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STORMWATER PLANS
FOR
3226 BRUCE GARNER RD
CREEDMOOR, NC 27522

GENERAL NOTES:

- CONSTRUCTION ON THIS PROJECT SHALL BE IN ACCORDANCE WITH GRANVILLE COUNTY, NC, NCDEQ, AND NCDOT STANDARD SPECIFICATIONS.
- THE GRADE LINES DENOTE THE FINISHED ELEVATIONS OF THE PROPOSED FINISHED PAVEMENT. GRADE LINES MAY BE ADJUSTED AT THEIR BEGINNING, ENDING, AND AT STRUCTURES AS DIRECTED BY THE ENGINEER IN ORDER TO PROVIDE A PROPER TIE-IN.
- UNDERGROUND UTILITIES MAY EXIST ON, ALONG OR WITHIN CONFLICT OF THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING NC 811 OR THE APPROPRIATE UTILITY COMPANIES 3 FULL BUSINESS DAYS PRIOR TO ANY EXCAVATION. **THE CONTRACTOR MUST FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.** IN CASE OF CONFLICT, NOTIFY ENGINEER AND DO NOT CONSTRUCT.
- THE EARTHWORK ON THIS PLAN DOES NOT NECESSARILY BALANCE; OFFSITE BORROW OR WASTE MAY BE REQUIRED.
- THE CONTRACTOR SHALL PERFORM ALL CONSTRUCTION IN ACCORDANCE WITH LOCAL CITY, COUNTY AND STATE BUILDING CODES.
- THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE DEMOLITION OF ALL EXISTING ON SITE FACILITIES, ABOVE AND BELOW GROUND. THE CONTRACTOR IS ALSO RESPONSIBLE FOR REMOVAL OF ALL WASTE RESULTING FROM DEMOLITION, AS WELL AS GRADING AND FILLING OF ALL DEPRESSIONS TO INSURE THAT THE SITE REMAINS AESTHETICALLY ACCEPTABLE. DISPOSAL SHALL BE IN ACCORDANCE WITH ALL LOCAL, STATE, & FEDERAL RULES & REGULATIONS.
- THE CONTRACTOR SHALL OBSERVE ALL REQUIRED SAFETY PRECAUTIONS IN THE PERFORMANCE OF ALL WORK IN ACCORDANCE WITH OSHA.
- THE CONTRACTOR SHALL GRADE, SEED AND SOD OR OTHERWISE PROVIDE TEMPORARY AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, ESPECIALLY SLOPES. SEE EROSION CONTROL INSTRUCTIONS, IF APPLICABLE.
- WORK WITHIN PUBLIC RIGHT-OF-WAYS SHALL BE IN ACCORDANCE WITH ALL STATE AND LOCAL REQUIREMENTS, NOTIFICATIONS, STANDARDS AND POLICIES.
- ANY SUBSTITUTIONS, CHANGES, OR MODIFICATIONS SHALL BE APPROVED BY THE PROJECT ENGINEER, PLANNING DEPARTMENT STAFF, AND DEVELOPER.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS NECESSARY TO CONSTRUCTION. THE CONTRACTOR SHALL READ ALL PERMITS AND ENSURE THAT CONSTRUCTION COMPLIES WITH THE PERMITS. REQUIRED PERMITS MAY INCLUDE, BUT ARE NOT LIMITED TO: CITY/COUNTY APPROVALS/PERMITS, VDOT PERMITS, DRIVEWAY PERMITS, EROSION CONTROL PERMITS, ENVIRONMENTAL PERMITS, STREAM CROSSING PERMITS, USACE/DWQ PERMITS. IF THE CONTRACTOR HAS QUESTIONS ABOUT PERMIT LANGUAGE, OR THE NEED FOR A PERMIT, HE MUST CONTACT THE DEVELOPER AND THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
- THE GRADING CONTRACTOR MUST MAINTAIN COPIES OF THE LAND DISTURBANCE PERMIT ONSITE. HE MUST READ AND FOLLOW THE CONDITIONS OF THE PERMITS.
- THE CONTRACTOR MUST VERIFY ALL FIELD ELEVATIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY VARIATION OF FIELDS ELEVATIONS.

CONSTRUCTION SEQUENCE:

- OBTAIN APPROVED SET OF CONSTRUCTION DRAWINGS
- INSTALL BERM/DIVERSION
- INSTALL DRY DETENTION BASIN
- STABILIZE BOTH THE DIVERSION AND BASIN PRIOR TO PROCEEDING WITH LOT DISTURBANCE
- INSTALL TEMPORARY CONSTRUCTION MEASURES REQUIRED FOR EACH LOT CONSTRUCTION
- CLEAR ONLY AS NECESSARY TO INSTALL THE EROSION CONTROL DEVICES REQUIRED FOR HOME CONSTRUCTION.
- AT NO TIME IS MORE THAN 42,000 SF OF DISTURBANCE ALLOWED WITHOUT SUBMISSION OF AN EROSION CONTROL PLAN.
- BEGIN HOME CONSTRUCTION ONCE E&S MEASURES ARE INSTALLED FOR EACH LOT. THESE MEASURES MAY BE REMOVED ONCE GROUND STABILIZATION IS COMPLETE.

VICINITY MAP
NOT TO SCALE



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FIRST ISSUE DATE
MARCH 2023



CONSTRUCTION DRAWINGS
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CREEDMOOR, NC 27522

COVER SHEET

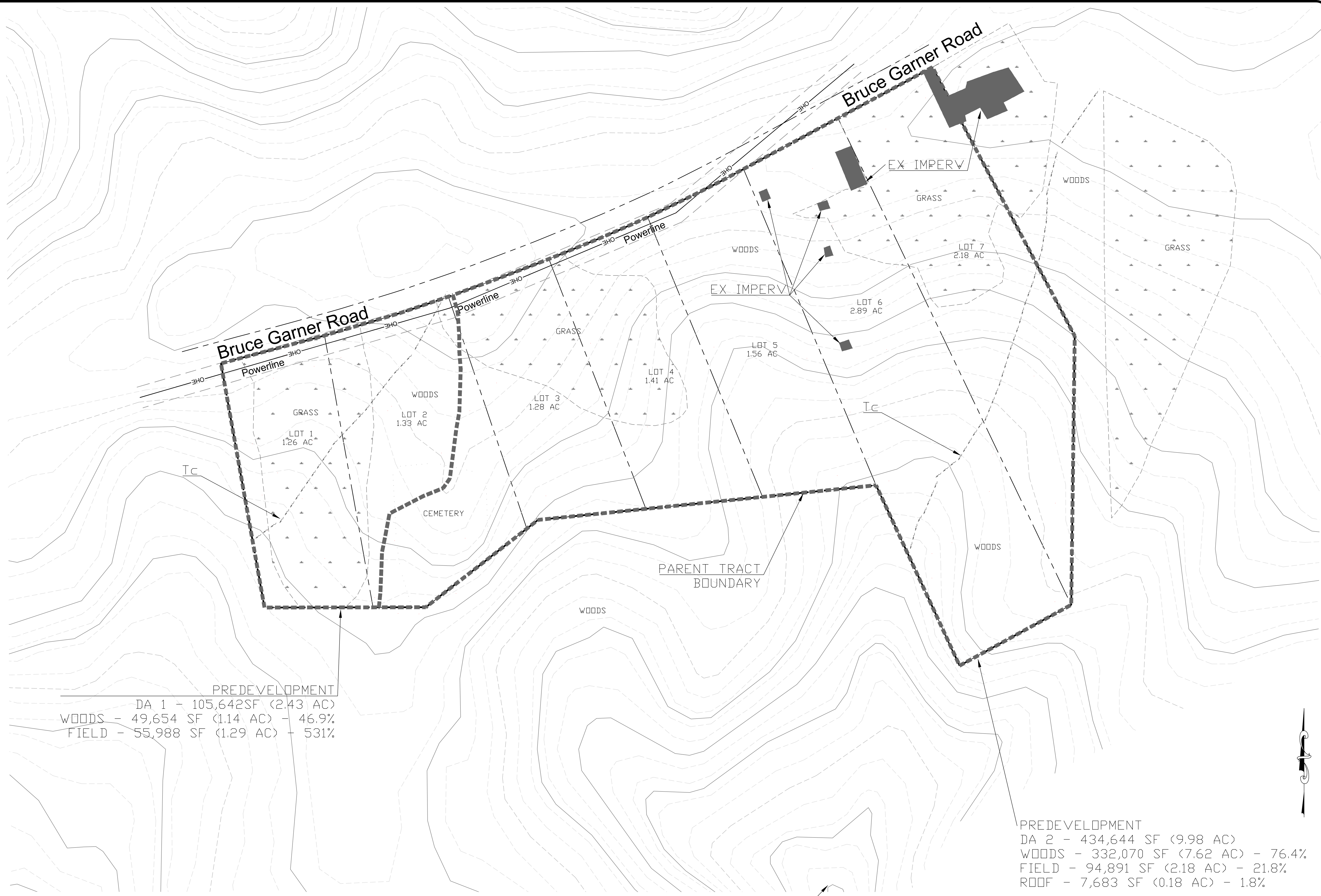
PROJECT NO.
LT STORM
DRAWING NAME:

SHEET NO.
C-1



Know what's below.
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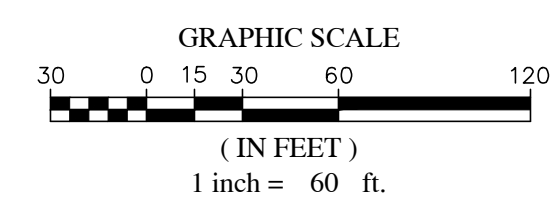
CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4849) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.



PREDEVELOPMENT
DA 1 - 105,642SF (2.43 AC)
WOODS - 49,654 SF (1.14 AC) - 46.9%
FIELD - 55,988 SF (1.29 AC) - 53.1%

PREDEVELOPMENT
DA 2 - 434,644 SF (9.98 AC)
WOODS - 332,070 SF (7.62 AC) - 76.4%
FIELD - 94,891 SF (2.18 AC) - 21.8%
ROOF - 7,683 SF (0.18 AC) - 1.8%

COMMON POINT OF DISCHARGE



CONTRACTOR SHALL NOTIFY "NC811" (811) OR (1-800-632-4949) AT LEAST 3 FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NC811". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

REVISIONS		DATE	BY
7			
6			
5			
4			
3			
2			
1			

PROJECT ENGINEER/ARCHITECT
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CREEDMOOR, NC 27522

EXISTING CONDITIONS

PROJECT NO.
LT STORM

DRAWING NAME:

SHEET NO.
C-2

GENERAL/STORMWATER NOTES:

- 1.1. 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 1 YEAR OF THE AS-BUILT CERTIFICATION BY THE ENGINEER OF RECORD. BECAUSE STEM WILL BE THE OWNER OF EACH SCM, INSPECTION REPORTS WILL BE SAVED FOR POTENTIAL AUDIT PURPOSES.
2. THE DEVELOPER OR HIS AGENT SHALL CONTACT GRANVILLE 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 CAN BE PERFORMED.
3. THE PROJECT IS NOT WITHIN 5 MILES OF A PUBLIC AIRPORT.
4. TO COMPLY WITH STORMWATER REGULATIONS THE PROPOSED DRY DETENTION POND HAS BEEN DESIGNED TO TREAT RUNOFF FROM PROPERTIES USING ASSUMED LAND USES. THE ASSUMED LAND USE CHART IS ON THIS PAGE.

THE FOLLOWING SHALL BE APPROVED BY GRANVILLE COUNTY PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY FOR A SINGLE FAMILY RESIDENCE THAT DRAINS INTO A STORMWATER CONTROL MEASURE:

1. THE ENGINEER OF RECORD SHALL REQUEST A FINAL INSPECTION BY THE STORMWATER ADMINISTRATOR AND CORRECT ANY NOTED DEFICIENCIES.
2. PROVIDE A CONSTRUCTION CERTIFICATION SEALED BY A PROFESSIONAL ENGINEER THAT THE PROJECT WAS INSPECTED AND CONSTRUCTED IN ACCORDANCE WITH THE APPROVED STORMWATER PLANS.
3. SUBMIT AS-BUILT RECORD DRAWINGS SEALED BY A PROFESSIONAL ENGINEER.

STABILIZATION TIMEFRAMES

Site Area Description	Stabilization	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

- NOTES:
1. ALL SLOPES 3:1 AND STEEPER, AND DITCHES SHALL BE STABILIZED WITHIN 7 DAYS AND BE LINED WITH BLANKET MATTING.
2. PERMANENT GROUNDCOVER WILL BE PROVIDED FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR NO MORE THAN 90 CALENDAR DAYS (WHICHEVER IS SHORTER).
3. ROADSIDE DITCHES MUST HAVE MATTING IMMEDIATELY UPON CONSTRUCTION OR BY END OF DAY IF CONSTRUCTION CANNOT BE COMPLETED IN ONE DAY.

DISTURBED AREA
NO MORE THAN 42,000 SF AT A TIME. SEE CONST SEQUENCE

I, Matt Hastings, to the best of my knowledge, certify that the permanent stormwater management control(s) shown on this plan has been designed in accordance with the requirements of the Falls Lake Nutrient Strategy and North Carolina Division of Water Quality Stormwater Best Management Practices Manual (latest edition), as applicable. I also certify that other applicable local, state, and federal permits have been applied for and/or received.

Signature of licensed design professional _____ Date _____

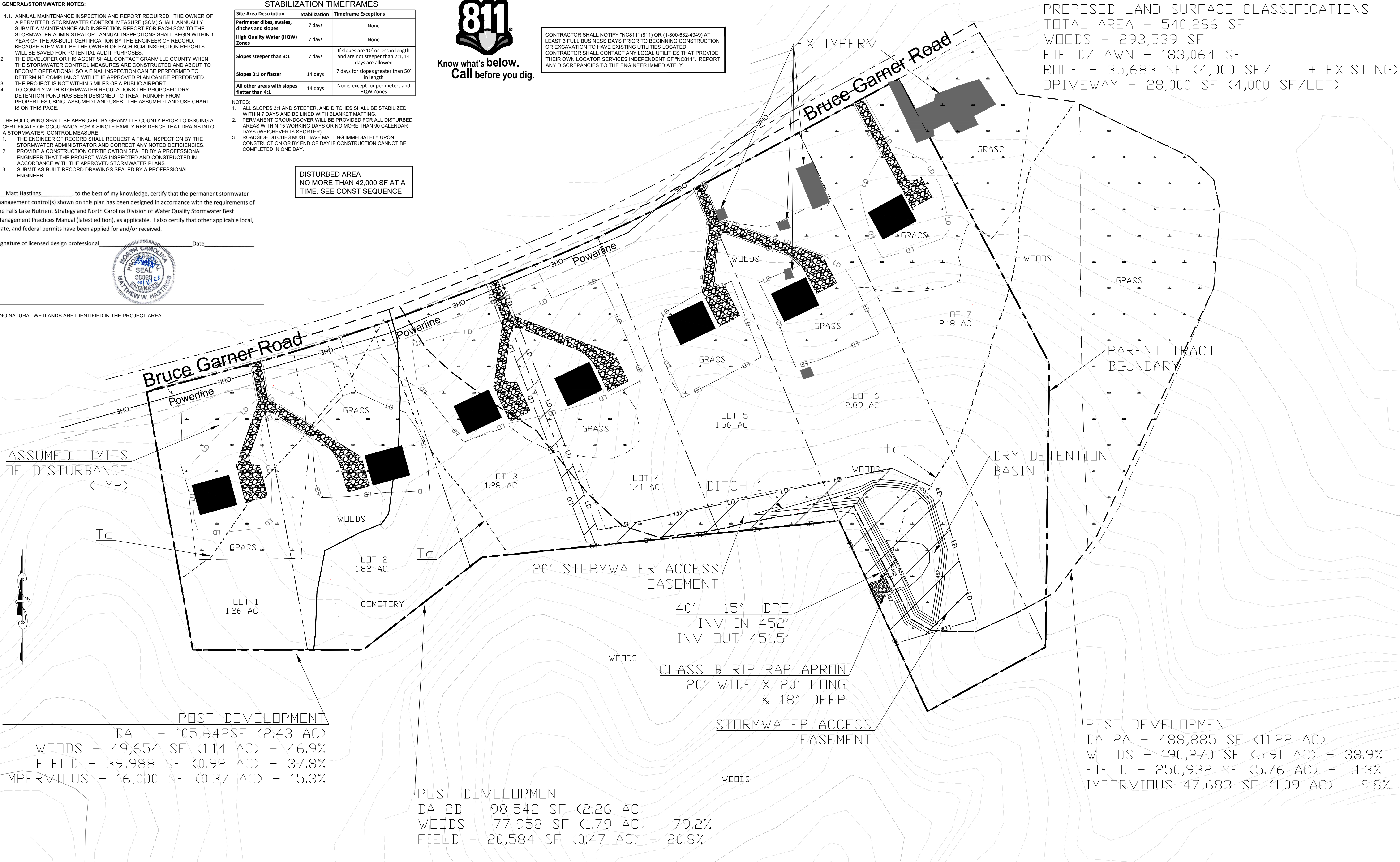


*NO NATURAL WETLANDS ARE IDENTIFIED IN THE PROJECT AREA.



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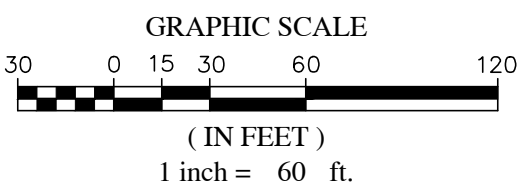
PROPOSED LAND SURFACE CLASSIFICATIONS
TOTAL AREA - 540,286 SF
WOODS - 293,539 SF
FIELD/LAWN - 183,064 SF
ROOF - 35,683 SF (4,000 SF/LOT + EXISTING)
DRIVEWAY - 28,000 SF (4,000 SF/LOT)

POST DEVELOPMENT
DA 1 - 105,642SF (2.43 AC)
WOODS - 49,654 SF (1.14 AC) - 46.9%
FIELD - 39,988 SF (0.92 AC) - 37.8%
IMPERVIOUS - 16,000 SF (0.37 AC) - 15.3%

POST DEVELOPMENT
DA 2B - 98,542 SF (2.26 AC)
WOODS - 77,958 SF (1.79 AC) - 79.2%
FIELD - 20,584 SF (0.47 AC) - 20.8%

POST DEVELOPMENT
DA 2A - 488,885 SF (11.22 AC)
WOODS - 190,270 SF (5.91 AC) - 38.9%
FIELD - 250,932 SF (5.76 AC) - 51.3%
IMPERVIOUS 47,683 SF (1.09 AC) - 9.8%

DIVERSION/DITCH SCHEDULE (MINIMUM SIZING)											
Q=cia											
NAME	DRAINAGE AREA (AC)	Invert	C-factor	I, in/hr	DEPTH (FT)	SLOPE (%)	Q (cfs)	V (fps)	FLOWDEPTH (ft)	SHEAR STRESS (psf)	MATTING
DITCH 1	4.08	454	0.4	4.88	1.50	2.00%	7.96	3.46	1.41	1.76	NAG S150



COMMON POINT OF DISCHARGE

LAND SURFACE CLASSIFICATION TABLE BY LOT					
LOT #	Lot Size, AC	ROOF, SF	DRIVEWAY, SF	LAWN, SF	WOODS, SF
1	1.26	4000	4000	20,866	26,020
2	1.82	4000	4000	22,751	48,669
3	1.28	4000	4000	16,955	30,802
4	1.41	4000	4000	29,469	23,951
5	1.56	4000	4000	14,284	45,670
6	2.89	7042	4000	42,433	72,413
7	2.18	8641	4000	36,306	46,014

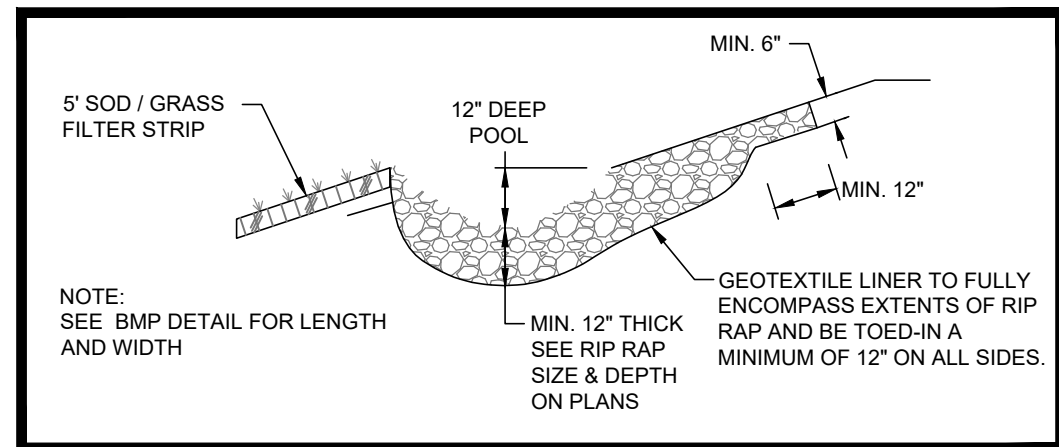
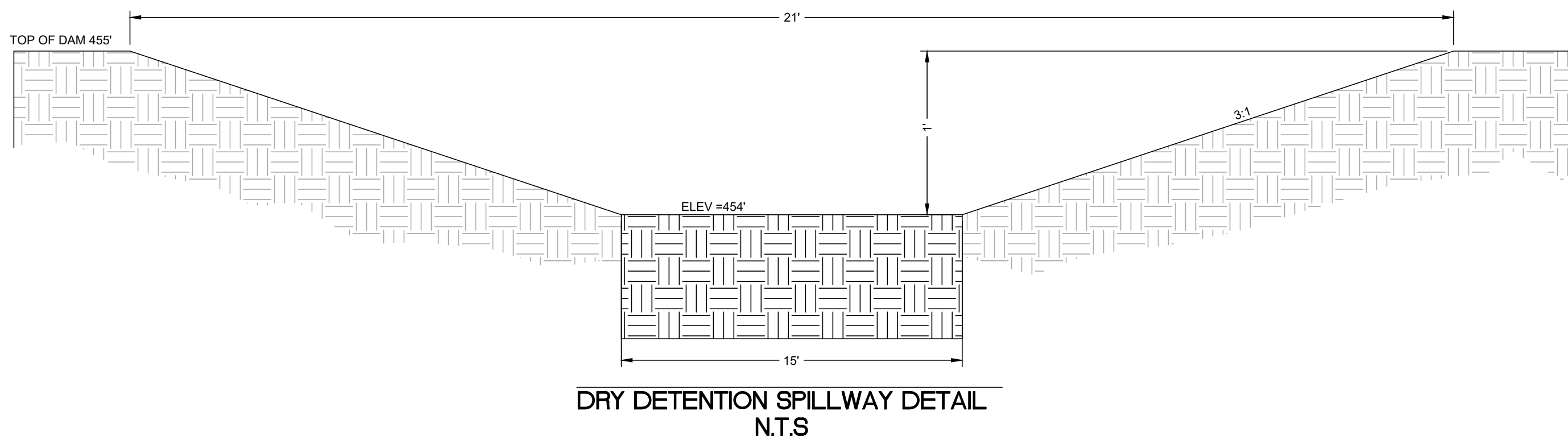
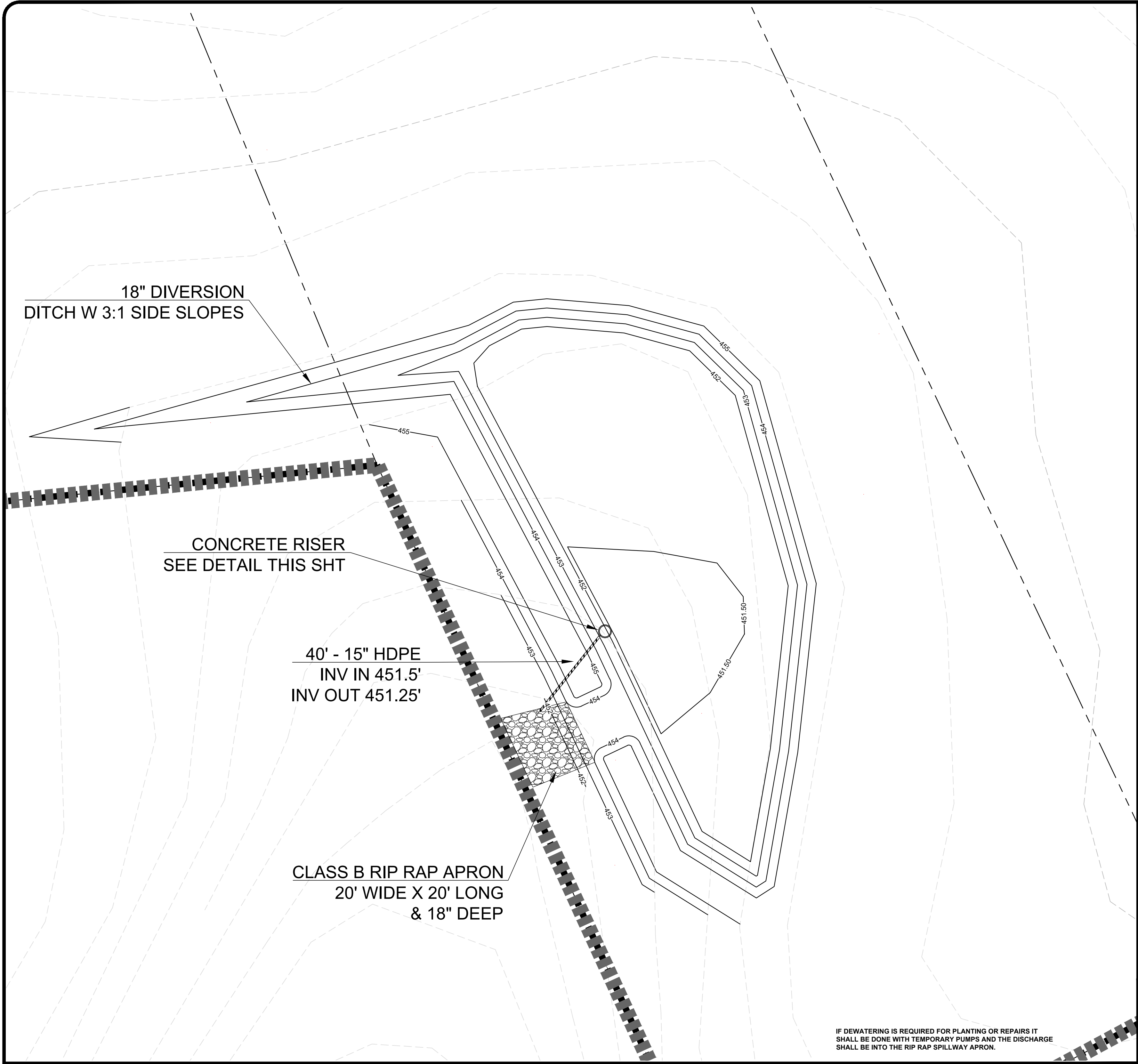
REVISIONS	BY	DATE
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PROJECT MANAGER
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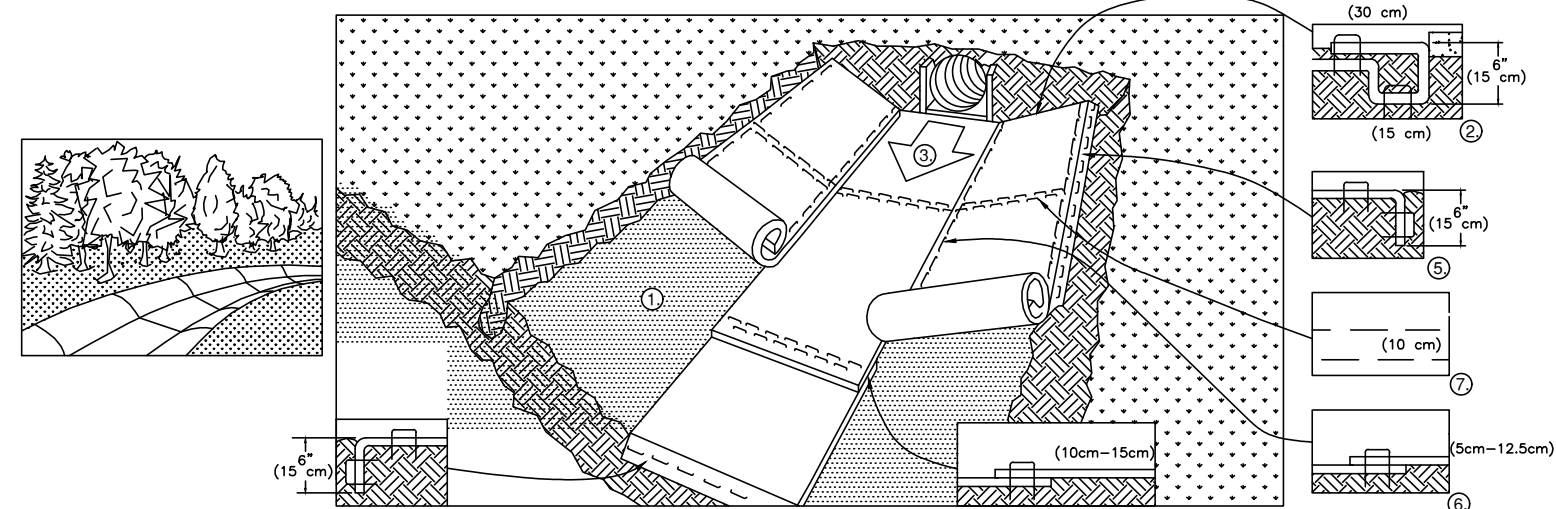


CONSTRUCTION DRAWINGS
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CREEDMOOR, NC 27522
POST DEVELOPMENT/GRADING PLAN

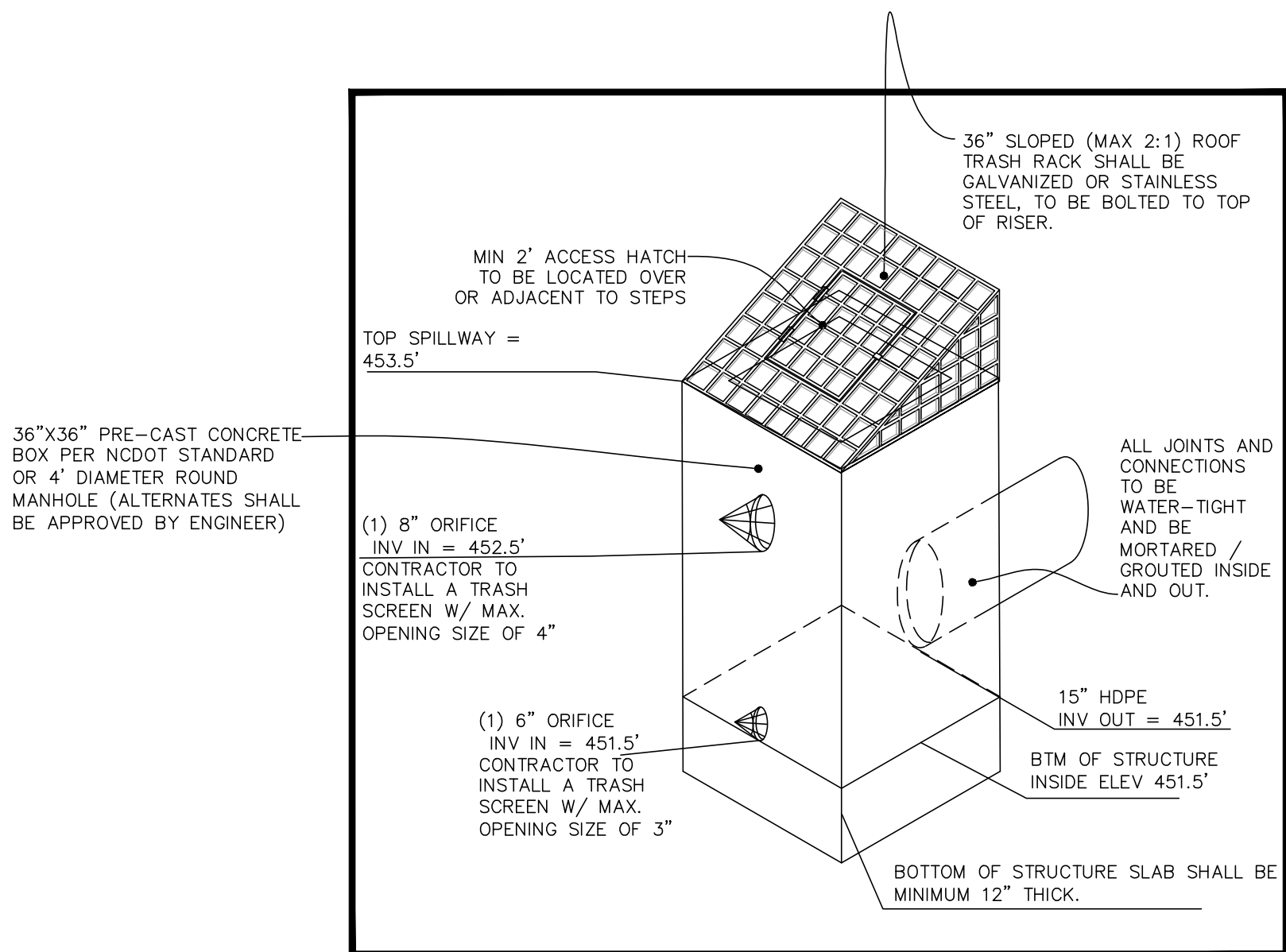
PROJECT NO.
LT STORM
DRAWING NAME:
SHEET NO.
C-3



RIP RAP PLUNGE POOL
NOT TO SCALE



NORTH AMERICAN GREEN SLOPE BLANKET



POND RISER-STRUCTURE
NOT TO SCALE

DAM EMBANKMENT CONSTRUCTION STANDARDS:

- 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.
- 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.
- 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 MATERIALS.
- 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.
- SURFACE WATER AND STREAM FLOW SHALL BE CONTINUOUSLY CONTROLLED THROUGHOUT CONSTRUCTION AND THE PLACEMENT OF CONTROLLED FILL.
- FOUNDATION AREAS MAY REQUIRE UNDERCUTTING OF COMPRESSIBLE AND/OR UNSUITABLE SOILS 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.
- 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.
- 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.
- 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.
- COMPACTION BY MEANS OF DROP WEIGHTS FROM A CRANE OR HOIST SHALL NOT BE PERMITTED.
- HEAVY EQUIPMENT SHALL NOT BE ALLOWED TO PASS OVER CAST-IN-PLACE STRUCTURES (INCLUDING THE CRADLE) UNTIL ADEQUATE CURING TIME HAS ELAPSED.
- TO RE-ESTABLISH VEGETATION AFTER CONSTRUCTION, A 2- TO 3- INCH LAYER OF TOPSOIL SHALL BE PLACED ON THE DISTURBED EMBANKMENT SURFACE AND THE AREA SEEDED AND SODDED OR HYDROSEEDED.

PROJECT ENGINEER/ARCHITECT	PROJECT MANAGER	DRAWN BY	FIRST ISSUE DATE	REVISIONS	DATE	BY
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				3		
				4		
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CONSTRUCTION DRAWINGS
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3226 BRUCE GARNER RD
CREEDMOOR, NC 27622

DRY POND DETAILS

PROJECT NO.
LT STORM

DRAWING NAME:
20-0293_D

SHEET NO.
D-1