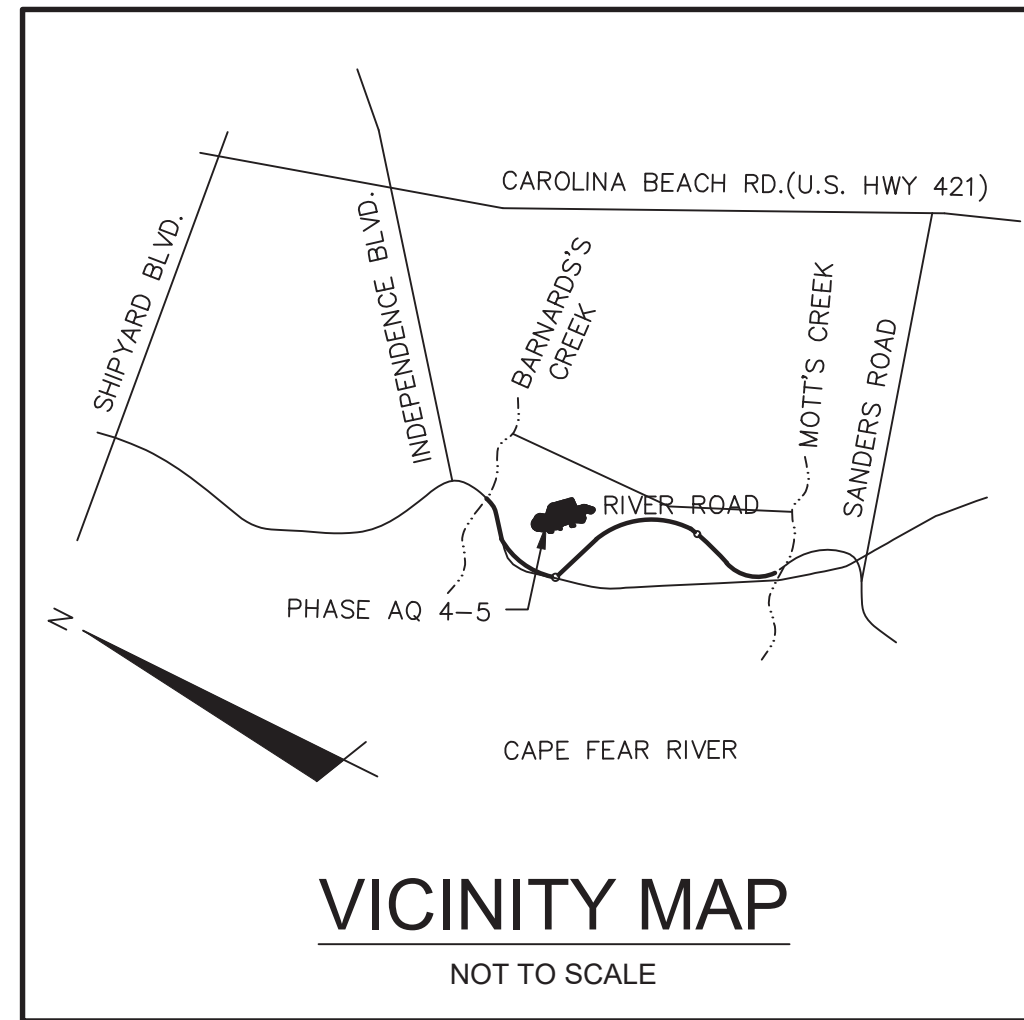


RIVERLIGHTS AGE QUALIFIED - PHASE 4 & 5

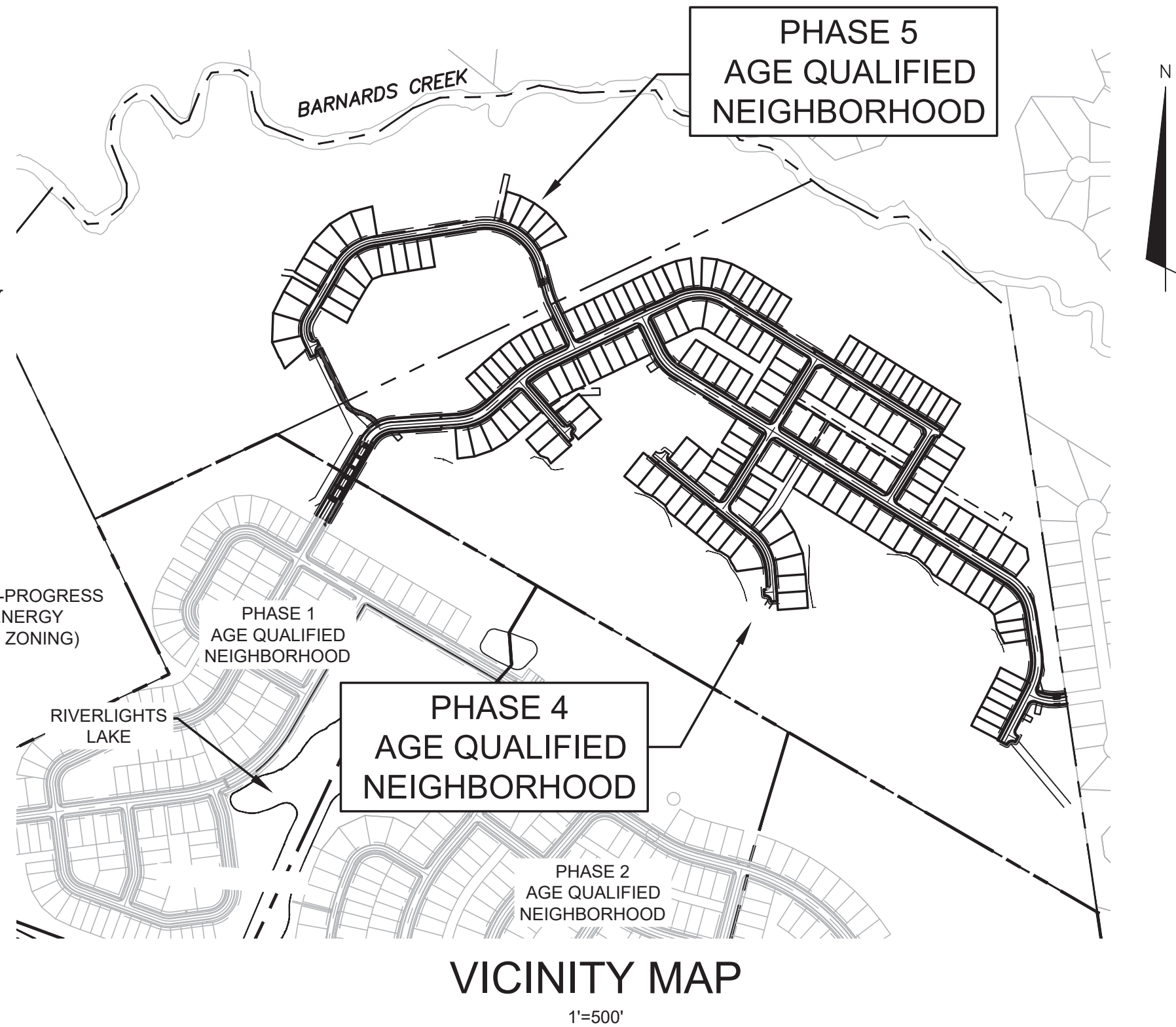
CITY OF WILMINGTON, NC

FEBRUARY 13, 2019

TECHNICAL REVIEW COMMITTEE RE-SUBMITTAL



ISSUED FOR PERMITTING
NOT FOR CONSTRUCTION



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SRB CONDITIONS

- THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHALL COMPLY WITH ALL REGULATIONS AND REQUIREMENTS IMPOSED BY THE LAND DEVELOPMENT CODE, THE CITY OF WILMINGTON TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL AND ANY OTHER APPLICABLE FEDERAL, STATE OR LOCAL LAW, ORDINANCE OR REGULATION, AS WELL AS ANY CONDITION STATED BELOW. IN THE EVENT OF A CONFLICT, THE MORE STRINGENT REQUIREMENT OR HIGHER STANDARD SHALL APPLY.
- APPROVAL OF THIS PRELIMINARY PLAN DOES NOT CONSTITUTE TECHNICAL APPROVAL OF A SITE PLAN. FINAL APPROVAL BY THE TECHNICAL REVIEW COMMITTEE AND THE ISSUANCE OF ALL REQUIRED PERMITS MUST OCCUR PRIOR TO RELEASE OF THE PROJECT FOR CONSTRUCTION.
- IF, FOR ANY REASON, ANY CONDITION FOR APPROVAL IS FOUND TO BE ILLEGAL OR INVALID OR IF THE APPLICANT SHOULD FAIL TO ACCEPT ANY CONDITION FOLLOWING APPROVAL, THE APPROVAL OF THE PRELIMINARY PLAN SHALL BE NULL AND VOID.
- THE USE AND DEVELOPMENT OF THE SUBJECT PROPERTY SHALL BE IN ACCORDANCE WITH THE APPROVED PRELIMINARY PLAN AS SUBMITTED AND APPROVED.
- UTILITIES SHALL BE PLACED IN APPROPRIATE LOCATIONS RELATIVE TO THE PUBLIC RIGHTS OF WAY AND CO-LOCATION OF WATER AND SEWER UTILITIES WITH THE REQUIRED STREET TREES (PER THE CITY TSSM) SHALL BE PURSUED BY THE APPLICANT AND DESIGNER.
- A TREE PRESERVATION PLAN AND TREE REMOVAL PERMIT SHALL BE REQUIRED FOR THIS PROJECT AND CITY STAFF SHALL ISSUE THESE BASED ON ACCEPTABLE LIMITS OF CLEARING AND TREE PRESERVATION.
- TREES DESIGNATED TO BE PRESERVED SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION AND TREE PROTECTION FENCING SHALL BE NOTED ON THE CONSTRUCTION PLANS. TREE CLEARING WILL BE LIMITED TO ESSENTIAL SITE IMPROVEMENTS WITHIN THE PROJECT LIMITS AS SHOWN ON THE APPROVED SITE PLAN.
- IF NECESSARY, RESOURCE AREAS, BUFFERS AND SET BACKS PER REQUIREMENTS OF THE LDC SHALL BE SHOWN AND LABELED ON THE PRELIMINARY PLAN.
- ALL EXISTING AND PROPOSED PUBLIC AND NON-MUNICIPAL EASEMENTS SHALL BE ADDED AS NECESSARY TO THE PRELIMINARY PLAN.
- AN ACCEPTABLE PRELIMINARY PLAN WHICH ADEQUATELY ADDRESSES ALL TRC/SRB COMMENTS SHALL BE SUBMITTED FOR SIGNATURE WITHIN THIRTY (30) CALENDAR DAYS OF SRB APPROVAL.
- THE USE OF PINE STRAW AS GROUND COVER SHALL BE PROHIBITED WITHIN TEN (10) FEET OF ANY COMBUSTIBLE EXTERIOR CONSTRUCTION.
- REQUIREMENTS OF THE APPROVED TRAFFIC IMPACT ANALYSIS (TIA) MUST BE COMPLETED PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
- ALL CITY, STATE AND FEDERAL REGULATIONS SHALL BE FOLLOWED.
- THE MODIFICATION OF THE RESIDENTIAL DRIVEWAY STANDARD DETAIL TO ELIMINATE THE 5-FOOT RESIDENTIAL FLARED TAPER AND DIRECTLY CONNECT DRIVEWAYS OF UP TO 18 FEET IN WIDTH PERPENDICULAR TO THE STREET USING A 3-FOOT CURB RADIUS SHALL BE PERMITTED ON THE CONDITION THAT AUTOTURN DATA ALLOW SATISFACTORY USE OF THIS DRIVEWAY BY SUV'S.
- ADDITIONAL BUFFERING SHALL BE PROVIDED TO THE FURTHEST EXTENT POSSIBLE BETWEEN THE CRADDOCK DRIVE AND THE EXISTING DUKE-PROGRESS ENERGY UTILITY EASEMENT LOCATED ALONG THE EASTERN PROPERTY BOUNDARY.

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

COUNTY AND AGENCY CONTACTS

- City of Wilmington Planning Department**
102 North Third Street
PO BOX 1810
Wilmington, NC 28402-1810
(910)342-2782
Contact: Brian Chambers
Email: Brian.Chambers@wilmingtonnc.gov
- City of Wilmington Engineering**
212 Operations Center Drive
PO BOX 1810
Wilmington, NC 28402-1810
(910)341-7807
Contact: Rob Gordon
Email: Rob.Gordon@wilmingtonnc.gov
- New Hanover County Sediment and Erosion Control**
230 Government Center Drive, Suite 160
Wilmington, NC 28403
(910)798-7432
Contact: Beth Wetherill
Email: BWetherill@nhcgov.com
- Cape Fear Public Utility Authority**
235 Government Center Drive
Wilmington, NC 28403
(910)332-6626
Contact: David Dailey
Email: David.Dailey@cfpua.org

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____



243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048 , Fax: (910)251-8282
License: F-1222

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PROJECT DATA

NAME OF PROJECT:
RIVERLIGHTS- PHASE 4-5 AGE QUALIFIED NEIGHBORHOOD
WILMINGTON, NORTH CAROLINA

OWNER/DEVELOPER:
NNP IV-CAPE FEAR RIVER, LLC
109 PIER MASTER POINT, SUITE 209
WILMINGTON, NC 28412
PHONE: (910)951-0707
CONTACT: ANDY KERKHOFF
EMAIL: AKERKHOFF@NEWLANDCO.COM

PREPARED BY:
MCKIM & CREED, INC
243 NORTH FRONT ST
WILMINGTON, NC 28401
PHONE: (910)343-1048
CONTACT: KATHRYN ESPINOZA, PE
EMAIL: KESPINOZA@MCKIMCREED.COM

CONSTRUCTION NOTES

- CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.
- CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING THE LOCATION OF EXISTING UTILITIES FROM THE APPROPRIATE PARTIES PRIOR TO CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES, USING FLAGMEN, ETC. AS NECESSARY TO INSURE SAFETY TO THE PUBLIC.
- THESE DRAWINGS SHOW INFORMATION OBTAINED FROM THE AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST ALONG THE LINES OF WORK AND BELOW THE SURFACE OF THE GROUND. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITIES FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION, AND SUCH INFORMATION IS BEING SHOWN ONLY FOR THE CONVENIENCE OF THE CONTRACTOR WHO MUST VERIFY THE INFORMATION TO HIS OWN SATISFACTION DURING THE BIDDING AND CONSTRUCTION PHASES. IF THE CONTRACTOR RELIES ON SAID INFORMATION, HE DOES SO AT HIS OWN RISK. THE GIVING OF THE INFORMATION ON THE CONTRACT DRAWINGS WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO SUPPORT AND PROTECT ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES, WHETHER ABOVE OR BELOW GRADE.
- SHOULD ANY DAMAGE OCCUR TO EXISTING UTILITIES, IT SHALL BE REPAIRED SOLELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL VERIFY EXISTING INVERTS PRIOR TO CONSTRUCTION OF UNDERGROUND UTILITIES. TEST PITTING OF EXISTING LINES PRIOR TO CONSTRUCTION, IF NECESSARY, SHALL BE COORDINATED WITH THE OWNER.
- ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND LOCAL BUILDING CODES.
- ALL DISTURBED AREAS SHALL BE SMOOTHLY GRADED TO PROMOTE POSITIVE DRAINAGE AND STABILIZED WITH TOPSOIL, SEED, AND MULCH. IF SETTLEMENT OCCURS, TOPSOIL, SEEDING, AND MULCH SHALL BE REPEATED UNTIL SETTLEMENT SUBSIDES. (SEE EROSION AND SEDIMENT CONTROL DETAILS AND SPECIFICATIONS.)
- WATER MAINS WILL BE INSTALLED AT A DEPTH THAT WILL PROTECT 36" COVER OVER THE PIPES BELOW PROPOSED GRADE UNLESS SHOWN OTHERWISE ON THESE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.
- ALL WATER VALVES, BOXES, AND FIRE HYDRANT ASSEMBLES SHALL BE SET AND ADJUSTED TO FINISHED GRADE.
- THE OWNER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, BOTH TEMPORARY AND PERMANENT.
- THE CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL SURVEY CONTROL PRIOR TO STAKING OUT CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS.
- FIRE HYDRANTS SHALL BE PLACED A MINIMUM DISTANCE OF 6 FEET FROM BACK OF CURB AND SHALL HAVE A CLEAR SPACE OF 3 FEET FROM ANY PERMANENT STRUCTURE PER CFPUA STANDARDS.
- ALL SELECT AND BORROW MATERIAL SHALL MEET CRITERIA SET FORTH BY SECTIONS 1016 AND 1018 OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION'S STANDARDS AND SPECIFICATIONS FOR ROADS AND STRUCTURES. SEE SECTION FOR PLACEMENT AND COMPACTION INFORMATION.
- THE ENGINEER AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION OF THE PIPES PRIOR TO CONSTRUCTION. IF DAMAGE OCCURS TO THESE PIPES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PIPES(S).
- EXISTING PAVING, CONCRETE, AND OTHER UNSUITABLE MATERIALS INCLUDING UNDERCUT EXCAVATION SHALL NOT BE USED AS FILL MATERIAL AND SHALL BE DISPOSED OF OUTSIDE THE PROJECT LIMITS AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR ALL PERMITTING AND FEES FOR DISPOSAL.
- ALL TREES, STUMPS, ROOT MAT, ETC. SHALL BE ENTIRELY REMOVED REGARDLESS OF DEPTH. BURIAL OF ORGANIC MATERIAL WITHIN THE PROJECT LIMITS IS NOT PERMITTED. OPEN BURNING OF DOWNED TREES AND STUMPS IS NOT PERMITTED. CHIPPED MATERIALS MUST BE REMOVED PRIOR TO THE PLACEMENT OF EMBANKMENT OR TOPSOIL.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO OBTAIN OFF-SITE SPOIL AREAS FOR DISPOSAL OF EXCESS AND/OR UNSUITABLE MATERIALS AS NECESSARY. OFF-SITE SPOIL AREAS MUST BE SUBMITTED TO THE ENGINEER AND APPLICABLE REGULATORY AGENCIES PRIOR TO UTILIZATION BY THE CONTRACTOR. NO AREAS DESIGNATED AS WETLANDS WILL BE PERMITTED FOR USE AS A DISPOSAL SITE. THE CONTRACTOR SHALL SUBMIT DOCUMENTATION TO THE ENGINEER THAT NO WETLANDS WILL BE IMPACTED. THE ENGINEER WILL NOT CONSIDER ANY DELAYS OR MONETARY CLAIMS RESULTING FROM THE CONTRACTOR'S FAILURE OR DIFFICULTY IN FINDING NECESSARY DISPOSAL SITES TO MEET THE TIME FRAMES AND CAPACITIES REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PLANS, PERMITS, EROSION AND SEDIMENT CONTROL MEASURES, ETC. REQUIRED BY THE APPROPRIATE REGULATORY AGENCIES FOR UTILIZING OFF-SITE SPOIL AREAS. THE CONTRACTOR SHALL CERTIFY TO THE ENGINEER THAT ALL REQUIRED PERMITS HAVE BEEN OBTAINED PRIOR TO UTILIZING THE OFF-SITE SPOIL AREAS. ALL COSTS FOR PROCURING AND UTILIZING THE OFF-SITE SPOIL AREAS ARE TO BE INCIDENTAL TO THE BASE BID.

DEMOLITION NOTES

- THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR CONTROLLING DUST GENERATED BY THE WORK, INCLUDING BUT NOT LIMITED TO DEMOLITION AND CONSTRUCTION ACTIVITIES, SITE VEHICULAR TRAFFIC AND RELATED OPERATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR HAVING ALL EXISTING UTILITIES LOCATED PRIOR TO BEGINNING ANY DEMOLITION. CONTRACTOR SHALL CONTACT NC ONE CALL AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED.
- EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE GROUND, ARE BASED ON 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 OWNER'S REPRESENTATIVE AND ENGINEER IMMEDIATELY.
- THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DISCONNECTING AND ABANDONING ALL EXISTING UTILITIES WITH THE OWNER UNLESS OTHERWISE NOTED. ALL EXISTING UTILITIES AND ASSOCIATED PIPING, ETC. NOT IN USE ON THE SITE SHALL BE PROPERLY ABANDONED AND REMOVED AS REQUIRED. COORDINATE WITH THE OWNER.
- THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING UTILITIES THAT REMAIN IN SERVICE DURING DEMOLITION.
- THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS AND SLOPES ON AND OFF SITE IN ACCORDANCE WITH THE EROSION CONTROL MEASURES SPECIFIED ON THE PLANS AND IN THE SPECIFICATIONS. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER TO DETERMINE WHO IS RESPONSIBLE FOR PROVIDING THE PERMANENT STABILIZATION MEASURES AND THE TYPE OF PERMANENT MEASURES PRIOR TO BEGINNING DEMOLITION AND CONSTRUCTION. THE PERMANENT STABILIZATION MEASURES SHALL BE IN PLACE AND ACCEPTABLE TO THE OWNER'S REPRESENTATIVE AND ENGINEER PRIOR TO PROJECT CLOSEOUT. COORDINATE INSPECTION WITH THE OWNER AND ENGINEER PRIOR TO PROJECT CLOSEOUT.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONTACTING THE ENGINEER FOR THE REQUIRED INSPECTIONS ON THE PROJECT.
- WETLANDS DO NOT EXIST ON SITE. WETLANDS WILL NOT BE DISTURBED DURING CONSTRUCTION OF THIS PROJECT.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____



APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

EXCAVATION, GRADING, AND BACKFILLING NOTES

- ANY UNDERCUTTING IN GOOD SOIL SHALL BE REPLACED AND THE REPLACEMENT MATERIAL SHALL BE COMPACTED TO NINETY-FIVE (95) PERCENT OF MAXIMUM DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT, AS DETERMINED BY THE ASTM D 698 STANDARD PROCTOR TEST METHOD. IN THE EVENT THAT MATERIAL ENCOUNTERED AT PIPE GRADE, SUBGRADE OF PARKING OR ROADWAYS AND SUBGRADE OF BUILDING FOUNDATIONS IS FOUND TO BE SOFT, SPONGY, OR IN ANY OTHER WAY UNSUITABLE, THE CONTRACTOR SHALL NOTIFY THE GEOTECHNICAL ENGINEER IMMEDIATELY. SUCH UNSUITABLE MATERIAL SHALL BE REMOVED TO A DEPTH AS SPECIFIED BY THE GEOTECHNICAL ENGINEER AND REPLACED WITH A MINIMUM OF SIX (6) INCHES OF STONE, OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- BEFORE BACKFILLING IS COMMENCED OVER PIPES AND OTHER INSTALLATIONS, EARTH FILL SHALL BE SOLIDLY TAMPED AROUND AND ABOVE THE PIPE TO A DEPTH OF ONE (1) FOOT ABOVE THE TOP OF THE PIPE. CARE SHALL BE TAKEN TO PREVENT ANY DISTURBANCE TO THE PIPE OR DAMAGE TO NEWLY MADE JOINTS. THE FILLING OF THE TRENCH SHALL BE CARRIED OUT SIMULTANEOUSLY ON BOTH SIDES OF THE PIPES IN SUCH A MANNER THAT INJURIOUS SIDE PRESSURES DO NOT OCCUR.
- THE MATERIAL FOR BACKFILLING SHALL BE FREE FROM ALL PERISHABLE AND OBJECTIONABLE MATERIALS. BEFORE PLACING ANY BACKFILL, ALL RUBBISH, FORM, BLOCKS, WIRES OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM EXCAVATION. THE BACK-FILLING OVER PIPES SHALL BE PLACED IN LAYERS NOT OVER SIX (6) INCHES THICK AND COMPACTED TO A MINIMUM DENSITY OF NINETY-FIVE (95) PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST TO A DEPTH OF 12 INCHES BELOW FINISHED GRADE. THE LAST 12 INCHES OF BACKFILL SHALL BE PLACED IN LAYERS NOT OVER SIX (6) INCHES THICK AND COMPACTED TO A MINIMUM DENSITY OF NINETY-EIGHT (98) PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR COMPACTION TEST.

STORM DRAINAGE AND GRADING NOTES

- IN ACCORDANCE WITH NC GENERAL STATUTES, NPDES REGULATIONS, AND NCDENR REQUIREMENTS, STORMWATER DISCHARGE OUTFALLS SHALL BE INSPECTED BY THE CONTRACTOR. INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR AFTER EACH STORM EVENT OF 1/2 INCH OR GREATER, WITH ONE WEEKLY INSPECTION MINIMUM. NCDENR STANDARD INSPECTION REPORTS SHALL BE PREPARED AND SIGNED WITH COPIES PROVIDED TO THE OWNER, ARCHITECT, AND ENGINEER, BY THE CONTRACTOR.
- INLET PROTECTION SHALL BE INSTALLED AROUND OUTFALL. DEVICES SHALL BE CONSTRUCTED TO FINAL PROPOSED CONDITION UPON STABILIZATION OF CONTRIBUTING GROUND SURFACES AND REMOVAL OF SEDIMENT FROM STORM PIPES.
- ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER 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.
- UNLESS OTHERWISE NOTED, GRADES AND SPOT ELEVATIONS NOTED ON PLANS INDICATE FINISHED GRADE OR PAVEMENT SURFACE. ALL DIMENSIONS ARE MEASURED TO THE BACK OF CURB UNLESS OTHERWISE INDICATED.
- COORDINATION WITH CITY SURVEYOR TO DETERMINE MONUMENTATION IS REQUIRED. NOTE ON PLANS.
- CONTRACTOR TO COORDINATE WITH CITY OF WILMINGTON CONSTRUCTION INSPECTOR TO ENSURE EDGE OF CATCH BASIN GRATES ALIGN WITH TRAVEL LANE AS REQUIRED.

MATERIALS AND EASEMENT NOTES:

- ALL CATCH BASINS ARE NCDOT STD 840.02, 840.03
- ALL DROP INLETS ARE NCDOT STD 840.14, 840.16
- ALL STORM DRAINAGE PIPING TO BE CLASS III RCP, UNLESS OTHERWISE NOTED
- ALL STORM DRAINAGE PIPING CONVEYING DISCHARGE FROM THE PUBLIC RIGHT-OF-WAY SHALL BE CONTAINED WITHIN A PUBLIC DRAINAGE EASEMENT WHOSE WIDTH IS DETERMINED BY THE DEPTH OF BURY
- ALL SANITARY SEWER LINES AND WATERLINES SHALL BE C-900 PVC, UNLESS OTHERWISE NOTED AND MEET CAPE FEAR PUBLIC UTILITY SPECIFICATIONS
- A PUBLIC UTILITY EASEMENT SHALL BE RESERVED WITHIN THE STREET RIGHT-OF-WAY. A 10' NON-MUNICIPAL EASEMENT SHALL BE RESERVED ALONG BOTH SIDES OF ALL STREETS
- WATER AND SANITARY SEWER UTILITIES ARE PUBLIC - CAPE FEAR PUBLIC UTILITY AUTHORITY

UTILITY COMPANY CONTACTS

DUKE/PROGRESS ENERGY: SID LIVINGSTON/MARK HATFIELD (910) 452-2777
 DUKE ENERGY (TRANSMISSION): BILL WILDER (910) 772-4903
 AT&T (BELLSOUTH): JAMES BATSON (910) 341-1621
 TIME WARNER CABLE: ROBERT JOHN (910) 216-4494
 PIEDMONT NATURAL GAS: PAUL GONKA (910) 512-2841
 DJ MEDeiros (910) 431-3233
 CAPE FEAR PUBLIC UTILITY AUTHORITY (910) 332-6550

GROUND STABILIZATION CRITERIA		
SITE AREA DESCRIPTION	STABILIZATION TIMEFRAME	STABILIZATION TIMEFRAME EXCEPTIONS
PERMETER GRDES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	IF SLOPES ARE 10 FT 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 FT IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE (EXCEPT FOR PERIMETERS AND HOW ZONES)

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

SEAL

UTILITY NOTES

- SCHEDULE A PRECONSTRUCTION MEETING WITH CAPE FEAR PUBLIC UTILITY AUTHORITY 48 HOURS PRIOR TO CONSTRUCTION OF WATER AND SEWER LINES.
- WATER AND SANITARY SEWER UTILITY MAINS ARE PRIVATE BEYOND THE PUBLIC STREET RIGHT-OF-WAY.
- THIS PROJECT SHALL COMPLY WITH THE CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THE "FINAL APPROVAL".
- ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPUA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO CFPUA AND APPROVED BY USCFCCHHR OR ASSE.
- IF THE CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- WATER: 1.5" & 2" PVC MAINS SHALL BE CONSTRUCTED USING ASTM D2241, IPS, GASKETED PIPE, SDR 21. 4"-12" PVC MAINS AND SERVICES SHALL BE CONSTRUCTED USING AWWA C-900 PVC, CL235 (DR-18). REQUIREMENTS OF AWWA C900 WITH ELASTOMERIC PUSH-ON JOINTS
- CONFORMING TO THE REQUIREMENTS OF ASTM D1785 WITH SOLVENT WELD JOINTS CONFORMING TO ASTM D2672, FOR PIPE SIZES 8" THROUGH 12", PIPE SHALL BE CLASS 150, DR18 CONFORMING TO THE CONFORMING TO ASTM D3212 OR ASTM D3139.
- WATER AND SEWER SERVICES CANNOT BE ACTIVATED ON NEW MAINS UNTIL ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY PUBLIC WATER SUPPLY SECTION OF NCDENR AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY OF NCDENR.
- PVC WATER MAINS AND POLYETHYLENE SERVICES ARE TO BE MARKED WITH NO. 10 SINGLE STRAND INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STROPPED TO RARI WIRE AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
- SITE UTILITY CONTRACTOR TO PROVIDE WATER AND SANITARY SEWER SERVICE TO WITHIN 5 FEET OF THE BUILDING. CONTRACTOR SHALL COORDINATE SITE PLAN CONNECTIONS WITH THE ARCHITECTURAL BUILDING PLANS.
- MAXIMUM BENDING RADIUS FOR 8" C-900 PVC WATER MAIN BENDS IS 380' (ONE-HALF MANUFACTURER'S RECOMMENDED ALLOWABLE LONGITUDINAL BENDING). CONTRACTOR SHALL PLACE FITTINGS AS NECESSARY TO KEEP WATER MAIN IN ALIGNMENT AND ACHIEVE ANY RADIUS LESS THAN 380'.
- UNDERGROUND UTILITIES: ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND, EXCEPT WHERE SUCH PLACEMENT IS PROHIBITED OR DEEMED IMPRACTICAL BY THE UTILITY PROVIDER. UNDERGROUND TERMINAL FACILITIES FOR STREET LIGHTING ALONG THE PUBLIC STREETS ABUTTING THE SUBJECT SITE SHALL BE INSTALLED BY THE DEVELOPER.
- MINIMUM OF 36" COVERAGE ABOVE ALL WATERMANS.
- MINIMUM OF 36" VERTICAL SEPARATION BETWEEN WATERLINES AND STORMDRAIN CURB INLETS
- A VARIANCE IS NOT ANTICIPATED FOR ANY NORTH CAROLINA DIVISION OF WATER QUALITY (DWQ) REQUIREMENT.
- PLANS ARE IN COMPLIANCE WITH CAPE FEAR PUBLIC UTILITY AUTHORITY TECHNICAL STANDARDS AND SPECIFICATIONS.

RELATION OF WATER MAINS TO SANITARY SEWERS:

- LATERAL SEPARATION OF SANITARY SEWERS AND WATER MAINS: WATER MAINS SHALL BE LAID AT LEAST 10 FEET LATERALLY FROM EXISTING OR PROPOSED SEWERS UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT A 10 FOOT LATERAL SEPARATION, IN WHICH CASE:
 - THE WATER MAIN IS LAID IN A SEPARATE TRENCH, WITH THE ELEVATION OF THE BOTTOM OF THE WATER MAIN AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER, OR
 - THE WATER MAIN IS LAID IN THE SAME TRENCH AS THE SEWER WITH THE WATER MAIN LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND ABOVE THE TOP OF THE SEWER.
- CROSSING A WATER MAIN OVER A SEWER MAIN: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER MAIN WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER MAIN. UNLESS LOCAL CONDITIONS OR BARRIERS PREVENT AN 18 INCH VERTICAL SEPARATION - IN WHICH CASE BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS THAT ARE EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
- CROSSING A WATER MAIN UNDER A SEWER MAIN: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS UNDER A SEWER MAIN BOTH THE WATER MAIN AND THE SEWER MAIN SHALL BE CONSTRUCTED OF FERROUS MATERIALS AND WITH JOINTS EQUIVALENT TO WATER MAIN STANDARDS FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE POINT OF CROSSING.
- CROSSING A SEWER MAIN/WATER MAIN OVER OR UNDER A STORM DRAIN: WHENEVER IT IS NECESSARY FOR A SEWER MAIN/WATER MAIN TO CROSS A STORM DRAIN PIPE, THE SEWER MAIN/WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE OUTSIDE OF THE SEWER MAIN/WATER MAIN NEAREST TO THE OUTSIDE OF THE STORM DRAIN PIPE SHALL MAINTAIN A 24 INCH CLEAR SEPARATION DISTANCE HORIZONTAL, OR THE SEWER MAIN/WATER MAIN SHALL EITHER BE CONSTRUCTED OF DUCTILE IRON PIPE OR ENCASED IN EITHER CONCRETE OR DUCTILE IRON PIPE FOR AT LEAST 10 FEET ON EITHER SIDE OF THE CROSSING.

EROSION CONTROL NOTES

- ANY GRADING BEYOND THE DENUDED LIMITS SHOWN ON THE PLAN IS A VIOLATION OF THE COUNTY EROSION CONTROL ORDINANCE AND IS SUBJECT TO A FINE.
- GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF STATE LAW AND IS SUBJECT TO A FINE. ANY BUILDER THAT ANTICIPATED THE DISTURBANCE OF MORE THAN ONE ACRE WILL BE REQUIRED TO GET AN EROSION CONTROL PERMIT FROM NEW HANOVER COUNTY.
- GROUND COVER MUST BE PROVIDED ON EXPOSED SLOPES WITHIN 21 CALENDAR DAYS FOLLOWING COMPLETION OF ANY PHASE OF GRADING; AND, A PERMANENT GROUND COVER FOR ALL DISTURBED AREAS WITHIN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER) FOLLOWING COMPLETION OF CONSTRUCTION OR DEVELOPMENT.
- ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF NEW HANOVER COUNTY.
- SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
- ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY THE FIELD INSPECTOR, ENGINEER, AND OWNER.
- IF ACTIVE CONSTRUCTION CEASES IN ANY AREA FOR MORE THAN 15 WORKING DAYS OR 90 CALENDAR DAYS (WHICHEVER IS SHORTER), ALL DISTURBED AREAS MUST BE SEEDED, MULCHED, AND TACKED.
- WITHIN 24 HOURS FOLLOWING ANY RAIN EVENT, THE CONTRACTOR SHALL INSPECT AND REPAIR, AS NECESSARY, ALL DAMAGED EROSION CONTROL MEASURES.
- ALL ACTIVITY AND INSTALLATION OF EROSION CONTROL MATTING WILL BE COMPLETE PRIOR TO ANY RAIN EVENT.

EROSION CONTROL MAINTENANCE PLAN:

- ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED AND REPAIRED, AS NECESSARY, EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF EVERY ONE-HALF (0.5) INCH OR GREATER RAINFALL.
- ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
- SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP. THE SEDIMENT FENCE WILL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
- ALL AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
- STONE CONSTRUCTION ENTRANCE TO BE CLEANED WHEN SEDIMENT ACCUMULATIONS ARE VISIBLE OR SEDIMENT IS TRACKED ON TO THE PAVEMENT. STONE WILL BE PERIODICALLY TOP DRESSED WITH 2 INCHES OF #4 STONE TO MAINTAIN 6 INCH DEPTH. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS REQUIRED.
- INSPECT TEMPORARY DIVERSIONS AND CHECK DAMS ONCE A WEEK AND AFTER EVERY RAINFALL. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE AND CHECK DAM. CAREFULLY CHECK OUTLETS AND MAKE TIMELY REPAIRS AS NEEDED. WHEN THE AREA PROTECTED IS PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL AND APPROPRIATELY STABILIZE IT.
- INSPECT TEMPORARY SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2" OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN IT ACCUMULATES TO ONE-HALF THE DESIGN DEPTH. PLACE REMOVED SEDIMENT IN AN AREA WITH SEDIMENT CONTROLS.
- CHECK THE SEDIMENT BASIN EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE RISER AND POOL AREA.
- INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (0.5" OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED. INLET PROTECTION SHOULD BE CLEANED OUT WHEN IT IS HALF FULL.
- INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE PROMPTLY. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEAN OUT. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH. AFTER THE CONTRIBUTING DRAINAGE AREAS HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.
- INSPECT THE SKIMMER FOR CLOGGING. PULL THE SKIMMER TO THE SIDE OF THE BASIN AND REMOVE ANY DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER AND THE ARM OR BARREL PIPE FOR CLOGGING; IF CLOGGED, REMOVE THE DEBRIS.

NOTE (G.S. 113A-57 (2))

THE ANGLE FOR GRADED SLOPES AND FILLS SHALL BE NO GREATER THAN THE ANGLE THAT CAN BE RETAINED BY VEGETATIVE COVER OR OTHER ADEQUATE EROSION CONTROL DEVICES OR STRUCTURES. IN ANY EVENT, SLOPES LEFT EXPOSED WILL, WITHIN 21 CALENDAR DAYS OF COMPLETION OF ANY GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH TEMPORARY OR PERMANENT GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION.

CITY OF WILMINGTON STANDARD NOTES

- CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
- PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING SHALL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES AND NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
- ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST BE PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO ENSURE THAT NO CLEARING, GRADING, OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS.
- NO EQUIPMENT IS ALLOWED ON SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING IS INSTALLED AND APPROVED. PROTECTIVE FENCING IS TO BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT, AND CONTRACTORS SHALL RECEIIVE ADEQUATE INSTRUCTION ON TREE PROTECTION METHODS.
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING AT (910)341-7888 AND CONSTRUCTION MANAGEMENT (910)341-7807 TO DISCUSS PAVEMENT MARKINGS PRIOR TO INSTALLATION.
- IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
- TRAFFIC CONTROL DEVICES (INCLUDING SIGNS AND PAVEMENT MARKINGS) IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
- ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
- ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
- CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING AT (910)341-7888 TO DISCUSS STREET LIGHTING OPTIONS.
- IF THE CONTRACTOR DESIRES WATER FOR CONSTRUCTION HE SHALL APPLY WITH THE CAPE FEAR PUBLIC UTILITY AUTHORITY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
- CONTACT TRAFFIC ENGINEERING TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN.
- NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
- IF UNITS ARE SOLD AT ANY POINT, THE BUYER MUST RECEIVE A SUBDIVISION STREET DISCLOSURE STATEMENT.
- ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
- TACTILE WARNING MATS WILL BE INSTALLED ON ALL WHEELCHAIR RAMPS.
- CONTACT TRAFFIC ENGINEERING AT (910)341-7888 TO COORDINATE PARKING SIGNAGE AND/OR MARKINGS PRIOR TO INSTALLATION.
- CONTACT TRAFFIC ENGINEERING AT (910)341-7888 FORTY -EIGHT (48) HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
- A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
- A LANDSCAPING PLAN INDICATING LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO RECORDING THE FINAL PLAN.

FIRE PROTECTION NOTES

- HYDRANT MUST BE WITHIN 150' OF THE FDC.
- THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
- LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPAC SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
- HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB PER CITY OF WILMINGTON STANDARDS. HYDRANTS WILL BE LOCATED WITHIN 6' OF THE CURB PER CFPUA STANDARDS.
- COMBUSTIBLE MATERIALS MAY NOT BE STORED OR ERECTED ONSITE WITHOUT CITY FIRE INSPECTOR APPROVAL.
- NEW HYDRANTS MUST BE AVAILABLE FOR USE PRIOR TO CONSTRUCTION.
- UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY. THE BUILDING CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
- A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM UNDERGROUND UTILITIES
- CONTRACTOR SHALL MAINTAIN AN ALL-WEATHER ACCESS TO ALL PORTIONS OF THE JOBSITE WHERE COMBUSTIBLES ARE PRESENT AT ALL TIMES DURING CONSTRUCTION.
- TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.
- FIRE DEPARTMENT ACCESS WIDTHS SHALL BE A MINIMUM OF 20-FEET UNLESS LESSER WIDTHS ARE APPROVED BY THE FIRE CODE OFFICIAL.

REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITAL	01/14/2018
H	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITAL, STORMWATER RESUBMITAL AND NEW HANOVER COUNTY PHASE 2 SUBMITAL	11/12/2018
H	CFPUA ADDITIONAL INFORMATION	10/12/2018
G	CFPUA RE-SUBMITAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITAL	07/19/2018
E	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITAL	11/01/2017
A	CITY OF WILMINGTON SUBVISION REVIEW BOARD SUBMITAL	08/08/2017

RIVERLIGHTS
 AGE QUALIFIED PHASE 4 & 5
 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

DATE: 01/25/2018	SCALE	FILE NUMBER: G-002
MCE PROJ. # 02735-0177	HORIZONTAL: N/A	DRAWING NUMBER
DRAWN EEM/ALM/MDH	VERTICAL: N/A	2
DESIGNED EEM/KCBE		
CHECKED KCBE		
PROJ. MGR. KCBE		
STATUS: PRELIMINARY DESIGN		REVISION K
NOT FOR CONSTRUCTION		

CAPE FEAR PUBLIC UTILITY AUTHORITY CONSTRUCTION PROCEDURE:

- THE DESIGN ENGINEERING SHALL SUBMIT 3 SETS OF FINAL DESIGN PLANS AND APPROVED SPECIFICATIONS PRIOR TO SCHEDULING THE PRE-CONSTRUCTION MEETING.
- SUBMITTALS FOR MATERIALS SHOULD BE MADE IN ACCORDANCE WITH CFPWA SPECIFICATION SECTION 01340. MATERIAL SHOP DRAWING SUBMITTALS ARE REQUIRED FOR ALL PHYSICAL ASSETS TO ENSURE THEY COMPLY WITH CFPWA TECHNICAL SPECIFICATIONS AND DETAILS. THESE SUBMITTALS ARE PROJECT-SPECIFIC, AND MUST INCLUDE OR HIGHLIGHT ONLY THE SPECIFIC MATERIALS TO BE USED IN THE PROJECT. THE SUBMITTAL APPROVAL PROCESS IS GENERALLY AS FOLLOWS:

MATERIAL VENDOR FURNISHES SUBMITTALS TO THE CONTRACTOR BASED ON THE PROJECT REQUIREMENTS.

CONTRACTOR REVIEWS THE SUBMITTALS FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DRAWINGS, CFPWA TECHNICAL SPECIFICATIONS AND DETAILS, AND FORWARDS TO THE DEVELOPER'S ENGINEER-OF-RECORD WHEN COMPLETE.

THE DEVELOPER'S ENGINEER-OF-RECORD VERIFIES COMPLIANCE, STAMPS AND SIGNS THE SUBMITTAL, AND FORWARDS THE PACKAGE TO THE CFPWA CONSTRUCTION MANAGER. IF IT IS DETERMINED THAT THE MATERIAL SHOP DRAWING SUBMITTAL IS NOT IN COMPLIANCE, THE ENGINEER SHALL RETURN IT TO THE CONTRACTOR FOR CORRECTION AND RESUBMISSION AS NOTED ABOVE.

CFPWA'S CONSTRUCTION MANAGER REVIEWS THE SUBMITTAL FROM THE DEVELOPER'S ENGINEER-OF-RECORD, VERIFIES COMPLIANCE, AND NOTIFIES THE ENGINEER THAT THE MATERIALS ARE APPROVED FOR CONSTRUCTION. IF IT IS DETERMINED THAT THE MATERIAL SHOP DRAWING SUBMITTAL IS NOT IN COMPLIANCE, THE SUBMITTAL WILL BE RETURNED TO THE ENGINEER FOR CORRECTION AND RESUBMISSION AS NOTED ABOVE.

- ANY REQUEST FOR DEVIATIONS FROM THE STAMPED DRAWINGS AND MATERIAL SUBMITTALS MUST BE SUBMITTED TO THE CFPWA CONSTRUCTION MANAGER. THE DEVIATION WILL BE REVIEWED BY CFPWA STAFF. THE ENGINEER, CONTRACTOR AND CFPWA INSPECTOR WILL BE NOTIFIED IF IT IS APPROVED, NEEDS TO BE REVISED AND RESUBMITTED OR REJECTED. ANY CHANGES TO THE STAMPED CONSTRUCTION DOCUMENTS MADE IN THE FIELD BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER OF RECORD AND CFPWA CONSTRUCTION MANAGER. THE CFPWA INSPECTOR CANNOT APPROVE MAJOR CHANGES FROM THE STAMPED CONSTRUCTION DOCUMENTS.
- THE CFPWA INSPECTOR SHALL BE NOTIFIED WHEN ANY MATERIAL IS DELIVERED TO THE JOB SITE. THE CFPWA INSPECTOR WILL VERIFY THAT ALL MATERIALS MEET CFPWA SPECIFICATIONS, DETAILS, AND/OR APPROVED SUBMITTAL. THE CFPWA INSPECTOR WILL NOTIFY THE CONTRACTOR AND THE CFPWA CONSTRUCTION MANAGER OF ANY UNAPPROVED MATERIAL, AND THAT THE UNAPPROVED MATERIAL MUST BE REMOVED FROM THE PROJECT SITE.
- CONTRACTOR SHALL GIVE TWO (2) BUSINESS DAYS NOTIFICATION FOR SCHEDULING TO THE ASSIGNED CFPWA INSPECTOR FOR EACH OF THE FOLLOWING:

OPERATING A CFPWA VALVE (INCLUDES TAPPING VALVES)

WHEN BEGINNING CONSTRUCTION AND IF THE CONTRACTOR PULLS OFF THE SITE

LAYING OUT OF ANY CONNECTION IN EXISTING MANHOLE

CUTTING IN ANY NEW MANHOLES ON EXISTING LINES

CORING ANY MANHOLES

CONNECTING TO AN EXISTING SEWER FORCE MAINS

CONNECTING ONTO EXISTING WATER LINES

ANY BORES AND THREADING CARRIER PIPES

ALL CAMERA WORK, TESTING, CHLORINATION AND WATER SAMPLING

ALL TESTING

CAPE FEAR PUBLIC UTILITY AUTHORITY TESTING PROCEDURE:

- ALL STRUCTURES, PRESSURE PIPING AND GRAVITY SEWER PIPING SHALL BE TESTED BY THE CONTRACTOR AS SPECIFIED IN THE CFPWA SPECIFICATIONS IN ACCORDANCE WITH APPLICABLE REGULATIONS AND AS DIRECTED BY THE CFPWA INSPECTOR. ALL TESTING MUST BE CONDUCTED IN THE PRESENCE OF THE CFPWA INSPECTOR. THE CONTRACTOR IS TO GIVE TWO (2) BUSINESS DAYS NOTIFICATION FOR SCHEDULING, TO THE ASSIGNED CFPWA INSPECTOR FOR ALL TESTING.

- ALL PRESSURE PIPE LINES MUST BE SUBJECTED TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE APPROPRIATE CFPWA SPECIFICATION. THESE PIPE LINES SHALL BE TESTED TO 150 PSI FOR A PERIOD OF TWO (2) HOURS. IF THE PRESSURE DROPS MORE THAN THREE (3) PSI, THE TEST FAILS. REFER TO THE APPROPRIATE CFPWA SPECIFICATION FOR MORE INFORMATION ON THE PROCEDURE.

- ALL WATER MAINS AND SERVICES MUST BE FLUSHED, CHLORINATED AND SAMPLED IN ACCORDANCE WITH THE CFPWA SPECIFICATION 02660 AND AS DIRECTED BY THE CFPWA INSPECTOR.

- SEWER LINE SEGMENT TESTING: EACH SEWER LINE SEGMENT (THE SEWER MAIN BETWEEN MANHOLES) SHALL BE TESTED:

THIRTY (30) DAYS AFTER INSTALLATION AND PRIOR TO FINAL ACCEPTANCE OF THE PROJECT, ALL SEWER LINE SEGMENTS AND ALL SERVICES SHALL BE CAMERA INSPECTED AND VIDEO RECORDED. THE CFPWA INSPECTOR WILL REVIEW THE VIDEO RECORDING FOR ACCEPTANCE.

AS AN ALTERNATIVE TO WAITING THIRTY (30) DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM, THE CFPWA MAY ACCEPT CERTIFICATION FROM A SOIL TESTING FIRM VERIFYING THAT THE BACKFILL OF THE TRENCH HAS BEEN COMPACTED TO AT LEAST 95% MAXIMUM DENSITY.

AFTER TWO (2) PAPER COPIES OF THE AS-BUILTS HAVE BEEN SUBMITTED TO THE CFPWA INSPECTOR.

AFTER GRAVEL HAS BEEN INSTALLED ON ALL ROADWAYS.

- VIDEO INSPECTION TESTING: THE CONTRACTOR SHALL PROVIDE A DVD(S) OF EACH SEWER LINE SEGMENT AND SERVICE LINE TO ENSURE THAT THE LINES MEET MINIMUM STANDARDS. THE DVD(S) WILL BE REVIEWED IN THE ORDER THEY ARE RECEIVED. THE TYPICAL REVIEW TIME IS GENERALLY TEN (10) TO FIFTEEN (15) BUSINESS DAYS BUT WILL DEPEND ON THE COMPLEXITY OF THE PROJECT, SIZE, QUALITY OF THE DVD(S), ETC.

THE MAIN LINE CAMERA INSPECTION MUST HAVE PROJECT NAME, FOOTAGES, MANHOLE NUMBERS, AND DATES OF INSPECTION.

THE SERVICE LINE CAMERA INSPECTION MUST INCLUDE PROJECT NAME, FOOTAGES, ADDRESS AND/OR LOT NUMBER, AND DATE OF INSPECTION.

THE CAMERA INSPECTION MUST SHOW THE FULL DIAMETER OF THE PIPE.

THE CAMERA INSPECTION MUST BE PERFORMED UPON COMPLETION OF CLEANING AND POTABLE WATER INTRODUCED INTO THE SYSTEM TO BE TESTED. ALL DEFECTS IN THE PIPELINE AND APPURTENANCES SHALL BE REMEDIATED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE CFPWA AND WILL BE RE-INSPECTED AS OUTLINED ABOVE.

- TWO (2) SETS OF AS-BUILT RECORD DRAWINGS SHALL BE PROVIDED IN ACCORDANCE WITH CFPWA SPECIFICATION SECTION 01720 FOR REVIEW.

CITY OF WILMINGTON RECORD DRAWING REQUIREMENTS:

RECORD DRAWINGS (AS-BUILTS) SHALL BE FILED IN THE ENGINEERING OFFICE FOR ASSET MANAGEMENT AND FUTURE USE. RECORD DRAWINGS SHOULD INDICATE WHAT HAS BEEN LOCATED BY THE SURVEYOR AND REFLECT WHAT IS ON AND IN THE GROUND AT A PARTICULAR SITE. ALL INFORMATION PERTAINS TO PUBLIC AND/OR PRIVATE INFRASTRUCTURE, SUCH AS STREETS, WATER, SEWER, AND DRAINAGE. ALL INFRASTRUCTURE SHOWN ON PLANS SHALL BE INDICATED PUBLIC OR PRIVATE. RECORD DRAWINGS SHALL BE SUBMITTED IN BOTH DIGITAL AND HARD COPY FORM. DIGITAL FILES SHALL BE AUTOCAD VERSION 2000 OR LATER. HARD COPIES SHALL HAVE AN ENGINEER'S SEAL AFFIXED AND THE SURVEYOR'S "STANDARDS OF PRACTICE" STATEMENT SIGNED AND SEALED.

PLANS SHALL INCLUDE

LOCATIONS, TOP ELEVATIONS, INVERT ELEVATIONS FOR ALL MANHOLES

FIRE HYDRANTS, WATER METERS AND SANITARY SEWER CLEANOUTS

NOTE OR SHOW UTILITY CROSSINGS

STREETS AND CURBLINES (LABELED "PUBLIC" OR "PRIVATE") WITH SPOT ELEVATIONS PROVIDED AT THE TOP OF CURB, EDGE OF PAVEMENT AND AT THE CENTERLINE EVERY 200 FT AND AT ALL STREETS SHOULD ALSO BE LABELED WITH THE COMPACTED STONE BASED THICKNESS AND ASPHALT THICKNESS

PAVEMENT MARKINGS AND ALL TRAFFIC SIGNS

SIDEWALKS WITH SPOT ELEVATIONS PROVIDED AT THE INSIDE EDGE, OUTSIDE EDGE AND AT THE CENTERLINE EVERY 100 FT AND AT ALL GRADE BREAKS

SIZE, SLOPE AND MATERIAL FOR ALL STORM DRAINAGE PIPES

FOR STORM DRAINAGE: TYPE/MATERIAL OF STRUCTURE, TOP ELEVATION, INVERTS IN AND OUT.

LOCATIONS OF STREET LIGHTING AND TYPE

VICINITY MAP

NORTH ARROW

DATE

SCALE FOR DRAWINGS SHALL BE 1"=20' OR 1"=30'; THE EXCEPTION BEING UTILITY PLANS, WHICH MAY BE SUBMITTED AT 1"=40' OR LESS. NO PLANS ACCEPTED AT 1"=50' OR MORE.

LEGEND

DETAILS IF NEEDED

VERTICAL DATUM

LOT NUMBERS AND LOT LINES

RIGHT-OF-WAY AND EASEMENT LINES

ANY STATE OF NC PERMIT NUMBERS (IF APPLICABLE)

HARD COPIES OF PLANS SHALL BE SIGNED/SEALED/DATED BY A LICENSED SURVEYOR

REQUIREMENTS FOR VIDEO INSPECTION OF STORM SEWER SYSTEMS:

GENERAL

- ALL EQUIPMENT USED FOR CLEANING AND VIDEO INSPECTION SHALL BE SPECIFICALLY DESIGNED FOR THE WORK DESCRIBED HEREIN. ALL CAMERAS SHALL BE SELF-POWERED UNITS WITH COLOR, PAN-AND-TILT, MINIMUM RESOLUTION OF 640X480, AND THE ABILITY TO OPERATE IN 100% HUMIDITY CONDITIONS. THE LENS SHALL HAVE NOT LESS THAN A 65-DEGREE VIEWING ANGLE WITH EITHER AUTOMATIC OR REMOTE FOCUS AND IRIS CONTROLS.

- ALL WORK DESCRIBED HEREIN SHALL BE COMPLETED IN ACCORDANCE WITH NASSCO PIPELINE ASSESSMENT AND CERTIFICATION PROGRAM/ MANHOLE ASSESSMENT AND CERTIFICATION PROGRAM (PACP/MACP) GUIDELINES.

- THE CITY OF WILMINGTON (COW) RESERVES THE RIGHT TO REFUSE ANY RECORDING OR REPORT ON THE BASIS OF SUBSTANDARD QUALITY.

EXECUTION

- ALL STORM PIPE INSTALLATIONS SHALL BE COMPLETELY INSTALLED A MINIMUM OF 30 DAYS PRIOR TO VIDEO INSPECTION. GENERALLY, INSPECTIONS SHALL OCCUR 30 DAYS PRIOR TO ASPHALT PAVING.

- THE CONTRACTOR'S CLEANING OPERATIONS SHALL BE PERFORMED PRIOR TO THE VIDEO INSPECTION, AND SHALL FULLY CLEAN THE PIPES AND STRUCTURES AS WELL AS REMOVE ALL SEDIMENT, ROOTS, DEBRIS, ETC.

- INSPECTIONS OF EACH PIPE SEGMENT SHALL BEGIN IN THE CENTER OF THE START DRAINAGE STRUCTURE AND END IN THE CENTER OF THE END DRAINAGE STRUCTURE. THE CAMERA SHALL BE MOVED THROUGH THE LINE IN EITHER DIRECTION AT A UNIFORM RATE BUT NOT GREATER THAN 30 FEET PER MINUTE (0.5 FT/SEC).

- THE CAMERA SHALL BE STOPPED AT EACH PIPE JOINT, DEFECT, IMPERFECTION, ETC. AT THESE LOCATIONS, THE CAMERA SHALL BE PANNED, TILTED AND ROTATED TO FULLY VIEW AND DOCUMENT THE CONDITION OF THE JOINTS, DEFECTS, IMPERFECTIONS, ETC.

- THE DIGITAL RECORDING SHALL BE FREE OF ELECTRICAL INTERFERENCE AND SHALL PRODUCE A CLEAR AND STABLE IMAGE.

- VIDEO OVERLAY SHALL INCLUDE, AT A MINIMUM, THE OWNER NAME, PROJECT NAME, STREET NAME, DIAMETER OF PIPE, PIPE MATERIAL, DATE AND TIME OF INSPECTION, DIRECTION OF VIDEO (UPSTREAM OR DOWNSTREAM), DRAINAGE STRUCTURE NUMBER DESIGNATION FOR EACH DRAINAGE STRUCTURE ON THE PIPE SEGMENT INSPECTED THAT CORRESPONDS TO THE CONSTRUCTION PLANS. A CONSTANT OVERLAY DISPLAY OF THE STREET NAME, DRAINAGE STRUCTURE DESIGNATIONS (I.E. MH START#/MH END#), DATE AND DISTANCE SHALL APPEAR ON THE SCREEN. THE INSPECTOR SHALL MOVE THE CONSTANT OVERLAY DISPLAY SO IT DOES NOT INTERFERE WITH THE INSPECTION REVIEW.

- INSPECTION OF EACH PIPE SEGMENT SHALL BE PROVIDED IN A SEPARATE VIDEO FILE. IN SITUATIONS WHERE REVERSE INSPECTION IS NECESSARY, THE REVERSE INSPECTION SHALL BE PROVIDED IN A SEPARATE VIDEO FILE.

- ALL OBSERVATIONS/DEFECTS SHALL BE NOTED BY THE INSPECTOR, WHERE A TEXT DISPLAY SHALL APPEAR DESCRIBING THE OBSERVATION/DEFECT. TEXT SHALL DISPLAY FOR A MINIMUM OF 4 SECONDS. THE VIDEO FILE RECORDING SHALL PAUSE AS THE OPERATOR SELECTS THE OBSERVATION/DEFECT NOTATION, ELIMINATING "ON HOLD" VIDEO.

- AN INSPECTION FORM SHALL BE COMPLETED AND SUBMITTED FOR EACH PIPE SEGMENT AND DRAINAGE STRUCTURE INSPECTED AND VIDEOED. AT A MINIMUM, OBSERVATION/DEFECT NOTES SHALL INCLUDE GENERAL INFO, DISTANCE WITHIN THE PIPE SEGMENT, DESCRIPTION, A SEVERITY RATING, AND A STILL PHOTOGRAPH.

DELIVERABLES

- CORRESPONDENCE FROM THE ENGINEER OF RECORD CONFIRMING THAT HE/SHE HAS REVIEWED THE VIDEO INSPECTION PACKAGE FOR COMPLIANCE TO CONTENT AND HAS MADE AN EVALUATION WITH RECOMMENDATIONS FOR REPAIR AS NEEDED PER THE CITY GUIDELINES.
- VIDEO INSPECTIONS CAPTURED LIVE OFF OF THE INSPECTION CAMERA TO BE SUBMITTED TO ON A DVD COMPATIBLE WITH WINDOWS MEDIA PLAYER. THE INSPECTIONS MUST BE IN ORDER AND COMPLETE.
- ALL INSPECTION REPORTS COMPLETED FOR EACH PIPE SEGMENT AND DRAINAGE STRUCTURE WHETHER VIDEOED OR NOT SHALL BE SUBMITTED.

CITY OF WILMINGTON MATERIALS DOCUMENTATION AND TESTING (PROVIDED FOR INFORMATION ONLY/SUBJECT TO CHANGE):

TEST TYPE:	LOCATION FOR:	TEST TARGET:	SPEC:	FREQUENCY AND TEST SECTIONS:	DOCUMENTATION:
SOIL PROCTORS	FOR USE WITH SOIL DENSITY TESTS	OPTIMUM MOISTURE AND MAXIMUM DRY DENSITY RESULTS	STANDARD PROCTOR - ASTM D698-A	EACH PROJECT, WHERE SOILS CHANGE	SOIL PROFILE TESTS (LAB)
DENSITY - NUCLEAR GAUGE	EMBANKMENTS	≥ 95% COMPACTION	NUCLEAR GAUGE	1 / BLOCK OR EVERY 500'	ON DELIVERY - COLLECT TICKETS
	PIPE TRENCH AND OVERFILL	≥ 95% COMPACTION	ASTM D6938	PER LIFT (12" MAX) EVERY 100'	
	SUBBASE (FINAL 12" FILL)	≥ 98% COMPACTION		"4 / BLOCK OR EVERY 500' WHERE PVMT < 32' WIDTH OR 8 / BLOCK OR EVERY 500' WHERE PVMT > 32' WIDTH"	
DENSITY - ALTERNATES	FOR ALL, SEE ABOVE	SEE ABOVE	SAND CONE METHOD -ASTM D1556 OR;	SEE ABOVE	DENSITY REPORTS.
PROOFROLL	SUBBASE AT GRADE	VISUAL CHECK OF STABILITY / MOISTURE	LOADED TANDEM TRUCK	ALL AREAS UNDER ROAD	PROOFROLL REPORT.
DYNAMIC CONE PENETROMETER	EXCAVATION BACKFILLS	# BLOWS PER 1.75" (TYP. 25-30)	ASTM D6951	ANY AREA TO CHECK FOR RELATIVE COMPACTION	REPORT.
DENSITY - NUCLEAR GAUGE	ROAD BASE (ABC)	EACH ≥ 95% WITH AVG. ≥ 98%	NUCLEAR GAUGE - ASTM D6938	"4 / BLOCK OR EVERY 500' WHERE PVMT < 32' WIDTH OR 8 / BLOCK OR EVERY 500' WHERE PVMT > 32' WIDTH"	DENSITY REPORTS.
	CURBLINES (ABC)	EACH ≥ 95% WITH AVG. ≥ 98%		4 / BLOCK OR EVERY 500'	
PROOFROLL	STONE BASE AT GRADE	VISUAL CHECK OF STABILITY / MOISTURE	LOADED TANDEM TRUCK	ALL AREAS UNDER ROAD	PROOFROLL REPORT.
SAMPLING, MAKING & CURING TEST SPECIMENS	CURBING, SIDEWALKS, DRIVEWAYS	PROPER COLLECTION AND CURING IN FIELD AND LABORATORY	SAMPLING CONCRETE - ASTM C172; ASTM C31; ASTM C39	4 CYLINDERS PER DAY/BATCH FOR EVERY 50 CUBIC YARDS	"FORM 312U MIX DESIGN, VERIFY JMF ON-SITE."
AIR TEST	SEE ABOVE	UP TO 8%, PER MIX DESIGN	PRESSURE AIR METER - ASTM C231	TRUCK #1; AIR, SLUMP, TEMP, CYLINDERS	NC DOT M&T 903 (BATCH TIX)
SLUMP TEST	SEE ABOVE	UP TO 5", PER MIX DESIGN	SLUMP TEST - ASTM C143	TRUCKS #2-4; AIR	250 DAILY PLANT REPORT WHEN NEEDED
COMPRESSIVE STRENGTH	CURBING, SIDEWALKS, DRIVEWAYS	BREAKS RESULTS @ REQUIRED STRENGTH (I.E. 3000PSI)	ASTM C39	"7 DAY BREAK (TYP @ 75% OF STRENGTH), 28 DAY BREAK @ DESIGN STRENGTH"	CONCRETE BREAK REPORTS.
ASPHALT MIX	ROADWAY/PATH	SURFACE UP TO 3" DEPTH	PVMT DESIGN OR		VERIFY JMF ON-SITE.
(JOB MIX FORMULAE)		INTERMEDIATE UP TO 4" DEPTH	CITY POLICY	FOR CONTROL STRIP WHEN NEEDED, REF. NCDOT 2012 STANDARD SPECIFICATIONS SECTION 609-7	ON DELIVERY - COLLECT TICKETS
		BASE UP TO 8" DEPTH			ASPHALT ROADWAY DAILY REPORT - (NCDOT M&T 605 FORM)
ASPHALT TEMPERATURE	AIR TEMPARTURE	40° IN THE SHADE AND RISING	NCDOT	TEST BEFORE PLACEMENT	
	SURFACE TEMPARTURE	50°	SECTION 610-4	ALSO, NO WET PAVEMENT AFFECTING BONDING	
DENSITY - NUCLEAR GAUGE CONTROL WITH CORE CHECKS	ROADWAY/PATH	90% COMPACTION - 9.5A	NUCLEAR DENSITY TESTS - ASTM D2950	"QC = 5 NUCLEAR GAUGE SHOTS PER 500'/EACH PAVER LAYDOWN WIDTH / LOT QA = VERIFICATION, TEST REQUESTS AND LOCATION"	FORMS - CITY OR NCDOT QC-5, 5160C, QA-515, ETC
(CORE CONTROL AND CONTROL STRIPS WHEN NEEDED)		92% COMPACTION-SURFACE OTHER, INTERMEDIATE, BASE	BULK DENSITY (CORES) - ASTM D2726	QC = 1 CORE CHECK PER 500'/EACH PAVER LAYDOWN WIDTH, PRIMARILY IN BASE LAYERS.	"CERTIFICATIONS: GAUGE CALIBRATION QMS ROADWAYTECHNICIAN, NUCLEAR GAUGE OPERATOR, ETC"

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

REVNO.	DESCRIPTIONS / REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPWA ADDITIONAL INFORMATION	10/12/2018
G	CFPWA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

MCKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
NOTES

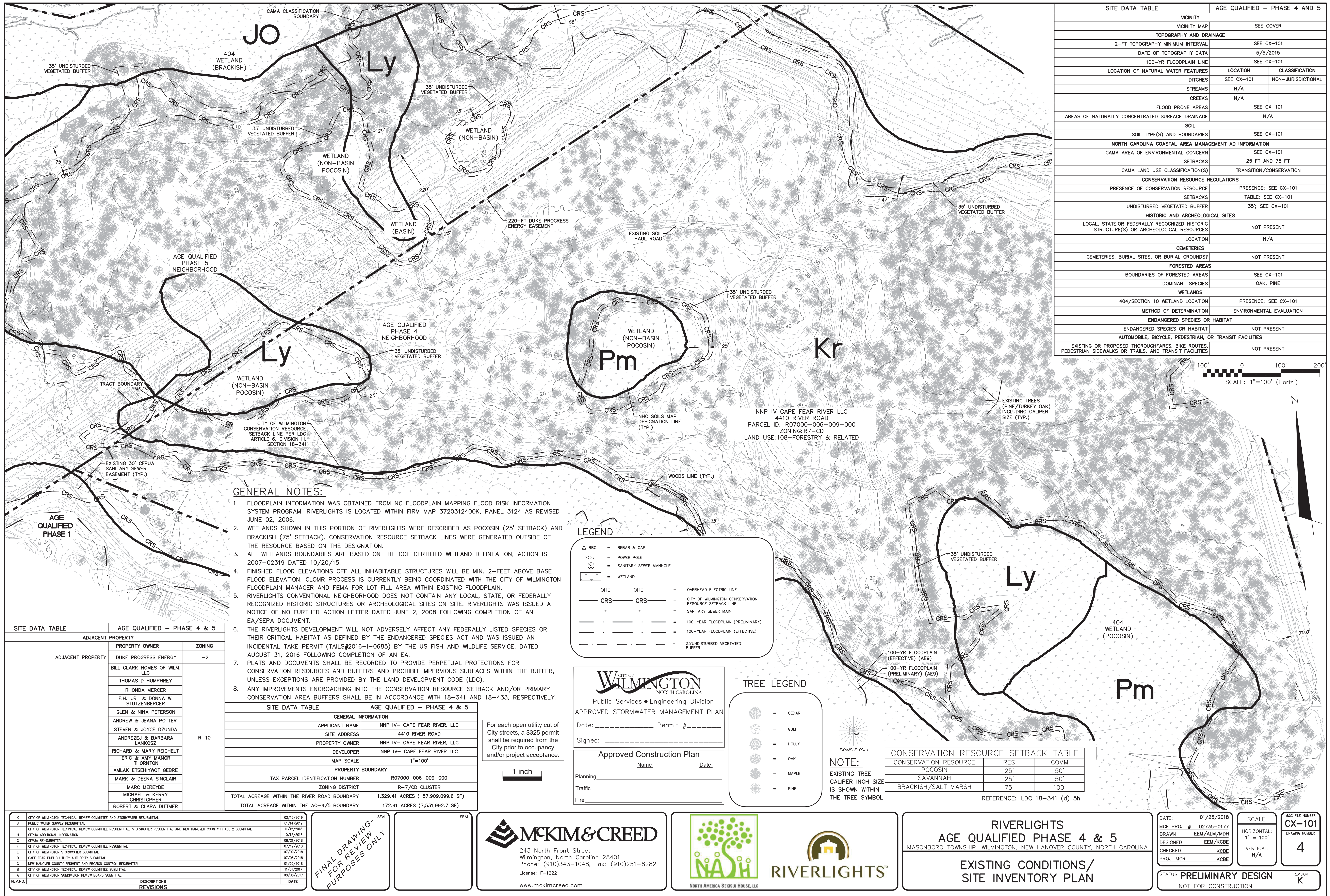
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

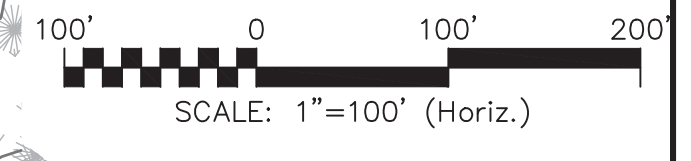
HAC FILE NUMBER: G-003
DRAWING NUMBER: 3

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

REVISION K



SITE DATA TABLE		AGE QUALIFIED - PHASE 4 AND 5
VICINITY		
VICINITY MAP		
TOPOGRAPHY AND DRAINAGE		
2-FT TOPOGRAPHY MINIMUM INTERVAL		
DATE OF TOPOGRAPHY DATA		
100-YR FLOODPLAIN LINE		
LOCATION OF NATURAL WATER FEATURES		
DITCHES		LOCATION CLASSIFICATION
STREAMS		SEE CX-101
CREEKS		N/A
FLOOD PRONE AREAS		
AREAS OF NATURALLY CONCENTRATED SURFACE DRAINAGE		
SOIL		
SOIL TYPE(S) AND BOUNDARIES		
NORTH CAROLINA COASTAL AREA MANAGEMENT AD INFORMATION		
CAMA AREA OF ENVIRONMENTAL CONCERN		
SETBACKS		
CAMA LAND USE CLASSIFICATION(S)		
CONSERVATION RESOURCE REGULATIONS		
PRESENCE OF CONSERVATION RESOURCE		
SETBACKS		
UNDISTURBED VEGETATED BUFFER		
HISTORIC AND ARCHEOLOGICAL SITES		
LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURE(S) OR ARCHEOLOGICAL RESOURCES		
LOCATION		
CEMETERIES		
CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS?		
FORESTED AREAS		
BOUNDARIES OF FORESTED AREAS		
DOMINANT SPECIES		
WETLANDS		
404/SECTION 10 WETLAND LOCATION		
METHOD OF DETERMINATION		
ENDANGERED SPECIES OR HABITAT		
ENDANGERED SPECIES OR HABITAT		
AUTOMOBILE, BICYCLE, PEDESTRIAN, OR TRANSIT FACILITIES		
EXISTING OR PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, AND TRANSIT FACILITIES		



GENERAL NOTES:

- FLOODPLAIN INFORMATION WAS OBTAINED FROM NC FLOODPLAIN MAPPING FLOOD RISK INFORMATION SYSTEM PROGRAM. RIVERLIGHTS IS LOCATED WITHIN FIRM MAP 3720312400K, PANEL 3124 AS REVISED JUNE 02, 2006.
- WETLANDS SHOWN IN THIS PORTION OF RIVERLIGHTS WERE DESCRIBED AS POCOSIN (25' SETBACK) AND BRACKISH (75' SETBACK). CONSERVATION RESOURCE SETBACK LINES WERE GENERATED OUTSIDE OF THE RESOURCE BASED ON THE DESIGNATION.
- ALL WETLANDS BOUNDARIES ARE BASED ON THE COE CERTIFIED WETLAND DELINEATION, ACTION IS 2007-02319 DATED 10/20/15.
- FINISHED FLOOR ELEVATIONS OFF ALL INHABITABLE STRUCTURES WILL BE MIN. 2- FEET ABOVE BASE FLOOD ELEVATION. CLOMR PROCESS IS CURRENTLY BEING COORDINATED WITH THE CITY OF WILMINGTON FLOODPLAIN MANAGER AND FEMA FOR LOT FILL AREA WITHIN EXISTING FLOODPLAIN.
- RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD DOES NOT CONTAIN ANY LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURES OR ARCHEOLOGICAL SITES ON SITE. RIVERLIGHTS WAS ISSUED A NOTICE OF NO FURTHER ACTION LETTER DATED JUNE 2, 2008 FOLLOWING COMPLETION OF AN EA/SEPA DOCUMENT.
- THE RIVERLIGHTS DEVELOPMENT WILL NOT ADVERSELY AFFECT ANY FEDERALLY LISTED SPECIES OR THEIR CRITICAL HABITAT AS DEFINED BY THE ENDANGERED SPECIES ACT AND WAS ISSUED AN INCIDENTAL TAKE PERMIT (TAILS#2016-I-0685) BY THE US FISH AND WILDLIFE SERVICE, DATED AUGUST 31, 2016 FOLLOWING COMPLETION OF AN EA.
- PLATS AND DOCUMENTS SHALL BE RECORDED TO PROVIDE PERPETUAL PROTECTIONS FOR CONSERVATION RESOURCES AND BUFFERS AND PROHIBIT IMPERVIOUS SURFACES WITHIN THE BUFFER, UNLESS EXCEPTIONS ARE PROVIDED BY THE LAND DEVELOPMENT CODE (LDC).
- ANY IMPROVEMENTS ENCRUCHING INTO THE CONSERVATION RESOURCE SETBACK AND/OR PRIMARY CONSERVATION AREA BUFFERS SHALL BE IN ACCORDANCE WITH 18-341 AND 18-433, RESPECTIVELY.

LEGEND

	REBAR & CAP		OVERHEAD ELECTRIC LINE
	POWER POLE		CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
	SANITARY SEWER MANHOLE		SANITARY SEWER MAIN
	WETLAND		100-YEAR FLOODPLAIN (PRELIMINARY)
			100-YEAR FLOODPLAIN (EFFECTIVE)
			35' UNDISTURBED VEGETATED BUFFER

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

TREE LEGEND

	CEDAR
	GUM
	HOLLY
	OAK
	MAPLE
	PINE

NOTE:
EXISTING TREE CALIPER INCH SIZE IS SHOWN WITHIN THE TREE SYMBOL

CONSERVATION RESOURCE SETBACK TABLE

CONSERVATION RESOURCE	RES	COMM
POCOSIN	25'	50'
SAVANNAH	25'	50'
BRACKISH/SALT MARSH	75'	100'

REFERENCE: LDC 18-341 (d) 5h

SITE DATA TABLE		AGE QUALIFIED - PHASE 4 & 5
ADJACENT PROPERTY		
ADJACENT PROPERTY	PROPERTY OWNER	ZONING
	DUKE PROGRESS ENERGY	I-2
	BILL CLARK HOMES OF WLM, LLC	
	THOMAS D HUMPHREY	
	RHONDA MERCER	
	F.H. JR. & DONNA W. STUTZENBERGER	
	GLEN & NINA PETERSON	
	ANDREW & JEANA POTTER	
	STEVEN & JOYCE DZUNDA	
	ANDRZEJ & BARBARA LANKOSZ	R-10
	RICHARD & MARY REICHEL	
	ERIC & ALY MANOR THORNTON	
	AMLAK ETSEHIWOT GEBRE	
	MARK & DEENA SINCLAIR	
	MARC MEREYDE	
	MICHAEL & KERRY CHRISTOPHER	
	ROBERT & CLARA DITMER	

SITE DATA TABLE		AGE QUALIFIED - PHASE 4 & 5
GENERAL INFORMATION		
APPLICANT NAME	NNP IV- CAPE FEAR RIVER, LLC	
SITE ADDRESS	4410 RIVER ROAD	
PROPERTY OWNER	NNP IV- CAPE FEAR RIVER, LLC	
DEVELOPER	NNP IV- CAPE FEAR RIVER LLC	
MAP SCALE	1"=100'	
PROPERTY BOUNDARY		
TAX PARCEL IDENTIFICATION NUMBER	R07000-006-009-000	
ZONING DISTRICT	R-7/CD CLUSTER	
TOTAL ACREAGE WITHIN THE RIVER ROAD BOUNDARY	1,329.41 ACRES (57,909,099.6 SF)	
TOTAL ACREAGE WITHIN THE AQ-4/5 BOUNDARY	172.91 ACRES (7,531,992.7 SF)	

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
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C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

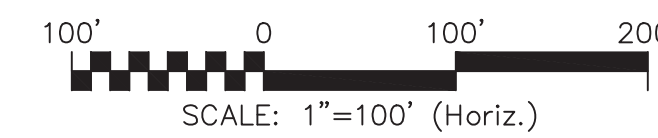
MCKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

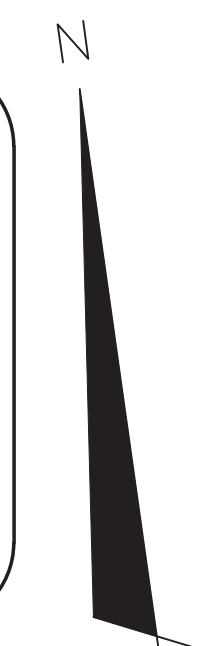
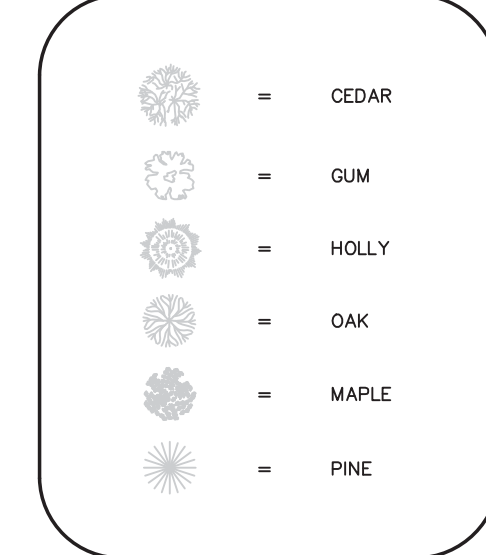
RIVERLIGHTS AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
EXISTING CONDITIONS/ SITE INVENTORY PLAN

DATE:	01/25/2018	SCALE:	HORIZONTAL: 1" = 100'	VERTICAL: N/A	M&E FILE NUMBER: CX-101
M&E PROJ. #	02735-0177	DRAWN	EEM/ALM/MDH	DESIGNED	EEM/KCBE
CHECKED	KCBE	PROJ. MGR.	KCBE	REVISION	K
STATUS: PRELIMINARY DESIGN NOT FOR CONSTRUCTION					

MATCHLINE THIS SHEET



TREE LEGEND



EXAMPLE ONLY



MATCHLINE THIS SHEET

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



DEMOLITION NOTES:

1. NO EARTH DISTURBING ACTIVITIES SHALL COMMENCE UNTIL ALL PERIMETER EROSION CONTROL MEASURES ARE IN PLACE IN ACCORDANCE WITH THE EROSION CONTROL SEQUENCE SHOWN IN THESE PLANS.
2. NO EARTH-DISTURBING ACTIVITY OR OTHER WORK SHALL TAKE PLACE WITHIN WETLANDS AREAS NOTED ON SURVEY. CONTRACTOR SHALL FIELD VERIFY WETLAND LIMITS FLAGGING IS IN PLACE AND SHALL NOT ENTER WETLAND AREAS. IF WETLAND FLAGGING IS MISSING OR OTHERWISE DAMAGED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTE WETLAND LIMITS AND PREVENT DISTURBANCE OR OTHER ACTIVITY WITHIN WETLANDS.
3. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL PROPERTY CORNER MONUMENTS, AND SHALL HAVE, AT HIS EXPENSE, ALL CORNER MONUMENTS REPLACED WHICH ARE DISTURBED BY CONSTRUCTION ACTIVITIES.
4. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS, AT HIS EXPENSE, DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURB, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
5. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH ALL REGULATIONS GOVERNING THE DEMOLITION, REMOVAL, TRANSPORTATION AND DISPOSAL DO ALL DEMOLITION DEBRIS.
6. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS FOR EXCAVATION AND TRENCHING PROCEDURES. CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, ETC. AS NECESSARY FOR THESE OPERATIONS, AND SHALL COMPLY WITH ALL OSHA PERFORMANCE CRITERIA.
7. CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL UTILITIES AND APPURTENANCES TO REMAIN.

K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2016
H	CFPIA ADDITIONAL INFORMATION	10/12/2016
G	CFPIA RE-SUBMITTAL	08/21/2016
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E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2016
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2016
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2016
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/30/2015
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/28/2015
REVNO.	DESCRIPTIONS	DATE
	REVISIONS	

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

SEAL

MCKIM & CREED

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Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
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RIVERLIGHTS

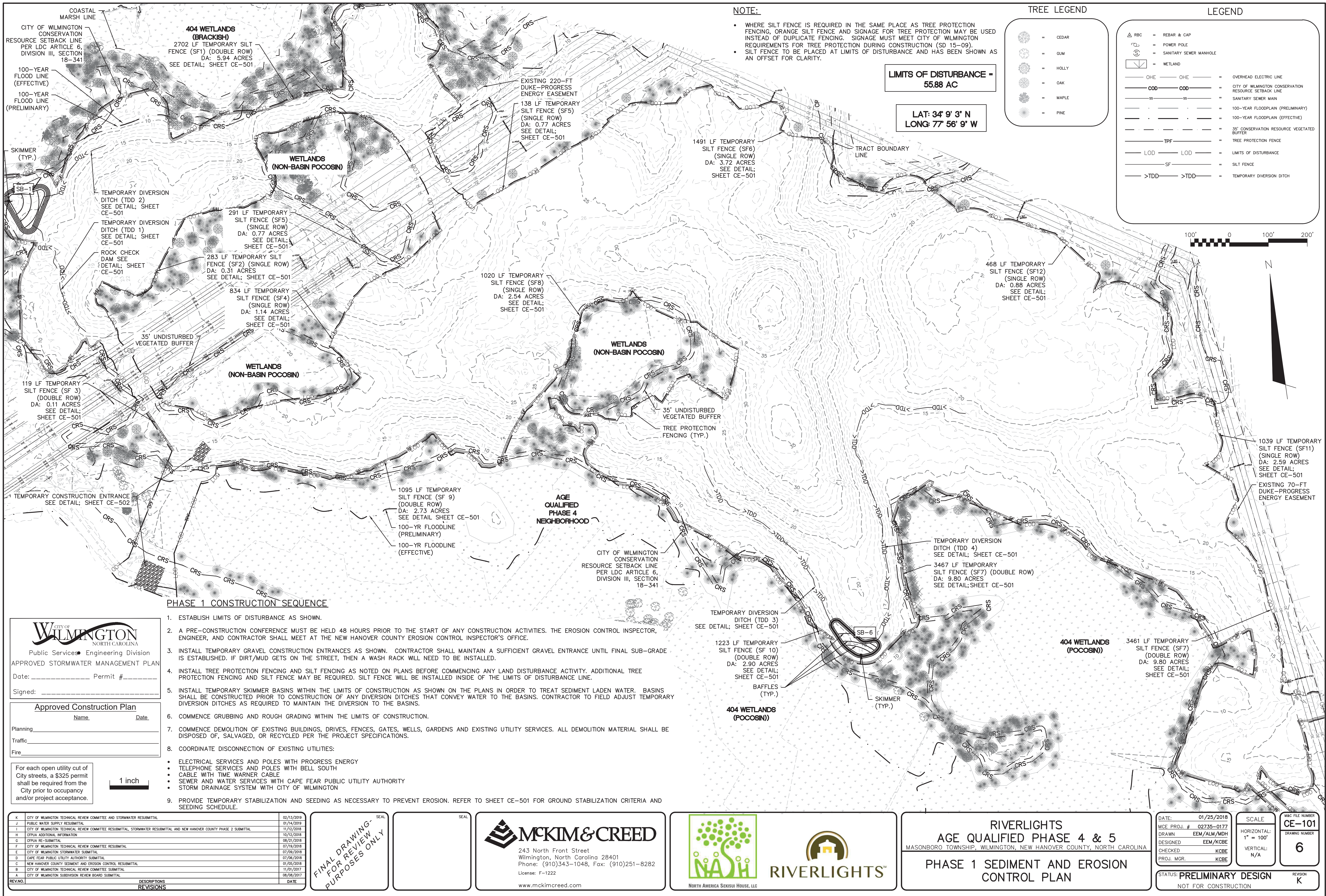
NORTH AMERICA SEXSUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

TREE REMOVAL PLAN

DATE:	01/25/2018
MCE PROJ. #	02735-0177
DRAWN	EEM/ALM/MDH
DESIGNED	EEM/KCBE
CHECKED	KCBE
PROJ. MGR.	KCBE

SCALE	HORIZONTAL: 1" = 100'	VERTICAL: N/A
MAC FILE NUMBER	CX-102	DRAWING NUMBER
	5	
STATUS:	PRELIMINARY DESIGN	REVISION
	NOT FOR CONSTRUCTION	K



NOTE:

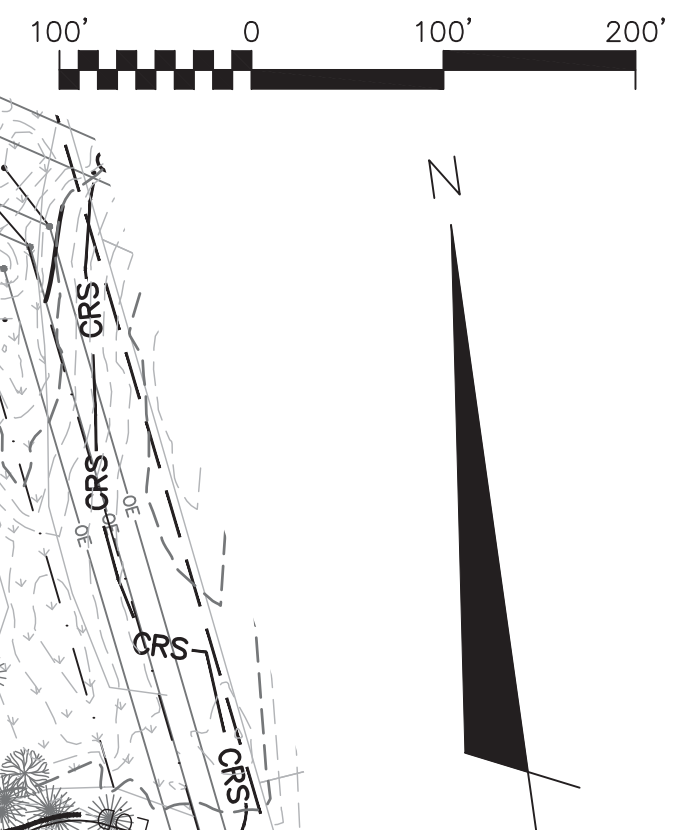
- WHERE SILT FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, ORANGE SILT FENCE AND SIGNAGE FOR TREE PROTECTION MAY BE USED INSTEAD OF DUPLICATE FENCING. SIGNAGE MUST MEET CITY OF WILMINGTON REQUIREMENTS FOR TREE PROTECTION DURING CONSTRUCTION (SD 15-09).
- SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY.

TREE LEGEND

- CEDAR
- GUM
- HOLLY
- OAK
- MAPLE
- PINE

LEGEND

- RBC = REBAR & CAP
- PP = POWER POLE
- SS = SANITARY SEWER MANHOLE
- WETLAND
- OHE = OVERHEAD ELECTRIC LINE
- COO = CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
- SS = SANITARY SEWER MAIN
- 100-YR FLOODPLAIN (PRELIMINARY)
- 100-YR FLOODPLAIN (EFFECTIVE)
- 35' CONSERVATION RESOURCE VEGETATED BUFFER
- TPF = TREE PROTECTION FENCE
- LOD = LIMITS OF DISTURBANCE
- SF = SILT FENCE
- TDD = TEMPORARY DIVERSION DITCH



PHASE 1 CONSTRUCTION SEQUENCE

- ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
- A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL MEET AT THE NEW HANOVER COUNTY EROSION CONTROL INSPECTOR'S OFFICE.
- INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES AS SHOWN. CONTRACTOR SHALL MAINTAIN A SUFFICIENT GRAVEL ENTRANCE UNTIL FINAL SUB-GRADE IS ESTABLISHED. IF DIRT/MUD GETS ON THE STREET, THEN A WASH RACK WILL NEED TO BE INSTALLED.
- INSTALL TREE PROTECTION FENCING AND SILT FENCING AS NOTED ON PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. ADDITIONAL TREE PROTECTION FENCING AND SILT FENCE MAY BE REQUIRED. SILT FENCE WILL BE INSTALLED INSIDE OF THE LIMITS OF DISTURBANCE LINE.
- INSTALL TEMPORARY SKIMMER BASINS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE PLANS IN ORDER TO TREAT SEDIMENT LADEN WATER. BASINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ANY DIVERSION DITCHES THAT CONVEY WATER TO THE BASINS. CONTRACTOR TO FIELD ADJUST TEMPORARY DIVERSION DITCHES AS REQUIRED TO MAINTAIN THE DIVERSION TO THE BASINS.
- COMMENCE GRUBBING AND ROUGH GRADING WITHIN THE LIMITS OF CONSTRUCTION.
- COMMENCE DEMOLITION OF EXISTING BUILDINGS, DRIVES, FENCES, GATES, WELLS, GARDENS AND EXISTING UTILITY SERVICES. ALL DEMOLITION MATERIAL SHALL BE DISPOSED OF, SALVAGED, OR RECYCLED PER THE PROJECT SPECIFICATIONS.
- COORDINATE DISCONNECTION OF EXISTING UTILITIES:
 - ELECTRICAL SERVICES AND POLES WITH PROGRESS ENERGY
 - TELEPHONE SERVICES AND POLES WITH BELL SOUTH
 - CABLE WITH TIME WARNER CABLE
 - SEWER AND WATER SERVICES WITH CAPE FEAR PUBLIC UTILITY AUTHORITY
 - STORM DRAINAGE SYSTEM WITH CITY OF WILMINGTON
- PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION. REFER TO SHEET CE-501 FOR GROUND STABILIZATION CRITERIA AND SEEDING SCHEDULE.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

REV.	NO.	DESCRIPTION	DATE
K	1	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	1	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
I	1	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/22/2018
H	1	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	1	CFPIA RE-SUBMITTAL	08/21/2018
F	1	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	1	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	1	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	1	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	1	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	1	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

SEAL

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RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

PHASE 1 SEDIMENT AND EROSION CONTROL PLAN

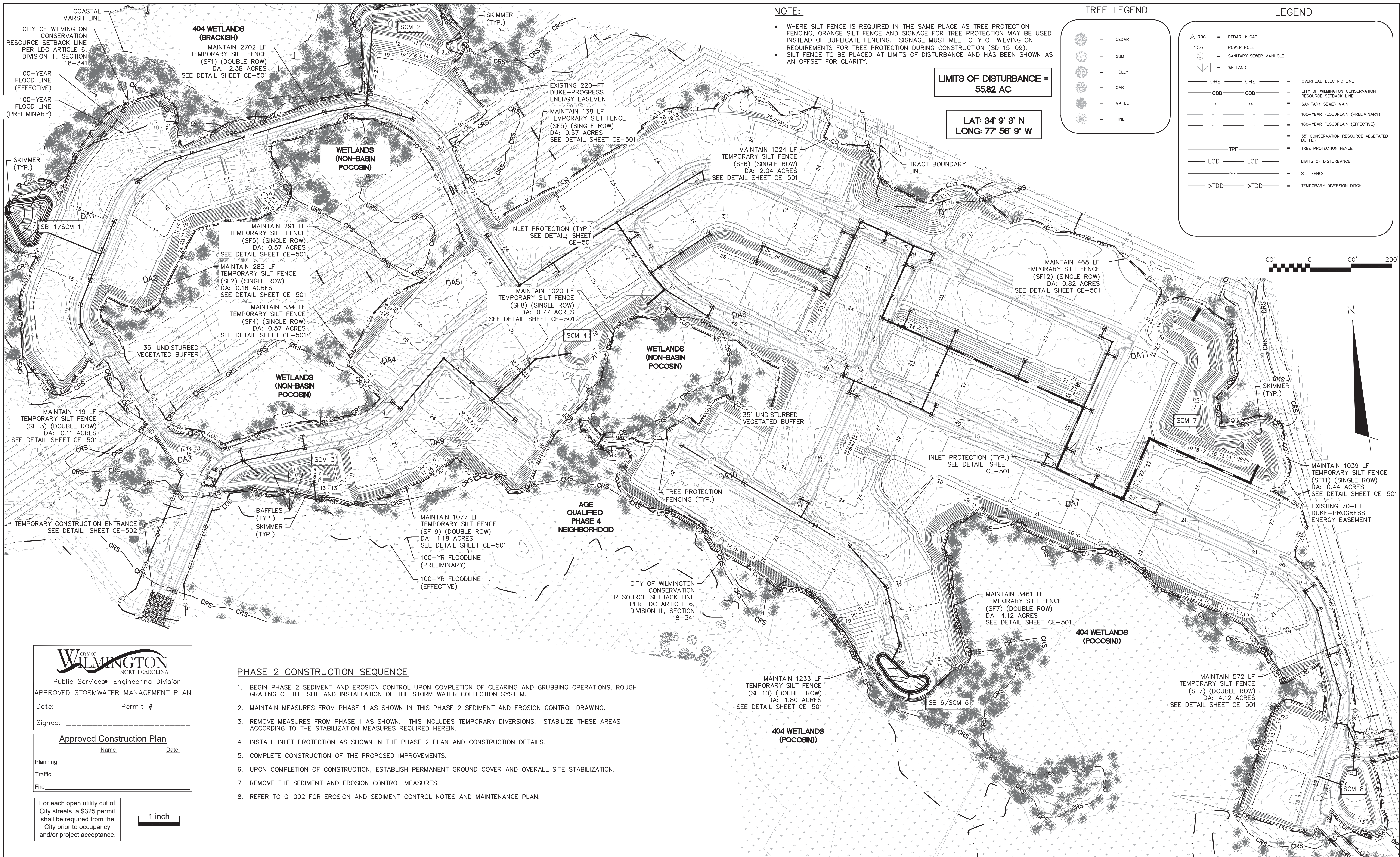
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: N/A

MAC FILE NUMBER
CE-101
DRAWING NUMBER
6

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

REVISION
K



NOTE:

- WHERE SILT FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, ORANGE SILT FENCE AND SIGNAGE FOR TREE PROTECTION MAY BE USED INSTEAD OF DUPLICATE FENCING. SIGNAGE MUST MEET CITY OF WILMINGTON REQUIREMENTS FOR TREE PROTECTION DURING CONSTRUCTION (SD 15-09).
- SILT FENCE TO BE PLACED AT LIMITS OF DISTURBANCE AND HAS BEEN SHOWN AS AN OFFSET FOR CLARITY.

LIMITS OF DISTURBANCE = 55.82 AC

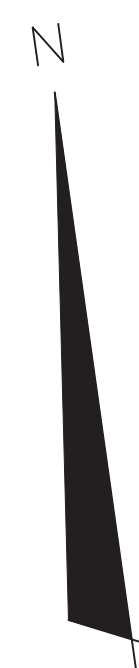
**LAT: 34° 9' 3" N
LONG: 77° 56' 9" W**

TREE LEGEND

- CEDAR
- GUM
- HOLLY
- OAK
- MAPLE
- PINE

LEGEND

- REBAR & CAP
- POWER POLE
- SANITARY SEWER MANHOLE
- WETLAND
- OHE
- OVERHEAD ELECTRIC LINE
- CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
- SANITARY SEWER MAIN
- 100-YEAR FLOODPLAIN (PRELIMINARY)
- 100-YEAR FLOODPLAIN (EFFECTIVE)
- 35' CONSERVATION RESOURCE VEGETATED BUFFER
- TREE PROTECTION FENCE
- TPF
- LOD
- LIMITS OF DISTURBANCE
- SF
- SILT FENCE
- TDD
- TEMPORARY DIVERSION DITCH



PHASE 2 CONSTRUCTION SEQUENCE

- BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
- MAINTAIN MEASURES FROM PHASE 1 AS SHOWN IN THIS PHASE 2 SEDIMENT AND EROSION CONTROL DRAWING.
- REMOVE MEASURES FROM PHASE 1 AS SHOWN. THIS INCLUDES TEMPORARY DIVERSIONS. STABILIZE THESE AREAS ACCORDING TO THE STABILIZATION MEASURES REQUIRED HEREIN.
- INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 2 PLAN AND CONSTRUCTION DETAILS.
- COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
- REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.
- REFER TO G-002 FOR EROSION AND SEDIMENT CONTROL NOTES AND MAINTENANCE PLAN.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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1 inch

REV. NO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2016
H	CPDUA ADDITIONAL INFORMATION	10/12/2016
G	CPDUA RE-SUBMITTAL	08/21/2016
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2016
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2016
D	CARP FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2016
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2016
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

SEAL

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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RIVERLIGHTS

NORTH AMERICA SEXISU HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

PHASE 2 SEDIMENT AND EROSION CONTROL PLAN

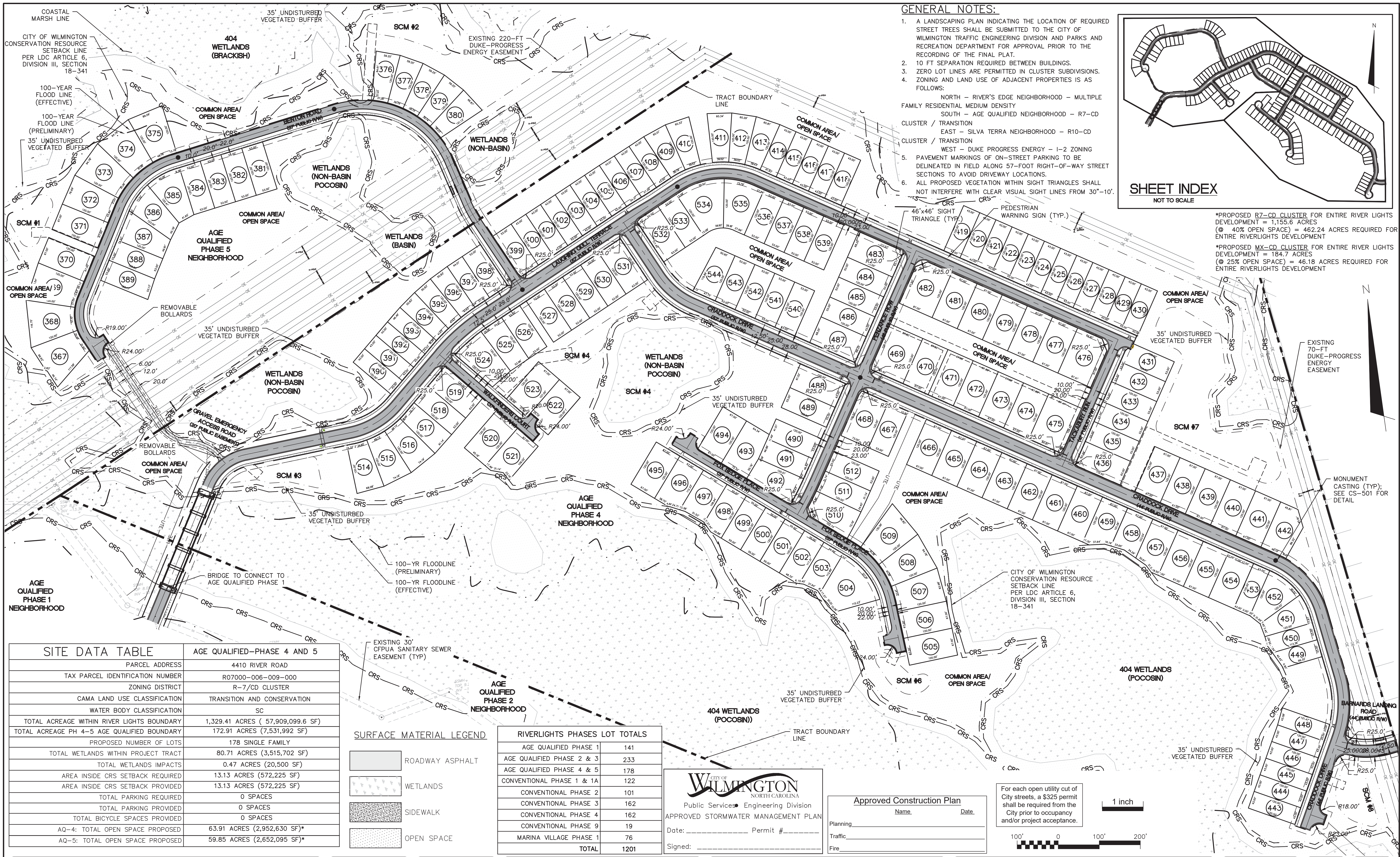
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: N/A

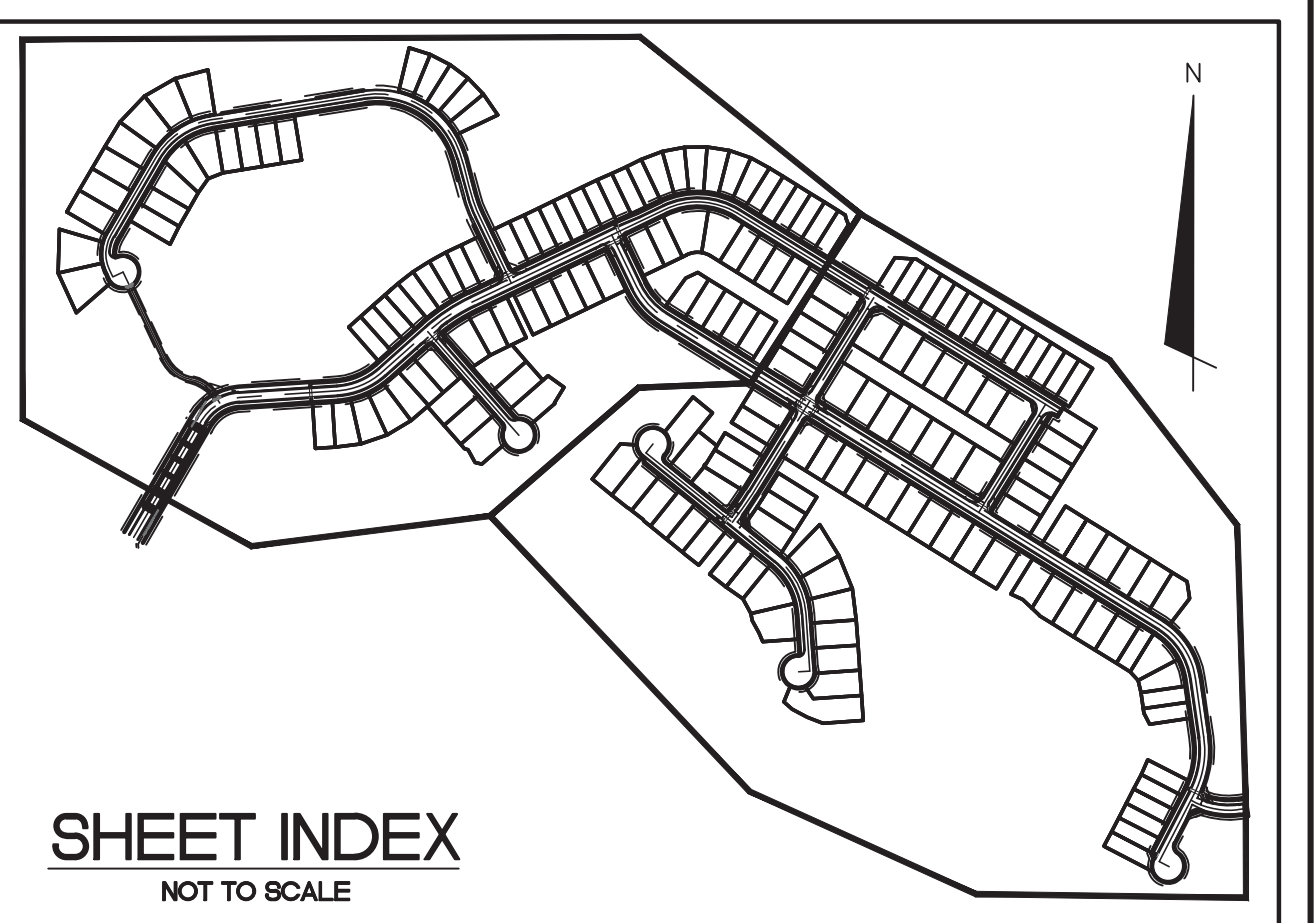
MAC FILE NUMBER: CE-102
DRAWING NUMBER: 7

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

REVISION: K



- GENERAL NOTES:**
- A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAN.
 - 10 FT SEPARATION REQUIRED BETWEEN BUILDINGS.
 - ZERO LOT LINES ARE PERMITTED IN CLUSTER SUBDIVISIONS.
 - ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
 NORTH - RIVER'S EDGE NEIGHBORHOOD - MULTIPLE FAMILY RESIDENTIAL MEDIUM DENSITY
 SOUTH - AGE QUALIFIED NEIGHBORHOOD - R7-CD CLUSTER / TRANSITION
 EAST - SILVA TERRA NEIGHBORHOOD - R10-CD CLUSTER / TRANSITION
 WEST - DUKE PROGRESS ENERGY - I-2 ZONING
 - PAVEMENT MARKINGS OF ON-STREET PARKING TO BE DELINEATED IN FIELD ALONG 57-FOOT RIGHT-OF-WAY STREET SECTIONS TO AVOID DRIVEWAY LOCATIONS.
 - ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30"-10'.



*PROPOSED R7-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 1,155.6 ACRES
 (@ 40% OPEN SPACE) = 462.24 ACRES REQUIRED FOR ENTIRE RIVERLIGHTS DEVELOPMENT

*PROPOSED MX-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 184.7 ACRES
 (@ 25% OPEN SPACE) = 46.18 ACRES REQUIRED FOR ENTIRE RIVERLIGHTS DEVELOPMENT

SITE DATA TABLE	
PARCEL ADDRESS	4410 RIVER ROAD
TAX PARCEL IDENTIFICATION NUMBER	R07000-006-009-000
ZONING DISTRICT	R-7/CD CLUSTER
CAMA LAND USE CLASSIFICATION	TRANSITION AND CONSERVATION
WATER BODY CLASSIFICATION	SC
TOTAL ACREAGE WITHIN RIVER LIGHTS BOUNDARY	1,329.41 ACRES (57,909,099.6 SF)
TOTAL ACREAGE PH 4-5 AGE QUALIFIED BOUNDARY	172.91 ACRES (7,531,992 SF)
PROPOSED NUMBER OF LOTS	178 SINGLE FAMILY
TOTAL WETLANDS WITHIN PROJECT TRACT	80.71 ACRES (3,515,702 SF)
TOTAL WETLANDS IMPACTS	0.47 ACRES (20,500 SF)
AREA INSIDE CRS SETBACK REQUIRED	13.13 ACRES (572,225 SF)
AREA INSIDE CRS SETBACK PROVIDED	13.13 ACRES (572,225 SF)
TOTAL PARKING REQUIRED	0 SPACES
TOTAL PARKING PROVIDED	0 SPACES
TOTAL BICYCLE SPACES PROVIDED	0 SPACES
AQ-4: TOTAL OPEN SPACE PROPOSED	63.91 ACRES (2,952,630 SF)*
AQ-5: TOTAL OPEN SPACE PROPOSED	59.85 ACRES (2,652,095 SF)*

SURFACE MATERIAL LEGEND

	ROADWAY ASPHALT
	WETLANDS
	SIDEWALK
	OPEN SPACE

RIVERLIGHTS PHASES LOT TOTALS

AGE QUALIFIED PHASE 1	141
AGE QUALIFIED PHASE 2 & 3	233
AGE QUALIFIED PHASE 4 & 5	178
CONVENTIONAL PHASE 1 & 1A	122
CONVENTIONAL PHASE 2	101
CONVENTIONAL PHASE 3	162
CONVENTIONAL PHASE 4	162
CONVENTIONAL PHASE 9	19
MARINA VILLAGE PHASE 1	76
TOTAL	1201

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

Name: _____ Date: _____
 Traffic: _____
 Fire: _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

100' 0 100' 200'

REV.	DESCRIPTION	DATE
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FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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 License: F-1222
 www.mckimcreed.com

RIVERLIGHTS
 NORTH AMERICA SEXKUS HOUSE, LLC

RIVERLIGHTS AGE QUALIFIED PHASE 4 & 5
 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OVERALL SITE PLAN

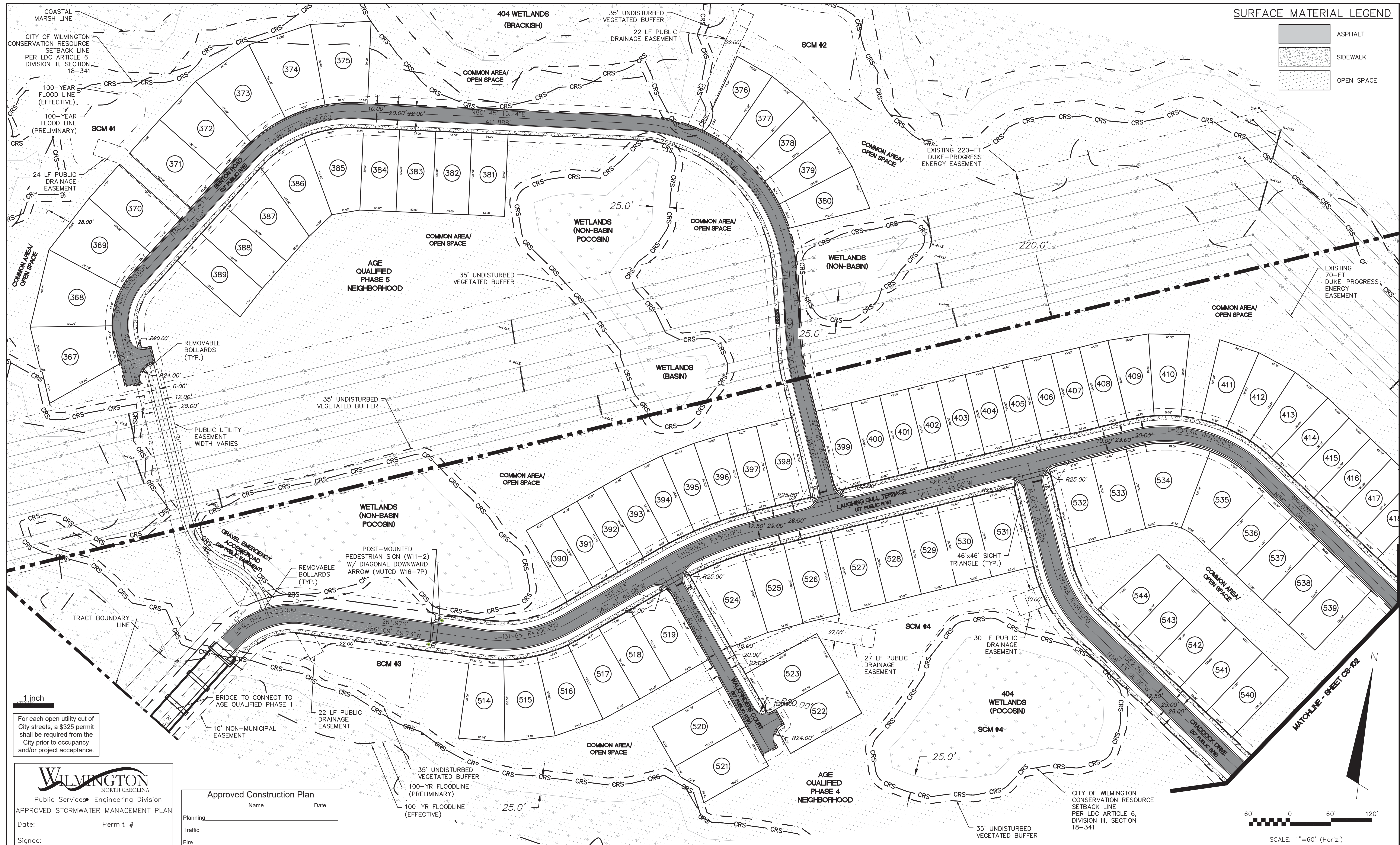
DATE: 01/25/2018
 MCE PROJ. # 02735-0177
 DRAWN: EEM/ALM/MDH
 DESIGNED: EEM/KCBE
 CHECKED: KCBE
 PROJ. MGR.: KCBE

SCALE: HORIZONTAL: 1" = 100'
 VERTICAL: N/A

MAC FILE NUMBER: CS-100
 DRAWING NUMBER: 8

STATUS: PRELIMINARY DESIGN
 NOT FOR CONSTRUCTION

REVISION: K



SURFACE MATERIAL LEGEND

	ASPHALT
	SIDEWALK
	OPEN SPACE

1 inch

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WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

REV.	DESCRIPTION	DATE
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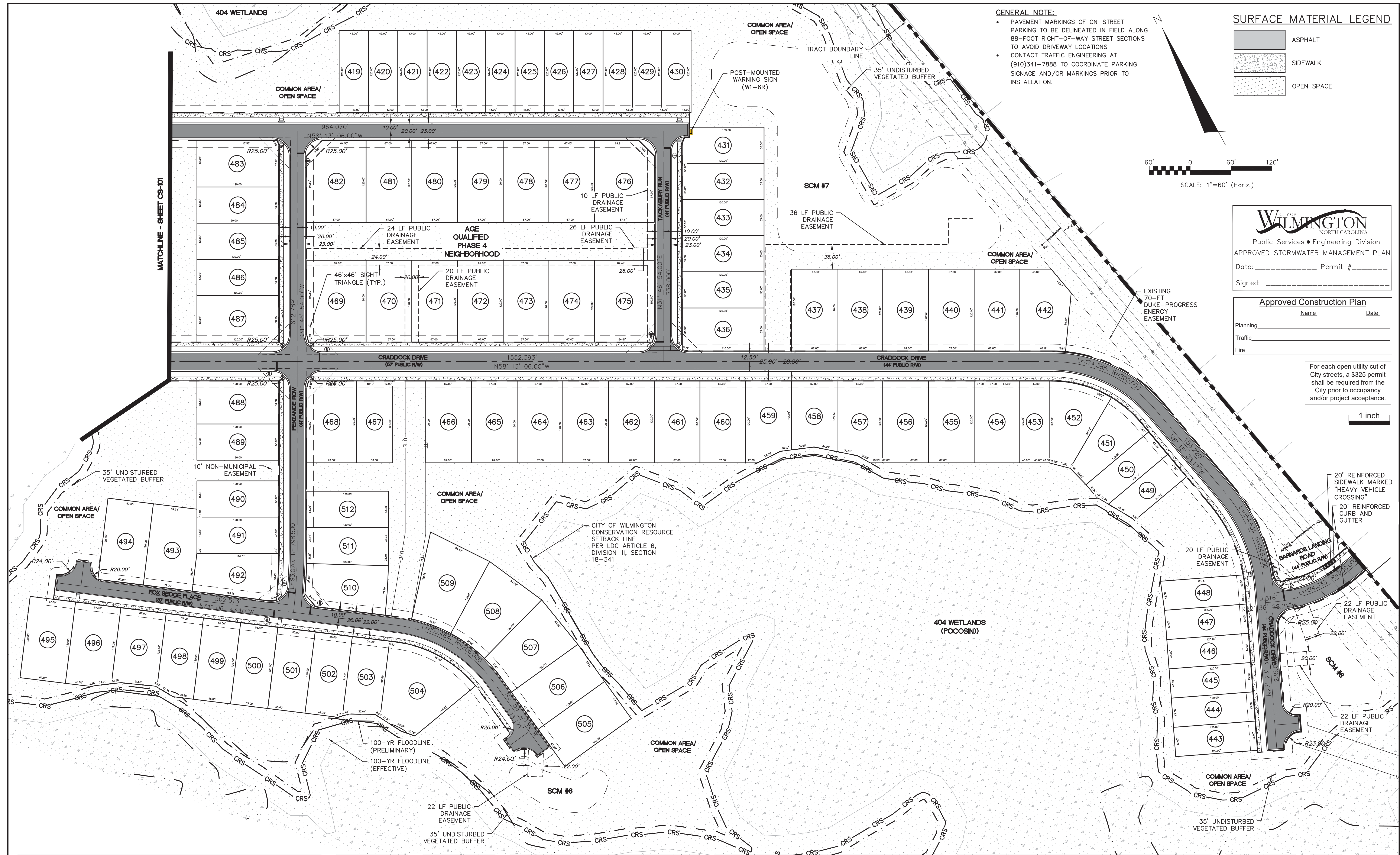
NASH RIVERLIGHTS™

NORTH AMERICA SEXISUS HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

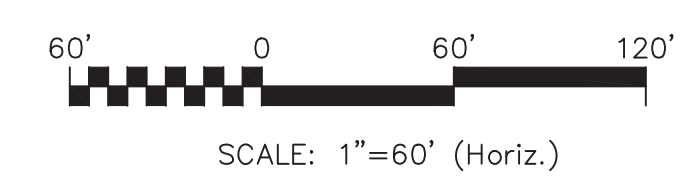
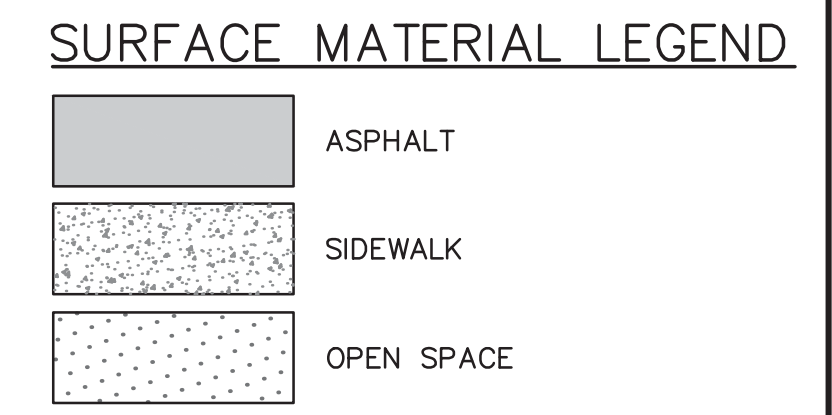
SITE PLAN

DATE: 01/25/2018	SCALE: 1" = 60'	MAC FILE NUMBER: CS-101
MCE PROJ. # 02735-0177	HORIZONTAL: 1" = 60'	DRAWING NUMBER: 9
DRAWN: EEM/ALM/MDH	DESIGNED: EEM/KCBE	CHECKED: KCBE
PROJ. MGR.: KCBE	STATUS: PRELIMINARY DESIGN	REVISION: K
	NOT FOR CONSTRUCTION	



GENERAL NOTE:

- PAVEMENT MARKINGS ON ON-STREET PARKING TO BE DELINEATED IN FIELD ALONG 88-FOOT RIGHT-OF-WAY STREET SECTIONS TO AVOID DRIVEWAY LOCATIONS
- CONTACT TRAFFIC ENGINEERING AT (910)341-7888 TO COORDINATE PARKING SIGNAGE AND/OR MARKINGS PRIOR TO INSTALLATION.



CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

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1 inch

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MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
SITE PLAN

DATE:	01/25/2018
MCE PROJ. #	02735-0177
DRAWN	EEM/ALM/MDH
DESIGNED	EEM/KCBE
CHECKED	KCBE
PROJ. MGR.	KCBE

SCALE	MAC FILE NUMBER
HORIZONTAL: 1" = 60'	CS-102
VERTICAL: N/A	DRAWING NUMBER
	10
STATUS: PRELIMINARY DESIGN	REVISION
NOT FOR CONSTRUCTION	K

Approved Construction Plan

 Name _____ Date _____

 Planning _____

 Traffic _____

 Fire _____

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1 inch

Parcel Table		
Parcel #	Area (SF)	Area (AC)
367	9872	0.23
368	9925	0.23
369	9575	0.22
370	8040	0.18
371	8040	0.18
372	8463	0.19
373	9178	0.21
374	9178	0.21
375	8947	0.21
376	5736	0.13
377	5896	0.14
378	5896	0.14
379	5896	0.14
380	6264	0.14
381	6360	0.15
382	6360	0.15
383	6360	0.15
384	6360	0.15
385	7992	0.18
386	7474	0.17
387	7613	0.17
388	6360	0.15
389	6458	0.15
390	5160	0.12
391	5160	0.12
392	5160	0.12
393	5320	0.12
394	5519	0.13
395	5519	0.13
396	5519	0.13

Parcel Table		
Parcel #	Area (SF)	Area (AC)
397	5208	0.12
398	6360	0.15
399	6347	0.15
400	5160	0.12
401	5160	0.12
402	5160	0.12
403	5160	0.12
404	5160	0.12
405	5160	0.12
406	5157	0.12
407	5168	0.12
408	5160	0.12
409	5928	0.14
410	5943	0.14
411	5943	0.14
412	5940	0.14
413	5965	0.14
414	5160	0.12
415	5160	0.12
416	5160	0.12
417	5160	0.12
418	5160	0.12
419	5160	0.12
420	5160	0.12
421	5160	0.12
422	5160	0.12
423	5160	0.12
424	5160	0.12
425	5160	0.12
426	5160	0.12

Parcel Table		
Parcel #	Area (SF)	Area (AC)
427	5160	0.12
428	5160	0.12
432	6360	0.15
433	6360	0.15
434	6360	0.15
435	6360	0.15
436	7550	0.17
437	8040	0.18
438	8040	0.18
439	8040	0.18
440	8040	0.18
441	8040	0.18
442	8174	0.19
443	5160	0.12
444	5160	0.12
445	5160	0.12
446	5160	0.12
447	5160	0.12
448	5208	0.12
449	4553	0.10
450	5098	0.12
451	6529	0.15
452	7726	0.18
453	5160	0.12
454	8040	0.18
455	8040	0.18
456	8040	0.18
457	7540	0.17
458	6670	0.15
459	7468	0.17

Parcel Table		
Parcel #	Area (SF)	Area (AC)
460	8040	0.18
461	8040	0.18
462	8040	0.18
463	8040	0.18
464	8040	0.18
465	8040	0.18
466	8040	0.18
467	6360	0.15
468	8746	0.20
469	10426	0.24
470	8040	0.18
471	8040	0.18
472	8040	0.18
473	8040	0.18
474	8040	0.18
475	10476	0.24
476	10236	0.23
477	8040	0.18
478	8040	0.18
479	8040	0.18
480	8040	0.18
481	8040	0.18
482	10187	0.23
483	8183	0.19
484	6360	0.15
485	6360	0.15
486	6360	0.15
487	8190	0.19
488	7560	0.17
489	6360	0.15

Parcel Table		
Parcel #	Area (SF)	Area (AC)
490	6360	0.15
491	6389	0.15
492	7725	0.18
493	8423	0.19
494	8040	0.18
495	8040	0.18
496	7922	0.18
497	7298	0.17
498	6461	0.15
499	6600	0.15
500	6600	0.15
501	6600	0.15
502	6592	0.15
503	6152	0.14
504	11965	0.27
505	8040	0.18
506	8040	0.18
507	8749	0.20
508	9178	0.21
509	9673	0.22
510	7890	0.18
511	6548	0.15
512	6360	0.15
514	7022	0.16
515	7286	0.17
516	7286	0.17
517	6727	0.15
518	6360	0.15
519	7605	0.17
520	8040	0.18

Parcel Table		
Parcel #	Area (SF)	Area (AC)
521	7525	0.17
522	7706	0.18
523	8039	0.18
524	8661	0.20
525	6877	0.16
526	6360	0.15
527	6360	0.15
528	6360	0.15
529	6360	0.15
530	6360	0.15
531	7560	0.17
532	7546	0.17
533	6360	0.15
534	10715	0.25
535	9318	0.21
536	6360	0.15
537	6360	0.15
538	6360	0.15
539	6360	0.15
540	6360	0.15
541	6360	0.15
542	6360	0.15
543	6360	0.15
544	6625	0.15

REV. NO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING-
 FOR REVIEW-
 PURPOSES ONLY

SEAL



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 Wilmington, North Carolina 28401
 Phone: (910)343-1048, Fax: (910)251-8282
 License: F-1222
 www.mckimcreed.com



 NORTH AMERICA SEKISUI HOUSE, LLC

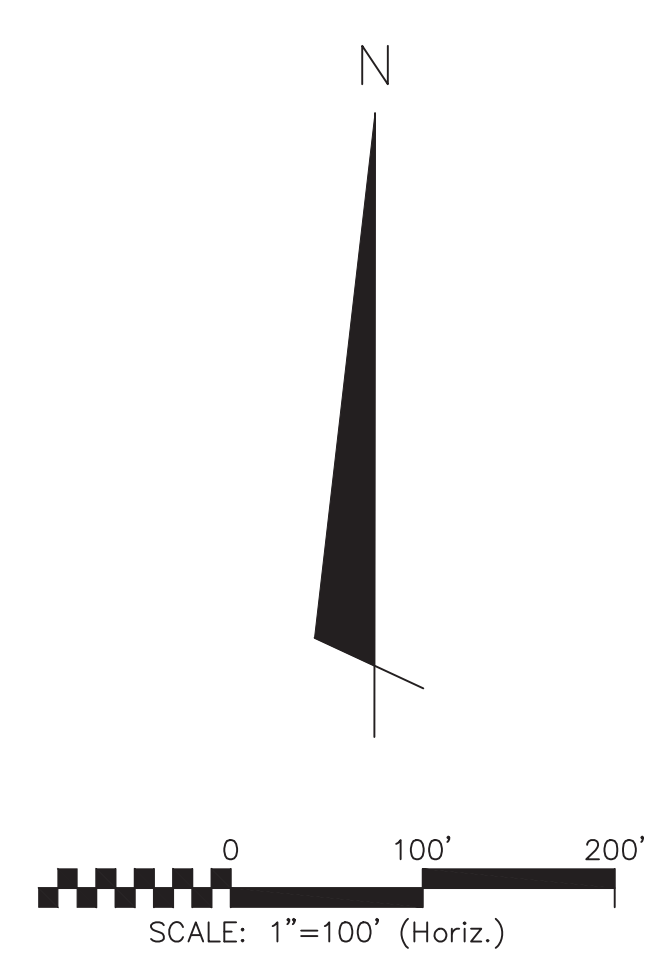
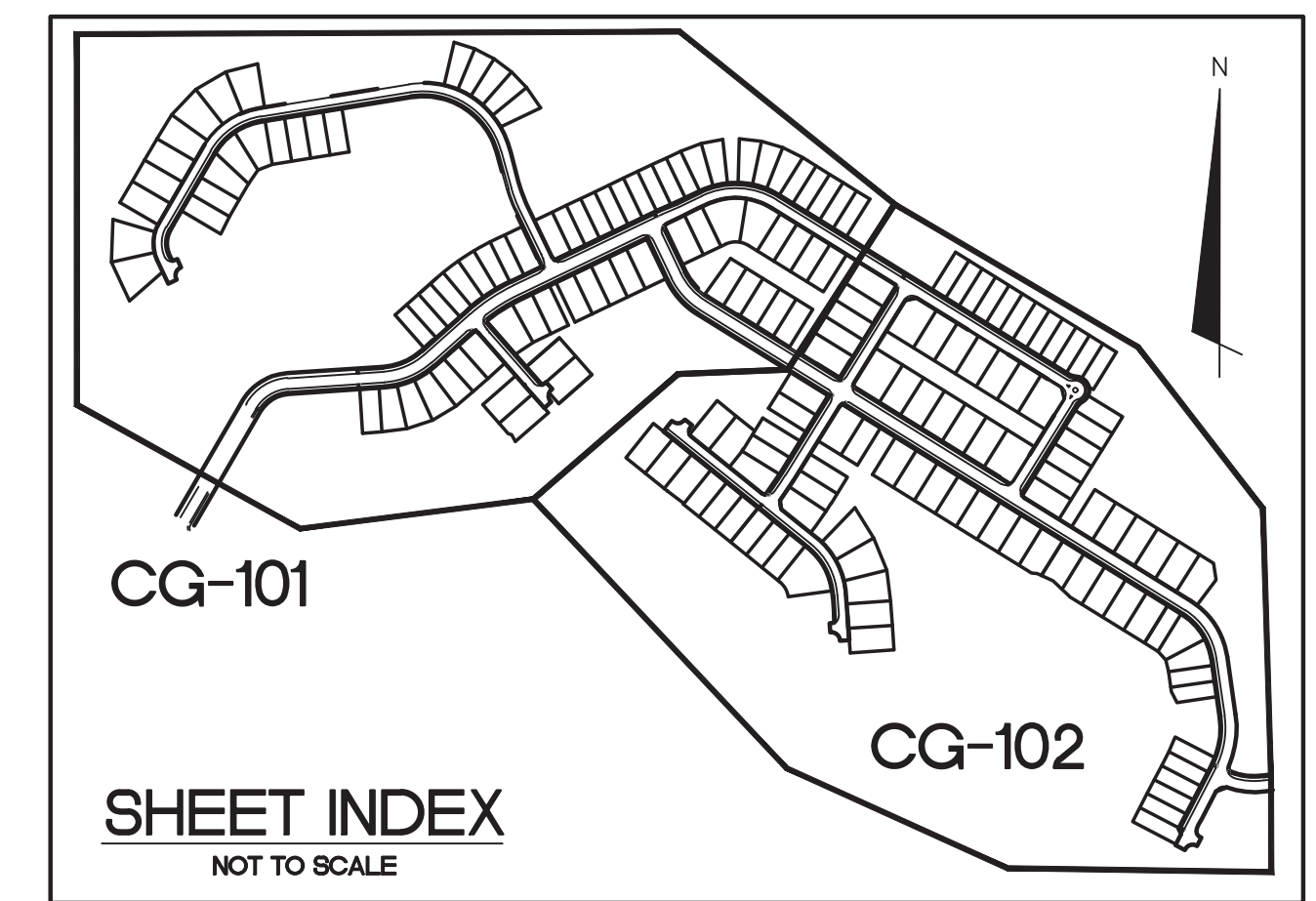
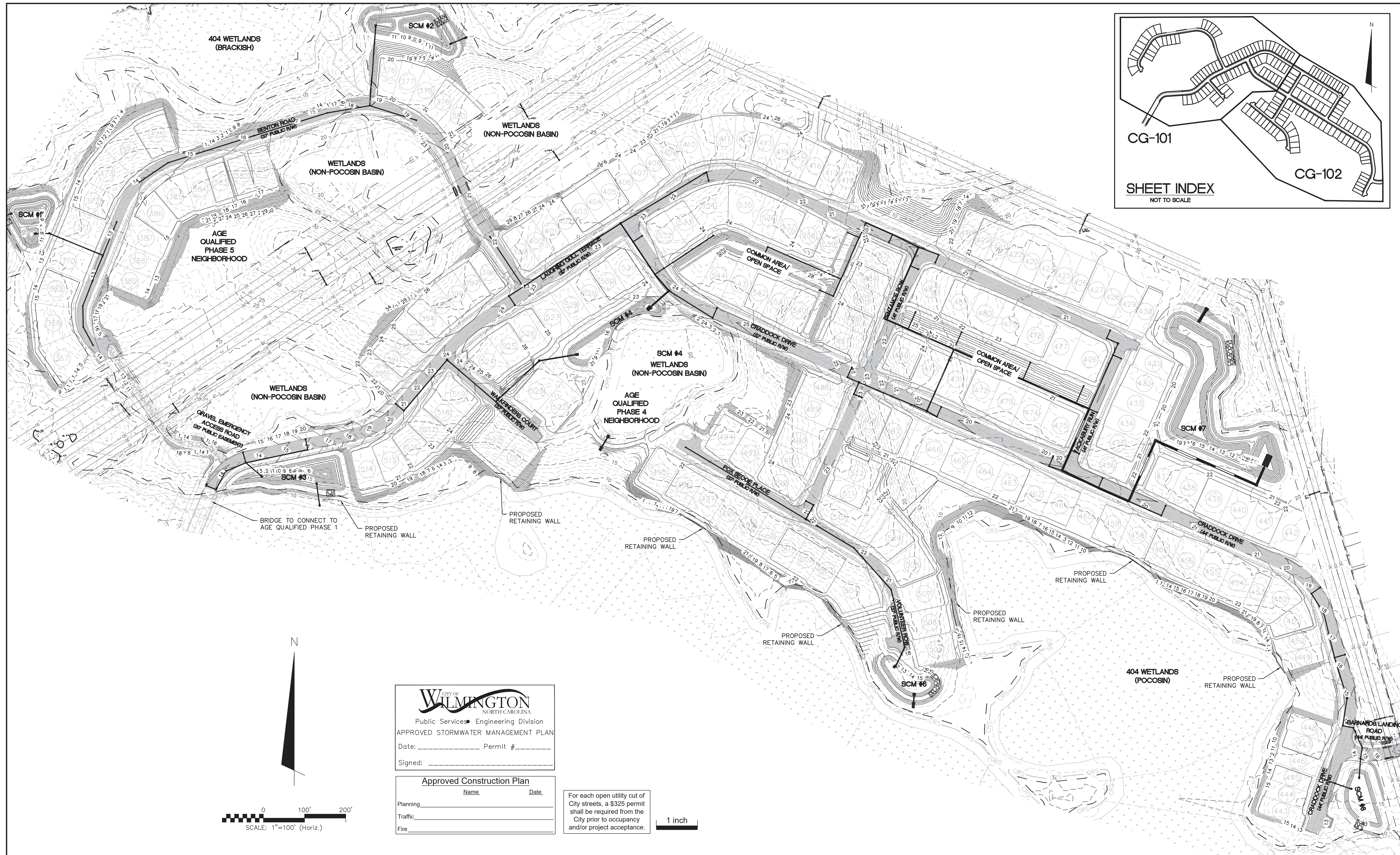



 RIVERLIGHTS™

RIVERLIGHTS
 AGE QUALIFIED PHASE 4 & 5
 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

SITE PLAN PARCEL TABLES

DATE: 01/25/2018	SCALE	MAC FILE NUMBER
MCE PROJ. # 02735-0177	HORIZONTAL: N/A	CS-103
DRAWN EEM/ALM/MDH	VERTICAL: N/A	DRAWING NUMBER
DESIGNED EEM/KCBE		11
CHECKED KCBE		
PROJ. MGR. KCBE		
STATUS: PRELIMINARY DESIGN	REVISION	K
NOT FOR CONSTRUCTION		




 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN
 Date: _____ Permit # _____
 Signed: _____

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



REV. NO.	DESCRIPTIONS REVISIONS	DATE
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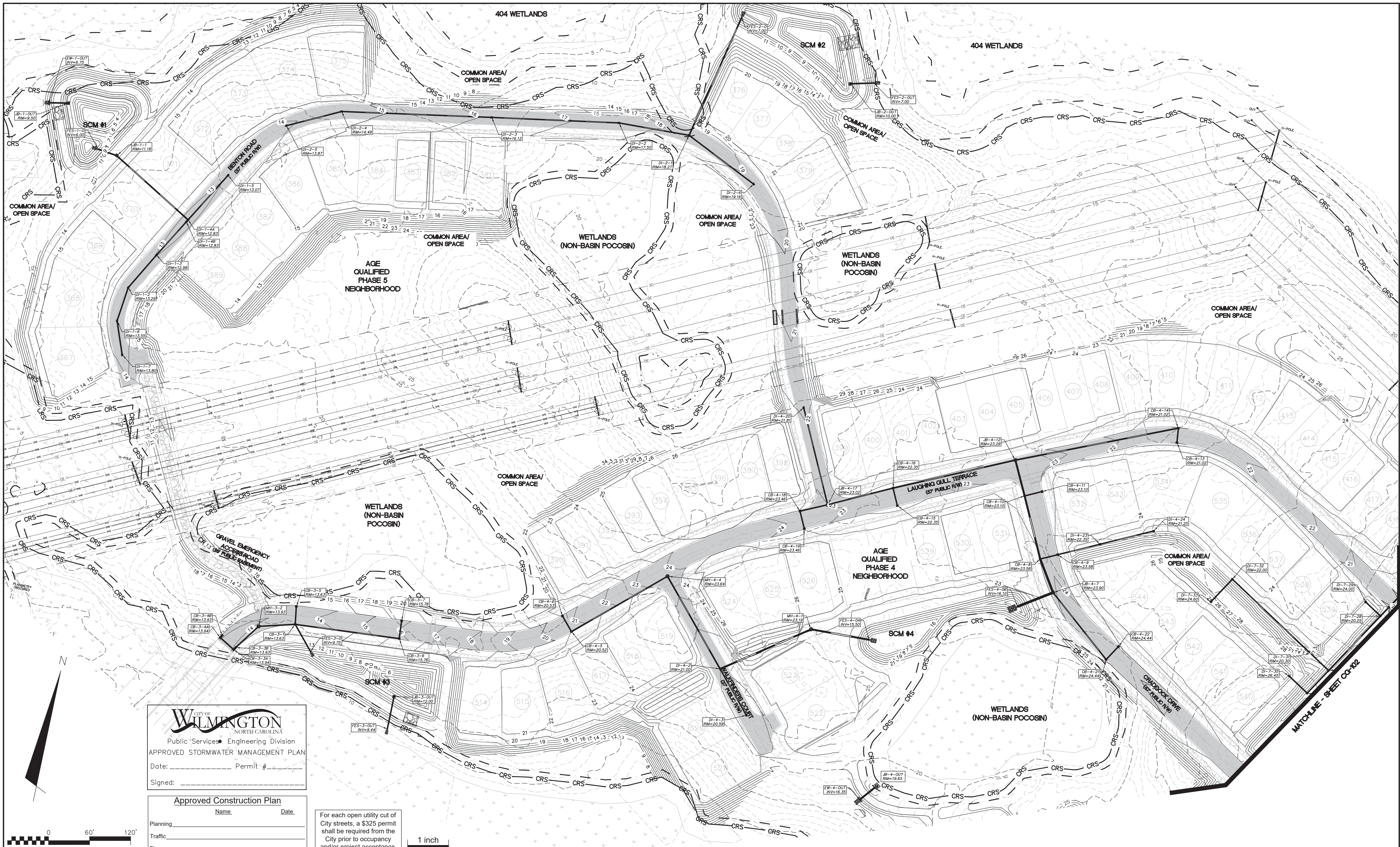

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 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OVERALL STORM DRAINAGE AND GRADING PLAN

DATE: 01/25/2018	SCALE: 1" = 100'	MAC FILE NUMBER: CG-100
MCE PROJ. # 02735-0177	HORIZONTAL: 1" = 100'	DRAWING NUMBER: 12
DRAWN: EEM/ALM/MDH	VERTICAL: N/A	REVISION: K
DESIGNED: EEM/KCBE		
CHECKED: KCBE		
PROJ. MGR.: KCBE		
STATUS: PRELIMINARY DESIGN NOT FOR CONSTRUCTION		

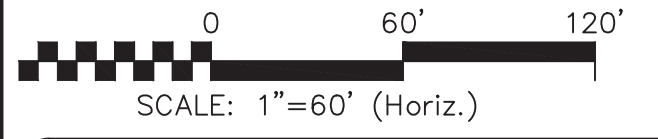


CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name	Date
Planning	_____
Traffic	_____
Fire	_____

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REV. NO.	DESCRIPTIONS / REVISIONS	DATE
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FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

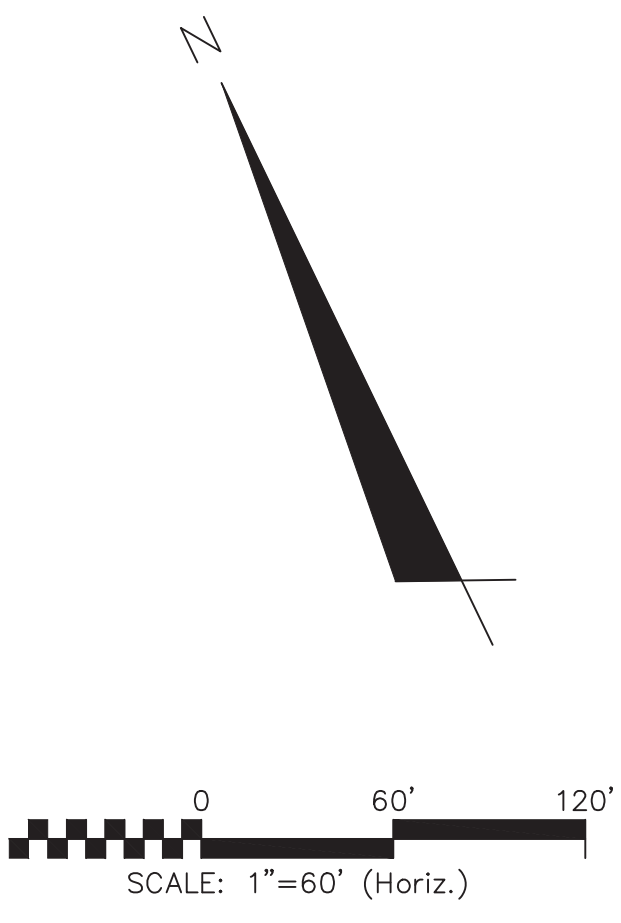
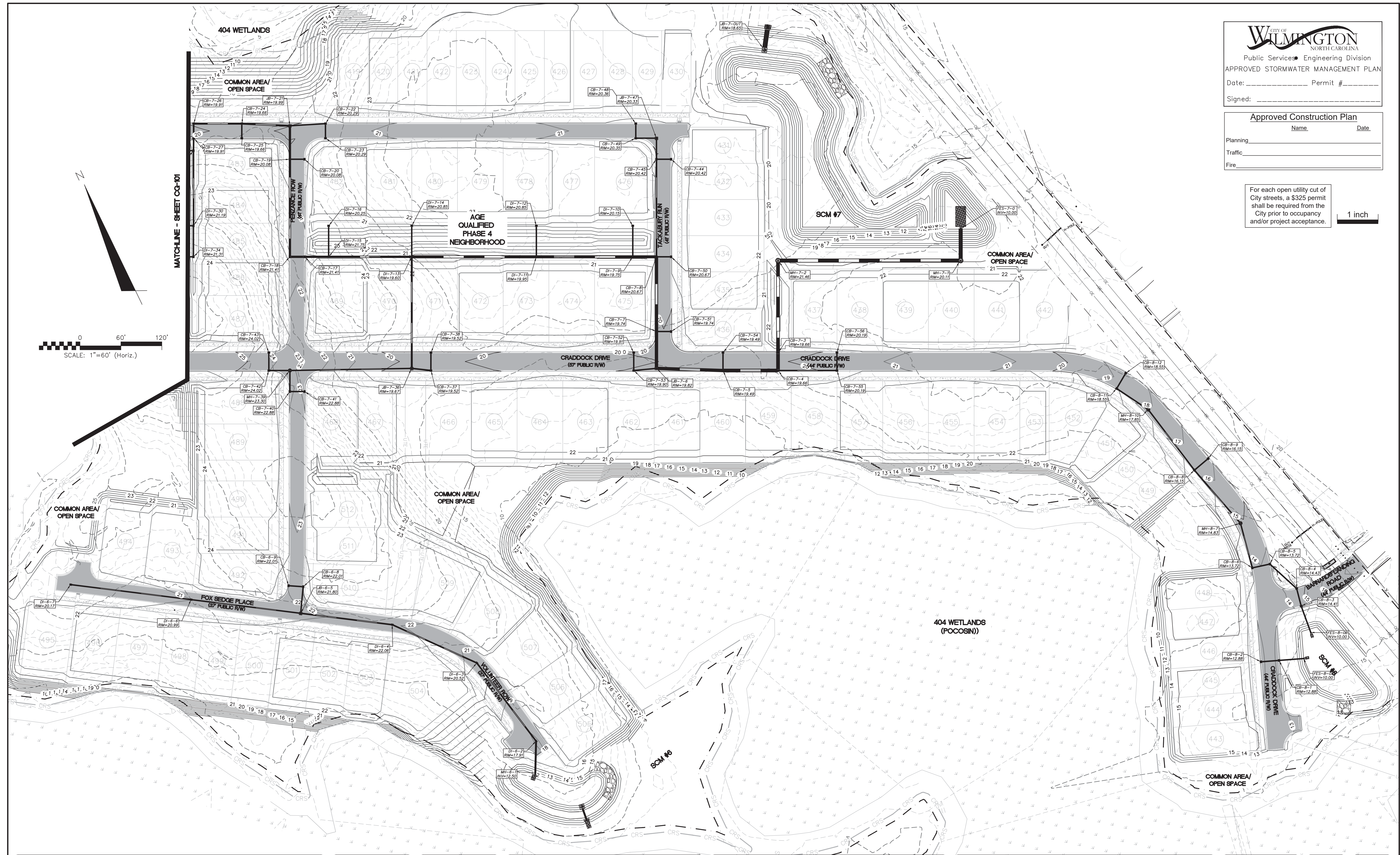
RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
STORM DRAINAGE AND GRADING PLAN

DATE: 01/25/2018	SCALE: 1" = 60'	MAC FILE NUMBER: CG-101
MCE PROJ. # 02735-0177	HORIZONTAL: 1" = 60'	DRAWING NUMBER: 13
DRAWN: EEM/ALM/MDH	VERTICAL: N/A	REVISION: K
DESIGNED: EEM/KCBE		
CHECKED: KCBE		
PROJ. MGR.: KCBE		
STATUS: PRELIMINARY DESIGN NOT FOR CONSTRUCTION		

Approved Construction Plan		
Name	Date	
Planning		
Traffic		
Fire		

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch



REV. NO.	DESCRIPTION	DATE
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 AGE QUALIFIED PHASE 4 & 5
 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

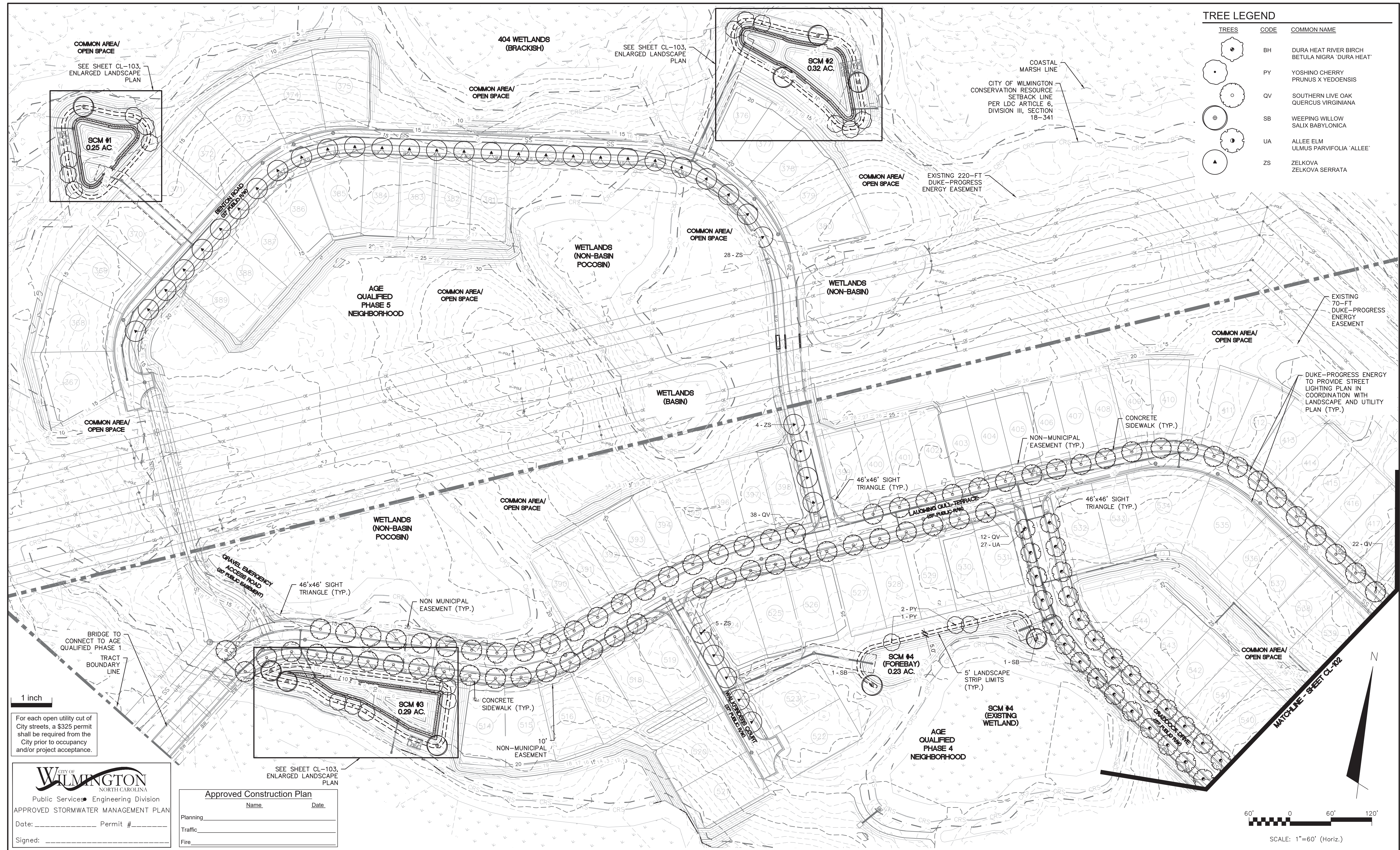
STORM DRAINAGE AND GRADING PLAN

DATE:	01/25/2018
MCE PROJ. #	02735-0177
DRAWN	EEM/ALM/MDH
DESIGNED	EEM/KCBE
CHECKED	KCBE
PROJ. MGR.	KCBE

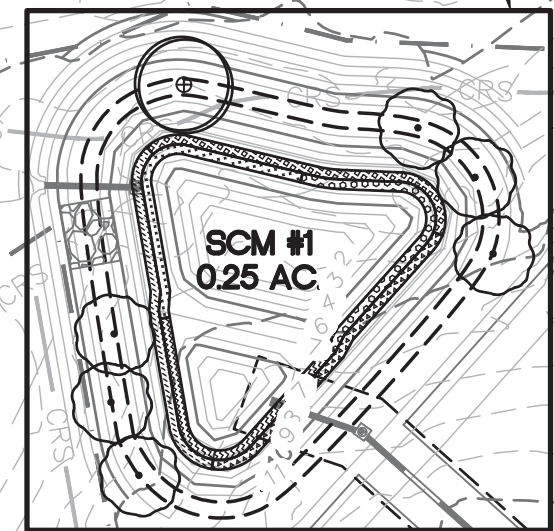
SCALE	MAC FILE NUMBER
HORIZONTAL: 1" = 60'	CG-102
VERTICAL: N/A	14
STATUS: PRELIMINARY DESIGN	REVISION K
NOT FOR CONSTRUCTION	

TREE LEGEND

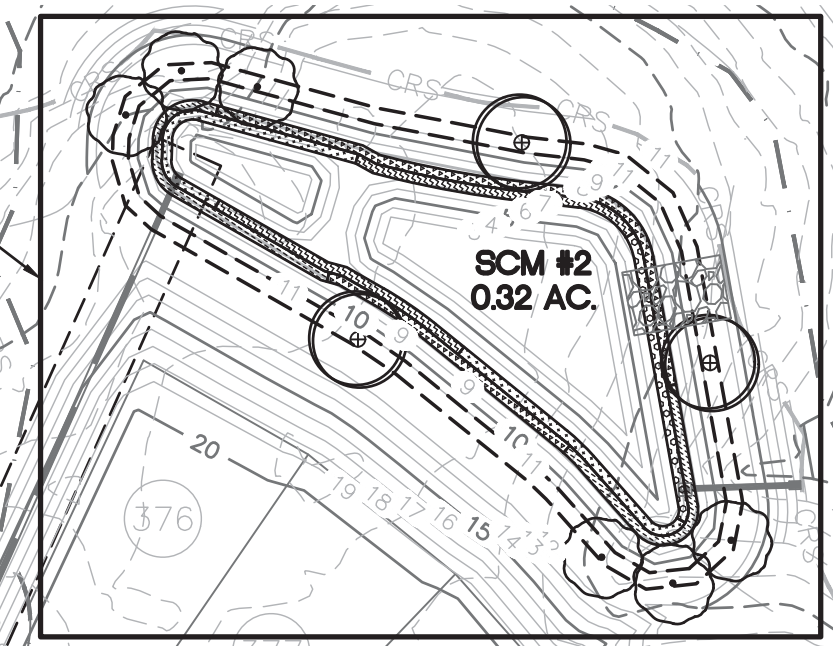
TREES	CODE	COMMON NAME
	BH	DURA HEAT RIVER BIRCH BETULA NIGRA 'DURA HEAT'
	PY	YOSHINO CHERRY PRUNUS X YEDOENSIS
	QV	SOUTHERN LIVE OAK QUERCUS VIRGINIANA
	SB	WEeping WILLOW SALIX BABYLONICA
	UA	ALLEE ELM ULMUS PARVIFOLIA 'ALLEE'
	ZS	ZELKOVA ZELKOVA SERRATA



COMMON AREA/
OPEN SPACE
SEE SHEET CL-103,
ENLARGED LANDSCAPE
PLAN



SEE SHEET CL-103,
ENLARGED LANDSCAPE
PLAN



COASTAL
MARSH LINE
CITY OF WILMINGTON
CONSERVATION RESOURCE
SETBACK LINE
PER LDC ARTICLE 6,
DIVISION III, SECTION
18-341

COMMON AREA/
OPEN SPACE
EXISTING 220-FT
DUKE-PROGRESS
ENERGY EASEMENT

EXISTING
70-FT
DUKE-PROGRESS
ENERGY
EASEMENT

DUKE-PROGRESS ENERGY
TO PROVIDE STREET
LIGHTING PLAN IN
COORDINATION WITH
LANDSCAPE AND UTILITY
PLAN (TYP.)

COMMON AREA/
OPEN SPACE

CONCRETE
SIDEWALK (TYP.)

NON-MUNICIPAL
EASEMENT (TYP.)

46'x46' SIGHT
TRIANGLE (TYP.)

46'x46' SIGHT
TRIANGLE (TYP.)

SCM #4
(FOREBAY)
0.23 AC.

SCM #4
(EXISTING
WETLAND)

AGE
QUALIFIED
PHASE 4
NEIGHBORHOOD

COMMON AREA/
OPEN SPACE
MATCHLINE - SHEET CL-102

1 inch

For each open utility cut of
City streets, a \$325 permit
shall be required from the
City prior to occupancy
and/or project acceptance.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

SEE SHEET CL-103,
ENLARGED LANDSCAPE
PLAN

REV. NO.	DESCRIPTIONS REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
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A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

SEAL

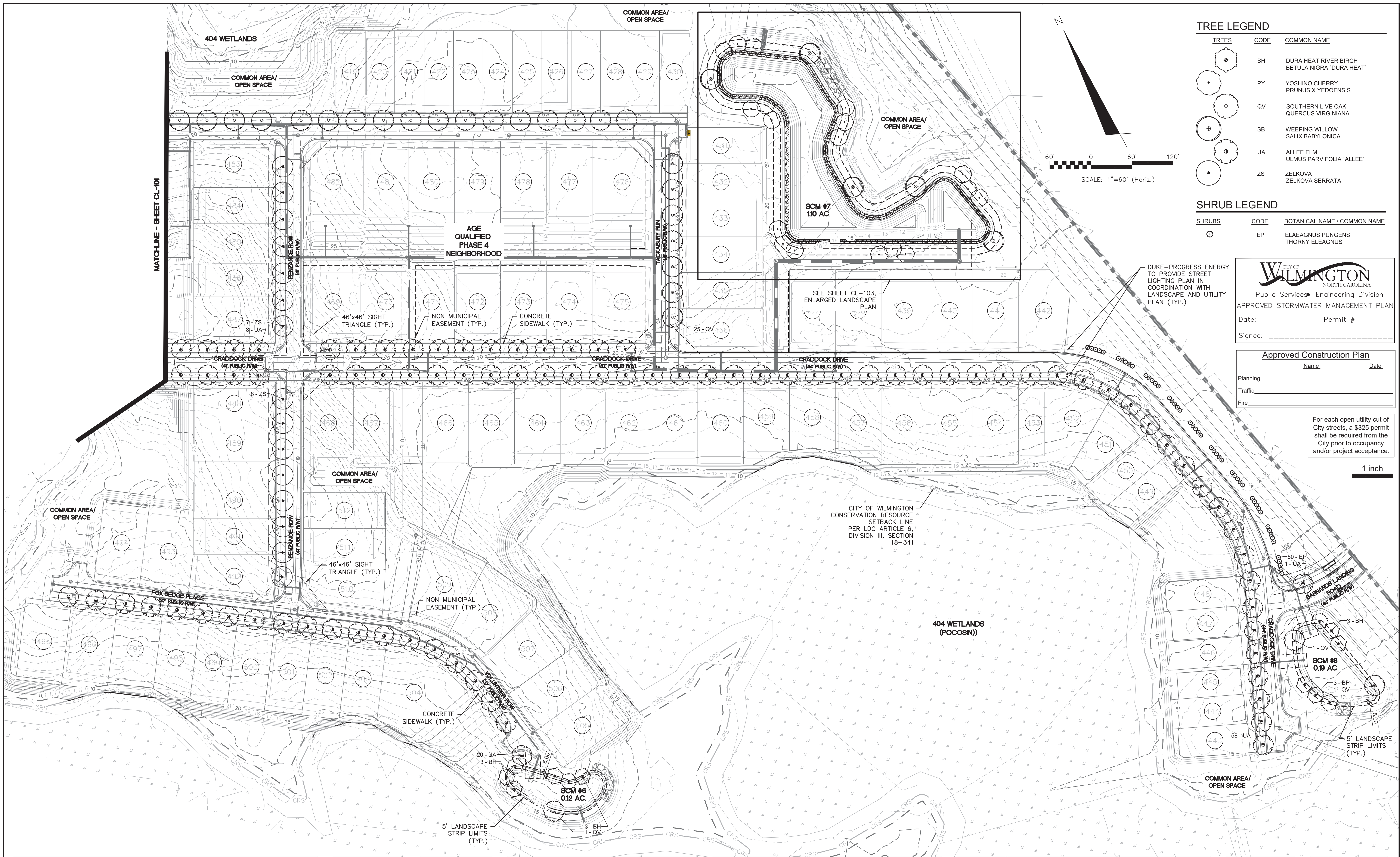
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Wilmington, North Carolina 28401
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License: F-1222
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NASH
NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
LANDSCAPE PLAN

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE
SCALE: HORIZONTAL: 1"=60'
VERTICAL: N/A
MAC FILE NUMBER: CL-101
DRAWING NUMBER: 14A
STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION
REVISION: K

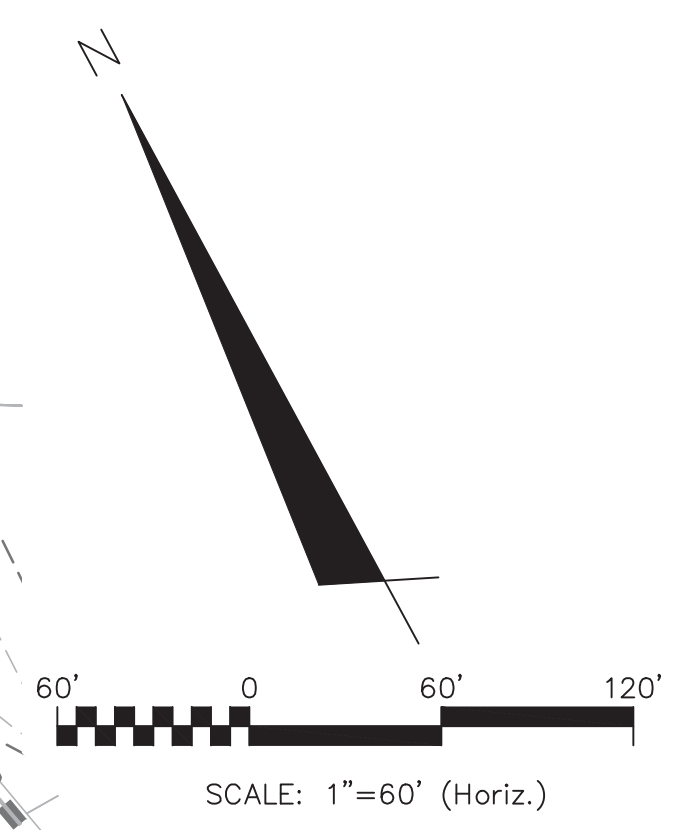


TREE LEGEND

TREES	CODE	COMMON NAME
	BH	DURA HEAT RIVER BIRCH BETULA NIGRA 'DURA HEAT'
	PY	YOSHINO CHERRY PRUNUS X YEDOENSIS
	QV	SOUTHERN LIVE OAK QUERCUS VIRGINIANA
	SB	WEeping WILLOW SALIX BABYLONICA
	UA	ALLEE ELM ULMUS PARVIFOLIA 'ALLEE'
	ZS	ZELKOVA ZELKOVA SERRATA

SHRUB LEGEND

SHRUBS	CODE	BOTANICAL NAME / COMMON NAME
	EP	ELAEAGNUS PUNGENS THORNY ELEAGNUS



CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

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1 inch

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SEAL

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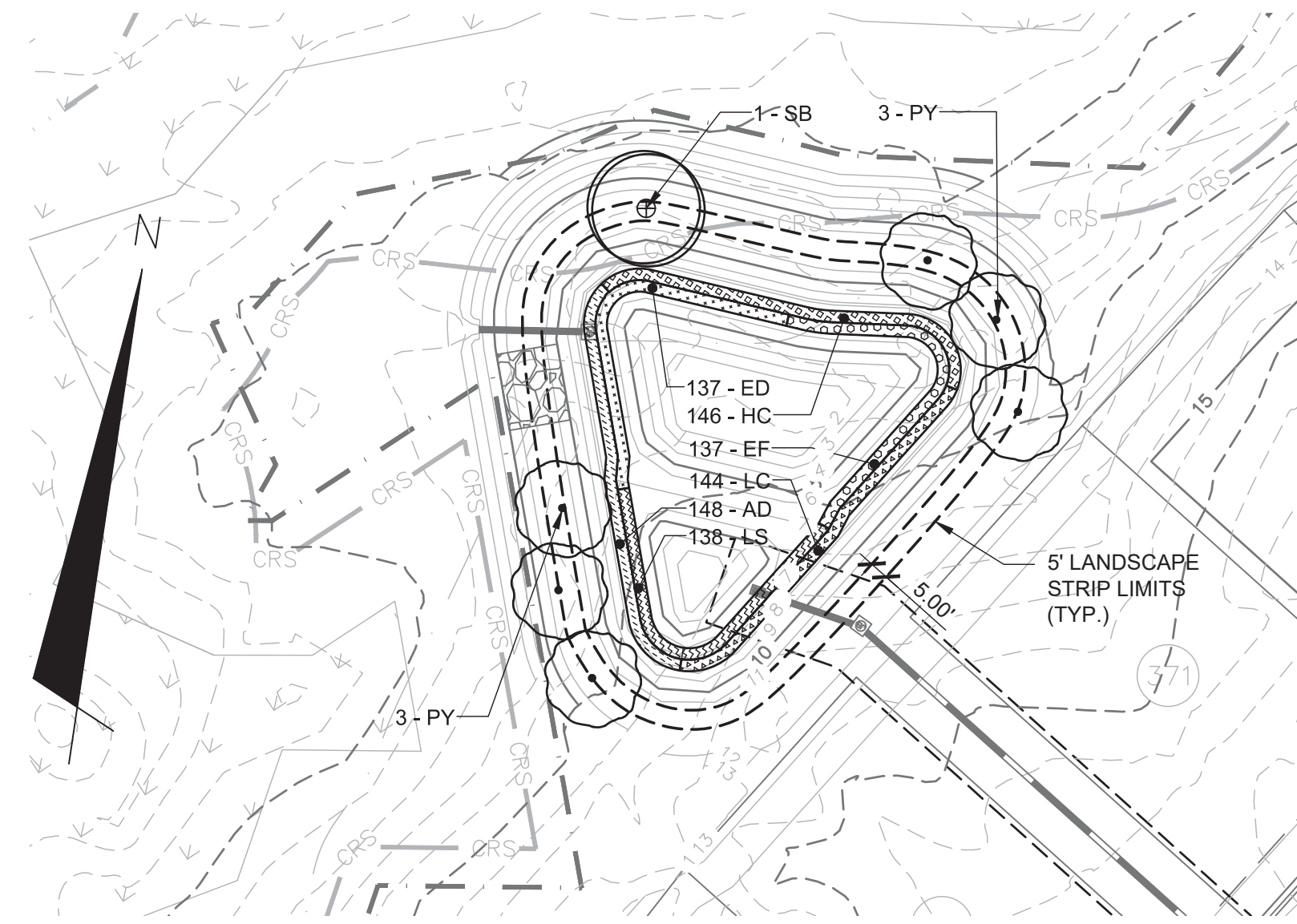
NASH
NORTH AMERICA SEXSUI HOUSE, LLC

RIVERLIGHTS

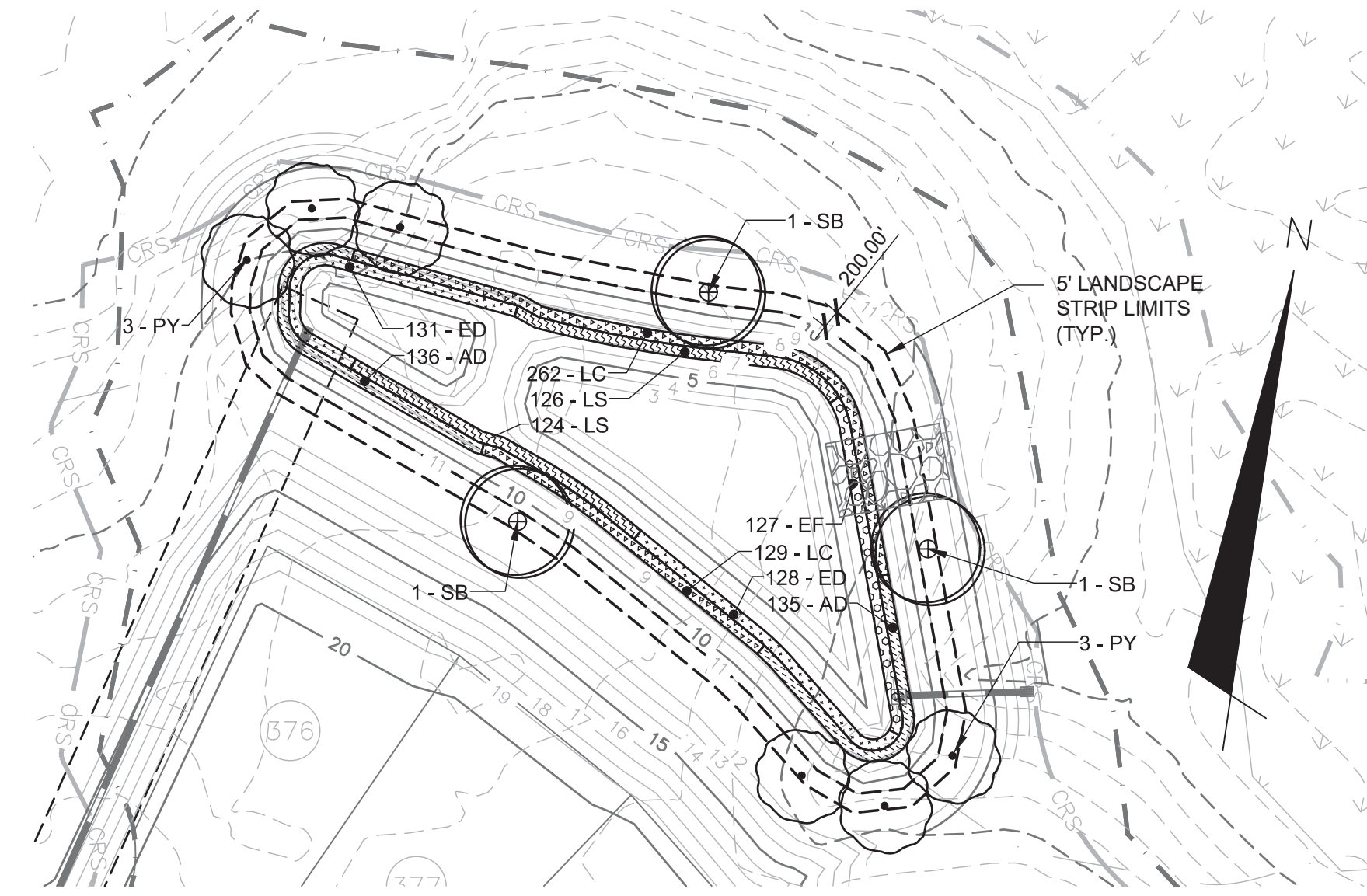
RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

LANDSCAPE PLAN

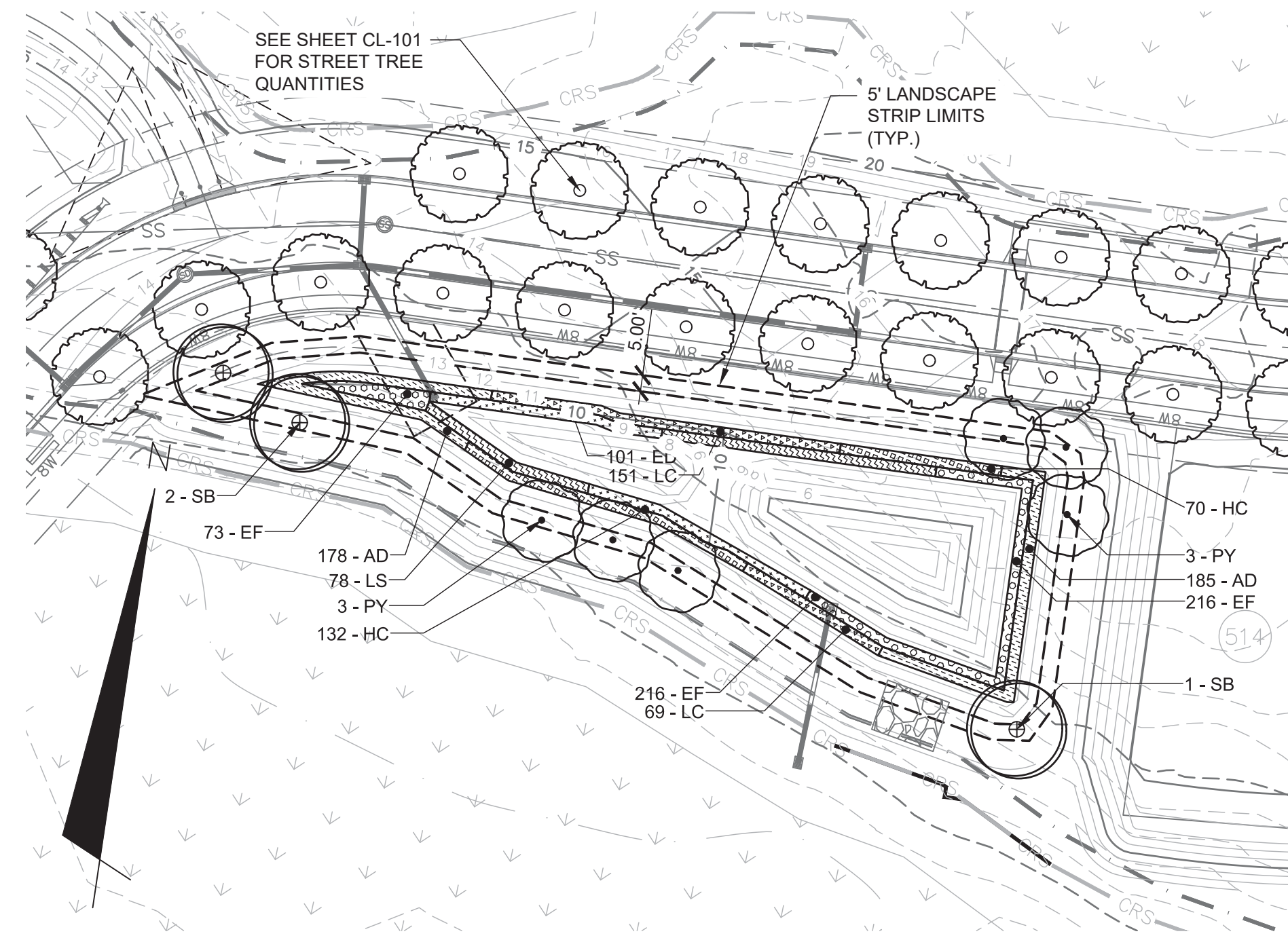
DATE: 01/25/2018	SCALE: 1"=60'	MAC FILE NUMBER: CL-102
MCE PROJ. # 02735-0177	HORIZONTAL: 1"=60'	DRAWING NUMBER: 14B
DRAWN: EEM/ALM/MDH	VERTICAL: N/A	
DESIGNED: EEM/KCBE		
CHECKED: KCBE		
PROJ. MGR.: KCBE		
STATUS: PRELIMINARY DESIGN	REVISION: K	
NOT FOR CONSTRUCTION		



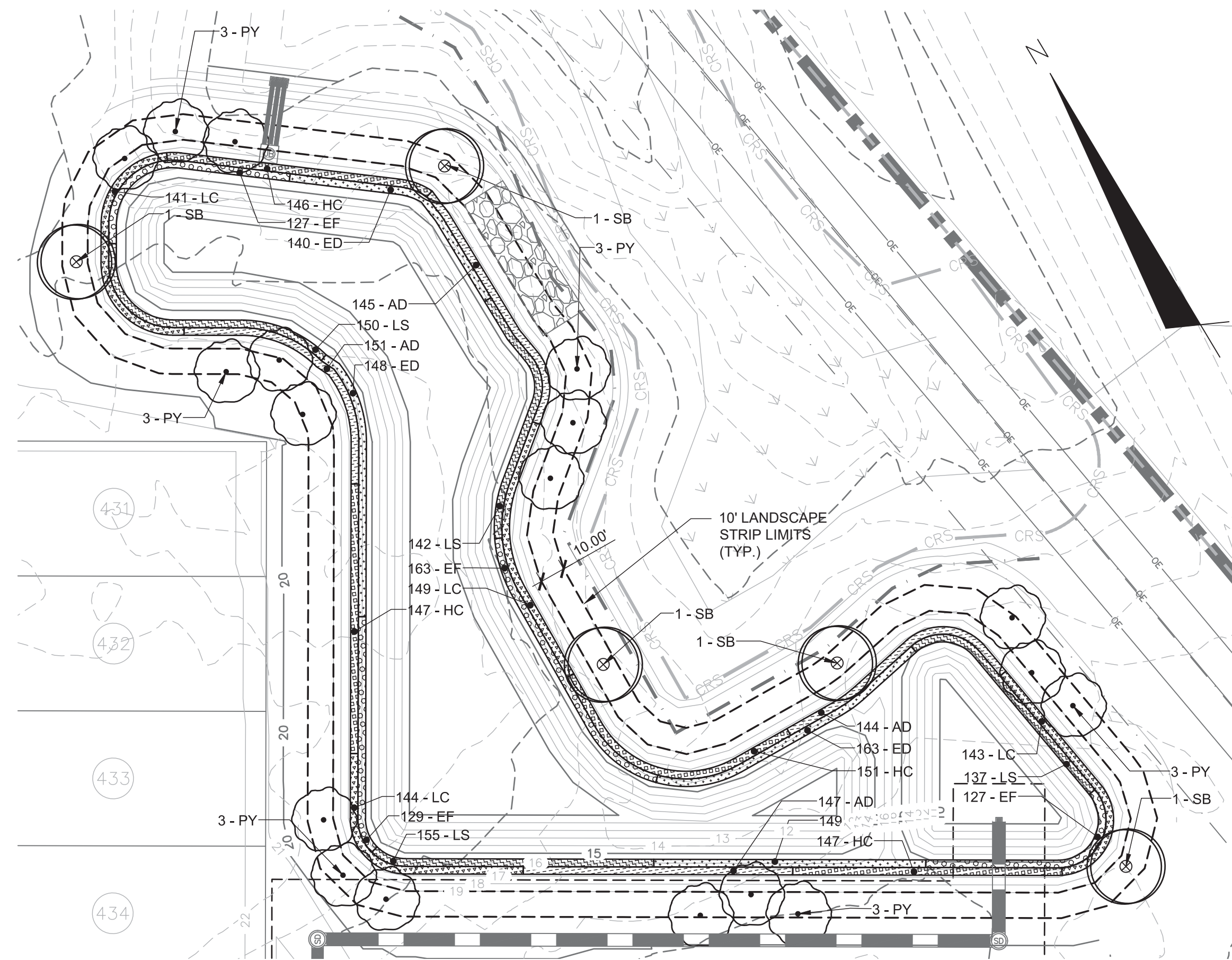
SCM #1 ENLARGED LANDSCAPE PLAN
SCALE 1" = 40'



SCM #2 ENLARGED LANDSCAPE PLAN
SCALE 1" = 40'



SCM #3 ENLARGED LANDSCAPE PLAN
SCALE 1" = 40'



SCM #7 ENLARGED LANDSCAPE PLAN
SCALE 1" = 40'

TREE LEGEND

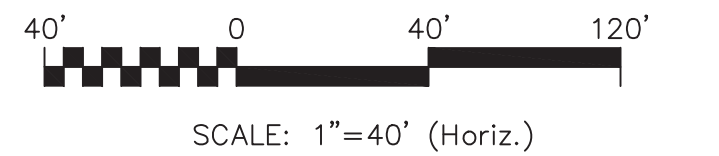
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	QV	SOUTHERN LIVE OAK QUERCUS VIRGINIANA
	SB	WEeping WILLOW SALIX BABYLONICA
	UA	ALLEE ELM ULMUS PARVIFOLIA 'ALLEE'
	ZS	ZELKOVA ZELKOVA SERRATA

SHRUB LEGEND

SHRUBS	CODE	BOTANICAL NAME / COMMON NAME
	EP	ELAEAGNUS PUNGENS THORNY ELEAGNUS

LITORAL SHELF PLANTING LEGEND

SHRUB AREAS	CODE	COMMON NAME
	ED	SWAMP MILKWEED ASCLEPIAS INCARNATA
	AD	DWARF JOE PYE WEED EUPATORIADELPHUS DUBIUS
	EF	JOE PYE WEED EUPATORIADELPHUS FISTULOSUS
	HC	SCARLET ROSEMALLOW HIBISCUS COCCINEUS
	LC	CARDINAL FLOWER LOBELIA CARDINALIS
	LS	GREAT LOBELIA LOBELIA SIPHILITICA



1 inch

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CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REV. NO.	DESCRIPTIONS / REVISIONS	DATE
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SEAL

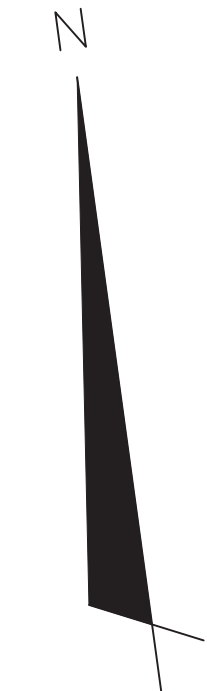
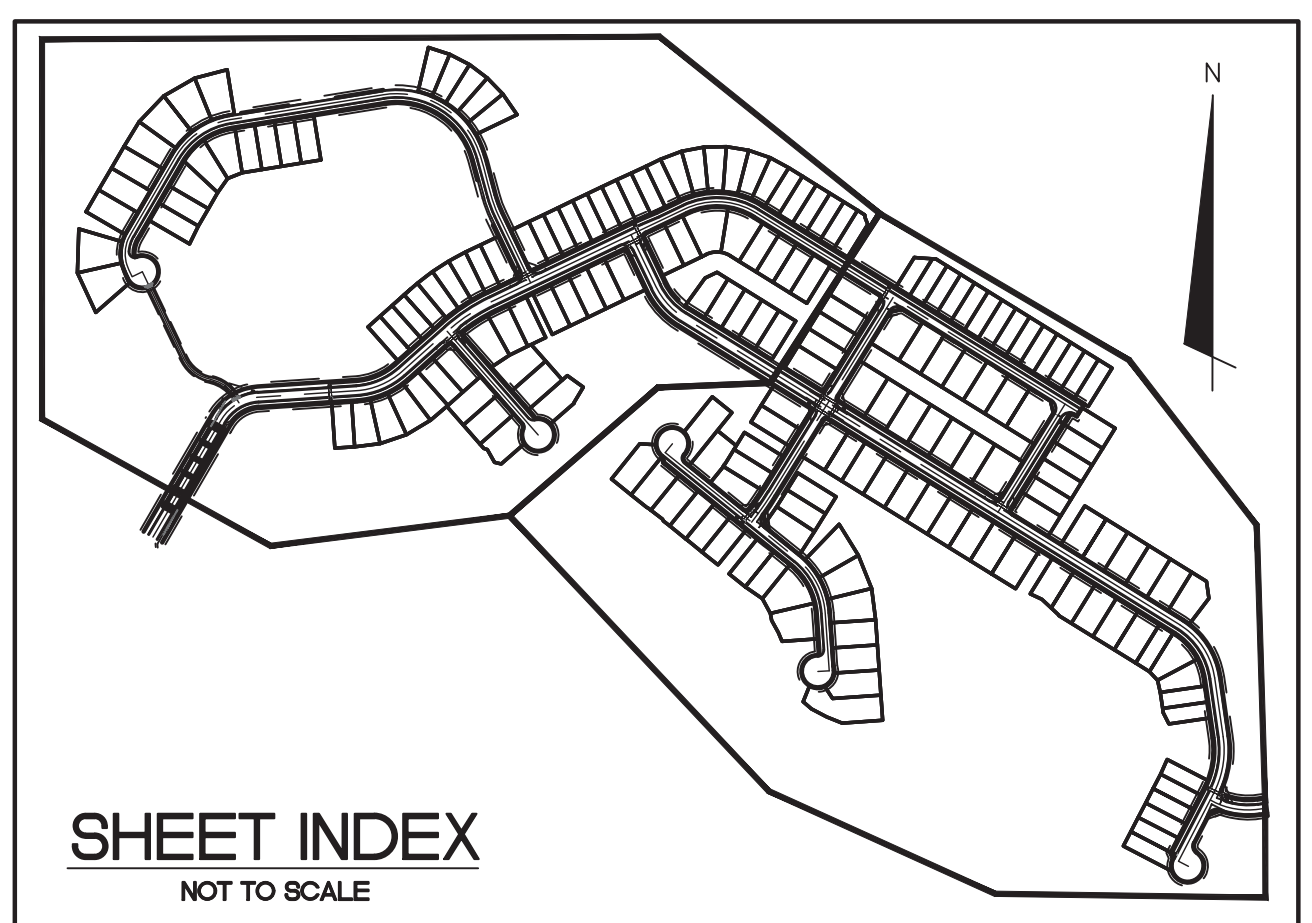
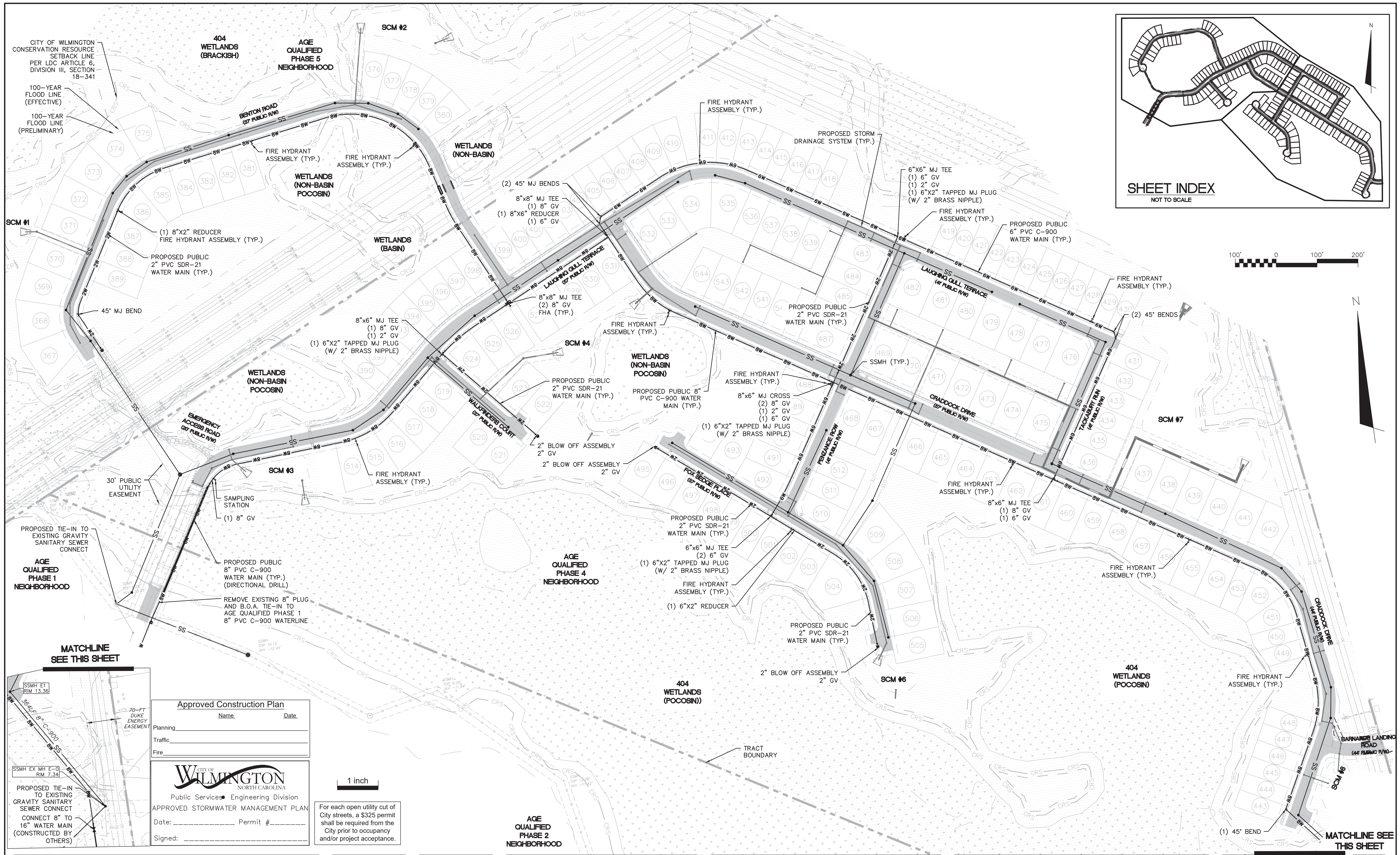
SEAL

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243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
ENLARGED SCM LANDSCAPE PLANS

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE
SCALE: HORIZONTAL: 1" = 60', VERTICAL: N/A
MAC FILE NUMBER: CL-103
DRAWING NUMBER: 14C
STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION
REVISION: K



CITY OF WILMINGTON
CONSERVATION RESOURCE
SETBACK LINE
PER LOC ARTICLE 6,
DIVISION III, SECTION
18-341

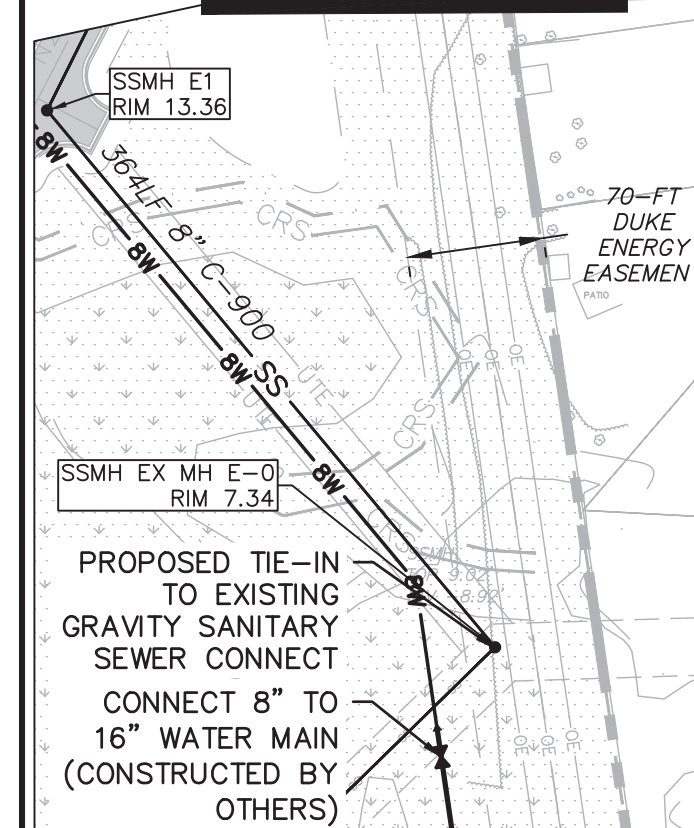
100-YEAR
FLOOD LINE
(EFFECTIVE)

100-YEAR
FLOOD LINE
(PRELIMINARY)

SCM #1

AGE QUALIFIED
PHASE 1
NEIGHBORHOOD

MATCHLINE
SEE THIS SHEET



Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Traffic: _____

Fire: _____

WILMINGTON
NORTH CAROLINA
Public Services Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

1 inch

For each open utility cut of
City streets, a \$325 permit
shall be required from the
City prior to occupancy and
or project acceptance.

REVNO.	DESCRIPTIONS REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

SEAL

FINAL DRAWING
FOR REVIEW
PURPOSES ONLY

AGE QUALIFIED
PHASE 2
NEIGHBORHOOD

MCKIM & CREED

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Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
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www.mckimcreed.com

RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

OVERALL UTILITIES PLAN

DATE: 01/25/2018

MCE PROJ # 02735-0177

DRAWN EEM/ALM/MDH

DESIGNED EEM/KCBE

CHECKED KCBE

PROJ. MGR. KCBE

SCALE

HORIZONTAL: 1" = 100'

VERTICAL: N/A

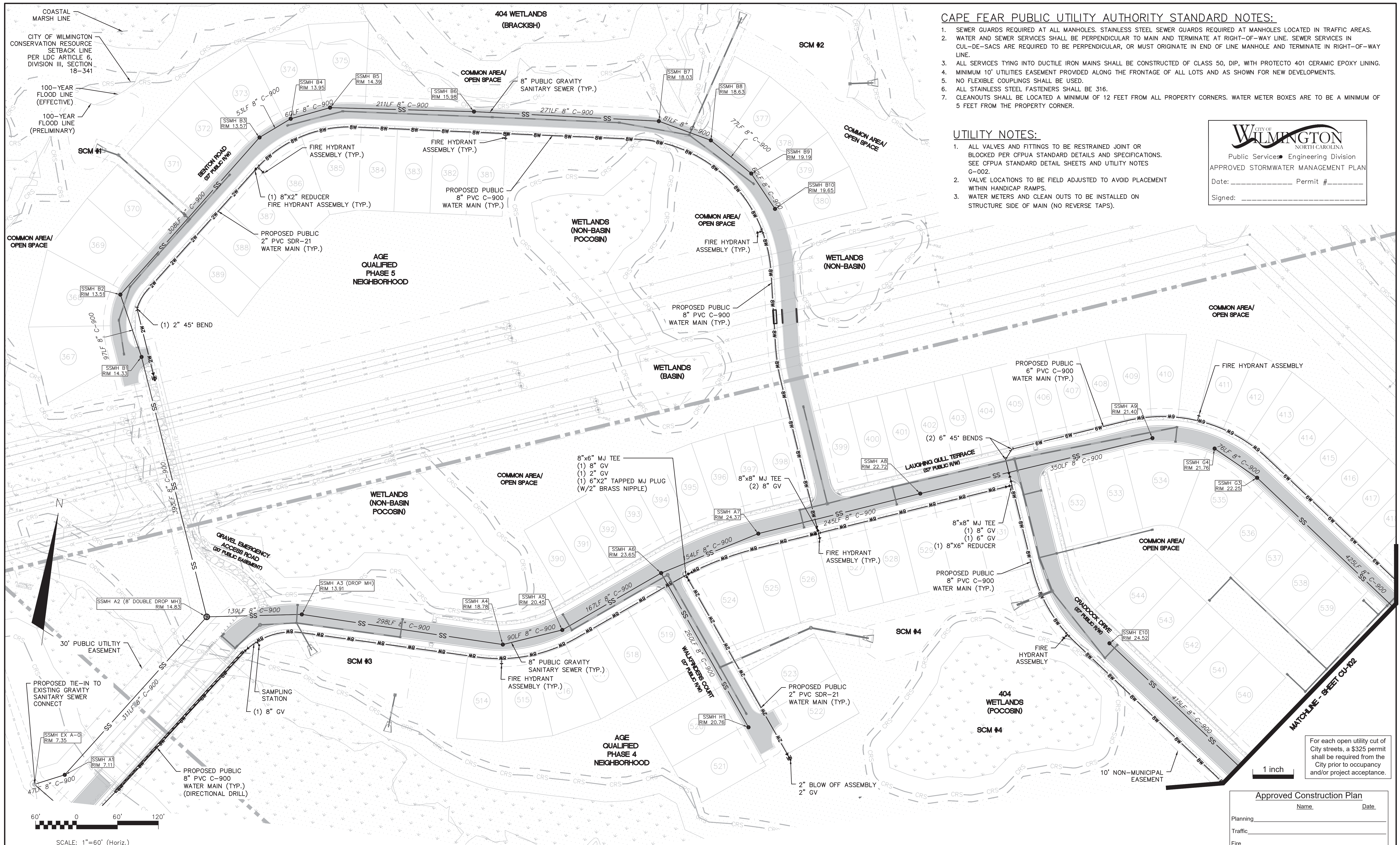
STATUS: PRELIMINARY DESIGN

NOT FOR CONSTRUCTION

REVISION K

MAC FILE NUMBER: CU-100

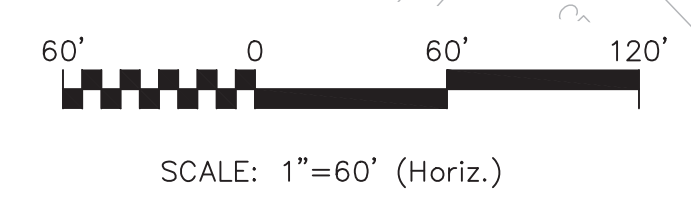
DRAWING NUMBER: 15



- CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:**
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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 - ALL STAINLESS STEEL FASTENERS SHALL BE 316.
 - CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

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CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

REVNO.	DESCRIPTIONS/REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFWA ADDITIONAL INFORMATION	10/12/2018
G	CFWA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

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243 North Front Street
Wilmington, North Carolina 28401
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NASH RIVERLIGHTS™
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
UTILITIES PLAN

DATE: 01/25/2018	SCALE: HORIZONTAL: 1" = 60'	MAC FILE NUMBER: CU-101
MCE PROJ # 02735-0177	VERTICAL: N/A	DRAWING NUMBER: 16
DRAWN: EEM/ALM/MDH		
DESIGNED: EEM/KCBE		
CHECKED: KCBE		
PROJ. MGR.: KCBE		
STATUS: PRELIMINARY DESIGN	REVISION: K	
NOT FOR CONSTRUCTION		

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

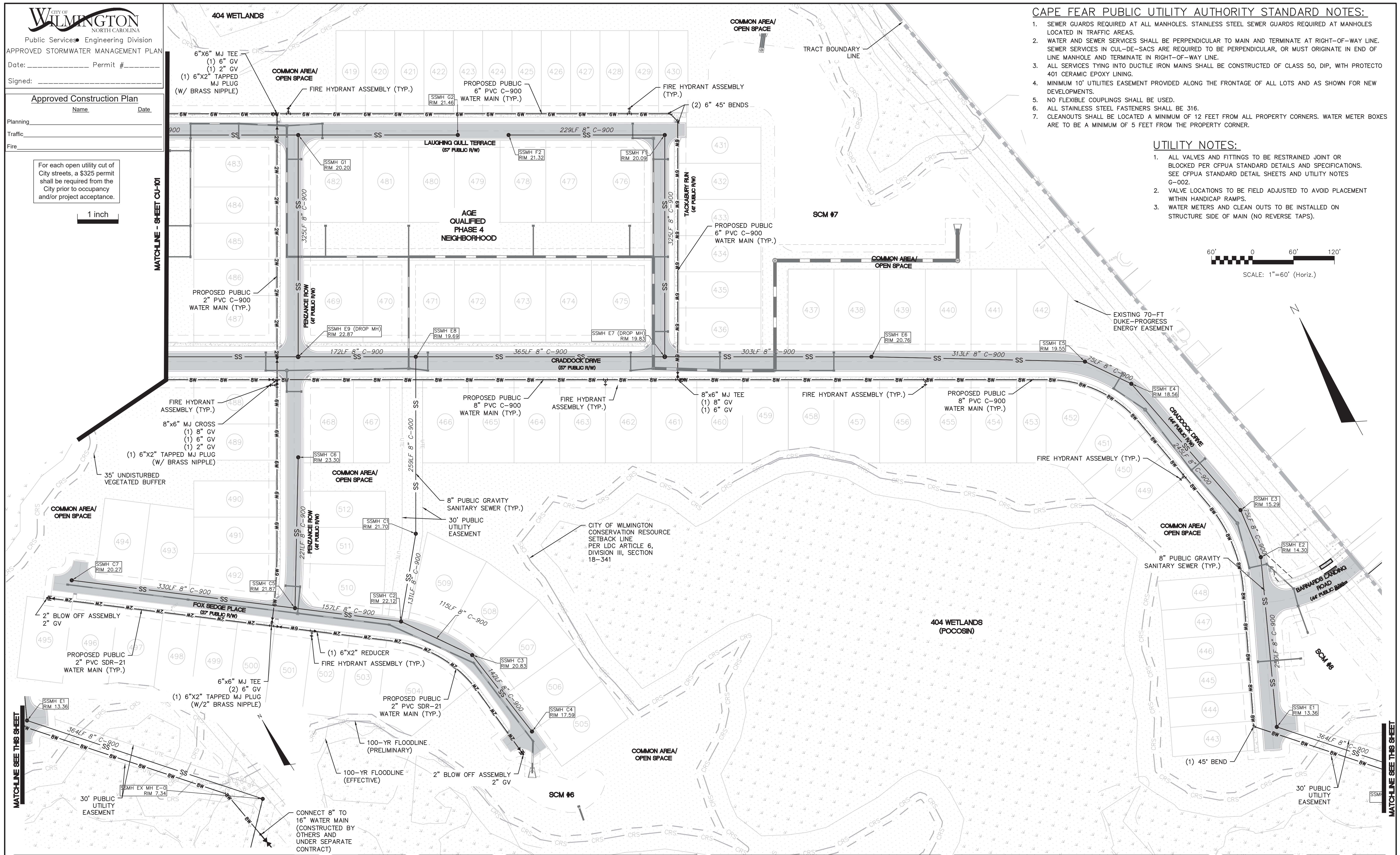
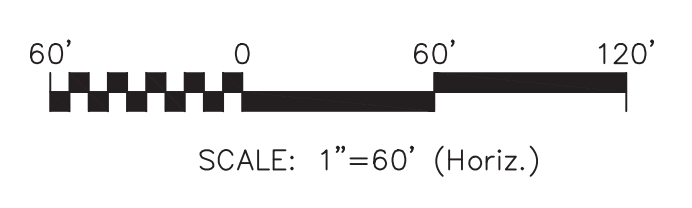
Name	Date
Planning	
Traffic	
Fire	

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1 inch

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REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
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A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

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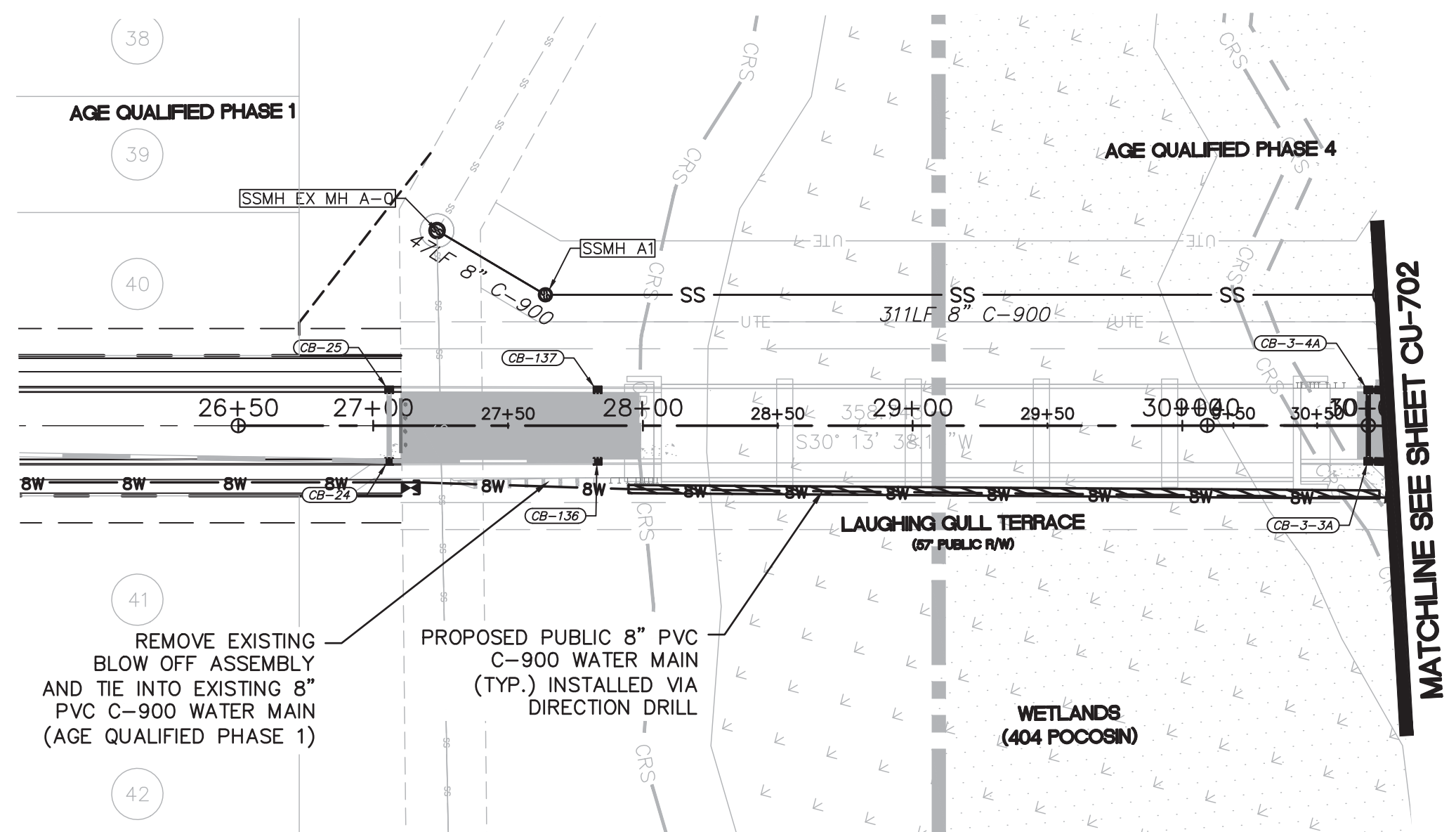
NASH
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

UTILITIES PLAN

DATE: 01/25/2018	SCALE: HORIZONTAL: 1" = 60'	MAC FILE NUMBER: CU-102
MCE PROJ # 02735-0177	VERTICAL: N/A	17
DRAWN: EEM/ALM/MDH		
DESIGNED: EEM/KCBE		
CHECKED: KCBE		
PROJ. MGR.: KCBE		
STATUS: PRELIMINARY DESIGN	REVISION: K	
NOT FOR CONSTRUCTION		

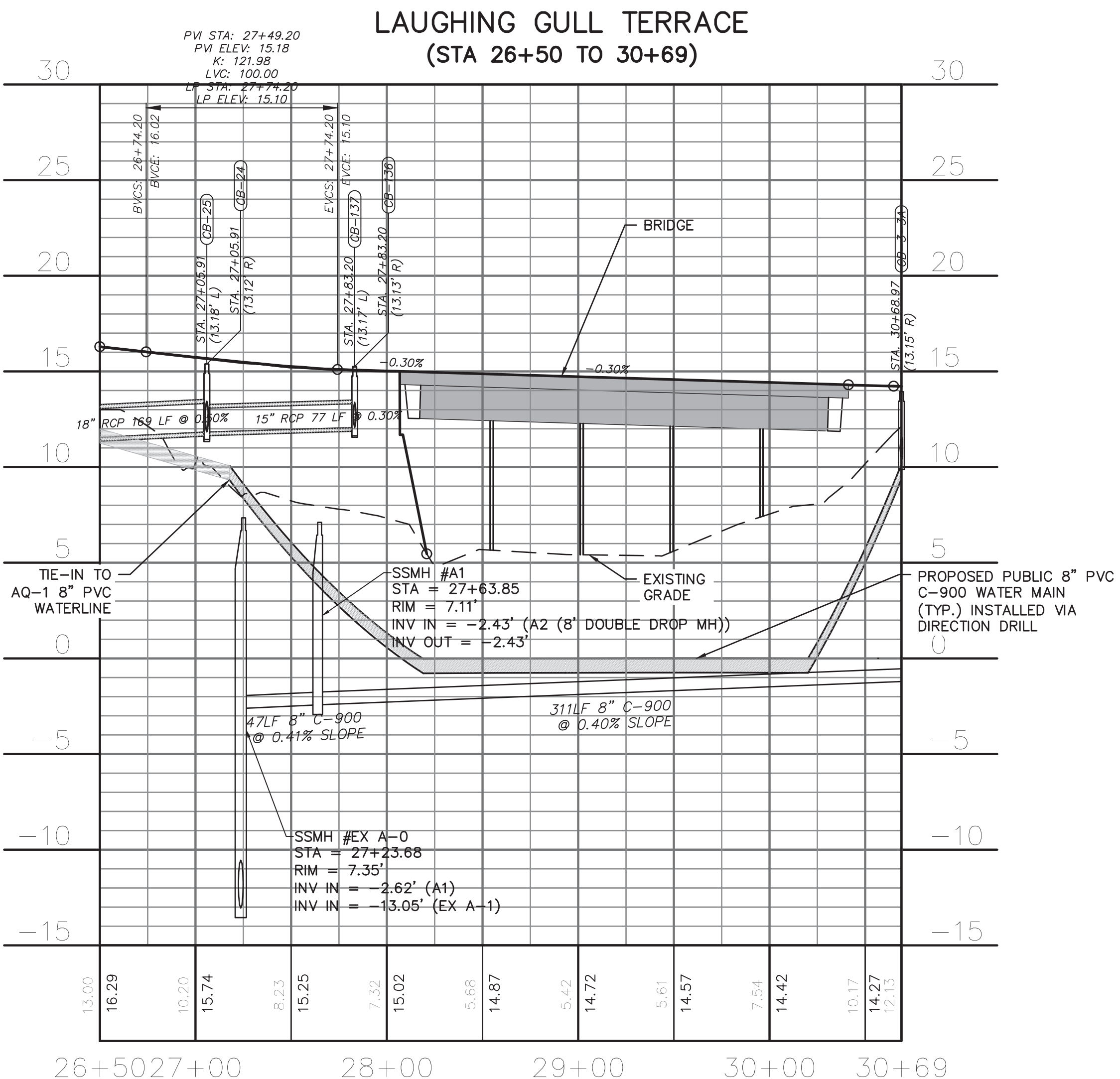


CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

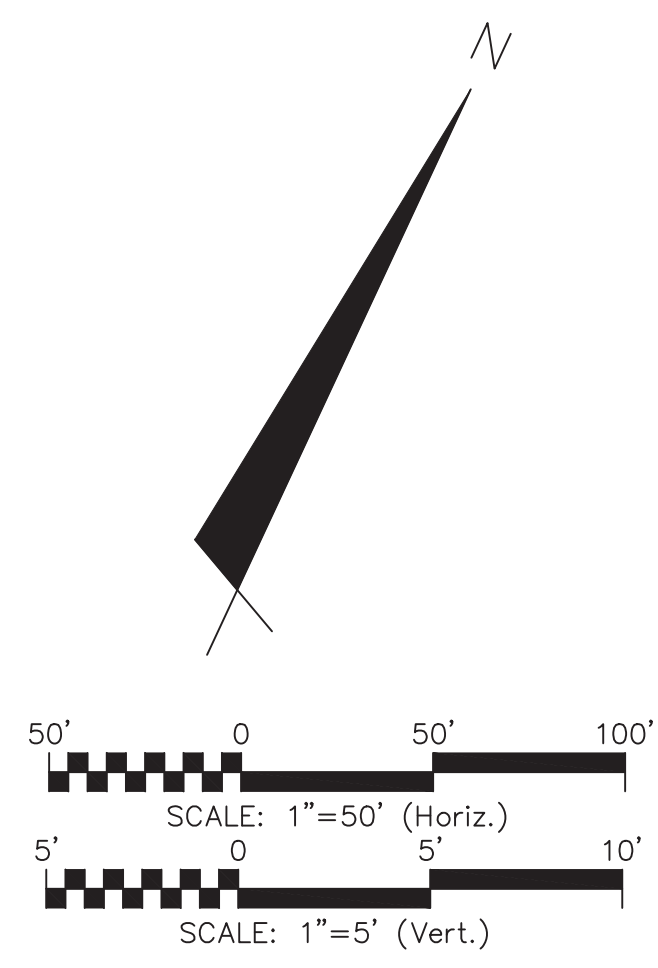
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**LAUGHING GULL TERRACE
(STA 26+50 TO 30+69)**



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

REV. NO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPUA ADDITIONAL INFORMATION	10/12/2018
G	CFPUA RE-SUBMITTAL	08/21/2018
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A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

SEAL

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RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

PLAN AND PROFILE
LAUGHING GULL TERRACE STA
26+50 TO 30+69

DATE: 01/25/2018

MCE PROJ. # 02735-0177

DRAWN: EEM/ALM/MDH

DESIGNED: EEM/KCBE

CHECKED: KCBE

PROJ. MGR.: KCBE

SCALE: HORIZONTAL: 1" = 50', VERTICAL: 1" = 5'

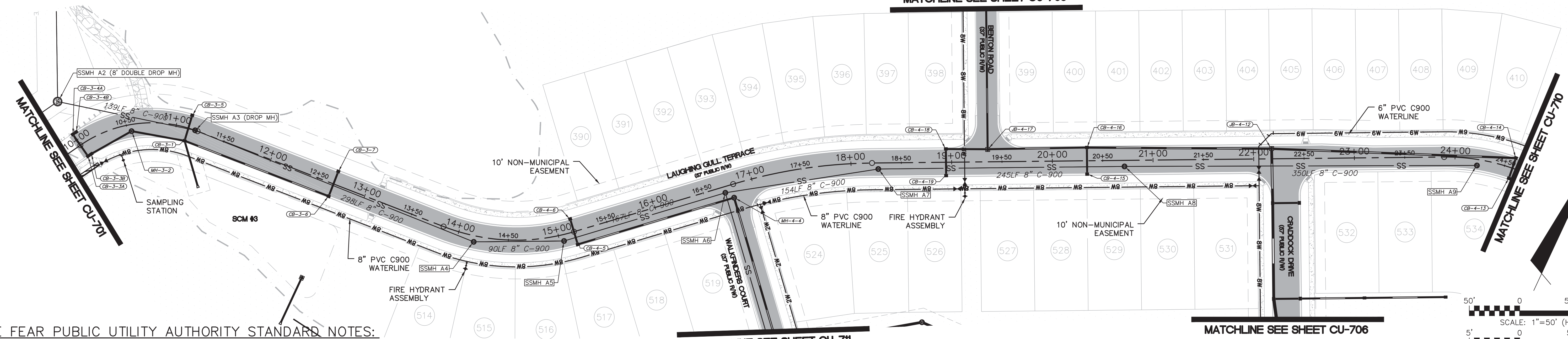
MAC FILE NUMBER: CU-701

DRAWING NUMBER: 18

REVISION: K

STATUS: PRELIMINARY DESIGN NOT FOR CONSTRUCTION

MATCHLINE SEE SHEET CU-703



CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

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**LAUGHING GULL TERRACE
(STA 9+40.3 TO 24+50)**

Approved Construction Plan

Name: _____ Date: _____

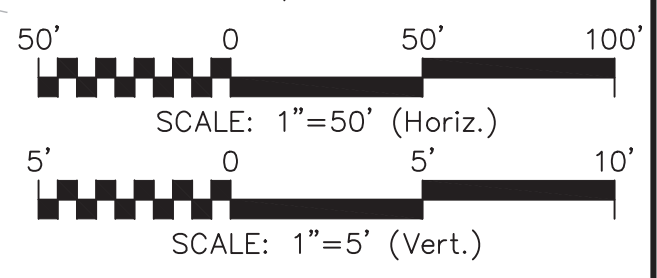
Planning: _____

Traffic: _____

Fire: _____

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1 inch



CITY OF WILMINGTON
NORTH CAROLINA

Public Services Engineering Division

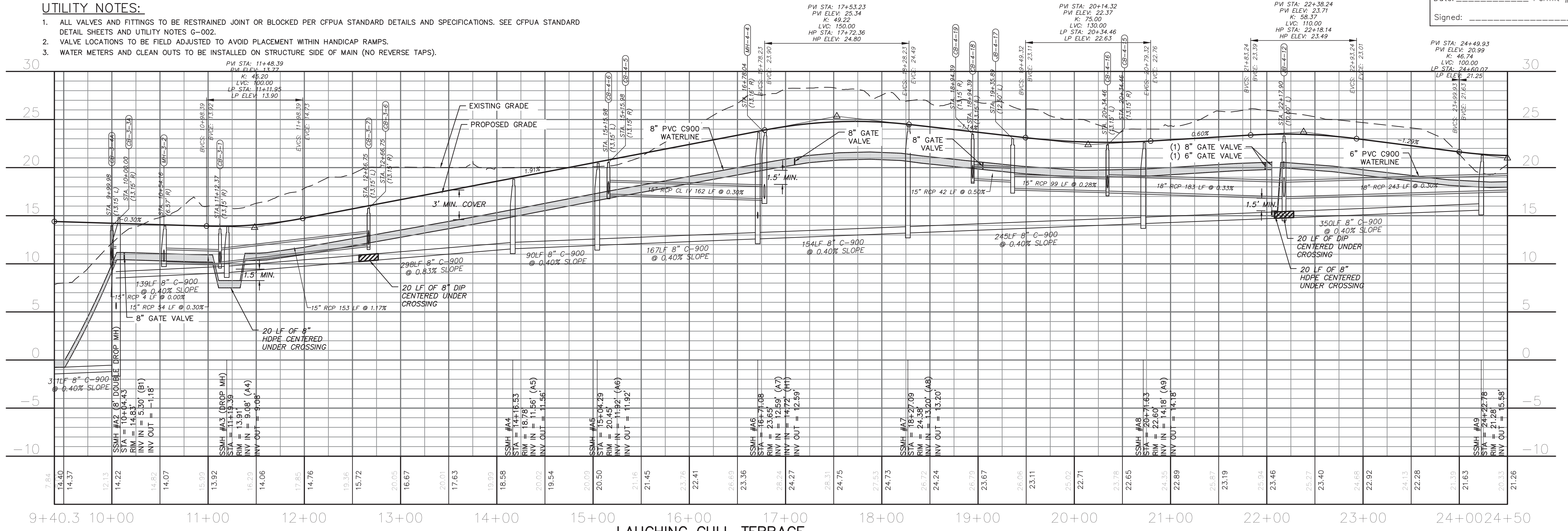
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

UTILITY NOTES:

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**LAUGHING GULL TERRACE
(STA 9+40.3 TO 24+50)**

REV.	DESCRIPTION	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
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G	CFPUA RE-SUBMITTAL	08/21/2018
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D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/25/2018
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A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING -
FOR REVIEW
PURPOSES ONLY

SEAL

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MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

**PLAN AND PROFILE
LAUGHING GULL TERRACE
STA 9+40 TO 24+50**

01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER
CU-702
DRAWING NUMBER
19
REVISION
K

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

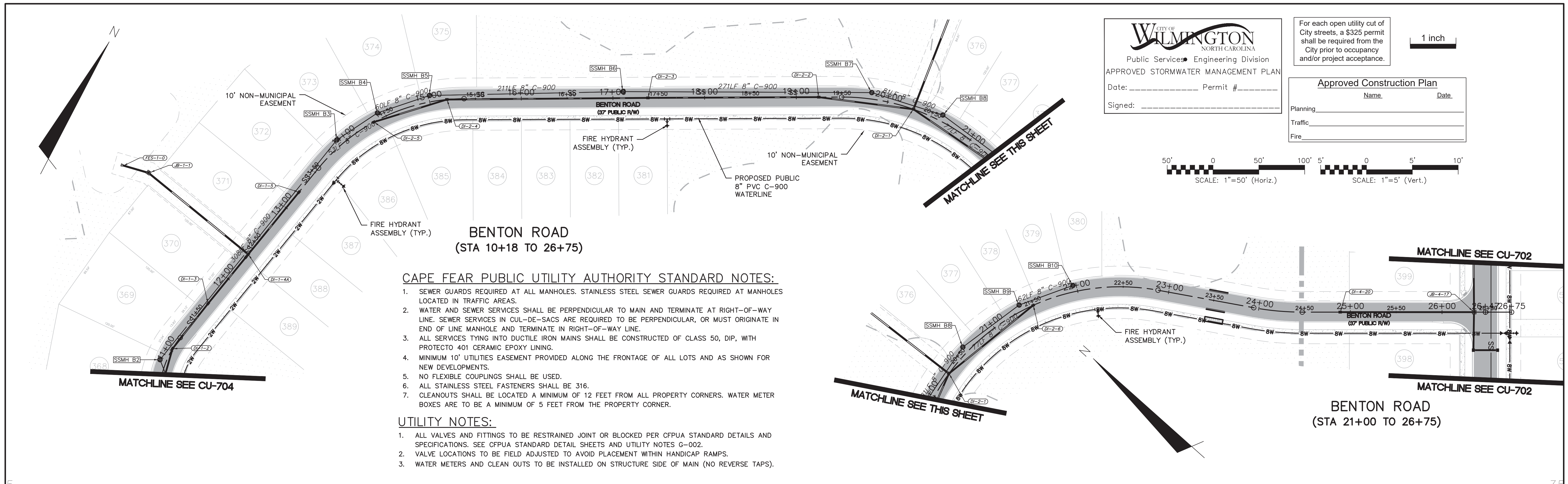
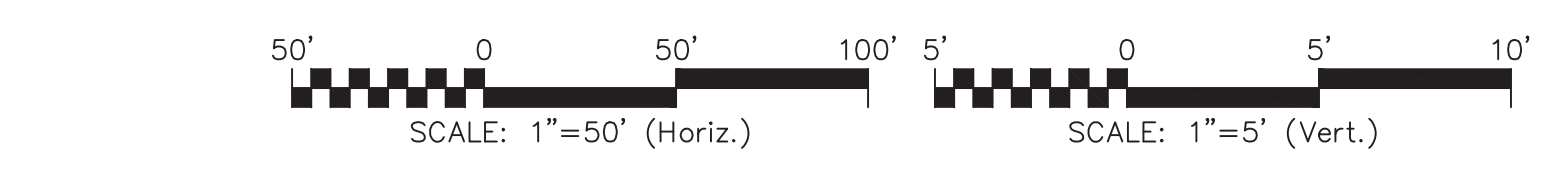
Approved Construction Plan

Name: _____ Date: _____

Planning: _____

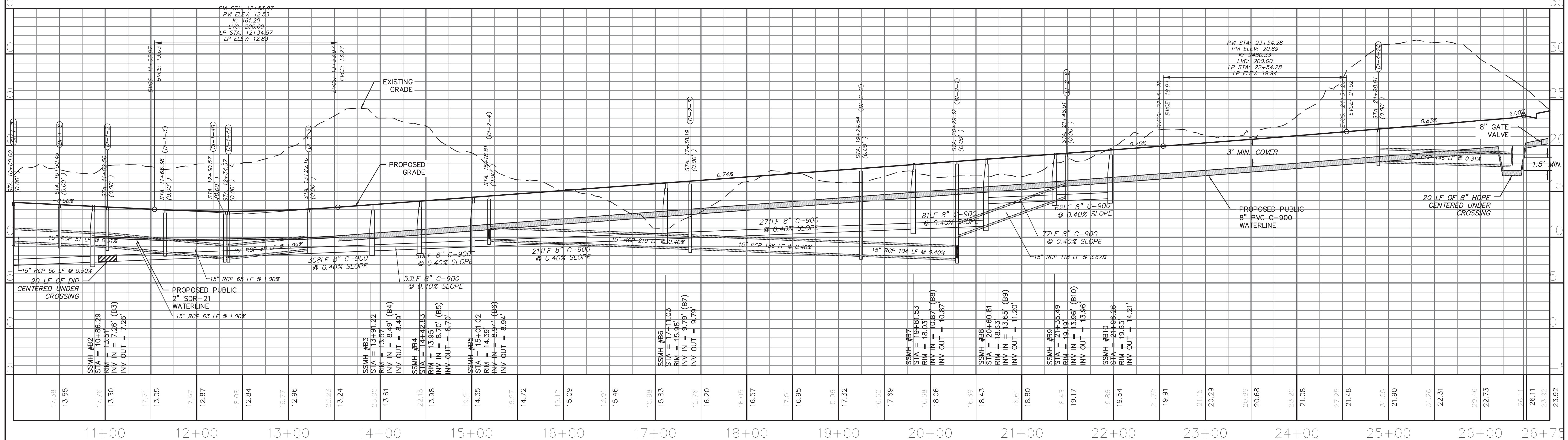
Traffic: _____

Fire: _____



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BENTON ROAD (STA 10+18 TO 26+75)

REVNO.	DESCRIPTIONS / REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
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G	CFPUA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

MCKIM & CREED

243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

BENTON ROAD
PLAN AND PROFILE
STA 10+18 TO 26+75

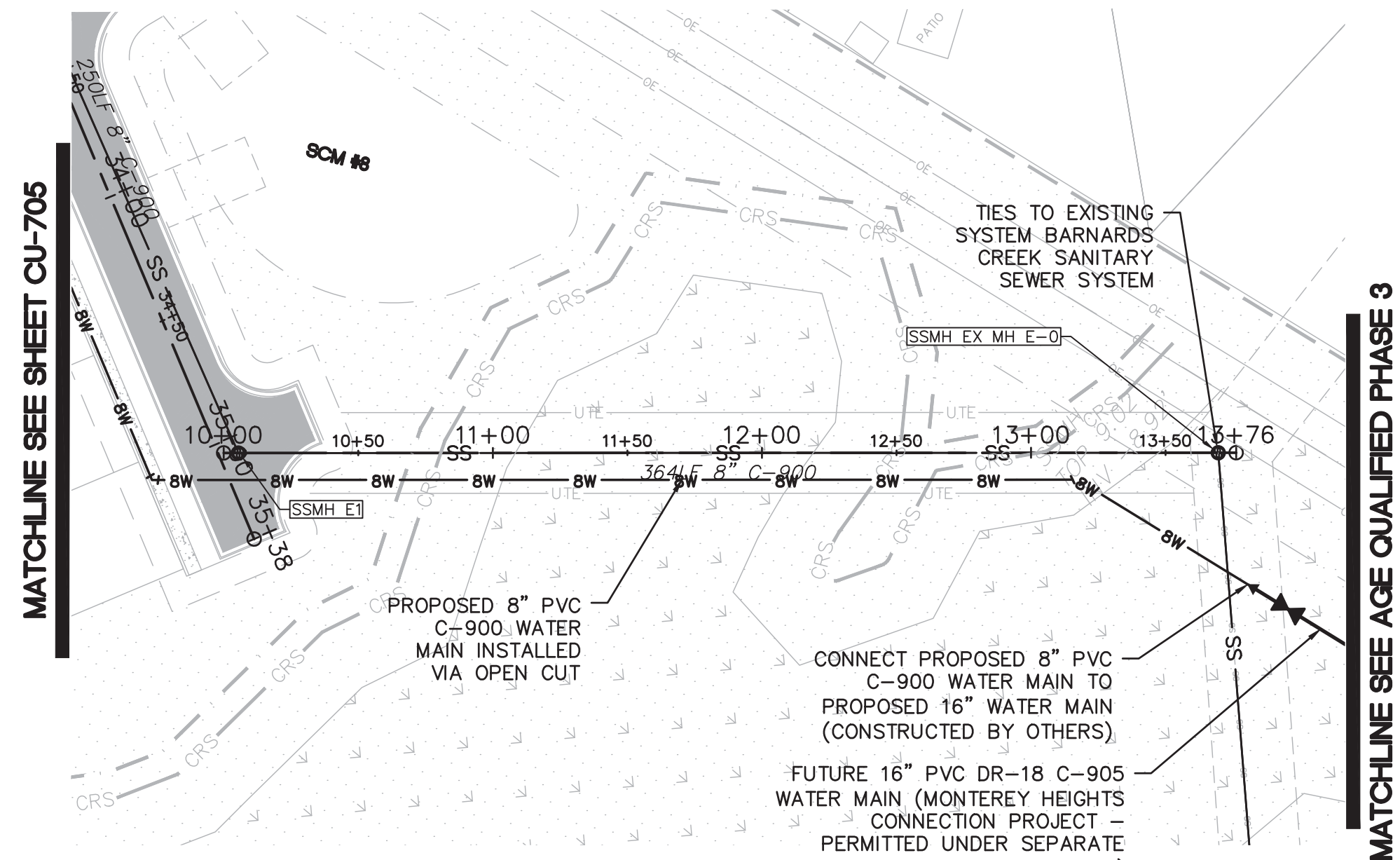
DATE: 01/25/2018
MCE PROJ # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER: **CU-703**
DRAWING NUMBER: **20**

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

REVISION: **K**



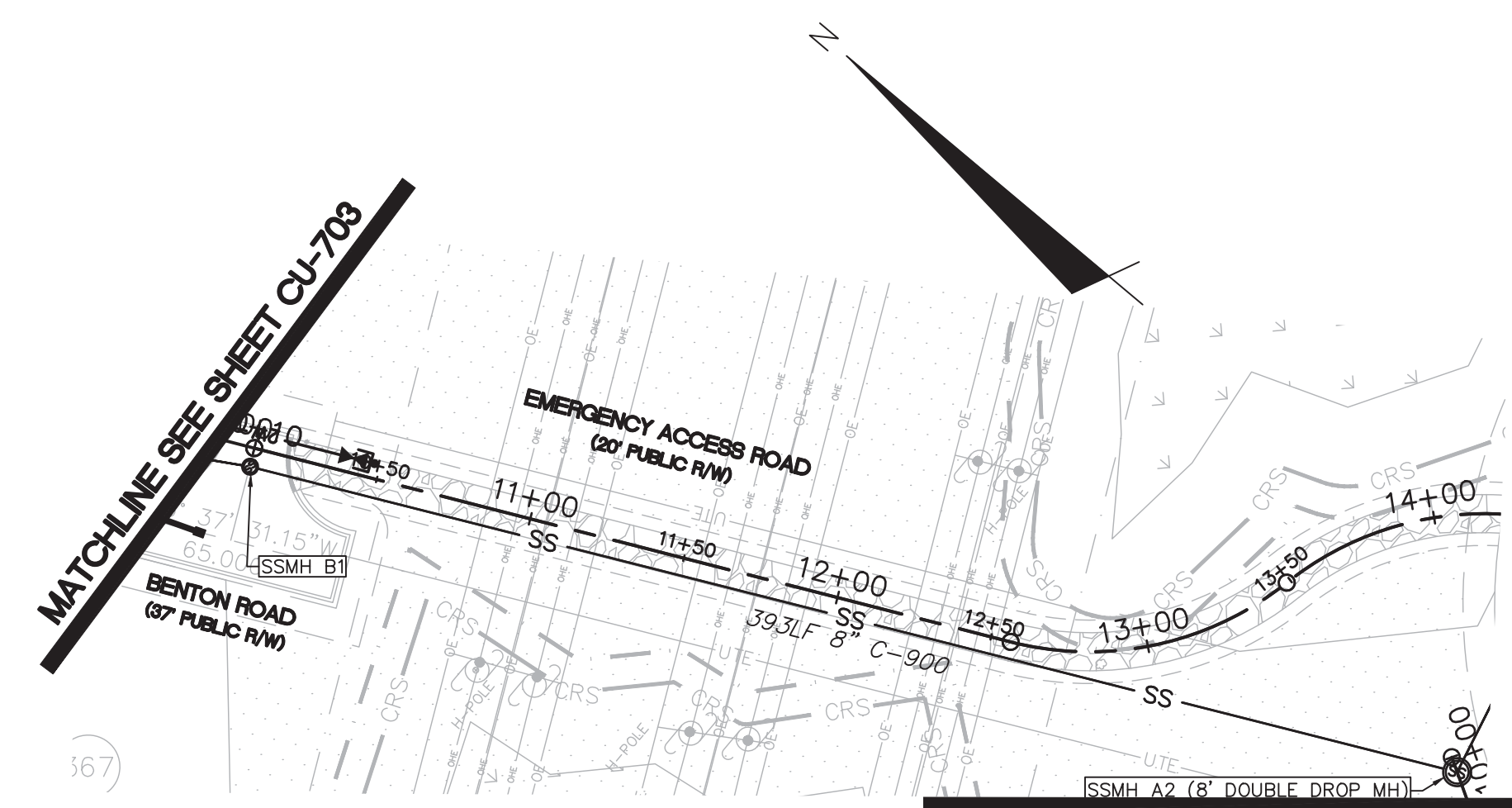
**AQ-4 SANITARY SEWER OUTFALL
(STA 10+00 TO 13+76)**

**CAPE FEAR PUBLIC UTILITY AUTHORITY
STANDARD NOTES:**

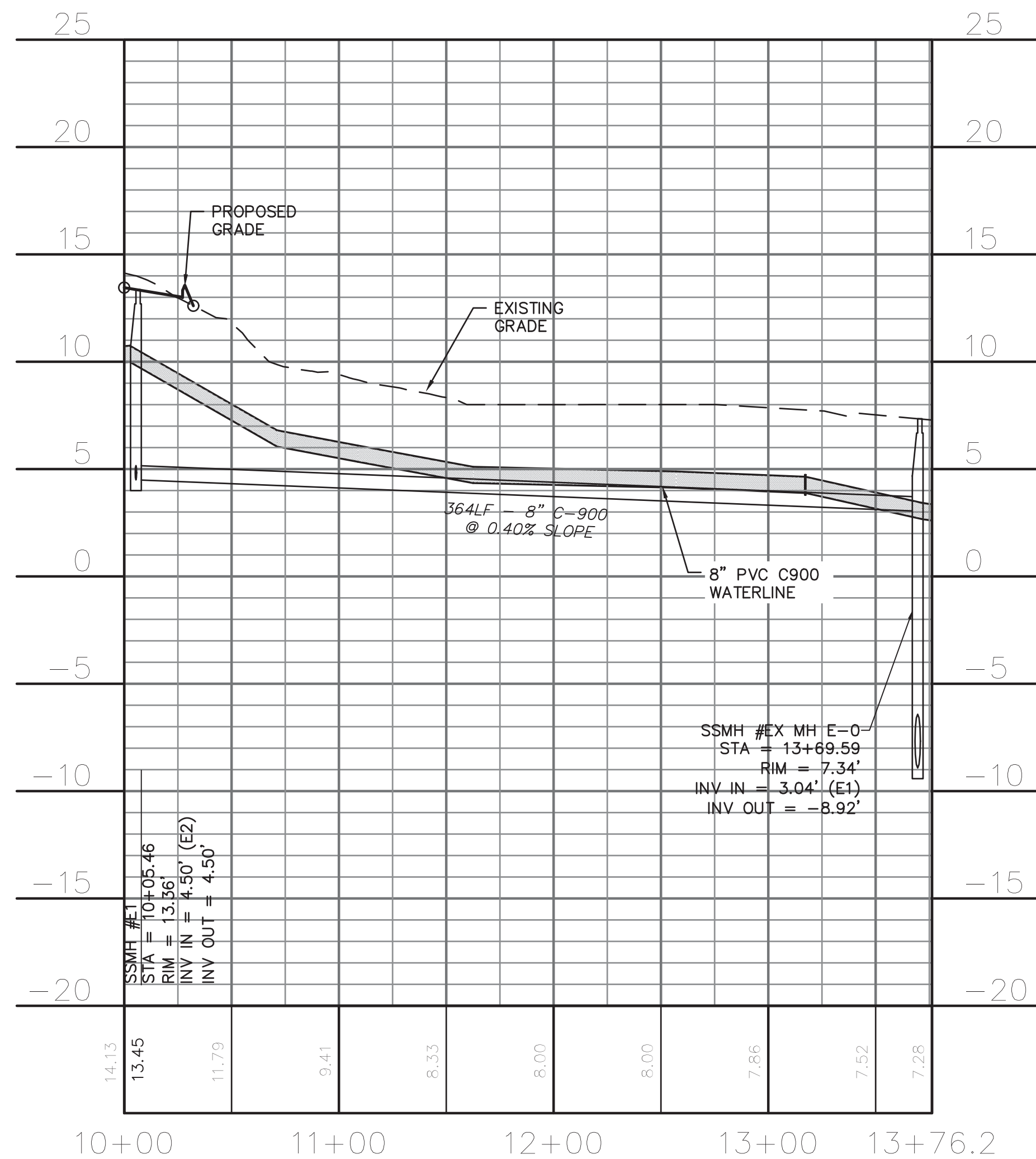
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**EMERGENCY ACCESS RD
(STA 10+00 TO 14+50)**



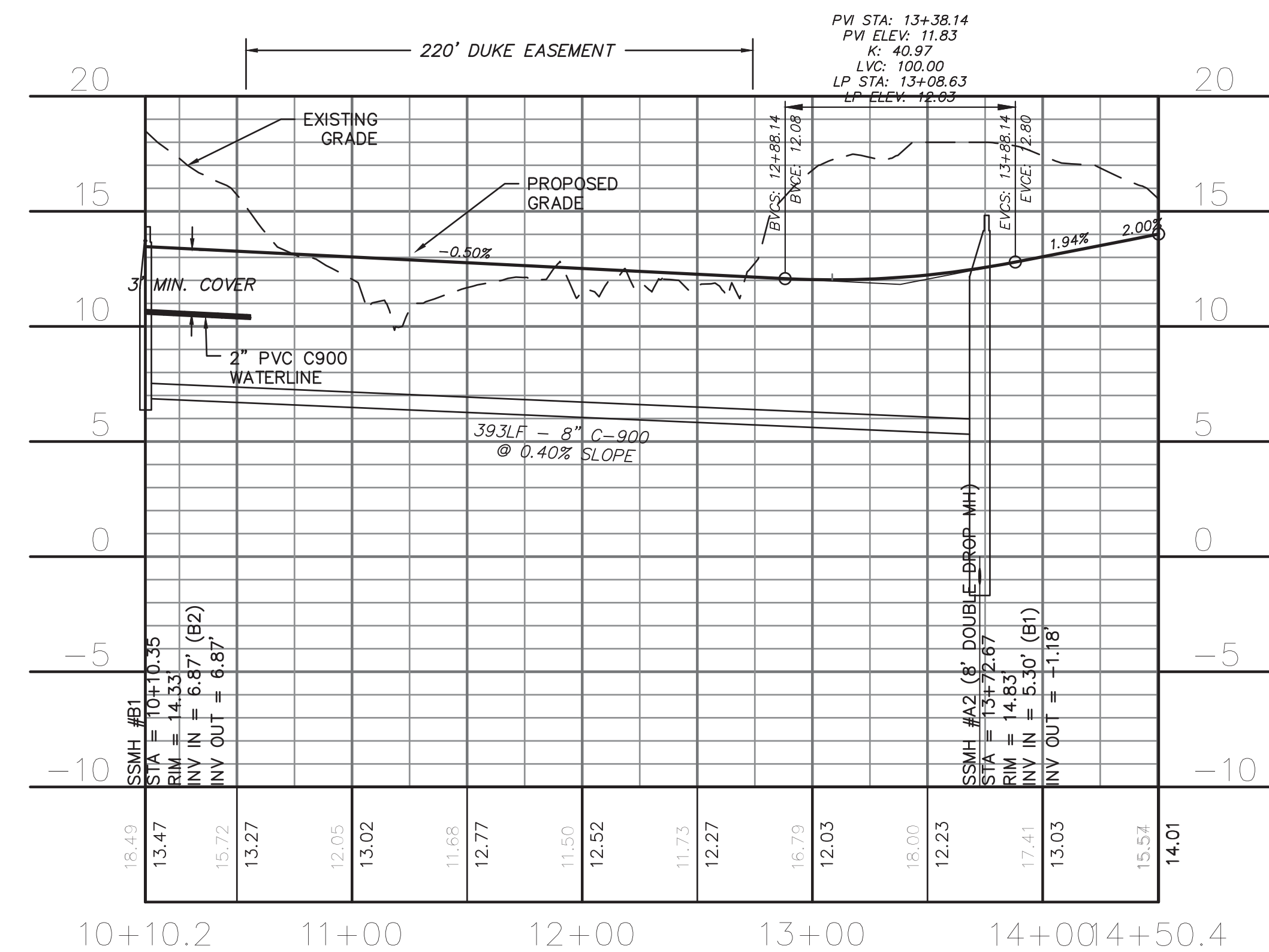
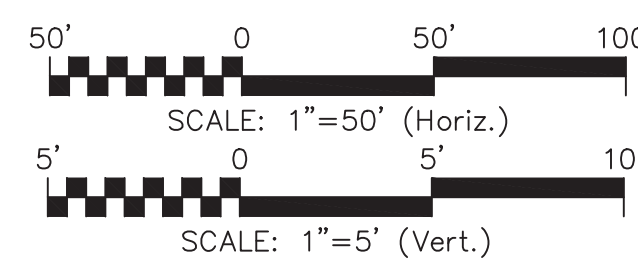
**AQ-4 SANITARY SEWER OUTFALL
(STA 10+00 TO 13+76)**

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

1 inch

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



**EMERGENCY ACCESS RD
(STA 10+00 TO 14+50)**

REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPUA ADDITIONAL INFORMATION	10/12/2018
G	CFPUA RE-SUBMITTAL	08/21/2018
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SEAL
FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

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RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
PLAN AND PROFILE
AQ-4 SANITARY SEWER OUTFALL
EMERGENCY ACCESS ROAD

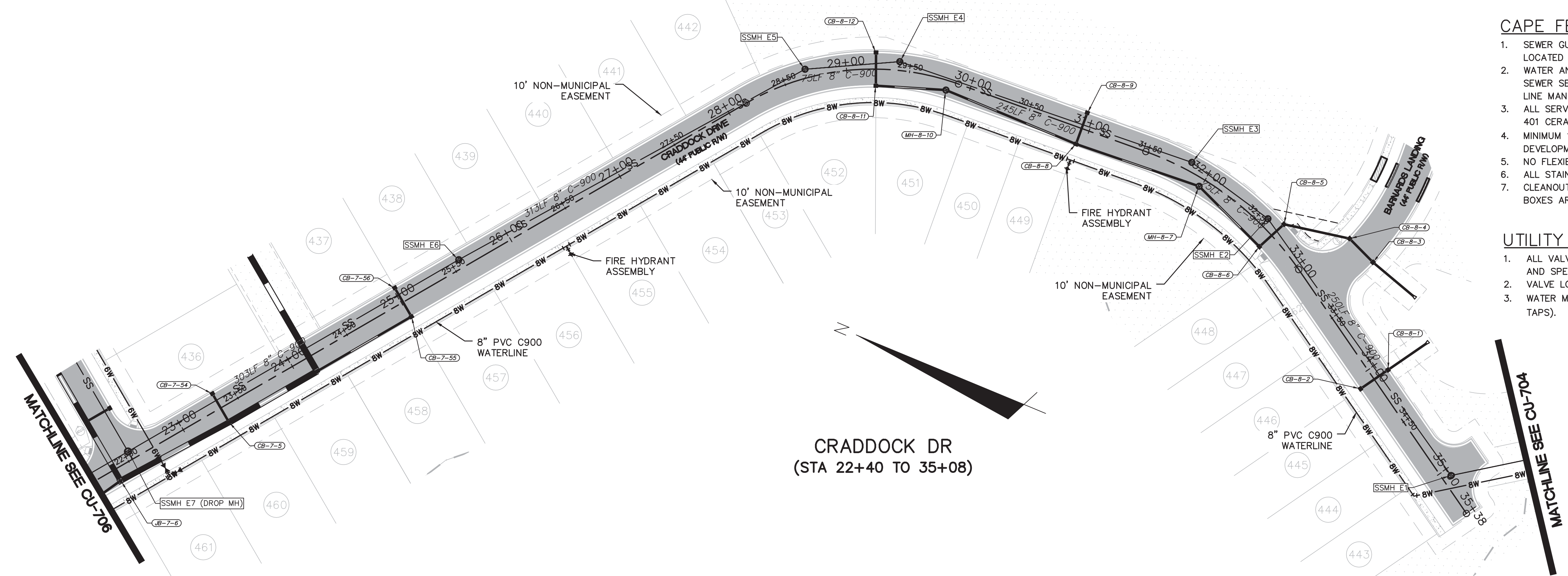
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'
MAC FILE NUMBER: CU-704
DRAWING NUMBER: 21
STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION
REVISION K

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

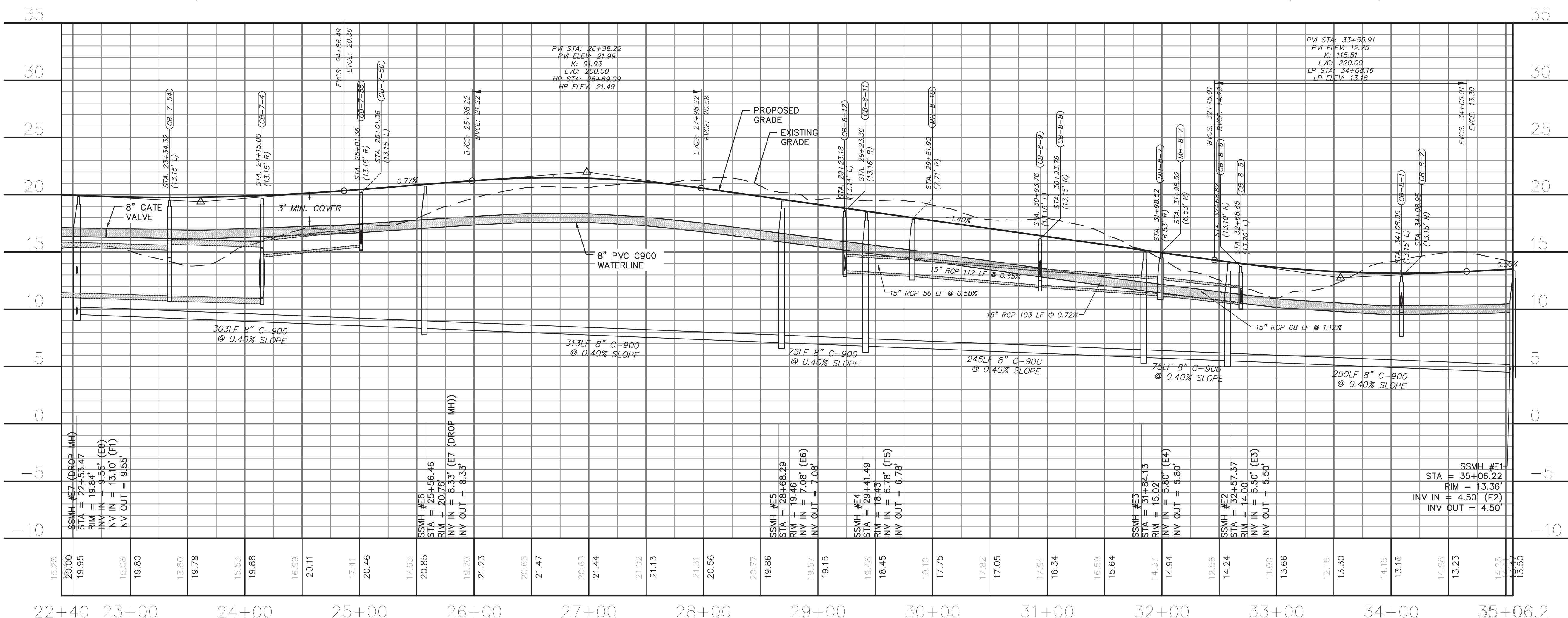
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**CRADDOCK DR
(STA 22+40 TO 35+08)**



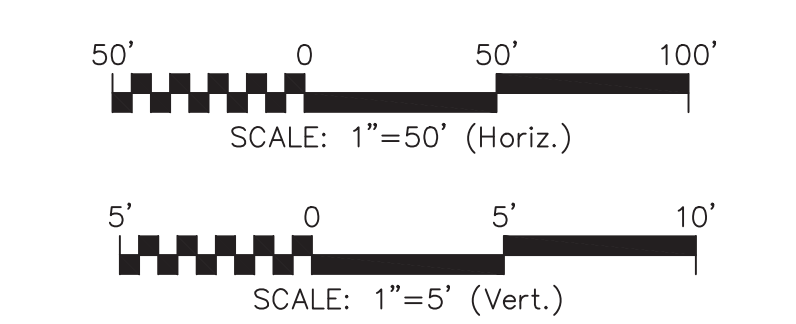
**CRADDOCK DR
(STA 22+40 TO 35+08)**

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

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Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	



REVNO.	DESCRIPTIONS	DATE
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C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

**FINAL DRAWING
FOR REVIEW
PURPOSES ONLY**

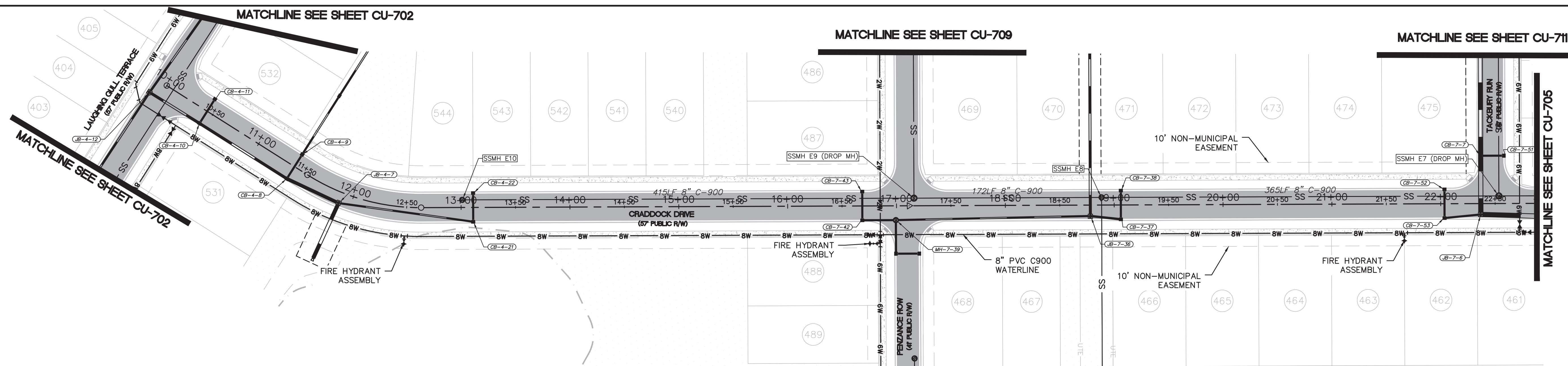
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RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

**RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
CRADDOCK ROAD
PLAN AND PROFILE
STA 22+40 TO 35+08**

DATE: 01/25/2018	SCALE: HORIZONTAL: 1" = 50'	MAC FILE NUMBER: CU-705
MCE PROJ. # 02735-0177	VERTICAL: 1" = 5'	DRAWING NUMBER: 22
DRAWN: EEM/ALM/MDH	DESIGNED: EEM/KCBE	CHECKED: KCBE
PROJ. MGR.: KCBE	STATUS: PRELIMINARY DESIGN	REVISION: K
	NOT FOR CONSTRUCTION	



CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

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Approved Construction Plan

Name _____ Date _____

Planning _____

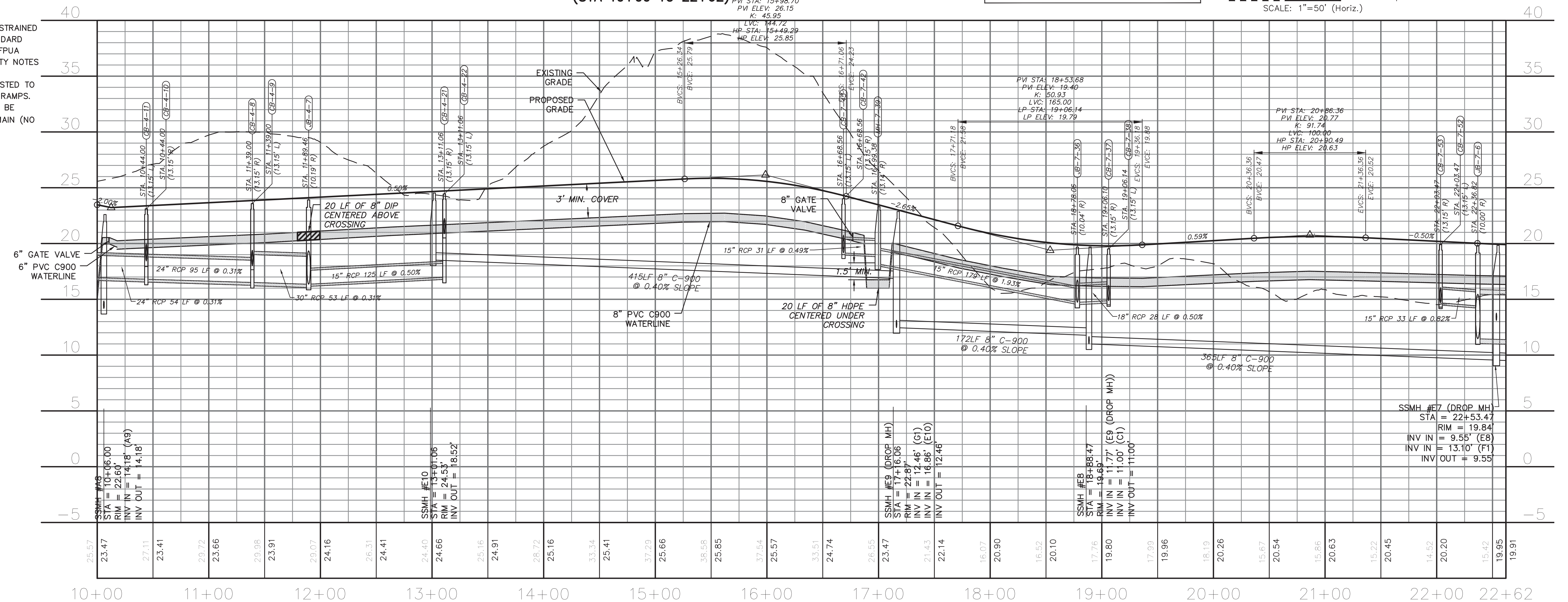
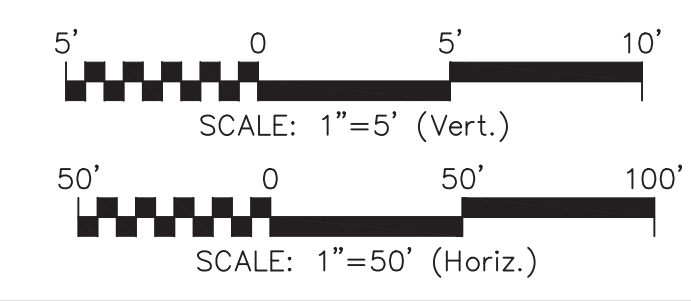
Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____



**CRADDOCK DR
(STA 10+00 TO 22+62)**

REV.	DESCRIPTION	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
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G	CFPUA RE-SUBMITTAL	08/21/2018
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E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING -
FOR REVIEW
PURPOSES ONLY

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RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

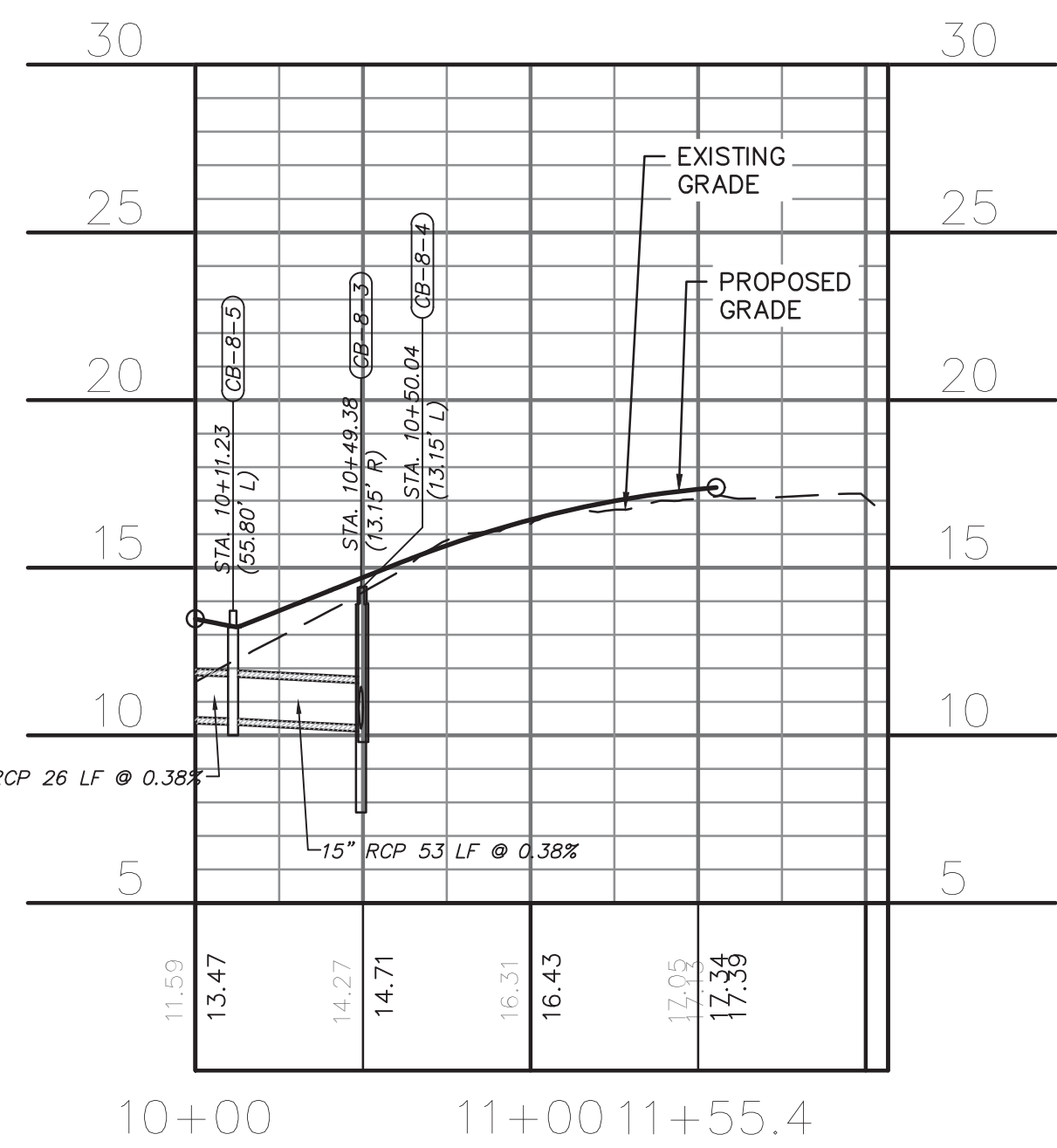
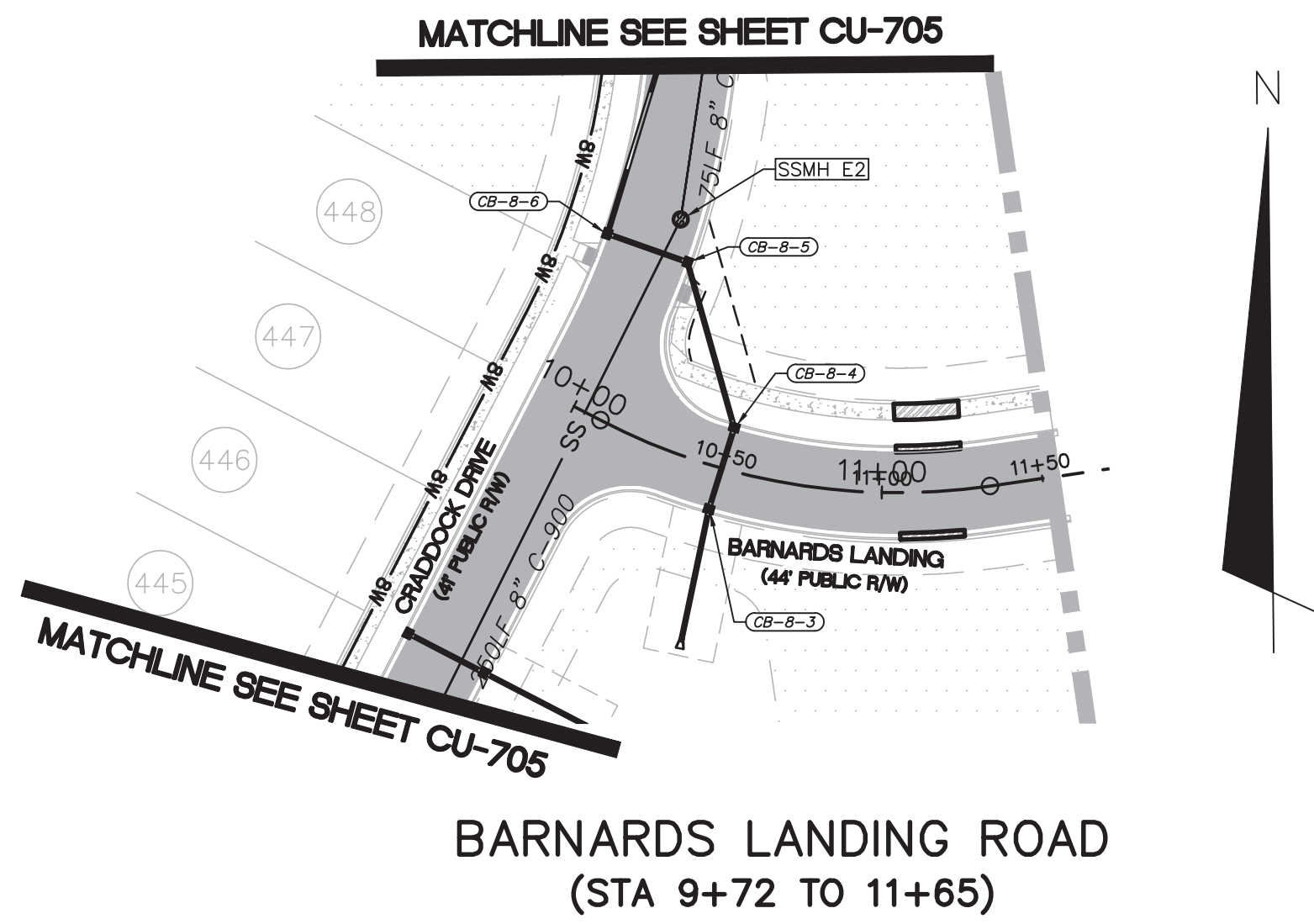
RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
CRADDOCK DRIVE
PLAN AND PROFILE
STA 10+00 TO 22+62

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE

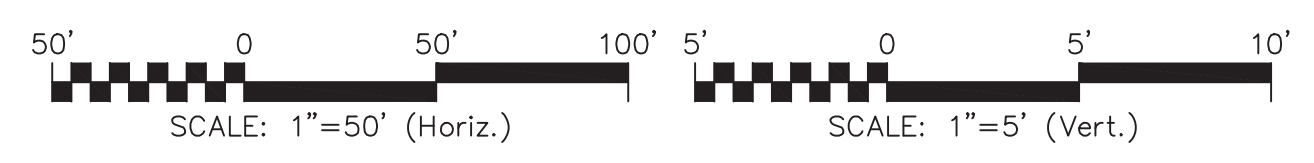
SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

MAC FILE NUMBER: **CU-706**
DRAWING NUMBER: **23**
REVISION: **K**



BARNARDS LANDING ROAD
(STA 9+72 TO 11+65)



CAPE FEAR PUBLIC UTILITY AUTHORITY
STANDARD NOTES:

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CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

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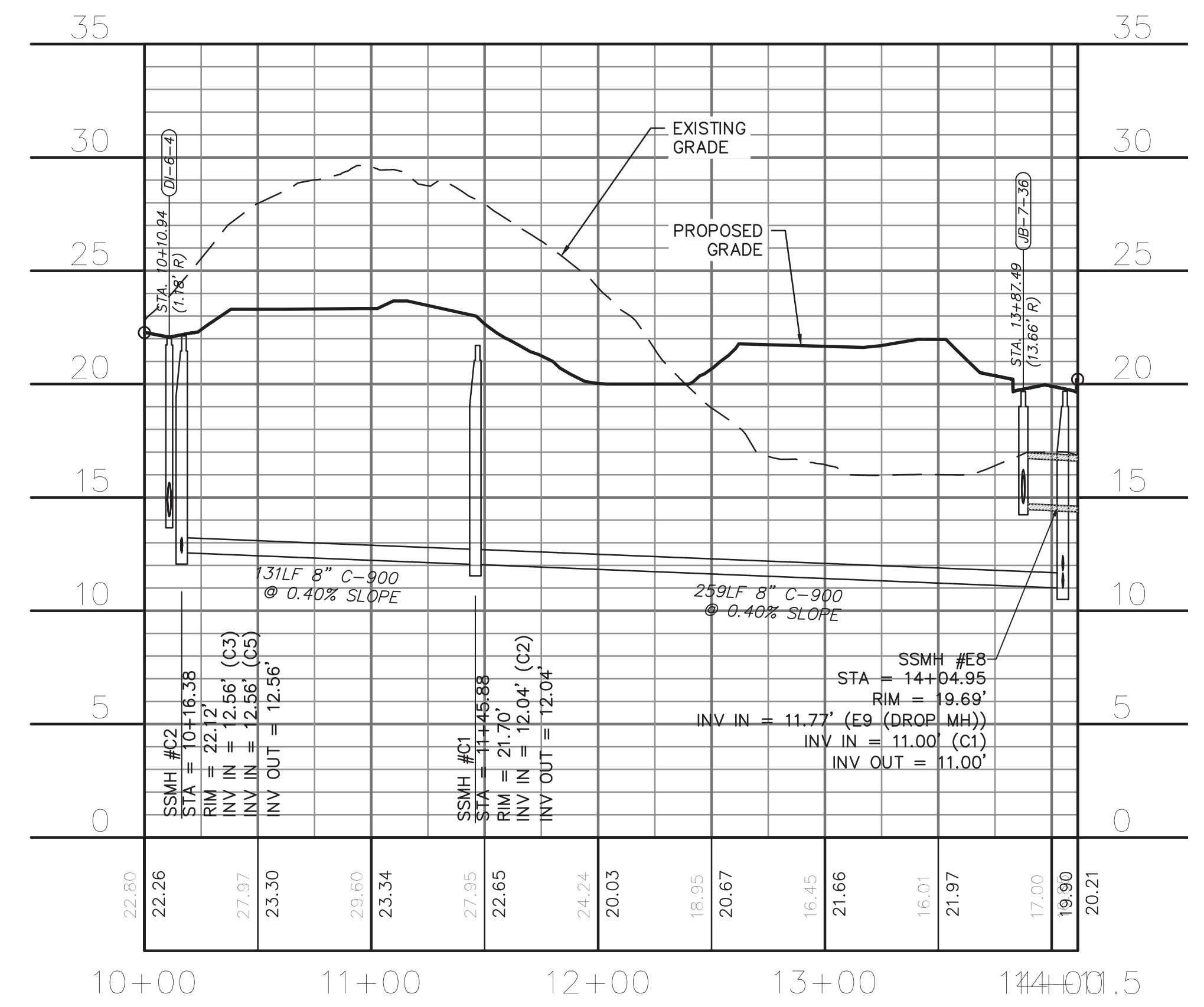
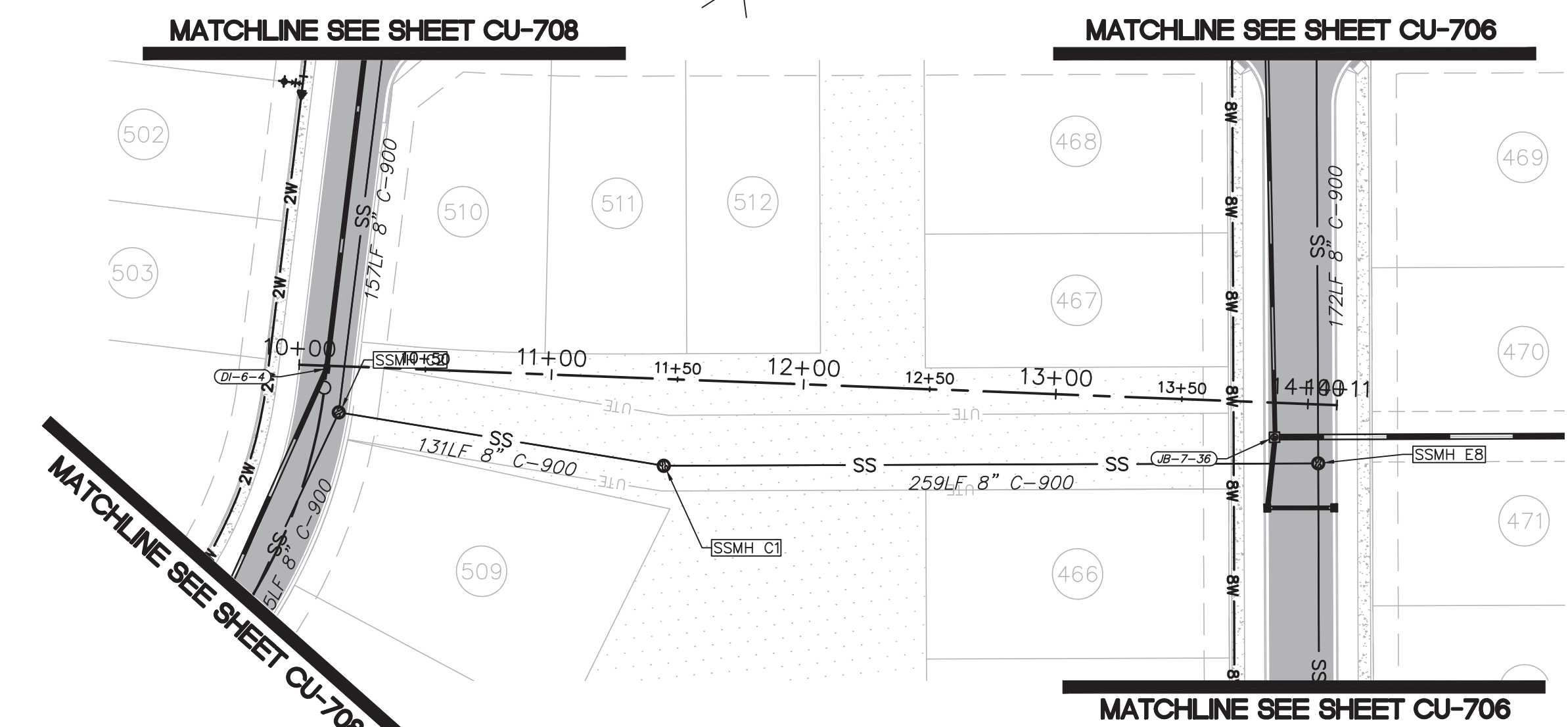
Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____



SANITARY SEWER EASEMENT
(STA 10+00 TO 13+38)

REVNO.	DESCRIPTIONS REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPUA ADDITIONAL INFORMATION	10/12/2018
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E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/20/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/26/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/25/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/28/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

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RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

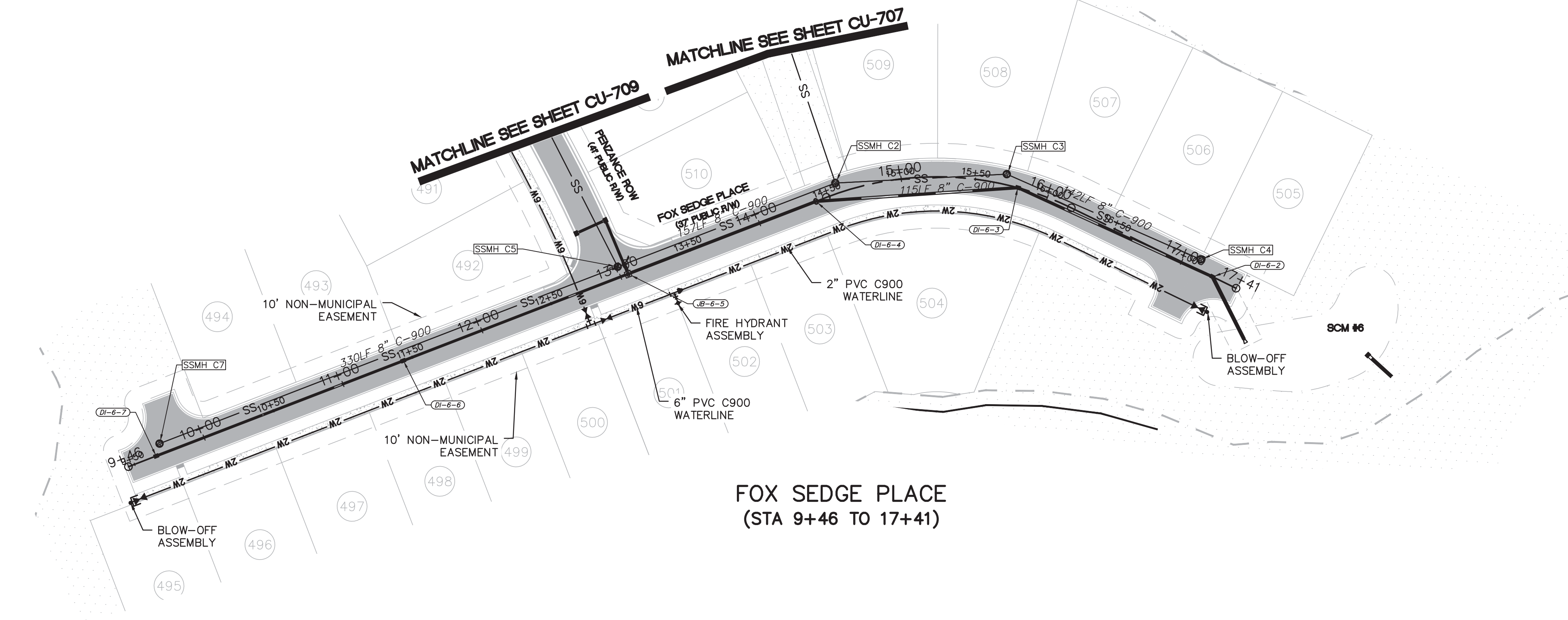
RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
PLAN AND PROFILE
BARNARDS LANDING ROAD
SANITARY SEWER EASEMENT

DATE: 01/25/2018
MCE PROJ # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

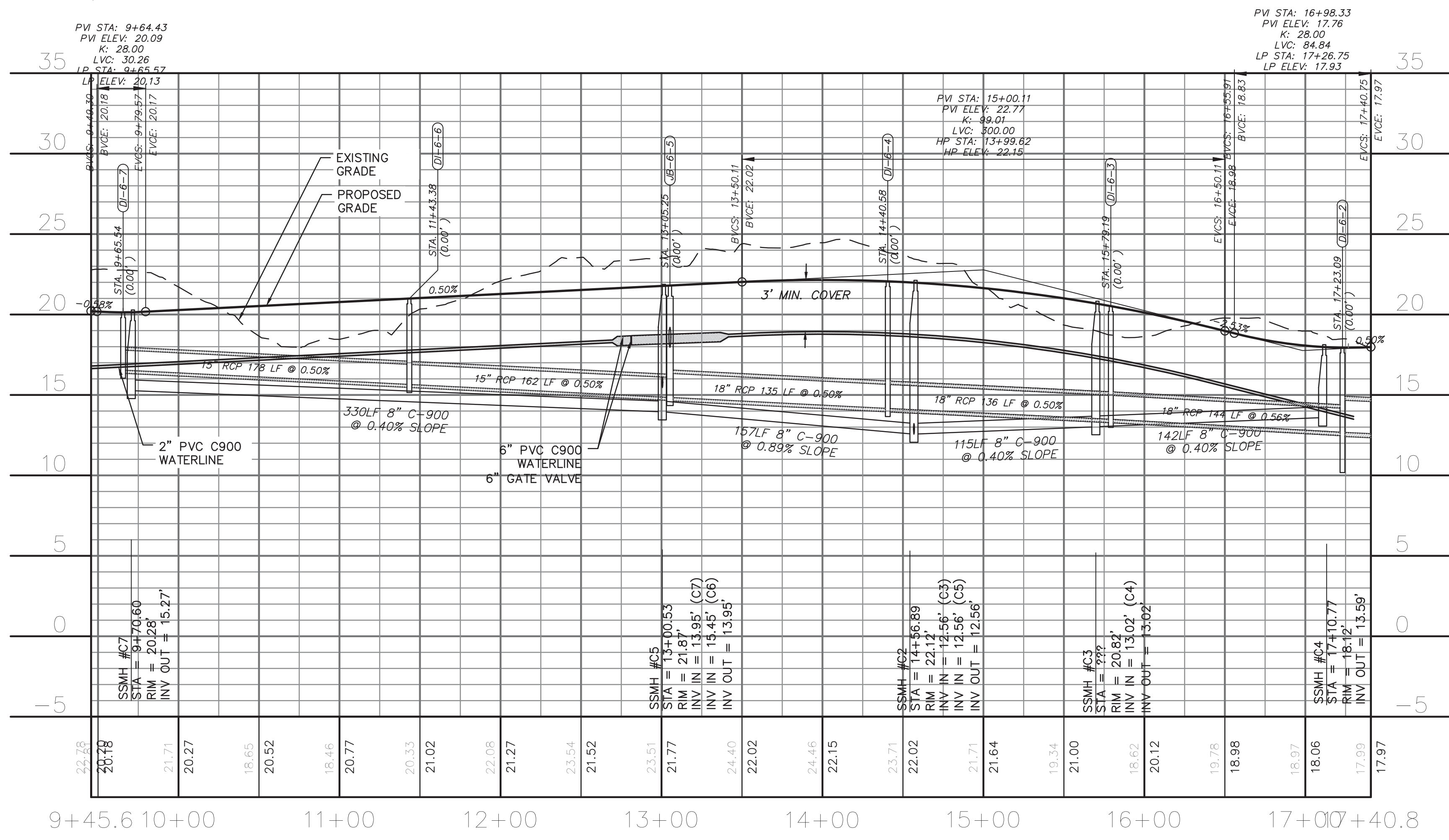
SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER: **CU-707**
DRAWING NUMBER: **24**
REVISION: **K**

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION



**FOX SEDGE PLACE
(STA 9+46 TO 17+41)**



**FOX SEDGE PLACE
(STA 9+46 TO 17+41)**

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

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CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

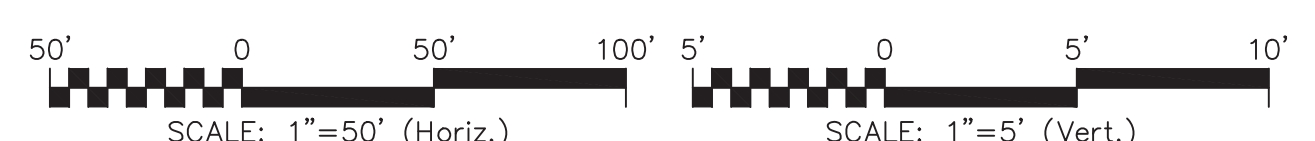
Date: _____ Permit # _____
Signed: _____

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Approved Construction Plan

Name: _____ Date: _____

Planning: _____
Traffic: _____
Fire: _____



REVNO.	DESCRIPTIONS	DATE
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J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2018
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B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/30/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

SEAL

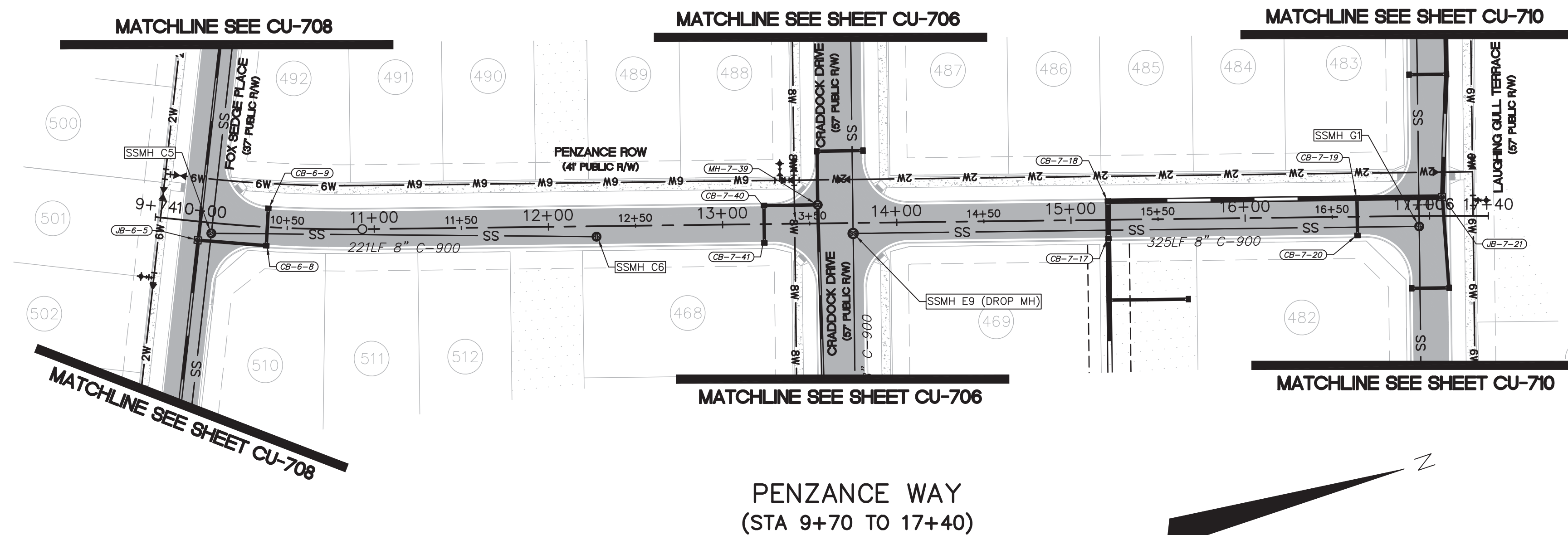
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Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

RIVERLIGHTS
NORTH AMERICA SEXISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
PLAN AND PROFILE
FOX SEDGE PLACE
STA 9+46 TO 17+41

DATE:	01/25/2018
MCE PROJ. #	02735-0177
DRAWN	EEM/ALM/MDH
DESIGNED	EEM/KCBE
CHECKED	KCBE
PROJ. MGR.	KCBE

SCALE	MAC FILE NUMBER
HORIZONTAL: 1" = 50'	CU-708
VERTICAL: 1" = 5'	DRAWING NUMBER
	25
STATUS: PRELIMINARY DESIGN	REVISION
NOT FOR CONSTRUCTION	K

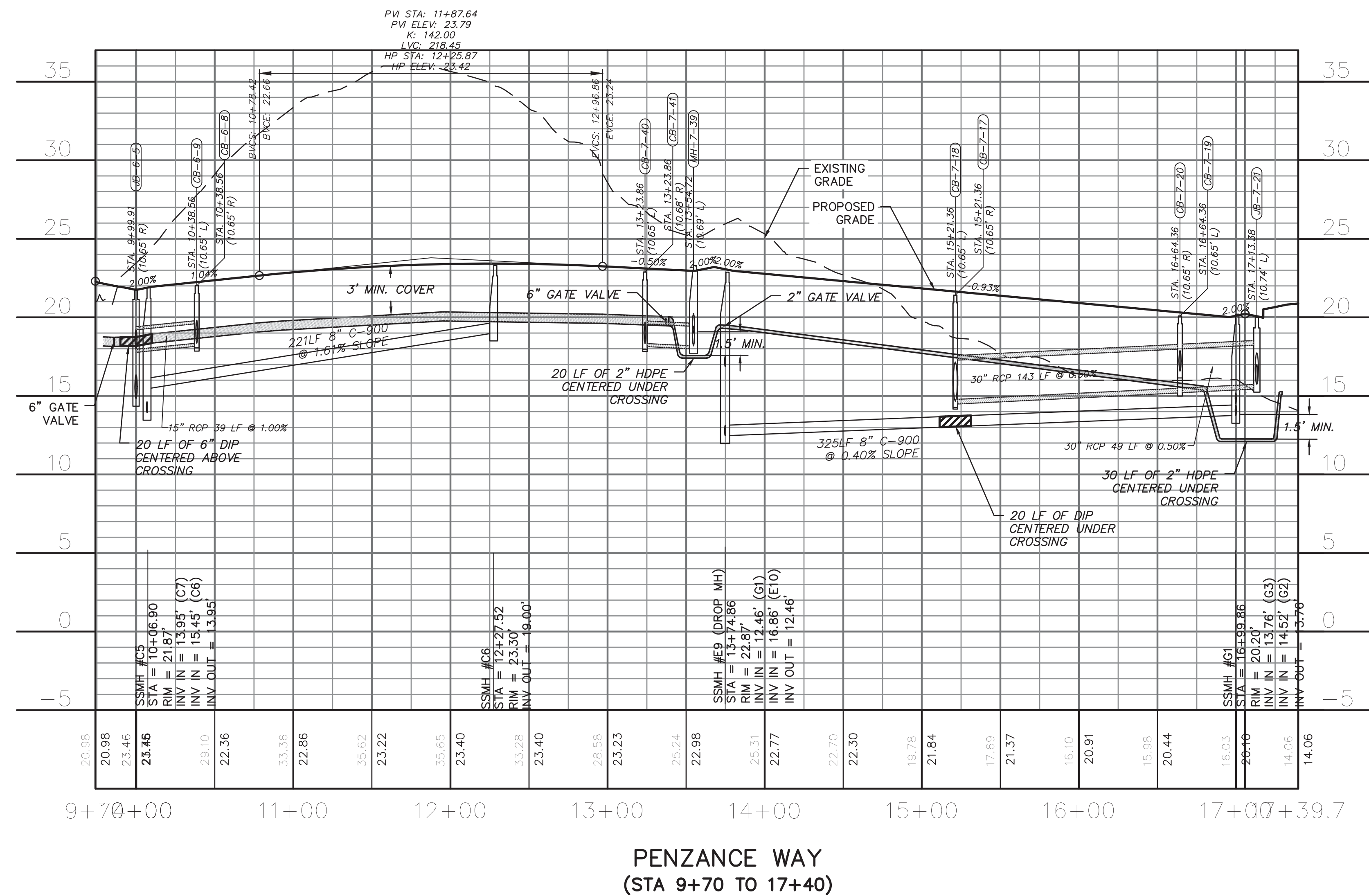


CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE IN RIGHT-OF-WAY LINE.
- ALL SERVICES TYING INTO DUCTILE IRON MAINS SHALL BE CONSTRUCTED OF CLASS 50, DIP, WITH PROTECTO 401 CERAMIC EPOXY LINING.
- MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

UTILITY NOTES:

- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT OR BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.
- VALVE LOCATIONS TO BE FIELD ADJUSTED TO AVOID PLACEMENT WITHIN HANDICAP RAMPS.
- WATER METERS AND CLEAN OUTS TO BE INSTALLED ON STRUCTURE SIDE OF MAIN (NO REVERSE TAPS).



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

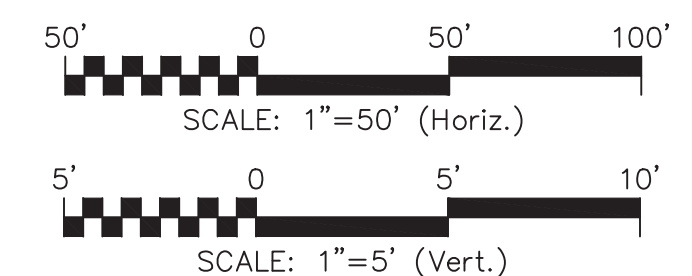
WILMINGTON
NORTH CAROLINA

Public Services Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____



REVNO.	DESCRIPTIONS REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPUA ADDITIONAL INFORMATION	10/12/2018
G	CFPUA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

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NASH RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS AGE QUALIFIED PHASE 4 & 5

MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

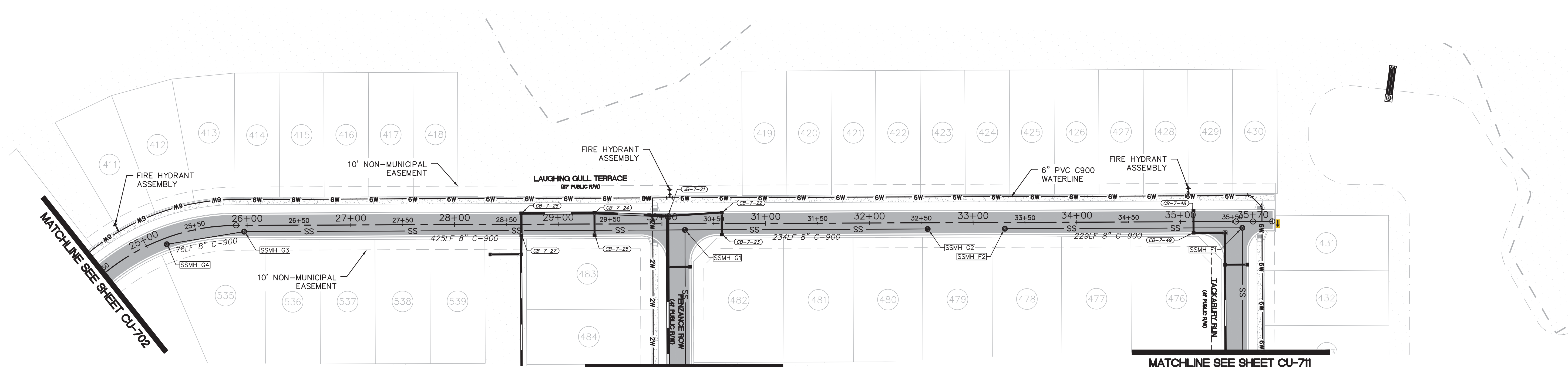
PLAN AND PROFILE PENZANCE WAY STA 9+70 TO 17+40

DATE: 01/25/2018
MCE PROJ # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

MAC FILE NUMBER: CU-709
DRAWING NUMBER: 26
REVISION: K

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION



CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD NOTES:

- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- WATER AND SEWER SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SEWER SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN END OF LINE MANHOLE AND TERMINATE IN RIGHT-OF-WAY LINE.
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- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

UTILITY NOTES:

- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT OR BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.
- VALVE LOCATIONS TO BE FIELD ADJUSTED TO AVOID PLACEMENT WITHIN HANDICAP RAMPS.
- WATER METERS AND CLEAN OUTS TO BE INSTALLED ON STRUCTURE SIDE OF MAIN (NO REVERSE TAPS).

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
Signed: _____

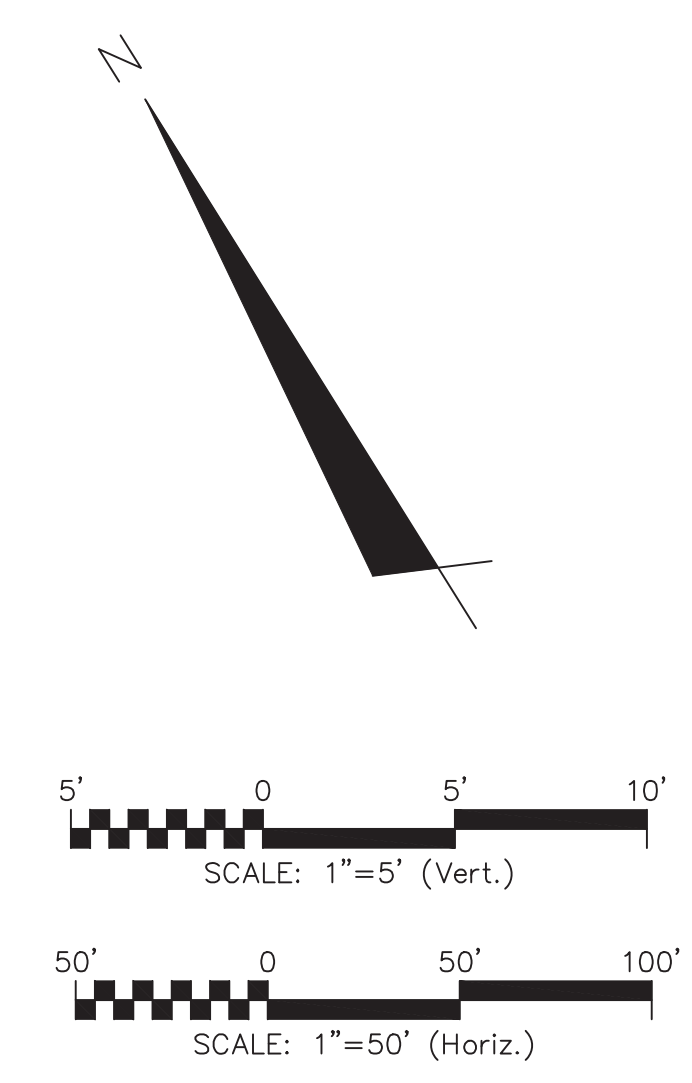
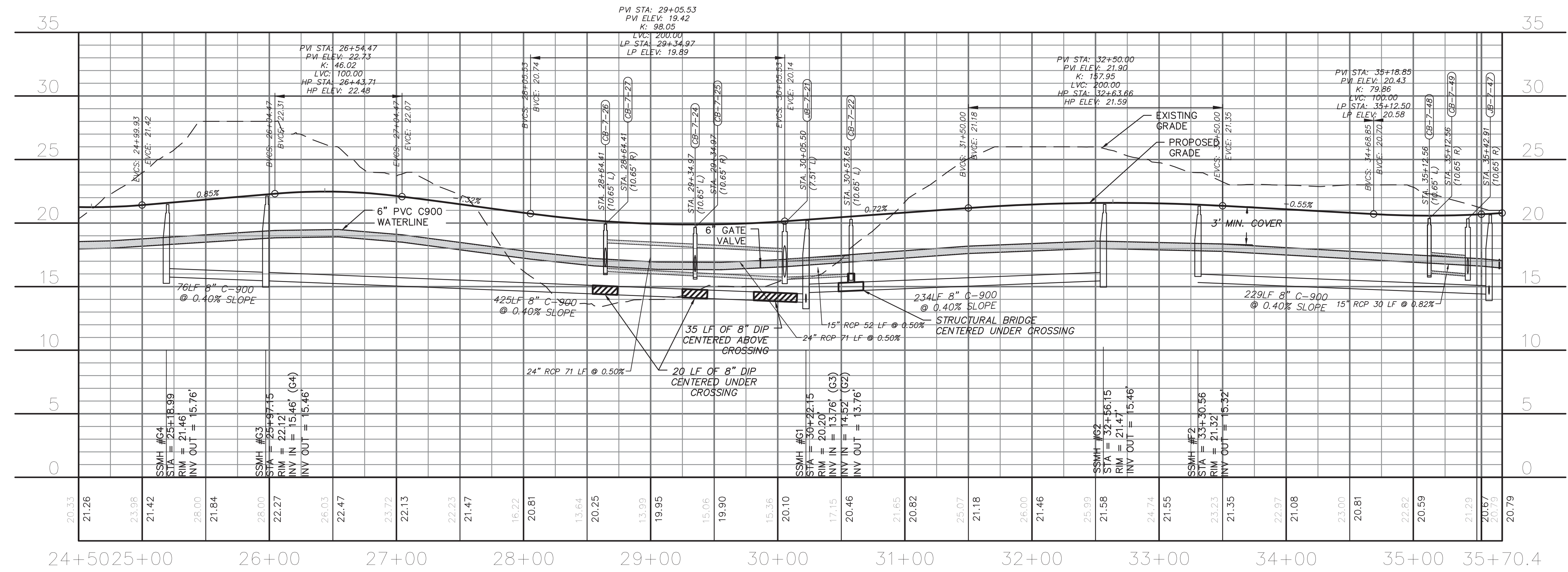
For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

1 inch

**LAUGHING GULL TERRACE
(STA 24+50 TO 35+70)**



**LAUGHING GULL TERRACE
(STA 24+50 TO 35+70)**

REV. NO.	DESCRIPTION	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2017
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2016
H	CFPUA ADDITIONAL INFORMATION	10/12/2016
G	CFPUA RE-SUBMITTAL	08/21/2016
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2016
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2016
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2016
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2016
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING -
FOR REVIEW
PURPOSES ONLY

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Phone: (910)343-1048, Fax: (910)251-8282
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RIVERLIGHTS
NORTH AMERICA SEXKUS HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
PLAN AND PROFILE
LAUGHING GULL TERRACE
STA 24+50 TO 35+70

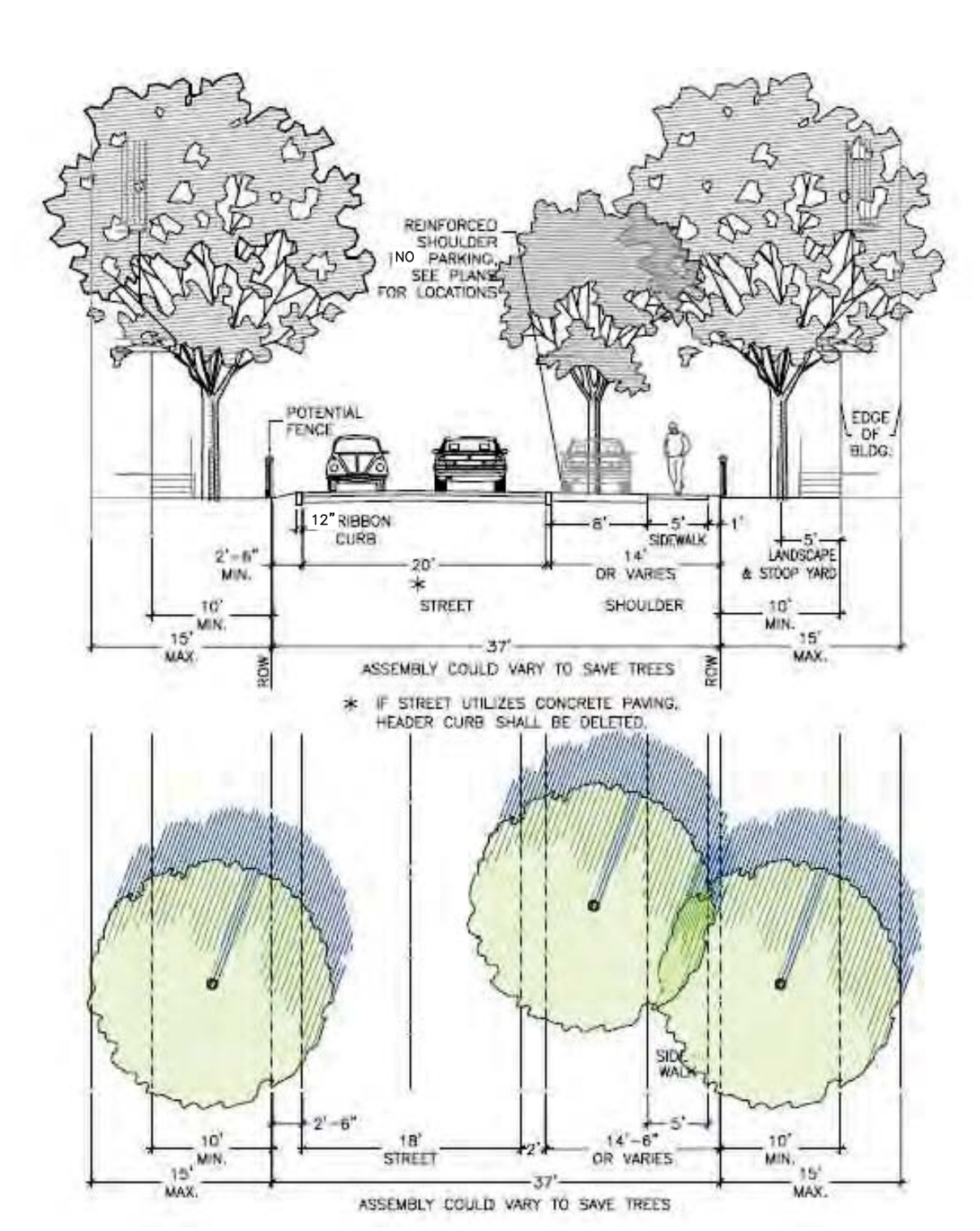
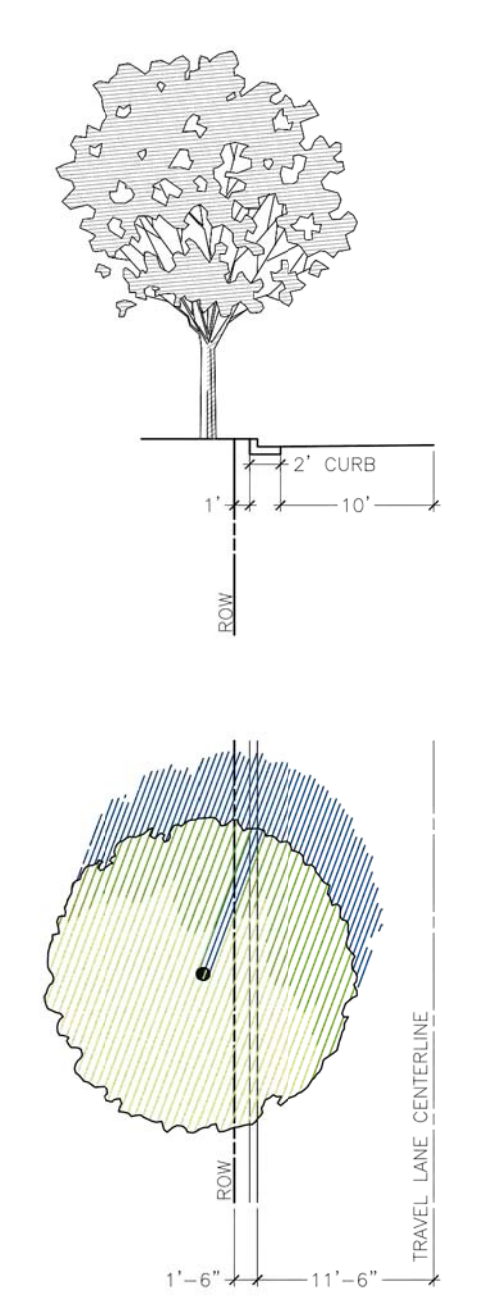
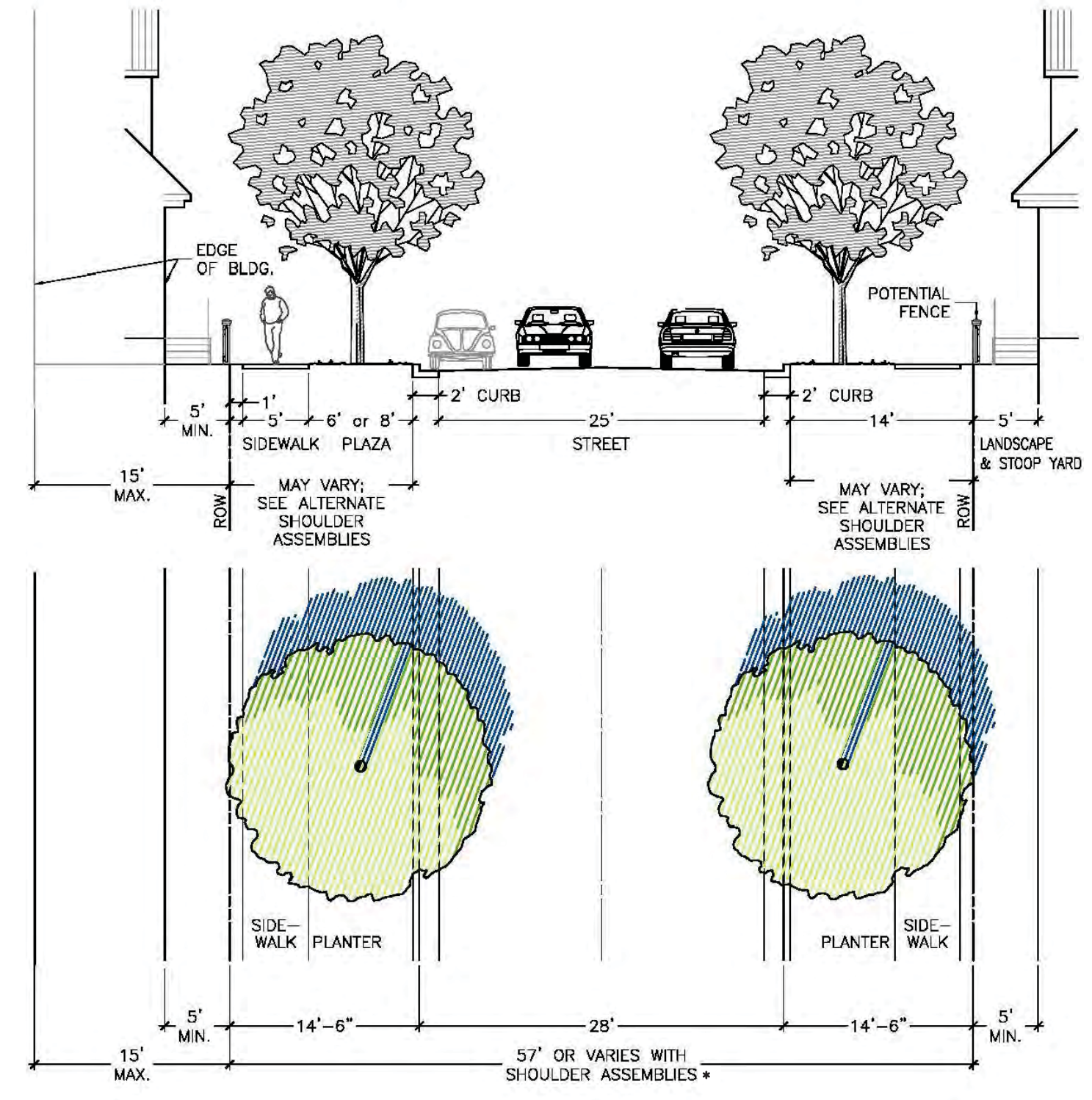
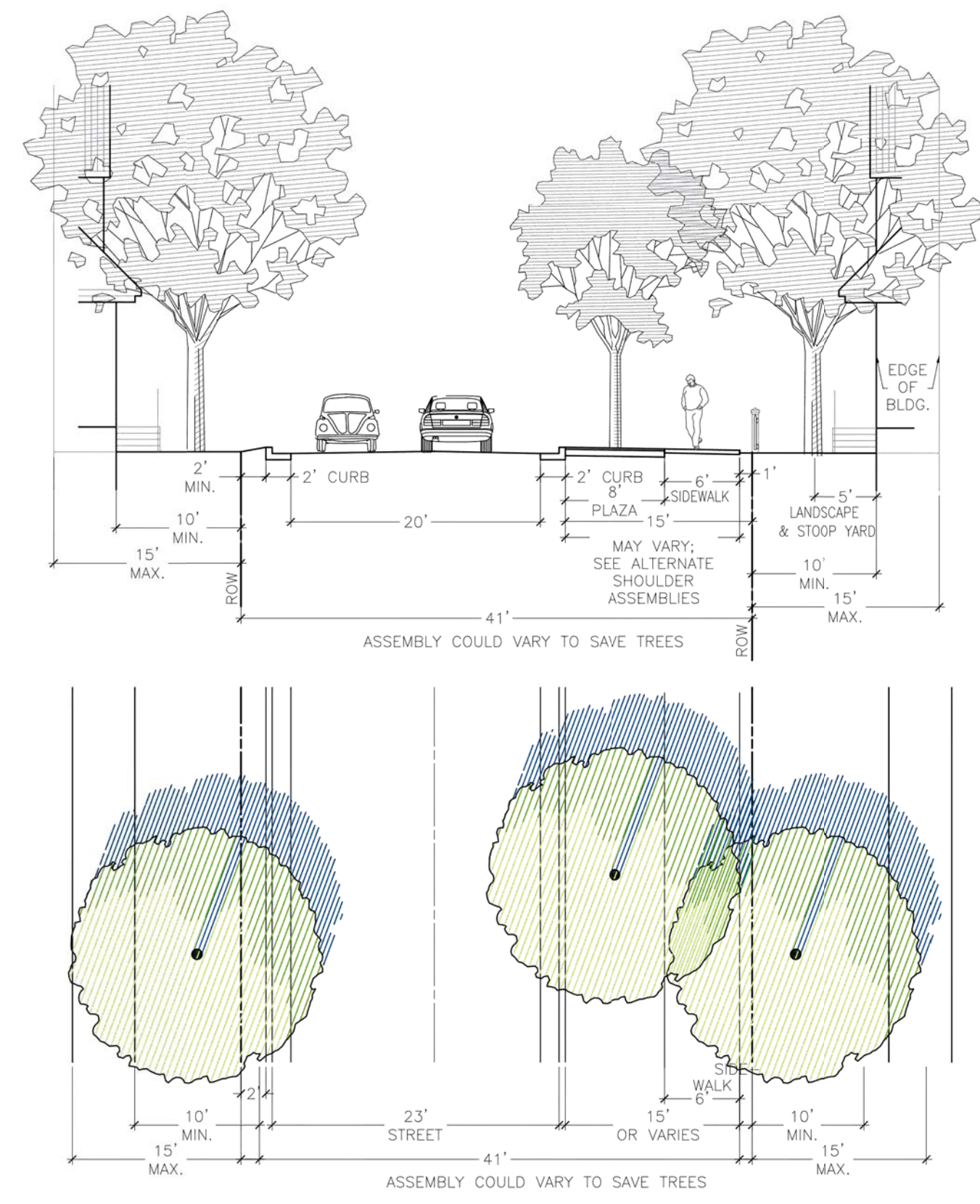
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER
CU-710
DRAWING NUMBER
27

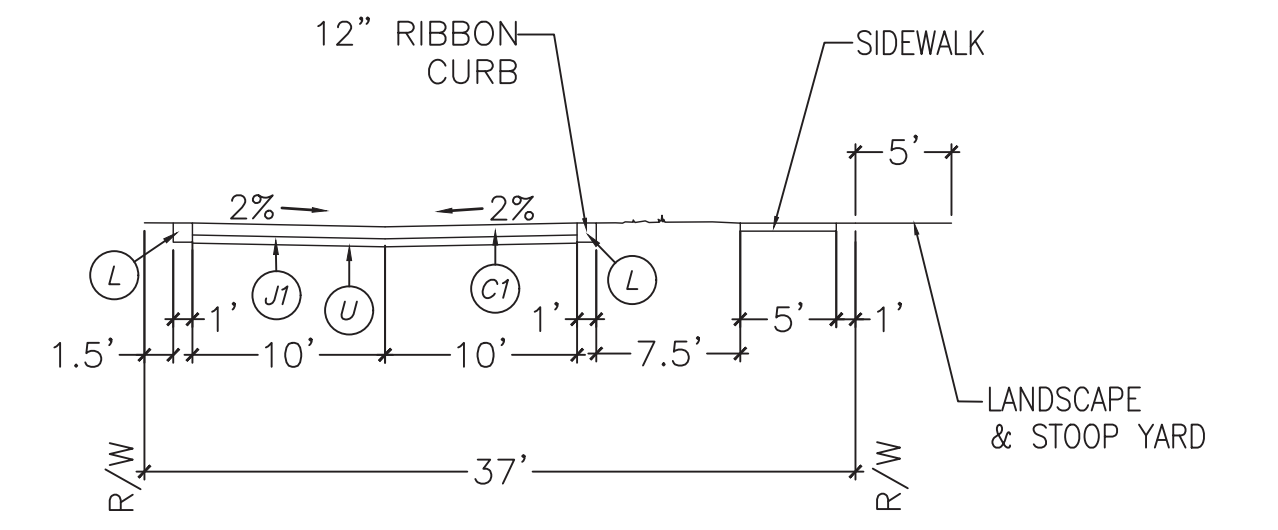
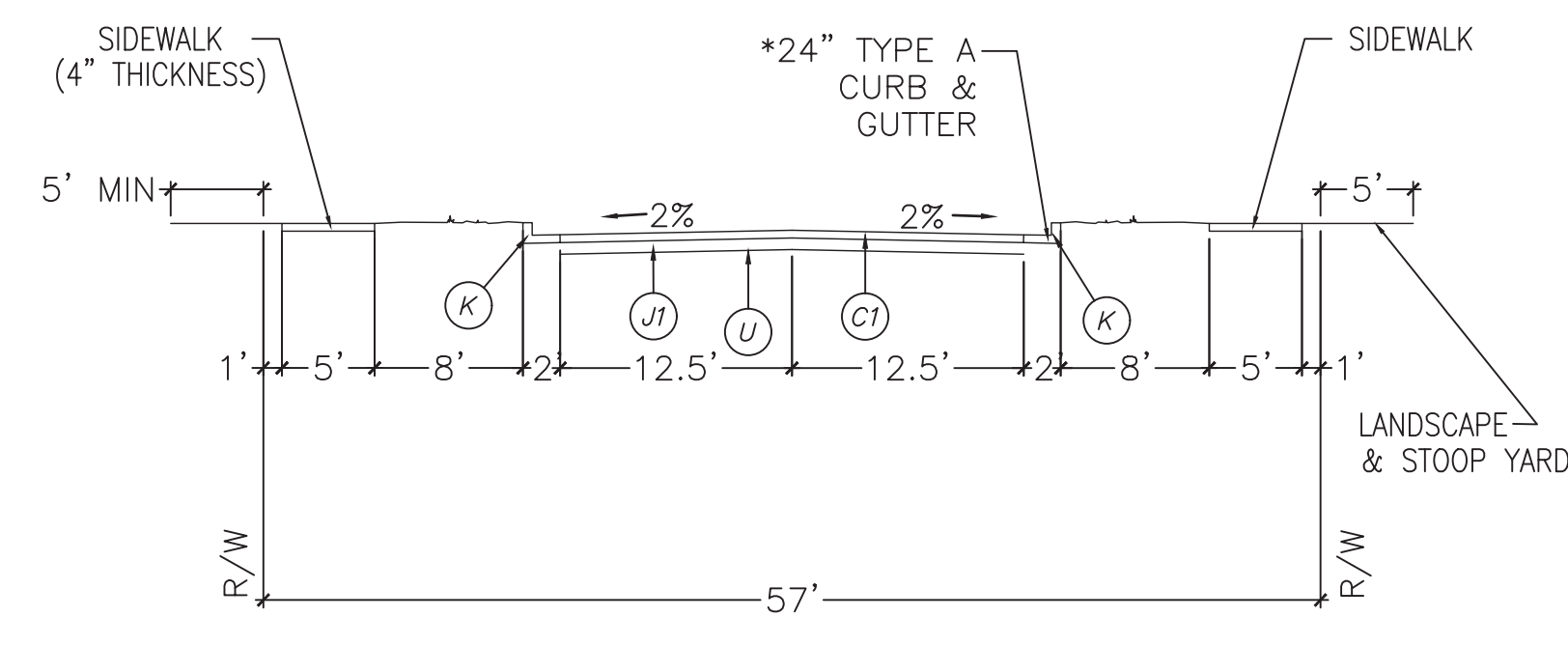
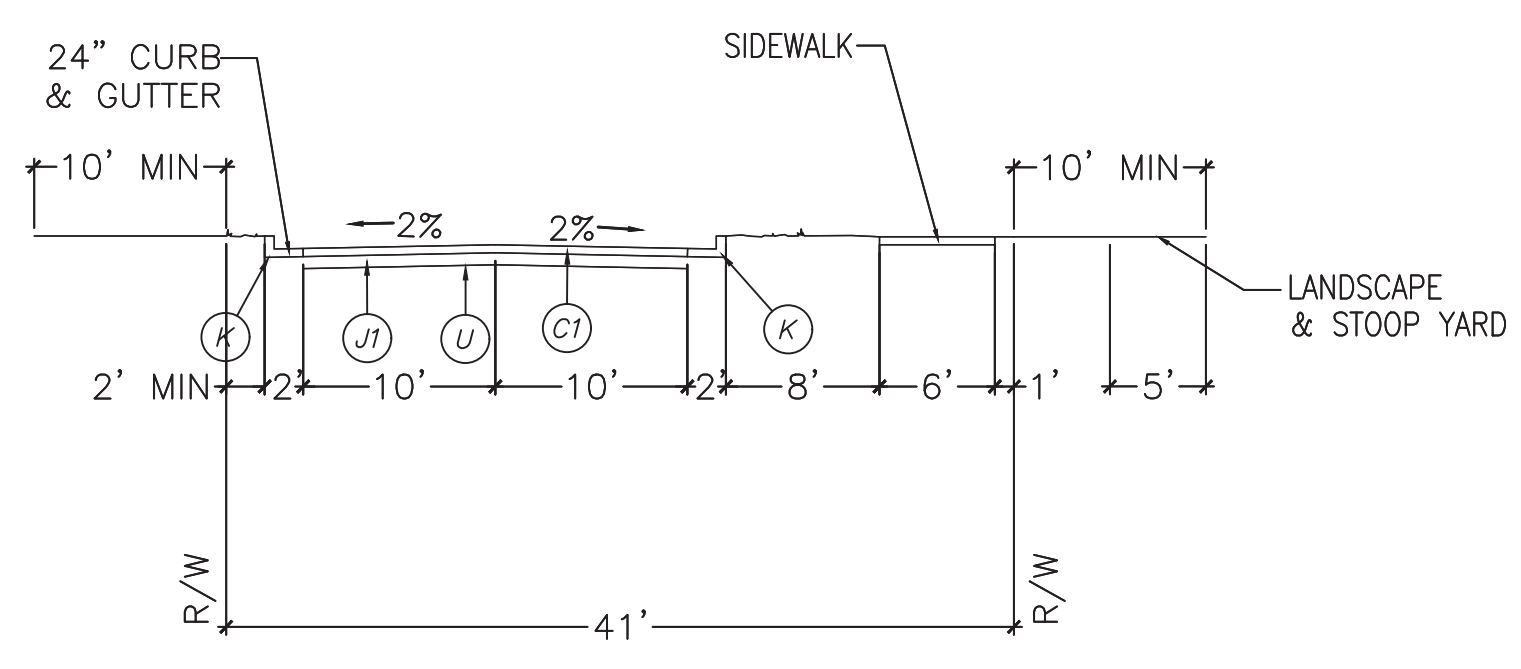
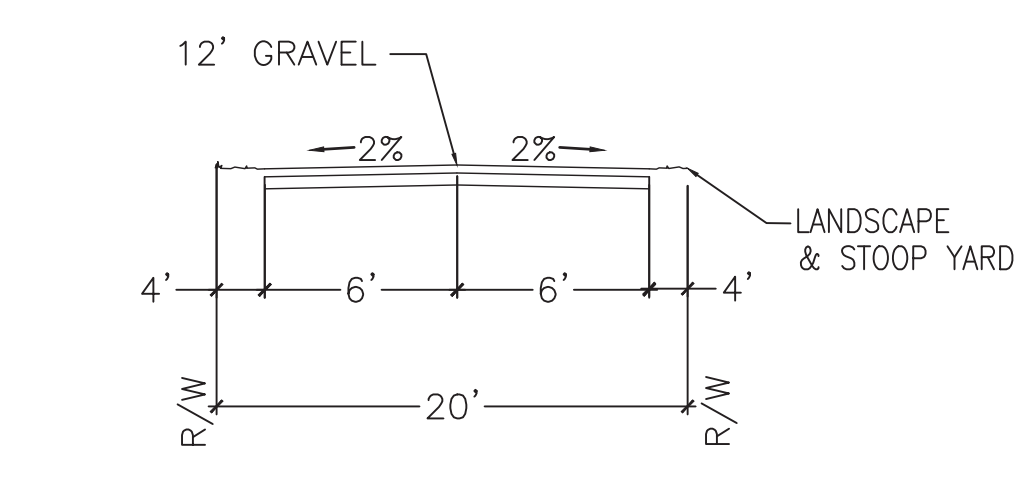
STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

REVISION
K



ALTERNATIVE SHOULDER TYPE 4

* 44' RIGHT-OF-WAY WITH ALTERNATIVE SECTION TYPE 4'
CRADDOCK DRIVE
(STA. 22+47 TO STA. 35+06)



20' GRAVEL EMERGENCY ACCESS ROAD (PUBLIC)

41' RIGHT-OF-WAY (PUBLIC)

***57' RIGHT-OF-WAY - COLLECTOR (PUBLIC)**

37' RIGHT-OF-WAY (PUBLIC)

Right-of-Way Width	20 feet
Asphalt Width	12 feet
Design Speed	25 MPH
Traffic Lanes	1 lanes, one-way
Parking Lanes	No Parking
Curb Radius	25 feet
Walkway Type	5 foot sidewalk
Curb Type	24" Vertical C&G
Landscape Type	Irregular spacing-50'oc max

Right-of-Way Width	57 feet
Asphalt Width	25 feet
Design Speed	25 MPH
Traffic Lanes	2 lanes
Parking Lanes	One Side @ 8 feet, marked
Curb Radius	25 feet
Walkway Type	5 foot sidewalk
Curb Type	24" Vertical C&G
Landscape Type	Irregular spacing-50'oc max

Right-of-Way Width	37 feet
Asphalt Width	20 feet
Design Speed	25 MPH
Traffic Lanes	2 lanes
Parking Lanes	One Side
Curb Radius	10 feet
Walkway Type	5 foot Sidewalk
Curb Type	12" Ribbon Curb
Landscape Type	Irregular Tree Spacing

PAVEMENT SCHEDULE	
C1	3" ASPHALT CONCRETE SURFACE COARSE, TYPE S9.5B AT AN AVERAGE RATE OF 336 LBS. PER SQ. YD.
C2	2" ASPHALT CONCRETE SURFACE COARSE, TYPE SF9.5A AT AN AVERAGE RATE OF 224 LBS. PER SQ. YD.
J1	8.0" COMPACTED ABC STONE BASE COURSE
J2	6.0" COMPACTED ABC STONE BASE COURSE
K	24.0" VERTICAL CURB & GUTTER (TYPE A)
L	12.0" RIBBON CURB
U	COMPACTED SUBGRADE

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

REVNO.	DESCRIPTIONS / REVISIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
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D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

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Wilmington, North Carolina 28401
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RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
TYPICAL CROSS SECTIONS

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

MAC FILE NUMBER: CT-301
DRAWING NUMBER: 29
REVISION: K

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

Approved Construction Plan

Name _____ Date _____

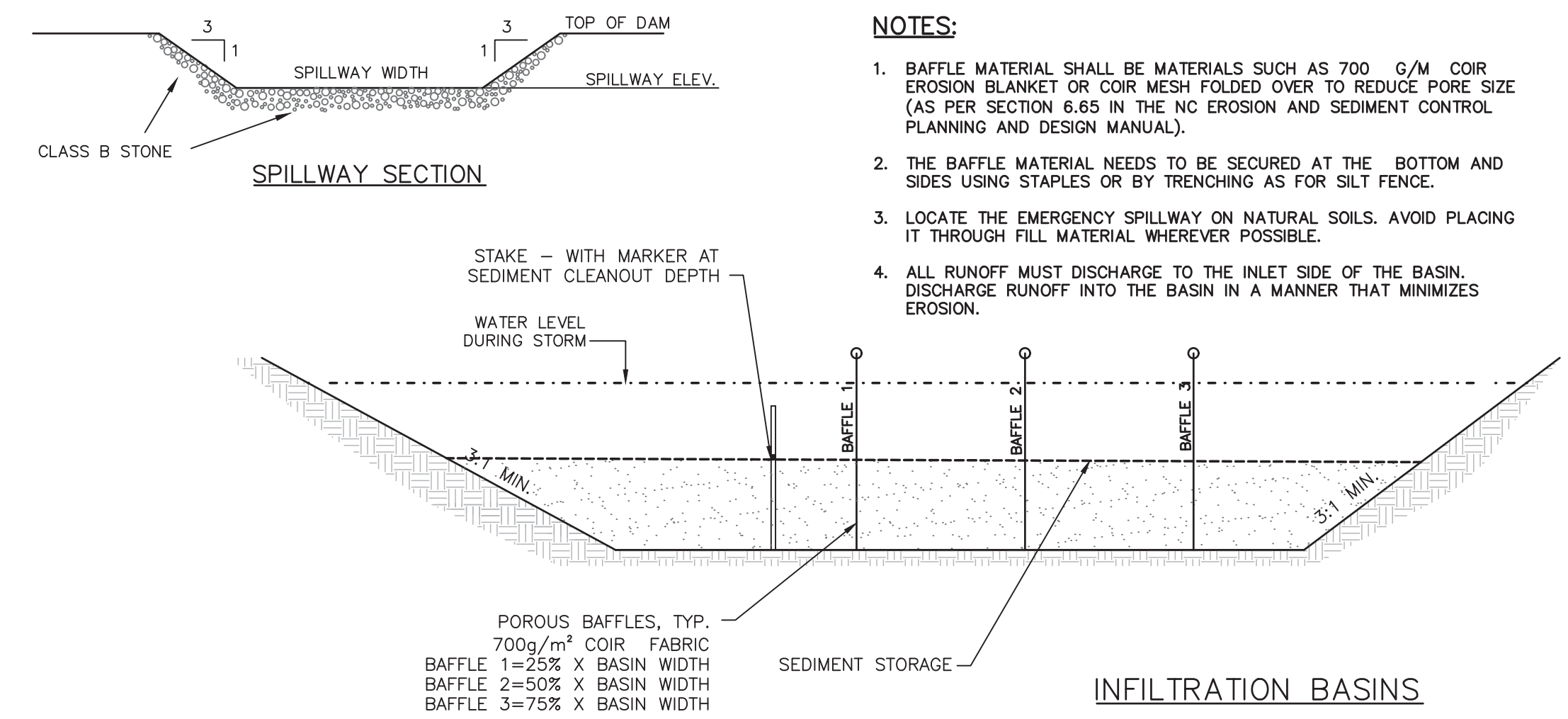
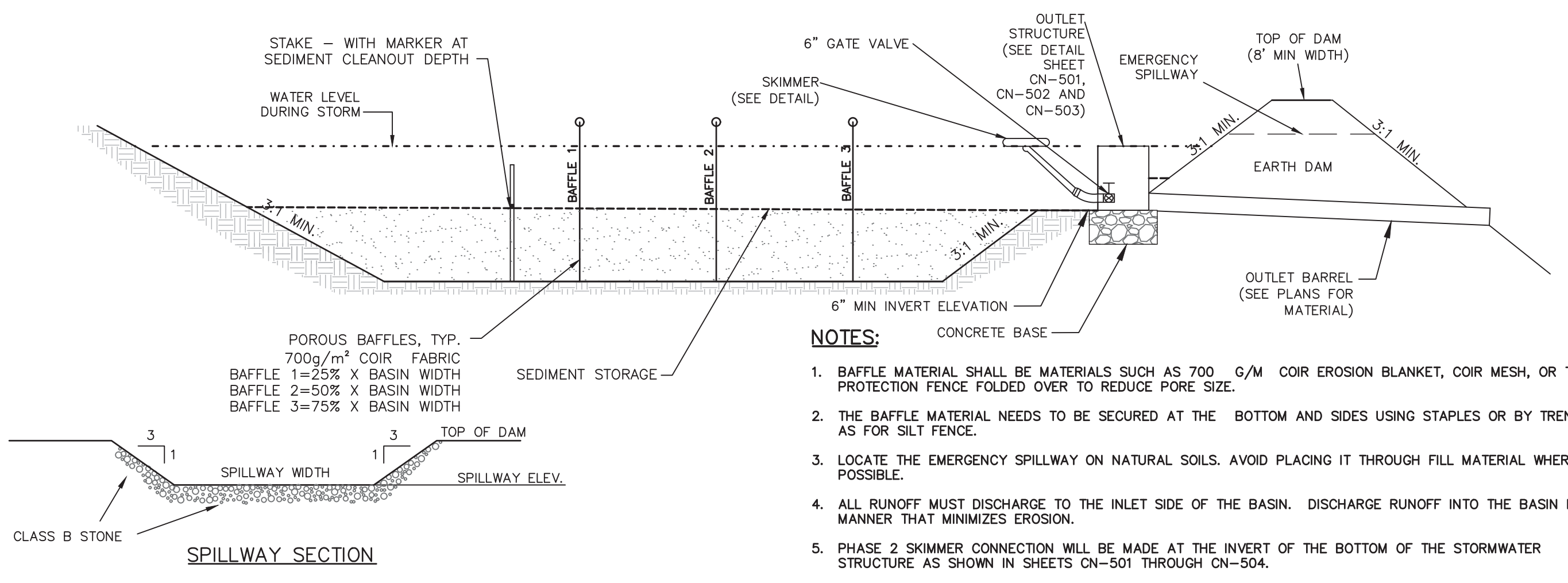
Planning _____

Traffic _____

Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch



- NOTES:**
1. BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET OR COIR MESH FOLDED OVER TO REDUCE PORE SIZE (AS PER SECTION 6.65 IN THE NC EROSION AND SEDIMENT CONTROL PLANNING AND DESIGN MANUAL).
 2. THE BAFFLE MATERIAL NEEDS TO BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
 3. LOCATE THE EMERGENCY SPILLWAY ON NATURAL SOILS. AVOID PLACING IT THROUGH FILL MATERIAL WHEREVER POSSIBLE.
 4. ALL RUNOFF MUST DISCHARGE TO THE INLET SIDE OF THE BASIN. DISCHARGE RUNOFF INTO THE BASIN IN A MANNER THAT MINIMIZES EROSION.

- NOTES:**
1. BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET, COIR MESH, OR TREE PROTECTION FENCE FOLDED OVER TO REDUCE PORE SIZE.
 2. THE BAFFLE MATERIAL NEEDS TO BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
 3. LOCATE THE EMERGENCY SPILLWAY ON NATURAL SOILS. AVOID PLACING IT THROUGH FILL MATERIAL WHEREVER POSSIBLE.
 4. ALL RUNOFF MUST DISCHARGE TO THE INLET SIDE OF THE BASIN. DISCHARGE RUNOFF INTO THE BASIN IN A MANNER THAT MINIMIZES EROSION.
 5. PHASE 2 SKIMMER CONNECTION WILL BE MADE AT THE INVERT OF THE BOTTOM OF THE STORMWATER STRUCTURE AS SHOWN IN SHEETS CN-501 THROUGH CN-504.

NOTES:
ORIFICE SIZES ARE FOR THE FAIRCLOTH SKIMMER; IF ANOTHER TYPE OF SKIMMER IS USED THE DEVICE MUST BE ABLE TO DRAIN THE BASIN WITHIN 24 - 72 HOURS.

SEDIMENT VOLUME CALCULATION TABLE (PHASE 1)

Skimmer No.	Drainage Area ac	Rational C Runoff Coeff.	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SB-1	2.13	0.30	7.23	4.62	1,502	7,868	3,835	22,056	3.00	19,067	8.0
SB-6	4.50	0.30	7.23	9.76	3,172	4,471	8,100	8,970	2.00	4,972	12.0

FAIRCLOTH SKIMMER SIZE CALCULATION

Skimmer No.	Dewatering Time (days)	Skimmer Outflow cf/day	Skimmer Size in	Orifice Diameter in	Orifice Radius in	Barrel Outflow gpm	Barrel Pipe in
SB-1	5	3,813	2.5	2.00	1.00	19.8	4.0
SB-6	5	994	1.5	1.10	0.60	5.2	4.0

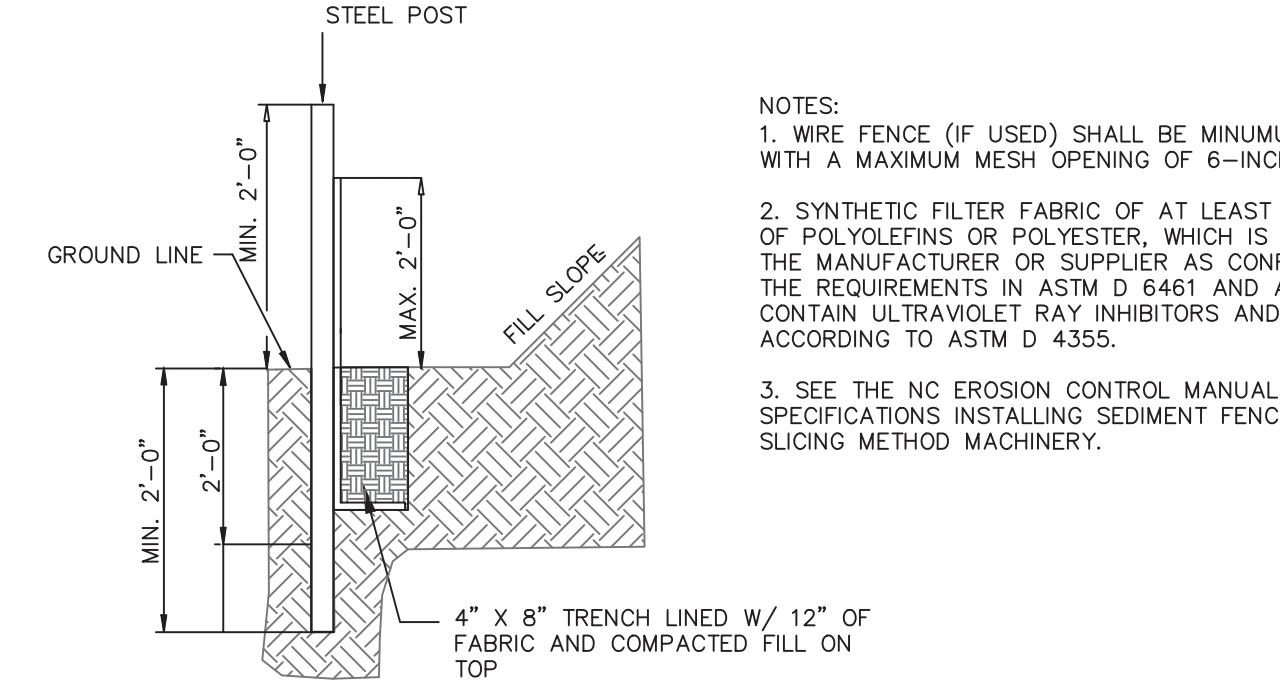
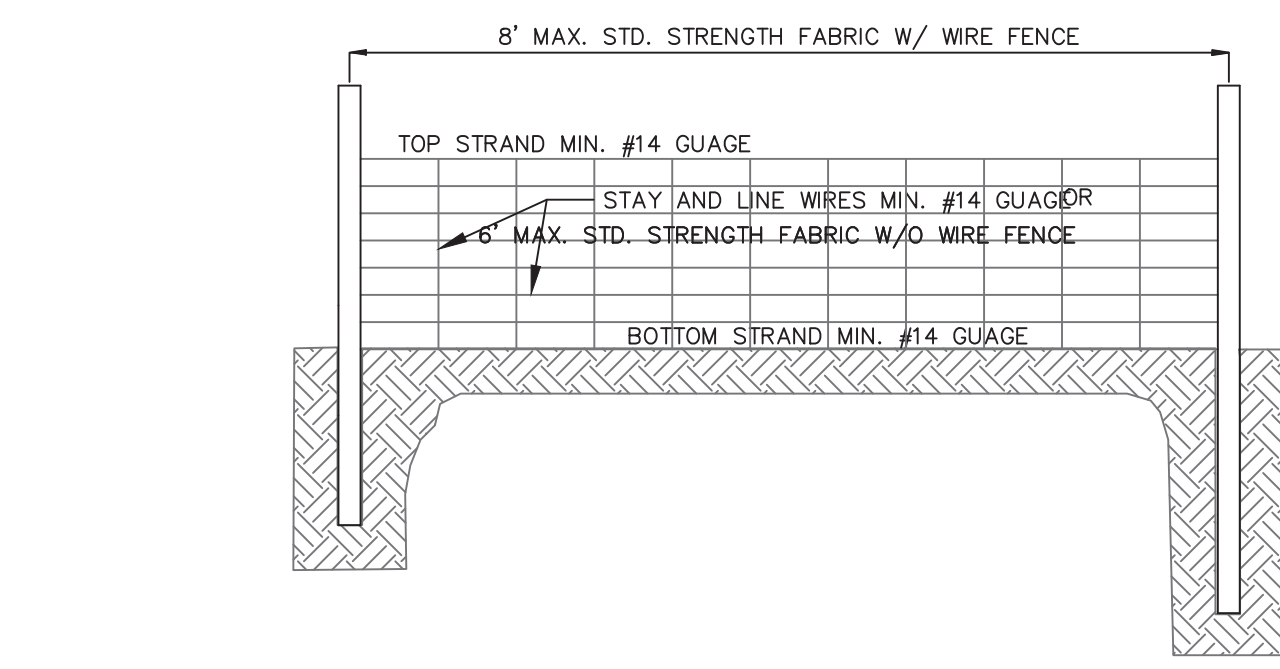
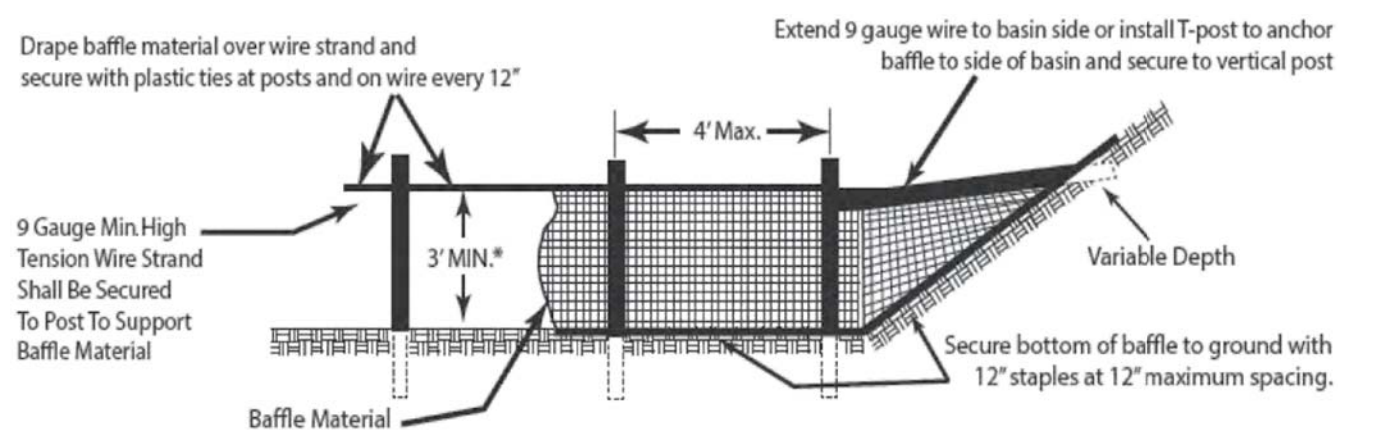
SEDIMENT VOLUME CALCULATION TABLE (PHASE 2)

Skimmer No.	Drainage Area ac	Rational C Runoff Coeff.	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SCM 1	2.64	0.55	7.23	10.50	3,412	7,868	4,752	22,056	3.00	19,067	8.0
SCM 2	3.40	0.53	7.23	13.03	4,234	12,530	6,120	39,822	3.50	35,356	10.0
SCM 3	1.85	0.50	7.23	6.69	2,174	10,897	3,330	29,937	3.00	21,838	6.0
SCM 4	8.18	0.58	7.23	34.30	11,148	51,211	14,724	108,190	2.00	59,101	20.0
SCM 6	3.64	0.55	7.23	14.47	4,704	5,472	6,552	14,971	3.00	10,973	10.0
SCM 7	14.68	0.55	7.23	58.38	25,393	44,012	26,424	116,556	2.75	88,053	20.0

FAIRCLOTH SKIMMER SIZE CALCULATION

Skimmer No.	Dewatering Time (days)	Skimmer Outflow cf/day	Skimmer Size in	Orifice Diameter in	Orifice Radius in	Barrel Outflow gpm	Barrel Pipe in
SCM 1	5	3,813	2.5	2.0	1.0	19.8	4.0
SCM 2	5	7,071	3.0	2.6	1.3	36.7	4.0
SCM 3	5	4,368	2.5	2.1	1.0	22.7	4.0
SCM 4	5	11,820	4.0	3.1	1.5	61.4	4.0
SCM 6	5	2,195	2.0	1.6	0.8	11.4	4.0
SCM 7	5	17,611	4.0	3.7	1.9	91.5	4.0

- NOTES:**
1. Q10 Peak Flow were taken from Rational Method.
 2. Required Surface Areas and Volumes were taken from NCDENR ESC Manual.
 3. Faircloth Skimmer Selection Table taken from Table 4-2. NCDOT Level III-A Design of Sediment & Erosion Control Plans Manual
 4. Emergency Weir Width taken from Skimmer Basin Criteria Section of NCDENR ESC Manual Table and/or Hydraulic Routing of the basin to ensure non-erosive void
 5. Minimum Barrel Pipe on the Skimmer is 4-inches. (On a 1% slope the capacity is 100 GPM)
 6. Skimmer Orifice Diameter / Radius were obtained using the Faircloth Skimmer sizing spreadsheet (obtained from their website: <http://www.fairclothskimmer.com>).
 7. Sediment basin sized at 435 sf x Q10 for DA greater than 10 acres*



- NOTES:**
1. WIRE FENCE (IF USED) SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
 2. SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461 AND ALSO SHOULD CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS ACCORDING TO ASTM D 4355.
 3. SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

TEMPORARY SILT FENCE
NOT TO SCALE

SEDIMENT VOLUME CALCULATION TABLE (PHASE 2)

Skimmer No.	Drainage Area ac	Rational C Runoff Coeff.	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SCM 8	2.50	0.59	7.23	10.66	3,466	8,539	4,500	20,823	3.00	14,913	8.0

SILT FENCE CALCULATION TABLE PHASE 1

SILT FENCE No.	Drainage Area ac	Length ft	Acre per 100 ft	0.25 Acre per 100 ft YES/NO
SF 1	5.94	2702.0	0.22	YES
SF 2	0.31	283.0	0.11	YES
SF 3	0.11	119.0	0.09	YES
SF 4	1.14	834.0	0.14	YES
SF 5	0.77	429.0	0.18	YES
SF 6	3.72	1491.0	0.25	YES
SF 7	9.80	4039.0	0.24	YES
SF 8	2.54	1020.0	0.25	YES
SF 9	2.73	1095.0	0.25	YES
SF 10	2.90	1223.0	0.24	YES
SF 11	2.59	1039.0	0.25	YES
SF 12	0.88	468.0	0.19	YES

Notes: Calculation taken from Table 6.62a of the NCDENR ESC Manual for slopes < 2% only.

SILT FENCE CALCULATION TABLE PHASE 2

SILT FENCE No.	Drainage Area ac	Length ft	Acre per 100 ft	0.25 Acre per 100 ft YES/NO
SF 1	2.38	2702.0	0.09	YES
SF 2	0.16	283.0	0.06	YES
SF 3	0.11	119.0	0.09	YES
SF 4	0.57	834.0	0.07	YES
SF 5	0.57	429.0	0.13	YES
SF 6	2.04	1324.0	0.15	YES
SF 7	4.12	4033.0	0.10	YES
SF 8	0.77	1020.0	0.08	YES
SF 9	1.18	1077.0	0.11	YES
SF 10	1.80	1233.0	0.15	YES
SF 11	0.44	825.0	0.05	YES
SF 12	0.82	468.0	0.18	YES

Notes: Calculation taken from Table 6.62a of the NCDENR ESC Manual for slopes < 2% only.

SEEDBED PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW*).
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 SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
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. IF STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.
10. APPLY:
AGRICULTURAL LIMESTONE - 2 TONS/ACRE
FERTILIZER - 1000 LBS/ACRE (10-10-10)
SUPERPHOSPHATE - 500 LBS/ACRE (20%)
MULCH - 2 TONS/ACRE (SMALL GRAIN STRAW)
ANCHOR - ASPHALT EMULSION AT 450 GAL/ACRE

TEMPORARY SEEDING

GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRASS	1-2 LBS.	APRIL - JUNE	25 LBS. 10-10-10
BROWNTOP MILLET	1-2 LBS	JUNE - AUGUST	25 LBS 10-10-10

PERMANENT SEEDING

GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1-2 LBS.	APRIL - JUNE	25 LBS. 10-10-10
FESCUE, TALL (KENTUCKY 31)	5-7 LBS	JUNE - AUGUST FEB. - OCT.	25 LBS 10-10-10
SERICA LESPEDEZA (SLOPES)	1-2 LBS	MARCH - APRIL	25 LBS 10-10-10

TREE PROTECTION NOTES:

1. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS. [18-457(b)]
2. PROTECTIVE FENCING IS TO BE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. [18-458]
3. LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS. [18-457(c)]
4. ANY TREES AND/OR AREAS DESIGNATED TO BE PROTECTED MUST PROPERLY BARRICADED WITH FENCING AND PROTECTED THROUGHOUT CONSTRUCTION TO INSURE THAT NO CLEARING AND GRADING OR STAGING OF MATERIALS WILL OCCUR IN THOSE AREAS. [18-458]
5. NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED. [18-458]
6. REGULATED AND SIGNIFICANT TREES IN THE STREET YARD [18-456(c)] AND ANY TREES IN ANY REQUIRED BUFFERS [18-456(b)] ARE REQUIRED TO BE RETAINED.

REV. NO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/16/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL, AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBMISSION REVIEW BOARD SUBMITTAL	08/09/2017

FINAL DRAWING FOR REVIEW PURPOSES ONLY

SEAL

MCKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
SEDIMENT AND EROSION CONTROL DETAILS

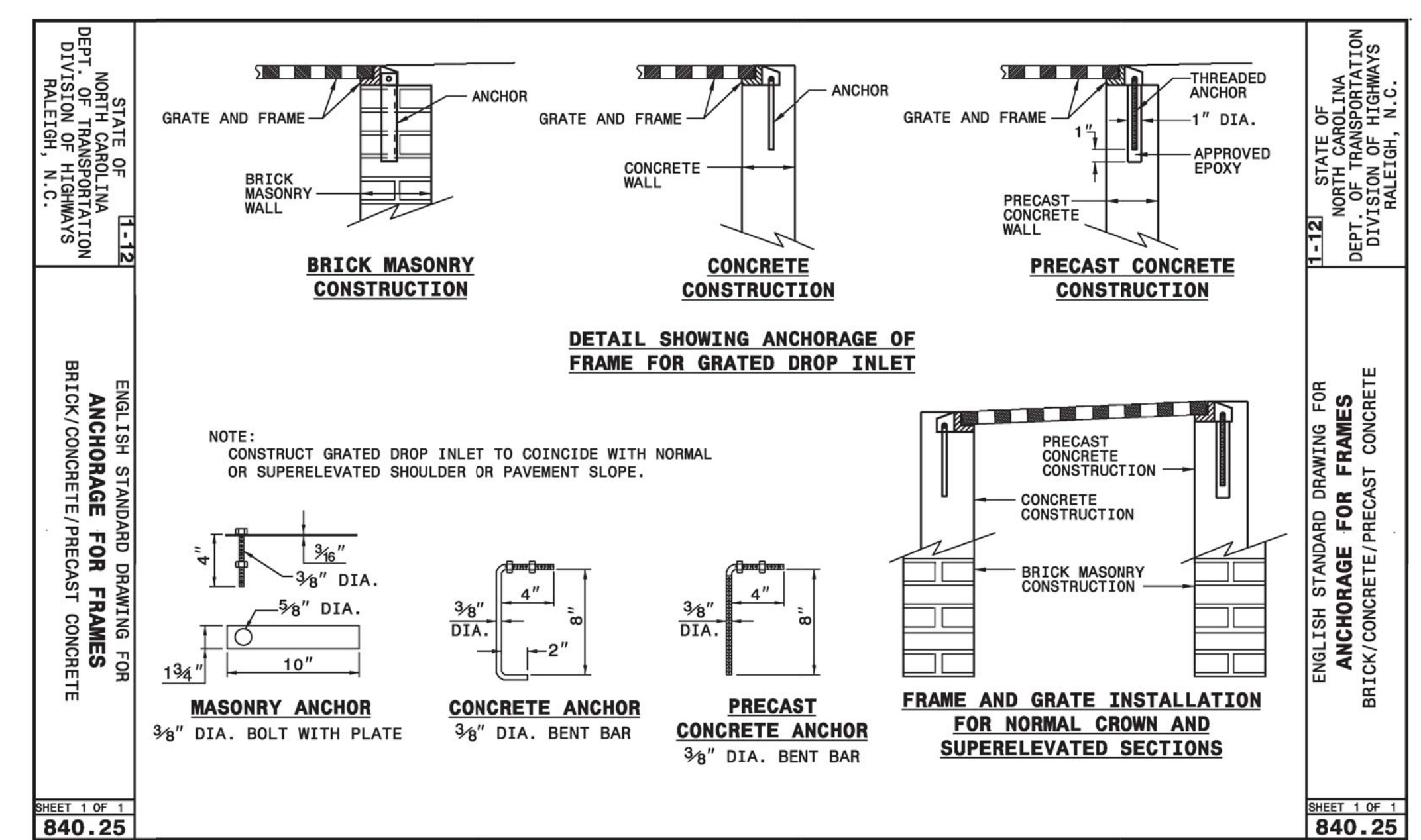
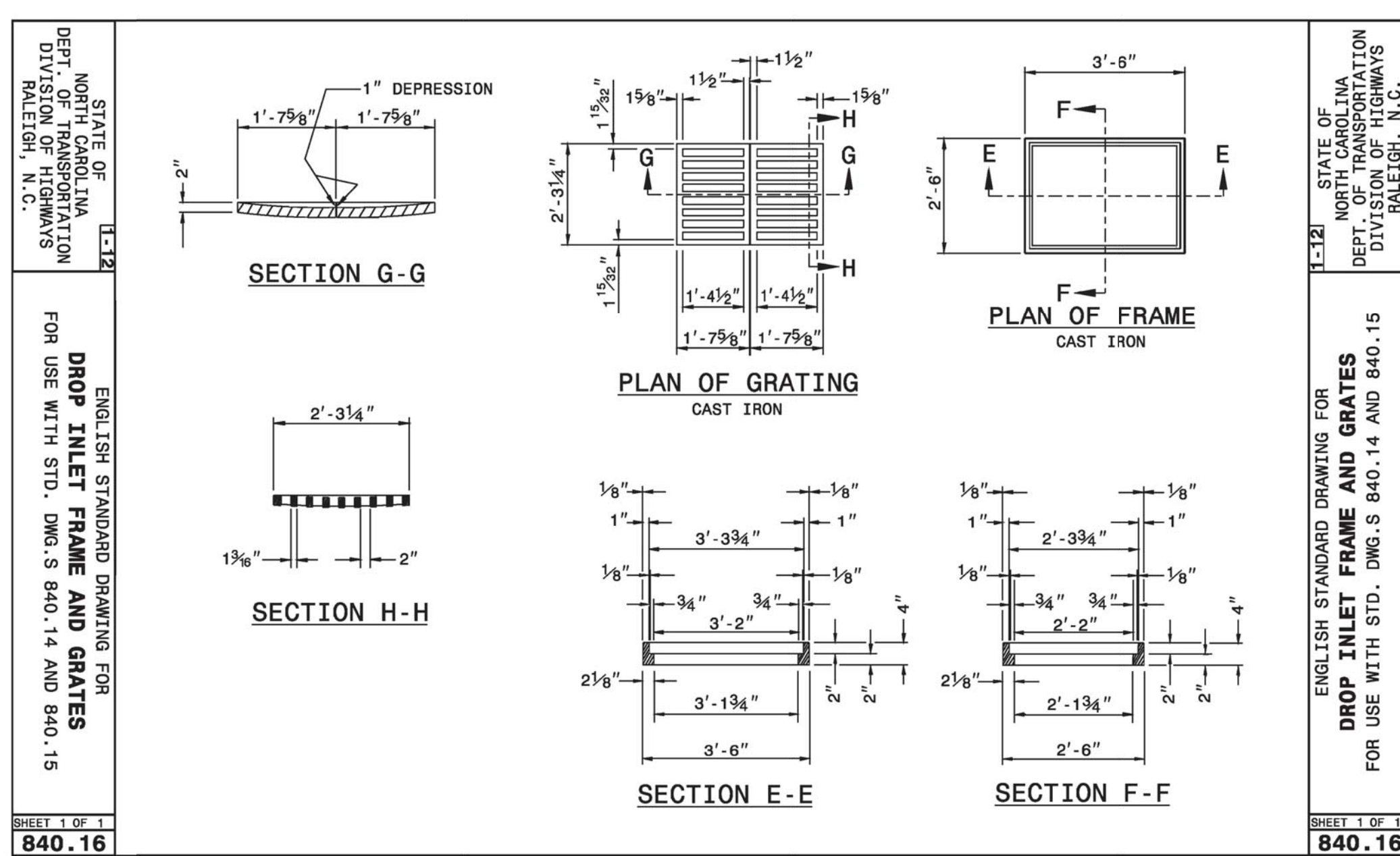
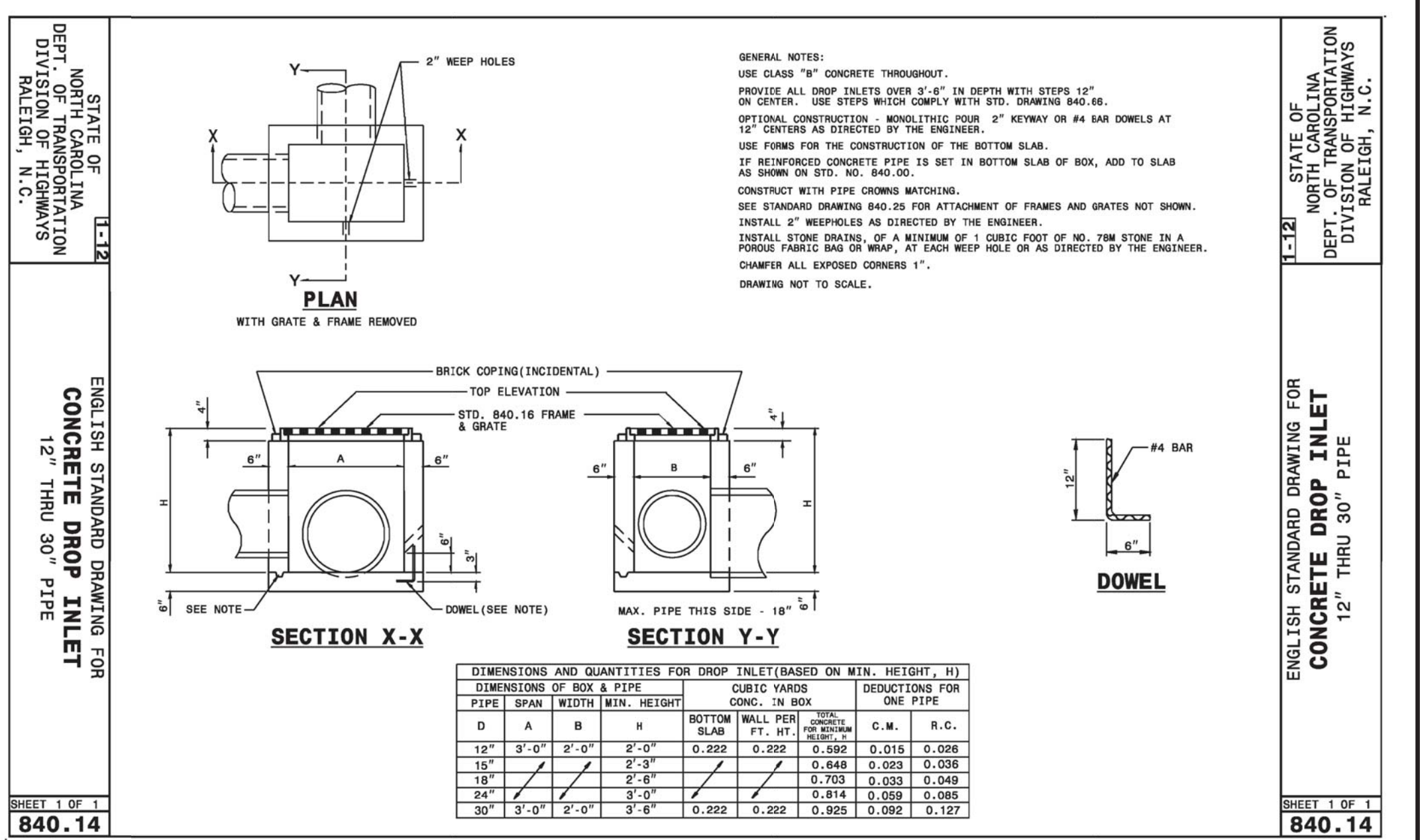
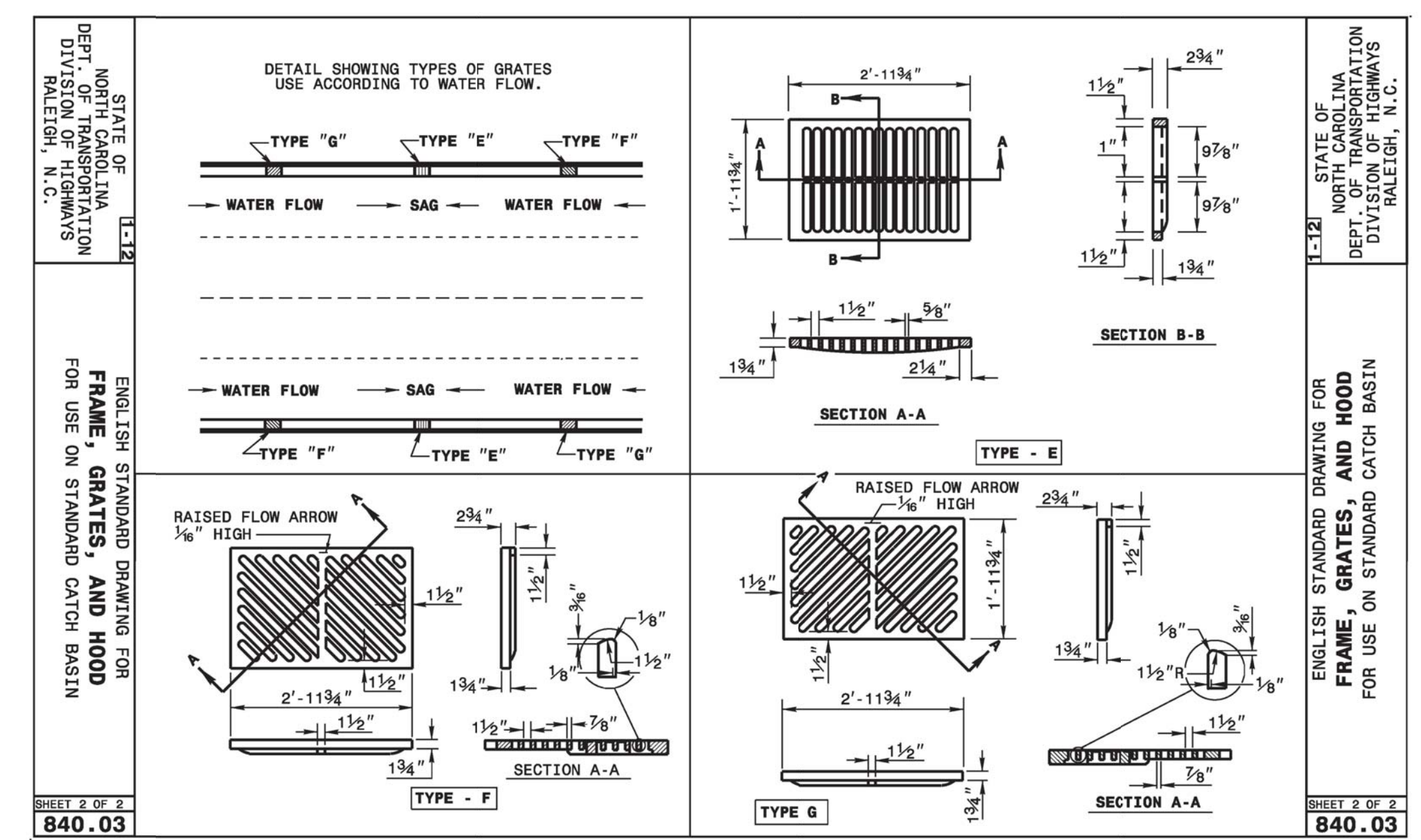
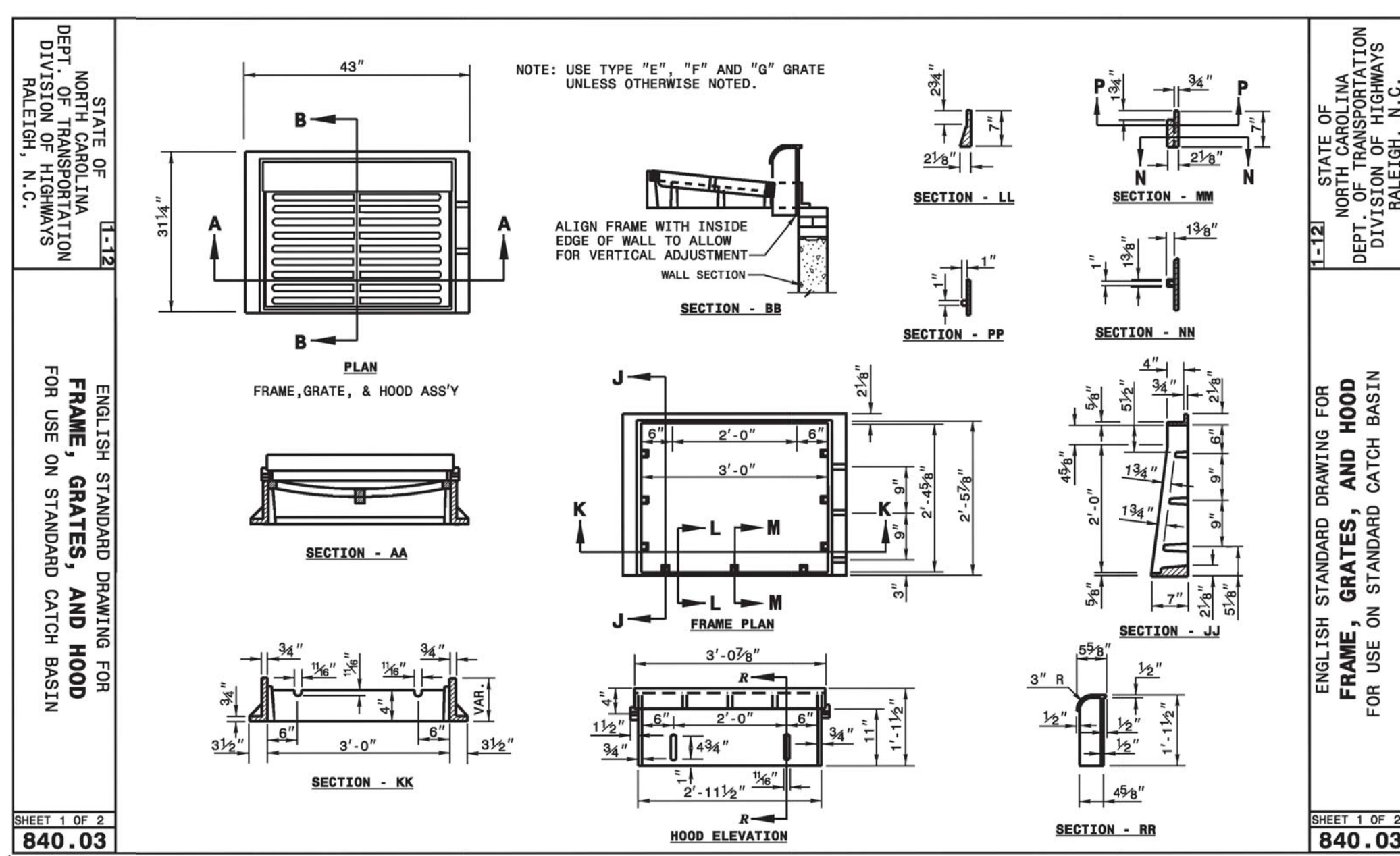
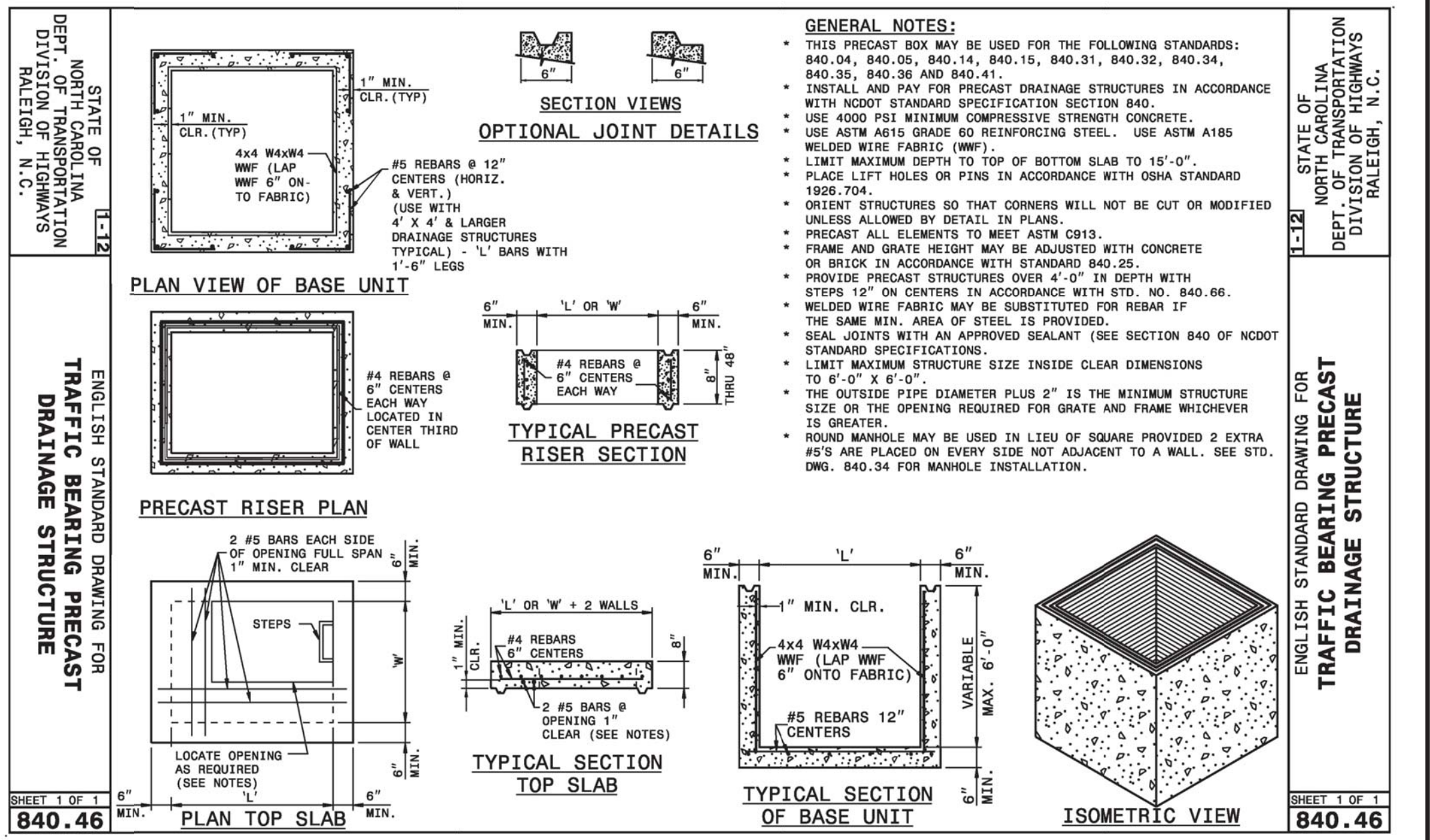
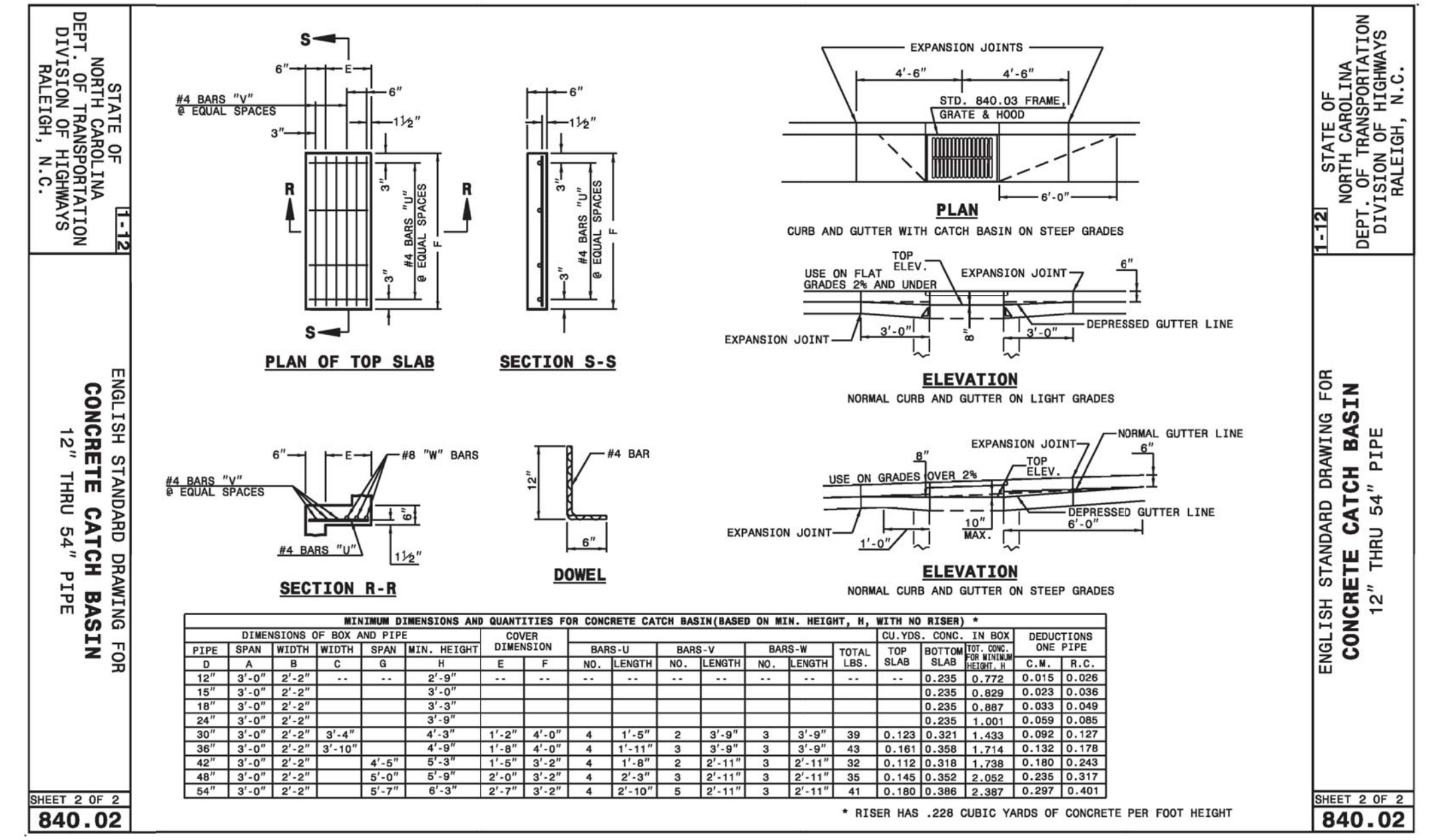
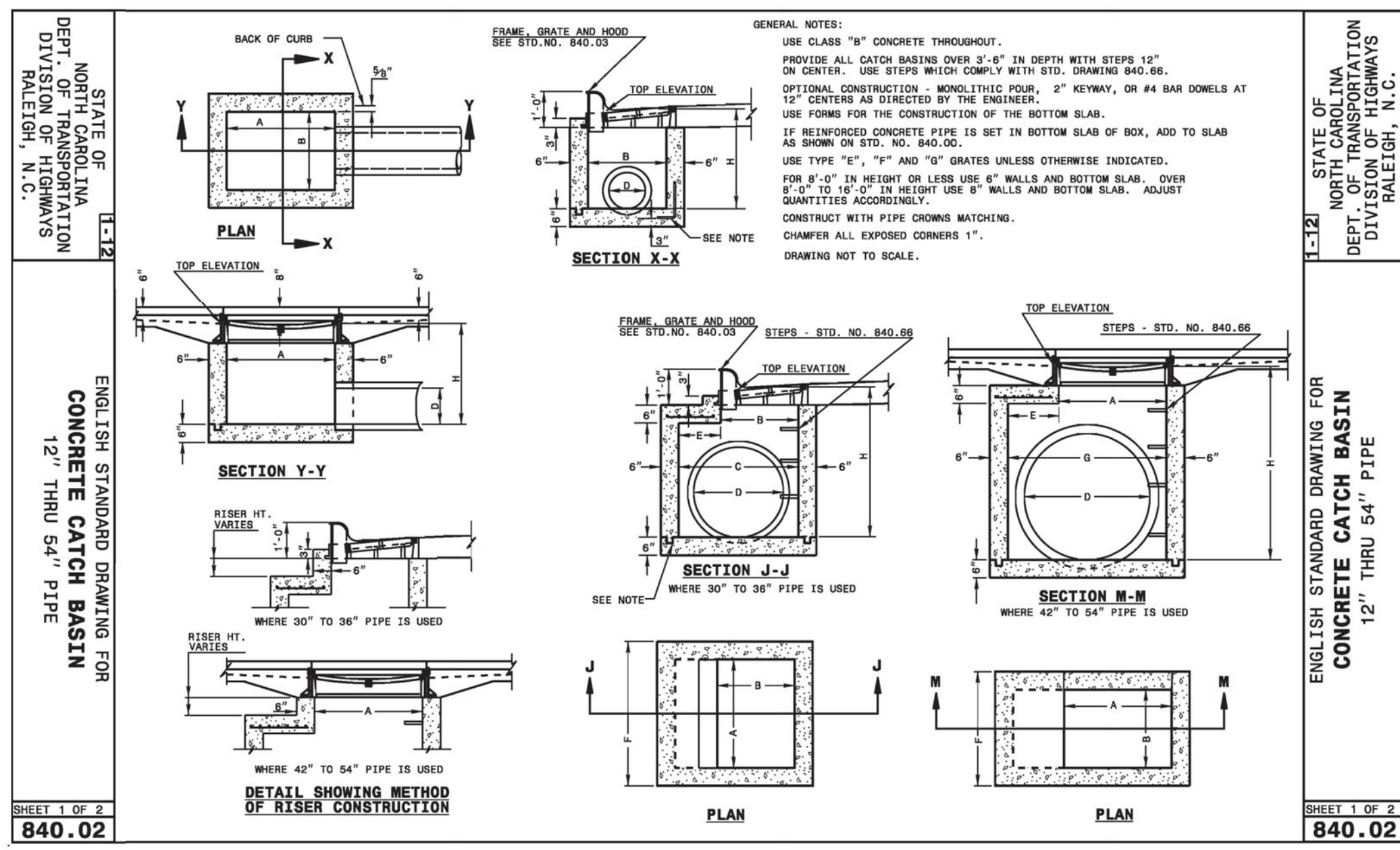
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER
DRAWING NUMBER
CE-501
30

REVISION
K

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION



For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name: _____ Date: _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFRUA ADDITIONAL INFORMATION	10/12/2018
G	CFRUA REV-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
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D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/30/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/28/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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 MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

STORM DRAINAGE DETAILS

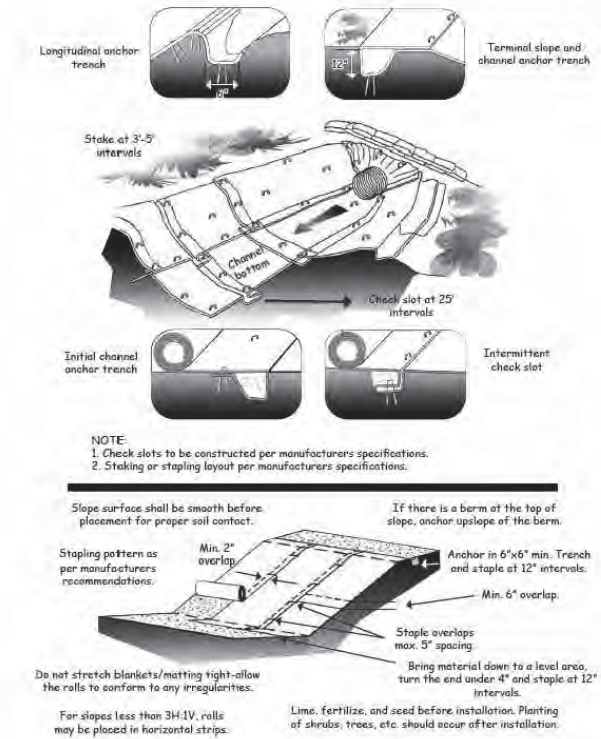
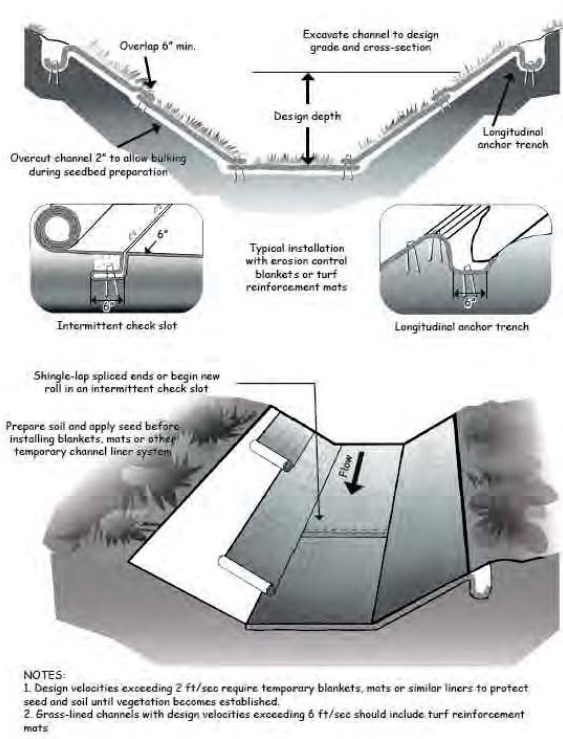
DATE: 01/25/2018
 MCE PROJ. # 02735-0177
 DRAWN EEM/ALM/MDH
 DESIGNED EEM/KCBE
 CHECKED KCBE
 PROJ. MGR. KCBE

SCALE: HORIZONTAL: N/A
 VERTICAL: N/A

MAC FILE NUMBER: CG-501
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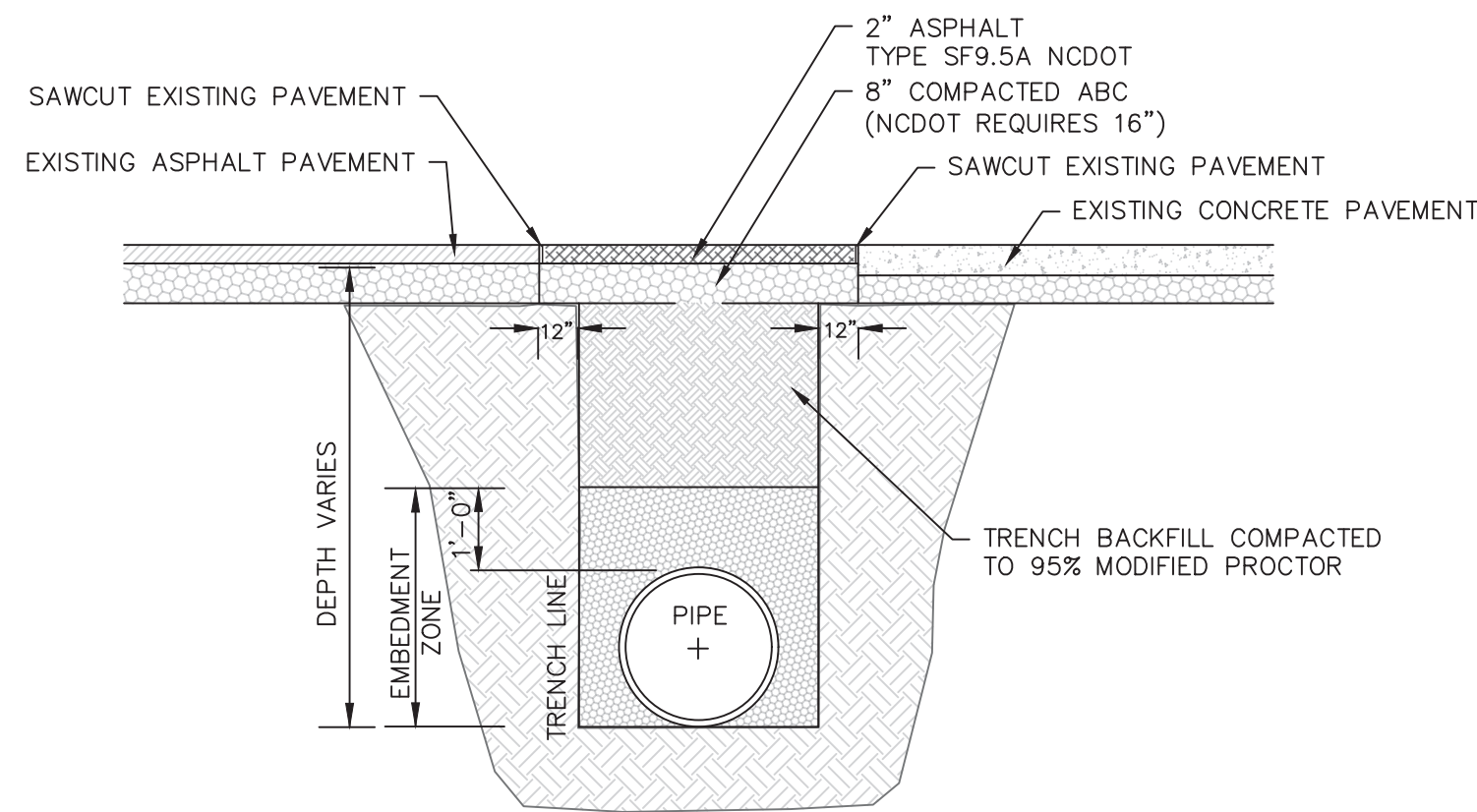
STATUS: PRELIMINARY DESIGN
 NOT FOR CONSTRUCTION

REVISION: K



ROLLED EROSION CONTROL PRODUCT (RECP)

- NOT TO SCALE (NCDENR PRACTICE STD. 6.17)
- NOTES:
- USE EXCLESOR MATTING (OR APPROVED EQUAL) AT A MINIMUM FOR THE ROLLED EROSION CONTROL PRODUCT ON SLOPES AND BOTTOMS OF DRAINAGE DITCHES AS INDICATED.
 - STABILIZE WITH PERMANENT VEGETATION WHEN CONDITIONS ARE SUITABLE FOR ROOT ESTABLISHMENT.

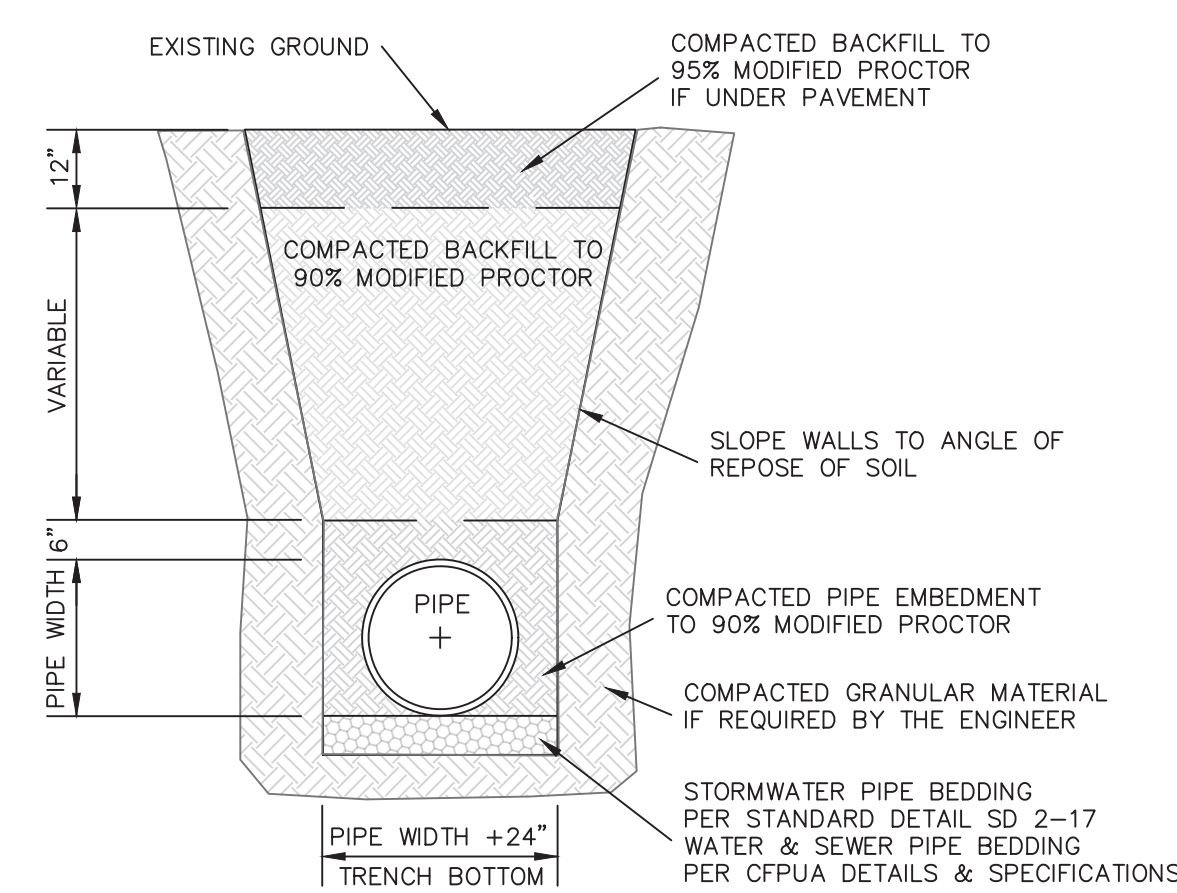


- NOTES:
- BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99
 - CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

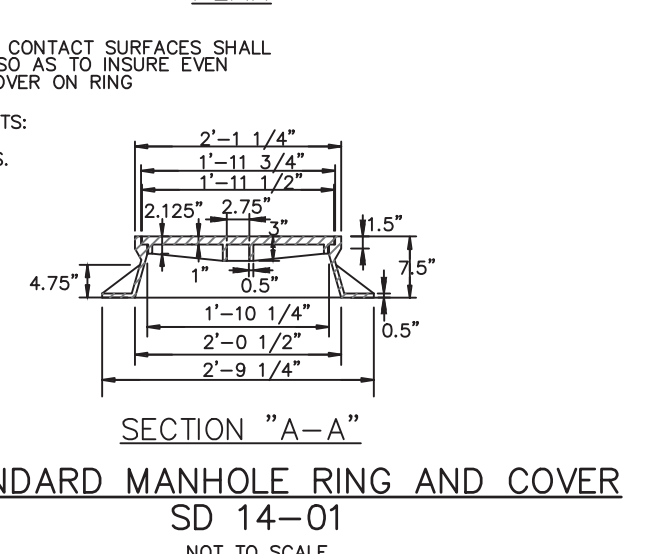
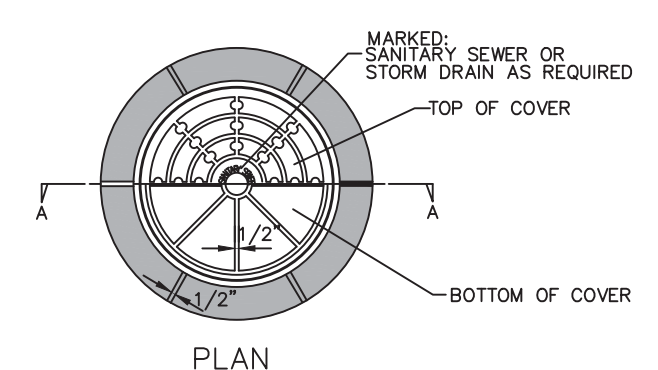
STANDARD SHOWING METHOD MAKING PAVEMENT REPAIRS WHERE PIPE IS INSTALLED

PAVEMENT REPAIR DETAIL

SD 1-16 NOT TO SCALE



STANDARD PIPE TRENCH DETAIL SD 1-07 NOT TO SCALE



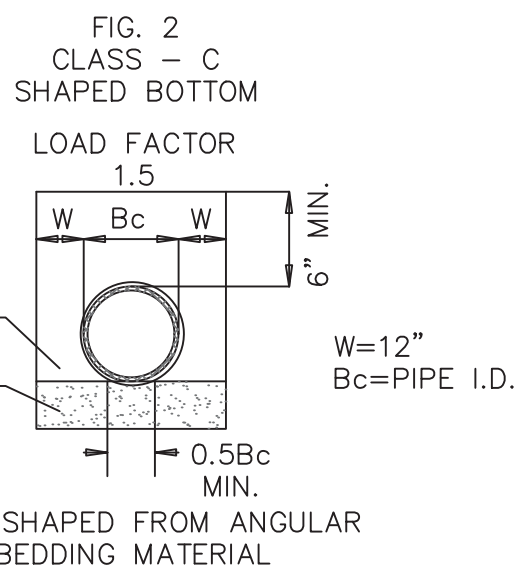
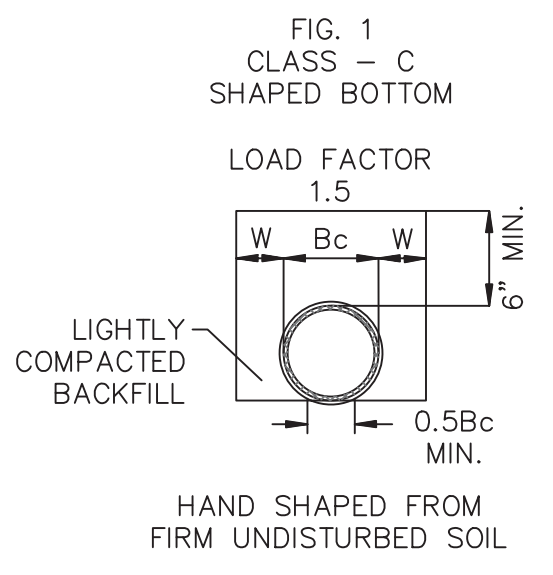
STANDARD MANHOLE RING AND COVER SD 14-01 NOT TO SCALE

STORM DRAINAGE NOTES:

- ALL PIPE BEDDING SHALL BE CLASS "C" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL STORM DRAINAGE PIPES SHALL BE RCP CLASS III UNLESS OTHERWISE NOTED ON THE PLANS.
- DO NOT PLANT TREES WITHIN UTILITY AND DRAINAGE EASEMENTS.
- THE ENGINEER AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION OF THE PIPES PRIOR TO CONSTRUCTION. IF DAMAGE OCCURS TO THESE PIPES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PIPE(S).
- THE CONTRACTOR SHALL CONTACT ONECALL BEFORE COMMENCING ANY WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WHETHER INDICATED ON THE DRAWINGS OR NOT. THE CONTRACTOR WILL ASSURE THE PRESENCE ON SITE OF A REPRESENTATIVE OF THE GAS COMPANY WHEN WORKING IN THE VICINITY OF ANY GAS MAINS.
- EXCAVATION FOR STORM DRAINAGE PIPE SHALL BE TO THE LINES AND GRADES AS SHOWN ON THE PLANS.
- THE BEDDING SHALL BE SHAPED IN ACCORDANCE WITH CLASS "C" BEDDING AS SHOWN ON CITY STANDARD DETAIL SD 2-17.
- THE BEDDING SHALL PROVIDE A FIRM FOUNDATION OF UNIFORM DENSITY ALONG THE ENTIRE LENGTH OF PIPE. RECESSES SHALL BE MADE TO ACCOMMODATE BELLS AND JOINTS.
- WHERE UNSTABLE SOILS ARE ENCOUNTERED AS DETERMINED BY GEOTECHNICAL ENGINEER, A MINIMUM 4-INCH THICK BEDDING OF STONE SHALL BE PLACED, SEE FIGURE 2, SD 2-17.
- THE STONE SHALL BE UNIFORMLY GRADED FROM 3/4 INCH TO NO. 4 IN ACCORDANCE WITH ASTM C-33. CARE SHALL BE TAKEN TO PREVENT UNDERROUTING IN SUITABLE SOIL.
- AREAS UNDERCUT SHALL BE FILLED WITH SUITABLE SOIL AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 1557 STANDARD TEST METHOD.

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch



GUIDELINES FOR BEDDING DETAILS, STORM SEWER CLASS C

SD 2-17 NOT TO SCALE

Approved Construction Plan

Name _____ Date _____

Planning _____

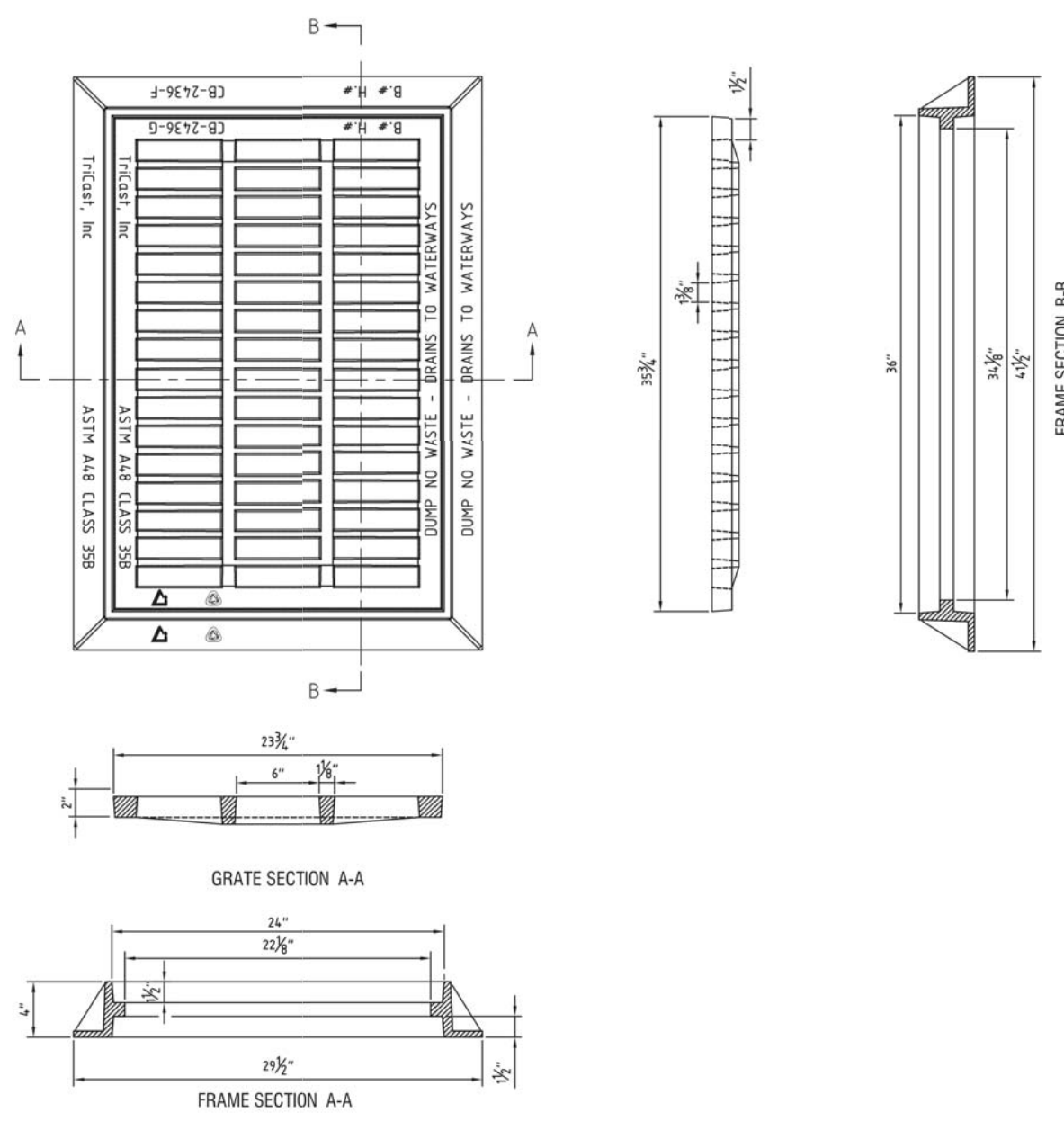
Traffic _____

Fire _____

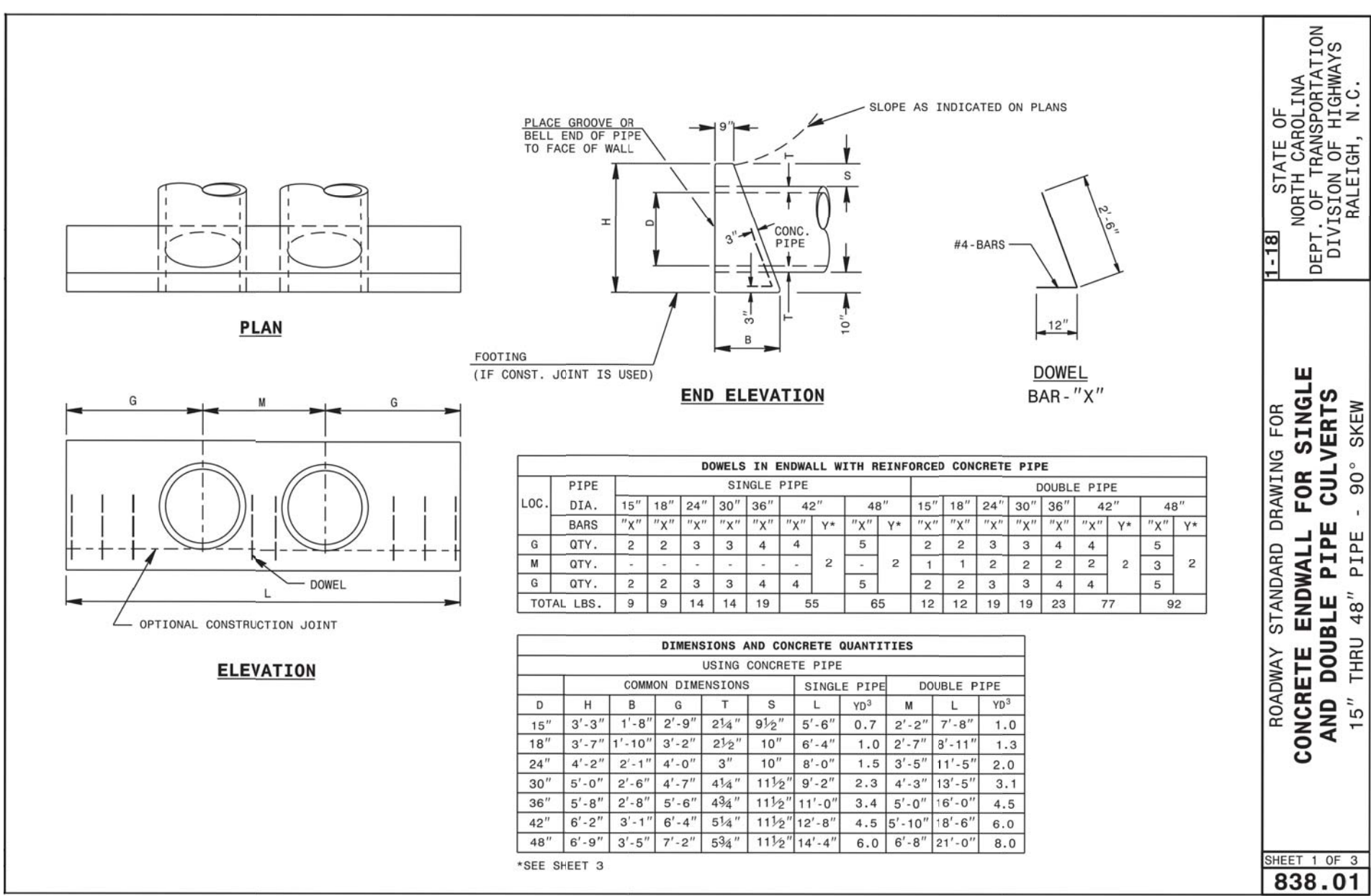
City of Wilmington North Carolina
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____



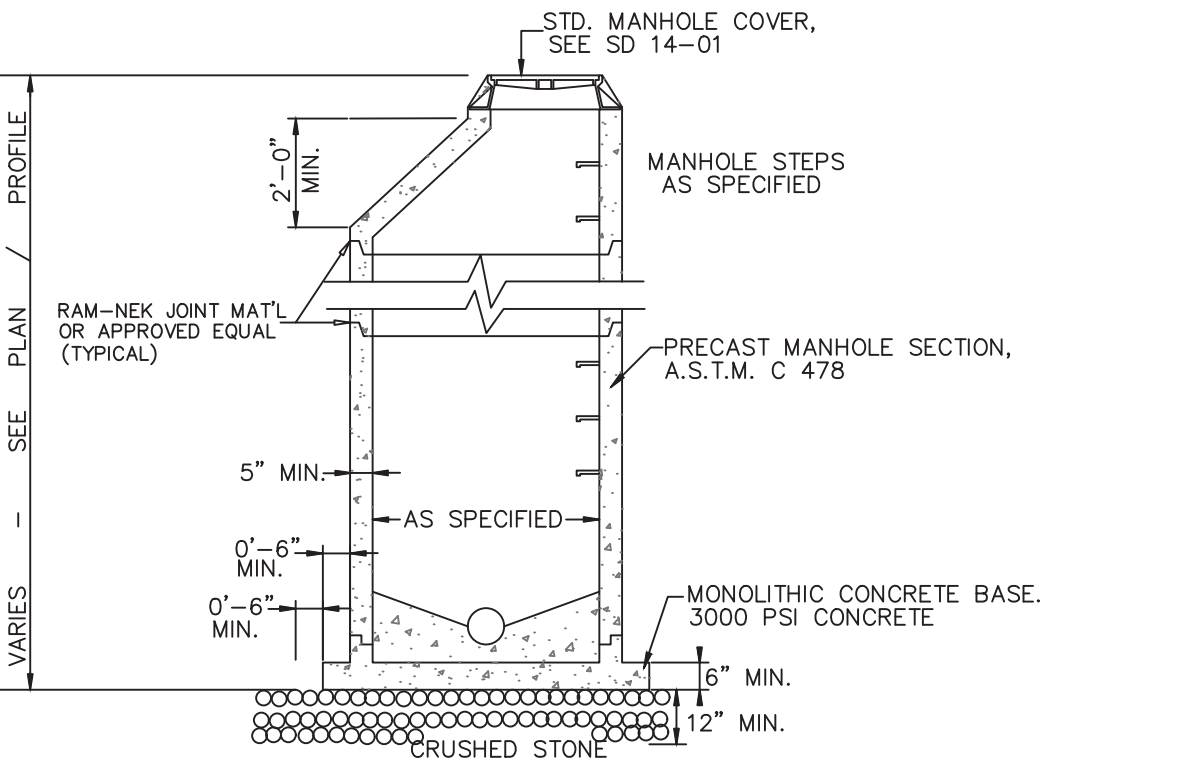
24"x36" CASTING (2DI) NOT TO SCALE



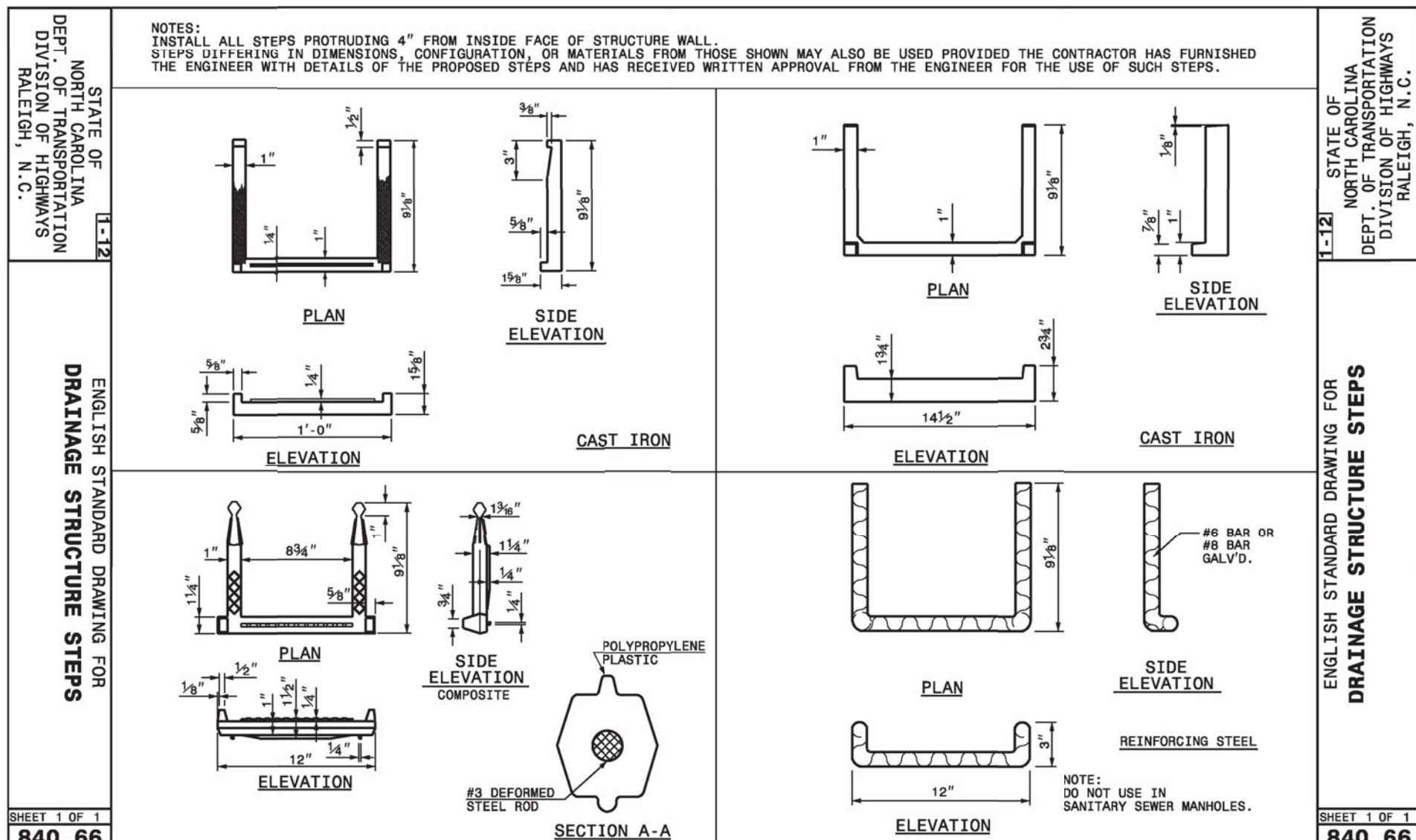
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR
CONCRETE ENDWALL FOR SINGLE AND DOUBLE PIPE CULVERTS
15" THRU 48" PIPE - 90° SKEW

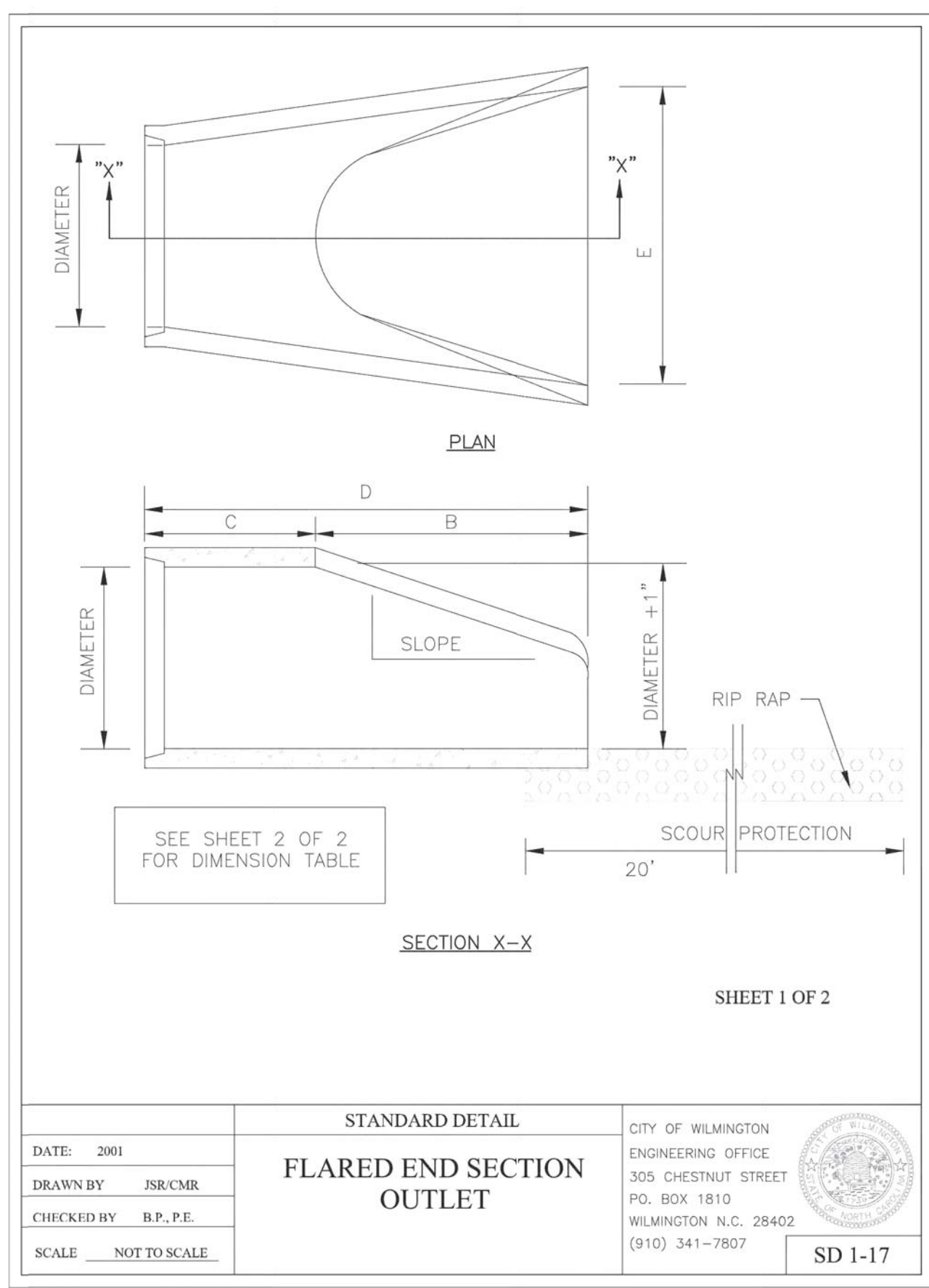
SHEET 1 OF 3
838.01



PRECAST MANHOLE SD 14-11 NOT TO SCALE



ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS SHEET 1 OF 2 840.66



STANDARD DETAIL
FLARED END SECTION OUTLET
CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO. BOX 1810
WILMINGTON N.C. 28402
(910) 341-7807
SD 1-17

NOTE:
1. STRUCTURAL DESIGN OF END SECTION SHALL CONFORM WITH THAT OF STANDARD REINFORCED CONCRETE.

PIPE DIAMETER	WALL THICKNESS	SLOPE	B	C	D	E	UNIT WEIGHT		
12	2 1/4	3:1	24	49	73	24	730		
15	2 1/4	3:1	27	46	73	30	910		
18	2 1/2	3:1	27	46	73	36	1190		
21	2 3/4	3:1	36	37	73	42	1370		
24	3	3:1	42	31	1/2	73	1/2	48	1770
27	3 1/4	3:1	48	25	1/2	73	1/2	54	2130
30	3 1/2	3:1	54	19	3/4	73	3/4	60	2380
33	3 3/4	3:1	60	36	96	66	3870		
36	4	3:1	63	34	3/4	97	3/4	72	5320
42	4 1/2	3:1	63	35	98	78	5920		
48	5	3:1	72	26	98	84	7470		
54	5 1/2	2.4:1	66	34	100	90	8810		
60	6	2:1	60	39	99	96	11180		
72	7	2:1	78	21	99	108	13980		

DIMENSIONS IN INCHES WEIGHTS IN POUNDS

STANDARD DETAIL
FLARED END SECTION OUTLET DIMENSION TABLE
CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO. BOX 1810
WILMINGTON, N.C. 28402
(910) 341-7807
SD 1-17

REVNO.	DESCRIPTION	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
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AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

STORM DRAINAGE DETAILS

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR. KCBE

SCALE: CG-502
HORIZONTAL: N/A
VERTICAL: N/A
DRAWING NUMBER: 33

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
JB-1-OUT	EW-1-OUT	28.83'	18"	RCP	0.87%	7.00	6.75
JB-1-1	FES-1-0	28.23'	18"	RCP	1.31%	6.37	6.00
DI-1-7	DI-1-6	50.23'	15"	RCP	0.50%	9.56	9.31
DI-1-6	DI-1-2	51.43'	15"	RCP	0.51%	9.31	9.05
DI-1-5	DI-1-4A	87.53'	15"	RCP	1.09%	8.72	7.77
DI-1-4B	DI-1-4A	4.00'	15"	RCP	0.00%	7.77	7.77
DI-1-4A	JB-1-1	140.50'	18"	RCP	1.00%	7.77	6.37
DI-1-3	DI-1-4B	65.19'	15"	RCP	1.00%	8.42	7.77
DI-1-2	DI-1-3	62.84'	15"	RCP	1.00%	9.05	8.42

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
MH-7-39	JB-7-36	178.71'	15"	RCP	1.93%	18.18	14.73
MH-7-2	MH-7-1	267.78'	60"	RCP	0.30%	10.44	9.64
MH-7-1	FES-7-0	46.75'	60"	RCP	0.30%	9.64	9.50
JB-7-OUT	FES-7-OUT-B	28.06'	18"	RCP	0.89%	16.25	16.00
JB-7-47	CB-7-45	30.85'	15"	RCP	0.81%	16.00	15.75
JB-7-36	DI-7-13	163.54'	24"	RCP	0.53%	14.73	13.87
JB-7-21	CB-7-19	49.01'	30"	RCP	0.50%	15.74	15.49
JB-7-6	CB-7-5	97.55'	48"	RCP	0.30%	11.46	11.17
DI-7-35	DI-7-34	36.50'	15"	RCP	0.50%	17.60	17.42
DI-7-34	DI-7-30	45.50'	15"	RCP	0.50%	17.42	17.19
DI-7-33	DI-7-32	45.50'	15"	RCP	0.50%	18.39	18.16
DI-7-32	DI-7-31	157.50'	15"	RCP	0.50%	18.16	17.37
DI-7-31	DI-7-30	36.50'	15"	RCP	0.50%	17.37	17.19
DI-7-30	DI-7-28	110.00'	18"	RCP	0.50%	17.19	16.64
DI-7-28	DI-7-29	30.00'	15"	RCP	0.50%	16.79	16.64
DI-7-28	CB-7-27	18.35'	18"	RCP	0.50%	16.64	16.55
DI-7-16	DI-7-15	45.50'	15"	RCP	0.51%	14.71	14.48
DI-7-15	DI-7-13	121.88'	30"	RCP	0.50%	14.48	13.87
DI-7-14	DI-7-13	45.50'	15"	RCP	1.00%	16.75	16.30
DI-7-13	DI-7-11	182.68'	42"	RCP	0.48%	13.87	13.00
DI-7-12	DI-7-11	45.50'	15"	RCP	1.69%	17.11	16.34
DI-7-11	DI-7-9	141.32'	42"	RCP	0.30%	13.00	12.57
DI-7-10	DI-7-9	45.50'	15"	RCP	2.48%	16.91	15.78
DI-7-9	CB-7-8	34.76'	42"	RCP	0.32%	12.57	12.46
CB-7-56	CB-7-55	26.30'	15"	RCP	0.50%	15.75	15.62
CB-7-55	CB-7-4	86.36'	15"	RCP	1.01%	15.62	14.75
CB-7-54	CB-7-5	26.30'	15"	RCP	0.84%	15.00	14.78
CB-7-53	JB-7-6	33.50'	15"	RCP	0.82%	14.67	14.40
CB-7-52	CB-7-53	26.30'	15"	RCP	0.50%	14.80	14.67
CB-7-51	CB-7-7	21.30'	15"	RCP	0.99%	15.22	15.01
CB-7-50	CB-7-8	21.30'	15"	RCP	0.99%	15.86	15.65
CB-7-49	JB-7-47	30.35'	15"	RCP	0.82%	16.25	16.00
CB-7-48	CB-7-49	21.30'	15"	RCP	0.52%	16.36	16.25
CB-7-45	CB-7-8	143.00'	18"	RCP	0.70%	15.75	14.75
CB-7-44	CB-7-45	21.30'	15"	RCP	0.70%	15.90	15.75
CB-7-43	CB-7-42	26.30'	15"	RCP	1.33%	19.50	19.15
CB-7-42	MH-7-39	30.82'	15"	RCP	0.49%	19.15	19.00
CB-7-41	CB-7-40	21.33'	15"	RCP	0.52%	18.44	18.33
CB-7-40	MH-7-39	30.86'	15"	RCP	0.49%	18.33	18.18
CB-7-38	CB-7-37	26.30'	15"	RCP	0.49%	15.00	14.87
CB-7-37	JB-7-36	28.21'	18"	RCP	0.50%	14.87	14.73
CB-7-27	CB-7-26	21.30'	18"	RCP	0.50%	16.55	16.44
CB-7-26	CB-7-24	70.56'	24"	RCP	0.50%	16.44	16.09
CB-7-25	CB-7-24	21.30'	15"	RCP	0.33%	16.22	16.15
CB-7-24	JB-7-21	70.60'	24"	RCP	0.50%	16.09	15.74
CB-7-23	CB-7-22	21.30'	15"	RCP	0.50%	16.11	16.00
CB-7-22	JB-7-21	52.24'	15"	RCP	0.50%	16.00	15.74
CB-7-20	CB-7-19	21.30'	15"	RCP	0.33%	16.64	16.57
CB-7-19	CB-7-18	143.00'	30"	RCP	0.50%	15.49	14.77
CB-7-18	CB-7-17	21.30'	30"	RCP	0.50%	14.77	14.66
CB-7-17	DI-7-15	35.47'	30"	RCP	0.50%	14.66	14.48
CB-7-8	CB-7-7	109.50'	48"	RCP	0.30%	12.46	12.13
CB-7-7	JB-7-6	54.00'	48"	RCP	1.24%	12.13	11.46
CB-7-5	CB-7-4	80.68'	54"	RCP	0.30%	11.17	10.93
CB-7-4	CB-7-3	26.30'	54"	RCP	0.30%	10.93	10.85
CB-7-3	MH-7-2	134.85'	54"	RCP	0.30%	10.85	10.44
FES-7-OUT-A		24.81'	18"	RCP	1.01%	16.25	16.00
FES-7-OUT-C		24.83'	18"	RCP	1.01%	16.25	16.00

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
MH-4-4	DI-4-2	155.67'	18"	RCP	0.31%	16.77	16.30
MH-4-1	FES-4-0A	86.18'	24"	RCP	0.34%	15.79	15.50
JB-4-OUT	EW-4-OUT	32.41'	24"	RCP	0.46%	16.50	16.35
JB-4-17	CB-4-16	98.57'	15"	RCP	0.28%	17.85	17.57
JB-4-12	CB-4-10	54.01'	24"	RCP	0.31%	16.97	16.80
JB-4-7	FES-4-0B	55.45'	36"	RCP	0.45%	16.35	16.10
DI-4-24	DI-4-23	80.58'	15"	RCP	0.35%	18.65	18.37
DI-4-23	CB-4-9	63.85'	15"	RCP	0.35%	18.37	18.15
DI-4-20	JB-4-17	146.02'	15"	RCP	0.31%	18.30	17.85
DI-4-3	DI-4-2	77.80'	15"	RCP	0.48%	16.67	16.30
DI-4-2	MH-4-1	145.20'	24"	RCP	0.35%	16.30	15.79
CB-4-22	CB-4-21	26.30'	15"	RCP	0.49%	21.00	20.87
CB-4-21	JB-4-7	124.87'	15"	RCP	0.50%	16.97	16.35
CB-4-19	CB-4-18	26.30'	15"	RCP	0.50%	19.00	18.87
CB-4-18	JB-4-17	41.51'	15"	RCP	0.50%	18.87	18.66
CB-4-16	JB-4-12	183.46'	18"	RCP	0.33%	17.57	16.97
CB-4-15	CB-4-16	26.30'	15"	RCP	0.35%	17.96	17.86
CB-4-14	JB-4-12	242.80'	18"	RCP	0.30%	17.70	16.97
CB-4-13	CB-4-14	21.30'	15"	RCP	0.52%	17.81	17.70
CB-4-10	CB-4-8	95.00'	24"	RCP	0.31%	16.80	16.51
CB-4-10	CB-4-11	26.30'	15"	RCP	1.00%	18.70	18.44
CB-4-9	CB-4-8	26.30'	15"	RCP	0.49%	18.15	18.02
CB-4-8	JB-4-7	52.55'	30"	RCP	0.31%	16.51	16.35
CB-4-6	CB-4-5	26.30'	15"	RCP	0.30%	17.33	17.25
CB-4-5	MH-4-4	162.06'	15"	RCP	0.30%	17.25	16.77

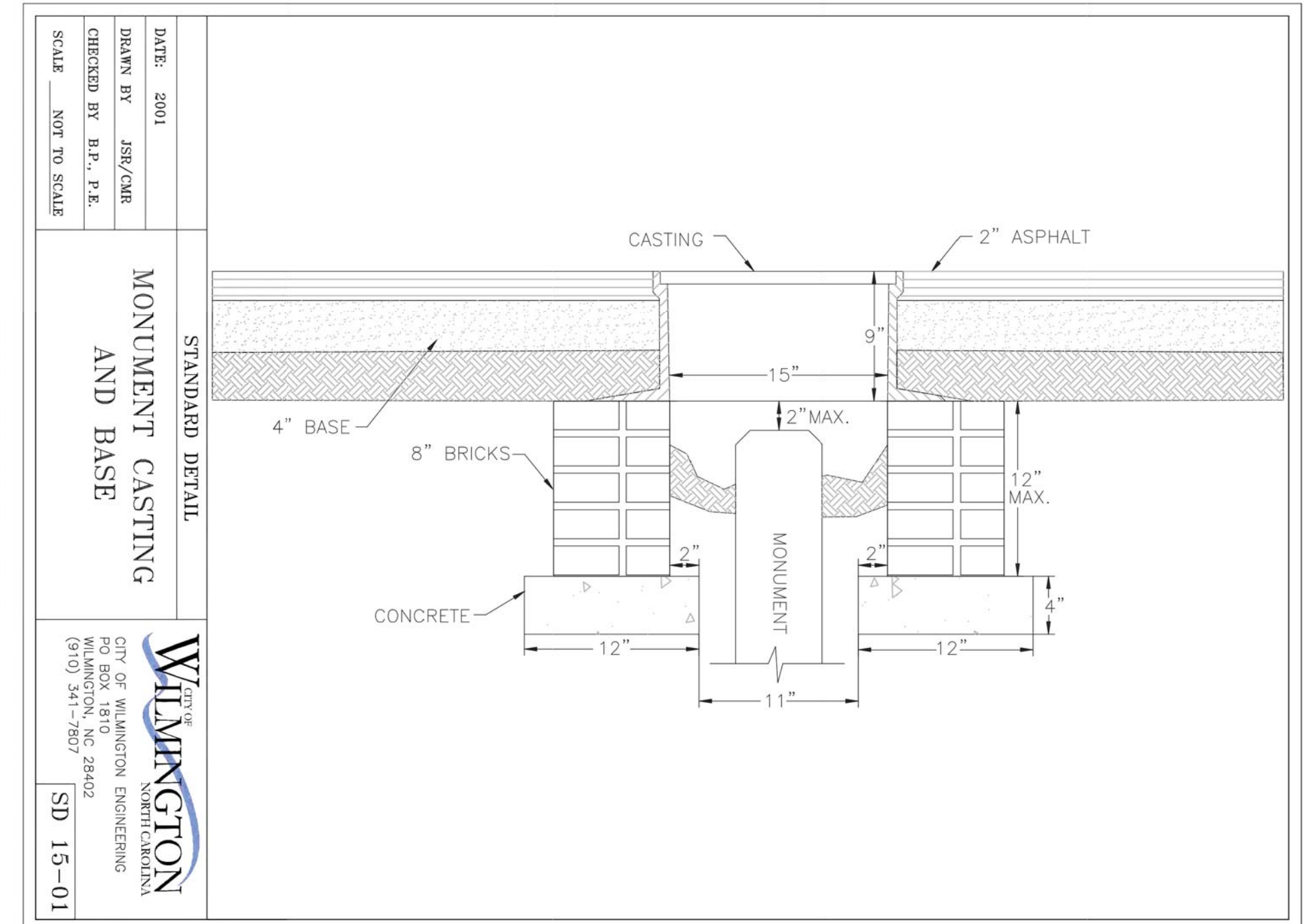
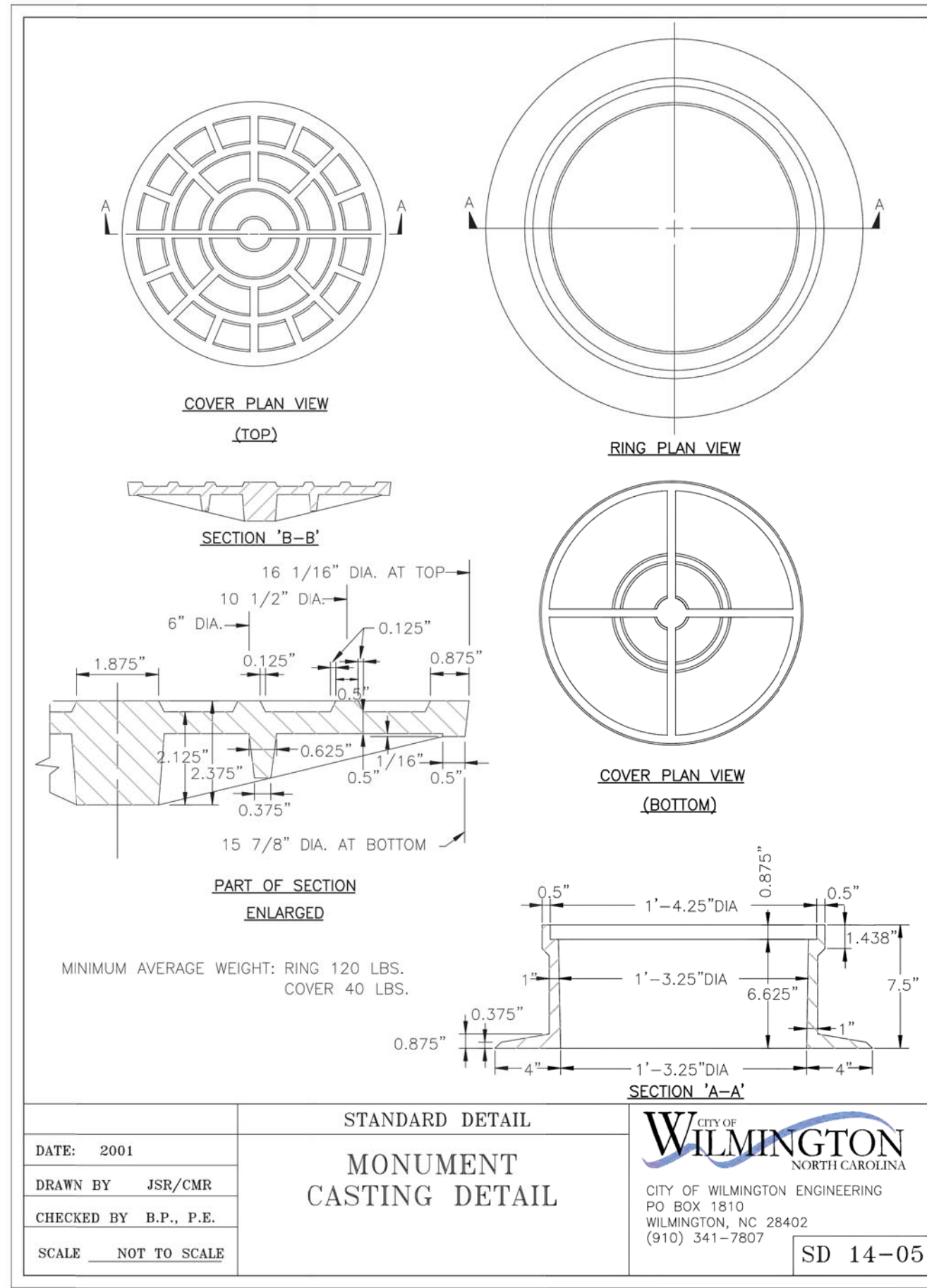
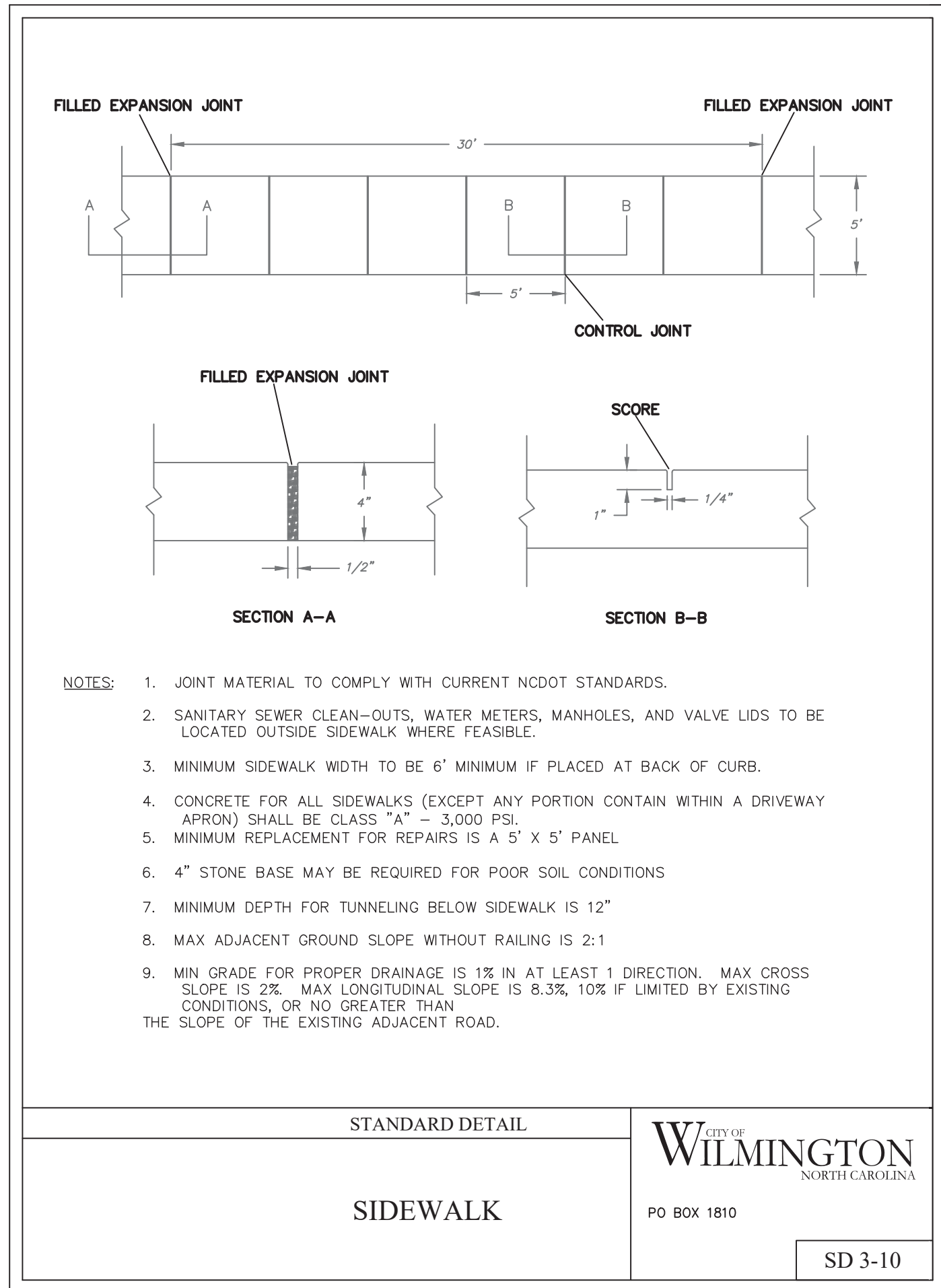
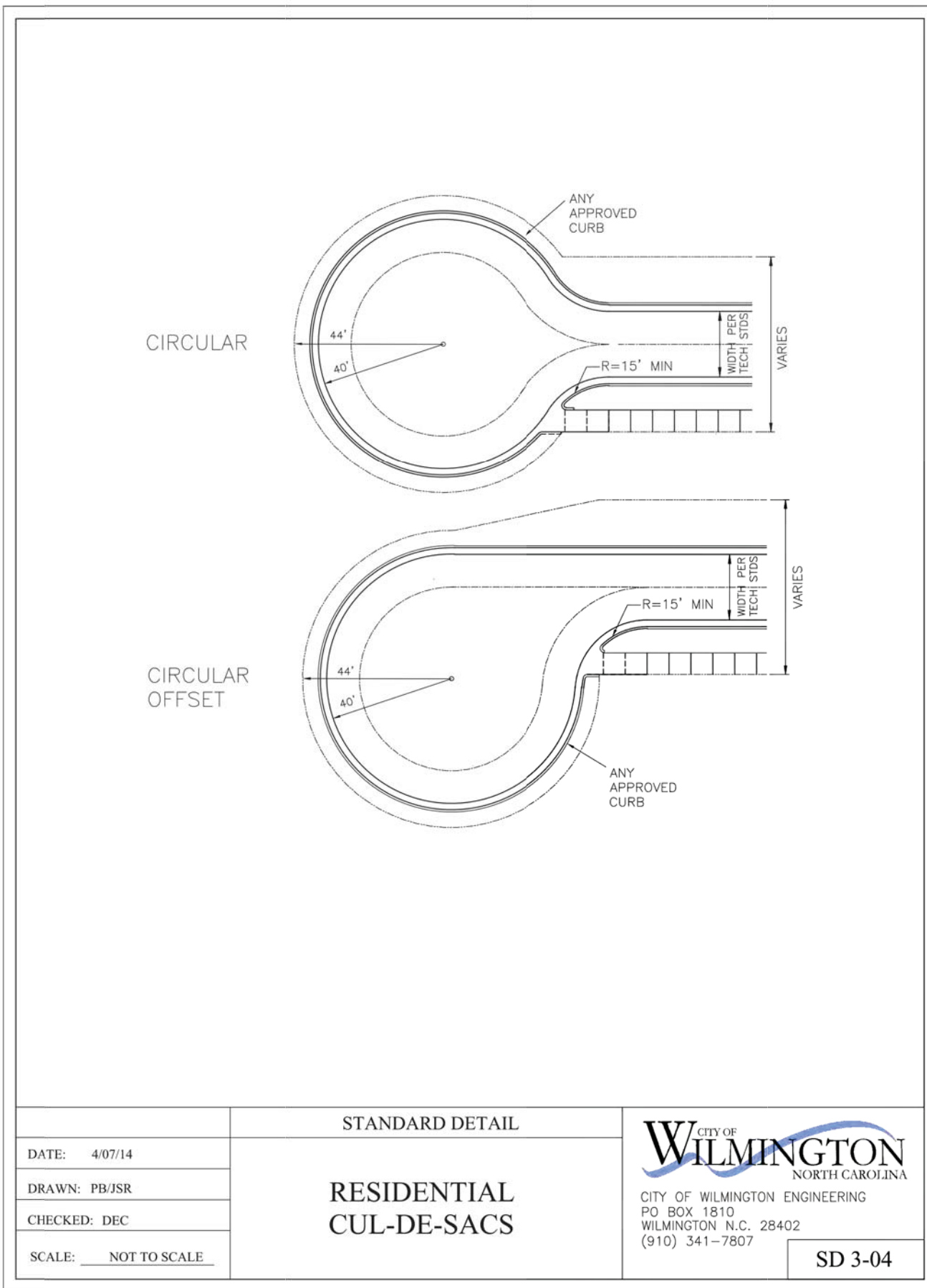
STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
MH-3-2	CB-3-1	53.52'	15"	RCP	0.30%	10.21	10.05
JB-3-OUT	FES-3-OUT	48.40'	15"	RCP	0.64%	9.75	9.44
CB-3-7	CB-3-6	26.30'	15"	RCP	0.99%	12.24	11.98
CB-3-6	CB-3-1	153.36'	15"	RCP	1.17%	11.98	10.18
CB-3-5	CB-3-1	26.30'	15"	RCP	0.49%	10.18	10.05
CB-3-4B	CB-3-4A	4.00'	15"	RCP	0.00%	10.50	10.50
CB-3-4A	CB-3-3A	26.30'	15"	RCP	0.49%	10.50	10.37
CB-3-3B	MH-3-2	45.92'	15"	RCP	0.35%	10.37	10.21
CB-3-3A	CB-3-3B	4.00'	15"	RCP	0.00%	10.37	10.37
CB-3-1	FES-3-0	45.59'	15"	RCP	0.66%	10.05	9.75

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
JB-2-OUT	FES-2-OUT	34.36'	18"	RCP	1.46%	7.50	7.00
DI-2-6	DI-2-1	118.26'	15"	RCP	3.67%	14.50	10.16
DI-2-5	DI-2-4	83.35'	15"	RCP	0.40%	10.04	9.71
DI-2-4	DI-2-3	219.35'	15"	RCP	0.40%	9.71	8.83
DI-2-3	DI-2-2	186.34'	15"	RCP	0.40%	8.83	8.08
DI-2-2	DI-2-1	104.10'	15"	RCP	0.40%	8.08	7.66
DI-2-1	FES-2-0	188.73'	18"	RCP	0.35%	7.66	7.00

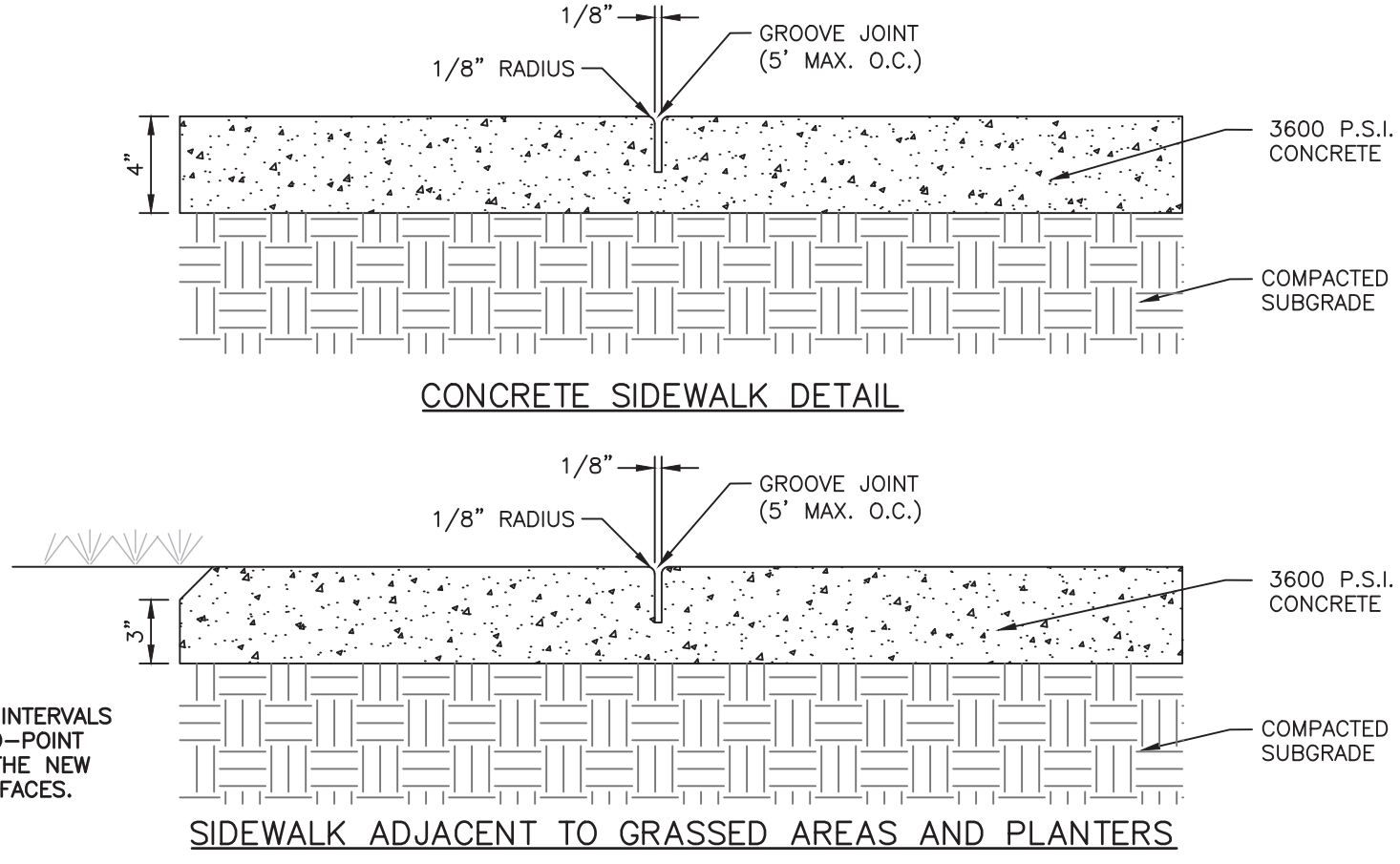
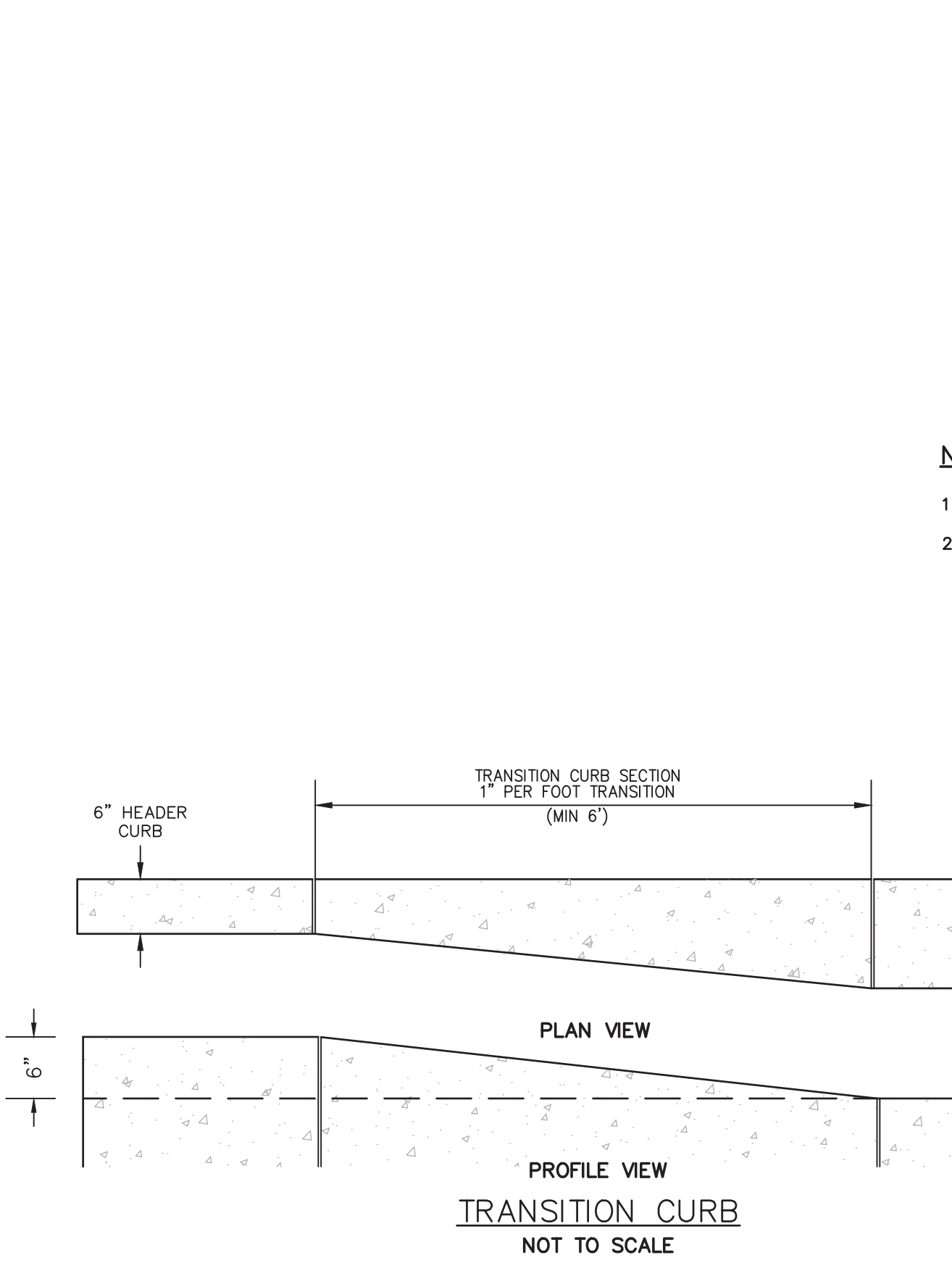
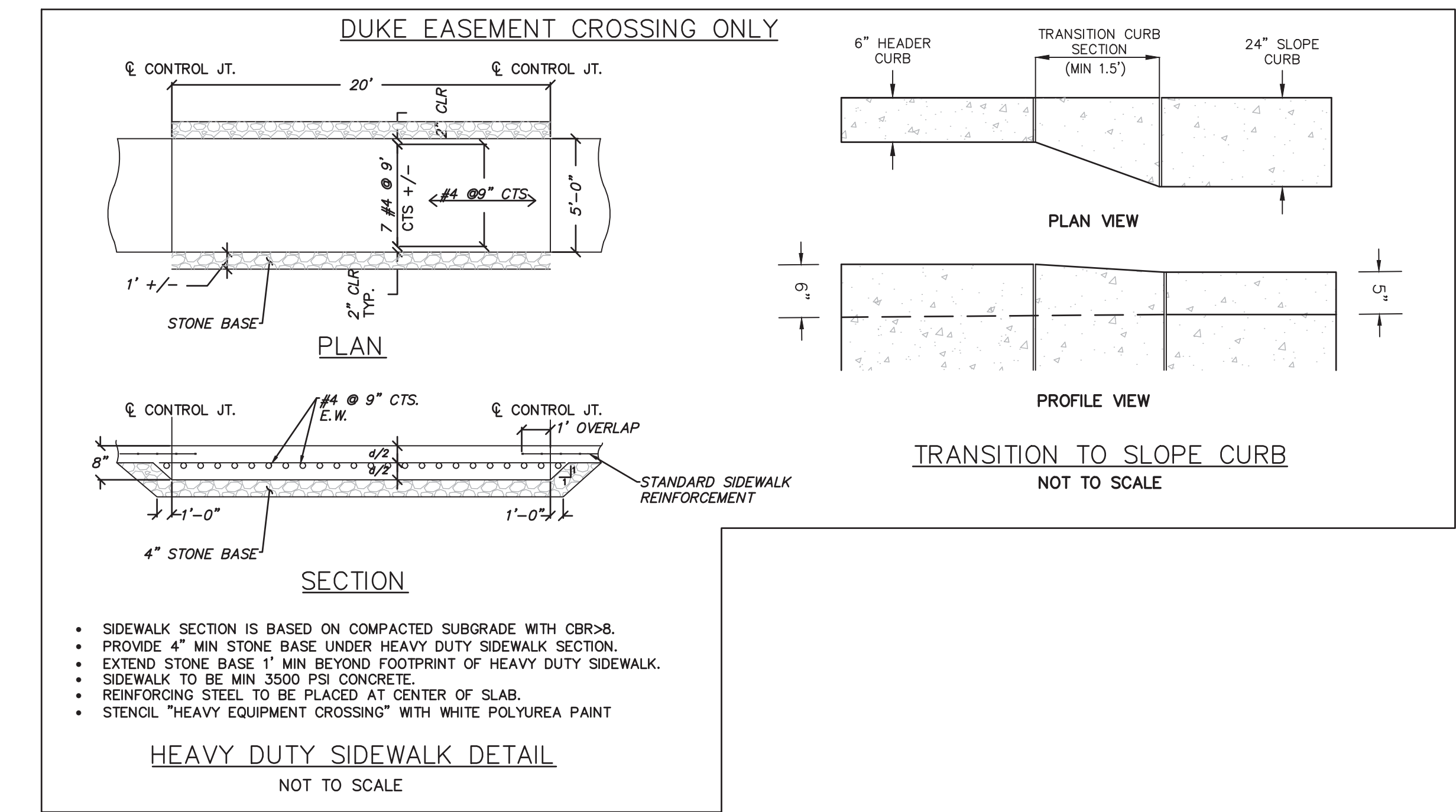
STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
MH-8-10	CB-8-8	111.59'	15"	RCP	0.85%	13.05	12.10
MH-8-7	CB-8-6	67.63'	15"	RCP	1.12%	11.36	10.60
CB-8-12	CB-8-11	26.30'	15"	RCP	0.50%	13.50	13.37
CB-8-11	MH-8-10	55.63'	15"	RCP	0.58%	13.37	13.05
CB-8-9	CB-8-8	26.30'	15"	RCP	0.49%	13.03	12.90
CB-8-8	MH-8-7	103.11'	15"	RCP	0.72%	12.10	11.36
CB-8-6	CB-8-5	26.30'	15"	RCP	0.38%	10.60	10.50
CB-8-5	CB-8-4	53.21'	15"	RCP	0.38%	10.50	10.30
CB-8-4	CB-8-3	26.31'	15"	RCP	0.38%	10.30	10.20
CB-8-3	FES-8-0B	41.36'	15"	RCP	0.48%	10.20	10.00
CB-8-2	CB-8-1	26.30'	15"	RCP	0.30%	10.21	10.13
CB-8-1	FES-8-0A	36.44'	15"	RCP	0.36%	10.13	10.00

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
JB-6-OUT	EW-6-OUT	21.58'	24"	RCP	1.16%	11.50	11.25
JB-6-5	DI-6-4	135.33'	18"	RCP	0.50%	14.84	14.16
DI-6-7	DI-6-6	177.84'	15"	RCP	0.50%	16.54	15.65
DI-6-6	JB-6-5	161.87'	15"	RCP	0.50%	15.65	14.84
DI-6-4	DI-6-3	136.05'	18"	RCP	0.50%	14.16	13.48
DI-6-3	DI-6-2	143.73'	18"	RCP	0.56%	13.48	12.67
DI-6-2	MH-6-1	46.94'	24"	RCP	0.36%	12.67	12.50
CB-6-9	CB-6-8	21.30'	15"	RCP	0.99%	18.56	18.35
CB-6-8	JB-6-5	39.15'	15"	RCP	1.00%	18.35	17.96
		0.00'	15"	RCP	0.00%	-5.44	-5.44

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB-7-44	CB-7-45	21.30'	15"	RCP	0.70%	15.90	15.75
CB-7-43	CB-7-42	26.30'	15"	RCP	1.33%	19.50	19.15
CB-7-42	MH-7-39	30.82'	15"	RCP	0.49%	19.15	19.00
CB-7-41	CB-7-40	21.33'	15"	RCP	0.52%	18.44	18.33
CB-7-40	MH-7-39	30.86'	15"	RCP	0.49%	18.33	18.18
CB-7-38	CB-7-37	26.30'	15"	RCP	0.49%	15.00	14.87
CB-7-37	JB-7-36	28.21'	18"	RCP	0.50%	14.87	14.73
CB-7-27	CB-7-26	21.30'	18"	RCP	0.50%	16.55	16.44
CB-7-26	CB-7-24	70.56'	24"	RCP	0.50%	16.44	16.09
CB-7-25	CB-7-24	21.30'	15"	RCP	0.33%	16.22	16.15
CB-7-24	JB-7-21	70.60'	24"	RCP	0.50%	16.09	15.74
CB-7-23	CB-7-22	21.30'	15"	RCP	0.50%	16.11	16.00
CB-7-22	JB-7-21	52.24'	15"	RCP	0.50%	16	



- GENERAL NOTES:**
- A GROOVE JOINT 1" DEEP WITH 1/8" RADII SHALL BE REQUIRED IN THE CONCRETE SIDEWALK AT 5' INTERVALS.
 - ONE 1/2" EXPANSION JOINT WILL BE REQUIRED AT 45' INTERVALS.
 - A 1/2" EXPANSION JOINT WILL BE REQUIRED WHERE THE SIDEWALK ABUTS ANY CURB AND GUTTER AND ANY RIGID STRUCTURES.
 - IN SIDEWALKS AND PLAZA AREAS EXPANSION JOINTS ARE REQUIRED AT NO GREATER THAN 30' INTERVALS.
 - CONCRETE SHALL BE 3600 PSI. IN 28 DAYS.
 - PER ADA REQUIREMENTS; MAXIMUM SIDEWALK CROSS SLOPE SHALL NOT BE STEEPER THAN 1:48, MAXIMUM SIDEWALK RUNNING SLOPE OF WALKING SURFACE SHALL NOT BE STEEPER THAN 1:20, AREAS STEEPER THAN 1:20 REQUIRE RAMP AND HANDRAILS, RAMP RUNS WITH A RISE GREATER THAN 6" SHALL HAVE HANDRAILS, RAMP RUNS SHALL HAVE A RUNNING SLOPE NOT STEEPER THAN 1:12, MAXIMUM RISE PER RAMP IS 30", LANDINGS MUST BE PROVIDED WHERE NECESSARY. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.



- NOTES:**
- CURB TO BE CONSTRUCTED IN 10 FT. LENGTHS.
 - 1/2" EXPANSION JOINTS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 50 FEET, AT THE ENDS AND MID-POINT OF RETURNS AND AT ANY OTHER POINT WHERE THE NEW CURB AND GUTTER ABUTS OTHER CONCRETE SURFACES.

CITY OF WILMINGTON NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
Signed: _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

Approved Construction Plan

Name _____ Date _____

Planning _____
Traffic _____
Fire _____

REVNO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	07/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFRPA ADDITIONAL INFORMATION	10/12/2018
G	CFRPA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

SEAL

MCKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
www.mckimcreed.com

RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

SITE DETAILS

DATE: _____
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE: HORIZONTAL: N/A
VERTICAL: N/A

MAC FILE NUMBER: CS-501
DRAWING NUMBER: 35

STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION

REVISION: K

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

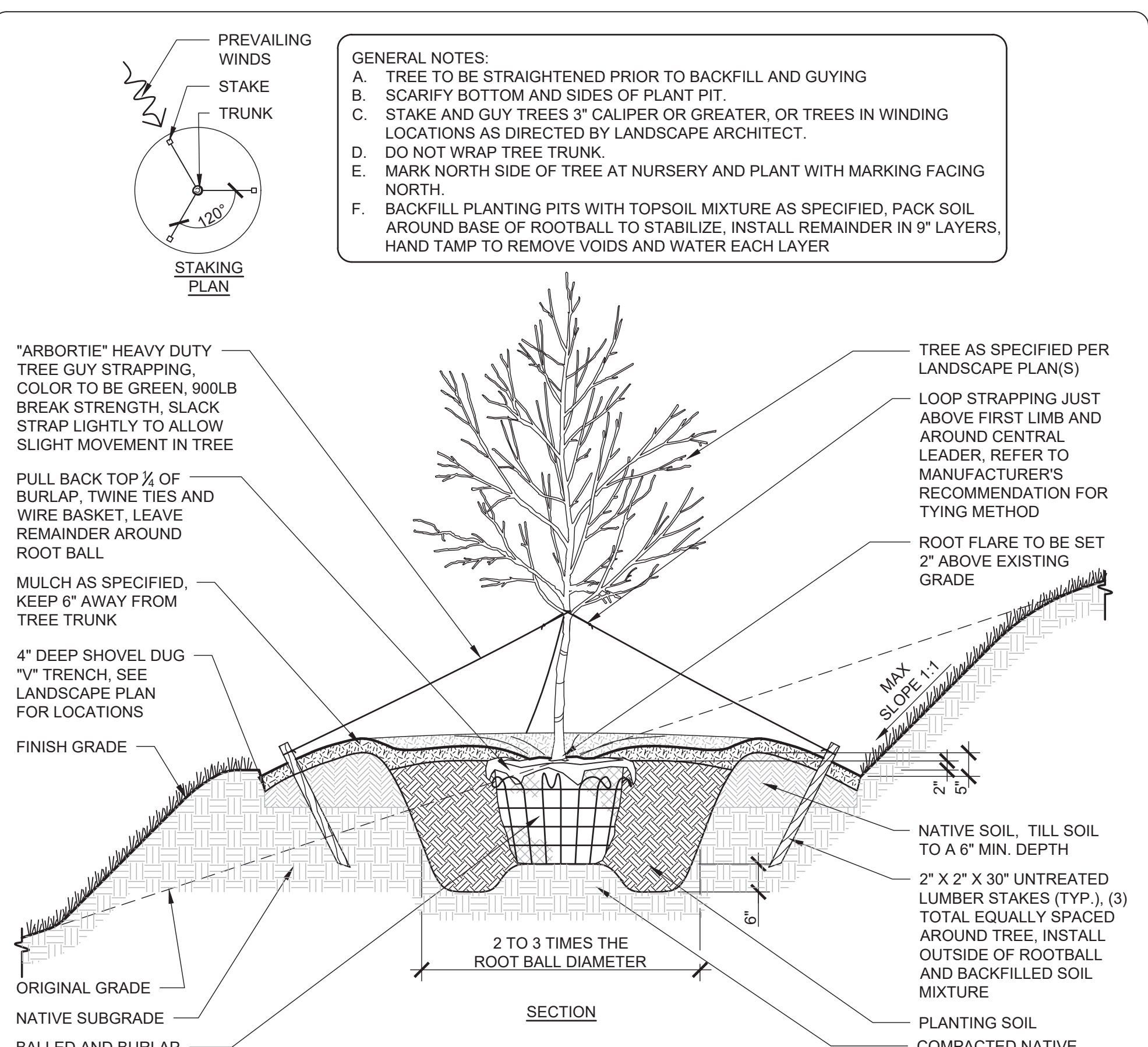
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CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

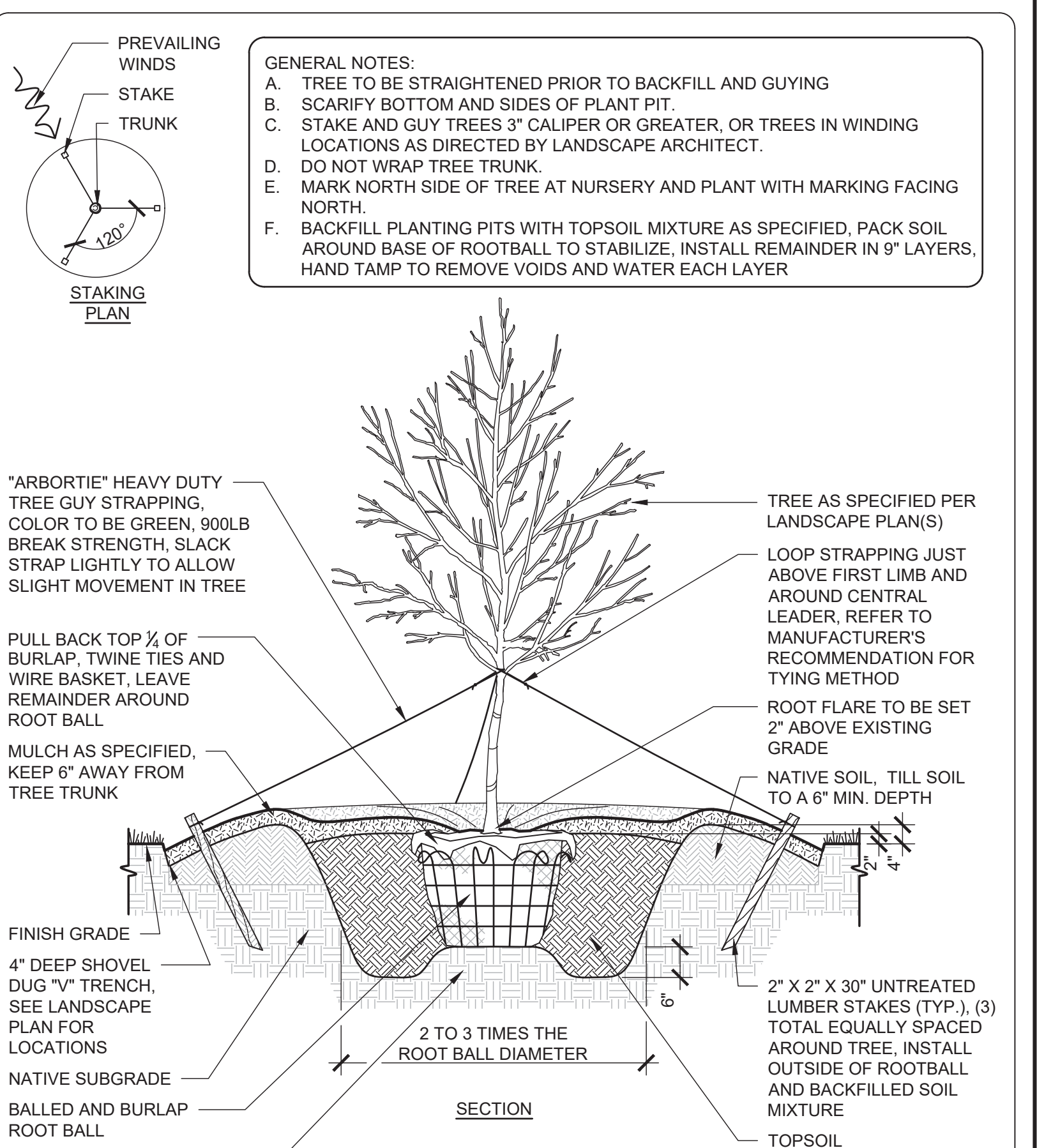
Approved Construction Plan
Name _____ Date _____

Planning _____
Traffic _____
Fire _____

6 CITY STAMPS NO SCALE



4 TREE PLANTING ON A SLOPE SCALE: 1/2" = 1'-0"



2 TYPICAL TREE PLANTING SCALE: 1/2" = 1'-0"

TREE PLANTING SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CALIPER	HEIGHT	QTY	REMARKS
	BH	BETULA NIGRA 'DURA HEAT'	DURA HEAT RIVER BIRCH	B & B	2.5" CAL.	10'-12' HT.	12	3 TRUNK MIN., UNIFORM CANOPY & MATCHED
	PY	PRUNUS X YEDOENSIS	YOSHINO CHERRY	B & B	2.5" CAL.	10'-12' HT.	39	UNIFORM CANOPY & MATCHED
	QV	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	B & B	2.5" CAL.	10'-12' HT.	99	UNIFORM CANOPY & MATCHED
	SB	SALIX BABYLONICA	WEeping WILLOW	B & B	3" CAL.	12'-14' HT.	14	UNIFORM CANOPY & MATCHED
	UA	ULMUS PARVIFOLIA 'ALLEE'	ALLEE ELM	B & B	2.5" CAL.	10'-12' HT.	114	SINGLE DOMINANT LEADER, UNIFORM CANOPY & MATCHED
	ZS	ZELKOVA SERRATA	ZELKOVA	B & B	2.5" CAL.	10'-12' HT.	52	UNIFORM CANOPY, NO INCLUDED BARK & MATCHED

SHRUB PLANT SCHEDULE

SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	SPREAD	SPACING	QTY	REMARKS
	ELAEAGNUS PUNGENS	THORNY ELEAGNUS	15 GAL.	48"-60" HT.	48"-60" SPD.	6' O.C.	50	MATCHED, FURTHER COORDINATION WITH PROGRESS ENERGY REQUIRED

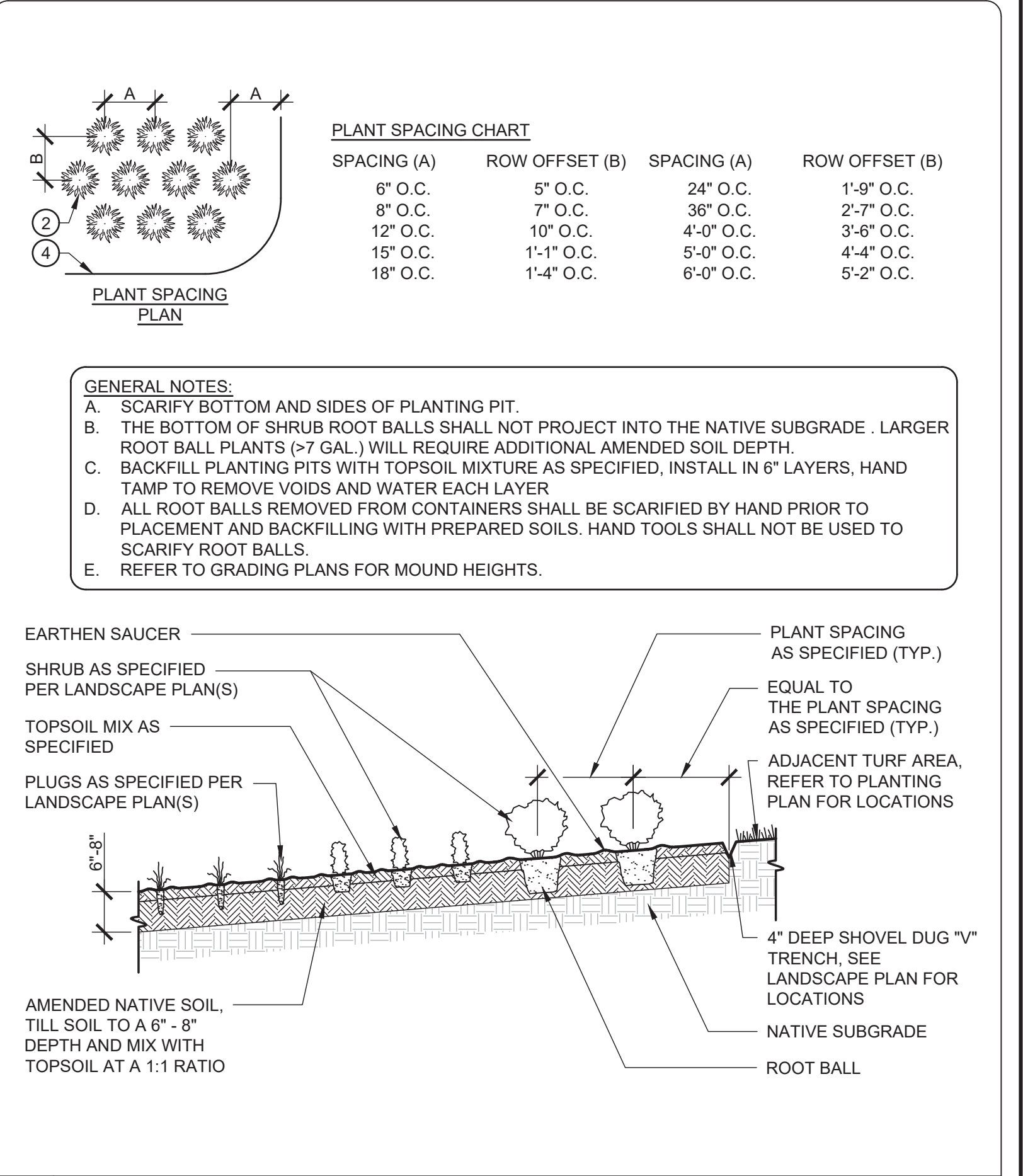
LITTORAL SHELF PLANTING SCHEDULE

SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	SPACING	SPACING	QTY	REMARKS
	ED	ASCLEPIAS INCARNATA	SWAMP MILKWEED	4" POT	15"-18" HT.	18" O.C.	18" o.c.	1,192	
	AD	EUPATORIADELPHUS DUBIUS	DWARF JOE PYE WEED	4" POT	15"-18" HT.	18" O.C.	18" o.c.	1,369	
	EF	EUPATORIADELPHUS FISTULOSUS	JOE PYE WEED	4" POT	15"-18" HT.	18" O.C.	18" o.c.	1,099	
	HC	HIBISCUS COCCINEUS	SCARLET ROSEMALLOW	4" POT	15"-18" HT.	18" O.C.	18" o.c.	935	
	LC	LOBELIA CARDINALIS	CARDINAL FLOWER	4" POT	15"-18" HT.	18" O.C.	18" o.c.	1,332	
	LS	LOBELIA SIPHILITICA	GREAT LOBELIA	4" POT	15"-18" HT.	18" O.C.	18" o.c.	1,168	

5 PLANT SCHEDULE NO SCALE

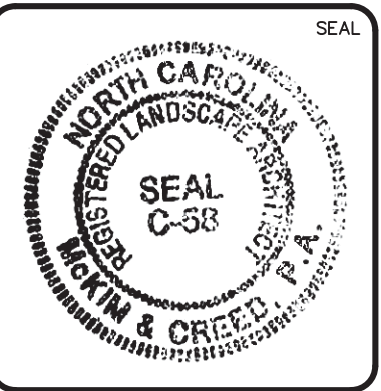
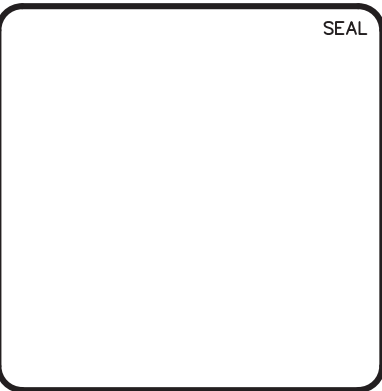
1. ALL EXISTING VEGETATION THAT IS USED TO MEET LANDSCAPING REQUIREMENTS, ALL REQUIRED PLANTED LIVING MATERIAL, AND ALL REQUIRED BERMS SHALL BE MAINTAINED BY THE OWNER OF THE PROPERTY ON A CONTINUING BASIS. ANY PLANTED MATERIAL WHICH BECOMES DAMAGED OR DISEASED OR DIES SHALL BE REPLACED BY THE OWNER WITHIN 60 DAYS OF THE OCCURRENCE OF SUCH CONDITION. IF, IN THE OPINION OF THE ZONING ADMINISTRATOR THERE ARE SEASONAL CONDITIONS WHICH WILL NOT PERMIT THE TIMELY REPLACEMENT OF THE VEGETATION (E.G. TOO HOT OR TOO COOL FOR SUCCESSFUL REPLANTING) THIS REQUIREMENT MAY BE ADMINISTRATIVELY WAIVED UNTIL A TIME CERTAIN WHEN THE REPLANTING WOULD BE SUCCESSFUL.
2. VERIFICATION OF TOTAL LANDSCAPE MATERIAL QUANTITIES AS SHOWN ON THE LANDSCAPE PLANS AND IN THE PLANT SCHEDULE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY DISCREPANCIES PRIOR TO FINAL BIDDING OR INSTALLATION.
3. ALL PLANTING TYPES SHALL COMPLY WITH LOCAL GOVERNING CODES AND REGULATIONS, CONFORM TO REQUIREMENTS OF PLANT LIST AND TO THE AMERICAN ASSOCIATION OF NURSERYMEN "AMERICAN STANDARD OF NURSERY STOCK" AND "HORTICULTURAL STANDARDS" AS TO SPECIES, AGE, SIZE, AND PLANTING RECOMMENDATIONS.
4. LANDSCAPE MATERIAL PLACED IN PREPARED HOLES SHALL BE PROPERLY BACKFILLED PRIOR TO THE END OF THE WORKING DAY.
5. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING INSTALLATION.
6. LANDSCAPE ARCHITECT SHALL APPROVE ANY ON-SITE PLANT STORAGE AREA FOR ACCESSIBILITY, SHADE CONDITIONS, HEATING IN MULCH MATERIAL AND TEMPORARY WATERING METHODS.
7. ALL ROPE AND WRAPPING TWINE SHALL BE CUT AND REMOVED FROM AROUND THE UPPER PARTS OF THE ROOT BALL. METAL BASKET WIRES AND BURLAP SHALL BE PULLED BACK AND TUCKED UNDER THE EDGES OF THE SAUCER RINGS ON ALL TREES AND LARGE SHRUBS. ALL SYNTHETIC BURLAP SHALL BE REMOVED FROM PLANT BALLS PRIOR TO BACK FILLING.
8. ALL PLANT BEDS OR RAISED SAUCER RINGS SHALL BE EDGED WITH SMOOTH, CONTINUOUS CURVES.
9. ALL PLANT MATERIAL SHALL BE PLANTED AT HEIGHTS AND WIDTHS AS ILLUSTRATED IN PLANTING DETAILS.
10. TREE GUYING SHALL BE PERFORMED WITHIN A WEEK OF PLANTING. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TREE GUYING STRAPPING AND STAKES AFTER THE FIRST FULL GROWING SEASON OR ONE YEAR, WHICHEVER COMES FIRST.
11. CONTRACTOR SHALL VERIFY LOCATIONS OF UNDERGROUND UTILITIES PRIOR TO PLANTING.
12. ANY EXPOSED OR UNCOVERED LINES SHALL BE SHOWN TO GENERAL CONTRACTOR PRIOR TO BACKFILLING.
13. ALL PLANT BEDS AND RAISED SAUCER RINGS SHALL BE GRADED TO PROVIDE ADEQUATE DRAINAGE AND SHALL BE MULCHED AS SPECIFIED.
14. ALL MATERIALS, PLANTING AND LANDSCAPE WORK SHALL CONFORM TO THE CURRENT MUNICIPAL AUTHORITIES STANDARD SPECIFICATIONS AND DETAILS.
15. ALL LANDSCAPE AREAS THAT ARE NOT PLANTED, MULCHED OR PAVED SHALL BE SEEDED OR SODDED.
16. FIRST YEAR PRUNING OF TREE CROWN SHALL BE LIMITED TO REMOVAL OF DEAD & DAMAGED WOOD.
17. TREE PROTECTION FENCE SHALL BE INSTALLED, INSPECTED AND APPROVED PRIOR TO CLEARING, GRADING AND CONSTRUCTION ACTIVITY OR ISSUANCE OF ANY RELATED PERMITS. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.
18. MULCH LINE SHALL CONSIST OF SMOOTH CONTINUOUS CURVES.
19. ALL TREES NOT WITHIN A PLANT BED SHALL BE TREATED WITH A 6" DIAMETER MULCH RING TYPICAL, UNLESS OTHERWISE INDICATED ON THE PLANTING PLANS.
20. TREES SHALL BE LOCATED A MINIMUM OF 5 FEET FROM SEWER/WATER CONNECTIONS OR AS OTHERWISE DICTATED BY LOCAL REGULATIONS. CONTRACTOR SHALL BE LIABLE FOR DAMAGE TO ANY AND ALL PUBLIC OR PRIVATE UTILITIES.
21. SUBSTITUTIONS OF PLANT MATERIALS SPECIFIED CAN ONLY OCCUR WITH PRIOR APPROVAL BY LANDSCAPE ARCHITECT.
22. ESTABLISH PLANT BED CONFIGURATION. LANDSCAPE ARCHITECT TO APPROVE BED LAYOUT IN FIELD.
23. AREAS DAMAGED BY ACTIVITIES OF CONTRACTOR SHALL BE RE-ESTABLISHED TO PRE-DISTURBANCE CONDITION AT NO ADDITIONAL COST TO THE OWNER.
24. USE HERBICIDES, PESTICIDES, AND FERTILIZER IN A MANNER CONSISTENT WITH THE FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT AND IN ACCORDANCE WITH LABEL RESTRICTIONS.
25. CONTRACTOR SHALL INSURE THAT ALL PLANT MATERIAL IS FREE OF FIRE ANTS PRIOR TO INSTALLATION.
26. LANDSCAPE ARCHITECT OR OWNER SHALL APPROVE PLACEMENT OF TREES PRIOR TO PLANTING.
27. CONTRACTOR TO ENSURE THE PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30'-10".
28. DUKE ENERGY TO PROVIDE STREET LIGHTING PLAN IN COORDINATION WITH LANDSCAPE AND UTILITY PLAN.

3 PLANTING NOTES SCALE: 1/2" = 1'-0"



1 LITTORAL SHELF PLANTING SCALE: 1/2" = 1'-0"

REV. NO.	DESCRIPTION	DATE
0	ADDENDUM #1 TO THE SINGLE FAMILY PHASE 3 CONSTRUCTION DRAWINGS DATED 12.01.17 - ADDITION OF LANDSCAPE SHEETS	08.17.18
	REVISIONS	



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NASH RIVERLIGHTS

NORTH AMERICA SEKISUI HOUSE, LLC

LANDSCAPE DETAILS AND PLANT SCHEDULE

MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA

LANDSCAPE DETAILS AND PLANT SCHEDULE

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR: KCBE

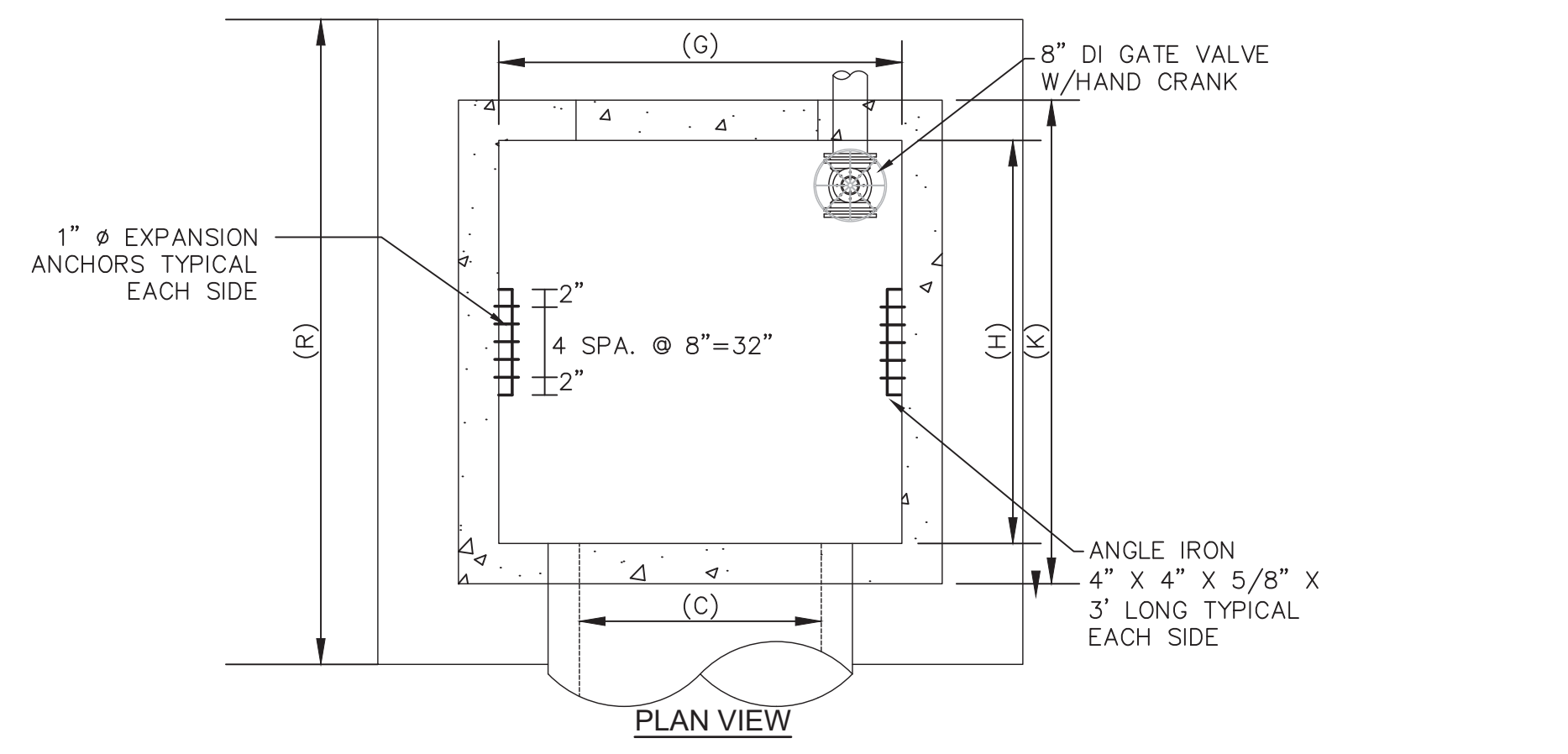
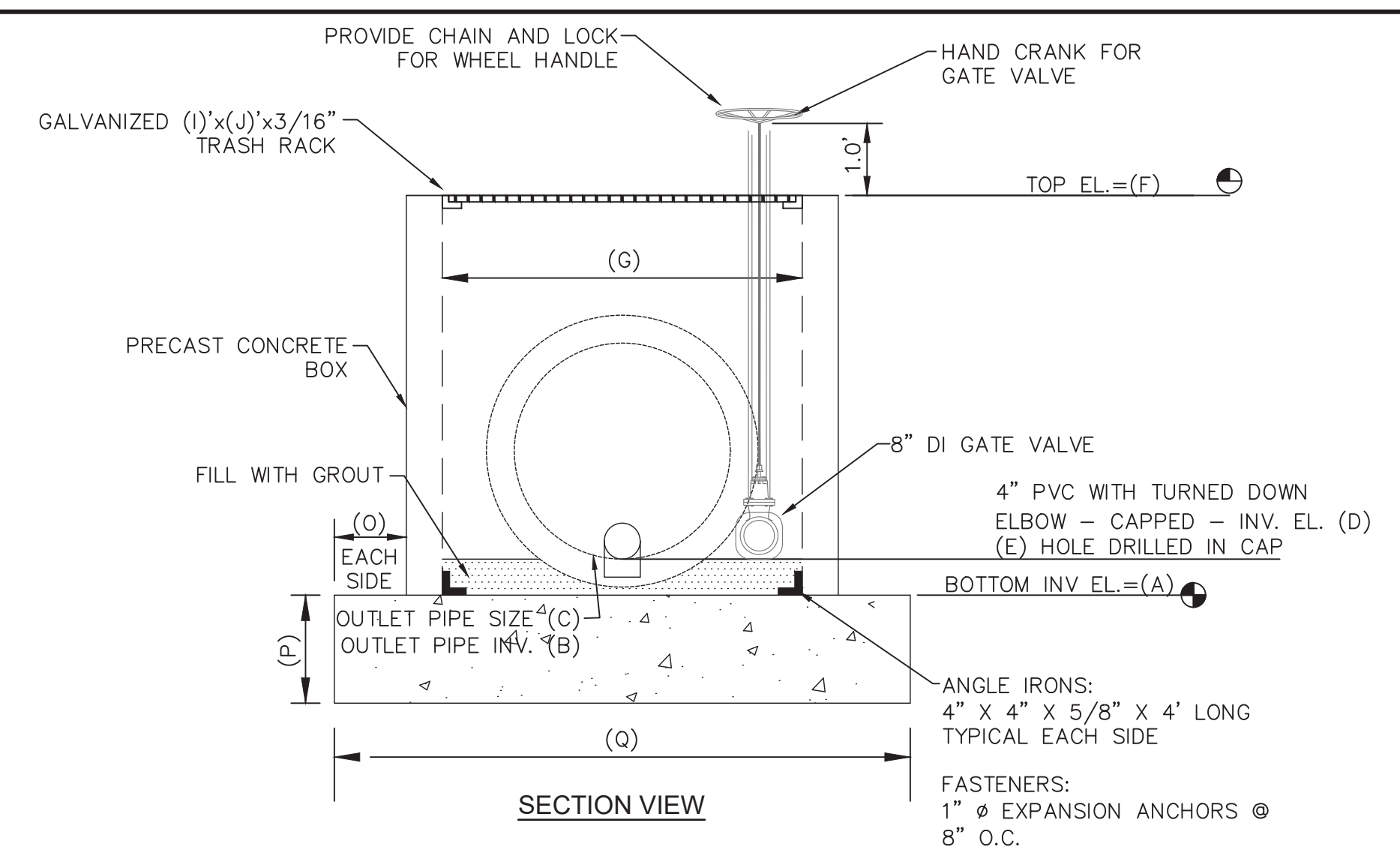
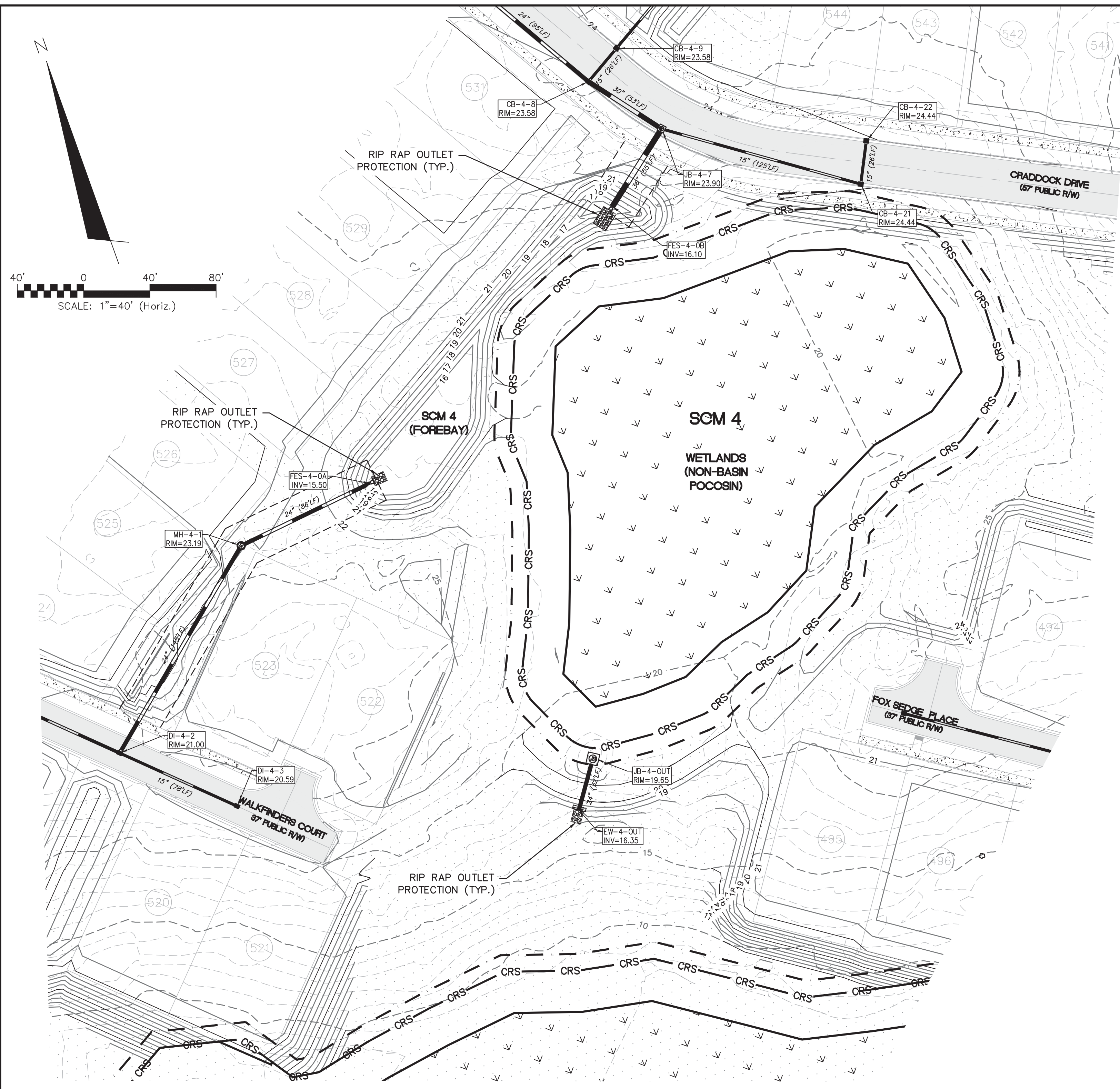
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER: CL-501
DRAWING NUMBER: 37
REVISION: K

STATUS: PRELIMINARY DESIGN FOR REVIEW PURPOSES ONLY

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

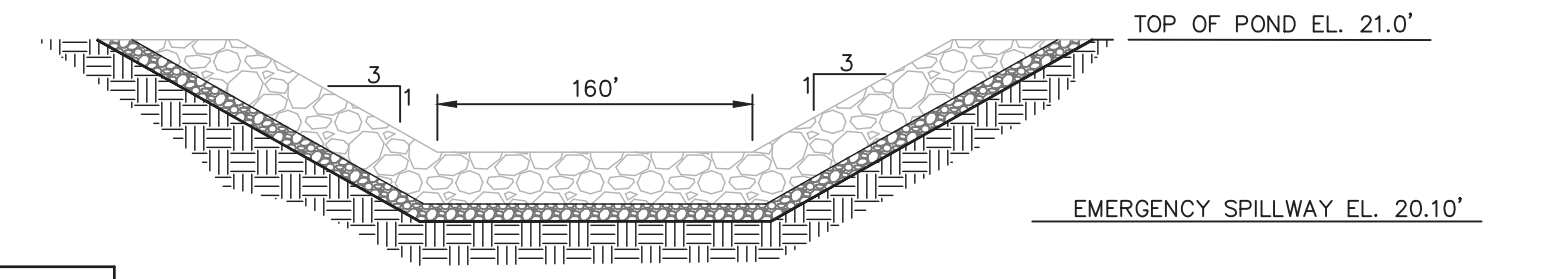
1 inch



WET POND OUTLET STRUCTURE

	SCM 4
A	15.00'
B	16.50'
C	24"
D	19.00'
E	3.75"
F	19.65'
G	6'
H	6'
I	6'
J	6'
K	7.34'
O	0.5'
Q	8.34'
R	8.34'

WET POND OUTLET STRUCTURE
NOT TO SCALE



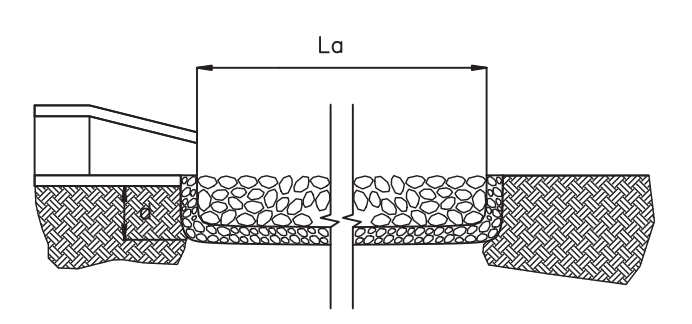
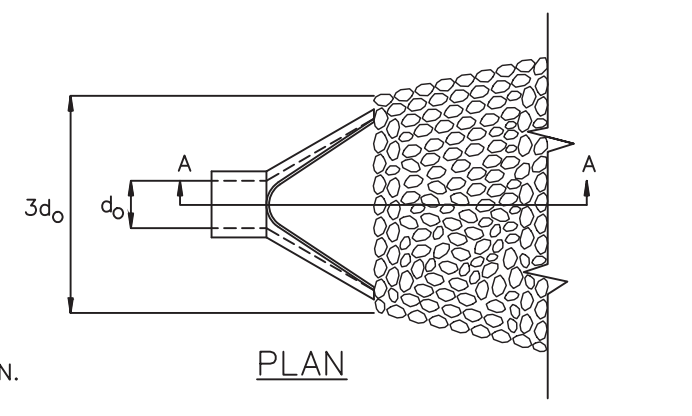
EMERGENCY SPILLWAY SECTION
NOT TO SCALE

WET POND OUTLET STRUCTURE PROTECTION

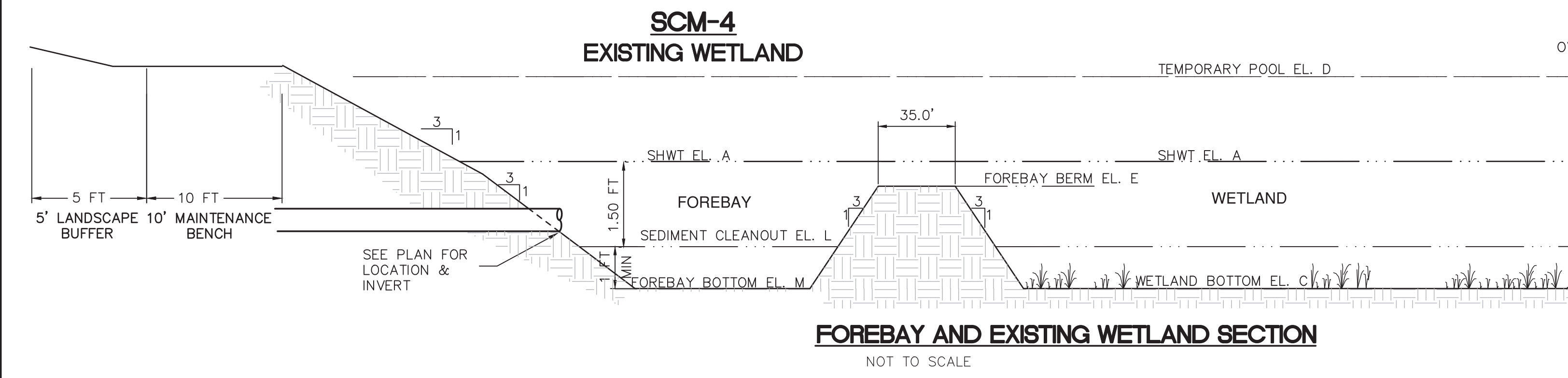
	SCM 4 - IN	SCM 4 - IN	SCM 4 - OUT
OUTLET PIPE DIA.	24"	36"	24"
OUTLET PIPE DIA.	3.86 CFS	10.97 CFS	4.54 CFS
OUTLET VELOCITY	1.23 FPS	1.55 FPS	5.80 FPS
MATERIAL	CLASS A	CLASS A	CLASS A
LENGTH	8.0'	12.0'	8.0'
WIDTH	6.0'	9.0'	6.0'
STONE DIA.	3"	3"	3"
THICKNESS	9"	9"	9"

NOTES:

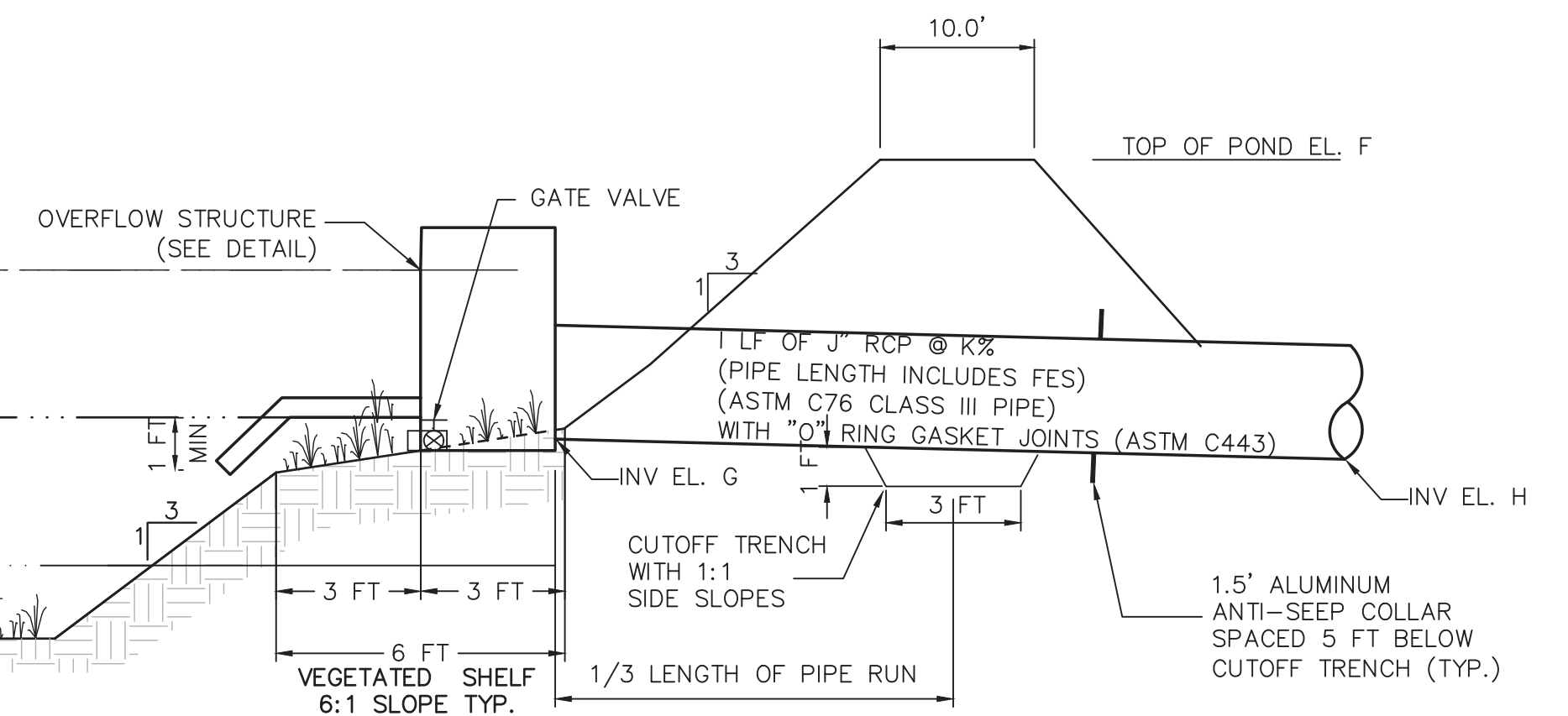
1. L_a IS THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.



PIPE OUTLET PROTECTION
NOT TO SCALE



FOREBAY AND EXISTING WETLAND SECTION
NOT TO SCALE



STORAGE POND SECTION

	SCM 4
A	18.50'
B	N/A
C	18.00'
D	19.75'
E	19.75'
F	21.00'
G	16.50'
H	16.35'
I	32.6'
J	24"
K	0.46%
L	16.50'
M	15.50'

REV. NO.	DESCRIPTIONS	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2018
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2018
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2016
H	CFPIA ADDITIONAL INFORMATION	10/12/2016
G	CFPIA RE-SUBMITTAL	08/21/2016
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2016
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D	CARP FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2016
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2016
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

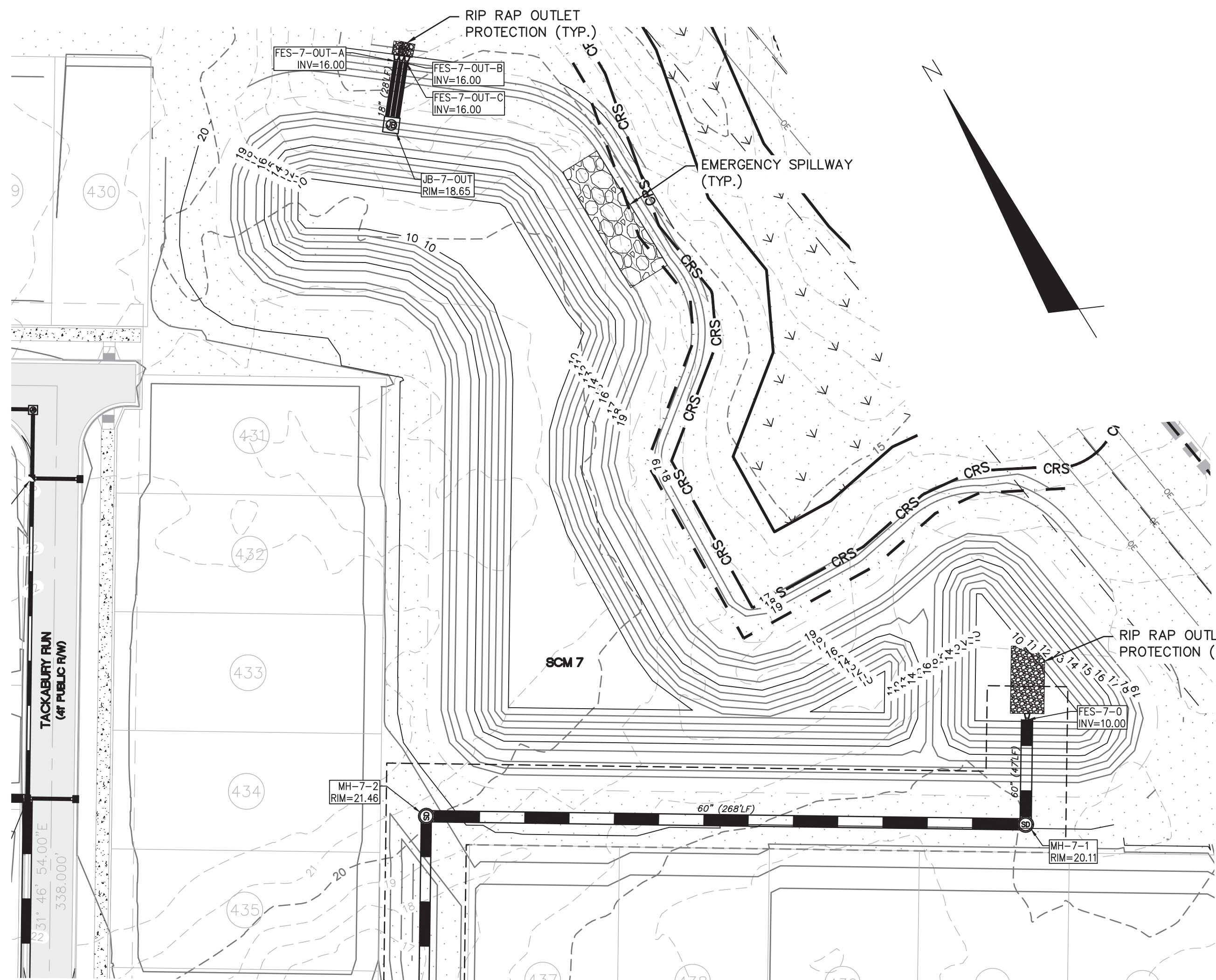
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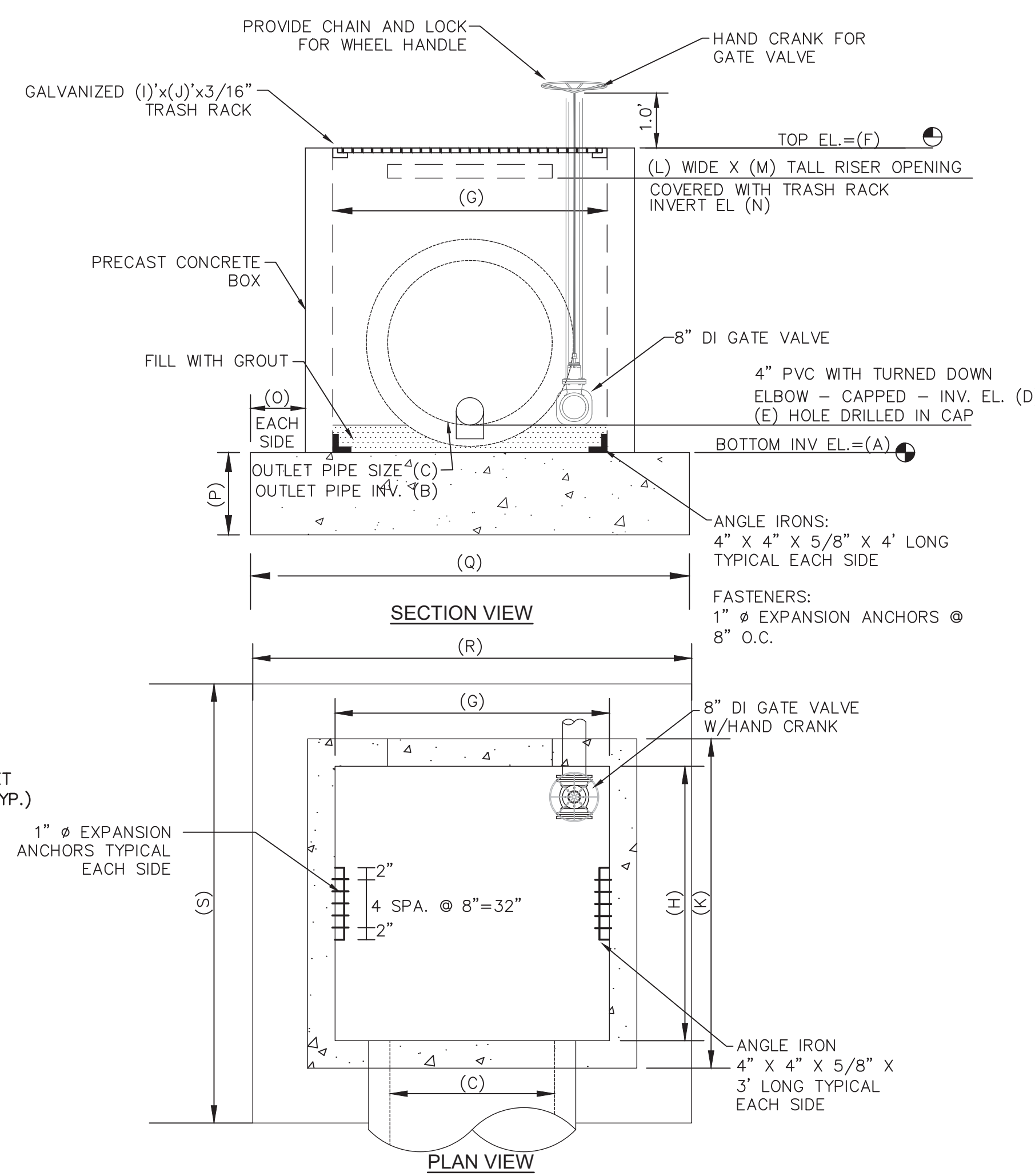
NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
STORMWATER MANAGEMENT DETAILS

DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE
SCALE: HORIZONTAL: 1" = 40'
VERTICAL: N/A
MAC FILE NUMBER: CN-502
DRAWING NUMBER: 39
REVISION: K
STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION



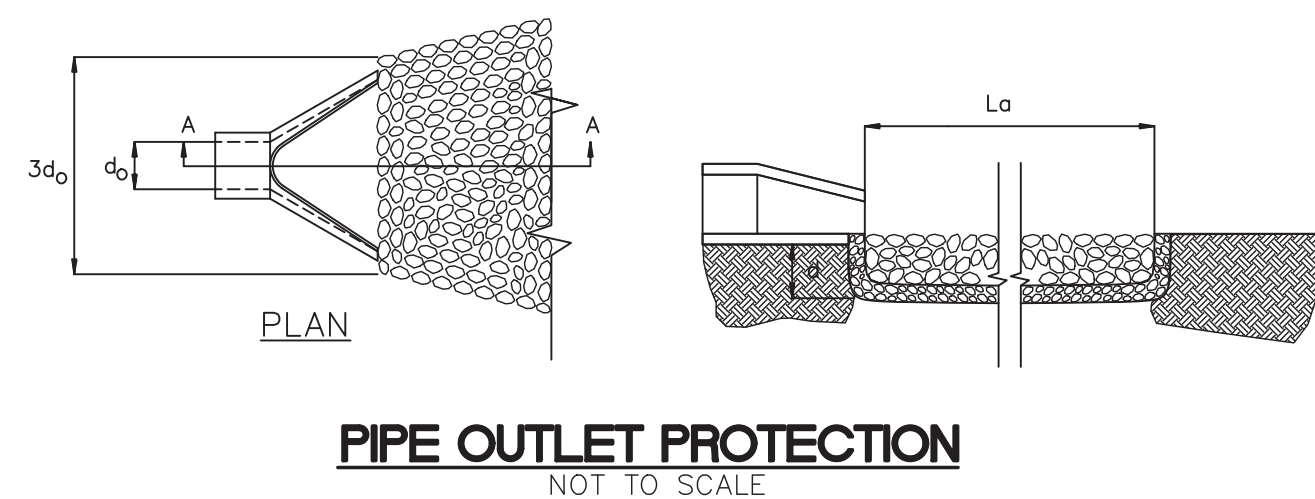
**SCM-7
WET POND**



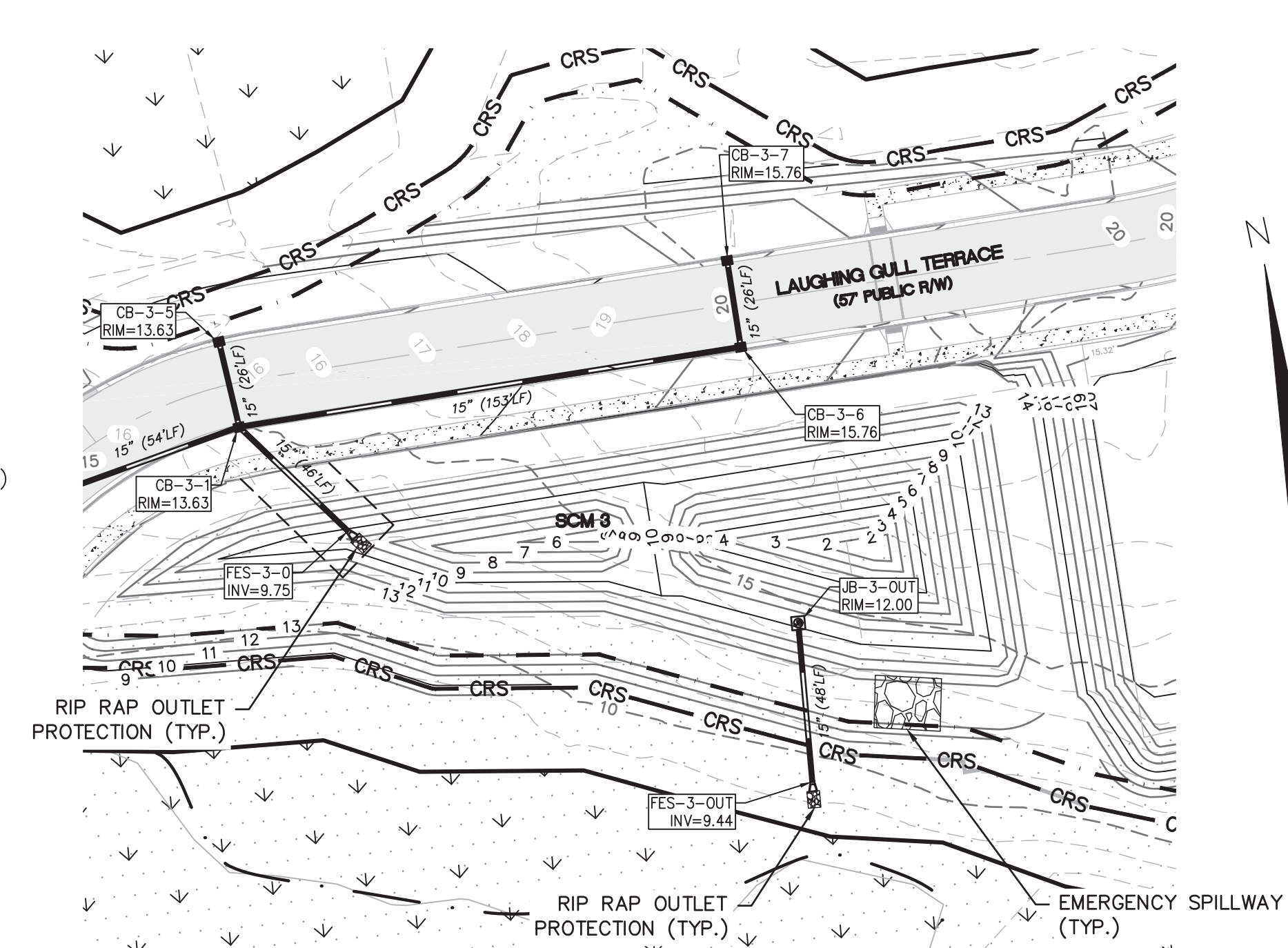
**WET POND OUTLET STRUCTURE
NOT TO SCALE**

WET POND OUTLET STRUCTURE	
	SCM 7
A	15.00'
B	16.25'
C	3 X 18"
D	16.25'
E	2.75"
F	18.65'
G	9'
H	5'
I	9'
J	5'
K	6.34'
L	54"
M	9"
N	17.90'
O	0.5'
P	1.0'
Q	7.34'
R	10.34'
S	11.34'

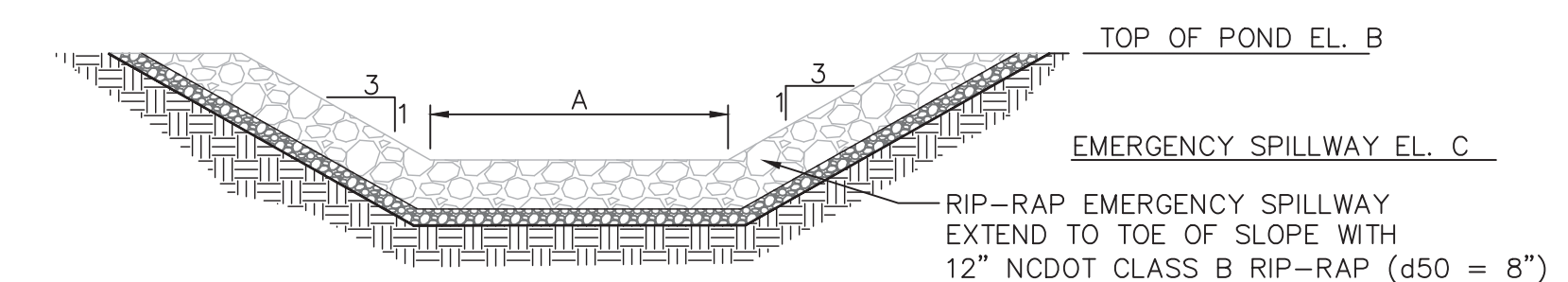
WET POND OUTLET STRUCTURE PROTECTION				
	SCM 7 - IN	SCM 7 - OUT	SCM 3 - IN	SCM 3 - OUT
OUTLET PIPE DIA.	60"	3 x 18"	15"	15"
OUTLET PIPE DIA.	23.0 CFS	2.63 CFS	6.37 CFS	0.499 CFS
OUTLET VELOCITY	1.17 FPS	4.74 FPS	5.19 FPS	2.64 FPS
MATERIAL	CLASS B	CLASS A	CLASS A	CLASS A
LENGTH	30.0'	6.0'	5.0'	5.0'
WIDTH	15.0'	4.5'	3.8'	3.8'
STONE DIA.	6"	3"	3"	3"
THICKNESS	22"	9"	9"	9"



**PIPE OUTLET PROTECTION
NOT TO SCALE**



**SCM-3
WET POND**

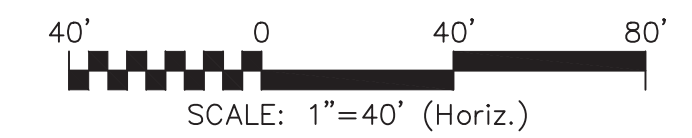


**EMERGENCY SPILLWAY SECTION
NOT TO SCALE**

RIP-RAP EMERGENCY SPILLWAY EXTEND TO TOE OF SLOPE WITH 12" NCDOT CLASS B RIP-RAP (d50 = 8") & 4" NCDOT NO. 57 STONE BEDDING WRAPPED WITH NON-WOVEN FILTER FABRIC (SI GEOTEX 801 OR APPROVED EQUAL) TOP OF STONE AT SPILLWAY ELEVATION

EMERGENCY SPILLWAY SECTION		
	SCM 7	SCM 3
A	60.0'	20.0'
B	19.50'	13.50'
C	18.75'	12.25'

STORAGE POND		
	SCM 7	SCM 3
A	16.25'	10.00'
B	11.00'	3.00'
C	10.00'	2.00'
D	17.90'	11.00'
E	15.75'	9.50'
F	19.50'	13.50'
G	16.25'	9.75'
H	16.00'	9.44'
I	28'	48'
J	3 x 18"	15"
K	0.89%	0.64%
L	11.00'	7.00'
M	10.00'	6.00'

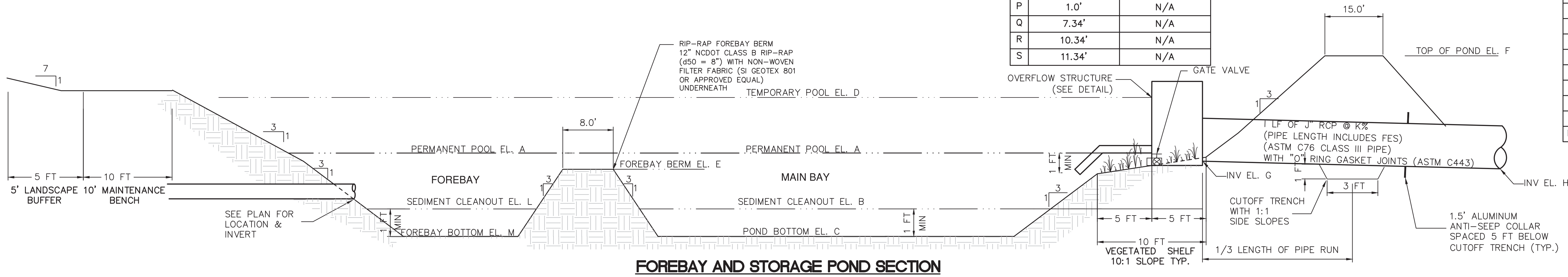


SCALE: 1"=40' (Horiz.)

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____

For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.



**FOREBAY AND STORAGE POND SECTION
NOT TO SCALE**

REV. NO.	DESCRIPTION	DATE
K	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE AND STORMWATER RESUBMITTAL	02/13/2019
J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CAPE FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

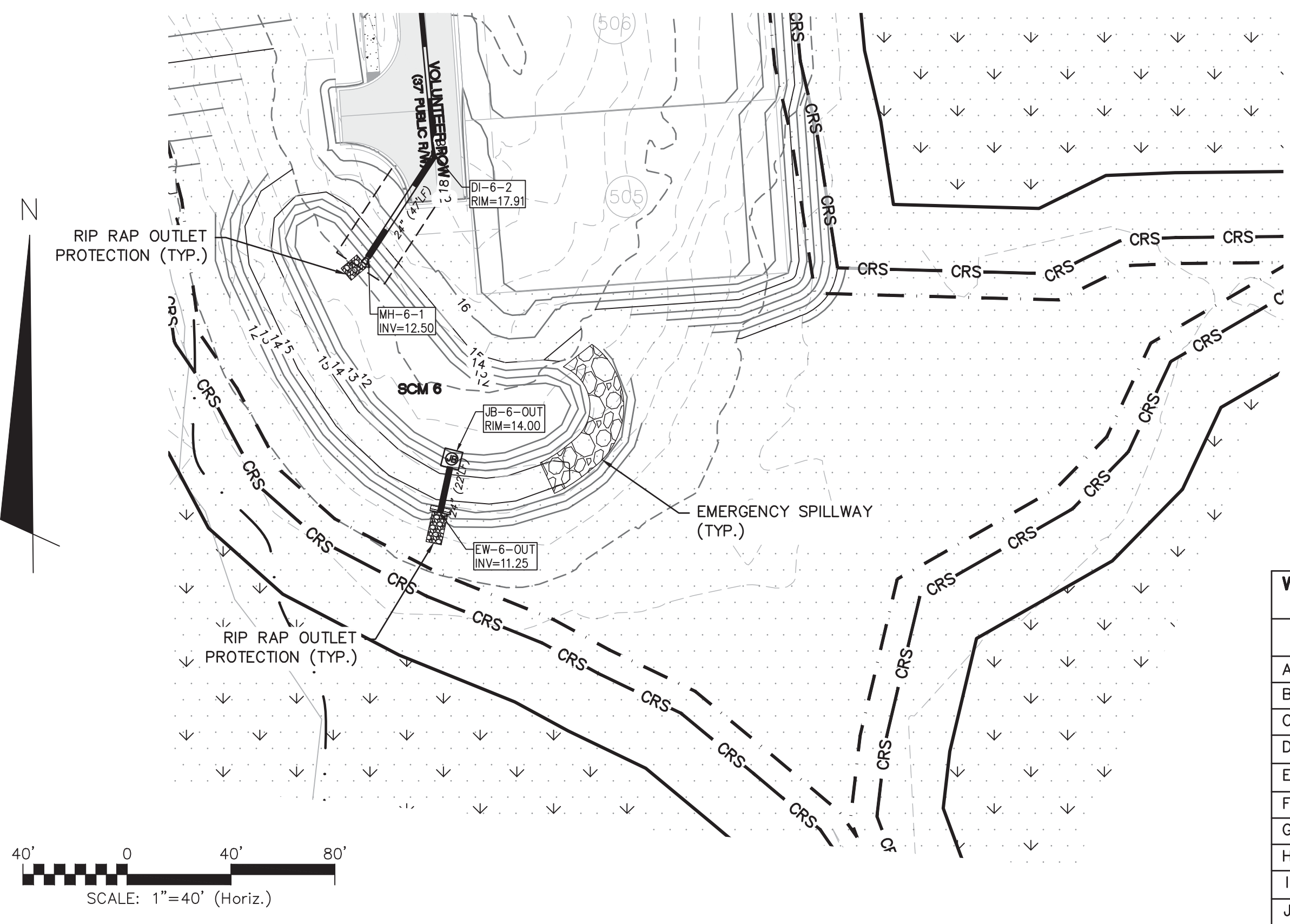
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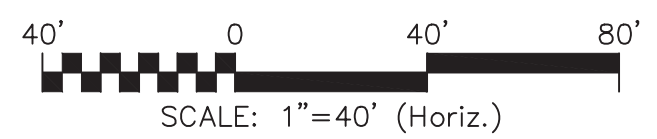
NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
STORMWATER MANAGEMENT DETAILS

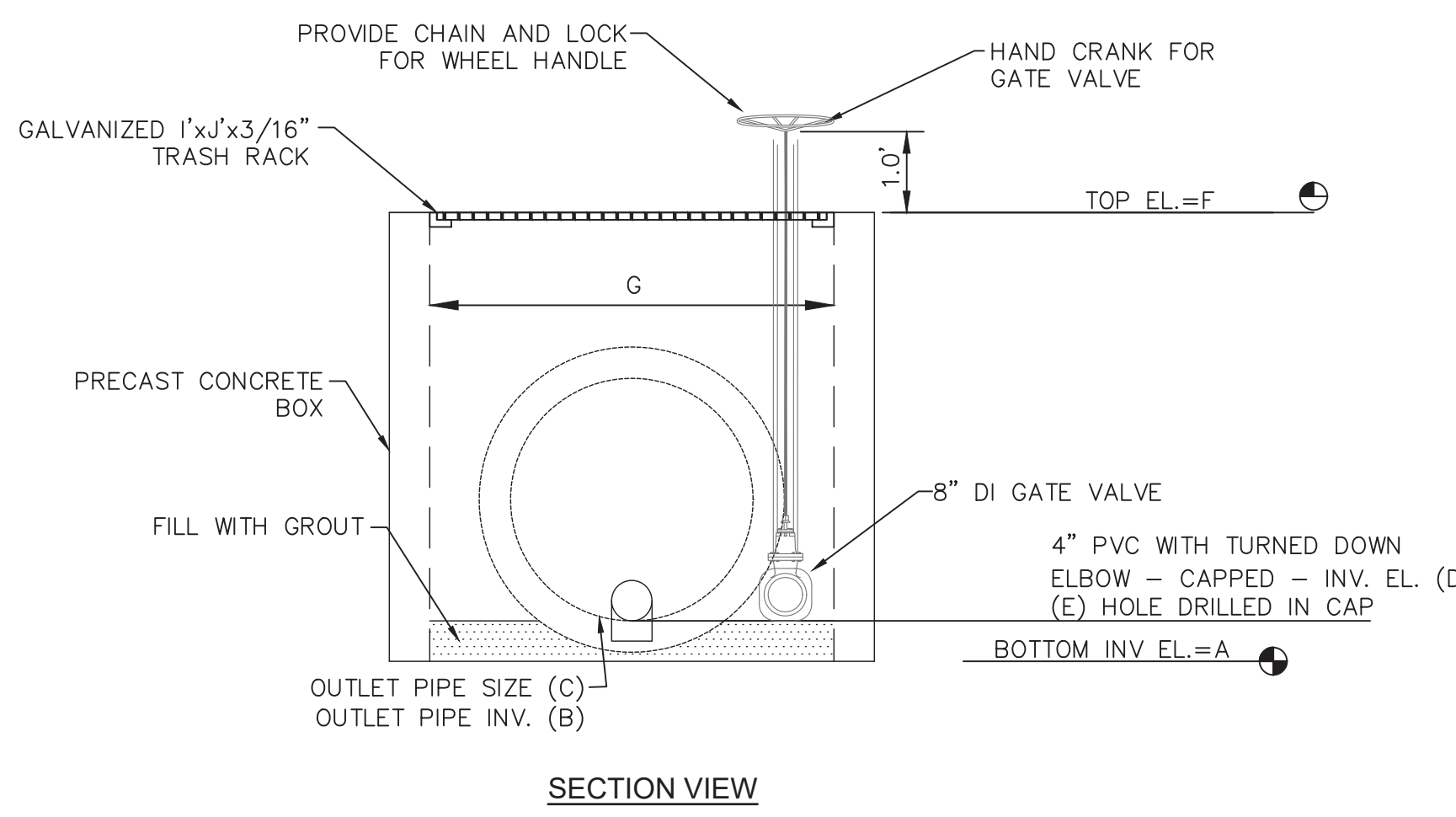
DATE: 01/25/2018
MCE PROJ. # 02735-0177
DRAWN: EEM/ALM/MDH
DESIGNED: EEM/KCBE
CHECKED: KCBE
PROJ. MGR.: KCBE
SCALE: HORIZONTAL: 1"=40'
VERTICAL: N/A
MAC FILE NUMBER: CN-503
DRAWING NUMBER: 40
REVISION: K
STATUS: PRELIMINARY DESIGN
NOT FOR CONSTRUCTION



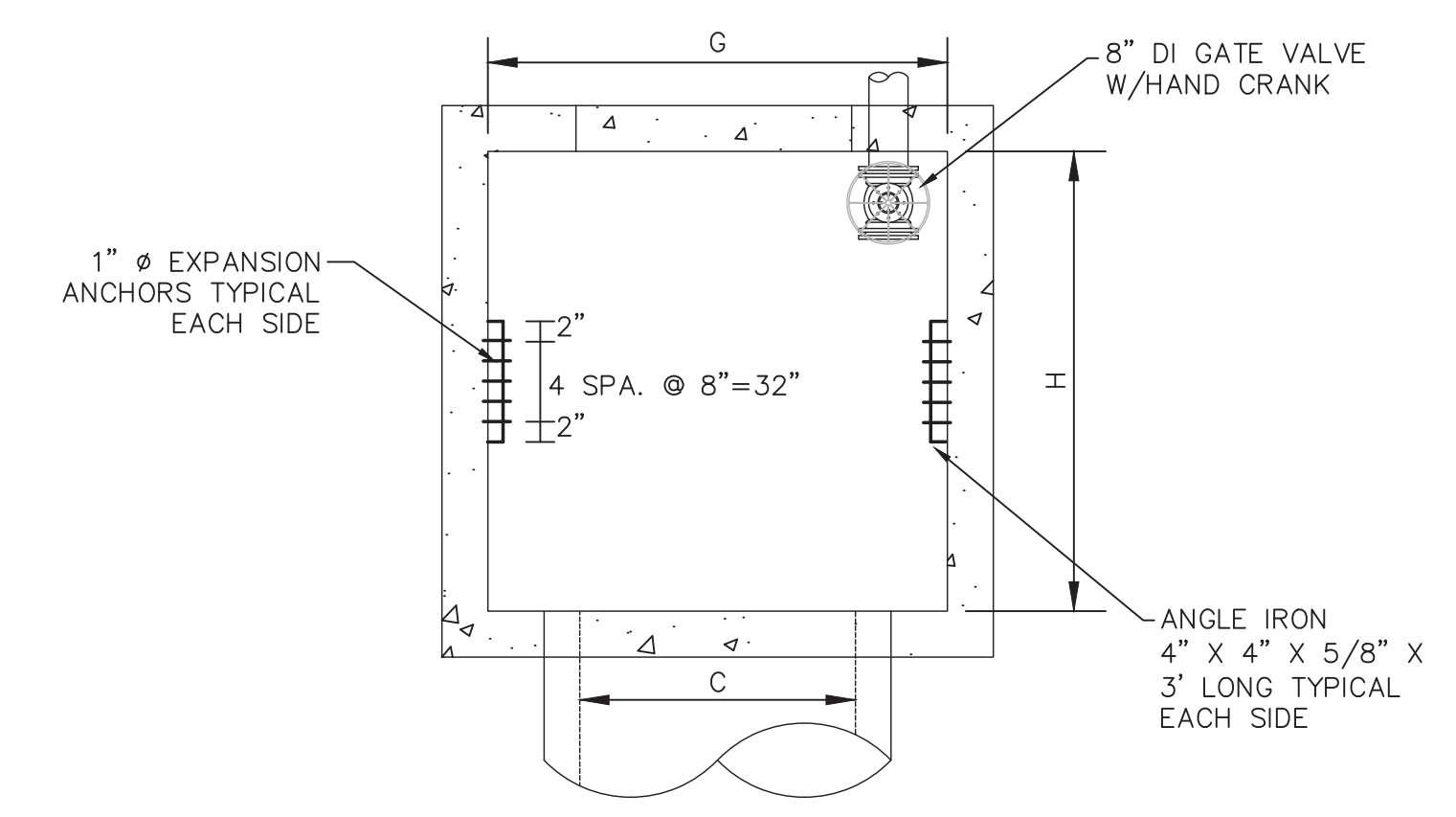
**SCM-6
INFILTRATION BASIN**



WET POND OUTLET STRUCTURE	
	SCM 6
A	10.50'
B	11.50'
C	24"
D	N/A
E	N/A
F	14.00'
G	5'
H	5'
I	5'
J	5'

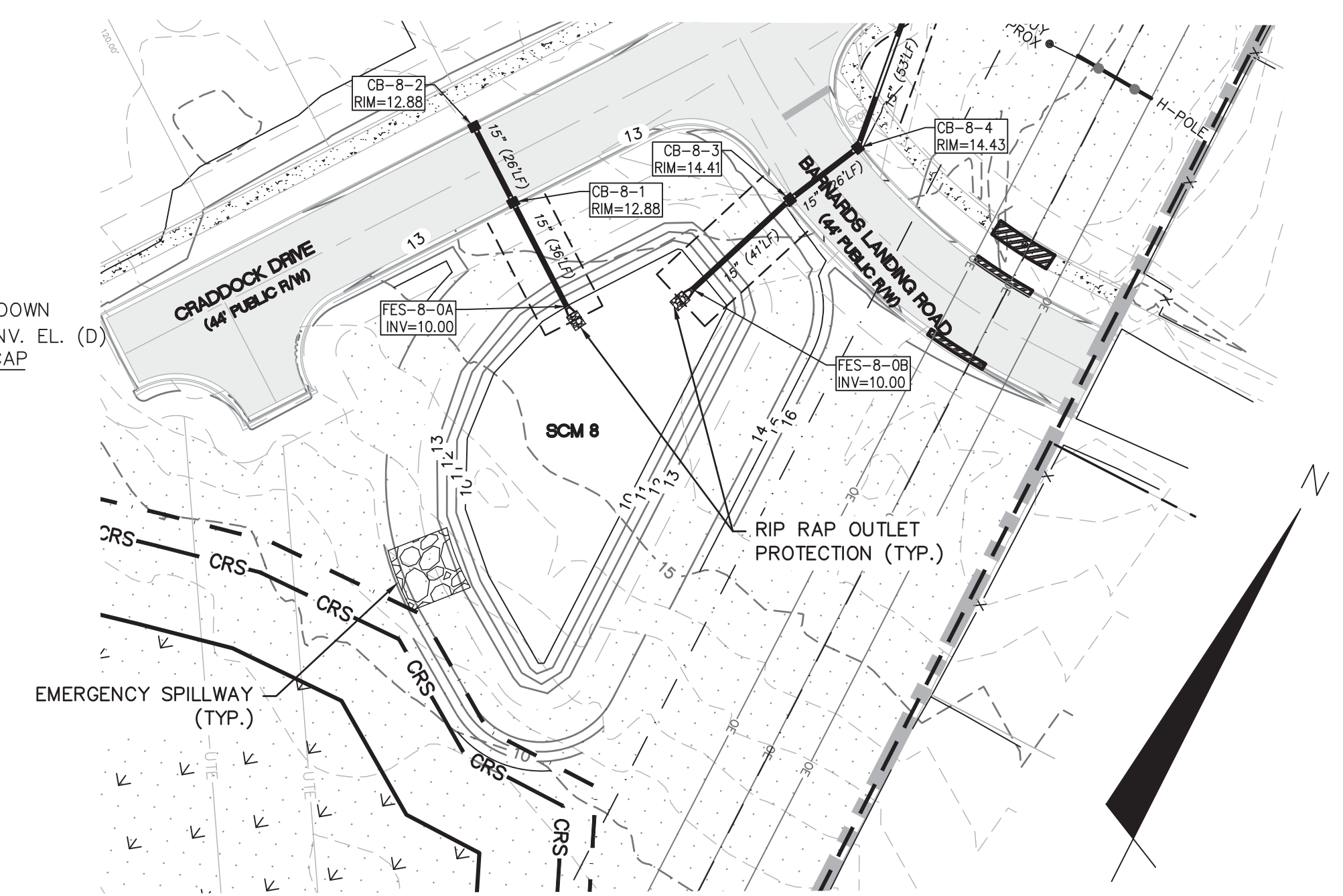


SECTION VIEW

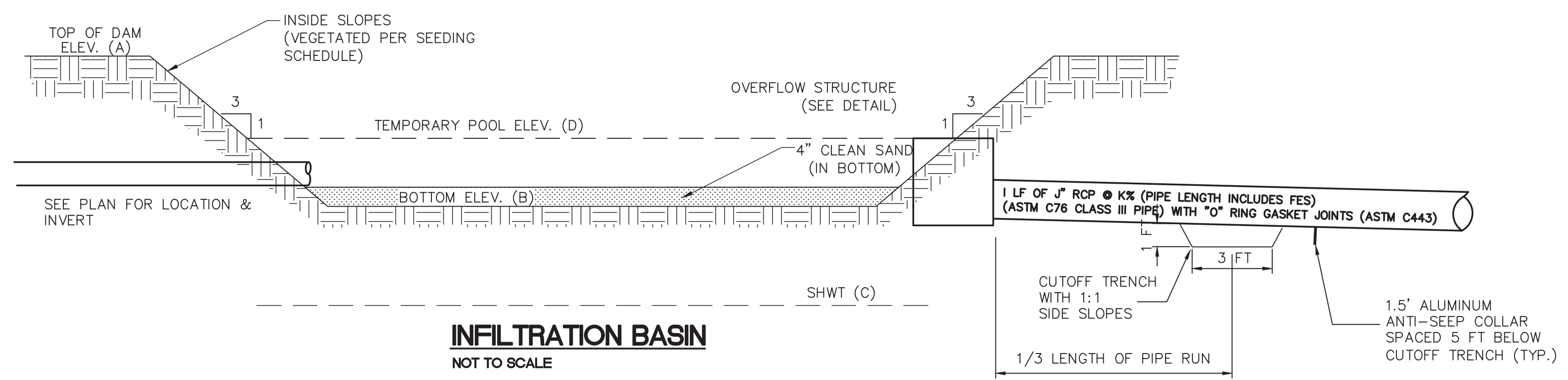


PLAN VIEW

**WET POND OUTLET STRUCTURE
NOT TO SCALE**

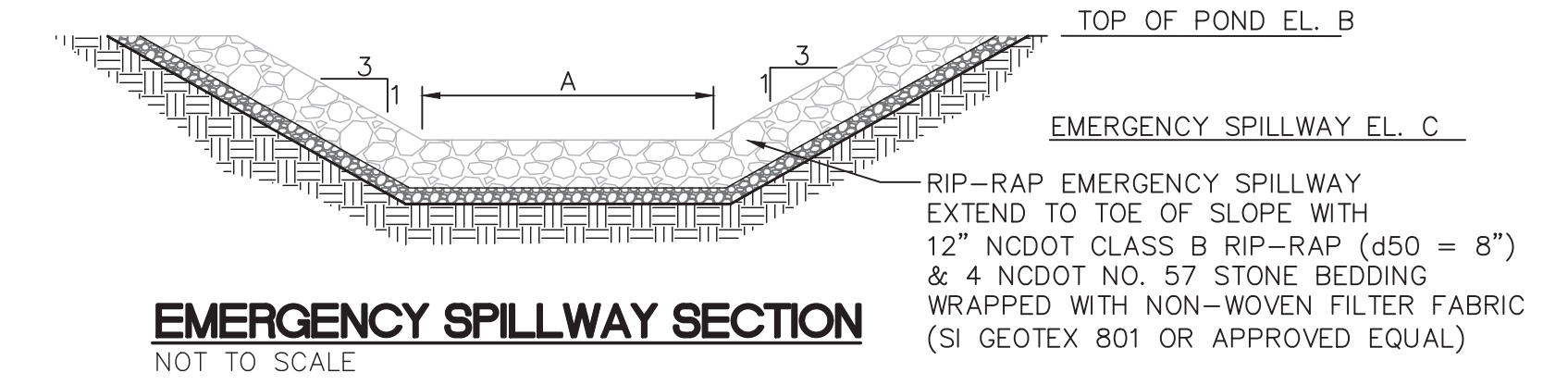


**SCM-8
INFILTRATION BASIN**



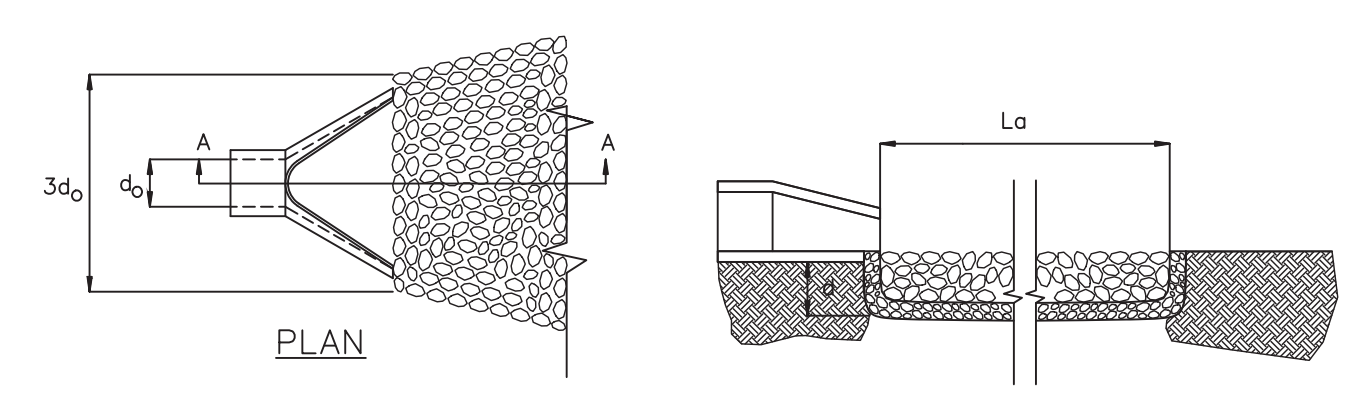
**INFILTRATION BASIN
NOT TO SCALE**

INFILTRATION BASIN		
	SCM 6	SCM 8
A	15.00'	13.00'
B	12.00'	10.00'
C	9.95'	7.96'
D	14.00'	N/A
I	21.6"	N/A
J	18"	N/A
K	1.16%	N/A



**EMERGENCY SPILLWAY SECTION
NOT TO SCALE**

EMERGENCY SPILLWAY SECTION		
	SCM 6	SCM 8
A	50.00'	20.00'
B	15.00'	13.00'
C	14.50'	12.25'



**PIPE OUTLET PROTECTION
NOT TO SCALE**

OUTLET PROTECTION				
	SCM 6 - IN	SCM 6 - OUT	SCM 8 - IN	SCM 8 - IN
OUTLET PIPE DIA.	24"	24"	15"	15"
OUTLET PIPE DIA.	7.94 CFS	8.32 CFS	4.03 CFS	2.19 CFS
OUTLET VELOCITY	5.03 FPS	7.02 FPS	3.28 FPS	1.78 FPS
MATERIAL	CLASS A	CLASS B	CLASS A	CLASS A
LENGTH	8.0'	12.0'	5.0'	5.0'
WIDTH	6.0'	6.0'	3.8'	3.8'
STONE DIA.	3"	6"	3"	3"
THICKNESS	9"	22"	9"	9"

NOTES

1. THE ENTIRE INFILTRATION BASIN SHALL BE SEEDED PER THE SEEDING SCHEDULE IMMEDIATELY FOLLOWING THE COMPLETION OF CONSTRUCTION.
2. THE BOTTOM SHALL BE OVEREXCAVATED 4" AND BACKFILLED WITH CLEAN SAND TO THE BOTTOM ELEVATION SPECIFIED.
3. IF HARDPAN OR OTHER UNSUITABLE SOILS ARE ENCOUNTERED, OVEREXCAVATE THE BOTTOM A MINIMUM OF 2" AND BACKFILL WITH ENGINEER APPROVED SANDY SOIL MATERIAL.
4. IF THE BASIN IS USED AS AN EROSION CONTROL DEVICE, THE BOTTOM MUST BE COMPLETELY CLEANED OUT, OVEREXCAVATED 6" AND BACKFILLED WITH AN ENGINEER APPROVED SANDY SOIL MATERIAL.

CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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J	PUBLIC WATER SUPPLY RESUBMITTAL	01/14/2019
I	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL, STORMWATER RESUBMITTAL AND NEW HANOVER COUNTY PHASE 2 SUBMITTAL	11/12/2018
H	CFPIA ADDITIONAL INFORMATION	10/12/2018
G	CFPIA RE-SUBMITTAL	08/21/2018
F	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE RESUBMITTAL	07/19/2018
E	CITY OF WILMINGTON STORMWATER SUBMITTAL	07/09/2018
D	CARP FEAR PUBLIC UTILITY AUTHORITY SUBMITTAL	07/06/2018
C	NEW HANOVER COUNTY SEDIMENT AND EROSION CONTROL RESUBMITTAL	01/05/2018
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	11/01/2017
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	08/08/2017

FINAL DRAWING - FOR REVIEW PURPOSES ONLY

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**RIVERLIGHTS
AGE QUALIFIED PHASE 4 & 5**
MASONBORO TOWNSHIP, WILMINGTON, NEW HANOVER COUNTY, NORTH CAROLINA
STORMWATER MANAGEMENT DETAILS

DATE: 01/25/2018
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DRAWN EEM/ALM/MDH
DESIGNED EEM/KCBE
CHECKED KCBE
PROJ. MGR. KCBE

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

MAC FILE NUMBER
CN-504
DRAWING NUMBER
41

STATUS: **PRELIMINARY DESIGN**
NOT FOR CONSTRUCTION

REVISION
K