

SITE DATA:
 PROPERTY CURRENTLY OWNED BY:
 SEAGATE VILLAGE, LLC
 409 BRADLEY CREEK POINT RD
 WILMINGTON, NC 28403

PROPERTY ADDRESS:
 6201 OLEANDER
 6205 OLEANDER DR
 12 GREENVILLE AVE
 24 GREENVILLE AVE

NEW HANOVER COUNTY PINS:
 R06208-003-007-000
 R06208-003-006-000
 R06208-003-008-000
 R06208-003-001-000

TOTAL TRACT AREA
 1.34 AC (58420.79 SF)

DISTURBED AREA:
 1.17 AC (51,167.18 SF)

CURRENT ZONING:
 CB-COMMUNITY BUSINESS

CAMA CLASSIFICATION:
 WATERSHED RESOURCE PROTECTION

SETBACKS:
 REQ'D= 20' PROP= 20'
 REQ'D= 10' PROP= 10'
 REQ'D= 0' PROP= 10.4R' / 12.9L'

PROPOSED LAND USE:
 BREWERY/RESTAURANT

GROSS FLOOR AREA:
 9,350 SF (16% LOT COVERAGE)

BUILDING HEIGHT: 20'

ON SITE IMPERVIOUS SURFACES:
 BUILDINGS= 9,350 SF
 PAVEMENT= 16,830 SF
 PERVIOUS PAVEMENT= 4,544 SF *25% IMPERVIOUS
 SIDEWALKS= 3,315 SF
 TOTAL IMPERVIOUS= 30,631 SF (52.4%)

OFF SITE IMPERVIOUS SURFACES:
 SIDEWALKS= 1,365 SF
 PAVEMENT= 244 SF

PARKING MIN. REQUIRED:
 RESTAURANT USE: 190 SEATS @ 1 SPACE / 4 SEATS = 48 SPACES
 BREWERY USE: 4,000 SF @ 1 SPACE / 1000 SF = 4 SPACES
 TOTAL PARKING REQUIRED: 52 SPACES
 TOTAL PARKING PROVIDED: 67 SPACES (1 HC)

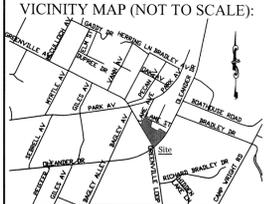
BICYCLE PARKING REQUIRED: (MIN. 5 PER 25-125 VEHICLE SPACES)
 PROVIDED: 8 SPACES

PARKING LOT INTERIOR SHADING:
 REQUIRED: 21,345 SF @ 25% = 5,336.25 SF
 PROVIDED: SEE LANDSCAPE PLAN

STREETYARD:
 GREENVILLE AVE.
 REQUIRED: 4,883 SF (271.3' X 18)
 PROVIDED: 4,917 SF
 OLEANDER DR.
 REQUIRED: 2,446 SF (271.83' X 9)
 PROVIDED: 2,446 SF

FOUNDATION PLANTINGS: (12% OF BUILDING FACE ADJ. TO PARKING AREA)
 REQUIRED: 115' x 16' x 12" = 220.8 SF
 PROVIDED: 223 SF

WATER AND SEWER DEMAND: (190 SEATS)
 SEWER: @ 45 GPD = 8,550 GPD
 WATER: @ 40 GPD = 7,600 GPD



REVISIONS

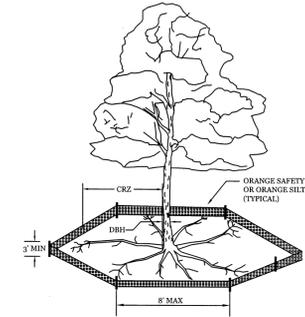
INTRACOASTAL ENGINEERING, PLLC
 5725 Oleander Dr. Unit E-7
 Wilmington, North Carolina 28403
 Phone: (910) 859-8953
 Email: Charlie@intracoastalengineering.com
 License Number: P-0662

TREE REMOVAL & PROTECTION PLAN
 FOR
WRIGHTSVILLE BEACH BREWERY
 WILMINGTON, NORTH CAROLINA

CLIENT INFORMATION:
 PETER WATKINS
 131 ROGERSVILLE RD
 WILMINGTON, NC 28403
 PH. 910-619-4938
 Email: wbrews@gmail.com

DRAWN:	JAE	SHEET SIZE:	24 x 36
CHECKED:	CDC	DATE:	11/10/2015
APPROVED:	CDC	SCALE:	1" = 20'
PROJECT NUMBER:	2015-040		

DRAWING NUMBER: **C-1** 1 OF 7



- NOTES:
- PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIERS SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
 - CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
 - IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATS SHALL BE PLACED WHERE MACHINERY MASSES TO BEHELD SOIL COMPACTION IN THIS ZONE.
 - WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
 - FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
 - FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF \$500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 1 YEAR FOR TREE MITIGATION.
 - 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 4' OF THE SOIL AND SUPPLY THE MAJORITY OF NUTRIENTS AND WATER. GENERALLY, ROOTS SPREAD OUT AT THE HEIGHT OF THE TREE.
 - CROWN OF THE TREE IS NEEDED FOR LEAF GROWTH TO PRODUCE OXYGEN, FILTER THE AIR, REDUCE WIND AND SOFTEN NOISE. DO NOT INTENSIFY PRUNING.

TREE PROTECTION DETAIL (SD 15-09)
 NOT TO SCALE

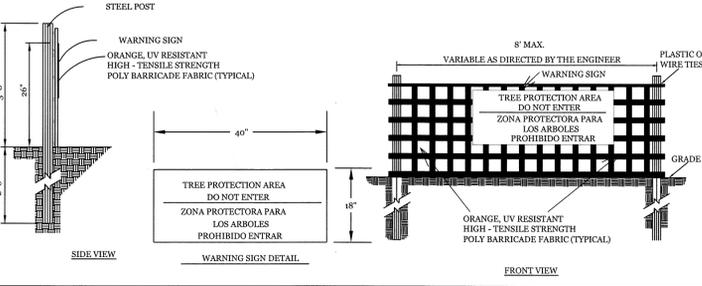
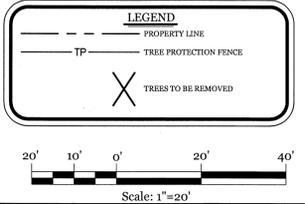
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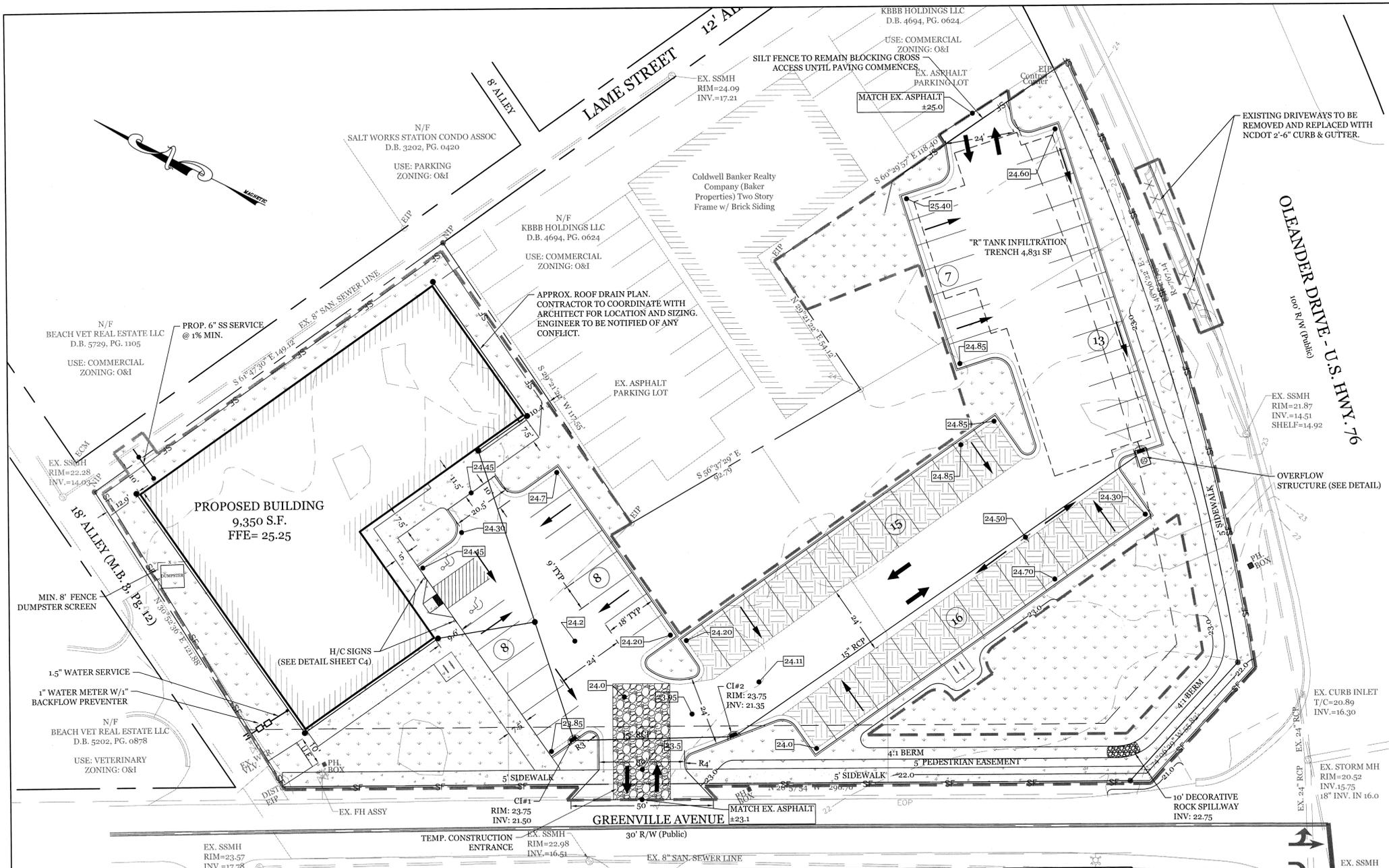
- THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
- WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM. CLEARLY LEGIBLE AND SPACED AS DETAILED.
- SIGNS SHALL BE PLACED AT 50' MAXIMUM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

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

Approved Construction Plan

Name	Date
Planning	
Public Utilities	
Traffic	
Fire	





NORTH CAROLINA TEMPORARY GRASSING DETAIL

SEEDING MIXTURE SPECIES	APPLICATION RATE
LATE WINTER & EARLY SPRING: Rye (grain) Annual Lespedeza (Kobe in Piedmont and Coastal Plain, Korean in Mountains) <i>Omit annual Lespedeza when duration of temporary cover is not to extend beyond June</i>	100 (lb/acre) 50 (lb/acre)
SUMMER: German Millet In the Piedmont and Mountains, a small-stemmed sundgrass may be substituted at a rate of 50 (lb/acre)	40 (lb/acre)
FALL: Rye (grain)	120 (lb/acre)

SEEDING DATES

LATE WINTER & EARLY SPRING:
Mountains - Above 2500 ft: Feb. 15-May 15
Piedmont - Jan. 1-May 1
Coastal Plain - Dec. 1-Apr. 15

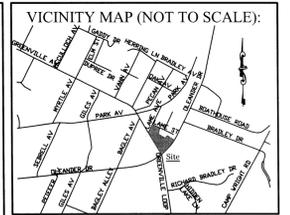
SUMMER:
Mountains - May 15-Aug. 15
Piedmont - May 1-Aug. 15
Coastal Plain - Apr. 15-Aug. 15

FALL:
Mountains - Aug. 15-Dec. 15
Coastal Plain and Piedmont - Aug. 15-Dec. 30

SOIL AMENDMENTS:
Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

MULCH:
Apply 4,000 lb/acre straw. anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

MAINTENANCE:
Refertilize if growth is not fully adequate. reseed, refertilize and mulch immediately following erosion or other damage.



REVISIONS

NO.	DATE	DESCRIPTION

INTRACOASTAL ENGINEERING, PLLC

5725 Olander Dr. Unit E-7
Wilmington, North Carolina 28403
Phone: (910)859-8983
Email: charlie@intracoastalengineering.com
License Number P-0662

NORTH CAROLINA PERMANENT GRASSING DETAIL

SEEDING MIXTURE SPECIES	APPLICATION RATE
FALL & WINTER: Tall Fescue (blend of two or three improved varieties) Rye (grain)	200 (lb/acre) 25 (lb/acre)
SPRING & SUMMER: Pensacola Bahiagrass Sericea Lespedeza Common Bermudagrass German Millet Tall Fescue	50 (lb/acre) 30 (lb/acre) 10 (lb/acre) 10 (lb/acre) 50 (lb/acre)

SEEDING DATES

FALL & WINTER:
January - April
August - December

SOIL AMENDMENTS:
Apply lime and fertilizer according to soil tests, or apply 3,000-5,000 lb/acre ground agricultural limestone (use the lower rate on sandy soils) and 1,000 lb/acre 10-10-10 fertilizer.

MAINTENANCE:
Fertilize according to soil tests or apply 40 lb/acre nitrogen in January or February, 40 lb in September and 40 lb in November, from a 12-4-8, 16-4-8, or similar turf fertilizer. Avoid fertilizer applications during warm weather, as this increases stand losses to disease. Reseed, fertilize, and mulch damaged areas immediately. mow to a height of 2.5-3.5 inches as needed.

SPRING & SUMMER:
April 1 - July 15

SOIL AMENDMENTS:
Apply lime and fertilizer according to soil tests, or apply 3,000 lb/acre ground agriculture limestone and 500 lb/acre 10-10-10 fertilizer.

MAINTENANCE:
Refertilize the following April with 50 lb/acre nitrogen. Repeat as growth requires. may be mowed only once a year. Where a neat appearance is desired, omit sericea and mow as often as needed.

MULCH:
Apply 4,000 lb/acre straw. anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

SEDIMENTATION & EROSION CONTROL PLAN FOR WRIGHTSVILLE BEACH BREWERY

WILMINGTON, NORTH CAROLINA

CONSTRUCTION SEQUENCE:

- CONSTRUCTION OF SITE TO START WITH INSTALLATION OF CONSTRUCTION ENTRANCE AND SILT FENCE ALONG ALL LOCATIONS PER PLANS. UPON INSTALLATION OF SILT FENCE, TREES SHOULD BE REMOVED IN LOCATIONS AS NECESSARY. DITCH PLUG TO BE INSTALLED PRIOR TO CLEARING, GRADING & DITCH FILLING. ALL SLOPED AREAS SHOULD BE SEEDING IN ACCORDANCE TO SPECIFICATIONS. SLOPE STABILIZATION IS WITHIN 21 CALENDAR DAYS OF ANY PHASE OF CONSTRUCTION. ALL OTHER AREAS MUST BE STABILIZED WITHIN 15 WORKING DAYS. CONTRACTOR TO FOLLOW NPDES STABILIZATION REQUIREMENTS PER TABLE ON THIS SHEET AS WELL. MOST STRINGENT REQUIREMENT TO BE MET.
- GENERAL CLEARING AND GRADING OF THIS SITE WILL NOT BE DONE UNTIL THE TEMPORARY SILT FENCE & CONSTRUCTION ENTRANCE HAS BEEN INSTALLED.
- NO CUT SLOPE OR FILL SLOPE SHALL EXCEED A RISE OR FALL OF ONE FOOT FOR EVERY RUN OF 3 FEET (1 VERTICAL TO 3 HORIZONTAL).
- NO SEDIMENT WILL BE ALLOWED TO EXIT THE SITE. ALL EROSION SHALL BE CONTROLLED INCLUDING SIDE SLOPES DURING AND AFTER CONSTRUCTION.
- INSTALL PRIMARY EROSION CONTROL MEASURES BEFORE BEGINNING CONSTRUCTION INCLUDING BUT NOT LIMITED TO GRAVELED CONSTRUCTION ENTRANCE, SILT FENCE, TREE PROTECTION FENCE & SEDIMENT BASINS. CONTRACTOR TO BE FAMILIAR WITH USACOE GENERAL PERMIT CONDITIONS FOR 4 ROAD CROSSINGS. SPECIFIC CONSTRUCTION METHODS MAY BE REQUIRED ABOVE AND BEYOND WHAT IS SPECIFIED IN THIS PLAN. INSTALL ALL SECONDARY EROSION CONTROL MEASURES, SUCH AS INLET PROTECTION AS SOON AS POSSIBLE AFTER BEGINNING CONSTRUCTION.
- ALL EROSION CONTROL MEASURES TO BE INSPECTED AFTER EACH RAIN. SILT FENCE AND INLET PROTECTION TO BE CLEANED WHEN HALF FULL.
- A 4" LAYER OF TOPSOIL SHALL BE APPLIED TO ALL NEW AREAS TO BE GRASSED.
- MAINTAIN ALL EROSION CONTROL MEASURES UNTIL PROJECT IS COMPLETE.
- MORE STRINGENT MEASURES MAY BE REQUIRED TO HALT EROSION IF THOSE ON THIS PLAN PROVE TO BE LESS EFFECTIVE.
- REMOVE ALL TEMPORARY EROSION CONTROL MEASURES UPON COMPLETION OF CONSTRUCTION. ALL PERMANENT MEASURES SHALL BE WELL ESTABLISHED PRIOR TO PROJECT COMPLETION.

MAINTENANCE PLAN:

- ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL, BUT IN NO CASE, LESS THAN ONCE EVERY WEEK AND WITHIN 24 HOURS OF EVERY HALF INCH RAINFALL.
- ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF 2-3 INCH STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE OBJECTIONABLE MATERIAL SPILLED, WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS.
- SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET PROTECTION, SEDIMENT TRAP & BAFFLES, AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND AFTER EVERY RAIN EVENT.
- CHECK SEDIMENT BASIN AND BAFFLES WEEKLY & AFTER EACH RAINFALL EVENT. REMOVE SEDIMENT FROM TRAP & BAFFLES AND RESTORE TO ORIGINAL VOLUME WHEN SEDIMENT ACCUMULATES TO ABOUT 1/2 THE DESIGN VOLUME. REPAIR / REPLACE BAFFLES IF TORN, COLLAPSED, OR INEFFECTIVE.
- DIVERSION DITCHES WILL BE CLEANED OUT IMMEDIATELY TO REMOVE SEDIMENT OR OBSTRUCTIONS FROM THE FLOW AREA. THE DIVERSION RIDGES WILL ALSO BE REPAIRED. SWALES MUST BE TEMPORARILY STABILIZED WITHIN 21 CALENDAR DAYS OF CEASE OF ANY PHASE OF ACTIVITY ASSOCIATED WITH A SWALE.
- SEDIMENT WILL BE REMOVED FROM BEHIND THE SEDIMENT FENCE WHEN IT BECOMES HALF FILLED. THE SEDIMENT FENCE WILL BE REPAIRED AS NECESSARY TO MAINTAIN A BARRIER. STAKES MUST BE STEEL. STAKE SPACING WILL BE 4 FEET MAX. WITH THE USE OF EXTRA STRENGTH FABRIC, WITHOUT WIRE BACKING. STAKE SPACING WILL BE 8 FEET MAX WHEN STANDARD STRENGTH FABRIC AND WIRE BACKING ARE USED. IF ROCK FILTERS ARE DESIGNED AT LOW POINTS IN THE IN THE SEDIMENT FENCE THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF FULL OF SEDIMENT, NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.

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Name _____ Date _____

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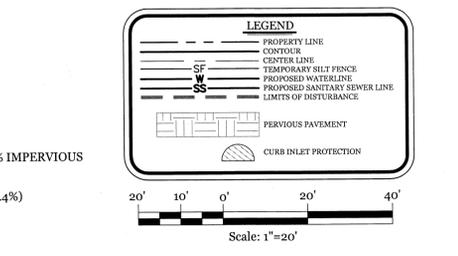
Fire _____

STORMWATER MANAGEMENT PLAN APPROVED

CITY OF WILMINGTON
ENGINEERING DEPARTMENT

DATE _____ PERMIT # _____

SIGNED _____



SYMBOL	GROUND STABILIZATION CRITERIA	
	STABILIZATION TIMEFRAME	STABILIZATION TIMEFRAME EXCEPTIONS
* Perimeter dikes, swales, ditches and slopes	7 Days	None
* High Quality Water (HQW) Zones	7 Days	None
* Slopes Steeper than 3:1	7 Days	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
* Slopes 2:1 or flatter	14 Days	7-days for slopes greater than 50 ft. in length
* All other areas with slopes flatter than 4:1	14 Days	None (except for perimeters & HQW Zones)

Charles D. Carter
11-10-15

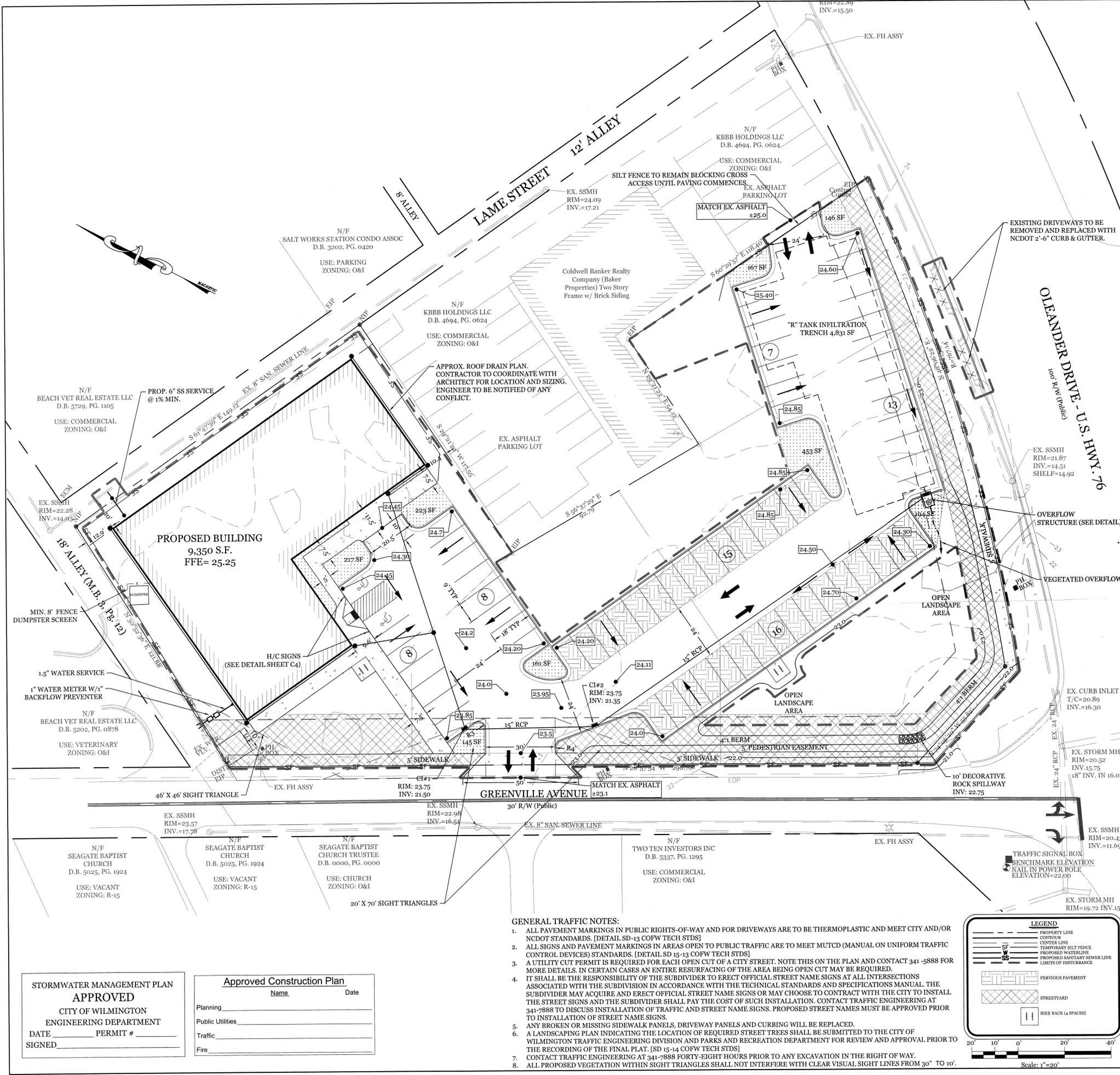
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PETER WATKINS
131 ROGERSVILLE RD
WILMINGTON, NC 28403
PH. 910-619-4938
Email: wbbrews@gmail.com

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2 OF 7



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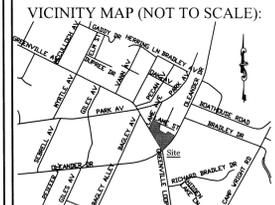
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 Wilmington, North Carolina, 28403
 Phone: (910) 859-8983
 Email: charlie@intracoastalengineering.com
 License Number P-0662

FOR

WRIGHTSVILLE BEACH BREWERY

WILMINGTON, NORTH CAROLINA

SITE, GRADING, DRAINAGE, UTILITY, & STORMWATER PLAN

- DEVELOPMENT NOTES:**
- ALL DEVELOPMENT SHALL BE IN ACCORDANCE WITH THE CITY OF WILMINGTON LAND DEVELOPMENT CODE.
 - PROPOSED USES AT THIS TIME ARE, BREWERY AND RESTAURANT.
 - PROJECT SHALL COMPLY WITH ALL FEDERAL, STATE & NEW HANOVER COUNTY REGULATIONS.
 - PROPERTY IS LOCATED IN ZONE "X" ACCORDING TO THE FEMA FLOOD INSURANCE RATE MAP, COMMUNITY-PANEL NUMBER 3720315600J, DATED 04/03/06
- UTILITY NOTES:**
- EXISTING WATER AND SANITARY SEWER SERVICES ARE CURRENTLY AVAILABLE TO THE SITE FROM CAFE PEAK PUBLIC UTILITY AUTHORITY PUBLIC MAINS.
 - ALL PROPOSED UTILITY SERVICES, SUCH AS ELECTRIC POWER, CATV, GAS & TELEPHONE SHALL BE INSTALLED UNDERGROUND.
 - ALL WATER & SEWER UTILITIES TO BE INSTALLED PER CFPUA TECHNICAL SPECIFICATIONS & STANDARDS.
 - PROJECT SHALL COMPLY WITH CFPUA CROSS CONNECTION CONTROL REQUIREMENTS. WATER METERS (CANNOT BE RELEASED UNTIL ALL REQUIREMENTS ARE MET AND N.C.D.E.N.R. HAS ISSUED THEIR "FINAL APPROVAL". CALL 343-3910 FOR INFORMATION. ANY BACKFLOW PREVENTION DEVICES REQUIRED BY THE CFPUA WILL NEED TO BE ON THE LIST OF APPROVED DEVICES BY USCFCOHR OR ASSE.
 - IF CONTRACTOR DESIRES CFPUA WATER FOR CONSTRUCTION, HE SHALL APPLY IN ADVANCE FOR THIS SERVICE AND MUST PROVIDE A REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION DEVICE ON THE DEVELOPER'S SIDE OF THE WATER METER BOX.
 - WHEN PVC WATER MAINS AND SERVICES ARE PROPOSED, THE PIPES ARE TO BE MARKED WITH NO. 10 INSULATED, SINGLE-STRAND COPPER WIRE INSTALLED & STRAPPED TO THE PIPES WITH DUCT TAPE. THIS IS TO BE ACCESSIBLE IN ALL VALVES AND METER BOXES TO AID IN FUTURE LOCATION OF FACILITIES.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OR EXISTING UTILITIES DURING CONSTRUCTION. CALL U-LOCO AT 1-800-632-4949. CONTRACTOR IS RESPONSIBLE FOR THE REPAIR AND REPLACEMENT OF ANY UTILITIES, CURB & GUTTER, PAVEMENT, ETC. THAT MAY BE DAMAGED DURING CONSTRUCTION. DAMAGED ITEMS SHALL BE REPAIRED TO AT LEAST THE QUALITY OR WORKMANSHIP FOUND IN THE ORIGINAL ITEM.
 - THE BILLSOUTH CONTACT IS STEVE DAYVAULT, BUILDING INDUSTRY CONSULTANT, AT 910-392-8712. 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 - APPROXIMATELY 3' DEEP * BELLSOUTH & CABLE TV WILL THEN PLACE THEIR CABLE AT APPROXIMATELY 2' DEEP.

CHARLES D. CRUTTER
 PROFESSIONAL ENGINEER
 032555
 N.C. ENGINEER
 11.10.15

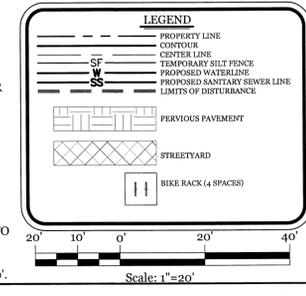
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DRAWING NUMBER:
C-3
 3 OF 7

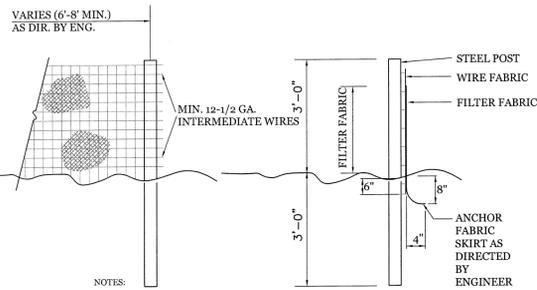
- GENERAL TRAFFIC NOTES:**
- ALL PAVEMENT MARKINGS IN PUBLIC RIGHTS-OF-WAY AND FOR DRIVEWAYS ARE TO BE THERMOPLASTIC AND MEET CITY AND/OR NCDOT STANDARDS. (DETAIL SD-13 COFW TECH STDS)
 - ALL SIGNS AND PAVEMENT MARKINGS IN AREAS OPEN TO PUBLIC TRAFFIC ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) STANDARDS. (DETAIL SD 15-13 COFW TECH STDS)
 - A UTILITY CUT PERMIT IS REQUIRED FOR EACH OPEN CUT OF A CITY STREET. NOTE THIS ON THE PLAN AND CONTACT 341-5888 FOR MORE DETAILS. IN CERTAIN CASES AN ENTIRE RESURFACING OF THE AREA BEING OPEN CUT MAY BE REQUIRED.
 - IT SHALL BE THE RESPONSIBILITY OF THE SUBDIVIDER TO ERECT OFFICIAL STREET NAME SIGNS AT ALL INTERSECTIONS ASSOCIATED WITH THE SUBDIVISION IN ACCORDANCE WITH THE TECHNICAL STANDARDS AND SPECIFICATIONS MANUAL. THE SUBDIVIDER MAY ACQUIRE AND ERECT OFFICIAL STREET NAME SIGNS OR MAY CHOOSE TO CONTRACT WITH THE CITY TO INSTALL THE STREET SIGNS AND THE SUBDIVIDER SHALL PAY THE COST OF SUCH INSTALLATION. CONTACT TRAFFIC ENGINEERING AT 341-7888 TO DISCUSS INSTALLATION OF TRAFFIC AND STREET NAME SIGNS. PROPOSED STREET NAMES MUST BE APPROVED PRIOR TO INSTALLATION OF STREET NAME SIGNS.
 - ANY BROKEN OR MISSING SIDEWALK PANELS, DRIVEWAY PANELS AND CURBING WILL BE REPLACED.
 - 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. (SD 15-14 COFW TECH STDS)
 - CONTACT TRAFFIC ENGINEERING AT 341-7888 FORTY-EIGHT HOURS PRIOR TO ANY EXCAVATION IN THE RIGHT OF WAY.
 - ALL PROPOSED VEGETATION WITHIN SIGHT TRIANGLES SHALL NOT INTERFERE WITH CLEAR VISUAL SIGHT LINES FROM 30' TO 10'.



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

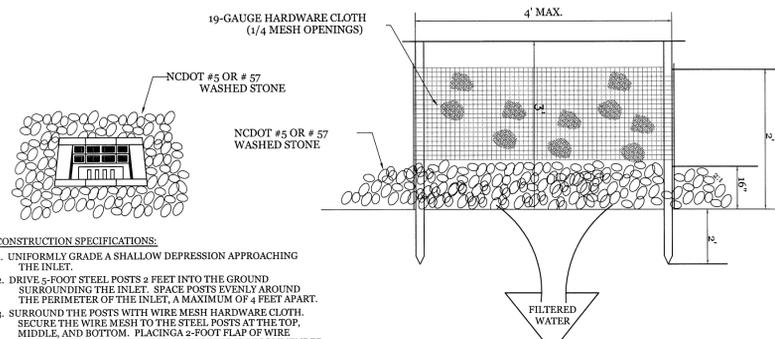
Approved Construction Plan

Name	Date
Planning	_____
Public Utilities	_____
Traffic	_____
Fire	_____



- NOTES:
- FENCE FABRIC SHALL BE A MIN. OF 22" IN WIDTH AND SHALL HAVE A MIN. OF SIX LINE WIRES WITH 12" STAY SPACING.
 - FABRIC SHALL BE FOR EROSION CONTROL AND MIN. OF 36" IN WIDTH FABRIC SHALL BE FASTENED ADEQUATELY TO THE WIRE FABRIC AS DIRECTED BY THE ENGINEER.
 - STEEL POST SHALL BE 4"-Ø IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

TEMPORARY SILT FENCE
NTS

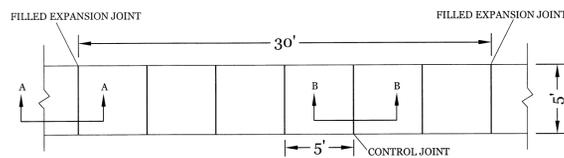


CONSTRUCTION SPECIFICATIONS:

- UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET.
- DRIVE 5-FOOT STEEL POSTS 2 FEET INTO THE GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
- SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE, AND BOTTOM. PLACING A 2-FOOT FLAP OF WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
- PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
- ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATION. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.
- COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUND COVER.

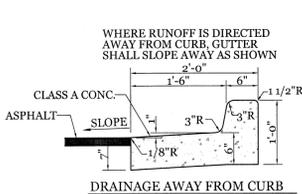
MAINTENANCE:
INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1 INCH OR GREATER) RAINFALL EVENT. CLEAR THE MESH WIRE OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR UNDERCUT THE WIRE MESH DURING SEDIMENT REMOVAL. REPLACE STONE AS NEEDED.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION
NTS

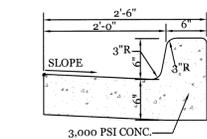


- NOTES:
- JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
 - SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
 - MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
 - CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION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

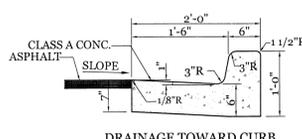
STANDARD SIDEWALK DETAIL (SD 3-10)
NTS



DRAINAGE AWAY FROM CURB

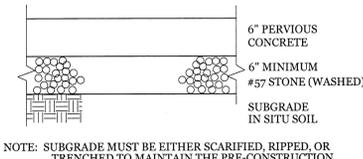


30" CURB SECTION
NTS



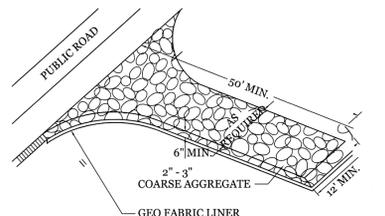
DRAINAGE TOWARD CURB

24" CURB SECTION
NTS



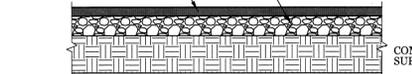
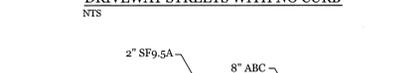
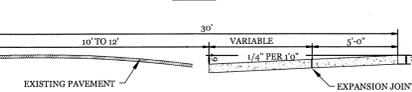
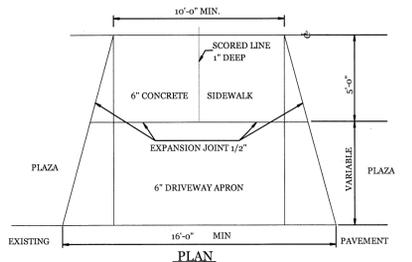
PERVIOUS CONCRETE SECTION
NTS

NOTE: SUBGRADE MUST BE EITHER SCARIFIED, RIPPED, OR TRENCHED TO MAINTAIN THE PRE-CONSTRUCTION SUBGRADE INFILTRATION RATE.

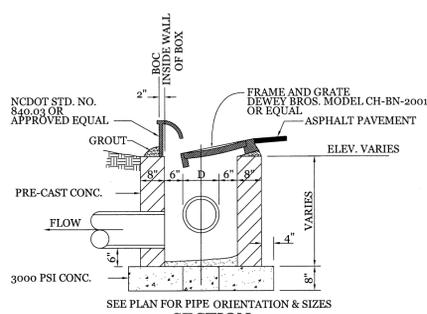


NOTE: CONSTRUCTION ENTRANCE TO BE 12" OR ENTIRE WIDTH OF ENTRANCE, WHICHEVER IS GREATER.

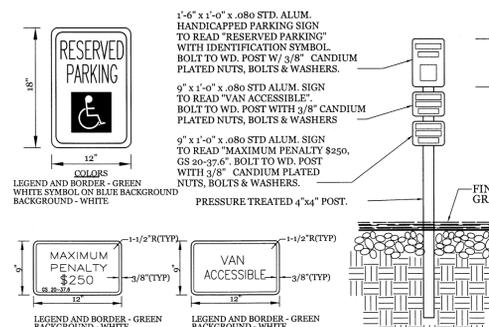
TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
NTS



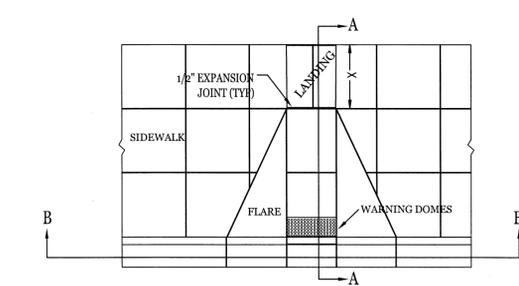
PAVEMENT SECTION
NTS



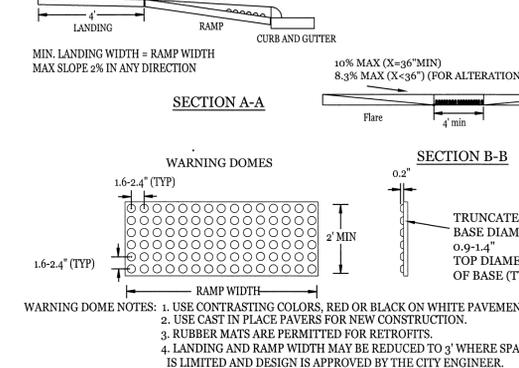
CURB INLET DETAIL
NTS



TYPICAL HANDICAPPED SIGN DETAIL
NTS



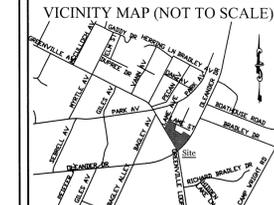
WHEEL CHAIR RAMP DETAIL
NTS



WHEEL CHAIR RAMP DETAIL
NTS

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

- SITE WORK NOTES:**
- THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS BOTH ON AND ADJACENT TO THE SITE.
 - CLEARING: CONTRACTOR SHALL REMOVE ALL TREES AND VEGETATION WITHIN LIMITS OF CONSTRUCTION UNLESS OTHERWISE DESIGNATED TO REMAIN.
 - GRUBBING AND STRIPPING: CONTRACTOR SHALL RAKE AND REMOVE ROOTS, STUMPS, VEGETATION, DEBRIS, EXISTING STRUCTURES ABOVE AND BELOW GRADE, ORGANIC MATERIAL OR ANY OTHER UNSUITABLE MATERIAL WITHIN LIMITS OF CONSTRUCTION.
 - MUCKING: CONTRACTOR SHALL COORDINATE WITH OWNER AND THEIR GEOTECHNICAL REPRESENTATIVE TO COORDINATE REMOVAL OF ANY SOFT AREAS.
 - DISPOSAL: CLEARED, GRUBBED, STRIPPED OR OTHER WASTE MATERIAL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A PROPERLY PERMITTED FACILITY.
 - FILL AND COMPACTION SHOULD COMPLY WITH GEOTECHNICAL RECOMMENDATIONS.
 - THE CONTRACTOR SHALL NOTE THAT THE GRADING PLAN MAY NOT REPRESENT A BALANCED EARTHWORK CONDITION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CUT AND FILL QUANTITIES AND COMPLETE INSTALLATION TO SPECIFIED GRADES.
 - THE CONTRACTOR SHALL FURNISH SUITABLE BORROW MATERIAL FROM AN OFF-SITE PROPERLY PERMITTED FACILITY AS REQUIRED.
 - INFORMATION CONCERNING UNDERGROUND UTILITIES WAS OBTAINED FROM AVAILABLE RECORDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT ELEVATIONS AND LOCATIONS OF ALL EXISTING UTILITIES AT ALL CROSSINGS PRIOR TO COMMENCING TRENCH EXCAVATION. IF ACTUAL CLEARANCES ARE LESS THAN INDICATED ON PLAN, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. ANY CONDITION DISCOVERED OR EXISTING THAT WOULD NECESSITATE A MODIFICATION OF THESE PLANS SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION.
 - NO CONSTRUCTION IS TO BEGIN BEFORE LOCATION OF EXISTING UTILITIES HAS BEEN DETERMINED. CALL "NO ONE-CALL" AT LEAST 48 HOURS BEFORE COMMENCING CONSTRUCTION.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. BEFORE COMMENCING ANY EXCAVATIONS IN OR ALONG ROADWAYS OR RIGHT-OF-WAYS, PUBLIC AREAS OR IN PRIVATE EASEMENTS, THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE PERSONNEL OF THEIR INTENT TO EXCAVATE, IN WRITING, NOT LESS THAN 10 DAYS PRIOR TO EXCAVATING.
 - THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE DISCONNECTION/ RECONNECTION AND/OR THE RELOCATION OF ALL EXISTING UTILITIES WITH APPROPRIATE PERSONNEL.
 - CONTRACTOR SHALL ADJUST ALL MANHOLES, VALVE & CURB BOXES TO FINAL GRADE UPON COMPLETION OF ALL CONSTRUCTION. ANY BOXES DAMAGED OR OTHERWISE DISTURBED BY THE CONTRACTOR SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
 - EXISTING SURVEYING PERFORMED BY HOBBS SURVEYING COMPANY, PC
 - THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AT THE SITE. FURTHERMORE THE CONTRACTOR SHALL REPORT ALL DISCREPANCIES OR QUESTIONS TO THE ENGINEER PRIOR TO INSTALLATION.
 - THE CONTRACTOR SHALL PROVIDE ANY AND ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK UNLESS OTHERWISE DIRECTED BY OWNER.
 - ALL SERVICE CONNECTIONS SHALL BE INSTALLED TO MEET ALL LOCAL, STATE, AND CFPWA CODES. METERS, TAPS, MATERIALS, WORKMANSHIP AND ALL FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL COMPLY WITH ALL REQUIREMENTS.
 - ALL BACKHILL FROM UTILITY INSTALLATION MUST BE COMPACTED OR AMENDED TO PROVIDE TRAFFIC BEARING CAPACITY. GEOTECHNICAL ENGINEER TO BE CONSULTED AT CONTRACTORS COST AS NECESSARY.
 - ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO INSTALLATION. ALL AREAS SHALL BE SLOPED TO DRAIN AWAY FROM BUILDINGS AT ALL TIMES.
 - CONCRETE FOR WALKS, CURBS AND DRIVES SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS - AIR ENTRAINED.
 - FIELD TESTING SHALL BE DONE BY AN INDEPENDENT TESTING LABORATORY PAID FOR BY THE OWNER. FURTHER TESTING REQUIRED DUE TO A FAILED TEST WILL BE PAID FOR BY THE CONTRACTOR.
 - ALL SIDEWALKS SHALL BE FREE OF CRACKS, BREAKS, OR ANY OTHER DEFECT PRIOR TO RECEIVING A CERTIFICATE OF OCCUPANCY.



REVISIONS

NO.	DATE	DESCRIPTION

INTRACOASTAL ENGINEERING, PLLC
5725 Oleander Dr. Unit 12-7
Wilmington, North Carolina 28403
Phone: 910.859.8983
Email: charlie@intracoastalengineering.com
License Number P-0662

DETAILS FOR WRIGHTSVILLE BEACH BREWERY
WILMINGTON, NORTH CAROLINA

CHARLES D. CRUZER
PROFESSIONAL ENGINEER
032555
11-10-15

CLIENT INFORMATION:
PETER WATKINS
131 ROGERSVILLE RD
WILMINGTON, NC 28403
PH. 910-619-4938
Email: wbbrews@gmail.com

DRAWN:	JAE	SHEET SIZE:	24 x 36
CHECKED:	CDC	DATE:	11/10/2015
APPROVED:	CDC	SCALE:	NTS
PROJECT NUMBER:	2015-040		

DRAWING NUMBER: **C-4** 4 OF 7

Approved Construction Plan

Name: _____ Date: _____

Planning: _____

Public Utilities: _____

Traffic: _____

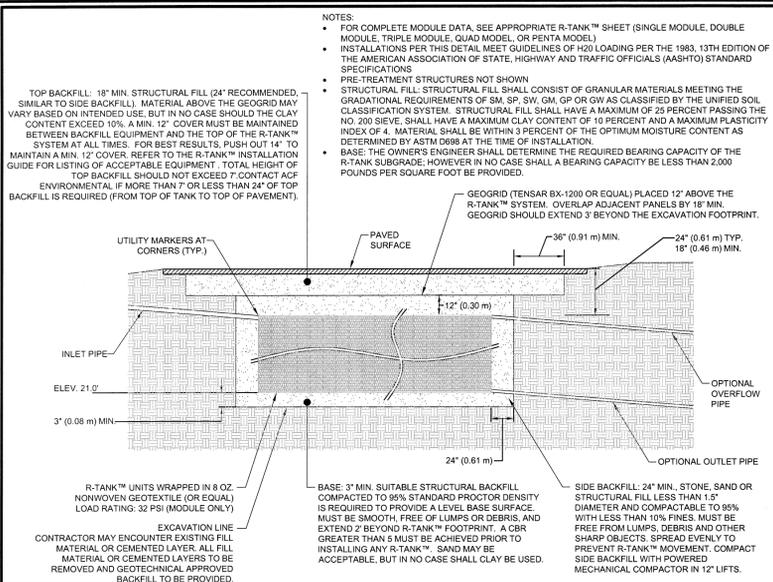
Fire: _____

STORMWATER MANAGEMENT PLAN APPROVED

CITY OF WILMINGTON ENGINEERING DEPARTMENT

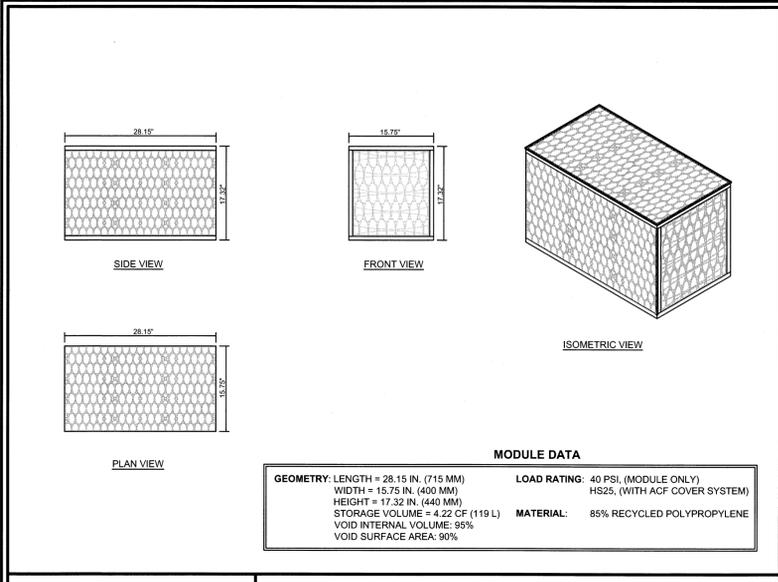
DATE: _____ PERMIT #: _____

SIGNED: _____



- NOTES:
- FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK™ SHEET (SINGLE MODULE, DOUBLE MODULE, TRIPLE MODULE, QUAD MODEL, OR PENTA MODEL)
 - INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF H20 LOADING PER THE 1983, 13TH EDITION OF THE AMERICAN ASSOCIATION OF STATE, HIGHWAY AND TRAFFIC OFFICIALS (AASHTO) STANDARD SPECIFICATIONS
 - PRE-TREATMENT STRUCTURES NOT SHOWN
 - STRUCTURAL FILL: STRUCTURAL FILL SHALL CONSIST OF GRANULAR MATERIALS MEETING THE GRADATIONAL REQUIREMENTS OF SM, SP, SW, GM, GP OR GW AS CLASSIFIED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM. STRUCTURAL FILL SHALL HAVE A MAXIMUM OF 25 PERCENT PASSING THE NO. 200 SIEVE, SHALL HAVE A MAXIMUM CLAY CONTENT OF 10 PERCENT AND A MAXIMUM PLASTICITY INDEX OF 4. MATERIAL SHALL BE WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM 9989 AT THE TIME OF INSTALLATION.
 - BASE: THE OWNER'S ENGINEER SHALL DETERMINE THE REQUIRED BEARING CAPACITY OF THE R-TANK SUBGRADE; HOWEVER IN NO CASE SHALL A BEARING CAPACITY BE LESS THAN 2,000 POUNDS PER SQUARE FOOT BE PROVIDED.
 - GEORGRID (TENSAR BX-1200 OR EQUAL) PLACED 12\"/>

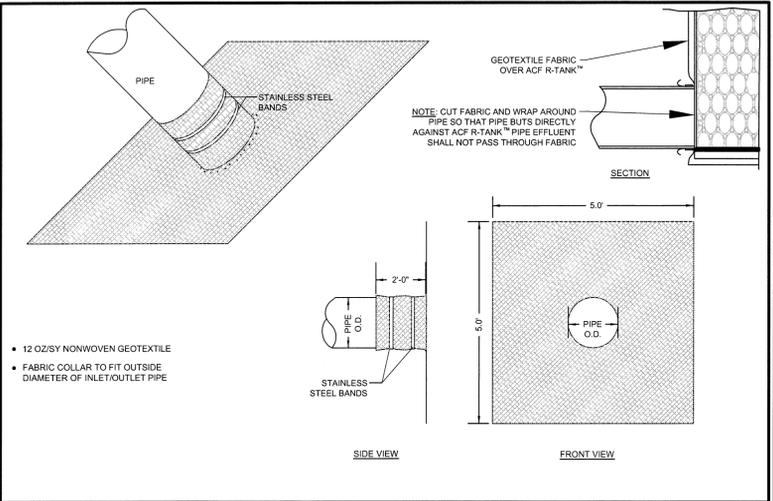
R-TANK™ - H2O LOADS
 FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com



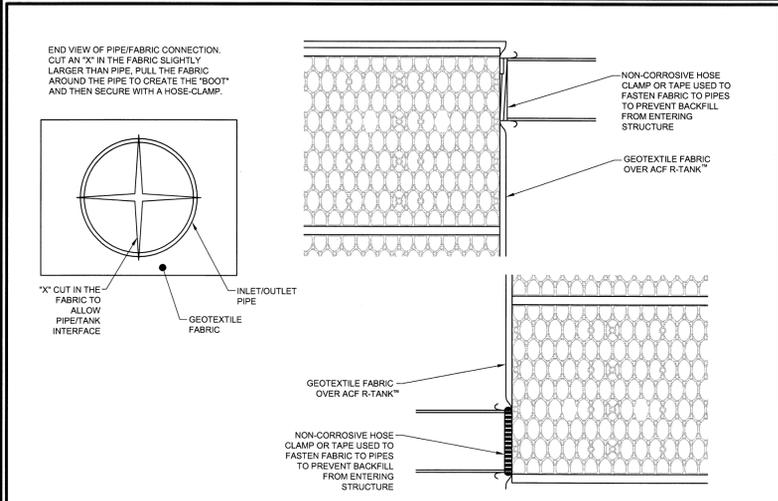
MODULE DATA

GEOMETRY: LENGTH = 28.15 IN. (715 MM) WIDTH = 15.75 IN. (400 MM) HEIGHT = 17.32 IN. (440 MM) STORAGE VOLUME = 4.22 CF (119 L) VOID INTERNAL VOLUME: 95% VOID SURFACE AREA: 90%	LOAD RATING: 40 PSI (MODULE ONLY) HS25, (WITH ACF COVER SYSTEM)	MATERIAL: 85% RECYCLED POLYPROPYLENE
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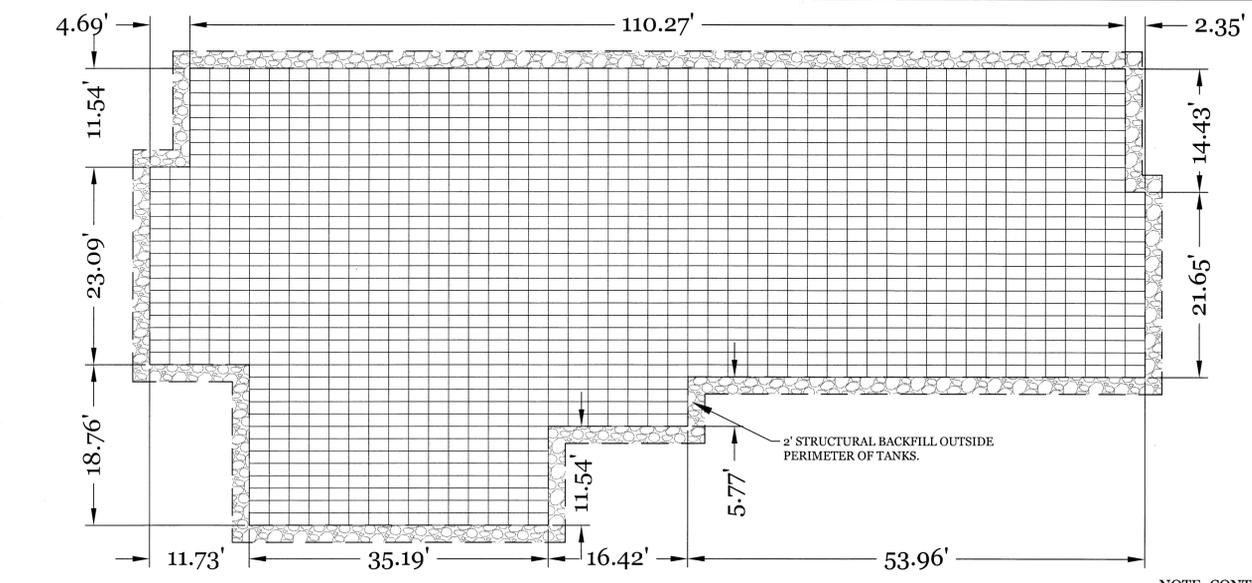
R-TANK™ - SINGLE MODULE
 FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com



FABRIC PIPE BOOT FOR R-TANK™
 FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

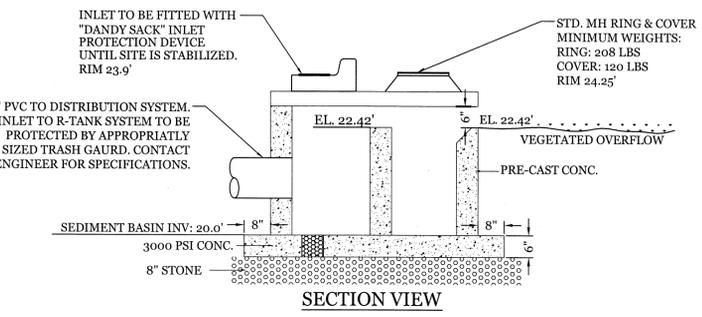
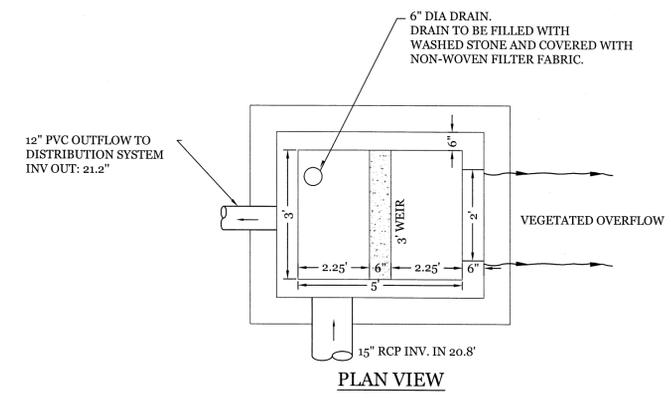


R-TANK™ TYPICAL TANK INLET/OUTLET DETAIL
 FOR ADDITIONAL INFORMATION PLEASE CONTACT: ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

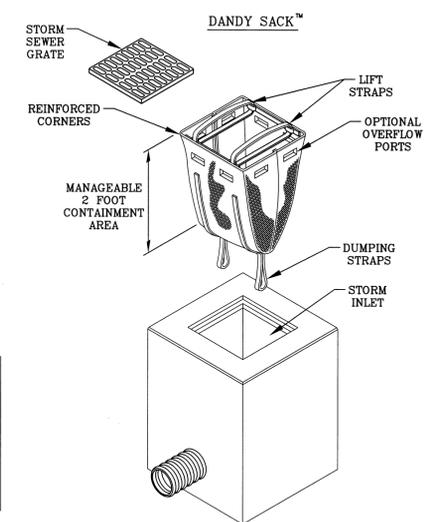


R-TANK - LAYOUT PLAN (1,427 TANKS TOTAL)
 SCALE: 1" = 10'

NOTE: CONTRACTOR TO OBTAIN SPECIFICATIONS FROM ENGINEER ON R-TANK INSTALLATION PRIOR TO BIDDING & CONSTRUCTION.



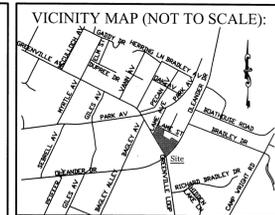
OVERFLOW STRUCTURE
 NTS



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

Approved Construction Plan

Name	Date
Planning _____	_____
Public Utilities _____	_____
Traffic _____	_____
Fire _____	_____



REVISIONS

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 Email: charlie@intracoastalengineering.com
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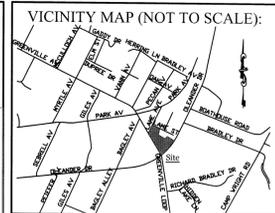
DETAILS FOR
WRIGHTSVILLE BEACH BREWERY
 WILMINGTON, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL
 032555
 ENGINEER
 CHARLES D. CZIZUR
Charles D. Czizur
 11.10.15

CLIENT INFORMATION:
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 WILMINGTON, NC 28403
 PH. 910-619-4938
 Email: wbrews@gmail.com

DRAWN:	JAE	SHEET SIZE:	24 x 36
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DRAWING NUMBER:
C-5
 5 OF 7



REVISIONS

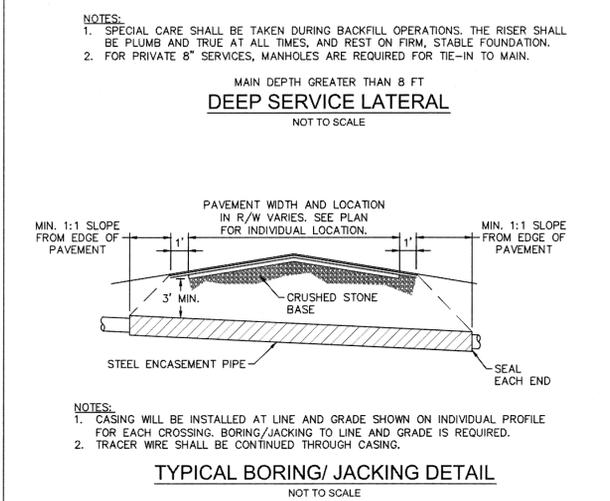
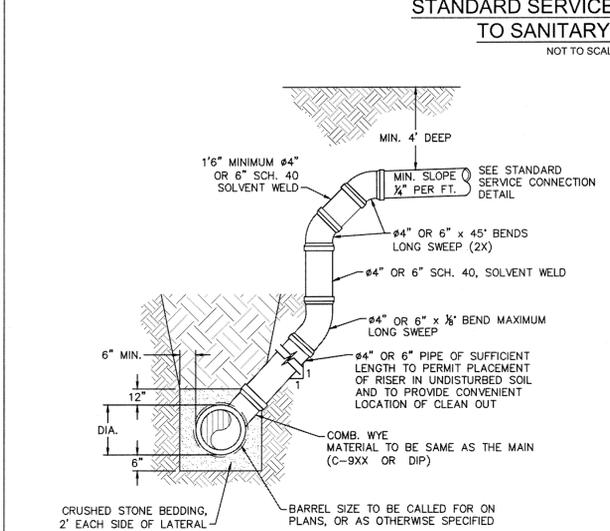
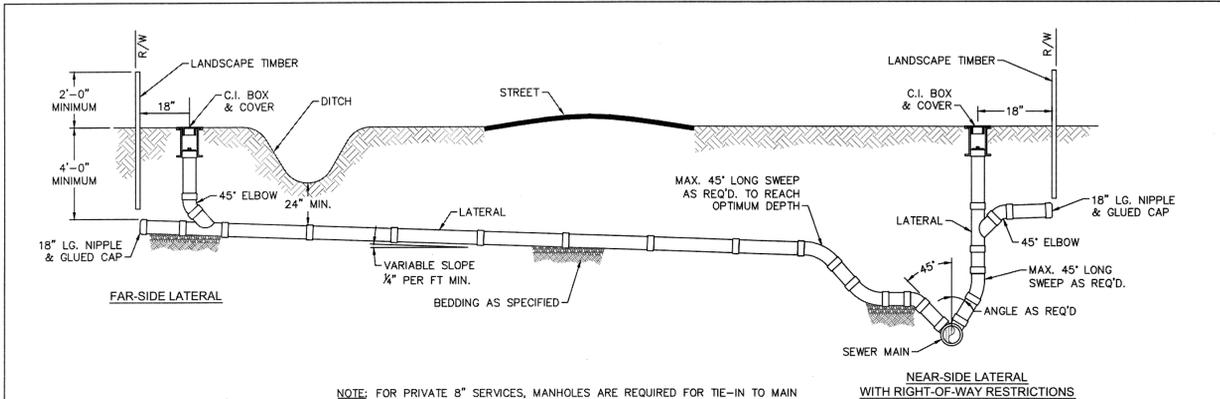
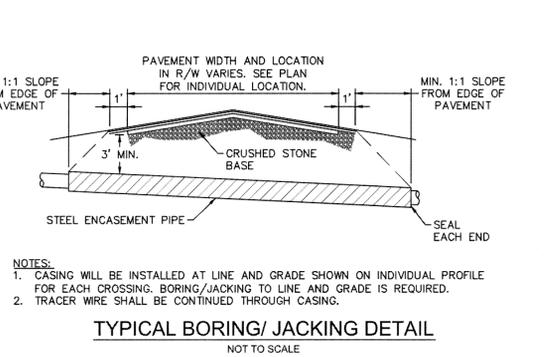
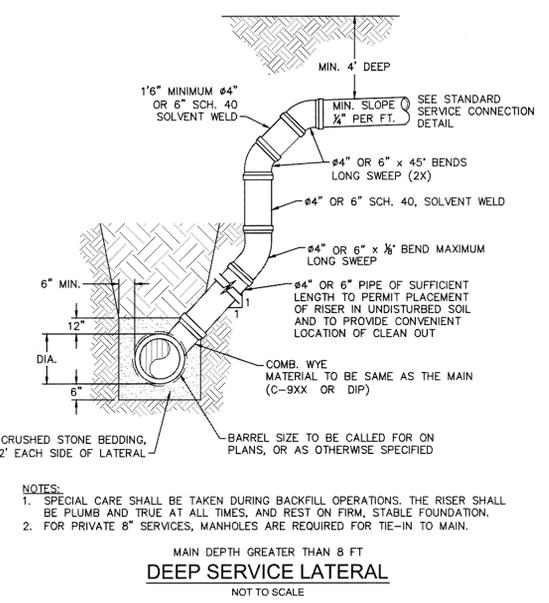
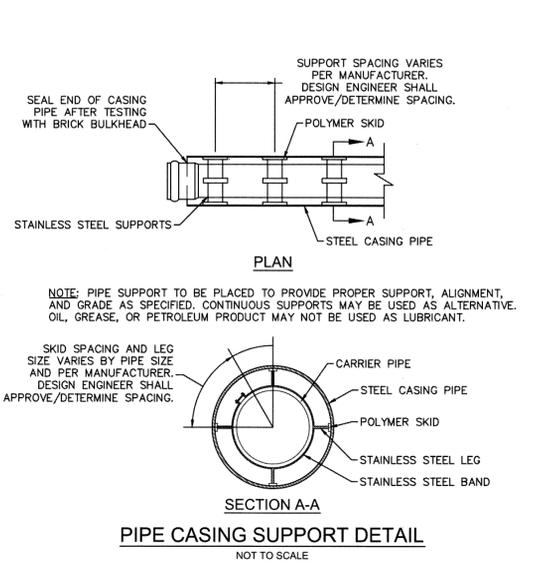
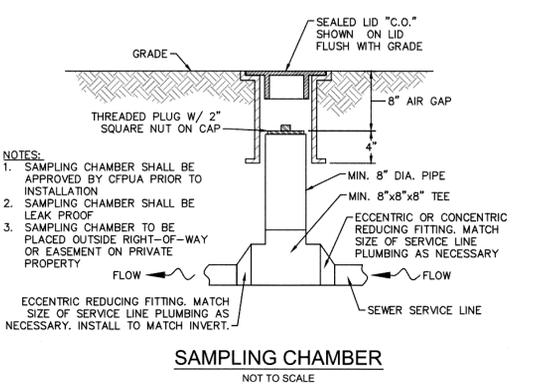
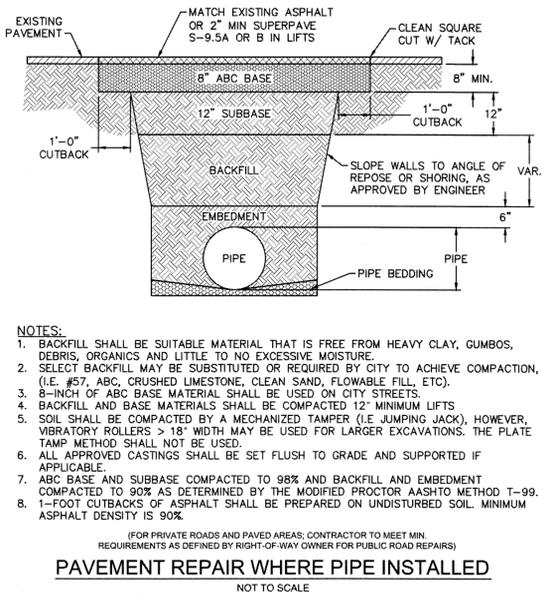
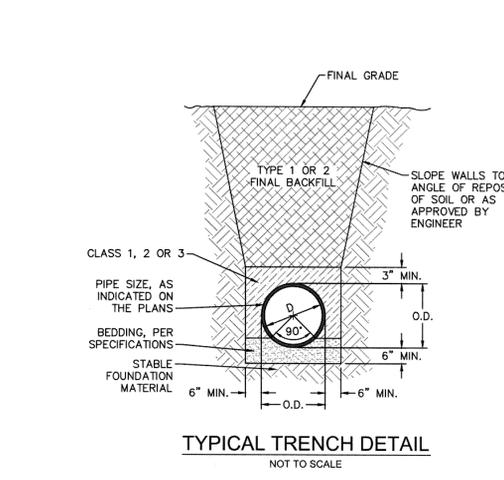
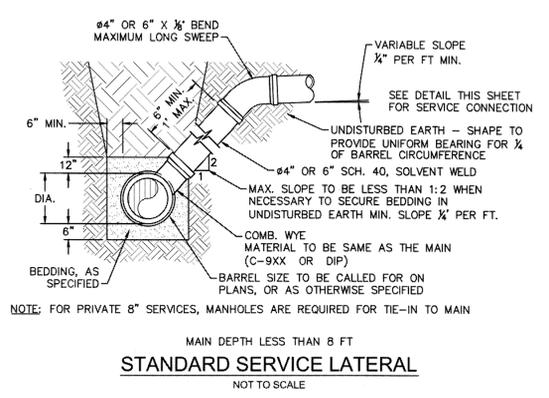
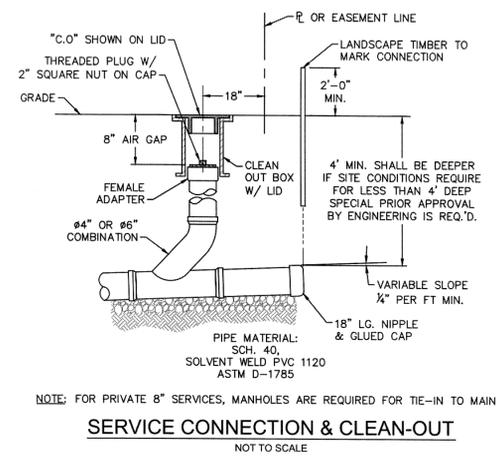
INTRACOASTAL ENGINEERING, PLLC
 5725 Oleander Dr. Unit E-7
 Wilmington, North Carolina 28403
 Phone: (910)859-8983
 Email: charlie@intracoastalengineering.com
 License Number P-0662

CFPUA DETAILS FOR
WRIGHTSVILLE BEACH BREWERY
 WILMINGTON, NORTH CAROLINA

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

CLIENT INFORMATION:
 PETER WATKINS
 131 ROGERSVILLE RD
 WILMINGTON, NC 28403
 PH. 910-619-4938
 Email: wbbrews@gmail.com

DRAWN: JAE	SHEET SIZE: 24 x 36
CHECKED: CDC	DATE: 11/10/2015
APPROVED: CDC	SCALE: NTS
PROJECT NUMBER: 2015-040	



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**