

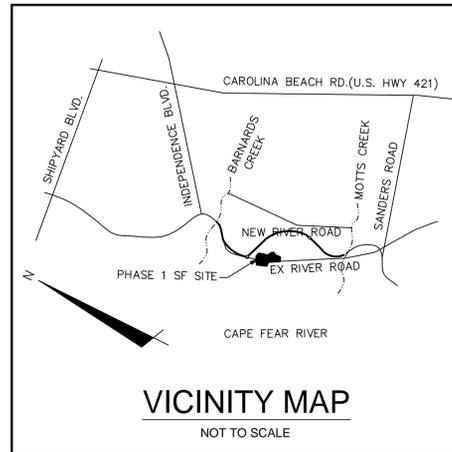
RIVERLIGHTS

PHASE I-A CONVENTIONAL

CITY OF WILMINGTON, NC

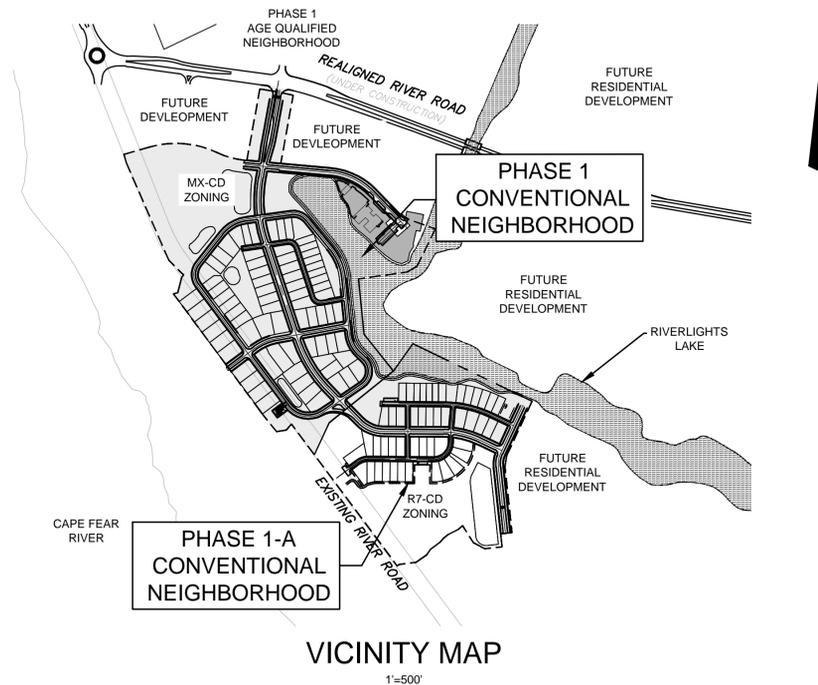
FEBRUARY 2016

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



PROJECT DATA

NAME OF PROJECT:
 RIVERLIGHTS- PHASE 1-A CONVENTIONAL NEIGHBORHOOD
 WILMINGTON, NORTH CAROLINA

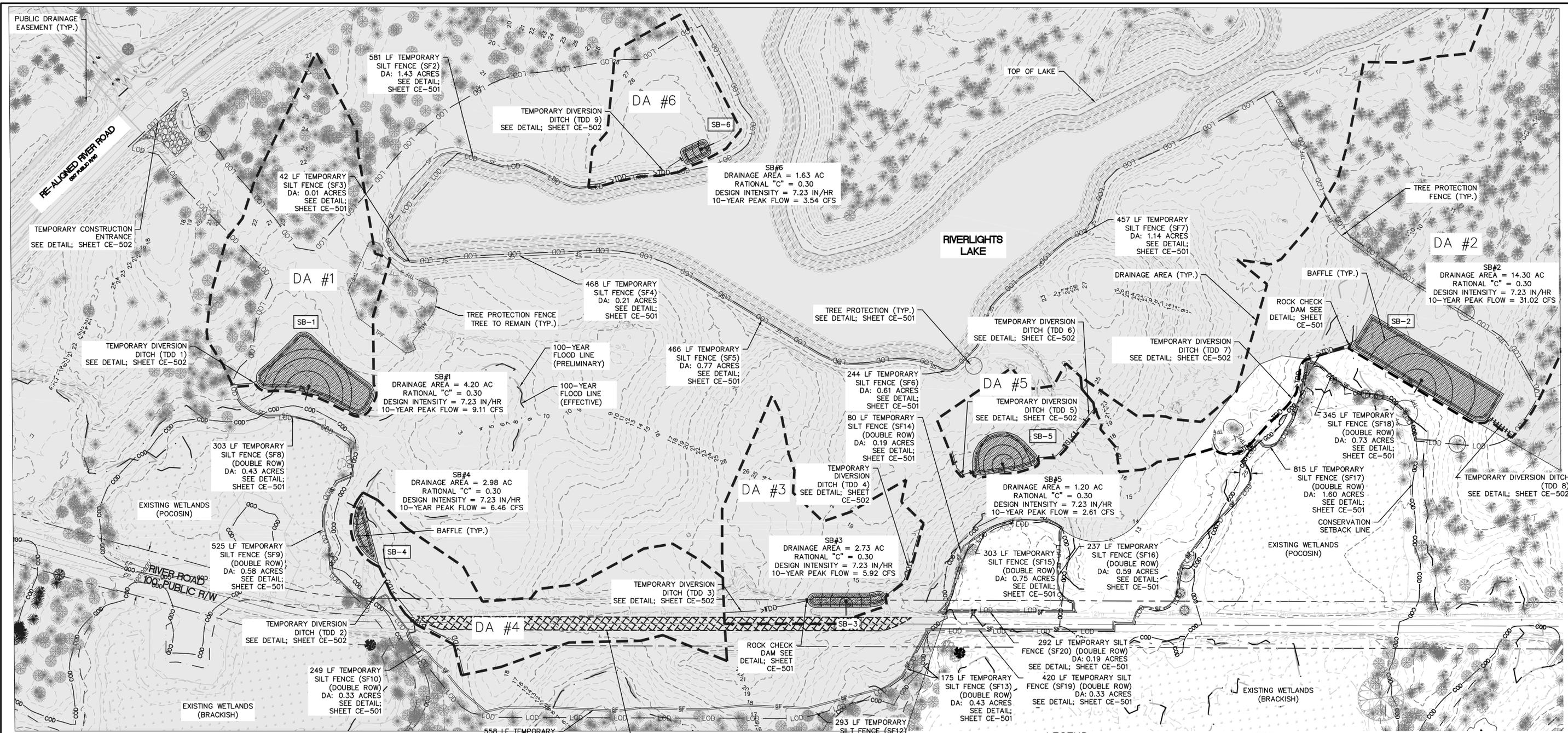
OWNER/DEVELOPER:
 NNP IV-CAPE FEAR RIVER, LLC
 3410 RIVER ROAD, SUITE 103
 WILMINGTON, NC 28412
 PHONE: (704)813-8697
 CONTACT: DOUG BROWN

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



SHEET LIST TABLE		
SHEET NUMBER	SHEET TITLE	SHEET DESCRIPTION
1	G-001	COVER
2	G-002	GENERAL NOTES
3	CX-101	EXISTING CONDITIONS/SITE INVENTORY PLAN
4	CX-102	OVERALL TREE REMOVAL PLAN
5	CE-101	PHASE 1 SEDIMENT AND EROSION CONTROL PLAN
6	CE-102	PHASE 2 SEDIMENT AND EROSION CONTROL PLAN
7	CG-101	GRADING PLAN STORM DRAINAGE PLAN
8	CS-100	OVERALL SITE PLAN
9	CS-101	OVERALL SITE PLAN
10	CU-101	UTILITY PLAN
11	CU-701	PLAN & PROFILE BIBEY ALLEY & COBLE SOUND
12	CU-702	PLAN & PROFILE EXISTING RIVER ROAD
13	CT-301	ROADWAY TYPICAL SECTIONS
14	CE-501	EROSION AND SEDIMENT CONTROL DETAILS
15	CE-502	EROSION AND SEDIMENT CONTROL DETAILS
16	CG-501	STORM DRAINAGE DETAILS
17	CG-502	STORM DRAINAGE DETAILS
18	CG-503	STORM DRAINAGE DETAILS
19	CS-501	SITE PLAN DETAILS
20	CS-502	SITE PLAN DETAILS
21	WSD-1	UTILITY DETAILS
22	WSD-2	UTILITY DETAILS
23	SSD-1	UTILITY DETAILS
24	SSD-2	UTILITY DETAILS
25	SSD-3	UTILITY DETAILS
26	SSD-4	UTILITY DETAILS
27	L-161	PLANTING PLAN
28	L-501	DETAILS

FINAL DESIGN
NOT FOR CONSTRUCTION



LAT: 34° 8' 50" N
 LONG: 77° 56' 11" W

LIMITS OF DISTURBANCE -
 49.42 AC

PHASE 1 CONSTRUCTION SEQUENCE

- ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
- A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL MEET AT THE NEW HANOVER COUNTY EROSION CONTROL INSPECTOR'S OFFICE.
- INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES AS SHOWN. CONTRACTOR SHALL MAINTAIN A SUFFICIENT GRAVEL ENTRANCE UNTIL FINAL SUB-GRADE IS ESTABLISHED. IF DIRT/MUD GETS ON THE STREET, THEN A WASH RACK WILL NEED TO BE INSTALLED.
- INSTALL TREE PROTECTION FENCING AND SILT FENCING AS NOTED ON PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. ADDITIONAL TREE PROTECTION FENCING AND SILT FENCE MAY BE REQUIRED.
- INSTALL TEMPORARY SKIMMER BASINS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE PLANS IN ORDER TO TREAT SEDIMENT LADEN WATER. BASINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ANY DIVERSION DITCHES THAT CONVEY WATER TO THE BASINS. CONTRACTOR TO FIELD ADJUST TEMPORARY DIVERSION DITCHES AS REQUIRED TO MAINTAIN THE DIVERSION TO THE BASINS.

- COMMENCE GRUBBING AND ROUGH GRADING WITHIN THE LIMITS OF CONSTRUCTION.
- COMMENCE DEMOLITION OF EXISTING BUILDINGS, DRIVES, FENCES, GATES, WELLS, GARDENS AND EXISTING UTILITY SERVICES. ALL DEMOLITION MATERIAL SHALL BE DISPOSED OF, SALVAGED, OR RECYCLED PER THE PROJECT SPECIFICATIONS.
- CONTRACTOR SHALL COORDINATE DISCONNECTION OF THE EXISTING UTILITIES:
 - ELECTRICAL SERVICES AND POLES WITH PROGRESS ENERGY
 - TELEPHONE SERVICES AND POLES WITH BELL SOUTH
 - CABLE WITH TIME WARNER CABLE
 - SEWER AND WATER SERVICES WITH CAPE FEAR PUBLIC UTILITY AUTHORITY
 - STORM DRAINAGE SYSTEM WITH CITY OF WILMINGTON
- PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION. REFER TO SHEET CE-502 FOR GROUND STABILIZATION CRITERIA AND SEEDING SCHEDULE.
- REFER TO G-002 FOR EROSION CONTROL NOTES AND MAINTENANCE PLAN.

LEGEND

	= SANITARY SEWER MANHOLE
	= WETLAND
	= OVERHEAD ELECTRIC LINE
	= CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
	= SANITARY SEWER MAIN
	= MEAN HIGH WATER
	= AREA OF ENVIRONMENTAL CONCERN
	= 100-YEAR FLOODPLAIN (PRELIMINARY)
	= 100-YEAR FLOODPLAIN (EFFECTIVE)
	= COASTAL MARSH LINE
	= 35' CONSERVATION RESOURCE VEGETATED BUFFER
	= TREE PROTECTION FENCE
	= LIMITS OF DISTURBANCE
	= SILT FENCE
	= TEMPORARY DIVERSION DITCH

NOTE:

- WHERE SILT FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, 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).

TREE LEGEND

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

100' 0 100' 200'
 SCALE: 1"=100' (Horiz.)

REV. NO.	DESCRIPTION	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

FINAL DRAWINGS
 FOR REVIEW
 PURPOSES ONLY

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MCKIM & CREED

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

RIVERLIGHTS
 Newland by COMMUNITIES

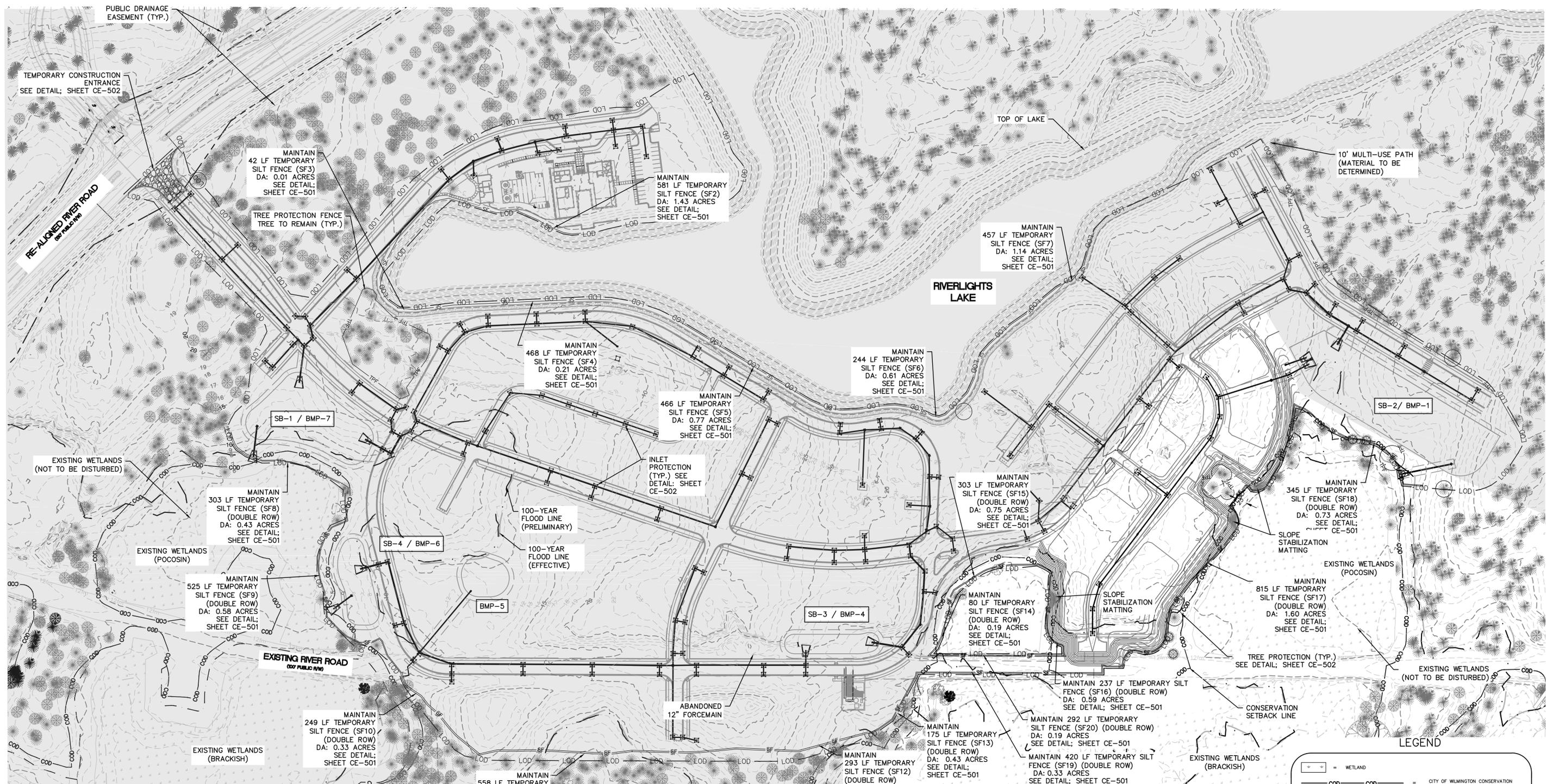
NORTH AMERICA SENIUS HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A

PHASE 1 SEDIMENT AND EROSION CONTROL PLAN

DATE: 2015-10-30	SCALE: HORIZONTAL: 1"=100'	MAC FILE NUMBER: CE-101
MCE PROJ. #: 2735-0129	VERTICAL: N/A	DRAWING NUMBER: 5
DRAWN: EEM		
DESIGNED: KCBK		
CHECKED: NJL		
PROJ. MGR.: KCBK		
STATUS: FINAL DESIGN	REVISION: B	
ISSUED FOR PERMITTING		

S:\2725\0129 Ph 1 SF-00-Drawings-Additional Isss\CE-101-02750129-A.dwg - 2/3/2016 12:15:16 PM, AManderson

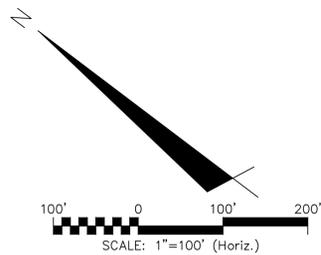


PHASE 2 CONSTRUCTION SEQUENCE

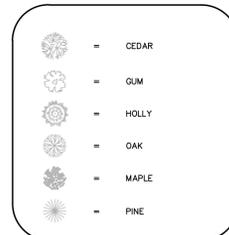
- BEGIN PHASE 2 SEDIMENT AND EROSION CONTROL UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, ROUGH GRADING OF THE SITE AND INSTALLATION OF THE STORM WATER COLLECTION SYSTEM.
- MAINTAIN MEASURES FROM PHASE 1 AS SHOWN IN THIS PHASE 2 SEDIMENT AND EROSION CONTROL DRAWING.
- REMOVE MEASURES FROM PHASE 1 AS SHOWN. THIS INCLUDES TEMPORARY DIVERSIONS. STABILIZE THESE AREAS ACCORDING TO THE STABILIZATION MEASURES REQUIRED HEREIN.
- INSTALL INLET PROTECTION AS SHOWN IN THE

PHASE 2 PLAN AND CONSTRUCTION DETAILS.

- COMPLETE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- UPON COMPLETION OF CONSTRUCTION, ESTABLISH PERMANENT GROUND COVER AND OVERALL SITE STABILIZATION.
- REMOVE THE SEDIMENT AND EROSION CONTROL MEASURES.
- REFER TO G-002 FOR EROSION AND SEDIMENT CONTROL NOTES AND MAINTENANCE PLAN.



TREE LEGEND



LIMITS OF DISTURBANCE = 49.42 AC

**LAT: 34° 8' 50" N
LONG: 77° 56' 11" W**

LEGEND

	= WETLAND		= CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
	= SANITARY SEWER MAIN		= MEAN HIGH WATER
	= AREA OF ENVIRONMENTAL CONCERN		= 100-YEAR FLOODPLAIN (PRELIMINARY)
	= 100-YEAR FLOODPLAIN (EFFECTIVE)		= COASTAL MARSH LINE
	= 35' CONSERVATION RESOURCE VEGETATED BUFFER		= TREE PROTECTION FENCE
	= LIMITS OF DISTURBANCE		= SILT FENCE
	= TEMPORARY DIVERSION DITCH		

REV. NO.	DESCRIPTIONS	DATE
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A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

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

RIVERLIGHTS
 Newland by COMMUNITIES
 NORTH AMERICA SENIUS HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
PHASE 2 SEDIMENT AND EROSION CONTROL PLAN

DATE: 2015-10-30	SCALE: 1"=100'	MAC FILE NUMBER: CE-102
MCE PROJ. #: 2735-0129	HORIZONTAL: 1"=100'	DRAWING NUMBER: 6
DRAWN: EEM	VERTICAL: N/A	REVISION: B
DESIGNED: KCB		
CHECKED: NJL		
PROJ. MGR.: KCB		

STATUS: FINAL DESIGN
ISSUED FOR PERMITTING

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

REV. NO.	DESCRIPTIONS REVISIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

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RIVERLIGHTS
by
Newland COMMUNITIES

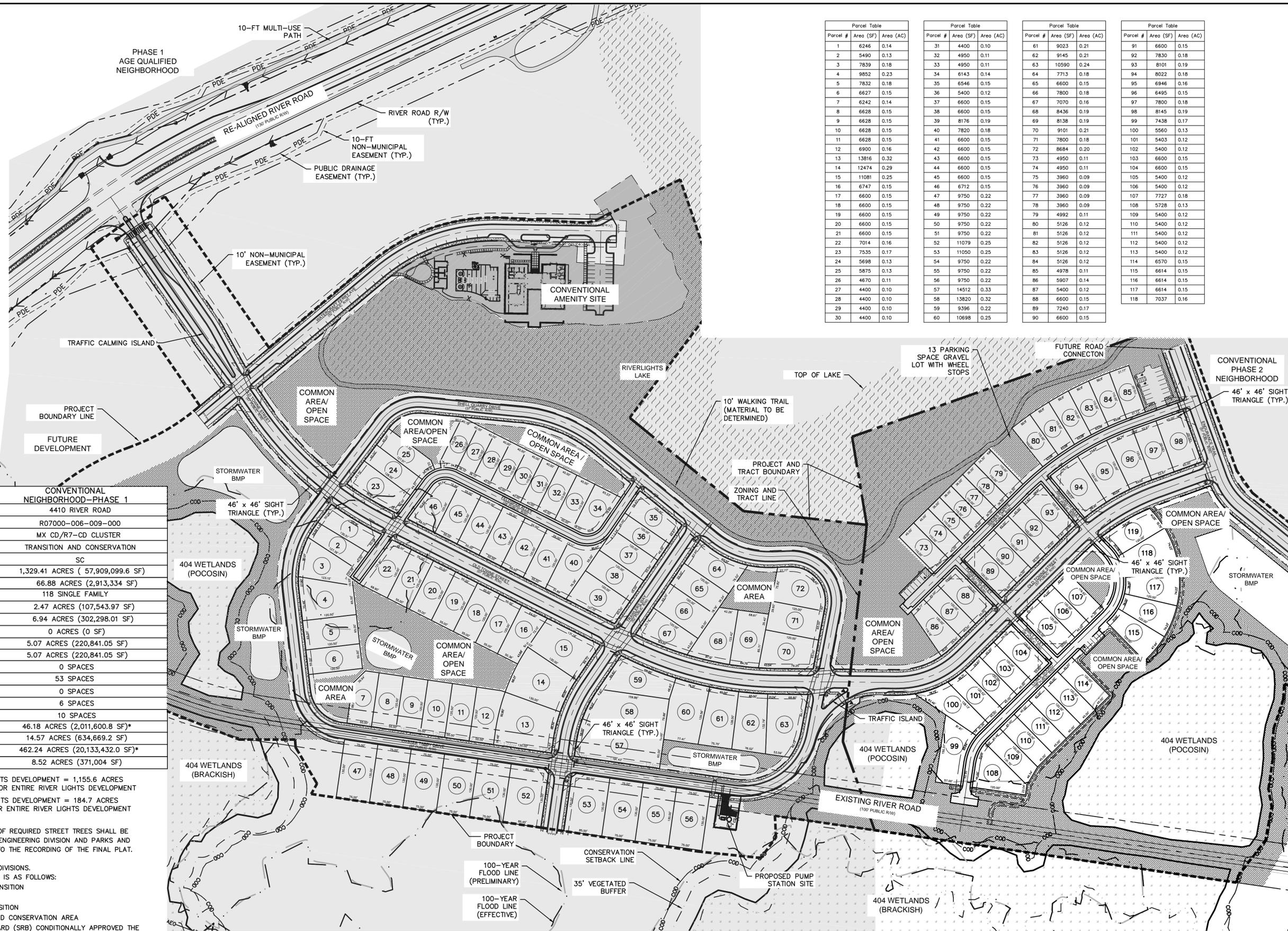
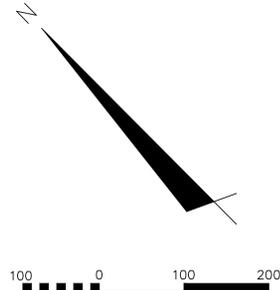
**RIVERLIGHTS
CONVENTIONAL NEIGHBORHOOD
PH 1-A**

**GRADING PLAN
STORM DRAINAGE PLAN**

DATE:	2015-10-30	SCALE:	HORIZONTAL: 1"=50'	VERTICAL: N/A	MAC FILE NUMBER: CG-101
MCE PROJ. #	2735-0129	DRAWN:	EEM	DESIGNED:	KCBE
CHECKED:	NAL	PROJ. MGR.:	KCBE	DRAWING NUMBER:	7
STATUS: FINAL DESIGN				REVISION B	
ISSUED FOR PERMITTING					

SURFACE MATERIAL LEGEND

	ASPHALT
	SIDEWALK
	OPEN SPACE



Parcel #	Area (SF)	Area (AC)	Parcel #	Area (SF)	Area (AC)	Parcel #	Area (SF)	Area (AC)	Parcel #	Area (SF)	Area (AC)
1	6246	0.14	31	4400	0.10	61	9023	0.21	91	6600	0.15
2	5490	0.13	32	4950	0.11	62	9145	0.21	92	7830	0.18
3	7839	0.18	33	4950	0.11	63	10590	0.24	93	8101	0.19
4	9852	0.23	34	6143	0.14	64	7713	0.18	94	8022	0.18
5	7832	0.18	35	6546	0.15	65	6600	0.15	95	6946	0.16
6	6627	0.15	36	5400	0.12	66	7800	0.18	96	6495	0.15
7	6242	0.14	37	6600	0.15	67	7070	0.16	97	7800	0.18
8	6628	0.15	38	6600	0.15	68	8436	0.19	98	8145	0.19
9	6628	0.15	39	8176	0.19	69	8138	0.19	99	7438	0.17
10	6628	0.15	40	7820	0.18	70	9101	0.21	100	5560	0.13
11	6628	0.15	41	6600	0.15	71	7800	0.18	101	5403	0.12
12	6900	0.16	42	6600	0.15	72	8684	0.20	102	5400	0.12
13	13816	0.32	43	6600	0.15	73	4950	0.11	103	6600	0.15
14	12474	0.29	44	6600	0.15	74	4950	0.11	104	6600	0.15
15	11081	0.25	45	6600	0.15	75	3960	0.09	105	5400	0.12
16	6747	0.15	46	6712	0.15	76	3960	0.09	106	5400	0.12
17	6600	0.15	47	9750	0.22	77	3960	0.09	107	7727	0.18
18	6600	0.15	48	9750	0.22	78	3960	0.09	108	5728	0.13
19	6600	0.15	49	9750	0.22	79	4992	0.11	109	5400	0.12
20	6600	0.15	50	9750	0.22	80	5126	0.12	110	5400	0.12
21	6600	0.15	51	9750	0.22	81	5126	0.12	111	5400	0.12
22	7014	0.16	52	11079	0.25	82	5126	0.12	112	5400	0.12
23	7535	0.17	53	11050	0.25	83	5126	0.12	113	5400	0.12
24	5698	0.13	54	9750	0.22	84	5126	0.12	114	6570	0.15
25	5875	0.13	55	9750	0.22	85	4978	0.11	115	6614	0.15
26	4670	0.11	56	9750	0.22	86	5907	0.14	116	6614	0.15
27	4400	0.10	57	14512	0.33	87	5400	0.12	117	6614	0.15
28	4400	0.10	58	13820	0.32	88	6600	0.15	118	7037	0.16
29	4400	0.10	59	9396	0.22	89	7240	0.17			
30	4400	0.10	60	10698	0.25	90	6600	0.15			

SITE DATA TABLE	
CONVENTIONAL NEIGHBORHOOD—PHASE 1	4410 RIVER ROAD
PARCEL ADDRESS	
TAX PARCEL IDENTIFICATION NUMBER	R07000-006-009-000
ZONING DISTRICT	MX CD/R7-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 PHASE 1 CONVENTIONAL BOUNDARY	66.88 ACRES (2,913,334 SF)
PROPOSED NUMBER OF LOTS	118 SINGLE FAMILY
FUTURE AMENITY SITE	2.47 ACRES (107,543.97 SF)
TOTAL WETLANDS WITHIN PROJECT TRACT	6.94 ACRES (302,298.01 SF)
TOTAL WETLANDS IMPACTS	0 ACRES (0 SF)
AREA INSIDE COD SETBACK REQUIRED	5.07 ACRES (220,841.05 SF)
AREA INSIDE COD SETBACK PROVIDED	5.07 ACRES (220,841.05 SF)
TOTAL PARKING REQUIRED	0 SPACES
TOTAL PARKING PROVIDED	53 SPACES
TOTAL HANDICAP SPACES REQUIRED	0 SPACES
TOTAL HANDICAP SPACES PROVIDED	6 SPACES
TOTAL BICYCLE SPACES PROVIDED	10 SPACES
MX-CD CLUSTER: TOTAL OPEN SPACE REQUIRED	46.18 ACRES (2,011,600.8 SF)*
MX-CD CLUSTER: TOTAL OPEN SPACE PROPOSED	14.57 ACRES (634,669.2 SF)
R7-CD CLUSTER: TOTAL OPEN SPACE REQUIRED	462.24 ACRES (20,133,432.0 SF)*
R7-CD CLUSTER: TOTAL OPEN SPACE PROPOSED	8.52 ACRES (371,004 SF)

*PROPOSED R7-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 1,155.6 ACRES (@ 40% OPEN SPACE) = 462.24 ACRES REQUIRED FOR ENTIRE RIVER LIGHTS DEVELOPMENT
 *PROPOSED MX-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 184.7 ACRES (@ 25% OPEN SPACE) = 46.18 ACRES REQUIRED FOR ENTIRE RIVER LIGHTS 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 PLAN.
- 10 FT SEPARATION REQUIRED BETWEEN BUILDINGS.
- ZERO LOT LINES ARE PERMITTED IN CLUSTER SUBDIVISIONS.
- ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
 NORTH - FUTURE R7-CD CLUSTER / TRANSITION
 SOUTH - CAPE FEAR RIVER / TRANSITION
 EAST - FUTURE R7-CD CLUSTER / TRANSITION
 WEST - FUTURE MX-CD / TRANSITION AND CONSERVATION AREA
- THE CITY OF WILMINGTON SUBDIVISION REVIEW BOARD (SRB) CONDITIONALLY APPROVED THE PRELIMINARY PLAN FOR CONVENTIONAL NEIGHBORHOOD - PHASE 1 ON APRIL 15TH, 2015.

REVNO.	DESCRIPTIONS / REVISIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
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FINAL DRAWINGS SEAL FOR REVIEW PURPOSES ONLY

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RIVERLIGHTS
 by Newland COMMUNITIES
 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
OVERALL SITE PLAN

DATE: 2015-10-30
 MCE PROJ. # 2735-0129
 DRAWN: EEM
 DESIGNED: KCBE
 CHECKED: NAL
 PROJ. MGR: KCBE

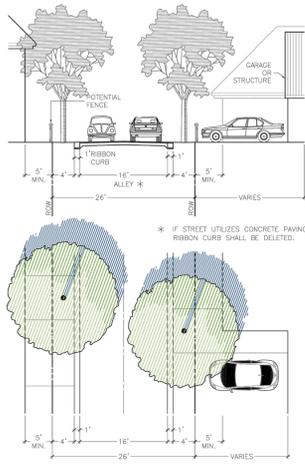
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 VERTICAL: N/A

STATUS: FINAL DESIGN
 ISSUED FOR PERMITTING

MAC FILE NUMBER: CS-100
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 REVISION: B

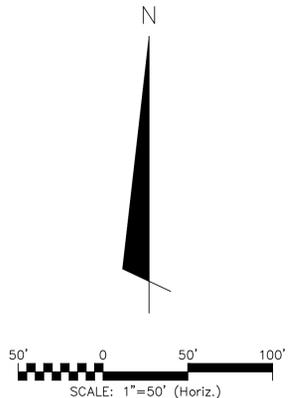
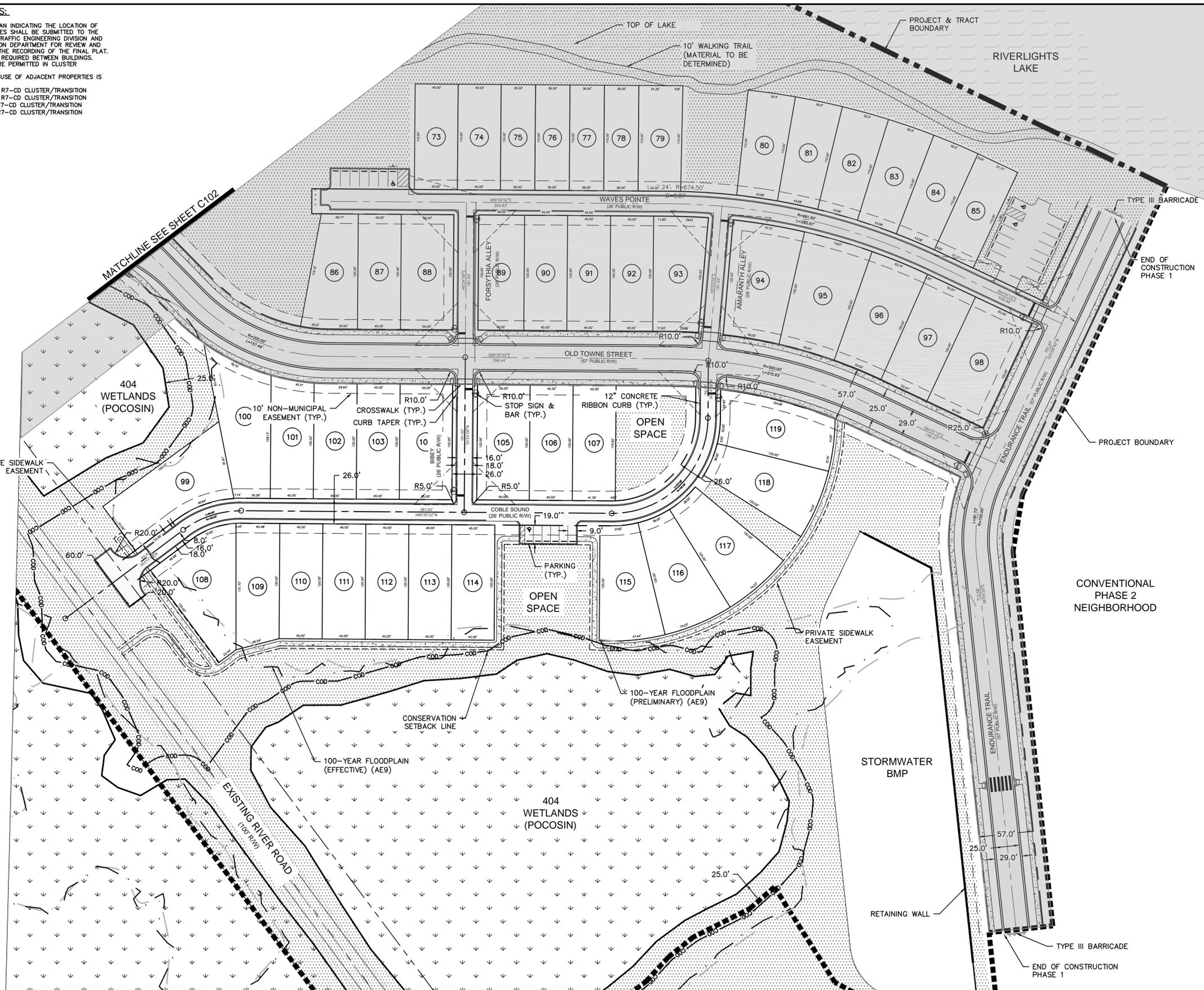
GENERAL NOTES:

1. A LANDSCAPING PLAN INDICATING THE LOCATION OF REQUIRED STREET TREES SHALL BE SUBMITTED TO THE CITY OF WILMINGTON TRAFFIC ENGINEERING DIVISION AND PARKS AND RECREATION DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO THE RECORDING OF THE FINAL PLAT.
2. 10 FT SEPARATION REQUIRED BETWEEN BUILDINGS.
3. ZERO LOT LINES ARE PERMITTED IN CLUSTER SUBDIVISIONS.
4. ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
 NORTH- FUTURE R7-CD CLUSTER/TRANSITION
 SOUTH- FUTURE R7-CD CLUSTER/TRANSITION
 EAST- FUTURE R7-CD CLUSTER/TRANSITION
 WEST- FUTURE R7-CD CLUSTER/TRANSITION



26' RIGHT-OF-WAY (PUBLIC)

Right-of-Way Width	26 Feet
Right-of-Way	10 Feet
Front Setback	20 Feet
Traffic Lanes	2 Lanes
Parking Lanes	No Parking
Curbside	4 Feet
Walkway Type	NA
Strip Type	12" Ribbon Curb
Landscaping Type	Irregular Tree Spacing



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FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

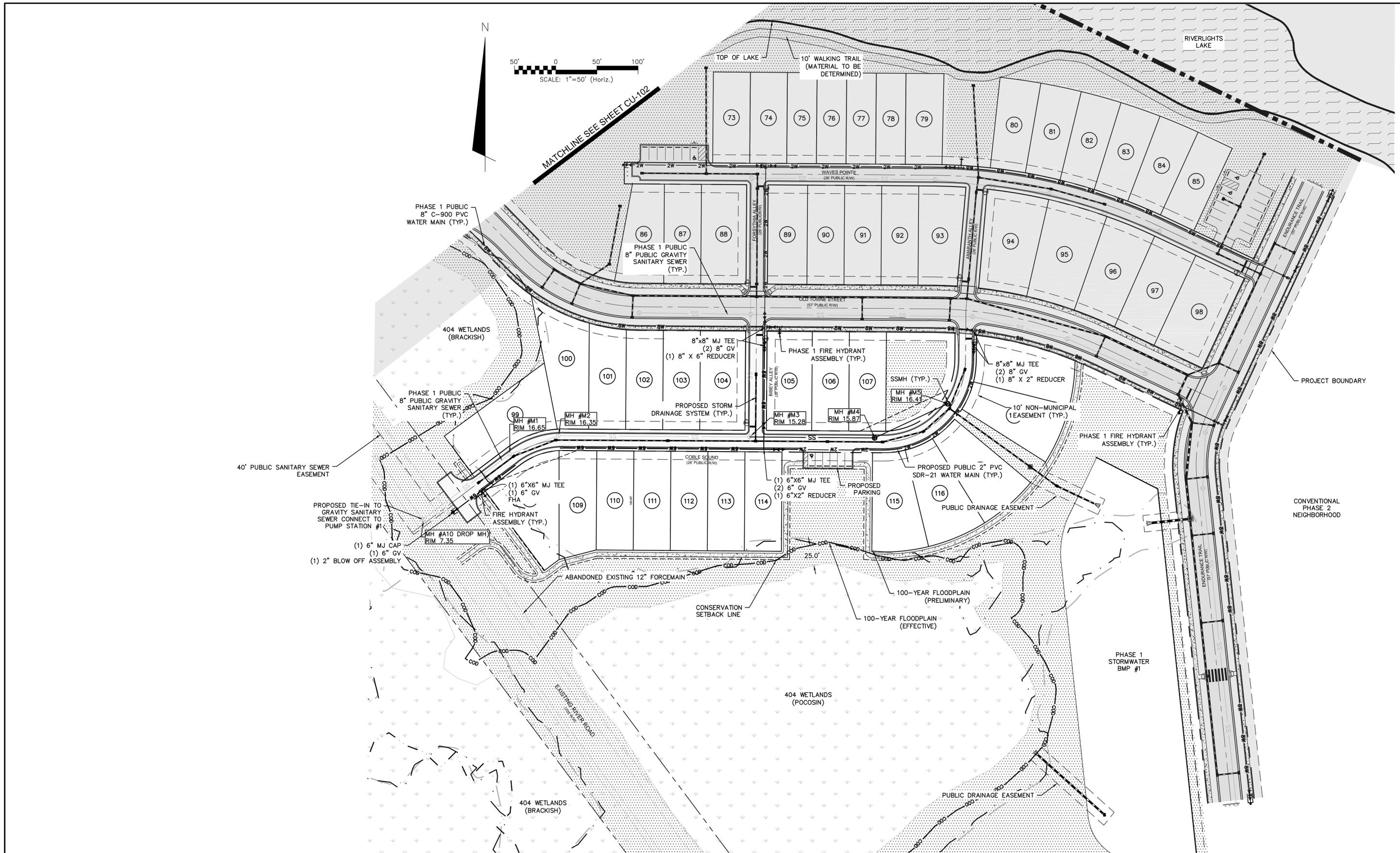
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RIVERLIGHTS
 by Newland COMMUNITIES
 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
OVERALL SITE PLAN

DATE: 2015-10-30	SCALE: 1"=50'	M&C FILE NUMBER: CS-101
M&C PROJ. # 2735-0129	HORIZONTAL: 1"=50'	DRAWING NUMBER: 9
DRAWN: EEM	VERTICAL: N/A	REVISION: B
DESIGNED: KCBE		
CHECKED: NLL		
PROJ. MGR: KCBE		
STATUS: FINAL DESIGN ISSUED FOR PERMITTING		



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MCKIM & CREED
 243 North Front Street
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 License: F-1222
 www.mckimcreed.com

RIVERLIGHTS
 by Newland COMMUNITIES
 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
UTILITY PLAN

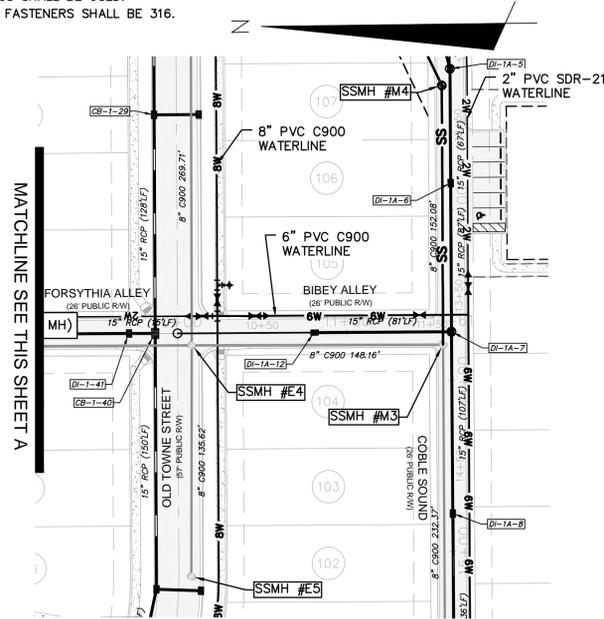
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MCE PROJ. #: 2735-0129	DESIGNED: EEM	DRAWING NUMBER: 10
CHECKED: N/A	VERTICAL: N/A	
PROJ. MGR.: KCBE		
STATUS: FINAL DESIGN		REVISION: A
ISSUED FOR PERMITTING		

CAPE FEAR PUBLIC UTILITY AUTHORITY STANDARD SEWER NOTES:

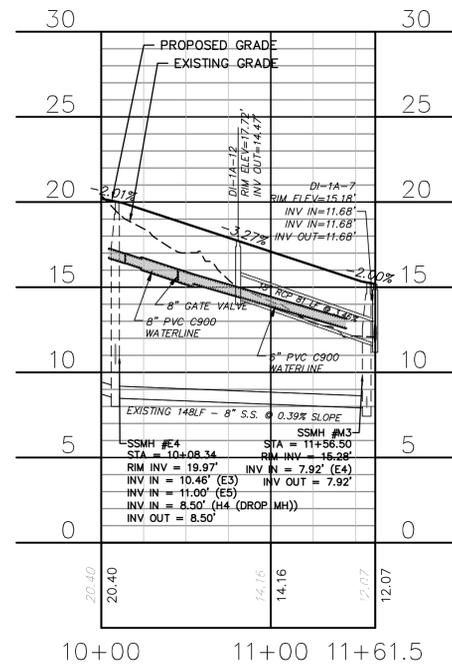
- SEWER GUARDS REQUIRED AT ALL MANHOLES. STAINLESS STEEL SEWER GUARDS REQUIRED AT MANHOLES LOCATED IN TRAFFIC AREAS.
- SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE IN RIGHT-OF-WAY LINE.
- 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.

UTILITY NOTES:

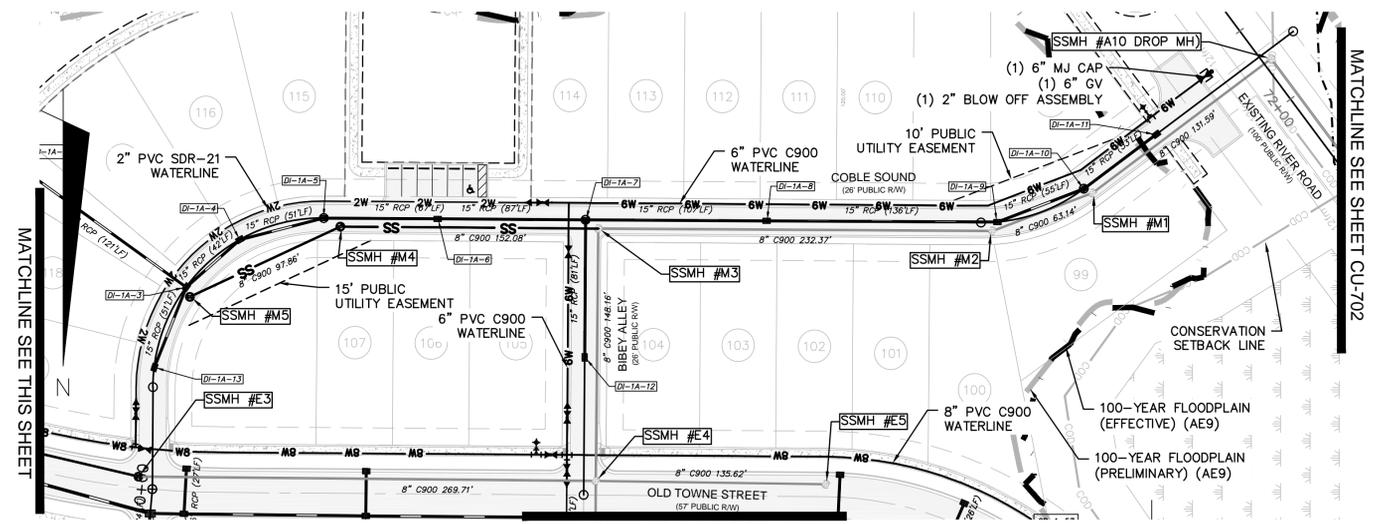
- ALL VALVES AND FITTINGS TO BE RESTRAINED JOINT AND BLOCKED PER CFPWA STANDARD DETAILS AND SPECIFICATIONS. SEE CFPWA STANDARD DETAIL SHEETS AND UTILITY NOTES G-002.



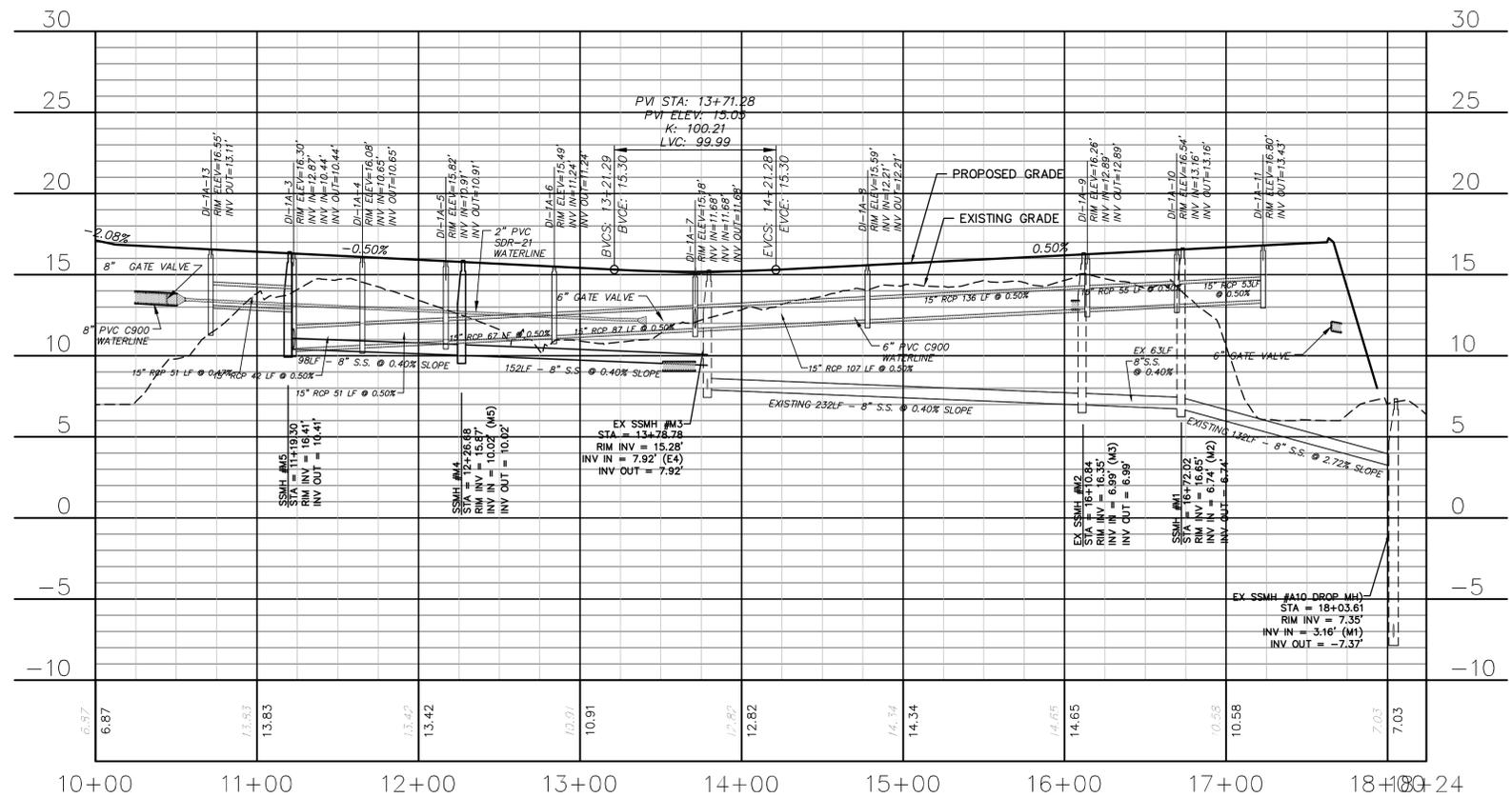
**BIBEY ALLEY
(STA 10+00 TO 11+61)**



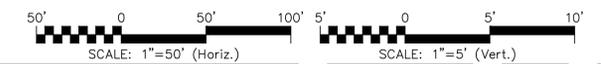
**BIBEY ALLEY
(STA 10+00 TO 11+61)**



**COBLE SOUND
(STA 10+00 TO 17+99)**



**COBLE SOUND
(STA 10+00 TO 17+99)**



REVNO.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

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 NORTH AMERICA SEKISUI HOUSE, LLC

**RIVERLIGHTS
 CONVENTIONAL NEIGHBORHOOD
 PH 1-A
 PLAN & PROFILE
 BIBEY ALLEY & COBLE SOUND**

DATE: 2015-10-30
 MCE PROJ. # 2735-0129
 DRAWN: EEM
 DESIGNED: KCBE
 CHECKED: NUL
 PROJ. MGR: KCBE

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

STATUS: FINAL DESIGN
 ISSUED FOR PERMITTING

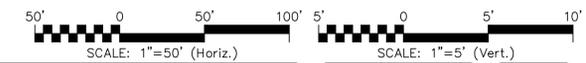
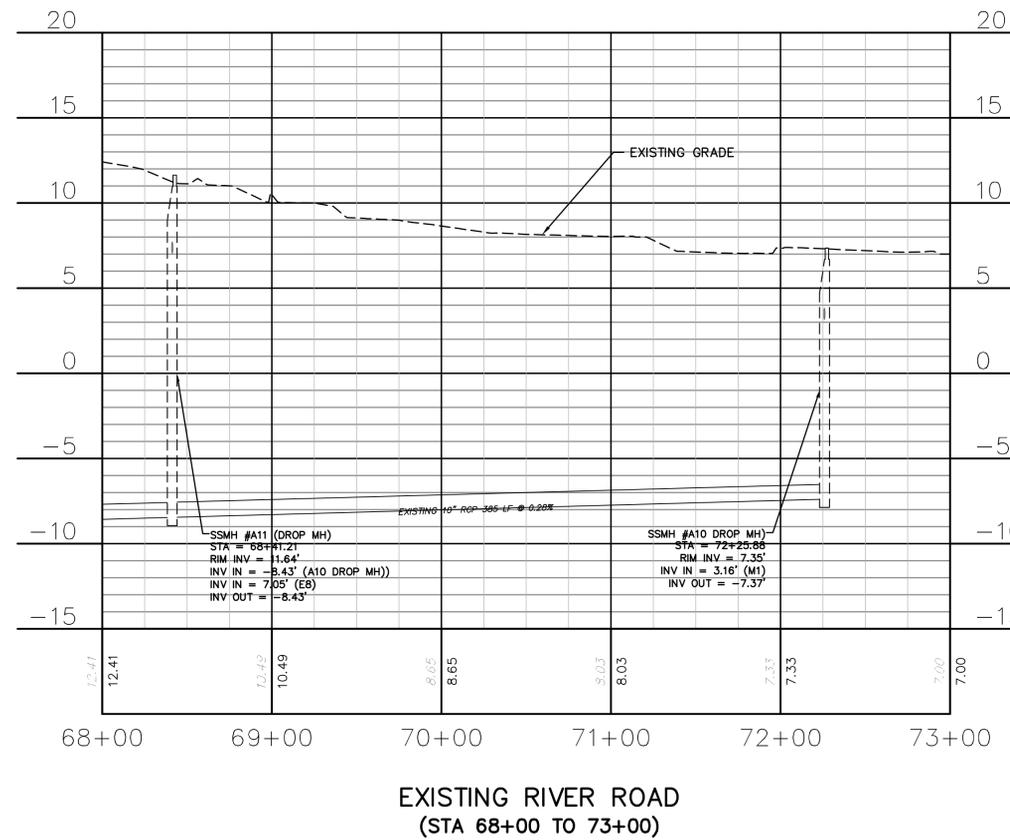
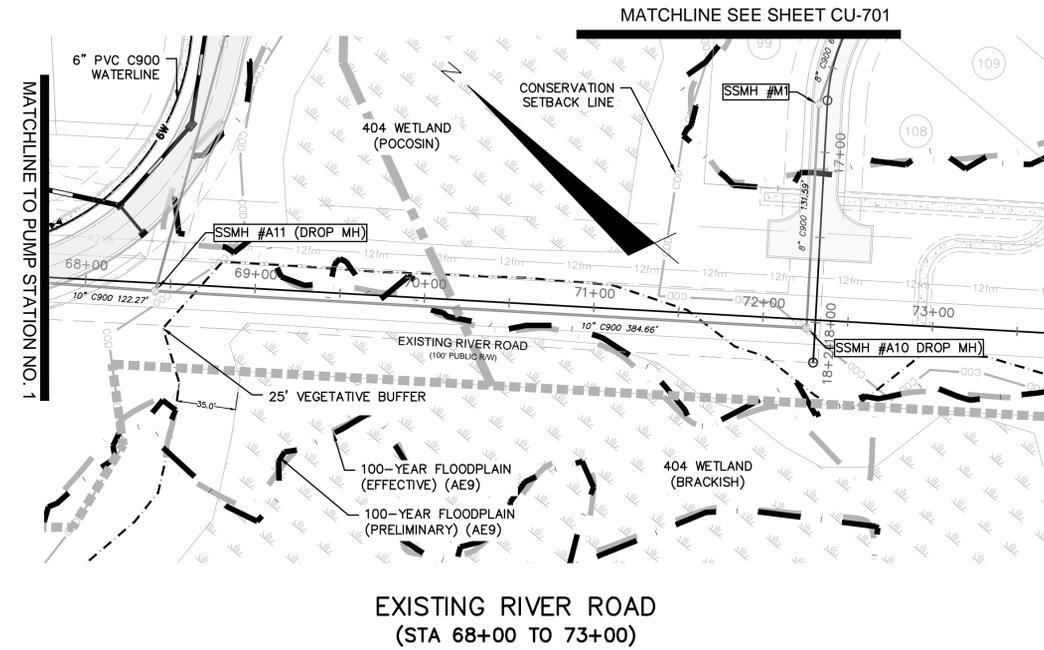
MAC FILE NUMBER: CU-701
 DRAWING NUMBER: 11
 REVISION: B

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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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.
- THIS SECTION OF SEWER WILL BE INSTALLED AS A PART OF SF-1. PLAN AND PROFILE FOR INFORMATION ONLY.



REV. NO.	DESCRIPTIONS / REVISIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

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RIVERLIGHTS
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 NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
PLAN & PROFILE EXISTING RIVER ROAD

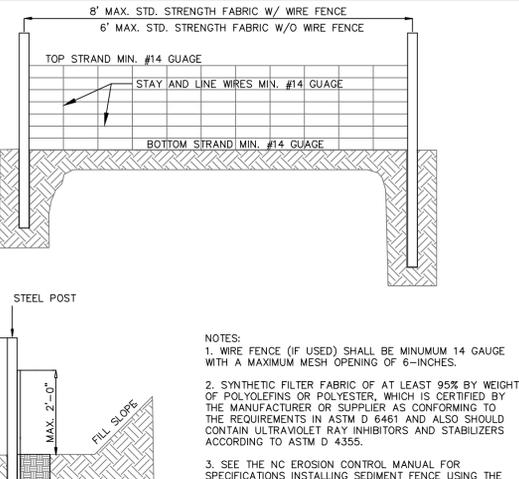
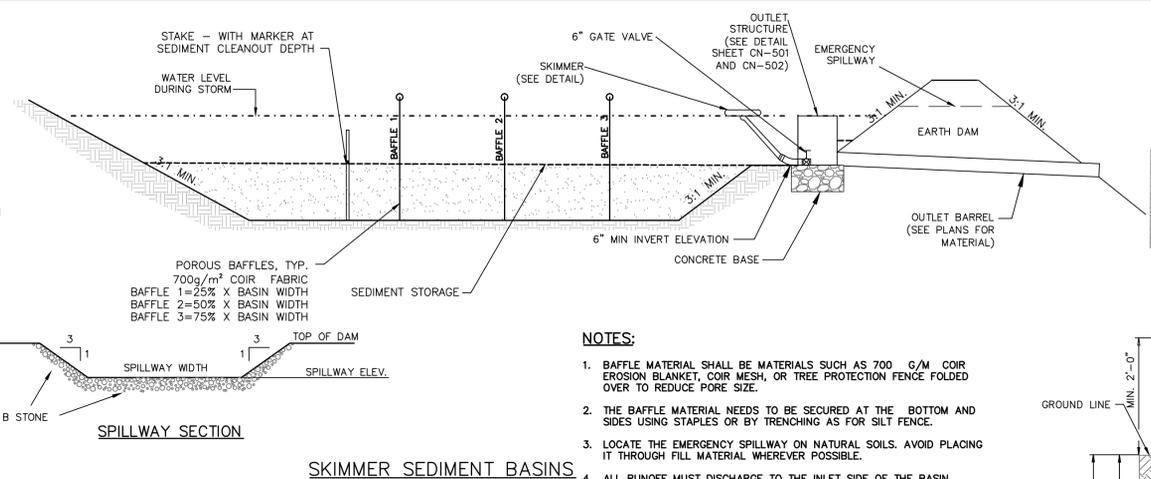
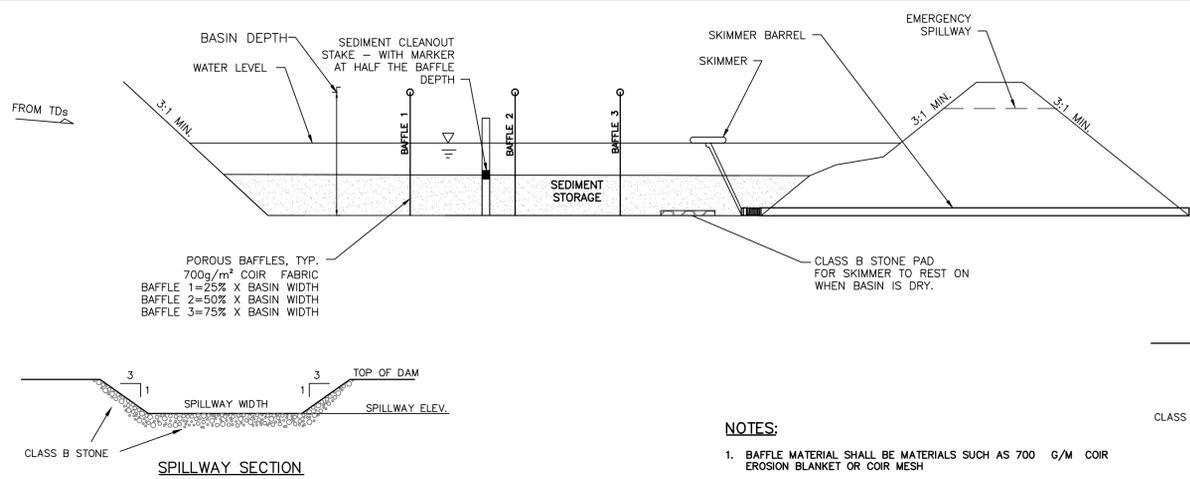
DATE: 2015-10-30
 MCE PROJ. #: 2735-0129
 DRAWN: EEM
 DESIGNED: KCBE
 CHECKED: N/A
 PROJ. MGR.: KCBE

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

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

STATUS: **FINAL DESIGN**
 ISSUED FOR PERMITTING

MAC FILE NUMBER: **CU-702**
 DRAWING NUMBER: **12**
 REVISION: **B**



SKIMMER SEDIMENT BASINS
PHASE 1: SB-1, 2, 3, 4, 5 AND 6
PHASE 2: 5 AND 6

NOTES:

- BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET OR COIR MESH.
- THE BAFFLE MATERIAL NEEDS TO BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
- LOCATE THE EMERGENCY SPILLWAY ON NATURAL SOILS. AVOID PLACING IT THROUGH FILL MATERIAL WHEREVER POSSIBLE.
- ALL RUNOFF MUST DISCHARGE TO THE INLET SIDE OF THE BASIN. DISCHARGE RUNOFF INTO THE BASIN IN A MANNER THAT MINIMIZES EROSION.

SKIMMER SEDIMENT BASINS
PHASE 2: SB-1, 2, 3 AND 4

NOTES:

- BAFFLE MATERIAL SHALL BE MATERIALS SUCH AS 700 G/M COIR EROSION BLANKET, COIR MESH, OR TREE PROTECTION FENCE FOLDED OVER TO REDUCE PORE SIZE.
- THE BAFFLE MATERIAL NEEDS TO BE SECURED AT THE BOTTOM AND SIDES USING STAPLES OR BY TRENCHING AS FOR SILT FENCE.
- LOCATE THE EMERGENCY SPILLWAY ON NATURAL SOILS. AVOID PLACING IT THROUGH FILL MATERIAL WHEREVER POSSIBLE.
- ALL RUNOFF MUST DISCHARGE TO THE INLET SIDE OF THE BASIN. DISCHARGE RUNOFF INTO THE BASIN IN A MANNER THAT MINIMIZES EROSION.
- PHASE 2 SKIMMER CONNECTION WILL BE MADE AT THE INVERT OF THE BOTTOM OF THE STORMWATER STRUCTURE AS SHOWN IN SHEETS CN-501 THROUGH CN-503. OUTLET STRUCTURE WEIRS BELOW THE TOP MUST BE BLOCKED IN ORDER FOR THE SKIMMER TO FUNCTION.

TEMPORARY SILT FENCE
NOT TO SCALE

SILT FENCE SILT FENCE CALCULATION TABLE

No.	Drainage Area ac	Length ft	Acre per 100 ft	0.25 Acre per 100 ft YES/NO
SF 2	1.43	581.00	0.25	YES
SF 3	0.01	42.00	0.02	YES
SF 4	0.21	468.00	0.04	YES
SF 5	0.77	466.00	0.17	YES
SF 6	0.61	244.00	0.25	YES
SF 7	1.14	457.00	0.25	YES
SF 8	0.43	303.00	0.14	YES
SF 9	0.58	525.00	0.11	YES
SF 10	0.33	249.00	0.13	YES
SF 11	1.37	558.00	0.24	YES
SF 12	0.67	293.00	0.23	YES
SF 13	0.43	175.00	0.25	YES
SF 14	0.19	80.00	0.24	YES
SF 15	0.75	303.00	0.25	YES
SF 16	0.59	237.00	0.25	YES
SF 17	1.60	815.00	0.20	YES
SF 18	0.73	345.00	0.21	YES
SF 19	0.33	420.00	0.08	YES
SF 20	0.19	292.00	0.07	YES

NOTES:

- WIRE FENCE (IF USED) SHALL BE MINIMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.
- 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.
- SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

SKIMMER BASIN CALCULATION TABLE (PHASE 1)

Skimmer No.	Drainage Area ac	Rational C	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SB-1	4.20	0.30	7.23	9.11	2,961	20,598	7,559	59,033	3.00	37,468	12.0
SB-4	2.98	0.30	7.23	6.46	2,100	2,451	5,364	6,308	3.00	3,422	8.0
SB-3	2.73	0.30	7.23	5.92	1,924	3,781	4,914	9,855	3.00	5,531	8.0
SB-5	1.20	0.30	7.23	2.61	848	8,353	2,163	23,566	3.00	14,668	6.0
SB-2	14.30	0.30	7.23	31.02	10,082	24,760	25,740	70,832	3.00	44,866	20.0
SB-6	1.63	0.30	7.23	3.54	1,151	1,736	2,934	4,552	3.00	2,537	6.0

SKIMMER BASIN CALCULATION TABLE (PHASE 2)

Skimmer No.	Drainage Area ac	Rational C	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA (1800cf/ac x DA) sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SB-1/BMP-7	22.39	0.49	7.23	79.32	25,779	25,779	40,302	40,302	3.00	40,302	20.0
SB-4/BMP-6	6.73	0.51	7.23	24.82	8,065	8,065	12,114	12,114	3.00	12,114	20.0
SB-3/BMP-4	4.53	0.52	7.23	17.03	5,535	5,535	8,154	8,154	3.00	8,154	20.0
SB-2/BMP-1	25.44	0.55	7.23	101.16	32,878	24,760	45,792	70,832	3.00	70,832	20.0

FAIRCLOTH SKIMMER SIZE CALCULATION

Skimmer No.	Dewatering Time (days)	Skimmer Outflow cf/day	Skimmer Size in	Orifice Diameter in	Orifice Radius in	Barrel Outflow gpm	Barrel Pipe in
SB-1	3	12,489	4.0	3.2	1.6	64.9	4.0
SB-4	3	1,141	1.5	1.2	0.6	5.9	4.0
SB-3	3	1,844	2.0	1.4	0.7	9.6	4.0
SB-5	3	4,889	2.5	2.2	1.1	25.4	4.0
SB-2	3	14,955	4.0	3.4	1.7	77.7	4.0
SB-6	3	846	1.5	1.1	0.5	4.4	4.0

FAIRCLOTH SKIMMER SELECTION TABLE

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

FAIRCLOTH SKIMMER SELECTION TABLE

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

FAIRCLOTH SKIMMER SELECTION TABLE

Skimmer No.	Dewatering Time (days)	Skimmer Outflow cf/day	Skimmer Size in	Orifice Diameter in	Orifice Radius in	Barrel Outflow gpm	Barrel Pipe in
SB-1/BMP-7	3	13,434	4.0	3.3	1.6	69.8	4.0
SB-4/BMP-6	3	4,038	2.5	2.0	1.0	21.0	4.0
SB-3/BMP-4	3	2,718	2.0	1.8	0.9	14.1	4.0
SB-2/BMP-1	3	23,611	5.0	4.3	2.1	122.6	5.0

NOTES:

- Q10 Peak Flow were taken from Rational Method.
- Required Surface Areas and Volumes were taken from NCDENR ESC Manual.
- Faircloth Skimmer Selection Table taken from Table 4-2, NCDOT Level III-A Design of Sediment & Erosion Control Plans Manual
- Emergency Weir Width taken from Skimmer Basin Criteria Section of NCDENR ESC Manual Table and/or Hydraulic Routing of the basin to ensure non-erosive velocity.
- Minimum Barrel Pipe on the Skimmer is 4-inches. (On a 1% slope the capacity is 100 GPM)
- Skimmer Orifice Diameter / Radius were obtained using the Faircloth Skimmer sizing spreadsheet (obtained from their website: <http://www.fairclothskimmer.com/skimmer-sizing>)

GENERAL NOTES:

- PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
- PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
- EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
- EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
- EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
- INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
- EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.

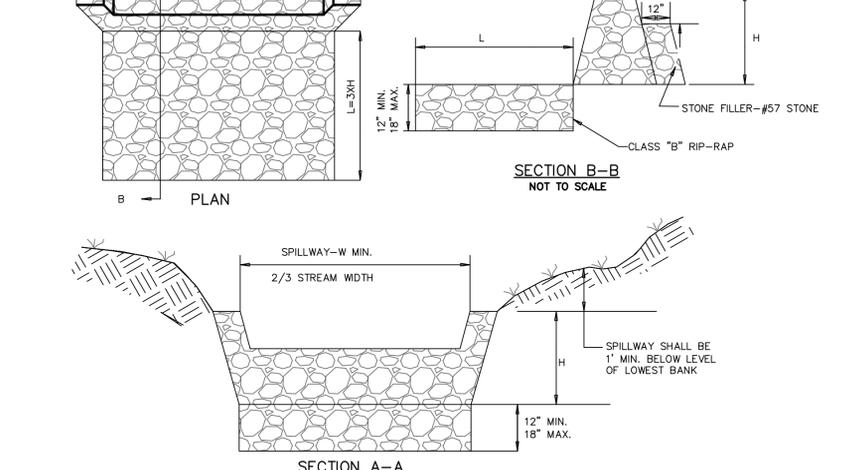
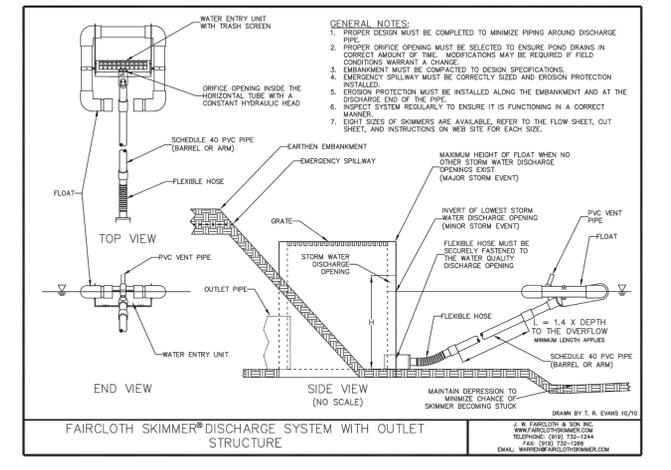
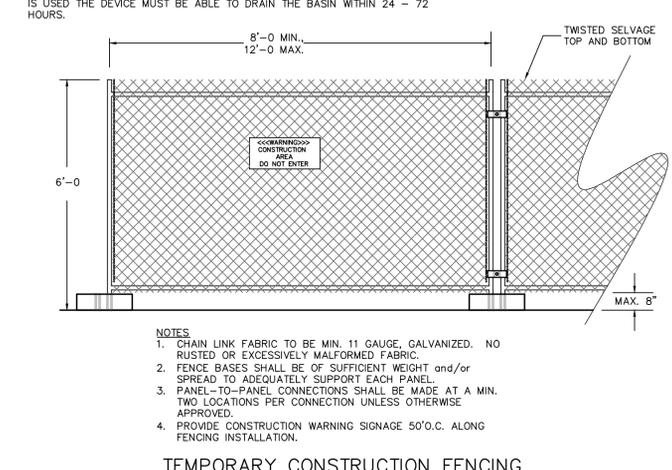
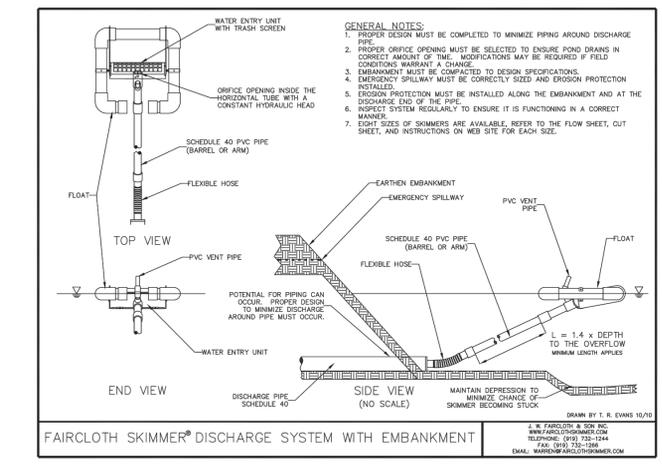
ORIFICE SIZES ARE FOR THE FAIRCLOTH SKIMMER. IF ANOTHER TYPE OF SKIMMER IS USED THE DEVICE MUST BE ABLE TO DRAIN THE BASIN WITHIN 24 - 72 HOURS.

NOTES:

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

NOTES:

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



SKIMMER DETAIL WITH EMBANKMENT
NOT TO SCALE

REV.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

TEMPORARY CONSTRUCTION FENCING
NOT TO SCALE

SKIMMER DETAIL WITH OUTLET STRUCTURE
NOT TO SCALE

DITCH CHECK DAM
SD 13-04
NOT TO SCALE

FAIRCLOTH SKIMMER® DISCHARGE SYSTEM WITH OUTLET STRUCTURE
NOT TO SCALE

NOTES:

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RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A

EROSION AND SEDIMENT CONTROL DETAILS

DATE: 2015-10-30
MCE PROJ. # 2735-0129
DRAWN: EEM
DESIGNED: KCBE
CHECKED: NUL
PROJ. MGR.: KCBE

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

STATUS: FINAL DESIGN
ISSUED FOR PERMITTING

MFC FILE NUMBER: CE-501
DRAWING NUMBER: 14
REVISION: B

SEEDBED PREPARATION:

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

TEMPORARY SEEDING

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

PERMANENT SEEDING

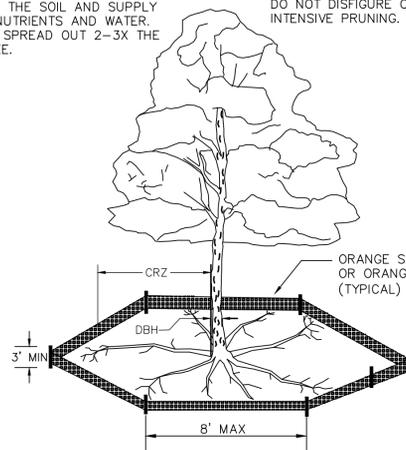
GRASS TYPE	AMOUNT/1000 S.F.	TIME OF SEEDING	INITIAL
BERMUDA, COMMON	1-2 LBS.	APRIL - JUNE	25 LBS. 10-10-10
FESCUE, TALL (KENTUCKY 31)	5-7 LBS	JUNE - AUGUST FEB. - OCT.	25 LBS 10-10-10
SERICEA LESPEDEZA (SLOPES)	1-2 LBS	MARCH - APRIL	25 LBS 10-10-10

TREE PROTECTION NOTES:

- NO LAND DISTURBANCE INCLUDING TREE REMOVAL IS TO OCCUR OUTSIDE THE LIMITS OF DISTURBANCE SHOWN ON THE PLANS. [18-457(b)]
- PROTECTIVE FENCING IS TO BE PROPERLY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. [18-458]
- LAND CLEARING AND CONSTRUCTION CONTRACTORS SHALL RECEIVE ADEQUATE INSTRUCTION ON TREE PROTECTION REQUIREMENTS AND METHODS. [18-457(d)]
- 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]
- NO EQUIPMENT IS ALLOWED ON THE SITE UNTIL ALL TREE PROTECTION FENCING AND SILT FENCING HAS BEEN INSTALLED AND APPROVED. [18-458]
- 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.

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.

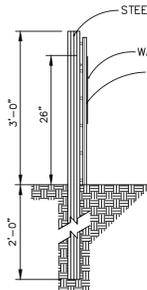
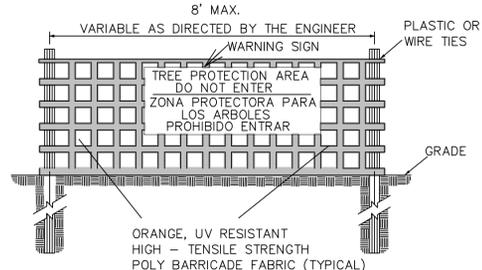


NOTE:

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.

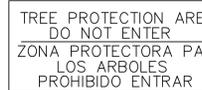
NOTES:

- 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.
- CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
- IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
- 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.
- 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.
- FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.



FRONT VIEW

SIDE VIEW



WARNING SIGN DETAIL

NOTES:

- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
- WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
- 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.
- ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
- TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
- ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

METHOD OF TREE PROTECTION DURING CONSTRUCTION

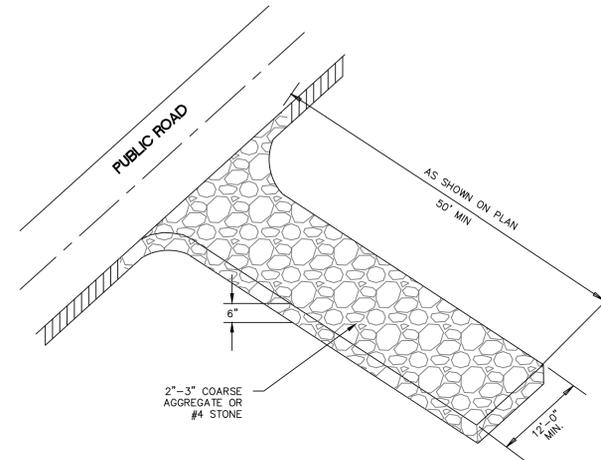
SD 15-09

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 #
TDD1	0.17	0.4	51	12.50	12.00	0.50	0.98	BARE EARTH	0.020	1.61	NO LINING	SB-1
TDD2	2.49	5.4	317	14.00	10.00	4.00	1.26	BARE EARTH	0.020	3.89	LINING RQ	SB-4
TDD3	0.54	1.2	183	17.00	14.00	3.00	1.64	BARE EARTH	0.020	2.77	LINING RQ	SB-3
TDD4	0.31	0.7	175	15.00	14.00	1.00	0.57	BARE EARTH	0.020	1.63	NO LINING	SB-3
TDD5	0.05	0.1	82	20.50	14.00	6.50	7.93	BARE EARTH	0.020	2.56	LINING RQ	SB-5
TDD6	0.35	0.8	174	23.00	14.00	9.00	5.18	BARE EARTH	0.020	3.63	LINING RQ	SB-5
TDD7	4.25	9.2	439	10.00	8.00	2.00	0.46	BARE EARTH	0.020	3.05	LINING RQ	SB-2
TDD8	0.23	0.5	64	23.00	8.00	15.00	23.44	BARE EARTH	0.020	9.47	LINING RQ	SB-2
TDD9	1.13	2.5	215	23.00	22.00	1.00	0.47	BARE EARTH	0.020	0.92	NO LINING	SB-6

TDD NUMBER	SECONDARY LINING	MANNING n	VELOCITY (FPS)	COMMENT	DEPTH in	MIN. DEPTH in	CHECK DAM SPACING (FT)	NUMBER REQUIRED	NUMBER PROVIDED	BMP #
TDD1	EXCELSIOR	0.020	1.61	EXCELSIOR OK	1.9	18	204	0	0	SB-1
TDD2	EXCELSIOR	0.035	2.57	EXCELSIOR OK	8.3	18	159	2	2	SB-4
TDD3	EXCELSIOR	0.035	1.85	EXCELSIOR OK	3.9	18	122	2	2	SB-3
TDD4	EXCELSIOR	0.020	1.63	EXCELSIOR OK	2.9	18	350	1	1	SB-3
TDD5	EXCELSIOR	0.035	1.74	EXCELSIOR OK	0.7	18	25	3	3	SB-5
TDD6	EXCELSIOR	0.035	2.44	EXCELSIOR OK	2.3	18	39	5	5	SB-5
TDD7	EXCELSIOR	0.035	2.26	EXCELSIOR OK	12.1	18	439	1	1	SB-2
TDD8	EXCELSIOR	0.035	3.86	EXCELSIOR OK	1.2	18	9	8	8	SB-2
TDD9	EXCELSIOR	0.020	0.92	EXCELSIOR OK	9.5	21	430	1	1	SB-6

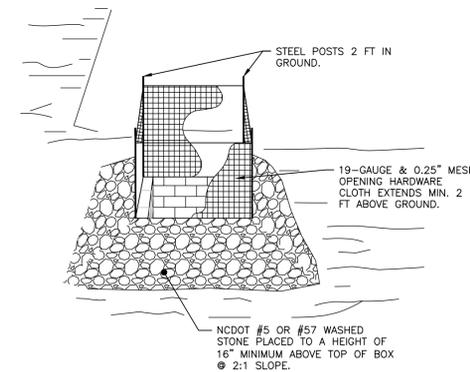
Notes:

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



CONSTRUCTION ENTRANCE/EXIT

SD 13-03
NOT TO SCALE

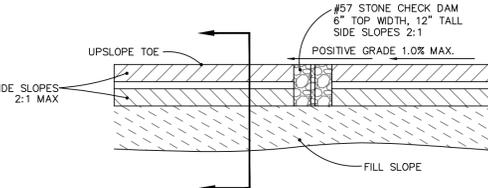
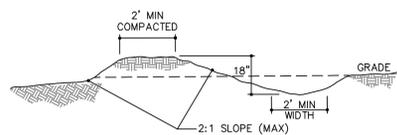


NOTES:

- 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.
- 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.
- 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

REVNO.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

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

RIVERLIGHTS
 NORTH AMERICA SEKISUI HOUSE, LLC
 by Newland COMMUNITIES

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
EROSION AND SEDIMENT CONTROL DETAILS

DATE: 2015-10-30
 MCE PROJ. # 2735-0129
 DRAWN: EEM
 DESIGNED: KCBE
 CHECKED: NUL
 PROJ. MGR.: KCBE

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

MAC FILE NUMBER: CE-502
 DRAWING NUMBER: 15

STATUS: FINAL DESIGN
 ISSUED FOR PERMITTING

REVISION: B

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

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN

12" THRU 54" PIPE

840.02

GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC FORM, 2" REINFORCING OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
 USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
 FOR 3'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 3'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
 CONSTRUCT WITH PIPE CHAINS MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

PIPE	SPAN	WIDTH	HEIGHT	MIN. HEIGHT	CONC. IN BOX	DEDUCTIONS
12"	3'-0"	2'-0"	2'-0"	3'-0"	0.235	0.015
15"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
18"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
24"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
30"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
36"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
42"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
48"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
54"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015

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

ENGLISH STANDARD DRAWING FOR CONCRETE CATCH BASIN

12" THRU 54" PIPE

840.02

GENERAL NOTES:
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 OPTIONAL CONSTRUCTION - MONOLITHIC FORM, 2" REINFORCING OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
 USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
 FOR 3'-0" IN HEIGHT OR LESS USE 6" WALLS AND BOTTOM SLAB. OVER 3'-0" IN HEIGHT USE 8" WALLS AND BOTTOM SLAB. ADJUST QUANTITIES ACCORDINGLY.
 CONSTRUCT WITH PIPE CHAINS MATCHING.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

PIPE	SPAN	WIDTH	HEIGHT	MIN. HEIGHT	CONC. IN BOX	DEDUCTIONS
12"	3'-0"	2'-0"	2'-0"	3'-0"	0.235	0.015
15"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
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24"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
30"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
36"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
42"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
48"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
54"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015

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

ENGLISH STANDARD DRAWING FOR TRAFFIC BEARING PRECAST DRAINAGE STRUCTURE

12" THRU 54" PIPE

840.46

GENERAL NOTES:
 THIS PRECAST BOX MAY BE USED FOR THE FOLLOWING STANDARDS: 840.04, 840.05, 840.14, 840.15, 840.31, 840.32, 840.34, 840.35, 840.36 AND 840.41.
 INSTALL AND PAY FOR PRECAST DRAINAGE STRUCTURES IN ACCORDANCE WITH NC DOT STANDARD SPECIFICATION SECTION 840.
 USE 4000 PSI MINIMUM COMPRESSIVE STRENGTH CONCRETE.
 USE ASTM A615 GRADE 60 REINFORCING STEEL. USE ASTM A185 WELDED WIRE FABRIC (WFF).
 LIMIT MAXIMUM DEPTH TO TOP OF BOTTOM SLAB TO 15'-0".
 PLACE LIFT HOLES OR PINS IN ACCORDANCE WITH OSHA STANDARD 1926.704.
 ORIENT STRUCTURES SO THAT CORNERS WILL NOT BE CUT OR MODIFIED UNLESS ALLOWED BY DETAIL IN PLANS.
 PRECAST ALL ELEMENTS TO MEET ASTM 913.
 FRAME AND GRATE HEIGHT MAY BE ADJUSTED WITH CONCRETE OR BRICK IN ACCORDANCE WITH STANDARD 840.25.
 PROVIDE PRECAST STRUCTURES OVER 4'-0" IN DEPTH WITH STEPS 12" ON CENTERS IN ACCORDANCE WITH STD. NO. 840.66.
 WELDED WIRE FABRIC MAY BE SUBSTITUTED FOR REBAR IF THE SAME MIN. AREA OF STEEL IS PROVIDED.
 SEAL JOINTS WITH AN APPROVED SEALANT (SEE SECTION 840 OF NC DOT STANDARD SPECIFICATIONS).
 LIMIT MAXIMUM STRUCTURE SIZE INSIDE CLEAR DIMENSIONS TO 6'-0" X 6'-0".
 THE OUTSIDE PIPE DIAMETER PLUS 2" IS THE MINIMUM STRUCTURE SIZE OR THE OPENING REQUIRED FOR GRATE AND FRAME WHICHEVER IS GREATER.
 ROUND MANHOLE MAY BE USED IN LIEU OF SQUARE PROVIDED 2 EXTRA #5'S ARE PLACED ON EVERY SIDE NOT ADJACENT TO A WALL. SEE STD. DWG. 840.04 FOR MANHOLE INSTALLATION.

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

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

840.03

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

ALIGN FRAME WITH INSIDE EDGE OF WALL TO ALLOW FOR VERTICAL ADJUSTMENT FOR WALL SECTION.

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

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

840.03

DETAIL SHOWING TYPES OF GRATES USE ACCORDING TO WATER FLOW.

TYPE "G" TYPE "E" TYPE "F"

WATER FLOW SAG WATER FLOW

RAISED FLOW ARROW 1/2" HIGH

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

ENGLISH STANDARD DRAWING FOR CONCRETE DROP INLET

12" THRU 30" PIPE

840.14

GENERAL NOTES:
 USE CLASS "B" CONCRETE THROUGHOUT.
 PROVIDE ALL DROP INLETS OVER 3'-0" IN DEPTH WITH STEPS 12" ON CENTER. USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66.
 OPTIONAL CONSTRUCTION - MONOLITHIC FORM, 2" REINFORCING OR #4 BAR DOMELS AT 12" CENTERS AS DIRECTED BY THE ENGINEER.
 USE FORMS FOR THE CONSTRUCTION OF THE BOTTOM SLAB.
 IF REINFORCED CONCRETE PIPE IS SET IN BOTTOM SLAB OF BOX, ADD TO SLAB AS SHOWN ON STD. NO. 840.00.
 CONSTRUCT WITH PIPE CHAINS MATCHING.
 SEE STANDARD DRAWING 840.25 FOR ATTACHMENT OF FRAMES AND GRATES NOT SHOWN.
 INSTALL 2" WELDED WIRE FABRIC AS DIRECTED BY THE ENGINEER.
 INSTALL STONE DRAINAGE OF A MINIMUM OF 1 CUBIC FOOT OF NO. 788 STONE IN A POURS FABRIC 840 OR WAF, AT EACH WEEP HOLE OR AS DIRECTED BY THE ENGINEER.
 CHAMFER ALL EXPOSED CORNERS 1".
 DRAWING NOT TO SCALE.

PIPE	SPAN	WIDTH	HEIGHT	MIN. HEIGHT	CONC. IN BOX	DEDUCTIONS
12"	3'-0"	2'-0"	2'-0"	3'-0"	0.235	0.015
15"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
18"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
24"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015
30"	3'-0"	2'-0"	3'-0"	3'-0"	0.235	0.015

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

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

840.16

SECTION G-G

SECTION H-H

PLAN OF GRATING CAST IRON

SECTION E-E

SECTION F-F

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

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

840.25

DETAIL SHOWING ANCHORAGE OF FRAME FOR GRATED DROP INLET

BRICK MASONRY CONSTRUCTION

CONCRETE CONSTRUCTION

PRECAST CONCRETE CONSTRUCTION

NOTE: CONSTRUCT GRATED DROP INLET TO COINCIDE WITH NORMAL OR SUPERELEVATED SHOULDER OR PAVEMENT SLOPE.

MASONRY ANCHOR 3/8" DIA. BOLT WITH PLATE

CONCRETE ANCHOR 3/8" DIA. BENT BAR

PRECAST CONCRETE ANCHOR 3/8" DIA. BENT BAR

FRAME AND GRATE INSTALLATION FOR NORMAL CROWN AND SUPERELEVATED SECTIONS

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

ENGLISH STANDARD DRAWING FOR DRAINAGE STRUCTURE STEPS

840.66

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

PLAN

SIDE ELEVATION

CAST IRON

ELEVATION

CAST IRON

PLAN

SIDE ELEVATION

COMPOSITE

SECTION A-A

ELEVATION

REINFORCING STEEL

NOTE: DO NOT USE IN SANITARY SEWER MANHOLES.

REV.	DESCRIPTION	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

FINAL DRAWINGS FOR REVIEW PURPOSES ONLY

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

CONVENTIONAL NEIGHBORHOOD PH 1-A

STORM DRAINAGE DETAILS

North America Sekisui House, LLC

by **NEWLAND COMMUNITIES**

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A

STORM DRAINAGE DETAILS

DATE: 2015-10-30

MCE PROJ. # 2735-0129

DRAWN: EEM

DESIGNED: KCBE

CHECKED: NUL

PROJ. MGR.: KCBE

SCALE: HORIZONTAL: 1"=100'

VERTICAL: N/A

STATUS: FINAL DESIGN

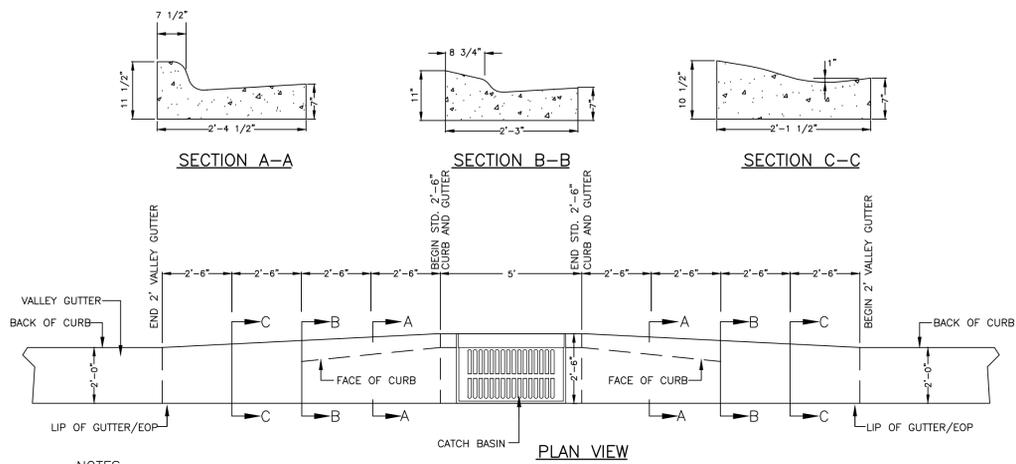
ISSUED FOR PERMITTING

MAC FILE NUMBER: CG-501

DRAWING NUMBER: 16

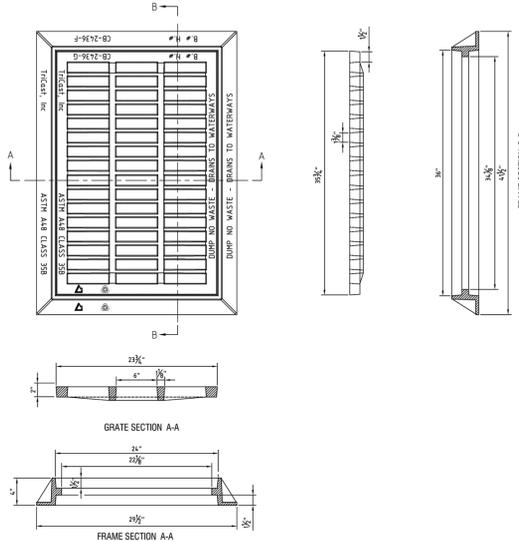
REVISION: B

S:\2735\0129 PH 1-A\Drawings-Additional\04\DETAILS-027350129-A.dwg, 2/3/2016 12:39:23 PM, AlMendhall



NOTES:
 1. TRANSITION IS NOT TO BE LOCATED WITHIN THE CURB RADIUS.
 2. TRANSITIONS ARE CONSTRUCTED AT ALL ROADWAY CATCH BASIN LOCATIONS.

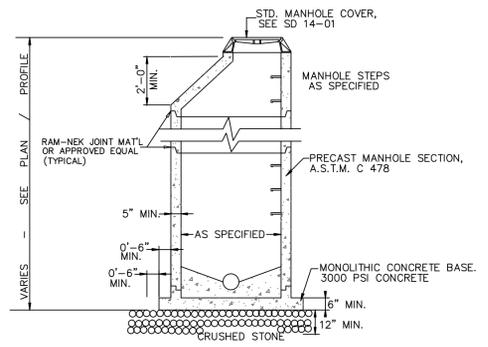
CURB TRANSITION
 NOT TO SCALE



NOTE:
 FRAME AND GRATE TO BE STANDARD CITY OF WILMINGTON CAST IRON FRAME AND GRATE PER SD 14-04

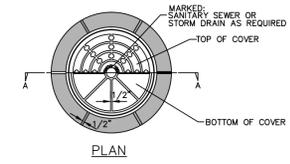
GRILL BASIN
 SD 2-02
 NOT TO SCALE

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



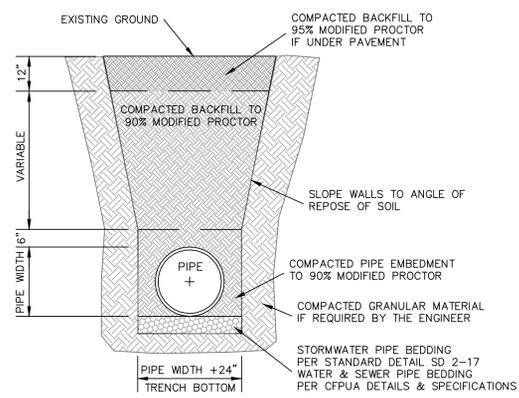
NOTE:
 EXTENDED BASE MAY NOT BE REQUIRED WHERE MANHOLES ARE GREATER THAN 4 FEET INSIDE DIAMETER

PRECAST MANHOLE
 SD 14-11
 NOT TO SCALE

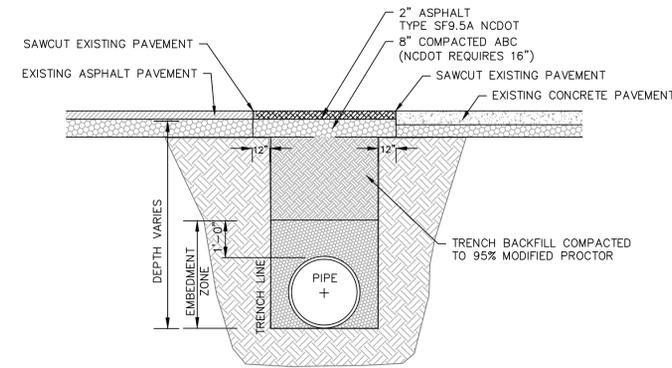


NOTE:
 RING & COVER CONTACT SURFACES SHALL BE MACHINED SO AS TO INSURE EVEN BEARING OF COVER ON RING
 MINIMUM WEIGHTS:
 RING 190 LBS.
 COVER 120 LBS.

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



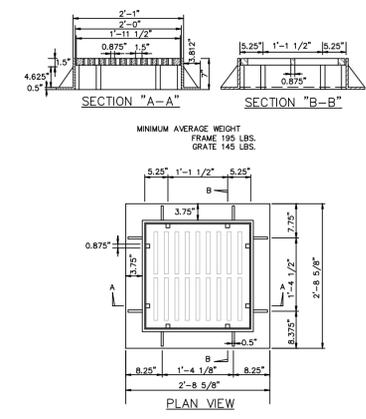
STANDARD PIPE TRENCH DETAIL
 SD 1-07
 NOT TO SCALE



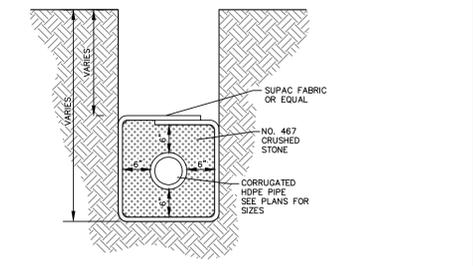
NOTES:
 * BACKFILL TO BE INSTALLED IN 6" LIFTS (MAXIMUM) AND COMPACTED TO A MINIMUM DENSITY OF 95% AS DETERMINED BY THE MODIFIED A.A.S.H.T.O. STANDARD METHOD T-99
 * CUT - BACK TO BE PREPARED AFTER TRENCH BACKFILLING AND COMPACTION

STANDARD SHOWING METHOD MAKING PAVEMENT REPAIRS WHERE PIPE IS INSTALLED
PAVEMENT REPAIR DETAIL
 SD 1-16
 NOT TO SCALE

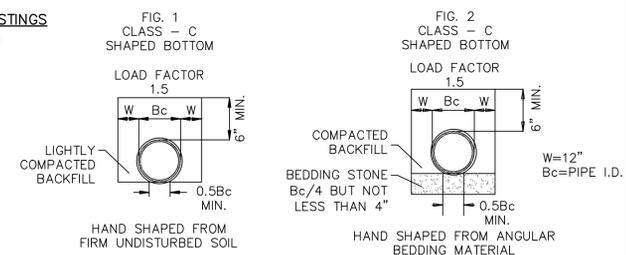
STORM DRAINAGE NOTES:
 1. ALL PIPE BEDDING SHALL BE CLASS "C" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
 2. ALL STORM DRAINAGE PIPES SHALL BE RCP CLASS III UNLESS OTHERWISE NOTED ON THE PLANS.
 3. DO NOT PLANT TREES WITHIN UTILITY AND DRAINAGE EASEMENTS.
 4. THE ENGINEER AND THE CONTRACTOR SHALL INSPECT ALL EXISTING PIPES USED IN THE FINAL DRAINAGE SYSTEM AND AGREE ON THE CONDITION OF THE PIPES PRIOR TO CONSTRUCTION. IF DAMAGE OCCURS TO THESE PIPES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE PIPE(S).
 5. THE CONTRACTOR SHALL CONTACT ONECALL BEFORE COMMENCING ANY WORK. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES WHETHER INDICATED ON THE DRAWINGS OR NOT. THE CONTRACTOR WILL ASSURE THE PRESENCE ON SITE OF A REPRESENTATIVE OF THE GAS COMPANY WHEN WORKING IN THE VICINITY OF ANY GAS MAINS.



GRILL BASIN CASTINGS
 SD 14-04
 NOT TO SCALE



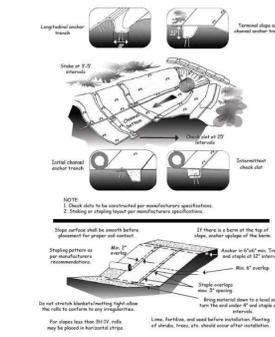
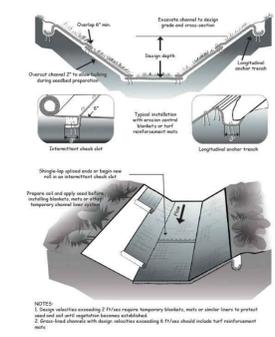
TYPICAL SECTION
GUIDELINES FOR SUB-DRAIN
 SD 2-04
 NOT TO SCALE



GUIDELINES FOR BEDDING DETAILS, STORM SEWER CLASS C

SD 2-17
 NOT TO SCALE

- EXCAVATION FOR STORM DRAINAGE PIPE SHALL BE TO THE LINES AND GRADES AS SHOWN ON THE PLANS.
- THE BEDDING SHALL BE SHAPED IN ACCORDANCE WITH CLASS "C" BEDDING AS SHOWN ON CITY STANDARD DETAIL SD 2-17.
- THE BEDDING SHALL PROVIDE A FIRM FOUNDATION OF UNIFORM DENSITY ALONG THE ENTIRE LENGTH OF PIPE. RECESSES SHALL BE MADE TO ACCOMMODATE BELLS AND JOINTS.
- WHERE UNSTABLE SOILS ARE ENCOUNTERED AS DETERMINED BY GEOTECHNICAL ENGINEER, A MINIMUM 4-INCH THICK BEDDING OF STONE SHALL BE PLACED, SEE FIGURE 2, SD 2-17.
- THE STONE SHALL BE UNIFORMLY GRADED FROM 3/4 INCH TO NO. 4 IN ACCORDANCE WITH ASTM C-33. CARE SHALL BE TAKEN TO PREVENT UNDERCUTTING IN SUITABLE SOIL.
- AREAS UNDERCUT SHALL BE FILLED WITH SUITABLE SOIL AND COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 1557 STANDARD TEST METHOD.



NOTES:
 1. USE EXCELSIOR MATTING (OR APPROVED EQUAL) AT A MINIMUM FOR THE ROLLED EROSION CONTROL PRODUCT ON SLOPES AND BOTTOMS OF DRAINAGE DITCHES AS INDICATED.
 2. STABILIZE WITH PERMANENT VEGETATION WHEN CONDITIONS ARE SUITABLE FOR ROOT ESTABLISHMENT.

ROLLED EROSION CONTROL PRODUCT (RECP)
 NOT TO SCALE (NCDENR PRACTICE STD. 6.17)

REVNO.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/30/2015

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 Wilmington, North Carolina 28401
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 License: F-1222
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RIVERLIGHTS
 CONVENTIONAL NEIGHBORHOOD
 PH 1-A
 STORM DRAINAGE DETAILS

RIVERLIGHTS
 CONVENTIONAL NEIGHBORHOOD
 PH 1-A
 STORM DRAINAGE DETAILS

DATE: 2015-10-30
 MCE PROJ. # 2735-0129
 DRAWN: EEM
 DESIGNED: KCBE
 CHECKED: NJL
 PROJ. MGR: KCBE

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

MAC FILE NUMBER: CG-502
 DRAWING NUMBER: 17
 REVISION: B

STATUS: FINAL DESIGN
 ISSUED FOR PERMITTING

STRUCTURE TABLE	
STRUCTURE NAME	DETAILS
DI-1A-1	RIM = 10.501 INV IN = 7.241
DI-1A-3	RIM = 16.297 INV IN = 11.500 INV IN = 10.439 INV OUT = 10.439
DI-1A-4	RIM = 16.085 INV IN = 10.650 INV OUT = 10.650
DI-1A-5	RIM = 15.824 INV IN = 10.905 INV OUT = 10.905
DI-1A-6	RIM = 13.178 INV IN = 11.241 INV OUT = 11.241
DI-1A-7	RIM = 15.177 INV IN = 11.680 INV IN = 11.677 INV OUT = 11.677
DI-1A-8	RIM = 14.148 INV IN = 12.211 INV OUT = 12.211
DI-1A-9	RIM = 16.264 INV IN = 12.891 INV OUT = 12.891
DI-1A-10	RIM = 16.537 INV IN = 13.165 INV OUT = 13.165
DI-1A-11	RIM = 16.802 INV OUT = 13.431
I-1B	RIM = 7.000
JB-1A-2	RIM = 17.331 INV IN = 9.835 INV OUT = 9.835

STORM DRAINAGE PIPE DATA TABLE							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	DOWNSTREAM INVERT	UPSTREAM INVERT
JB-1A-2	DI-1A-1	39.73'	15"	RCP	6.53%	9.84'	7.24'
DI-1A-11	DI-1A-10	53.27'	15"	RCP	0.50%	13.43'	13.16'
DI-1A-10	DI-1A-9	54.69'	15"	RCP	0.50%	13.16'	12.89'
DI-1A-9	DI-1A-8	136.09'	15"	RCP	0.50%	12.89'	12.21'
DI-1A-8	DI-1A-7	106.69'	15"	RCP	0.50%	12.21'	11.68'
DI-1A-7	DI-1A-6	87.28'	15"	RCP	0.50%	11.68'	11.24'
DI-1A-6	DI-1A-5	67.07'	15"	RCP	0.50%	11.24'	10.91'
DI-1A-5	DI-1A-4	51.05'	15"	RCP	0.50%	10.91'	10.65'
DI-1A-4	DI-1A-3	42.22'	15"	RCP	0.50%	10.65'	10.44'
DI-1A-3	JB-1A-2	120.78'	15"	RCP	0.50%	10.44'	9.84'
DI-1A-1	I-1B	48.19'	18"	RCP	0.50%	7.24'	7.00'
	DI-1A-7	80.75'	15"	RCP	3.46%	14.47'	11.68'
	DI-1A-3	50.73'	15"	RCP	0.50%	11.75'	11.50'

S:\2735\0129 Ph. 1 - S\98-Drawings-Additional\01\DETAILS-027350129-A.dwg, 2/2/2016 12:39:44 PM, AMandmhall

REVNO.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
A	CITY OF WILMINGTON SUBDIVISION REVIEW BOARD SUBMITTAL	10/20/2015
	REVISIONS	

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NORTH AMERICA SEKISUI HOUSE, LLC by Newland COMMUNITIES

RIVERLIGHTS
CONVENTIONAL NEIGHBORHOOD
PH 1-A

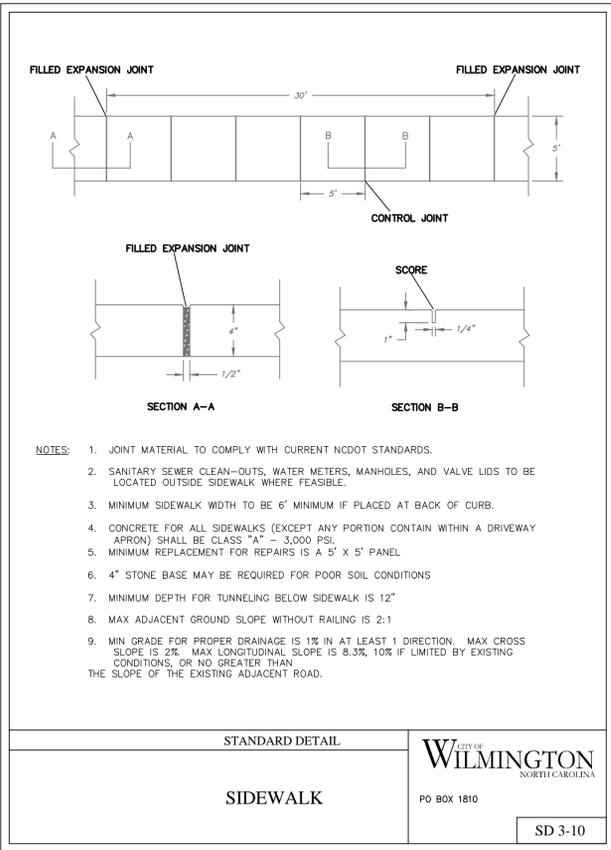
STORM DRAINAGE DETAILS

DATE:	2015-10-30
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DRAWN	EEM
DESIGNED	KCBE
CHECKED	NJL
PROJ. MGR.	KCBE

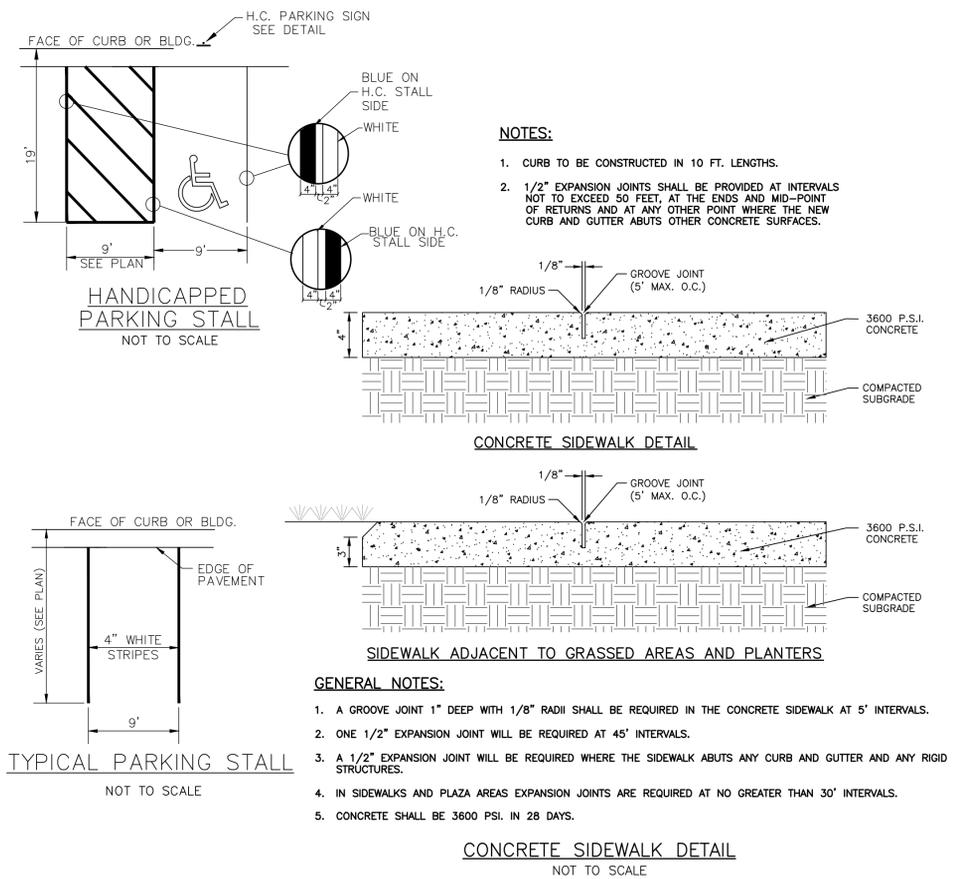
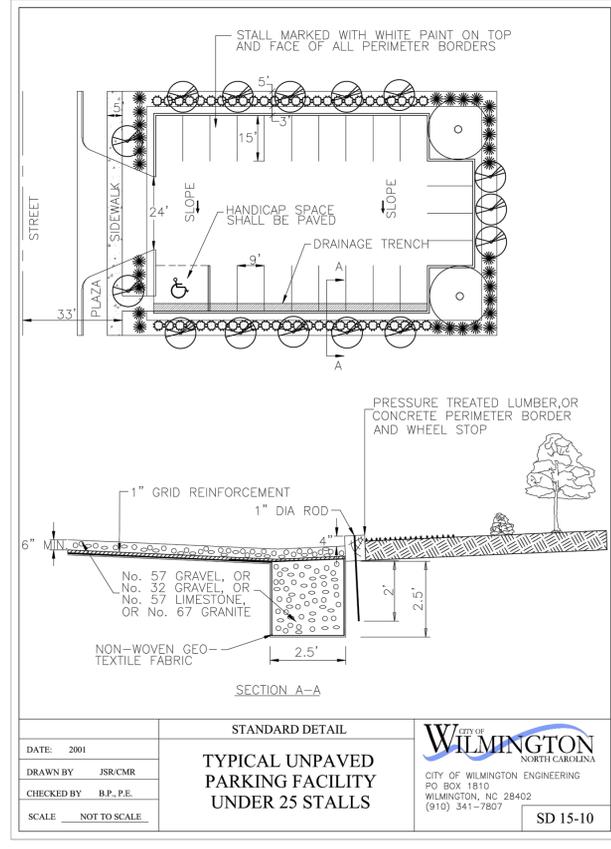
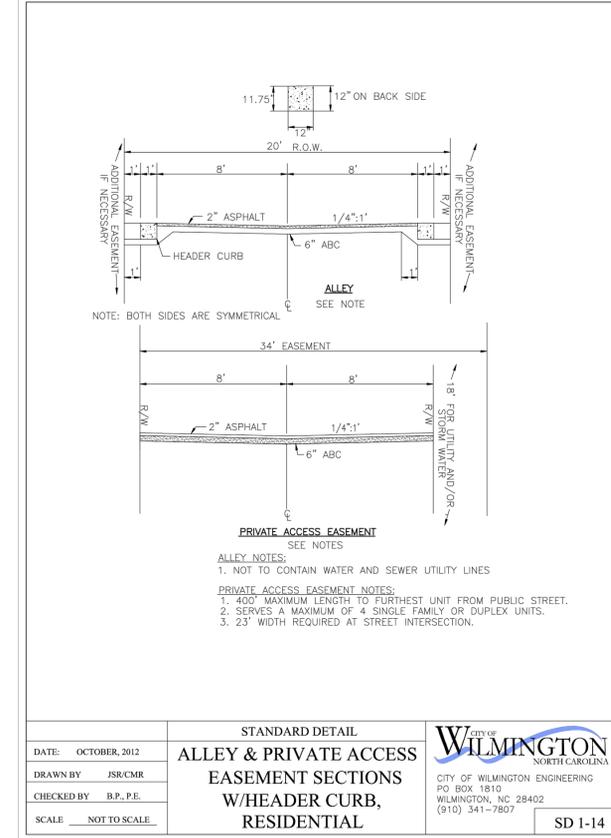
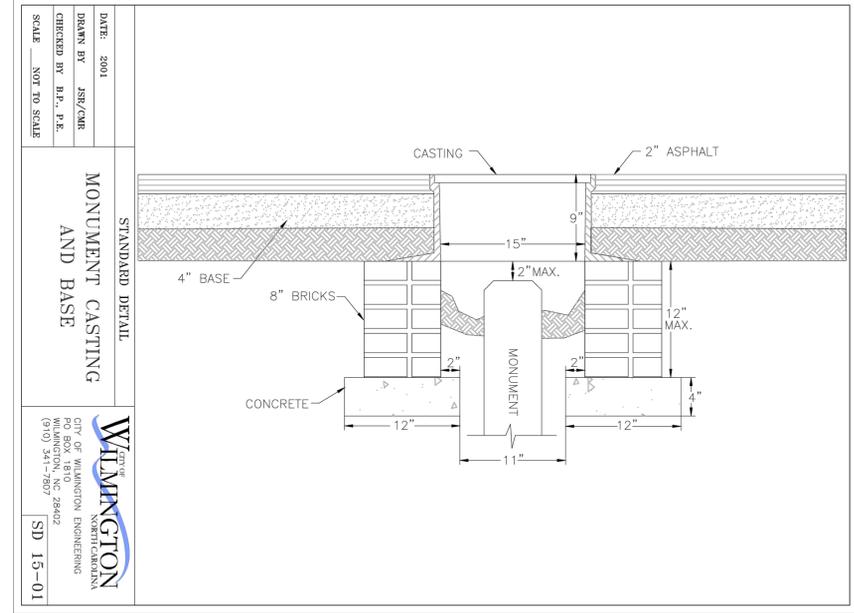
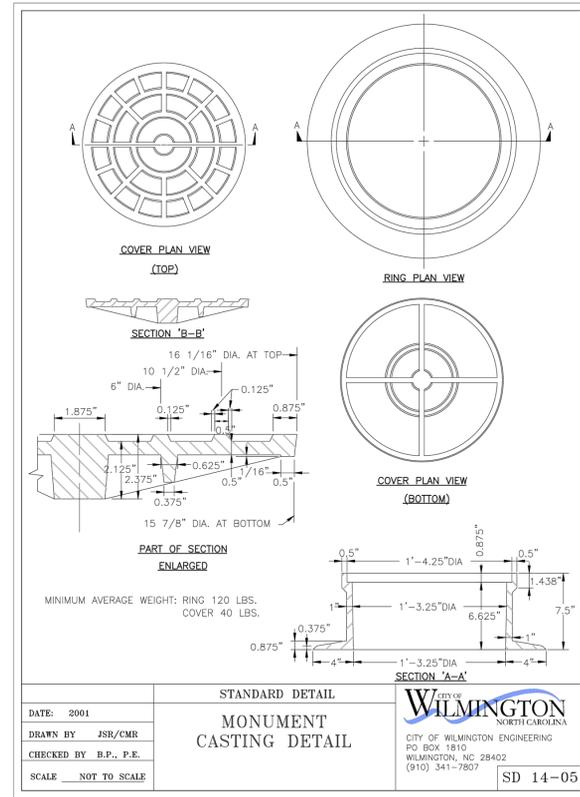
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VERTICAL: N/A	

M&C FILE NUMBER	CG-503
DRAWING NUMBER	18

STATUS:	FINAL DESIGN
ISSUED FOR PERMITTING	
REVISION	B



STANDARD DETAIL
SIDEWALK
PO BOX 1810
SD 3-10



REVNO.	DESCRIPTIONS	DATE
B	CITY OF WILMINGTON TECHNICAL REVIEW COMMITTEE SUBMITTAL	02/03/2016
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RIVERLIGHTS
by Newland COMMUNITIES
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
SITE PLAN DETAILS

DATE: ---
MCE PROJ. # 2735-0129
DRAWN: EEM
DESIGNED: KCBE
CHECKED: NUL
PROJ. MGR.: KCBE

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

MAC FILE NUMBER: CS-501
DRAWING NUMBER: 19
REVISION: B

STATUS: FINAL DESIGN
ISSUED FOR PERMITTING

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GENERAL NOTES

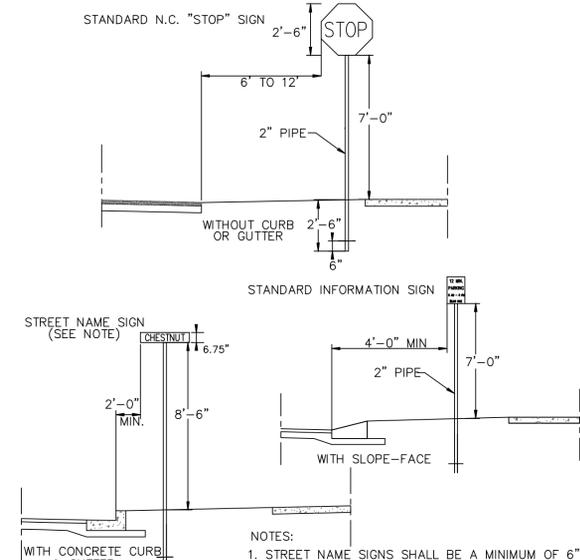
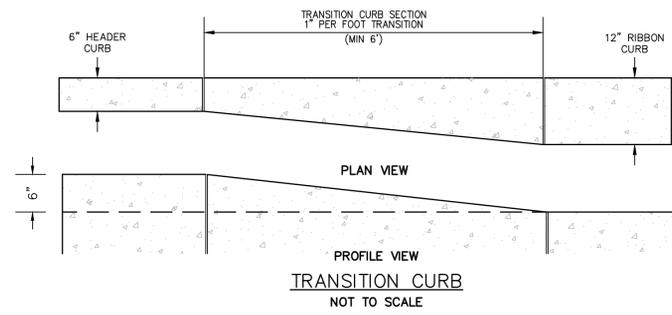
1. IN ACCORDANCE WITH N.C.G.S. 136-44.14, ALL STREET CURBS BEING CONSTRUCTED OR RECONSTRUCTED SHALL PROVIDE WHEELCHAIR RAMP FOR THE PHYSICALLY HANDICAPPED ON EACH SIDE OF ANY STREET OR ROAD, WHERE CURBS AND SIDEWALKS ARE PROVIDED AND AT OTHER MAJOR POINTS OF PEDESTRIAN FLOW.
2. WHEELCHAIR RAMP SHALL 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'-0" IN LENGTH.

CONSTRUCTION NOTES

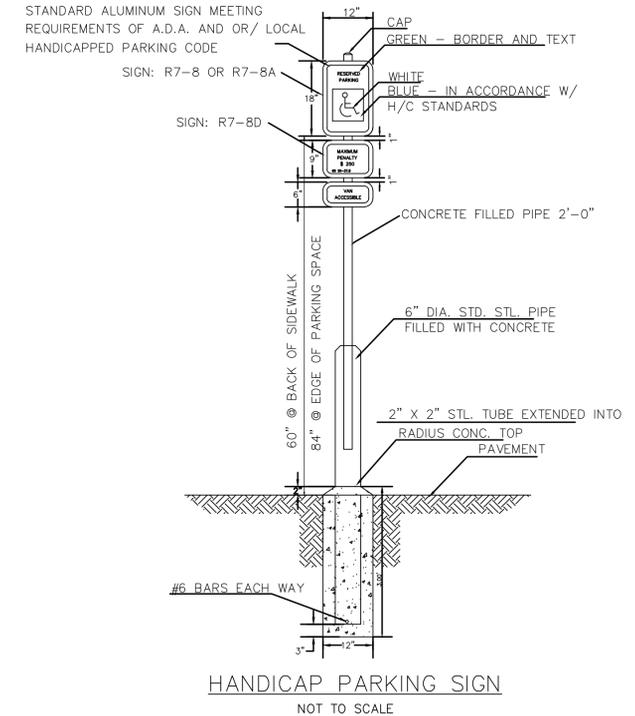
1. CONSTRUCTION SHALL CONFORM WITH CONSTRUCTION STANDARDS OF THE GOVERNING BODY WHICH HAS JURISDICTION OF THE PARTICULAR STREET.
2. WHEELCHAIR RAMP SHALL BE CONSTRUCTED OF CLASS "A" CONCRETE WITH THE SURFACE HAVING A ROUGH, NON-SKID TYPE FINISH.
3. A 1/2"-IN. EXPANSION JOINT SHALL BE REQUIRED WHERE THE 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'-0", 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

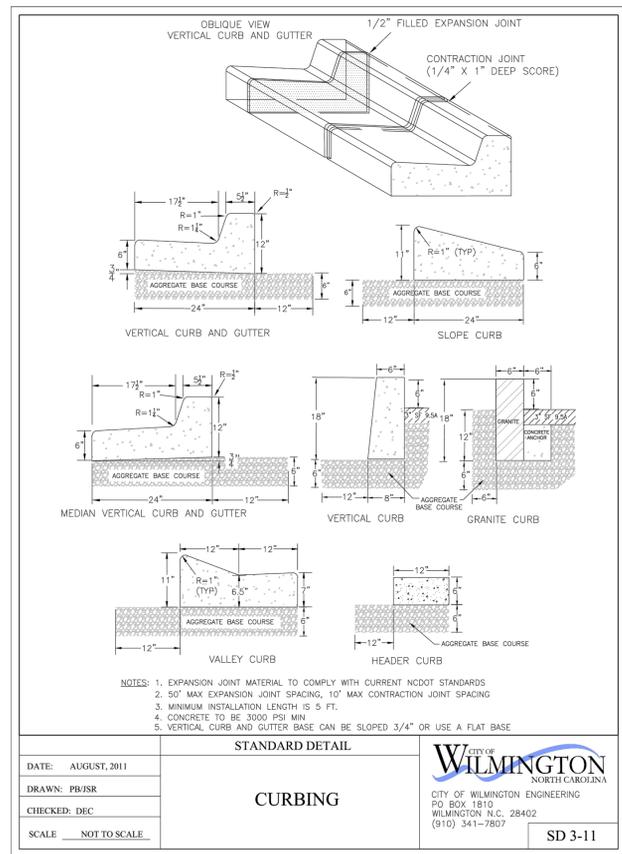
1. STOP BARS SHALL BE USED WHERE IT IS IMPORTANT TO INDICATE THE POINT BEHIND WHICH VEHICLES ARE REQUIRED TO STOP IN COMPLIANCE WITH A TRAFFIC SIGNAL, STOP SIGN OR OTHER LEGAL REQUIREMENT.
2. PARKING SHALL BE ELIMINATED A MINIMUM OF 20 FEET BACK OF THE PEDESTRIAN CROSSWALK.
3. ALL PAVEMENT MARKINGS SHALL 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.



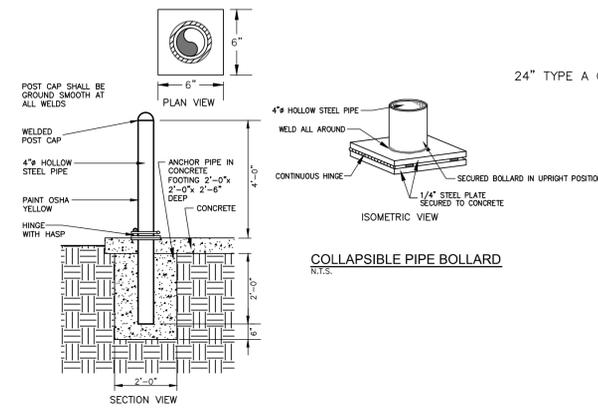
STANDARD SIGN INSTALLATION LOCATION
SD 15-04
NOT TO SCALE



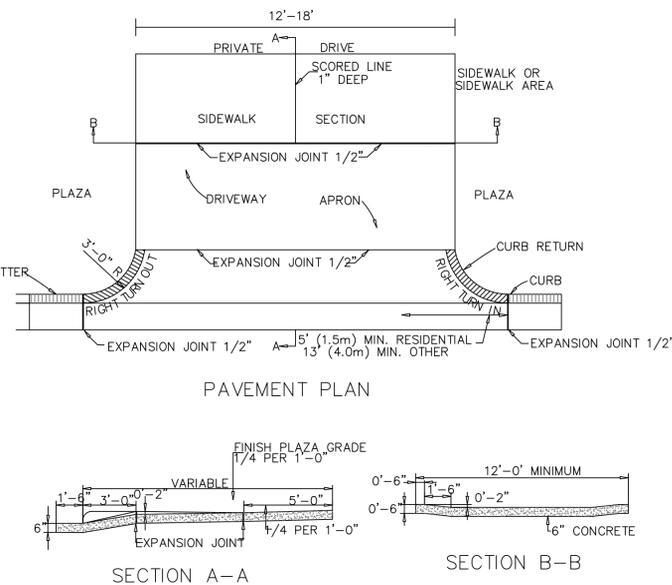
HANDICAP PARKING SIGN
NOT TO SCALE



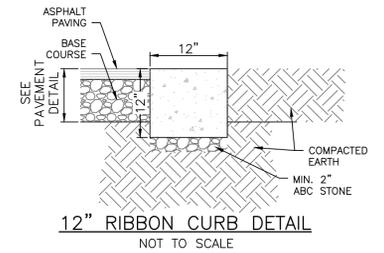
DATE: AUGUST, 2011		<p>CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, N.C. 28402 (910) 341-7807</p>	SD 3-11
DRAWN: PB/JSR			
CHECKED: DEC			
SCALE: NOT TO SCALE			



COLLAPSIBLE PIPE BOLLARD
N.T.S.



MODIFIED STANDARD DRIVEWAY DETAIL
SD 8-02
NOT TO SCALE



12" RIBBON CURB DETAIL
NOT TO SCALE

REVNO.	DESCRIPTIONS	DATE
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FINAL DRAWINGS SEAL FOR REVIEW PURPOSES ONLY

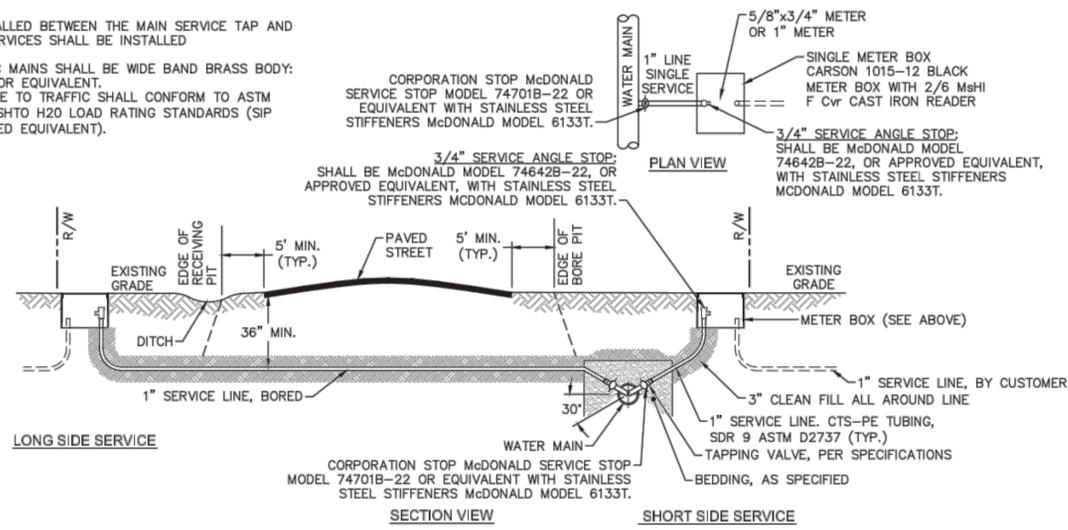
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Newland COMMUNITIES
NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS CONVENTIONAL NEIGHBORHOOD PH 1-A
SITE PLAN DETAILS

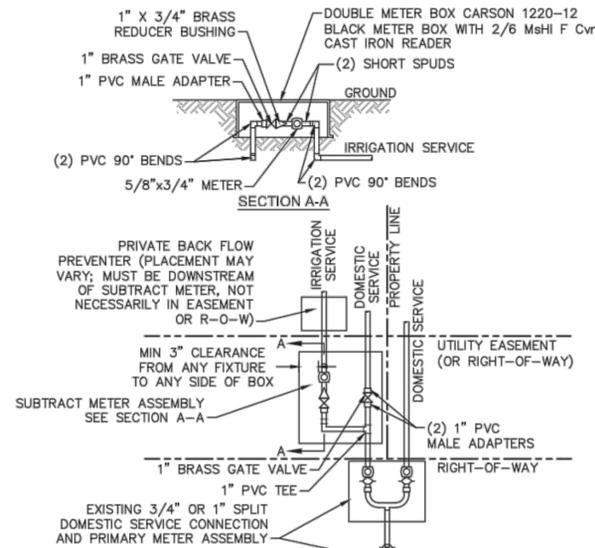
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DRAWN: EEM	VERTICAL: N/A	REVISION: B
DESIGNED: KCBE	STATUS: FINAL DESIGN	
CHECKED: NUL	ISSUED FOR PERMITTING	
PROJ. MGR.: KCBE		

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



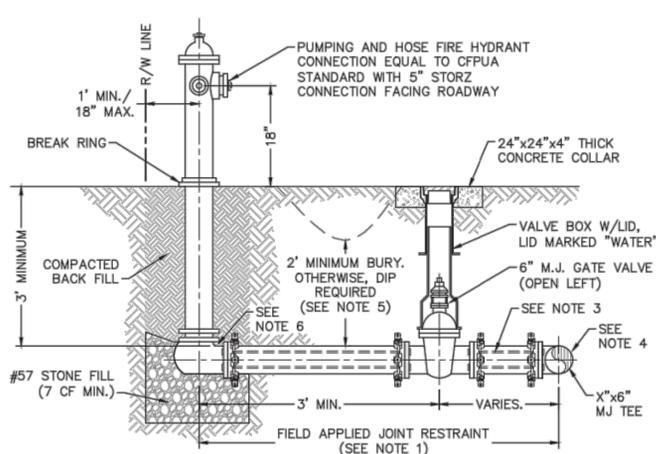
NOTE:
TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPWA SYSTEM

WD-18 SINGLE SERVICE CONNECTION
NOT TO SCALE



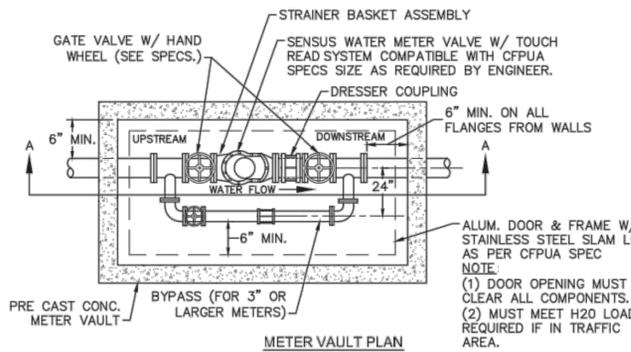
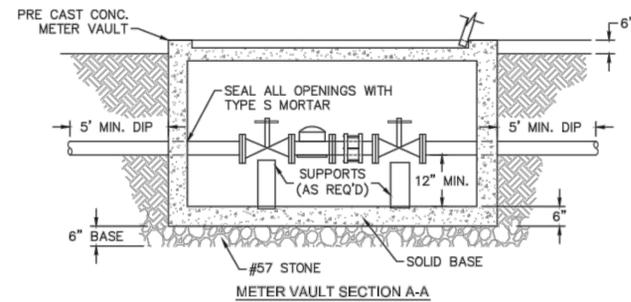
- NOTES:**
- BEYOND THE PRIMARY DOMESTIC METER ASSEMBLY, CFPWA IS ONLY RESPONSIBLE FOR METER AND WASHERS OF SUBTRACT METER ASSEMBLY.
 - ALL PIPE AND FITTINGS UP TO FINAL SERVICE LINE TO BE 1" EXCLUDING METERS.

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

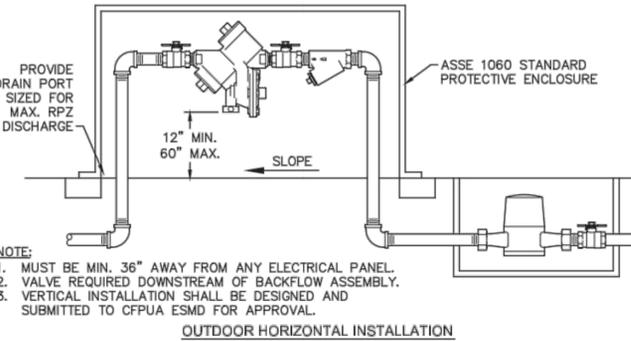
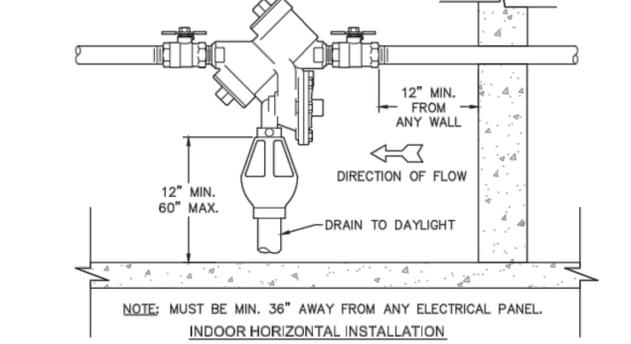


- NOTES:**
- JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI OR C-900 PVC PIPE AS MANUFACTURED BY EBAA IRON, SIGMA, STAR PIPE PRODUCTS OR APPROVED EQUAL.
 - WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.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

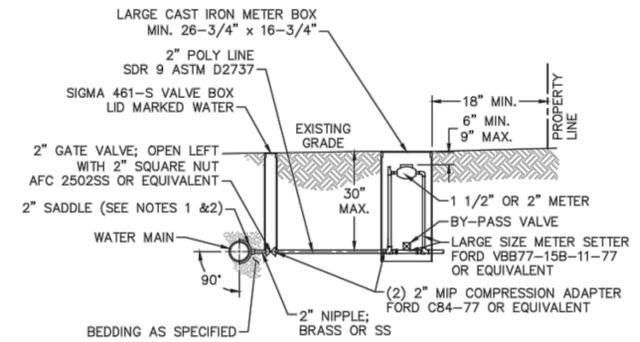
WD-10 FIRE HYDRANT ASSEMBLY
NOT TO SCALE



WD-1 WATER METER VAULT
NOT TO SCALE

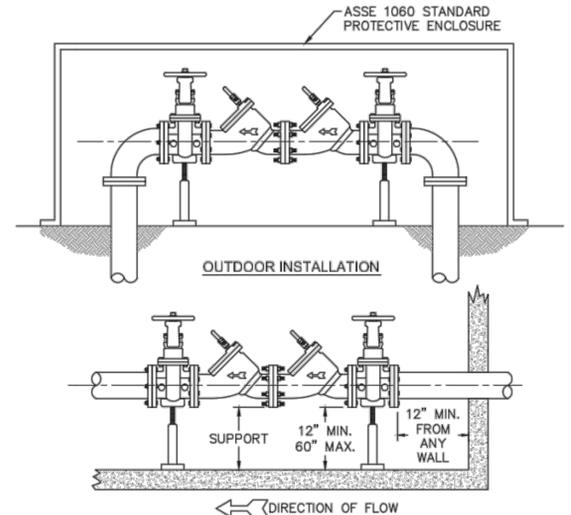


WD-12 REDUCED PRESSURE PRINCIPLE ASSEMBLY
NOT TO SCALE



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

WD-11 LARGE METER
NOT TO SCALE



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

WD-7 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE

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

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

CFPUA WATER DISTRIBUTION SYSTEM

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

STANDARD DETAILS

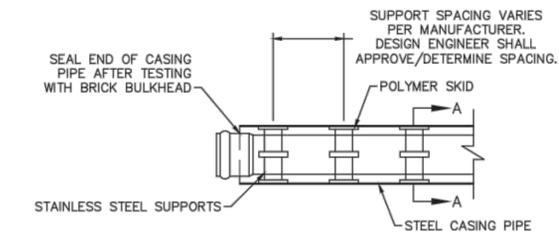


CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

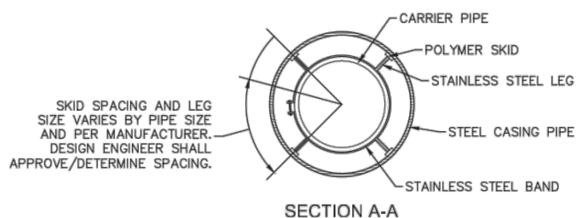
SHEET NO:
WSD-1

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

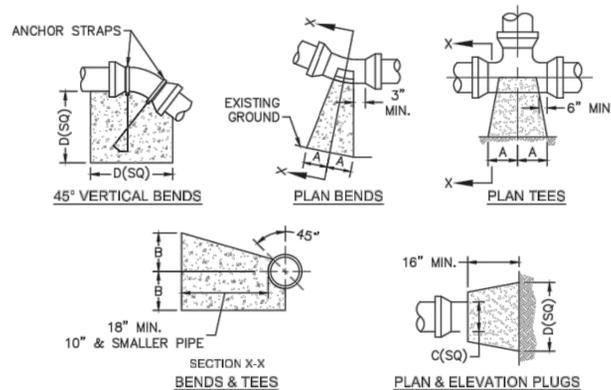
S:\2350129 Ph. 1 S:\98-Drawings-Additional\03\DETAILS-02750129-A.dwg, 2/3/2016 12:40:00 PM, AMM@cmh.com



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

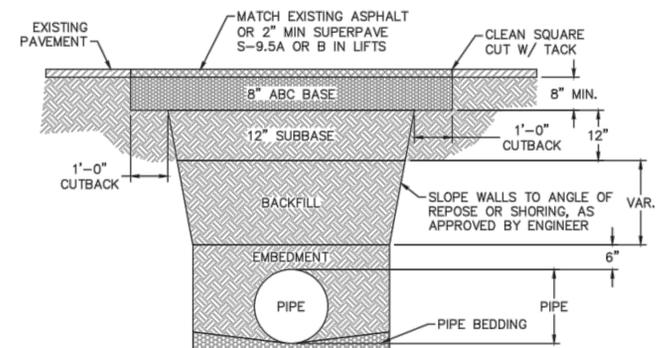


WD-15 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



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

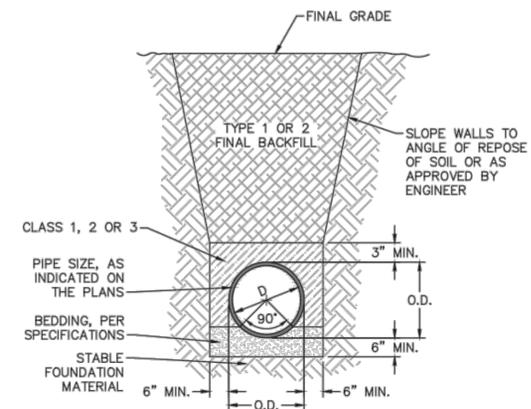
NOTES:
1. BASED ON 160 PSI TEST PRESSURE AND 2000 PSF SOIL BEARING CAPACITY.
2. ALL BEARING SURFACES TO BE CARRIED TO UNDISTURBED GROUND.
3. USE MEG-A-LUG (PREFERRED) IN LIEU OF BLOCKING AND RODDING.



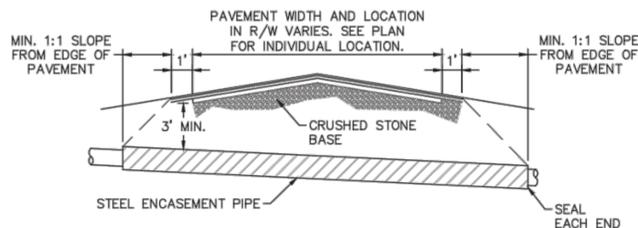
NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
4. BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12\"/>

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

WD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE

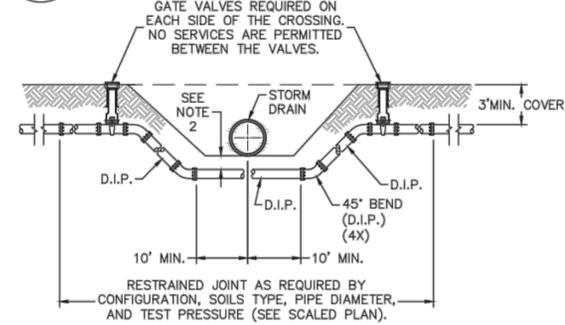


WD-13 TYPICAL TRENCH DETAIL
NOT TO SCALE



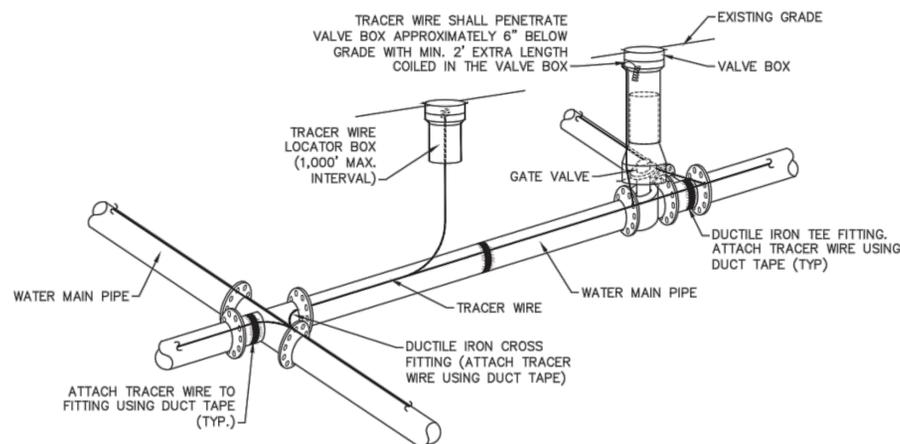
NOTES:
1. CASING WILL BE INSTALLED AT LINE AND GRADE SHOWN ON INDIVIDUAL PROFILE FOR EACH CROSSING. BORING/JACKING TO LINE AND GRADE IS REQUIRED.
2. TRACER WIRE SHALL BE CONTINUED THROUGH CASING.

WD-16 TYPICAL BORING/JACKING DETAIL
NOT TO SCALE



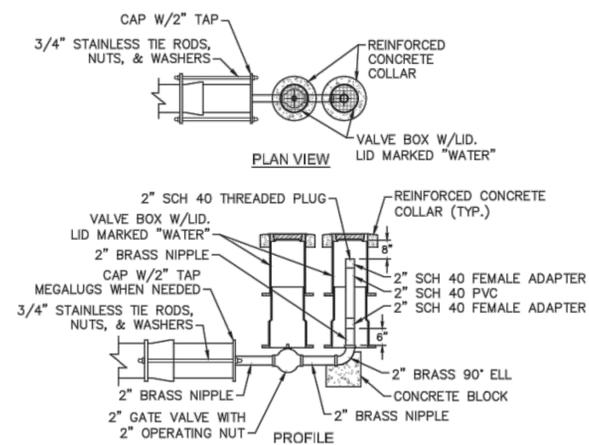
NOTES:
1. USE PRESSURE CLASS 350 DIP, UNLESS SPECIFIED OTHERWISE.
2. MINIMUM DEPTH REQUIRED, UNLESS SPECIFIED OTHERWISE BY CFPUA:
a. IN DOT R/W, 36\"/>

WD-2 WATER MAIN DITCH AND STORM DRAIN CROSSING
NOT TO SCALE

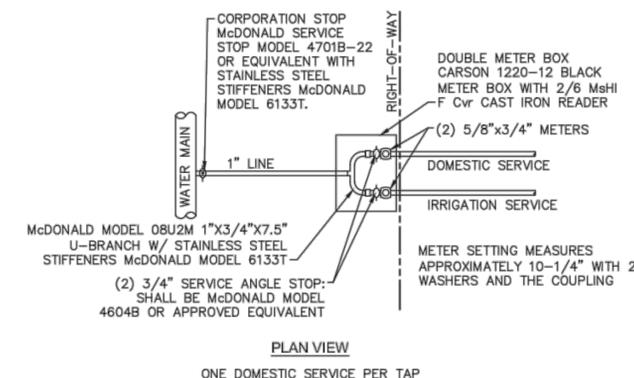


NOTES:
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
2. WIRE SHALL BE STRAPPED TO ALL PVC WATER MAIN PIPING WITH DUCT TAPE AT 12 FOOT INTERVALS ALONG THE PIPE.
3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS WITH DUCT TAPE.
4. ALL SPLICES IN THE WIRE SHALL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

WD-17 TRACER WIRE DETAIL
NOT TO SCALE



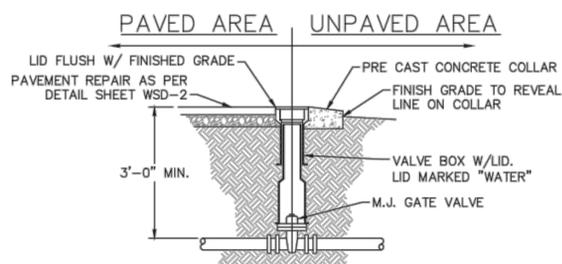
WD-5 2" BLOW-OFF
NOT TO SCALE



WD-9 DOUBLE SERVICE CONNECTION
NOT TO SCALE

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

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



WD-3 VALVE DETAIL
NOT TO SCALE

WD-6 SAMPLING STATION
NOT TO SCALE

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

CFPUA WATER DISTRIBUTION SYSTEM

STANDARD DETAILS

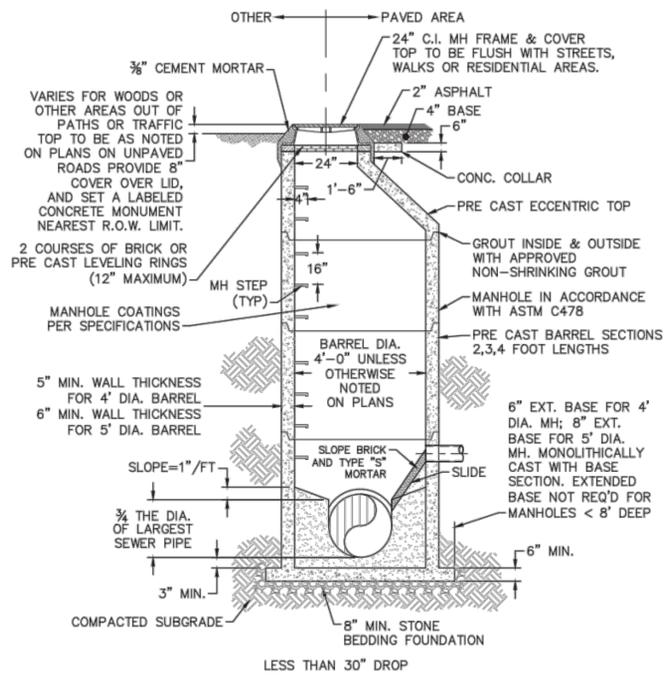


CAPE FEAR PUBLIC UTILITY AUTHORITY
235 GOVERNMENT CENTER DRIVE
WILMINGTON, NC 28403
OFFICE: (910)332-6560

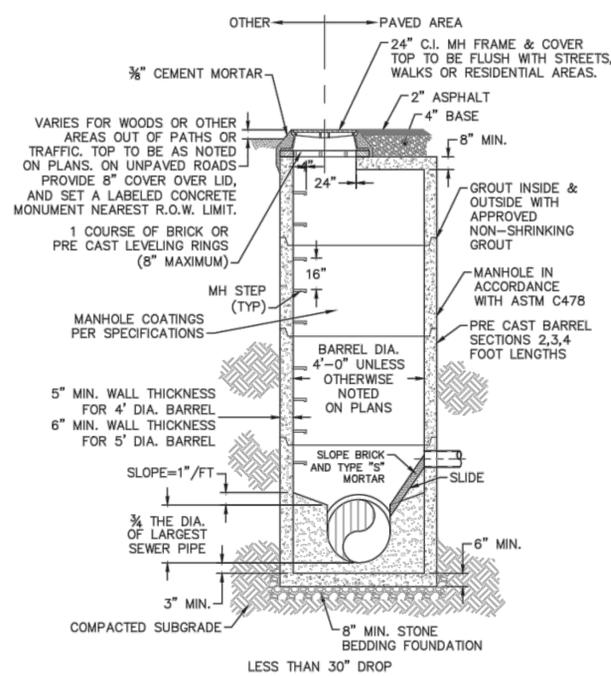
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1/9/12
SCALE
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DRAWN BY
CFPUA
CHECKED BY
CFPUA
PROJECT NO :

SHEET NO:
WSD-2

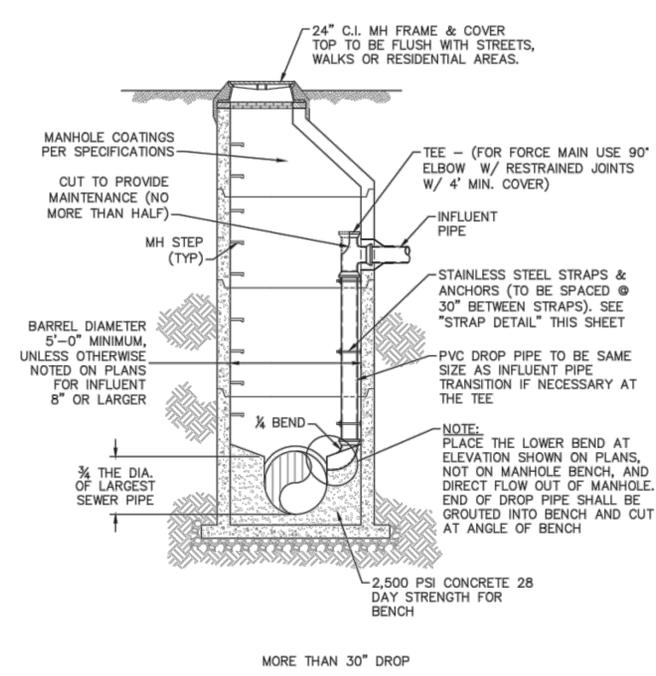
Stewardship. Sustainability. Service.



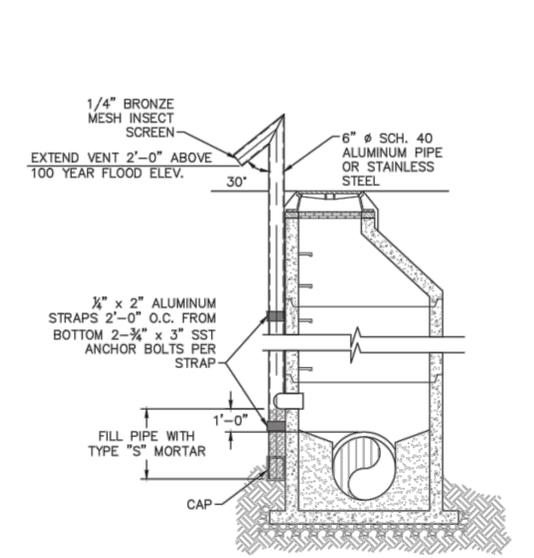
SD-1 PRECAST CONCRETE OFFSET MANHOLE TYPICAL
NOT TO SCALE



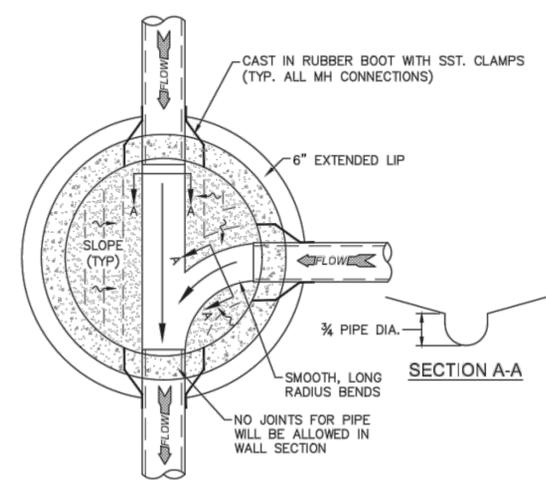
SD-2 PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
NOT TO SCALE



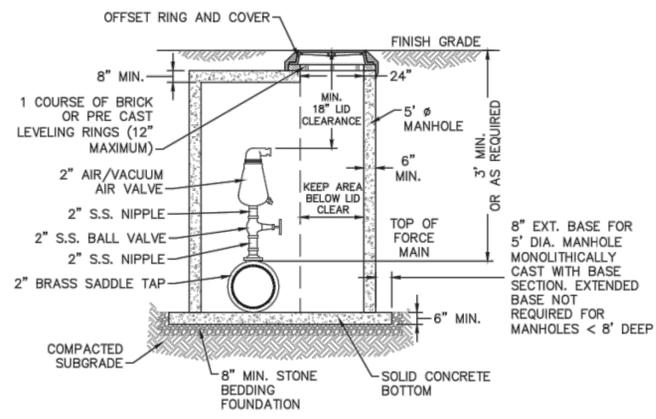
SD-3 DROP MANHOLE
NOT TO SCALE



SD-4 STANDARD VENT MANHOLE
NOT TO SCALE

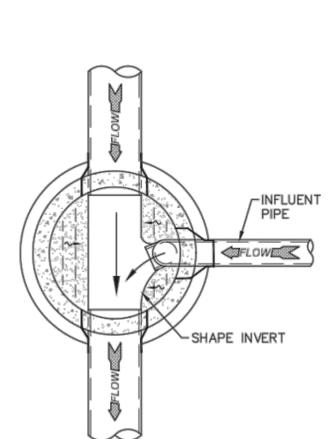


SD-5 MANHOLE FLOOR PLAN
NOT TO SCALE

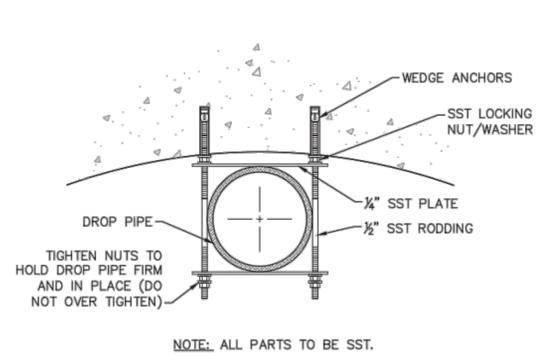


NOTES:
 1. CONTRACTOR TO INSTALL VALVE AND MANHOLE AT SUFFICIENT DEPTH TO ALLOW FOR ACCESS.
 2. FORCE MAIN TO BE OFFSET IN MANHOLE TO KEEP AREA BELOW LID CLEAR.
 3. REFER TO SPECIFICATIONS FOR ADDITIONAL DETAILS.
 4. USE CAST IN RUBBER BOOT WITH SST. CLAMPS FOR ALL MH CONNECTIONS, INCLUDING FORCE MAIN.

SD-6 AIR/VACUUM AND AIR RELEASE COMBINATION VALVE
NOT TO SCALE



SD-7 DROP MANHOLE FLOOR PLAN
NOT TO SCALE



SD-8 STRAP DETAIL
NOT TO SCALE

- 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.
 - SERVICES SHALL BE PERPENDICULAR TO MAIN AND TERMINATE AT RIGHT-OF-WAY LINE. SERVICES IN CUL-DE-SACS ARE REQUIRED TO BE PERPENDICULAR, OR MUST ORIGINATE IN MANHOLE AND TERMINATE AT RIGHT-OF-WAY LINE.
 - 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.

SD-9 STANDARD SEWER NOTES
(REQUIRED ON ALL SEWER PLAN AND PROFILE SHEETS)

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

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

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

CFPUA SANITARY SEWER

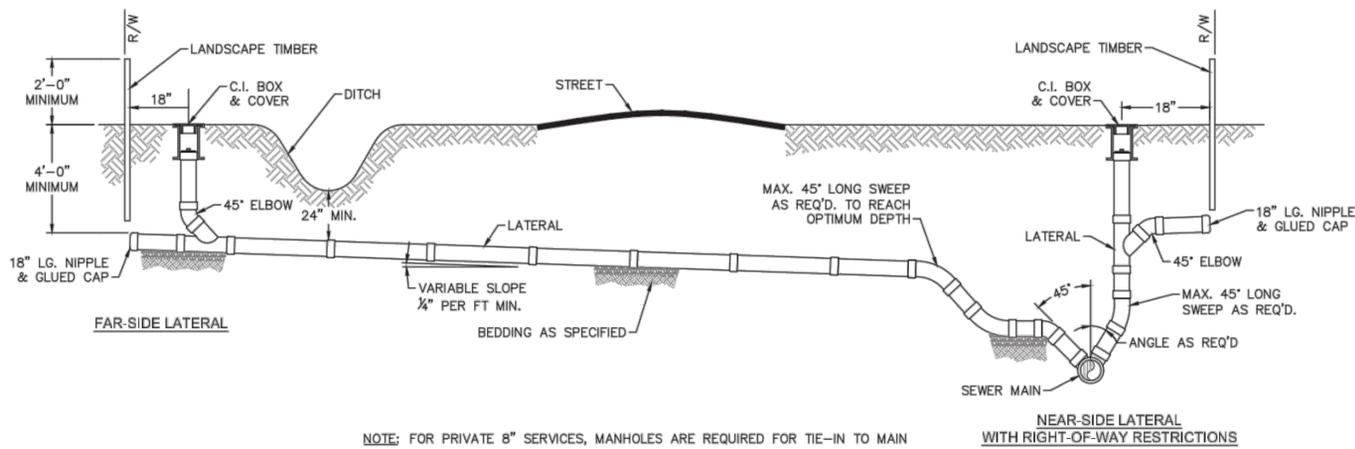
STANDARD DETAILS

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

DATE: 1/8/12
SCALE: N/A
DRAWN BY: CFPJA
CHECKED BY: CFPJA
PROJECT NO:

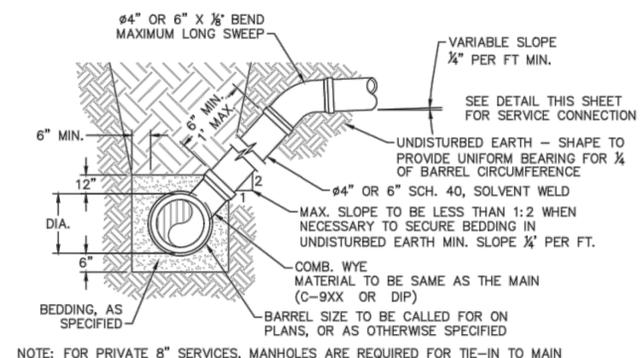
SHEET NO: SSD-1

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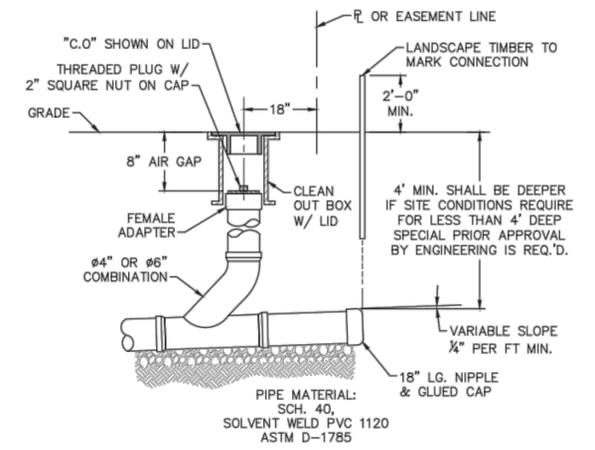
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

SD-19 STANDARD SERVICE CONNECTION TO SANITARY SEWER
NOT TO SCALE



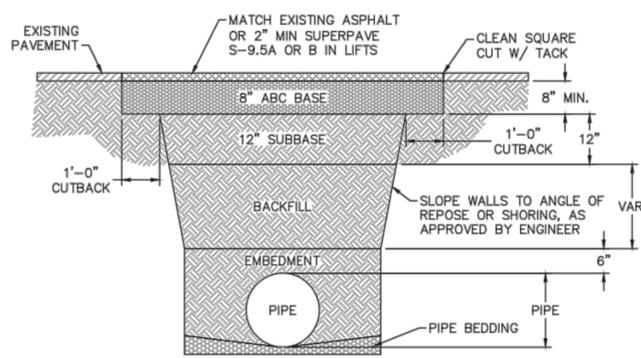
NOTE: FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN

SD-10 STANDARD SERVICE LATERAL
NOT TO SCALE



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

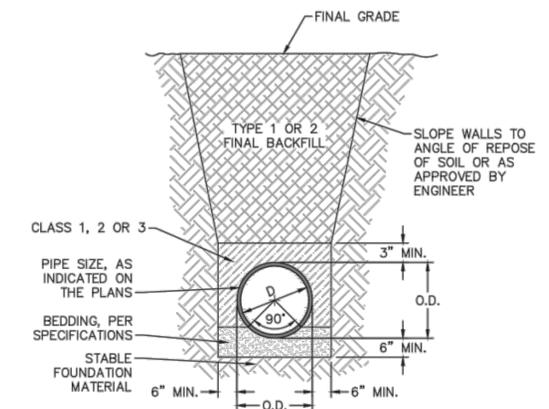
SD-11 SERVICE CONNECTION AND CLEAN-OUT
NOT TO SCALE



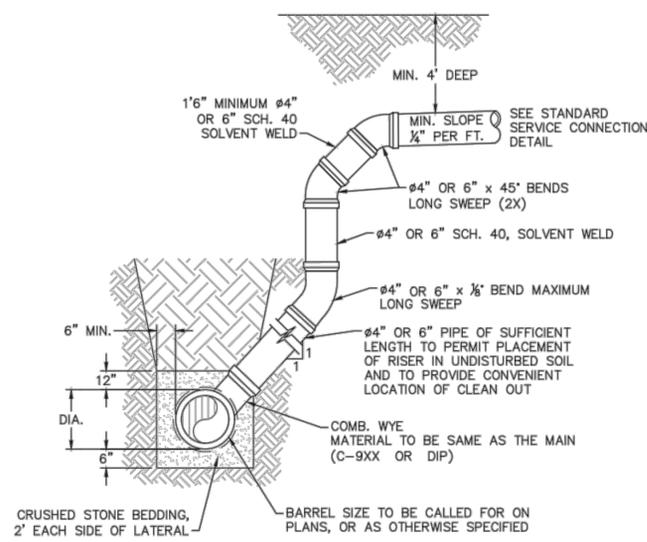
NOTES:
1. BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
2. SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
3. 8-INCH OF ABC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

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

SD-14 PAVEMENT REPAIR WHERE PIPE INSTALLED
NOT TO SCALE

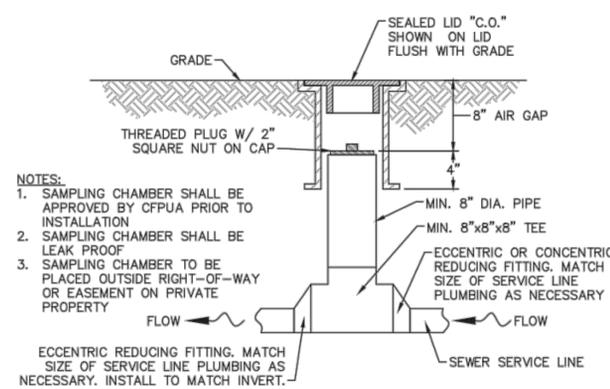


SD-15 TYPICAL TRENCH DETAIL
NOT TO SCALE



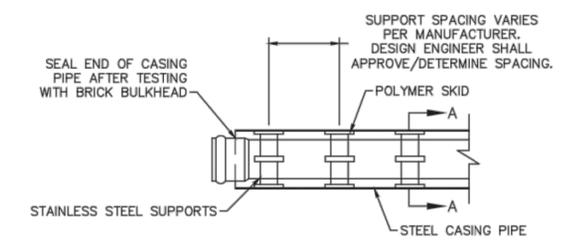
NOTES:
1. SPECIAL CARE SHALL BE TAKEN DURING BACKFILL OPERATIONS. THE RISER SHALL BE PLUMB AND TRUE AT ALL TIMES, AND REST ON FIRM, STABLE FOUNDATION.
2. FOR PRIVATE 8" SERVICES, MANHOLES ARE REQUIRED FOR TIE-IN TO MAIN.

SD-12 DEEP SERVICE LATERAL
NOT TO SCALE

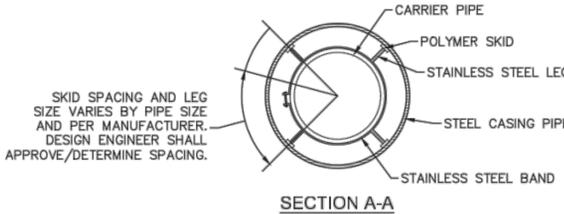


NOTES:
1. SAMPLING CHAMBER SHALL BE APPROVED BY CFPUA PRIOR TO INSTALLATION
2. SAMPLING CHAMBER SHALL BE LEAK PROOF
3. SAMPLING CHAMBER TO BE PLACED OUTSIDE RIGHT-OF-WAY OR EASEMENT ON PRIVATE PROPERTY
ECCENTRIC REDUCING FITTING. MATCH SIZE OF SERVICE LINE PLUMBING AS NECESSARY. INSTALL TO MATCH INVERT.

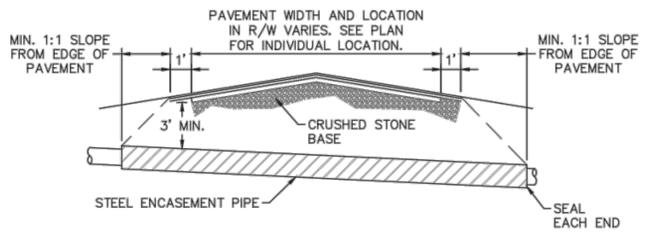
SD-13 SAMPLING CHAMBER
NOT TO SCALE



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



SD-17 PIPE CASING SUPPORT DETAIL
NOT TO SCALE



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

SD-16 TYPICAL BORING/JACKING DETAIL
NOT TO SCALE

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

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

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

CFPUA SANITARY SEWER

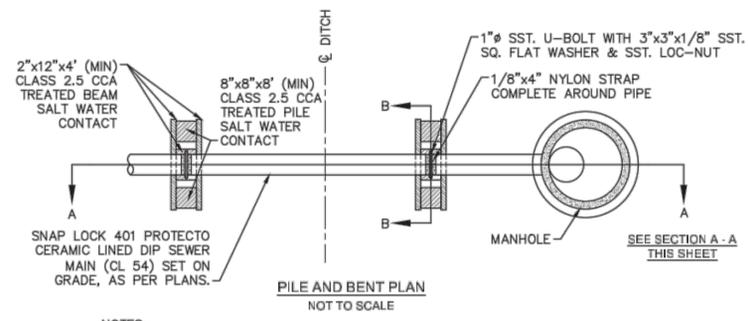
STANDARD DETAILS

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

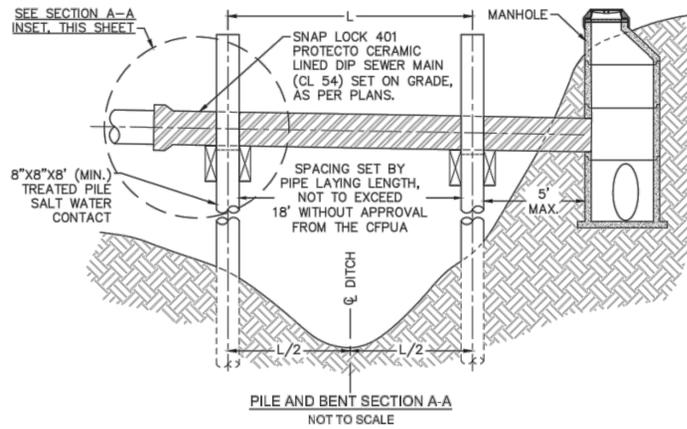
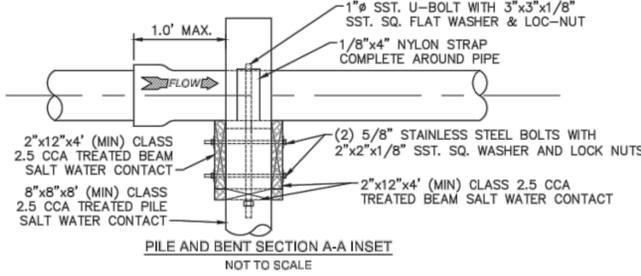
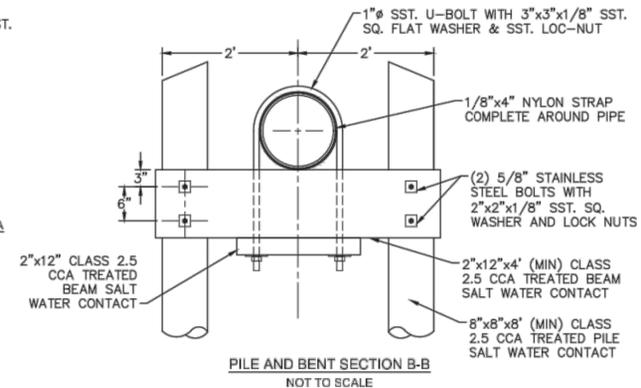
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SCALE: N/A
DRAWN BY: CFPJA
CHECKED BY: CFPJA
PROJECT NO: _____

SHEET NO:
SSD-2

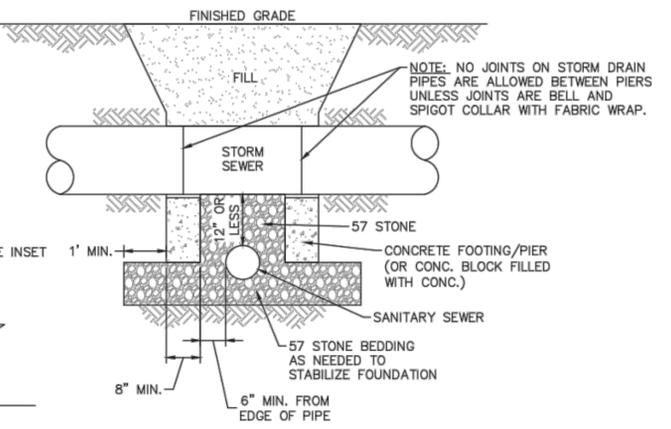
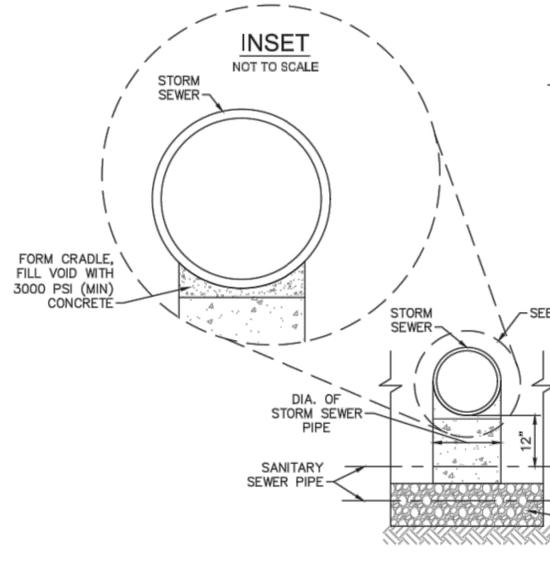
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- NOTES:**
- PILES AND PILE DRIVING SHALL CONFORM TO NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, JANUARY 2002, SECTIONS 445, 450, 1082-2 & 1084-2.
 - CENTERLINE OF BOLTS TO BE A MINIMUM OF 3" FROM OUTSIDE EDGE OF TIMBER. BOLTS TO BE A MINIMUM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

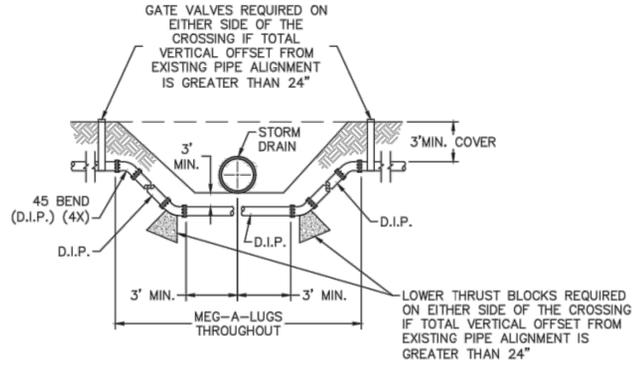


SD-20 PILE AND BENT DETAIL
NOT TO SCALE



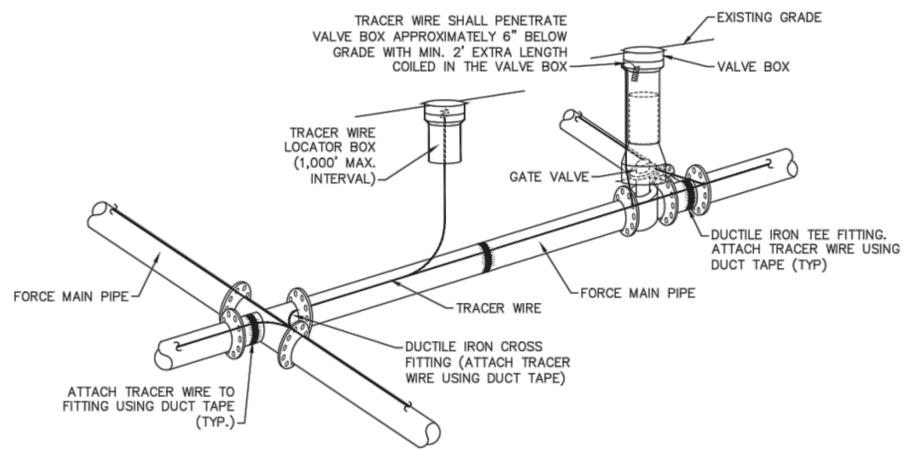
- THE FOLLOWING MUST BE FOLLOWED IN THE CASES OF GRAVITY SEWER UNDER STORM DRAIN:**
- A SEPARATION OF LESS THAN 12" BETWEEN STORM DRAIN AND GRAVITY SEWER, STORM DRAIN MUST BE BRIDGED.
 - A SEPARATION OF 12" TO LESS THAN 24" BETWEEN STORM DRAIN AND GRAVITY SEWER, GRAVITY SEWER CAN BE DIP OR STORM DRAIN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

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



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

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



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

SD-21 TRACER WIRE DETAIL
NOT TO SCALE

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

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

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

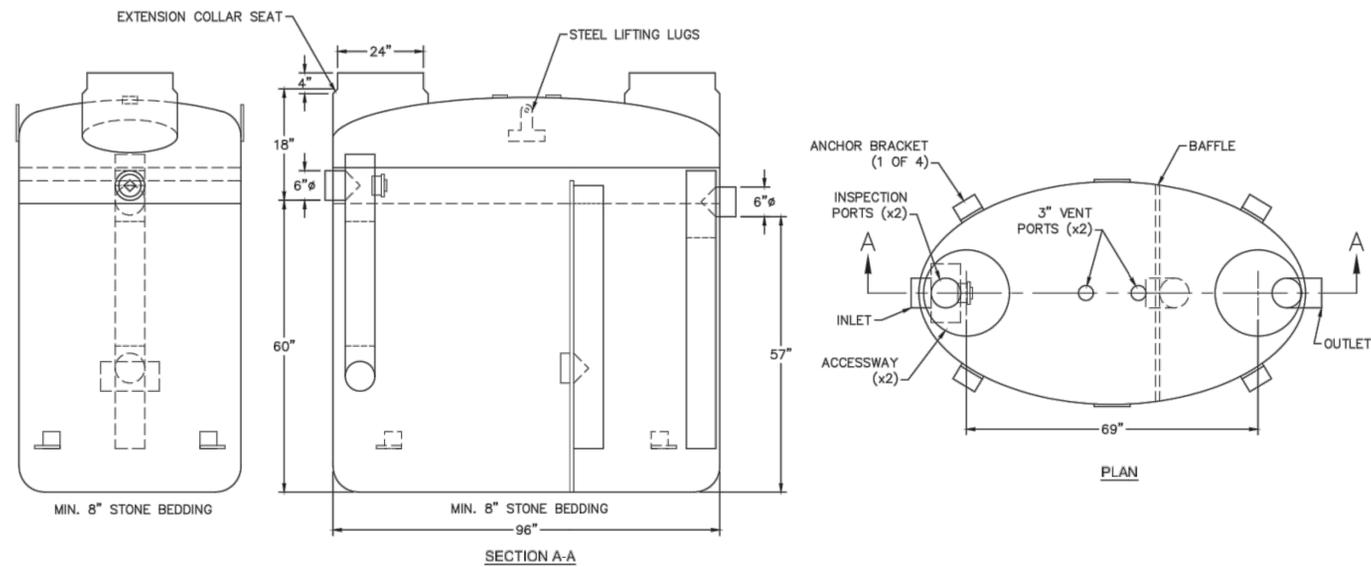
CFPUA SANITARY SEWER

STANDARD DETAILS

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

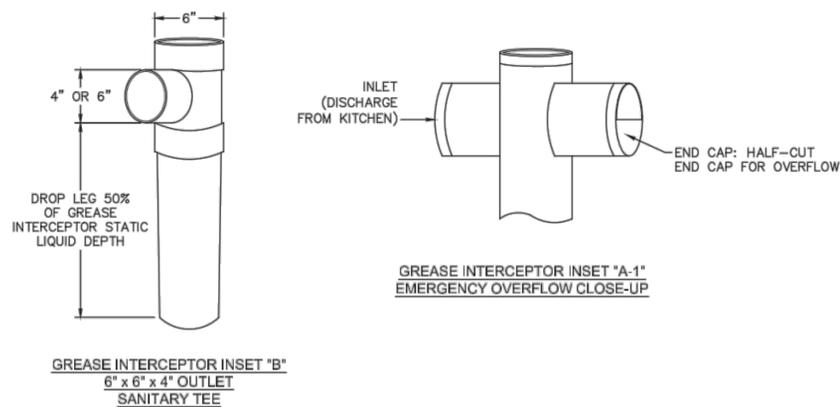
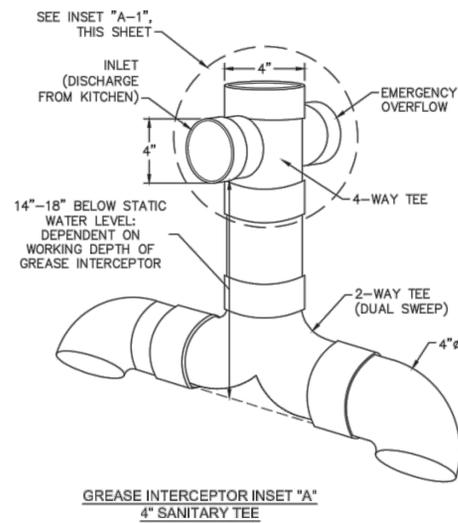
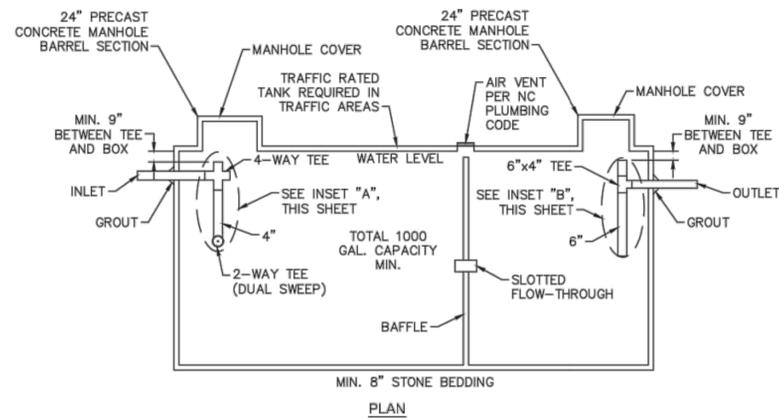
DATE
1/8/12
SCALE
N/A
DRAWN BY
CFPUA
CHECKED BY
CFPUA
PROJECT NO :

SHEET NO:
SSD-3



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

SD-22 FIBERGLASS GREASE INTERCEPTOR
NOT TO SCALE



SD-23 CONCRETE GREASE INTERCEPTOR
NOT TO SCALE

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

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

REV:	DESCRIPTION:	DATE:

CFPUA SANITARY SEWER

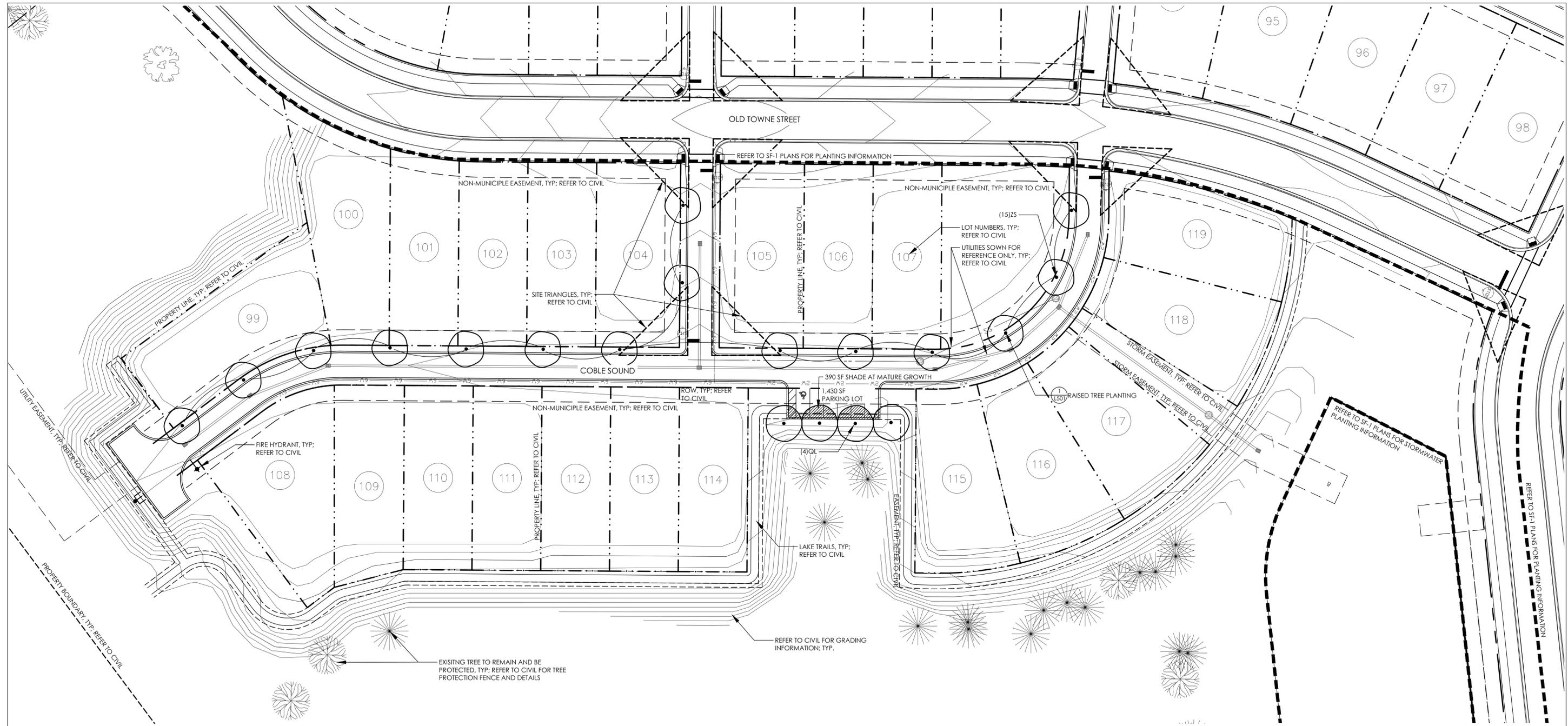
STANDARD DETAILS

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

Stewardship. Sustainability. Service.

DATE
1/8/12
SCALE
N/A
DRAWN BY
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CFPUA
PROJECT NO :

SHEET NO:
SSD-4



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 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 AREAS INCLUDING CONSTRUCTION ACCESS OUTSIDE PROJECT LIMITS.
- REFER TO CIVIL DRAWINGS FOR ABBREVIATIONS AND LEGENDS.
- REFER TO SF-1 DRAWINGS FOR STREET LIGHT INFORMATION.

SF1A STREET TREE PLANTING SCHEDULE

SYM	QTY	BOTANICAL NAME	COMMON NAME	CAL/RT	MIN. HT.	MIN. SPR.	REMARKS
STREET TREES							
QL	4	QUERCUS LYRATA	OVERCUP OAK	2-2 1/2'	-	-	STRONG CENTRAL LEADER; NO INCLUDED BARK
ZS	15	ZELKOVA SERRATA	ZELKOVA	2-2 1/2'	-	-	UNIFORMLY BRANCHED; NO INCLUDED BARK

PARKING LOT SHADE REQUIREMENT DATA TABLE:

REQUIRED : 20% SHADE COVER FOR PARKING LOT PAVED SURFACE PROVIDED AT MATURE GROWTH
 PROVIDED : 27% SHADE COVER FOR PARKING LOT PAVED SURFACE PROVIDED AT MATURE GROWTH
 1,430 SF PARKING AREA
 390 SF SHADE AT MATURE GROWTH



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.

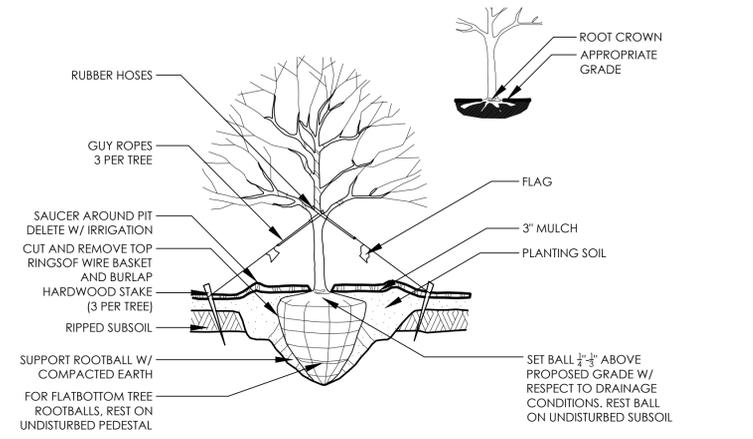
REV. NO.	DESCRIPTIONS / REVISIONS	DATE



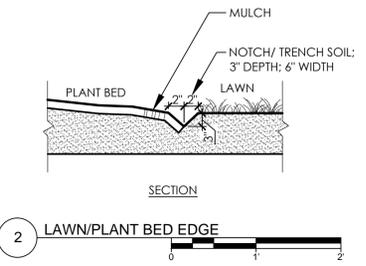
RIVER LIGHTS - CONVENTIONAL AREA SF-1A

PLANTING PLAN

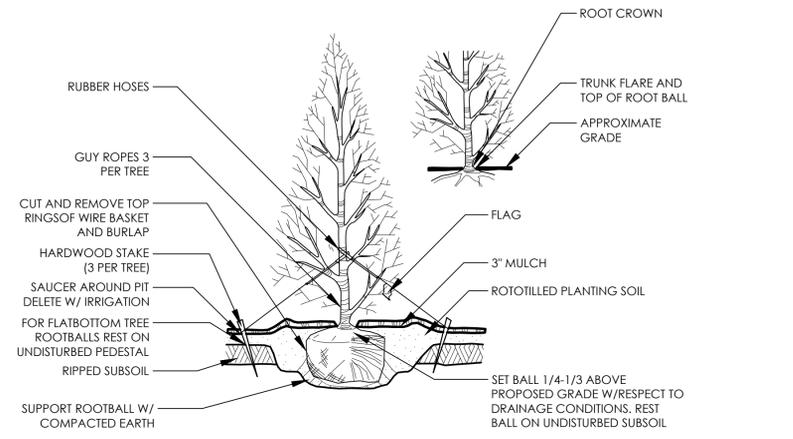
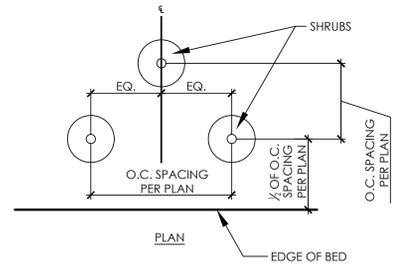
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MCE PROJ. #	DRAWING NUMBER	
DRAWN: JI		
DESIGNED: JG, ED		
CHECKED: JG, ED		
PROJ. MGR.: JG		
STATUS: FINAL DESIGN	REVISION	



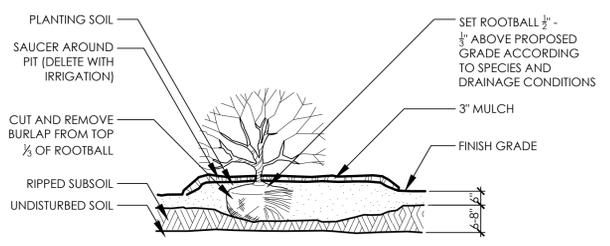
1 RAISED TREE PLANTING
 * FOR SPECIES SELECTION REFER TO STREET TREE PLANTING SCHEDULE 8 ON L161 AND L162
 * USE BELOW GRADE TREE STABILIZATION PER DETAIL 7/L501 FOR ALL TREES WITHIN PLAYGROUND AREA FENCING
 SCALE: NTS



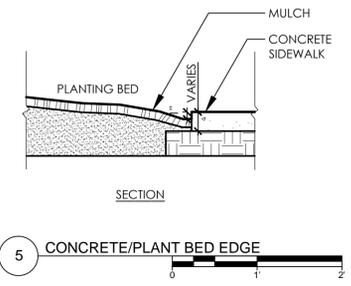
2 LAWN/PLANT BED EDGE



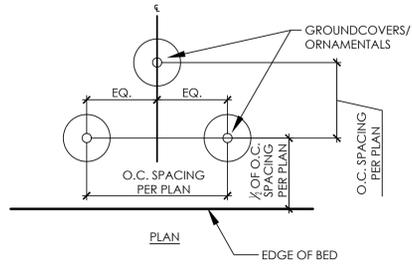
3 EVERGREEN TREE PLANTING
 SCALE: NTS



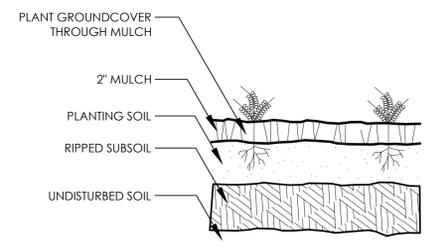
4 RAISED SHRUB PLANTING
 SCALE: NTS



5 CONCRETE/PLANT BED EDGE



6 GROUND COVER PLANTING
 SCALE: NTS

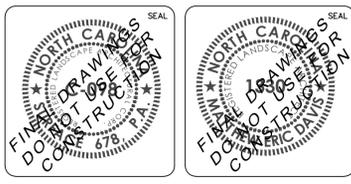


Approved Construction Plan
 Name: _____ Date: _____
 Planning: _____
 Traffic: _____
 Fire: _____

CITY OF WILMINGTON
 NORTH CAROLINA
 Public Services • Engineering Division
APPROVED STORMWATER MANAGEMENT PLAN
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REV. NO.	DESCRIPTIONS / REVISIONS	DATE



RIVER LIGHTS - CONVENTIONAL AREA SF-1A
DETAILS

DATE: 02/03/2016	SCALE: AS NOTED	M&C FILE NUMBER: L501
MCE PROJ. #	DESIGNED: J.C. ED	DRAWING NUMBER
DRAWN: JI	CHECKED: J.C. ED	
PROJ. MGR. J.C.	STATUS: FINAL DESIGN	REVISION