



84 High Street  
Ipswich, MA 01938  
[www.redbarnarchitecture.com](http://www.redbarnarchitecture.com)  
978.595.6764

February 2, 2021

Marblehead Zoning Board of Appeals

Re: Special Permit Application  
Storm Water Runoff Mitigation  
69 Pleasant Street  
Wykes Residence

Dear Board Members,

At the last Zoning Board of Appeals hearing for which we presented (the December 22, 2020 hearing) there were concerns raised by the neighbors about our plans to mitigate storm water run-off. In order to address those concerns Mr. Wykes re-engaged the services of our surveyor, Gail Smith of North Shore Survey, Ms. Smith revisited the property and provided us with a topographic survey for our use.

We also engaged the services of Mr. Robert Griffin, PE of the Griffin Engineering Group to prepare calculations and an engineered solution for a subsurface drainage system. Mr. Griffin's team performed a field visit on January 8, 2021 to test the soils percolation rate. While on site, two test pits were dug to determine subsurface conditions (TP-1 and TP-2 as shown on the plan prepared by Griffin Engineering dated January 20, 2021). As a result of these efforts we are offering the following designs to mitigate storm water runoff around the site and project location:

- During construction, erosion control will be provided along the adjacent lot line to limit the effect of runoff of storm water and other debris.
- Grade elevations along the lot line will be maintained and the grade will be swaled to capture run off and retain that water on Mr. Wykes property.
- A swale will be built at the rear of the proposed pergola (between elevations 56 and 57) with water being diverted from the uphill grade to a surface grate as part of a mini-catch basin (approx 30" in dia with a rim elevation of 55.5').
- Gutters and downspouts will be diverted to a subsurface pvc pipe drainage system.
- The mini-catch basin and downspouts will be diverted to the front of the garage addition to two 1000 gal drywells.
- One of the catch basins in the driveway will have a surface grate to capture runoff from the regarded driveway.
- Two trench drains will be installed in front of the garage doors of the addition and will be diverted to the driveway catch basins.

At the December meeting the abutters also brought up concern about the possibility of ledge below grade and the need to blast during foundation excavation. During the January 8<sup>th</sup> site visit, two test pits were dug to investigate the subsurface conditions. At TP-1 we were able to dig down 66" below grade before encountering resistance. At TP-2 we were able to dig down 78" below grade before encountering resistance.

This puts us well below minimum 48" as required by code for the bottom of the footing. It is our belief, based on this information, we will be able to excavate and pour footings and foundations with out blasting ledge. If ledge happens to be encountered, we'll be at a height far enough below grade that will allow us to pin to ledge for foundation support without blasting.

As a result of the topographic survey we are now confident that we can eliminate the landscape stairway that was previously shown in the side yard setback. We can navigate the grade change from the driveway (approximate grade 51') to the rear yard (approximate grade 56') with out a stair. Eliminating the stair will give us better control over the grades in this area in order to mitigate storm water run off and capture that water on Mr. Wykes property.

Lastly, at the December 22, 2020 meeting the Board requested that we have the site plan updated to clarify the building height. We have updated the zoning chart on the plan provided by North Shore Survey to reflect the correct height of the proposed addition.

Attached to this letter are the following:

- Revised architectural drawings by Red Barn Architecture removing the landscape stair on the west side of the addition. Changes have been bubbled to highlight the change.
- A revised/updated SW-1 as prepared by Red Barn Architecture showing the proposed storm water plan. This plan is a schematic level plan indicating the proposed drainage elements and was originally presented at the December 22, 2020 meeting. This plan has been updated/coordinated with the drainage plan as prepared by Griffin Engineering
- Drainage Plan C-1 dated 1/20/2021 as prepared by Griffin Engineering showing the layout and size of proposed drainage systems
- Infiltration Calculations as prepared by Griffin Engineering dated 1/20/2021
- Test pit photos showing depth of excavation at TP-1 and TP-2 from the 1/8/2021 Griffin Engineering site visit

We hope these efforts and their results will satisfy the Board and the neighbors. If you have any questions please do not hesitate to be in touch with this office.

Sincerely,

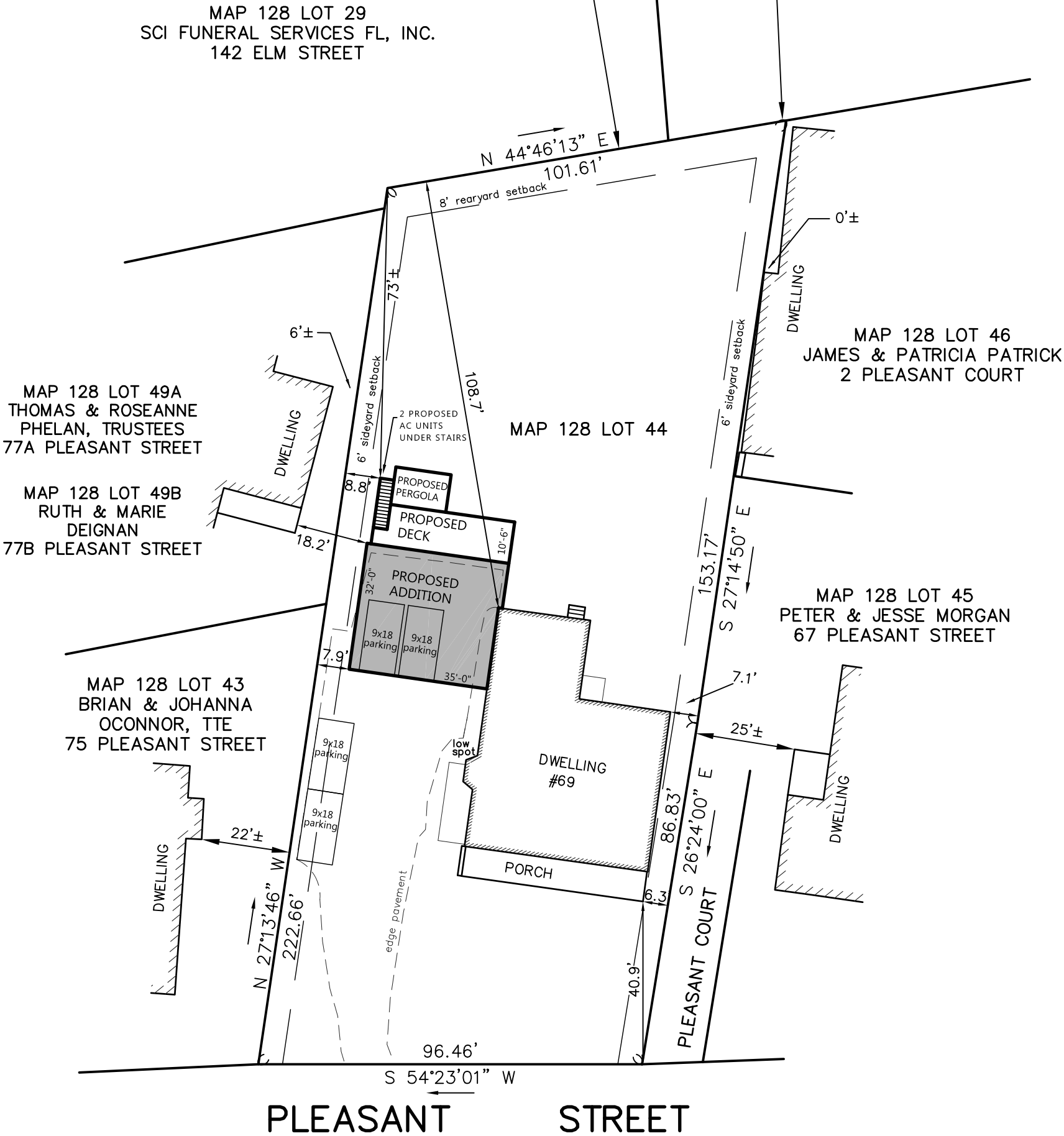


Ryan McShera  
Principal/Owner  
Red Barn Architecture

ZONING DISTRICT – UNRESTRICTED RESIDENCE

	REQUIRED	EXISTING	PROPOSED ADDITION
LOT AREA	7500	22,300	22,300
FRONTAGE	35	96.46'	96.46'
FRONT	N	40.9'	94'±
SIDE	6	6.3'	7.9'
REAR	8	108.7'	73'±
BLDG HEIGHT	35	44.1'	28.8'*

\*BUILDING HEIGHT REMAINS UNCHANGED AS PART OF THIS PROJECT. OVERALL HEIGHT OF BUILDING REMAINS AT 44.1', NEW ADDITION IS 28.8'.



ZONING BOARD OF APPEALS PLAN

69 PLEASANT STREET

MARBLEHEAD

PROPERTY OF

JOSEPH & MISTY WYKES

SCALE 1" = 30' JULY 28, 2020

NORTH SHORE SURVEY CORPORATION

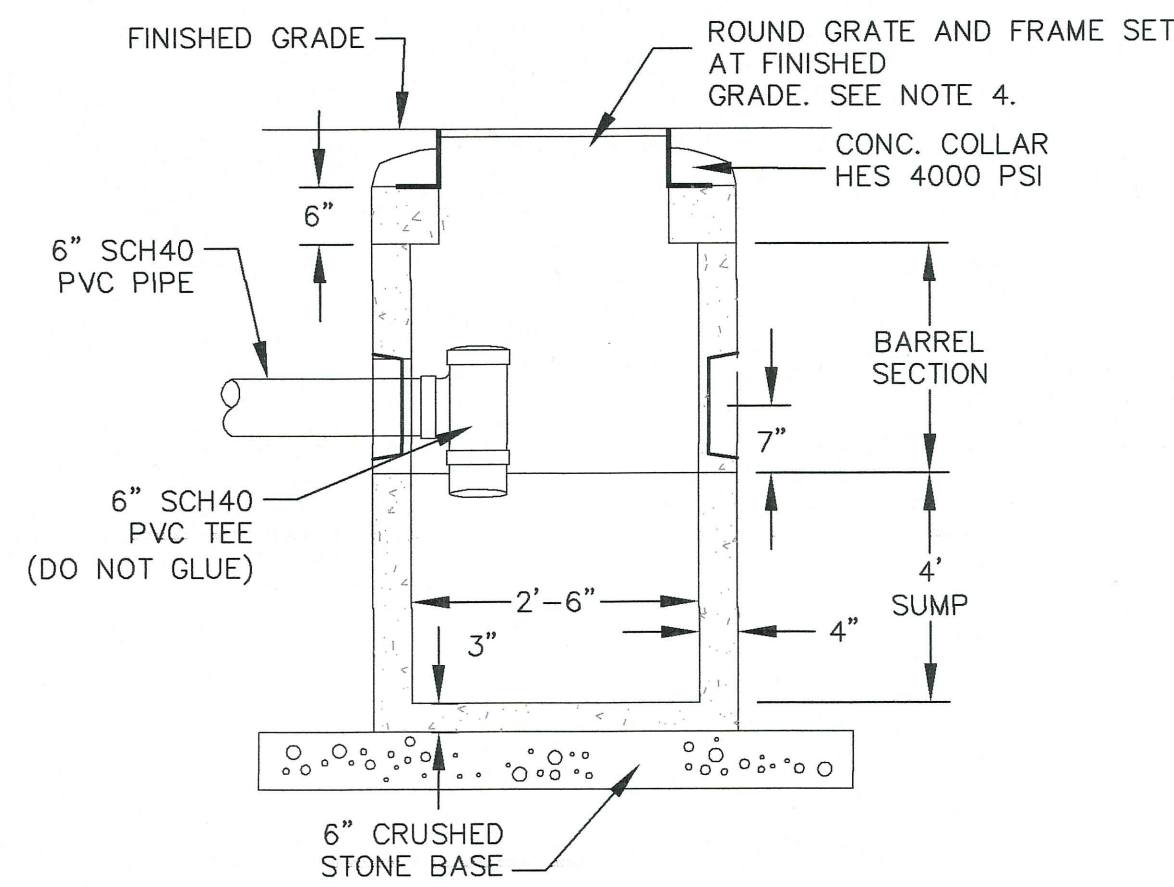
14 BROWN ST. – SALEM, MA

(978) 744-4800

# 4917

THIS PLAN IS THE RESULT  
OF AN INSTRUMENT SURVEY.

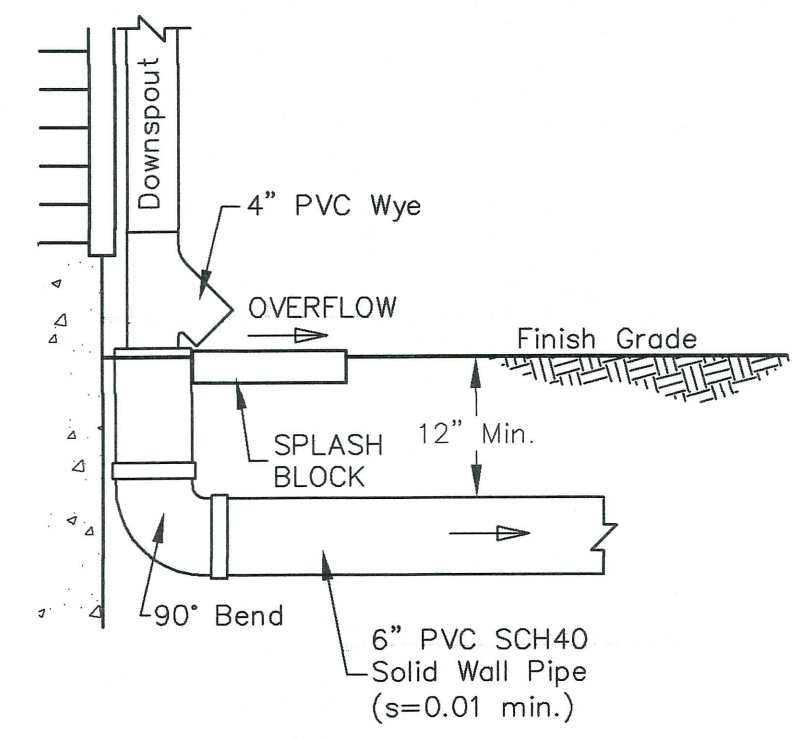




- NOTES:
1. CONCRETE 4,000 PSI MINIMUM AFTER 28 DAYS.
  2. REINFORCED STEEL SHALL CONFORM TO LATEST ASTM A185 SPEC. 0.12 SQ. IN./LINEAL FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
  3. H-20 DESIGN LOADING.
  4. EAST JORDAN IRON WORKS, INC 24" DIA. HEAVY DUTY GRATE & FRAME (PRODUCT #00113040C03) OR APPROVED EQUIVALENT.
  5. E.F. SHEA 30" PRECAST DRAIN MANHOLE OR APPROVED EQUIVALENT.
  6. TONGUE & GROOVE JOINTS SEALED WITH BUTYL RESIN.

### 30"Ø PRECAST MINI-CATCH BASIN

SCALE: N.T.S.

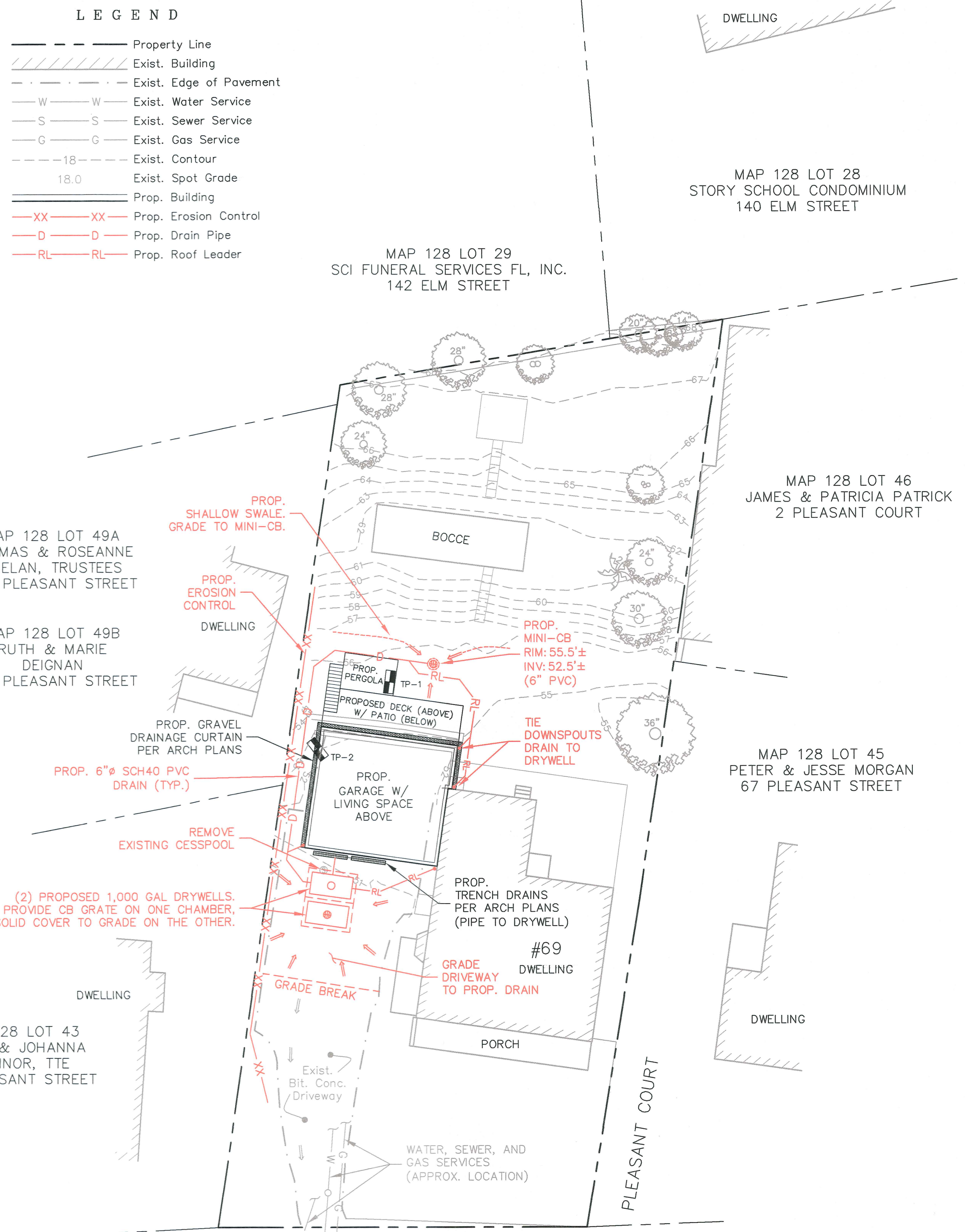


### ROOF LEADER CONNECTION

SCALE: N.T.S.

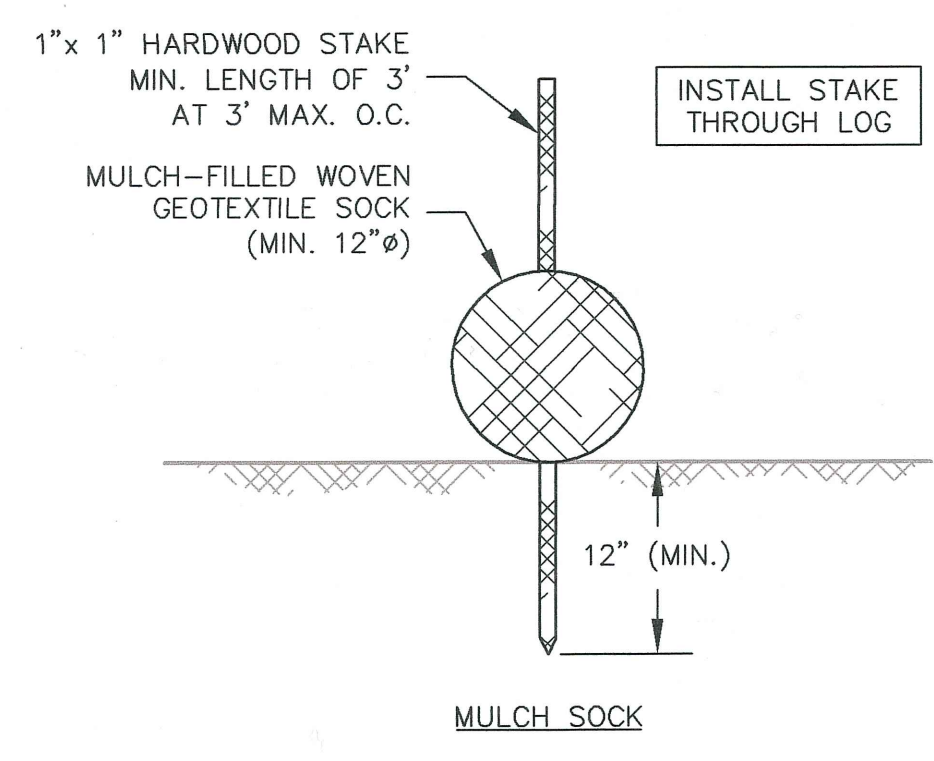
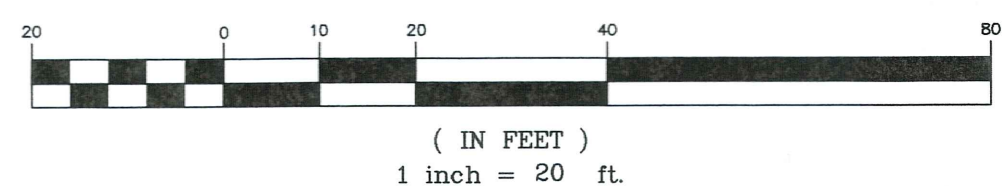
SOIL LOGS (1/8/21)						
TP-1 (EL. 55.5'±)						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLES	OTHER	
0'-12"	Ap	SL	10YR 3/2	---	GRAN. FR	
12'-24"	Bw	LS	10YR 4/6	---	MA. FR	
24'-66"+	C	LS	10YR 4/6	---	MA. FR	
-NO WATER, NO MOTTLES -LARGE BOULDER ON SOUTH SIDE OF HOLE						
-NO REFUSAL, MACHINE LIMIT REACHED @ 66"						
TP-2 (EL. 52.0'±)						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLES	OTHER	
0'-66"	FILL	---	---	---	GRAN. FR	
66'-78"+	C	LS	10YR 4/6	---	MA. FR	
-NO WATER, NO MOTTLES						
-FILL MATERIAL: GRANULAR MATERIAL MIXED W/ BRICK, ASH, CONCRETE, STONES, & GLASS (MOST LIKELY FROM OLD FOUNDATION)						

- PLAN NOTES & REFERENCES:**
- 1.) EXISTING CONDITIONS HEREIN WERE DEVELOPED BY INSTRUMENT FIELD SURVEY BY NORTH SHORE SURVEY.
  - 2.) ZONING BOARD OF APPEALS PLAN DATED JULY 28, 2020 BY NORTH SHORE SURVEY CORPORATION
- GENERAL NOTES:**
- 1.) THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES SHALL BE CONSIDERED APPROXIMATE AND MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCIES IN THE LOCATION OF ANY UTILITIES SHOWN OR ENCOUNTERED DURING CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER. THE ABSENCE OF UNDERGROUND UTILITIES IS NEITHER INTENDED NOR IMPLIED.
  - 2.) THE CONTRACTOR SHALL CALL DIG-SAFE 72 HOURS PRIOR TO CONSTRUCTION TO INFORM UTILITY COMPANIES OF ANY EXCAVATION ADJACENT TO EXISTING UTILITIES.
  - 3.) THE CONTRACTOR SHALL NOTIFY THE OWNER, UTILITY COMPANIES, POLICE, FIRE AND DPW PRIOR TO ANY BLASTING.
  - 4.) WHENEVER EXISTING STRUCTURES ARE ENCOUNTERED, THE CONTRACTOR SHALL REPAIR ANY DAMAGED STRUCTURES OR REPLACE ANY REMOVED STRUCTURES, AND MAKE ANY IMPROVEMENTS ABOVE OR BELOW GRADE TO A CONDITION BETTER THAN OR EQUAL TO EXISTING CONDITIONS.
  - 5.) THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL WASTE MATERIAL AT AN APPROVED SITE. BURIAL OF WASTE MATERIAL ON-SITE IS NOT PERMITTED.
  - 6.) THE CONTRACTOR SHALL PROTECT ADJACENT PROPERTIES FROM ON-SITE CONSTRUCTION ACTIVITIES AND REMOVE ANY SEDIMENT OR DEBRIS DEPOSITED THEREON IMMEDIATELY.
  - 7.) DRAINAGE GENERATED AS A RESULT OF DEWATERING SHALL BE DISCHARGED TO EXISTING DRAINAGE COURSES WITH PROPER FILTRATION AND EROSION CONTROL MEASURES. DISCHARGE ONTO PAVEMENT OR PRIVATE PROPERTY SHALL NOT BE ALLOWED.
  - 8.) IF ANY PART OF THIS DESIGN IS TO BE ALTERED IN ANY WAY, THE ENGINEER SHALL BE NOTIFIED IN WRITING BEFORE CONSTRUCTION.
  - 9.) UNLESS OTHERWISE NOTED, COMPACT ALL LAYERS TO 95 % MODIFIED PROCTOR.



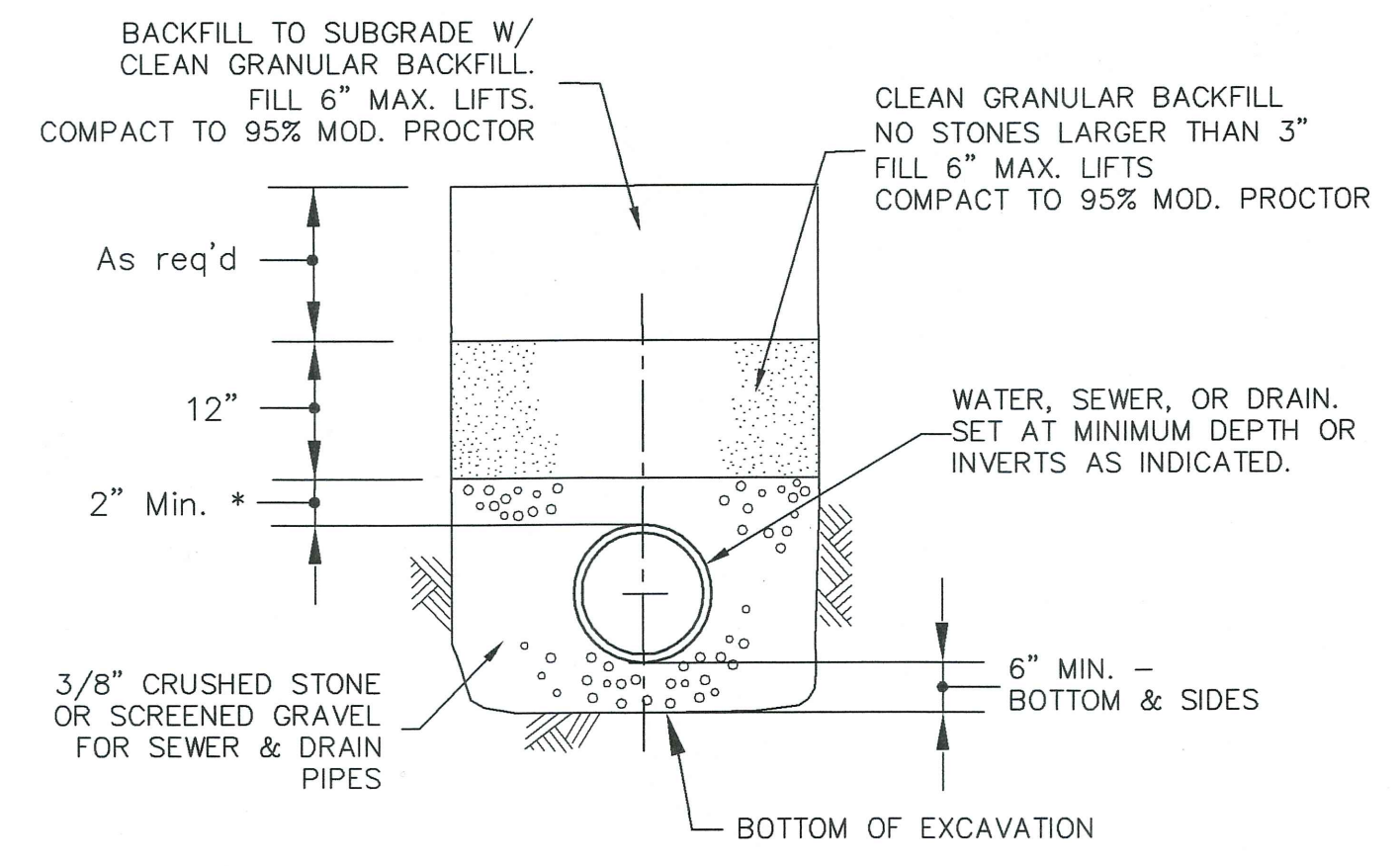
### SITE PLAN

GRAPHIC SCALE



### EROSION CONTROL

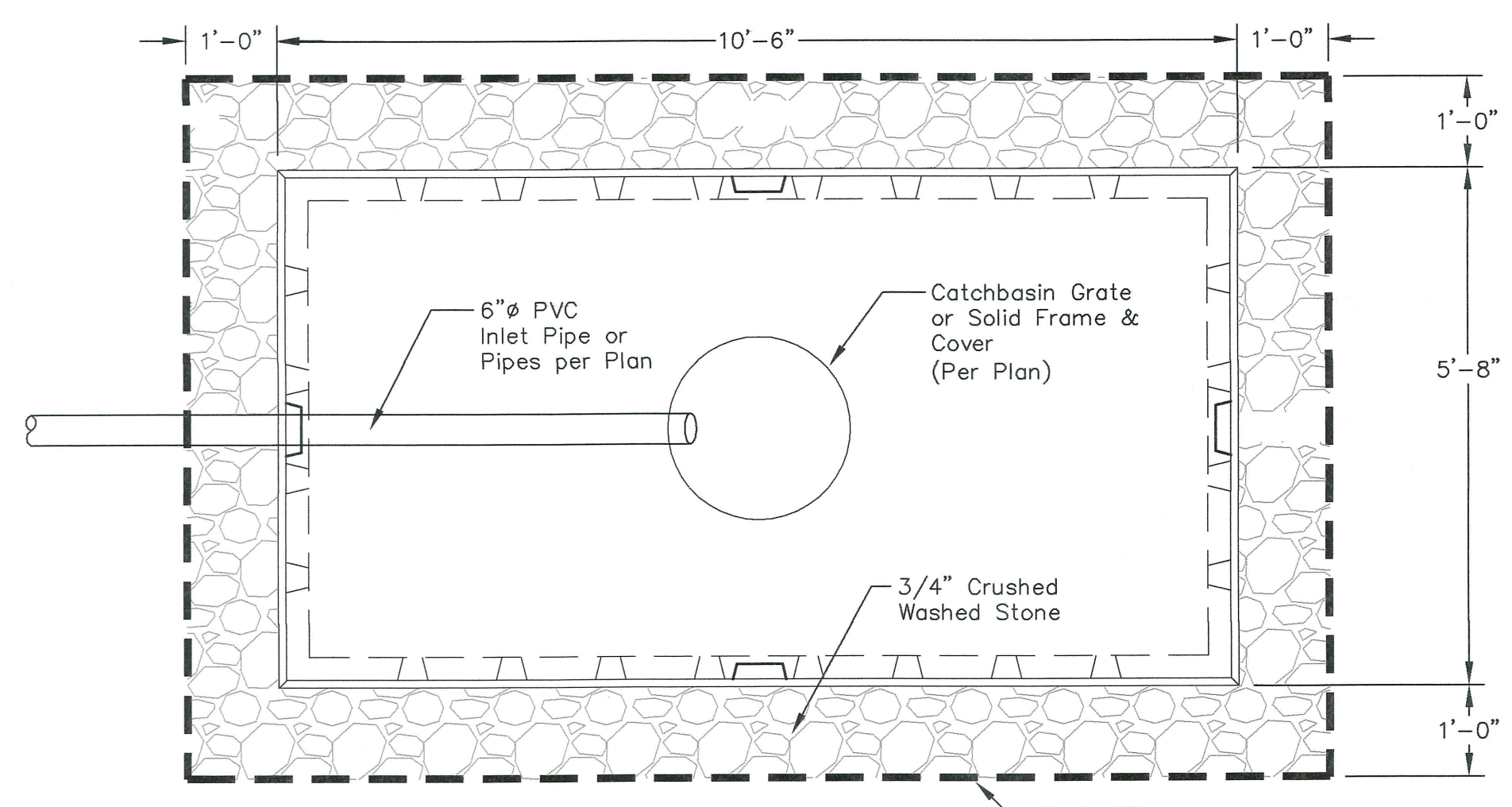
SCALE: N.T.S.



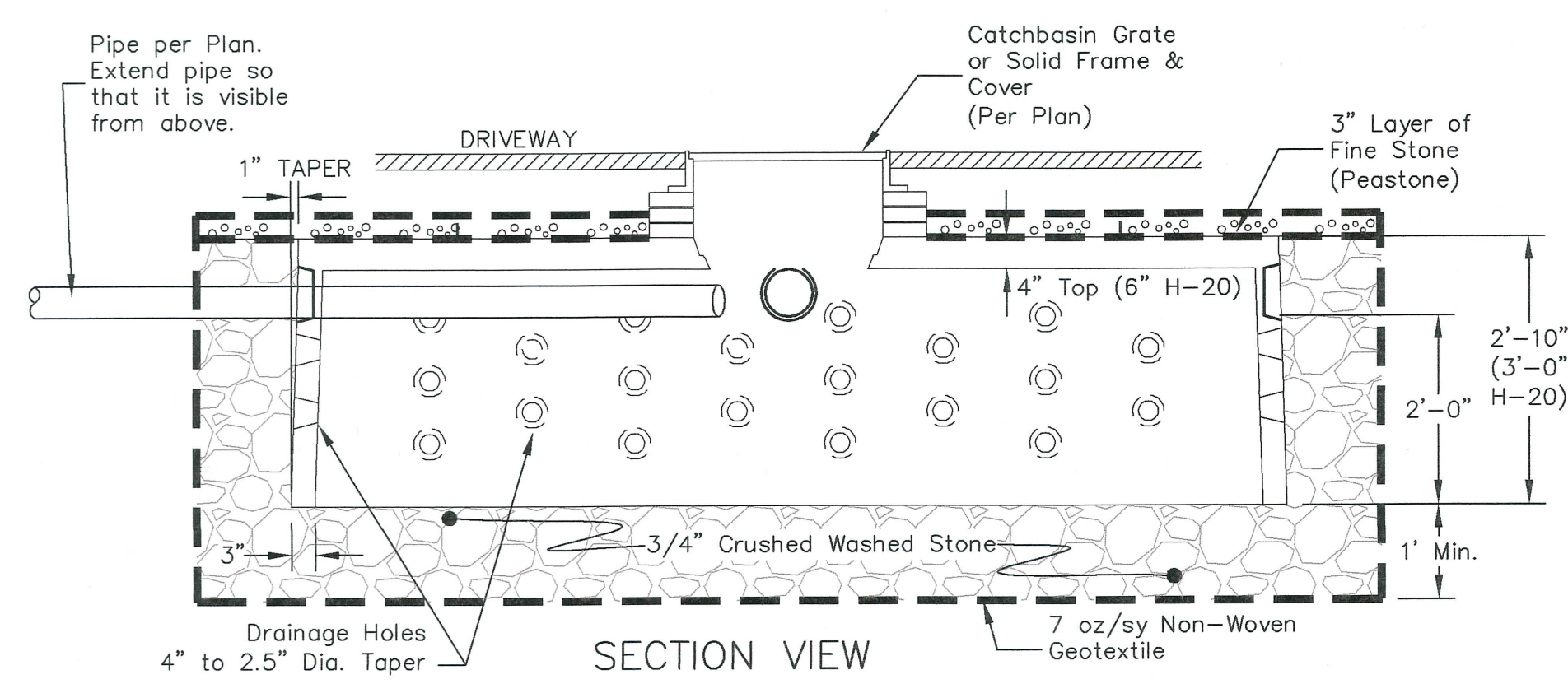
\* FOR DUCTILE IRON OR RCP PIPE: TOP OF STONE IS MID-DEPTH (SPRING LINE) OF CONDUIT.

### TYPICAL PIPE BEDDING SECTION

SCALE: N.T.S.



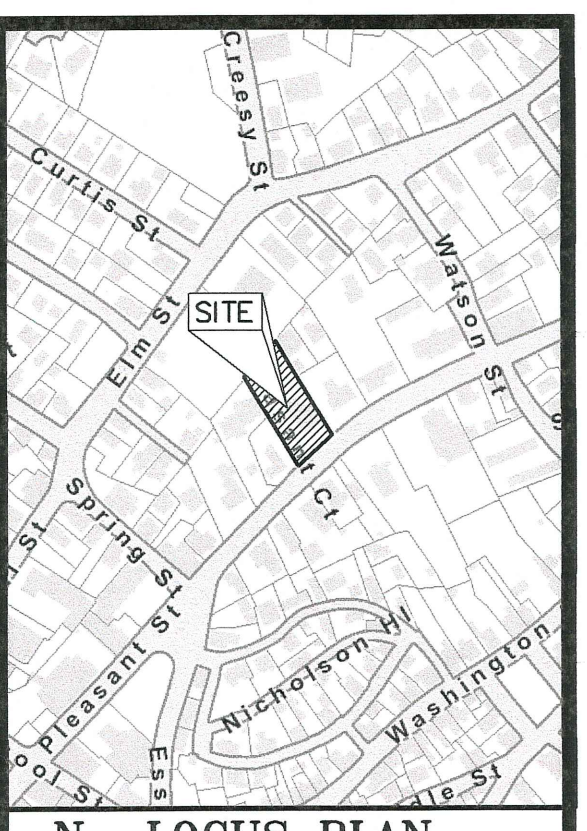
### PLAN VIEW



- NOTES:
- 1) 1,000 GALLON DRYWELL SHALLOW: SHEA DW-SDWH OR APPROVED ALTERNATE.
  - 2) DRYWELL SHALL HAVE A SOLID CAST IRON FRAME & COVER, UNLESS NOTED OTHERWISE.
  - 3) H-20 LOADING REQUIRED.

### 1,000 GAL. DRY WELL DETAIL (H-20)

SCALE: N.T.S.

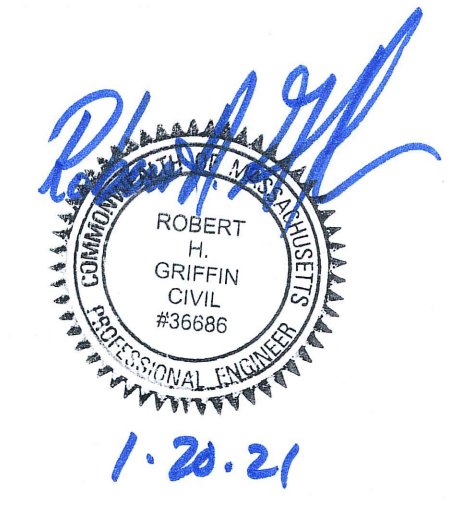


### N LOCUS PLAN

SCALE: 1" = 400'

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

### Revisions



495 Cabot Street, 2nd Floor  
Beverly, MA 01915

Tel: 978-927-5111  
Fax: 978-927-5103

WYKES RESIDENCE  
69 PLEASANT ST  
MARBLEHEAD, MA

### DRAINAGE PLAN

Scale: 1"=20'

Job No.: 1979

File Name:

Date: 1/20/21

C-1





Griffin Engineering Group, LLC

495 Cabot Street, 2nd Floor

Beverly, MA 01915

Phone: (978) 927-5111; Fax: (978) 927-5103

## INFILTRATION CALCULATIONS

**PROJECT:** 69 Pleasant Street, Marblehead

**DATE:** January 20, 2021

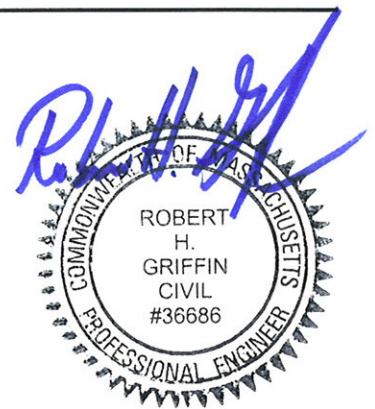
### Tributary Impervious Areas

Proposed Building Roof:	1,131 sf
Portion of Existing Building Roof:	473 sf
Mini-Catchbasin	533 sf
Driveway (CB Grate):	1,148 sf
<hr/>	
Total Impervious Area:	<b>3,285 sf</b> , tributary to drywell(s)

### 1,000 Gal Drywell w/ 12" stone surround & 6" base

Chamber Storage:	129 cf
Stone Storage:	71 cf
<hr/>	
Total Storage:	200 cf, per drywell

Number of Drywells Proposed:	2
Total Storage Provided (Static):	400 cf
Equivalent Runoff Depth from Tributary Area:	1.5 inches







TP-1



TP-1





TP-2





TP-2





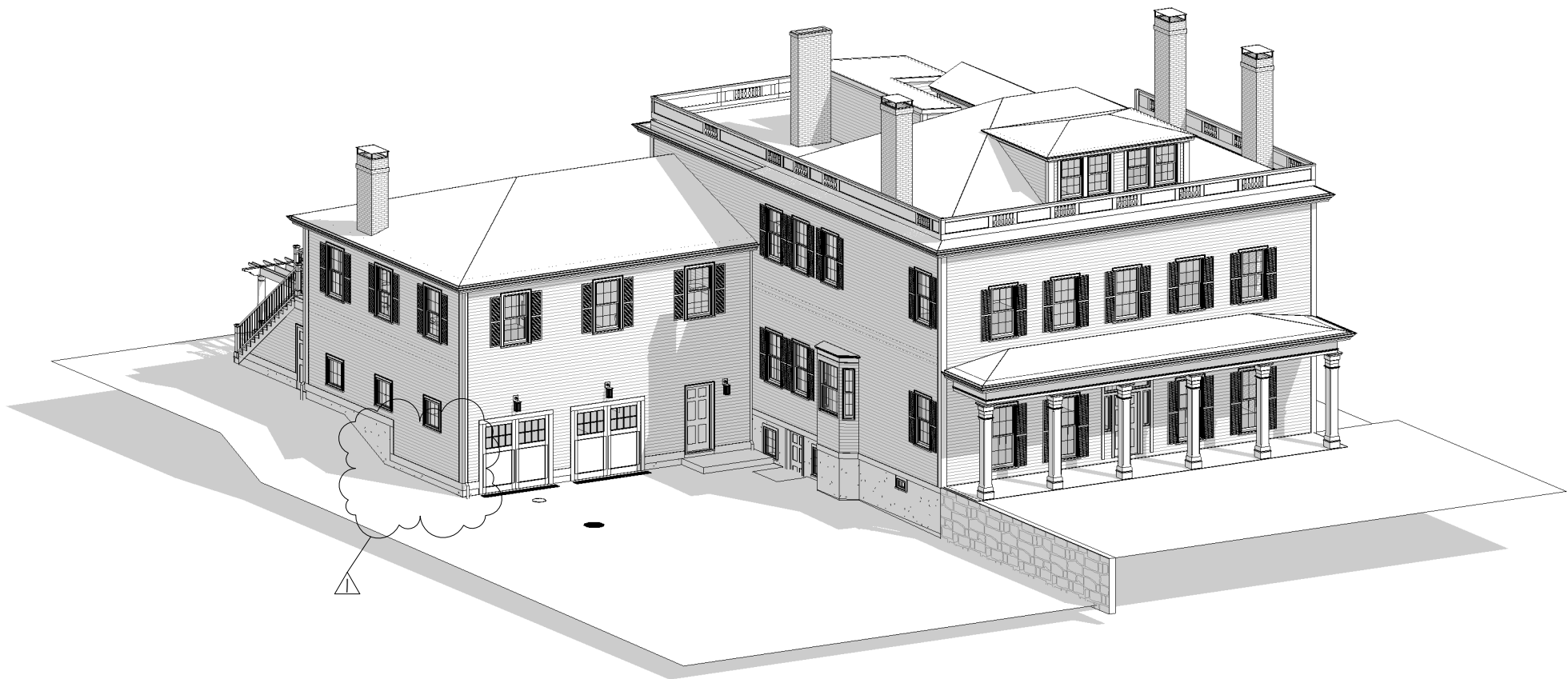
# Wykes Residence

Addition/Renovation

69 Pleasant St.

Marblehead, MA

ZBA SET



GROSS SQUARE FOOTAGE EXISTING

FIRST FLOOR	2,190 SF
SECOND FLOOR	2,185 SF
THIRD FLOOR	870 SF
TOTAL	5,245 SF

GROSS SQUARE FOOTAGE PROPOSED

FIRST FLOOR	3,324 SF (1,134 SF NEW)
SECOND FLOOR	3,319 SF (1,134 SF NEW)
THIRD FLOOR	870 SF (0 SF NEW)
TOTAL	7,513 SF (2,268 SF NEW)

Wykes Residence  
Addition/Renovation  
69 Pleasant St.  
Marblehead, MA

Red Barn Architecture  
84 High Street  
Ipswich, MA 01938  
978.595.6764

Project Name  
Addition/Renovation

Description  
COVER PAGE

Scale: 3/32" = 1'-0"

Date: 02.02.21

Drawn by: VAF

Plot Date: 2/2/2021 4:06:36 PM

REVISIONS

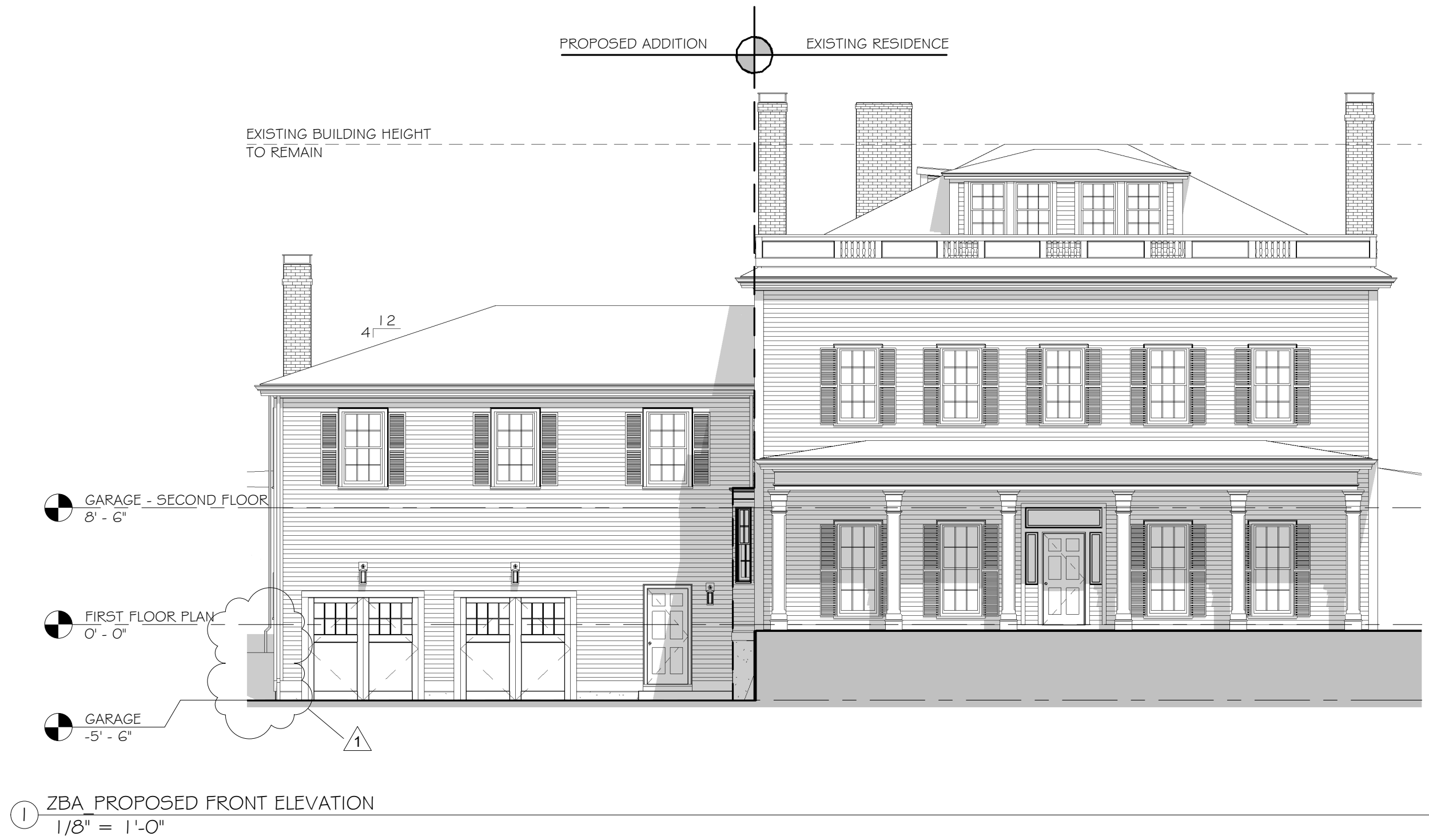
 STORMWATER  
RUNOFF MITIGATION  
02.02.2021

COVER PAGE

A-O-ZBA

© Red Barn Architecture





Wykes Residence

Addition/Renovation

69 Pleasant St.  
Marblehead, MA

Red Barn Architecture  
84 High Street  
Ipswich, MA 01938  
978.595.6764

Project Name

Addition/Renovation

Description

PROPOSED FRONT ELEVATION

Scale:

1/8" = 1'-0"

Date:

02.02.21

Drawn by:

TJT

Plot Date:

2/2/2021 3:59:06 PM

REVISIONS

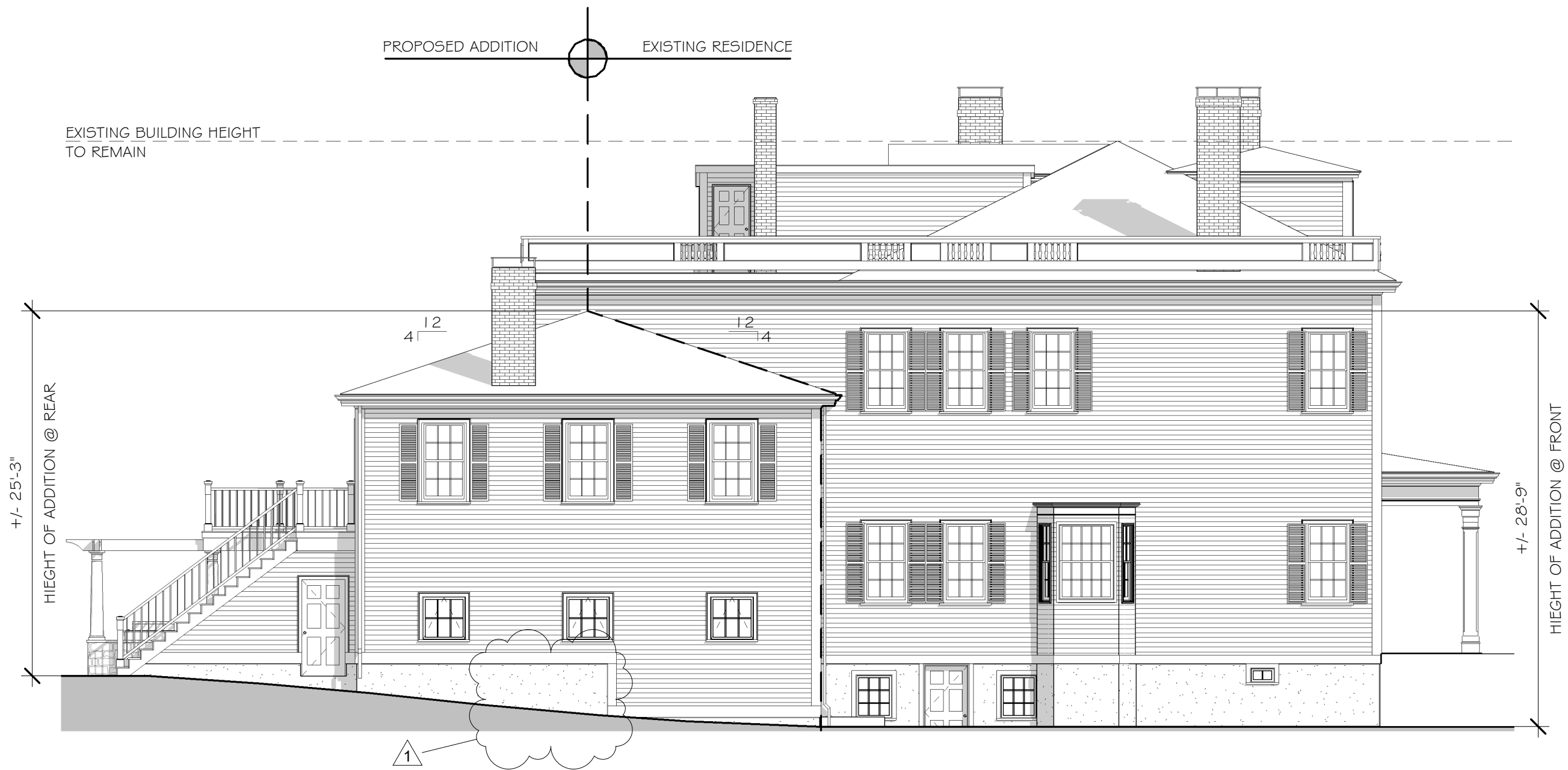
STORMWATER  
RUNOFF MITIGATION  
02.02.2021

PROPOSED FRONT ELEVATION

A-3A-ZBA

© Red Barn Architecture





① ZBA PROPOSED LEFT SIDE ELEVATION  
1/8" = 1'-0"

# Wykes Residence

Addition/Renovation  
69 Pleasant St.  
Marblehead, MA

Red Barn Architecture  
84 High Street  
Ipswich, MA 01938  
978.595.6764

**Project Name**  
Addition/Renovation

**Description**  
PROPOSED LEFT SIDE ELEVATION

**Scale:** 1/8" = 1'-0"

**Date:** 02.02.21

**Drawn by:** TJT

**Plot Date:** 2/2/2021 3:59:54 PM

## REVISIONS

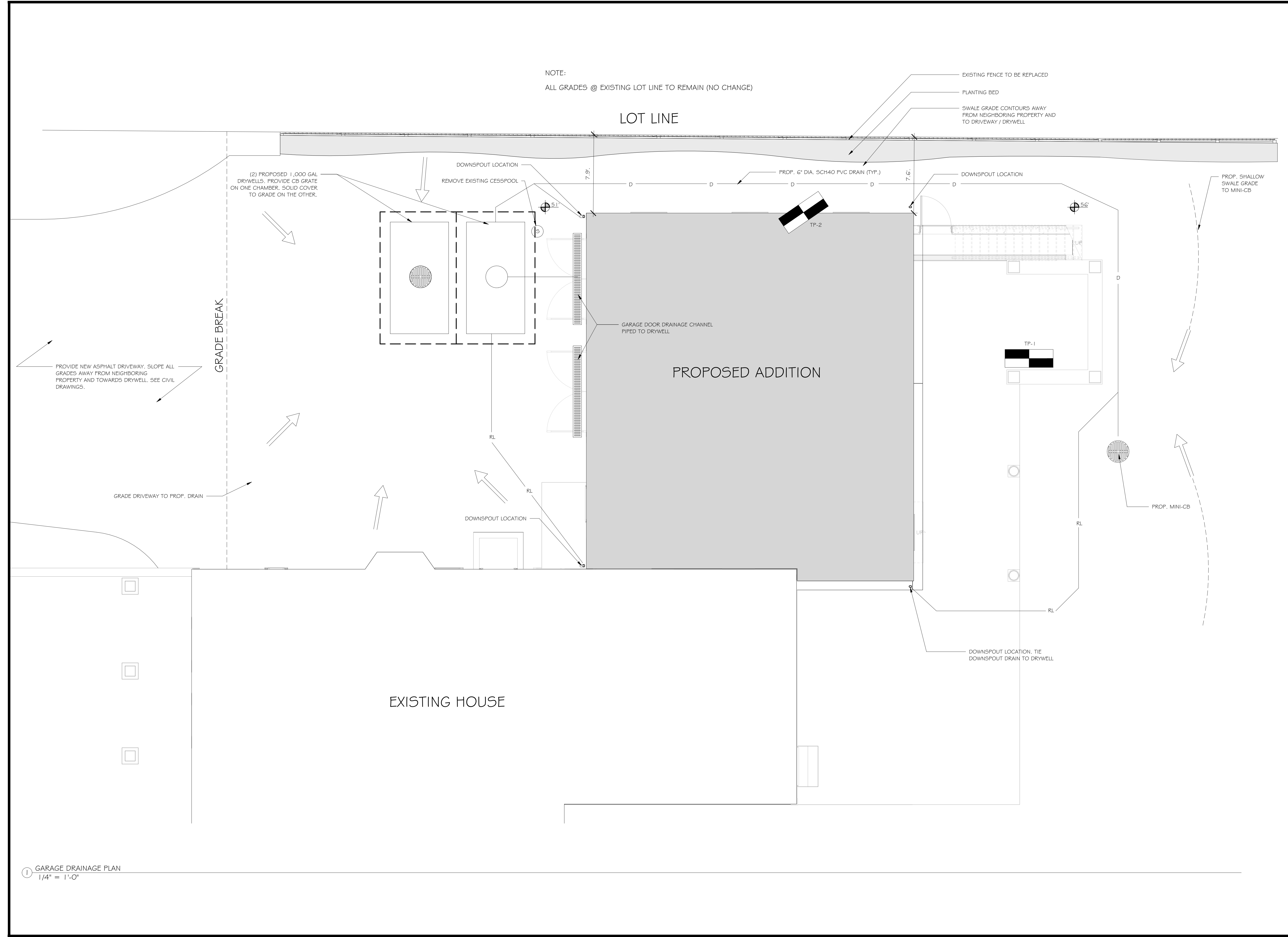
① STORMWATER  
RUNOFF MITIGATION  
02.02.2021

PROPOSED LEFT SIDE ELEVATION

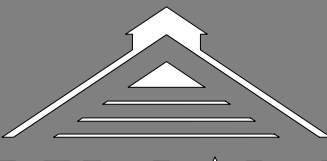
A-4A-ZBA

© Red Barn Architecture





1 GARAGE DRAINAGE PLAN  
1/4" = 1'-0"



RED BARN  
ARCHITECTURE

84 High Street  
Ipswich, MA 01938  
978.595.6764

**Project Name**  
Addition/Renovation

**Description**  
STORMWATER PLAN

**Scale:** 1/4" = 1'-0"

**Date:** 02.02.21

**Drawn by:** TA

**Plot Date:** 2/2/2021 3:57:50

Revisions/Project Status	
Issue	Date & Issue Description

**Wykes Residence**  
Addition/Renovation

69 Pleasant St.  
Marblehead, MA

© Red Barn Architecture

STORMWATER PLAN

SW-1