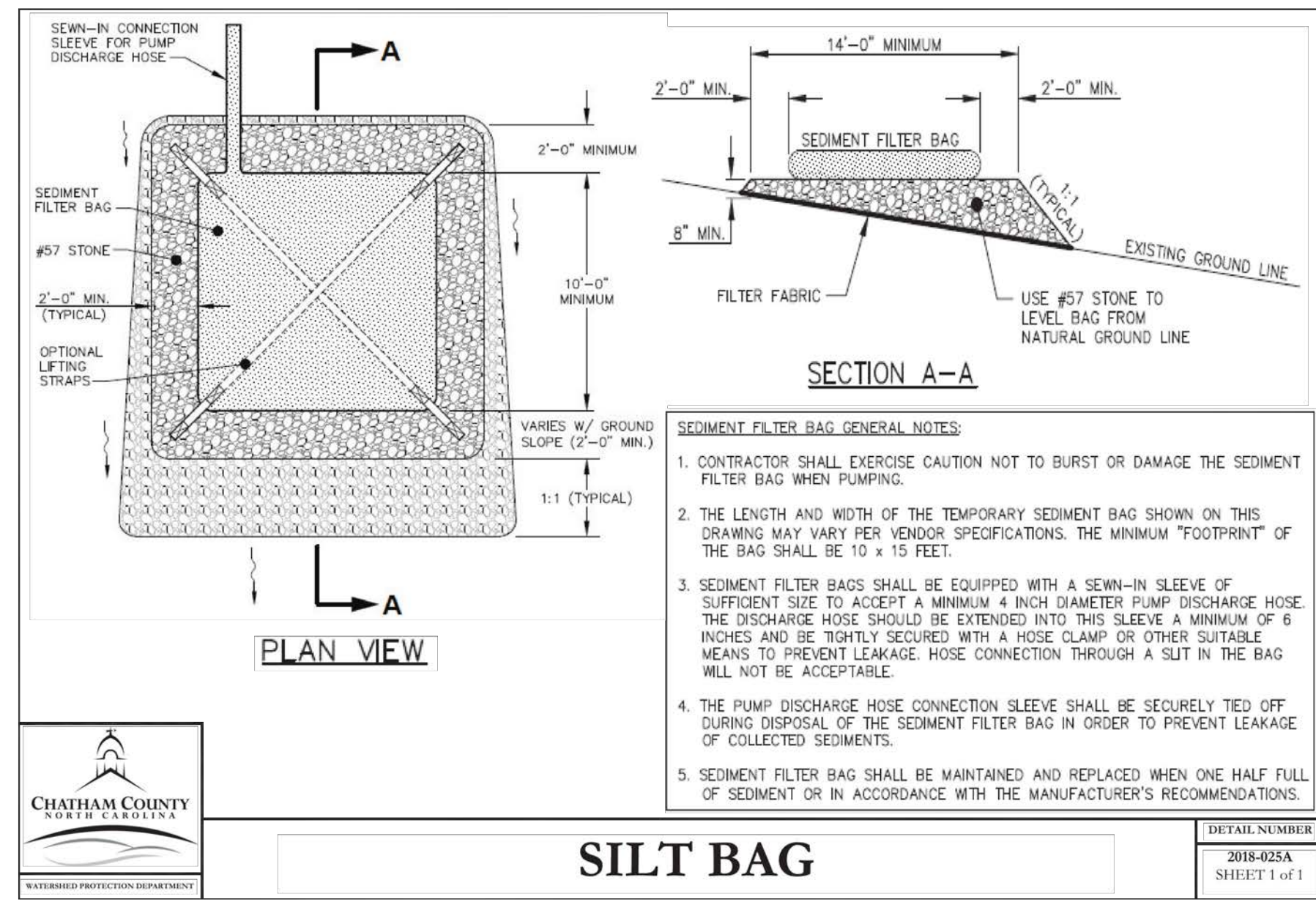


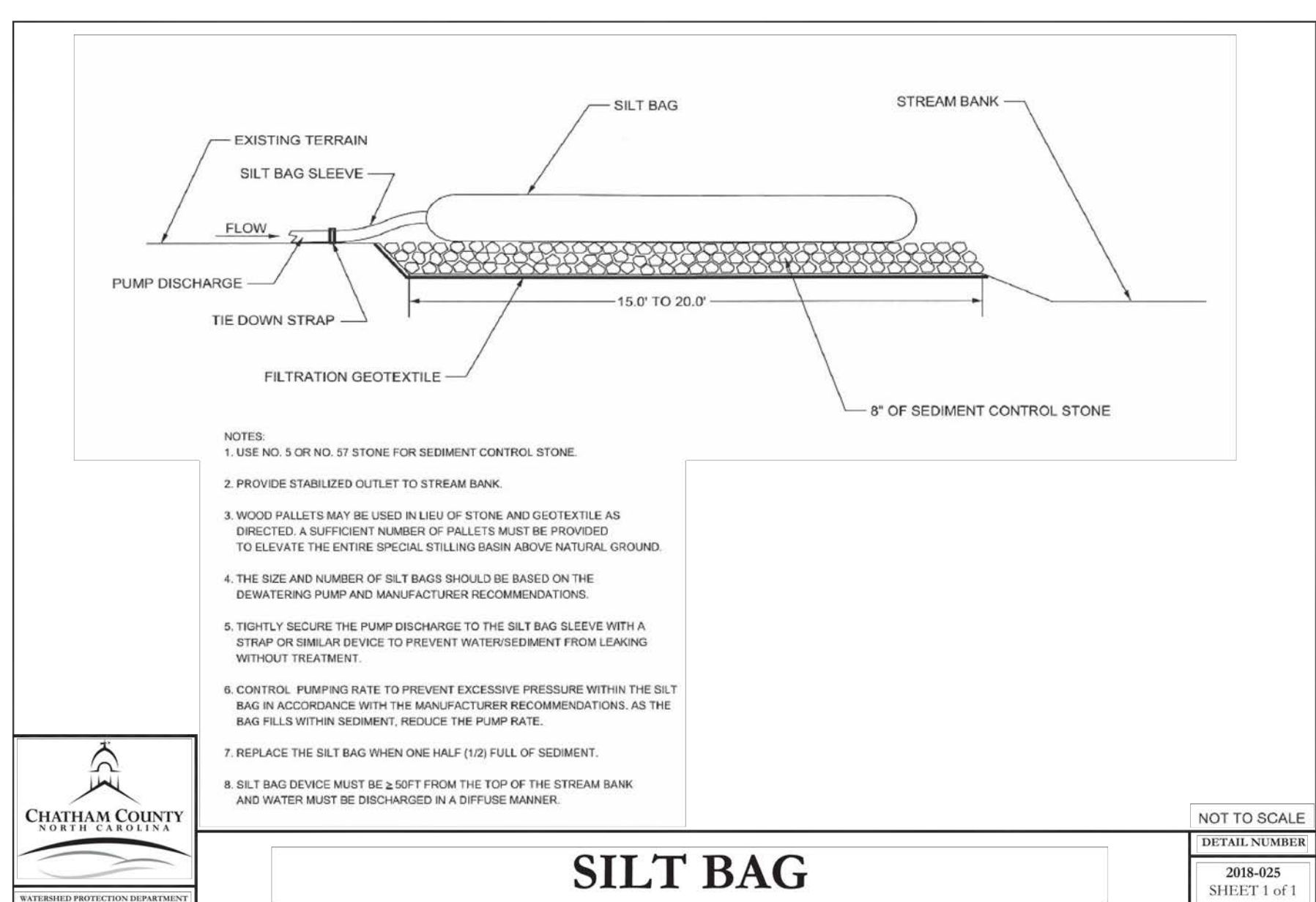
STANDARD MATTING INSTALLATION (SLOPES)

DETAIL NUMBER
2018-010A
SHEET 1 of 1

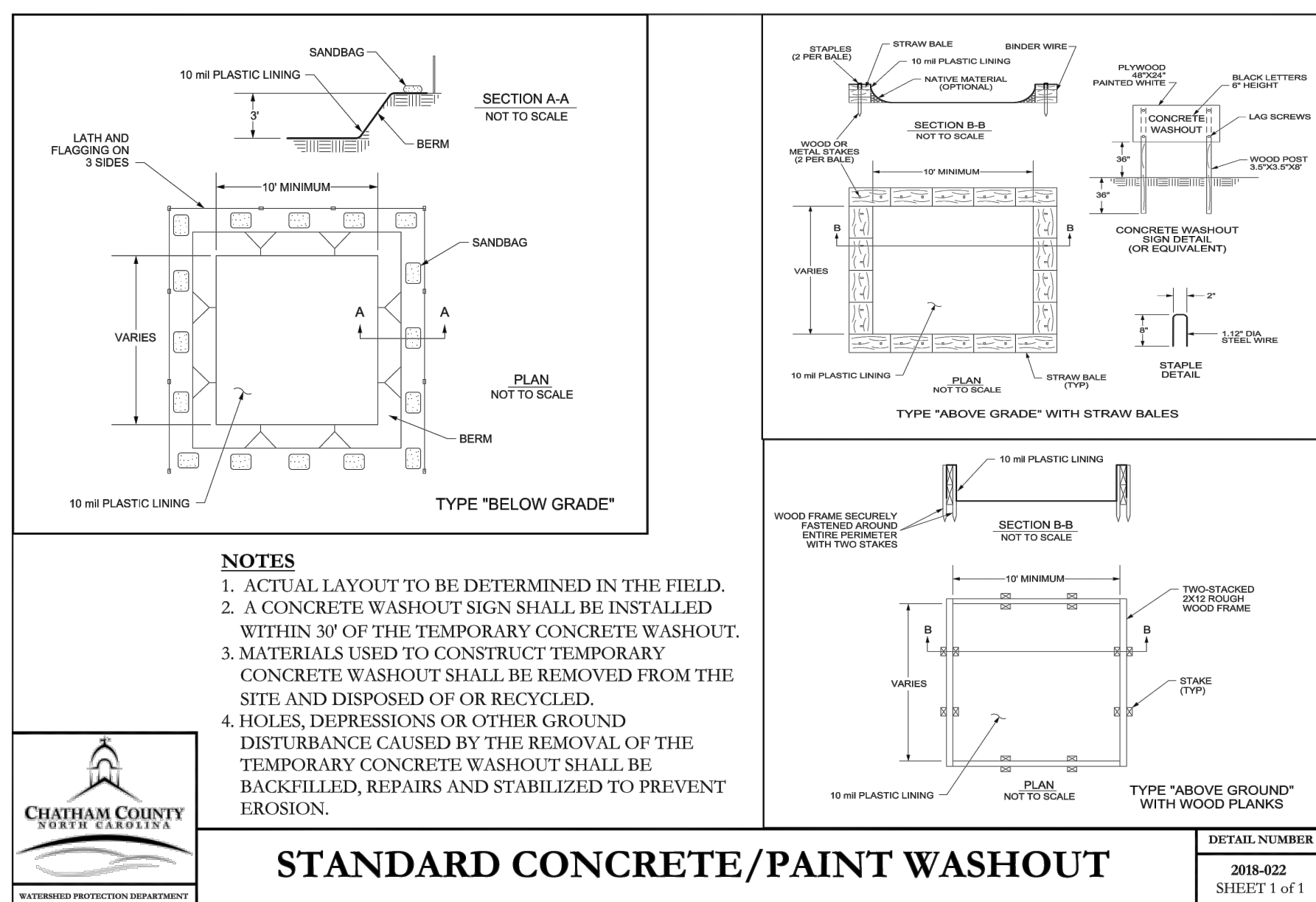


SILT BAG

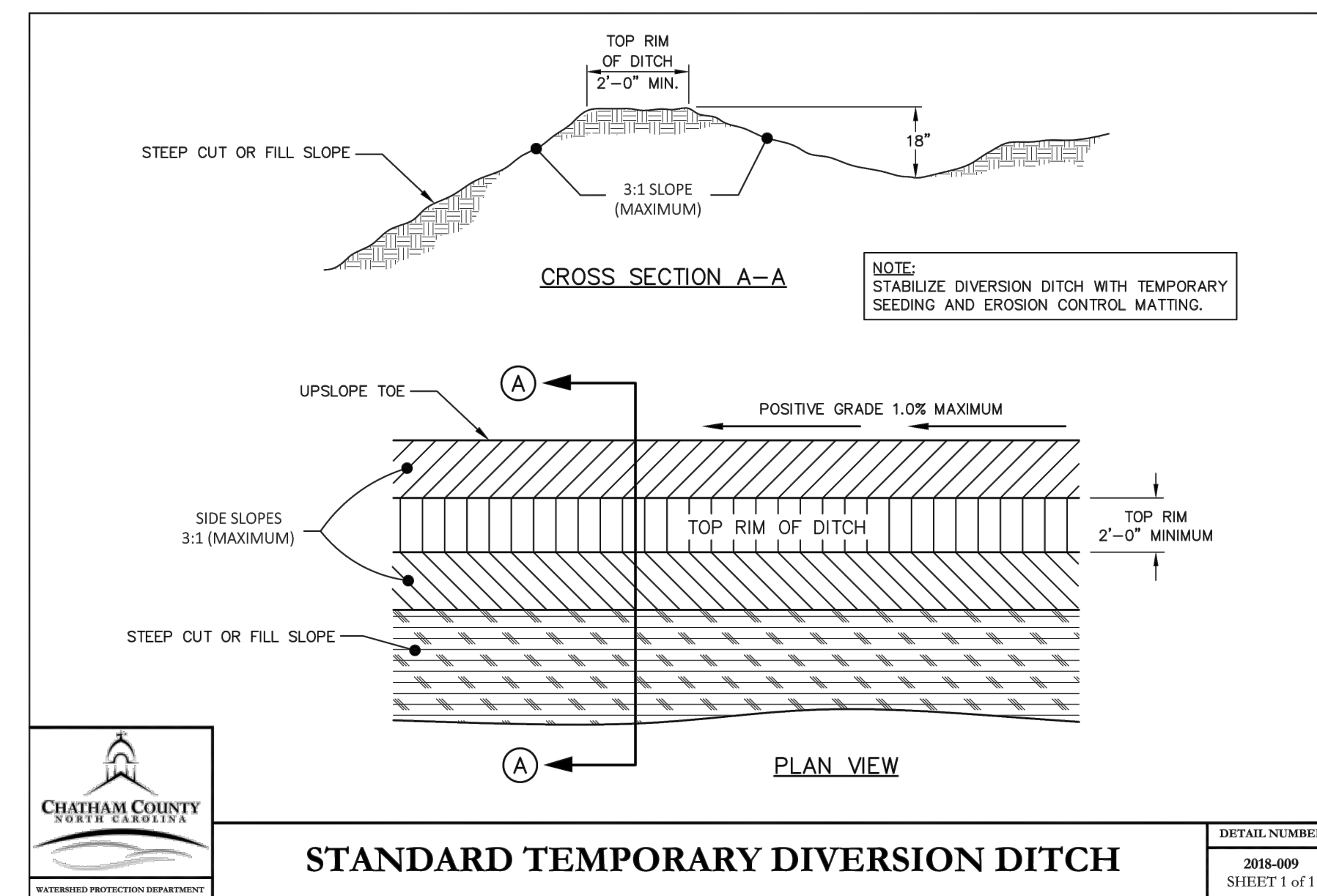
DETAIL NUMBER
2018-025A
SHEET 1 of 1



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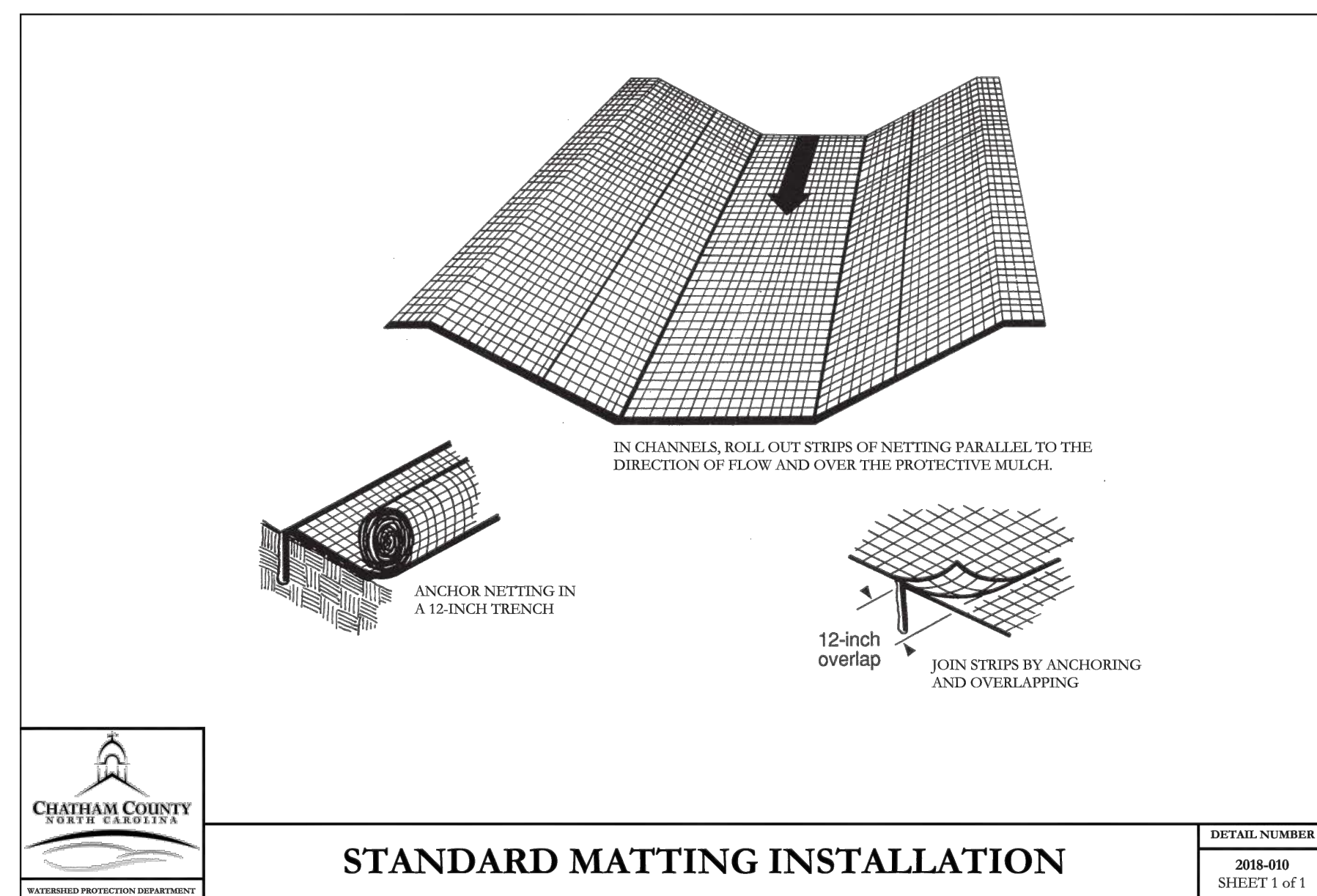


STANDARD CONCRETE/PAINT WASHOUT

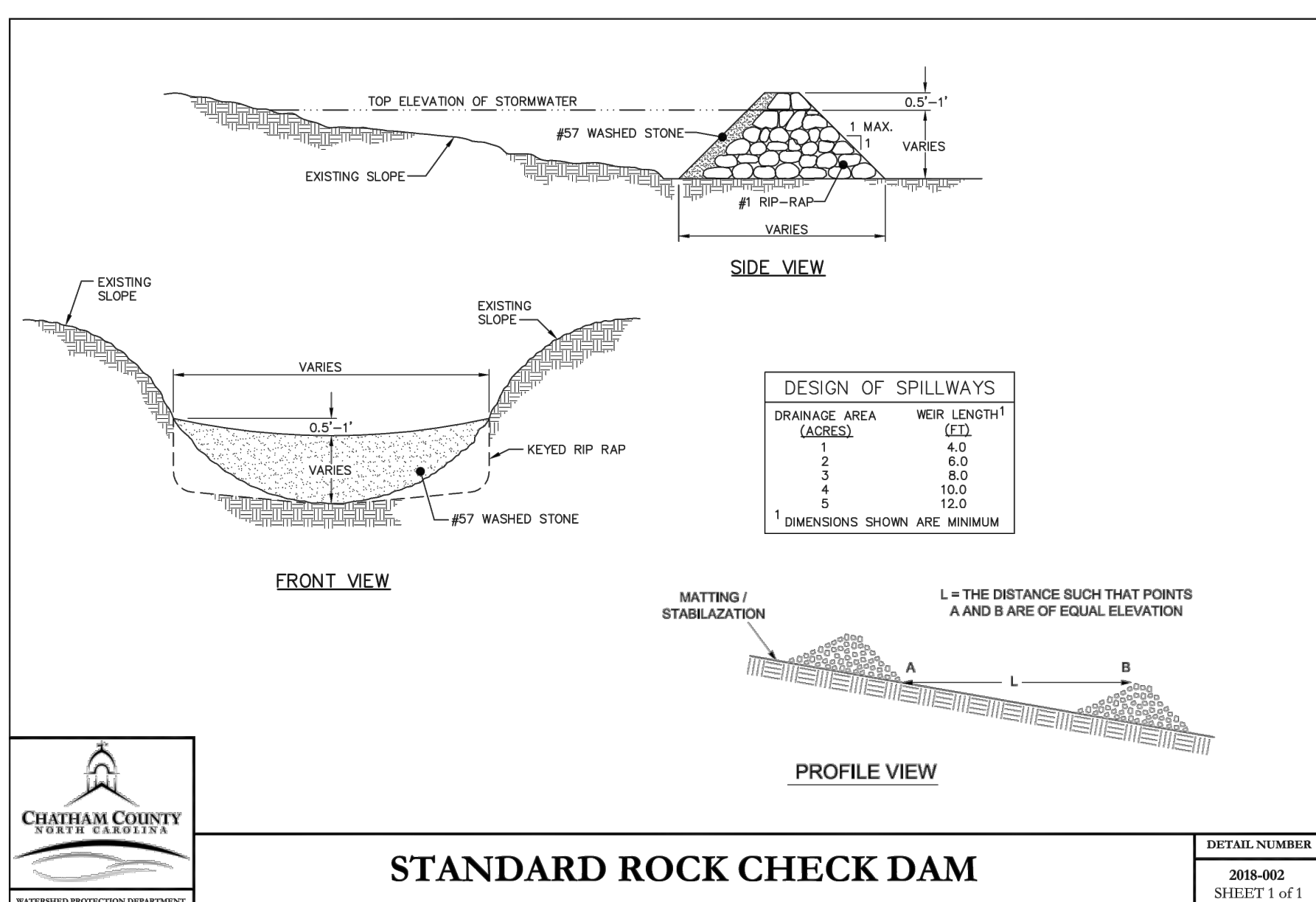


STANDARD TEMPORARY DIVERSION DITCH

DETAIL NUMBER
2018-009
SHEET 1 of 1

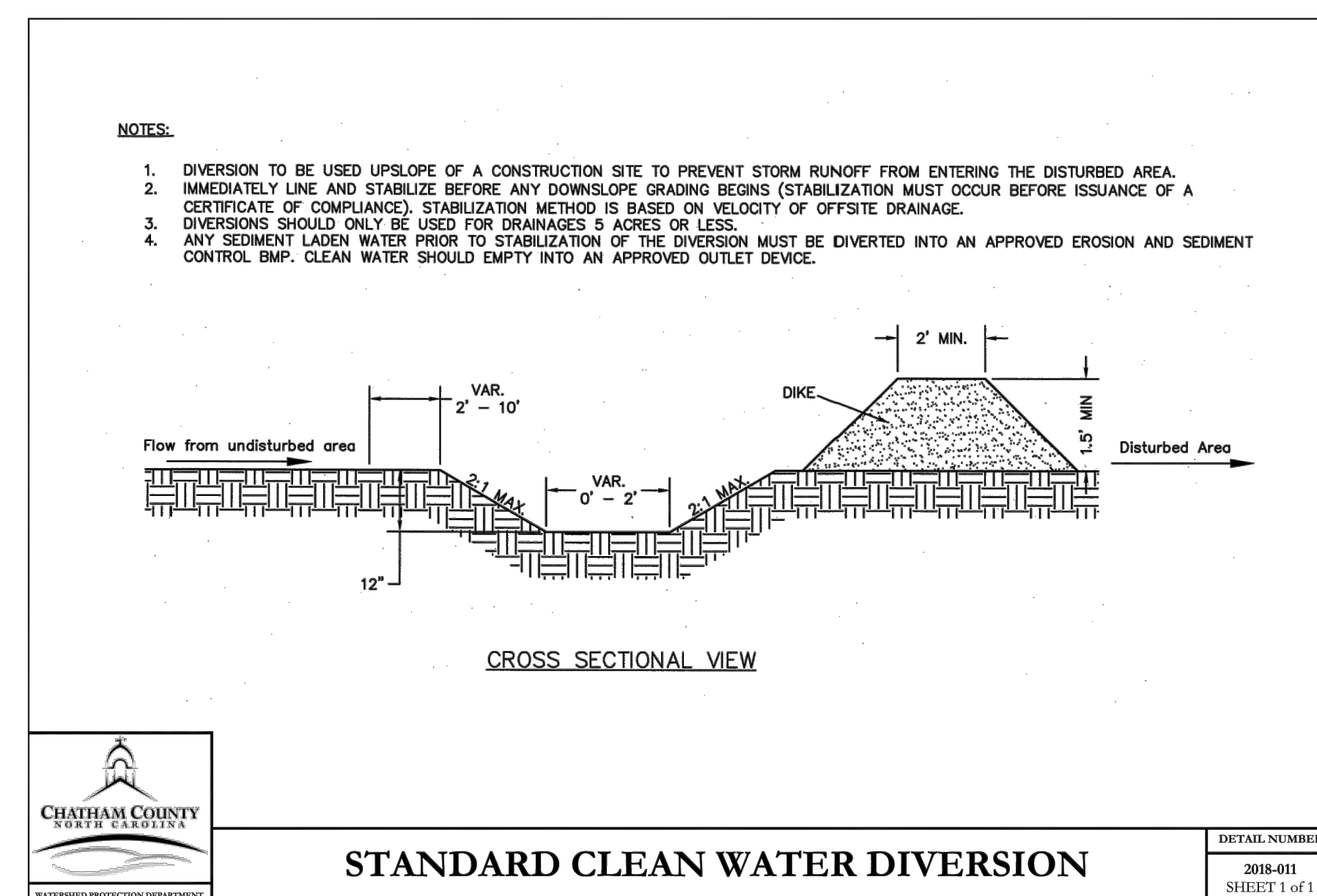


STANDARD MATTING INSTALLATION

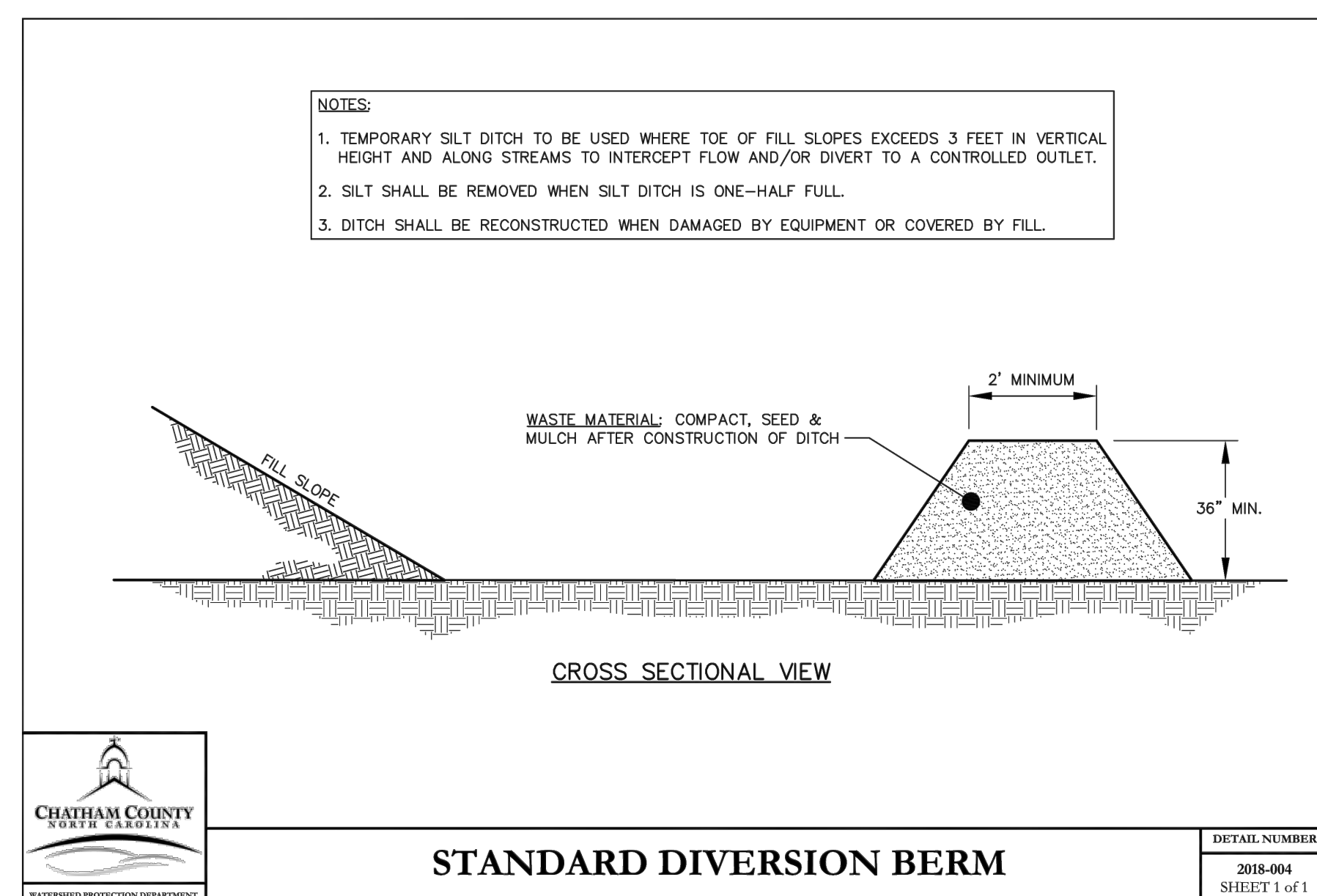


STANDARD ROCK CHECK DAM

DETAIL NUMBER
2018-002
SHEET 1 of 1



STANDARD CLEAN WATER DIVERSION



STANDARD DIVERSION BERM

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NO.	DATE	BY	REVISIONS
6			
5			
4	1/24/20	CEA	CCDOT COMMENTS
3	2/19/20	ABA	CCDOT COMMENTS
2	02/06/20	JHS	CCDOT COMMENTS
1	12/20/19	JHS	CCDOT COMMENTS
			FIRST ISSUED

CONSTRUCTION DRAWINGS
HOBBY FARM SUBDIVISION
3267 ANDREWS STORE ROAD, PITTSBORO, NC 27312
CHATHAM COUNTY, NORTH CAROLINA

EROSION CONTROL DETAILS

C3 PROJECT #:
18-067
REVIEW PROJECT #:
XX-XXX
SHEET #:

C-2.1

Species	Rate (lb/acre)	Dates
Rye (grain)	120	January 1 - May 1
Annual lespedeza (Kobe)	50	
German millet	40	May 1 - August 15
Rye (grain)	120	August 15 - December 31

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

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

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



TEMPORARY SEEDING/MULCHING SPECIFICATIONS

DETAIL NUMBER
2018-009
SHEET 1 of 1

ALL DISTURBED AREAS			
March 1 - August 31		September 10 - 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 AREAS			
March 1 - August 31		September 10 - February 28	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	25#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

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

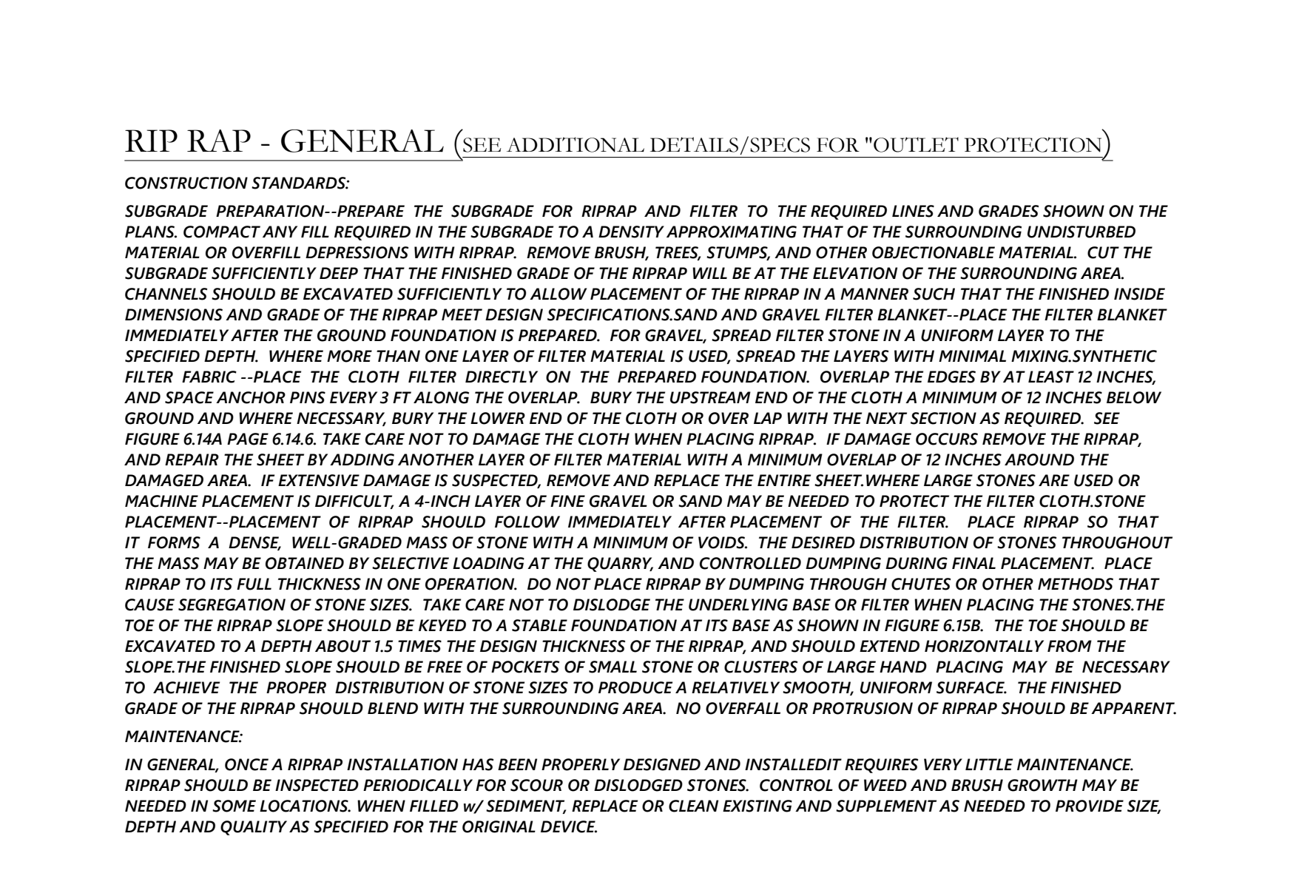
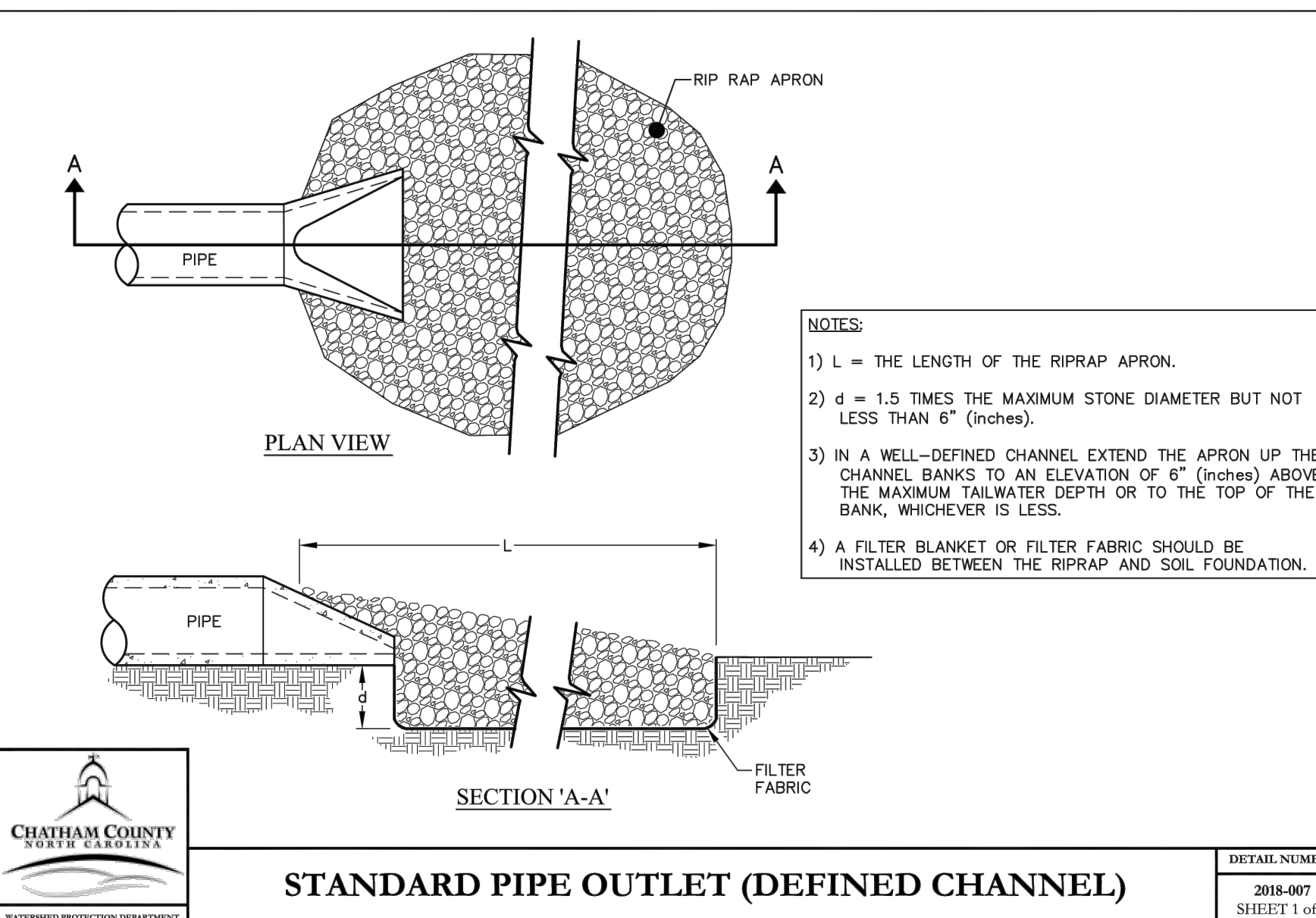
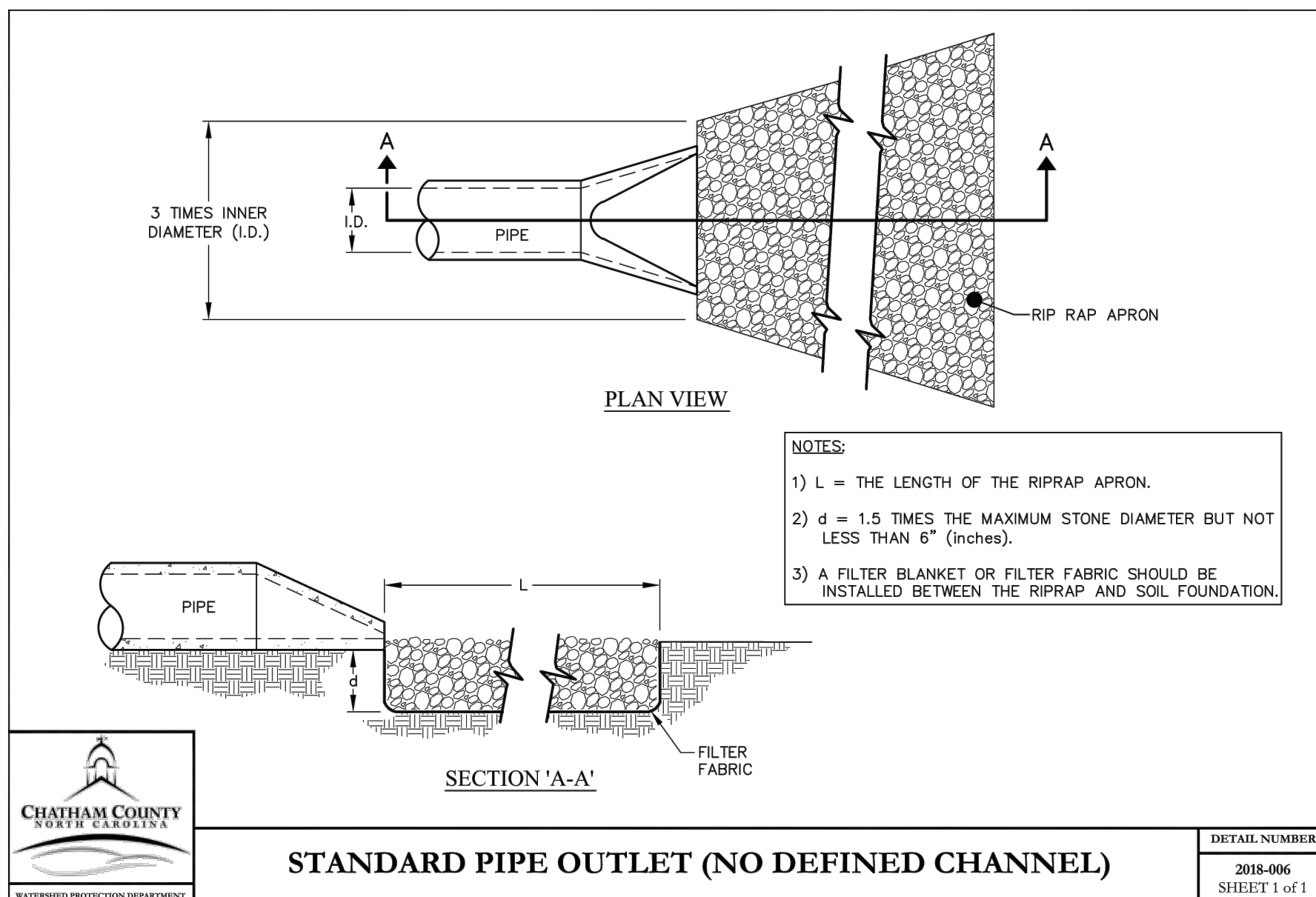
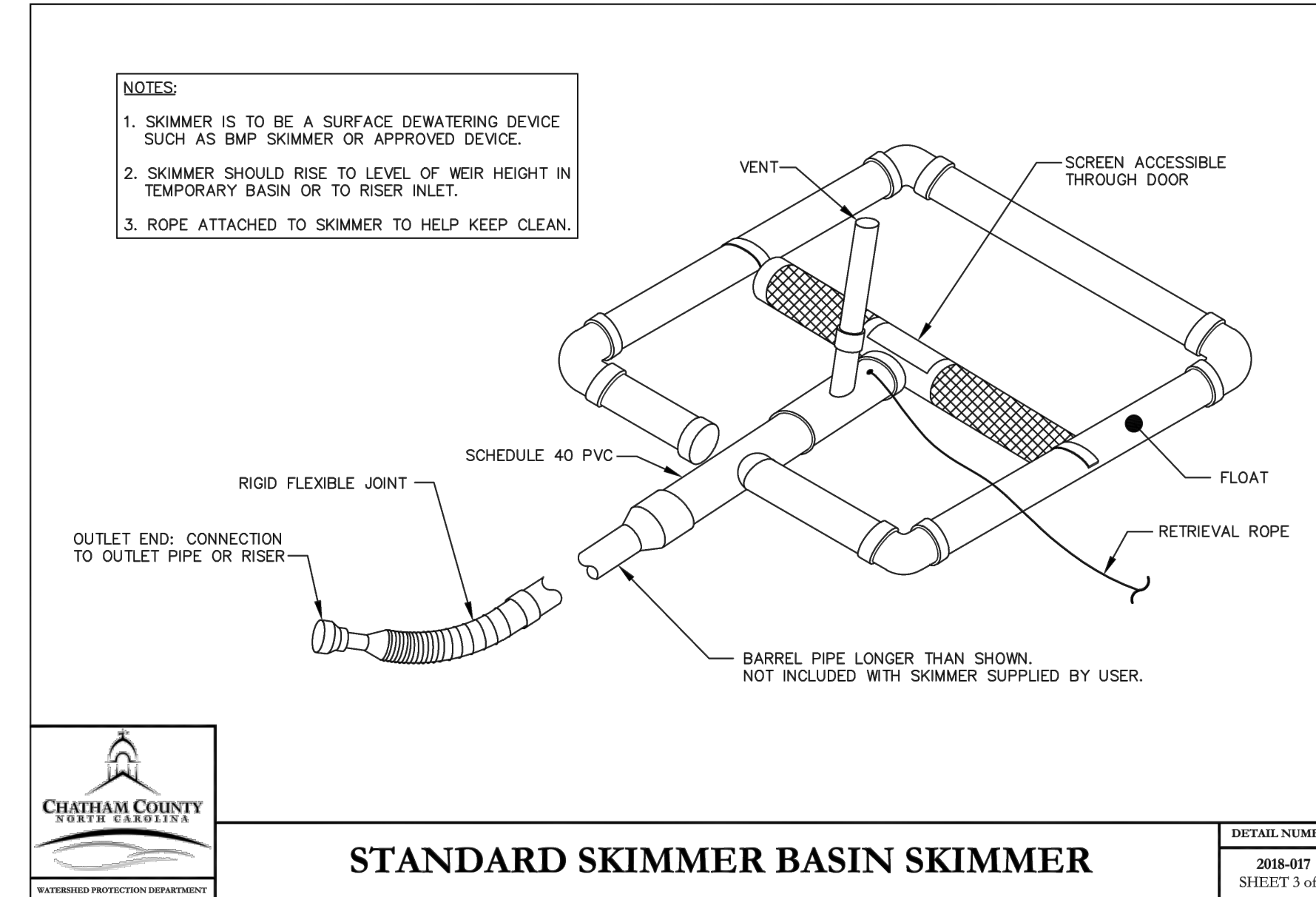
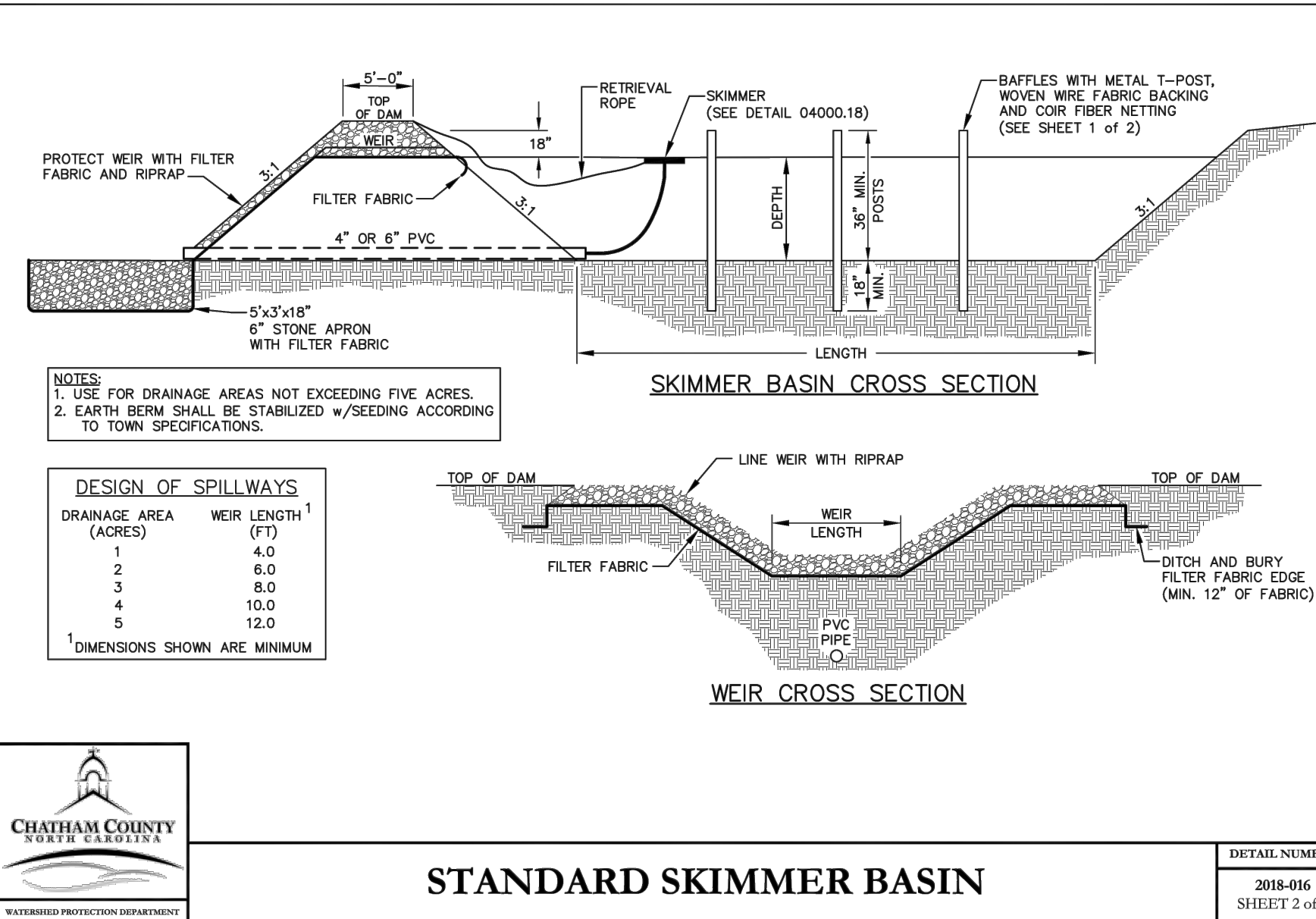
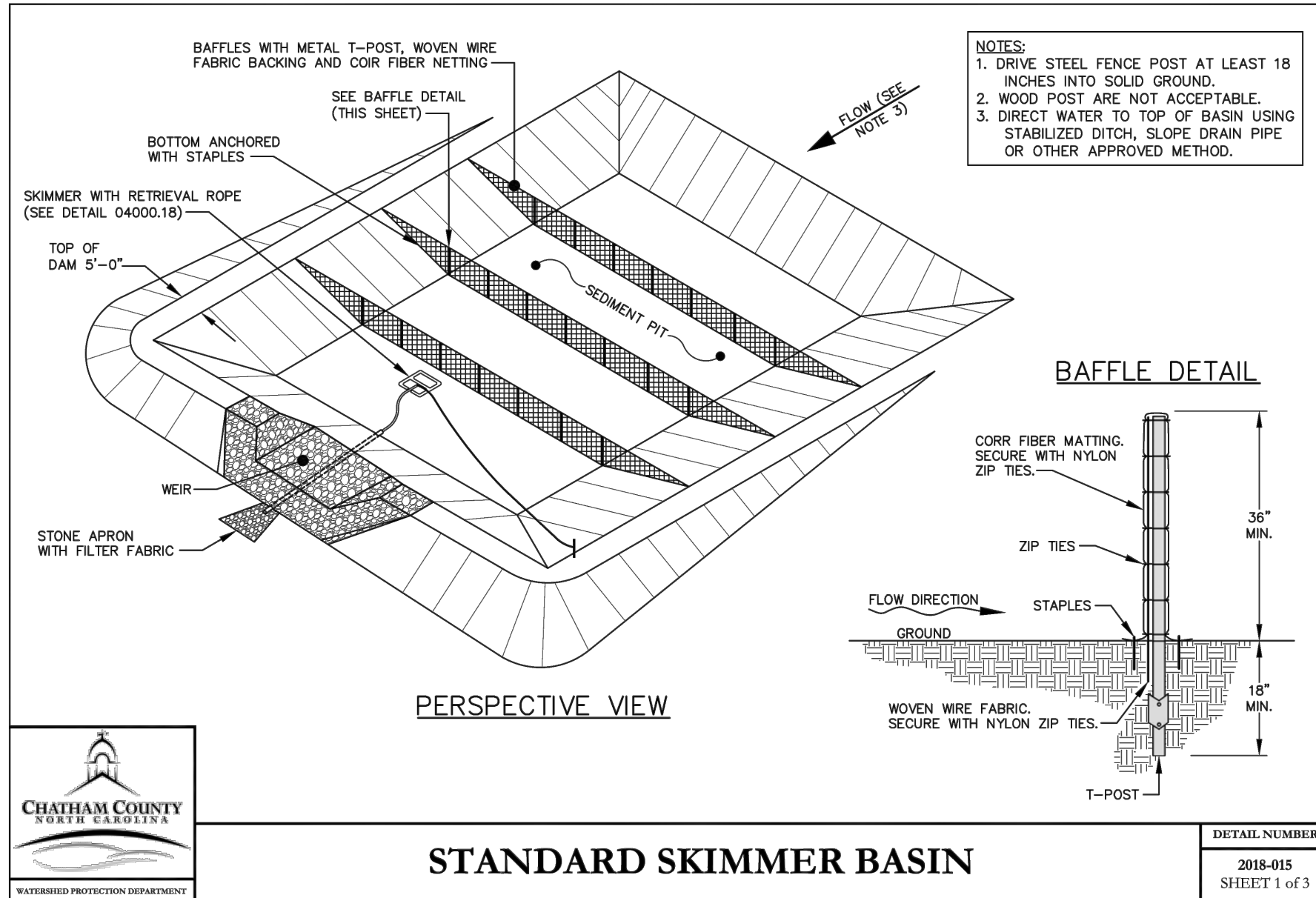
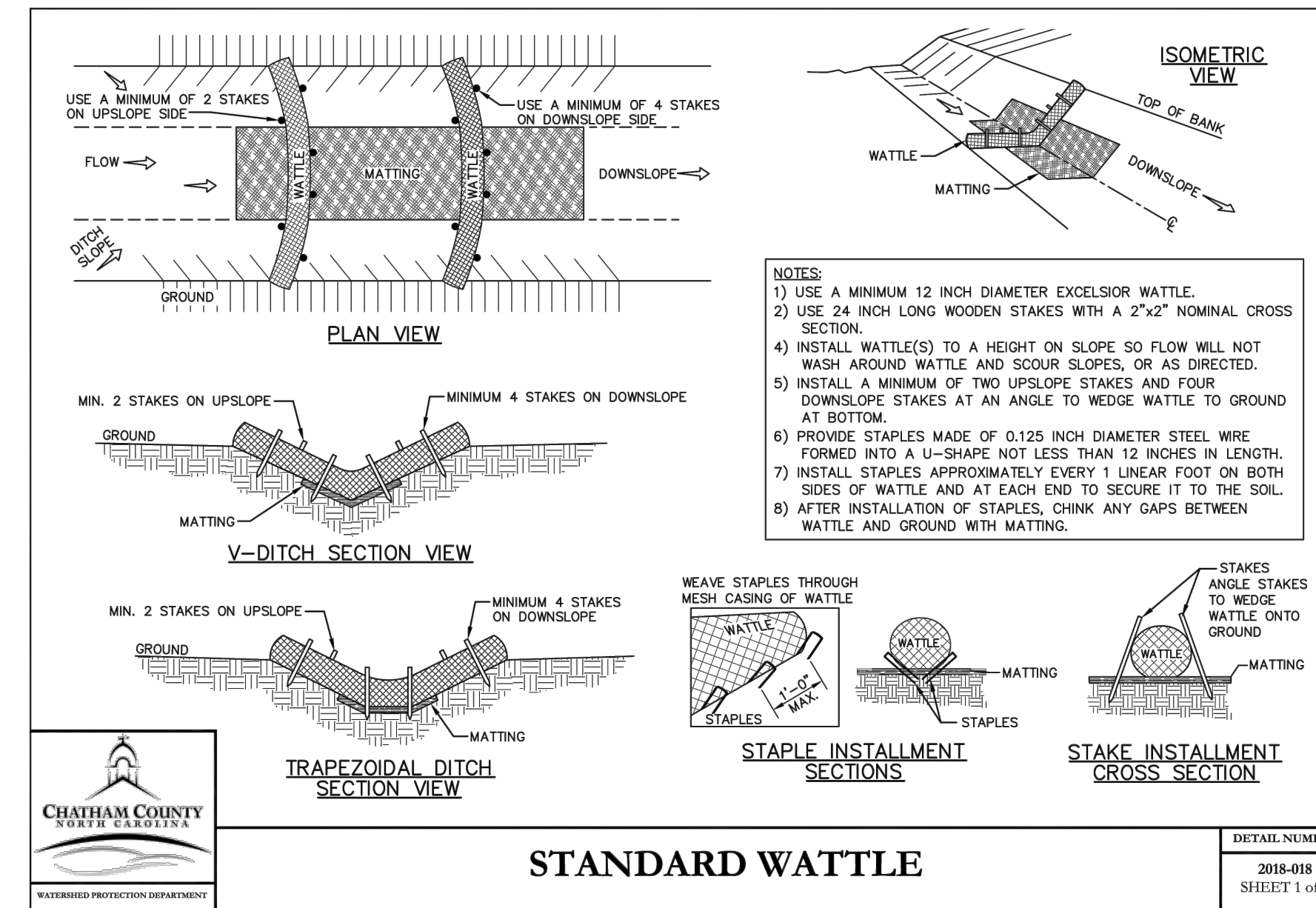
On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 lb/acre and add 20# of Sericea Lespedeza from January 1 - December 31.

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.



PERMANENT SEEDING/MULCHING SPECIFICATIONS

DETAIL NUMBER
2018-021
SHEET 1 of 1



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NO.	DATE	BY	REVISIONS
6			
5			
4	1/24/20	CEA	NC DOT COMMENTS
3	2/19/20	ABA	NC DOT COMMENTS
2	02/06/20	JHS	CC UTILITY, STORM, NC DOT COMMENTS
1	12/29/19	JHS	CC EROSION CONTROL COMMENTS
			FIRST ISSUED

CONSTRUCTION DRAWINGS
HOBBY FARM SUBDIVISION
3307 ANDREWS STORE ROAD, PITTSBORO, NC 27312
CHATHAM COUNTY, NORTH CAROLINA

EROSION CONTROL DETAILS

C3 PROJECT #:
18-067
REVIEW PROJECT #:
XX-XXX
SHEET #:
C-22

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

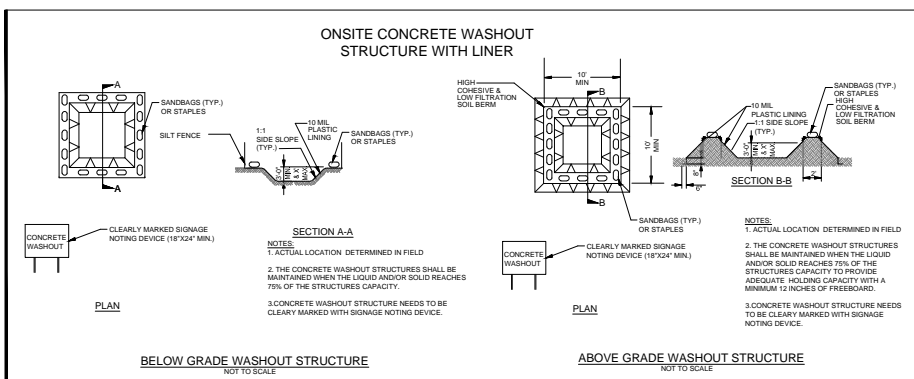
Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization 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
<ul style="list-style-type: none"> Temporary grass seed covered with straw or other mulches and tackifiers Hydroseeding Rollled erosion control products with or without temporary grass seed Appropriately applied straw or other mulch Plastic sheeting 	<ul style="list-style-type: none"> 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 Rollled 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 storm 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 defunct 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 apron 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 the 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 openly.

HAZARDOUS AND TOXIC WASTE
 1. Create designated hazardous waste collection area 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.

PERMANENT SEEDING IN NORTH CAROLINA (TABLE 6.11L)

SEEDING MIXTURE SPECIES	RATE (LB/ACRE)
TALL FESCUE	20
SERICEA LESPEDEZA	10
KOBE LESPEDEZA	50

SEEDING NOTES
 1. AFTER AUGUST 15 USE UNSCARIFIED SERICEA SEED.
 2. WHERE PERIODIC MOWING IS PLANNED OR A NEAR APPEARANCE IS DESIRED, OMIT SERICEA AND INCREASE KOBE LESPEDEZA TO 40 LB/ACRE.
 3. TO EXTEND SPRING SEEDING DATES INTO JUNE, ADD 15LB/ACRE HULLED BERMUDAGRASS. HOWEVER, AFTER MID-APRIL IT IS PREFERABLE TO SEED TEMPORARY COVER.
NURSE PLANTS
 BETWEEN MAY 1 AND AUGUST 15, ADD 10 LB/ACRE GERMAN MILLET OR 15LB/ACRE SUDAGRASS. PRIOR TO MAY 1 OR AFTER AUGUST 15 ADD 40 LB/ACRE RYE (GRAIN).
SEEDING DATES
 BEST POSSIBLE
 FALL: AUGUST 25 - SEPTEMBER 15 AUGUST 20 - OCTOBER 25
 LATE WINTER: FEBRUARY 15 - MARCH 21 FEBRUARY 1 - APRIL 15
 FALL IS BEST FOR ALL FESCUE AND LATE WINTER FOR LESPEDEZAS. OVER SEEDING OF KOBE LESPEDEZA OVER FALL-SEEDED TALL FESCUE IS VERY EFFECTIVE.
SOIL AMENDMENTS
 APPLY LIME AND FERTILIZER ACCORDING TO SOIL TESTS, OR APPLY 4,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 1,000 LB/ACRE 10-10-10 FERTILIZER.
MULCH
 APPLY 4,000 LB/ACRE GRAIN STRAW OR EQUIVALENT COVER OF ANOTHER SUITABLE MULCH. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING OR ROVING OR BY CRIMPING WITH A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.
MAINTENANCE
 REFERENTIVE IN THE SECOND YEAR UNLESS GROWTH IS FULLY ADEQUATE. MAY BE MOWED ONCE OR TWICE A YEAR, BUT MOWING IS NOT NECESSARY. RESEED, FERTILIZE AND MULCH DAMAGED AREAS IMMEDIATELY.

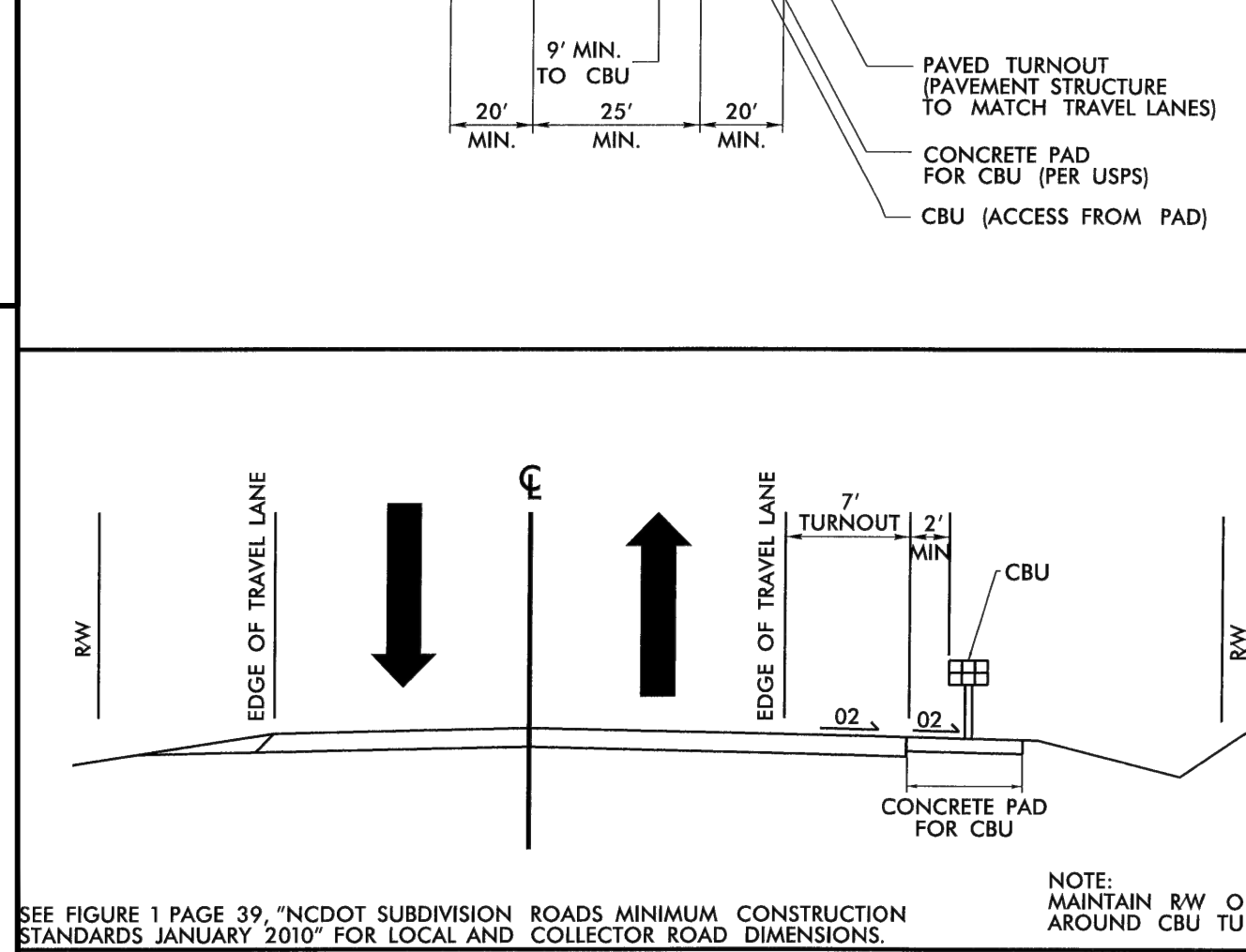
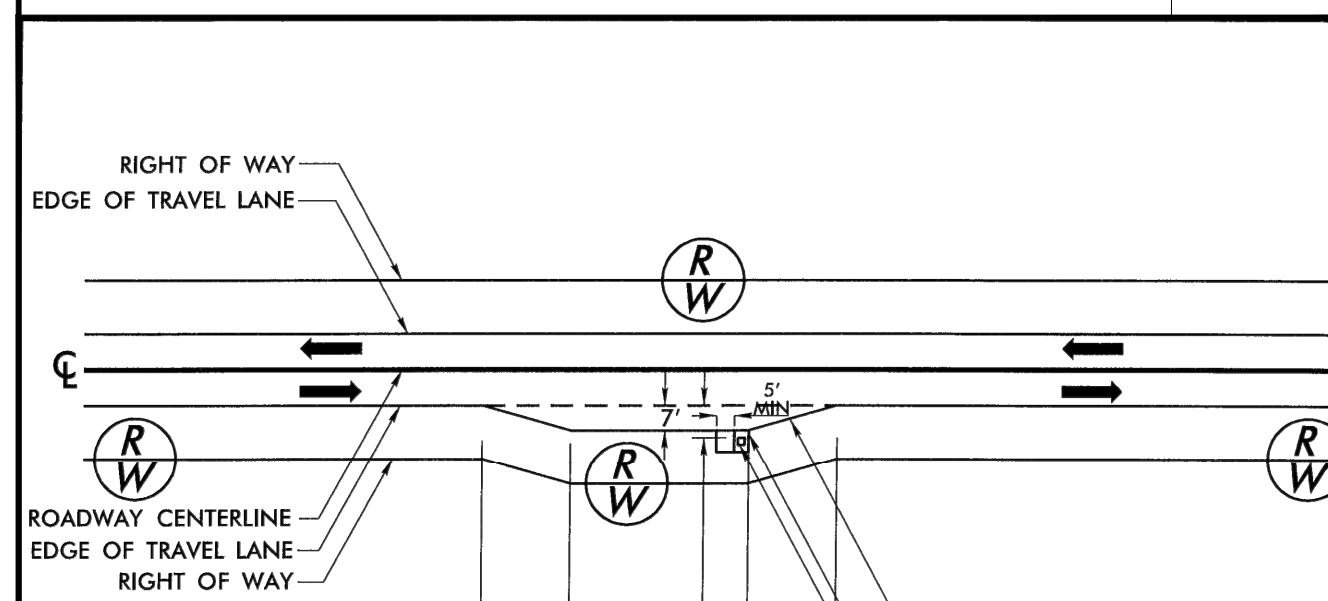
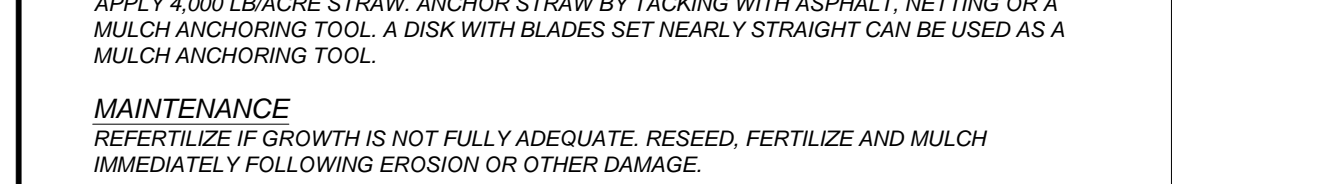
SEEDING SCHEDULE
 1) CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
 2) RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
 3) REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
 4) APPLY AGRICULTURAL LIME, FERTILIZER, AND UNIFORMLY AND MIX WITH SOIL (SEE BELOW).
 5) CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES.
 6) SEED ON A FRESHLY PREPARED SEEDBED AND SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK.
 7) MULCH IMMEDIATELY AFTER SEEDING.
 8) INSPECT ALL SEEDBED AREAS AND MAKE NECESSARY RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. STRESS SHOULD BE GIVEN TO RESEEDING DAMAGED, REESTABLISH WITH ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
 9) CONSULT A CONSERVATION INSPECTOR ON MAINTENANCE AND FERTILIZATION AFTER PERMANENT COVER IS STABILIZED.
 * APPLY:
 AGRICULTURAL LIMESTONE - 2 TONS / ACRES (3 TONS / ACRE IN CLAY SOILS)
 FERTILIZER - 1,000 LBS / ACRE - 10-10-10
 SUPERPHOSPHATE - 500 LBS / ACRE - 20% ANALYSIS
 MULCH - 2 TONS / ACRE (5000 LBS/ACRE FOR STEEP SLOPES) - SMALL GRAIN STRAW
 ANOTHER - ASPHALT EMULSION @ 400 GALS / ACRE

SEEDBED PREPARATION
MAINTENANCE
 NEW SEEDINGS SHOULD BE INSPECTED FREQUENTLY AND MAINTENANCE PERFORMED AS NEEDED. IF RILLS AND GULLIES DEVELOP, THEY MUST BE FILLED, RE-SEED, AND MULCHED AS SOON AS POSSIBLE. DIVERSIONS MAY BE NEEDED UNTIL NEW PLANTS TAKE HOLD. DAMAGE TO VEGETATION FROM DISEASE, INSECTS, TRAFFIC, ETC., CAN OCCUR AT ANY TIME. HERBICIDES AND REGULAR MOWING MAY BE NEEDED TO CONTROL WEEDS. DUST AND SPRAYS MAY BE NEEDED TO CONTROL INSECTS. WEED OR DAMAGED SPOTS MUST BE RELIMED, FERTILIZED, MULCHED, AND RESEED AS PROMPTLY AS POSSIBLE.

TEMPORARY SEEDING IN NORTH CAROLINA

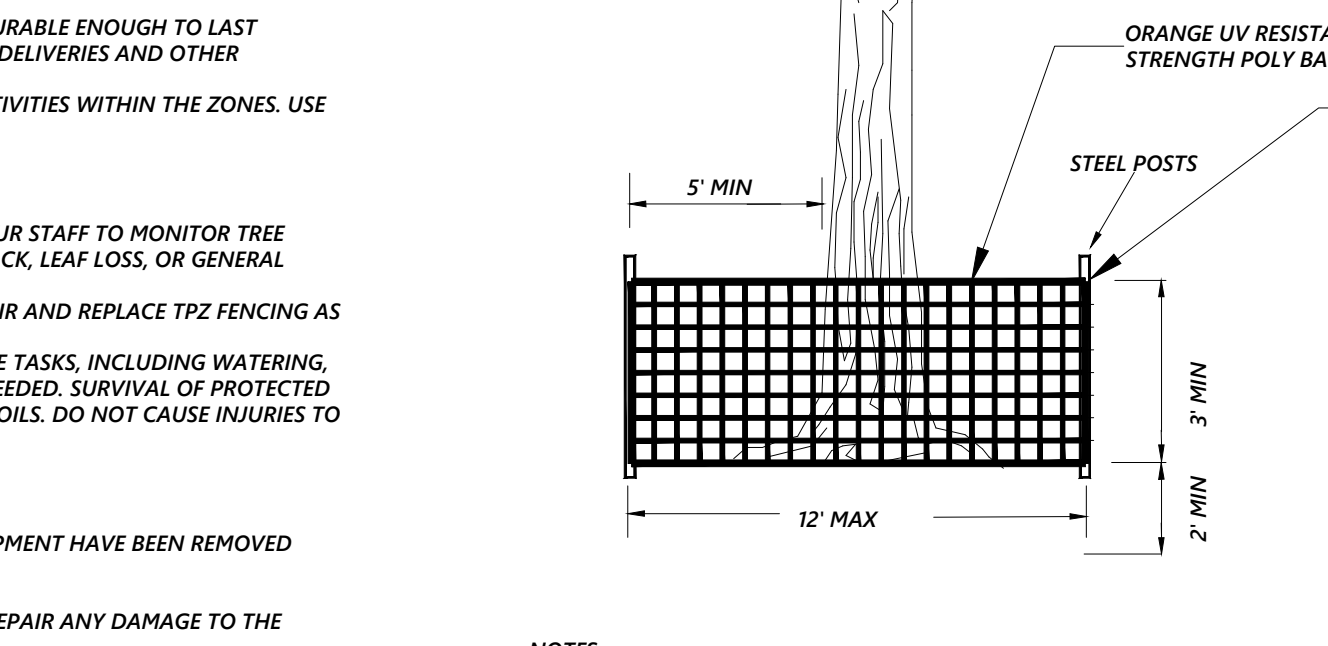
SEEDING MIXTURE SPECIES	RATE (LB/ACRE)
RYE (GRAIN)	120
ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN IN MOUNTAINS)	50
GERMAN MILLET	40
OMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IN THE PIEDMONT AND MOUNTAINS, A SMALL-STEMMED SUDAGRASS	
RYE (GRAIN)	120
IS NOT TO EXTEND BEYOND JUNE. MAY BE SUBSTITUTED AT A RATE OF 50 LB/ACRE.	
MOUNTAINS - ABOVE 2500 FT. FEB. 15 - MAY 15	
PIEDMONT - JAN. 1 - MAY 1	
COASTAL PLAIN - DEC. 1 - APR. 15	
MOUNTAINS - MAY 15 - AUG. 15	
PIEDMONT - MAY 1 - AUG. 15	
COASTAL PLAIN - APR. 15 - AUG. 15	
MOUNTAINS - AUG. 15 - DEC. 15	
COASTAL PLAIN AND PIEDMONT - AUG. 15 - DEC. 30	

SOIL AMENDMENTS
 FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/ACRE GROUND AGRICULTURAL LIMESTONE AND 750 LBS/ACRE 10-10-10 FERTILIZER.
MULCH
 APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.
MAINTENANCE
 REFERENTIVE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, FERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.



SEE FIGURE 1 PAGE 39 "NCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS JANUARY 2010" FOR LOCAL AND COLLECTOR ROAD DIMENSIONS.
 NOTE: MAINTAIN RW OFFSET AROUND CBU TURNOUT

MAIL KIOSK DETAILS
 NOT TO SCALE



- CONSTRUCTION SPECS:**
 1. ERECT TPZ FENCES. RESTRICT ACCESS TO TPZs. WITH TALL, BRIGHT, PROTECTIVE FENCING. MOST FENCING IS INEXPENSIVE AND DURABLE ENOUGH TO LAST THROUGHOUT MOST CONSTRUCTION PROJECTS. TEMPORARY TREE PROTECTION FENCING SHOULD BE ERECTED BEFORE CLEARING, DELIVERIES AND OTHER CONSTRUCTION ACTIVITIES BEGIN ON THE SITE.
 2. PROHIBIT OR RESTRICT ACCESS TO TPZs. ALL ON-SITE WORKERS SHOULD BE AWARE OF THE TPZs AND THE RESTRICTIONS ON ACTIVITIES WITHIN THE ZONES. USE THESE TPZ GUIDELINES FOR THE BEST EFFECT:
 • POST "KEEP OUT" SIGNS ON ALL SIDES OF FENCING. DO NOT STORE CONSTRUCTION EQUIPMENT OR MATERIALS IN TPZs.
 • PROHIBIT CONSTRUCTION ACTIVITIES NEAR THE MOST VALUABLE TREES, AND RESTRICT ACTIVITIES AROUND OTHERS.
 • ASSESS CREW AND CONTRACTOR PENALTIES, IF NECESSARY, TO KEEP THE TPZs INTACT.
 3. MONITOR TREES. VIGILANCE IS REQUIRED TO PROTECT TREES ON CONSTRUCTION SITES. USE A TREE PROFESSIONAL OR TRAIN YOUR STAFF TO MONITOR TREE HEALTH DURING AND AFTER CONSTRUCTION ON A REGULAR, FREQUENT BASIS. WATCH FOR SIGNS OF TREE STRESS, SUCH AS DIEBACK, LEAF LOSS, OR GENERAL DECLINE IN TREE HEALTH OR APPEARANCE.
 4. MONITOR TPZ FENCES. ASSIGN A CREWMEMBER THE WEEKLY RESPONSIBILITY OF CHECKING THE INTEGRITY OF TPZ FENCES. REPAIR AND REPLACE TPZ FENCING AS NEEDED.
 5. OPTIMIZE TREE HEALTH. ASSIGN A TRAINED CREWMEMBER OR HIRE A PROFESSIONAL TO COMPLETE REGULAR TREE MAINTENANCE TASKS, INCLUDING WATERING, FERTILIZATION, AND MULCHING TO PROTECT TREE ROOTS. CONSULT A TREE PROFESSIONAL FOR ADVICE ON THESE PRACTICES IF NEEDED. SURVIVAL OF PROTECTED TREES WILL INCREASE IF THESE PRACTICES CONTINUE DURING CONSTRUCTION. HEALTHY TREES REQUIRE UNDISTURBED HEALTHY SOILS. DO NOT CAUSE INJURIES TO TREES AND ROOTS. DO NOT CHANGE THE SOIL, GRADE, DRAINAGE, OR AERATION WITHOUT PROTECTING PRIORITY TREES.
MAINTENANCE:
 CONTINUE TO CARE FOR THE SITE UNTIL THE NEW OWNER TAKES POSSESSION. TAKE THESE STEPS AFTER ALL MATERIALS AND EQUIPMENT HAVE BEEN REMOVED FROM THE SITE.
 • REMOVE TREE PROTECTION ZONE FENCES.
 • PRUNE ANY DAMAGED TREES. IN SPITE OF PRECAUTIONS, SOME DAMAGE TO PROTECTED TREES MAY OCCUR. IN SUCH CASES, REPAIR ANY DAMAGE TO THE CROWN, TRUNK, OR ROOT SYSTEM IMMEDIATELY.
 • REPAIR ROOTS BY CUTTING OFF THE DAMAGED AREAS AND PAINTING THEM WITH TREE PAINT. SPREAD PEAT MOSS OR MOST TOPSOIL OVER EXPOSED ROOTS.
 • REPAIR DAMAGE TO BARK BY TRIMMING AROUND THE DAMAGED AREA AS SHOWN IN FIGURE 6.05D, TAPER THE CUT TO PROVIDE DRAINAGE, AND PAINT WITH TREE PAINT.
 • CUT OFF ALL DAMAGES TREE LIMBS ABOVE THE TREE COLLAR AT THE TRUNK OR MAIN BRANCH. USE THREE SEPARATE CUTS AS SHOWN IN FIGURE 6.05D TO AVOID PEELING BARK FROM HEALTHY AREAS OF THE TREE.
 • CONTINUE MAINTENANCE CARE. PAY SPECIAL ATTENTION TO ANY STRESSED, DISEASED, OR INSECT-INFESTED TREES. REDUCE TREE STRESS CAUSED BY UNINTENDED CONSTRUCTION DAMAGE BY OPTIMIZING PLANT CARE WITH TREE MULCH, AND FERTILIZER WHERE APPROPRIATE. CONSULT YOUR TREE EXPERT IS NEEDED.
 • INFORM THE PROPERTY OWNER ABOUT THE MEASURES EMPLOYED DURING CONSTRUCTION, WHY THOSE MEASURES WERE TAKEN, AND HOW THE EFFORT CAN BE CONTINUED.
- NOTES:**
 1. TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE OR ISSUANCE OF A GRADING PERMIT.
 2. WARNING SIGNS IN BOTH ENGLISH AND SPANISH SHALL BE PLACED IN TREE PROTECTION AREAS @ 50'. THE SIGNS SHOULD READ, "TREE PROTECTION AREA-NO TRESPASSING" AND "ZONA PROTECTORA PARA LOS ARBOLOS/PROHIBIDO ENTRAR".
 3. WARNING SIGNS TO BE MADE OF DURABLE WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND POSTALIZED.
 4. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
 5. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
 6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
 7. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
 8. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF RALEIGH INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING EFFECTIVE: 04/01/19

PART III SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION
 Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions 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 a daily rain gauge observation is made during weekend or holiday periods, and no individual day rainfall information is available, record the cumulative rain measurement for those unattended 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&S 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 measure inspected; 2. Date and time of the inspection; 3. Name of the person performing the inspection; 4. Indication of maintenance needs for the measure, properly, description, evidence, and date of corrective actions taken.
(3) Stormwater 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 outfall 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, or indication of visible sediment leaving the site; 5. 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	1. Identification of the perimeter E&S measures inspected, including any stabilization or stabilization measures that have been performed. 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, or indication of visible sediment leaving the site; 5. Description, evidence, and date of corrective actions taken.
(5) Streams or wetlands onsite or office (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event > 1.0 inch in 24 hours	1. 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)(ii) of this permit. 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.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&S 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
 The approved E&S plan as well as any approved deviation shall be kept on the site. The approved E&S plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&S 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&S measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&S plan.	Initial date and date each E&S measure on a copy of the approved E&S plan or complete, date and sign an inspection report that lists each E&S measure shown on the approved E&S plan. This documentation is required upon the initial installation of the E&S measures or if the E&S measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial date and date a copy of the approved E&S 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&S plan.	Initial date and date a copy of the approved E&S 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&S measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&S measures.	Initial date and date a copy of the approved E&S 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&S 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	<ul style="list-style-type: none"> 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) above	<ul style="list-style-type: none"> 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))	<ul style="list-style-type: none"> 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))	<ul style="list-style-type: none"> 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(i)(7))	<ul style="list-style-type: none"> 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 recurrence of the noncompliance. [40 CFR 122.41(i)(6)]. Division staff may waive the requirement for a written report on a case-by-case basis.

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

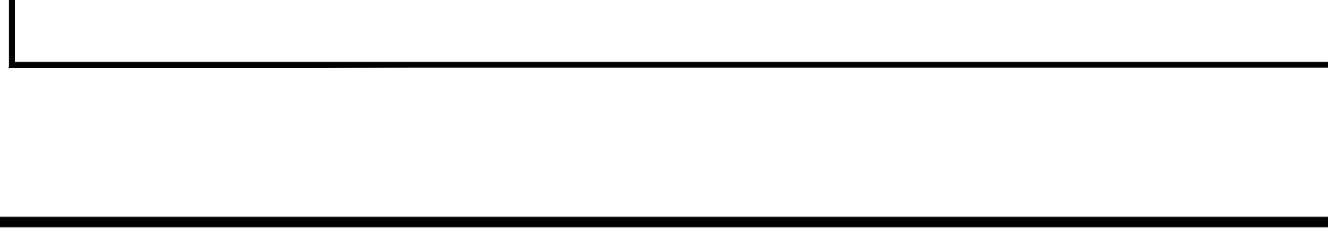
Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw 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&S 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&S 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 sized, 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.

PART III 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&S 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&S 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 sized, designed and maintained dewatering tanks, weir tanks, and filtration systems.
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 (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

TREE PROTECTION FENCE

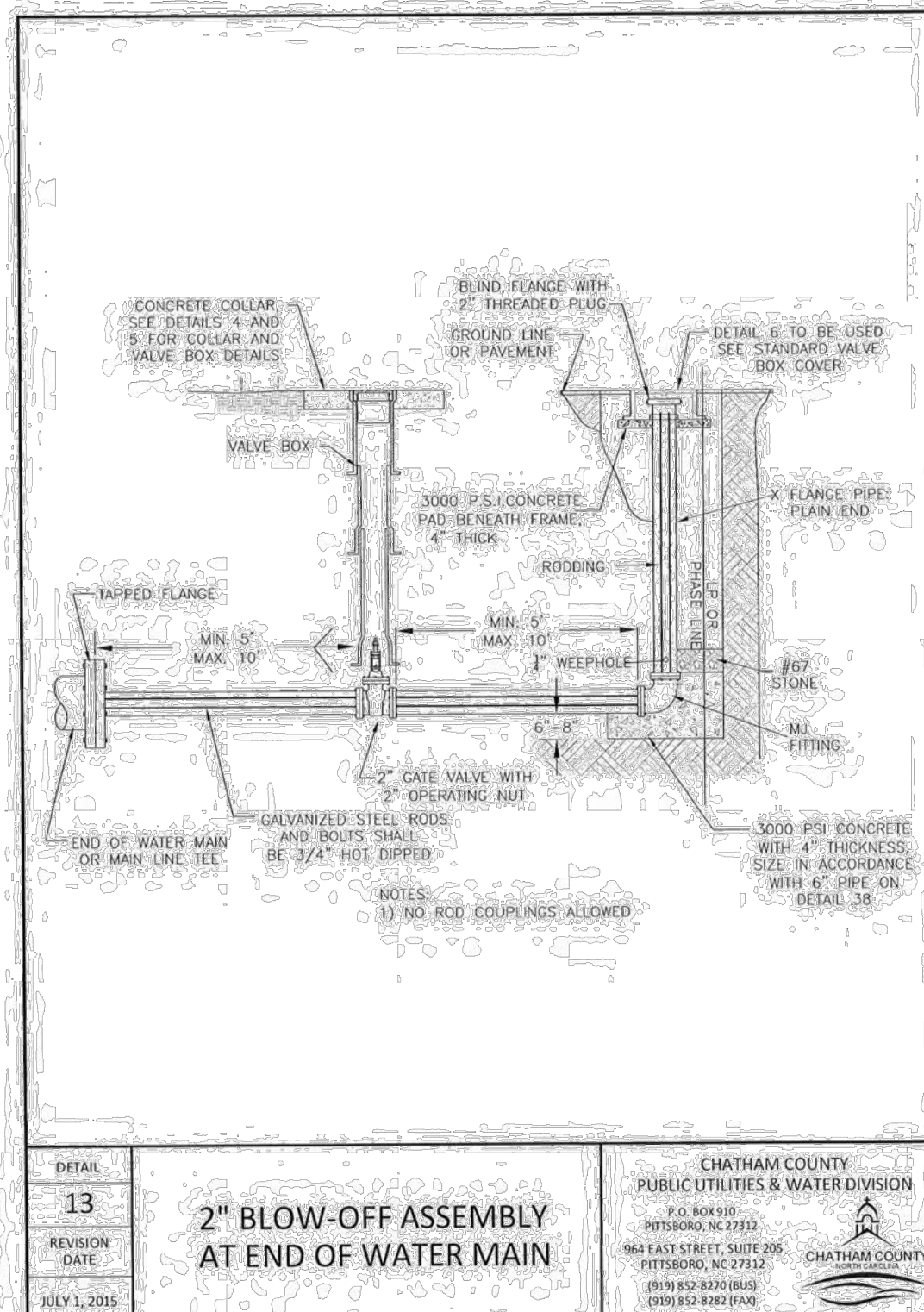
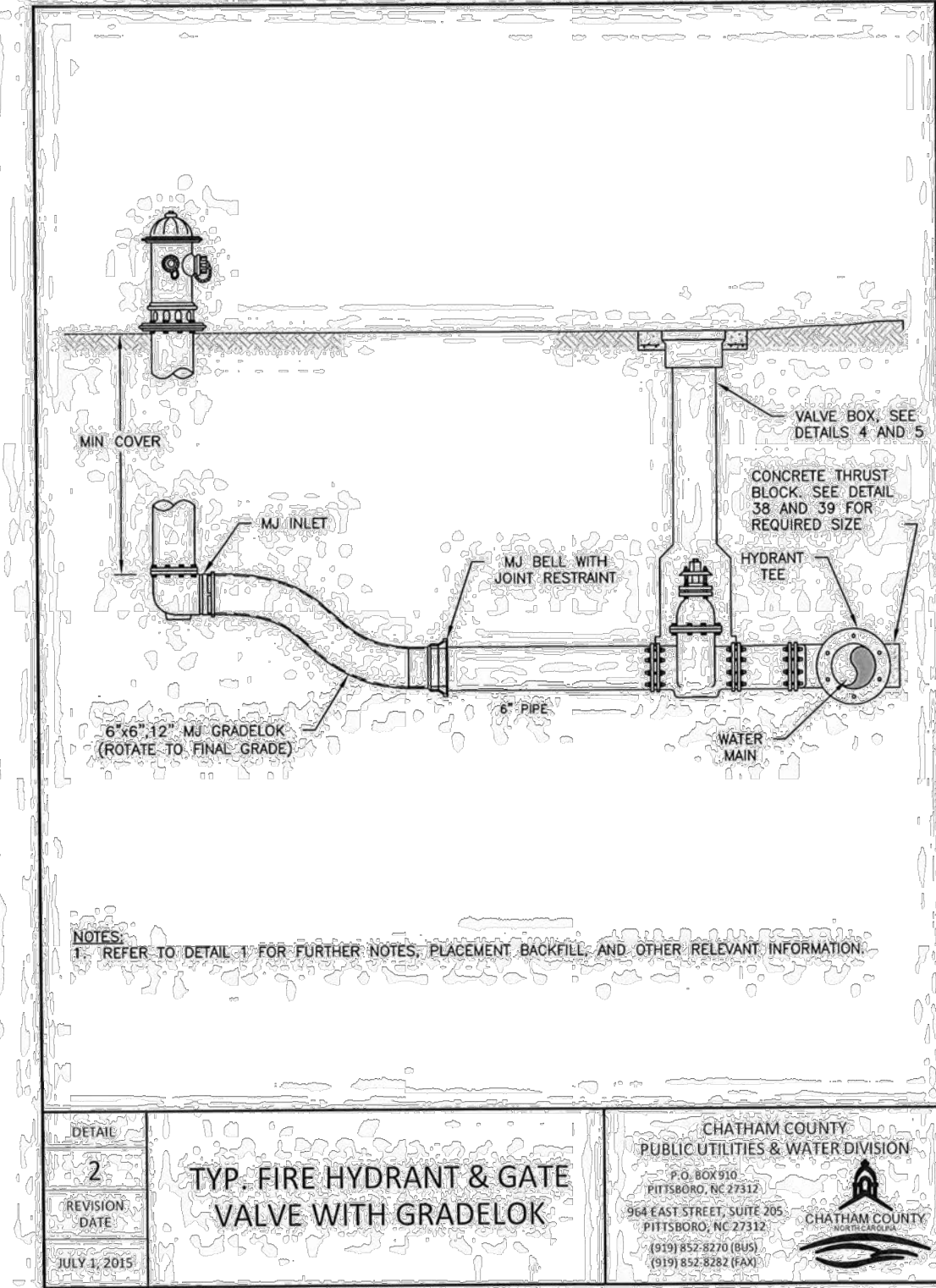
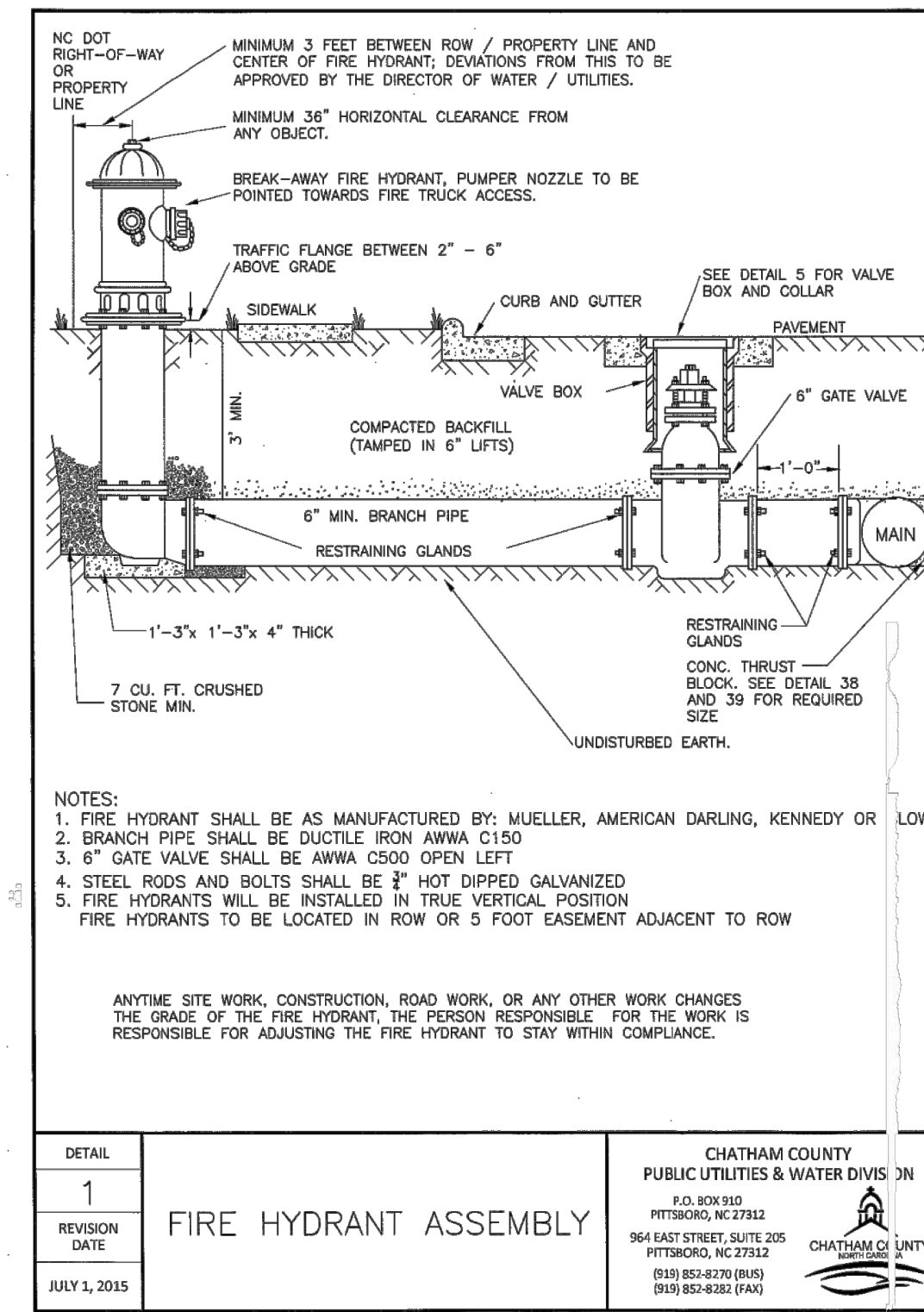
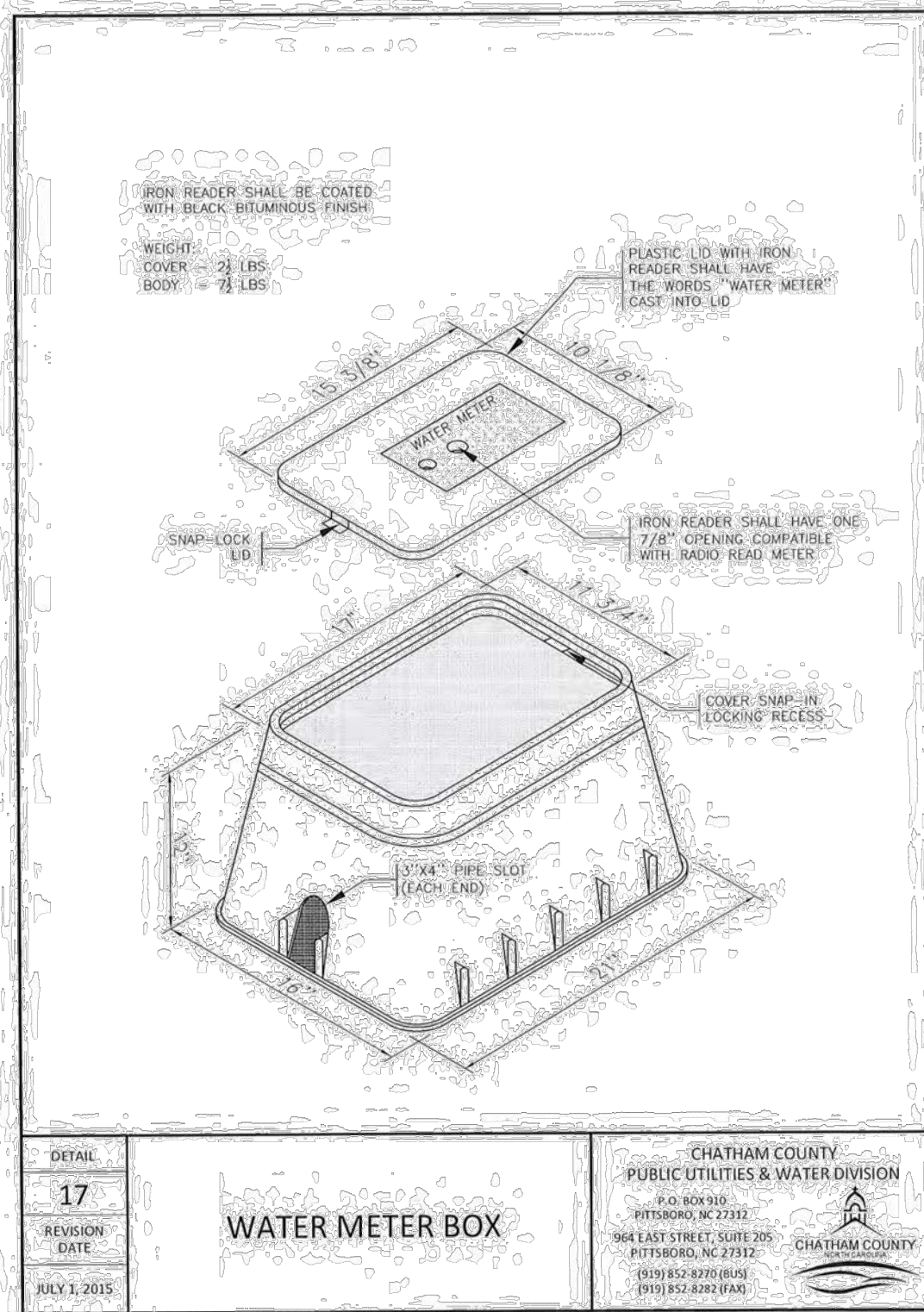
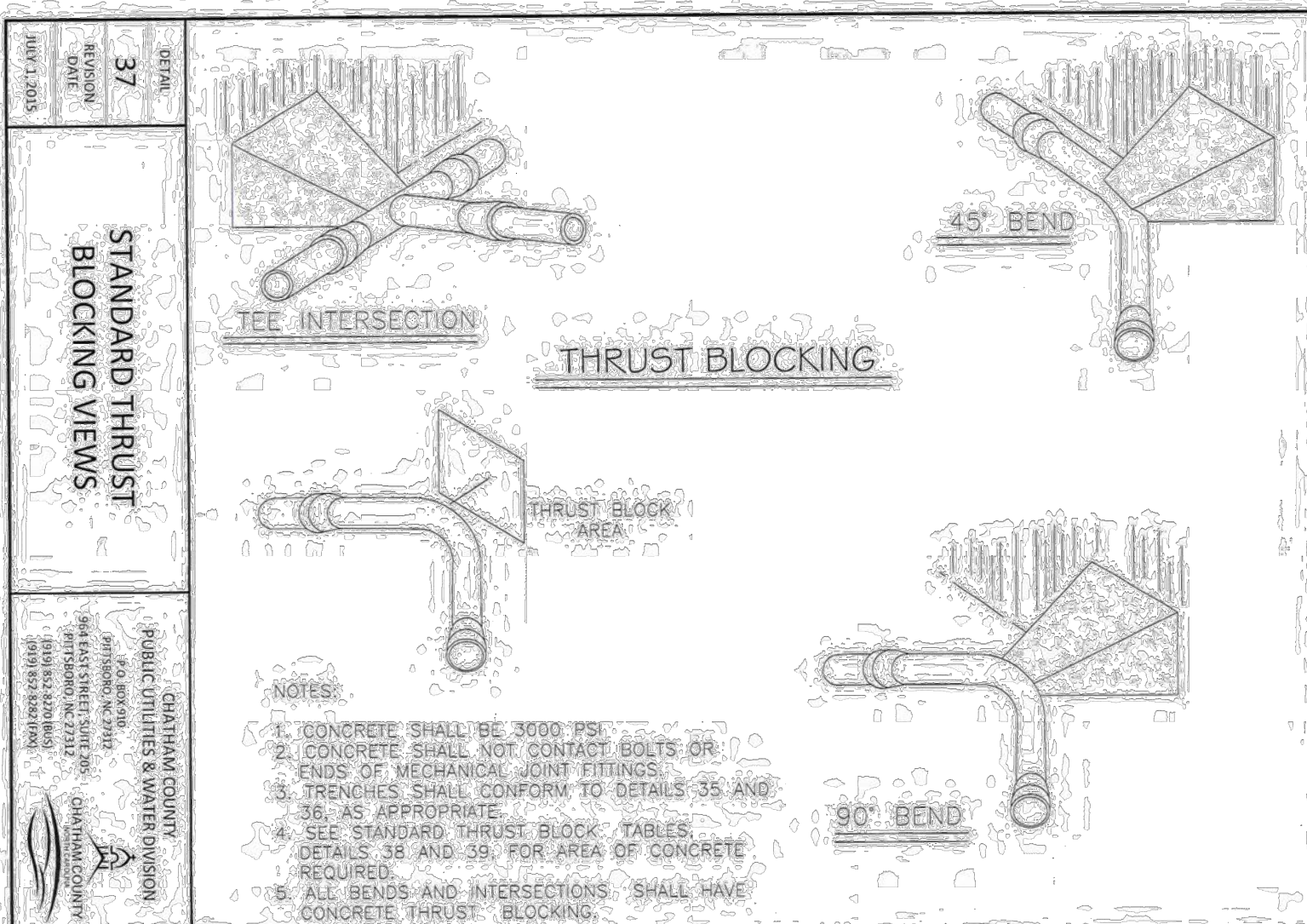
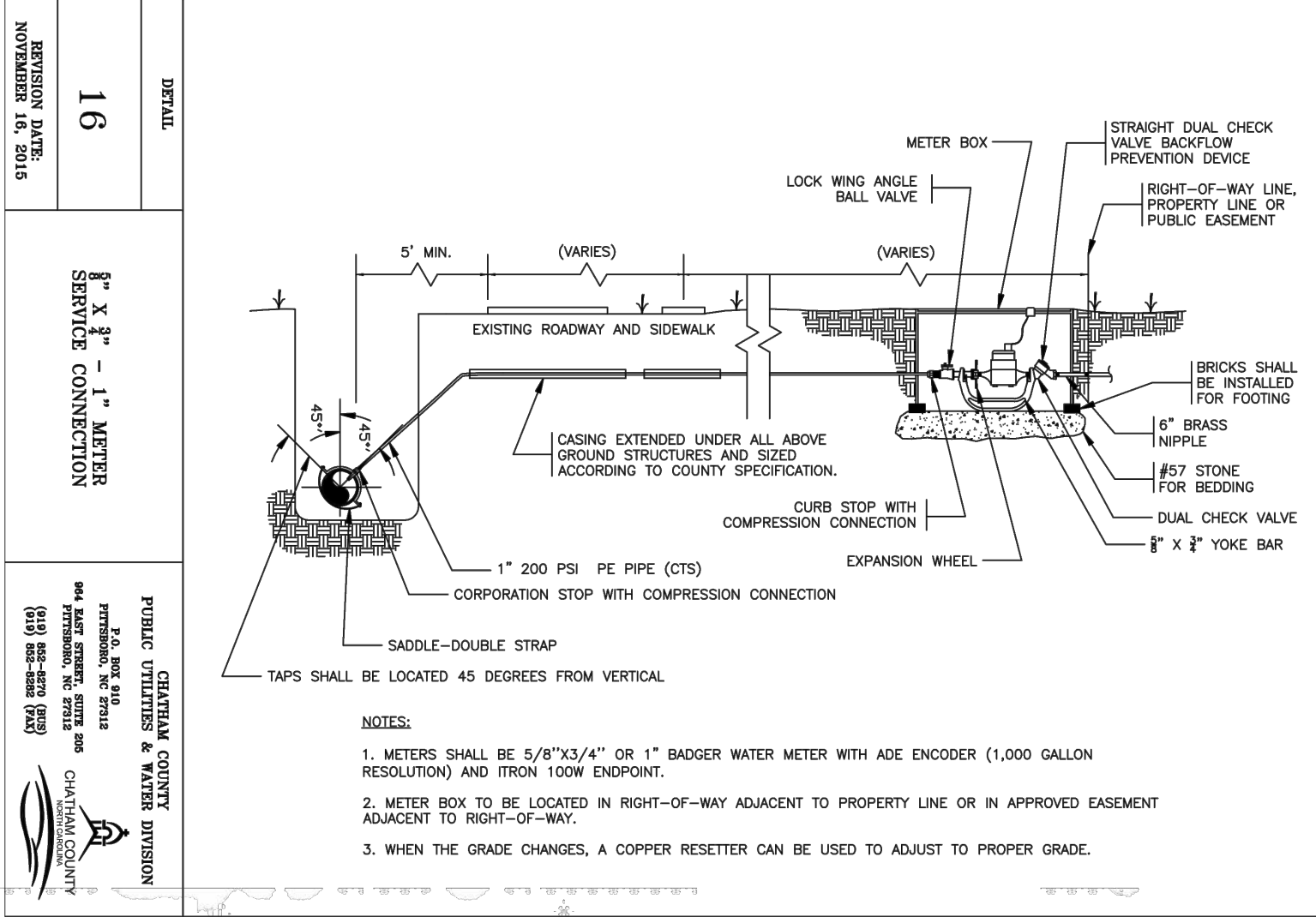


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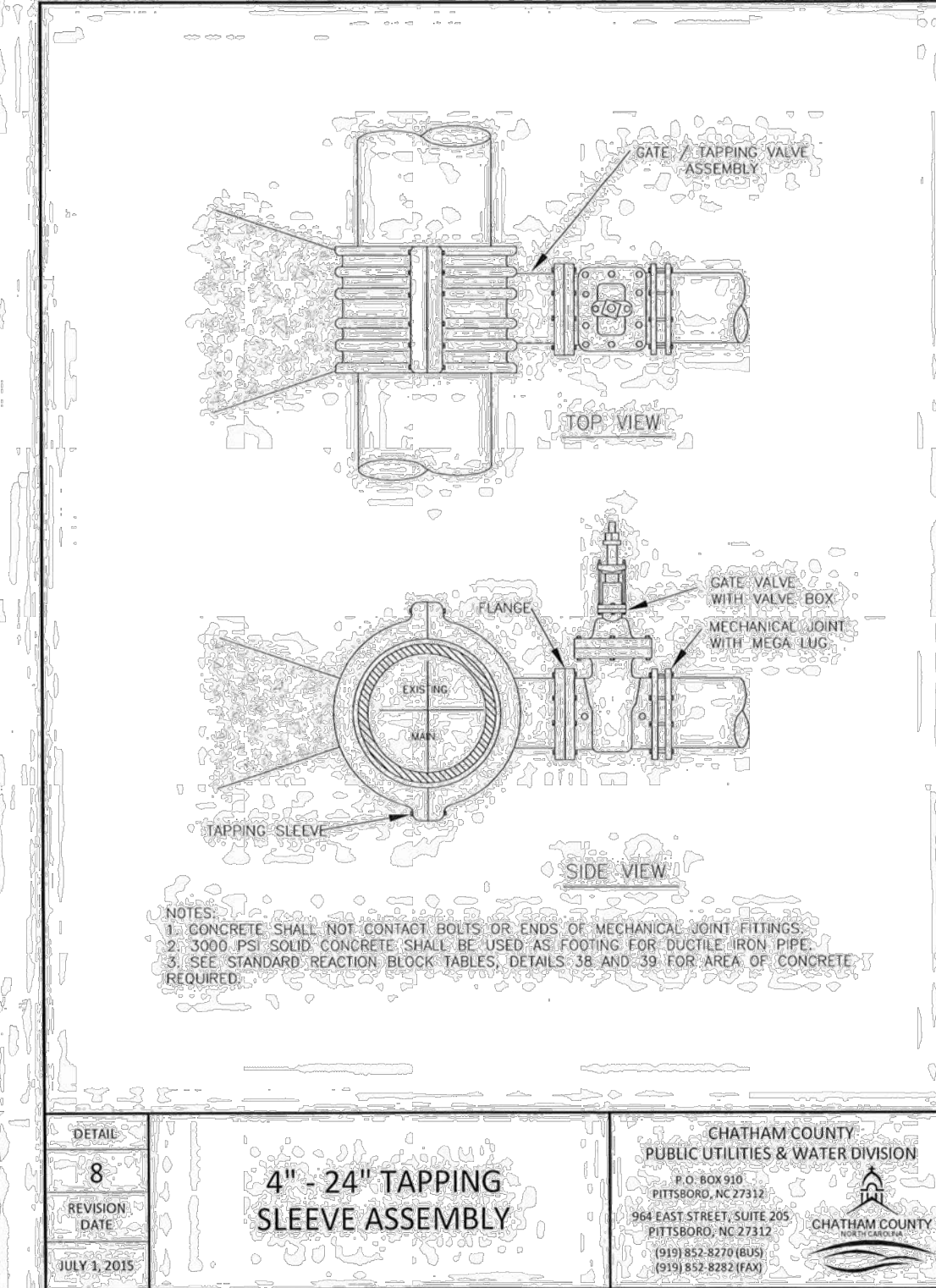
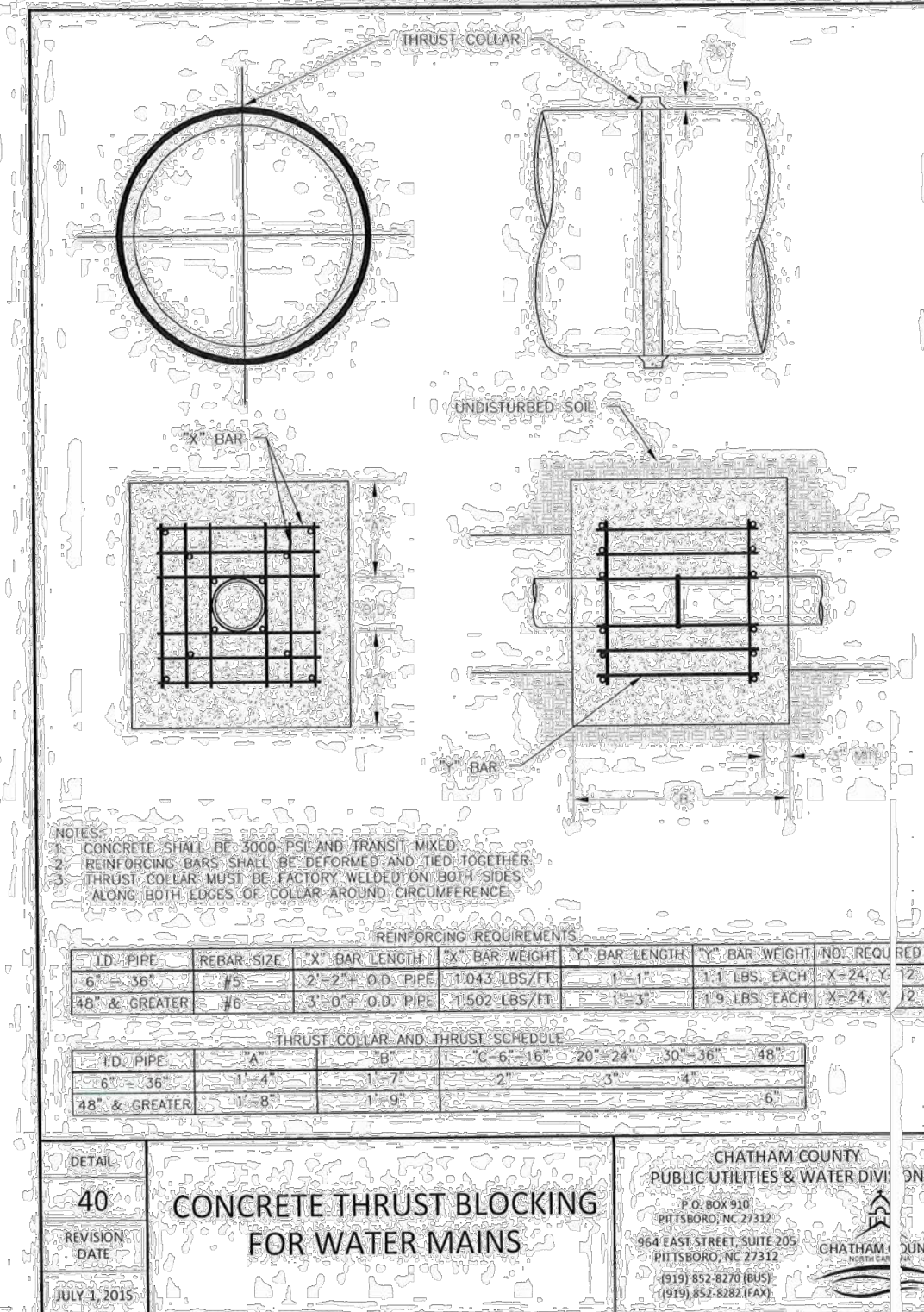


NO.	DATE	BY	REVISIONS
6			
5			
4	1/24/20	CEA	
3			



DETAIL 38
CONCRETE THRUST BLOCKING QUANTITY TABLE, 6\"/>

SIZE AND DEGREE OF BEND	SPREAD	DEPTH	MIN. REINFORCING BARS	MIN. CONCRETE STRENGTH	MIN. CONCRETE THICKNESS	MIN. CONCRETE AREA
6\"/>	11 1/4\"/>	1.108	1	1	1	1
6\"/>	22 1/2\"/>	2.207	1	2	1	1
45°	4.328	2	3	3	1	1
90°	7.956	2	4	5	1	2
PLUG	5.655	2	3	4	1	2
8\"/>	11 1/4\"/>	1.870	1	1	1	1
8\"/>	22 1/2\"/>	3.922	1	2	1	1
45°	7.694	2	4	5	1	2
90°	14.215	4	6	8	2	4
PLUG	10.053	3	5	6	2	3
12\"/>	11 1/4\"/>	4.433	2	3	1	2
12\"/>	22 1/2\"/>	8.826	3	5	2	3
45°	17.312	5	9	13	3	5
90°	31.983	8	16	19	4	8
PLUG	22.619	6	12	14	3	5
16\"/>	11 1/4\"/>	7.881	2	3	1	2
16\"/>	22 1/2\"/>	15.691	4	6	2	4
45°	30.779	8	16	19	4	8
90°	50.861	15	29	35	8	16
PLUG	40.213	10	21	25	5	10



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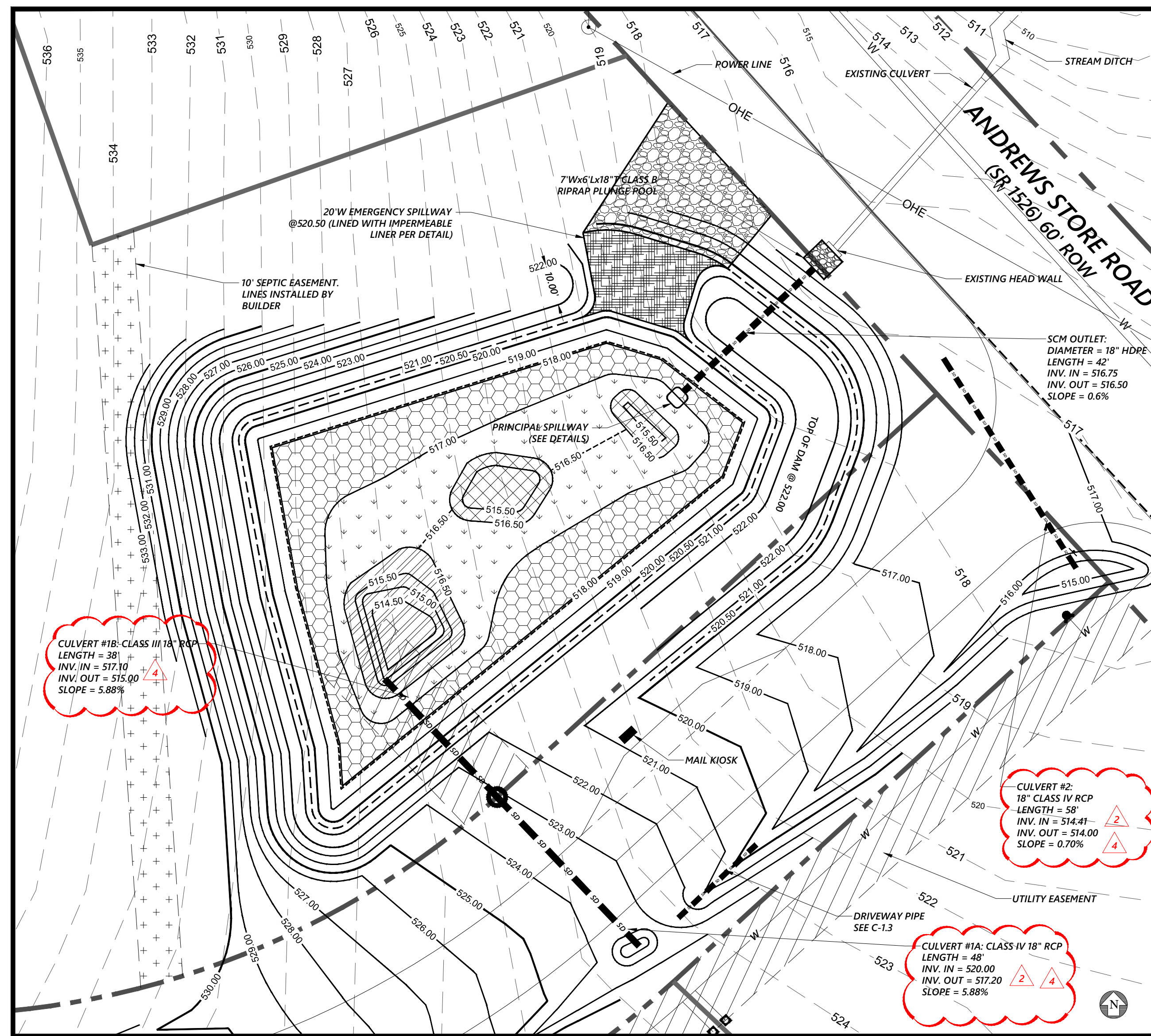


NO.	DATE	BY	REVISIONS
6			
5	1/24/20	CEA	
4	2/19/20	ABA	
3	02/06/20	JHS	
2	12/29/19	JHS	
1			

CONSTRUCTION DRAWINGS
HOBBY FARM SUBDIVISION
 3267 ANDREWS STORE ROAD, PITTSPORO, NC 27312
 CHATHAM COUNTY, NORTH CAROLINA

C3 PROJECT #:
18-067
 REVIEW PROJECT #:
XX-XXX
 SHEET #:
C-24

UTILITY DETAILS



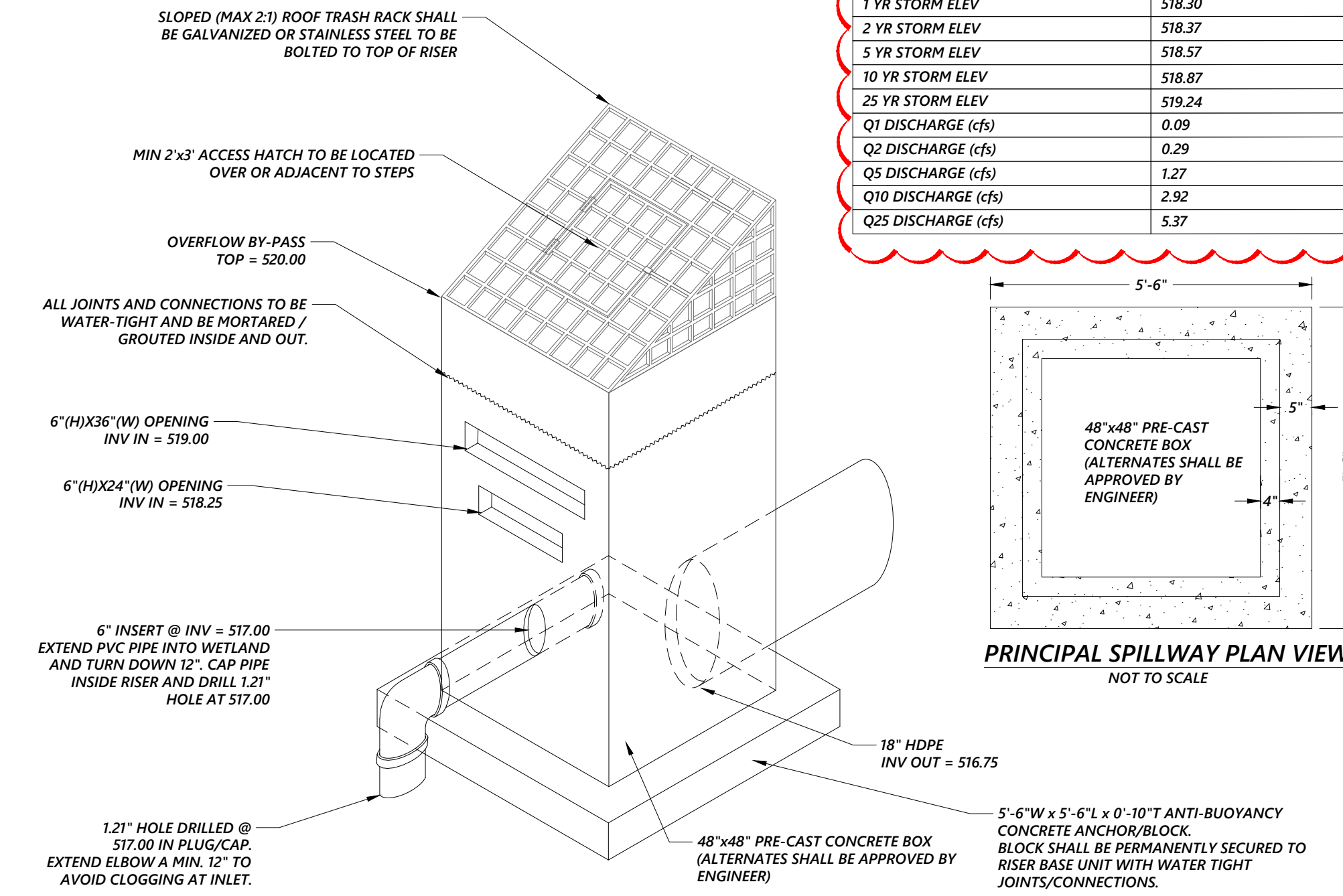
CONSTRUCTION WETLAND (SCM) DETAIL - PLAN VIEW

SCALE: 1" = 20'

- NOTES:
- 1) INTERIOR STEPS SHALL BE INSTALLED PER NCDOT STANDARDS.
 - 2) ROUND STRUCTURE & ASSOCIATED TRASH RACK MAY BE USED
 - 3) REFER TO PLANS FOR GRADING PLAN AND OVERALL INFORMATION.

PRINCIPAL SPILLWAY DETAILS

INLET STRUCTURE	4'x4' RISER
TOP OF RISER	520.00
ORIFICE ELEV (SIZE)	518.25 (6"x24"), 519.00 (6"x36")
WQV ORIFICE ELEV (SIZE)	517.00 (12")
BARREL OUTLET SIZE	516.75 (18")
TOP OF POND	522.00
1 YR STORM ELEV	518.30
2 YR STORM ELEV	518.37
5 YR STORM ELEV	518.57
10 YR STORM ELEV	518.87
25 YR STORM ELEV	519.24
Q1 DISCHARGE (cfs)	0.09
Q2 DISCHARGE (cfs)	0.29
Q5 DISCHARGE (cfs)	1.27
Q10 DISCHARGE (cfs)	2.92
Q25 DISCHARGE (cfs)	5.37



PRINCIPAL SPILLWAY DETAILS

NOT TO SCALE

	FOREBAY/DEEP POOL - 676.47 SF (514.50-516.50) = 11%
	NON-FOREBAY - 458.37 SF (515.50-516.50) = 7%
	SHALLOW WATER - 2,317.18 SF (516.50-517.00) = 38%
	SHALLOW LAND - 2,699.02 SF (517.00-518.13) = 44%
TOTAL WETLAND AREA = 6,151.04 SF (514.50-518.13)	

NOTE: BASIN SHOULD BE CLEANED AND VEGETATIVE COVER PROVIDED PRIOR TO USE AS A WETLAND

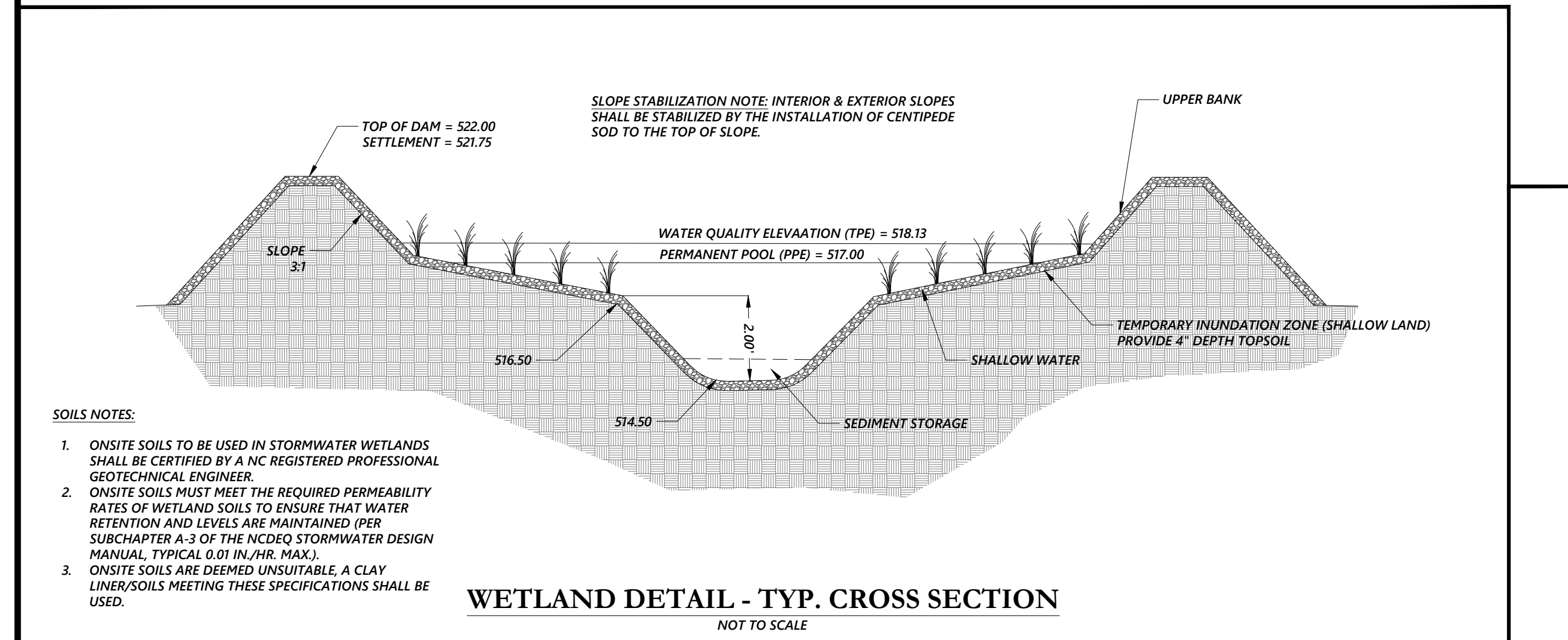
WETLAND PLANTING CHART

Total Planting Area = 14,930 SF

SHALLOW LAND PLANTS			
Shallow Land Planting Area, SF			2,699
Total Plants Required (MIN. 50/200 SF)			675
SCIENTIFIC NAME	COMMON NAME	QTY.	PCT. OF QTY.
ASCLEPIAS INCARNATA	SWAMP MILK WEED	135	20 %
LOBELIA CARDINALIS	CARDINAL FLOWER	135	20 %
EUPATORIADALPHUS FISTULOSUS	JOE PYE WEED	135	20 %
HIBISCOUS COCCINEUS	SACRET ROSE MALLOW	135	20 %
KOSTELETZKYIA VIRGINICA	SEASHORE MALLOW	135	20 %
	SUB TOTAL:	605	100 %
SHALLOW WATER PLANTS			
Shallow Water Planting Area, SF			2,317
Total Plants Required (MIN. 50/200 SF)			582
SCIENTIFIC NAME	COMMON NAME	QTY.	PCT. OF QTY.
PONTERERIA CORDATA	PICKERELWEED	97	17 %
SAURURUS CERNUUS	LIZARD'S TAIL	97	17 %
ACORUS SUBCORDATUM	SWEETFLAG	97	17 %
JUNCLUS EFFLUSUS 'VAR'	SOFT RUSH	97	17 %
SAGITTARIA LATIFOLIA	DUCK POTATO	97	17 %
SCIRPUS CYPERINUS	WOOL GRASS	97	17 %
	SUB TOTAL:	582	100 %
GRAND TOTAL:		1,187	100 %

- WETLAND PLANTING NOTES:**
1. CONTACT ENGINEER PRIOR TO CONSTRUCTION FOR PRE-CONFERENCE.
 2. INSTALL STORMWATER WETLAND PLANTS PER SUBCHAPTERS A-3 & C-4 OF THE NCDOT STORMWATER DESIGN MANUAL.
 3. SOD INTERIOR BANK OF SCM ABOVE SHALLOW LAND ELEVATION (EL. 423.90) WITH CENTIPEDE GRASS.
 4. MAINTAIN HEALTH OF STORMWATER WETLAND PLANTINGS PER MDC REQUIREMENTS.
 5. WETLAND PLANTS SHALL BE OBTAINED FROM A SIMILAR PLACE OF ORIGIN OR LOCAL SOURCE TO ENSURE SURVIVABILITY. WETLAND SEED MIXES ARE NOT ALLOWED.
 6. CONTRACTOR SHALL REPLACE ANY PLANT LOSSES WITH THE APPROPRIATE SHALLOW WATER OR SHALLOW LAND PLANTINGS AS SHOWN ON THIS SHEET FOR A MINIMUM OF 2 YEARS FROM INSTALLATION. ALL PLANTS THAT DO NOT SURVIVE AT THE END OF THE FIRST YEAR AND AGAIN AT THE END OF THE 2-YEAR WARRANTY PERIOD MUST BE REPLACED.
 7. SOILS USED WITHIN THE WETLAND MUST ADHERE TO THE FOLLOWING REQUIREMENTS:
 - 7.1. THE SOIL MIX MUST BE UNIFORM AND FREE OF STONES, STUMPS, ROOTS, OR OTHER SIMILAR MATERIAL GREATER THAN 2 INCHES IN DIAMETER.
 - 7.2. THE pH SHOULD BE BETWEEN 4.5 AND 7.0 IN THE PH FALLS OUTSIDE OF THIS RANGE, CONTRACTOR SHALL FOLLOW RECOMMENDATIONS OF SOIL TEST RESULTS FOR APPROPRIATE APPLICATION RATES.
 - 7.3. ALL TOP SOILS TO BE USED WITHIN THE WETLAND SHALL BE ANALYZED AT A SOIL TESTING LAB, AND CONTRACTOR SHALL FOLLOW RECOMMENDATIONS OF SOIL TEST RESULTS BEFORE PLANTING.
 8. SOIL AMENDMENTS SHOULD BE INCORPORATED AT THE END OF THE SITE DEVELOPMENT PROCESS AND THE WETLAND SHOULD BE PLANTED AND MULCHED IMMEDIATELY AFTER AMENDING THE SOIL TO STABILIZE THE SITE AS SOON AS POSSIBLE.
 9. ENSURE NEWLY INSTALLED PLANTINGS ARE PROVIDED WITH ADEQUATE WATER, ESPECIALLY DURING DRY PERIODS.
 10. NEW PLANTINGS SHOULD BE INSPECTED FREQUENTLY AND MAINTENANCE PERFORMED OR PLANTING REPLACED AS NEEDED.

- STORMWATER WETLAND NOTES:**
1. ANNUAL MAINTENANCE INSPECTION AND REPORT REQUIRED - THE OWNER OF A PERMITTED STORMWATER CONTROL MEASURE (SCM) SHALL ANNUALLY SUBMIT A MAINTENANCE AND INSPECTION REPORT FOR EACH SCM TO THE STORMWATER ADMINISTRATOR. ANNUAL INSPECTIONS SHALL BEGIN WITHIN ONE YEAR OF THE AS-BUILT CERTIFICATION BY THE ENGINEER OF RECORD.
 2. THE DEVELOPER OR HIS AGENT SHALL CONTACT CHATHAM COUNTY WHEN THE STORMWATER CONTROL MEASURES ARE CONSTRUCTED AND ABOUT TO BECOME OPERATIONAL SO A FINAL INSPECTION CAN BE PERFORMED TO DETERMINE COMPLIANCE WITH THE APPROVED PLAN.
 3. PRIOR TO A CERTIFICATE OF OCCUPANCY, THE ENGINEER OF RECORD SHALL CERTIFY THAT THE STORMWATER CONTROL MEASURES AND CONVEYANCES WERE INSPECTED AND CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED STORMWATER PLANS, HAS ITS FULL DESIGN VOLUME AND IS OPERATING AS DESIGNED. THE CERTIFICATION AND AS-BUILT PLAN IS REQUIRED PRIOR TO FINAL APPROVAL AND CERTIFICATE OF OCCUPANCY.
 4. THE PROJECT IS NOT WITHIN FIVE (5) MILES OF A PUBLIC AIRPORT.



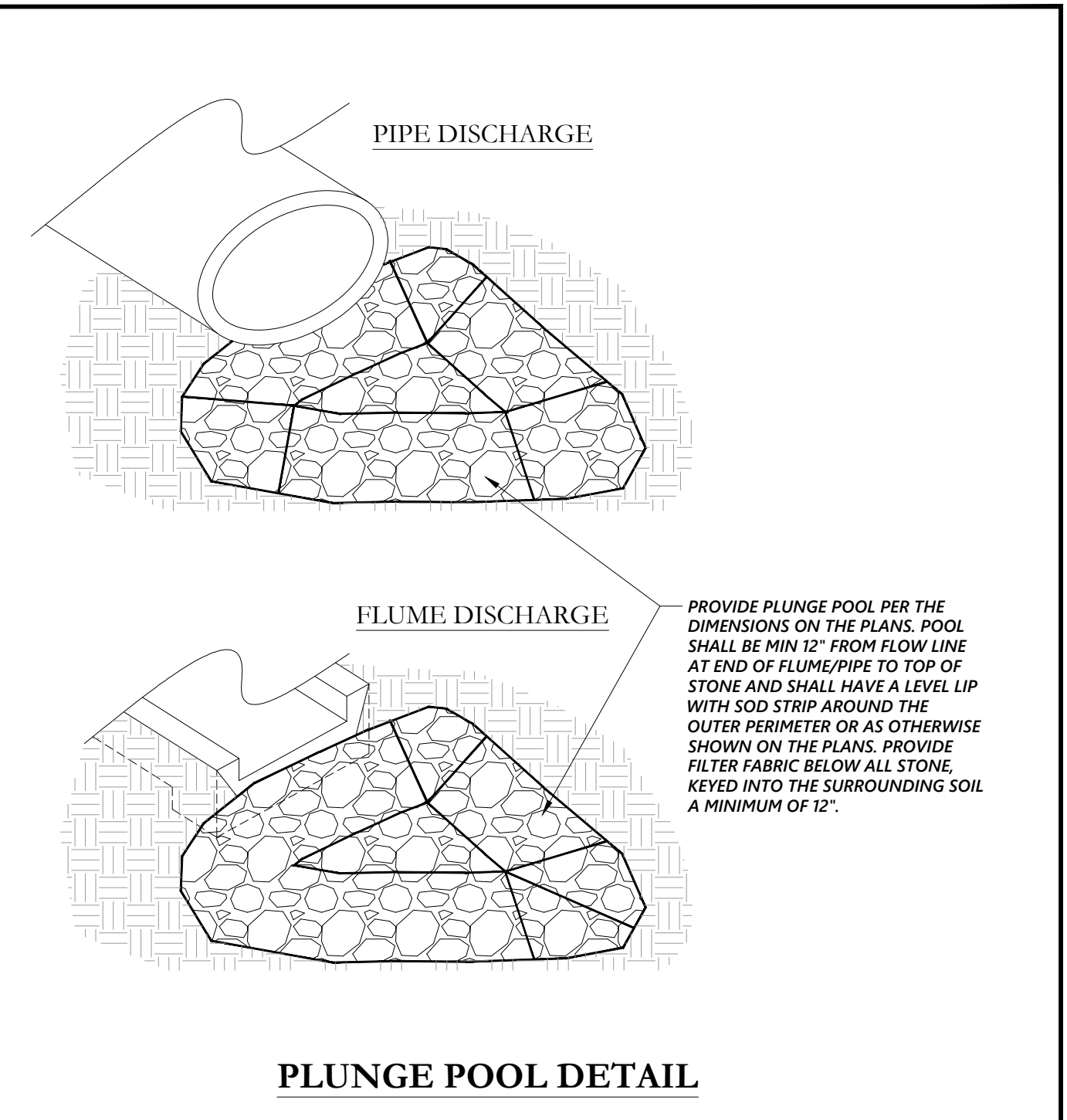
WETLAND DETAIL - TYP. CROSS SECTION

NOT TO SCALE

- SOILS NOTES:**
1. ONSITE SOILS TO BE USED IN STORMWATER WETLANDS SHALL BE CERTIFIED BY A NC REGISTERED PROFESSIONAL GEOTECHNICAL ENGINEER.
 2. ONSITE SOILS MUST MEET THE REQUIRED PERMEABILITY RATES OF WETLAND SOILS TO ENSURE THAT WATER RETENTION AND LEVELS ARE MAINTAINED (PER SUBCHAPTER A-3 OF THE NCDOT STORMWATER DESIGN MANUAL, TYPICAL 0.01 IN./HR. MAX.).
 3. ONSITE SOILS ARE DEEMED UNSUITABLE. A CLAY LINER/SOILS MEETING THESE SPECIFICATIONS SHALL BE USED.

DAM EMBANKMENT CONSTRUCTION STANDARDS:

1. CONTROLLED FILL, AS SPECIFIED BY THE GEOTECHNICAL ENGINEER, IN THE DAM EMBANKMENT SHALL BE PLACED IN 6-INCH LOOSE LAYERS (3-INCH LOOSE LAYERS WITHIN 3- FEET OF EITHER SIDE OF THE PRINCIPAL SPILLWAY PIPE TO A DEPTH OF 2- FEET OVER THE PIPE) AND SHALL BE COMPACTED TO A DENSITY OF NO LESS THAN 95% OF THE STANDARD PROCTOR MAXIMUM DENSITY AT A MOISTURE CONTENT OF - OR - TWO PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D998.
2. ALL VISIBLE ORGANIC DEBRIS SUCH AS ROOTS AND LIMBS SHALL BE REMOVED FROM THE FILL MATERIAL PRIOR TO COMPACTION TO THE REQUIRED DENSITY. SOILS WITH ORGANIC MATTER CONTENT EXCEEDING 5% BY WEIGHT SHALL NOT BE USED. STONES GREATER THAN 3-INCH (IN ANY DIRECTION) SHALL BE REMOVED FROM THE FILL PRIOR TO COMPACTION.
3. FILL MATERIAL PLACED AT DENSITIES LOWER THAN SPECIFIED MINIMUM DENSITIES OR AT MOISTURE CONTENTS OUTSIDE THE SPECIFIED RANGES OR OTHERWISE NOT CONFORMING TO SPECIFIED REQUIREMENTS SHALL BE REMOVED AND REPLACED WITH ACCEPTABLE MATERIAL.
4. ANY FILL LAYER THAT IS SMOOTH DRUM ROLLED TO REDUCE MOISTURE PENETRATION DURING A STORM EVENT SHALL BE PROPERLY SCARIFIED PRIOR TO THE PLACEMENT OF THE NEXT SOIL LIFT.
5. SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
6. FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOIL. IN ADDITION TO THAT INDICATED ON THE PLANS, ALL SUCH UNDERCUTTING SHALL BE PERFORMED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER AND SHALL BE MONITORED AND DOCUMENTED. IN NO CASE SHALL THERE BE AN ATTEMPT TO STABILIZE ANY PORTIONS OF THE FOUNDATION SOILS WITH CRUSHED STONE.
7. TREATMENT OF SEEPAGE AREAS, SUBGRADE PREPARATION, FOUNDATION DEWATERING AND ROCK FOUNDATION PREPARATION (I.E. TREATMENT WITH SLUSH GROUTING, DENTAL CONCRETE, ETC.) MAY BE REQUIRED AT THE DISCRETION OF THE GEOTECHNICAL ENGINEER. ALL SUCH ACTIVITIES SHALL BE CLOSELY MONITORED AND DOCUMENTED BY THE GEOTECHNICAL ENGINEER.
8. FILL ADJACENT TO THE RISER AND PRINCIPAL SPILLWAY PIPE SHALL BE PLACED SO THAT LIFTS ARE AT THE SAME LEVEL ON BOTH SIDES OF THE STRUCTURES.
9. EARTHWORK COMPACTION WITHIN 3- FEET OF ANY STRUCTURES SHALL BE ACCOMPLISHED BY MEANS OF HAND TAMPERS, MANUALLY DIRECTED POWER TAMPERS OR PLATE COMPACTORS OR MINIATURE SELF- PROPELLED ROLLERS.
10. COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
11. HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE CRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
12. TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3-INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND SODDED OR HYDROSEEDED.



PLUNGE POOL DETAIL

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NO.	DATE	BY	REVISIONS
6			
5			
4	1/24/20	CEA	SCM COMMENTS
3	2/19/20	ABA	NCDOT COMMENTS
2	02/06/20	JHS	CC, UTILITY, STORM, NCDOT COMMENTS
1	12/29/19	JHS	CC, EROSION CONTROL, COMMENTS
			FIRST ISSUED

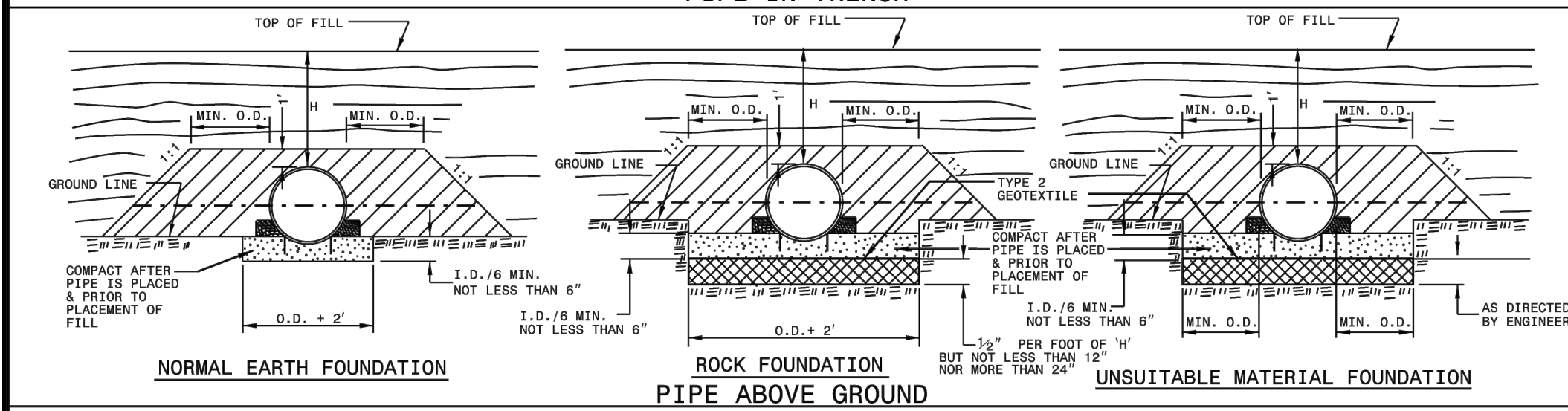
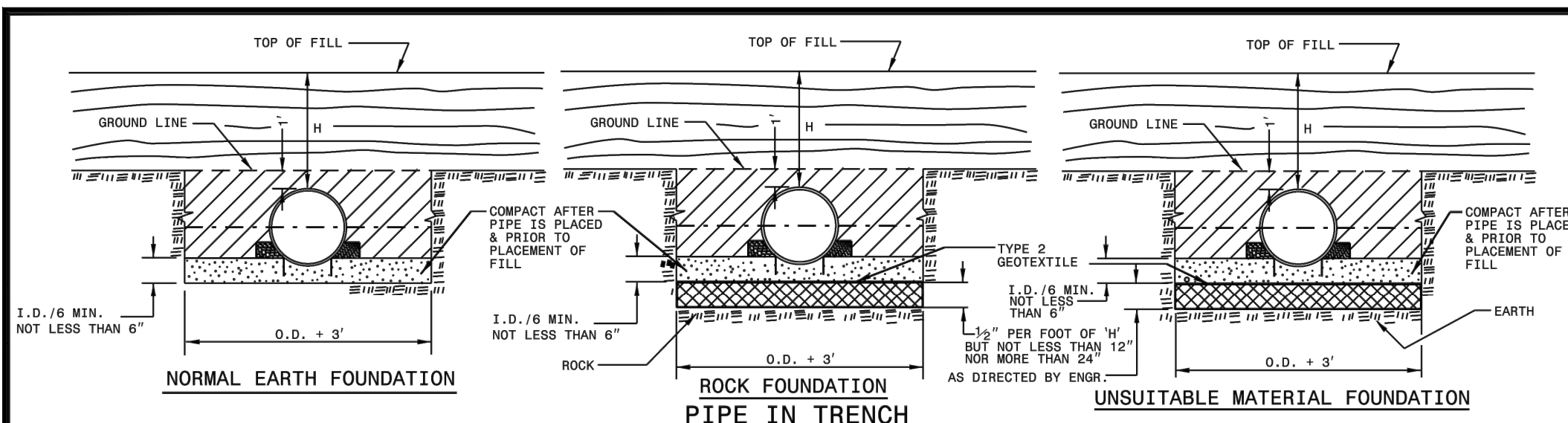
CONSTRUCTION DRAWINGS
HOBBY FARM DIVISION
3067 ANDREWS STORE ROAD, PITTSBORO, NC 27312
CHATHAM COUNTY, NORTH CAROLINA

SCM DETAILS PLAN

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18-067

REVIEW PROJECT #:
XX-XXX

SHEET #:
C-25



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, TYPE 1 ABOVE AND BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL.

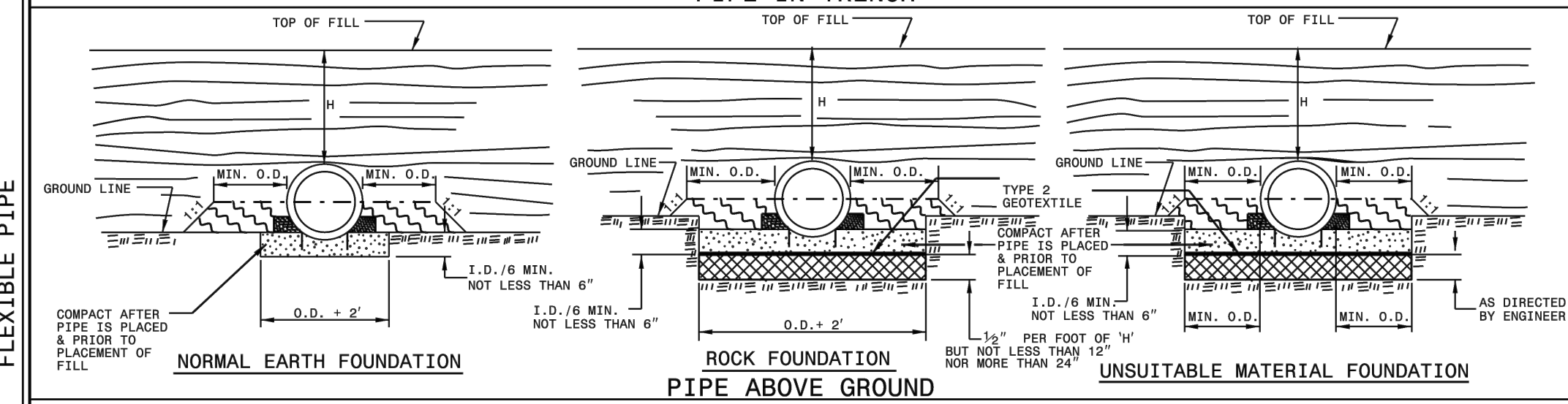
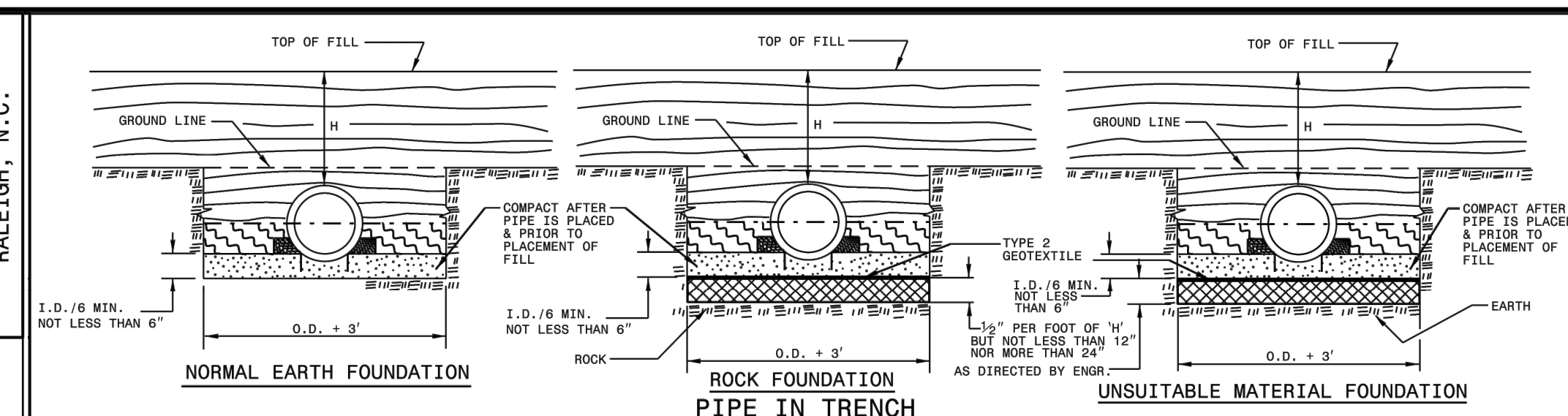
UNDISTURBED EARTH MATERIAL.

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE 2 GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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 RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
 FLEXIBLE PIPE

SHEET 1 OF 3
300.01



GENERAL NOTES:
 I.D. = THE MAXIMUM HORIZONTAL INSIDE DIAMETER DIMENSION.
 O.D. = THE MAXIMUM HORIZONTAL OUTSIDE DIAMETER DIMENSION.
 H = THE FILL HEIGHT MEASURED VERTICALLY AT ANY POINT ALONG THE PIPE FROM THE TOP OF THE PIPE TO THE TOP OF THE EMBANKMENT AT THAT POINT.

DO NOT OPERATE HEAVY EQUIPMENT OVER ANY PIPE CULVERT UNTIL THE PIPE CULVERT HAS BEEN PROPERLY BACKFILLED AND COVERED WITH AT LEAST 3 FEET OF APPROVED MATERIAL.

SELECT BACKFILL MATERIAL CLASS III OR CLASS II, BELOW SPRINGLINE.
 APPROVED SUITABLE LOCAL MATERIAL ABOVE SPRINGLINE.

UNDISTURBED EARTH MATERIAL.

SELECT MATERIAL CLASS V OR VI FOR FOUNDATION CONDITIONING. ENCAPSULATE WITH TYPE 2 GEOTEXTILE AS DIRECTED BY THE ENGINEER.

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 DIVISION OF HIGHWAYS
 RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
 RIGID PIPE

SHEET 2 OF 3
300.01

FLEXIBLE PIPE

Round Corrugated Steel Pipe 2 2/3 x 1 1/2 corrugation **				Round Corrugated Aluminum Pipe 2 2/3 x 1 1/2 corrugation **			
Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)		Diameter (inches)	Minimum cover (inches)	Maximum Height of Cover (feet)	
		(Ga)				(Ga)	
12	12	16	14	12	12	16	14
15	12	204	256	15	12	123	155
18	12	162	204	18	12	98	123
21	12	135	169	21	12	81	102
24	12	115	145	24	12	69	87
27	12	100	128	27	12	60	78
30	12	79	100	30	12	67	85
36	12	65	83	36	12	60	85
42	12	55	70	42	12	50	71
48	12	48	61	48	12	42	60
54	12	44	54	54	12	38	56
60	12	39	48	60	12	34	51
66	12	34	42	66	12	30	46
72	12	30	37	72	12	26	41
78	12	26	33				
84	12	22	29				

** FOR DIFFERENT CORRUGATIONS AND ARCH PIPES REFER TO ROADWAY DESIGN MANUAL OR MANUFACTURERS SPECIFICATION.

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS
 CSP - AASHTO M36
 GAAP - AASHTO M196
 HDPE - AASHTO M284
 PVC - ASTM F949 or AASHTO M304

NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS

HDPE - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 60"
 * (Maximum fill) 20' for pipe diameters ≤ 24"
 17' for pipe diameters ≥ 30" and ≤ 60"

PVC - * (Minimum fill) 2' for pipe diameters ≥ 12" and ≤ 36"
 * (Maximum fill) 30' for pipe diameters ≥ 12" and ≤ 36"

* FILL HEIGHT IS MEASURED FROM THE TOP OF THE PIPE TO THE BOTTOM OF THE PAVEMENT STRUCTURE

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ROADWAY STANDARD DRAWING FOR
METHOD OF PIPE INSTALLATION
 FILL HEIGHT TABLES

SHEET 3 OF 3
300.01

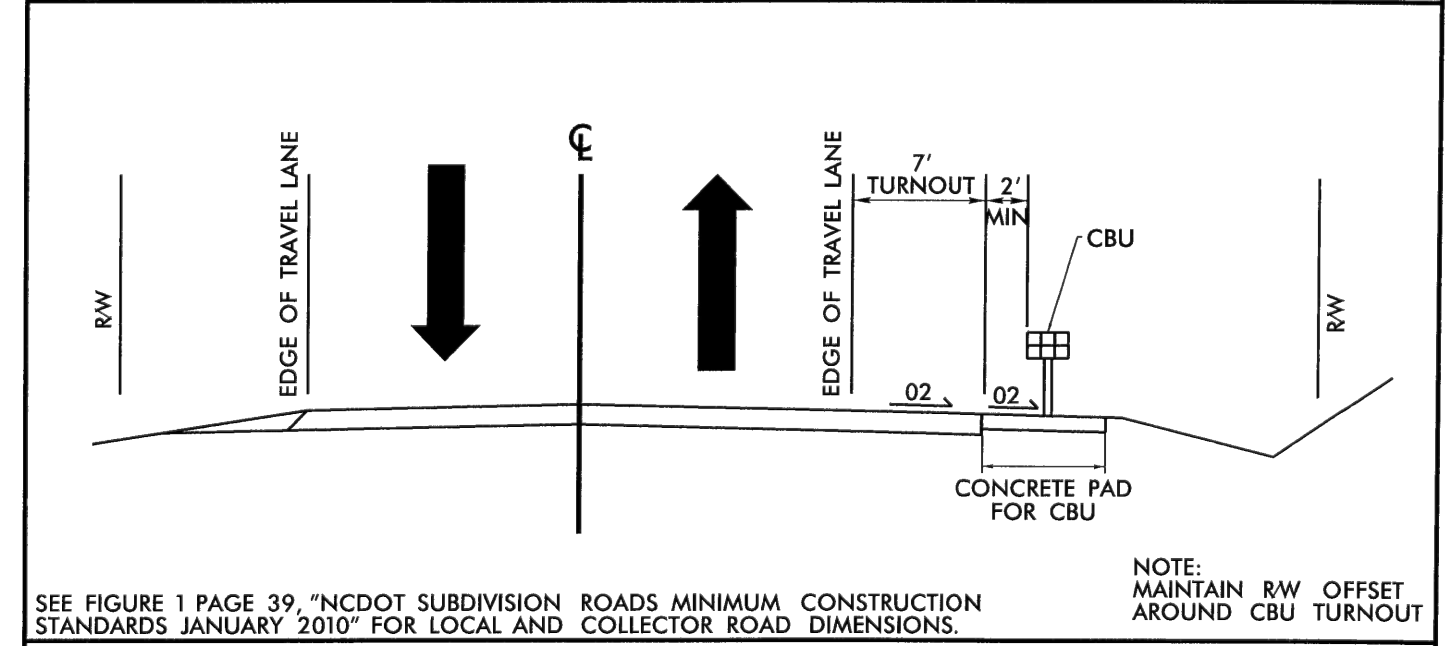
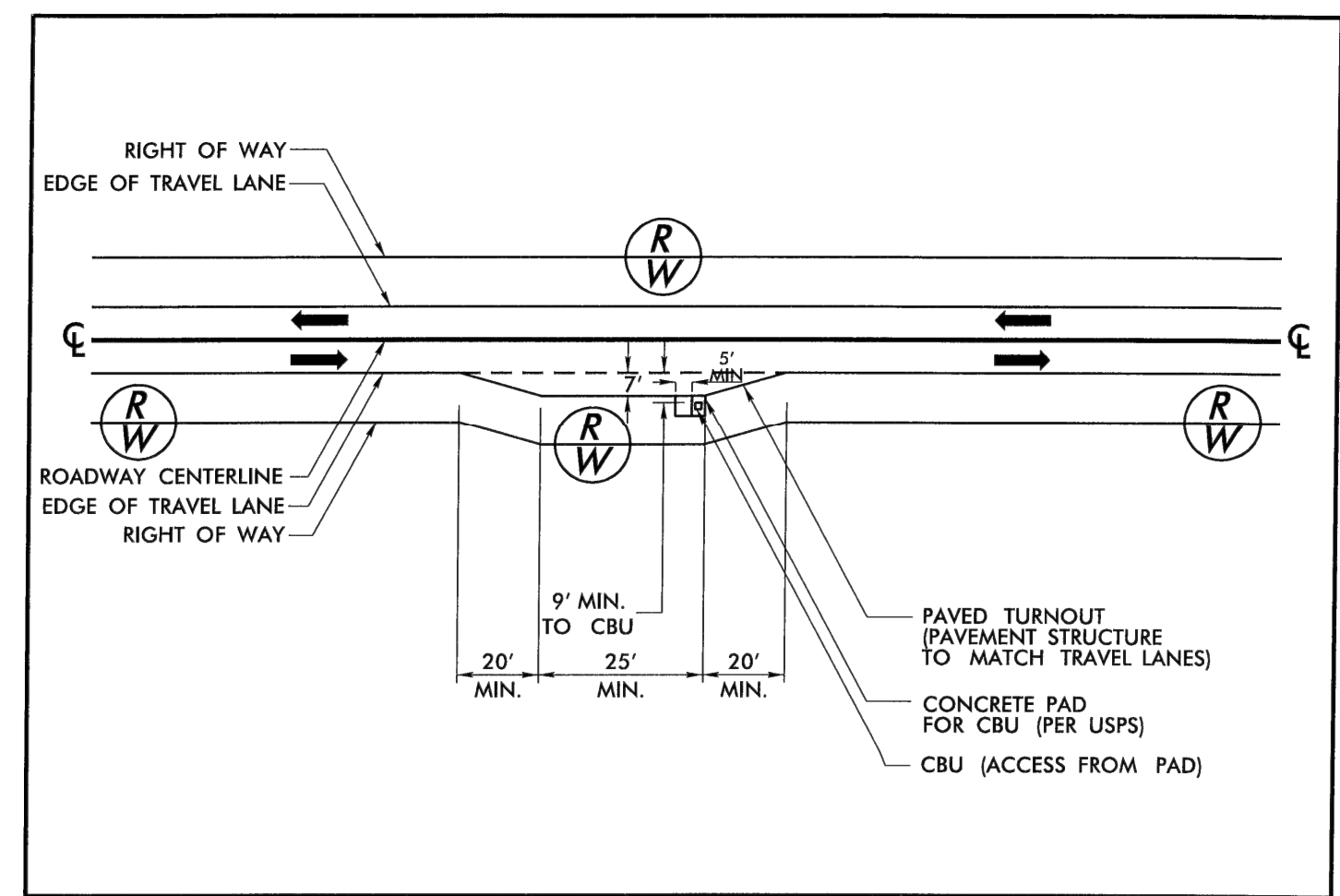
RIGID PIPE

RCP - * (Minimum fill) 1' for Class IV & CLASS V
 2' for Class III & Class II
 * (Maximum fill) 10' - Class II pipe
 20' - Class III pipe
 30' - Class IV pipe
 40' - Class V pipe
 (For fills > 40' & < 80' use LRFD Direct Design Method)

REFER TO THE FOLLOWING FOR PIPE SPECIFICATIONS
 RCP - AASHTO M170

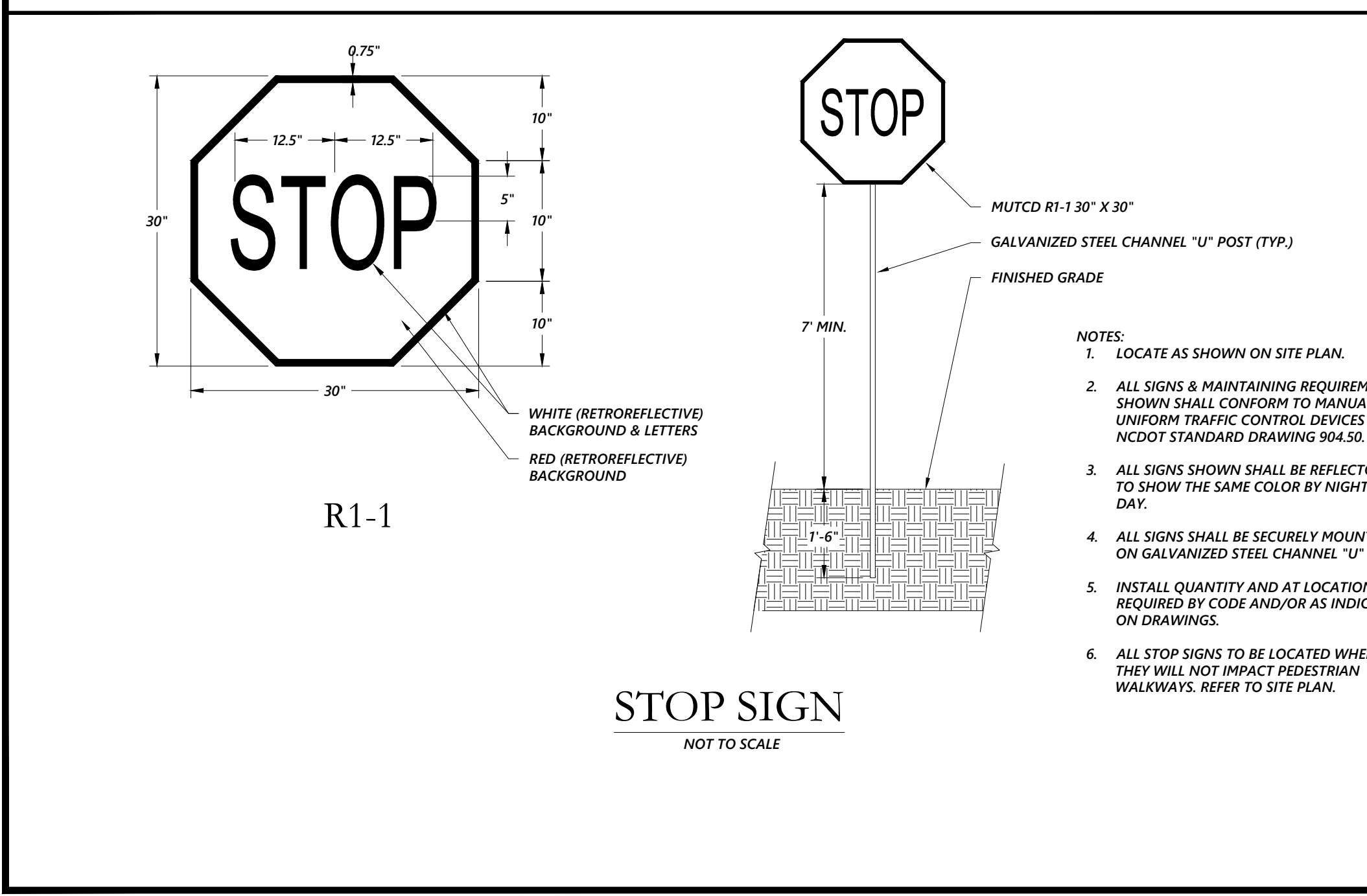
NOTES: FILL HEIGHTS SHOWN WERE CALCULATED USING AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS

1' MINIMUM COVER FOR ALL SIDE DRAIN PIPE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS



SEE FIGURE 1 PAGE 39 "NCDOT SUBDIVISION ROADS MINIMUM CONSTRUCTION STANDARDS JANUARY 2010" FOR LOCAL AND COLLECTOR ROAD DIMENSIONS.

FIGURE 1
CBU PLACEMENT FOR SHOULDER SECTION RESIDENTIAL LOCAL AND COLLECTOR SUBDIVISION STREETS



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NO.	REVISIONS	DATE	BY
6			
5			
4	NCDOT COMMENTS	1/24/20	CEA
3	NCDOT COMMENTS	2/19/20	ABA
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