

HARWICH PLANNING BOARD
PUBLIC HEARING NOTICE

The Harwich Planning Board will hold a public hearing no earlier than 6:30 PM on Tuesday, October 6, 2020 in the Griffin Meeting Room, 732 Main St., Harwich, MA to consider the following applications. The meeting is via REMOTE PARTICIPATION ONLY. Written comments may be submitted to the Planning Board at the address shown below or emailing the Town Planner, Charleen Greenhalgh, at cgreenhalgh@town.harwich.ma.us. Anyone having interest the application is invited to access the meeting via GoToMeeting.com. Instructions regarding how to access and participate in the meeting will be posted on the Planning Board's Agenda page for the date of the meeting: <https://www.harwich-ma.gov/node/2451/agenda/2020>. The application and plans can also be viewed using the same website link noted above under Planning Board Legal Notice October 6, 2020 or by emailing the Planning Department.

PB2020-24 195 Queen Anne Road, LLC, as applicant, George A. McLaughlin III, as manager, Daniel A. Ojala, P.E., P.L.S., as representative, seeks approval of a Site Plan Review Special Permit and a Special Permit for structures with a gross floor area > 7,500 SF and 20 or more new parking spaces pursuant to the Code of the Town of Harwich §325-55 and §§325-9 and -51 to construct an industrial warehouse/contractor structure (7 bays, 9,000 sf). The property is located at 195 Queen Anne Road, Map 58, Parcel F1-2 in the I-L zoning district.

All documents related to the above cases are on file with the Planning Department and the Town Clerk; however, they can only be viewed at the Town Hall (address noted above) by appointment only.

In accordance with state law, this legal notice will also be available electronically at 'www.masspublicnotices.org.' The Town is not responsible for any errors in the electronic posting of this legal notice.

Duncan Berry, Chair
Cape Cod Chronicle Print Dates: September 17 & 24, 2020

TOWN OF HARWICH PLANNING DEPARTMENT

PLANNING BOARD APPLICATION SPECIAL PERMITS & SITE PLAN REVIEW

FORM A



TO THE TOWN CLERK, HARWICH, MA

DATE 9-1-20

PART A – APPLICANT INFORMATION/AUTHORIZATION

| | |
|---|---|
| Applicant Name(s) | 195 QUEEN ANNE ROAD, LLC |
| Representative/Organization (Who will serve as the primary contact responsible for facilitating this application?) | DANIEL A. OJALA, PE, PLS DOWN CAPE ENGINEERING, INC. |
| Mailing address | 939 ROUTE 6A |
| Town, ST, Zip | YARMOUTH PORT, MA 02675 |
| Phone | 508-362-4541 |
| Fax | 508-362-9880 |
| E-mail | downcape@downcape.com |

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

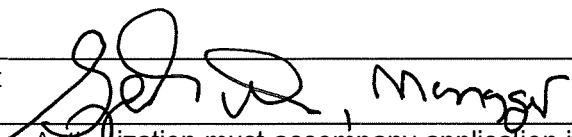
- ☐ Owner ☐ Prospective Buyer* ☒ Representative for Owner/Tenant/Buyer*
☐ Tenant* ☐ Other* _____

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

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

Authorization

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

Applicant  GEORGE A. MCLAVAHLIN III
Owner(s) – Authorization must accompany application if the owner is not the applicant.

Official use only:

| | |
|---------------------|------------|
| PLANNING DEPARTMENT | TOWN CLERK |
|---------------------|------------|

Case #

PART B – PROJECT LOCATION

| | | | |
|-----------------------------|-------------------|------------------|---------------|
| Legal Street Address | 195 QUEEN ANNE RD | Village/Zip Code | HARWICH 02645 |
| Title Book/Page or L.C.C. # | LCC # 222354 | | |
| Map(s) / Parcel(s) | 58 / F1-2 | | |
| Zoning & Overlay Districts | I-L | *Historic? | |
| Frontage (linear feet) | 185.82' | | |
| Total land area (s.f.) | 85,749 sq.ft. | | |
| Upland (s.f.) | " | Wetlands (s.f.) | |

PART C – PROJECT DESCRIPTION

| | | |
|---|--|----------------------------------|
| Existing Floor Area in Sq. Ft | Gross: 7,200 sq.ft. | Net: |
| Proposed Floor Area in Sq. Ft | Gross: 9,900 sq.ft. | Net: |
| Change in Sq. Ft + / - | Gross: 9,900 sq.ft. | Net: |
| Existing # of parking spaces | 21 | Proposed # of parking spaces: 54 |
| Existing Use(s) | warehouse/contractor bays, auto sales, auto services | |
| Proposed Use(s) | WAREHOUSE/CONTRACTOR BAYS, AUTO SALES, AUTO SERVICES | |
| Attach a separate narrative if necessary. | | |

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

Site Plan Review § 325-55:

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

Article V, Use Regulations:

- ☐ Paragraph 325, sub-paragraph # 9 ☐ Paragraph _____, sub-paragraph # _____
- ☐ Paragraph _____, sub-paragraph # _____, supplemental regulation # _____ § 325-14

Article X, Special Permits:

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

Other Special Permits:

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

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

September 2011

Project Narrative

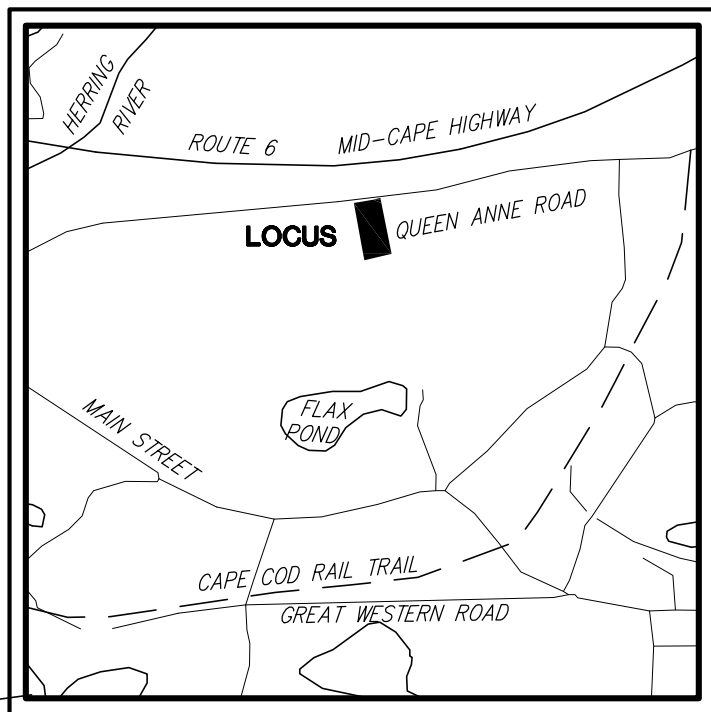
195 Queen Anne Road, Harwich

Proposed project is at 195 Queen Anne Road, Harwich, the lot size is 85,749 square feet (1.97 acres \pm) and is all upland in the Industrial – Limited zone, and is not located in the water protection zone.

The existing warehouse / contractor bays and auto services are proposed to remain. Proposed new building of 9,900 square feet. The parking area will also be expanded as required to provide an additional 33 parking spaces for a total of 54 parking spaces. Proposed uses in the new building are warehouse /contractor bays.

Drainage, lighting and landscaping improvements are planned for the site. A floor drain tight tank is proposed, along with a Title 5 septic for the new rear building.

The existing ladder sign on Queen Anne Road and the existing curb cuts will remain.



LOCUS MAP
SCALE 1"=2000'±
LOCUS ASSESSORS
MAP 58-F1_2
LOT SIZE: 1.97 AC.



ZONING SUMMARY

ZONING DISTRICT: I-L DISTRICT

| | REQUIRED | PROVIDED |
|------------------------|-------------|-----------|
| MIN. LOT SIZE | 20,000 S.F. | 85,749 SF |
| MIN. LOT FRONTAGE | 100' | 185.82' |
| MIN. FRONT SETBACK | 25' | 36' |
| MIN. SIDE SETBACK | 25' | 26.0' |
| MIN. REAR SETBACK | 50' | 50.4' |
| MAX. BUILDING HEIGHT | 40' | 25' |
| MAX. BUILDING HEIGHT | 2.5 STORIES | 1 STORY |
| MAX. BUILDING COVERAGE | 40% | 20% |
| MAX. SITE COVERAGE | 70% | 69.95% |
| PARKING SETBACK FRONT | 15' | 30'+ |
| PARKING SETBACK SIDE | 5' | 10' |

SITE IS NOT IN A FLOOD HAZARD ZONE
FEMA PANEL 25001C0603J EFF.
7-16-2014

NAVD88 DATUM

LOT SIZE: 85,749 SF± 1.97± ACRES
PROP. BLDG COVERAGE: 20.0%
PROP. SITE COVERAGE: 69.95%

SITE IS NOT IN A STATE ZONE 2 WATER SUPPLY
PROTECTION AREA OR LOCAL GROUNDWATER DISTRICT

LEGEND

- 99 - EXISTING CONTOUR
- X 99.1 EXIST. SPOT ELEV.
- [99] PROPOSED CONTOUR
- [98.4] PROPOSED SPOT EL.
- TH1 TEST HOLE
- 2% SLOPE OF GROUND
- UTILITY POLE
- FIRE HYDRANT
- 3" CAL. LONDON PLANE TREE OR APPROVED EQUAL SEE DETAILS

NOTE: NOT ALL SYMBOLS MAY APPEAR IN DRAWING.

#205
TOWN OF HARWICH
MAP 58-M1-1.0
(TRANSFER STATION PROPERTY)

PARKING CALCULATIONS:

WAREHOUSE/CONTRACTOR BAYS: 1/1,000 SF + 1/EMPL.
15,500 SF/ 1000 = 16 + 15 empl. + 6 Comp.Veh.=37
AUTO SALES: 1 PER 3000 SF +6 CARS +2 EMPL=9
AUTO SERVICE: 2 EMPL.+2/BAY +3 CARS = 7

TOTAL REQUIRED: 53

PROVIDED: 54 INCLUDING 3 VAN HANDICAP SPACES
10% INTERIOR LANDSCAPE OF NEW PARKING: 1468/13858
= 10.6% OK
TREES: 54 SPACES / 5 = 11 TREES REQ. 11 PROVIDED

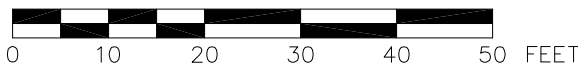
SITE/LANDSCAPE PLAN

OF
#195 QUEEN ANNE ROAD
HARWICH, MA

PREPARED FOR
195 QUEEN ANNE ROAD, LLC

DATE: 8-31-2020

Scale: 1"= 20'



8-31-2020
DANIEL A. OJALA PLS DATE
PERMIT SET- NOT FOR CONSTRUCTION

off 508-362-4541
fax 508-362-9880
downcape.com @
down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

SHEET
1 OF 4

LEGEND

- 99 — EXISTING CONTOUR
- X 99.1 EXIST. SPOT ELEV.
- [99] — PROPOSED CONTOUR
- [98.4] — PROPOSED SPOT EL.
- TH1 TEST HOLE
- 2% SLOPE OF GROUND
- UTILITY POLE
- FIRE HYDRANT

NOTE: NOT ALL SYMBOLS MAY APPEAR IN DRAWING

*THE INSTALLER SHALL VERIFY THE LOCATIONS OF ALL UTILITIES AND ALL BUILDING SEWER OUTLETS AND ELEVATIONS PRIOR TO INSTALLING ANY PORTION OF SEPTIC SYSTEM

SYSTEM DESIGN:

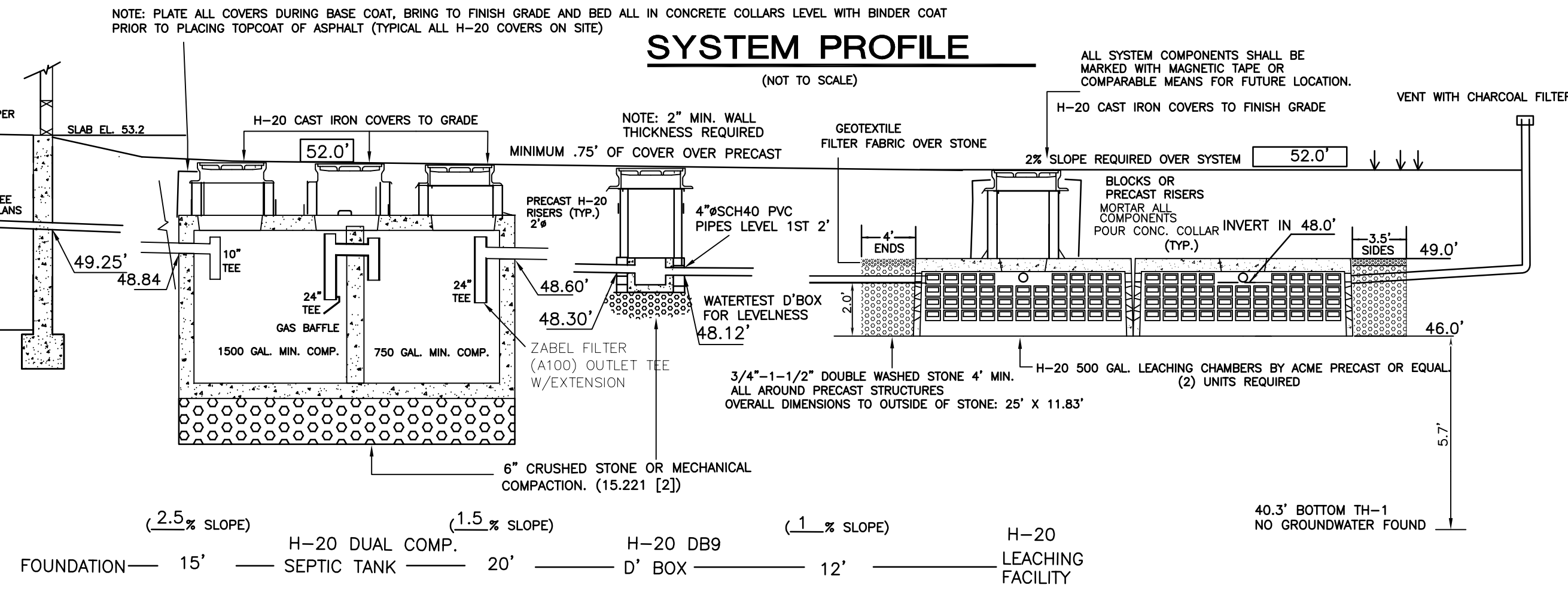
GARBAGE DISPOSER IS NOT ALLOWED
DESIGN FLOW: 9900 SF WAREHOUSE/CONTRACTOR BAYS
22 PERSONS MAX AT 15GPD/WORKER = 330 GPD
USE A 330 GPD DESIGN FLOW

SEPTIC TANK: 330 GPD (2) = 660 1ST COMP. , 330 2ND COMP.
USE A 1500 GAL. H-20 DUAL COMPARTMENT SEPTIC TANK 1000/500

LEACHING:
SIDES: $2 (12.83 + 25) 2 (.74) = 112$ GPD
BOTTOM: $12.83 \times 25 \times (.74) = 237$ GPD
TOTAL: _____ X S.F. 350 GPD

USE (2) 500 GAL. LEACHING CHAMBERS (ACME OR EQUAL)
WITH 4" STONE AT ENDS AND 4" AT SIDES

APPROVED _____ DATE _____ BOARD OF HEALTH _____ MA



NOTES

- DATUM IS NAVD88
- MUNICIPAL WATER IS AVAILABLE
- MINIMUM PIPE PITCH TO BE 1/8" PER FOOT.
- DESIGN LOADING FOR ALL PROPOSED PRECAST UNITS TO BE AASHO H-20
- PIPE JOINTS TO BE MADE WATERTIGHT.
- CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH 310 CMR 15.000 (TITLE 5.)
- THIS PLAN IS FOR PROPOSED WORK ONLY AND NOT TO BE USED FOR LOT LINE STAKING OR ANY OTHER PURPOSE.
- PIPE FOR SEPTIC SYSTEM TO SCH. 40-4" PVC.
- COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.
- CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING DIGSAFE (1-888-344-7233) AND VERIFYING THE LOCATION OF ALL UNDERGROUND & OVERHEAD UTILITIES PRIOR TO COMMENCEMENT OF WORK.
- ANY UNSUITABLE MATERIAL ENCOUNTERED SHALL BE REMOVED 5' BENEATH AND AROUND THE PROPOSED LEACHING FACILITY.



DRAINAGE SOIL TESTS:

ENGINEER: DANIEL A. OJALA PE PLS, SE

DATE: 04/09/2020

| 0" | ELEV. 49.0' | 0" | ELEV. 49.3' | 0" | ELEV. 49.8 | 0" | ELEV. 50.5' | 0" | ELEV. 51.2' |
|----------------------------|-------------|----------------------------|-------------|------------------------------|------------|----------------------------|-------------|----------------------------|-------------|
| FILL LS 10YR 4/2 | 8" | FILL GRAVEL 10YR 4/2 | 12" | FILL LS 10YR 4/2 | 72" | FILL LS 10YR 4/2 | 72" | FILL LS 10YR 4/2 | 45.2' |
| 84" | 42.0' | B | 43.3' | C | 48.8 | C | 44.5' | C | 45.2' |
| A/B | 39.0' | C | | M/C S | | C | | C | |
| C | | M/C S | | SOME DISTURBANCE NOTED AT 6' | | M/C S | | M/C S | |
| NAT | | NAT | | 2.5Y 7/4 | | NAT | | NAT | |
| 180" | 34.0' | 144" | 37.3' | 120" | 39.8' | 144" | 38.5' | 120" | 41.2' |
| NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | |

TEST HOLE LOGS

ENGINEER: CRAIG FERRARI, SE #13587

WITNESS: KATHLEEN TENAGLIA RS

DATE: 8/05/20

PERC. RATE = < 2 MIN/INCH

CLASS I SOILS P# 14729

| 0" | ELEV. 50.8' | 0" | ELEV. 51' | 0" | ELEV. 50.2' | 0" | ELEV. 50.5' |
|----------------------------|-------------|----------------------------|-----------|----------------------------|-------------|----------------------------|-------------|
| FILL LS 10YR 4/2 | 24" | FILL LS 10YR 4/2 | 6" | FILL LS 10YR 4/2 | 18" | FILL LS 10YR 4/2 | 49' |
| 48.8' | 72" | 45' | 49.7' | 49.7' | 49.7' | 49.7' | 49.7' |
| C | C | C | C | C | C | C | C |
| MS | MS | MS | MS | MS | MS | MS | MS |
| 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 | 2.5Y 7/4 |
| 126" | 40.3' | 132" | 40' | 120" | 40.3' | 120" | 40.5' |
| NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | | NO GROUNDWATER ENCOUNTERED | |

HYDROGEOLOGIC INFORMATION:

SITE IS LOCATED OUTSIDE OF THE MA DEP MAPPED ZONE II RECHARGE AREA FOR A PUBLIC WELL IN THE II ZONING DISTRICT SOUTH OF QUEEN ANNE ROAD IN HARWICH. THE GROUNDWATER IS ESTIMATED TO BE AT ELEVATION 24 NAVD88 DATUM AND THE GROUNDWATER FLOW IS TO THE SOUTH PER THE 2' CONTOUR GROUNDWATER MAPPING OF THE AREA.

THE USES PROPOSED ARE TYPICAL WAREHOUSE/CONTRACTOR BAY TYPE USES, AND THE BUILDING IS TO HAVE SEALED CONCRETE FLOORS WITH FLOOR DRAINS LEADING TO A DUAL CONTAINMENT TIGHT TANK (NON-HAZARDOUS INDUSTRIAL WASTEWATER HOLDING TANK) PER THE LATEST PLUMBING CODE AND MA 314 CMR 18.00.

THE PAVED PARKING LOT IMPERVIOUS SURFACES ARE DRAINED TO DEEP SUMP HOODED CATCH BASINS LEADING TO DEEP SUMP HOODED MANHOLES TO REMOVE THE 44% TSS REMOVAL REQUIRED PRIOR TO INFILTRATION PER THE MA DEP STORMWATER MANAGEMENT GUIDELINES.

THE SITE IS ADJACENT THE CAPPED MUNICIPAL LANDFILL, AND GROUNDWATER IS GREATER THAN 25' BELOW FINISH SITE GRADES.

TITLE 5 DETAILS SITE PLAN

OF

195 QUEEN ANNE ROAD
HARWICH, MA

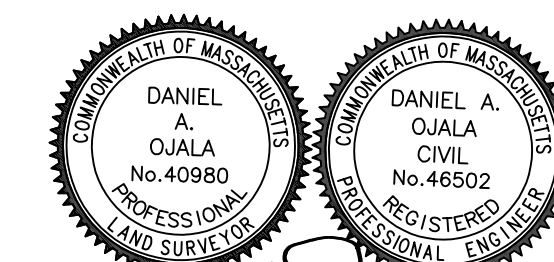
PREPARED FOR

195 QUEEN ANNE ROAD, LLC

DATE: 8-31-2020

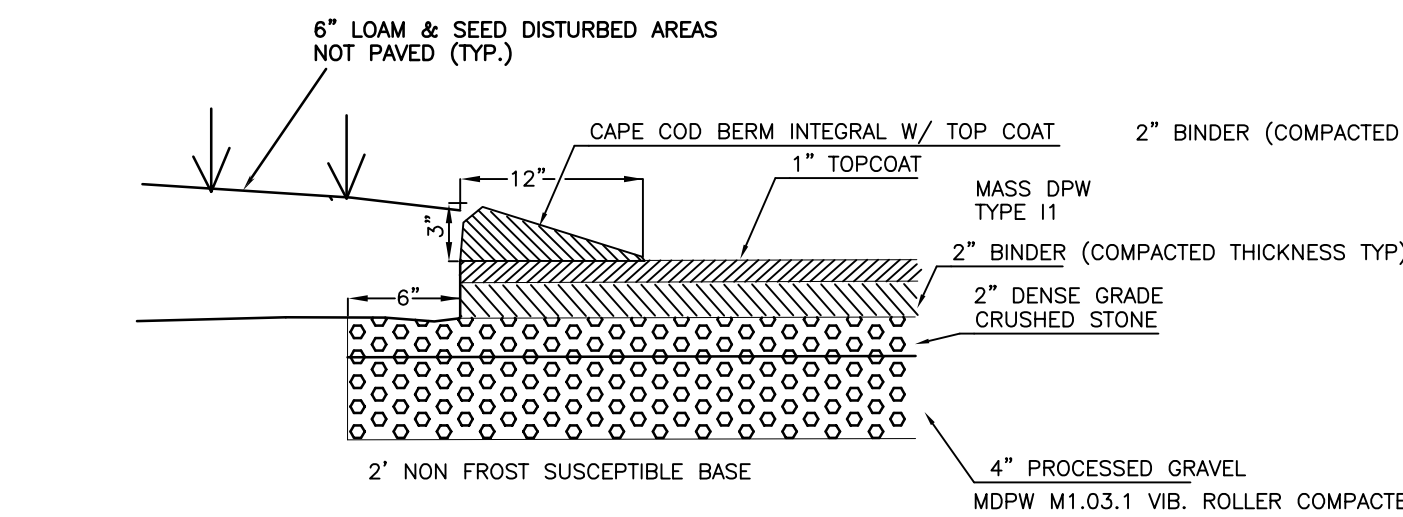
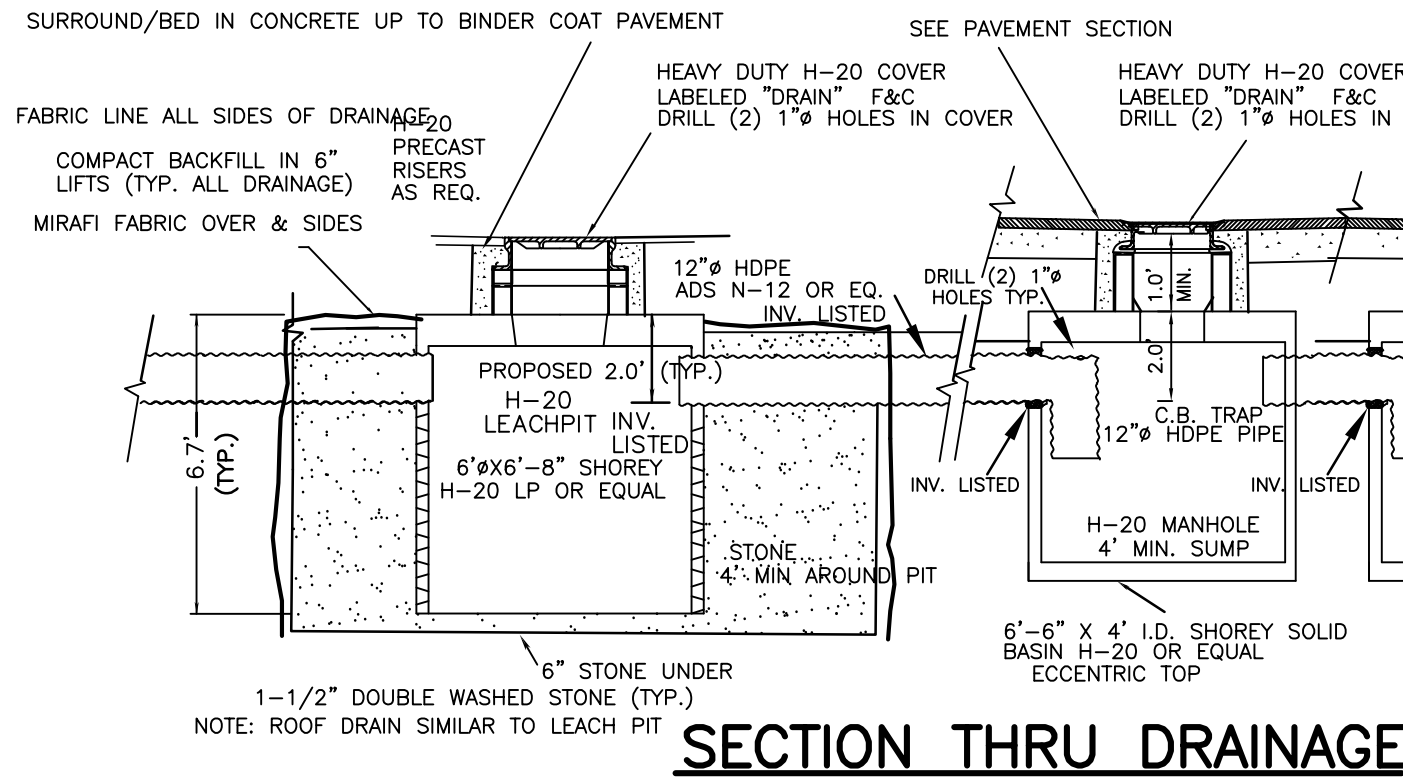
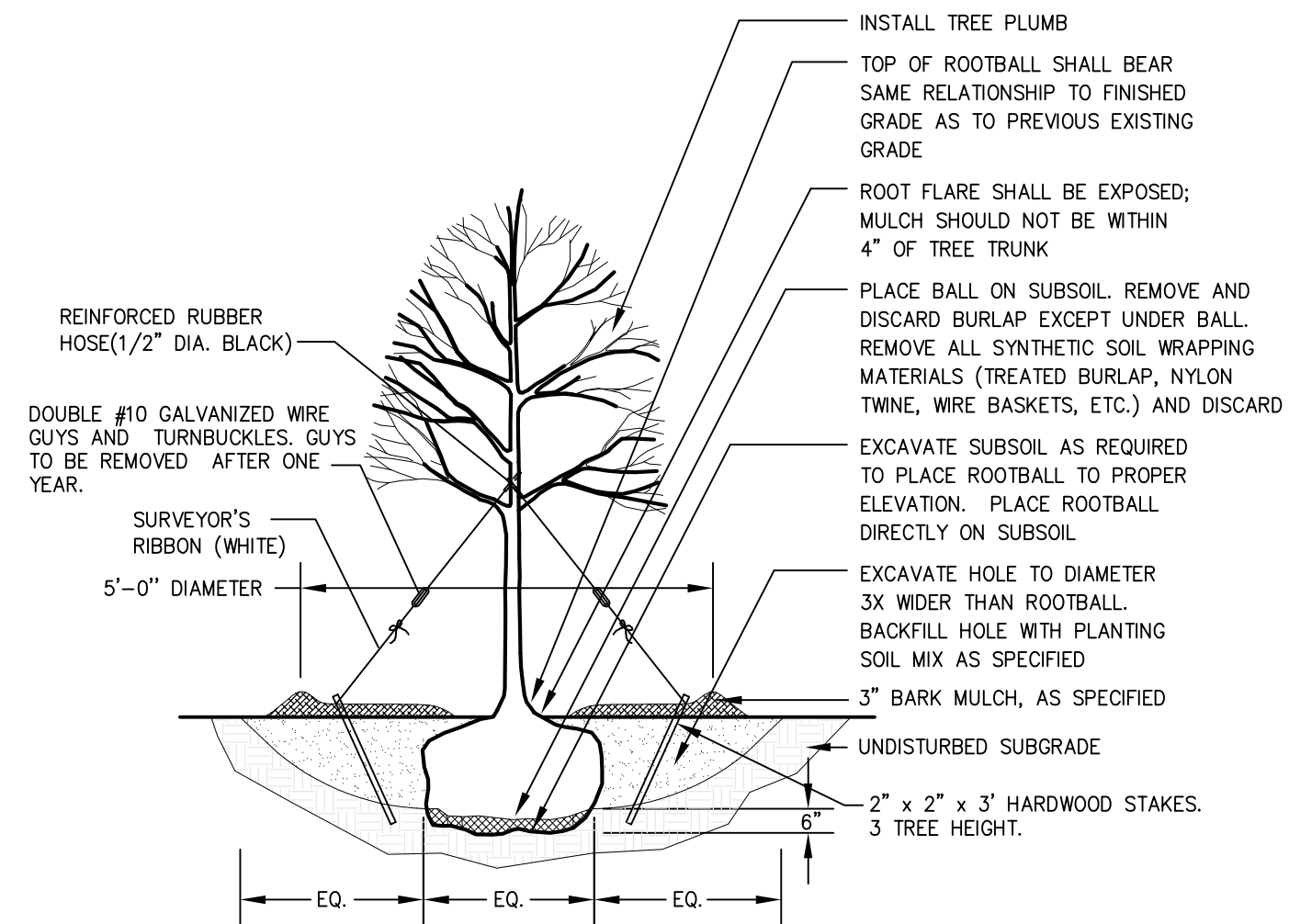
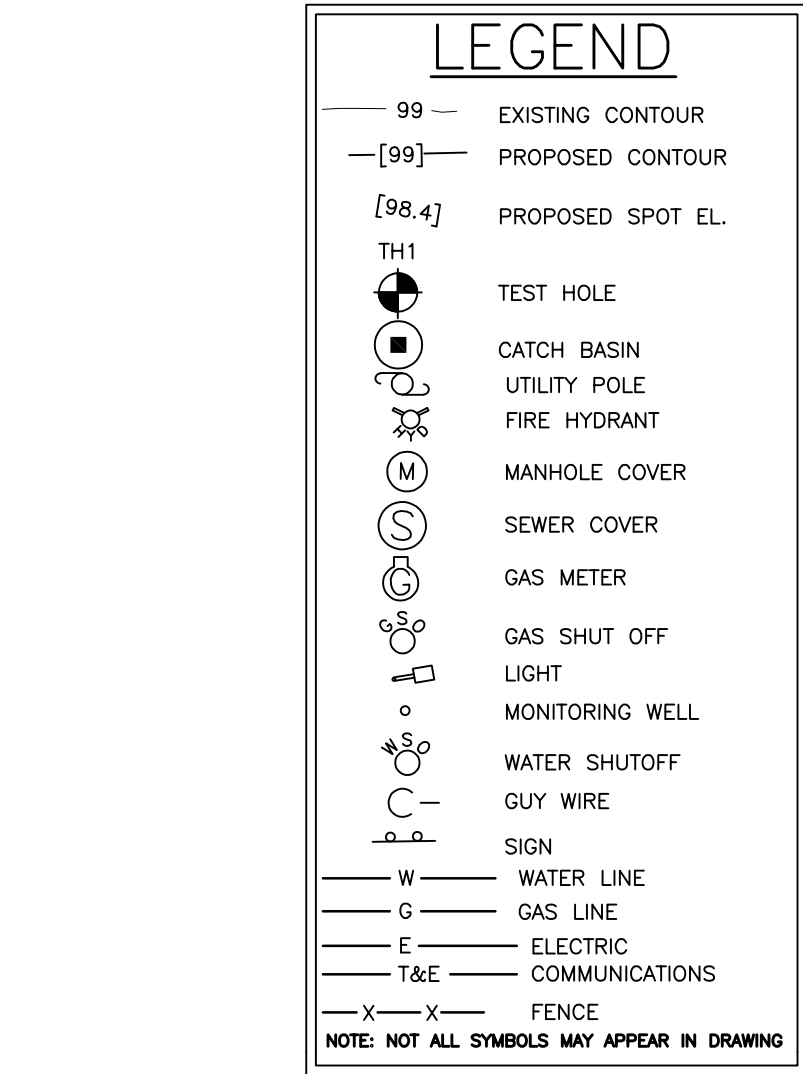
Scale: 1" = 20'

down cape engineering, inc.
civil engineers
and surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675



Daniel A. Ojala PLS PE DATE 8-31-2020
PERMIT SET - NOT FOR CONSTRUCTION

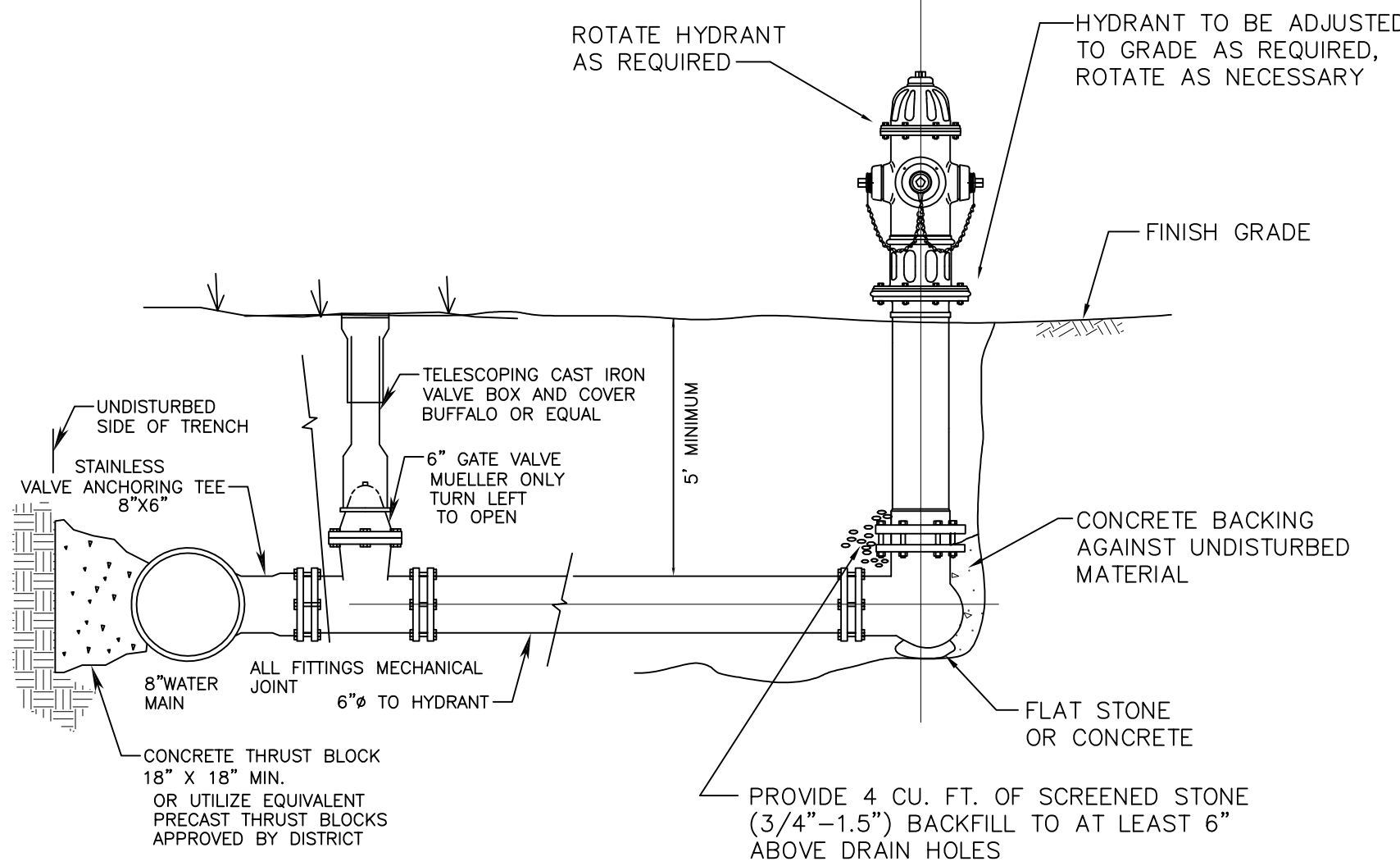




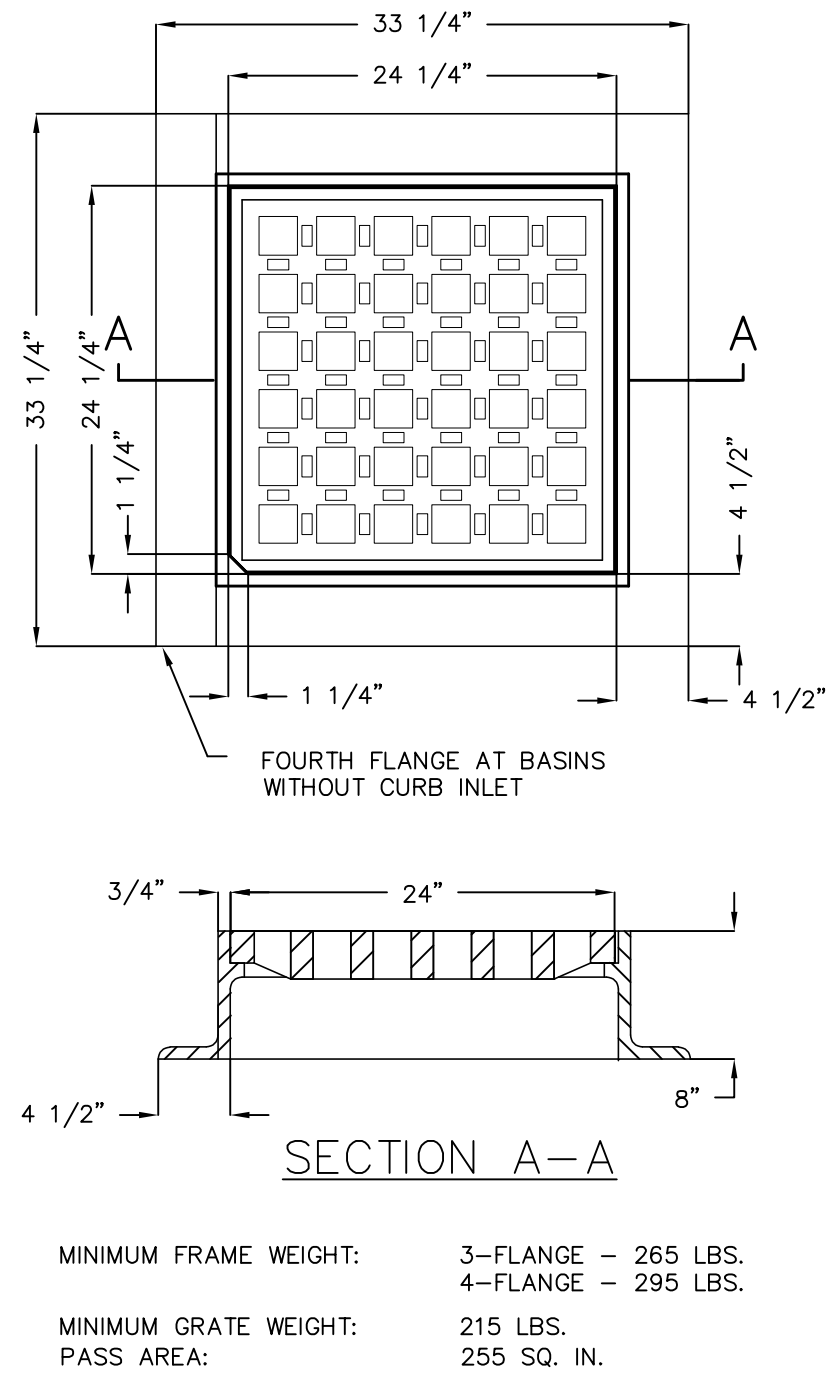
PAVEMENT CROSS SECTION

NOT TO SCALE

DCE #20-064



TYPICAL HYDRANT CONNECTION



NOTES:

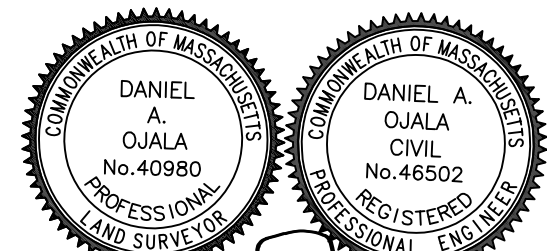
1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN IS APPROXIMATE. PRIOR TO ANY EXCAVATION ON THIS SITE, THE EXCAVATING CONTRACTOR SHALL MAKE THE REQUIRED 72 HOUR NOTIFICATION TO DIG SAFE (1-888-344-7233 OR 811) AND ANY OTHER UTILITIES WHICH MAY HAVE CABLE, PIPE OR EQUIPMENT IN THE CONSTRUCTION AREA FOR VERIFICATION OF LOCATIONS.
2. ALL CONSTRUCTION MATERIALS, COMPONENTS, AND METHODS EMPLOYED ON THIS PROJECT WORK SHALL CONFORM TO THE TOWN OF HARWICH SUBDIVISION REGS. AND/OR THE MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS STANDARD SPECIFICATIONS FOR BRIDGES AND HIGHWAYS AS AMENDED TO PRESENT. ALL SEPTIC WORK AND MATERIALS TO CONFORM TO 310 CMR 15.00 TITLE 5, AND HARWICH HEALTH REGULATIONS.
3. VERTICAL DATUM IS NAVD FROM RTK GPS. MUNICIPAL WATER IS AVAILABLE.
4. DESIGN LOADING FOR ALL PRECAST UNITS TO BE AASHTO-H20 UNLESS NOTED.
5. THIS PLAN IS FOR PROPOSED WORK ONLY AND IS NOT TO BE USED FOR PROPERTY LINE STAKING.
6. 6" LOAM AND SEED ALL DISTURBED AREAS NOT PAVED, M6.03.0 SEED.
7. ALL SEPTIC PIPING 4" SCH-40 PVC UNLESS NOTED.
8. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.
9. ALL STORMWATER RUNOFF TO BE RETAINED ON SITE.
10. COORDINATE UTILITY INSTALLATIONS WITH APPROPRIATE VENDORS.
11. ALL LIGHTING SHALL CONFORM TO ZONING ORDINANCE.
12. CONTRACTOR TO PROVIDE FILTER FABRIC BETWEEN FRAME & GRATES AND SILT FENCE AROUND PERIMETER OF WORK AREA UNTIL SITE STABILIZED.
13. COORDINATE DOWNSPOUT LOCATIONS AND CONNECTIONS WITH ARCH. DWGS.

GENERAL SEEDING NOTES

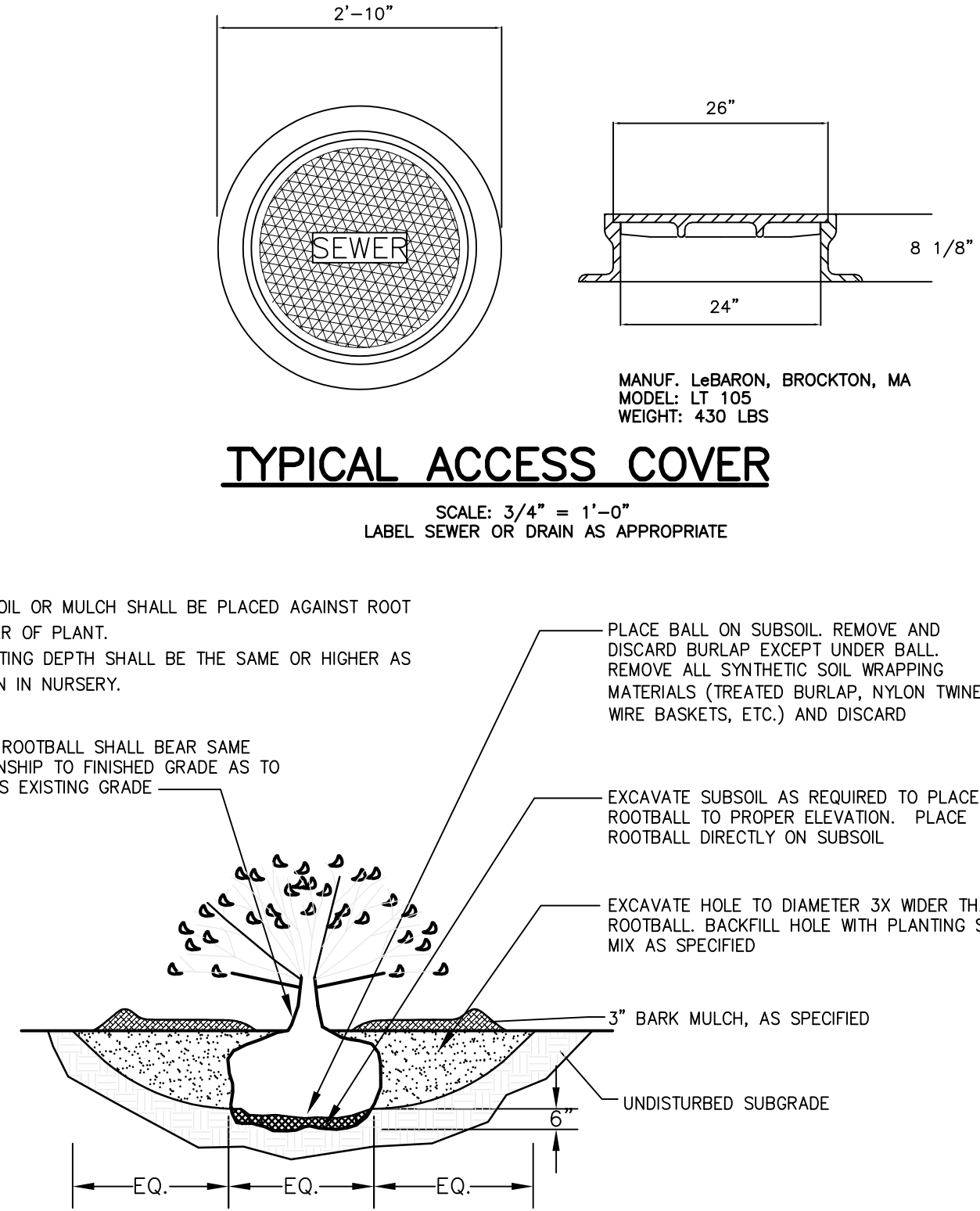
- 1) PERMANENT SEEDING SHALL CONSIST OF THE FOLLOWING MIXTURE OR APPROVED EQUAL — OPTIMUM SEEDING DATES ARE BETWEEN APRIL 1 AND MAY 31 AND AUGUST 16 AND OCTOBER 15.
SUMMER STRESS MIXTURE (LOFTS SEED INC.)
90% REBEL II OR TRIBUTE TALL FESCUE
10% NASSAI OR BARON KENTUCKY BLUEGRASS
SEEDING RATE: 5# PER 1,000 SQ. FT. OR 200# PER ACRE.
- 2) PERMANENT SEEDING TO BE APPLIED BY RAKING OR DRILLING INTO THE SOILS AT A RATE OF 150# PER ACRE. SLOPED AREA TO BE COVERED WITH MULCH AS INDICATED IN NOTE 4.
- 3) FERTILIZER FOR THE ESTABLISHMENT OF TEMPORARY AND PERMANENT VEGETATIVE COVER SHALL BE 10-10-10 APPLIED AT A RATE OF 15# PER 1,000 SQ. FT. OR AS DETERMINED BY SOIL TESTS. LIMESTONE FOR TEMPORARY SEEDING SHALL BE APPLIED AT A RATE OF 90# PER 1,000 SQ. FT. LIMESTONE FOR PERMANENT SEEDING SHALL BE APPLIED AT A RATE OF 135# PER 1,000 SQ. FT.

GENERAL PLANTING NOTES

- 1) ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK BY THE AMERICAN NURSERY & LANDSCAPE ASSOCIATION OR THE PLANT MATERIAL WILL BE UNACCEPTABLE. ALL PLANT MATERIAL SHALL BE TRUE TO SPECIES, VARIETY, SIZE AND BE CERTIFIED DISEASE AND INSECT FREE. THE OWNER AND/OR THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO APPROVE ALL PLANT MATERIAL ON SITE PRIOR TO INSTALLATION.
- 2) PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS. BACKFILL PLANTING PITS WITH ONE PART EACH OF TOPSOIL, PEAT MOSS AND PARENT MATERIAL. IF WET SOIL CONDITIONS EXIST THEN PLANTING PITS SHALL BE EXCAVATED AN ADDITIONAL 12" AND FILLED WITH SAND.
- 3) NEWLY INSTALLED PLANT MATERIAL SHALL BE WATERED AT THE TIME OF INSTALLATION. REGULAR WATERING SHALL BE PROVIDED TO ENSURE THE ESTABLISHMENT, GROWTH AND SURVIVAL OF ALL PLANTS.
- 4) ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR ONE YEAR AFTER THE DATE OF FINAL ACCEPTANCE. ANY PLANT MATERIAL THAT DIES WITHIN THAT TIME PERIOD SHALL BE REMOVED, INCLUDING THE STUMP, AND REPLACED BY A TREE OF SIMILAR SIZE AND SPECIES AT THE EXPENSE OF THE CONTRACTOR.
- 5) ALL PLANTING BEDS SHALL RECEIVE 2" OF SHREDDED PINE BARK.



DANIEL A. OJALA PLS PE DATE 8-31-2020
PERMIT SET - NOT FOR CONSTRUCTION



SHRUB PLANTING

NOT TO SCALE

DRAINAGE ELEV. SCHEDULE

| NAME | RM | INV. | (NOTE: INV. OUT 0.1' LOWER ON MH'S) |
|------|------|------|-------------------------------------|
| CB1 | 51.5 | 48.0 | |
| CB2 | 51.5 | 48.0 | |
| CB3 | 52.2 | 49.2 | |
| CB4 | 50.5 | 46.5 | |
| CB5 | 49.5 | 46.5 | |
| MH1 | 51.9 | 46.4 | |
| MH2 | 52.0 | 46.4 | |
| MH3 | 52.4 | 49.1 | |
| MH4 | 50.7 | 46.4 | |
| MH5 | 49.6 | 46.4 | |
| LP1 | 52.1 | 46.3 | |
| LP2 | 52.1 | 46.3 | |
| LP3 | 52.3 | 46.3 | |
| LP4 | 52.3 | 46.3 | |
| LP5 | 50.8 | 46.3 | |
| LP6 | 51.0 | 46.3 | |
| LP7 | 50.1 | 46.3 | |
| LP8 | 50.4 | 46.0 | |
| LP9 | 52.5 | 47.5 | |

DETAIL SHEET

SITE PLAN

OF

195 QUEEN ANNE ROAD

HARWICH, MA

PREPARED FOR

195 QUEEN ANNE ROAD, LLC

DATE: 8-31-2020

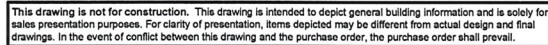
Scale: 1" = 20'

0 10 20 30 40 50 FEET

down cape engineering, inc.
civil engineers
land surveyors
939 Main Street (Rte 6A)
YARMOUTHPORT MA 02675

PERMIT SET - NOT FOR CONSTRUCTION

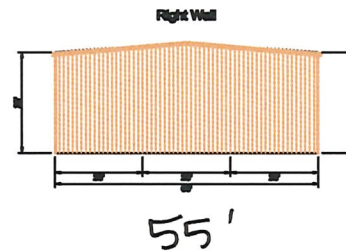
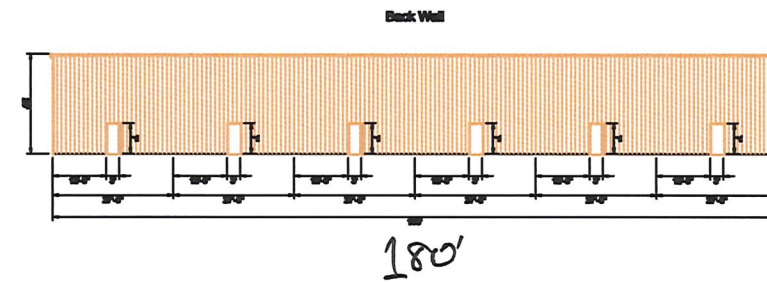
SHEET
4 OF 4



NOTE: 7 BAYS (+1)

#195 QUEEN ANNE
8/13/2020

| | | | |
|---|--|--|--|
| A.S.S. AUS BUILDING SYSTEMS A.S.S. Building Systems Caryville, TN 37714 | | Customer: CHBS WESTCOM Housh, VA | |
| Builder: A.S.S. Building Systems CONTACT: Chris Wickstrom COUNTY: | | For Construction Permit: <input type="checkbox"/> For Construction Permit For Division: <input type="checkbox"/> For Division | |
| Scale: NOT TO SCALE | | Working Status: <input type="checkbox"/> Final <input type="checkbox"/> Revised | |
| Version: | | Paper Size: 22x34 | |
| Estimator: Ken Chapman | | Date: 5/4/02 | |
| Job Name: Chris Wickstrom | | | |
| Member: <div style="text-align: center;">  </div> | | | |
| The engineer whose seal appears hereon is an employee for the manufacturer for the materials described herein. Said seal or certification is limited to the products designed and manufactured by manufacturer only. The undersigned engineer is not the overall engineer of record for this project. | | | |



ARCHITECTURAL - (A) Building A

#195 Queen Anne
8/13/2020

WHITE ROOF

METAL BLDG.
OFF-
WHITE
W/ GREEN
TRIM

Package Steel Systems, Inc.



#195 QUEEN ANNE RD
BLDG PLAN - 3D 8/31/20

939 main street rte 6a
yarmouth port
mass 02675

land court
surveys

structural design

site planning

sewage system
designs

inspections

permits



down cape engineering, inc
civil engineers & land surveyors



tel. (508) 362-4541
fax (508) 362-9880

Daniel A. Ojala, P.E., P.L.S.
Arne H. Ojala, P.E., P.L.S.
Daniel E. Gonsalves, P.E., S.E.
Craig J. Ferrari, E.I.T., S.E.

August 31, 2020

DRAINAGE CALCULATIONS

195 QUEEN ANNE ROAD, HARWICH, MA



Daniel A. Ojala, PE, PLS
Down Cape Engineering, Inc.

195 QUEEN ANNE ROAD, HARWICH, MA

DRAINAGE CALCULATIONS

DATE: 8-31-2020

DOWN CAPE ENGINEERING

DRAINAGE AREA: DA2 FRONT ROOF AND ALL PARKING AREAS

DRAINAGE AREA COMPOSITE CURVE NUMBER CALCULATIONS:

| | | |
|------------------------------------|-----------|----------|
| AREA OF PAVEMENT/DRIVES/BUILDINGS: | 51,773 SF | 1.19 AC. |
| AREA OF LAWNS AND WOODS: | 2200 SF | 0.05 AC. |
| TOTAL DRAINAGE AREA: | 53973 SF | 1.24 AC. |
| CURVE NUMBER PVT/BLDGS: | 0.99 | |
| CURVE NUMBER LAWN/WOODS: | 0.35 | |

COMPOSITE CURVE NUMBER: 0.96
(PVT AREA * 0.99 + GRASS* 0.35)/ TOTAL AREA)

RATIONAL METHOD DRAINAGE SIZING: $Q=CIA$, SF REQ= $Q*448.8$ GPM/CFS (1/0.7) GPM/SF

| | | |
|---------------------|------------|----------------------|
| DRAINAGE AREA: | 53973 SF | |
| CURVE NUMBER: | 0.96 RATIO | |
| RAINFALL INTENSITY: | 3.8 IN./HR | (SEE NOMOGRAPH) |
| GPM/SF RATIO: | 0.7 GPM/SF | (<2MIN/IN PERC RATE) |

LEACHING AREA REQUIRED: 2910 SF

USE 7LEACHING PITS 6.67'X6' DIA WITH 4' STONE AROUND
TOTAL SQUARE FOOTAGE OF LEACHING AREA PROVIDED
= 2926 SF > 2910 SF O.K.

195 QUEEN ANNE ROAD, HARWICH, MA

DRAINAGE CALCULATIONS

DATE: 8-31-2020

DOWN CAPE ENGINEERING

DRAINAGE AREA: DA1 ROOF AREA

DRAINAGE AREA COMPOSITE CURVE NUMBER CALCULATIONS:

| | | |
|------------------------------------|----------|----------|
| AREA OF PAVEMENT/DRIVES/BUILDINGS: | 9,900 SF | 0.23 AC. |
| AREA OF LAWNS AND WOODS: | 0 SF | 0.00 AC. |
| TOTAL DRAINAGE AREA: | 9900 SF | 0.23 AC. |
| CURVE NUMBER PVT/BLDGS: | 0.99 | |
| CURVE NUMBER LAWN/WOODS: | 0.35 | |

COMPOSITE CURVE NUMBER: 0.99
(PVT AREA * 0.99 + GRASS* 0.35)/ TOTAL AREA)

RATIONAL METHOD DRAINAGE SIZING: $Q=CIA$, SF REQ= $Q*448.8$ GPM/CFS (1/0.7) GPM/SF

| | | |
|---------------------|------------|----------------------|
| DRAINAGE AREA: | 9900 SF | |
| CURVE NUMBER: | 0.99 RATIO | |
| RAINFALL INTENSITY: | 5.5 IN./HR | (SEE NOMOGRAPH) |
| GPM/SF RATIO: | 0.7 GPM/SF | (<2MIN/IN PERC RATE) |

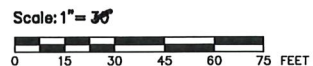
LEACHING AREA REQUIRED: 793 SF

USE 2 LEACHING PITS 6.67'X6' DIA WITH 4' STONE AROUND
TOTAL SQUARE FOOTAGE OF LEACHING AREA PROVIDED
= 836 SF > 793 SF O.K.



DRAINAGE AREA **195 QUEEN ANNE ROAD, LLC**

DATE: 8-31-2020



HARWICH CODE

4. Calculate the rate of runoff by using the following Rational Method formula:

$$Q = CIA$$

Where

Q = Rate of runoff in cubic feet (cf) per second

C = Runoff coefficient

I = Rainfall intensity in inches per hour

A = Drainage area in acres

Minute (gal/min) as follows:

$$Q \text{ gal/min} = Q \text{ cf/sec} \times 60 \text{ sec/min} \times 7.48 \text{ gal/cf}$$

5. The ratio of square feet of leaching provided to Q gal/min

| Soil Percolation Rate | Ration Q – Leaching Area |
|---|---------------------------------|
| Less than 2 min/inch | 0.7 |
| 2 min/inch to 8 min/inch | 0.5 |
| 8 min/inch to 12 min/inch | 0.2 |
| Greater than 12 min/inch is unsuitable for leaching basin | |

6. No accounting for storage and/or leaching during a rainstorm will be allowed.
7. Percolation and deep tests shall be required at the proposed location of each leaching system. More tests may be required by the Town Engineer.
8. The USGS method shall be used to estimate probable high groundwater levels.
9. The bottom of leaching structures must be at least one foot above the estimated probable high groundwater level.

