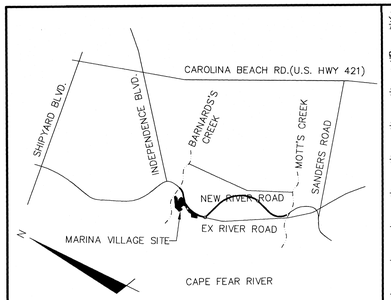


VICINITY MAP

NOT TO SCALE

404 WETLAND (POCOSIN)

404 WETLAND (BRACKISH)

PROJECT BOUNDARY

REALIGNED RIVER ROAD (130' PUBLIC R/W)

DUKE/PROGRESS ACCESS EASEMENT

DUKE/PROGRESS TRANSMISSION EASEMENT

PIEDMONT NATURAL GAS EASEMENT

TREE LINE (TYP.)

35' VEGETATED BUFFER

CAMA AREA OF ENVIRONMENTAL CONCERN (AEC)

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

100-YR FLOODPLAIN (EFFECTIVE)(AE9)

MEAN HIGH WATER (APPROX. EL. 2)

CAMA CLASSIFICATION BOUNDARY

100-YR FLOODPLAIN (PRELIMINARY)(AE9)

COASTAL MARSH LINE

CAPE FEAR RIVER

60' 0 60' 120'

SCALE: 1"=60' (Horiz.)

LEGEND

RBC	=	REBAR & CAP
	=	POWER POLE
S	=	SANITARY SEWER MANHOLE
	=	WETLAND
OHE OHE	=	OVERHEAD ELECTRIC LINE
COD COD	=	CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
SS SS	=	SANITARY SEWER MAIN
MHW MHW	=	MEAN HIGH WATER
AEC AEC AEC	=	AREA OF ENVIRONMENTAL CONCERN
	=	100-YEAR FLOODPLAIN (PRELIMINARY)
	=	100-YEAR FLOODPLAIN (EFFECTIVE)
	=	COASTAL MARSH LINE
	=	35' CONSERVATION RESOURCE VEGETATED BUFFER
TPF	=	TREE PROTECTION FENCE
LOD LOD	=	LIMITS OF DISTURBANCE
SF	=	SILT FENCE
>TDD >TDD	=	TEMPORARY DIVERSION DITCH
	=	CAMA CLASSIFICATION BOUNDARY

TREE LEGEND

	=	CEDAR
	=	GUM
	=	HOLLY
	=	OAK
	=	MAPLE
	=	PINE
X	=	TREE TO BE REMOVED

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____

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

1 inch

CONSERVATION RESOURCE SETBACK TABLE

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

REFERENCE: LDC 18-341 (d) 5h

REV.NO.	DESCRIPTIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

REVISIONS

SEAL

SEAL

NORTH CAROLINA PROFESSIONAL CIVIL 035107 ENGINEER NICHOLAS J. LAURETTA

7/19/16

McKIM & CREED

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

www.mckimcreed.com

NASH

NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

TREE REMOVAL PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

SCALE: HORIZONTAL: 1"=60' VERTICAL: N/A

M&C FILE NUMBER CX-102

DRAWING NUMBER 5

STATUS: FINAL DESIGN

ISSUED FOR CONSTRUCTION

REVISION 2

LIMITS OF DISTURBANCE = 5.24 AC

LAT: 34° 9' 13" N
LONG: 77° 56' 36" W

TREE LEGEND

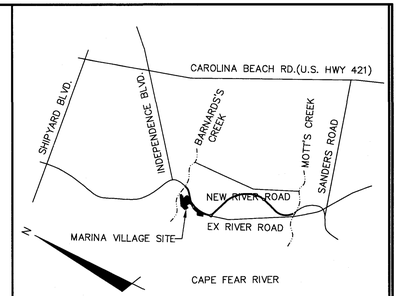
- CEDAR
- GUM
- HOLLY
- OAK
- MAPLE
- PINE

PHASE 1 CONSTRUCTION SEQUENCE

1. ESTABLISH LIMITS OF DISTURBANCE AS SHOWN.
2. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL MEET AT THE NEW HANOVER COUNTY EROSION CONTROL INSPECTOR'S OFFICE.
3. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCES AS SHOWN. CONTRACTOR SHALL MAINTAIN A SUFFICIENT GRAVEL ENTRANCE UNTIL FINAL SUB-GRADE IS ESTABLISHED. IF DIRT/MUD GETS ON THE STREET, THEN A WASH RACK WILL NEED TO BE INSTALLED.
4. INSTALL TREE PROTECTION FENCING AND SILT FENCING AS NOTED ON PLANS BEFORE COMMENCING ANY LAND DISTURBANCE ACTIVITY. ADDITIONAL TREE PROTECTION FENCING AND SILT FENCE MAY BE REQUIRED.
5. INSTALL TEMPORARY SKIMMER BASINS WITHIN THE LIMITS OF CONSTRUCTION AS SHOWN ON THE PLANS IN ORDER TO TREAT SEDIMENT LADEN WATER. BASINS SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION OF ANY DIVERSION DITCHES THAT CONVEY WATER TO THE BASINS.
6. CONTRACTOR TO FIELD ADJUST TEMPORARY DIVERSION DITCHES AS REQUIRED TO MAINTAIN THE DIVERSION TO THE BASINS.
6. COMMENCE GRUBBING AND ROUGH GRADING WITHIN THE LIMITS OF CONSTRUCTION.
7. PROVIDE TEMPORARY STABILIZATION AND SEEDING AS NECESSARY TO PREVENT EROSION. REFER TO SHEET CE-501 FOR GROUND STABILIZATION CRITERIA AND SEEDING SCHEDULE.

NOTE:

- WHERE SILT FENCE IS REQUIRED IN THE SAME PLACE AS TREE PROTECTION FENCING, ORANGE SILT FENCE AND SIGNAGE FOR TREE PROTECTION MAY BE USED INSTEAD OF DUPLICATE FENCING. SIGNAGE MUST MEET CITY OF WILMINGTON REQUIREMENTS FOR TREE PROTECTION DURING CONSTRUCTION (SD 15-09).
- CONSTRUCTION AND GRADING WILL NOT DISTURB THE WETLAND/CONSERVATION RESOURCE.



VICINITY MAP

NOT TO SCALE

TREE PROTECTION (TYP.) SEE DETAIL: SHEET CE-501

269 LF TEMPORARY SILT FENCE (SF 4) DA: 0.24 AC SEE DETAIL; SHEET CE-501

141 LF TEMPORARY SILT FENCE (SF 5) DA: 0.10 AC SEE DETAIL; SHEET CE-501

532 LF TEMPORARY SILT FENCE (SF 3) DA: 0.32 AC SEE DETAIL; SHEET CE-501

107 LF TEMPORARY SILT FENCE (SF 13) DA: 0.04 AC SEE DETAIL; SHEET CE-501

135 LF TEMPORARY SILT FENCE (SF 2) DA: 0.09 AC SEE DETAIL; SHEET CE-501

TEMP. DIVERSION DITCH (TDD-2) SEE DETAIL; SHEET CE-502

TSB-1
DRAINAGE AREA=3.48 AC
RATIONAL "C"= 0.30
DESIGN INTENSITY= 7.23 IN/HR
10-YEAR PEAK FLOW= 7.53 CFS

ROCK CHECK DAM (TYP.) SEE DETAIL: SHEET CE-502

TEMP. DIVERSION DITCH (TDD-1) SEE DETAIL; SHEET CE-502

DA #1

TEMP. PERIMETER DIKE INSTALLED DURING PHASE 1 CONSTRUCTION

71 LF TEMPORARY SILT FENCE (SF 6) DA: 0.03 AC SEE DETAIL; SHEET CE-501

TEMP. CONSTRUCTION ENTRANCE SEE DETAIL: SHEET CE-501

137 LF TEMPORARY SILT FENCE (SF 1) DA: 0.06 AC SEE DETAIL; SHEET CE-501

TEMPORARY SEDIMENT BASIN DRAINAGE AREA

RIVER ROAD (100' PUBLIC R/W)

MARINA VILLAGE PHASE 1 LOD (TYP.)

558 LF TEMPORARY SILT FENCE (SF 7) DA: 0.50 AC SEE DETAIL; SHEET CE-501

DUKE PROGRESS ACCESS EASEMENT

DUKE PROGRESS TRANSMISSION EASEMENT

DUKE PROGRESS ACCESS EASEMENT

PIEDMONT NATURAL GAS EASEMENT

209 LF TEMPORARY SILT FENCE (SF 8) DA: 0.13 AC SEE DETAIL; SHEET CE-501

304 LF TEMPORARY SILT FENCE (SF 11) DA: 0.52 AC SEE DETAIL; SHEET CE-501

263 LF TEMPORARY SILT FENCE (SF 9) DA: 0.33 AC SEE DETAIL; SHEET CE-501

TEMP. CONSTRUCTION ENTRANCE SEE DETAIL: SHEET CE-501

35' VEGETATED BUFFER

CAMA AREA OF ENVIRONMENTAL CONCERN (AEC)

100-YR FLOODPLAIN (PRELIMINARY)(AE9)

100-YR FLOODPLAIN (EFFECTIVE)(AE9)

CITY OF WILMINGTON CONSERVATION OVERLAY DISTRICT (COD)

MEAN HIGH WATER (APPROX. EL. 2)

TREE LINE

COASTAL MARSH LINE

CAPE FEAR RIVER

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

LEGEND

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

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035107 NICHOLAS J. LAURETTA 7/19/16

McKIM & CREED
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Phone: (910)343-1048, Fax: (910)251-8282
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NASH — NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

PHASE 1 SEDIMENT & EROSION CONTROL PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER: CE-101
DRAWING NUMBER: 6

STATUS: FINAL DESIGN — ISSUED FOR CONSTRUCTION
REVISION: 2

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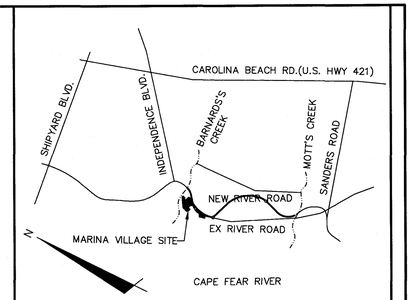
CONSTRUCTION SEQUENCE:

PHASE 2 CONSTRUCTION SEQUENCE

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

LIMITS OF DISTURBANCE = 5.24 AC

LAT: 34° 9' 13" N
LONG: 77° 56' 36" W



VICINITY MAP

NOT TO SCALE

RIPRAP OUTLET PROTECTION, d50=8" SEE SHEET CC-503 FOR DETAILS

269 LF TEMPORARY SILT FENCE (SF 4) DA: 0.24 AC SEE DETAIL; SHEET CE-501

404 WETLAND

532 LF TEMPORARY SILT FENCE (SF 3) DA: 0.32 AC SEE DETAIL; SHEET CE-501

TREE PROTECTION (TYP.) SEE DETAIL; SHEET CE-501

107 LF TEMPORARY SILT FENCE (SF 13) DA: 0.04 AC SEE DETAIL; SHEET CE-501

135 LF TEMPORARY SILT FENCE (SF 2) DA: 0.09 AC SEE DETAIL; SHEET CE-501

141 LF TEMPORARY SILT FENCE (SF 5) DA: 0.10 AC SEE DETAIL; SHEET CE-501

PHASE 1 INFILTRATION BASIN 1

PHASE 1 INFILTRATION BASIN 4 SEE SHEET CE-505 FOR DETAILS

PHASE 1 INFILTRATION BASIN 2

REMOVE SILT FENCE SECTION FOR PARKING LOT CONSTRUCTION

REALIGNED RIVER ROAD (130' PUBLIC R/W)

558 LF TEMPORARY SILT FENCE (SF 7) DA: 0.50 AC SEE DETAIL; SHEET CE-501

DUKE PROGRESS ACCESS EASEMENT

DUKE PROGRESS TRANSMISSION EASEMENT

DUKE PROGRESS ACCESS EASEMENT

PIEDMONT NATURAL GAS EASEMENT

304 LF TEMPORARY SILT FENCE (SF 11) DA: 0.52 AC SEE DETAIL; SHEET CE-501

PHASE 1 INFILTRATION BASIN 3

263 LF TEMPORARY SILT FENCE (SF 9) DA: 0.33 AC SEE DETAIL; SHEET CE-501

133 LF TEMPORARY SILT FENCE (SF 10) DA: 0.04 AC SEE DETAIL; SHEET CE-501

INLET PROTECTION (TYP.)

LIMITS OF DISTURBANCE (TYP.)

137 LF TEMPORARY SILT FENCE (SF 1) DA: 0.06 AC SEE DETAIL; SHEET CE-501

25.0'

35.0'

100.0'

75.0'

35' VEGETATED BUFFER

CAMA AREA OF ENVIRONMENTAL CONCERN (AEC)

100-YR FLOODPLAIN (PRELIMINARY)(AE9)

100-YR FLOODPLAIN (EFFECTIVE)(AE9)

CITY OF WILMINGTON CONSERVATION OVERLAY DISTRICT (COD)

MEAN HIGH WATER (APPROX. EL. 2)

TREE LINE

COASTAL MARSH LINE

Cape Fear River

N

50' 0 50' 100'

SCALE: 1"=50' (Horiz.)

LEGEND

△ RBC	= REBAR & CAP
PO	= POWER POLE
Ⓢ	= SANITARY SEWER MANHOLE
	= WETLAND
OHE OHE	= OVERHEAD ELECTRIC LINE
COD COD	= CITY OF WILMINGTON CONSERVATION RESOURCE SETBACK LINE
SS SS	= SANITARY SEWER MAIN
MHW MHW	= MEAN HIGH WATER
AEC AEC AEC	= AREA OF ENVIRONMENTAL CONCERN
	= 100-YEAR FLOODPLAIN (PRELIMINARY)
	= 100-YEAR FLOODPLAIN (EFFECTIVE)
	= COASTAL MARSH LINE
	= 35' CONSERVATION RESOURCE VEGETATED BUFFER
TPF	= TREE PROTECTION FENCE
LOD LOD	= LIMITS OF DISTURBANCE
SF	= SILT FENCE
>TDD >TDD	= TEMPORARY DIVERSION DITCH

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

NOTE:

- CONSTRUCTION AND GRADING WILL NOT DISTURB THE WETLAND/CONSERVATION RESOURCE.

REV.NO.	DESCRIPTIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

REVISIONS

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035107 NICHOLAS J. LAURETTA
7/19/16

McKIM & CREED
243 North Front Street
Wilmington, North Carolina 28401
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NASH North America Sekisui House, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

PHASE 2 SEDIMENT & EROSION CONTROL PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER: CE-102
DRAWING NUMBER: 7

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION: 0

S:\2735\0124 Marina Village\60-Drawings\Phase 1B\CE-102.dwg, 7/18/2016 4:52:22 PM, AMendenhall, 1:1

NOTE:

- CONSTRUCTION AND GRADING WILL NOT DISTURB THE WETLAND/CONSERVATION RESOURCE.

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

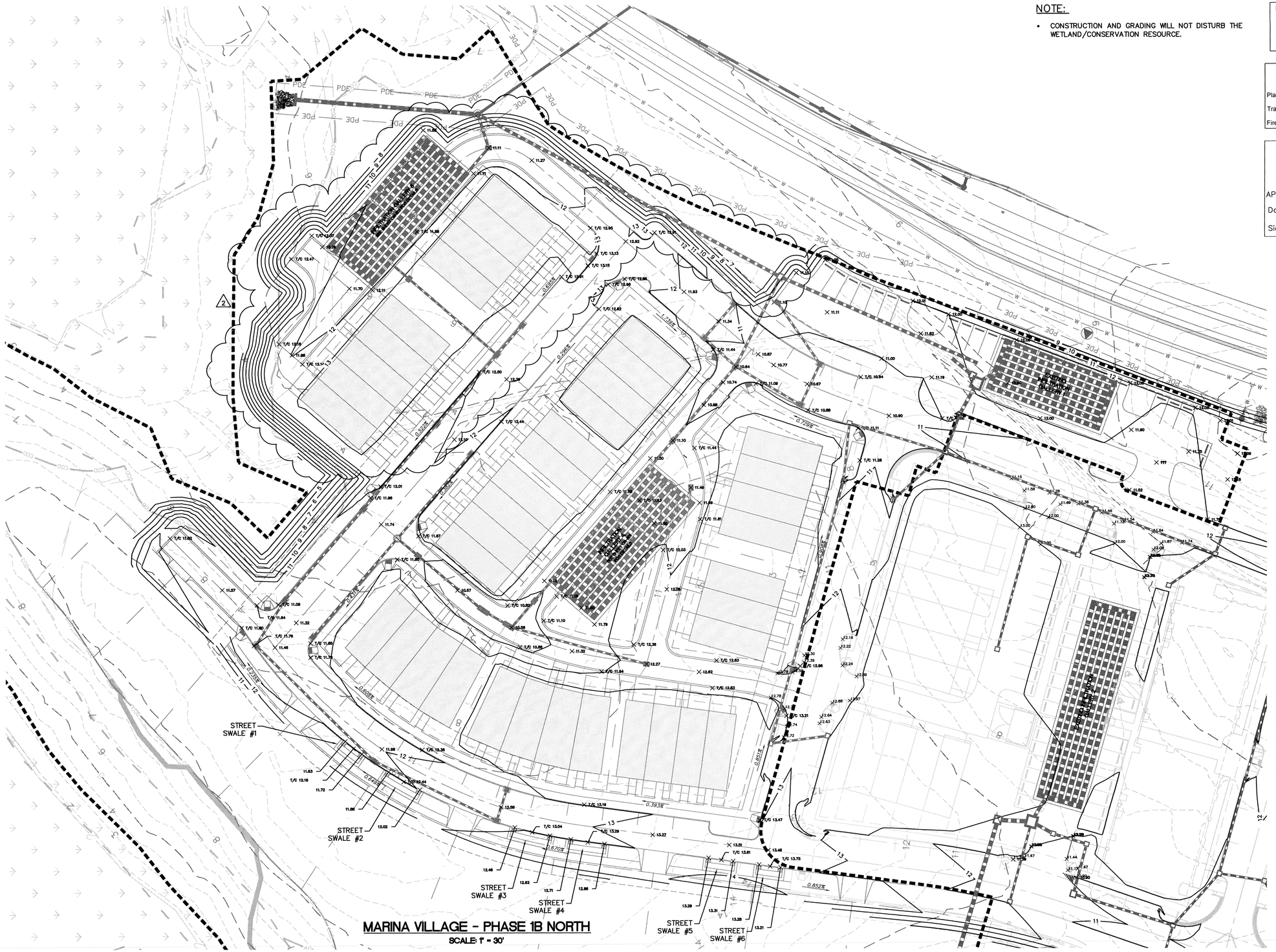
CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____



MARINA VILLAGE - PHASE 1B NORTH

SCALE: 1" = 30'

N

30' 0 30' 60'

SCALE: 1"=30' (Horiz.)

REV.NO.	DESCRIPTIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

REVISIONS

SEAL

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER CIVIL 035107 NICHOLAS J. LAURENTA 7/19/16

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NASH

RIVERLIGHTS

North America Sekisui House, LLC

RIVERLIGHTS MARINA VILLAGE PHASE 1B

GRADING PLAN NORTH

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER CG-101

DRAWING NUMBER 8

STATUS: FINAL DESIGN

ISSUED FOR CONSTRUCTION

REVISION 2

S:\2735\0124 Marina Village\8D-Drawings\Phase 1B\CG-103.dwg, 7/18/2016 4:55:43 PM, AMendenhall, 1:1

MATERIALS AND STANDARDS NOTES:

- ALL CATCH BASINS ARE NCDOT STD 840.01
- ALL DROP INLETS IN TRAFFIC AREAS ARE NCDOT STD 840.35, ALL DROP INLETS IN LANDSCAPE AREAS ARE CITY OF WILMINGTON STD 2-02 & 14-04.
- ALL STORM DRAINAGE PIPING TO BE CLASS III RCP, UNLESS OTHERWISE NOTED.

STRUCTURE TABLE – STRM – 14-15	
STR. NAME	DETAILS
CB-401	RIM = 12.33 SUMP = 9.85 INV OUT = 9.85W
CB-402	RIM = 12.39 SUMP = 9.74 INV IN =9.74E INV OUT = 9.74NE
CB-403	RIM = 11.80 SUMP = 9.30 INV IN =9.30SW INV OUT = 9.30NE
CB-404	RIM = 11.28 SUMP = 8.76 INV IN =8.76SW INV OUT = 8.76SE
CB-405	RIM = 11.04 SUMP = 8.13 INV IN =8.13NW INV OUT = 8.13SE
CB-405A	RIM = 11.03 SUMP = 8.02 INV OUT = 8.02SE
CB-406	RIM = 11.43 SUMP = 7.74 INV IN =7.74NW INV OUT = 7.74SE
CB-409	RIM = 11.80 SUMP = 7.38 INV IN =7.38NW INV OUT = 7.38SE
CB-410	RIM = 11.82 SUMP = 7.95 INV OUT = 7.95NW

STRUCTURE TABLE – STRM – 14-15	
STR. NAME	DETAILS
CB-417	RIM = 10.39 SUMP = 7.54 INV IN =7.54SE INV OUT = 7.54NE
CB-418	RIM = 10.37 SUMP = 7.66 INV IN =7.66NE INV OUT = 7.66NW
CB-419	RIM = 11.06 SUMP = 7.48 INV IN =7.48SE INV OUT = 7.48SW
CB-420	RIM = 11.04 SUMP = 7.63 INV OUT = 7.63NW
CB-424	RIM = 12.22 SUMP = 7.29 INV OUT = 7.29NW
DI-407	RIM = 11.11 SUMP = 6.04 INV OUT = 6.04E INV OUT = 7.10NW
DI-408	RIM = 12.09 SUMP = 7.20 INV IN =7.20NW INV IN =7.20SE INV OUT = 7.20NE
DI-411	RIM = 11.11 SUMP = 7.50 INV IN =7.50NE INV OUT = 7.50SW
DI-412	RIM = 10.48 SUMP = 7.23 INV IN =7.23NE INV OUT = 7.23SW

STRUCTURE TABLE – STRM – 14-15	
STR. NAME	DETAILS
DI-412A	RIM = 10.48 SUMP = 7.23 INV IN =7.23NE INV OUT = 7.23SW
DI-413	RIM = 10.58 SUMP = 7.16 INV IN =7.16NE INV IN =7.16S INV OUT = 7.16SE
DI-413A	RIM = 10.55 SUMP = 7.16 INV IN =7.16NE INV OUT = 7.16SW
DI-414	RIM = 12.27 SUMP = 7.61 INV OUT = 7.61N
DI-415	RIM = 11.49 SUMP = 6.08 INV OUT = 7.08W
DI-416	RIM = 10.64 SUMP = 6.34 INV IN =7.34NE INV IN =7.34SW INV OUT = 7.34NW INV OUT = 7.34SE
DI-421	RIM = 11.10 SUMP = 6.09 INV IN =7.09SE INV OUT = 7.09NW
DI-422	RIM = 11.10 SUMP = 6.85 INV OUT = 7.85SW
DI-423	RIM = 10.91 SUMP = 6.07 INV IN =7.07NW INV OUT = 7.07SE

STRUCTURE TABLE – STRM – 14-15	
STR. NAME	DETAILS
DI-424	RIM = 12.50 SUMP = 6.03 INV IN =7.03SW INV OUT = 7.03NE
EW-4	RIM = 7.00 INV IN =3.89S
I-4A	RIM = 11.07 SUMP = 7.00 INV IN =7.00NW
I-4B	RIM = 11.58 SUMP = 7.00 INV IN =7.00E
I-4C	RIM = 11.25 SUMP = 7.00 INV IN =7.00SE
I-5A	RIM = 11.81 SUMP = 7.00 INV IN =7.00SW
I-5B	RIM = 12.67 SUMP = 7.00 INV IN =7.00SE
JB-407A	RIM = 9.85 SUMP = 4.46 INV IN =4.46SW INV OUT = 4.46N
JB-416A	RIM = 9.56 SUMP = 7.00 INV IN =7.00NW INV IN =7.00SW INV OUT = 7.00NE

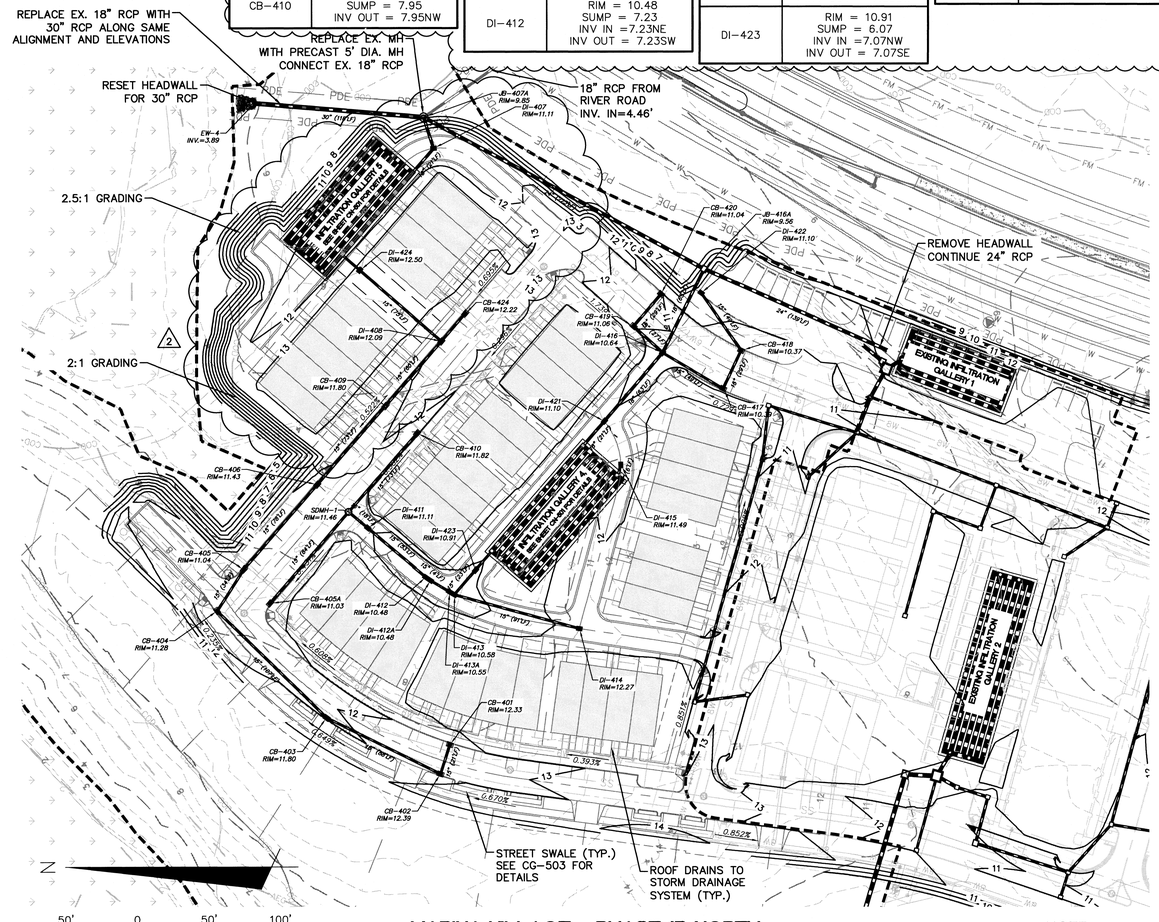
STRUCTURE TABLE – STRM – 13B	
STR. NAME	DETAILS
DI-501	RIM = 12.11 SUMP = 7.57 INV OUT = 8.57N
DI-502	RIM = 10.75 SUMP = 7.14 INV IN =8.14N INV OUT = 8.14S
DI-502A	RIM = 10.75 SUMP = 7.14 INV IN =8.14N INV OUT = 8.14S
DI-503	RIM = 10.86 SUMP = 7.54 INV OUT = 8.54S
EX. CB-318	RIM = 10.48 SUMP = 7.76 INV IN =7.76E
SDMH-2	RIM = 10.92 SUMP = 6.95 INV IN =7.95N INV IN =7.95S INV OUT = 7.95W

STRUCTURE TABLE – STRM – 14-15	
STR. NAME	DETAILS
SDMH-1	RIM = 11.46 SUMP = 7.59 INV IN =7.59SE INV IN =7.59NW INV OUT = 7.59SW

STORM DRAINAGE PIPE DATA TABLE – STRM – 14-15							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
SDMH-1	DI-411	17.50'	15"	RCP	0.51%	7.59'	7.50'
JB-416A	JB-407A	222.59'	24"	RCP	1.14%	7.00'	4.46'
JB-407A	EW-4	118.34'	30"	RCP	0.48%	4.46'	3.89'
DI-424	I-5A	15.00'	15"	CAP	0.22%	7.03'	7.00'
DI-423	I-4A	16.00'	15"	CAP	0.42%	7.07'	7.00'
DI-422	CB-418	48.51'	15"	CL IV RCP	0.40%	7.85'	7.66'
DI-421	I-4C	21.30'	18"	CAP	0.40%	7.09'	7.00'
DI-416	JB-416A	64.81'	18"	DUAL 18" RCP	0.52%	7.34'	7.00'
DI-416	DI-421	62.85'	18"	RCP	0.40%	7.34'	7.09'
DI-415	I-4B	6.39'	15"	CAP	1.25%	7.08'	7.00'
DI-414	DI-413	90.58'	15"	RCP	0.50%	7.61'	7.16'
DI-413A	DI-413	4.01'	15"	RCP	0.00%	7.16'	7.16'
DI-413	DI-423	22.64'	15"	RCP	0.42%	7.16'	7.07'
DI-412A	DI-413A	15.31'	15"	RCP	0.46%	7.23'	7.16'
DI-412	DI-412A	3.97'	15"	RCP	0.00%	7.23'	7.23'
DI-411	DI-412	53.12'	15"	RCP	0.51%	7.50'	7.23'
DI-408	DI-424	75.34'	15"	RCP	0.22%	7.20'	7.03'
DI-407	JB-407A	22.85'	18"	RCP	2.54%	6.04'	5.46'
DI-407	I-5B	20.91'	18"	CAP	0.50%	7.10'	7.00'
CB-424	DI-408	25.50'	15"	RCP	0.34%	7.29'	7.20'
CB-420	CB-419	29.30'	15"	RCP	0.50%	7.63'	7.48'

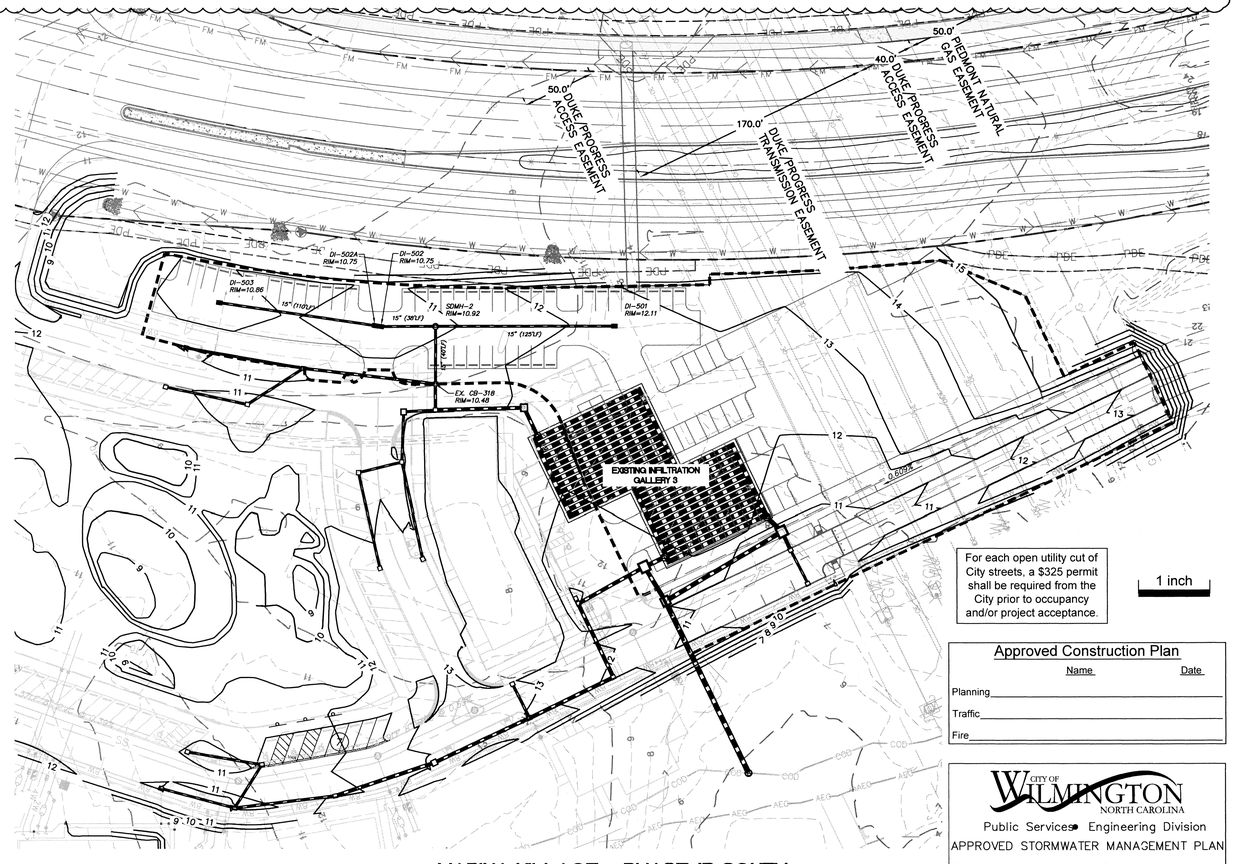
STORM DRAINAGE PIPE DATA TABLE – STRM – 14-15							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
CB-419	DI-416	27.40'	15"	RCP	0.50%	7.48'	7.34'
CB-418	CB-417	29.30'	15"	CL IV RCP	0.40%	7.66'	7.54'
CB-417	DI-416	48.99'	15"	CL IV RCP	0.40%	7.54'	7.34'
CB-410	SDMH-1	72.71'	15"	RCP	0.50%	7.95'	7.59'
CB-409	DI-408	59.62'	15"	RCP	0.30%	7.38'	7.20'
CB-406	CB-409	72.73'	15"	RCP	0.50%	7.74'	7.38'
CB-405A	SDMH-1	84.00'	15"	RCP	0.51%	8.02'	7.59'
CB-405	CB-406	78.03'	15"	RCP	0.50%	8.13'	7.74'
CB-404	CB-405	34.46'	15"	CL IV RCP	1.83%	8.76'	8.13'
CB-403	CB-404	106.80'	15"	CL IV RCP	0.50%	9.30'	8.76'
CB-402	CB-403	88.45'	15"	CL IV RCP	0.50%	9.74'	9.30'
CB-401	CB-402	21.30'	15"	CL IV RCP	0.50%	9.85'	9.74'
	JB-416A	139.40'	24"	RCP	0.50%	7.70'	7.00'

STORM DRAINAGE PIPE DATA TABLE – STRM – 13B							
FROM	TO	LENGTH	SIZE	PIPE TYPE	SLOPE	UPSTREAM INVERT	DOWNSTREAM INVERT
SDMH-2	EX. CB-318	40.27'	15"	RCP	0.48%	7.95'	7.76'
DI-503	DI-502A	109.99'	15"	CL IV RCP	0.36%	8.54'	8.14'
DI-502A	DI-502	4.01'	15"	CL IV RCP	0.00%	8.14'	8.14'
DI-502	SDMH-2	37.99'	15"	CL IV RCP	0.50%	8.14'	7.95'
DI-501	SDMH-2	124.80'	15"	RCP	0.50%	8.57'	7.95'



MARINA VILLAGE - PHASE 1B NORTH

SCALE: 1" = 50'



MARINA VILLAGE - PHASE 1B SOUTH

SCALE: 1" = 50'

NOTE:

- CONSTRUCTION AND GRADING WILL NOT DISTURB THE WETLAND/CONSERVATION RESOURCE.

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

1 inch

Approved Construction Plan

Name Date

Planning _____

Traffic _____

Fire _____

CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL

NORTH CAROLINA PROFESSIONAL CIVIL 035107 ENGINEER NICHOLAS J. LAURETTA 7/19/16

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

NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

STORM DRAINAGE PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

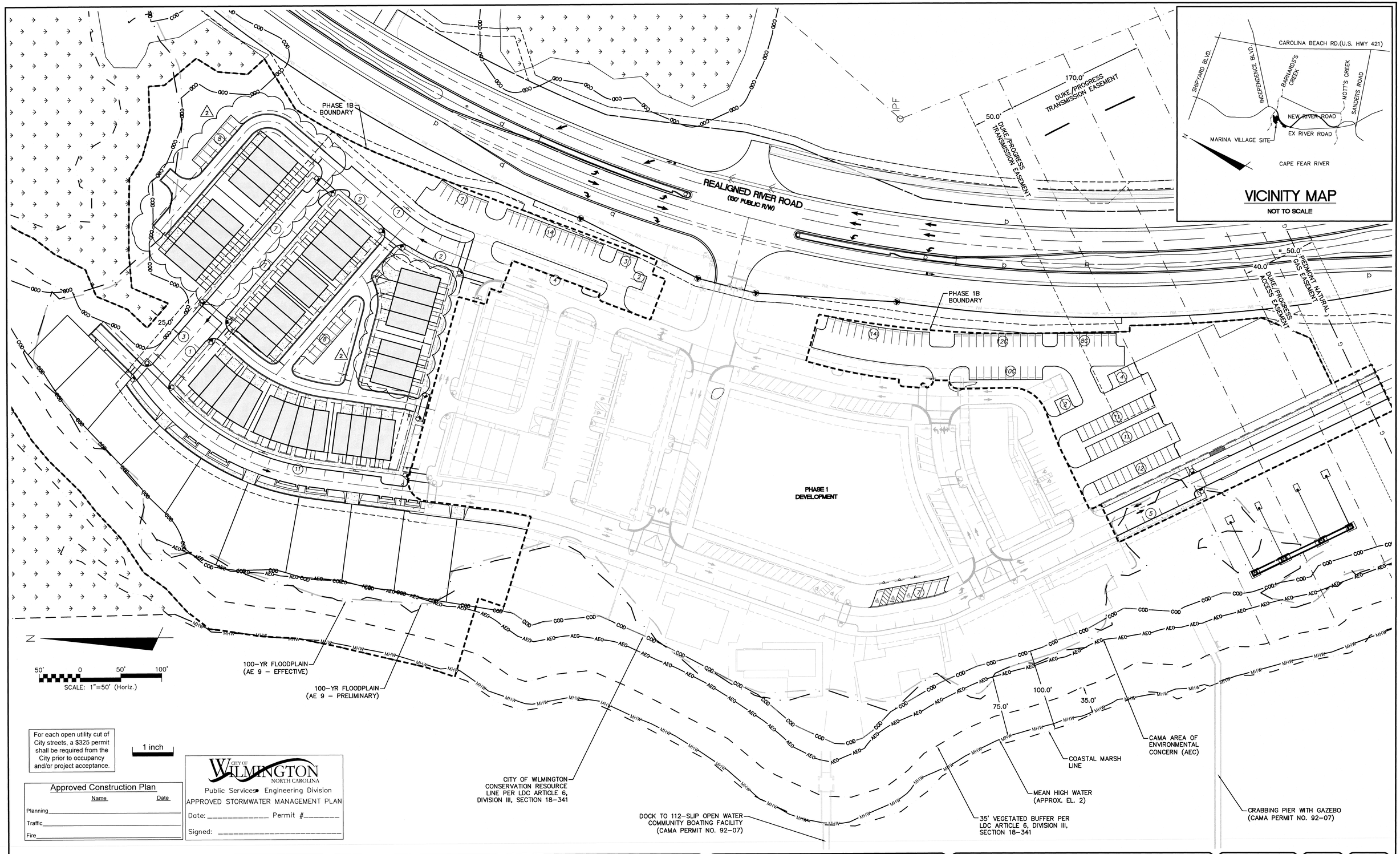
M&C FILE NUMBER CG-103

DRAWING NUMBER 10

STATUS: FINAL DESIGN ISSUED FOR CONSTRUCTION

REVISION 2

S:\2735\0124 Marina Village\80-Drawings\Phase 1B\CG-103.dwg 7/18/2016 4:56:19 PM AMendenhall 1:1



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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/15/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

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NORTH CAROLINA PROFESSIONAL ENGINEER CIVIL 035107 NICHOLAS J. LAMBERTA
7/19/16

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www.mckimcreed.com

NASH
NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

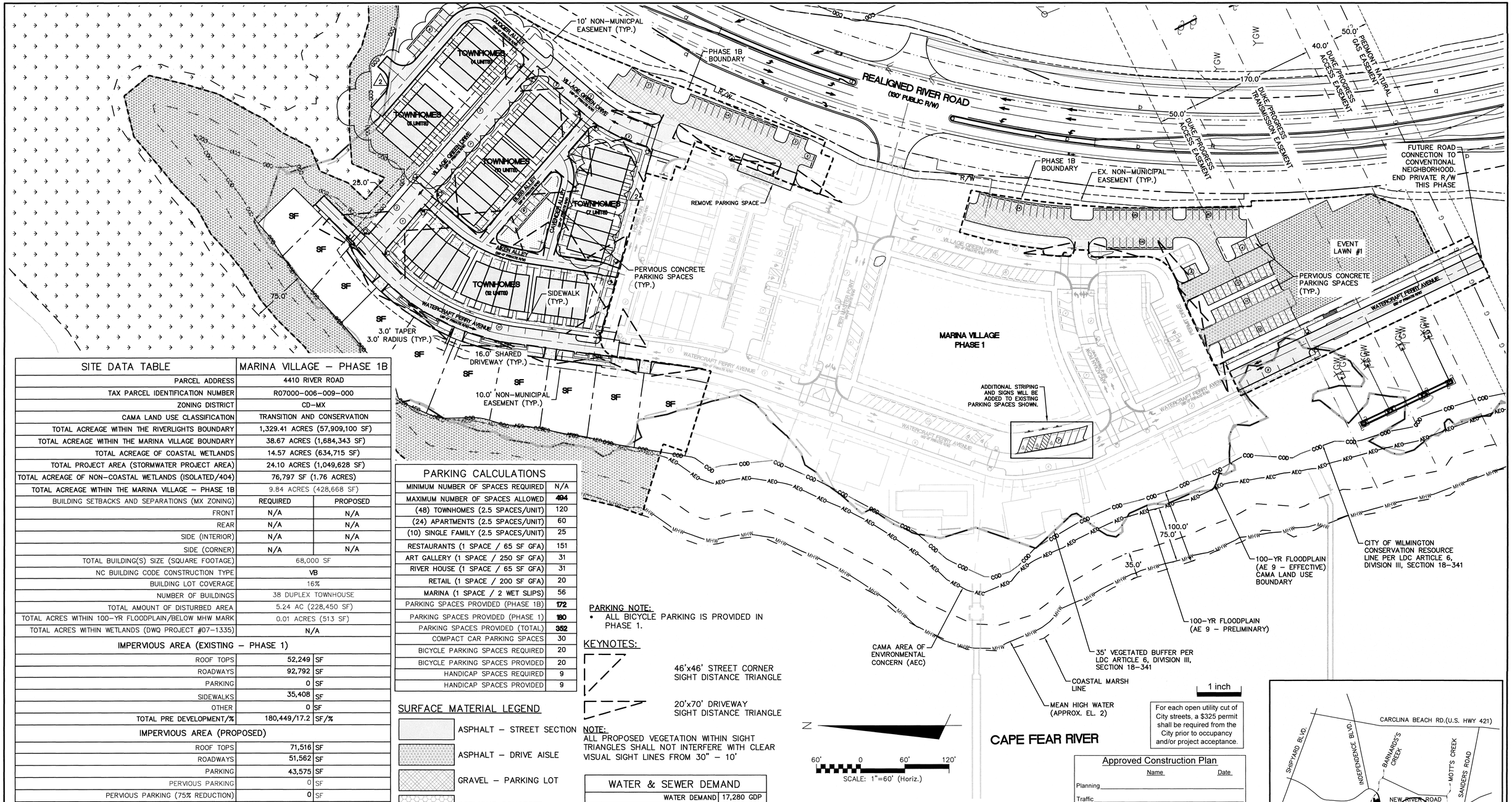
OVERALL SITE PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER CS-100
DRAWING NUMBER 11

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2



SITE DATA TABLE	MARINA VILLAGE – PHASE 1B	
PARCEL ADDRESS	4410 RIVER ROAD	
TAX PARCEL IDENTIFICATION NUMBER	R07000-006-009-000	
ZONING DISTRICT	CD-MX	
CAMA LAND USE CLASSIFICATION	TRANSITION AND CONSERVATION	
TOTAL ACREAGE WITHIN THE RIVERLIGHTS BOUNDARY	1,329.41 ACRES (57,909,100 SF)	
TOTAL ACREAGE WITHIN THE MARINA VILLAGE BOUNDARY	38.67 ACRES (1,684,343 SF)	
TOTAL ACREAGE OF COASTAL WETLANDS	14.57 ACRES (634,715 SF)	
TOTAL PROJECT AREA (STORMWATER PROJECT AREA)	24.10 ACRES (1,049,628 SF)	
TOTAL ACREAGE OF NON-COASTAL WETLANDS (ISOLATED/404)	76,797 SF (1.76 ACRES)	
TOTAL ACREAGE WITHIN THE MARINA VILLAGE – PHASE 1B	9.84 ACRES (428,668 SF)	
BUILDING SETBACKS AND SEPARATIONS (MX ZONING)	REQUIRED	PROPOSED
FRONT	N/A	N/A
REAR	N/A	N/A
SIDE (INTERIOR)	N/A	N/A
SIDE (CORNER)	N/A	N/A
TOTAL BUILDING(S) SIZE (SQUARE FOOTAGE)	68,000 SF	
NC BUILDING CODE CONSTRUCTION TYPE	VB	
BUILDING LOT COVERAGE	16%	
NUMBER OF BUILDINGS	38 DUPLEX TOWNHOUSE	
TOTAL AMOUNT OF DISTURBED AREA	5.24 AC (228,450 SF)	
TOTAL ACRES WITHIN 100-YR FLOODPLAIN/BELOW MHW MARK	0.01 ACRES (513 SF)	
TOTAL ACRES WITHIN WETLANDS (DWQ PROJECT #07-1335)	N/A	
IMPERVIOUS AREA (EXISTING – PHASE 1)		
ROOF TOPS	52,249	SF
ROADWAYS	92,792	SF
PARKING	0	SF
SIDEWALKS	35,408	SF
OTHER	0	SF
TOTAL PRE DEVELOPMENT/%	180,449/17.2	SF/%
IMPERVIOUS AREA (PROPOSED)		
ROOF TOPS	71,516	SF
ROADWAYS	51,562	SF
PARKING	43,575	SF
PERVIOUS PARKING	0	SF
PERVIOUS PARKING (75% REDUCTION)	0	SF
SIDEWALKS	22,078	SF
PERVIOUS SIDEWALK	0	SF
PERVIOUS SIDEWALK (75% REDUCTION)	0	SF
FUTURE ALLOTMENT	0	SF
OTHER	0	SF
TOTAL S.F. (ONSITE IMPERVIOUS AREA)	188,731	SF
PERCENTAGE (ONSITE IMPERVIOUS AREA/ONSITE AREA)	18.0	%
PERCENTAGE (EXIST. ONSITE IMPERVIOUS AREA/ONSITE AREA)	17.2	%
TOTAL SQUARE FOOTAGE OF IMPERVIOUS SURFACES SHOWN IN THE STREET YARD	0	SF

PARKING CALCULATIONS	
MINIMUM NUMBER OF SPACES REQUIRED	N/A
MAXIMUM NUMBER OF SPACES ALLOWED	**494**
(48) TOWNHOMES (2.5 SPACES/UNIT)	120
(24) APARTMENTS (2.5 SPACES/UNIT)	60
(10) SINGLE FAMILY (2.5 SPACES/UNIT)	25
RESTAURANTS (1 SPACE / 65 SF GFA)	151
ART GALLERY (1 SPACE / 250 SF GFA)	31
RIVER HOUSE (1 SPACE / 65 SF GFA)	31
RETAIL (1 SPACE / 200 SF GFA)	20
MARINA (1 SPACE / 2 WET SLIPS)	56
PARKING SPACES PROVIDED (PHASE 1B)	**172**
PARKING SPACES PROVIDED (PHASE 1)	**180**
PARKING SPACES PROVIDED (TOTAL)	**352**
COMPACT CAR PARKING SPACES	30
BICYCLE PARKING SPACES REQUIRED	20
BICYCLE PARKING SPACES PROVIDED	20
HANDICAP SPACES REQUIRED	9
HANDICAP SPACES PROVIDED	9

PARKING NOTE:
- ALL BICYCLE PARKING IS PROVIDED IN PHASE 1.

KEYNOTES:

46'x46' STREET CORNER SIGHT DISTANCE TRIANGLE

20'x70' DRIVEWAY SIGHT DISTANCE TRIANGLE

NOTE:
ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30" – 10'

SURFACE MATERIAL LEGEND

- ASPHALT – STREET SECTION
- ASPHALT – DRIVE AISLE
- GRAVEL – PARKING LOT
- PERVIOUS CONCRETE
- ROOFTOP
- SIDEWALK
- COMMON SPACE
- OPEN SPACE

WATER & SEWER DEMAND	
WATER DEMAND	17,280 GDP
SANITARY SEWER DEMAND	17,280 GDP

TOTAL ACREAGE OF MARINA VILLAGE – PHASE 1B WITHIN COD: 2.06 ACRES (89,951 SF)

TOTAL ACREAGE OF MARINA VILLAGE – PHASE 1B ENCROACHMENT INTO THE COD: 0 ACRES (0 SF)

COMMON SPACE CALCULATIONS	
TOTAL COMMON SPACE REQUIRED	18.47 ACRES (804,640 SF)*
TOTAL COMMON SPACE PROPOSED	0.08 ACRES (3,634 SF)

OPEN SPACE CALCULATIONS*	
TOTAL OPEN SPACE REQUIRED	46.18 ACRES (2,011,601 SF)*
TOTAL OPEN SPACE PROPOSED	2.82 ACRES (122,991 SF)

*PROPOSED MX-CD CLUSTER FOR ENTIRE RIVER LIGHTS DEVELOPMENT = 184.7 ACRES
OPEN SPACE AND COMMON SPACE ACRES REQUIRED FOR ENTIRE RIVERLIGHTS DEVELOPMENT
@ 25% OPEN SPACE AND 10% COMMON SPACE = 46.18 AC (OPEN) AND 18.47 AC (COMMON)

1 inch

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

VICINITY MAP
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL CIVIL 035107 ENGINEER NICHOLAS J. LAURETTA
7/19/16

McKIM & CREED
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Wilmington, North Carolina 28401
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www.mckimcreed.com

NASH
NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

SITE PLAN

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

SCALE
HORIZONTAL: 1"=60'
VERTICAL: N/A

M&C FILE NUMBER CS-101
DRAWING NUMBER 12

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2

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CITY OF WILMINGTON NOTES:

1. ALL PARKING STALL MARKINGS AND LANE ARROWS WITHIN THE PARKING AREAS SHALL BE WHITE.
2. ALL TRAFFIC CONTROL SIGNS AND MARKINGS OFF THE RIGHT-OF-WAY ARE TO BE MAINTAINED BY THE PROPERTY OWNER IN ACCORDANCE WITH MUTCD STANDARDS.
3. A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
4. 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.
5. ZERO LOT LINES ARE PERMITTED.
6. BUILDINGS LOCATED ON THE PERIPHERY OF THE MX DISTRICT SHALL BE SET BACK A MINIMUM OF 20 (TWENTY) FEET FROM THE MX DISTRICT BOUNDARY.
7. ZONING AND LAND USE OF ADJACENT PROPERTIES IS AS FOLLOWS:
   - NORTH - FUTURE MX-CD / TRANSITION
   - SOUTH - FUTURE MX-CD / TRANSITION AND CONSERVATION AREA
   - WEST - FUTURE MX-CD / TRANSITION
   - EAST - I-2 / TRANSITION AND CONSERVATION AREA
8. INSTALL REFLECTORS PER CITY AND NCDOT STANDARDS. TRAFFIC ENGINEERING MUST APPROVE OF PAVEMENT MARKING LAYOUT PRIOR TO ACTUAL STRIPING.
9. IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATION MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COSTS OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
10. CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
11. IF THESE UNITS ARE SOLD AT ANY POINT, THE BUYER MUST RECEIVE A SUBDIVISION STREET DISCLOSURE STATEMENT.

GENERAL NOTES:

1. FLOODPLAIN INFORMATION WAS OBTAINED FROM NC FLOODPLAIN MAPPING FLOOD RISK INFORMATION SYSTEM PROGRAM. RIVERLIGHTS IS LOCATED WITHIN FIRM MAP 3720312400K, PANEL 3124 AS REVISED JUNE 02, 2006.
2. ITEMS DESIGNATED AS "PROPOSED" ARE PART OF THE RIVER ROAD REALIGNMENT PROJECT THAT IS CURRENTLY UNDER CONSTRUCTION. RIVER ROAD CONSTRUCTION TO BE COMPLETE SPRING 2016.
3. WETLANDS SHOWN IN THIS PORTION OF RIVERLIGHTS WERE DESCRIBED AS BRACKISH/SALT MARSH AND POCOSIN WETLANDS AND CONSERVATION RESOURCE SETBACK LINES WERE GENERATED AS 100' AND 25', RESPECTIVELY, MINIMUM OUTSIDE OF THE RESOURCE.
4. FINISHED FLOOR ELEVATIONS OFF ALL INHABITABLE STRUCTURES WILL BE MIN. 2-FEET ABOVE BASE FLOOD ELEVATION
5. RIVERLIGHTS PHASE 1 MARINA VILLAGE COMMUNITY DOES NOT CONTAIN ANY LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURES OR ARCHEOLOGICAL SITES ON SITE. RIVERLIGHTS WAS ISSUED A NOTICE OF NO FURTHER ACTION LETTER DATED JUNE 2, 2008 FOLLOWING COMPLETION OF AN EA/SEPA DOCUMENT.
6. EXISTING THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS AND TRANSITS FACILITIES DO NOT EXIST ON SITE.

1 RESERVED PARKING

1V RESERVED PARKING / VAN ACCESSIBLE

2 STOP

3 ONLY

4 ONLY

5 STATE LAW — STOP TO WITHIN CROSSWALK

6 DO NOT ENTER

7 ONE WAY / ONE WAY

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

N

30' 0 30' 60'

SCALE: 1"=30' (Horiz.)

DUGGER ALLEY (26'-0" PRIVATE R/W)
VILLAGE GREEN DRIVE (49'-0" PRIVATE R/W)
BLISS ALLEY (26'-0" PRIVATE R/W)
CAVENDER ALLEY (26'-0" PRIVATE R/W)
AIKEN ALLEY (26'-0" PRIVATE R/W)
WATERCRAFT FERRY AVENUE (49'-0" PRIVATE R/W)
WILLAGE GREEN DRIVE (52'-0" PRIVATE R/W)

TRANSITION TO VERTICAL CURB (TYP.)
6" VERTICAL CURB (TYP.)
12" HEADER CURB (TYP.)
15' OFFSET FROM FIRE HYDRANT (TYP.)

REV.NO.	DESCRIPTIONS REVISIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035107 CIVIL
NICOLAS J. LAURETTA
7/19/16

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NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

SITE PLAN NORTH

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER: CS-102
DRAWING NUMBER: 13

STATUS: FINAL DESIGN — ISSUED FOR CONSTRUCTION
REVISION 2

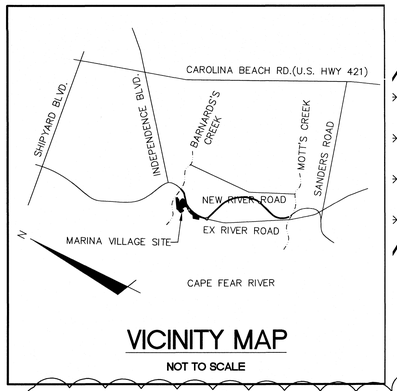
For each open utility cut of City streets, a $325 permit shall be required from the City prior to occupancy and/or project acceptance.

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

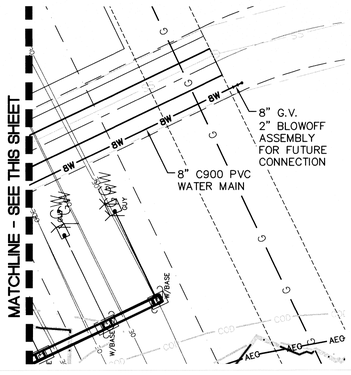


VICINITY MAP

NOT TO SCALE

(5) SHALLOW SERVICES
TRANSITION TO 401 PROTECTO LINED DIP OVER CROSSING INCLUDING TOP 45° ELBOW AND TRANSITION FITTING. TRANSITION TO SCH. 40 PVC 1 FT BEFORE COMBINATION.

(2) 1" PE WATER LATERAL
(2)2" GV
VARIABLE WIDTH UTILITY EASEMENT (MIN. 10')
10' MIN.
(2) SIMPLEX GRINDER PUMP STATIONS
MH #MV-24
8" PVC INV IN = 7.66'
8" PVC INV OUT = 7.66'
RIM = 11.38'
SS CLEANOUT (TYP.)
FIRE HYDRANT ASSEMBLY (TYP.)
6"x6" MJ TEE
6" DIP
(2) 2" 45° EL.
6"x2" RED.
MH #MV-25
8" PVC INV OUT = 8.94'
RIM = 12.65'
FIRE HYDRANT ASSEMBLY (TYP.)
6"x6" MJ TEE
6" DIP
(2) 6" MJ 45° EL.
6" GV
8" PUBLIC GRAVITY SEWER (TYP.)
2" SDR21 PVC WATER MAIN
6"x2" RED.
REMOVE 2" BLOWOFF INSTALL 8"x6" RED.
TOWNHOUSE
8" C900 PVC 123.00'
8" C900 PVC 97.35'
8" C900 PVC 136.64'
REMOVE 2" BLOWOFF INSTALL 8"x6" RED.
MH #MV-23
8" PVC INV IN = 7.17'
8" PVC INV OUT = 7.17'
RIM = 12.18'
MH #MV-22
8" PVC INV IN = 6.78'
8" PVC INV OUT = 6.78'
RIM = 12.80'
CONNECT TO EX. PIPE STUB INSTALLED DURING PHASE 1
EX. MH #MV-21
8" PVC INV IN = 6.24'
8" PVC INV IN = 6.39'
8" PVC INV OUT = 6.39'
RIM = 13.19'
TYPICAL RES. UTILITY SERVICE
1" PE WATER LATERAL
4" PVC SCH. 40 LATERAL
@ 1% MIN. GRADE
SS CLEANOUT (TYP.)
5/8" WATER METER (TYP.)
EX. FIRE HYDRANT ASSEMBLY
REMOVE 2" BLOWOFF INSTALL 8"x6" RED.
EX. 8" C900 PVC WATER MAIN (TYP.)
EX. 12" C900 PVC DR18 WATER MAIN (CFPUA)
EX. 10-FT NON-MUNICPAL EASEMENT
EX. PUBLIC DRAINAGE EASEMENT
50.0' PIEDMONT NATURAL GAS EASEMENT
40.0' DUKE/PROGRESS ACCESS EASEMENT
170.0' DUKE PROGRESS TRANSMISSION EASEMENT
50.0' DUKE/PROGRESS ACCESS EASEMENT
REMOVE 2" BLOWOFF ASSEMBLY
EX. 8" PUBLIC GRAVITY SEWER (TYP.)
35' VEGETATED BUFFER
CITY OF WILMINGTON CONSERVATION OVERLAY DISTRICT (COD)
100-YR FLOODPLAIN (AE 9 – PRELIMINARY)
100-YR FLOODPLAIN (AE 9 – EFFECTIVE)
MEAN HIGH WATER (APPROX. EL. 2)
COASTAL MARSH LINE
DOCK TO 112-SLIP OPEN WATER COMMUNITY BOATING FACILITY (CAMA PERMIT NO. 92-07)
CRABBING PIER WITH GAZEBO (CAMA PERMIT NO. 92-07)
MATCHLINE - SEE THIS SHEET



CFPUA STANDARD SEWER NOTES:

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

2
- CONVERTED 2 SINGLE FAMILY LOTS TO 5 TOWNHOME LOTS
- REMOVED 1 TOWNHOME LOT ON HOBIE RUN

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL CIVIL 035107 ENGINEER NICHOLAS J. LARRETTA

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

NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS

RIVERLIGHTS MARINA VILLAGE PHASE 1B

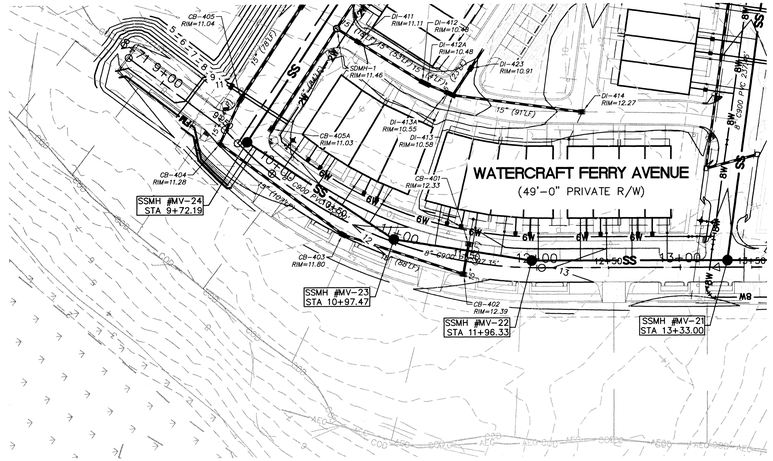
UTILITY PLAN

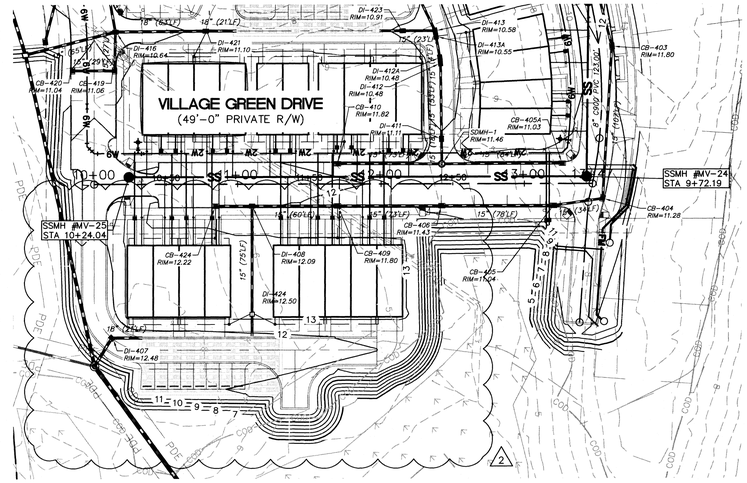
DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

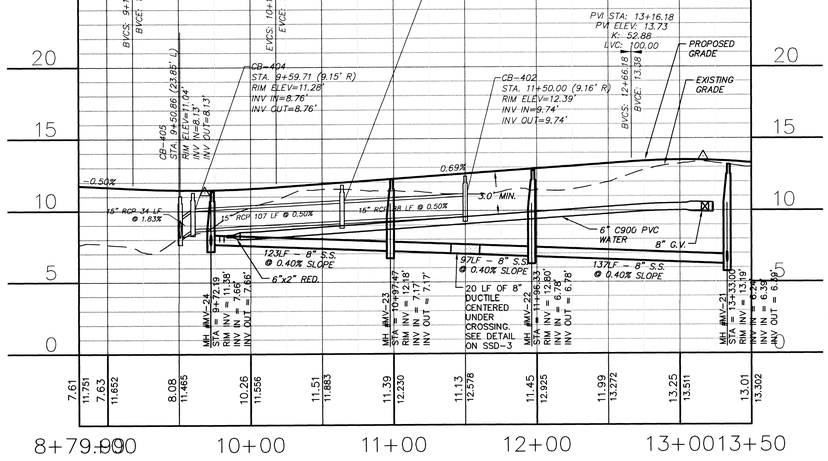
SCALE
HORIZONTAL: 1"=50'
VERTICAL: N/A

M&C FILE NUMBER CU-101
DRAWING NUMBER 15

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2

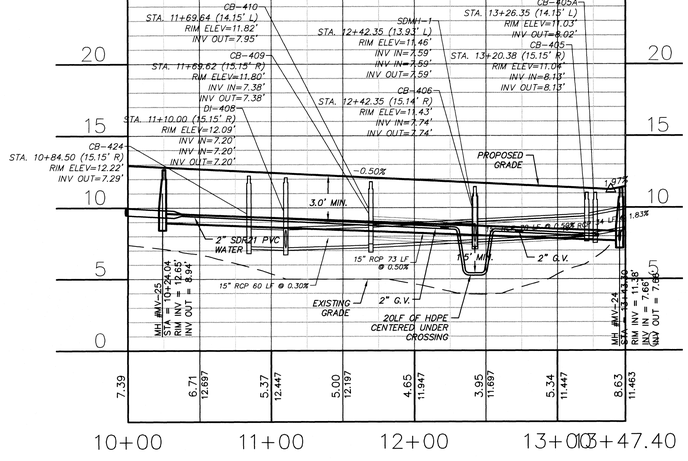






WATERCRAFT FERRY AVENUE

SCALE: HOR. 1"=50', VERT. 1"=5'



VILLAGE GREEN DRIVE

SCALE: HOR. 1"=50', VERT. 1"=5'

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

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

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

1 inch

△2
- CONVERTED 2 SINGLE FAMILY LOTS TO 5 TOWNHOME LOTS
- REMOVED 1 TOWNHOME LOT ON HOBIE RUN

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035107 NICHOLAS J. LAURITA
7/19/16

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

NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

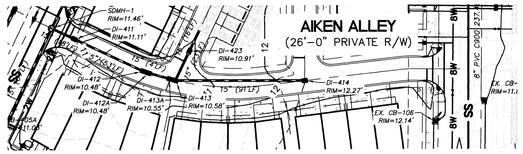
PLAN AND PROFILE

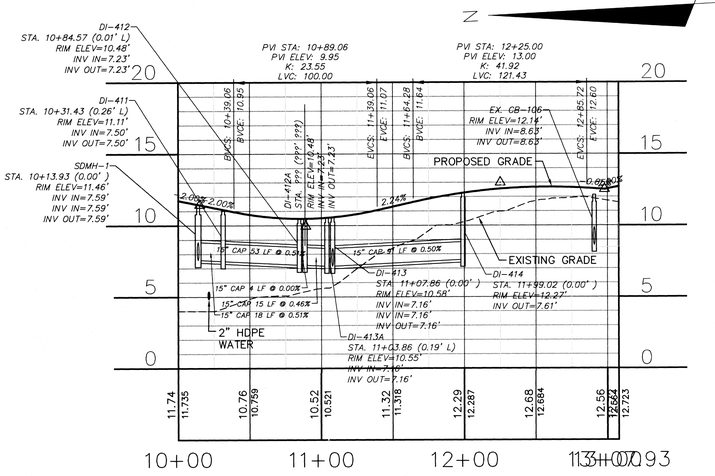
DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER CU-701
DRAWING NUMBER 16

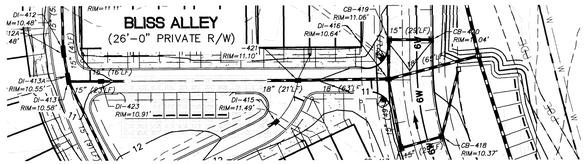
STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2

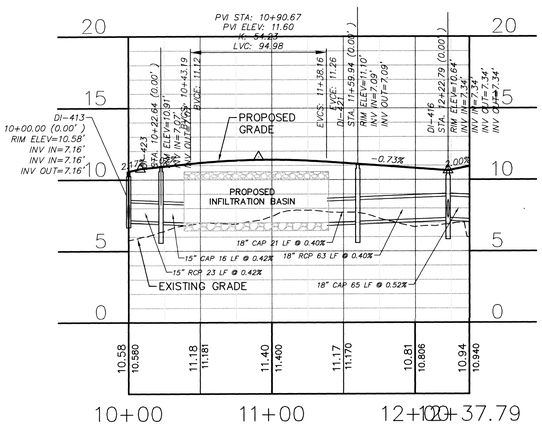




AIKEN ALLEY

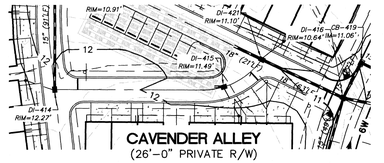
HOR. 1"=50', VERT. 1"=5'

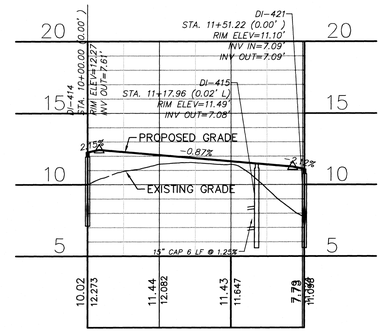




BLISS ALLEY

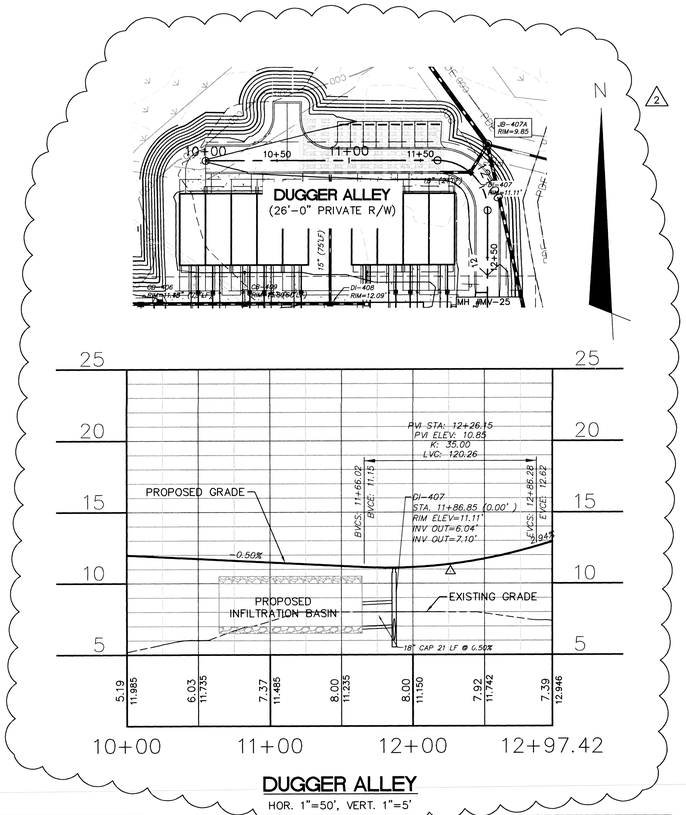
HOR. 1"=50', VERT. 1"=5'





CAVENDER ALLEY

HOR. 1"=50', VERT. 1"=5'



DUGGER ALLEY

HOR. 1"=50', VERT. 1"=5'

SCALE: 1"=50' (Horiz.)

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

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REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	~~CFPUA COMMENTS~~	~~04/11/2016~~
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL CIVIL 035107 NICHOLAS J. LABERTA 7/20/16

McKIM & CREED
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License: F-1222
www.mckimcreed.com

NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

PLAN AND PROFILE

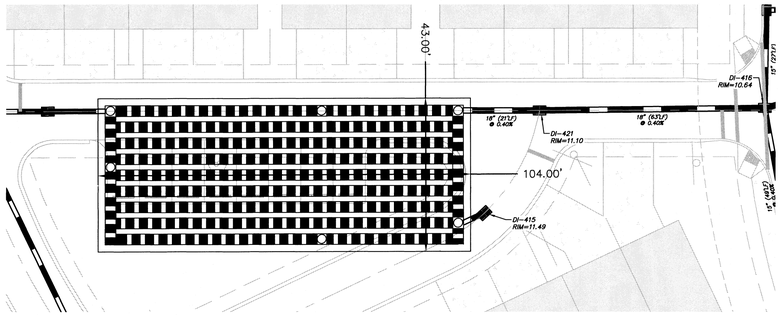
DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

MAC FILE NUMBER CU-703
DRAWING NUMBER 18

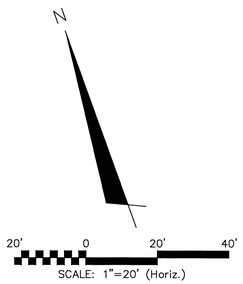
STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2

INFILTRATION GALLERY 4

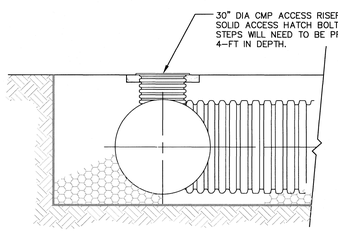


INFILTRATION GALLERY 4
DA= 1.88 AC
WQV STORAGE REQD.= 5,062 CF
STORAGE PROV.= 10,972 CF

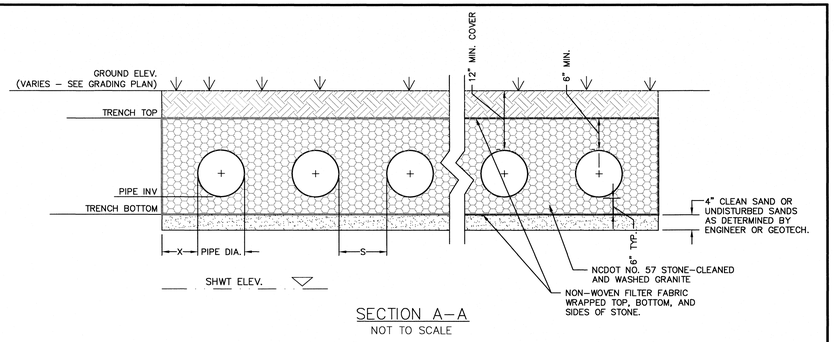
PLAN VIEW
SCALE: 1" = 20'



SCALE: 1"=20' (Horiz.)

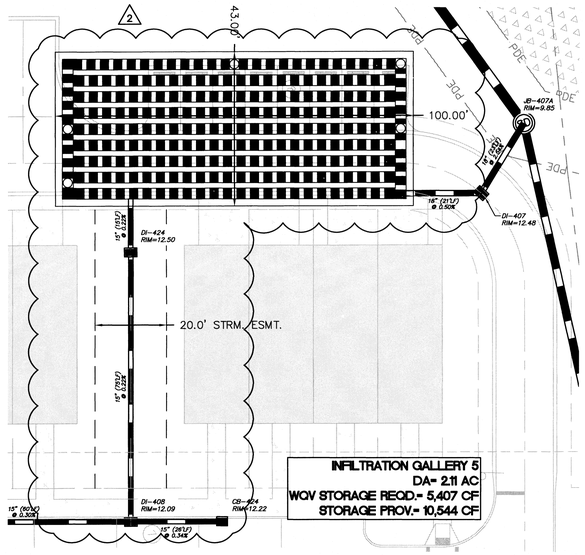


TYP. CMP ACCESS RISER
NOT TO SCALE



SECTION A–A
NOT TO SCALE

INFILTRATION GALLERY 5



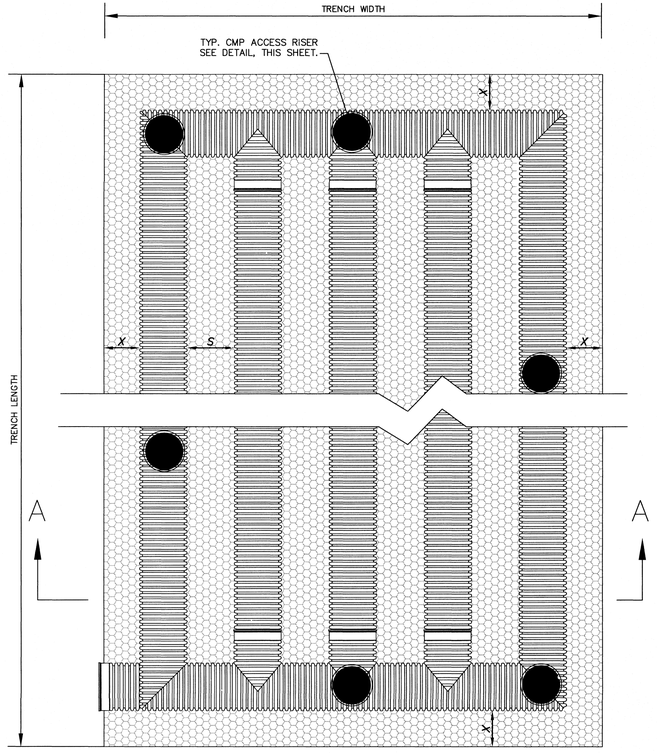
INFILTRATION GALLERY 5
DA= 2.11 AC
WQV STORAGE REQD.= 5,407 CF
STORAGE PROV.= 10,544 CF

PLAN VIEW
SCALE: 1" = 20'

SPLITTER /BYPASS STRUCTURE TABLE		
DESIGN	DI–416	DI–407
RIM ELEVATION	10.64'	11.11'
WEIR ELEVATION	9.00'	9.25'
SUMP ELEVATION	6.34'	6.04'
OUTFALL PIPE INVERT	7.34'	7.10'

INFILTRATION TRENCH SYSTEM TABLE		
DESIGN	INFILTRATION GALLERY 4	INFILTRATION GALLERY 5
# OF RUNS	9	9
LENGTH PER RUN	100'	96'
PIPE DIAMETER (IN)	36"CAP	36"CAP
MIN. X (IN)	2'	2'
MIN. S (IN)	1/2 DIA. OF PIPE	1/2 DIA. OF PIPE
TRENCH WIDTH (FT)	43'	43'
TRENCH LENGTH (FT)	104'	100'
SHWT ELEVATION	4.50'	4.50'
TRENCH BOTTOM ELEVATION	6.50'	6.50'
PIPE TRENCH INVERT	7.00'	7.00'
TRENCH TOP ELEVATION	10.50'	10.50'
10–YR WSEL	9.25'	9.61'

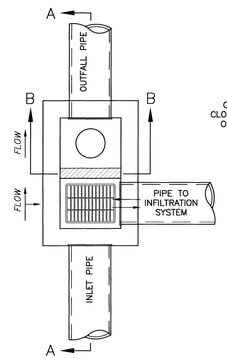
NOTES:
1. SHWT AND HIGH RIVER ELEVATIONS TAKEN FROM SITE & SOILS EVALUATION REPORT BY ECS CAROLINAS, LLP DATED FEBRUARY 18, 2015 FOR NEWLAND COMMUNITIES, LLC.
2. EXISTING ELEVATIONS TAKEN FROM COMBINATION OF FIELD MEASUREMENTS AND TOPOGRAPHY SURVEY BY MCKIM & CREED, INC.



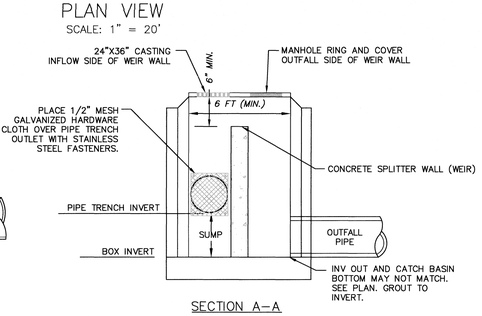
PLAN VIEW
NOT TO SCALE

NOTES:
1. INFILTRATION TRENCH PIPE SHALL BE CONTECH PERFORATED ALUMINIZED OR ALUMINUM CMP PIPE MEETING AASHTO M–36, CLASS 2 PERFORATIONS (3/8" DIA); OR PERFORATED HDPE MEETING AASHTO CLASS 2, TYPE S PERFORATIONS. CONTRACTOR TO SUBMIT INFILTRATION TRENCH SPECIFICATION FOR ENGINEER APPROVAL.
2. CMP OR HDPE PIPE TO BE INSTALLED PER ASTM & MANUFACTURER'S RECOMMENDATIONS. PIPE JOINTS TO BE PER MANUFACTURER'S RECOMMENDATIONS AS AN UNDERGROUND INFILTRATION SYSTEM.
3. SEE TABLE FOR NUMBER OF PIPE RUNS AND DIMENSIONS.
4. IT IS IMPORTANT THAT FILL MATERIAL FOR THE INFILTRATION TRENCHES SHALL BE SAME MATERIAL AS EXISTING SOILS UNDERLYING THE TRENCH. BE SURE NOT TO COMPACT THE SAND UNDER THE TRENCH SO THAT PROPER INFILTRATION RATES CAN OCCUR BELOW THE TRENCHES.

TYP. INFILTRATION TRENCH SYSTEM
NOT TO SCALE

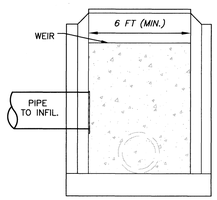


PLAN



SECTION A–A

SPLITTER OUTLET BOX (TYP.)
NOT TO SCALE



SECTION B–B

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

REVISIONS		
REV.NO.	DESCRIPTIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 035107 NICHOLAS J. LAURETTA
7/19/16

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NASH
NORTH AMERICA SEKISUI HOUSE, LLC
RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

STORMWATER MANAGEMENT DETAILS

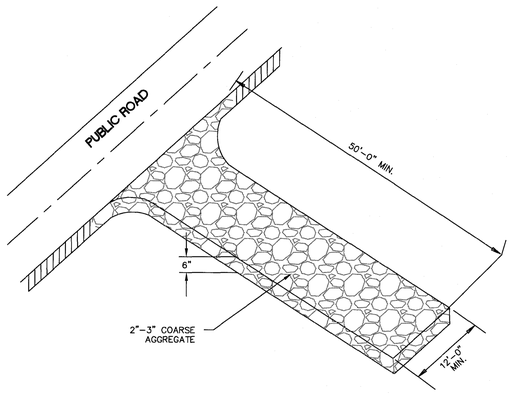
DATE:	17MAR16
MCE PROJ. #	2735–0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

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

M&C FILE NUMBER CN–501
DRAWING NUMBER 23

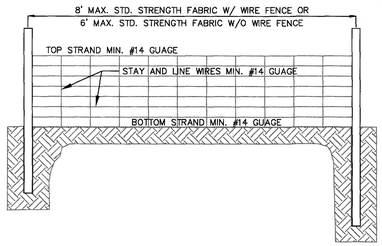
STATUS: **FINAL DESIGN**
ISSUED FOR CONSTRUCTION
REVISION 2

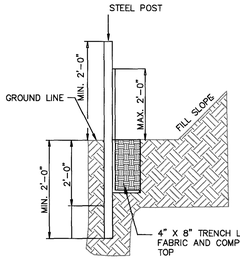
S:\2735\0124 Marina Village\80-Drawings\Phase 1B\CN-501.dwg, 7/18/2016 5:05:41 PM, AMendenhall, 1:1



CONSTRUCTION ENTRANCE/EXIT

SD 13-03
NOT TO SCALE





NOTES:
1. WIRE FENCE (IF USED) SHALL BE MINUMUM 14 GAUGE WITH A MAXIMUM MESH OPENING OF 6-INCHES.

2. SYNTHETIC FILTER FABRIC OF AT LEAST 95% BY WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461 AND ALSO SHOULD CONTAIN ULTRAVOLET RAY INHIBITORS AND STABILIZERS ACCORDING TO ASTM D 4355.

3. SEE THE NC EROSION CONTROL MANUAL FOR SPECIFICATIONS INSTALLING SEDIMENT FENCE USING THE SLICING METHOD MACHINERY.

TEMPORARY SILT FENCE

NOT TO SCALE

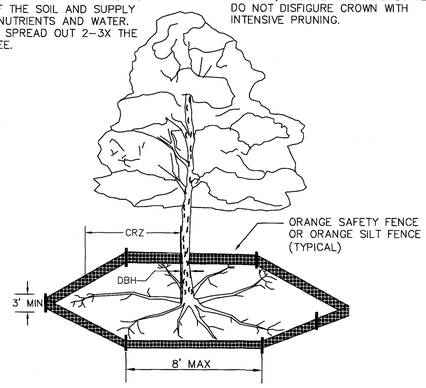
2

SILT FENCE CALCULATION TABLE

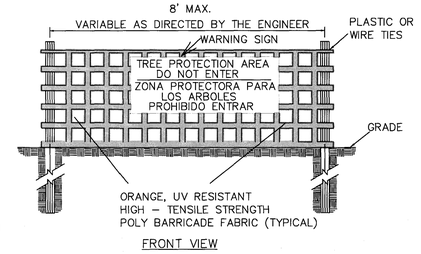
SILT FENCE No.	Sheet Location CE-101	Sheet Location CE-102	Drainage Area SF	Drainage Area ac	Length ft	Acre per 100 ft	0.25 Acre per 100 ft YES/NO
SF 1	X	X	2770	0.06	137.00	0.05	YES
SF 2	X	X	3805	0.09	135.00	0.06	YES
SF 3	X	X	13813	0.32	532.00	0.06	YES
SF 4	X	X	10328	0.24	269.00	0.09	YES
SF 5	X	X	4553	0.10	141.00	0.07	YES
SF 6	X		1294	0.03	71.00	0.04	YES
SF 7	X	X	21990	0.50	558.00	0.09	YES
SF 8	X		5785	0.13	209.00	0.06	YES
SF 9	X	X	14591	0.33	263.00	0.13	YES
SF 10		X	1563	0.04	133.00	0.03	YES
SF 11	X	X	22675	0.52	304.00	0.17	YES
SF 13	X	X	1626	0.04	107.00	0.03	YES

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

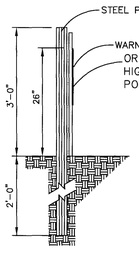
NOTE:
CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT DISFIGURE CROWN WITH INTENSIVE PRUNING.



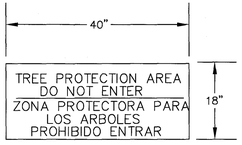
NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN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



FRONT VIEW



SIDE VIEW



WARNING SIGN DETAIL

NOTES:

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

METHOD OF TREE PROTECTION DURING CONSTRUCTION

SD 15-09
NOT TO SCALE

SEEDBED PREPARATION:

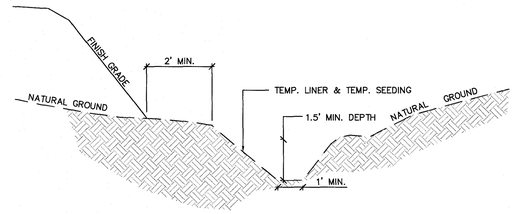
1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTRANCE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE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

TREE PROTECTION NOTES:

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

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

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



Temporary Perimeter Dike Calculations

									TEMPORARY ROCK CHECK DAMS		
Perm Dike NUMBER	LENGTH (FT)	HIGH (FT)	LOW (FT)	ELEVATION DIFF. (FT)	SLOPE (%)	VELOCITY (FPS)	LINING	Manning n	CHECK DAM SPACING (FT)	NUMBER REQUIRED	NUMBER PROVIDED
1	156	12.53	7.00	5.53	3.54	1.41	GRASS	0.035	56	3	3

TEMPORARY CHANNEL LINER SPECIFICATION:
1. SEE TEMPORARY PERIMETER DIKE CHART FOR LINER TYPE AND CHECK DAM SPACING.
2. MIN. SHEAR STRENGTH: STRAW WITH NET (OR APPROVED EQUAL) - 1.45 LBS/FT²

* ALL RATINGS ABOVE ARE MINIMUM SHEAR STRENGTH REQUIREMENTS FOR THE LINER BASED ON UNVEGETATED CONDITIONS.

CONSTRUCTION SPECIFICATION

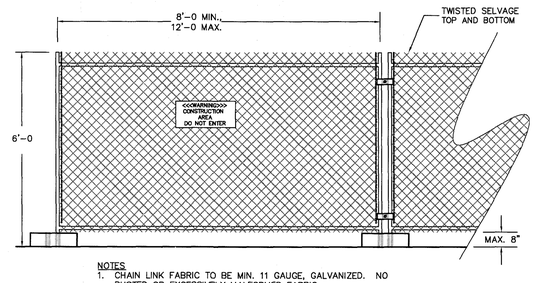
1. GRADE THE SURFACE OF INSTALLATION AREAS SO THAT THE GROUND IS SMOOTH AND LOOSE.
2. WHEN SEEDING PRIOR TO INSTALLATION, FOLLOW THE STEPS FOR SEED BED PREPARATION, SOIL AMENDMENTS, AND SEEDING AS NOTED IN "SURFACE STABILIZATION 6.1" (GENERAL NOTES) AND AS PER NCDENR STANDARDS.
3. SPREAD SEED BEFORE TEMPORARY LINER IS INSTALLED.
4. LINER SHALL BE INSTALLED FROM TOP OF BANK TO TOP OF BANK ALONG DIKE WITHIN DENUDED LIMITS.

MAINTENANCE

1. ALL EROSION CONTROL LINING SHALL BE INSPECTED EVERY SEVEN (7) DAYS OR AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE-HALF (0.5) INCH.

TEMPORARY PERIMETER DIKE

NOT TO SCALE



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

TEMPORARY CONSTRUCTION FENCING

NOT TO SCALE

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

1 inch

Approved Construction Plan

	Name	Date
Planning		
Traffic		
Fire		

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

REV.NO.	DESCRIPTIONS	DATE
	REVISIONS	
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

SEAL

SEAL
NORTH CAROLINA PROFESSIONAL
GML 035107 ENGINEER
NICHOLAS J. LAURETTA
7/19/16

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

RIVERLIGHTS MARINA VILLAGE PHASE 1B

SEDIMENT & EROSION CONTROL DETAILS

DATE:	17MAR16
MCE PROJ. #	2735-0124
DRAWN	ALM
DESIGNED	NJL
CHECKED	KCBE
PROJ. MGR.	NJL

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

M&C FILE NUMBER CE-501
DRAWING NUMBER 25

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION
REVISION 2

S:\2735\0124 Marina Village\80-Drawings\Phase 1B\CG-503.dwg, 7/18/2016 5:05:15 PM, AMendenhall, 1:1

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

1 inch

Approved Construction Plan

Name Date

Planning_____

Traffic_____

Fire_____

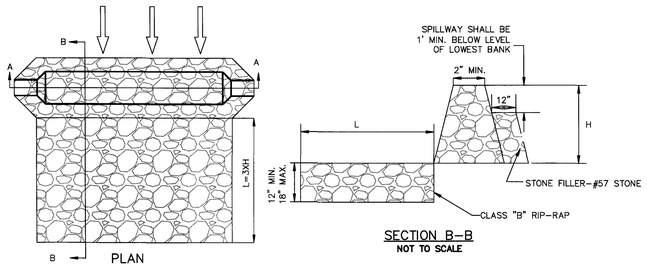
CITY OF WILMINGTON NORTH CAROLINA

Public Services • Engineering Division

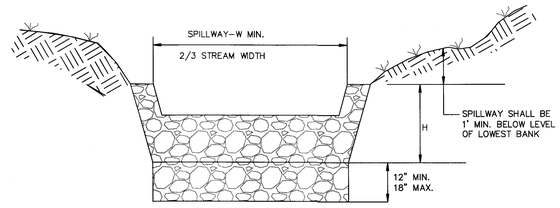
APPROVED STORMWATER MANAGEMENT PLAN

Date: _____ Permit #_____

Signed: _____

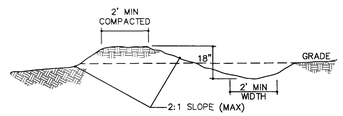


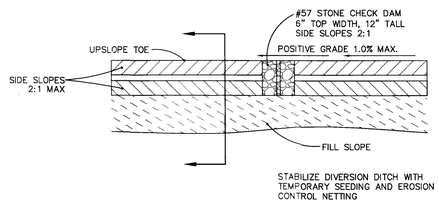
SECTION B–B
NOT TO SCALE



SECTION A–A

DITCH CHECK DAM
SD 13–04
NOT TO SCALE





TEMPORARY DIVERSION DITCH
NOT TO SCALE

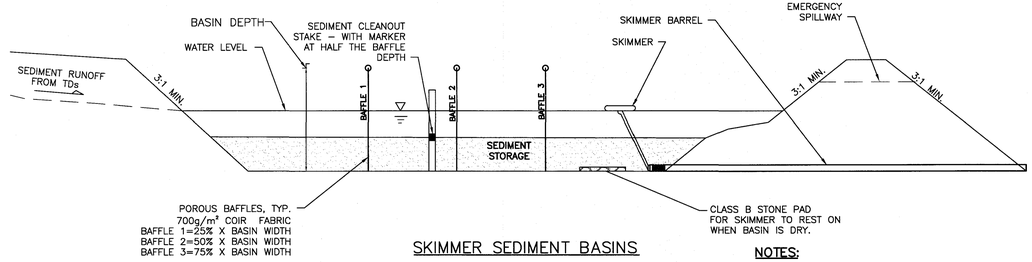
2

TDD NUMBER	DA (AC)	Q10 (CFS)	LENGTH (FT)	HIGH (FT)	LOW (FT)	ELEVATION DIFF. (FT)	SLOPE (%)	INITIAL LINING	MANNING n	VELOCITY (FPS)	COMMENT
TDD 1	0.25	0.5	158	8.00	4.00	4.00	2.53	BARE EARTH	0.020	2.73	LINING REQ
TDD2	1.25	2.7	231	5.45	4.57	0.88	0.38	BARE EARTH	0.020	2.10	LINING REQ

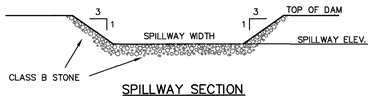
							TEMPORARY ROCK CHECK DAMS/WATTLES		
TDD NUMBER	SECONDARY LINING	MANNING n	VELOCITY (FPS)	COMMENT	DEPTH in	MIN. DEPTH in	CHECK DAM SPACING (FT)	NUMBER REQUIRED	NUMBER PROVIDED
TDD 1	LINING REQ	0.035	1.82	EXCELSIOR OK	2.3	18	79	2	2
TDD2	LINING REQ	0.035	1.36	EXCELSIOR OK	7.9	19	525	0	0

Notes:

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



SKIMMER SEDIMENT BASINS



SPILLWAY SECTION

NOTES:

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

SKIMMER BASIN CALCULATION TABLE (PHASE 1)

Skimmer No.	Drainage Area ac	Rational C Runoff Coeff.	I10 Intensity in/hr	Q10 Peak Flow cfs	Required SA (325 x Q10) sf	Provided SA sf	Required Vol (1800cf/ac x DA) cf	Provided Vol cf	Storage Depth ft	Storage Vol Drained cf	Weir Width ft
SB-1	3.48	0.30	7.23	7.55	2,453	2,584	6,264	6,920	3.00	6,920	8.0

2

FAIRCLOTH SKIMMER SIZE CALCULATION (PHASE 1)

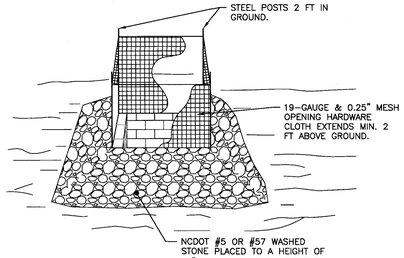
Skimmer No.	Dewatering Time (days)	Skimmer Outflow cf/day	Skimmer Size in	Orifice Diameter in	Orifice Radius in	Barrel Outflow gpm	Barrel Pipe in
SB-1	3	2,307	2.0	1.6	0.8	12.0	4.0

Faircloth Skimmer Selection Table

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

NOTES:

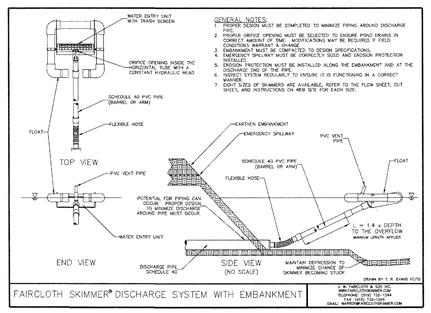
1. Q10 Peak Flow w ere taken from Rational Method.
2. Required Surface Areas and Volumes w ere taken from NCDENR ESC Manual.
3. Faircloth Skimmer Selection Table taken from Table 4-2. NCDOT Level III-A Design of Sediment & Erosion Control Plans Manual
4. Emergency Weir Width taken from Skimmer Basin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



NOTES:

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

TEMP. STORM DRAIN INLET PROTECTION
NOT TO SCALE



SKIMMER DETAIL WITH EMBANKMENT
NOT TO SCALE

REV.NO.	DESCRIPTIONS	DATE
2	SITE PLAN AND STORM DRAINAGE REVISIONS	07/19/2016
1	CFPUA COMMENTS	04/11/2016
0	ISSUED FOR CONSTRUCTION	03/17/2016

REVISIONS

SEAL

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER CIVIL 035107 NICHOLAS J. LAURETTI

7/19/16

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NASH NORTH AMERICA SEKISUI HOUSE, LLC

RIVERLIGHTS™

RIVERLIGHTS MARINA VILLAGE PHASE 1B

SEDIMENT & EROSION CONTROL DETAILS

DATE:	17MAR16
MCE PROJ. #	2735–0124
DRAWN	ALM
DESIGNED	N.JL
CHECKED	KCBE
PROJ. MGR.	N.JL

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

MAC FILE NUMBER CE–502

DRAWING NUMBER 26

STATUS: FINAL DESIGN
ISSUED FOR CONSTRUCTION

REVISION 2

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