



Zoning Board of Appeals

Town of Truro

24 Town Hall Road
Truro, MA 02666
(508) 349-7004

Staff Report

Public Hearing

December 5, 2019 at 5:30pm

Select Board Meeting Room

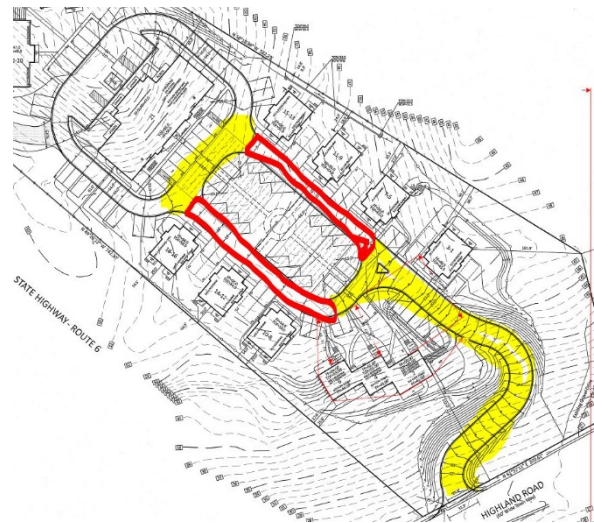
Overview

Since the first public hearing, staff has continued to work with the applicant to answer many of the questions discussed. In addition, the Board of Health and the Planning Board met to begin discussing potential comments. It is likely those boards will provide comments soon.

Fire Chief Comments

Initial comments were received from the Fire Chief. These comments were developed with input from state fire officials, and they will likely be augmented with additional comments as the project progresses.

- The required site drive widths are provided through most of the site. The image shows the areas that require 20' width in yellow, with areas that can be narrower for one-way traffic in red. The 20' width should be extended an additional 10' to the west in front of Unit 6. The state officials added arrows that point to the limits of the required 20' way.
- Turning radii for emergency vehicles will have to be examined.



- An emergency key box should be provided at the gated emergency egress to Route 6.
- The Chief requests that all buildings be sprinkled, including the duplex buildings. This would exceed required code.
- “On-street” parking should not be allowed on the site drives as it would restrict the movement of emergency vehicles.
- An additional fire hydrant should be added to the center of the site.

Cape Cod Commission Comments

The ZBA received comments from the Cape Cod Commission. As previously discussed, the Commission is a “local board” for the purposes of 40B. Their comments are advisory.

Their comments are prepared by the professional staff at the Commission. These were broken down into the issue areas that largely follow those in the Regional Policy Plan. Below is a brief characterization of each of the comment areas as viewed by Town Staff.

- Affordable Housing
 - There is a clear shortage of affordable housing, and the project works to address those concerns.
- Transportation
 - The project is expected to result in roughly 262 daily vehicle trips. The count is both to and from the site – meaning one driver entering the site is one trip, and when the driver leaves the site it is a second trip.
 - The area does not have a history of significant vehicular accidents.
 - The applicant should consider how to provide a sidewalk to the bus stop.
 - The adequacy of the vegetated buffer from Route 6 should be considered.
- Water Resources
 - The Commission seeks to reduce controllable sources of nitrogen, including wastewater, stormwater, and fertilization.
 - The project would not contribute to a nitrogen overloaded marine embayment. (Town Staff notes this statement does not apply to freshwater bodies.)
 - The Commission estimates a site-wide nitrogen loading concentration of roughly 19 mg/L.
 - The exact flows of groundwater would need to be established to determine potential impacts to private wells.
 - Bio-infiltration practices should be considered to the extent possible.
- Natural Resources
 - TOY restrictions may be explored for impacts of tree removal to migratory birds.

- Erosion control and soil management details should be provided.
- Invasive species should be removed from the site.
- Utilities should be underground to the extent feasible.
- Community Design
 - The design is context-sensitive, and the design responds to the rural character of the area.
 - The proposed buildings are modest in size and utilize traditional materials and detailing.

Staff Hearing Overview

The applicant has begun providing additional materials to address the concerns discussed at the first hearing. This has been in consultation with Town Staff, most notably the DPW Director.

Plans showing the location of abutting private wells have been provided. The Town has also provided to the applicant existing conditions plans for the area.

Staff suggests that the hearing today should focus on getting a detailed understanding of the various aspects of the project. Some of these areas are:

- What site work is required, how the site will be graded, what erosion control measures will be in place, etc.
- How and where will the site drives be constructed, how were the curb cuts located, what materials will be used, how are pedestrians and bicyclists accommodated, etc.
- Where are general utilities proposed on the site, what work will be required to install those utilities, etc.
- What kind of septic is proposed, where are the various components, how have state requirements been met by the project, etc.

Any other issues of interest can be discussed. These are merely some suggestions.

Staff feels that a peer review of the septic and nitrogen loading issues is required to establish that the project will not detrimentally impact the environment or public health. These funds are generally provided by the applicant. This should be discussed with the Applicant and Staff.

Actions

Staff suggests that prior to the continuance of this public hearing, the Board should discuss:

- 1) A list of the significant questions that must be answered and additional materials that may be required for the applicant to address those questions.

The Board can request additional materials or peer reviews at any time in the hearing process.

- 2) The date and time of the next continued public hearing and site visit.

The proposed date for the continued hearing is December 12th.

- 3) Preliminary date for subsequent public hearing.

The additional date proposed is December 19th. Additional hearings may be required in January.

- 4) Revisit the order in which the Board would like to deal with the relevant issues identified.



TOWN OF TRURO
HEALTH & CONSERVATION DEPARTMENT
24 Town Hall Road, Truro 02666
508-349-7004 x119

To: Truro Zoning Board of Appeals

From: Emily Beebe, Health & Conservation Agent 

Date: December 5, 2019

Re: Comprehensive Permit application for the Cloverleaf project at 22 Highland Road

At their meeting of December 3, 2019, the Truro Board of Health discussed the proposed development plans for this property and received public comments; one written comment was received and has been submitted to you for the public record.

The members of the Board of Health are acutely aware of the shortage of housing as they are currently engaged in ongoing legal proceedings in the pursuit of improving the habitability and safety of existing housing in Truro.

The review of the Cloverleaf project site plans generated 2 main points of discussion, those being the design for the disposal of wastewater and the design for storm-water drainage. The Board of Health considers groundwater protection their top priority and have concerns about the waiver requested from their local regulations; specifically, the regulation that requires all properties in Truro to comply with the nitrogen loading standard of Title 5. The nitrogen loading requirements establish a correlation between the amount and type of use on a property and that property's land area in order to reduce wastewater contamination of our water resources. It is important to understand that Title 5 does not require its nitrogen loading standards be applied to properties that are served by a municipal water supply.

The majority of the town of Truro is served by private wells, but in North Truro there are properties connected to the municipal Public Water Supply with neighbors who rely on private wells. In order to better protect the groundwater resource the Board of Health developed a local regulation many years ago to address this "mix" of town water and private wells. Simply put, the local regulation requires that all properties comply with the nitrogen loading requirements of Title 5, not just those properties served by private wells or located in a zone 2.

The present proposal describes construction of 40 units of housing with 72 bedrooms, and office and community space; this use has a total wastewater design flow of 8,293 gal/day. The scale of the project has raised concerns about potential impacts to groundwater resources and private wells in the immediate area, the Pond Village neighborhood, and impact to Pilgrim Pond itself.

Pursuant to these concerns and in light of the statement in the application that adding additional treatment to the wastewater would be an excessive cost the Board has requested the applicant to provide them with the estimated costs of adding innovative/alternative (I/A) treatment to the wastewater disposal system; additional treatment would reduce the concentrations of nitrogen and other contaminants prior to disposal.

Additionally, the Board has asked that the applicant explore costs for larger pump chambers to increase storage during electrical outage events.

There was also discussion about the drainage for storm-water; this project is within an area that suffers from poor storm-water drainage design. We understand the proposed design would accommodate 50-year storm events and wish to underscore the importance of containing all storm-water runoff on-site. Further, the Board echo's the comments of the Cape Cod Commission (letter dated 12-3-19) regarding the treatment of storm-water where possible by using rain gardens and vegetated swales to reduce the nutrient load from pavement and roof runoff.

We understand that the applicant is not obligated to address these concerns, and we have advanced them with the hope that there may be ways to balance the true needs for both affordable rental housing and thoughtful stewardship of our groundwater resources.

We regret not being able to attend this evenings hearing, but we will however be present at your meeting of December 12. In the meantime, the membership of the Board of Health sends their thanks to the members of the Zoning Board of Appeals for the opportunity to provide comment on this development project.

3225 MAIN STREET • P.O. BOX 226
BARNSTABLE, MASSACHUSETTS 02630



CAPE COD
COMMISSION

(508) 362-3828 • Fax (508) 362-3136 • www.capecodcommission.org

Via Electronic Mail

December 3, 2019

To: Truro Zoning Board of Appeals
c/o Jeffrey Ribeiro, Town Planner

Re: *Cape Cod Commission Staff Comments*
“Cloverleaf” 40B/ Comprehensive Permit Application, 22 Highland Road, Truro
Community Housing Resource, Inc./ Ted Malone

cc: Kevin Grunwald, Truro CCC representative
Harold Mitchell, CCC Chair
Elizabeth Taylor, Chair, CCC Committee on Planning and Regulation

Pursuant to Section 13(j) of the Cape Cod Commission Act, the Cape Cod Commission (herein, “Commission” or “CCC”) is considered a “Local Board” for purposes of MGL Ch. 40B, ss. 20-23. Accordingly, the Commission provides, through its staff and in its capacity as a Local Board, the following review comments to the ZBA on the above-referenced matter.

The Commission staff commends the Town on its local planning process for the project to date, which process has shaped the project to its benefit. The project site is a former portion of the Route 6 layout, which was conveyed by the Commonwealth to the town for affordable housing purposes. The Town crafted the RFP for the project reflecting those concerns and priorities identified during the local planning process; the applicant’s bid and successive project design in turn reflect those local concerns and priorities.

AFFORDABLE HOUSING

There continues to be an acute need for affordable housing in all towns on Cape Cod, particularly those on the Outer Cape, and for affordable rental units especially. Only 2.3% of Truro’s existing housing stock is considered affordable.

The Cape Cod Commission Act and Cape Cod Regional Policy Plan look to preserve the social diversity of the region by promoting the development of affordable housing for low- and moderate- income people.

The project meets these concerns. The applicant proposes to construct 40 rental units in a mix of unit and building types. Of the 40 units, 45% are proposed one-bedroom units; 35% are proposed two-bedroom units; and 20% are proposed three-bedroom units. 27 of 40 will be deed restricted as affordable (21 at or below 60% AMI; 6 at or below 80% AMI). This proposal well exceeds Ch. 40B's 20-25% minimum affordability requirement and would nearly double the number of existing affordable units in the town. In addition, 6 units will be restricted as "workforce" housing at or below 110% AMI.

TRANSPORTATION

The project site is well-located within proximity to the regional roadway network via Route 6 and to existing Cape Cod Regional Transit Authority (CCRTA) transit service. There is no significant crash history on Highland Road in the vicinity of the proposed site. Based on the CCC traffic count database, the estimated 2018 Annual Average Daily Traffic (AADT) on Highland Road (west of the proposed site) is 2,000 vehicles per day while the Summer ADT is 2,700 vehicles per day. The AADT for Route 6 (south of Highland Road) is 14,500 vehicles per day while in the Summer the ADT is 19,000 vehicles per day.

Based on the Institute of Transportation Engineers (ITE) Trip Generation Handbook, 10th edition, Land Use Code 220 (Multi-Family Housing Low Rise), the project is expected to generate approximately 262 daily vehicle trips, 24 vehicle trips (7 entering, 17 exiting) during the weekday morning peak hour and 28 vehicle trips (17 entering, 11 exiting) during the weekday evening peak hour.

CCC Transportation Staff strongly encourage the applicant to partner with the Town of Truro, MassDOT, and the CCRTA to provide an ADA-compliant sidewalk connecting the site from the proposed site drive to the existing bus stop/shelter on Highland Road (approx. 350 feet west of the site). This is a great opportunity for the applicant to reduce potential traffic impacts associated with the project, given the availability of existing transit service in proximity to the site. Consideration of street lighting sufficient to ensure safe passage should be discussed along with the sidewalk.

Note, that the project site drive onto Highland Road as well as the proposed rear gated access drive onto Route 6 will require a MassDOT Access Permit/s.

Finally, as a related community design issue, several of the proposed buildings are relatively close to the Route 6 ROW. While there is currently a significant naturally vegetated buffer between the proposed buildings and the Route 6 roadway itself, should that area of the ROW be developed or altered in the future (such as with a sidewalk, bicycle or multi-use path), it is possible those buildings could be more greatly exposed to Route 6. The applicant could consider adding supplemental landscaping in this part of the project site now or later in the case of such eventuality, or might come to agreement with MassDOT and the Town that in such case, ROW work would include retaining or supplementing vegetative screening sufficient to buffer the development from Route 6.

WATER RESOURCES

The Cape Cod Regional Policy Plan contains certain goals and objectives that aim to protect and preserve a variety of regionally significant water resources: freshwater resources (such as

ponds); marine resources (such as estuaries and embayments); and drinking water resources (such as wells and areas that contribute to wells).

More specifically, the Cape Cod Commission has a long standing policy that aims to limit project site-wide nitrogen loading to a concentration of 5 mg/L or less in order to protect and preserve the drinking water quality of supply wells and areas that contribute to them: these areas include public drinking water supplies, private wells, and the sole source Cape Cod Aquifer in general. Included in the concentration limit are those controllable sources of nitrogen typically associated with development: wastewater, stormwater and turf fertilization.

The project site is in a sub-watershed that directly discharges to Cape Cod Bay, and thus is not considered an impaired area requiring limits on estuarine nitrogen inputs.

The site is not located in a Wellhead Protection Area or Potential Public Water Supply Area relative to public water supply wells. However, non-community public water supply wells are located to the west, south, and northeast of the project site; and private residential wells are located to the southwest and northeast. The southern corner of the project site does extend into the Interim Wellhead Protection Area for the Mamarazzi Restaurant non-community supply well.

The project is proposed to be served by a Title V compliant septic system. Based on a preliminary calculation performed by Commissions staff, the project's sitewide nitrogen loading concentration (based on a proposed design flow for 70 bedrooms and 7700 gallons per day) would be nearly 19 mg/L. Groundwater flow at the site appears to be generally to the west / southwest, but without local water table measurements it is not possible to more precisely determine the direction of groundwater flow or likely path of septic system effluent.

Though there is currently no municipal water service to the site, municipal water service is proposed to be extended to the site to serve the project. Design has been completed to extend municipal water to the project site and grant funds have been obtained to fund the water main extension (the Town has recently been awarded a MassWorks grant).

The project site is bordered to the north and southeast by private residences, and there are five single family homes within 300 feet of the project location. As there are several non-community supply wells and private wells potentially located directly downgradient from the proposed septic system at distances ranging roughly from 500 to 1,000 feet, the proposed development could potentially pose some risk to these water supplies. As feasible, a way to mitigate this potential risk would be to serve these downgradient properties with the extended municipal water supply. The applicant could also consider incorporating treatment into the project's septic system design to reduce its overall nitrogen load.

The applicant should also consider addressing the quality of the project's stormwater. Such water quality treatment and enhanced stormwater best management practices would, among other things, reduce nitrogen inputs to drinking water resources. Because the site already requires substantial earthwork and grading, there are likely opportunities to re-design some of the landscaped areas to provide water quality treatment for stormwater runoff rather than managing it simply through infiltration. The current stormwater system does manage roof runoff through direct infiltration, which is encouraged in the Regional Policy Plan, but does not otherwise appear to provide any water quality treatment capacity for runoff from parking and road surfaces at the site. Strategies that could be employed to achieve this include the use of

bioretention practices such as vegetated swales, filter strips, and rain gardens (which could all be incorporated into the landscape design).

Commission staff notes that the applicant has proposed a landscaping of native plantings and groundcovers that will require little if any nitrogen fertilizer applications to maintain in a healthy state.

A Phase I Environmental Site Assessment was performed on the project site which did not identify any Recognized Environmental Conditions (RECs) or Suspect Conditions. Additionally, the site is located approximately 1-mile upgradient of the former North Truro Naval Air Station, and historic aerial photos of the area do not appear to show any previous development on the site.

NATURAL RESOURCES

- There are no mapped wetlands or vernal pools on or near the site;
- The site is not within the FEMA floodplain;
- The site abuts the Cape Cod National Seashore;
- The site is within mapped priority habitat for eastern box turtle under MESA. NHESP has determined that a “take” can be avoided with implementation of an approved turtle protection plan;
- The project involves significant alteration of existing natural site grade, contours and vegetation. To minimize impacts to on-site and surrounding open space and wildlife and plant habitat areas during construction, the applicant should develop and implement, among other things, the following work plans and protocols:
 - Erosion and sediment control plan;
 - Soils management plan – Soils should be stored and reused on site as much as possible to avoid excessive movement of soils and truck trips;
 - Given the extent of existing tree cover on the site, the number of trees proposed to be removed, the potential for birds to be nesting in those trees, and the proximity of the site to the CCNS, tree removal should avoid the spring/summer breeding bird season;
 - Invasive species management plan- measures should be taken (such as planting native species as proposed) to prevent introducing invasive species onto the site especially given the proximity to the CCNS;
 - To the extent feasible, the applicant should consider burying and co-locating underground utilities proposed to serve the site.

COMMUNITY DESIGN

The project proposes 40 units of new housing on 3.9 acres in a context-sensitive design that includes 13 buildings of various size and form, all clustered around a central green space. The project is in an area with a rural character and the design responds by providing a meandering access road that limits views into the development and maintains the natural vegetated character of the roadway. Most of the proposed buildings are modest in size (the largest of the proposed buildings is located to the rear of the site) and take varying forms, generally responding to the surrounding context with traditional building design features: varied, appropriately-pitched roofs; articulated facades; and the use of natural siding materials.

From: [Ted Malone](#)
To: [Jeffrey Ribeiro](#); [Rae Ann Palmer](#)
Cc: [John O'Reilly](#)
Subject: Fwd: Clover leaf 40B SDS and Drainage plans showing Abutting SDS and well
Date: Monday, December 02, 2019 11:58:57 AM
Attachments: [Cloverleaf Utility Plan - 40B - SDS & Drainage - SHOWING ABUTTING SDS.pdf](#)

Hello Jeff and Rae Ann

The attached communication directly between Emily Bebe and John O'Reilly should probably go through the ZBA for applicant to submit in response to Town staff / Board comments. I want to be sure that we are following proper procedures. Please ask Town Counsel to weigh in.

Thanks,

Ted Malone
cell: 774.216.1747

Sent from my iPhone

From: John O'Reilly <joreilly@jmoreillyassoc.com>
Sent: Monday, December 2, 2019 10:12 AM
To: Emily Beebe
Cc: Ted Malone
Subject: FW: Clover leaf 40B SDS and Drainage plans showing Abutting SDS and well

Emily,
First, the Turkey came out great, not bad for a rookie....

Attached please find the updated site plan showing the proposed sewage system for the proposed housing development, Cloverleaf.

We have added the well and sewage system information of the two closest abutters.

As discussed last Tuesday and based on your initial plan review, we will also be adding to the final construction plans:

- Groundwater information and potential mounding, if applicable
- On-site soil testing, four holes within the primary and additional holes within the reserve areas.
- The proposed sewer lines shall be sleeved when crossing either the main or services to the buildings
- 6 inch clean outs will be specified, one at each building, on the exterior and one at every connection and every 100 feet of sewer piping, or as required by your office upon final review.
- Tee Sizes within the septic tanks will be specified

We will address potential break out for the leaching facility for System B. final grades of the SAS will be determined after the soil testing and final grading is confirmed.

- Effluent filter tees will be specified within the second septic tank
- O&M for the system will be provided along with the permit application.
 - O&M to address potential generator hook-up for the pumps within the sewage system, Owner to review
 - Pressure dose system inspection, process and timing will be address
 - System pumping, time and process will be addressed
 - Filter cleaning, process and timing will be addressed.

Please let me know if you have any other information or your meeting this week with the Board.

Thank you
John

From: Matthew Wrobel <mwrobel@jmoreillyassoc.com>
Sent: Monday, December 2, 2019 11:01 AM
To: John O'Reilly <joreilly@jmoreillyassoc.com>
Subject: RE: Clover leaf 40B SDS and Drainage plans showing Abutting SDS and well

[Heres the update of that pdf with the changes we discussed made](#)

From: Matthew Wrobel
Sent: Monday, December 02, 2019 10:16 AM
To: John O'Reilly <joreilly@jmoreillyassoc.com>
Subject: Clover leaf 40B SDS and Drainage plans showing Abutting SDS and well

Hey John.

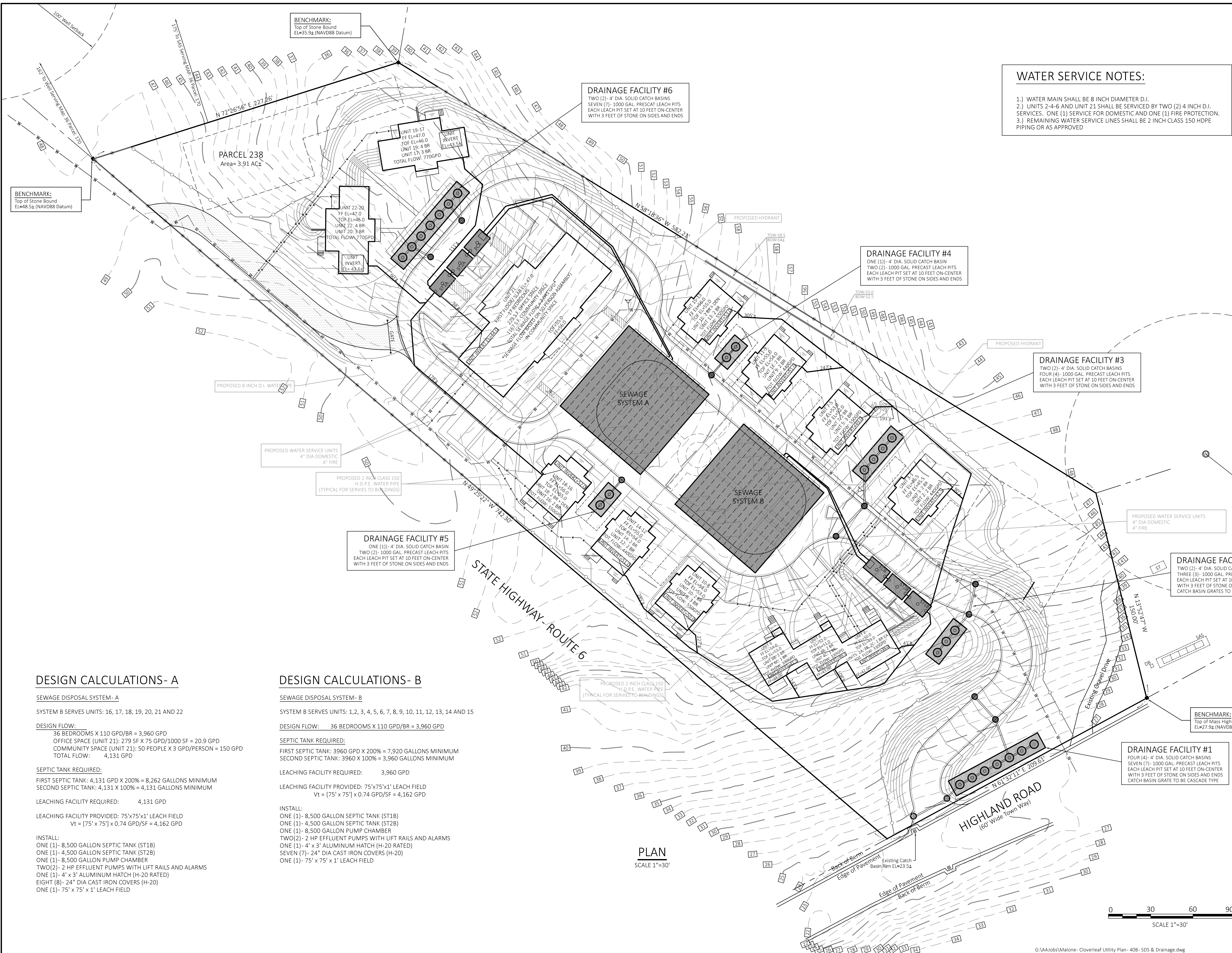
Heres the pdf of the cloverleaf plan showing the two abutting SDS's and the abutting wells for both properties. The well and septic for the property at 423 Rt 6 are falling just outside the plan view as it prints but are visible in the electronic file.

Matthew J. Wrobel, EIT
Civil Engineer

J.M. O'Reilly & Associates, Inc
1573 Main Street 2nd Floor / P.O. Box 1773
Brewster, MA 02631
508-896-6601
508-896-6602 fax
<http://www.jmoreillyassoc.com>

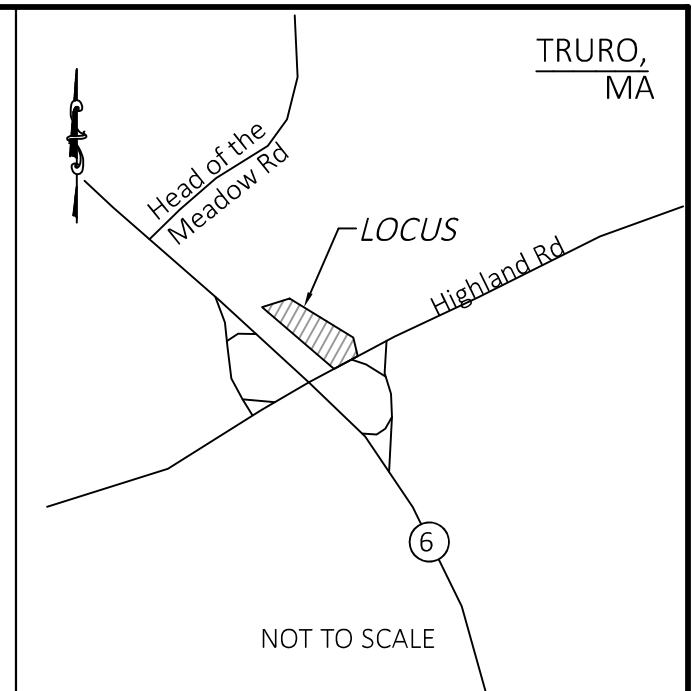
Confidentiality Notice:

This electronic mail message and any attached files contain information intended for the exclusive use of the individual or entity to whom



WATER SERVICE NOTES:

- 1.) WATER MAIN SHALL BE 8 INCH DIAMETER D.I.
- 2.) UNITS 2-4-6 AND UNIT 21 SHALL BE SERVICED BY TWO (2) 4 INCH D.I. SERVICES. ONE (1) SERVICE FOR DOMESTIC AND ONE (1) FIRE PROTECTION.
- 3.) REMAINING WATER SERVICE LINES SHALL BE 2 INCH CLASS 150 HDPE PIPING OR AS APPROVED



PLAN BOOK 672 PAGE 34
 ASSESSORS' MAP 36 PARCEL 238

LEGEND

— 22	EXISTING CONTOUR
— 32	PROPOSED CONTOUR
x 12.34	EXISTING SPOT GRADE
24x5	PROPOSED SPOT GRADE
— W	WATER SERVICE LINE
— U	UNDERGROUND UTILITY SERVICE
— O	OVERHEAD UTILITY SERVICE
— G	GAS SERVICE LINE
⊙	TEST HOLE / BORING LOCATION
⊙	SEPTIC TANK
⊙	DISTRIBUTION BOX
SAS	SOIL ABSORPTION SYSTEM
Reserve	RESERVED FOR FUTURE
⊙	UTILITY POLE
⊙	CATCH BASIN
⊙	FIRE HYDRANT
⊙	WELL
⊙	DRAINAGE MANHOLE
⊙	CONCRETE BOUND, FOUND
—	TOP OF BANK
—	LIMIT OF WORK
—	FENCE
—	EDGE OF CLEARING

SCALE 1"=30'

DESIGN CALCULATIONS- A

SEWAGE DISPOSAL SYSTEM- A

SYSTEM B SERVES UNITS: 16, 17, 18, 19, 20, 21 AND 22

DESIGN FLOW:
 36 BEDROOMS X 110 GPD/BR = 3,960 GPD
 OFFICE SPACE (UNIT 21): 279 SF X 75 GPD/1000 SF = 20.9 GPD
 COMMUNITY SPACE (UNIT 21): 50 PEOPLE X 3 GPD/PERSON = 150 GPD
 TOTAL FLOW: 4,131 GPD

SEPTIC TANK REQUIRED:
 FIRST SEPTIC TANK: 4,131 GPD X 200% = 8,262 GALLONS MINIMUM
 SECOND SEPTIC TANK: 4,131 X 100% = 4,131 GALLONS MINIMUM

LEACHING FACILITY REQUIRED: 4,131 GPD

LEACHING FACILITY PROVIDED: 75'x75'x1' LEACH FIELD
 $V_t = [75' \times 75'] \times 0.74 \text{ GPD/SF} = 4,162 \text{ GPD}$

INSTALL:
 ONE (1)- 8,500 GALLON SEPTIC TANK (ST1B)
 ONE (1)- 4,500 GALLON SEPTIC TANK (ST2B)
 ONE (1)- 8,500 GALLON PUMP CHAMBER
 TWO(2)- 2 HP EFFLUENT PUMPS WITH LIFT RAILS AND ALARMS
 ONE (1)- 4' x 3' ALUMINUM HATCH (H-20 RATED)
 EIGHT (8)- 24" DIA CAST IRON COVERS (H-20)
 ONE (1)- 75' x 75' x 1' LEACH FIELD

DESIGN CALCULATIONS- B

SEWAGE DISPOSAL SYSTEM- B

SYSTEM B SERVES UNITS: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 AND 15

DESIGN FLOW: 36 BEDROOMS X 110 GPD/BR = 3,960 GPD

SEPTIC TANK REQUIRED:
 FIRST SEPTIC TANK: 3960 GPD X 200% = 7,920 GALLONS MINIMUM
 SECOND SEPTIC TANK: 3960 X 100% = 3,960 GALLONS MINIMUM

LEACHING FACILITY REQUIRED: 3,960 GPD

LEACHING FACILITY PROVIDED: 75'x75'x1' LEACH FIELD
 $V_t = [75' \times 75'] \times 0.74 \text{ GPD/SF} = 4,162 \text{ GPD}$

INSTALL:
 ONE (1)- 8,500 GALLON SEPTIC TANK (ST1B)
 ONE (1)- 4,500 GALLON SEPTIC TANK (ST2B)
 ONE (1)- 8,500 GALLON PUMP CHAMBER
 TWO(2)- 2 HP EFFLUENT PUMPS WITH LIFT RAILS AND ALARMS
 ONE (1)- 4' x 3' ALUMINUM HATCH (H-20 RATED)
 SEVEN (7)- 24" DIA CAST IRON COVERS (H-20)
 ONE (1)- 75' x 75' x 1' LEACH FIELD

PLAN
 SCALE 1"=30'



SHEET 2 OF 4
 PERMIT SET - NOT FOR CONSTRUCTION

Community Housing Resource, Inc.
 P.O. Box 1015, Provincetown, MA 02657

SEWAGE-DRAINAGE SITE PLAN- 40B PERMIT SET
 CLOVER LEAF DRIVE, OFF HIGHLAND ROAD, TRURO, MA

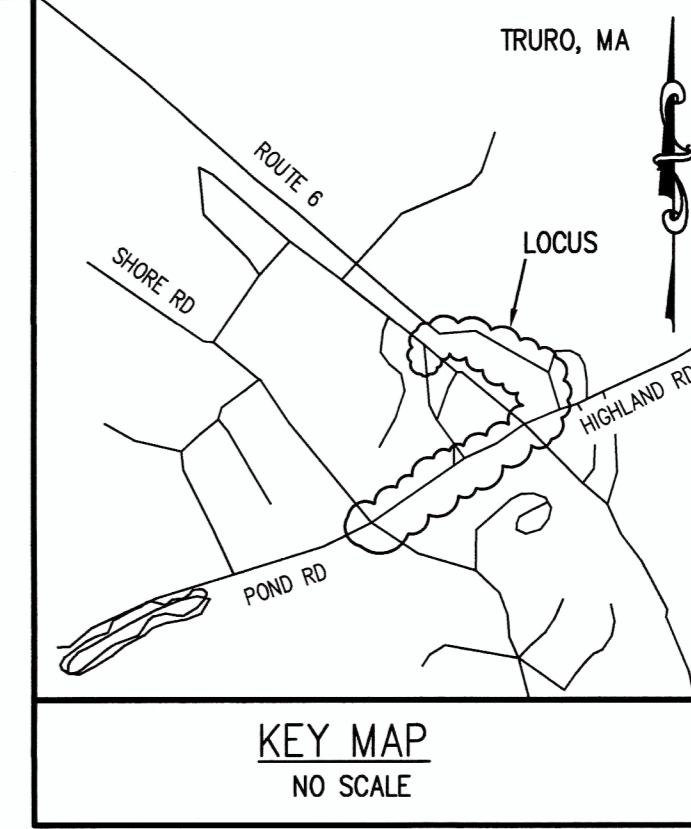
J.M. O'REILLY & ASSOCIATES, INC.
 Professional Engineering & Land Surveying Services

1573 Main Street - Route 6A
 P.O. Box 1773
 Brewster, MA 02631 (508)896-6602 Fax

DATE: 11-1-2019 SCALE: As Noted BY: RFR CHECK: JMO JOB NUMBER: JMO-8446A

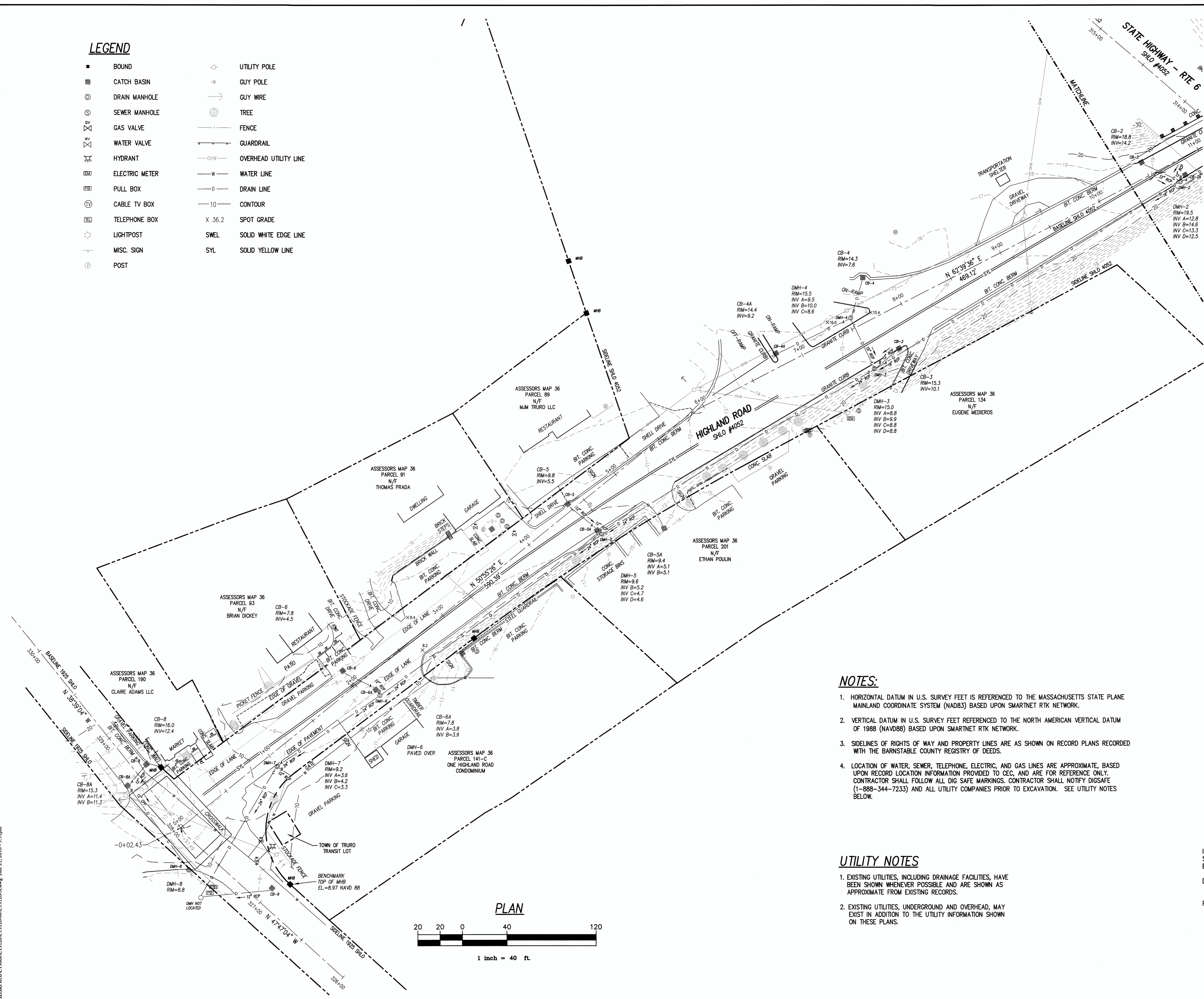
LEGEND

- | | |
|------------------|----------------------------|
| ■ BOUND | ○ UTILITY POLE |
| ▣ CATCH BASIN | ○ GUY POLE |
| ⊙ DRAIN MANHOLE | — GUY WIRE |
| ⊙ SEWER MANHOLE | ● TREE |
| ⊗ GAS VALVE | — FENCE |
| ⊗ WATER VALVE | — GUARDRAIL |
| ⊗ HYDRANT | — OVERHEAD UTILITY LINE |
| ⊗ ELECTRIC METER | — WATER LINE |
| ⊗ PULL BOX | — DRAIN LINE |
| ⊗ CABLE TV BOX | — 10 CONTOUR |
| ⊗ TELEPHONE BOX | X 36.2 SPOT GRADE |
| ⊗ LIGHTPOST | SWEL SOLID WHITE EDGE LINE |
| ⊗ MISC. SIGN | SYL SOLID YELLOW LINE |
| ⊗ POST | |



REFERENCES:
 ASSESSORS MAP 36, PARCEL VARIOUS
 PLAN BOOK 672, PAGE 34
 S.H.L.O. #4052
 S.H.L.O. #8575

DATUM NOTE:
 ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 1988)



NOTES:

- HORIZONTAL DATUM IN U.S. SURVEY FEET IS REFERENCED TO THE MASSACHUSETTS STATE PLANE MAINLAND COORDINATE SYSTEM (NAD83) BASED UPON SMARTNET RTK NETWORK.
- VERTICAL DATUM IN U.S. SURVEY FEET REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED UPON SMARTNET RTK NETWORK.
- SIDELINES OF RIGHTS OF WAY AND PROPERTY LINES ARE AS SHOWN ON RECORD PLANS RECORDED WITH THE BARNSTABLE COUNTY REGISTRY OF DEEDS.
- LOCATION OF WATER, SEWER, TELEPHONE, ELECTRIC, AND GAS LINES ARE APPROXIMATE, BASED UPON RECORD LOCATION INFORMATION PROVIDED TO CEC, AND ARE FOR REFERENCE ONLY. CONTRACTOR SHALL FOLLOW ALL DIG SAFE MARKINGS. CONTRACTOR SHALL NOTIFY DIGSAFE (1-888-344-7233) AND ALL UTILITY COMPANIES PRIOR TO EXCAVATION. SEE UTILITY NOTES BELOW.

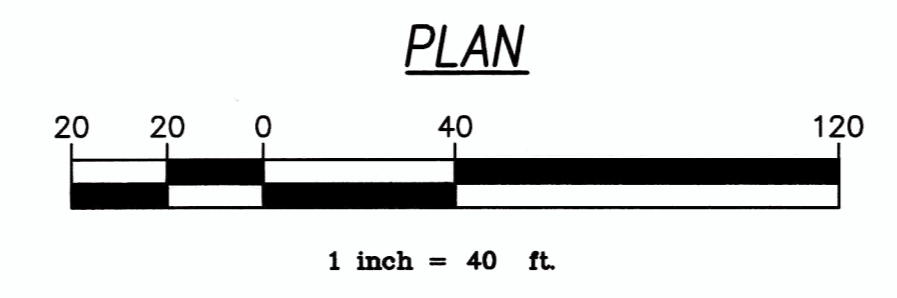
UTILITY NOTES

- EXISTING UTILITIES, INCLUDING DRAINAGE FACILITIES, HAVE BEEN SHOWN WHENEVER POSSIBLE AND ARE SHOWN AS APPROXIMATE FROM EXISTING RECORDS.
- EXISTING UTILITIES, UNDERGROUND AND OVERHEAD, MAY EXIST IN ADDITION TO THE UTILITY INFORMATION SHOWN ON THESE PLANS.

I HEREBY CERTIFY THAT THE CONDITIONS SHOWN HEREON ARE LOCATED AS THEY EXISTED ON THE GROUND AS OF 12-11-18.

DATE Dec. 21, 2018

P.L.S.



NO.	DATE	REVISION	BY

PROJECT: ENVIRONMENTAL PARTNERS GROUP, INC.
 OFF HIGHLAND ROAD
 TRURO, MA

SHEET TITLE: PLAN SHOWING EXISTING SITE CONDITIONS

SCALE: AS NOTED

DRAWING FILE: C19126-X.dwg

DATE: 12-21-18

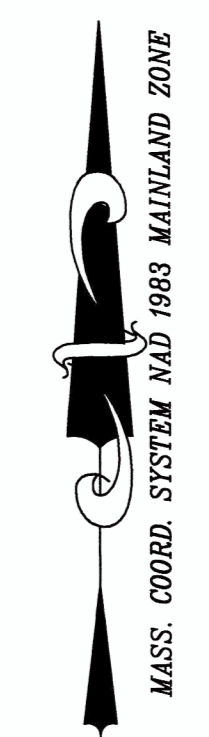
DRAWN BY: JLH

CHECKED BY:

1 OF 2 SHEETS

PROJECT NO: C19126.00

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NO.	DATE	REVISION

SEAL

PROJECT
ENVIRONMENTAL PARTNERS GROUP, INC.
OFF HIGHLAND ROAD
TRURO, MA

SHEET TITLE
**PLAN SHOWING EXISTING
SITE CONDITIONS**

SCALE AS NOTED
DRAWING FILE C19126-X.dwg
DATE 12-21-18
DRAWN BY JLH
CHECKED BY

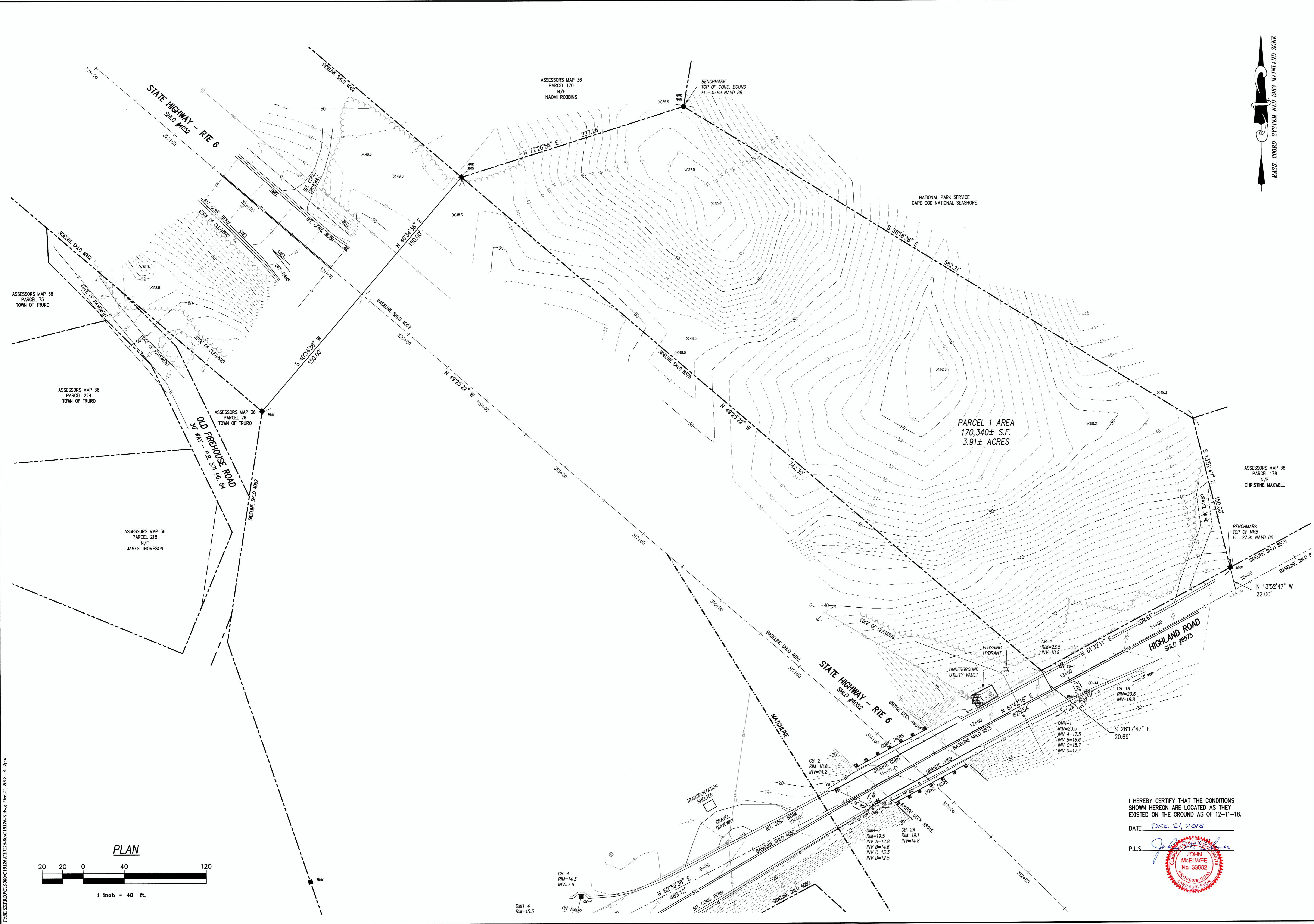
PROJECT NO. C19126.00

DATE Dec 21, 2018

P.L.S. *John McElwhee*

JOHN McELWHEE
No. 33602
PROFESSIONAL LAND SURVEYOR

C1.12
2 OF 2 SHEETS



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