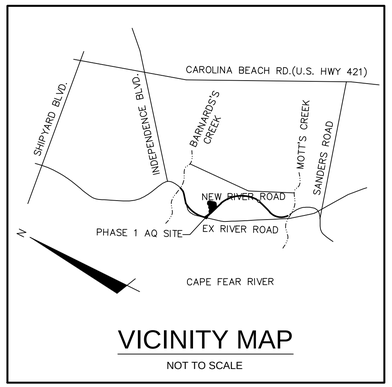


VICINITY MAP

NOT TO SCALE

RIVERLIGHTS

PHASE I AGE QUALIFIED

CITY OF WILMINGTON, NC

SEPTEMBER 2015

ISSUED 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

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____

PHASE I AGE QUALIFIED

02735-0125

SEPTEMBER 2015

COUNTY AND AGENCY CONTACTS

A. City of Wilmington
Planning Department
102 North Third Street
PO BOX 1810
Wilmington, NC 28402-1810
(910)341-7800
Contact: Ron Satterfield
Email: Ron.Satterfield@wilmingtonnc.gov

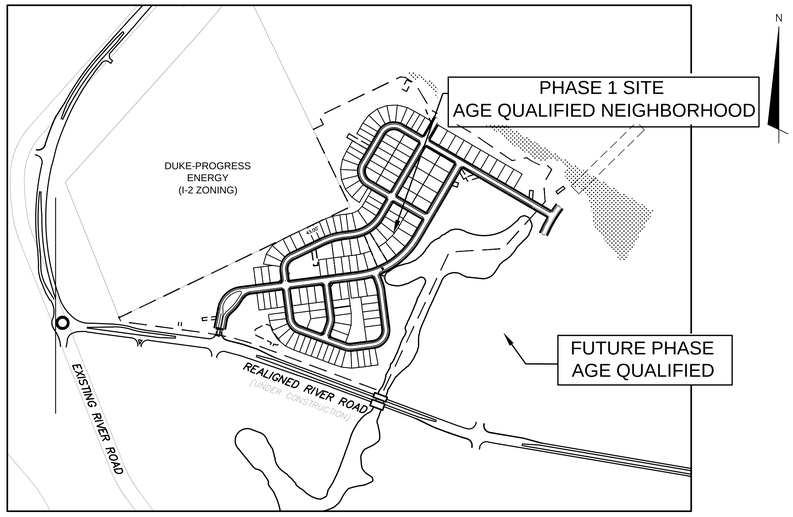
B. City of Wilmington
Engineering
212 Operations Center Drive
PO BOX 1810
Wilmington, NC 28402-1810
(910) 341-7807
Contact: Rob Gordon
Email: Rob.Gordon@wilmingtonnc.gov

C. 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

D. Cape Fear Public Utility Authority
235 Government Center Drive
Wilmington, NC 28403
(910) 332-6626
Contact: David Dailey
Email: David.Dailey@cfpua.org

E. NCDENR
Division of Environmental Health
Public Water Supply Section
1634 Mail Service Center
Raleigh, NC 27699-1634
(919) 707-9051
Contact: Tammy Kaufman
Email: tammy.kaufman@ncdenr.gov

ISSUED FOR CONSTRUCTION



VICINITY MAP

1"=500'

PROJECT DATA

NAME OF PROJECT:
RIVERLIGHTS- PHASE 1 AGE QUALIFIED NEIGHBORHOOD
WILMINGTON, NORTH CAROLINA

OWNER/DEVELOPER:
NNP IV-CAPE FEAR RIVER, LLC
3410 RIVER ROAD, SUITE 103
WILMINGTON, NC 28412
PHONE: (704)813-8697
CONTACT: DOUG BROWN

PREPARED BY:
MCKIM & CREED, INC
243 NORTH FRONT ST
WILMINGTON, NC 28401
PHONE: (910)343-1048
FAX: (910)251-8282
CONTACT: KATHRYN ESPINOZA, PE
EMAIL: KESPINOZA@MCKIMCREED.COM

NASH — North America Sekisui House, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

811 Know what's below. Call before you dig.

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

SHEET INDEX

SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
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2	G-002	NOTES AND LEGEND
3	CX-101	EXISTING CONDITIONS / SITE INVENTORY PLAN
4	CX-102	TREE REMOVAL PLAN
5	CE-101	PHASE 1 EROSION CONTROL PLAN
6	CE-102	PHASE 2 EROSION CONTROL PLAN
7	CG-101	STORM DRAINAGE & GRADING PLAN
8	CG-102	STORM DRAINAGE & GRADING PLAN
9	CG-103	STORM DRAINAGE & GRADING PLAN
10	CS-100	OVERALL SITE PLAN
11	CS-101	SITE PLAN
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14	CU-101	UTILITY PLAN
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19	CU-703	PLAN AND PROFILE OLD SAND MINE DRIVE STA 10+00 TO STA 24+42.73
20	CU-704	PLAN AND PROFILE RUDDY DUCK WAY WALKFINDERS ALLEY
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~~25~~	~~CU-709~~	PLAN AND PROFILE ~~SIDDONS COURT~~ BULLRUSH COURT
~~26~~	~~CU-710~~	PLAN AND PROFILE ~~FOX SEDGE COURT~~ WHARTON COURT
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52	CL-105	LANDSCAPE DETAILS

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11

CONSTRUCTION NOTES

1. CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING THE LOCATION OF EXISTING UTILITIES FROM THE APPROPRIATE PARTIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES, USING FLAGMEN, ETC. AS NECESSARY TO INSURE SAFETY TO THE PUBLIC.
4. 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.
5. SHOULD ANY DAMAGE OCCUR TO EXISTING UTILITIES, IT SHALL BE REPAIRED SOLELY AT THE CONTRACTOR'S EXPENSE.
6. 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.
7. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL CONFORM TO THE DRAWINGS, PROJECT SPECIFICATIONS, AND LOCAL BUILDING CODES.
8. 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.)
9. WATER MAINS WILL BE INSTALLED AT A DEPTH THAT WILL PROVIDE 36" COVER OVER THE PIPES BELOW PROPOSED GRADE UNLESS SHOWN OTHERWISE ON THESE PLANS OR DIRECTED OTHERWISE BY THE ENGINEER.
10. WHEREVER SEWER OR WATER MAINS CROSS ONE ANOTHER, A MINIMUM VERTICAL CLEARANCE OF 18" SHALL BE PROVIDED BETWEEN THE BOTTOM OF THE WATER PIPE AND THE TOP OF THE SEWER PIPE.
11. WHEREVER SEWER OR WATER MAINS RUN PARALLEL TO EACH OTHER, A MINIMUM HORIZONTAL SEPARATION OF 10' SHALL BE PROVIDED, OR 18" VERTICAL SEPARATION.
12. IF NEITHER OF THESE CONDITIONS (#10 OR #11 ABOVE) CAN BE MET, THEN THE SEWER SHALL BE CLASS 50 DIP, MINIMUM OF 20 LF CENTERED OVER THE CROSSING.
13. ALL WATER VALVES, BOXES, AND FIRE HYDRANT ASSEMBLES SHALL BE SET AND ADJUSTED TO FINISHED GRADE.
14. THE OWNER IS RESPONSIBLE FOR THE ACQUISITION OF ALL EASEMENTS, BOTH TEMPORARY AND PERMANENT.
15. 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.
16. ANY PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED SOLELY AT THE CONTRACTOR'S EXPENSE.
17. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR ANY DEVIATION FROM THESE PLANS.
18. 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.
19. 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.
20. 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).
21. 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.
22. 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.
23. 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 OF ANY NATURE 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

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIARIZED WITH FIELD DEMOLITION CONDITIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEMOLISHED DEBRIS ASSOCIATED WITH THE PROJECT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
3. 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.
4. 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.
5. 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.
6. 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.
7. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ANY EXISTING UTILITIES THAT REMAIN IN SERVICE DURING DEMOLITION.
8. 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.
9. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND CONTACTING THE ENGINEER FOR THE REQUIRED INSPECTIONS ON THE PROJECT.
10. WETLANDS DO EXIST ON SITE AND ARE NOTED ON THE PLANS. UNLESS OTHERWISE INDICATED, THE WETLANDS SHALL NOT BE DISTURBED DURING CONSTRUCTION OF THIS PROJECT.

EXCAVATION, GRADING, AND BACKFILLING NOTES

1. 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.
2. 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.
3. 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

1. 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.
2. 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.
3. 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.
4. 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.

UTILITY NOTES

1. SCHEDULE A PRECONSTRUCTION MEETING WITH CAPE FEAR PUBLIC UTILITY AUTHORITY 48 HOURS PRIOR TO CONSTRUCTION OF WATER AND SEWER LINES.
2. WATER AND SANITARY SEWER UTILITY MAINS ARE PUBLIC AND PRIVATE BEYOND THE PUBLIC STREET RIGHT-OF-WAY.
3. 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".
4. ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPUA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO CFPUA AND APPROVED BY USCFCCCHR OR ASSE.
5. BACKFLOW PREVENTION AND METERS WILL BE PROVIDED FOR BOTH FIRE LINES (RPDA) AND DOMESTIC SERVICE (RPZ). FIRE LINE BACKFLOW PREVENTER AND DOMESTIC SERVICE BACKFLOW PREVENTER WILL BE LOCATED AS SHOWN ON THE UTILITY PLANS. INSTALLER OF BACKFLOW PREVENTERS MUST CONTACT CFPUA PRIOR TO INSTALLING UNITS TO GIVE CFPUA THE OPTION TO VERIFY INSTALLATION PROCEDURES.
   - 5.1. REDUCED PRESSURE PRINCIPLE ASSEMBLY FOR DOMESTIC WATER SERVICE
   - 5.2. REDUCE PRESSURE DETECTOR ASSEMBLY WILL BE UTILIZED FOR THE BACKFLOW PREVENTER ON THE FIRE SERVICE.
6. 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.
7. WATER: 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, CL150 (DR-18).
8. SANITARY SEWER: FOR PIPE SIZES 4" AND 6" PIPE SHALL BE SCH 40 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 REQUIREMENTS OF AWWA C900 WITH ELASTOMERIC PUSH-ON JOINTS CONFORMING TO ASTM D3212 OR ASTM D3139.
9. 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.
10. 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 STRIPPED TO BARE 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.
11. 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.
12. MAXIMUM BENDING RADIUS FOR 8" C-900 PVC WATER MAIN BENDS IS 380' (ONE-HALF MANUFACTURER'S RECOMMENDED ALLOWABLE LONGITUDINAL BENDING).
13. 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.
14. MINIMUM OF 36" COVERAGE ABOVE ALL WATERMAINS.
15. MINIMUM OF 18" VERTICAL SEPARATION BETWEEN WATERLINES AND STORMDRAIN CURB INLETS.
16. A VARIANCE IS NOT ANTICIPATED FROM ANY NORTH CAROLINA DIVISION OF WATER QUALITY (DWQ) REQUIREMENT.
17. PLANS ARE IN COMPLIANCE WITH CAPE FEAR PUBLIC UTILITY AUTHORITY TECHNICAL STANDARDS AND SPECIFICATIONS.

RELATION OF WATER MAINS TO SANITARY SEWERS:

1. 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:
   - 1.1. 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
   - 1.2. 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.
2. CROSSING A WATER MAIN OVER A SEWER MAIN: WHENEVER IT IS NECESSARY FOR A WATER MAIN TO CROSS OVER A SEWER THE WATER MAIN SHALL BE LAID AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 24 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.
3. 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.
4. 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 DUCTILE IRON PIPE FOR AT LEAST 5 FEET ON EITHER SIDE OF THE CROSSING.

MATERIALS AND EASEMENT NOTES:

- ALL CATCH BASINS ARE NCDOT STD 840.01
- ALL DROP INLETS ARE NCDOT STD 840.15
- 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

EROSION CONTROL NOTES

1. 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.
2. 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.
3. 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.
4. ADDITIONAL MEASURES TO CONTROL EROSION AND SEDIMENT MAY BE REQUIRED BY A REPRESENTATIVE OF NEW HANOVER COUNTY.
5. SLOPES SHALL BE GRADED NO STEEPER THAN 3:1.
6. ADDITIONAL DEVICES MAY BE REQUIRED AS AGREED UPON BY THE FIELD INSPECTOR, ENGINEER, AND OWNER.
7. 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.
8. WITHIN 24 HOURS FOLLOWING ANY RAIN EVENT, THE CONTRACTOR SHALL INSPECT AND REPAIR, AS NECESSARY, ALL DAMAGED EROSION CONTROL MEASURES.
9. ALL ACTIVITY AND INSTALLATION OF EROSION CONTROL MATTING WILL BE COMPLETE PRIOR TO ANY RAIN EVENT.

EROSION CONTROL MAINTENANCE PLAN:

1. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED AND REPAIRED, AS NECESSARY, EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF EVERY ½ INCH OR GREATER RAINFALL.
2. 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.
3. 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.
4. ALL AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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 IT 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.
11. 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

1. CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING AT 1-800-632-4949.
2. 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.
3. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
4. ONCE STREETS ARE OPEN TO TRAFFIC, THE DEVELOPER SHALL CONTACT TRAFFIC ENGINEERING TO REQUEST INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
5. 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.
6. ANY BROKEN OR MISSING SIDEWALK PANELS AND CURBING SHALL BE REPLACED BY THE CONTRACTOR.
7. CONTACT CITY OF WILMINGTON TRAFFIC ENGINEERING AT 341-7852 TO DISCUSS STREET LIGHTING OPTIONS.
8. 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.
9. THE NUMBER AND SPACING OF DRIVEWAYS FOR ALL INTERCONNECTED SITES WILL BE DETERMINED BY THE COMBINED FRONTAGE OF THE INTERCONNECTED PROPERTIES.
10. CONTACT TRAFFIC ENGINEERING TO ENSURE THAT ALL TRAFFIC SIGNAL FACILITIES AND EQUIPMENT ARE SHOWN ON THE PLAN. CALL TRAFFIC ENGINEERING FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT-OF-WAY.
11. TACTILE WARNING MATS ARE TO BE INSTALLED ON ALL WHEELCHAIR RAMPS.
12. NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS.
13. THERE ARE NO KNOWN CEMETERIES, BURIAL SITES OR BURIAL GROUNDS ON THE PROJECT SITE.

NOTE COW(18-458)

NO EQUIPMENT IS ALLOWED ONSITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED BY THE ENGINEER.

FIRE PROTECTION NOTES

1. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF THE HYDRANT AND FDC.
2. 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.
3. COMBUSTIBLE MATERIALS MAY NOT BE STORED OR ERECTED ONSITE WITHOUT CITY FIRE INSPECTOR APPROVAL.
4. UNDERGROUND FIRE LINE AND PRIVATE WATER MAINS MUST BE PERMITTED AND INSPECTED BY THE WILMINGTON FIRE DEPARTMENT FROM THE PUBLIC RIGHT-OF-WAY TO THE BUILDING. CONTACT THE WILMINGTON FIRE DEPARTMENT DIVISION OF FIRE AND LIFE SAFETY AT 910-343-0696 FOR ADDITIONAL INFORMATION.
5. A MINIMUM OF 5' SHALL SEPARATE UNDERGROUND FIRE LINES OR PRIVATE WATER MAINS FROM UNDERGROUND UTILITIES
6. CONTRACTOR SHALL MAINTAIN AN ALL WEATHER ACCESS AT ALL TIMES DURING CONSTRUCTION.
7. TEMPORARY STREET SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES.

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) 452-5300

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
PERIMETER DIKES, 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 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 HQW ZONES)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

NOTES AND LEGEND

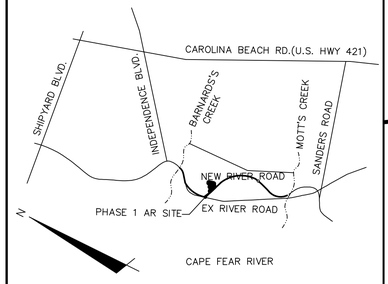
DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER G-002
DRAWING NUMBER 2

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\2735\0125 Ph 1 AR\80-Drawings\G002-027350125.dwg, 4/6/2016 4:48:16 PM, EMcArthur, 1:1



VICINITY MAP

NOT TO SCALE

GENERAL NOTES:

1. 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.
2. ITEMS DESIGNATED AS "PROPOSED" ARE PART OF THE RIVER ROAD REALIGNMENT PROJECT THAT IS CURRENTLY UNDER CONSTRUCTION. RIVER ROAD CONSTRUCTION TO BE COMPLETE SPRING 2016.
3. WETLANDS SHOWN IN THIS PORTION OF RIVERLIGHTS WERE DESCRIBED AS POCOSIN WETLAND AND CONSERVATION RESOURCE SETBACK LINES WERE GENERATED AS 25' MINIMUM OUTSIDE OF THE RESOURCE.
4. FINISHED FLOOR ELEVATIONS OFF ALL INHABITABLE STRUCTURES WILL BE MIN. 2-FEET ABOVE BASE FLOOD ELEVATION
5. RIVERLIGHTS PHASE 1 AGE QUALIFIED COMMUNITY 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.
6. PLATS AND DOCUMENTS SHALL BE RECORDED TO PROVIDE PERPETUAL PROTECTIONS FOR CONSERVATION RESOURCE AND BUFFERS AND PROHIBIT IMPERVIOUS SURFACES AND DISTURBANCE WITHIN THE CONSERVATION SETBACKS, BUFFER SETBACKS, UNLESS EXCEPTIONS ARE PROVIDED BY THE LDC.

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

LEGEND

- RBC = REBAR & CAP
- = POWER POLE
- = SANITARY SEWER MANHOLE
- = WETLAND
- OHE OHE = OVERHEAD ELECTRIC LINE
- COD COD = CONSERVATION SETBACK LINE
- SS SS = SANITARY SEWER MAIN

TREE LEGEND

- = CEDAR
- = GUM
- = OAK
- = MAPLE
- = PINE

NOTE:

EXISTING TREE CALIPER INCH SIZE IS SHOWN WITHIN THE TREE SYMBOL

EXAMPLE ONLY

100' 0 100' 200'

SCALE: 1"=100' (Horiz.)

Approved Construction Plan		
	Name	Date
Planning		
Traffic		
Fire		

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

404 WETLAND
PRELIMINARY 100-YR FLOODPLAIN (AE 9)
CITY OF WILMINGTON CONSERVATION SETBACK LINE. PER LDC ARTICLE 6 DIVISION III SECTION 18-341
50.0'
PIEDMONT NATURAL GAS EASEMENT
DUKE-PROGRESS ENERGY (I-2 ZONING)
PROJECT BOUNDARY (TYP.)
EXISTING TREES (PINE/TURKEY OAK) INCLUDING CALIPER SIZE (TYP.)
EXISTING 20" FORCE MAIN
PROPOSED 10-FT MULTI-USE PATH
REALIGNED RIVER ROAD (130' PUBLIC R/W)
EXISTING 12" PVC WATERLINE
CITY OF WILMINGTON CONSERVATION SETBACK LINE PER LDC ARTICLE 6, DIVISION III, SECTION 18-341
CONSERVATION LINE
404 WETLAND (POCOSIN)
PRELIMINARY 100-YR FLOODPLAIN (AE 9)
EFFECTIVE 100-YR FLOODPLAIN (AE 9)
EXISTING 30' CFPUA SANITARY SEWER EASEMENT
NNP IV CAPE FEAR RIVER LLC
4410 RIVER ROAD
PARCEL ID: R07000-006-009-000
ZONING: R7-CD
LAND USE: 108-FORESTRY & RELATED
TRACT 1C
MAN-MADE LAKE FOR RIVERLIGHTS DEVELOPMENT. NOT SUBJECT TO THE CONSERVATION RESOURCE REGULATIONS OF 18-341
NNP IV CAPE FEAR RIVER LLC
4410 RIVER ROAD
PARCEL ID: R07000-006-009-000
ZONING: R7-CD
LAND USE: 108-FORESTRY & RELATED
TRACT 1A
EXISTING SOIL CLASSIFICATION AND BOUNDARY LINE
PROJECT BOUNDARY 61.1 ACRES
PROPOSED PUBLIC DRAINAGE AND ACCESS EASEMENT
PROPOSED 10-FT NON-MUNICIPAL EASEMENT
Kr
Pm
La
PDE
GAS
WM
SS

REV.NO.	DESCRIPTIONS REVISIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/28/2015

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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED - PHASE 1

EXISTING CONDITIONS / SITE INVENTORY PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

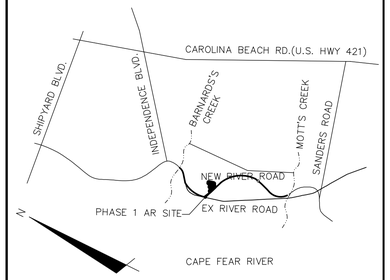
MAC FILE NUMBER: CX-101

DRAWING NUMBER: 3

STATUS: FINAL DESIGN ISSUED FOR CONSTRUCTION

REVISION 4

S:\02735\0125 Ph 1 AR\80 Drawings\CX\101-02735\0125.dwg, 4/6/2016 4:49:31 PM, EMcArthur, 1:1



VICINITY MAP

NOT TO SCALE

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.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

4 REVISIONS PER CITY OF WILMINGTON TRC – REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, LOT LINE AND CHANGES.

TREE LEGEND

- = CEDAR
- = GUM
- = OAK
- = MAPLE
- = PINE
- = TREE TO BE REMOVED

LEGEND

- RBC = REBAR & CAP
- = POWER POLE
- = SANITARY SEWER MANHOLE
- = WETLAND
- OHE OHE OHE = OVERHEAD ELECTRIC LINE
- COD COD COD = CONSERVATION SETBACK LINE
- SS SS SS = SANITARY SEWER MAIN

N

120' 0 120' 240'

SCALE: 1"=120' (Horiz.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
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1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

SEAL

McKIM & CREED
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NASH — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

TREE REMOVAL PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=120'
VERTICAL: N/A

M&C FILE NUMBER CX-102
DRAWING NUMBER 4

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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11

PHASE 1 CONSTRUCTION SEQUENCE

1. ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
2. 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.
3. 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.
4. 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.
5. 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.
6. COMMENCE GRUBBING AND ROUGH GRADING WITHIN THE LIMITS OF CONSTRUCTION.
7. 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.
8. 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
9. PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION. REFER TO SHEET CE-501 FOR GROUND STABILIZATION CRITERIA AND SEEDING SCHEDULE.

LEGEND

- POWER POLE
- GW = GUY WIRE
- WETLAND
- TPD = TEMPORARY PERIMETER DIKE
- COD = CITY OF WILMINGTON CONSERVATION RESOURCE
- LOD = LIMITS OF DISTURBANCE
- SF = SILT FENCE
- TPF = TREE PROTECTION FENCE
- >TDD = TEMPORARY DIVERSION DITCH

TREE LEGEND

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

LIMITS OF DISTURBANCE = 58.82 AC

LAT: 34° 9' 3" N
LONG: 77° 56' 9" W

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF 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.

326 LF TEMPORARY SILT FENCE (SF3) (DOUBLE ROW) DA: 0.82 ACRES SEE DETAIL; SHEET CE-501
SWALE SKIMMER OUTFLOW TOWARDS EXISTING WETLANDS
346 LF TEMPORARY SILT FENCE (SF4) (DOUBLE ROW) DA: 0.47 ACRES SEE DETAIL; SHEET CE-501
CONSERVATION LINE
782 LF TEMPORARY SILT FENCE (SF5) (DOUBLE ROW) DA: 0.61 ACRES SEE DETAIL; SHEET CE-501
CITY OF WILMINGTON CONSERVATION SETBACK LINE PER LDC ARTICLE 6, DIVISION III, SECTION 18-341
SB#3 DRAINAGE AREA = 10.63 AC RATIONAL "C" = 0.30 DESIGN INTENSITY = 7.23 IN/HR 10-YR PEAK FLOW = 23.06 CFS
SB#4 DRAINAGE AREA = 2.74 AC RATIONAL "C" = 0.30 DESIGN INTENSITY = 7.23 IN/HR 10-YR PEAK FLOW = 5.94 CFS
EXISTING 220-FT DUKE-PROGRESS ENERGY EASEMENT
DA #3
ROCK CHECK DAM (TYP.) SEE DETAIL; SHEET CE-501
TEMPORARY DIVERSION DITCH (TDD 6) SEE DETAIL; SHEET CE-502
DA #4
SKIMMER BASIN (TYP.) SEE DETAIL; SEE SHEET CE-501
EXISTING 30' CFPUA SANITARY SEWER EASEMENT (TYP.)
100-YEAR FLOOD LINE (PRELIMINARY)
100-YEAR FLOOD LINE (EFFECTIVE)
TEMPORARY DIVERSION DITCH (TDD 4) SEE DETAIL; SHEET CE-502
TEMPORARY DIVERSION DITCH (TDD 5) SEE DETAIL; SHEET CE-502
669 LF TEMPORARY SILT FENCE (SF2) DA: 1.20 ACRES SEE DETAIL; SHEET CE-501
TREE PROTECTION (TYP.) SEE DETAIL; SHEET CE-502
TOP OF LAKE
TEMPORARY DIVERSION DITCH (TDD 3) SEE DETAIL; SHEET CE-502
644 LF TEMPORARY SILT FENCE (SF12) DA: 1.53 ACRES SEE DETAIL; SHEET CE-501
385 LF TEMPORARY SILT FENCE (SF10) DA: 0.17 ACRES SEE DETAIL; SHEET CE-501
TREE TO REMAIN (TYP.)
EXISTING 50-FT PIEDMONT NATURAL GAS EASEMENT
1002 LF TEMPORARY SILT FENCE (SF11) DA: 2.00 ACRES SEE DETAIL; SHEET CE-501
452 LF TEMPORARY SILT FENCE (SF8) DA: 0.39 ACRES SEE DETAIL; SHEET CE-501
PARCEL BOUNDARY LINE
SEDIMNENT BASIN DRAINAGE AREA (TYP.)
538 LF TEMPORARY SILT FENCE (SF18) DA: 0.38 ACRES SEE DETAIL; SHEET CE-501
DA #2
ROCK CHECK DAM (TYP.) SEE DETAIL; SHEET CE-501
LIMITS OF DISTURBANCE (TYP.)
338 LF TEMPORARY SILT FENCE (SF13) DA: 0.86 ACRES SEE DETAIL; SHEET CE-501
332 LF TEMPORARY SILT FENCE (SF17) DA: 0.62 ACRES SEE DETAIL; SHEET CE-501
50'
SB#2 DRAINAGE AREA = 4.83 AC RATIONAL "C" = 0.30 DESIGN INTENSITY = 7.23 IN/HR 10-YR PEAK FLOW = 10.48 CFS
489 LF TEMPORARY SILT FENCE (SF7) DA: 0.36 ACRES SEE DETAIL; SHEET CE-501
449 LF TEMPORARY SILT FENCE (SF9) DA: 0.16 ACRES SEE DETAIL; SHEET CE-501
TEMPORARY DIVERSION DITCH (TDD 2) SEE DETAIL; SHEET CE-502
281 LF TEMPORARY SILT FENCE (SF16) DA: 0.71 ACRES SEE DETAIL; SHEET CE-501
TREE PROTECTION (TYP.) SEE DETAIL; SHEET CE-502
DA #1
TEMPORARY DIVERSION DITCH (TDD 7) SEE DETAIL; SHEET CE-502
321 LF TEMPORARY SILT FENCE (SF15) DA: 0.82 ACRES SEE DETAIL; SHEET CE-501
705 LF TEMPORARY SILT FENCE (SF14) DA: 1.66 ACRES SEE DETAIL; SHEET CE-501
TEMPORARY DIVERSION DITCH (TDD 1) SEE DETAIL; SHEET CE-502
SB#5 DRAINAGE AREA = 1.09 AC RATIONAL "C" = 0.30 DESIGN INTENSITY = 7.23 IN/HR 10-YR PEAK FLOW = 2.37 CFS
953 LF TEMPORARY SILT FENCE (SF1) DA: 1.21 ACRES SEE DETAIL; SHEET CE-501
10-FT NON-MUNICIPAL EASEMENT (TYP.)
517 LF TEMPORARY SILT FENCE (SF6) DA: 0.91 ACRES SEE DETAIL; SHEET CE-501
PUBLIC DRAINAGE EASEMENT (TYP.)
EXISTING STORMDRAIN SYSTEM
TEMPORARY CONSTRUCTION ENTRANCE SEE DETAIL; SHEET CE-502
RIVER ROAD R/W (TYP.)
10-FT MULTI-USE PATH
SB#1 DRAINAGE AREA = 3.09 AC RATIONAL "C" = 0.30 DESIGN INTENSITY = 7.23 IN/HR 10-YR PEAK FLOW = 6.70 CFS

120 0 120 240

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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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 NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED - PHASE 1

PHASE 1 EROSION CONTROL PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=120'
VERTICAL: N/A

M&C FILE NUMBER CE-101
DRAWING NUMBER 5

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\6D-Drawings\CE101-02735\0125.dwg, 4/6/2016 4:53:16 PM, EMcArthur, 1:1

CONSTRUCTION SEQUENCE:

PHASE 2 CONSTRUCTION SEQUENCE

1. 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.
2. MAINTAIN MEASURES FROM PHASE 1 AS SHOWN IN THIS PHASE 2 SEDIMENT AND EROSION CONTROL DRAWING.
3. REMOVE MEASURES FROM PHASE 1 AS SHOWN. THIS INCLUDES TEMPORARY SEDIMENT BASINS AND TEMPORARY DIVERSIONS. STABILIZE THESE AREAS ACCORDING TO THE STABILIZATION MEASURES REQUIRED HEREIN.
4. INSTALL INLET PROTECTION AS SHOWN IN THE PHASE 2 PLAN AND CONSTRUCTION DETAILS.
5. COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
6. UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
7. REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit #_____
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For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

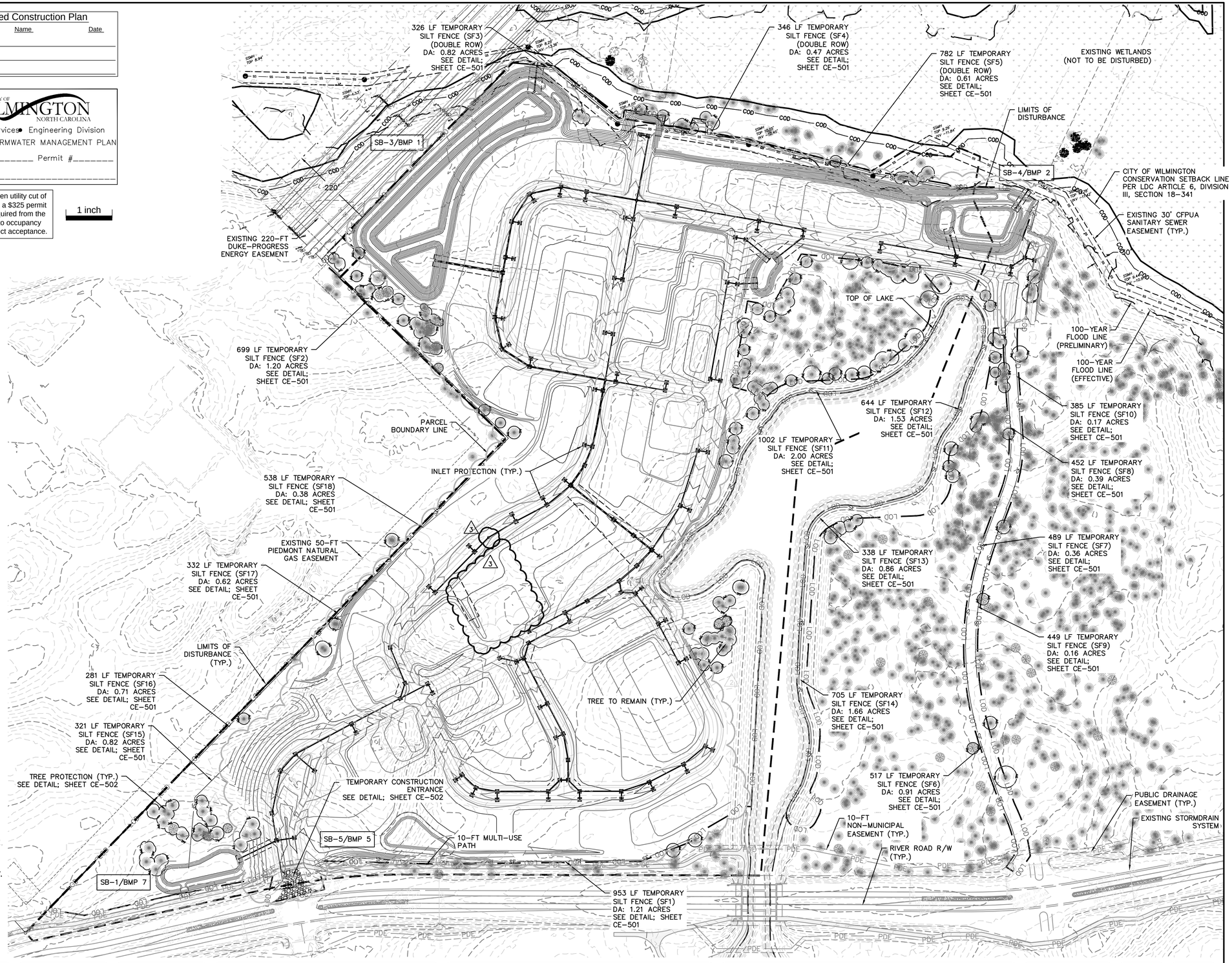
1 inch

LIMITS OF DISTURBANCE = 58.82 AC

LAT: 34° 9' 3" N
LONG: 77° 56' 9" W

N

120 0 120 240



LEGEND

- POWER POLE
- GW = GUY WIRE
- = WETLAND
- COD = CITY OF WILMINGTON CONSERVATION RESOURCE
- LOD = LIMITS OF DISTURBANCE
- SF = SILT FENCE
- TPF = TREE PROTECTION FENCE

TREE LEGEND

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

1. REVISIONS TO GRADING ALONG PASSERINE AVENUE AND ALONG THE WEST SIDE OF PROPERTY AND ADJUSTMENTS TO STORMWATER RIM ELEVATIONS.
2. ADJUSTMENT OF INLET PROTECTION DUE TO CHANGES IN STORMWATER DRAINAGE NETWORK, REVISIONS TO GRADING
3. GRADING REVISIONS FOR REMOVAL OF WALKFINDERS ALLEY. INLET PROTECTION REVISIONS.

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
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NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PHASE 2 EROSION CONTROL PLAN

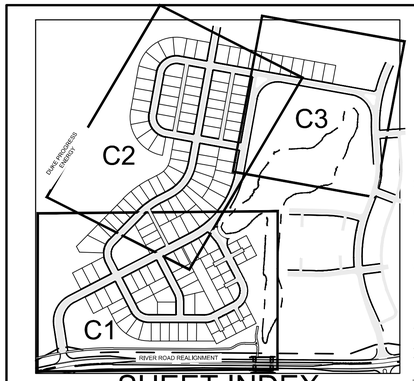
DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=120'
VERTICAL: N/A

M&C FILE NUMBER CE-102
DRAWING NUMBER 6

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\90-Drawings\CE\102\02735012S.dwg, 4/6/2016 4:55:45 PM, EMcArthur, 1:1



SHEET INDEX

NOT TO SCALE

1. REVISIONS TO GRADING ALONG PASSERINE AVENUE AND ALONG THE WEST SIDE OF PROPERTY AND ADJUSTMENTS TO STORMWATER RIM ELEVATIONS.
2. REMOVAL OF SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, REVISIONS TO LOT LINES AND GRADING
3. GRADING REVISIONS FOR THE REMOVAL OF WALKFINDERS ALLEY

NOTE:
SEE SHEET CG-503/504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

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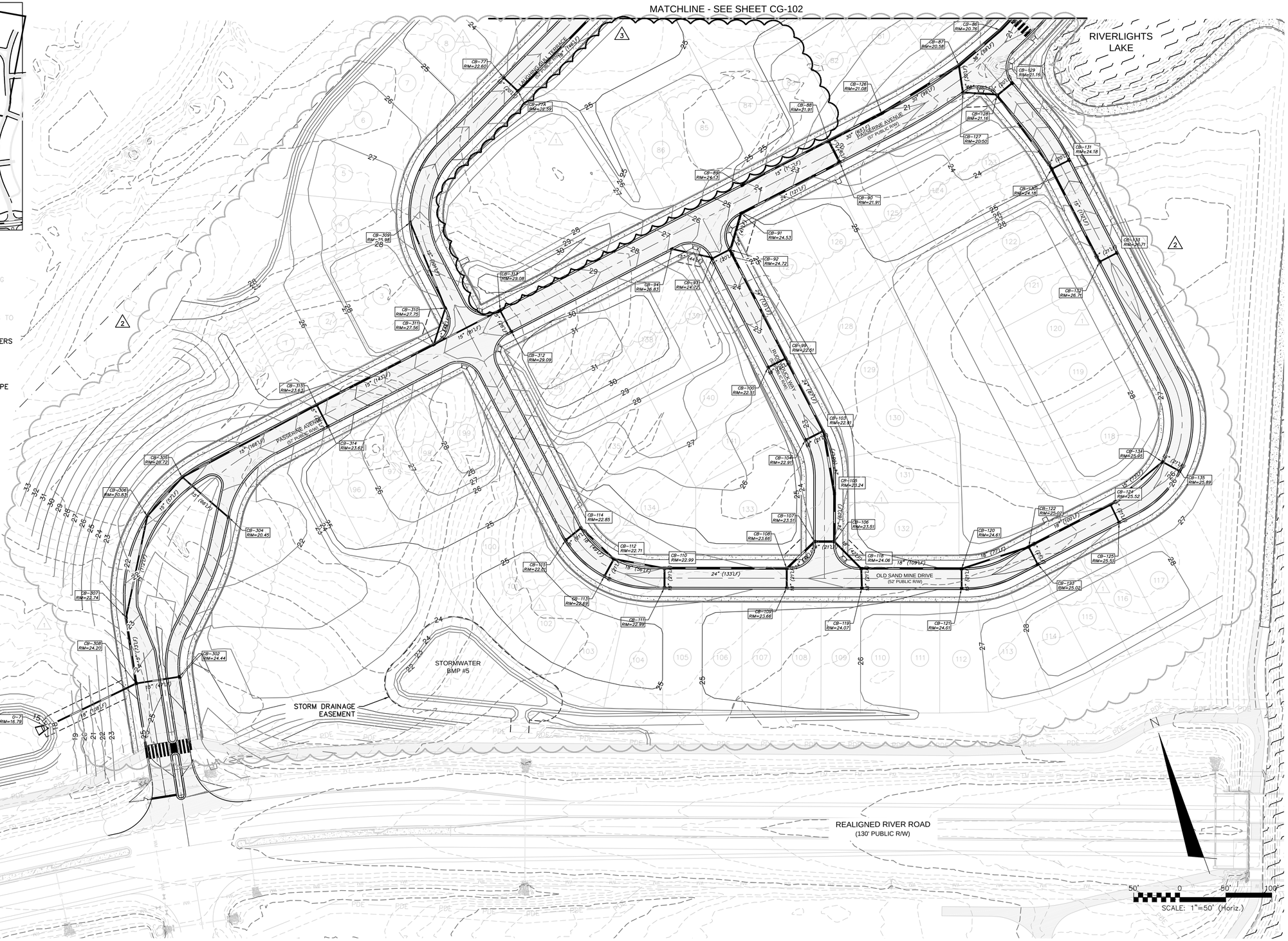
1 inch



REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
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REVISIONS

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NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

STORM DRAINAGE & GRADING PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CG-101
DRAWING NUMBER 7

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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DUKE-PROGRESS ENERGY

STORMWATER BMP #1

STORM DRAINAGE EASEMENT

LYREBIRD AVENUE (52' PUBLIC R/W)

LAUGHING GULL TERRACE (52' PUBLIC R/W)

PUBLIC UTILITY AND DRAINAGE EASEMENT

MATCHLINE - SEE SHEET CG-101

MATCHLINE - SEE SHEET CG-103

SSMH TOP 8.05' INV -13.05'

SSMH TOP 8.43' INV -13.38'

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

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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

1 REVISIONS TO STORMWATER RIM ELEVATIONS

2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, REVISIONS TO LOT LINES, GRADING AND STORMWATER DRAINAGE NETWORK.

3 GRADING REVISIONS FOR THE REMOVAL OF WALKFINDERS ALLEY.

N

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

NOTE:
SEE SHEET CG-503-504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.

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DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CG-102
DRAWING NUMBER 8

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

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1 inch

1 REVISIONS TO STORMWATER RIM ELEVATIONS

2 REVISIONS TO LOT LINES, GRADING, AND STORMWATER DRAINAGE NETWORK

N

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

NOTE:
SEE SHEET CG-503/504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.

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RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

STORM DRAINAGE & GRADING PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

M&C FILE NUMBER: CG-103

DRAWING NUMBER: 9

STATUS: FINAL DESIGN ISSUED FOR CONSTRUCTION

REVISION 4

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SITE DATA TABLE	AGE QUALIFIED NEIGHBORHOOD–PHASE 1
PARCEL ADDRESS	4410 RIVER ROAD
TAX PARCEL IDENTIFICATION NUMBER	R07000–006–009–000
ZONING DISTRICT	R–7/CD CLUSTER
CAMA LAND USE CLASSIFICATION	TRANSITION / CONSERVATION
WATER BODY CLASSIFICATION	SC
TOTAL ACREAGE WITHIN RIVER LIGHTS BOUNDARY	1,329.41 ACRES (57,909,099.6 SF)
TOTAL ACREAGE PHASE 1 AGE QUALIFIED BOUNDARY	61.1 ACRES (2,663,144 SF)
PROPOSED NUMBER OF LOTS	141 SINGLE FAMILY
TOTAL AMOUNT OF DISTURBED AREA	58.82 ACRES (2,562,221.8 SF)
IMPERVIOUS AREA (EXISITNG)	
LOT COVERAGE	0
DRIVEWAYS	0
SIDEWALKS	0
CONCRETE OR ASPHALT STREETS	0
TOTAL S.F	0
PERCENT S.F	0
IMPERVIOUS AREA (PROPOSED)	
LOT COVERAGE	11.78 ACRES (513,240 SF)
SIDEWALKS	1.83 ACRES (79,699 SF)
CONCRETE OR ASPHALT STREETS	5.70 ACRES (248,423 SF)
TOTAL S.F	21.79 ACRES (841,362 SF+107,949 SF FUT.)
PERCENT S.F	35.7%

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

Parcel Table		
Parcel #	Area (SF)	Area (AC)
1	6240	0.14
2	6000	0.14
3	9343	0.21
4	6445	0.15
5	6445	0.15
6	7437	0.17
7	5929	0.14
8	7388	0.17
9	7393	0.17
10	4743	0.11
11	5016	0.12
12	5213	0.12
13	5424	0.12
14	5521	0.13
15	5240	0.12
16	5842	0.13
17	8008	0.18
18	8008	0.18
19	5506	0.13
20	5160	0.12
21	5770	0.13
22	6098	0.14
23	6445	0.15
24	6445	0.15
25	6445	0.15
26	6446	0.15
27	5973	0.14
28	5160	0.12
29	5160	0.12
30	5160	0.12
31	5160	0.12
32	6281	0.14
33	6445	0.15
34	6445	0.15
35	6445	0.15
36	6445	0.15
37	5778	0.13
38	5160	0.12
39	5160	0.12
40	6360	0.15
41	9240	0.21
42	8040	0.18
43	8040	0.18
44	8040	0.18
45	8040	0.18
46	8040	0.18
47	8040	0.18
48	8040	0.18

Parcel Table		
Parcel #	Area (SF)	Area (AC)
49	8040	0.18
50	8040	0.18
51	6805	0.16
52	6253	0.14
53	6254	0.14
54	6254	0.14
55	6254	0.14
56	6253	0.14
57	6805	0.16
58	7980	0.18
59	6254	0.14
60	6254	0.14
61	6254	0.14
62	6254	0.14
63	6254	0.14
64	6254	0.14
65	6805	0.16
66	9808	0.23
67	9778	0.22
68	9778	0.22
69	9182	0.21
70	9182	0.21
71	9779	0.22
72	9779	0.22
73	9808	0.23
74	9182	0.21
75	8354	0.19
76	8092	0.19
77	9128	0.21
78	9131	0.21
79	7976	0.18
80	7204	0.17
81	7221	0.17
82	6280	0.14
83	6280	0.14
91	7834	0.18
92	7174	0.16
93	6978	0.16
94	6360	0.15
95	7560	0.17
96	5160	0.12
97	5160	0.12
98	5160	0.12
99	6360	0.15
100	5199	0.12
101	6399	0.15
102	6445	0.15
103	6445	0.15

Parcel Table		
Parcel #	Area (SF)	Area (AC)
104	6093	0.14
105	5160	0.12
106	5160	0.12
107	5160	0.12
108	5160	0.12
109	5160	0.12
110	5160	0.12
111	5160	0.12
112	5617	0.13
113	6445	0.15
114	5546	0.13
115	5160	0.12
116	5160	0.12
117	5432	0.12
118	11125	0.26
119	6360	0.15
120	6360	0.15
121	6360	0.15
122	6360	0.15
123	8884	0.20
124	6805	0.16
125	6360	0.15
126	6600	0.15
127	7800	0.18
128	6358	0.15
129	6360	0.15
130	7603	0.17
131	7145	0.16
132	6780	0.16
133	11479	0.26
134	10498	0.24
135	6148	0.14
136	7560	0.17
137	6360	0.15
138	6360	0.15
139	7320	0.17
140	6042	0.14
141	6042	0.14

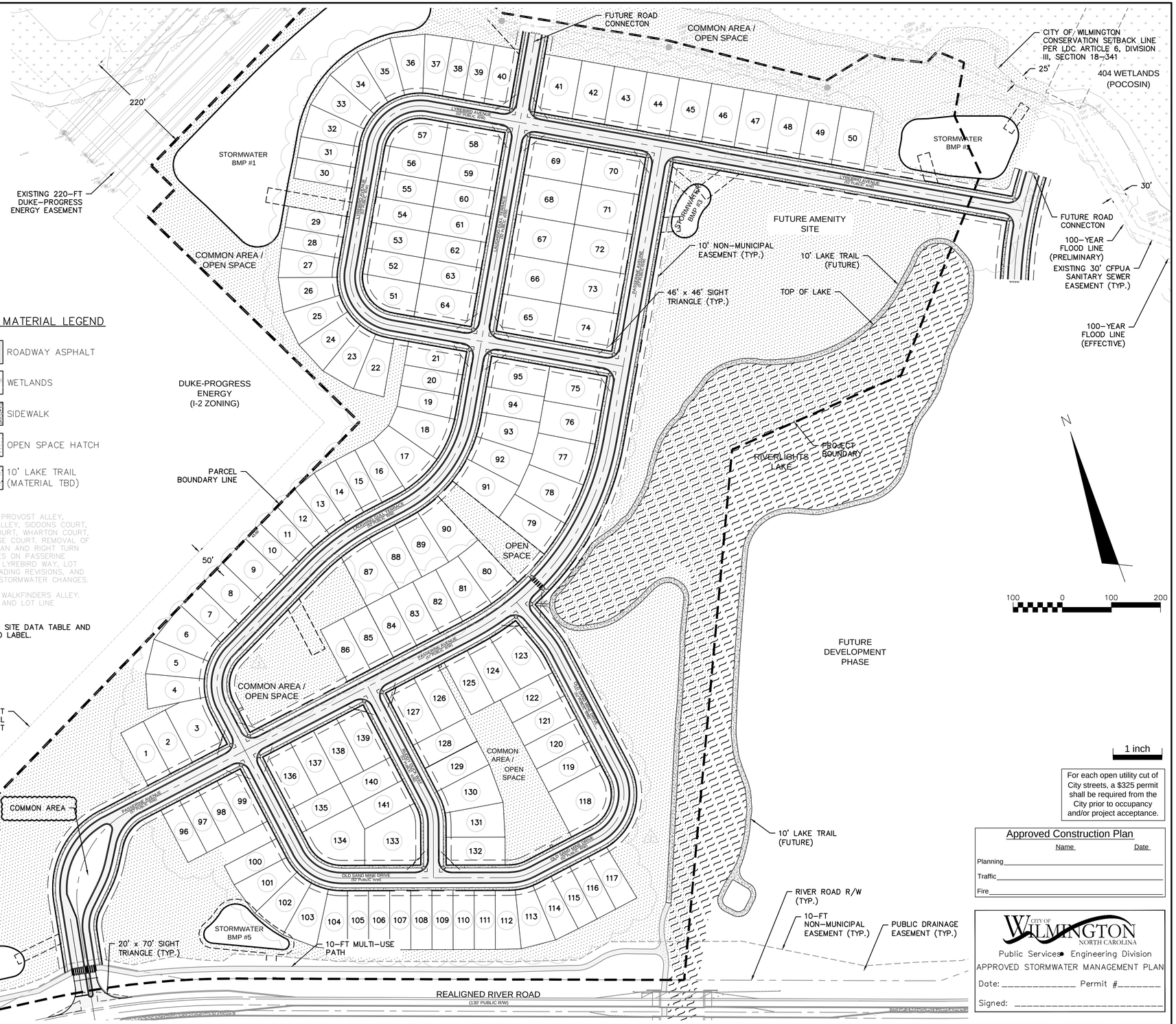
SURFACE MATERIAL LEGEND

- ROADWAY ASPHALT
- WETLANDS
- SIDEWALK
- OPEN SPACE HATCH
- 10' LAKE TRAIL (MATERIAL TBD)

2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT. REMOVAL OF TRAFFIC MEDIAN AND RIGHT TURN BYPASS LANES ON PASSERINE AVENUE AND LYREBIRD WAY, LOT LINE AND GRADING REVISIONS, AND ASSOCIATED STORMWATER CHANGES.

3 REMOVAL OF WALKFINDERS ALLEY. LOT NUMBER AND LOT LINE REVISIONS.

4 REVISIONS TO SITE DATA TABLE AND ENTRY ISLAND LABEL.



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: _____

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

OVERALL SITE PLAN

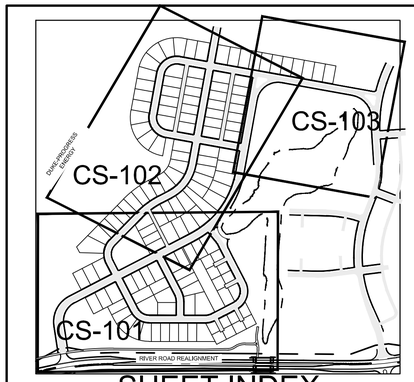
DATE:	04/15/2015
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CS–100
DRAWING NUMBER 10

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\60-Drawings\CS\100-02735012S.dwg, 4/6/2016 5:01:38 PM, EMcArthur, 1:1



SHEET INDEX

NOT TO SCALE

GENERAL NOTES:

1. FOR ROADWAY DIMENSIONING REFERENCE TYPICAL SECTIONS ON PLAN SHEET CT-301.

2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, LOT LINE AND GRADING REVISIONS AND ASSOCIATED STORMWATER CHANGES.

3 REMOVAL OF WALKFINDERS ALLEY. REVISIONS TO LOT LINES AND LOT NUMBERS.

4 REVISIONS TO ENTRY ISLAND LABEL AND PEDESTRIAN CROSSING SYMBOL.

MATCHLINE SEE SHEET CS-102

DUKE-PROGRESS ENERGY (I-2 ZONING)

PIEDMONT NATURAL GAS EASEMENT

50.0'

PROJECT BOUNDARY

SCALE: 1"=50' (Horiz.)

TRAFFIC ISLAND (SEE CS-103 FOR INSET)

COMMON AREA

PUBLIC DRAINAGE EASEMENT

PROPOSED STORMWATER BMP #7

REFUGE ISLAND (TYP.)

EX. 10' MULTI-USE PATH (TYP.)

HIGH-VISIBILITY CROSSWALK (TYP.)

5' CONCRETE SIDEWALK (TYP.)

10' NON-MUNICIPAL EASEMENT (TYP.)

24" TYPE 'A' CONCRETE CURB & GUTTER (TYP.)

24" TYPE 'A' CONCRETE MEDIAN CURB & GUTTER (TYP.)

EX. PUBLIC DRAINAGE EASEMENT (TYP.)

PROPOSED STORMWATER BMP #5

EX. 10' / NON-MUNICIPAL EASEMENT (TYP.)

RIVER ROAD R/W (TYP.)

REALIGNED RIVER ROAD (130' PUBLIC R/W)

OPEN SPACE

COMMON AREA /OPEN SPACE

PUBLIC UTILITY EASEMENT

PUBLIC DRAINAGE EASEMENT

8' PEDESTRIAN EASEMENT

COMMON AREA/ OPEN SPACE

COMMON AREA / OPEN SPACE

RIVERLIGHTS LAKE

10' LAKE TRAIL (FUTURE)

W11-2 SIGN PEDESTRIAN (TYP.)

STOP SIGN & BAR (TYP.)

CROSSWALK (TYP.)

PASSERINE AVENUE (50' PUBLIC R/W)

BUDDY RYAN WAY (50' PUBLIC R/W)

OLD SAND MINE DRIVE (52' PUBLIC R/W)

OLD SAND MINE TRAIL

BELLFLOWER GULLWING GULL TERRACE (50' PUBLIC R/W)

R25.0'

20.0' / 24.0' / 52.0'

25.0' / 29.0' / 57.0'

AVED SHOULDER -2.0% LT

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.

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
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
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NASH — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED - PHASE 1

SITE PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

M&C FILE NUMBER: CS-101

DRAWING NUMBER: 11

STATUS: FINAL DESIGN — ISSUED FOR CONSTRUCTION

REVISION: 4

S:\27350\125 Ph 1 AR\90-Drawings\CS\101\027350125.dwg, 4/6/2016 5:04:22 PM, EMcArthur, 1:1

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, LOT LINE AND GRADING REVISIONS, AND REMOVAL OF TRAFFIC MEDIAN AND RIGHT TURN BYPASS LANE ON PASSERINE AVENUE.

3 REMOVAL OF WALKFINDERS ALLEY. LOT NUMBER AND LOT LINE REVISIONS.

4 ADDITION OF TEMPORARY NCDOT TYPE III BARRICADE AND REVISIONS TO PEDESTRIAN CROSSING SYMBOL.

PROJECT BOUNDARY

DUKE-PROGRESS ENERGY (I-2 ZONING)

50.0'

PIEDMONT NATURAL GAS EASEMENT

COMMON AREA / OPEN SPACE

PROPOSED STORMWATER BMP #1

PUBLIC DRAINAGE EASEMENT

404 WETLANDS (POCOSIN)

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

EXISTING 30' CFPUA SANITARY SEWER EASEMENT (TYP.)

EXISTING CFPUA SANITARY SEWER

PRELIMINARY 100-YEAR FLOODPLAIN

EFFECTIVE 100-YEAR FLOODPLAIN

INSTALL NCDOT TYPE III BARRICADE (SEE DETAIL SHEET)

LYREBIRD AVENUE (57' PUBLIC R/W)

LAUGHING GULL TERRACE (50' PUBLIC R/W)

PASSERINE AVENUE (57' PUBLIC R/W)

RUDDY DUCK WAY (50' PUBLIC R/W)

BLUEWING TEAL MEWS (50' PUBLIC R/W)

PUBLIC UTILITY EASEMENT

MATCHLINE SEE SHEET CS-101

MATCHLINE SEE SHEET CS-103

OPEN SPACE

HIGH-VISIBILITY CROSSWALK (TYP.)

W11-2 SIGN PEDESTRIAN (TYP.)

PUBLIC DRAINAGE AND UTILITY EASEMENT

CROSSWALK (TYP.)

STOP SIGN & BAR (TYP.)

10' NON-MUNICIPAL EASEMENT (TYP)

5' CONCRETE SIDEWALK (TYP.)

24" TYPE 'A' CONCRETE CURB & GUTTER (TYP.)

PROPOSED STORMWATER BMP #3

FUTURE AGE QUALIFIED AMENITY AREA (2.47 ACRES)

10' LAKE TRAIL (FUTURE)

RIVERLIGHTS LAKE

REV.NO.	DESCRIPTIONS	DATE
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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

SITE PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CS-102
DRAWING NUMBER 12

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

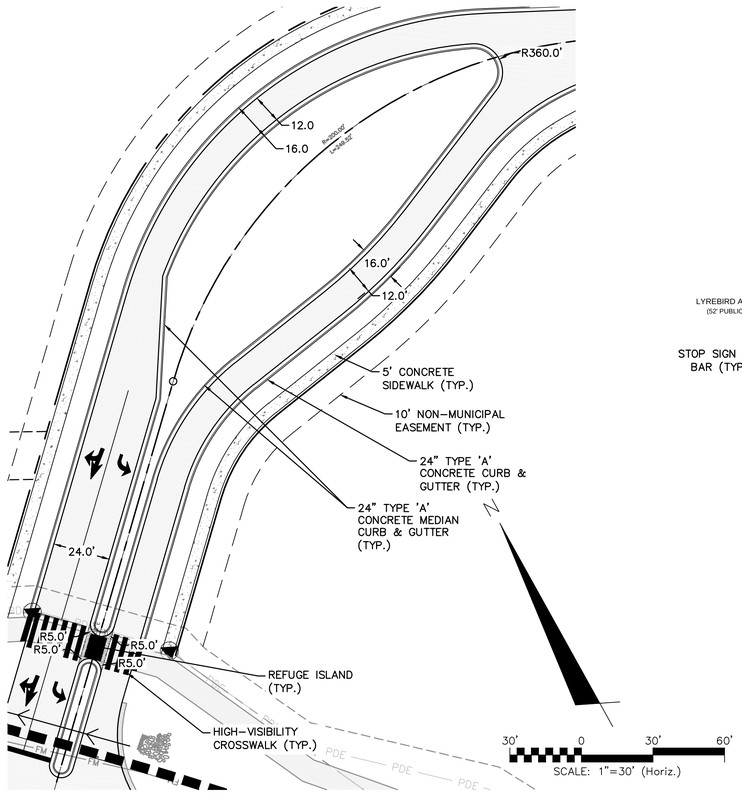
S:\2735\0125 Ph 1 AR\90-Drawings\CS\101-02735012S.dwg, 4/6/2016 5:04:48 PM, EMcArthur,
1:1

GENERAL NOTES:

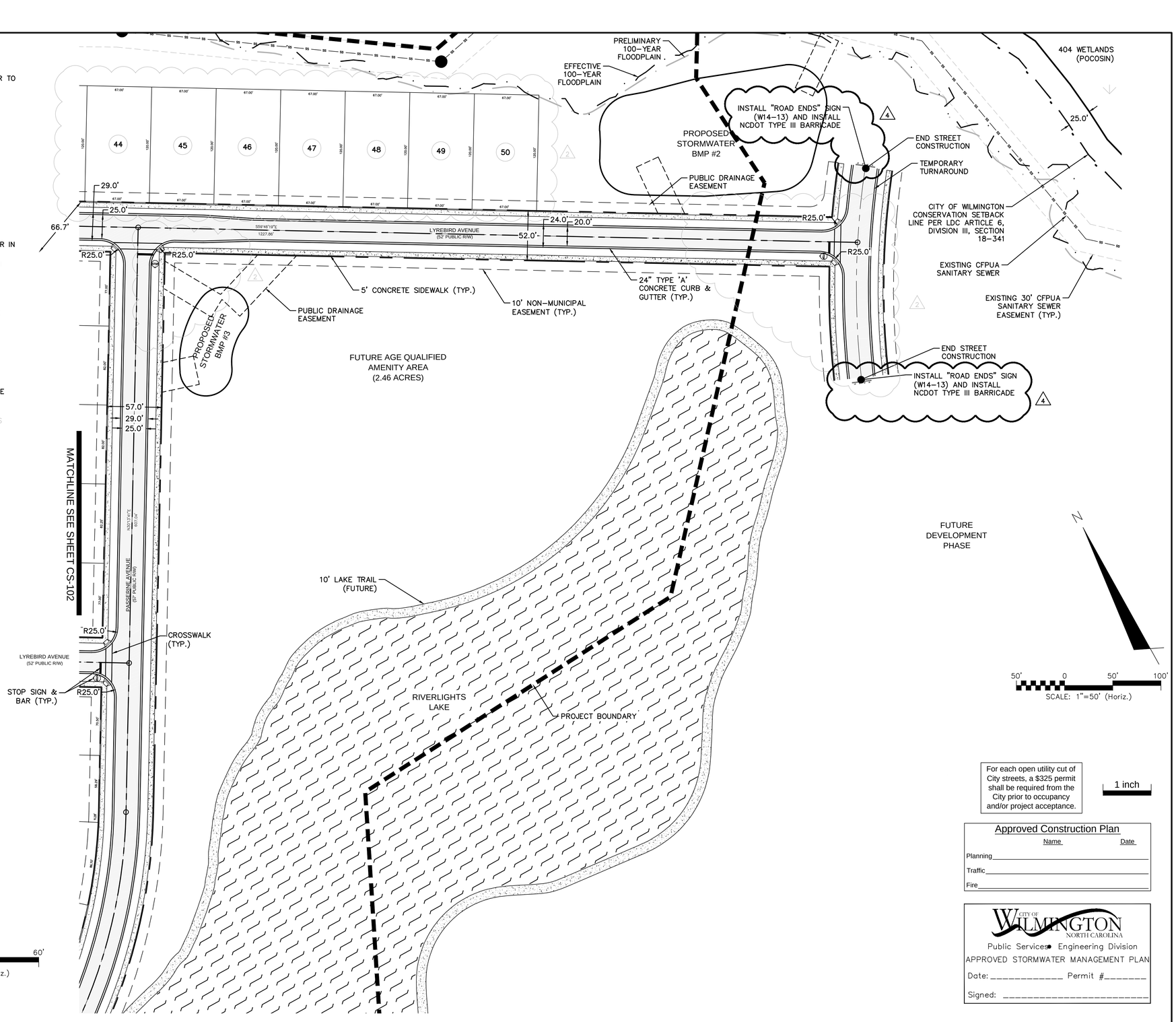
1. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
2. 10 FT SEPARATION REQUIRED BETWEEN BUILDINGS.
3. ZERO LOT LINES ARE PERMITTED IN CLUSTER SUBDIVISIONS.
4. ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
   - NORTH – FUTURE R7-CD CLUSTER / TRANSITION
   - SOUTH – FUTURE R7-CD CLUSTER / TRANSITION
   - EAST – FUTURE R7-CD CLUSTER / TRANSITION
   - WEST – I-2 / TRANSITION AND CONSERVATION AREA
5. SEE SHEET CT-301 FOR STREET TYPICAL SECTIONS
6. SEE SHEET CG-503 AND CG-504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.
7. SEE SHEET G-002 FOR FULL UTILITY NOTES
8. ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS.
9. ALL SIGN AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS.
10. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
11. 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.
12. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
13. 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.
14. ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING MUST BE REPLACED.
15. CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
16. IF THESE UNITS ARE SOLD AT ANY POINT, THE BUYER MUST RECEIVE A SUBDIVISION STREET DISCLOSURE STATEMENT.
17. A SIGN SHALL BE PLACED AT THE NORTH BOUNDARY OF THE PROPERTY INDICATING THAT A FUTURE CONNECTION WILL BE OPENED WHEN THE PROPERTY TO THE NORTH DEVELOPS.

△2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, LOT LINE AND GRADING REVISIONS, AND REMOVAL OF TRAFFIC MEDIAN AND RIGHT TURN BYPASS LANE ON LYREBIRD WAY.

△4 ADDITION OF TEMPORARY NCDOT TYPE III BARRICADES.



MAIN ENTRY TRAFFIC ISLAND INSET



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
	REVISIONS	
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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

SITE PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CS-103
DRAWING NUMBER 13

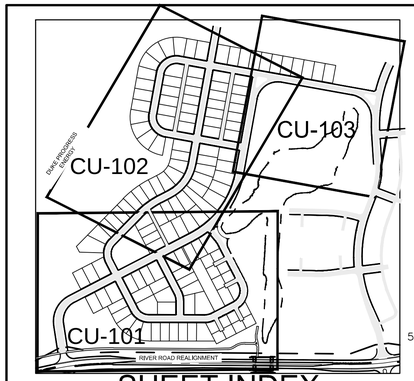
STATUS: **FINAL DESIGN** ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\6D-Drawings\CS\101\02735012S.dwg, 4/6/2016 5:05:24 PM, EMcArthur,

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REMOVAL OF SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, REVISIONS TO LOT LINES, LOT NUMBERS, STORMWATER NETWORK, SOTMRWATER EASEMENTS AND UTILITY EASEMENTS.

3 SANITARY SEWER MODIFICATIONS. REMOVAL OF WALKFINDERS ALLEY. LOT LINE AND LOT NUMBER REVISIONS.



SHEET INDEX

NOT TO SCALE

N

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

MATCHLINE SEE SHEET CU-102

DUKE-PROGRESS ENERGY

50' EXISTING PIEDMONT NATURAL GAS EASEMENT

PROJECT BOUNDARY

LEGEND

- SS — SANITARY SEWER LINE
- 8W 8W — WATER MAIN
- STORMWATER DRAINAGE
- SS — EXISTING SANITARY SEWER LINE
- W — EXISTING WATER MAIN
- FM — EXISTING FORCE MAIN
- STORMWATER CATCH INLET
- STORMWATER OUTLET
- EXISTING MANHOLE
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEANOUT
- WATER METER
- FIRE HYDRANT ASSEMBLY (FHA)
- ROADWAY CENTERLINE
- ROW
- LOT LINE
- PRELIMINARY 100-YR FLOOD LINE
- EFFECTIVE 100-YR FLOOD LINE
- COD — COD — CONSERVATION RESOURCE SETBACK
- UTILITY EASEMENT
- EXISTING WETLANDS

NOTE:
1. SEE SHEET CG-503/504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.
2. SEE SHEET C-002 FOR FULL UTILITY NOTES
3. SEE SHEET CU-103 FOR SEWER STRUCTURE/PIPE SCHEDULE.
4. FLOODPLAIN INFORMATION WAS OBTAINED FROM NC FLOODPLAIN MAPPING FLOOD RISK INFORMATION SYSTEM PROGRAM. RIVERLIGHTS IS LOCATED WTHIN FIRM MAP 3720312400K, PANEL 3124 AS REVISED JUNE 02, 2006. SANITARY SEWER RIMS WILL BE DESIGNED AT A MINIMUM OF 2' ABOVE THE BASE FLOOD ELEVATION OF 9'.

WATER AND SEWER DEMAND:
1. WATER 0 GPD (CURRENT USE)
2. WATER 50,760 GPD (PROPOSED USE)
3. SEWER 0 GPD (CURRENT USE)
4. SEWER 50,760 GPD (PROPOSED USE)

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

REV.NO.	DESCRIPTIONS REVISIONS	DATE
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NASH — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED - PHASE 1

UTILITY PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU-101
DRAWING NUMBER 14

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\80 Drawings\CU\01\02735012S.dwg, 4/6/2016 5:08:58 PM, EMcArthur, 1:1

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

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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

NOTE:
1. SEE SHEET CG-503/504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.
2. SEE SHEET G-002 FOR FULL UTILITY NOTES
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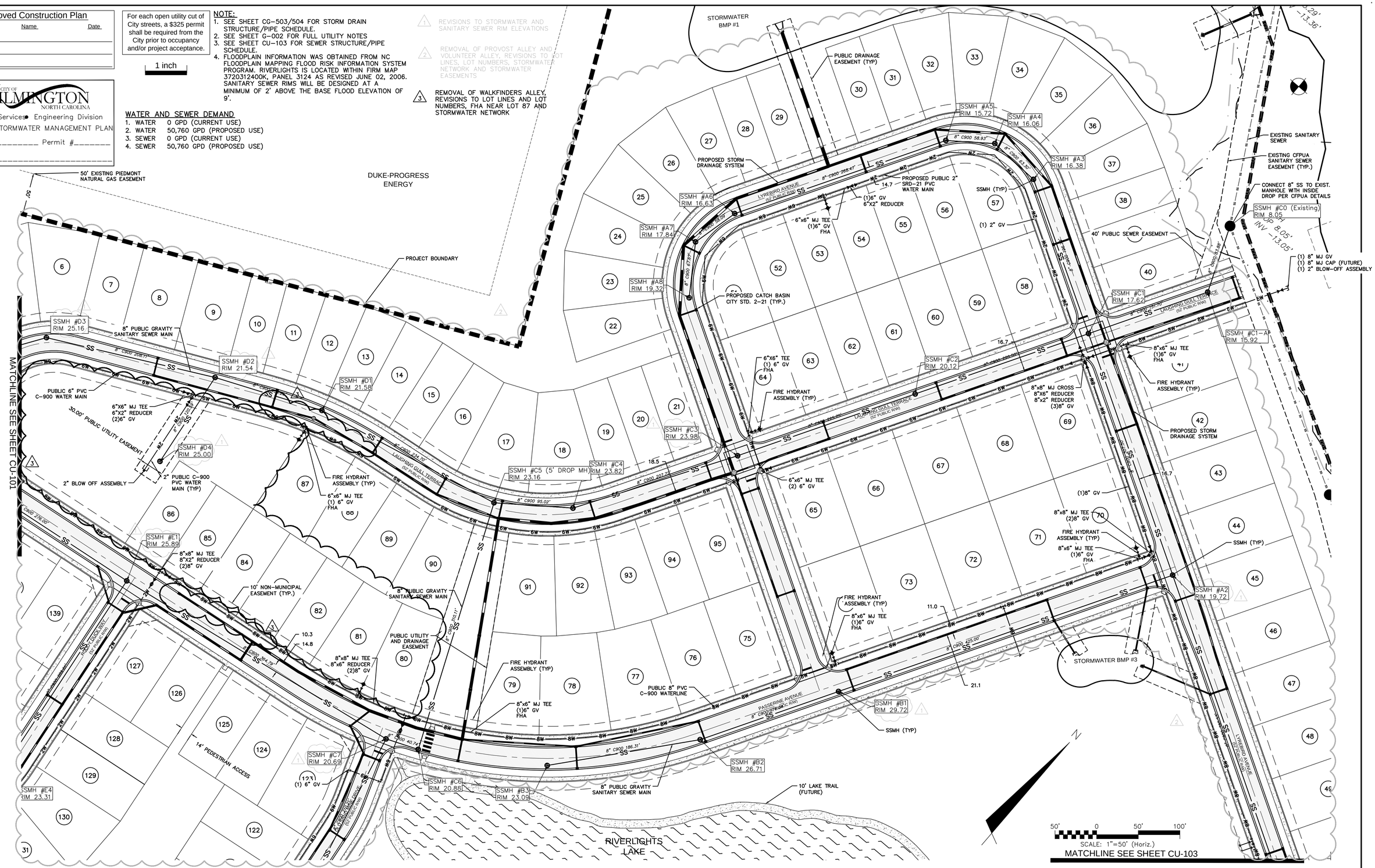
WATER AND SEWER DEMAND
1. WATER 0 GPD (CURRENT USE)
2. WATER 50,760 GPD (PROPOSED USE)
3. SEWER 0 GPD (CURRENT USE)
4. SEWER 50,760 GPD (PROPOSED USE)

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REMOVAL OF PROVOST ALLEY AND 2' VOLUNTEER ALLEY, REVISIONS TO LOT LINES, LOT NUMBERS, STORMWATER NETWORK AND STORMWATER EASEMENTS

3 REMOVAL OF WALKFINDERS ALLEY, REVISIONS TO LOT LINES AND LOT NUMBERS, FHA NEAR LOT 87 AND STORMWATER NETWORK



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RIVERLIGHTS AGE QUALIFIED – PHASE 1

UTILITY PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

M&C FILE NUMBER CU-102

DRAWING NUMBER 15

STATUS: FINAL DESIGN ISSUED FOR CONSTRUCTION

REVISION 4

S:\2735\0125 Ph 1 AR\60-Drawings\CU101-02735012S.dwg, 4/6/2016 5:09:29 PM, EMcArthur, 1:1

SANITARY SEWER PIPE DATA TABLE

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	DOWNSTREAM INVERT	UPSTREAM INVERT
G4	G3	87.64'	8"	C900 PVC DR18	0.40%	17.24	17.59
G3	G2	69.36'	8"	C900 PVC DR18	0.40%	16.96	17.24
G2	G1	326.05'	8"	C900 PVC DR18	0.40%	15.66	16.96
G1	C13	71.37'	8"	C900 PVC DR18	0.40%	15.37	15.66
E4	E1	289.61'	8"	C900 PVC DR18	0.40%	16.11	17.27
E3	E2	171.00'	8"	C900 PVC DR18	0.40%	16.57	17.25
E2	E1	276.00'	8"	C900 PVC DR18	0.40%	15.46	16.57
E1	C7	364.79'	8"	C900 PVC DR18	1.09%	11.48	15.46
D5	D3	40.65'	8"	C900 PVC DR18	1.13%	19.40	19.86
D4	D2	120.59'	8"	C900 PVC DR18	2.50%	15.73	18.74
D3	D2	208.11'	8"	C900 PVC DR18	1.76%	15.73	19.40
D2	D1	134.26'	8"	C900 PVC DR18	0.41%	15.18	15.73
D1	C5 (5' DROP MH)	234.70'	8"	C900 PVC DR18	0.40%	14.24	15.18
C13	C12	136.00'	8"	C900 PVC DR18	0.40%	14.82	15.37
C12	C11	88.19'	8"	C900 PVC DR18	0.40%	14.47	14.82
C11	C9	120.90'	8"	C900 PVC DR18	0.40%	13.98	14.47
C9	C8	146.00'	8"	C900 PVC DR18	0.40%	13.40	13.98
C8	C7	210.21'	8"	C900 PVC DR18	0.40%	12.56	13.40
C7	C6	40.74'	8"	C900 PVC DR18	0.40%	11.32	11.48
C6	C5 (5' DROP MH)	310.11'	8"	C900 PVC DR18	0.40%	10.08	11.32
C5 (5' DROP MH)	C4	95.02'	8"	C900 PVC DR18	0.40%	9.19	9.57
C4	C3	207.72'	8"	C900 PVC DR18	0.40%	8.36	9.19
C3	C2	225.75'	8"	C900 PVC DR18	0.40%	7.46	8.36
C2	C1	220.50'	8"	C900 PVC DR18	0.40%	6.58	7.46
C1-A	C0 (Existing)	83.88'	8"	C900 PVC DR18	3.08%	3.38	5.97
C1	C1-A	151.70'	8"	C900 PVC DR18	0.40%	5.97	6.58
B3	B2	186.31'	8"	C900 PVC DR18	0.40%	17.45	18.20
B2	B1	176.04'	8"	C900 PVC DR18	0.40%	16.75	17.45
B1	A2	425.00'	8"	C900 PVC DR18	0.40%	15.05	16.75
A8	A7	67.67'	8"	C900 PVC DR18	2.17%	12.03	13.50
A7	A6	58.09'	8"	C900 PVC DR18	2.17%	10.77	12.03
A6	A5	268.47'	8"	C900 PVC DR18	0.40%	9.70	10.77
A5	A4	58.93'	8"	C900 PVC DR18	0.40%	9.47	9.70
A4	A3	63.30'	8"	C900 PVC DR18	0.40%	9.21	9.47
A3	C1	196.79'	8"	C900 PVC DR18	0.40%	8.43	9.21
A2	C1	307.50'	8"	C900 PVC DR18	2.15%	8.43	15.05
A1	A2	390.53'	8"	C900 PVC DR18	0.40%	15.05	16.61
A0	A1	32.32'	8"	C900 PVC DR18	0.40%	16.61	16.74

3

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REVISIONS TO LOT LINES, LOT NUMBERS, STORMWATER NETWORK, AND STORMWATER EASEMENTS

3 SANITARY SEWER REVISIONS. ADDITION OF UTILITY SERVICES FOR THE FUTURE AMENITY AREA.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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.

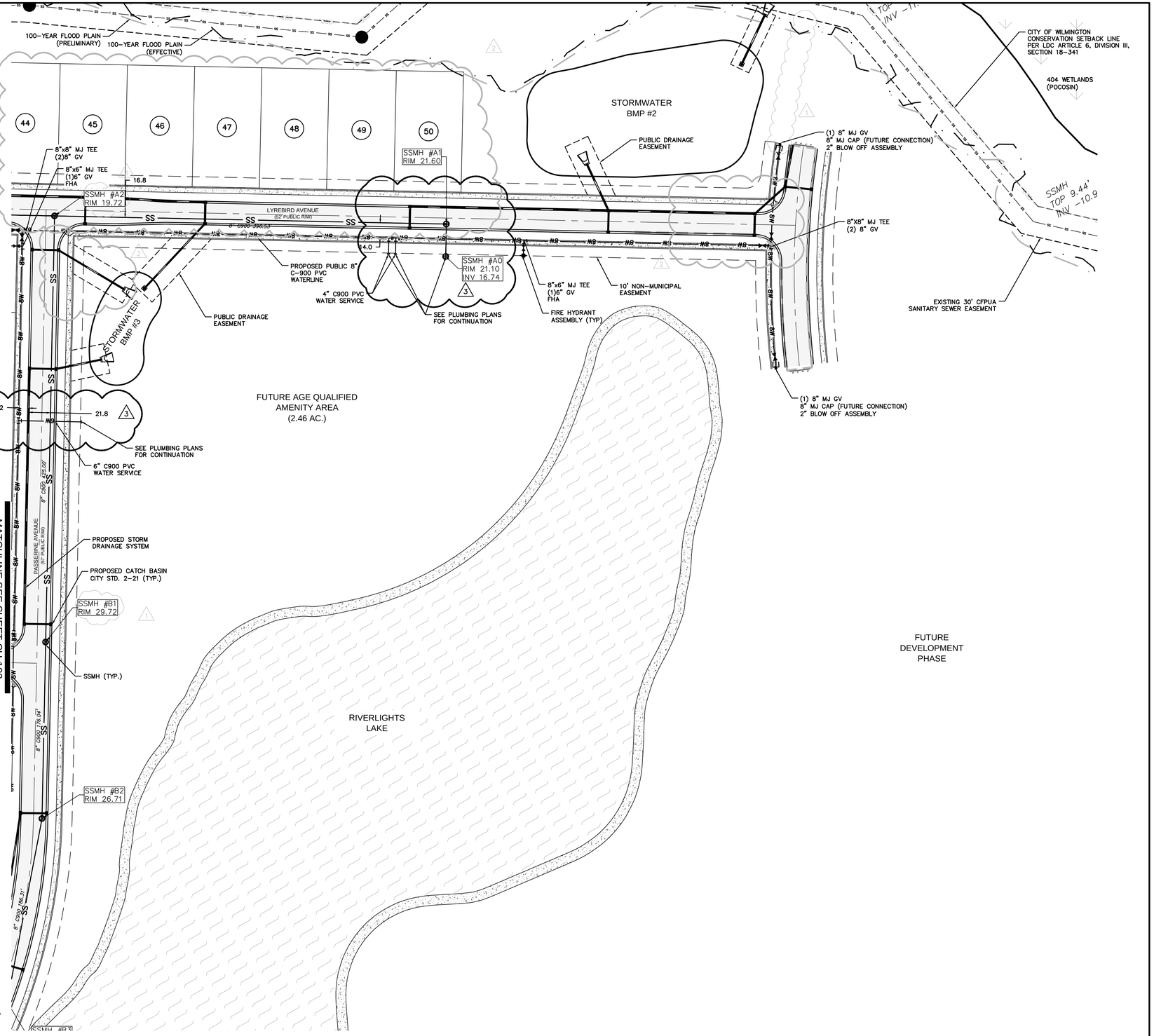
1 inch

N

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)

WATER AND SEWER DEMAND:
1. WATER 0 GPD (CURRENT USE)
2. WATER 50,760 GPD (PROPOSED USE)
3. SEWER 0 GPD (CURRENT USE)
4. SEWER 50,760 GPD (PROPOSED USE)

NOTE:
1. SEE SHEET CG-503/504 FOR STORM DRAIN STRUCTURE/PIPE SCHEDULE.
2. SEE SHEET 2 (G-002) FOR FULL UTILITY NOTES
3. 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. SANITARY SEWER RIMS WILL BE DESIGNED AT A MINIMUM OF 2' ABOVE THE BASE FLOOD ELEVATION OF 9'.



REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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www.mckimcreed.com

NASH — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

UTILITY PLAN

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU-103
DRAWING NUMBER 16

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\27350125 Ph 1 AR\80\Drawings\CU\01-02735012S.dwg, 4/6/2016 5:10:04 PM, EMcArthur.

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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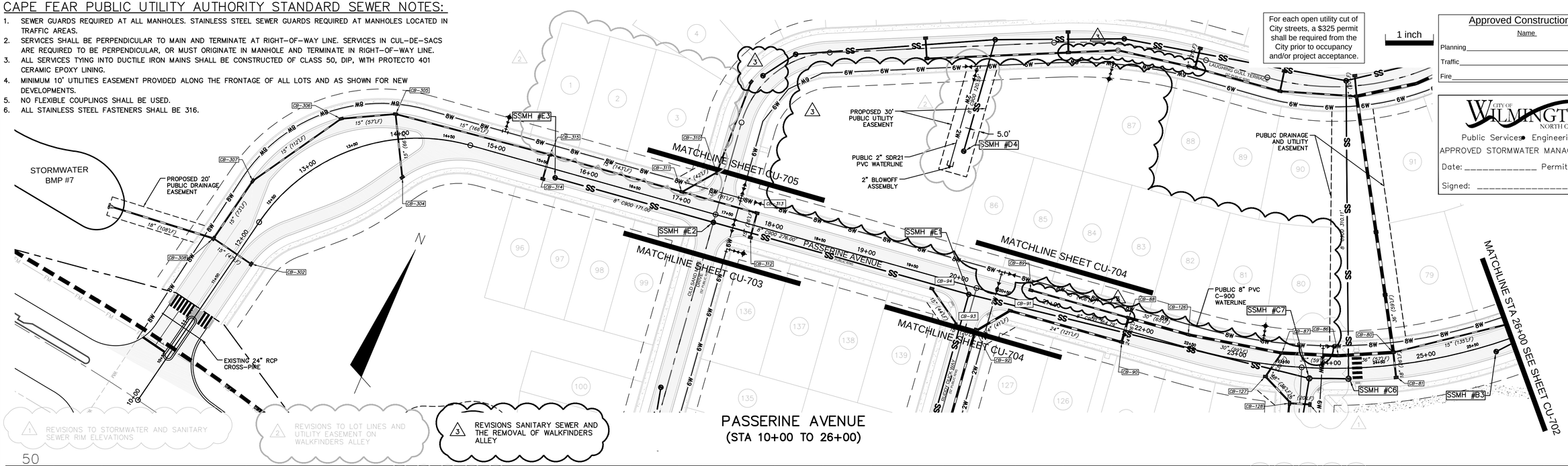
For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

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: _____

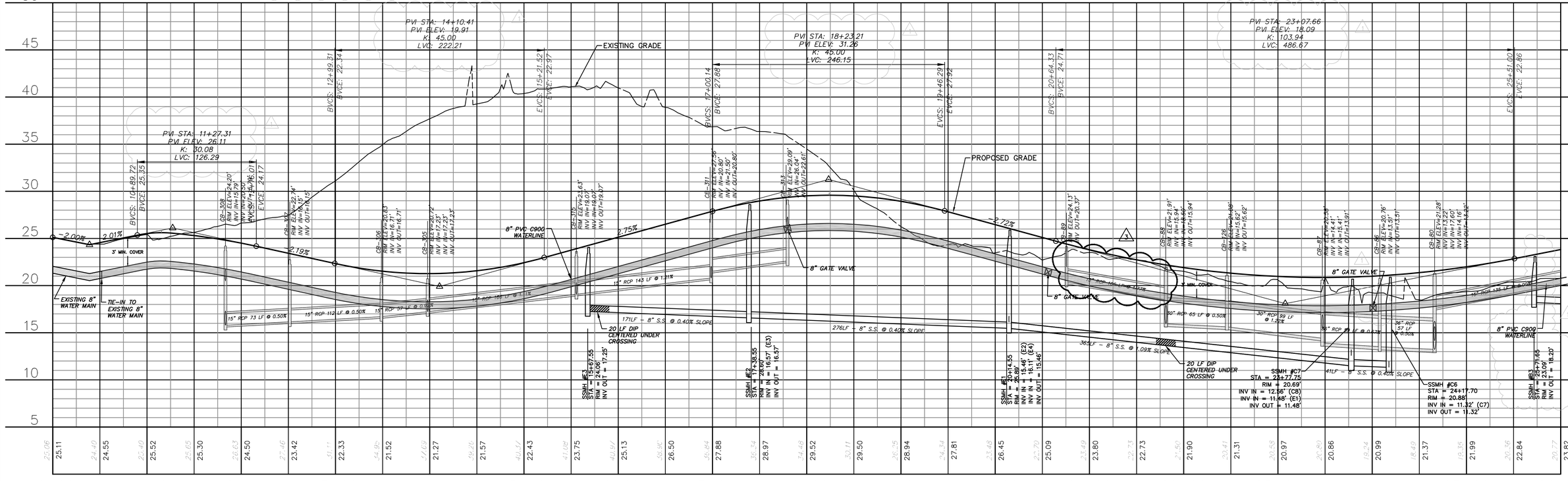


1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REVISIONS TO LOT LINES AND UTILITY EASEMENT ON WALKFINDERS ALLEY

3 REVISIONS SANITARY SEWER AND THE REMOVAL OF WALKFINDERS ALLEY

PASSERINE AVENUE
(STA 10+00 TO 26+00)



PASSERINE AVENUE
(STA 10+00 TO 26+00)

SCALE: 1"=50' (Horiz.)
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
PASSERINE AVENUE
STA 10+00 TO STA 26+00

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER: CU-701
DRAWING NUMBER: 17

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\27350\125 Ph 1 AR\90-Drawings\CU701-027350125.dwg, 4/6/2016 5:13:13 PM, EMcArthur, 1:1

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

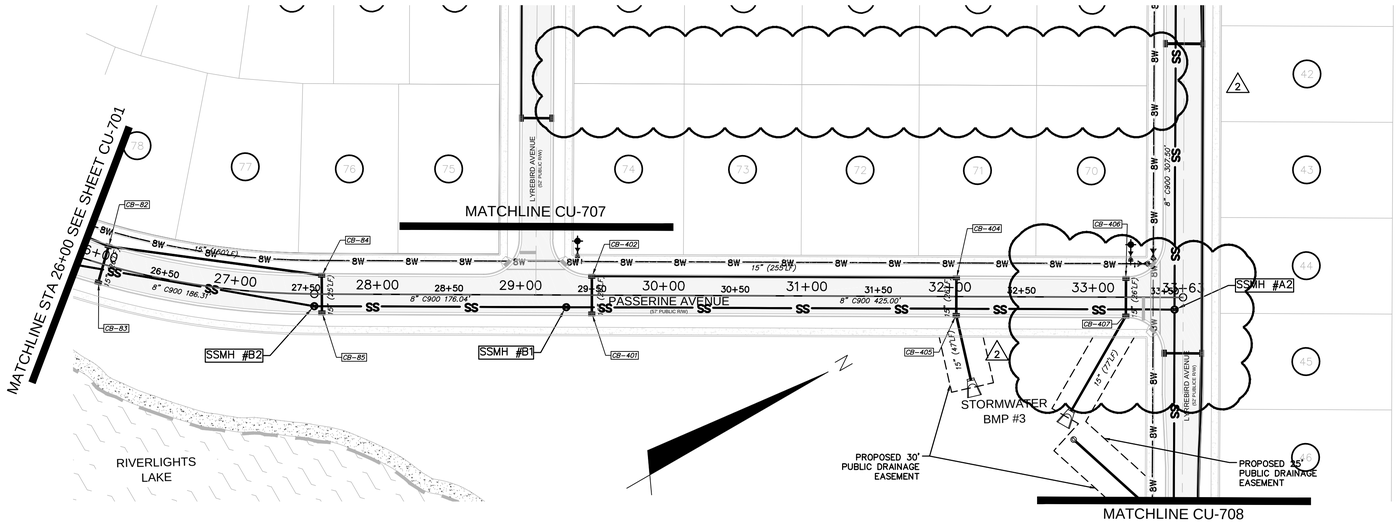
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

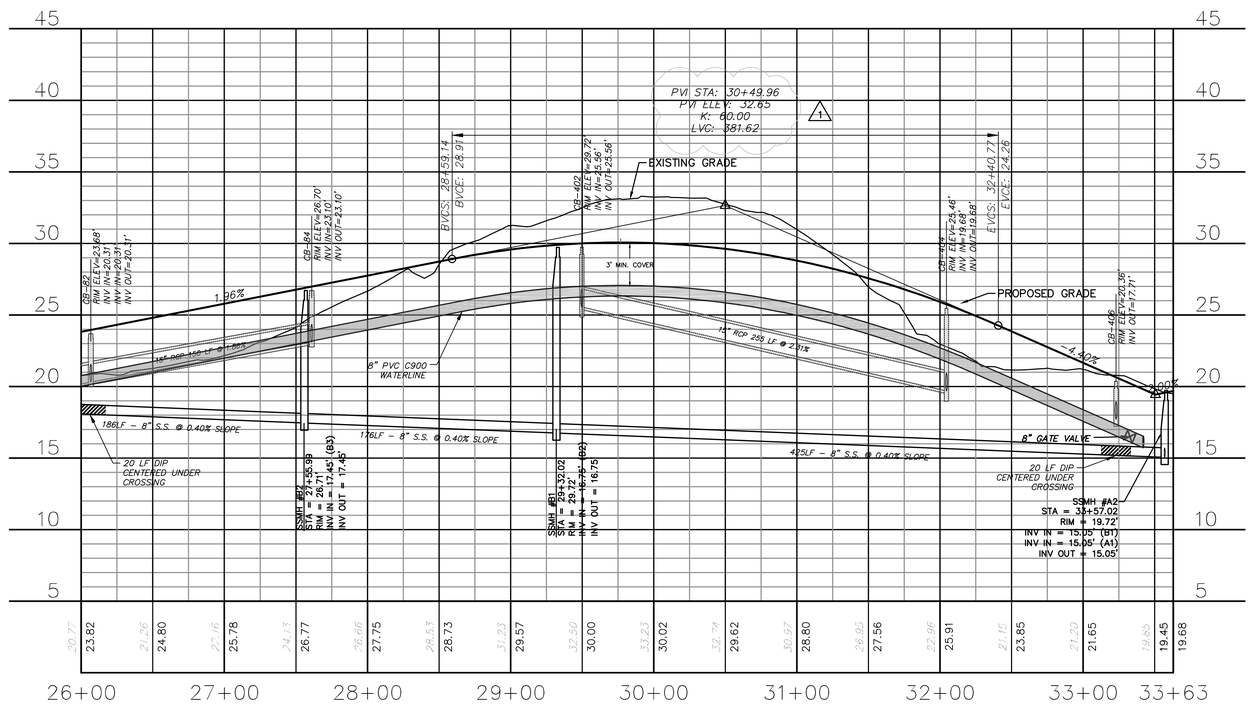
Signed: _____

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



PASSERINE AVENUE
(STA 26+00 TO 33+63.02)



PASSERINE AVENUE
(STA 26+00 TO 33+63.02)

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REMOVAL OF PROVOST ALLEY, REVISIONS TO LOT LINES AND STORMWATER DRAINAGE NETWORK

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)

5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
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1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
PASSERINE AVENUE
STA 26+00 TO STA 33+72.61

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-702
DRAWING NUMBER 18

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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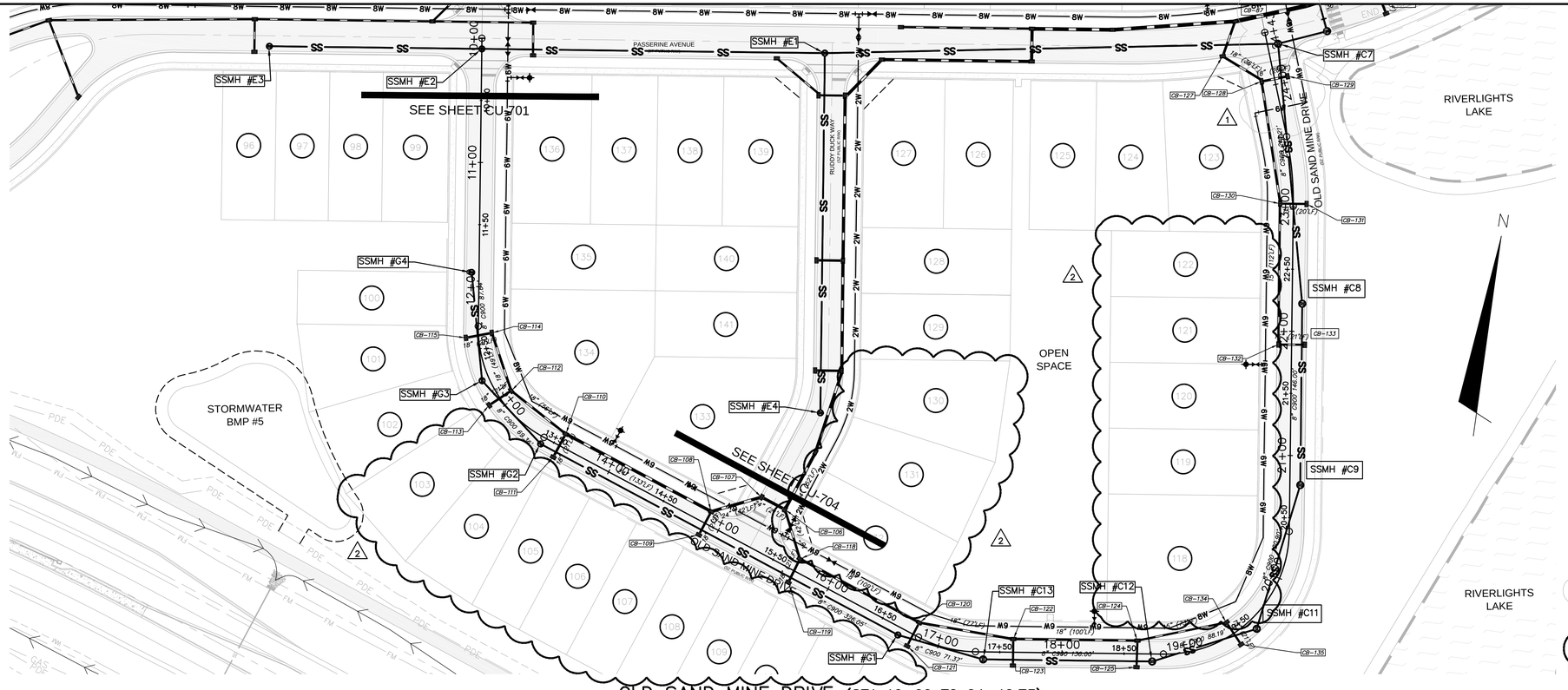

OLD SAND MINE DRIVE (STA 10+00 TO 24+42.73)

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

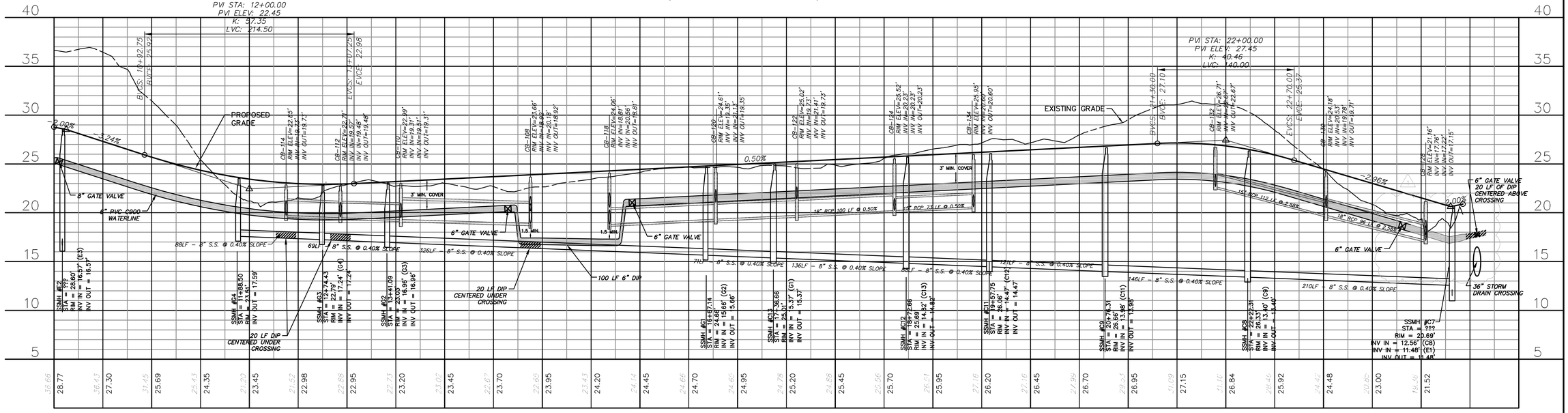
CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit #_____
Signed: _____

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

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REMOVAL OF SIDDONS COURT, BULLRUSH COURT, WHARTON COURT, AND FOXSEDGE COURT, REVISIONS TO LOT LINES AND ASSOCIATED STORMWATER CHANGES.



OLD SAND MINE DRIVE
(STA 10+00 TO 24+42.73)

SCALE: 1"=50' (Horiz.)
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

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NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
OLD SAND MINE DRIVE
STA 10+00 TO STA 24+42.73

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-703
DRAWING NUMBER 19

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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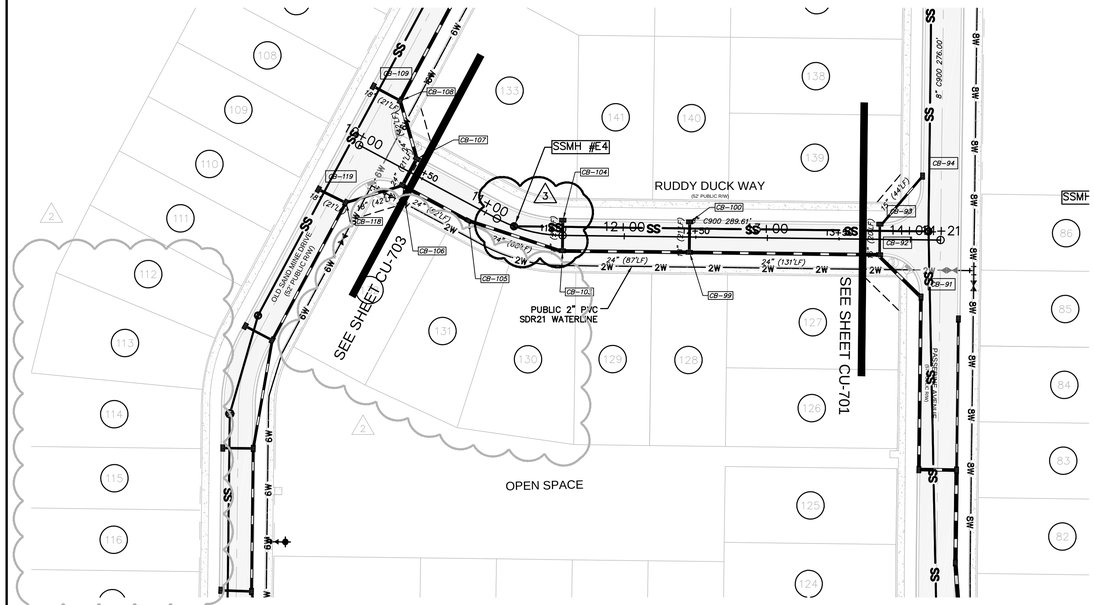
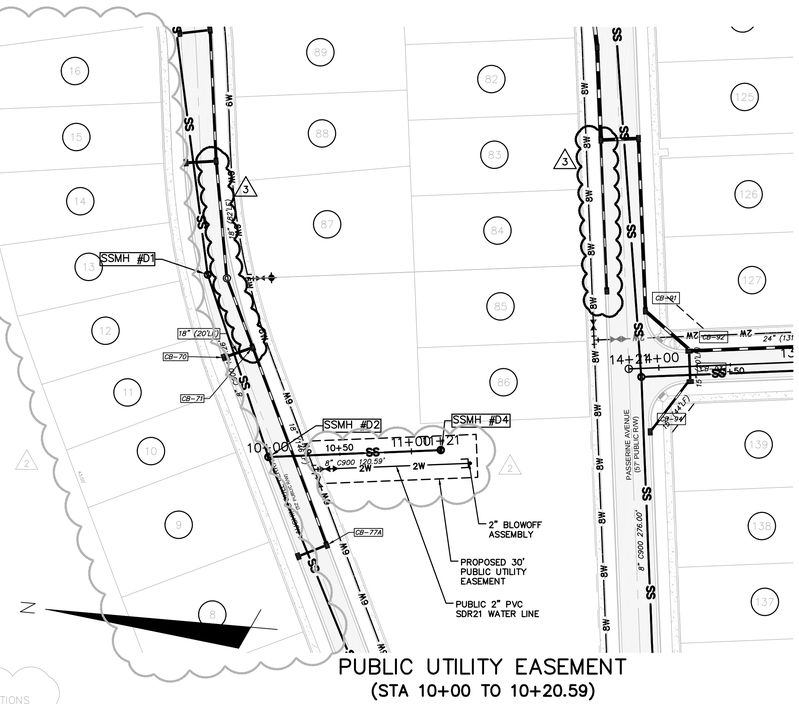


RUDDY DUCK WAY
(STA 10+00 TO 14+20.99)

RUDDY DUCK WAY
(STA 10+00 TO 14+20.99)

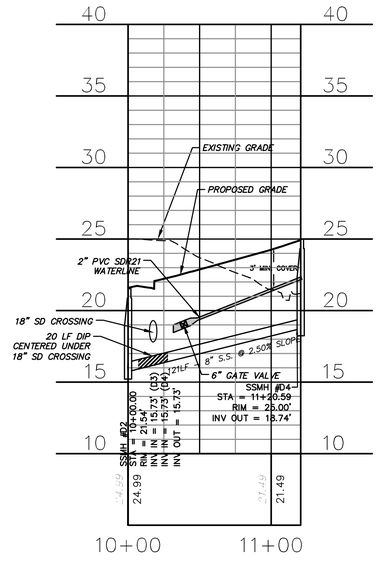


PUBLIC UTILITY EASEMENT
(STA 10+00 TO 10+20.59)

1 REVISIONS TO STORMWATER RIM ELEVATIONS

2 REMOVAL OF SIDDONS COURT AND BULLRUSH COURT, REVISIONS TO LOT LINE, LOT NUMBERS AND UTILITY EASEMENT

3 SANITARY SEWER AND STORMWATER REVISIONS



PUBLIC UTILITY EASEMENT
(STA 10+00 TO 10+20.59)

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.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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50' 0 50' 100'
SCALE: 1"=50' (Horiz.)
5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
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NASH — North America Sekisui House, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
RUDDY DUCK WAY
WALKFINDERS ALLEY

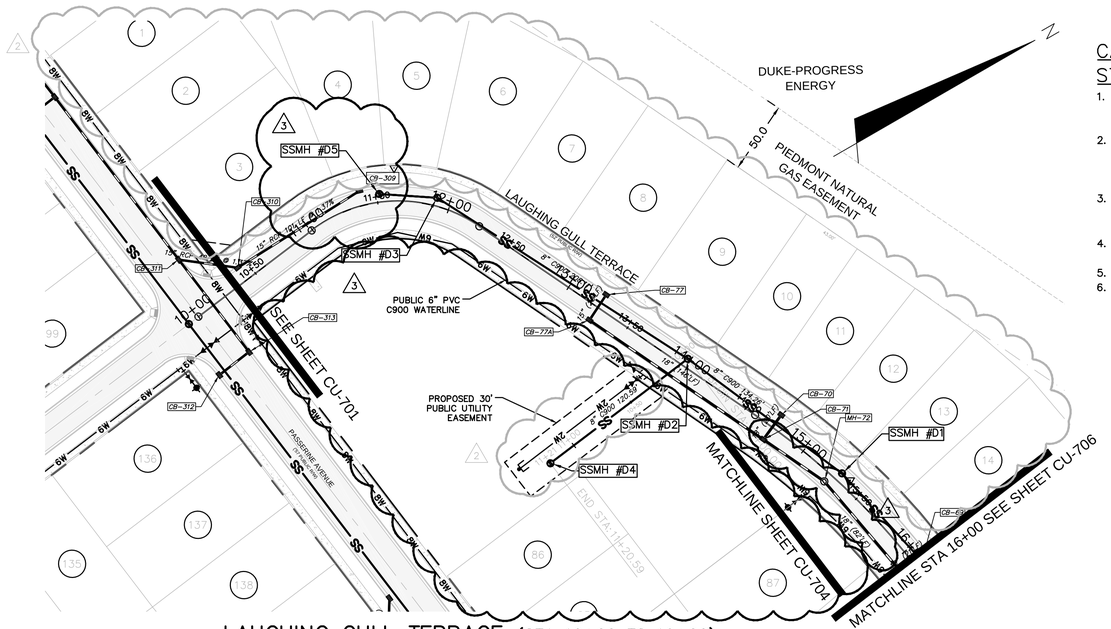
DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

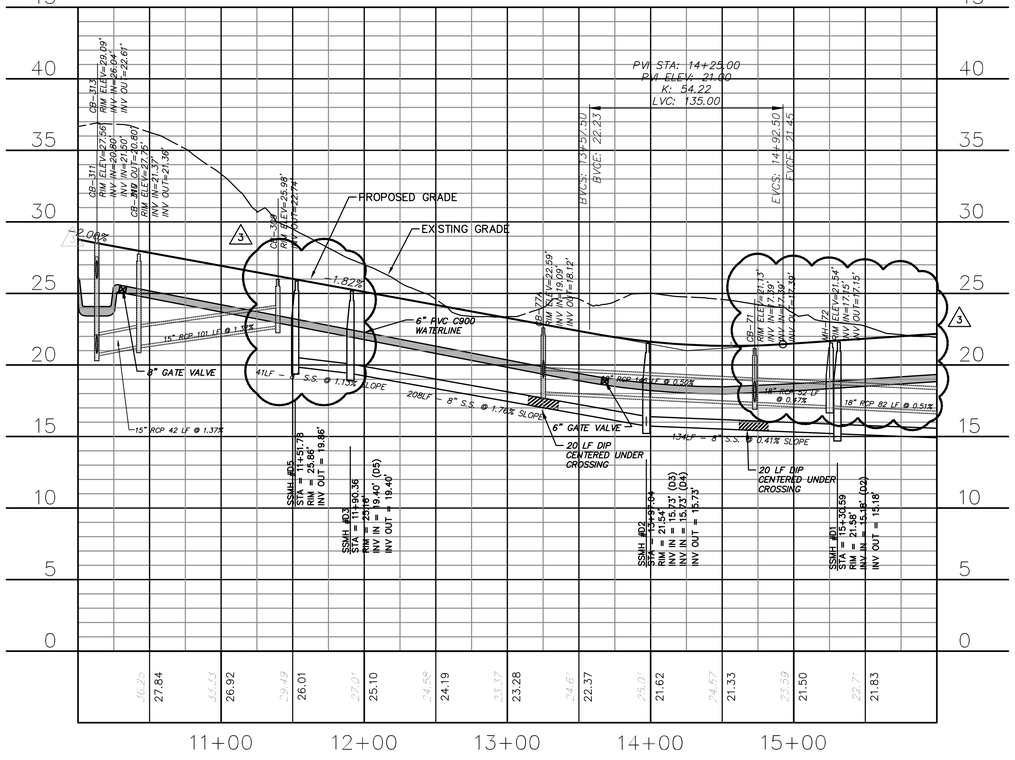
M&C FILE NUMBER CU-704
DRAWING NUMBER 20

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\90-Drawings\CU704\02735012S.dwg, 4/6/2016 5:21:13 PM, EMcArthur, 1:1



LAUGHING GULL TERRACE (STA 10+00 TO 16+00)



CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER 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: _____

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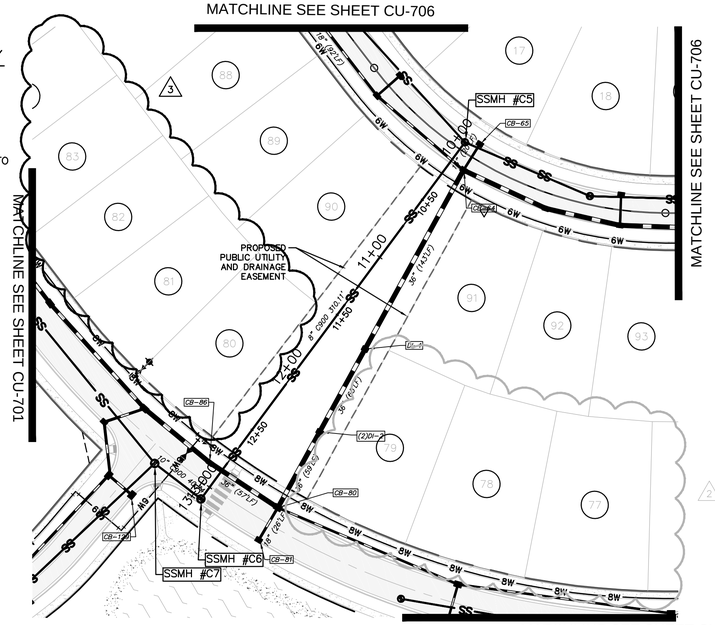
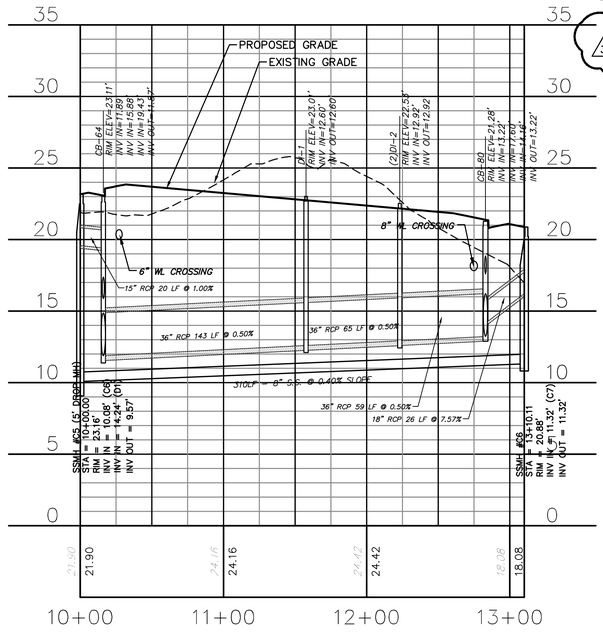
1 inch



PUBLIC UTILITY EASEMENT (STA 10+00 TO 13+10.11)



PUBLIC UTILITY EASEMENT (STA 10+00 TO 13+10.11)

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REVISIONS TO LOT LINES, LOT NUMBERS, AND UTILITY EASEMENT

3 SANITARY SEWER AND STORMWATER MODIFICATIONS AND REVISIONS FOR THE REMOVAL OF WALKFINDERS ALLEY

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)
5' 0 5' 10'
SCALE: 1"=5' (Vert.)

LAUGHING GULL TERRACE (STA 10+00 TO 16+00)

PUBLIC UTILITY EASEMENT (STA 10+00 TO 13+10.11)

REV.NO.	DESCRIPTIONS REVISIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/28/2015

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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 — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

PLAN AND PROFILE SHEET LAUGHING GULL TERRACE STA 10+00 TO STA 16+00

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-705
DRAWING NUMBER 21

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 ARNB\Drawings\CU705-02735012S.dwg, 4/6/2016 5:24:10 PM, EMcArthur, 1:1

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____

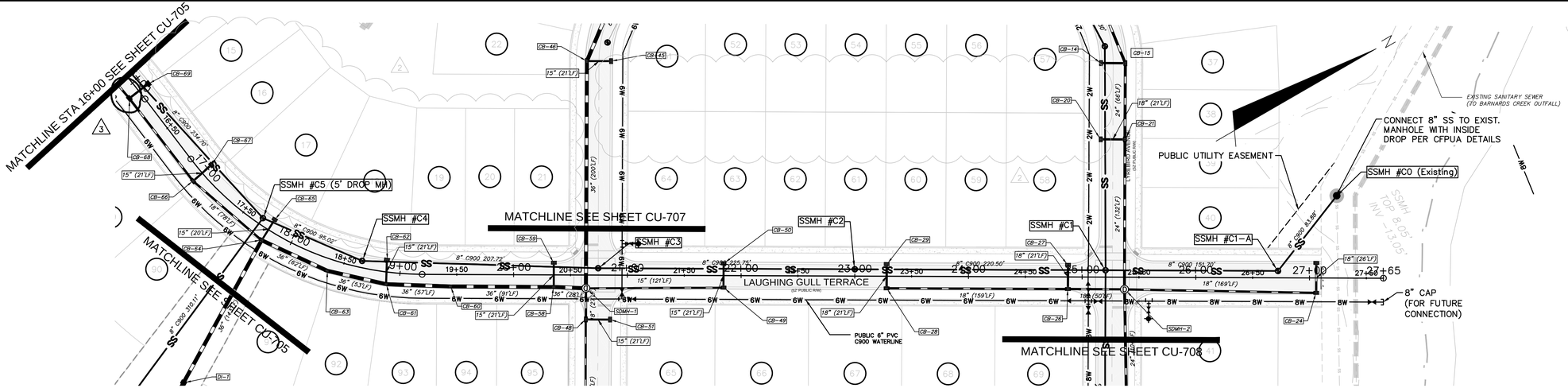
For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

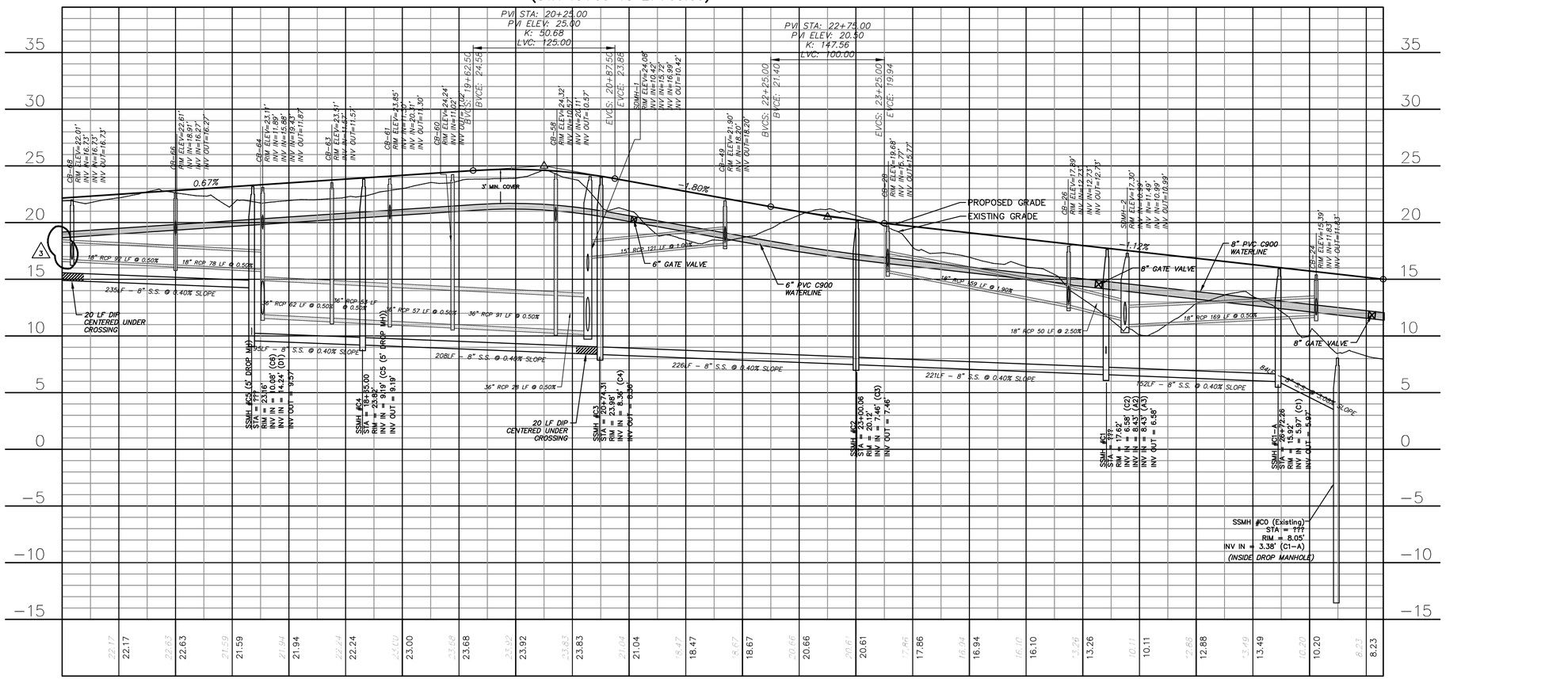
1 REVISIONS TO STORMWATER RIM ELEVATIONS

2 REMOVAL VOLUNTEER ALLEY AND REVISED LOT LINES AND LOT NUMBERS

3 STORMWATER REVISIONS DUE TO REMOVAL OF WALKFINDERS ALLEY



LAUGHING GULL TERRACE
(STA 15+00 TO 27+65.06)



LAUGHING GULL TERRACE
(STA 15+00 TO 27+65.06)

SCALE: 1"=50' (Horiz.) SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
LAUGHING GULL TERRACE
STA 16+00 TO STA 27+65.06

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-706
DRAWING NUMBER 22

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION

REVISION 4

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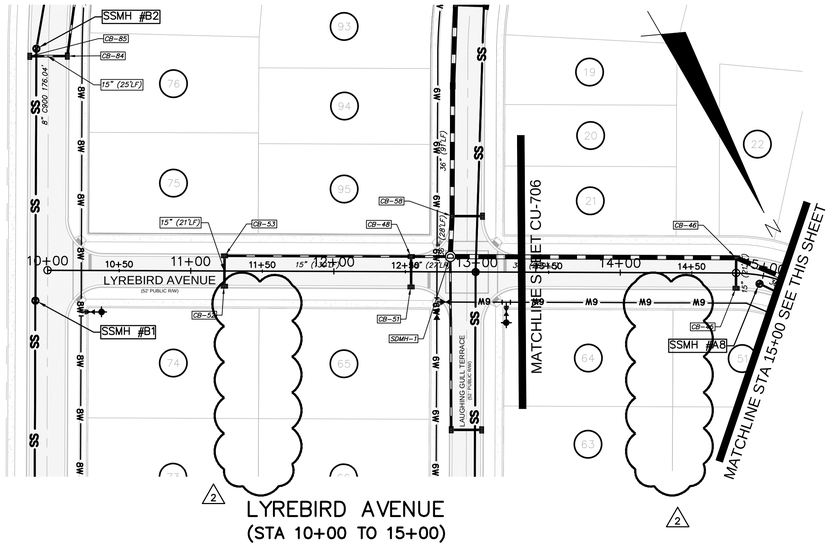
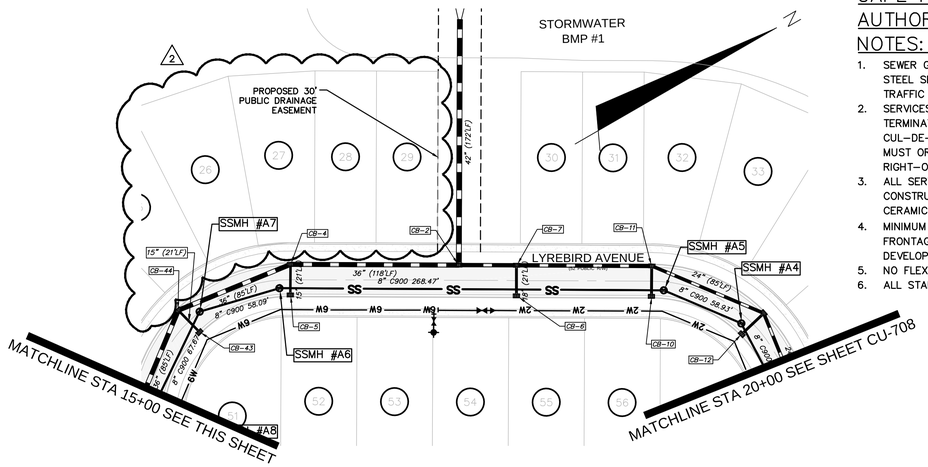


LYREBIRD AVENUE
(STA 10+00 TO 15+00)



LYREBIRD AVENUE
(STA 15+00 TO 20+00)

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

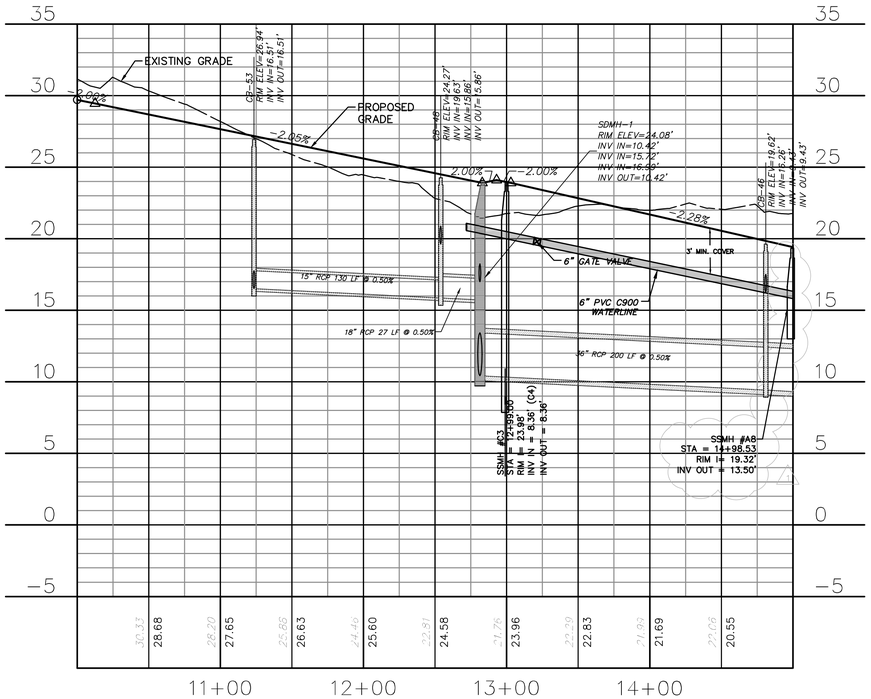
CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit #_____
Signed: _____

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

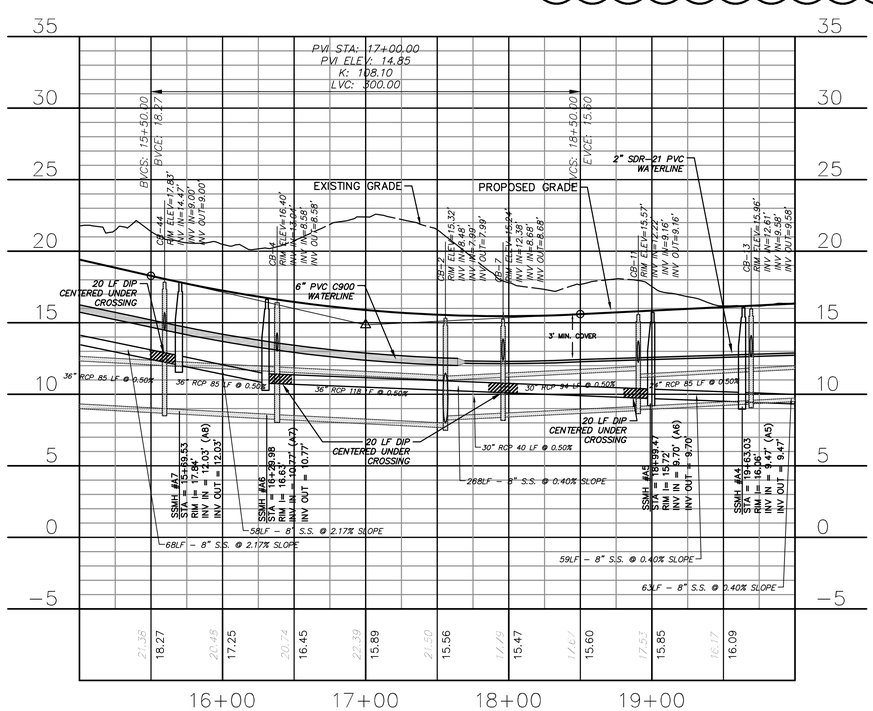
2 REMOVAL OF PROVOST ALLEY, VOLUNTEER ALLEY, REVISISIONS TO LOT LINES AND LOT NUMBERS AND ASSOCIATED STORMWATER CHANGES.

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



LYREBIRD AVENUE
(STA 10+00 TO 15+00)



LYREBIRD AVENUE
(STA 15+00 TO 20+00)

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)
5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/22/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

PLAN AND PROFILE LYREBIRD WAY STA 10+00 TO STA 20+00

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-707
DRAWING NUMBER 23

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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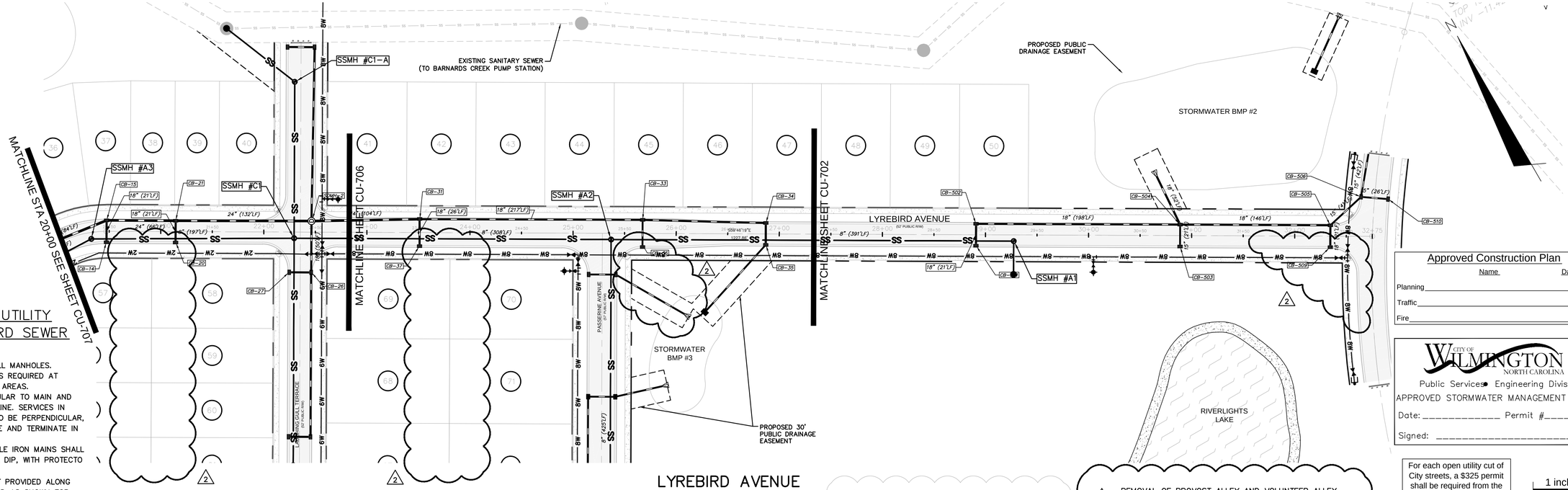


CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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

LYREBIRD AVENUE (STA 20+00 TO 32+74.51)

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

2 REMOVAL OF PROVOST ALLEY AND VOLUNTEER ALLEY, REVISED STORMWATER DRAINAGE NETWORK AND STORMWATER EASEMENTS

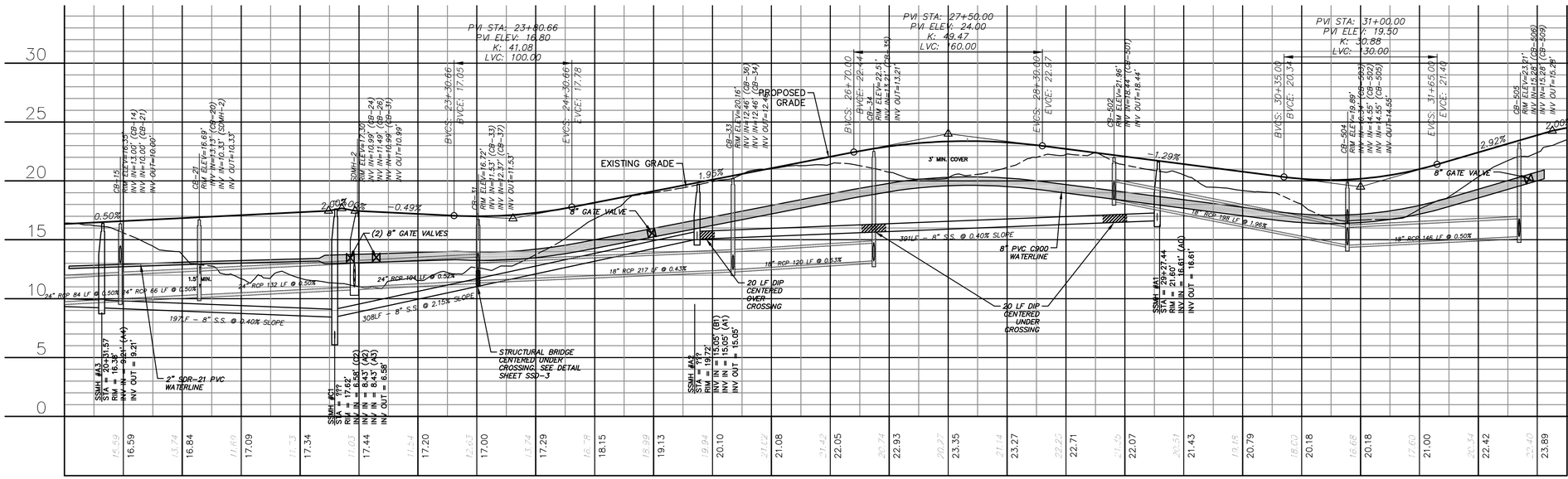
Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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



LYREBIRD AVENUE (STA 20+00 TO 32+74.51)

50' 0 50' 100' SCALE: 1"=50' (Horiz.)

5' 0 5' 10' SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS REVISIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

PLAN AND PROFILE LYREBIRD WAY STATION 20+00 TO 32+74.51

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE: HORIZONTAL: 1"=50' VERTICAL: N/A

M&C FILE NUMBER: CU-708
DRAWING NUMBER: 24

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\60\Drawings\CU708-02735\0125.dwg, 4/6/2016 5:32:18 PM, EMcArthur, 1:1

2 REMOVED

2 REMOVED

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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

1 REVISIONS TO STORMWATER RIM ELEVATIONS

2 REMOVED SIDDONS COURT AND BULLRUSH COURT

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

5' 0 5' 10'

SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

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www.mckimcreed.com

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

PLAN AND PROFILE SIDDONS COURT BULLRUSH COURT

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER: CU-709
DRAWING NUMBER: 25

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION

REVISION 4

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1:1

2 REMOVED

2 REMOVED

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

2 REMOVED FOX SEDGE COURT AND WHARTON COURT

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)
5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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

NASH NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS AGE QUALIFIED – PHASE 1

PLAN AND PROFILE FOX SEDGE COURT WHARTON COURT

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU-710
DRAWING NUMBER 26

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\80 Drawings\CU710-027350125.dwg, 4/6/2016 5:37:46 PM, EMcArthur, 1:1

2 REMOVED

2 REMOVED

2 REMOVED VOLUNTEER ALLEY AND PROVOST ALLEY

1 REVISIONS TO STORMWATER RIM ELEVATIONS AND SANITARY SEWER RIMS

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)

5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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License: F-1222
www.mckimcreed.com

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
VOLUNTEER ALLEY
PROVOST ALLEY

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CU-711
DRAWING NUMBER 26A

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR180 Drawings\CU711-02735012526.dwg, 4/6/2016 5:39:34 PM, EMcArthur, 1:1

2 REVISIONS TO LOT LINES, LOT NUMBERS, AND UTILITY EASEMENT

4 REMOVAL OF WALKFINDERS ALLEY

4 REMOVED

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

1. SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
2. SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE IN RIGHT-OF-WAY LINE.
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4. MINIMUM 10' UTILITIES EASEMENT PROVIDED ALONG THE FRONTAGE OF ALL LOTS AND AS SHOWN FOR NEW DEVELOPMENTS.
5. NO FLEXIBLE COUPLINGS SHALL BE USED.
6. ALL STAINLESS STEEL FASTENERS SHALL BE 316.

50' 0 50' 100'
SCALE: 1"=50' (Horiz.)

5' 0 5' 10'
SCALE: 1"=5' (Vert.)

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

SEAL

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Wilmington, North Carolina 28401
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License: F-1222
www.mckimcreed.com

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™
by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

PLAN AND PROFILE
WALKFINDERS ALLEY

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

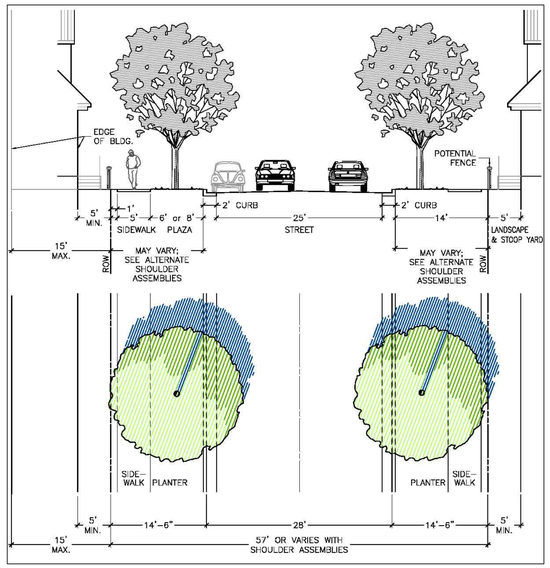
SCALE
HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

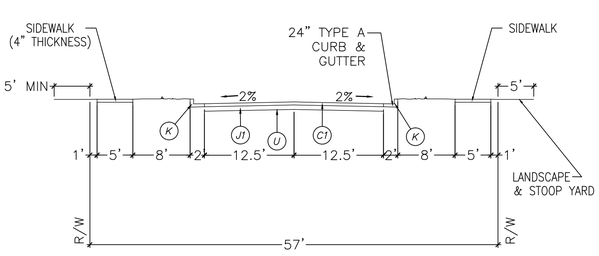
M&C FILE NUMBER CU-712
DRAWING NUMBER 26B

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\6D-Drawings\CU712-02735\0125.dwg, 4/6/2016 5:41:33 PM, EMcArthur, 1:1

ILLUSTRATIVE STREET SECTIONS FROM DEVELOPMENT AGREEMENT

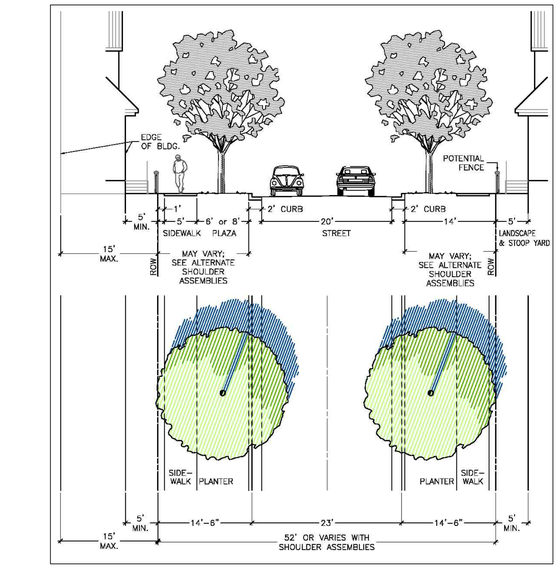


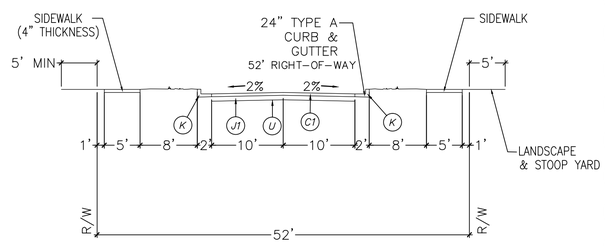


57' RIGHT-OF-WAY - COLLECTOR

(PUBLIC)

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	Curb A
Landscape Type	Irregular spacing-50'oc max





52' RIGHT-OF-WAY

(PUBLIC)

Right-of-Way Width	52 feet
Asphalt Width	20 feet
Design Speed	25 MPH
Traffic Lanes	2 lanes
Parking Lanes	No Parking
Curb Radius	25 feet
Walkway Type	5 foot sidewalk
Curb Type	Curb A
Landscape Type	Irregular spacing-50'oc max

2 REMOVED

3 REMOVED

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

* SEE SHEET CS-501 (14) FOR ADDITIONAL DETAILS AND SECTIONS FOR CURBING, PAVEMENT, STONE, AND SUBGRADE.

2 REMOVAL OF 26' ROW TYPICAL SECTION

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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

NOTE: SEE SHEET CG-502 AND CS-501 FOR PAVEMENT, SIDEWALK, AND CURB DETAILS

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED - PHASE 1

ROADWAY TYPICAL SECTIONS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CT-301
DRAWING NUMBER 27

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 ARNB\Drawings\CT301\02735\0125.dwg, 4/6/2016 5:41:59 PM, EMcArthur, 1:1

SPILLWAY SECTION

SKIMMER SEDIMENT BASINS

PHASE 1: SB–1, 2, 3, 4 AND 5
PHASE 2: SB–1 AND 5

NOTES:

1. BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET OR COIR MESH
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.

SPILLWAY SECTION

SKIMMER SEDIMENT BASINS

PHASE 2: SB–3 AND 4

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.

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:
1. WIRE FENCE (IF USED) SHALL BE MINUMUM 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

SKIMMER BASIN 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	3.09	0.30	7.23	6.70		2,177	6,270	5,559	17,497	3.00	10,742		8.0
SB-2	4.83	0.30	7.23	10.48		3,405	3,542	8,694	9,699	3.00	5,801		12.0
SB-3	10.63	0.30	7.23	23.06		7,493	22,411	19,134	63,152	3.00	39,329		20.0
SB-4	2.74	0.30	7.23	5.94		1,931	3,522	4,932	9,570	3.00	5,669		8.0
SB-5	1.09	0.30	7.23	2.37		769	2,231	1,964	5,975	3.00	3,457		6.0

FAIRCLOTH SKIMMER SIZE CALCULATION (PHASE 1)

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	3	3,581	2.5	1.9	0.9	18.6	4.0
SB-2	3	1,934	2.0	1.5	0.7	10.0	4.0
SB-3	3	13,110	4.0	3.2	1.6	68.1	4.0
SB-4	3	1,890	2.0	1.5	0.7	9.8	4.0
SB-5	3	1,152	1.5	1.2	0.6	6.0	4.0

Faircloth Skimmer Selection Table

Skimmer Size in	Outflow Qmax cf/day	Head ft
1.5	1,728	0.125
2	3,283	0.167
2.5	6,234	0.208
3	9,774	0.250
4	20,109	0.333
5	32,832	0.333

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 velocity.
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/skimmer-sizing)

SKIMMER BASIN 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
SB-1 / BMP-7	6.48	0.37	7.23	17.33		5,634	5,634	11,664	11,664	3.00	11,664		20.0
SB-3 / BMP-1	36.68	0.52	7.23	137.90		44,818	44,818	66,024	66,024	2.83	66,024		20.0
SB-4 / BMP-2	5.09	0.42	7.23	15.46		5,023	5,023	9,162	9,162	3.78	9,162		20.0
SB-5 / BMP-5	2.37	0.40	7.23	6.85		2,228	2,228	4,266	4,266	2.00	4,266		20.0

FAIRCLOTH SKIMMER SIZE CALCULATION (PHASE 2)

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 / BMP-7	3	3,888	2.5	2.0	1.0	20.2	4.0
SB-3 / BMP-1	3	22,008	5.0	4.1	2.1	114.3	5.0
SB-4 / BMP-2	3	3,054	2.0	1.9	0.9	15.9	4.0
SB-5 / BMP-5	3	1,422	1.5	1.4	0.7	7.4	4.0

Faircloth Skimmer Selection Table

Skimmer Size in	Outflow Qmax cf/day	Head ft
1.5	1,728	0.125
2	3,283	0.167
2.5	6,234	0.208
3	9,774	0.250
4	20,109	0.333
5	32,832	0.333

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 velocity.
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/skimmer-sizing)

SILT FENCE CALCULATION TABLE

SILT FENCE No.	Drainage Area ac	Length ft	Acre per 100 ft	0.25 Acre per 100 ft YES/NO
SF 1	1.21	953.00	0.13	YES
SF 2	1.20	669.00	0.18	YES
SF 3	0.82	326.00	0.25	YES
SF 4	0.47	346.00	0.13	YES
SF 5	0.61	782.00	0.08	YES
SF 6	0.91	517.00	0.18	YES
SF 7	0.36	489.00	0.07	YES
SF 8	0.39	452.00	0.09	YES
SF 9	0.16	449.00	0.04	YES
SF 10	0.17	385.00	0.04	YES
SF 11	2.00	1002.00	0.20	YES
SF 12	1.53	644.00	0.24	YES
SF 13	0.86	338.00	0.25	YES
SF 14	1.66	705.00	0.24	YES
SF 15	0.82	321.00	0.25	YES
SF 16	0.71	281.00	0.25	YES
SF 17	0.62	332.00	0.19	YES
SF 18	0.38	538.00	0.07	YES

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

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.

SKIMMER DETAIL WITH EMBANKMENT

NOT TO SCALE

NOTES
1. CHAIN LINK FABRIC TO BE MIN. 11 GAUGE, GALVANIZED. NO RUSTED OR EXCESSIVELY MALFORMED FABRIC.
2. FENCE BASES SHALL BE OF SUFFICIENT WEIGHT and/or SPREAD TO ADEQUATELY SUPPORT EACH PANEL.
3. PANEL–TO–PANEL CONNECTIONS SHALL BE MADE AT A MIN. TWO LOCATIONS PER CONNECTION UNLESS OTHERWISE APPROVED.
4. PROVIDE CONSTRUCTION WARNING SIGNAGE 50'O.C. ALONG FENCING INSTALLATION.

TEMPORARY CONSTRUCTION FENCING

NOT TO SCALE

SKIMMER DETAIL WITH OUTLET STRUCTURE

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: ________________________

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.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

EROSION AND SEDIMENT CONTROL DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CE–501
DRAWING NUMBER 28

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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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

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(d)]
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.

TEMPORARY SEEDING			
GRASS TYPE	AMOUNT/ 1000 S.F.	TIME OF SEEDING	INITIAL
RYE GRAIN	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
SERICEA LESPEDEZA (SLOPES	1–2 LBS	MARCH – APRIL	25 LBS 10–10–10

STABILIZE DIVERSION DITCH WITH TEMPORARY SEEDING AND EROSION CONTROL NETTING

TEMPORARY DIVERSION DITCH

NOT TO SCALE

NOTE:
THE CRITICAL ROOT ZONE (CRZ) OF A TREE IS WHERE THE MAJORITY OF A TREE'S ROOTS LAY. 85% OF MOST TREE ROOTS ARE FOUND IN THE TOP 24" OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT 2–3X THE HEIGHT OF THE TREE.

NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.

NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARKUNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

FRONT VIEW

SIDE VIEW

WARNING SIGN DETAIL

NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SD 15–09
NOT TO SCALE

CONSTRUCTION ENTRANCE/EXIT

SD 13–03
NOT TO SCALE

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: ________________________

TEMPORARY DIVERSION DITCH CALCULATION TABLE

TDD NUMBER	DA (AC)	Q 10 (CFS)	LENGTH (FT)	HIGH (FT)	LOW (FT)	ELEVATION DIFF. (FT)	SLOPE (%)	INITIAL LINING	MANNING n	VELOCITY (FPS)	COMMENT
TDD 1	0.12	0.3	81	22.00	18.00	4.00	4.94	BARE EARTH	0.020	2.41	LINING REQ
TDD 2	1.41	3.1	687	30.00	18.00	12.00	1.75	BARE EARTH	0.020	3.76	LINING REQ
TDD 3	2.23	4.8	680	31.00	22.00	9.00	1.32	BARE EARTH	0.020	3.87	LINING REQ
TDD 4	1.56	3.4	620	24.00	15.00	9.00	1.45	BARE EARTH	0.020	3.61	LINING REQ
TDD 5	4.75	10.3	703	19.00	10.00	9.00	1.28	BARE EARTH	0.020	4.62	LINING REQ
TDD 6	2.65	5.8	696	12.50	11.00	1.50	0.22	BARE EARTH	0.020	2.05	LINING REQ
TDD 7	1.09	2.4	396	41.00	30.00	11.00	2.78	BARE EARTH	0.020	4.13	LINING REQ

TEMPORARY ROCK CHECK DAMS/WATTLES

TDD NUMBER	SECONDARY LINING	MANNING n	VELOCITY (FPS)	COMMENT	DEPTH in	MIN. DEPTH in	CHECK DAM SPACING (FT)	NUMBER REQUIRED	NUMBER PROVIDED
TDD 1	LINING REQ	0.035	1.65	EXCELSIOR OK	1.4	18	41	2	2
TDD 2	LINING REQ	0.035	2.49	EXCELSIOR OK	6.0	18	115	6	6
TDD 3	LINING REQ	0.035	2.55	EXCELSIOR OK	7.8	18	151	5	5
TDD 4	LINING REQ	0.035	2.38	EXCELSIOR OK	6.5	18	138	5	5
TDD 5	LINING REQ	0.035	3.04	EXCELSIOR OK	10.9	18	156	5	5
TDD 6	LINING REQ	0.035	1.35	EXCELSIOR OK	12.4	18	928	1	1
TDD 7	LINING REQ	0.035	2.74	EXCELSIOR OK	4.7	18	72	6	6

Notes:
1. Q10 taken from Rational Method.
2. Manning n value for bare earth = 0.020 per NC ESC Manual Table 8.05f
3. Manning n value for excelsior (curled wood) matting = 0.035 per NC ESC Manual Table 8.05f
4. Tractive Force (Shear Stress) was also evaluated and found to be sufficient for the proposed lining.

PLAN

SECTION B–B
NOT TO SCALE

SECTION A–A

DITCH CHECK DAM

SD 13–04
NOT TO SCALE

NOTES:
1. DRIVE 5–FOOT STEEL POSTS (1.25 lb/lf steel) 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
2. SURROUND THE POSTS WITH AT LEAST 19–GAUGE HARDWARE CLOTH WITH A 1/4–INCH MESH OPENING. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM FOR A MIN. 2 FEET ABOVE THE GROUND. PLACING A 2–FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING AND REMOVAL IS RECOMMENDED.
3. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET. THE TOP ELEVATION OF THE STRUCTURE MUST BE AT LEAST 12–INCHES LOWER THAN THE SURROUNDING GROUND ELEVATION DOWNSLOPE FROM THE INLET TO ENSURE THAT STORM FLOWS GET INTO THE INTENDED INLET; UNLESS OTHER SEDIMENT–CONTROL DEVICES ARE INSTALLED TO PREVENT OFF–SITE SEDIMENT–RUNOFF.

TEMP. STORM DRAIN INLET PROTECTION

NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

SEAL

McKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343–1048, Fax: (910)251–8282
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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

EROSION AND SEDIMENT CONTROL DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CE–502
DRAWING NUMBER 29

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\2735\0125 Ph 1 AR\80-Drawings\DETAILS.dwg, 4/6/2016 5:43:47 PM, EMcArthur, 1:1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. — 1-12

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR, 2" KEYWAY, OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.

FOR 8'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 8'-0" TO 16'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.

CONSTRUCT WITH PIPE CROWNS MATCHING.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

SHEET 1 OF 2 — 840.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE SHEET 1 OF 2 840.02

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE

MINIMUM DIMENSIONS AND QUANTITIES FOR CONCRETE CATCH BASIN(BASED ON MIN. HEIGHT, H, WITH NO RISER) *

DIMENSIONS OF BOX AND PIPE						COVER DIMENSION		BARS-U		BARS-V		BARS-W			CU.YDS. CONC. IN BOX			DEDUCTIONS ONE PIPE	
PIPE D	SPAN A	WIDTH B	WIDTH C	SPAN G	MIN. HEIGHT H	E	F	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	TOTAL LBS.	TOP SLAB	BOTTOM SLAB	TOT. CONC. FOR MINIMUM HEIGHT, H	C.M.	R.C.
12"	3'-0"	2'-2"	--	--	2'-9"	--	--	--	--	--	--	--	--	--	--	0.235	0.772	0.015	0.026
15"	3'-0"	2'-2"			3'-0"											0.235	0.829	0.023	0.036
18"	3'-0"	2'-2"			3'-3"											0.235	0.887	0.033	0.049
24"	3'-0"	2'-2"			3'-9"											0.235	1.001	0.059	0.085
30"	3'-0"	2'-2"	3'-4"		4'-3"	1'-2"	4'-0"	4	1'-5"	2	3'-9"	3	3'-9"	39	0.123	0.321	1.433	0.092	0.127
36"	3'-0"	2'-2"	3'-10"		4'-9"	1'-8"	4'-0"	4	1'-11"	3	3'-9"	3	3'-9"	43	0.161	0.358	1.714	0.132	0.178
42"	3'-0"	2'-2"		4'-5"	5'-3"	1'-5"	3'-2"	4	1'-8"	2	2'-11"	3	2'-11"	32	0.112	0.318	1.738	0.180	0.243
48"	3'-0"	2'-2"		5'-0"	5'-9"	2'-0"	3'-2"	4	2'-3"	3	2'-11"	3	2'-11"	35	0.145	0.352	2.052	0.235	0.317
54"	3'-0"	2'-2"		5'-7"	6'-3"	2'-7"	3'-2"	4	2'-10"	5	2'-11"	3	2'-11"	41	0.180	0.386	2.387	0.297	0.401

* RISER HAS .228 CUBIC YARDS OF CONCRETE PER FOOT HEIGHT

SHEET 2 OF 2 — 840.02

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN 12" THRU 54" PIPE SHEET 2 OF 2 840.02

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

GENERAL NOTES:

- * THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.04, 840.05, 840.14, 840.15, 840.31, 840.32, 840.34, 840.35, 840.36 AND 840.41.
- * INSTALL AND PAY FOR PRECAST DRAINAGE STRUCTURES IN ACCORDANCE WITH NCDOT STANDARD SPECIFICATION SECTION 840.
- * USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
- * USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A185 WELDED WIRE FABRIC (WWF).
- * LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB TO 15'-0".
- * PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
- * ORIENT STRUCTURES SO THAT CORNERS WILL NOT BE CUT OR MODIFIED UNLESS ALLOWED BY DETAIL IN PLANS.
- * PRECAST ALL ELEMENTS TO MEET ASTM C913.
- * FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
- * PROVIDE PRECAST STRUCTURES OVER 4'-0" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
- * WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR IF THE SAME MIN. AREA OF STEEL IS PROVIDED.
- * SEAL JOINTS WITH AN APPROVED SEALANT (SEE SECTION 840 OF NCDOT STANDARD SPECIFICATIONS.
- * LIMIT MAXIMUM STRUCTURE SIZE INSIDE CLEAR DIMENSIONS TO 6'-0" X 6'-0".
- * THE OUTSIDE PIPE DIAMETER PLUS 2" IS THE MINIMUM STRUCTURE SIZE OR THE OPENING REQUIRED FOR GRATE AND FRAME WHICHEVER IS GREATER.
- * ROUND MANHOLE MAY BE USED IN LIEU OF SQUARE PROVIDED 2 EXTRA #5'S ARE PLACED ON EVERY SIDE NOT ADJACENT TO A WALL. SEE STD. DWG. 840.34 FOR MANHOLE INSTALLATION.

SHEET 1 OF 1 — 840.46

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE SHEET 1 OF 1 840.46

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

NOTE: USE TYPE "E", "F" AND "G" GRATE UNLESS OTHERWISE NOTED.

SHEET 1 OF 2 — 840.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN SHEET 1 OF 2 840.03

ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN

SHEET 2 OF 2 — 840.03

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR FRAME, GRATES, AND HOOD FOR USE ON STANDARD CATCH BASIN SHEET 2 OF 2 840.03

ENGLISH STANDARD DRAWING FOR CONCRETE DROP INLET 12" THRU 30" PIPE

GENERAL NOTES:

USE CLASS "B" CONCRETE THROUGHOUT.

PROVIDE ALL DROP INLETS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.

OPTIONAL CONSTRUCTION - MONOLITHIC POUR 2" KEYWAY OR #4 BAR DOWELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.

USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.

IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.

CONSTRUCT WITH PIPE CROWNS MATCHING.

SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.

INSTALL 2" WEEPHOLES AS DIRECTED BY THE ENGINEER.

INSTALL STONE DRAINS, OF A MINIMUM OF 1 CUBIC FOOT OF NO. 78M STONE IN A POROUS FABRIC BAG OR WRAP, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.

CHAMFER ALL EXPOSED CORNERS 1".

DRAWING NOT TO SCALE.

DIMENSIONS AND QUANTITIES FOR DROP INLET(BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				CUBIC YARDS CONC. IN BOX			DEDUCTIONS FOR ONE PIPE	
PIPE D	SPAN A	WIDTH B	MIN. HEIGHT H	BOTTOM SLAB	WALL PER FT. HT.	TOTAL CONCRETE FOR MINIMUM HEIGHT, H	C.M.	R.C.
12"	3'-0"	2'-0"	2'-0"	0.222	0.222	0.592	0.015	0.026
15"			2'-3"			0.648	0.023	0.036
18"			2'-6"			0.703	0.033	0.049
24"			3'-0"			0.814	0.059	0.085
30"	3'-0"	2'-0"	3'-6"	0.222	0.222	0.925	0.092	0.127

SHEET 1 OF 1 — 840.14

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR CONCRETE DROP INLET 12" THRU 30" PIPE SHEET 1 OF 1 840.14

ENGLISH STANDARD DRAWING FOR DROP INLET FRAME AND GRATES FOR USE WITH STD. DWG.S 840.14 AND 840.15

SHEET 1 OF 1 — 840.16

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR DROP INLET FRAME AND GRATES FOR USE WITH STD. DWG.S 840.14 AND 840.15 SHEET 1 OF 1 840.16

ENGLISH STANDARD DRAWING FOR ANCHORAGE FOR FRAMES BRICK/CONCRETE/PRECAST CONCRETE

SHEET 1 OF 1 — 840.25

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12 ENGLISH STANDARD DRAWING FOR ANCHORAGE FOR FRAMES BRICK/CONCRETE/PRECAST CONCRETE SHEET 1 OF 1 840.25

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

REVISIONS

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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RIVERLIGHTS AGE QUALIFIED – PHASE 1

STORM DRAINAGE DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CG-501 — DRAWING NUMBER 30

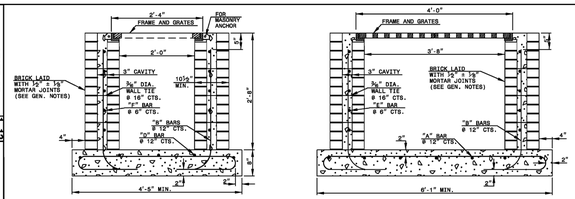
STATUS: FINAL DESIGN — ISSUED FOR CONSTRUCTION — REVISION 4

S:\2735\0125 Ph 1 AR\80-Drawings\DETAILS.dwg, 4/6/2016 5:43:58 PM, EMcArthur, 1:1

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR **TRAFFIC BEARING GRATED DROP INLET** FOR CAST IRON DOUBLE FRAME AND GRATES

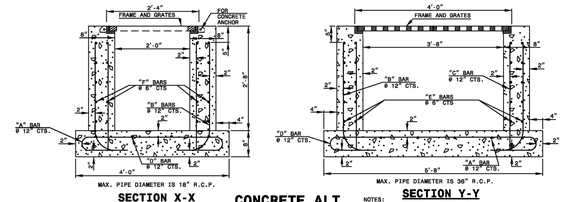
SHEET 1 OF 2 **840.35**



SECTION X-X

SECTION Y-Y

BRICK ALT.



SECTION X-X

SECTION Y-Y

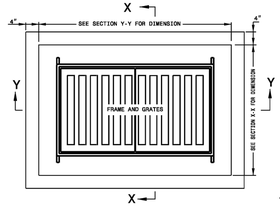
CONCRETE ALT.

NOTES:
-HORIZONTAL AND VERTICAL DIMENSIONS MAY BE ADJUSTED AS THE FIELD CONDITIONS AND/OR ALTERNATE DESIGN REQUIRE.
-MAXIMUM HEIGHT FOR THIS STRUCTURE IS 14'-0".
-MAKE ALL ADJUSTMENTS AS DIRECTED BY THE ENGINEER.
-DEPTH OF STEEL GRATE WILL REQUIRE DEEPER SEAT ALONG SHORT WALLS.

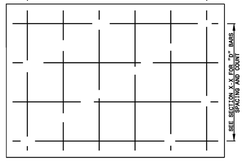
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR **TRAFFIC BEARING GRATED DROP INLET** FOR CAST IRON DOUBLE FRAME AND GRATES

SHEET 2 OF 2 **840.35**



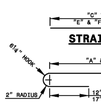
PLAN



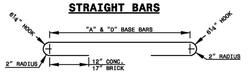
PLAN OF BASE

BILL OF MATERIALS

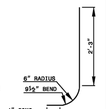
	COMMON CONCRETE ALT.				BRICK ALT.		
BAR	SIZE	LENGTH	QUANTITY	WEIGHT	LENGTH	QUANTITY	WEIGHT
A	#5	6'-4½"	6	38.9	7'-3½"	6	47.7
B	#5	3'-8"	16	56.3	3'-8"	16	56.3
C	#5	3'-8"	14	38.9	-0-	-0-	-0-
D	#5	6'-01½"	4	53.6	6'-01½"	4	38.6
E	#5	3'-0"	20	69.6	3'-0"	10	31.3
F	#5	4'-8"	20	97.3	4'-8"	10	48.7
REINF. STEEL (TOTAL WEIGHT LBS.)				328.6			222.8
CONCRETE IN BASE CLASS "AA" (CUBIC YARDS)				0.56			0.68
CONCRETE IN WALLS CLASS "AA" (CUBIC YARDS)				0.92			-0-
CONCRETE IN WALLS CLASS "B" (CUBIC YARDS)				-0-			0.96
BRICK IN WALLS (LOOSE CUBIC YARDS)				-0-			0.90
CONCRETE TOTAL (CUBIC YARDS)				1.48			1.64
BRICK & CONCRETE TOTAL (CUBIC YARDS)				1.48			1.90
CONC. CUBIC YARDS IN WALL/FOOT OF HEIGHT				0.38			0.14
BRICK CUBIC YARDS IN WALL/FOOT OF HEIGHT				-0-			0.34
LBS. OF REINF. STEEL IN WALL/FOOT OF HEIGHT				94.9			47.6



STRAIGHT BARS



BASE BARS



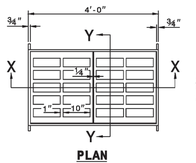
CORNER BARS

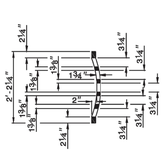
GENERAL NOTES:
-USE CLASS 'AA' CONCRETE FOR CAST IN PLACE CONCRETE BOX.
-USE CLASS 'B' CONCRETE IN THE WALL CAVITY FOR REINFORCED BRICK CONSTRUCTION AND CLASS 'AA' FOR THE FOOTING BASE.
-CHAMFER ALL EXPOSED CONCRETE CORNERS 1".
-USE FORMS TO CONSTRUCT THE BOTTOM SLAB.
-IF PIPES ARE SET IN THE BASE FOLLOW CONSTRUCTION PROCEDURES SHOWN BY STD. DWG. 840.00.
-PRECAST UNITS MADE OF CLASS 'AA' CONCRETE MAY BE USED IN LIEU OF BRICK MASONRY CONSTRUCTION.
-INCLUDE REINFORCING STEEL COST IN THE UNIT OR LINEAR FOOT BID PRICE FOR "MASONRY DRAINAGE STRUCTURE".
-REFERENCE STD. DWG. 840.25 FOR FRAME ANCHORAGE.
-CONCRETE BRICK, JUMBO BRICK AND 4" SOLID CONCRETE BLOCK WILL BE PERMITTED.
-CONCRETE FOR BRICK BOX REFER TO SECTION 832 OF THE STANDARD SPECIFICATIONS.
-PROVIDE GRATED DROP INLETS OVER 3'-6" DEEP WITH STEPS SPACED 12" ON CENTER AS DIRECTED BY STD. DWG. 840.66.
-FRAME AND GRATES ARE SEPARATE CONTRACT ITEMS.

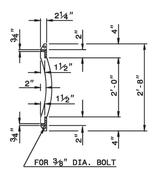
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

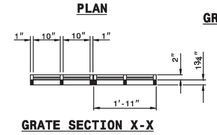
ENGLISH STANDARD DRAWING FOR **FRAMES AND WIDE SLOT SAG GRATES**

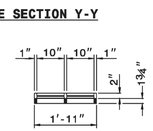
SHEET 1 OF 1 **840.22**

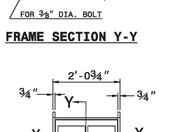


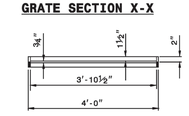


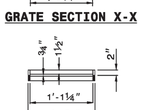












NOTE:
SEE STD. DWG. 840.25 FOR FRAME ANCHORAGE.

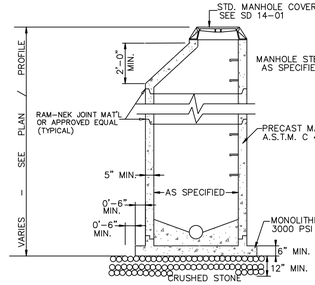
STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR **FRAMES AND WIDE SLOT SAG GRATES**

SHEET 1 OF 1 **840.22**

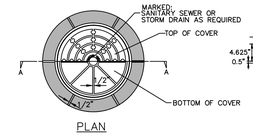
STORM DRAINAGE NOTES:

1. ALL PIPE BEDDING SHALL BE CLASS "C" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. ALL STORM DRAINAGE PIPES SHALL BE RCP CLASS III UNLESS OTHERWISE NOTED ON THE PLANS.
3. DO NOT PLANT TREES WITHIN UTILITY AND DRAINAGE EASEMENTS.
4. 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).
5. 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 ONSITE OF A REPRESENTATIVE OF THE GAS COMPANY WHEN WORKING IN THE VICINITY OF ANY GAS MAINS.

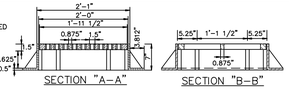


NOTE:
EXTENDED BASE MAY NOT BE REQUIRED WHERE MANHOLES ARE GREATER THAN 4 FEET INSIDE DIAMETER

PRECAST MANHOLE
SD 14-11
NOT TO SCALE

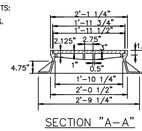


PLAN



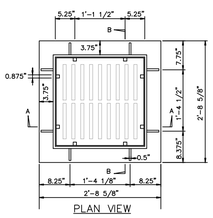
NOTE:
RING & COVER CONTACT SURFACES SHALL BE MACHINED SO AS TO INSURE EVEN BEARING OF COVER ON RING

MINIMUM WEIGHTS:
RING 190 LBS.
COVER 120 LBS.

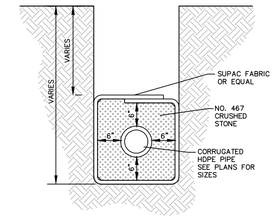


STANDARD MANHOLE RING AND COVER
SD 14-01
NOT TO SCALE

MINIMUM AVERAGE WEIGHT
FRAME 195 LBS.
GRATE 145 LBS.

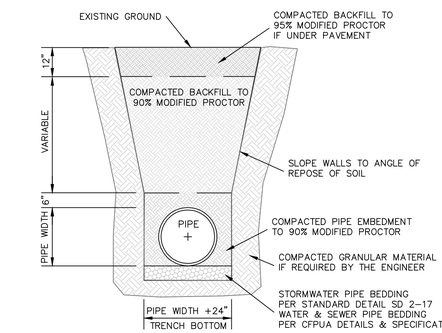


GRILL BASIN CASTINGS
SD 14-04
NOT TO SCALE

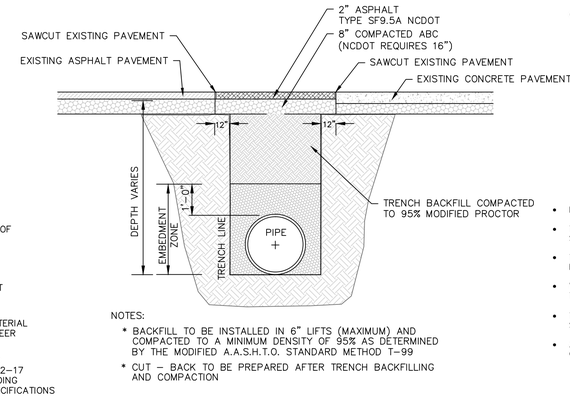


TYPICAL SECTION

GUIDELINES FOR SUB-DRAIN
SD 2-04
NOT TO SCALE



STANDARD PIPE TRENCH DETAIL
SD 1-07
NOT TO SCALE

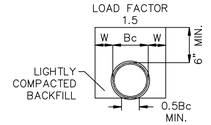


NOTES:
* BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99
* CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

STANDARD SHOWING METHOD MAKING PAVEMENT REPAIRS WHERE PIPE IS INSTALLED

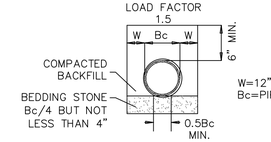
PAVEMENT REPAIR DETAIL
SD 1-16
NOT TO SCALE

FIG. 1
CLASS - C
SHAPED BOTTOM



HAND SHAPED FROM FIRM UNDISTURBED SOIL

FIG. 2
CLASS - C
SHAPED BOTTOM



HAND SHAPED FROM ANGULAR BEDDING MATERIAL

GUIDELINES FOR BEDDING DETAILS, STORM SEWER CLASS C
SD 2-17
NOT TO SCALE

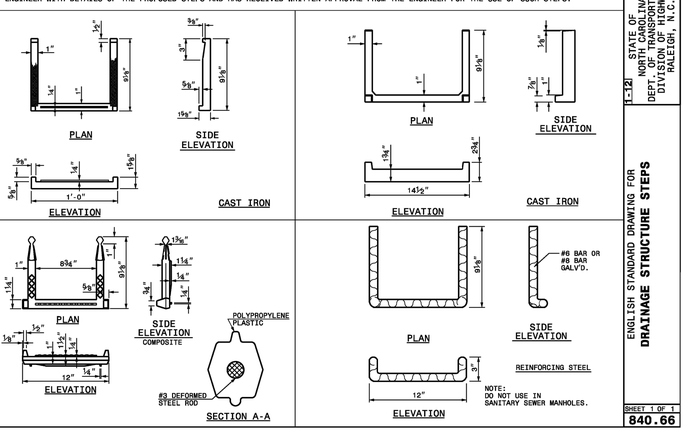
- EXCAVATION FOR STORM DRAINAGE PIPE SHALL BE TO THE LINES AND GRADES AS SHOWN ON THE PLANS.
- THE BEDDING SHALL BE SHAPED IN ACCORDANCE WITH CLASS 'C' BEDDING AS SHOWN ON CITY STANDARD DETAIL SD 2-17.
- THE BEDDING SHALL PROVIDE A FIRM FOUNDATION OF UNIFORM DENSITY ALONG THE ENTIRE LENGTH OF PIPE. RECESSES 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 UNDERCUTTING 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.

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C. 1-12

ENGLISH STANDARD DRAWING FOR **DRAINAGE STRUCTURE STEPS**

SHEET 1 OF 1 **840.66**

NOTES:
INSTALL ALL STEPS PROTRUDING 4" FROM INSIDE FACE OF STRUCTURE WALL.
STEPS DIFFERING IN DIMENSIONS, CONFIGURATION, OR MATERIALS FROM THOSE SHOWN MAY ALSO BE USED PROVIDED THE CONTRACTOR HAS FURNISHED THE ENGINEER WITH DETAILS OF THE PROPOSED STEPS AND HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER FOR THE USE OF SUCH STEPS.



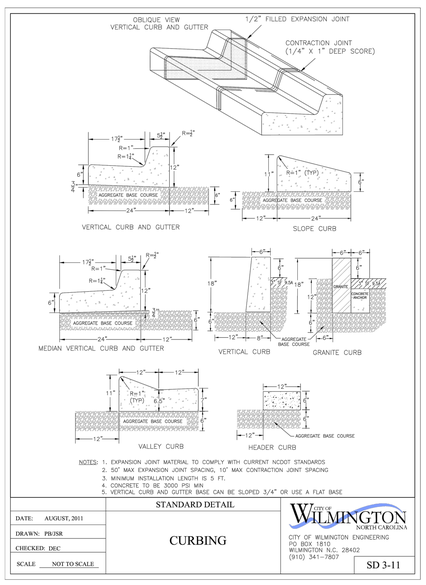
Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	

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



NOTES:
1. EXPANSION JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS
2. 50' MAX EXPANSION JOINT SPACING, 10' MAX CONTRACTION JOINT SPACING
3. MINIMUM INSTALLATION LENGTH IS 5 FT.
4. CONCRETE TO BE 3000 PSI MIN.
5. VERTICAL CURB AND GUTTER BASE CAN BE SLOPED 3/4" OR USE A FLAT BASE.

DATE: AUGUST, 2011	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN: PB/ISR	CURBING	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
CHECKED: DEC		
SCALE NOT TO SCALE		SD 3-11

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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 — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED - PHASE 1

STORM DRAINAGE DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER CG-502

DRAWING NUMBER 31

STATUS: **FINAL DESIGN** — ISSUED FOR CONSTRUCTION

REVISION 4

S:\27350\125 Ph 1 AR\80-Drawings\SET\ALS.dwg, 4/6/2016 5:44:23 PM, EMcAfee

1:1

STRUCTURE TABLE – BMP 1	
STR. NAME	DETAILS
(2)DI–2	RIM = 22.53 INV IN = 12.92SE INV OUT = 12.92NW
CB–2	RIM = 15.32 INV IN = 8.48NE INV IN = 7.99SW INV OUT = 7.99NW
CB–4	RIM = 16.40 INV IN = 13.04SE INV IN = 8.58S INV OUT = 8.58NE
CB–5	RIM = 16.40 INV OUT = 13.15NW
CB–6	RIM = 15.24 INV OUT = 12.49NW
CB–7	RIM = 15.24 INV IN = 12.38SE INV IN = 8.68NE INV OUT = 8.68SW
CB–10	RIM = 15.57 INV OUT = 12.33NW
CB–11	RIM = 15.57 INV IN = 12.22SE INV IN = 9.16NE INV OUT = 9.16SW
CB–12	RIM = 15.96 INV OUT = 12.72N
CB–13	RIM = 15.96 INV IN = 12.61S INV IN = 9.58E INV OUT = 9.58SW
CB–14	RIM = 16.35 INV OUT = 13.11NE
CB–15	RIM = 16.35 INV IN = 13.00SW INV IN = 10.00SE INV OUT = 10.00W
CB–20	RIM = 16.68 INV OUT = 13.24NE
CB–21	RIM = 16.69 INV IN = 13.13SW INV IN = 10.33SE INV OUT = 10.33NW
CB–24	RIM = 15.39 INV IN = 11.83NW INV OUT = 11.83SW
CB–25	RIM = 15.39 INV OUT = 11.94SE
CB–26	RIM = 17.89 INV IN = 12.73SW INV IN = 12.73NW INV OUT = 12.73NE
CB–27	RIM = 17.89 INV OUT = 12.94SE
CB–28	RIM = 19.68 INV IN = 15.77NW INV OUT = 15.77NE
CB–29	RIM = 19.68 INV OUT = 16.18SE
CB–31	RIM = 16.72 INV IN = 11.53SE INV IN = 12.37SW INV OUT = 11.53NW
CB–33	RIM = 20.16 INV IN = 12.46SW INV IN = 12.46SE INV OUT = 12.46NW
CB–34	RIM = 22.51 INV IN = 13.21SW INV OUT = 13.21NW
CB–35	RIM = 22.51 INV IN = 15.02W INV OUT = 13.32NE
CB–36	RIM = 20.16 INV OUT = 12.59NE
CB–37	RIM = 16.72 INV OUT = 12.50NE

STRUCTURE TABLE – BMP 1	
STR. NAME	DETAILS
CB–43	RIM = 17.83 INV OUT = 14.58W
CB–44	RIM = 17.83 INV IN = 14.47E INV IN = 9.00SE INV OUT = 9.00N
CB–45	RIM = 19.62 INV OUT = 16.37SW
CB–46	RIM = 19.62 INV IN = 16.26NE INV IN = 9.43SE INV OUT = 9.43NW
CB–48	RIM = 24.27 INV IN = 19.63NE INV IN = 15.86SE INV OUT = 15.86NW
CB–49	RIM = 21.90 INV IN = 18.20NW INV OUT = 18.20SW
CB–50	RIM = 21.90 INV OUT = 18.41SE
CB–51	RIM = 24.27 INV OUT = 19.84SW
CB–52	RIM = 26.94 INV OUT = 16.62SW
CB–53	RIM = 26.94 INV IN = 16.51NE INV OUT = 16.51NW
CB–58	RIM = 24.32 INV IN = 10.57SW INV IN = 20.11NW INV OUT = 10.57NE
CB–59	RIM = 24.32 INV OUT = 20.32SE
CB–60	RIM = 24.24 INV IN = 11.02SW INV OUT = 11.02NE
CB–61	RIM = 23.85 INV IN = 11.30SW INV IN = 20.31NW INV OUT = 11.30NE
CB–62	RIM = 23.86 INV OUT = 20.52SE
CB–63	RIM = 23.51 INV IN = 11.57SW INV OUT = 11.57NE
CB–64	RIM = 23.11 INV IN = 11.89SE INV IN = 15.88W INV IN = 19.43NW INV OUT = 11.87NE
CB–65	RIM = 23.12 INV OUT = 19.63SE
CB–66	RIM = 22.61 INV IN = 18.91N INV IN = 16.27W INV OUT = 16.27E
CB–67	RIM = 22.60 INV OUT = 19.12S
CB–68	RIM = 22.01 INV IN = 16.73N INV IN = 16.73W INV OUT = 16.73E
CB–69	RIM = 22.01 INV OUT = 16.84S
CB–70	RIM = 21.13 INV OUT = 17.49SE
CB–71	RIM = 21.13 INV IN = 17.39SW INV IN = 17.39NW INV OUT = 17.39NE
CB–77	RIM = 22.60 INV OUT = 19.20SE
CB–77A	RIM = 22.59 INV IN = 19.09NW INV OUT = 18.12NE

STRUCTURE TABLE – BMP 1	
STR. NAME	DETAILS
CB–80	RIM = 21.28 INV IN = 13.22SW INV IN = 17.60NE INV IN = 14.16SE INV OUT = 13.22NW
CB–81	RIM = 21.27 INV OUT = 16.15NW
CB–82	RIM = 23.68 INV IN = 20.31NE INV IN = 20.31SE INV OUT = 20.31SW
CB–83	RIM = 23.67 INV OUT = 20.44NW
CB–84	RIM = 26.70 INV IN = 23.10SE INV OUT = 23.10SW
CB–85	RIM = 26.71 INV OUT = 23.22NW
CB–86	RIM = 20.76 INV IN = 13.51W INV OUT = 13.51NE
CB–87	RIM = 20.58 INV IN = 14.41W INV IN = 15.41S INV OUT = 13.91E
CB–88	RIM = 21.91 INV IN = 15.94S INV IN = 18.50W INV OUT = 15.94E
CB–89	RIM = 24.13 INV OUT = 20.37E
CB–90	RIM = 21.91 INV IN = 16.07W INV OUT = 16.07N
CB–91	RIM = 24.53 INV IN = 16.68SW INV OUT = 16.68E
CB–92	RIM = 24.72 INV IN = 16.88S INV IN = 19.71W INV OUT = 16.88NE
CB–93	RIM = 24.72 INV IN = 19.81NW INV OUT = 19.81E
CB–94	RIM = 26.83 INV OUT = 22.69SE
CB–99	RIM = 22.51 INV IN = 19.12W INV IN = 17.54S INV OUT = 17.54N
CB–100	RIM = 22.51 INV OUT = 19.23E
CB–103	RIM = 22.91 INV IN = 17.99S INV IN = 19.39W INV OUT = 17.99N
CB–104	RIM = 22.91 INV OUT = 19.50E
CB–105	RIM = 23.24 INV IN = 18.34S INV OUT = 18.34N
CB–106	RIM = 23.51 INV IN = 18.60W INV IN = 18.60SE INV OUT = 18.60N
CB–107	RIM = 23.51 INV IN = 18.71SW INV OUT = 18.71E
CB–108	RIM = 23.66 INV IN = 18.92W INV IN = 20.18S INV OUT = 18.92NE
CB–109	RIM = 23.66 INV OUT = 20.39N
CB–110	RIM = 22.99 INV IN = 19.31NW INV IN = 19.51S INV OUT = 19.31E
CB–111	RIM = 22.99 INV OUT = 19.72N

STRUCTURE TABLE – BMP 1	
STR. NAME	DETAILS
CB–112	RIM = 22.71 INV IN = 19.57SW INV IN = 19.48NW INV OUT = 19.48SE
CB–113	RIM = 22.69 INV OUT = 19.78NE
CB–114	RIM = 22.85 INV IN = 19.73W INV OUT = 19.73SE
CB–115	RIM = 22.81 INV OUT = 19.84E
CB–118	RIM = 24.06 INV IN = 18.81E INV IN = 20.56S INV OUT = 18.81NW
CB–119	RIM = 24.07 INV OUT = 20.77N
CB–120	RIM = 24.61 INV IN = 19.35E INV IN = 21.13S INV OUT = 19.35W
CB–121	RIM = 24.61 INV OUT = 21.34N
CB–122	RIM = 25.02 INV IN = 19.73E INV IN = 21.41S INV OUT = 19.73W
CB–123	RIM = 25.02 INV OUT = 21.62N
CB–124	RIM = 25.52 INV IN = 20.23S INV IN = 20.23E INV OUT = 20.23W
CB–125	RIM = 25.51 INV OUT = 20.34N
CB–126	RIM = 21.08 INV IN = 15.62W INV OUT = 15.62E
CB–127	RIM = 20.50 INV IN = 16.07SE INV OUT = 16.07N
CB–128	RIM = 21.16 INV IN = 17.76E INV IN = 17.22S INV OUT = 17.15NW
CB–129	RIM = 21.16 INV OUT = 17.96W
CB–130	RIM = 24.18 INV IN = 20.53E INV IN = 19.78S INV OUT = 19.71N
CB–131	RIM = 24.18 INV OUT = 20.73W
CB–132	RIM = 26.71 INV IN = 22.67E INV OUT = 22.67N
CB–133	RIM = 26.71 INV OUT = 23.22W
CB–134	RIM = 25.95 INV IN = 20.60SE INV OUT = 20.60W
CB–135	RIM = 25.89 INV OUT = 20.71NW
DI–1	RIM = 23.01 INV IN = 12.60SE INV OUT = 12.60NW
MH–72	RIM = 21.54 INV IN = 17.15SW INV OUT = 17.15E
O–1	RIM = 11.06 INV IN = 7.10SE
P1–FES	RIM = 7.58 INV IN = 5.25SW

STRUCTURE TABLE – BMP 1	
STR. NAME	DETAILS
P1–OUT	RIM = 14.10 INV OUT = 6.83NE
P2–FES	RIM = 10.49 INV IN = 8.70SW
P2–OUT	RIM = 13.20 INV OUT = 9.25NE
P3–OUT	RIM = 19.30 INV OUT = 15.90E
SDMH–1	RIM = 24.08 INV IN = 10.42SW INV IN = 15.72SE INV IN = 16.99NE INV OUT = 10.42NW
SDMH–2	RIM = 17.30 INV IN = 10.99NE INV IN = 11.49SW INV IN = 10.99SE INV OUT = 10.99NW

STRUCTURE TABLE – BMP 2	
STR. NAME	DETAILS
CB–501	RIM = 21.96 INV OUT = 18.55NE
CB–502	RIM = 21.96 INV IN = 18.44SW INV OUT = 18.44SE
CB–503	RIM = 19.89 INV OUT = 16.55NE
CB–504	RIM = 19.89 INV IN = 16.34SW INV IN = 14.55NW INV IN = 14.55SE INV OUT = 14.55N
CB–505	RIM = 23.21 INV IN = 15.28E INV IN = 15.28SW INV OUT = 15.28NW
CB–506	RIM = 23.54 INV IN = 15.47NE INV IN = 15.47SE INV OUT = 15.47W
CB–509	RIM = 23.21 INV OUT = 17.19NE
CB–510	RIM = 23.54 INV OUT = 16.28NW
O–2	RIM = 13.79 INV IN = 12.00S

STRUCTURE TABLE – BMP 3	
STR. NAME	DETAILS
CB–401	RIM = 29.72 INV OUT = 26.17NW
CB–402	RIM = 29.72 INV IN = 25.56SE INV OUT = 25.56NE
CB–404	RIM = 25.46 INV IN = 19.68SW INV OUT = 19.68SE
CB–405	RIM = 25.46 INV IN = 19.08NW INV OUT = 19.08E
CB–406	RIM = 20.36 INV OUT = 17.71SE
CB–407	RIM = 20.36 INV IN = 17.63NW INV OUT = 17.63SE
O–3A	RIM = 18.91 INV IN = 17.39NW
O–3B	RIM = 19.52 INV IN = 18.00W

STRUCTURE TABLE – BMP 7	
STR. NAME	DETAILS
CB–302	RIM = 24.44 INV OUT = 20.90W
CB–304	RIM = 20.45 INV OUT = 17.46NW
CB–305	RIM = 20.72 INV IN = 17.23SE INV IN = 17.23E INV OUT = 17.23SW
CB–306	RIM = 20.83 INV IN = 16.71NE INV OUT = 16.71SW
CB–307	RIM = 22.74 INV IN = 16.15NE INV OUT = 16.15S
CB–308	RIM = 24.20 INV IN = 15.79N INV IN = 20.50E INV OUT = 15.79W
CB–309	RIM = 25.98 INV OUT = 22.74S
CB–310	RIM = 27.75 INV IN = 21.37N INV OUT = 21.36SW
CB–311	RIM = 27.56 INV IN = 20.80NE INV IN = 21.50E INV OUT = 20.80W
CB–312	RIM = 29.09 INV OUT = 26.30N
CB–313	RIM = 29.09 INV IN = 26.04S INV OUT = 22.61W
CB–314	RIM = 23.62 INV OUT = 19.20N
CB–315	RIM = 23.63 INV IN = 19.07E INV IN = 19.07S INV OUT = 19.07W
O–7	RIM = 16.79 INV IN = 15.00E

3 REVISIONS TO STORMWATER DUE TO THE REMOVAL OF WALKFINDERS ALLEY

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

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

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORM DRAINAGE DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CG–503
DRAWING NUMBER 32

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\90-Drawings\DETAILS.dwg, 4/6/2016 5:44:47 PM, EMcArthur, 1:1

STORM DRAINAGE PIPE DATA TABLE
BMP – 1

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
SDMH–2	CB–21	131.74'	24"	RCP	0.50%	10.99'	10.33'
SDMH–1	CB–46	199.69'	36"	RCP	0.50%	10.42'	9.43'
P3–OUT	CB–35	88.08'	15"	RCP	1.00%	15.90'	15.02'
P2–FES	P2–OUT	54.91'	18"	RCP	1.00%	8.70'	9.25'
P1–OUT	P1–FES	63.27'	24"	RCP	2.50%	6.83'	5.25'
MH–72	CB–68	82.13'	18"	RCP	0.51%	17.15'	16.73'
DI–1	CB–64	142.82'	36"	RCP	0.50%	12.60'	11.89'
CB–135	CB–134	21.30'	15"	RCP	0.50%	20.71'	20.60'
CB–134	CB–124	73.08'	15"	RCP	0.50%	20.60'	20.23'
CB–133	CB–132	21.29'	15"	RCP	2.60%	23.22'	22.67'
CB–132	CB–130	111.92'	15"	RCP	2.58%	22.67'	19.78'
CB–131	CB–130	20.15'	15"	RCP	1.00%	20.73'	20.53'
CB–130	CB–128	96.47'	18"	RCP	2.58%	19.71'	17.22'
CB–129	CB–128	20.15'	18"	RCP	1.00%	17.96'	17.76'
CB–128	CB–127	36.18'	18"	RCP	2.99%	17.15'	16.07'
CB–127	CB–87	29.78'	18"	RCP	2.24%	16.07'	15.41'
CB–126	CB–87	98.82'	30"	RCP	1.22%	15.62'	14.41'
CB–125	CB–124	21.41'	15"	RCP	0.51%	20.34'	20.23'
CB–124	CB–122	100.00'	18"	RCP	0.50%	20.23'	19.73'
CB–123	CB–122	21.30'	15"	RCP	1.00%	21.62'	21.41'
CB–122	CB–120	76.72'	18"	RCP	0.50%	19.73'	19.35'
CB–121	CB–120	21.30'	15"	RCP	0.99%	21.34'	21.13'
CB–120	CB–118	108.93'	18"	RCP	0.50%	19.35'	18.81'
CB–119	CB–118	21.22'	18"	RCP	0.99%	20.77'	20.56'
CB–118	CB–106	41.51'	18"	RCP	0.50%	18.81'	18.60'
CB–115	CB–114	21.23'	18"	RCP	0.50%	19.84'	19.73'
CB–114	CB–112	49.04'	18"	RCP	0.50%	19.73'	19.48'
CB–113	CB–112	21.30'	18"	RCP	1.00%	19.78'	19.57'
CB–112	CB–110	55.98'	18"	RCP	0.30%	19.48'	19.31'
CB–111	CB–110	21.30'	18"	RCP	1.00%	19.72'	19.51'
CB–110	CB–108	132.79'	24"	RCP	0.30%	19.31'	18.92'
CB–109	CB–108	21.30'	18"	RCP	1.00%	20.39'	20.18'
CB–108	CB–107	42.12'	24"	RCP	0.50%	18.92'	18.71'
CB–107	CB–106	21.30'	24"	RCP	0.50%	18.71'	18.60'
CB–106	CB–105	52.16'	24"	RCP	0.50%	18.60'	18.34'
CB–105	CB–103	67.56'	24"	RCP	0.51%	18.34'	17.99'
CB–104	CB–103	21.30'	18"	RCP	0.50%	19.50'	19.39'
CB–103	CB–99	87.19'	24"	RCP	0.52%	17.99'	17.54'
CB–100	CB–99	21.33'	18"	RCP	0.50%	19.23'	19.12'
CB–99	CB–92	131.40'	24"	RCP	0.50%	17.54'	16.88'
CB–94	CB–93	43.83'	15"	RCP	6.57%	22.69'	19.81'

STORM DRAINAGE PIPE DATA TABLE
BMP – 1

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB–93	CB–92	20.15'	15"	RCP	0.50%	19.81'	19.71'
CB–92	CB–91	40.56'	24"	RCP	0.50%	16.88'	16.68'
CB–91	CB–90	120.50'	24"	RCP	0.50%	16.68'	16.07'
CB–90	CB–88	26.30'	24"	RCP	0.50%	16.07'	15.94'
CB–89	CB–88	105.54'	15"	RCP	1.77%	20.37'	18.50'
CB–88	CB–126	64.78'	30"	RCP	0.50%	15.94'	15.62'
CB–87	CB–86	59.33'	36"	RCP	0.67%	13.91'	13.51'
CB–86	CB–80	56.88'	36"	RCP	0.50%	13.51'	13.22'
CB–85	CB–84	25.16'	15"	RCP	0.50%	23.22'	23.10'
CB–84	CB–82	150.27'	15"	RCP	1.86%	23.10'	20.31'
CB–83	CB–82	26.30'	15"	RCP	0.50%	20.44'	20.31'
CB–82	CB–80	135.28'	15"	RCP	2.00%	20.31'	17.60'
CB–81	CB–80	26.30'	18"	RCP	7.57%	16.15'	14.16'
CB–80	(2)DI–2	59.06'	36"	RCP	0.50%	13.22'	12.92'
CB–77A	CB–71	145.87'	18"	RCP	0.50%	18.12'	17.39'
CB–77	CB–77A	20.21'	15"	RCP	0.53%	19.20'	19.09'
CB–71	MH–72	51.68'	18"	RCP	0.47%	17.39'	17.15'
CB–70	CB–71	20.15'	18"	RCP	0.50%	17.49'	17.39'
CB–69	CB–68	21.04'	18"	RCP	0.50%	16.84'	16.73'
CB–68	CB–66	91.75'	18"	RCP	0.50%	16.73'	16.27'
CB–67	CB–66	21.30'	15"	RCP	1.00%	19.12'	18.91'
CB–66	CB–64	78.20'	18"	RCP	0.50%	16.27'	15.88'
CB–65	CB–64	20.15'	15"	RCP	1.00%	19.63'	19.43'
CB–64	CB–63	61.90'	36"	RCP	0.50%	11.87'	11.57'
CB–63	CB–61	53.18'	36"	RCP	0.50%	11.57'	11.30'
CB–62	CB–61	21.48'	15"	RCP	0.98%	20.52'	20.31'
CB–61	CB–60	56.60'	36"	RCP	0.50%	11.30'	11.02'
CB–60	CB–58	90.89'	36"	RCP	0.50%	11.02'	10.57'
CB–59	CB–58	21.30'	15"	RCP	1.00%	20.32'	20.11'
CB–58	SDMH–1	28.28'	36"	RCP	0.50%	10.57'	10.42'
CB–53	CB–48	130.44'	15"	RCP	0.50%	16.51'	15.86'
CB–52	CB–53	21.30'	15"	RCP	0.50%	16.62'	16.51'
CB–51	CB–48	21.30'	15"	RCP	1.00%	19.84'	19.63'
CB–50	CB–49	21.30'	15"	RCP	1.00%	18.41'	18.20'
CB–49	SDMH–1	121.04'	15"	RCP	1.00%	18.20'	16.99'
CB–48	SDMH–1	27.37'	18"	RCP	0.50%	15.86'	15.72'
CB–46	CB–44	84.70'	36"	RCP	0.50%	9.43'	9.00'
CB–45	CB–46	21.30'	15"	RCP	0.50%	16.37'	16.26'
CB–44	CB–4	84.68'	36"	RCP	0.50%	9.00'	8.58'
CB–43	CB–44	21.29'	15"	RCP	0.50%	14.58'	14.47'
CB–37	CB–31	26.14'	18"	RCP	0.50%	12.50'	12.37'

STORM DRAINAGE PIPE DATA TABLE
BMP – 1

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB–36	CB–33	26.30'	15"	RCP	0.50%	12.59'	12.46'
CB–35	CB–34	21.30'	18"	RCP	0.50%	13.32'	13.21'
CB–34	CB–33	119.53'	18"	RCP	0.63%	13.21'	12.46'
CB–33	CB–31	216.83'	18"	RCP	0.43%	12.46'	11.53'
CB–31	SDMH–2	104.46'	24"	RCP	0.52%	11.53'	10.99'
CB–29	CB–28	21.30'	18"	RCP	1.92%	16.18'	15.77'
CB–28	CB–26	159.46'	18"	RCP	1.90%	15.77'	12.73'
CB–27	CB–26	21.30'	18"	RCP	1.00%	12.94'	12.73'
CB–26	SDMH–2	49.79'	18"	RCP	2.50%	12.73'	11.49'
CB–25	CB–24	26.30'	18"	RCP	0.40%	11.94'	11.83'
CB–24	SDMH–2	168.62'	18"	RCP	0.50%	11.83'	10.99'
CB–21	CB–15	65.50'	24"	RCP	0.50%	10.33'	10.00'
CB–20	CB–21	21.17'	18"	RCP	0.50%	13.24'	13.13'
CB–15	CB–13	84.25'	24"	RCP	0.50%	10.00'	9.58'
CB–14	CB–15	21.30'	18"	RCP	0.50%	13.11'	13.00'
CB–13	CB–11	84.92'	24"	RCP	0.50%	9.58'	9.16'
CB–12	CB–13	21.24'	18"	RCP	0.50%	12.72'	12.61'
CB–11	CB–7	94.48'	30"	RCP	0.50%	9.16'	8.68'
CB–10	CB–11	21.26'	18"	RCP	0.50%	12.33'	12.22'
CB–7	CB–2	40.27'	30"	RCP	0.50%	8.68'	8.48'
CB–6	CB–7	21.30'	18"	RCP	0.50%	12.49'	12.38'
CB–5	CB–4	21.30'	15"	RCP	0.50%	13.15'	13.04'
CB–4	CB–2	117.67'	36"	RCP	0.50%	8.58'	7.99'
CB–2	O–1	171.55'	42"	RCP	0.52%	7.99'	7.10'
(2)DI–2	DI–1	64.82'	36"	RCP	0.50%	12.92'	12.60'

STORM DRAINAGE PIPE DATA TABLE
BMP – 2

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB–510	CB–506	26.31'	15"	RCP	3.09%	16.28'	15.47'
CB–509	CB–505	21.27'	18"	RCP	8.96%	17.19'	15.28'
CB–506	CB–505	40.52'	15"	RCP	0.48%	15.47'	15.28'
CB–505	CB–504	145.76'	18"	RCP	0.50%	15.28'	14.55'
CB–504	O–2	51.83'	18"	RCP	4.92%	14.55'	12.00'
CB–503	CB–504	21.30'	15"	RCP	1.00%	16.55'	16.34'
CB–502	CB–504	198.00'	18"	RCP	1.96%	18.44'	14.55'
CB–501	CB–502	21.30'	18"	RCP	0.50%	18.55'	18.44'
	CB–506	42.10'	15"	RCP	0.50%	15.68'	15.47'

STORM DRAINAGE PIPE DATA TABLE
BMP – 3

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
O–3A	CB–407	76.68'	15"	RCP	0.31%	17.63'	17.39'
CB–407	CB–406	26.30'	15"	RCP	0.30%	17.71'	17.63'
CB–405	O–3B	46.62'	15"	RCP	2.32%	18.00'	19.08'
CB–404	CB–405	26.30'	15"	RCP	2.31%	19.08'	19.68'
CB–402	CB–404	254.75'	15"	RCP	2.31%	19.68'	25.56'
CB–401	CB–402	26.29'	15"	RCP	2.30%	25.56'	26.17'

STORM DRAINAGE PIPE DATA TABLE
BMP – 7

FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB–315	CB–305	165.75'	15"	RCP	1.11%	19.07'	17.23'
CB–314	CB–315	26.30'	15"	RCP	0.50%	19.20'	19.07'
CB–313	CB–311	81.00'	15"	RCP	1.37%	22.61'	21.50'
CB–312	CB–313	26.30'	15"	RCP	1.00%	26.30'	26.04'
CB–311	CB–315	143.00'	15"	RCP	1.21%	20.80'	19.07'
CB–310	CB–311	41.51'	15"	RCP	1.37%	21.36'	20.80'
CB–309	CB–310	100.55'	15"	RCP	1.37%	22.74'	21.37'
CB–308	O–7	108.37'	18"	RCP	0.73%	15.79'	15.00'
CB–307	CB–308	72.54'	15"	RCP	0.50%	16.15'	15.79'
CB–306	CB–307	112.29'	15"	RCP	0.50%	16.71'	16.15'
CB–305	CB–306	56.83'	15"	RCP	0.92%	17.23'	16.71'
CB–304	CB–305	66.28'	15"	RCP	0.34%	17.46'	17.23'
CB–302	CB–308	47.30'	15"	RCP	0.85%	20.90'	20.50'

3 REVISIONS TO STORMWATER DUE TO REMOVAL OF WALKFINDERS ALLEY

1 REVISIONS TO STORMWATER AND SANITARY SEWER RIM ELEVATIONS

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

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

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORM DRAINAGE DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

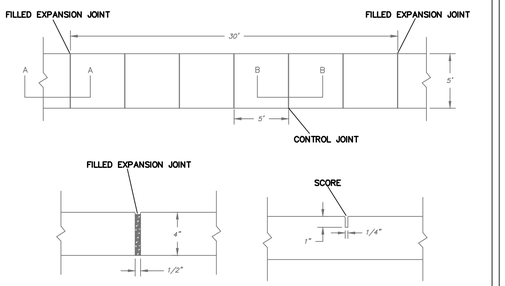
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CG–504
DRAWING NUMBER 33

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION

REVISION 4

S:\27350\125 Ph 1 AR180\Drawings\DETAILS.dwg, 4/6/2016 5:45:06 PM, EMcArthur, 1:1

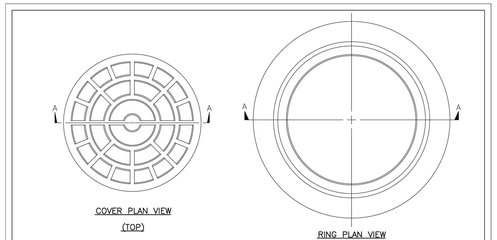


NOTES:

1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEAN–OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" – 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2% MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

DATE: OCTOBER, 2010	STANDARD DETAIL
DRAWN: PB/JSR	SIDEWALK
CHECKED: DEC	
SCALE NOT TO SCALE	

CITY OF WILMINGTON NORTH CAROLINA
PO BOX 1810
SD 3-10



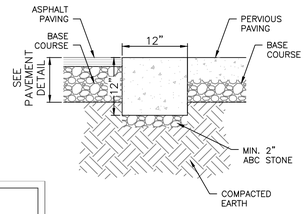
DATE: 2001	STANDARD DETAIL
DRAWN BY JSR/CMR	MONUMENT CASTING DETAIL
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341–7807
SD 14–05

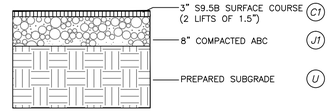
**** COMPACTED ABC NOTE–1:**
COMPACTED ABC MUST MEET THE NCDOT STANDARD SPECIFICATION GRADATION. REFER TO NCDOT STD SPECS (JAN 2012 EDITION) SECTION 520, AND SECTIONS 1005, 1006, AND 1010 FOR ALL OF THE MATERIAL GRADATION AND SPECIFICATIONS.

**** COMPACTED ABC NOTE–2:**
GRANITE BASED ABC IS NOT REQUIRED FOR THIS PROJECT. THE FOLLOWING TYPE OF MATERIALS MAY BE USED FOR ABC;

1. MARL – 6" IN DEPTH;
2. CRUSHED CONCRETE – CAN REDUCE TO 4" IN DEPTH;
3. ASPHALT MILLING CRUSHED TO $\frac{3}{4}$" DIAMETER – 6" IN DEPTH.



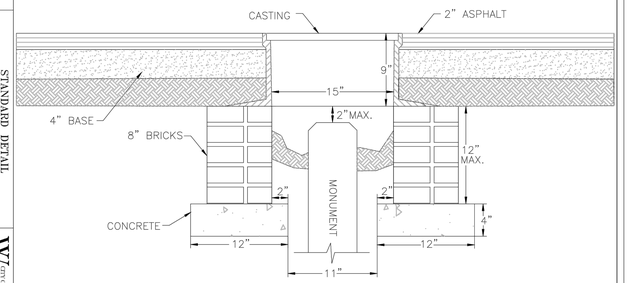
(L) 12" RIBBON CURB DETAIL
NOT TO SCALE

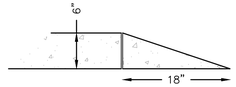


ASPHALT PAVEMENT SECTION (STREET SECTION)
NOT TO SCALE

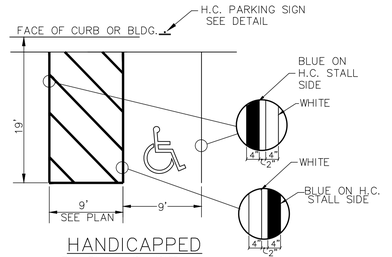
DATE: 2001	STANDARD DETAIL
DRAWN BY JSR/CMR	MONUMENT CASTING AND BASE
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341–7807
SD 15–01

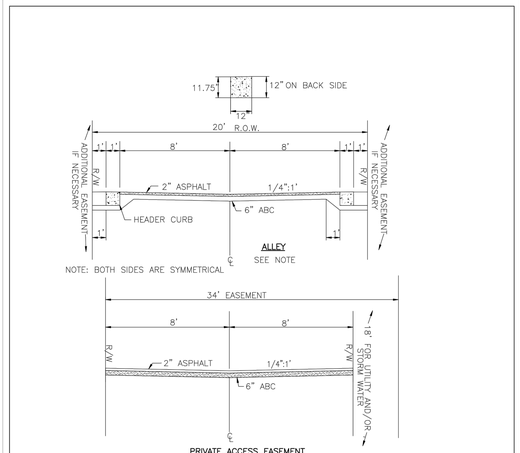




CURB TAPER
NOT TO SCALE



HANDICAPPED PARKING STALL
NOT TO SCALE



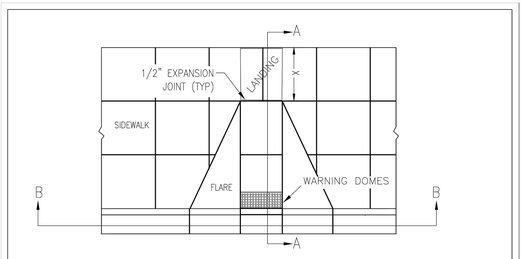
PRIVATE ACCESS EASEMENT
SEE NOTES

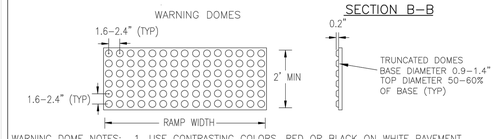
ALLEY NOTES:
1. NOT TO CONTAIN WATER AND SEWER UTILITY LINES

PRIVATE ACCESS EASEMENT NOTES:
1. 400' MAXIMUM LENGTH TO FURTHEST UNIT FROM PUBLIC STREET.
2. SERVES A MAXIMUM OF 4 SINGLE FAMILY OR DUPLEX UNITS.
3. 23' WIDTH REQUIRED AT STREET INTERSECTION.

DATE: OCTOBER, 2012	STANDARD DETAIL
DRAWN BY JSR/CMR	ALLEY & PRIVATE ACCESS EASEMENT SECTIONS W/HEADER CURB, RESIDENTIAL
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341–7807
SD 1-14

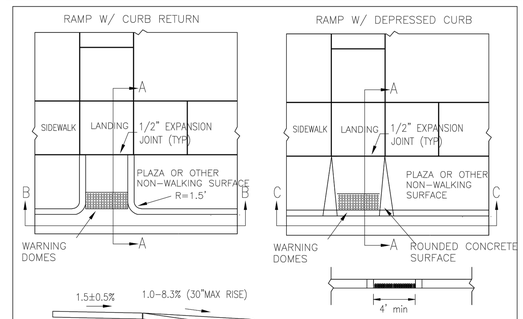


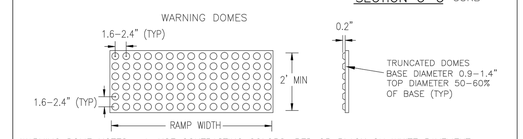


WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
2. USE CAST IN PLACE PAVERS FOR NEW CONSTRUCTION.
3. RUBBER MATS ARE PERMITTED FOR RETROFITS.
4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

DATE: DECEMBER, 2010	STANDARD DETAIL
DRAWN: PB/JSR	PERPENDICULAR CURB RAMP ADJACENT TO WALKING SURFACE
CHECKED: DEC	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341–7807
SD 3-07

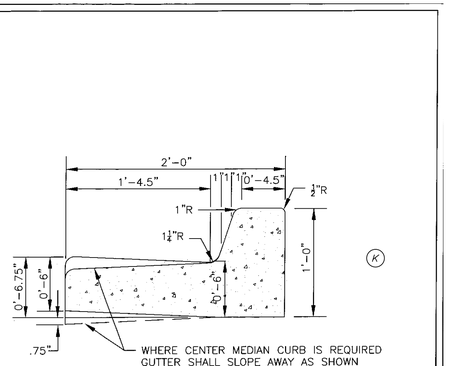




WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
2. USE CAST IN PLACE PAVERS FOR NEW CONSTRUCTION.
3. RUBBER MATS ARE PERMITTED FOR RETROFITS.
4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

DATE: DECEMBER, 2010	STANDARD DETAIL
DRAWN: PB/JSR	PERPENDICULAR CURB RAMP ADJACENT TO PLAZA
CHECKED: DEC	
SCALE NOT TO SCALE	

CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON N.C. 28402
(910) 341–7807
SD3-08

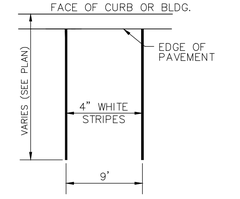


(K)

STANDARD CURB SECTION TYPE "A"

DATE: 2001	STANDARD DETAIL
DRAWN BY JSR/CMR	CURB SECTION TYPE "A"
CHECKED BY B.P., P.E.	
SCALE NOT TO SCALE	

CITY OF WILMINGTON
ENGINEERING OFFICE
305 CHESTNUT STREET
PO. BOX 1810
WILMINGTON N.C. 28402
(910) 341–7807
SD 7-01



TYPICAL PARKING STALL
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: _____

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.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

SITE PLAN DETAILS

DATE:	2015–04–15
MCE PROJ. #	02735–0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CS–501
DRAWING NUMBER 34

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\27350\125 Ph 1 ARX\90-Drawings\DETAILS.dwg, 4/6/2016 5:45:23 PM, EMcArthur, 1:1

GENERAL NOTES

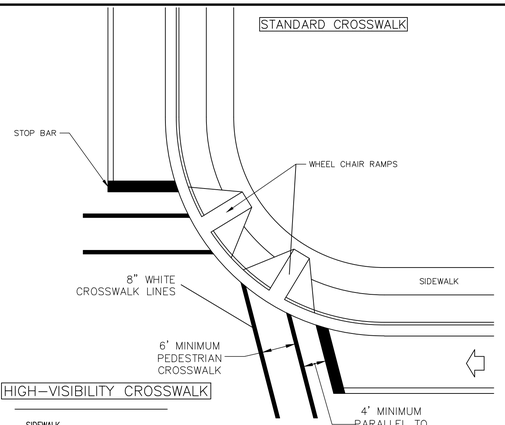
1. IN ACCORDANCE WITH N.C.G.S. 136-44.14, ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED SHALL PROVIDE WHEELCHAIR RAMPS FOR THE PHYSICALLY HANDICAPPED ON EACH SIDE OF ANY STREET OR ROAD, WHERE CURBS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
2. WHEELCHAIR RAMPS SHALL BE LOCATED AS INDICATED IN DETAIL DRAWINGS; HOWEVER, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.
3. CURB RAMPS SHALL HAVE DETECTABLE WARNINGS EXTENDING THE FULL WIDTH OF THE RAMP AND A MINIMUM OF 2-FT. IN LENGTH.

CONSTRUCTION NOTES

1. CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION STANDARDS OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
2. WHEELCHAIR RAMPS SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
3. A ½-IN. EXPANSION JOINT SHALL BE REQUIRED WHERE THE CONCRETE WHEELCHAIR RAMP JOINS ANY RIGID PAVEMENT OR STRUCTURE.
4. IN NO CASE SHALL THE WIDTH OF A CURB RAMP OR CURB CUT BE LESS THAN 40-IN. (3-FT, 4-IN.), NOT INCLUDING THE FLARED SIDES.
5. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.
6. THE MAXIMUM SLOPE ON THE CURB RAMP RUN IS 1:12.
7. THE MAXIMUM CROSS SLOPE OF THE CURB RAMP IS 1:50.
8. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20.
9. ANY RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 48-IN. LONG BETWEEN THE CURB RAMPS.
10. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9-IN., A HEIGHT OF NOMINAL 0.2-IN. AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35-IN. AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

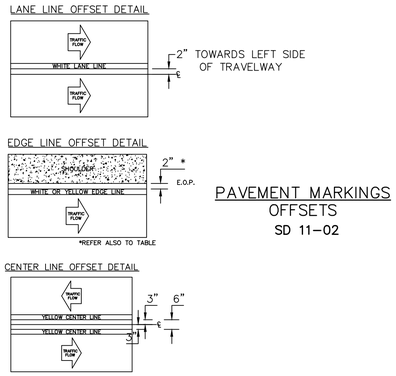
ADDITIONAL NOTES

1. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT.
2. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF THE PEDESTRIAN CROSSWALK.
3. ALL PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION. THIS DOCUMENT IS AVAILABLE FROM THE SUPERINTENDENT OF DOCUMENTS, U.S. GOVERNMENT PRINTING OFFICE, WASHINGTON, D.C. 20402.
4. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
5. THE BOTTOM OF DIAGONAL (CORNER TYPE) CURB RAMPS AT MARKED CROSSINGS SHALL HAVE 48-IN. MINIMUM CLEAR SPACE WITHIN THE MARKINGS.
6. IF DIAGONAL CURB RAMPS HAVE FLARED SIDES, THEY SHALL HAVE AT LEAST A 24-IN. LONG SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING.



PAVEMENT MARKINGS
WHEEL CHAIR RAMPS
SD 11-11

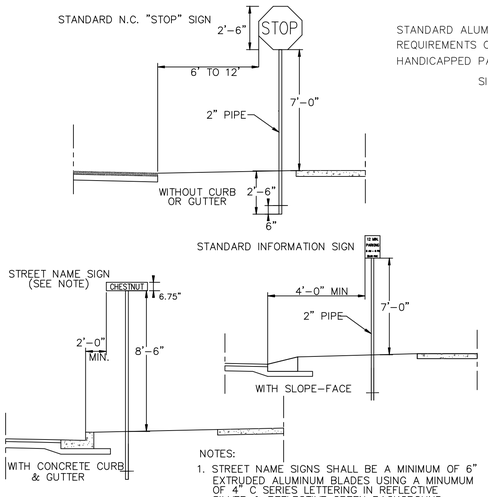
LEGEND
- DIRECTION OF TRAFFIC FLOW
- PAVEMENT MARKING SYMBOLS



PAVEMENT MARKINGS
OFFSETS
SD 11-02

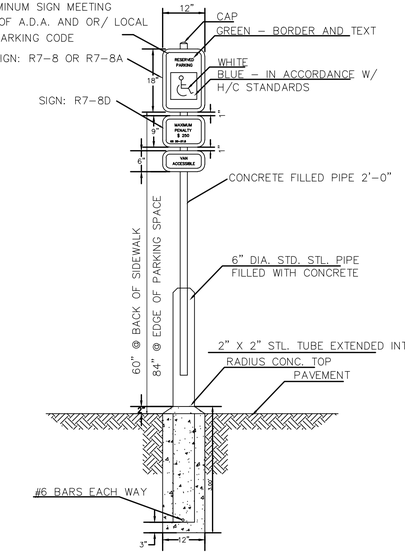
TABLE 1
EDGE LINE OFFSETS FOR 2-LANE, 2-WAY ROADWAYS WITH UN-PAVED SHOULDERS

WIDTH OF TRAVEL PAVEMENT	MAX. EDGE LINE OFFSET FROM E. O. P.	MINIMUM LANE WIDTH
16' – 20'	2"	8' – 10'
22'	2"	11'
24'	1"	11'
26'	2'	11'
28'	2'	12'
30'	3'	12'
32'	4'	12'

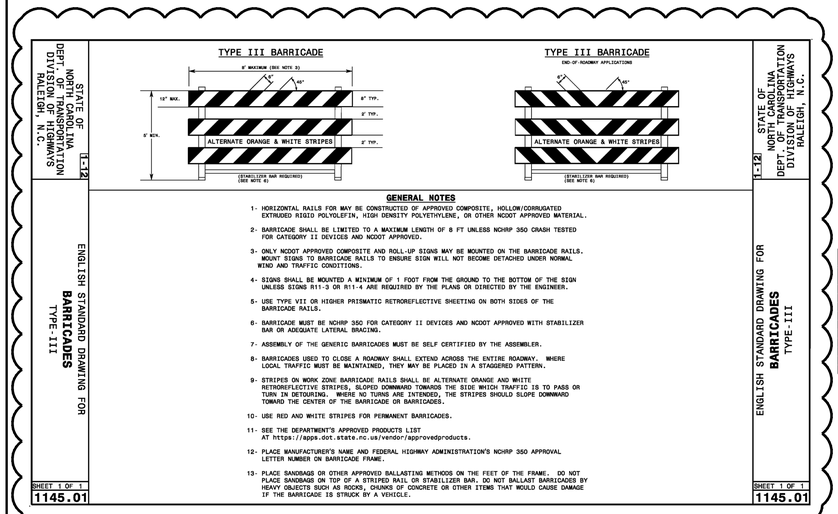


NOTES:
1. STREET NAME SIGNS SHALL BE A MINIMUM OF 6" EXTRUDED ALUMINUM BLADES USING A MINUMUM OF 4" C SERIES LETTERING IN REFLECTIVE SILVER & REFLECTIVE GREEN BACKGROUND.
2. ALL REFLECTIVE SIGNS SHALL BE MADE OF ENGINEERING GRADE OR HIGH INTENSITY GRADE REFLECTIVE SHEETING OR APPROVED EQUIVALENT.
3. ALL SIGNS PLACED IN RIGHT-OF-WAY WILL BE APPROVED BY TRAFFIC ENGINEERING DIVISION.
4. ALL FOOTINGS TYPICAL FOR ALL SIGNS, WHICH NEED TO BE ANCHORED IN CONCRETE.

STANDARD SIGN INSTALLATION LOCATION
SD 15-04
NOT TO SCALE



HANDICAP PARKING SIGN
NOT TO SCALE



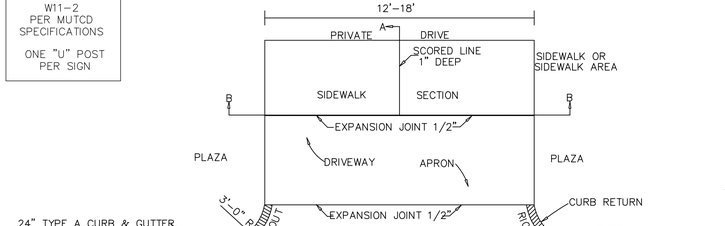
4 ADDITION OF NCDOT TYPE III BARRICADE

36" X 36" W11-2 PER MUTCD SPECIFICATIONS

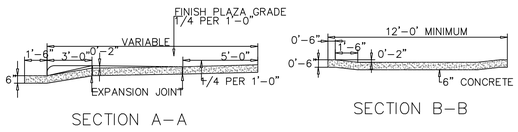
ONE "U" POST PER SIGN

PAVEMENT MARKER SPACING CHART	
TYPE OF PAVEMENT MARKING	TYPICAL SPACING in FT (speed limit <= 45mph)
Centerlines---along through lanes	40
Centerlines---along horizontal curves	per Traffic Engineering
Skip Lines---along through lanes	40
Turn Lanes---Skip Lines	40
Turn Lanes---Solid Lane Lines	20
Turn Lanes---Centerlines	40
Painted Islands---White	20
Painted Islands---Yellow	40
Raised Median Islands	40
Other Markings	per Traffic Engineering

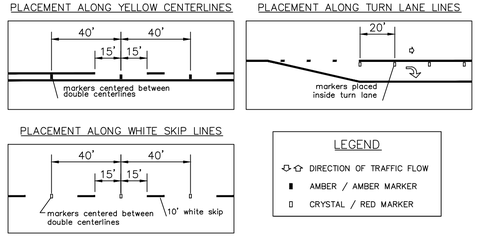
GENERAL NOTES
- CRYSTAL/RED MARKERS SHALL BE USED ALONG WHITE PAVEMENT MARKINGS UNLESS OTHERWISE DIRECTED BY TRAFFIC ENGINEERING. RED SIDE OF MARKER TO FACE "WRONG-WAY" TRAFFIC.
- PAVEMENT MARKERS SHOULD NOT BE PLACED CLOSER THAN 2 INCHES TO A PAVEMENT CONSTRUCTION JOINT, EXCEPT WHEN PLACED BETWEEN DOUBLE YELLOW CENTERLINES.
- PAVEMENT MARKERS SHALL NOT BE PLACED DIRECTLY ON PAVEMENT MARKINGS.
- PAVEMENT MARKERS USED IN CONJUNCTION WITH DOUBLE YELLOW CENTERLINES SHALL BE PLACED MID-WAY BETWEEN THE LINES, WITH A GAP BETWEEN MARKER AND MARKINGS.



PAVEMENT PLAN

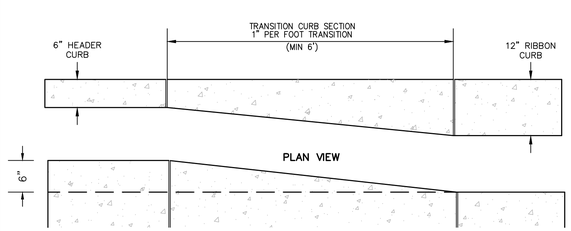


MODIFIED STANDARD DRIVEWAY DETAIL
MODIFIED SD 8-02
NOT TO SCALE



LEGEND
- DIRECTION OF TRAFFIC FLOW
- AMBER / AMBER MARKER
- CRYSTAL / RED MARKER

PAVEMENT MARKINGS
RAISED PAVEMENT MARKERS
SD 11-10



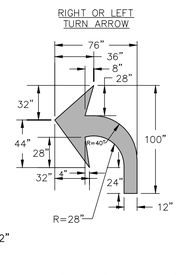
TRANSITION CURB
NOT TO SCALE

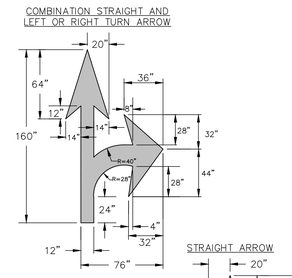
For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

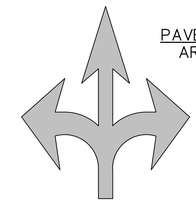
Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

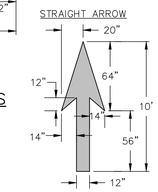
1 inch

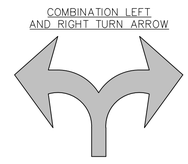






PAVEMENT MARKINGS
ARROW SYMBOLS
SD 11-03





GENERAL NOTES
- ALL PAVEMENT MARKING SYMBOLS SHALL BE WHITE IN COLOR
- PAVEMENT MARKING SYMBOLS SHALL NOT BE LOCATED AS TO ENCROACH INTO INTERSECTION AREAS.
- ON PORTLAND CEMENT CONCRETE PAVEMENTS, PAVEMENT MARKING SYMBOLS SHALL NOT BE PLACED ACROSS TRANSVERSE EXPANSION JOINTS UNLESS APPROVED BY THE ENGINEER.

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/28/2015

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

NASH HOUSE — NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

SITE PLAN DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

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

M&C FILE NUMBER: CS-502

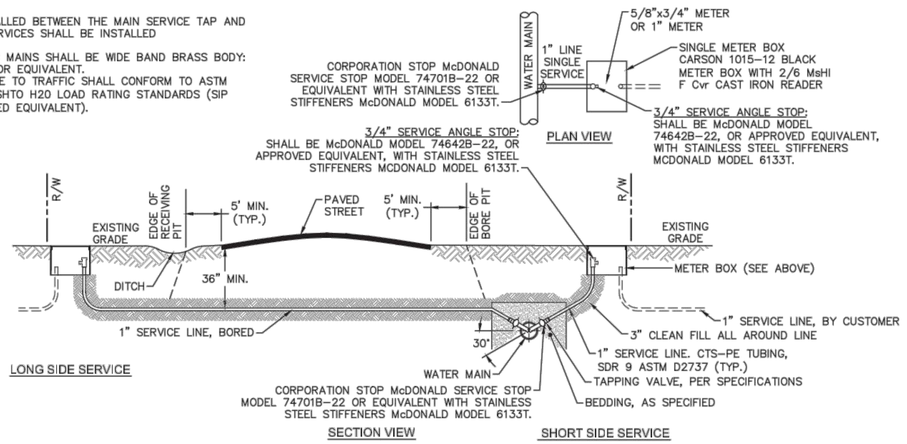
DRAWING NUMBER: 35

STATUS: FINAL DESIGN — ISSUED FOR CONSTRUCTION

REVISION: 4

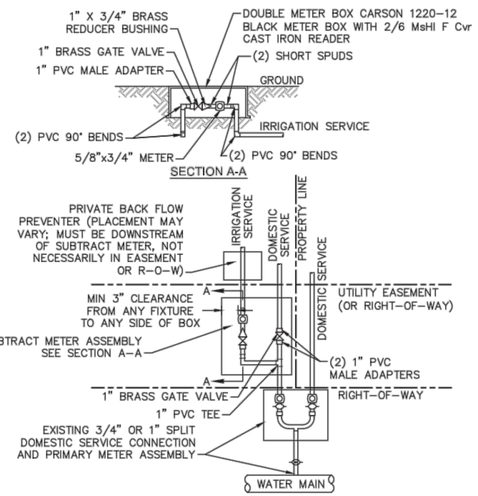
S:\2735\0125 Ph 1 ARNB\Drawings\DETAILS.dwg, 4/6/2016 5:45:42 PM, EMCArthur, 1:1

NOTES:
1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: SADDLE McDONALD 3801 OR EQUIVALENT.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4242, OR APPROVED EQUIVALENT).



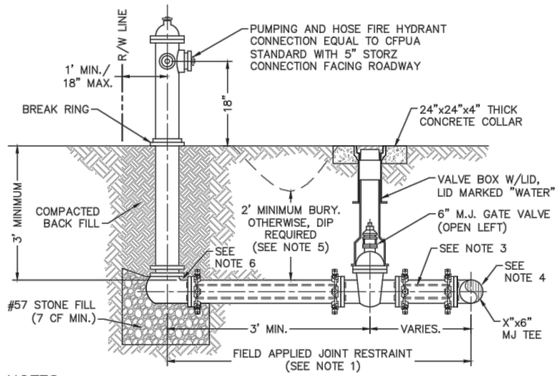
NOTE:
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPUA WATER SYSTEM

WD-18 **SINGLE SERVICE CONNECTION**
NOT TO SCALE



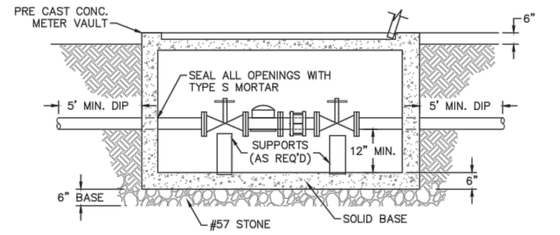
NOTES:
1. BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPUA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY.
2. ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS.

WD-8 **DOUBLE SERVICE CONNECTION USING SUBTRACT METER**
NOT TO SCALE

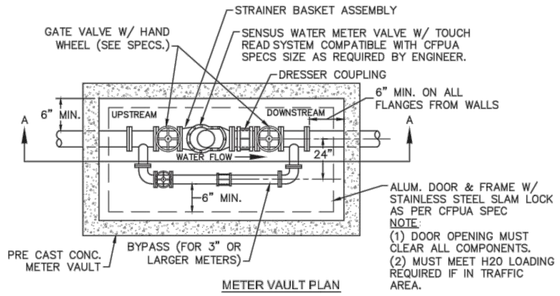


NOTES:
1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI OR C-900 PVC PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH COR-BLUE MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
4. HYDRANT TEE SHALL BE RESTRAINED ON EACH SIDE OF MAIN PLUS ANY VALVE, FITTING, OR JOINT IN MAIN WITHIN 10-FEET OF HYDRANT TEE.
5. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
6. WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.

WD-10 **FIRE HYDRANT ASSEMBLY**
NOT TO SCALE



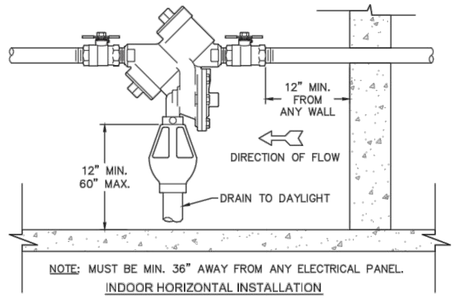
METER VAULT SECTION A-A



METER VAULT PLAN

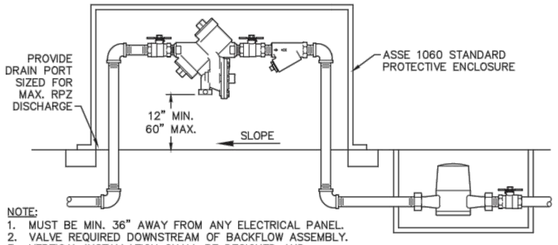
FOR WATER METERS LARGER THAN 2"

WD-1 **WATER METER VAULT**
NOT TO SCALE



NOTE: MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.

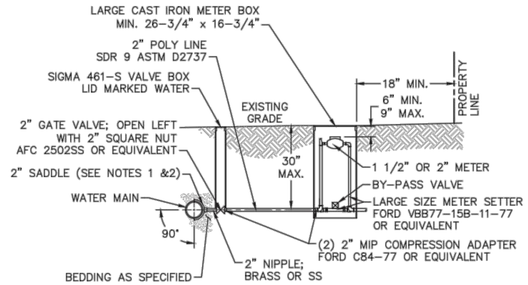
INDOOR HORIZONTAL INSTALLATION



NOTE:
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPUA ESMD FOR APPROVAL.

OUTDOOR HORIZONTAL INSTALLATION

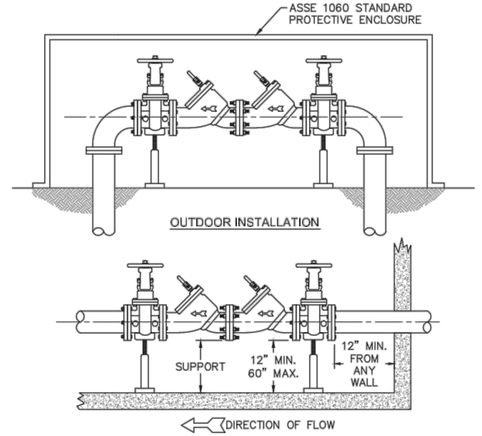
WD-12 **REDUCED PRESSURE PRINCIPLE ASSEMBLY**
NOT TO SCALE



NOTES:
1. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY: McDONALD 3800, FORD S90 (DOUBLE STRAP) OR EQUIVALENT.
3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (OLDCASTLE PRECAST MODEL B1730 OR APPROVED EQUIVALENT).
4. METER BOXES SUSCEPTIBLE TO INCIDENTAL, NON-DELIBERATE TRAFFIC SHALL CONFORM TO ANSI/SCTE 77 TIER 15 LOAD RATING STANDARDS (SYNERTECH MODEL DUO 17x30 OR APPROVED EQUIVALENT).
5. NON-TRAFFIC METER BOXES SHALL BE SIGMA MB2203 OR APPROVED EQUIVALENT.
6. 3" CLEAN FILL REQUIRED ALL AROUND 2" POLY SERVICE LINE.

FOR 1-1/2" OR 2" WATER SERVICES

WD-11 **LARGE METER**
NOT TO SCALE



OUTDOOR INSTALLATION

NOTE:
1. MUST BE MIN. 36" AWAY FROM ANY ELECTRICAL PANEL.
2. VALVE REQUIRED DOWNSTREAM OF BACKFLOW ASSEMBLY.
3. VERTICAL INSTALLATION SHALL BE DESIGNED AND SUBMITTED TO CFPUA ESMD FOR APPROVAL

INDOOR INSTALLATION

WD-7 **DOUBLE CHECK VALVE ASSEMBLY**
NOT TO SCALE

GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/26/12
2	Single Service Connection and Fire Hydrant Details Revised	7/23/13
3	Fire Hydrant Detail Revised	01/03/14
4	Revised Fire Hydrant Assembly To Show 5" STORZ Connection	04/10/15

CFPUA WATER DISTRIBUTION SYSTEM

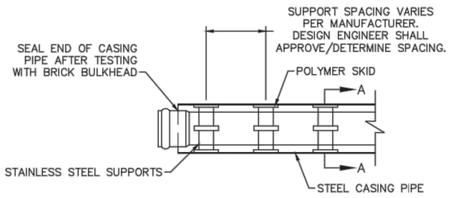
STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:

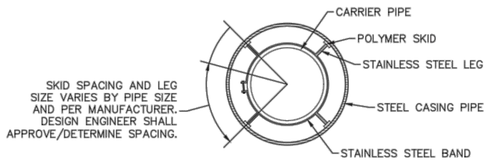
SHEET NO: WSD-1

S:\27350125 Ph 1 AR\90-Drawings\DETAILS.dwg, 4/6/2016 5:45:52 PM, EMcArthur, 1:1



PLAN

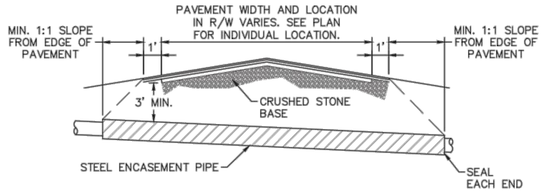
NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



SECTION A-A

WD-15 PIPE CASING SUPPORT DETAIL

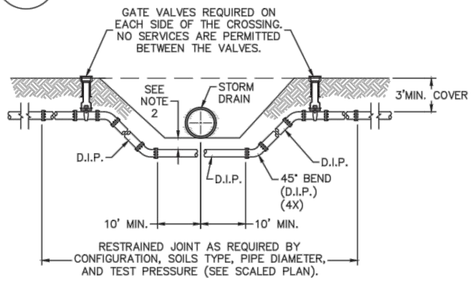
NOT TO SCALE



NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

WD-16 TYPICAL BORING/ JACKING DETAIL

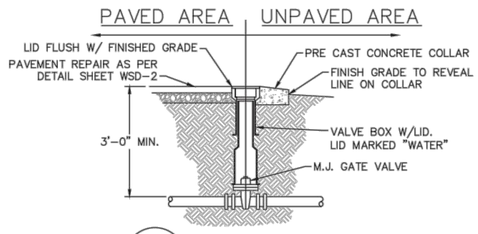
NOT TO SCALE



NOTES:
1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE.
2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPUA:
   a. IN DOT R/W, 36" MIN. TYPICAL, OR 24" MIN. WHEN CROSSING A DITCH LINE.
   b. ALL OTHER LOCATIONS, 30" MIN.
   c. WHEN STORM DRAIN INVERT IS BURIED AT OR BELOW ABOVE DEPTHS, 18" MIN. CLEARANCE IS REQUIRED.

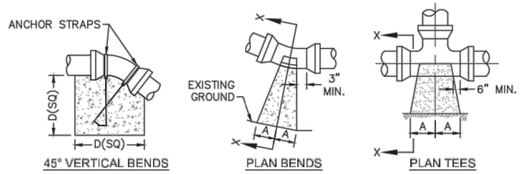
WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING

NOT TO SCALE



WD-3 VALVE DETAIL

NOT TO SCALE

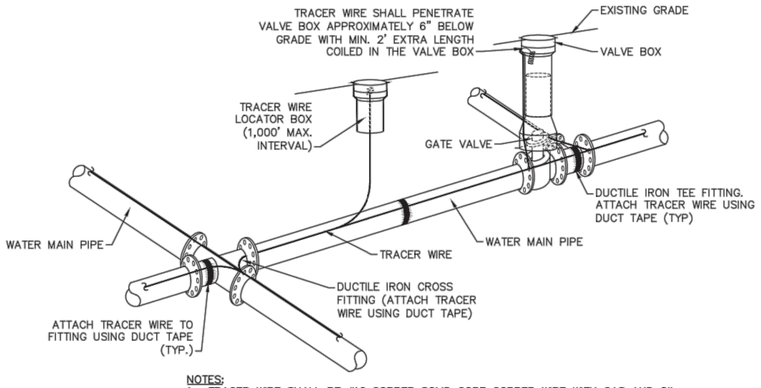


SIZE	90 BENDS A	90 BENDS B	45 BENDS A	45 BENDS B	22-1/2 BENDS A	22-1/2 BENDS B	TEES/PLUGS A	TEES/PLUGS B	45 VERT. BENDS
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
14"	26"	29"	21"	19"	18"	18"	26"	20"	72"
16"	33"	29"	25"	21"	20"	21"	32"	21"	83"
18"	40"	30"	28"	24"	22"	23"	36"	24"	88"

NOTES:
1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.

WD-4 THRUST BLOCK DETAIL

NOT TO SCALE



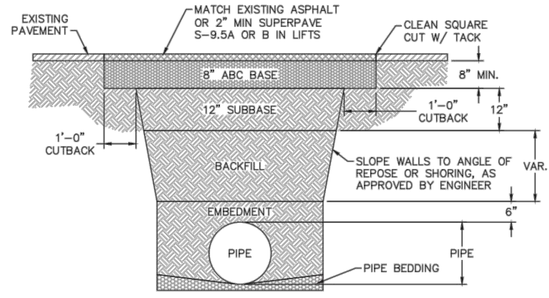
NOTES:
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT, AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

WD-17 TRACER WIRE DETAIL

NOT TO SCALE

WD-6 SAMPLING STATION

NOT TO SCALE

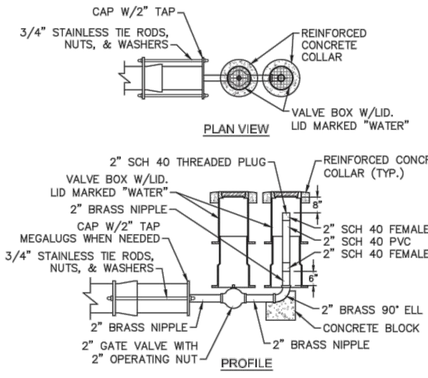


NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12' MINIMUM LIFTS
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
8. 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

(FOR PR VATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQU REMENTS AS DEFINED BY R GHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

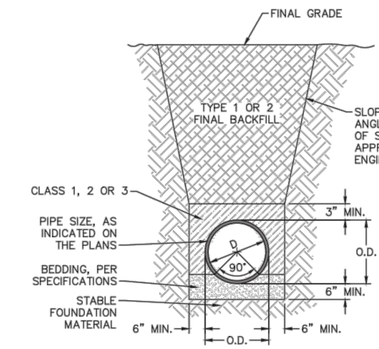
WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED

NOT TO SCALE



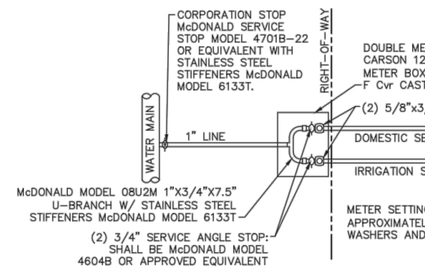
WD-5 2" BLOW-OFF

NOT TO SCALE



WD-13 TYPICAL TRENCH DETAIL

NOT TO SCALE



WD-9 DOUBLE SERVICE CONNECTION

NOT TO SCALE

GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	Revised Water Main Ditch and Storm Crossing Detail	11/12/13
2	Revised Water Main Ditch and Storm Crossing Detail	05/05/14
3	Revised Tracer Wire Detail	10/20/15

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED B: CFPUA
PROJECT N:
SHEET: WSD

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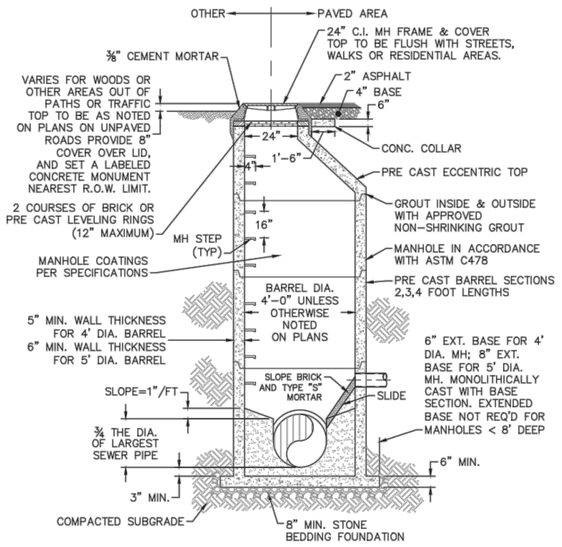
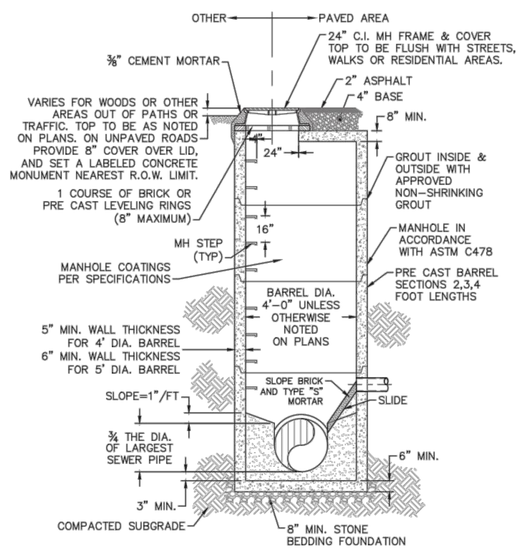


LESS THAN 30" DROP

SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL

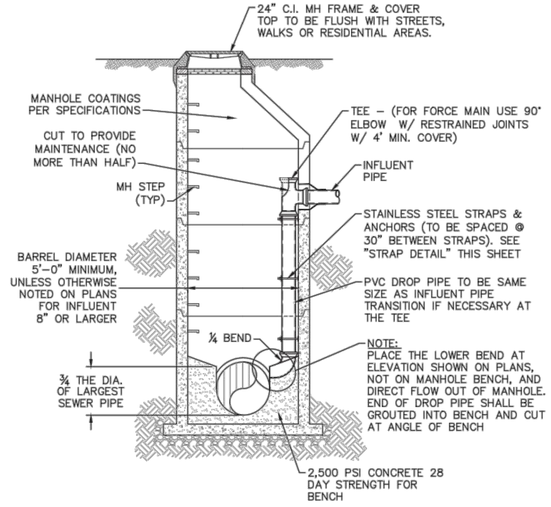
NOT TO SCALE



LESS THAN 30" DROP

SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL

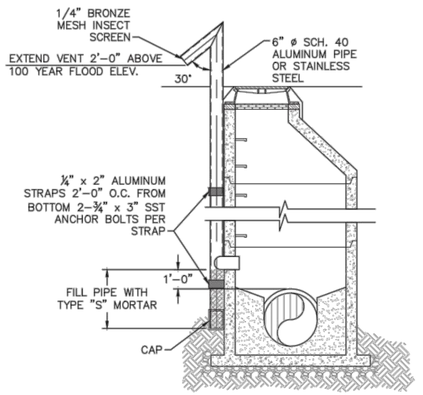
NOT TO SCALE



MORE THAN 30" DROP

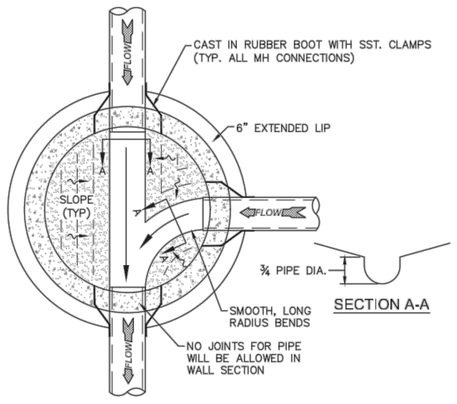
SD-3 DROP MANHOLE

NOT TO SCALE



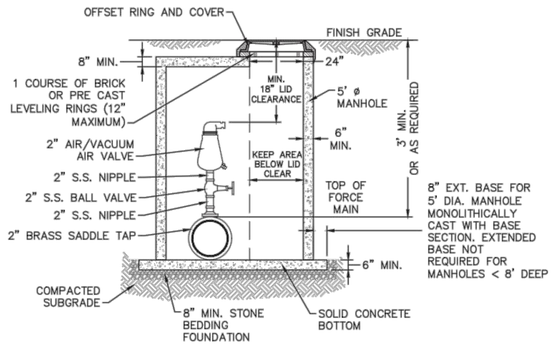
SD-4 STANDARD VENT MANHOLE

NOT TO SCALE



SD-5 MANHOLE FLOOR PLAN

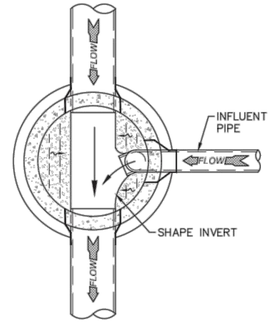
NOT TO SCALE



NOTES:
1. CONTRACTOR TO INSTALL VALVE AND MANHOLE AT SUFFICIENT DEPTH TO ALLOW FOR ACCESS.
2. FORCE MAIN TO BE OFFSET IN MANHOLE TO KEEP AREA BELOW LID CLEAR.
3. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. USE CAST IN RUBBER BOOT WITH SST. CLAMPS FOR ALL MH CONNECTIONS, INCLUDING FORCE MAIN.

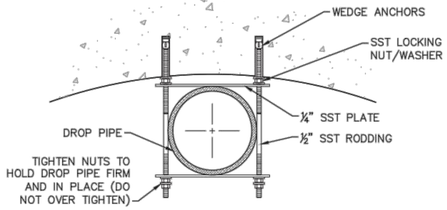
SD-6 AIR/ VACUUM AND AIR RELEASE COMBINATION VALVE

NOT TO SCALE



SD-7 DROP MANHOLE FLOOR PLAN

NOT TO SCALE



NOTE: ALL PARTS TO BE SST.

SD-8 STRAP DETAIL

NOT TO SCALE

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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

SD-9 STANDARD SEWER NOTES

(REQUIRED ON ALL SEWER PLAN AND PROFILE SHEETS)

GENERAL NOTES:

1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
3. THE CONTRACTOR IS RESPONSIBLE FOR TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES WHILE CONSTRUCTION IS IN PROGRESS.
4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	AIR / VACUUM AND AIR RELEASE COMBINATION VALVE REVISED	10/26/12
2	STANDARD SEWER NOTE #6 REVISED	12/10/12
3	REVISED STANDARD VENT MANHOLE TO EXTEND VENT 2'-0" ABOVE 100 YR FLOOD	11/20/14

CFPUA SANITARY SEWER

STANDARD DETAILS

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO :

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

SHEET NO: SSD-1

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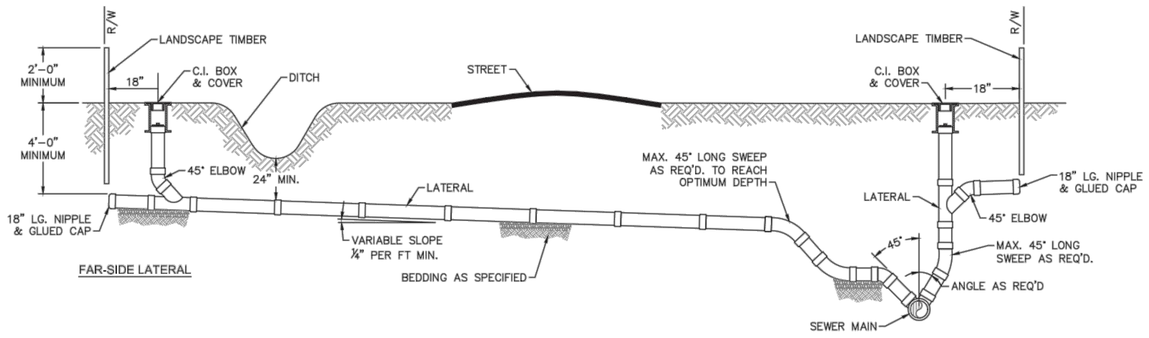
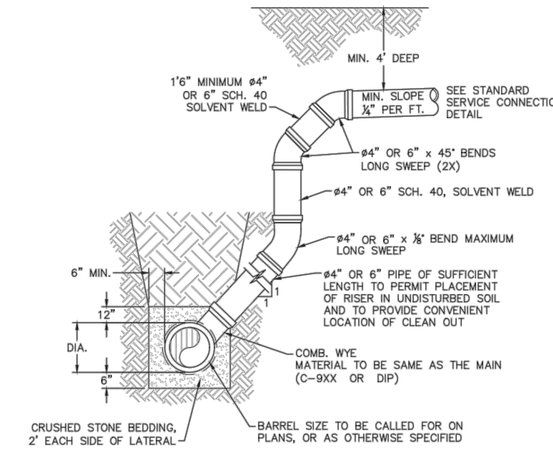


NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE–IN TO MAIN

SD-19 STANDARD SERVICE CONNECTION TO SANITARY SEWER

NOT TO SCALE

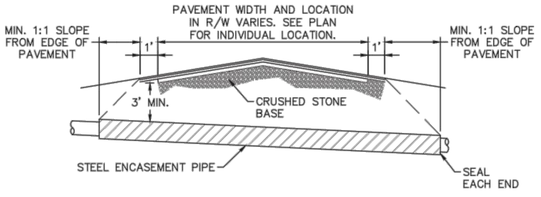


NOTES:
1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE–IN TO MAIN.

MAIN DEPTH GREATER THAN 8 FT

SD-12 DEEP SERVICE LATERAL

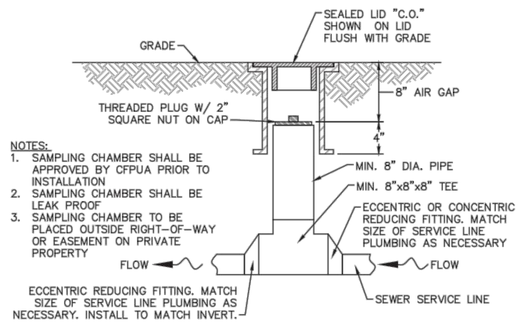
NOT TO SCALE



NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

SD-16 TYPICAL BORING/ JACKING DETAIL

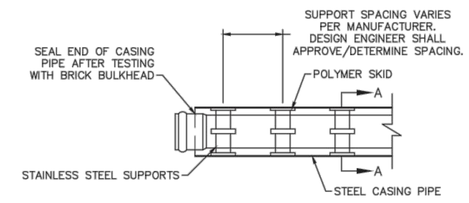
NOT TO SCALE



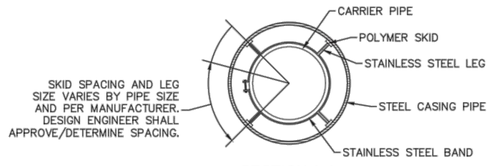
NOTES:
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION
2. SAMPLING CHAMBER SHALL BE LEAK PROOF
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT–OF–WAY OR EASEMENT ON PRIVATE PROPERTY

SD-13 SAMPLING CHAMBER

NOT TO SCALE

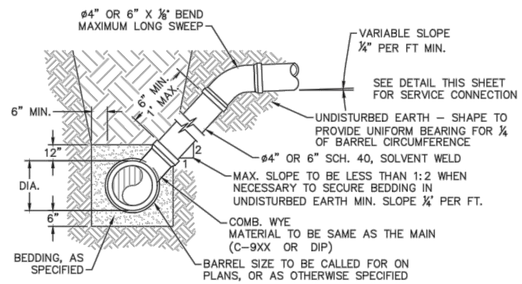


NOTE: PIPE SUPPORT TO BE PLACED TO PROVIDE PROPER SUPPORT, ALIGNMENT, AND GRADE AS SPECIFIED. CONTINUOUS SUPPORTS MAY BE USED AS ALTERNATIVE. OIL, GREASE, OR PETROLEUM PRODUCT MAY NOT BE USED AS LUBRICANT.



SD-17 PIPE CASING SUPPORT DETAIL

NOT TO SCALE

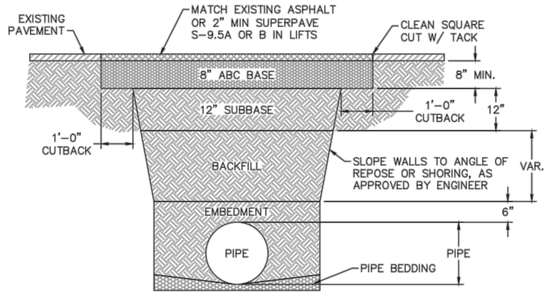


NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE–IN TO MAIN

MAIN DEPTH LESS THAN 8 FT

SD-10 STANDARD SERVICE LATERAL

NOT TO SCALE

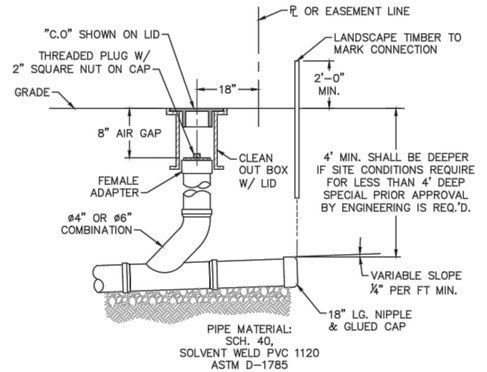


NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8–INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS
5. SOIL SHALL BE COMPACTED BY A MECHANIZED TAMPER (I.E JUMPING JACK), HOWEVER, VIBRATORY ROLLERS > 18" WIDTH MAY BE USED FOR LARGER EXCAVATIONS. THE PLATE TAMP METHOD SHALL NOT BE USED.
6. ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
7. ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T–99.
8. 1–FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

(FOR PRIVATE ROADS AND PAVED AREAS; CONTRACTOR TO MEET MIN. REQUIREMENTS AS DEFINED BY RIGHT-OF-WAY OWNER FOR PUBLIC ROAD REPAIRS)

SD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED

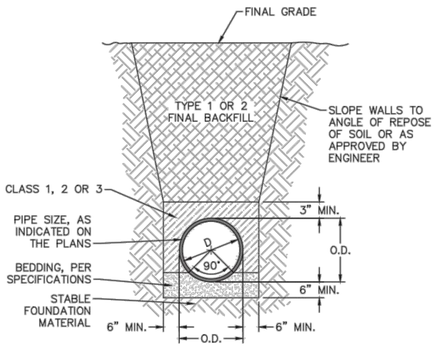
NOT TO SCALE



NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE–IN TO MAIN

SD-11 SERVICE CONNECTION AND CLEAN-OUT

NOT TO SCALE



SD-15 TYPICAL TRENCH DETAIL

NOT TO SCALE

GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE–WAY.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES BEFORE ANY CONSTRUCTION BEGINS.
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4. THE CONTRACTOR IS RESPONSIBLE FOR STABILIZATION OF ALL DISTURBED AREAS.
5. THE CONTRACTOR IS RESPONSIBLE FOR LAY DOWN AND STOCKPILE AREAS (TO ARRANGE AND ENSURE COMPLIANCE WITH ALL LOCAL AND STATE REGULATIONS).

THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	SAMPLING CHAMBER REVISED	10/26/12

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:

SHEET NO: SSD-2

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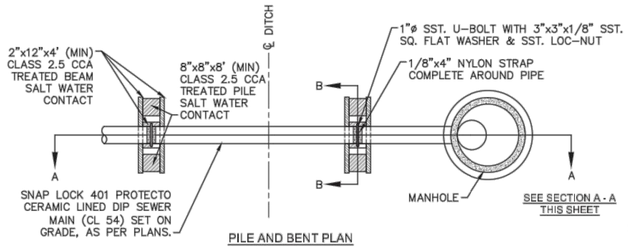
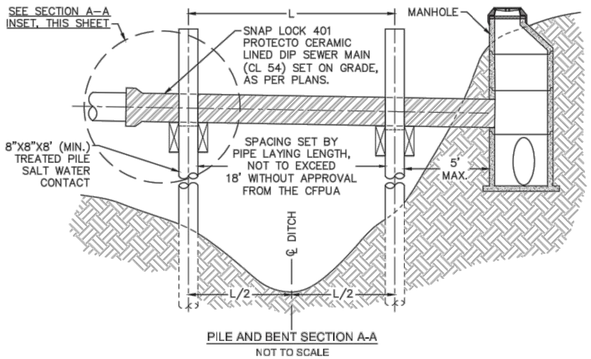
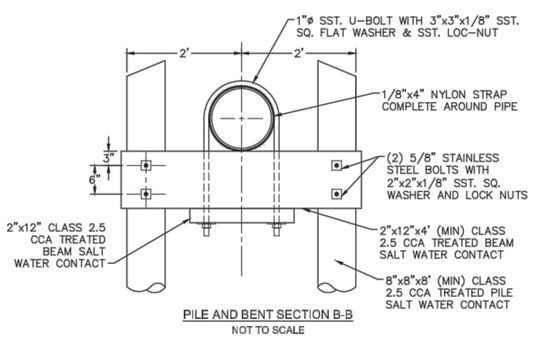


PILE AND BENT PLAN
NOT TO SCALE

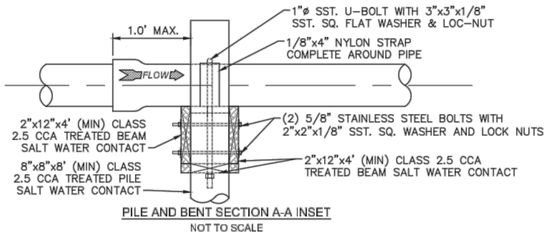
NOTES:
1. PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1082-2 & 1084-2.
2. CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM OF 3" CENTERLINE TO CENTERLINE.
3. ALL STAINLESS STEEL SHALL BE 316. STAINLESS STRAP TO BE COLD FORMED.
4. PILE SHALL NOT OBSTRUCT FLOW OR CAUSE EROSION OF DITCH/STREAM BANK.
5. MIN. CLASS 54 DIP--ENGINEER MUST DESIGN LOADING.
6. DESIGN SHALL BE APPROVED BY CFPUA.



PILE AND BENT SECTION A-A
NOT TO SCALE

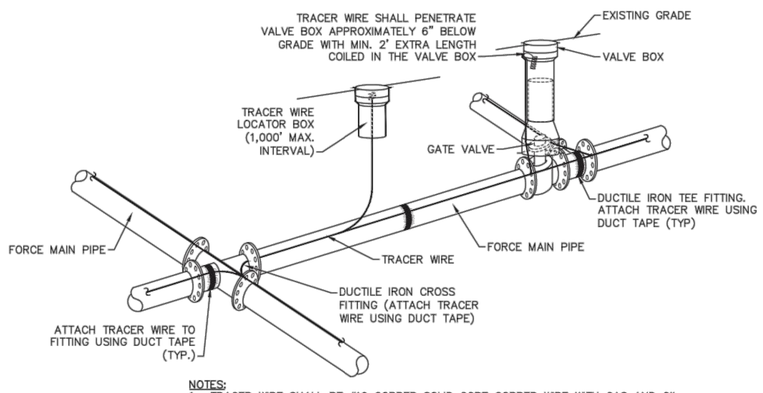


PILE AND BENT SECTION B-B
NOT TO SCALE



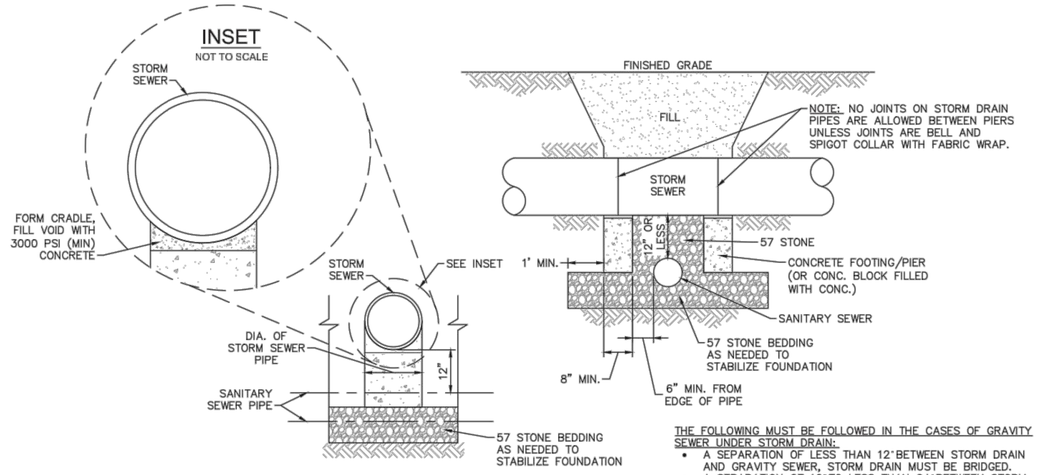
PILE AND BENT SECTION A-A INSET
NOT TO SCALE

SD-20 PILE AND BENT DETAIL
NOT TO SCALE



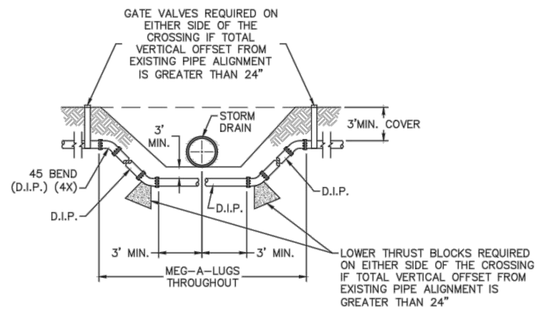
NOTES:
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
2. WIRE SHALL BE STRAPPED TO ALL PVC FORCE MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.
4. ALL SPLICES IN THE WIRE SHALL BE MADE WITH 3M DBR DIRECT BURY SPLICE KIT AN UNDERGROUND RATED, WATERTIGHT, AND APPROVED SPLICE CONNECTOR OR APPROVED EQUAL.

SD-21 TRACER WIRE DETAIL
NOT TO SCALE



THE FOLLOWING MUST BE FOLLOWED IN THE CASES OF GRAVITY SEWER UNDER STORM DRAIN:
- A SEPARATION OF LESS THAN 12' BETWEEN STORM DRAIN AND GRAVITY SEWER, STORM DRAIN MUST BE BRIDGED.
- A SEPARATION OF 12" TO LESS THAN 24' BETWEEN STORM DRAIN AND GRAVITY SEWER, GRAVITY SEWER CAN BE DIP OR STORM DRAIN CAN BE BRIDGED. (PER DWR REGULATIONS)
- A SEPARATION OF 24" OR GREATER BETWEEN STORM DRAIN AND GRAVITY SEWER REQUIRES NO BRIDGING OR DIP.

SD-24 STRUCTURAL BRIDGING DETAIL FOR STORMWATER OVER GRAVITY SEWER INSTALLATIONS WITH LESS THAN 12" SEPARATION
NOT TO SCALE



NOTE: USE D.I.P. (CL50 OR BETTER)

SD-18 FORCE MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE

GENERAL NOTES:
1. NO EXCAVATED MATERIAL SHALL BE PLACED IN ANY STREAM, DITCH OR DRAINAGE-WAY.
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THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:
1	ADDED NOTES TO THE STRUCTURAL BRIDGING DETAIL	03/11/15
2	Revised Tracer Wire Detail	10/20/15

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainably. Service.

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED B: CFPUA
PROJECT N:
SHEET: SSD

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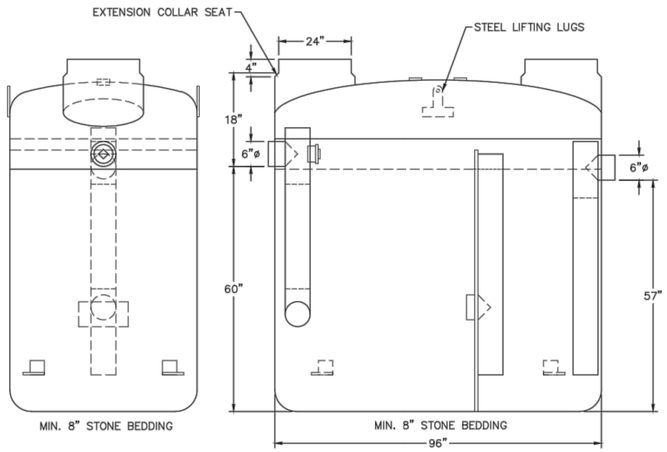
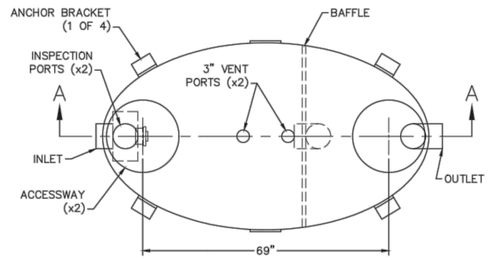


SECTION A-A

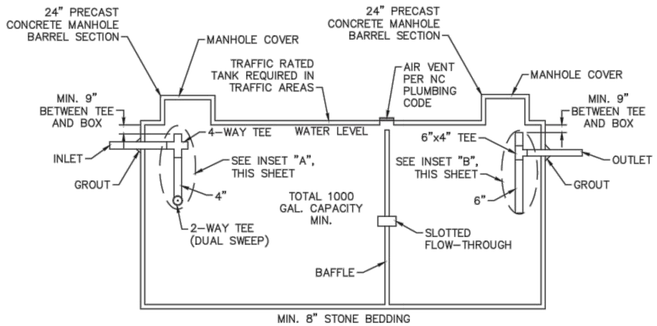


PLAN

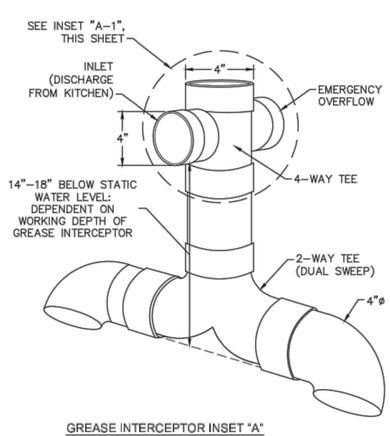
NOTES:
1. FOR GRAVITY APPLICATIONS ONLY.
2. MIN. THICKNESS: 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
3. STANDARD PIPE STUBS ARE SOCKET SDR 35 PVC.
4. EXTENSION COLLARS SHALL BE CAULKED WITH SIKAFLEX OR EQUIVALENT FOR WATERTIGHT SEAL.
5. FOLLOW MANUFACTURE'S SPECS FOR TRAFFIC OR PEDESTRIAN LOADING.

SD-22 FIBERGLASS GREASE INTERCEPTOR

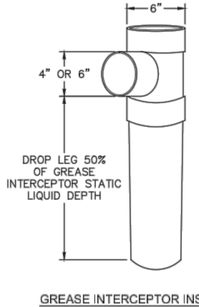
NOT TO SCALE



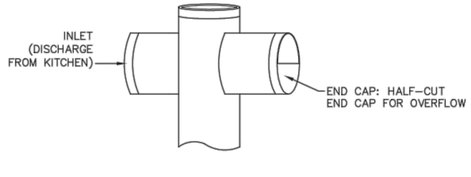
PLAN



GREASE INTERCEPTOR INSET "A"
4" SANITARY TEE



GREASE INTERCEPTOR INSET "B"
6" x 6" x 4" OUTLET
SANITARY TEE



GREASE INTERCEPTOR INSET "A-1"
EMERGENCY OVERFLOW CLOSE-UP

SD-23 CONCRETE GREASE INTERCEPTOR

NOT TO SCALE

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THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:

CFPUA SANITARY SEWER

STANDARD DETAILS

CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560
Stewardship. Sustainability. Service.

DATE: 1/9/12
SCALE: N/A
DRAWN BY: CFPUA
CHECKED BY: CFPUA
PROJECT NO.:
SHEET: SSD

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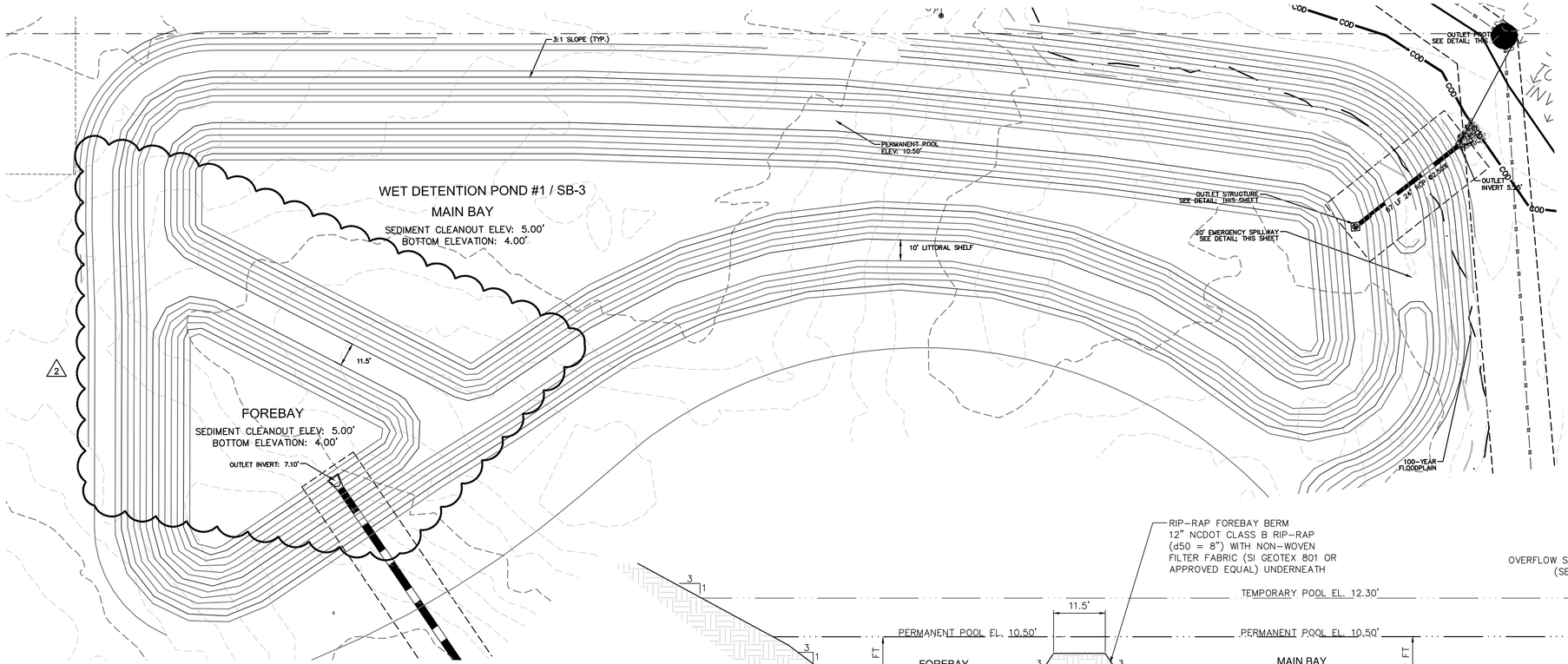
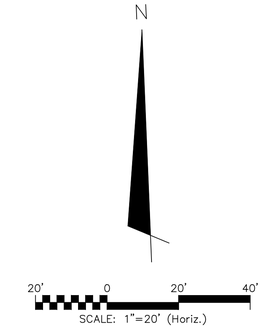




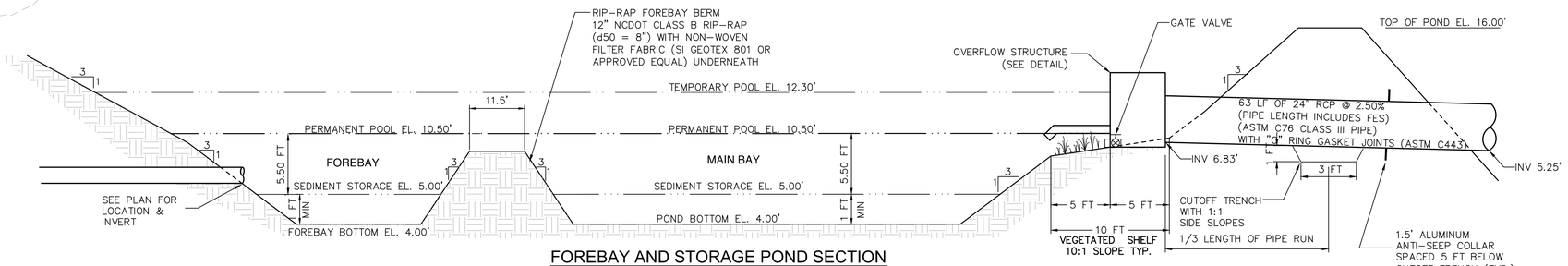
Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

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



FOREBAY AND STORAGE POND SECTION
NOT TO SCALE

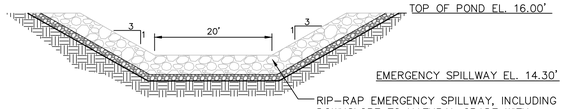
2 GRADING REVISIONS TO STORMWATER BMPS

WET DETENTION POND NOTES

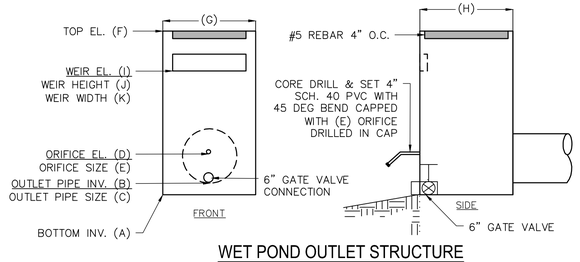
1. TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.
2. SOD SLOPES ABOVE THE PERMANENT POOL AROUND THE INSIDE OF THE FOREBAY, ABOVE THE VEGETATED SHELF AROUND THE MAIN BAY AND SLOPES OUTSIDE OF THE POND.
3. CONTRACTOR SHALL EXCAVATE VEGETATED SHELF AS NECESSARY TO PROVIDE ADEQUATE CLEARANCE AROUND RISER FOR PVC PIPE INVERT.
4. THE SEASONAL HIGH WATER TABLE WAS FOUND TO BE ~ EL. 10.94 IN THE MAIN BAY OF THE WET DETENTION POND.

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING UTILITIES.
2. THE IMPROVEMENTS SHOWN ON THIS SITE PLAN CANNOT DEVIATE FROM THE PLAN ONCE APPROVED WITHOUT WRITTEN APPROVAL OF ENGINEER.
3. SITE WILL REQUIRE A COUNTY EROSION CONTROL PERMIT AND CITY STORMWATER PERMIT.
4. IMPERVIOUS AREA SHALL DRAIN TO PROPOSED CITY PERMITTED STORMWATER POND.

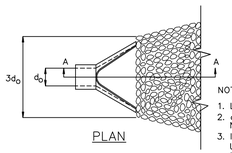


EMERGENCY SPILLWAY SECTION
NOT TO SCALE



WET POND OUTLET STRUCTURE
NOT TO SCALE

WET POND OUTLET STRUCTURE	
	WET POND 1
A	6.83'
B	6.83'
C	24" RCP
D	10.5'
E	3.00"
F	14.30
G	4'
H	4'
I	12.30'
J	2"
K	4"



NOTES:
1. La 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.

OUTLET PROTECTION	
OUTLET PIPE DIA.	24"
OUTLET FLOW RATE	1.19 CFS
OUTLET VELOCITY	5.20 FT/S
MATERIAL	CLASS A
LENGTH	8'
WIDTH	6'
STONE DIA.	3"
THICKNESS	9"

PIPE OUTLET PROTECTION
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

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

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORMWATER MANAGEMENT DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=30'
VERTICAL: N/A

M&C FILE NUMBER CN-501
DRAWING NUMBER 42

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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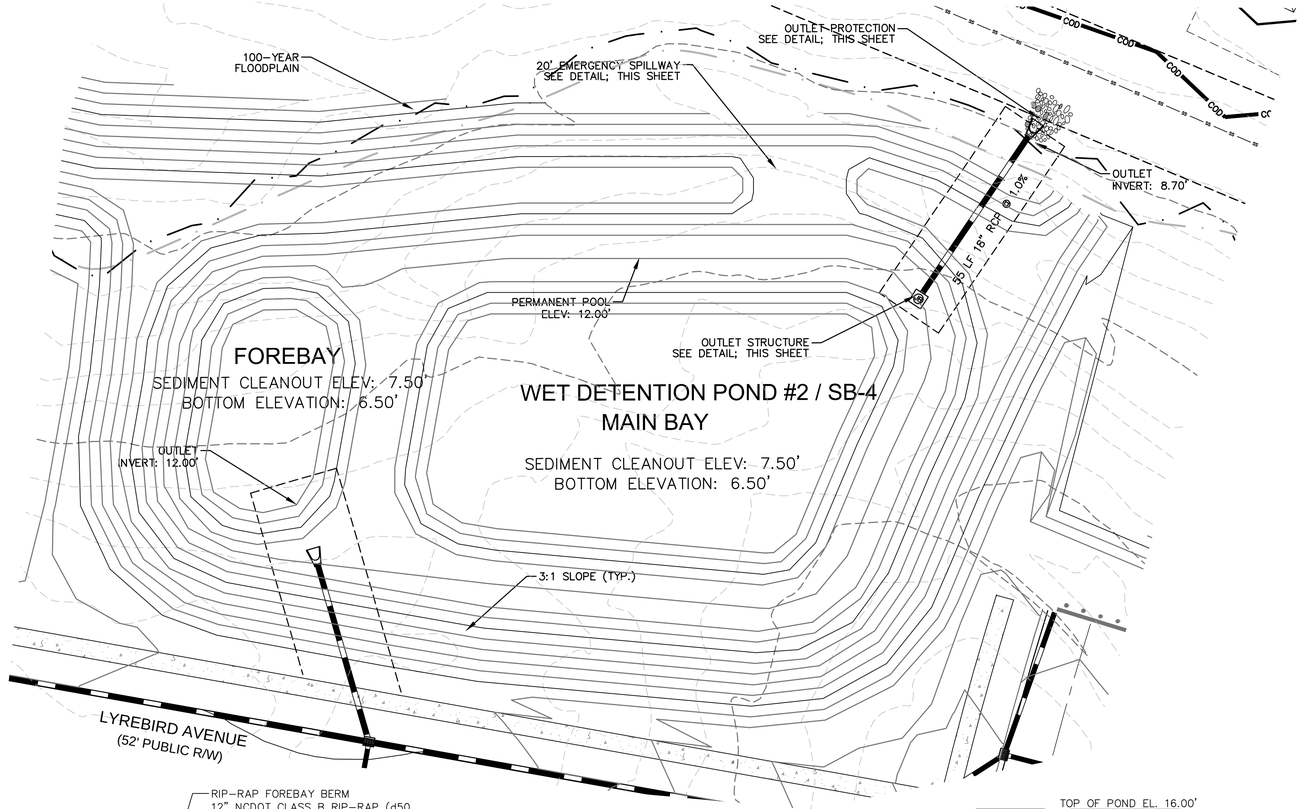

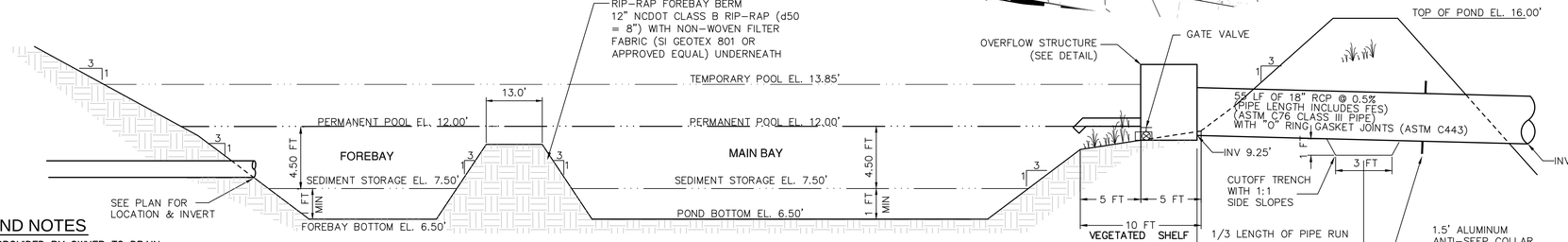

FOREBAY AND STORAGE POND SECTION

NOT TO SCALE

WET DETENTION POND NOTES

1. TEMPORARY PUMP WILL BE PROVIDED BY OWNER TO DRAIN POND/FOREBAY FOR ROUTINE MAINTENANCE OR IN AN EMERGENCY.
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4. THE SEASONAL HIGH WATER TABLE WAS FOUND TO BE ~ EL. 11.87 IN THE MAIN BAY OF THE WET DETENTION POND.

GENERAL NOTES

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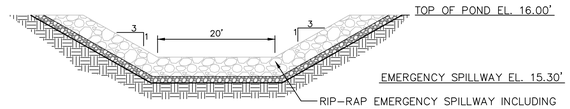
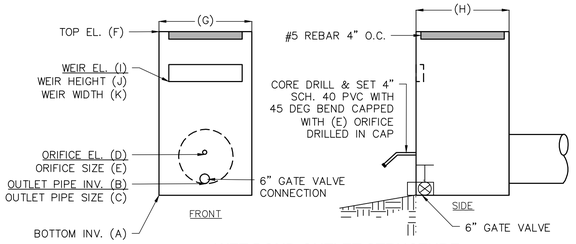


EMERGENCY SPILLWAY SECTION

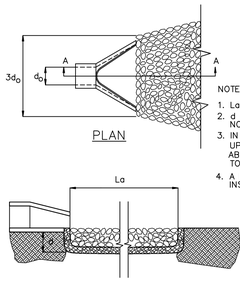
NOT TO SCALE



WET POND OUTLET STRUCTURE

NOT TO SCALE

WET POND OUTLET STRUCTURE	
	WET POND 2
A	9.25'
B	9.25'
C	18" RCP
D	12.00'
E	1.75"
F	14.80'
G	3'
H	3'
I	13.85'
J	3"
K	6"



OUTLET PROTECTION	
OUTLET PIPE DIA.	18"
OUTLET FLOW RATE	0.203 CFS
OUTLET VELOCITY	1.8 FT/S
MATERIAL	CLASS A
LENGTH	6'
WIDTH	4.5'
STONE DIA.	3"
THICKNESS	9"

PIPE OUTLET PROTECTION

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: _____

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.	DESCRIPTIONS	DATE
	REVISIONS	
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
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SEAL

SEAL

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

NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED - PHASE 1

STORMWATER MANAGEMENT DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE: HORIZONTAL: 1"=20' VERTICAL: N/A

M&C FILE NUMBER: CN-502

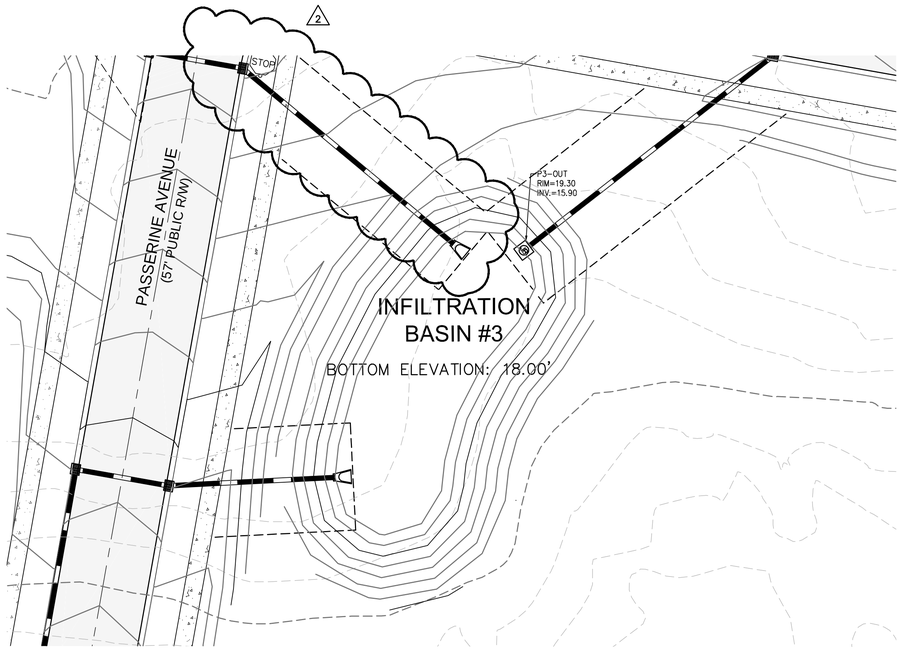
DRAWING NUMBER: 43

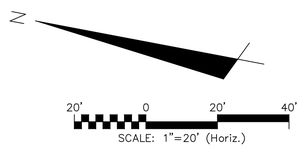
STATUS: FINAL DESIGN ISSUED FOR CONSTRUCTION

REVISION 4

S:\02735\0125 Ph 1 AR\99-Drawings\CN\501-02735\0125.dwg, 4/6/2016 5:48:59 PM, EMcArthur, 1:1

2 REVISIONS TO GRADING AND STORMWATER NETWORK





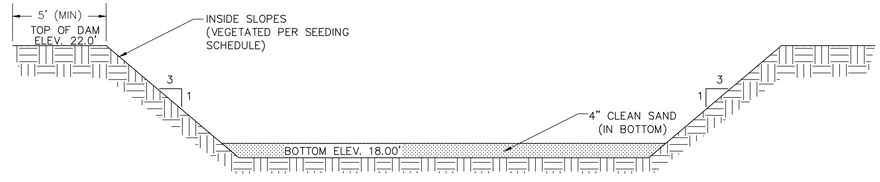
Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

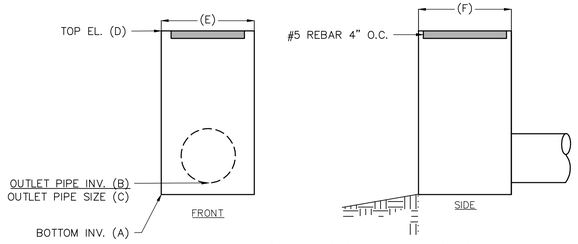
CITY OF WILMINGTON NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit #_____
Signed: _____

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



INFILTRATION BASIN
NOT TO SCALE



INFILTRATION BASIN OUTLET STRUCTURE
NOT TO SCALE

INFILTRATION OUTLET STRUCTURE	
	INFILTRATION BASIN 3
A	15.90'
B	15.90'
C	15" RCP
D	19.30'
E	2'
F	2'

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, OVEREXCAVED 6" AND BACKFILLED WITH AN ENGINEER APPROVED SANDY SOIL MATERIAL.
5. 50-YR DISCHARGE THROUGH WEIR ASSUMING THE BASIN WILL NOT INFILTRATE.
   WEIR EQUATION: $Q_{50} = C*L*h^{3/2}$
   $Q_{50} = 8.278cfs = 3.0*8.0ft*h^{3/2}$
   $h = 0.492' = 5.90"$

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/27/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

SEAL

SEAL

McKIM&CREED
243 North Front Street
Wilmington, North Carolina 28401
Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
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NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORMWATER MANAGEMENT DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=20'
VERTICAL: N/A

M&C FILE NUMBER: CN-503
DRAWING NUMBER: 44

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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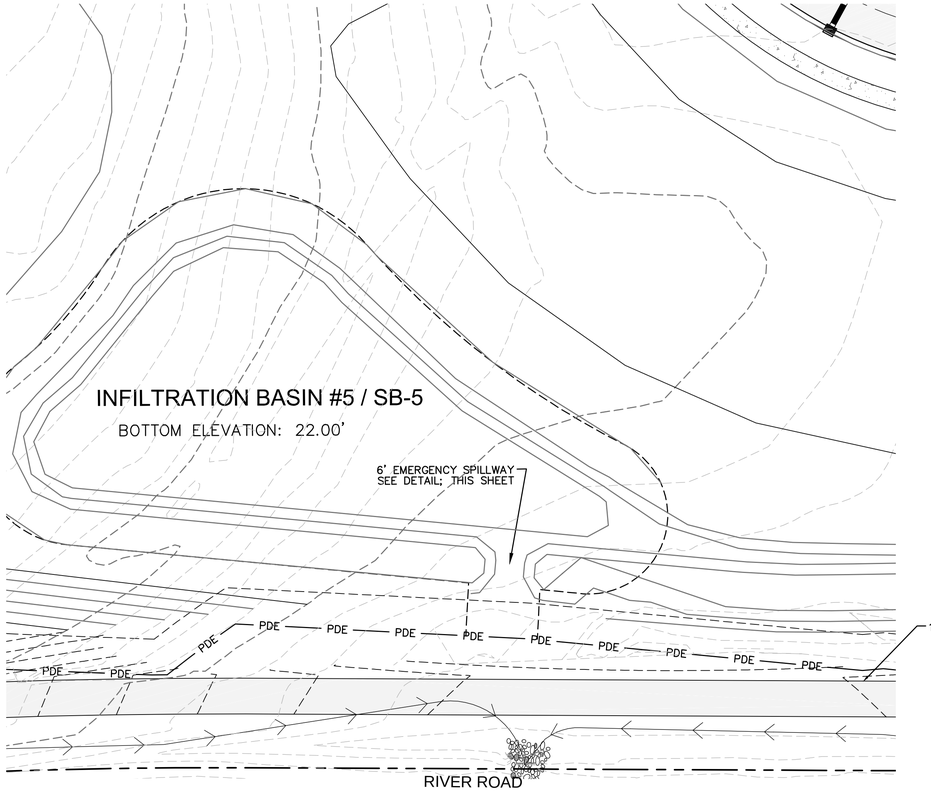

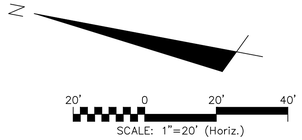

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

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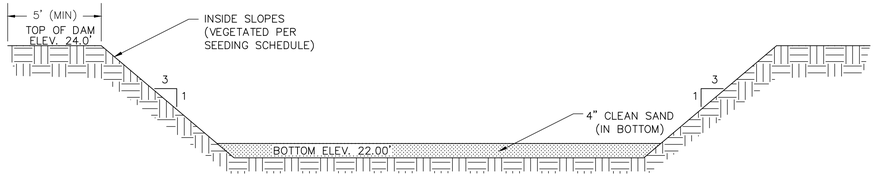
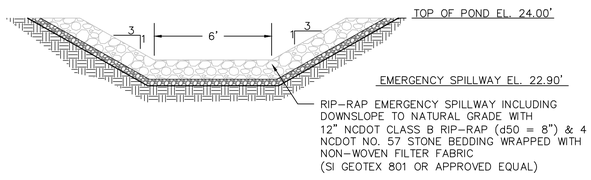
1 inch



INFILTRATION BASIN
NOT TO SCALE



EMERGENCY SPILLWAY SECTION
NOT TO SCALE

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   WEIR EQUATION: $Q_{50} = C*L*h^{3/2}$
   $Q_{50} = 1.957cfs = 3.0*8.0ft*h^{3/2}$
   $h = 0.228' = 2.73"$

REV.NO.	DESCRIPTIONS	DATE
4	ADDITIONAL CITY OF WILMINGTON TRC COMMENT REVISIONS	04/06/2016
3	SANITARY SEWER REVISIONS, REMOVAL OF WALKFINDERS ALLEY AND ADDITION OF UTILITY SERVICES TO FUTURE AMENITY AREA	02/10/2016
2	MODIFICATIONS TO LOTS, ALLEYS, AND GRADING	01/25/2016
1	GRADING, STORMWATER, AND UTILITY REVISIONS	10/22/2015
0	ISSUED FOR CONSTRUCTION	09/29/2015

REVISIONS

SEAL

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RIVERLIGHTS™ by Newland COMMUNITIES

RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORMWATER MANAGEMENT DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=20'
VERTICAL: N/A

M&C FILE NUMBER CN-504
DRAWING NUMBER 45

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

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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 #_____

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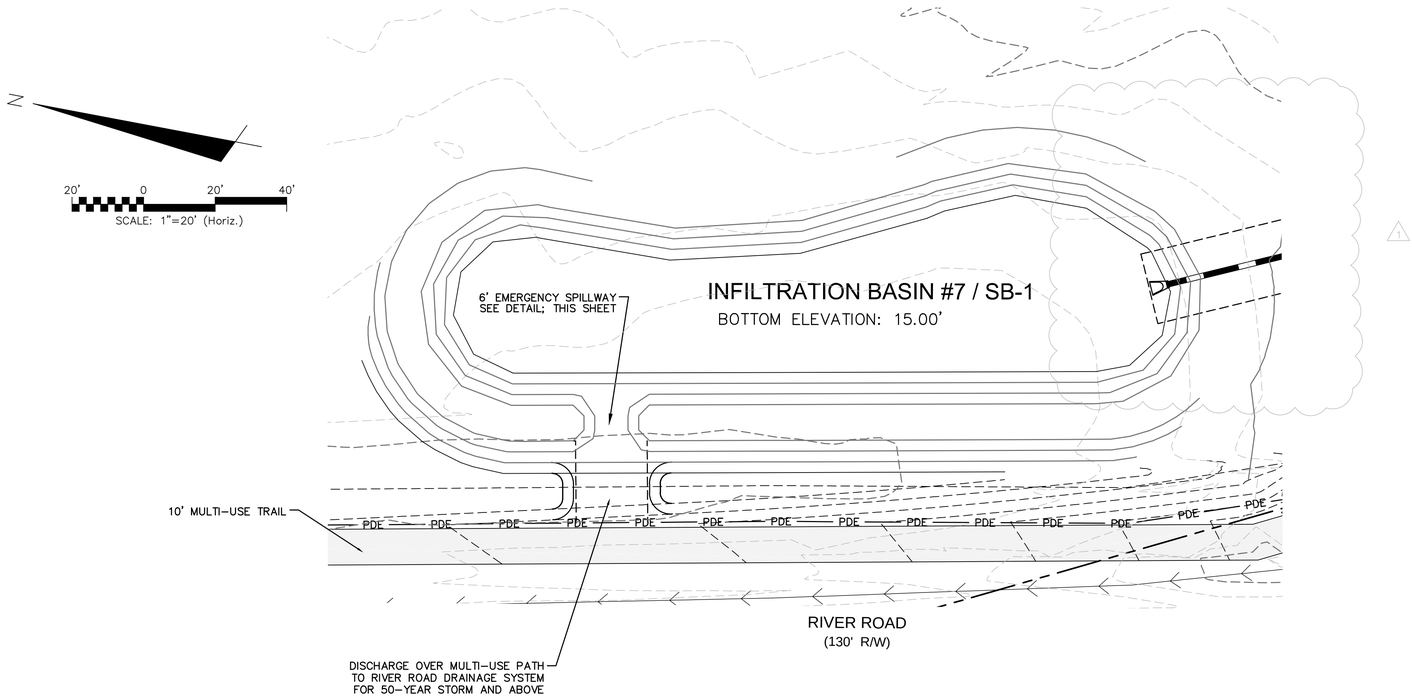

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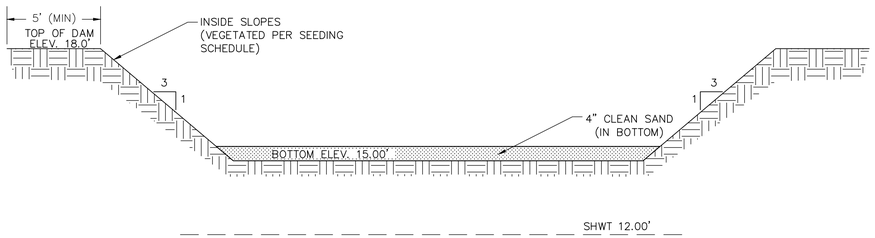
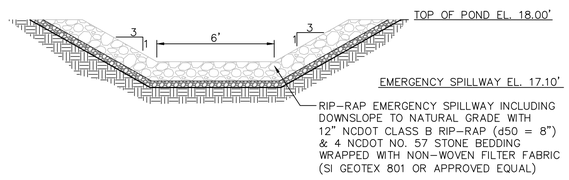
   $Q_{50} = 6.367cfs = 3.0*6.0ft*h^{3/2}$
   $h = 0.500' = 6.00"$



INFILTRATION BASIN
NOT TO SCALE



EMERGENCY SPILLWAY SECTION
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
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REVISIONS

SEAL

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RIVERLIGHTS
AGE QUALIFIED – PHASE 1

STORMWATER MANAGEMENT DETAILS

DATE:	04/15/2015
MCE PROJ. #	02735-0125
DRAWN	EEM/KCBE
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

SCALE
HORIZONTAL: 1"=20'
VERTICAL: N/A

M&C FILE NUMBER CN-505
DRAWING NUMBER 46

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 4

S:\02735\0125 Ph 1 AR\BD-Drawings\CN501-02735\0125.dwg, 4/6/2016 5:49:44 PM, EMcArthur, 1:1