GENERAL NOTES:

- 1. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE OWNER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- 2. THERE MAY BE WETLANDS WITHIN THIS SITE. IT IS THE OWNER'S RESPONSIBILITY FOR WETLANDS JURISDICTION AND PERMIT DISTURBANCE PRIOR TO ANY GRADING ACTIVITY.

SITE PLAN NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE LATEST TOWN OF ROLESVILLE AND/OR NCDOT STANDARDS AND SPECIFICATIONS AS APPLICABLE.

- 2. ALL DIMENSIONS SHOWN ON SITE PLAN ARE MEASURED TO BACK OF CURB UNLESS OTHERWISE NOTED.
- 3. CONTRACTOR SHALL MAINTAIN AN "AS-BUILT" SET OF DRAWINGS TO RECORD THE EXACT LOCATION OF ALL PIPING PRIOR TO CONCEALMENT. DRAWINGS SHALL BE GIVEN TO THE ENGINEER UPON COMPLETION OF THE PROJECT WITH A COPY OF THE TRANSMITTAL LETTER TO THE OWNER.
- 4. EXISTING IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED/RESTORED TO THEIR ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER, BY THE CONTRACTOR RESPONSIBLE FOR THE DAMAGE
- 5. THE CONTRACTOR SHALL NOTE THAT THE DRAWINGS MAY NOT SHOW EVERY OFFSET, TRANSITION, FITTING, ETC. THAT MAY BE REQUIRED. THE CONTRACTOR SHALL INSTALL SUCH STANDARD APPURTENANCES AS REQUIRED TO CLOSELY FOLLOW THE GRADES AND ALIGNMENTS DEPICTED ON THE PLANS.
- 6. 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.
- 7. CONTRACTOR IS RESPONSIBLE FOR COORDINATING CONSTRUCTION ACTIVITIES WITH THE APPROPRIATE UTILITY COMPANIES FOR ANY REQUIRED RELOCATIONS (I.E. POWER POLES, TELEPHONE PEDESTALS, WATER METERS. ETC.).
- 8. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION, FOR NECESSARY PLAN OR GRADE CHANGES, NO EXTRA COMPENSATION SHALL BE PAID TO CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- 9. ACCESSIBLE RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH NCDOT DETAILS.
- 10. ALL SIDEWALKS THAT CONNECT TO THE PUBLIC RIGHT-OF-WAY MUST BE ACCESSIBLE TO PERSONS WHO ARE BLIND, HAVE LOW VISION AND PEOPLE WITH MOBILITY DISABILITIES. PEDESTRIAN EXISTING ROUTES AND ALTERNATE PEDESTRIAN ROUTES DURING CONSTRUCTION WILL BE REQUIRED TO BE COMPLIANT WITH THE PUBLIC RIGHTS OF WAY ACCESSIBILITY GUIDELINES (PROWAG), 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 11. TYPICAL PAVEMENT SECTION DETAILS ARE SHOWN WITHIN THIS SET AND INTENDED TO BE A MINIMUM PAVEMENT SECTION REQUIREMENT. THE CURRENT GEOTECHNICAL REPORT SHALL OVER-RIDE ALL TYPICAL PAVEMENT SECTIONS SHOWN, IF THE GEOTECHNICAL ENGINEER DEEMS A HEAVIER SECTION IS REQUIRED.
- 12. EQUIPMENT AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED PROVIDED APPROVAL HAS BEEN OBTAINED FROM THE OWNER IN WRITING PRIOR TO ORDERING OR INSTALLATION. THE CONTRACTOR SHALL WAIVE ANY CLAIM FOR ADDITIONAL COST RELATED TO SUBSTITUTION OF ALTERNATE EQUIPMENT.
- 13. ALL SIGNAGE ASSOCIATED WITH THE PUBLIC STREET SYSTEM SHALL ADHERE TO MUTCD STANDARDS AND SPECIFICATIONS

NOTES:

- 1. ROADS LABELED AS PUBLIC WILL BE DEDICATED AS PUBLIC ROW TO BE MAINTANED BY THE TOWN OF ROLESVILLE.
- 2. ROADS LABELED AS PRIVATE WILL BE DEDICATED AS PRIVATE AND BE MAINTAINED BY THE HOA.
- 3. GREENWAY EASEMENTS LABELED AS PUBLIC WILL BE DEDICATED AS PUBLIC AND BE MAINTAINED BY THE TOWN OF ROLESVILLE
- 4. SANITARY SEWER EASEMENTS WILL BE DEDICATED AS PUBLIC EASEMENTS TO THE CITY OF RALEIGH.

STORM DRAINAGE NOTES

- 1. ALL STORM DRAINAGE PIPES SHOWN SHALL BE REINFORCED CONCRETE (RCP) (MINIMUM CLASS III) UNLESS NOTED OTHERWISE. CONTRACTOR TO COORDINATE WITH THE GEOTECH TO VERIFY TYPE OF BEDDING REQUIRED BASED ON SOIL CONDITIONS. CONTRACTOR TO SELECT REQUIRED CLASS OF PIPE BASED ON DEPTH OF PIPE AND BEDDING PROVIDED PER THE AMERICAN CONCRETE PIPE ASSOCIATION GUIDELINES.
- 2. ALL STORM DRAINAGE CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ROLESVILLE STANDARDS.
- 3. ALL CONCRETE SHALL MEET A MINIMUM 3000 PSI COMPRESSIVE STRENGTH.
- 4 ALL PIPE IN STORM DRAIN STRUCTURES SHALL BE STRUCK EVEN WITH INSIDE WALL.
- 5. ALL PIPE JOINTS SHALL BE MADE WITH PREFORMED JOINT SEALER, WHICH CONFORMS TO AASHTO SPECIFICATION M-198 FOR TYPE B FLEXIBLE PLASTIC GASKETS UNLESS OTHERWISE NOTED.
- 6. THE INTERIOR SURFACES OF ALL STORM DRAINAGE STRUCTURES SHALL BE POINTED UP AND SMOOTHED TO AN ACCEPTABLE STANDARD, USING MORTAR MIXED TO MANUFACTURER'S SPECIFICATIONS. 7. ALL BACKFILL SHALL BE NON-PLASTIC IN NATURE, FREE FROM ROOTS, VEGETATION MATTER, WASTE CONSTRUCTION MATERIAL OR
- OTHER OBJECTIONABLE MATERIAL. SAID MATERIAL SHALL BE CAPABLE OF BEING COMPACTED BY MECHANICAL MEANS AND SHALL HAVE NO TENDENCY TO FLOW OR BEHAVE IN A PLASTIC MANNER UNDER THE TAMPING BLOWS OR PROOF ROLLING.
- 8. MATERIALS DEEMED BY THE OWNER'S REPRESENTATIVE OR GEOTECH AS UNSUITABLE FOR BACKFILL PURPOSES SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL.
- 9. BACKFILLING OF TRENCHES SHALL BE ACCOMPLISHED IMMEDIATELY AFTER PIPE IS LAID. THE FILL AROUND THE PIPE SHALL BE THOROUGHLY COMPACTED TO 95 % OF THE MAXIMUM DRY DENSITY OBTAINABLE WITH THE STANDARD PROCTOR TEST. THE TOP EIGHT (8) INCHES SHALL BE COMPACTED TO 100 PERCENT STANDARD PROCTOR.
- 10. UNDER NO CIRCUMSTANCES SHALL WATER BE ALLOWED TO RISE IN UNBACKFILLED TRENCHES AFTER PIPE HAS BEEN PLACED.
- 11. ALL CONCRETE PIPE AND PRECAST STORM STRUCTURES SHALL MEET NCDOT STANDARDS BY MANUFACTURER.
- 12. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL PIPE AND STRUCTURES FOR CRACKS OR BREAKS, PRIOR TO INSTALLATION. ANY DAMAGED ITEMS SHALL NOT BE INSTALLED.

GRADING NOTES

- 1. ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION, FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO THE CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
- . OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS FOR EXCAVATIONS; FINAL RULE 29CFR PART 1926. SUBPART "P" APPLIES TO ALL EXCAVATIONS EXCEEDING FIVE (5) FEET IN DEPTH EXCAVATION EXCEEDING TWENTY (20) FEET IN DEPTH REQUIRES THE DESIGN OF A TRENCH SAFETY SYSTEM BY A REGISTERED PROFESSIONAL ENGINEER, PROVIDED BY CONTRACTOR RESPONSIBLE FOR EXCAVATION.
- 3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ROLESVILLE AND/OR NCDOT STANDARDS AND SPECIFICATIONS AS APPLICABLE.
- 4. 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.
- 5. CONSTRUCTION, MAINTENANCE AND REMOVAL OF ALL EROSION CONTROL DEVICES ARE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. TIMING OF REMOVAL SHALL BE COORDINATED WITH THE EROSION CONTROL INSPECTOR.
- 6. EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON A FIELD SURVEY AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS PRIOR TO BEGINNING RELATED CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
- 7. SOIL UNDER BUILDINGS, PAVED AREAS AND WITHIN SLOPES GREATER THAN 3:1 (H:V) SHALL BE APPROVED, PLACED AND COMPACTED AS RECOMMENDED BY THE GEOTECHNICAL ENGINEER.

RETAINING WALL NOTES

- IS RESPONSIBLE FOR ENSURING RETAINING WALLS ARE NOT LOCATED IN ANY STREAM BUFFERS, AND THEIR CONSTRUCTION DOES NOT ENCROACH INTO ANY ADJACENT PROPERTIES DUE TO ANY BATTER INCORPORATED IN THE DESIGN OF THE WALLS.
- THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FINAL CONSTRUCTION DRAWINGS FROM A REGISTERED ENGINEER AND GAIN ALL REQUIRED PERMITS NECESSARY FOR THE CONSTRUCTION OF THE RETAINING WALLS.
- RETAINING WALLS SHALL BE ASSUMED TO BE BACKFILLED WITH OFF-SITE BORROW DESIGNER, THAT READILY AVAILABLE ON-SITE SOILS CAN BE USED.
- THE TOP AND BOTTOM OF WALL ELEVATIONS SHOWN ON THESE PLANS IDENTIFY FINISHED GRADE ELEVATIONS ONLY. THE EXTENT THAT THE RETAINING WALL WILL BE BLOCK COURSE SHALL BE IDENTIFIED ON THE RETAINING WALL CONSTRUCTION DRAWINGS.
- ALL RETAINING WALLS OVER 30" HIGH SHALL HAVE A SAFETY FENCE (DESIGN BY OTHERS).
- ANY TIEBACK SYSTEMS FOR THE RETAINING WALLS SHALL NOT BE ALLOWED WITHIN PUBLIC RIGHT-OF-WAY

CITY OF RALEIGH PUBLIC UTILITIES STANDARD UTILITY NOTES (AS APPLICABLE)

- DETAILS & SPECIFICATIONS (REFERENCE: CORPUD HANDBOOK, CURRENT EDITION)
- 2. UTILITY SEPARATION REQUIREMENTS:
- OUTSIDE DIAMETER.
- INSTALLED TO WATERLINE SPECIFICATIONS.
- DIP MATERIAL IS SPECIFIED FOR SANITARY SEWER.
- REQUIRED
- RALEIGH PUBLIC UTILITIES DEPARTMENT PRIOR TO CONSTRUCTION.
- ADVANCE NOTICE TO THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT.
- ON ALL REUSE MAINS.
- CONNECTION TO PROVIDE ADEQUATE FLOW & PRESSUR
- SPACED EVERY 75 LINEAR FEET MAXIMUM.

- (919) 996-2334 OR TIMOTHY.BEASLEY@RALEIGHNC.GOV FOR MORE INFORMATION.
- (919) 996-5923 OR JOANIE.HARTLEY@RALEIGHNC.GOV FOR MORE INFORMATION.

THE RETAINING WALL ALIGNMENT SHOWN ON THESE PLANS DEPICTS THE LOCATION OF THE FRONT FACE OF THE RETAINING WALL AT THE TOP OF THE WALL. THE CONTRACTOR RETAINING WALLS ARE TO BE DESIGN-BUILD PROJECTS BY THE CONTRACTOR. IT SHALL BE

MATERIAL OR PROCESSED FILL, UNLESS THE CONTRACTOR CAN PROVIDE TO THE OWNER WITH CONFIRMATION FROM THE GEOTECHNICAL ENGINEER AND THE RETAINING WALL

EXTENDED BELOW GRADE TO THE FOOTING OR ABOVE GRADE TO THE TOP OF THE CAP

ALL MATERIALS & CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH CITY OF RALEIGH DESIGN STANDARDS,

a. A DISTANCE OF 100' SHALL BE MAINTAINED BETWEEN SANITARY SEWER & ANY PRIVATE OR PUBLIC WATER SUPPLY SOURCE SUCH AS AN IMPOUNDED RESERVOIR USED AS A SOURCE OF DRINKING WATER. IF ADEQUATE LATERAL SEPARATION CANNOT BE ACHIEVED, FERROUS SANITARY SEWER PIPE SHALL BE SPECIFIED & INSTALLED TO WATERLINE SPECIFICATIONS. HOWEVER, THE MINIMUM SEPARATION SHALL NOT BE LESS THAN 25' FROM A PRIVATE WELL OR 50' FROM A PUBLIC WELL.

b. WHEN INSTALLING WATER &/OR SEWER MAINS. THE HORIZONTAL SEPARATION BETWEEN UTILITIES SHALL BE 10'. IF THIS SEPARATION CANNOT BE MAINTAINED DUE TO EXISTING CONDITIONS, THE VARIATION ALLOWED IS THE WATER MAIN IN A SEPARATE TRENCH WITH THE ELEVATION OF THE WATER MAIN AT LEAST 18" ABOVE THE TOP OF THE SEWER & MUST BE APPROVED BY THE PUBLIC UTILITIES DIRECTOR. ALL DISTANCES ARE MEASURED FROM OUTSIDE DIAMETER TO

c. WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER SEPARATION, OR ANYTIME A SANITARY SEWER PASSES OVER A WATERMAIN, DIP MATERIALS OR STEEL ENCASEMENT EXTENDED 10' ON EACH SIDE OF CROSSING MUST BE SPECIFIED &

d. 5.0' MINIMUM HORIZONTAL SEPARATION IS REQUIRED BETWEEN ALL SANITARY SEWER & STORM SEWER FACILITIES, UNLESS

e. MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL WATERMAIN & RCP STORM DRAIN CROSSINGS; MAINTAIN 18" MIN. VERTICAL SEPARATION AT ALL SANITARY SEWER & RCP STORM DRAIN CROSSINGS. WHERE ADEQUATE SEPARATIONS CANNOT BE ACHIEVED, SPECIFY DIP MATERIALS & A CONCRETE CRADLE HAVING 6" MIN. CLEARANCE (PER CORPUD DETAILS W-41 &

f. ALL OTHER UNDERGROUND UTILITIES SHALL CROSS WATER & SEWER FACILITIES WITH 18" MIN. VERTICAL SEPARATION

ANY NECESSARY FIELD REVISIONS ARE SUBJECT TO REVIEW & APPROVAL OF AN AMENDED PLAN &/OR PROFILE BY THE CITY OF

4. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER & SEWER SERVICE TO EXISTING RESIDENCES & BUSINESSES THROUGHOUT CONSTRUCTION OF PROJECT. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 24 HOUR

5. 3.0' MINIMUM COVER IS REQUIRED ON ALL WATER MAINS & SEWER FORCEMAINS. 4.0' MINIMUM COVER IS REQUIRED

IT IS THE DEVELOPER'S RESPONSIBILITY TO ABANDON OR REMOVE EXISTING WATER & SEWER SERVICES NOT BEING USED IN REDEVELOPMENT OF A SITE UNLESS OTHERWISE DIRECTED BY THE CITY OF RALEIGH PUBLIC UTILITIES DEPARTMENT. THIS INCLUDES ABANDONING TAP AT MAIN & REMOVAL OF SERVICE FROM ROW OR EASEMENT PER CORPUD HANDBOOK PROCEDURE.

7. INSTALL 3/4" COPPER WATER SERVICES WITH METERS LOCATED AT ROW OR WITHIN A 2'X2' WATERLINE EASEMENT IMMEDIATELY ADJACENT. NOTE: IT IS THE APPLICANT'S RESPONSIBILITY TO PROPERLY SIZE THE WATER SERVICE FOR EACH

8. INSTALL 4" PVC SEWER SERVICES @ 1.0% MINIMUM GRADE WITH CLEANOUTS LOCATED AT ROW OR EASEMENT LINE &

9. PRESSURE REDUCING VALVES ARE REQUIRED ON ALL WATER SERVICES EXCEEDING 80 PSI; BACKWATER VALVES ARE REQUIRED ON ALL SANITARY SEWER SERVICES HAVING BUILDING DRAINS LOWER THAN 1.0' ABOVE THE NEXT UPSTREAM MANHOLE.

10. ALL ENVIRONMENTAL PERMITS APPLICABLE TO THE PROJECT MUST BE OBTAINED FROM NCDWQ, USACE &/OR FEMA FOR ANY RIPARIAN BUFFER, WETLAND &/OR FLOODPLAIN IMPACTS (RESPECTIVELY) PRIOR TO CONSTRUCTION.

11. NCDOT / RAILROAD ENCROACHMENT AGREEMENTS ARE REQUIRED FOR ANY UTILITY WORK (INCLUDING MAIN EXTENSIONS & SERVICE TAPS) WITHIN STATE OR RAILROAD ROW PRIOR TO CONSTRUCTION.

12. GREASE INTERCEPTOR / OIL WATER SEPARATOR SIZING CALCULATIONS & INSTALLATION SPECIFICATIONS SHALL BE APPROVED BY THE CORPUD FOG PROGRAM COORDINATOR PRIOR TO ISSUANCE OF A BUILDING PERMIT. CONTACT TIM BEASLEY AT

13. CROSS-CONNECTION CONTROL PROTECTION DEVICES ARE REQUIRED BASED ON DEGREE OF HEALTH HAZARD INVOLVED AS LISTED IN APPENDIX-B OF THE RULES GOVERNING PUBLIC WATER SYSTEMS IN NORTH CAROLINA. THESE GUIDELINES ARE THE MINIMUM REQUIREMENTS. THE DEVICES SHALL MEET AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE) STANDARDS OR BE ON THE UNIVERSITY OF SOUTHERN CALIFORNIA APPROVAL LIST. THE DEVICES SHALL BE INSTALLED AND TESTED (BOTH INITIAL AND PERIODIC TESTING THEREAFTER) IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS OR THE LOCAL CROSS-CONNECTION CONTROL PROGRAM, WHICHEVER IS MORE STRINGENT. CONTACT JOANIE HARTLEY AT

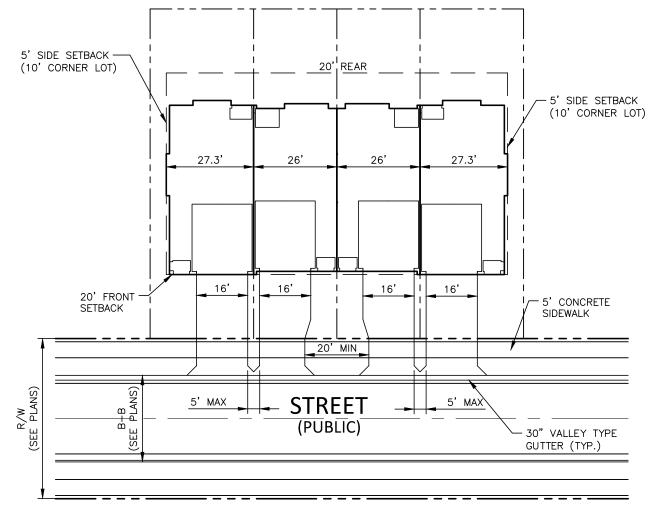
SETBACKS

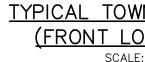
R3 PUD

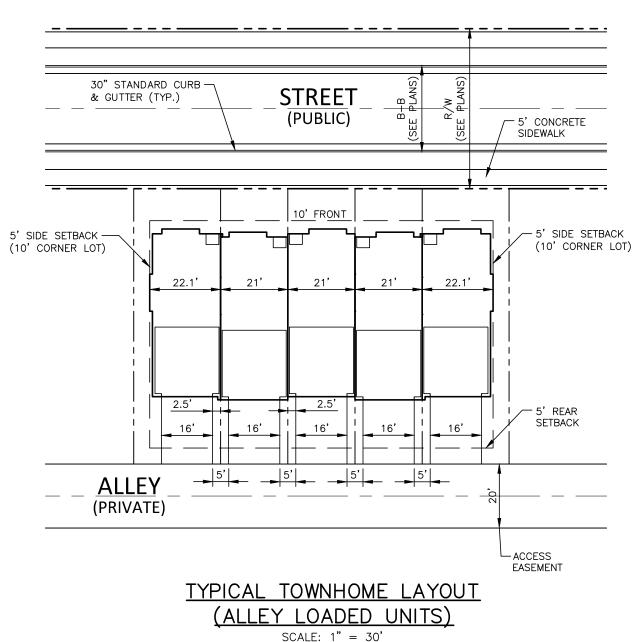
FRONT (FRONT LOAD)	20 FT
FRONT (ALLEY LOAD)	10 FT
SIDE	5 FT
AGGREGATE SIDE	10 FT
CORNER SIDE	10 FT
REAR (FRONT LOAD)	15 FT
REAR (ALLEY LOAD)	5 FT (RIGHT-OF-WAY)
MIN LOT WIDTH	26 FT (FRONT) 20 FT (ALLEY)

SITE AND OPEN SPACE AREAS

TOTAL SITE AREA	23.38 AC
RETAIL	0.00 AC
RESIDENTIAL	23.38 AC
R3 PUD	140 PROPOSED TOWNHOMES
TOTAL UNITS	140
OVERALL DENSITY	5.99 DU/AC
TOWNHOME AREA	23.38 AC
TOWNHOME DENSITY	5.99 DU/AC
ALLOWED DENSITY	10 DU/AC (TOWNHOME)
TOTAL IMPERVIOUS	562,727 SF (12.09 AC)
OPEN SPACE	15% OF TOTAL SITE AREA REQUIRED 3.50 AC REQUIRED 8.89 AC PROVIDED
TOWNHOMES 15% TH AREA (23.38 AC) 35% ACTIVE OS AREA (3.50 AC)	3.50 ACRES REQUIRED 1.23 ACRES REQUIRED
TOTAL OPEN SPACE REQUIRED:	3.50 AC
TOTAL OPEN SPACE PROVIDED:	1.80 AC IMPROVED OPEN SPACE 7.09 AC UNIMPROVED OPEN SPACE 8.89 AC TOTAL OPEN SPACE PROVIDED







REQUIRED **TOWNHOME PARKING** TOTAL UNITS 140 TOTAL 3 BEDROOM UNITS 124 (2 SPACES/TH + 0.5 SPACES PER BEDROOM OVER 2) = $(124 \times 2) + (124 \times 0.5) = 310$ TOTAL 4 BEDROOM UNITS (2 SPACES/TH + 0.5 SPACES PER BEDROOM OVER 2) = $(16 \times 2) + (16 \times 0.5) + (16 \times 0.5) = 48$ VISITOR PARKING 140 UNITS/4 = 35 SPACES MAIL KIOSK PARKING 6 (SEE MAIL KIOSK CALCULATION TABLE) TOTAL REQUIRED PARKING 399 SPACES PROVIDED PARKING: GARAGE PARKING 140 x 2 = 280 DRIVEWAY PARKING 140 x 1 =140 STREET PARKING

MAIL KIOSK PARKING 6 (1 ACCESSIBLE) DOG PARK PARKING 11 (2 ACCESSIBLE) PARKING LOT SPACES 46 (12 AMENITY, 6 MAIL, 28 GUEST TOTAL PARKING PROVIDED 477 SPACES

MAIL KIOSK CALCULATIONS

NUMBER OF MAIL BOXES(U 52 OR LESS 53-78 79-104 105 OR MORE	NITS) REQUIRED PARKING SPACES 2 3 4 4 PLUS 1 PER EACH ADDITIONAL 26 MAILBOXES
MAIL KIOSK AREA MAIL KIOSK CALCULATION: 140 UNITS @ 16 UNITS/KIOS	SK (CBU) = 9 KIOSKS (CBUs)
REG) UNITS QUIRED: 6 SPACES DVIDED: 6 SPACES (1 ACCESSIBLE)

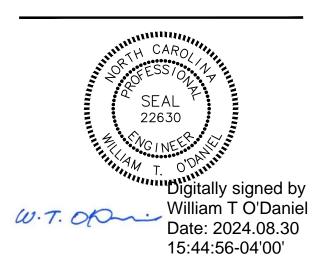
TYPICAL TOWNHOME LAYOUT (FRONT LOADED UNITS)



The John R. McAdams Company, In 621 Hillsborough Street Suite 500 Raleigh, NC 27603 phone 919. 361. 5000 fax 919. 361. 2269 license number: C-0293, C-187

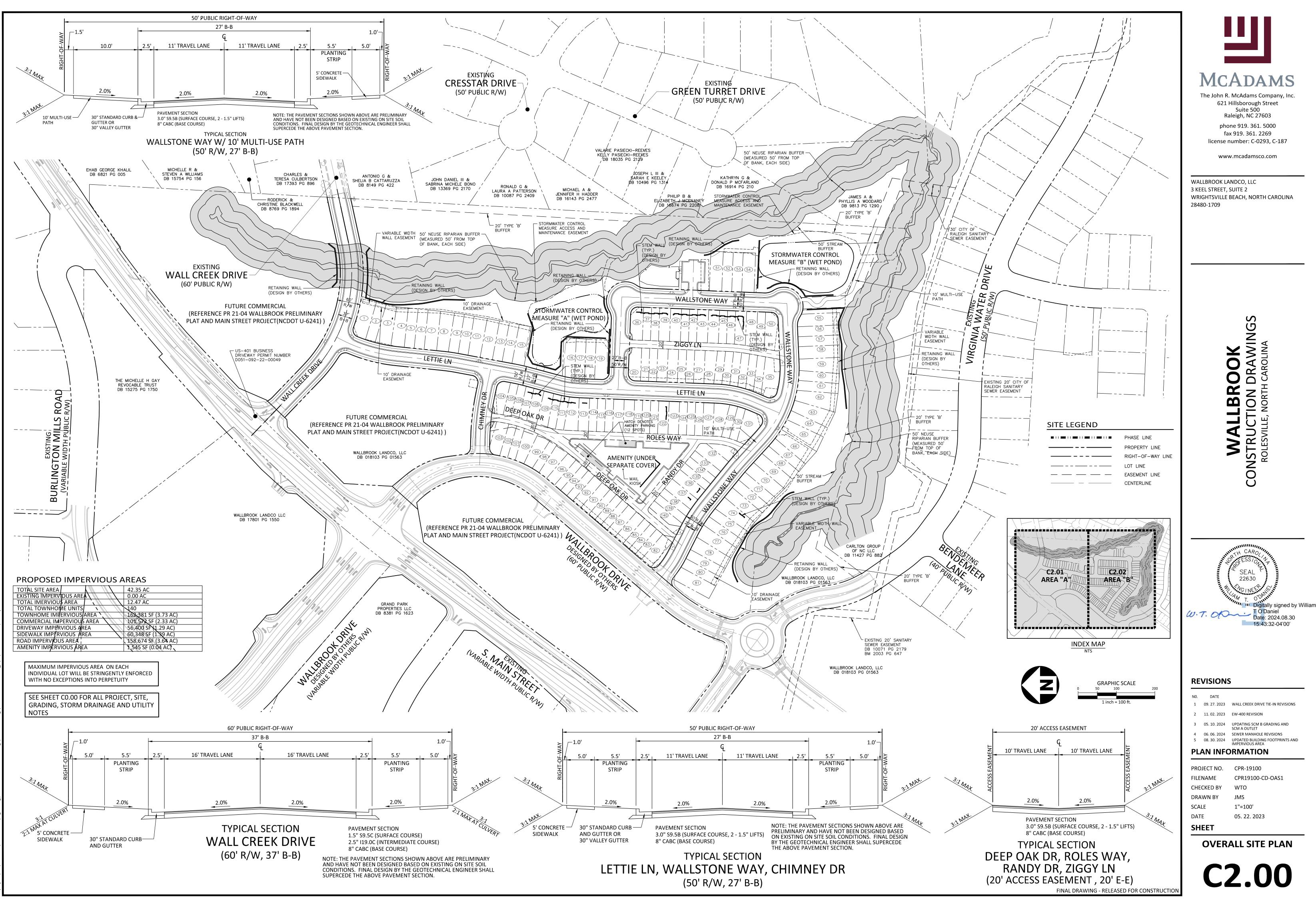
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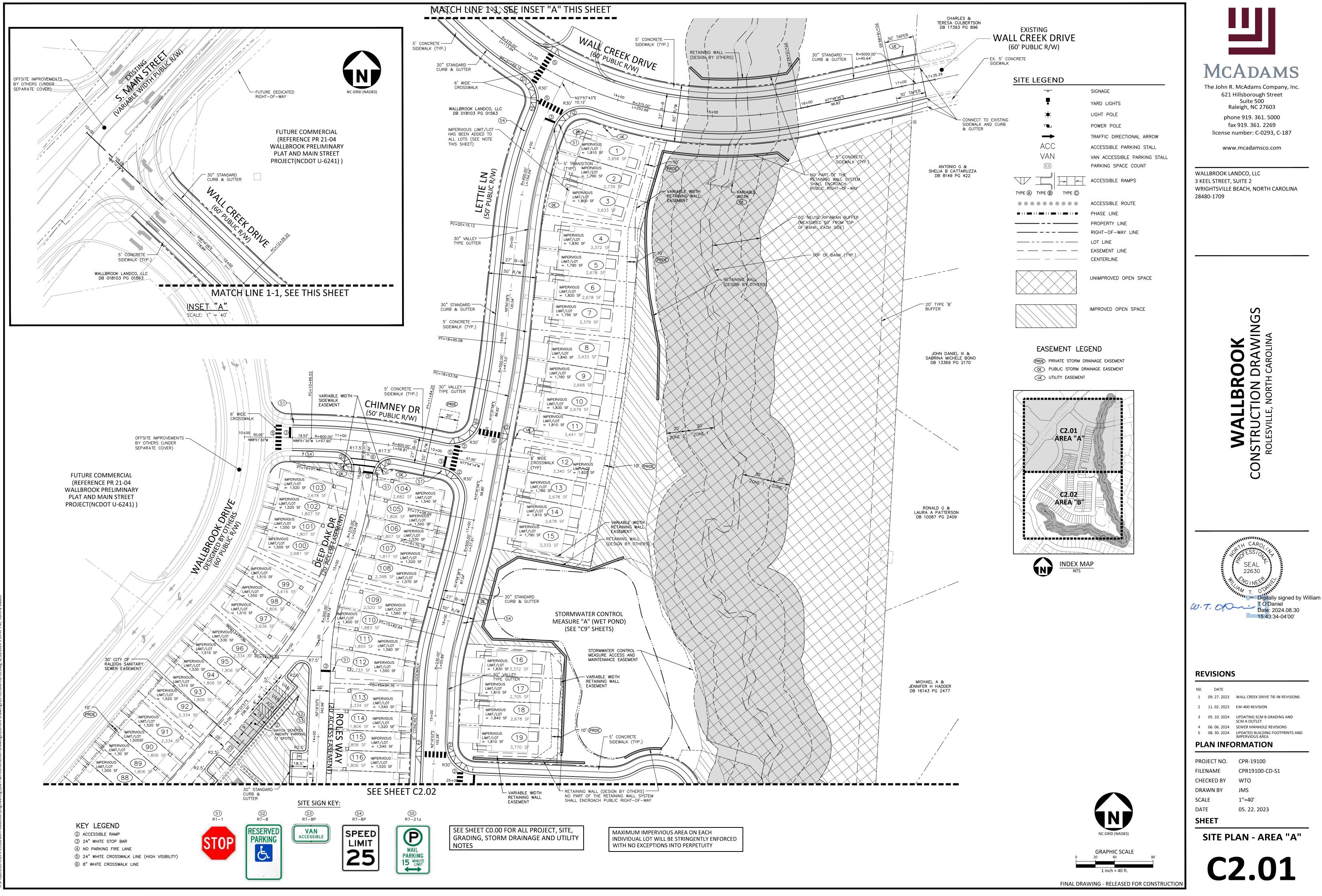


REVISIONS

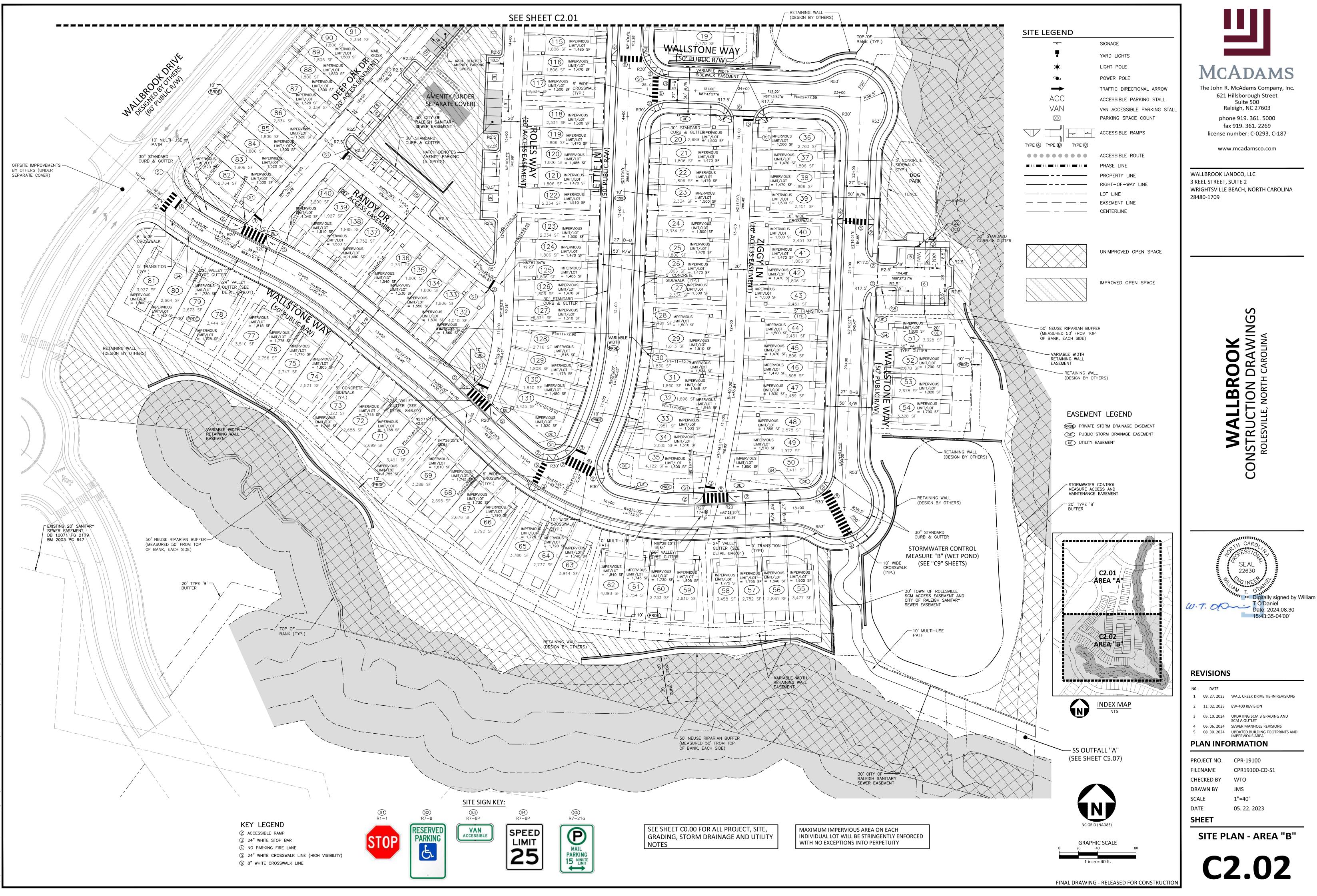
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NO. DATE	NO.	DATE				



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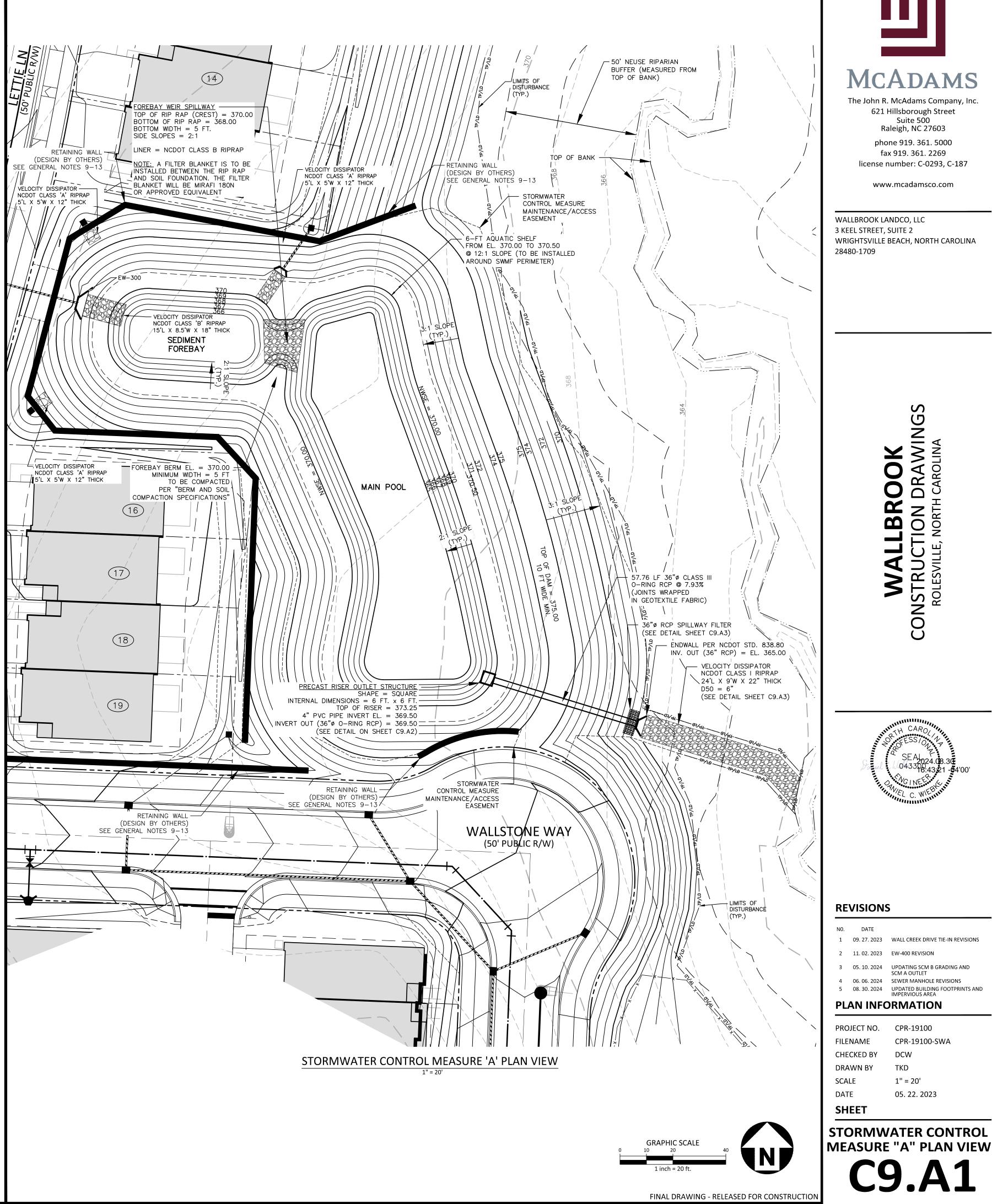


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STORMWATER CONTROL MEASURE 'A' CONSTRUCTION SPECIFICATIONS <u>GENERAL NOTES</u> CONSTRUCTION SEQUENCE PRIOR TO CONSTRUCTION, THE OWNER SHALL OBTAIN A LAND DISTURBING (GRADING) PERMIT AND AN "APPROVAL TO CONSTRUCT" PRIOR TO CONSTRUCTION, ANY DISCREPANCIES IN THE PLANS AND NOTES SHALL BE BROUGHT TO THE DESIGN ENGINEER'S ATTENTION IMMEDIATE FROM THE TOWN OF ROLESVILLE AND ALL OTHER NECESSARY PERMITS FROM APPLICABLE AGENCIES (E.G. 404 / 401 PERMITS) THE PROJECT WILL MEET ALL OF THE REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES PER THE APPROVED SEDIMENT AND EROSION CONTROL PLAN. THE CONTROL STRUCTURES AS OUTLINED IN THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY STORMWATER DESIGN CONTRACTOR SHALL MAINTAIN ALL APPROVED SEDIMENT AND EROSION CONTROL MEASURES THROUGHOUT THE ENTIRE PROJECT, AS REQUIRED. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE EROSION CONTROL INSPECTOR, AS REQUIRED BY GOVERNING MANUAL AGENCIES, PRIOR TO ANY CLEARING THE FINAL CERTIFICATION FOR THIS FACILITY WILL INCLUDE A CERTIFICATION BY THE ON-SITE GEOTECHNICAL ENGINEER THAT THE PROJECT WAS CONSTRUCTED PER THE APPROVED PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE 3. CLEAR AND GRUB AREA WITHIN THE LIMITS OF THE PROPOSED DAM CONSTRUCTION. ALL TREES AND THEIR ENTIRE ROOT SYSTEMS MUST ON-SITE GEOTECHNICAL ENGINEER FOR OBSERVATION AND TESTING SUCH THAT THE ON-SITE GEOTECHNICAL ENGINEER CAN CERTIFY THE BE REMOVED FROM THE DAM FOOTPRINT AREA AND BACKFILLED WITH SUITABLE SOIL MATERIAL. THE BACKFILLED AREAS SHALL BE CONSTRUCTION OF THE DAM EMBANKMENT AND SPILLWAY. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR MATERIALS AND COMPACTED TO THE SAME STANDARDS AS THE DAM EMBANKMENT. THE REMAINING AREA OF THE EMBANKMENT SHALL BE STRIPPED TO COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY A SUITABLE DEPTH AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER, ANY RESIDUAL SOILS TO BE LEET IN PLACE MUST BE WELL SCARIFIED TO PROMOTE BONDING OF THE NEW EMBANKMENT FILL. NO EMBANKMENT MATERIAL SHALL BE PLACED FOR THE DAM OR ALL CONSTRUCTION ACTIVITY RELATED TO THE PROPOSED STORMWATER CONTROL MEASURE SHALL BE PER THE DETAILS AND KEY TRENCH UNTIL APPROVAL OF THE DAM SUBGRADE IS OBTAINED FROM THE ON-SITE GEOTECHNICAL ENGINEER. SPECIFICATIONS SHOWN IN THESE DRAWINGS. SOILS, COMPACTION, AND OTHER MISCELLANEOUS DETAILS AND SPECIFICATIONS MAY BE EXCAVATE FOR THE NEW KEY TRENCH ALONG THE CENTERLINE OF THE PROPOSED DAM EMBANKMENT. THE TRENCH SHALL EXTEND A MODIFIED PER THE RECOMMENDATIONS OF THE ON-SITE GEOTECHNICAL ENGINEER. HOWEVER, PRIOR TO IMPLEMENTATION, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATION FROM THESE DESIGN DRAWINGS, INCLUDING SHOP DRAWINGS FOR ANY PROPOSED MINIMUM OF 5 FT BELOW EXISTING GRADE OR 2 FT BELOW THE 36"Ø RCP OUTLET BARREL AND SHALL HAVE A MINIMUM BOTTOM MODIFICATION. WIDTH OF 5 FEET. THE KEY TRENCH SIDESLOPES SHALL BE A MINIMUM OF 1:1 (H:V), WHEN EXCAVATING THE KEY TRENCH. IF ANY DEBRIS IS ENCOUNTERED TO AN EXTENT THAT SUCH DEBRIS MAY EXIST IN OTHER INSITU PORTIONS OF THE DAM EMBANKMENT. IT SHOULD ALSO DURING THE INITIAL STAGES OF CONSTRUCTION, THE STORMWATER CONTROL MEASURE MAY BE USED AS A SEDIMENT BASIN FOR BE REMOVED. THE KEY TRENCH SHALL BE COMPACTED TO THE SAME SPECIFICATION LISTED IN ITEM 4 OF THE SECTION TITLED "BERM EROSION CONTROL PURPOSES. IF SO, THE CONTRACTOR SHALL FOLLOW THE GENERAL CONSTRUCTION SEQUENCE BELOW: AND SOIL COMPACTION SPECIFICATIONS." DEPENDING UPON ON-SITE SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION, THE A. THE CONTRACTOR SHALL CONSTRUCT THE ENTIRE FACILITY (PERMANENT OUTLET STRUCTURE, DAM, ETC.) WITH THE EXCEPTION OF ON-SITE GEOTECHNICAL ENGINEER MAY VARY THE DEPTH AND DIMENSIONS OF THE KEY TRENCH AS DEEMED NECESSARY. THE ON-SITE THE INTERIOR FINE GRADING FOR THE FACILITY. THE INTERIOR FINE GRADING WILL BE CONSTRUCTED ONCE THE EROSION CONTROL GEOTECHNICAL ENGINEER SHALL RETAIN DOCUMENTATION OF ANY VARIATION FOR FUTURE AS-BUILT SUBMITTALS TO THE TOWN OF PHASE IS COMPLETE ROLESVILLE B. THE TEMPORARY DRAW DOWN RISER (OR SKIMMER) SHALL BE CONNECTED TO THE PERMANENT 6"Ø DIP DRAIN PIPE. ONCE THE UPSTREAM DRAINAGE AREA IS STABILIZED AND THE EROSION CONTROL INSPECTOR APPROVES THE REMOVAL OF THE BEGIN PLACEMENT OF BACKFILL WITHIN THE KEY TRENCH. THE KEY TRENCH SHALL BE COMPACTED TO THE SPECIFICATIONS LISTED ITEM 4 OF THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS." THE KEY TRENCH SHALL BE TESTED PER THE SPECIFICATIONS SEDIMENT BASIN, THE CONTRACTOR SHALL REMOVE THE TEMPORARY DRAW DOWN RISER (OR SKIMMER) AND CLEAN OUT THE LISTED IN THAT SECTION BASIN. ALL SEDIMENT, TRASH, ETC. SHALL BE DISPOSED OF PROPERLY (I.E. - PLACED IN A LANDFILL) AND NOT STOCKPILED IN AN AREA WHERE WATER QUALITY COULD BE ADVERSELY AFFECTED ONCE THE BASIN IS CLEANED OUT, AND ALL EROSION CONTROL DEVICES REMOVED, THE CONTRACTOR SHALL CONSTRUCT THE PRIOR TO INSTALLATION, SUBGRADE CONDITIONS ALONG THE SPILLWAY PIPES SHOULD BE EVALUATED BY THE ON-SITE GEOTECHNICAL INTERIOR GRADING SHOWN ON THIS SHEET. ENGINEER TO ASSESS WHETHER SUITABLE BEARING CONDITIONS EXIST AT THE SUBGRADE LEVEL. SHOULD SOFT OR OTHERWISE ONCE THE GRADING IS COMPLETE. THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION AND AN AS-BUILT SURVEY PRIOR TO UNSUITABLE CONDITIONS BE ENCOUNTERED ALONG THE PIPE ALIGNMENTS, THESE MATERIALS SHOULD BE UNDERCUT AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE UNDERCUT MATERIALS SHALL BE REPLACED WITH ADEQUATELY COMPACTED STRUCTURAL FILL, LEAN INSTALLATION OF THE STORMWATER CONTROL MEASURE PLANTS. IF THE CONTRACTOR PLANTS THE PROPOSED VEGETATION PRIOR TO AN AS-BUILT SURVEY (AND SUBSEQUENT APPROVAL), ANY CHANGES TO THE GRADING / RE-PLANTING OF PLANTS WILL BE AT THE CONCRETE OR FLOWABLE FILL AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER CONTRACTOR'S EXPENSE IN ORDER TO HELP PROTECT THE SOIL SUBGRADE FROM DETERIORATION (DUE TO EXPOSURE, RAINFALL, SEEPAGE, AND RUNOFF) BEFORE F ONCE THE ENGINEER HAS APPROVED THE AS-BUILT GRADING. THE CONTRACTOR SHALL PLANT THE PROPOSED STORMWATER THE CRADLE CAN BE POURED, IT IS STRONGLY RECOMMENDED THAT A 3" TO 4" THICK CONCRETE MUD MAT BE POURED OVER THE CONTROL MEASURE PLANTS SHOWN ON THE LANDSCAPE PLAN FOR THE FACILITY. AFTER COMPLETION OF THE PLANTING, THE LANDSCAPE CONTRACTOR SHALL PROVIDE A LETTER TO THE ENGINEER CERTIFYING THAT THE PLANTS HAVE BEEN INSTALLED PER THE SUBGRADE ONCE IT IS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE MUD MAT WILL ALSO PROVIDE BEARING FOR THE BLOCKS THAT TEMPORARILY SUPPORT THE SPILLWAY PIPE UNTIL THE CRADLE CAN BE POURED. THE METHOD OF BLOCK SUPPORT FOR THI APPROVED STORMWATER CONTROL MEASURE PLANTING PLAN. PIPE PROPOSED BY THE CONTRACTOR SHOULD BE SUBMITTED TO THE JOHN R. MCADAMS COMPANY FOR REVIEW. ALL OSHA REQUIREMENTS FOR EXCAVATIONS (SHORING, DEPTH, ETC.) ARE THE RESPONSIBILITY OF THE CONTRACTOR. IF REQUIRED, THE BEGIN CONSTRUCTION OF THE NEW EMBANKMENT. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS PRIOR TO CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN TO BE SEALED BY A NC P.E. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPACTION, UNLESS DIRECTED OTHERWISE BY THE ON-SITE GEOTECHNICAL ENGINEER. FILL LIFTS SHALL BE CONTINUOUS OVER THE DETERMINE IF AN EXCAVATION PLAN IS REQUIRED. THE JOHN R. MCADAMS COMPANY ASSUMES NO RESPONSIBILITY FOR ANY ENTIRE LENGTH OF FILL. IF IT IS NECESSARY, THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT BACK EXCAVATION DESIGN RELATED TO SAFETY OR OSHA REQUIREMENTS. TO FINAL GRADE IN ORDER TO ACHIEVE PROPER COMPACTION. ON-SITE GEOTECHNICAL ENGINEER TO DETERMINE IF IN-SITU SOILS ENCOUNTERED WOULD MAINTAIN A STORMWATER CONTROL AS CONSTRUCTION OF THE EMBANKMENT MOVES FORWARD, IT WILL BE NECESSARY TO INSTALL THE CONCRETE CRADLE. SEE NOTE ON MEASURE PERMANENT POOL AT DESIGN ELEVATION. IF HIGHLY PERMEABLE SOILS ARE ENCOUNTERED THAT WOULD NOT MAINTAIN THE PERMANENT POOL ELEVATION AS DESIGNED. A CLAY LINER MAY BE REQUIRED TO MAINTAIN A PERMANENT POOL OF WATER IN THE CRADLE DETAIL (SHEET C9.A3). THIS MAY BE CONSTRUCTED USING ONE OF THE FOLLOWING METHODS: STORMWATER CONTROL MEASURE FINAL DETERMINATION IF A CLAY LINER IS NEEDED SHALL BE THE RESPONSIBILITY OF THE ON-SITE A. IF THE PROPOSED STRUCTURAL FILL MATERIAL IS UTILIZED AS THE FORMWORK FOR THE CONCRETE CRADLE. THEN THE STRUCTURAL GEOTECHNICAL ENGINEER. UPON DETERMINATION OF HIGHLY PERMEABLE SOIL CONDITIONS, ON-SITE GEOTECHNICAL ENGINEER WILL INFORM THE DESIGN ENGINEER AND RECOMMEND LINER SPECIFICATIONS. FILL SHOULD BE INSTALLED AND COMPACTED UP TO THE TOP OF CONCRETE CRADLE ELEVATION. ONCE THE STRUCTURAL FILL REACHES THE NEXT DOWNSTREAM JUNCTION BOX OR HEADWALL AND IS COMPACTED TO THE ELEVATION OF THE TOP OF THE IT IS ANTICIPATED THAT DEWATERING WILL BE NECESSARY IN THE EXCAVATION AREAS (E.G. - EMBANKMENT SUB GRADE, INTERIOR CONCRETE CRADLE, EXCAVATE THE CONCRETE CRADLE TRENCH PER THE PROVIDED DETAILS AND CONSTRUCT THE CONCRETE CRADLE AS PER THE PROVIDED CONCRETE CRADLE DETAIL PORTIONS OF THE STORMWATER CONTROL MEASURE, KEY TRENCH, ETC.). THEREFORE, THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ANY PUMPING EQUIPMENT, ETC. NEEDED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE B. IF THE PROPOSED STRUCTURAL FILL IS NOT UTILIZED AS THE FORMWORK FOR THE CONCRETE CRADLE, THEN PRIOR TO STORMWATER CONTROL MEASURE SITE. DURING PLACEMENT OF FILL WITHIN THESE AREAS. THE CONTRACTOR SHALL KEEP THE WATER CONSTRUCTING THE STRUCTURAL FILL EMBANKMENT, THE FORMWORK FOR THE CONCRETE CRADLE SHOULD BE INSTALLED ON LEVEL BELOW THE BOTTOM OF THE EXCAVATION / CONSTRUCTION AREAS. THE MANNER IN WHICH THE WATER IS REMOVED SHALL BE EXISTING GROUND AND/OR THE MUD MAT. THE CONCRETE CRADLE SHALL BE CONSTRUCTED PER THE PROVIDED DETAILS SUCH THAT THE EXCAVATION BOTTOM AND SIDE SLOPES ARE STABLE, WITH NO SEDIMENT DISCHARGED FROM THE SITE (I.E. PUMPED WATER MAY NEED TO BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE SUCH AS A DIRT BAG (ACF ENVIRONMENTAL), OR 10. INSTALL RISER / BARREL ASSEMBLY, ALONG WITH THE EMERGENCY DRAIN SYSTEM. INSTALL 36" RCP OUTLET BARREL SPILLWAY FILTER ENGINEER APPROVED EQUIVALENT, PRIOR TO DISCHARGE). FROM THE DETAILS SHOWN ON SHEET C9.A3. THE RETAINING WALL ALIGNMENT SHOWN ON THESE PLANS DEPICTS THE LOCATION OF THE FRONT FACE OF THE 11. CONSTRUCT EMBANKMENT PER SPECIFICATIONS LISTED IN THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS" AND RETAINING WALL AT THE BOTTOM. REQUIREMENTS OF THE ON-SITE GEOTECHNICAL ENGINEER. ALL CHARACTERISTICS OF THE EMBANKMENT FILL MATERIAL SHALL MEET TH STANDARDS SET FORTH IN "BERM AND SOIL COMPACTION SPECIFICATIONS", INCLUDING COMPACTION AND MOISTURE REQUIREMENTS. II . THE RETAINING WALL IS TO BE A DESIGN-BUILD PROJECT(S) BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NECESSARY TO ACHIEVE PROPER COMPACTION. THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT OBTAIN FINAL CONSTRUCTION DRAWINGS FROM A REGISTERED PROFESSIONAL ENGINEER AND GAIN ALL REQUIRED PERMITS BACK TO PROPER FINAL GRADE, ANY HAND COMPACTION ACTIVITIES AROUND SPILLWAY OR DRAIN STRUCTURES SHALL BE CONDUCTED IN NECESSARY FOR THE CONSTRUCTION OF THE RETAINING WALL 4-INCH LOOSE LIFTS AND BE TO THE SAME COMPACTION AND MOISTURE REQUIREMENTS AS THE ENTIRE EMBANKMENT. ALL COMPACTION AND MOISTURE TESTING SHALL BE CARRIED OUT AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER AND AS LISTED IN THE RETAINING WALL SHALL BE ASSUMED TO BE BACKFILLED WITH OFF-SITE BORROW MATERIAL OR PROCESSED FILL UNLESS THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS". CONTRACTOR CAN PROVIDE OWNER WITH CONFIRMATION FROM THE GEOTECHNICAL ENGINEER AND THE RETAINING WALL DESIGNER THAT READILY AVAILABLE ON-SITE SOILS CAN BE USED. 12. UPON COMPLETION OF DAM EMBANKMENT, PROMPTLY STABILIZE AND SEED DAM EMBANKMENT PER SEEDING SCHEDULE. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER THE PERMANENT SEEDING SCHEDULE FOUND ON SHEET C9.A4. THE TOP AND BOTTOM OF WALL ELEVATIONS SHOWN ON THESE PLANS IDENTIFY FINISHED GRADE ELEVATIONS ONLY. THE EXTENT THAT THE RETAINING WALL WILL BE EXTENDED BELOW GRADE TO THE FOOTING SHALL BE IDENTIFIED ON THE RETAINING WALL CONSTRUCTION 3. SCHEDULE A FINAL AS-BUILT INSPECTION AND AS-BUILT SURVEY WITH THE ENGINEER AND SURVEYOR. AN AS-BUILT INSPECTION AND DRAWINGS SURVEY SHALL BE SCHEDULED BEFORE IMPOUNDING WATER IN THE FACILITY AND A MINIMUM OF 60 DAYS PRIOR TO THE ANTICIPATED DATE OF CERTIFICATION APPROVAL. ANY COMMENTS OR DEFICIENCIES IN THE SCM CONSTRUCTION MUST BE CORRECTED TO THE 8. THE ON-SITE GEOTECHNICAL ENGINEER SHOULD BE GIVEN AN OPPORTUNITY TO REVIEW ALL RETAINING WALL PLANS AND DESIGNS SATISFACTION OF THE ENGINEER AND OWNER BEFORE CERTIFICATION SHALL BE GRANTED. RELEVANT TO GEOTECHNICAL CONSIDERATIONS PRIOR TO FINAL DESIGN OF THE WALLS. THE GRADES SHOWN ON THIS PLAN ARE FINISHED GRADES. IF THE EXISTING SOIL LAYER AFTER CONSTRUCTION / COMPACTION IS NOT BERM AND SOIL COMPACTION SPECIFICATIONS DETERMINED SUITABLE BY A LANDSCAPE PROFESSIONAL FOR THE WET POND PLANTINGS, THEN THE CONTRACTOR SHALL AMEND THE PLANTING AREA OF THE WET POND AS DIRECTED BY A LANDSCAPE PROFESSIONAL PRIOR TO CONSTRUCTION, THE ON-SITE GEOTECHNICAL ENGINEER SHALL IDENTIFY BORROW / FILL AREAS AND VERIFY THEIR SUITABILITY FOR USE WITHIN THE DAM EMBANKMENT. ALSO, THE ON-SITE GEOTECHNICAL ENGINEER SHALL PERFORM STANDARD PROCTORS ON THE PRIOR TO TOPSOIL INSTALLATION. THE CONTRACTOR SHALL SCARIFY THE TOP 2"-3" OF THE BERM SECTION TO PROMOTE BONDING OF PROPOSED BORROW MATERIAL TO ENSURE THAT OPTIMUM MOISTURE CONTENT AND COMPACTION CAN BE ACHIEVED / CONTROLLED THE TOPSOIL WITH THE COMPACTED FILL. THE TOPSOIL DEPTH SHALL RANGE FROM 3"-4" ON THE DAM EMBANKMENT AND AQUATIC DURING CONSTRUCTION. SHELF. PLEASE NOTE THE TOPSOIL SHALL BE AMENDED, AS DIRECTED BY A LANDSCAPE PROFESSIONAL, PRIOR TO INSTALLATION ON THE EMBANKMENT AND AQUATIC SHELF. ALL FILL MATERIALS TO BE USED FOR THE DAM EMBANKMENT SHALL BE TAKEN FROM BORROW AREAS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, WOOD, STONES GREATER THAN 6", AND FROZEN 16. THE CONTRACTOR SHALL REFER TO THE LANDSCAPE PLAN FOR THE PERMANENT PLANTING PLAN/SCHEDULE FOR THIS FACILITY. OR OTHER OBJECTIONABLE MATERIAL THE FOLLOWING SOIL TYPES ARE SUITABLE FOR USE AS FILL WITHIN THE DAM EMBANKMENT AND CONTRACTOR SHALL COORDINATE WITH A LANDSCAPE PROFESSIONAL REGARDING SCHEDULING FOR PLANT INSTALLATION. PLEASE NOTE KEY TRENCH: ML AND CL. ALL FILL MATERIALS SHALL BE APPROVED BY THE ONSITE GEOTECHNICAL ENGINEER FOR THE INTENDED USE. THAT NO TREES/SHRUBS OF ANY TYPE MAY BE PLANTED ON THE PROPOSED DAM EMBANKMENT (FILL AREAS). 3. FILL PLACEMENT FOR THE EMBANKMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT (UNCOMPACTED), EACH LIFT SHALL BE CONTINUOUS **OUTLET STRUCTURE MATERIAL SPECIFICATIONS** FOR THE ENTIRE LENGTH OF EMBANKMENT. BEFORE PLACEMENT OF FILL FOR THE BERM SECTION. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT. FILL MATERIAL ADJACENT TO ALL SPILLWAY AND DRAINAGE THE 36"Ø RCP OUTLET BARREL SHALL BE CLASS III RCP, MODIFIED BELL AND SPIGOT, MEETING THE REQUIREMENTS OF ASTM C76-LATEST STRUCTURES SHALL BE PLACED IN 4-INCH (UNCOMPACTED) LIFTS AND HAND-COMPACTED TO THE SAME COMPACTION AND MOISTURE THE PIPES SHALL HAVE CONFINED O-RING RUBBER GASKET JOINTS MEETING ASTM C-443-LATEST. THE PIPE JOINTS SHALL BE TYPE R-4. REQUIREMENTS AS THE ENTIRE EMBANKMENT. THE STRUCTURAL DESIGN FOR THE 6' X 6' (INTERNAL DIMENSIONS) RISER BOX WITH EXTENDED BASE SHALL BE BY OTHERS. PRIOR TO ALL FILL SOILS USED IN THE EMBANKMENT CONSTRUCTION SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR ORDERING THE STRUCTURES, THE CONTRACTOR SHALL PROVIDE, TO THE DESIGN ENGINEER FOR REVIEW, SHOP DRAWINGS AND MAXIMUM DRY DENSITY (ASTM D-698). THE FILL SOILS SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN -1 TO +3 PERCENT OF ITS SUPPORTING STRUCTURAL CALCULATIONS SEALED BY A P.E. REGISTERED IN NORTH CAROLINA DEMONSTRATING THE PERTINENT VERTICAL OPTIMUM MOISTURE CONTENT. COMPACTION TESTS SHALL BE PERFORMED BY THE ON-SITE GEOTECHNICAL ENGINEER DURING LOADS ARE SUPPORTED BY THE CONCRETE RISER STRUCTURE CONSTRUCTION TO VERIFY THAT THE PROPER COMPACTION LEVEL HAS BEEN REACHED. THE FILL SHOULD BE COMPACTED USING A SHEEPSFOOT TYPE COMPACTOR. IN ORDER TO PREVENT DAMAGE TO THE PIPE, NO COMPACTION EQUIPMENT SHALL CROSS ANY PIPE THE RISER BOX OUTLET STRUCTURE SHALL BE PROVIDED WITH STEPS 16" ON CENTER. STEPS SHALL BE PROVIDED ON THE INNER WALL OF UNTIL MINIMUM COVER IS ESTABLISHED ALONG THE PIPE. THE RISER BOX. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66. PLEASE REFER TO SHEET C9.A3 FOR LOCATION OF THE RISER STEPS. NOTE THE STEPS SHALL LINE UP WITH THE ACCESS HATCH OF THE TRASH RACK. THE DESIGN ENGINEER SHALL BE PROVIDED WITH REPORTS AND CERTIFICATION, BY THE ON-SITE GEOTECHNICAL ENGINEER, THAT THE GEOTECHNICAL ASPECTS OF THE FACILITY HAVE BEEN CONSTRUCTED PER PLAN. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR THE CONCRETE ANTI-FLOTATION BLOCK SHALL BE CAST-IN-PLACE. STEEL REINFORCEMENT AND CONNECTION TO THE RISER SHALL BE MATERIALS AND COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY. THESE REPORTS AND CERTIFICATION WILL BE NEEDED DURING PROVIDED IN ACCORDANCE WITH THE DETAIL ON SHEET C9.A3. THE CONTRACTOR SHALL ENSURE THE WEIGHT OF THE ENTIRE RISER THE AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER CONTROL MEASURE. THEREFORE, IT SHALL BE THE CONTRACTOR'S STRUCTURE IS GREATER THAN OR EQUAL TO 30,936 LBS. IN LIEU OF CAST-IN-PLACE, THE CONTRACTOR MAY OPT FOR A PRECAST RESPONSIBILITY TO COORDINATE TESTING AND OBSERVATION WITH THE ON-SITE GEOTECHNICAL ENGINEER. ANTI-FLOTATION BLOCK. SHOP DRAWINGS FOR THE PRECAST BLOCK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE PRECAST ANTI-FLOTATION BLOCK SHALL HAVE A SHIPPING WEIGHT OF 21,300 LBS. 6. TESTING OF THE NEW FILL MATERIALS SHALL BE PERFORMED TO VERIFY THAT THE RECOMMENDED LEVEL OF COMPACTION IS ACHIEVED DURING CONSTRUCTION. THEREFORE, ONE DENSITY TEST SHALL BE PERFORMED FOR EVERY 2,500 SQUARE FEET OF AREA FOR EVERY LIFT THE RISER BOX JOINTS SHALL BE SEALED USING BUTYL RUBBER SEALANT CONFORMING TO ASTM-C990-LATEST. IF NECESSARY, THE OF FILL OR AS RECOMMENDED BY THE ON-SITE GEOTECHNICAL ENGINEER. CONTRACTOR SHALL INCORPORATE A WATERSTOP INTO THE RISER BOX JOINT TO ENSURE A WATERTIGHT CONNECTION. THE CONTRACTOR SHALL PARGE JOINTS ON BOTH THE INSIDE AND OUTSIDE WITH NON-SHRINK GROUT AND INSTALL GALVANIZED STEEL 7. TESTING WILL BE REQUIRED ALONG THE 36"Ø RCP OUTLET BARREL AT A FREQUENCY OF ONE TEST PER 25 LF OF PIPE PER VERTICAL FOOT STRAPS PER DETAIL ON SHEET C9.A2 OF FILL OR AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER. PRIOR TO ORDERING, THE CONTRACTOR SHALL SUBMIT TRASH RACK SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. CONTRACTOR SHALL ENSURE THAT AN ACCESS HATCH IS PROVIDED WITHIN THE TRASH RACK (SEE DETAIL FOR LOCATION) THAT WILL ALLOW FOR STATEMENT OF RESPONSIBILITY FUTURE MAINTENANCE ACCESS. CONTRACTOR SHALL ALSO PROVIDE A CHAIN AND LOCK FOR SECURING THE ACCESS HATCH. NOTE THE ACCESS HATCH SHALL LINE UP WITH THE ACCESS STEPS AFTER INSTALLATION. 1. ALL REQUIRED MAINTENANCE AND INSPECTIONS OF THE STORMWATER CONTROL MEASURE SHALL BE THE RESPONSIBILITY OF THE ALL POURED CONCRETE SHALL MEET THE FOLLOWING SPECIFICATIONS UNLESS OTHERWISE NOTED: OWNER, PER THE EXECUTED OPERATION AND MAINTENANCE AGREEMENT FOR THIS FACILITY. -MINIMUM 3000 PSI (28 DAY) -SLUMP = 3" - 5" -ENTRAINED AIR = 5% - 7% PLEASE NOTE NO CONCRETE SHALL BE POURED WHEN THE AMBIENT AIR TEMPERATURES ARE EXPECTED TO BE ABOVE 85°F OR BELOW 40°F. CAST-IN-PLACE CONCRETE SHALL BE "WET CURED" AFTER FINISHING FOR A MINIMUM OF 48 HOURS. ON-SITE GEOTECHNICAL ENGINEER TO ENSURE AND CERTIFY ALL POURED CONCRETE MEETS THE ABOVE SPECIFICATIONS GEOTEXTILE FABRIC FOR THE 42"Ø RCP OUTLET BARREL JOINTS SHALL BE MIRAFI 180N OR ENGINEER APPROVED EQUAL (NON-WOVEN FABRIC). STORMWATER CONTROL MEASURE EMERGENCY DRAW DOWN IS VIA AN 6"Ø PLUG VALVE. THE VALVE SHALL BE A M&H STYLE 1820 ECCENTRIC VALVE OR APPROVED EQUAL. THIS VALVE IS IN ACCORDANCE WITH AWWA C-517, AND SHALL BE OPERABLE FROM TOP OF OUTLET STRUCTURE VIA A HAND WHEEL (SEE DETAIL SHEET C9.A2). THE CONTRACTOR SHALL PROVIDE A REMOVABLE VALVE WRENCH WITH A HAND WHEEL ON TOP FOR OPERATION OF THE 6"Ø PLUG VALVE.



Suite 500

SCM A OUTLET

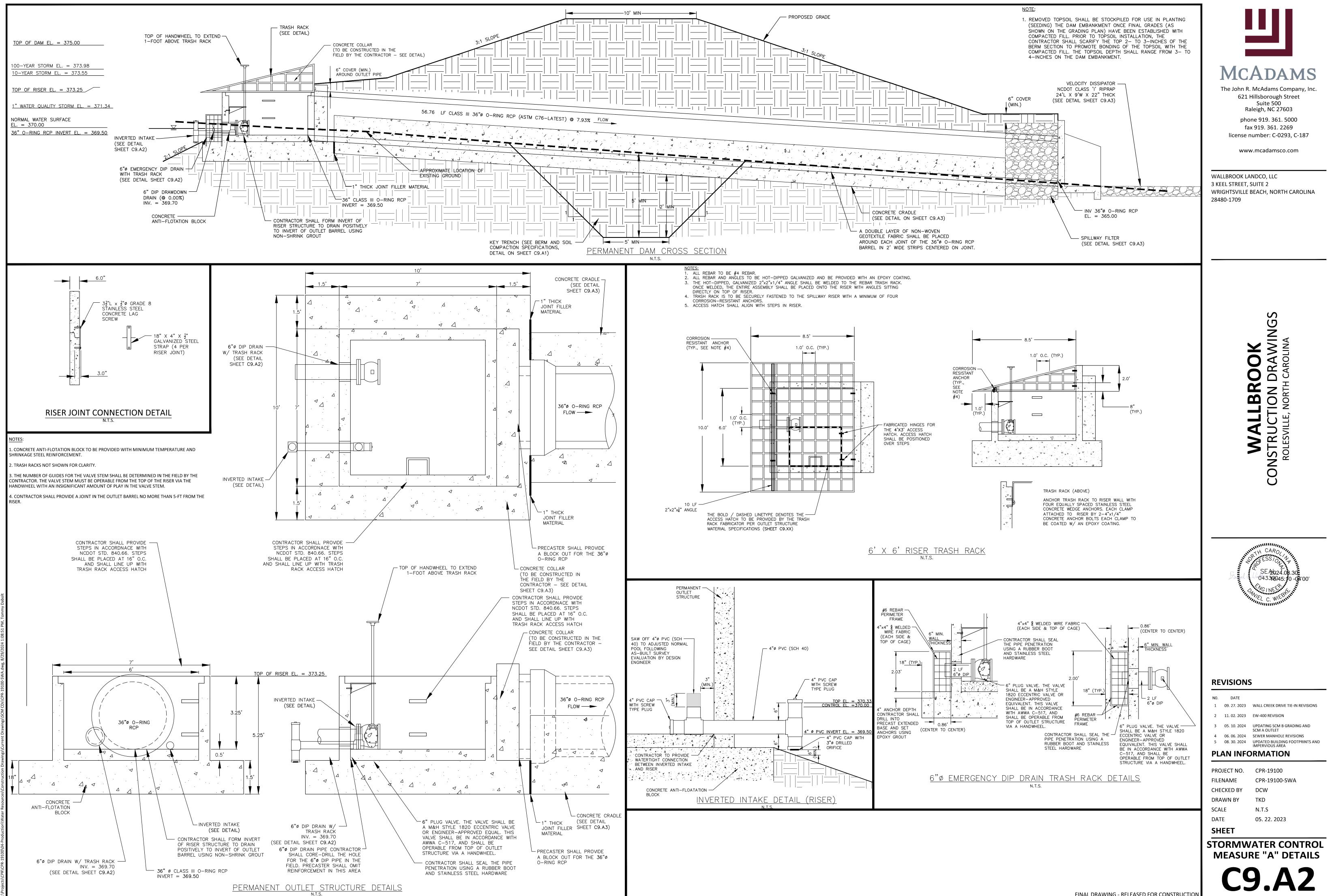
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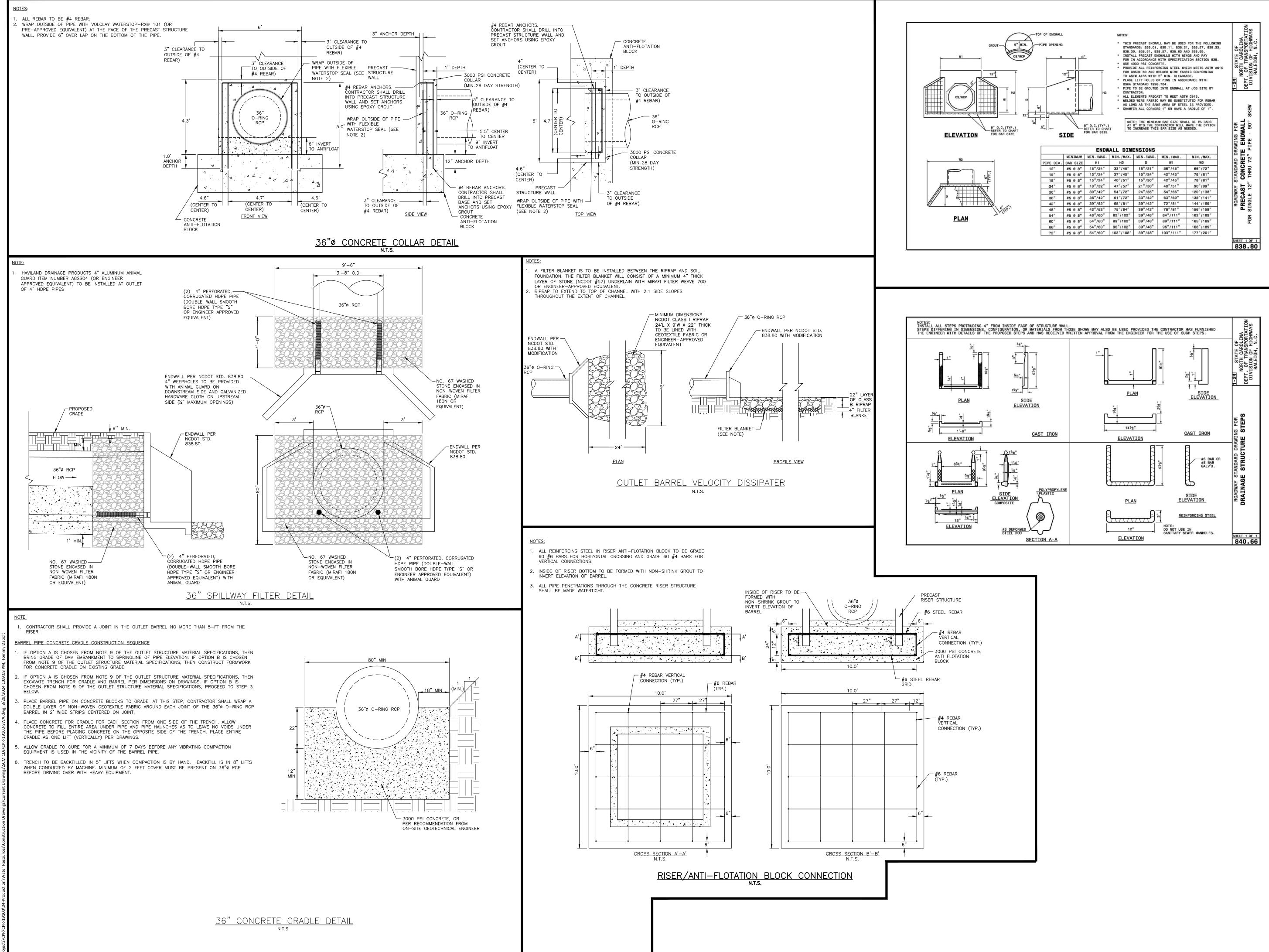
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1" = 20'

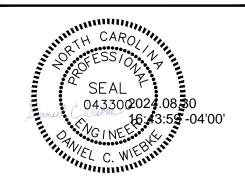
05. 22. 2023











REVISIONS

N0.	DATE	
1	09. 27. 2023	WALL CREEK DRIVE TIE-IN REVISIONS
2	11. 02. 2023	EW-400 REVISION
3	05. 10. 2024	UPDATING SCM B GRADING AND SCM A OUTLET
4	06. 06. 2024	SEWER MANHOLE REVISIONS
5	08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA
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STORMWATER CONTROL MEASURE 'A' LANDSCAPE SPECIFICATIONS

LEGEND

QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	НАТСН	ТҮРЕ	SPACING		
SHA	SHALLOW WATER							
166	IV	IRIS VIRGINIANA	BLUE FLAG IRIS		4-INCH CONTAINER	24" O.C.		
151	PC	PONTEDERIA CORDATA	PICKEREL WEED		4-INCH CONTAINER	24" O.C.		
136	ST	SCHOENOPLECTUS TABERNAEMONTANI	SOFT-STEM BULRUSH		4-INCH CONTAINER	24" O.C.		
SHA	SHALLOW LAND							
137	CS	CAREX SPP.	SEDGES		4-INCH CONTAINER	24" O.C.		
155	CA	CRINUM AMERICANUM	AMERICAN CRINUM LILY	$\left(\begin{array}{c} & & & \\ & & & & \\ & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ $	4-INCH CONTAINER	24" O.C.		
115	HA	HIBISCUS ACULEATUS	PINELANDS MALLOW		4-INCH CONTAINER	24" O.C.		

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3-4 INCHES DEEP OVER ADVERSE SOIL CONDITIONS. TOPSOIL SHOULD BE INCORPORATED INTO THE FINAL GRADING OF THE BASIN SIDE SLOPES AND AQUATIC SHELF. CONTRACTOR SHOULD SCARIFY THE TOP 3-4 INCHES OF THE COMPACTED FILL TO PROMOTE BONDING WITH TOPSOIL.

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. PER ONE TIME ONLY, APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL.
- 5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- 6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER.
- 7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- 8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. AFTER PERMANENT COVER IS ESTABLISHED.

9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT.

TEMPORARY SEEDING SCHEDULE

EEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AN 1 - MAY 1	RYE (GRAIN)	120 LBS/AC
	KOBE LESPEDEZA	50 LBS/AC
1AY 1 - AUG 15	GERMAN MILLET	40 LBS/AC
UG 15 - DEC 30	RYE (GRAIN)	120 LBS/AC

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 750 LB/AC 10-10-10 FERTILIZER (FROM AUG 15 - DEC 30, INCREASE 10-10-10 FERTILIZER TO 1000 LB/AC).

APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING JAN 1 - AUG 15: EROSION OR OTHER DAMAGE.

AUG 15 - DEC 30: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOP DRESS WITH 50 LB/AC OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/AC KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

NOTE: USE THE TEMPORARY SEEDING SCHEDULE ONLY WHEN DATE IS NOT CORRECT TO USE THE PERMANENT SEEDING SCHEDULE.

PERMANENT SEEDING SCHEDULE (DAM EMBANKMENTS)

SEEDING DATE	SEEDING MIXTURE OPTIONS (CHOOSE ONE)	APPLICATION RATE
MAY 1 - AUG 31	CENTIPEDE RAW	30 LBS/AC
APRIL 1 - SEPT 1	SUMMER MIX	200 LBS/AC
	(80% HULLED BERMUDA/20% MILLET)	
OCT 1 - MARCH 1	FALL MIX	200 LBS/AC
	(80% TALL FESCUE/20% ANNUAL RYEGRASS)	

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 1000 LB/AC 10-10-10 FERTILIZER.

MULCH

APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 LB/AC 10-10-10 FERTILIZER. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

NOTE: PERMANENT SEEDING SCHEDULE IS FOR SLOPES OF THE BASIN AND TOP OF BERM.

PLANTING INSTRUCTIONS

- CREATE PLANTING AREA FOR EACH PLANT AND EXCAVATE PIT. PLACE PLANTS IN PIT ENSURING ROOTS ARE FACING COMPLETELY DOWNWARD.
- HEEL IN SOIL AROUND PLANT AND PROCEED TO NEXT PLANTING LOCATION. NEWLY PLANTED PLANTS NEED TO BE FASTENED TO THE SUBSTRATE FOR THE ESTABLISHMENT OF
- NEW ROOTS. F. ROOTS SHALL BE SPREAD IN THEIR NORMAL POSITION. ALL BROKEN OR FRAYED ROOTS SHALL BE CUT
- OFF CLEANLY. G. THE DIAMETER OF THE PITS FOR ALL VEGETATIVE STOCK SHALL BE AT LEAST THREE TIMES THE
- H. SET THE PLANTS UPRIGHT, IN THE CENTER OF THE PIT. THE BOTTOM OF THE ROOT MASS SHOULD BE RESTING ON UNDISTURBED SOIL
- SETTLE BACKFILL AND TO ELIMINATE VOIDS AND AIR POCKETS. WHEN PIT IS APPROXIMATELY 2/3 FULL, WATER THOROUGHLY BEFORE PLACING REMAINDER OF THE BACKFILL. WATER AGAIN AFTER PLACING FINAL LAYER OF BACKFILL.
- J. BROKEN OR DAMAGED PARTS WILL BE CUT BACK TO UNDAMAGED TISSUE, LEAVING AS MUCH GREEN BASAL TISSUE AS POSSIBLE ABOVE THE ROOTS. IF MORE THAN FIFTY PERCENT (50%) OF THE PLANT IS DAMAGED THEN CONTRACTOR SHALL REPLACE THE PLANT.

- DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER ONCE REMOVED FROM THE CONTAINER. CONTAINER PLANTS WILL NEED TO BE WATERED REGULARLY AND PLACED IN SHADY CONDITIONS UNTIL PLANTING OCCURS.
- BARE ROOT PLANTS ARE FOR IMMEDIATE PLANTING, OTHERWISE SEE D) BELOW. D. IF BARE ROOTS SPECIMENS ARE NOT TO BE PLANTED WITHIN FOUR (4) DAYS, TEMPORARY HOLDING OF BARE ROOT SPECIMENS ARE TO BE COVERED ENTIRELY BY A SUITABLE MEDIUM (ETC. SOIL, SAWDUST, MULCH OR THE LIKE) AND WATERED REGULARLY SO AS TO NOT DRY OUT.

PLANT LOCATIONS A. NEW PLANTINGS SHALL BE LOCATED WHERE SHOWN ON PLAN EXCEPT WHERE CHANGES HAVE BEEN MADE IN PROPOSED CONSTRUCTION. B. NECESSARY ADJUSTMENTS SHALL BE MADE ONLY AFTER APPROVAL BY THE OWNER OR THE OWNER'S

REPRESENTATIVE.

WATER SHALL BE POTABLE AND SHALL NOT CONTAIN ELEMENTS TOXIC TO PLANT LIFE.

PLANTING SCHEDULE

- 1. ONCE THE GRADING IS COMPLETE, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION AND AN AS-BUILT SURVEY PRIOR TO INSTALLATION OF THE STORMWATER MANAGEMENT FACILITY PLANTS. IF THE CONTRACTOR PLANTS THE PROPOSED VEGETATION PRIOR TO AN AS-BUILT SURVEY (AND SUBSEQUENT APPROVAL), ANY CHANGES TO THE GRADING / RE-PLANTING OF PLANTS WILL BE AT THE CONTRACTOR'S EXPENSE.
- PROPOSED STORMWATER MANAGEMENT FACILITY PLANTS SHOWN ON THE LANDSCAPE PLAN FOR THE FACILITY. AFTER COMPLETION OF THE PLANTING, THE LANDSCAPE CONTRACTOR SHALL PROVIDE A LETTER TO THE ENGINEER CERTIFYING THAT THE PLANTS HAVE BEEN INSTALLED PER THE APPROVED STORMWATER MANAGEMENT FACILITY PLANTING PLAN.
- OPTIMAL PLANTING PERIODS RANGE APPROXIMATELY FROM APRIL 15TH THRU JUNE 30TH AND SEPTEMBER 1ST THRU OCTOBER 31ST. FOR FINAL DETERMINATION OF THE SITE'S PLANTING PERIOD, THE CONTRACTOR SHALL COORDINATE WITH A LANDSCAPE PROFESSIONAL REGARDING SCHEDULING FOR PLANT INSTALLATION.
- 4. IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PREVENT WILDLIFE FROM DAMAGING OR CONSUMING WETLAND PLANTINGS.

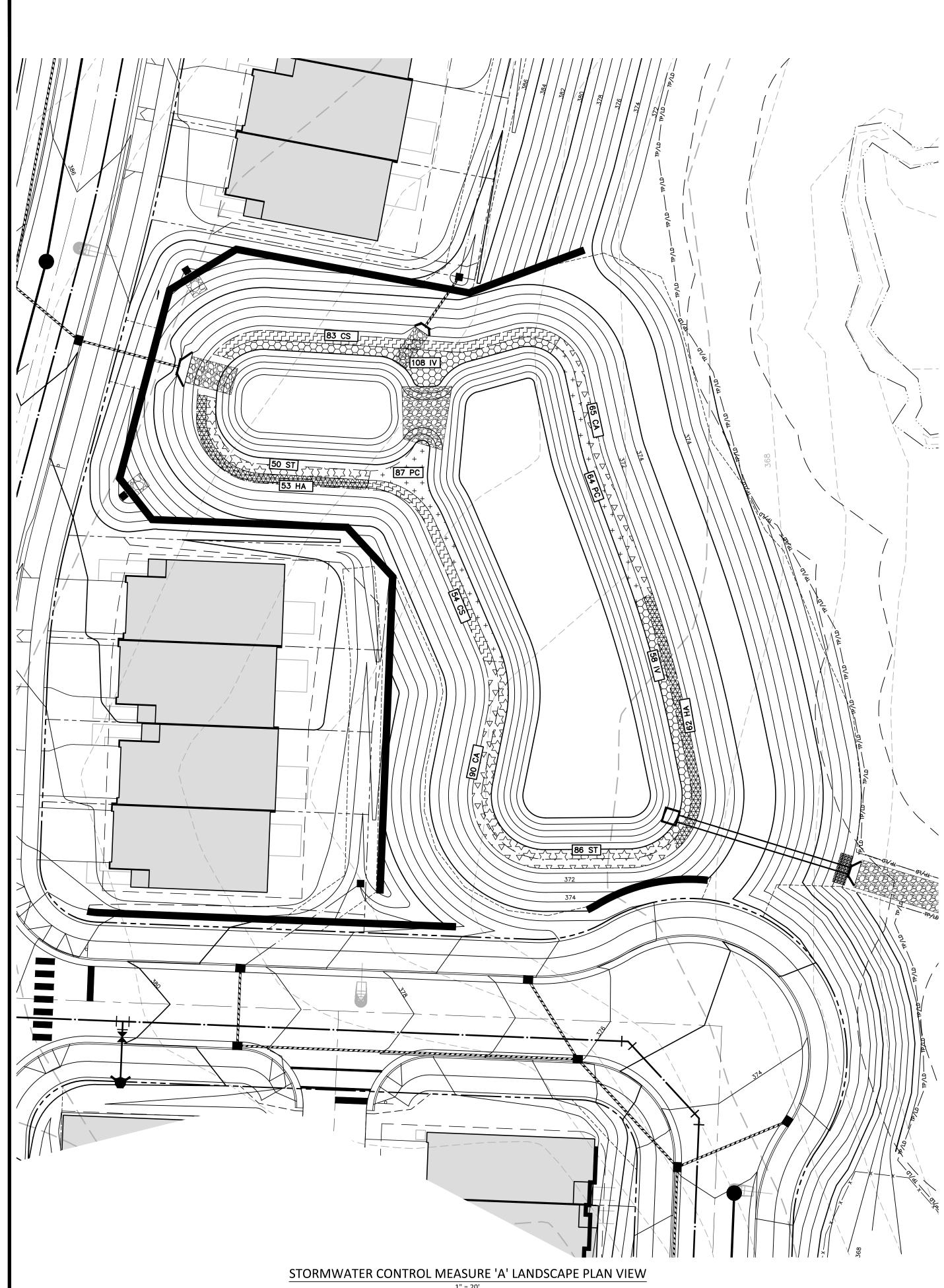
PLANTING TECHNIQUES A. ENSURE THAT ROOTS, ONCE REMOVED FROM POT, ARE STRAIGHTENED AND FACE DOWNWARD.

DIAMETER OF THE ROOT MASS. PLANT PIT WALL SHALL BE SCARIFIED PRIOR TO PLANT INSTALLATION.

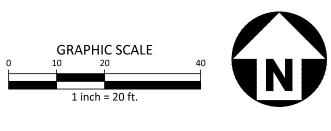
I. PLACE THE BACKFILL AROUND THE BASE AND SIDES OF THE ROOT MASS, AND WORK EACH LAYER TO

CONTAINER STOCK / BARE ROOT A. STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE

2. ONCE THE ENGINEER HAS APPROVED THE AS-BUILT GRADING, THE CONTRACTOR SHALL PLANT THE



1" = 20'





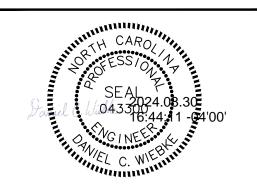
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REVISIONS

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SH	EET		
DATE		05. 22. 2023	
SCALE		1"=20'	
DRAWN BY		TKD	
CHECKED BY		DCW	
FILENAME		CPR-19100-SWA	
PRC	JECT NO.	CPR-19100	
PL	AN INFO	DRMATION	
5	08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA	
4	06. 06. 2024	SEWER MANHOLE REVISIONS	
3	05. 10. 2024	UPDATING SCM B GRADING AND SCM A OUTLET	
2	11.02.2023	EW-400 REVISION	
1	09. 27. 2023	WALL CREEK DRIVE TIE-IN REVISIONS	
N0.	DATE		

STORIVIVVATER CONTROL MEASURE "A" LANDSCAPE PLAN

STORMWATER CONTROL MEASURE 'B' CONSTRUCTION SPECIFICATIONS

GENERAL NOTES

- PRIOR TO CONSTRUCTION, ANY DISCREPANCIES IN THE PLANS AND NOTES SHALL BE BROUGHT TO THE DESIGN ENGINEER'S ATTENTION THE PROJECT WILL MEET ALL OF THE REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER
- CONTROL STRUCTURES AS OUTLINED IN THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY STORMWATER DESIGN
- THE FINAL CERTIFICATION FOR THIS FACILITY WILL INCLUDE A CERTIFICATION BY THE ON-SITE GEOTECHNICAL ENGINEER THAT THE PROJECT WAS CONSTRUCTED PER THE APPROVED PLANS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE ON-SITE GEOTECHNICAL ENGINEER FOR OBSERVATION AND TESTING SUCH THAT THE ON-SITE GEOTECHNICAL ENGINEER CAN CERTIFY THE CONSTRUCTION OF THE DAM EMBANKMENT AND SPILLWAY. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR MATERIALS AND COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY
- ALL CONSTRUCTION ACTIVITY RELATED TO THE PROPOSED STORMWATER CONTROL MEASURE SHALL BE PER THE DETAILS AND SPECIFICATIONS SHOWN IN THESE DRAWINGS. SOILS, COMPACTION, AND OTHER MISCELLANEOUS DETAILS AND SPECIFICATIONS MAY BI MODIFIED PER THE RECOMMENDATIONS OF THE ON-SITE GEOTECHNICAL ENGINEER. HOWEVER, PRIOR TO IMPLEMENTATION, THE DESIGN ENGINEER SHALL BE NOTIFIED OF ANY DEVIATION FROM THESE DESIGN DRAWINGS, INCLUDING SHOP DRAWINGS FOR ANY PROPOSED MODIFICATION
- DURING THE INITIAL STAGES OF CONSTRUCTION, THE STORMWATER CONTROL MEASURE MAY BE USED AS A SEDIMENT BASIN FOR EROSION CONTROL PURPOSES. IF SO, THE CONTRACTOR SHALL FOLLOW THE GENERAL CONSTRUCTION SEQUENCE BELOW: A. THE CONTRACTOR SHALL CONSTRUCT THE ENTIRE FACILITY (PERMANENT OUTLET STRUCTURE, DAM, ETC.) WITH THE EXCEPTION OF THE INTERIOR FINE GRADING FOR THE FACILITY. THE INTERIOR FINE GRADING WILL BE CONSTRUCTED ONCE THE EROSION CONTROL PHASE IS COMPLETE
- THE TEMPORARY DRAW DOWN RISER (OR SKIMMER) SHALL BE CONNECTED TO THE PERMANENT 6"Ø DIP DRAIN PIPE. ONCE THE UPSTREAM DRAINAGE AREA IS STABILIZED AND THE EROSION CONTROL INSPECTOR APPROVES THE REMOVAL OF THE SEDIMENT BASIN, THE CONTRACTOR SHALL REMOVE THE TEMPORARY DRAW DOWN RISER (OR SKIMMER) AND CLEAN OUT THE BASIN. ALL SEDIMENT, TRASH, ETC. SHALL BE DISPOSED OF PROPERLY (I.E. - PLACED IN A LANDFILL) AND NOT STOCKPILED IN AN AREA WHERE WATER QUALITY COULD BE ADVERSELY AFFECTED.
- ONCE THE BASIN IS CLEANED OUT, AND ALL EROSION CONTROL DEVICES REMOVED, THE CONTRACTOR SHALL CONSTRUCT THE INTERIOR GRADING SHOWN ON THIS SHEET ONCE THE GRADING IS COMPLETE. THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION AND AN AS-BUILT SURVEY PRIOR TO INSTALLATION OF THE STORMWATER CONTROL MEASURE PLANTS. IF THE CONTRACTOR PLANTS THE PROPOSED VEGETATION PRIOR
- TO AN AS-BUILT SURVEY (AND SUBSEQUENT APPROVAL), ANY CHANGES TO THE GRADING / RE-PLANTING OF PLANTS WILL BE AT THE CONTRACTOR'S EXPENSE ONCE THE ENGINEER HAS APPROVED THE AS-BUILT GRADING. THE CONTRACTOR SHALL PLANT THE PROPOSED STORMWATER CONTROL MEASURE PLANTS SHOWN ON THE LANDSCAPE PLAN FOR THE FACILITY. AFTER COMPLETION OF THE PLANTING, THE LANDSCAPE CONTRACTOR SHALL PROVIDE A LETTER TO THE ENGINEER CERTIFYING THAT THE PLANTS HAVE BEEN INSTALLED PER THE
- ALL OSHA REQUIREMENTS FOR EXCAVATIONS (SHORING, DEPTH, ETC.) ARE THE RESPONSIBILITY OF THE CONTRACTOR. IF REQUIRED, THE CONTRACTOR SHALL PROVIDE AN EXCAVATION PLAN TO BE SEALED BY A NC P.E. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE IF AN EXCAVATION PLAN IS REQUIRED. THE JOHN R. MCADAMS COMPANY ASSUMES NO RESPONSIBILITY FOR ANY EXCAVATION DESIGN RELATED TO SAFETY OR OSHA REQUIREMENTS.
- ON-SITE GEOTECHNICAL ENGINEER TO DETERMINE IF IN-SITU SOILS ENCOUNTERED WOULD MAINTAIN A STORMWATER CONTROL MEASURE PERMANENT POOL AT DESIGN ELEVATION. IF HIGHLY PERMEABLE SOILS ARE ENCOUNTERED THAT WOULD NOT MAINTAIN THE PERMANENT POOL ELEVATION AS DESIGNED, A CLAY LINER MAY BE REQUIRED TO MAINTAIN A PERMANENT POOL OF WATER IN THE STORMWATER CONTROL MEASURE. FINAL DETERMINATION IF A CLAY LINER IS NEEDED SHALL BE THE RESPONSIBILITY OF THE ON-SITE GEOTECHNICAL ENGINEER. UPON DETERMINATION OF HIGHLY PERMEABLE SOIL CONDITIONS, ON-SITE GEOTECHNICAL ENGINEER WILL INFORM THE DESIGN ENGINEER AND RECOMMEND LINER SPECIFICATIONS.
- 8. IT IS ANTICIPATED THAT DEWATERING WILL BE NECESSARY IN THE EXCAVATION AREAS (E.G. EMBANKMENT SUB GRADE. INTERIOR PORTIONS OF THE STORMWATER CONTROL MEASURE, KEY TRENCH, ETC.). THEREFORE, THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE, AND MAINTAIN ANY PUMPING EQUIPMENT, ETC. NEEDED FOR REMOVAL OF WATER FROM VARIOUS PARTS OF THE STORMWATER CONTROL MEASURE SITE, DURING PLACEMENT OF FILL WITHIN THESE AREAS. THE CONTRACTOR SHALL KEEP THE WATER LEVEL BELOW THE BOTTOM OF THE EXCAVATION / CONSTRUCTION AREAS. THE MANNER IN WHICH THE WATER IS REMOVED SHALL BE SUCH THAT THE EXCAVATION BOTTOM AND SIDE SLOPES ARE STABLE, WITH NO SEDIMENT DISCHARGED FROM THE SITE (I.E. PUMPED WATER MAY NEED TO BE DIRECTED TO AN APPROVED EROSION CONTROL DEVICE SUCH AS A DIRT BAG (ACF ENVIRONMENTAL), OR ENGINEER APPROVED EQUIVALENT, PRIOR TO DISCHARGE).
- THE RETAINING WALL ALIGNMENT SHOWN ON THESE PLANS DEPICTS THE LOCATION OF THE FRONT FACE OF THE RETAINING WALL AT THE BOTTOM.
- 10. THE RETAINING WALL IS TO BE A DESIGN-BUILD PROJECT(S) BY THE CONTRACTOR. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN FINAL CONSTRUCTION DRAWINGS FROM A REGISTERED PROFESSIONAL ENGINEER AND GAIN ALL REQUIRED PERMITS NECESSARY FOR THE CONSTRUCTION OF THE RETAINING WALL
- 11. THE RETAINING WALL SHALL BE ASSUMED TO BE BACKFILLED WITH OFF-SITE BORROW MATERIAL OR PROCESSED FILL UNLESS CONTRACTOR CAN PROVIDE OWNER WITH CONFIRMATION FROM THE GEOTECHNICAL ENGINEER AND THE RETAINING WALL DESIGNER THAT READILY AVAILABLE ON-SITE SOILS CAN BE USED.
- 12. THE TOP AND BOTTOM OF WALL ELEVATIONS SHOWN ON THESE PLANS IDENTIFY FINISHED GRADE ELEVATIONS ONLY. THE EXTENT THAT THE RETAINING WALL WILL BE EXTENDED BELOW GRADE TO THE FOOTING SHALL BE IDENTIFIED ON THE RETAINING WALL CONSTRUCTION DRAWINGS
- 13. THE ON-SITE GEOTECHNICAL ENGINEER SHOULD BE GIVEN AN OPPORTUNITY TO REVIEW ALL RETAINING WALL PLANS AND DESIGNS RELEVANT TO GEOTECHNICAL CONSIDERATIONS PRIOR TO FINAL DESIGN OF THE WALLS.
- 14. THE GRADES SHOWN ON THIS PLAN ARE FINISHED GRADES. IF THE EXISTING SOIL LAYER AFTER CONSTRUCTION / COMPACTION IS NOT DETERMINED SUITABLE BY A LANDSCAPE PROFESSIONAL FOR THE WET POND PLANTINGS, THEN THE CONTRACTOR SHALL AMEND THE PLANTING AREA OF THE WET POND AS DIRECTED BY A LANDSCAPE PROFESSIONAL
- 15. PRIOR TO TOPSOIL INSTALLATION, THE CONTRACTOR SHALL SCARIFY THE TOP 2"-3" OF THE BERM SECTION TO PROMOTE BONDING OF THE TOPSOIL WITH THE COMPACTED FILL. THE TOPSOIL DEPTH SHALL RANGE FROM 3"-4" ON THE DAM EMBANKMENT AND AQUATIC SHELF. PLEASE NOTE THE TOPSOIL SHALL BE AMENDED, AS DIRECTED BY A LANDSCAPE PROFESSIONAL, PRIOR TO INSTALLATION ON THE EMBANKMENT AND AQUATIC SHELF.
- 16. THE CONTRACTOR SHALL REFER TO THE LANDSCAPE PLAN FOR THE PERMANENT PLANTING PLAN/SCHEDULE FOR THIS FACILITY. CONTRACTOR SHALL COORDINATE WITH A LANDSCAPE PROFESSIONAL REGARDING SCHEDULING FOR PLANT INSTALLATION. PLEASE NOTE THAT NO TREES/SHRUBS OF ANY TYPE MAY BE PLANTED ON THE PROPOSED DAM EMBANKMENT (FILL AREAS).
- OUTLET STRUCTURE MATERIAL SPECIFICATIONS

APPROVED STORMWATER CONTROL MEASURE PLANTING PLAN.

- 1. THE 36"Ø RCP OUTLET BARREL SHALL BE CLASS III RCP, MODIFIED BELL AND SPIGOT, MEETING THE REQUIREMENTS OF ASTM C76-LATEST. THE PIPES SHALL HAVE CONFINED O-RING RUBBER GASKET JOINTS MEETING ASTM C-443-LATEST. THE PIPE JOINTS SHALL BE TYPE R-4 THE STRUCTURAL DESIGN FOR THE 5' X 5' (INTERNAL DIMENSIONS) RISER BOX WITH EXTENDED BASE SHALL BE BY OTHERS. PRIOR TO
- ORDERING THE STRUCTURES, THE CONTRACTOR SHALL PROVIDE, TO THE DESIGN ENGINEER FOR REVIEW, SHOP DRAWINGS AND SUPPORTING STRUCTURAL CALCULATIONS SEALED BY A P.E. REGISTERED IN NORTH CAROLINA DEMONSTRATING THE PERTINENT VERTICAL LOADS ARE SUPPORTED BY THE CONCRETE RISER STRUCTURE
- THE RISER BOX OUTLET STRUCTURE SHALL BE PROVIDED WITH STEPS 16" ON CENTER. STEPS SHALL BE PROVIDED ON THE INNER WALL OF THE RISER BOX. STEPS SHALL BE IN ACCORDANCE WITH NCDOT STD. 840.66. PLEASE REFER TO SHEET C9.B3 FOR LOCATION OF THE RISER STEPS. NOTE THE STEPS SHALL LINE UP WITH THE ACCESS HATCH OF THE TRASH RACK.
- 4. THE CONCRETE ANTI-FLOTATION BLOCK SHALL BE CAST-IN-PLACE. STEEL REINFORCEMENT AND CONNECTION TO THE RISER SHALL BE PROVIDED IN ACCORDANCE WITH THE DETAIL ON SHEET C9.B3. THE CONTRACTOR SHALL ENSURE THE WEIGHT OF THE ENTIRE RISER STRUCTURE IS GREATER THAN OR EQUAL TO 45,100 LBS. IN LIEU OF CAST-IN-PLACE, THE CONTRACTOR MAY OPT FOR A PRECAST ANTI-FLOTATION BLOCK. SHOP DRAWINGS FOR THE PRECAST BLOCK SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. THE PRECAST ANTI-FLOTATION BLOCK SHALL HAVE A SHIPPING WEIGHT OF 16,345 LBS.
- THE RISER BOX JOINTS SHALL BE SEALED USING BUTYL RUBBER SEALANT CONFORMING TO ASTM-C990-LATEST. IF NECESSARY, THE CONTRACTOR SHALL INCORPORATE A WATERSTOP INTO THE RISER BOX JOINT TO ENSURE A WATERTIGHT CONNECTION. THE CONTRACTOR SHALL PARGE JOINTS ON BOTH THE INSIDE AND OUTSIDE WITH NON-SHRINK GROUT AND INSTALL GALVANIZED STEEL STRAPS PER DETAIL ON SHEET C9.B2
- . PRIOR TO ORDERING, THE CONTRACTOR SHALL SUBMIT TRASH RACK SHOP DRAWINGS TO THE ENGINEER FOR REVIEW. CONTRACTOR SHALL ENSURE THAT AN ACCESS HATCH IS PROVIDED WITHIN THE TRASH RACK (SEE DETAIL FOR LOCATION) THAT WILL ALLOW FOR FUTURE MAINTENANCE ACCESS. CONTRACTOR SHALL ALSO PROVIDE A CHAIN AND LOCK FOR SECURING THE ACCESS HATCH. NOTE THE ACCESS HATCH SHALL LINE UP WITH THE ACCESS STEPS AFTER INSTALLATION.
- 7. ALL POURED CONCRETE SHALL MEET THE FOLLOWING SPECIFICATIONS UNLESS OTHERWISE NOTED:
- -MINIMUM 3000 PSI (28 DAY) -SLUMP = 3" - 5"
- -ENTRAINED AIR = 5% 7%

PLEASE NOTE NO CONCRETE SHALL BE POURED WHEN THE AMBIENT AIR TEMPERATURES ARE EXPECTED TO BE ABOVE 85°F OR BELOW 40°F. CAST-IN-PLACE CONCRETE SHALL BE "WET CURED" AFTER FINISHING FOR A MINIMUM OF 48 HOURS.

- ON-SITE GEOTECHNICAL ENGINEER TO ENSURE AND CERTIFY ALL POURED CONCRETE MEETS THE ABOVE SPECIFICATIONS.
- 8. GEOTEXTILE FABRIC FOR THE 36"Ø RCP OUTLET BARREL JOINTS SHALL BE MIRAFI 180N OR ENGINEER APPROVED EQUAL (NON-WOVEN FABRIC).
- 9. STORMWATER CONTROL MEASURE EMERGENCY DRAW DOWN IS VIA AN 6"Ø PLUG VALVE. THE VALVE SHALL BE A M&H STYLE 1820 ECCENTRIC VALVE OR APPROVED EQUAL. THIS VALVE IS IN ACCORDANCE WITH AWWA C-517, AND SHALL BE OPERABLE FROM TOP OF OUTLET STRUCTURE VIA A HAND WHEEL (SEE DETAIL SHEET C9.B2). THE CONTRACTOR SHALL PROVIDE A REMOVABLE VALVE WRENCH WITH A HAND WHEEL ON TOP FOR OPERATION OF THE 6"Ø PLUG VALVE.

CONSTRUCTION SEQUENC

- 2. INSTALL ALL SEDIMENT AND EROSION CONTROL MEASURES PER THE APPROVED SEDIMENT AND EROSION CONTROL PLAN. THE AGENCIES, PRIOR TO ANY CLEARING
- 3. CLEAR AND GRUB AREA WITHIN THE LIMITS OF THE PROPOSED DAM CONSTRUCTION. ALL TREES AND THEIR ENTIRE ROOT SYSTEMS MUST
- 4. EXCAVATE FOR THE NEW KEY TRENCH ALONG THE CENTERLINE OF THE PROPOSED DAM EMBANKMENT. THE TRENCH SHALL EXTEND A ROLESVILLE
- LISTED IN THAT SECTION
- CONCRETE OR FLOWABLE FILL AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER
- TO FINAL GRADE IN ORDER TO ACHIEVE PROPER COMPACTION.
- CRADLE DETAIL (SHEET C9.B3). THIS MAY BE CONSTRUCTED USING ONE OF THE FOLLOWING METHODS:
- A. IF THE PROPOSED STRUCTURAL FUL MATERIAL IS UTILIZED AS THE FORMWORK FOR THE CONCRETE CRADIE. THEN THE STRUCTURAL AS PER THE PROVIDED CONCRETE CRADLE DETAIL
- FROM THE DETAILS SHOWN ON SHEET C9.B3.
- 11. CONSTRUCT EMBANKMENT PER SPECIFICATIONS LISTED IN THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS" AND THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS".
- SATISFACTION OF THE ENGINEER AND OWNER BEFORE CERTIFICATION SHALL BE GRANTED.
- BERM AND SOIL COMPACTION SPECIFICATIONS DURING CONSTRUCTION.
- REQUIREMENTS AS THE ENTIRE EMBANKMENT.
- UNTIL MINIMUM COVER IS ESTABLISHED ALONG THE PIPE
- THE DESIGN ENGINEER SHALL BE PROVIDED WITH REPORTS AND CERTIFICATION. BY THE ON-SITE GEOTECHNICAL ENGINEER. THAT THE
- TESTING OF THE NEW FILL MATERIALS SHALL BE PERFORMED TO VERIFY THAT THE RECOMMENDED LEVEL OF COMPACTION IS ACHIEVED OF FILL OR AS RECOMMENDED BY THE ON-SITE GEOTECHNICAL ENGINEER.
- TESTING WILL BE REQUIRED ALONG THE 36"Ø RCP OUTLET BARREL AT A FREQUENCY OF ONE TEST PER 25 LF OF PIPE PER VERTICAL FOOT OF FILL OR AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER.
- STATEMENT OF RESPONSIBILITY
- OWNER, PER THE EXECUTED OPERATION AND MAINTENANCE AGREEMENT FOR THIS FACILITY.

PRIOR TO CONSTRUCTION, THE OWNER SHALL OBTAIN A LAND DISTURBING (GRADING) PERMIT AND AN "APPROVAL TO CONSTRUCT" FROM THE TOWN OF ROLESVILLE AND ALL OTHER NECESSARY PERMITS FROM APPLICABLE AGENCIES (E.G. 404 / 401 PERMITS)

CONTRACTOR SHALL MAINTAIN ALL APPROVED SEDIMENT AND EROSION CONTROL MEASURES THROUGHOUT THE ENTIRE PROJECT. AS REQUIRED. THE CONTRACTOR SHALL RECEIVE APPROVAL FROM THE EROSION CONTROL INSPECTOR, AS REQUIRED BY GOVERNING

BE REMOVED FROM THE DAM FOOTPRINT AREA AND BACKFILLED WITH SUITABLE SOIL MATERIAL. THE BACKFILLED AREAS SHALL BE COMPACTED TO THE SAME STANDARDS AS THE DAM EMBANKMENT. THE REMAINING AREA OF THE EMBANKMENT SHALL BE STRIPPED T A SUITABLE DEPTH AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER, ANY RESIDUAL SOILS TO BE LEFT IN PLACE MUST BE WELL SCARIFIED TO PROMOTE BONDING OF THE NEW EMBANKMENT FILL. NO EMBANKMENT MATERIAL SHALL BE PLACED FOR THE DAM OR KEY TRENCH UNTIL APPROVAL OF THE DAM SUBGRADE IS OBTAINED FROM THE ON-SITE GEOTECHNICAL ENGINEER.

MINIMUM OF 5 FT BELOW EXISTING GRADE OR 2 FT BELOW THE 36"Ø RCP OUTLET BARREL AND SHALL HAVE A MINIMUM BOTTOM WIDTH OF 5 FEET. THE KEY TRENCH SIDESLOPES SHALL BE A MINIMUM OF 1:1 (H:V). WHEN EXCAVATING THE KEY TRENCH. IF ANY DEBRIS IS ENCOUNTERED TO AN EXTENT THAT SUCH DEBRIS MAY EXIST IN OTHER INSITU PORTIONS OF THE DAM EMBANKMENT. IT SHOULD ALSO BE REMOVED. THE KEY TRENCH SHALL BE COMPACTED TO THE SAME SPECIFICATION LISTED IN ITEM 4 OF THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS." DEPENDING UPON ON-SITE SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION, THE ON-SITE GEOTECHNICAL ENGINEER MAY VARY THE DEPTH AND DIMENSIONS OF THE KEY TRENCH AS DEEMED NECESSARY. THE ON-SITE GEOTECHNICAL ENGINEER SHALL RETAIN DOCUMENTATION OF ANY VARIATION FOR FUTURE AS-BUILT SUBMITTALS TO THE TOWN OF

5. BEGIN PLACEMENT OF BACKFILL WITHIN THE KEY TRENCH. THE KEY TRENCH SHALL BE COMPACTED TO THE SPECIFICATIONS LISTED ITEM 4 OF THE SECTION TITLED "BERM AND SOIL COMPACTION SPECIFICATIONS." THE KEY TRENCH SHALL BE TESTED PER THE SPECIFICATIONS

5. PRIOR TO INSTALLATION, SUBGRADE CONDITIONS ALONG THE SPILLWAY PIPES SHOULD BE EVALUATED BY THE ON-SITE GEOTECHNICAL ENGINEER TO ASSESS WHETHER SUITABLE BEARING CONDITIONS EXIST AT THE SUBGRADE LEVEL. SHOULD SOFT OR OTHERWISE UNSUITABLE CONDITIONS BE ENCOUNTERED ALONG THE PIPE ALIGNMENTS. THESE MATERIALS SHOULD BE UNDERCUT AS DIRECTED BY THE GEOTECHNICAL ENGINEER. THE UNDERCUT MATERIALS SHALL BE REPLACED WITH ADEQUATELY COMPACTED STRUCTURAL FILL, LEAN

7. IN ORDER TO HELP PROTECT THE SOIL SUBGRADE FROM DETERIORATION (DUE TO EXPOSURE, RAINFALL, SEEPAGE, AND RUNOFF) BEFORE THE CRADIE CAN BE POURED. IT IS STRONGLY RECOMMENDED THAT A 3" TO 4" THICK CONCRETE MUD MAT BE POURED OVER THE SUBGRADE ONCE IT IS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE MUD MAT WILL ALSO PROVIDE BEARING FOR THE BLOCKS THAT TEMPORARILY SUPPORT THE SPILLWAY PIPE UNTIL THE CRADLE CAN BE POURED. THE METHOD OF BLOCK SUPPORT FOR THE PIPE PROPOSED BY THE CONTRACTOR SHOULD BE SUBMITTED TO THE JOHN R. MCADAMS COMPANY FOR REVIEW.

8. BEGIN CONSTRUCTION OF THE NEW EMBANKMENT. FILL MATERIALS SHALL BE PLACED IN MAXIMUM 8" THICK LIFTS PRIOR TO COMPACTION, UNLESS DIRECTED OTHERWISE BY THE ON-SITE GEOTECHNICAL ENGINEER. FILL LIFTS SHALL BE CONTINUOUS OVER THE ENTIRE LENGTH OF FILL. IF IT IS NECESSARY, THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT BACK

9. AS CONSTRUCTION OF THE EMBANKMENT MOVES FORWARD, IT WILL BE NECESSARY TO INSTALL THE CONCRETE CRADLE. SEE NOTE ON

FILL SHOULD BE INSTALLED AND COMPACTED UP TO THE TOP OF CONCRETE CRADLE ELEVATION. ONCE THE STRUCTURAL FILL REACHES THE NEXT DOWNSTREAM JUNCTION BOX OR HEADWALL AND IS COMPACTED TO THE ELEVATION OF THE TOP OF THE CONCRETE CRADLE, EXCAVATE THE CONCRETE CRADLE TRENCH PER THE PROVIDED DETAILS AND CONSTRUCT THE CONCRETE CRADLI

B. IF THE PROPOSED STRUCTURAL FILL IS NOT UTILIZED AS THE FORMWORK FOR THE CONCRETE CRADLE, THEN PRIOR TO CONSTRUCTING THE STRUCTURAL FILL EMBANKMENT, THE FORMWORK FOR THE CONCRETE CRADLE SHOULD BE INSTALLED ON EXISTING GROUND AND/OR THE MUD MAT. THE CONCRETE CRADLE SHALL BE CONSTRUCTED PER THE PROVIDED DETAILS

10. INSTALL RISER / BARREL ASSEMBLY, ALONG WITH THE EMERGENCY DRAIN SYSTEM. INSTALL 36" RCP OUTLET BARREL SPILLWAY FILTER

REQUIREMENTS OF THE ON-SITE GEOTECHNICAL ENGINEER. ALL CHARACTERISTICS OF THE EMBANKMENT FILL MATERIAL SHALL MEET TH STANDARDS SET FORTH IN "BERM AND SOIL COMPACTION SPECIFICATIONS", INCLUDING COMPACTION AND MOISTURE REQUIREMENTS. I NECESSARY TO ACHIEVE PROPER COMPACTION. THE EMBANKMENT FILL MATERIAL WILL BE OVERBUILT IN HORIZONTAL LIFTS AND CUT BACK TO PROPER FINAL GRADE. ANY HAND COMPACTION ACTIVITIES AROUND SPILLWAY OR DRAIN STRUCTURES SHALL BE CONDUCTED IN 4-INCH LOOSE LIFTS AND BE TO THE SAME COMPACTION AND MOISTURE REQUIREMENTS AS THE ENTIRE EMBANKMENT. ALL COMPACTION AND MOISTURE TESTING SHALL BE CARRIED OUT AS DIRECTED BY THE ON-SITE GEOTECHNICAL ENGINEER AND AS LISTED IN

12. UPON COMPLETION OF DAM EMBANKMENT, PROMPTLY STABILIZE AND SEED DAM EMBANKMENT PER SEEDING SCHEDULE. PERMANENT GROUND COVER SHALL BE ESTABLISHED PER THE PERMANENT SEEDING SCHEDULE FOUND ON SHEET C9.B4.

13. SCHEDULE A FINAL AS-BUILT INSPECTION AND AS-BUILT SURVEY WITH THE ENGINEER AND SURVEYOR. AN AS-BUILT INSPECTION AND SURVEY SHALL BE SCHEDULED BEFORE IMPOUNDING WATER IN THE FACILITY AND A MINIMUM OF 60 DAYS PRIOR TO THE ANTICIPATED DATE OF CERTIFICATION APPROVAL, ANY COMMENTS OR DEFICIENCIES IN THE SCM CONSTRUCTION MUST BE CORRECTED TO THE

PRIOR TO CONSTRUCTION, THE ON-SITE GEOTECHNICAL ENGINEER SHALL IDENTIFY BORROW / FILL AREAS AND VERIFY THEIR SUITABILITY FOR USE WITHIN THE DAM EMBANKMENT. ALSO, THE ON-SITE GEOTECHNICAL ENGINEER SHALL PERFORM STANDARD PROCTORS ON TH PROPOSED BORROW MATERIAL TO ENSURE THAT OPTIMUM MOISTURE CONTENT AND COMPACTION CAN BE ACHIEVED / CONTROLLED

ALL FILL MATERIALS TO BE USED FOR THE DAM EMBANKMENT SHALL BE TAKEN FROM BORROW AREAS APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER. THE FILL MATERIAL SHALL BE FREE FROM ROOTS, STUMPS, WOOD, STONES GREATER THAN 6", AND FROZEN OR OTHER OBJECTIONABLE MATERIAL. THE FOLLOWING SOIL TYPES ARE SUITABLE FOR USE AS FILL WITHIN THE DAM EMBANKMENT AND KEY TRENCH: ML AND CL. ALL FILL MATERIALS SHALL BE APPROVED BY THE ONSITE GEOTECHNICAL ENGINEER FOR THE INTENDED USE.

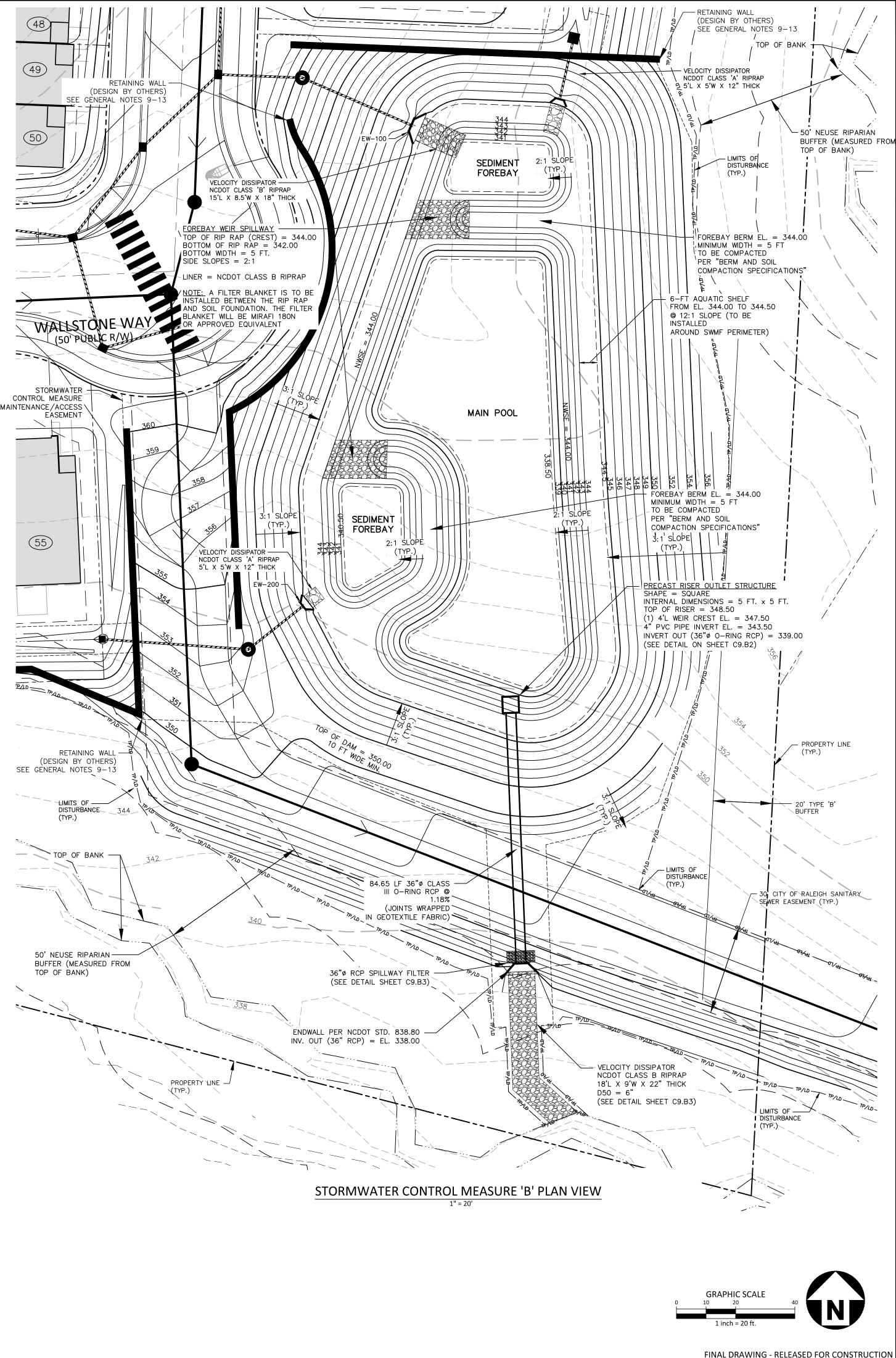
3. FILL PLACEMENT FOR THE EMBANKMENT SHALL NOT EXCEED A MAXIMUM 8" LIFT (UNCOMPACTED). EACH LIFT SHALL BE CONTINUOUS FOR THE ENTIRE LENGTH OF EMBANKMENT, BEFORE PLACEMENT OF FILL FOR THE BERM SECTION. ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND THE SURFACE PROPERLY PREPARED FOR FILL PLACEMENT. FILL MATERIAL ADJACENT TO ALL SPILLWAY AND DRAINAGE STRUCTURES SHALL BE PLACED IN 4-INCH (UNCOMPACTED) LIFTS AND HAND-COMPACTED TO THE SAME COMPACTION AND MOISTURE

4. ALL FILL SOILS USED IN THE EMBANKMENT CONSTRUCTION SHALL BE COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). THE FILL SOILS SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN -1 TO +3 PERCENT OF ITS OPTIMUM MOISTURE CONTENT. COMPACTION TESTS SHALL BE PERFORMED BY THE ON-SITE GEOTECHNICAL ENGINEER DURING CONSTRUCTION TO VERIFY THAT THE PROPER COMPACTION LEVEL HAS BEEN REACHED. THE FILL SHOULD BE COMPACTED USING A SHEEPSFOOT TYPE COMPACTOR. IN ORDER TO PREVENT DAMAGE TO THE PIPE, NO COMPACTION EQUIPMENT SHALL CROSS ANY PIPE

GEOTECHNICAL ASPECTS OF THE FACILITY HAVE BEEN CONSTRUCTED PER PLAN. THIS CERTIFICATION MUST ADDRESS THE TESTING FOR MATERIALS AND COMPACTION OF THE DAM EMBANKMENT AND SPILLWAY THESE REPORTS AND CERTIFICATION WILL BE NEEDED DURING THF AS-BUILT CERTIFICATION PROCESS FOR THIS STORMWATER CONTROL MEASURE. THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE TESTING AND OBSERVATION WITH THE ON-SITE GEOTECHNICAL ENGINEER.

DURING CONSTRUCTION. THEREFORE, ONE DENSITY TEST SHALL BE PERFORMED FOR EVERY 2,500 SQUARE FEET OF AREA FOR EVERY LIFT

L. ALL REQUIRED MAINTENANCE AND INSPECTIONS OF THE STORMWATER CONTROL MEASURE SHALL BE THE RESPONSIBILITY OF THE



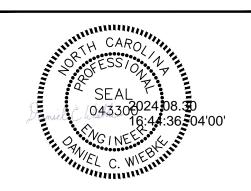


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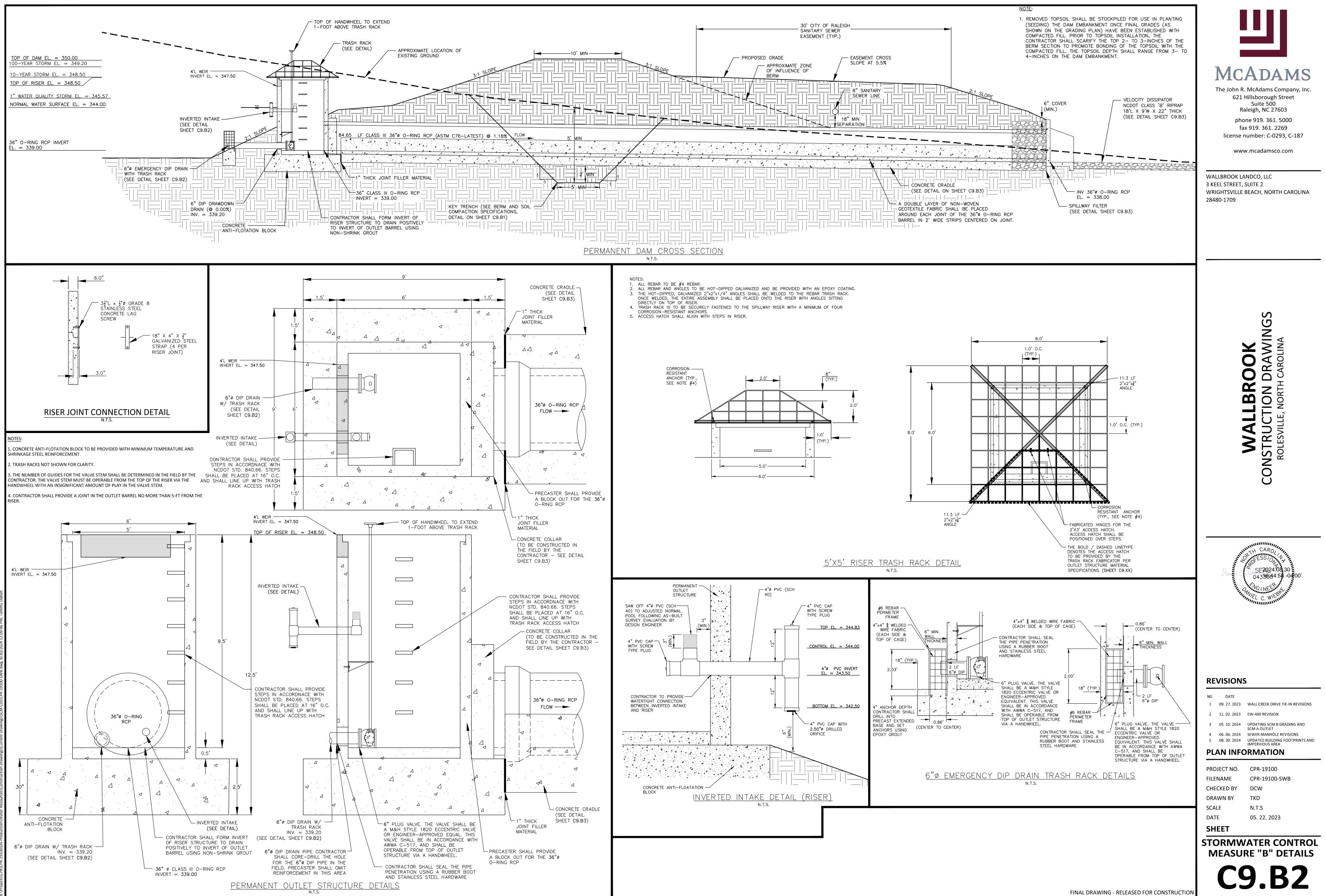
REVISIONS

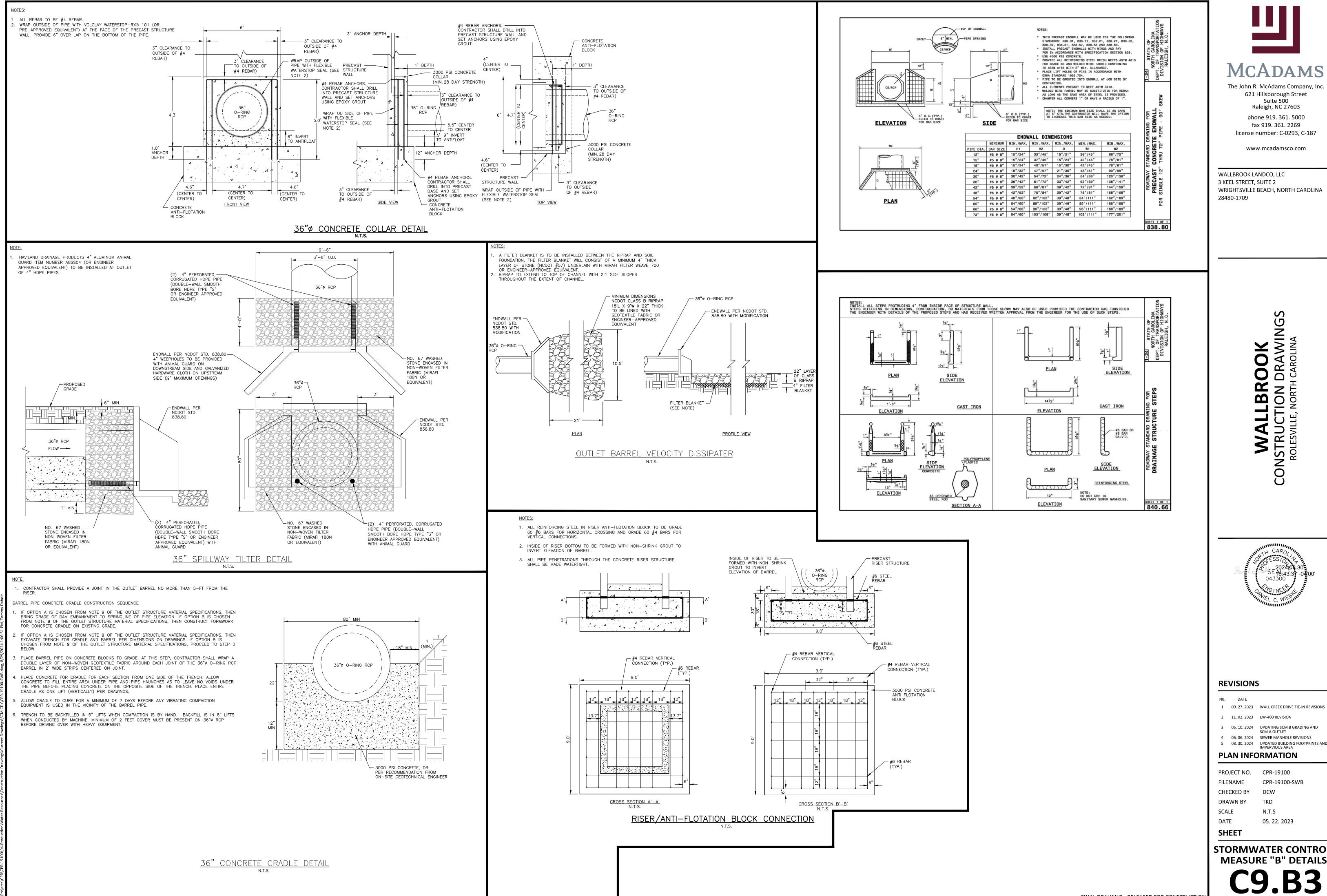
SHEET

N0.	DATE	
1	09. 27. 2023	WALL CREEK DRIVE TIE-IN REVISIONS
2	11. 02. 2023	EW-400 REVISION
3	05. 10. 2024	UPDATING SCM B GRADING AND SCM A OUTLET
4	06.06.2024	SEWER MANHOLE REVISIONS
5	08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA
PL	AN INFO	ORMATION
	DJECT NO.	CPR-19100
FIC	JLCT NO.	CFN-19100
FILE	NAME	CPR-19100-SWB
CHE	CKED BY	DCW
DRA	WN BY	TKD
SCA	LE	1" = 20'
		05. 22. 2023

STORMWATER CONTROL

MEASURE "B" PLAN VIEW





NO. 1 2 3 4 5	DATE 09. 27. 2023 11. 02. 2023 05. 10. 2024	WALL CREEK DRIVE TIE-IN REVISIONS EW-400 REVISION
2 3 4	11. 02. 2023	
- 3 4		EW-400 REVISION
4	05. 10. 2024	
•		UPDATING SCM B GRADING AND SCM A OUTLET
5	06. 06. 2024	SEWER MANHOLE REVISIONS
	08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA
PL/	AN INFO	ORMATION
PRO	JECT NO.	CPR-19100
FILE	NAME	CPR-19100-SWB
CHE	CKED BY	DCW
DRA	WN BY	ТКD
SCAI	LE	N.T.S
DAT	E	05. 22. 2023
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		ATER CONTROL
Μ	EASU	RE "B" DETAILS

STORMWATER CONTROL MEASURE 'B' LANDSCAPE SPECIFICATIONS

LEG	LEGEND						
QTY.	SYM.	SCIENTIFIC NAME	COMMON NAME	НАТСН	ТҮРЕ	SPACING	
SHA	SHALLOW WATER						
103	IV	IRIS VIRGINIANA	BLUE FLAG IRIS		4-INCH CONTAINER	24" O.C.	
171	PC	PONTEDERIA CORDATA	PICKEREL WEED		4-INCH CONTAINER	24" O.C.	
277	ST	SCHOENOPLECTUS TABERNAEMONTANI	SOFT-STEM BULRUSH		4-INCH CONTAINER	24" O.C.	
SHA	LLOW	LAND					
138	CS	CAREX SPP.	SEDGES		4-INCH CONTAINER	24" O.C.	
118	СА	CRINUM AMERICANUM	AMERICAN CRINUM LILY		4-INCH CONTAINER	24" O.C.	
113	HA	HIBISCUS ACULEATUS	PINELANDS MALLOW		4-INCH CONTAINER	24" O.C.	

SEEDBED PREPARATION

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3-4 INCHES DEEP OVER ADVERSE SOIL CONDITIONS. TOPSOIL SHOULD BE INCORPORATED INTO THE FINAL GRADING OF THE BASIN SIDE SLOPES AND AQUATIC SHELF. CONTRACTOR SHOULD SCARIFY THE TOP 3-4 INCHES OF THE COMPACTED FILL TO PROMOTE BONDING WITH TOPSOIL.

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. PER ONE TIME ONLY, APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL.
- 5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM REASONABLY UNIFORM SEEDBED IS PREPARED 4 TO 6 INCHES DEEP.
- 6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER.
- 7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
- 8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. AFTER PERMANENT COVER IS ESTABLISHED.

9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT.

TEMPORARY SEEDING SCHEDULE

SEEDING DATE	SEEDING MIXTURE	APPLICATION RATE
AN 1 - MAY 1	RYE (GRAIN)	120 LBS/AC
	KOBE LESPEDEZA	50 LBS/AC
/IAY 1 - AUG 15	GERMAN MILLET	40 LBS/AC
AUG 15 - DEC 30	RYE (GRAIN)	120 LBS/AC

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 750 LB/AC 10-10-10 FERTILIZER (FROM AUG 15 - DEC 30, INCREASE 10-10-10 FERTILIZER TO 1000 LB/AC).

APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE JAN 1 - AUG 15: REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE, AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

AUG 15 - DEC 30: REPAIR AND REFERTILIZE DAMAGED AREAS IMMEDIATELY. TOP DRESS WITH 50 LB/AC OF NITROGEN IN MARCH. IF IT IS NECESSARY TO EXTEND TEMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 LB/AC KOBE LESPEDEZA IN LATE FEBRUARY OR EARLY MARCH.

NOTE: USE THE TEMPORARY SEEDING SCHEDULE ONLY WHEN DATE IS NOT CORRECT TO USE THE PERMANENT SEEDING SCHEDULE.

PERMANENT SEEDING SCHEDULE (DAM EMBANKMENTS)

SEEDING DATE	SEEDING MIXTURE OPTIONS (CHOOSE ONE)	APPLICATION RATE
MAY 1 - AUG 31	CENTIPEDE RAW	30 LBS/AC
APRIL 1 - SEPT 1	SUMMER MIX	200 LBS/AC
	(80% HULLED BERMUDA/20% MILLET)	
OCT 1 - MARCH 1	FALL MIX	200 LBS/AC
	(80% TALL FESCUE/20% ANNUAL RYEGRASS)	

SOIL AMENDMENTS

FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 4,000 LB/AC GROUND AGRICULTURE LIMESTONE AND 1000 LB/AC 10-10-10 FERTILIZER.

MULCH

APPLY 4000 LB/AC STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT, NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

MAINTENANCE

INSPECT AND REPAIR MULCH FREQUENTLY. REFERTILIZE IN LATE WINTER OF THE FOLLOWING YEAR; USE SOIL TESTS OR APPLY 150 LB/AC 10-10-10 FERTILIZER. MOW REGULARLY TO A HEIGHT OF 2-4 INCHES.

NOTE: PERMANENT SEEDING SCHEDULE IS FOR SLOPES OF THE BASIN AND TOP OF BERM.

PLANTING INSTRUCTIONS

- CREATE PLANTING AREA FOR EACH PLANT AND EXCAVATE PIT. PLACE PLANTS IN PIT ENSURING ROOTS ARE FACING COMPLETELY DOWNWARD.
- HEEL IN SOIL AROUND PLANT AND PROCEED TO NEXT PLANTING LOCATION. NEWLY PLANTED PLANTS NEED TO BE FASTENED TO THE SUBSTRATE FOR THE ESTABLISHMENT OF
- NEW ROOTS. F. ROOTS SHALL BE SPREAD IN THEIR NORMAL POSITION. ALL BROKEN OR FRAYED ROOTS SHALL BE CUT
- OFF CLEANLY. G. THE DIAMETER OF THE PITS FOR ALL VEGETATIVE STOCK SHALL BE AT LEAST THREE TIMES THE
- H. SET THE PLANTS UPRIGHT, IN THE CENTER OF THE PIT. THE BOTTOM OF THE ROOT MASS SHOULD BE RESTING ON UNDISTURBED SOIL
- I. PLACE THE BACKFILL AROUND THE BASE AND SIDES OF THE ROOT MASS, AND WORK EACH LAYER TO SETTLE BACKFILL AND TO ELIMINATE VOIDS AND AIR POCKETS. WHEN PIT IS APPROXIMATELY 2/3 FULL, WATER THOROUGHLY BEFORE PLACING REMAINDER OF THE BACKFILL. WATER AGAIN AFTER PLACING FINAL LAYER OF BACKFILL.
- J. BROKEN OR DAMAGED PARTS WILL BE CUT BACK TO UNDAMAGED TISSUE, LEAVING AS MUCH GREEN BASAL TISSUE AS POSSIBLE ABOVE THE ROOTS. IF MORE THAN FIFTY PERCENT (50%) OF THE PLANT IS DAMAGED THEN CONTRACTOR SHALL REPLACE THE PLANT.

CONTAINER STOCK / BARE ROOT

- DEVELOPED SUFFICIENTLY TO HOLD ITS SOIL TOGETHER ONCE REMOVED FROM THE CONTAINER. CONTAINER PLANTS WILL NEED TO BE WATERED REGULARLY AND PLACED IN SHADY CONDITIONS UNTIL PLANTING OCCURS.
- BARE ROOT PLANTS ARE FOR IMMEDIATE PLANTING, OTHERWISE SEE D) BELOW. D. IF BARE ROOTS SPECIMENS ARE NOT TO BE PLANTED WITHIN FOUR (4) DAYS, TEMPORARY HOLDING OF BARE ROOT SPECIMENS ARE TO BE COVERED ENTIRELY BY A SUITABLE MEDIUM (ETC. SOIL, SAWDUST, MULCH OR THE LIKE) AND WATERED REGULARLY SO AS TO NOT DRY OUT.

PLANT LOCATIONS A. NEW PLANTINGS SHALL BE LOCATED WHERE SHOWN ON PLAN EXCEPT WHERE CHANGES HAVE BEEN MADE IN PROPOSED CONSTRUCTION. B. NECESSARY ADJUSTMENTS SHALL BE MADE ONLY AFTER APPROVAL BY THE OWNER OR THE OWNER'S

REPRESENTATIVE.

WATER SHALL BE POTABLE AND SHALL NOT CONTAIN ELEMENTS TOXIC TO PLANT LIFE.

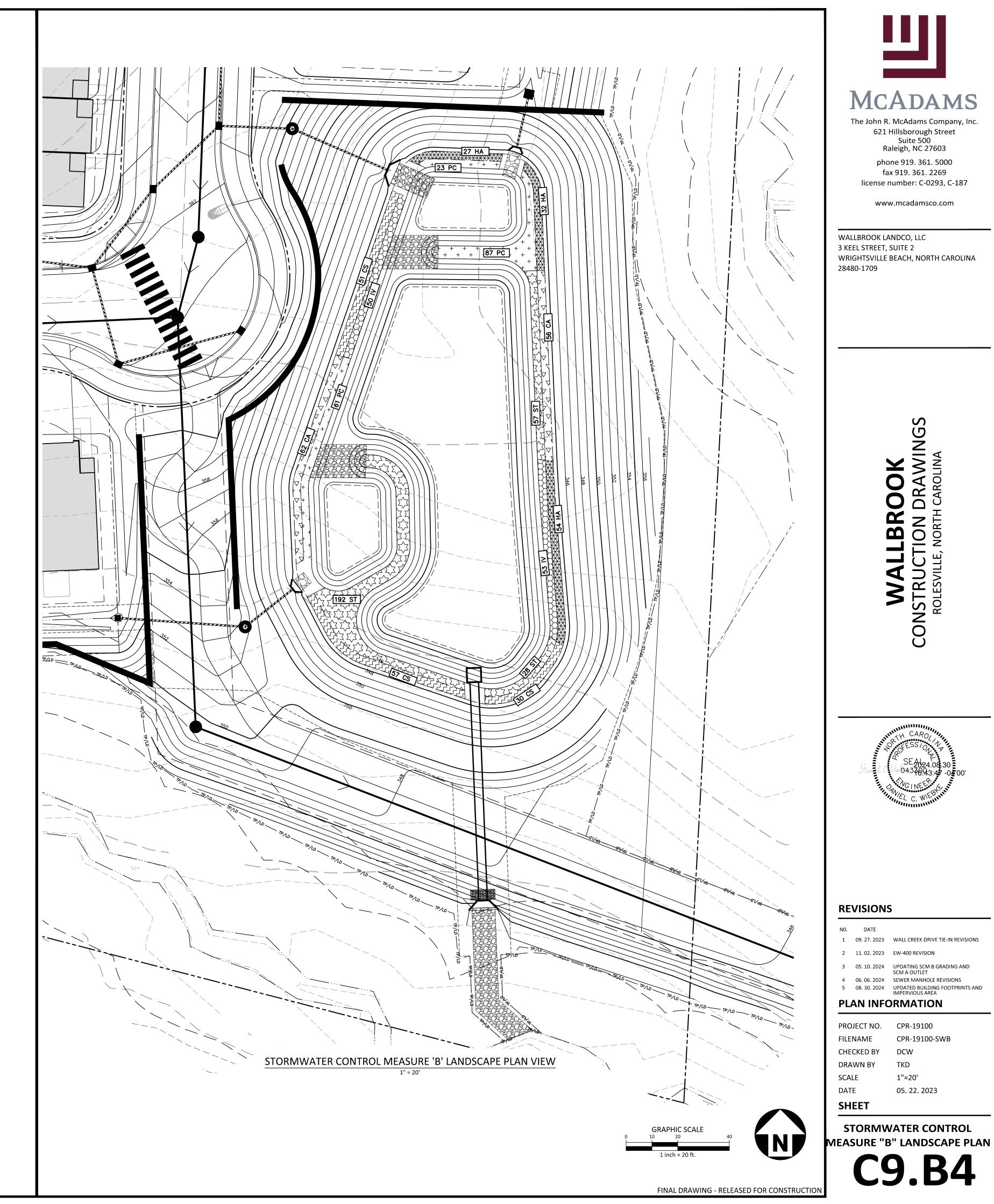
PLANTING SCHEDULE

- 1. ONCE THE GRADING IS COMPLETE, THE CONTRACTOR SHALL REQUEST AN ON-SITE INSPECTION AND AN AS-BUILT SURVEY PRIOR TO INSTALLATION OF THE STORMWATER MANAGEMENT FACILITY PLANTS. IF THE CONTRACTOR PLANTS THE PROPOSED VEGETATION PRIOR TO AN AS-BUILT SURVEY (AND SUBSEQUENT APPROVAL), ANY CHANGES TO THE GRADING / RE-PLANTING OF PLANTS WILL BE AT THE CONTRACTOR'S EXPENSE
- 2. ONCE THE ENGINEER HAS APPROVED THE AS-BUILT GRADING, THE CONTRACTOR SHALL PLANT THE PROPOSED STORMWATER MANAGEMENT FACILITY PLANTS SHOWN ON THE LANDSCAPE PLAN FOR THE FACILITY, AFTER COMPLETION OF THE PLANTING. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A LETTER TO THE ENGINEER CERTIFYING THAT THE PLANTS HAVE BEEN INSTALLED PER THE APPROVED STORMWATER MANAGEMENT FACILITY PLANTING PLAN.
- OPTIMAL PLANTING PERIODS RANGE APPROXIMATELY FROM APRIL 15TH THRU JUNE 30TH AND SEPTEMBER 1ST THRU OCTOBER 31ST. FOR FINAL DETERMINATION OF THE SITE'S PLANTING PERIOD, THE CONTRACTOR SHALL COORDINATE WITH A LANDSCAPE PROFESSIONAL REGARDING SCHEDULING FOR PLANT INSTALLATION.
- 4. IT IS RECOMMENDED THAT THE CONTRACTOR TAKE MEASURES TO PREVENT WILDLIFE FROM DAMAGING OR CONSUMING WETLAND PLANTINGS.

PLANTING TECHNIQUES A. ENSURE THAT ROOTS, ONCE REMOVED FROM POT, ARE STRAIGHTENED AND FACE DOWNWARD.

DIAMETER OF THE ROOT MASS. PLANT PIT WALL SHALL BE SCARIFIED PRIOR TO PLANT INSTALLATION.

STOCK SHALL HAVE BEEN GROWN IN A CONTAINER LONG ENOUGH FOR THE ROOT SYSTEM TO HAVE





621 Hillsborough Street Suite 500 Raleigh, NC 27603 phone 919. 361. 5000 fax 919. 361. 2269 license number: C-0293, C-187

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REVISIONS

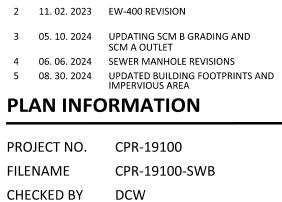
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1 09. 27. 2023 WALL CREEK DRIVE TIE-IN REVISIONS

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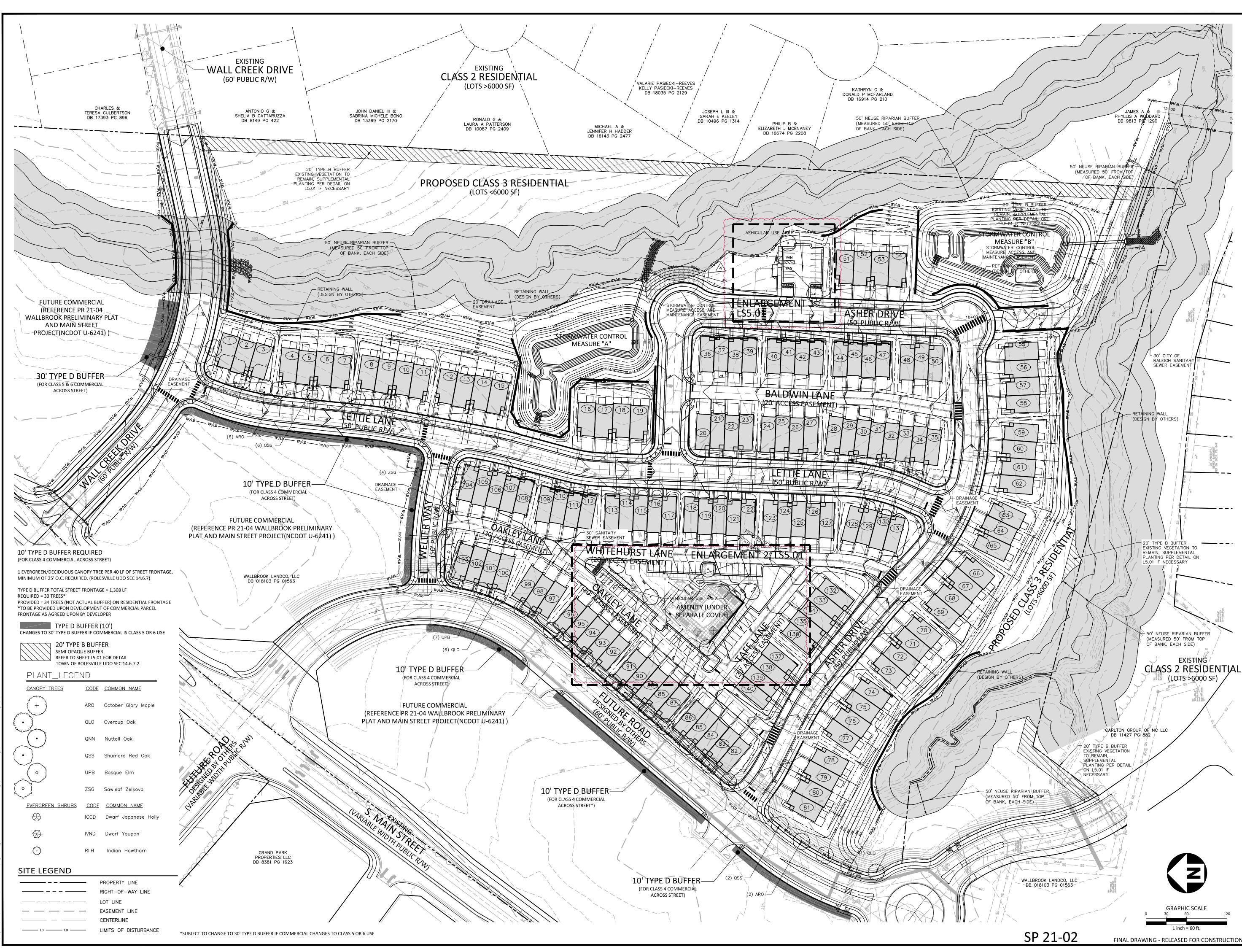
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STORMWATER CONTROL

C9 B4

05. 22. 2023

- PLAN INFORMATION





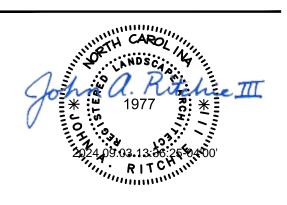
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DATE	05. 22. 2023
SCALE	1"=60'
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FILENAME	CPR19100-LS1
PROJECT NO.	CPR-19100
PLAN INFO	ORMATION
5 08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA
4 06. 06. 2024	SCM A OUTLET SEWER MANHOLE REVISIONS
3 05. 10. 2024	UPDATING SCM B GRADING AND
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1 09. 27. 2023	WALL CREEK DRIVE TIE-IN REVISIONS
NO. DATE	
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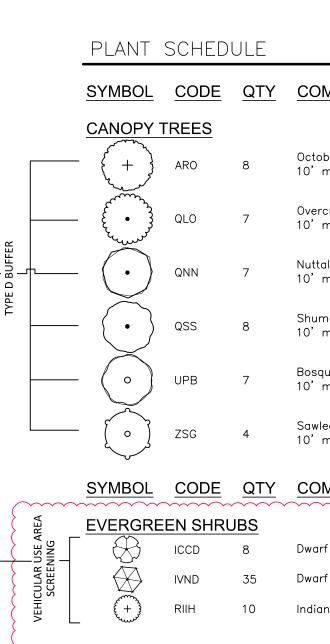
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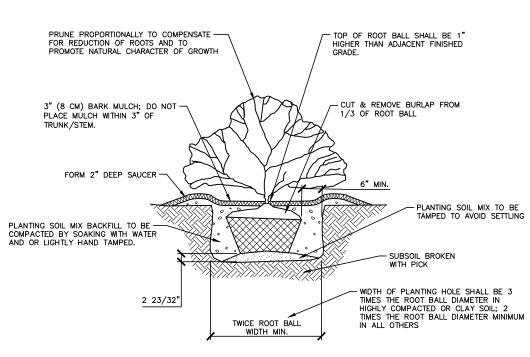
3" (8 CM) BARK MULCH; DO NOT – PLACE MULCH WITHIN 3" OF TRUNK/STEM.

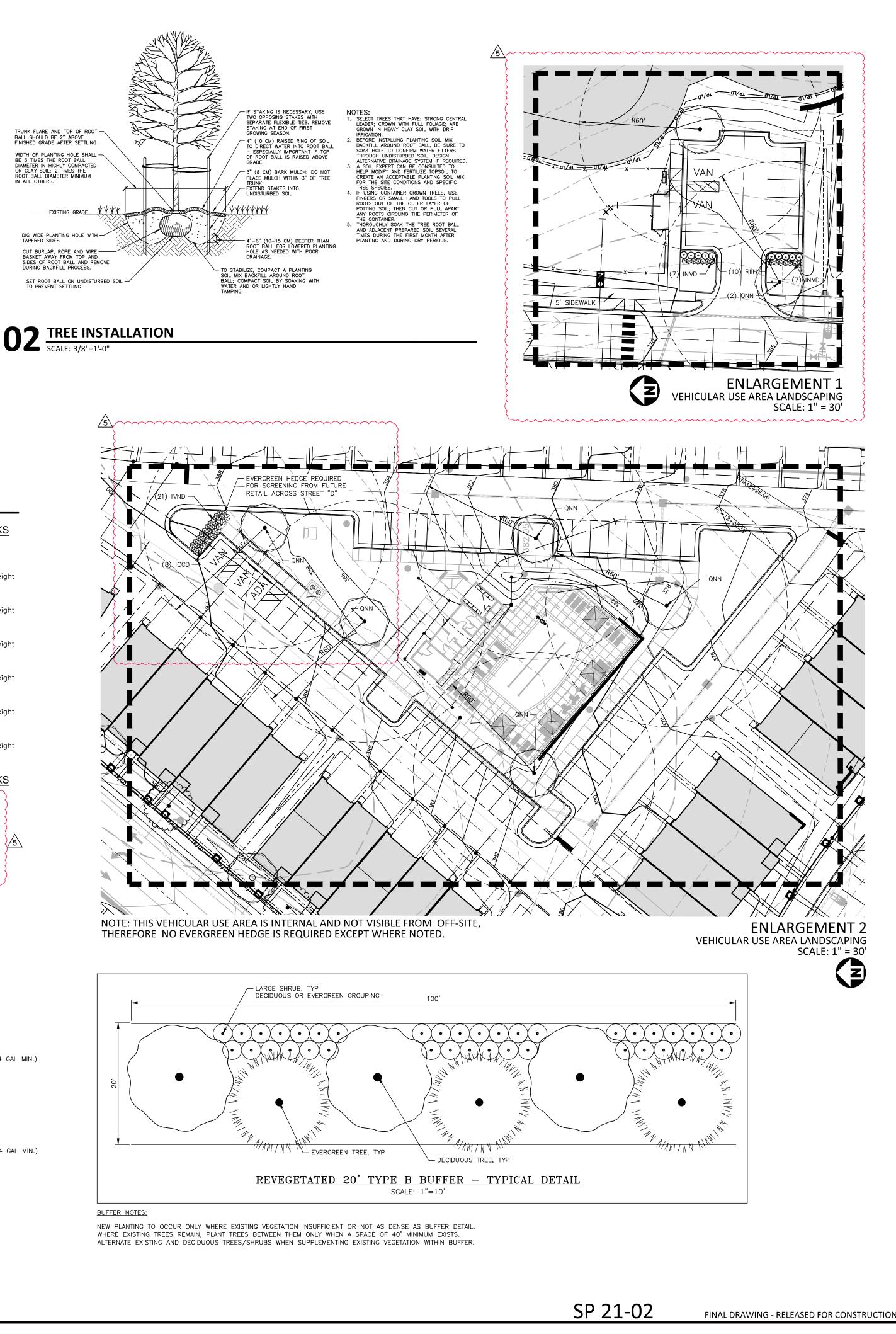
FORM 2" DEEP SAUCER -

GENERAL LANDSCAPE NOTES:

- 1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF ROLESVILLE AND THE STATE OF NORTH CAROLINA STANDARDS AND SPECIFICATIONS.
- 2. CONTRACTOR IS RESPONSIBLE FOR THE SITE INSPECTION BEFORE LANDSCAPE CONSTRUCTION AND INSTALLATION IN ORDER TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
- 3. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE BEGINNING DEMOLITION OR INSTALLATION.
- 4. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES BETWEEN THE NOTES, SPECIFICATIONS, DRAWINGS OR SITE CONDITIONS FOR RESOLUTION PRIOR TO INSTALLATION.
- 5. ANY DAMAGE TO UTILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. 6. THIS PLAN IS FOR PLANTING PURPOSES ONLY. FOR INFORMATION REGARDING BUILDINGS,
- GRADING, WALLS, ETC., REFER TO ARCHITECTURE, SITE AND GRADING PLANS. 7. VERIFICATION OF TOTAL PLANT QUANTITIES AS SHOWN IN THE PLANT SCHEDULE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
- 8. CONTRACTOR TO ENSURE PROPER STABILIZATION AND SEEDING OF THE SITE IN ACCORDANCE WITH APPLICABLE REGULATIONS.
- 9. LANDSCAPE MATERIAL SHALL BE WELL FORMED, VIGOROUS, GROWING SPECIMENS WITH GROWTH TYPICAL OF VARIETIES SPECIFIED AND SHALL BE FREE FROM DAMAGE, INSECTS AND DISEASES. MATERIAL SHALL EQUAL OR SURPASS #1 QUALITY AS DEFINED IN THE CURRENT ISSUE OF "AMERICAN STANDARD FOR NURSERY STOCK" AS PUBLISHED BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION.
- 10. ALL PLANT MATERIAL IS TO BE CAREFULLY HANDLED BY THE ROOT BALL, NOT THE TRUNK, BRANCHES AND/OR FOLIAGE OF THE PLANT. MISHANDLED PLANT MATERIAL MAY BE REJECTED BY THE LANDSCAPE ARCHITECT.
- 11. ALL PLANT MATERIAL IS TO BE WELL ROOTED, NOT ROOT BOUND, SUCH THAT THE ROOT BALL REMAINS INTACT THROUGHOUT THE PLANTING PROCESS. DEFICIENT PLANT MATERIAL MAY BE REJECTED BY THE LANDSCAPE ARCHITECT OR OWNER.
- 12. ALL PLANTS TO BE A MINIMUM OF WHAT IS SPECIFIED IN THE PLANT SCHEDULE. ANY CHANGES OR SUBSTITUTIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT AND GOVERNING JURISDICTION PRIOR TO ANY HOLE BEING DUG.
- 13. CONTRACTOR TO COORDINATE WITH OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT TO ESTABLISH THE EXTENTS OF MULCH/SEED/SOD IF NOT SPECIFICALLY SHOWN ON PLANS.
- 14. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE IN ALL PLANTING AREAS.
- 15. PROPOSED TREES TO BE PLANTED A MINIMUM 10 FEET FROM ANY LIGHT POLE AS MEASURED FROM TRUNK OF THE TREE TO THE POLE.
- 16. PROPOSED TREES TO BE PLANTED A MINIMUM 5 FEET FROM ANY FIRE HYDRANT AS MEASURED FROM TRUNK OF THE TREE TO THE HYDRANT.
- 7. CONTRACTOR SHALL COMPLETE SOIL TEST IN ALL PLANTING AREAS TO DETERMINE SOU AMENDMENT REQUIREMENTS UNLESS WAIVED BY OWNER'S REPRESENTATIVE. CONTRACTOR SHALL ADJUST PH AND FERTILITY BASED UPON THE SOIL TEST RESULTS.
- 18. TOPSOIL SHALL BE FREE OF MATERIAL LARGER THAN 1.0 INCH IN DIAMETER OR LENGTH AND SHALL NOT CONTAIN SLAG, CINDERS, STONES, LUMPS OF SOIL, STICKS, ROOTS, TRASH, OR OTHER EXTRANEOUS MATERIAL.
- 19. LOOSEN SUBGRADE / SURFACE SOIL TO A MINIMUM DEPTH OF 6 INCHES. APPLY SOIL AMENDMENTS AND FERTILIZERS AS REQUIRED BY THE SOIL TEST RESULTS TO ACHIEVE A HEALTHY GROWING MEDIA AND MIX THOROUGHLY INTO TOP 4 INCHES OF SOIL. SPREAD PLANTING SOIL MIX TO A DEPTH OF 6 INCHES BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT. DO NOT SPREAD IF PLANTING SOIL OR SUBGRADE IS FROZEN, MUDDY, OR EXCESSIVELY WET.
- 20. IF IMPORTED TOPSOIL IS REQUIRED, THE SUBGRADE SHALL BE SCARIFIED OR TILLED TO A DEPTH OF AT LEAST 6 INCHES PRIOR TO INSTALLATION OF IMPORTED TOPSOIL. FOLLOWING INSTALLATION OF IMPORTED TOPSOIL, THE TOPSOIL SHALL BE TILLED TO INTEGRATE THE SOIL PROFILES.
- 21. PLANT MATERIALS ARE TO BE GUARANTEED FOR A PERIOD OF 12 MONTHS. PLANT MATERIALS WHICH REMAIN UNHEALTHY WILL BE REPLACED BY THE LANDSCAPE CONTRACTOR BEFORE THE EXPIRATION OF THE GUARANTEE PERIOD OR IMMEDIATELY IF SO DIRECTED BY THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.
- 22. ALL TREE PLANTINGS SHALL BE MULCHED TO A DEPTH OF 3 INCHES, AND WITH A MINIMUM 3 FOOT RADIUS FROM BASE OF TREE OR TO DRIPLINE. MULCH SHALL BE FREE OF TRASH AND MAINTAINED WEED FREE. MULCH SHALL NOT COVER THE ROOT FLARE. CONFIRM MULCH SPECIFICATIONS WITH OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.
- 23. DO NOT PRUNE TREES AND SHRUBS BEFORE DELIVERY. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, SWEATING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY THEIR NATURAL SHAPE. PROVIDE PROTECTIVE COVERING OF EXTERIOR PLANTS DURING DELIVERY. DO NOT DROP EXTERIOR PLANTS DURING DELIVERY AND HANDLING.
- 24. DELIVER EXTERIOR PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY. IMMEDIATELY AFTER UNLOADING, STAND THE TREES UP TO REDUCE THE RISK OF SUN SCALD. PROPERLY STAGED TREES ARE STANDING, UNTIED AND SPACED. UNLESS IMMEDIATELY INSTALLED, SET EXTERIOR PLANTS AND TREES IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE, AND KEEP ROOTS MOIST.
- 25. SEE LANDSCAPE DETAILS FOR TREE STAKING REQUIREMENTS.
- 26. EXCAVATE EDGES OF ALL PLANTING BEDS TO 2 INCH DEPTH TO FORM A NEAT AND CRISP DEFINITION. 27. CONTRACTOR SHALL REMOVE DEBRIS AND FINE GRADE ALL PLANTING AREAS PRIOR TO
- INSTALLATION. 28. REMOVE GUY WIRES AND STAKES AT END OF WARRANTY PERIOD OR ESTABLISHMENT.
- 29. FINISH GRADING: GRADE PLANTING AREAS TO A SMOOTH, UNIFORM SURFACE PLANE WITH LOOSE, UNIFORMLY FINE TEXTURE. GRADE TO WITHIN PLUS OR MINUS 1/2 INCH OF FINISH ELEVATION. ROLL AND RAKE, REMOVE RIDGES, AND FILL DEPRESSIONS TO MEET FINISH GRADES. LIMIT FINISHED GRADING TO AREAS THAT CAN BE PLANTED IN THE IMMEDIATE FUTURE.

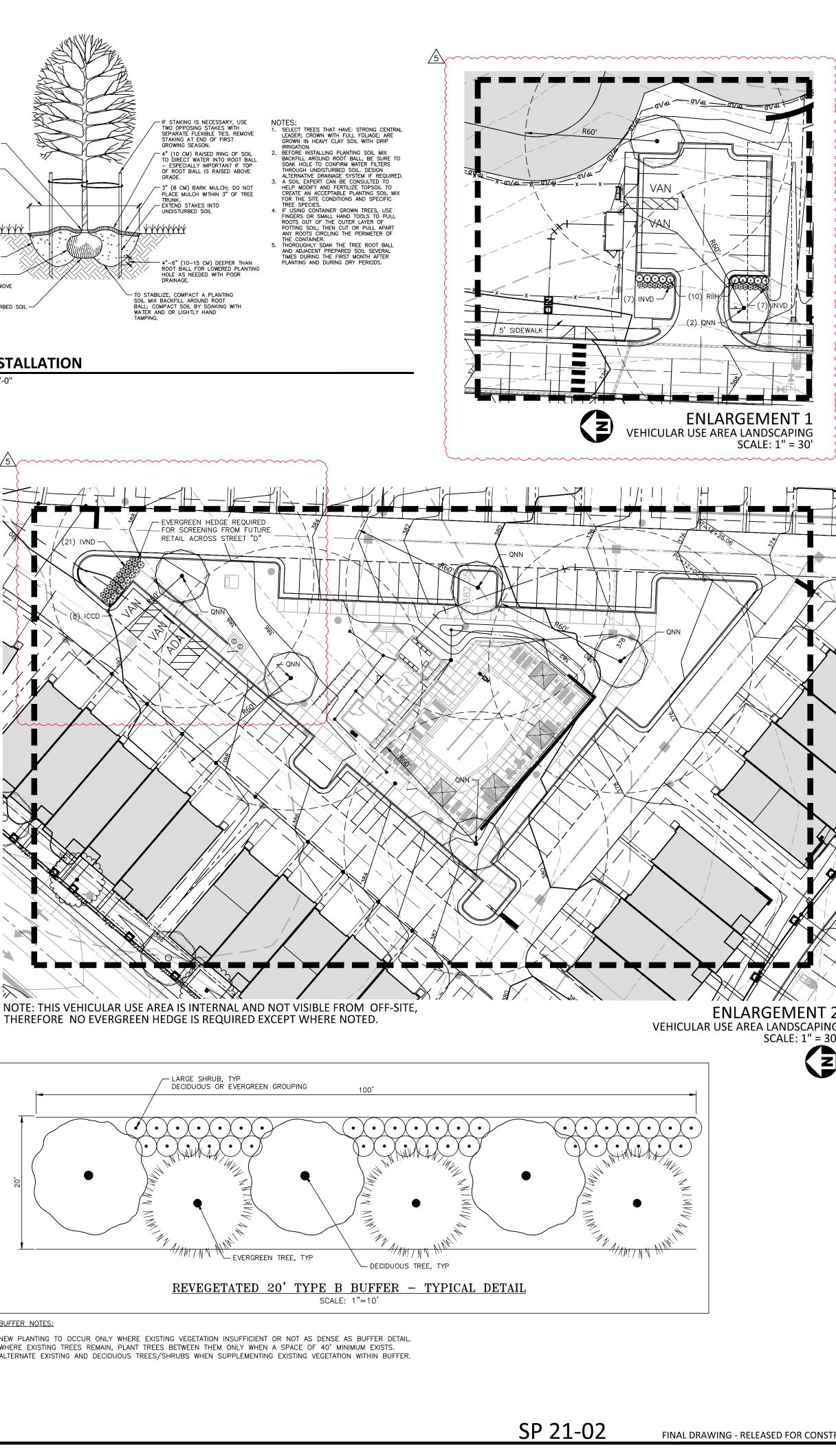


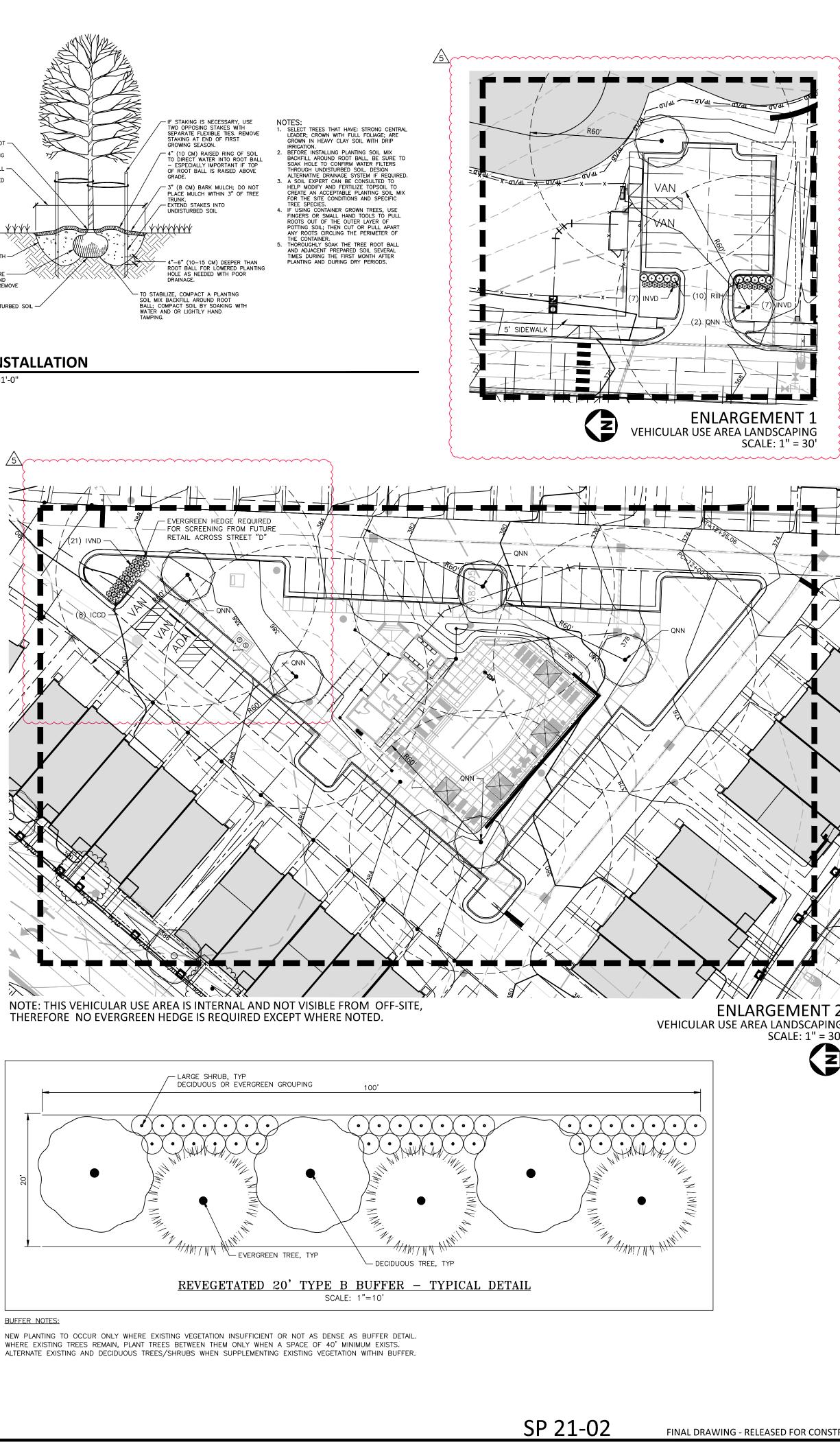




01 SHRUB INSTALLATION SCALE: 3/8"=1'-0"

	PLANT	SCHEDU	JLE				
	SYMBOL	CODE	<u>QTY</u>	COMMON NAME	BOTANICAL NAME	CAL	REMARKS
	CANOPY T	REES					
	- {+}	ARO	8	October Glory Maple 10' min height	Acer rubrum 'October Glory' TM	2.5"	10' min height
		QLO	7	Overcup Oak 10' min height	Quercus lyrata	2.5"	10' min height
·	\cdot	QNN	7	Nuttall Oak 10' min height	Quercus nuttallii	2.5"	10' min height
		QSS	8	Shumard Red Oak 10' min height	Quercus shumardii	2.5"	10' min height
		UPB	7	Bosque Elm 10' min height	Ulmus parvifolia 'Bosque'	2.5"	10' min height
		ZSG	4	Sawleaf Zelkova 10' min height	Zelkova serrata 'Green Vase'	2.5"	10' min height
	<u>SYMBOL</u>	CODE	<u>QTY</u>	COMMON NAME	BOTANICAL NAME	HEIGHT	REMARKS
REA	EVERGRE	EN SHRL	IBS	~~ ~~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~		~~ ~~ ~~	
ÚSE A NING		ICCD	8	Dwarf Japanese Holly	llex crenata 'Compacta'	24" min	}
VEHICULAR ÚSE AREA SCREENING	\bigotimes	IVND	35	Dwarf Yaupon	llex vomitoria 'Nana'	24" min	5
		RIIH	10	Indian Hawthorn	Rhaphiolepis indica	24" min	
							·····}





BUFFER SUPPLEMENTAL PLANT MATERIAL

LARGE DECIDUOUS TREE <u>LARGE TREE SPECIES</u> (INSTALLED AT 2.5" CAL MIN.) TULIP POPLAR SWEETGUM 'ROTUNIDLOBA' OAK - WATER OAK, SWAMP WHITE OAK SYCAMORE SOURWOOD PERSIMMON

LARGE EVERGREEN TREE LARGE EVERGREEN TREE SPECIES (INSTALLED AT 12" HT MIN.) LOBLOLLY PINE VIRGINIA PINE CANADIAN HEMLOCK BLUE ATLAS CEDAR

DECIDUOUS SHRUB LARGE (INSTALLED AT 30" HT, 4 GAL MIN.) AMERICAN BEAUTYBERRY BOTTLEBRUSH BUCKEYE FORSYTHIA SPP. FLORIDA LEUCOUTHOE

EVERGREEN SHRUB LARGE (INSTALLED AT 30" HT, 4 GAL MIN.) CAMELIA SASANQUA FLORIDA ANISE LEATHERLEAF VIBURNUM WAX MYRTLE YAUPON HOLLY

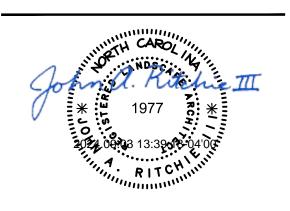


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REVISIONS

NO. DATE	
1 09. 27. 2023	WALL CREEK DRIVE TIE-IN REVISIONS
2 11. 02. 2023	B EW-400 REVISION
3 05. 10. 2024	UPDATING SCM B GRADING AND
4 06. 06. 2024	
5 08. 30. 2024	UPDATED BUILDING FOOTPRINTS AND IMPERVIOUS AREA
PLAN INF	ORMATION
PROJECT NO.	CPR-19100
FILENAME	CPR19100-LS1
CHECKED BY	SRD
DRAWN BY	JAR
SCALE	1"=30'
DATE	05. 22. 2023
SHEET	
	LARGED CODE
	IDSCAPE PLAN
	5 N 1