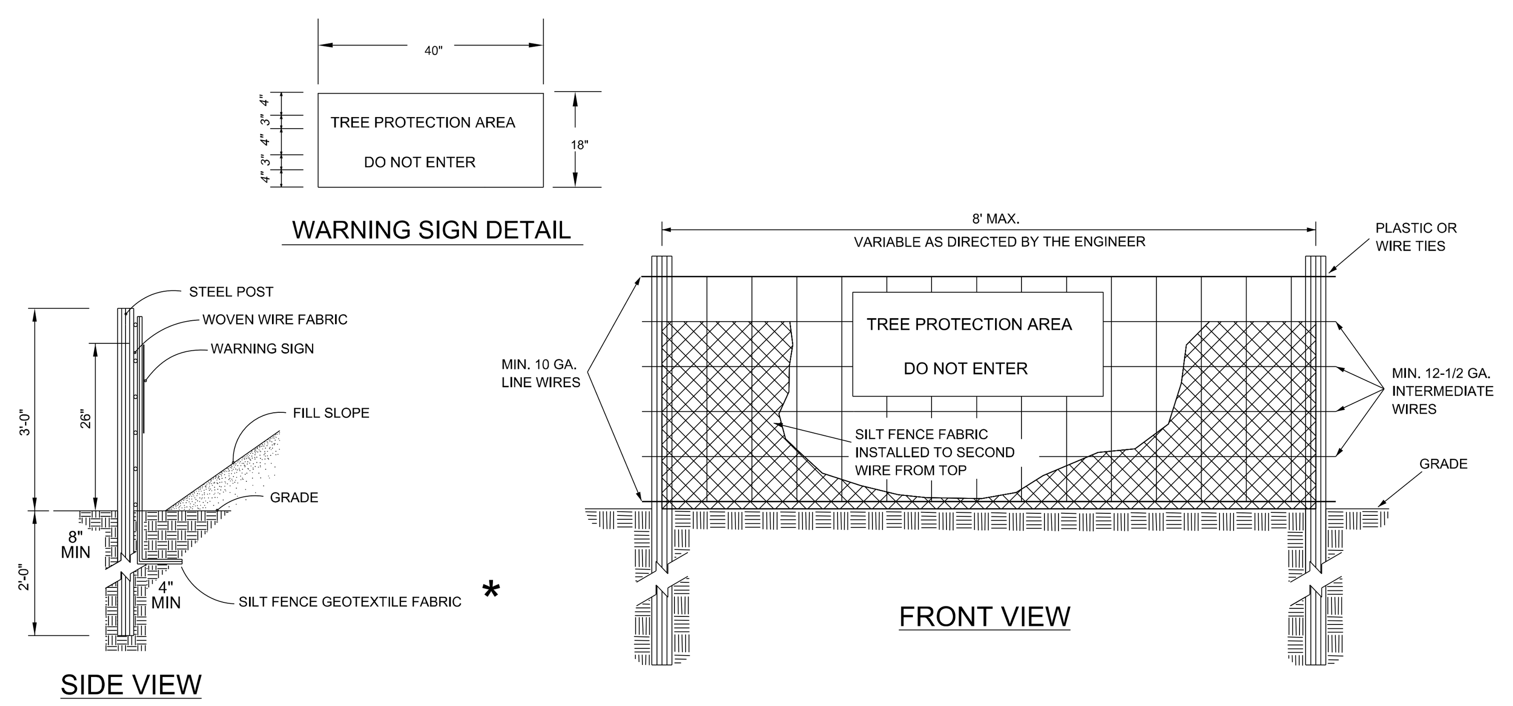
Roadway Standard Drawings

The following roadway english standards as appear in "Roadway Standard Drawings"– Roadway Design Unit – N. C. Department of Transportation – Raleigh, N. C., dated January 2012 and the latest revison thereto are applicable to this project and by reference hereby are considered a part of these plans.

1604.01	Railroad Erosion Control Detail	1632.01	Rock Inlet Sediment Trap Type A
1605.01	Temporary Silt Fence	1632.02	Rock Inlet Sediment Trap Type B
1606.01	Special Sediment Control Fence	1632.03	Rock Inlet Sediment Trap Type C
1607.01	Gravel Construction Entrance	1633.01	Temporary Rock Silt Check Type A
1622.01	Temporary Berms and Slope Drains	1633.02	Temporary Rock Silt Check Type B
1630.01	Riser Basin	1634.01	Temporary Rock Sediment Dam Type A
1630.02	Silt Basin Type B	1634.02	Temporary Rock Sediment Dam Type B
1630.03	Temporary Silt Ditch	1635.01	Rock Pipe Inlet Sediment Trap Type A
1630.04	Stilling Basin	1635.02	Rock Pipe Inlet Sediment Trap Type B
1630.05	Temporary Diversion	1640.01	Coir Fiber Baffle
1630.06	Special Stilling Basin	1645.01	Temporary Stream Crossing
1631.01	Matting Installation		

e E Young St Side\05-CAD\16-0940.00\Hydraulics\EROSION CONTROL\16-0940_EC_TSH.dgn
6/7/2019

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-2

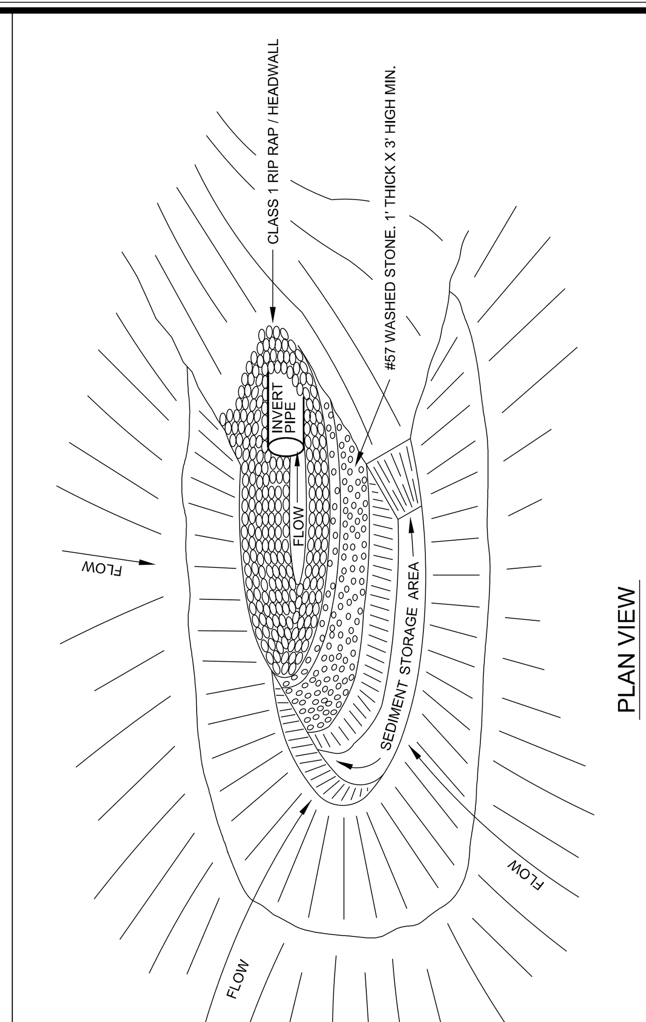


MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS

NOTES:

1. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
2. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
4. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
5. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
6. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
7. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.
8. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
9. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
10. SEE N.C. STATE DENR PRACTICE STANDARDS & SPECIFICATIONS SEDIMENT FENCE SET FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS & DESIGN CRITERIA. (HOWEVER FLOW SHALL NOT RUN PARALELL WITH THE TOE OF THE FENCE).

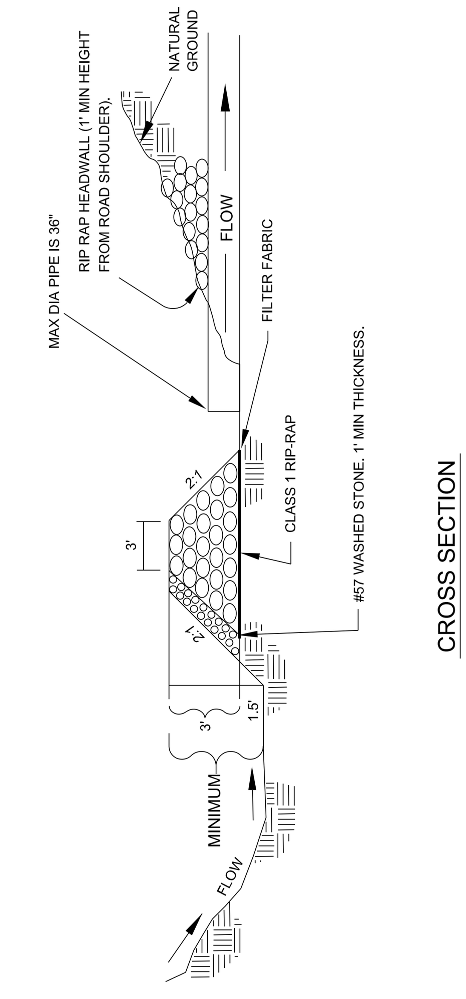
CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 9/1/13 | NOT TO SCALE
STANDARD TEMPORARY (SEDIMENT/SILT) / TREE PROTECTION FENCE
SW-20.02



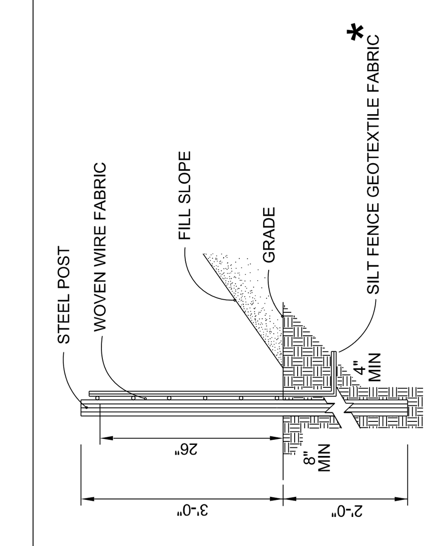
MAINTENANCE:
REMOVE SEDIMENT & RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSION WHEN SEDIMENT HAS ACCUMULATED TO 1/2 DESIGN DEPTH OF THE TRAP.

ANY RIP-RAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.

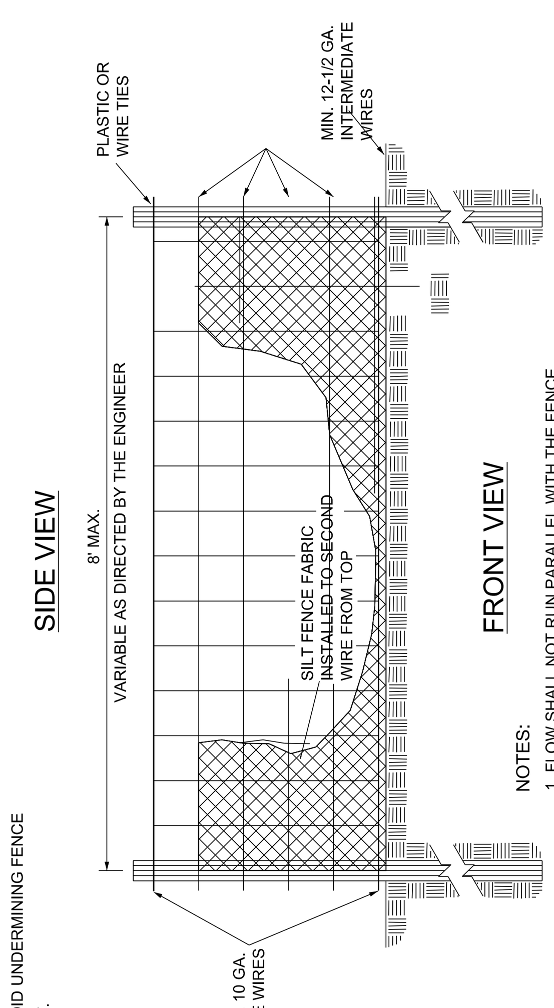
NOTES:
IF EXCAVATED STORAGE AREA IS USED AS TEMPORARY SEDIMENT TRAP, THE DESIGN CRITERIA FOR TEMPORARY SEDIMENT TRAP MUST BE SATISFIED.



CITY OF RALEIGH
STANDARD DETAIL
REVISIONS | DATE: 8/1/18 | NOT TO SCALE
ROCK PIPE INLET PROTECTION
SW-20.06

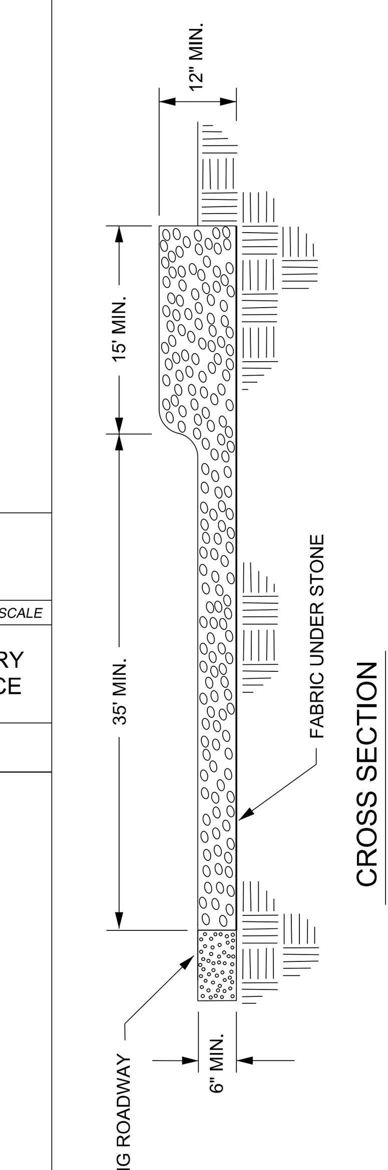


MAINTENANCE:
1. INSPECT FENCE WEEKLY AND AFTER EACH RAINFALL AND MAKE ANY REPAIRS PROMPTLY.
2. REPLACE FENCE IF IT COLLAPSES, TEARS, DECOMPOSES, OR BECOMES INEFFECTIVE.
3. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE. TAKE CARE TO AVOID UNDERMINING FENCE DURING CLEANOUT.



NOTES:
1. FLOW SHALL NOT RUN PARALLEL WITH THE FENCE.
2. END OF SILT FENCE NEEDS TO BE TURNED UPHILL.
3. SEE N.C. STATE DENR PRACTICE STANDARDS & SPECIFICATIONS SEDIMENT FENCE SET FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATIONS & DESIGN CRITERIA.

CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 9/1/13 | NOT TO SCALE
STANDARD TEMPORARY (SEDIMENT/SILT) FENCE
SW-20.01

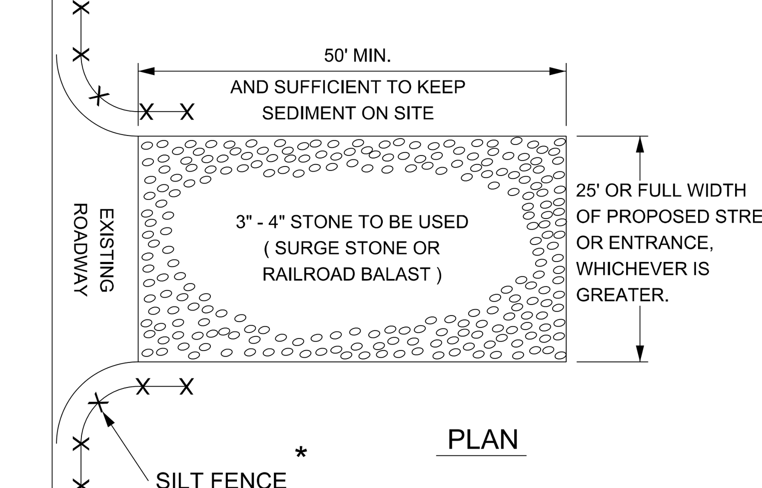


MAINTENANCE:
ADD ADDITIONAL STONE AND "FLUFF" TOP DRESSING WITH 2" STONE. INSPECT AFTER EACH RAINFALL AND CLEAN OUT AS NECESSARY. REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

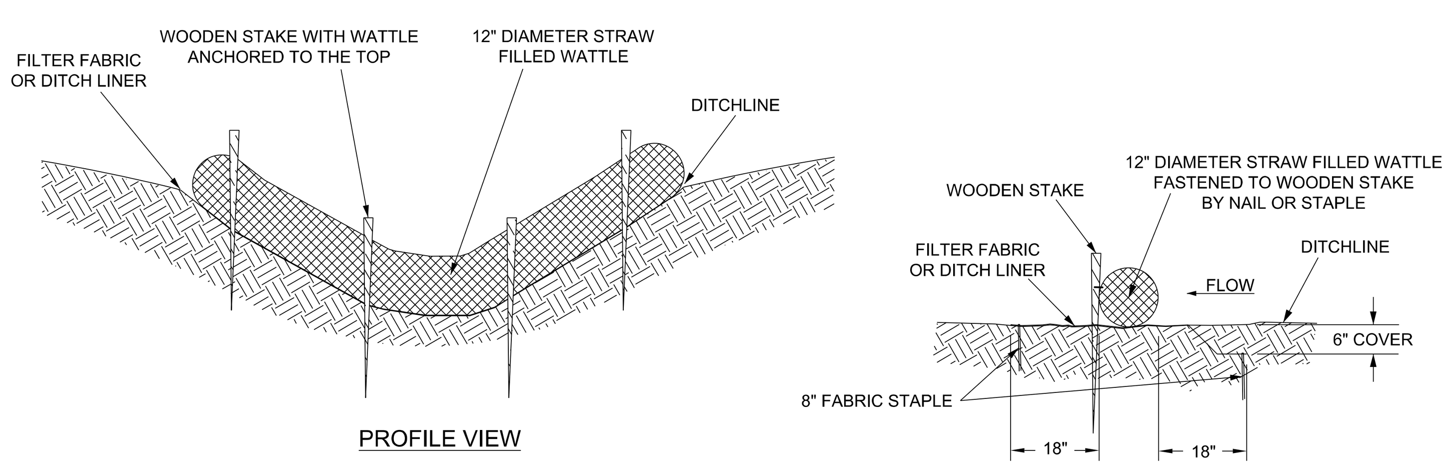
SEE N.C. DENR EROSION and SEDIMENT CONTROL PLANNING and DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.

NOTES:
* 1. SILT FENCE SHOULD BE INSTALLED 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 VEHICLE MUST BE WASHED BEFORE ENTERING THE PUBLIC ROAD OR THE LENGTH OF THE CONSTRUCTION ENTRANCE EXTENDED.

NEW CONSTRUCTION

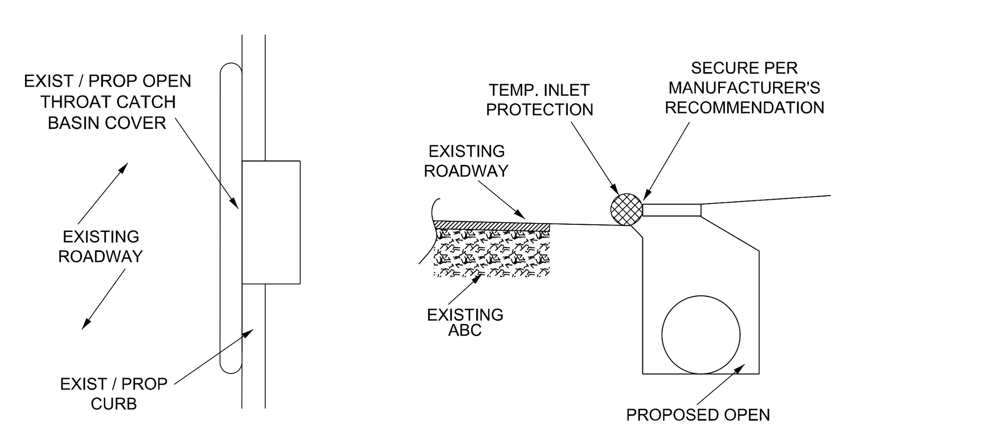


CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 9/1/13 | NOT TO SCALE
CONSTRUCTION ENTRANCE
SW-20.09

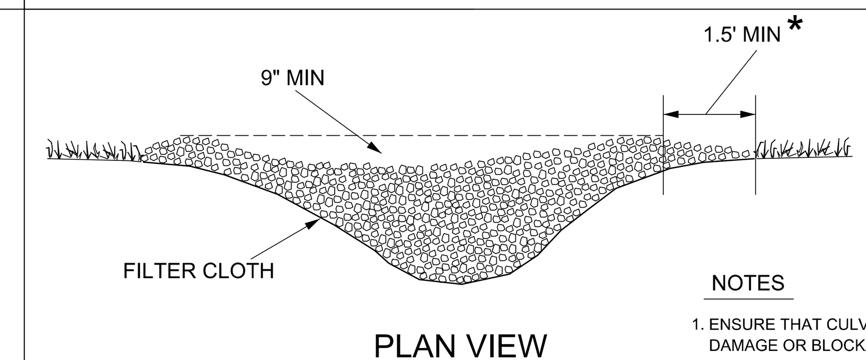


NOTES:

1. WATTLES SHALL BE FILLED WITH STRAW OR OTHER APPROVED MATERIAL.
2. SPACING FOR WATTLES SHALL BE DETERMINED BY THE SITE ENGINEER.
3. WATTLES MAY BE USED FOR PROTECTION OF CATCH BASINS AND DROP INLETS WITH APPROVAL BY THE STORMWATER PROGRAM MANAGER OR DESIGNEE.



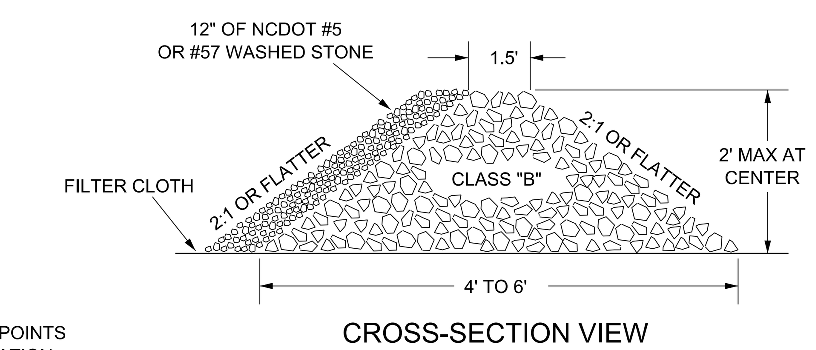
CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 9/1/13 | NOT TO SCALE
10-20-2016
WATTLE / INLET PROTECTION DETAIL
SW-20.23

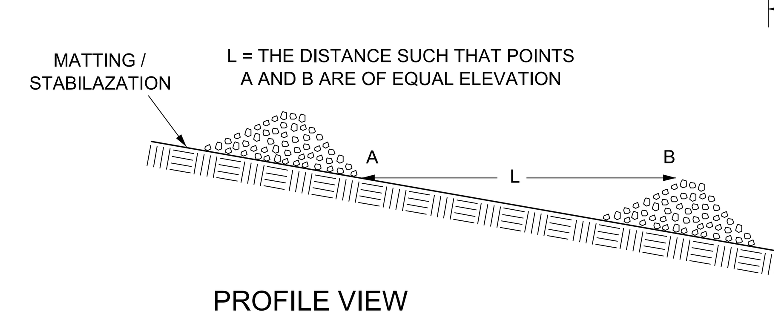


MAINTENANCE:
INSPECT DAM WEEKLY AND AFTER EACH RAINFALL EVENT OF ½" OR GREATER.
REMOVE SEDIMENT ACCUMULATION FROM BEHIND CHECK DAMS TO PREVENT DAMAGE TO CHANNEL VEGETATION.
FLOW SHOULD BE MAINTAINED THROUGH THE DAM.
ADD STONES TO DAM AS NECESSARY.

NOTES

1. ENSURE THAT CULVERT ENTRANCES BELOW THE CHECK DAMS, ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONES.
2. THE DRAINAGE AREA IS LIMITED TO ONE HALF ACRE.
* 3. KEY THE STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 1.5 FEET TO AVOID WASHOUT FROM OVERFLOW AROUND THE DAM.



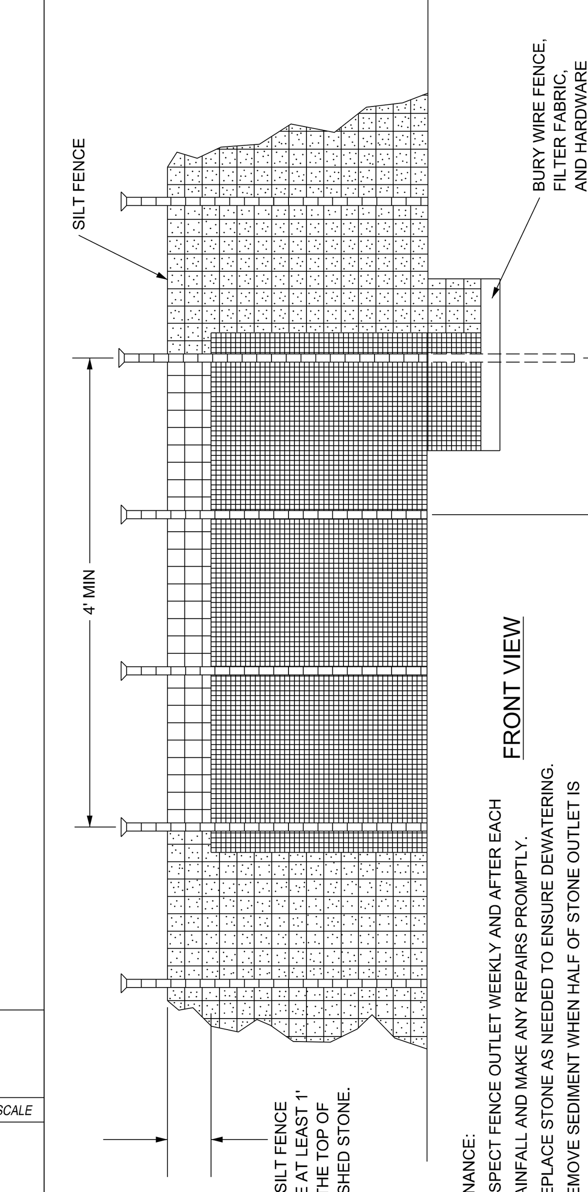


PURPOSE: TO REDUCE EROSION IN A CHANNEL BY REDUCING THE VELOCITY OF FLOW.

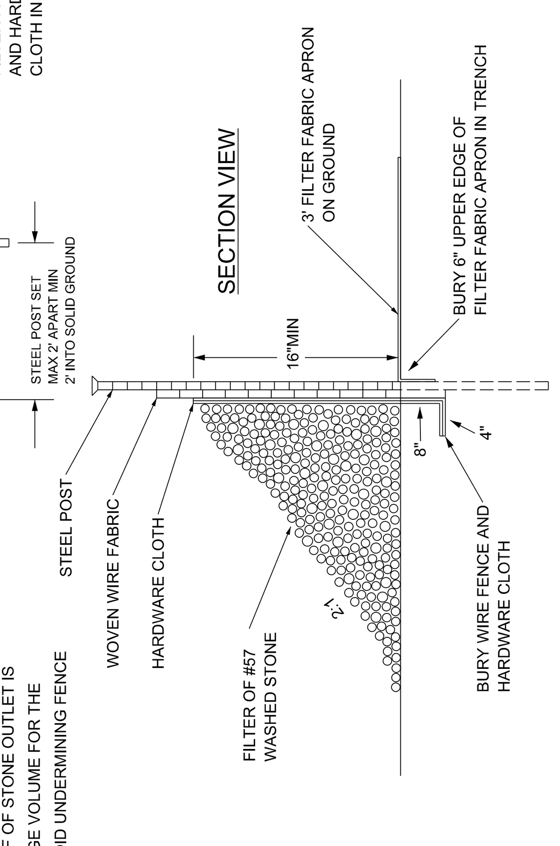
DO NOT USE CHECK DAM IN INTERMITTENT OR PERENNIAL STREAMS.

SEE N.C. DENR EROSION and SEDIMENT CONTROL PLANNING and DESIGN MANUAL FOR CONDITIONS WHERE PRACTICE APPLIES; PLANNING CONSIDERATION & DESIGN CRITERIA.

CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 9/1/13 | NOT TO SCALE
CHECK DAM
SW-20.08



MAINTENANCE:
1. INSPECT FENCE OUTLET WEEKLY AND AFTER EACH RAINFALL AND MAKE ANY REPAIRS PROMPTLY.
2. REPLACE STONE AS NEEDED TO ENSURE DEWATERING.
3. REMOVE SEDIMENT WHEN HALF OF STONE OUTLET IS COVERED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN. TAKE CARE TO AVOID UNDERMINING FENCE OUTLET DURING CLEANOUT.

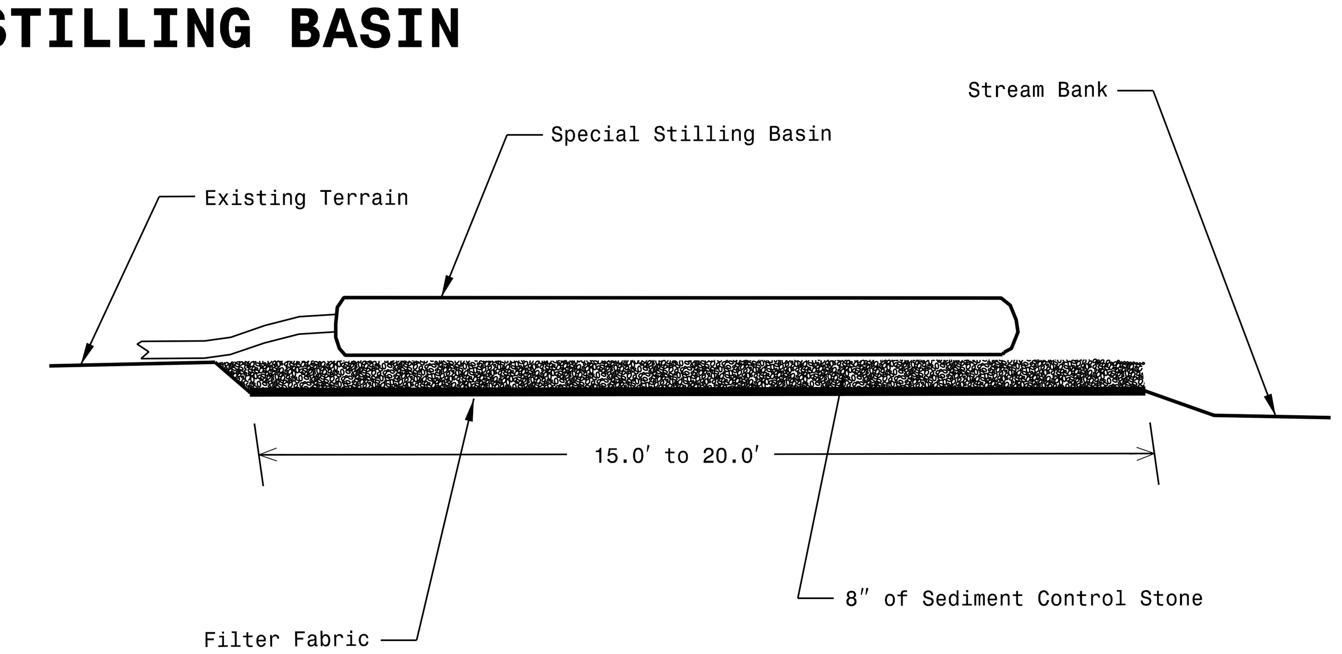


CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT
REVISIONS | DATE: 1/11/2012 | DRAWN BY: WDP
WDP 10-9-2012
STANDARD SILT FENCE OUTLET
SW-20.24

SPECIAL STILLING BASIN

MAINTENANCE:

1. CHECK STRAPS WEEKLY TO ENSURE HOSE IS SECURED AND TO PREVENT PUMPED WATER FROM ESCAPING WITHOUT FILTERING.
2. PLACE BAG ON AGGREGATE OR HAY BALE BED TO MAXIMIZE WATER FLOW THROUGH SURFACE AREA OF BAG.
3. WHEN BAG IS FULL OF SEDIMENT AND NO LONGER ALLOWS WATER TO PASS, REMOVE FULL BAG AND REPLACE WITH NEW BAG. FULL BAG TO BE DISPOSED OF PROPERLY.



Note: Provide Stabilized Outlet to Streambank
Not To Scale

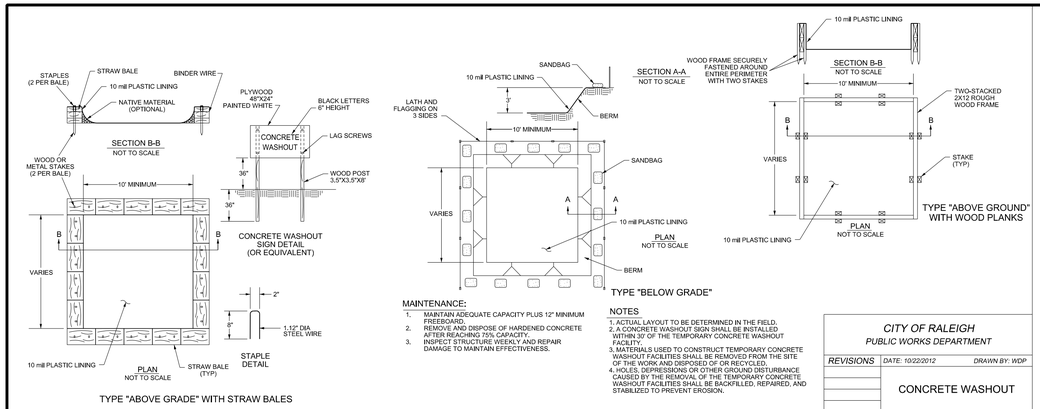
Legend

- Temporary Silt Fence ....
- Standard Silt Fence Outlet ....
- Check Dam ....
- Rock Inlet Sediment Trap: ....
- Rock Pipe Inlet Protection ....
- Concrete Washout Structure: ....
- Gravel Construction Entrance ....
- Erosion Control Matting ....
- Wattle ....

SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10′ OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED.
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50′ IN LENGTH.
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-3



MAINTENANCE:

1. MAINTAIN ADEQUATE CAPACITY PLUS 12" MINIMUM FREEBOARD.
2. REMOVE AND DISPOSE OF HARDENED CONCRETE AFTER REACHING 75% CAPACITY.
3. INSPECT STRUCTURE WEEKLY AND REPAIR DAMAGE TO MAINTAIN EFFECTIVENESS.

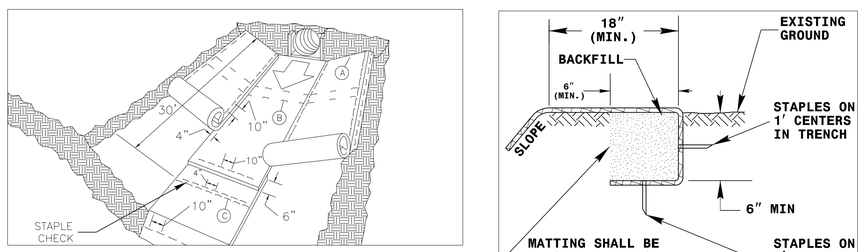
NOTES

1. ACTUAL LAYOUT TO BE DETERMINED IN THE FIELD.
2. A CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF OR RECYCLED.
4. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED, REPAIRED, AND STABILIZED TO PREVENT EROSION.

CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT

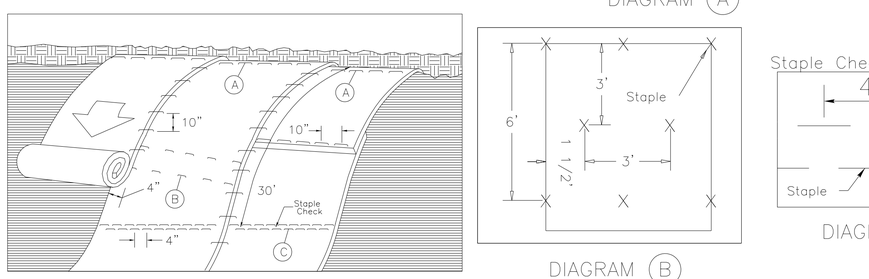
REVISIONS	DATE: 10/22/2012	DRAWN BY: WDP
	CONCRETE WASHOUT	
	SW-20.25	

MATTING INSTALLATION DETAIL



MATTING IN DITCHES

DIAGRAM (A)



MATTING ON SLOPES

DIAGRAM (B)

DIAGRAM (C)

NOT TO SCALE

NOTES:

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

MAINTENANCE:

1. INSPECT MATTING WEEKLY AND AFTER EACH RAINFALL EVENT OF ½" OR GREATER AND MAKE ANY REPAIRS PROMPTLY.
2. MAINTAIN GOOD CONTRACT WITH GROUND SO NO EROSION OCCURS UNDER MATTING.
3. INSPECT AREAS OF MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH GROUND SHALL BE REPAIRED AND STAPLED.
4. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, FIX PROBLEM AND PROTECT ERODED AREA.
5. MONITOR AND REPAIR MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

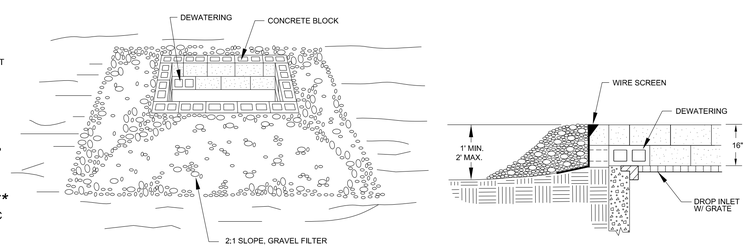
CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW POOL DRAINAGE. PLACE THE BOTTOM ROW OF BLOCKS AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS.

2. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2-INCH OPENINGS OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.

3. USE CLEAN GRAVEL, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED.

** NOT TO BE USED FOR SEDIMENT STORAGE **
OR ON ROADWAYS OPEN TO PUBLIC TRAFFIC



MAINTENANCE: INSPECT INLET PROTECTION WEEKLY AND AFTER EACH RAINFALL EVENT OF ½" OR GREATER. REMOVE SEDIMENT AFTER EACH RAIN EVENT. GRAVEL SHOULD BE REPLACED AND REPAIRS MADE AS NEEDED.

CITY OF RALEIGH
PUBLIC WORKS DEPARTMENT

REVISIONS	DATE: 9/1/13	NOT TO SCALE
	BLOCK AND GRAVEL DROP INLET PROTECTION	
	SW-20.14	

SEQUENCE OF CONSTRUCTION

1. CALL NCDEQ LQS AT THE RALEIGH REGIONAL OFFICE AT 919–791–4200 TO SCHEDULE A PRE–CONSTRUCTION MEETING AT LEAST 48 HOURS PRIOR TO PROJECT ACTIVATION.

2. EROSION AND SEDIMENT CONTROL (E&SC) PERMIT AND A CERTIFICATE OF COVERAGE (COC) MUST BE OBTAINED BEFORE ANY LAND DISTURBING ACTIVITIES OCCUR. THE COC CAN BE OBTAINED BY FILLING OUT THE ELECTRONIC NOTICE OF INTENT (E–NOI) FORM AT DEQ.NC.GOV/NCG01. A COPY OF THE E&SC PERMIT, THE COC, AND A HARD COPY OF THE PLAN MUST BE KEPT ON SITE, PREFERABLY IN A PERMITS BOX, AND ACCESSIBLE DURING INSPECTION.

3. SELF–INSPECTIONS FOR EROSION AND SEDIMENTATION CONTROL MEASURES ARE TO BE PERFORMED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF EVERY RAIN EVENT OF GREATER THAN 1 INCH. ANY NEEDED REPAIRS SHALL BE MADE IMMEDIATELY TO MAINTAIN MEASURES AS DESIGNED. ALL ESC MEASURES SHALL BE MAINTAINED AS SPECIFIED IN THE CONSTRUCTION DETAILS ON THIS PLAN. A RAIN GAUGE SHALL BE INSTALLED AT THE PROJECT SITE FOR MONITORING.

4. WHEN THE PROJECT IS COMPLETE, THE PERMITTEES SHALL CONTACT DEMLR TO CLOSE OUT THE E&SC PLAN. AFTER DEMLR INFORMS THE PERMITTEE OF THE PROJECT CLOSE OUT, VIA INSPECTION REPORT, THE PERMITTEE SHAL VISIT DEQ.NC.GOV/NCG01 TO SUBMIT AN ELECTRONIC NOTICE OF TERMINATION (E–NOT). A $100 ANNUAL GENERAL PERMIT FEE WILL BE CHARGED UNTIL THE E–NOT HAS BEEN FILLED OUT.

5. INSTALL PERIMETER SEDIMENT CONTROLS ALONG EAST YOUNG STREET TO ACCOMMODATE SCOPE OF WORK AS SHOWN ON SHEET EC–04 THROUGH EC–05.

PHASE ONE

6. INSTALL STORM DRAINAGE SYSTEM FROM STRUCTURE 502 THROUGH STRUCTURE 425. IN A THREE–DAY DRY PERIOD, EXTEND THE PIPE FROM STRUCTURE 425 TO END OF PIPE 406, GRADE THE AREA AROUND 406 TO PROVIDE POSITIVE DRAINAGE INTO THE PIPE, AND STABILIZE THE AREA.

7. IN A THREE–DAY DRY PERIOD, INSTALL STRUCTURE 423 AND STRUCTURE 424 AND PIPES TO 421 AND 422, GRADE THE AREA AROUND 421 AND 422 TO PROVIDE POSITIVE DRAINAGE INTO THE PIPES, AND STABILIZE THE AREA.

8. INSTALL STORM DRAINAGE SYSTEM FROM STRUCTURE 502 TO STRUCTURE 504.

9. SAWCUT AND REMOVE EXISTING ASPHALT AS SHOWN ON THE PLAN BETWEEN STA. 20+25 and STA. 31+00.

10. INSTALL PROPOSED CURB AND GUTTER AND PAVEMENT FOR WIDENED ROADWAY.

11. INSTALL CONCRETE SIDEWALK AND ADDITIONAL GRADING AS NECESSARY, ADDING ADDITIONAL EROSION CONTROL MEASURES AS SHOWN.

12. PERMANENTLY STABILIZE ALL DISTURBED AREAS PAYING PARTICULAR ATTENTION TO THE FILL SLOPE ADJACENT TO THE WETLANDS.

PHASE TWO

13. IN A THREE–DAY DRY PERIOD, INSTALL STORM DRAINAGE SYSTEM FROM END OF PIPE 404 THROUGH STRUCTURE 402, GRADE THE AREA TO PROVIDE POSITIVE DRAINAGE TO STRUCTURES 402 AND 403, AND STABILIZE THE AREA.

14. INSTALL STORM DRAINAGE SYSTEM FROM STRUCTURE 416 THROUGH STRUCTURE 405.

15. SAWCUT AND REMOVE EXISTING ASPHALT AS SHOWN ON THE PLANS BETWEEN STA. 16+50 AND STA. 20+25.

16. INSTALL PROPOSED CURB AND GUTTER AND PAVEMENT FOR WIDENED ROADWAY.

17. INSTALL CONCRETE SIDEWALK AND ADDITIONAL GRADING AS NECESSARY, ADDING ADDITIONAL EROSION CONTROL MEASURES AS SHOWN.

18. PERMANENTLY STABILZE ALL DISTURBED AREAS, PAYING PARTICULAR ATTENTION TO THE SLOPE ADJACENT TO THE WETLANDS.

19. IN A THREE–DAY DRY PERIOD, INSTALL STORM DRAINAGE SYSTEM FROM END OF PIPE 413 THROUGH STRUCTURE 410, GRADE THE AREA TO PROVIDE POSITIVE DRAINAGE TO THE STRUCTURE, AND STABILIZE THE AREA.

20. INSTALL STORM DRAINAGE SYSTEM FROM STRUCTURE 401 TO 409, FROM STRUCTURE 408 TO 407, AND FROM 411 TO 412.

21. SAWCUT AND REMOVE EXISTING ASPHALT AS SHOWN ON THE PLAN BETWEEN STA. 12+00 AND STA. 15+50.

22. INSTALL PROPOSED CURB AND GUTTER AND PAVEMENT FOR WIDENED ROADWAY.

23. INSTALL CONCRETE SIDEWALK AND ADDITIONAL GRADING AS NECESSARY, ADDING ADDITIONAL EROSION CONTROL MEASURES AS SHOWN.

24. PERMANENTLY STABILIZE ALL DISTURBED AREAS.

25. ONCE DISTURBED AREAS ARE STABILIZED AND UPON APPROVAL FROM INSPECTOR, REMOVE ALL SEDIMENT CONTROL DEVICES AND CLEAR THE AREA. STABILIZE ALL AREAS DISTURBED BY EROSION CONTROL MEASURE REMOVAL.

GENERAL EROSION CONTROL NOTES

1. AN APPROVED COPY OF THE EROSION AND SEDIMENT CONTROL PLAN WITH PLACARD AND APPROVAL LETTER AND A MINIMUM OF 30–DAYS OF SELF–INSPECTION REPORTS ARE TO BE KEPT ON–SITE UNTIL PROJECT CLOSE–OUT BY NCDEQ LQS OFFICE.

2. EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED AT ANY AREA USED FOR CONTRACTOR EQUIPMENT STAGING, MATERIALS LAYDOWN, AND SPOIL OR WASTE AREAS.

3. ALL SEDIMENT CONTAINMENT DEVICES MUST BE MAINTAINED UNTIL ALL UPGRADE DRAINAGE AREAS HAVE BEEN STABILIZED WITH THE ESTABLISHMENT OF PERMANENT VEGETATION.

4. ANY DEWATERING OF SEDIMENT CONTAINMENT DEVICES FOR MAINTENANCE, REMOVAL, OR CONVERSION PURPOSES IS TO BE DONE THROUGH A SILT BAG. TURBID WATER FROM EXCAVATIONS CANNOT BE PUMPED DIRECTLY TO THE STORM DRAIN SYSTEM BUT MUST BE FILTERED THROUGH A SILT BAG.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING NEW GRASS DURING THIS PROJECT UNTIL THE NOTICE OF TERMINATION IS FILLED

6. ANY ACCIDENTAL RELEASE OF SEDIMENT FROM THE SITE SHALL BE CLEANED BY THE CONTRACTOR.

7. IT WILL BE THE CONTRACTORS RESPONSIBILITY TO KEEP CLEAN ALL STREETS DURING CONSTRUCTION. SEDIMENT TRACKED ONTO THE ROAD MUST BE CLEANED USING A DRY METHOD (E.G. NO WATER TRUCKS OR HOSES).

8. CONTRACTOR SHALL CONDUCT REGULAR INSPECTIONS OF THE EROSION AND SEDIMENT CONTROLS. THESE INSPECTIONS USING THE NCDENR INSPECTION FORM, MUST EITHER OCCUR AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAIN EVENT ONE–HALF (0.5) INCH OR GREATER AND ON EVERY SEVEN (7) CALENDAR DAYS. INSPECTION RECORDS AND RAIN GAUGE ARE TO BE KEPT ON SITE. DOWNSTREAM RECEIVING WATERS AND DISCHARGE POINTS MUST BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT DISCHARGE AT LEAST ONCE DURING THE CONSTRUCTION PROJECT. EACH INSPECTION REPORT WILL BE SUBMITTED TO THE OWNER FOR AN AUTHORIZED SIGNATURE IN ACCORDANCE WITH THE DWQ NPDES STORM WATER GENERAL PERMIT. INSPECTORS REPORTS SHALL BE INCLUDED WITH MONTHLY MEETING MINUTES AND/OR WITH MONTHLY PAY APPLICATION.

9. BASED ON THE OUTCOME OF THE INSPECTIONS, IMPLEMENT AND NEEDED REPAIRS OR MODIFICATIONS TO THE CONTROL(S) IMMEDIATELY FOLLOWING THE INSPECTION. THE INSPECTOR MUST APPROVE MODIFICATIONS SPECIFIC TO THE CONSTRUCTION PROJECTS PRIOR TO IMPLEMENTATION BY THE CONTRACTOR AND/OR SUBCONTRACTORS.

10. THE CONTRACTOR MUST INSPECT THE PROJECT AND DOCUMENT THE INSPECTION AFTER INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROL MEASURES, CLEARING AND GRUBBING OF EXISTING GROUND COVER, COMPLETION OF ANY PHASE OF GRADING OF SLOPES OR FILLS, INSTALLATION OF STORM DRAINAGE FACILITIES, COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER SUFFICIENT TO RESTRAIN EROSION.

11. CONTACT NC DEQ LQS AT (919) 791–4200 TO SCHEDULE AND HOLD A PRE–CONSTRUCTION MEETING A MINIMUM OF 48 HOURS BEFORE INSTALLATION OF ESC MEASURES AND AGAIN ONCE ESC MEASURES ARE IN PLACE.

12. EROSION AND SEDIMENTATION CONTROL DEVICES MUST BE INSTALLED PRIOR TO THE START OF CLEARING, DEMOLITION, GRADING AND/OR CONSTRUCTION.

13. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF EARTH SHALL BE IN ACCORDANCE WITH THE APPROVED ESC PLAN AND THAT THE SUPERINTENDENT IN–CHARGE OR CONTRACTOR SHALL BE ON SITE ON ALL DAYS WHEN CONSTRUCTION OR GRADING ACTIVITY TAKES PLACE.

14. AREAS THAT WILL BE UNWORKED FOR MORE THAN 7 OR 14 DAYS MUST BE STABILIZED USING MULCH, PLASTIC SHEETING, OR AN EROSION CONTROL BLANKET. AREAS THAT WILL BE UNWORKED FOR MORE THAN 14 DAYS MUST BE SEEDED, TACKED AND MULCHED. ALL GROUND COVER MUST BE APPLIED PER CONDITIONS OF THE NPDES PERMIT OR IN CRITICAL AREAS, AT THE END OF THE DAY.

15. CONTRACTOR SHALL PROVIDE SEDIMENT STORAGE AT EACH STRUCTURE IN ACCORDANCE WITH TABLE SHOWN ON SHEET EC–8.

16. ROLLED EROSION CONTROL PRODUCTS (NETS, BLANKETS OR MATS) MUST BE FREE OF PLASTIC OR SYNTHETIC MATERIALS, EVEN IF LABELED 'BIODEGRADABLE' OR 'PHOTODEGRADABLE' THESE PRODUCTS MUST BE MADE WITH NATURAL FIBERS SUCH AS JUTE (NOT POLY JUTE) STRAW, SISAL OR COIR.

17. GARBAGE IS TO BE DISPOSED OF PROPERLY. SPILLS GENERATED FROM EQUIPMENT ARE TO BE CLEANED UP IMMEDIATELY.

18. TRENCH EXCAVATION MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH. ANY EXCESS EXCAVATED MATERIAL TO BE HAULED IMMEDIATELY OFF SITE AND DISPOSED OF AT APPROVED LOCATIONS. NO MATERIAL WILL BE STOCKPILED ON–SITE.

19. THE CONTRACTOR SHALL ONLY EXCAVATE THAT AMOUNT OF UTILITY AS CAN BE REMOVED AND REPLACED IN A SINGLE WORKING DAY AND SHALL BACKFILL OR COVER WITH STEEL PLATE ALL EXCAVATION AT THE END OF EACH WORKING DAY. NO OPEN UNCOVERED EXCAVATION WILL BE ALLOWED AFTER WORKING HOURS.

20. LOCATION OF CONCRETE WASHOUT TO BE SUBMITTED BY CONTRACTOR 14 DAYS PRIOR TO START OF CONSTRUCTION FOR APPROVAL BY ENGINEER AND INSPECTOR.

21. EQUIPMENT AND TIRE WASHING IS PROHIBITED ON THE CONSTRUCTION SITE.

22. ANY EQUIPMENT OR MATERIALS BEING BROUGHT TO THE CONSTRUCTION SITE MUST BE KEPT WITHIN THE PROJECT LIMITS.

23. ALL MILLINGS SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF AT A NCDENR APPROVED LOCATION.

WASTE AND BORROW SOURCES:

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices that may be required on a commercial borrow or waste site will be done at the Contractor's expense.

All offsite Staging Areas, Borrow and Waste sites shall be in accordance with "Borrow and Waste Site Reclamation Procedures for Contracted Projects" located at:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/ContractedReclamationProcedures.pdf

All forms and documents referenced in the "Borrow and Waste Site Reclamation Procedures for Contracted Projects" shall be included with the reclamation plans for offsite staging areas, and borrow and waste sites.

CONCRETE WASHOUT STRUCTURE:
(12-01-15)

Description

Concrete washout structures are enclosures above or below grade to contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with wash out operations.

The concrete washout structure may include constructed devices above or below ground and or commercially available devices designed specifically to capture concrete waste water.

Materials

Item	Section
Temporary Silt Fence	1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil think geomembrane. If the minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

Install temporary silt fence around the perimeter of the enclosure in accordance with the details and as directed if structure is not located in an area where existing erosion and sedimentation control devices are capable to containing any loss of sediment.

Post a sign with the words "Concrete Washout" in close proximity of the concrete washout area, so it is clearly visible to site personnel.

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/soil_water/details/

Alternate details for accommodating concrete washout may be submitted for review and approval.

The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity.

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate details are approved then those details will also be paid for per each approved and installed device.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	Pay Unit
Concrete Washout Structure	Each

PHASE A

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-04/CONST.4

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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EMAIL: AMT1@AMTENGINEERING.COM
NCBELS LICENSE # F-1049

-L-
PI Sta 14+17.24
Δ = 1° 09' 02.0" (LT)
D = 0° 34' 22.7"
L = 200.81'
T = 100.41'
R = 10,000.00'
SE = EXIST

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 4

DETAIL 1
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 2:1, Natural Ground; d; B
Min. D = 1 Ft.
Max. d = 0.5 Ft.
B = 2 Ft.
*When B is < 6.0'
Type of Liner = PSRM
FROM L STA. 20+60 TO STA. 20+80 LT

DETAIL 2
TOE PROTECTION
(Not to Scale)

3:1 OR FLATTER Fill Slope; 3:1 OR FLATTER Fill Slope; d; PSRM
d = 1 Ft.
Type of Liner = PSRM
FROM L STA. 14+20 TO STA. 15+50 RT
FROM L STA. 18+75 TO STA. 20+20 LT

DETAIL 3
TOE PROTECTION
(Not to Scale)

NATURAL GROUND; 2:1 OR FLATTER; b; d; FILL SLOPE
d = 1 Ft.
b = 2 Ft.
Type of Liner = PSRM
FROM L STA. 22+75 TO STA. 24+85 LT

DETAIL 4
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground; 6:1 OR FLATTER; D; 6:1 OR FLATTER; Natural Ground
Min. D = 0.5 Ft.
FROM L STA. 17+50 TO STA. 18+35 LT

-Y1- POT Sta. 10+00.00
-Y2- POT Sta. 10+00.00
NAD 83/2011
-L- PC Sta. 13+16.83
-L- POT Sta. 10+00.00
BEGIN CONSTRUCTION
PHASE A & PHASE B
-L- POT STA.12+00.00
10+00
15+00
20+00
S 31° 41' 34.0" E
S 32° 50' 36.0" E
EAST YOUNG STREET
(ROUTE 1003)
VARIABLE WIDTH RIGHT OF WAY
LOUISBURG ROAD
(ROUTE 401)
VARIABLE WIDTH RIGHT OF WAY
OLD CENTURY FARM ROAD
(ROUTE 2396 - CLOSED)
60' WIDE RIGHT OF WAY
CENTURY FARM ROAD
60' WIDE RIGHT OF WAY
NCDOT
PID 1768383699
808 E YOUNG ST
26.35 ACRES
DB 14835, PG 1205
SCARBORO FAMILY LIMITED PARTNERSHIP
PID 1768596016
3201 CENTURY FARM RD
144.85 ACRES
DB 7436, PG 445
CEDAR LAKES HOMEOWNERS ASSN INC
PID 1768283479
OPEN SPACE
DB 12758 PG 1369
FERGUSON, MICHAEL P.
PID 1768284275
626 TOLEDO CT
DB 16982, PG 144
HARTSFIELD, JAMES & TORI
PID 1768284173
622 TOLEDO CT
DB 12192, PG 2167
REF
PULLEY, JAMES E & PHYLLIS
PID 1768274942
880 E YOUNG ST
DB 4642, PG 542
MITCHELL F RABIL FAMILY IRREVOCABLE TRUST
PID 1768166987
890 E YOUNG ST
28.09 ACRES
DB 5695, PG 745
8:1 ASPHALT TAPER
RELOCATE SIGN
-L- +73.04
48.36' LT
RELOCATE SIGNS
CONCRETE WASHOUT STRUCTURE
LINE WITH PSRM
R=70'
R=100'
R=130'
R=15'
24" RCP
15" RCP-IV
2'-6" C&G
8 TN CLB RIPRAP
21 SY GEOTEXTILE
-L- +53.01
33.27' LT
-L- +39.04
JB w/MH
-Y2- +14.96
19.47' RT
24 INCH TEMPORARY PIPE
PHASE B
MATCHLINE -L- STA. 23+00 SEE SHEET 5
-L- +91.04
41.18' LT
END CONSTRUCTION PHASE A
-L- POT STA.21+25.00
-Y2- POT Sta. 15+00.00=
-L- POT Sta.21+25.21
5 TN CLB RIPRAP
14 SY GEOTEXTILE
BEGIN 5' SIDEWALK
-L- STA.12+06.72
MATCH EXIST.SIDEWALK
-L- +07.75
44.08' RT
-L- +54.18
26.27' RT
-L- +61.36
26.38' RT
-L- +73.47
26.66' RT
PROP. 6' SIDEWALK
R=100'
+96.54
8:1 ASPHALT TAPER
-Y1- +95.
65.42' RT
-L- +29.33
45.00' RT
-L- PT Sta. 15+17.64
-Y1- POT Sta. 20+00.00

CONTRACTOR TO CONSTRUCT PROP.IMPROVEMENTS WITH CAUTION AROUND EXIST.COLUMNS/MAILBOX ON EITHER SIDE OF DRIVEWAY.IF REQUIRED EXIST.COLUMNS ARE TO BE RELOCATED IN SIMILAR FASHION OUTSIDE AREA OF CONSTRUCTION.

— LOD — LIMITS OF DISTURBANCE PHASE A
— LOD — LIMITS OF DISTURBANCE PHASE B

NOTE:
CONTRACTOR TO RELOCATE ANY EXIST. SIGNS IN CONFLICT WITH PROP. IMPROVEMENTS.

8/17/99
5/7/2019
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PHASE B

-L-		-Y3-
PI Sta 25+92.39	PI Sta 33+53.38	PI Sta 11+24.02
Δ = 2° 50' 28.4" (LT)	Δ = 27° 32' 06.9" (RT)	Δ = 7° 14' 43.7" (LT)
D = 1° 25' 56.8"	D = 6° 02' 02.1"	D = 3° 57' 08.0"
L = 198.35'	L = 456.34'	L = 183.33'
T = 99.20'	T = 232.77'	T = 91.80'
R = 4,000.00'	R = 950.00'	R = 1,450.00'
SE = EXIST	SE = EXIST	SE = EXIST

DETAIL 3
TOE PROTECTION
(Not to Scale)

d= 1 Ft.
b= 2 Ft.
Type of Liner= PSRM
FROM L STA. 22+75 TO STA. 24+85 LT

CLEARING AND GRUBBING
EROSION CONTROL FOR
CONSTRUCTION SHEET 5

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-05/CONST.5

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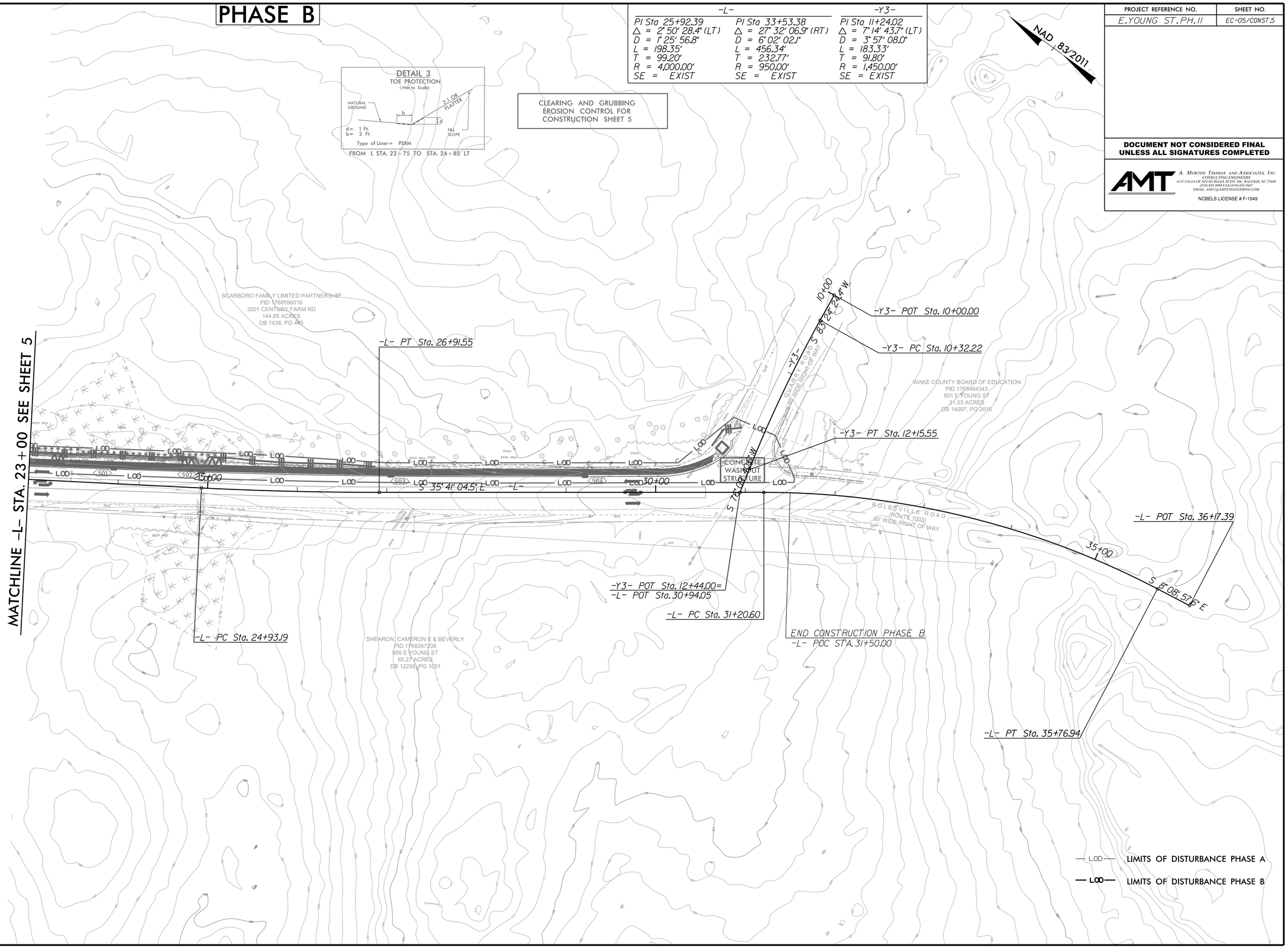
NCBELS LICENSE # F-1049



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6/7/2019
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jcrouse

PHASE A

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-06/CONST.4

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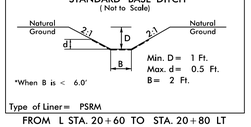
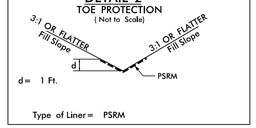
-L-
PI Sta 14+17.24
Δ = 1° 09' 02.0" (LT)
D = 0° 34' 22.7"
L = 200.81'
T = 100.41'
R = 10,000.00'
SE = EXIST

DETAIL 1
STANDARD BASE DITCH
(Not to Scale)



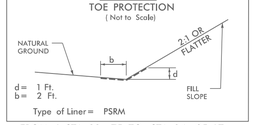
Type of Liner = PSRM
FROM L STA. 20+60 TO STA. 20+80 LT

DETAIL 2
TOE PROTECTION
(Not to Scale)



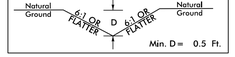
Type of Liner = PSRM
FROM L STA. 14+20 TO STA. 15+50 RT
FROM L STA. 18+75 TO STA. 20+20 LT

DETAIL 3
TOE PROTECTION
(Not to Scale)

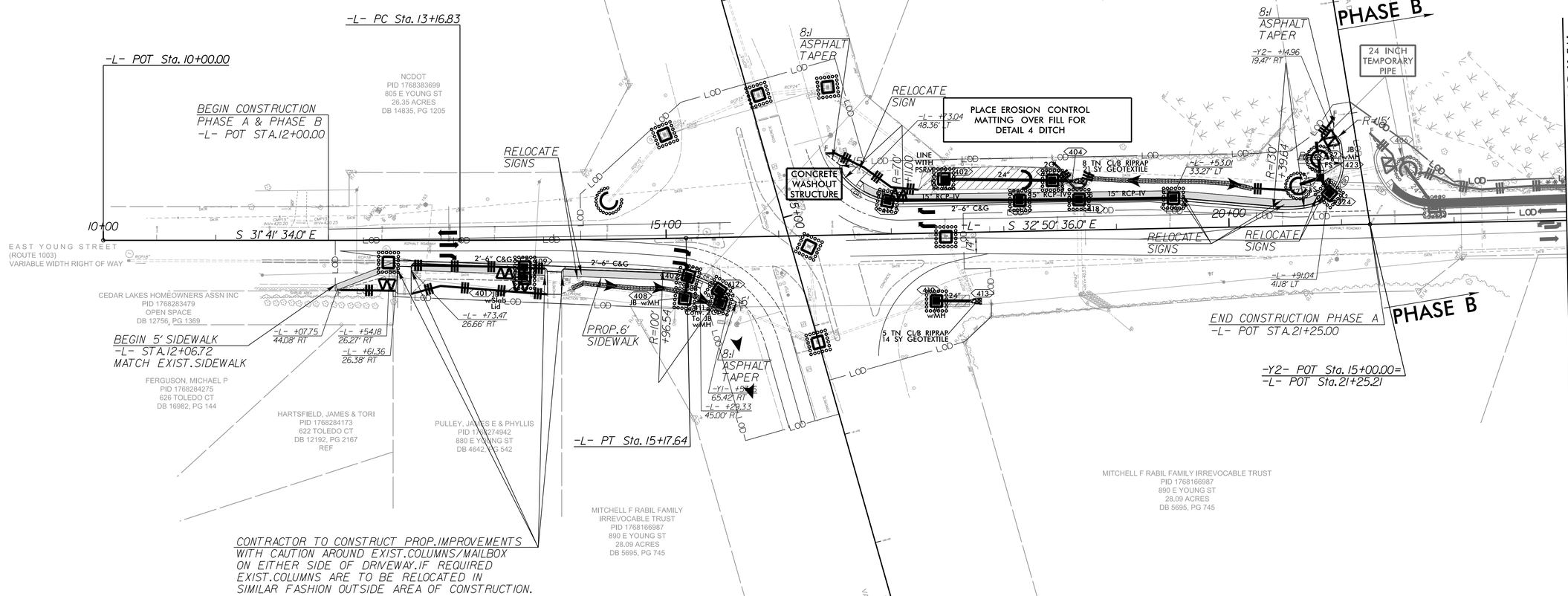


Type of Liner = PSRM
FROM L STA. 22+75 TO STA. 24+85 LT

DETAIL 4
STANDARD 'V' DITCH
(Not to Scale)



FROM L STA. 17+50 TO STA. 18+35 LT



DENOTES MECHANIZED CLEARING

DENOTES FILL IN WETLAND

— LOD — LIMITS OF DISTURBANCE PHASE A

— LOD — LIMITS OF DISTURBANCE PHASE B

NOTE:
CONTRACTOR TO RELOCATE ANY EXIST. SIGNS IN CONFLICT WITH PROP. IMPROVEMENTS.

8/17/99

5/7/2019
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PHASE B

PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-07/CONST.5

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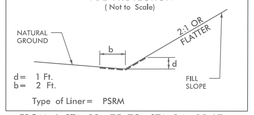
NAD 83/2011

DENOTES MECHANIZED CLEARING

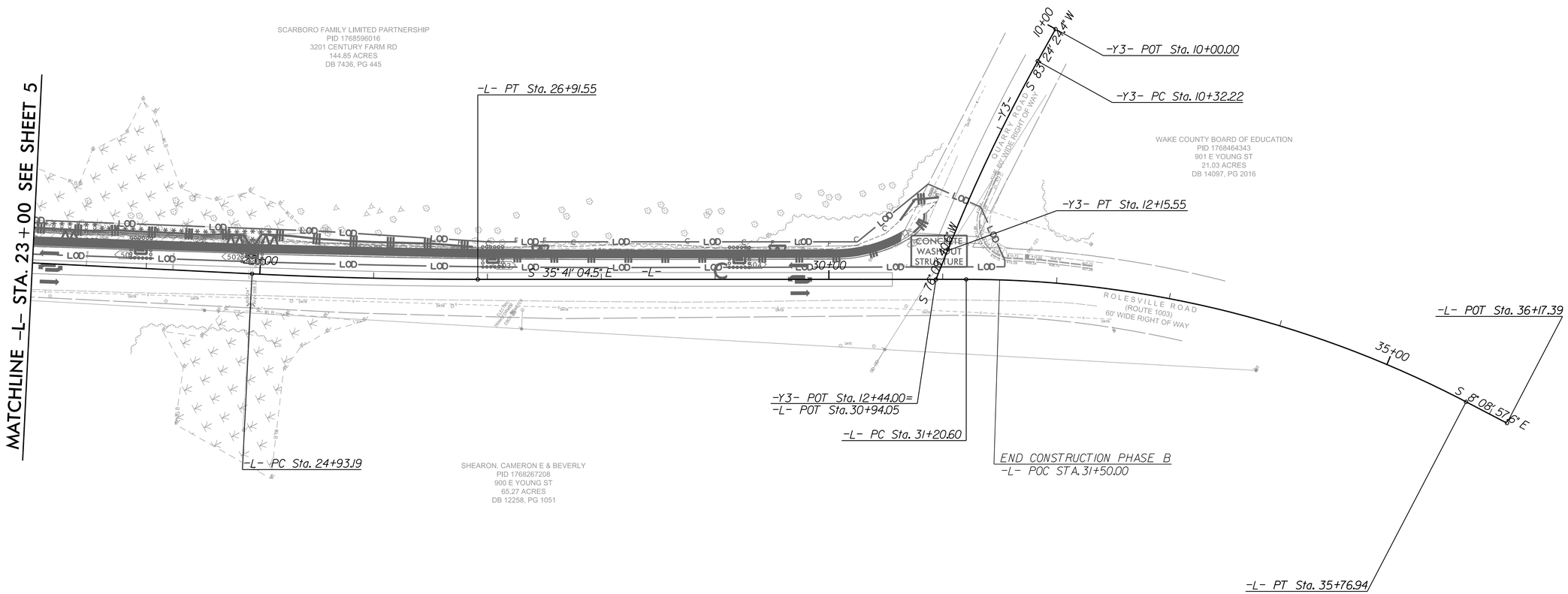
DENOTES FILL IN WETLAND

DETAIL 3
TOE PROTECTION
(Not to Scale)



FROM L STA. 22+75 TO STA. 24+85 LT

-L-		-Y3-
PI Sta 25+92.39	PI Sta 33+53.38	PI Sta 11+24.02
△ = 2° 50' 28.4" (LT)	△ = 27° 32' 06.9" (RT)	△ = 7° 14' 43.7" (LT)
D = 1° 25' 56.8"	D = 6° 02' 02.1"	D = 3° 57' 08.0"
L = 198.35'	L = 456.34'	L = 183.33'
T = 99.20'	T = 232.77'	T = 91.80'
R = 4,000.00'	R = 950.00'	R = 1,450.00'
SE = EXIST	SE = EXIST	SE = EXIST



— LOD — LIMITS OF DISTURBANCE PHASE A

— LOD — LIMITS OF DISTURBANCE PHASE B

8/17/99

6/7/2019
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PROJECT REFERENCE NO.	SHEET NO.
E.YOUNG ST.PH.II	EC-8

STABILIZATION REQUIREMENTS:
(3-11-2014)

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING: **(East)**

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31		September 1 - February 28	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 – August 31		September 1 - February 28	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

06 Dust	Escalade	Justice	Serengeti
2nd Millennium	Essential	Kalahari	Shelby
3rd Millennium	Evergreen 2	Kitty Hawk 2000	Sheridan
Apache III	Falcon IV	Legitimate	Signia
Avenger	Falcon NG	Lexington	Silver Hawk
Barlexas	Falcon V	LSD	Sliverstar
Barlexas II	Faith	Magellan	Shenandoah Elite
Bar Fa	Fat Cat	Matador	Sidewinder
Barrera	Festnova	Millennium SRP	Skyline
Barrington	Fidelity	Monet	Solara
Barrobusto	Finelawn Elite	Mustang 4	Southern Choice II
Barvado	Finelawn Xpress	Ninja 2	Speedway
Biltmore	Finesse II	Ol' Glory	Spyder LS
Bingo	Firebird	Olympic Gold	Sunset Gold
Bizem	Firecracker LS	Padre	Taccoa
Blackwatch	Firenza	Patagonia	Tanzania
Blade Runner II	Five Point	Pedigree	Trio
Bonsai	Focus	Picasso	Tahoe II
Braveheart	Forte	Piedmont	Talladega
Bravo	Garrison	Plantation	Tarheel
Bullseye	Gazelle II	Proseeds 5301	Terrano
Cannavaro	Gold Medallion	Prospect	Titan ltd
Catalyst	Grande 3	Pure Gold	Titanium LS
Cayenne	Greenbrooks	Quest	Tracer
Cessane Rz	Greenkeeper	Raptor II	Traverse SRP
Chipper	Gremlin	Rebel Exeda	Tulsa Time
Cochise IV	Greystone	Rebel Sentry	Turbo
Constitution	Guardian 21	Rebel IV	Turbo RZ
Corgi	Guardian 41	Regiment II	Tuxedo RZ
Corona	Hemi	Regenerate	Ultimate
Coyote	Honky Tonk	Rendition	Venture
Darlington	Hot Rod	Rhambler 2 SRP	Umbrella
Davinci	Hunter	Rembrandt	Van Gogh
Desire	Inferno	Reunion	Watchdog
Dominion	Innovator	Riverside	Wolfpack II
Dynamic	Integrity	RNP	Xtremegreen
Dynasty	Jaguar 3	Rocket	
Endeavor	Jamboree	Scorpion	

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

TEMPORARY SEEDING:

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

FERTILIZER TOPDRESSING:

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

SUPPLEMENTAL SEEDING:

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

MOWING:

The minimum mowing height on this project shall be 4 inches.

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones ¾" and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

MINIMIZE REMOVAL OF VEGETATION:

The Contractor shall minimize removal of vegetation within project limits to the maximum extent practicable. Vegetation along stream banks and adjacent to other jurisdictional resources outside the construction limits shall only be removed upon approval of Engineer. No additional payment will be made for this minimization work.

REQUIRED SEDIMENT STORAGE

Structure #	Structure Type	Drainage Area (sft)	Drainage Area (ac)	NOAA Intensity (in/hr)	Disturbed Area (sft)	Max Impervious (sft)	Trees Area (sft)	Grass Area (sft)	C Value	10 yr Q (cfs)	Sediment Storage Min (cft)
409	Catch Basin	3680	0.08	5.75	813	3680	0	0	0.90	0.44	67
401	Junction	1770	0.04	5.75	1770	0	0	1770	0.20	0.05	146
407	Catch Basin	5126	0.12	5.75	1600	5126	0	0	0.90	0.61	132
408	Junction	1400	0.03	5.75	1400	0	0	1400	0.20	0.04	116
411	Junction	455	0.01	5.75	455	0	0	455	0.20	0.01	38
412	Catch Basin	5036	0.12	5.75	175	5036	0	0	0.90	0.60	14
416	Catch Basin	2909	0.07	5.75	368	2909	0	0	0.90	0.35	30
402	Inlet	11329	0.26	4.85	3556	3164	0	8165	0.40	0.50	294
417	Catch Basin	4361	0.10	5.75	1170	4361	0	0	0.90	0.52	97
403	Inlet	41983	0.96	4.85	3000	0	0	41983	0.20	0.93	248
418	Catch Basin	1816	0.04	5.75	486	1816	0	0	0.90	0.22	40
405	Catch Basin	5862	0.13	5.75	1990	5862	0	0	0.90	0.70	164
421	Pipe	48064	1.10	4.85	2186	0	8294	39770	0.18	0.98	181
422	Pipe	1980	0.05	5.75	1980	0	0	1980	0.20	0.05	164
424	Catch Basin	1750	0.04	5.75	600	1750	0	0	0.90	0.21	50
406	Pipe	1184	0.03	5.75	1184	0	0	1184	0.20	0.03	98
425	Catch Basin	3564	0.08	5.75	750	3564	0	0	0.90	0.42	62
501	Catch Basin	8211	0.19	5.75	2754	8211	0	0	0.90	0.98	228
502	Catch Basin	5756	0.13	5.75	1900	5756	0	0	0.90	0.68	157
503	Catch Basin	6181	0.14	5.75	1944	6181	0	0	0.90	0.73	161
504	Catch Basin	7087	0.16	5.75	2416	7087	0	0	0.90	0.84	200

MIXTURE			SEEDING SCHEDULE					
	Agricultural Limestone	Min. 2 tons/acre (3 tons/acre in clay soils or per soils test)	FOR SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1)			FOR SHOULDERS, SIDE DITCHES, SLOPES (3:1 TO 2:1)		
	Fertilizer	1,000 lbs/acre – 10-10-10	Date	Type	Planting Rate	Date	Type	Planting Rate
	Superphosphate	500 lbs/acre – 20% analysis	Aug 15–Nov 1	Tall Fescue	300 lbs/acre	Mar 1–Jun 1	Sericea Lespedeza (scarified) and use the following combinations:	50 lbs/acre (Sericea Lespedeza);
	Mulch	2 tons/acre – small grain straw	Nov 1–Mar 1	Tall Fescue & Abruzzi Rye	300 lbs/acre	Mar 1–Apr 15	Add Tall Fescue	120 lbs/acre
	Anchor	Asphalt emulsion at 300 gals/acre	Mar 1–Apr 15	Tall Fescue	300 lbs/acre	Mar 1–Jun 30	Or add Weeping Love grass	10 lbs/acre
			Apr 15–Jun 30	Hulled Common Bermudagrass	25 lbs/acre	Mar 1–Jun 30	Or add Hulled Common Bermudagrass	25 lbs/acre
			Jul 1–Aug 15	Tall Fescue AND Browntop Millet or Sorghum-Sudan Hybrids***	125 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Millet); 30 lbs/acre (Sorghum-Sudan Hybrids)	Jun 1–Sept 1	Tall Fescue AND Browntop Mullet or Sorghum-Sudan Hybrids***	120 lbs/acre (Tall Fescue); 35 lbs/acre (Browntop Mullet); 30 lbs/acre (Sorghum-Sudan Hybrids)
						Sept 1–Mar 1	Sericea Lespedeza (unhulled – unscarified) AND Tall Fescue	70 lbs/acre (Sericea Lespedeza); 120 lbs/acre (Tall Fescue)
						Nov 1–Mar 1	AND Abruzzi Rye	25 lbs/acre