## **CAROLINA BEACH**

Planning and Zoning Meeting
Thursday, September 12, 2024 — 6:00 PM
Council Chambers, 1121 N. Lake Park Boulevard, Carolina Beach, NC



## **AGENDA**

#### **CALL TO ORDER**

#### **CONFLICT OF INTEREST**

Members of Planning and Zoning shall not vote on recommendations, permits, approvals, or other issues where the outcome of the matter being considered is reasonably likely to have a direct, substantial, and readily identifiable financial impact on the member or a member has a close familial, business, or other associational relationship. No member shall be excused from voting except upon those matters as noted, above, or upon those others involving the consideration of his own financial interest or official conduct. (160D-109)

#### APPROVAL OF MINUTES

<u>1.</u> August 8th, 2024 – P&Z Minutes

#### STAFF REPORT ON RECENT COUNCIL MEETINGS

#### STAFF REPORT ON RECENT DEVELOPMENTS

#### **PUBLIC DISCUSSION**

Consider a preliminary plat for a 4-lot subdivision located at 1231 Saint Joseph Street. Applicant: Black Lotus Properties, LLC

#### **DISCUSSION ITEMS**

3. Appoint a Chair and Co-chair of the Planning & Zoning Commission

#### **NON-AGENDA ITEMS**

#### **ADJOURNMENT**



# **AGENDA ITEM COVERSHEET**

PREPARED BY: Gloria Abbotts, Senior Planner DEPARTMENT: Community

Development

**MEETING:** Planning & Zoning Commission – September 12<sup>th</sup>, 2024

**SUBJECT:** August 8<sup>th</sup>, 2024 – P&Z Minutes

# **Action:**

Approve the August 8<sup>th</sup>, 2024 Minutes

## CAROLINA BEACH

Planning and Zoning Commission
Thursday, August 8, 2024 - 6:00 PM
Council Chambers, 1121 N. Lake Park Boulevard, Carolina Beach, NC



## **MINUTES**

#### **CALL TO ORDER**

Chairman Rouse called the meeting to order at 6:00 PM.

#### **PRESENT**

Chairman Wayne Rouse Vice Chairman Jeff Hogan Commissioner Melanie Boswell Commissioner Todd Piper Commissioner Bill Carew Commissioner Lynn Conto

#### **ABSENT**

Commissioner Ethan Crouch

#### **ALSO PRESENT**

Community Development Director Jeremy Hardison Senior Planner Gloria Abbotts

#### **CONFLICT OF INTEREST**

Members of Planning and Zoning shall not vote on recommendations, permits, approvals, or other issues where the outcome of the matter being considered is reasonably likely to have a direct, substantial, and readily identifiable financial impact on the member or a member has a close familial, business, or other associational relationship. No member shall be excused from voting except upon those matters as noted, above, or upon those others involving the consideration of his own financial interest or official conduct. (160D-109)

#### **APPROVAL OF MINUTES**

1. June 13, 2024 – P&Z Minutes

<u>ACTION:</u> Motion to approve the minutes as written
Motion made by Chairman Rouse, seconded by Vice Chairman Hogan
Voting Yea: Chairman Rouse, Vice Chairman Hogan, Commissioner Boswell, Commissioner Piper,
Commissioner Carew, Commissioner Conto

Motion passed 6-0

#### STAFF REPORT ON RECENT DEVELOPMENTS

Ms. Abbotts reported the following statistics for June/July:

#### **Permitting**

- 32 permits (renovation, repair, grading, additions, fences)
- 5 residential new construction
- 13 certificates of occupancy

#### Code Enforcement

- 20 complaints received
- 8 resolved

Commissioner Carew asked about the low resolution percentage of Code Enforcement complaints. Ms. Abbotts said some of the complaints are unfounded and wouldn't have a resolution, such as a neighbor dispute or other issues that are not part of Town ordinances. Commissioner Conto said that might be a good category to track, and Vice Chairman Hogan said this would make the resolution percentage higher. Ms. Abbotts said staff will update that next month.

#### **Demos**

- 309 Cape Fear Boulevard
- 925 Carolina Sands Drive

### New Businesses - Recently Opened

- Face First Aesthetics and Acne Clinic 703 Saint Joseph St.
- Brunches Restaurant 300 North Lake Park Boulevard
- Juarez Auto Repair 306 North Lake Park Boulevard

#### New Businesses – Applied

- Riko's Thin Crust Pizza 1000 North Lake Park Boulevard, Unit 151 (Proximity)
- Axis Fitness 902 North Lake Park Boulevard (Proximity)
- Surfs Up Mini Golf 1360 Bridge Barrier Road

#### **Town Council and Other Updates**

- Conditional Zoning (CZ) 2 North Carolina Avenue approved by Council
- Wine and beer shop text amendment approved by Council
- Unified Development Ordinance (UDO) in effect August 9
- Seaside Chapel School upcoming TBD
- 1300 block of Spot Lane paving assessment upcoming to Council in September
- 1231 Saint Joseph Street subdivision (4 lots) upcoming to Technical Review Committee (TRC) in August

Chairman Rouse asked for an explanation of the paving assessment. Mr. Hardison said this is an application to improve the street, which is currently unimproved and impassable. He said this is a wooded area that was not part of the Wilmington Beach paving project because at that time there

were wetlands, but some hydrology has changed since then so property owners have applied for Council to consider paving that road and in turn, there would be an assessment to adjacent properties.

#### **PUBLIC COMMENT**

None

#### **PUBLIC HEARING**

2. Conditional Zoning to Consider an Addition to a Bar at 3 Cape Fear Boulevard Applicant: Ant Bates Motel LLC

Applicant Ant Bates Motel LLC applied for a Conditional Zoning (CZ) application for an addition to The Silver Dollar, an existing bar/tavern in the Central Business District (CBD). The establishment provides on-premise wine, beer, and liquor. According to the ordinance, if alcohol is served on-premise and the establishment does not meet the criteria for a standard restaurant, it is classified as a bar. The Alcoholic Beverage Control (ABC) Commission stipulates that a restaurant must have food sales constituting at least 30% of sales to avoid being classified as a bar. A bar and any additions made to the bar is allowed through the approval of a CZ district in the CBD.

The applicant is proposing to construct a second story on an existing bar. The proposal includes the addition of a staircase, a second-floor enclosed area (837 square feet), an open deck area (648 square feet), and updating plumbing, mechanical, and electrical. The proposed height of the building is 21 feet.

The existing building is a commercial building built in 1945. It meets the current lot coverage and setbacks requirements. The addition proposed is within the current footprint. The parking requirement for bars is 1 per 110 square feet of indoor gross floor area. Where properties are located within the CBD, parking requirements may be waived if public parking spaces adequate to meet the requirement are located within 500 feet of the use.

The project is in general conformity with the 2020 Land Use Plan, and staff recommends approval of the project as proposed.

Ms. Abbotts presented the details. She reviewed the current use, site photos, adjacent properties, floor plans, and criteria that the Commission shall consider in making a recommendation. Ms. Abbotts said the proposed addition will be similar to the second floor of nearby Sunny Daze Smokehouse, which has a covered bar area with seating as well as open decking.

As part of the application process, a community meeting is required. The applicant held the required meeting on June 17, 2024. Ms. Abbotts said no one attended, so there were no concerns or changes to the plans, although some people reached out with questions that were answered via email or phone.

#### Staff proposed conditions

- 1. All Federal, State, and Local ordinances shall be met
- 2. Building is in an AE 10 flood zone; renovations must be below 49% of the value of the building
- 3. Sloped railing shall be used on second floor

- 4. Use of non-combustible materials
- 5. Alleyway shall be free of obstructions and debris
- 6. Remove paint/markings from public right-of-way

The Commission may include additional standards.

Vice Chairman Hogan asked if the existing restrooms, which are narrow, will have to come up to Town code. Ms. Abbotts said the application was reviewed by the New Hanover County Building Safety Department, and as far as she knows the existing restrooms do not need to be upgraded. Vice Chairman Hogan asked if this will still be a non-handicapped-accessible building, and Ms. Abbotts said yes.

#### **ACTION:** Motion to open the public hearing

Motion made by Chairman Rouse, seconded by Vice Chairman Hogan Voting Yea: Chairman Rouse, Vice Chairman Hogan, Commissioner Boswell, Commissioner Piper, Commissioner Carew, Commissioner Conto *Motion passed 6-0* 

Dan Wilcox, representing the applicant, said the owner asked him to be present tonight to answer questions. He said it's a straightforward project that will not obstruct the views of the building next door, and the new restroom upstairs will meet handicapped requirements. Mr. Wilcox said the lines were painted in the right-of-way when The Silver Dollar held an event in the lot across the way, and the purpose was to control the flow of patrons between the two sites for alcohol purposes.

Commissioner Conto asked if The Silver Dollar is still moving forward with plans to purchase adjacent business Nauti Dog. She said she is less opposed to this project if it's just the existing building vs. extending over multiple buildings. Mr. Wilcox said he is just a contractor, not the owner or operator, and he doesn't know anything about these plans. He said the permit is standalone for the existing property of The Silver Dollar.

No one else requested to speak.

#### **ACTION:** Motion to close the public hearing

Motion made by Chairman Rouse, seconded by Vice Chairman Hogan Voting Yea: Chairman Rouse, Vice Chairman Hogan, Commissioner Boswell, Commissioner Piper, Commissioner Carew, Commissioner Conto Motion passed 6-0

Commissioner Carew said he is excited somebody is putting money into the Boardwalk in one of the older buildings, and he is in favor of the project.

Commissioner Piper said rooftop decks have been approved for multiple other bars and restaurants in that general location, so he doesn't see how this is any different.

Commissioner Conto said she loves the plans for rejuvenation, although she is leery of allowing the expansion of bars in that area due to the Boardwalk's past.

Commissioner Boswell said she agrees that rejuvenation of the Boardwalk and restoration of an existing building are good things, and she thinks Mr. Wilcox's work will make this project an asset for the Town. She said she appreciates that plans call for the building height to stay well below the 50-foot limit, and although it's a bar it will be regulated. Commissioner Boswell said she thinks it will make The Silver Dollar newer and better, so she is in favor of it.

Vice Chairman Hogan said he is in favor of allowing businesses to advance, and the owners have spent a lot of money on the building and he has no problem with them investing more. He said every time the area adds a rooftop, it adds to the excitement of people coming to the Boardwalk to see summer fireworks.

Chairman Rouse said he's excited to see someone willing to invest their money in the Boardwalk area, which is as close as the Town gets to having a historic district. He said he will vote to support the motion with the conditions laid out by staff's recommendation.

Mr. Hardison said the application before the Commission tonight is just for the expansion of the second floor as presented, and if there is a proposed expansion to another building as a bar it would have to come back before the Commission for consideration or the owners would have to change the use to a restaurant, reapply with the ABC Commission as a restaurant, and be subject to an audit of beverages with food sales.

<u>ACTION:</u> Motion of approval, whereas in accordance with the provisions of the North Carolina General Statutes, the Planning and Zoning Commission does hereby find and determine that the adoption of the Conditional Use District to allow for an addition to a bar located at 3 Cape Fear Boulevard is consistent with the goals and objectives of the adopted Land Use Plan and other long-range plans and the potential impacts on the surrounding area are mitigated by the approved conditions Motion made by Vice Chairman Hogan, seconded by Commissioner Boswell

Voting Yea: Chairman Rouse, Vice Chairman Hogan, Commissioner Boswell, Commissioner Piper,

**Commissioner Carew** 

Voting Nay: Commissioner Conto

Motion passed 5-1

#### **NON-AGENDA ITEMS**

None

#### **ADJOURNMENT**

Chairman Rouse adjourned the meeting at 6:22 PM.



# **AGENDA ITEM COVERSHEET**

PREPARED BY: Gloria Abbotts, Sr Planner DEPARTMENT: Community

Development

**MEETING:** Planning and Zoning – 9/12/2024

**SUBJECT:** Consider a preliminary plat for a 4-lot subdivision located at 1231 Saint Joseph

Street

Applicant: Black Lotus Properties, LLC

#### **BACKGROUND:**

Black Lotus Properties, LLC, has submitted a request for a preliminary plat approval for the Kybalion Creek subdivision at 1231 Saint Joseph Street. The property is 49,437 square feet (1.14 acres). This subdivision will consist of 4 lots between 7,224 - 10,231 sq. ft. The existing single-family home on the property will become Lot 2 of the subdivision.

The applicant proposes to install a private road, Reef Rd., which will meet the minimum width of 22′. The road will be constructed with impervious material that meets the standards of DOT & Fire Code, subject to P&Z approval. To remain within the 10,000 square feet impervious surface limit for a state stormwater permit, a pervious road surface is proposed. The existing ditch that runs along the rear of the property will be relocated closer to the rear property line, with a riprap lined swale to manage drainage. The existing ditch carries flow from other properties, which the engineer has provided calculations to account for additional drainage. The only proposed fill would be for the ditch relocation. Most of the dirt from the new ditch will be repurposed to fill in the old ditch, with only a minimal amount of additional fill required. The site will be graded to maintain natural flow from south to north. An 85′ x 60′ hammerhead at the end of Reef Rd will be installed for turnaround access. The entire subdivision is in an AE 11 flood zone. There is an existing fire hydrant in front of Forest by the Sea to service the subdivision. Water and sewer will be off St. Joseph Street with private lines extended to service the lots. Streetlamps will be required, and street trees will be installed for every 50′ of lot frontage. Existing vegetation can be used and is encouraged. Sidewalks are not proposed along the street, but P&Z may require applicant to construct a sidewalk. The proposed 8′ multi-use path will be in the right-of-way in front of the subdivision.

Single-family dwellings are permitted by right in the R-2 zoning district, which has a minimum lot size of 7,000 square feet. Setbacks for structures in this district are 25 feet from the front, 10 feet from the rear, and 7.5 feet from the side yards, and 12.5 feet required on corner lots. The maximum height for structures is 45 feet, with a maximum lot coverage of 40% and a maximum impervious coverage of 65% per lot.

#### **ACTION REQUESTED:**

Consider recommending approval or denial of a 4-lot subdivision located at 1231 Saint Joseph Street.

#### **STAFF RECOMMENDATION:**

Staff recommends approval of this preliminary plat subject to the following conditions. Final plat may not be submitted for approval until all conditions, revisions, changes and submissions are made. The conditions, revisions, changes and submissions to be made are as follows:

- 1. Street trees shall be installed according to preliminary plat submittal. Existing vegetation can be used for this requirement.
- 2. Permanent monuments of stone or concrete shall be placed at one or more corners of the subdivision to be designated as control corners.
- 3. A drainage plan that will include all portions of the development shall be submitted. This plan shall be prepared and sealed by a registered surveyor or engineer.
- 4. Surfacing shall be done in accordance with plans and standard specifications approved by the Planning and Zoning Commission and the state Department of Transportation.
- 5. The Planning and Zoning Commission may require the construction of a concrete sidewalk on one side of all frontage streets and potentially on one or both sides of all other streets within the subdivision, in accordance with approved plans and specifications.
- 6. The installation of a street sign, light pole, and stop sign is required.
- 7. Electrical lines shall be buried.
- 8. Lot coverage for any lot located within the subdivision shall not exceed 40%.
- 9. The plan must clearly designate the location of open space, recreation areas, and stormwater ponds, as well as ownership details.
- 10. Grading, surfacing, curb and gutters, sidewalks, street lighting, street trees, sewage disposal facilities, stormwater drainage facilities, and other utilities shall be installed and certified by a surveyor and/or engineer, or Performance Guarantee provided prior to recordation of the final plat.

#### **MOTION:**

Motion to approve or deny the preliminary plat with the proposed conditions.

Permit Number:
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# Application for Subdivision Preliminary Plat **TOWN OF CAROLINA BEACH, N.C.**

Each application must be printed or typewritten and have all information answered. Incomplete or illegible applications will not be accepted. All plans must be folded to 8 ½ X 11. No application will be accepted unless accompanied by a drawing of the proposed lot development drawn to scale with the requirements indicated in Chapter 36.

The Technical Review Committee, Planning and Zoning Commission and/or Town Council reserves the right to require additional information if needed to assure that the use in its proposed location will be harmonious with the area in which it is proposed to be located and in accordance with the Code of Ordinances of the Town of Carolina Beach. Applications must be reviewed by the Planning Department for completeness prior to acceptance. A fee payable to the Town of Carolina Beach must accompany this application. Fees are nonrefundable after review by the Technical Review Committee. The fee shall be in accordance with the Town's annually adopted Rates and Fee Schedule.

In accordance with the requirements of the <u>Town of Carolina Beach Subdivision Ordinance</u>, there is submitted herewith for approval a preliminary plan of the following subdivision:

Name of Subdivision:	St. Joseph St. 1 ac Tract	# of Lots Proposed: 4	
Tax Parcel(s) #:	R08810-004-004-000		
Acreage and/or square footage:	1.14 ac	Existing Zone: R-2-WB	
Name of Applicant:	Black Lotus Properties, I	LC 703-568-7220	
Signature of Applicant:	Shew	(Phone Number)	
Owner Name and Address:	Sherif Fouad	5 W Hargett St. Rm 202	
	(Print Name)	(Address)	
	Raleigh, NC, 27601	sherif@blacklotusproperties.com	
	(City, State, Zip)	(Email Address)	

This preliminary plan contains all the information required by Chapter 36 of the Town Code. I certify that this application package contains all requirements of the Town of Carolina Beach Code of Ordinances. The registered Engineer, Landscape Architect or Surveyor under whose supervision this subdivision is being developed is:

	Headwaters Engineerin	g of the Cape Fear, PLLC	Thomas J. Scl
	(Engineer, Architect, or Surveyor)	(Contact Name)	
	910-465-3304	tscheetz@headwaterscapef	ear.com
	(Telephone Number)	(E-Mail Address)	
Signature of Owner:	Sheupan	<sub>Date:_</sub> 7/17/24	

#### Final Plat Procedure

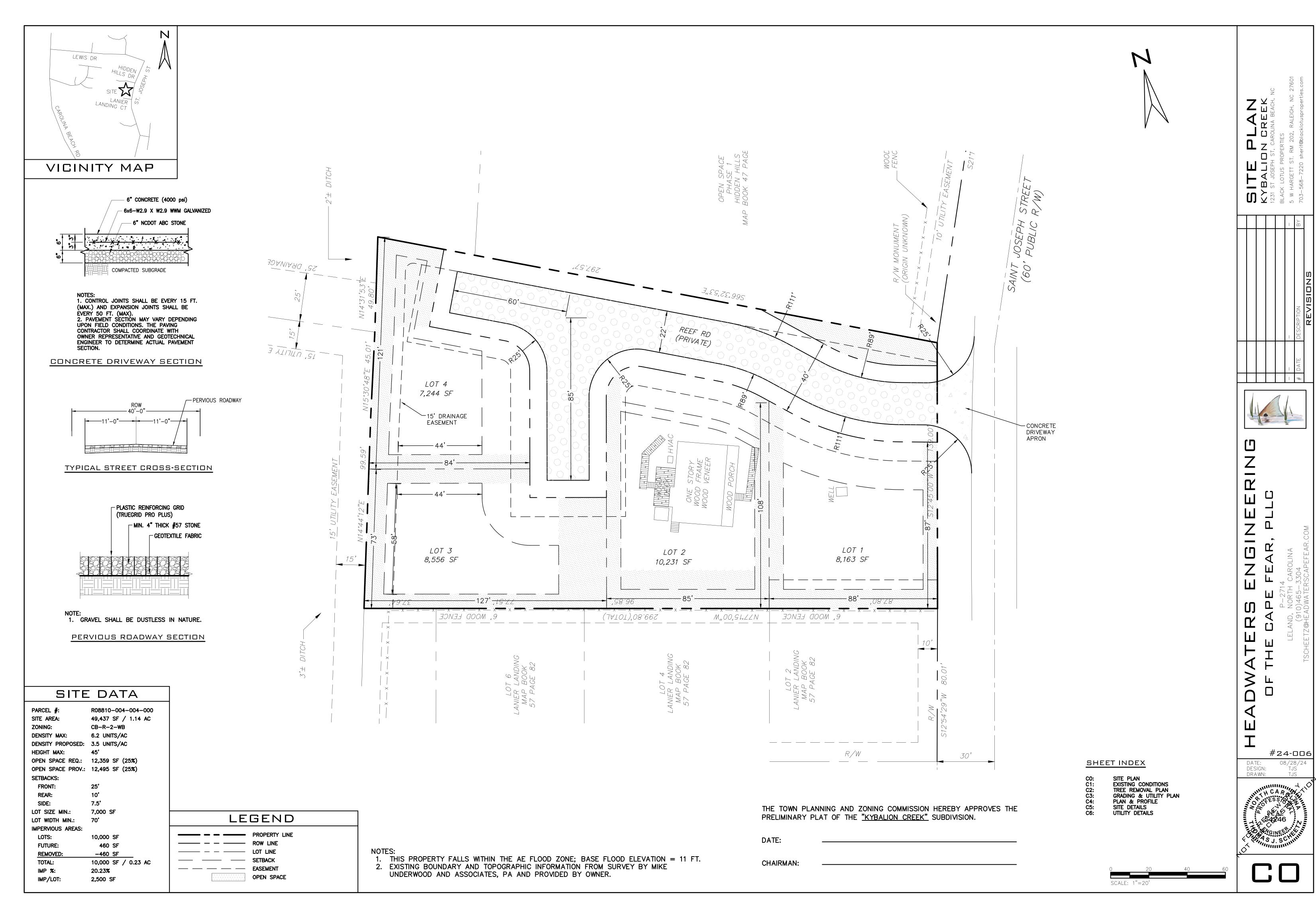
#### Submittal, authorization, and recording.

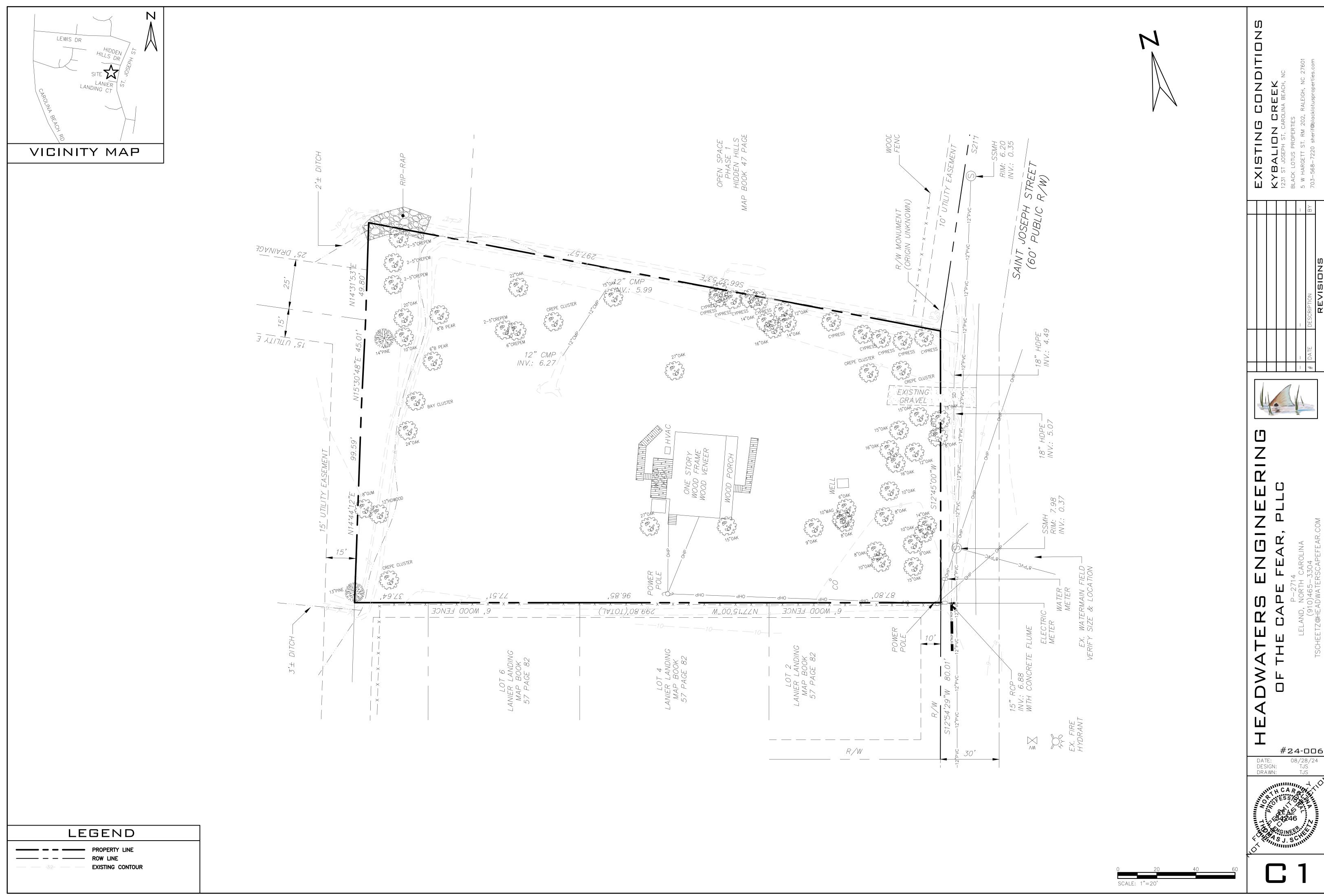
Subsequent to the review and approval of preliminary subdivision plans and construction plans the developer shall submit final plats for recording to the Planning Department. The plat to be recorded in the office of the New Hanover County Register of Deeds shall contain all information required by Chapter 36 of the Town Code. One (1) copy of this plat shall be signed and sealed by a registered surveyor and submitted on mylar material. Four paper copies of the plat shall be submitted to the Planning Director for review by other Departments of the Town. The Planning Director shall review the final plat and compare it to the approved preliminary subdivision plan and conditions of approval. After review the Planning Director may then:

a) Certify the plat for recording, in writing on the mylar copy; or, b) Request revisions of the plat to complete information required by Town Code or to cause the plat to conform to the preliminary subdivision plan.

#### Fees

In accordance with the Town's Rate and Fee schedule.





12



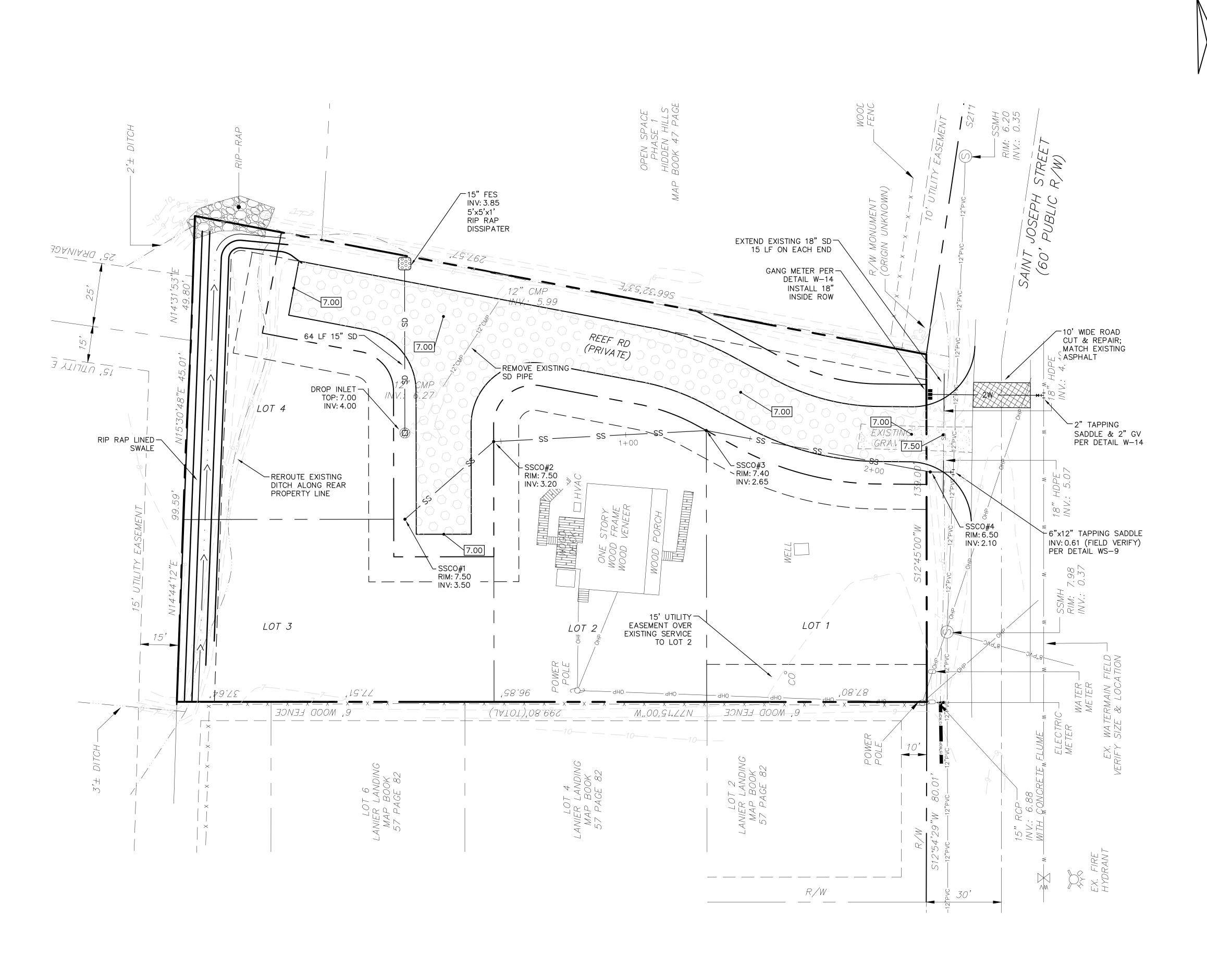
LEGEND

TREE TO BE REMOVED

TREE TO BE PROTECTED

#24-006

08/28/24 TJS TJS



#24-006 08/28/24 TJS TJS DATE: DESIGN: DRAWN:

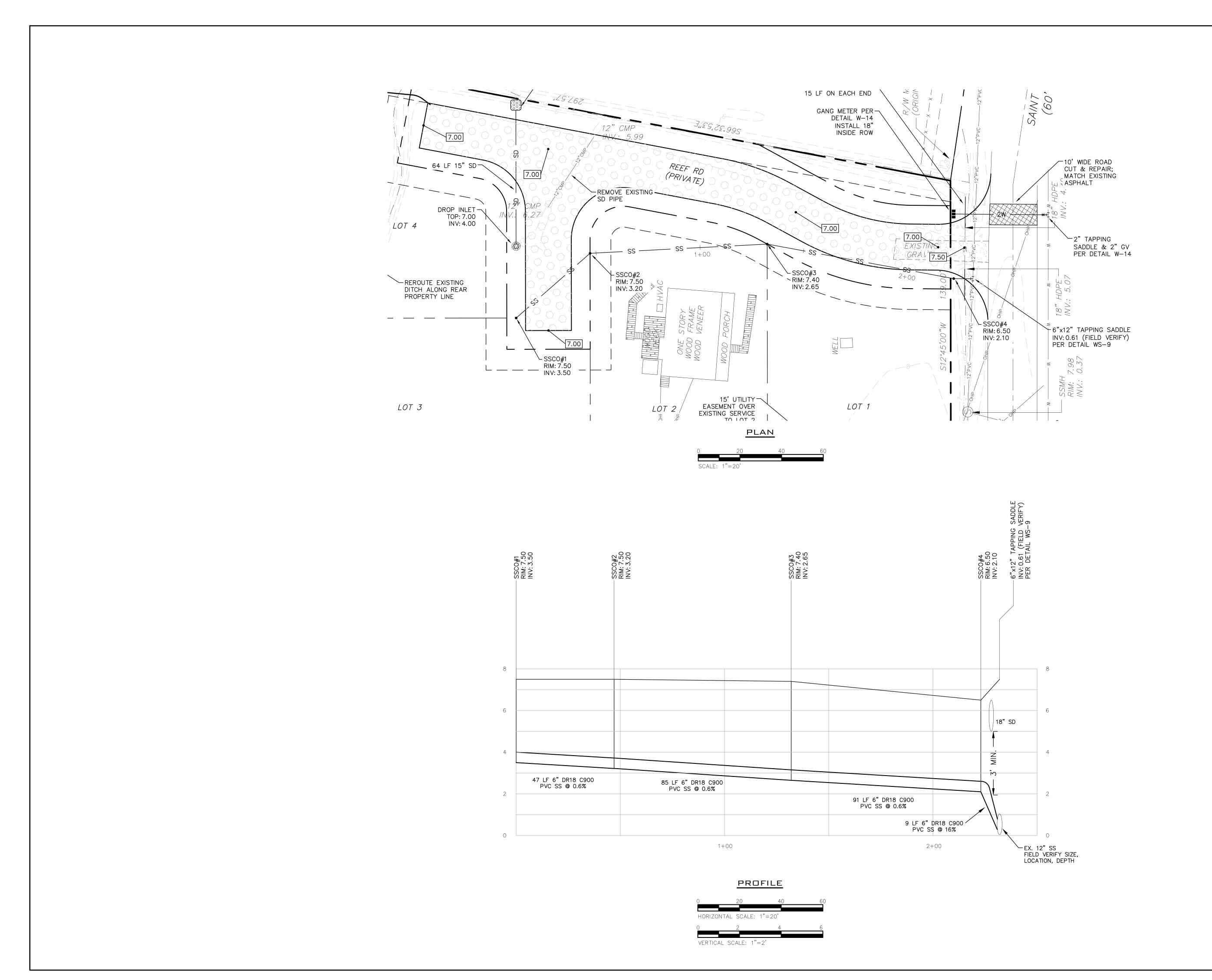
MO P

LEGEND

\_\_\_\_\_\_ 2W \_\_\_\_\_\_ 2" WATER LINE

1. WATER TO BE PROVIDED BY THE TOWN.
2. SEWER TO BE PRIVATE AND WILL DRAIN TO A TOWN SEWER MAIN.

3. SEWER LINE TO BE PLACED IN 10' WIDE PRIVATE UTILITY EASEMENT.
4. ALL PVC MAINS SHALL HAVE 36" MINIMUM COVER.





**H** 

#24-006

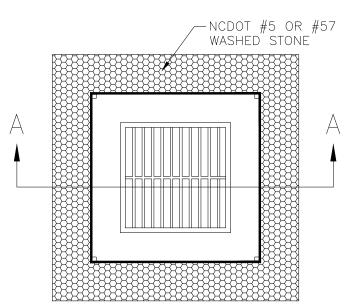
DATE: DESIGN: DRAWN: 08/28/24 TJS TJS

SUBJECT TO SEEPAGE OR HIGH WATER TABLE.

1. CLEAR THE ENTRANCE AND EXIT AREA OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL AND PROPERLY GRADE IT. 2. PLACE THE GRAVEL TO THE SPECIFIC GRADE AND DIMENSIONS SHOWN ON THE PLANS, AND SMOOTH 3. PROVIDE DRAINAGE TO CARRY WATER TO A SEDIMENT TRAP OR OTHER SUITABLE OUTLET. 4. USE GEOTEXTILE FABRICS BECAUSE THEY IMPROVE STABILITY OF THE FOUNDATION IN LOCATIONS

MAINTAIN THE GRAVEL PAD IS A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2 INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

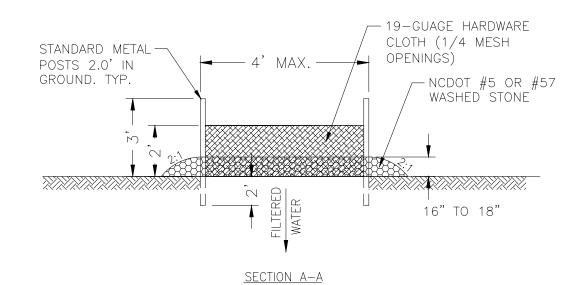
# TEMPORARY GRAVELLED CONSTRUCTION ENTRANCE NTS



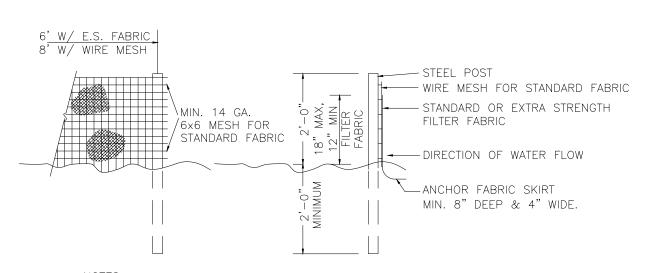
1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING THE INLET. 2. DRIVE 5' STEEL POST 2' INTO THE GROUND SURROUNDING THE INLET SPACE POST EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM

3. SURROUND THE POST WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POST AT THE TOP, MIDDLE AND BOTTOM. PLACING A 2' FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED. 4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16" TO 18" AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE. 5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS. 6. COMPACT THE AREA PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 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. REMOVE SEDIMENT WHEN ACCUMULATION REACHES HALF THE DEPTH OF ROCK. REPLACE STONE WHEN IT NO LONGER DRAINS AS DESIGNED.



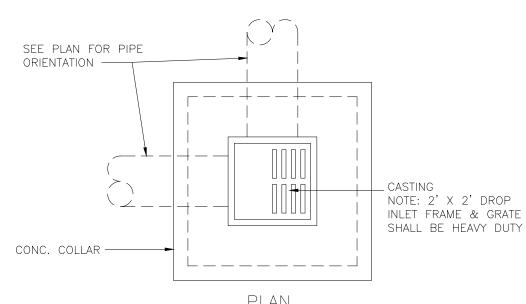
# HARDWARE CLOTH & GRAVEL INLET PROTECTION NTS

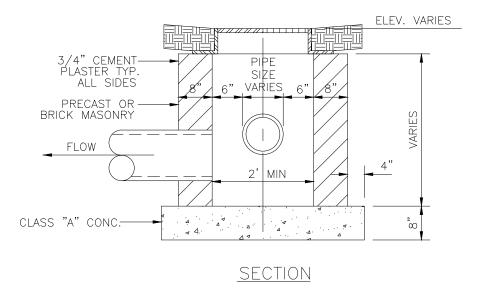


1. SYN. FENCE FABRIC SHALL BE MIN. OF 30" IN WIDTH WITH 30 LB/IN TENSILE STRENGTH FOR STANDARD FABRIC AND 50 LB/IN FOR EXTRA STRENGTH. FABRIC SHALL BE CONTINUOUS LENGTH. IF JOINTS ARE NECESSARY, LAP FABRIC POST TO POST. STEEL POST SHALL BE MIN 4' IN HEIGHT AND BE OF THE SELF-FASTENER STEEL ANGLE TYPE.

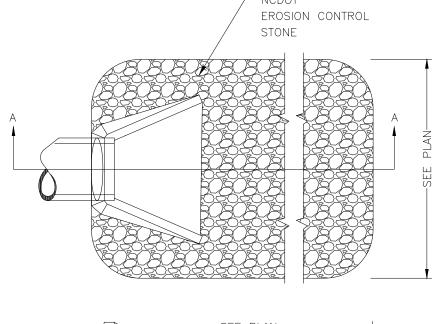
TEMPORARY SILT FENCE MAINTENANCE INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY. SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY. REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT. REMOVE ALL FENCING MATERIALS AND UNSTABLE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

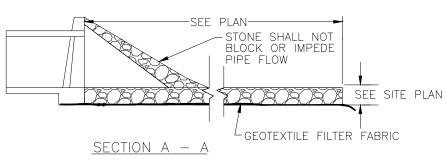
# TEMPORARY SILT FENCE





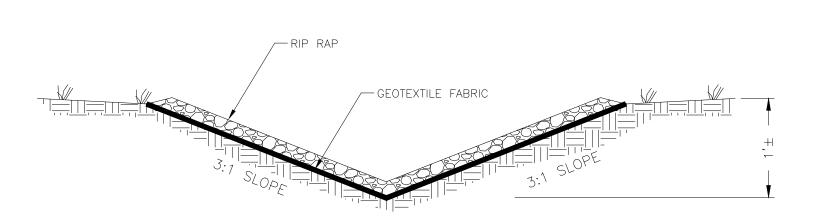
# DROP INLET DETAIL





NOTE: FILTER FABRIC AND STONE SHALL BE TOED UNDER FLARED END SECTION

ENERGY DISSIPATER



RIP RAP LINED SWALE

# TEMPORARY/PERMANENT **GRASS SPECIFICATION**

CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONS. RIP THE ENTIRE AREA TO A 6 INCH DEPTH.

REMOVE ALL ROCKS, ROOTS AND OTHER OBSTRUCTIONS LEAVING SURFACES SMOOTH AND UNIFORM. APPLY AGRICULTURAL LIME AND FERTILIZER UNIFORMLY AND MIX WITH SOIL. LIME: 45 LBS. PER 1000 S.F. PHOSPHOROUS: 20 LBS PER 1000 S.F.

CONTINUE TILLAGE UNTIL A WELL PULVERIZED, FIRM, UNIFORM SEED BED IS PREPARED 4-6 INCHES DEEP. SEED ON A FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY. 2 - 3 LBS PER 1000 S.F. (SEE MIXTURE BELOW) MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.

FERTILIZER: 17 LBS. PER 1000 S.F.

GRAIN STRAW & HAY AT 75 TO 100 LBS PER 1000 S.F. WOOD CHIPS AT 500 LBS. PER 1000 S.F. JUTE & MESH AS PER MANUFACTURER ASPHALT FOR ANCHORING MULCH SHALL BE TYPE SS-1 EMULSION AND APPLIED AT A RATE OF 1000 GAL. PER ACRE FOR SLOPE STABILIZATION, AND 150 GAL. PER TON OF STRAW FOR ANCHORING STRAW.

WITHIN THE PLANTING SEASON, IF POSSIBLE. IF GRASS STAND SHOULD BE OVER 60% DAMAGED, REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES. CONSULT CONSERVATION INSPECTOR ON MAINTENANCE, TREATMENT, AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED. SEED FOR TEMPORARY AND PERMANENT APPLICATIONS SHALL BE:

INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESEED

20% CARPET GRASS 24% BERMUDA GRASS 20% TURF FESCUE 10% CREEPING RED FESCUE 24% ANNUAL RYE GRAIN \*BERMUDA SEED SHALL BE HULLED FOR WARM WEATHER PLANTING. PURITY OF SEED SHALL BE A MIN. OF 98% AND GERMINATION SHALL BE A MIN. OF 85%.

ALL DISTURBED AREA SHALL BE SEEDED WITHIN 7 TO 14 DAYS OF THE COMPLETION OF GRADING. CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS, OTHER SEEDING SCHEDULES MAY BE POSSIBLE.

#### NPDES STABILIZATION TIMEFRAMES SITE AREA DESCRIPTION STABILIZATION TIMEFRAME EXCEPTIONS PERIMETER DIKES, SWALES, DITCHES AND SLOPES 7 DAYS NONE HIGH QUALITY WATER (HQW) ZONES 7 DAYS NONE IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED SLOPES STEEPER THAN 3:1 SLOPES 3:1 OR FLATTER 14 DAYS | 7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH

ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1 | 14 DAYS | NONE, EXCEPT FOR PERIMETERS AND HQW ZONES

# TEMPORARY SEEDING RECOMMENDATIONS FOR SUMMER

,	SEEDING MIXTURE	
SPECIES GERMAN MILLET	RATE (lb/acre) 40	
IN THE PIEDMONT AND BE SUBSTITUTED AT A	MOUNTAINS, A SMALL-STEMMED SUDANGRASS MRATE OF 50 lb/acre.	VI.

MOUNTAINS - MAY 15 - AUG. 15 PIEDMONT - MAY 1 - AUG. 15 COASTAL PLAIN — APR. 15 — AUG. 15 SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre

GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER. APPLY 4,000 lb/acre STRAW. ANCHOR STRAW BY TACKING WITH ASPHALT

NETTING, OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET IEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

EFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

# TEMPORARY SEEDING RECOMMENDATIONS FOR FALL

	SEEDING MIXTURE
SPECIES	RATE (lb/acre)
RYE (GRAIN)	120

EEDING DATES

SEEDING DATES

MOUNTAINS — AUG. 15 — DEC. 15 COASTAL PLAIN AND PIEDMONT - AUG. 15 - DEC. 15 SOIL AMENDMENTS

FOLLOW SOIL TEST OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 1,000 lb/acre 10-10-10 FERTILIZER.

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.

EPAIR AND REFERTILIZE DAMAGE AREAS IMMEDIATELY. TOP DRESS WITH O Ib/acre OF NITROGEN IN MARCH, IF IT IS NECESSARY TO EXTENT EMPORARY COVER BEYOND JUNE 15, OVERSEED WITH 50 lb/acre KOBE PIEDMONT AND COASTAL PLAIN) OR KOREAN (MOUNTAINS) LESPEDEZA II ATE FEBRUARY OR EARLY MARCH.

# TEMPORARY SEEDING RECOMMENDATIONS FOR LATE WINTER AND EARLY SPRING SEEDING MIXTURE

SPECIES RATE (lb/acre)

YE (GRAIN) ANNUAL LESPEDEZA (KOBE IN PIEDMONT AND COASTAL PLAIN, KOREAN

IN MOUNTAINS)

DMIT ANNUAL LESPEDEZA WHEN DURATION OF TEMPORARY COVER IS NOT TO EXTEND BEYOND JUNE.

SEEDING DATES MOUNTAINS -ABOVE 2,500 FEET: FEB. 15 - MAY 15 BELOW 2,500 FEET: FEB. 1 - MAY 1 PIEDMONT JAN. 1 - MAY 1 DEC. 1 - APRIL 15 COASTAL PLAIN -

SOIL AMENDMENTS FOLLOW RECOMMENDATIONS OF SOIL TESTS OR APPLY 2,000 lb/acre GROUND AGRICULTURAL LIMESTONE AND 750 lb/acre 10-10-10 FERTILIZER.

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.

REFERTILIZE IF GROWTH IS NOT FULLY ADEQUATE. RESEED, REFERTILIZE IND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

SITE WORK NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE TO BECOME FAMILIAR WITH FIELD CONSTRUCTION CONDITIONS. 2. CONTRACTOR SHALL COORDINATE WORK WITHIN LOCAL RIGHT OF WAYS WITH PROPER AUTHORITIES AND SHALL MEET ANY REQUIREMENTS AS TO TRAFFIC

CONTROL AND CONNECTION TO EXISTING STREETS. 3. CLEARING AND GRUBBING: REMOVE ALL TREES AS REQUIRED UNLESS

OTHERWISE NOTED TO REMAIN, STUMPS, ROOTS, SHRUBBERY, ASPHALT, CONCRETE, STRUCTURES, BURIED UTILITIES, STORAGE TANKS, ETC. WITHIN LIMITS OF CONSTRUCTION.

4. STRIPPING: BEFORE EXCAVATING OR FILLING, REMOVE ALL TOPSOIL, WOOD, LEAVES, AND ANY OTHER UNSUITABLE MATERIAL

5. MUCKING: REMOVE ANY SOFT, ORGANIC SILT MATERIALS AND EXISTING BURIED CONSTRUCTION DEBRIS AS REQUIRED AND FILL TO SUBGRADE ELEVATIONS WITH A CLEAN SELECT-FILL COMPACTED AS SPECIFIED.

6. DISPOSAL: CLEARED, GRUBBED, STRIPPED OR EXCAVATED SPOIL SHALL BE REMOVED FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL AND STATE CODES.

7. BORROW MATERIAL: THE CONTRACTOR SHALL FURNISH BORROW MATERIAL REQUIRED FROM OFF SITE AND OBTAIN ALL REQUIRED PERMITS ASSOCIATED WITH BORROW OPERATIONS. 8. FILL AND COMPACTION: AFTER STRIPPING THOSE AREAS DESIGNATED TO

RECEIVE FILL SHOULD BE PROOFROLLED. THE TOP 8" OF SUBGRADE SHALL BE COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT. ANY AREA WHICH PUMPS OR RUTS EXCESSIVELY SHOULD BE UNDERCUT AND REPLACED WITH A CLEAN, SILTY OR CLAYEY SAND HAVING A UNIFIED SOIL CLASSIFICATION OF SP, SM, OR SC. FILL MATERIAL 5' OUTSIDE OF BUILDING AREAS SHALL THEN BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED TO 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. FILL MATERIALS WITHIN BUILDING AREAS TO A LINE OUTSIDE THE BUILDING AREAS SHALL BE PLACED IN LAYERS NOT TO EXCEED 8" AND COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698) WITH THE UPPER 12 INCHES OF SUBGRADE BEING COMPACTED IN 6 INCH LAYERS TO 100% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IN AREAS WHERE NO STRUCTURAL FILL IS TO BE PLACED THE UPPER 12 INCHES OF IN-PLACE SUBGRADE SHOULD BE COMPACTED TO AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY. IF THE MATERIAL IS TOO DRY TO COMPACT TO THE REQUIRED DENSITY EACH LAYER SHALL BE WETTED IN ACCORDANCE WITH COMPACTION REQUIREMENTS. IF THE MATERIAL IS TOO WET TO SECURE PROPER COMPACTION, IT SHALL BE HARROWED REPEATEDLY OR OTHERWISE AERATED WITH SUITABLE EQUIPMENT UNTIL OPTIMUM MOISTURE CONTENT IS OBTAINED. FILL SHALL BE PLACED IN SUCH A MANNER THAT THE SURFACE WILL DRAIN READILY AT ALL TIMES. SEE STRUCTURAL NOTES AND SOILS REPORT FOR ADDITIONAL REQUIREMENTS.

9. LAYOUT: THE CONTRACTOR SHALL PROVIDE ALL LAYOUT REQUIRED TO CONSTRUCT HIS WORK.

10. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF EXISTING UTILITIES DURING CONSTRUCTION. 11. EXISTING BOUNDARY AND TOPOGRAPHIC INFORMATION FROM SURVEY BY MIKE UNDERWOOD AND ASSOCIATES. PA AND PROVIDED BY OWNER. THE CONTRACTOR SHALL VERIFY DIMENSIONS AT JOBSITE.

13. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF RELOCATION OR DISCONNECTION OF ALL EXISTING UTILITIES WITH APPLICABLE AGENCIES 14. ALL PAVEMENT AND BASE MATERIALS AND WORKMANSHIP SHALL CONFORM TO

NCDOT STANDARDS. 15. WATER AND SEWER SERVICES SHALL BE INSTALLED TO MEET LOCAL AND STATE PLUMBING CODES. METER AND TAPS SHALL MEET ALL LOCAL REQUIREMENTS.

16. ALL AREAS SHALL BE GRADED FOR POSITIVE DRAINAGE. 17. CONTRACTOR SHALL NOTE THAT EARTHWORK QUANTITIES ARE HIS

RESPONSIBILITY. PLANS DO NOT REPRESENT A BALANCED EARTHWORK 18. REINF. CONC. PIPE SHALL BE CLASS III W/RUBBER GASKETED JOINT OR

"RAM NECK" UNLESS OTHERWISE STATED. INSTALL PER MANUFACTURER'S REQUIREMENTS. 19. USE WHITE LANE MARKING PAINT FOR ALL PAVEMENT MARKINGS. PAINT SHALL BE A CHLORINATED RUBBER ALKYD, FS TT-P-115, TYPE III, FACTORY

MIXED, QUICK DRYING, NON-BLEEDING. CONTRACTOR TO VERIFY WITH LOCAL 20. REFER TO THE PLUMBING DRAWINGS FOR LOCATION AND INVERTS OF NEW WASTE AND WATER LINES.

21. SEE ARCHITECTURAL PLANS FOR LOCATION OF ROOF DRAINS. THE GENERAL CONTRACTOR IS RESPONSIBLE TO CONNECT THESE LINES TO THE UNDERGROUND DOWNSPOUT DRAIN AT THE REQUIRED DEPTH TO DRAIN. ALI UNDERGROUND DOWNSPOUT DRAINS SHALL HAVE A MINIMUM SLOPE OF 1% AND BE SCH 40 PVC PIPE AS FOLLOWS: USE 4" PIPE FOR UP TO 4 DOWNSPOUT CONNECTIONS, 5" PIPE FOR 5 TO 8 DOWNSPOUT CONNECTIONS AND 8" PIPE FOR 9 OR MORE CONNECTIONS

22. ALL DOWNSPOUTS SHALL HAVE AN AIR GAP PRIOR TO CONNECTION TO THE STORM DRAIN SYSTEM. 23. THE FINISHED GROUND ELEVATION AT THE BUILDING PERIMETER SHALL BE A

EROSION CONTROL NOTES AND MAINTENANCE PLAN 1. ALL EROSION AND SEDIMENT CONTROL MEASURES 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

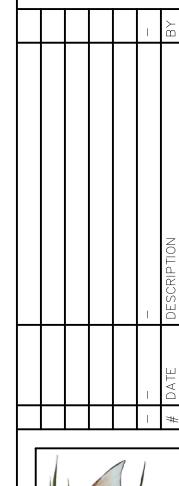
EVERY HALF-INCH RAINFALL. 2. ALL POINTS OF EGRESS WILL HAVE CONSTRUCTION ENTRANCES THAT WILL BE PERIODICALLY TOP-DRESSED WITH AN ADDITIONAL 2 INCHES OF #4 STONE TO MAINTAIN PROPER DEPTH. THEY WILL BE MAINTAINED IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE SITE. IMMEDIATELY REMOVE

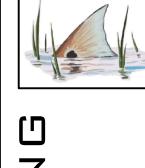
3. SEDIMENT WILL BE REMOVED FROM HARDWARE CLOTH AND GRAVEL INLET PROTECTION AND ROCK PIPE INLET PROTECTION WHEN THE DESIGNED CLEANED OR REPLACED WHEN THE SEDIMENT POOL NO LONGER DRAINS AS DESIGNED. DEBRIS WILL BE REMOVED FROM THE ROCK AND HARDWARE WEEK AND AFTER EVERY RAIN EVENT. SEDIMENT WILL BE REMOVED FROM AROUND BEAVER DAMS, DANDY SACKS AND SOCKS ONCE A WEEK AND

AFTER EVERY RAIN EVENT. 4. 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 6 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 SEDIMENT FENCE, THE ROCK WILL BE REPAIRED OR REPLACED IF IT BECOMES HALF-FULL OF SEDIMENT,

# LAND QUALITY REQUIRES

MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL SLOPES WILL BE STABILIZED WITHIN 21 CALENDAR DAYS. ALL OTHER AREAS WILL BE STABILIZED WITHIN 15 WORKING DAYS. : WATER QUALITY REQUIRES ALL SEEDED AREAS BE FERTILIZED, RESEEDED AS NECESSARY AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VIGOROUS, DENSE VEGETATIVE COVER. ALL PERIMETER DIKES, SWALES, HORIZONTAL TO DITCHES, PERIMETER SLOPES, ALL SLOPES STEEPER THAN (3:1) VERTICAL AND ALL HIGH QUALITY WATER (HQW) ZONES SHALL PROVIDE TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICAL BUT IN ANY EVENT WITHIN SEVEN (7) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY. ALL OTHER DISTURBED AREAS SHALL PROVIDE TEMPORARY OR PERMANENT STABILIZATION WITH GROUND COVER AS SOON AS PRACTICAL BUT IN ANY EVENT WITHIN FOURTEEN (14) CALENDAR DAYS FROM THE LAST LAND-DISTURBING ACTIVITY.



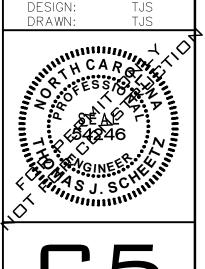


MINIMUM OF 6 INCHES RELOW THE BUILDING FINIS EXCEPT AT ENTRANCES AND ENTRANCE TRANSITIONS.

OBJECTIONABLE MATERIAL SPILLED WASHED OR TRACKED ONTO THE CONSTRUCTION ENTRANCE OR ROADWAYS. PROTECTION, BLOCK AND GRAVEL INLET PROTECTION, ROCK DOUGHNUT INLET STORAGE CAPACITY HAS BEEN HALF FILLED WITH SEDIMENT. ROCK WILL BE CLOTH TO ALLOW PROPER DRAINAGE. SILT SACKS WILL BE EMPTIED ONCE A

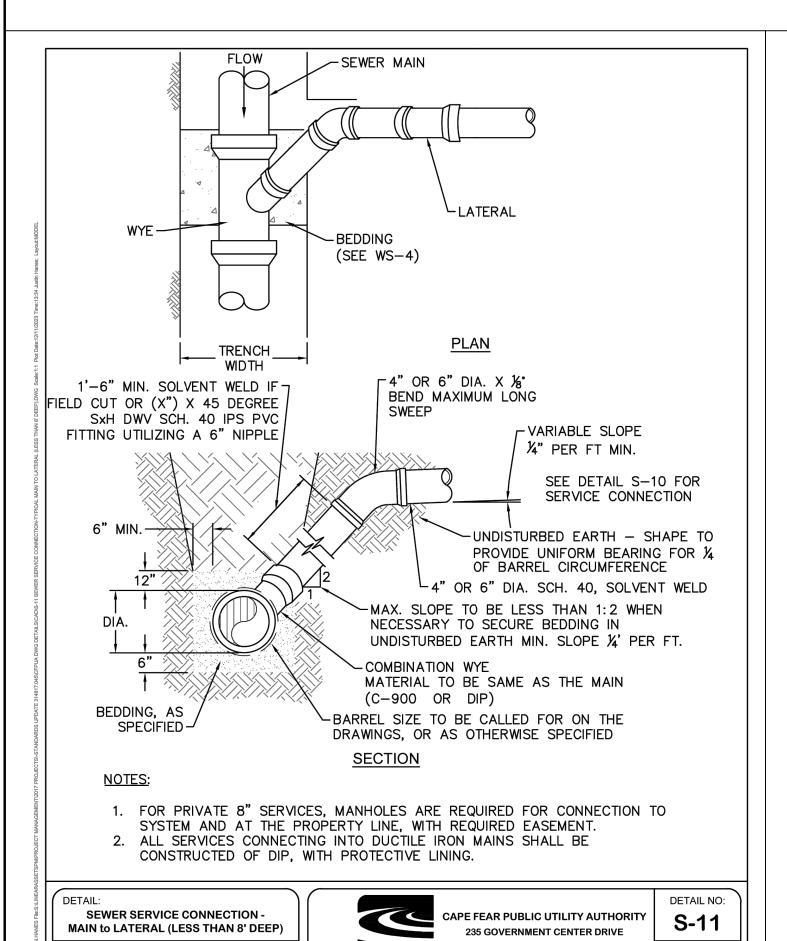
NO LONGER DRAINS AS DESIGNED OR IS DAMAGED.

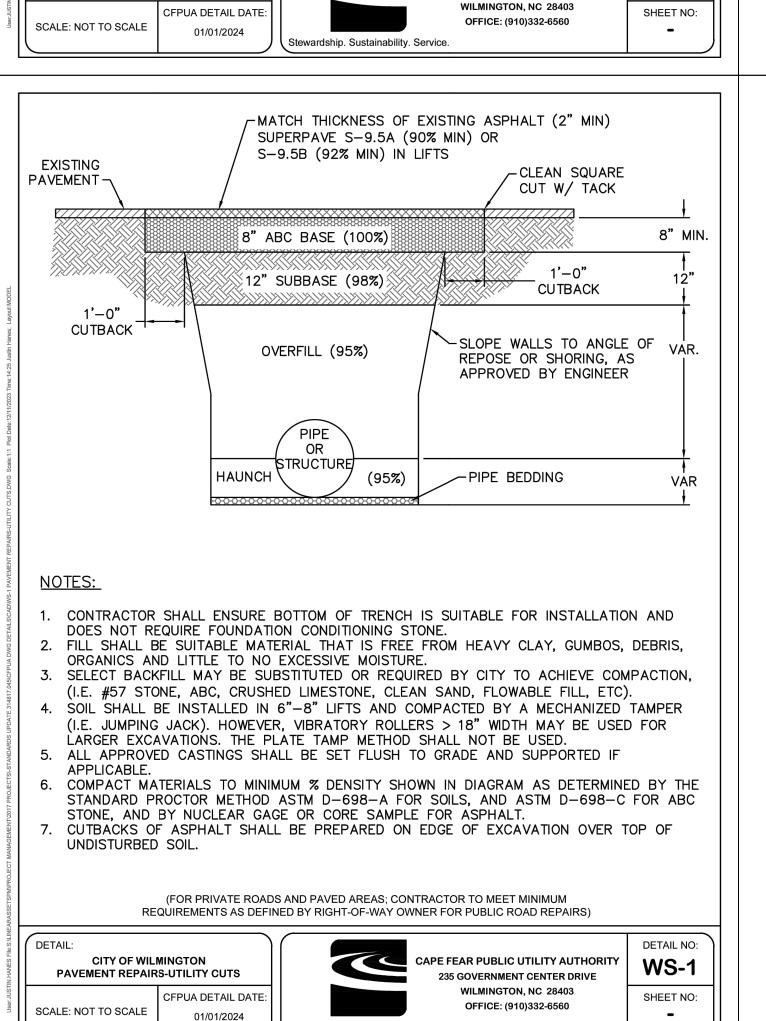
5. ALL SEEDED AREAS WILL BE FERTILIZED, RESEEDED AS NECESSARY, AND MULCHED, ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN. TO



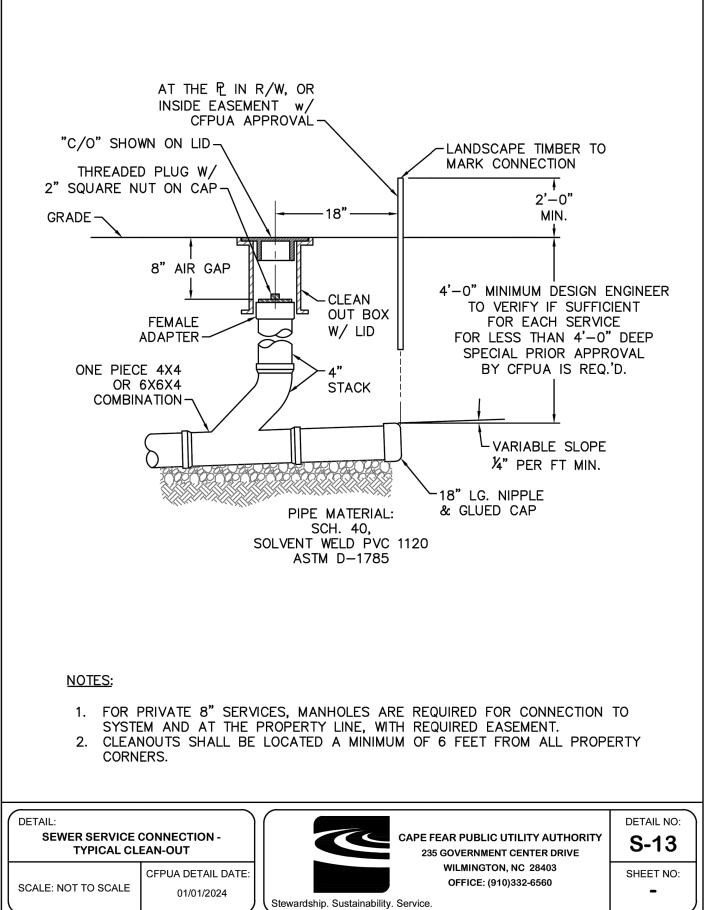
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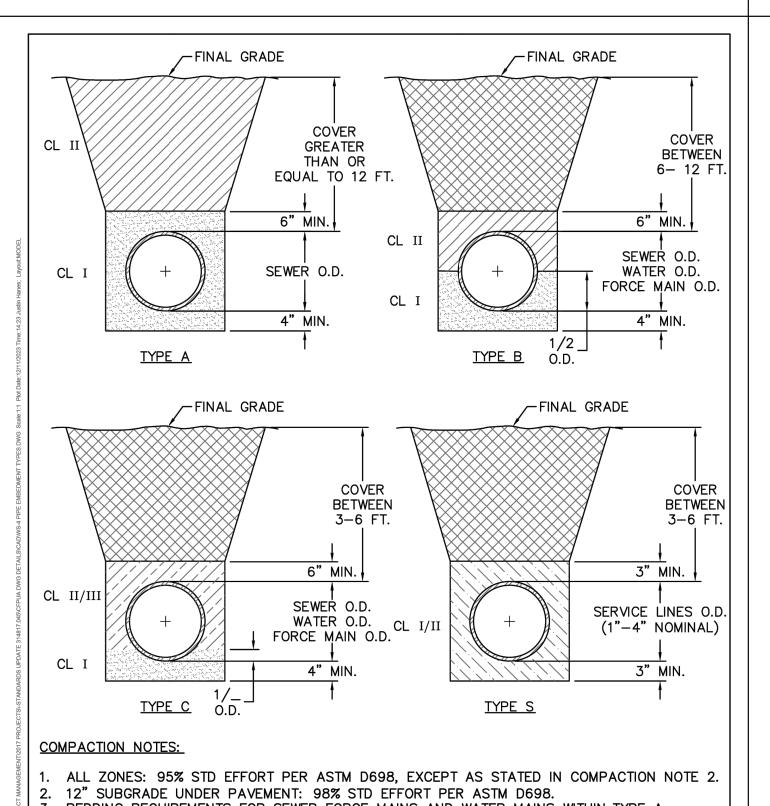
08/28/24

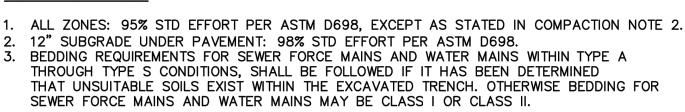




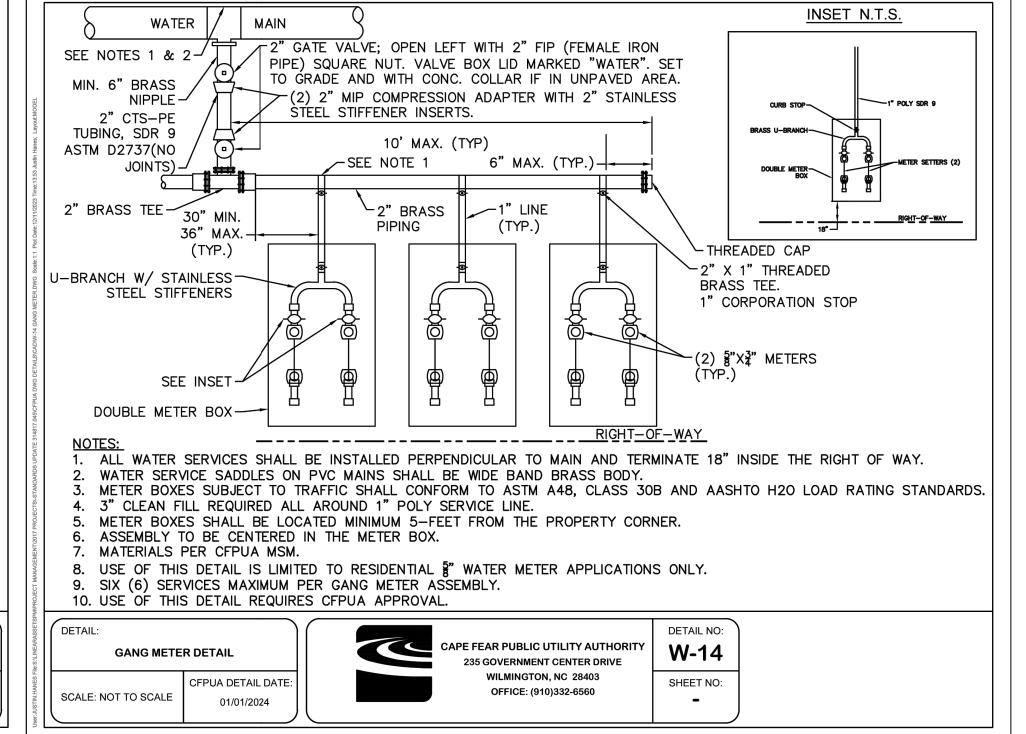
ardship. Sustainability. Service

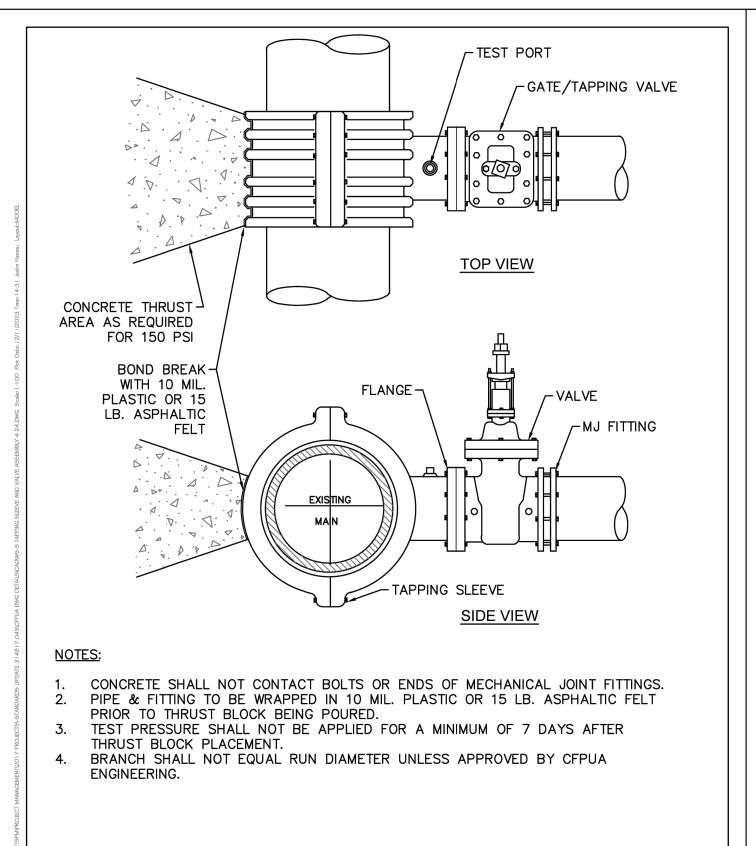






DETAIL: PIPE EMBEDMENT TYPES		ENT TYPES	CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE	DETAIL NO: WS-4
	SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2024	WILMINGTON, NC 28403 OFFICE: (910)332-6560 Stewardship. Sustainability. Service.	SHEET NO:





TAPPING SLEEVE AND VALVE ASSEMBLY

(4"-24")

SCALE: NOT TO SCALE

CFPUA DETAIL DATE:

01/01/2024

DETAIL NO:

**WS-9** 

SHEET NO:

WATER & SEWER PIPELINES

SCALE: NOT TO SCALE

CFPUA DETAIL DATE:

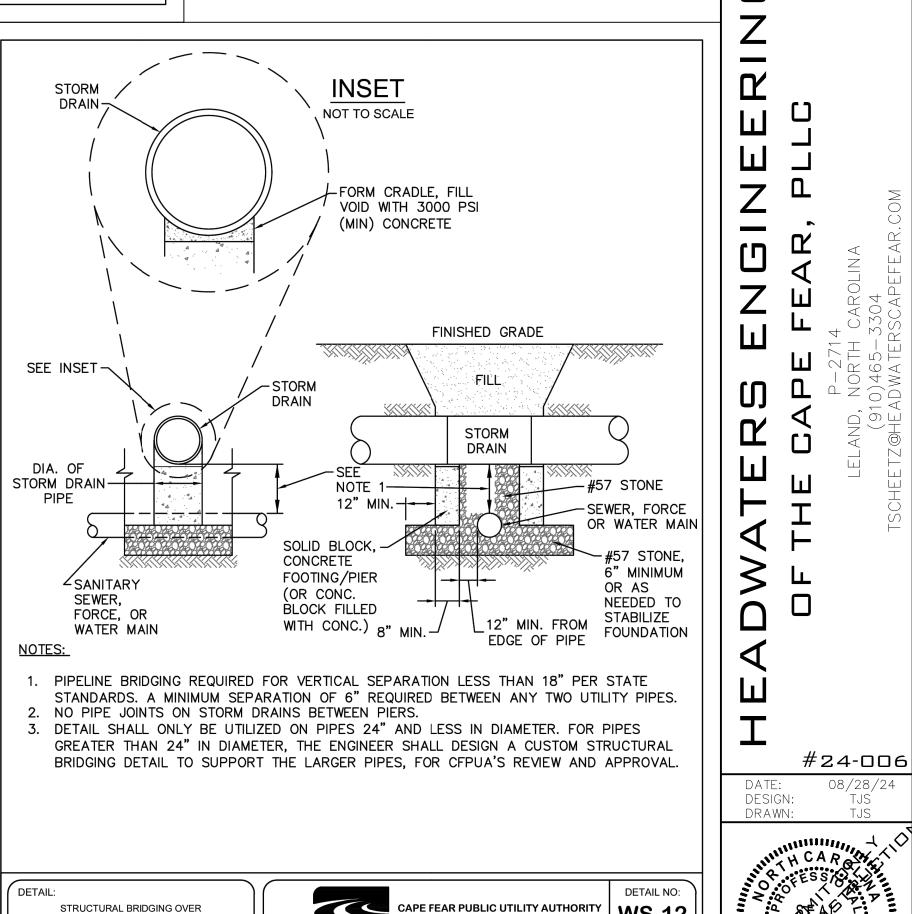
01/01/2024

CAPE FEAR PUBLIC UTILITY AUTHORITY

235 GOVERNMENT CENTER DRIVE

WILMINGTON, NC 28403

OFFICE: (910)332-6560

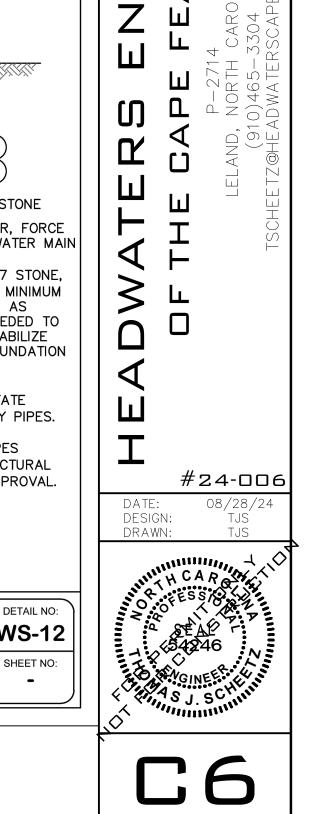


235 GOVERNMENT CENTER DRIVE

WILMINGTON, NC 28403

OFFICE: (910)332-6560

ardship. Sustainability. Service





Jeremy Hardison
Director Of Community Dev.
Town of Carolina Beach
1121 N. Lake Park Blvd.
Carolina Beach, NC 28428

Project #:

24-006

Subject:

St Joseph St 1 Ac Tract - Permeable Pavers

Date:

August 22, 2024

Mr. Hardison,

The purpose of this letter is to ensure the Town that the proposed "Truegrid Pro Plus" permeable paver product, as described by the manufacturer in the attached brochure, meets or exceeds all requirements described in the NCDOT Subdivision Roads standards and USPS National Delivery Planning Standards.

Please see the below specifications & facts of this product:

- Strength: Over 17,000 psi compared to 4000 psi +/- (asphalt)
- HS20 rated: 16,000 lbs. per wheel/32,000 lbs. per axle
- Variable subbase, 8" minimum can be increased to add bearing capacity to meet emergency vehicle requirements if needed
- 100% permeable to reduce stormwater runoff
- Permeability also captures pollutants
- Made from 100% recycled HDPE

Sincerely,

Thomas J. Scheetz, P.E., President **Headwaters Engineering of the Cape Fear, PLLC**1108 New Pointe Blvd Unit 130 #151, Leland, NC 28451 (910)465-3304 – tscheetz@headwaterscapefear.com



# **Stormwater Calculations**

For

"Kybalion Creek"
St Joseph St 1 ac Tract
Black Lotus Properties, LLC
24-006

SEAL STATE STATE OF SEAL STATE

HEADWATERS ENGINEERING
of the Cape Fear, PLLC

Leland, NC (910) 465-3304 tscheetz@headwaterscapefear.com

NCBELS License P-2714

Item 2.

Date:	Design:	Headwaters Engineering s				
8/22/2024	TJS	of the Cape Fear, PLLC Leland, NC				1
Title:			For:		Job #:	
SW Calculat	ions		St Joseph St 1 ac Tract		24-006	

<u>Swale</u>

Q 10 = CiA = 155.5 cfs C = 0.4 i 10 = 7.61 in/hr A = 51.10 ac

## **NOAA Rainfall Data**

Average recurrence interval = 10 yrs

Duration = 24 hr i 10 = 7.61 in/hr Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Tuesday, Aug 20 2024

## **Swale**

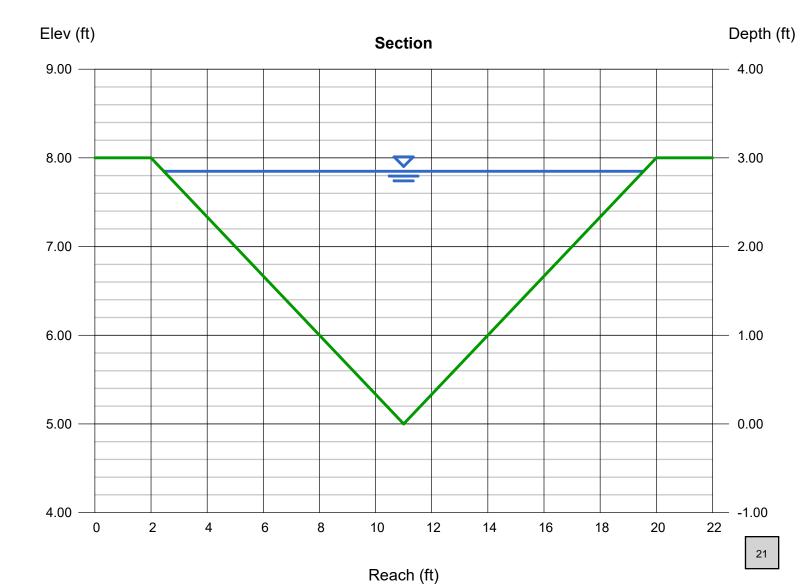
Triangular	
Side Slopes (z:1)	= 3.00, 3.00
Total Depth (ft)	= 3.00
Invert Elev (ft)	= 5.00
Slope (%)	= 0.50
N-Value	= 0.020

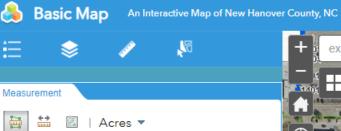
# Calculations

Compute by: Known Q Known Q (cfs) = 155.50

# Highlighted

Depth (ft)	=	2.85
Q (cfs)	=	155.50
Area (sqft)	=	24.37
Velocity (ft/s)	=	6.38
Wetted Perim (ft)	=	18.02
Crit Depth, Yc (ft)	=	2.79
Top Width (ft)	=	17.10
EGL (ft)	=	3.48



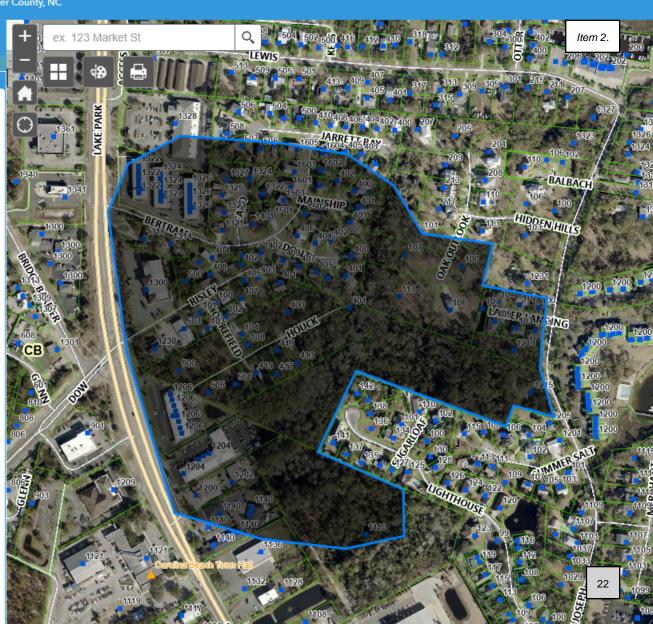


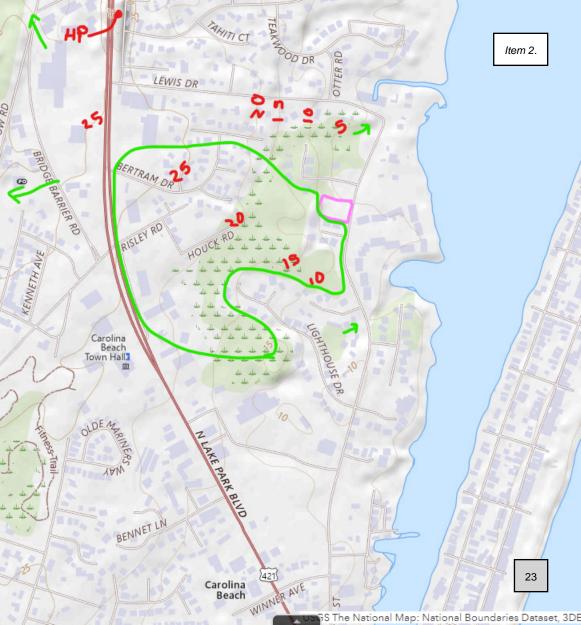
51.1 Acres

Measurement Result

Clear

Press CTRL to enable snapping









#### NOAA Atlas 14, Volume 2, Version 3 Location name: Carolina Beach, North Carolina, USA\*

Latitude: 34.0486°, Longitude: -77.8936° Elevation: 6 ft\*\*

source: ESRI Maps
\*\* source: USGS

#### POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley NOAA, National Weather Service, Silver Spring, Maryland

PF tabular | PF graphical | Maps & aerials

#### PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) <sup>1</sup>										
		precipita	пон печи	Average re				JC 1111C1 V	uio (iii ii	ioneoj
Duration	1	2	5	10	25	50	100	200	500	1000
5-min	<b>0.540</b> (0.502-0.584)	<b>0.644</b> (0.598-0.695)	<b>0.751</b> (0.696-0.810)	<b>0.834</b> (0.772-0.900)	<b>0.941</b> (0.866-1.01)	<b>1.02</b> (0.937-1.10)	<b>1.10</b> (1.01-1.19)	<b>1.19</b> (1.07-1.28)	<b>1.30</b> (1.16-1.40)	<b>1.39</b> (1.23-1.51)
10-min	<b>0.863</b> (0.803-0.933)	<b>1.03</b> (0.956-1.11)	<b>1.20</b> (1.12-1.30)	<b>1.33</b> (1.23-1.44)	<b>1.50</b> (1.38-1.61)	<b>1.63</b> (1.49-1.75)	<b>1.76</b> (1.60-1.89)	<b>1.88</b> (1.70-2.03)	<b>2.05</b> (1.84-2.22)	<b>2.18</b> (1.94-2.37)
15-min	<b>1.08</b> (1.00-1.17)	<b>1.29</b> (1.20-1.40)	<b>1.52</b> (1.41-1.64)	<b>1.69</b> (1.56-1.82)	<b>1.90</b> (1.75-2.05)	<b>2.06</b> (1.89-2.22)	<b>2.22</b> (2.02-2.39)	<b>2.37</b> (2.15-2.56)	<b>2.58</b> (2.31-2.79)	<b>2.74</b> (2.43-2.98)
30-min	<b>1.48</b> (1.38-1.60)	<b>1.79</b> (1.66-1.93)	<b>2.16</b> (2.00-2.33)	<b>2.44</b> (2.26-2.64)	<b>2.82</b> (2.59-3.03)	<b>3.10</b> (2.84-3.34)	3.40 (3.09-3.66)	<b>3.70</b> (3.34-3.99)	<b>4.11</b> (3.68-4.45)	<b>4.44</b> (3.94-4.82)
60-min	<b>1.84</b> (1.72-1.99)	<b>2.24</b> (2.08-2.42)	<b>2.77</b> (2.57-2.99)	<b>3.18</b> (2.94-3.44)	<b>3.75</b> (3.45-4.04)	<b>4.20</b> (3.85-4.53)	<b>4.68</b> (4.26-5.04)	<b>5.18</b> (4.69-5.60)	<b>5.89</b> (5.28-6.38)	<b>6.48</b> (5.75-7.04)
2-hr	<b>2.19</b> (2.02-2.39)	<b>2.68</b> (2.47-2.93)	<b>3.40</b> (3.13-3.71)	<b>3.99</b> (3.66-4.36)	<b>4.84</b> (4.42-5.28)	<b>5.56</b> (5.05-6.06)	<b>6.34</b> (5.72-6.92)	<b>7.20</b> (6.44-7.84)	<b>8.45</b> (7.48-9.23)	<b>9.54</b> (8.37-10.4)
3-hr	<b>2.33</b> (2.14-2.57)	<b>2.85</b> (2.62-3.14)	<b>3.64</b> (3.33-4.00)	<b>4.30</b> (3.93-4.73)	<b>5.29</b> (4.80-5.81)	<b>6.15</b> (5.54-6.74)	<b>7.10</b> (6.34-7.77)	<b>8.14</b> (7.22-8.91)	<b>9.73</b> (8.51-10.7)	<b>11.1</b> (9.62-12.2)
6-hr	<b>2.94</b> (2.69-3.25)	<b>3.59</b> (3.29-3.98)	<b>4.59</b> (4.19-5.08)	<b>5.45</b> (4.96-6.02)	<b>6.72</b> (6.07-7.40)	<b>7.82</b> (7.02-8.62)	<b>9.06</b> (8.07-9.97)	<b>10.4</b> (9.20-11.5)	<b>12.6</b> (10.9-13.8)	<b>14.4</b> (12.4-15.9)
12-hr	<b>3.44</b> (3.12-3.84)	<b>4.21</b> (3.82-4.69)	<b>5.42</b> (4.91-6.04)	<b>6.47</b> (5.83-7.20)	<b>8.04</b> (7.18-8.92)	<b>9.42</b> (8.36-10.4)	<b>11.0</b> (9.65-12.2)	<b>12.7</b> (11.1-14.1)	<b>15.4</b> (13.2-17.1)	<b>17.9</b> (15.1-19.8)
24-hr	<b>4.04</b> (3.70-4.46)	<b>4.90</b> (4.50-5.41)	<b>6.35</b> (5.81-7.00)	<b>7.61</b> (6.95-8.39)	<b>9.56</b> (8.64-10.5)	<b>11.3</b> (10.1-12.4)	<b>13.3</b> (11.7-14.6)	<b>15.5</b> (13.5-17.2)	<b>19.0</b> (16.2-21.1)	<b>22.1</b> (18.5-24.8)
2-day	<b>4.66</b> (4.29-5.12)	<b>5.64</b> (5.20-6.20)	<b>7.24</b> (6.64-7.96)	<b>8.62</b> (7.87-9.49)	<b>10.7</b> (9.70-11.8)	<b>12.6</b> (11.3-13.9)	<b>14.7</b> (13.0-16.3)	<b>17.1</b> (14.9-19.0)	<b>20.7</b> (17.7-23.2)	<b>23.9</b> (20.1-27.0)
3-day	<b>4.90</b> (4.52-5.36)	<b>5.92</b> (5.46-6.48)	<b>7.54</b> (6.94-8.27)	<b>8.94</b> (8.19-9.81)	<b>11.0</b> (10.0-12.1)	<b>12.9</b> (11.6-14.2)	<b>14.9</b> (13.3-16.5)	<b>17.2</b> (15.1-19.1)	<b>20.8</b> (17.9-23.2)	<b>24.0</b> (20.2-27.1)
4-day	<b>5.14</b> (4.75-5.61)	<b>6.20</b> (5.73-6.77)	<b>7.85</b> (7.24-8.58)	<b>9.26</b> (8.50-10.1)	<b>11.4</b> (10.3-12.4)	<b>13.2</b> (11.9-14.4)	<b>15.2</b> (13.6-16.7)	<b>17.4</b> (15.4-19.2)	<b>20.9</b> (18.1-23.2)	<b>24.2</b> (20.3-27.2)
7-day	<b>5.82</b> (5.42-6.29)	<b>7.01</b> (6.53-7.58)	<b>8.82</b> (8.19-9.54)	<b>10.3</b> (9.55-11.2)	<b>12.5</b> (11.5-13.6)	<b>14.4</b> (13.1-15.6)	<b>16.4</b> (14.8-17.8)	<b>18.6</b> (16.6-20.3)	<b>21.8</b> (19.2-24.0)	<b>24.5</b> (21.2-27.5)
10-day	<b>6.54</b> (6.10-7.04)	<b>7.83</b> (7.30-8.43)	<b>9.70</b> (9.02-10.5)	<b>11.3</b> (10.4-12.1)	<b>13.5</b> (12.5-14.6)	<b>15.4</b> (14.1-16.7)	<b>17.4</b> (15.9-18.9)	<b>19.7</b> (17.7-21.4)	<b>22.9</b> (20.2-25.1)	<b>25.5</b> (22.3-28.3)
20-day	<b>8.76</b> (8.22-9.39)	<b>10.4</b> (9.79-11.2)	<b>12.7</b> (11.9-13.6)	<b>14.6</b> (13.6-15.7)	<b>17.3</b> (16.0-18.5)	<b>19.5</b> (18.0-20.9)	<b>21.8</b> (20.0-23.5)	<b>24.3</b> (22.0-26.3)	<b>27.8</b> (24.9-30.4)	<b>30.7</b> (27.1-33.8)
30-day	<b>10.8</b> (10.2-11.5)	<b>12.9</b> (12.1-13.7)	<b>15.4</b> (14.5-16.5)	<b>17.5</b> (16.5-18.7)	<b>20.4</b> (19.1-21.8)	<b>22.7</b> (21.1-24.3)	<b>25.1</b> (23.2-26.9)	<b>27.6</b> (25.3-29.7)	<b>31.0</b> (28.1-33.6)	<b>33.7</b> (30.3-36.7)
45-day	<b>13.6</b> (12.9-14.4)	<b>16.1</b> (15.2-17.1)	<b>19.1</b> (18.0-20.3)	<b>21.5</b> (20.2-22.8)	<b>24.8</b> (23.2-26.4)	<b>27.5</b> (25.6-29.2)	<b>30.2</b> (27.9-32.2)	<b>32.9</b> (30.3-35.3)	<b>36.7</b> (33.4-39.6)	<b>39.7</b> (35.9-43.1)
60-day	<b>16.5</b> (15.6-17.5)	<b>19.4</b> (18.4-20.6)	<b>22.8</b> (21.5-24.1)	<b>25.4</b> (24.0-26.8)	<b>28.9</b> (27.2-30.6)	<b>31.6</b> (29.7-33.5)	<b>34.4</b> (32.1-36.5)	<b>37.1</b> (34.4-39.5)	<b>40.8</b> (37.5-43.7)	<b>43.6</b> (39.8-47.0)

Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP

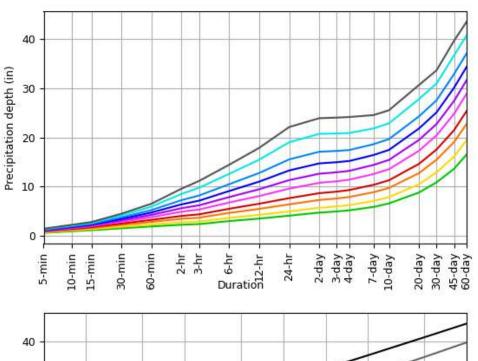
Please refer to NOAA Atlas 14 document for more information.

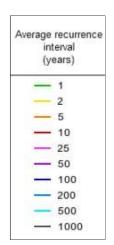
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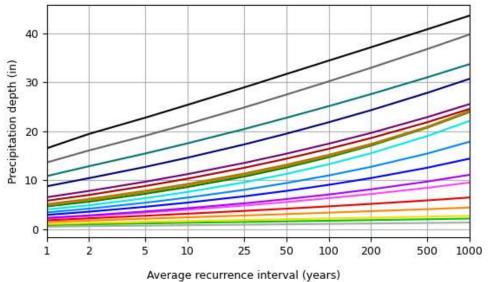
### PF graphical

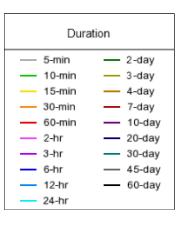
Item 2.

PDS-based depth-duration-frequency (DDF) curves Latitude: 34.0486°, Longitude: -77.8936°









NOAA Atlas 14, Volume 2, Version 3

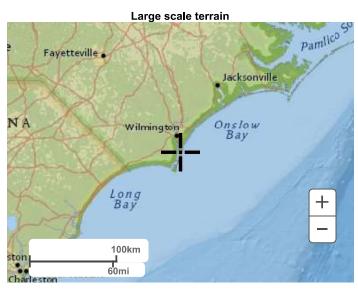
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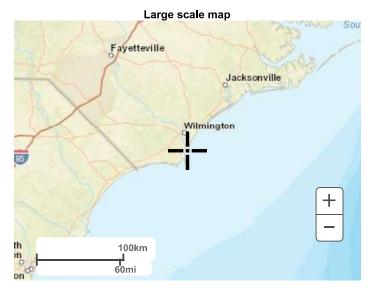
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## Maps & aerials

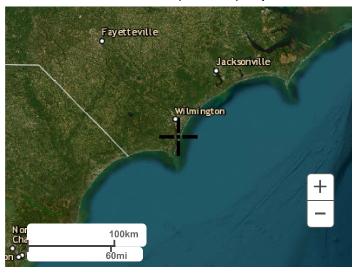
Small scale terrain







Large scale aerial



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# **AGENDA ITEM COVERSHEET**

PREPARED BY: Gloria Abbotts, Senior Planner DEPARTMENT: Community

Development

**MEETING:** Planning & Zoning Commission – 9/12/2024

**SUBJECT:** Appoint a Chair and Co-chair of the Planning & Zoning Commission

### **Action:**

The Commission will need to appoint a Chair and Co-chair.