

CITY OF WILMINGTON
NEW HANOVER COUNTY, NORTH CAROLINA

SHIPYARD VILLAGE APARTMENTS

TRC SUBMITTAL

FEBRUARY 10, 2016
NOT FOR CONSTRUCTION

DEVELOPMENT INFORMATION:

OWNER/DEVELOPER:
SHIPYARD VILLAGE WILMINGTON, LLC
PO BOX 29169
GREENSBORO, NC 27429-9169
2100-D W. CORNWALLIS DR.
GREENSBORO, NC 27408

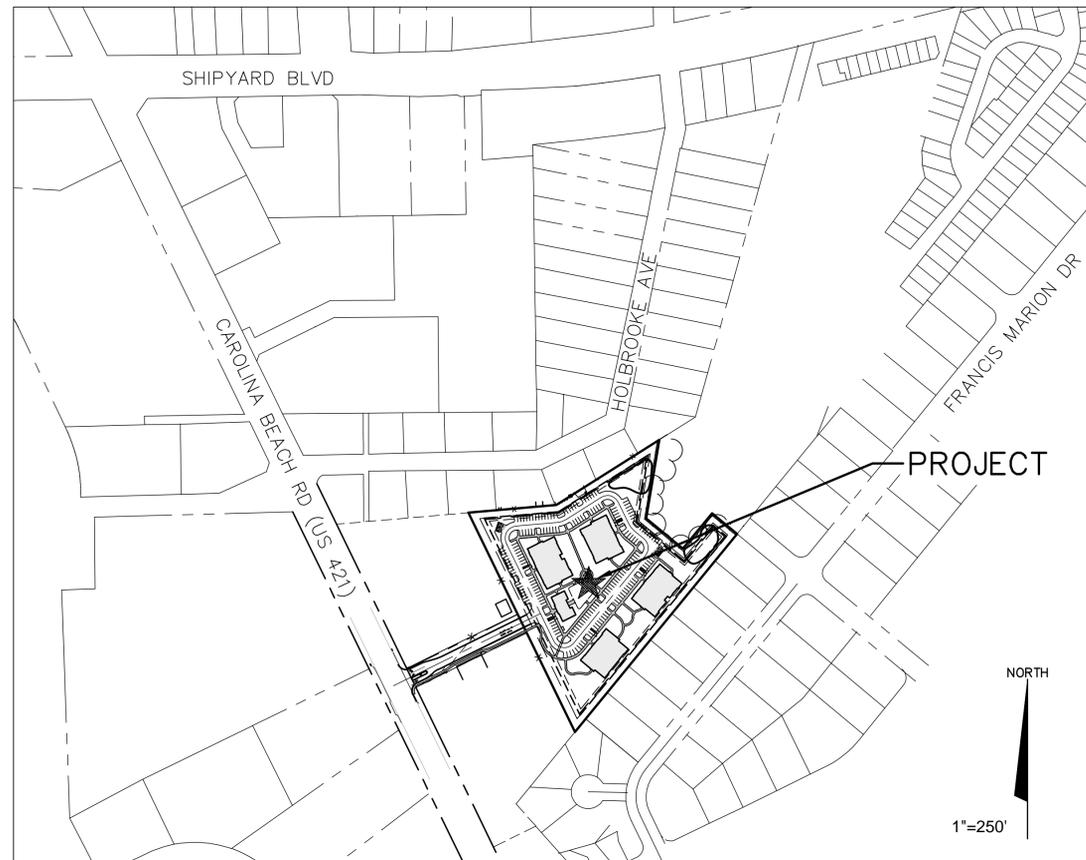
OWNER'S DESIGNATED REPRESENTATIVE:
VERNON POWELL, PRESIDENT
SHIPYARD VILLAGE WILMINGTON, LLC.
vernonbpowell@gmail.com
(336) 282-7200

PROJECT ENGINEER / REPRESENTATIVE:
TARA S. MURPHY, RLA, ASLA, LEED AP, PMP
McKIM & CREED, INC.
243 NORTH FRONT STREET
WILMINGTON, NORTH CAROLINA 28401
tschwenzfeier@mckimcreed.com
(910) 343-1048

PROJECT ADDRESS:
2821 CAROLINA BEACH ROAD
WILMINGTON, NC 28412

TAX PARCEL IDENTIFICATION NUMBER:
R06506-008-020-000

PROPERTY ZONING:
MF-M MULTI-FAMILY RESIDENTIAL
DISTRICT, MEDIUM DENSITY



SHEET INDEX

Sheet List Table		
Sheet Number	Sheet Title	Sheet Description
1	G001	COVER
2	G002	GENERAL NOTES
3	CX101	SITE INVENTORY PLAN
4	CX102	TREE REMOVAL PLAN
5	CE101	SEDIMENT AND EROSION CONTROL PLAN - PHASE 1 & 2
6	CS101	OVERALL SITE PLAN
7	CS102	SITE PLAN ENLARGEMENT
8	CS-103	OPEN SPACE PLAN
9	CG101	GRADING AND DRAINAGE PLAN
10	CU101	UTILITY PLAN
11	CL101	CONCEPT LANDSCAPE PLAN
12	CS501	SITE DETAILS
13	CS502	SITE DETAILS
14	CE501	EROSION CONTROL DETAILS
15	CN501	STORMWATER MANAGEMENT DETAILS
16	CN502	STORMWATER MANAGEMENT DETAILS
17	CG501	GRADING & DRAINAGE DETAILS
18	CU501	UTILITY DETAILS
19	CU502	UTILITY DETAILS
20	CU503	UTILITY DETAILS
21	CU504	UTILITY DETAILS
22	CU505	UTILITY DETAILS



243 North Front Street
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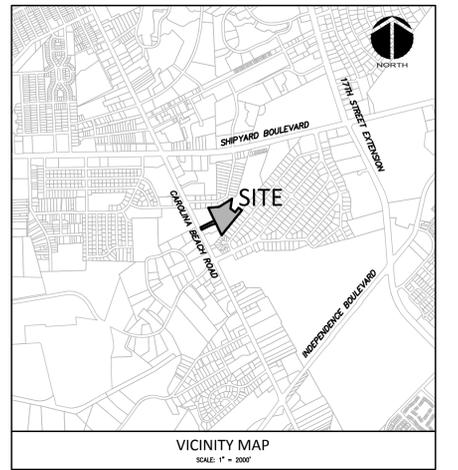
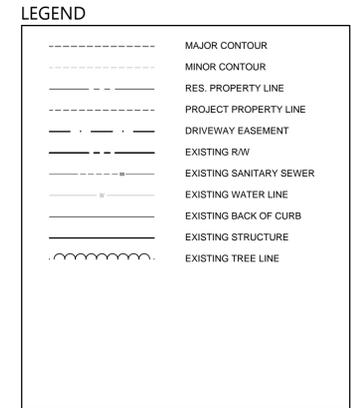
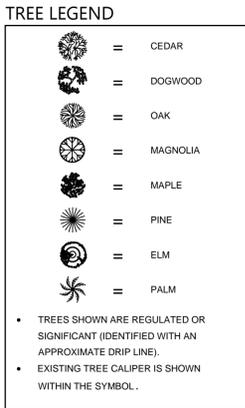
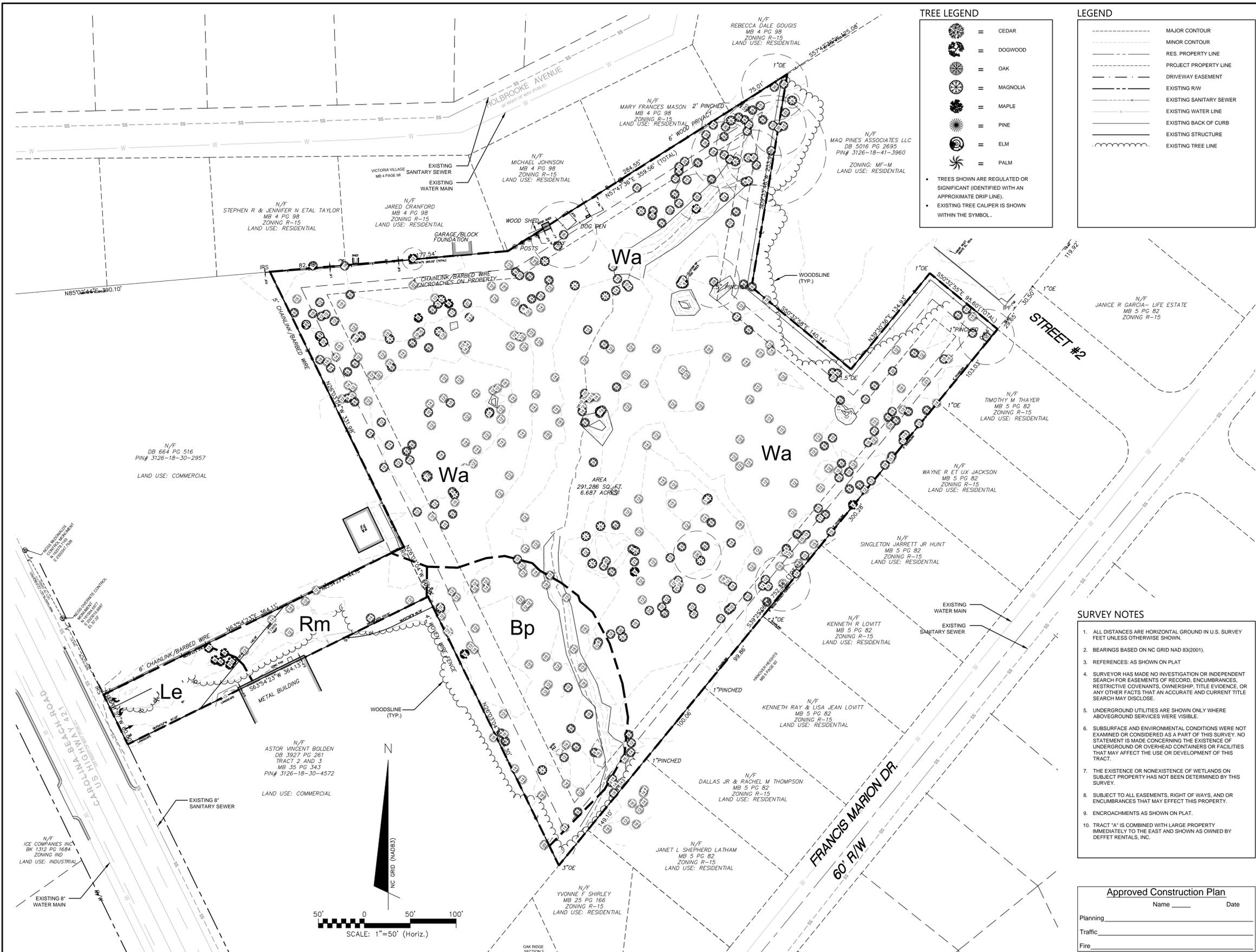


STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

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

**PRELIMINARY PLANS
NOT FOR CONSTRUCTION**

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



SITE DATA TABLE	SHIPYARD VILLAGE APARTMENTS
GENERAL INFORMATION	
APPLICANT NAME	SHIPYARD VILLAGE WILMINGTON, LLC
SITE ADDRESS	2821 CAROLINA BEACH ROAD
PROPERTY OWNER/DEVELOPER	SHIPYARD VILLAGE WILMINGTON, LLC
MAP SCALE	1"=50'
PROPERTY BOUNDARY	
TAX PARCEL IDENTIFICATION NUMBER	R06506-008-020-000
	R06506-008-032-000
	R06506-008-029-000
ZONING DISTRICT	MF-M
TOTAL ACREAGE	SEE CS-101
TOPOGRAPHY AND DRAINAGE	
DATE OF TOPOGRAPHY DATA	4/22/2014
100-YR FLOODPLAIN LINE	NONE IDENTIFIED
LOCATION OF NATURAL WATER FEATURES	LOCATION CLASSIFICATION
DITCHES, STREAMS, CREEKS	N/A N/A
FLOOD PRONE AREAS	NONE IDENTIFIED
AREAS OF NATURALLY CONCENTRATED SURFACE DRAINAGE	N/A
SOIL (USDA SOIL SURVEY)	
SOIL TYPE(S) AND BOUNDARIES	SEE CX-101
NORTH CAROLINA COASTAL AREA MANAGEMENT ACT INFORMATION	
CAMA AREA OF ENVIRONMENTAL CONCERN	NONE IDENTIFIED
SETBACKS	N/A
CAMA LAND USE CLASSIFICATION(S)	URBAN
CONSERVATION RESOURCE REGULATIONS	
PRESENCE OF CONSERVATION RESOURCE	NONE
SETBACKS	N/A
VEGETATED BUFFER	N/A
HISTORIC AND ARCHEOLOGICAL SITES	
LOCAL, STATE, OR FEDERALLY RECOGNIZED HISTORIC STRUCTURE(S) OR ARCHEOLOGICAL RESOURCES	NONE IDENTIFIED
LOCATION	N/A
CEMETERIES	
CEMETERIES, BURIAL SITES, OR BURIAL GROUNDS	NONE IDENTIFIED
FORESTED AREAS	
BOUNDARIES OF FORESTED AREAS	SEE CX-101
FOREST AREA	SEE CX-101
HABITAT	NONE IDENTIFIED
DOMINANT SPECIES	OAK, PINE
WETLANDS	
404/SECTION 10 WETLAND LOCATION	NONE IDENTIFIED
METHOD OF DETERMINATION	N/A
IMPACTED WETLANDS	N/A
ENDANGERED SPECIES OR HABITAT	
ENDANGERED SPECIES OR HABITAT IN PROJECT AREA	NONE IDENTIFIED
AUTOMOBILE, BICYCLE, PEDESTRIAN, OR TRANSIT FACILITIES	
EXISTING OR PROPOSED THOROUGHFARES, BIKE ROUTES, PEDESTRIAN SIDEWALKS OR TRAILS, AND TRANSIT FACILITIES	SEE CX-1-1, PROPERTY IS ALONG WAVE ROUTE 106

- ### SURVEY NOTES
- ALL DISTANCES ARE HORIZONTAL GROUND IN U.S. SURVEY FEET UNLESS OTHERWISE SHOWN.
 - BEARINGS BASED ON NC GRID NAD 83(2011).
 - REFERENCES: AS SHOWN ON PLAT
 - SURVEYOR HAS MADE NO INVESTIGATION OR INDEPENDENT SEARCH FOR EASEMENTS OF RECORD, ENCUMBRANCES, RESTRICTIVE COVENANTS, OWNERSHIP, TITLE EVIDENCE, OR ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE.
 - UNDERGROUND UTILITIES ARE SHOWN ONLY WHERE ABOVEGROUND SERVICES WERE VISIBLE.
 - SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.
 - THE EXISTENCE OR NONEXISTENCE OF WETLANDS ON SUBJECT PROPERTY HAS NOT BEEN DETERMINED BY THIS SURVEY.
 - SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND OR ENCUMBRANCES THAT MAY EFFECT THIS PROPERTY.
 - ENCROACHMENTS AS SHOWN ON PLAT.
 - TRACT "A" IS COMBINED WITH LARGE PROPERTY IMMEDIATELY TO THE EAST AND SHOWN AS OWNED BY DEFFET RENTALS, INC.

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CITY OF WILMINGTON
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REV. NO.	DESCRIPTIONS	DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION



MCKIM & CREED

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NC LICENSE F-1222
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SHIPYARD VILLAGE APARTMENTS
2821 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON

SITE INVENTORY PLAN

DATE:	10 FEB 2016	SCALE:	1"=50'	M&C FILE NUMBER:	CX-101
M&C PROJ. #	07010-0001	HORIZONTAL:	1"=50'	DRAWING NUMBER:	3
DRAWN:	TCM/TSM	VERTICAL:	N/A		
DESIGNED:	TCM/TSM				
CHECKED:	RMC				
PROJ. MGR.:	TSM				
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION					

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TREE LEGEND

- = CEDAR
- = DOGWOOD
- = OAK
- = MAGNOLIA
- = MAPLE
- = PINE
- = ELM
- = PALM

- ALL TREES SHOWN ARE REGULATED OR SIGNIFICANT.
- SIGNIFICANT TREES ARE IDENTIFIED WITH AN ESTIMATED/APPROXIMATE DRIP LINE.
- EXISTING TREE CALIPER IS SHOWN WITHIN THE SYMBOL.
- TREES SHOWN WITH AN "X" TO BE REMOVED TO INSTALL ESSENTIAL SITE IMPROVEMENTS.

LEGEND

- MAJOR CONTOUR
- MINOR CONTOUR
- RES. PROPERTY LINE
- PROJECT PROPERTY LINE
- DRIVEWAY EASEMENT
- EXISTING R/W
- EXISTING SANITARY SEWER
- EXISTING WATER LINE
- EXISTING BACK OF CURB
- EXISTING STRUCTURE
- EXISTING TREE LINE

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Approved Construction Plan

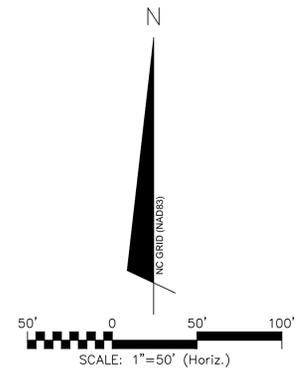
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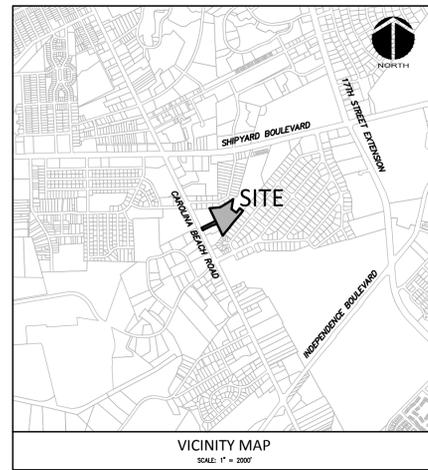
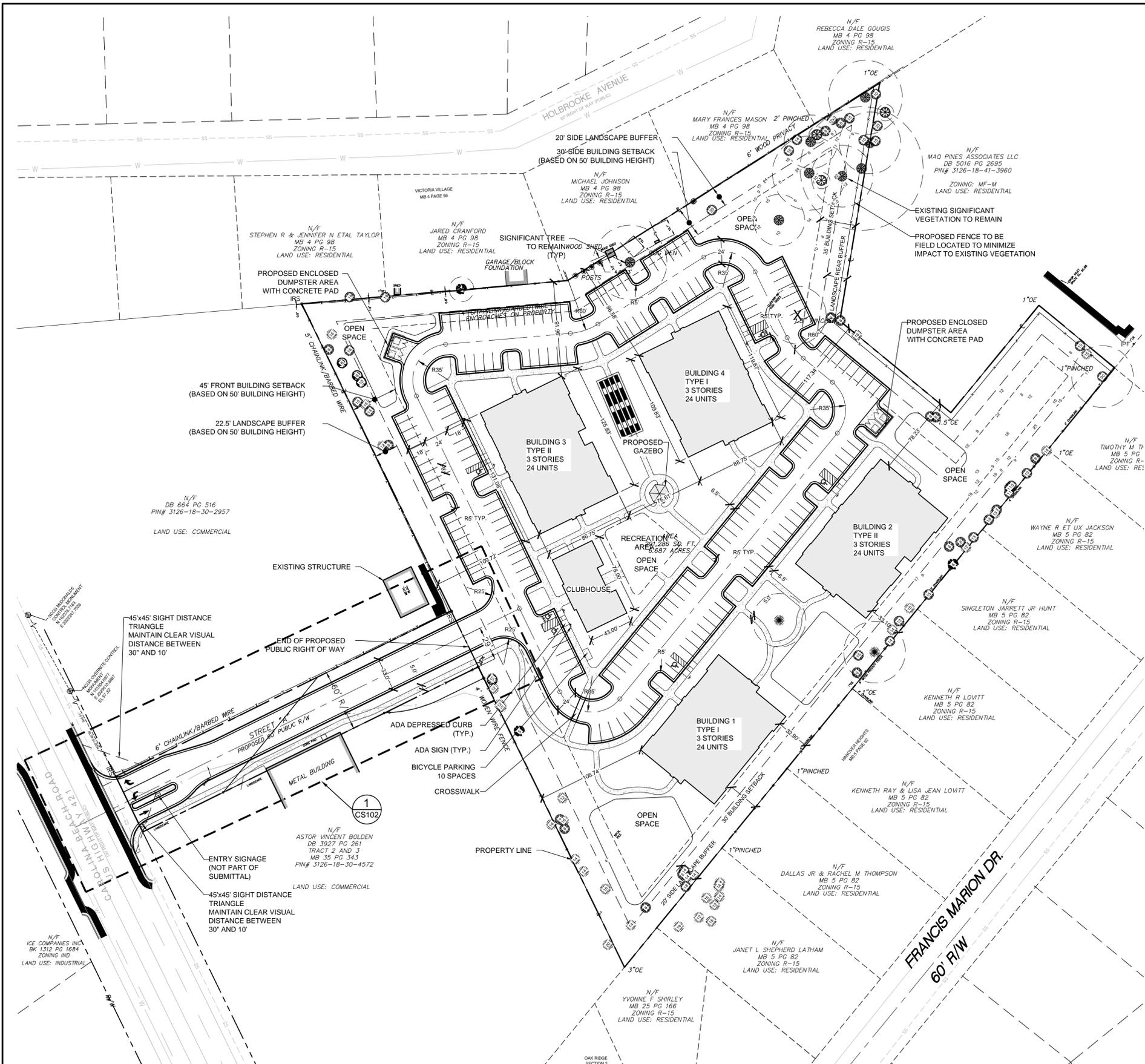
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TREE REMOVAL PLAN

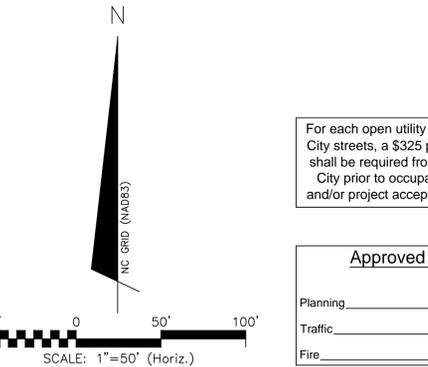
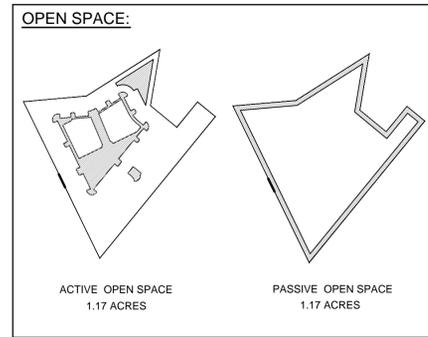
DATE: 10 FEB 2016	SCALE: 1"=50'	MAC FILE NUMBER: CX-102
MCE PROJ.#: 07010-0001	HORIZONTAL: 1"=50'	DRAWING NUMBER: 4
DRAWN: TCM/TSM	VERTICAL: N/A	
DESIGNED: TCM/TSM		
CHECKED: RMC		
PROJ. MGR.: TSM		

STATUS: PRELIMINARY TRC PLANS
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- GENERAL NOTES:**
- PROJECT IS NOT WITHIN ANY SPECIAL HIGHWAY OVERLAY DISTRICT.
 - PROJECT IS NOT WITHIN ANY CORRIDOR OVERLAY DISTRICT.
 - NO WETLANDS HAVE BEEN IDENTIFIED ON SITE.
 - CONTACT THE NORTH CAROLINA ONE CALL CENTER PRIOR TO DOING ANY DIGGING. 1-800-632-4949.
 - THE BELLSOUTH CONTACT IS STEVE DAYVAULT - HE IS THE BUILDING INDUSTRY CONSULTANT - (910) 392-8712. PLEASE CONTACT HIM PRIOR TO STARTING THE PROJECT IN ORDER TO FACILITATE GOOD COMMUNICATION AND MAXIMUM FLEXIBILITY.
 - THE PROCESS FOR TELEPHONE CABLE PLACEMENT:
 - FINAL GRADE WILL NEED TO BE ESTABLISHED.
 - POWER WILL PLACE THEIR CABLE FIRST AT APPROXIMATELY 3 FT DEEP.
 - BELLSOUTH/CABLE TV WILL THEN PLACE THEIR CABLE AT APPROXIMATELY 2 FEET DEEP.
 - SITE DIMENSIONS FOR PARKING AREAS ARE TO THE FACE OF CURB.
 - ALL PROPOSED VEGETATION WITHIN SIGHT DISTANCE TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30' TO 10'.
 - SEE SHEET 4 (CS-102) FOR TYPICAL HANDICAP SPACE DIMENSION INFORMATION.
 - NO FEMA 100-YEAR FLOODPLAIN HAS BEEN IDENTIFIED ON SITE.



SITE DATA TABLE		SHIPYARD VILLAGE	
PARCEL ADDRESS	2821 CAROLINA BEACH ROAD		
BUILDING SETBACKS (SEE GENERAL NOTE #5)	REQUIRED	PROPOSED	
FRONT	47'	47'	
REAR	37'	37'	
SIDE (INTERIOR)	32'	32'	
SIDE (CORNER)	30'	30'	
TAX PARCEL IDENTIFICATION NUMBER(S)	R06506-008-020-000 R06506-008-029-000		
PARCEL DEED BOOK AND PAGE NUMBER(S)	DB 5387 PG 329 DB 5813 PG 1822		
CURRENT ZONING:	MF-M (17 DU/AC)		
TOTAL ACREAGE	7.19 ACRES (313,133 SF)		
AREA OF PROPOSED PUBLIC RIGHT OF WAY	0.50 ACRES (21,847 SF)		
REMAINING SITE	6.69 ACRES (291,286 SF)		
MAX DENSITY ALLOWED	119 UNITS		
DENSITY PROPOSED	96 UNITS		
BUILDING SIZE WITH SQUARE FOOTAGE	45,506 GROSS SF		
(2) BUILDING TYPE 1	10,082 SF (EACH)		
(2) BUILDING TYPE 2	11,061 SF (EACH)		
CLUBHOUSE	3,220 SF		
NC BUILDING CODE CONSTRUCTION TYPE	VA		
BUILDING LOT COVERAGE	14.49%		
PROPOSED BUILDING HEIGHT	50' (BLDG. TYPE 1 & 2) 15' CLUBHOUSE		
NUMBER OF STORIES & SQUARE FEET PER FLOOR	3 STORIES, SF VARIES		
TOTAL AMOUNT OF DISTURBED AREA	6.60 ACRES (287,613 SF)		
CAMA LAND USE CLASSIFICATION	URBAN		
EXISTING IMPERVIOUS AREA	0		
IMPERVIOUS AREA (PROPOSED)	BUILDINGS	45,506	SF
	ROADWAYS AND PARKING	81,632	SF
	SIDEWALKS	17,459	SF
OFF-SITE IMPERVIOUS (WITHIN PROPOSED PUBLIC R/W)	14,111 SF		
TOTAL S.F. (ONSITE IMPERVIOUS AREA)	144,597 SF		
PERCENTAGE (ONSITE IMPERVIOUS AREA/ONSITE AREA)	46.0 %		
PARKING CALCULATIONS			
PROPOSED USE:	MULTI-FAMILY		
SPACES PROVIDED	187		
MAXIMUM SPACES ALLOWED (2.5 PER UNIT)	240		
MINIMUM SPACES REQUIRED	177		
36 1 BEDROOM UNITS @ 1.5 SPACES PER UNIT	54 SPACES		
48 2 BEDROOM UNITS @ 2.0 SPACES PER UNIT	96 SPACES		
12 3 BEDROOM UNITS @ 2.25 SPACES PER UNIT	27 SPACES		
ACCESSIBLE SPACES REQUIRED	6 (1 VAN)		
ACCESSIBLE SPACES PROVIDED	6 (1 VAN)		
OPEN SPACE CALCULATIONS			
TOTAL OPEN SPACE REQUIRED (35% OF SITE, EXCLUDING PUBLIC RIGHT OF WAY)	2.34 ACRES (101,946 SF)		
OPEN SPACE PROVIDED	2.34 ACRES (101,946 SF)		
REQUIRED ACTIVE OPEN SPACE (17.5% OF SITE, EXCLUDING PUBLIC RIGHT OF WAY)	1.17 ACRES (50,973 SF)		
PROPOSED ACTIVE OPEN SPACE	1.17 ACRES (50,973 SF)		
REQUIRED PASSIVE OPEN SPACE (17.5% OF SITE, EXCLUDING PUBLIC RIGHT OF WAY)	1.17 ACRES (50,973 SF)		
PROPOSED PASSIVE OPEN SPACE	1.17 ACRES (50,973 SF)		

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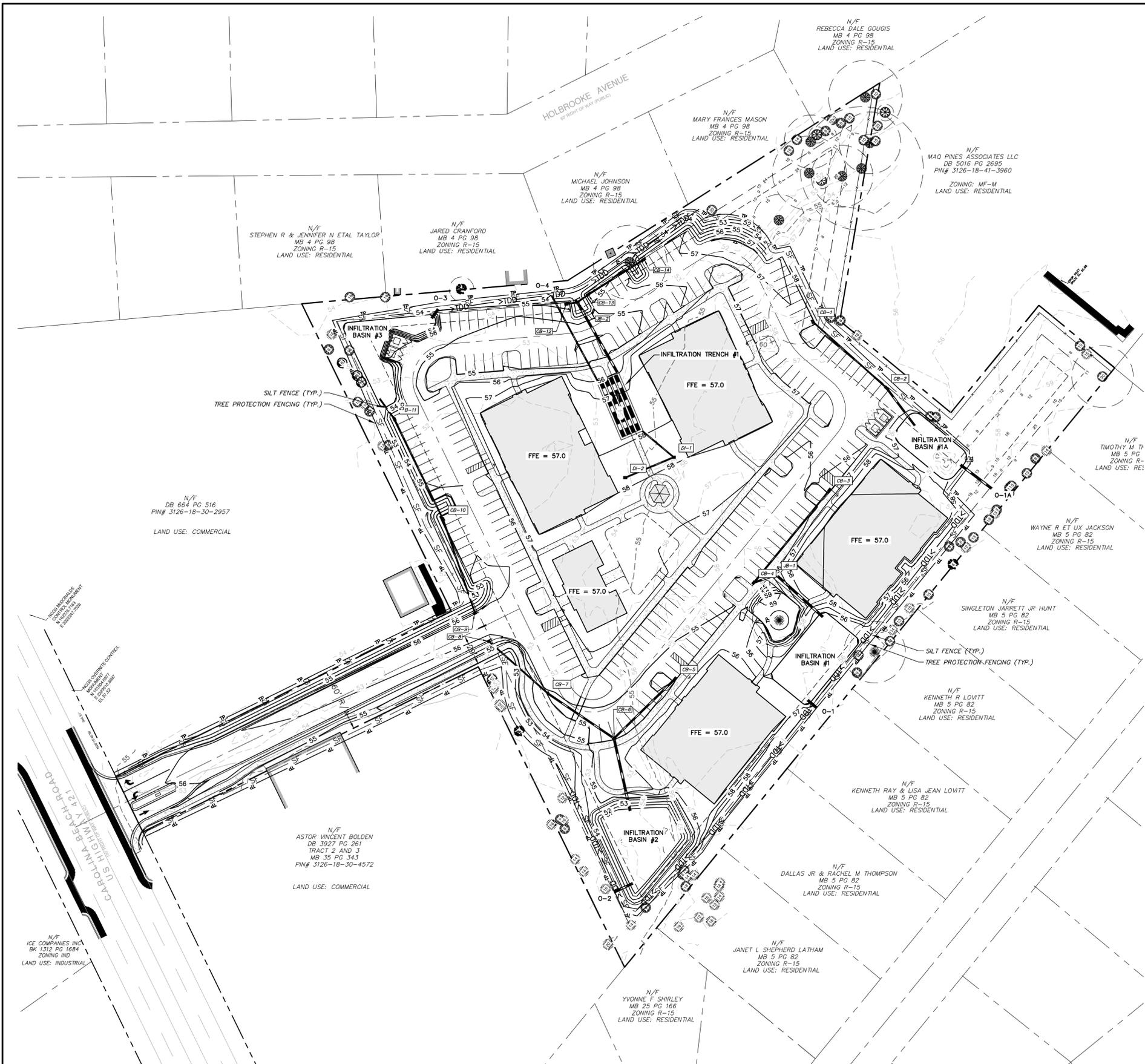
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TOWNSHIP OF WILMINGTON

OVERALL SITE PLAN

DATE:	10 FEB 2016	SCALE:	1"=50'	MAC FILE NUMBER:	CS-101
MCE PROJ. #	07010-0001	HORIZONTAL:	1"=50'	DRAWING NUMBER:	6
DRAWN:	TCM/TSM	VERTICAL:	N/A		
DESIGNED:	TCM/TSM				
CHECKED:	RMC				
PROJ. MGR.:	TSM				
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION					



- STORM DRAINAGE AND GRADING NOTES**
- IN ACCORDANCE WITH NC GENERAL STATUTES, NPDES REGULATIONS, AND NCDENR REQUIREMENTS, STORMWATER DISCHARGE OUTFALLS SHALL BE INSPECTED BY THE CONTRACTOR. INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR AFTER EACH STORM EVENT OF 1/2 INCH OR GREATER, WITH ONE WEEKLY INSPECTION MINIMUM. NCDENR STANDARD INSPECTION REPORTS SHALL BE PREPARED AND SIGNED WITH COPIES PROVIDED TO THE OWNER, ARCHITECT, AND ENGINEER, BY THE CONTRACTOR.
 - INLET PROTECTION SHALL BE INSTALLED AROUND OUTFALL DEVICES SHALL BE CONSTRUCTED TO FINAL PROPOSED CONDITION UPON STABILIZATION OF CONTRIBUTING GROUND SURFACES AND REMOVAL OF SEDIMENT FROM STORM PIPES.
 - SEDIMENT / EROSION DEVICES SHALL BE CHECKED BY THE CONTRACTOR DAILY. EACH DEVICE IS TO BE MAINTAINED OR REPLACED IF SEDIMENT ACCUMULATION HAS REACHED ONE HALF THE CAPACITY OF THE DEVICE.
 - ALL DIMENSIONS AND GRADES SHOWN ON THE PLANS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY CONSTRUCTION MANAGER IF ANY DISCREPANCIES EXIST PRIOR TO PROCEEDING WITH CONSTRUCTION FOR NECESSARY PLAN OR GRADE CHANGES. NO EXTRA COMPENSATION SHALL BE PAID TO CONTRACTOR FOR ANY WORK DONE DUE TO DIMENSIONS OR GRADES SHOWN INCORRECTLY ON THESE PLANS IF SUCH NOTIFICATION HAS NOT BEEN GIVEN.
 - UNLESS OTHERWISE NOTED, GRADES AND SPOT ELEVATIONS NOTED ON PLANS INDICATE FINISHED GRADE OR PAVEMENT SURFACE. ALL DIMENSIONS ARE MEASURED TO THE BACK OF CURB UNLESS OTHERWISE INDICATED.
 - ALL AREAS TO BE GRADED SO THAT NO AREAS OF STANDING WATER OCCUR.

STORM DRAINAGE STRUCTURE DATA TABLE

Structure Name	Details
CB-1	RIM = 56.59 INV OUT = 54.41
CB-2	RIM = 56.07 INV IN = 54.12 INV OUT = 54.12
CB-3	RIM = 55.93 INV OUT = 54.10
CB-4	RIM = 55.43 INV IN = 53.76 INV OUT = 53.76
CB-5	RIM = 54.51 INV OUT = 51.62
CB-6	RIM = 54.08 INV IN = 51.21 INV OUT = 51.21
CB-7	RIM = 54.90 INV IN = 51.59 INV OUT = 51.59
CB-8	RIM = 56.45 INV OUT = 51.98
CB-9	RIM = 55.96 INV OUT = 51.18
CB-10	RIM = 55.68 INV IN = 50.89 INV OUT = 50.89
CB-11	RIM = 55.33 INV IN = 50.57 INV OUT = 50.57
CB-12	RIM = 54.89 INV IN = 50.27
CB-13	RIM = 54.55 INV IN = 50.24 INV OUT = 50.24
CB-14	RIM = 56.03 INV OUT = 50.44
DI-1	RIM = 58.00 INV IN = 50.14 INV OUT = 50.14
DI-2	RIM = 58.00 INV OUT = 50.40
JB-1	RIM = 56.34 INV IN = 53.66 INV OUT = 53.66
JB-2	RIM = 53.67 INV IN = 50.21 INV OUT = 50.21

STORM DRAINAGE PIPE DATA TABLE

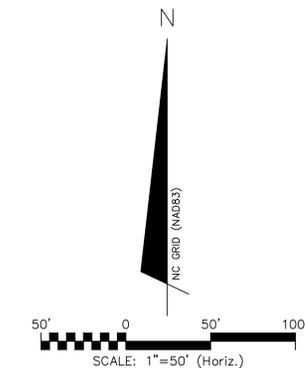
FROM	TO	Length	Size	PIPE TYPE	Slope	DOWNSTREAM INVERT	UPSTREAM INVERT
IB #2	O-2	19.73'	24"	RCP	0.50%	50.00'	49.90'
IB #1	O-1	10.96'	24"	RCP	0.50%	54.00'	53.95'
IB #1A	O-1A	37.84'	24"	RCP	0.50%	54.00'	53.81'
IB #3	O-3	10.66'	24"	RCP	0.50%	50.50'	50.45'
IT #1	O-4	93.84'	12"	RCP	0.50%	50.00'	49.53'
CB-1	CB-2	96.40'	12"	RCP	0.30%	54.41'	54.12'
CB-2	IB #1A	45.77'	18"	RCP	0.26%	54.12'	54.00'
CB-3	CB-4	116.49'	12"	RCP	0.29%	54.10'	53.76'
CB-4	JB-1	23.28'	18"	RCP	0.43%	53.76'	53.66'
CB-5	CB-6	83.06'	18"	RCP	0.49%	51.62'	51.21'
CB-6	IB #2	71.89'	24"	RCP	0.29%	51.21'	51.00'
CB-7	CB-6	77.52'	18"	RCP	0.49%	51.59'	51.21'
CB-8	CB-7	77.03'	12"	RCP	0.51%	51.98'	51.59'
CB-9	CB-10	96.17'	12"	RCP	0.30%	51.18'	50.89'
CB-10	CB-11	107.99'	12"	RCP	0.30%	50.89'	50.57'
CB-11	IB #3	24.46'	12"	RCP	0.29%	50.57'	50.50'
CB-13	JB-2	12.55'	12"	RCP	0.24%	50.24'	50.21'
CB-14	CB-13	64.50'	12"	RCP	0.31%	50.44'	50.24'
DI-1	IT #1	39.76'	12"	RCP	0.35%	50.14'	50.00'
DI-2	DI-1	51.20'	12"	RCP	0.51%	50.40'	50.14'

NOTE: STATE REGULATED WATER BODY SERVING THE WATERSHED: BARNARDS CREEK (C, SW).

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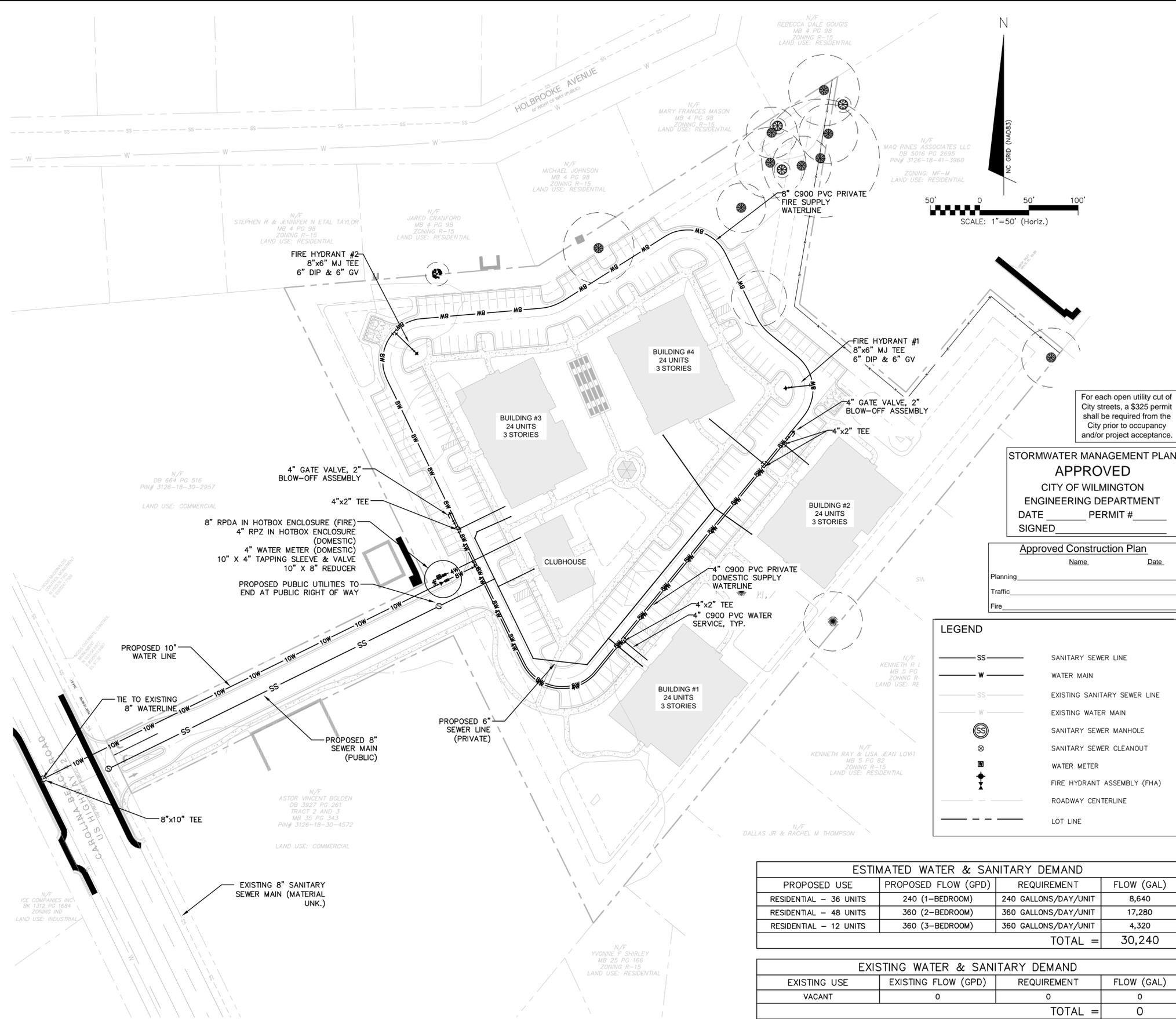
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 TOWNSHIP OF WILMINGTON
GRADING AND DRAINAGE PLAN

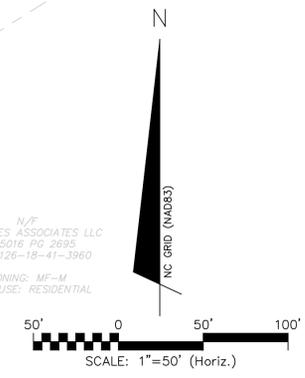
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MCE PROJ. #	07010-0001	HORIZONTAL:	1"=50'	DRAWING NUMBER:	8
DRAWN:	TCM/TSM	VERTICAL:	N/A		
DESIGNED:	TCM/TSM				
CHECKED:	RMC				
PROJ. MGR.:	TSM				
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION					

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UTILITY NOTES

- SCHEDULE A PRECONSTRUCTION MEETING WITH CAPE FEAR PUBLIC UTILITY AUTHORITY 48 HOURS PRIOR TO CONSTRUCTION OF WATER AND SEWER LINES.
- WATER AND SANITARY SEWER UTILITY MAINS ARE PRIVATE BEYOND THE PUBLIC STREET RIGHT-OF-WAY.
- THIS PROJECT SHALL COMPLY WITH THE CFPWA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METER(S) CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND NCDENR HAS ISSUED THE "FINAL APPROVAL".
- ALL COMMERCIAL WATER SERVICES AND ANY IRRIGATION SYSTEMS SUPPLIED BY CFPWA WATER SHALL HAVE A BACKFLOW PREVENTION DEVICE ACCEPTABLE TO CFPWA AND APPROVED BY USFCCCOR OR ASSE.
- BACKFLOW PREVENTION AND METERS WILL BE PROVIDED FOR BOTH FIRE LINES (RPDA) AND DOMESTIC SERVICE (RPZ). FIRE LINE BACKFLOW PREVENTER AND DOMESTIC SERVICE BACKFLOW PREVENTER WILL BE LOCATED AS SHOWN ON THE UTILITY PLANS. INSTALLER OF BACKFLOW PREVENTERS MUST CONTACT CFPWA PRIOR TO INSTALLING UNITS TO GIVE CFPWA THE OPTION TO VERIFY INSTALLATION PROCEDURES.
 - REDUCED PRESSURE PRINCIPLE ASSEMBLY FOR DOMESTIC WATER SERVICE
 - REDUCE PRESSURE DETECTOR ASSEMBLY WILL BE UTILIZED FOR THE BACKFLOW PREVENTER ON THE FIRE SERVICE.
- IF THE CONTRACTOR DESIRES CFPWA WATER FOR CONSTRUCTION HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
- WATER: 1.5" & 2" PVC MAINS SHALL BE CONSTRUCTED USING ASTM D2241, IPS, GASKETED PIPE, SDR 21. 4"-12" PVC MAINS AND SERVICES SHALL BE CONSTRUCTED USING AWWA C-900 PVC, CL235 (DR-18).
- SANITARY SEWER: FOR PIPE SIZES 4" AND 6" PIPE SHALL BE SCH 40 CONFORMING TO THE REQUIREMENTS OF ASTM D1785 WITH SOLVENT WELD JOINTS CONFORMING TO ASTM D2672. FOR PIPE SIZES 8" THROUGH 12", PIPE SHALL BE CLASS 150, DR18 CONFORMING TO THE REQUIREMENTS OF AWWA C900 WITH ELASTOMERIC PUSH-ON JOINTS CONFORMING TO ASTM D3212 OR ASTM D3139.
- WATER AND SEWER SERVICES CANNOT BE ACTIVATED ON NEW MAINS UNTIL ENGINEER'S CERTIFICATION AND AS-BUILTS ARE RECEIVED AND "FINAL APPROVAL" ISSUED BY PUBLIC WATER SUPPLY SECTION OF NCDENR AND "FINAL ENGINEERING CERTIFICATION" ISSUED BY DIVISION OF WATER QUALITY OF NCDENR.
- PVC WATER MAINS AND POLYETHYLENE SERVICES ARE TO BE MARKED WITH NO. 10 SINGLE STRAND INSULATED COPPER WIRE INSTALLED THE ENTIRE LENGTH AND STRAPPED TO THE PIPES WITH DUCT TAPE. THE INSULATED WIRE IS TO BE STRIPPED TO BARE WIRE AND SECURED TO ALL VALVES. THIS WIRE IS TO BE ACCESSIBLE AT ALL FIRE HYDRANTS AND WATER METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
- SITE UTILITY CONTRACTOR TO PROVIDE WATER AND SANITARY SEWER SERVICE TO WITHIN 5 FEET OF THE BUILDING. CONTRACTOR SHALL COORDINATE SITE PLAN CONNECTIONS WITH THE ARCHITECTURAL BUILDING PLANS.
- MAXIMUM BENDING RADIUS FOR 8" C-900 PVC WATER MAIN BENDS IS 380' (ONE-HALF MANUFACTURER'S RECOMMENDED ALLOWABLE LONGITUDINAL BENDING).
- UNDERGROUND UTILITIES: ALL NEW UTILITIES SHALL BE INSTALLED UNDERGROUND, EXCEPT WHERE SUCH PLACEMENT IS PROHIBITED OR DEEMED IMPRACTICAL BY THE UTILITY PROVIDER. UNDERGROUND TERMINAL FACILITIES FOR STREET LIGHTING ALONG THE PUBLIC STREETS ADJACENT TO THE SUBJECT SITE SHALL BE INSTALLED BY THE DEVELOPER.
- MINIMUM OF 36" COVERAGE ABOVE ALL WATERMANS.
- MINIMUM OF 36" VERTICAL SEPARATION BETWEEN WATERLINES AND STORMDRAIN CURB INLETS
- A VARIANCE IS NOT ANTICIPATED FROM ANY NORTH CAROLINA DIVISION OF WATER QUALITY (DWQ) REQUIREMENT.
- PLANS ARE IN COMPLIANCE WITH CAPE FEAR PUBLIC UTILITY AUTHORITY TECHNICAL STANDARDS AND SPECIFICATIONS.

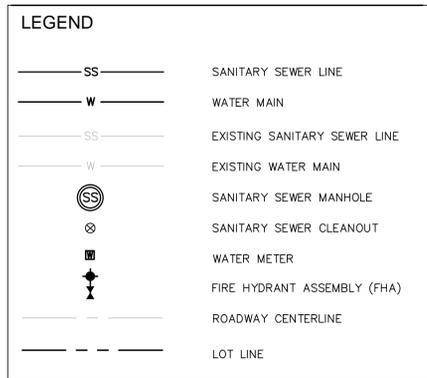


For each open utility cut of City streets, a \$325 permit shall be required from the City prior to occupancy and/or project acceptance.

STORMWATER MANAGEMENT PLAN
APPROVED
 CITY OF WILMINGTON
 ENGINEERING DEPARTMENT
 DATE _____ PERMIT # _____
 SIGNED _____

Approved Construction Plan

Name	Date
Planning	
Traffic	
Fire	



UTILITY COMPANY CONTACTS

- DUKE/PROGRESS ENERGY: SID LIVINGSTON/MARK HATFIELD (910) 452-2777
- DUKE ENERGY (TRANSMISSION): BILL WILDER (910) 772-4903
- AT&T (BELLSOUTH): JAMES BATSON (910) 452-5300
- TIME WARNER CABLE: ROBERT JOHN (910) 216-4494
- PIEDMONT NATURAL GAS: PAUL GONKA (910) 512-2841
DJ MEDEIROS (910) 431-3233
- CAPE FEAR PUBLIC UTILITY AUTHORITY (910) 332-6550

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.

FIRE PROTECTION NOTES:

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



ESTIMATED WATER & SANITARY DEMAND

PROPOSED USE	PROPOSED FLOW (GPD)	REQUIREMENT	FLOW (GAL)
RESIDENTIAL - 36 UNITS	240 (1-BEDROOM)	240 GALLONS/DAY/UNIT	8,640
RESIDENTIAL - 48 UNITS	360 (2-BEDROOM)	360 GALLONS/DAY/UNIT	17,280
RESIDENTIAL - 12 UNITS	360 (3-BEDROOM)	360 GALLONS/DAY/UNIT	4,320
TOTAL =			30,240

EXISTING WATER & SANITARY DEMAND

EXISTING USE	EXISTING FLOW (GPD)	REQUIREMENT	FLOW (GAL)
VACANT	0	0	0
TOTAL =			0

REV. NO.	DESCRIPTIONS	DATE

PRELIMINARY PLAN
NOT FOR
CONSTRUCTION

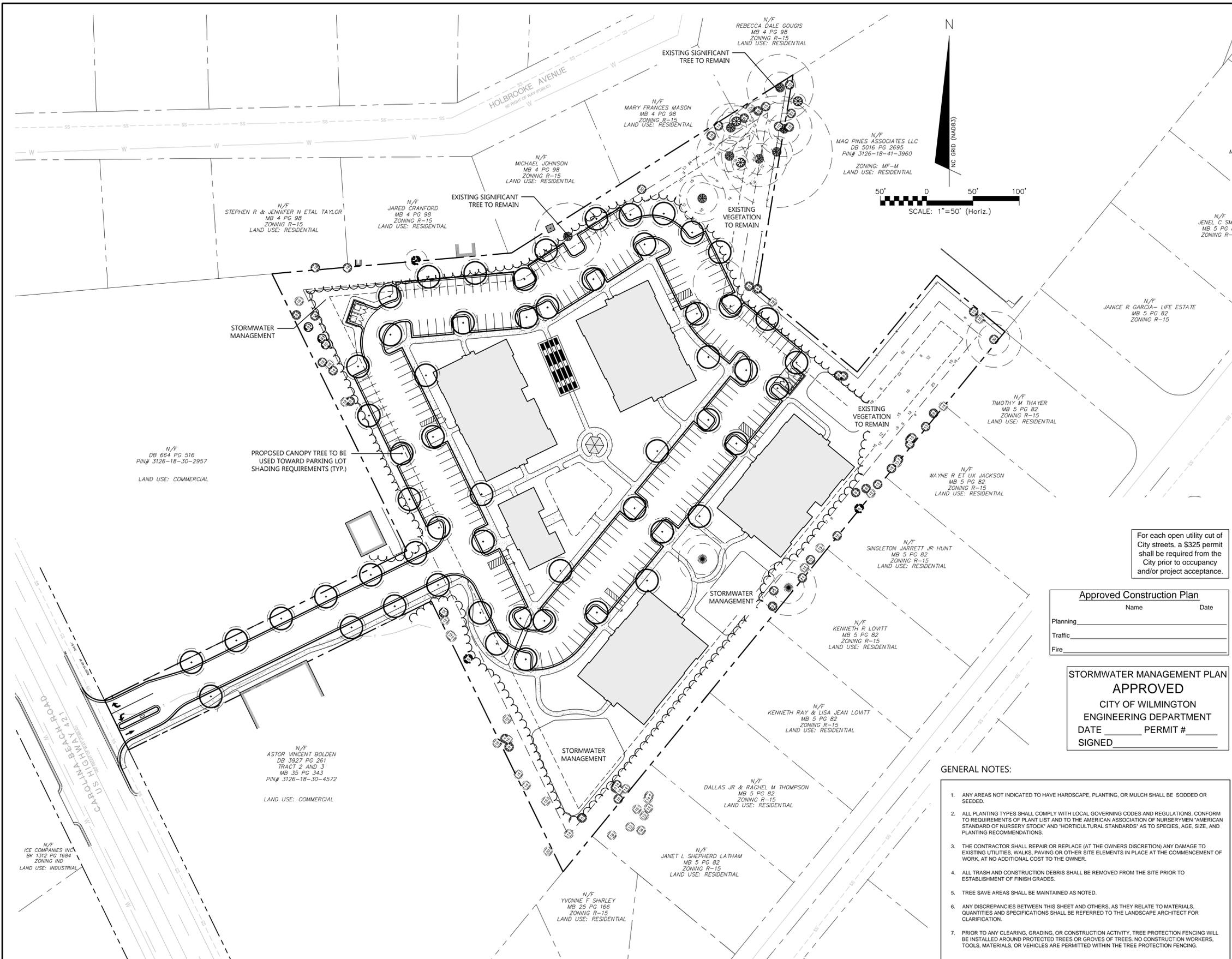


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SHIPYARD VILLAGE WILMINGTON, LLC
 2821 CAROLINA BEACH ROAD
 WILMINGTON, NORTH CAROLINA
 TOWNSHIP OF WILMINGTON
 PO BOX 29169
 GREENSBORO, NC 27429-9169

SHIPYARD VILLAGE APARTMENTS
 2821 CAROLINA BEACH ROAD
 WILMINGTON, NORTH CAROLINA
 TOWNSHIP OF WILMINGTON
UTILITY PLAN

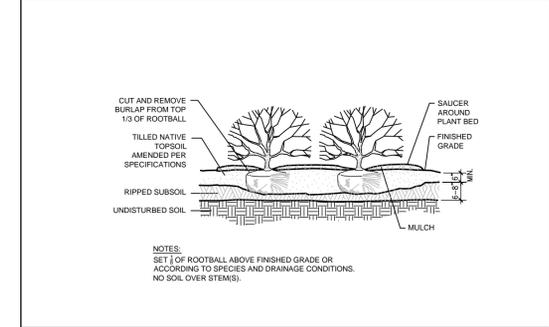
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MCE PROJ. # 07010-0001	DRAWN TCM/TSM	CHECKED RMC
DESIGNED TCM/TSM	PROJ. MGR. TSM	REVISION
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION		



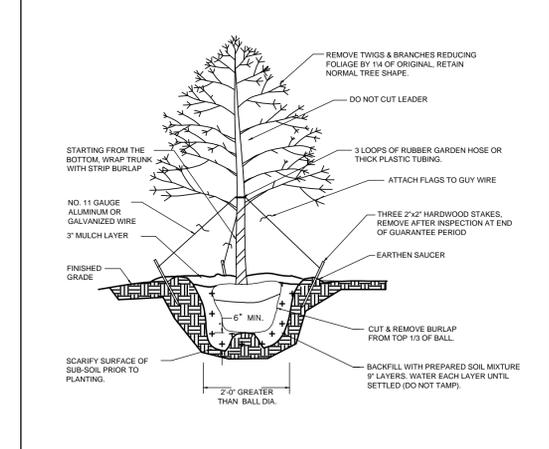
CALCULATIONS:

SEC. 18-481 PARKING LOT
INTERIOR PARKING AREA = 67,517 SF (EXCLUSIVE OF R/O/W)
SHADING REQUIRED (20%) = 13,503 SF SHADING PROPOSED (20%) = 13,503 SF
LANDSCAPED ISLANDS PROPOSED ARE A MINIMUM OF 12' X 18' (216 SF) EACH CANOPY TREE SHALL HAVE A MINIMUM PLANTING AREA OF 200 SF NO PARKING SPACE SHALL BE LOCATED FURTHER THAN 120' FROM A PLANTED ISLAND
SEC. 18-498 BUFFER YARD
SEE SITE PLAN - SITE DATA TABLE FOR CALCULATIONS BUFFER YARDS WILL BE PLANTED IN ACCORDANCE WITH SEC. 18-503
SEC. 18-460 MITIGATION
PROTECTED TREES TO BE REMOVED ARE WITHIN THE AREA OF ESSENTIAL SITE IMPROVEMENTS. NO MITIGATION REQUIRED.
REGULATED TREES TO BE REMOVED ARE WITHIN THE AREA OF ESSENTIAL SITE IMPROVEMENTS. NO MITIGATION REQUIRED.
SEC. 18-477 STREETYARD
NOT APPLICABLE
SEC. 18-490 FOUNDATION
AREA REQUIRED = 9,940 SF
[388 LF BUILDING FACADE TYPE I X 50' HEIGHT X 12%] [394 LF BUILDING FACADE TYPE II X 50' HEIGHT X 12%] [242 LF BUILDING FACADE CLUB X 15' HEIGHT X 12%]
AREA PROPOSED = 9,940 SF
DISTURBED AREA
DISTURBED AREA = 6.06 AC (TOTAL INCLUDING R/O/W)
TREES PER ACRE REQUIRED TO BE PLANTED (15) = 37 TREES PROPOSED = 37
NOTE
ALL REQUIRED PLANTINGS WILL BE OF A SPECIES LISTED IN THE APPROVED PLANTINGS LIST PER THE CITY OF WILMINGTON TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL.

SHRUB PLANTING DETAIL NOT TO SCALE



TREE PLANTING DETAIL NOT TO SCALE



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Approved Construction Plan	
Name	Date
Planning	
Traffic	
Fire	

STORMWATER MANAGEMENT PLAN APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

- GENERAL NOTES:**
- ANY AREAS NOT INDICATED TO HAVE HARDSCAPE, PLANTING, OR MULCH SHALL BE SODDED OR SEEDED.
 - ALL PLANTING TYPES SHALL COMPLY WITH LOCAL GOVERNING CODES AND REGULATIONS, CONFORM TO REQUIREMENTS OF PLANT LIST AND TO THE AMERICAN ASSOCIATION OF NURSERMEN "AMERICAN STANDARD OF NURSERY STOCK" AND "HORTICULTURAL STANDARDS" AS TO SPECIES, AGE, SIZE, AND PLANTING RECOMMENDATIONS.
 - THE CONTRACTOR SHALL REPAIR OR REPLACE (AT THE OWNERS DISCRETION) ANY DAMAGE TO EXISTING UTILITIES, WALKS, PAVING OR OTHER SITE ELEMENTS IN PLACE AT THE COMMENCEMENT OF WORK, AT NO ADDITIONAL COST TO THE OWNER.
 - ALL TRASH AND CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SITE PRIOR TO ESTABLISHMENT OF FINISH GRADES.
 - TREE SAVE AREAS SHALL BE MAINTAINED AS NOTED.
 - ANY DISCREPANCIES BETWEEN THIS SHEET AND OTHERS, AS THEY RELATE TO MATERIALS, QUANTITIES AND SPECIFICATIONS SHALL BE REFERRED TO THE LANDSCAPE ARCHITECT FOR CLARIFICATION.
 - PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION FENCING WILL BE INSTALLED AROUND PROTECTED TREES OR GROVES OF TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

REV. NO.	DESCRIPTIONS	DATE

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SHIPYARD VILLAGE APARTMENTS
2821 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON
CONCEPT LANDSCAPE PLAN

DATE: 10 FEB 2016	SCALE: 1"=50'	M&C FILE NUMBER: CL-101
M&C PROJ. #: 07010-0001	HORIZONTAL: 1"=50'	DRAWING NUMBER: 10
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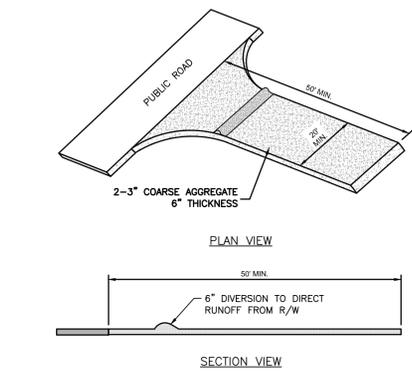
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NPDES PERMIT NCG 010000 PLAN NOTES:

1. ACCORDING TO NPDES NCG 010000 EFFECTIVE AUGUST 3, 2011: THE PLANS SHALL CONFORM TO GROUND STABILIZATION REQUIREMENTS OF SECTION II.B.2 GROUND STABILIZATION.
2. ACCORDING TO NPDES NCG 010000 EFFECTIVE AUGUST 3, 2011: THE SEDIMENT BASINS SHALL CONFORM TO SURFACE WITHDRAWAL REQUIREMENTS OF SECTION II.B.4 SEDIMENT BASINS.

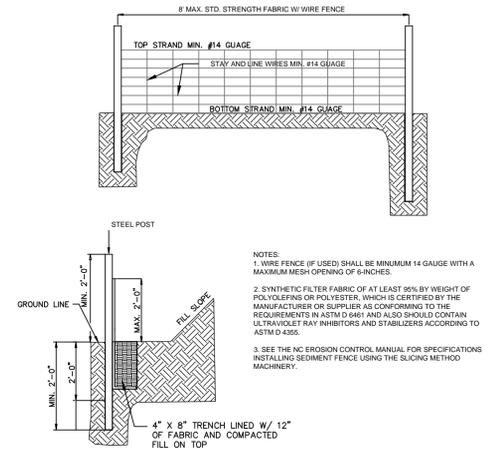
VEGETATION PLAN SPECIFICATIONS

1. ALL DISTURBED AREAS SHALL BE DRESSED TO THE EXISTING TYPICAL SECTION AND TILLED OR RIPPED TO A MIN. DEPTH OF 4-INCHES. THE TOP 2 INCHES SHALL BE PULVERIZED TO PROVIDE A UNIFORM SEEDBED.
2. LIME AND FERTILIZER SHOULD BE INCORPORATED INTO THE SOIL PRIOR TO SEEDING OR SOD. FOLLOW SOIL TESTS OR AS FOLLOWS:
 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
3. FOR OPEN AREAS, USE STRAW MULCH AS A MINIMUM FOR STABILIZATION IF THE AREAS CANNOT BE SEEDED ACCORDING TO THE PLANTING DATES. OTHER MULCHING PRACTICES ARE LISTED IN SECTION 6.14 OF THE EROSION CONTROL MANUAL FOR MULCHING.
4. FOR DITCHES AND SLOPES, USE EXCELSIOR MATTING AS A MINIMUM FOR STABILIZATION IF THE AREAS CANNOT BE SEEDED ACCORDING TO THE PLANTING DATES. OTHER MATTING PRACTICES ARE LISTED IN SECTION 6.14 OF THE EROSION CONTROL MANUAL FOR MULCHING.
5. CHEMICAL STABILIZERS MAY BE USED, BUT IT IS NOT RECOMMENDED FOR VEGETATION GROWTH. REFER TO THE EROSION CONTROL MANUAL FOR A LIST OF STABILIZERS AND FOLLOW MANUFACTURER'S SPECIFICATIONS.
6. THE FOLLOWING TABLES ARE REFERENCED FROM NC EROSION CONTROL MANUAL SEC. 6.10 AND 6.11, AND THE STABILIZATION TABLE IS REFERENCED FROM NPDES NCG 010000.

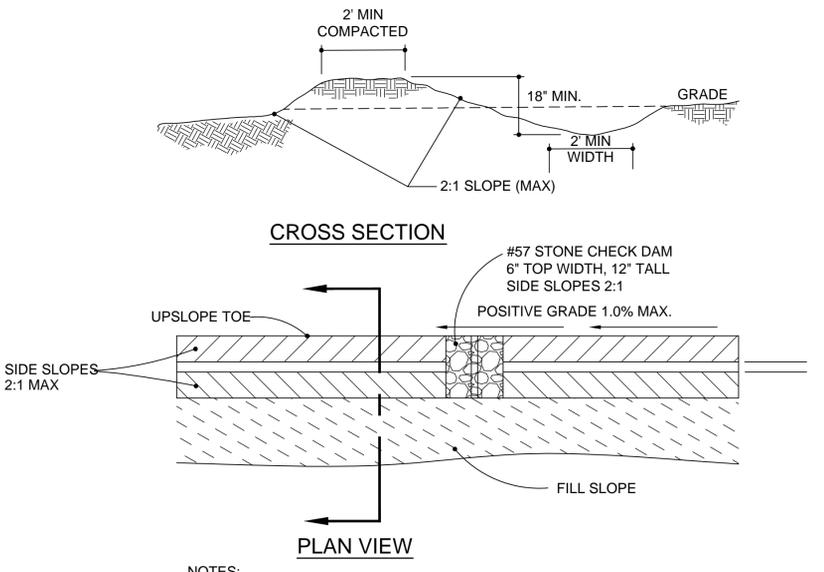


5 TEMPORARY CONSTRUCTION ENTRANCE
 CE501 NOT TO SCALE
 NCDEMLR PRACTICE STD. 6.06

2 STANDARD EROSION CONTROL NOTES
 CE501

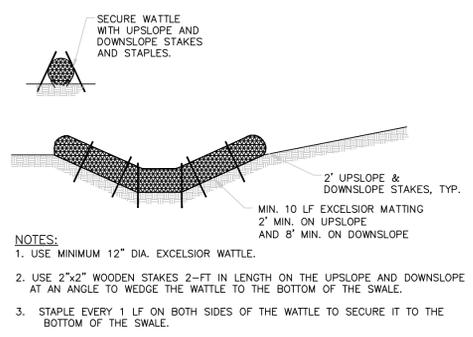


4 TEMPORARY SILT FENCE
 CS501 NOT TO SCALE

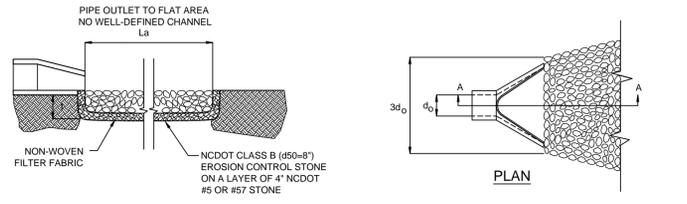


- NOTES:**
1. TEMP. DIVERSION DITCHES SHALL DRAIN INTO SEDIMENT BASINS AND NOT OFF-SITE AS SHOWN.
 2. TEMP. DIVERSION DITCHES SHALL BE CONVERTED INTO PERMANENT CONVEYANCE SWALES THEREFORE LOCATE APPROPRIATELY ALONGSIDE ROADS.
 3. LINING SHALL BE EXCELSIOR MATTING AND INSTALLED ACCORDING TO NCDENR STD. EROSION CONTROL PRACTICES. TEMPORARY DIVERSION 1-4 AND 6 REQUIRE EXCELSIOR MATTING.

1 TEMPORARY DIVERSION DITCH
 CE501 NOT TO SCALE
 NCDEMLR PRACTICE STD. 6.20



6 TEMPORARY WATTLE (CHECK DAM)
 CE501 NOT TO SCALE
 NCDEMLR PRACTICE



- NOTES:**
1. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.

RIP-RAP APRON SCHEDULE						
SEC PHASE	RIPRAP LOCATIONS	PIPE DIA. (IN.)	LENGTH, L _a (ft)	UPSTREAM WIDTH, 3xDIA (FT.)	DOWNSTREAM WIDTH, W (FT.)	STONE THICKNESS t (IN.)
1&2	TDB-1	6	6	3	VARIES WITH SWALE	9"

3 PIPE OUTLET PROTECTION
 CE501 NOT TO SCALE

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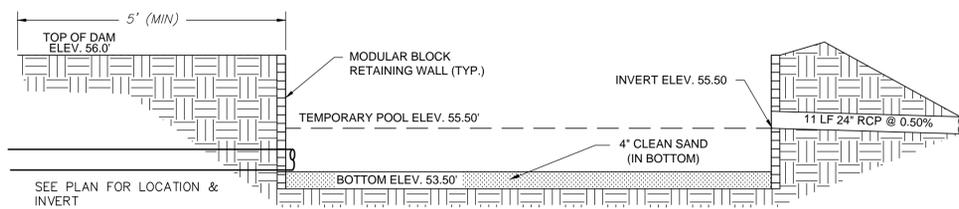
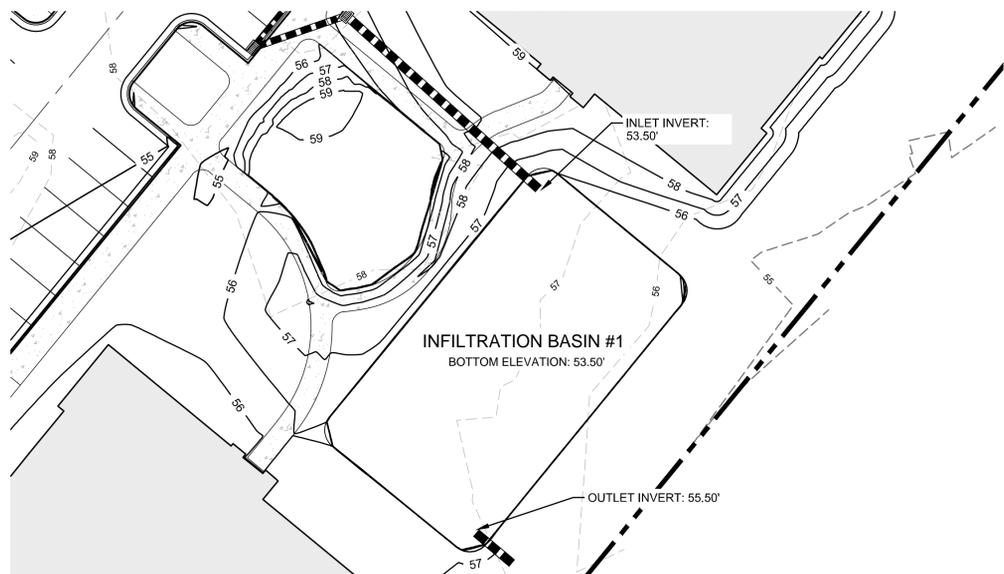
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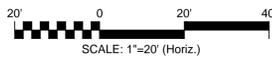
EROSION CONTROL DETAILS

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DRAWN: TCM/TSM	VERTICAL: N/A	
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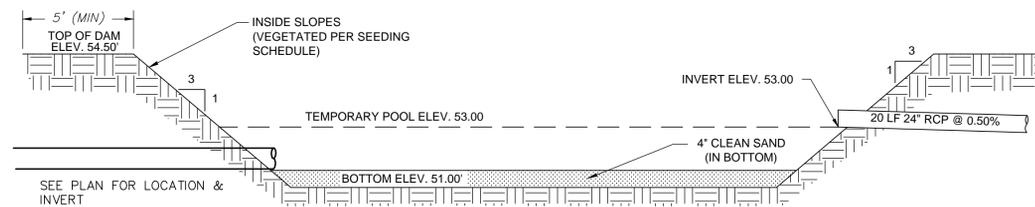
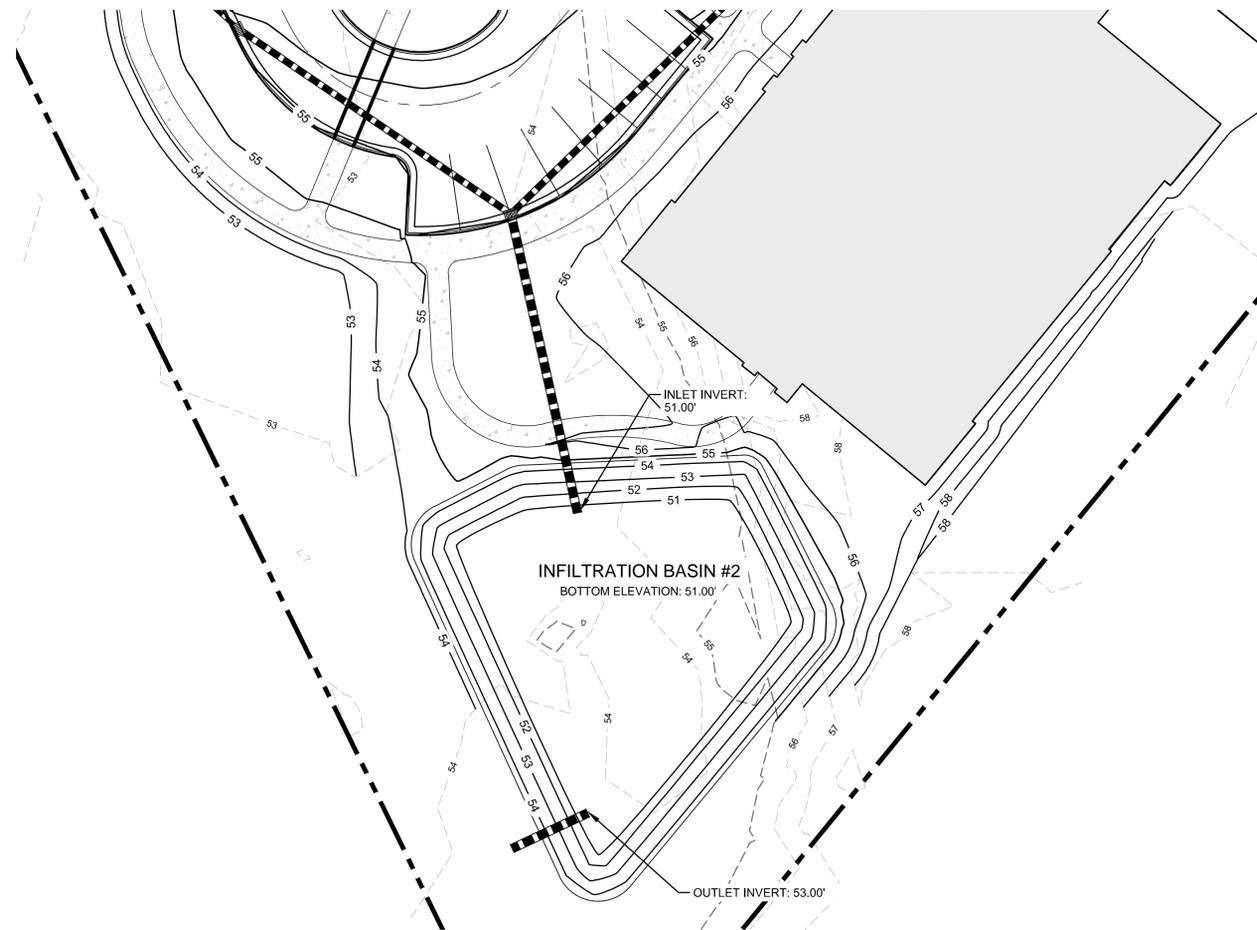


INFILTRATION BASIN #1
NOT TO SCALE

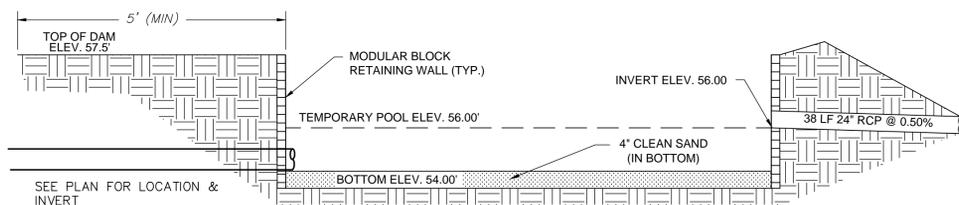
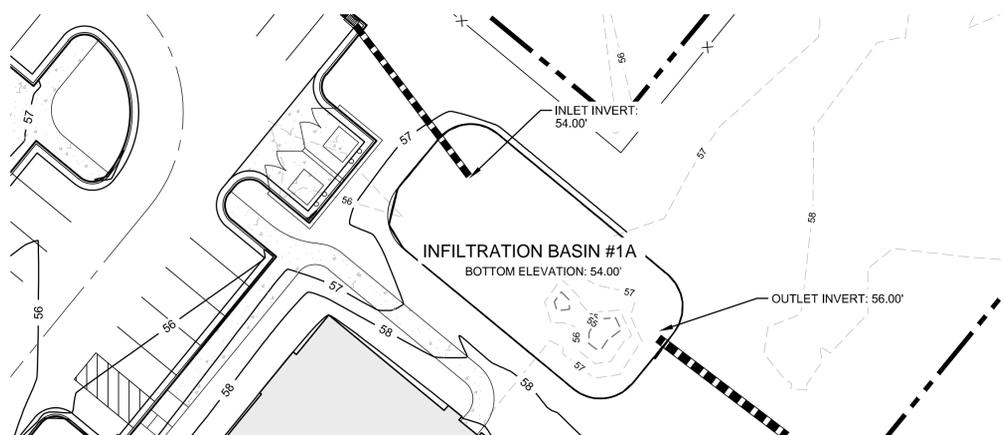


NOTES

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



INFILTRATION BASIN #2
NOT TO SCALE



INFILTRATION BASIN #1A
NOT TO SCALE

1 inch
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ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

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

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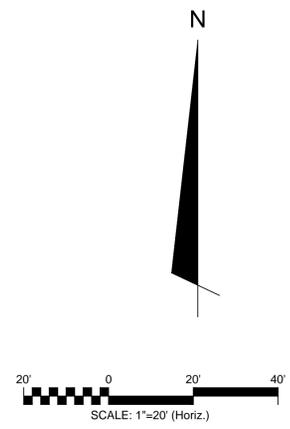
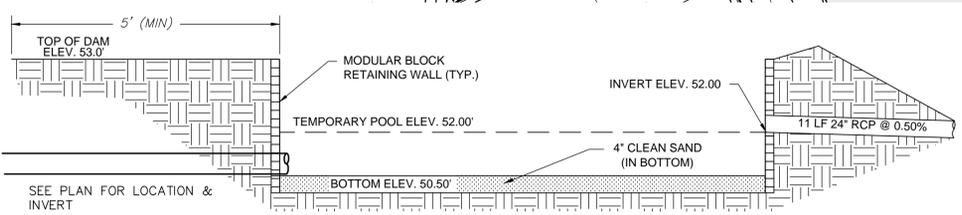
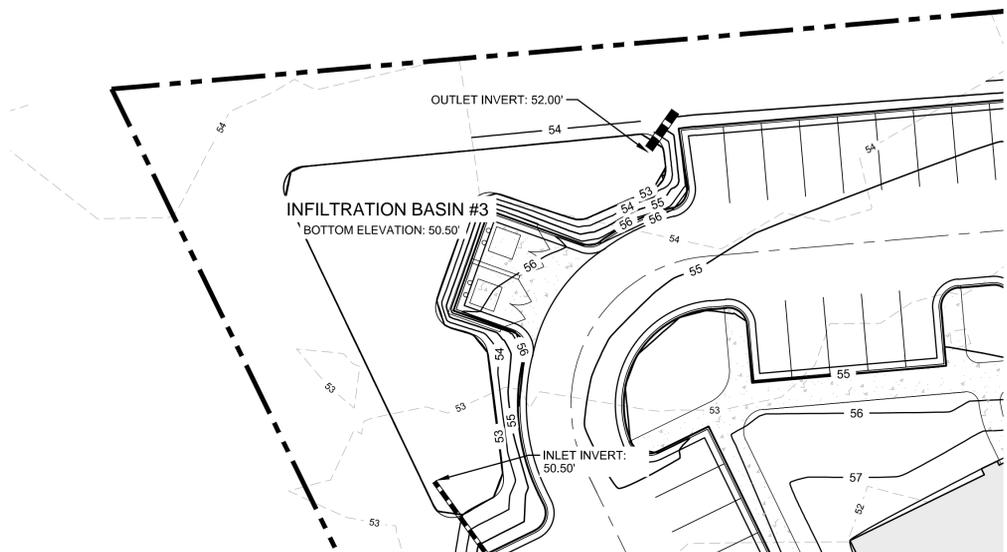
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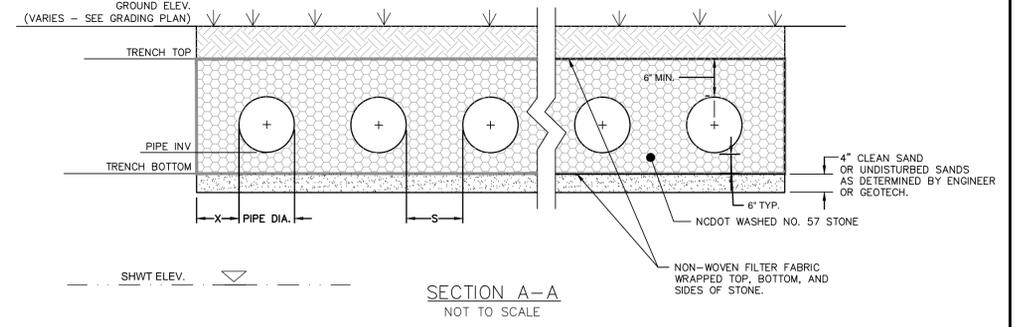
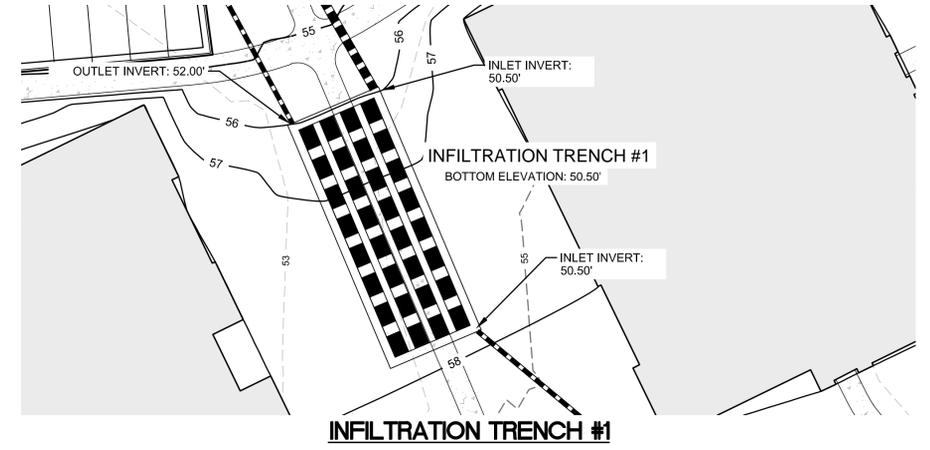
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STORMWATER MANAGEMENT DETAILS

DATE: 10 FEB 2016	SCALE: HORIZONTAL: N/A, VERTICAL: N/A	MAC FILE NUMBER: CN501
MCE PROJ. #: 07010-0001		DRAWING NUMBER: 14
DRAWN: TCM/TSM		
DESIGNED: TCM/TSM		
CHECKED: RMC		
PROJ. MGR.: TSM		
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION		

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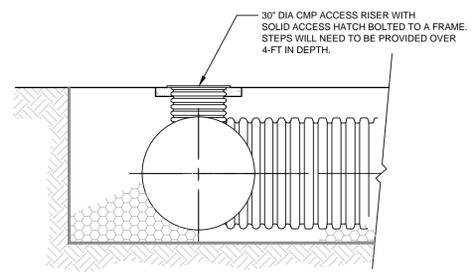
INFILTRATION TRENCH SYSTEM TABLE	
DESIGN	INFILTRATION TRENCH #1
# OF RUNS	4
PIPE DIAMETER (IN)	42" CMP
MIN. X (IN)	1/2 DIA. OF PIPE
MIN. S (IN)	1/2 DIA. OF PIPE
TRENCH WIDTH (FT)	23.25'
TRENCH LENGTH (FT)	62'
SHWT ELEVATION	48.50'
TRENCH BOTTOM ELEVATION	50.50'
PIPE TRENCH INVERT	51.00'
TRENCH TOP ELEVATION	55.00'
10-YR WSEL	53.31'
25-YR WSEL	53.72'
50-YR WSEL	53.65'



NOTES

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

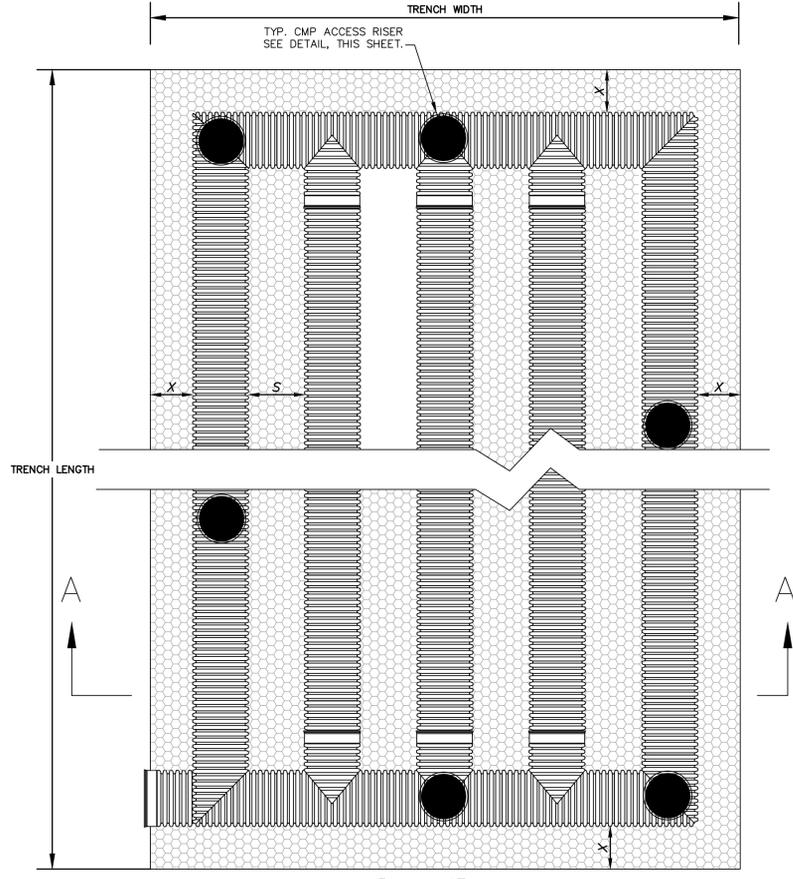
INFILTRATION BASIN #3
NOT TO SCALE



TYP. CMP ACCESS RISER
NOT TO SCALE

NOTES:

1. INFILTRATION TRENCH PIPE SHALL BE CONTECH PERFORATED 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.
5. SHWT ELEVATIONS TAKEN FROM SITE & SOILS VALUATION REPORT BY ECS CAROLINAS, LLP DATED JANUARY 20, 2016 FOR SHIPYARD VILLAGE WILMINGTON, LLC.
6. EXISTING ELEVATIONS TAKEN FROM TOPOGRAPHY SURVEY BY MCKIM & CREED, INC. DATED APRIL 22, 2014.



TYP. INFILTRATION TRENCH SYSTEM
NOT TO SCALE

PLAN VIEW
NOT TO SCALE

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.

STORMWATER MANAGEMENT PLAN
APPROVED
CITY OF WILMINGTON
ENGINEERING DEPARTMENT
DATE _____ PERMIT # _____
SIGNED _____

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

REV. NO.	DESCRIPTIONS	DATE

PRELIMINARY PLAN
NOT FOR
CONSTRUCTION

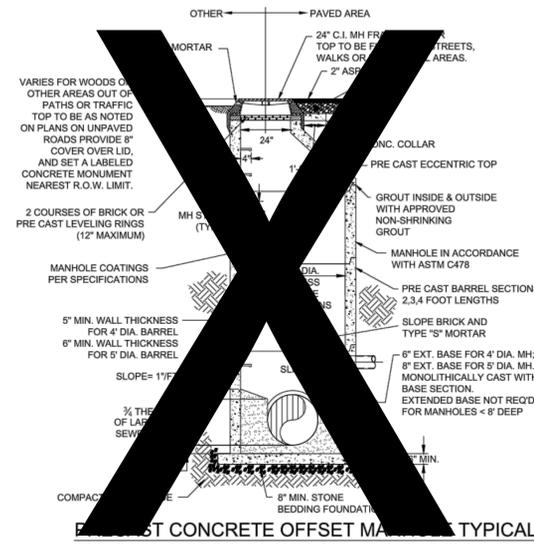


MCKIM & CREED
243 North Front Street
Wilmington, NC 28401
Phone: (910)343-1048, Fax: (910)251-8282
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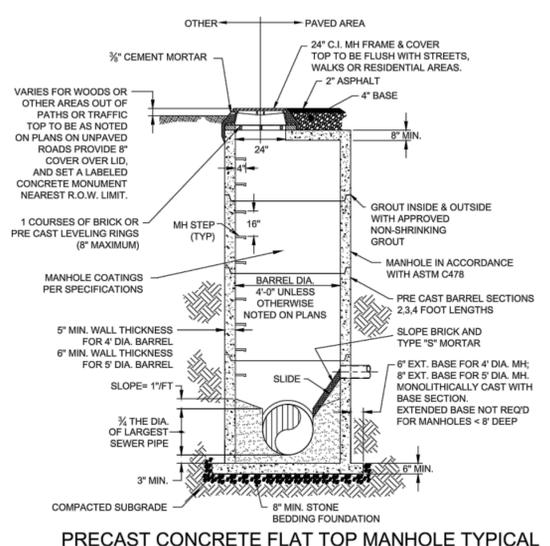
SHIPYARD VILLAGE WILMINGTON, LLC
PO BOX 29169
GREENSBORO, NC 27429-9169

SHIPYARD VILLAGE APARTMENTS
2821 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON
STORMWATER MANAGEMENT DETAILS

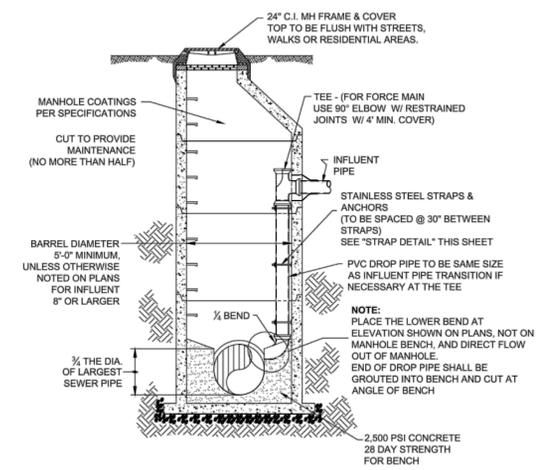
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DESIGNED: TCM/TSM	CHECKED: RMC	
PROJ. MGR.: TSM		
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION		



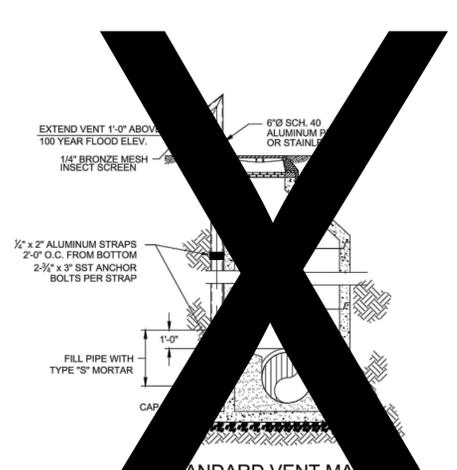
PRECAST CONCRETE OFFSET MANHOLE TYPICAL
(LESS THAN 30" DROP)
NOT TO SCALE



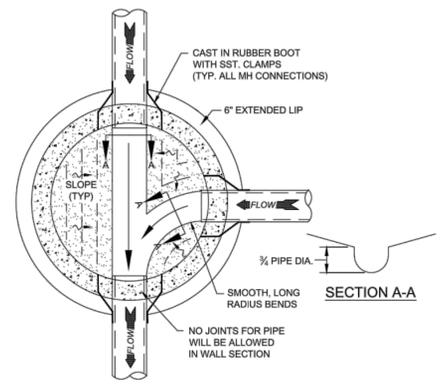
PRECAST CONCRETE FLAT TOP MANHOLE TYPICAL
(LESS THAN 30" DROP)
NOT TO SCALE



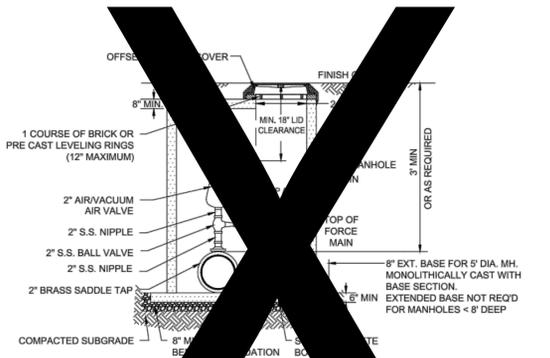
DROP MANHOLE
(MORE THAN 30" DROP)
NOT TO SCALE



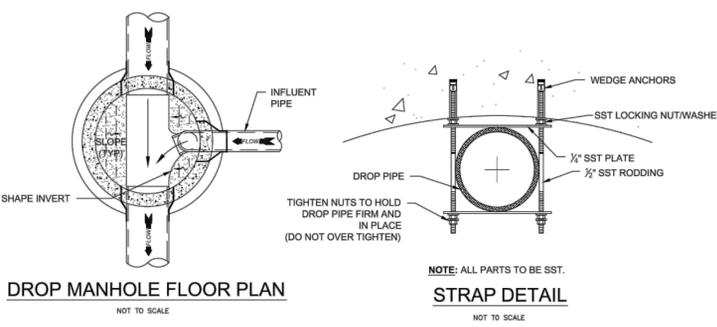
STANDARD VENT MANHOLE
NOT TO SCALE



MANHOLE FLOOR PLAN
NOT TO SCALE



MANHOLE FLOOR PLAN WITH VACUUM AND AIR RELEASE COMBINATION VALVE
NOT TO SCALE



DROP MANHOLE FLOOR PLAN
NOT TO SCALE

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.
- 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 & STOCKPILE AREAS (TO ARRANGE AND INSURE 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

CFPUA SANITARY SEWER		DATE: 1/8/12
STANDARD DETAILS		SCALE: N/A
CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560		DRAWN BY: CFPUA
UTILITY DETAILS		CHECKED BY: CFPUA
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION		PROJECT NO.:
REVISION		SHEET NO: SSD-1

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REV. NO.	DESCRIPTION	DATE

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CONSTRUCTION



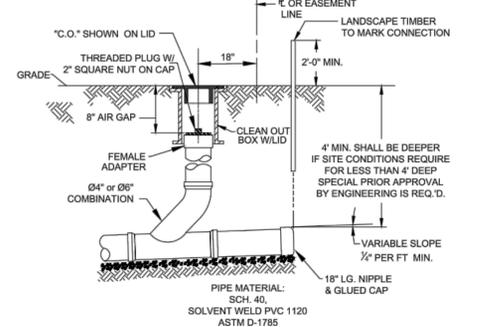
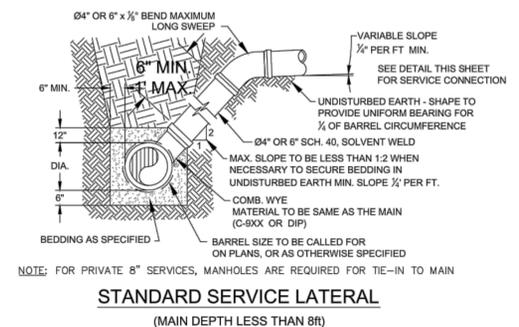
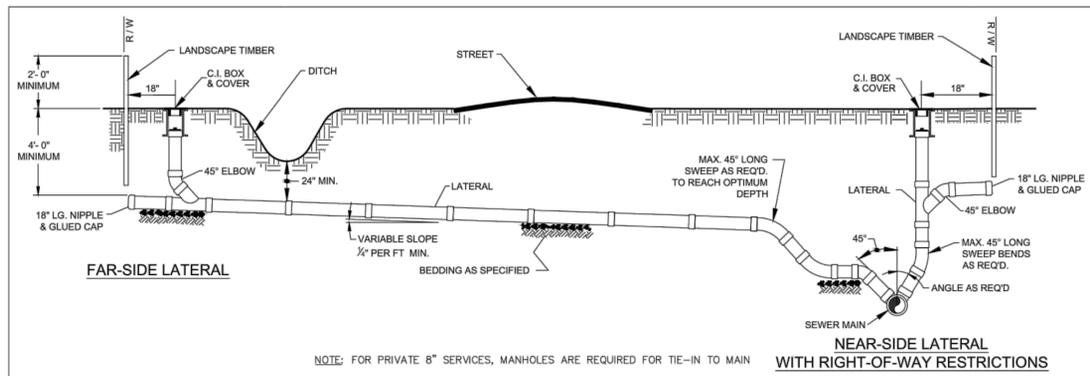
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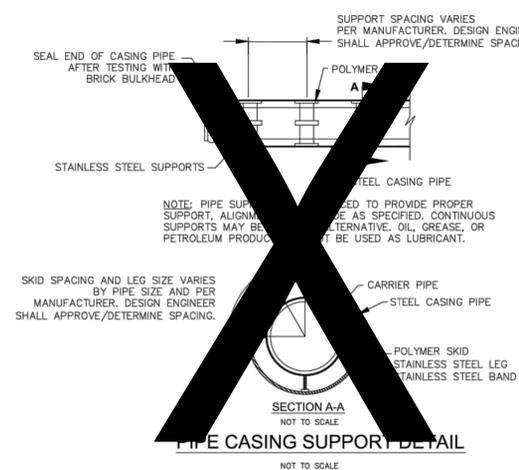
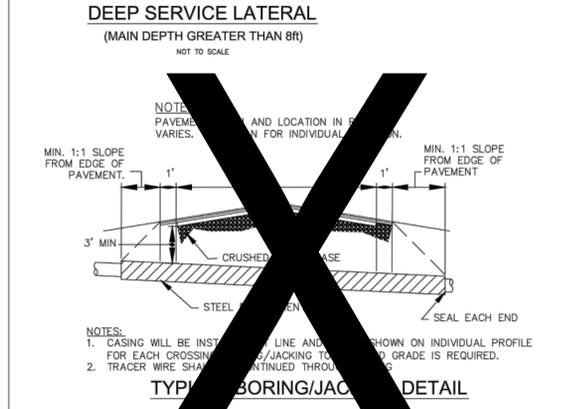
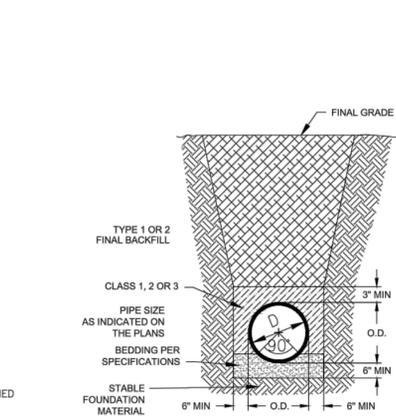
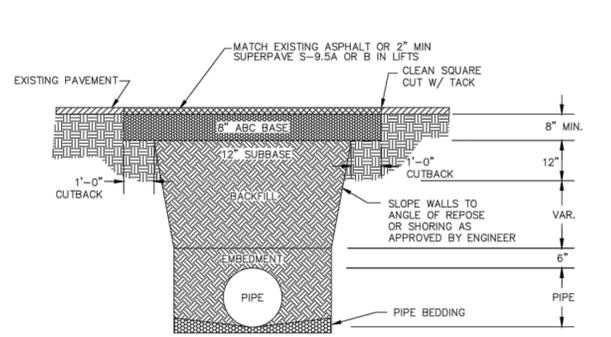
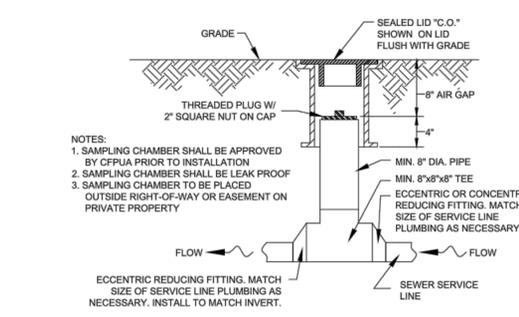
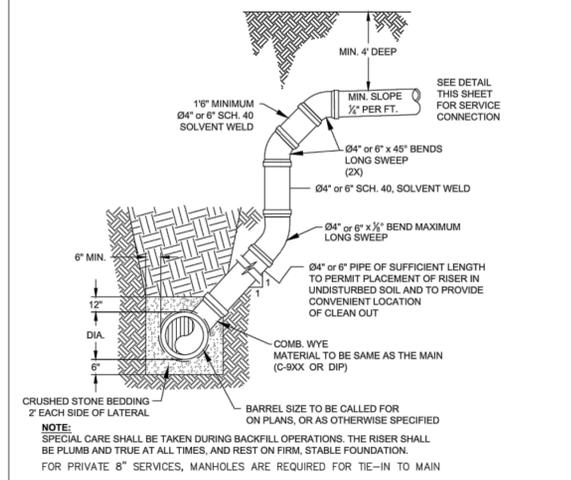
SHIPYARD VILLAGE WILMINGTON, LLC
2821 CAROLINA BEACH ROAD
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PO BOX 29169
GREENSBORO, NC 27429-9169

SHIPYARD VILLAGE APARTMENTS
2821 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON

DATE:	10 FEB 2016	SCALE:	HORIZONTAL: N/A	MAC FILE NUMBER:	CU501
MCE PROJ. #:	07010-0001	DESIGNED:	TCM/TSM	DRAWING NUMBER:	N/A
DRAWN:	TCM/TSM	CHECKED:	RMC	VERTICAL:	N/A
PROJ. MGR.:	TSM	CHECKED:	RMC	PROJECT NO.:	17
STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION					



STANDARD SERVICE CONNECTION TO SANITARY SEWER
NOT TO SCALE



- NOTES:**
- BACKFILL SHALL BE SUITABLE MATERIAL THAT IS FREE FROM HEAVY CLAY, GUMBOS, DEBRIS, ORGANICS AND LITTLE TO NO EXCESSIVE MOISTURE.
 - SELECT BACKFILL MAY BE SUBSTITUTED OR REQUIRED BY CITY TO ACHIEVE COMPACTION, (I.E. #57, ABC, CRUSHED LIMESTONE, CLEAN SAND, FLOWABLE FILL, ETC).
 - 8-INCH OF ABC BASE MATERIAL SHALL BE USED ON CITY STREETS.
 - BACKFILL AND BASE MATERIALS SHALL BE COMPACTED 12" MINIMUM LIFTS
 - 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.
 - ALL APPROVED CASTINGS SHALL BE SET FLUSH TO GRADE AND SUPPORTED IF APPLICABLE.
 - ABC BASE AND SUBBASE COMPACTED TO 98% AND BACKFILL AND EMBEDMENT COMPACTED TO 90% AS DETERMINED BY THE MODIFIED PROCTOR AASHTO METHOD T-99.
 - 1-FOOT CUTBACKS OF ASPHALT SHALL BE PREPARED ON UNDISTURBED SOIL. MINIMUM ASPHALT DENSITY IS 90%.

CL 50 DUCTILE IRON DR 18 PVC PIPE TRENCH DETAIL
NOT TO SCALE

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

REV.	DESCRIPTION	DATE
1	SAMPLING CHAMBER REVISED	10/28/12

CFPUA SANITARY SEWER

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: SSD-2

REV. NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
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SHIPYARD VILLAGE APARTMENTS
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WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON

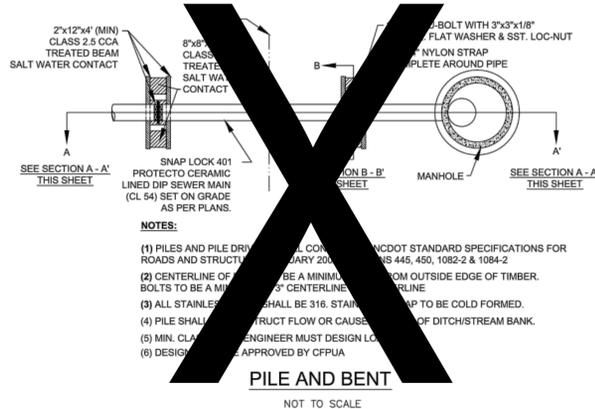
UTILITY DETAILS

DATE: 10 FEB 2016
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DRAWN: TCM/TSM
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PROJ. MGR: TSM

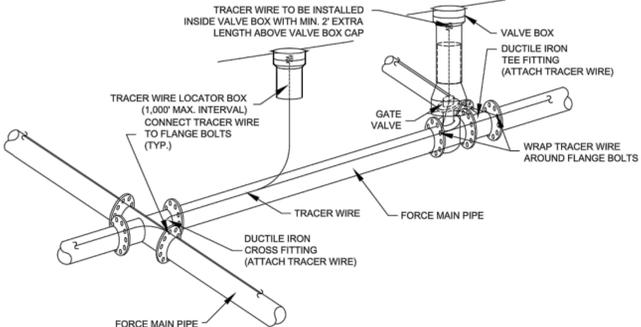
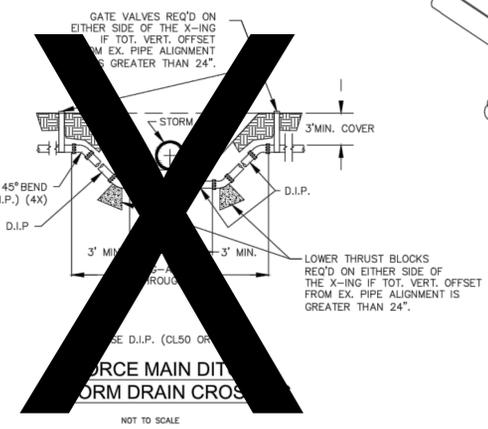
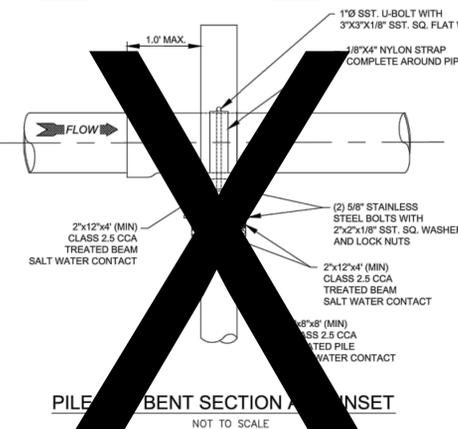
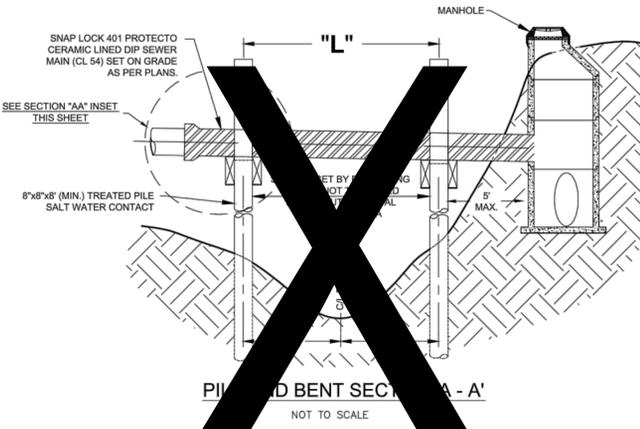
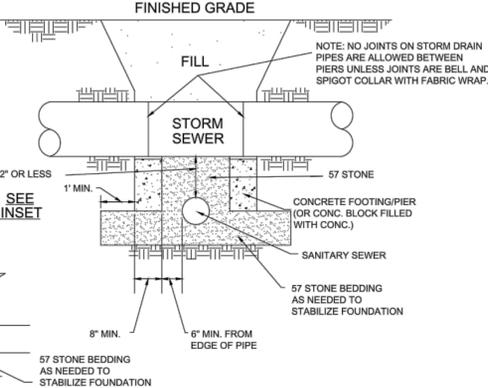
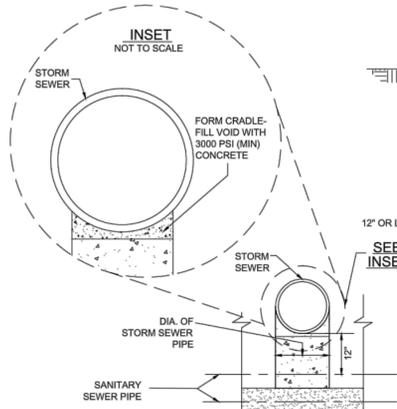
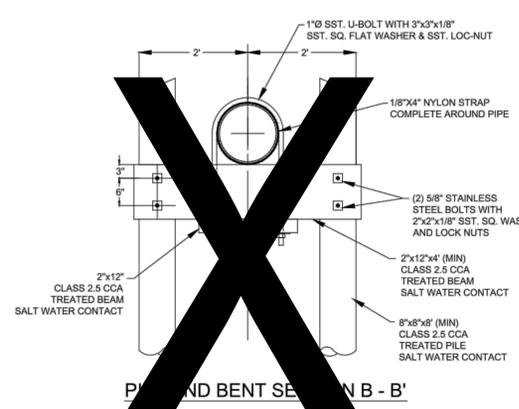
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VERTICAL: N/A

MCE FILE NUMBER: CU502
DRAWING NUMBER: 18

STATUS: PRELIMINARY TRC PLANS
NOT FOR CONSTRUCTION



- NOTES:**
- (1) PILES AND PILE DRIVING SHALL COMPLY WITH STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, SECOND EDITION, 2002, SECTIONS 445, 450, 1082-2 & 1084-2.
 - (2) CENTERLINE OF PILE SHALL BE A MINIMUM 3" FROM OUTSIDE EDGE OF TIMBER.
 - (3) ALL STAINLESS STEEL SHALL BE 316. STAINLESS STEEL SHALL BE COLD FORMED.
 - (4) PILE SHALL BE DESIGNED TO RESIST FLOW OR CAUSE OF DITCH/STREAM BANK.
 - (5) MIN. CLASSIFICATION ENGINEER MUST DESIGN LOADS APPROVED BY CFPUA.
 - (6) DESIGN APPROVED BY CFPUA.



- NOTES:**
1. TRACER WIRE SHALL BE #10 COPPER SOLID CORE COPPER WIRE WITH GAS AND OIL RESISTANT INSULATION.
 2. WIRE SHALL BE STRAPPED TO ALL PVC FORCE MAIN PIPING WITH DUCT TAPE AT 12-FT. INTERVALS.
 3. SECURE WIRE TO ALL TEE AND CROSS FITTINGS.
 4. ALL WIRE SPLICES SHALL HAVE WATER PROOF WIRE CONNECTIONS.

- GENERAL NOTES:**
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THE DETAILS SHOWN HEREON SUPERCEDE CFPUA WRITTEN TECHNICAL SPECIFICATIONS VERSIONS 1.00 - 1.04

REV:	DESCRIPTION:	DATE:

CFPUA SANITARY SEWER		DATE: 1/8/12
STANDARD DETAILS		SCALE: N/A
CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560		DRAWN BY: CFPUA
		CHECKED BY: CFPUA
SHEET NO: SSD-3		PROJECT NO.:

REV. NO.	DESCRIPTION	DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION



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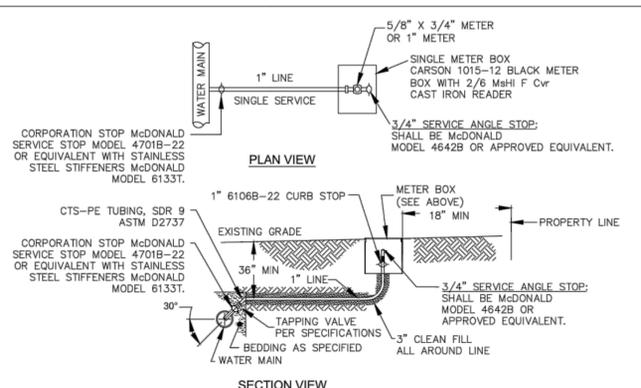
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UTILITY DETAILS

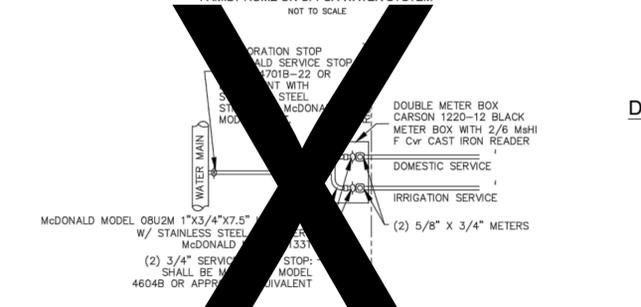
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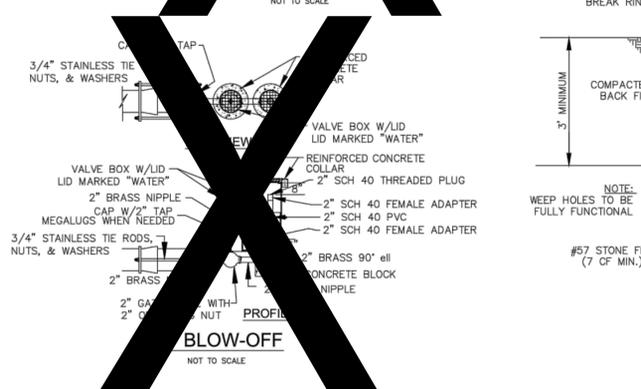


NOTES:
 1. NO JOINT SHALL BE INSTALLED BETWEEN THE MAIN SERVICE TAP AND THE METER STOP. ALL SERVICES SHALL BE INSTALLED PERPENDICULAR TO MAIN.
 2. SERVICE SADDLES ON PVC MAINS SHALL BE WIDE BAND BRASS BODY; SADDLE McDONALD 3801 OR EQUIVALENT.
 3. METER BOXES SUSCEPTIBLE TO TRAFFIC SHALL CONFORM TO ASTM A48, CLASS 30B AND AASHTO H20 LOAD RATING STANDARDS (SIP MODEL 4240 OR APPROVED EQUIVALENT)

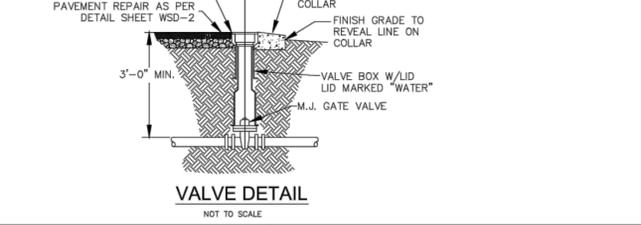
SINGLE SERVICE CONNECTION
 TYPICAL WATER SERVICE CONNECTION FOR RESIDENTIAL SINGLE FAMILY HOME ON CFPWA WATER SYSTEM



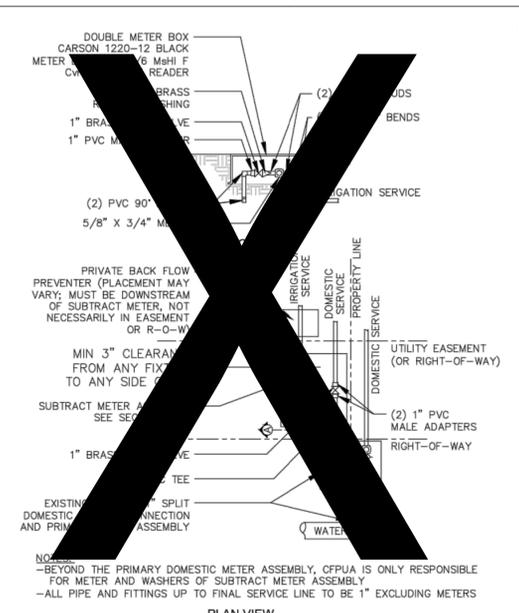
DOUBLE SERVICE CONNECTION
 (MULTIPLE DOMESTIC SERVICES PER TAP)



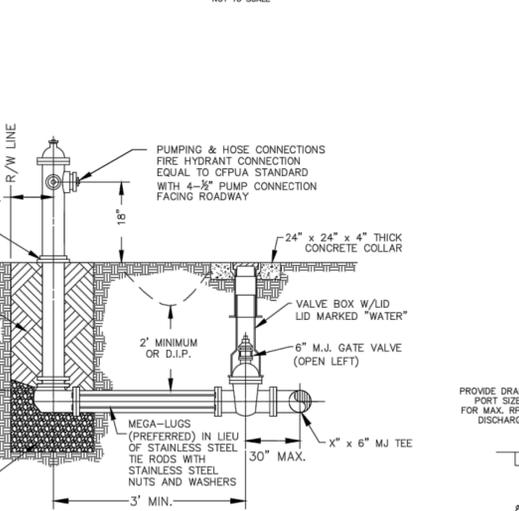
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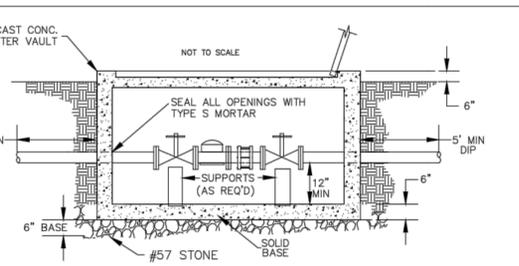
VALVE DETAIL



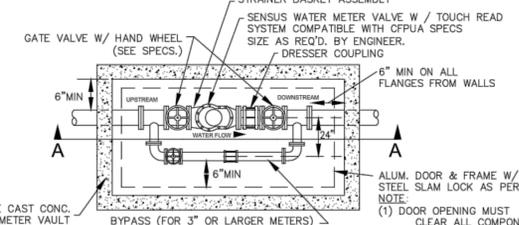
DOUBLE SERVICE CONNECTION USING SUBTRACT METER
 (MULTIPLE DOMESTIC SERVICES PER TAP)



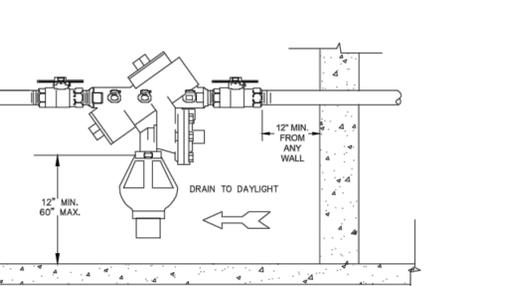
FIRE HYDRANT ASSEMBLY



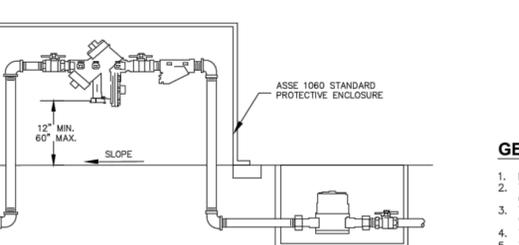
METER VAULT SECTION A-A



WATER METER VAULT
 FOR WATER METERS LARGER THAN 2"



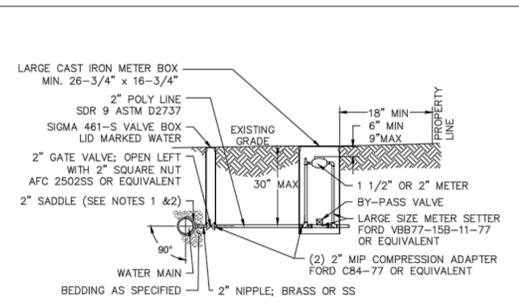
INDOOR HORIZONTAL INSTALLATION



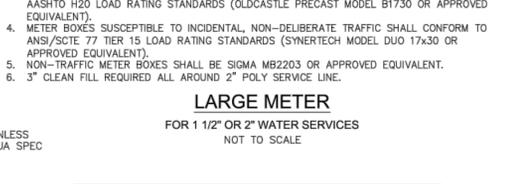
OUTDOOR HORIZONTAL INSTALLATION

REDUCED PRESSURE PRINCIPLE ASSEMBLY

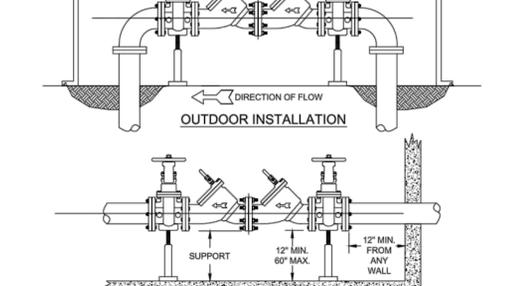
REV.	DESCRIPTION:	DATE:
1	Single Service Connection, Double Service Connection, and Large Meter Revised	10/26/12



LARGE METER
 FOR 1 1/2" OR 2" WATER SERVICES



OUTDOOR INSTALLATION



INDOOR INSTALLATION

DOUBLE CHECK VALVE ASSEMBLY

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 & 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

CFPWA WATER DISTRIBUTION SYSTEM

DATE: 1/9/12
 SCALE: N/A
 DRAWN BY: CFPWA
 CHECKED BY: CFPWA
 PROJECT NO.:
 SHEET NO: WSD-1

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

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REV.	DESCRIPTION:	DATE:

PRELIMINARY PLAN
 NOT FOR CONSTRUCTION



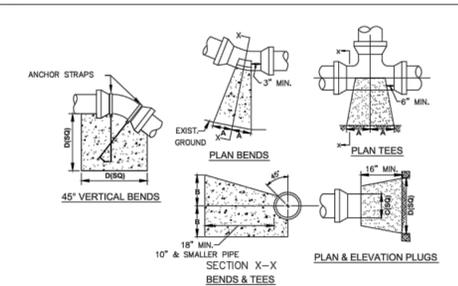
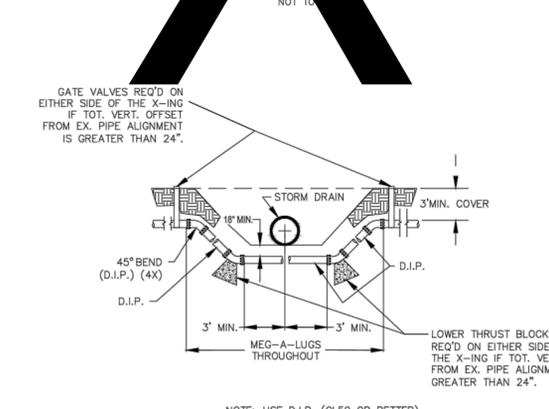
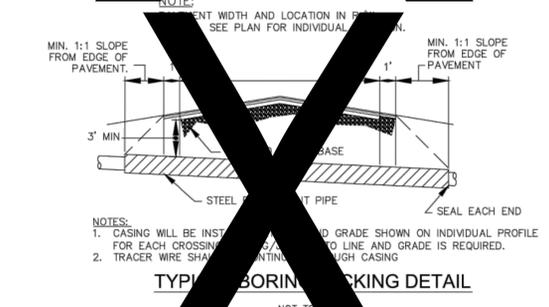
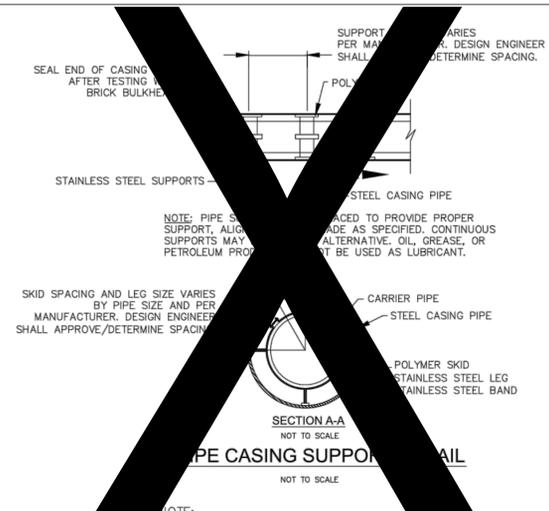
MCKIM & CREED
 243 North Front Street
 Wilmington, NC 28401
 Phone: (910)343-1048, Fax: (910)251-8282
 NC LICENSE F-1222
 www.mckimcreed.com

SHIPYARD VILLAGE WILMINGTON, LLC
 PO BOX 29169
 GREENSBORO, NC 27429-9169

SHIPYARD VILLAGE APARTMENTS
 2821 CAROLINA BEACH ROAD
 WILMINGTON, NORTH CAROLINA
 TOWNSHIP OF WILMINGTON

UTILITY DETAILS

DATE:	SCALE:	HORIZONTAL:	VERTICAL:
10 FEB 2016	N/A	N/A	N/A
MCE PROJ. # 07010-0001			
DRAWN TCM/TSM			
DESIGNED TCM/TSM			
CHECKED RMC			
PROJ. MGR. TSM			
STATUS: PRELIMINARY TRC PLANS			
NOT FOR CONSTRUCTION			

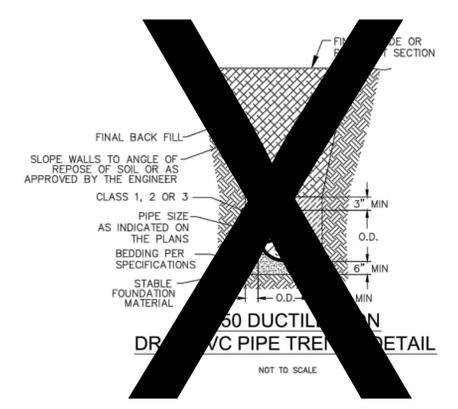
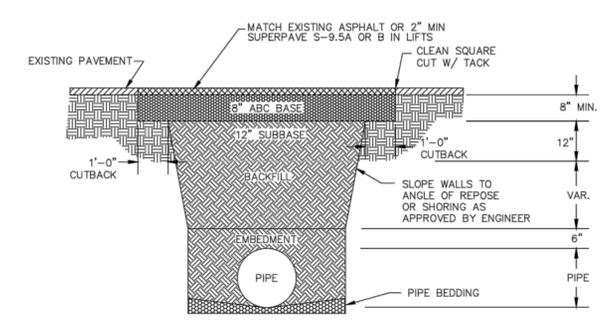
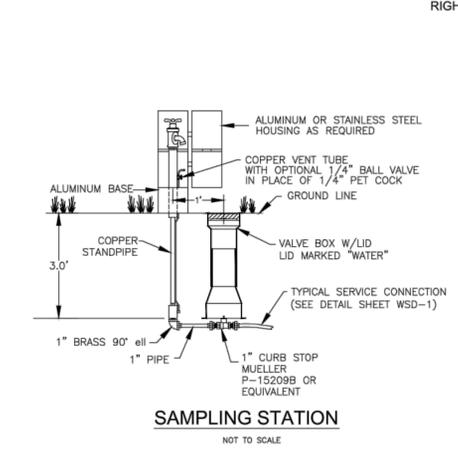
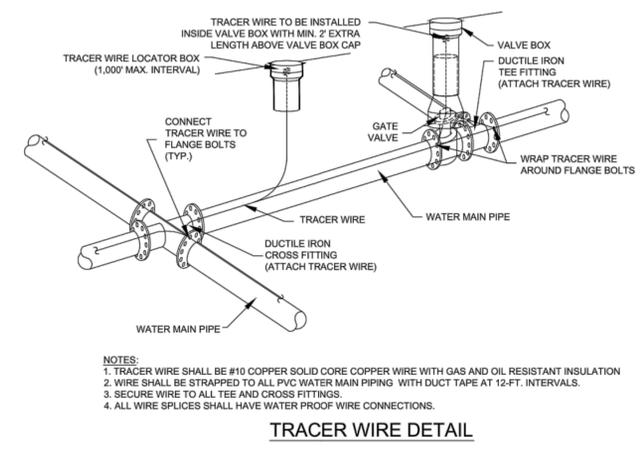


SIZE	90° BENDS		45° BENDS		22 1/2° BENDS		TEES/PLUGS		45° VERT. BENDS
	A	B	A	B	A	B	A	B	
3"	8"	6"	5"	6"	3"	7"	6"	8"	27"
4"	8"	9"	5"	8"	3"	11"	6"	9"	28"
6"	14"	11"	9"	9"	8"	8"	12"	9"	36"
8"	16"	16"	12"	12"	10"	13"	14"	13"	42"
10"	18"	22"	15"	14"	14"	16"	18"	15"	50"
12"	20"	28"	18"	17"	16"	16"	22"	18"	62"
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:

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

THRUST BLOCK DETAIL
NOT TO SCALE



GENERAL NOTES:

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

CFPWA WATER DISTRIBUTION SYSTEM		DATE: 1/8/12
STANDARD DETAILS		SCALE: N/A
<p>CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560</p>		DRAWN BY: CFPWA
SHEET NO: WSD-2		CHECKED BY: CFPWA
		PROJECT NO.:

REV:	DESCRIPTION:	DATE:

REV. NO.	DESCRIPTIONS	DATE

PRELIMINARY PLAN
NOT FOR
CONSTRUCTION



243 North Front Street
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SHIPYARD VILLAGE APARTMENTS
2821 CAROLINA BEACH ROAD
WILMINGTON, NORTH CAROLINA
TOWNSHIP OF WILMINGTON

UTILITY DETAILS

DATE: 10 FEB 2016	SCALE: HORIZONTAL: N/A	MAC FILE NUMBER: CU505
MCE PROJ. #: 07010-0001	VERTICAL: N/A	DRAWING NUMBER: 21
DRAWN: TCM/TSM	DESIGNED: TCM/TSM	CHECKED: RMC
CHECKED: RMC	PROJ. MGR. TSM	STATUS: PRELIMINARY TRC PLANS NOT FOR CONSTRUCTION

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