

# LEWIS LANDING

## PROPOSED MULTI-UNIT RESIDENTIAL DEVELOPMENT

### HUTTLESTON AVE.

### FAIRHAVEN, MASSACHUSETTS

**APPLICANT/OWNER:**

DANA LEWIS  
18 TANNER LANE  
FAIRHAVEN, MA 02719

**LOCUS:**

MAP 31 - LOT 117C AND LOT 115A  
HUTTLESTON AVENUE  
FAIRHAVEN, MA



**SCHEDULE OF DRAWINGS**

SHEET NUMBER	PLAN TITLE
-	COVER SHEET
1	EXISTING CONDITIONS PLAN
2	SITE LAYOUT AND LANDSCAPING PLAN
3	GRADING & UTILITIES PLAN
4	EROSION CONTROL PLAN
5	DETAIL SHEET-1
6	DETAIL SHEET-2
7	ARCHITECTURALS

**PLANNING BOARD WAIVERS REQUESTED FOR  
STORMWATER MANAGEMENT REGULATIONS**

1. FAIRHAVEN ZONING BYLAW 198-31.1 (C)  
(2) (g) [6] REQUIRING BASINS AND  
PONDS TO HAVE 4:1 SIDE SLOPES AND  
SEDIMENT FOREBAYS TO HAVE 3:1 SIDE  
SLOPES.
2. FAIRHAVEN ZONING BYLAW 198-31.1 (A)  
(1) (a) [2] ALLOWING NO INCREASE IN  
THE 10-YEAR STORM RUNOFF VOLUME  
DUE TO SOILS UNSUITABLE FOR  
INFILTRATION.

**PREPARED BY:**



CIVIL ENGINEERING—LAND SURVEYING—ENVIRONMENTAL ASSESSMENT  
P.O. BOX 1088, 350 BEDFORD STREET, LAKEVILLE, MA 02347  
TEL: 508.947.0050 FAX: 508.947.2004



SCALE: 1"=100'

**SEPTEMBER 9, 2019**

REVISED JULY 8, 2020



LOCUS

520' SIGHT DISTANCE

620' SIGHT DISTANCE



30B

NEW BO  
ROA

(FORMERLY WASHINGTON STREET)

AVENUE

hu.

24  
21.179

113  
15,119

112  
31 952114  
18.000+

**115A**  
19.050±

117C  
ACR -

117A  
22,823

**24C**  
15.00

111  
21.000

117  
ACR. -157  
11,756

158  
0,600

159  
10,60160  
10,6016  
10,60

16  
10,0

24E  
14.80

110  
13.535

**140**  
11,60

14  
11,9

142

BROOKVIEW

STREET

46 85 DRIVE

11.

92.51

63  
703164  
10,900

10,9

16  
10,9

10,90

11,000

169  
2,345

170  
10,9017  
10,90

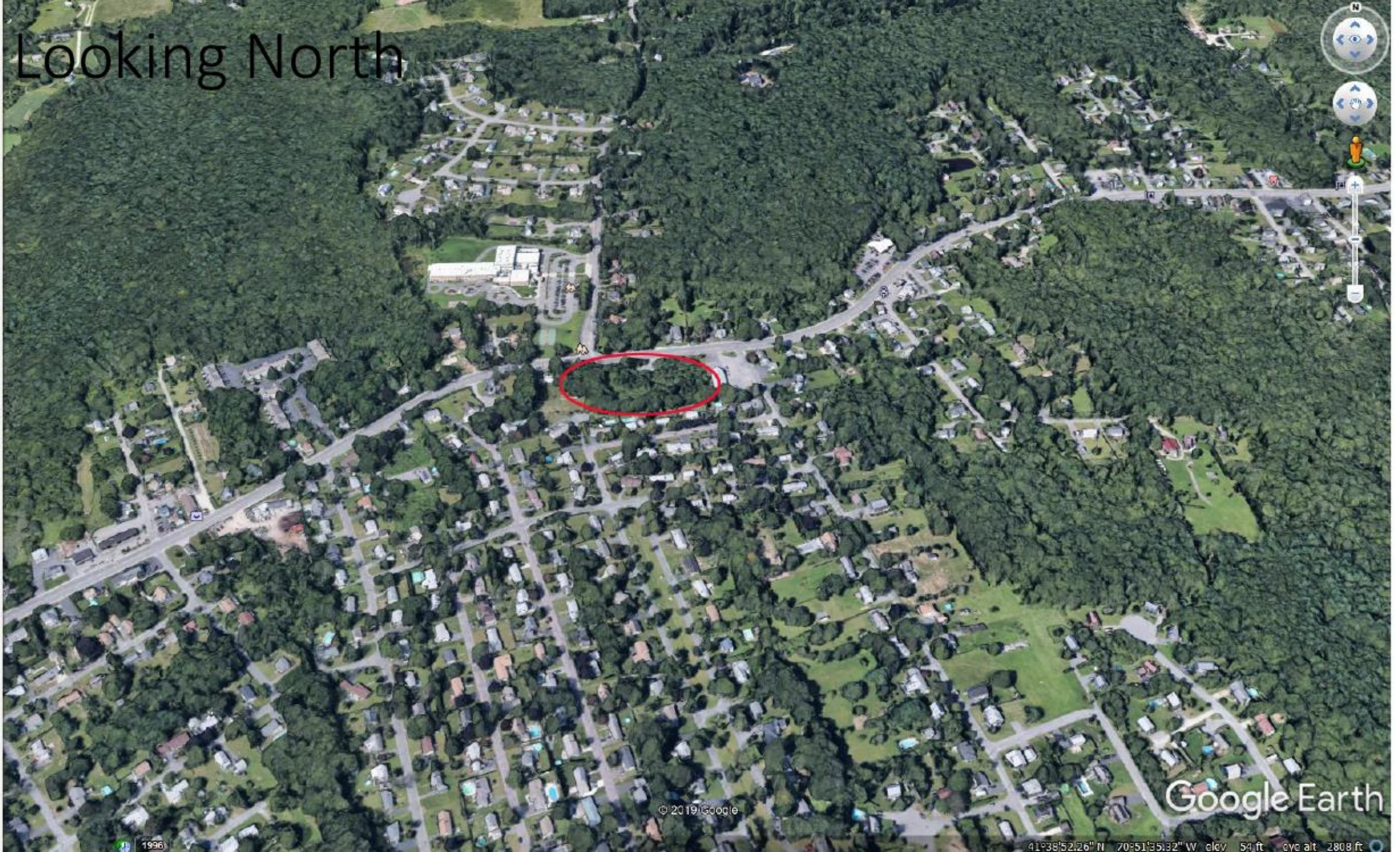
17  
10,9

17  
10,90174  
10.03

ROAD



# Looking North



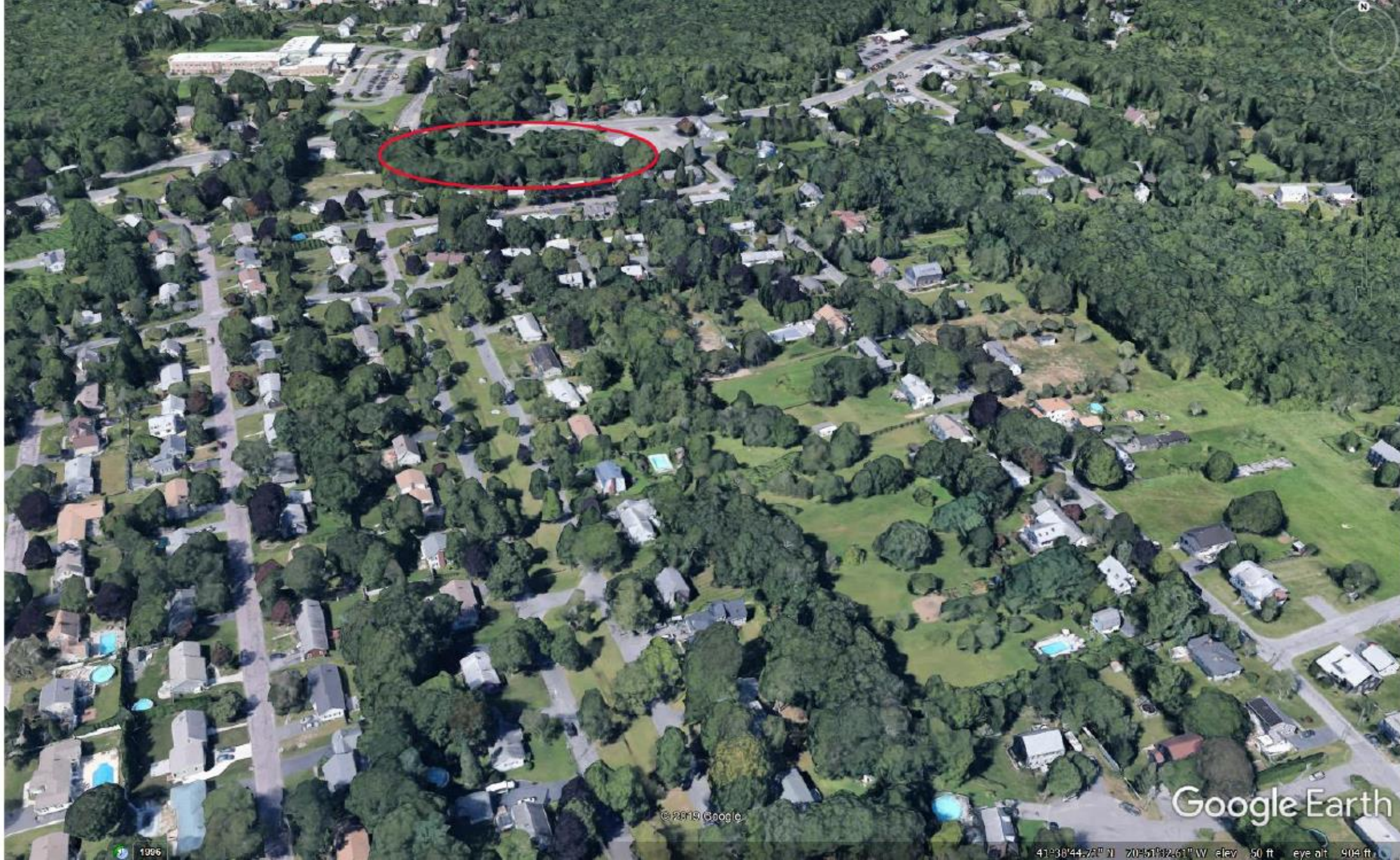
© 2019 Google

Google Earth

1996

41°38'52.26" N 70°51'35.32" W elev 54 ft eye alt 2808 ft





© 2019 Google

Google Earth

1996

41°38'44.72" N 70°51'32.61" W elev 150 ft eye alt 904 ft



Looking South



© 2019 Google

Google Earth

1996

Imagery Date: 10/5/2018 41°38'58.43" N 70°51'42.80" W elev 55 ft eye alt 2694 ft



Click and drag to rotate, or click "N" to reset to north



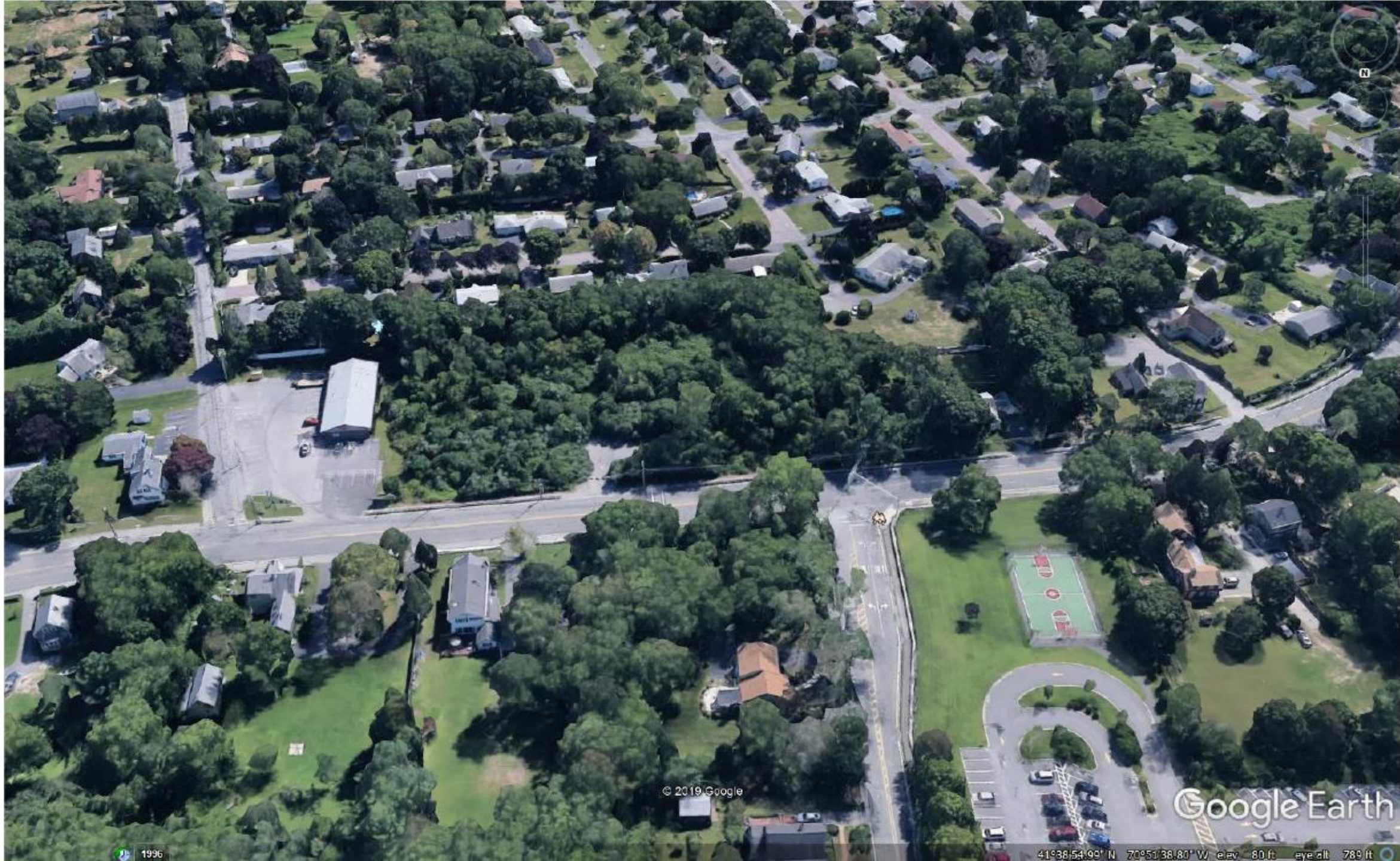
© 2019 Google

Google Earth

1996

41°38'55.81" N 70°51'37.46" W elev 54 ft eye alt 1248 ft





© 2019 Google

Google Earth

1996

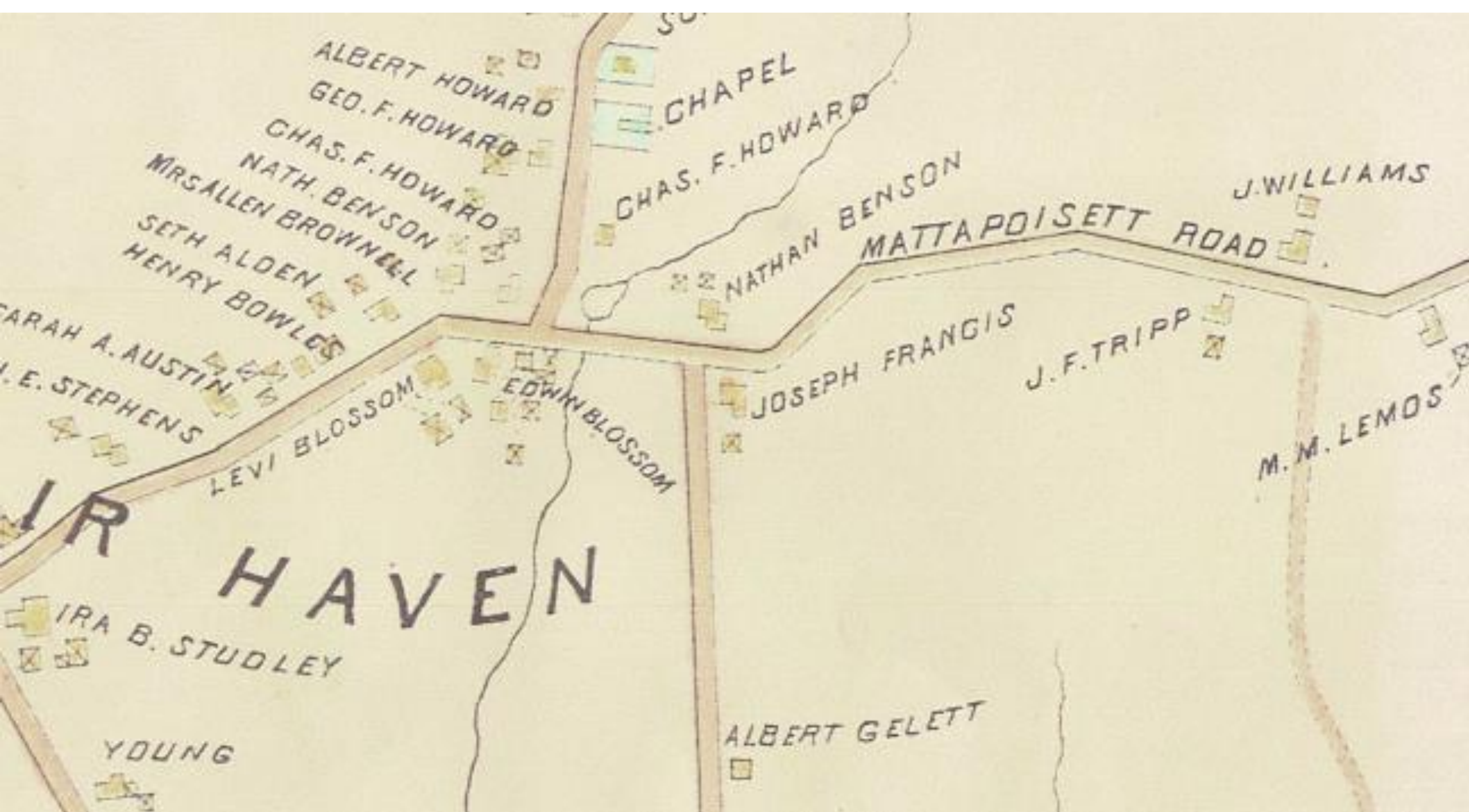
41°38'54.99" N 70°51'38.80" W elev 80 ft eye alt 789 ft



1895







ALBERT HOWARD  
GEO. F. HOWARD

CHAPEL

CHAS. F. HOWARD

J. WILLIAMS

MATTAPoisETT ROAD

NATHAN BENSON

CHAS. F. HOWARD  
NATH. BENSON

MRS ALLEN BROWNELL  
SETH ALDEN

HENRY BOWLES

CARAH A. AUSTIN  
E. STEPHENS

LEVI BLOSSOM

EDWIN BLOSSOM

JOSEPH FRANGIS

J. F. TRIPP

M. M. LEMOS

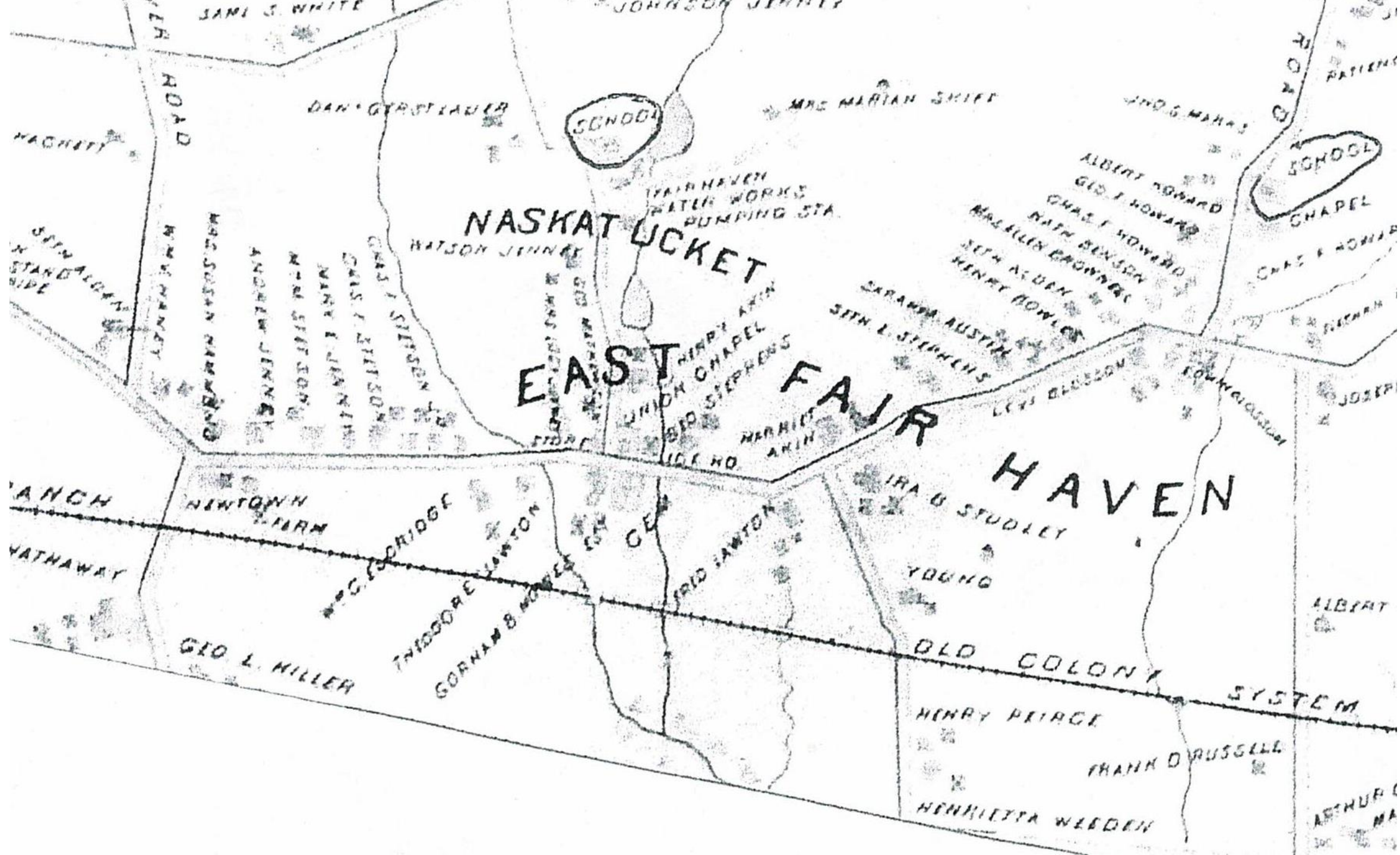
H A V E N

IRA B. STUDLEY

YOUNG

ALBERT GELETT





NASKATUCKET

EAST FAIR

HAVEN

SONODA

SCHOOL

CHAPEL

FAIR HAVEN  
PUMPING STA.

ROAD

ROAD

HATHAWAY

NEWTON H. FARM

GEO. L. MILLER

W.C. SCRIDGE

THEODORE LAWTON

GORNAN B. HOWES

JOHN LAWTON

IRA B. STODLEY

YOUNG

OLD COLONY

SYSTEM

HENRY PIERCE

FRANK D. RUSSELL

HENRIETTA WEDDEN

ALBERT

ARTHUR L. MA

DAN GERSTADTER

MRS. MARIAN SHIFF

JNO. G. MAHES

ALBERT HOWARD

GEO. L. HOWARD

CHARL. HOWARD

RATH BENSON

MARSHALL BROWNELL

SITH ALDEN

HENRY BOWLER

SARA ANN AUSTIN

SITH L. STEPHENS

LEWIS BLOSSOM

JOHN HANCOCK

JOSEPH

HENRY AKIN

UNION CHAPEL

GEO. STEPHENS

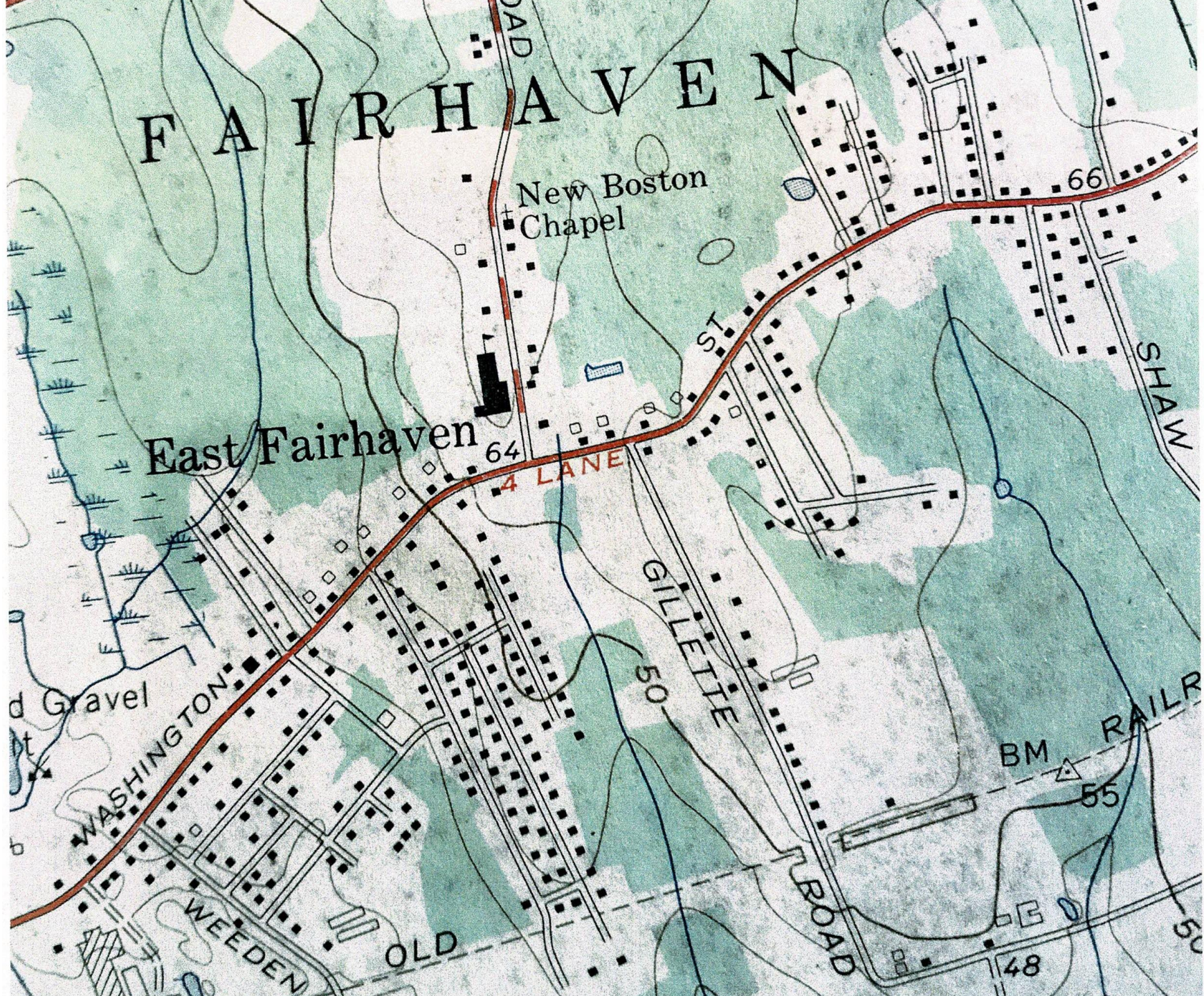
HARRIET AKIN

ICE HO.

CEA



1962





# DESCRIPTION

- **Applicant:** Dana Lewis, Represented by Richard Rheame, P.E. of Prime Engineering, Inc.
- **Project Location:** The location is Huttleston Avenue (between 347 and 355), Map 31 Lots 115A and 117C. The project is directly to the west of the liquor store on the corner of Rt. 6 and Gellette Rd.
- **Proposal:** To construct Twelve (12) residential units with twenty-four (24) bedrooms in four (4) multi-unit residential buildings with three (3) two-bedroom units each. twenty-eight (28) parking spaces and associated infrastructure, stormwater control and landscaping.
- **Zoning:** Rezoned to Apartment/Multifamily (RC) from RA and B in 2018.
- **Local Permits:** Conservation Commission Notice of Intent for work within the 100-foot buffer to wetlands; Building; Land Disturbance Permit (Chapter 194) from the Fairhaven Board of Public Works.
- **Other Permits:** The proposed work area is over 1 acre and requires filing an US EPA - NPDES permit and associated SWPPP;



# Project History:

- The site was a wetland that was mostly filled and became a roadwork staging area.
- The site is overgrown with brush that are mostly invasive species.
- A stonewall separates the smaller lot 115A, which is a few feet lower, than 117C.
- The two properties were rezoned to Apartment/Multifamily (RC) from RA and B in 2018 by a developer. The rezone was approved with a Covenant “limiting the total number of condominium units in their project...”. The Covenant also requires “Condominium Documents, which will be reviewed by Town Counsel prior to project approval...”. The current proposal is for apartments.
- As part of the rezone the “Covenantors” agreed to a condition “they will limit their Project to a total of not more than twelve (12) condominium units having no more than twenty-four (24) bedrooms total and structures not to exceed two (2) stories.” It also includes that “Project’s Condominium Documents, which will be reviewed by Town Counsel prior to Project approval...”
- The smaller lot, Map 31, 115A, is 19,005 square feet and was a Single Residence District (RA). The larger lot, Map 31, Lot 117C is 2.06 acres and was Business District (B) since 1965. Both were rezoned to Apartment/Multifamily Districts (RC).
- At the time of the rezone, the Police Department noted that they had a concern with any future ingress/egress to the site because of the curvature and hill on Huttleston Avenue. As one combined similarly zoned lot the Special Permit Authority can limit curb cuts.



# ADMINISTRATIVE SUMMARY

- **Complete Filing Received:** September 21, 2019.
- **Advertisements:** The project was originally advertised in the Thursday October 17, 2019 and Thursday October 24, 2019 editions of the Fairhaven Neighborhood News. The project was re-advertised in the Thursday August 6, 2020 and August 13, 2020 editions of the Fairhaven Neighborhood News.
- **Extensions:** On October 15, 2020 the Agent requested a continuation to the November 5, 2029 Public Hearing; On March 9, 2020 the Agent requested a continuation to the March 24, 2020 public hearing; On March 9, 2020 the Agent granted an additional two months to action on the petition. On March 10, 2020, the Governor declared a State of Emergency tolling all permits until 90 days after the end of the State of Emergency. The State of Emergency is still in effect.
- **Routing Sent:** January 3, 2020
- **Public Hearing:** The Lewis Landing Special Permit public hearing was opened on January 28, 2020 and continued to February 25, 2020. The public hearing was heard on that date and was continued again to March 25 but that meeting was cancelled due to the State of Emergency. The continued Public Hearing was re-advertised and noticed to resume on August 25, 2020.



# SP 2019-13 Lewis Landing Routing Comments

- Fire Department:
  - No concerns except developer needs the correct water main size for sprinkler system.
- Police Department:
  - Note Route 6 has heavy traffic at this location and have a concern with the sightline distance to the left when exiting the property from the proposed westerly entry.
  - Most MV's drive well in excess of eastbound 35 MPH (school, hill, curve).
- Public Works Department:
  - Existing drain manhole at the SW corner of the property needs to be rebuilt;
  - Southwest corner of the site has ponding of water now.
  - Discharge at proposed maintenance shed will only make the problem worse
  - Sewer: Several clarifications needed.
  - Water: 8" Ductile Iron Water Main needed for project and Separate water shut off needed for each unit.
  - BPW: Preconstruction Meeting with Utility Contractor
    - Fees: Sewer, Water, Driveway, Trench Permit, Inspection Services and As-built plans



# SP 2019-13 Lewis Landing Routing Comments

- Conservation :

- Project before the Conservation Commission since October 15, 2019.
- Revised plans dated December 4, 2019 were submitted in response to peer review comments regarding stormwater.
- The applicant is requesting variances to the Massachusetts Wetlands Protection Act Stormwater Regulations. Additionally, there are a few aspects of the stormwater design that do not meet Massachusetts Stormwater Standards.
- The engineer submitted revised plans and responses to the most recent stormwater peer review on January 23 to be presented to the Conservation Commission at their January 27 meeting.



# Environment

- Overall, the site consists of invasive brush and contains a lot of wild rose and phragmites. There is one specimen Linden Tree that has been identified to be retained.
- All of the proposed rain garden plants are native.
- Most of the landscaping plants are native.
- **Wetlands: Soil tests indicate the** site was a wetland that was mostly filled.
- The southern border and southwest corner are still wetlands.
- **Two of the proposed four-unit buildings are within the 100-foot buffer of the wetlands.**
- Stormwater is piped under the road to a low spot to an old manhole and then piped in another line to an open swale that runs several blocks down along Brook Drive.
- **Habitat:** The site is not in an NHESP Priority Habitat



# Storm water:

- The fourth and most recent Peer Review by GCG was submitted on May 11, 2020 based on the February 14, 2020 plans. The Agent has subsequently revised the plans on June 26, 2020 and July 8, 2020. Staff has asked the Agent to prepare a response to the GCG Comments of May 11.
- The Agent submitted 4 letters dated June 1; June 20; June 24 and July 23, 2020.
  - June 1, 2020: Agent notes that Peer Review wants them to cut the trees in the proposed infiltration area on Lot 115A. The Peer Reviewer said they could not accurately calculate the amount of water being detained and that the trees detritus would impact the effectiveness of the detention and maintenance. The Agent requests that they be allowed to retain the existing trees within the proposed infiltration area. He says the area has four times the capacity then required. They also request keeping landscaping along the pocket wetlands which the Peer Review says will block maintenance.
  - June 20, 2020: Agent requests that the Board not require any more Peer Review.
  - June 23, 2020: Agent reports that a video assessment of the existing drain lines and manhole was conducted that shows the "Route 6 drainage system has been abandoned and is clogged with soi. It is clear that MassDOT extended the drainage system westerly as shon on revised plan...It is proposed to re-habilitate that manhole and to install a bolt down manhole cover..." They believe these two actions will result in less overland flow than currently occurs.
  - July 23, 2020: A one-page summary of changes since February.



# Storm water:

- **Four (4) waivers from Section 198.31.1 requested.** The original Peer Review identified additional Waivers that were required. If the Planning Board approves of the pocket wetland as a Best Management Practice then some of those additional waivers are not required.
  - The majority of paved areas are generally at least 25 feet away from the edge of the wetlands.
  - Applicant offers that once the project is approved an easement will be granted to MassDOT and the Town to preserve the right of the existing drainpipes).
- **(Section 198-31.1 (c)(2)(g)[6].** “the design does not meet the 15 feet width access path as required by MSH, which is under MDEP jurisdiction. Since the pocket wetland requires sediment clean once every ten years and will be maintained by a private contractor. Waiver requested.
- **(Section 198-31.1 (c)(2)(n)[6].** “The existing RCPs are located at the bottom of constructed pocket wetland, which requires sediment clean out once every 10 years... GCG recommends applicant to install a foot of rip-rap stone over the two pipes for protections during sediment clean out.
- **(Section 198-31.1 (A)(1)(a)[2].** “This is a Town of Fairhaven requirement and as proposed the post-development 10-year storm event would increase the runoff volume from pre-development condition’s 0.269 a.f. to 0.411 a.f. It would require additional square feet of infiltration area to control the runoff volume(Note: the area of development has been reduced so the area would be reduced. Staff has requested GCG to estimate the revised area). The latest calculations shown an increase of runoff volume of 0.148-acre feet (6,447 cubic feet) during the 10-year storm event. This is a local requirement; If a wavier is not considered, this would require an addition infiltration basin be designed at the downstream of pocket wetland outfall.” Waiver Requested. GCG recommends to properly sizing the infiltration area based on MSH requirements without the required ESHGW separation. Infiltration volume calculations at the downstream of pocket wetland should be included in the HydroCAD report.
- **(Section 198-31.1 (A) (1) (a) [2].** “To allow an increase in the volume of runoff since the soils are not suitable for infiltration. See comment #3 above. See comment #3 above”.



# Transportation

- **Access:** Proposal now has one driveway onto Route 6. However, it is onto a busy section of Route 6 carrying 11,000- 12,000 cars a day.
  - The existing driveway is proposed to be relocated to the west about 80' from existing curb cut. **A second entry was removed.**
  - Liquor store has a 60' wide curb cut on Route 6 and 160' wide cut on Gellette Road.
- **Sight Lines:**
  - The sightline from the proposed driveway is just over 300 feet but is located at a **dangerous location.**
  - **The driveway is proposed between two intersections that experience a higher crash rate than other sections of the road.**
  - **Exiting the property to the left is an intersection, a curve and a hill.**
  - **Police noted during the Rezone that this was an area of concern.**
- **Safety/Accidents:** From 2015-2017 there appear to have been about six (6) accidents at the New Boston Road/Route 6 Intersection. There appear to have been four (4) accidents at the Gellette/Route 6 intersection with two of those including injuries.



# Transportation

- **Trip Generation:** (Existing – Zero)
  - 12 residential units can be expected to create approximately 120 vehicle trips/day.
  - **Proposed:** According to the Applicant traffic estimates
  - The peak hour trips during the morning peak weekday hour (7 a.m. to 9 a.m.) is projected to be 11 with 2 vehicles entering and 9 vehicles exiting.
  - The peak hour trip ends during the adjacent street's afternoon peak weekday hour (4 p.m. to 6 p.m.) is projected to be 12 with 8 vehicles entering and 4 vehicles exiting.
  - **Vehicular Volume of Road:** Route 6 at this location carries approximately 11,000 – 12,000 cars a day (SRPEDD Rt. 6 Study). East bound the Speed Limit is 35 MPH and west bound it is 40 MPH.
  - **Nearby Intersections (LOS):** The LOS for the nearby Intersections is C.
  - **Parking:** Proposal is for 28 parking spaces including two accessible spots.
  - **Mass Transit:** This area is not currently serviced by mass transit.



# ZONING & SPECIAL PERMIT CRITERIA

- **Zoning Criteria: § 198-2. Purpose of Zoning: How does the proposal adhere to the following purposes of § 198:**
  - ***A. Does design promote the health, safety, convenience and general welfare?***
- The proposal creates a new curb cut and generates new traffic between two curb cuts (New Boston and Gellete Rd.) that are dangerous.
  - ***B. Does design lessen the danger from fire, flood, panic and other... disasters?***
- The existing site has distinct flooding problems. The revised plan increases the flow of stormwater off of the site but at a slower rate.
  - ***C. Does design improve and beautify the town?***
- The design shows bare utilitarian buildings that do not beautify the Town. The removal of invasive species and addition of street trees is an improvement.
  - ***D. Does design prevent overcrowding of land?***
- The design proposes to fit the maximum number of units allowed by Town Meeting. The two-story units are less than 900 sf each with little storage and no amenities.
  - ***E. Does design avoid undue concentration of population?***
- The plan is crowded.



# ZONING & SPECIAL PERMIT CRITERIA

- *F. Does design facilitate the adequate needs of water, water supply, drainage, sewerage, schools, parks, open space and other public requirements?*
- The site has existing drainage problems that will not be entirely solved by the proposed stormwater system. The site is across Route 6 from the East Fairhaven School. However, the apartments are so small they are not conducive to children.
  - *G. Does the design conserve the value of land and buildings, including the conservation of natural resources and the prevention of blight and pollution of the environment?*
- The bare buildings originally billed to the Town as condominiums have become rentals that will not improve the value of the neighborhood.
  - *H. Does the design encourage the most appropriate use of land throughout the town?*
- TBD.
  - *I. Does the design preserve and increase amenities ...*
- There is no room for additional amenities on the site when fitting 12 units on the available land.

**Special Permit Criteria:§198-29(1): How does the proposal show Harmony with the general purpose and intent of the Special Permit chapter, and are the standards of Section 198-29(1) met by the use as designed:**

- **§198-29(1)(a): Does design assure safety with respect to internal circulation and egress of traffic.**
  - The site ingress/egress is not optimal.
- **§198-29(1)(b): Does design provide adequate access for fire and service equipment.**
  - The Fire Department will be contacted on the revised plan.
- **§198-29(1)(c): Does design provide adequate utility services and drainage facilities ...**
  - The site was a wetlands that were filled. There was once a larger pond across the road that was filled in over the years. The low side of this site accumulates stormwater before draining to a long drainage swale.
- **§198-29(1)(d): Does Landscape design conform to § 198-27C of this chapter.**
- **§198-27C(1): No off-street parking area for five or more cars shall be located within the required front, side or rear yard setback. If no setback is required minimum parking setback shall be 6'.**
  - There is no parking in the setback.
- **§198-27C(2): Required parking areas paved, unless exempted by Special Permit.**
  - The parking is proposed to be paved.



Special Permit Criteria:§198-29(1): show Harmony with the general purpose and intent of the Special Permit chapter

- **§ 198-27C (3): Backing onto a public way?**
  - There is no proposed backing into a public way.
- **§198-27C (4): Perimeter landscaping requirements. Parking for 5 or more cars include the following:**
- **§ 198-27C (4) (a): A landscaped buffer strip ...adjacent to any public road...**
  - A vegetated buffer strip is proposed with Red Maples and an Inkberry Holly hedge.
- **§ 198-27C (b): A landscaped buffer strip shall be provided adjacent to any adjoining uses...**
  - There is not a landscaped buffer between the units and the abutting liquor store.
  - A 6' stockade fence is proposed along the liquor store parking.
- **§ 198-27C (c): Plantings shall include the incorporation of evergreen and deciduous plantings ...**
  - Blue Spruce evergreen and inkberry evergreens are included among the mostly deciduous plantings.

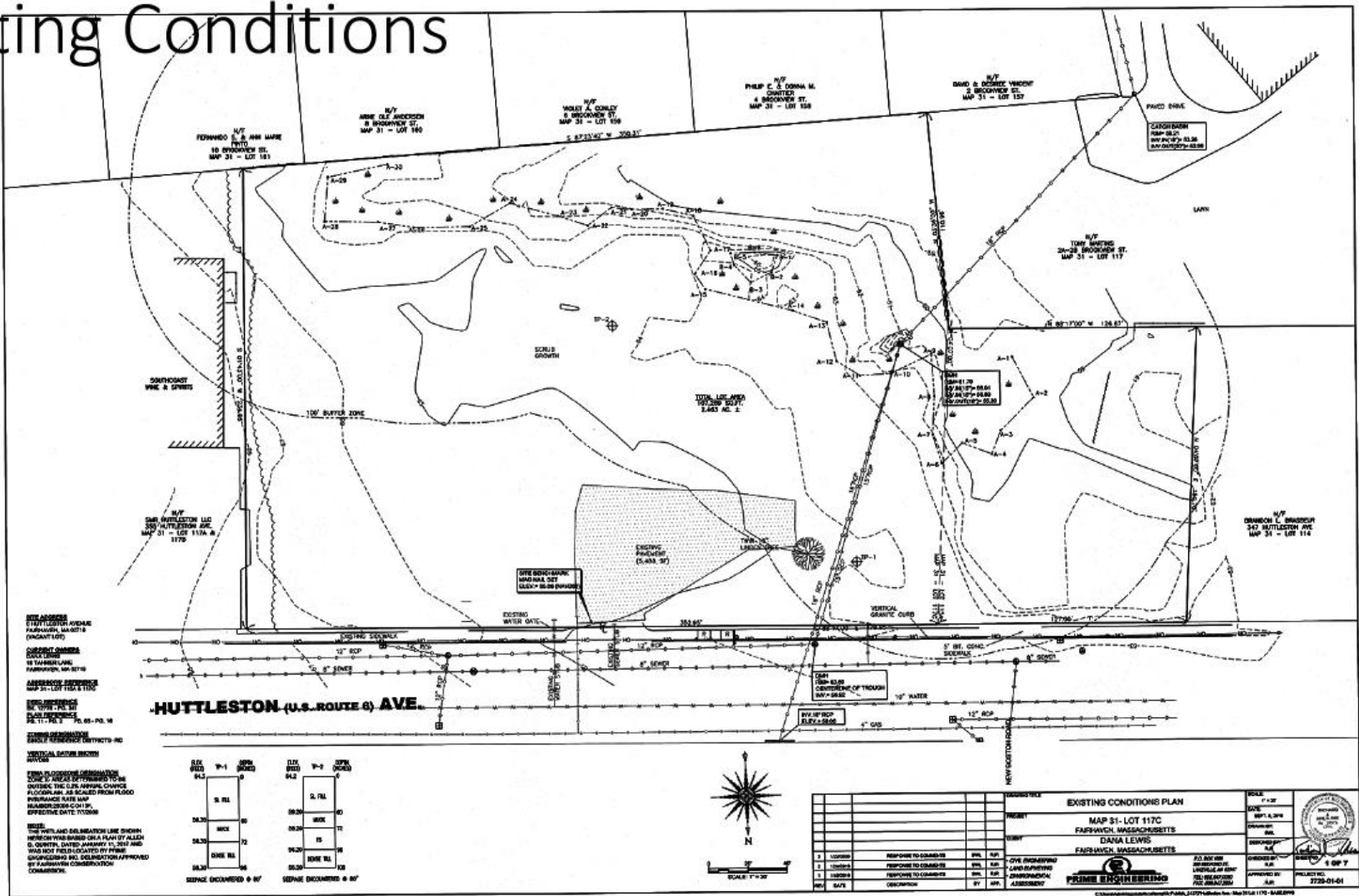
# KEY PLANNING CONCERNS

- Traffic: New Curb cut at Difficult Location:
  - Sightline distance to west is not optimal. Listed as 400 feet it appears to be less than 300 feet and cars generally drive significantly faster than the posted 35 MPH.
  - The extended curb cut of the Liquor Store next to the narrow entrance to Gillette Road creates backups on Route 6. Proposal adds new curb cut at dangerous location just after cars come around a curve on a hill.
- Stormwater and Drainage:
  - Site is located on app. 5' of fill over a onetime wetland with poor soil and a high water table. Infiltration is difficult.
  - Without waivers, Peer Review indicates they would need additional area for infiltration area to control the stormwater runoff. What would the project look like without waivers?
- Wetlands:
  - The southern border and southwest corner are still wetlands.
  - Stormwater is piped under the road to a poorly functioning manhole and then piped in another line to an open swale that runs several blocks down along Brook Drive.
- Flooding:
  - SW corner of the property has a ponding issue.





# Existing Conditions





N/F  
FERNANDO S. & ANN MARIE  
PINTO  
10 BROOKVIEW ST.  
MAP 31 - LOT 161

ARNE OLE ANDERSEN  
8 BROOKVIEW ST.  
MAP 31 - LOT 160

6 BROOKVIEW ST.  
MAP 31 - LOT 159

S 87°23'40" W 350.31'

# Existing Conditions

CATCH BASIN  
RIM= 59.21  
INV. IN (18")= 53.26  
INV. OUT (20")= 52.96

N/F  
TONY MARTINS  
2A-2B BROOKVIEW ST.  
MAP 31 - LOT 117

LLC  
AVE.  
17A &

100' BUFFER ZONE

SCRUB  
GROWTH

TOTAL LOT AREA  
107,289 SQ. FT.  
2.463 AC. ±

SITE BENCHMARK  
MAG NAIL SET  
ELEV.= 65.06 (NAVD83)

EXISTING  
PAVEMENT  
(5,488 SF)

TWIN-18  
LINDSEY TREE

DMH  
RIM= 61.70  
INV. IN (15")= 56.01  
INV. IN (18")= 56.89  
INV. OUT (18")= 55.30

VERTICAL  
GRANITE CURB

5' BIT. CONC.  
SIDEWALK

8" SEWER

EXISTING SIDEWALK

12" RCP

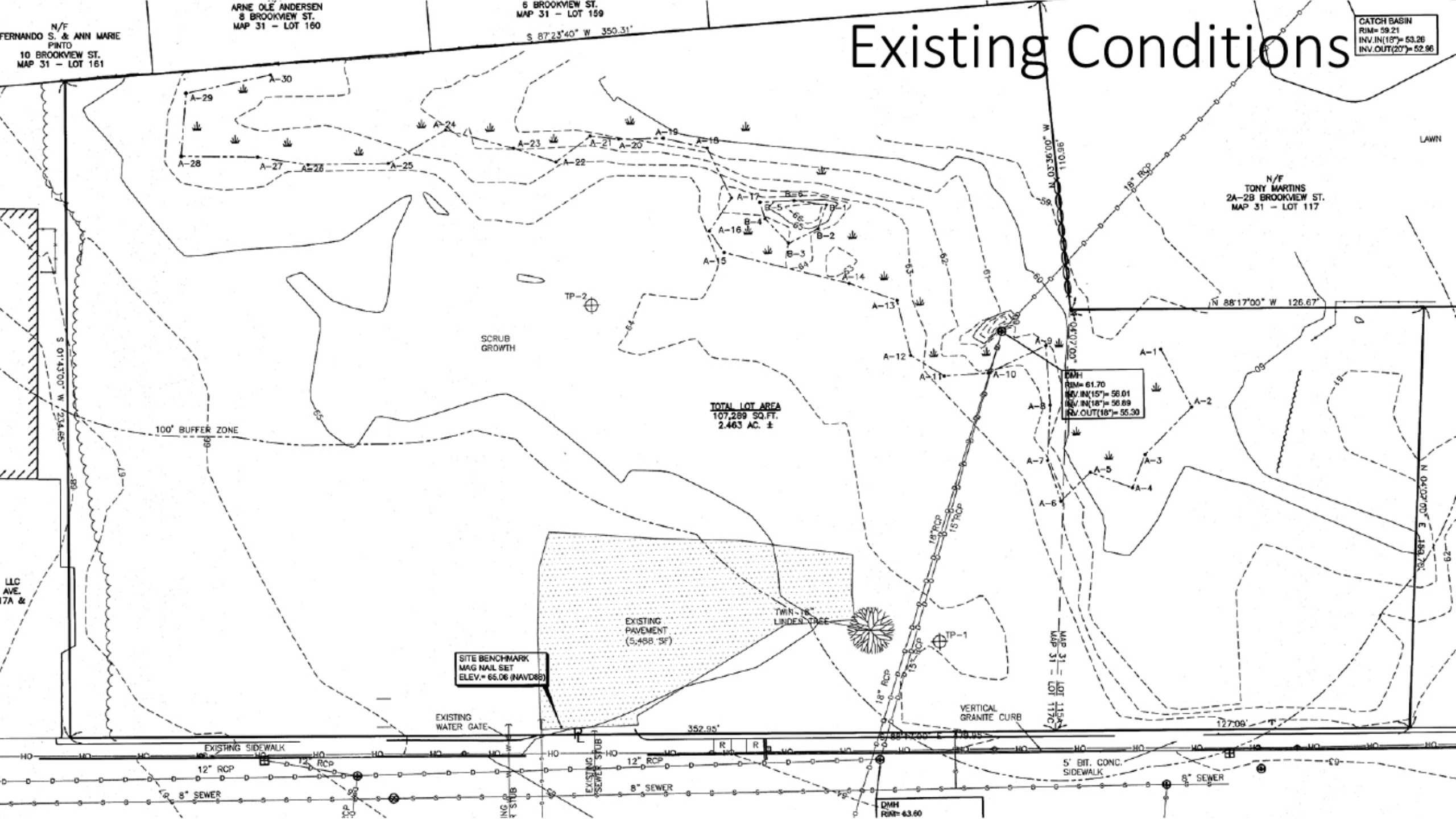
8" SEWER

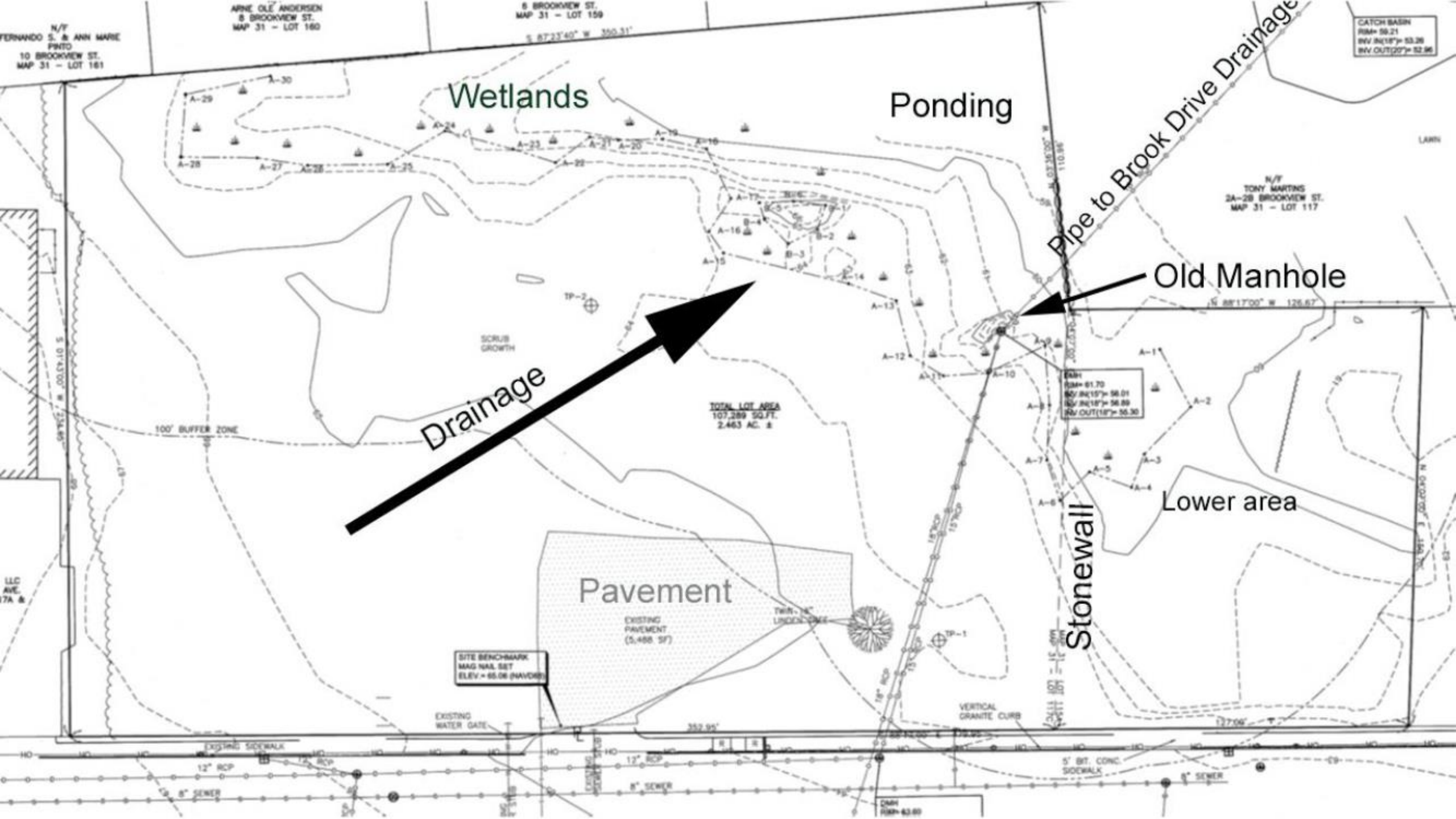
EXISTING  
WATER GATE

EXISTING  
SEWER STUB

8" SEWER

DMH  
RIM= 63.60







# Existing Conditions Photos







































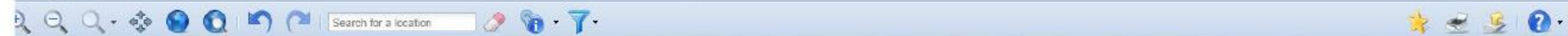
# MuniMapper: Fairhaven, MA

[Town of Fairhaven Web Site](#)

[Disclaimer](#)



## 300' from c.l. NBR to Curve



























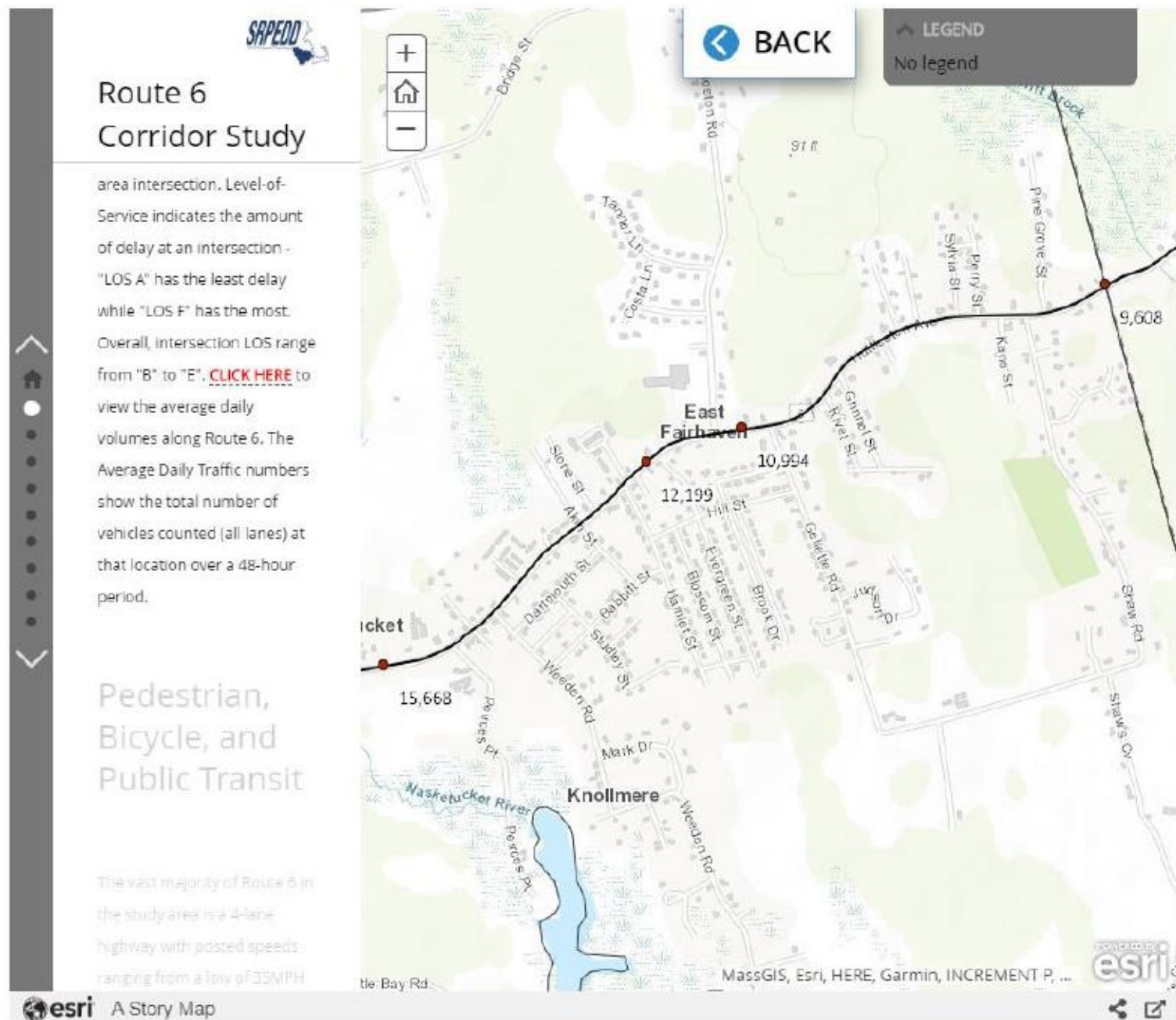


# Route 6 Daily Trip Generation:

12,199  
East of  
E. FH School

10,994  
at this  
location

The interactive map below provides background information for the Route 6 Corridor Study.



The interactive map below provides background information for the Route 6 Corridor Study.

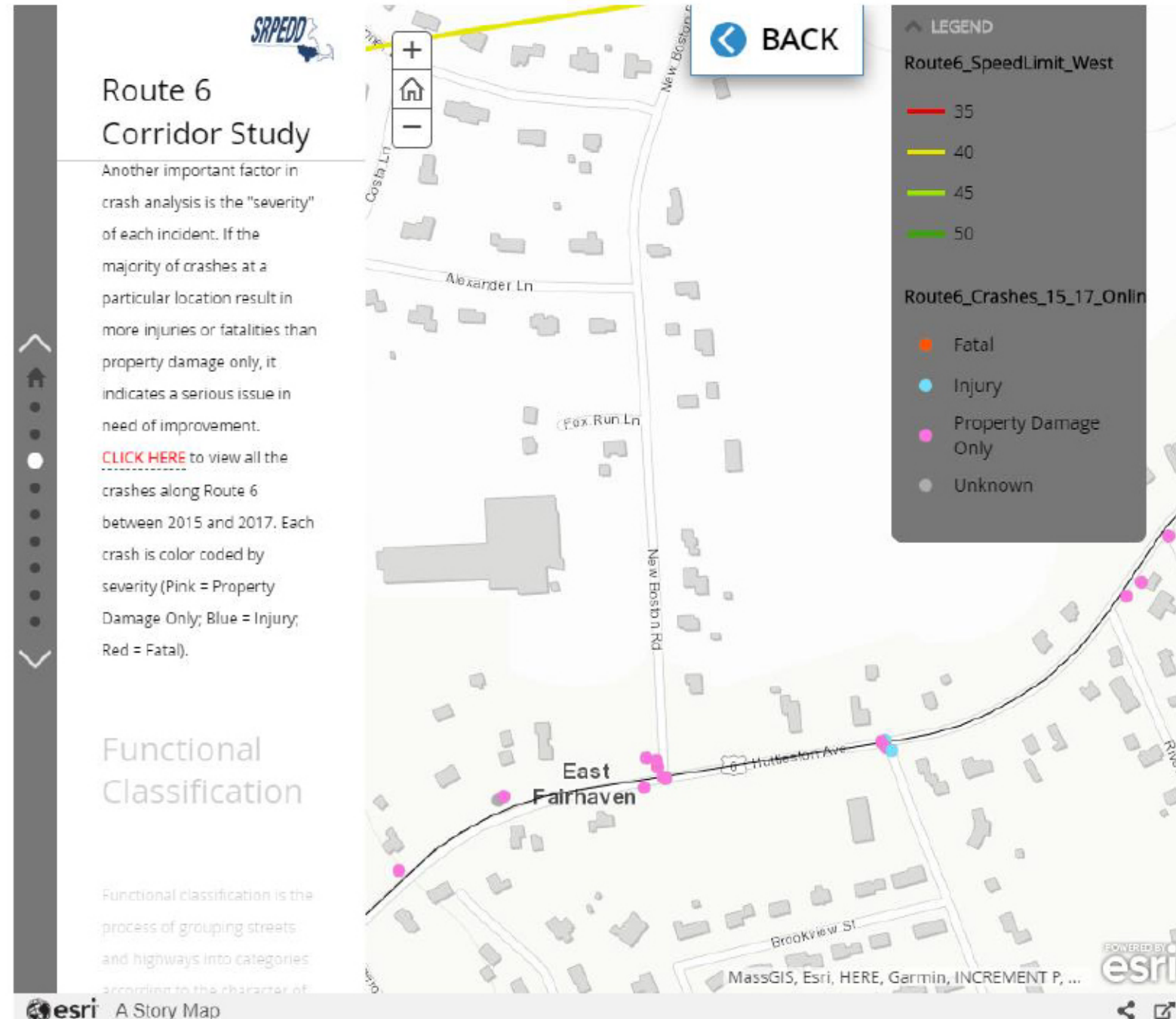
# Route 6 Crash Statistics

6 @ E.FH  
& Rt. 6  
4 @ Gell.  
& Rt. 6  
(2 injury)

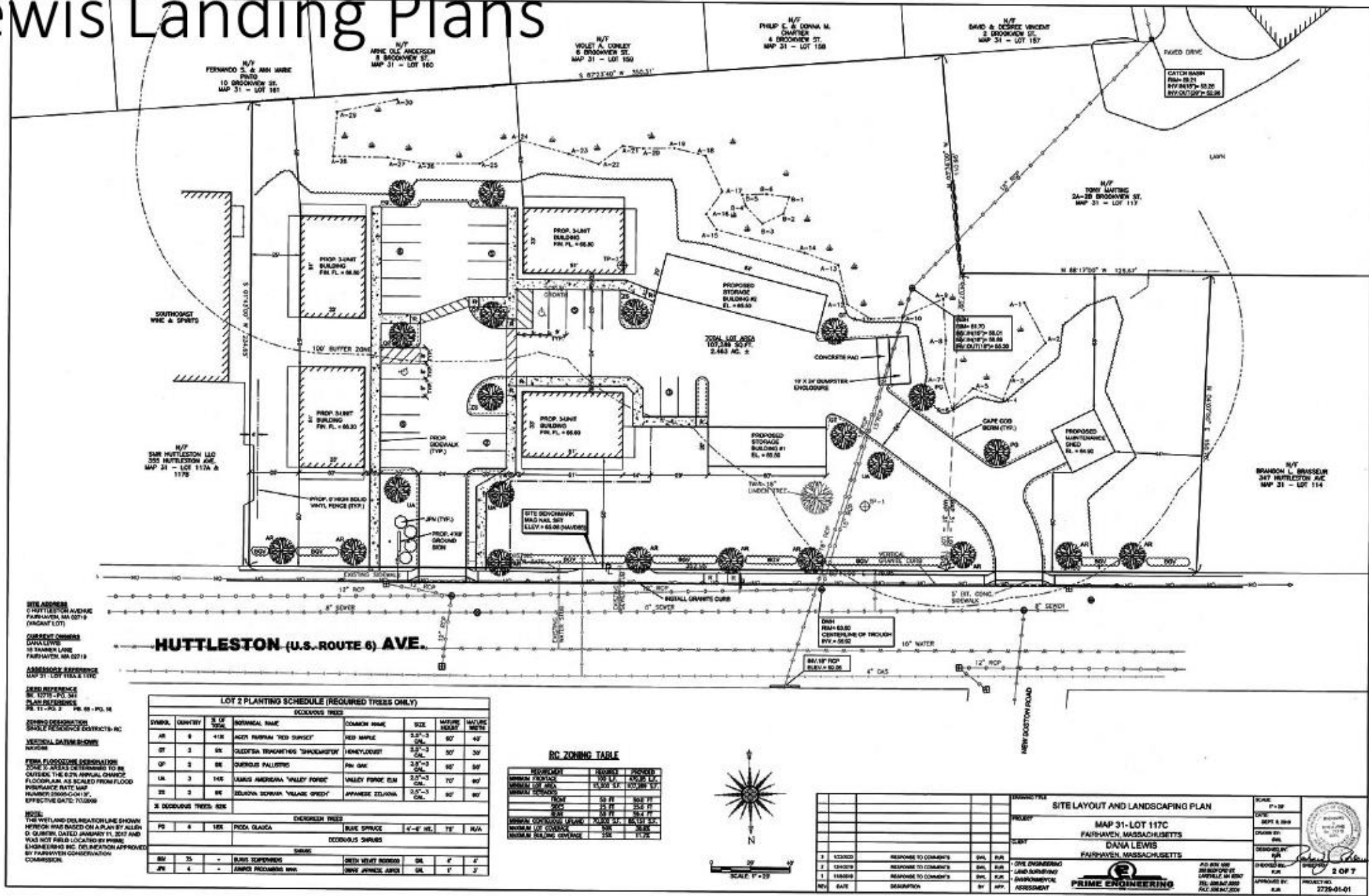




The interactive map below provides background information for the Route 6 Corridor Study.



# Lewis Landing Plans





# Final Plan

[illegible]

CATCH BASIN  
RIM= 59.21  
INV.IN(18")= 53.25  
INV.OUT(20")= 52.96

N/F  
TONY MARTINS  
2A-2B BROOKVIEW ST.  
MAP 31 - LOT 117

TOTAL LOT AREA  
107,289 SQ.FT.  
2.463 AC.

CONCRETE PAD  
24' DUMPSTER

DMH  
RIM= 81.70  
INV.IN(15")= 58.01  
INV.IN(18")= 56.89  
INV.OUT(18")= 55.3

1,205 SF  
INFILTRATION AREA  
BOT EL. 59.1  
422 CF OF STORAGE  
x 61.4

PROPOSED  
FLARED END  
INV. = 59.45  
x61.5  
PROPOSED

PROPOSED  
TREELINE

PROPOSED 4" HDPE DRAIN PIPE (SEE DETAIL)

EMERGENCY SPILL WAY

SPILLWAY  
EL.=63.5  
PROPOSED RAIN  
GARDEN  
EL.=63.0

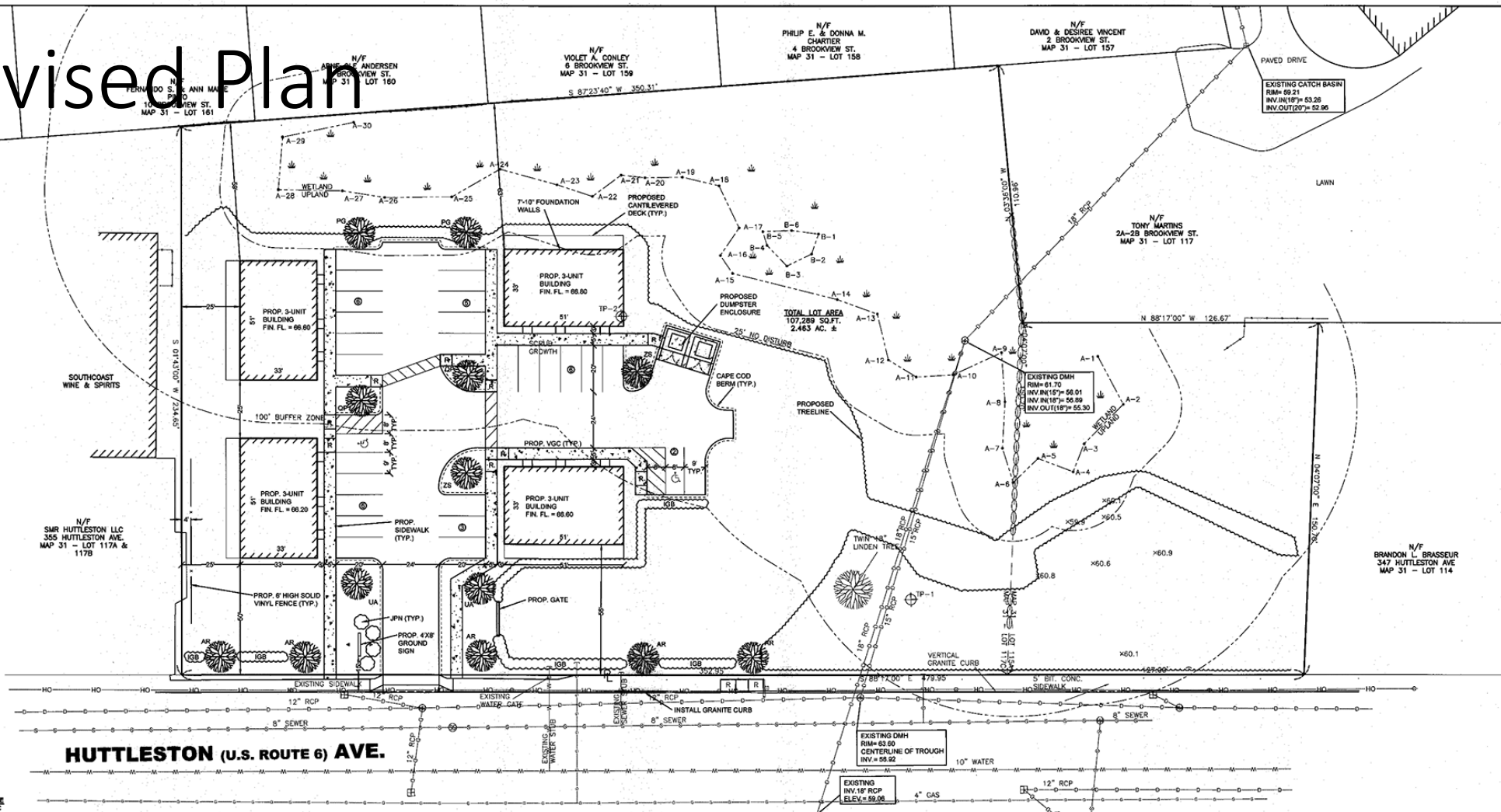
VEGETATED FILTER STRIP  
W/ 18" WIDE STONE  
DIAPHRAGM  
CURB BREAK  
E<sub>1</sub> = 63.46

5° BIT. CONC. ✓

8" SEWER



# Revised Plan



**HUTTLESTON (U.S. ROUTE 6) AVE.**

LOT 2 PLANTING SCHEDULE (REQUIRED TREES ONLY)						
DECIDUOUS TREES						
SYMBOL	QUANTITY	% OF TOTAL	BOTANICAL NAME	COMMON NAME	SIZE	MATURE HEIGHT
AR	5	40%	ACER RUBRUM 'RED SUNSET'	RED MAPLE	2.5"-3" CAL.	60' 40'
QP	2	15%	QUERCUS PALUSTRIS	PIN OAK	2.5"-3" CAL.	65' 50'
UA	2	15%	ULMUS AMERICANA 'VALLEY FORGE'	VALLEY FORGE ELM	2.5"-3" CAL.	70' 60'
ZS	2	15%	ZELKOVA SERRATA 'VILLAGE GREEN'	JAPANESE ZELKOVA	2.5"-3" CAL.	60' 60'
% DECIDUOUS TREES: 80%						
EVERGREEN TREES						
PG	2	15%	PICEA GLAUCA	BLUE SPRUCE	4'-6" HT.	75' N/A
DECIDUOUS SHRUBS						
SHRUBS						
IGB	75	--	ILEX CORN	INHERENT HOLLY	OL	4' 3'
JPH	4	--	JUNIPER PROCEENS NANA	MINI JAPANESE JUNPER	OL	1' 3'

## RC ZONING TABLE

REQUIREMENT	REQUIRED	PROVIDED
MINIMUM FRONTAGE	100 LF	475.98 LF
MINIMUM LOT AREA	15,000 S.F.	107,288 S.F.
MINIMUM SETBACKS		
FRONT	50 FT	50.0 FT
REAR	50 FT	25.9 FT
SIDE	50 FT	34.1 FT
MINIMUM CONTIGUOUS UPLAND	70,000 S.F.	88,131 S.F.
MINIMUM LOT COVERAGE	50%	21.9%
MINIMUM BUILDING COVERAGE	25%	0.3%



DRAWING TITLE				SCALE	
SITE LAYOUT AND LANDSCAPING PLAN				1" = 20'	
PROJECT				DATE	
MAP 31-LOT 117C				SEPT. 8, 2019	
FAIRHAVEN, MASSACHUSETTS				DRAWN BY:	
DANA LEWIS				CML	
FAIRHAVEN, MASSACHUSETTS				DESIGNED BY:	
PRIME ENGINEERING				RL	
CHECKED BY:				RL	
APPROVED BY:				RL	
DATE				PROJECT NO.	
DESCRIPTION				2729-01-01	

# NOTES

1. LIGHTING WILL BE LED WALLPACKS MOUNTED ON THE CORNERS OF EACH BUILDING.
2. THE EXISTING CONCRETE BLOCK MANHOLE IS TO BE REBUILT WITH THE MA DOW STANDARD CONCRETE BLOCKS WITH ALL VERTICAL AND HORIZONTAL JOINTS IN A FULL BED OF MORTAR. THE OUTSIDE OF THE STRUCTURE SHALL BE WRAPPED IN A DOUBLE LAYER OF 1/4" GALVANIZED WIRE MESH AND SPARGED WITH MORTAR.

**SITE ADDRESS**  
3 HUTTLESTON AVENUE  
FAIRHAVEN, MA 02719  
(VACANT LOT)

**CURRENT OWNERS**  
DANA LEWIS  
18 TANNER LANE  
FAIRHAVEN, MA 02719

**ASSESSMENT REFERENCE**  
MAP 31 - LOT 117C & 117D

**DEED REFERENCE**  
BK. 12718 - PG. 341

**PLAN REFERENCE**  
PR. 11 - PG. 2 & 3, PG. 16

**ZONING DESIGNATION**  
SINGLE RESIDENCE DISTRICTS-RC  
NAVARS

**FEMA FLOODZONE DESIGNATION**  
ZONE X-AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN. AS SCALED FROM FLOOD INSURANCE RATE MAP NUMBER: 25005-C0413F, EFFECTIVE DATE: 7/7/2009

**NOTE:**  
THE WETLAND DELINEATION LINE SHOWN HEREON WAS BASED ON A PLAN BY ALLEN D. CURTIN, DATED JANUARY 11, 2017 AND WAS NOT FIELD LOCATED BY PRIME ENGINEERING INC. DELINEATION APPROVED BY FAIRHAVEN CONSERVATION COMMISSION.

DEEP MARSH PLANTINGS			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10

SHALLOW MARSH PLANTINGS			
BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10
SPARGANGETHUS VERTICILLATUS	WETLAND TUBER	10"	10

## DETENTION BASIN PLANTING SCHEDULE

## ROOF DRAIN CALCULATIONS

ALL ROOF DRAINAGE TO FLOW TO UNDERGROUND INFILTRATORS.

REQUIRED STORM CATCHMENT = 0.2575 SF OF IMP. AREA

INFILTRATION REQUIREMENT = 23,449 SF IMP. X 0.2575 SF = 6022 CF

CULVERT 1500KLD INFILTRATOR W/ 12" CRUSHED STONE BOTTOM @ 50.8 CF STORAGE

489 CF / 56.8 CF/CHAMBER = 9 CHAMBERS REQUIRED (MIN)

CHAMBERS PROVIDED = 12, TOTAL STORM CATCHMENT PROVIDED = 682 CF

## TOP OF PIPE CALCULATIONS

EXISTING 15" RCP

SLOPE = (58.92 - 58.01) / 159 FT = .0057 SLOPE

INV. AT PIPE CROSSING = 58.92 - (58 FT TO BASIN X .0057) = 58.54

TOP EL. OF PIPE AT CROSSING = 58.54 + 1.25 FT DIAM. + .21 PIPE THICKNESS = 58.00

EXISTING 15" RCP

SLOPE = (58.06 - 58.88) / 209 FT = .0103 SLOPE

INV. AT BASIN = 58.06 - (119 FT TO BASIN X .0103) = 57.83

TOP EL. OF PIPE AT CROSSING = 57.83 + 1.5 FT DIAM. + .21 PIPE THICKNESS = 58.54

## LEGEND

100	EXISTING CONTOURS
58.5	EXISTING SPOT ELEVATION
TP-101	OBSERVATION HOLE LOCATION
100	PROPOSED CONTOURS
100	PROPOSED SPOT ELEVATION
100	PROPOSED WATER
100	EXISTING TREELINE
100	PROPOSED TREELINE
100	HWY/RAIL RAMP
100	PROPOSED GAS
100	PROPOSED SEWER



## INFILTRATION CALCULATIONS

INFILTRATION REQUIREMENT = 23,449 SF IMP. X .65% = 15,242 SF

MINUS ROOF AREA (100% INFILTRATED) = 15,242 - 6,732 = 8,510 SF REQUIRED

VOLUME = .25" RAINFALL X 8,510 SF = 175 CF REQUIRED

740 CF PROVIDED > 175 CF REQUIRED

## GRADING AND UTILITIES PLAN

MAP 31 - LOT 117C  
FAIRHAVEN, MASSACHUSETTS  
DANA LEWIS  
FAIRHAVEN, MASSACHUSETTS

PRIME ENGINEERING  
LAND SURVEYING  
ENVIRONMENTAL  
ASSESSMENT

P.O. BOX 108  
30 ROCKFORD ST.  
LAUREL, MA 01907  
TEL: 508.687.2000  
FAX: 508.687.2004

SCALE  
DATE  
DRAWN BY  
DESIGNED BY  
CHECKED BY  
APPROVED BY

PROJECT  
CLIENT  
CIVIL ENGINEERING  
LAND SURVEYING  
ENVIRONMENTAL  
ASSESSMENT  
BY  
APP.  
REV  
DATE  
DESCRIPTION

1 7/20/2020 GENERAL REVISIONS SWA RLR  
2 8/25/2020 RESPONSE TO COMMENTS SWA RLR  
3 9/24/2020 RESPONSE TO COMMENTS SWA RLR  
4 12/20/2020 RESPONSE TO COMMENTS SWA RLR  
5 12/20/2020 RESPONSE TO COMMENTS SWA RLR  
6 11/09/2019 RESPONSE TO COMMENTS SWA RLR

SHEET NO. 3 OF 7  
PROJECT NO. 2729-01-01

NEW BOSTON ROAD

12" RCP  
4" GAS  
10" WATER

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THE FOLLOWING IS THE MINIMUM REQUIREMENTS THE CONTRACTOR SHALL FOLLOW TO PREVENT IMPACTS CAUSED BY EROSION AND SEDIMENTATION DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER SEEDING AND STABILIZATION OF THE EROSION CONTROL MEASURES.

1. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO STRAW REMOVAL AND BEFORE ANY EROSION CONTROL MEASURES ARE INSTALLED. STOCKPILE AREAS WILL BE INITIATED AND MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE CONSTRUCTED IN ACCORDANCE WITH LOCAL MUNICIPAL REGULATIONS. ALL EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND IMPROVED AS REQUIRED TO ACHIEVE PROPER SEDIMENT CONTROL. DURING CONSTRUCTION A STAKED STRAWLE DASH SHALL BE INSTALLED DOWN GRADIENT OF ALL DRAINAGE OUTFALLS.
3. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD IF DEEMED NECESSARY BY THE OWNER OR AGENTS OF THE OWNER.
4. CATCH BASINS WILL BE PROTECTED WITH STRAW BALE FILTERS THROUGHOUT THE CONSTRUCTION PERIOD UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. FILTER FABRIC SHOULD BE INSTALLED UNDER GRADE OR FLAT UNTIL PAVEMENT IS IN PLACE AND GROUND SURFACE IS STABILIZED.
5. SEEDING MIXTURE FOR FINISHED GRASSSED AREAS WILL BE AS FOLLOWS:
 

KENTUCKY BLUE GRASS	45%
CRESTED RED FESCUE	45%
PERENNIAL RYEGRASS	10%

 SEEDING MIXTURE SHALL BE APPLIED AT RATES OF 2.185/1000 SQ. FT.  
 FERTILIZER SHALL BE APPLIED AT A RATE OF 1.185/1000 SQ. FT.  
 PLANTING SEASONS SHALL BE APRIL 1 TO JUNE 1 AND AUGUST 1 TO OCTOBER 1. AFTER OCTOBER 1, SEEDING SHALL BE STABILIZED WITH 1-2 BINS NITROGEN PER TON, APPLIED AS A RATE OF 18-25 TONS/1.185/1000 SQ. FT.
6. AREAS TO BE LEFT BARE FOR FINISHED GRASSING AND SEEDING IS ACHIEVED, SHALL RECEIVE A TEMPORARY SEEDING OF PERENNIAL RYEGRASS AT RATES OF 2.185/1000 SQ. FT. TO A DEPTH OF 10 INCH LIMESTONE (EQUIVALENT TO 0.50 PERCENT CALCIUM PLUS MAGNESIUM OXIDE) AND FERTILIZER AT RATES OF 1.185/1000 SQ. FT. PLANTING SEASONS SHALL BE APRIL 1 TO JUNE 1 AND AUGUST 1 TO OCTOBER 1. WHERE GRASS PREDOMINATES, FERTILIZE ACCORDING TO A SOIL TEST AT A MINIMUM APPLICATION RATE OF 1.185/1000 SQ. FT. OF NITROGEN PER 1,000 FT. AREAS TO BE LEFT BARE FOR FINISH GRASSING AND SEEDING OUTSIDE OF PLANTING SEASONS SHALL RECEIVE AN AIR-DRYED WOOD CHIP MULCH. FIVE (5) INCHES OF COARSE MATTER, TREATED WITH 1-2 BINS NITROGEN PER TON, APPLIED AS A RATE OF 18-25 TONS/1.185/1000 SQ. FT.
7. AT ALL PROPOSED FILL AREAS WHICH ARE NOT CURRENTLY SHOWN ON THESE PLANS, THE CONTRACTOR SHALL STABILIZE THE EROSION CONTROL LINE (STRAW BALE OR FILTER FABRIC) ABOUT TEN (10) FEET FROM THE TOE OF PROPOSED FILL AREAS PRIOR TO BEGINNING FILL INSTALLATION. STABILIZATION OF SLOPES IN FILL AREAS (USING MULCH OR GRASS) SHALL BE INITIATED WITHIN THIRTY (30) DAYS OF COMMENCEMENT OF FILL INSTALLATION.
8. STABILIZATION OF SLOPES IN CUT AREAS (USING MULCH OR GRASS) AND THE INSTALLATION OF EROSION CONTROL LINE (STRAW BALE CHECK OR FILTER FABRIC) AT THE TOE OF SLOPE SHALL BE INITIATED WITHIN THIRTY (30) FEET.
9. SEDIMENT REMOVED FROM CONTROL STRUCTURES WILL BE DEPOSITED IN A FANNER WHICH IS CONSISTENT WITH THE INTENT OF THE PLAN. ALL STRAW BALES OR SILT FENNS RETAINING SEDIMENT OVER 12 INCHES HEIGHT SHALL HAVE THE SEDIMENT REMOVED AND ALL DAMAGED STRUCTURES SHALL BE REPAIRED OR REPLACED.
10. CONTRACTOR WILL BE RESPONSIBLE FOR IMPLEMENTING THIS EROSION AND SEDIMENT CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES. INFORMING ALL PARTIES ENGAGED ON THE CONSTRUCTION SITE OF THE REQUIREMENTS AND OBJECTIVES OF THE PLAN, AND NOTIFYING THE PROPER TOWN AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY. THE OWNER SHALL BE RESPONSIBLE FOR PROVIDING A COPY OF THE EROSION AND SEDIMENT CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
11. THE CONTRACTOR SHALL SECURE THE SERVICES OF A PROFESSIONAL ENGINEER, WHO SHALL VERIFY IN THE FIELD THAT THE CONTROLS REQUIRED BY THIS PLAN ARE PROPERLY INSTALLED. THE CONTRACTOR SHALL MAINTAIN INSPECTION OF SUCH FACILITIES NOT LESS FREQUENTLY THAN EVERY 14 DAYS OR AFTER A RAINFALL IN EXCESS OF 1/4 INCH, WHICHEVER OCCURS FIRST.
12. STOCKPILES OF SOIL SHALL BE SURROUNDED BY A SEDIMENT BARRIER. SOIL STOCKPILES TO BE LEFT BARE FOR MORE THAN THIRTY (30) DAYS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH. IF SOIL STOCKPILES ARE TO REMAIN FOR MORE THAN THIRTY (30) DAYS, FILTER FABRIC SHALL BE USED IN PLACE OF STRAW BALES. SLOPE SIZES SHALL NOT EXCEED 2:1.
13. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTROL DUST AND WIND EROSION THROUGHOUT THE LIFE OF THE CONTRACT. DUST CONTROL SHALL INCLUDE, BUT NOT BE LIMITED TO SPRINKLING OF WATER ON EXPOSED SOILS AND HAUL ROADS AS NEEDED. CONTRACTOR SHALL CONTROL DUST TO PREVENT IT FROM CAUSING TRAFFIC.
14. IF FINAL GRASSING IS TO BE DELAYED FOR MORE THAN THIRTY (30) DAYS AFTER LAND DISTURBANCES CEASE, TEMPORARY VEGETATION OR MULCH SHALL BE USED TO STABILIZE SOILS.
15. STRAW BALES SHALL BE USED ONLY AS A TEMPORARY MEASURE. WHERE CONTROL MEASURES WILL BE REQUIRED FOR LONGER THAN THIRTY (30) DAYS, FILTER FABRIC SHALL BE USED.
16. WHERE DETERMINING IS NECESSARY, THERE SHALL NOT BE A DISCHARGE DIRECTLY INTO WETLANDS OR A DISCHARGE INTO A WATERWAY. METHODS AND DEVICES SHALL BE UTILIZED TO THE EXTENT PERMITTED BY LAW, SUCH AS PUMPING WATER INTO A TEMPORARY SEDIMENTATION BOWL, OR PUMPING WATER INTO A POND OR LAKE. THE CONTRACTOR SHALL NOT PUMP OR FLUSH THE INTAKE OF THE PUMP, OR OTHER METHODS TO MINIMIZE AND RETAIN THE SUSPENDED SOLIDS. IF A PUMPING OPERATION IS CAUSING TURBIDITY PROBLEMS, SAIL OPERATION SHALL CEASE UNTIL SUCH TIME AS FEASIBLE MEANS OF CONTROLLING TURBIDITY ARE DETERMINED AND IMPLEMENTED. SAIL DISCHARGE POINTS SHALL BE LOCATED OVER 100 FEET FROM THE DELINEATED WETLANDS AS SHOWN ON THESE PLANS.
17. THE CONTRACTOR SHALL OBTAIN AN NPDES PERMIT PRIOR TO THE START OF CONSTRUCTION.

PUMP DISCHARGE HOSE

HOSE OVER COMPOST LOGS

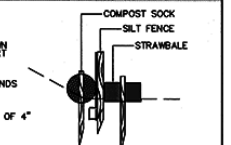
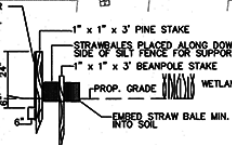
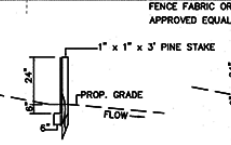
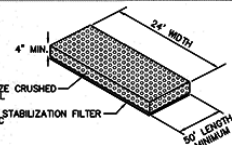
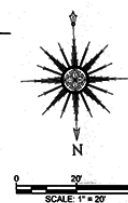
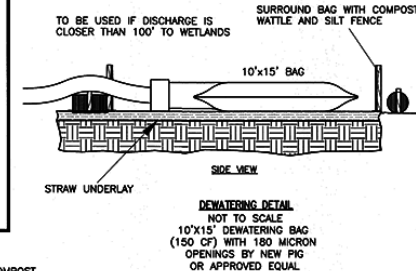
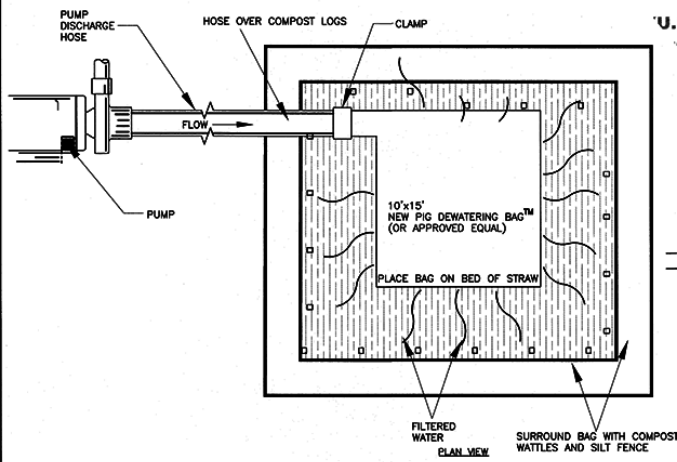
FLOW



PUMP

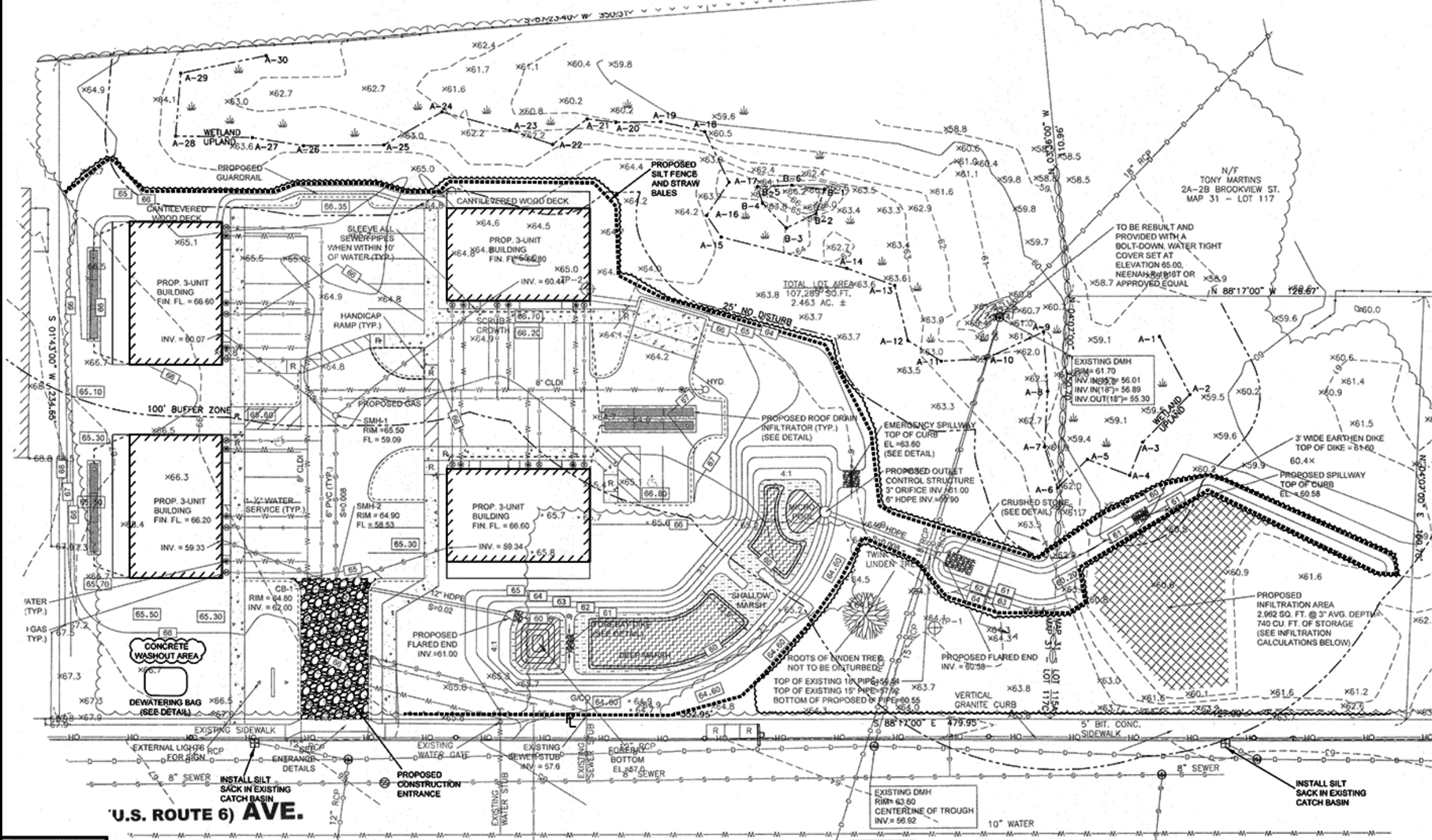
HOSE OVER COMPOST LOGS

FLOW

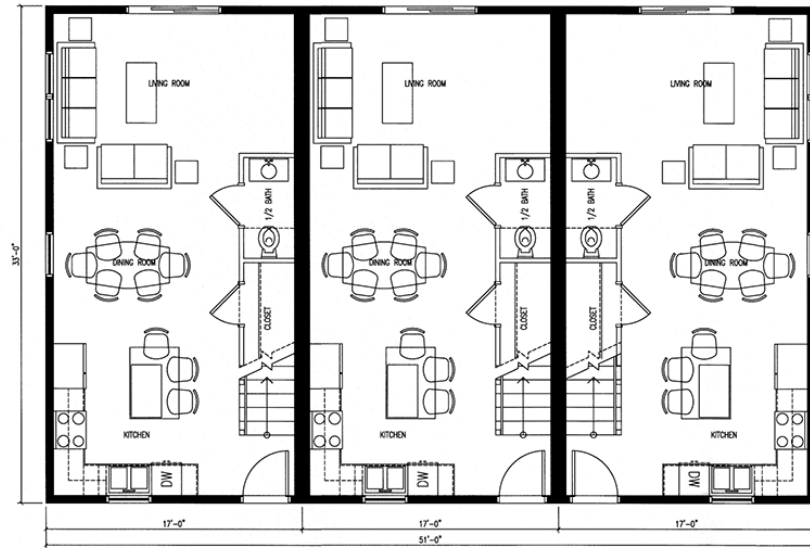
10'x10' NEW OR PLACE



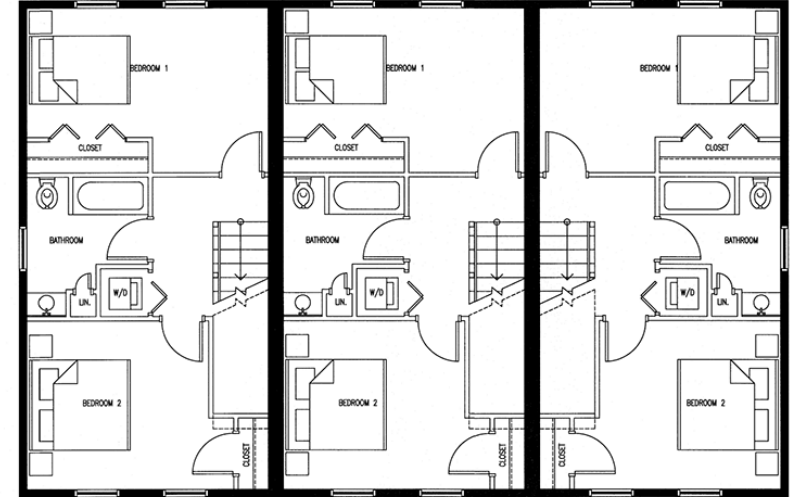
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				EROSION CONTROL PLAN		DATE 1" = 30'			
				PROJECT		DATE			
8	7/26/2019	GENERAL REVISIONS	SWL	RJR	MAP 31- LOT 117C FAIRHAVEN, MASSACHUSETTS		SEPT. 9, 2019		
9	05/20/2020	RESPONSE TO COMMENTS	SWL	RJR	CLIENT		DRAWN BY		
14	2/14/2020	RESPONSE TO COMMENTS	SWL	RJR	DANA LEWIS		DESIGNED BY		
3	10/23/2020	RESPONSE TO COMMENTS	SWL	RJR	FAIRHAVEN, MASSACHUSETTS		CHECKED BY	4 OF 7	
2	12/4/2019	RESPONSE TO COMMENTS	SWL	RJR			P.O. BOX 1008 580 BEDFORD ST. LAND SURVEYING FAIRHAVEN, MA 01934 TEL: 508.947.0000 FAX: 508.947.0004		
1	11/6/2019	RESPONSE TO COMMENTS	SWL	RJR			ENVIRONMENTAL ENGINEERING		
REV		DESCRIPTION	BY	APP					







1 PROPOSED FIRST FLOOR PLAN  
A-1.1 1/4"=1'-0"



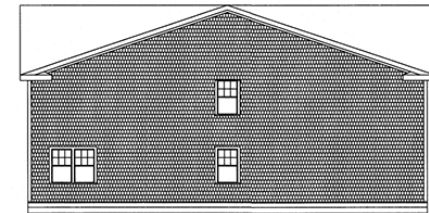
1 PROPOSED SECOND FLOOR PLAN  
A-1.2 1/4"=1'-0"





1 PROPOSED FRONT ELEVATION  
A-2.0 1/8"=1'-0"



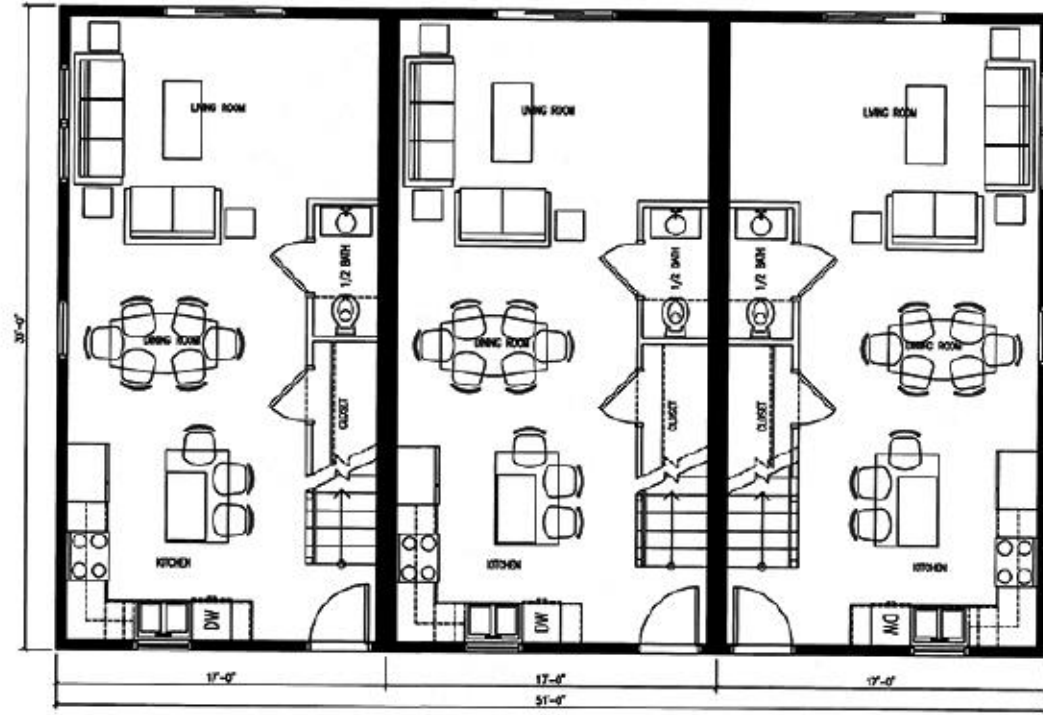
1 PROPOSED REAR ELEVATION  
A-2.1 1/8"=1'-0"



1 PROPOSED SIDE ELEVATION  
A-2.2 1/8"=1'-0"

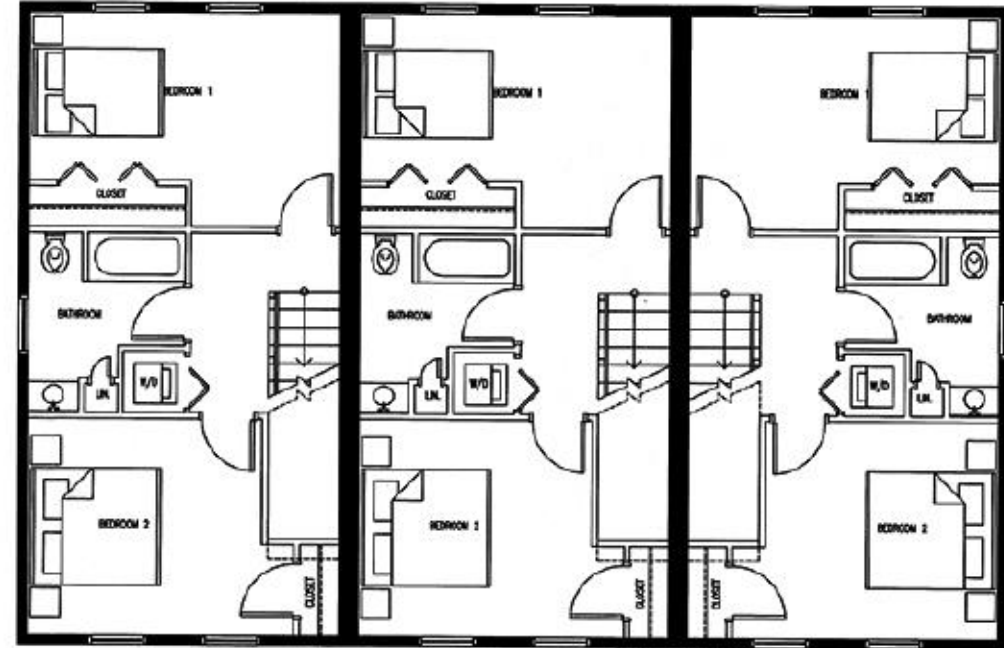
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					CLIENT		DANA LEWIS FAIRHAVEN, MASSACHUSETTS		SEPT. 9, 2019			
									DRAWN BY			
									BRL			
									DESIGNED BY			
									BRL			
					• CIVIL ENGINEERING • LAND SURVEYING • ENVIRONMENTAL ASSESSMENT		 <b>PRIME ENGINEERING</b>		CHECKED BY		<b>7 of 7</b>	
							P.O. BOX 1088 385 BEDFORD ST. LAKEVILLE, MA 03447 TEL: 508.947.0000 FAX: 508.947.2004		BRL			
REV	DATE	DESCRIPTION	BY	APP	APPROVED BY							PROJECT NO.
												2729-01-01

# 1<sup>st</sup> Floor Plan



1 PROPOSED FIRST FLOOR PLAN  
A-12 1/4" = 1'-0"

# 2<sup>nd</sup> Floor Plan



1 PROPOSED SECOND FLOOR PLAN  
A-13 1/4" = 1'-0"





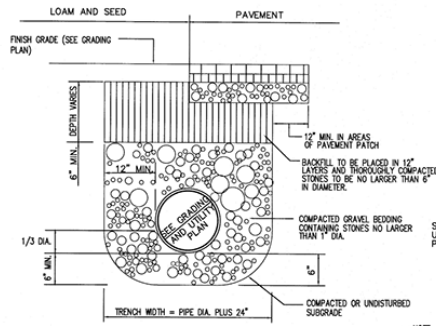
1 PROPOSED FRONT ELEVATION  
A-2.0 1/8"=1'-0"



1 PROPOSED REAR ELEVATION  
A-2.1 1/8"=1'-0"

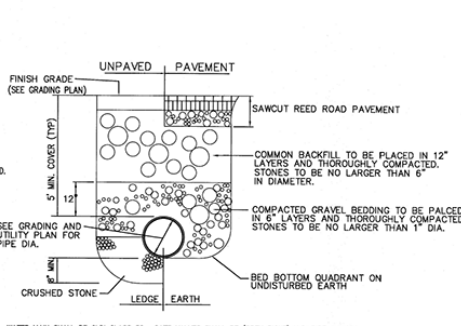






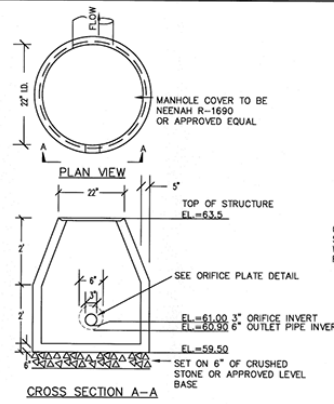
NOTE: ALL DRAINAGE PIPING DIAMETERS SPECIFIED ON GRADING AND UTILITIES PLAN DRAINAGE PIPING SHALL BE HOPE ASTM D 3500 OR APPROVED EQUAL.

**DRAINAGE PIPE TRENCH DETAIL**  
NOT TO SCALE

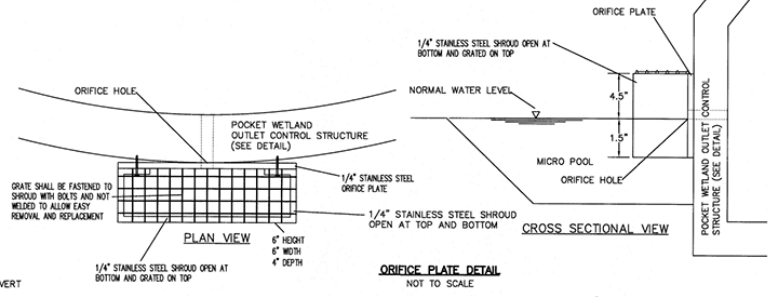


NOTE: WATER MAIN SHALL BE CLASS 52. GATE VALVES SHALL BE (OPEN RIGHT) U.S. PIPE A-USPO-23, MUELLER A2360-23 RESILIENT SEATED OR AMERICAN FLOW CONTROL, SERIES 2500.

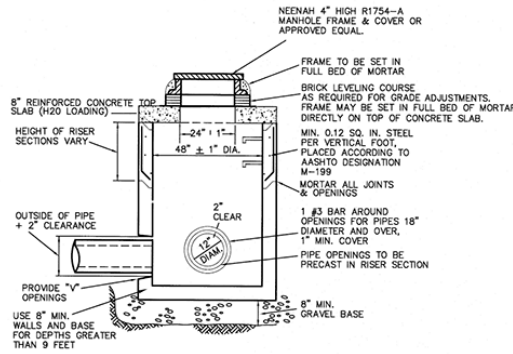
**WATER MAIN TRENCH DETAIL**  
NOT TO SCALE



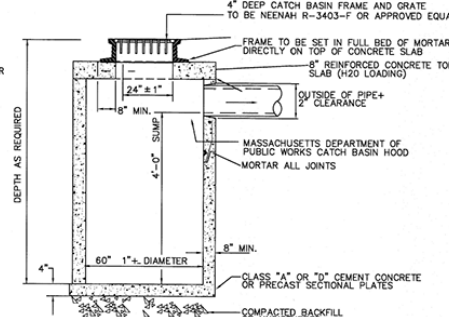
**POCKET WETLAND OUTLET CONTROL STRUCTURE DETAIL**  
NOT TO SCALE



**ORIFICE PLATE DETAIL**  
NOT TO SCALE



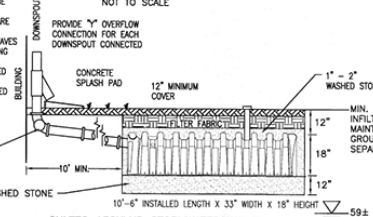
**PRECAST CONCRETE FLAT TOP DRAIN MANHOLE**  
NOT TO SCALE



1. MASSACHUSETTS STANDARD CATCH BASIN HOOD SHALL BE INSTALLED ON OUTLET PIPE.

**CONSTRUCTION NOTES:**  
1. TOPSOIL AND SUBSOIL SHALL BE REMOVED BENEATH CHAMBER.  
2. HEAVY DUTY WIRE STRAINERS ARE TO BE INSTALLED AT ALL DOWN SPOUTS. THIS IS TO PREVENT LEAVES AND OTHER DEBRIS FROM CLOGGING DOWN SPOUT.  
3. CHAMBERS ARE TO BE PROVIDED AS SHOWN ON THIS PLAN.  
4. INFILTRATORS MUST BE DESIGNED TO WITHSTAND TRAFFIC LOADS.

**TYPICAL FLAT TOP CATCH BASIN**  
NOT TO SCALE



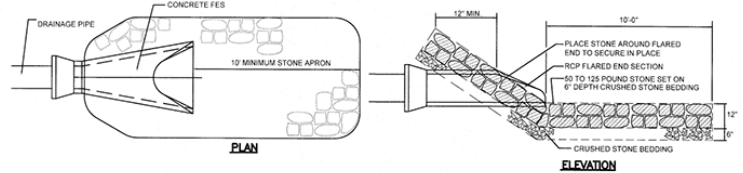
**CULTEC 150XHD STORMWATER INFILTRATOR**  
NOT TO SCALE  
ALL ROOF DRAINAGE TO BE DIRECTED TO CULTEC INFILTRATORS



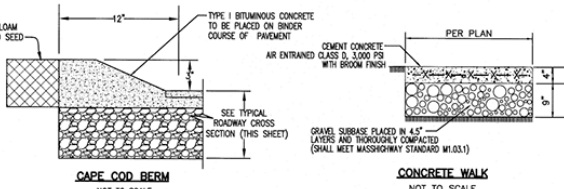
**PROPOSED GROUND SIGN**  
NOT TO SCALE

DIA.	W	A	B	C	D	E	BD	K	L	P	DIA. +1"	R1	R2	S	G	SLOPE
12" OR 18"	2"	4"	2'-0"	4'-0"/8"	6'-1 3/4"	2'-0"	23"	4'-6 1/8"	6'-6 1/8"	19 13/16"	13" OR 19"	10 1/2"	8"	4"	2 1/2"	3:1

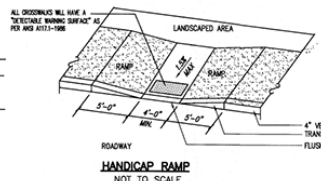
**CONCRETE FLARED END SECTION**  
NOT TO SCALE



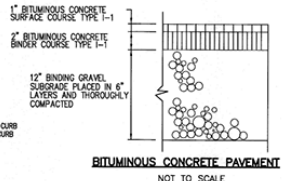
**CRUSHED STONE OUTLET DETAIL**  
NOT TO SCALE



**SEWER PIPE TRENCH DETAIL**  
NOT TO SCALE



**HANDICAP RAMP**  
NOT TO SCALE



**BITUMINOUS CONCRETE PAVEMENT**  
NOT TO SCALE

REV	DATE	DESCRIPTION	BY	APP	DRIVING TITLE	PROJECT	CLIENT	CHECKED BY	APPROVED BY	SCALE	DATE	DRAWN BY	DESIGNED BY	PROJECT NO.	SHEET NO.
1	11/09/2019	RESPONSE TO COMMENTS	SWL	RJR	PRIME ENGINEERING	MAP 31-LOT 117C	FAIRHAVEN, MASSACHUSETTS	DANA LEWIS	FAIRHAVEN, MASSACHUSETTS	1" = 20'	SEPT. 9, 2019	SWL	RJR	2729-01-01	5 OF 7