

Director of
Planning and Inspections
MEREDITH GUNS

Building Inspector
MARTY SHAW
CHARLES THUMAN

Code Enforcement Officer
JORDAN BLYTHE



Assistant Director of
Planning and Inspections
CAMERON RAY

Senior Planner
RYAN LANG

Zoning Administrator
DONNA ELLIOTT

THE TOWN OF KILL DEVIL HILLS
NORTH CAROLINA

PLANNING DEPARTMENT

June 21, 2022

Memorandum

To: Planning Board

From: Ryan Lang, Senior Planner 

Subject: **SITE PLAN REVIEW**—3206 Briggs Street in the Commercial Zone
Proposed Two 4-Unit Townhomes

Attached is the proposed site plan at 3206 Briggs Street in the Commercial Zone, to construct two 4-unit townhomes, each unit being 2 bedrooms, 22 parking spaces, and associated site modifications submitted by House Engineering. The proposed multifamily development is a permitted use in the Commercial Zone (C) *Multi Family Dwellings*. Attached you will find a commercial site plan application, owners authorization, proposed site plan, proposed architectural plans, applicant's response to Staff's Tech 3 comments, health department approval, wastewater detail plan, and soil inspection.

All staff comments regarding the site plan have been addressed. Staff recommends that the Planning Board forward the plan to the Board of Commissioners with a favorable recommendation.

Town of Kill Devil Hills Planning and Inspections
Commercial Site Plan Review Application*



Applicant

Name: House Engineering, p.C.
Address: PO Box 466
Kitty Hawk NC 27949
Phone: 252-261-8253
Fax: _____
Cell: 252-305-4796

Property Owner

Name: Vladimir Zyka and Edlira Shemandi
Address: 302 West Fil Lane
Kill Devil Hills, NC 27948
Phone: _____
Fax: _____
Cell: 252-207-8247

Property Location

Address: 3206 Briggs Street Lot, Block: Lots 3-4 / Blk 11
Subdivision: Orville Beach Amended Blk 11 Pin#: 9885 1304 0393

Zoning District: Commercial LI-1 LI-2 OIR
Total Lot Size: 25,217.00 Sq. Ft. Disturbed Area: 11,575.00 Sq. Ft.

Contractor

Company Name: _____ License Number: _____
Name: _____ Phone: _____
Address: _____ Cell: _____
Fax: _____
Town Privilege License Number: _____

Construction Information

Type of Construction: VB
 Assembly Business Educational Factory/Industrial High Hazard
 Institutional Mercantile Residential Storage Utility/Misc.
 New Construction Addition Repair/Replace Remodel Other: _____

Square Footage Proposed:

Interior Space: 10,400.00 Sq. Ft. Covered Deck(s): 1176.00 Sq. Ft. Storage: _____ Sq. Ft.
Garage: 1176.00 Sq. Ft. # of Bedrooms: 16 # of Open Deck(s): 8
Proposed Square Footage: 16,408.00 + Existing Square Footage: _____ = 16,408.00 Total Sq. Ft.
% Impervious Coverage: _____ + % Pervious Coverage: 45.82 = 45.82 Total % Coverage
of Parking Spaces: Existing: _____ Proposed: 22 Total: 22
Septic Tank Permit #: _____ Construction Type: VB

Estimated Construction Cost (including labor and materials): 1.5 Mil

Flood Information

Flood Zone: VE AE X Base Flood Elevation: N/A
Proposed First Floor Elevation: 9.0 Sq. Ft Below Base Flood Elevation: NA

*This form is designed as a guide for Commercial Site Plan Review.
Additional plans and information will be required prior to building permits.

- Proposed First Floor Elevation
- Dumpster Pad Location
- Proposed Sign Location
- Sight triangle shown
- Commercial Building Plans showing architectural compliance
- Plans to N.C.D.O.T. (if required)
- NC Engineer/Land Surveyor Seal on Site Plan

*** The items listed in the Site Plan portion of the above checklist represent information that must be indicated on any site plan submitted for review by the Kill Devil Hills Planning Department, Planning Board, and Board of Commissioners. All of the above required documents shall be submitted on or before the 3rd Tuesday of each month. Upon completion of review, the Planning Board shall transmit its recommendations to the Board of Commissioners. The Board of Commissioners shall review site plans on the second Monday of each month.

Signature of Applicant:  (Date) 3/16/2022
Verified by pdfFiller
03/16/2022



TOWN OF KILL DEVIL HILLS, NORTH CAROLINA
OWNER AUTHORIZATION

I, Vladimir Zyka & Edlira Shermandi, authorize House Engineering, P.C.
(Owner) (Agent/ Contractor)

to act as my agent for Permitting of (2) 4 unit townhomes
(Description)

located at 3206 Briggs Street
(Address)

I understand and accept responsibility to comply with all regulations and required inspections.

I further understand and acknowledge that until a final inspection has been performed and approved and this project has received a Certificate of Occupancy/Completion (CO), no portion of this project is authorized for use or occupancy.

Verified by pdfFiller

Vladimir Zyka
Signature of Owner

Richard A. House, P.E.
Signature of Agent

3/15/2022
Date

3/15/2022
Date

PO Box 466, Kitty Hawk NC 27949
Address

252-261-8253
Telephone # (s)

OWNER AUTHORIZATION IS REQUIRED AT INITIAL SUBMITTAL

Please check with you Insurance Agent prior to construction. Your project may affect your flood insurance rates!

PO Box 1719 • Kill Devil Hills, NC 27948
252-449-5318 • 252-441-4102 (fax) • www.kdhnc.com

HOUSE ENGINEERING, P.C.



P.O. Box 466
Kitty Hawk, NC 27949
Phone: 252-261-8253
e-mail: rick@houseengineering.net



June 7, 2022

Town of Kill Devil Hills
Planning and Inspections Department
PO Box 1719
Kill Devil Hills, NC 27948
C/O Mr. Cameron Ray

Re: Written Response for Administrative Review, Staff Comments for property located at 3206 Briggs Street, Kill Devil Hills, Dare County, North Carolina

Please find attached the written response to staff comments. Also, (15) fifteen copies of the revised plans accompany this submittal.

Respectfully Submitted,
Bryan Seawell
House Engineering, P.C.

June 1, 2022

Memorandum

To: Bryan Seawell, House Engineering

From: Ryan Lang, Senior Planner

Subject: **SITE PLAN TECHNICAL REVIEW 2**—3206 Briggs Street in the Commercial Zone
Proposed 4-Unit Townhomes

Staff has reviewed the plans and documentation for the above referenced proposed project and offers the following comments:

Planning

Site Plan:

1. Sheet C2: Add building setback lines. **Setbacks added to Page C2**
2. Relocated Briggs Street Parking not shown, only provided on waste water sheet. **Revised on Page C2**
3. *General Notes:* (All Sheets Revise)
 - i. Lot Coverage: Provide Total Coverage square footage and percentage without Turfstone reduction. Provide Total Coverage square footage and percentage with Turfstone reduction. **Revised to Page C2**
 - ii. List Setbacks Applicable: (Front 30', Rear Yard: Double Frontage 30', Side Yard 10') **Revised to Page C2**

Lighting (C5):

1. Western parking spaces shall be lit. Consider solar lighting fixtures. **Revised to Page C5**

Commercial Building Exterior:

2. Provide proposed building materials (Siding, Roofing) **Added on Pages 1/5 and 2/5 (Elevations)**

Town Engineer

1. The additional topography provided along Briggs Street is fine. NO additional information was provided along the southern and northern property lines "to show grade relationships to adjoining property." Specifically, we want to make sure that surface flow from the site does not spill onto adjoining property. A series of about half a dozen shots down each of those two property lines will suffice. **Spot Elevations Added to Page C3**

2. Sheet C2 shows the reconfigured parking, but we didn't see where the spaces were expressly called out to be marked. **Pages C2 and C3 show new location of 6 parking spaces on Briggs Street**

Public Services

Solid Waste

1. Provide pad and setback dimensions of the dumpster site per the attached Town two dumpster site plan. **Dimensions added to Page C2**

Streets

1. Remove the curb in the parking areas north and south of the entrance curb and gutter returns. Asphalt will need to be cut at an angle in these locations from the end of each back of curb to the intersection of closest parking lines and the existing edge of pavement. **Revised on Page C6**
2. The driveway typical detail on sheet C6 needs to be revised to reflect the commercial driveway with curbs. **Revised on Page C6**
3. Show proposed replacement parking in the Briggs Street right-of-way. **Pages C2 and C3 show new location of 6 parking spaces on Briggs Street**

Water System

1. Public Services recommends connecting water services to the existing 8" PVC main located in the US 158 right-of-way and along the western boundary of the property. Public Services is working with the designer to modify the water service connections accordingly. **Revised on Page C2**
2. Fees associated with the proposed services with individual meters are provided below based on the current fee schedule:

a. Proposed two bedroom unit with 5/8"x 3/4" meter:	
System Development Fee	= \$ 4,000.00
Tap Fee	= \$ 1,145.00
Surety	= \$ 100.00
<u>Total Each Unit</u>	<u>= \$ 5,245.00</u>

Eight (8) Proposed Units x \$5,245.00 = \$41,960.00

Fire Marshal

1. Water test has not been completed **To be provided by Mike Robinson, P.E.**
2. What UL listing is going to be used for the fire separation between the units? **UL 350 Type A (2 Hours)**

In order to be placed on the **June 21, 2022** Planning Board meeting agenda, please submit revised site plans by **CLOSE OF BUSINESS on June 7, 2022**. If you have any questions or concerns, feel free to contact us here at the Planning Department (252-449-5315).

Improvement Permit
County of Dare
PO Box 669
Manteo NC 27954



S4-10026

Phone: (252) 475-5080

DARE COUNTY DEPARTMENT OF PUBLIC HEALTH

An Improvement Permit (IP) issued pursuant to this application is not affected by change in ownership provided the site and wastewater characteristics remain unchanged. An IP issued with a plat is valid without expiration. An IP issued with a site plan is valid for 60 months from the date of issuance.

Parcel: 000040000	LOT: 3-4 BLK: 11 SEC:	Permit: S4-10026
Location:	BRIGGS ST – KILL DEVIL HILLS	
Subdivision:	ORVILLE BEACH AMENDED BLK 11	
Owner Name:	VLADIMIR ZYKA	Permit Date: 04/06/2022
Owner Address:	302 W FIL LN	Permit Type: WW COMMERCIAL NEW
	KILL DEVIL HILLS, NC 27948	

Number of bedrooms:	16	Gallons per day:	1920
Occupancy:	32	Tank type:	PRECAST
Water Supply:	PUBLIC	Tank size:	3000
Nitrific field size sqft:	420	Pump tank size:	35000
Number of lines:	14	Grease trap size:	0
			Type V-D Pre-treatment system
Trench length (feet):	30	Septic type:	COMMERCIAL
Trench width (inches):	36	Septic code:	LOW PRESSURE PIPE
Trench depth (inches):	18	Distribution:	
Gravel depth (inches):	12	Distance from building:	5
Rock Under (inches):	6	Distance from water supply:	10
Rock Above (inches):	2	Distance from property line:	10
Bed system dimensions:	21X30	Distance from open water:	50

Design Specifications:

– COMPLETE ALL SITE PREP AND CALL FOR SITE WORK INSPECTION. MUCK ORGANIC LAYER AND BACKFILL WITH SAND PRIOR TO FILLING SITE WITH 12" OF FILL SAND ACROSS. SET TANKS AND INSTALL SYSTEM EXACTLY AS DESIGNED BY HOUSE ENGINEERING, P.E. 100% REPAIR AREA REQUIRED. SYSTEM REQUIRES PERIODIC INSPECTIONS BY EH UNIT AND ENGINEER. FINAL STARTUP AND CERTIFICATION REQUIRED. ALL WATER LINES MUST BE AT LEAST 10' FROM SYSTEM.

Note: This Permit is subject to all provisions of the 15A NCAC .1900 rules governing the installation of septic systems. The person making the installation must notify the Health Department when the septic tank system is ready for inspection. If any septic tank system or part thereof is covered before being inspected and approved, it shall be uncovered at the direction of the Health Officer at the expense of the one responsible for making the installation.
Issued 04/06/2022 Permit Fee: \$ 600.00


Environmental Health Specialist
Application Reference# 6818


Applicant signature here
Applicant Signature: HOUSE ENGINEERING

County of Dare
PO Box 669
Manteo NC 27954



S8-10027

Phone: (252) 475-5080

DARE COUNTY DEPARTMENT OF PUBLIC HEALTH
Authorization for Wastewater System Construction

Parcel: 000040000

PIN: 988513040393

Permit: S8-10027

Owner Name: VLADIMIR ZYKA

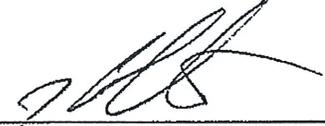
Permit Date: 04/06/2022

Owner Address: 302 W FIL LN
KILL DEVIL HILLS, NC 27948

Location: BRIGGS ST -- KILL DEVIL HILLS

Subdivision: ORVILLE BEACH AMENDED BLK 11

LOT: 3-4 BLK: 11 SEC:

1. Issued by  JDC

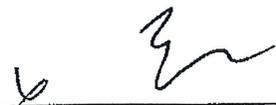
2. Any alteration in soil conditions (including location of structures and appurtenances) or modification in use, design wastewater flow or wastewater characteristics as specified in the associated improvement permit and application, may subject this authorization and associated permit(s) to revocation.

3. Comments:
SYSTEM REQUIRES PERPETUAL CONTRACT WITH CERTIFIED OPERATOR FOR MAINTENANCE AND REPORTING.
ANNUAL INSPECTION REQUIRED BY EH UNIT CURRENTLY WITH FEE ASSOCIATED.

This CA is valid for 60 months from the date of issuance.

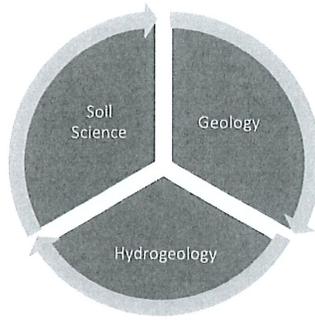
Disclaimer: This permit does not relieve you of the responsibility to obtain any other necessary Federal, State or Local permit(s).

Owner Certification


Applicant or Owner Signature
Applicant: HOUSE ENGINEERING

05/12/22
Date

Application Reference# 6818



4114 Laurel Ridge Drive
Raleigh, North Carolina 27612

Protocol Sampling Service, Inc.
"Experts in Environmental Compliance"

Protocolsampling@yahoo.com
Environmentalservicesnc.com

(919) 210-6547

March 7, 2022

Mr. Rick House, P. E.
House Engineering, P.C.
Post Office Box 466
Kitty Hawk, North Carolina 27949

Re: **Soil Inspection – John and Jeanne Harris**
1924 North Virginia Dare Trail – Lot 7, Section 2, Croatan Shores Amended
Kill Devil Hills, Dare County, North Carolina
Protocol Project No. 22-25

Dear Mr. House:

The subject property that will be developed into an 8-bedroom single family dwelling was inspected by Protocol Sampling Service, Inc., personnel on Wednesday, January 19, 2022. Protocol personnel inspected the lot by advancing two (2) soil borings for lithologic descriptions, depth to the seasonal high-water table, if evident, and the depth to static water table in the proposed TS-II LPP active and repair waste water disposal areas (Site Plan – attached).

The proposed waste water system areas are located in the western portion of the property and were found to be slightly undulating with estimated elevations of 9.0 to 10.0 feet msl. The seasonal high-water table was not found to a depth of 48 inches below land surface and the static water table was also found at a depth of 57 inches below land surface. The soil profile exhibited excellent structure (single grained), consistence (loose) and texture (sand) and should be considered suitable for a TS-II LPP active and repair systems with an LTAR not to exceed 1.2 gpd/ft² for both the active and repair system. No fill will be required to maintain 12-inches of separation beneath the drain lines. The soil porosity ranges from 20 to 25% with infiltration rates exceeding 20-inches/hour in the soil with a high-water table elevation of at least 48-inches below land surface.

Conclusions and recommendations of this report are based on best available data, collected within budgetary constraints of the proposal. It is the premise of this effort that the information collected and analyzed is representative of a reasonable effort to understand an existing problem. No guarantee is expressed or implied that new or additional data will not be required at a later time. The findings presented herein represent Protocol Sampling Service, Inc.'s professional opinion based on our site and soils evaluation and knowledge of the current laws and rules governing on-site wastewater systems in North Carolina. The Dare County Health Department must make final approval of the subsurface discharge system. Any concurrence with the findings of this report would be made at that time.

Please call me at (919) 210-6547 if you have any questions or comments.

Sincerely,



Protocol Sampling Service, Inc.
David E. Meyer, N.C.L.S.S.
President

NC Licensed Soil Scientist NC Licensed Well Contractor NC Licensed Geologist Septic Design
Monitor Well Installation Water Well Rehabilitation/Abandonment/Testing Direct Push Technology

Soil Profile Description
1924 N. Virginia Dare Trail – Profile 1 & 2

- A1 0 – 24 inches; dark yellowish brown (10YR 4/4) fine sand; single grained; loose.
- A2 24 – 48 inches; grayish brown (10YR 5/2) fine sand; single grained; loose.
- C1 48– 72 inches; light brownish gray (10YR 6/2) fine; single grained; loose.

Soil Series: Newhan
Landscape: Coastal Plain
Landform: dune
Parent Material: Marine sediments
Drainage Class: well to excessively well
Particle Size Class: sandy
Temperature Regime: thermic
Subgroup Classification: Typic Udipsamments
Examination Method: auger boring
Date: January 19, 2022
Weather: Sunny, 55°
Investigators: David Meyer
Shwt: 48” +
Measured water table depth: 57”
Surface elevation: 9.0 - 10.0’ msl



PROPOSED FRONT ELEVATION 1-A

SCALE: 1/4"=1'-0"



PROPOSED RIGHT SIDE ELEVATION 1-B

SCALE: 1/4"=1'-0"

AREA CALCULATIONS FOR EACH UNIT:

TOTAL HEATED AREA: 1300 sq.ft.
 GROUND FLOOR (UNHEATED): 604 sq.ft.
 FIRST FLOOR: 617 sq.ft.
 SECOND FLOOR: 683 sq.ft.
 DECKS: 147 sq.ft.
 BEDROOMS: 2
 FULL BATHS: 2
 HALF BATH: 1

ELEVATIONS

for:
Vladimir Zyka
and Edlira Shermadhi
 Property Location:
Lot 3 & 4, Orville Beach Amended Blk 11
Kill Devil Hills, Dare County, North Carolina

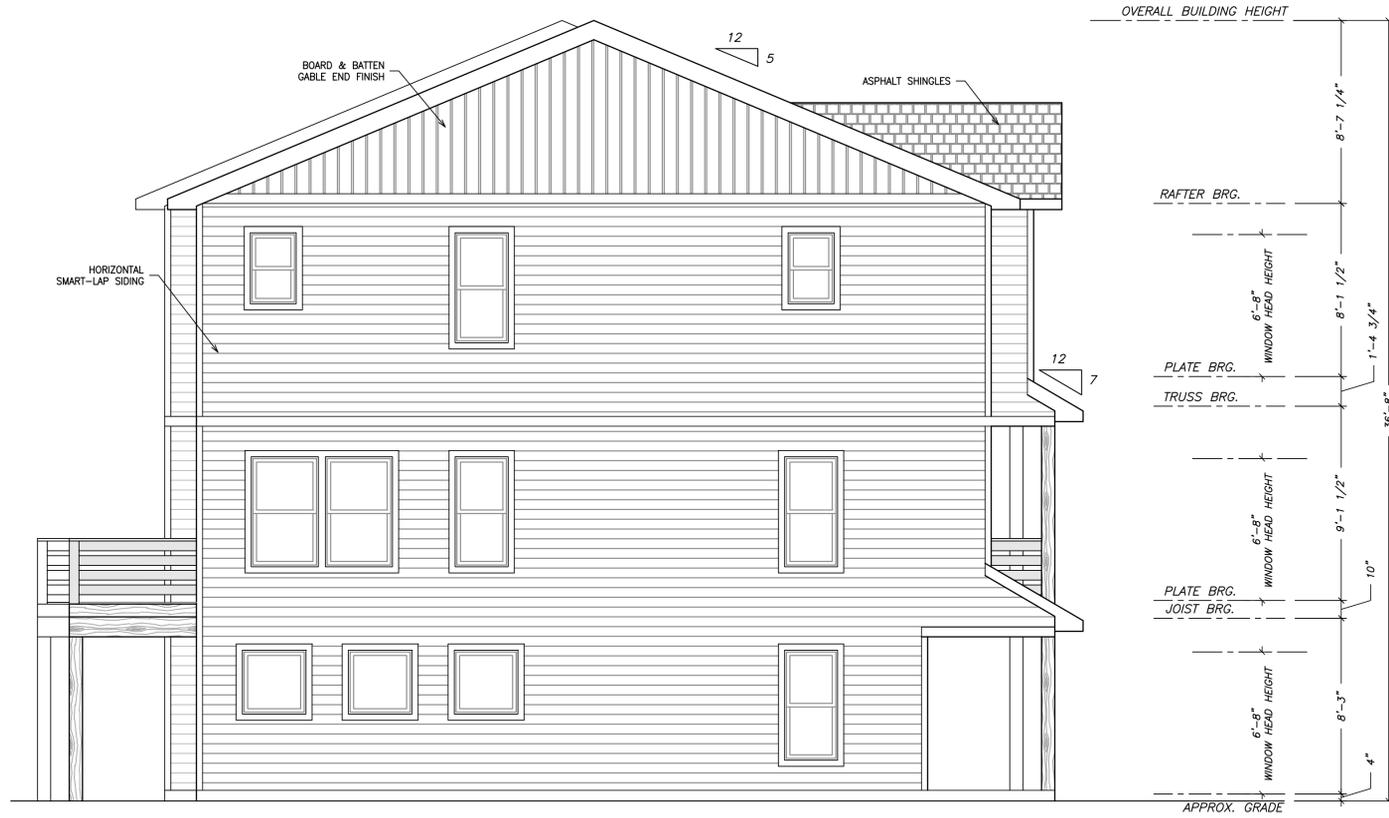
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		APPROVALS	DATE
		DRAWN B. MORRIS	6/7/2022
		CHECKED R. HOUSE	
FIRM CERTIFICATION No. C-1955		ENGINEER R. HOUSE	
ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS.		SUBMITTED R. HOUSE	
PROJECT CONTACTS:		RECEIVED	
		APPLICABLE DRAWING TOLERANCES	
SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	1 OF 5
CAD FILENAME: 185664_Zyka		SCALE: 1/4" = 1'-0"	

GLAZING CALCULATIONS:
 1. GABLE WALL 1-B:
 -TOTAL AREA: 897 sq.ft.
 -GLAZING AREA: 91 sq.ft. -10.15%

HOUSE ENGINEERING, P.C.
 P.O. BOX 466
 KITTY HAWK, NORTH CAROLINA 27949
 OFFICE: (252) 261-8253 e-mail: rick@houseengineering.net



PROPOSED REAR ELEVATION 2-A
SCALE: 1/4"=1'-0"



PROPOSED LEFT SIDE ELEVATION 2-B
SCALE: 1/4"=1'-0"

DWELLING ELEVATIONS

OVERALL BUILDING HEIGHT

RAFTER BRG.

WINDOW HEAD HEIGHT

PLATE BRG.

TRUSS BRG.

WINDOW HEAD HEIGHT

PLATE BRG.

JOIST BRG.

WINDOW HEAD HEIGHT

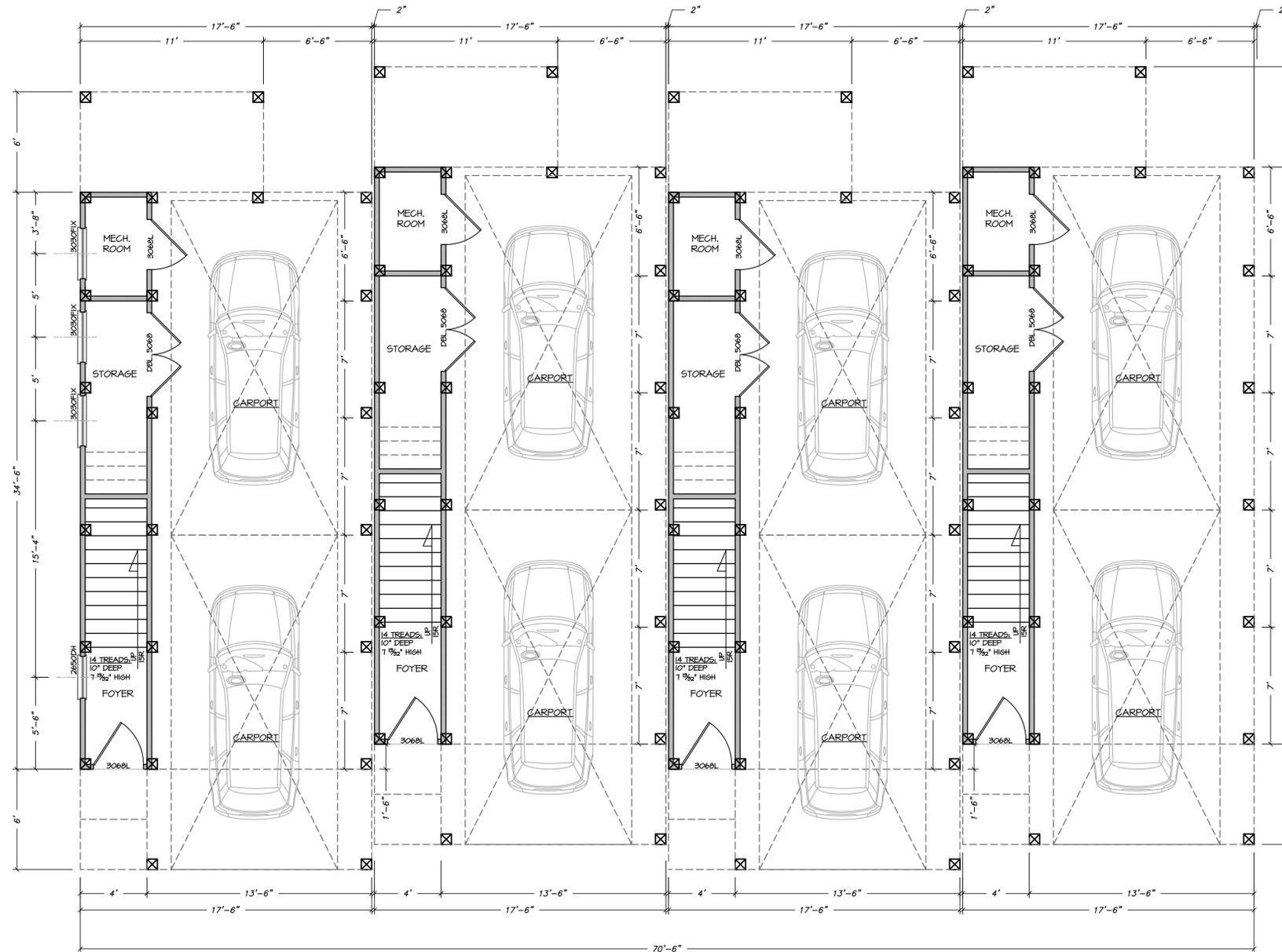
APPROX. GRADE

GLAZING CALCULATIONS:

- GABLE WALL 2-B:
-TOTAL AREA: 1,177 sq.ft.
-GLAZING AREA: 121 sq.ft. -10.28%

ELEVATIONS			
for:			
Vladimir Zyka			
and Edlira Shermadhi			
Property Location:			
Lot 3 & 4, Orville Beach Amended Blk 11			
Kill Devil Hills, Dare County, North Carolina			
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	APPROVALS	DATE	
	DRAWN	B. MORRIS	6/7/2022
	CHECKED	R. HOUSE	
	ENGINEER	R. HOUSE	
FIRM CERTIFICATION No. C-1955	ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS.	RECEIVED	
PROJECT CONTACTS:	APPLICABLE DRAWING TOLERANCES		
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 P.O. BOX 466
 KITTY HAWK, NORTH CAROLINA 27949
 OFFICE: (252) 261-8253 e-mail: rick@houseengineering.net



GROUND FLOOR PLAN 3-A
SCALE: 1/4"=1'-0"

AREA CALCULATIONS FOR EACH UNIT:

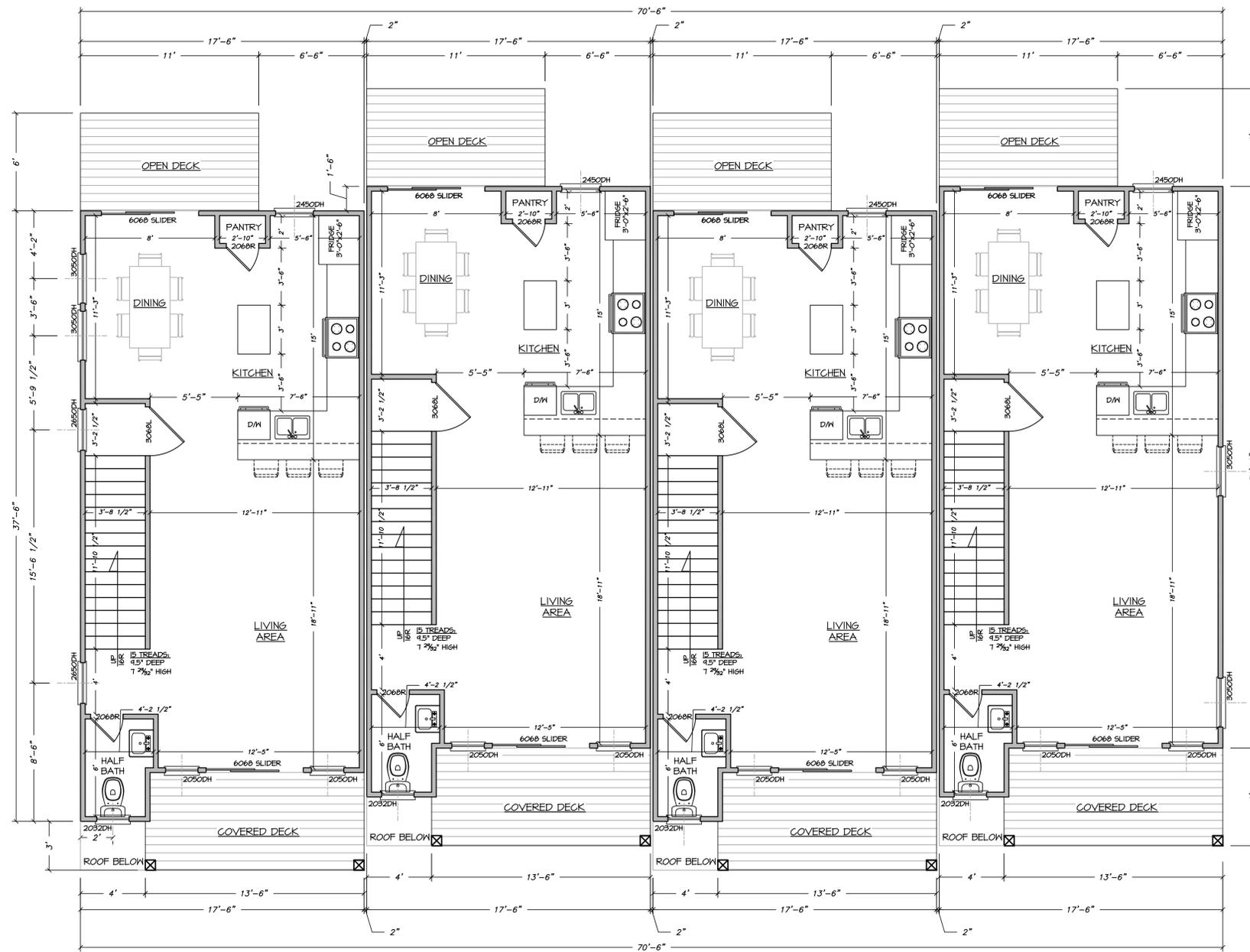
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 HALF BATH: 1

GROUND FLOOR PLAN
 for:
Vladimir Zyka
 and **Edlira Shermadhi**
 Property Location:
Lot 3 & 4, Orville Beach Amended Blk 11
Kill Devil Hills, Dare County, North Carolina

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	DRAWN B. MORRIS	6/7/2022
	CHECKED R. HOUSE	
	ENGINEER R. HOUSE	
FIRM CERTIFICATION No. C-1955	ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS.	
PROJECT CONTACTS:	SUBMITTED R. HOUSE RECEIVED APPLICABLE DRAWING TOLERANCES	

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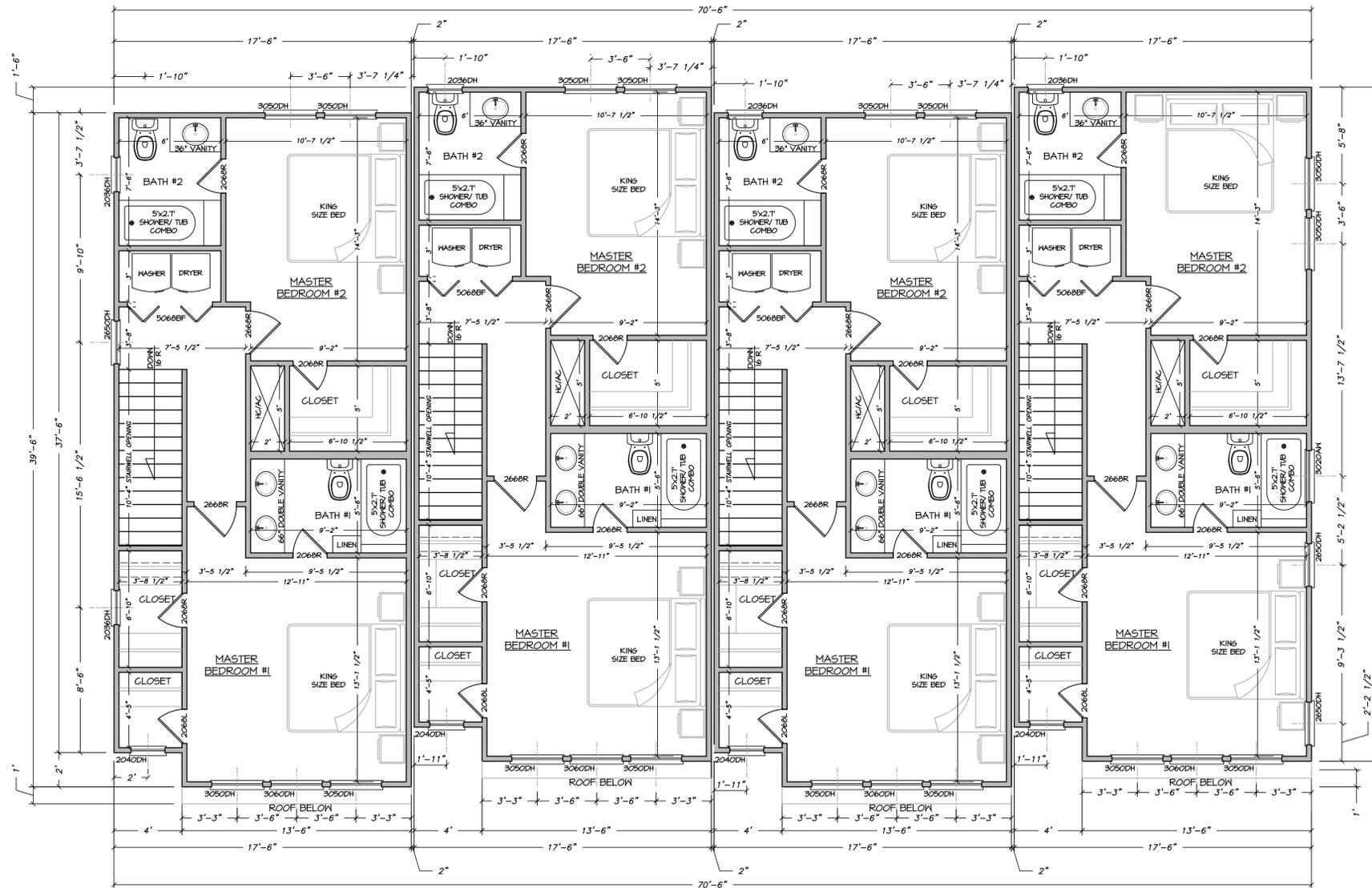
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 P.O. BOX 466
 KITTY HAWK, NORTH CAROLINA 27949
 OFFICE: (252) 261-8253 e-mail: rick@houseengineering.net



FIRST FLOOR PLAN 4-A
SCALE: 1/4"=1'-0"

FIRST FLOOR PLAN			
for: Vladimir Zyka and Edlira Shermadhi			
Property Location: Lot 3 & 4, Orville Beach Amended Blk 11 Kill Devil Hills, Dare County, North Carolina			
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	APPROVALS DATE DRAWN B. MORRIS 6/7/2022 CHECKED R. HOUSE ENGINEER R. HOUSE SUBMITTED R. HOUSE RECEIVED		
FIRM CERTIFICATION No. C-1955		APPLICABLE DRAWING TOLERANCES	
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SIZE	PROJECT NUMBER	REV	SHEET NO.
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CAD FILENAME: 185664_Zyka		SCALE: 1/4" = 1'-0"	

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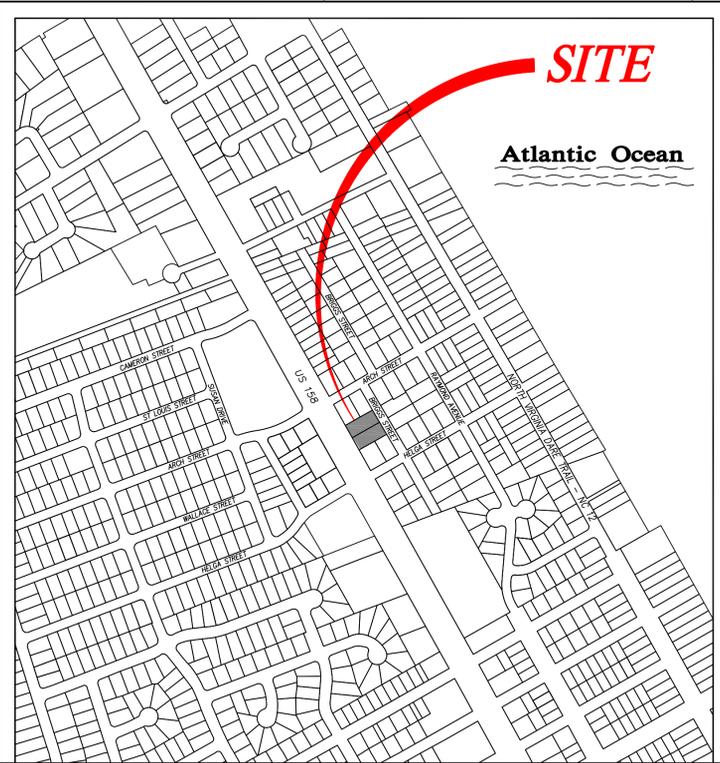


SECOND FLOOR PLAN 5-A
SCALE: 1/4"=1'-0"

SECOND FLOOR PLAN for: Vladimir Zyka and Edlira Shermadhi Property Location: Lot 3 & 4, Orville Beach Amended Blk 11 Kill Devil Hills, Dare County, North Carolina			
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	APPROVALS DRAWN B. MORRIS CHECKED R. HOUSE ENGINEER R. HOUSE SUBMITTED R. HOUSE	DATE 6/7/2022	
FIRM CERTIFICATION No. C-1955 ENGINEER'S SEAL APPLIES ONLY TO STRUCTURAL COMPONENTS.		APPLICABLE DRAWING TOLERANCES	
PROJECT CONTACTS:			
SIZE D	PROJECT NUMBER 185664	REV -	SHEET NO. 5 OF 5
CAD FILENAME: 185664_Zyka SCALE: 1/4" = 1'-0"			



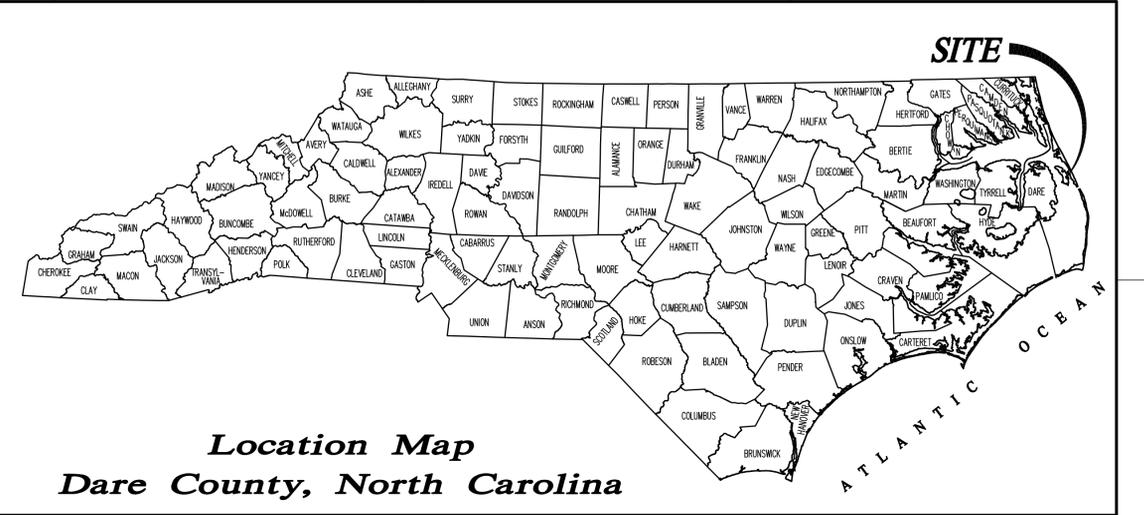
HOUSE ENGINEERING, P.C.
 P.O. BOX 466
 KITTY HAWK, NORTH CAROLINA 27949
 OFFICE: (252) 261-8253 e-mail: rick@houseengineering.net



VICINITY MAP

Sheet Index

- C1 Cover Sheet / Index Sheet
- C2 Site and Utility Plan
- C3 Grading and Drainage Plan
- C4 Landscape Plan
- C5 Lighting Plan
- C6 Site and Utility Detail Plan
- C7 Grading and Drainage Detail Plan
- C8 Landscape Detail Plan
- C1 Soil Erosion and Sedimentation Control Plan
- C2 Soil Erosion and Sedimentation Control Detail Plan



**Location Map
Dare County, North Carolina**

**Briggs Street Townhomes
Kill Devil Hills**



ENGINEER SEAL

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APPROVALS	DATE
Drawn: D. NEFF	06/06/22
Checked: R. HOUSE	06/06/22
Engineer: R. HOUSE	06/06/22

REVISIONS		
No.	Date	Description
1	5-24-22	AS PER STAFF REVIEW
2	5-31-22	SITE PLAN REVIEW II

HOUSE ENGINEERING, P.C.

Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

Cover / Index Sheet
For:
Briggs Street Townhomes
Location:
**3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina**

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	C1 OF 8

CAD FILENAME: 185664 SCALE: 1" = 10'-0"

CROATAN HIGHWAY

US HWY 158

BRIGGS STREET

GENERAL NOTES:

- STREET ADDRESS: 3206 Briggs Street Kill Devil Hills, NC 27948
- PARCEL ID NUMBER: 000040000 and 000043000
- GLOBAL PIN: 98851304393 and 988513041236
- RECORDED REFERENCE: Lot 3 and 4 Block 11, / Lot 3 and 4 Block 12 DB 2186 PG. 0404; DB. 2186 PG. 0411 (08/14/2017) Recombination Plat or Legal Agreement required to combine Lots 3 & 4 Block 11 and 12, for development.
- LOT AREA: 25,217 S.F.
- FEMA Flood Zone: FEMA Flood Zone: X; Regulatory Flood Protection Elevation (RFPE) in Shaded X and X zones west of N12, the RFPE is 8' NAVD 1988 or the natural grade elevation if the natural grade is greater than 8' NAVD 1988
- ZONING: C (Commercial) Proposed Use: Multi-Family
- DENSITY: MULTI-FAMILY DWELLING: 18 UNITS PER ACRE. 25,217 SF. = 0.58 X 18 = 10.0 UNITS/AC
- SETBACKS: FRONT and REAR 30' (DOUBLE FRONTAGE) / SIDES 10'
- PROPOSED DEVELOPMENT: (8) TWO BEDROOM RESIDENTIAL DWELLING (Multi-Family) FRAME STRUCTURE ON PILE FOUNDATION WITH CONCRETE PARKING AREA UNDERNEATH
- PARKING CALCULATION: 2 PARKING SPACES PER DWELLING, (8) 2 BEDROOM DWELLINGS = 16 SPACES REQUIRED (22) 10'x20' PARKING SPACES PROVIDED
- BOUNDARY AND TOPOGRAPHIC INFORMATION TAKEN FROM DIGITAL FILE PREPARED BY Styons Surveys Inc.
- LOT COVERAGE:

BUILDINGS/STAIRS	5,638 S.F.
DECKS/STAIRS	528 S.F.
CONCRETE VEHICLE SURFACE	3,838 S.F.
CONCRETE CURB/RIBBON	150 S.F.
STONE BASE TURFSTONE	1,875 S.F.
CONCRETE DUMPSTER PAD	160 S.F.
TOTAL COVERAGE	12,194 S.F. 48.36%
TURFSTONE REDUCTION	1,875 S.F. x 0.67 = 1,256 S.F.
TOTAL COVERAGE WITH TURFSTONE REDUCTION	11,575 S.F. 45.82%
TOTAL PARCEL	25,217 S.F.
TOTAL LOT COVERAGE	= 48.36%
TOTAL LOT COVERAGE WITH REDUCTION	= 45.82%
ALLOWABLE	65%
- 20 PERCENT OF THE SURFACE AREA OF THE DRIVE AISLE SHALL BE CONSTRUCTED USING PERMEABLE SURFACE MATERIALS. 3,838 S.F. x 20% = 768 S.F. REQUIRED (PROVIDED = 1,875 S.F.)

LEGEND:

- PROPOSED DWELLING AREA
- PROPOSED VEHICLE CIRCULATION AREA
- PROPOSED CONCRETE AREA
- EXISTING ROAD SURFACE
- PROPOSED DECK
- PROPOSED REINFORCED VEHICLE CIRCULATION AREA (6" 3,000 PSI CONCRETE)
- PROPOSED STONE BASE TURFSTONE
- PROPOSED PARKING SPACE (10'x20')
- PROPOSED WATER SERVICE LINE (SIZED BY KDH)
- PROPOSED STORM PIPE
- EXISTING WATERMAIN



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Site and Utility Plan

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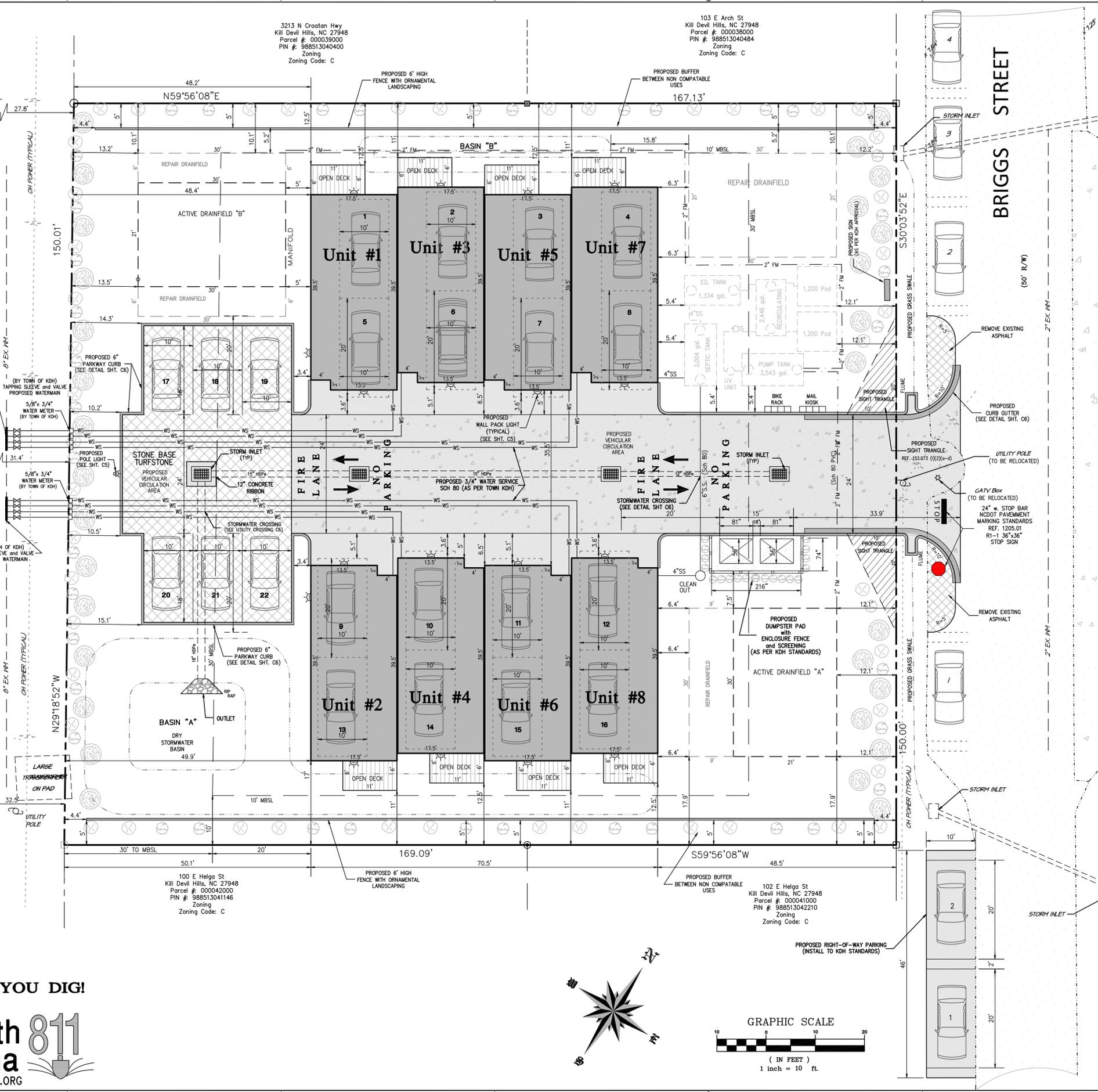
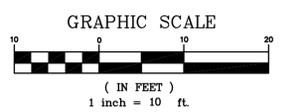
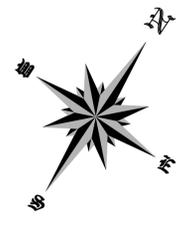
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D	185664	-	C2 OF 8
CAD FILENAME: 185664		SCALE: 1" = 10'-0"	

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North Carolina 811
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3213 N Croatan Hwy
 Kill Devil Hills, NC 27948
 Parcel #: 000039000
 PIN #: 988513040400
 Zoning Code: C

103 E Arch St
 Kill Devil Hills, NC 27948
 Parcel #: 000038000
 PIN #: 988513040484
 Zoning Code: C

100 E Helga St
 Kill Devil Hills, NC 27948
 Parcel #: 000042000
 PIN #: 988513041146
 Zoning Code: C

102 E Helga St
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CROATAN HIGHWAY

US HWY 158

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STORMWATER MANAGEMENT NARRATIVE

STORMWATER MANAGEMENT NARRATIVE
THE STORMWATER MANAGEMENT PLAN SHOWN HEREON HAS BEEN PREPARED TO ADDRESS STORMWATER MANAGEMENT ON THE SUBJECT PROPERTY.
THE STORMWATER RUNOFF WILL BE MANAGED THROUGH PROPOSED ON SITE SHALLOW INFILTRATION SWALES AND OPEN LAWN AREAS. STORMWATER STORAGE IS AVAILABLE IN THE BASINS, SWALES AND LAWN SURFACES.

STORMWATER SYSTEM OPERATION AND MAINTENANCE
1. THE OWNER SHALL DESIGNATE A PARTY RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF THE STORMWATER MANAGEMENT SYSTEM. THIS MAY BE THE OWNER, LANDSCAPER, PROPERTY MANAGER OR OTHER PARTY WITH FREQUENT ACCESS TO THE PROPERTY.
2. THE STABILIZING LANDSCAPING IS IMPORTANT TO THE OPERATION OF THE SYSTEM. THE RESPONSIBLE PARTY SHALL INSPECT THE STORMWATER BASINS REGULARLY TO ENSURE THE STABILIZING VEGETATION IS THRIVING AND MAINTAINED. INSPECTIONS SHOULD BE PERFORMED AFTER SIGNIFICANT RAINFALL EVENTS TO LOOK FOR EROSION AND VEGETATION DAMAGE. ALL ERODED AREAS SHALL BE REPLANTED AND STABILIZED AS SOON AS POSSIBLE.

THE CALCULATIONS WILL SHOW THAT THE HIGHLY PERVIOUS SOILS, COUPLED WITH THE SHALLOW INFILTRATION SWALES ARE ADEQUATE TO RETAIN AND INFILTRATE THE STORMWATER GENERATED FROM THE DESIGN RAINFALL EVENT.
DESIGN STORM EVENT:
RUNOFF 4.3 INCHES IN TWO HOUR RAINFALL DESIGN STORM EVENT
TOTAL RUNOFF TO BE MANAGED FROM DESIGN STORM:
COMBINED BUILT UPON AREA IMPERVIOUS SURFACES:
TOTAL IMPERVIOUS SURFACE WITH TURFSTONE REDUCTION= 11,575 SQ. FT.
USE C = 1.00 AS COMPOSITE RUNOFF FACTOR
TOTAL RUNOFF:
11,575 SQ. FT. x 4.3 x 1.00/12 = 4,148 CU. FT.

CALCULATE HOLDING CAPACITY FOR INFILTRATION BASINS:
SOIL INFILTRATION RATE = +20 INCHES PER HOUR
SOIL VOID RATIO = 20%
ALL SIDE SLOPES 3:1 OR FLATTER
SHWT @ +/- 5.5' MSL

STORMWATER MANAGEMENT BASIN "A"
BASIN DATA:
TOP ELEVATION = 9.0'
TOP AREA = 2,048 SQ. FT.
BOTTOM ELEVATION = 6.0'
BOTTOM AREA = 306 SQ. FT.
CALCULATE OPEN VOLUME IN BASIN
V1 = OPEN VOLUME = TOP SF AREA + BOTTOM SF AREA / x DEPTH
V1 = OPEN VOLUME = $\frac{2,048 + 306}{2} \times 3.0 = 3,531$ CU. FT.

CALCULATE OPEN VOLUME IN BASIN
V1 = TOTAL BASIN "A" VOLUME = 3,531 CU. FT.

STORMWATER MANAGEMENT BASIN "B"
BASIN DATA:
TOP ELEVATION = 8.5'
TOP AREA = 416 SQ. FT.
BOTTOM ELEVATION = 7.5'
BOTTOM AREA = 63 SQ. FT.
CALCULATE OPEN VOLUME IN BASIN
V2 = OPEN VOLUME = TOP SF AREA + BOTTOM SF AREA / x DEPTH
V2 = OPEN VOLUME = $\frac{416 + 63}{2} \times 1.0 = 239$ CU. FT.

CALCULATE OPEN VOLUME IN BASIN
V2 = TOTAL BASIN "A" VOLUME = 239 CU. FT.

STORMWATER CALCULATE PIPE STORAGE
V3 = STORAGE IN 15" STORMWATER PIPE CALCULATION @ 9 G PER FOOT
V3 = 9 G x 164 L.F. = 1,422 G / 7.48 = 190 CU. FT.

CALCULATE VOLUME IN STORMPIPE
V3 = TOTAL PIPE VOLUME = 190 CU. FT.

STORMWATER GRID PAVER 6" UNDERLYING GRAVEL
BASIN DATA:
TOP ELEVATION = 9.5'
TOP AREA = 1,080 SQ. FT.
BOTTOM ELEVATION = 9.0'
BOTTOM AREA = 1,080 SQ. FT.
CALCULATE OPEN VOLUME IN BASIN
V4 = OPEN VOLUME = TOP SF AREA + BOTTOM SF AREA / x DEPTH x 40% VOIDS
V4 = OPEN VOLUME = $\frac{1,874 + 1,874}{2} \times 0.50$ (Gravel Depth) x .60 (40% Voids) = 562 CU. FT.

CALCULATE OPEN VOLUME IN BASIN
V4 = TOTAL GRAVEL BASIN VOLUME = 562 CU. FT.

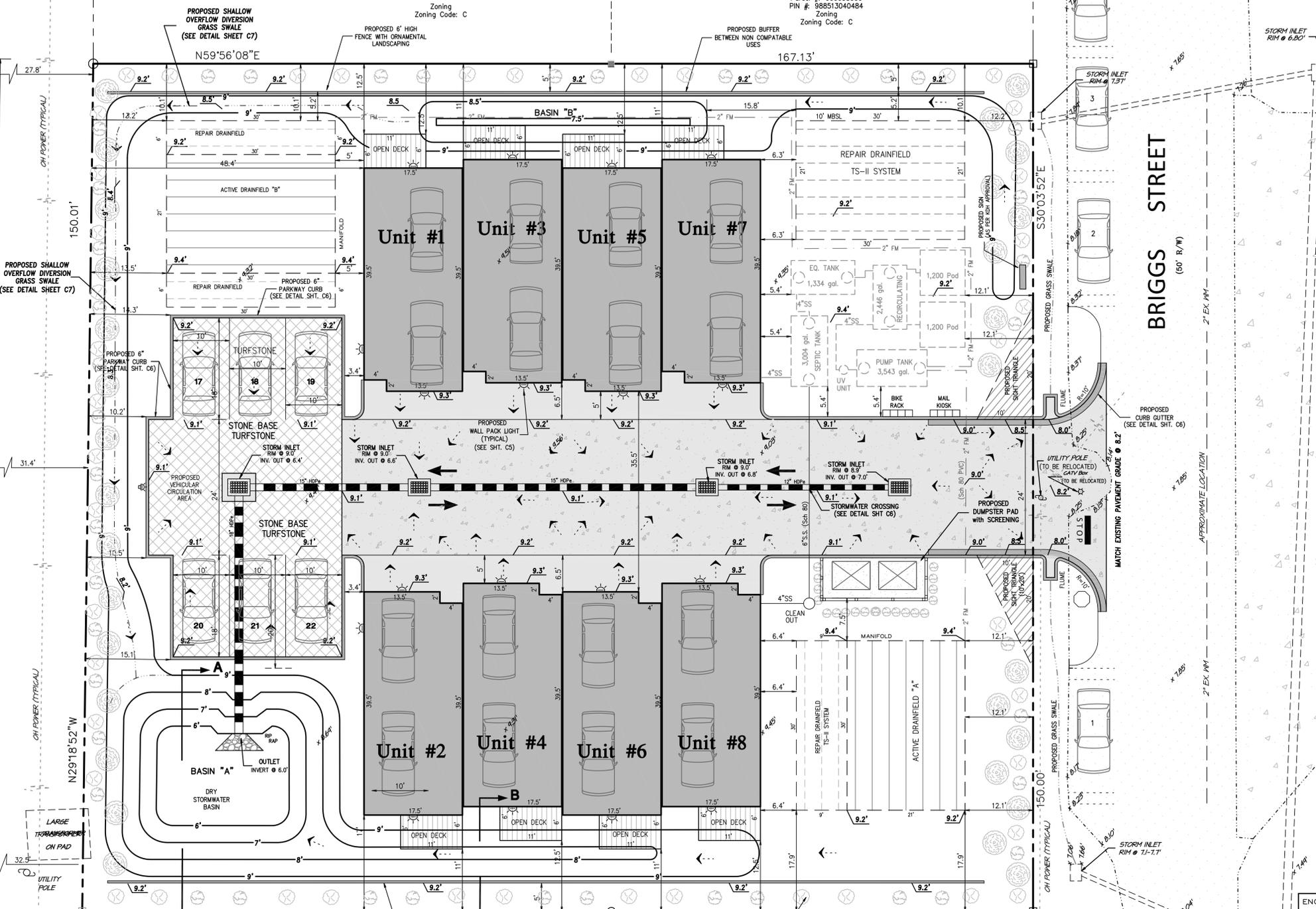
SITE TOTAL STORMWATER MANAGEMENT
V5 = V1 + V2 + V3 + V4 = V5
V5 = 3,531 + 239 + 190 + 562 = 4,522 CU. FT.

TOTAL STORAGE = 4,380 CU. FT.
TOTAL STORAGE REQUIRED = 4,148 CU. FT.

CALCULATION SUMMARY:
ADDITIONAL STORMWATER STORAGE IS AVAILABLE IN DRY GRASS INFILTRATION SWALES. A DESIGN VOLUME REDUCTION FOR DRY GRASS SWALE WITH LESS THAN 1.5% SLOPE THIS STORAGE IS NOT INCLUDED IN THE ABOVE CALCULATIONS AND WILL RESULT IN ADDITIONAL STORMWATER MANAGEMENT BUFFERING.

A LOW-IMPACT APPROACH TO STORMWATER MANAGEMENT IS THE DISPERSION OF RUNOFF OVER A LARGE AREA. THIS METHODOLOGY MIMICS NATURAL PROCESSES AND WORKS PARTICULARLY WELL ON SITES WITH HIGH INFILTRATION RATES AND WELL DRAINED SOILS. THE CALCULATIONS ABOVE DEMONSTRATE THAT THE RECEIVING BASINS ARE MORE THAN ADEQUATE TO INFILTRATE EXPECTED RUNOFF FROM THE IMPERVIOUS SURFACES NOTED.

SWALES REMOVE POLLUTANTS FROM STORMWATER BY BIOPARTICULATION, SETTLING, AND INFILTRATION. GRASSES FILTER POLLUTANTS AS STORMWATER RUNOFF MOVES THROUGH THE GRASS. BY REDUCING FLOW VELOCITIES AND INCREASING A SITE'S TIME OF CONCENTRATION, GRASSES CONTRIBUTE TO REDUCING RUNOFF PEAKS. GRASS SWALES THAT ARE DESIGNED WITH INCORPORATE DEPRESSION STORAGE PROMOTE INFILTRATION AND CAN HELP CONTRIBUTE TO SATISFYING A SITE RUNOFF CAPTURE/STORAGE REQUIREMENT.

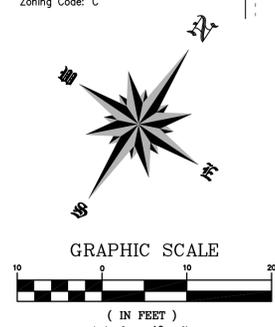


LEGEND:

PROPOSED DWELLING AREA	[Solid Grey Box]
PROPOSED VEHICLE CIRCULATION AREA	[Dotted Grey Box]
PROPOSED CONCRETE AREA	[Horizontal Line Pattern Box]
EXISTING ROAD SURFACE	[Vertical Line Pattern Box]
PROPOSED DECK	[Diagonal Line Pattern Box]
PROPOSED REINFORCED VEHICLE CIRCULATION AREA (6" 3,000 PSI CONCRETE)	[Cross-hatch Pattern Box]
PROPOSED STONE BASE TURFSTONE	[Grid Pattern Box]

GRADING LEGEND:

PROPOSED FINISHED GRADE CONTOUR	[Solid Line]
PROPOSED FINISHED SPOT GRADE	[Dashed Line]
PROPOSED DRAINAGE DIRECTIONAL ARROW	[Arrow]
PROPOSED STORM INLET	[Grid Symbol]
PROPOSED STORMWATER PIPE	[Line with 'x' marks]
EXISTING SPOT GRADE	[Dotted Line]



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Grading and Drainage Plan
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Briggs Street Townhomes
Location:
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D	185664	-	C3 OF 8
CAD FILENAME: 185664		SCALE: 1" = 10'-0"	

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CROATAN HIGHWAY

US HWY 158

EXISTING CURB AND GUTTER

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Zoning
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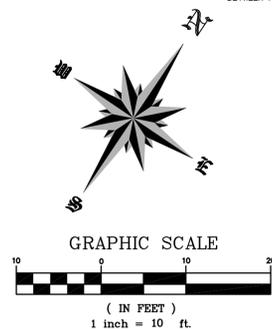
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Parcel #: 000042000
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PERIMETER LANDSCAPE DATA

SOUTH PROPERTY LINE = 169.01'
169/30 = 6 TREES REQUIRED
6 TREES PROVIDED
169/10 = 17 SHRUBS REQUIRED
22 SHRUBS PROVIDED
NORTH PROPERTY LINE = 169.01'
169/30 = 6 TREES REQUIRED
6 TREES PROVIDED
169/10 = 17 SHRUBS REQUIRED
17 SHRUBS PROVIDED
US 158 HWY RIGHT-OF-WAY = 150 LF.
150/10 = 15 TREES REQUIRED
15 TREES PROVIDED
150/10 = 15 SHRUBS REQUIRED
26 SHRUBS PROVIDED
BRIGGS STREET RIGHT-OF-WAY = 150 LF.
150/10 = 15 TREES REQUIRED
15 TREES PROVIDED
150/10 = 15 SHRUBS REQUIRED
17 SHRUBS PROVIDED



GENERAL NOTES:

- * STREET ADDRESS: 3206 Briggs Street
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- * PARCEL ID NUMBER: 000040000 and 000043000
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- * LOT AREA: 25,217 S.F.
- * FEMA Flood Zone: FEMA Flood Zone: X; Regulatory Flood Protection Elevation (RFPE) in Shaded X and X zones west of NC12, the RFPE is 8' NAVD 1988 or the natural grade elevation if the natural grade is greater than 8' NAVD 1988
- * SETBACKS: FRONT and REAR 30' (DOUBLE FRONTAGE) / SIDES 10'
- * ZONING: C (Commercial) Proposed Use: Multi-Family
- * DENSITY: MULTI-FAMILY DWELLING: 18 UNITS PER ACRE.
25,217 SF. = 0.58 X 18 = 10.0 UNITS/AC
- * PROPOSED DEVELOPMENT: (8) TWO BEDROOM RESIDENTIAL DWELLING
(Multi-Family) FRAME STRUCTURE ON PILE FOUNDATION
WITH CONCRETE PARKING AREA UNDERNEATH

LANDSCAPE INVENTORY

Canopy Shade Cover:
The percentage of ground covered by a vertical projection of the outermost perimeter of the natural spread of foliage of plants. Small openings within the canopy are included

LANDSCAPE LEGEND:

COMMON NAME Botanical Name	HEIGHT	SPREAD	MINIMUM SIZE @ PLANTING	QUANTITY	SYMBOL
BALD CYPRESS	50' - 100'	20' - 30'	2" Cal. - 8' Ht.	30	
GRAPE MYRTLE	15' - 30'	6' - 15'	1.5" Cal. - 6' Ht.	22	
GLOSSY ABELLA	3' - 5'	3' - 6'	3 Gallon	41	
DWARF YAUPON HOLLY	3' - 5'	3' - 6'	3 Gallon	46	

LEGEND:

- PROPOSED DWELLING AREA
- PROPOSED VEHICLE CIRCULATION AREA
- PROPOSED CONCRETE AREA
- EXISTING ROAD SURFACE
- PROPOSED DECK
- PROPOSED REINFORCED VEHICLE CIRCULATION AREA (6" 3,000 PSI CONCRETE)
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Landscaping Plan

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LIGHTING NOTES

- REFER TO TOWN OF KILL DEVIL HILLS ORDINANCE SECTION 153.074 LIGHTING - Lighting plan required (EXTERIOR LIGHTING) Permitted Range of Average Footcandles Minimum - Maximum = 0.1 - 2.0
 - DOMINION POWER MAY PROVIDE SITE LIGHTING - OWNERS OPTION.
 - EXTERIOR LIGHTING SHALL BE FIXTURES WITH TRUE FULL CUT-OFF AND FULLY SHIELDED. WALL PACKS LIGHTS SHALL BE MOUNTED 16" ±
 - EXTERIOR LIGHTING CONTROLLED BY A TIMER SYSTEM. FOR STANDARD TIME, LIGHTS SHALL BE SET TO TURN ON AT 5:00 PM AND OFF AT 7:00 AM. FOR DAYLIGHT SAVINGS TIME, LIGHTS SHALL BE SET TO CUT ON AT 7:00 PM AND TURN OFF AT 6:00 AM. UNLESS OTHERWISE SPECIFIED BY THE USE DEMAND OR THE PROPERTY OWNER AND/OR TOWN OF KDH. ALL WALL MOUNTED SITE LIGHTS TO BE PROVIDED WITH MANUAL OVERRIDES.
 - LIGHT POLE FOUNDATION TO BE DESIGNED BY A STRUCTURAL ENGINEER. POLE MOUNTING DETAIL TO BE PROVIDED BY STRUCTURAL ENGINEER. LIGHT POLE BASE DETAIL SHOWN HEREON IS FOR ELECTRIC & CONDUIT LAYOUT.
 - ALL ARCHITECTURAL AND LANDSCAPE LIGHTING TO BE 40 WATTS OR LESS.
 - LUMINARY CALCULATIONS BASED ON THE PROPOSED SITE LOCATION, LIGHT POLE HEIGHT AND FIXTURE AND ARE APPROXIMATE. FOOTCANDLE READINGS AT THE PROPERTY LINES SHALL BE CERTIFIED BY A REGISTERED ENGINEER BEFORE A CERTIFICATE OF OCCUPANCY WILL BE ISSUED FOR THE STRUCTURE.
 - ILLUMINATION STANDARDS MUST BE MET PRIOR TO FINAL APPROVAL
 - IN NO INSTANCE SHALL ILLUMINATION LEVELS WITH IN THE SITE EXCEED 30 FOOT CANDLES
 - ALL LIGHTING ILLUMINATION SHALL MEET INTERNATIONAL DARK SKY REQUIREMENTS
 - ALL UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC AND BE A MINIMUM OF 1 INCH. UNLESS NOTED OTHERWISE
 - ALL ELECTRIC WIRING FOR POLE MOUNTED LIGHTS SHALL BE UNDERGROUND.
 - CONTRACTOR TO PROVIDE PROTECTION FROM PHYSICAL DAMAGE FOR SWITCHBOARDS, PANEL BOARD AND OTHER ELECTRICAL EQUIPMENT (3' FROM EQUIPMENT)
- Lighting prohibited.
- No fixture shall be erected which is an imitation of an official highway or traffic-control light or sign.
 - No fixture shall be in a direct line of vision with any traffic-control sign or light.
 - No fixture shall have a flashing or intermittent pattern of illumination.
 - No fixture shall be located within a public right-of-way unless approved by the Department of Public Services, Public Works Division.
 - No fixture shall be erected, either indoors or outdoors, which because of the design of light source, orientation or intensity causes glare onto adjacent property or streets.
 - Search lights are prohibited except when used by federal, state or local authority.
 - No fixture shall violate any law of the State of North Carolina relative to outdoor lighting.
 - All neon lighting is prohibited except as allowed in § 153.077.
 - All light produced on-site shall be contained within the perimeter of the site by design, orientation or shielding of the light source.
 - All light fixtures shall be installed to be shielded in such a manner that all light rays emitted by the fixture, either directly from the lamps or indirectly from the fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted.

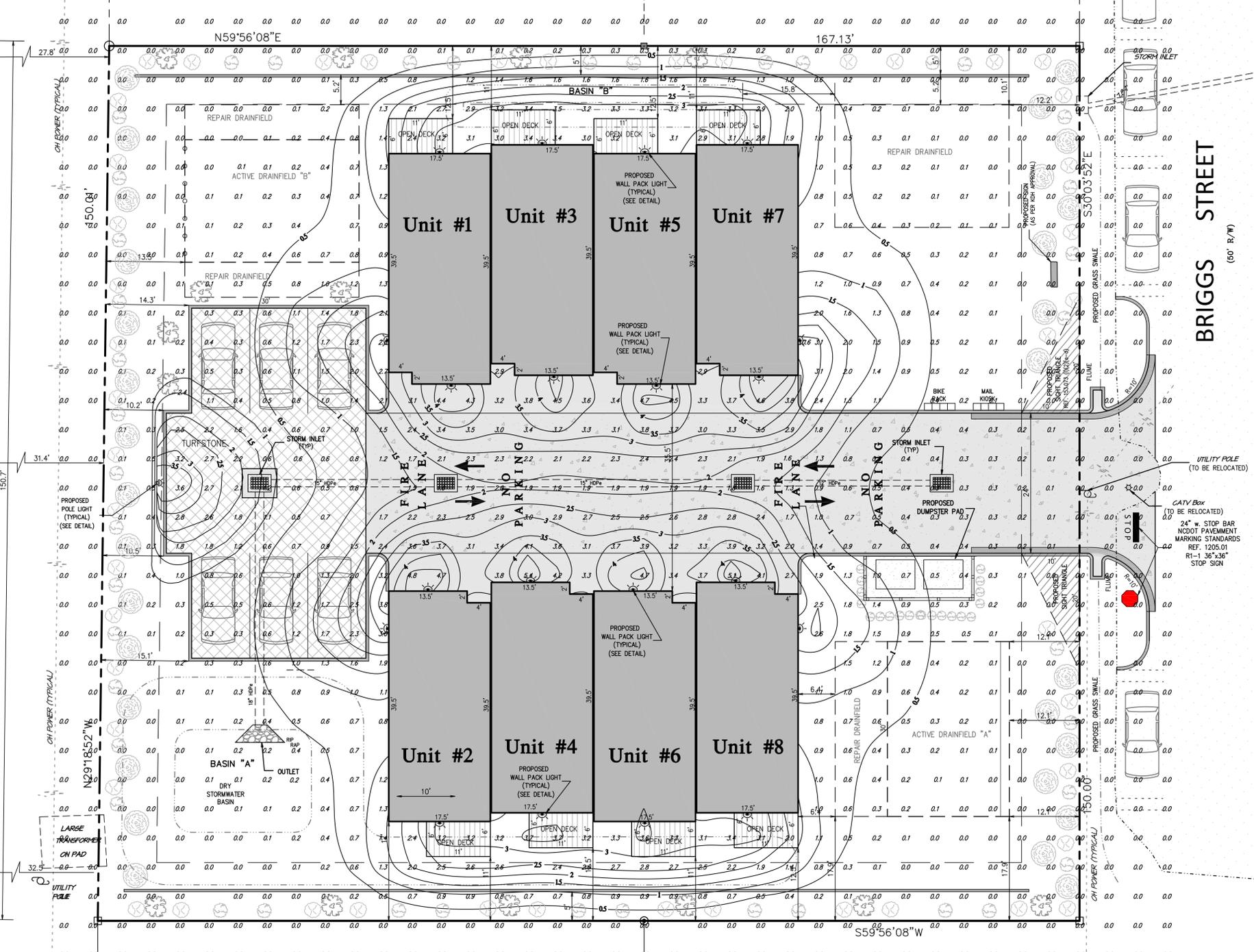
NOTES:

- * The light loss factor (LLF) is a product of many variables, only lamp lumen depreciation (LLD) has been applied to the calculated results unless otherwise noted. The LLF is the result (quotient) of mean lumens / initial lumens per lamp manufacturer's specifications.
- * Illumination values shown (in footcandles) are the predicted results for planes of calculation either horizontal, vertical or inclined as designated in the calculation summary. Meter orientation is normal to the plane of calculation.
- * The calculated results of this lighting simulation represent an anticipated prediction of system performance. Actual measured results may vary from the anticipated performance and are subject to means and methods which are beyond the control of RAB Lighting Inc.
- * Mounting height determination is job site specific, our lighting simulations assume a mounting height (insertion point of the luminaire symbol) to be taken at the top of the symbol for ceiling mounted luminaires and at the bottom of the symbol for all other luminaire mounting configurations.
- * It is the Owner's responsibility to confirm the suitability of the existing or proposed poles and bases to support the proposed fixtures, based on the weight and EPA of the proposed fixtures and the owner's site soil conditions and wind zone. It is recommended that a professional engineer licensed to practice in the state the site is located be engaged to assist in this determination.
- * The landscape material shown herein is conceptual, and is not intended to be an accurate representation of any particular plant, shrub, bush, or tree, as these materials are living objects, and subject to constant change. The conceptual objects shown are for illustrative purposes only. The actual illumination values measured in the field will vary.
- * Photometric model elements such as buildings, rooms, plants, furnishings or any architectural details which impact the dispersion of light must be detailed by the customer documents for inclusion in the RAB lighting design model. RAB is not responsible for any inaccuracies caused by incomplete information on the part of the customer, and reserves the right to use best judgment when translating customer requests into photometric studies.
- * RAB Lighting Inc. luminaire and product designs are protected under U.S. and International intellectual property laws. Patents issued or pending apply.

The Lighting Analysis, eLayout, Energy Analysis and/or Visual Simulation ("Lighting Design") provided by RAB Lighting Inc. ("RAB") represents an anticipated prediction of lighting system performance based upon design parameters and information supplied by others. These design parameters and information provided by others have not been field verified by RAB and therefore actual measured results may vary from the actual field conditions. RAB recommends that design parameters and other information be field verified to reduce variation.

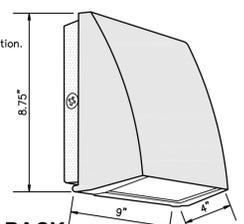
CROATAN HIGHWAY
US HWY 158
(150' R/W)

BRIGGS STREET
(50' R/W)



LIGHTING LEGEND

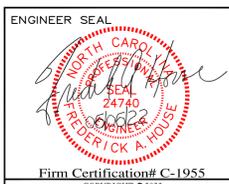
- PROPOSED WALL PACK LIGHT
RAB LIGHTING (MODEL# SLIM12N)
MOUNTED 14 TO 16 HIGH
(OR APPROVED EQUAL)
- PROPOSED POLE LIGHT
RAB LIGHTING (MODEL# SLIM12N)
MOUNTED 3 TO 4 HIGH
(OR APPROVED EQUAL)
- PHOTOMETRIC ILLUMINATION CONTOURS
(FOOTCANDLES)
- PHOTOMETRIC ILLUMINATION GRID
TO BE PROVIDED BY MANUFACTURE
(FOOTCANDLES)
- LIGHTING MEASUREMENT TO BE VERIFIED
BY LIGHTING INSTALLER AND TO BE
SUBMITTED AND APPROVED BY TOWN OF KDH



- Mounting:
Die-cast back box with four (4) conduit entry points and knockout pattern for junction box or direct wall mounting. Hinged housing and bubble level for easy installation.
- Full Cutoff:
Full cutoff meets dark-sky requirements
- Recommended Mounting Height:
Up to 20 ft
- RAB 12, Watt SLIM Wallpacks are designed to cover the footprint of most traditional wallpacks. They are suitable for mounting heights from 15' to 30'. These ultra-high efficiency fixtures are full cutoff

**RAB SLIM POLE AND WALLPACK
(MODEL# SLIM12N)**
NOT TO SCALE

BEFORE YOU DIG!
North Carolina 811
WWW.nc811.ORG



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Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

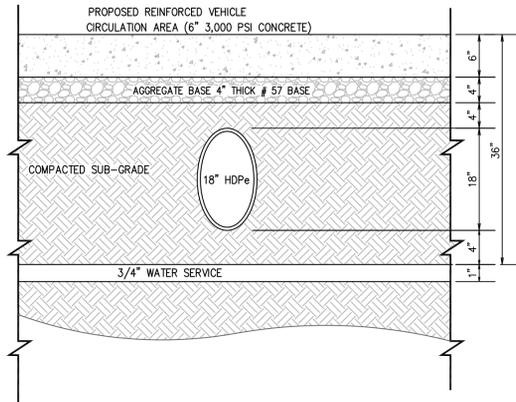
Lighting Plan

For:
Briggs Street Townhomes
Location:
**3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina**

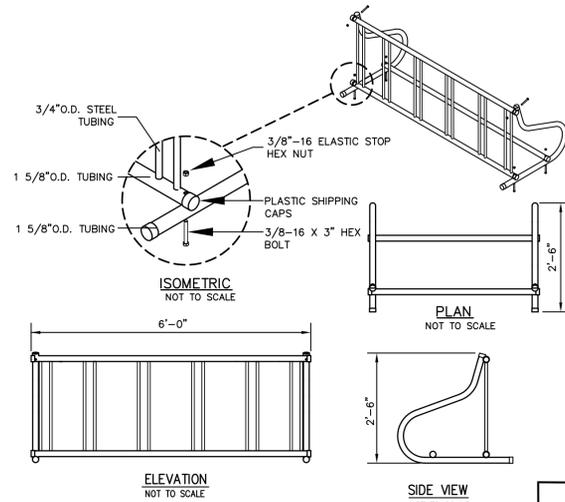
APPROVALS	DATE
Drawn: D. NEFF	06/06/22
Checked: R. HOUSE	06/06/22
Engineer: R. HOUSE	06/06/22

REVISIONS		
No.	Date	Description
1	5-24-22	AS PER STAFF REVIEW
2	5-31-22	SITE PLAN REVIEW II

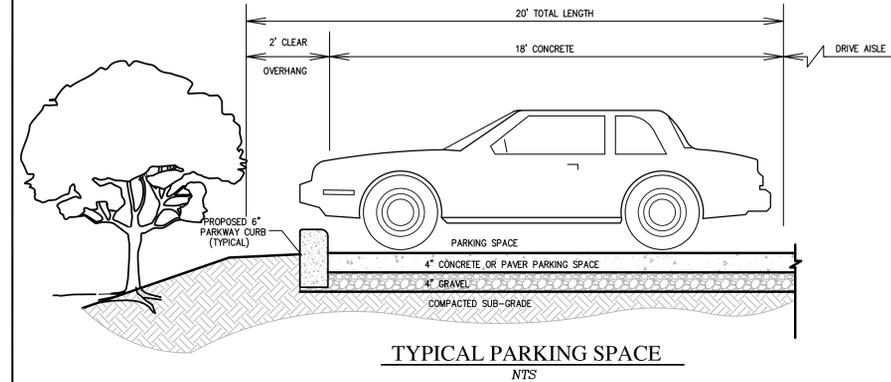
SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	C5 OF 8
CAD FILENAME: 185664		SCALE: 1" = 10'-0"	



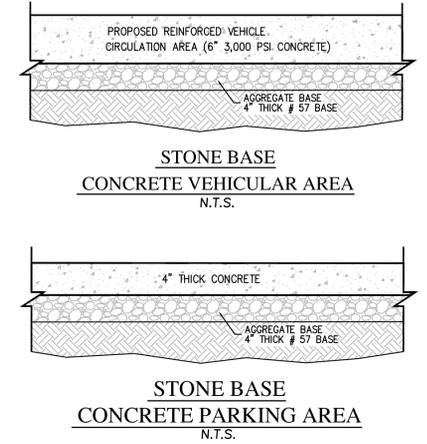
UTILITY CROSSING DETAIL
N.T.S.



TYPICAL BIKE RACK DETAIL
(OR APPROVED EQUAL)
N.T.S.

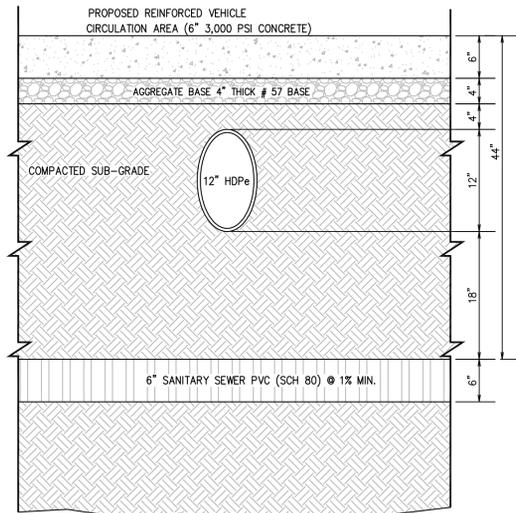


TYPICAL PARKING SPACE
N.T.S.

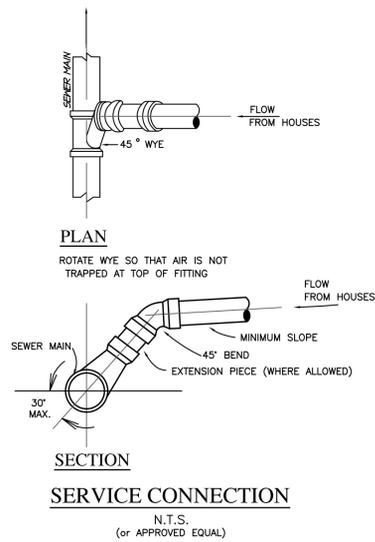


STONE BASE CONCRETE VEHICULAR AREA
N.T.S.

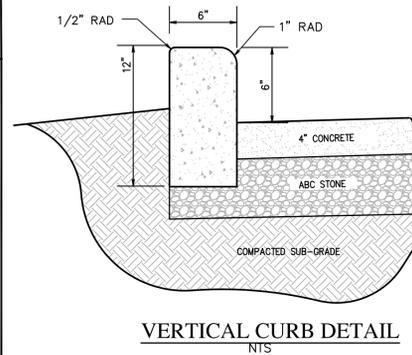
STONE BASE CONCRETE PARKING AREA
N.T.S.



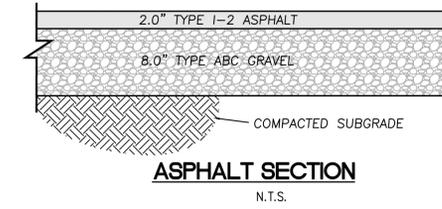
STORMWATER CROSSING DETAIL
N.T.S.



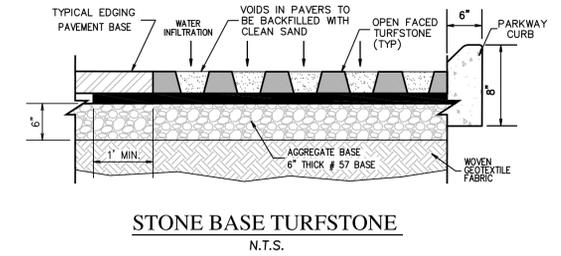
SERVICE CONNECTION
N.T.S.
(OR APPROVED EQUAL)



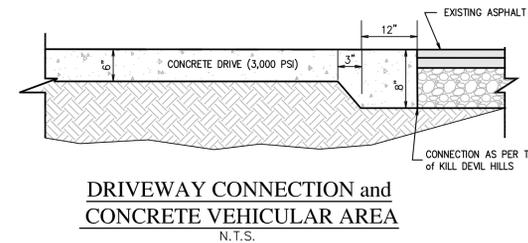
VERTICAL CURB DETAIL
N.T.S.



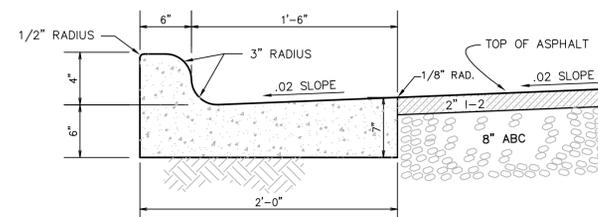
ASPHALT SECTION
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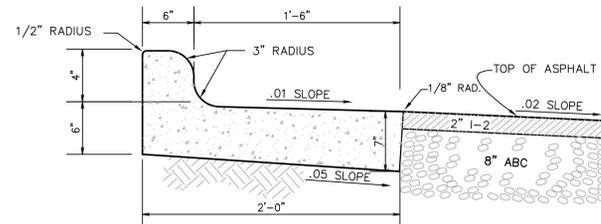
STONE BASE TURFSTONE
N.T.S.



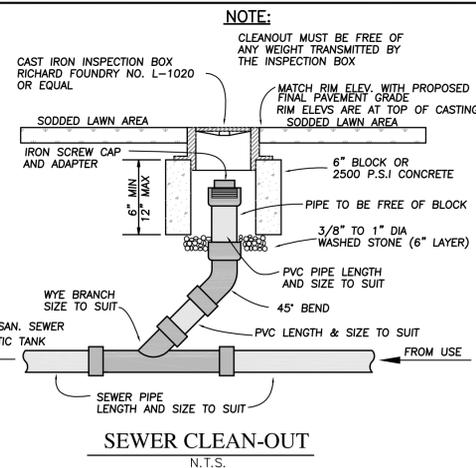
DRIVEWAY CONNECTION and CONCRETE VEHICULAR AREA
N.T.S.



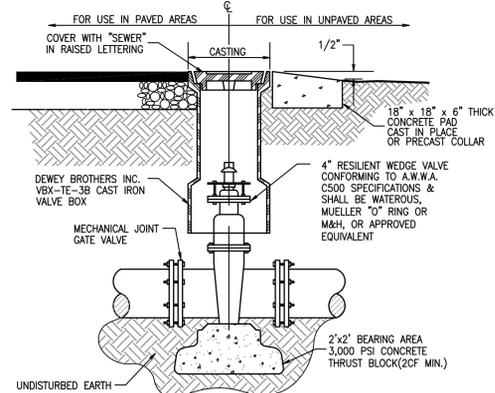
CATCHING CURB and GUTTER
REF. NCDOT STD. 846.01



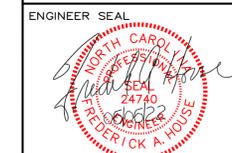
SPILLWAY CURB and GUTTER
REF. NCDOT STD. 846.01



SEWER CLEAN-OUT
N.T.S.



VALVE BOX ASSEMBLY
N.T.S.



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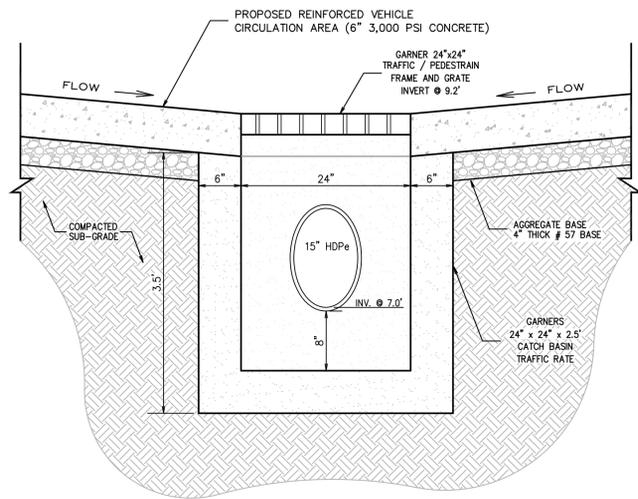
APPROVALS	DATE
Drawn: D. NEFF	06/06/22
Checked: R. HOUSE	06/06/22
Engineer: R. HOUSE	06/06/22

REVISIONS		
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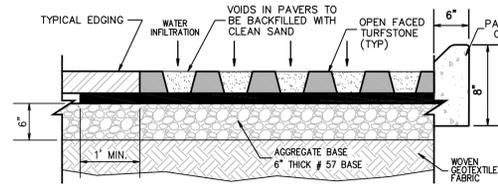
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Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kill Devil Hills, North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

Site and Utility Detail Plan
For:
Briggs Street Townhomes
Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

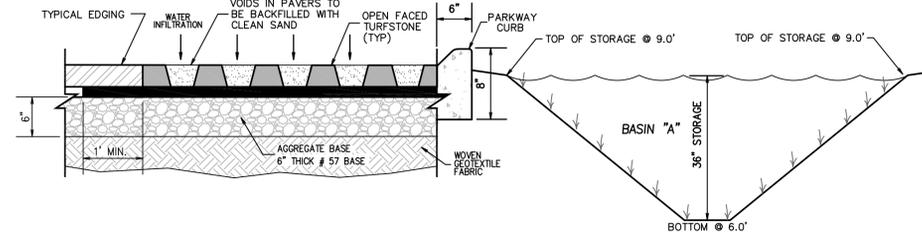
SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	C6 OF 8
CAD FILENAME: 185664		SCALE: as noted	



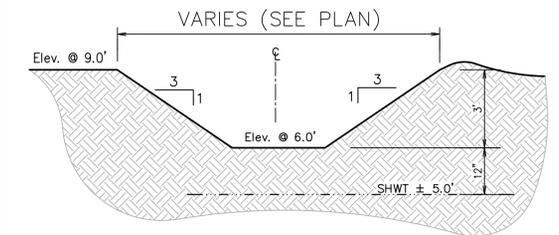
GARNER 24" x 24" x 2.5'
STORM INLET BOX DETAIL
N.T.S.



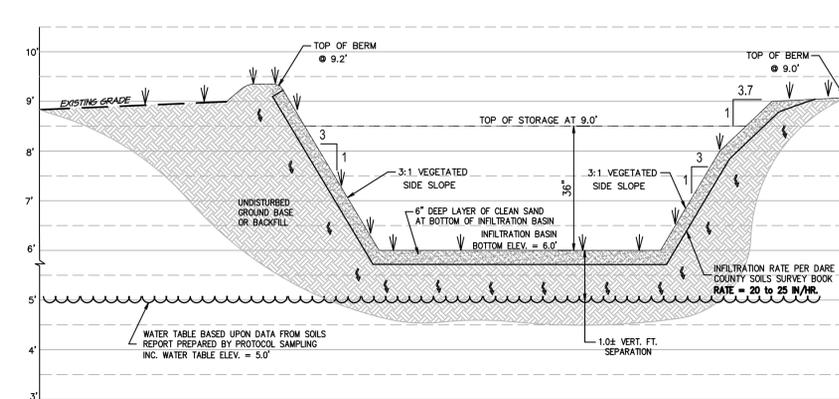
STONE BASE
TURFSTONE UNDERLYING STORMWATER STORAGE
N.T.S.



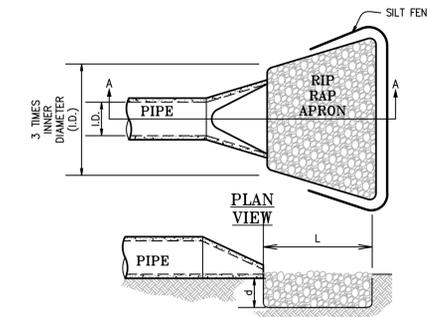
STONE BASE
TURFSTONE / STORMWATER STORAGE
N.T.S.



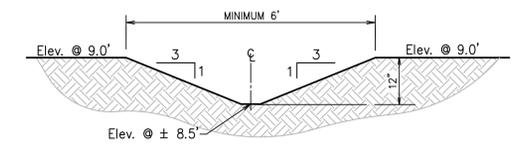
Typical Basin Detail
N.T.S.



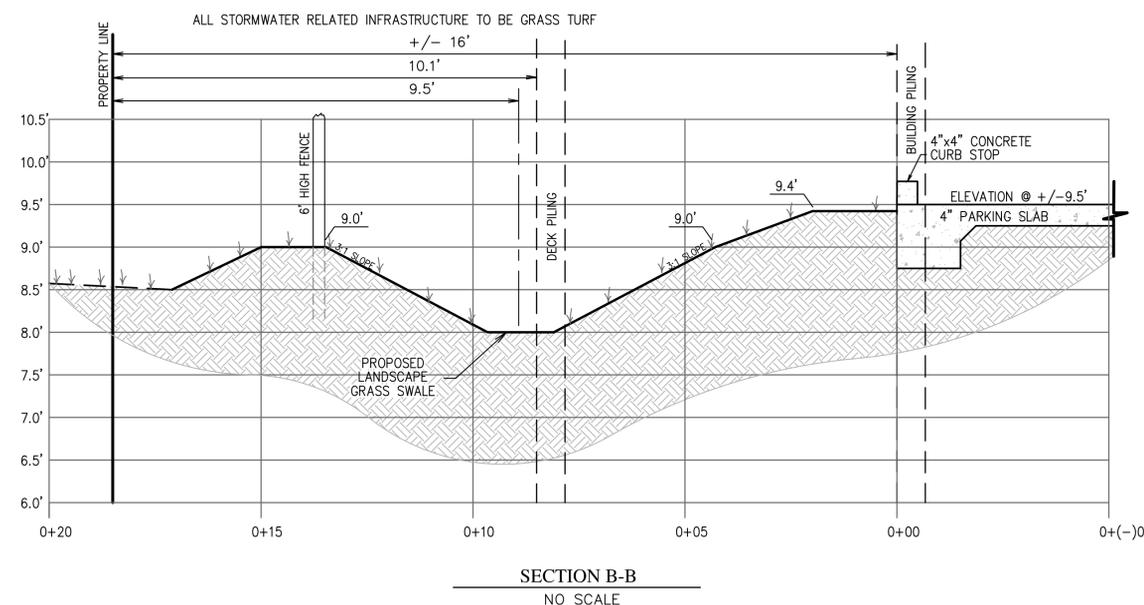
SECTION "A" - "A"
"BMP" INFILTRATION BASIN
N.T.S.



SECTION
"A-A"
N.T.S.

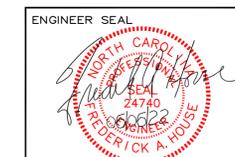


Overflow Diversion Grass Swale Detail
N.T.S.



SECTION B-B
NO SCALE

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No.	Date	Description
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2	5-31-22	SITE PLAN REVIEW II

HOUSE ENGINEERING, P.C.
Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

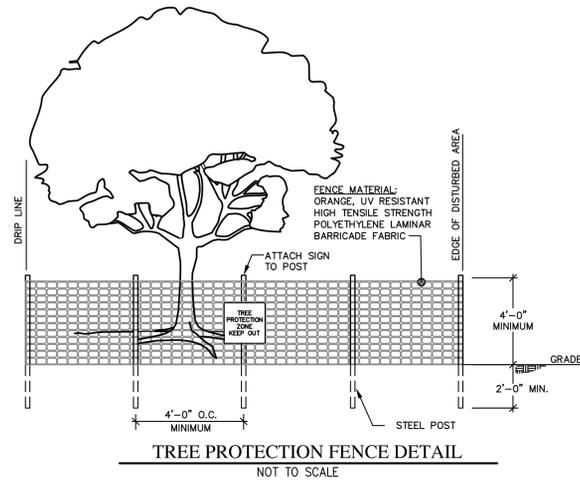
Grading and Drainage Detail Plan
For:
Briggs Street Townhomes
Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	C7 OF 8

CAD FILENAME: 185664 SCALE: as noted

LANDSCAPE NOTES

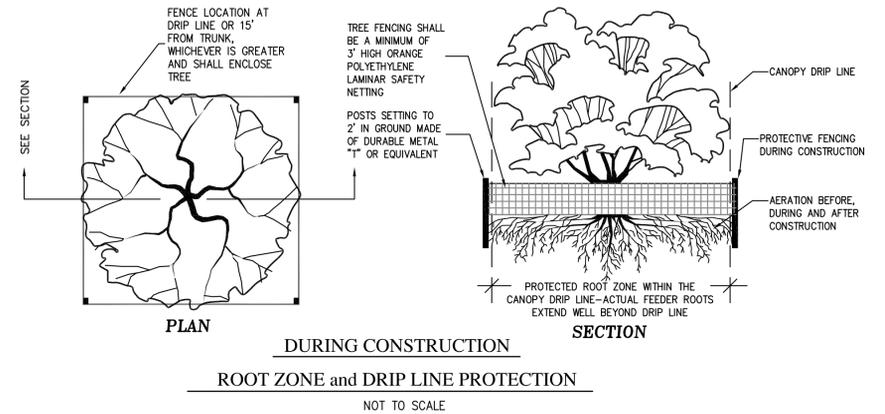
- Landscape areas shall be properly maintained. The owner shall be notified in writing by the zoning official of the town of any areas which are not being properly maintained, and the owner shall, within 15 calendar days of receipt of the notice, restore the landscaped area to a satisfactory condition, meet the requirements of this code.
- Landscaping shall not be considered to be complete until after 90 days of healthy growth. Contractor shall be responsible to replace all unhealthy or dead landscaping. Contractor shall remain responsible for all replaced landscape with the 90 day healthy growth requirement. Being applicable to all replaced landscaping.
- Dig planting hole no deeper than the root ball height. Excavate hole 2-3 times the width of the root ball diameter.
- Roughen the sides of the planting hole, before placing the tree in the planting hole, prune only dead or broken branches and remove any tree wrap, tape, string, and tags from tree trunk and branches.
- Gently lower the tree into the hole so that the trunk flare is at or slightly above the original grade.
- Backfill 1/3 of the planting hole with original soil to stabilize root ball and keep tree upright.
- Cut and remove top 2/3 of the wire basket. Cut and remove top 2/3 of the burlap from Completely backfill hole with original soil and add soil amendment if needed.
- Create a mulch ring around the tree and a 3-6" high soil and mulch berm at the edge of the hole. Keep mulch away from the trunk.
- Contractor shall be responsible for all plant counts and square footage. If any part of this plan can not be followed due to site conditions contact owner/town prior to commencing work.
- All trees in rows to be aligned unless shown otherwise
- Plant all trees a minimum of 2 feet from any drain lines. The Landscape contractor shall verify the location of all drain lines prior to commencing work.
- Trees are to be a minimum of 3 1/2 feet away from any hardscape such as curbs, walks parking stalls, ect.
- Prior to any excavating to any landscaping purposes, the location of all under ground utilities shall be determined.
- Grass and ground cover. Ground cover shall be placed or planted on all disturbed portions of exposed ground or earth not occupied by natural or other landscape material.
- All dumpsters shall be screened on three sides by a fence. The screening shall exceed the height of the intended container by 12 inches. The opening for the removal of trash pickup shall allow for a clearance of 12 inches on each side of the container and 24 inches at the rear of the container. Design shall be approved by the Department of Public Services, Public Works Division.
- Any existing natural landscape shall be preserved whenever possible. Existing natural Landscape that meets minimum requirements may be credited towards the proposed landscape requirements.
- Where abutting single-family dwellings to the rear or to the side, such property line shall have a wood, masonry wall, vinyl or vegetative buffer six feet in height along the property line.
- A perimeter landscaped area, with a minimum depth of five feet, may be required along property lines. Along property lines abutting any street, the minimum depth shall be ten feet.
- Interior landscaped areas shall contain a minimum of 75 square feet. Within these landscaped areas there shall be a minimum of one small tree per ten parking spaces
- Where a vegetative screen is required between two incompatible uses, the perimeter landscape area shall contain one shrub, at least 30 inches high planted 2 1/2 feet on center. The type of shrub used needs to be capable of attaining a height of at least 6 feet at maturity. Plant materials and/or planted berms shall be installed so as to screen the parking areas from adjacent properties and streets.
- No vehicles, motor or otherwise, shall be parked on landscaped areas. No temporary signs or other structures shall be placed on any landscaped area without issuance of a permit by the Building Inspector or Zoning Administrator
- All dumpsters shall be screened on three sides by a fence. The screening shall exceed the height of the intended container by 12 inches.
- Within the sight triangle, no plant material, signage or any other obstruction shall interfere with an individual's vehicle sight line. No plant material shall exceed 30 inches in height at maturity. trees shall be trimmed so that branches are at least seven feet above curb level
- plants shall be sufficiently sized to ensure screening within three years. Where a vegetative screen is required, plant materials shall be sufficiently sized as practicable to ensure obscurity within three years. Seedling plants may be used where berms or structures are required or where the proposed use is contiguous to a street or vacant land that does not have proposed development in the review process.



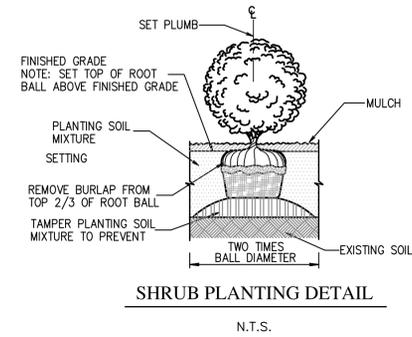
- NOTES:
- INSTALL TREE PROTECTION FENCE AT TREE DRIP LINE OR AT EDGE OF DISTURBED AREA, AS SHOWN ON PLANS, PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - PLACE TREE PROTECTION ZONE SIGN. SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE. THE SIGN MUST CONTAIN THE FOLLOWING LANGUAGE IN BOTH ENGLISH & SPANISH: "TREE PROTECTION ZONE, KEEP OUT".
 - THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
 - TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

TREE PRESERVATION NOTES

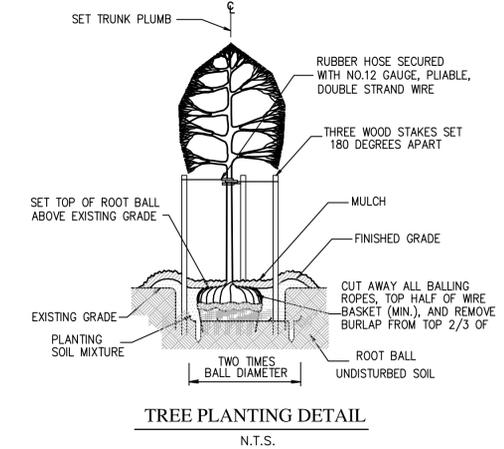
- ALL TREES NOT LOCATED WITHIN THE LIMITS OF CONSTRUCTION AND OUTSIDE OF DISTURBED AREAS SHALL BE PRESERVED. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL TREES TO BE PRESERVED FROM HIS ACTIVITIES.
- ALL TREES SHOWN TO BE RETAINED WITHIN THE LIMITS OF CONSTRUCTION ON THE PLANS, SHALL BE PROTECTED DURING CONSTRUCTION WITH FENCING. SEE TREE PROTECTION FENCE DETAIL THIS SHEET.
- TREE PROTECTION FENCES SHALL BE ERRECTED ACCORDING TO TOWN OF KDH STANDARDS FOR TREE PROTECTION, INCLUDING TYPES OF FENCING AND SIGNAGE.
- TREE PROTECTION FENCES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING, OR GRADING) AND SHALL BE MAINTAINED THROUGHOUT ALL PHASES OF THE CONSTRUCTION PROJECT.
- EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL BE INSTALLED OR MAINTAINED IN A MANNER WHICH DOES NOT RESULT IN SOIL BUILD-UP WITHIN TREE DRIP LINES.
- FENCES SHALL COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES, LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIFLINE) OR CRITICAL ROOT ZONE (CRZ), WHICHEVER IS GREATER, AND SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PROJECT IN ORDER TO PREVENT THE FOLLOWING:
 - SOIL COMPACTION IN CRZ AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIAL.
 - CRZ DISTURBANCES DUE TO GRADE CHANGES OR TRENCHING NOT REVIEWED AND AUTHORIZED BY THE FORESTRY MANAGER.
 - WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT
 - OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.
- ALL GRADING WITHIN CRZ AREAS SHALL BE DONE BY HAND OR WITH SMALL EQUIPMENT TO MINIMIZE ROOT DAMAGE. PRIOR TO GRADING, RELOCATE PROTECTIVE FENCING TO 2 FEET BEHIND THE GRADE CHANGE AREA.
- NO LANDSCAPE TOPSOIL DRESSING GREATER THAN FOUR (4) INCHES SHALL BE PERMITTED WITHIN THE DRIFLINE OR CRZ OF TREES, WHICHEVER IS GREATER. NO TOPSOIL IS PERMITTED ON ROOT FLARES OF ANY TREE.
- WOODED AREAS ARE NEW GROWTH WITHIN THE LAST 20 YEARS, EXISTING LIVE OAKS THAT ARE HEALTHY ARE TO BE PRESERVED AS PER PLAN



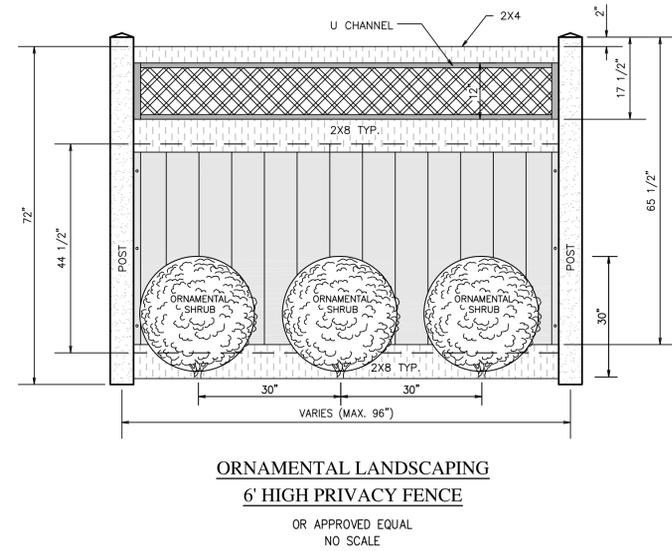
DURING CONSTRUCTION
ROOT ZONE and DRIP LINE PROTECTION
NOT TO SCALE



SHRUB PLANTING DETAIL
N.T.S.

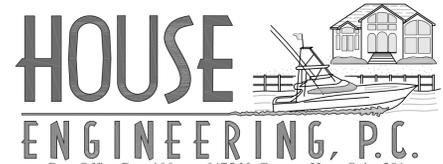


TREE PLANTING DETAIL
N.T.S.



ORNAMENTAL LANDSCAPING
6' HIGH PRIVACY FENCE
OR APPROVED EQUAL
NO SCALE

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APPROVALS	DATE
Drawn: D. NEFF	06/06/22
Checked: R. HOUSE	06/06/22
Engineer: R. HOUSE	06/06/22

REVISIONS		
No.	Date	Description
1	5-24-22	AS PER STAFF REVIEW
2	5-31-22	SITE PLAN REVIEW II

Landscape Detail Plan
For:
Briggs Street Townhomes
Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	C8 OF 8

CAD FILENAME: 185664 SCALE: as noted

CROATAN HIGHWAY

US HWY 158

BRIGGS STREET

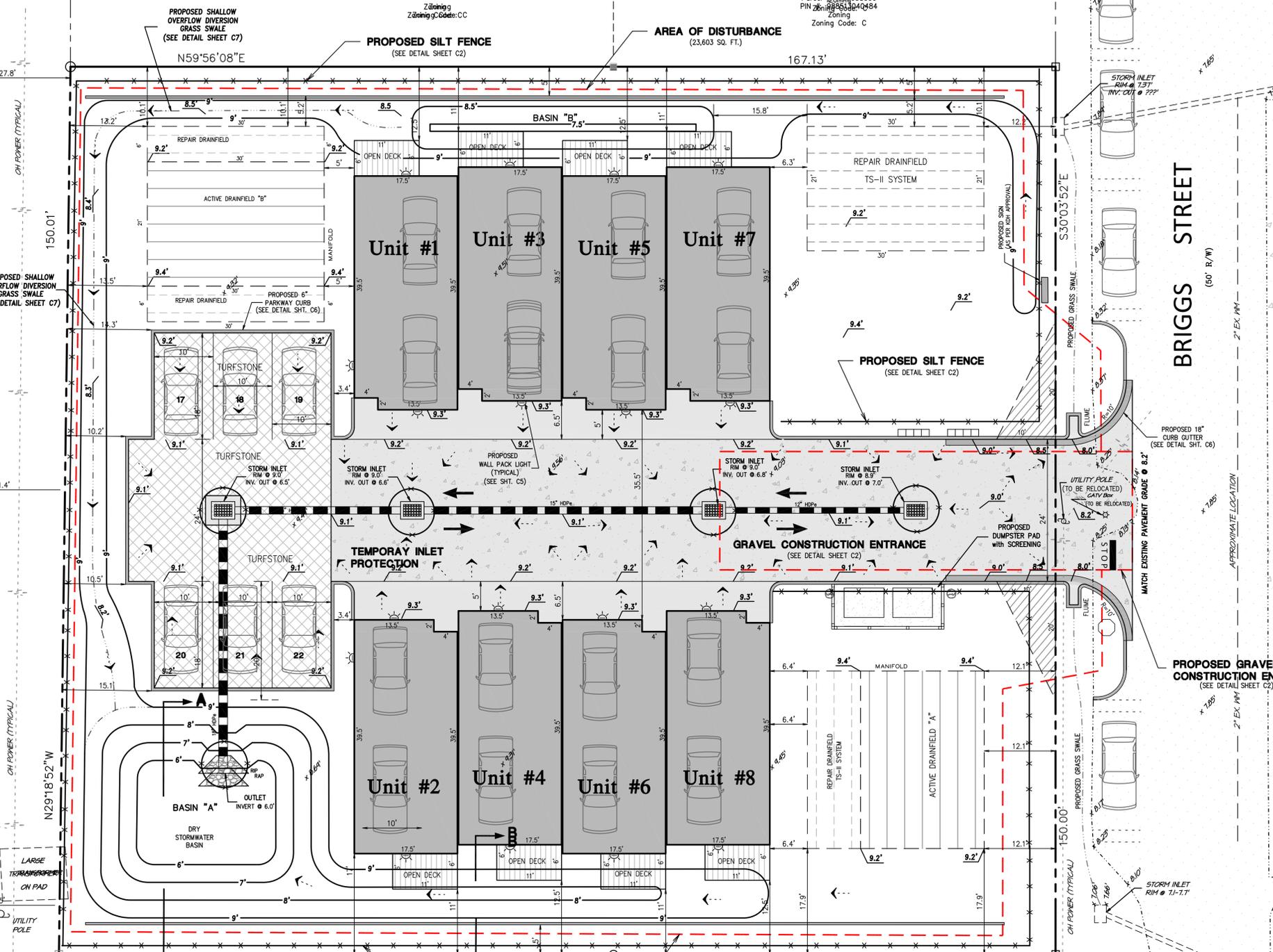
PROPOSED SIDEWALK CONSTRUCTION DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH SEED OR SOD

GENERAL NOTES:

- STREET ADDRESS: 3206 Briggs Street, Kill Devil Hills, NC 27948
PARCEL ID NUMBER: 000040000 and 000043000
GLOBAL PIN: 98851304393 and 988513041236
RECORDED REFERENCE: Lot 3 and 4 Block 11, / Lot 3 and 4 Block 12 DB 2186 PG. 0404; DB. 2186 PG. 0411 (08/14/2017)
LOT AREA: 25,217 S.F.
FEMA Flood Zone: FEMA Flood Zone: X; Regulatory Flood Protection Elevation (RFPE) in Shaded X and X zones west of NC12, the RFPE is 8' NAVD 1988 or the natural grade elevation if the natural grade is greater than 8' NAVD 1988
ZONING: C (Commercial) Proposed Use: Multi-Family
DENSITY: MULTI-FAMILY DWELLING: 18 UNITS PER ACRE. 25,217 SF. = 0.58 X 18 = 10.0 UNITS/AC
PROPOSED DEVELOPMENT: (8) TWO BEDROOM RESIDENTIAL DWELLING (Multi-Family) FRAME STRUCTURE ON PILE FOUNDATION WITH CONCRETE PARKING AREA UNDERNEATH

LEGEND:

- PROPOSED DWELLING AREA
PROPOSED VEHICLE CIRCULATION AREA
PROPOSED CONCRETE AREA
EXISTING ROAD SURFACE
PROPOSED DECK
PROPOSED REINFORCED VEHICLE CIRCULATION AREA (6" 3,000 PSI CONCRETE)
PROPOSED STONE BASE TURFSTONE
PROPOSED FINISHED GRADE CONTOUR
PROPOSED FINISHED SPOT GRADE
PROPOSED DRAINAGE DIRECTIONAL ARROW
PROPOSED SILT FENCE

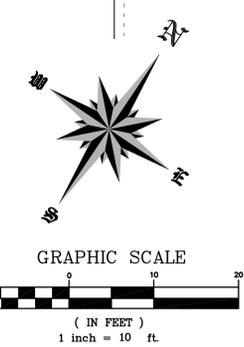


DEMOLITION NOTES

- THE ABANDONMENT OF THE EXISTING WATER METER/SERVICE SHALL BE IN CONFORMANCE WITH TOWN OF KILL DEVIL HILLS DEPARTMENT OF PUBLIC UTILITIES DESIGN STANDARDS MANUAL AT THE DEVELOPER'S EXPENSE.
CONTRACTOR TO USE EXISTING DRIVEWAY FOR STAGING UNTIL CONSTRUCTION IS COMPLETE AT ANY STAGE, DURING CONSTRUCTION THAT EXISTING DRIVEWAY MUST BE REMOVE, A GRAVEL CONSTRUCTION ENTRANCE SHALL BE INSTALLED (SEE DETAIL THIS SHEET C5)
CONTRACTOR TO REVIEW SHEET C5 FOR PRE-DEVELOPMENT DRAINAGE STRUCTURES BEFORE START OF CONSTRUCTION.
CONTRACTOR MUST OBTAIN DEMOLITION PERMIT.
ALL EXISTING UTILITIES AND IMPROVEMENTS, INCLUDING SUBSTRUCTURES, THAT ARE DAMAGED BY THE CONTRACTOR, WHICH ARE NOT DESIGNATED BY THE PLANS OR SPECIFICATIONS TO BE DISTURBED, SHALL BE RESTORED OR REPAIRED TO THE SATISFACTION OF THE ENGINEER AND TOWN OF KILL DEVIL HILLS

INCIDENTAL DRAINAGE

- TEMPORARY DRAINAGE DURING CONSTRUCTION WILL BE PROVIDED BY THE OWNER/DEVELOPER/CONTRACTOR TO RELIEVE AREAS THAT MAY CAUSE DAMAGE TO ROADWAYS AND/OR ADJACENT PROPERTIES AS DIRECTED BY PLANNING/CIVIL INSPECTIONS.
THE PLANNING/CIVIL INSPECTOR WILL PERFORM AN ON-SITE INSPECTION OF STORM SEWER PIPE INSTALLATION PRIOR TO ANY BACKFILLING OF THE INSTALLED PIPE.
IF PRECAST DRAINAGE STRUCTURES ARE USED, SHOP DRAWINGS WILL BE SUBMITTED TO THE DESIGN ENGINEER BY THE OWNER/DEVELOPER/CONTRACTORS DESIGN CONSULTANT, ALONG WITH THE PROPER CERTIFICATIONS, UNLESS PREVIOUSLY APPROVED BY THE TOWN OF KILL DEVIL HILLS PLANNER.
ALL STORM SEWER PIPE JOINTS WILL BE INSTALLED, SILT FREE, OR WILL BE COMPLETELY WRAPPED WITH TWO FEET (2') WIDE APPROVED FILTER FABRIC, SECURED IN PLACE PRIOR TO BACKFILLING.



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Table with columns: APPROVALS, DATE, REVISIONS. Includes entries for D. Neff and R. House dated 06/06/22.

Soil Erosion and Sedimentation Control Plan For: Briggs Street Townhomes Location: 3206 Briggs Street Lot: 3&4 Blk: 12, Orville Beach Amended Kill Devil Hills Dare County North Carolina

SOIL EROSION & SEDIMENT CONTROL PLAN NOTES:

- OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
- FLAG AND/OR ROUGH STAKE WORK LIMITS.
- HOLD PRECONSTRUCTION CONFERENCE (OWNER, CONTRACTOR, ENGINEER, AND APPROPRIATE GOVERNMENT OFFICIALS) AT LEAST ONE WEEK PRIOR TO START OF CONSTRUCTION ACTIVITIES.
- INSTALL SILT AND SAND FENCING @ LOCATIONS SHOWN ON PLAN
- COMPLETE CLEARING AND GRUBBING PROCEDURES.
- GRADE SITE ACCORDING TO PLAN
- ALL EROSION SEDIMENT CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER HEAVY RAINFALL EVENTS. NEEDED REPAIRS WILL BE MADE IMMEDIATELY. INSPECTION/MAINTENANCE LOG WILL BE KEPT ON SITE FOR THE DURATION OF THE PROJECT.
- NO DEBRIS WILL BE BURIED ON THIS SITE.
- ALL EROSION AND SEDIMENT CONTROL, STORMWATER MANAGEMENT AND DRAINAGE DESIGN SHALL BE IN ACCORDANCE WITH THE NORTH CAROLINA SEDIMENT AND STORMWATER REGULATIONS AND WITH THE TOWN OF KILL DEVIL HILLS CODE.
- EXISTING UTILITIES ARE IN ACCORDANCE WITH THE BEST AVAILABLE INFORMATION. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO CONTACT THE GOVERNING UTILITY COMPANIES (3) THREE DAYS PRIOR TO CONSTRUCTION IN ORDER TO VERIFY THE UTILITY LOCATIONS IN THE FIELD.
- THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY AND ALL DAMAGES DONE TO THEM DUE TO HIS NEGLIGENCE SHALL BE IMMEDIATELY AND COMPETENTLY REPAIRED AT HIS EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL APPLICABLE PERMITS, INSURANCE, BONDS, ETC. REQUIRED BY LOCAL, STATE AND/ OR FEDERAL AGENCIES NECESSARY FOR CONSTRUCTION.
- PLAN LOCATION AND DIMENSIONS SHALL BE STRICTLY ADHERED TO UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- PROPOSED AREA TO BE DISTURBED IS (+/- 23,603 SQ FT)
- ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITHIN THIRTY DAYS OF LAND DISTURBING ACTIVITIES. IF SAID ACTIVITIES OCCUR OUTSIDE THE PERMANENT VEGETATION SEEDING DATES (APR. 1- SEP.30) THEN TEMPORARY VEGETATION SEEDING SPECIFICATIONS SHALL BE FOLLOWED FOR PLANTING UNTIL THE NEXT APPROPRIATE PERMANENT SEEDING PERIOD, AT WHICH TIME PERMANENT VEGETATION SHALL BE ESTABLISHED ACCORDING TO PERMANENT VEGETATION SEEDING SPECIFICATIONS (SEE PERM. & TEMP. SEEDING SPEC'S THIS SHEET.)
- IF EXCESSIVE WIND EROSION OR STORMWATER RUNOFF EROSION DEVELOPS DURING CONSTRUCTION IN ANY LOCATION ON THE PROJECT, ADDITIONAL SAND OR SILT FENCING SHALL BE INSTALLED AS DIRECTED BY ENGINEER SO AS TO PREVENT DAMAGE TO ADJACENT PROPERTY. SEE SAND AND SILT FENCE DETAIL THIS SHEET.
- SOIL EROSION AND SEDIMENTATION CONTROLS TO BE INSPECTED, MAINTAINED AND REPAIRED AS NECESSARY UNTIL PERMANENT CONTROLS ARE ESTABLISHED PER CONSTRUCTION SCHEDULE.

Seeding Specifications

PERMANENT VEGETATION

SEEDING DATES: APRIL 1 - SEPT 30

SEED MIXTURE	APPLICATION RATES/ACRE
BAMIA	50 LBS.
COMMON BERMUDA (UNHULLED)	50 LBS.
GERMAN MILLETT	15 LBS.
FESCUE	20 LBS.

FERTILIZER

26-13-13 @ 500 LB/ACRE

MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.

BEACH GRASS

SPRIG AT 6" O.C.

GENERAL:

FERTILIZER RATES SHOWN ARE GENERAL RECOMMENDATIONS; FREQUENCY AND AMOUNT OF FERTILIZATION CAN BEST BE DETERMINED THROUGH SITE SPECIFIC SOIL TESTING. SATISFACTORY STABILIZATION AND EROSION CONTROL REQUIRES A COMPLETE VEGETATIVE COVER EVEN SMALL BREACHES IN VEGETATIVE COVER CAN EXPAND RAPIDLY IF LEFT UNATTENDED. A SINGLE HEAVY RAIN IS OFTEN SUFFICIENT TO GREATLY ENLARGE BARE SPOTS, AND THE LONGER REPAIRS ARE DELAYED THE MORE COSTLY THEY BECOME. PROMPT ACTION WILL KEEP SEDIMENT LOSS AND REPAIR COST DOWN. NEW SEEDINGS SHOULD BE INSPECTED FREQUENTLY AND MAINTENANCE PERFORMED AS NEEDED. IF RILLS AND GULLS DEVELOP THEY MUST BE FILLED, RE-SEED, AND MULCHED AS SOON AS POSSIBLE. DIVERSIONS MAY BE NEEDED UNTIL NEW PLANTS TAKE HOLD. MAINTENANCE REQUIREMENTS EXTEND BEYOND THE SEEDING PHASE. WEAK OR DAMAGED SPOTS MUST BE RELIQUED, FERTILIZED, MULCHED AND RE-SEED AS PROMPTLY AS POSSIBLE. REFERIALIZATION MAY BE NEEDED TO MAINTAIN PRODUCTIVE STANDS.

ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED ACCORDING TO THE FOLLOWING SPECIFICATIONS:

TEMPORARY VEGETATION

SEEDING DATES: OCT. 1 - MARCH 31

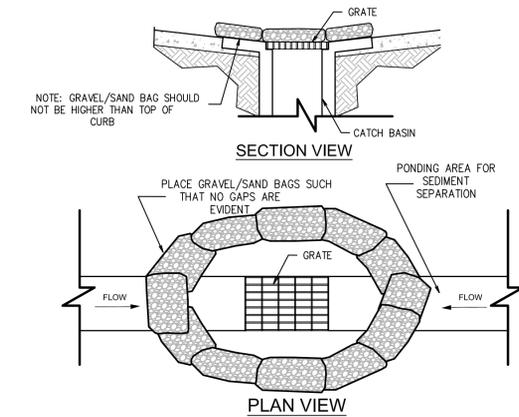
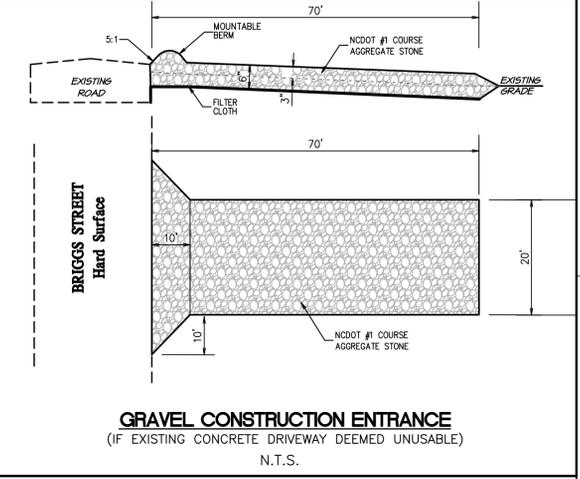
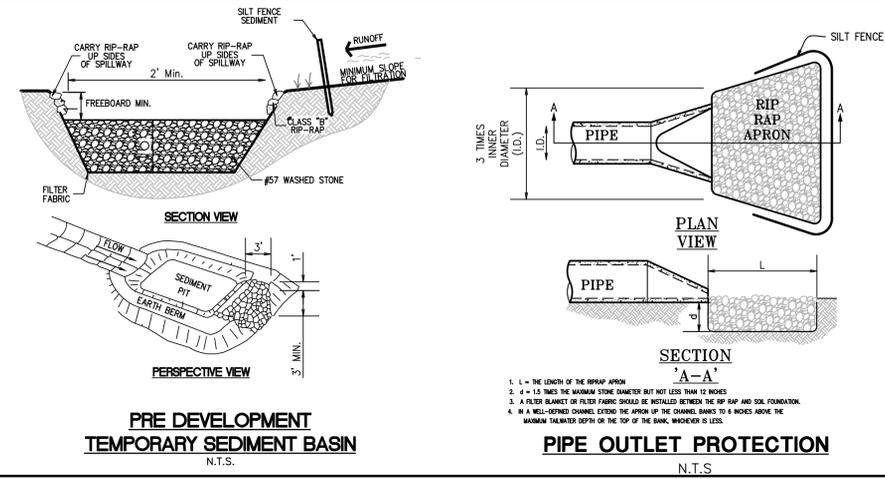
SEED MIXTURE	APPLICATION RATES/ACRE
RYE GRAIN	175 LBS.

FERTILIZER

10-10-10 @ 1000 LB/ACRE

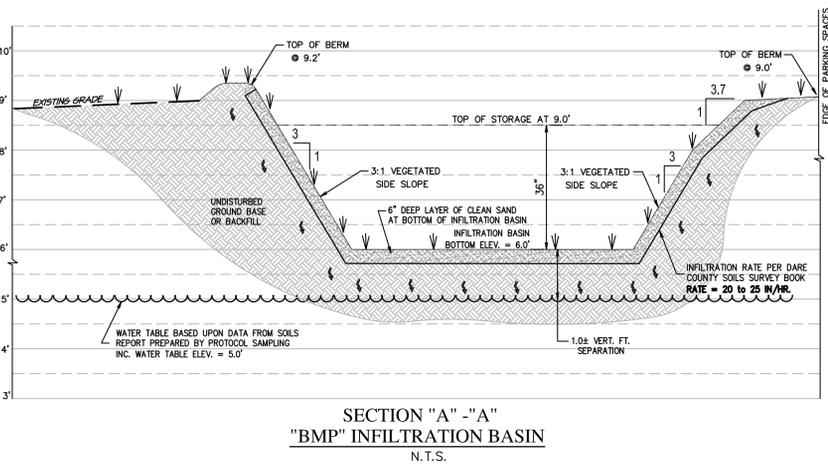
MULCH

APPLY 4,000 LB/ACRE STRAW. ANCHOR STRAW BY TACKLING WITH ASPHALT, NETTING OR A MULCH ANCHORING TOOL. A DISK WITH BLADES SET NEARLY STRAIGHT CAN BE USED AS A MULCH ANCHORING TOOL.



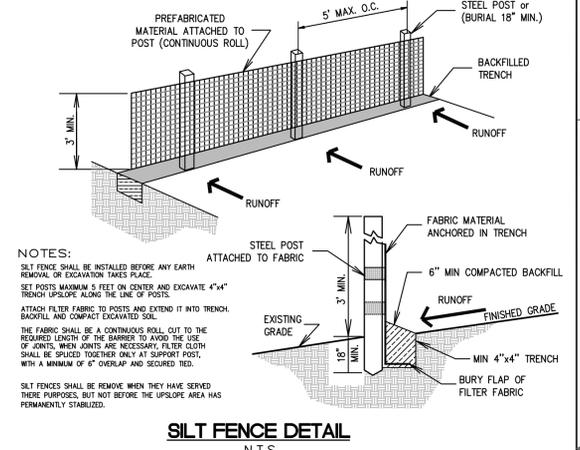
TEMPORARY INLET PROTECTION

N.T.S.



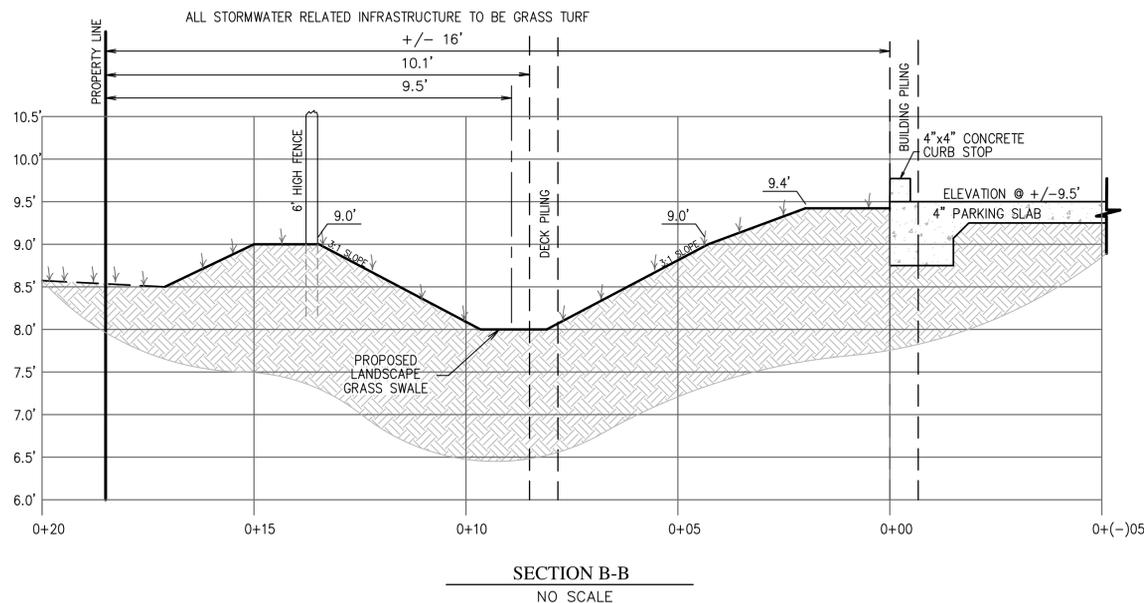
"BMP" INFILTRATION BASIN

N.T.S.



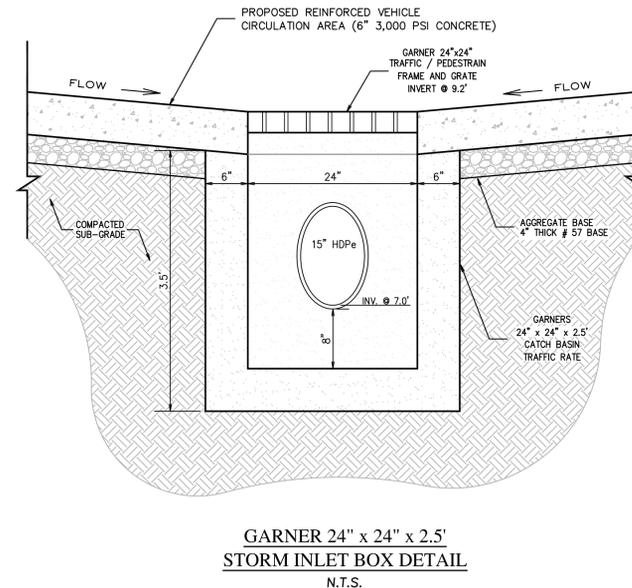
SILT FENCE DETAIL

N.T.S.



SECTION B-B

NO SCALE



GARNER 24" x 24" x 2.5" STORM INLET BOX DETAIL

N.T.S.



Firm Certification# C-1955

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APPROVALS DATE

Drawn: D. NEFF 06/06/22

Checked: R. HOUSE 06/06/22

Engineer: R. HOUSE 06/06/22

REVISIONS

No.	Date	Description
1	5-24-22	AS PER STAFF REVIEW
2	5-31-22	SITE PLAN REVIEW II

SIZE PROJECT NUMBER REV SHEET NO.

D 185664 - C2

CAD FILENAME: 185664 SCALE: as noted

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Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
Kitty Hawk North Carolina 27949
Office# (252) 261-8253 E-Mail: info@houseengineering.net

Soil Erosion and Sedimentation Control Detail Plan

For: Briggs Street Townhomes

Location: 3206 Briggs Street

Lot: 3&4 Blk: 12, Orville Beach Amended

Kill Devil Hills Dare County North Carolina

SIZE PROJECT NUMBER REV SHEET NO.

D 185664 - C2

CAD FILENAME: 185664 SCALE: as noted

CROATAN HIGHWAY

US HWY 158

BRIGGS STREET

WASTEWATER ACTIVE / REPAIR SYSTEM DESIGN DATA:

DESIGN FLOW = 1,920 gpd
 DEPTH TO SEASONAL HIGH WATER TABLE = 48" +
 SOIL TYPE - SINGLE GRAINED LOOSE SAND (TYPE 1) DUE TO LOT AREA CONSTRAINTS, A PRE-TREATMENT ACTIVE SYSTEM WILL BE UTILIZED ALONG WITH A L.P.P. PRESSURE DOSED DRAINFIELD LOADED AT 1.0 GPD/SQ. FT. AND A 40% TS-II DRAINFIELD REDUCTION, DAMAND DOSING OF DRAINFIELD AND UV DISINFECTION WILL BE REQUIRED. A PRE-TREATMENT REPAIR SYSTEM WILL BE UTILIZED ALONG WITH A L.P.P. PRESSURE DOSED DRAINFIELD LOADED AT 1.0 GPD/SQ. FT TIME DOSING OF DRAINFIELD AND UV DISINFECTION WILL BE REQUIRED.

INNOVATIVE WASTEWATER SYSTEM NO: IHWS 2015-03-R2

PROPOSED TREATMENT LEVEL - TS-II

Parameter	Effluent Quality Standard
CBOD	L.T. 10 mg/l
TSS	L.T. 10 mg/l
NH4-N	L.T. 10 mg/l
TN	L.T. 20 mg/l or 60% removal
Fecal Coliform	L.T. 1,000 colonies/100 ml

EQUIPMENT REQUIRED:

- 3,004 G. CAPACITY PRECAST SEPTIC TANK WITH EFFLUENT FILTER
- 1,334 GALLON CAPACITY PRECAST EQUALIZING TANK
- 2,446 GALLON CAPACITY PRECAST RECIRCULATION TANK
- 3,432 GALLON CAPACITY PRECAST PUMP TANK
- (2) E-Z TREAT 1200 TREATMENT UNITS WITH ASSOCIATED PUMP AND RECIRCULATION SYSTEM COMPONENTS
- ULTRAVIOLET DISINFECTION SYSTEM
- AMERICAN ONSITE CONTROL, ALARM

ACTIVE and REPAIR L.P.P. BED SIZING:

- BED LTR = 1.0 GPD/SQ. (PROTOCOL SAMPLING SERVICES)
- USE 40% BED AREA REDUCTION PER .1970(J)(3)(B)
- AREA REQUIRED = 1,920/1.0 x .60 = 1,152 SQ. FT.
- MINIMUM DRAINLINE LENGTH = 1,152/3 = 384 L.F. ON 3.0' O.C.
- DRAINFIELD "A"
- USE 7 SLEEVED LATERALS AT 3' O.C., EACH LATERAL 30.0 L.F.
- DRAINFIELD "B"
- USE 7 SLEEVED LATERALS AT 3' O.C., EACH LATERAL 30.0 L.F.

PUMP DESIGN FLOW:

- DESIGN PRESSURE HEAD AT DRAINFIELD = 3 FT.
- HOLE DIAMETER = 5/32"
- NUMBER OF LATERAL = 7
- NUMBER OF HOLES PER LATERAL = 10
- TOTAL NUMBER OF HOLES = 7x10 = 70
- FLOW PER HOLE AT 3 FT FIELD PRESSURE HEAD = 0.50 GPM/HOLE
- TOTAL PUMP AT DESIGN PRESSURE HEAD = 35 GPM PER DRAINFIELD

L.P.P. MANIFOLD:

- USE 4" SCH 40 PVC MANIFOLD. SEE DETAIL FOR CONFIGURATION DETAILS

FORCE MAIN:

- USE 2" SCH 40 PVC FORCE MAIN FROM PUMP TO MANIFOLD (105 L.F.). MAINTAIN 3" MINIMUM COVER IN FORCE MAIN
- ALL FORCEMAIN SHALL BE LAID IN SUCH THAT NO INTERMEDIATE HIGH POINTS CREATED WITHOUT INSTALLING OF AN AIR RELEASE VALVE

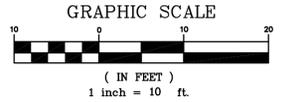
PUMP SELECTION:

- Q = CALCULATED FLOW (GPD) DESIGN POINT = 35 GPM
- H = STATIC HEAD AT FIELD = 3.0'
- H₁ = ELEVATION HEAD = 4.0'
- L_e = EQUIVALENT LENGTH OF FORCE MAIN = 160 L.F. + 25% = 200 L.F.
- d = FORCE MAIN DIAMETER (IN.) = 2
- C = PIPE COEFFICIENT = 130
- H = FRICTION HEAD = $\frac{10.44 (L_e) Q^{1.85}}{C^{1.49} d^{4.76}} = 0.0028(0)^{1.85}$
- TDH = H₁ + H₂ + H_f
- USE (2) MYERS MODEL ME45 1/2 hp 115 volt EFFLUENT PUMPS AT 35 gpm with 20.10 TDH OR APPROVED EQUAL - SUBMIT SPECIFICATIONS FOR APPROVAL PRIOR TO ORDERING
- FINAL FLOAT SETUP DEPENDS ON THE GEOMETRY OF THE PUMP TANK SELECTED
- CONSULT ENGINEER AFTER TANKS AND PUMPS HAVE BEEN SELECTED TO DETERMINE FINAL FLOAT SETTINGS.
- OPERATOR TO RECORD INITIAL FLOAT SETTING AND INITIAL OPERATION CONDITIONS.

LEGEND:

- PROPOSED DWELLING AREA
- PROPOSED VEHICLE CIRCULATION AREA
- PROPOSED CONCRETE AREA
- EXISTING ROAD SURFACE
- PROPOSED DECK
- PROPOSED REINFORCED VEHICLE CIRCULATION AREA (6" 3,000 PSI CONCRETE)
- PROPOSED TURFSTONE
- PROPOSED PARKING SPACE (10'x20')

- ### GENERAL NOTES:
- STREET ADDRESS: 3206 Briggs Street Kill Devil Hills, NC 27948
 - PARCEL ID NUMBER: 000040000 and 000043000
 - GLOBAL PIN: 988513040393 and 988513041236
 - RECORDED REFERENCE: Lot 3 and 4 Block 11, / Lot 3 and 4 Block 12 DB 2186 PG. 0404; DB. 2186 PG. 0411 (08/14/2017)
 - LOT AREA: 25,217 S.F.
 - FEMA Flood Zone: FEMA Flood Zone: X
 - ZONING: C (Commercial) Multi-Family
 - DENSITY: MULTI-FAMILY DWELLING: 18 UNITS PER ACRE, 25,217 SF. = 0.58 X 18 = 10.0 UNITS/AC
 - PROPOSED DEVELOPMENT: (8) TWO BEDROOM RESIDENTIAL DWELLING (Multi-Family) FRAME STRUCTURE ON PILE FOUNDATION WITH CONCRETE PARKING AREA UNDERNEATH



ENGINEER SEAL

HOUSE ENGINEERING, P.C.

Firm Certification # C-1955

APPROVALS

APPROVALS	DATE
Drawn: D. NEFF	03/30/22
Checked: R. HOUSE	03/30/22
Engineer: R. HOUSE	03/30/22

REVISIONS

No.	Date	Description
1	03/31/22	As per DCHD Comments

HOUSE ENGINEERING, P.C.

Post Office Box 466 - 6475 N. Croatan Hwy, Suite 201
 Kitty Hawk North Carolina 27949
 Office# (252) 261-8253 E-Mail: info@houseengineering.net

Wastewater Site Plan

For:
Briggs Street Townhomes
 Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

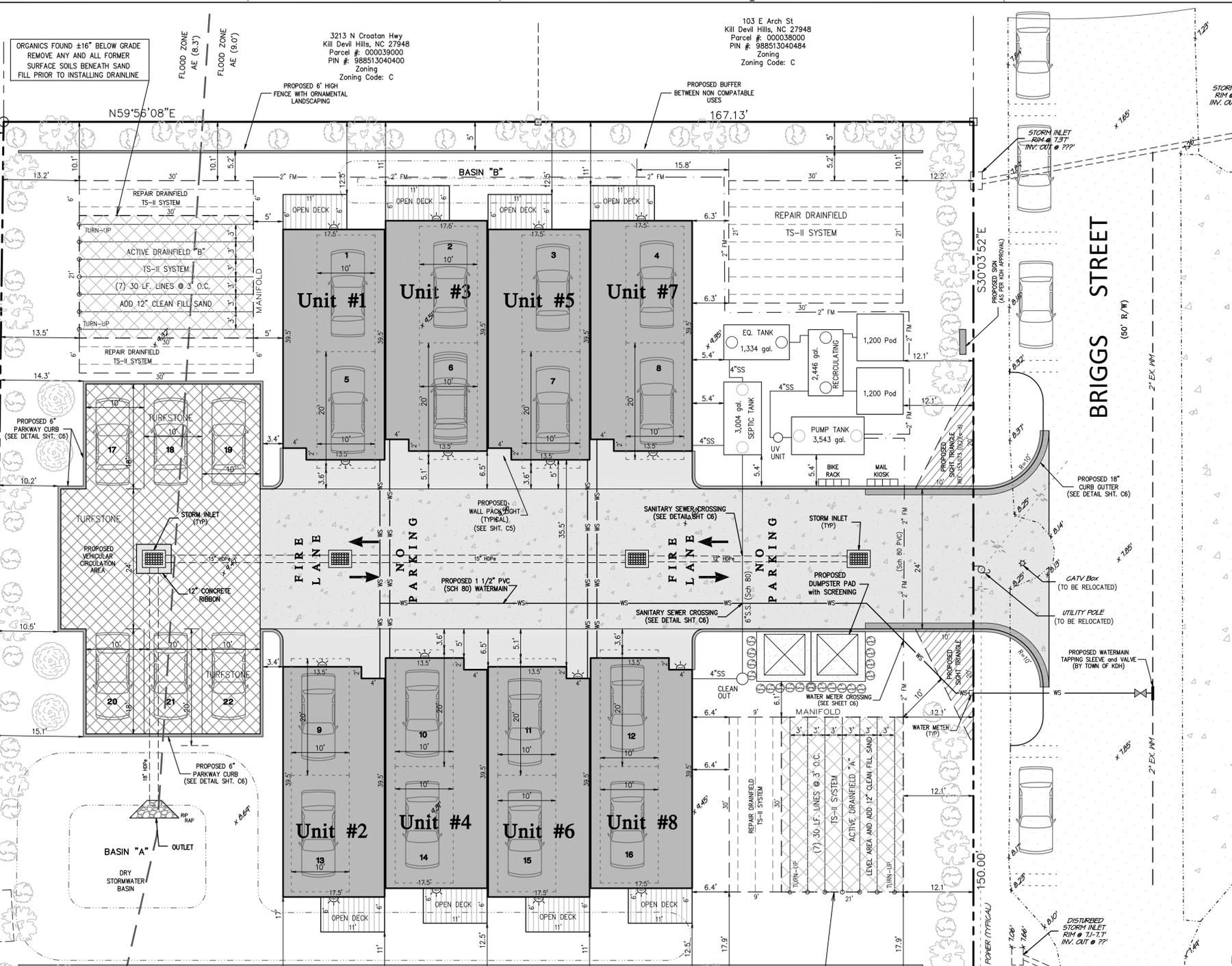
SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	W1 OF 3

CAD FILENAME: 185664 SCALE: 1" = 10'-0"

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ORGANICS FOUND ±16" BELOW GRADE
 REMOVE ANY AND ALL FORMER
 SURFACE SOILS BENEATH SAND
 FILL PRIOR TO INSTALLING DRAINLINE

103 E Arch St
 Kill Devil Hills, NC 27948
 Parcel #: 000038000
 PIN #: 988513040484
 Zoning
 Zoning Code: C

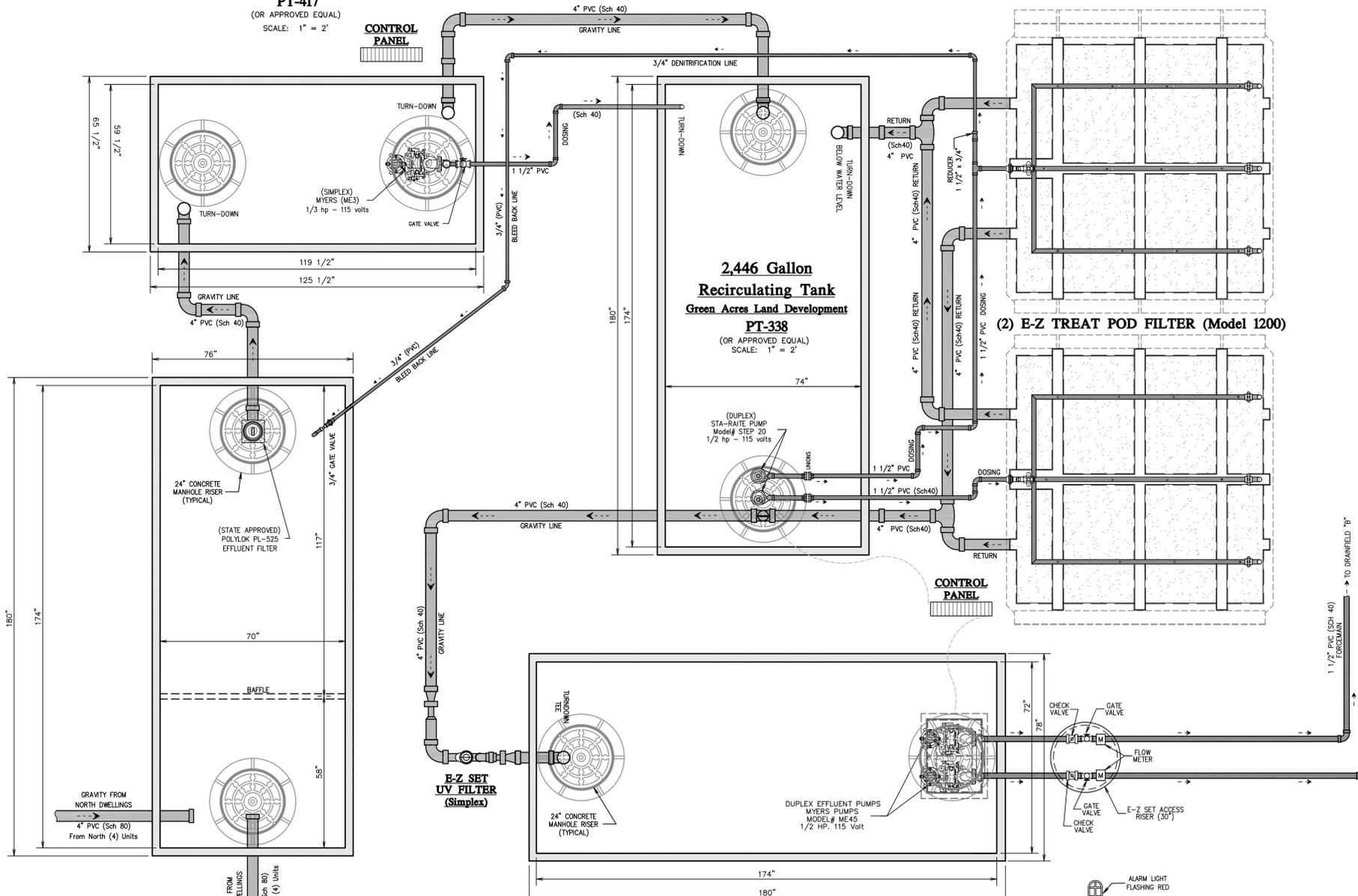
100 E Helga St
 Kill Devil Hills, NC 27948
 Parcel #: 000042000
 PIN #: 988513041146
 Zoning
 Zoning Code: C

102 E Helga St
 Kill Devil Hills, NC 27948
 Parcel #: 000041000
 PIN #: 988513042210
 Zoning
 Zoning Code: C

ORGANICS FOUND ±24" BELOW GRADE
 REMOVE ANY AND ALL FORMER
 SURFACE SOILS BENEATH SAND
 FILL PRIOR TO INSTALLING DRAINLINE

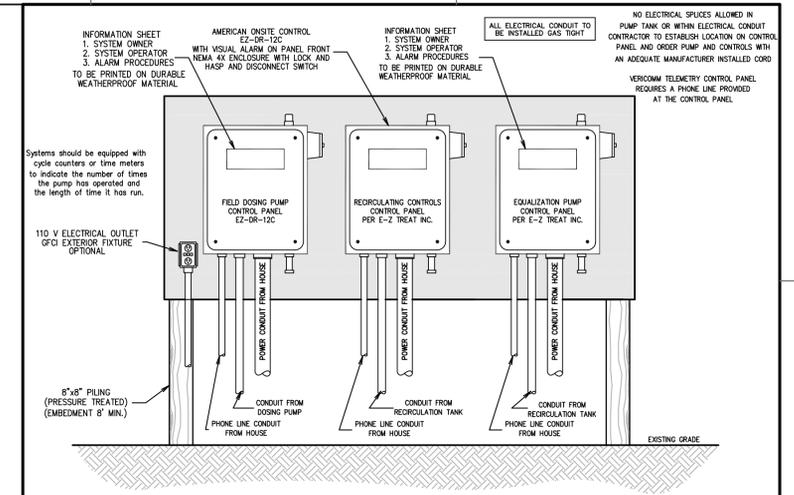
1,334 Gallon Equalizing Tank
Green Acres Land Development

PT-417
(OR APPROVED EQUAL)
SCALE: 1" = 2'

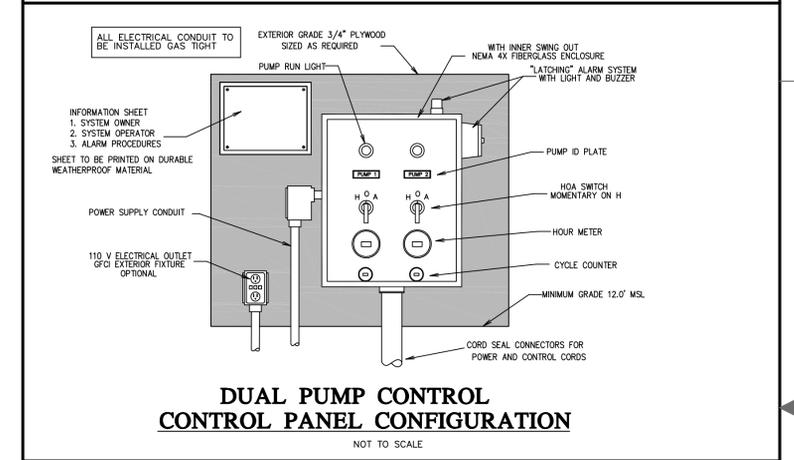


Schematic Tank and Piping Layout

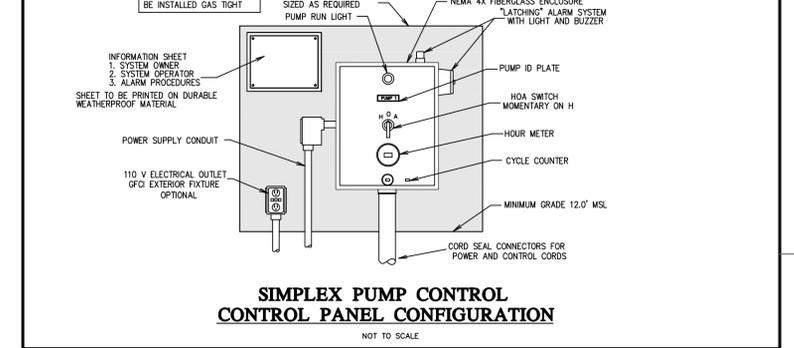
Scale: 1" = 2'



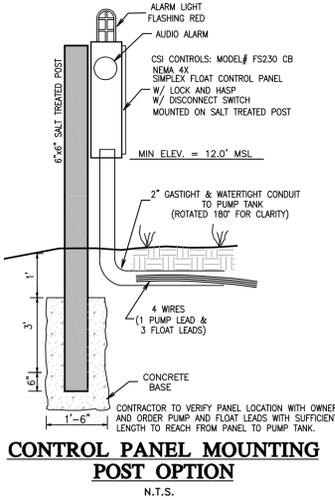
CONTROL PANEL CONFIGURATION



DUAL PUMP CONTROL CONTROL PANEL CONFIGURATION



SIMPLEX PUMP CONTROL CONTROL PANEL CONFIGURATION



CONTROL PANEL MOUNTING POST OPTION

N.T.S.



APPROVALS

APPROVALS	DATE
Drawn: D. NEFF	03/13/22
Checked: R. HOUSE	03/13/22
Engineer: R. HOUSE	03/13/22

REVISIONS

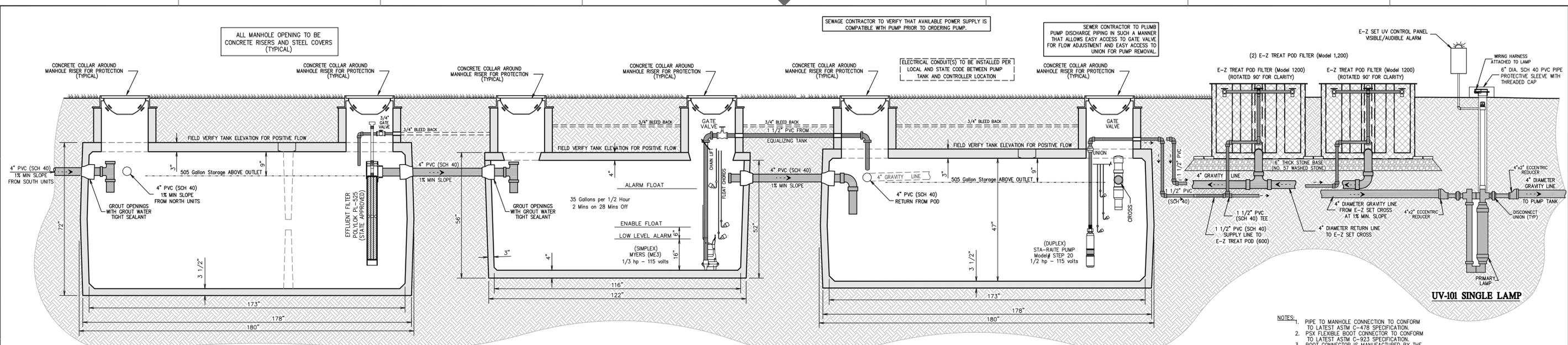
No.	Date	Description

HOUSE ENGINEERING, P.C.
P.O. BOX 466
KITTY HAWK, NORTH CAROLINA 27949
OFFICE: (252) 261-8253 E-Mail: rick@houseengineering.net

Wastewater Detail Plan
For:
Briggs Street Townhomes
Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	W2 OF 3

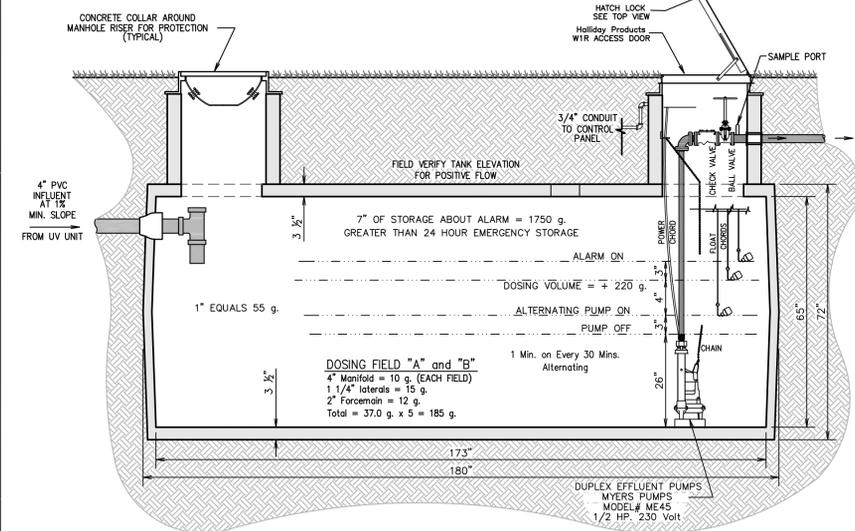
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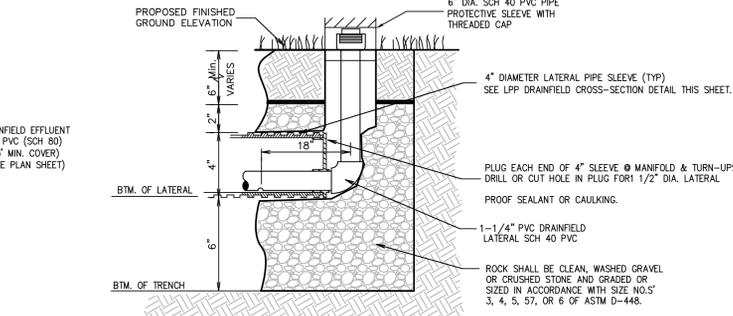
3,004 Gallon Septic Tank
Green Acres Land Development
STB-380
 (OR APPROVED EQUAL)
 SCALE: 1" = 2'

1,334 Gallon Equalizing Tank
Green Acres Land Development
PT-417
 (OR APPROVED EQUAL)
 SCALE: 1" = 2'

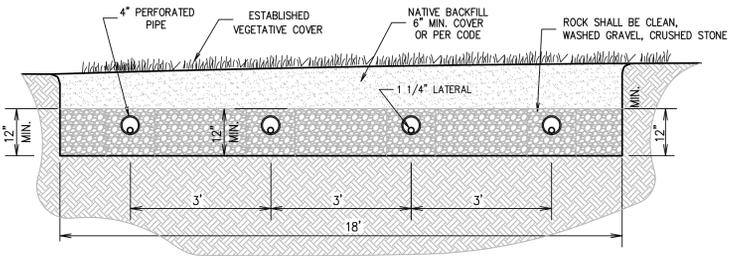
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Green Acres Land Development
PT-338
 (OR APPROVED EQUAL)
 SCALE: 1" = 2'



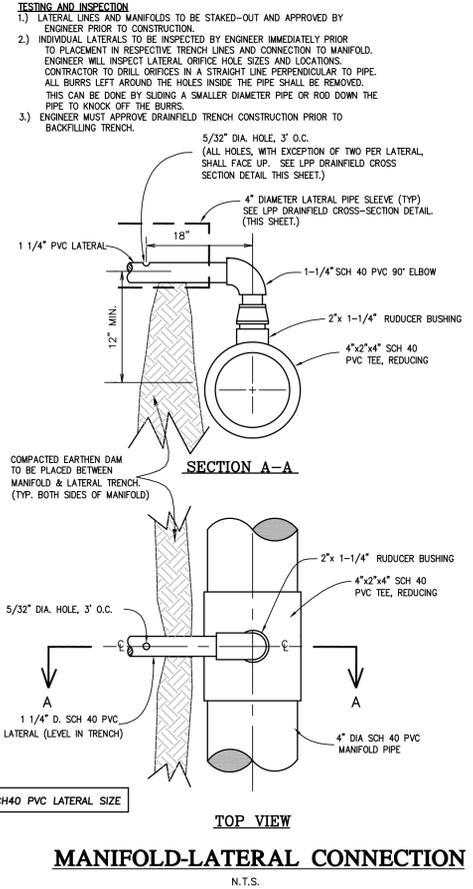
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Green Acres Land Development
PT-337
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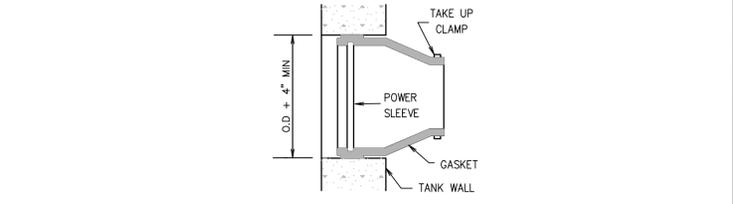
TRENCH X-SECTION
 NOT TO SCALE



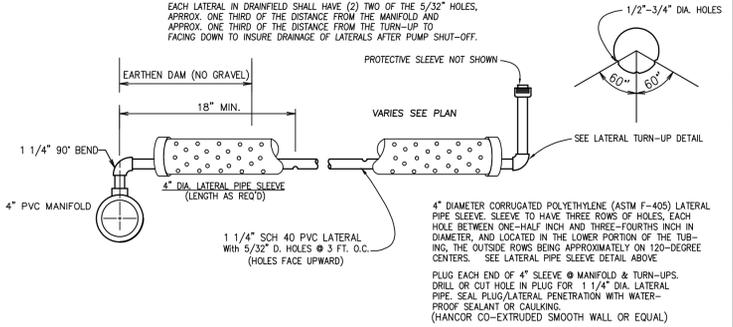
PREFERRED L.P.P. FIELD LATERAL TRENCH LAYOUT
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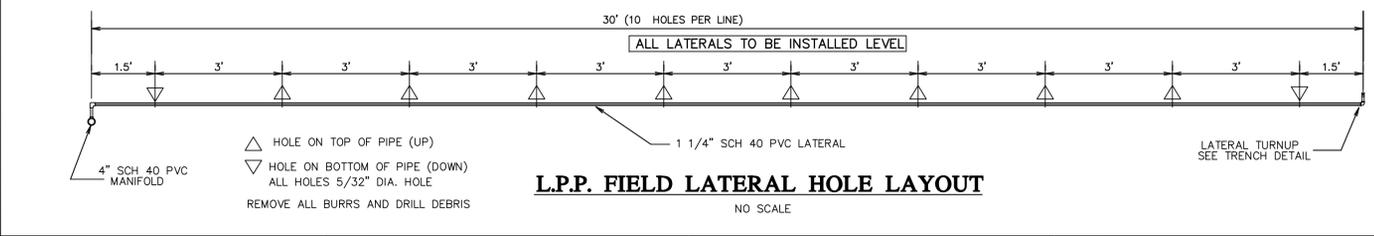
MANIFOLD-LATERAL CONNECTION
 N.T.S.



Booted Pipe Opening
 NO SCALE



L.P.P. FIELD LATERAL SECTION
 NO SCALE



L.P.P. FIELD LATERAL HOLE LAYOUT
 NO SCALE



HOUSE ENGINEERING, P.C.
 P.O. BOX 466
 KITTY HAWK, NORTH CAROLINA 27949
 OFFICE: (252) 261-8253 E-Mail: rick@houseengineering.net

APPROVALS		DATE
Drawn:	D. NEFF	03/13/22
Checked:	R. HOUSE	03/13/22
Engineer:	R. HOUSE	03/13/22

REVISIONS		
No.	Date	Description
1	08/01/18	SITE PLAN REVISION

Wastewater Detail Plan

For:
Briggs Street Townhomes
 Location:
3206 Briggs Street
Lot: 3&4 Blk: 12, Orville Beach Amended
Kill Devil Hills Dare County North Carolina

SIZE	PROJECT NUMBER	REV	SHEET NO.
D	185664	-	W3 OF 3

CAD FILENAME: 185664 SCALE: 1" = 2'-0"

