

Harwich Planning Board Agenda  
**Tuesday, January 26, 2021 – 6:30 PM**  
Town Hall, 732 Main Street, Harwich

This meeting will be held **VIA REMOTE PARTICIPATION ONLY**.  
Access is available through GoToMeeting.com and live broadcast on Channel 18\*

**Please join my meeting from your computer, tablet or smartphone.**

<https://global.gotomeeting.com/join/356533877>

**You can also dial in using your phone.**

**United States: [+1 \(571\) 317-3122](tel:+15713173122)**

**Access Code: 356-533-877**

- I. CALL TO ORDER** Pursuant to Governor Baker’s March 12, 2020 Order Suspending Certain Provisions of the Open Meeting Law, G.L. c. 30A, §20, and the Governor’s March 15, 2020 Order imposing strict limitations on the number of people that may gather in one place, this meeting of the Harwich Planning Board is being conducted via remote participation. No in-person attendance of members of the public will be permitted, but every effort will be made to ensure that the public can adequately access the proceedings as provided for in the Order.

**II. PUBLIC HEARINGS**

- A. PB2020-33 Main Street Stone Horse, applicant & owner**, c/o William F. Riley, Esq. representative, seeks a new Use Special Permit, to convert one of the two dormitory buildings, specifically the building known as 868 Route 28, into twenty two (22) one-bedroom apartments and to amend the previously approved Site Plan Review Special Permit granted under case PB2019-13 with additional parking requirement and other waivers. The application, is pursuant to the Code of the Town of Harwich §325-51.Q (Multifamily Use) and §325-55 (Site Plan Review). The property is located 872 Route 28, Map 25, Parcel A2, is located in the CH-1 zoning district.
- B. PB2020-34 Cool Change LLC, Allen Harbor Marine**, applicant & owner, c/o Rob O’Neill, representative, seeks a Site Plan Review and Use Special Permit pursuant to §§325-55; 325-13, Use Table, paragraph IV.19; and 325-51 to construct a 4,102 square foot commercial building for a marine use (boat maintenance and repair) and associated parking at property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district.

**III. PUBLIC MEETING\*\***

- A. New Business:  
B. Old Business:  
1. **West Harwich DCPC** - Continued discussion on Design Guidelines  
2. **Discussion on possible zoning amendments/rules and regulations amendment for 2021**  
C. Briefings and Reports by Board Members

**IV. ADJOURN**

**\*PLEASE NOTE:** *We request all who are attending this meeting to please observe the same courtesies that would be observed if you were here in person. If you need to conduct unrelated business before your item on the agenda comes up, we request you mute your line –*  
**Use \*6 to mute and unmute your phone.**

**\*\*Per the Attorney General’s Office – Boards/Commissions may hold an open session for topics not reasonably anticipated by the Chair 48 hours in advance of the meeting following “New Business”.**  
**Next Planning Board Meeting (Subject to Change) – Tuesday, February 9, 2021.**

*Requests for accommodations for any person having a disability can be made by contacting the Administration Office at 508-430-7513.*

Authorized Posting Officer: Elaine Banta, ebanta@town.harwich.ma.us or 508-430-7511



**AGENDA ITEM # IIA**

To: Planning Board  
From: Charleen Greenhalgh, Town Planner  
Date: January 19, 2021  
Re: Staff Report – Site Plan Review & Use Special Permits

**PB2020-33 Main Street Stone Horse, applicant & owner**, c/o William F. Riley, Esq. representative, seeks a new Use Special Permit, to convert one of the two dormitory buildings, specifically the building known as 868 Route 28, into twenty two (22) one-bedroom apartments and to amend the previously approved Site Plan Review Special Permit granted under case PB2019-13 with additional parking requirement and other waivers. The application is pursuant to the Code of the Town of Harwich §325-51.Q (Multifamily Use) and §325-55 (Site Plan Review). The property is located 872 Route 28, Map 25, Parcel A2, in the CH-1 zoning district.

A public hearing on this matter is scheduled for a virtual meeting to be held on Tuesday, January 26, 2021 no earlier than 6:30pm. **The Board cannot proceed until evidence in the form of the white certified mailing receipts have been received.**

**Description**

The applicant seeks approval for a Site Plan Review Special Permit and a Use Special Permit for a multifamily use. The property went through site plan review and received approval on May 14, 2019 for two dormitory buildings. The southerly building is complete and the northerly building is still to be finished. It is the northerly building that they are seeking to change the use to 22 one-bedroom apartment. The application was filed with the Town Clerk on December 8, 2020, with revised information filed on December 22, 2020 and January 11, 2021 and include the following:

1. Form A – Special Permits & Site Plan Review
2. Narrative, dated December 8, 2020
3. List of Waivers Requested
4. Stormwater Management, dated January 31, 2019, prepared by Daniel P. Croteau, P.E.
5. Zoning District chart (C-H-1) and Typical Parking Calculation (Zoning Compliance)
6. Narrative, dated December 21, 2020; Revised January 10, 2021
7. LLC Business Entity Summary
8. Revised Drainage Calculations by Moran Engineering Associates, LLC, dated December 21, 2020, including Area of Contribution Plans for the “Previously Proposed” and “Currently Proposed”
9. Appendix 4.A – Requirements for Applications and Plans – Special Permits including Site Plan Review
10. As-Built Septic Drainage Plan, Prepared by Moran Associates, LLC, dated 5/26/20.

11. Set of plans for “The Stonehorse”, prepared by Eldredge Surveying, dated 12-21-2020, revised 2021-01-10 as follows:
  - a. Sheet 1 of 4, Site Plan, scale 1” = 30’
  - b. Sheet 2 of 4, Orthophoto Plan, scale 1” = 30’
  - c. Sheet 3 of 4, Orthophoto Plan, scale 1” = 30’
  - d. Sheet 4 of 4, Site Plan Overlay, scale 1” = 30’
12. Set of building plans for “The Stonehorse” “North Building”, prepared by JB Designs, scale ¼” = 1’- 0” as follows:
  - a. First Level Plan, Page 5 of 12, Revision #6, dated 11-20-19, Revised 12-16-2020
  - b. Second Level Plan, Page 6 of 12, Revision #6, dated 11-20-19, Revised 12-16-2020
  - c. Garden Level Plan, Page 4 of 12, Revision #7, dated 01-09-20, Revised 12-16-2020

### **MGL Reference and Planning Board Jurisdiction**

Pursuant to MGL c.40 A, §9 the Planning Board must, within 65 days of submission of application for a special permit hold a public hearing. The decision of the Planning Board shall take place within 90 days following the close of the public hearing. Further, a special permit issued shall require a two-thirds vote of the Board.

The Planning Board has jurisdiction to review this application pursuant to §325-51.Q for the Multifamily Use Special Permit and §325-55 for the Site Plan Review Special Permit.

### **Waivers**

The following waivers have been request. The explanations from Terry Eldredge, P.L.S. are shown in *italics*.

1. Parking: *A total of 82 parking spaces are required for the existing and proposed use. Thirty three- (33) spaces are proposed, resulting in a deficiency of 49 spaces. On behalf of the owner, **a waiver for the deficiency of 49 parking spaces** is requested. The existing approved project required a total of 91 parking spaces and only 17 were proposed which resulted in a deficiency of 74 spaces.*
2. Maneuvering Areas: *The proposed northerly parking area complies with the required aisle width of 24’. The aisle width of the narrowest portion of the newly constructed parking on the Rte 28 side of the project is 1’ less than 24’ required. On behalf of the owner, **a waiver of 1’ for this deficiency** is requested. The pre-existing three spaces on Deep Hole Road do not comply with the required aisle width unless you take into consideration backing into the Town Road. On behalf of the owner, **a waiver for this deficiency** is requested.*
3. Curbing: *Curbing has been installed for the parking area running parallel to Route 28. Six wheel stops are proposed for the northerly parking lot. On behalf of the owner, **a waiver for any additional curbing or wheel stops** is requested.*
4. Year-round use: *I am not sure if a waiver is required, but, on behalf of the owner, **a waiver for two- 2 additional year round units** is requested.*

### **Comments from other Boards, Departments, Committees**

**Highway:** In his narrative he mentions completing all the landscape and hardscape portions of his permit. If this includes final pavement then this is misleading as the final top coat of asphalt has not been applied. There is still “fabric” covering the catch basins and they are above grade and there for not taking water. This is resulting in the runoff of storm water from the property to Route 28 and Deep Hole Road.

There is also a fair amount of roof runoff on the Old County Road side of the property which has resulted in contributing to the flooding issues down at the Route 28 intersection. If gutter, downspouts and drywells were added to the building it should help reduce the pressure on the Town’s drainage system and help prevent flooding at that intersection.

**Fire:** No issues

**Conservation:** No issues or comments

**Health:** If the total septic flow for the entire property does not exceed 9,900 gallons per day, then the Health Department has no issue with the proposal. If the project is approved by the Planning Board, then we will require a breakdown of total septic flow for each building to accompany the building permit application.

**Engineering:** The Town Engineer reviewed the plans with the Town Planner; comments are noted below. Additionally, he will be reviewing in detail the Stormwater Report and provide comments as needed.

### **Planning Staff Comments**

1. This site received a use variance from the Zoning Board of Appeals for the Dormitory Use. The applicant now seeks to change the use of the northerly building to Multifamily Use. Town Counsel was consulted on this, as there was a question about the existing and proposed use approved by a variance and a new use requested via special permit on the property. Town Counsel, Amy Kwesell, KP Law opined that the variance would need to be amended so that the variance addressed the southerly building only. She offered the following Finding/Condition: *“The Applicant was granted a Variance by the Zoning Board of Appeals on October 31, 2018 (recorded in the Barnstable Registry of Deeds in Book 31998, Page 236) to allow the two buildings on the Property to be used as dormitories. The Southerly Building (aka #860 Route 28) is constructed and is currently being used as a dormitory pursuant to that Variance. However, the Applicant is now proposing that the Northerly Building (aka #868 Route 28) be used as a multi-family dwelling. Therefore, the Applicant shall request an amended Variance from the Zoning Board of Appeals removing the allowance of the Northerly Building (aka #868 Route 28) to be used as a dormitory.”*
2. As noted, the Town Engineer and Town Planner met on three (3) separate occasions to review the various iterations of plans and application as submitted on December 8 and 22, 2020 and January 11, 2021. Please know that additional information was submitted on Friday, January 15<sup>th</sup> in response to our January 11<sup>th</sup> review where we noted that due to timing further staff review could not be completed prior to the Staff Report for the January 26<sup>th</sup> hearing. This new information is NOT included in this packet and has Not been reviewed by staff.
3. One letter from an abutter was received and is included.
4. On January 13, 2021, the Interim Town Planner sent an email to the applicant and his representatives with the following:

- a) Regarding the use of some dormitory units year-round, at the time of the hearing this will need to be addressed and included in the findings of facts.
- b) Regarding the waiver for the number of parking spaces, Mr. Eldredge responded that *“I will leave the “detailed descriptive reason as to why such a waiver from the number of spaces should be granted” to you, the board, the attorney and the client.”* The Planning Board nor I have the responsibility of providing a detail descriptive reason, this is entirely up to the applicant and/or the representatives to provide this.
- c) Regarding the parking spaces and driveway along Deep Hole Road. Again, it is the responsibility of the applicant and/or the representatives to provide a reason why these should be allowable. As stated previously, Staff cannot support these three parking spaces or the drive.
- d) A statement has been made that *“I have also added the width of the driveway exiting the northerly parking area to Old County Road, which is a foot wider than previously approved, 19’ vs. 18’, as well as the narrowest widths of the driveways that served the original Stonehorse Motel.”* Staff believes that this needs to be 24’ wide. When it was one row of parking, the reduced width was like adequate.
- e) As stated previously, an existing conditions plan showing what exists on the ground today is required. The orthophoto plans are not sufficient, nor are the added notes stating that *“Everything shown hereon is existing, with the exception of:”* and the corresponding four item.
- f) We do not understand this statement, *“Also note, that the existing surface of the area to the north of the proposed parking spaces and proposed dumpster location in the north parking lot is currently crushed concrete and sand, which is adequate to drive on and which is proposed to be loamed and seeded.”*
- g) The “previous deficiency” in parking notation is not relevant.
- h) Proposed topography for proposed contours is required.
- i) New waiver #3 – There needs to be either wheelstops or curbing, particularly for the “new” parking area off Old County. Further, we cannot discern where the existing curbing begins and ends, even in the parking that is parallel to Route 28.
- j) New waiver #4 – We do not understand the request.
- k) A statement was made that the *“lot coverages have been amended to address the new parking areas and any other site changes, see the plan of Site Coverage Area Calculations that was originally filed by the attorney”*. We cannot be responsible for discerning which plans were superseded and which were not. All relevant and necessary information must be on the site plan.
- l) As stated previously the orthophoto plans are not necessary or relevant to the application.
- m) The parking area containing the 7 parking spaces along Route 28 is intended to be 2-way traffic, however this is adjacent to a 1-way drive. How will a vehicle turn around with this new configuration? The approved plan provided an ADA parking spaces at the northeasterly end, the hatched area served as an available area to turn around.
- n) No ADA parking signs have been noted.
- o) It appears that the ADA parking spaces are located on a 5% grade. How will this work?
- p) We believe that there should be ADA parking for the proposed multifamily use building.
- q) We need a true surveyed existing conditions plan of exactly how the site exists today. We then need a site plan of what is proposed. We have made the suggestion that it be superimposed over the existing plan for clarity.

- r) Please provide a list of all relevant plans and other information. When new information was submitted in late December, it was presumed that these superseded all other plans submitted at the original filing.

It is too late to submit revised plans for the hearing on January 26, 2021. These comments will be included in my staff report, which will be completed next week. A copy of said report, along with a Planning Board agenda, containing the log-in information for remote participation will be sent to you.

5. At this time, the Town Engineer and the Interim Town Planner are not in a position to make a recommendation on this application. We will do so once a completed application and plans are submitted. We have made several attempts to make it clear what needs to be submitted based on Zoning and Rules and Regulations requirements. We are making no conclusion on the proposed use at this time, only that the information provided for the Site Plan is both incomplete and inadequate.

## **VOTES**

### **Continuance**

If the Board will require additional information or wants to take the matter under advisement the following motion is recommended:

Move to continue the public hearing for **PB2020-33 Main Street Stone Horse**, to no earlier than 6:30 pm on \_\_\_\_\_ (Next Meeting Dates: *Feb. 23, Mar. 9, Mar. 23*) for the following reason(s): *Need to provide reasons for the continuance...additional information...taking it under consideration....*

# TOWN OF HARWICH PLANNING DEPARTMENT



**PLANNING BOARD APPLICATION  
SPECIAL PERMITS & SITE PLAN REVIEW                      FORM A**

TO THE TOWN CLERK, HARWICH, MA                      DATE \_\_\_\_\_

## PART A – APPLICANT INFORMATION/AUTHORIZATION

Applicant Name(s) Main Street Stone Horse LLC	
Representative/Organization (Who will serve as the primary contact responsible for facilitating this application?)	William F. Riley, Esq.
Mailing address	P.O. Box 707
Town, ST, Zip	Chatham, MA 02633
Phone	508-945-5400
Fax	
E-mail	billriley@rileyandnorcross.com

The applicant is one of the following: (please check appropriate box)

- Owner                       Prospective Buyer\*                       Representative for Owner/Tenant/Buyer\*  
 Tenant\*                       Other\* \_\_\_\_\_

**\*Written permission of the owner(s) and a municipal lien certificate (where applicable) is required.**

All other forms and information as required in the Harwich Code Chapter 400, Rules and Regulations, shall be submitted as part of this application.

### Authorization

Your signature hereby asserts, to the best of your knowledge, that the information submitted in this application is true and accurate; that you agree to fully comply with the Town of Harwich Zoning By-laws and the terms and conditions of any approval of this application by the Planning Board; and authorizes the Members of the Planning Board and/or Town Staff to visit and enter upon the subject property for the duration of the consideration of this application.

\_\_\_\_\_  
Applicant

\_\_\_\_\_  
Owner(s) – Authorization must accompany application if the owner is not the applicant.

Official use only:

<b>PLANNING DEPARTMENT</b>	<b>TOWN CLERK</b>
----------------------------	-------------------

Case #

PB2020-33







Revised page 2  
of application  
PB 2020-33

**PART B – PROJECT LOCATION**

Legal Street Address	872 Route 28	Village/Zip Code
Title Book/Page or L.C.C. #	Book 31890, Page 119	
Map(s) / Parcel(s)	Map 25, Parcel A2	
Zoning & Overlay Districts	CH-1	*Historic?
Frontage (linear feet)	589.16 ft., 184.65 ft., 679.34 ft.	
Total land area (s.f.)	113,779 sq. ft.	
Upland (s.f.)	113,779 sq. ft.	Wetlands (s.f.) None

**PART C – PROJECT DESCRIPTION**

Existing Floor Area in Sq. Ft	Gross: 15,606 sq. ft.	Net:
Proposed Floor Area in Sq. Ft	Gross: No change	Net:
Change in Sq. Ft + / -	Gross:	Net:
Existing # of parking spaces	17	Proposed # of parking spaces: 31
Existing Use(s)	Dormitory in two Buildings	
Proposed Use(s)	Dormitory in one building; multi family one bedroom apartments in one building.	

*Attach a separate narrative if necessary.*

The undersign hereby files an application with the Harwich Planning Board for the following special permits as proposed under the provisions of the Harwich Zoning Code: **(check all that apply)**

**Site Plan Review § 325-55:**

- Any floor area expansion of any structure or expansion of exterior space, other than parking, serving any of the following: commercial, industrial, multi-family or educational use or personal wireless service facility or the creation of a drive-up or drive-through window
- Expansion or reconfiguration of an existing parking lot and/or driveway(s) serving said parking lot.
- Establishment of any new commercial, industrial, multi-family, educational, fast food/take out restaurant or personal wireless service facility.
- Establishment of any new retail use(s) in the Industrial (IL) Zone.
- Waiver of Site Plan § 325-55.F

**Article V, Use Regulations:**

- Paragraph\_\_\_\_, sub-paragraph #\_\_\_\_
- Paragraph\_\_\_\_, sub-paragraph #\_\_\_\_, supplemental regulation #\_\_\_\_ § 325-14

**Article X, Special Permits:**

- Structures w/ gross floor area of 7,500+ s.f. § 325-51
- Structures requiring 20 or more new parking spaces § 325-51
- Accessory Apt./Shared Elderly Housing § 325-51.H
- Mixed Use § 325-51.M
- Drinking Water Resource Protection § 325-51.C
- Two Family § 325-51.N
- Village Commercial, Harwich Port § 325-51.L
- \*Harwich Center Overlay § 325-51.O
- Signage § 325-27.F Additional Cluster, Excess SF, Non-entry Facades

**Other Special Permits:**

- Six Ponds Special District - Article XVI
- Wind Energy Systems - Article XVIII
- Large Scale Wind Generation – Article XIX
- Other (i.e. Alternate Access § 325-18.P, Special Cases § 325-44.B) Multi Family, Section 325-51Q
- Repetitive Petition (MGL Ch 40A, §16): Proposed project evolved from a previously denied plan submitted to the Planning Board on \_\_\_\_\_ Year/Case # \_\_\_\_\_

*\*Note: Projects within the Harwich Center Overlay District may also be within the Harwich Center Historic District. This requires separate filing with the Historic District and Historical Commission. Please inquire for forms and instructions.*

# **NARRATIVE**

DATE: December 21, 2020; **Revised January 10, 2021**

PROPERTY: 868 Route 28, South Harwich, MA

PETITIONER: Main Street Stone Horse, LLC

## SITE PLAN SPECIAL PERMIT

Since the grant of the special permit by the Harwich Planning Board for the construction of two- (2) dormitory buildings and appurtenances on May 14, 2019 (Case No.: PB2019-13), the Applicant has in accordance with the special permits constructed two new dormitory buildings and rehabbed the existing office building with a total of 90 bedrooms and has substantially completed the hardscape and landscape as shown on the latest site plan.

The Applicant seeks to modify the north building at 868 Rte 28 from 42 bedrooms to a multi-family building containing 22 one bedroom apartments.

At the time of the construction of the buildings, many employers of seasonal help entered into an agreement with the Applicant that would utilize all the bedrooms constructed on the site. Due to changes in the economy as a result of the COVID-19 pandemic the building as currently constructed is uneconomic.

As a result of our borders to foreign workers being closed, the companies with whom the Applicant is working with have suggested that one bedroom apartments would be of greater utility for local year round work force who find it difficult to find housing. In addition, the one bedroom apartments are more desirable for higher level employees.

The modified project as proposed will have 20 fewer bedrooms which will reduce sewage flow on the site by 2,200 gallons per day.

The modified project will comply with 5% of the total number of units being handicap accessible.

Under the previously approved Planning Board Special Permit, 20 rooms were approved for year round use. The Applicant requests that the 22 one bedroom apartment units be approved for year round use. None of the dormitory units will NOT be used year round, only the apartments.

The number of parking spaces required for the dormitory and apartment use is 82. The Applicant previously proposed providing 17 spaces as originally approved by the Planning Board; and an additional 16 spaces are now proposed for a total of 33 spaces. A parking waiver of 49 parking spaces is required and is requested as a part of this filing.

Circulation arrows have been added to the site plan to restrict two driveways or portions of two driveways to be one-way.

There will be no exterior changes to the buildings.

Landscaping completed to date is comprised of 22 trees that have been planted and areas that were disturbed during construction being loamed and seeded.

Proposed landscaping consists of loaming and seeding areas shown in green on the Site Plan.

The layout of walkways, patios, driveways, and parking areas were field adjusted as shown on the latest Site Plan.

Outside lighting has been installed on all of the buildings and the outside ground lighting has been installed for the South building and the parking area running parallel to Route 28. Wiring for outside ground lighting for the North building and the northerly parking lot has been installed.

With the increase in hardscape, based on Drainage Calculations prepared by Dan Croteau, PE, one additional leach pit for system number 1 as shown on the Site Plan and the Area of Contribution Sketch will be required for drainage which will handle the additional runoff from the parking area to be expanded.

There will be no changes to the sewage system installed.

There are (6) fire hydrants located within 500 feet of the subject property. There are four (4), within 50 feet of the subject property, which includes one (1) installed on the subject property as part of the originally approved project. Also, the new dormitory buildings are both sprinkled for fire safety.

Fire access for apparatus and equipment is provided to all sides of the buildings, from Rte 28, Old County Road, the driveway from Rte 28 to Old County Road and the driveway paralleling Rte 28.

There will be no changes to the site with the exception of additional parking and landscaping.

**THE STONEHORSE PROJECT** 868 ROUTE 28  
Assessors MAP 25, PARCELS A1, A2, and A4-18  
ZONING DISTRICT C-H-1  
**LIST OF WAIVERS REQUESTED**  
Revised **January 10, 2021**

1. Parking:

A total of 82 parking spaces are required for the existing and proposed use. Thirty three- (33) spaces are proposed, resulting in a deficiency of 49 spaces. On behalf of the owner, **a waiver for the deficiency of 49 parking spaces** is requested.

*The existing approved project required a total of 91 parking spaces and only 17 were proposed which resulted in a deficiency of 74 spaces.*

2. Maneuvering Areas:

*The proposed northerly parking area complies with the required aisle width of 24'.*

The aisle width of the narrowest portion of the newly constructed parking on the Rte 28 side of the project is 1' less than 24' required. On behalf of the owner, **a waiver of 1' for this deficiency** is requested.

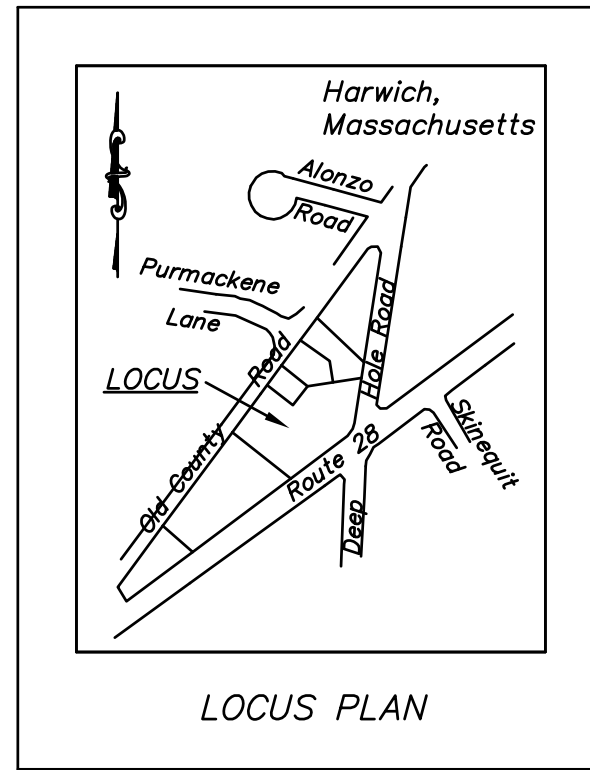
The pre-existing three spaces on Deep Hole Road do not comply with the required aisle width unless you take into consideration backing into the Town Road. On behalf of the owner, **a waiver for this deficiency** is requested.

3. Curbing:

Curbing has been installed for the parking area running parallel to Route 28. Six wheel stops are proposed for the northerly parking lot. On behalf of the owner, **a waiver for any additional curbing or wheel stops** is requested.

4. Year-round use:

I am not sure if a waiver is required, but, on behalf of the owner, **a waiver for two- 2 additional year round units** is requested.

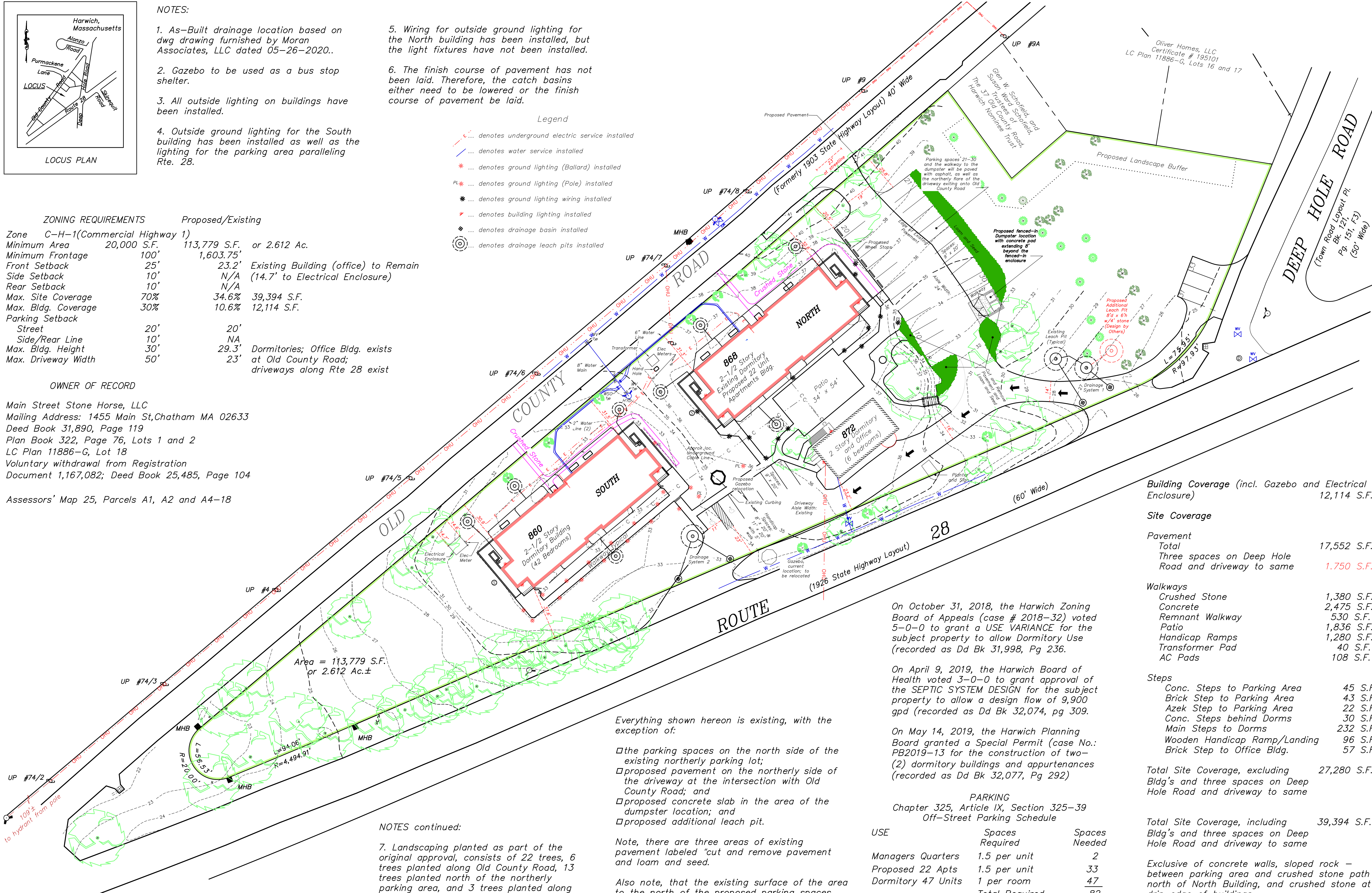


**NOTES:**

- As-Built drainage location based on dwg drawing furnished by Moran Associates, LLC dated 05-26-2020.
- Gazebo to be used as a bus stop shelter.
- All outside lighting on buildings have been installed.
- Outside ground lighting for the South building has been installed as well as the lighting for the parking area paralleling Rte. 28.
- Wiring for outside ground lighting for the North building has been installed, but the light fixtures have not been installed.
- The finish course of pavement has not been laid. Therefore, the catch basins either need to be lowered or the finish course of pavement be laid.

ZONING REQUIREMENTS		Proposed/Existing
Zone	C-H-1(Commercial Highway 1)	
Minimum Area	20,000 S.F.	113,779 S.F. or 2.612 Ac.
Minimum Frontage	100'	1,603.75'
Front Setback	25'	23.2' Existing Building (office) to Remain
Side Setback	10'	N/A (14.7' to Electrical Enclosure)
Rear Setback	10'	N/A
Max. Site Coverage	70%	34.6% 39,394 S.F.
Max. Bldg. Coverage	30%	10.6% 12,114 S.F.
Parking Setback		
Street	20'	20'
Side/Rear Line	10'	NA
Max. Bldg. Height	30'	29.3' Dormitories; Office Bldg. exists at Old County Road; driveways along Rte 28 exist
Max. Driveway Width	50'	23'

**OWNER OF RECORD**  
 Main Street Stone Horse, LLC  
 Mailing Address: 1455 Main St, Chatham MA 02633  
 Deed Book 31,890, Page 119  
 Plan Book 322, Page 76, Lots 1 and 2  
 LC Plan 11886-G, Lot 18  
 Voluntary withdrawal from Registration  
 Document 1,167,082; Deed Book 25,485, Page 104  
 Assessors' Map 25, Parcels A1, A2 and A4-18



**NOTES continued:**

7. Landscaping planted as part of the original approval, consists of 22 trees, 6 trees planted along Old County Road, 13 trees planted north of the northerly parking area, and 3 trees planted along Rte 28; and in addition disturbed areas were loamed and seeded, with the exception of the area where proposed additional parking is proposed.

Everything shown hereon is existing, with the exception of:

- the parking spaces on the north side of the existing northerly parking lot;
- proposed pavement on the northerly side of the driveway at the intersection with Old County Road; and
- proposed concrete slab in the area of the dumpster location; and
- proposed additional leach pit.

Note, there are three areas of existing pavement labeled "cut and remove pavement and loam and seed.

Also note, that the existing surface of the area to the north of the proposed parking spaces and proposed dumpster location in the north parking lot is currently crushed concrete and sand, which is adequate to drive on and which is proposed to be loamed and seeded.

On October 31, 2018, the Harwich Zoning Board of Appeals (case # 2018-32) voted 5-0-0 to grant a USE VARIANCE for the subject property to allow Dormitory Use (recorded as Dd Bk 31,998, Pg 236).

On April 9, 2019, the Harwich Board of Health voted 3-0-0 to grant approval of the SEPTIC SYSTEM DESIGN for the subject property to allow a design flow of 9,900 gpd (recorded as Dd Bk 32,074, pg 309).

On May 14, 2019, the Harwich Planning Board granted a Special Permit (case No.: PB2019-13 for the construction of two-(2) dormitory buildings and appurtenances (recorded as Dd Bk 32,077, Pg 292)

**PARKING**  
 Chapter 325, Article IX, Section 325-39  
 Off-Street Parking Schedule

USE	Spaces Required	Spaces Needed
Managers Quarters	1.5 per unit	2
Proposed 22 Apts	1.5 per unit	33
Dormitory 47 Units	1 per room	47
<b>Total Required</b>		<b>82</b>
<b>Total Provided</b>		<b>33</b>
Deficient		49 Spaces
Previous Deficiency		74 Spaces

Building Coverage (incl. Gazebo and Electrical Enclosure) 12,114 S.F.

Site Coverage

Pavement  
 Total 17,552 S.F.  
 Three spaces on Deep Hole Road and driveway to same 1,750 S.F.

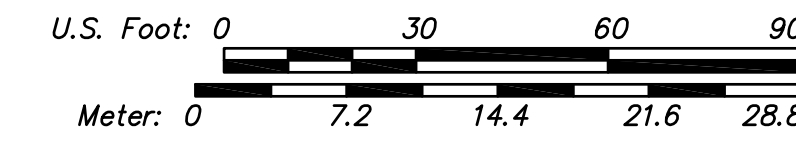
Walkways  
 Crushed Stone 1,380 S.F.  
 Concrete 2,475 S.F.  
 Remnant Walkway 530 S.F.  
 Patio 1,836 S.F.  
 Handicap Ramps 1,280 S.F.  
 Transformer Pad 40 S.F.  
 AC Pads 108 S.F.

Steps  
 Conc. Steps to Parking Area 45 S.F.  
 Brick Step to Parking Area 43 S.F.  
 Azek Step to Parking Area 22 S.F.  
 Conc. Steps behind Dorms 30 S.F.  
 Main Steps to Dorms 232 S.F.  
 Wooden Handicap Ramp/Landing 96 S.F.  
 Brick Step to Office Bldg. 57 S.F.

Total Site Coverage, excluding Bldg's and three spaces on Deep Hole Road and driveway to same 27,280 S.F.

Total Site Coverage, including Bldg's and three spaces on Deep Hole Road and driveway to same 39,394 S.F.

Exclusive of concrete walls, sloped rock - between parking area and crushed stone path north of North Building, and crushed stone at drip edge of buildings.



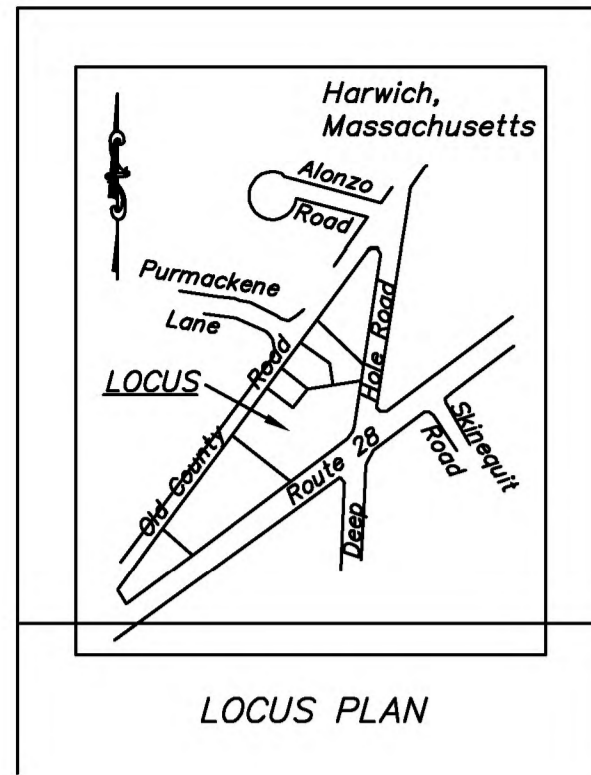
**SITE PLAN**  
 Harwich (South), Massachusetts  
 Description of Revision  
 Date  
 2021-01-10  
 Rev. #  
 1  
 See Page 2 of List of Revisions

**THE STONEHORSE**  
 Terry W. Eldredge, dba  
**ELDRIDGE SURVEYING**  
 1038 Main Street, Chatham, MA; (508) 776-4129; Fax: (508) 945-5885

Date: 12-21-2020  
 Scale: 1" = 30'  
 Project No.: H-2891-85.0



Date: 12-21-2020  
 Scale: 1" = 30'  
 Project No.: H-2891-85.0



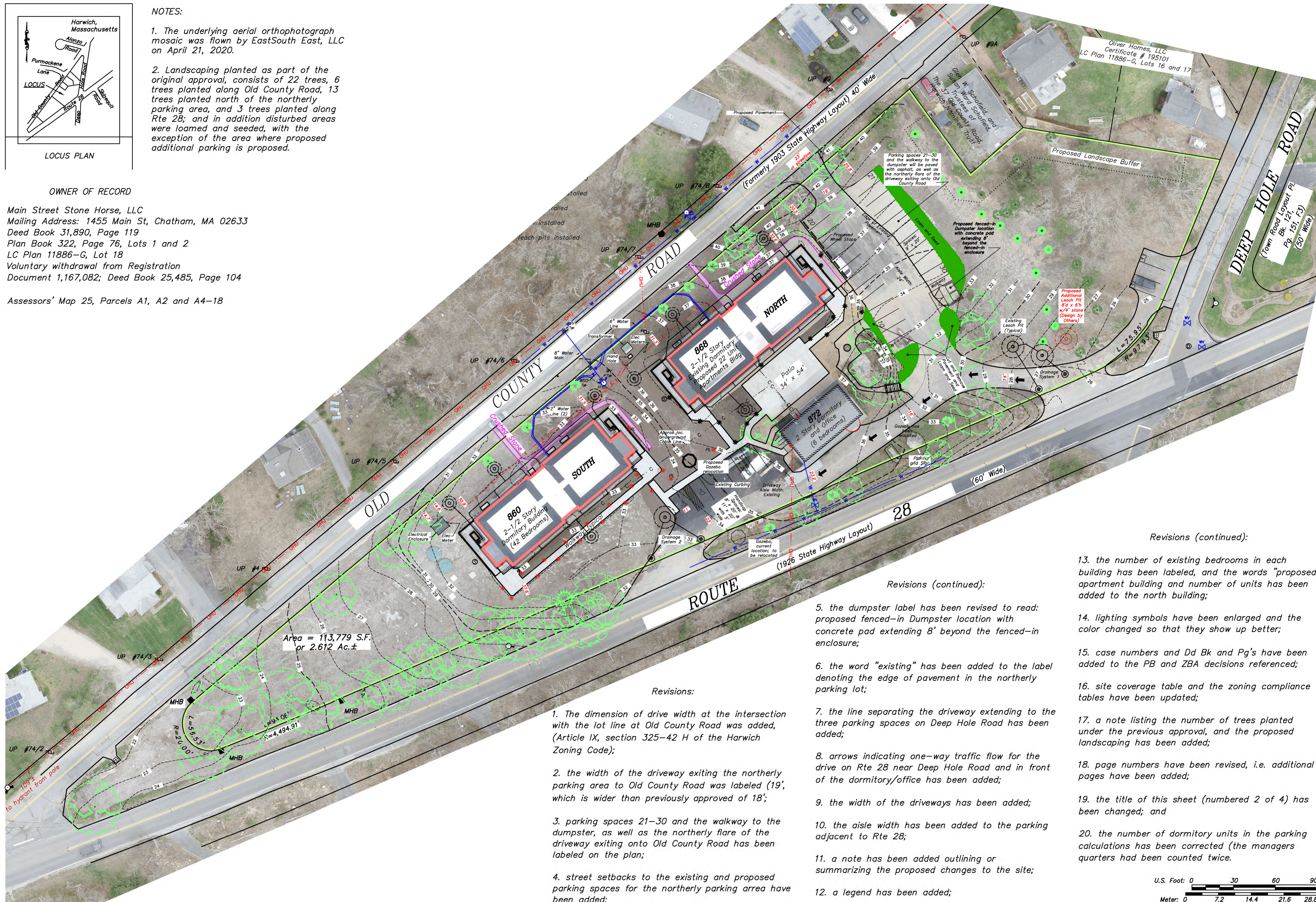
**NOTES:**

1. The underlying aerial orthophotograph mosaic was flown by EastSouth East, LLC on April 21, 2020.
2. Landscaping planted as part of the original approval, consists of 22 trees, 6 trees planted along Old County Road, 13 trees planted north of the northerly parking area, and 3 trees planted along Rte 28; and in addition disturbed areas were loamed and seeded, with the exception of the area where proposed additional parking is proposed.

**OWNER OF RECORD**

Main Street Stone Horse, LLC  
 Mailing Address: 1455 Main St, Chatham, MA 02633  
 Deed Book 31,890, Page 119  
 Plan Book 322, Page 76, Lots 1 and 2  
 LC Plan 11886-G, Lot 18  
 Voluntary withdrawal from Registration  
 Document 1,167,082; Deed Book 25,485, Page 104

Assessors' Map 25, Parcels A1, A2 and A4-18



Area = 113,779 S.F.  
 or 2.612 Ac.±

**Revisions:**

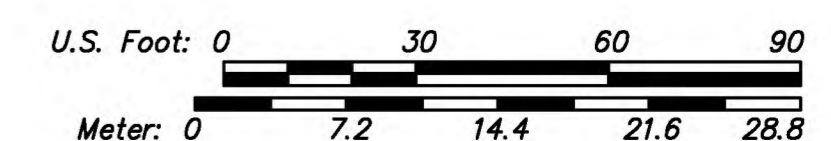
1. The dimension of drive width at the intersection with the lot line at Old County Road was added, (Article IX, section 325-42 H of the Harwich Zoning Code);
2. the width of the driveway exiting the northerly parking area to Old County Road was labeled (19', which is wider than previously approved of 18');
3. parking spaces 21-30 and the walkway to the dumpster, as well as the northerly flare of the driveway exiting onto Old County Road has been labeled on the plan;
4. street setbacks to the existing and proposed parking spaces for the northerly parking area have been added;

**Revisions (continued):**

5. the dumpster label has been revised to read: proposed fenced-in Dumpster location with concrete pad extending 8' beyond the fenced-in enclosure;
6. the word "existing" has been added to the label denoting the edge of pavement in the northerly parking lot;
7. the line separating the driveway extending to the three parking spaces on Deep Hole Road has been added;
8. arrows indicating one-way traffic flow for the drive on Rte 28 near Deep Hole Road and in front of the dormitory/office has been added;
9. the width of the driveways has been added;
10. the aisle width has been added to the parking adjacent to Rte 28;
11. a note has been added outlining or summarizing the proposed changes to the site;
12. a legend has been added;

**Revisions (continued):**

13. the number of existing bedrooms in each building has been labeled, and the words "proposed apartment building and number of units has been added to the north building;
14. lighting symbols have been enlarged and the color changed so that they show up better;
15. case numbers and Dd Bk and Pg's have been added to the PB and ZBA decisions referenced;
16. site coverage table and the zoning compliance tables have been updated;
17. a note listing the number of trees planted under the previous approval, and the proposed landscaping has been added;
18. page numbers have been revised, i.e. additional pages have been added;
19. the title of this sheet (numbered 2 of 4) has been changed; and
20. the number of dormitory units in the parking calculations has been corrected (the managers quarters had been counted twice).

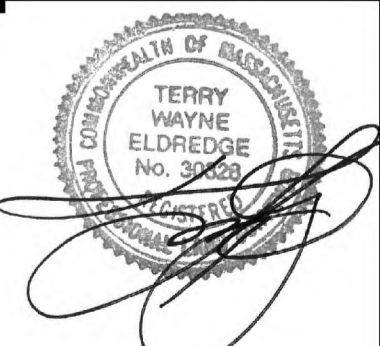


**ORTHO PHOTO PLAN**

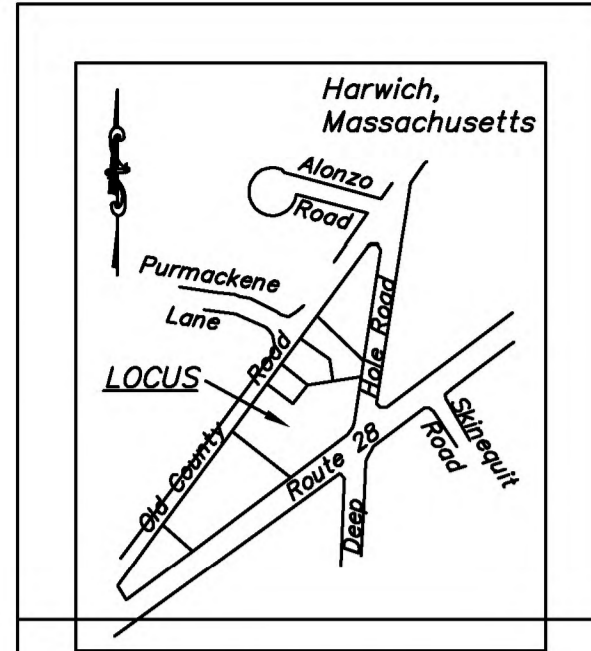
Rev. #	Description of Revision	Date
1	Removed Zoning Compliance Table and added List of 2021-01-10 Revisions that are applicable to Sh. 1, SITE PLAN and the plan view of this Sh. 2	2021-01-10

**THE STONEHORSE**

Terry W. Eldredge, dba  
**ELDRIDGE SURVEYING**  
 1038 Main Street, Chatham, MA; (508) 776-4129; Fax: (508) 945-5885



Date: 12-21-2020  
 Scale: 1" = 30'  
 Project No.: H-2891-85.0



LOCUS PLAN

NOTES:

1. The underlying aerial orthophoto mosaic was flown by EastSouth East, LLC on April 21, 2020.
2. This plan does not depict the trees planted along Old County Road or Rte 28.
3. This plan does not depict the handicap ramp to the dormitory/office.
4. This plan does not depict the ground lighting.

Items 2-4 were either planted or installed after the date of photography.

OWNER OF RECORD

Main Street Stone Horse, LLC  
 Mailing Address: 1455 Main St, Chatham, MA 02633  
 Deed Book 31,890, Page 119  
 Plan Book 322, Page 76, Lots 1 and 2  
 LC Plan 11886-G, Lot 18  
 Voluntary withdrawal from Registration  
 Document 1,167,082; Deed Book 25,485, Page 104

Assessors' Map 25, Parcels A1, A2 and A4-18



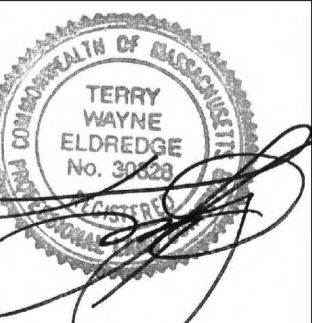
ORTHOPHOTO PLAN

Showing Existing Conditions as of April 20, 2020

Rev. #	Description of Revision	Date
1	Removed Zoning Compliance Table and added List of	2021-01-10
	Revisions that are applicable to Sh. 1, SITE PLAN and	
	the plan view of this Sh. 2	

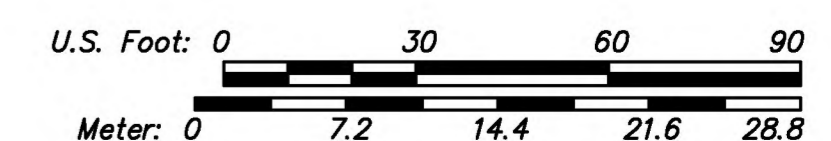
THE STONEHORSE

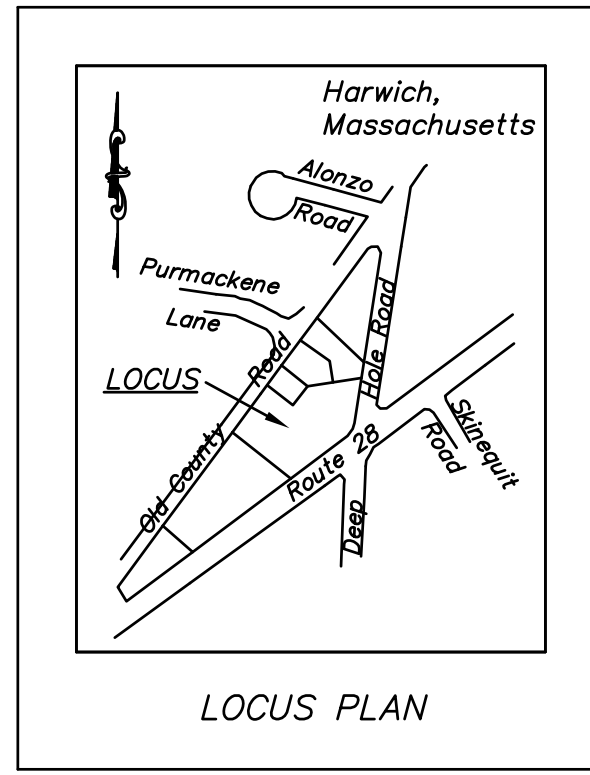
Terry W. Eldredge, dba  
**ELDRIDGE SURVEYING**  
 1038 Main Street, Chatham, MA; (508) 776-4129; Fax: (508) 945-5885



Date: 01-10-2021  
 Scale: 1" = 30'  
 Project No.: H-2891-85.0

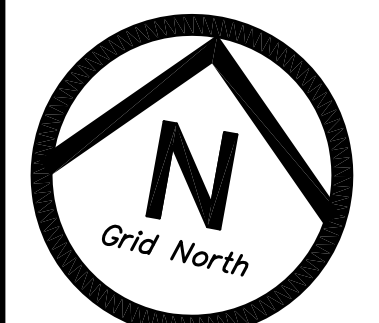
Sheet No.: 3 of 4





**OWNER OF RECORD**  
 Main Street Stone Horse, LLC  
 Mailing Address: 1455 Main St, Chatham MA 02633  
 Deed Book 31,890, Page 119  
 Plan Book 322, Page 76, Lots 1 and 2  
 LC Plan 11886-G, Lot 18  
 Voluntary withdrawal from Registration  
 Document 1,167,082; Deed Book 25,485, Page 104  
 Assessors' Map 25, Parcels A1, A2 and A4-18

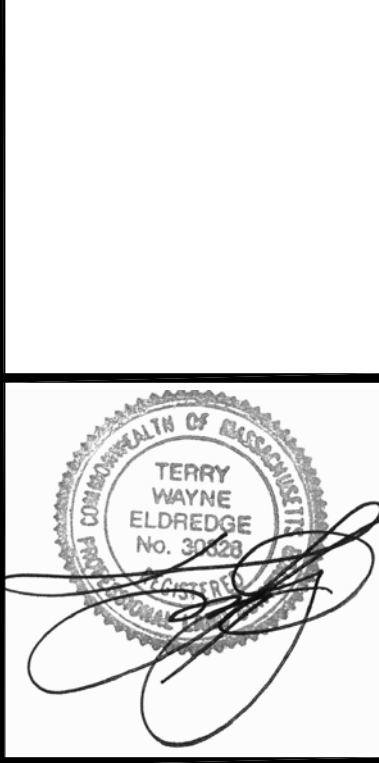
- Legend**
- ... denotes underground electric service installed
  - ... denotes water service installed
  - \* ... denotes ground lighting (Ballard) installed
  - PL\* ... denotes ground lighting (Pole) installed
  - \* ... denotes ground lighting wiring installed
  - ... denotes building lighting installed
  - ◆ denotes drainage basin installed
  - ⊙ denotes drainage leach pits installed
- The fuchsia color represents the line work shown on the 2019-04-09 Post Development Plan



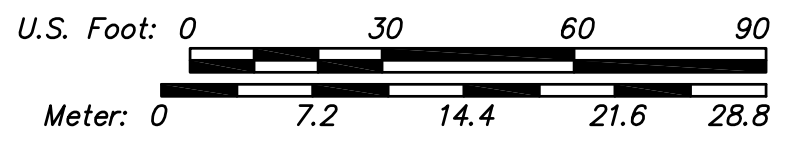
**SITE PLAN OVERLAY**  
 Harwich (South), Massachusetts

Rev. #	Description of Revision	Date
1	See Page 2 of List of Revisions	2021-01-10

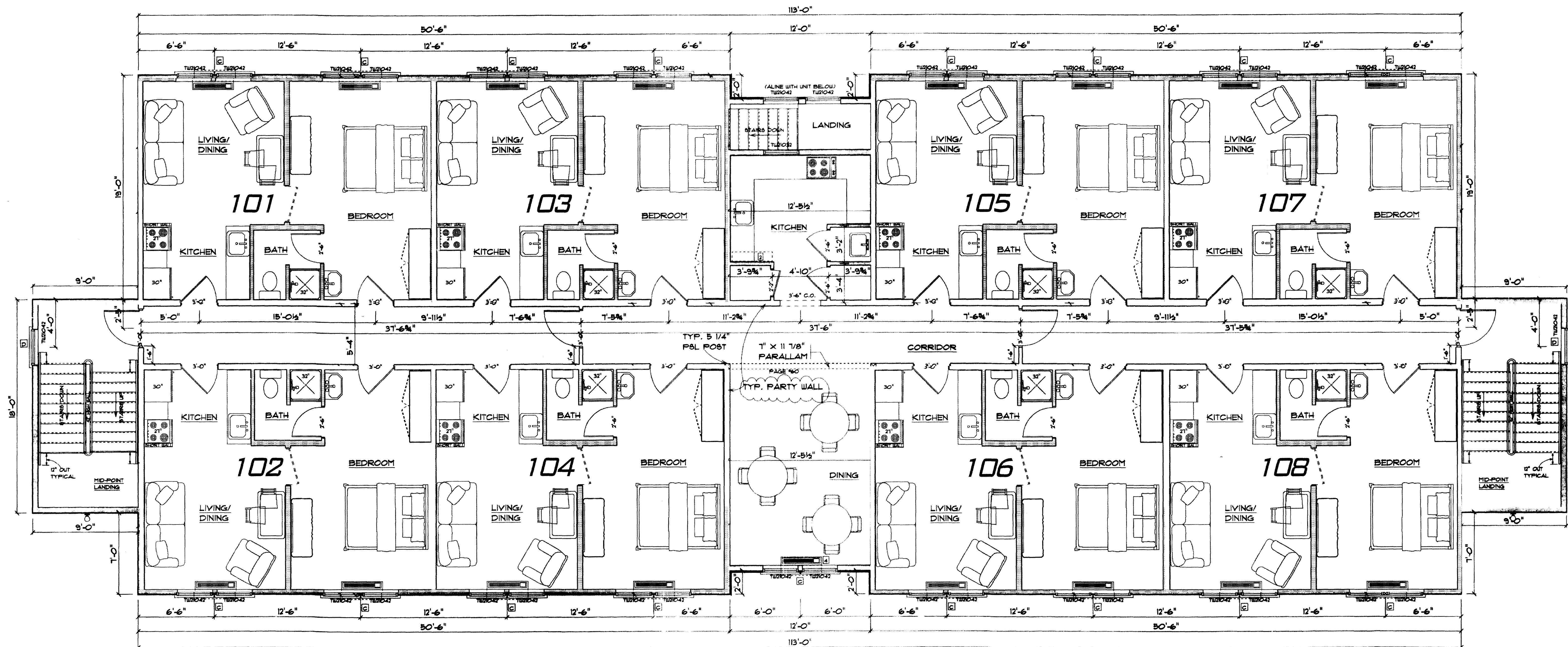
**THE STONEHORSE**  
 Terry W. Eldredge, dba  
**ELDRIDGE SURVEYING**  
 1038 Main Street, Chatham, MA; (508) 776-4129; Fax: (508) 945-5885



Date: 01-10-2021  
 Scale: 1" = 30'  
 Project No.: H-2891-85.0







# FIRST LEVEL PLAN

- 1 14 6K HEAT PUMP UNITS
- 2 1 9K HEAT PUMP UNITS
- 3 2 12K HEAT PUMP UNITS

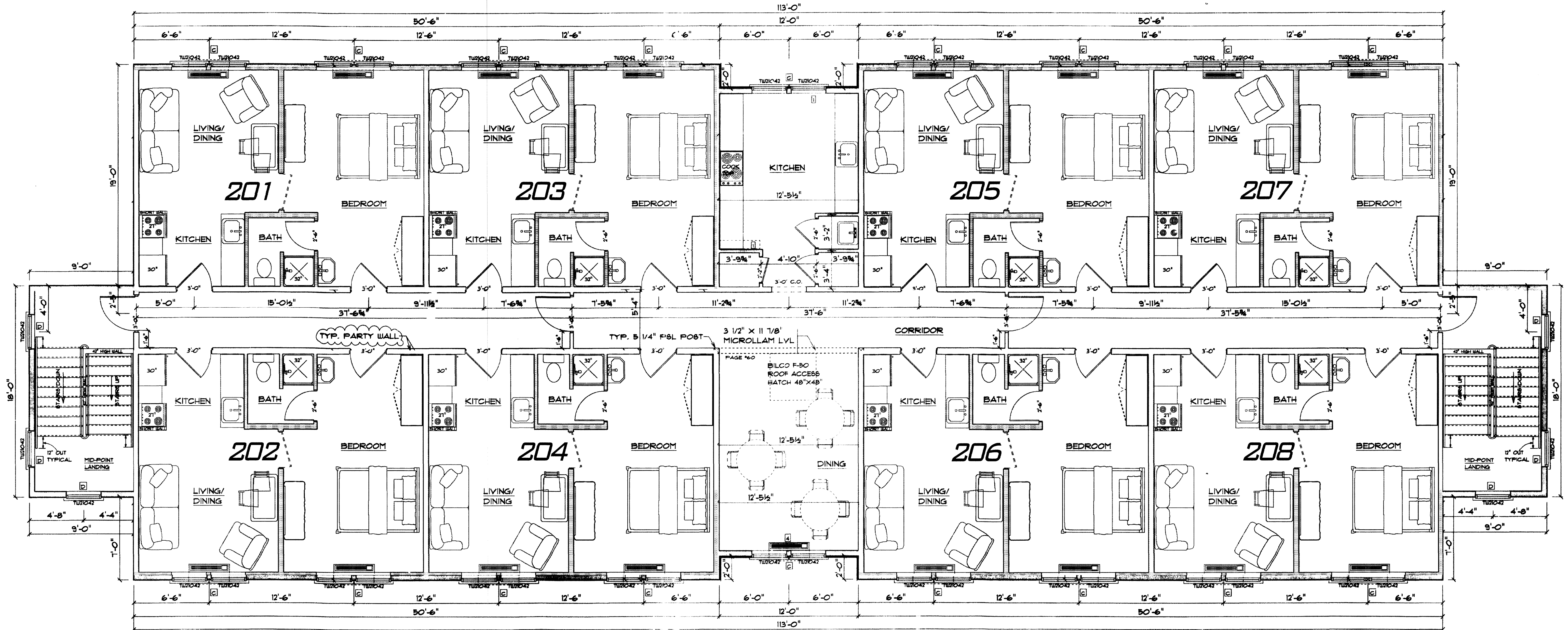
Revised 12-16-2020

Revisions include importing apartment layouts and renumbering units in the same format as the previous bedroom layout was numbered

<b>BUILDER</b> THE STONEHORSE 868 ROUTE 28 HARWICH MA.	<b>JOB ADDRESS</b> NORTH BUILDING PROPOSED 2 1/2 STORY DORMITORY BUILDING.	<b>DESIGN</b> WWW.JBHOMEDESIGNS.COM	<b>DATE</b> 11-20-19	<b>REVISION</b> #6	<b>DRAWN BY</b> JB	<b>PAGE</b> 5 OF 12	<b>SCALE</b> 1/4"=1'-0"	<b>JB Designs</b> P.O. BOX 288 WEST BARNSTABLE MA 02668 (508) 494-9534
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(1) PURCHASE OF DRAWINGS LEAVES PURCHASER RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL BUILDING CODES AND ORDINANCES. JB DESIGNS MAY NOT BE HELD RESPONSIBLE FOR SITE CONDITIONS OR FOR THE USE OF THESE DRAWINGS DURING CONSTRUCTION.  
 (2) EXACT SIZE AND REINFORCEMENT OF ALL CONCRETE FOOTINGS MUST BE DETERMINED BY LOCAL SOIL CONDITIONS AND ACCEPTABLE PRACTICES OF CONSTRUCTION. VERIFY DESIGN WITH LOCAL ENGINEER.  
 (3) ALL FOOTINGS SHALL EXTEND BELOW PROCLINE VERIFY DEPTH.  
 (4) VERIFY STRUCTURAL ELEMENTS FOR DESIGN 4 SIZE WITH LOCAL ENGINEER AND BUILDING OFFICIALS.



# SECOND LEVEL PLAN

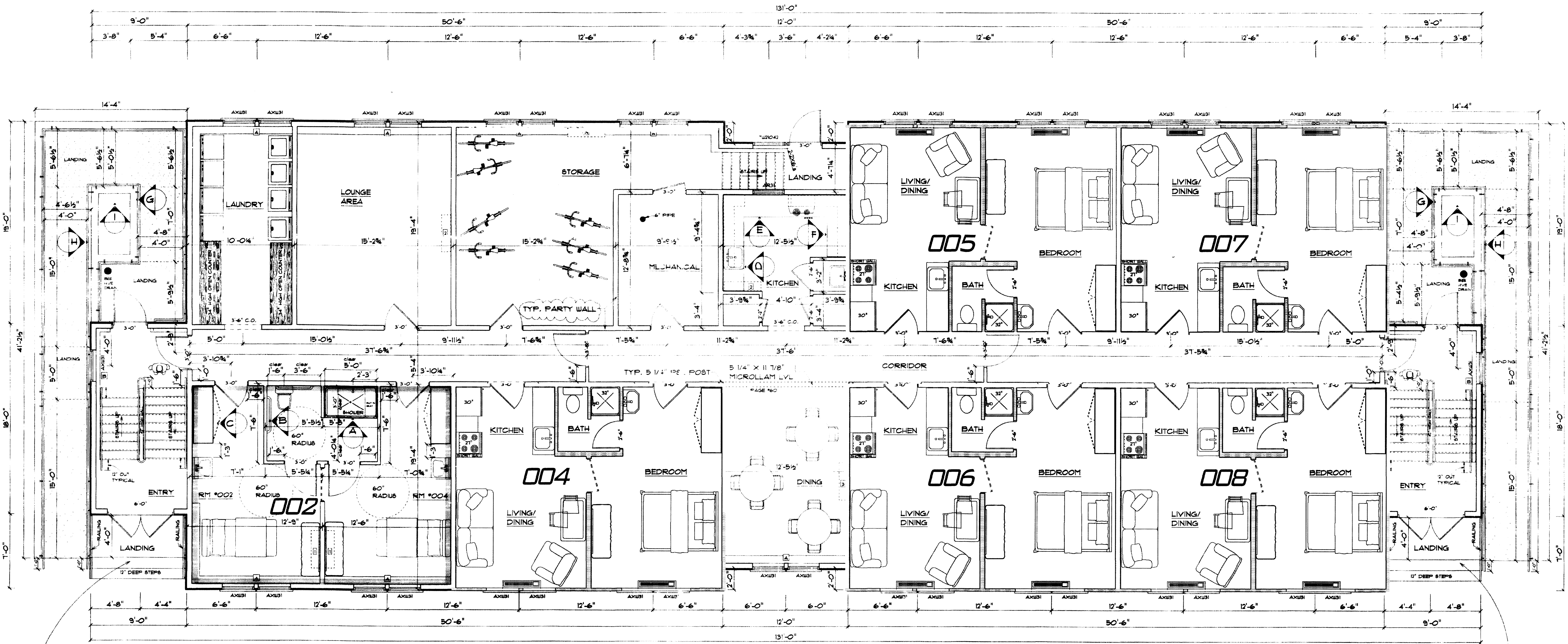
[ ] 11 6K HEAT PUMP UNIT  
 [ ] 1 12K HEAT PUMP UNIT

Revised 12-16-2020

Revisions include importing apartment layouts and renumbering units in the same format as the previous bedroom layout was numbered

<b>BUILDER</b> THE STONEHORSE 868 ROUTE 28 HARWICH MA.	<b>JOB ADDRESS</b> NORTH BUILDING PROPOSED 2 1/2 STORY DORMITORY BUILDING.	<b>DESIGN</b> WWW.JBHOMEDESIGNS.COM	<b>DATE</b> 11-20-19 <b>REVISION</b> #6 <b>DRAWN BY</b> JB <b>PAGE</b> 6 OF 12 <b>SCALE</b> 1/4"=1'-0"	<b>NO. 2886</b> <b>REGISTERED ARCHITECT</b> <b>PROVIDE &amp; STAMP</b> <b>DATE</b> <b>12/16/20</b> <b>12/16/20</b>	<b>JB Designs</b> P.O. BOX 288 WEST BARNSTABLE MA. 02868 (508) 494-8534
---	---	--	---	---	--

(1) PURCHASE OF DRAWINGS LEAVES PURCHASER RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL BUILDING CODES AND ORDINANCES. AS DESIGNS MAY NOT BE HELD RESPONSIBLE FOR SITE CONDITIONS OR FOR THE USE OF THESE DRAWINGS DURING CONSTRUCTION.  
 (2) EXACT SIZE AND REINFORCEMENT OF ALL CONCRETE FOOTINGS MUST BE DETERMINED BY LOCAL SOIL CONDITIONS AND ACCEPTABLE PRACTICES OF CONSTRUCTION. VERIFY DESIGN WITH LOCAL ENGINEER.  
 (3) ALL FOOTINGS SHALL EXTEND BELOW FROSTLINE VERIFY DEPTH.  
 (4) VERIFY STRUCTURAL ELEMENTS FOR DESIGN & SIZE WITH LOCAL ENGINEER AND BUILDING OFFICIALS.



ENTRY ELE. = 39'-3 1/4"  
 FG. ELE. = 31'-2 1/2"  
 RISE = 2'-3/4"  
 TOTAL OF 4 RISERS

Note: The building designer has not drawn a layout for the handicap apartment unit yet.

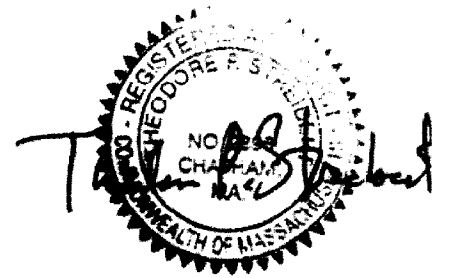
# GARDEN LEVEL PLAN

- 12 6K HEAT PUMP UNITS
- 3 9K HEAT PUMP UNITS
- 1 12K HEAT PUMP UNITS

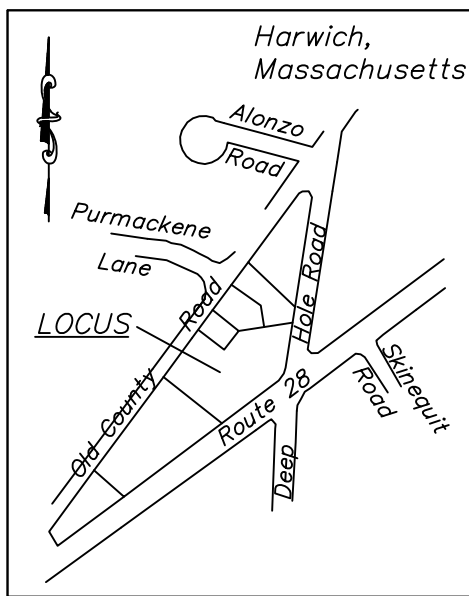
Revised 12-16-2020

Revisions include importing apartment layouts and renumbering units in the same format as the previous bedroom layout was numbered

ENTRY ELE. = 39'-3 1/4"  
 FG. ELE. = 31'-2 1/2"  
 RISE = 2'-3/4"  
 TOTAL OF 4 RISERS



<b>BUILDER</b>	<b>JOB ADDRESS</b>	<b>DESIGN</b>	<b>WWW.JBHOMEDESIGNS.COM</b>		<b>DATE</b>	<b>REVISION</b>	<b>DRAWN BY</b>	<b>PAGE</b>	<b>SCALE</b>	<b>JB Designs</b>
	THE STONEHORSE 868 ROUTE 28 HARWICH MA.	NORTH BUILDING PROPOSED 2 1/2 STORY DORMITORY BUILDING.			1-9-20	#7	JB	4 OF 12	1/4" = 1'-0"	
<b>NOTES</b>			<small>(1) PURCHASE OF DRAWINGS LEAVES PURCHASER RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL BUILDING CODES AND ORDINANCES. JB DESIGNS MAY NOT BE HELD RESPONSIBLE FOR SITE CONDITIONS OR FOR THE USE OF THESE DRAWINGS DURING CONSTRUCTION.</small> <small>(2) EXACT SIZE AND REINFORCEMENT OF ALL CONCRETE FOOTINGS MUST BE DETERMINED BY LOCAL SOIL CONDITIONS AND ACCEPTABLE PRACTICES OF CONSTRUCTION. VERIFY DESIGN WITH LOCAL ENGINEER.</small> <small>(3) ALL FOOTINGS SHALL EXTEND BELOW PROSPECTIVE FINISH GRADE WITH LOCAL ENGINEER AND BUILDING OFFICIALS.</small> <small>(4) VERIFY STRUCTURAL ELEMENTS FOR DESIGN &amp; SIZE WITH LOCAL ENGINEER AND BUILDING OFFICIALS.</small>							
										<small>P.O. BOX 288 WEST BARNSTABLE MA 02868 (508) 494-9534</small>



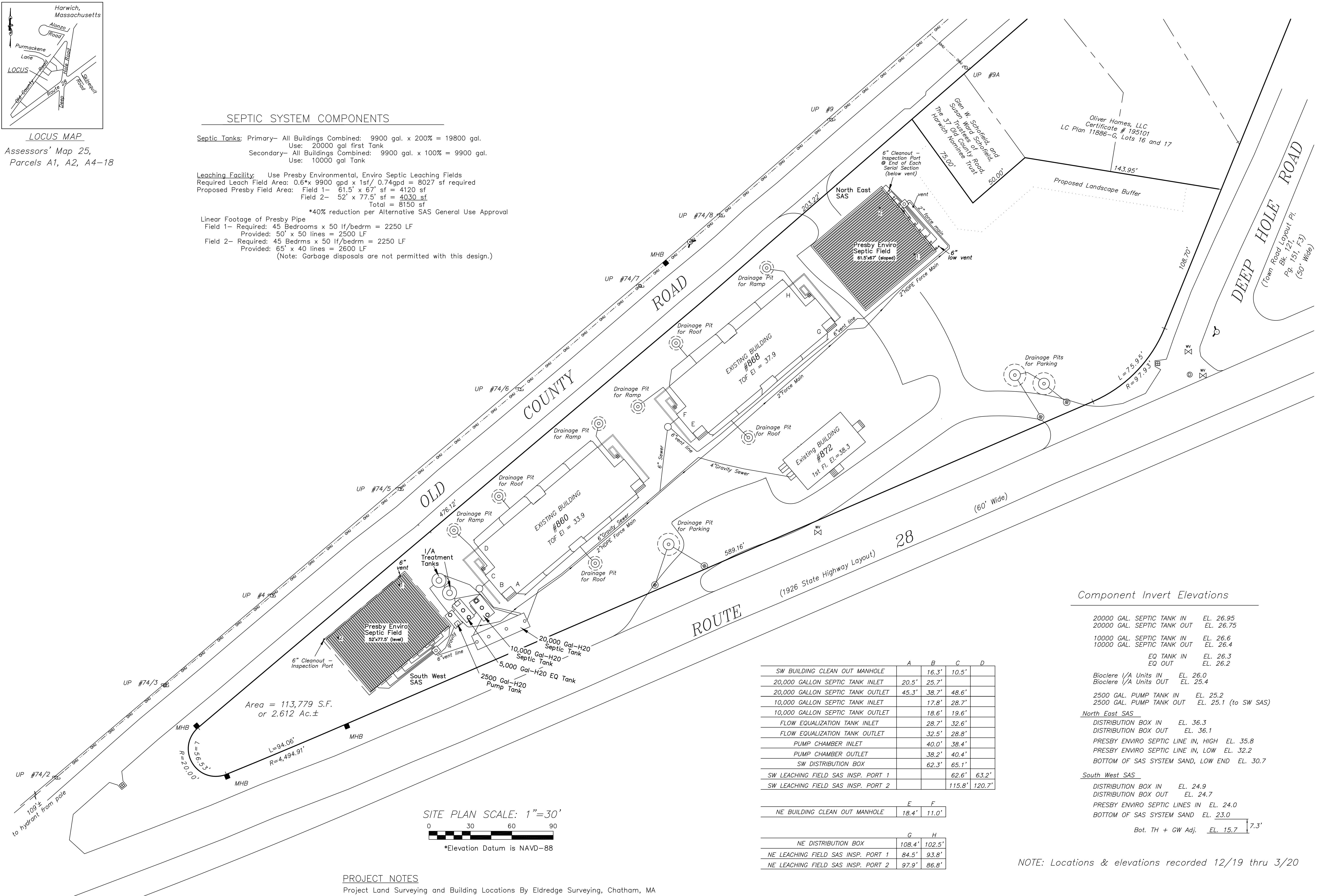
LOCUS MAP  
Assessors' Map 25,  
Parcels A1, A2, A4-18

### SEPTIC SYSTEM COMPONENTS

**Septic Tanks:** Primary- All Buildings Combined: 9900 gal. x 200% = 19800 gal.  
Use: 20000 gal first Tank  
Secondary- All Buildings Combined: 9900 gal. x 100% = 9900 gal.  
Use: 10000 gal Tank

**Leaching Facility:** Use Presby Environmental, Enviro Septic Leaching Fields  
Required Leach Field Area:  $0.6 \times 9900 \text{ gpd} \times 1 \text{ sf} / 0.74 \text{ gpd} = 8027 \text{ sf}$  required  
Proposed Presby Field Area: Field 1-  $61.5' \times 67' \text{ sf} = 4120 \text{ sf}$   
Field 2-  $52' \times 77.5' \text{ sf} = 4030 \text{ sf}$   
Total = 8150 sf  
\*40% reduction per Alternative SAS General Use Approval

**Linear Footage of Presby Pipe**  
Field 1- Required: 45 Bedrooms x 50 lf/bedrm = 2250 LF  
Provided: 50' x 50 lines = 2500 LF  
Field 2- Required: 45 Bedrms x 50 lf/bedrm = 2250 LF  
Provided: 65' x 40 lines = 2600 LF  
(Note: Garbage disposals are not permitted with this design.)



Area = 113,779 S.F.  
or 2.612 Ac.±

SITE PLAN SCALE: 1"=30'



\*Elevation Datum is NAVD-88

### PROJECT NOTES

Project Land Surveying and Building Locations By Eldredge Surveying, Chatham, MA

### Component Invert Elevations

20000 GAL. SEPTIC TANK IN EL. 26.95  
20000 GAL. SEPTIC TANK OUT EL. 26.75

10000 GAL. SEPTIC TANK IN EL. 26.6  
10000 GAL. SEPTIC TANK OUT EL. 26.4

EQ TANK IN EL. 26.3  
EQ TANK OUT EL. 26.2

Bioclere I/A Units IN EL. 26.0  
Bioclere I/A Units OUT EL. 25.4

2500 GAL. PUMP TANK IN EL. 25.2  
2500 GAL. PUMP TANK OUT EL. 25.1 (to SW SAS)

**North East SAS**  
DISTRIBUTION BOX IN EL. 36.3  
DISTRIBUTION BOX OUT EL. 36.1  
PRESBY ENVIRO SEPTIC LINE IN, HIGH EL. 35.8  
PRESBY ENVIRO SEPTIC LINE IN, LOW EL. 32.2  
BOTTOM OF SAS SYSTEM SAND, LOW END EL. 30.7

**South West SAS**  
DISTRIBUTION BOX IN EL. 24.9  
DISTRIBUTION BOX OUT EL. 24.7  
PRESBY ENVIRO SEPTIC LINES IN EL. 24.0  
BOTTOM OF SAS SYSTEM SAND EL. 23.0

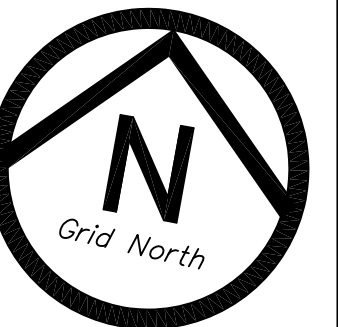
Bot. TH + GW Adj. EL. 15.7 7.3'

	A	B	C	D
SW BUILDING CLEAN OUT MANHOLE		16.3'	10.5'	
20,000 GALLON SEPTIC TANK INLET	20.5'	25.7'		
20,000 GALLON SEPTIC TANK OUTLET	45.3'	38.7'	48.6'	
10,000 GALLON SEPTIC TANK INLET		17.8'	28.7'	
10,000 GALLON SEPTIC TANK OUTLET		18.6'	19.6'	
FLOW EQUALIZATION TANK INLET		28.7'	32.6'	
FLOW EQUALIZATION TANK OUTLET		32.5'	28.8'	
PUMP CHAMBER INLET		40.0'	38.4'	
PUMP CHAMBER OUTLET		38.2'	40.4'	
SW DISTRIBUTION BOX		62.3'	65.1'	
SW LEACHING FIELD SAS INSP. PORT 1			62.6'	63.2'
SW LEACHING FIELD SAS INSP. PORT 2			115.8'	120.7'

	E	F
NE BUILDING CLEAN OUT MANHOLE	18.4'	11.0'

	G	H
NE DISTRIBUTION BOX	108.4'	102.5'
NE LEACHING FIELD SAS INSP. PORT 1	84.5'	93.8'
NE LEACHING FIELD SAS INSP. PORT 2	97.9'	86.8'

NOTE: Locations & elevations recorded 12/19 thru 3/20



Septic System As-Built Plan

Date  
Description of Revision

THE STONEHORSE  
872 Route 28, So. Harwich, MA

MORAN ENGINEERING ASSOC., LLC  
941 Route 28, So. Harwich, MA; (508) 432-2878; MoranEng@gmail.com

Date: 5/26/20  
Scale: 1" = 30'

# MORAN ENGINEERING ASSOCIATES, LLC

941 ROUTE 28, HARWICH

P.O. BOX 183  
South Harwich, MA 02661

moraneng@gmail.com

O: 508-432-2878  
F: 508-432-3501

December 21, 2020

## REVISED DRAINAGE CALCULATIONS

Stonehorse Work-Force Housing @ 872 Route 28, South Harwich, Ma

### Proposed Conditions: Runoff for 25-Year Storm Peak Flow

Using NOAA Atlas 14, Vol 10, Ver 2 for 25 yr, 15min duration => 1.13 inch/15min  
=> 1.13x4 = 4.52 in/hr

Revised calculations for increase in paved parking.

Revised contribution area per project surveyor, Terry Eldredge, sketch attached.

### Catch Basins Contribution Drainage Area - 1

	Area	C
Paved Driveway & Parking	= 13,500 sf	0.95
Walks & Hardscape = 1244 sf/2 + 76sf	= 698 sf	0.95
Landscaping	= 6022 sf	0.5

Peak Runoff =  $(0.95 \times (13,500 + 698 \text{ sf}) + 0.5 \times 6022 \text{ sf}) \times 4.52 \text{ in/hr} \times 1 \text{ ft}/12 \text{ in} = 6215 \text{ cf/hr}$   
 $6215 \text{ cf/hr} \times 1 \text{ hr}/60 \text{ min} = 103.6 \text{ cf/min} (= 1.73 \text{ cf/sec})$

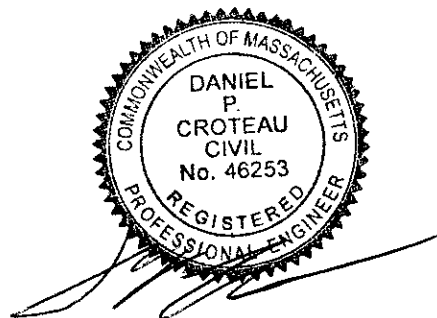
$Q \text{ gal/min} = 103.6 \text{ cf/min} \times 7.48 \text{ gal/cf} = 775 \text{ gal/min}$

Required Leaching Area =  $775 \text{ gal/min} \times 1 \text{ sf} / 0.7 \text{ gal/min} = 1107 \text{ sf}$  Required

Provided Leaching Area : 3-Leach Pits (8'diam x 5'deep w/4'stone)

=  $3 \times (\pi 16' \times 5' + \pi 8' \times 8') = 1357 \text{ sf}$  Provided

Storage Volume:  $3 \times (\pi 3.67' \times 3.67' \times 6' + 0.3(\pi 8' \times 8' \times 6' - \pi 3.67' \times 3.67' \times 6')) = 1619 \text{ cf}$



Catch basins Contribution Area - 1 - CURRENTLY PROPOSED

*Chady*

	Currently Proposed	s.f.	C
Paved Driveway and Parking:	13,500		0.95
Walks and Hardscape:	698		0.95
Grass Parking:	0		0.7
Landscaping:	6,022		0.5

Peak Runoff:

	0.95	x	14,198	"="	13,488			
plus	0.7	x	0	"="	0			
plus	0.5	x	6,022	"="	3,011			
			<b>TOTAL</b>		<b>16,499</b>			
<b>Total</b>	<b>16,499</b>	x	4.52	inch/hour	x	1 ft/12 in	"="	6,215 c.f./hr.
			1 hr./60					
	6,215 c.f./hr.	x	min	"="	103.6 c.f./min			
Q gal/min	"="		103.6 c.f./min	x	7.48 gal/c.f.	"="		775 gal/min

Required Leaching

Area = 775 gal/min x 1 s.f./0.7 gal/min =" 1107 s.f. Required

Proposed: 2 Leach Pits, 8' diam, 5' Deep with 4' Stone (total diameter = 16'):

	(Pi	x	Total Diameter	x	Height	"="	Surface Area
<b>Leaching Area Provided</b>	3.14158	x	16	x	5	"="	251
	(Pi	x	radius	x	radius		
Plus	3.14158	x	8	x	8	"="	201
			<b>TOTAL</b>				<b>452 s.f. per pit</b>
			<b>Additional Pit Proposed</b>	x # of Pits			<b>3</b>
				"="			<b>1,357 s.f.</b>
					Which is greater than		<b>1107 s.f. Required</b>
					by		<b>250 s.f.</b>

Storage Volume:

# of Pits	((Pi	x Inside Radius	x Inside Radius	x Inside height)	+	(% Voids	x	<i>cont. below</i>	
3	3.14159	3.67	3.67	6		30%			
	x Outside Radius	x Outside Radius	x Inside height)	-	(Pi	x Inside Radius	x Inside Radius	x Inside height))))	
	3.14159	8	8	6	3.14159	3.67	3.67	6	<b>1,619</b>

# STORMWATER RUNOFF DRAINAGE CALCULATIONS

## THE STONEHORSE PROJECT - RTE 28 SOUTH HARWICH

Proposed Conditions: Runoff for 25-Year Storm Peak Flow

Using NOAA Atlas 14, Vol 10. Ver 2 for 25 yr., 15 min => 1.13 inch/15 min => (1.13 x 4) = 4.52 in/hr.

### Catch basins Contribution Area - 1 - PREVIOUSLY PROPOSED

				<b>Previously Proposed s.f.</b>	<b>C</b>		
				7,255	0.95		
				698	0.95		
				3,175	0.7		
				6,022	0.5		
<b>Peak Runoff:</b>							
	0.95	x	7,953	"="	7,555		
plus	0.7	x	3,175	"="	2,223		
plus	0.5	x	6,022	"="	3,011		
				<b>TOTAL</b>	<b>12,789</b>		
<b>Total</b>	<b>12,789</b>	x	4.52	inch/hour	x	1 ft/12 in	"=" 4,817 c.f./hr.
			1 hr./60				
4,817 c.f./hr.	x		min	"="	80.3 c.f./min		
Q gal/min	"="		80.3 c.f./min	x	7.48 gal/c.f.	"="	601 gal/min

**Required Leaching Area =** 601 gal/min x 1 s.f./0.7 gal/min " = " **858 s.f. Required**

### Proposed: 2 Leach Pits, 8' diam, 5' Deep with 4' Stone (total diameter = 16'):

	(Pi	x	Total Diameter	x	Height	"="	Surface Area
<b>Leaching Area Provided</b>							
:	3.14158	x	16	x	5	"="	251
	(Pi	x	radius	x	radius		
Plus	3.14158	x	8	x	8	"="	201
						<b>TOTAL</b>	<b>452 s.f. per pit</b>
					x # of Pits	2	<b>905 s.f.</b>
					"="		<b>858 s.f. Required</b>

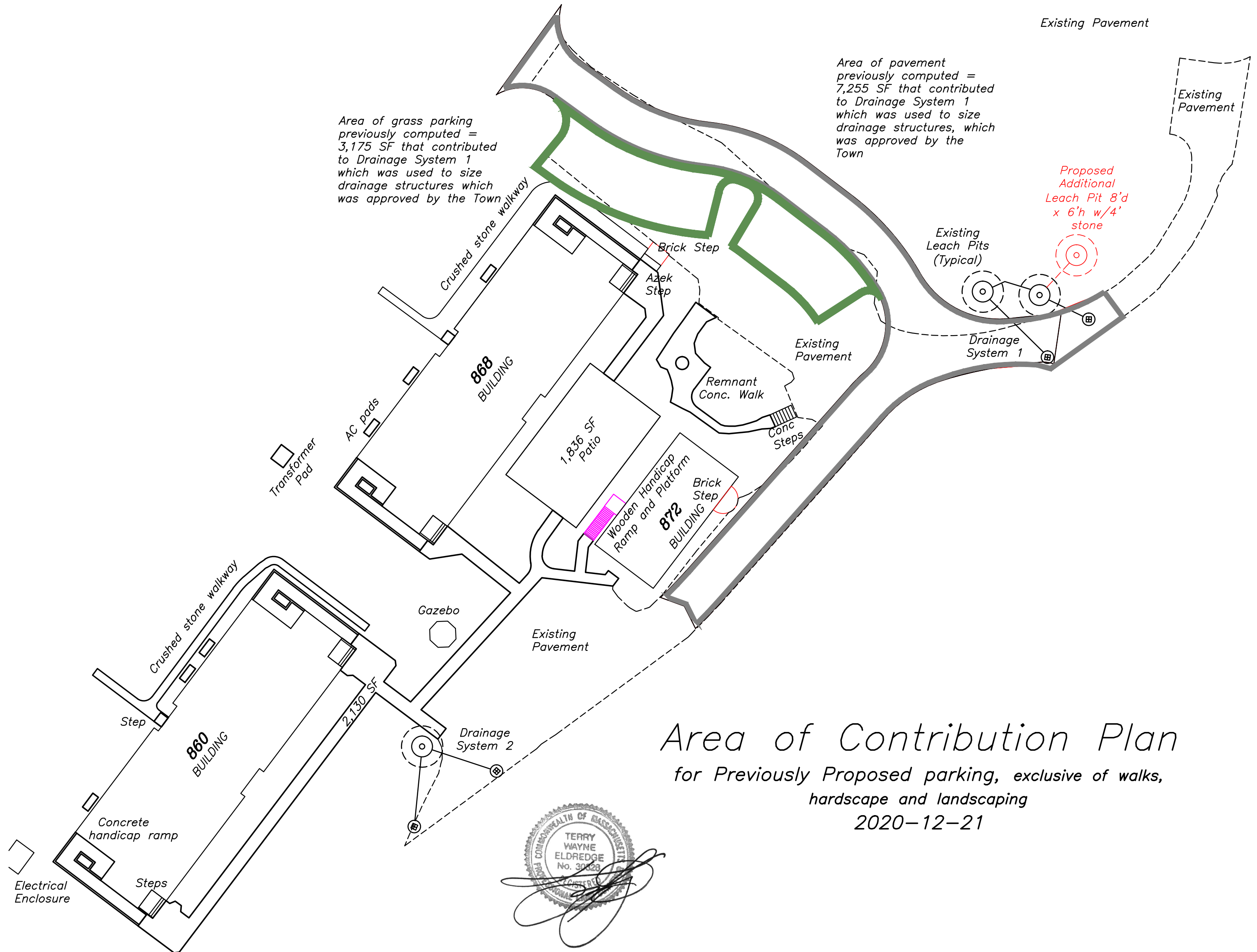
Storage Volume: Which is greater than

# of Pits	((Pi	x Inside Radius	x Inside Radius	x Inside height)	+	(% Voids	x	cont. below	
2	3.14159	3.67	3.67	6		30%			
	x Outside (Pi	x Outside Radius	x Inside height)	-	(Pi	x Inside Radius	x Inside Radius	x Inside height))))	"=" CF
	3.14159	8	8	6	3.14159	3.67	3.67	6	<b>1,079</b>

Existing Pavement

Area of grass parking previously computed = 3,175 SF that contributed to Drainage System 1 which was used to size drainage structures which was approved by the Town

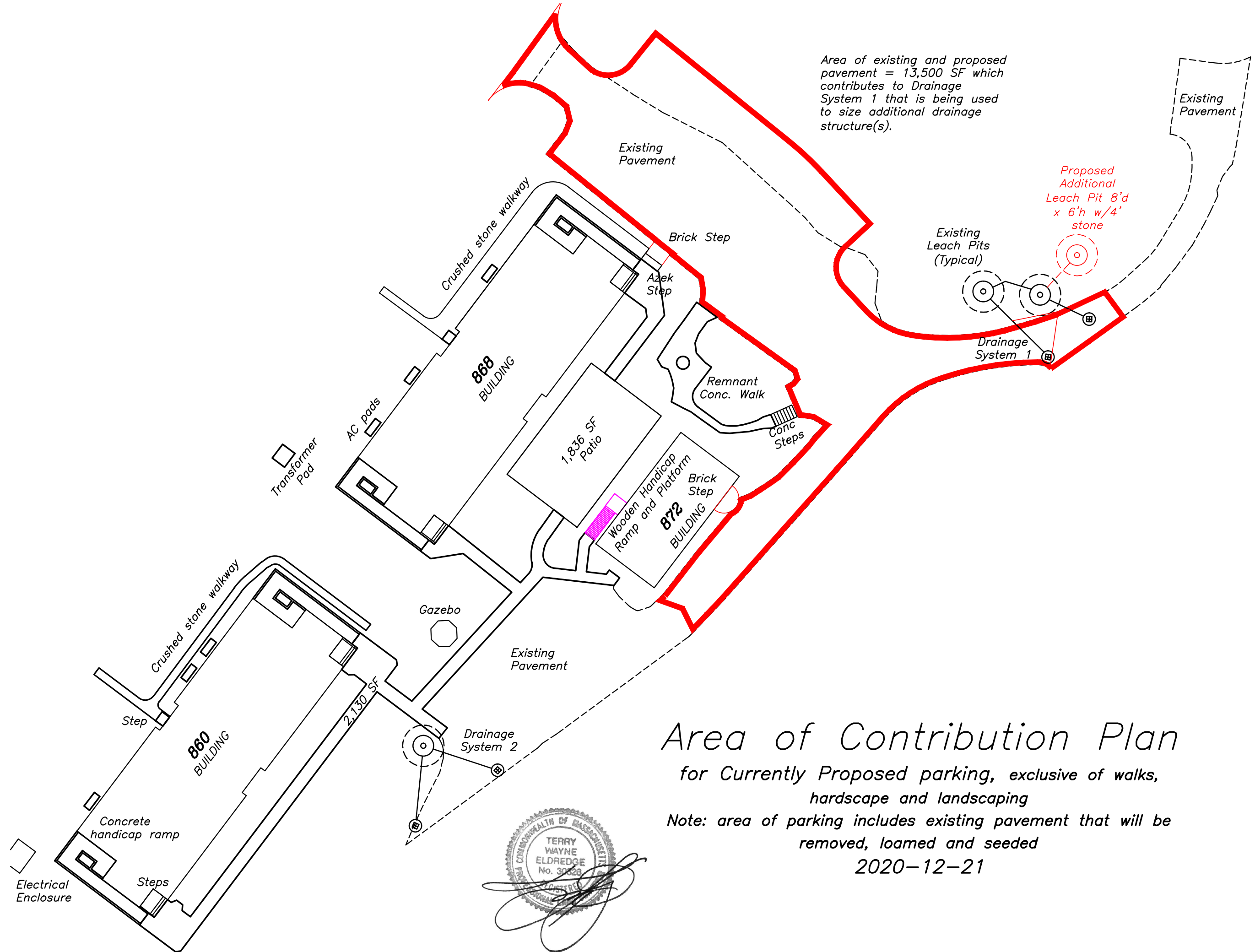
Area of pavement previously computed = 7,255 SF that contributed to Drainage System 1 which was used to size drainage structures, which was approved by the Town



*Area of Contribution Plan*  
 for Previously Proposed parking, exclusive of walks,  
 hardscape and landscaping  
 2020-12-21







Area of existing and proposed pavement = 13,500 SF which contributes to Drainage System 1 that is being used to size additional drainage structure(s).

# Area of Contribution Plan

for Currently Proposed parking, exclusive of walks, hardscape and landscaping

Note: area of parking includes existing pavement that will be removed, loamed and seeded

2020-12-21



Electrical Enclosure

Concrete handicap ramp

Step

Crushed stone walkway

860 BUILDING

2,130 SF

Gazebo

Existing Pavement

Drainage System 2

868 BUILDING

1,836 SF Patio

872 BUILDING

Wooden Handicap Ramp and Platform

Brick Step

Remnant Conc. Walk

Conc Steps

Brick Step

Azek Step

Crushed stone walkway

AC pads

Transformer pad

Existing Leach Pits (Typical)

Drainage System 1

Proposed Additional Leach Pit 8'd x 6'h w/4' stone

Existing Pavement



**AGENDA ITEM # II.B**

To: Planning Board  
From: Charleen Greenhalgh, Town Planner  
Date: January 19, 2021  
Re: Staff Report – Site Plan Review & Use Special Permits

**PB2020-34 Cool Change LLC, Allen Harbor Marine**, applicant & owner, c/o Rob O’Neill, representative, seeks a Site Plan Review and Use Special Permit pursuant to §§325-55; 325-13, Use Table, paragraph IV.19; and 325-51 to construct a 4,102 square foot commercial building for a marine use (boat maintenance and repair) and associated parking for property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district.

A public hearing on this matter is scheduled for a virtual meeting to be held on Tuesday, January 26, 2021 no earlier than 6:30pm. Abutters were notified via certified mail on January 6, 2021.

**Description**

The applicant seeks approval for a Site Plan Review Special Permit and a Use Special Permit for a marine use. The property is currently undeveloped; however the restaurant use to the west has a parking easement on this parcel. The application was filed with the Town Clerk on December 22, 2020. Revised plans were submitted on January 13, 2021 and include the following:

1. Form A – Special Permits & Site Plan Review
2. Site Plan Review Narrative, dated December 18, 2020 by Stephen S. Morrell, AIA
3. Municipal Lien Certificate
4. AMENDED project narrative dated October 22, 2020 by Benjamin E. Zehnder
5. Packet of previous Board of Appeals decision and other correspondence
6. Set of Plans for Allen Harbor Marine Bldg Project, prepared by GenCon and Green Seal Environmental, Inc., Stuart D. Clark, P.E. dated December 17, 2020, with a latest revision date of 1/8/21:
  - a) Sheet G-00, General Notes, Not To Scale (NTS)
  - b) Sheet C-00, Existing Conditions, scale 1” = 20’
  - c) Sheet C-01, Site Plan, scale 1” = 20’
  - d) Sheet C-02, Utilities Plan, scale 1” = 20’
  - e) Sheet C-03, On-Site Sanitary Disposal System, scale As Noted
  - f) Sheet C-04, Erosions Control Plan, scale 1” = 20’
  - g) Sheet C-05, Watershed Areas, scale 1” = 30’
  - h) Sheet C-06, Traffic Circulation C-06 Plan, scale 1” = 20’
  - i) Sheet D-00, Details, scale An Noted
7. Set of Building Plans for Allen Harbor Marine Bldg Project, prepared by GenCon:
  - a) Sheet A1.1, Floor Plan, Sections & Elevations, scale As Noted, dated 1/11/21.
  - b) Sheet A1.2, Renderings, scale As Noted, dated 12/17/21.

8. Response Letter, by Rob O’Neill, Project Manager (GenServ)
9. Site Plan Review Application Narrative, dated November 6, 2020 by Stephen S. Morrell, AIA
10. Waiver Request, by Rob O’Neill, Project Manager (GenServ)
11. Exterior Light Fixtures, by Rob O’Neill, Project Manager (GenServ) nine (9) cut sheets are included.

### **MGL Reference and Planning Board Jurisdiction**

Pursuant to MGL c.40 A, §9 the Planning Board must, within 65 days of submission of application for a special permit hold a public hearing. The decision of the Planning Board shall take place within 90 days following the close of the public hearing. Further, a special permit issued shall require a two-thirds vote of the Board.

The Planning Board has jurisdiction to review this application pursuant to the §325-13 and §325-51 for the Use Special Permit and §325-55 for the Site Plan Review Special Permit.

### **Waivers**

The following waivers have been request. The explanations from Rob O’Neill, Project Manager are shown in *italics*.

1. Landscaping and planting – *The adjacent Tyler Lane subdivision includes landscaping and plantings. The current site for Allen Harbor and proposed building does not allow for planting/landscape areas.*
2. Curbing and Wheel stops – *these would impede on the maneuverability of boats coming in and out of the site.*

### **Comments from other Boards, Departments, Committees**

**Health:** A fully compliant septic system must be approved prior to any building permit issuance.

**Fire, Police, Water, DPW/Highway:** No issues, comments or concerns.

**Conservation:** Any work in the FEMA Flood Zone requires Conservation Commission approval, as this is Land Subject to Coastal Storm Flowage.

**Engineering:** The Town Engineer reviewed the plans with the Town Planner; comments are noted below. Additionally, he will be reviewing in detail the Stormwater Report and provide comments as needed.

### **Planning Staff Comments**

1. As noted, the Town Engineer and Town Planner met to review the plans and application as submitted on January 5, 2021. At that time we sent an email to Rob O’Neill, Project Manager outlining our questions and comments. Revised plans and other information was provided on January 13, 2021. Most of our comments/questions had been addressed; however, we do provide the following additional comments:
  - a. The westerly parking two (2) parking spaces nearest the proposed building cannot be used during the hours of operation of the Marine use, as these would block access to the three (3) parking spaces at the rear of the building. This could be accomplished with signage and can be made a condition of approval.
  - b. We still encourage one central curb cut. Because this is a change of use this would need to go to MassDOT for a curb cut permit. This can be made a condition of approval.

- c. Dimensions for the parking spaces are not provided, including the HP space. If the application states what the various dimension would be, this too can be included in the conditions.
  - d. Curbing is encouraged along the easterly parking area. We understand the desire to minimize curbing due to the boat and trailer access; however curbing along the easterly side should not impede access. This can be made a condition of approval.
  - e. The applicant has request a waiver of the landscaping and planting. The Town Engineer and Interim Planner believe that those areas that will not be paved must be “green” and therefore some indication of loaming and seeding, and/or low growing shrubs should be provided.
2. The Zoning Board of Appeals approved variances for setbacks for the building and parking pursuant to Case #2020-41.
  3. The property contains a use easement for parking for the restaurant located to the west of the property (Villa Roma). The parking needs for each use will be offset by the nature of of each business and the hours of operation.
  4. The requested waivers would not be required provided there are conditions imposed including the submittal of a landscaping plan.
  5. At this time, all other requirements of the zoning bylaws appear to have been met.
  6. Reasonable conditions are recommended including:
    - a. A fully compliant septic system must be approved prior to any building permit issuance.
    - b. Any work in the FEMA Flood Zone requires Conservation Commission approval, as this is Land Subject to Coastal Storm Flowage.
    - c. The two parking spaces on the westerly side of the lot shall be restricted to evening use only. Signage shall be installed to indicate said restriction.
    - d. A Cape Cod Berm shall be installed along the easterly edge of the parking area, and shall be shown on the As-Built Plan.
    - e. A Massachusetts Department of Transportation (“MassDOT”) may be required as this is a change of use. Any changes to the entrance to the site as a result of this review shall not require further review from the Planning Board. A copy of the MassDOT curb cut permit shall be filed with the Planning Office.
    - f. The regular parking spaces shall be 9’ wide by 20’ in length and the parking space for disabled persons shall be 8’ wide with a 5’ hatched aisle adjacent by 20’ in length.
    - g. All signage shall comply with the Sign Code and Building Department Requirements.
    - h. All lighting shall comply with the Lighting Code.
    - i. Prior to the issuance of a building permit, a landscape plan shall be submitted to the Planning Office.
    - j. Any changes to the approved site may require additional review and approvals from the Planning Board.
    - k. This decision shall be recorded at the Barnstable County Registry of Deeds.
    - l. Conformance with all review procedure requirements outlined pursuant to the Code of the Town of Harwich §400-18.G Inspection, certificate of completion and as-built plan shall be met.

## VOTES

### Continuance

If the Board will require additional information or wants to take the matter under advisement the following motion is recommended:

Move to continue the hearing for **PB2020-34 Cool Change LLC**, to no earlier than 6:30 pm on \_\_\_\_\_ (Next Meeting Dates: *Feb. 9, Feb. 23, Mar. 9*) for the following reason(s): *Need to provide reasons for the continuance...additional information...taking it under consideration....*

### **I. Vote to Close the Public Hearing**

### **II. Vote to Adopt Proposed Findings:**

To adopt the following finding of fact (*the Board may wish to add or change findings*):

1. The property is located with the CH-1 zoning district.
2. Subject property is burden by a parking easement by the adjacent parcel to the west.
3. The Marine Use is allowable with a Use Special Permit.
4. Dimensional variances for the building and parking setbacks were approved by the Harwich Zoning Board of Appeals pursuant to Case #2020-41.
5. Appropriate and adequate parking shall be provided on the subject site.
6. The use as developed will not adversely affect the neighborhood.
7. The specific site is an appropriate location for such a use.
8. There will be no nuisance or serious hazard to vehicles or pedestrians.
9. Adequate and appropriate facilities will be provided for the proper operation of the proposed use, including appropriate sewage treatment.

**Vote on Use Special Permit** (*Please Note: An affirmative vote by at least five Planning Board members is required.*)

1. To **approve with conditions** case PB2020-34 Cool Change LLC for a Use Special Permit pursuant to §325-13, Use Table, paragraph IV.19 and §325-51 for a marine use (boat maintenance and repair) for property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district, based on the aforementioned findings of fact and the fact that the application meets the necessary requirements and criteria for approval pursuant to the Code of Town of Harwich. The following condition is imposed: (*Note: need to determine and outline the conditions.*)

1.) No outside storage of boats or other materials shall be permitted.

2. To **deny** case number case number PB2020-34 Cool Change LLC for a Use Special Permit pursuant to §325-13, Use Table, paragraph IV.19 and §325-51 for a marine use (boat maintenance and repair) for property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district, based on the fact that the application does not meet the necessary requirements and criteria for approval pursuant to the Code of Town of Harwich, specifically...(*Note: need to list the specific requirements that have not been satisfied.*)

**Vote on Site Plan Review Special Permit:** (*Please Note:* An affirmative vote by at least five Planning Board members is required.)

- I. To **approve with conditions** case number PB2020-34 Cool Change LLC for a Site Plan Review pursuant to §§325-55 to construct a 4,102 square foot commercial building for a marine use (boat maintenance and repair) and associated parking at property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district. The decision is based on the aforementioned findings of fact, the fact that the application meets the necessary requirements and criteria for approval pursuant to the Code of Town of Harwich and the fact that the Marine Use is permitted by Special Permit in the zoning district. The following conditions are imposed:
1. A fully compliant septic system must be approved prior to any building permit issuance.
  2. Any work in the FEMA Flood Zone requires Conservation Commission approval, as this is Land Subject to Coastal Storm Flowage.
  3. No outside storage of boats or other materials shall be permitted.
  4. The two parking spaces on the westerly side of the lot shall be restricted to evening use only. Signage shall be installed to indicate said restriction.
  5. A Cape Cod Berm shall be installed along the easterly edge of the parking area, and shall be shown on the As-Built Plan.
  6. A Massachusetts Department of Transportation (“MassDOT”) may be required as this is a change of use. Any changes to the entrance to the site as a result of this review shall not require further review from the Planning Board. A copy of the MassDOT curb cut permit shall be filed with the Planning Office.
  7. The regular parking spaces shall be 9’ wide by 20’ in length and the parking space for disabled persons shall be 8’ wide with a 5’ hatched aisle adjacent by 20’ in length.
  8. All signage shall comply with the Sign Code and Building Department Requirements.
  9. All lighting shall comply with the Lighting Code.
  10. Prior to the issuance of a building permit, a landscape plan shall be submitted to the Planning Office.
  11. Any changes to the approved site may require additional review and approvals from the Planning Board.
  12. This decision shall be recorded at the Barnstable Registry of Deeds.
  13. Conformance with all review procedure requirements outlined pursuant to §400-18.G Inspection, certificate of completion and as-built plan, of the Code of the Town of Harwich shall be met.
- II. To **deny** case number PB2020-34 Cool Change LLC for a Site Plan Review Special Permit pursuant to §§325-55 to construct a 4,102 square foot commercial building for a marine use (boat maintenance and repair) and associated parking at property located at 282 Route 28, Map 12, Parcel G2-1 in the CH-1 zoning district, based on the fact that the Use Special Permit was denied and therefore the Site Plan Review Special Permit cannot be granted.

# GENCON

November 6, 2020

Harwich Planning Department  
732 Main Street  
Harwich, MA 02645

Re: **Site Plan Review Application Narrative**  
*Proposed Boat Maintenance and Repair Building*  
*282 MA Route 28*  
*Harwich, MA*

The proposed use for the lot is for boat maintenance and repair. The owner is proposing a structure to house these activities in lieu of having the boats and accompanying work out in the open. It is believed this structure would benefit the abutters both aesthetically and via a major reduction of the noise associated with the work on the boats. There is a parking easement that has been granted to the adjacent restaurant which restricts the buildable area of the lot. This easement grants access to the 14 spaces in front of the building. As the operating hours of the two business do not overlap, these spaces will be used by the restaurant during their business hours and by the owner at all other times.

The proposed building will 60'x78'. It will be 25' above average grade at its highest point. Site work will include but not be limited to minor grading, 3 new parking spaces, a new septic system, a tight tank, and a rain garden.

Very truly yours,



Stephen S. Morrell, AIA  
Lead Architect



Harwich Planning Department  
Ms. Charleen Greenlagh  
732 Main Street Harwich, MA  
Attn: Ms. Greenlagh

RE: PB-2002-34 Response Letter

Ms. Greenlagh,

On behalf of Allen Harbor Marine, (Cool Change LLC) please see the below responses per your email on 1/6/2021. Feel free to call me with any questions.

- 1) Please see the attached waivers.
- 2) A municipal lien certificate has been requested by Allen Harbor from the Treasures Office. We anticipate having this in hand by the planning board meeting on 1/26/2021.
- 3) Added to plans; C-00. See attached revised Civil drawings dated 1-8-2021.
- 4) Added to plans; C-01. See attached revised Civil drawings 1-8-2021.
- 5) Added to plans; C-01. See attached revised Civil drawings dated 1-8-2021.
- 6) Legend is included on sheet G-00. See attached revised Civil drawings dated 1-8-2021.
- 7) This has been changed. See attached revised Civil drawings dated 1-8-2021.
- 8) Added to plans; C-01. See attached revised Civil drawings dated 1-8-2021.
- 9) See new sheet, C-06. Included in revised Civil drawings dated 1-8-2021.
- 10) Revised to minimize cutbacks. See attached revised Civil drawings dated 1-8-2021.
- 11) HP parking space has been relocated. See attached revised Civil drawings dated 1-8-2021.
- 12) Please see the attached lighting cutsheets.
- 13) No landscaping has been planned; see attached waiver request.

Thank you,

A handwritten signature in black ink that reads 'R. O'Neill'.

Rob O'Neill  
Project Manager





Harwich Planning Department  
Ms. Charleen Greenlagh  
732 Main Street Harwich, MA  
Attn: Ms. Greenlagh

RE: PB-2002-34 Waiver Request

Ms. Greenlagh,

Please see the below waivers requested for the Allen Harbor Marine project at 282 Rt 28.

1. We are requesting a waiver on landscaping and plantings for this project. The adjacent Tyler Lane subdivision includes landscaping and plantings. The current site for Allen Harbor and proposed building does not allow for planting/landscape areas.
2. We are requesting a waiver on curbing and wheel stops due to this will impede on the maneuverability of boats coming in and out of the site.

Thank you,

A handwritten signature in black ink that reads 'R. O'Neill'.

Rob O'Neill  
Project Manager

## GENERAL CONSTRUCTION NOTES

- ALL SITE PREPARATION NECESSARY TO COMPLETE THIS PROJECT ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COORDINATE ALL NECESSARY POLICE DETAILS WITH THE LOCAL POLICE DEPARTMENT.
- ALL CONSTRUCTION AND CONTRACTOR VEHICLES ARE TO BE PARKED WITHIN THE SITE PROPERTY. PARKING OF ANY CONSTRUCTION VEHICLE OUTSIDE OF THE SITE LIMITS IS PROHIBITED.
- THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL REQUIRED CONSTRUCTION PERMITS. ALL FEES INCLUDING POLICE DETAILS AND POSTING OF BONDS ARE TO BE PAID BY THE CONTRACTOR, AND COORDINATED WITH THE OWNER AND THE ENGINEER.
- ALL EXISTING CONDITIONS SHOWN SHALL BE CONSIDERED APPROXIMATE AND ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED CONDITIONS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO CONDUCTING ANY WORK.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS ARE BASED ON RECORDS OF PREVIOUS OWNERS, VARIOUS UTILITY COMPANIES, AND WHEREVER POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT GUARANTEED AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES, ANY GOVERNING PERMITTING AUTHORITIES, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK IN PREVIOUSLY UNALTERED AREAS TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESOLVE CONFLICTS BETWEEN THE PROPOSED UTILITIES AND FIELD-LOCATED UTILITIES AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED, INCOMPLETELY OR INACURATELY SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCURATE RECORDS OF THE LOCATION AND ELEVATION OF ALL WORK INSTALLED AND EXISTING UTILITIES FOUND DURING CONSTRUCTION FOR THE PREPARATION OF THE AS-BUILT PLAN.
- THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EXISTING UTILITIES IN WORKING ORDER AND FREE FROM DAMAGE DURING THE ENTIRE DURATION OF THE PROJECT. ALL COSTS RELATED TO THE REPAIR OF UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
- THE CONTRACTOR SHALL UTILIZE ALL PRECAUTIONS AND MEASURES TO ENSURE THE SAFETY OF THE PUBLIC, ALL PERSONAL AND PROPERTY DURING CONSTRUCTION IN ACCORDANCE WITH OSHA STANDARDS, INCLUDING BARRICADES, SAFETY LIGHTING, CONES, POLICE DETAIL AND/OR FLAGMEN AS DETERMINED NECESSARY BY THE ENGINEER AND/OR OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF POLICE DETAIL AND FOR COORDINATING WITH THE LOCAL OR STATE POLICE DEPARTMENT FOR ALL REQUIRED POLICE DETAIL.
- ALL TRENCHING WORK WITHIN A PUBLIC OR PRIVATE ROADWAY SHALL BE COORDINATED WITH THE OWNER AND/OR PROPER LOCAL & STATE AGENCIES. TRENCH SAFETY AND RELATED PERMITS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THIS WORK MAY BE REQUIRED TO TAKE PLACE OUTSIDE OF NORMAL HOURS OF OPERATION FOR THE FACILITY.
- ALL TRENCH WORK WITHIN EXISTING PAVEMENT SHALL BE NEATLY SAWCUT PER THE APPLICABLE DETAILS. TRENCH BACKFILL SHALL BE PLACED AND COMPACTED IN 8-INCH LIFTS OR AS OTHERWISE INDICATED ON PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY SETTLING DUE TO INADEQUATE COMPACTION AS DETERMINED BY THE ENGINEER WITHIN THE WARRANTY PERIOD.
- THE CONTRACTOR SHALL MAKE ALL CONNECTION ARRANGEMENTS WITH UTILITY COMPANIES, AS NECESSARY, INCLUDING NOTIFICATIONS TO THE CITY AND UTILITIES PRIOR TO ANY WORK.
- ALL IMPORTED MATERIAL SHALL BE CLEAN AND FREE OF ANY HAZARDOUS WASTE OR OTHER CHEMICAL CONTAMINATION. NO MATERIAL WILL BE ACCEPTED FROM AN EXISTING OR FORMER 21E SITE AS DEFINED BY THE MASSACHUSETTS CONTINGENCY PLAN 310 CMR 40.0000.
- SITE LAYOUT SURVEY REQUIRED FOR CONSTRUCTION WILL BE PROVIDED BY THE CONTRACTOR AND SHALL BE CONDUCTED BY A MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH THE SURVEYOR FOR ALL SITE SURVEY WORK. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN AS-BUILT PLAN OF THE SITE CONDUCTED BY A REGISTERED PROFESSIONAL LAND SURVEYOR AND APPROVED BY THE ENGINEER. AS-BUILTS ARE REQUIRED TO OBTAIN MASSDEP AUTHORIZATION TO OPERATE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL HORIZONTAL AND VERTICAL CONTROL POINTS DURING CONSTRUCTION INCLUDING BENCHMARK LOCATIONS AND ELEVATIONS AT CRITICAL AREAS. THE LOCATION OF ALL CONTROL POINTS AND BENCHMARKS SHALL BE COORDINATED WITH THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL GRADE STAKES AND MONUMENTATION. GRADE STAKES SHALL REMAIN IN PLACE UNTIL A FINAL INSPECTION OF THE SITE HAS BEEN COMPLETED BY THE ENGINEER. ANY RE-STAKING OF PREVIOUSLY SURVEYED SITE FEATURES SHALL BE THE RESPONSIBILITY (INCLUDING COST) OF THE CONTRACTOR.
- UNLESS OTHERWISE SPECIFIED ON THE PLANS AND DETAILS/SPECIFICATIONS, ALL SITE CONSTRUCTION MATERIALS AND METHODOLOGIES ARE TO CONFORM TO THE MOST RECENT VERSION OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSACHUSETTS HIGHWAY DEPARTMENT) STANDARD SPECIFICATIONS (THE MASSACHUSETTS HIGHWAY DEPARTMENT 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE 2002 SUPPLEMENTAL SPECIFICATIONS, AND THE 2005 STANDARD SPECIAL PROVISIONS).
- CONSTRUCTION AND/OR DEMOLITION SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS REGARDING NOISE, VIBRATION, DUST, SEDIMENTATION CONTAINMENT, HAZARDOUS WASTES, AND TRENCH WORK.
- SOLID WASTES AND/OR CONSTRUCTION OR DEMOLITION DEBRIS SHALL BE COLLECTED AND STORED IN A SECURED DUMPSTER. THE DUMPSTER SHALL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS.
- THE CONTRACTOR SHALL RESTORE ALL SITE SURFACES TO THEIR ORIGINAL CONDITION OR BETTER AFTER CONSTRUCTION IS COMPLETE. AREAS NOT DISTURBED BY CONSTRUCTION SHALL BE LEFT NATURAL. THE CONTRACTOR SHALL TAKE CARE TO PREVENT DAMAGE TO SHRUBS, TREES, OTHER LANDSCAPING AND/OR NATURAL FEATURES. IF THE PLANS FAIL TO IDENTIFY ALL LANDSCAPE FEATURES, EXISTING CONDITIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF ANY WORK.
- UNPAVED AREAS DISTURBED BY THE WORK SHALL HAVE A MINIMUM OF 4-INCHES OF LOAM (OR MORE AS SHOWN ON PLAN DETAILS) AND HYDROSEEDDED AS SHOWN ON THE PLAN AND/OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING ANY LOAMED AND SEEDDED AREAS UNTIL GROWTH IS ESTABLISHED AND APPROVED BY THE ENGINEER AND/OR OWNER.
- ALL PROPOSED STRUCTURES AND COMPONENTS SHALL BE DESIGNED BY THEIR MANUFACTURERS TO WITHSTAND AASHTO H-20 LOADING. PRECAST CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4,000 PSI UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE A UNIT PRICE COST IN CUBIC YARD MEASURE FOR LEDGE AND/OR BOULDER REMOVAL. LEDGE AND/OR BOULDERS LESS THAN 1 CUBIC YARD IN SIZE BASED ON THE AVERAGE DIMENSIONS WILL NOT BE CONSIDERED PAYABLE ROCK. UNIT PRICE SHALL BE GIVEN FOR BOTH ON AND OFF SITE DISPOSAL. COST OF REPLACEMENT MATERIAL SHALL BE INCLUDED IF ADDITIONAL FILL MATERIAL IS REQUIRED.
- DEVIATION OR ALTERATION OF THE PROPOSED WORK IS TO BE VERIFIED BY THE ENGINEER AND OWNER PRIOR TO CONDUCTING THE WORK.
- AT THE END OF CONSTRUCTION, THE CONTRACTOR SHALL REMOVE ALL CONSTRUCTION DEBRIS AND SURPLUS MATERIALS FROM THE SITE. A THOROUGH INSPECTION OF THE WORK SITE AND PERIMETER IS TO BE MADE AND ALL DISCARDED MATERIALS AND WIND BLOWN OR WATER CARRIED DEBRIS SHALL BE COLLECTED AND REMOVED FROM THE SITE.

## GENERAL GRADING AND DRAINAGE NOTES

- ALL CUT AND FILL SLOPES SHALL BE 3H:1V OR FLATTER UNLESS OTHERWISE NOTED ON THE PLANS.
- CONTRACTOR SHALL ADJUST AND/OR NEATLY SAWCUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH TRANSITION AND CONTINUOUS GRADE. A CONSTRUCTION PAVEMENT TRANSITION DETAIL IS PROVIDED ON THE PLAN SET.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER OR NOTED ON THE PLANS.
- PROPOSED ELEVATIONS ARE SHOWN TO FINISHED PAVEMENT OR GRADE UNLESS OTHERWISE SPECIFIED.
- PARKING AREAS AND TRAVEL LANES ARE NOT TO BE PAVED UNTIL THE ENTIRE PROPOSED DRAINAGE SYSTEM HAS BEEN INSTALLED, COMPACTED PROPERLY, AND ALL PIPE CONNECTIONS COMPLETE.
- DRAINAGE PIPING SHALL BE DOUBLE WALLED CORRUGATED PLASTIC PIPE, ADS-N12 OR EQUAL UNLESS OTHERWISE NOTED ON THE PLANS.
- BACKFILL ADJACENT TO PIPES AND STRUCTURES SHALL BE OF THE TYPE AND QUALITY CONFORMING TO THAT AS SPECIFIED. BACKFILL SHALL BE PLACED IN LIFTS NOT TO EXCEED 8 INCHES IN THICKNESS AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN +/- 2% OF OPTIMUM. ALL COMPACTION IS TO BE DETERMINED BY AASHTO METHOD T-99 OR ASTM D698/1557 AND ASTM D2434 FOR IN PLACE TESTING. TESTING OF BACKFILL MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE INSPECTED BY THE ENGINEER.
- ALL DRAINAGE STRUCTURES AND PIPES MUST BE PROPERLY CONNECTED TO THE DRAINAGE SYSTEM PRIOR TO THE INSTALLATION OF ANY PAVEMENT. THIS INCLUDES THE STABILIZATION OF ALL DISTURBED AREAS CONTRIBUTING TO THE DRAINAGE SYSTEMS AND ANY STORMWATER DRAINAGE BASIN FLOORS AND SIDE SLOPES.
- AT SUBSTANTIAL COMPLETION, ANY LOW LYING AREAS (NON-STORMWATER FEATURES) FOUND TO CREATE PONDING SHALL HAVE LOAM OR SURFACE TREATMENT REMOVED AND THE SUBGRADE MATERIAL SHALL BE REPAIRED AND REGRADED WITH GRANULAR NATIVE BACKFILL MATERIAL. AFTER BACKFILL, LOAM SHALL BE REPLACED AND RESEDED. NO TOP DRESSING SHALL BE ALLOWED. REGRADED AREAS SHALL BE HOSE TESTED TO ENSURE POSITIVE DRAINAGE AND THE PONDING PROBLEM TO BE ALLEVIATED.

## STORMWATER FACILITY OPERATION & MAINTENANCE:

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL AND STORMWATER MANAGEMENT FACILITIES UNTIL THE PROJECT IS DEEMED COMPLETE BY THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL INSPECT AND CLEAR ALL INLETS, MANHOLES, DRAINAGE BASINS, AND OTHER STRUCTURES OF SEDIMENT AND DEBRIS PRIOR TO THE OWNER'S ACCEPTANCE.
- THE CONTRACTOR SHALL PROPERLY DISPOSE OF ALL SEDIMENT AND DEBRIS IN A PRE-APPROVED LOCATION AND IN ACCORDANCE WITH APPLICABLE LAWS.
- IF REQUIRED, THE CONTRACTOR SHALL REFER TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR INFORMATION REGARDING STORMWATER FACILITY OPERATION AND MAINTENANCE REQUIREMENTS. THE CONTRACTOR SHALL MAINTAIN A WORKING COPY OF THE SWPPP ON SITE AT ALL TIMES.
- THE CONTRACTOR SHALL INSPECT ALL STORMWATER FACILITIES AFTER EVERY MAJOR RAINFALL EVENT FOR THE ENTIRE DURATION OF THE CONSTRUCTION PROJECT AND THE FIRST 3-MONTHS AFTER COMPLETION TO MONITOR SYSTEM OPERATION.














## EROSION & SEDIMENT CONTROL NOTES

- THE SITE CONSTRUCTION FOREMAN SHALL BE RESPONSIBLE FOR THE DAILY INSPECTION AND MAINTENANCE OF ALL SEDIMENTATION AND EROSION CONTROL BARRIERS AND SHALL IMPLEMENT ALL NECESSARY MEASURES TO CONTROL EROSION AND PREVENT SEDIMENT FROM LEAVING THE SITE.
- THE CONTRACTOR SHALL INSTALL ALL SEDIMENTATION AND EROSION CONTROL BARRIERS AS SHOWN ON THE PLANS AND AS DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER BEFORE ANY CONSTRUCTION ACTIVITIES ARE TO BEGIN. THESE MEASURES SHALL BE INSPECTED, MAINTAINED AND REPLACED AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD OF THE PROJECT. PERIMETER EROSION AND SEDIMENTATION CONTROL BARRIERS SHALL REPRESENT THE LIMIT OF WORK AND ALL WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGH THE CONSTRUCTION PERIOD.
- A MINIMUM SURPLUS OF 25-FEET OF SEDIMENTATION AND EROSION CONTROL BARRIER (SILT FENCE, STRAW BALE, &/OR SILT SOCK) SHALL BE STORED ONSITE AT ALL TIMES.
- THE CONTRACTOR SHALL PREVENT ANY SEDIMENT TRANSPORT TO THE ADJACENT PROPERTIES DURING CONSTRUCTION AND UNTIL ACCEPTANCE BY THE OWNER/ENGINEER.
- A CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AS SHOWN IN THE DETAILS TO SHED DIRT FROM CONSTRUCTION VEHICLE TIRES. THE CRUSHED STONE PAD WILL BE REPLACED/CLEANED AS NEEDED TO MAINTAIN ITS EFFECTIVENESS AND RECONSTRUCTED AS NECESSARY DURING SEPARATE PHASES OF THE PROJECT.
- THE LIMIT OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. THE CONTRACTOR SHALL PHASE THE SITE WORK IN A MANNER TO MINIMIZE AREAS OF EXPOSED OR UNSTABILIZED SOIL. IF TREES ARE TO BE CUT ON THE ENTIRE SITE, ONLY THOSE AREAS WHICH ARE ACTIVELY UNDER CONSTRUCTION SHALL BE GRUBBED. THE REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERLY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR LOCAL WEATHER REPORTS DURING CONSTRUCTION AND PRIOR TO SCHEDULING EARTHMOVING OR OTHER CONSTRUCTION ACTIVITIES WHICH WILL LEAVE LARGE DISTURBED AREAS UNSTABILIZED. IF INCLEMENT WEATHER IS FORECAST, THE CONTRACTOR SHALL USE THEIR BEST PROFESSIONAL JUDGEMENT WHEN SCHEDULING CONSTRUCTION ACTIVITIES AND SHALL BE RESPONSIBLE FOR ENSURING THE NECESSARY SEDIMENTATION AND EROSION CONTROL BARRIERS ARE INSTALLED AND FUNCTIONING PROPERLY TO MINIMIZE EROSION FROM ANY IMPENDING WEATHER EVENTS.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON WEEKLY BASIS AND AFTER EACH RAINFALL EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT THE EROSION AND SEDIMENTATION CONTROL MEASURES ARE OPERATING/FUNCTIONING PROPERLY. IDENTIFIED DEFICIENCIES SHALL BE CORRECTED IMMEDIATELY AND NO LATER THAN 24 HOURS AFTER IDENTIFICATION.
- SOIL STOCKPILES LEFT OVERNIGHT SHALL BE SURROUNDED ON THEIR PERIMETERS WITH SILT SOCK, SILT FENCE, STRAW BALES, OR A COMBINATION OF SILT FENCE WITH STRAW BALES.
- DISTURBED AREAS AND SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS DURING THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD PROVIDE APPROPRIATE STABILIZATION PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY AREAS HAVING A SLOPE GREATER THAN 4H:1V SHALL BE REINFORCED WITH EROSION BLANKETS OR APPROVED EQUAL UNTIL THE SITE IS PROPERLY STABILIZED. TEMPORARY SWALES MAY ALSO BE REQUIRED IF DETERMINED NECESSARY IN THE FIELD BY THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT IN EACH EXISTING CATCH BASIN RECEIVING RUNOFF FROM THE SITE. UPON THE INSTALLATION OF ANY NEW CATCH BASIN, THE CONTRACTOR SHALL INSTALL A SILT SACK OR APPROVED EQUIVALENT. THESE ARE TO BE INSPECTED AFTER EACH SIGNIFICANT STORM EVENT AND EMPTIED AS NEEDED DURING THE ENTIRE CONSTRUCTION PERIOD.
- SMALL SEDIMENTATION BASINS MAY BE CONSTRUCTED ON AN AS-NEEDED BASIS DURING CONSTRUCTION TO AID IN THE CAPTURE OF SITE RUNOFF AND SEDIMENT. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, IN CONSULTATION WITH THE ENGINEER, TO SIZE AND CONSTRUCT THESE BASINS IN APPROPRIATE LOCATIONS.
- ALL EXITS FROM THE SITE SHALL BE SWEEP AS NECESSARY, INCLUDING ANY TRACKING TO ENSURE SEDIMENT IS CONTAINED ONSITE. PAVED AREAS SHALL BE SWEEP AS NEEDED TO REMOVE SEDIMENT OR POTENTIAL POLLUTANTS WHICH MAY ACCUMULATE DURING CONSTRUCTION ACTIVITIES.
- ACCUMULATED SEDIMENT SHALL BE COLLECTED AND DISPOSED OF IN A PRE-APPROVED LOCATION BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL PROVIDE ON SITE OR MAKE READILY AVAILABLE THE NECESSARY EQUIPMENT AND SITE PERSONNEL DURING CONSTRUCTION HOURS FOR THE DURATION OF THE PROJECT TO ENSURE ALL EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER. IF SITE WORK IS SUSPENDED DURING THE WINTER MONTHS THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE PERSONNEL AND EQUIPMENT EITHER ON SITE OR MAKE READILY AVAILABLE TO ENSURE ALL EROSION AND SEDIMENTATION CONTROL DEVICES ARE PROPERLY MAINTAINED AND REPAIRED IN A TIMELY AND RESPONSIBLE MANNER.
- IF DEWATERING IS NECESSARY DURING CONSTRUCTION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IMPLEMENT PROPER MEASURES INCLUDING DEWATERING BAGS, TEMPORARY STRAW BALES, SILT FENCES, SILT SOCKS AND/OR OTHER APPROVED DEVICES. THE DEWATERING MEASURES SHALL BE APPROVED BY THE ENGINEER. DEWATERING BASINS SHALL NOT BE CONSTRUCTED WITHIN ANY RESOURCE AREAS OR BUFFER ZONES.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CONTROL DUST BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE ENGINEER AT NO EXTRA COST TO THE OWNER.
- THE CONTRACTOR SHALL ROUTINELY INSPECT THE PERIMETER OF THE SITE PROPERTY TO GATHER AND REMOVE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF. ALL TRUCKS AND CONTAINERS LEAVING THE SITE SHALL BE COVERED.
- BURIAL OF ANY STUMPS, SOLID DEBRIS, AND/OR STONES/BOULDERS ONSITE IS PROHIBITED UNLESS OTHERWISE INDICATED BY THE ENGINEER. NO ROAD SALT, SAND, OR OTHER DE-ICING CHEMICALS SHALL BE USED ON THE ACCESS ROADWAYS.
- THE CONTRACTOR IS RESPONSIBLE FOR ROUTINE INSPECTION AND MAINTENANCE DURING CONSTRUCTION OF ALL STORMWATER FACILITIES INSTALLED OR IMPACTED BY THE PROJECT. ANY SEDIMENT OR DEBRIS COLLECTED WITHIN THESE FACILITIES FROM THE PROJECT WORK SHALL BE REMOVED PRIOR TO THE OWNER'S ACCEPTANCE.
- SEDIMENTATION AND EROSION CONTROL BARRIERS AND INSPECTION REQUIREMENTS SHALL BE IN ACCORDANCE WITH ANY TOWN PERMIT CONDITIONS AND NPDES CONSTRUCTION GENERAL PERMIT.
- SLOPES EQUAL OR GREATER THAN 2H:1V SHALL BE HYDROSEEDDED THEN STABILIZED WITH EROSION CONTROL FABRIC UNLESS NOTED OTHERWISE ON THE PLANS.

## BASIC CONSTRUCTION SEQUENCE

- SURVEY AND DELINEATE THE PROPOSED LIMIT OF DISTURBANCE AND LIMIT OF PERIMETER EROSION AND SEDIMENTATION CONTROL BARRIERS.
- STAKE OUT THE LOCATIONS FOR EROSION AND SEDIMENTATION CONTROL BARRIERS (STRAW BALES, SILT FENCE, ETC.) AND INSTALL ACCORDING TO THE PLANS AND ANY APPLICABLE CITY PERMITS. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE EROSION AND SEDIMENTATION CONTROL BARRIERS WHICH REPRESENTS THE LIMIT OF DISTURBANCE AS SHOWN ON THE APPROVED PROJECT PLANS. INSTALL SILT SACS AND HAVE EROSION AND SEDIMENTATION CONTROL BARRIERS INSPECTED BY ENGINEER AND ANY TOWN DEPARTMENTS, IF NECESSARY.
- INSTALL TEMPORARY CONSTRUCTION ENTRANCES ONLY IN LOCATIONS INDICATED ON PLANS. NO OTHER ENTRANCES SHALL BE USED TO GAIN ACCESS TO THE SITE BY ANY CONSTRUCTION OR DELIVERY VEHICLES.
- SURVEY AND STAKE OUT CLEARING LIMITS AND ACCESS DRIVEWAY.
- BEGIN NECESSARY CLEARING, GRUBBING, TREE REMOVAL, AND SITE PREPARATION.
- INSTALL TEMPORARY CONVEYANCE DEVICES (SWALES, PIPES, ETC.) AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
- BEGIN ROUGH SITE GRADING AND BRING TO SUBGRADE ELEVATIONS. WORK SHALL PROGRESS DILIGENTLY TO MINIMIZE TIME SOILS ARE UN-STABILIZED.
- BEGIN TO CONSTRUCT BUILDING, WALL, STORMWATER MANAGEMENT SYSTEM, AND UTILITIES. ANY EROSION CONTROL DEVICE DISTURBED DURING THE UNDERGROUND UTILITY CONSTRUCTION SHALL BE IMMEDIATELY REPAIRED OR REPLACED IN KIND AND STABILIZED. MODIFY TEMPORARY CONVEYANCE DEVICES AS NECESSARY TO CONVEY RUNOFF TO TREATMENT AREAS.
- DO NOT OVER COMPACT SOILS IN AREAS OF PROPOSED INFILTRATION AND AVOID INFILTRATION AREAS WITH CONSTRUCTION EQUIPMENT. CONTRACTOR RESPONSIBLE FOR OVER EXCAVATION OF INFILTRATION AREAS IF CONSTRUCTION TRAFFIC ROUTES OCCUR THROUGH PROPOSED INFILTRATION AREAS. PARTICULAR CARE SHALL BE TAKEN TO PROTECT THE UNDERGROUND DRAINAGE BASINS FROM SEDIMENT.
- PERMANENTLY SEED ALL DISTURBED AREAS OUTSIDE OF THE AREA TO BE PAVED. SEEDING SHALL OCCUR WITHIN EITHER THE SPRING OR FALL GROWING SEASON.
- ONCE ALL UNDERGROUND UTILITIES HAVE BEEN CONSTRUCTED, PLACE COMPACTED GRAVEL FOUNDATION AND ROUGH GRADE THE ROADWAYS/PARKING AREAS IN ACCORDANCE WITH THE SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS.
- BEGIN DRIVEWAY, PARKING, MILLINGS YARD CONSTRUCTION PER SITE PLANS AND IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL REGULATIONS. DRIVEWAY AND PARKING AREAS ARE NOT TO BE PAVED UNTIL THE ENTIRE PERMANENT DRAINAGE SYSTEM HAS BEEN INSTALLED AND ALL PIPE CONNECTIONS ARE COMPLETE.
- FINISH PERMANENT STABILIZATION; SWEEP THE DRIVEWAY TO REMOVE ALL SEDIMENTS; THE CONTRACTOR SHALL CLEAN AND FLUSH THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND ALL ACCUMULATED SEDIMENTS IN THE DRAINAGE BASINS SHALL BE REMOVED. CONTRACTOR SHALL INSPECT THE DRAINAGE NETWORK AND REPAIR ANY DAMAGE IMMEDIATELY.
- COMPLETE ALL REMAINING PLANTING, SEEDING, AND FENCING.
- REMOVAL OF ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS SHALL BE APPROVED BY THE ENGINEER AND THE TOWN, IF APPLICABLE AND WHEN THE CONTRIBUTING AREA HAS REACHED A MINIMUM OF 80% STABILIZATION.

## LEGEND

	CATCH BASIN
CONC	CONCRETE
	CONCRETE BOUND WITH DRILL HOLE
EOP	EDGE OF PAVEMENT
ERAP	EDGE OF RECYCLED ASPHALT PAVEMENT
	ELECTRIC METER
	EROSION CONTROL BARRIER
	EXISTING CONTOUR
	FLOOD ZONE LIMIT
F	FOUND
	GAS LINE
	HYDRANT
	IRON PIN
LSA	LANDSCAPED AREA
	OVERHEAD WIRE
	PROPERTY LINE
	PROPOSED CONTOUR
	SOIL CLASS BOUNDARY
	TEST PIT
	UTILITY POLE

## LIST OF DRAWINGS

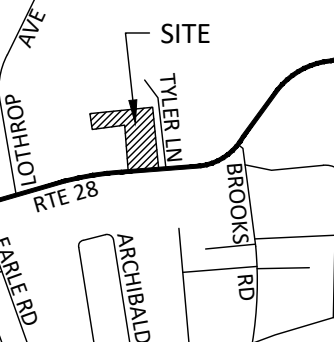
DRAWING	SHEET
GENERAL NOTES	G-00
EXISTING CONDITIONS	C-00
SITE PLAN	C-01
UTILITIES PLAN	C-02
ON-SITE SANITARY DISPOSAL SYSTEM	C-03
EROSION CONTROL PLAN	C-04
WATERSHED AREAS	C-05
TRAFFIC CIRCULATION PLAN	C-06
DETAILS	D-00



323 Manley Street  
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Sagamore Beach, MA 02562  
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No.	Date	Description
2	1/8/21	P8 Comments
1	12/10/20	Z8A Comments

No.	Date	Description

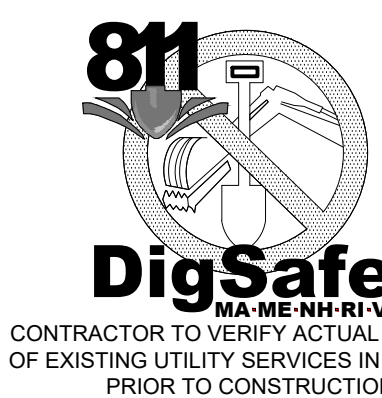
No.	Date	Description



scale	NTS
date	December 17, 2020
project	20458
drawn by	SDC/NHE
checked by	SDC

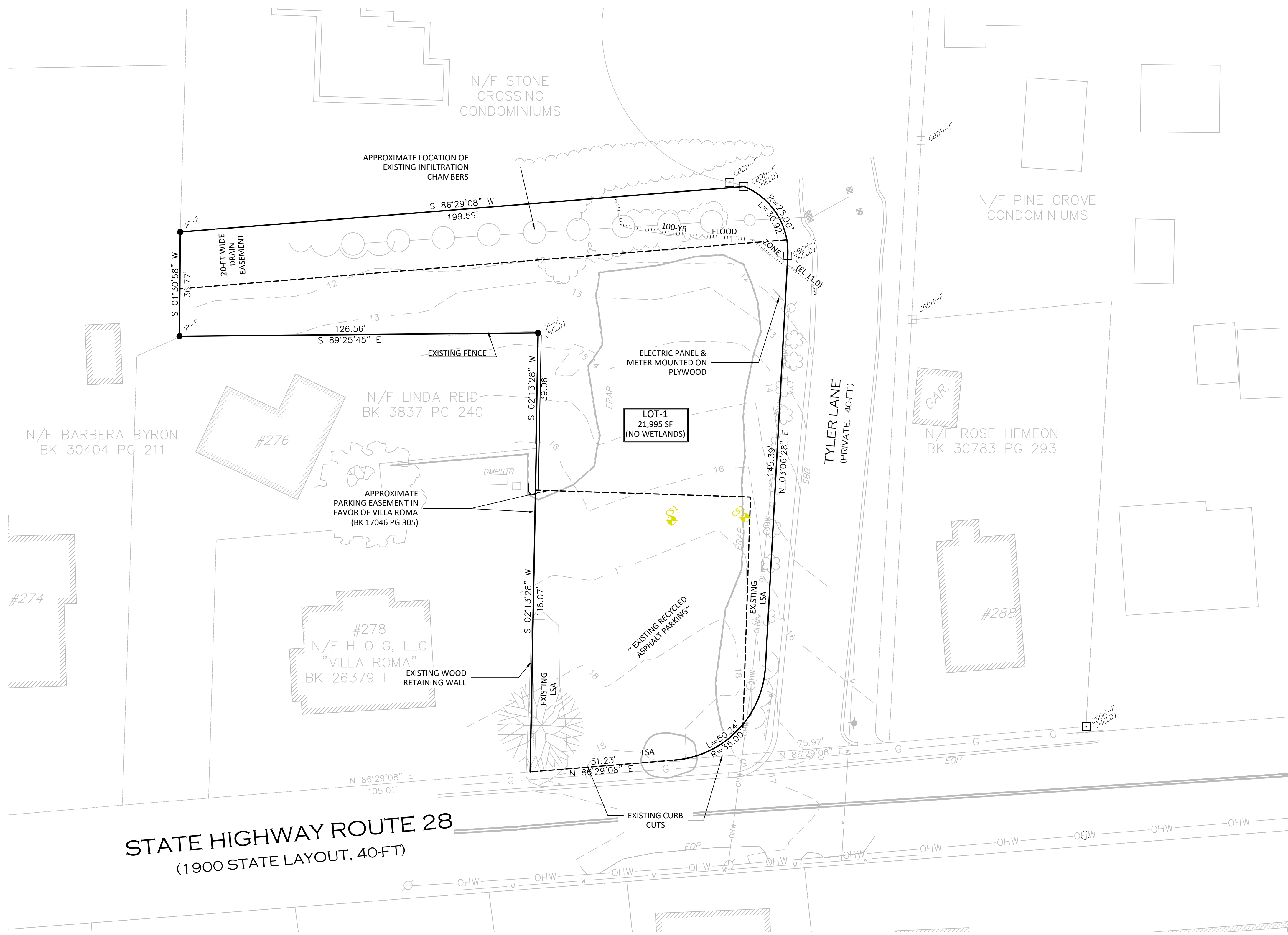
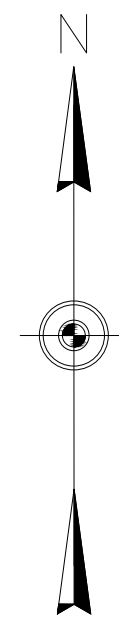
GENERAL  
NOTES AND  
LEGEND

G-00



CONTRACTOR TO VERIFY ACTUAL LOCATION OF EXISTING UTILITY SERVICES IN THE FIELD PRIOR TO CONSTRUCTION.

NOT FOR CONSTRUCTION

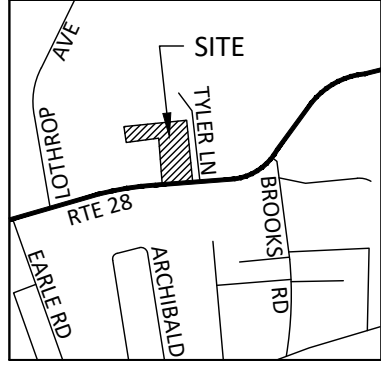


**NOTES**

1. OWNER OF RECORD:  
COOL CHANGE, LLC  
9 CAPTAIN NOYES ROAD  
SOUTH YARMOUTH, MA 02664
2. ASSESSORS REFERENCE:  
MAP 12 LOT G 2-1
3. DEED REFERENCE:  
BOOK 33205, PAGE 156  
BARNSTABLE REGISTRY OF DEEDS
3. PLAN REFERENCE:  
PLAN BOOK 596, PAGE 23 (LOT -1)  
BARNSTABLE REGISTRY OF DEEDS
4. HORIZONTAL DATUM IS BASED UPON MASSACHUSETTS  
MAINLAND STATE PLANE COORDINATE SYSTEM, NAD83, IN US  
SURVEY FEET.
5. VERTICAL DATUM IS BASED UPON NAVD88, IN US SURVEY  
FEET.
6. UNDERGROUND UTILITIES DEPICTED HEREON ARE BASED  
UPON VISIBLE, ABOVE GROUND EVIDENCE AND RECORD  
INFORMATION AND ARE ONLY APPROXIMATE. CONTRACTOR IS  
RESPONSIBLE FOR TAKING ALL NECESSARY PRECAUTIONS  
BEFORE BEGINNING ANY EXCAVATION. (DIGSAFE  
1-888-344-7233)
7. PARCEL AND RIGHT OF WAY LINES WERE OBTAINED WITH AN  
ON THE GROUND SURVEY PERFORMED BY GREEN SEAL  
ENVIRONMENTAL, INC. ON OCTOBER 20, 2020.
8. A PORTION OF THIS SITE IS LOCATED IN FEMA FLOOD ZONE  
AE WITH A BFE OF 11.00 NAVD88 AS SHOWN ON FIRM  
25001C0611J, EFFECTIVE JULY 16, 2014.
9. NO CERTIFIED VERNAL POOLS, ESTIMATED HABITATS OF RARE  
WILDLIFE, OR PRIORITY HABITATS OF RARE SPECIES ARE  
LOCATED ON OR WITHIN 500 FEET OF THE SITE.
10. NO SIGNIFICANT SOIL IMPORT OR EXPORT IS PROPOSED AS  
PART OF THIS SITE DEVELOPMENT.
11. ALL PROPOSED SLOPES ARE 3:1 OR LESS AND WILL BE  
STABILIZED BY LANDSCAPING.
12. CONSTRUCTION MATERIALS WILL BE USED PROMPTLY AFTER  
DELIVERY AND ANY WASTE MATERIALS WILL BE STORED IN  
CONTAINERS AND PROPERLY REMOVED FROM THE SITE AND  
DISPOSED OF. DUE TO THE SMALL SIZE OF THE SITE, NO  
EXTENDED STORAGE OF MATERIALS WILL OCCUR.
13. ALL CONSTRUCTION VEHICLES SHALL PARK ON SITE.  
PARKING OF CONSTRUCTION VEHICLES OUTSIDE OF SITE  
PROPERTY IS PROHIBITED

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2	1/8/21	P8 Comments
1	12/10/20	Z8A Comments

No.	Date	Description
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APPLICANT  
**ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

PROJECT  
**ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA

scale  
**1"=20'**

date  
**December 17, 2020**

project  
20458

drawn by  
SDC/NHE

checked by  
SDC

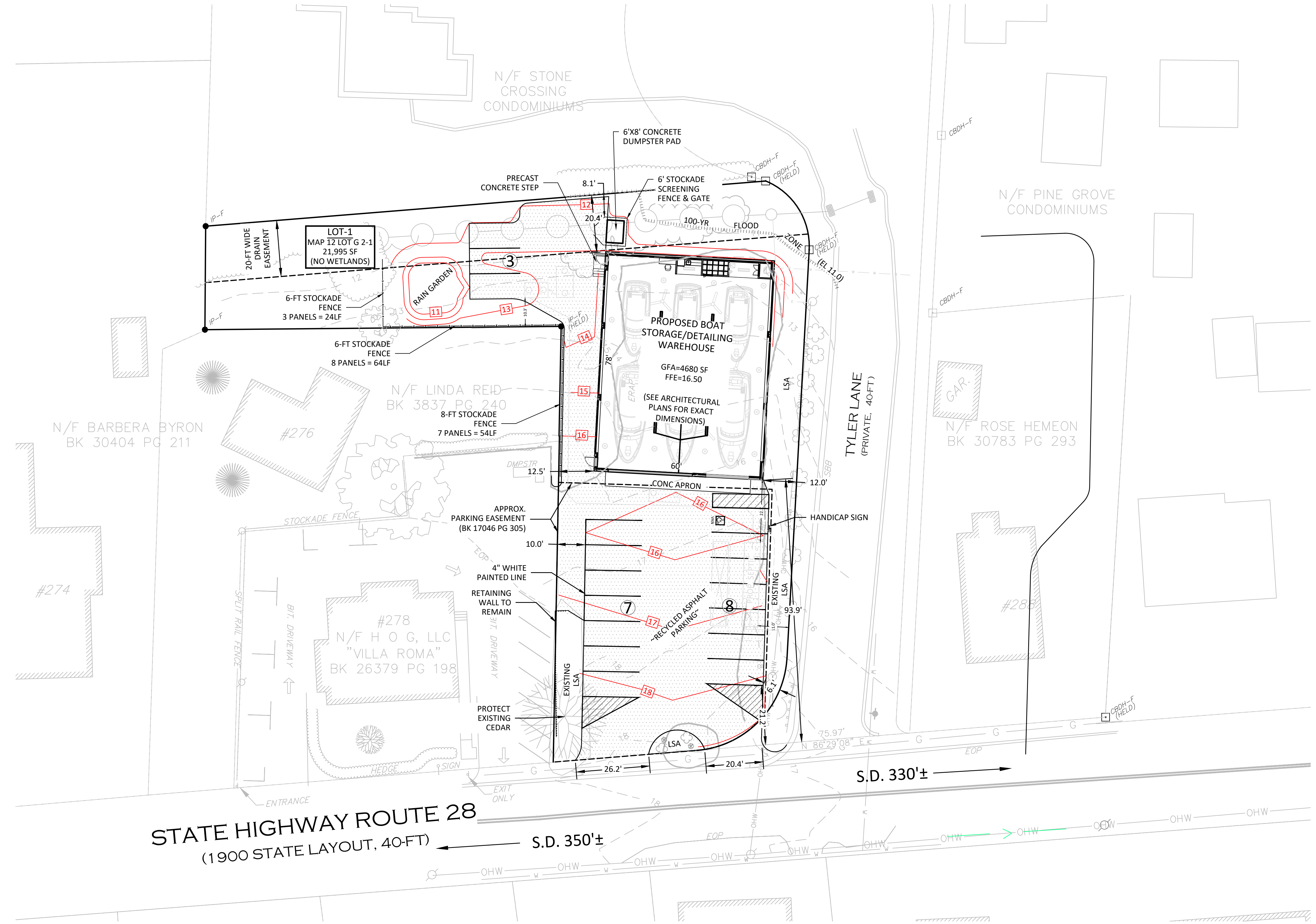
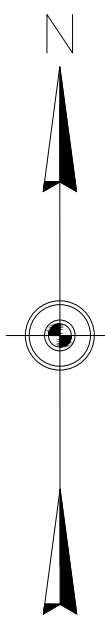
EXISTING  
CONDITIONS

**C-00**

**NOT FOR CONSTRUCTION**

DRAWING SCALE: 1" = 20'

S:\GENCON\GENCON CONSTRUCTION, LLC\2020-2021\04162020-0001 (HARWICH)\CAD\DWG\FR-2\DWG179\_2021\_2-13.DWG



ZONING TABLE		
ZONE: COMMERCIAL HIGHWAY (C-H-1)		
PROPOSED USE: MARINE STORAGE (PERMITTED)		
MIN FRONTAGE	REQUIRED	PROPOSED
AREA (OTHER PERMITTED USE)	20,000 SF	TOTAL 21,995 SF 21,093 SF (UPLAND) 0 SF (WETLANDS) 902 SF (FLOOD PLAIN)
FRONT YARD SETBACK	25'	12' TYLER LN 94.4' RTE 28
SIDE YARD SETBACK	10'	12.5'
REAR YARD SETBACK	10'	20.4'
FRONT PARKING SETBACK	20'	4.8' TYLER LN 18' RTE 28
SIDE/REAR PARKING SETBACK	10'	10'
MAX BUILDING COVERAGE	30%	21%
MAX LOT COVERAGE	70%	58%
MAXIMUM BUILDING HEIGHT	30'	25.5'

VARIANCE GRANTED  
CASE # 2020-41

VARIANCE GRANTED  
CASE # 2020-41

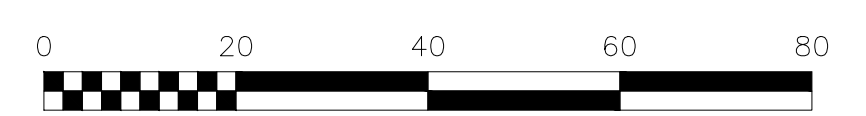
### PARKING CALCULATION

MARINA OR BOAT YARD USE:  
 1 PER EMPLOYEE MAXIMUM SHIFT, PLUS 1 PER SLIP, OR 1 SPACE PER DRY STORAGE CAPACITY, WHICHEVER IS GREATER, AND 1 PER EACH 2 MOORINGS ASSIGNED TO THE MARINA OR BOAT YARD  
 EMPLOYEES (4) = 4  
 BOAT STORAGE (6) = 6  
 10 REQUIRED (18 PROVIDED)

521 CMR 23.00 ACCESSIBLE SPACE REQUIREMENT  
 (1 TO 25 SPACES) = 1 WITH 1 VAN ACCESSIBLE (1 VAN ACCESSIBLE PROVIDED)

THIS PARCEL IS SUBJECT TO A PARKING EASEMENT AND AGREEMENT WITH OWNER'S OF VILLA ROMA RESTAURANT AS SHOWN ON ASSESSORS MAP 12 AS LOT G 1-A. (SEE BK 17046 PG 305) THE AGREEMENT ALLOWS THE COOPERATIVE USE OF THE PARKING LOT. THE AGREEMENT ALLOWS THE RESTAURANT TO USE THE PARKING LOT EXCLUSIVELY FROM 5PM TO 1AM (WITH A 3 SPACE EXCEPTION FROM 5 PM TO 7 PM). BOTH PARTIES MAY USE THE LOT FROM 1 AM TO 5 PM.

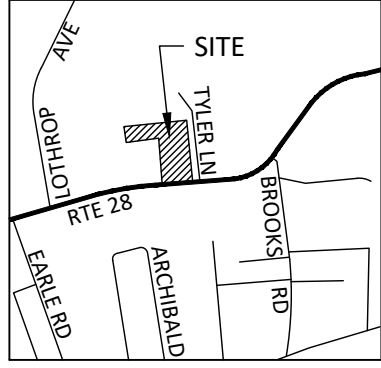
NOT FOR CONSTRUCTION



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owner  
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date  
December 17, 2020

project  
20458

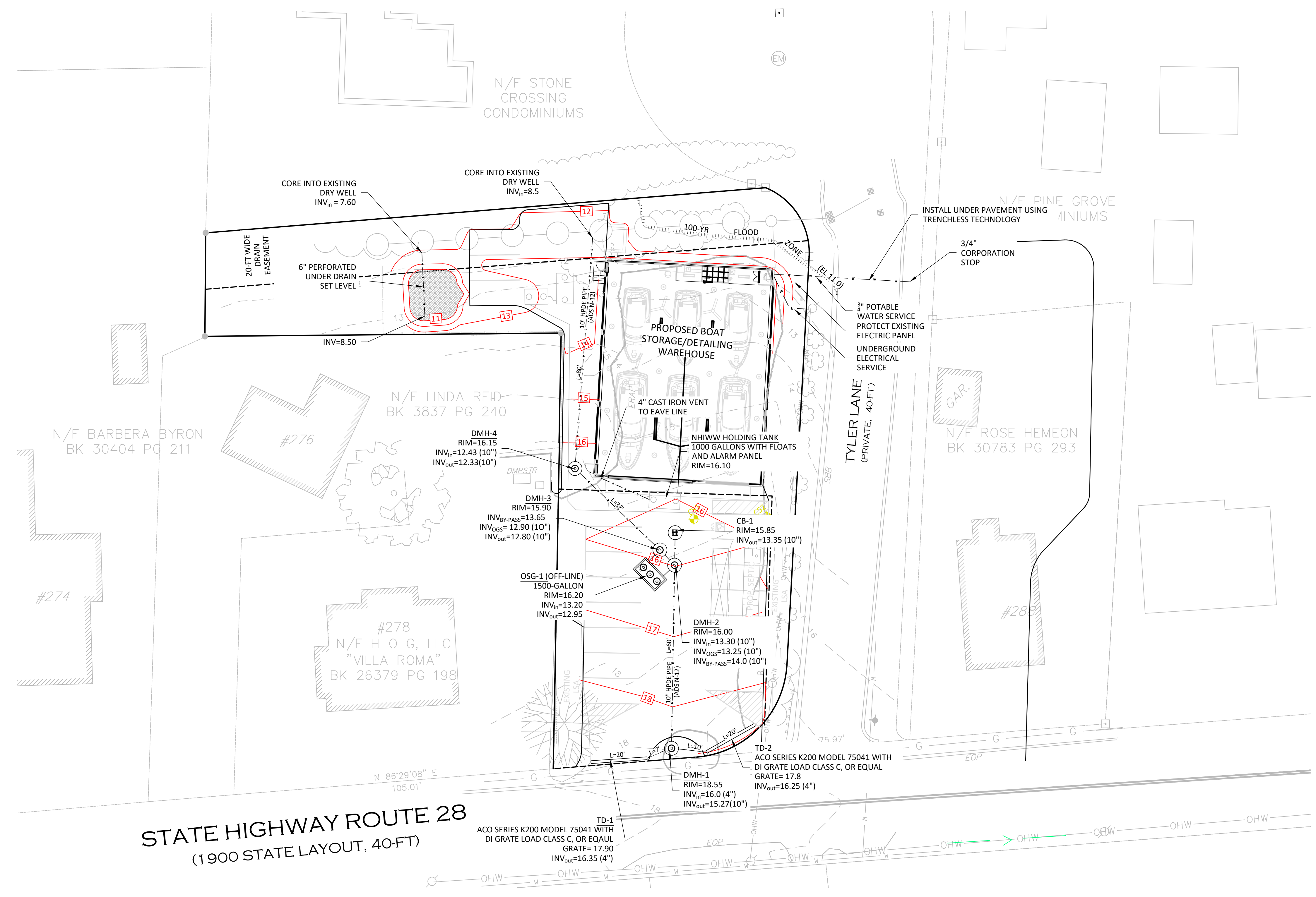
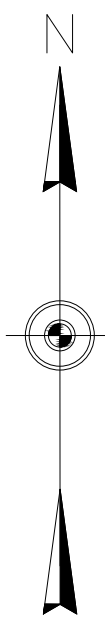
drawn by  
SDC/NHE

checked by  
SDC

SITE PLAN

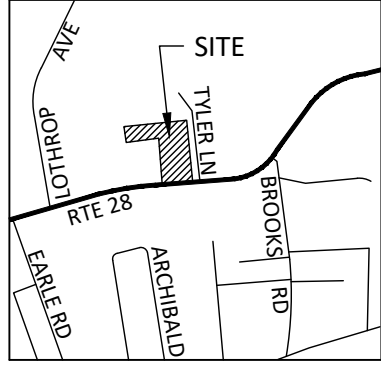
**C-01**

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**STATE HIGHWAY ROUTE 28**  
(1900 STATE LAYOUT, 40-FT)

S:\GENCON\GENCON CONSTRUCTION, LLC\2020-2021\04\17\2020-2021\04\17\2021 2:13 PM

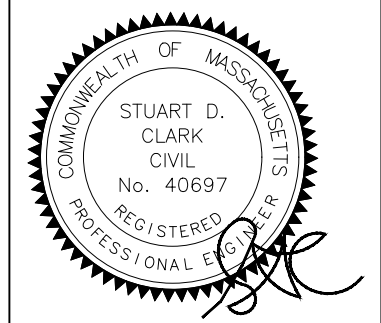


2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

No.	Date	Description
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APPLICANT  
**ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

PROJECT  
**ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA



scale  
**1"=20'**

date  
**December 17, 2020**

project  
20458

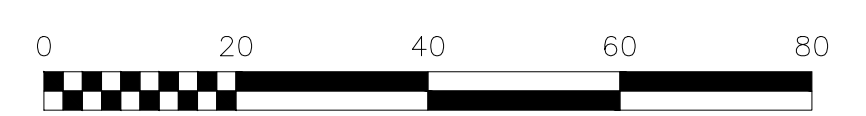
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checked by  
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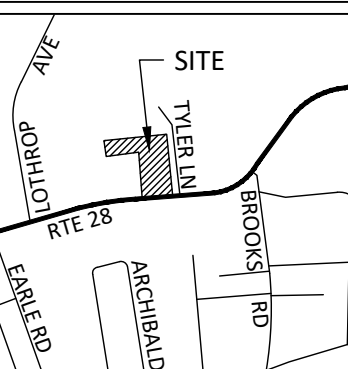
UTILITIES PLAN

**C-02**

**NOT FOR CONSTRUCTION**



DRAWING SCALE: 1" = 20'



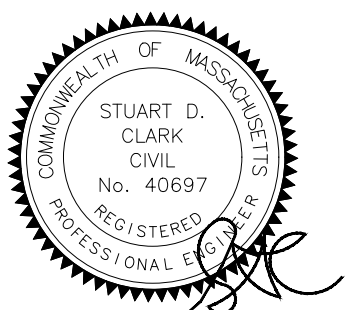
No.	Date	Description
2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

No.	Date	Description
2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

DISCIPLINE

APPLICANT  
**ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

PROJECT  
**ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA



scale  
**AS NOTED**

date  
**December 17, 2020**

project  
**20458**

drawn by  
**SDC/NHE**

checked by  
**SDC**

**ON-SITE  
SANITARY  
DISPOSAL  
SYSTEM**

**C-03**

**TEST PIT INFORMATION**  
DEEP OBSERVATION HOLE #CS1  
SURFACE EL=16.51 NAVD88

DEPTH FROM SURFACE FEET	INCHES	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURE, STONES, BOULDERS, CONSISTENCY, % GRAVEL)
1	0-15"	A	LOAMY SAND	10YR 4/2		
2	15-33"	B	LOAMY SAND	10YR 5/6		
3	33-58"	C1	FINE TO MEDIUM SAND	2.5Y 6/6		SAS LOCATION
4						PERC
5						
6						
7						
8	58-132"	C2	FINE TO MEDIUM SAND	10YR 6/8		
9						
10						
11						BOTTOM OF HOLE=5.51

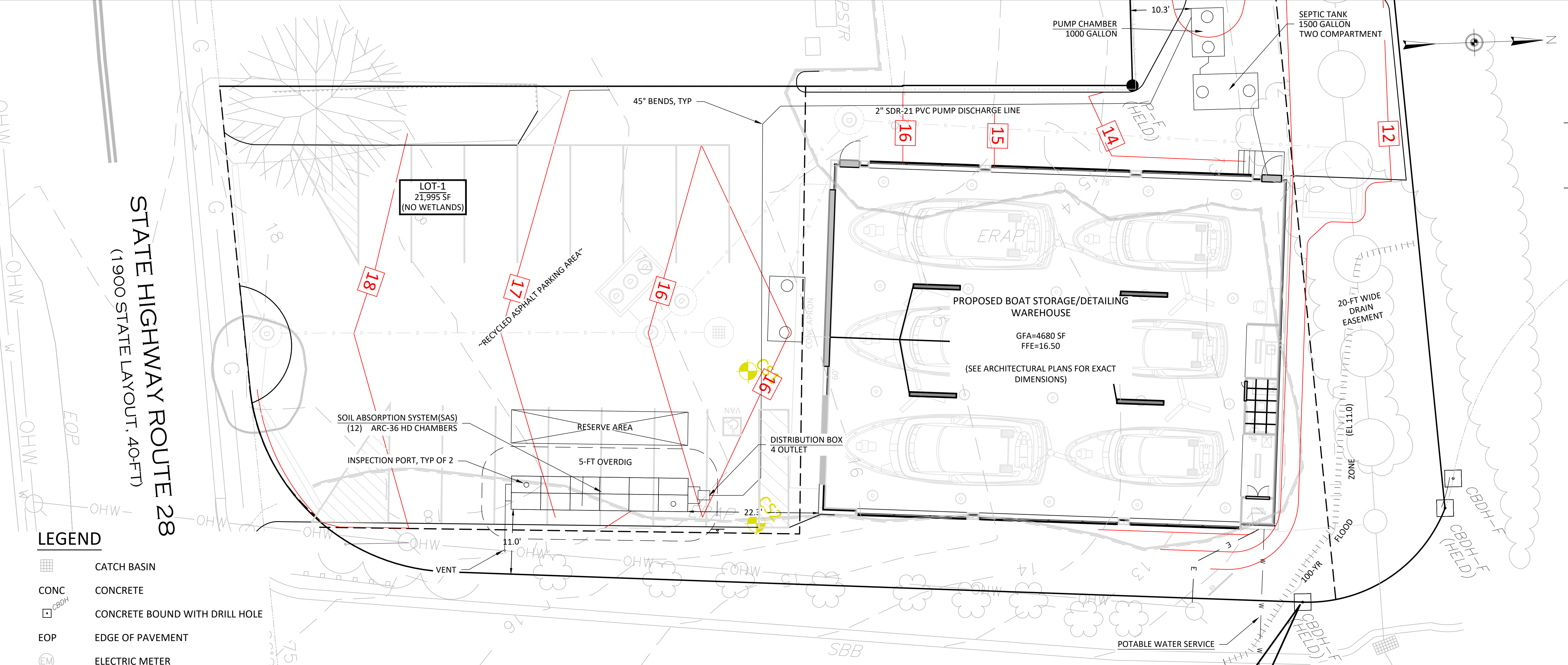
NO GROUNDWATER ENCOUNTERED  
SHGW: BOTTOM OF HOLE = EL 5.5 NAVD88  
TEST PERFORMED: 12/20/19  
SOIL EVALUATOR: C. SHORT  
WITNESS: M. LADUE

**TEST PIT INFORMATION**  
DEEP OBSERVATION HOLE #CS2  
SURFACE EL=16.25 NAVD88

DEPTH FROM SURFACE FEET	INCHES	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURE, STONES, BOULDERS, CONSISTENCY, % GRAVEL)
1	0-12"	A	LOAMY SAND	10YR 4/2		
2	12-36"	B	LOAMY SAND	10YR 5/6		
3	36-132"	C1	MED TO COARSE SAND	10YR 6/8		PERC
4						EL 11.08
5						
6						
7						
8						
9						
10						
11						BOTTOM OF HOLE=5.25

**GENERAL SEPTIC NOTES:**

- ALL RISERS TO BE WATERTIGHT.
- ALL JOINTS TO BE WATERTIGHT.
- ALL PIPES TO BE SCHEDULE 40.
- THE SYSTEM WILL BE AGGREGATE FREE.
- ALL COMPONENTS TO HAVE A MINIMUM OF 12" AND A MAXIMUM OF 36" OF COVER.
- CONTRACTOR TO VERIFY ALL ELEVATIONS AND UTILITY LOCATIONS PRIOR TO CONSTRUCTION. ANY DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
- ALL SEPTIC SYSTEM COMPONENTS TO BE MARKED WITH MAGNETIC MARKING TAPE.
- THERE ARE NO KNOWN CONFLICTS WITH TITLE V, SECTION 15.220(4)(K) (LOCATION OF PUBLIC AND PRIVATE WATER SUPPLIES).
- THERE ARE NO KNOWN SOURCES OF WATER SUPPLY, STREAMS OR DRAINS WITHIN 100' OF THE PREMISES.
- THE EXISTING SEPTIC SYSTEM IS TO BE REMOVED IN ACCORDANCE WITH TITLE 5.
- A ZABEL FILTER IS TO BE INSTALLED AT THE OUTLET THE OF THE SEPTIC TANK.
- THE ZABEL FILTER IS TO BE CLEANED ON AN ANNUAL BASIS.
- USE (12) ARC36HC IN AN AGGREGATE FREE BED. (SEE DEP APPROVAL LETTER X264258) DATED JUNE 12, 2015.
- COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOH AND PERMISSION OBTAINED FROM BOH.
- THE UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN COMPILED FROM SURFACE EVIDENCE AND RECORD PLANS. BEFORE CONSTRUCTION, THE APPROPRIATE UTILITY COMPANY AND DIG-SAFE 888-DIG-SAFE SHOULD BE CONTACTED.
- STOCK PILING OF MATERIALS, PARKING OR VEHICULAR TRAFFIC PROHIBITED OVER THE LEACHING AREA DURING CONSTRUCTION.
- SYSTEM AREA TO BE STAKE AND FLAGGED UNTIL A CERTIFICATE OF COMPLIANCE IS ISSUED.
- THE SYSTEM IS NOT LOCATED ON A NITROGEN SENSITIVE AREA.



**LEGEND**

	CATCH BASIN
	CONCRETE
	CONCRETE BOUND WITH DRILL HOLE
	EDGE OF PAVEMENT
	ELECTRIC METER
	EXISTING CONTOUR
	FLOOD ZONE LIMIT
	FOUND
	GAS LINE
	HYDRANT
	IRON PIN
	LANDSCAPED AREA
	OVERHEAD WIRE
	PROPOSED CONTOUR
	TEST PIT
	UTILITY POLE

**GENERAL NOTES**

THE SANITARY DISPOSAL SHALL BE CONSTRUCTED IN STRICT CONFORMANCE WITH THE STATE ENVIRONMENTAL CODE, TITLE V, AND REGULATION OF THE LOCAL BOARD OF HEALTH.

WHERE REQUIRED, ALL UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED TO THE LIMITS SHOWN OR NOTED ON THE PLAN. REPLACEMENT FILL SHALL CONFORM WITH REQUIREMENTS OF 310CMR15.255(3).

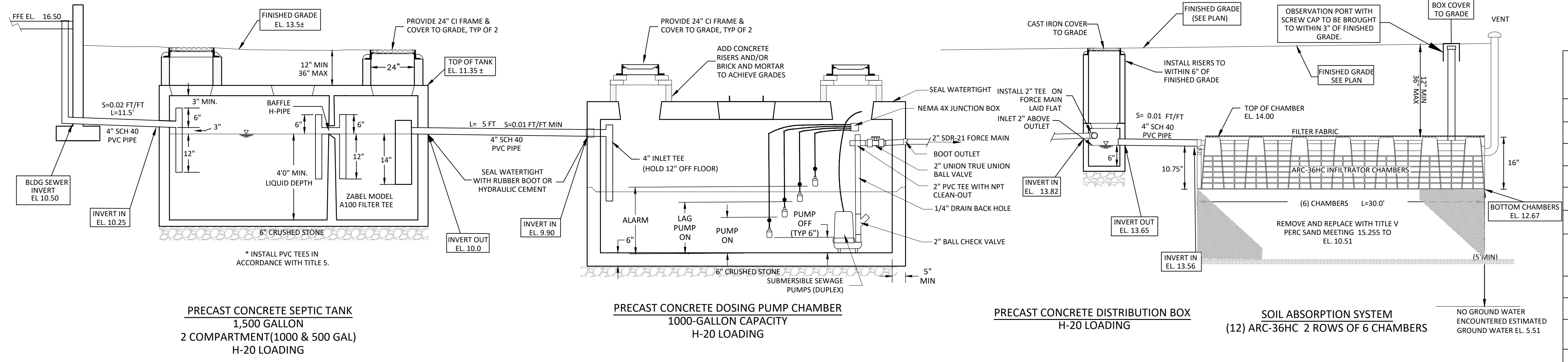
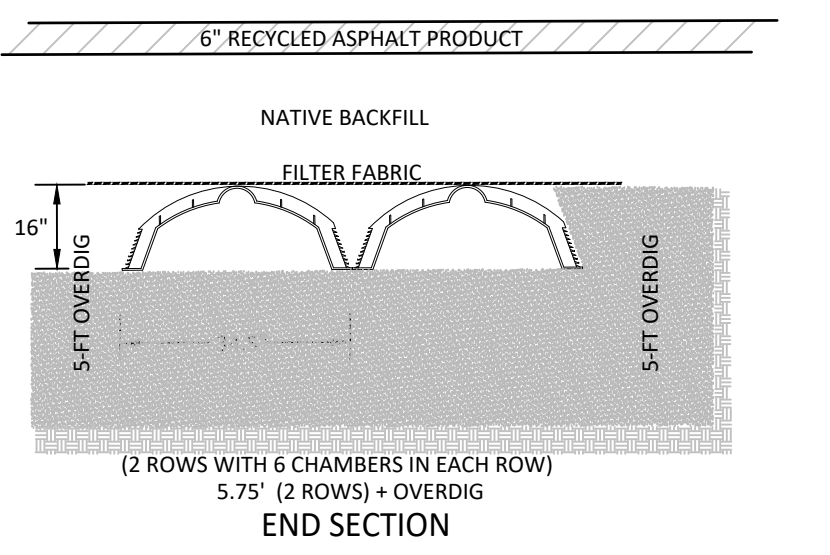
ALL BENCHMARKS SHOWN HEREON MUST BE VERIFIED FOR CONSISTENCY BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY DISCREPANCIES MUST BE RESOLVED BY THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.

UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN COMPILED FROM RECORD PLANS AND BEST AVAILABLE INFORMATION. THESE UTILITIES HAVE NOT BEEN FIELD VERIFIED AND THE ACTUAL LOCATION IS NOT GUARANTEED. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITIES AND OTHER SUBSURFACE STRUCTURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT DIG-SAFE AT 1-888-344-7233 A MINIMUM OF 72-HOURS PRIOR TO EXCAVATION FOR UTILITY MARK OUT. THE CONTRACTOR SHALL ALSO CONTACT VARIOUS LOCAL COMPANIES AND/OR AGENCIES WHO DO NOT PARTICIPATE IN THE DIG-SAFE PROGRAM FOR ADDITIONAL UTILITY MARK OUT.



**ELEVATION SCHEDULE**

TOP OF FOUNDATION	18.00
INVERT @ FOUNDATION	10.50
INVERT INTO SEPTIC TANK	10.25
INVERT OUT OF SEPTIC TANK	10.00
INVERT INTO PUMP CHAMBER	9.90
INVERT INTO DISTRIBUTION BOX	13.82
INVERT OUT OF DISTRIBUTION BOX	13.65
BOTTOM OF S.A.S.	12.67
BREAKOUT ELEVATION (TOP OF CHAMBER)	115.43
ESTIMATED SEASONAL HIGH GROUNDWATER (TEST PIT CS1)	5.51



**PUMP ELEVATION SCHEDULE**

	EL.
CHAMBER FLOOR	5.23
LEAD/LAG PUMP OFF	5.73
LEAD PUMP ON	6.23
LAG PUMP ON	6.73
HIGH-WATER ALARM	7.23
EMERGENCY STORAGE (PUMP ON TO INVERT)	1160 GAL
DOSE VOLUME	160 GAL
DOSES PER DAY	1
APPROXIMATE PUMP RUN TIME	8 MIN
TDH	15.5'

**DESIGN CALCULATIONS**

DESIGN FLOW: 310CMR15.203  
FACTORY, INDUSTRIAL PLANT, WAREHOUSE OR DRY STORAGE SPACE WITHOUT CAFETERIA  
15 GPD PER EMPLOYEE  
DESIGN FLOW = 6 EMPLOYEES x 15 GPD/EMPLOYEE = 90 GPD (USE DESIGN FLOW OF 200 GPD)

SEPTIC TANK: 310CMR15.223  
DESIGN FLOW = 200 GPD  
X 200%  
REQUIRED SIZE = 400 GAL  
USE 2 COMPARTMENT TANK  
COMPARTMENT 1 TANK 1,000 GAL  
COMPARTMENT 2 TANK 500 GAL  
1500 GAL

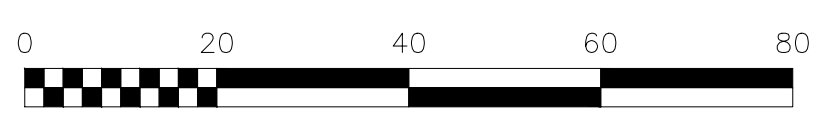
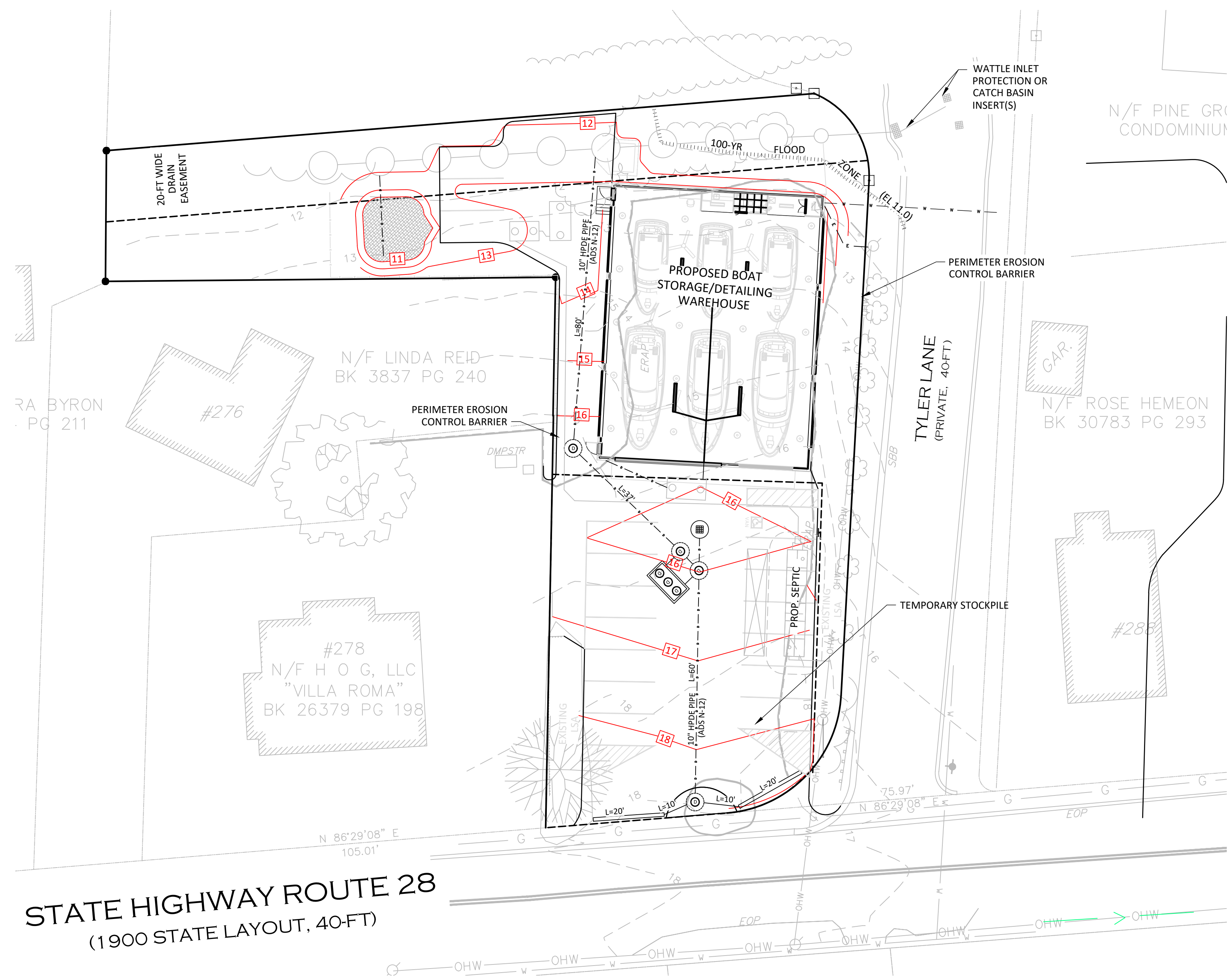
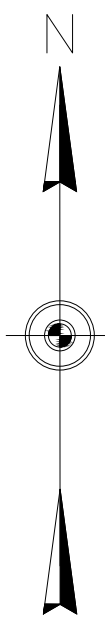
SOIL ABSORPTION SYSTEM 310CMR15.242  
DESIGN PERCOLATION RATE: <5 MPI  
SOIL TEXTURAL CLASS: CLASS I  
LONG TERM ACCEPTANCE RATE (LTAR): 0.74 GPD/SF  
AREA REQUIRED: 200 GPD/0.74 GPD/SF = 270 SF  
USE ARC-36 HIGH CAPACITY INFILTRATOR CHAMBERS AGGREGATE FREE - BED CONFIGURATION  
NUMBER OF CHAMBERS REQUIRED:  
270 SF/4.80 SF/LF = 56 LF  
56 LF/(5 LF/CHAMBER) = 11 CHAMBERS  
USE 2 ROWS OF 6 CHAMBERS = 12 CHAMBERS TOTAL  
12 x 5 LF x 4.80 SF/LF x 0.74 GPD/SF = 213 GPD  
SYSTEM IS NOT DESIGNED FOR A GARBAGE GRINDER

**PRECAST CONCRETE NOTES:**

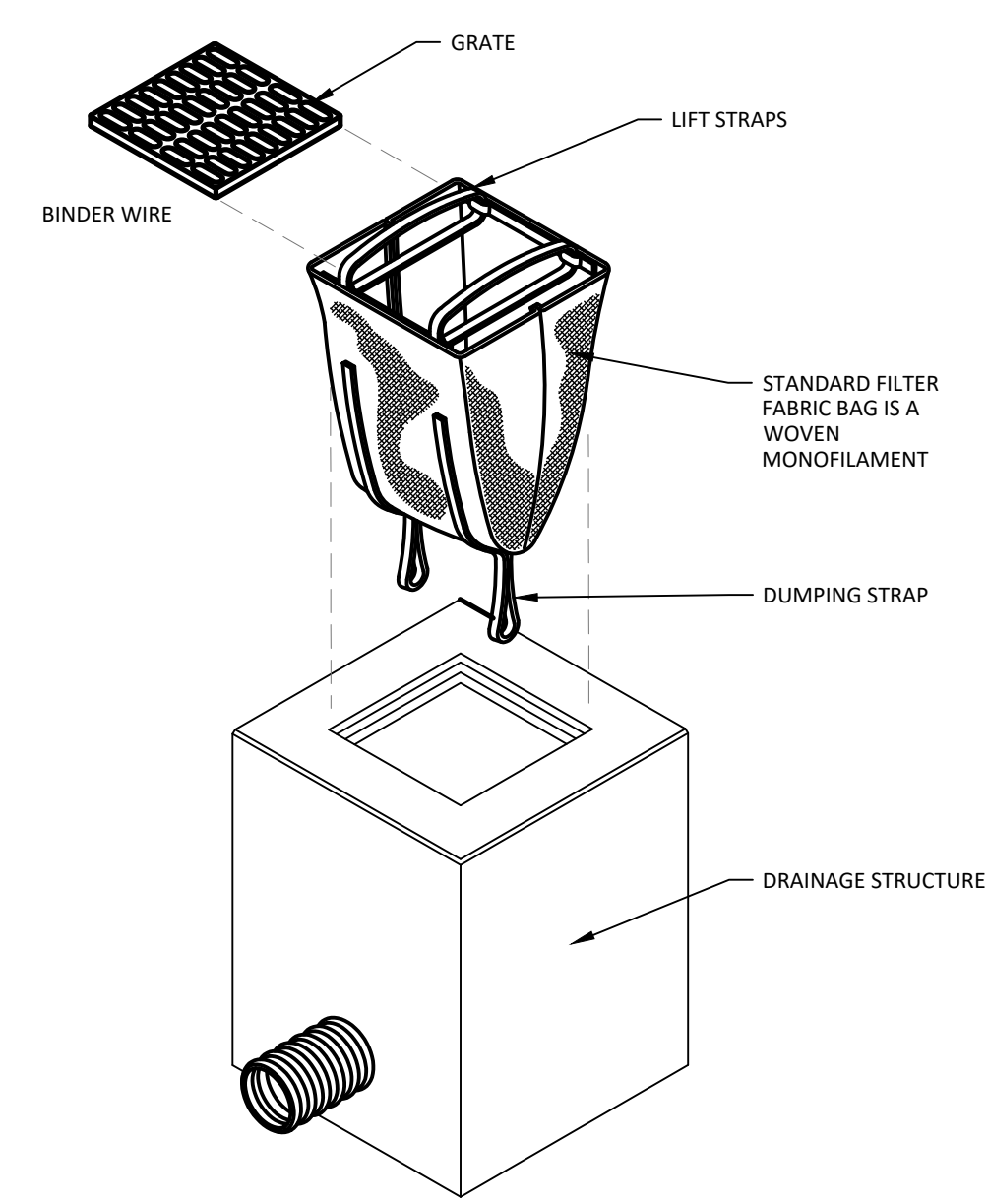
- CONCRETE: 5,000 PSI MINIMUM AFTER 28 DAYS.
- DESIGN CONFORMS WITH 310 CMR 15.00 DEP TITLE 5 REGS FOR SEPTIC TANKS.
- ALL REINFORCEMENT PER ASTM C1227
- DESIGNED FOR ASHTO H5-20 LOADING, COVER 1.5 FT.
- TONGUE AND GROOVE JOINT SEALED WITH BUTYL RESIN, INLET HEIGHT MAY INCREASE SLIGHTLY DUE TO THE BUTYL RESIN USED.

DUPLEX PUMPS SHALL ALTERNATE OPERATION. SUBMERSIBLE SEWAGE PUMPS SHALL BE CAPABLE OF PUMPING 20 GPM AGAINST THE TOTAL DYNAMIC HEAD (TDH) AND SHALL BE CAPABLE OF PASSING A 1" SOLID.

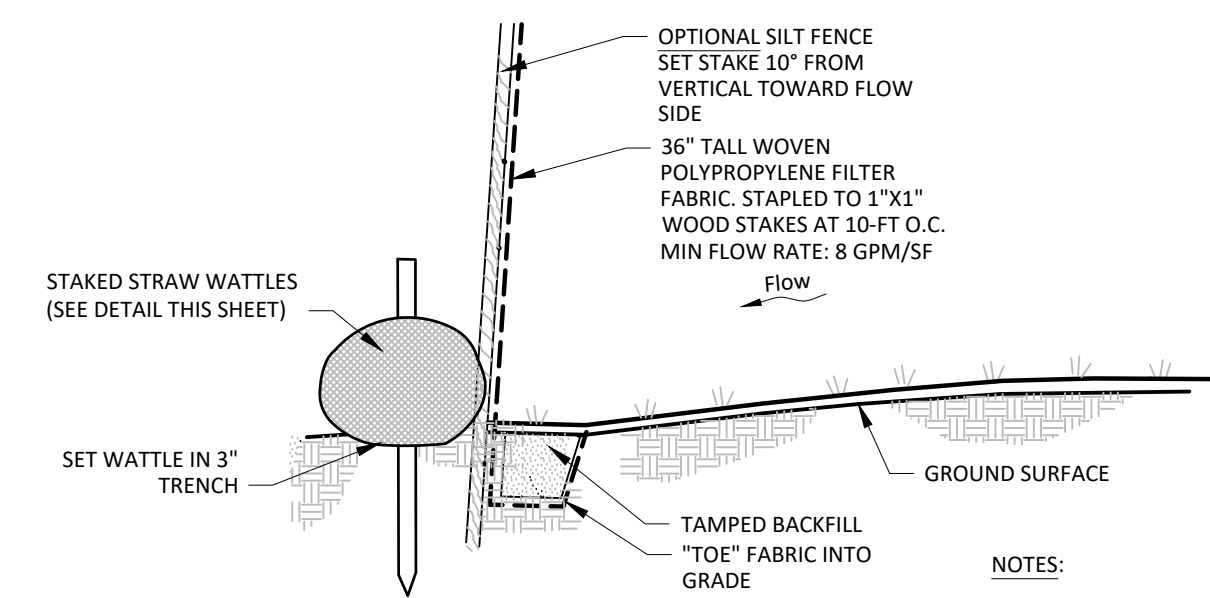
**SANITARY SYSTEM PROFILE**  
NOT TO SCALE



DRAWING SCALE: 1" = 20'



CATCH BASIN INSERT  
NOT TO SCALE

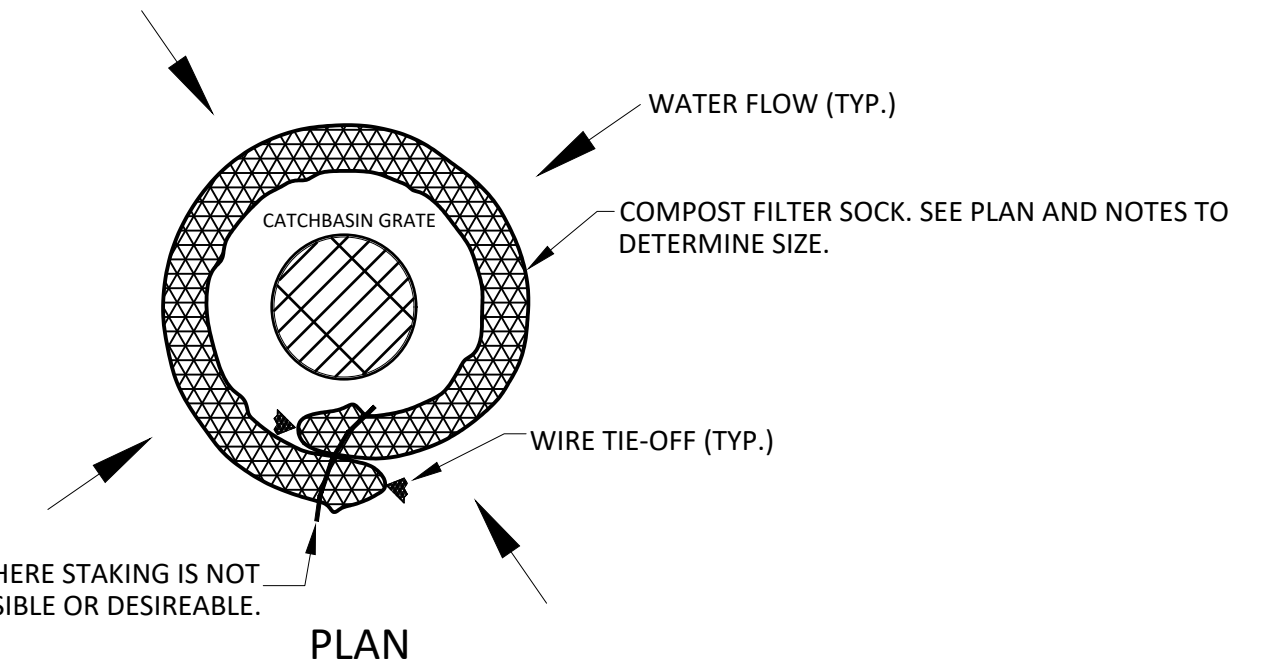


EROSION CONTROL BARRIER  
NOT TO SCALE

- NOTES:
1. WATTLE AND SILT FENCE COMBINATION SHALL BE INSTALLED AS THE PRIMARY PERIMETER EROSION CONTROL DEVICE AT LOCATIONS SHOWN ON SHEET C-02.
  2. SILT FENCE AND POSTS FROM APPROVED MANUFACTURER/SUPPLIER SET TO MANUFACTURERS SPECIFICATION.
  3. STRAW BALES MAY BE USED AS AN ALTERNATE FOR THE WATTLES AS SHOWN BELOW.

GENERAL CONSTRUCTION SEQUENCE

1. INSTALL PERIMETER EROSION CONTROL MEASURES AND CATCH BASIN CONTROLS.
2. INSTALL TEMPORARY CONSTRUCTION FENCE IF DESIRED.
3. SCRAPE AND STOCKPILE EXISTING RECYCLED ASPHALT PAVEMENT. RING WITH WATTLE EROSION CONTROL.
4. EXCAVATE AND INSTALL RAIN GARDEN INCLUDING DRAIN PIPE CONNECTIONS TO EXISTING INFILTRATION.
5. EXCAVATE AND INSTALL SEPTIC TANK AND PUMP CHAMBERS.
6. EXCAVATE AND INSTALL BUILDING FOUNDATION. CONSTRUCT BUILDING.
7. EXCAVATE AND INSTALL REMAINING STORMWATER PIPING AND STRUCTURES, REMAINING SEPTIC COMPONENTS, AND UTILITY CONNECTIONS.
8. SPREAD AND ALIGNMENT RECYCLED ASPHALT PAVEMENT AS NECESSARY. ROLL AND COMPACT.
9. FINAL GRADING AND LANDSCAPING.
10. REMOVE EROSION CONTROLS AFTER SOILS ARE STABILIZED.



WATTLE INLET PROTECTION  
NOT TO SCALE

NOTES:

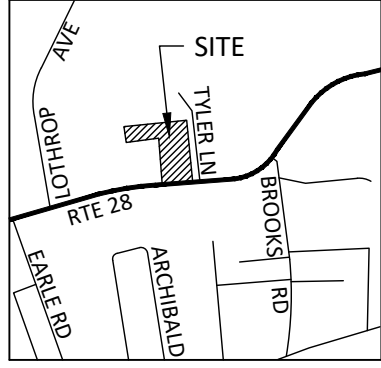
1. OVERLAP ENDS OF SOCK PER MANUFACTURERS RECOMMENDATIONS - ONE FOOT MINIMUM, 3 FEET MAXIMUM.
2. USE 8"-12" DIA. SOCK IN CURBSIDE OR TRAFFICED AREAS.
3. USE 12"-18" DIA. SOCK IN NON-TRAFFICED AREAS.
4. INSPECT AND MAINTAIN THROUGHOUT CONSTRUCTION.
5. SOCK AND COMPOST MATERIAL TO BE REMOVED FROM SITE WHEN CONSTRUCTION IS COMPLETE.



323 Manley Street  
W. Bridgewater, MA  
www.GenConDB.com



Green Seal Environmental, Inc.  
114 State Road, Building B  
Sagamore Beach, MA 02562  
Tel: (508) 888-6034 www.gseenv.com



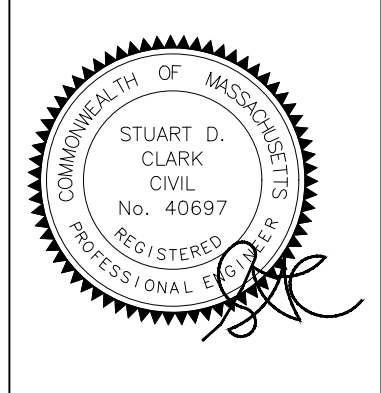
2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

DISCLAIMER

No.	Date	Description
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APPLICANT  
**ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

PROJECT  
**ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA



scale  
1"=20'

date  
December 17, 2020

project  
20458

drawn by  
SDC/NHE

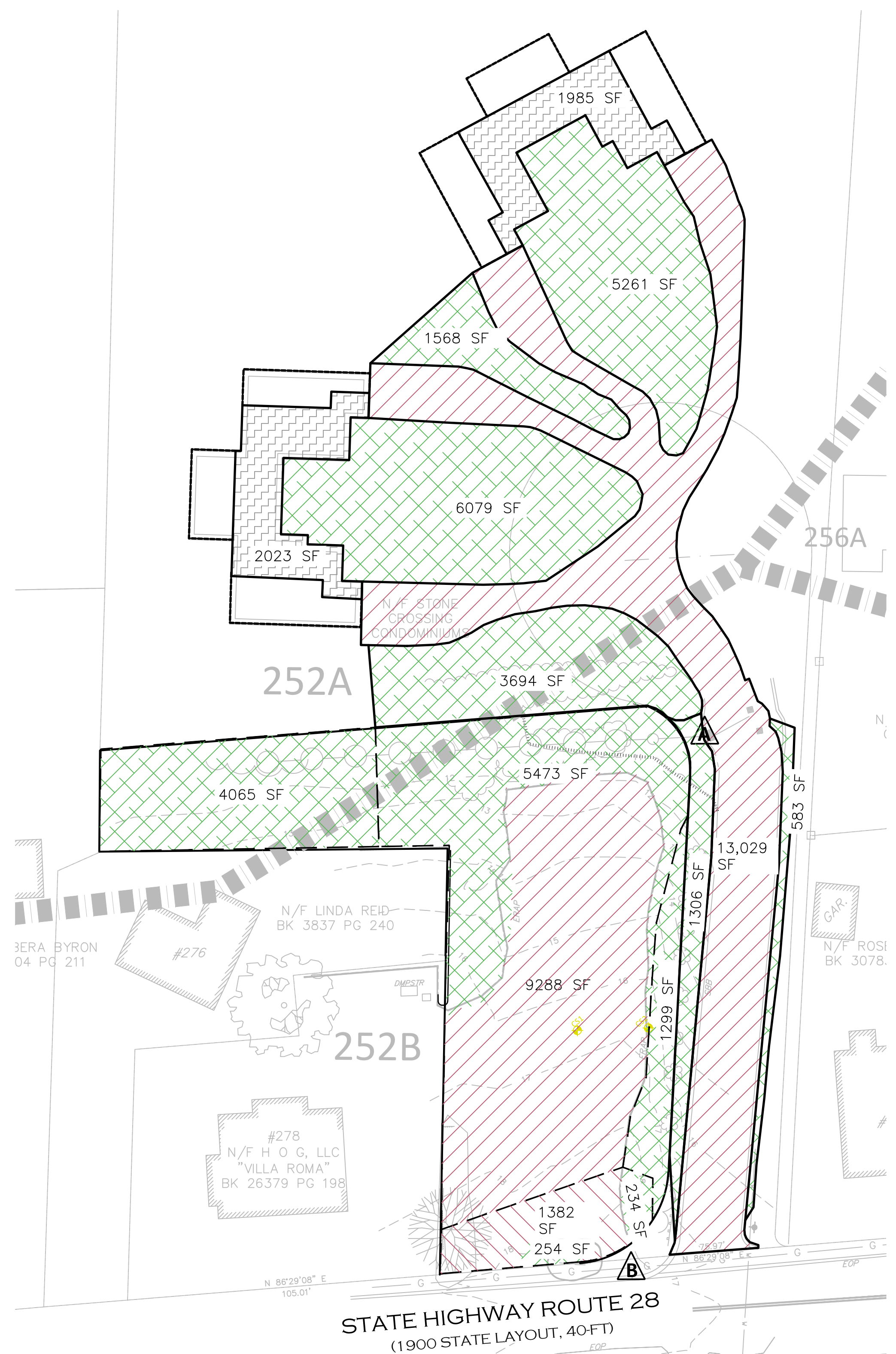
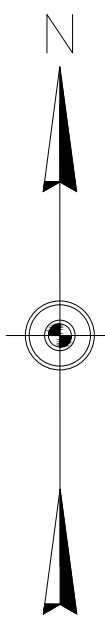
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NOT FOR CONSTRUCTION

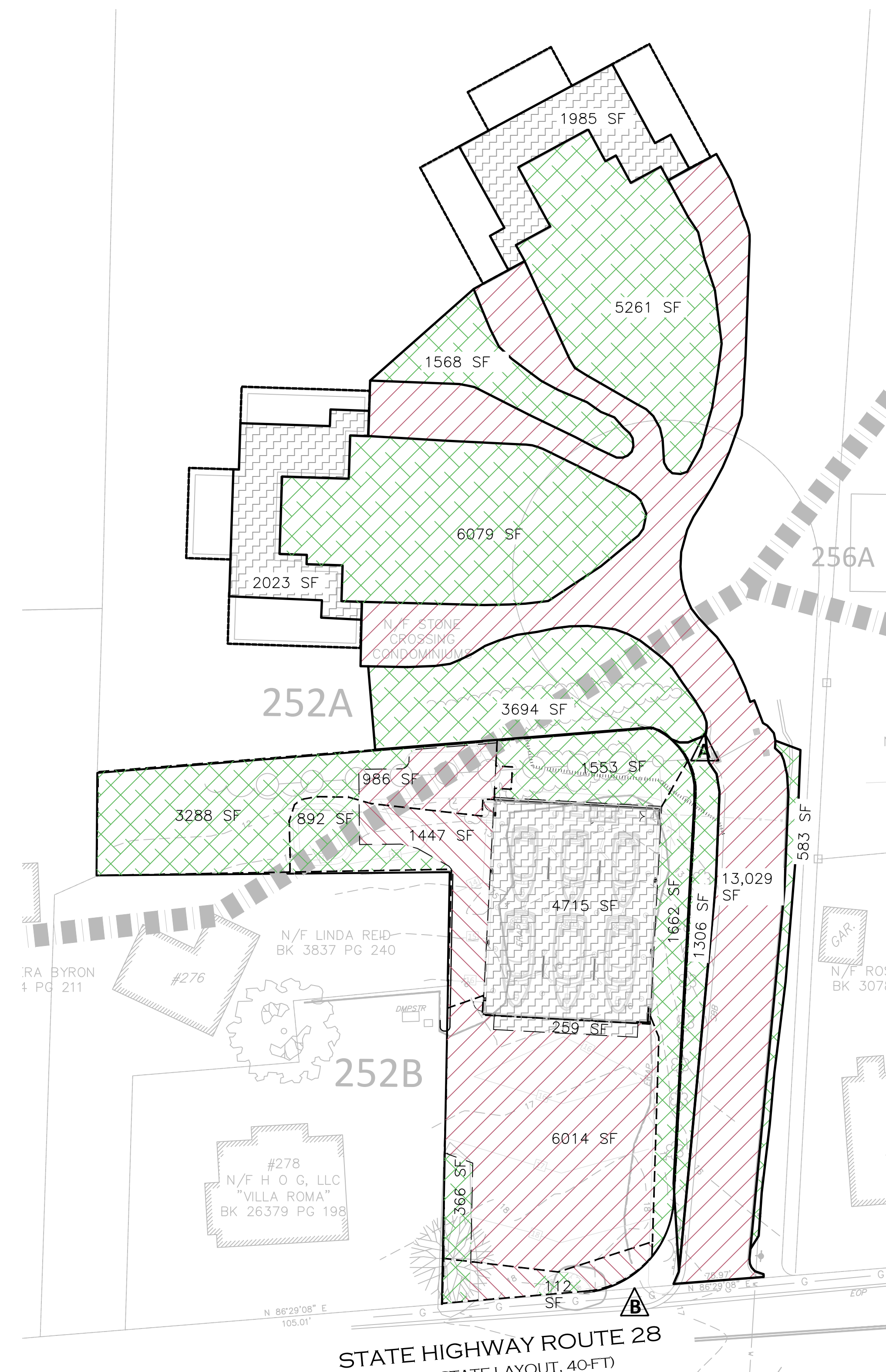
EROSION AND  
SEDIMENT  
CONTROL  
PLAN

C-04

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**EXISTING CONDITION WATERSHED AREAS**



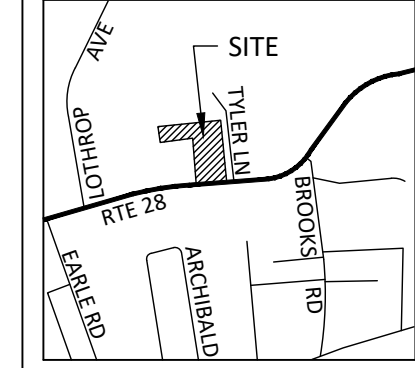
**POST DEVELOPMENT WATERSHED AREAS**

- RECYCLED APHLALT PRODUCT (CN 96)
- ROOF & APRON AREA (CN 98)
- GRASS/LANDSCAPE

**NOT FOR CONSTRUCTION**

0 30 60 90 120

DRAWING SCALE: 1" = 30'

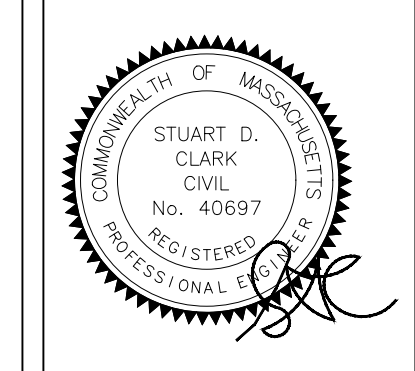


2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

No.	Date	Description
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APPLICANT: **ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

PROJECT: **ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA



scale: **1"=30'**

date: **December 17, 2020**

project: **20458**

drawn by: **SDC/NHE**

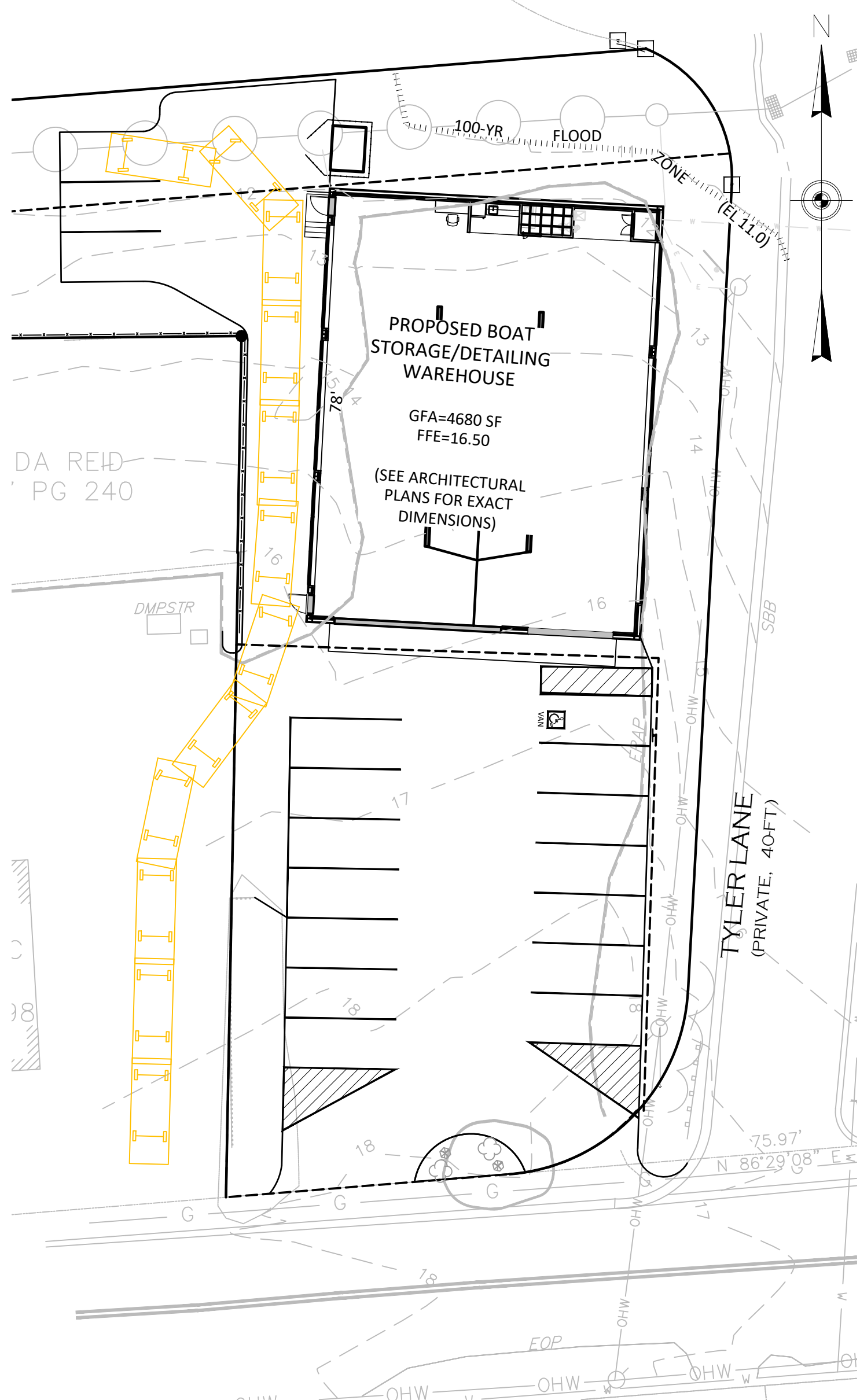
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**WATERSHED AREAS**

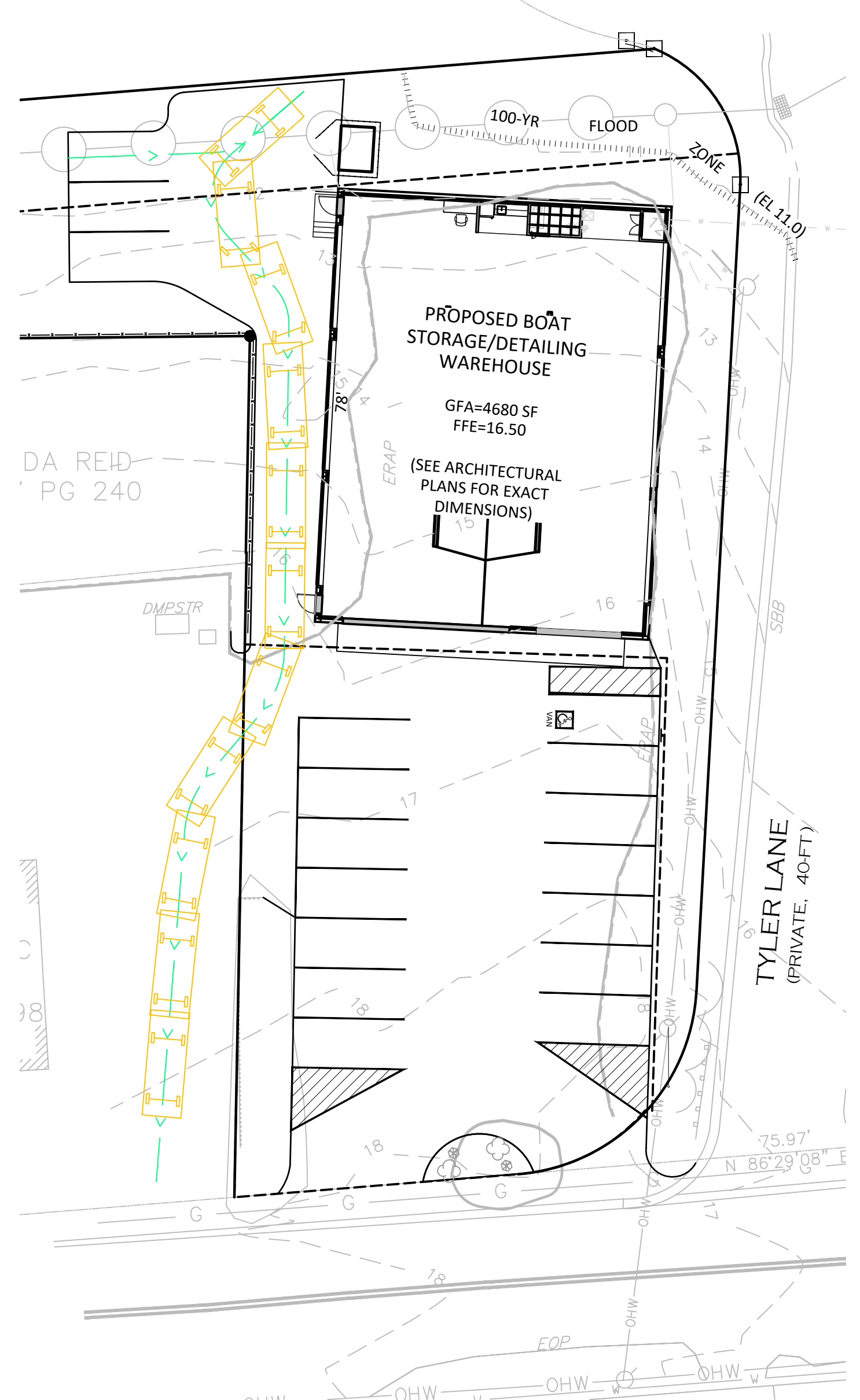
**C-05**

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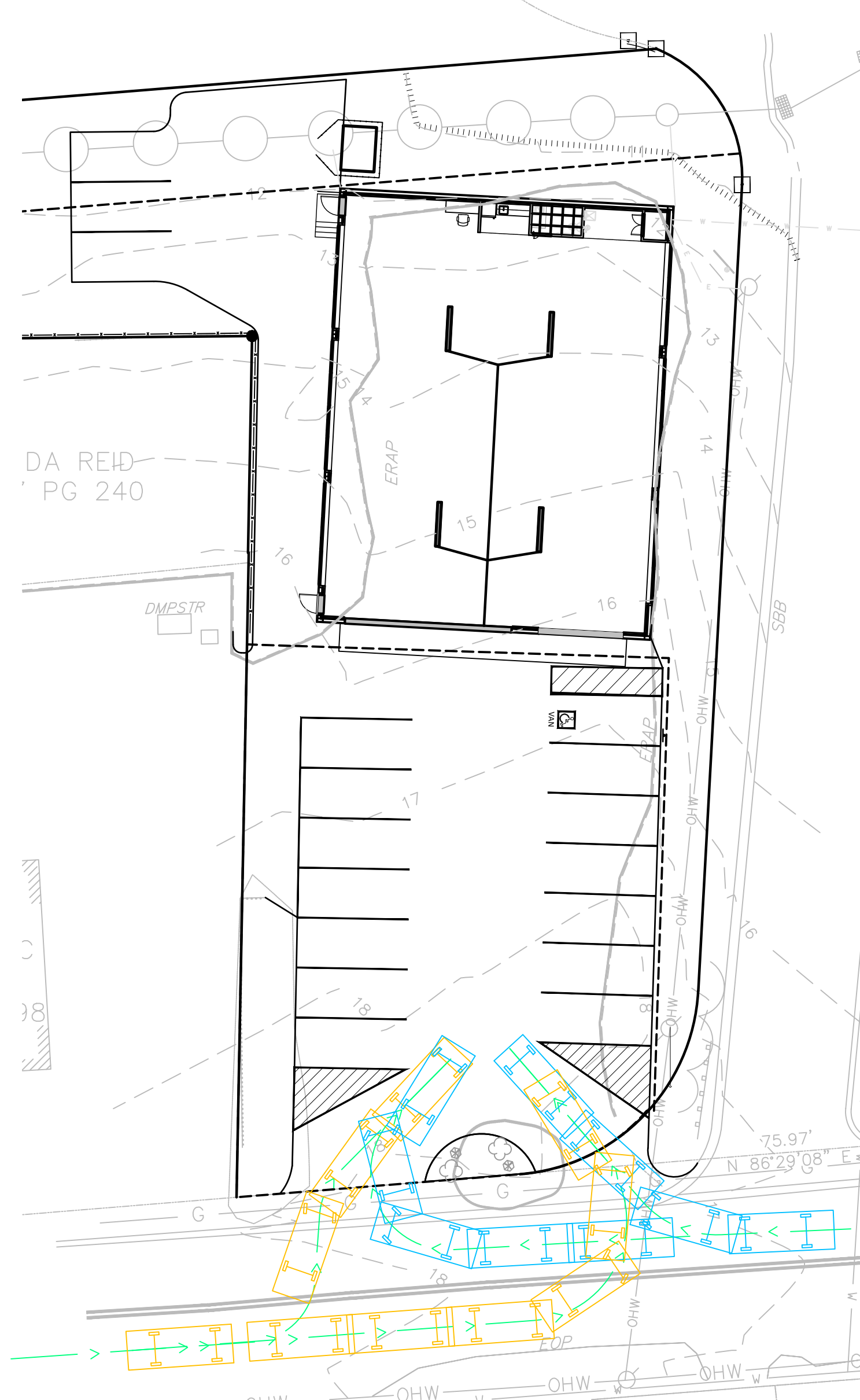




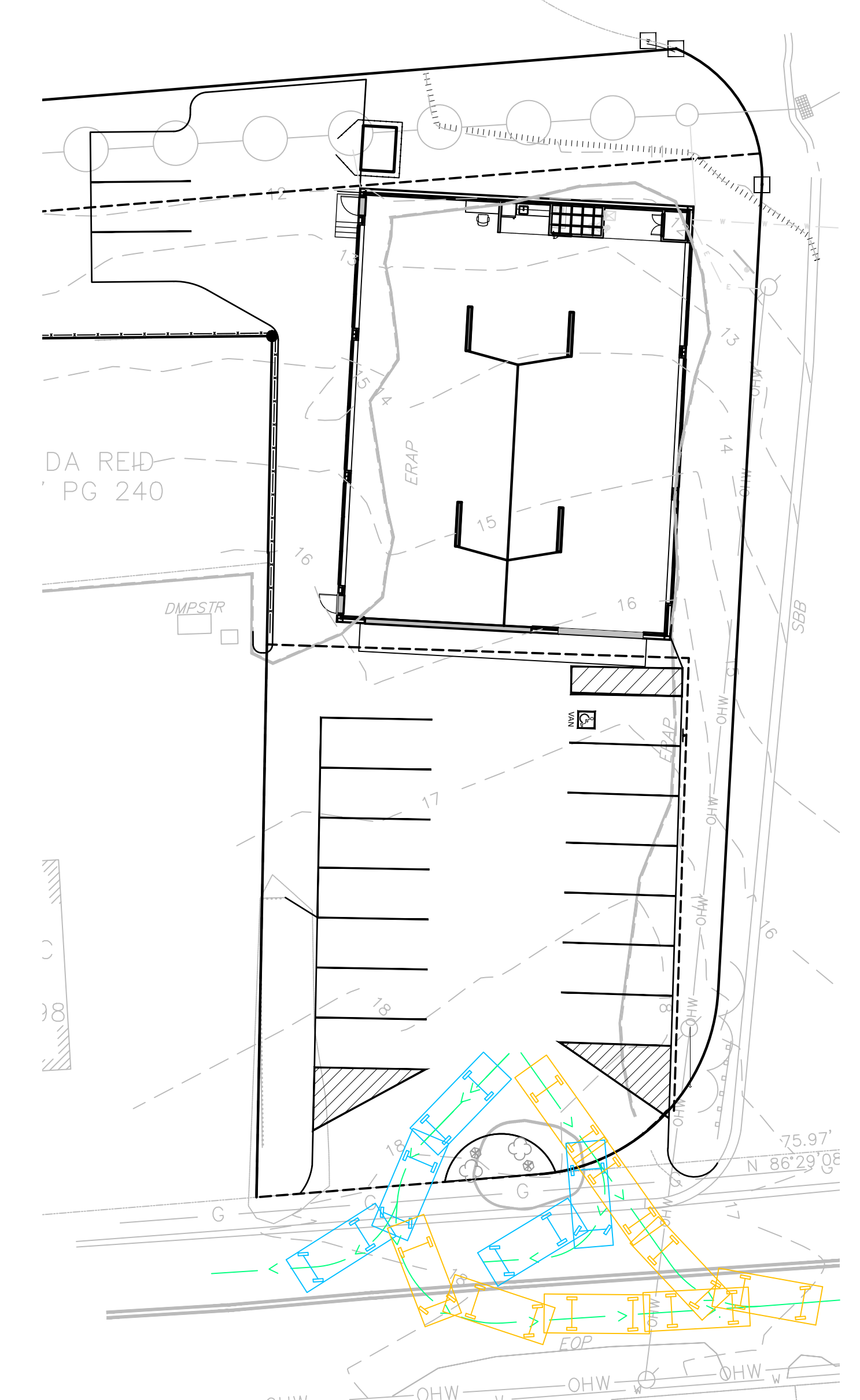
RESTAURANT EMPLOYEE INGRESS



RESTAURANT EMPLOYEE EGRESS

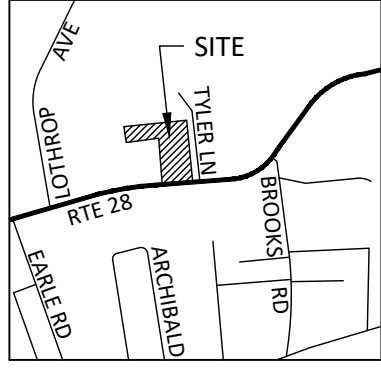


MAIN PARKING INGRESS



MAIN PARKING EGRESS

- TRAFFIC/PARKING NOTES:
1. HISTORICALLY, THE VILLA ROMA (RESTAURANT) HAS BEEN USING THE GRAVEL AREA ON THIS PARCEL FOR NON-STRUCTURED PARKING. THE INTENT OF THIS PARKING PLAN IS TO ALLOW FOR CONTINUED/SHARED USE IN A MORE FORMALIZED SETTING.
  2. OPERATIONALLY, THE MAIN PARKING LOT WILL BE SHARED BY THE APPLICANT AND THE RESTAURANT. THE APPLICANT WILL UTILIZE THE MAIN PARKING FROM 1AM TO 5PM. THE RESTAURANT WILL HAVE EXCLUSIVE USE OF THE MAIN PARKING LOT FROM 5PM TO 1AM.
  3. THE THREE (3) SPOTS DESIGNATED AT THE REAR OF THE PROPERTY ARE INTENDED FOR RESTAURANT EMPLOYEE DAYTIME PARKING (1AM TO 5PM).

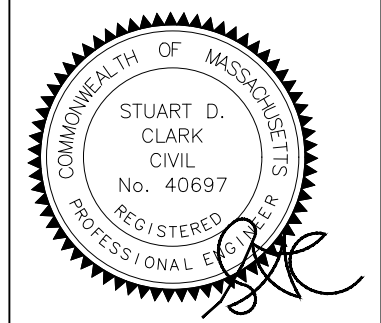


2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

No.	Date	Description
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owner **ALLEN HARBOR MARINE**  
335 LOWER COUNTY RD, HARWICH PORT, MA

project **ALLEN HARBOR MARINE BLDG**  
282 ROUTE 28, HARWICH PORT, MA



scale **1"=20'**

date **December 17, 2020**

project **20458**

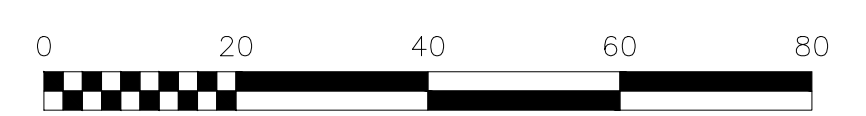
drawn by **SDC/NHE**

checked by **SDC**

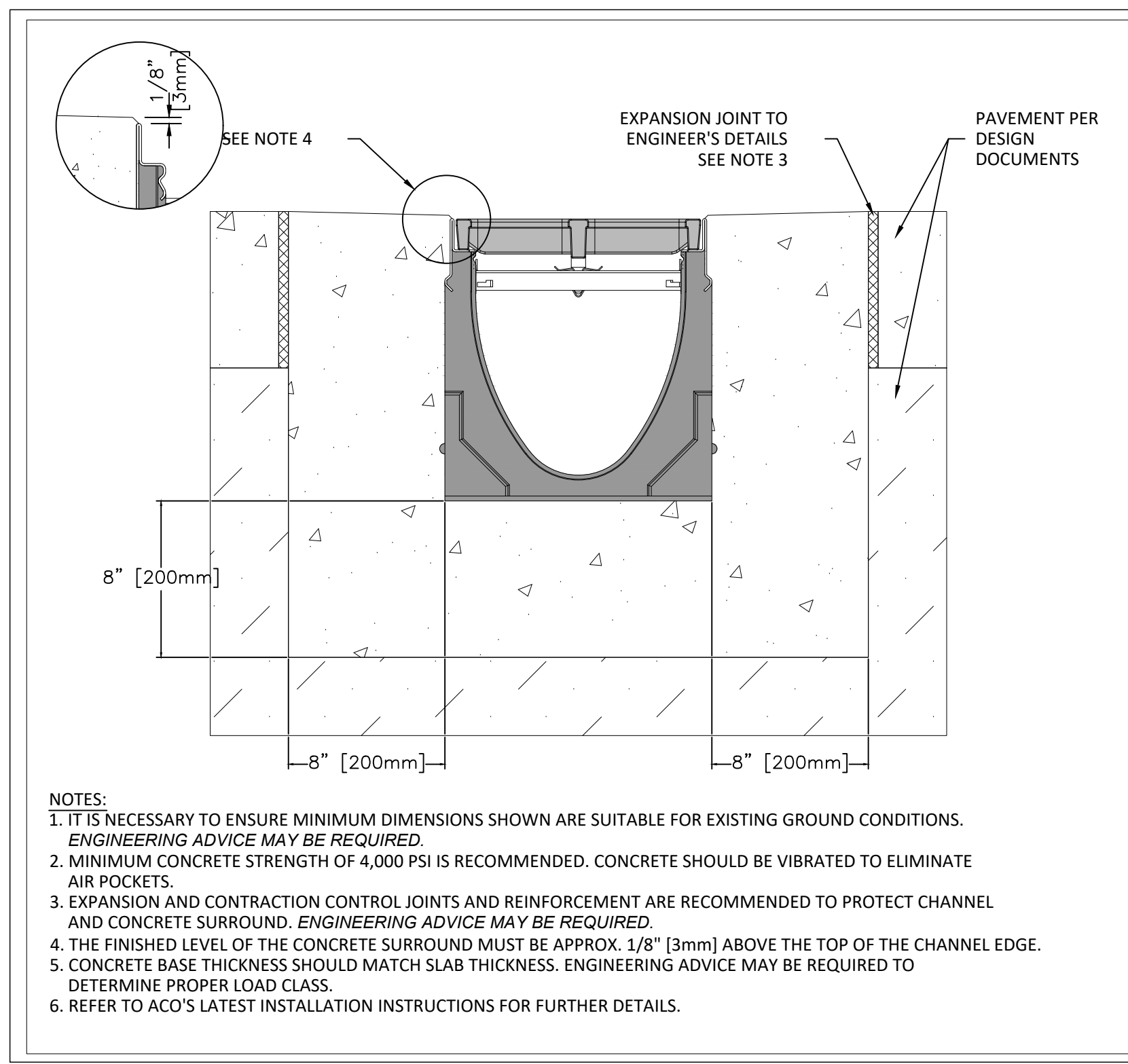
TRAFFIC  
CIRCULATION  
PLAN

**C-06**

**NOT FOR CONSTRUCTION**



DRAWING SCALE: 1" = 20'



**SPECIFICATION CLAUSE**  
**K200 KLASIKDRAIN - LOAD CLASS C**

**GENERAL**  
 THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K200 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

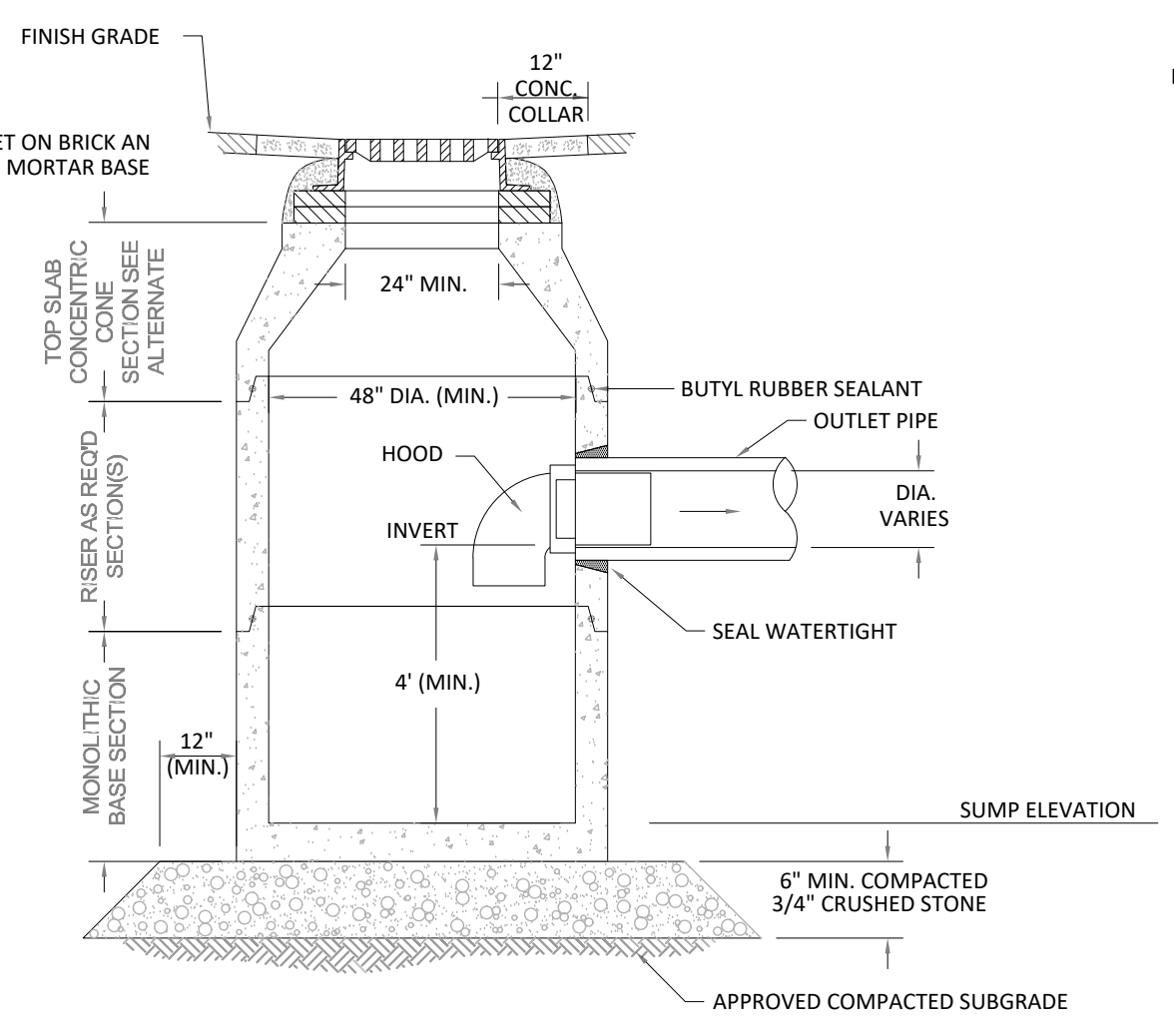
**MATERIALS**  
 CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:  
 COMPRESSIVE STRENGTH: 14,000 PSI  
 FLEXURAL STRENGTH: 4,000 PSI  
 TENSILE STRENGTH: 1,500 PSI  
 WATER ABSORPTION: 0.07%  
 FROST PROOF: YES  
 DILUTE ACID AND ALKALI RESISTANT: YES  
 B117 SALT SPRAY TEST COMPLIANT: YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "M" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

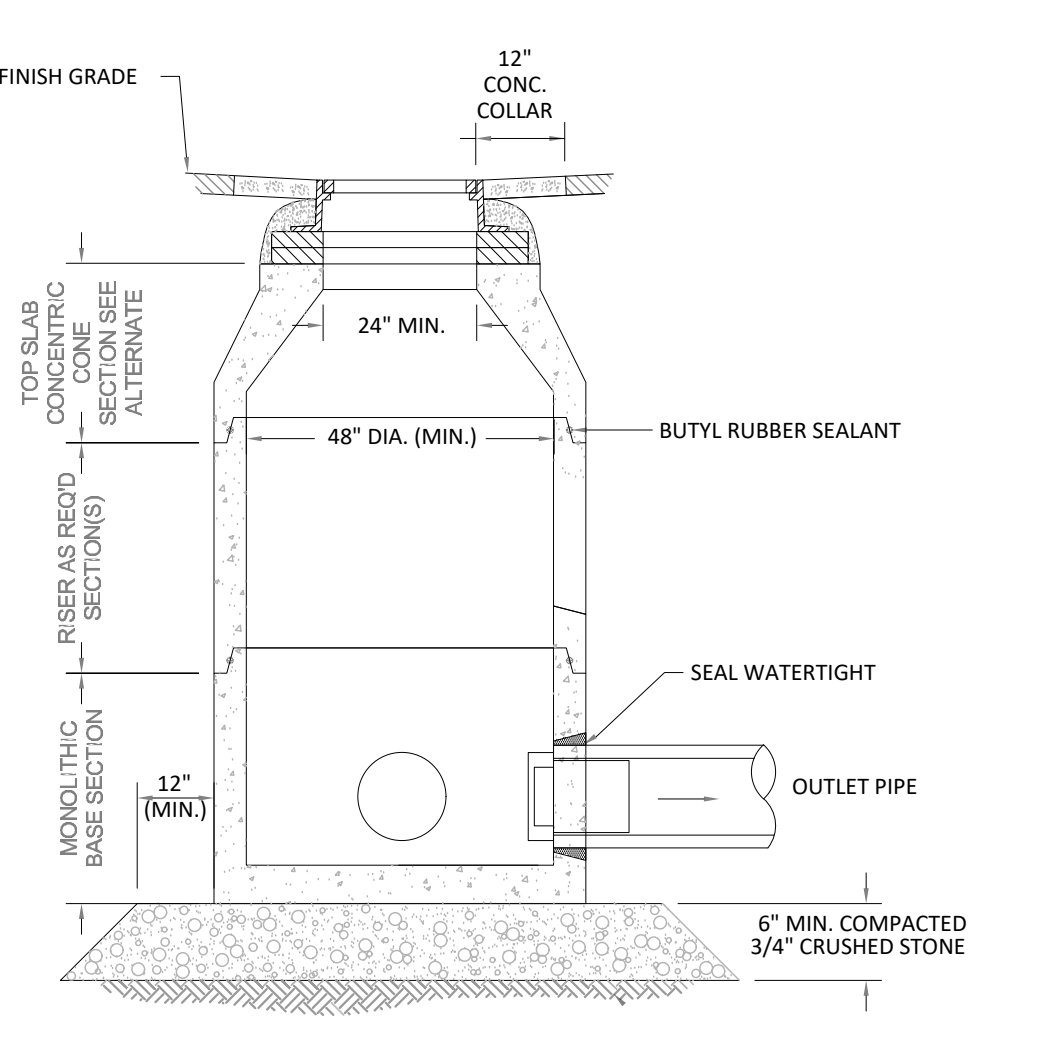
CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING "QUICKLOK" BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

- NOTES:**
- IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. ENGINEERING ADVICE MAY BE REQUIRED.
  - MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
  - EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. ENGINEERING ADVICE MAY BE REQUIRED.
  - THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" (3mm) ABOVE THE TOP OF THE CHANNEL EDGE.
  - CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
  - REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.



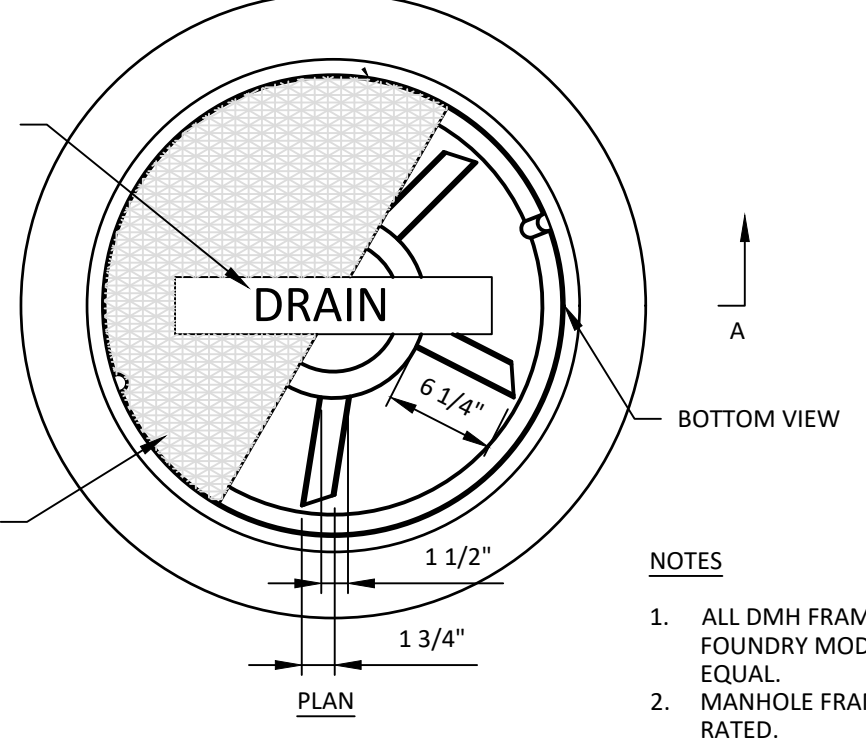
**DEEP SUMP HOODED CATCH BASIN**  
 NOT TO SCALE

- NOTES:**
- CONCRETE STRENGTH 4,000 PSI @ 28 DAYS.
  - CEMENT: PORTLAND TYPE II PER ASTM C150.
  - STEEL REINFORCING: ASTM A-615, Grade 60.
  - DESIGN LOAD: AASHTO H-20.
  - USE ECCENTRIC FLAT TOP WITH 24" OPENING WHERE DEPTH TO INVERT IS LESS THAN 5-FT.
  - STRUCTURE IS TO BE SET ON WELL COMPACTED 12" BED OF CRUSHED STONE.



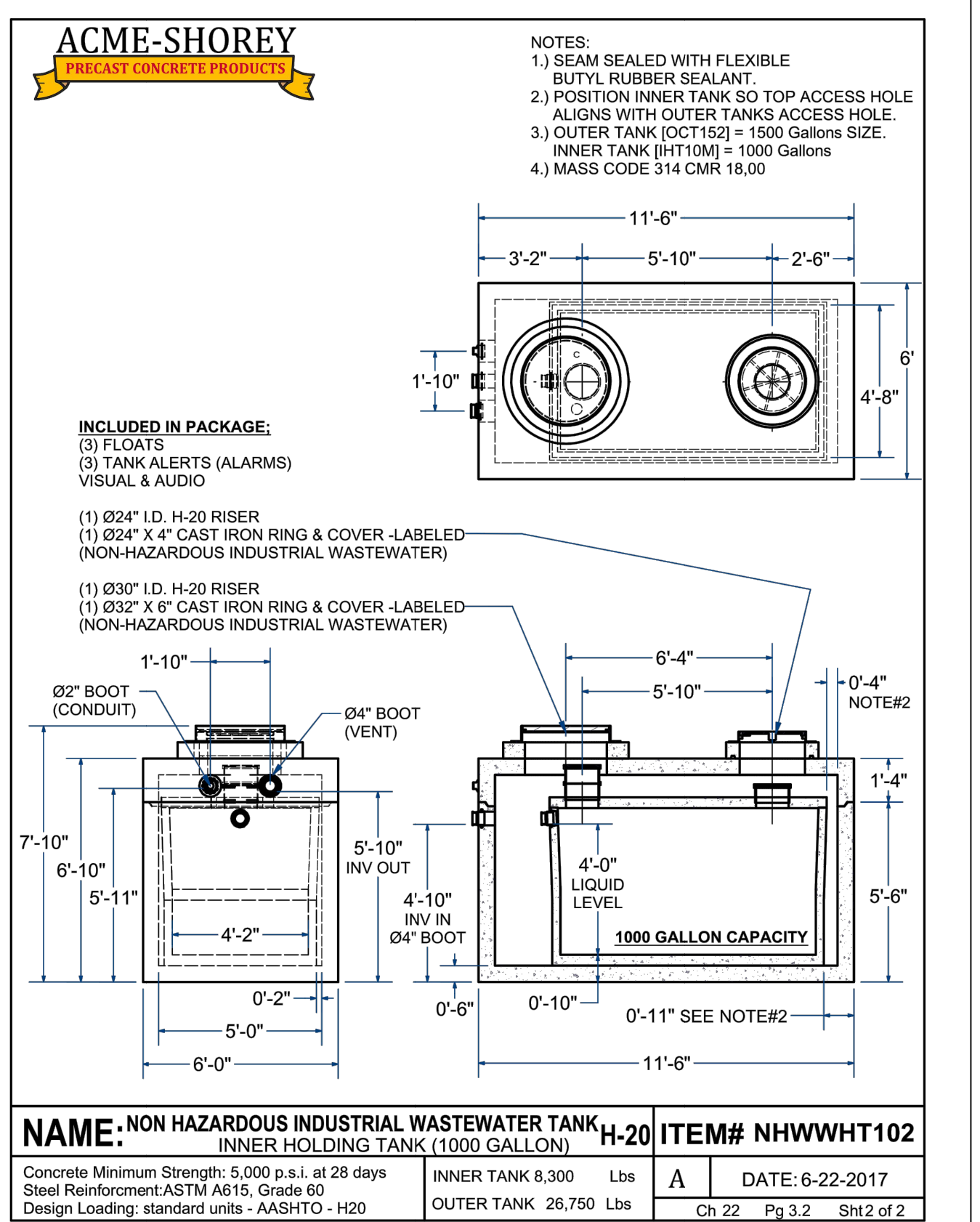
**DRAIN MANHOLE**  
 NOT TO SCALE

NOTE: COVER RAISED DIAMOND DESIGN



NOTES:

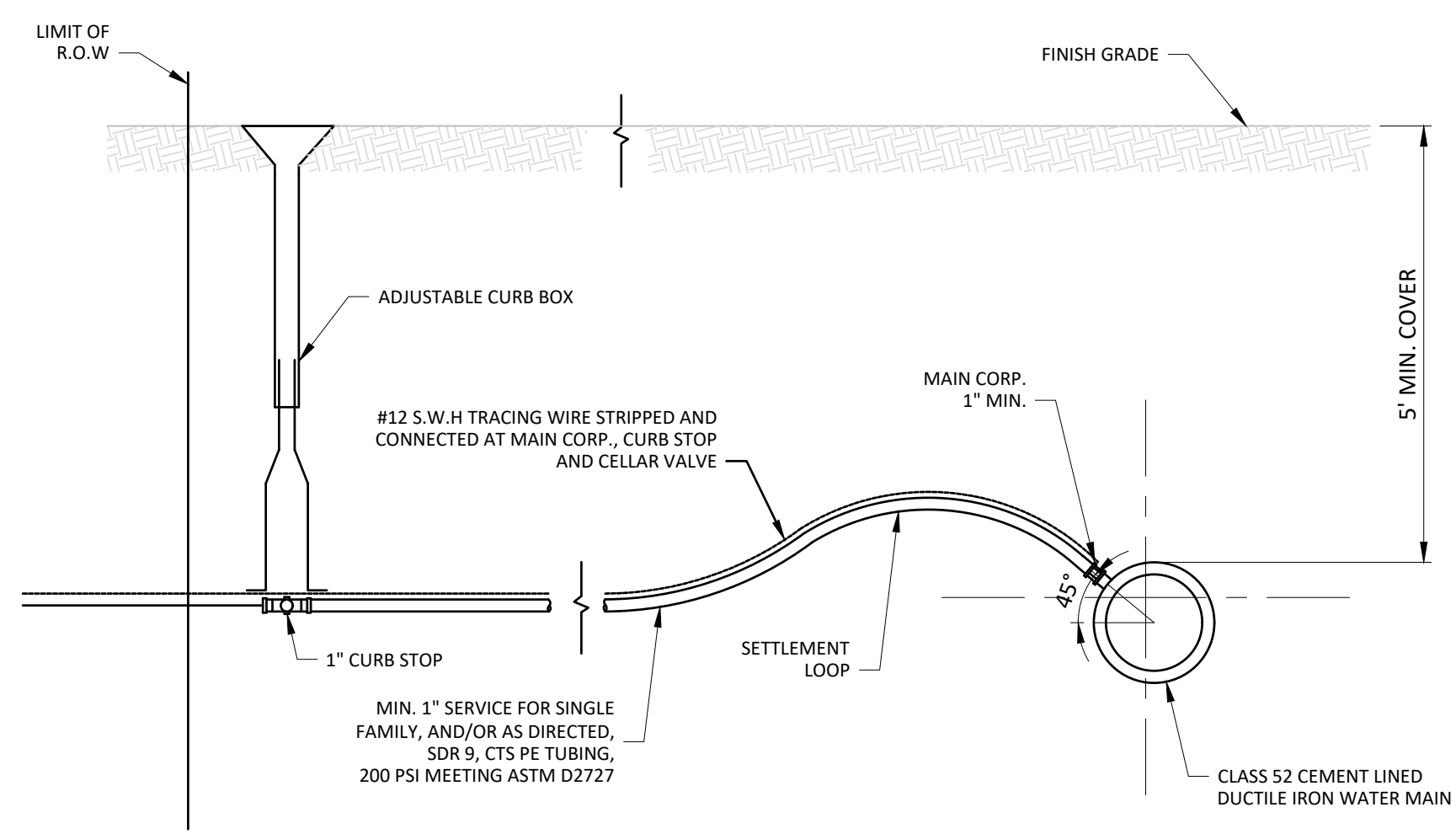
- ALL DMH FRAME AND COVERS TO BE LEBARON FOUNDRY MODEL NO. LK110A DRAIN OR EQUAL.
- MANHOLE FRAME AND COVER TO BE H-20 LOAD RATED.
- PATTERN NO. S LK110A/L26C2.



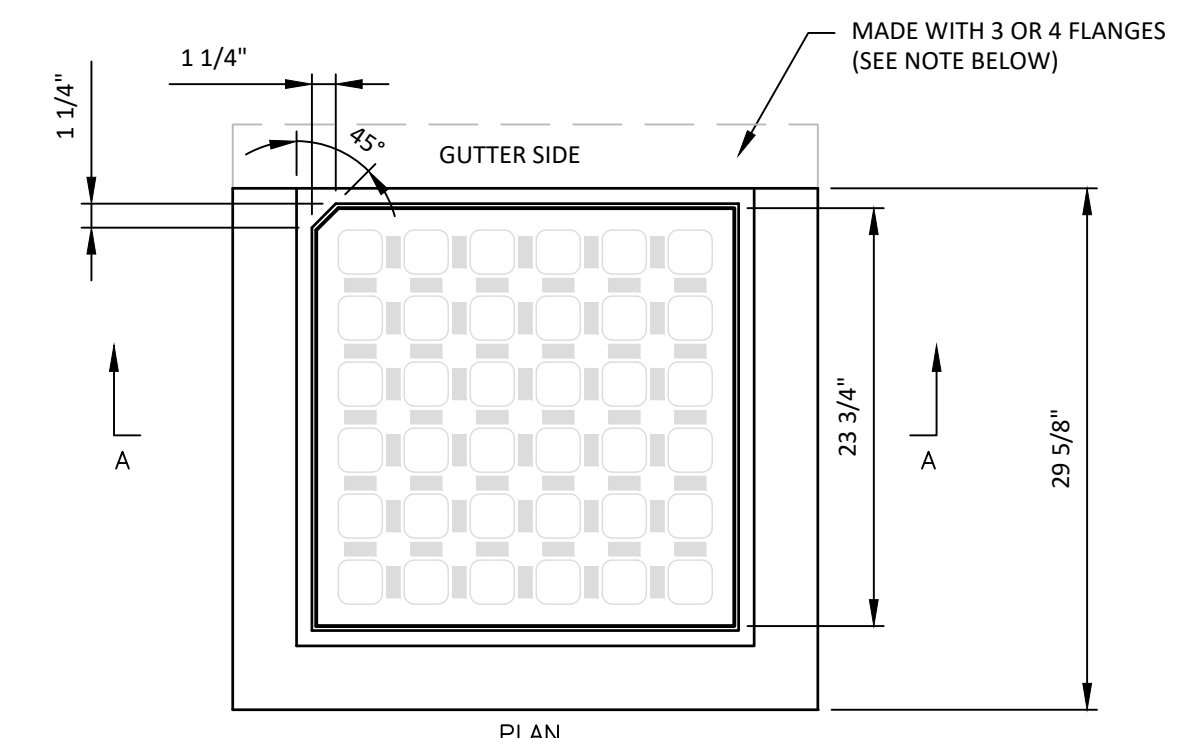
<b>NAME: NON HAZARDOUS INDUSTRIAL WASTEWATER TANK H-20</b>		<b>ITEM# NHWWHT102</b>	
Concrete Minimum Strength: 5,000 p.s.i. at 28 days		INNER TANK 8,300 Lbs	
Steel Reinforcement: ASTM A615, Grade 60		OUTER TANK 26,750 Lbs	
Design Loading: standard units - AASHTO - H20		DATE: 6-22-2017	
		Ch 22 Pg 3.2 Sh 2 of 2	

**NHWWH TANK**  
 NOT TO SCALE

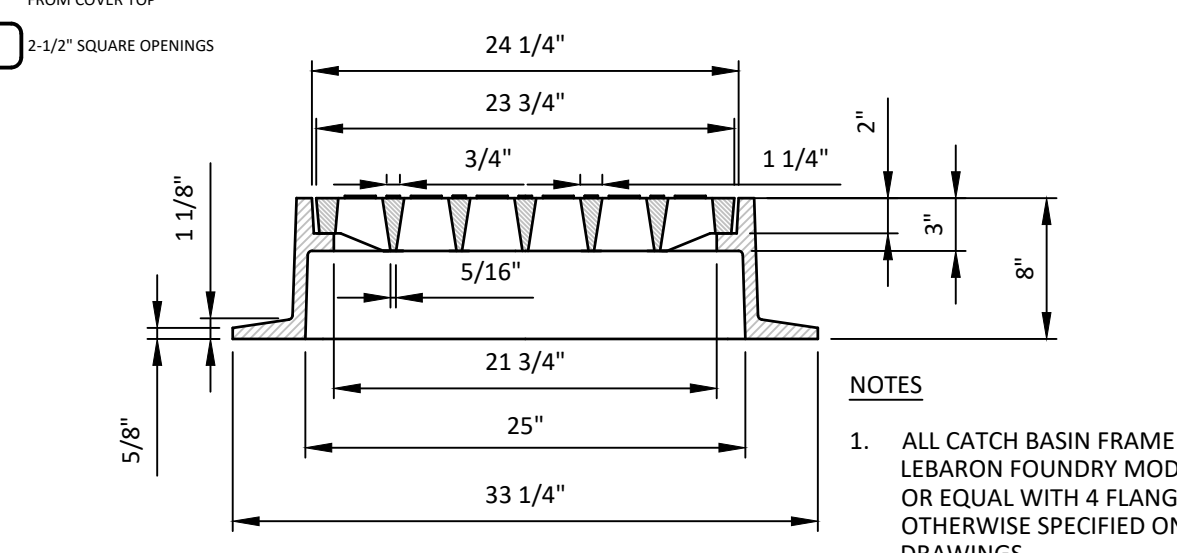
- NOTES:**
- NON HAZARDOUS INDUSTRIAL WASTE WATER HOLDING (NHWWH) TANKS SHALL CONFORM TO MGI 314 CMR 18.00 AND SPECIFICALLY 18.08.
  - NHWWH TANKS SHALL HAVE AN H-20 LOAD RATING.



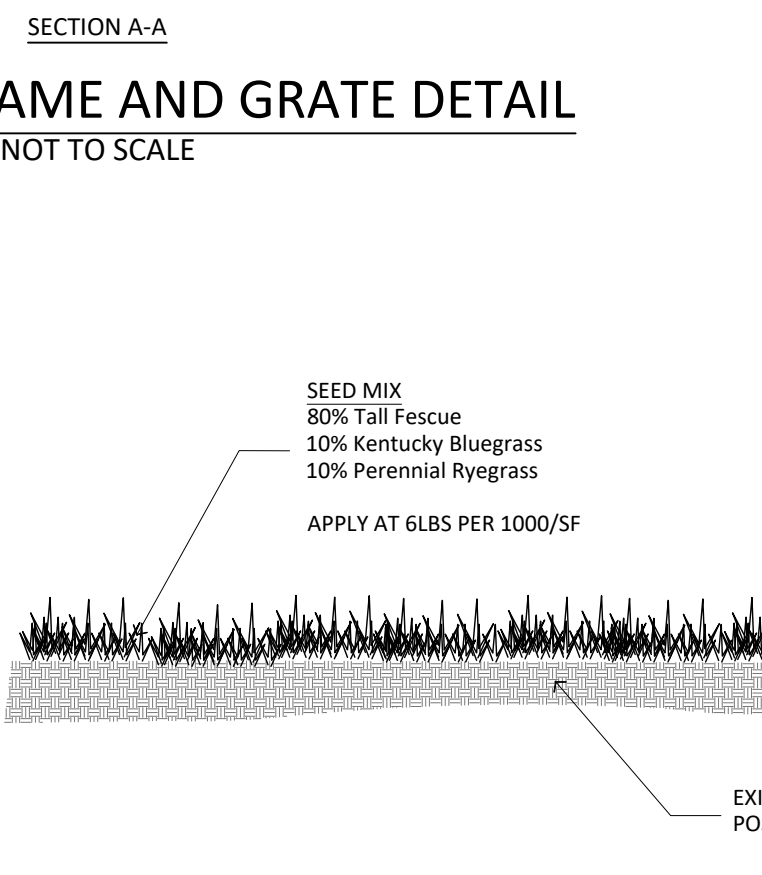
**TYPICAL WATER SERVICE CONNECTION DETAIL**  
 NOT TO SCALE



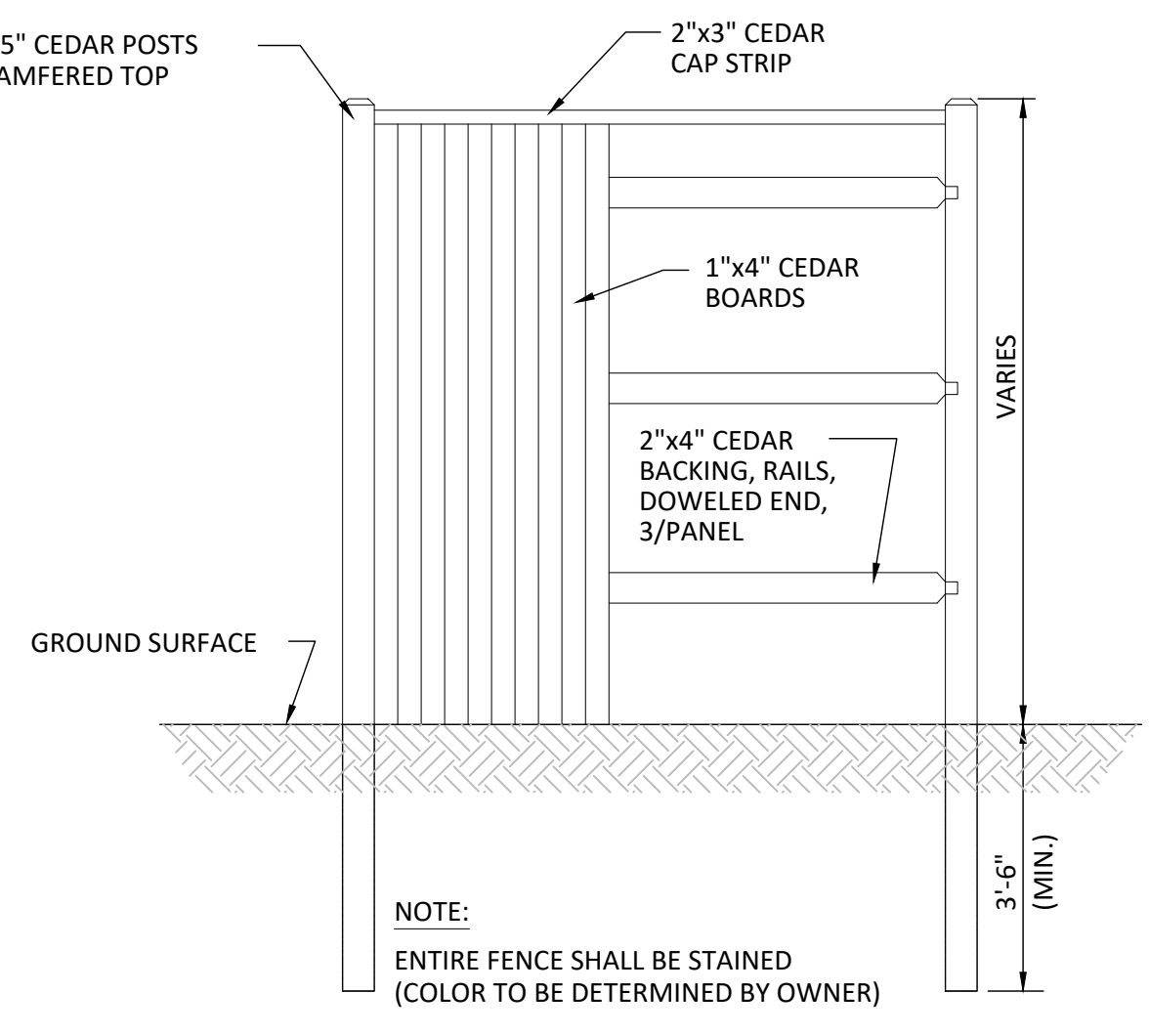
**MANHOLE FRAME AND COVER DETAIL**  
 NOT TO SCALE



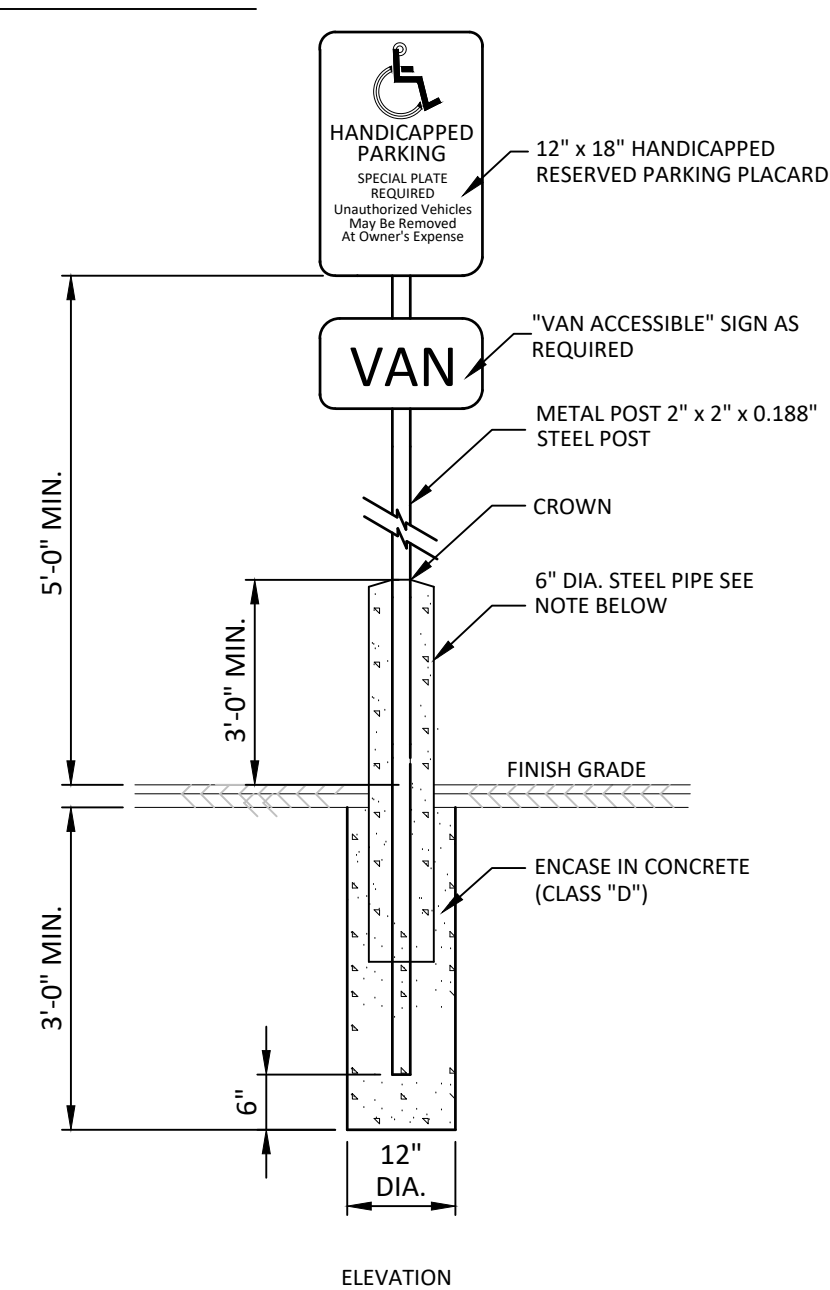
**CATCH BASIN FRAME AND GRATE DETAIL**  
 NOT TO SCALE



**LOAM AND SEED DETAIL**  
 NOT TO SCALE

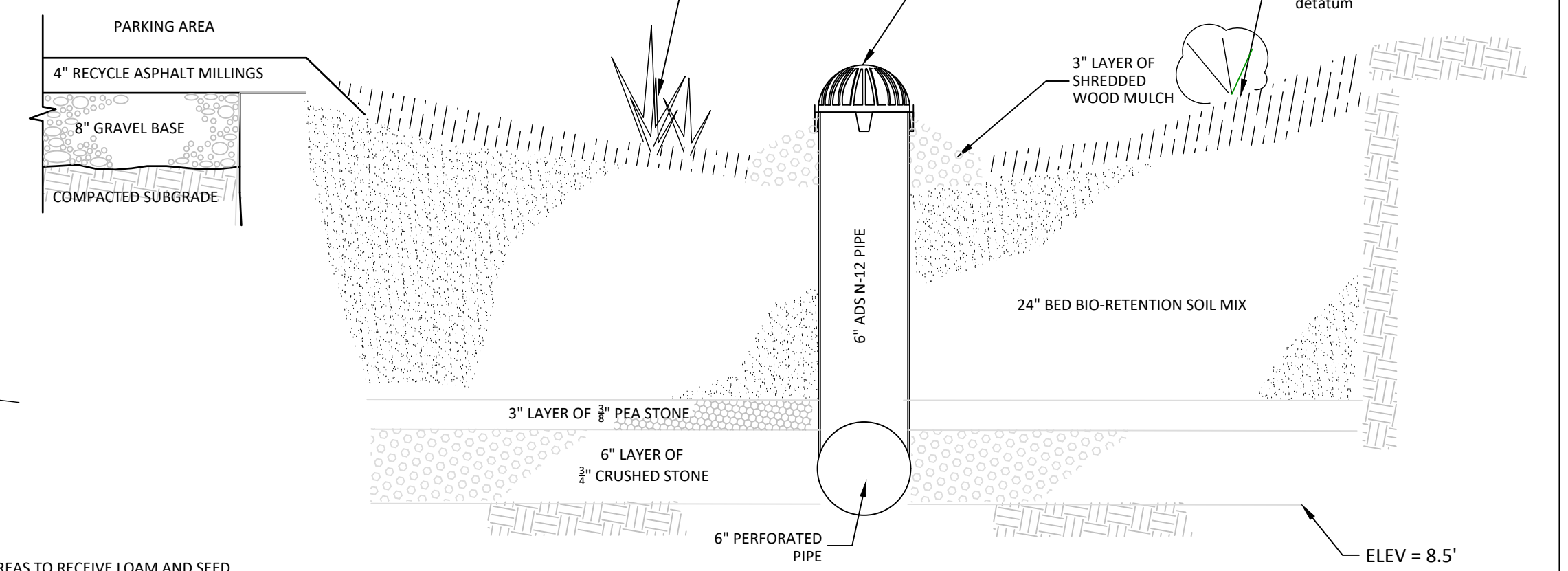


**STOCKADE FENCE DETAIL**  
 NOT TO SCALE



**HANDICAP SIGN DETAIL**  
 NOT TO SCALE

- NOTES:**
- SIGN LAYOUT, COLORS, SYMBOL AND LETTERING SHALL BE AASHTO STANDARD.
  - TO BE LOCATED ON SITE AT ALL HANDICAP SPACES AS SHOWN ON PLAN.
  - METAL POST SHALL BE MANUFACTURER PAINTED WITH EXTERIOR BLACK ENAMEL OR APPROVED EQUAL.
  - STEEL PIPE TO BE USED WHERE SIGN IS INSTALLED IN PAVED AREA.

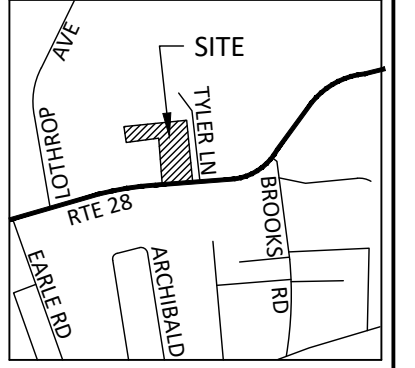


**RAIN GARDEN DETAIL**  
 NOT TO SCALE

- NOTES:**
- ALL DISTURBED NON PAVED AREAS TO RECEIVE LOAM AND SEED UNLESS OTHERWISE NOTED.
  - EROSION CONTROL BLANKET SHALL BE USED ON ALL DISTURBED SLOPES GREATER THAN 2H:1V.

**GENCON**  
 323 Manley Street  
 W. Bridgewater, MA  
 www.GenConDB.com

**GREEN SEAL**  
 Green Seal Environmental, Inc.  
 114 State Road, Building B  
 Sagamore Beach, MA 02562  
 Tel: (508) 888-6034 www.gseenv.com



No.	Date	Description
2	1/8/21	PB Comments
1	12/10/20	ZBA Comments

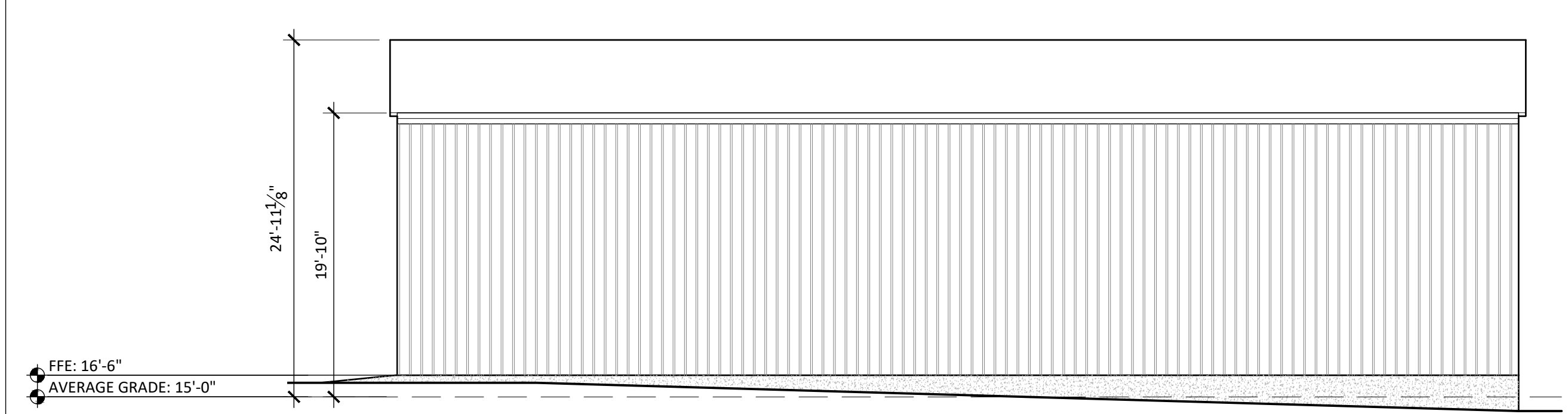
**ALLEN HARBOR MARINE BLDG**  
 335 LOWER COUNTY RD, HARWICH PORT, MA  
 PROJECT  
**ALLEN HARBOR MARINE BLDG**  
 282 ROUTE 28, HARWICH PORT, MA

**STUART D. CLARK**  
 CIVIL  
 No. 40697  
 PROFESSIONAL SEAL

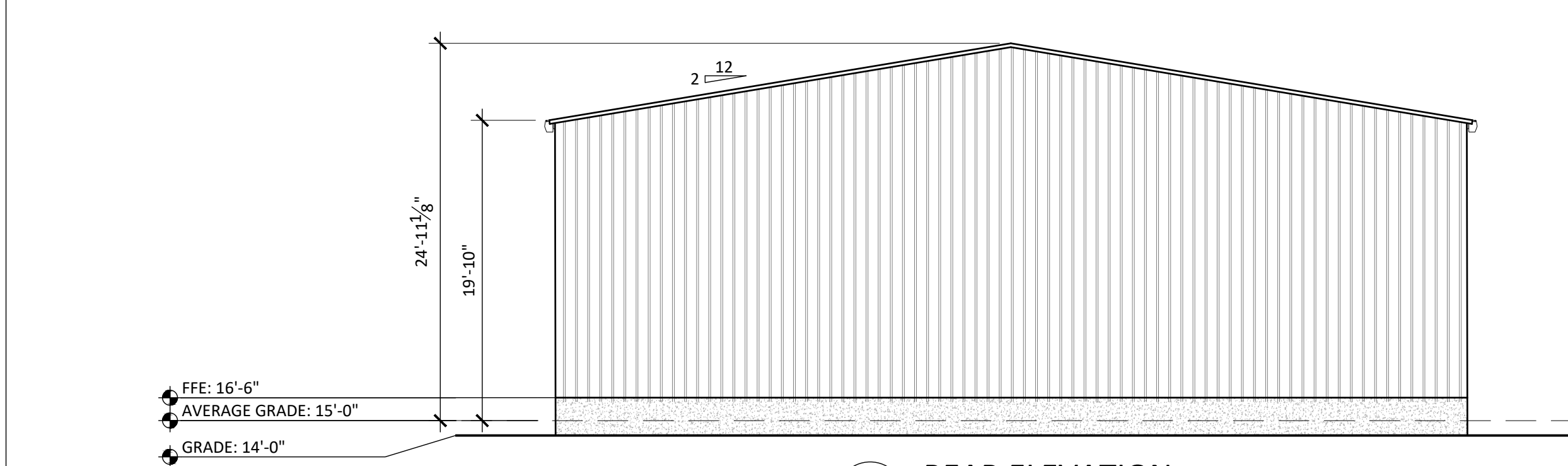
scale: **AS NOTED**  
 date: **December 17, 2020**  
 project: **20458**  
 drawn by: **SDC/NHE**  
 checked by: **SDC**

**DETAILS**

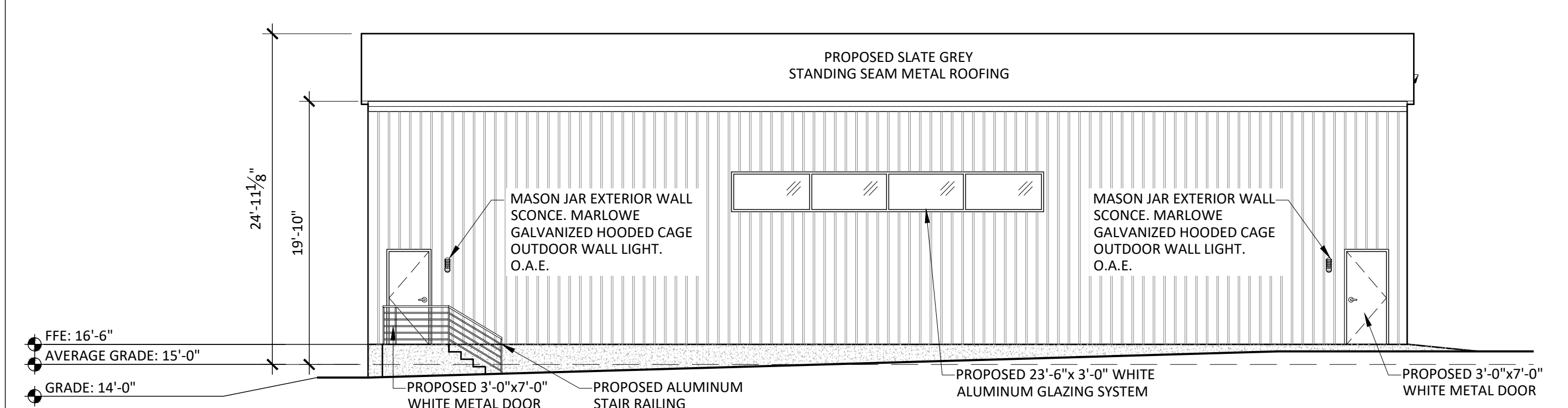
**D-00**



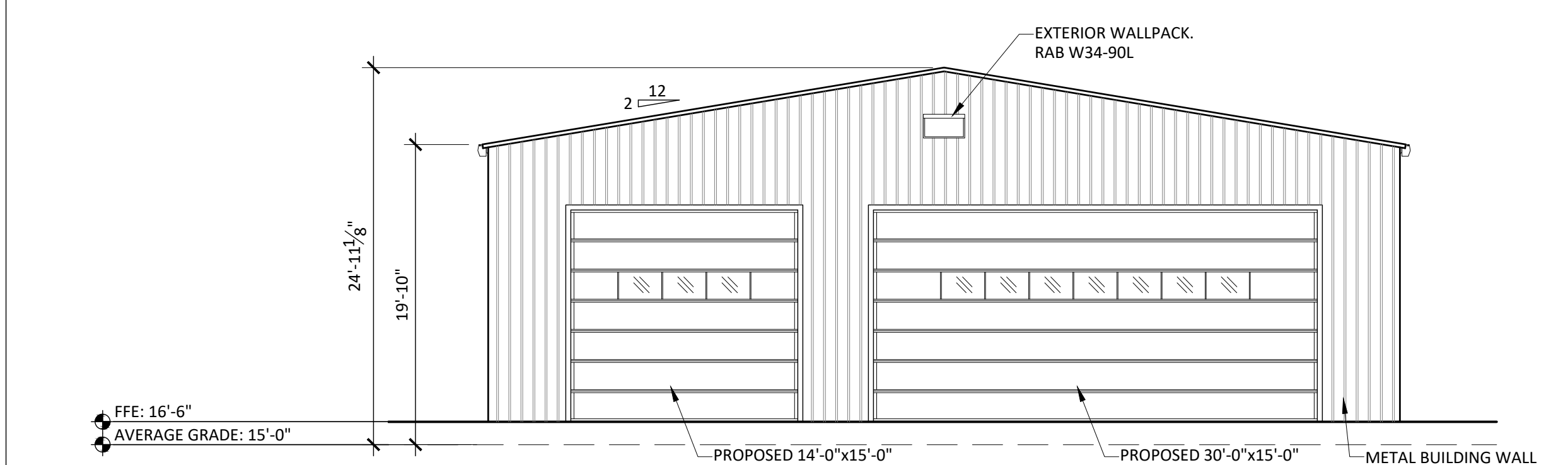
**6 EAST ELEVATION**  
SCALE: 1/8"=1'-0"



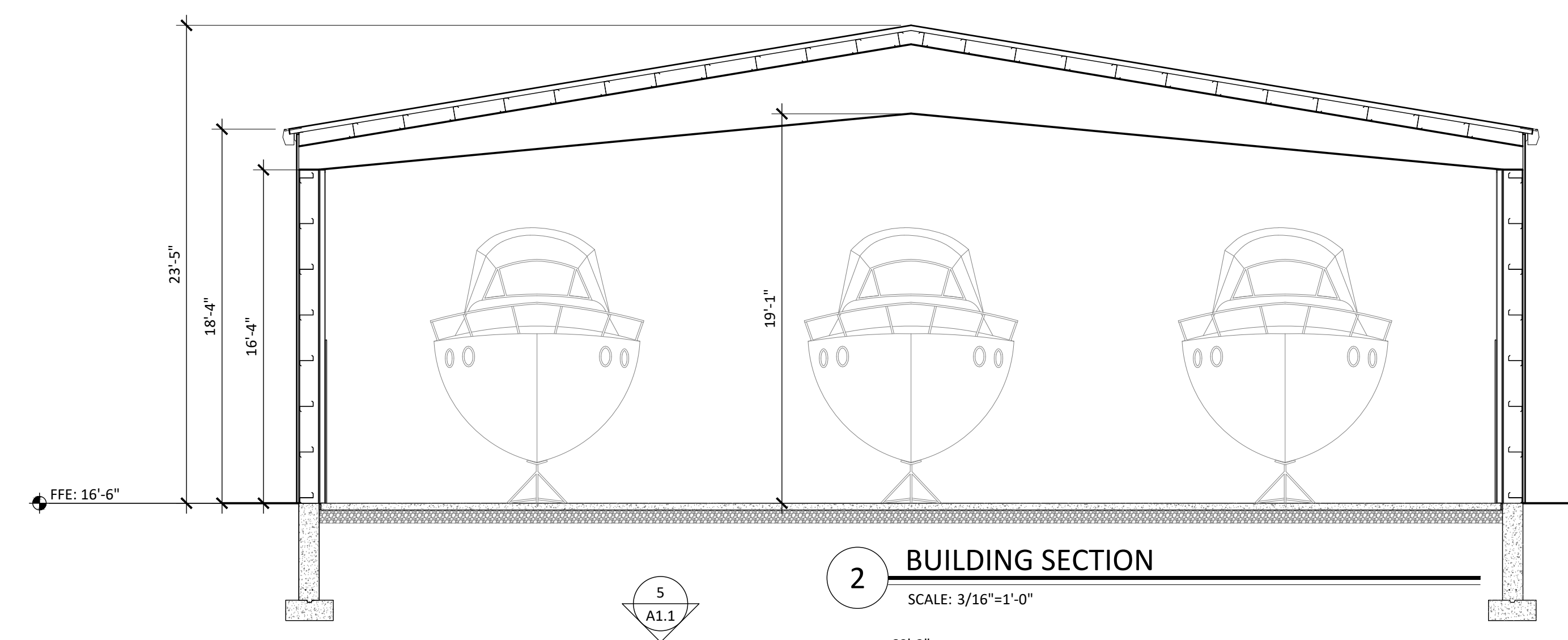
**5 REAR ELEVATION**  
SCALE: 1/8"=1'-0"



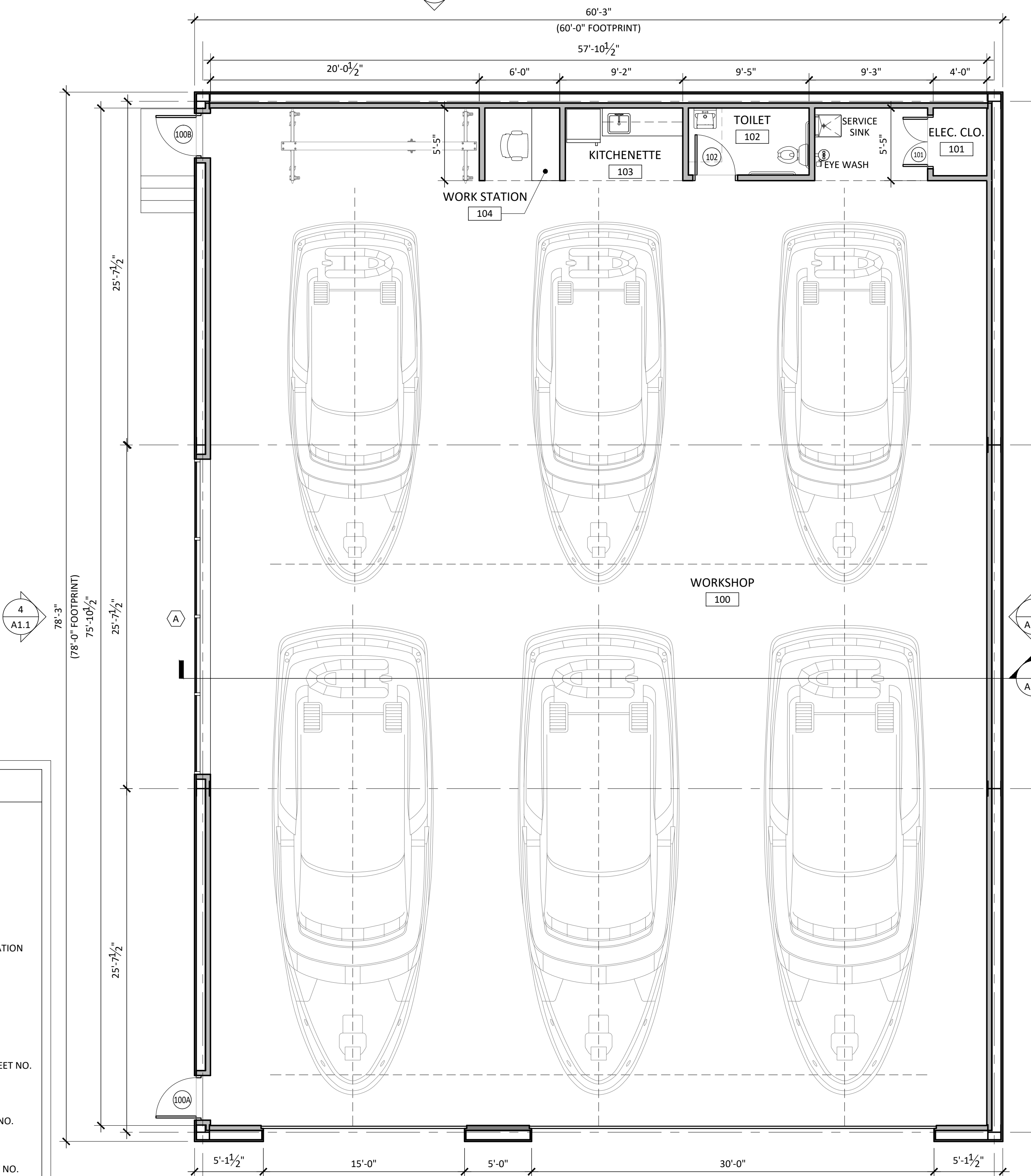
**4 WEST ELEVATION**  
SCALE: 1/8"=1'-0"



**3 SOUTH ELEVATION**  
SCALE: 1/8"=1'-0"



**2 BUILDING SECTION**  
SCALE: 3/16"=1'-0"



**1 FLOOR PLAN**  
SCALE: 3/16"=1'-0"

SYMBOL LEGEND	
	NEW WALL CONSTRUCTION.
	EXISTING WALL CONSTRUCTION
	NEW DOOR AND FRAME.
	ELEV. = ELEVATION TAG/ FINISH FLOOR ELEVATION
	WINDOW, CURTAIN WALL OR STOREFRONT ASSEMBLY.
	ELEVATION SYMBOL: ELEVATION/SHEET NO.
	DETAIL SYMBOL: DETAIL NO./SHEET NO.
	SECTION MARK: SECTION NO./SHEET NO.

No.	Date	Description
1	11/11/21	OWNER
2		OWNER
3		OWNER
4		OWNER
5		OWNER
6		OWNER

OWNER	ALLEN HARBOR MARINE
OWNER	335 LOWER COUNTY RD, HARWICH PORT, MA
PROJECT	ALLEN HARBOR MARINE BLDG
PROJECT	286 MA-28, HARWICH PORT, MA

Scale	AS NOTED
Date	1/11/21
Project	20458
Drawn by	NK
Checked by	SM



4 VIEW 4  
SCALE: NOT TO SCALE



2 VIEW 2  
SCALE: NOT TO SCALE



3 VIEW 3  
SCALE: NOT TO SCALE



1 VIEW 1  
SCALE: NOT TO SCALE

No.	Date	Description
-----	------	-------------

OWNER	<b>ALLEN HARBOR MARINE</b> 335 LOWER COUNTY RD., HARWICH PORT, MA	
PROJECT	<b>ALLEN HARBOR MARINE BLDG</b> 286 MA-28, HARWICH PORT, MA	

scale	AS NOTED
date	12/17/20
project	20458
drawn by	NK
checked by	SM

RENDERINGS

**A1.2**

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Harwich Planning Department  
Ms. Charleen Greenlagh  
732 Main Street Harwich, MA  
Attn: Ms. Greenlagh

RE: PB-2002-34 – Exterior Light Fixtures

Ms. Greenlagh,

The following light fixtures are being proposed for the exterior of the building.

- 1) RAB Lighting- 90L fixture is for the front peak of the building.
- 2) John Timberland /Marlowe 13 1/4"H Galvanized Hooded Cage Outdoor Wall Light- One (1) of these fixture at each egress on the West elevation.

Please contact me if you have any questions.

Thank you,

A handwritten signature in black ink that reads 'R. O'Neill'.

Rob O'Neill  
Project Manager

Ultra economy that  
gets the job done right.



W34™

At RAB, lowest price still means highest standards.

**RAB** | Outdoor

# W34™

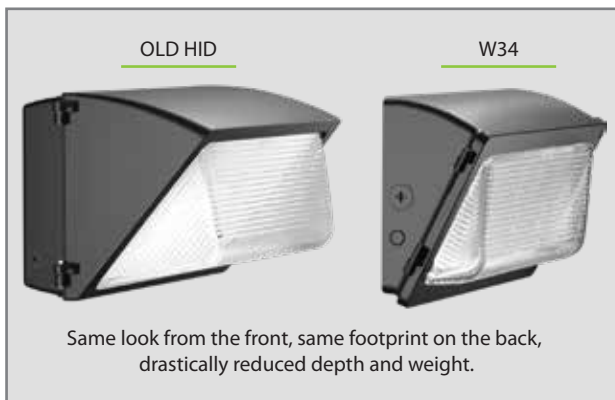
- Available in 6 lumen packages  
(replaces up to 400W MH; see performance on back page):  
Small – 3,100 lm and 3,600 lm  
Medium – 5,400 lm, 7,200 lm or 9,100 lm  
Large – 15,000 lm
- Integrated 0-10V dimming
- Available with photocell or microwave occupancy sensor
- Lightcloud®-enabled models offered
- 50,000-Hour LED lifespan



RAB's warranty is subject to all terms and conditions found at [rablighting.com/warranty](http://rablighting.com/warranty).

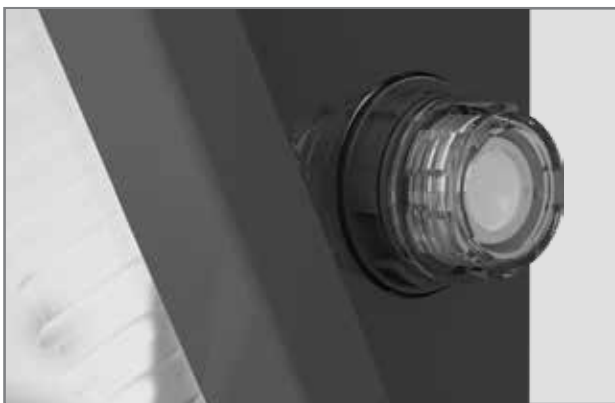


Save even more with utility rebates. W34 models are DLC listed.



## Optimized to deliver value.

Products in the W34 family combine the open-face look of traditional wall packs with a cost-efficient design that streamlines the replacement cycle of outdated or inoperable fixtures. You get exactly what you need to get the job done right...all at a fantastic price point.



## Light and motion sensing.

Button photocell and microwave occupancy sensor accessories are available as factory-installed options to provide additional energy savings by turning lights on only when you need them.



## Simple, powerful lighting control.

All models are available with factory-installed Lightcloud integration, for use with our commercial, wireless lighting control system and service.

## Specifications

### UL Listing:

Suitable for wet locations. Suitable for mounting within 4 feet of the ground

### LEDs:

Long-life, high-efficacy, surface-mount LEDs

### Lifespan:

50,000-hour LED lifespan based on IES LM-80 and TM-21 calculations

### Drivers:

**(30L):** Constant Current, Class 2, 120-277V, 50/60Hz, 120V: 0.24A, 208V: 0.15A, 240V: 0.13A, 277V: 0.12A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.06A

**(35L):** Constant Current, Class 2, 120-277V, 50/60Hz, 120V: 0.28A, 208V: 0.17A, 240V: 0.15A, 277V: 0.13A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.07A

**(55L):** Constant Current, Class 2, 120-277V, 50/60Hz, 120V: 0.43A, 208V: 0.26A, 240V: 0.22A, 277V: 0.19A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.07A

**(70L):** Constant Current, Class 2, 120-277V, 50/60Hz, 20V: 0.58A, 208V: 0.35A, 240V: 0.30A, 277V: 0.26A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.14A

**(90L):** Constant Current, Class 2, 120-277V, 50/60Hz, 120V: 0.73A, 208V: 0.43A, 240V: 0.38A, 277V: 0.33A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.14A

**(150L):** Constant Current, Class 1, 120-277V, 50/60Hz, 120V: 1.14A, 208V: 0.69A, 240V: 0.60A, 277V: 0.52A

Constant Current, Class 2, 480V, 50/60Hz, 480V: 0.28A

### 0-10V Dimming (Standard):

Driver includes dimming control wiring for 0-10V dimming systems. Requires separate 0-10V DC dimming circuit. Dims as low as 10%.

### Color Uniformity:

RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2017.

### Housing:

Die-cast aluminum

### Lens:

Glass

### Reflector:

Specular aluminum

### Cold Weather Starting:

Minimum starting temperature is -40°C (-40°F)

### Maximum Ambient Temperature:

Suitable for use in 40°C (104°F)

### Mounting:

Die-cast backbox with four (4) conduit entry points and knockout pattern for junction box or direct wall mounting. Hinged door for easy re-assembly.

### Green Technology:

Mercury and UV free. RoHS-compliant components.

### Finish:

Formulated for high durability and long-lasting color

### 5 Yr Limited Warranty:

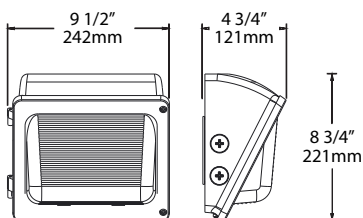
The RAB 5-year, limited warranty covers light output, driver performance and paint finish. RAB's warranty is subject to all terms and conditions found at [rablighting.com/warranty](http://rablighting.com/warranty).

### Buy American Act Compliance:

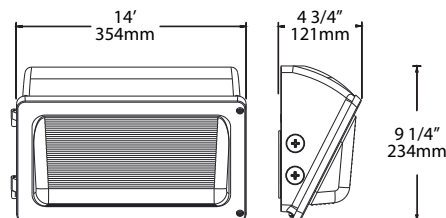
RAB values USA manufacturing! Upon request, RAB may be able to manufacture this product to be compliant with the Buy American Act (BAA). Please contact customer service to request a quote for the product to be made BAA compliant.

## Dimensions & Weights

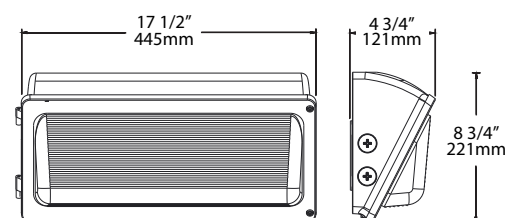
### W34-30L/35L Weight: 6.8 lbs



### W34-55L/70L/90L Weight: 10.8 lbs



### W34-150L Weight: 13.3 lbs





## Performance

### W34 Small

	3,100lm		3,600lm	
<b>Color Temperature</b>	<b>5000K</b>	<b>3000K</b>	<b>5000K</b>	<b>3000K</b>
<b>Input Watts</b>	29	29	33	34
<b>Output Lumens</b>	3,105	3,044	3,601	3,529
<b>Lumens Per Watt</b>	107	105	109	105
<b>Color Accuracy (CRI)</b>	83	82	83	83
	<i>(Replaces 70W MH)</i>		<i>(Replaces 100W MH)</i>	

### W34 Medium

	5,400lm		7,200lm		9,100lm	
<b>Color Temperature</b>	<b>5000K</b>	<b>3000K</b>	<b>5000K</b>	<b>3000K</b>	<b>5000K</b>	<b>3000K</b>
<b>Input Watts</b>	51	51	70	70	87	87
<b>Output Lumens</b>	5,375	5,270	7,188	7,047	9,087	8,909
<b>Lumens Per Watt</b>	105	103	103	101	104	102
<b>Color Accuracy (CRI)</b>	83	82	83	82	83	82
	<i>(Replaces 150W MH)</i>		<i>(Replaces 200W MH)</i>		<i>(Replaces 250 MH)</i>	

### W34 Large

	15,000lm	
<b>Color Temperature</b>	<b>5000K</b>	<b>3000K</b>
<b>Input Watts</b>	136	136
<b>Output Lumens</b>	14,845	14,554
<b>Lumens Per Watt</b>	109	107
<b>Color Accuracy (CRI)</b>	83	82
	<i>(Replaces 400W MH)</i>	

## Ordering information

Family	Lumen Package	CRI/CCT	Voltage	Options
W34	90L			
	<b>30L</b> 3100lm, 30W <b>35L</b> 3600lm, 33W <b>55L</b> 5400lm, 51W <b>70L</b> 7200lm, 69W <b>90L</b> 9100lm, 87W <b>150L</b> 15000lm, 136W	<b>Blank</b> 80 CRI, 5000K <b>830</b> 80 CRI, 3000K	<b>Blank</b> 120-277V, 0-10V Dimming <b>/480</b> 480V, 0-10V Dimming	<b>Blank</b> No Option <b>/PCU</b> 120-277V Button Photocell <b>/MVS</b> 120-277V Microwave Sensor <b>/LC</b> 120-277V Lightcloud® Control



**Need premium wall packs?**  
 For twice the lifespan, more variety and a no-compromise warranty, check out our WP1/WP2/WP3 series of traditional, glass-front LED wall packs.

FREE SHIPPING on Most Orders\*

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**LAMPS PLUS**  
 THE NATION'S LARGEST LIGHTING RETAILER

LP LUXURY LIGHTING

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MOST POPULAR

## Marlowe 13 1/4"H Galvanized Hooded Cage Outdoor Wall Light

16 Reviews | 7 Questions, 13 Answers

**\$79.99**

Comparable Value \$119.99

FREE SHIPPING &amp; FREE RETURNS\*

SHIPS TODAY if ordered in the next 6 Hr. 53 Min.

1

ADD TO CART

SAVE

### ^ MORE OPTIONS



DESIGN CHAT

VIEW IN YOUR ROOM

### PRODUCT DETAILS

A stylish galvanized metal finish graces the metal cage frame of this nautical-style outdoor wall light.

#### Additional Info:

The Marlowe collection of outdoor lighting offers a creative combination of nautical style and industrial design. This metal outdoor wall light features a stylish cage design with a hood on top and a narrow clear glass shade inside. A galvanized metal finish completes the hardy rustic look. Perfect for lighting up a patio area or garage space.

[Shop all John Timberland](#)

- 13 1/4" high x 9 1/2" wide. Extends 10" from the wall. Round backplate is 5 1/4" wide. Weighs 3.08 lbs.
- Uses one maximum 60 watt standard-medium base tube bulb (not included). Shown with an Edison filament bulb.
- Outdoor wall light for porches and patios. From the Marlowe collection by John Timberland. Based on industrial barn lights and coastal designs.
- Galvanized metal finish cage frame with hood. Clear glass shade inside.
- Wet location outdoor rated. Can also be used indoors.

### RECOMMENDED BULBS



**60W Equivalent Clear 8.5W LED Dimmable JA8 Standard Bulb**  
Style # 80M08

1

\$9.99 ea.

ADD TO CART

### MORE YOU MAY LIKE



\$79.99



\$79.99



\$69.99



\$69.99



\$79.99

### FREQUENTLY BOUGHT TOGETHER



Marlowe 10 3/4" High Galvanized Cage Outdoor Ceiling...

\$69.99



Urban Barn 10 1/4"W Galvanized Steel Outdoor Ceiling...

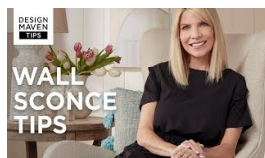
\$49.95



Franklin Park 13" High Galvanized Steel Outdoor Wall...

\$99.99

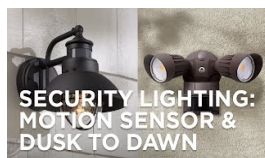
### RELATED VIDEOS



Best Wall Sconce Tips and Ideas



Outdoor Lighting Size Guide



Security Lighting



Outdoor Buying Guide

### Q & A

**ASK A QUESTION:**

Have a question? Ask owners.

Start typing your question and we'll check if it was already asked and answered. [Learn More](#)

**QUESTION: Is it dusk to dawn? If not can it be made dusk to dawn somehow?**

Mary M on May 4, 2020

**ANSWER:** The light is not dusk to dawn. You could try using a Dusk to Dawn Sensor Light Bulb.

[Reply](#) · [Inaccurate](#) · [Justin Z](#) Staff on May 4, 2020

[Add Answer](#) · I Have This Question Too (0)

**QUESTION: Is there a protective coating that can be applied for coastal area, i.e. car wax or another alternative application?**

Theresa C on Mar 2, 2020

**ANSWER:** We would recommend finding an outdoor wall light that is marine grade.

[Reply](#) · [Inaccurate](#) · [Dan T](#) Staff on Mar 2, 2020

[Add Answer](#) · I Have This Question Too (0)

**QUESTION: Is there a spec sheet for Marlowe 13 1/4”?**

BETSY D on Feb 17, 2020

**ANSWER:** The specs listed for this wall light are noted on our website. If more information is needed then what is stated, please contact one of our Lighting and Home Décor Specialist for further assistance. They can be reached by phone, email, or chat: <https://www.lampsplus.com/contact-us/>

[Reply](#) · [Inaccurate](#) · [Dan T](#) Staff on Feb 17, 2020

[Add Answer](#) · I Have This Question Too (0)

**QUESTION: How does this attach to an electrical box? Can I use an octagonal metal box? Does the box need to be oriented in any particular way? The boxes that I have use screws on the diagonal. Does this fixture come with an adapter to attach to this type of box?**

A shopper on Jun 17, 2019

**ANSWER:** The mounting bracket for these is VERY versatile. The only issue I have had is if the junction box is mounted to that the screws for the bracket are exactly horizontal...any other angle will work...and in the case mentioned, I removed the screws holding the junction box to the wall, rotated it and put the screws back in.

[Reply](#) · [Inaccurate](#) · [Christopher C](#) on Apr 16, 2020 · *Purchased on Mar 31, 2020*

[Read All 2 Answers](#) · [Add Answer](#) · I Have This Question Too (0)

**QUESTION: We are located near the ocean, will this rust?**

Johanna F on May 6, 2019

**ANSWER:** Hi - this outdoor wall light is wet location rated and very durable for outside usage, but the finish is not meant for coastal areas. For resistance to salt-air in coastal environments, you should select a fixture with a "Marine Grade" finish. We have an array of great choices including Vivex, Coastal Armor and more. I have added a helpful link below for some great options which are currently offered. [https://www.lampsplus.com/products/outdoor-lighting/usage\\_wall-light/s\\_marine-grade/](https://www.lampsplus.com/products/outdoor-lighting/usage_wall-light/s_marine-grade/)

[Reply\(1\)](#) · [Inaccurate](#) · [Dan T](#) Staff on May 7, 2019

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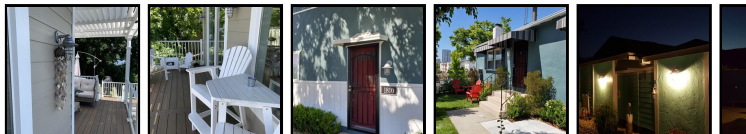
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4.5 / 5.0

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#### Good quality "Galvanized look" not actually galvanized fixture

I was taken aback at first when I realized that the finish was not really galvanized (zinc plating, neither electroplated or hot-dipped) but the quality of the galvanized-look paint finish was so good, that I was not worried. I was installing five of these and only two would be directly exposed to rain and they were not going to be getting a lot of direct sun. The other three would be under eaves. My only other complaint is the massive amount of blocks of molded EPS (commonly called styrofoam) that I ended up. This should not go into landfills and almost no recycling programs [Read More](#)

September 7, 2018  
Michael T

*Purchased  
over 2 years ago*



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#### These are NOT galvanized

While they are described as galvanized, arrived and found they look more like silver camo painted, don't even look like galvanized color. Not what I expected. Otherwise well made.

November 27, 2017  
jenny I

Was this review helpful? (2) (0) • [Flag as Inappropriate](#)

Awesome! I would definitely recommend ordering from lamps plus!

May 14, 2018  
Lori T

Was this review helpful? (1) (0) • [Flag as Inappropriate](#)

*Purchased  
over 2 years ago*

Very easy website, got confirmation email  
Product came quickly

December 7, 2017  
Sue M

*Purchased  
over 3 years ago*

Was this review helpful? [\(1\)](#) [\(0\)](#) · [Flag as Inappropriate](#)

**Great Farmhouse Style**

Love this light. It was recently featured in Country Living magazine as porch lighting g for a “relaxed” look. It’s made very well as it has a glass dome that encases the light and the metal cover fits over the glass. Gives good light coverage for safety.

October 11, 2018  
Dorothy O

*Purchased  
over 2 years ago*

Was this review helpful? [\(1\)](#) [\(0\)](#) · [Flag as Inappropriate](#)

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*Memorandum from  
Charleen Greenhalgh, Interim Town Planner  
Town of Harwich*

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AGENDA ITEM III.B.2

December 29, 2020

To: Planning Board  
From: Charleen Greenhalgh, Interim Town Planner  
Re: Possible Zoning Amendments and other Changes to Rules and Regulations

Other than the changes associated with the West Harwich Special District, there are several additional amendments to zoning and the rules and regulations that the Planning Board may wish to discuss:

**Zoning Amendments:**

1. There will need to be changes made to the Flood Plain Requirements, Article XVII, §325-104 through 108.1. These do not need to be address at the 2021 Annual Town Meeting, but will be required soon after in order to keep the Town of Harwich Community Rating System status in good standing.
2. Perhaps a new section regarding erosion control. With the heavier rains that we have been experiencing and erosion control bylaw might be helpful. This could be a new §325-18. It would likely be subparagraph “R” assuming the Attorney General approves the zoning amendments from the September Town Meeting.

Here is an example from another community:

Erosion Control. If the Building Inspector determines that erosion controls are necessary, erosion controls adequate to prevent damage to abutting properties or roadway shall be required for any project, building or structure which will alter in any manner the property in question. Erosion controls shall be adequate to prevent eroded material from entering, or siltation onto abutting properties or roads. Erosion control measures shall be taken prior to the commencement of work and shall remain in place until the disturbed areas have been stabilized permanently.

3. §325-42.L – The MRL and MRL-1 parking setbacks to streets, side and rear lots lines is 50 feet. When the Planning Board amended the zoning bylaws related to Multi-family at the September 2020 Annual Town Meeting, it would appear that amendments to this requirement was inadvertently omitted. It is recommended that the setbacks for parking be changed to a less restrictive setbacks, particularly for multifamily developments. Perhaps for existing improved properties, there could be the allowance for the existing setbacks and unimproved properties another setback.

*For example:*

- A. On already improved properties, the setbacks for parking shall be established at the time of the site plan review.*
- B. For vacant lands to be developed for any purpose, other than single-family, two-family and single-family with accessory apartment, the minimum setbacks for parking shall be 20 feet from the street, and 10 feet from the side and rear property lines.*

## **Rules and Regulations**

Back in 2008 the Town of Harwich codified the bylaws within the Town. For some reason the Planning Board's Rules and Regulations ("Rules and Regs"), formally known as Chapter 400 Subdivision of Land and Site Plan Special Permits, was included in the codification. It is not entirely clear as to the reason they were included. Other rules and/or regulations for other Boards/Committees/Commissions are not included in the "Codes". For example the Board of Health Regulations and the Harwich Wetland Regulations (Conservation Commission).

The Planning Board Rules and Regulations need only change with a public hearing notice and a duly held and authorized public hearing. The Rules and Regs should be a document that changes with the times as needed. The Harwich "Codes" are update and printed but once a year. The Rules and Regs should be updated and made available as needed.

The Town Engineer and I have and will continue to work on an update to the Rules and Regulations. Appendix 1, the Rational Method of Drainage Design and other Tables and Figures in Appendices 2 and 3 all are in need updating.

The checklist within Appendix 4 is also in need of corrections and updates.

The Board may also wish to consider changing the abutter notification requirement. Currently the requirement is that the applicant notify the abutters via return receipt certified mail. This is extremely costly and is not required by Massachusetts State Statute or General Laws. As of January 2021 the cost of sending a first class letter via return receipt certified mail will be \$6.96. We recently had an application where there were approximately 85 abutters. The cost as of January would have been \$591.60, just for the mailing.