

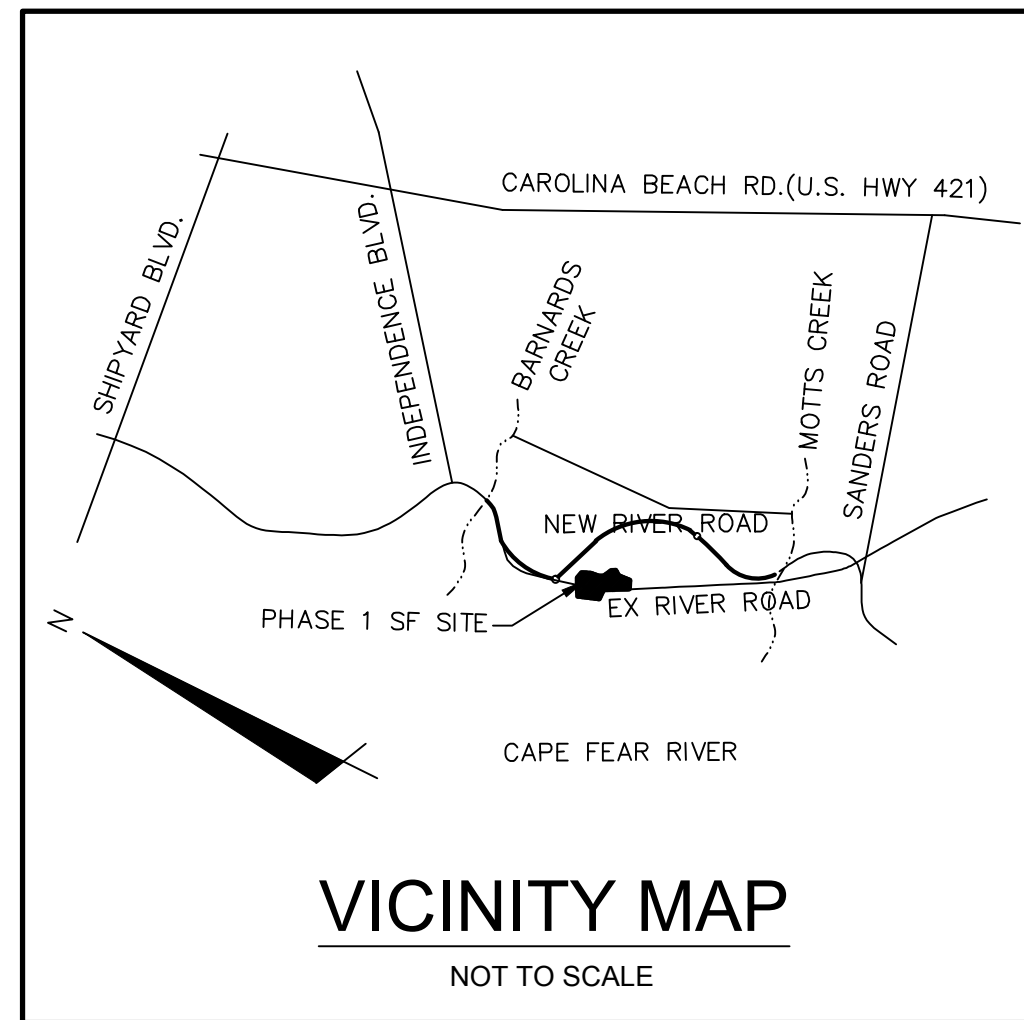
RIVERLIGHTS

AGE QUALIFIED - PHASE 2 & 3

CITY OF WILMINGTON, NC

JUNE 2016

TECHNICAL REVIEW COMMITTEE SUBMITTAL



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

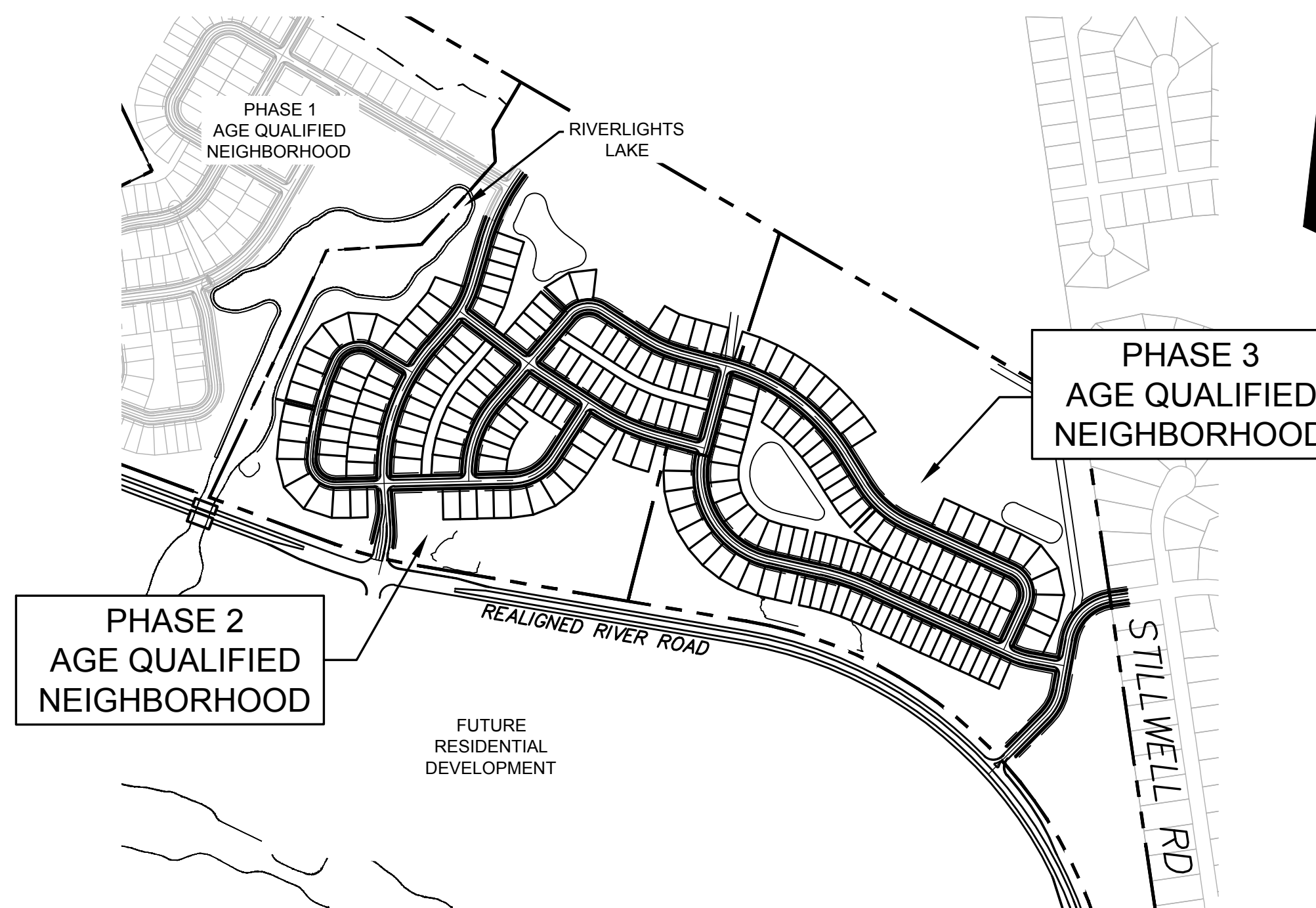
D. Cape Fear Public Utility Authority
 235 Government Center Drive
 Wilmington, NC 28403
 (910) 332-6626
 Contact: David Dailey
 Email: David.Dailey@cfpua.org

E. NCDENR
 Division of Environmental Health
 Public Water Supply Section
 1634 Mail Service Center
 Raleigh, NC 27699-1634
 (919) 715-3226
 Contact: Christyn Fertenbaugh
 Email: christyn.fertenbaugh@ncdenr.gov



Know what's below.
 Call before you dig.

ISSUED FOR PERMITTING
 NOT FOR CONSTRUCTION



VICINITY MAP
 1"=500'

PROJECT DATA

NAME OF PROJECT:
 RIVERLIGHTS- PHASE 1-A CONVENTIONAL 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



NORTH AMERICA SEKISUI HOUSE, LLC



RIVERLIGHTS™



MCKIM & CREED

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

www.mckimcreed.com

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 | |

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

| Sheet List Table | | |
|------------------|-------------|--|
| Sheet Number | Sheet Title | Sheet Description |
| 1 | G-001 | COVER |
| 2 | G-002 | NOTES |
| 3 | CX-101 | EXISTING CONDITIONS / SITE INVENTORY PLAN |
| 4 | CX-102 | TREE REMOVAL |
| 5 | CE-101 | PHASE 1 EROSION CONTROL |
| 6 | CE-102 | PHASE 2 EROSION CONTROL |
| 7 | CG-100 | OVERALL STORM DRAINAGE AND GRADING PLAN |
| 8 | CG-101 | STORM DRAINAGE AND GRADING PLAN |
| 9 | CG-102 | STORM DRAINAGE AND GRADING PLAN |
| 10 | CG-103 | STORM DRAINAGE AND GRADING PLAN |
| 11 | CG-104 | STORM DRAINAGE AND GRADING PLAN |
| 12 | CS-100 | OVERALL SITE PLAN |
| 13 | CS-101 | SITE PLAN |
| 14 | CS-102 | SITE PLAN |
| 15 | CS-103 | SITE PLAN |
| 16 | CS-104 | SITE PLAN |
| 17 | CU-100 | OVERALL UTILITY PLAN |
| 18 | CU-101 | UTILITY PLAN |
| 19 | CU-102 | UTILITY PLAN |
| 20 | CU-103 | UTILITY PLAN |
| 21 | CU-104 | UTILITY PLAN |
| 22 | CU-701 | PLAN AND PROFILE FLOATING BRIDGE TRAIL STA 10+00 TO STA 25+00 |
| 23 | CU-702 | PLAN AND PROFILE FLOATING BRIDGE TRAIL DEVERAUX DRIVE |
| 24 | CU-703 | PLAN AND PROFILE DEVERAUX DRIVE STA 21+00.00 TO STA 31+04 |
| 25 | CU-704 | PLAN AND PROFILE FOLSOM AVENUE STA 9+72 TO STA 21+52 |
| 26 | CU-705 | PLAN AND PROFILE BROOMSDGE TERRACE STA 9+72 TO STA 21+00 |
| 27 | CU-706 | PLAN AND PROFILE BROOMSDGE TERRACE SNOWDEN ROAD |
| 28 | CU-707 | PLAN AND PROFILE BROOMSDGE AVENUE STA 25+08 TO STA 39+00 |
| 29 | CU-708 | PLAN AND PROFILE BROOMSDGE TERRACE SNOWDEN ROAD |
| 30 | CU-709 | PLAN AND PROFILE SNOWDEN ROAD STA 21+00 TO 31+88 |
| 31 | CU-710 | PLAN AND PROFILE WILDERNESS DRIVE EXTENTION STA 10+00 TO STA 19+51 |
| 32 | CU-711 | PLAN AND PROFILE EAST OUTFALL SEWER STA.10+00 TO 23+44.40 |
| 33 | CT-301 | TYPICAL CROSS SECTIONS |
| 34 | CE-501 | EROSION AND SEDIMENT CONTROL DETAILS |
| 35 | CE-502 | EROSION AND SEDIMENT CONTROL DETAILS |
| 36 | CG-501 | STORM DRAINAGE DETAILS |
| 37 | CG-502 | STORM DRAINAGE DETAILS |
| 38 | CG-503 | STORM DRAINAGE DETAILS |
| 39 | CG-504 | STORM DRAINAGE DETAILS |
| 40 | CS-501 | SITE DETAILS |
| 41 | CS-502 | SITE DETAILS |
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| 43 | WSB-2 | UTILITY DETAILS |
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| 52 | L-161 | STREET TREE PLAN |
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| 54 | L-163 | STORMWATER BMP PLANTING PLAN |
| 55 | L-164 | STORMWATER BMP PLANTING PLAN |
| 56 | L-501 | DETAILS |

CONSTRUCTION NOTES

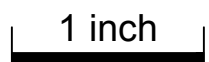
- 1. CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR IS FULLY RESPONSIBLE FOR ACQUIRING THE LOCATION OF EXISTING UTILITIES FROM THE APPROPRIATE PARTIES PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR PLACING BARRICADES, USING FLAGMEN, ETC. AS NECESSARY TO INSURE SAFETY TO THE PUBLIC.
...
20. THE CONTRACTOR IS SOLELY RESPONSIBLE TO OBTAIN OFF-SITE SPOIL AREAS FOR DISPOSAL OF EXCESS AND/OR UNSUITABLE MATERIALS AS NECESSARY.

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.

Approved Construction Plan
Name _____ Date _____
Planning _____
Traffic _____
Fire _____
CITY OF WILMINGTON logo
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____

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



- 6. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF DISCONNECTING AND ABANDONING ALL EXISTING UTILITIES WITH THE OWNER UNLESS OTHERWISE NOTED.
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.

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.
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.
3. THE MATERIAL FOR BACKFILLING SHALL BE FREE FROM ALL PERISHABLE AND OBJECTIONABLE MATERIALS.

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.
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.

MATERIALS AND EASEMENT NOTES:

- ALL CATCH BASINS ARE NCDOT STD 840.02, 840.03
• ALL DROP INLETS ARE NCDOT STD 840.14, 840.16
• ALL STORM DRAINAGE PIPING TO BE CLASS III RCP, UNLESS OTHERWISE NOTED
• ALL STORM DRAINAGE PIPING CONVEYING DISCHARGE FROM THE PUBLIC RIGHT-OF-WAY SHALL BE CONTAINED WITHIN A PUBLIC DRAINAGE EASEMENT WHOSE WIDTH IS DETERMINED BY THE DEPTH OF BURY

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 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. 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.

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.

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.
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.

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 ONE-HALF (0.5) 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.
3. SEDIMENT SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN IT BECOMES ABOUT 0.5 FEET DEEP.

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.

FIRE PROTECTION NOTES

- 1. HYDRANT MUST BE WITHIN 150' OF THE FDC.
2. THE FDC MUST BE WITHIN 40' OF FIRE APPARATUS PLACEMENT.
3. LANDSCAPING OR PARKING CANNOT BLOCK OR IMPEDE THE FDC OR FIRE HYDRANTS.
4. HYDRANTS MUST BE LOCATED WITHIN 8' OF THE CURB PER CITY OF WILMINGTON STANDARDS.
5. COMBUSTIBLE MATERIALS MAY NOT BE STORED OR ERRECTED ONSITE WITHOUT CITY FIRE INSPECTOR APPROVAL.

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

Table with 3 columns: SITE AREA DESCRIPTION, STABILIZATION TIMEFRAME, STABILIZATION TIMEFRAME EXCEPTIONS. Includes rows for PERMETER DIKES, SWALES, DITCHES AND SLOPES, HIGH QUALITY WATER ZONES, SLOPES STEEPER THAN 3:1, SLOPES 3:1 OR FLATTER, and ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1.

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

NOTES

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN EEM/KCE
DESIGNED NCE
CHECKED KJL
PROJ. MGR. RMC
SCALE: HORIZONTAL: N/A, VERTICAL: N/A
HMC FILE NUMBER: G-002
DRAWING NUMBER: 2
STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION
REVISION B

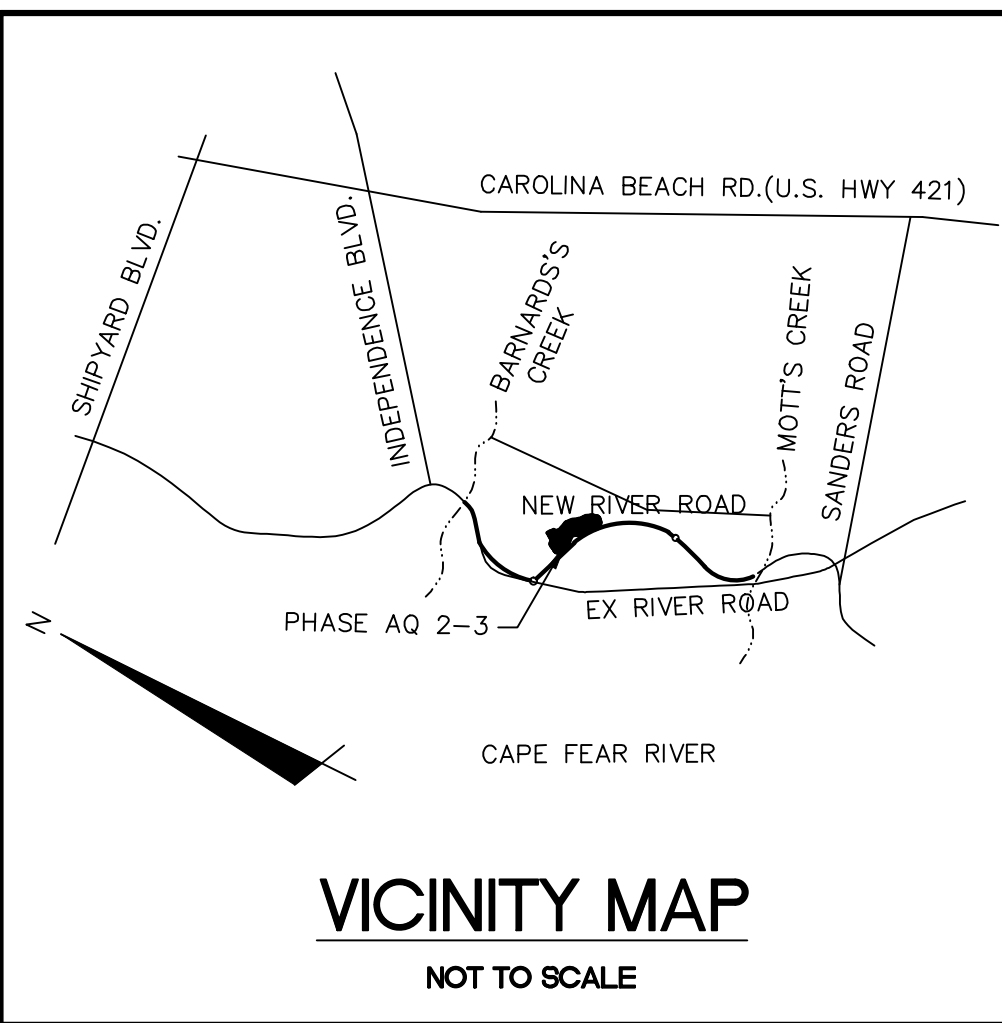
MCKIM & CREED logo and address: 243 North Front Street, Wilmington, North Carolina 28401. Phone: (910)343-1048, Fax: (910)251-8282. License: F-1222. www.mckimcreed.com

NASH RIVERLIGHTS logo and text: NORTH AMERICA SEKSISU HOUSE, LLC

Revision table with columns: REVNO., DESCRIPTIONS, REVISIONS, DATE. Includes entries for CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPUA SUBMITTAL and CITY OF WILMINGTON SUBVISION REVIEW BOARD SUBMITTAL.

PRELIMINARY - DO NOT USE FOR CONSTRUCTION stamp

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VICINITY MAP
NOT TO SCALE

LEGEND

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

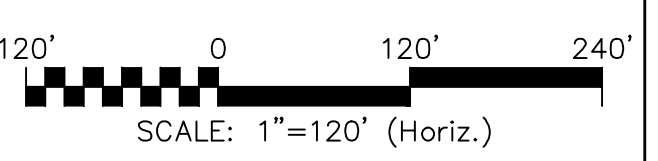
GENERAL NOTES:

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

TREE LEGEND

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

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



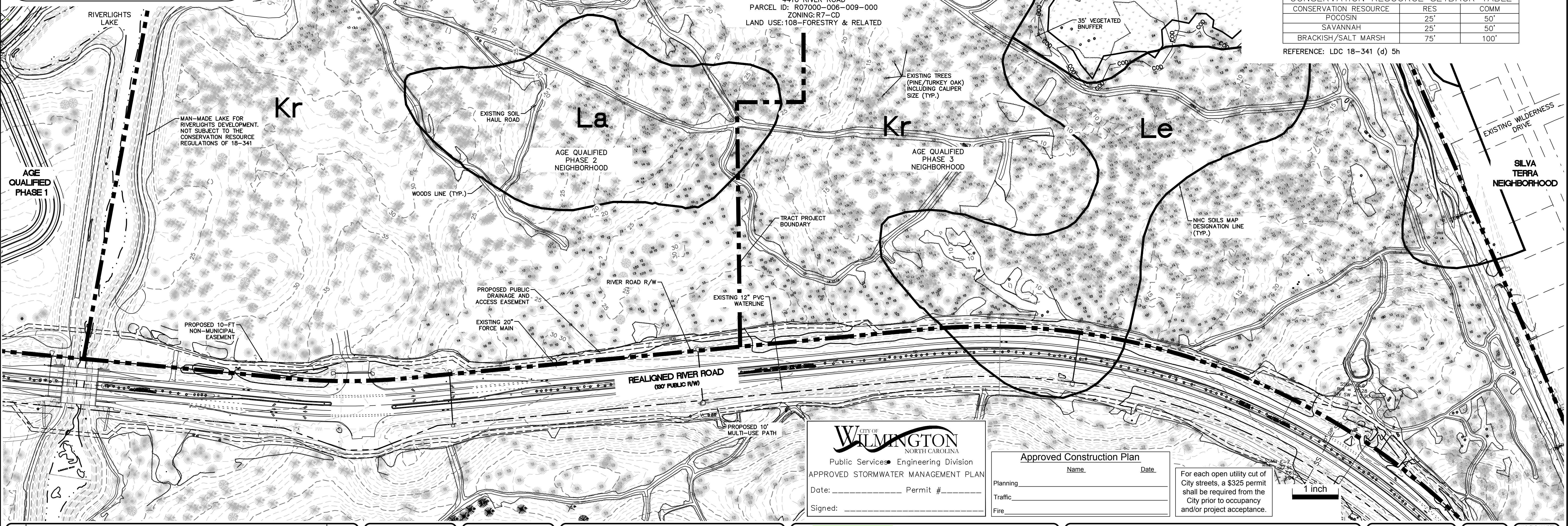
| SITE DATA TABLE | | AGE QUALIFIED - PHASE 2 & 3 | |
|--|-----------------------------------|-----------------------------|--|
| GENERAL INFORMATION | | | |
| APPLICANT NAME | NRP IV- CAPE FEAR RIVER, LLC | | |
| SITE ADDRESS | 4410 RIVER ROAD | | |
| PROPERTY OWNER | NRP IV- CAPE FEAR RIVER, LLC | | |
| DEVELOPER | NRP IV- CAPE FEAR RIVER, LLC | | |
| MAP SCALE | 1"=100' | | |
| PROPERTY BOUNDARY | | | |
| TAX PARCEL IDENTIFICATION NUMBER | R07000-006-009-000 | | |
| ZONING DISTRICT | R-7/CD CLUSTER | | |
| TOTAL ACREAGE WITHIN THE RIVER ROAD BOUNDARY | 1,329.41 ACRES (57,909,099.6 SF) | | |
| TOTAL ACREAGE WITHIN THE SF-2 BOUNDARY | 127.16 ACRES (5,539,089.6 SF) | | |
| ADJACENT PROPERTY | | | |
| ADJACENT PROPERTY | PROPERTY OWNER | ZONING | |
| | DUKE PROGRESS ENERGY | I-2 | |
| | BILL CLARK HOMES OF WILM. LLC | | |
| | CAROL BRANNER | | |
| | RITCHIE PAGE | | |
| | MICHAEL TODD | | |
| | JAMES & TERESA CONOLY | | |
| | WILLIAM NOEL III WESNER | R-10 | |
| | ALLEN JOSEPH & BARBARA DITTMER | | |
| | TIA PEARSON | | |
| | EDWIN JAMES WOOTEN | | |
| | KRISTIN NEWBERRY | | |
| | JOSEPH V. III & BREGETTA GARNETT | | |
| | JOHN S. POTTER | | |

| SITE DATA TABLE | | AGE QUALIFIED - PHASE 2 AND 3 | |
|---|------------|-------------------------------------|--------------------|
| VICINITY MAP | | | |
| VICINITY MAP | | SEE CX-101 | |
| TOPOGRAPHY AND DRAINAGE | | | |
| 2-FEET TOPOGRAPHY MINIMUM INTERVAL | | SEE CX-101 | |
| DATE OF TOPOGRAPHY DATA | | 5/5/2015 | |
| 100-YR FLOODPLAIN LINE | | SEE CX-101 | |
| LOCATION OF NATURAL WATER FEATURES | | | |
| DITCHES | SEE CX-101 | CLASSIFICATION | NON-JURISDICTIONAL |
| STREAMS | N/A | | |
| CREEKS | N/A | | |
| FLOOD PRONE AREAS | | SEE CX-101 | |
| AREAS OF NATURALLY CONCENTRATED SURFACE DRAINAGE | | N/A | |
| SOIL | | | |
| SOIL TYPE(S) AND BOUNDARIES | | SEE CX-101 | |
| NORTH CAROLINA COASTAL AREA MANAGEMENT AD INFORMATION | | | |
| CAMA AREA OF ENVIRONMENTAL CONCERN | | SEE CX-101 | |
| SETBACKS | | 75 FT | |
| CAMA LAND USE CLASSIFICATION(S) | | TRANSITION/CONSERVATION | |
| CONSERVATION RESOURCE REGULATIONS | | | |
| PRESENCE OF CONSERVATION RESOURCE | | PRESENCE; SEE CX-101 | |
| SETBACKS | | TABLE; SEE CX-101 | |
| VEGETATED BUFFER | | 35'; SEE CX-101 | |
| HISTORIC AND ARCHEOLOGICAL SITES | | | |
| LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURE(S) OR ARCHEOLOGICAL RESOURCES | | NOT PRESENT | |
| LOCATION | | N/A | |
| CEMETERIES | | | |
| CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS? | | NOT PRESENT | |
| FORESTED AREAS | | | |
| BOUNDARIES OF FORESTED AREAS | | SEE CX-101 | |
| DOMINANT SPECIES | | OAK, PINE | |
| WETLANDS | | | |
| 404/SECTION 10 WETLAND LOCATION | | PRESENCE; SEE CX-101 | |
| METHOD OF DETERMINATION | | ENVIRONMENTAL EVALUATION | |
| ENDANGERED SPECIES OR HABITAT | | | |
| ENDANGERED SPECIES OR HABITAT | | NOT PRESENT | |
| AUTOMOBILE, BICYCLE, PEDESTRIAN, OR TRANSIT FACILITIES | | | |
| EXISTING OR PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, AND TRANSIT FACILITIES | | SIDEWALK, MULTI-USE PATH CONNECTION | |

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



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

Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

| | |
|----------|------|
| Name | Date |
| Planning | |
| Traffic | |
| Fire | |

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

| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON INC. / STORMWATER / TREE REMOVAL, NEW HANCOCK COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

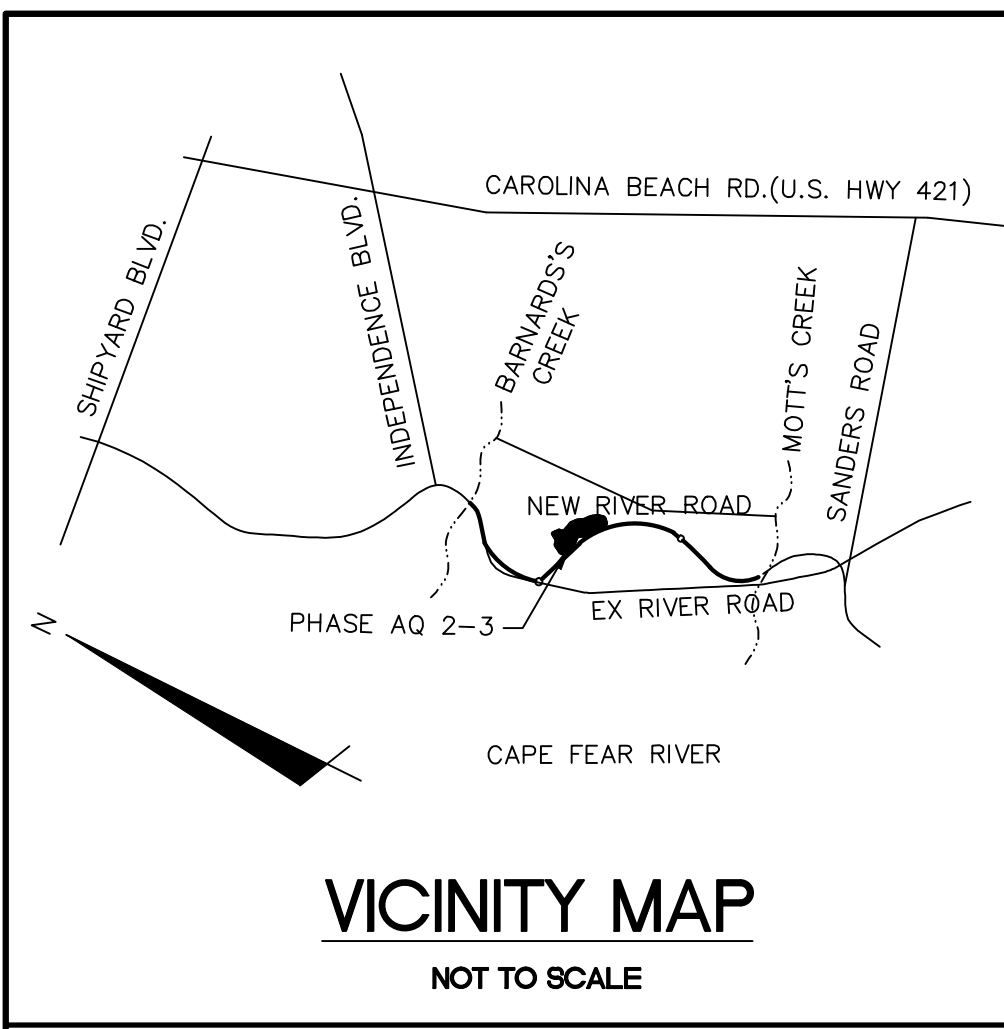
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RIVERLIGHTS
NORTH AMERICA SEXIUS HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

EXISTING CONDITIONS / SITE INVENTORY PLAN

| | | | | | |
|----------------------|------------|-------------|---------|------------------|--------|
| DATE: | 06/01/16 | SCALE: | 1"=100' | MAC FILE NUMBER: | CX-101 |
| MCE PROJ. # | 02735-0168 | HORIZONTAL: | 1"=100' | DRAWING NUMBER: | 3 |
| DRAWN | EEM/KCE | VERTICAL: | N/A | | |
| DESIGNED | KJC | | | | |
| CHECKED | NUL | | | | |
| PROJ. MGR. | RMC | | | | |
| STATUS: FINAL DESIGN | | REVISION: | | B | |
| NOT FOR CONSTRUCTION | | | | | |



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

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

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

DEMOLITION NOTES:

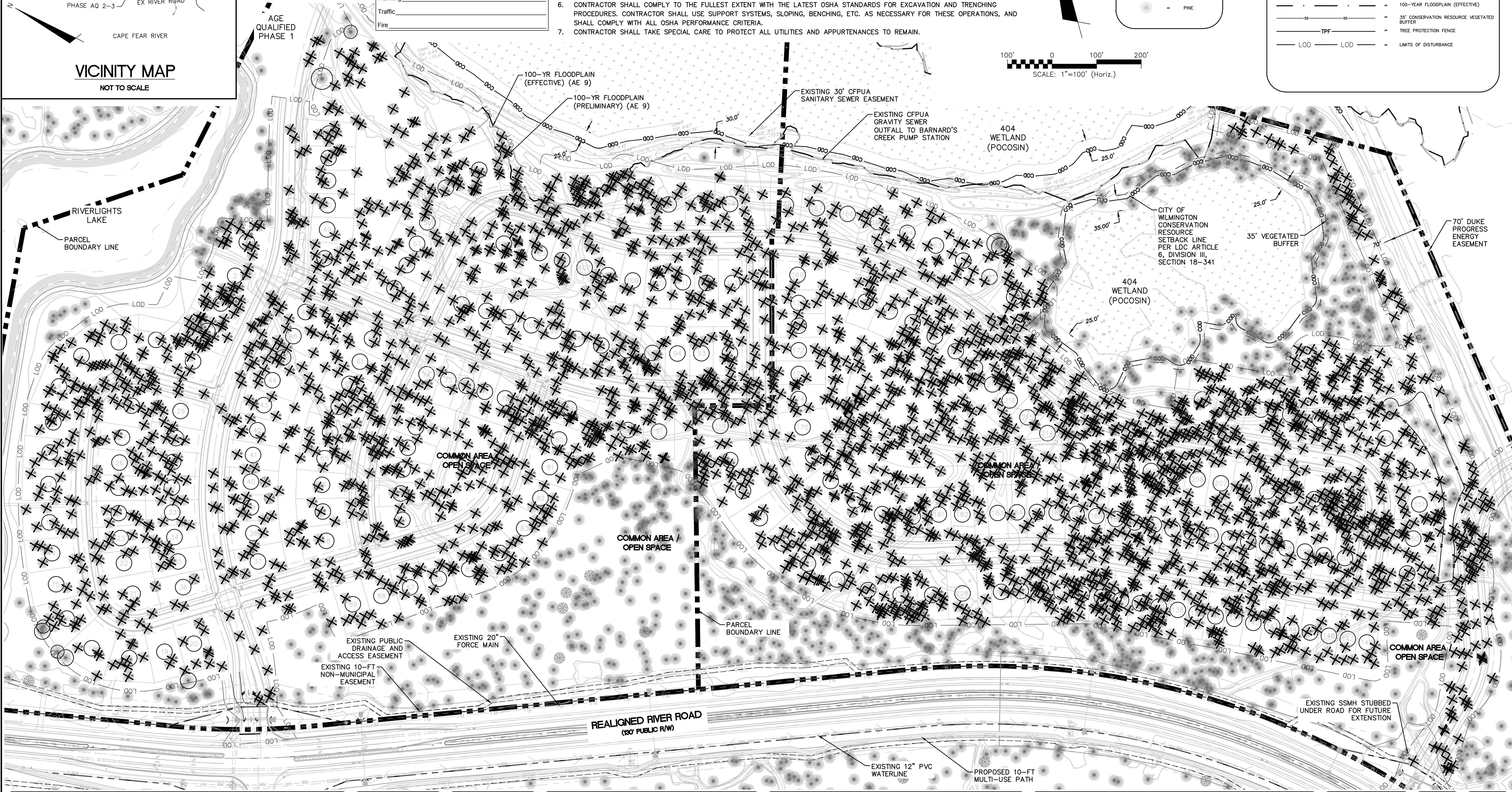
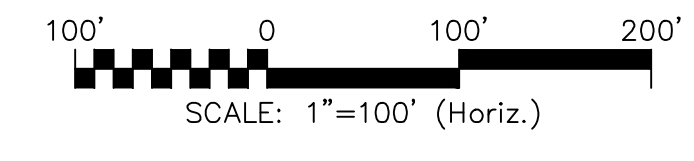
- NO EARTH DISTURBING ACTIVITIES SHALL COMMENCE UNTIL ALL PERIMETER EROSION CONTROL MEASURES ARE IN PLACE IN ACCORDANCE WITH THE EROSION CONTROL SEQUENCE SHOWN IN THESE PLANS.
- NO EARTH-DISTURBING ACTIVITY OR OTHER WORK SHALL TAKE PLACE WITHIN WETLANDS AREAS NOTED ON SURVEY. CONTRACTOR SHALL FIELD VERIFY 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.
- 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.
- 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.
- CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH ALL REGULATIONS GOVERNING THE DEMOLITION, REMOVAL, TRANSPORTATION AND DISPOSAL OF ALL DEMOLITION DEBRIS.
- 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.
- CONTRACTOR SHALL TAKE SPECIAL CARE TO PROTECT ALL UTILITIES AND APPURTENANCES TO REMAIN.

TREE LEGEND

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

LEGEND

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



| REVNO. | DESCRIPTIONS | REVISIONS | DATE |
|--------|---|-----------|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPUA SUBMITTAL | | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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



RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

TREE REMOVAL

DATE: 06/01/16
MCE PROJ. # 02735-0188
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N/L
PROJ. MGR.: RMC

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

MAC FILE NUMBER: CX-102
DRAWING NUMBER: 4

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

LEGEND

| | |
|--|--|
| | REBAR & CAP |
| | POWER POLE |
| | SANITARY SEWER MANHOLE |
| | WETLAND |
| | OHE |
| | COD |
| | SS |
| | 100-YEAR FLOODPLAIN (PRELIMINARY) |
| | 100-YEAR FLOODPLAIN (EFFECTIVE) |
| | 35' CONSERVATION RESOURCE VEGETATED BUFFER |
| | TPF |
| | LOD |
| | SF |
| | TDD |

TREE LEGEND

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

LIMITS OF DISTURBANCE - 65.92 AC

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

NOTE:

WHERE SILTY FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, ORANGE SILTY FENCE AND SIGNAGE FOR TREE PROTECTION MAY BE USED INSTEAD OF DUPLICATE FENCING. SIGNAGE MUST MEET CITY OF WILMINGTON REQUIREMENTS FOR TREE PROTECTION DURING CONSTRUCTION (SD 15-09).

PHASE 1 CONSTRUCTION SEQUENCE

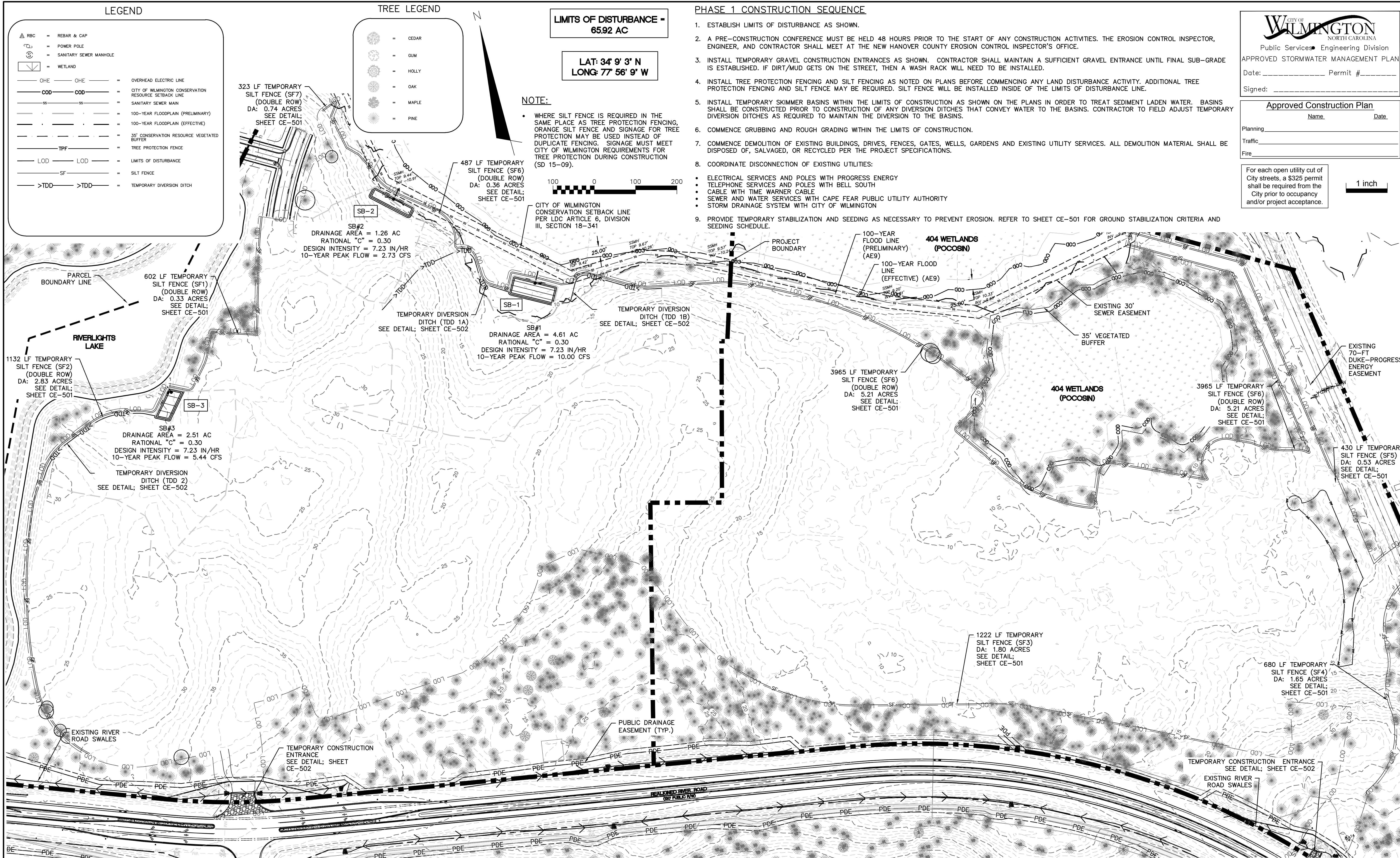
1. ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
2. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL MEET AT THE NEW HANOVER COUNTY EROSION CONTROL INSPECTOR'S OFFICE.
3. INSTALL TEMPORARY 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 SILTY FENCING AS NOTED ON PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. ADDITIONAL TREE PROTECTION FENCING AND SILTY FENCE MAY BE REQUIRED. SILTY 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.

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

| Approved Construction Plan | |
|----------------------------|------|
| Name | Date |
| Planning | |
| Traffic | |
| Fire | |

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

1 inch



| | | |
|--------|--------------|------|
| REVNO. | DESCRIPTIONS | DATE |
| | | |
| | | |
| | | |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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www.mckimcreed.com

RIVERLIGHTS
NORTH AMERICA SEXISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PHASE 1 EROSION CONTROL

| | | |
|------------------------|----------------------------|-------------------------|
| DATE: 06/01/16 | SCALE: HORIZONTAL: 1"=100' | MAC FILE NUMBER: CE-101 |
| MCE PROJ. # 02735-0168 | VERTICAL: N/A | DRAWING NUMBER: 5 |
| DRAWN: EEM/KCE | | |
| DESIGNED: KCE | | |
| CHECKED: NJL | | |
| PROJ. MGR.: RMC | | |
| STATUS: FINAL DESIGN | REVISION: B | |
| NOT FOR CONSTRUCTION | | |

LEGEND

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

TREE LEGEND

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

LIMITS OF DISTURBANCE = 65.92 AC

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

NOTE:

WHERE SILT FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, ORANGE SILT FENCE AND SIGNAGE FOR TREE PROTECTION MAY BE USED INSTEAD OF DUPLICATE FENCING. SIGNAGE MUST MEET CITY OF WILMINGTON REQUIREMENTS FOR TREE PROTECTION DURING CONSTRUCTION (SD 15-09).



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 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.
8. REFER TO G-002 FOR EROSION AND SEDIMENT CONTROL NOTES AND MAINTENANCE PLAN.

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

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name _____ Date _____

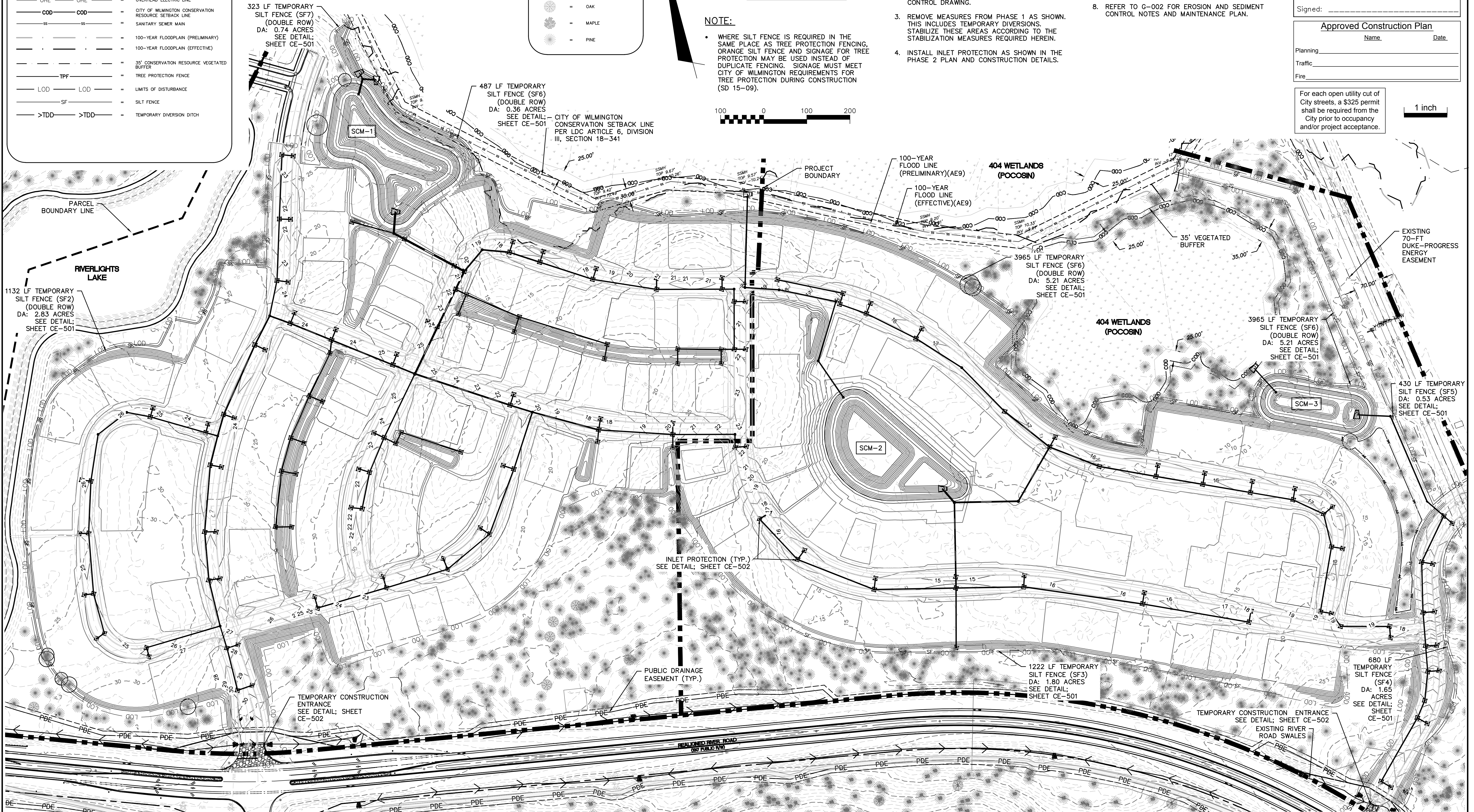
Planning _____

Traffic _____

Fire _____

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

1 inch



| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPPIA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBMISSION REVIEW BOARD SUBMITTAL | 01/08/2016 |

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NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

PHASE 2 EROSION CONTROL

DATE: 06/01/16
MCE PROJ. #: 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N/L
PROJ. MGR: RMC

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

MAC FILE NUMBER: **CE-102**
DRAWING NUMBER: **6**

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

REVISION: **B**

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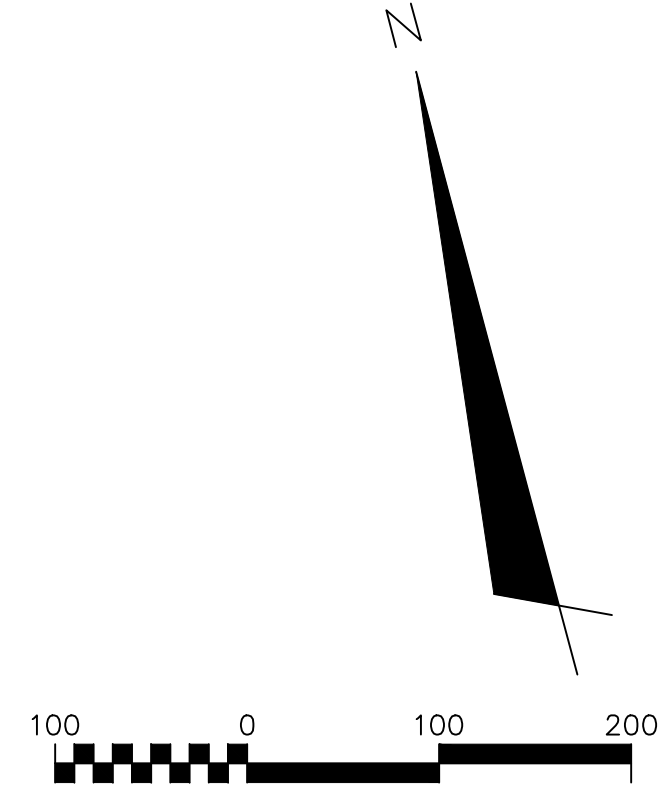
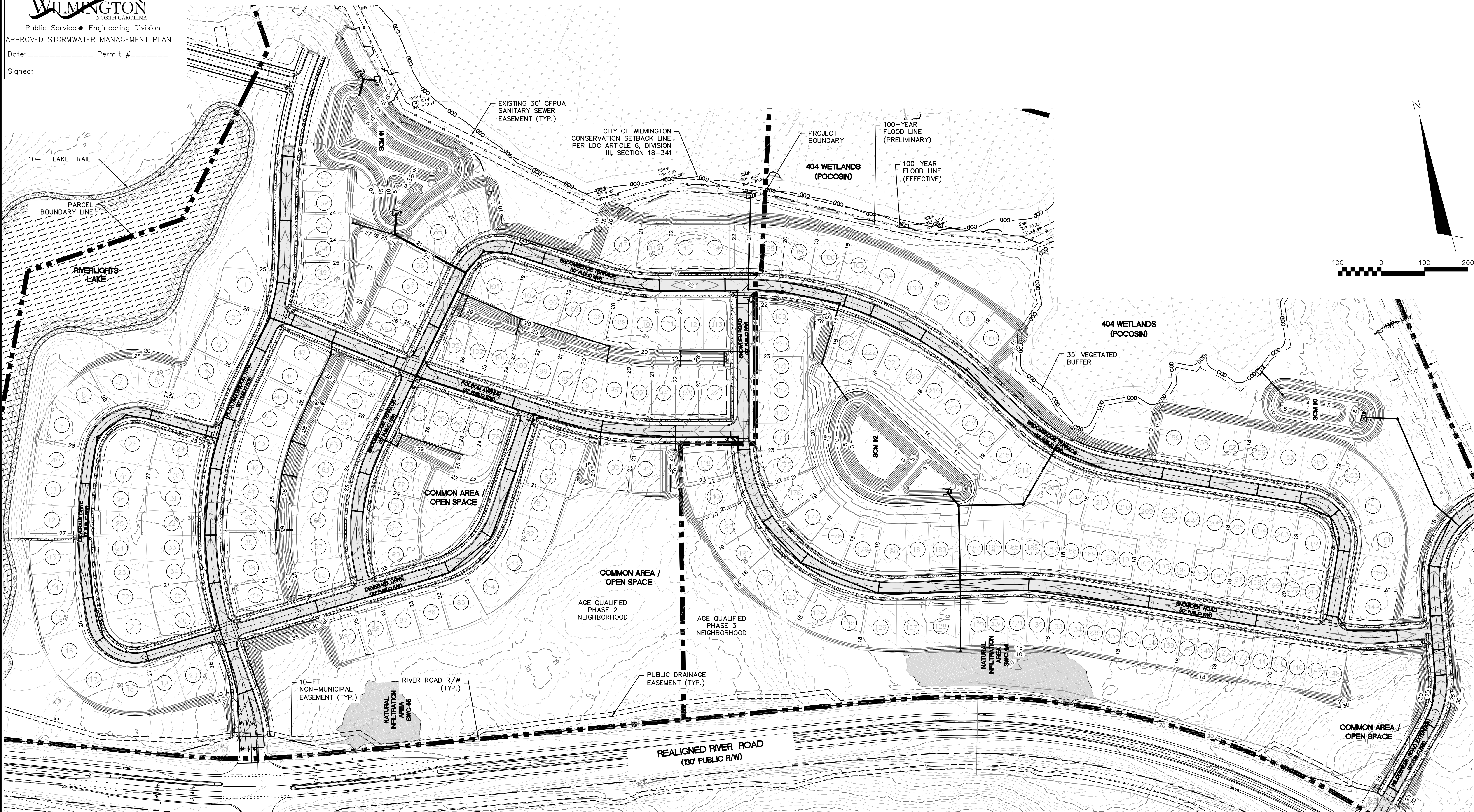
Approved Construction Plan

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: _____



| REVNO. | DESCRIPTIONS / REVISIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPUA SUBMITAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBMISSION REVIEW BOARD SUBMITAL | 01/08/2016 |

SEAL
 PRELIMINARY -
 DO NOT USE FOR
 CONSTRUCTION

SEAL
 PRELIMINARY -
 DO NOT USE FOR
 CONSTRUCTION

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NASH
 NORTH AMERICA SEKISUI HOUSE, LLC

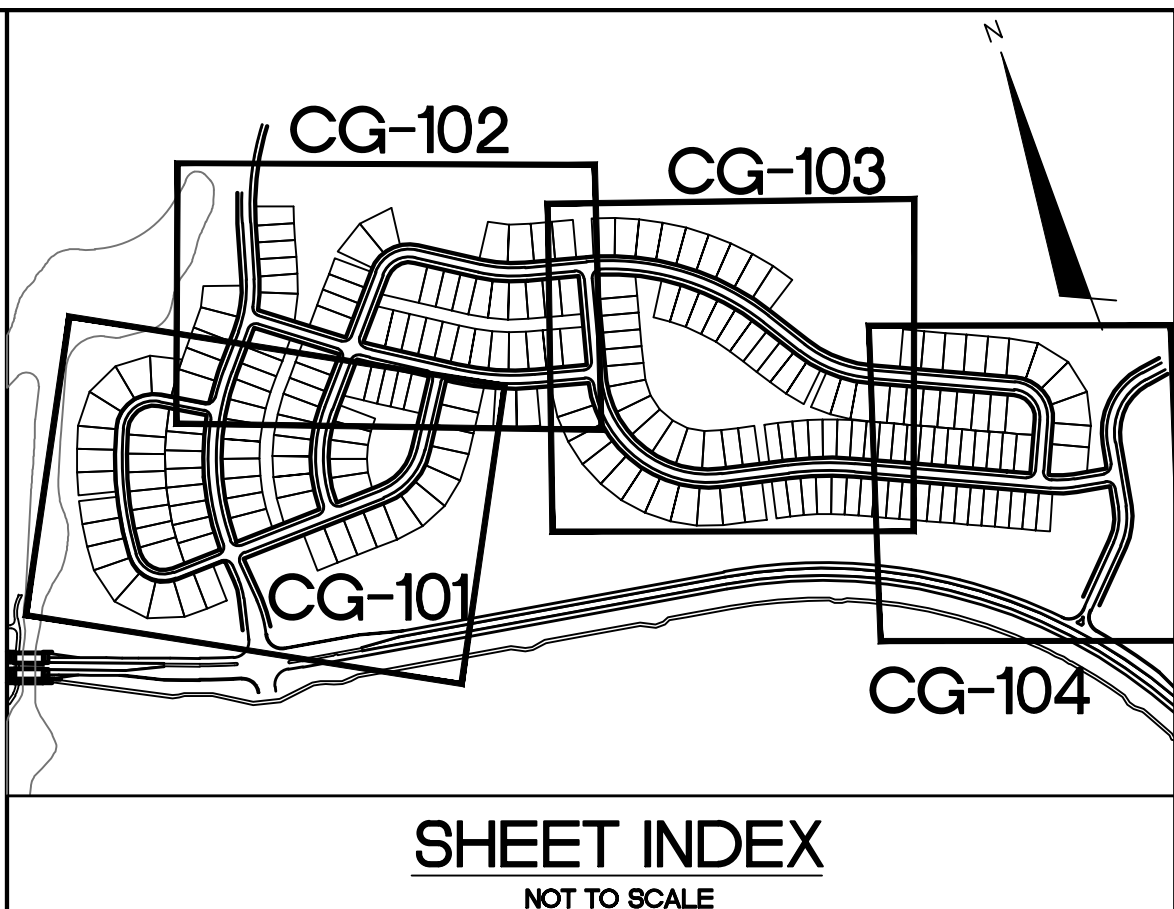
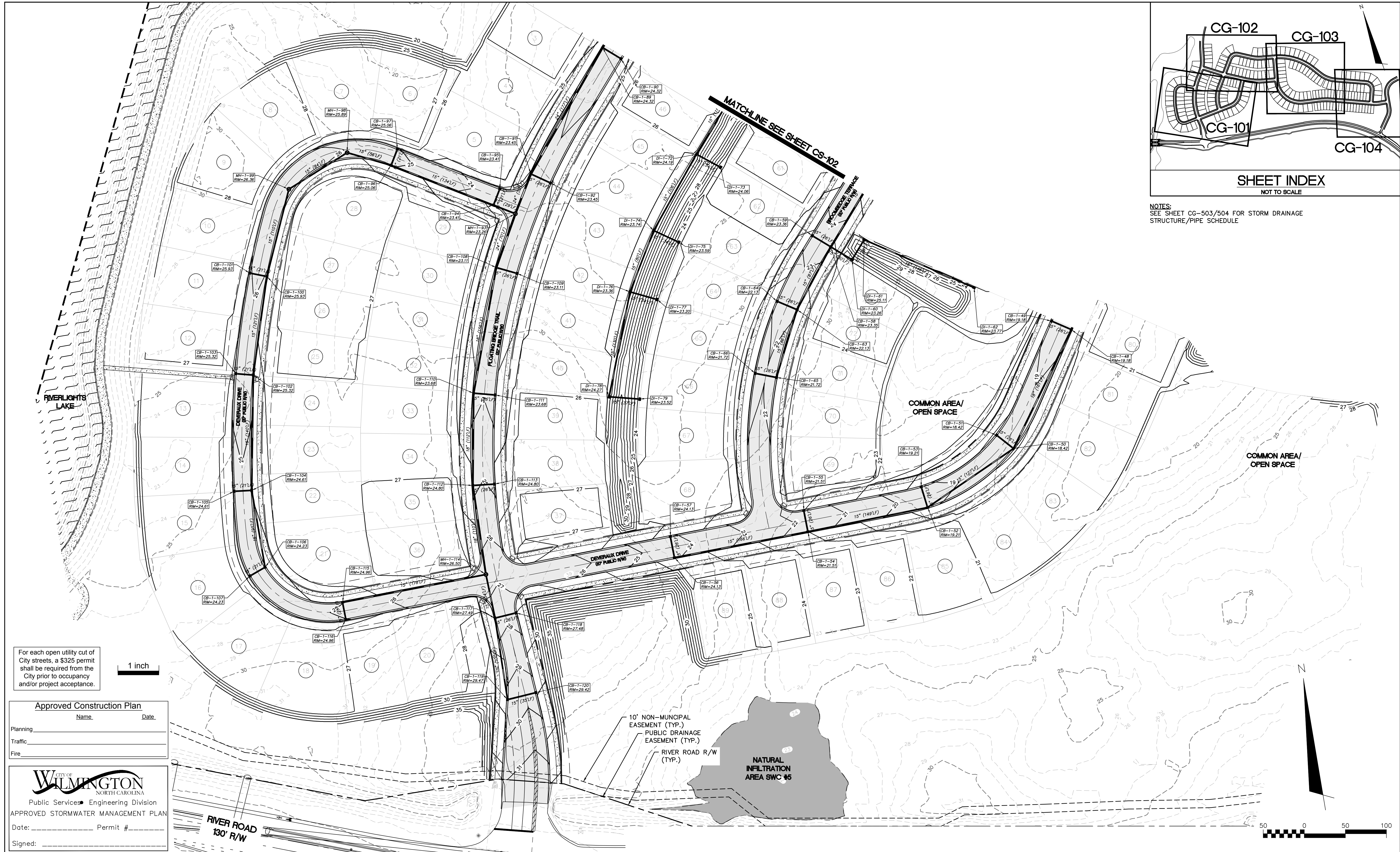
RIVERLIGHTS™

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

OVERALL STORM DRAINAGE AND GRADING PLAN

| | |
|------------------------|----------------------|
| DATE: 06/01/16 | SCALE: CG-100 |
| MCE PROJ. # 02735-0168 | HORIZONTAL: 1"=100' |
| DRAWN: EEM/KCE | VERTICAL: N/A |
| DESIGNED: KCE | REVISION: 7 |
| CHECKED: N.J.L. | STATUS: FINAL DESIGN |
| PROJ. MGR.: R.M.C. | NOT FOR CONSTRUCTION |

S:\07350168\02_2360-Drawing\CG100\CG-2-3_07350168.dwg, 01/20/16 10:39:35 AM, EEM/Arthur, 1/1



NOTES:
SEE SHEET CG-503/504 FOR STORM DRAINAGE
STRUCTURE/PIPE SCHEDULE

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 |
|----------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPDIA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |
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PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

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NASH
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS

RIVERLIGHTS - AGE QUALIFIED PHASE
2 & 3

STORM DRAINAGE AND GRADING PLAN

DATE: 06/01/16
MCE PROJ. # 02735-0188
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NJL
PROJ. MGR: RMC

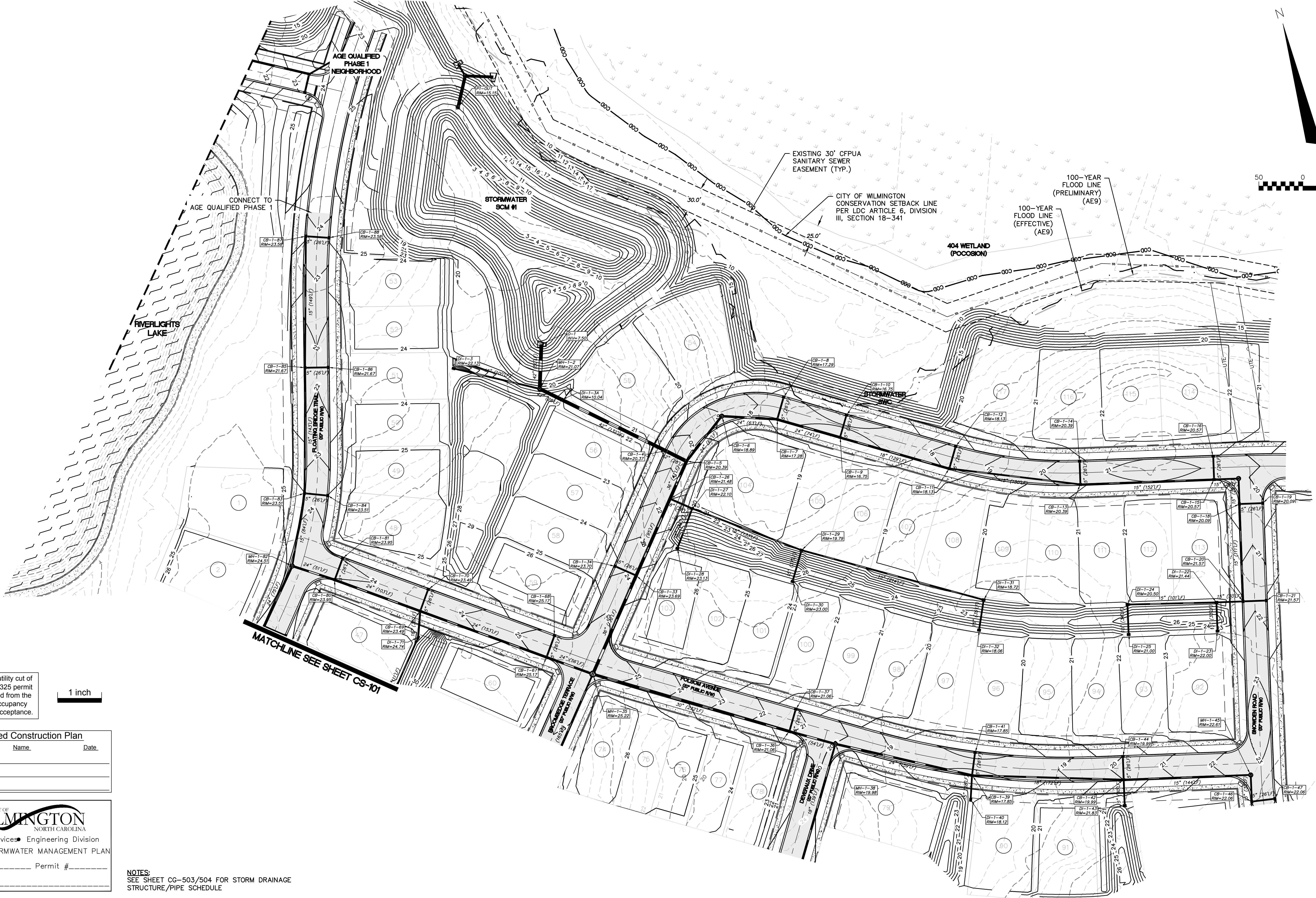
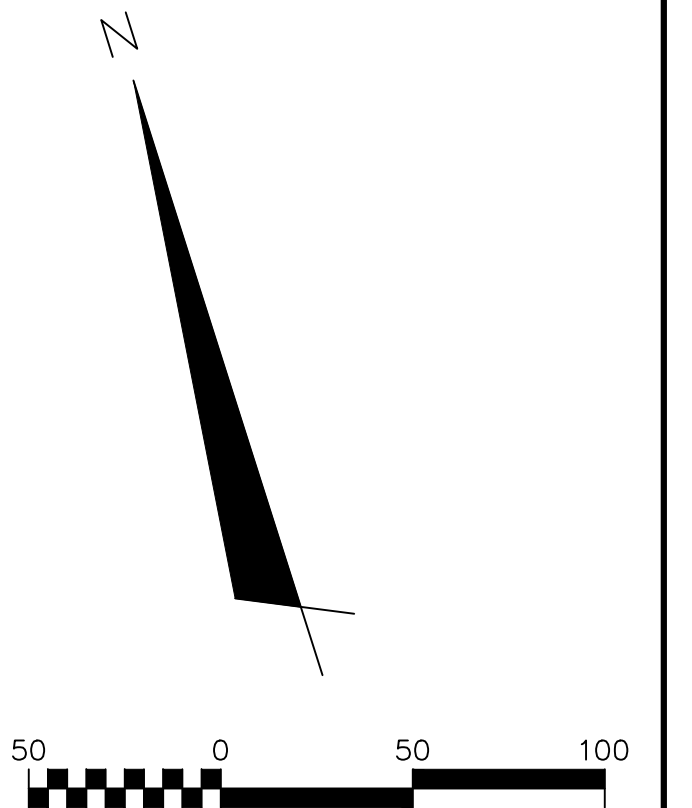
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

MAC FILE NUMBER
CG-101
DRAWING NUMBER
8

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION
B

S:\2735\0188_AQ-2-3\03-Drawing\CG101_CG-102_027350188.dwg, 6/1/2016 10:41:56 AM, ENH4THUR, 1/1



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

MATCHLINE SEE SHEET CS-101

| Approved Construction Plan | | |
|----------------------------|------|--|
| Name | Date | |
| Planning | | |
| Traffic | | |
| Fire | | |

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

Date: _____ Permit # _____
Signed: _____

NOTES:
SEE SHEET CG-503/504 FOR STORM DRAINAGE STRUCTURE/PIPE SCHEDULE

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
STORM DRAINAGE AND GRADING PLAN

| | | |
|-------------------------|---------------------------|-------------------------|
| DATE: 06/01/16 | SCALE: HORIZONTAL: 1"=50' | MAC FILE NUMBER: CG-102 |
| MCE PROJ. #: 02735-0168 | VERTICAL: N/A | DRAWING NUMBER: 9 |
| DRAWN: EEM/KCE | | |
| DESIGNED: KCE | | |
| CHECKED: N.J.L. | | |
| PROJ. MGR.: R.M.C. | | |
| STATUS: FINAL DESIGN | REVISION: B | |
| NOT FOR CONSTRUCTION | | |

S:\0735\0168\AG 2-380-Drawing\CG101_CG-102_027350168.dwg, 6/1/2016 10:42:28 AM, EEM/KCE

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 _____

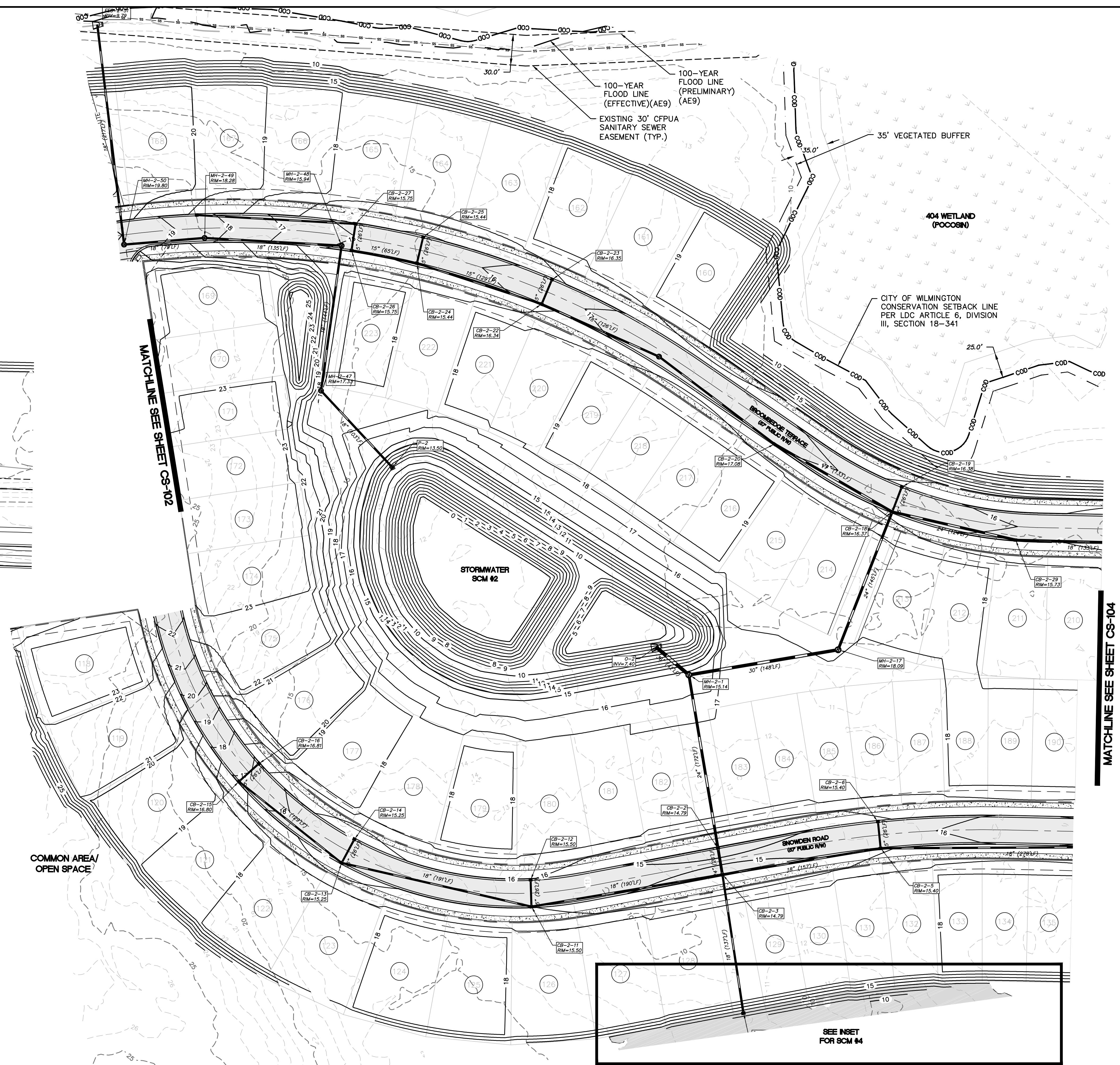
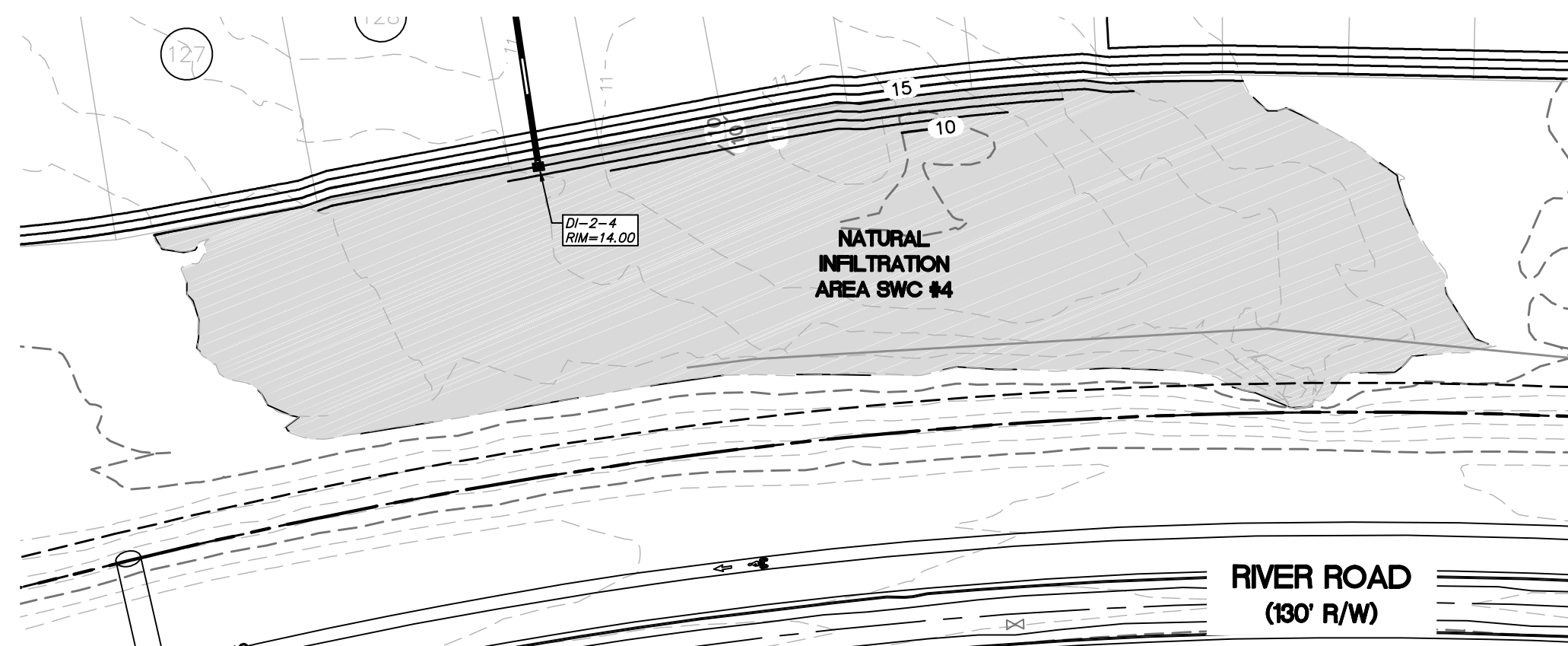


Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

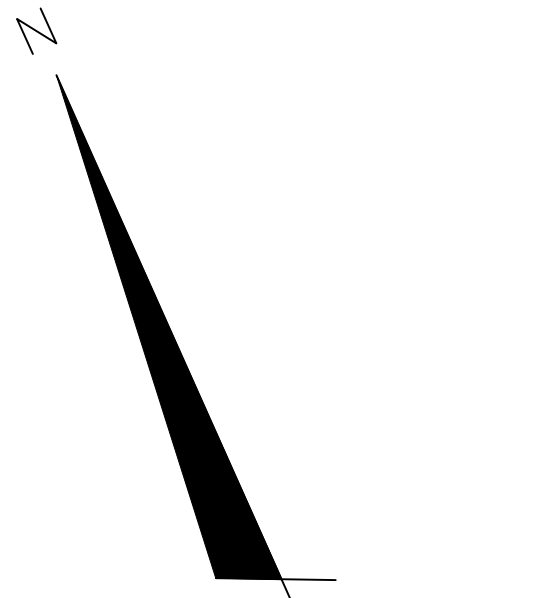
Signed: _____

INSET A: NATURAL INFILTRATION AREA SWC #5



MATCHLINE SEE SHEET CG-102

MATCHLINE SEE SHEET CG-104



NOTES:
SEE SHEET CG-503/504 FOR STORM DRAINAGE STRUCTURE/PIPE SCHEDULE

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITAL | 01/08/2016 |
| | REVISIONS | |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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NASH RIVERLIGHTS
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
STORM DRAINAGE AND GRADING PLAN

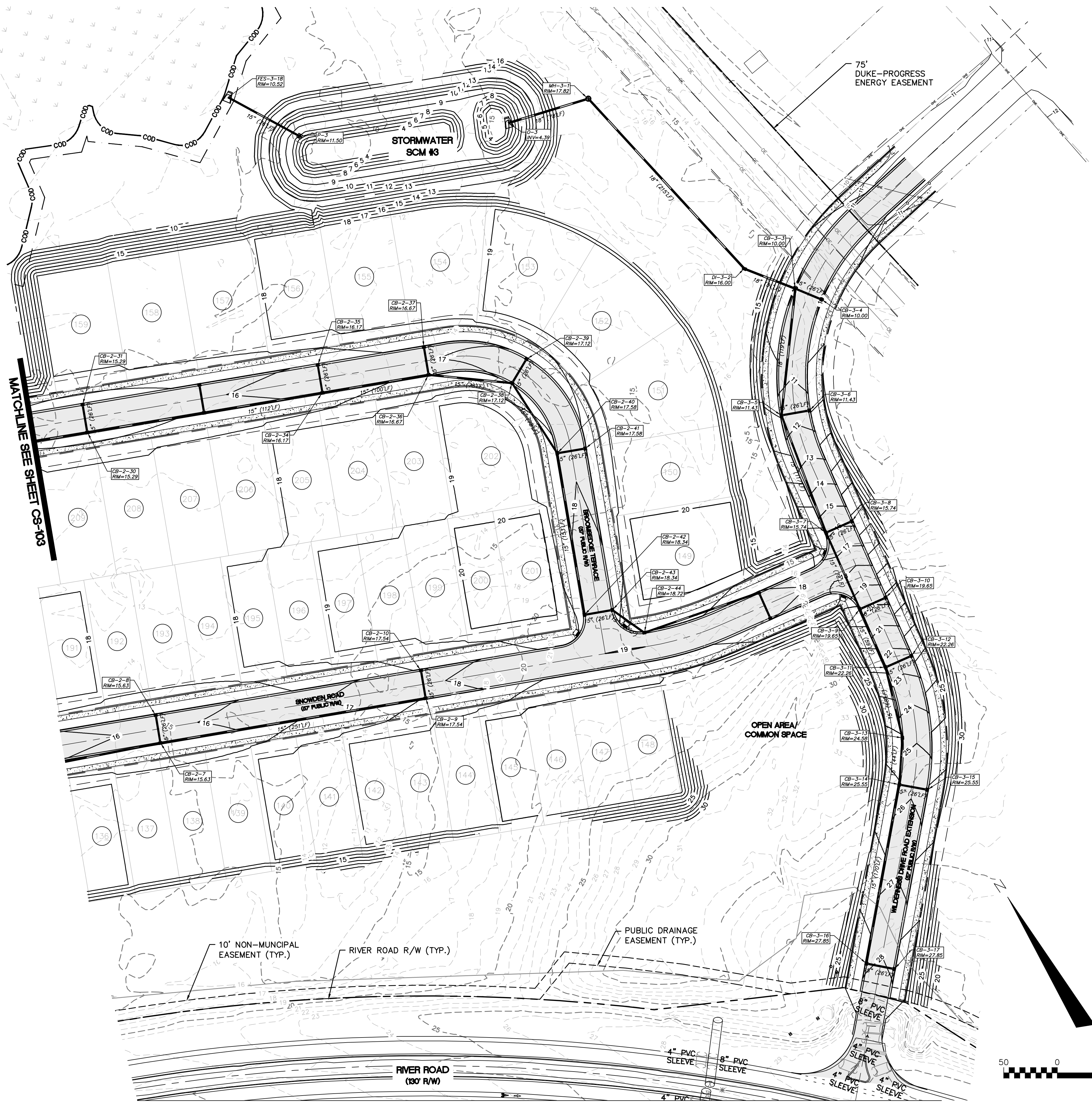
DATE: 06/01/16
MCE PROJ. #: 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N.J.L.
PROJ. MGR.: R.M.C.

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

MAC FILE NUMBER: **CG-103**
DRAWING NUMBER: **10**
REVISION: **B**

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

S:\02735\0168\AG 2-3860-Drawing\CG103_CG-104_027350168.dwg, 6/1/2016 10:45:08 AM, EEM\dmr



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 _____



Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____
 Signed: _____

NOTES:
 SEE SHEET CG-503/504 FOR STORM DRAINAGE STRUCTURE/PIPE SCHEDULE

| REVNO. | DESCRIPTIONS / REVISIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPLA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBMISSION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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 www.mckimcreed.com

NORTH AMERICA SEKISUI HOUSE, LLC

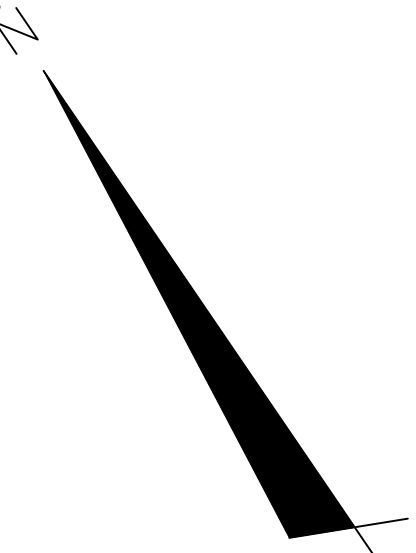
RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
 STORM DRAINAGE AND GRADING PLAN

DATE: 06/01/16
 MCE PROJ. # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: N.J.L.
 PROJ. MGR.: R.M.C.

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

MAC FILE NUMBER: CG-104
 DRAWING NUMBER: 11
 REVISION: B

STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION



S:\0735\0168\02-386-Drawing\CG103_CG_104_027350168.dwg, 6/1/2016 10:45:48 AM, EEM/kce

| SITE DATA TABLE | | AGE QUALIFIED-PHASE 2 AND 3 | |
|---|-----------------------------------|-----------------------------|--|
| PARCEL ADDRESS | 4410 RIVER ROAD | | |
| TAX PARCEL IDENTIFICATION NUMBER | R07000-006-009-000 | | |
| ZONING DISTRICT | R-7/CD CLUSTER | | |
| CAMA LAND USE CLASSIFICATION | TRANSITION AND CONSERVATION | | |
| WATER BODY CLASSIFICATION | SC | | |
| TOTAL ACREAGE WITHIN RIVER LIGHTS BOUNDARY | 1,329.41 ACRES (57,909,099.6 SF) | | |
| TOTAL ACREAGE PH 2-3 AGE QUALIFIED BOUNDARY | 127.16 ACRES (5,539,089.6 SF) | | |
| PROPOSED NUMBER OF LOTS | 223 SINGLE FAMILY | | |
| TOTAL WETLANDS WITHIN PROJECT TRACT | 16.56 ACRES (721,257.59 SF) | | |
| TOTAL WETLANDS IMPACTS | 0 ACRES (0 SF) | | |
| AREA INSIDE COD SETBACK REQUIRED | 2.48 ACRES (108,207.3 SF) | | |
| AREA INSIDE COD SETBACK PROVIDED | 2.48 ACRES (108,207.3 SF) | | |
| TOTAL PARKING REQUIRED | 0 SPACES | | |
| TOTAL PARKING PROVIDED | 0 SPACES | | |
| TOTAL BICYCLE SPACES PROVIDED | 0 SPACES | | |
| AQ-2: TOTAL OPEN SPACE PROPOSED | 20.52 ACRES (893,851.2 SF)* | | |
| AQ-3: TOTAL OPEN SPACE PROPOSED | 18.95 ACRES (825,462.0 SF)* | | |

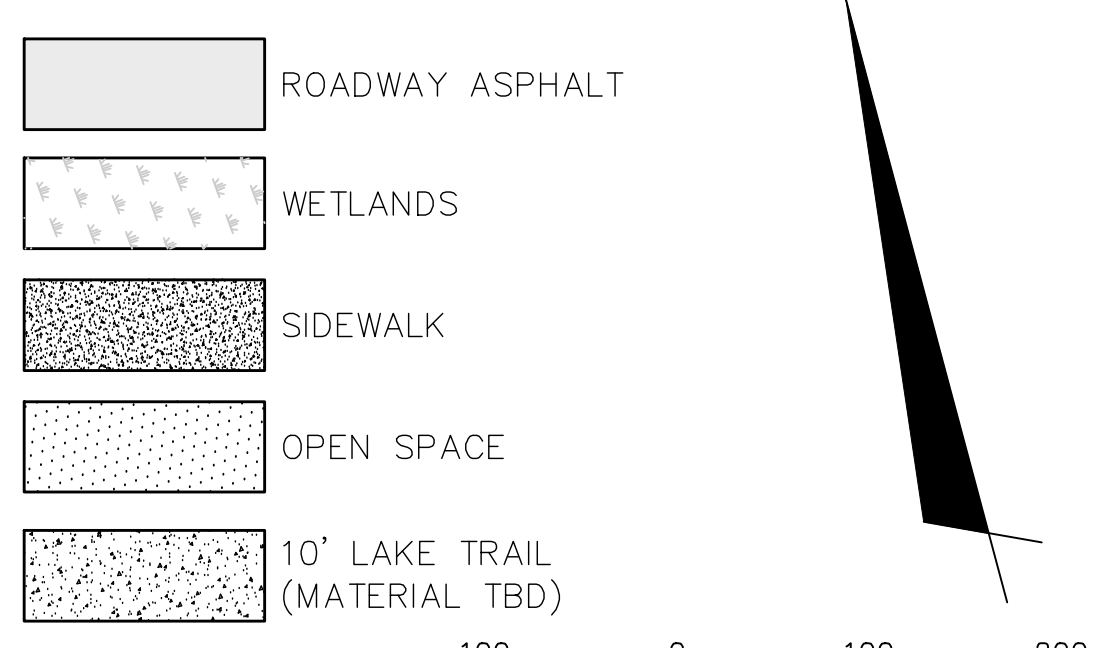
*PROPOSED R7-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 1,155.6 ACRES (@ 40% OPEN SPACE) = 462.24 ACRES REQUIRED FOR ENTIRE RIVERLIGHTS DEVELOPMENT

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

GENERAL NOTES:

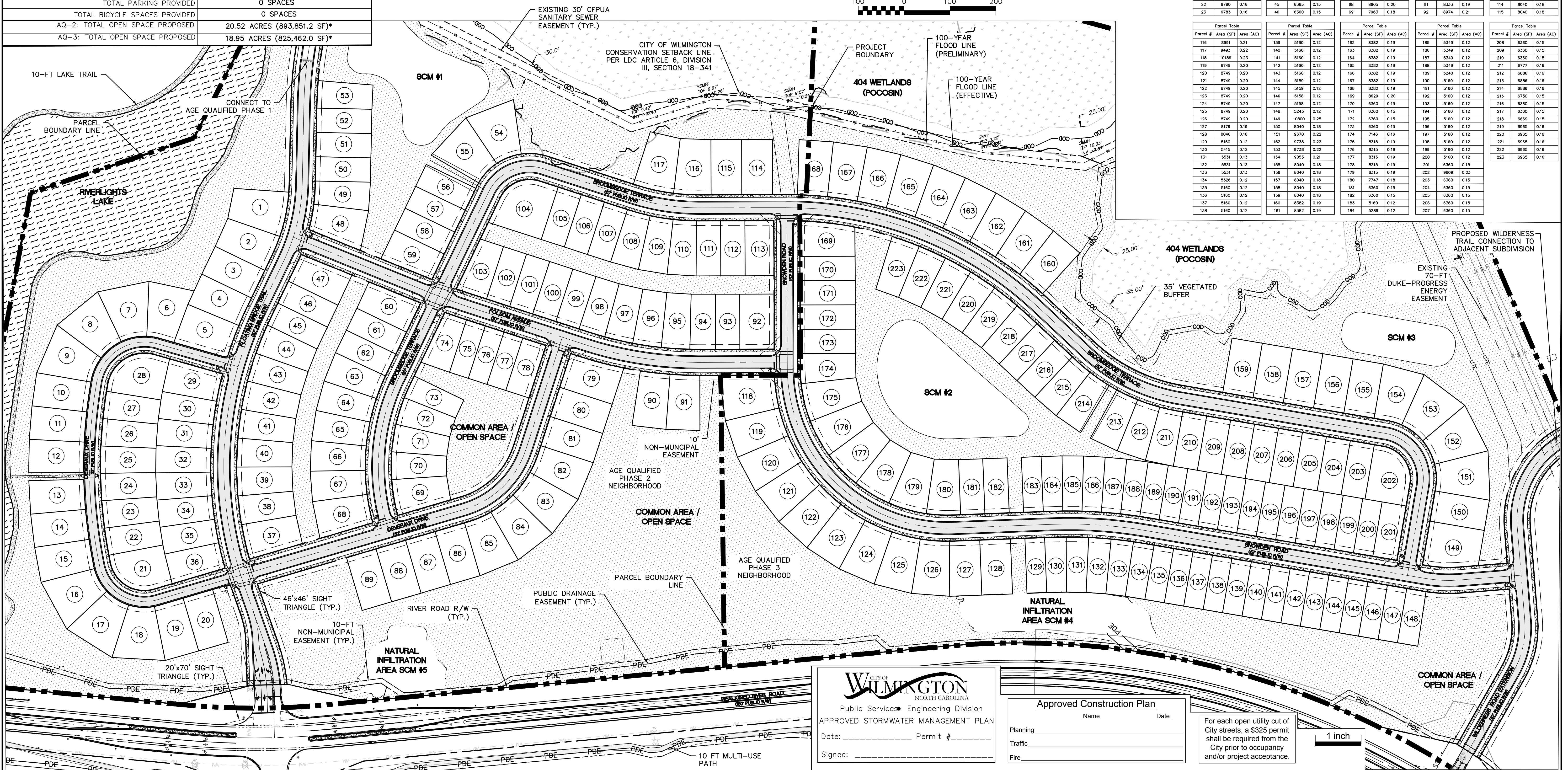
- A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
- 10 FT SEPARATION REQUIRED BETWEEN BUILDINGS.
- ZERO LOT LINES ARE PERMITTED IN CLUSTER SUBDIVISIONS.
- ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
 NORTH - FUTURE R7-CD CLUSTER / TRANSITION
 SOUTH - FUTURE R7-CD CLUSTER / TRANSITION
 EAST - SILVA TERRA NEIGHBORHOOD - R10-CD CLUSTER / TRANSITION
 WEST - AGE QUALIFIED NEIGHBORHOOD - R7-CD CLUSTER / TRANSITION

SURFACE MATERIAL LEGEND



* SEE SHEETS CS-101, CS-102, CS-103, AND CS-104 FOR INDIVIDUAL LOT DIMENSIONS

| Parcel # | Area (SF) | Area (AC) | Parcel # | Area (SF) | Area (AC) | Parcel # | Area (SF) | Area (AC) | Parcel # | Area (SF) | Area (AC) | Parcel # | Area (SF) | Area (AC) |
|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|
| 1 | 10057 | 0.23 | 24 | 6787 | 0.16 | 47 | 8171 | 0.19 | 70 | 6252 | 0.14 | 93 | 6360 | 0.15 |
| 2 | 8909 | 0.20 | 25 | 6787 | 0.16 | 48 | 8583 | 0.20 | 71 | 6252 | 0.14 | 94 | 6547 | 0.15 |
| 3 | 8040 | 0.18 | 26 | 6783 | 0.16 | 49 | 6739 | 0.15 | 72 | 6252 | 0.14 | 95 | 6965 | 0.16 |
| 4 | 8282 | 0.19 | 27 | 6780 | 0.16 | 50 | 6360 | 0.15 | 73 | 5701 | 0.13 | 96 | 6965 | 0.16 |
| 5 | 9784 | 0.22 | 28 | 10187 | 0.23 | 51 | 6360 | 0.15 | 74 | 6919 | 0.16 | 97 | 6965 | 0.16 |
| 6 | 9378 | 0.22 | 29 | 8000 | 0.18 | 52 | 6360 | 0.15 | 75 | 5160 | 0.12 | 98 | 6709 | 0.15 |
| 7 | 9832 | 0.23 | 30 | 6642 | 0.15 | 53 | 6807 | 0.16 | 76 | 5160 | 0.12 | 99 | 6360 | 0.15 |
| 8 | 9832 | 0.23 | 31 | 6659 | 0.15 | 54 | 9738 | 0.22 | 77 | 5160 | 0.12 | 100 | 6360 | 0.15 |
| 9 | 9792 | 0.22 | 32 | 6655 | 0.15 | 55 | 9732 | 0.22 | 78 | 6360 | 0.15 | 101 | 6360 | 0.15 |
| 10 | 8305 | 0.19 | 33 | 6655 | 0.15 | 56 | 6360 | 0.15 | 79 | 9424 | 0.22 | 102 | 6360 | 0.15 |
| 11 | 8305 | 0.19 | 34 | 6659 | 0.15 | 57 | 6360 | 0.15 | 80 | 8040 | 0.18 | 103 | 7345 | 0.17 |
| 12 | 8305 | 0.19 | 35 | 6661 | 0.15 | 58 | 6360 | 0.15 | 81 | 8040 | 0.18 | 104 | 12747 | 0.29 |
| 13 | 8305 | 0.19 | 36 | 7422 | 0.17 | 59 | 7632 | 0.18 | 82 | 8845 | 0.20 | 105 | 6360 | 0.15 |
| 14 | 8305 | 0.19 | 37 | 8429 | 0.19 | 60 | 8006 | 0.19 | 83 | 9137 | 0.21 | 106 | 6360 | 0.15 |
| 15 | 8486 | 0.20 | 38 | 6989 | 0.16 | 61 | 6360 | 0.15 | 84 | 9137 | 0.21 | 107 | 6360 | 0.15 |
| 16 | 9892 | 0.23 | 39 | 6989 | 0.16 | 62 | 6445 | 0.15 | 85 | 8927 | 0.21 | 108 | 6805 | 0.16 |
| 17 | 9892 | 0.23 | 40 | 6989 | 0.16 | 63 | 7136 | 0.16 | 86 | 8040 | 0.18 | 109 | 6822 | 0.16 |
| 18 | 9892 | 0.23 | 41 | 6989 | 0.16 | 64 | 7136 | 0.16 | 87 | 8040 | 0.18 | 110 | 6822 | 0.16 |
| 19 | 8441 | 0.19 | 42 | 6989 | 0.16 | 65 | 7136 | 0.16 | 88 | 8040 | 0.18 | 111 | 6403 | 0.15 |
| 20 | 8040 | 0.18 | 43 | 6989 | 0.16 | 66 | 7136 | 0.16 | 89 | 8040 | 0.18 | 112 | 6360 | 0.15 |
| 21 | 9767 | 0.22 | 44 | 7187 | 0.16 | 67 | 7136 | 0.16 | 90 | 8343 | 0.19 | 113 | 7560 | 0.17 |
| 22 | 6780 | 0.16 | 45 | 6365 | 0.15 | 68 | 8605 | 0.20 | 91 | 8333 | 0.19 | 114 | 8040 | 0.18 |
| 23 | 6783 | 0.16 | 46 | 6360 | 0.15 | 69 | 7963 | 0.18 | 92 | 8974 | 0.21 | 115 | 8040 | 0.18 |



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

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

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

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

NASH RIVERLIGHTS
 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
OVERALL SITE PLAN

DATE: 06/01/16
 MCE PROJ. #: 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: N.J.L.
 PROJ. MGR.: R.M.C.

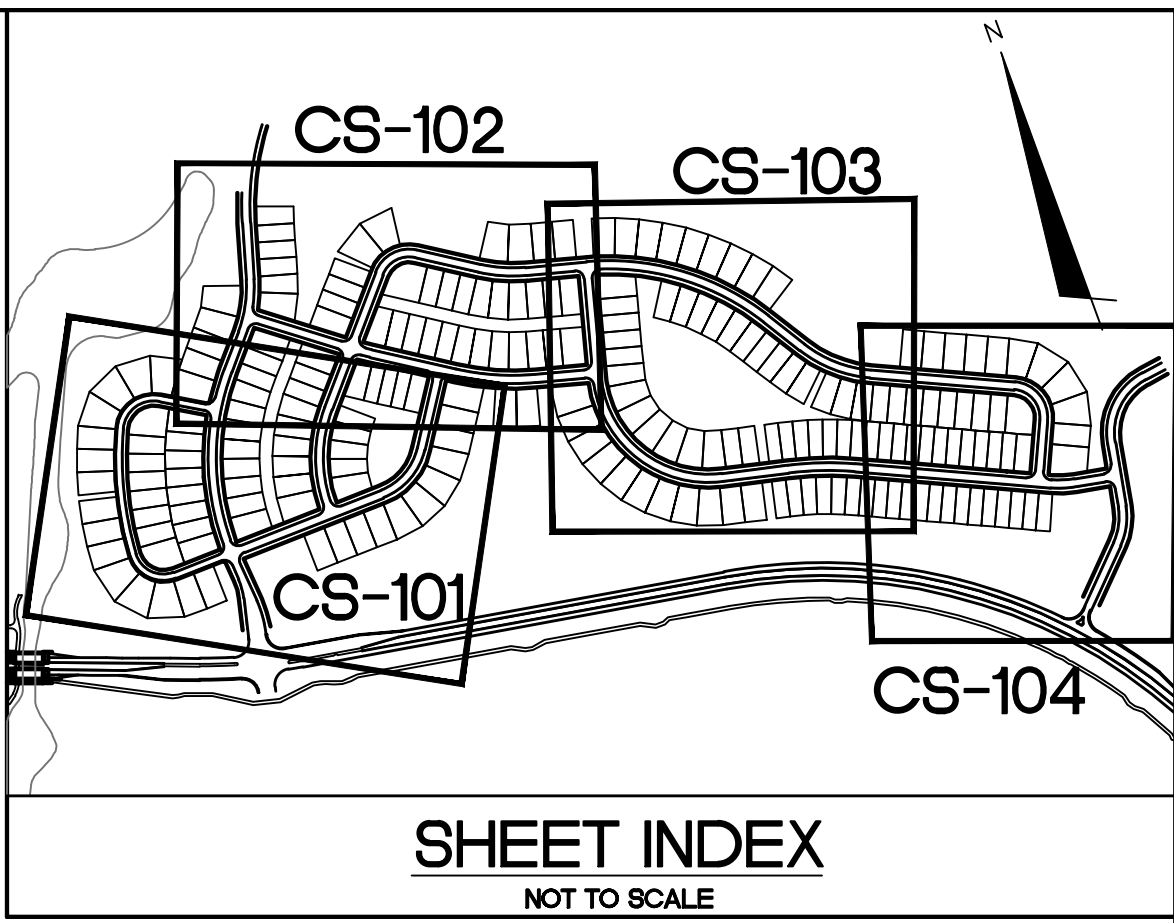
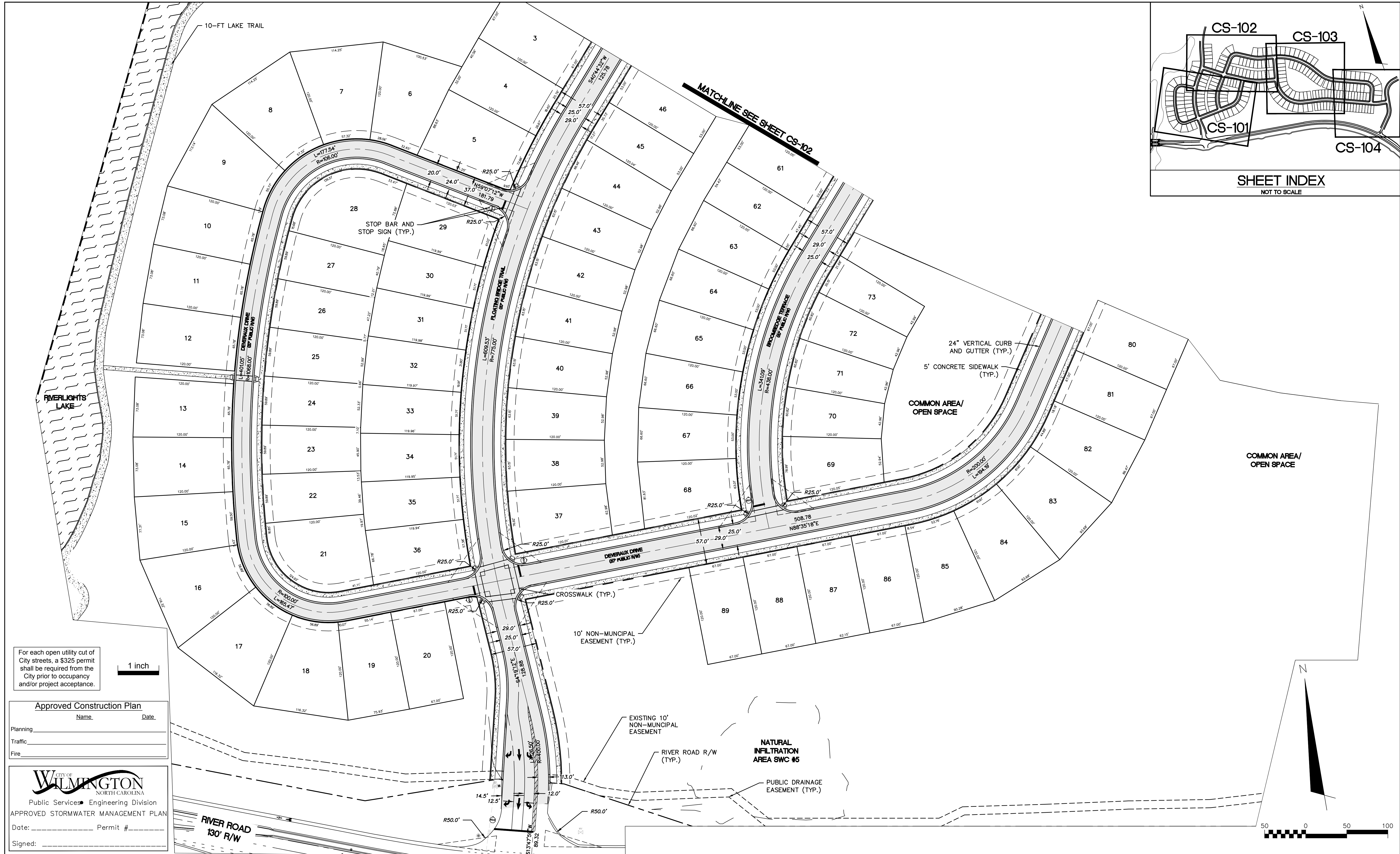
SCALE: HORIZONTAL: 1"=100'
 VERTICAL: N/A

MAC FILE NUMBER: CS-100
 DRAWING NUMBER: 12

STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

REVISION: B

S:\07350168\AG 2-3860\Drawings\CS100\AG 2-31_027350168.dwg, 6/1/2016 10:51:12 AM, Admin\mh...



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 |
|----------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |
| | | |
| | | |
| | | |
| | | |

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 CONSTRUCTION

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 PRELIMINARY -
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NASH
 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

SITE PLAN

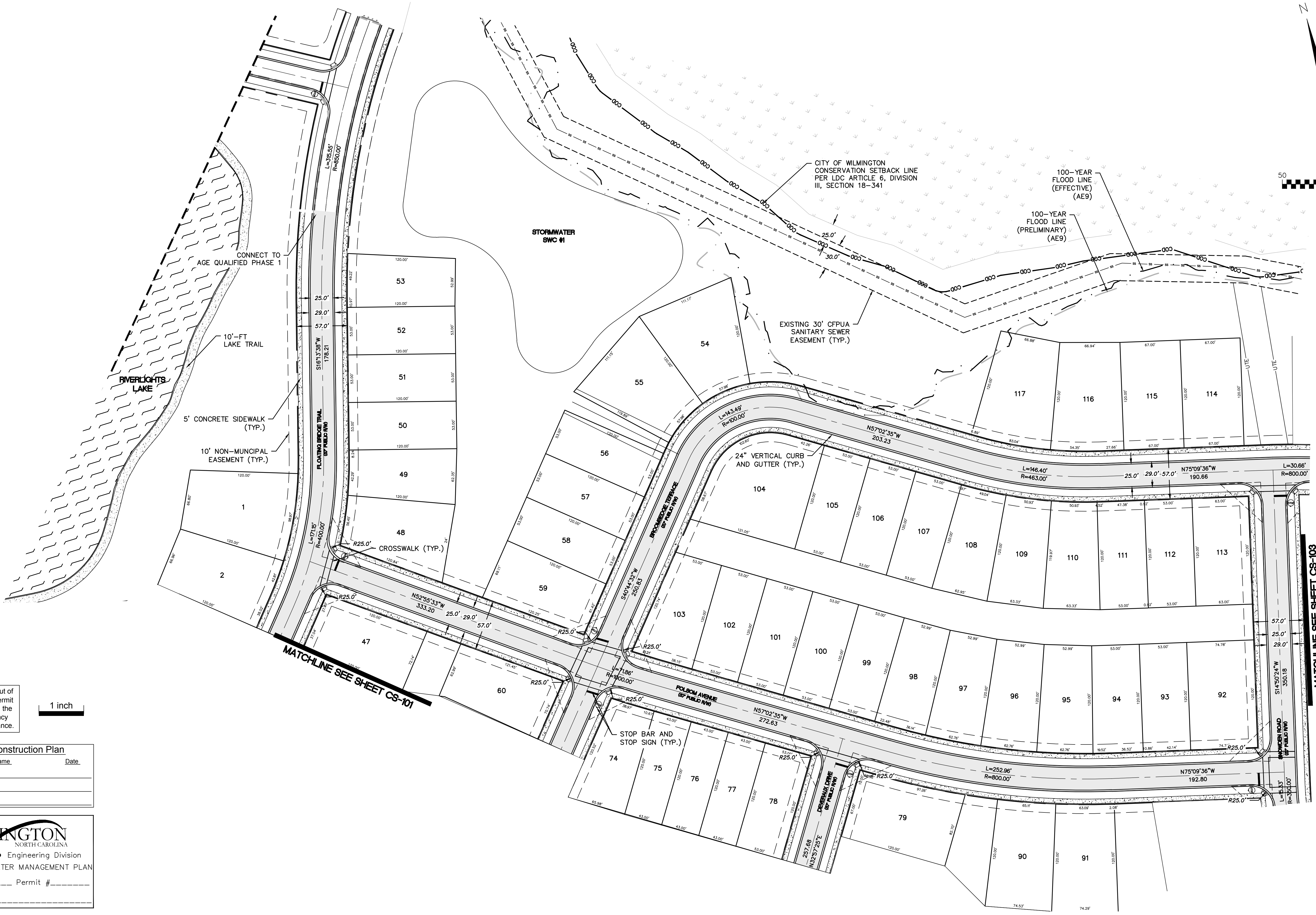
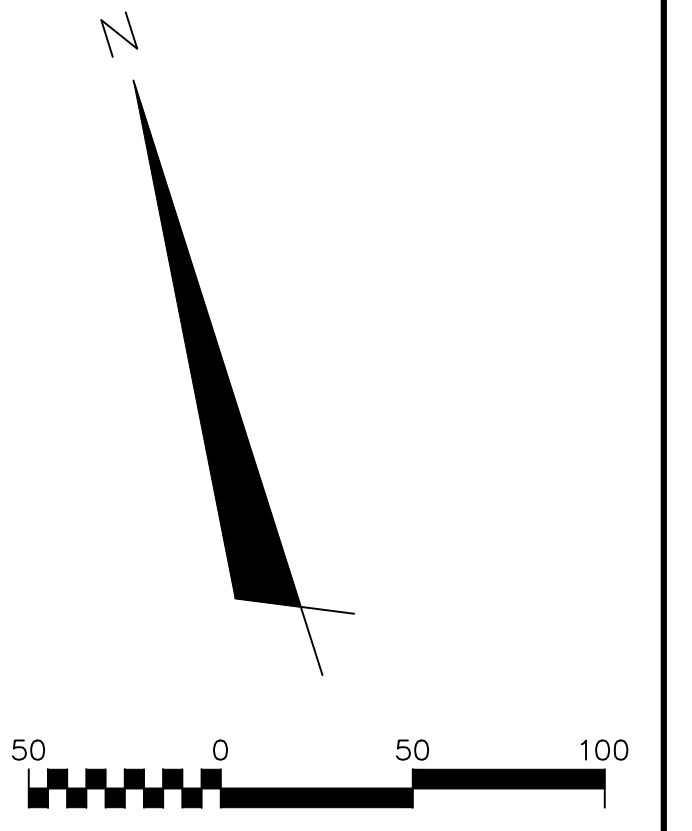
DATE: 06/01/16
 MCE PROJ. # 02735-0188
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NJL
 PROJ. MGR: RMC

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

MAC FILE NUMBER: CS-101
 DRAWING NUMBER: 13
 REVISION: B

STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

S:\2016\061616 AQ2-3800-Drawing\CS-101_CS-102_027350188.dwg, 6/1/2016 10:48:57 AM, E:\chm\...



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: _____

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
SITE PLAN

| | | |
|-------------------------|-----------------|-------------------------|
| DATE: 06/01/16 | SCALE: 1"=50' | MAC FILE NUMBER: CS-102 |
| MCE PROJ. #: 02735-0168 | HORIZONTAL: N/A | DRAWING NUMBER: 14 |
| DRAWN: EEM/KCE | VERTICAL: N/A | REVISION: B |
| DESIGNED: KCE | | |
| CHECKED: N.J.L. | | |
| PROJ. MGR.: R.M.C. | | |
| STATUS: FINAL DESIGN | | REVISION: B |
| NOT FOR CONSTRUCTION | | |

S:\02735\0168\A02-2\860-Drawing\CS101_CS-102_027350168.dwg, 01/11/2016 10:50:21 AM, EEM/Arthur

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: _____

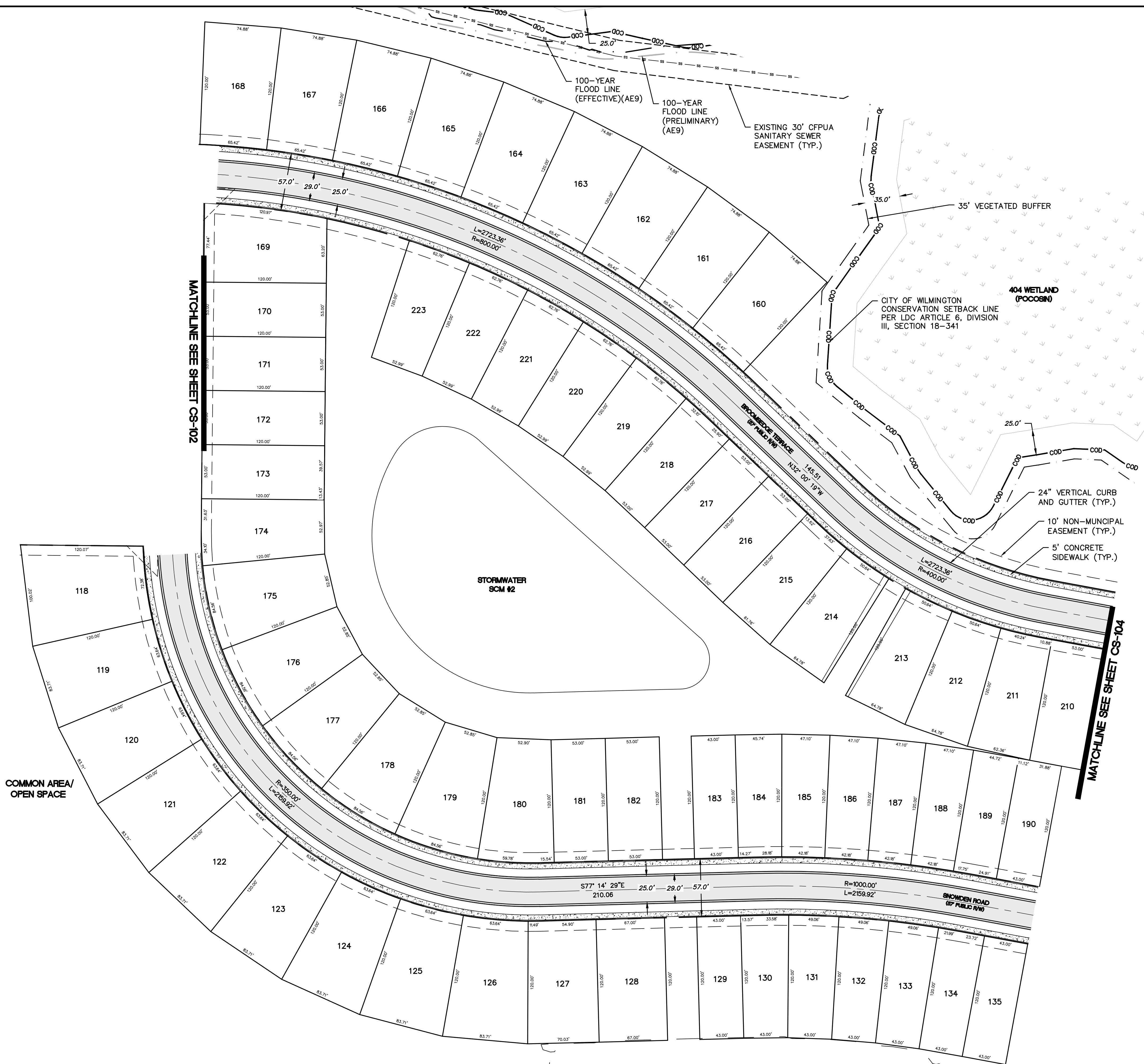
CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

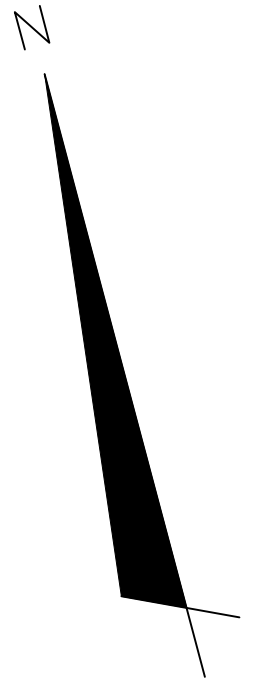
Date: _____ Permit #: _____

Signed: _____



MATCHLINE SEE SHEET CS-102

MATCHLINE SEE SHEET CS-104



| REVNO. | DESCRIPTIONS REVISIONS | DATE |
|--------|---------------------------|------|
| | | |
| | | |
| | | |
| | | |
| | | |

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PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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RIVERLIGHTS™

NORTH AMERICA SEXISUI HOUSE, LLC

RIVERLIGHTS – AGE QUALIFIED PHASE 2 & 3

SITE PLAN

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN EEM/KCE
DESIGNED KCE
CHECKED NJL
PROJ. MGR. RMC

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

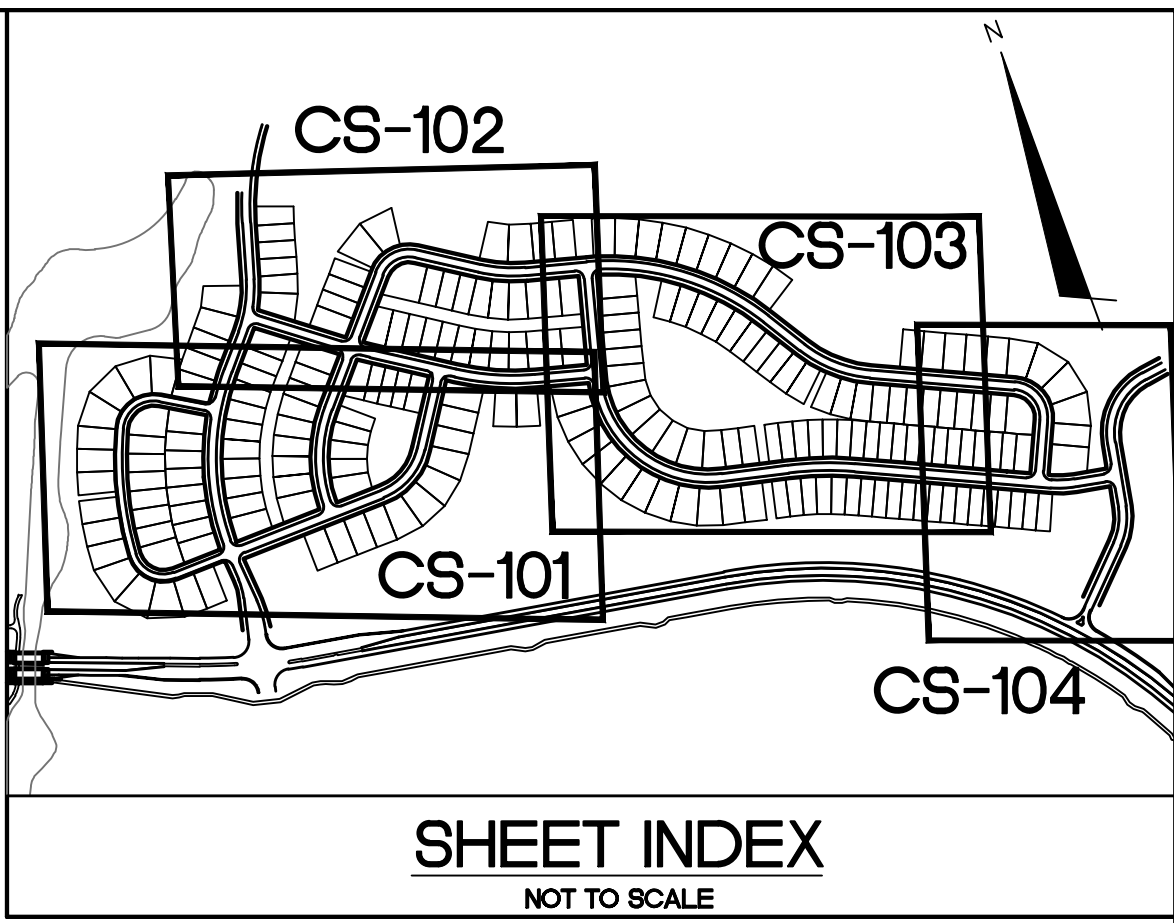
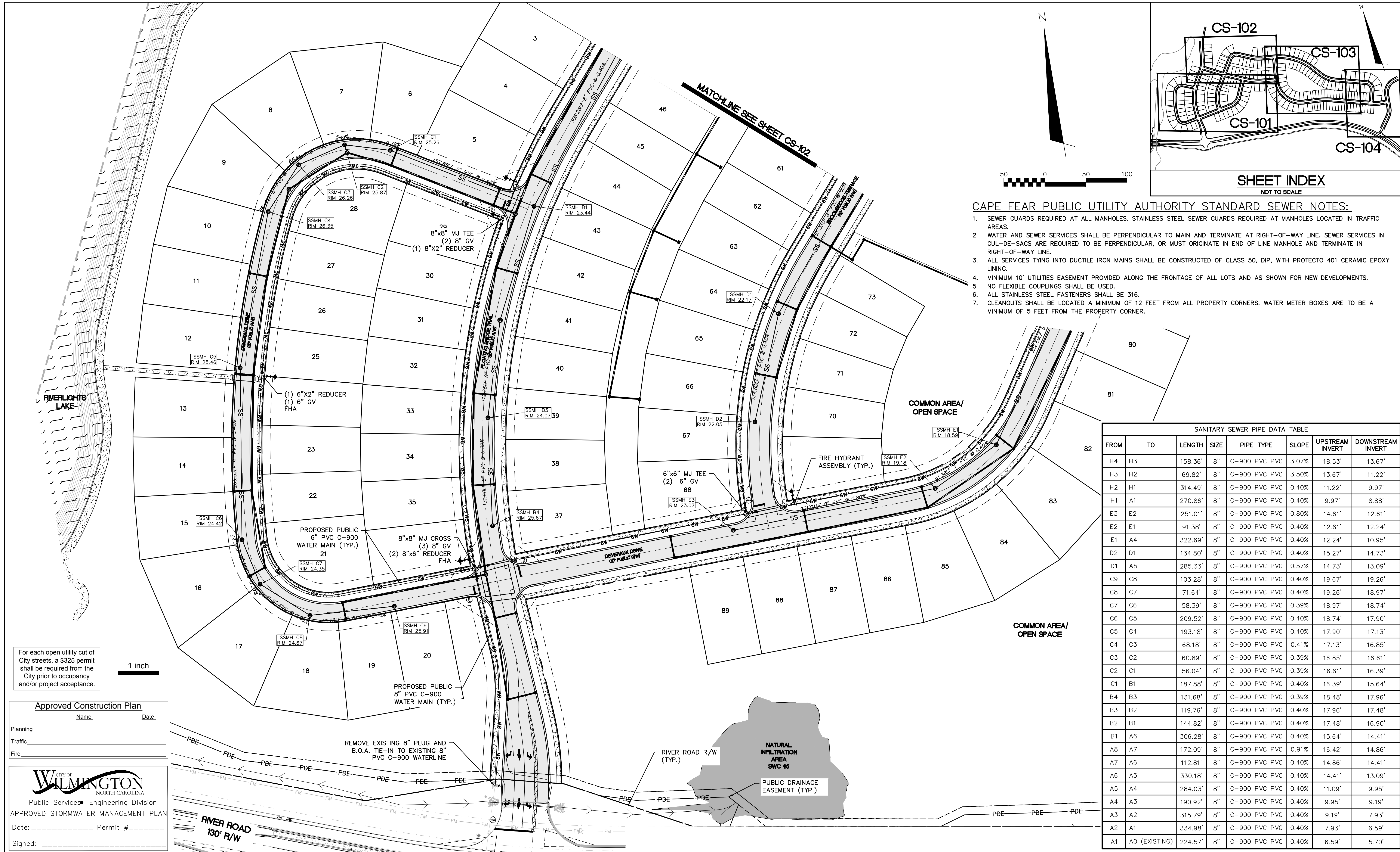
SCALE: HORIZONTAL: 1"=50', VERTICAL: N/A

MAC FILE NUMBER: **CS-103**
DRAWING NUMBER: **15**

REVISION: **B**

8 CITY OF WILMINGTON INC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPUA SUBMITTAL 06/01/2016

9 CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL 07/28/2016



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

| SANITARY SEWER PIPE DATA TABLE | | | | | | | |
|--------------------------------|---------------|---------|------|---------------|-------|-----------------|-------------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | UPSTREAM INVERT | DOWNSTREAM INVERT |
| H4 | H3 | 158.36' | 8" | C-900 PVC PVC | 3.07% | 18.53' | 13.67' |
| H3 | H2 | 69.82' | 8" | C-900 PVC PVC | 3.50% | 13.67' | 11.22' |
| H2 | H1 | 314.49' | 8" | C-900 PVC PVC | 0.40% | 11.22' | 9.97' |
| H1 | A1 | 270.86' | 8" | C-900 PVC PVC | 0.40% | 9.97' | 8.88' |
| E3 | E2 | 251.01' | 8" | C-900 PVC PVC | 0.80% | 14.61' | 12.61' |
| E2 | E1 | 91.38' | 8" | C-900 PVC PVC | 0.40% | 12.61' | 12.24' |
| E1 | A4 | 322.69' | 8" | C-900 PVC PVC | 0.40% | 12.24' | 10.95' |
| D2 | D1 | 134.80' | 8" | C-900 PVC PVC | 0.40% | 15.27' | 14.73' |
| D1 | A5 | 285.33' | 8" | C-900 PVC PVC | 0.57% | 14.73' | 13.09' |
| C9 | C8 | 103.28' | 8" | C-900 PVC PVC | 0.40% | 19.67' | 19.26' |
| C8 | C7 | 71.64' | 8" | C-900 PVC PVC | 0.40% | 19.26' | 18.97' |
| C7 | C6 | 58.39' | 8" | C-900 PVC PVC | 0.39% | 18.97' | 18.74' |
| C6 | C5 | 209.52' | 8" | C-900 PVC PVC | 0.40% | 18.74' | 17.90' |
| C5 | C4 | 193.18' | 8" | C-900 PVC PVC | 0.40% | 17.90' | 17.13' |
| C4 | C3 | 68.18' | 8" | C-900 PVC PVC | 0.41% | 17.13' | 16.85' |
| C3 | C2 | 60.89' | 8" | C-900 PVC PVC | 0.39% | 16.85' | 16.61' |
| C2 | C1 | 56.04' | 8" | C-900 PVC PVC | 0.39% | 16.61' | 16.39' |
| C1 | B1 | 187.88' | 8" | C-900 PVC PVC | 0.40% | 16.39' | 15.64' |
| B4 | B3 | 131.68' | 8" | C-900 PVC PVC | 0.39% | 18.48' | 17.96' |
| B3 | B2 | 119.76' | 8" | C-900 PVC PVC | 0.40% | 17.96' | 17.48' |
| B2 | B1 | 144.82' | 8" | C-900 PVC PVC | 0.40% | 17.48' | 16.90' |
| B1 | A6 | 306.28' | 8" | C-900 PVC PVC | 0.40% | 15.64' | 14.41' |
| A8 | A7 | 172.09' | 8" | C-900 PVC PVC | 0.91% | 16.42' | 14.86' |
| A7 | A6 | 112.81' | 8" | C-900 PVC PVC | 0.40% | 14.86' | 14.41' |
| A6 | A5 | 330.18' | 8" | C-900 PVC PVC | 0.40% | 14.41' | 13.09' |
| A5 | A4 | 284.03' | 8" | C-900 PVC PVC | 0.40% | 11.09' | 9.95' |
| A4 | A3 | 190.92' | 8" | C-900 PVC PVC | 0.40% | 9.95' | 9.19' |
| A3 | A2 | 315.79' | 8" | C-900 PVC PVC | 0.40% | 9.19' | 7.93' |
| A2 | A1 | 334.98' | 8" | C-900 PVC PVC | 0.40% | 7.93' | 6.59' |
| A1 | A0 (EXISTING) | 224.57' | 8" | C-900 PVC PVC | 0.40% | 6.59' | 5.70' |

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 |
|----------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

UTILITY PLAN

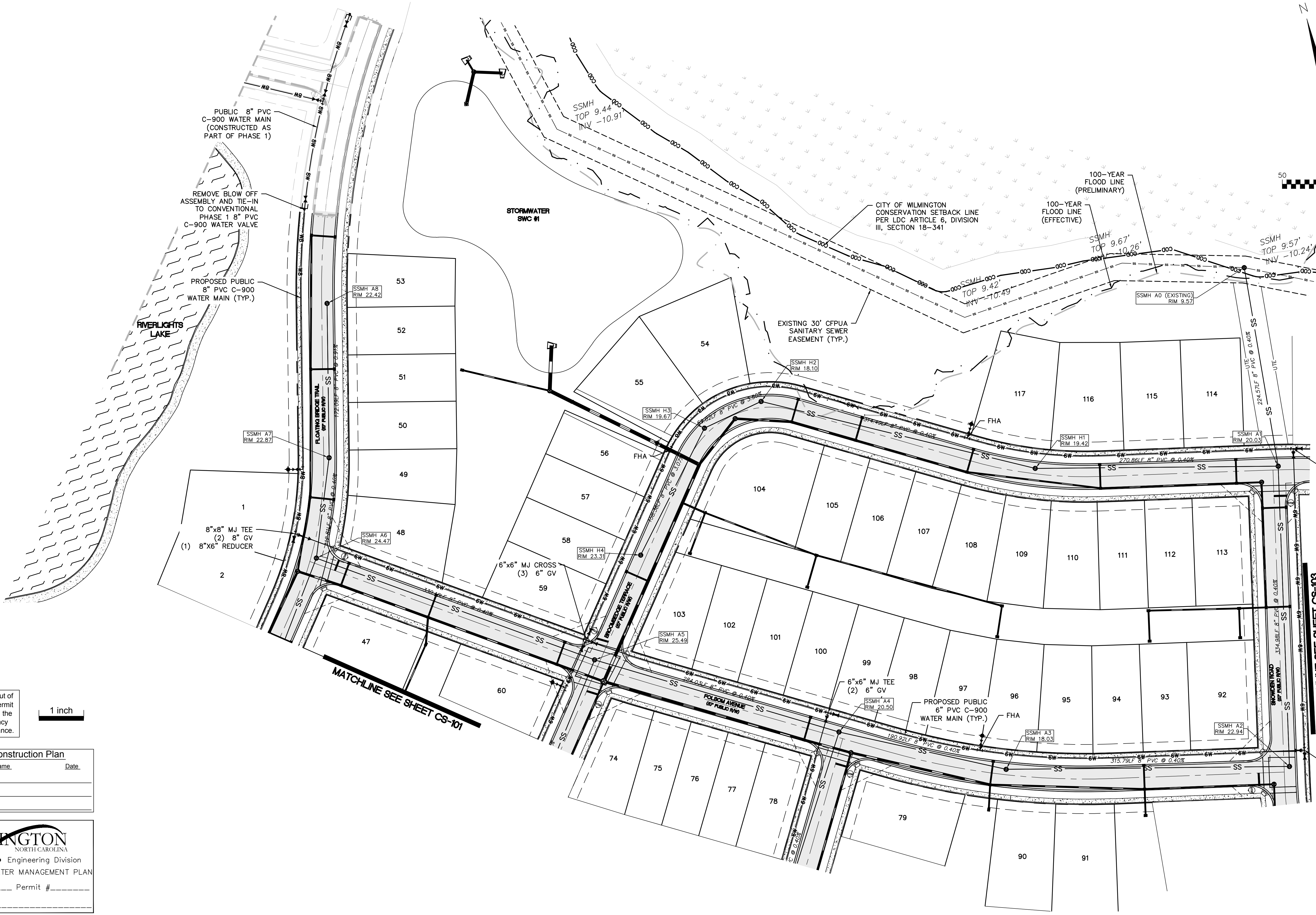
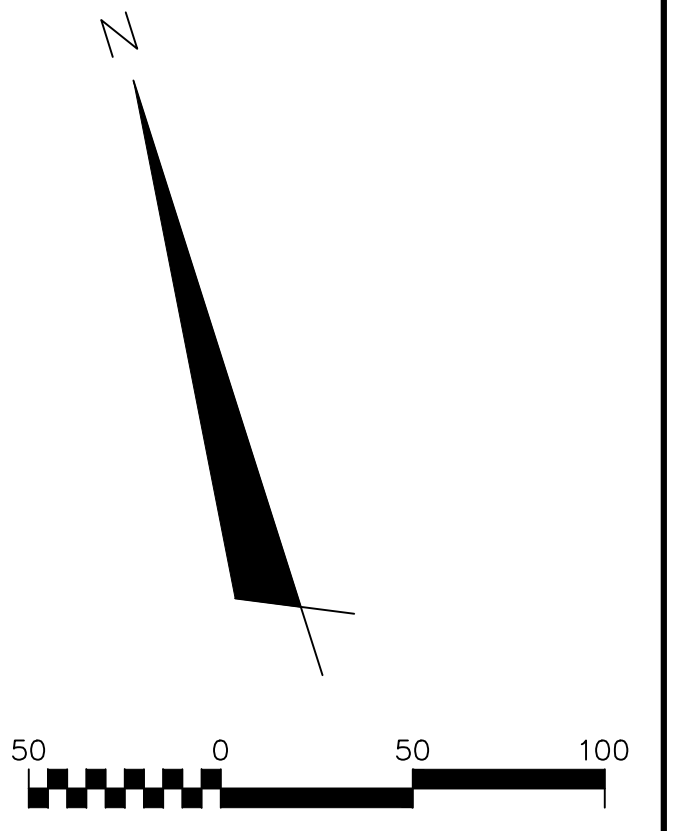
DATE: 06/01/16
MCE PROJ. #: 02735-0188
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NUL
PROJ. MGR.: RMC

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

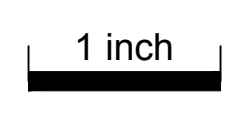
MAC FILE NUMBER: **CU-101**
DRAWING NUMBER: **18**

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

REVISION: **B**



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: _____

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

MCKIM & CREED

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NASH RIVERLIGHTS™

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

UTILITY PLAN

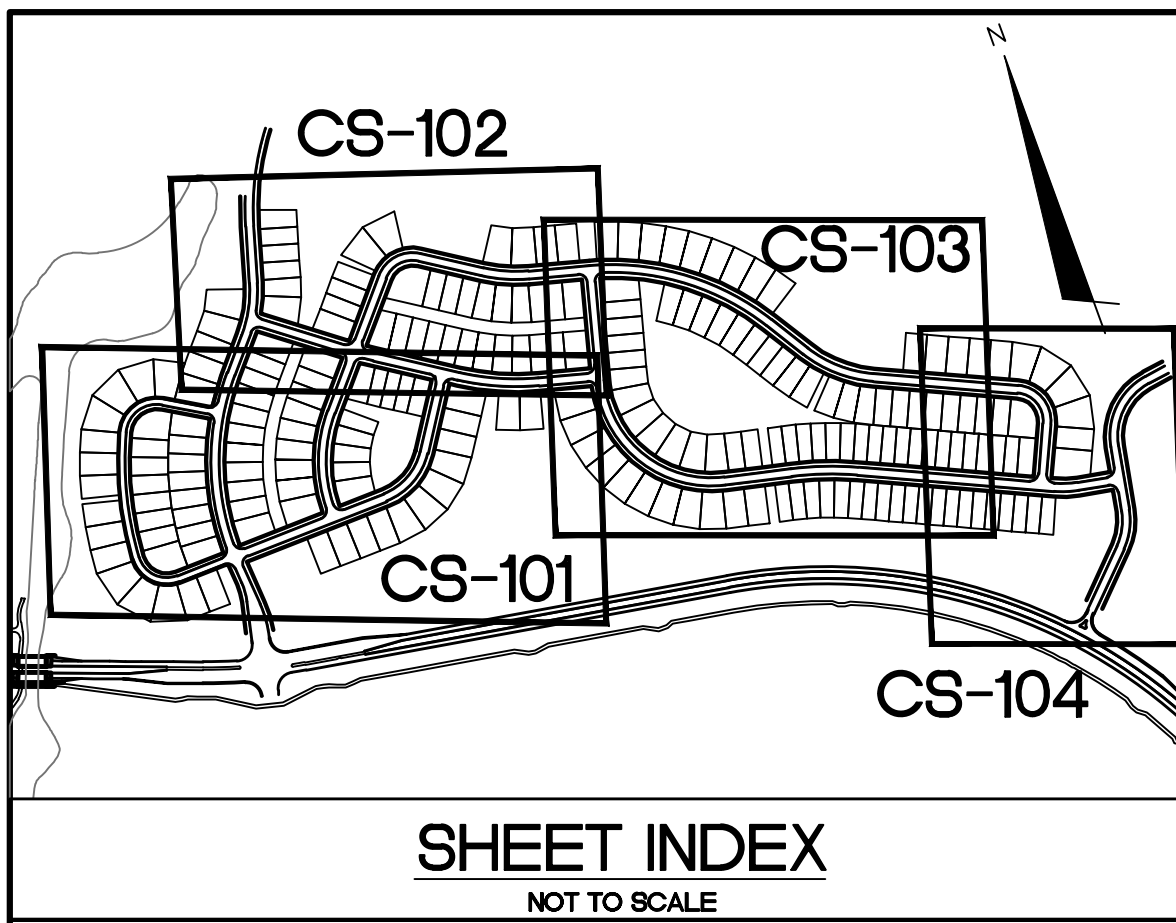
| | |
|--------------|------------|
| DATE: | 06/01/16 |
| MCE PROJ. #: | 02735-0168 |
| DRAWN: | EEM/KCE |
| DESIGNED: | KCE |
| CHECKED: | N/L |
| PROJ. MGR.: | RMC |

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

| | |
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| MAC FILE NUMBER: | CU-102 |
| DRAWING NUMBER: | 19 |

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

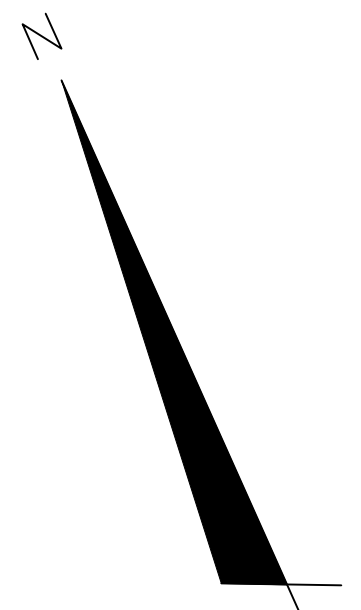
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SHEET INDEX
NOT TO SCALE

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

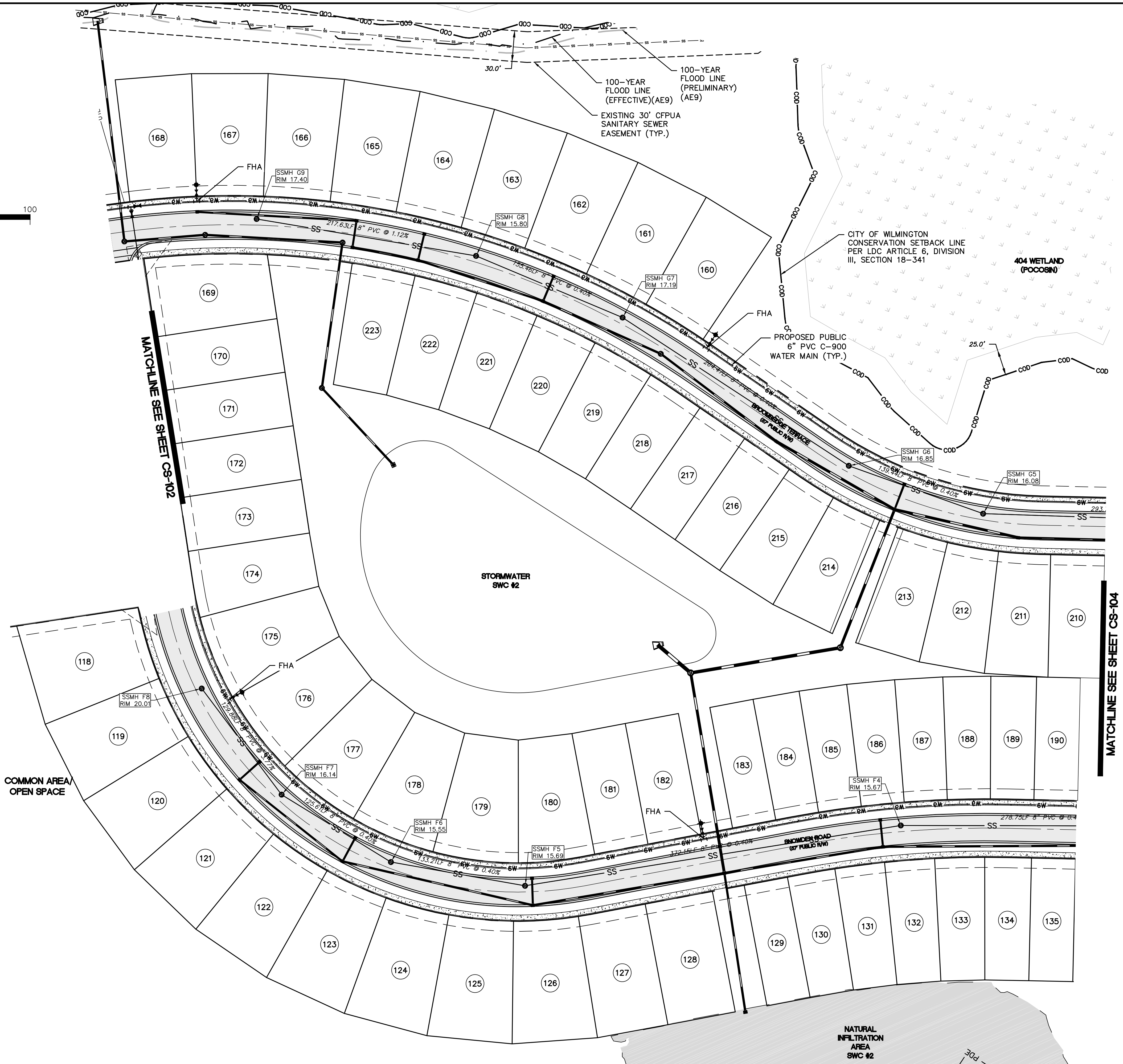
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

| SANITARY SEWER PIPE DATA TABLE | | | | | | | |
|--------------------------------|----|---------|------|---------------|-------|-----------------|-------------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | UPSTREAM INVERT | DOWNSTREAM INVERT |
| G9 | G8 | 217.63' | 8" | C-900 PVC PVC | 1.12% | 11.40' | 8.97' |
| G8 | G7 | 155.46' | 8" | C-900 PVC PVC | 0.40% | 9.00' | 8.38' |
| G7 | G6 | 264.47' | 8" | C-900 PVC PVC | 0.40% | 8.37' | 7.32' |
| G6 | G5 | 139.44' | 8" | C-900 PVC PVC | 0.40% | 7.32' | 6.76' |
| G5 | G4 | 293.73' | 8" | C-900 PVC PVC | 0.40% | 6.76' | 5.58' |
| G4 | G3 | 233.23' | 8" | C-900 PVC PVC | 0.40% | 5.58' | 4.65' |
| G3 | G2 | 68.25' | 8" | C-900 PVC PVC | 0.40% | 4.65' | 4.38' |
| G2 | G1 | 63.77' | 8" | C-900 PVC PVC | 0.40% | 4.38' | 4.12' |
| G1 | F2 | 206.51' | 8" | C-900 PVC PVC | 0.40% | 4.12' | 3.30' |
| F8 | F7 | 129.88' | 8" | C-900 PVC PVC | 3.77% | 14.01' | 9.11' |
| F7 | F6 | 125.61' | 8" | C-900 PVC PVC | 0.40% | 9.11' | 8.61' |
| F6 | F5 | 133.21' | 8" | C-900 PVC PVC | 0.40% | 8.61' | 8.07' |
| F5 | F4 | 372.15' | 8" | C-900 PVC PVC | 0.40% | 8.07' | 6.59' |
| F4 | F3 | 278.75' | 8" | C-900 PVC PVC | 0.40% | 6.59' | 5.47' |
| F3 | F2 | 411.50' | 8" | C-900 PVC PVC | 0.40% | 5.47' | 3.83' |
| F2 | F1 | 107.06' | 8" | C-900 PVC PVC | 0.40% | 3.83' | 3.40' |
| F1 | | 138.08' | 8" | C-900 PVC PVC | 0.41% | 3.40' | 2.84' |



COMMON AREA
OPEN SPACE

NATURAL
INFILTRATION
AREA
SWC #2

MATCHLINE SEE SHEET CS-102

MATCHLINE SEE SHEET CS-104

| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANDOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBMISSION REVIEW BOARD SUBMITAL | 01/08/2016 |
| | REVISIONS | |

SEAL
PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

SEAL
PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

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NASH RIVERLIGHTS™

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

UTILITY PLAN

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N.J.L.
PROJ. MGR.: R.M.C.

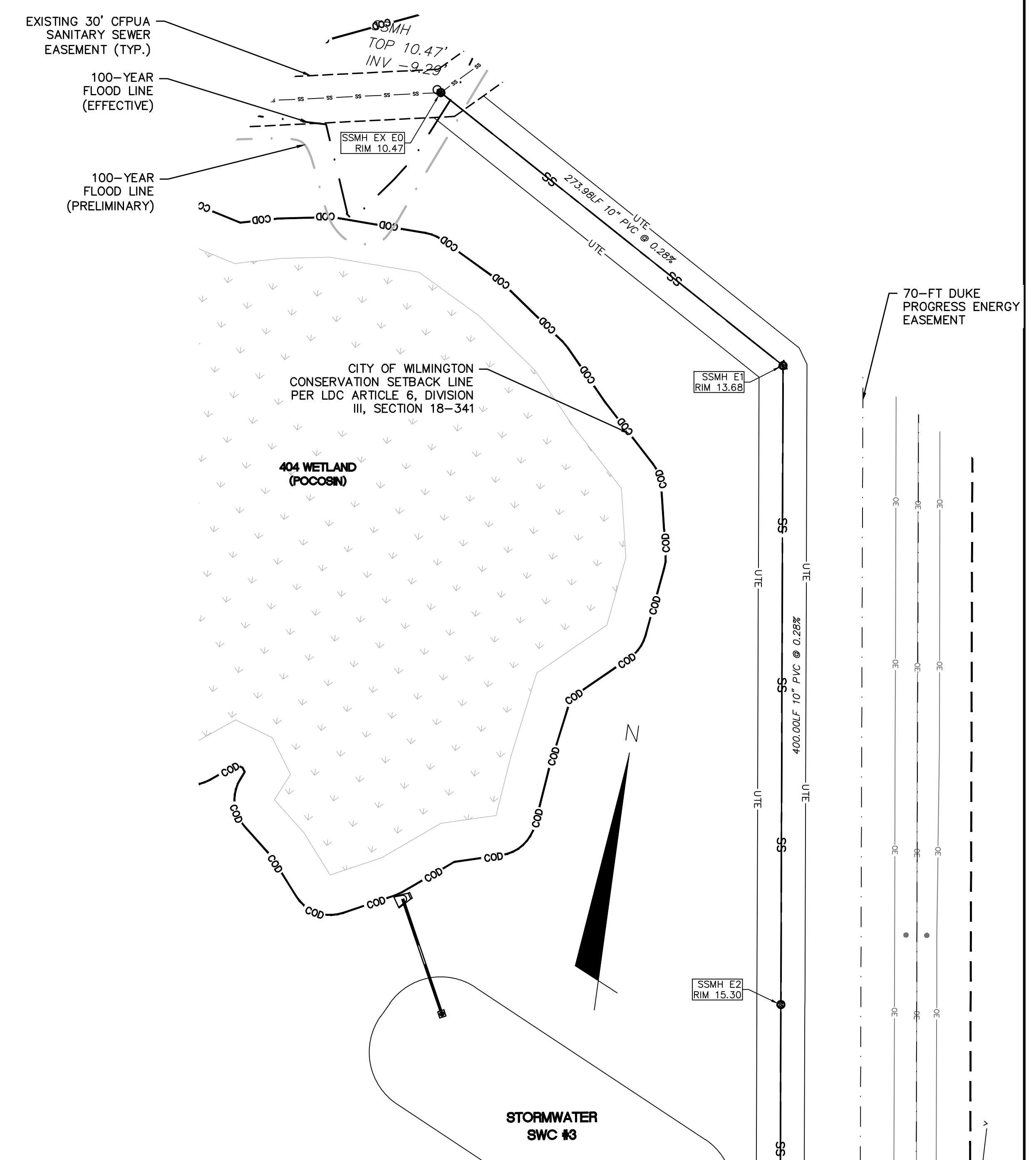
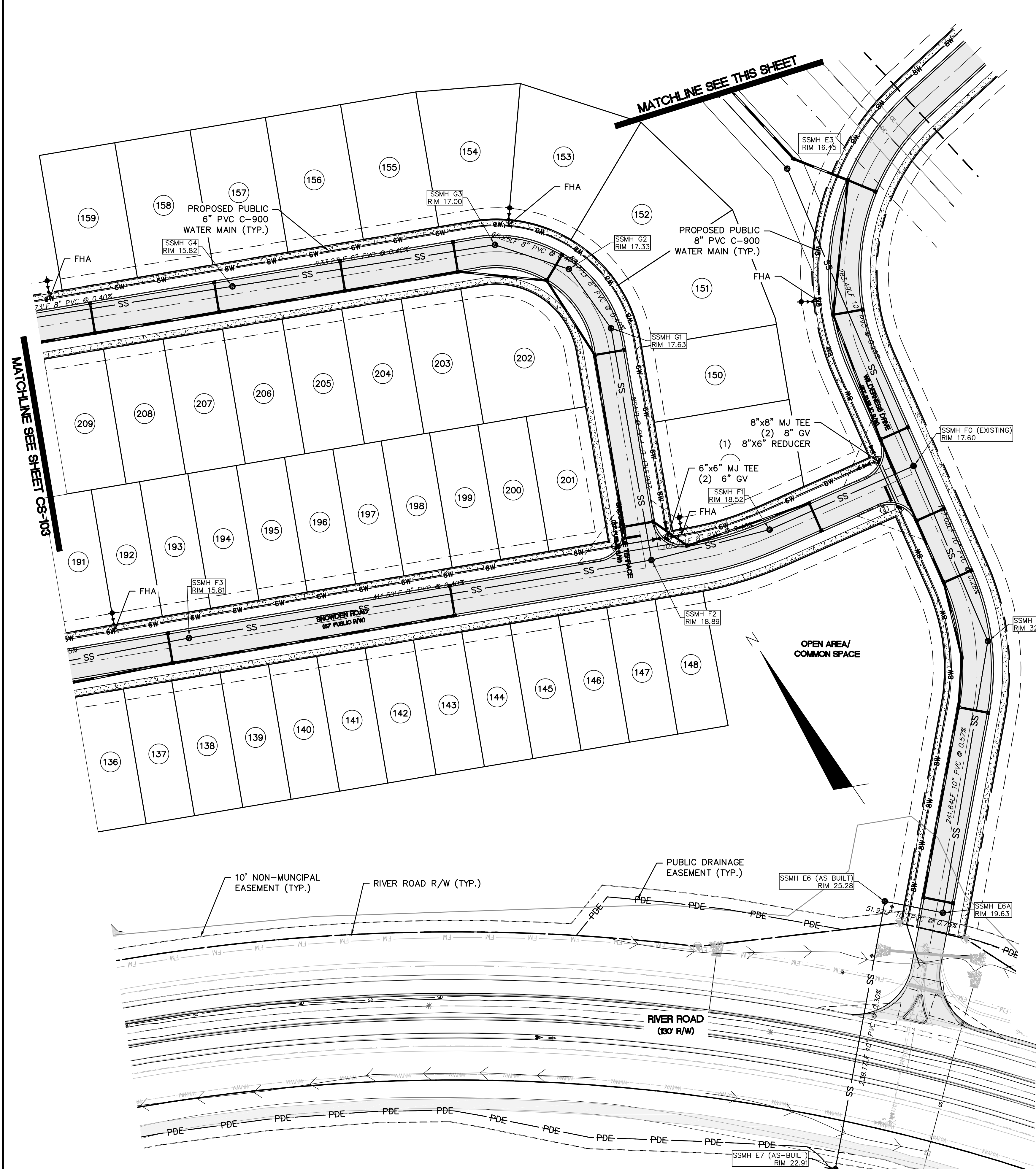
SCALE: HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER: **CU-103**
DRAWING NUMBER: **20**

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

REVISION: **B**

S:\02735\0168\AG 2-386\Drawings\CU103_CU104_027350168.dwg, 6/1/2016 11:09:33 AM, EEM\ahur, 1/1



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 Service Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND C/P/UA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

MCKIM & CREED

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NASH RIVERLIGHTS™

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

UTILITY PLAN

DATE: 06/01/16
MCE PROJ. #: 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N.J.L.
PROJ. MGR.: R.M.C.

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

MAC FILE NUMBER: CU-104
DRAWING NUMBER: 21

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

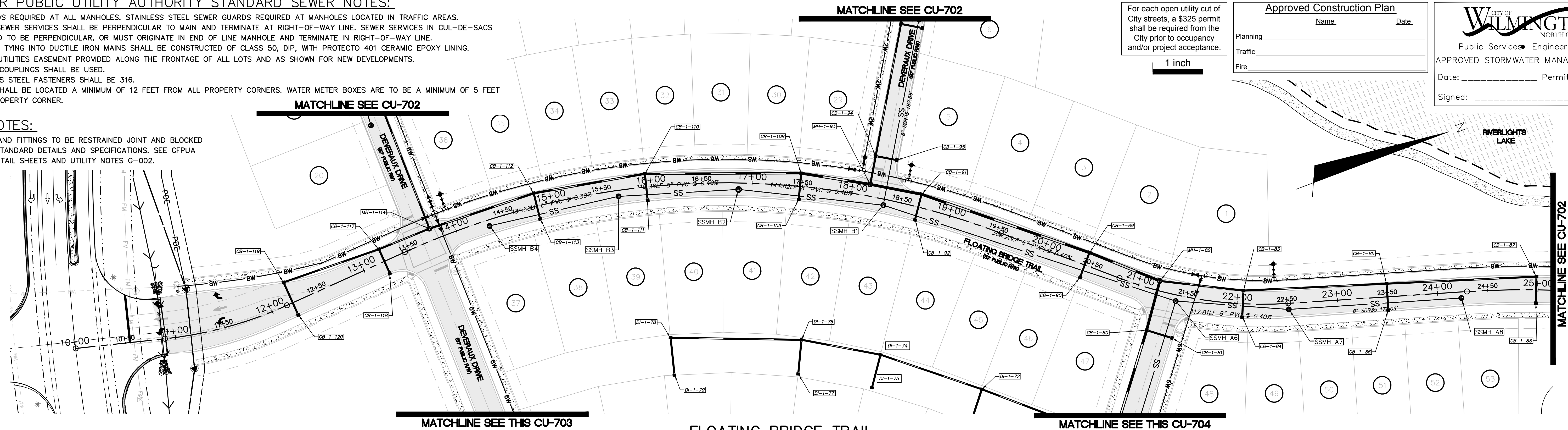
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CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

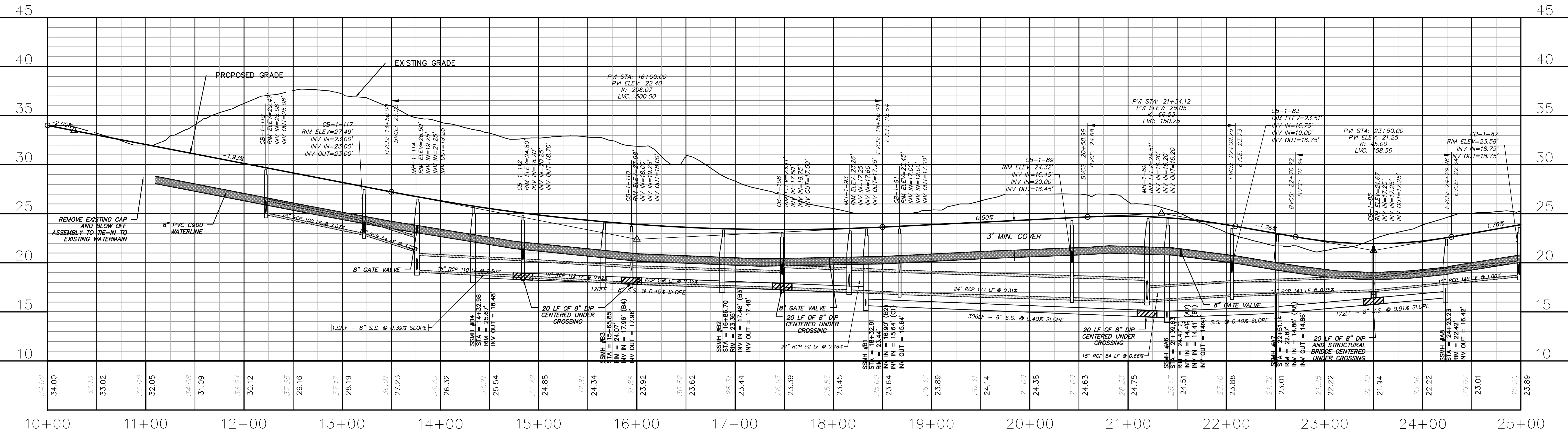
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
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- NO FLEXIBLE COUPLINGS SHALL BE USED.
- ALL STAINLESS STEEL FASTENERS SHALL BE 316.
- CLEANOUTS SHALL BE LOCATED A MINIMUM OF 12 FEET FROM ALL PROPERTY CORNERS. WATER METER BOXES ARE TO BE A MINIMUM OF 5 FEET FROM THE PROPERTY CORNER.

UTILITY NOTES:

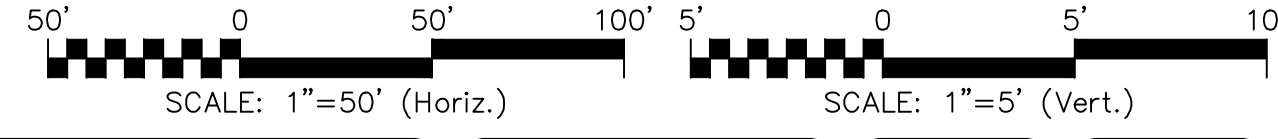
- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT AND BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.



**FLOATING BRIDGE TRAIL
(STA 10+00 TO 25+00.00)**



**FLOATING BRIDGE TRAIL
(STA 10+00 TO 25+00.00)**



| REV. NO. | DESCRIPTIONS | DATE |
|----------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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 License: F-1222
 www.mckimcreed.com

RIVERLIGHTS
 NORTH AMERICA SENSUI HOUSE, LTD.

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
FLOATING BRIDGE TRAIL
STA 10+00 TO STA 25+00

DATE: 06/01/16
 MCE PROJ. # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NAL
 PROJ. MGR: RMC

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

STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

MAC FILE NUMBER: CU-701
 DRAWING NUMBER: 22
 REVISION: B

S:\27350168 AC2-380-Drawings\CU701_027350168.dwg, 6/1/2016 10:16:17 AM, Altemidreth

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

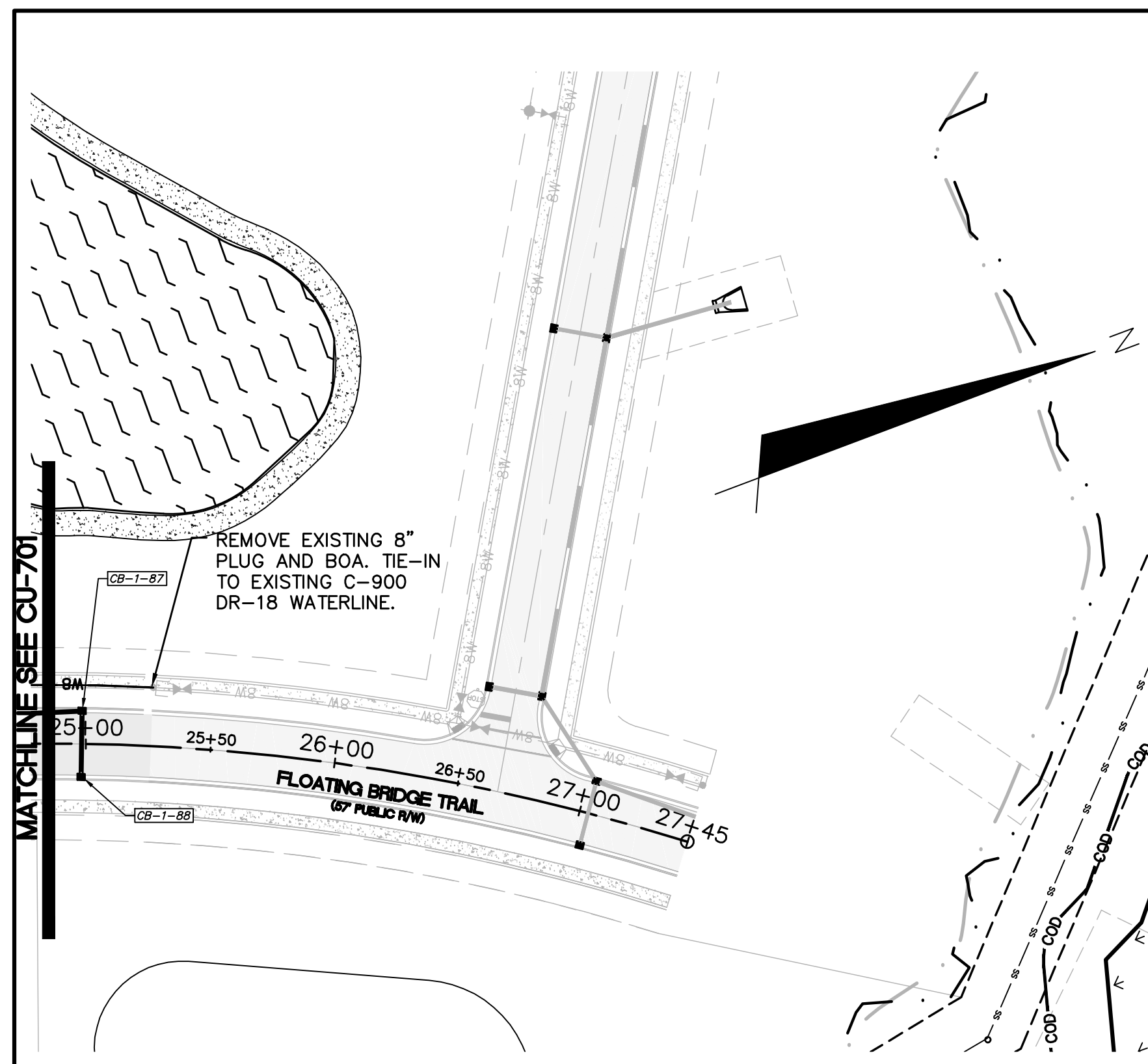
1 inch

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

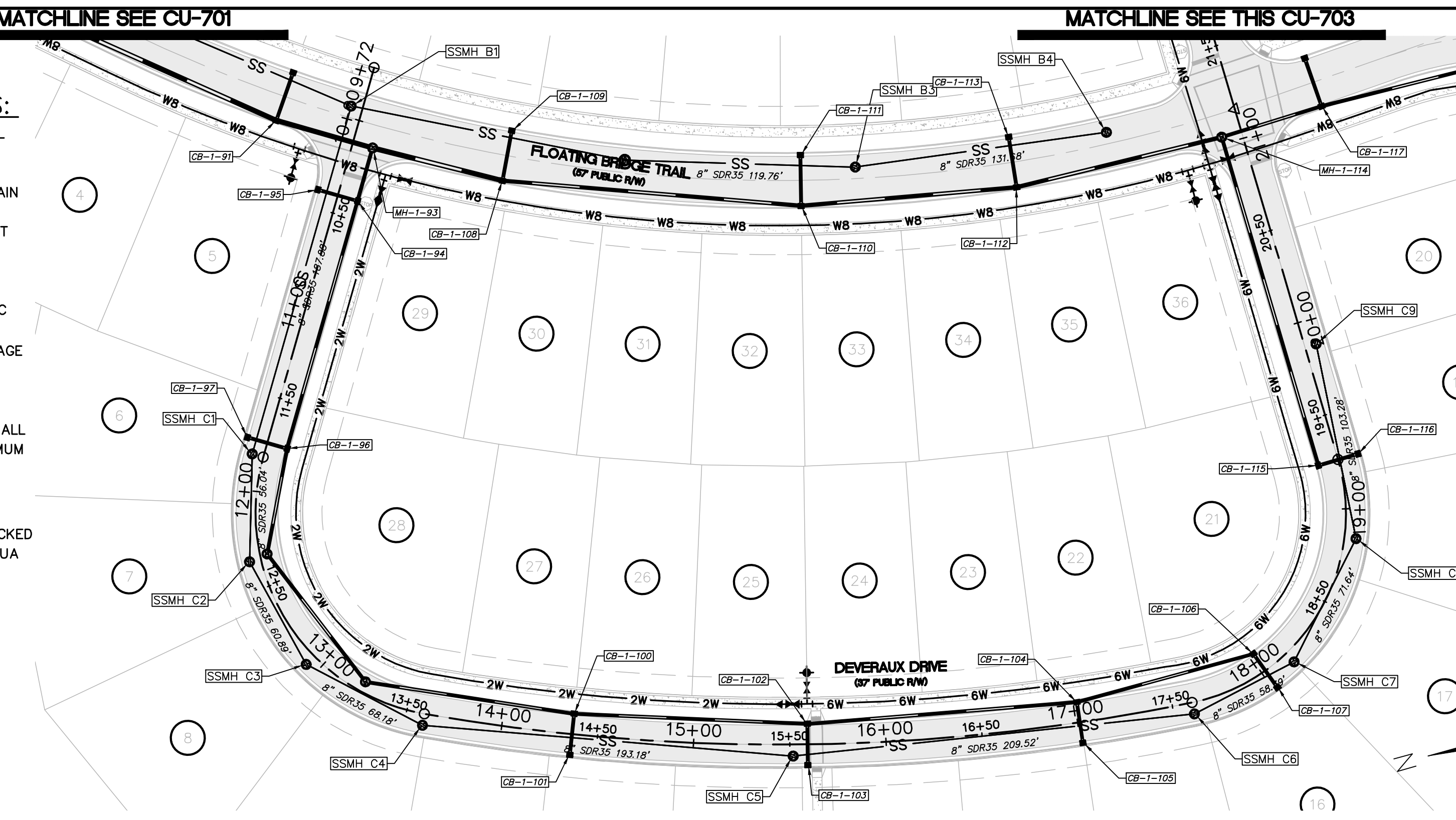
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UTILITY NOTES:

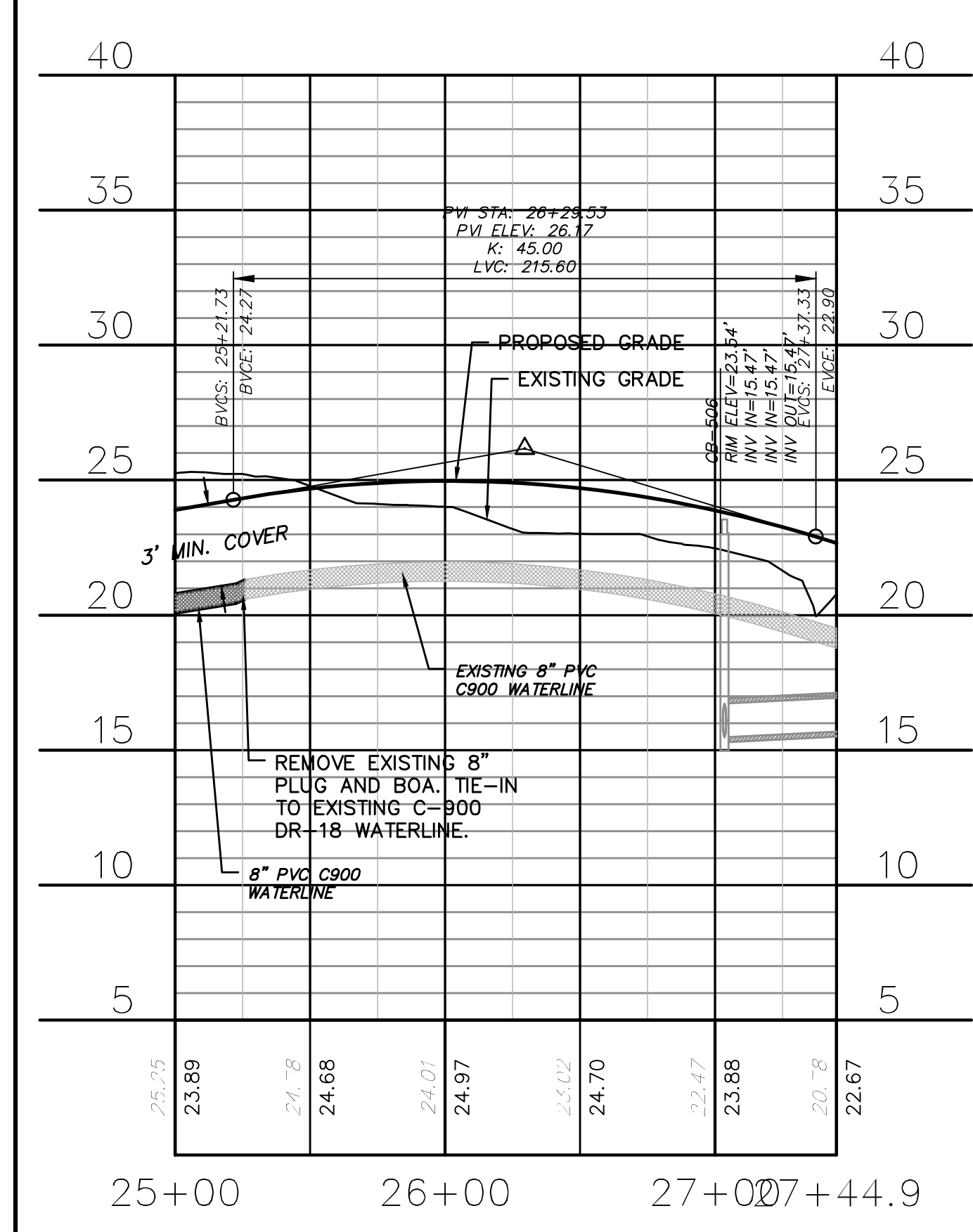
- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT AND BLOCKED PER CFPUA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPUA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.



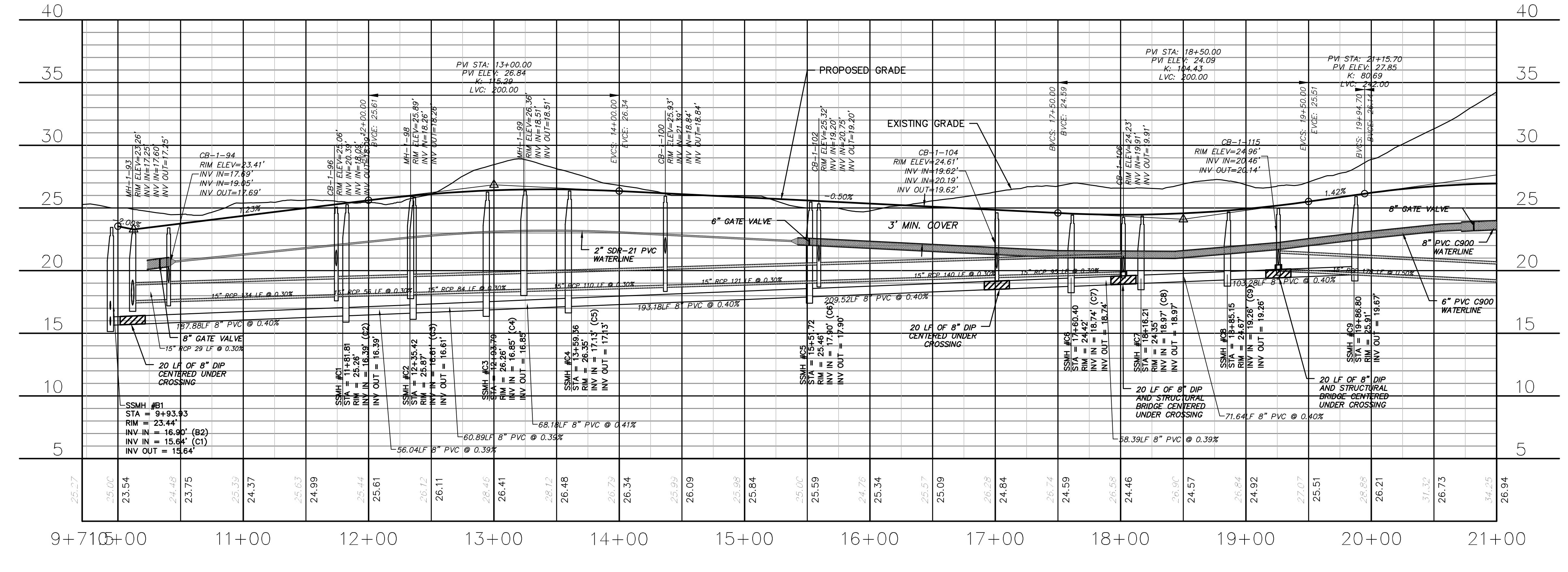
FLOATING BRIDGE TRAIL
(STA 25+00.00 TO 27+44.90)



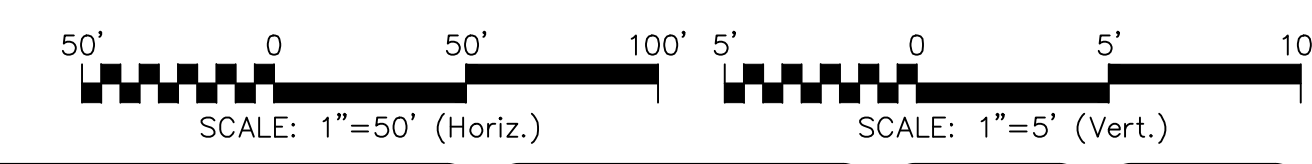
DEVERAUX DRIVE
(STA 9+71.50 TO 21+00.00)



FLOATING BRIDGE TRAIL
(STA 25+00.00 TO 27+44.90)



DEVERAUX DRIVE
(STA 9+71.50 TO 21+00.00)



| | | |
|--------|---|------------|
| REVNO. | DESCRIPTIONS | DATE |
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND CFPUA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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Phone: (910)343-1048, Fax: (910)251-8282
License: F-1222
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RIVERLIGHTS™
NORTH AMERICA SENSUS HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
FLOATING BRIDGE TRAIL
DEVERAUX DRIVE

DATE: 06/01/16
MCE PROJ # 02735-0168
DRAWN EEM/KCE
DESIGNED KCE
CHECKED NAL
PROJ. MGR. RMC

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

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

MAC FILE NUMBER: **CU-702**
DRAWING NUMBER: **23**
REVISION: **B**

S:\07350168.AQ2-3\06-Drawing\CU702_027350168.dwg, 6/1/2016 10:18:24 AM, AlMerideth

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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UTILITY NOTES:

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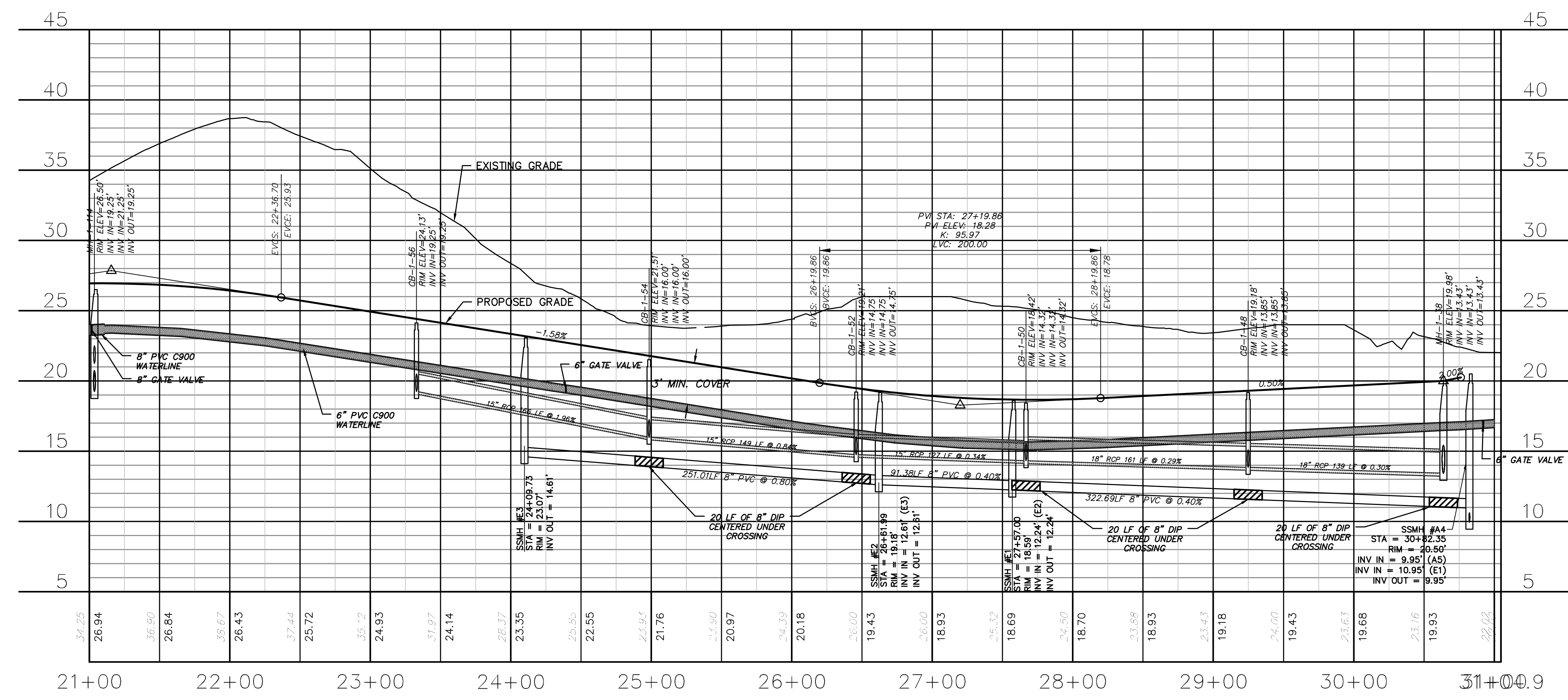
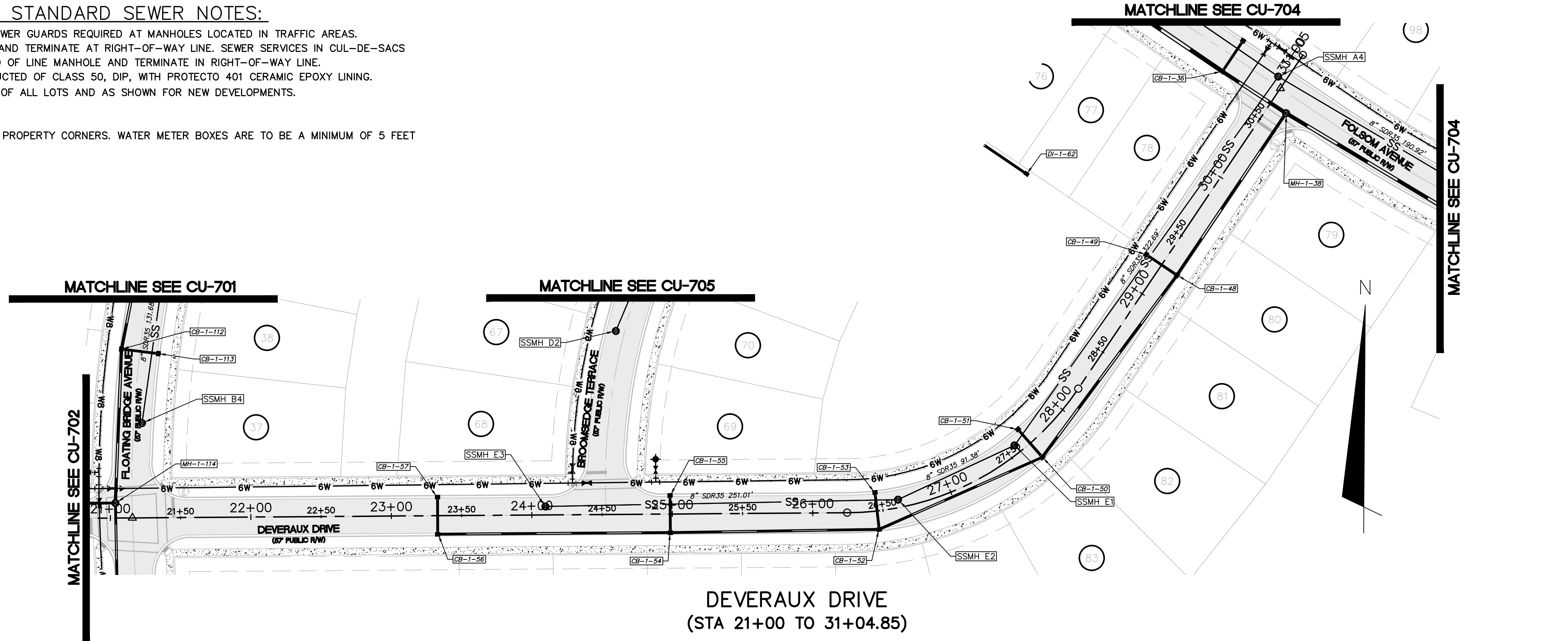
CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

| | |
|----------|------|
| Name | Date |
| Planning | |
| Traffic | |
| Fire | |

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



DEVERAUX DRIVE
(STA 21+00 TO 31+04.85)

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

| | | |
|--------|---|------------|
| REVNO. | DESCRIPTIONS | DATE |
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

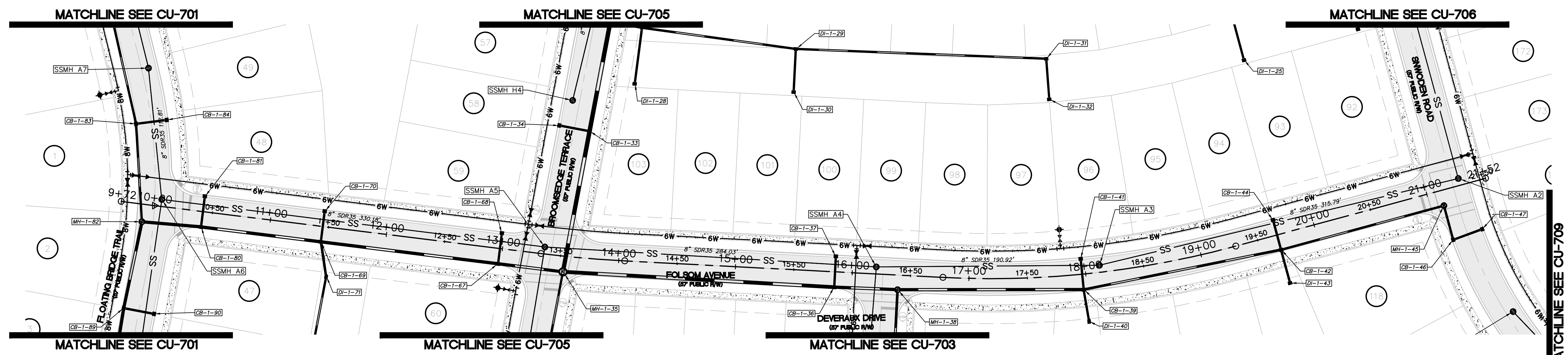
MCKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
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PLAN AND PROFILE
DEVERAUX DRIVE
STA 21+00.00 TO STA 31+04

| | | |
|------------------------|---------------------------|-------------------------|
| DATE: 06/01/16 | SCALE: HORIZONTAL: 1"=50' | MAC FILE NUMBER: CU-703 |
| MCE PROJ. # 02735-0168 | VERTICAL: 1"=5' | DRAWING NUMBER: 24 |
| DRAWN: EEM/KCE | | |
| DESIGNED: KCE | | |
| CHECKED: NLL | | |
| PROJ. MGR: RMC | | |
| STATUS: FINAL DESIGN | | REVISION: B |
| NOT FOR CONSTRUCTION | | |

S:\2735\0168_A02-3\00-Drawing\CU703_027350168.dwg, 6/1/2016 10:22:32 AM, AlMerideth



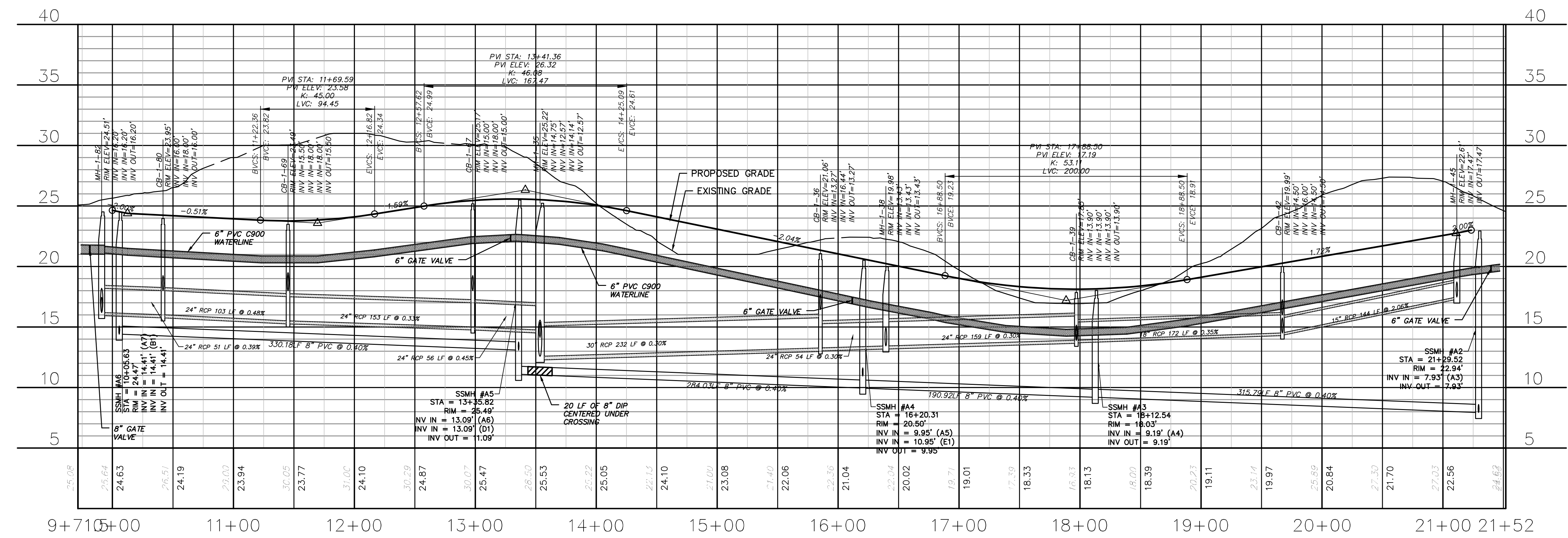
FOLSOM AVENUE
(STA 9+71.50 TO 21+52.02)

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

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FOLSOM AVENUE
(STA 9+71.50 TO 21+52.02)

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

Approved Construction Plan

Name _____ Date _____

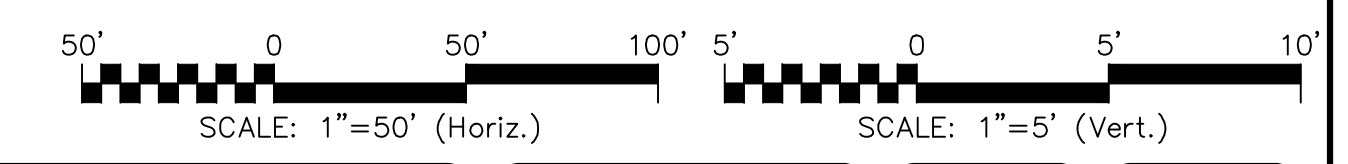
Planning _____

Traffic _____

Fire _____

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1 inch



| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND CFPWA SUBMITTAL | 06/01/2016 |
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PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

PRELIMINARY -
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**RIVERLIGHTS - AGE QUALIFIED PHASE
2 & 3**

**PLAN AND PROFILE
FOLSOM AVENUE
STA 9+72 TO STA 21+52**

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NAL
PROJ. MGR: RMC

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

MAC FILE NUMBER: CU-704
DRAWING NUMBER: 25

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

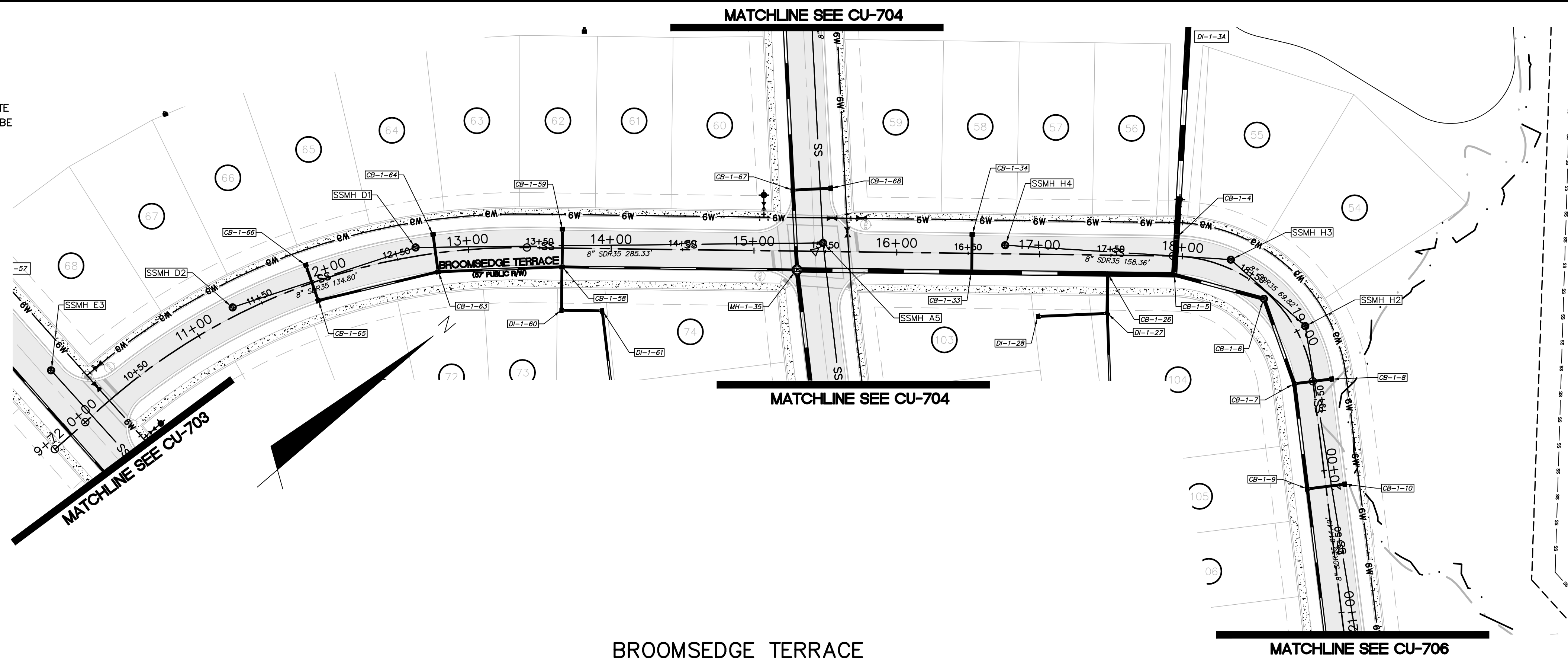
REVISION: B

CAPE FEAR PUBLIC UTILITY AUTHORITY
STANDARD SEWER NOTES:

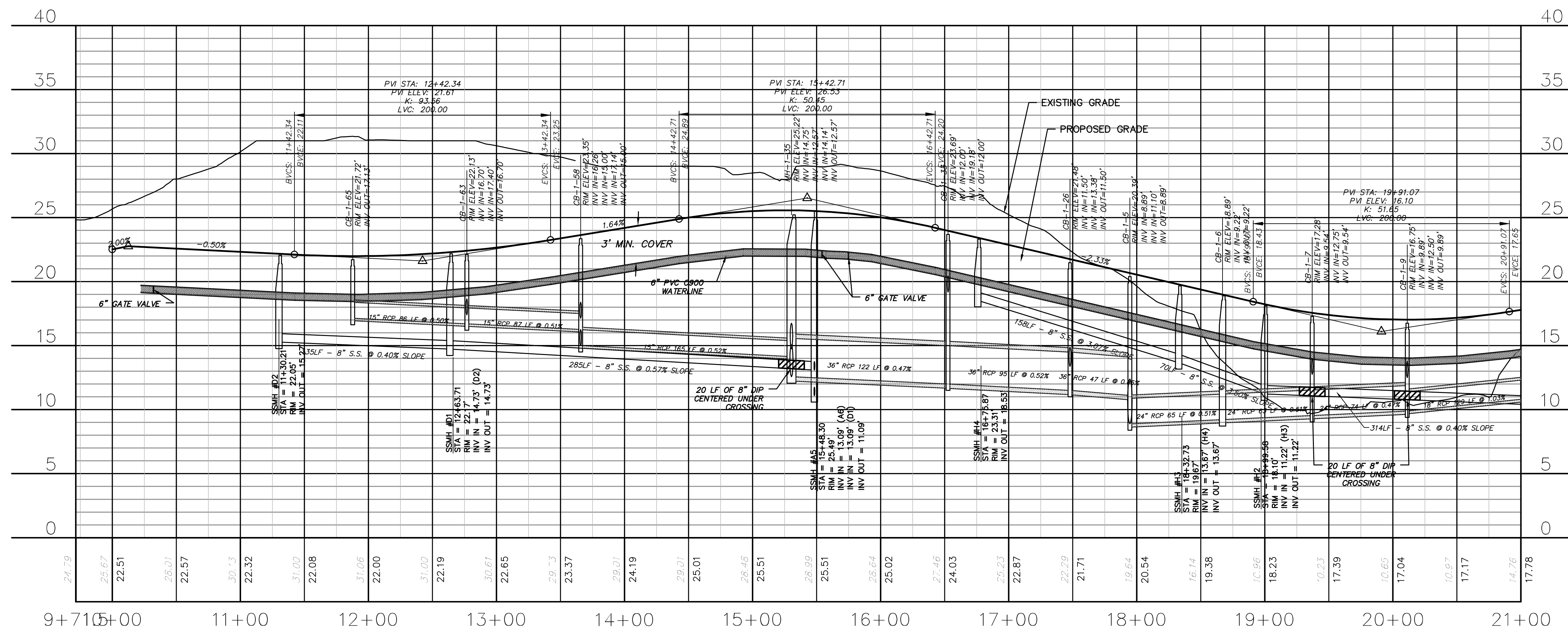
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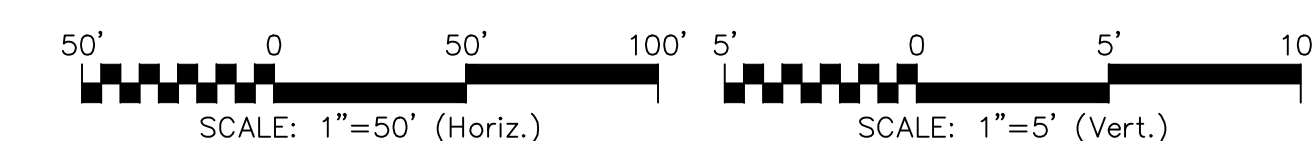
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BROOMSEDGE TERRACE
(STA 9+71.50 TO 21+00.00)



BROOMSEDGE TERRACE
(STA 9+71.50 TO 21+00.00)



CITY OF WILMINGTON
NORTH CAROLINA
Public Services Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
Date: _____ Permit # _____
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Approved Construction Plan
Name: _____ Date: _____
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Fire: _____

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| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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 SERVICES HOUSE, LLC

RIVERLIGHTS™

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

PLAN AND PROFILE
BROOMSEDGE TERRACE
STA 9+72 TO STA 21+00

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NLL
PROJ. MGR: RMC

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

MAC FILE NUMBER: CU-705
DRAWING NUMBER: 26

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

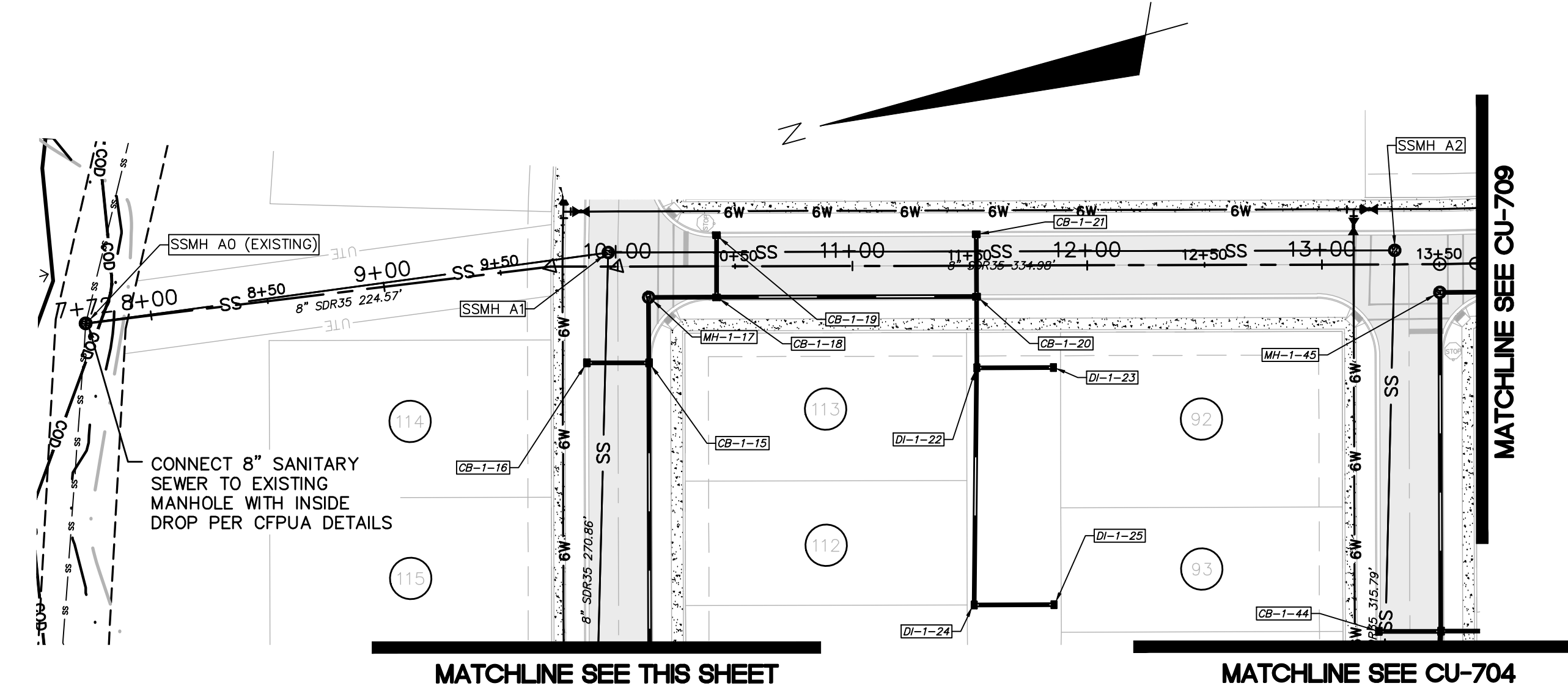
CAPE FEAR PUBLIC UTILITY AUTHORITY

STANDARD SEWER NOTES:

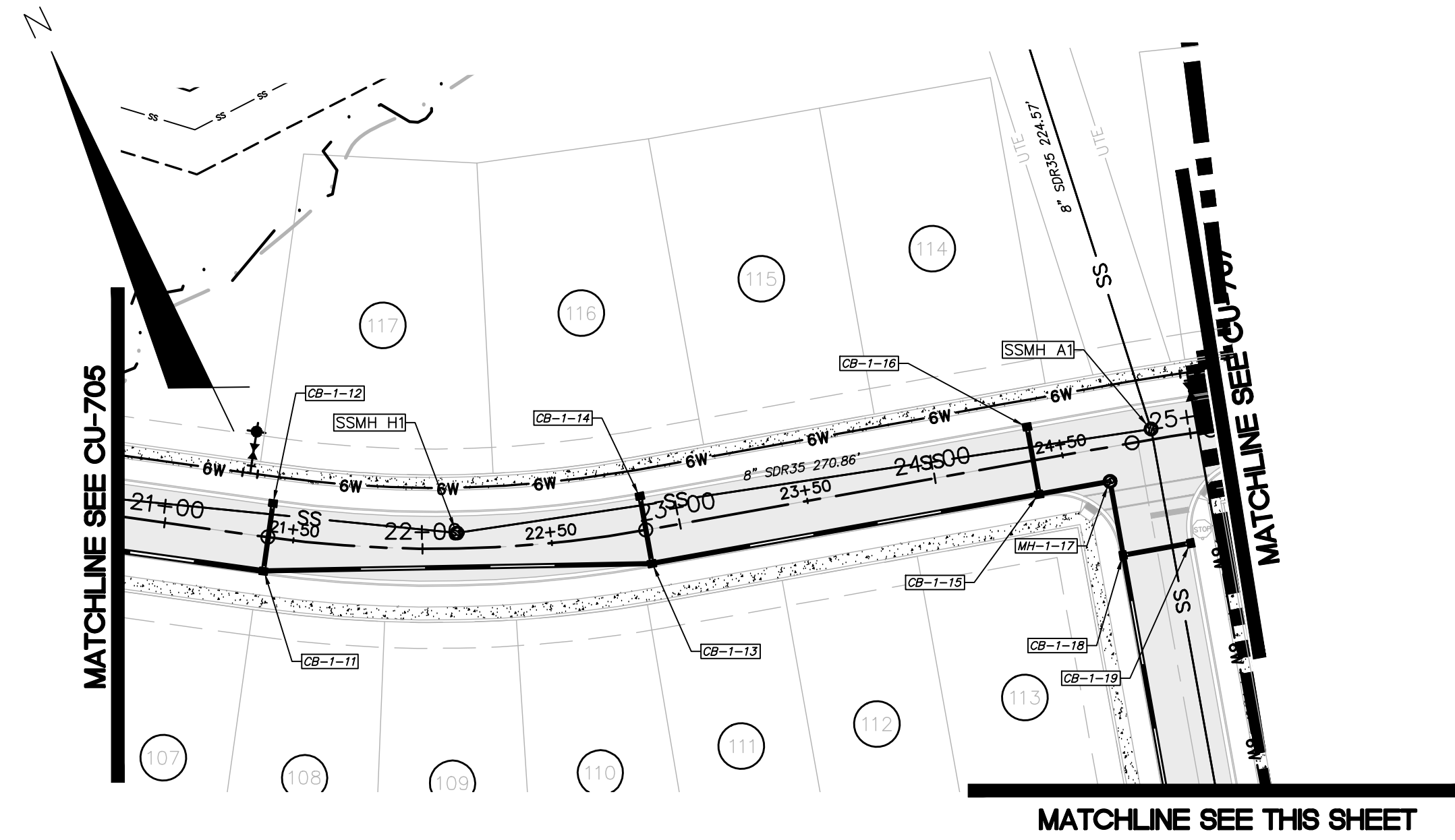
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UTILITY NOTES:

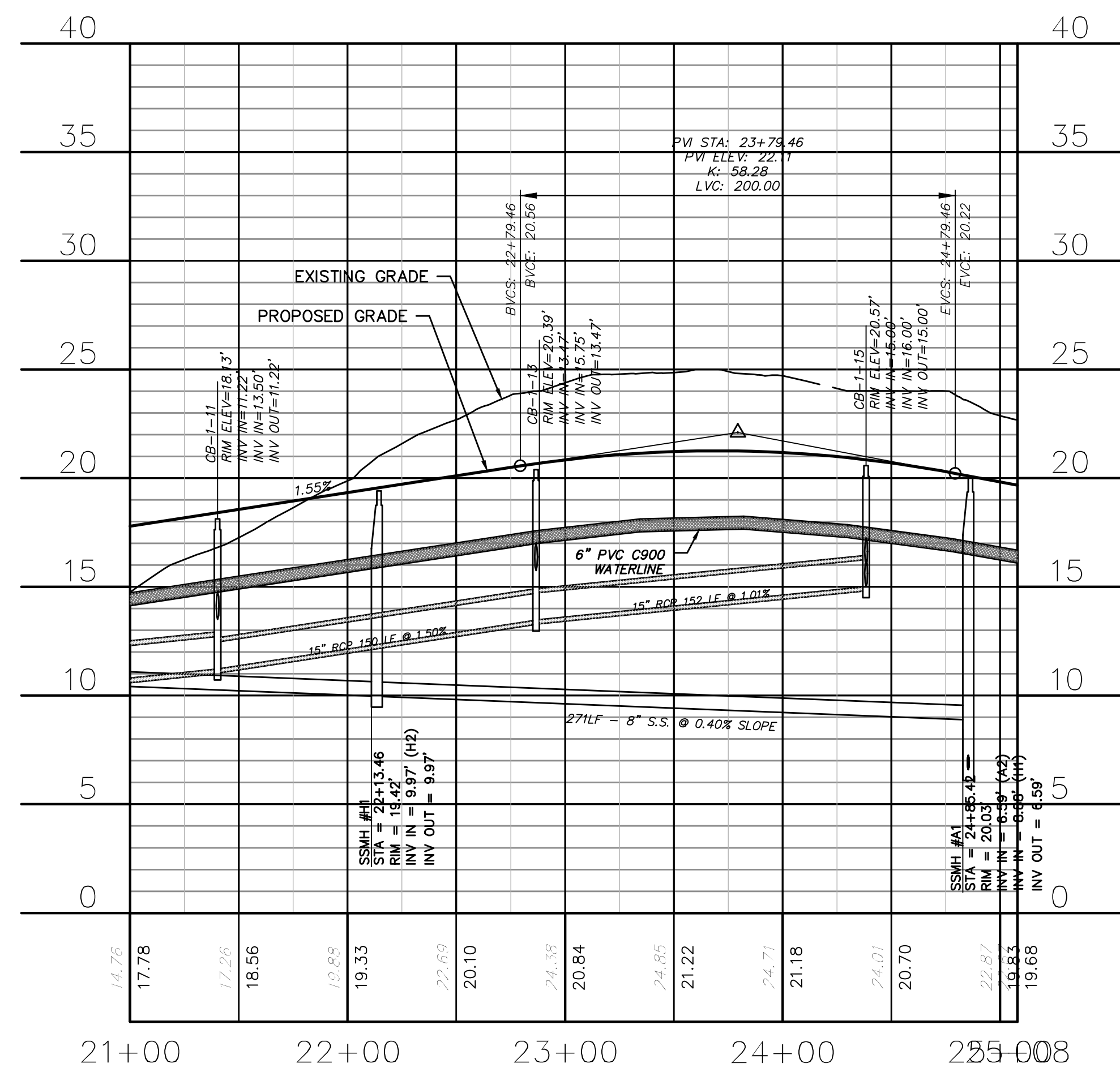
- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT AND BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.



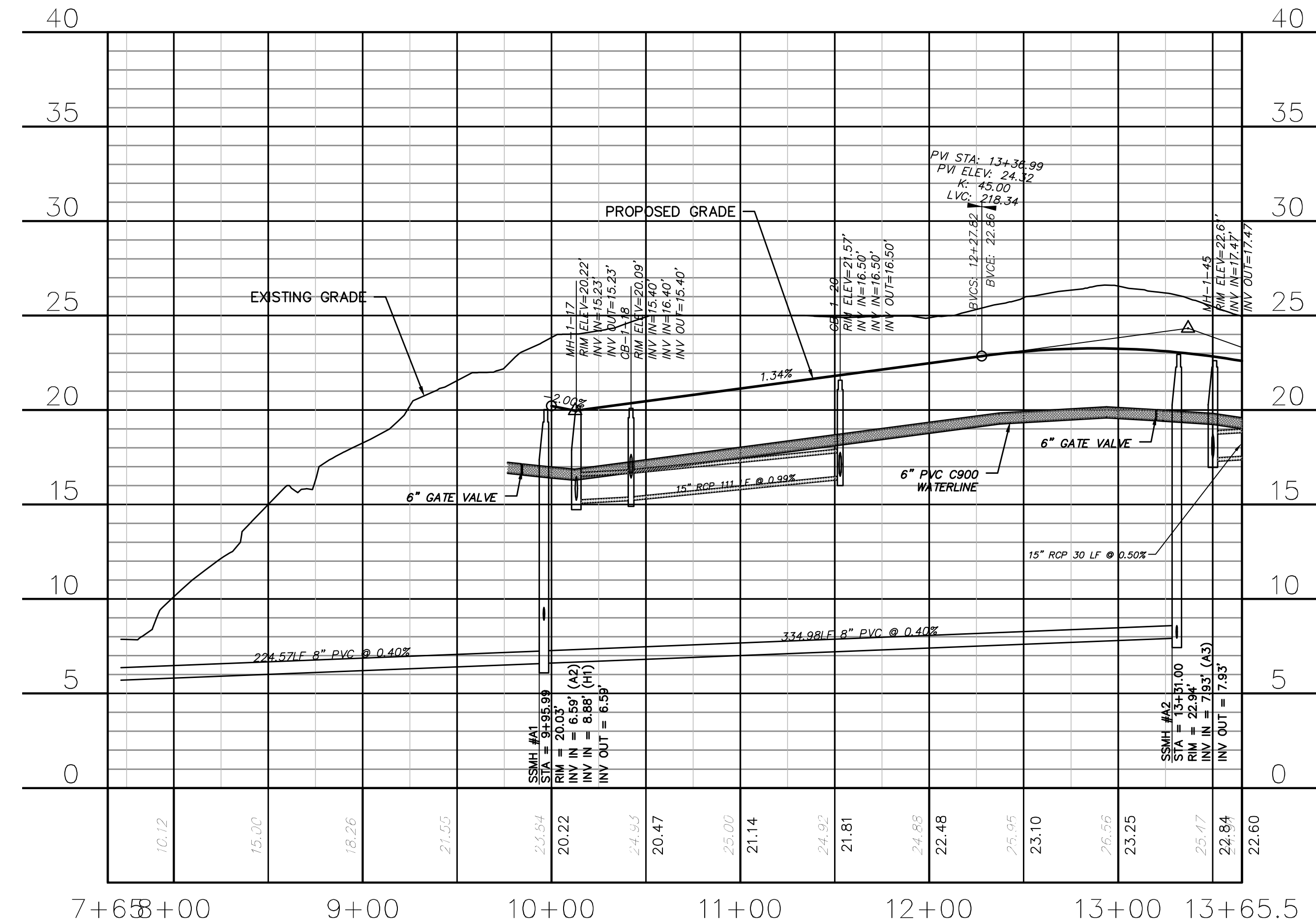
MATCHLINE SEE THIS SHEET
SNOWDEN ROAD
 (STA 7+72.00 TO 13+65.50)
 MATCHLINE SEE CU-704



MATCHLINE SEE CU-705
BROOMSEDGE TERRACE
 (STA 21+00.00 TO 25+07.98)
 MATCHLINE SEE THIS SHEET



BROOMSEDGE TERRACE
 (STA 21+00.00 TO 25+07.98)

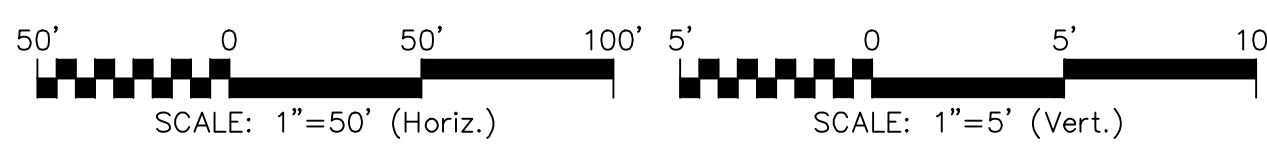


SNOWDEN ROAD
 (STA 7+72.00 TO 13+65.50)

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

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

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



| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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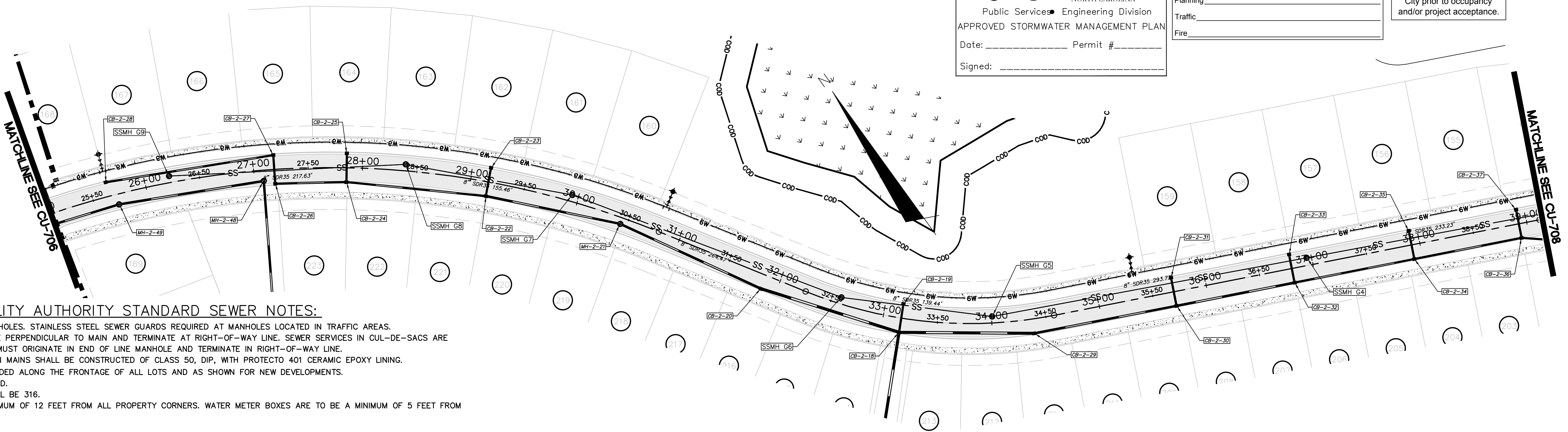
RIVERLIGHTS™
 NORTH AMERICA SERVICES HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
BROOMSEDGE TERRACE
SNOWDEN ROAD

DATE: 06/01/16
 MCE PROJ. # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NAL
 PROJ. MGR: RMC

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

MAC FILE NUMBER: **CU-706**
 DRAWING NUMBER: **27**
 STATUS: **FINAL DESIGN**
 NOT FOR CONSTRUCTION
 REVISION: **B**



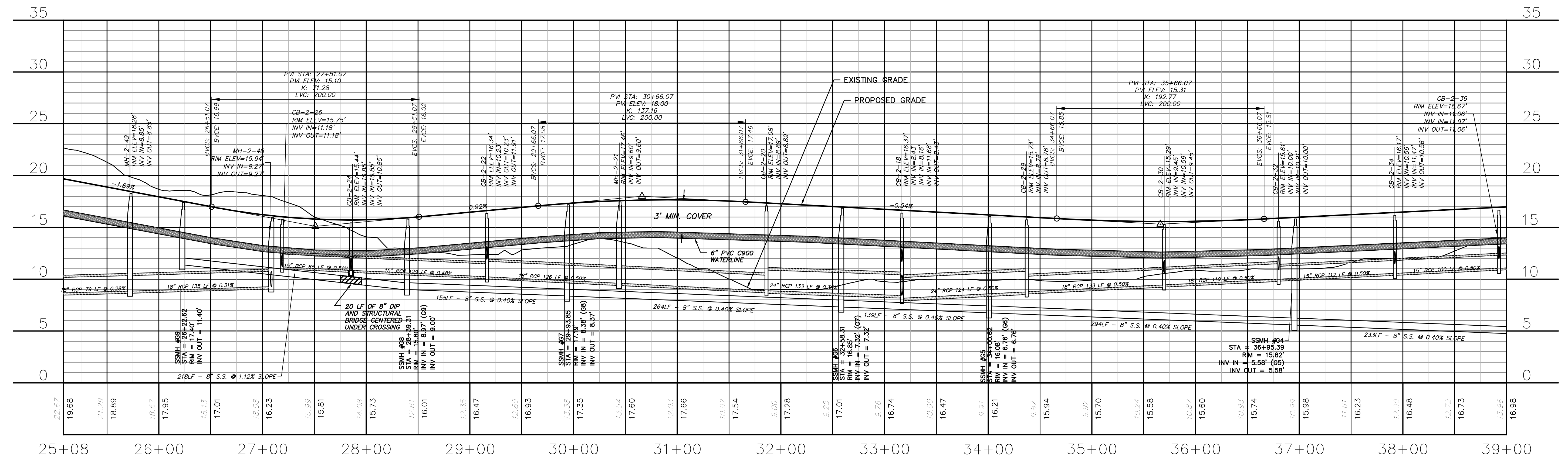
CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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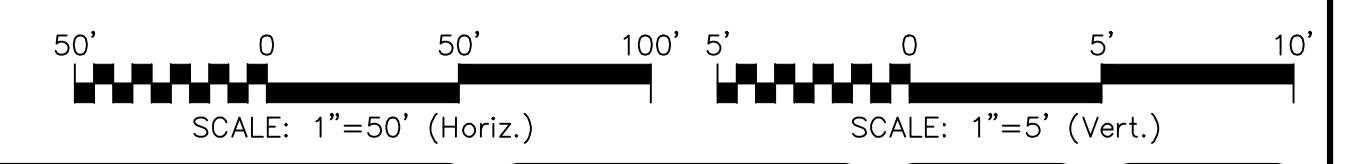
UTILITY NOTES:

- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT AND BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.

BROOMSDGE TERRACE
(STA 25+07.98 TO 39+00.00)



BROOMSDGE TERRACE
(STA 25+07.98 TO 39+00.00)



| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY -
 DO NOT USE FOR
 CONSTRUCTION

PRELIMINARY -
 DO NOT USE FOR
 CONSTRUCTION


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 NORTH AMERICA SENSUI HOUSE, LTD.

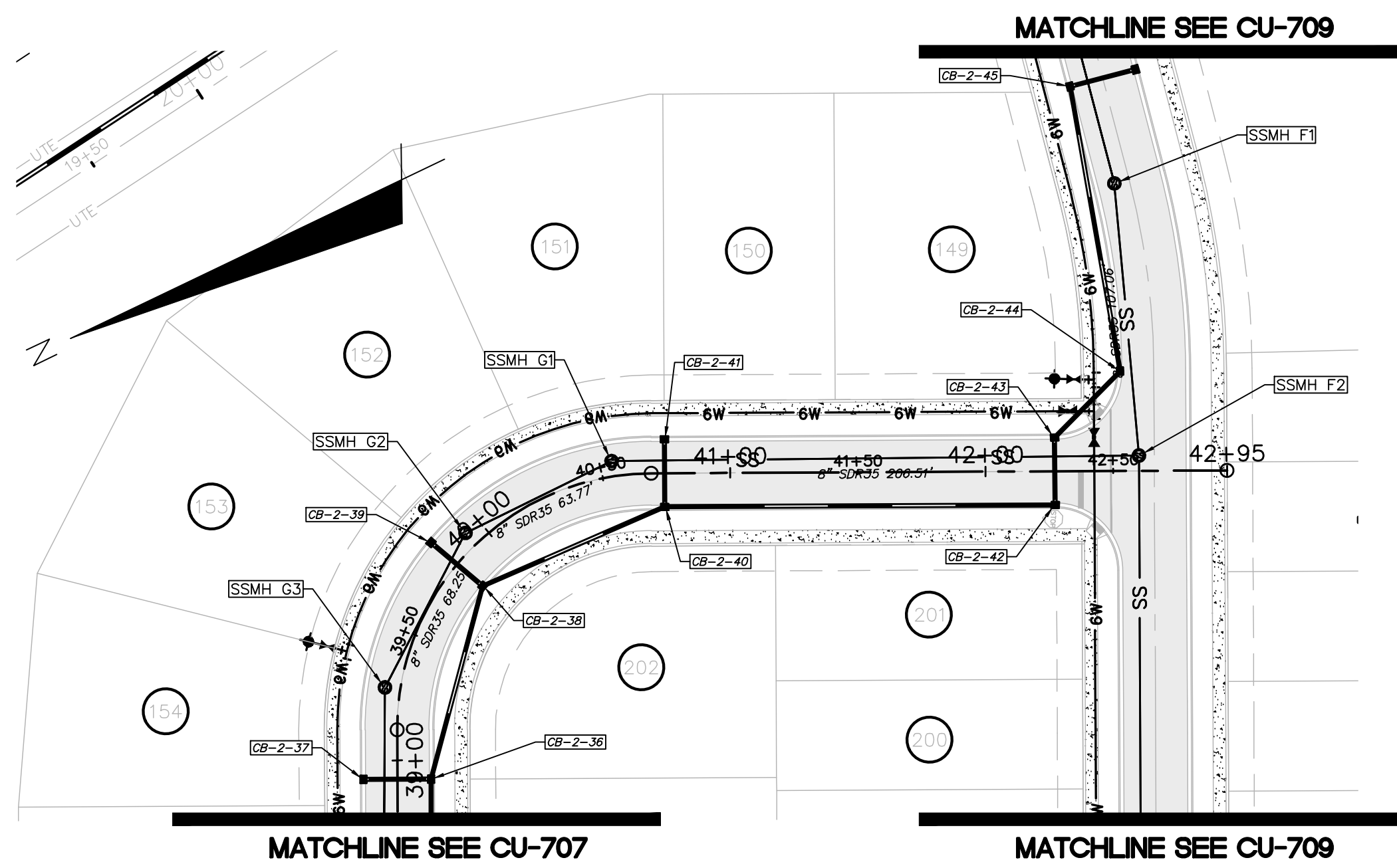
RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
BROOMSDGE AVENUE
STA 25+08 TO STA 39+00

DATE: 06/01/16
 MCE PROJ # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NAL
 PROJ. MGR: RMC

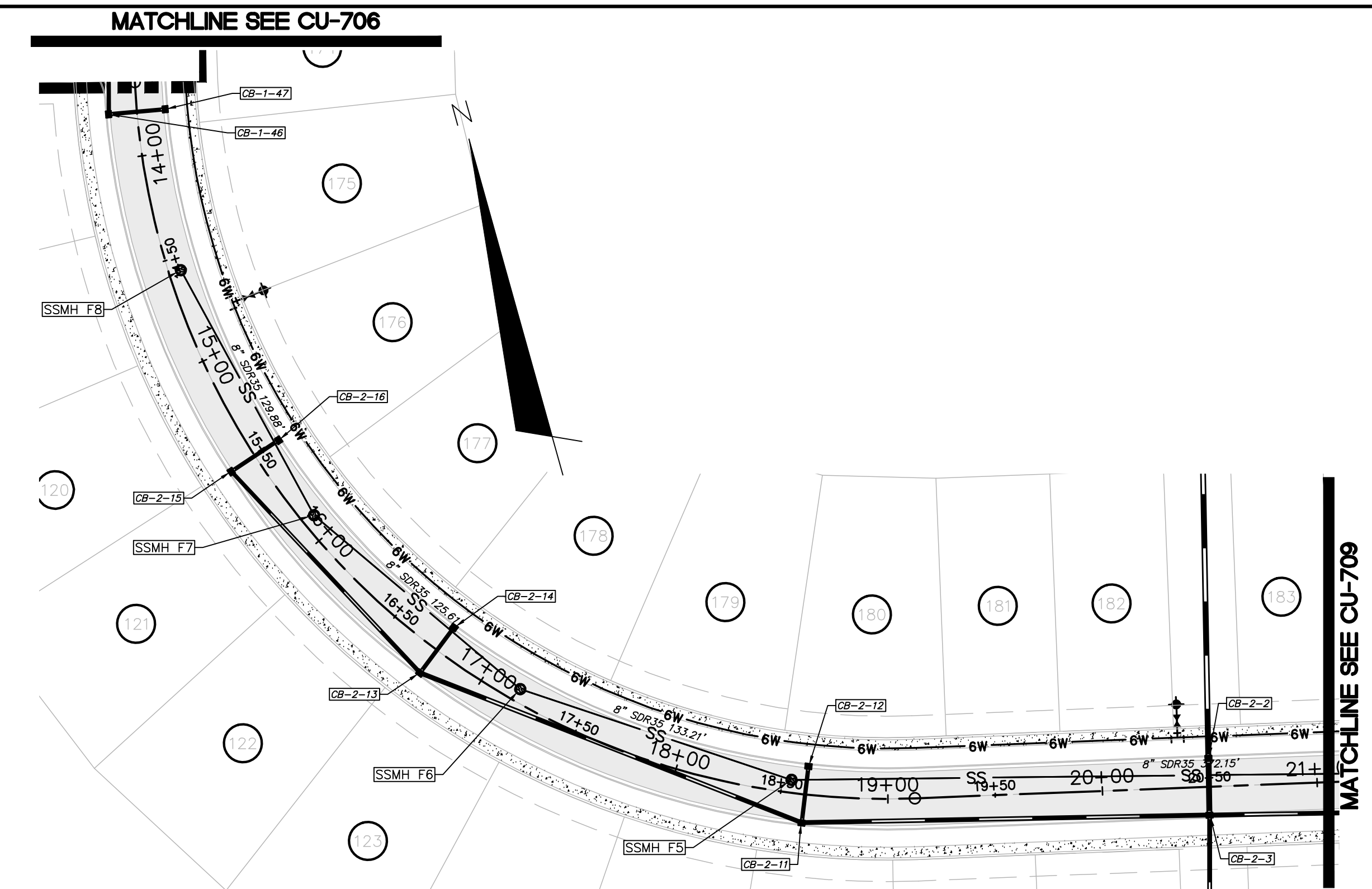
SCALE: 1"=50'
 HORIZONTAL: 1"=50'
 VERTICAL: 1"=5'

STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

MAC FILE NUMBER: CU-707
 DRAWING NUMBER: 28
 REVISION: B



BROOMSDGE TERRACE
(STA 39+00.00 TO 42+94.57)



SNOWDEN ROAD
(STA 13+65.50 TO 21+00.00)

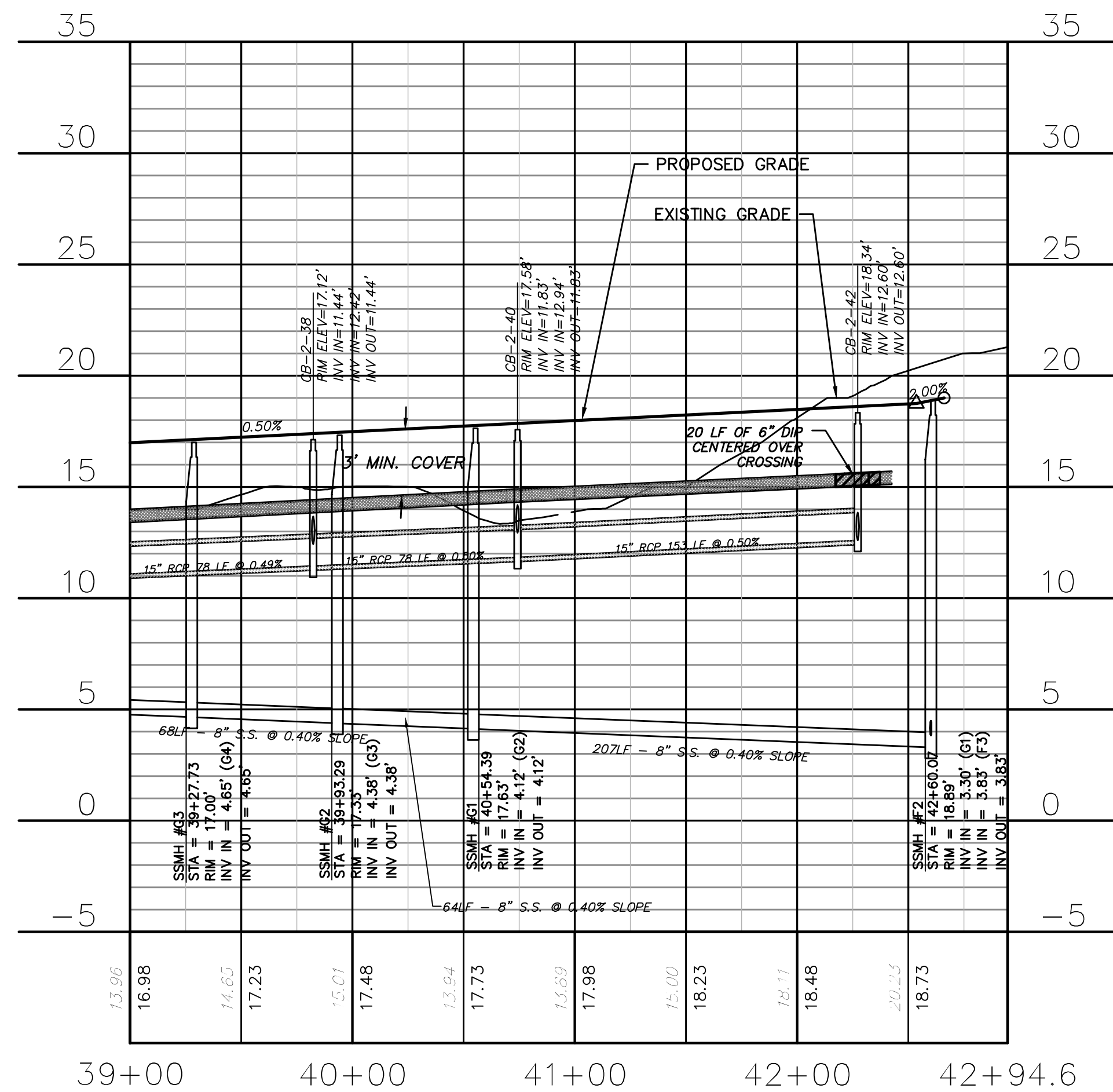
CAPE FEAR PUBLIC UTILITY AUTHORITY

STANDARD SEWER NOTES:

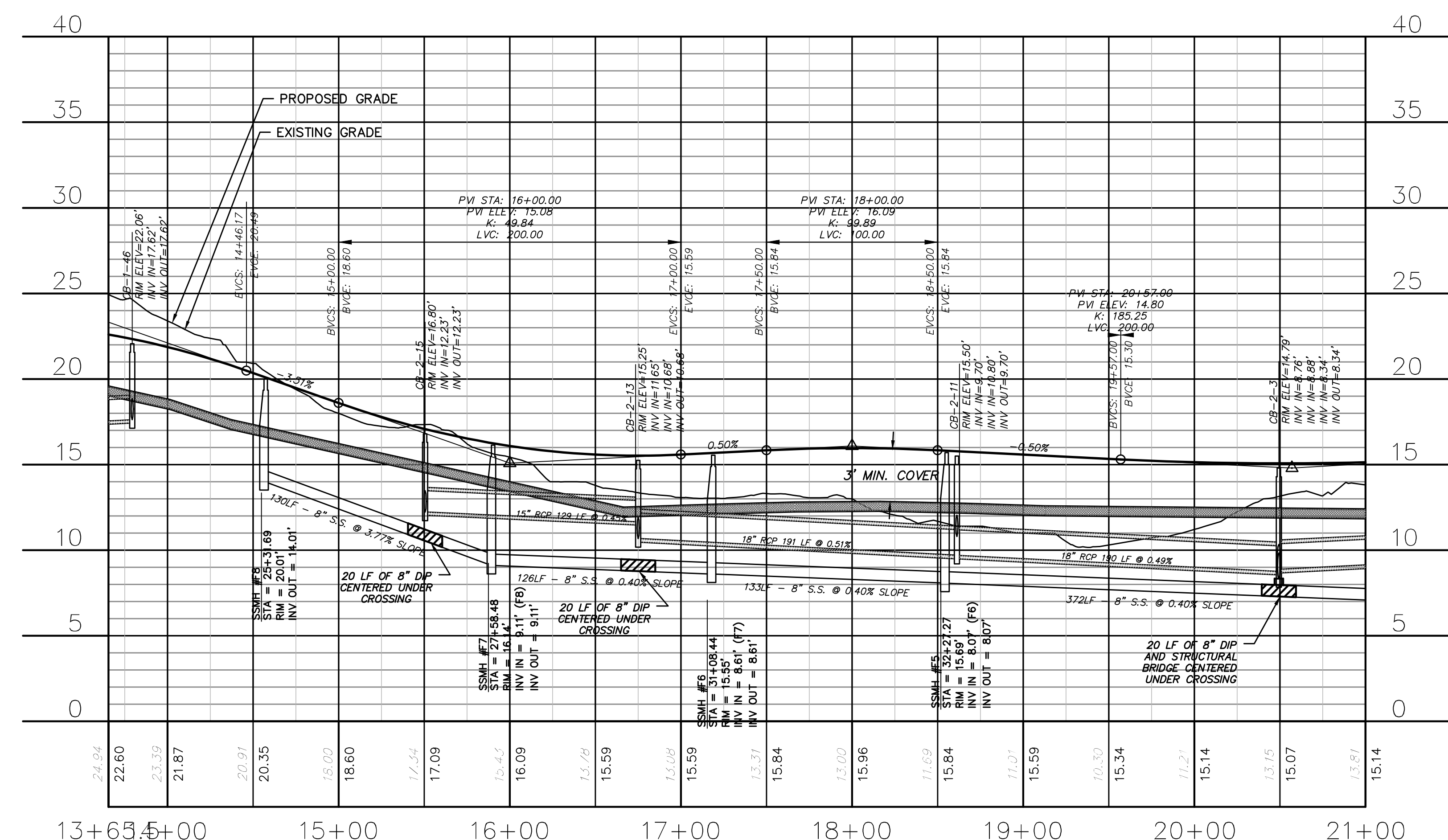
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UTILITY NOTES:

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BROOMSDGE TERRACE
(STA 39+00.00 TO 42+94.57)

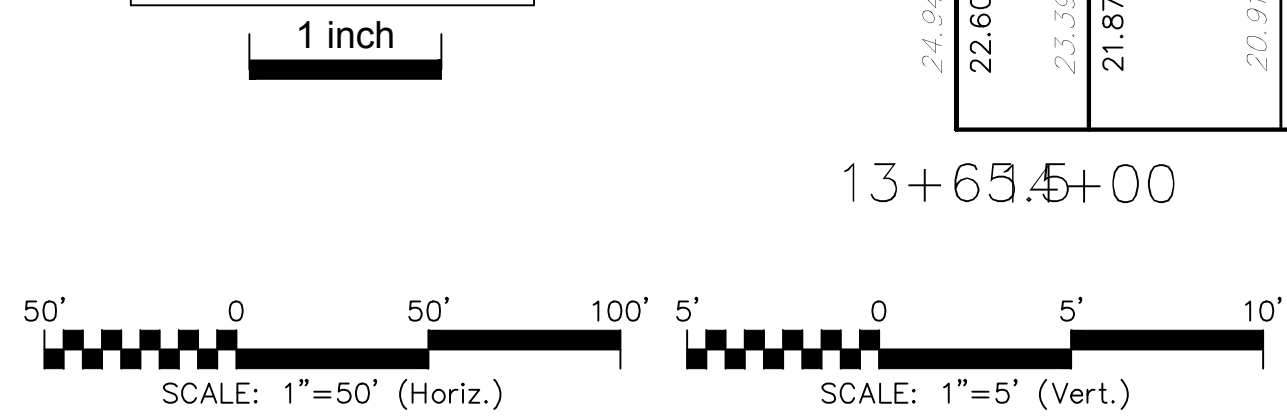


SNOWDEN ROAD
(STA 13+65.50 TO 21+00.00)

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

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

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



| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPUA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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Wilmington, North Carolina 28401
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RIVERLIGHTS™
NORTH AMERICA SENSUI HOUSE, LTD.

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
BROOMSDGE TERRACE
SNOWDEN ROAD

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NLL
PROJ. MGR: RMC

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

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

MAC FILE NUMBER: CU-708
DRAWING NUMBER: 29
REVISION: B

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

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

Approved Construction Plan

Name: _____ Date: _____

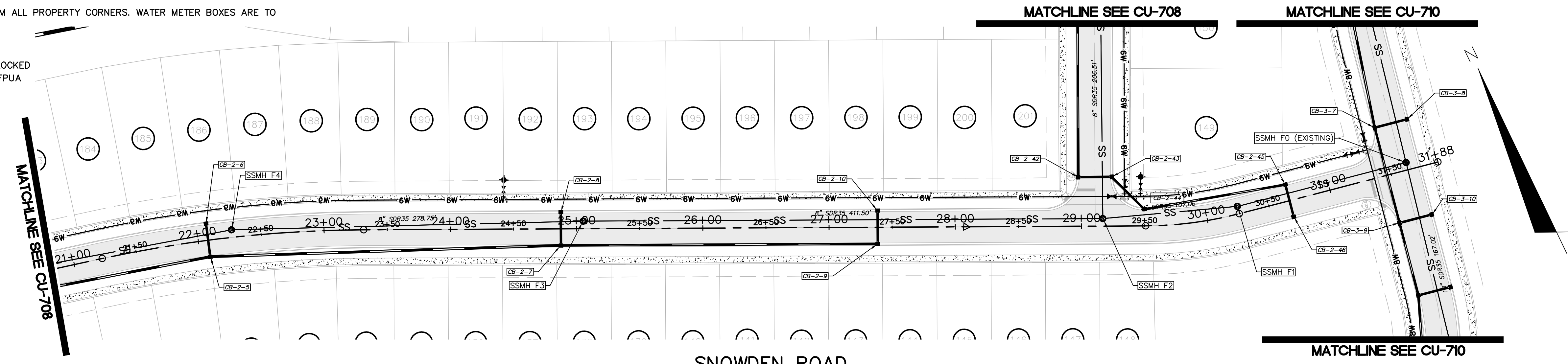
Planning: _____

Traffic: _____

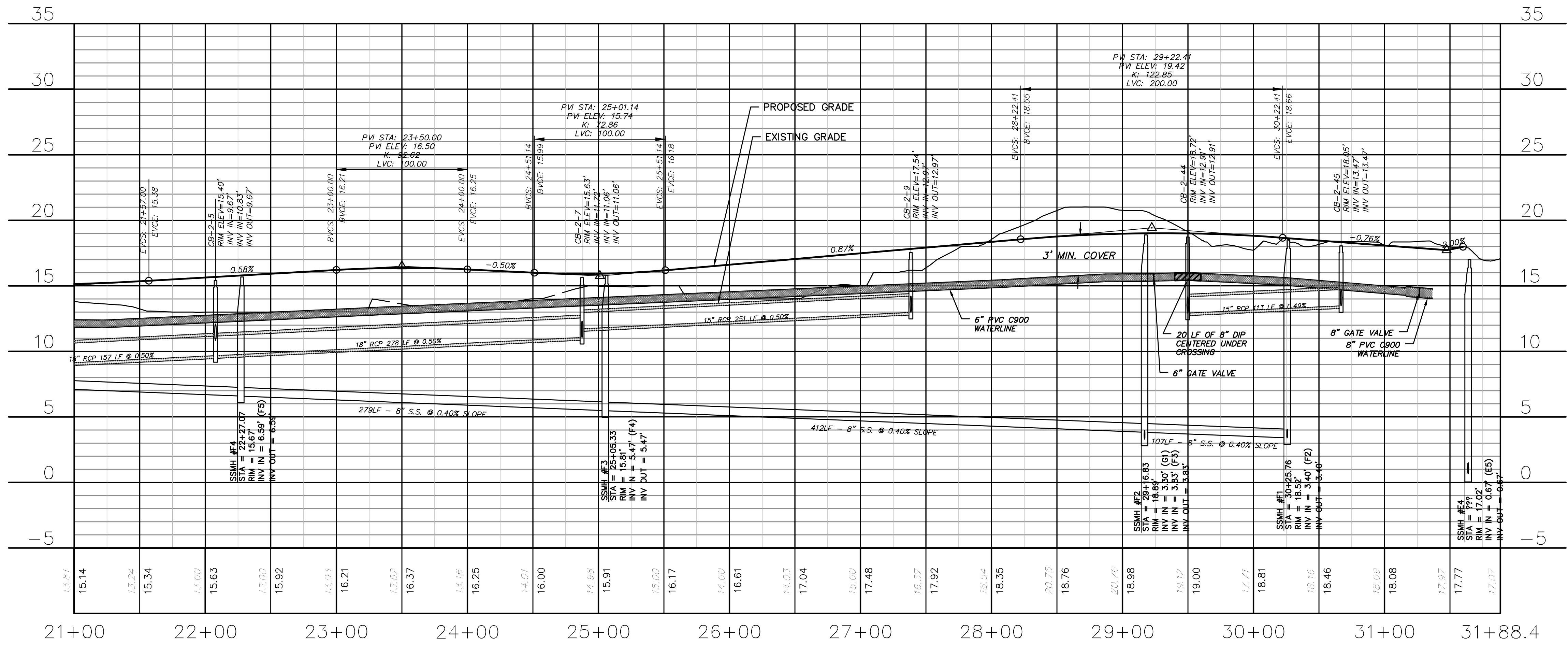
Fire: _____

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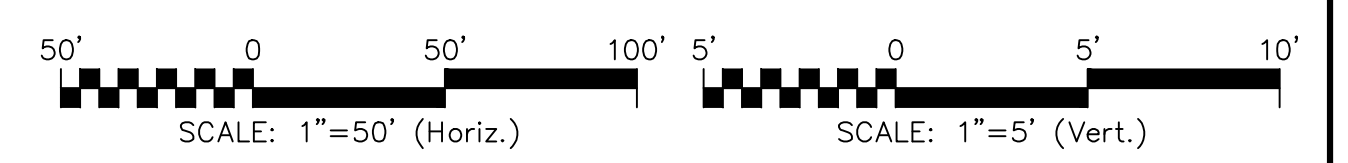
1 inch



SNOWDEN ROAD
 (STA 21+00.00 TO 31+88.40)



SNOWDEN ROAD
 (STA 21+00.00 TO 31+88.40)



| REV. NO. | DESCRIPTIONS | DATE |
|----------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
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PRELIMINARY -
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 CONSTRUCTION

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RIVERLIGHTS™
 NORTH AMERICA SERVICES HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

PLAN AND PROFILE
SNOWDEN ROAD
STA 21+00 TO 31+88

DATE: 06/01/16
 MCE PROJ. # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NLL
 PROJ. MGR: RMC

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

MAC FILE NUMBER: CU-709
 DRAWING NUMBER: 30
 REVISION: B

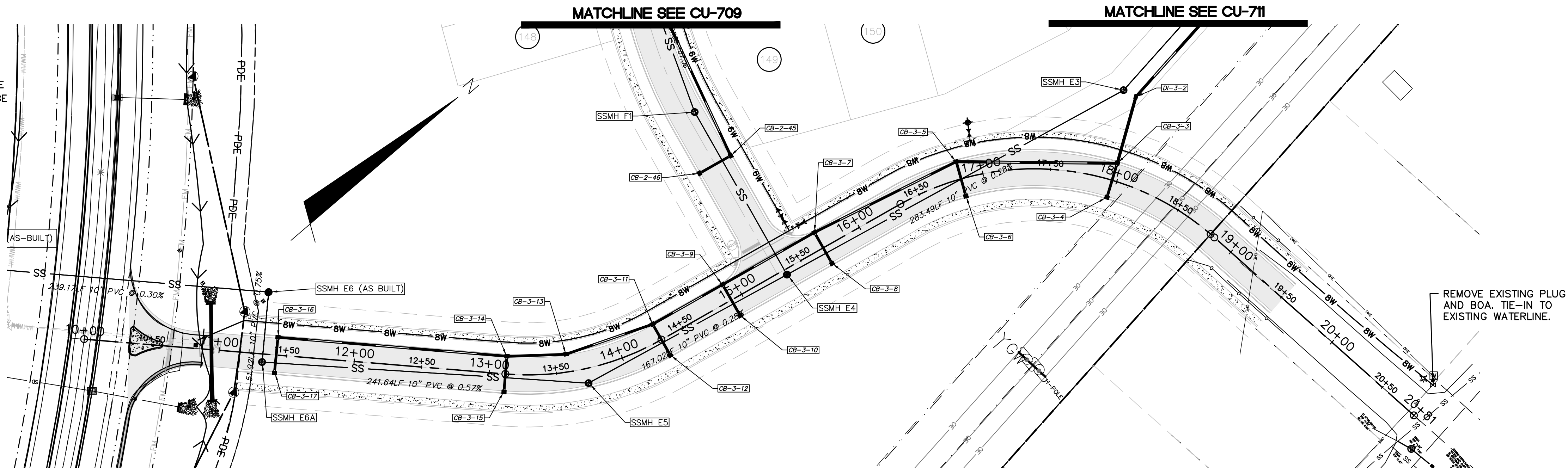
STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

CAPE FEAR PUBLIC UTILITY AUTHORITY
STANDARD SEWER NOTES:

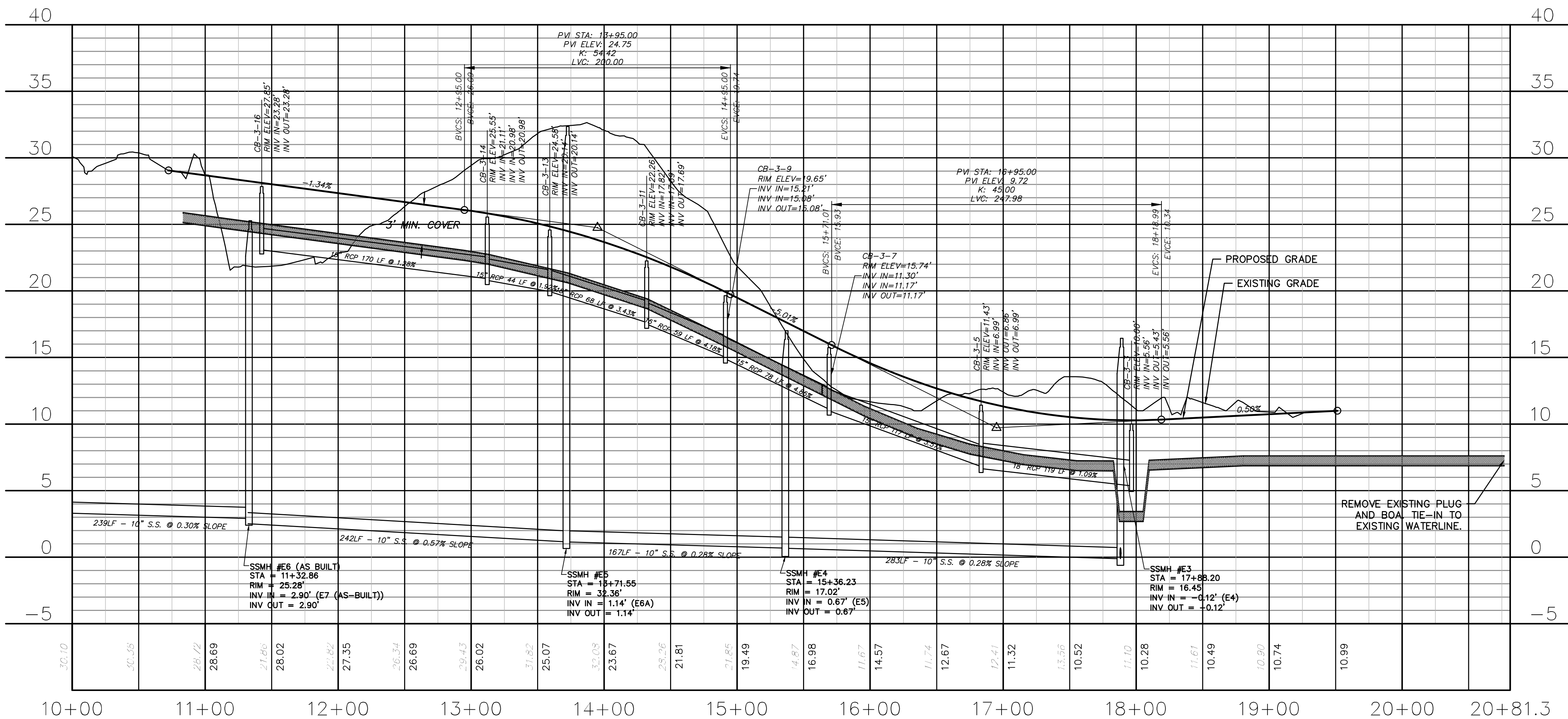
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WILDERNESS ROAD EXTENSION
(STA 10+00.00 TO 19+51.43)



WILDERNESS ROAD EXTENSION
(STA 10+00.00 TO 19+51.43)

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

Approved Construction Plan

Name: _____ Date: _____

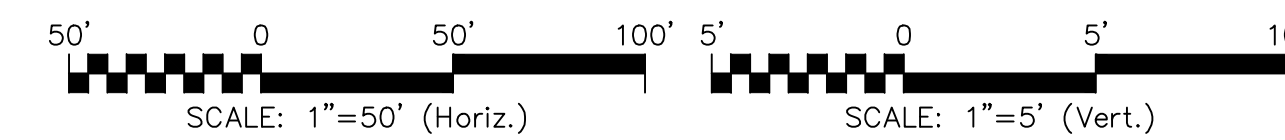
Planning: _____

Traffic: _____

Fire: _____

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1 inch



| REV. NO. | DESCRIPTIONS | DATE |
|----------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND CFPWA SUBMITTAL | 06/01/2016 |
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RIVERLIGHTS™
NORTH AMERICA SERVICES HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
PLAN AND PROFILE
WILDERNESS DRIVE EXTENTION
STA 10+00 TO STA 19+51

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NAL
PROJ. MGR: RMC

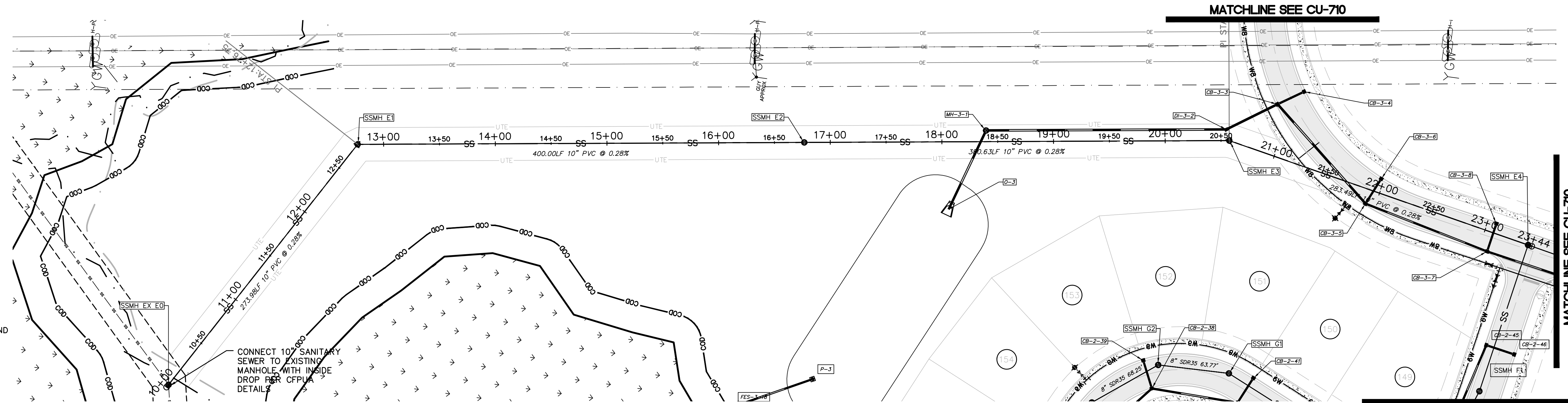
SCALE: HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

MAC FILE NUMBER: CU-710
DRAWING NUMBER: 31
STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION
REVISION: B

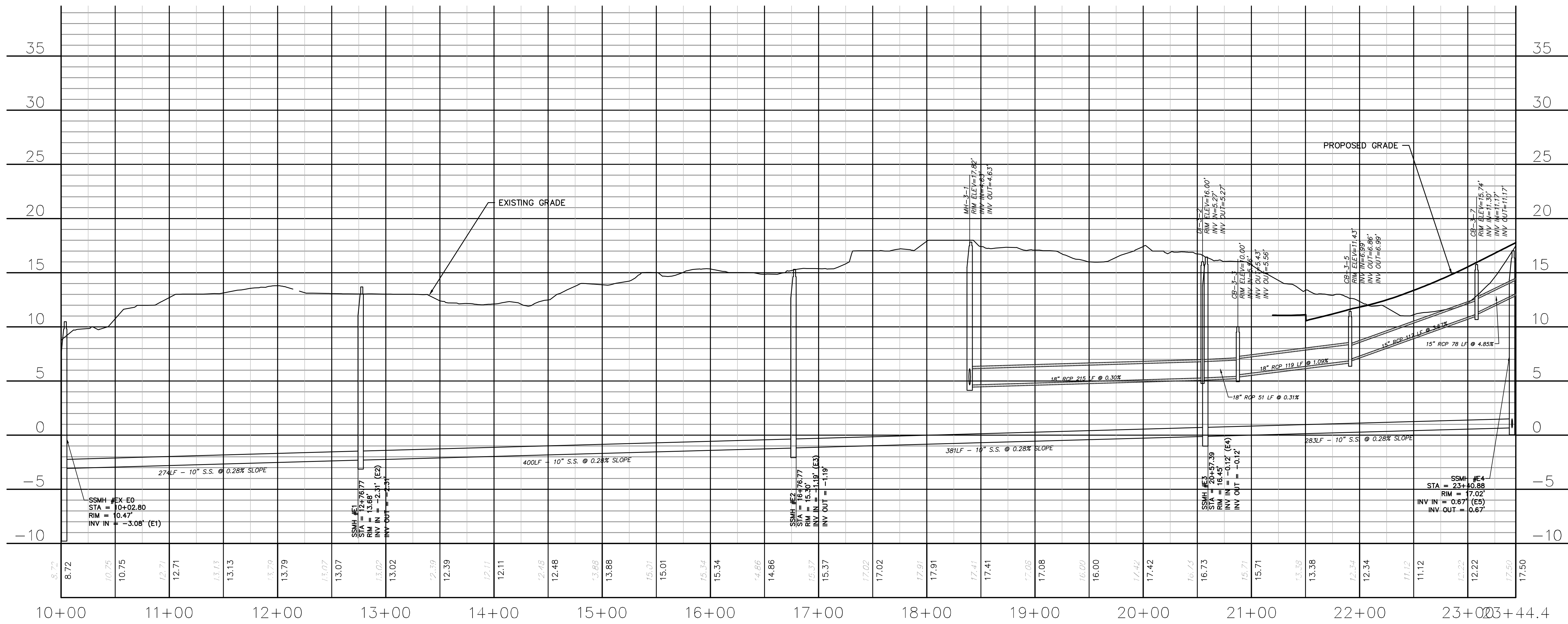
CAPE FEAR PUBLIC UTILITY
AUTHORITY STANDARD SEWER

- NOTES:**
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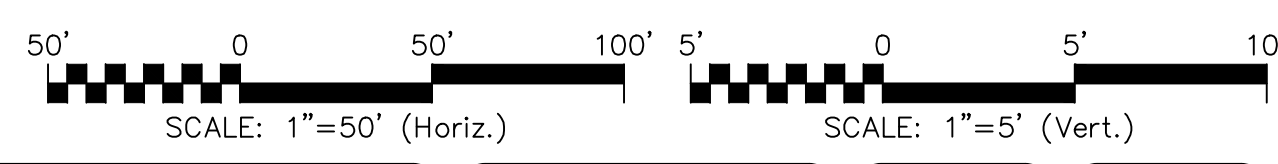
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EAST OUTFALL SEWER
(STA 10+00.00 TO 23+44.40)



EAST OUTFALL SEWER
(STA 10+00.00 TO 23+44.40)



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

Date: _____ Permit # _____
Signed: _____

Approved Construction Plan

| Name | Date |
|----------|------|
| Planning | |
| Traffic | |
| Fire | |

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1 inch

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/09/2016 |

PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

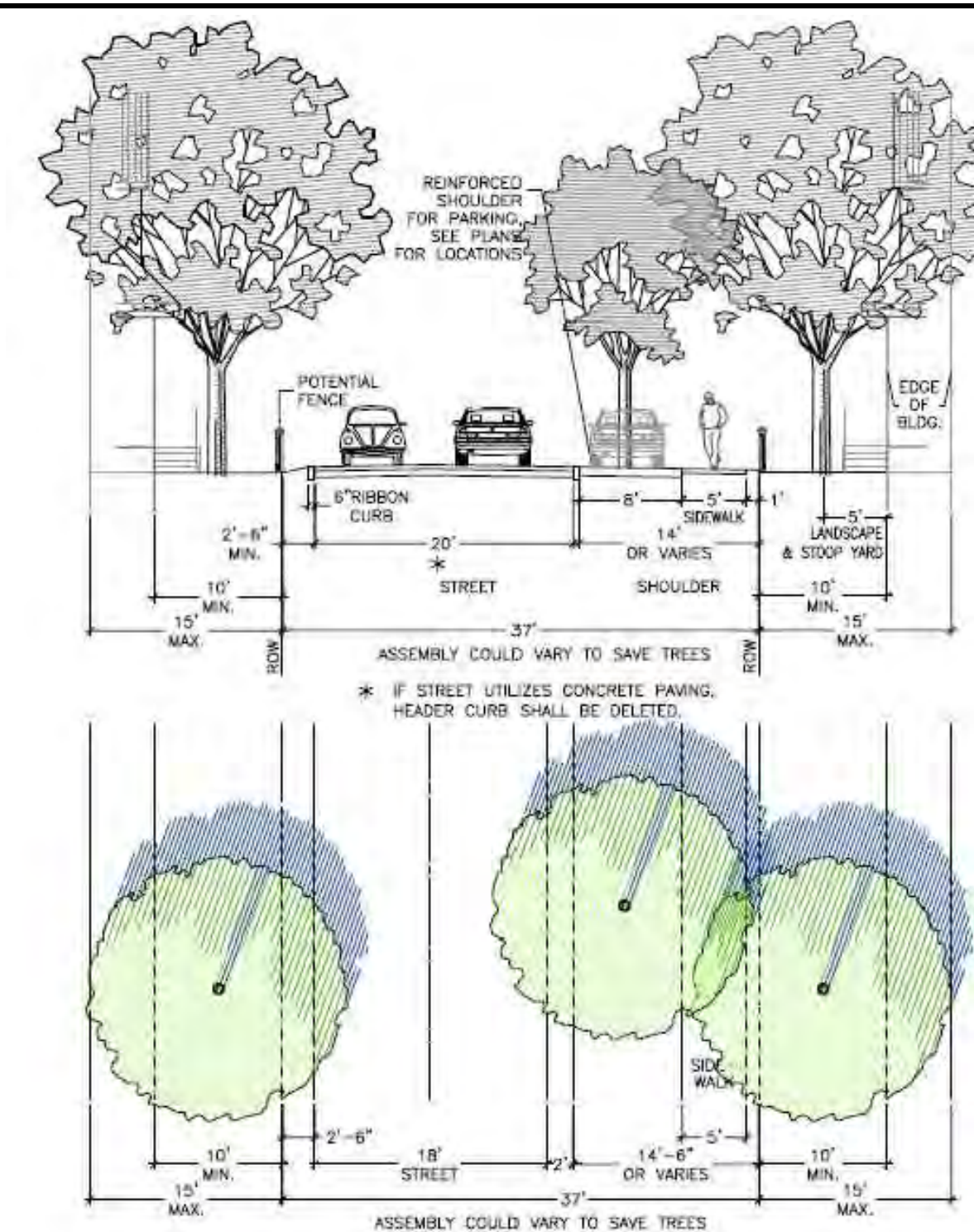
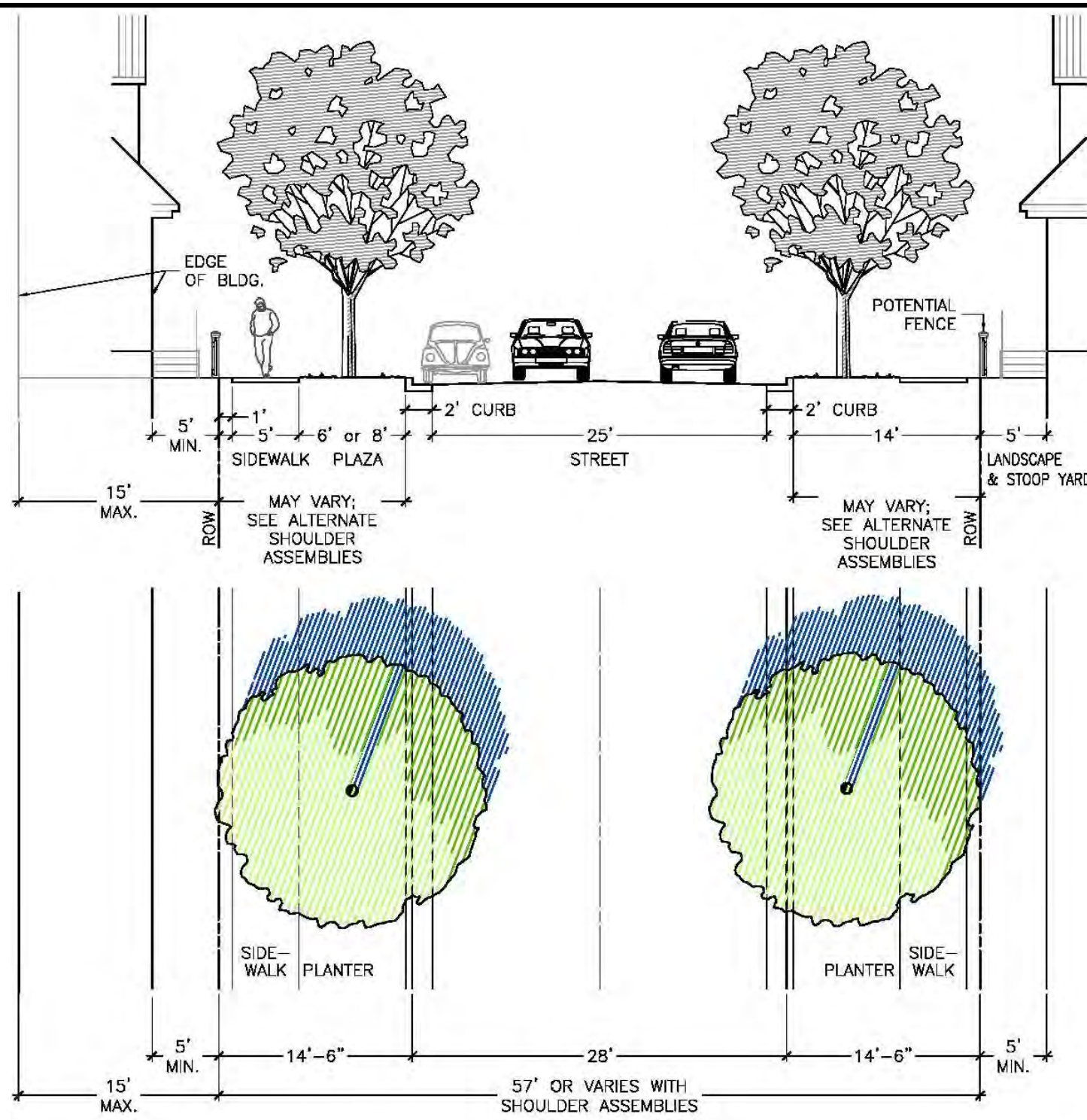
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NORTH AMERICA SIKSUI HOUSE, LTD.

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

**PLAN AND PROFILE
EAST OUTFALL SEWER
STA.10+00 TO 23+44.40**

| | | |
|-----------------------|---------------------------|-------------------------|
| DATE: 06/01/16 | SCALE: HORIZONTAL: 1"=50' | MAC FILE NUMBER: CU-711 |
| MCE PROJ # 02735-0168 | VERTICAL: N/A | DRAWING NUMBER: 32 |
| DRAWN: EEM/KCE | | |
| DESIGNED: KCE | | |
| CHECKED: N/A | | |
| PROJ. MGR: RMC | | |
| STATUS: FINAL DESIGN | | REVISION: B |
| NOT FOR CONSTRUCTION | | |



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1 inch

Approved Construction Plan

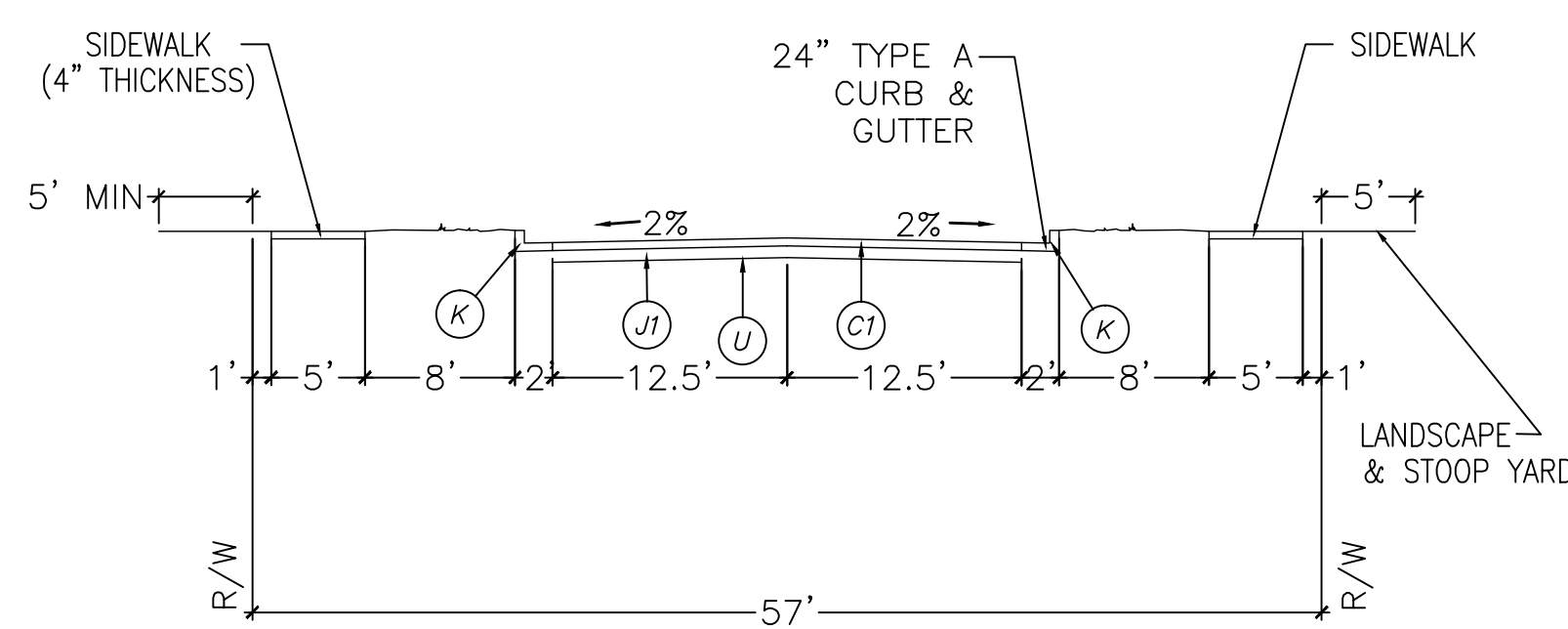
Name _____ Date _____
 Planning _____
 Traffic _____
 Fire _____



Public Services • Engineering Division
 APPROVED STORMWATER MANAGEMENT PLAN

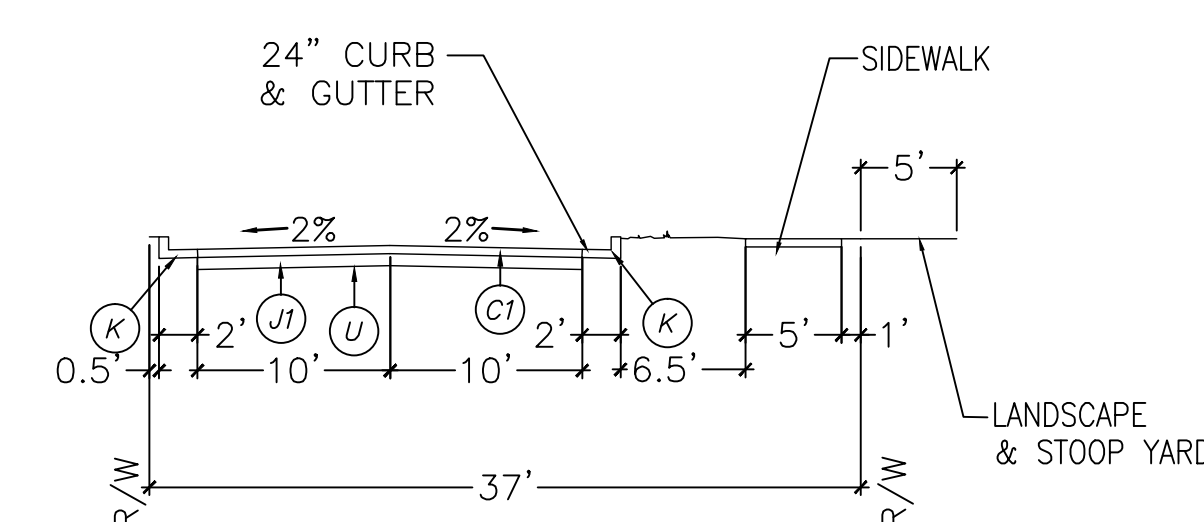
Date: _____ Permit # _____

Signed: _____



**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 | 24" Vertical C&G |
| Landscape Type | Irregular spacing-50'oc max |



**37' RIGHT-OF-WAY
 (PUBLIC)**

| | |
|--------------------|------------------------|
| Right-of-Way Width | 37 feet |
| Asphalt Width | 20 feet |
| Design Speed | 25 MPH |
| Traffic Lanes | 2 lanes |
| Parking Lanes | No Parking |
| Curb Radius | 10 feet |
| Walkway Type | 5 foot Sidewalk |
| Curb Type | 24" Vertical C&G |
| Landscape Type | Irregular Tree Spacing |

PAVEMENT SCHEDULE

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

*SEE SHEET CS-502 (34) FOR ADDITIONAL DETAILS AND SECTIONS FOR CURBING, PAVEMENT, STONE, AND SUBGRADE.

| | | |
|----------|---|------------|
| REV. NO. | DESCRIPTIONS / REVISIONS | DATE |
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/06/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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 - AGE QUALIFIED PHASE 2 & 3

TYPICAL CROSS SECTIONS

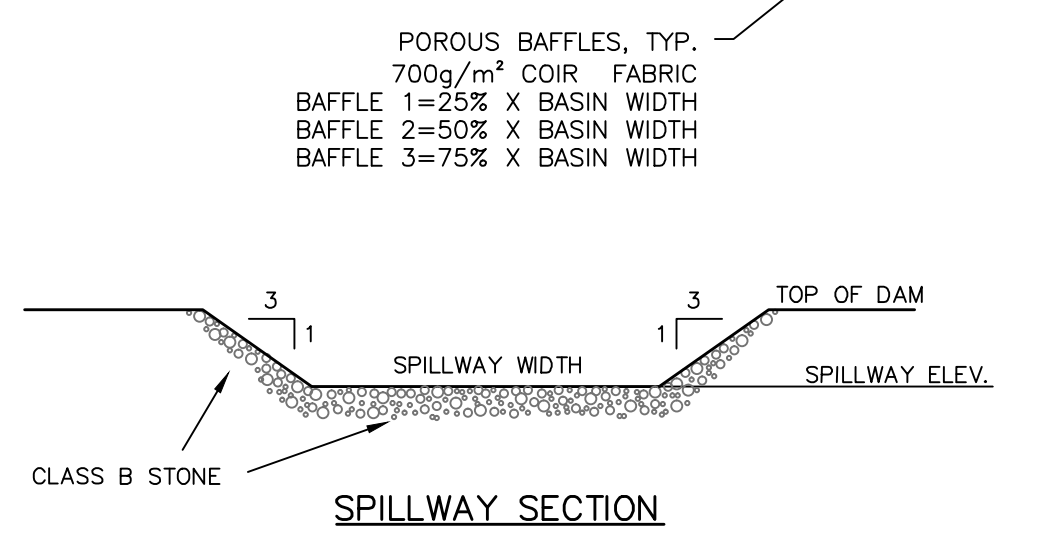
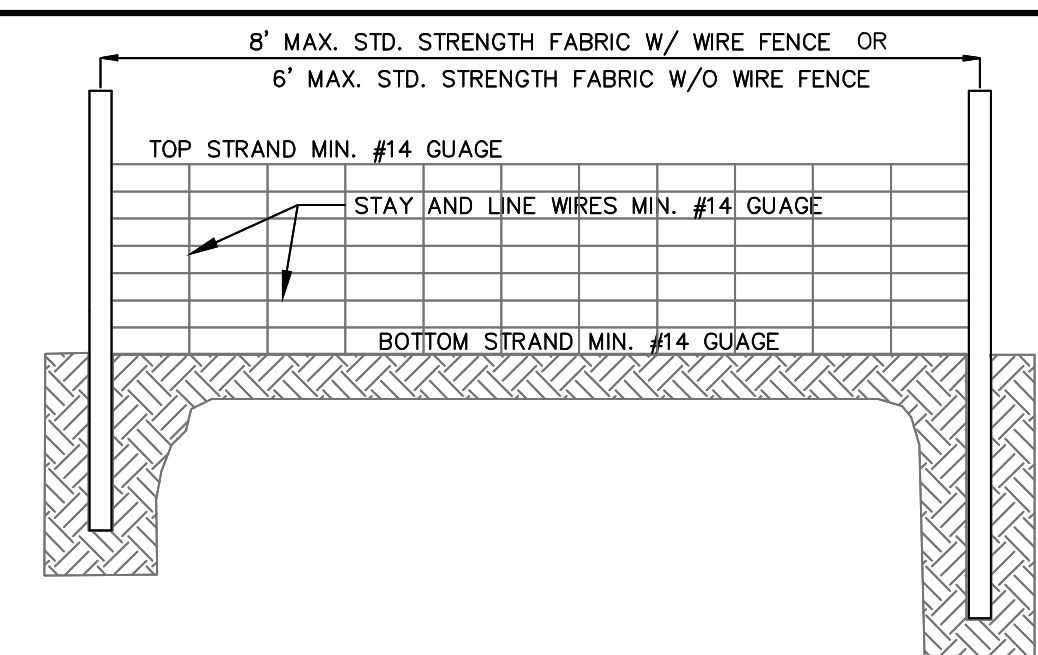
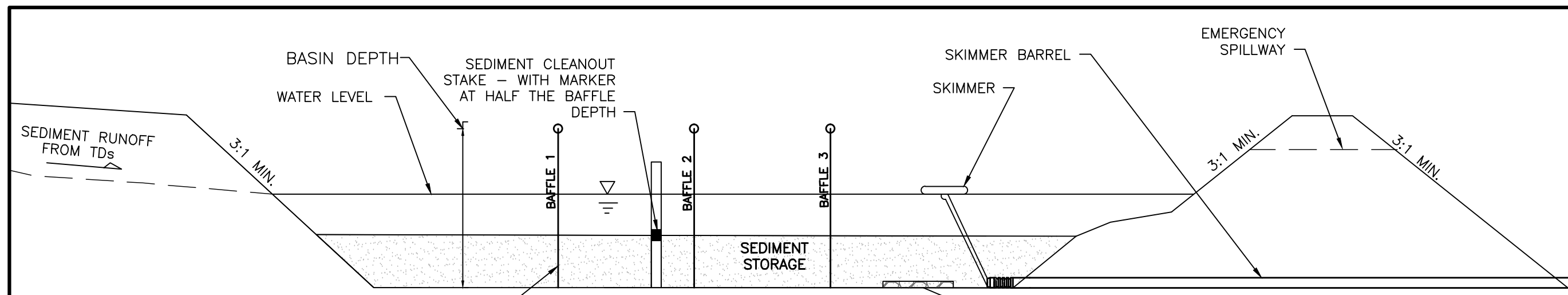
DATE: 06/01/16
 MCE PROJ. # 02735-0168
 DRAWN: EEM/KCE
 DESIGNED: KCE
 CHECKED: NJL
 PROJ. MGR: RMC

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

MAC FILE NUMBER: CT-301
 DRAWING NUMBER: 33

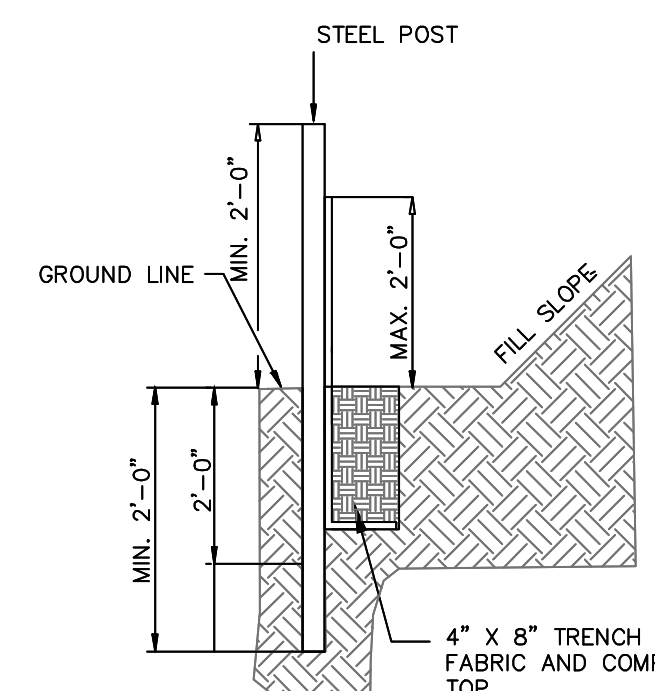
STATUS: FINAL DESIGN
 NOT FOR CONSTRUCTION

REVISION: B



SKIMMER SEDIMENT BASINS
PHASE 1: SB-1, 2, AND 3

- 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.



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

TEMPORARY SILT FENCE
NOT TO SCALE

SKIMMER BASIN CALCULATION TABLE

| Skimmer No. | Drainage Area ac | Rational C | Time of Conc. Tc min | I10 Intensity in/hr | Q10 Peak Flow cfs | Required SA (Q25 x Q10) sf | Provided SA sf | Required Vol (1800cf/ac x DA) cf | Basin Depth D ft | Provided Vol Basin Depth cf | Weir Width ft |
|-------------|------------------|------------|----------------------|---------------------|-------------------|----------------------------|----------------|----------------------------------|------------------|-----------------------------|---------------|
| TSB-1 | 4.61 | 0.30 | 5.00 | 7.23 | 10.00 | 3,250 | 4,486 | 8,298 | 2.00 | 9,001 | 6.0 |
| TSB-2 | 1.26 | 0.30 | 5.00 | 7.23 | 2.73 | 888 | 2,560 | 2,268 | 2.00 | 5,149 | 6.0 |
| TSB-3 | 2.51 | 0.30 | 5.00 | 7.23 | 5.44 | 1,769 | 2,411 | 4,518 | 2.00 | 4,855 | 6.0 |

FAIRCLOTH SKIMMER SIZE CALCULATION - PHASE 1

| Skimmer No. | Dewatering Time (days) | Skimmer Outflow cf/day | Skimmer Size | Skimmer Head ft | Orifice Diameter in | Orifice Radius in | Barrel Outflow gpm | Barrel Pipe in |
|-------------|------------------------|------------------------|--------------|-----------------|---------------------|-------------------|--------------------|----------------|
| TSB-1 | 3 | 3,000 | 2.0 | 0.167 | 1.8 | 0.9 | 15.6 | 4.0 |
| TSB-2 | 3 | 1,716 | 1.5 | 0.125 | 1.5 | 0.8 | 8.9 | 4.0 |
| TSB-3 | 3 | 1,618 | 1.5 | 0.125 | 2.8 | 1.4 | 8.4 | 4.0 |

Faircloth Skimmer Selection Table

| Skimmer Size | Outflow Qmax in | 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 |
| 6 | 51,840 | 0.417 |
| 8 | 97,978 | 0.500 |

- NOTES:**
1. Q10 Peak Flow were taken from Rational Method.
 2. Required Surface Areas and Volumes were taken from NCDENR Sediment & Erosion Manual.
 3. Faircloth Skimmer Selection Table taken from Table 4-2, NCDOT Level III-A Design of Sediment & Erosion Control Plans Manual

SILT FENCE TABLE

| SILT FENCE | DRAINAGE AREA | | LENGTH (LF) | AC per 100 LF | 1/4-AC per 100 LF "yes" or "no" |
|------------|---------------|------|-------------|---------------|---------------------------------|
| | SF | AC | | | |
| SF 1 | 14426 | 0.33 | 602 | 0.06 | yes |
| SF 2 | 123068 | 2.83 | 1132 | 0.25 | yes |
| SF 3 | 78396 | 1.80 | 1222 | 0.15 | yes |
| SF 4 | 72087 | 1.65 | 680 | 0.24 | yes |
| SF 5 | 22906 | 0.53 | 430 | 0.12 | yes |
| SF 6 | 226880 | 5.21 | 3965 | 0.13 | yes |
| SF 7 | 15564 | 0.36 | 487 | 0.07 | yes |
| SF 8 | 32042 | 0.74 | 323 | 0.23 | yes |

Approved Construction Plan

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

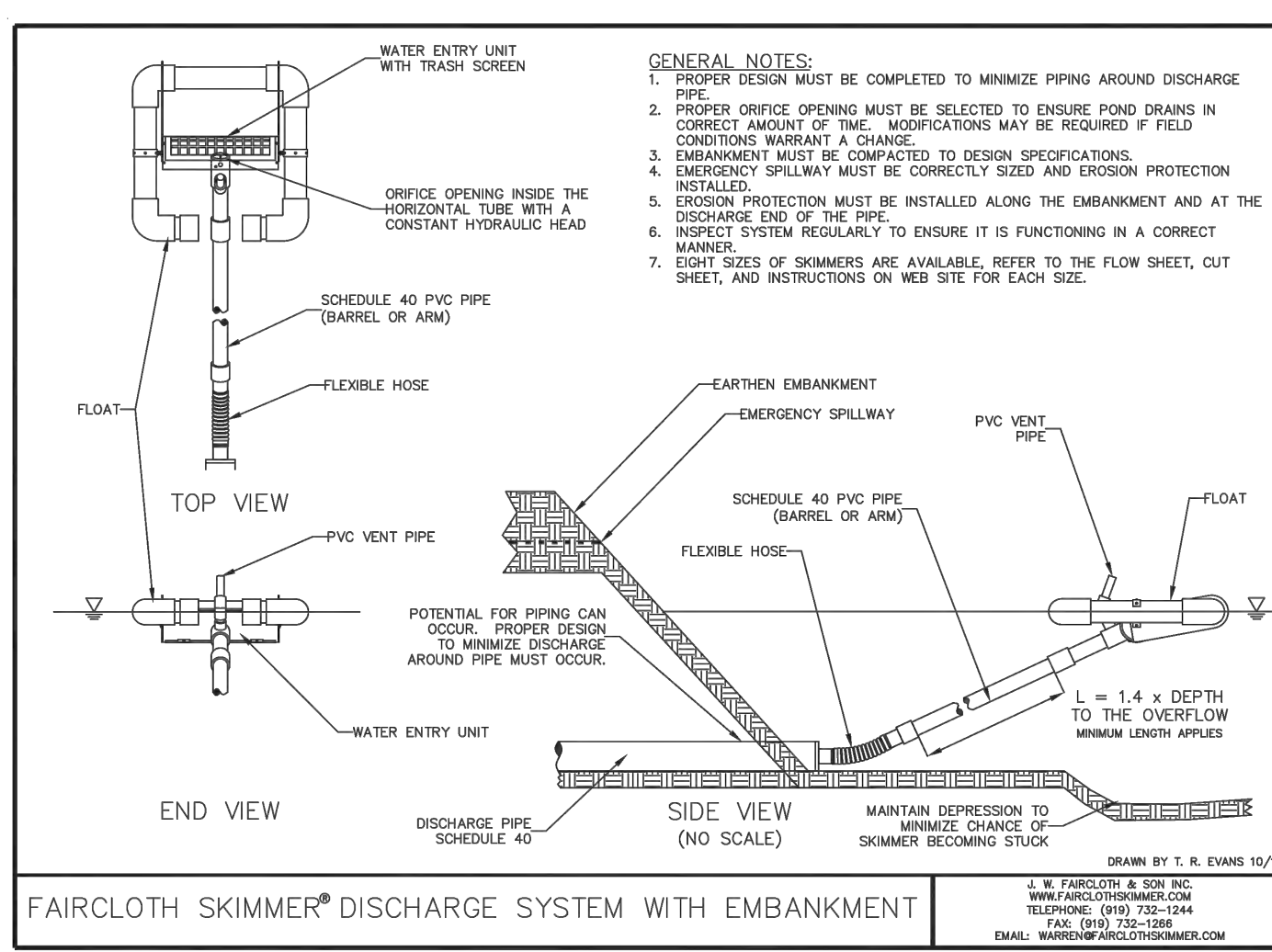
Name: _____ Date: _____

Planning: _____
Traffic: _____
Fire: _____

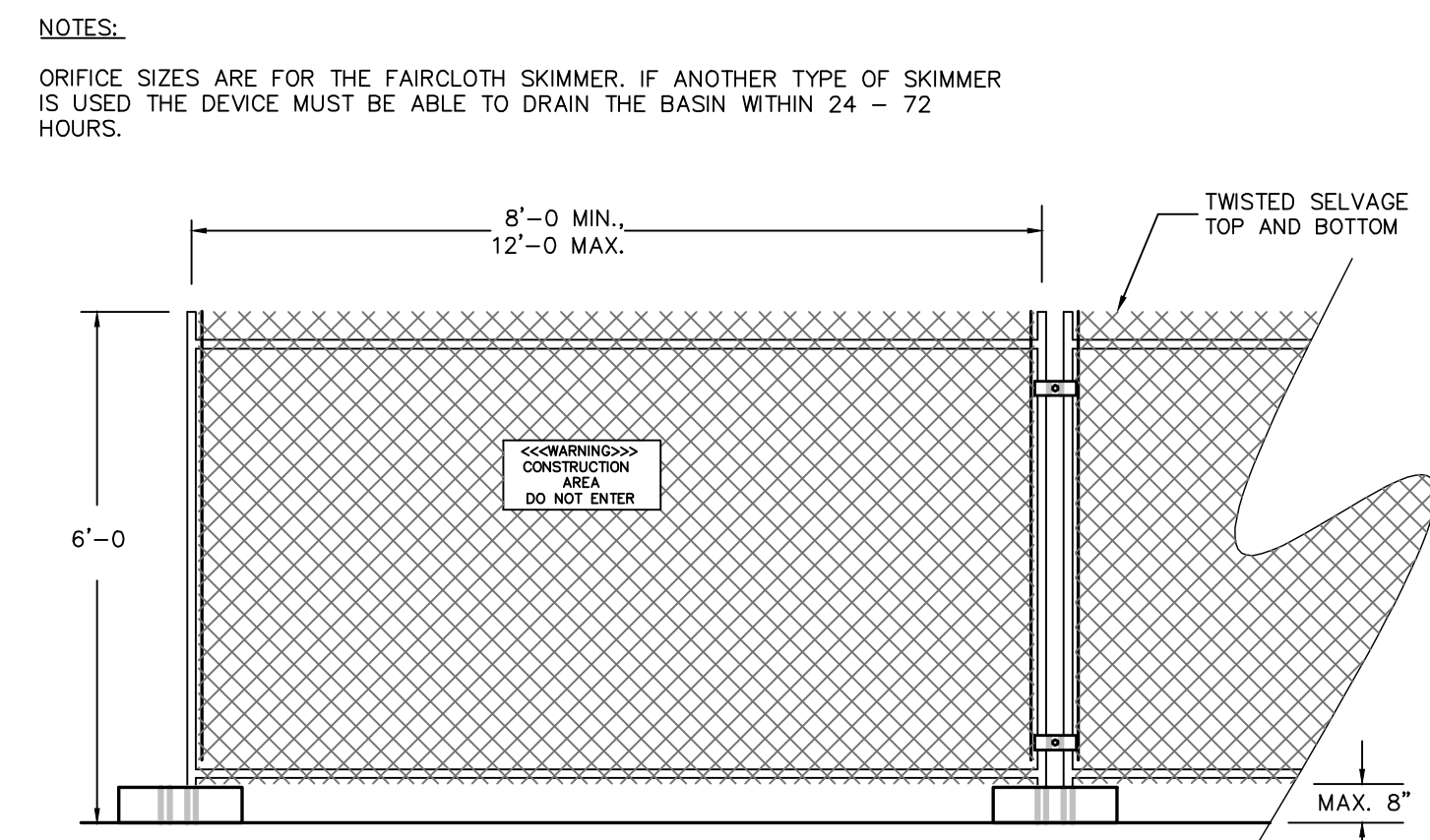
Date: _____ Permit # _____
Signed: _____

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

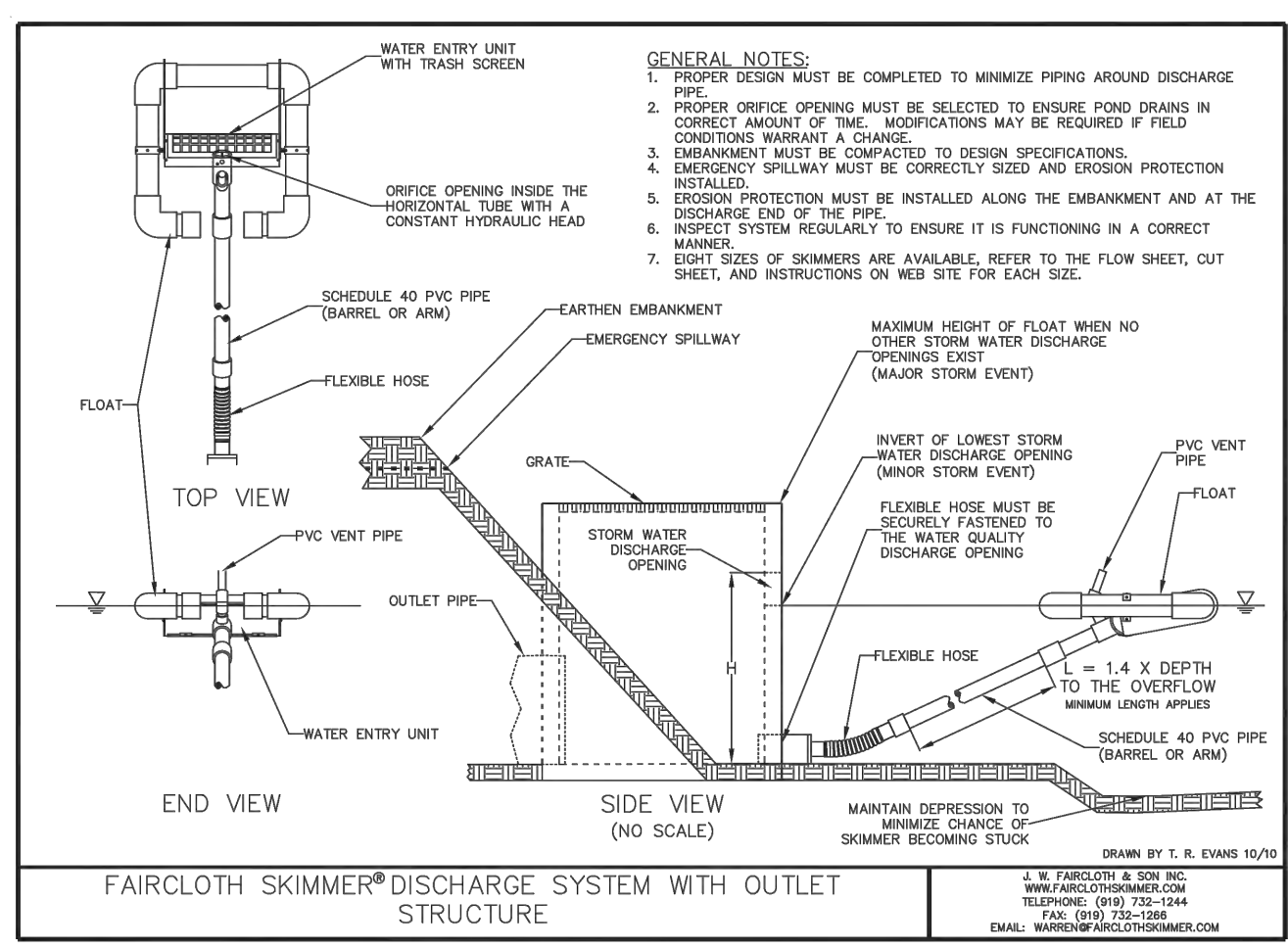


SKIMMER DETAIL WITH EMBANKMENT
NOT TO SCALE

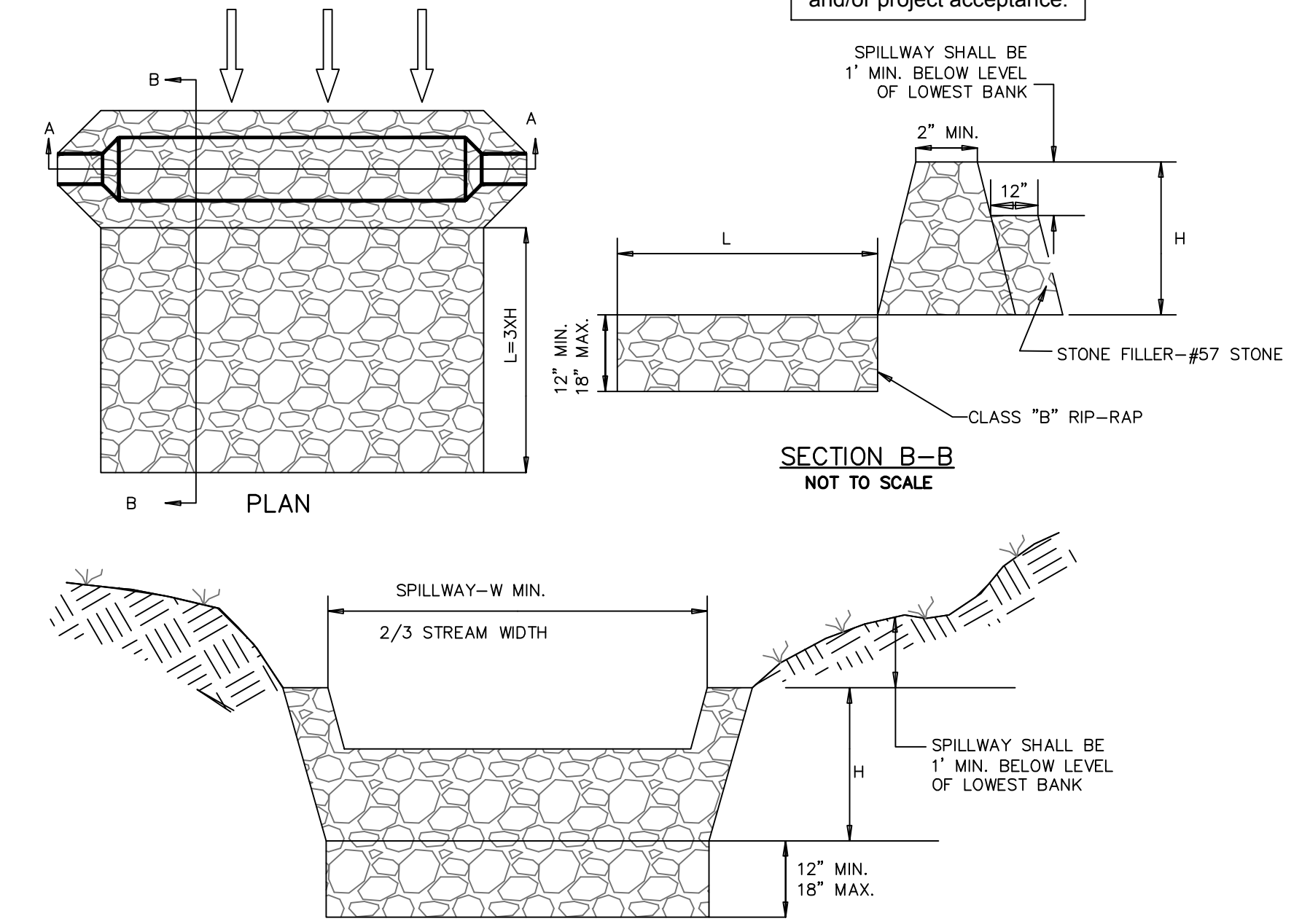


- NOTES:**
1. CHAIN LINK FABRIC TO BE MIN. 11 GAUGE, GALVANIZED. NO RUSTED OR EXCESSIVELY MALFORMED FABRIC.
 2. FENCE BASES SHALL BE OF SUFFICIENT WEIGHT and/or SPREAD TO ADEQUATELY SUPPORT EACH PANEL.
 3. PANEL-TO-PANEL CONNECTIONS SHALL BE MADE AT A MIN. TWO LOCATIONS PER CONNECTION UNLESS OTHERWISE 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



DITCH CHECK DAM
SD 13-04
NOT TO SCALE

| REVNO. | DESCRIPTION | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON INC. / STORMWATER / TREE REMOVAL, NEW HANCOCK COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/07/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 07/28/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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RIVERLIGHTS
NORTH AMERICA SEXISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

EROSION AND SEDIMENT CONTROL DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NJL
PROJ. MGR.: RMC

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

MAC FILE NUMBER: CE-501
DRAWING NUMBER: 34
REVISION: B

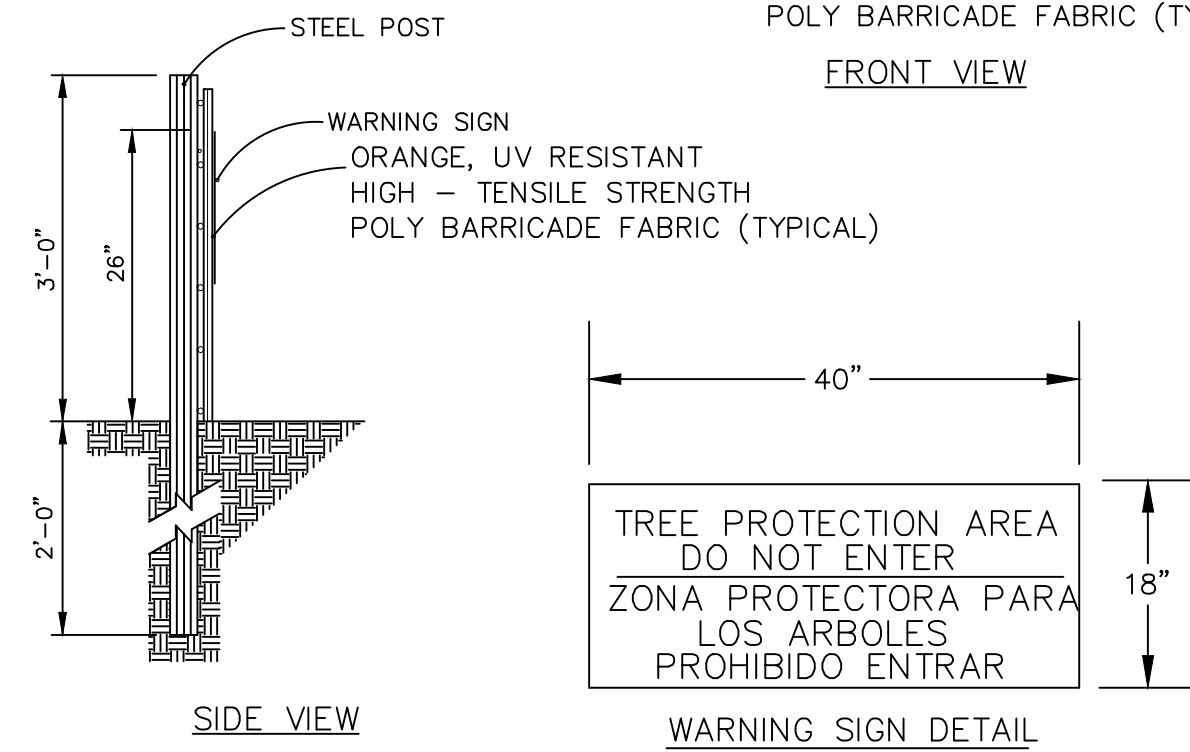
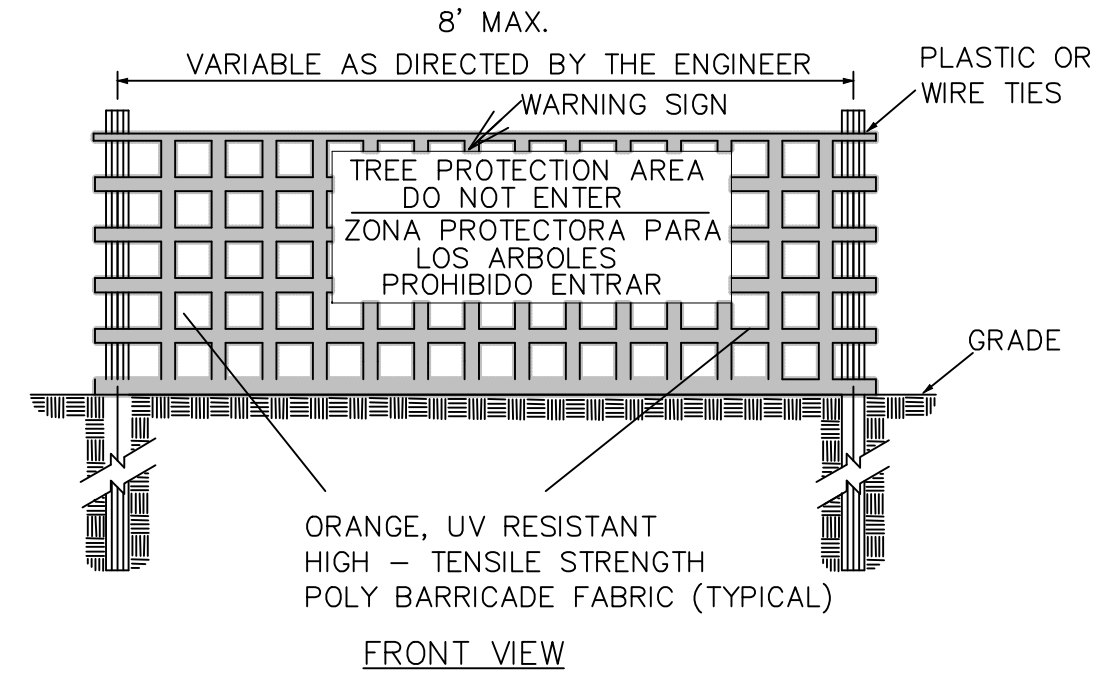
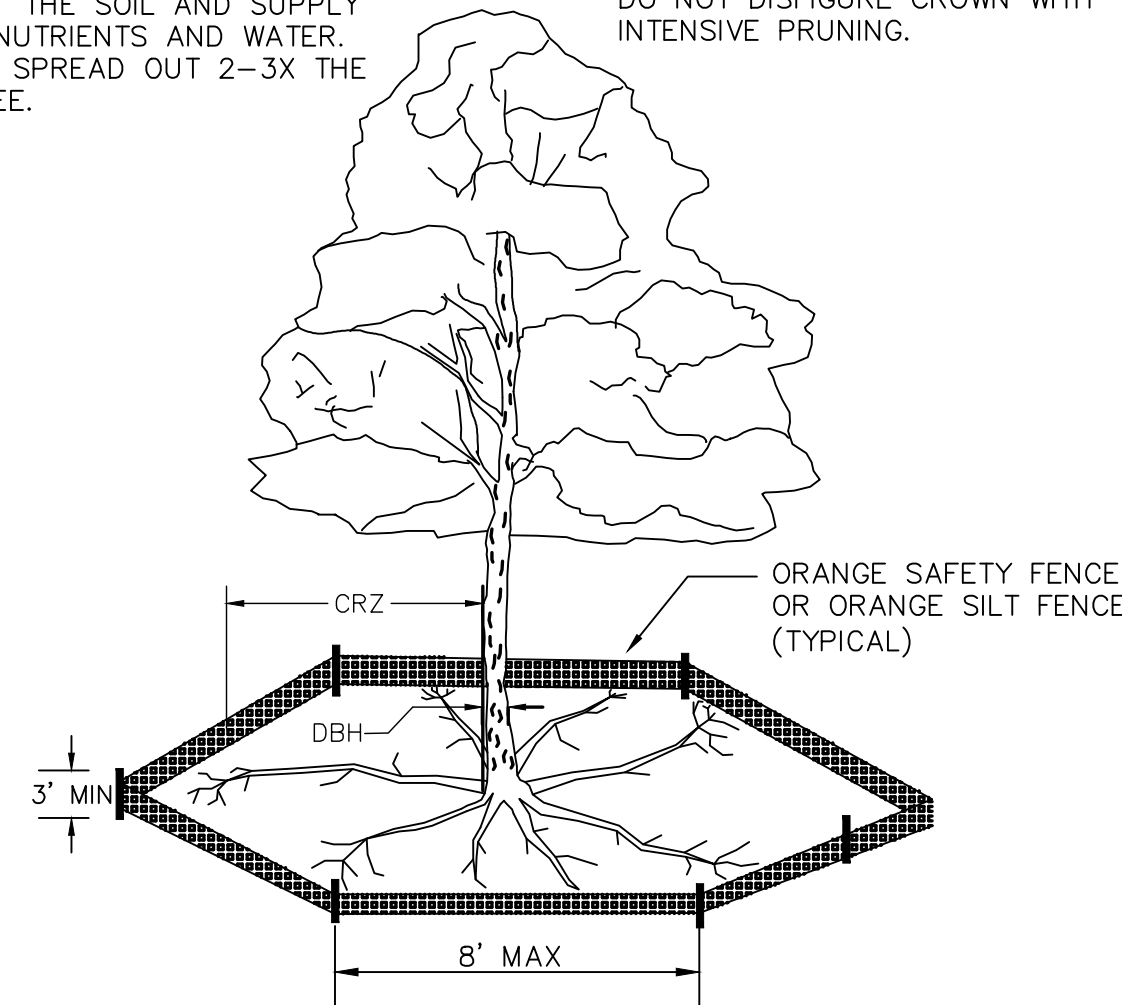
STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

SEEDBED PREPARATION:

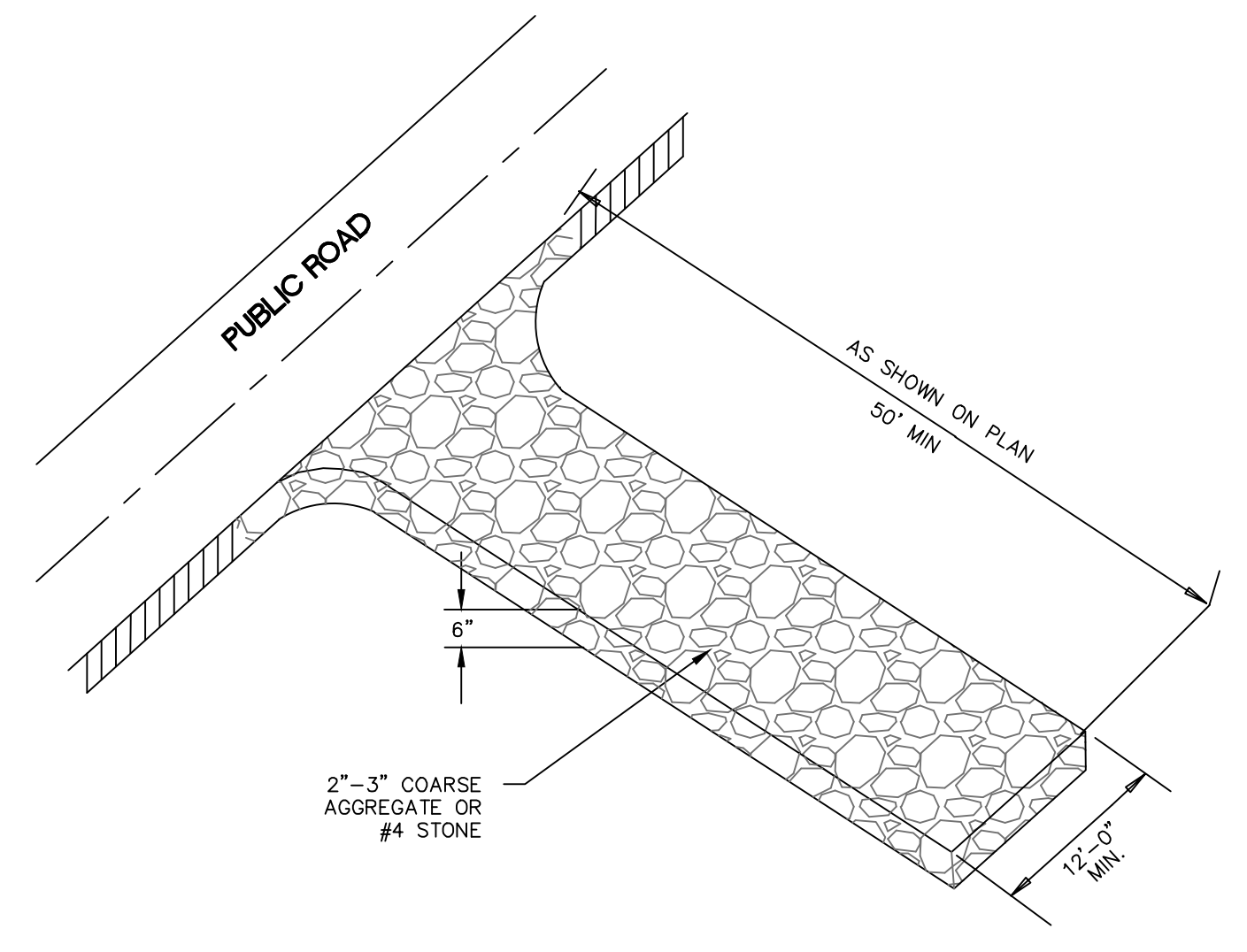
1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE 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

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. 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.



CONSTRUCTION ENTRANCE/EXIT
SD 13-03
NOT TO SCALE

| 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 |

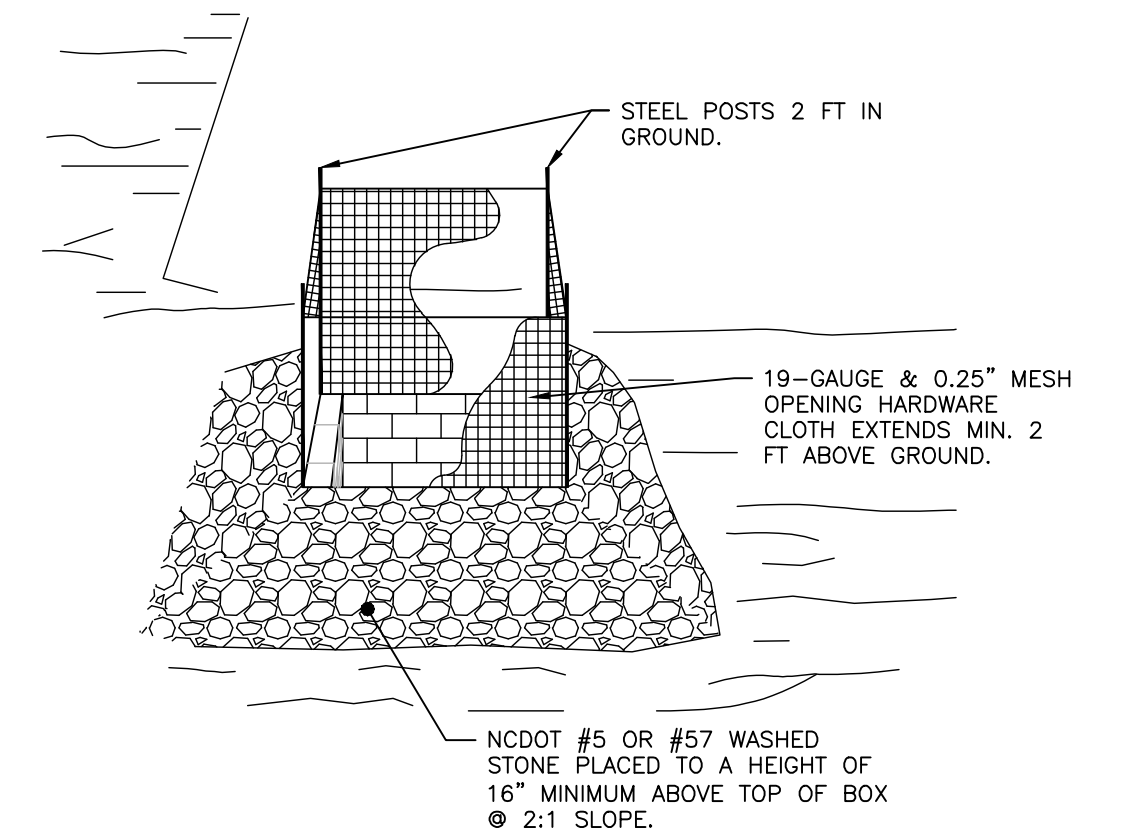
| PERMANENT SEEDING | | | | |
|----------------------------|------------------|---------------------------|---------|----------|
| GRASS TYPE | AMOUNT/1000 S.F. | TIME OF SEEDING | INITIAL | |
| BERMUDA COMMON | 1-2 LBS. | APRIL - JUNE | 25 LBS. | 10-10-10 |
| FESCUE, TALL (KENTUCKY 31) | 5-7 LBS. |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

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.

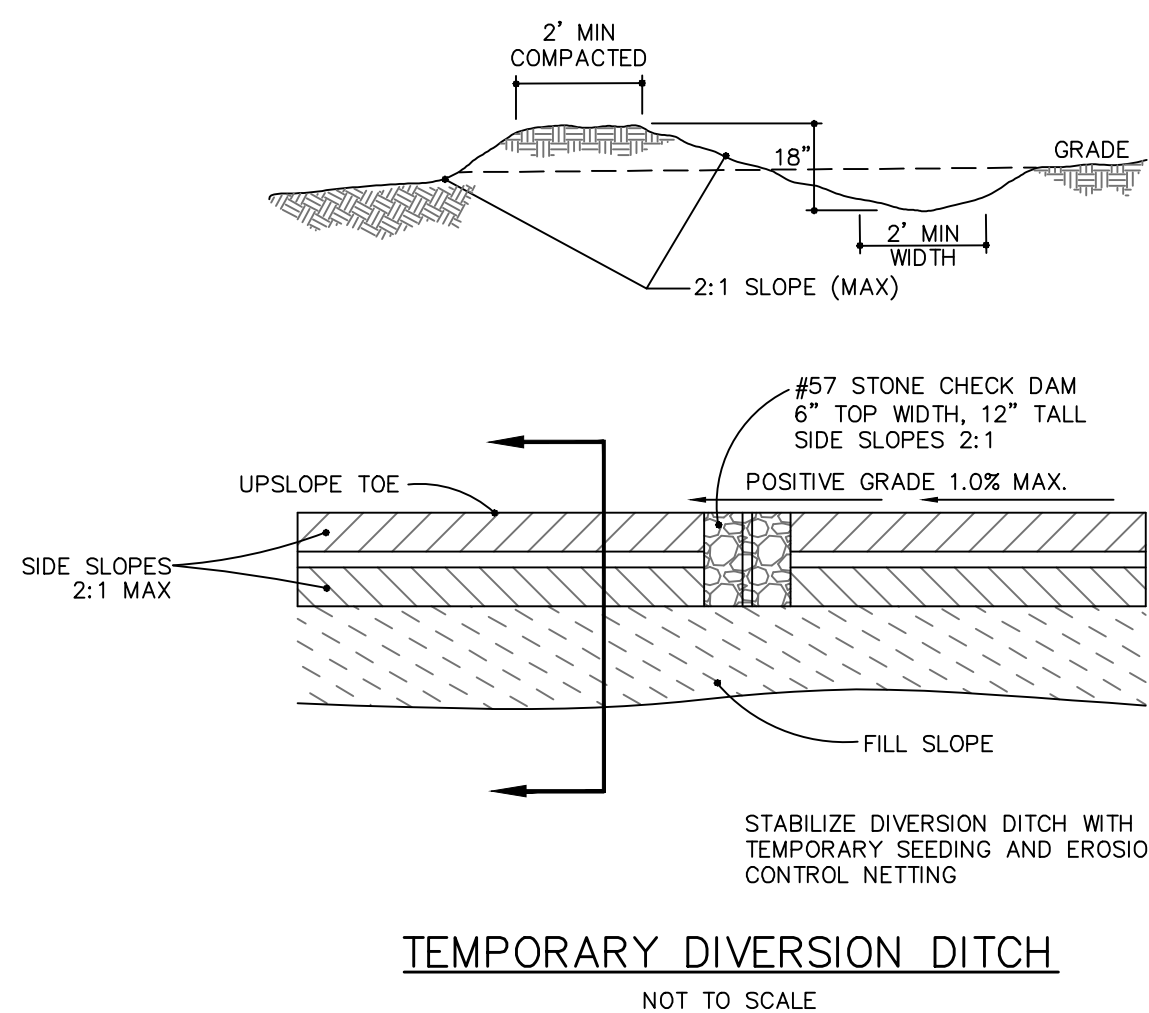
- NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 3. IF CONSTRUCTION OCCURS 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 PARK UNDER 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.

METHOD OF TREE PROTECTION DURING CONSTRUCTION
SD 15-09



- NOTES:
1. DRIVE 5-FOOT STEEL POSTS (1.25 lb/ft 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



TEMPORARY DIVERSION DITCH
NOT TO SCALE

| TDD NUMBER | DA (AC) | Q 10 (CFS) | LENGTH (FT) | HIGH (FT) | LOW (FT) | ELEVATION DIFF. (FT) | SLOPE (%) | INITIAL LINING | MANNING n | VELOCITY (FPS) | COMMENT | BMP # |
|------------|---------|------------|-------------|-----------|----------|----------------------|-----------|----------------|-----------|----------------|------------|-------|
| TDD 1A | 2.89 | 6.3 | 427 | 27.50 | 8.00 | 19.50 | 4.57 | BARE EARTH | 0.020 | 5.93 | LINING REQ | SB-1 |
| TDD 1B | 0.67 | 1.5 | 228 | 17.00 | 8.00 | 9.00 | 3.95 | BARE EARTH | 0.020 | 3.74 | LINING REQ | SB-1 |
| TDD 3 | 2.16 | 4.7 | 343 | 26.00 | 19.00 | 7.00 | 2.04 | BARE EARTH | 0.020 | 4.14 | LINING REQ | SB-2 |

| TDD NUMBER | SECONDARY LINING | MANNING n | VELOCITY (FPS) | COMMENT | DEPTH in | MIN. DEPTH in | TEMPORARY ROCK CHECK DAMS/WATTLES | | | |
|------------|------------------|-----------|----------------|--------------|----------|---------------|-----------------------------------|-----------------|-----------------|-------|
| | | | | | | | CHECK DAM SPACING (FT) | NUMBER REQUIRED | NUMBER PROVIDED | BMP # |
| TDD 1 | EXCELSIOR | 0.035 | 4.18 | EXCELSIOR OK | 6.7 | 18 | 44 | 10 | 10 | SB-1 |
| TDD 2 | EXCELSIOR | 0.035 | 2.68 | EXCELSIOR OK | 3.5 | 18 | 51 | 5 | 5 | SB-4 |
| TDD 3 | EXCELSIOR | 0.035 | 2.95 | EXCELSIOR OK | 7.0 | 18 | 98 | 4 | 4 | SB-3 |

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.

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: _____

| REVNO. | DESCRIPTIONS | DATE |
|--------|--------------|------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

MCKIM & CREED

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

RIVERLIGHTS

NORTH AMERICA SEXISUS HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

EROSION AND SEDIMENT CONTROL DETAILS

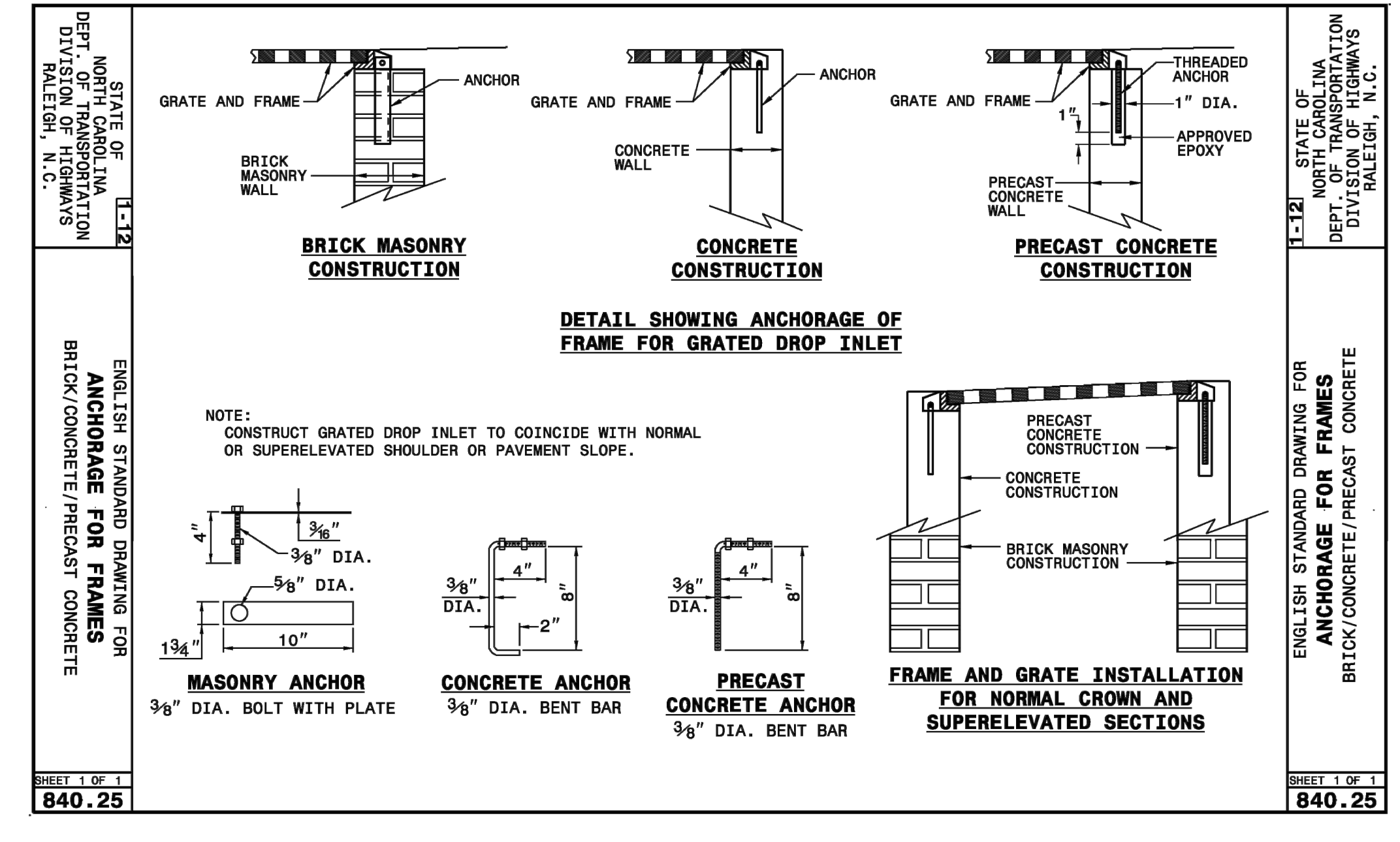
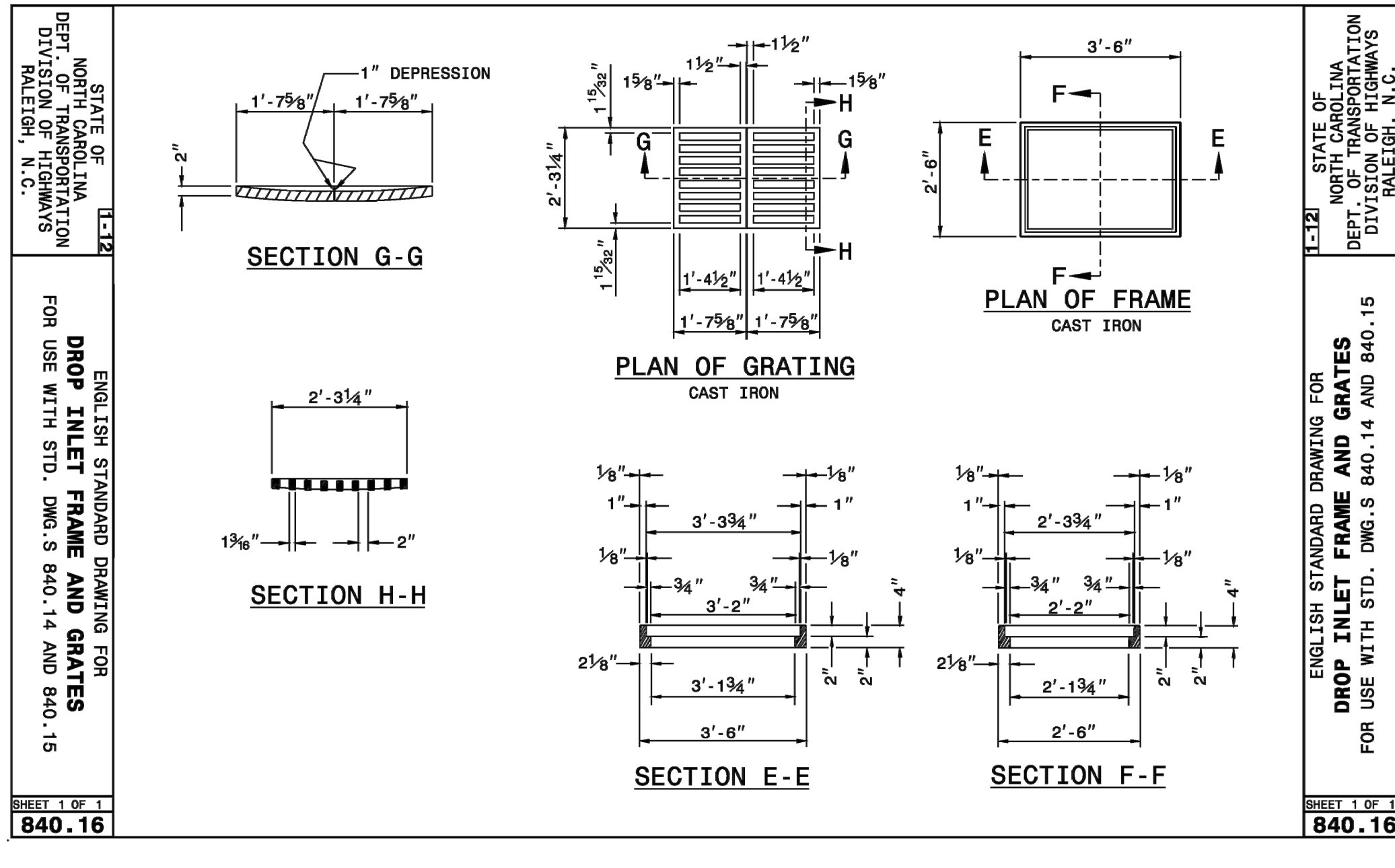
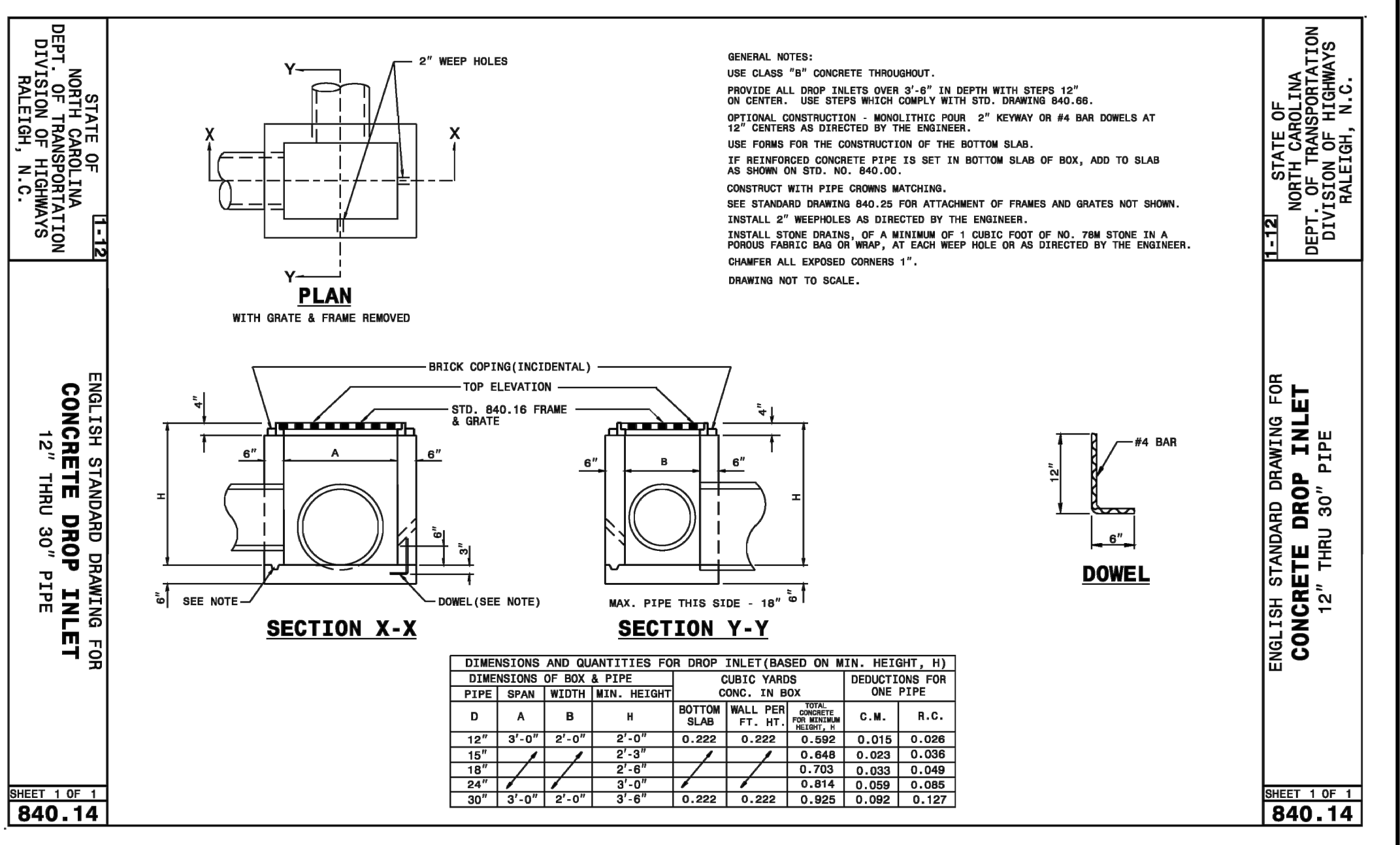
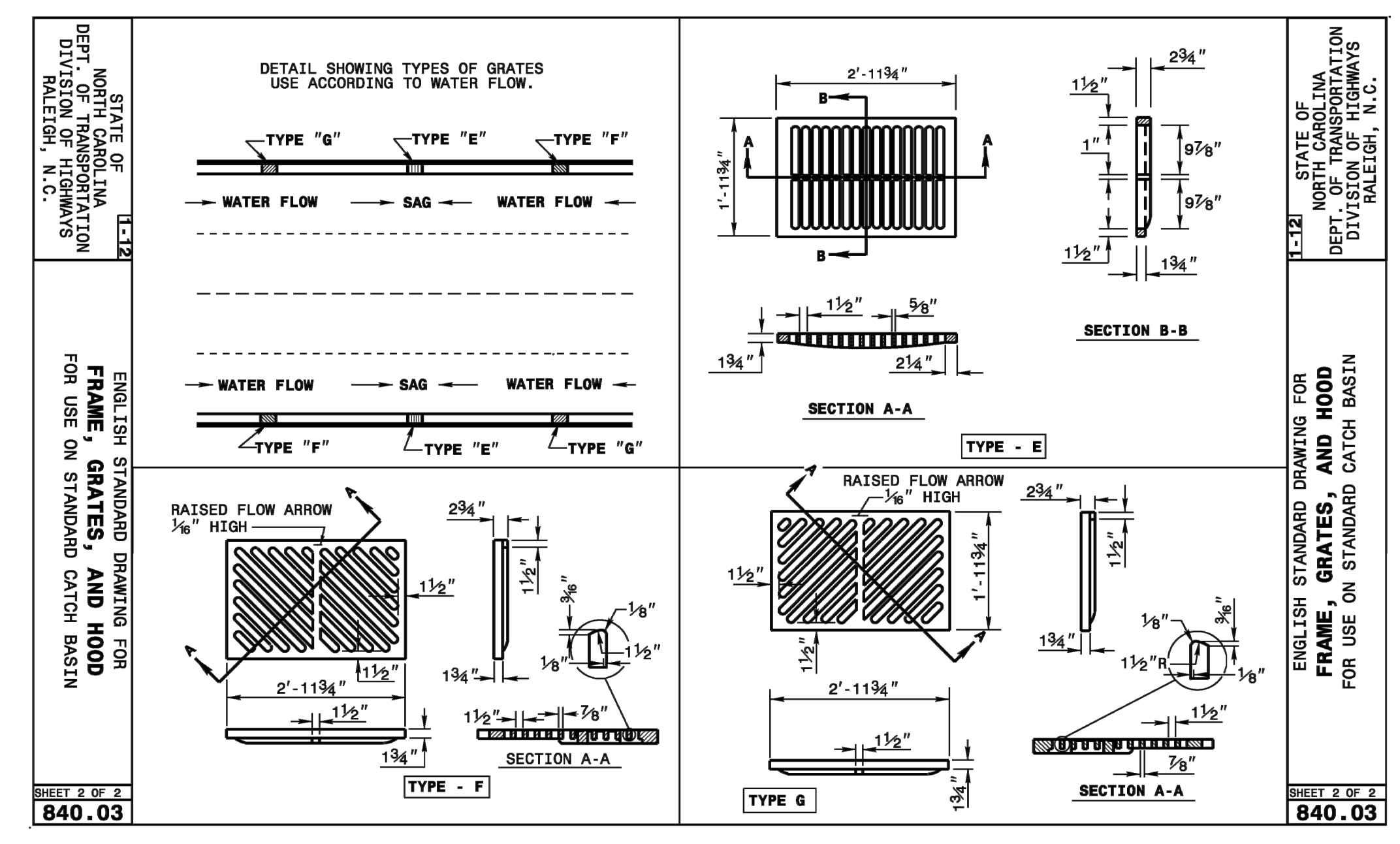
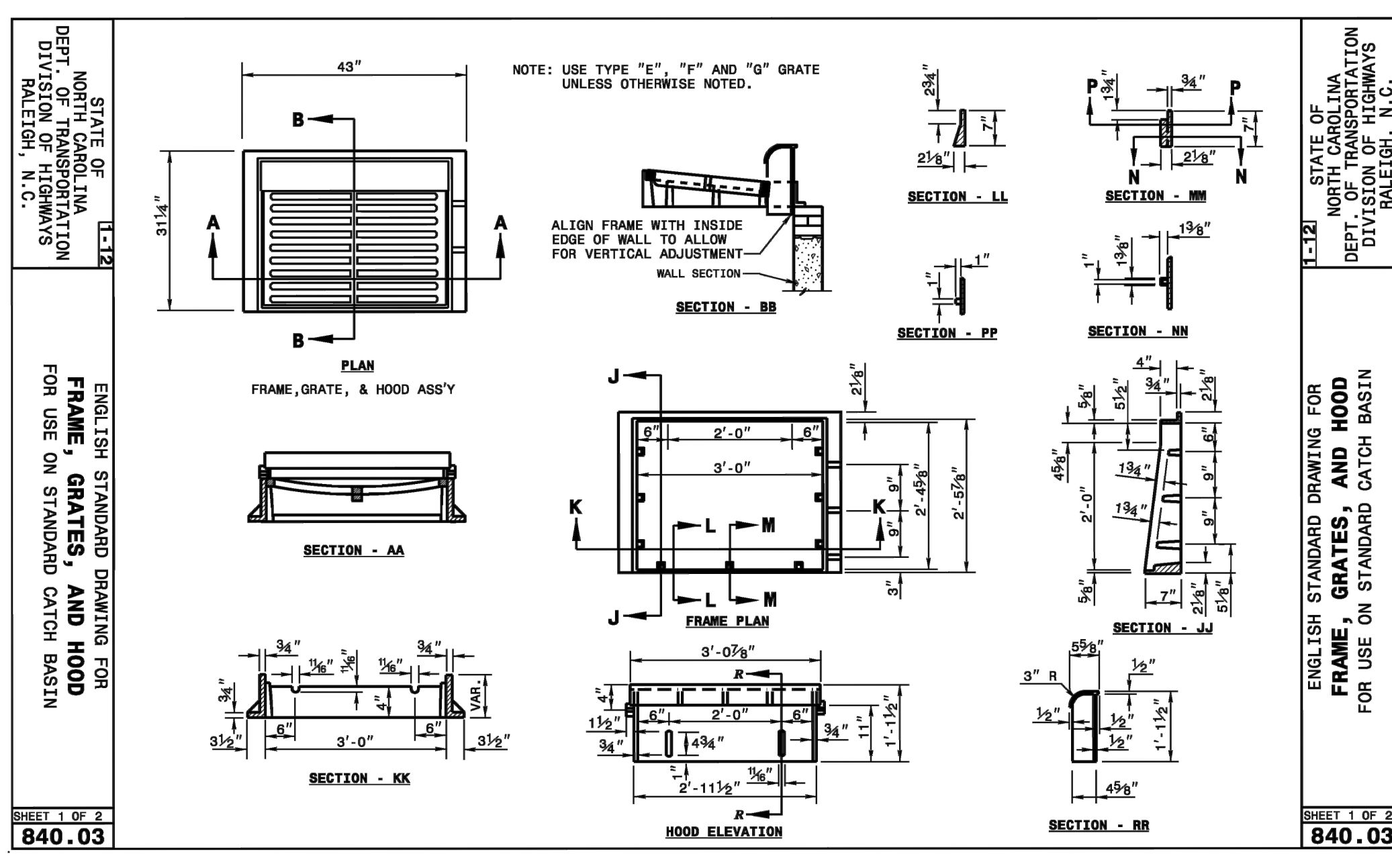
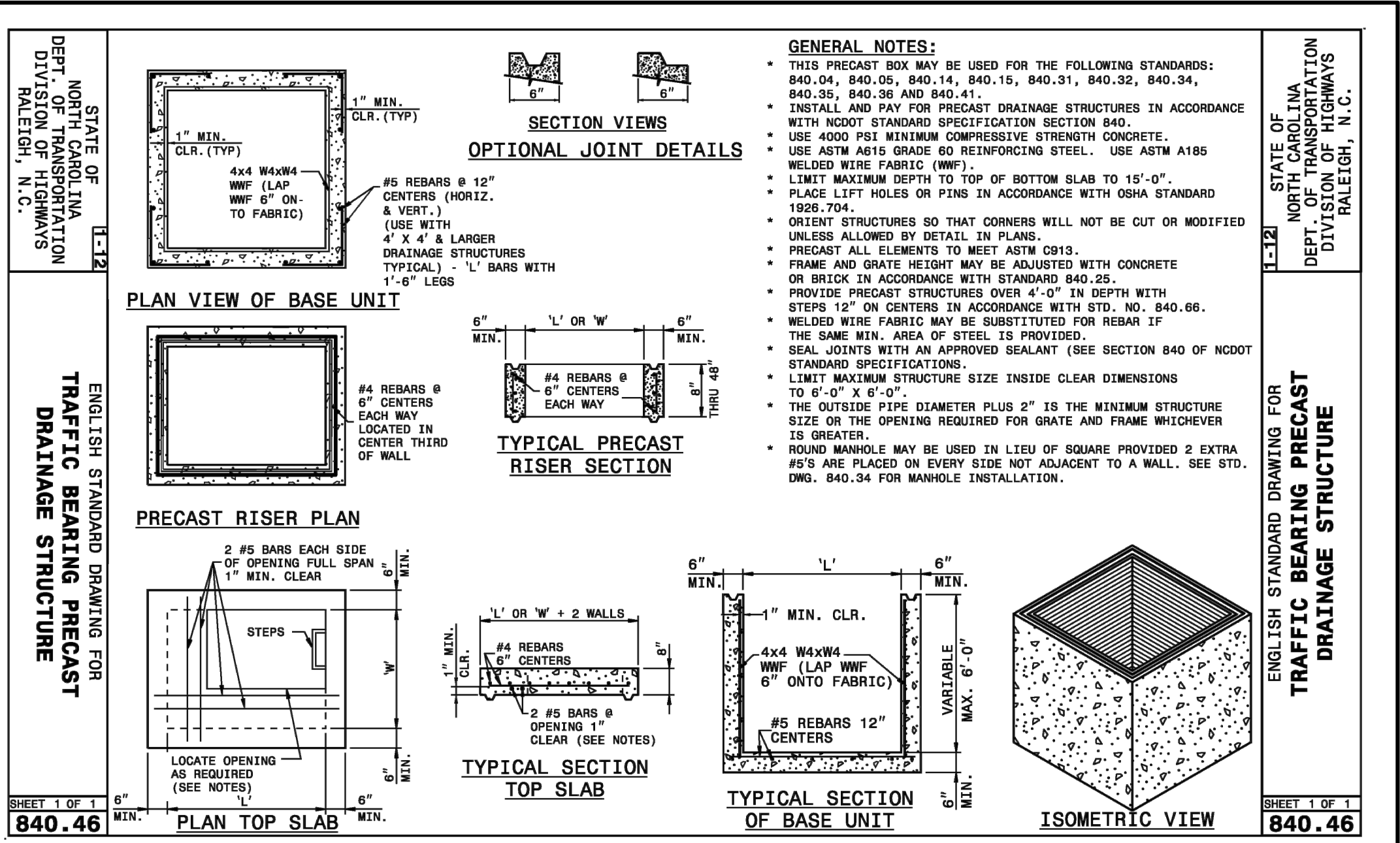
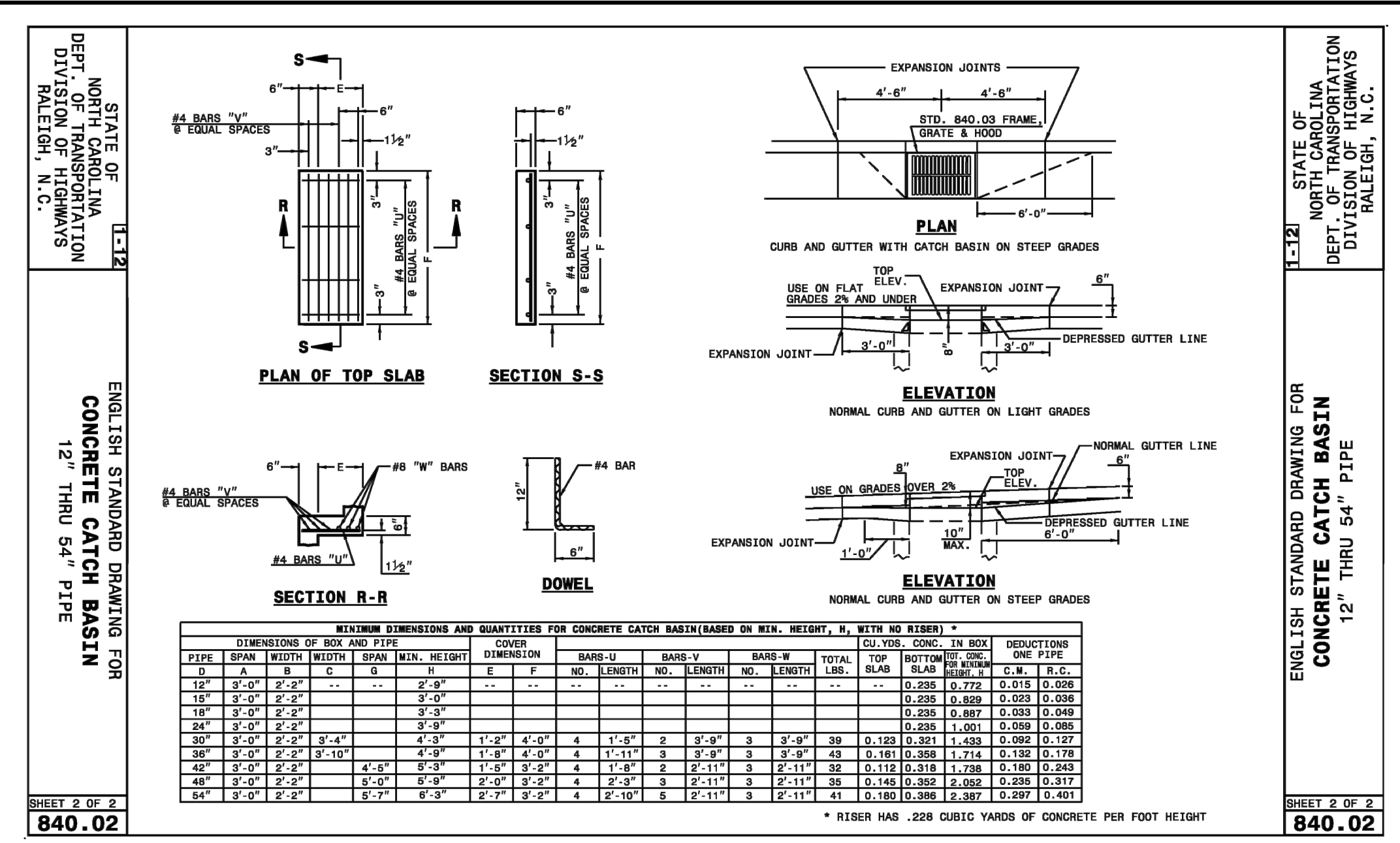
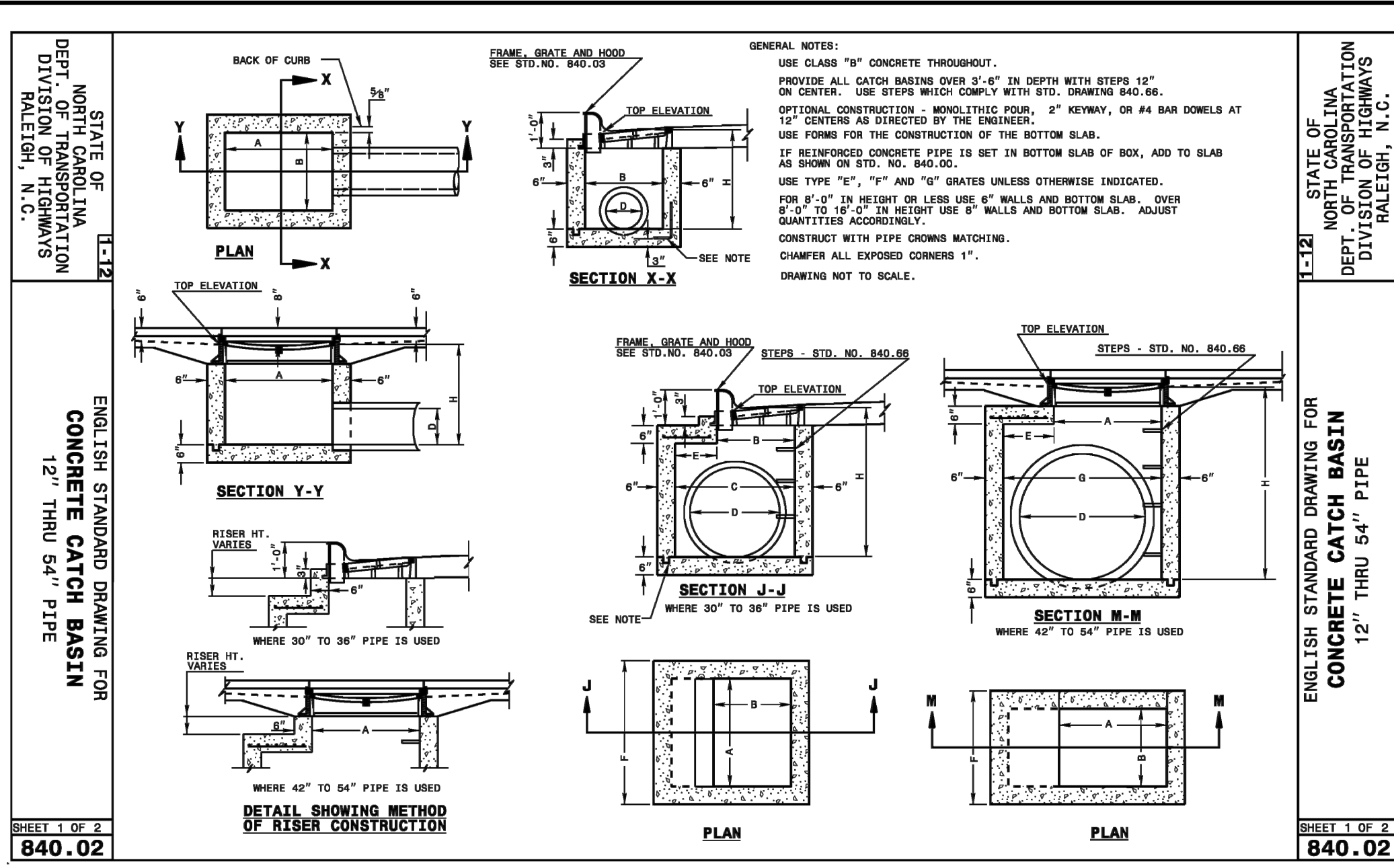
DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NJL
PROJ. MGR.: RMC

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

MAC FILE NUMBER: CE-502
DRAWING NUMBER: 35

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B



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: _____

MAC FILE NUMBER: CG-501
 DRAWING NUMBER: 36
 REVISION: B

| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| 1 | CITY OF WILMINGTON INC. / STORMWATER / TREE REMOVAL, NEW HANCOCK COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| 2 | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 07/26/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

RIVERLIGHTS
 NORTH AMERICA SEXSUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

STORM DRAINAGE DETAILS

| DATE: | 06/01/16 | SCALE: | CG-501 |
|-------------|------------|----------------------|--------|
| MCE PROJ. # | 02735-0168 | HORIZONTAL: | N/A |
| DRAWN | EEM/KCE | VERTICAL: | N/A |
| DESIGNED | KCE | REVISION: | B |
| CHECKED | NJL | NOT FOR CONSTRUCTION | |
| PROJ. MGR. | RMC | | |

| STRUCTURE TABLE | |
|-----------------|---|
| STRUCTURE NAME | DETAILS |
| CB-1-4 | RIM = 20.371 INV IN = 8.760 INV OUT = 17.620 |
| CB-1-5 | RIM = 20.392 INV IN = 8.890 INV IN = 11.100 INV OUT = 8.890 |
| CB-1-6 | RIM = 18.894 INV IN = 9.220 INV OUT = 9.220 |
| CB-1-7 | RIM = 17.284 INV IN = 9.540 INV IN = 12.750 INV OUT = 9.540 |
| CB-1-8 | RIM = 17.285 INV OUT = 13.000 |
| CB-1-9 | RIM = 16.751 INV IN = 9.890 INV IN = 12.500 INV OUT = 9.890 |
| CB-1-10 | RIM = 16.753 INV OUT = 12.750 |
| CB-1-11 | RIM = 18.129 INV IN = 11.220 INV IN = 13.500 INV OUT = 11.220 |
| CB-1-12 | RIM = 18.130 INV OUT = 13.750 |
| CB-1-13 | RIM = 20.388 INV IN = 13.470 INV IN = 15.750 INV OUT = 13.470 |
| CB-1-14 | RIM = 20.389 INV OUT = 16.000 |
| CB-1-15 | RIM = 20.571 INV IN = 15.000 INV IN = 16.000 INV OUT = 15.000 |
| CB-1-16 | RIM = 20.572 INV OUT = 16.350 |
| CB-1-18 | RIM = 20.091 INV IN = 15.400 INV IN = 16.400 INV OUT = 15.400 |
| CB-1-19 | RIM = 20.087 INV OUT = 16.700 |
| CB-1-20 | RIM = 21.574 INV IN = 16.500 INV IN = 16.500 INV OUT = 16.500 |
| CB-1-21 | RIM = 21.573 INV OUT = 17.000 |
| CB-1-26 | RIM = 21.477 INV IN = 11.500 INV IN = 13.380 INV OUT = 11.500 |
| CB-1-33 | RIM = 23.694 INV IN = 12.000 INV IN = 19.150 INV OUT = 12.000 |
| CB-1-34 | RIM = 23.696 INV OUT = 19.440 |
| CB-1-36 | RIM = 21.061 INV IN = 13.270 INV IN = 16.440 INV OUT = 13.270 |
| CB-1-37 | RIM = 21.062 INV OUT = 16.570 |
| CB-1-39 | RIM = 17.847 INV IN = 13.900 INV IN = 13.900 INV IN = 13.900 INV OUT = 13.900 |
| CB-1-41 | RIM = 17.848 INV OUT = 13.980 |
| CB-1-42 | RIM = 19.993 INV IN = 14.500 INV IN = 16.000 INV IN = 14.500 INV OUT = 14.500 |
| CB-1-44 | RIM = 19.995 INV OUT = 14.630 |

| STRUCTURE TABLE | |
|-----------------|---|
| STRUCTURE NAME | DETAILS |
| CB-1-46 | RIM = 22.058 INV IN = 17.620 INV OUT = 17.620 |
| CB-1-47 | RIM = 22.061 INV OUT = 17.750 |
| CB-1-48 | RIM = 19.176 INV IN = 13.850 INV IN = 13.850 INV OUT = 13.850 |
| CB-1-49 | RIM = 19.177 INV OUT = 13.970 |
| CB-1-50 | RIM = 18.423 INV IN = 14.320 INV IN = 14.320 INV OUT = 14.320 |
| CB-1-51 | RIM = 18.425 INV OUT = 14.400 |
| CB-1-52 | RIM = 19.212 INV IN = 14.750 INV IN = 14.750 INV OUT = 14.750 |
| CB-1-53 | RIM = 19.213 INV OUT = 14.880 |
| CB-1-54 | RIM = 21.509 INV IN = 16.000 INV IN = 16.000 INV OUT = 16.000 |
| CB-1-55 | RIM = 21.510 INV OUT = 16.500 |
| CB-1-56 | RIM = 24.131 INV IN = 20.390 INV IN = 19.250 INV OUT = 19.250 |
| CB-1-57 | RIM = 24.132 INV OUT = 19.500 |
| CB-1-58 | RIM = 23.355 INV IN = 16.260 INV IN = 15.000 INV IN = 17.140 INV OUT = 15.000 |
| CB-1-59 | RIM = 23.356 INV OUT = 19.000 |
| CB-1-63 | RIM = 22.128 INV IN = 16.700 INV IN = 17.400 INV OUT = 16.700 |
| CB-1-64 | RIM = 22.129 INV OUT = 17.750 |
| CB-1-65 | RIM = 21.716 INV OUT = 17.130 |
| CB-1-66 | RIM = 21.717 INV OUT = 17.750 |
| CB-1-67 | RIM = 25.173 INV IN = 15.000 INV IN = 18.000 INV OUT = 15.000 |
| CB-1-68 | RIM = 25.174 INV OUT = 19.500 |
| CB-1-69 | RIM = 23.488 INV IN = 15.500 INV IN = 18.000 INV IN = 18.000 INV OUT = 15.500 |
| CB-1-70 | RIM = 23.489 INV OUT = 19.000 |
| CB-1-80 | RIM = 23.954 INV IN = 18.000 INV IN = 18.000 INV OUT = 16.000 |
| CB-1-81 | RIM = 23.955 INV OUT = 19.000 |
| CB-1-83 | RIM = 23.509 INV IN = 16.750 INV IN = 19.000 INV OUT = 16.750 |
| CB-1-84 | RIM = 23.508 INV OUT = 19.250 |

| STRUCTURE TABLE | |
|-----------------|--|
| STRUCTURE NAME | DETAILS |
| CB-1-85 | RIM = 21.668 INV IN = 17.250 INV IN = 17.250 INV OUT = 17.250 |
| CB-1-86 | RIM = 21.667 INV OUT = 17.350 |
| CB-1-87 | RIM = 23.582 INV IN = 18.750 INV OUT = 18.750 |
| CB-1-88 | RIM = 23.581 INV OUT = 19.000 |
| CB-1-89 | RIM = 24.321 INV IN = 16.450 INV IN = 20.000 INV OUT = 16.450 |
| CB-1-90 | RIM = 24.320 INV OUT = 20.260 |
| CB-1-91 | RIM = 23.451 INV IN = 17.000 INV IN = 19.000 INV OUT = 17.000 |
| CB-1-92 | RIM = 23.449 INV OUT = 19.200 |
| CB-1-94 | RIM = 23.407 INV IN = 17.690 INV IN = 19.050 INV OUT = 17.686 |
| CB-1-95 | RIM = 23.409 INV OUT = 19.200 |
| CB-1-96 | RIM = 25.059 INV IN = 20.390 INV IN = 18.090 INV OUT = 18.091 |
| CB-1-97 | RIM = 25.059 INV OUT = 20.500 |
| CB-1-100 | RIM = 25.930 INV IN = 21.390 INV IN = 18.840 INV OUT = 18.839 |
| CB-1-101 | RIM = 25.929 INV OUT = 21.500 |
| CB-1-102 | RIM = 25.317 INV IN = 19.200 INV IN = 20.750 INV OUT = 19.204 |
| CB-1-103 | RIM = 25.317 INV OUT = 21.000 |
| CB-1-104 | RIM = 24.607 INV IN = 19.620 INV IN = 20.190 INV OUT = 19.621 |
| CB-1-105 | RIM = 24.607 INV OUT = 20.250 |
| CB-1-106 | RIM = 24.232 INV IN = 19.910 INV IN = 19.905 INV OUT = 17.500 |
| CB-1-107 | RIM = 24.232 INV OUT = 20.000 |
| CB-1-108 | RIM = 23.110 INV IN = 17.500 INV IN = 18.750 INV OUT = 17.500 |
| CB-1-109 | RIM = 23.109 INV OUT = 19.000 |
| CB-1-110 | RIM = 23.680 INV IN = 18.000 INV IN = 19.250 INV OUT = 18.000 |
| CB-1-111 | RIM = 23.679 INV OUT = 19.500 |
| CB-1-112 | RIM = 24.799 INV IN = 18.700 INV IN = 20.250 INV OUT = 18.700 |
| CB-1-113 | RIM = 24.798 INV OUT = 20.500 |

| STRUCTURE TABLE | |
|-----------------|--|
| STRUCTURE NAME | DETAILS |
| CB-1-115 | RIM = 24.965 INV IN = 20.460 INV IN = 17.250 INV OUT = 20.140 |
| CB-1-116 | RIM = 24.965 INV OUT = 20.520 |
| CB-1-117 | RIM = 27.486 INV IN = 23.000 INV IN = 23.000 INV OUT = 23.000 |
| CB-1-118 | RIM = 27.485 INV OUT = 25.150 |
| CB-1-119 | RIM = 29.473 INV IN = 25.080 INV IN = 25.080 INV OUT = 25.080 |
| CB-1-120 | RIM = 29.416 INV OUT = 25.260 |
| DI-1-3 | RIM = 22.134 INV OUT = 17.000 |
| DI-1-3A | RIM = 10.038 INV IN = 8.100 INV OUT = 8.100 |
| DI-1-22 | RIM = 21.441 INV IN = 16.650 INV IN = 19.064 INV OUT = 16.650 |
| DI-1-23 | RIM = 22.000 INV OUT = 19.554 |
| DI-1-24 | RIM = 20.500 INV IN = 16.950 INV OUT = 16.950 |
| DI-1-25 | RIM = 21.000 INV OUT = 17.100 |
| DI-1-27 | RIM = 22.095 INV IN = 13.660 INV IN = 13.660 INV OUT = 13.660 |
| DI-1-28 | RIM = 23.129 INV OUT = 15.411 |
| DI-1-29 | RIM = 19.793 INV IN = 14.060 INV IN = 14.060 INV OUT = 14.060 |
| DI-1-30 | RIM = 23.000 INV OUT = 14.250 |
| DI-1-31 | RIM = 18.720 INV IN = 14.700 INV OUT = 14.700 |
| DI-1-32 | RIM = 18.058 INV OUT = 14.800 |
| DI-1-40 | RIM = 18.124 INV OUT = 14.250 |
| DI-1-43 | RIM = 21.833 INV OUT = 17.000 |
| DI-1-60 | RIM = 23.256 INV IN = 18.500 INV OUT = 17.500 |
| DI-1-61 | RIM = 25.107 INV IN = 20.000 INV OUT = 19.000 |
| DI-1-62 | RIM = 23.770 INV OUT = 21.000 |
| DI-1-71 | RIM = 24.739 INV IN = 18.250 INV OUT = 18.250 |
| DI-1-72 | RIM = 24.194 INV IN = 18.750 INV IN = 20.250 INV OUT = 18.750 |
| DI-1-73 | RIM = 24.062 INV OUT = 20.500 |

| STRUCTURE TABLE | |
|-----------------|---|
| STRUCTURE NAME | DETAILS |
| DI-1-74 | RIM = 23.737 INV IN = 19.100 INV IN = 19.100 INV OUT = 19.100 |
| DI-1-75 | RIM = 23.595 INV OUT = 19.750 |
| DI-1-76 | RIM = 23.359 INV IN = 19.400 INV IN = 19.400 INV OUT = 19.400 |
| DI-1-77 | RIM = 23.204 INV OUT = 19.600 |
| DI-1-78 | RIM = 24.268 INV IN = 19.850 INV OUT = 19.850 |
| DI-1-79 | RIM = 23.524 INV OUT = 20.000 |
| FES-1-122 | RIM = 13.262 INV IN = 10.387 |
| FES-1-123 | RIM = 12.292 INV IN = 10.500 |
| MH-1-2 | RIM = 21.068 INV IN = 7.960 INV IN = 15.000 INV OUT = 7.960 |
| MH-1-17 | RIM = 20.220 INV IN = 15.233 INV OUT = 15.233 |
| MH-1-35 | RIM = 25.218 INV IN = 14.750 INV IN = 12.570 INV IN = 14.140 INV OUT = 12.570 |
| MH-1-38 | RIM = 19.979 INV IN = 13.430 INV IN = 13.430 INV OUT = 13.430 |
| MH-1-45 | RIM = 22.612 INV IN = 17.470 INV OUT = 17.470 |
| MH-1-82 | RIM = 24.508 INV IN = 16.200 INV IN = 16.200 INV OUT = 16.200 |
| MH-1-93 | RIM = 23.265 INV IN = 17.250 INV IN = 17.600 INV OUT = 17.250 |
| MH-1-98 | RIM = 25.894 INV IN = 18.260 INV OUT = 18.257 |
| MH-1-99 | RIM = 26.359 INV IN = 18.510 INV OUT = 18.511 |
| MH-1-114 | RIM = 26.505 INV IN = 19.250 INV IN = 21.250 INV OUT = 19.250 |
| MH-1-121 | RIM = 14.728 INV IN = 10.567 INV OUT = 10.567 |
| O-1 | RIM = 11.458 INV IN = 7.500 |
| P1-OUT | RIM = 15.150 INV OUT = 10.700 |

| STRUCTURE TABLE | |
|-----------------|--|
| STRUCTURE NAME | DETAILS |
| CB-2-2 | RIM = 14.793 INV IN = 8.230 INV IN = 8.230 INV OUT = 8.230 |
| CB-2-3 | RIM = 14.792 INV IN = 8.760 INV IN = 8.880 INV IN = 8.340 INV OUT = 8.340 |
| CB-2-5 | RIM = 15.398 INV IN = 9.670 INV IN = 10.830 INV OUT = 9.670 |
| CB-2-6 | RIM = 15.399 INV OUT = 10.960 |
| CB-2-7 | RIM = 15.626 INV IN = 11.720 INV IN = 11.060 INV OUT = 11.060 |
| CB-2-8 | RIM = 15.627 INV OUT = 11.190 |
| CB-2-9 | RIM = 17.538 INV IN = 12.970 INV OUT = 12.970 |
| CB-2-10 | RIM = 17.539 INV OUT = 13.100 |
| CB-2-11 | RIM = 15.502 INV IN = 9.700 INV IN = 10.800 INV OUT = 9.700 |
| CB-2-12 | RIM = 15.503 INV OUT = 11.060 |
| CB-2-13 | RIM = 15.245 INV IN = 11.650 INV IN = 10.680 INV OUT = 10.680 |
| CB-2-14 | RIM = 15.246 INV OUT = 10.810 |
| CB-2-15 | RIM = 16.801 INV IN = 12.230 INV OUT = 12.230 |
| CB-2-16 | RIM = 16.809 INV OUT = 12.370 |
| CB-2-18 | RIM = 16.375 INV IN = 8.430 INV IN = 8.160 INV IN = 11.680 INV OUT = 8.430 |
| CB-2-19 | RIM = 16.377 INV OUT = 11.940 |
| CB-2-20 | RIM = 17.076 INV IN = 8.890 INV OUT = 8.890 |
| CB-2-22 | RIM = 16.345 INV IN = 10.230 INV IN = 10.230 INV OUT = 11.910 |
| CB-2-23 | RIM = 16.346 INV IN = 11.780 |
| CB-2-24 | RIM = 15.441 INV IN = 10.850 INV IN = 10.850 INV OUT = 10.850 |
| CB-2-25 | RIM = 15.442 INV OUT = 11.000 |
| CB-2-26 | RIM = 15.751 INV IN = 11.180 INV IN = 11.180 |
| CB-2-27 | RIM = 15.752 INV IN = 11.310 INV OUT = 11.310 |
| CB-2-28 | RIM = 18.325 INV OUT = 13.090 |
| CB-2-29 | RIM = 15.727 INV IN = 8.780 INV OUT = 8.780 |

| STRUCTURE TABLE | |
|-----------------|--|
| STRUCTURE NAME | DETAILS |
| CB-2-30 | RIM = 15.294 INV IN = 9.450 INV IN = 10.590 INV OUT = 9.450 |
| CB-2-31 | RIM = 15.295 INV OUT = 10.850 |
| CB-2-32 | RIM = 15.605 INV IN = 10.000 INV IN = 10.910 INV OUT = 10.000 |
| CB-2-33 | RIM = 15.606 INV OUT = 11.170 |
| CB-2-34 | RIM = 16.165 INV IN = 10.560 INV IN = 11.470 INV OUT = 10.560 |
| CB-2-35 | RIM = 16.166 INV OUT = 11.730 |
| CB-2-36 | RIM = 16.667 INV IN = 11.060 INV IN = 11.970 INV OUT = 11.060 |
| CB-2-37 | RIM = 16.668 INV OUT = 12.230 |
| CB-2-38 | RIM = 17.117 INV IN = 11.440 INV IN = 12.420 INV OUT = 11.440 |
| CB-2-39 | RIM = 17.116 INV OUT = 12.680 |
| CB-2-40 | RIM = 17.576 INV IN = 11.830 INV IN = 12.940 INV OUT = 11.830 |
| CB-2-41 | RIM = 17.577 INV OUT = 13.140 |
| CB-2-42 | RIM = 18.340 INV IN = 12.600 INV OUT = 12.600 |
| CB-2-43 | RIM = 18.340 INV IN = 12.720 INV OUT = 12.720 |
| CB-2-44 | RIM = 18.723 INV IN = 8.430 INV IN = 8.160 INV IN = 11.680 INV OUT = 8.430 |
| CB-2-45 | RIM = 18.052 INV IN = 13.470 INV OUT = 13.470 |
| CB-2-46 | RIM = 18.051 INV OUT = 13.610 |
| CB-3-3 | RIM = 10.005 INV IN = 5.560 INV IN = 5.430 INV OUT = 5.560 |
| CB-3-4 | RIM = 10.005 INV IN = 5.430 |
| CB-3-5 | RIM = 11.425 INV IN = 6.990 INV IN = 6.860 INV OUT = 6.990 |
| CB-3-6 | RIM = 11.426 INV IN = 6.860 |
| CB-3-7 | RIM = 15.742 INV IN = 11.300 INV IN = 11.170 INV OUT = 11.170 |
| CB-3-8 | RIM = 15.742 INV OUT = 11.300 |
| CB-3-9 | RIM = 19.649 INV IN = 15.210 INV IN = 15.080 INV OUT = 15.080 |
| CB-3-10 | RIM = 19.649 INV OUT = 15.210 |

| STRUCTURE TABLE | |
|-----------------|--|
| STRUCTURE NAME | DETAILS |
| CB-3-11 | RIM = 22.258 INV IN = 17.820 INV IN = 10.590 INV OUT = 17.690 |
| CB-3-12 | RIM = 22.257 INV OUT = 17.820 |
| CB-3-13 | RIM = 24.577 INV IN = 20.140 INV OUT = 20.140 |
| CB-3-14 | RIM = 25.553 INV IN = 21.110 INV IN = 20.980 INV OUT = 20.980 |
| CB-3-15 | RIM = 25.552 INV OUT = 21.110 |
| CB-3-16 | RIM = 27.846 INV IN = 23.280 INV OUT = 23.280 |
| CB-3-17 | RIM = 27.850 INV OUT = 23.410 |
| DI-2-4 | RIM = 14.000 INV OUT = 9.000 |
| DI-3-2 | RIM = 16.004 INV IN = 5.270 INV OUT = 5.270 |
| FES-2-51 | RIM = 9.792 INV IN = 8.000 |
| FES-3-18 | RIM = 10.521 INV IN = 9.000 |
| MH-2-1 | RIM = 15.142 INV IN = 7.550 INV IN = 7.550 INV OUT = 7.550 |
| MH-2-17 | RIM = 18.089 INV IN = 8.000 INV OUT = 8.000 |
| MH-2-21 | RIM = 17.457 INV IN = 9.601 INV OUT = 9.601 |
| MH-2-47 | RIM = 17.329 INV IN = 9.700 INV OUT = 9.700 |
| MH-2-48 | RIM = 15.936 INV IN = 9.270 INV OUT = 9.270 |
| MH-2-49 | RIM = 18.283 INV IN = 8.850 INV OUT = 8.850 |
| MH-2-50 | RIM = 19.801 INV IN = 8.630 INV OUT = 8.630 |
| MH-3-1 | RIM = 17.817 INV IN = 4.630 INV OUT = 4.630 |
| O-2 | RIM = 10.817 INV IN = 7.400 |
| O-3 | RIM = 6.182 INV IN = 4.390 |
| P-2 | RIM = 13.502 INV OUT = 10.020 |
| P-3 | RIM = 11.938 INV OUT = 10.000 |

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: _____

| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| 8 | CITY OF WILMINGTON INC. / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/01/2016 |
| 9 | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/28/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

RIVERLIGHTS
NORTH AMERICA SEXISUS HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

STORM DRAINAGE DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN EEM/KCE
DESIGNED NCE
CHECKED KJL
PROJ. MGR. RMC

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

MAC FILE NUMBER: CG-503
DRAWING NUMBER: 38

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

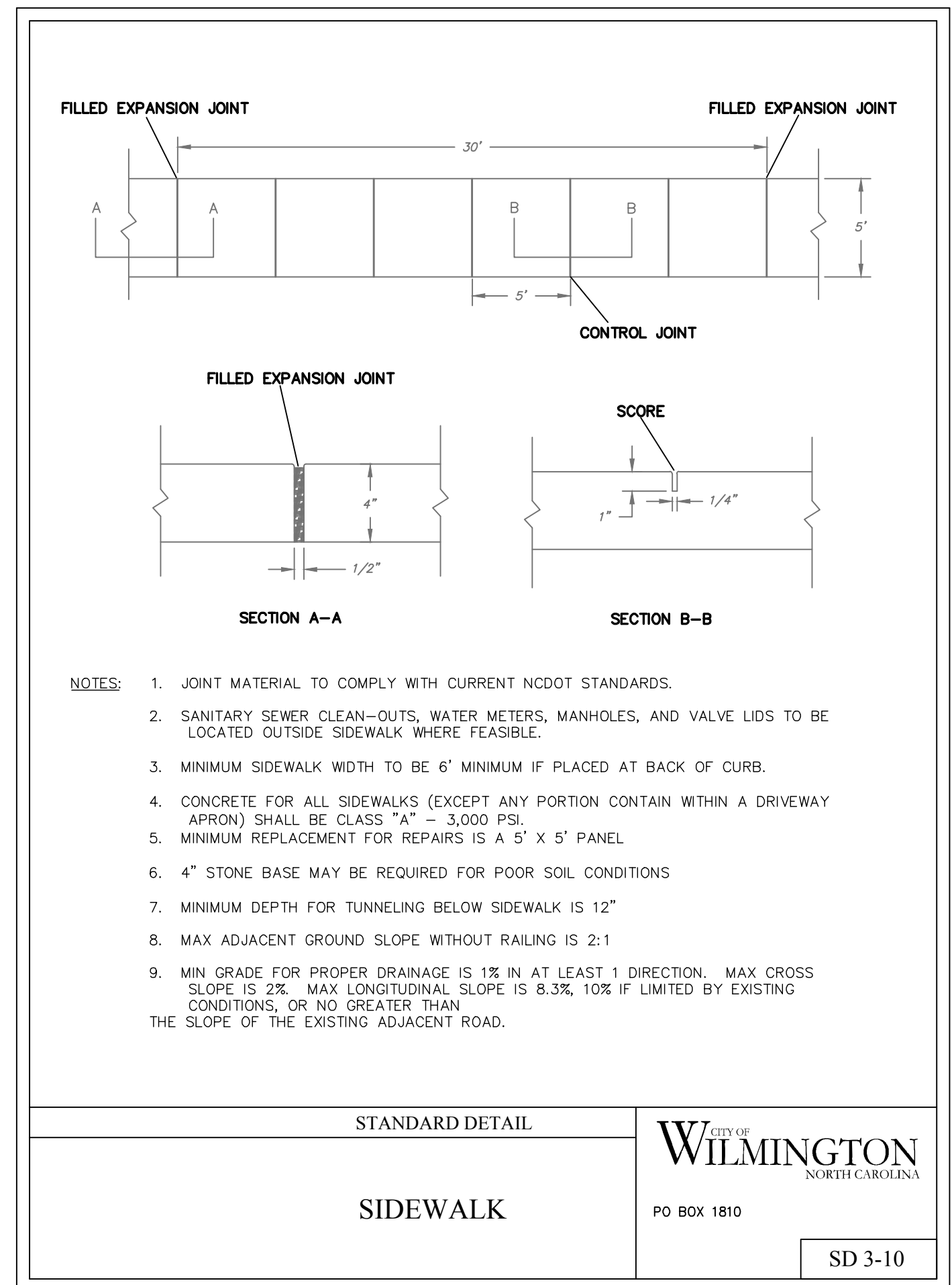
| STORM DRAINAGE PIPE DATA TABLE | | | | | | | |
|--------------------------------|-----------|---------|------|-----------|-------|-------------------|-----------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | DOWNSTREAM INVERT | UPSTREAM INVERT |
| P1-OUT | MH-1-121 | 36.50' | 36" | RCP | 0.36% | 10.70' | 10.57' |
| MH-1-121 | FES-1-123 | 15.78' | 18" | RCP | 0.43% | 10.57' | 10.50' |
| MH-1-114 | CB-1-112 | 109.61' | 18" | RCP | 0.50% | 19.25' | 18.70' |
| MH-1-99 | MH-1-98 | 83.82' | 15" | RCP | 0.30% | 18.51' | 18.26' |
| MH-1-98 | CB-1-96 | 55.70' | 15" | RCP | 0.30% | 18.26' | 18.09' |
| MH-1-93 | CB-1-91 | 51.98' | 24" | RCP | 0.48% | 17.25' | 17.00' |
| MH-1-82 | CB-1-80 | 50.73' | 24" | RCP | 0.39% | 16.20' | 16.00' |
| MH-1-45 | CB-1-42 | 144.33' | 15" | RCP | 2.06% | 17.47' | 14.50' |
| MH-1-38 | CB-1-36 | 54.15' | 24" | RCP | 0.30% | 13.43' | 13.27' |
| MH-1-35 | CB-1-33 | 122.32' | 36" | RCP | 0.47% | 12.57' | 12.00' |
| MH-1-17 | CB-1-15 | 27.85' | 15" | RCP | 0.84% | 15.23' | 15.00' |
| MH-1-2 | O-1 | 50.42' | 42" | RCP | 0.91% | 7.96' | 7.50' |
| DI-1-79 | DI-1-78 | 37.37' | 15" | RCP | 0.40% | 20.00' | 19.85' |
| DI-1-78 | DI-1-76 | 130.29' | 15" | RCP | 0.35% | 19.85' | 19.40' |
| DI-1-77 | DI-1-76 | 34.14' | 15" | RCP | 0.59% | 19.60' | 19.40' |
| DI-1-76 | DI-1-74 | 80.09' | 15" | RCP | 0.37% | 19.40' | 19.10' |
| DI-1-75 | DI-1-74 | 33.75' | 15" | RCP | 1.93% | 19.75' | 19.10' |
| DI-1-74 | DI-1-72 | 106.49' | 15" | RCP | 0.33% | 19.10' | 18.75' |
| DI-1-73 | DI-1-72 | 33.51' | 15" | RCP | 0.75% | 20.50' | 20.25' |
| DI-1-72 | DI-1-71 | 110.77' | 15" | RCP | 0.45% | 18.75' | 18.25' |
| DI-1-71 | CB-1-69 | 30.18' | 18" | RCP | 0.83% | 18.25' | 18.00' |
| DI-1-62 | DI-1-61 | 145.88' | 15" | RCP | 0.69% | 21.00' | 20.00' |
| DI-1-61 | DI-1-60 | 28.46' | 15" | RCP | 1.76% | 19.00' | 18.50' |
| DI-1-60 | CB-1-58 | 30.35' | 15" | RCP | 1.19% | 17.50' | 17.14' |
| DI-1-43 | CB-1-42 | 29.50' | 15" | RCP | 3.39% | 17.00' | 16.00' |
| DI-1-40 | CB-1-39 | 27.77' | 15" | RCP | 1.26% | 14.25' | 13.90' |
| DI-1-32 | DI-1-31 | 34.82' | 15" | RCP | 0.29% | 14.80' | 14.70' |
| DI-1-31 | DI-1-29 | 214.33' | 15" | RCP | 0.30% | 14.70' | 14.06' |
| DI-1-30 | DI-1-29 | 37.00' | 15" | RCP | 0.51% | 14.25' | 14.06' |
| DI-1-29 | DI-1-27 | 132.78' | 15" | RCP | 0.30% | 14.06' | 13.66' |
| DI-1-28 | DI-1-27 | 48.42' | 15" | RCP | 3.62% | 15.41' | 13.66' |

| STORM DRAINAGE PIPE DATA TABLE | | | | | | | |
|--------------------------------|----------|---------|------|-----------|-------|-------------------|-----------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | DOWNSTREAM INVERT | UPSTREAM INVERT |
| DI-1-27 | CB-1-26 | 27.58' | 18" | RCP | 1.02% | 13.66' | 13.38' |
| DI-1-25 | DI-1-24 | 34.00' | 15" | RCP | 0.44% | 17.10' | 16.95' |
| DI-1-24 | DI-1-22 | 101.01' | 15" | RCP | 0.30% | 16.95' | 16.65' |
| DI-1-23 | DI-1-22 | 32.68' | 15" | RCP | 1.50% | 19.55' | 19.06' |
| DI-1-22 | CB-1-20 | 30.35' | 15" | RCP | 0.49% | 16.65' | 16.50' |
| DI-1-3A | MH-1-2 | 28.11' | 42" | RCP | 0.50% | 8.10' | 7.96' |
| DI-1-3 | MH-1-2 | 100.32' | 15" | RCP | 1.99% | 17.00' | 15.00' |
| CB-1-120 | CB-1-119 | 35.42' | 15" | RCP | 0.51% | 25.26' | 25.08' |
| CB-1-119 | CB-1-117 | 100.47' | 15" | RCP | 2.07% | 25.08' | 23.00' |
| CB-1-118 | CB-1-117 | 26.30' | 15" | RCP | 8.18% | 25.15' | 23.00' |
| CB-1-117 | MH-1-114 | 54.30' | 15" | RCP | 3.22% | 23.00' | 21.25' |
| CB-1-116 | CB-1-115 | 21.30' | 15" | RCP | 0.28% | 20.52' | 20.46' |
| CB-1-115 | MH-1-114 | 177.83' | 15" | RCP | 0.50% | 20.14' | 19.25' |
| CB-1-113 | CB-1-112 | 26.30' | 15" | RCP | 0.95% | 20.50' | 20.25' |
| CB-1-112 | CB-1-110 | 112.34' | 18" | RCP | 0.62% | 18.70' | 18.00' |
| CB-1-111 | CB-1-110 | 26.30' | 15" | RCP | 0.95% | 19.50' | 19.25' |
| CB-1-110 | CB-1-108 | 155.63' | 18" | RCP | 0.32% | 18.00' | 17.50' |
| CB-1-109 | CB-1-108 | 26.30' | 15" | RCP | 0.95% | 19.00' | 18.75' |
| CB-1-108 | MH-1-93 | 69.57' | 24" | RCP | 0.36% | 17.50' | 17.25' |
| CB-1-107 | CB-1-106 | 21.30' | 15" | RCP | 0.42% | 20.00' | 19.91' |
| CB-1-106 | CB-1-104 | 95.05' | 15" | RCP | 0.30% | 19.91' | 19.62' |
| CB-1-105 | CB-1-104 | 21.30' | 15" | RCP | 0.28% | 20.25' | 20.19' |
| CB-1-104 | CB-1-102 | 140.44' | 15" | RCP | 0.30% | 19.62' | 19.20' |
| CB-1-103 | CB-1-102 | 21.30' | 15" | RCP | 1.17% | 21.00' | 20.75' |
| CB-1-102 | CB-1-100 | 121.27' | 15" | RCP | 0.30% | 19.20' | 18.84' |
| CB-1-101 | CB-1-100 | 21.30' | 15" | RCP | 0.52% | 21.50' | 21.39' |
| CB-1-100 | MH-1-99 | 109.60' | 15" | RCP | 0.30% | 18.84' | 18.51' |
| CB-1-97 | CB-1-96 | 21.30' | 15" | RCP | 0.52% | 20.50' | 20.39' |
| CB-1-96 | CB-1-94 | 133.74' | 15" | RCP | 0.30% | 18.09' | 17.69' |
| CB-1-95 | CB-1-94 | 21.30' | 15" | RCP | 0.70% | 19.20' | 19.05' |
| CB-1-94 | MH-1-93 | 28.66' | 15" | RCP | 0.30% | 17.69' | 17.60' |

| STORM DRAINAGE PIPE DATA TABLE | | | | | | | |
|--------------------------------|---------|---------|------|-----------|--------|-------------------|-----------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | DOWNSTREAM INVERT | UPSTREAM INVERT |
| CB-1-92 | CB-1-91 | 26.28' | 15" | RCP | 0.76% | 19.20' | 19.00' |
| CB-1-91 | CB-1-89 | 176.92' | 24" | RCP | 0.31% | 17.00' | 16.45' |
| CB-1-90 | CB-1-89 | 26.30' | 15" | RCP | 0.99% | 20.26' | 20.00' |
| CB-1-89 | MH-1-82 | 75.47' | 24" | RCP | 0.33% | 16.45' | 16.20' |
| CB-1-88 | CB-1-87 | 26.30' | 15" | RCP | 0.95% | 19.00' | 18.75' |
| CB-1-87 | CB-1-85 | 149.34' | 15" | RCP | 1.00% | 18.75' | 17.25' |
| CB-1-86 | CB-1-85 | 26.30' | 15" | RCP | 0.38% | 17.35' | 17.25' |
| CB-1-85 | CB-1-83 | 142.62' | 15" | RCP | 0.35% | 17.25' | 16.75' |
| CB-1-84 | CB-1-83 | 26.30' | 15" | RCP | 0.95% | 19.25' | 19.00' |
| CB-1-83 | MH-1-82 | 83.83' | 15" | RCP | 0.66% | 16.75' | 16.20' |
| CB-1-81 | CB-1-80 | 26.30' | 15" | RCP | 3.80% | 19.00' | 18.00' |
| CB-1-80 | CB-1-69 | 103.33' | 24" | RCP | 0.48% | 16.00' | 15.50' |
| CB-1-70 | CB-1-69 | 26.30' | 15" | RCP | 3.80% | 19.00' | 18.00' |
| CB-1-69 | CB-1-67 | 152.70' | 24" | RCP | 0.33% | 15.50' | 15.00' |
| CB-1-68 | CB-1-67 | 26.30' | 15" | RCP | 5.70% | 19.50' | 18.00' |
| CB-1-67 | MH-1-35 | 55.91' | 24" | RCP | 0.45% | 15.00' | 14.75' |
| CB-1-66 | | 26.30' | 15" | RCP | 0.30% | 17.75' | 17.67' |
| CB-1-65 | CB-1-63 | 86.33' | 15" | RCP | 0.50% | 17.13' | 16.70' |
| CB-1-64 | CB-1-63 | 26.30' | 15" | RCP | 1.33% | 17.75' | 17.40' |
| CB-1-63 | CB-1-58 | 86.87' | 15" | RCP | 0.51% | 16.70' | 16.26' |
| CB-1-59 | CB-1-58 | 26.30' | 15" | RCP | 15.21% | 19.00' | 15.00' |
| CB-1-58 | MH-1-35 | 164.56' | 15" | RCP | 0.52% | 15.00' | 14.14' |
| CB-1-57 | CB-1-56 | 26.30' | 15" | RCP | 0.95% | 19.50' | 19.25' |
| CB-1-56 | CB-1-54 | 165.54' | 15" | RCP | 1.96% | 19.25' | 16.00' |
| CB-1-55 | CB-1-54 | 26.30' | 15" | RCP | 1.90% | 16.50' | 16.00' |
| CB-1-54 | CB-1-52 | 148.68' | 15" | RCP | 0.84% | 16.00' | 14.75' |
| CB-1-53 | CB-1-52 | 26.30' | 15" | RCP | 0.49% | 14.88' | 14.75' |
| CB-1-52 | CB-1-50 | 126.95' | 15" | RCP | 0.34% | 14.75' | 14.32' |
| CB-1-51 | CB-1-50 | 26.30' | 15" | RCP | 0.30% | 14.40' | 14.32' |
| CB-1-50 | CB-1-48 | 161.05' | 18" | RCP | 0.29% | 14.32' | 13.85' |
| CB-1-49 | CB-1-48 | 26.30' | 15" | RCP | 0.46% | 13.97' | 13.85' |

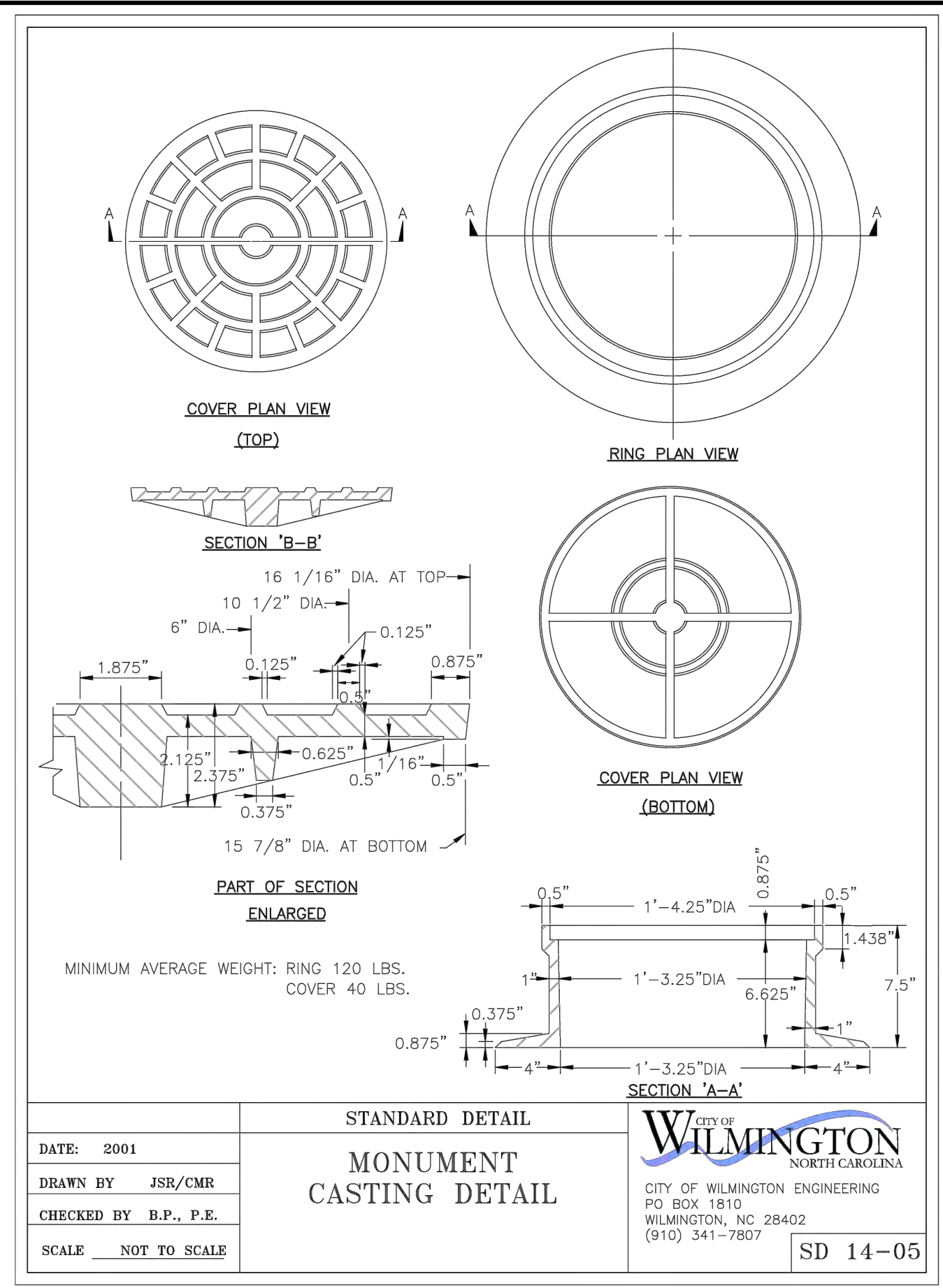
| STORM DRAINAGE PIPE DATA TABLE | | | | | | | |
|--------------------------------|-----------|---------|------|-----------|-------|-------------------|-----------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | DOWNSTREAM INVERT | UPSTREAM INVERT |
| CB-1-48 | MH-1-38 | 139.00' | 18" | RCP | 0.30% | 13.85' | 13.43' |
| CB-1-47 | CB-1-46 | 26.30' | 15" | RCP | 0.49% | 17.75' | 17.62' |
| CB-1-46 | MH-1-45 | 30.28' | 15" | RCP | 0.50% | 17.62' | 17.47' |
| CB-1-44 | CB-1-42 | 26.30' | 15" | RCP | 0.49% | 14.63' | 14.50' |
| CB-1-42 | CB-1-39 | 172.24' | 18" | RCP | 0.35% | 14.50' | 13.90' |
| CB-1-41 | CB-1-39 | 26.30' | 15" | RCP | 0.30% | 13.98' | 13.90' |
| CB-1-39 | MH-1-38 | 159.22' | 24" | RCP | 0.30% | 13.90' | 13.43' |
| CB-1-37 | CB-1-36 | 26.30' | 15" | RCP | 0.49% | 16.57' | 16.44' |
| CB-1-36 | MH-1-35 | 232.48' | 30" | RCP | 0.30% | 13.27' | 12.57' |
| CB-1-34 | CB-1-33 | 26.30' | 15" | RCP | 0.99% | 19.44' | 19.18' |
| CB-1-33 | CB-1-26 | 95.30' | 36" | RCP | 0.52% | 12.00' | 11.50' |
| CB-1-26 | CB-1-5 | 46.54' | 36" | RCP | 0.86% | 11.50' | 11.10' |
| CB-1-21 | CB-1-20 | 26.30' | 15" | RCP | 1.90% | 17.00' | 16.50' |
| CB-1-20 | CB-1-18 | 110.71' | 15" | RCP | 0.99% | 16.50' | 15.40' |
| CB-1-19 | CB-1-18 | 26.30' | 15" | RCP | 1.14% | 16.70' | 16.40' |
| CB-1-18 | MH-1-17 | 28.97' | 15" | RCP | 0.58% | 15.40' | 15.23' |
| CB-1-16 | CB-1-15 | 26.30' | 15" | RCP | 1.33% | 16.35' | 16.00' |
| CB-1-15 | CB-1-13 | 151.80' | 15" | RCP | 1.01% | 15.00' | 13.47' |
| CB-1-14 | CB-1-13 | 26.30' | 15" | RCP | 0.95% | 16.00' | 15.75' |
| CB-1-13 | CB-1-11 | 149.93' | 15" | RCP | 1.50% | 13.47' | 11.22' |
| CB-1-12 | CB-1-11 | 26.30' | 15" | RCP | 0.95% | 13.75' | 13.50' |
| CB-1-11 | CB-1-9 | 129.05' | 18" | RCP | 1.03% | 11.22' | 9.89' |
| CB-1-10 | CB-1-9 | 26.30' | 15" | RCP | 0.95% | 12.75' | 12.50' |
| CB-1-9 | CB-1-7 | 74.18' | 24" | RCP | 0.47% | 9.89' | 9.54' |
| CB-1-8 | CB-1-7 | 26.30' | 15" | RCP | 0.95% | 13.00' | 12.75' |
| CB-1-7 | CB-1-6 | 63.10' | 24" | RCP | 0.51% | 9.54' | 9.22' |
| CB-1-6 | CB-1-5 | 65.05' | 24" | RCP | 0.51% | 9.22' | 8.89' |
| CB-1-5 | CB-1-4 | 26.31' | 42" | RCP | 0.49% | 8.89' | 8.76' |
| CB-1-4 | DI-1-3A | 131.56' | 42" | RCP | 0.50% | 8.76' | 8.10' |
| | FES-1-122 | 31.79' | 30" | RCP | 0.36% | 10.50' | 10.39' |

| STORM DRAINAGE PIPE DATA TABLE | | | | | | | |
|--------------------------------|----------|---------|------|-----------|-------|-------------------|-----------------|
| FROM | TO | LENGTH | SIZE | PIPE TYPE | SLOPE | DOWNSTREAM INVERT | UPSTREAM INVERT |
| P-3 | FES-3-18 | 75.62' | 15" | RCP | 1.32% | 10.00' | 9.00' |
| P-2 | MH-2-47 | 102.55' | 18" | RCP | 0.31% | 10.02' | 9.70' |
| MH-3-1 | O-3 | 78.04' | 18" | RCP | 0.31% | 4.63' | 4.39' |
| MH-2-50 | FES-2-51 | 216.96' | 18" | RCP | 0.29% | 8.63' | 8.00' |
| MH-2-49 | MH-2-50 | 79.21' | 18" | RCP | 0.28% | 8.85' | 8.63' |
| MH-2-48 | MH-2-49 | 134.63' | 18" | RCP | 0.31% | 9.27' | 8.85' |
| MH-2-47 | MH-2-48 | 143.59' | 18" | RCP | 0.30% | 9.70' | 9.27' |
| MH-2-21 | CB-2-20 | 142.13' | 18" | RCP | 0.50% | 9.60' | 8.89' |
| MH-2-17 | MH-2-1 | 148.43' | 30" | RCP | 0.30% | 8.00' | 7.55' |
| MH-2-1 | O-2 | 42.36' | 36" | RCP | 0.35% | 7.55' | 7.40' |
| DI-3-2 | MH-3-1 | 215.30' | 18" | RCP | 0.30% | 5.27' | 4.63' |
| DI-2-4 | CB-2-3 | 137.48' | 18" | RCP | 0.48% | 9.00' | 8.34' |
| CB-3-17 | CB-3-16 | 26.30' | 15" | RCP | 0.49% | 23.41' | 23.28' |
| CB-3-16 | CB-3-14 | 169.70' | 15" | RCP | 1.28% | 23.28' | 21.11' |
| CB-3-15 | CB-3-14 | 26.30' | 15" | RCP | 0.49% | 21.11' | 20.98' |
| CB-3-14 | CB-3-13 | 43.71' | 15" | RCP | 1.92% | 20.98' | 20.14' |
| CB-3-13 | CB-3-11 | 67.71' | 15" | RCP | 3.43% | 20.14' | 17.82' |
| CB-3-12 | CB-3-11 | 26.30' | 15" | RCP | 0.49% | 17.82' | 17.69' |
| CB-3-11 | CB-3-9 | 59.32' | 15" | RCP | 4.18% | 17.69' | 15.21' |
| CB-3-10 | CB-3-9 | 26.30' | 15" | RCP | 0.49% | 15.21' | 15.08' |
| CB-3-9 | CB-3-7 | 78.00' | 15" | RCP | 4.85% | 15.08' | 11.30' |
| CB-3-8 | CB-3-7 | 26.30' | 15" | RCP | 0.49% | 11.30' | 11.17' |
| CB-3-7 | CB-3-5 | 117.05' | 15" | RCP | 3.57% | 11.17' | 6.99' |
| CB-3-5 | CB-3-3 | 118.90' | 18" | RCP | 1.09% | 6.86' | 5.56' |
| CB-3-5 | CB-3-6 | 26.30' | 15" | RCP | 0.49% | | |



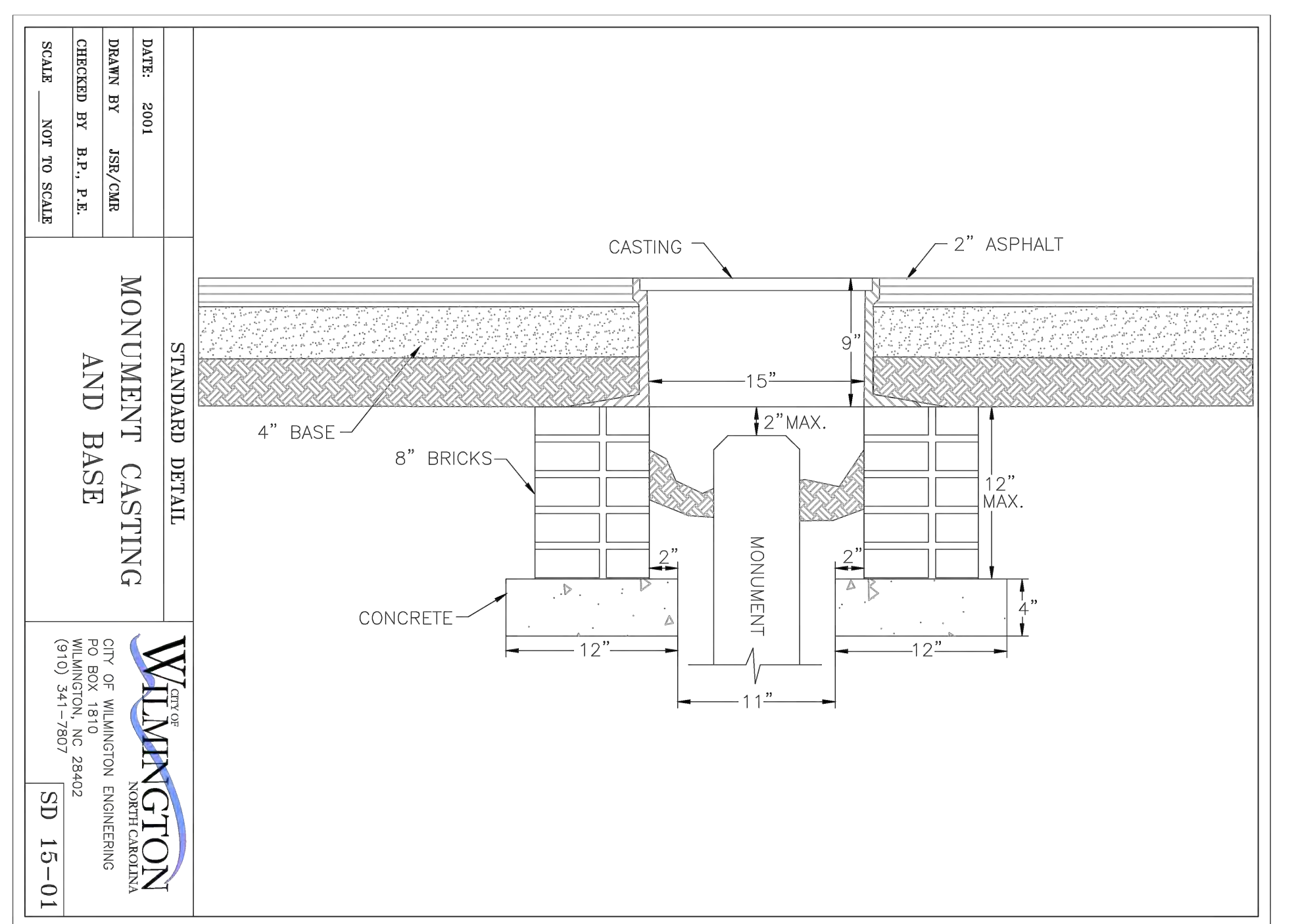
STANDARD DETAIL
SIDEWALK

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



STANDARD DETAIL
MONUMENT CASTING DETAIL

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

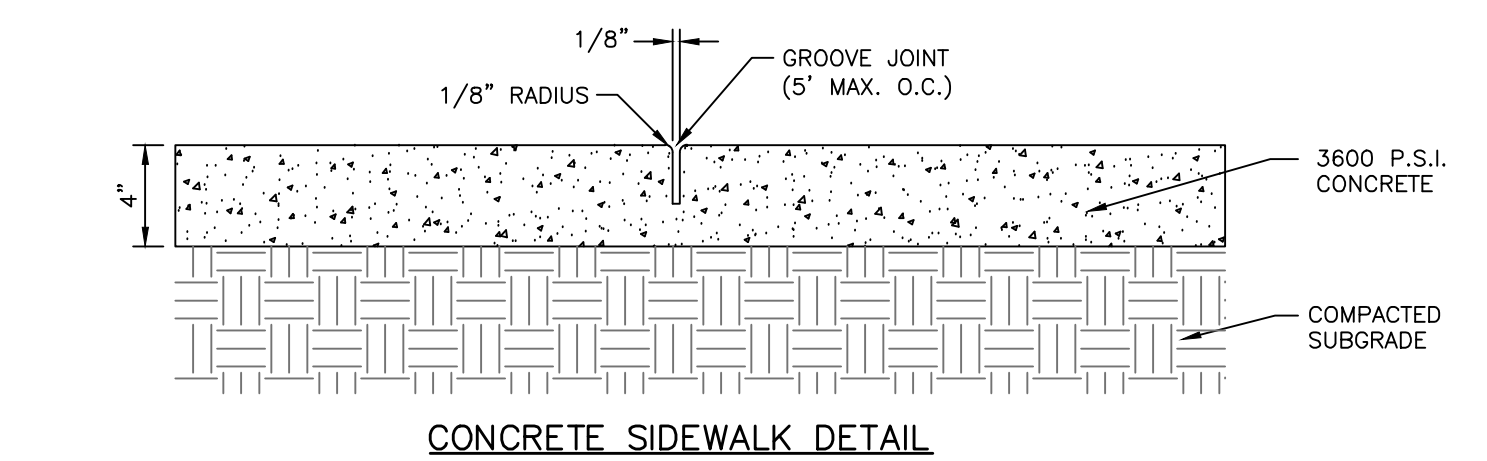


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CHECKED BY: B.P., P.E.
SCALE: NOT TO SCALE

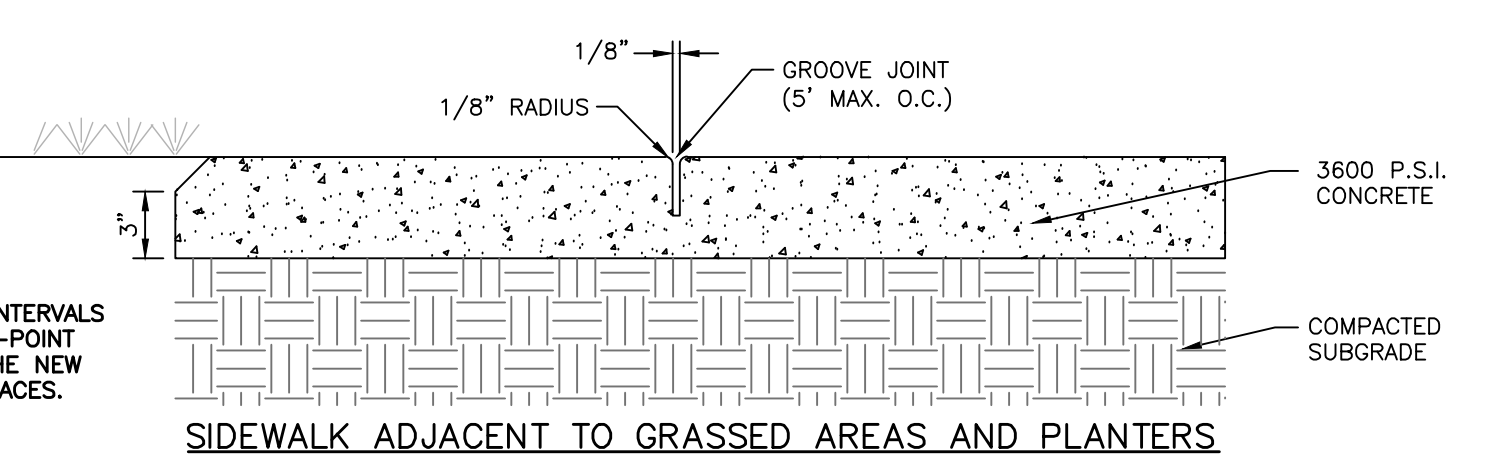
STANDARD DETAIL
MONUMENT CASTING AND BASE

CITY OF WILMINGTON
NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
WILMINGTON, NC 28402
(910) 341-7807
SD 15-01

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



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



CONCRETE SIDEWALK DETAIL
NOT TO SCALE

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

Date: _____ Permit # _____
Signed: _____

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

1 inch

Approved Construction Plan

Name _____ Date _____

Planning _____
Traffic _____
Fire _____

| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON INC / STORMWATER / TREE REMOVAL, NEW HANCOCK COUNTY EROSION CONTROL, AND CPWA SUBMITTAL | 06/11/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 07/28/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

RIVERLIGHTS
NORTH AMERICA SEXISUS HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

SITE DETAILS

DATE: _____
MCE PROJ. # 02735-0188
DRAWN EEM/KCE
DESIGNED KCE
CHECKED NJL
PROJ. MGR. RMC

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

MAC FILE NUMBER: CS-501
DRAWING NUMBER: 40

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

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GENERAL NOTES

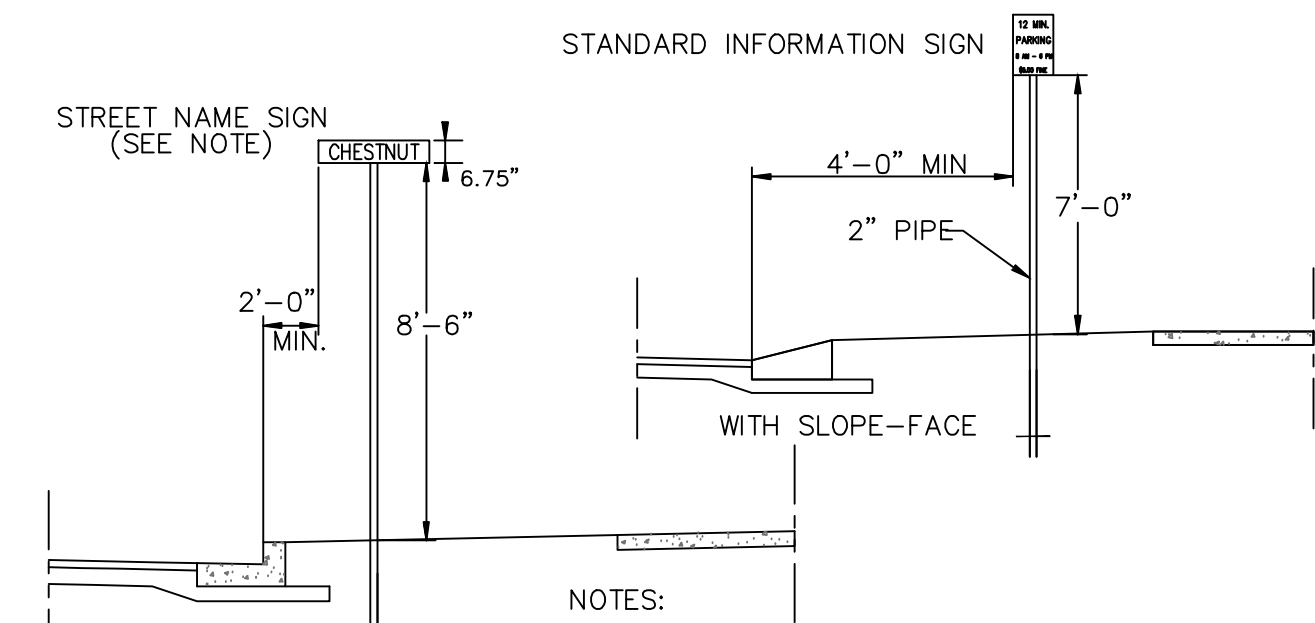
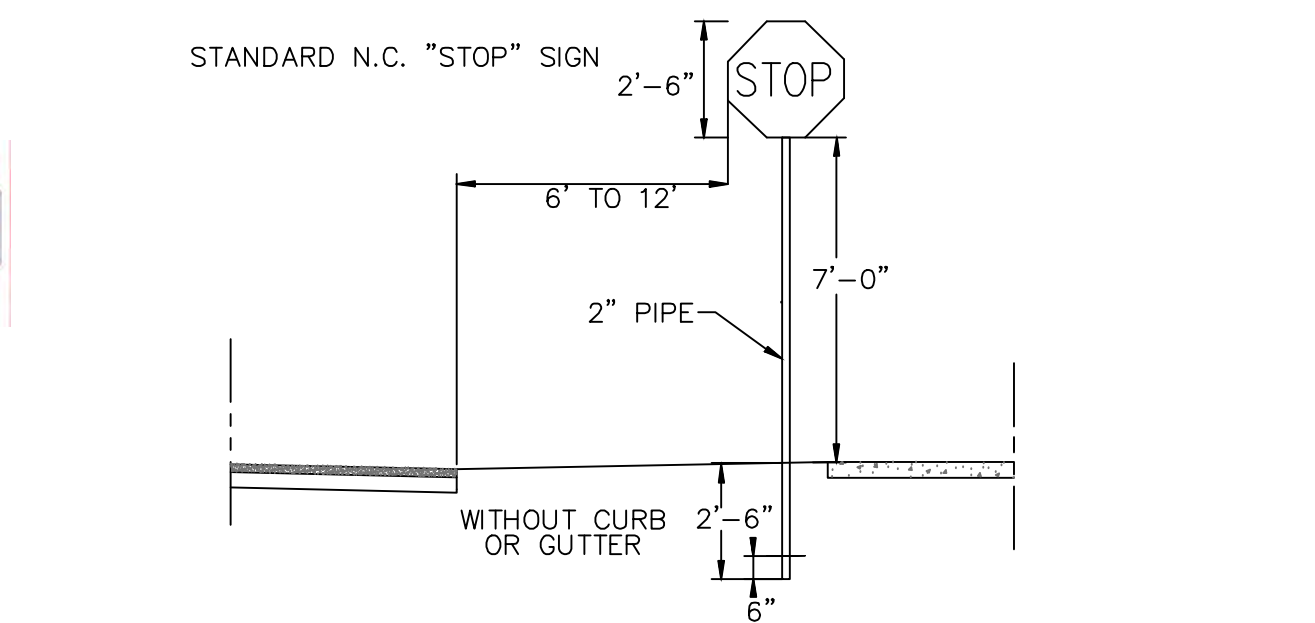
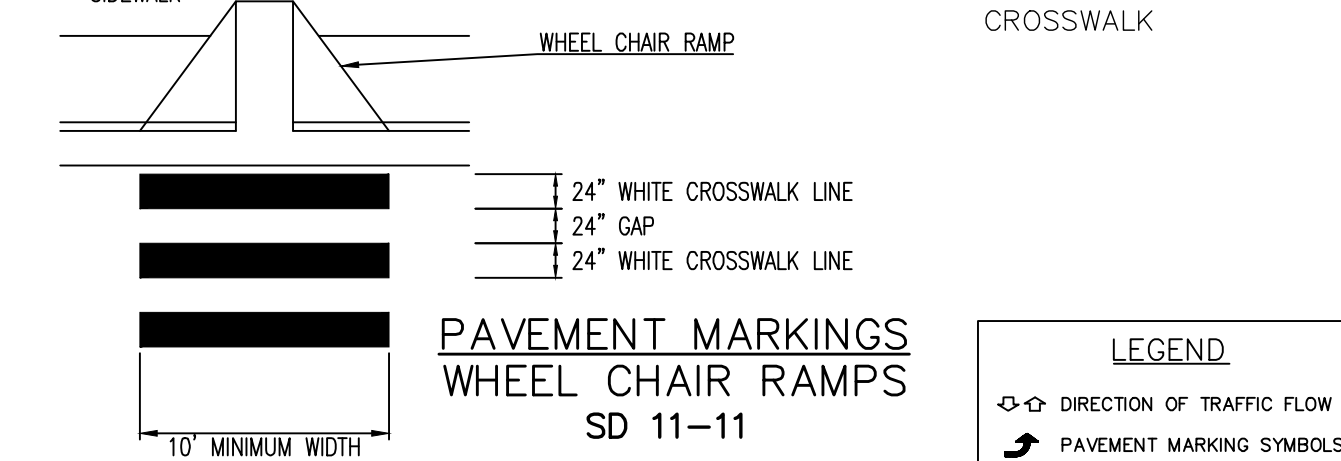
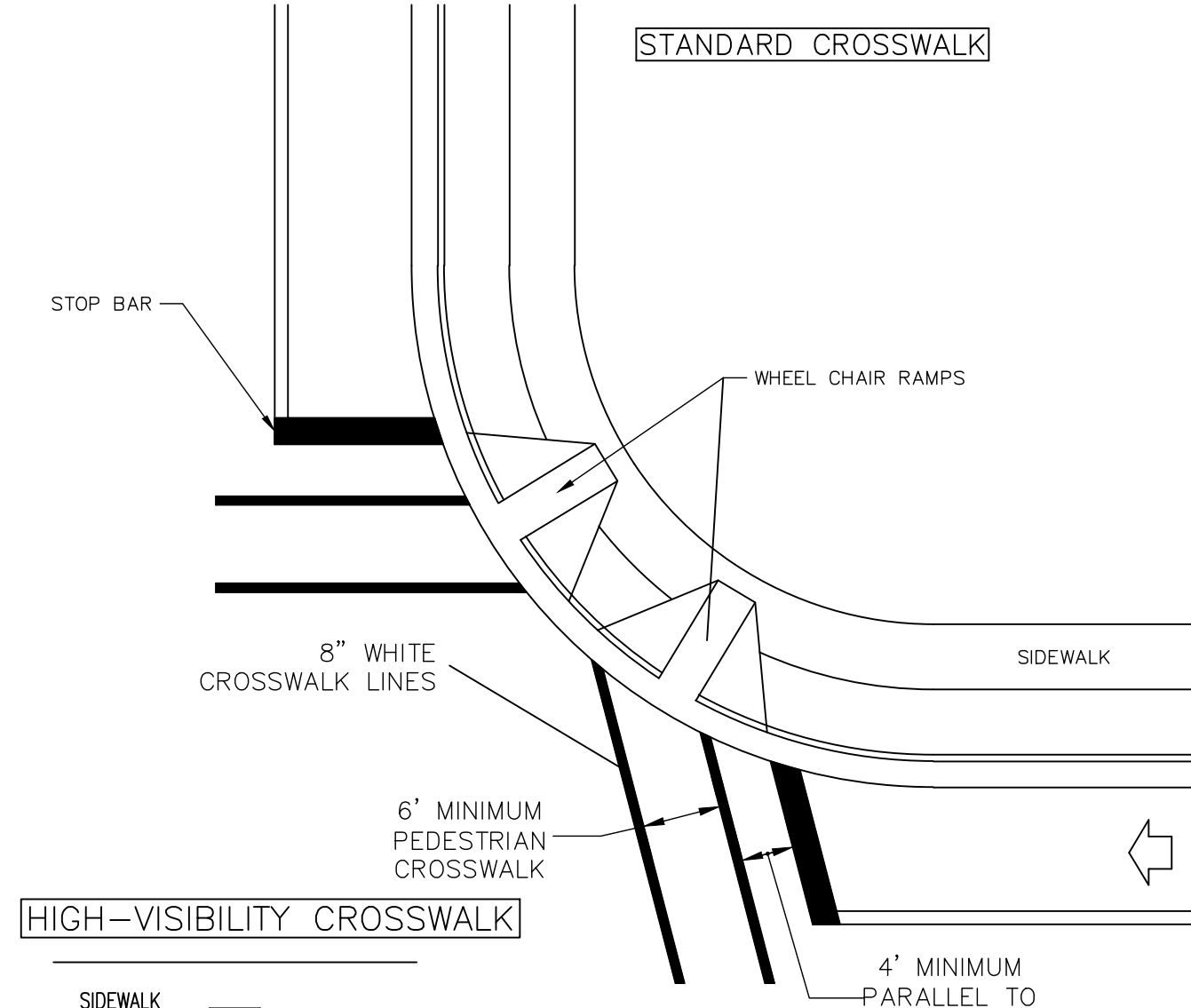
1. IN ACCORDANCE WITH N.C.G.S. 136-44.14, ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED SHALL PROVIDE WHEELCHAIR RAMP FOR THE PHYSICALLY HANDICAPPED ON EACH SIDE OF ANY STREET OR ROAD, WHERE CURBS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
2. WHEELCHAIR RAMP SHALL BE LOCATED AS INDICATED IN DETAIL DRAWINGS; HOWEVER, EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. MAY AFFECT PLACEMENT.
3. CURB RAMP 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 RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
3. A 1/2-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.

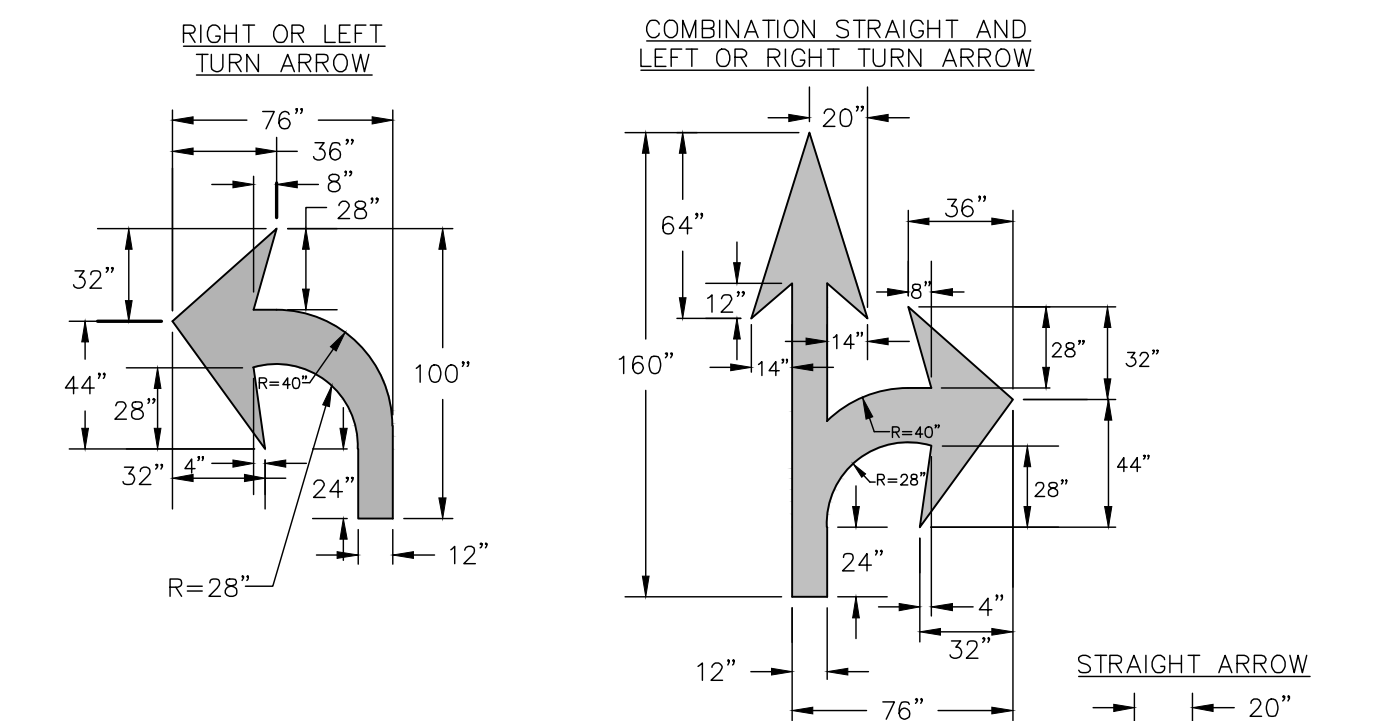
ADDITIONAL NOTES

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. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
5. CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES.
6. THE BOTTOM OF DIAGONAL (CORNER TYPE) CURB RAMPS AT MARKED CROSSINGS SHALL HAVE 48-IN. MINIMUM CLEAR SPACE WITHIN THE MARKINGS.
7. 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.

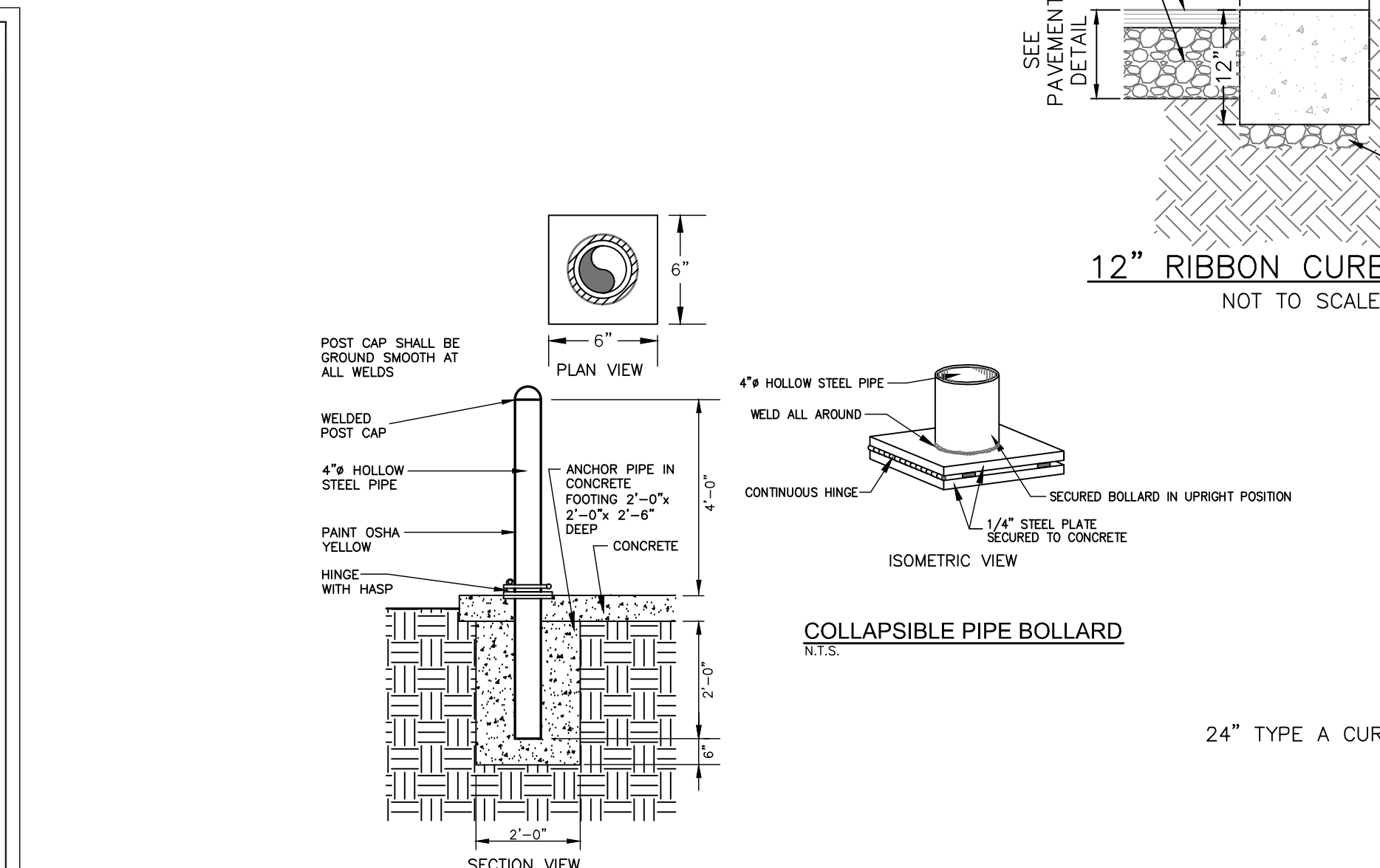
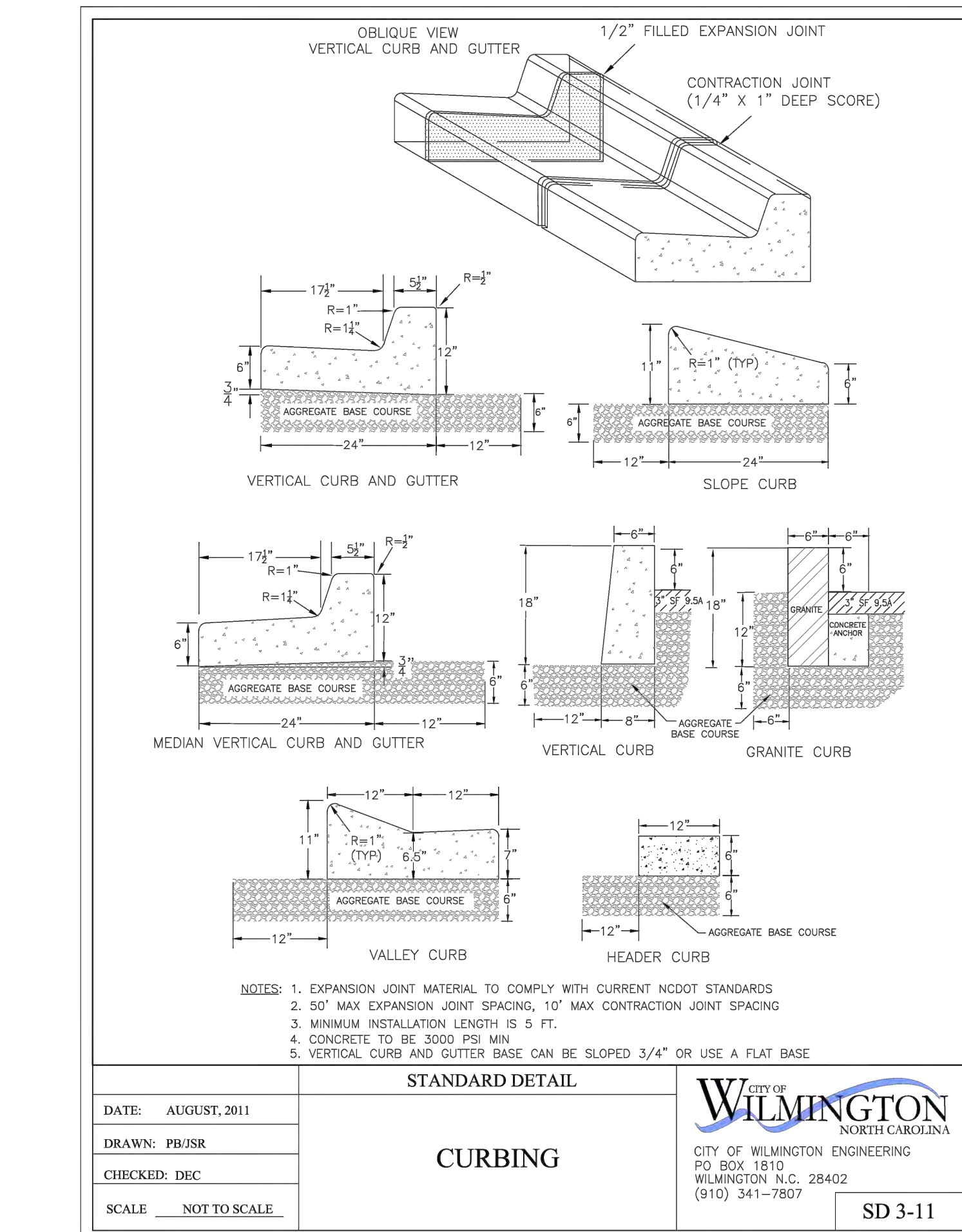


- NOTES:**
1. STREET NAME SIGNS SHALL BE A MINIMUM OF 6" EXTRUDED ALUMINUM BLADES USING A MINIMUM OF 4" C SERIES LETTERING IN REFLECTIVE SILVER & REFLECTIVE GREEN BACKGROUND.
 2. ALL REFLECTIVE SIGNS SHALL BE MADE OF ENGINEERING GRADE OR HIGH INTENSITY GRADE REFLECTIVE SHEETING OR APPROVED EQUIVALENT.
 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



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

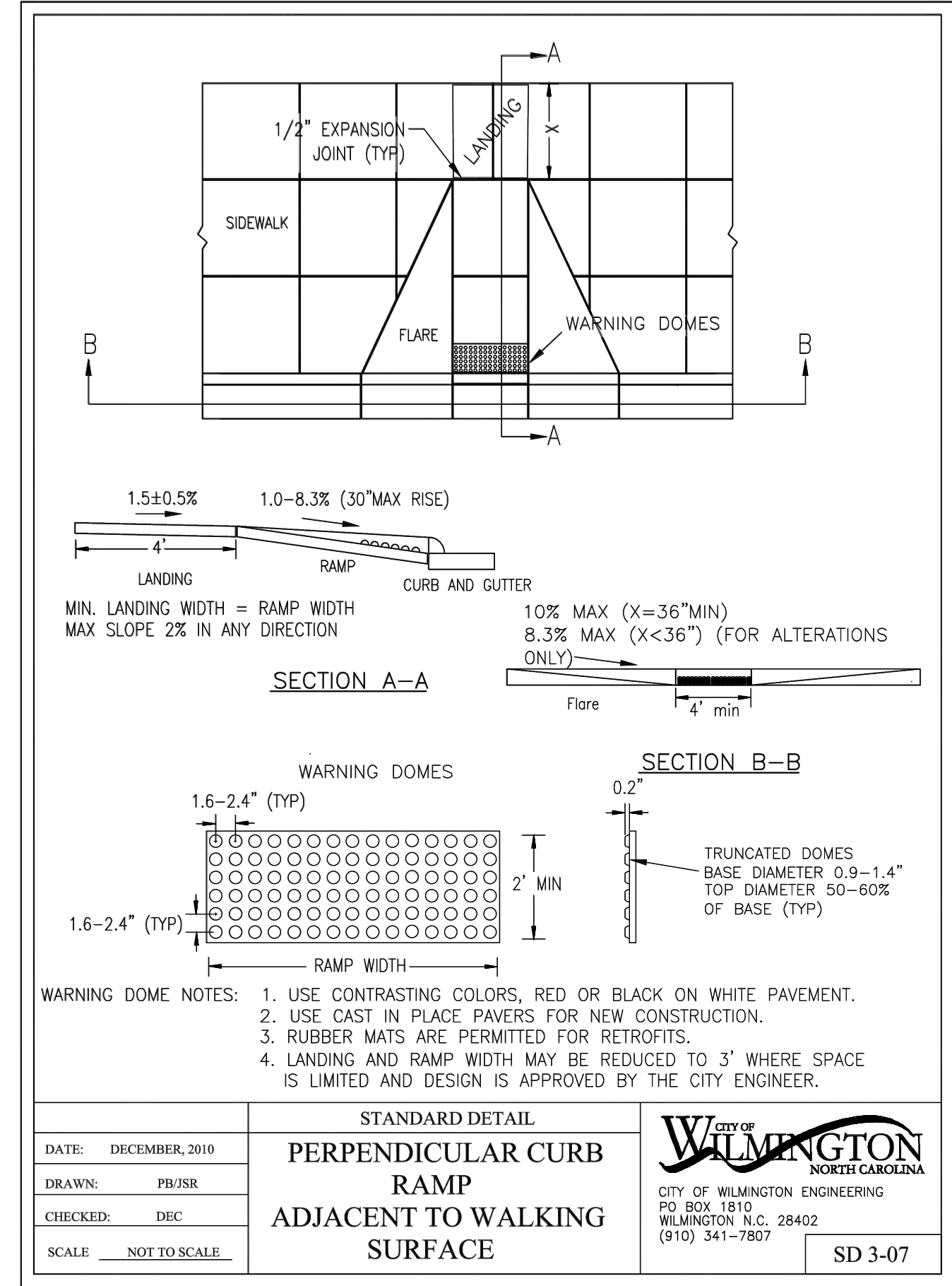
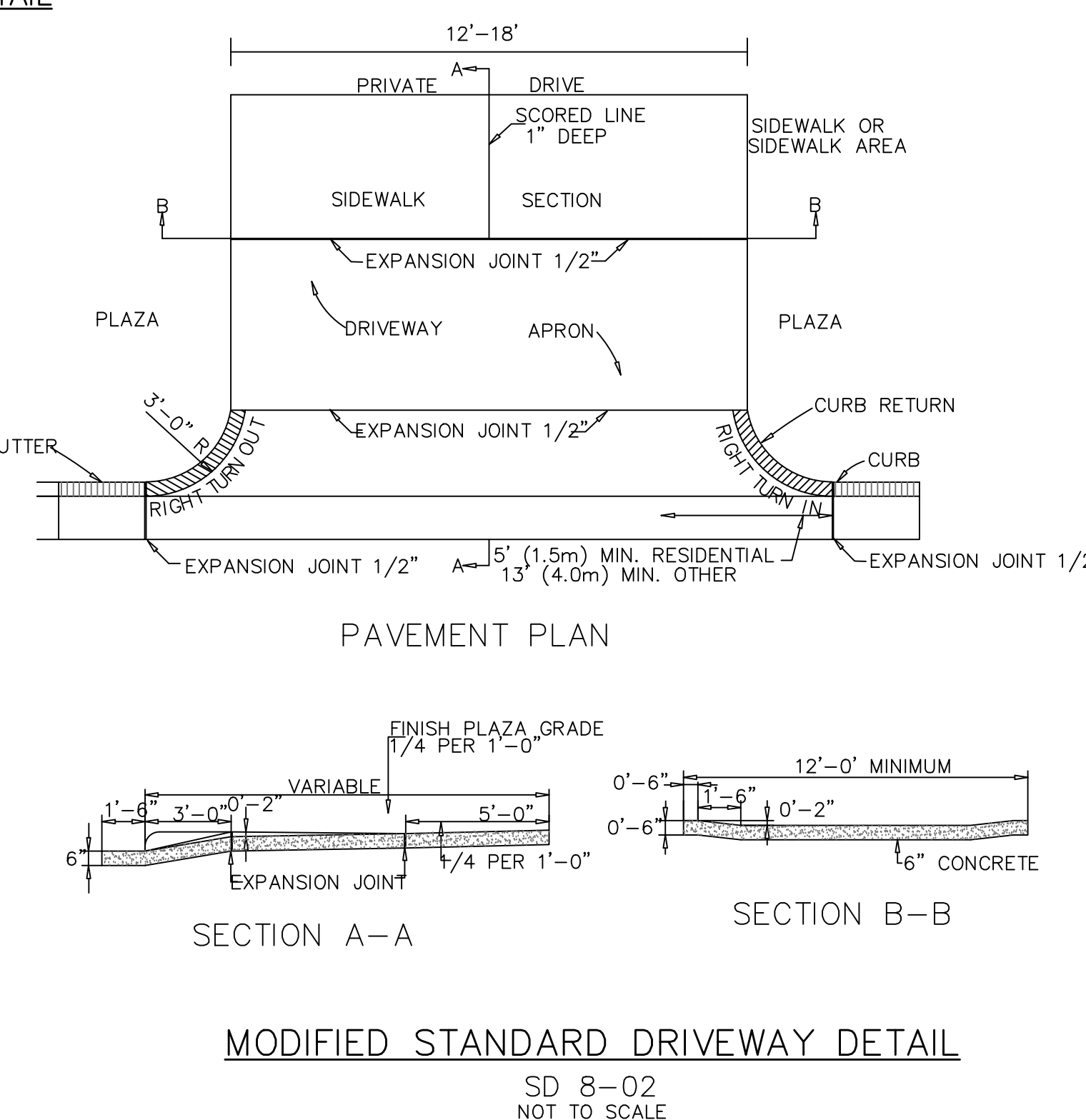


Approved Construction Plan

| 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.

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



| REVNO. | DESCRIPTION | DATE |
|--------|-------------|------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

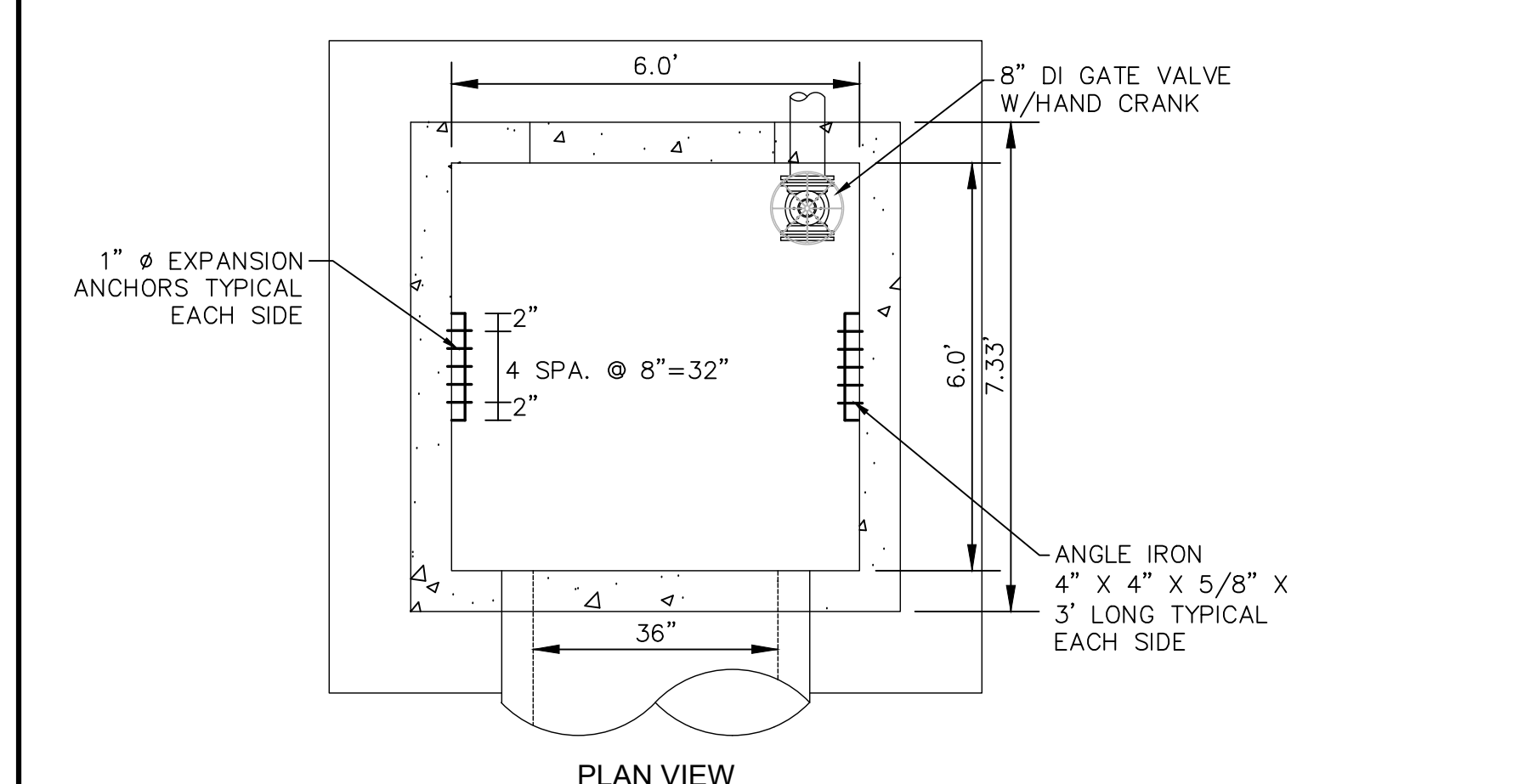
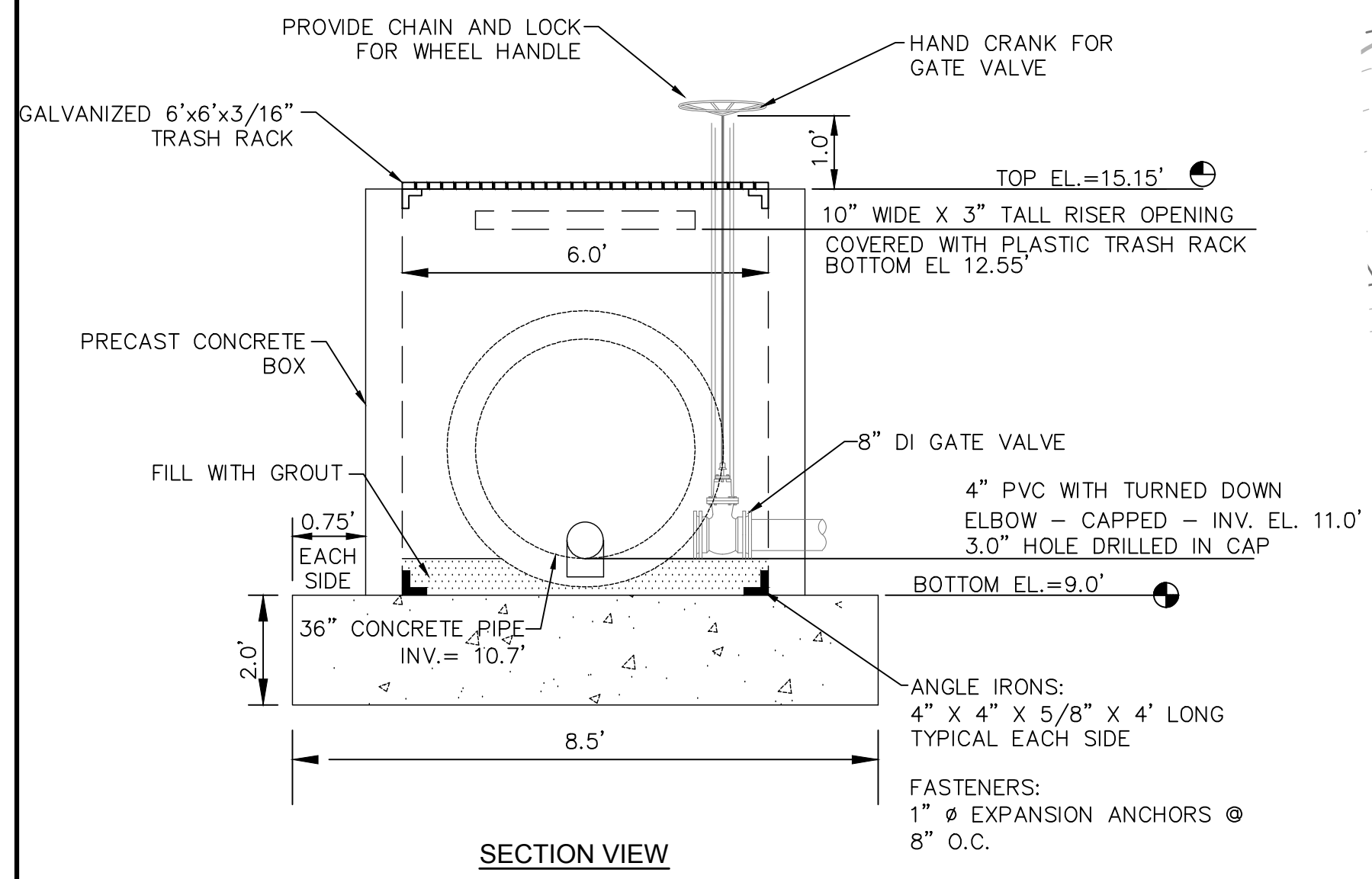
PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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

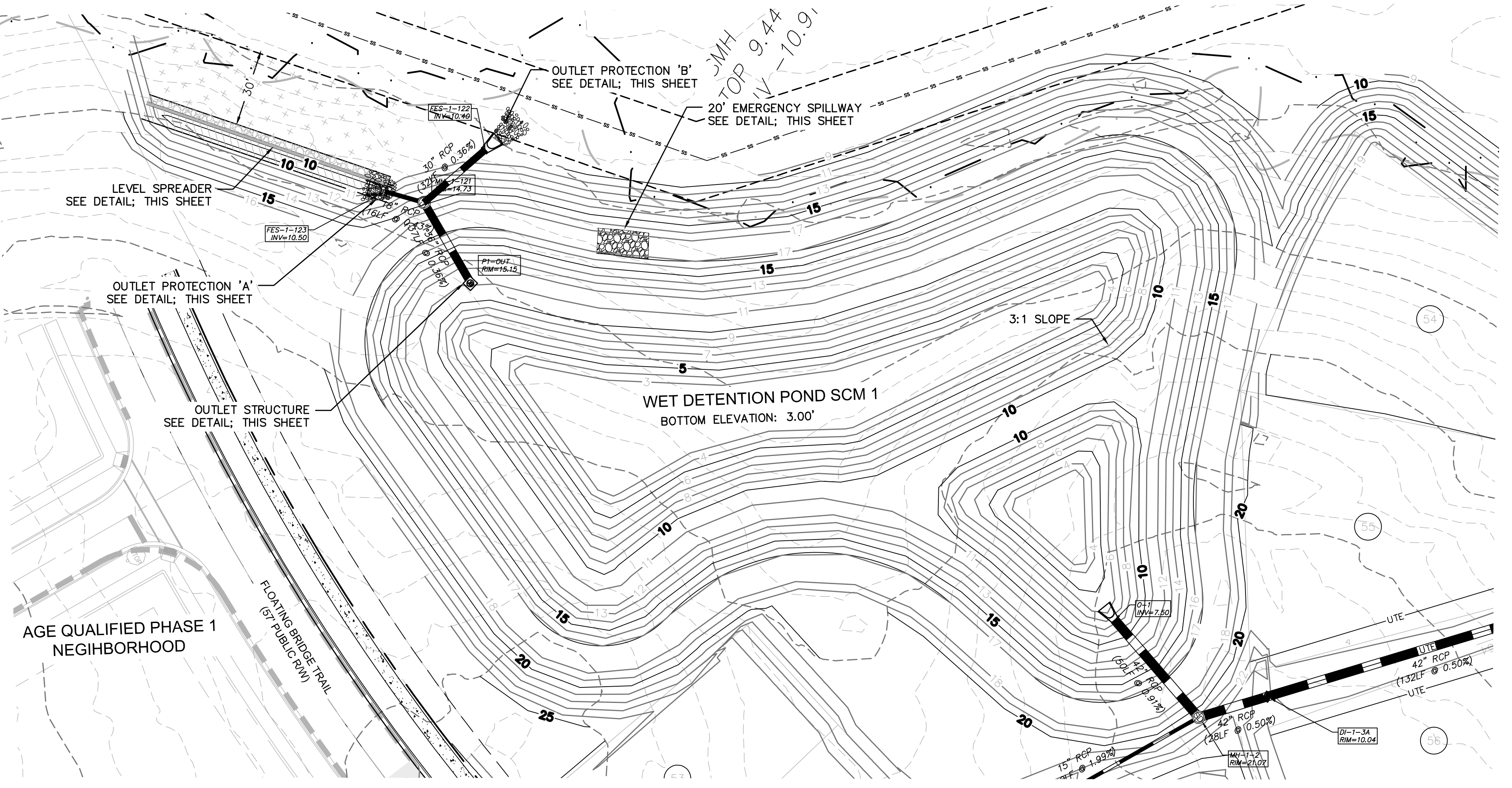
RIVERLIGHTS
NORTH AMERICA SEXUSI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3
SITE DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: NKL
CHECKED: JUE
PROJ. MGR. RMC
SCALE: HORIZONTAL: N/A, VERTICAL: N/A
MAC FILE NUMBER: CS-502
DRAWING NUMBER: 41
STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION
REVISION: B



WET POND OUTLET STRUCTURE
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: _____

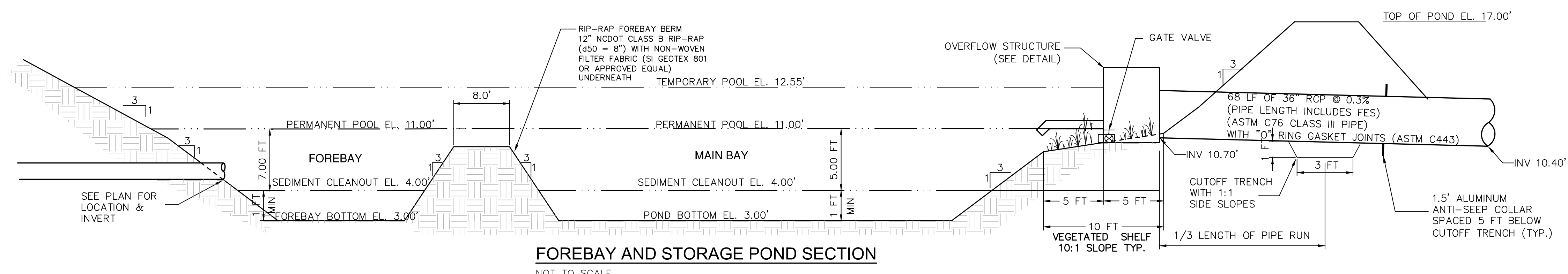
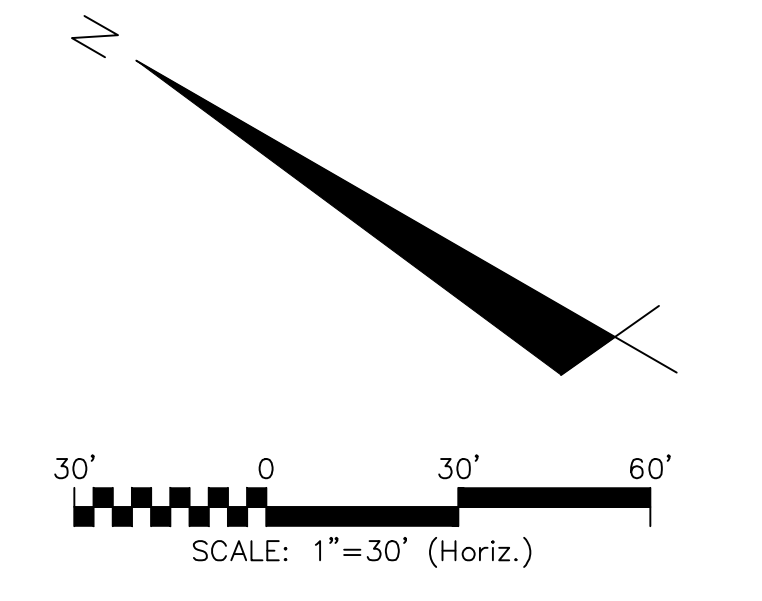
Traffic: _____

Fire: _____

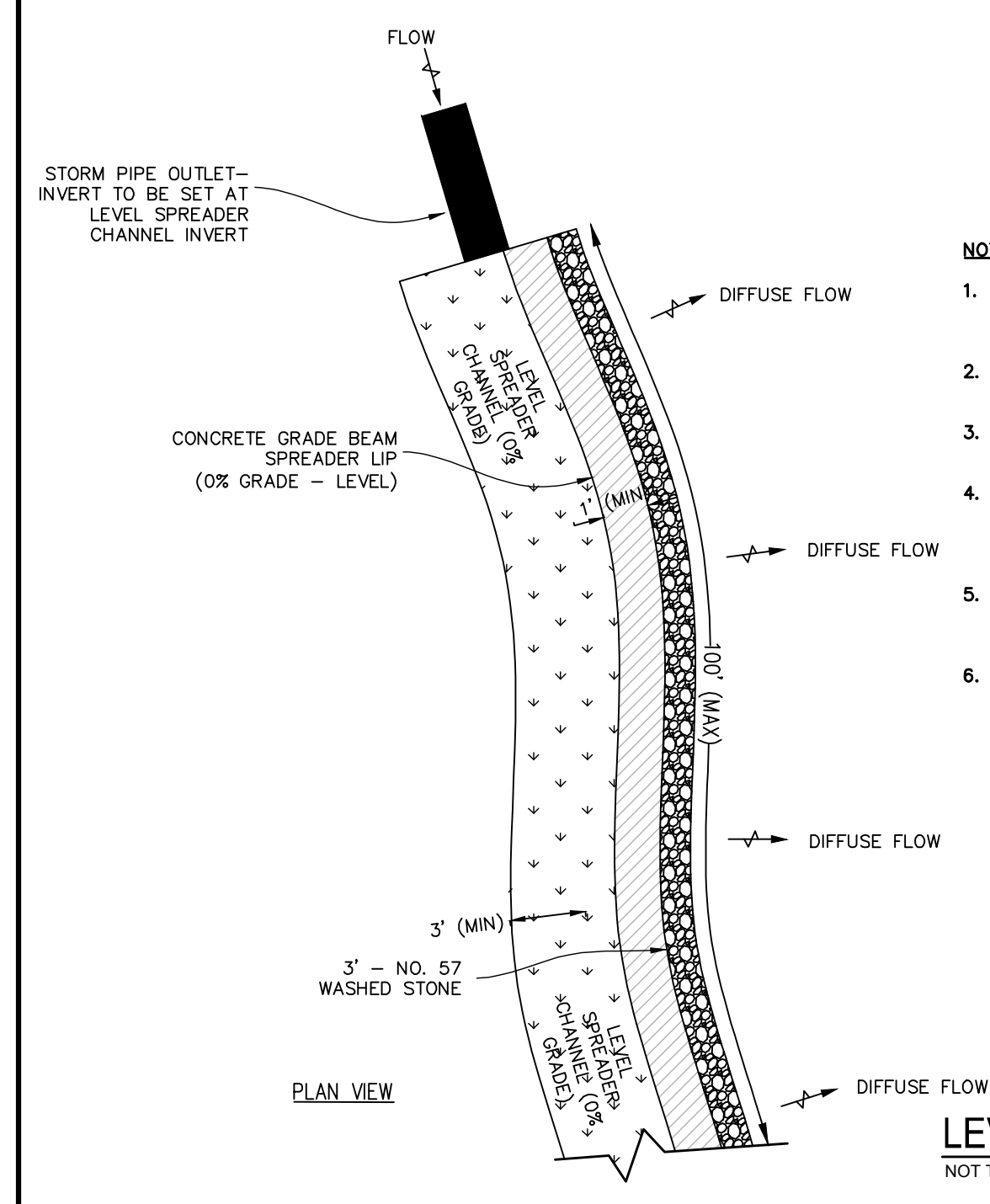
CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

Signed: _____

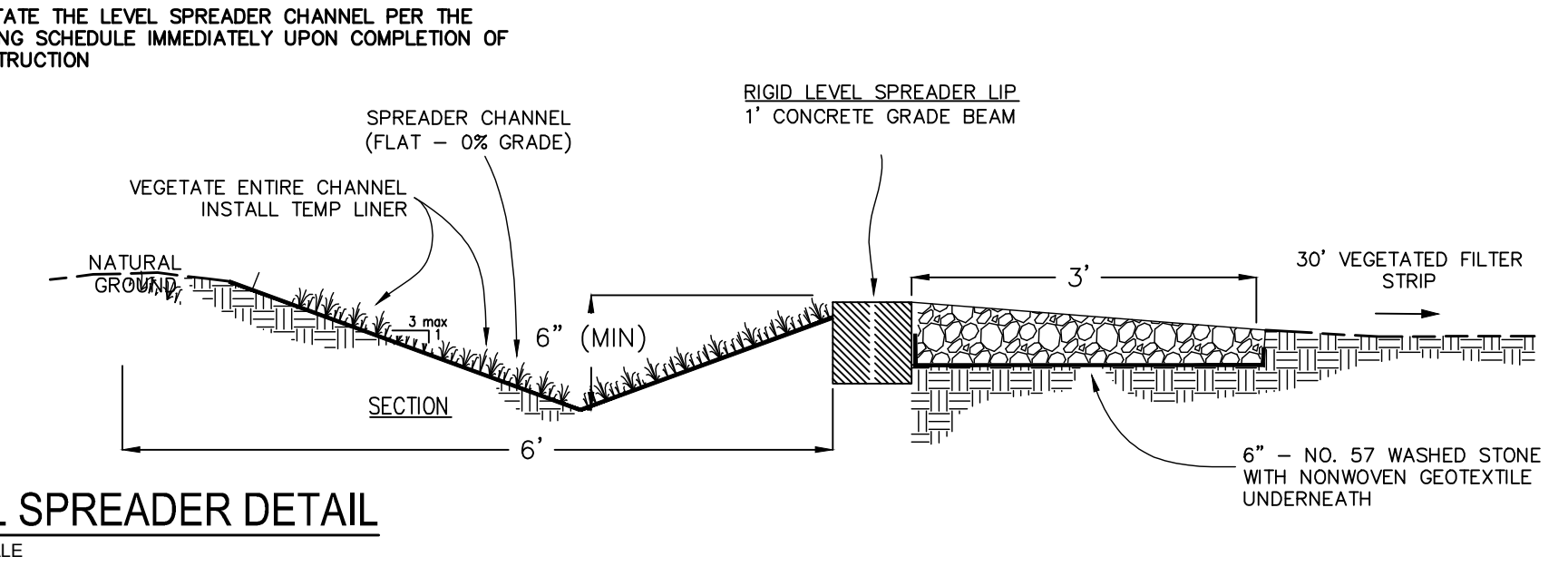


FOREBAY AND STORAGE POND SECTION
NOT TO SCALE



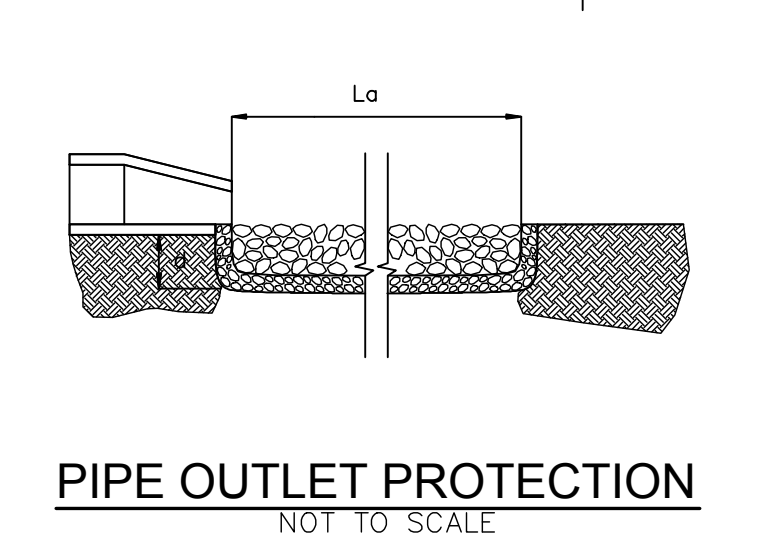
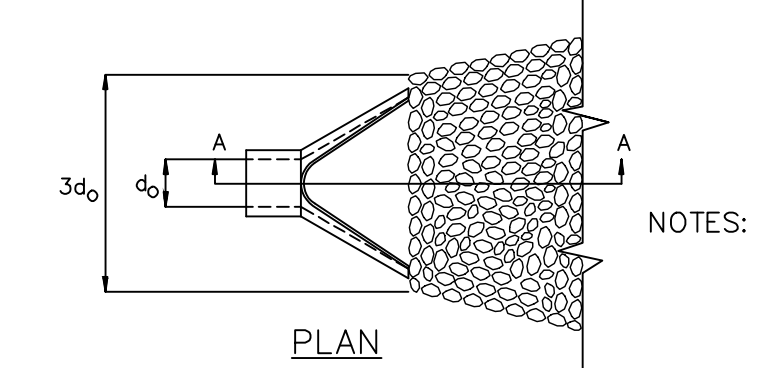
- NOTES**
1. ENSURE THAT THE SPREADER LIP IS INSTALLED AT 0% GRADE (LEVEL) FOR UNIFORM SPREADING OF STORM RUNOFF.
 2. CONSTRUCT THE LEVEL SPREADER ON UNDISTURBED SOIL (NOT ON FILL).
 3. SET THE LIP OF THE LEVEL SPREADER 1-3" ABOVE THE DOWNSTREAM WASHED STONE TO AVOID BLOCKAGE.
 4. GRADE THE LEVEL SPREADER CHANNEL TO FORCE ALL RUNOFF OVER THE LEVEL SPREADER LIP; THIS MAY REQUIRE BERMING UP THE SIDES AND REAR OF THE LEVEL SPREADER CHANNEL.
 5. THE LEVEL SPREADER/CHANNEL SHOULD FOLLOW THE CONTOUR OF NATURAL GROUND - IT MAY BE EITHER CURVED OR STRAIGHT.
 6. VEGETATE THE LEVEL SPREADER CHANNEL PER THE SEEDING SCHEDULE IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.

LEVEL SPREADER DETAIL
NOT TO SCALE



EMERGENCY SPILLWAY SECTION
NOT TO SCALE

| OUTLET PROTECTION | | |
|-------------------|----------|-----------|
| | A | B |
| OUTLET PIPE DIA. | 24" | 30" |
| OUTLET FLOW RATE | 10.0 CFS | 13.05 CFS |
| OUTLET VELOCITY | 4.4 FT/S | 4.75 FT/S |
| MATERIAL | CLASS A | CLASS B |
| LENGTH | 8' | 15' |
| WIDTH | 6' | 7.5' |
| STONE DIA. | 3" | 6" |
| THICKNESS | 9" | 22" |



PIPE OUTLET PROTECTION
NOT TO SCALE

1. Lo 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.

| REVNO. | DESCRIPTIONS | DATE |
|--------|---|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL, NEW HANOVER COUNTY EROSION CONTROL, AND CFPWA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

PRELIMINARY -
DO NOT USE FOR
CONSTRUCTION

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NASH RIVERLIGHTS™

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS - AGE QUALIFIED PHASE 2 & 3

STORMWATER MANAGEMENT DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NLL
PROJ. MGR: RMC

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

M&C FILE NUMBER: CN-501
DRAWING NUMBER: 48

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION B

MATCHLINE THIS SHEET

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

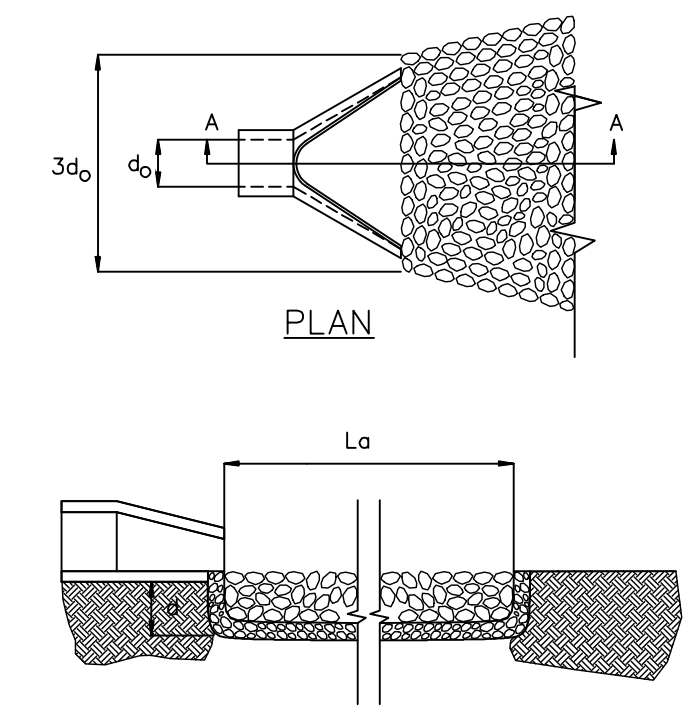
Name _____ Date _____

Planning _____

Traffic _____

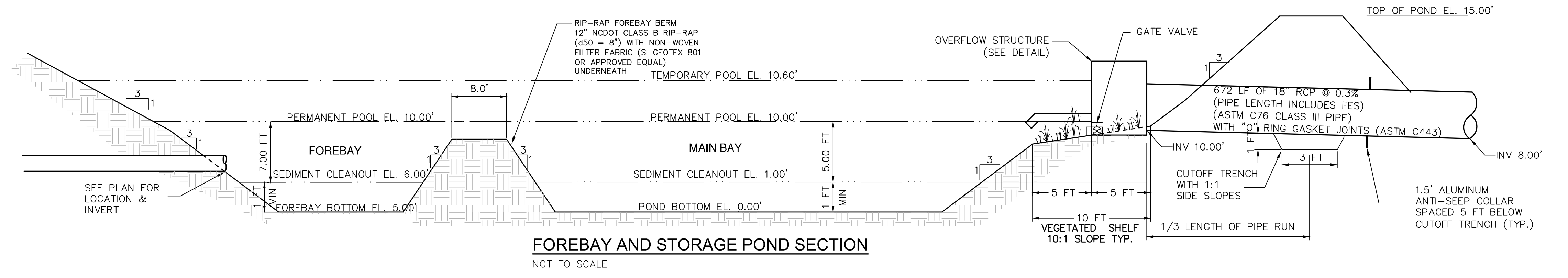
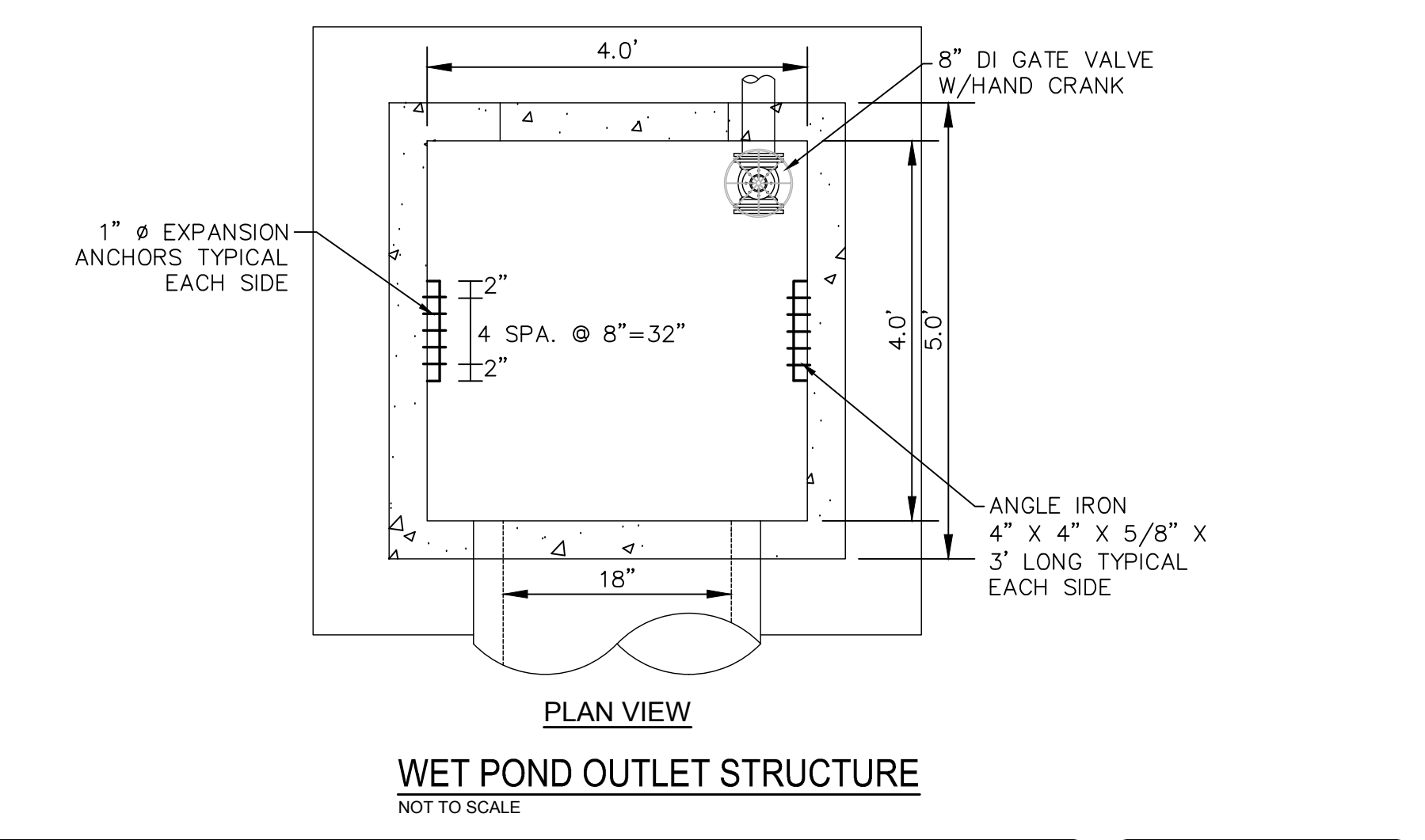
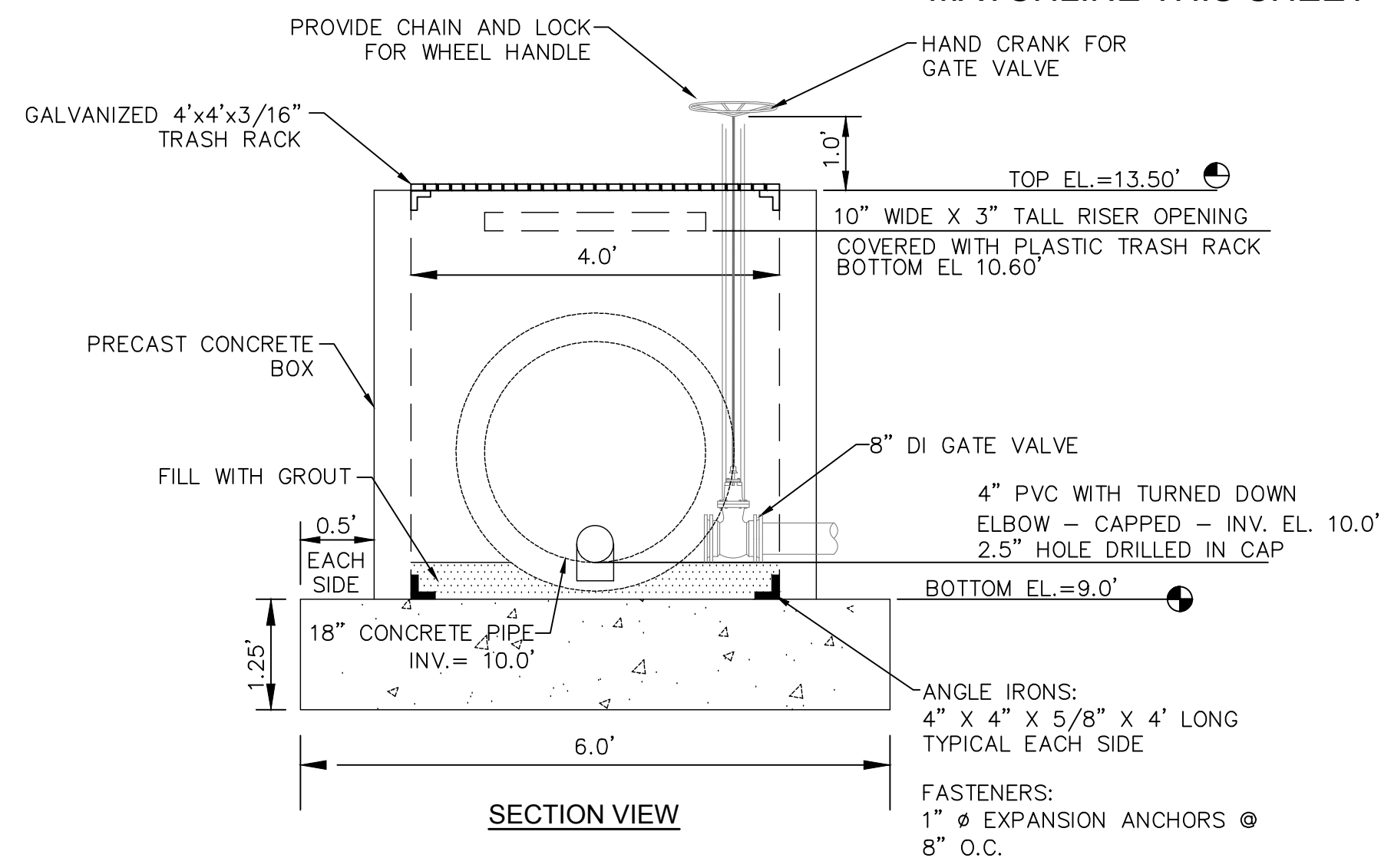
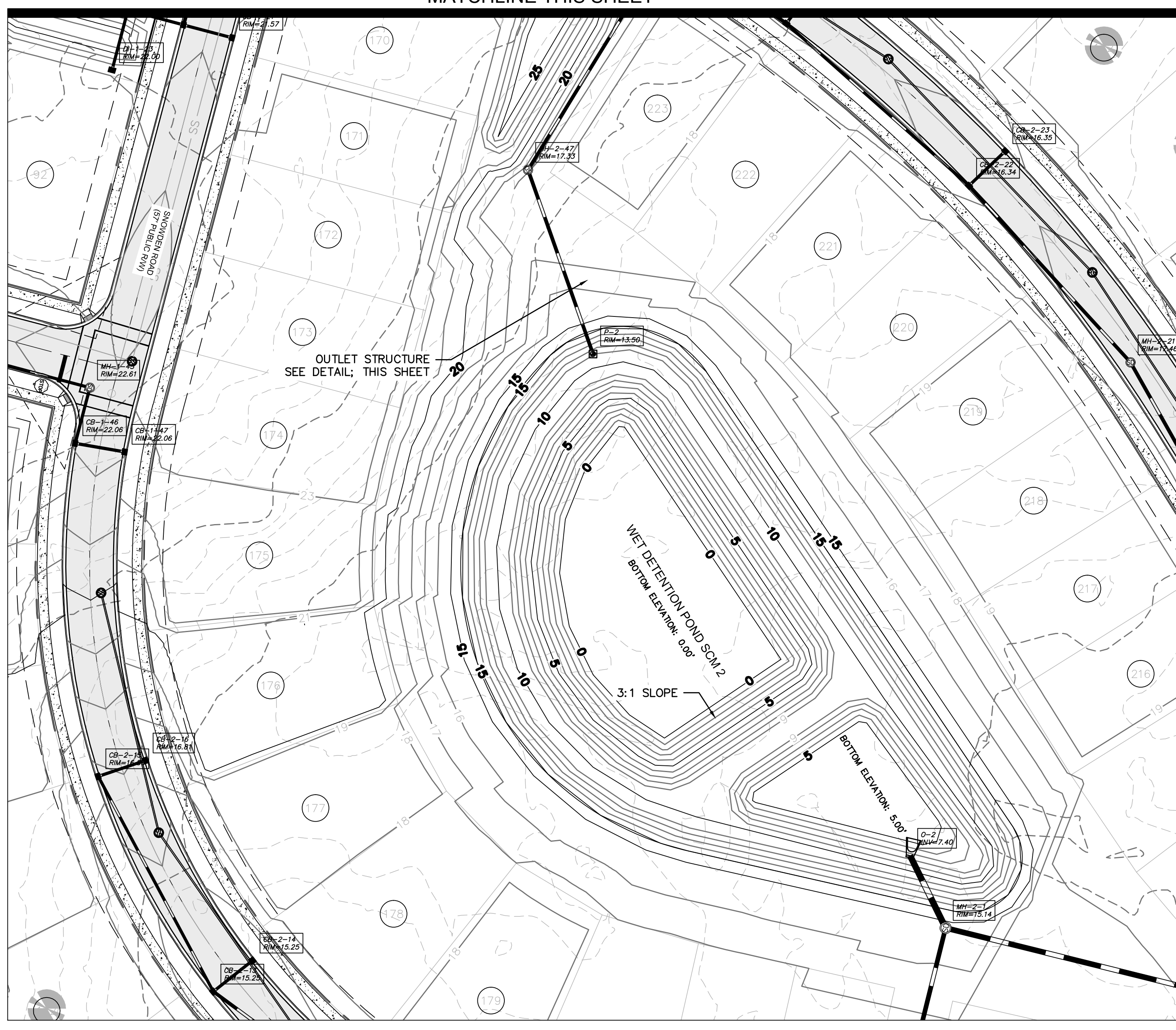
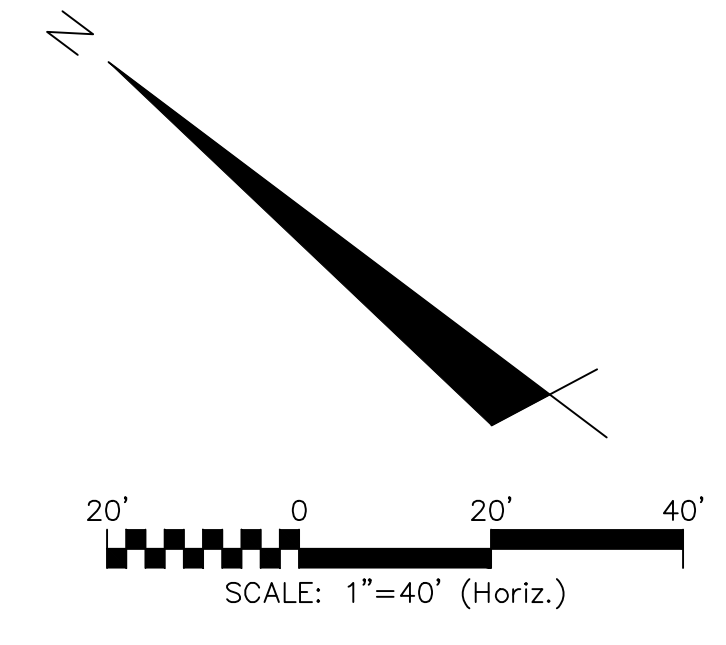
Fire _____

- NOTES:
1. L_o 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. | 18" |
| OUTLET FLOW RATE | 4.69 CFS |
| OUTLET VELOCITY | 3.63 FT/S |
| MATERIAL CLASS | CLASS A |
| LENGTH | 6' |
| WIDTH | 4.5' |
| STONE DIA. | 3" |
| THICKNESS | 9" |

PIPE OUTLET PROTECTION
NOT TO SCALE



| REVNO. | DESCRIPTIONS | DATE |
|--------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND CFPA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

PRELIMINARY - DO NOT USE FOR CONSTRUCTION

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STORMWATER MANAGEMENT DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: NAL
PROJ. MGR: RMC

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

MAC FILE NUMBER: CN-502
DRAWING NUMBER: 49

STATUS: FINAL DESIGN
NOT FOR CONSTRUCTION

REVISION: B

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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.

Approved Construction Plan

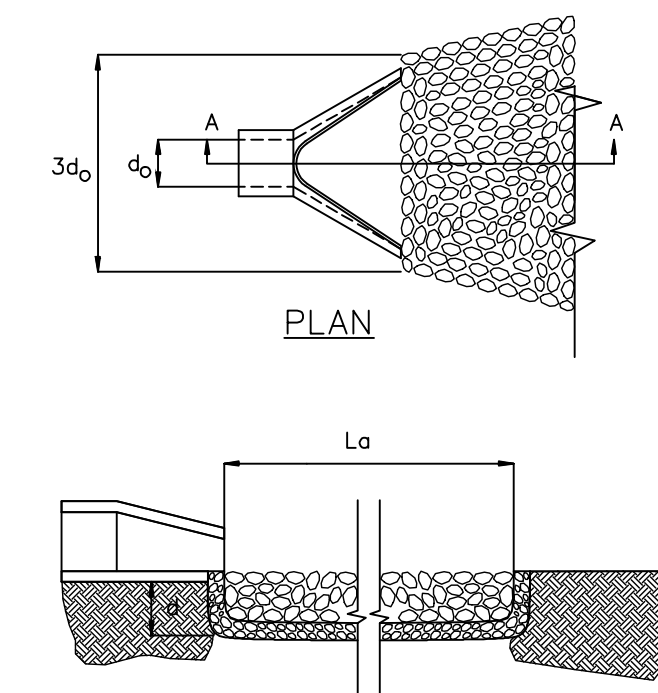
Name: _____ Date: _____

Planning: _____

Traffic: _____

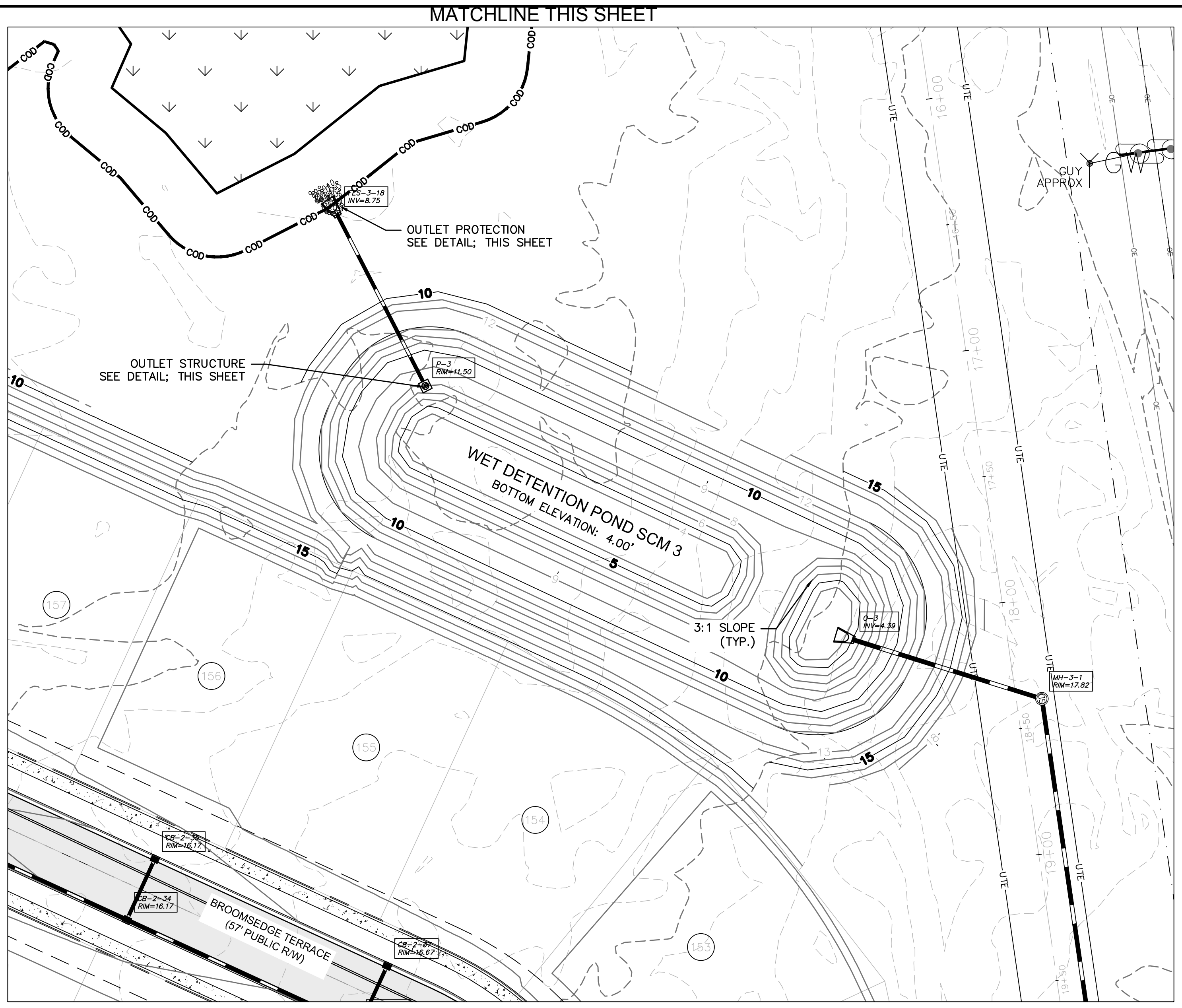
Fire: _____

- NOTES:
1. L_o 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.
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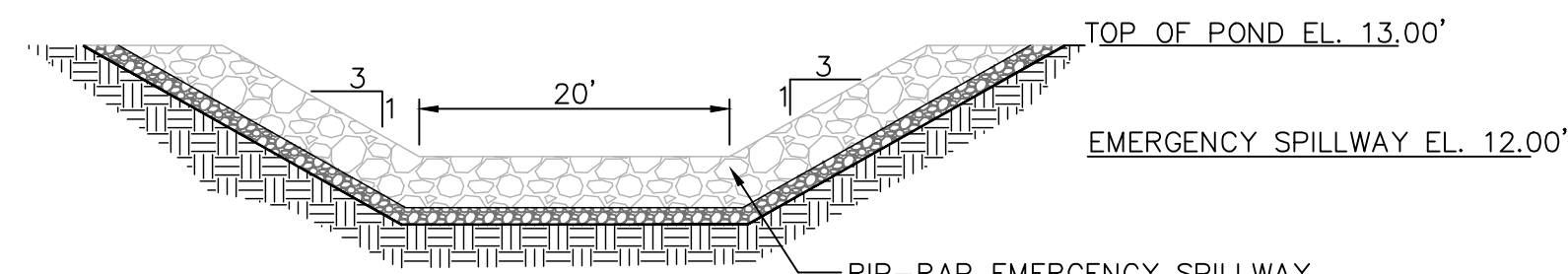
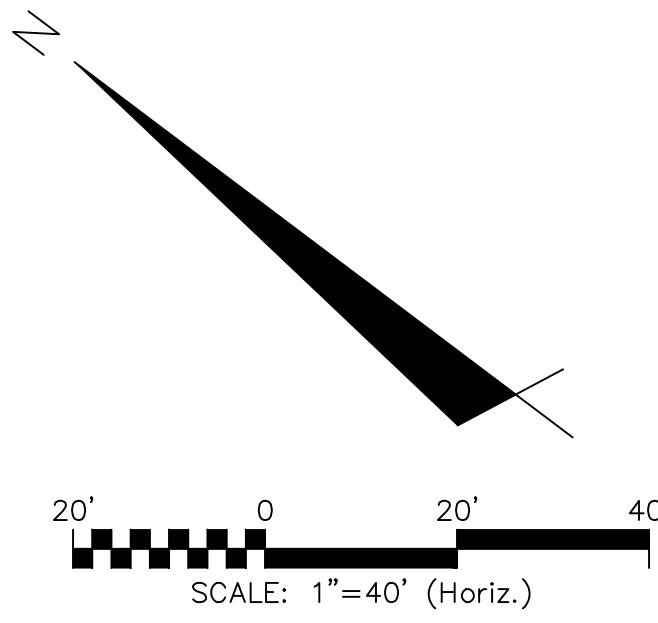
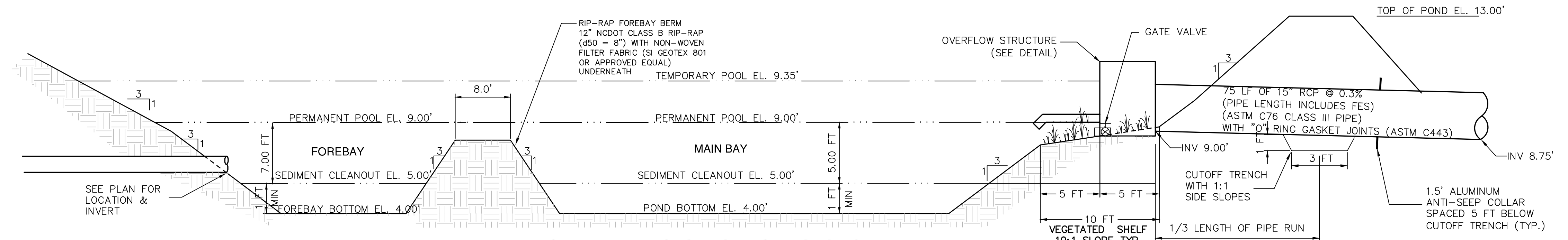


| OUTLET PROTECTION | |
|-------------------|-----------|
| OUTLET PIPE DIA. | 15" |
| OUTLET FLOW RATE | 0.65 CFS |
| OUTLET VELOCITY | 3.72 FT/S |
| MATERIAL | CLASS A |
| LENGTH | 5' |
| WIDTH | 3.8' |
| STONE DIA. | 3" |
| THICKNESS | 9" |

PIPE OUTLET PROTECTION
NOT TO SCALE

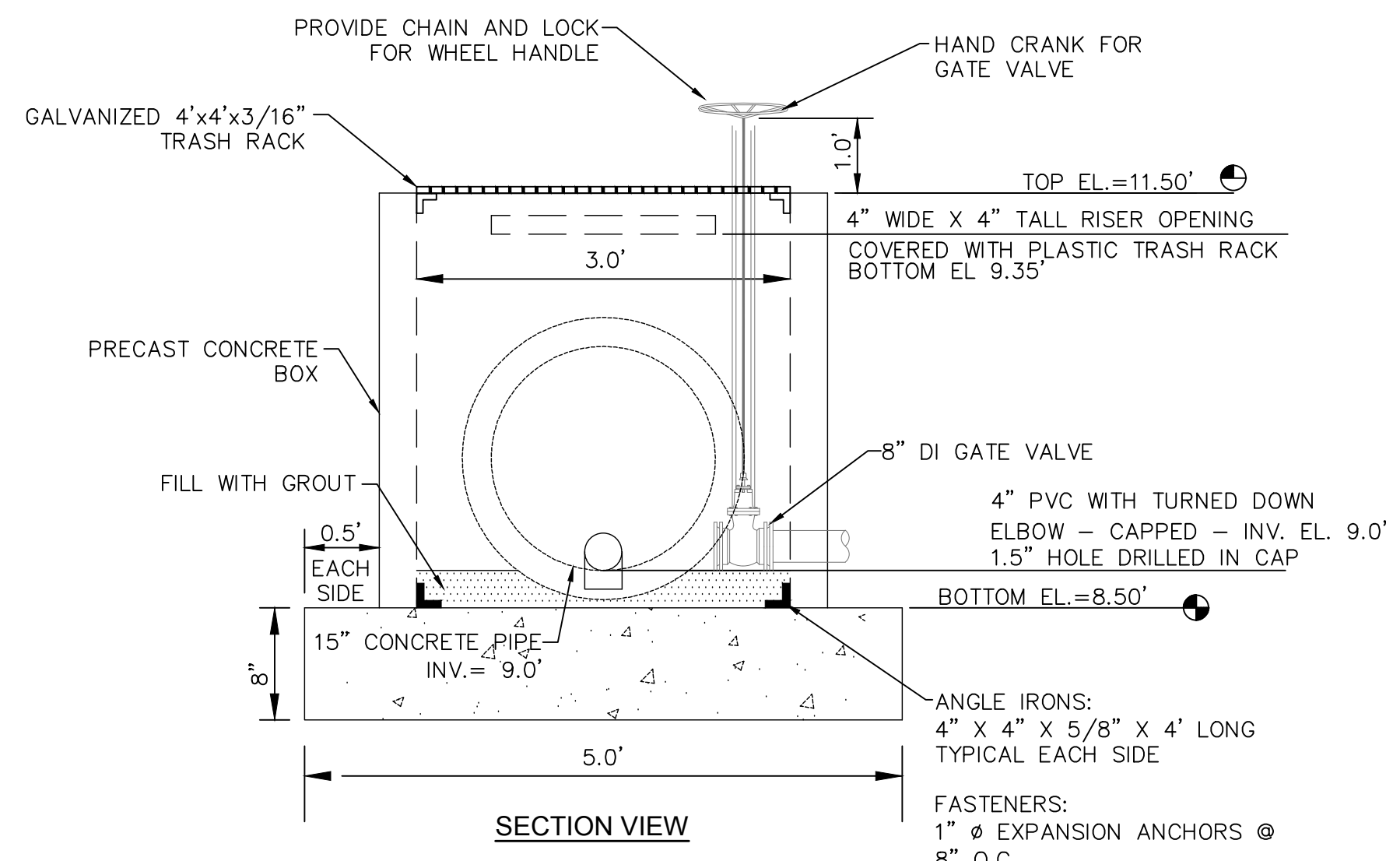


FOREBAY AND STORAGE POND SECTION
NOT TO SCALE

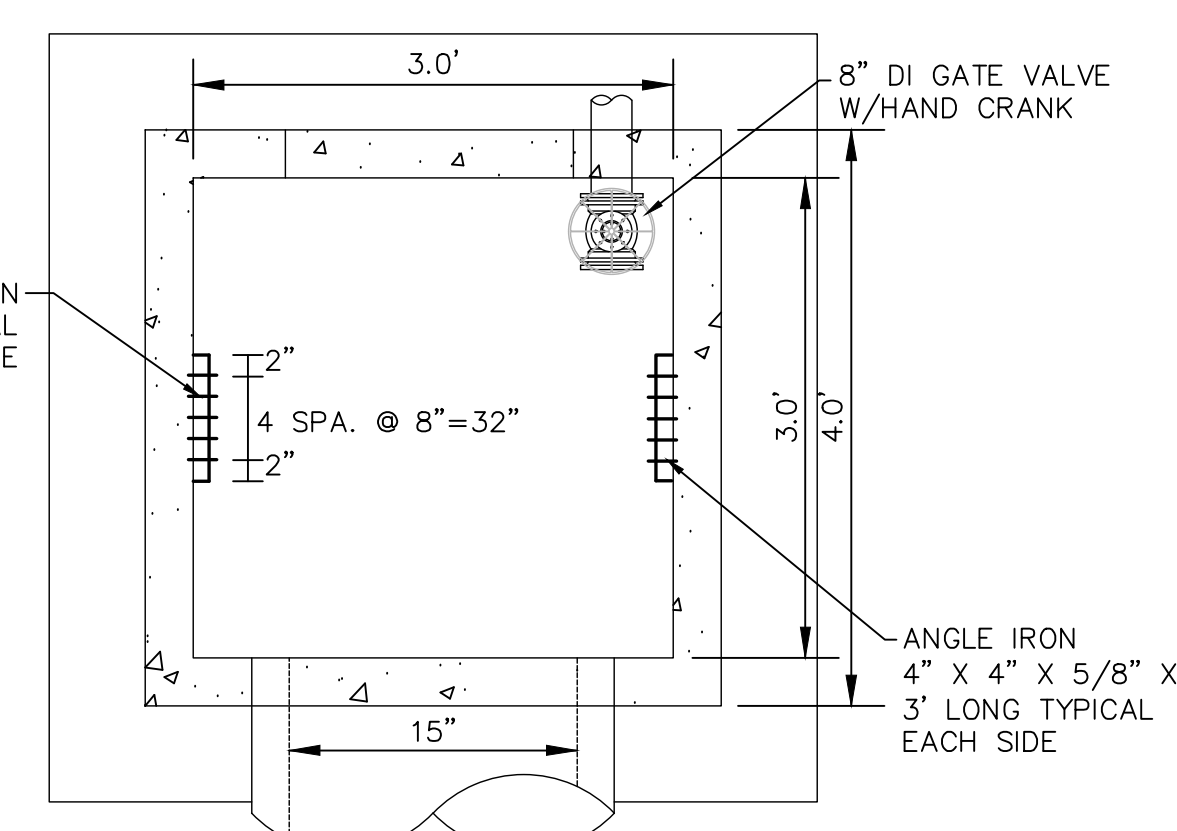


EMERGENCY SPILLWAY SECTION
NOT TO SCALE

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



SECTION VIEW



PLAN VIEW

WET POND OUTLET STRUCTURE
NOT TO SCALE

| REV. NO. | DESCRIPTIONS | DATE |
|----------|--|------------|
| B | CITY OF WILMINGTON TRC / STORMWATER / TREE REMOVAL NEW HANOVER COUNTY EROSION CONTROL AND OFPA SUBMITTAL | 06/01/2016 |
| A | CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL | 01/08/2016 |

SEAL
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SEAL
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STORMWATER MANAGEMENT DETAILS

DATE: 06/01/16
MCE PROJ. # 02735-0168
DRAWN: EEM/KCE
DESIGNED: KCE
CHECKED: N/L
PROJ. MGR: RMC

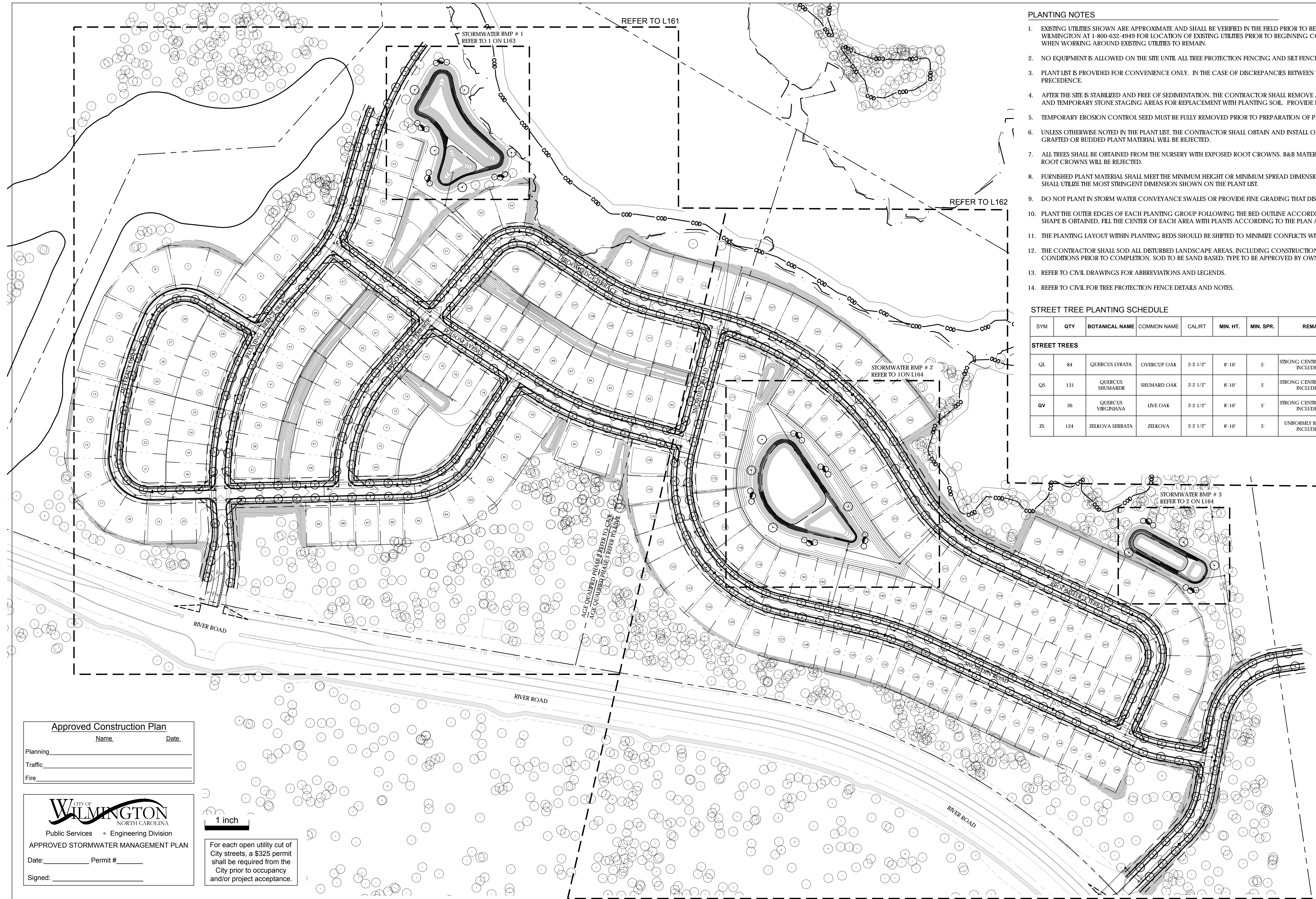
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MAC FILE NUMBER: **CN-503**
DRAWING NUMBER: **50**

STATUS: **FINAL DESIGN**
NOT FOR CONSTRUCTION

REVISION: **B**

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PLANTING NOTES

- EXISTING UTILITIES SHOWN ARE APPROXIMATE AND SHALL BE VERIFIED IN THE FIELD PRIOR TO BEGINNING WORK. CONTRACTOR SHALL CONTACT THE CITY OF WILMINGTON AT 1-800-632-4949 FOR LOCATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN WORKING AROUND EXISTING UTILITIES TO REMAIN.
- NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED.
- PLANT LIST IS PROVIDED FOR CONVENIENCE ONLY. IN THE CASE OF DISCREPANCIES BETWEEN THE PLAN AND PLANT LIST QUANTITIES, THE PLAN SHALL TAKE PRECEDENCE.
- AFTER THE SITE IS STABILIZED AND FREE OF SEDIMENTATION, THE CONTRACTOR SHALL REMOVE ALL TEMPORARY EROSION CONTROL DEVICES, SILT, RIP RAP AND TEMPORARY STONE STAGING AREAS FOR REPLACEMENT WITH PLANTING SOIL. PROVIDE PLANTING ACCORDING TO THE LANDSCAPE PLAN.
- TEMPORARY EROSION CONTROL SEED MUST BE FULLY REMOVED PRIOR TO PREPARATION OF PERMANENT SEED, SOD OR LANDSCAPE BEDS.
- UNLESS OTHERWISE NOTED IN THE PLANT LIST, THE CONTRACTOR SHALL OBTAIN AND INSTALL ONLY PLANT MATERIAL THAT IS GROWN ON ITS OWN ROOT-GRAFTED OR BUDDED PLANT MATERIAL WILL BE REJECTED.
- ALL TREES SHALL BE OBTAINED FROM THE NURSERY WITH EXPOSED ROOT CROWNS. B&B MATERIAL DELIVERED TO SITE WITH BURIED OR RECENTLY BURIED ROOT CROWNS WILL BE REJECTED.
- FURNISHED PLANT MATERIAL SHALL MEET THE MINIMUM HEIGHT OR MINIMUM SPREAD DIMENSIONS SHOWN IN THE PLANT LIST HEADINGS. THE CONTRACTOR SHALL UTILIZE THE MOST STRINGENT DIMENSION SHOWN ON THE PLANT LIST.
- DO NOT PLANT IN STORM WATER CONVEYANCE SWALES OR PROVIDE FINE GRADING THAT DISRUPTS FLOW OR CHANGES LONGITUDINAL SLOPES.
- PLANT THE OUTER EDGES OF EACH PLANTING GROUP FOLLOWING THE BED OUTLINE ACCORDING TO THE PLAN. ONCE A SATISFACTORY MATCHED OUTER SHAPE IS OBTAINED, FILL THE CENTER OF EACH AREA WITH PLANTS ACCORDING TO THE PLAN AND SPACING NOTES.
- THE PLANTING LAYOUT WITHIN PLANTING BEDS SHOULD BE SHIFTED TO MINIMIZE CONFLICTS WITH EXISTING TREE ROOTS.
- THE CONTRACTOR SHALL SOD ALL DISTURBED LANDSCAPE AREAS, INCLUDING CONSTRUCTION ACCESS OUTSIDE PROJECT LIMITS, TO MATCH EXISTING CONDITIONS PRIOR TO COMPLETION. SOD TO BE SAND BASED; TYPE TO BE APPROVED BY OWNER PRIOR TO INSTALLATION.
- REFER TO CIVIL DRAWINGS FOR ABBREVIATIONS AND LEGENDS.
- REFER TO CIVIL FOR TREE PROTECTION FENCE DETAILS AND NOTES.

STREET TREE PLANTING SCHEDULE

| SYM | QTY | BOTANICAL NAME | COMMON NAME | CAL/RT | MIN. HT. | MIN. SPR. | REMARKS |
|---------------------|-----|--------------------|-------------|----------|----------|-----------|---|
| STREET TREES | | | | | | | |
| QL | 84 | QUERCUS LYRATA | OVERCUP OAK | 2-2 1/2" | 8'-10' | 5' | STRONG CENTRAL LEADER; NO INCLUDED BARK |
| QS | 131 | QUERCUS SHUMARDII | SHUMARD OAK | 2-2 1/2" | 8'-10' | 5' | STRONG CENTRAL LEADER; NO INCLUDED BARK |
| QV | 36 | QUERCUS VIRGINIANA | LIVE OAK | 2-2 1/2" | 8'-10' | 5' | STRONG CENTRAL LEADER; NO INCLUDED BARK |
| ZS | 124 | ZELKOVA SERRATA | ZELKOVA | 2-2 1/2" | 8'-10' | 5' | UNIFORMLY BRANCHED; NO INCLUDED BARK |

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

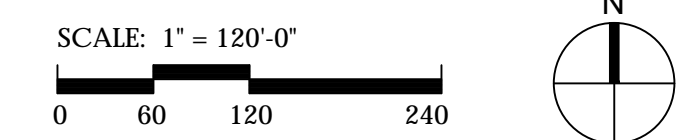
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit # _____

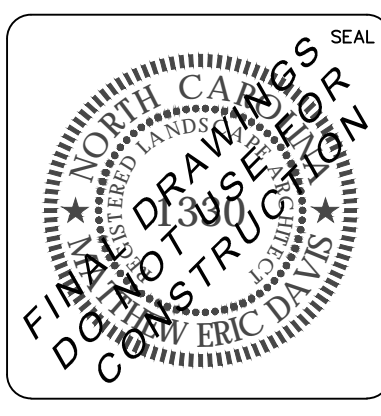
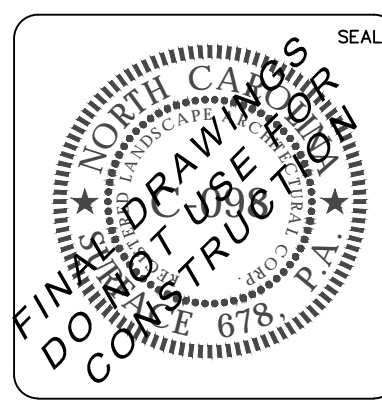
Signed: _____

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.



| REVNO. | DESCRIPTIONS | DATE |
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F: 919-419-1669

RIVERLIGHTS AGE QUALIFIED PHASE 2 AND 3

OVERALL PLANTING PLAN

DATE: 05/25/2016

MCE PROJ. # _____

DRAWN: JL

DESIGNED: JC, ED

CHECKED: JC, ED

PROJ. MGR.: JC

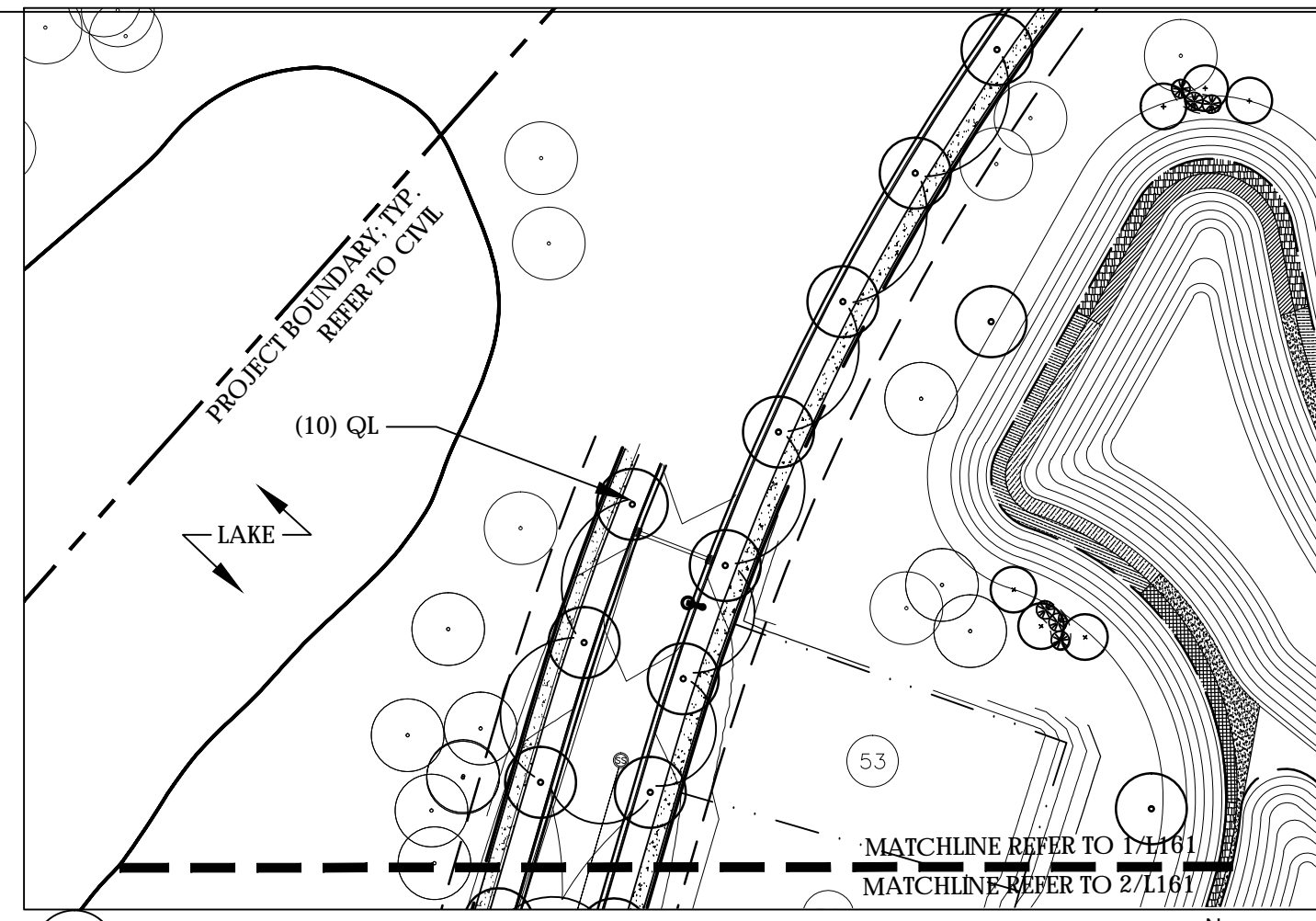
STATUS: _____

SCALE: AS NOTED

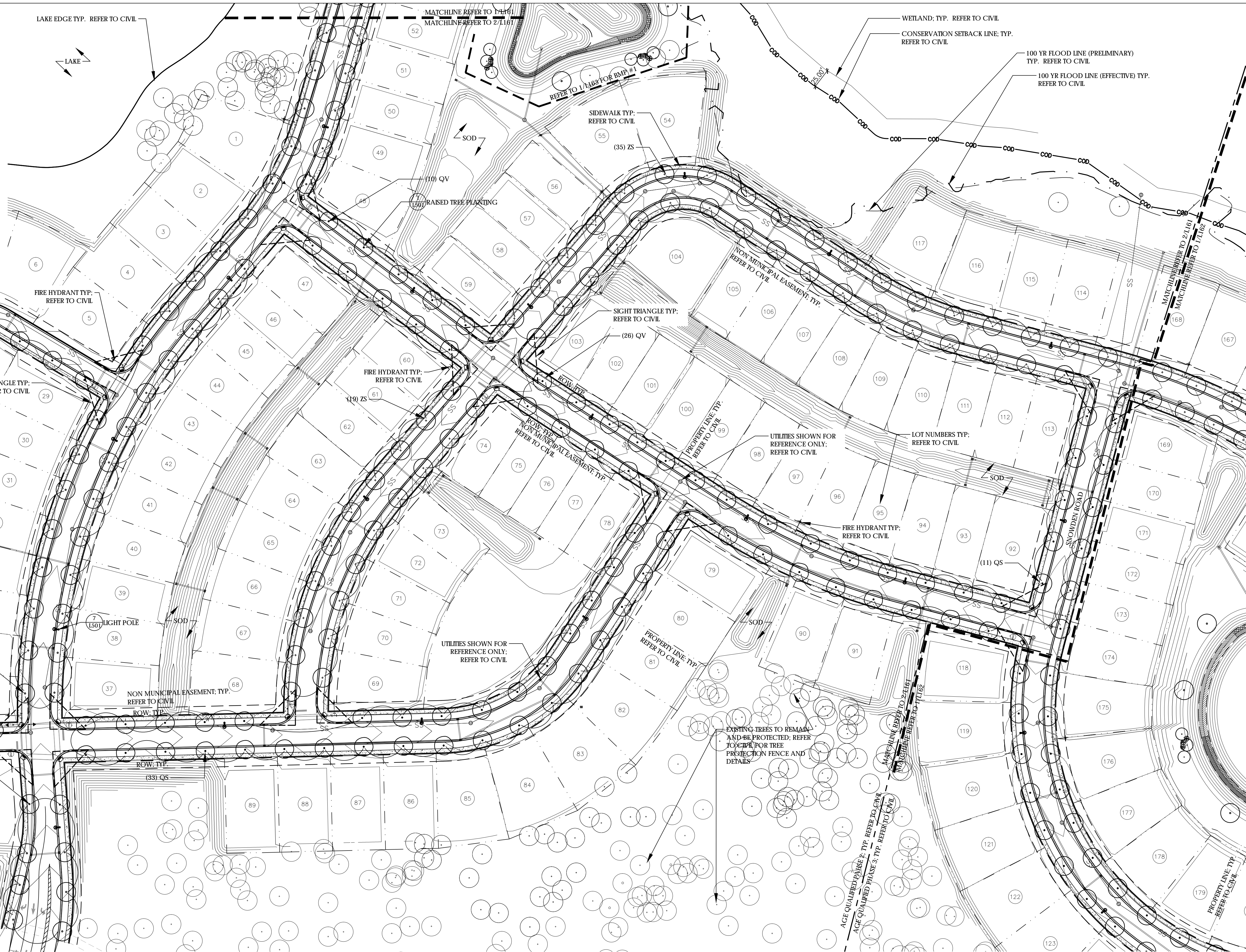
M&C FILE NUMBER: _____

DRAWING NUMBER: **L160**

REVISION: _____



1 STREET TREE PLANTING PLAN
SCALE: 1" = 60'-0"



2 STREET TREE PLANTING PLAN
SCALE: 1" = 60'-0"

| Approved Construction Plan | |
|----------------------------|------|
| Name | Date |
| Planning | |
| Traffic | |
| Fire | |

CITY OF WILMINGTON
NORTH CAROLINA
Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

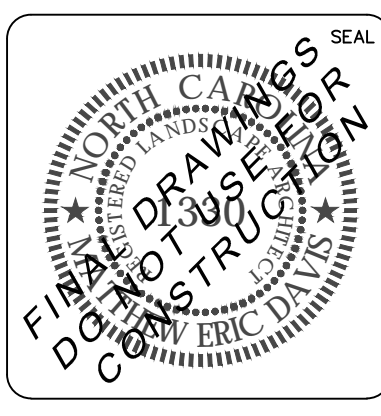
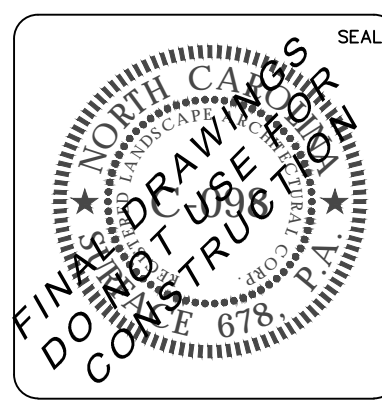
Date: _____ Permit # _____

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.

| REVNO. | DESCRIPTIONS | DATE |
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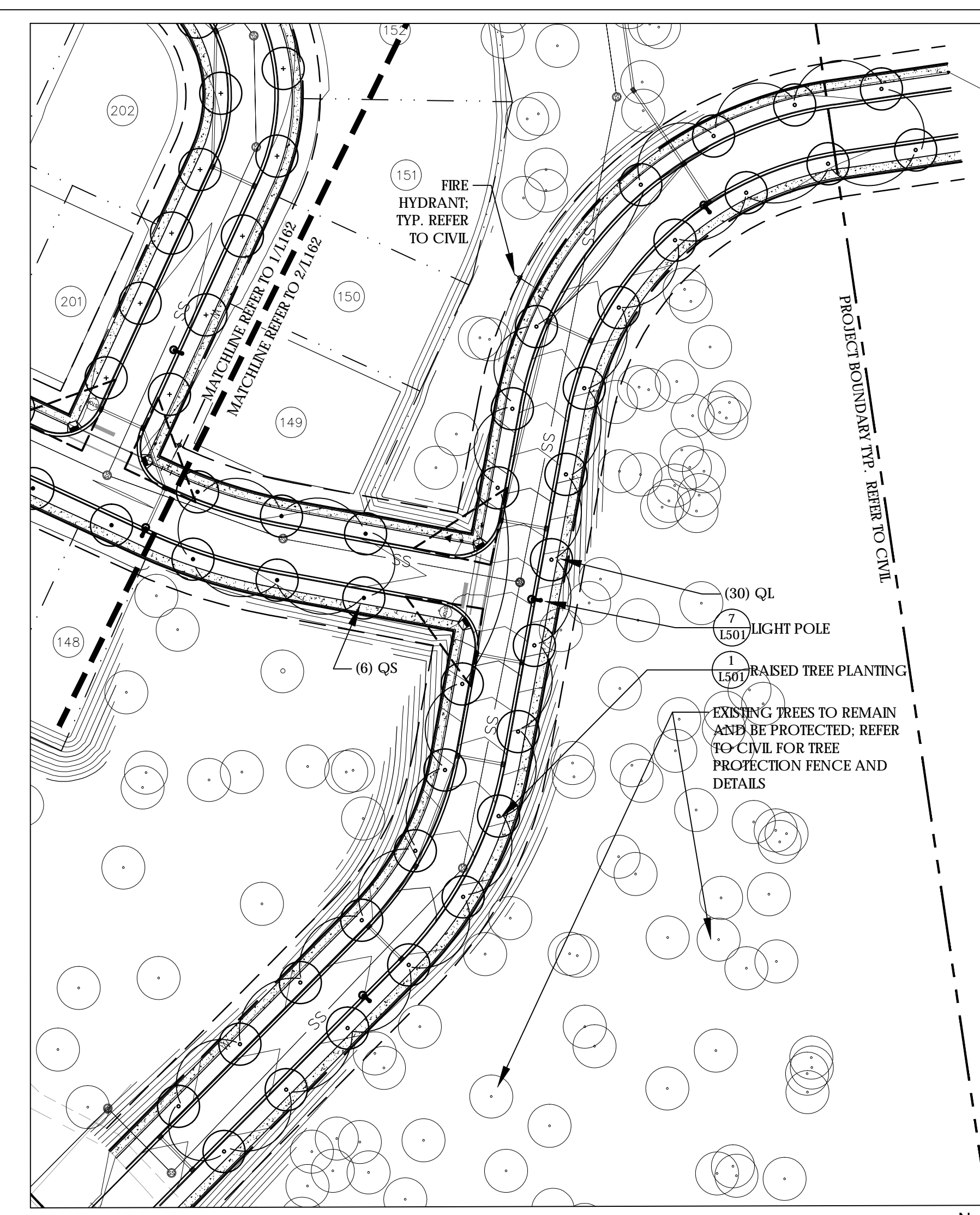
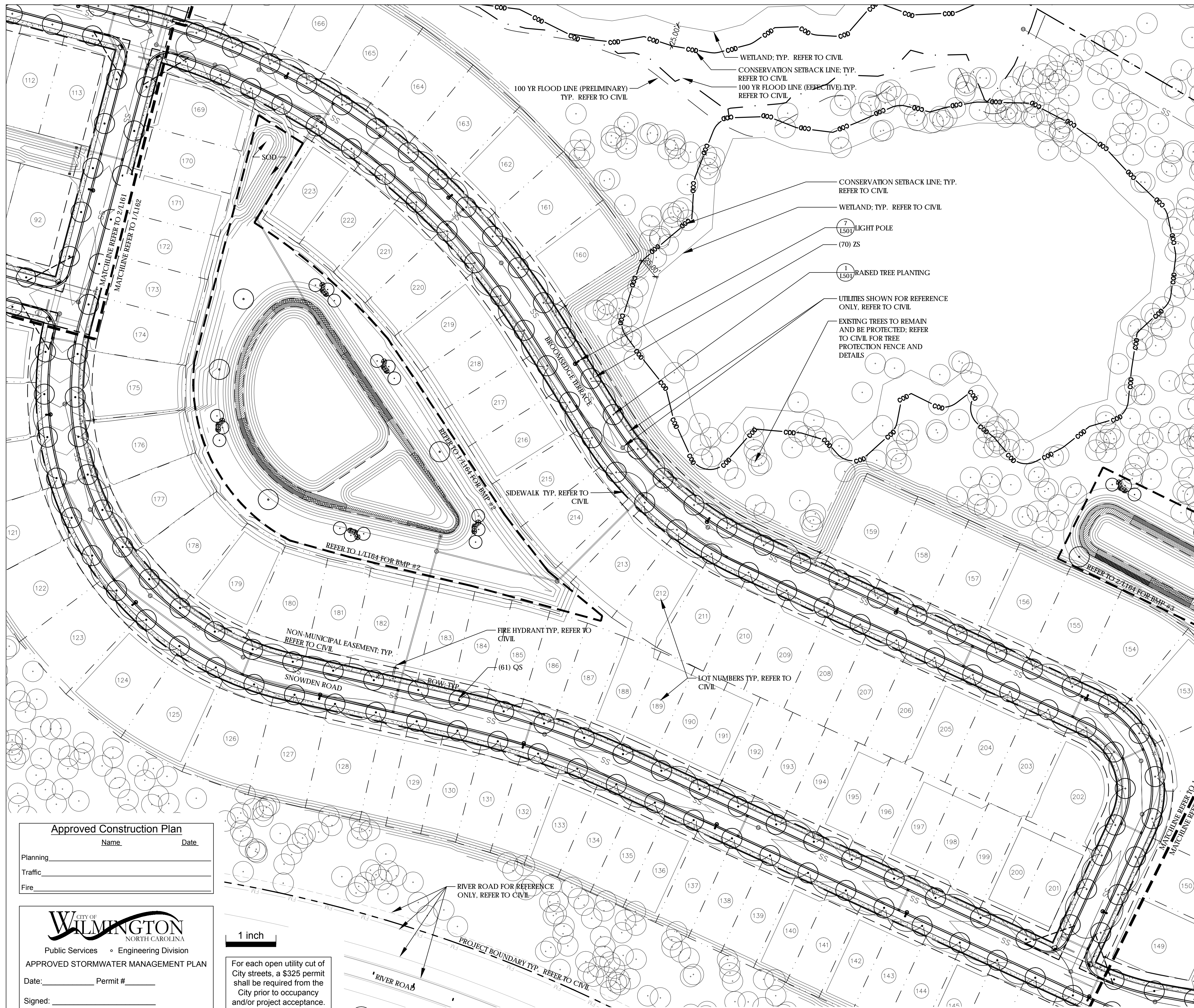
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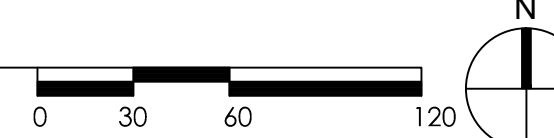
RIVERLIGHTS AGE QUALIFIED PHASE 2 AND 3

STREET TREE PLANTING PLAN

| | | |
|------------------|-----------------|-----------------|
| DATE: 05/25/2016 | SCALE: AS NOTED | M&C FILE NUMBER |
| MCE PROJ. # | | DRAWING NUMBER |
| DRAWN: JL | | L161 |
| DESIGNED: JC, ED | | |
| CHECKED: JC, ED | | |
| PROJ. MGR.: JC | | |
| STATUS: | | REVISION |



2 STREET TREE PLANTING PLAN
 SCALE: 1" = 60'-0"



| Approved Construction Plan | | |
|----------------------------|------|--|
| Name | Date | |
| Planning | | |
| Traffic | | |
| Fire | | |

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

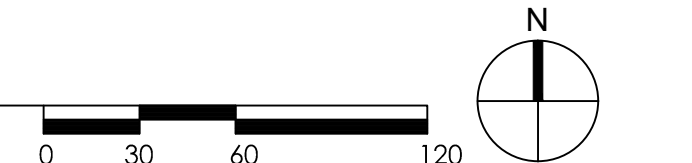
Date: _____ Permit # _____

Signed: _____

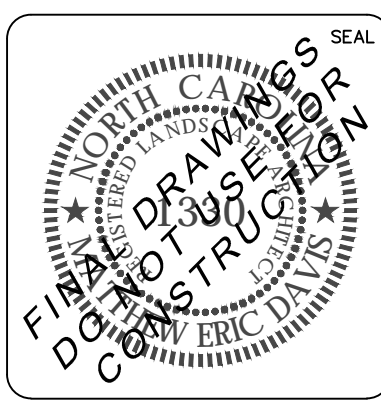
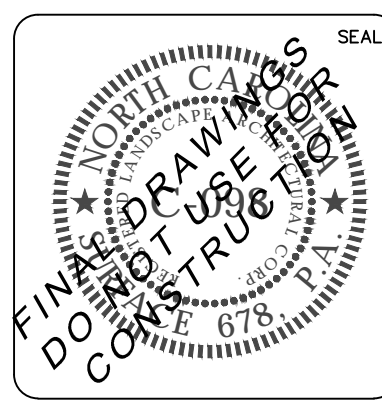
1 inch

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

1 STREET TREE PLANTING PLAN
 SCALE: 1" = 60'-0"



| REVNO. | DESCRIPTIONS | DATE |
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**RIVERLIGHTS AGE QUALIFIED
 PHASE 2 AND 3**

**STREET TREE
 PLANTING PLAN**

| | | |
|------------------|-----------------|-----------------|
| DATE: 05/25/2016 | SCALE: AS NOTED | M&C FILE NUMBER |
| MCE PROJ. # | | DRAWING NUMBER |
| DRAWN: JL | | L162 |
| DESIGNED: JC, ED | | |
| CHECKED: JC, ED | | |
| PROJ. MGR.: JC | | |
| STATUS: | | REVISION |

PLANT SCHEDULE - STORMWATER BMP #2

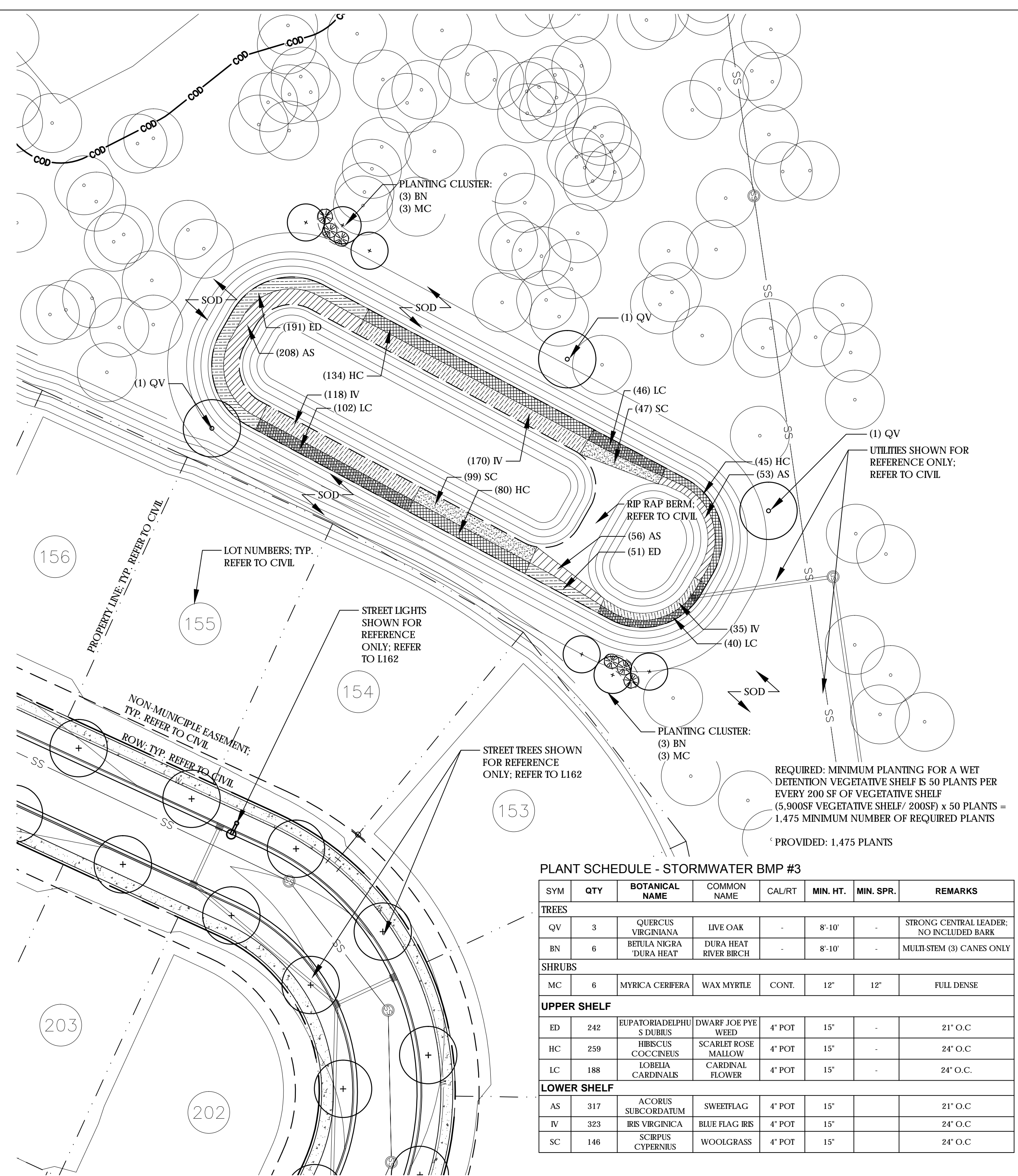
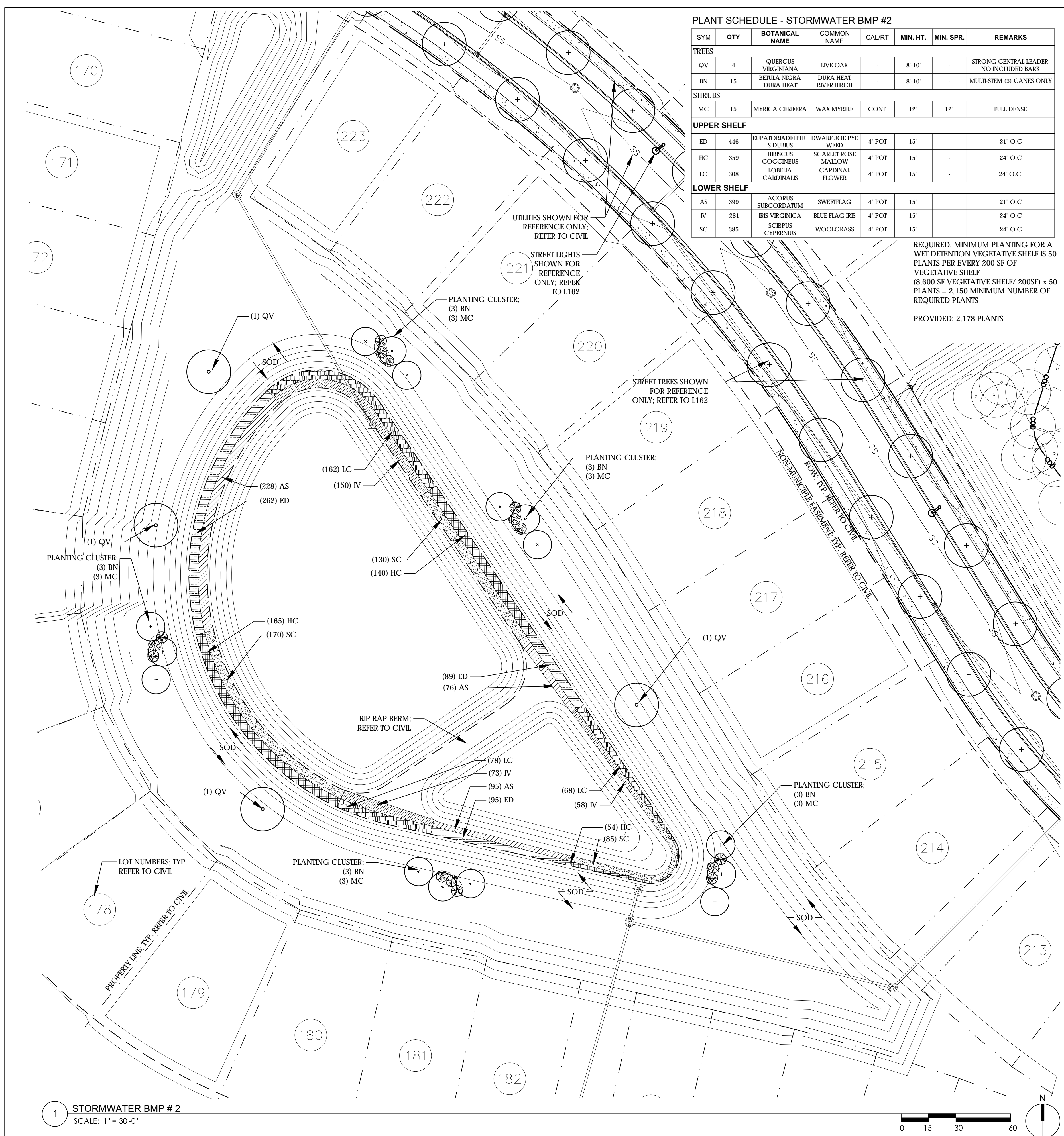
| SYM | QTY | BOTANICAL NAME | COMMON NAME | CAL/RT | MIN. HT. | MIN. SPR. | REMARKS |
|--------------------|-----|-----------------------------|--------------------------|--------|----------|-----------|---|
| TREES | | | | | | | |
| QV | 4 | QUERCUS VIRGINIANA | LIVE OAK | - | 8'-10' | - | STRONG CENTRAL LEADER; NO INCLUDED BARK |
| BN | 15 | BETULA NIGRA DURA HEAT | DURA HEAT RIVER BIRCH | - | 8'-10' | - | MULTI-STEM (3) CANES ONLY |
| SHRUBS | | | | | | | |
| MC | 15 | MYRICA CERIFERA | WAX MYRTLE | CONT. | 12" | 12" | FULL DENSE |
| UPPER SHELF | | | | | | | |
| ED | 446 | EUPATORIADELPHI S DUBIUS | DWARF JOE PYE WEED | 4" POT | 15" | - | 21" O.C |
| HC | 359 | HBISCUS COCCINEUS | SCARLET ROSE MALLOW | 4" POT | 15" | - | 24" O.C |
| LC | 308 | LOBELIA CARDINALIS | CARDINAL FLOWER | 4" POT | 15" | - | 24" O.C |
| LOWER SHELF | | | | | | | |
| AS | 399 | ACORUS SUBCORDATUM | SWEETFLAG | 4" POT | 15" | - | 21" O.C |
| IV | 281 | IRIS VIRGINICA | BLUE FLAG IRIS | 4" POT | 15" | - | 24" O.C |
| SC | 385 | SCRIPUS CYPERNIUS | WOOLGRASS | 4" POT | 15" | - | 24" O.C |

REQUIRED: MINIMUM PLANTING FOR A WET DETENTION VEGETATIVE SHELF IS 50 PLANTS PER EVERY 200 SF OF VEGETATIVE SHELF
(8,600 SF VEGETATIVE SHELF/ 200SF) x 50 PLANTS = 2,150 MINIMUM NUMBER OF REQUIRED PLANTS
PROVIDED: 2,178 PLANTS

PLANT SCHEDULE - STORMWATER BMP #3

| SYM | QTY | BOTANICAL NAME | COMMON NAME | CAL/RT | MIN. HT. | MIN. SPR. | REMARKS |
|--------------------|-----|-----------------------------|--------------------------|--------|----------|-----------|---|
| TREES | | | | | | | |
| QV | 3 | QUERCUS VIRGINIANA | LIVE OAK | - | 8'-10' | - | STRONG CENTRAL LEADER; NO INCLUDED BARK |
| BN | 6 | BETULA NIGRA DURA HEAT | DURA HEAT RIVER BIRCH | - | 8'-10' | - | MULTI-STEM (3) CANES ONLY |
| SHRUBS | | | | | | | |
| MC | 6 | MYRICA CERIFERA | WAX MYRTLE | CONT. | 12" | 12" | FULL DENSE |
| UPPER SHELF | | | | | | | |
| ED | 242 | EUPATORIADELPHI S DUBIUS | DWARF JOE PYE WEED | 4" POT | 15" | - | 21" O.C |
| HC | 259 | HBISCUS COCCINEUS | SCARLET ROSE MALLOW | 4" POT | 15" | - | 24" O.C |
| LC | 188 | LOBELIA CARDINALIS | CARDINAL FLOWER | 4" POT | 15" | - | 24" O.C |
| LOWER SHELF | | | | | | | |
| AS | 317 | ACORUS SUBCORDATUM | SWEETFLAG | 4" POT | 15" | - | 21" O.C |
| IV | 323 | IRIS VIRGINICA | BLUE FLAG IRIS | 4" POT | 15" | - | 24" O.C |
| SC | 146 | SCRIPUS CYPERNIUS | WOOLGRASS | 4" POT | 15" | - | 24" O.C |

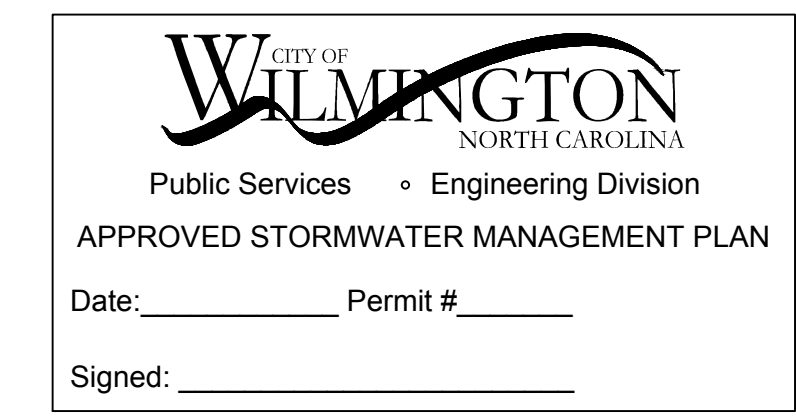
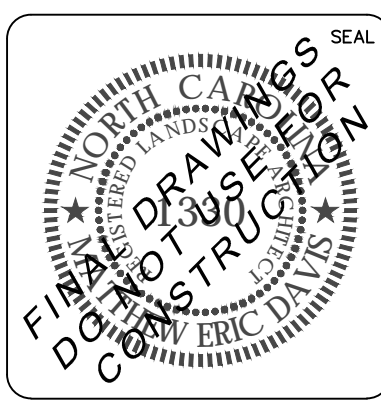
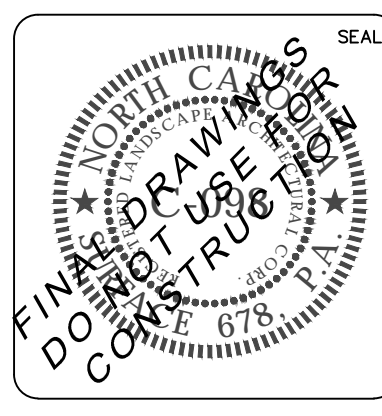
REQUIRED: MINIMUM PLANTING FOR A WET DETENTION VEGETATIVE SHELF IS 50 PLANTS PER EVERY 200 SF OF VEGETATIVE SHELF
(5,900SF VEGETATIVE SHELF/ 200SF) x 50 PLANTS = 1,475 MINIMUM NUMBER OF REQUIRED PLANTS
PROVIDED: 1,475 PLANTS



1 STORMWATER BMP #2
SCALE: 1" = 30'-0"

2 STORMWATER BMP #3
SCALE: 1" = 30'-0"

| REV. NO. | DESCRIPTIONS | DATE |
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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: _____

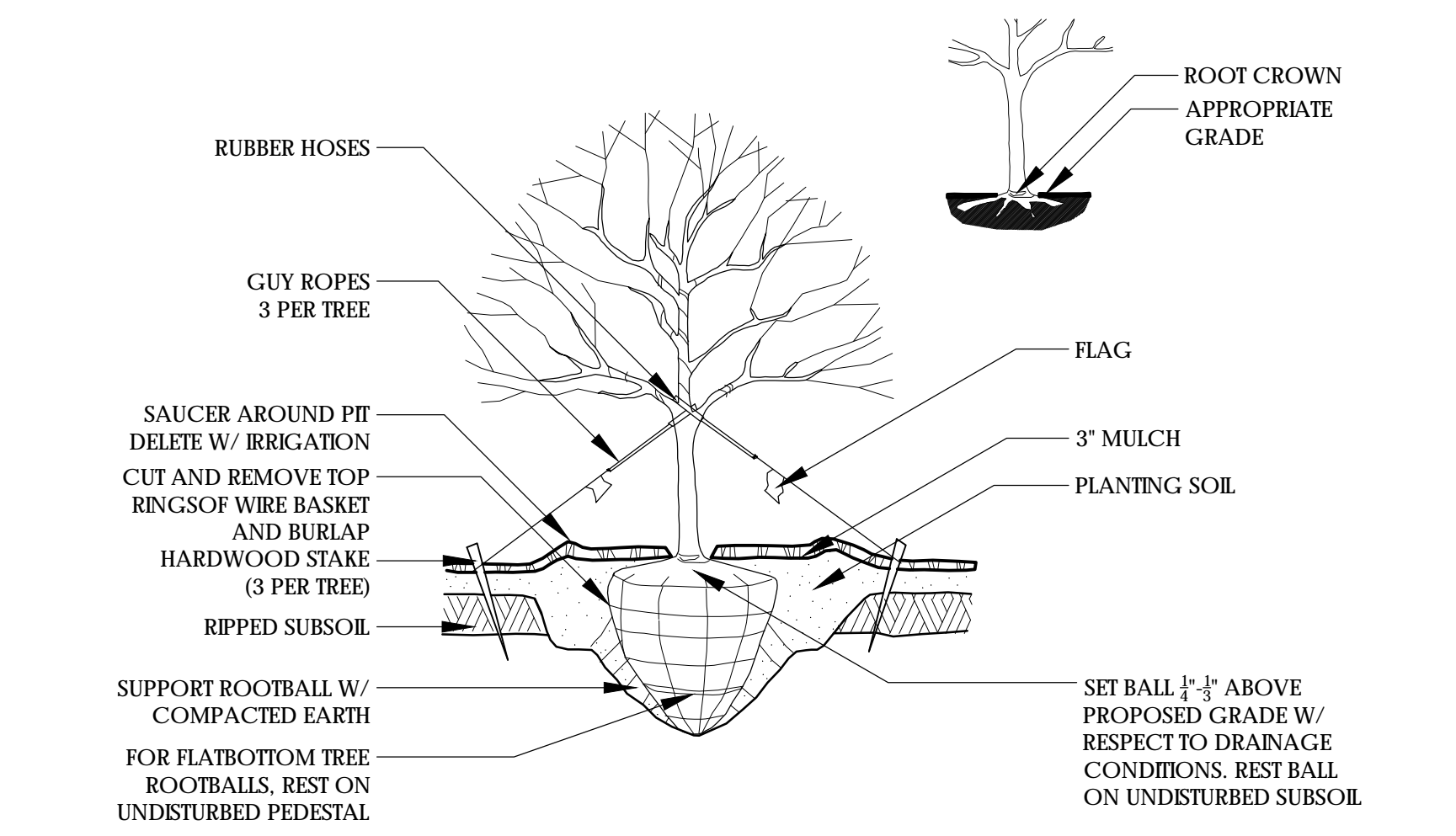
Traffic: _____

Fire: _____

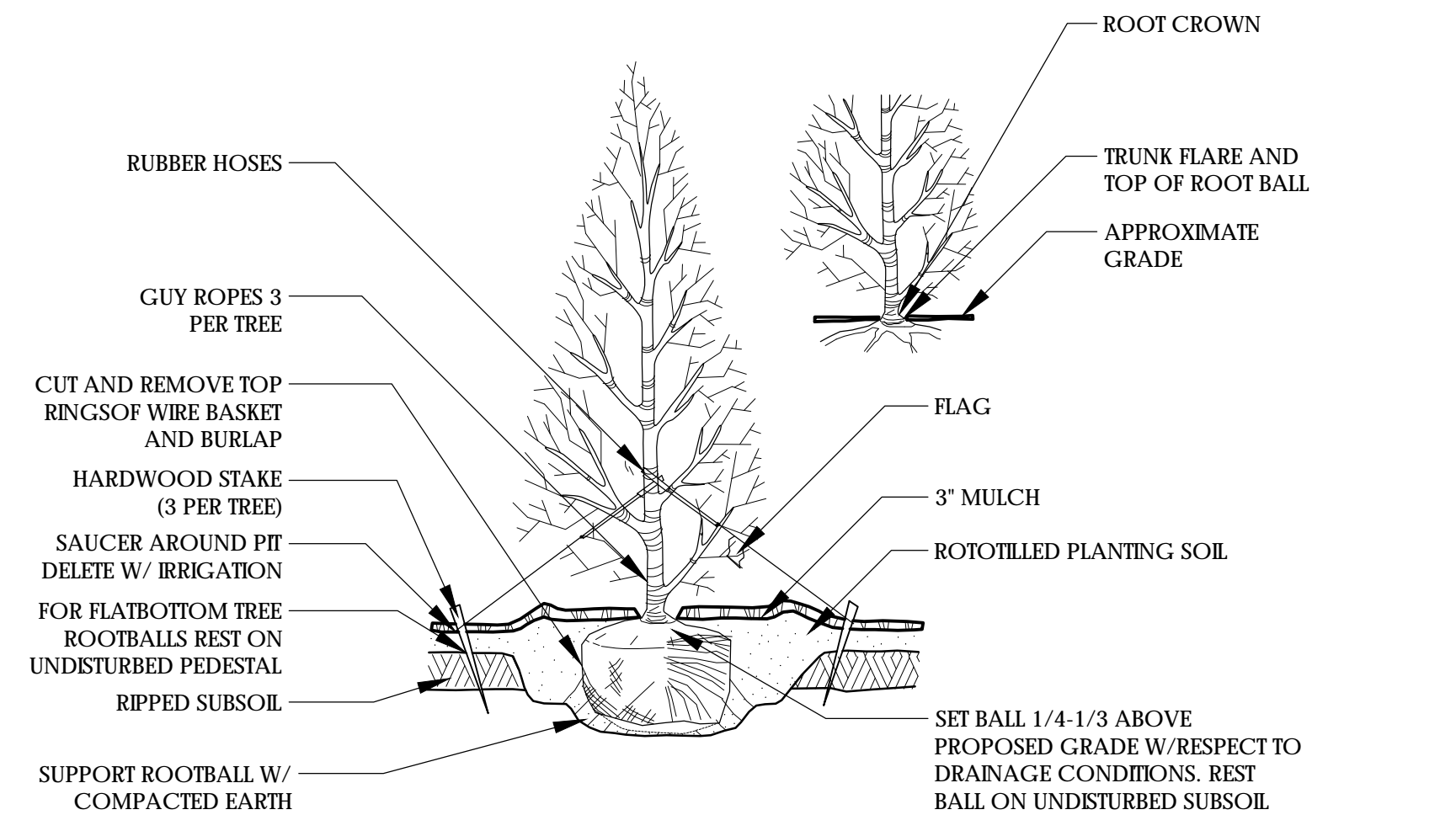
RIVERLIGHTS AGE QUALIFIED
PHASE 2 AND 3

STORMWATER BMP
PLANTING PLAN

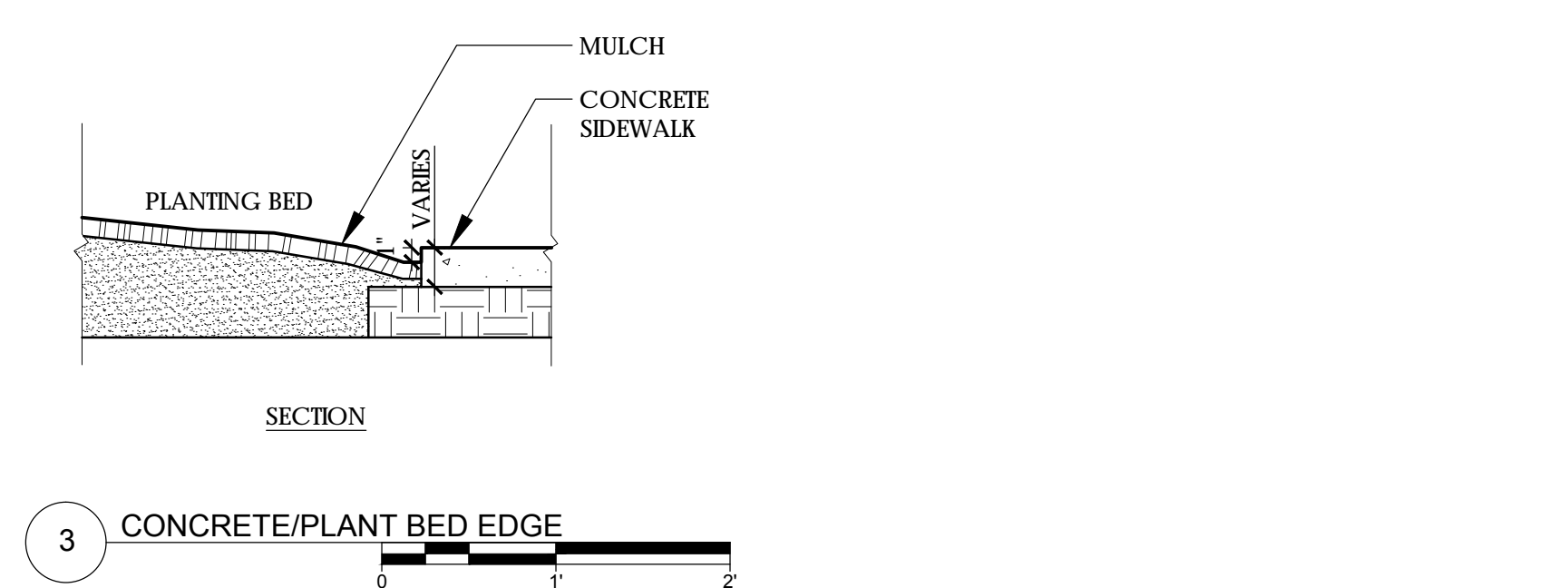
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|----------------------|-----------------|-----------------|
| DATE: 05/25/2016 | SCALE: AS NOTED | M&C FILE NUMBER |
| M&C PROJ. # | AS NOTED | DRAWING NUMBER |
| DRAWN: JL | | L164 |
| DESIGNED: J.C., E.D. | | |
| CHECKED: J.C., E.D. | | |
| PROJ. MGR.: J.C. | | |
| STATUS: | | REVISION |



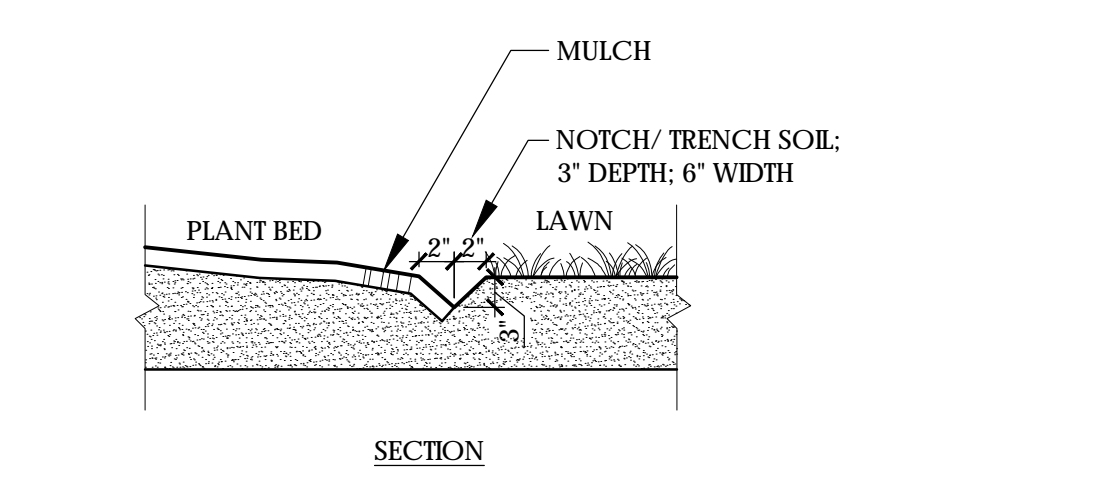
1 RAISED TREE PLANTING SCALE: NTS



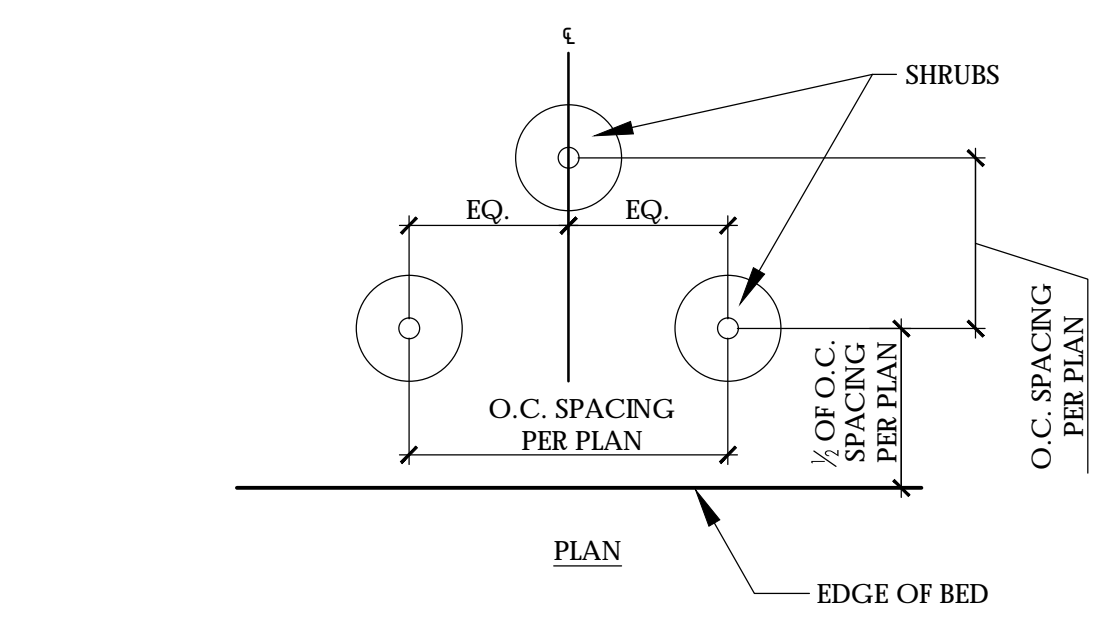
2 EVERGREEN TREE PLANTING SCALE: NTS



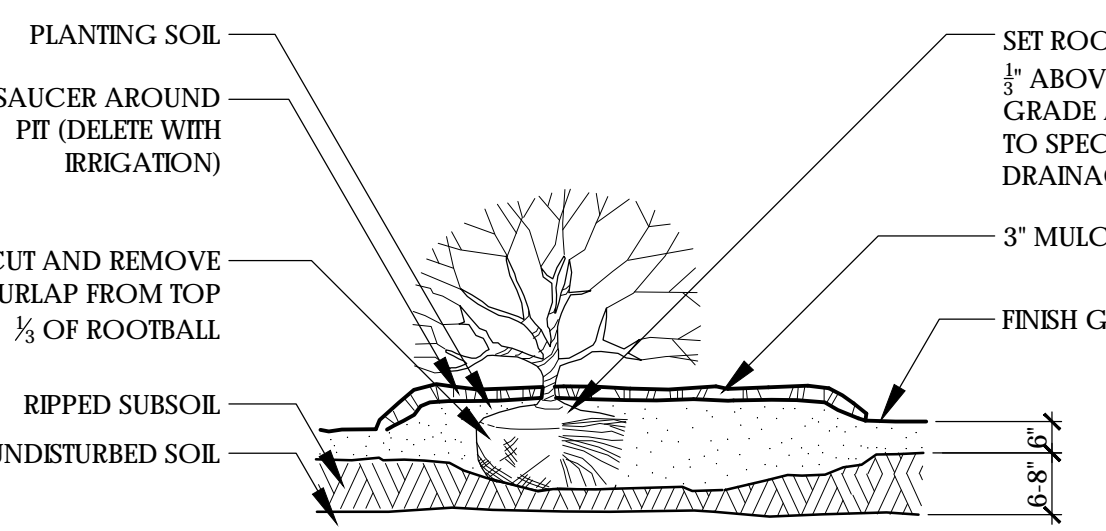
3 CONCRETE/PLANT BED EDGE



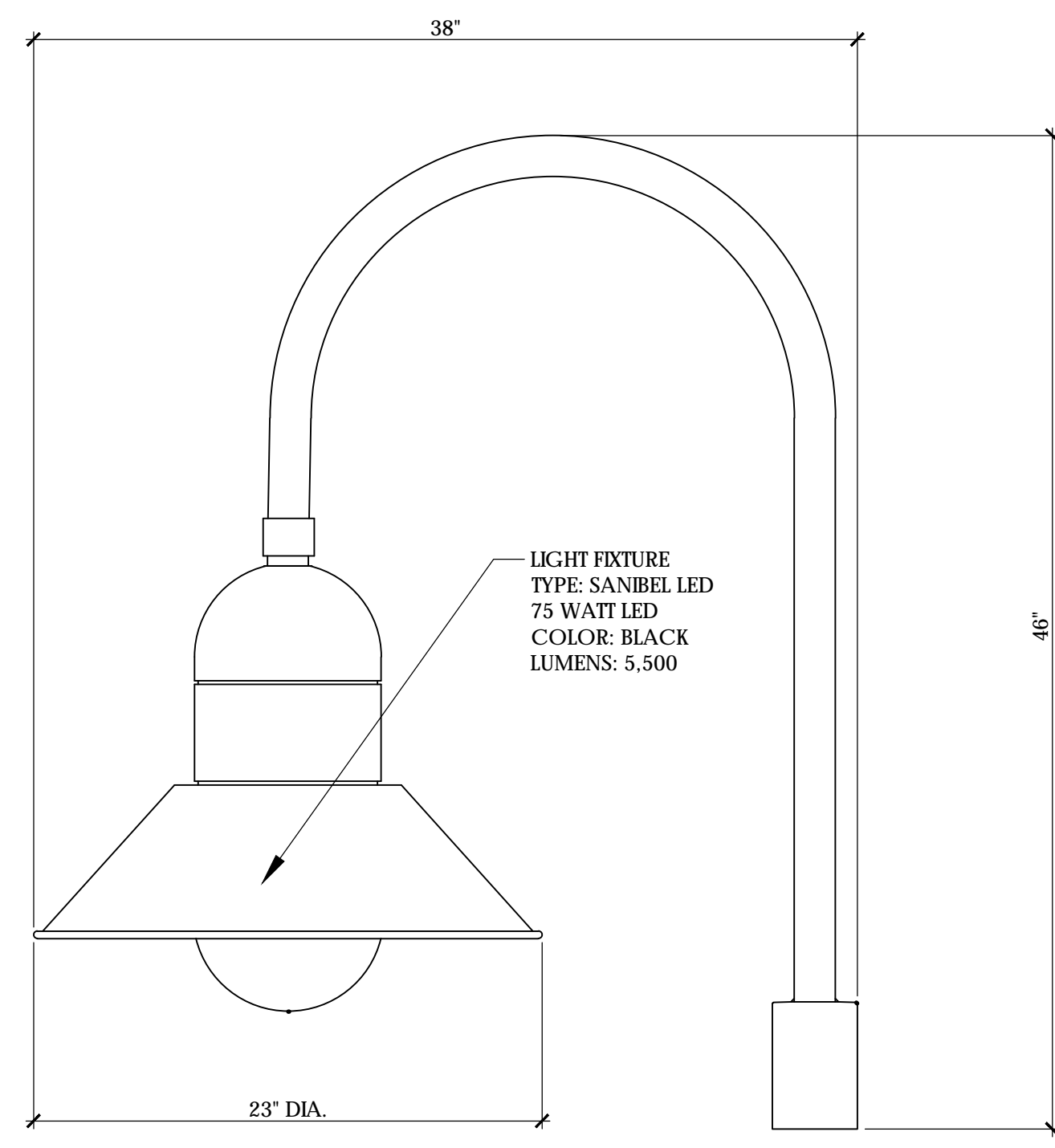
4 LAWN/PLANT BED EDGE



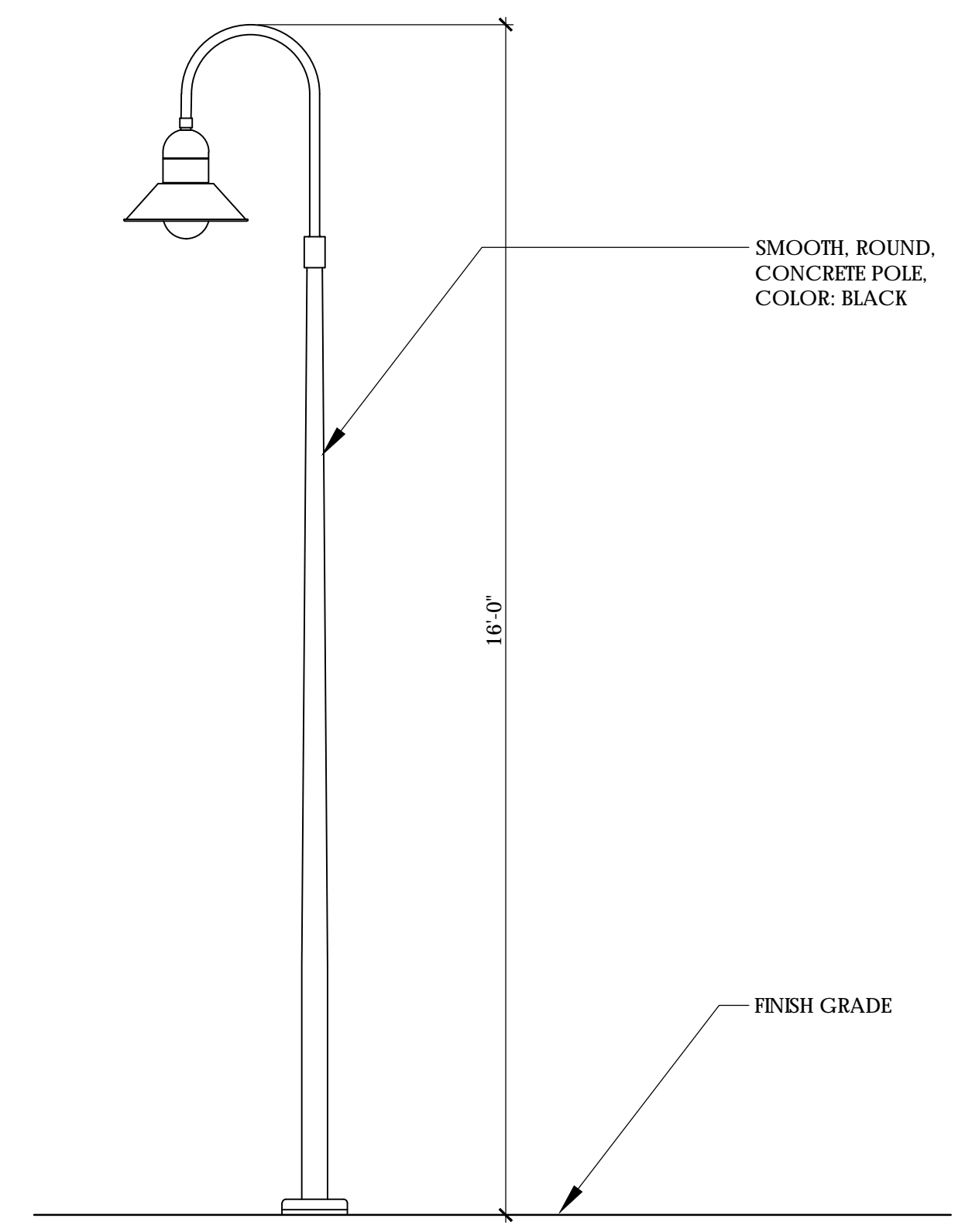
5 RAISED SHRUB PLANTING SCALE: NTS



6 GROUND COVER PLANTING SCALE: NTS

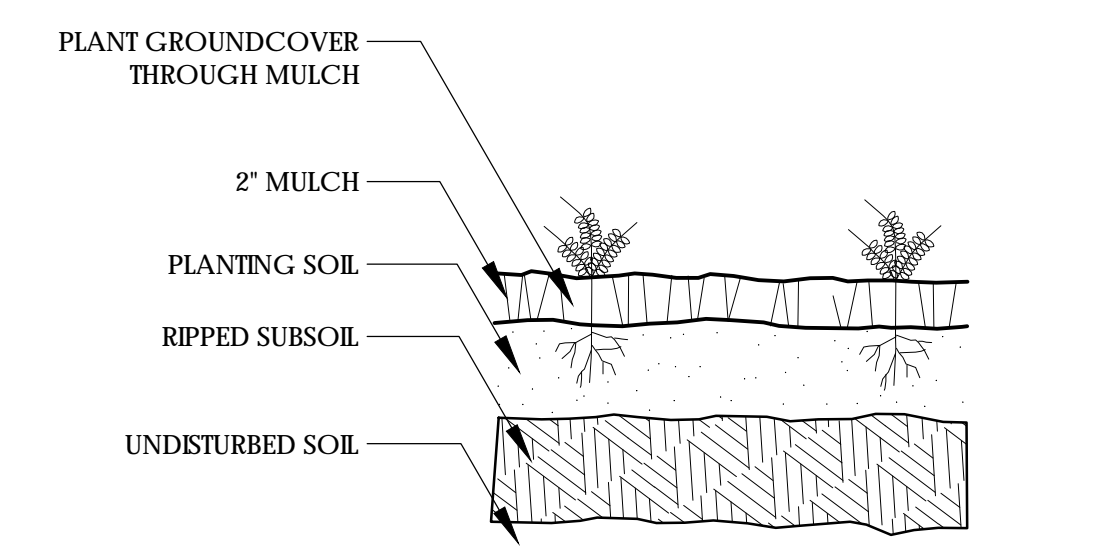


NON STANDARD LIGHT FIXTURE DETAIL



LIGHT FIXTURE POLE ELEVATION

7 LIGHT POLE * LIGHTING SHOWN FOR REFERENCE ONLY. * LIGHT POLE TO BE SIMILAR IN STYLE, COLOR, TYPE. * FINAL LAYOUT AND FOOT CANDLE STUDIES SHALL BE PROVIDED BY THE POWER COMPANY.



9 GROUND COVER PLANTING SCALE: NTS

Approved Construction Plan

Name _____ Date _____

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON
NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

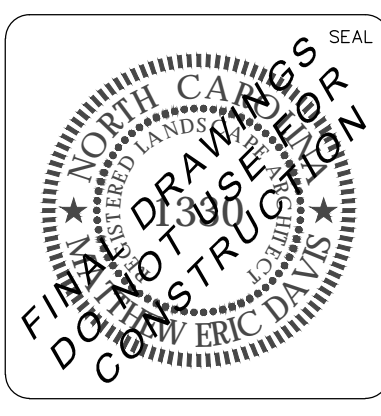
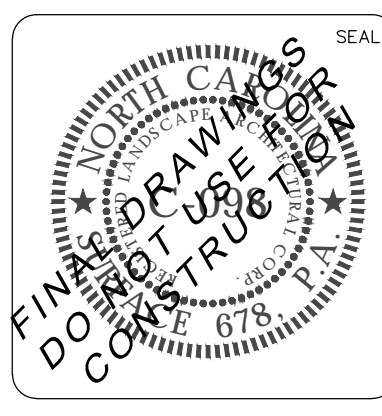
Date: _____ Permit # _____

Signed: _____

1 inch

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| REV. NO. | DESCRIPTIONS REVISIONS | DATE |
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F: 919-419-1669

RIVERLIGHTS AGE QUALIFIED PHASE 2 AND 3

LANDSCAPE DETAILS

| | | |
|--------------------|-----------------|-----------------|
| DATE: 05/25/2016 | SCALE: AS NOTED | M&C FILE NUMBER |
| MCE PROJ. # | | DRAWING NUMBER |
| DRAWN: JL | | L501 |
| DESIGNED: J.C., ED | | |
| CHECKED: J.C., ED | | |
| PROJ. MGR.: J.C. | | |
| STATUS: | | REVISION |