

- GENERAL NOTES
1. CONTRACTOR SHALL NOTIFY DIG-SAFE (811) AT LEAST 72 HOURS BEFORE EXCAVATING. SEE ALSO UTILITIES NOTES AND EXISTING CONDITIONS INFORMATION NOTES.
  2. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. CONSTRUCTION ACTIVITIES SHALL BE IN ACCORDANCE WITH THE OSHA STANDARDS AND LOCAL REQUIREMENTS.
  3. ACCESSIBLE ROUTES, PARKING SPACES, RAMPS, SIDEWALKS AND WALKWAYS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE FEDERAL AMERICANS WITH DISABILITIES ACT AND WITH STATE AND LOCAL LAWS AND REGULATIONS (WHICHEVER ARE MORE STRINGENT).
  4. AREAS DISTURBED WITHIN THE PROPOSED LIMIT OF WORK DURING CONSTRUCTION AND NOT RESTORED WITH IMPERVIOUS SURFACES (BUILDINGS, PAVEMENTS, WALKS, ETC.) SHALL BE TREATED IN ACCORDANCE WITH LANDSCAPE PLAN. TEMPORARY MULCH AND DUST CONTROL REQUIRED.
  5. WITHIN THE LIMITS OF THE BUILDING FOOTPRINT, THE SITE CONTRACTOR SHALL PERFORM EARTHWORK OPERATIONS REQUIRED UP TO SUBGRADE ELEVATIONS. OWNERS GEOTECHNICAL ENGINEER TO INSPECT, PROVIDE ADEQUATE NOTICE FOR ALL INSPECTIONS.
  6. WORK WITH THE LOCAL RIGHTS-OF-WAY SHALL CONFORM TO LOCAL MUNICIPAL STANDARDS. WORK WITHIN STATE RIGHTS-OF-WAY SHALL CONFORM TO THE LATEST EDITION OF THE STATE HIGHWAY DEPARTMENTS STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES. ROAD OPENING PERMITS REQUIRED FOR WORK IN ROADS.
  7. UPON AWARD OF CONTRACT, CONTRACTOR SHALL MAKE NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN NECESSARY PERMITS, PAY FEES, AND POST BONDS ASSOCIATED WITH THE WORK INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS, AND IN THE CONTRACT DOCUMENTS. DO NOT CLOSE OR OBSTRUCT ROADWAYS, SIDEWALKS, AND FIRE HYDRANTS, FIRE DEPARTMENT CONNECTION POINTS WITHOUT APPROPRIATE PERMITS.
  8. TRAFFIC SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. TEMPORARY SIGNAGE TO BE PROVIDED AS REQUIRED DURING CONSTRUCTION.
  9. AREAS OUTSIDE THE PROPOSED LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
  10. IN THE EVENT THAT SUSPECTED CONTAMINATED SOIL, GROUNDWATER, AND OTHER MEDIA ARE ENCOUNTERED DURING EXCAVATION AND CONSTRUCTION ACTIVITIES BASED ON VISUAL, CLFACTORY, OR OTHER EVIDENCE, THE CONTRACTOR SHALL STOP WORK IN THE VICINITY OF THE SUSPECT MATERIAL TO AVOID FURTHER SPREADING OF THE MATERIAL, AND SHALL NOTIFY THE OWNER IMMEDIATELY SO THAT THE APPROPRIATE TESTING AND SUBSEQUENT ACTION CAN BE TAKEN.
  11. CONTRACTOR SHALL PREVENT DUST, SEDIMENT, AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS.
  12. DAMAGE RESULTING FROM CONSTRUCTION LOADS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO OWNER.
  13. CONTRACTOR SHALL CONTROL ALL SITE STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFFSITE. STORMWATER RUNOFF DURING CONSTRUCTION TO PREVENT ADVERSE IMPACTS TO OFF SITE AREAS, AND SHALL BE RESPONSIBLE TO REPAIR RESULTING DAMAGES, IF ANY, AT NO COST TO OWNER.
  14. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND AND FALLS WITHIN THE NPDES CONSTRUCTION GENERAL PERMIT (CGP) PROGRAM AND EPA JURISDICTION. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR IS TO FILE A CGP NOTICE OF INTENT WITH THE EPA AND PREPARE A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE NPDES REGULATIONS.
  15. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AS-BUILT INFORMATION FOR ALL SITE CONSTRUCTION INCLUDING, BUT NOT LIMITED TO: BUILDING LOCATION, CURB LINES, SIDEWALKS, ACCESSIBLE CURB RAMPS, SIGNAGE, STRIPING, PAVEMENT LIMITS, UTILITIES, AND TOPOGRAPHY. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AS-BUILT INFORMATION ON ALL SEDIMENTATION AND INFILTRATION BASINS PRIOR TO STABILIZATION FOR ENGINEERS REVIEW.

- EXISTING CONDITIONS INFORMATION
1. BASE PLAN: THE EXISTING CONDITIONS SHOWN HEREON IS BASED ON SURVEYS BY DOWN CAPE ENGINEERING, INC. FROM 2018 TO 2022. UTILITIES HAVE BEEN SHOWN BASED ON FIELD OBSERVATIONS, DIGSAFE MARKINGS, AND PLANS OF RECORD WITHOUT EXCAVATION. SITE CONTRACTOR TO VERIFY EXACT LOCATIONS AND INVERTS IN FIELD PRIOR TO RUNNING ANY SLOPE OR LOCATION CRITICAL LINES AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOR DIRECTION PRIOR TO PROCEEDING WITH WORK. DOWN CAPE ENGINEERING, INC. 1-508-362-4541.
  2. TOPOGRAPHY: ELEVATIONS ARE BASED ON NAVD 88, THE CURRENT FEMA VERTICAL DATUM. HORIZONTAL CONTROL IS MASS STATE PLANE U.S. SURVEY FOOT NAD83 FROM RTK GPS OBSERVATIONS.

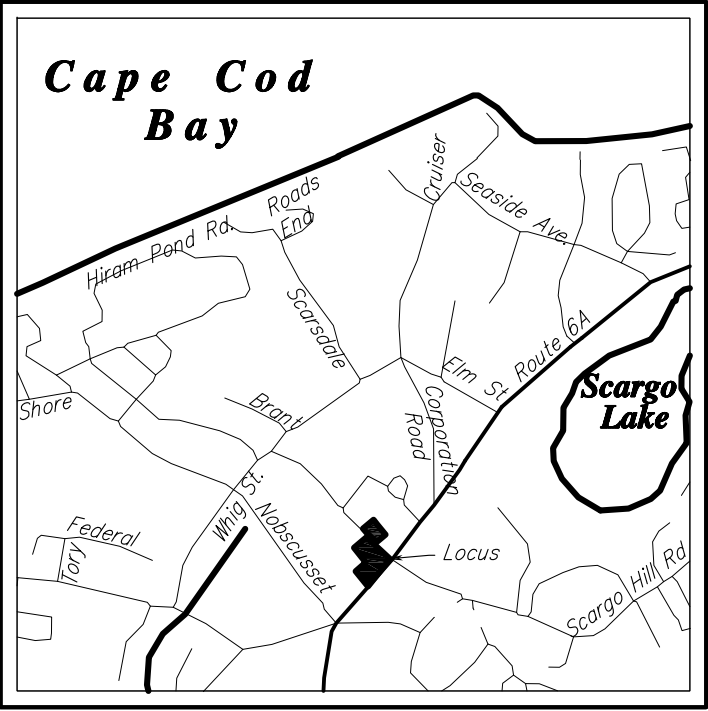
- DEMOLITION
1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING MANMADE SURFACE FEATURES WITHIN THE LIMIT OF WORK INCLUDING BUILDINGS, STRUCTURES, SLABS, FENCES, UTILITY POLES, SIGNS, ETC. UNLESS INDICATED OTHERWISE ON THE DRAWINGS. REMOVE AND DISPOSE OF EXISTING UTILITIES, FOUNDATIONS AND UNSUITABLE MATERIAL BENEATH AND FOR A DISTANCE OF 10 FEET (10') BEYOND THE PROPOSED BUILDING FOOTPRINT INCLUDING EXTERIOR COLUMNS. BACKFILL ALL EXCAVATIONS WITH COMPACTED STRUCTURAL FILL IN 6" LIFTS TO 95% MODIFIED PROCTOR DENSITY. ALSO SEE GEOTECHNICAL REPORT AND RECOMMENDATIONS. OWNERS GEOTECHNICAL ENGINEER TO BE NOTIFIED FOR INSPECTIONS OF REMOVAL AND COMPACTION. (BRIGGS ENGINEERING AND TESTING).
  2. CONTRACTOR SHALL DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
- EROSION CONTROL
1. PRIOR TO STARTING ANY OTHER WORK ON THE SITE, THE CONTRACTOR SHALL NOTIFY APPROPRIATE AGENCIES AND SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE PLANS AND AS IDENTIFIED IN FEDERAL, STATE, AND LOCAL APPROVAL. CONTRACTOR TO CONTRIBUTE TO DEVELOP CONSTRUCTION PERIOD STORMWATER POLLUTION PREVENTION PLAN FOR SITEWORK. (TEMPORARY RETENTION AREAS, STONE APRONS, EROSION CONTROL SILT FENCE WITH SILT SOCK ON LOW SIDE SITE, ETC.)
  2. CONTRACTOR SHALL INSPECT AND MAINTAIN EROSION CONTROL MEASURES, AND REMOVE SEDIMENT THEREFROM ON A WEEKLY BASIS AND WITHIN TWELVE HOURS AFTER EACH STORM EVENT AND DISPOSE OF SEDIMENTS IN AN UPLAND AREA SUCH THAT THEY DO NOT ENCUMBER OTHER DRAINAGE STRUCTURES AND PROTECTED AREAS.
  3. CONTRACTOR SHALL BE FULLY RESPONSIBLE TO CONTROL CONSTRUCTION SUCH THAT SEDIMENTATION SHALL NOT AFFECT REGULATORY PROTECTED AREAS, WHETHER SUCH SEDIMENTATION IS CAUSED BY WATER, WIND, OR DIRECT DEPOSIT.
  4. CONTRACTOR SHALL PERFORM CONSTRUCTION SEQUENCING SUCH THAT EARTH MATERIALS ARE EXPOSED FOR A MINIMUM OF TIME BEFORE THEY ARE COVERED, SEEDED, OR OTHERWISE STABILIZED TO PREVENT EROSION.
  5. UPON COMPLETION OF CONSTRUCTION AND ESTABLISHMENT OF PERMANENT GROUND COVER, CONTRACTOR SHALL REMOVE AND DISPOSE OF EROSION CONTROL MEASURES AND CLEAN SEDIMENT AND DEBRIS FROM ENTIRE DRAINAGE AND SEWER SYSTEMS.

- LAYOUT AND MATERIALS
1. DIMENSIONS ARE FROM THE FACE OF CURB, FACE OF BUILDING, FACE OF WALL, AND CENTER LINE OF PAVEMENT MARKINGS, UNLESS OTHERWISE NOTED.
  2. CURB RADII ARE 5 FEET (5') UNLESS OTHERWISE INDICATED ON THE PLANS.
  3. CURBING SHALL BE CAPE COD BERM WITHIN THE SITE UNLESS OTHERWISE INDICATED ON THE PLANS.
  4. SEE ARCHITECTURAL AND LANDSCAPE ARCHITECTURAL DRAWINGS FOR EXACT BUILDING DIMENSIONS AND DETAILS CONTIGUOUS TO THE BUILDING, INCLUDING SIDEWALKS, RAMPS, BUILDING ENTRANCES, STAIRWAYS, UTILITY PENETRATIONS, CONCRETE DOOR PADS, COMPACTOR PAD, LOADING AND DROPOFF AREA DETAILS, AND ALL PEDESTRIAN SAFETY MEASURES INCLUDING BOLLARDS ETC.
  5. THE BUILDING FOOTPRINT AND ITS COMPONENTS (INCLUDING UTILITY CONNECTION POINTS) SHOWN HEREON WERE RECEIVED ELECTRONICALLY THE ARCHITECT, VERIFY WITH MECHANICAL, STRUCTURAL, AND ARCHITECTURAL PLANS.
  6. THE LANDSCAPE AND HARDSCAPE FEATURES SHOWN WERE RECEIVED FROM PHILIP CHENEY LANDSCAPE ARCHITECT, COORDINATE WITH LATEST PLANS.
  7. PROPOSED BOUNDS AND ANY EXISTING PROPERTY LINE MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE SET OR RESET BY A PROFESSIONAL LICENSED LAND SURVEYOR.
  8. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL VERIFY EXISTING PAVEMENT ELEVATIONS AT INTERFACE WITH PROPOSED PAVEMENTS, AND EXISTING GROUND ELEVATIONS ADJACENT TO DRAINAGE OUTLETS TO ASSURE PROPER TRANSITIONS BETWEEN EXISTING AND PROPOSED FACILITIES.
  9. SYMBOLS AND LEGENDS OF PROJECT FEATURES ARE GRAPHIC REPRESENTATIONS AND ARE NOT NECESSARILY SCALED TO THEIR ACTUAL DIMENSIONS OR LOCATIONS ON THE DRAWINGS. THE CONTRACTOR SHALL REFER TO THE DETAIL SHEET DIMENSIONS, MANUFACTURER'S LITERATURE, SHOP DRAWINGS AND FIELD MEASUREMENTS OF SUPPLIED PRODUCTS FOR LAYOUT OF THE PROJECT FEATURES.
  10. CONTRACTOR SHALL NOT RELY SOLELY ON ELECTRONIC VERSIONS OF PLANS, SPECIFICATIONS, AND DATA FILES THAT ARE OBTAINED FROM THE DESIGNERS, BUT SHALL VERIFY LOCATION OF PROJECT FEATURES IN ACCORDANCE WITH THE PAPER COPIES OF THE PLANS AND SPECIFICATIONS THAT ARE SUPPLIED AS PART OF THE CONTRACT DOCUMENTS.

# Village Courtyard LLC Site Construction Plans

#744 Main Street  
&  
#18 Hope Lane  
Dennis, MA

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023



LOCUS MAP  
SCALE 1"=2000'±  
ASSESSORS MAP 351 PARCEL 4 & 6

PROJECT AREA

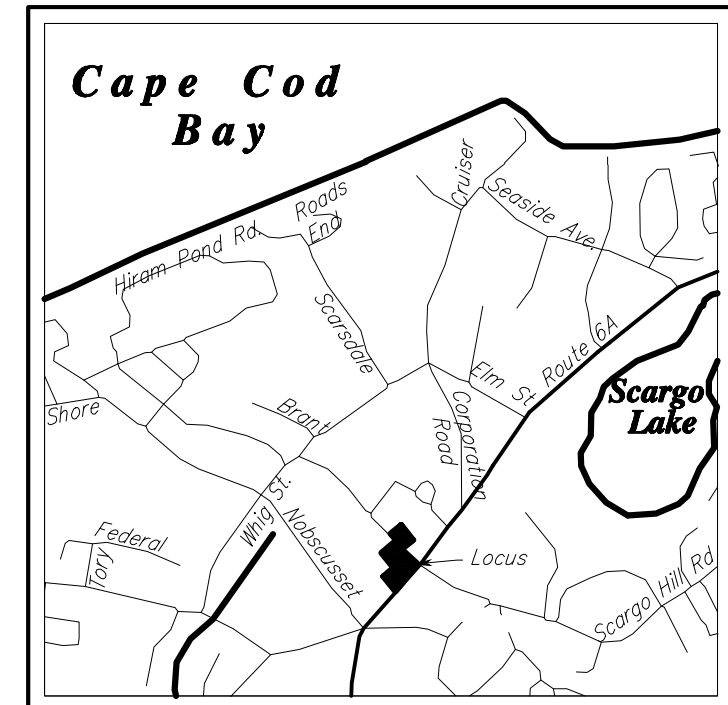


## PLAN SHEET INDEX:

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- UTILITIES
1. THE LOCATIONS, SIZES, AND TYPES OF EXISTING UTILITIES ARE SHOWN AS AN APPROXIMATE REPRESENTATION ONLY. THE OWNER OR ITS REPRESENTATIVE(S) HAVE NOT INDEPENDENTLY VERIFIED THIS INFORMATION AS SHOWN ON THE PLANS. THE UTILITY INFORMATION SHOWN DOES NOT GUARANTEE THE ACTUAL EXISTENCE, SERVICEABILITY, OR OTHER DATA CONCERNING THAT UTILITY. DOES IT GUARANTEE AGAINST THE POSSIBILITY THAT ADDITIONAL UTILITIES MAY BE PRESENT THAT ARE NOT SHOWN ON THE PLANS. PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY AND DETERMINE THE EXACT LOCATIONS, SIZES, AND ELEVATIONS OR THE POINTS OF CONNECTIONS TO EXISTING UTILITIES, AND SHALL CONFIRM THAT THERE ARE NO INTERFERENCES WITH EXISTING UTILITIES AND THE PROPOSED UTILITY ROUTES, INCLUDING ROUTES WITHIN THE PUBLIC RIGHTS OF WAY.
  2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, OR EXISTING CONDITIONS DIFFER FROM THOSE SHOWN SUCH THAT THE WORK CANNOT BE COMPLETED AS INTENDED, THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED IN WRITING TO THE OWNER'S REPRESENTATIVE FOR THE RESOLUTION OF THE CONFLICT AND CONTRACTOR'S FAILURE TO NOTIFY PRIOR TO PERFORMING ADDITIONAL WORK RELEASES OWNER FROM OBLIGATIONS FOR ADDITIONAL PAYMENTS WHICH OTHERWISE MAY BE WARRANTED TO RESOLVE THE CONFLICT.
  3. SET CATCH BASIN RIMS, AND INVERTS OF SEWERS, DRAINS, AND DITCHES IN ACCORDANCE WITH THE ELEVATIONS ON THE GRADING AND UTILITY PLANS.
  4. RIM ELEVATIONS FOR DRAIN AND SEWER MANHOLES, WATER VALVE COVERS, GAS GATES, ELECTRIC AND TELEPHONE PULL BOXES, AND MANHOLES, AND OTHER SUCH ITEMS, ARE APPROXIMATE AND SHALL BE SET/RESET AS FOLLOWS:
    - a. PAVEMENTS AND CONCRETE SURFACES: FLUSH
    - b. ALL SURFACES ALONG ACCESSIBLE ROUTES: FLUSH
    - c. LANDSCAPE, LOAM AND SEED, AND OTHER EARTH SURFACE AREAS: ONE INCH ABOVE SURROUNDING AREA AND TAPER EARTH TO THE RIM ELEVATION.
  5. THE LOCATION, SIZE, DEPTH, AND SPECIFICATIONS FOR CONSTRUCTION OF PROPOSED PRIVATE UTILITY SERVICES SHALL BE INSTALLED ACCORDING TO THE REQUIREMENTS PROVIDED BY, AND APPROVED BY, THE RESPECTIVE UTILITY COMPANY (GAS, TELEPHONE, ELECTRIC, FIRE ALARM, CABLE, ETC.). FINAL DESIGN LOADS AND LOCATIONS TO BE COORDINATED WITH OWNER AND ARCHITECT.
  6. CONTRACTOR SHALL MAKE ARRANGEMENTS FOR AND SHALL BE RESPONSIBLE FOR PAYING FEES FOR POLE RELOCATION AND FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, FIRE ALARM, AND ANY OTHER PRIVATE UTILITIES, WHETHER WORK IS PERFORMED BY CONTRACTOR OR BY THE UTILITIES COMPANY.
  7. UTILITY PIPE MATERIALS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE PLAN:
    - a. WATER PIPES SHALL BE CEMENT LINED DUCTILE IRON (CLDI) PIPE. (SEE SPECS)
    - b. SANITARY SEWER PIPES SHALL BE POLYVINYL CHLORIDE (PVC) SEWER PIPE SDR-35.
    - c. STORM DRAINAGE PIPES SHALL BE ADS N-12 12" OR 24" HIGH DENSITY POLYETHYLENE (HDPE) PIPE UNLESS OTHERWISE INDICATED ON THE PLANS.
    - d. ALL FLARED END SECTIONS SHALL BE REINFORCED CONCRETE.
    - e. PIPING MATERIALS AND INSTALLATIONS WITHIN 10 FEET OF THE PROPOSED BUILDINGS SHALL COMPLY WITH THE MASSACHUSETTS PLUMBING CODE.
  8. CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR AND SHALL FURNISH EXCAVATION, INSTALLATION, AND BACKFILL OF ELECTRICAL FURNISHED SITEWORK RELATED ITEMS SUCH AS PULL BOXES, CONDUITS, DUCT BANKS, LIGHT POLE BASES, AND CONCRETE PADS. SITE CONTRACTOR SHALL FURNISH CONCRETE ENCASMENT OF DUCT BANKS IF REQUIRED BY THE UTILITY COMPANY AND AS INDICATED ON THE DRAWINGS.
  9. CONTRACTOR SHALL EXCAVATE AND BACKFILL TRENCHES FOR GAS IN ACCORDANCE WITH GAS COMPANY'S REQUIREMENTS.
  10. ALL DRAINAGE AND SANITARY STRUCTURE INTERIOR DIAMETERS (4" MIN.) SHALL BE DETERMINED BY THE MANUFACTURER BASED ON THE PIPE CONFIGURATIONS SHOWN ON THESE PLANS AND LOCAL MUNICIPAL STANDARDS. FOR MANHOLES THAT ARE 20 FEET IN DEPTH AND GREATER, THE MINIMUM DIAMETER SHALL BE 5 FEET.
  11. CONNECTION LOCATIONS TO PRIVATE UTILITIES (ELECTRIC, GAS, TELEPHONE, ETC) AND FINAL DESIGN THEREOF TO BE COORDINATED WITH AND/OR PROVIDED BY THE UTILITY COMPANY(S).





**LOCUS MAP**  
 SCALE 1"=2000'±  
 ASSESSORS MAP 351 PARCEL 4 & 6

**BUILDING HEIGHTS**

EXISTING OFFICE BUILDING #744  
 RIDGE ELEVATION = 64.7'

DENNIS UNION CHURCH  
 RIDGE ELEVATION = 59.8'  
 STEEPLE ELEVATION = 85.6'

BUILDING A  
 RIDGE ELEVATION = 59.6'

BUILDING B  
 RIDGE ELEVATION = 58.3'

BUILDING C  
 RIDGE ELEVATION = 58.3'

BUILDING D  
 RIDGE ELEVATION = 57.8'

BUILDING E  
 RIDGE ELEVATION = 58.3'

BUILDING F  
 RIDGE ELEVATION = 58.8'

**ZONING SUMMARY**

ZONING DISTRICT: SPLIT ZONED LB DISTRICT/R-40 DISTRICT  
 (DWELLING UNIT-MULTI)

	REQUIRED:	COMBINED PARCELS EXISTING:	PROPOSED:
MIN. LOT SIZE	120,000 S.F.+	122,855 S.F.	104,213 S.F.
MIN. FRONT SETBACK	50'	19.8'	16.4'
MIN. SIDE SETBACK	50'	21.7'	17.1'
MIN. REAR SETBACK	50'	107.5'	13.0'
BUILDING COVERAGE	3.3%	3.3%	26.8%
MAX. SITE COVERAGE	25%	10.2%	54.5%
MAX. BUILDING HEIGHT	2 STORIES (35')		
		DENSITY 8.36 UNITS/AC.	

**PROPOSED SITE  
 OVERVIEW PLAN**

OF

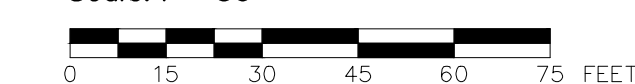
**744 MAIN STREET AND  
 18 HOPE LANE  
 DENNIS, MA**

PREPARED FOR

**VILLAGE COURTYARD LLC**

DATE: FEBRUARY 27, 2023  
 REV: AUGUST 4, 2023

Scale: 1"= 30'



**C100**

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

PERMIT SET - NOT FOR CONSTRUCTION

DCE #18-243

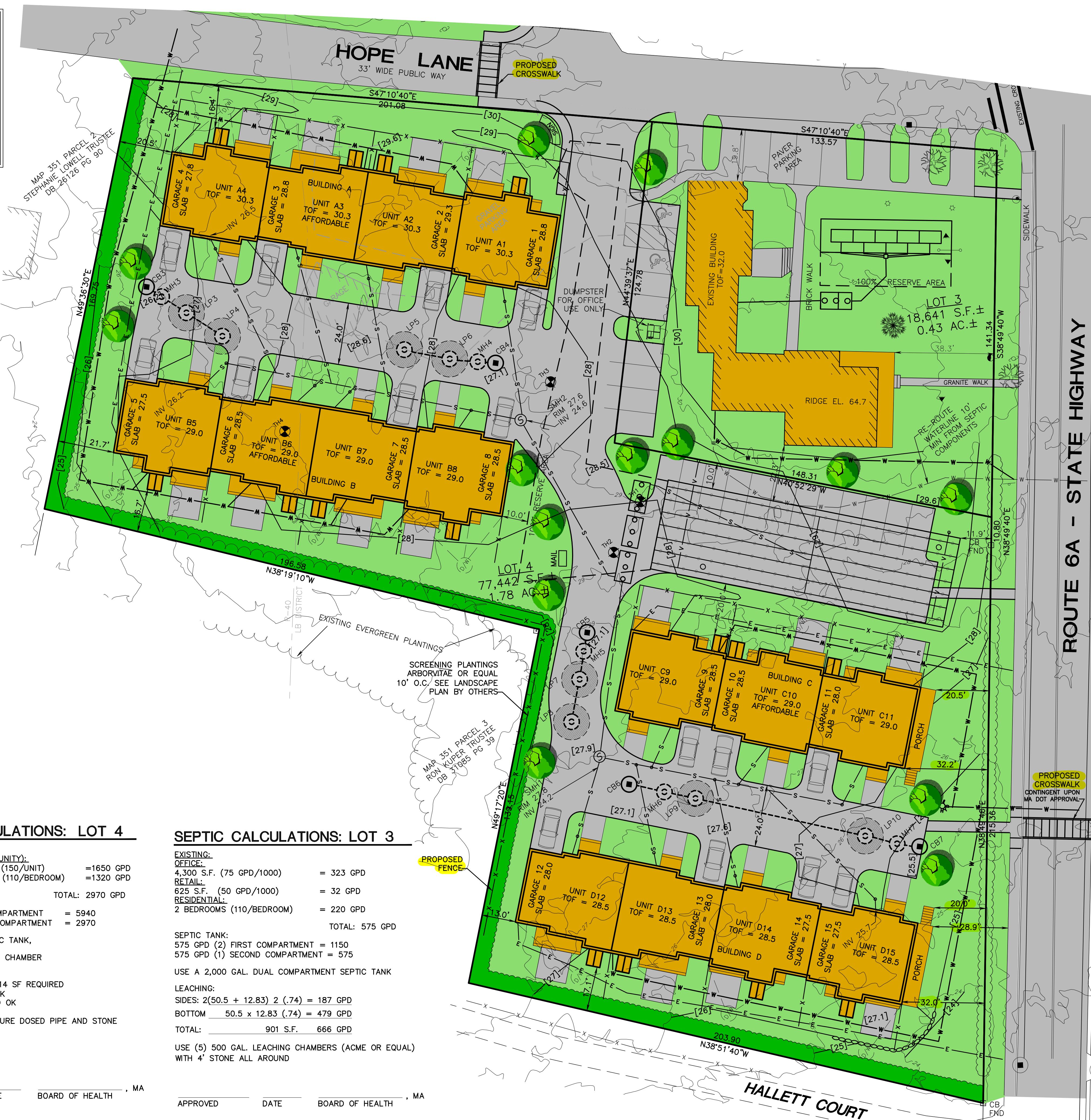
DCE #18-243



**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



#### SEPTIC CALCULATIONS: LOT 4

PROPOSED:  
RESIDENTIAL (55+ COMMUNITY):  
11 (2) BEDROOM UNITS (150/UNIT) = 1650 GPD  
4 (3) BEDROOM UNITS (110/BEDROOM) = 1320 GPD  
TOTAL: 2970 GPD

SEPTIC TANK:  
2970 GPD (2) FIRST COMPARTMENT = 5940  
2970 GPD (1) SECOND COMPARTMENT = 2970

USE A 6,000 GAL. SEPTIC TANK,  
3,000 GAL. SEPTIC TANK  
AND A 5,000 GAL. PUMP CHAMBER

LEACHING:  
2970 GPD / (.74) = 4014 SF REQUIRED  
35' X 115' = 4025 SF OK  
4025 X .74 = 2978 GPD OK

USE A 35' X 115' PRESSURE DOSED PIPE AND STONE  
LEACHING FIELD

#### SEPTIC CALCULATIONS: LOT 3

EXISTING:  
OFFICE:  
4,300 S.F. (75 GPD/1000) = 323 GPD  
RETAIL:  
625 S.F. (50 GPD/1000) = 32 GPD  
RESIDENTIAL:  
2 BEDROOMS (110/BEDROOM) = 220 GPD  
TOTAL: 575 GPD

SEPTIC TANK:  
575 GPD (2) FIRST COMPARTMENT = 1150  
575 GPD (1) SECOND COMPARTMENT = 575

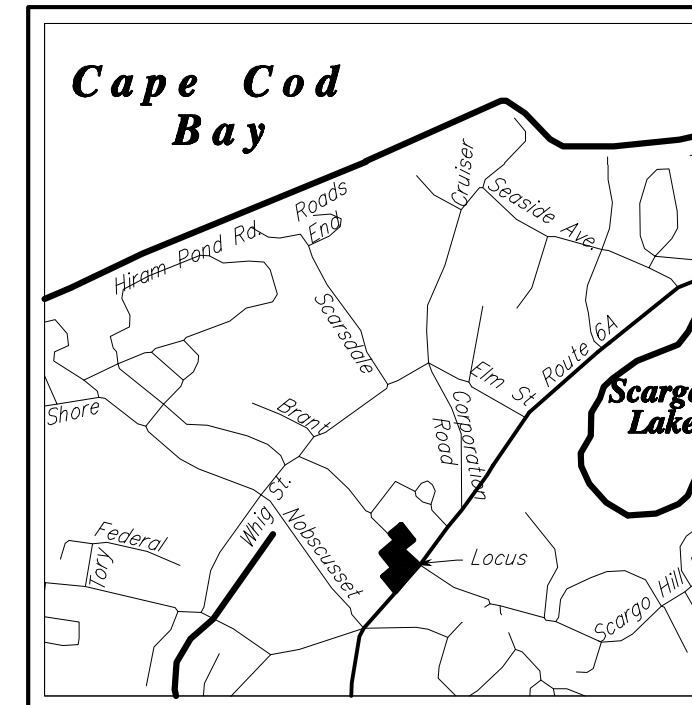
USE A 2,000 GAL. DUAL COMPARTMENT SEPTIC TANK

LEACHING:  
SIDES:  $2(50.5 + 12.83) 2 (.74) = 187$  GPD  
BOTTOM  $50.5 \times 12.83 (.74) = 479$  GPD  
TOTAL: 901 S.F. 666 GPD

USE (5) 500 GAL. LEACHING CHAMBERS (ACME OR EQUAL)  
WITH 4' STONE ALL AROUND

#### NOTES

- DATUM IS NAVD 88
- MUNICIPAL WATER IS PROPOSED
- 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 UKO.
- 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.
- EXISTING LEACHING FACILITY SHALL BE PUMPED AND REMOVED OR PUMPED AND FILLED WITH CLEAN SAND.
- ACCESS FOR ROUTINE MAINTENANCE MUST BE PROVIDED FOR ZABEL FILTER. INSTALLER MUST FOLLOW MANUFACTURER'S SPECIFICATIONS FOR PROPER FILTER INSTALLATION, INSTRUCT OWNER ON MAINTENANCE.
- INSTALLER TO VERIFY THE ELECTRICAL SYSTEM IS SUITABLE FOR PUMP CONNECTION PRIOR TO ORDERING PUMPS. ELECTRICAL PERMIT REQUIRED.
- COORDINATE UTILITY INSTALLATIONS WITH APPROPRIATE VENDORS.
- PER TITLE V 310 CMR 15.254 D: PUMPS, ALARMS AND OTHER EQUIPMENT REQUIRING PERIODIC OR ROUTINE INSPECTION AND MAINTENANCE SHALL BE OPERATED, INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S AND THE DESIGNER'S SPECIFICATIONS. IN NO INSTANCE SHALL INSPECTION BE PERFORMED LESS FREQUENTLY THAN ONCE EVERY THREE MONTHS FOR A SYSTEM SERVING A FACILITY WITH A DESIGN FLOW OF 2,000 GALLONS PER DAY OR GREATER. THE SYSTEM OWNER SHALL SUBMIT THE RESULTS OF SUCH INSPECTIONS TO THE APPROVING AUTHORITY BY JANUARY 31<sup>ST</sup> OF EACH YEAR FOR THE PREVIOUS CALENDAR YEAR.



#### LOCUS MAP

SCALE 1"=2000'

ASSESSORS MAP 351 PARCEL 4

#### PARKING CALCULATIONS:

EXISTING:  
OFFICE:  
4,300 S.F. (1/250) = 22 SPACES REQ.  
+ 5 EMPLOYEES (1/EMPLOYEE)  
RETAIL:  
625 S.F. (1/150) = 5 SPACES REQ.  
RESIDENTIAL:  
ONE UNIT (2/UNIT) = 2 SPACES REQ.  
PROPOSED:  
RESIDENTIAL:  
15 UNITS (2/UNIT) = 30 SPACES REQ.

TOTAL: 59 SPACES REQUIRED

59 SPACES PROVIDED INCLUDING 2 HANDICAP

SHADE TREES- 59 SPACES (1/5) = 12 TREES REQ.  
12 SHADE TREES PROVIDED IN OR  
WITHIN 5' OF PARKING LOT

#### ZONING SUMMARY

ZONING DISTRICT: SPLIT ZONED LB DISTRICT/R-40 DISTRICT  
(DWELLING UNIT-MULTI)

	REQUIRED:	LOT 3 EXISTING:	LOT 3 PROPOSED:
MIN. LOT SIZE	120,000 S.F. +	18,641 S.F.	18,641 S.F.
MIN. LOT FRONTAGE	100'	274.91'	274.91'
MIN. LOT WIDTH	150'	135.75'	135.75'
MIN. FRONT SETBACK	50'	19.8'	19.8'
MIN. SIDE SETBACK	50'	11.8'	11.8'
MIN. REAR SETBACK	50'		
BUILDING COVERAGE		19.1%	19.1%
MAX. SITE COVERAGE	25%	35.0%	35.0%
MAX. BUILDING HEIGHT	2 STORIES		

#### ZONING SUMMARY

ZONING DISTRICT: SPLIT ZONED LB DISTRICT/R-40 DISTRICT  
(DWELLING UNIT-MULTI)

	REQUIRED:	LOT 4 EXISTING:	LOT 4 PROPOSED:
MIN. LOT SIZE	120,000 S.F. +	77,442 S.F.	77,442 S.F.
MIN. LOT FRONTAGE	100'	201'	201'
MIN. LOT WIDTH	150'	205'	205'
MIN. FRONT SETBACK	50'	64.8'	7.7'
MIN. SIDE SETBACK	50'	79.1'	20.0'
MIN. REAR SETBACK	50'	92.9'	20.0'
BUILDING COVERAGE		0.6%	27.3%
MAX. SITE COVERAGE	25%	9.3%	56.1%
MAX. BUILDING HEIGHT	2 STORIES		

DENSITY 8.44 UNITS/AC. - LOT 4 ONLY  
OVERALL DENSITY 8.36 UNITS/AC.

#### SITE PLAN OF

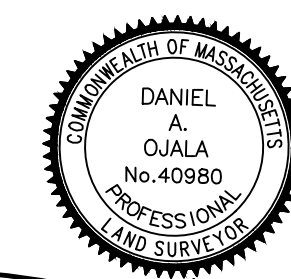
#744 MAIN STREET  
DENNIS, MA

PREPARED FOR

VILLAGE COURTYARD LLC

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023

Scale: 1"=20'  
0 10 20 30 40 50 FEET



DANIEL A. OJALA, P.E., P.L.S. DATE 8-1-2023

**C101**  
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fax 508-362-9880  
downcape.com @  
**down cape engineering, inc.**  
civil engineers  
land surveyors  
939 Main Street (Rte 6A)  
YARMOUTHPORT MA 02675

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_ BOARD OF HEALTH \_\_\_\_\_, MA

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_ BOARD OF HEALTH \_\_\_\_\_, MA



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



SEPTIC CALCULATIONS:

PROPOSED:  
RESIDENTIAL:  
5 TWO BEDROOM UNITS  
10 BEDROOMS (110/BEDROOM)

= 1100 GPD

TOTAL: 1100 GPD

SEPTIC TANK:  
1100 GPD (2) FIRST COMPARTMENT = 2200  
1100 GPD (1) SECOND COMPARTMENT = 1100  
2200 + 1100 = 3,300 GAL.  
USE A 2,500 GAL. SEPTIC TANK, 1,500 GAL. SEPTIC TANK  
AND A 3,000 GAL. PUMP CHAMBER

LEACHING:  
1,100 GPD / (.74) = 1487 SF REQUIRED  
40' X 37.5' = 1500 SF OK  
1500 X .74 = 1110 GPD OK

USE A 40' X 37.5' PIPE AND STONE LEACHING FIELD

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_ BOARD OF HEALTH \_\_\_\_\_, MA

- NOTES
1. DATUM IS NAVD 88

2. MUNICIPAL WATER IS PROPOSED

3. MINIMUM PIPE PITCH TO BE 1/8" PER FOOT.

4. DESIGN LOADING FOR ALL PROPOSED PRECAST UNITS TO BE AASHO H-20.

5. PIPE JOINTS TO BE MADE WATERTIGHT.

6. CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH 310 CMR 15.000 (TITLE 5.)

7. THIS PLAN IS FOR PROPOSED WORK ONLY AND NOT TO BE USED FOR LOT LINE STAKING OR ANY OTHER PURPOSE.

8. PIPE FOR SEPTIC SYSTEM TO SCH. 40-4" PVC UKO.

9. COMPONENTS NOT TO BE BACKFILLED OR CONCEALED WITHOUT INSPECTION BY BOARD OF HEALTH AND PERMISSION OBTAINED FROM BOARD OF HEALTH.

10. 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.

11. ANY UNSUITABLE MATERIAL ENCOUNTERED SHALL BE REMOVED 5' BENEATH AND AROUND THE PROPOSED LEACHING FACILITY.

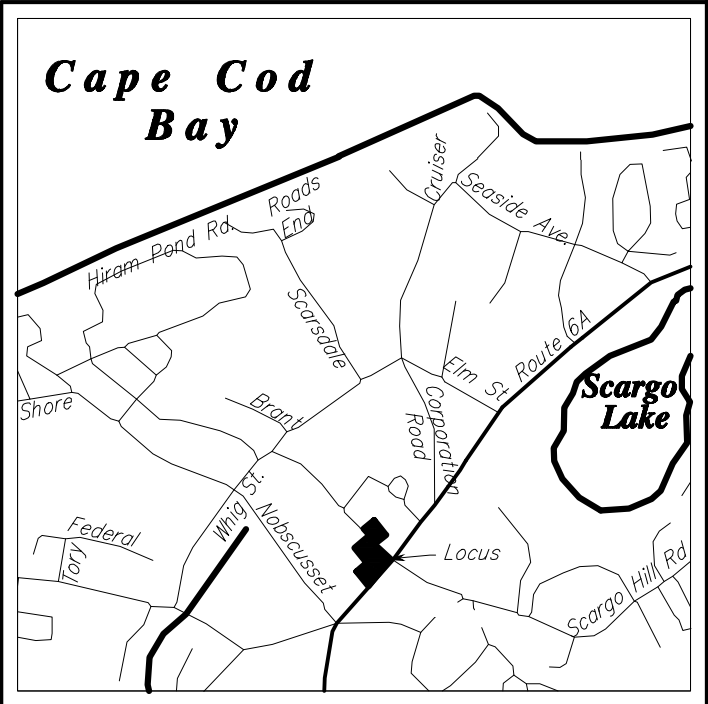
12. EXISTING LEACHING FACILITY SHALL BE PUMPED AND REMOVED OR PUMPED AND FILLED WITH CLEAN SAND.

13. ACCESS FOR ROUTINE MAINTENANCE MUST BE PROVIDED FOR ZABEL FILTER. INSTALLER MUST FOLLOW MANUFACTURER'S SPECIFICATIONS FOR PROPER FILTER INSTALLATION. INSTRUCT OWNER ON MAINTENANCE.

14. INSTALLER TO VERIFY THE ELECTRICAL SYSTEM IS SUITABLE FOR PUMP CONNECTION PRIOR TO ORDERING PUMPS. ELECTRICAL PERMIT REQUIRED.

15. COORDINATE UTILITY INSTALLATIONS WITH APPROPRIATE VENDORS.

16. PER TITLE V 310 CMR 15.254 D: PUMPS, ALARMS AND OTHER EQUIPMENT REQUIRING PERIODIC OR ROUTINE INSPECTION AND MAINTENANCE SHALL BE OPERATED, INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S AND THE DESIGNER'S SPECIFICATIONS. IN NO INSTANCE SHALL INSPECTION BE PERFORMED LESS FREQUENTLY THAN ONCE EVERY THREE MONTHS FOR A SYSTEM SERVING A FACILITY WITH A DESIGN FLOW OF 2,000 GALLONS PER DAY OR GREATER. THE SYSTEM OWNER SHALL SUBMIT THE RESULTS OF SUCH INSPECTIONS TO THE APPROVING AUTHORITY BY JANUARY 31st OF EACH YEAR FOR THE PREVIOUS CALENDAR YEAR.



LOCUS MAP  
SCALE 1"=2000'±  
ASSESSORS MAP 351 PARCEL 6

PARKING CALCULATIONS:

PROPOSED:  
RESIDENTIAL:  
5 UNITS (2/UNIT)

= 10 SPACES REQ.

TOTAL: 10 SPACES REQUIRED

15 SPACES PROVIDED INCLUDING 1 HANDICAP

SHADE TREES- 15 SPACES (1/5) = 3 TREES REQ.  
3 SHADE TREES PROVIDED IN OR  
WITHIN 5' OF PARKING LOT

ZONING SUMMARY

ZONING DISTRICT: SPLIT ZONED LB DISTRICT/R-40 DISTRICT (DWELLING UNIT-MULTI)

	REQUIRED: 120,000 S.F.+	'SITE B' EXISTING: 26,771 S.F.	'SITE B' PROPOSED: 26,771 S.F.
MIN. LOT SIZE	100'	200'	200'
MIN. LOT FRONTAGE	150'	200'	200'
MIN. LOT WIDTH	50'	21.0'	21.0'
MIN. FRONT SETBACK	50'	14.4'	14.4'
MIN. SIDE SETBACK	50'	16.7'	16.7'
MIN. REAR SETBACK	25%	0%	25.3%
BUILDING COVERAGE	25%	17.5%	50.0%
MAX. SITE COVERAGE	2 STORIES		
MAX. BUILDING HEIGHT			

DENSITY 8.14 UNITS/AC. - SITE B ONLY  
OVERALL DENSITY 8.36 UNITS/AC.

SITE PLAN

OF

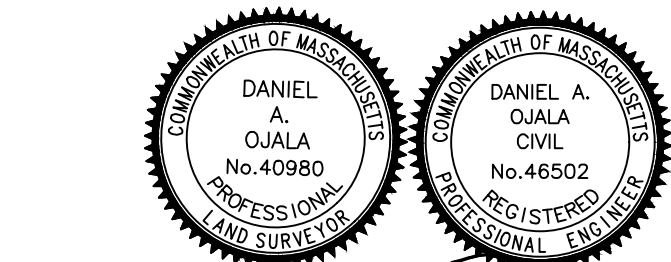
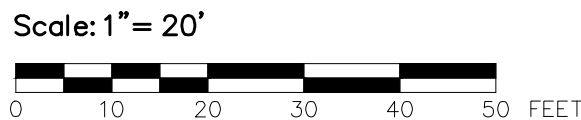
#18 HOPE LANE

DENNIS, MA

PREPARED FOR

VILLAGE COURTYARD LLC

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023



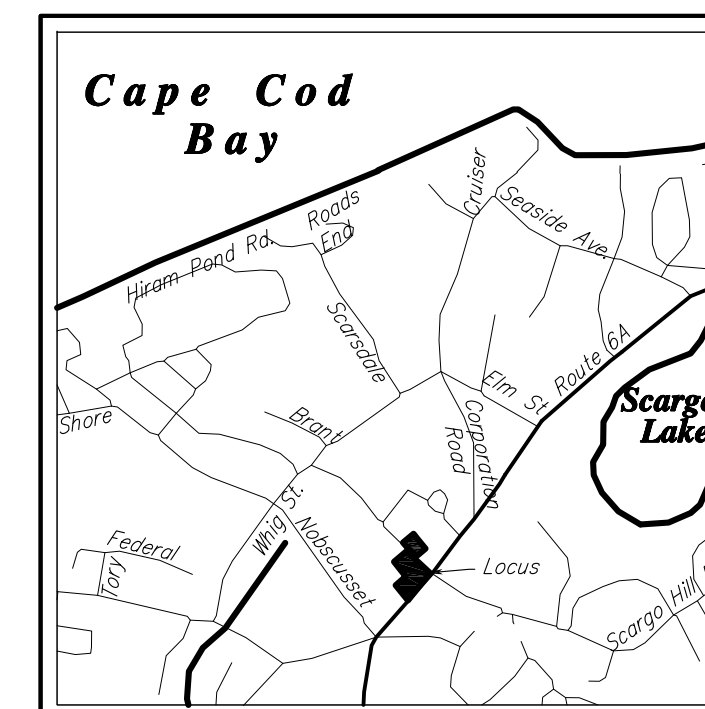
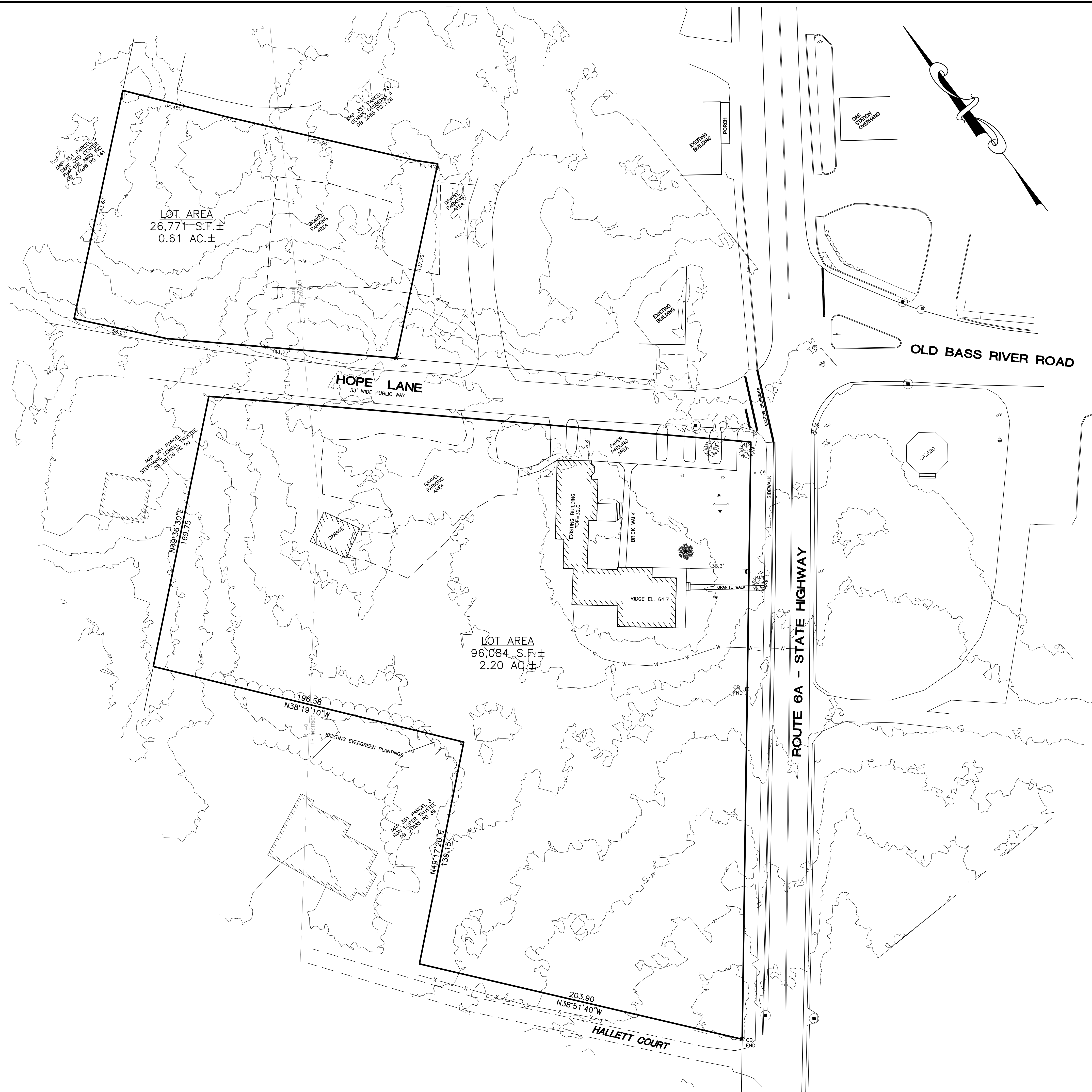
Daniel A. Ojala, P.E., P.L.S.  
8-4-2023  
DATE

C102

off 508-362-4541  
fax 508-362-9880  
downscape.com

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



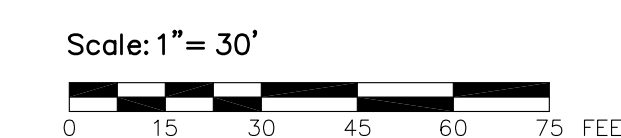


**LOCUS MAP**  
SCALE 1"=2000'±  
ASSESSORS MAP 351 PARCEL 4 & 6

**EXISTING CONDITIONS  
OVERVIEW PLAN**  
OF  
**744 MAIN STREET AND  
18 HOPE LANE  
DENNIS, MA**

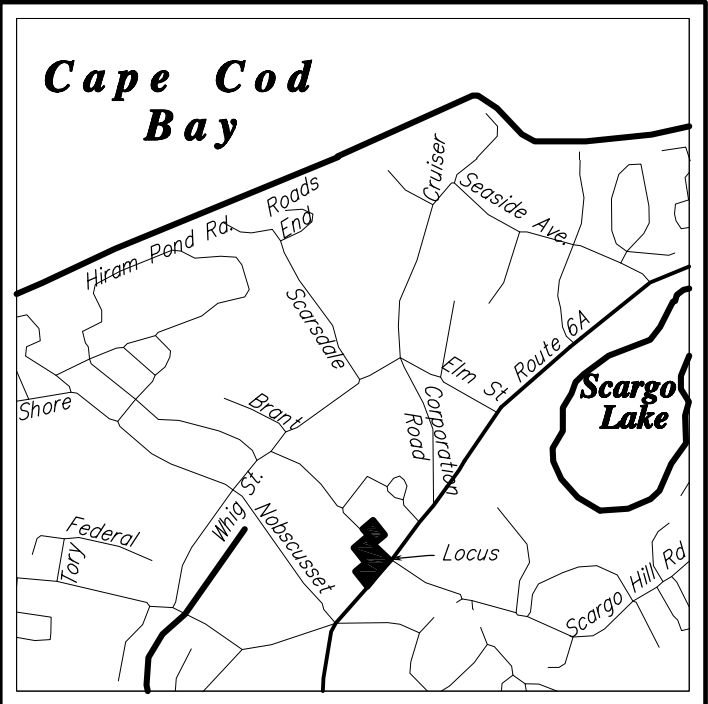
PREPARED FOR  
**VILLAGE COURTYARD LLC**

DATE: FEBRUARY 27, 2023



**C103**

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



**LOCUS MAP**  
SCALE 1"=2000'±  
ASSESSORS MAP 351 PARCEL 4 & 6



**SWEPT PATH  
ANALYSIS PLAN**  
OF  
**744 MAIN STREET AND  
18 HOPE LANE  
DENNIS, MA**  
PREPARED FOR  
**VILLAGE COURTYARD LLC**

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023

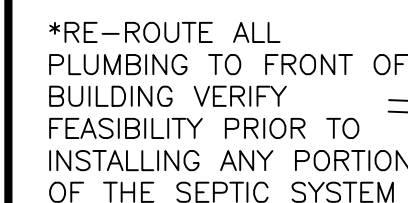
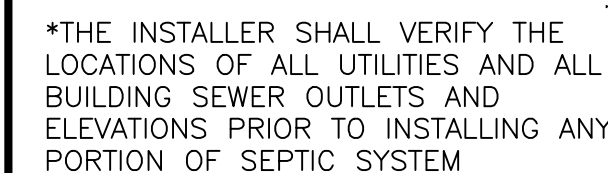
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**C104**

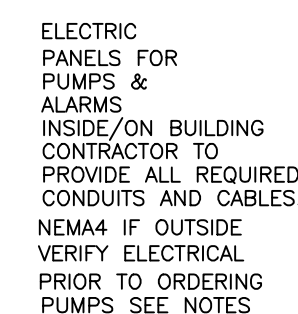
**down cape engineering, inc.**  
civil engineers  
land surveyors  
939 Main Street ( Rte 6A )  
YARMOUTHPORT MA 02675



(NOT TO SCALE)



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



CONCRETE MINIMUM STRENGTH: 5000 PSI AT 28 DAYS  
STEEL REINFORCEMENT: ASTM-AS-615 GRADE 60  
DESIGN LOADING: AASHTO HS-20

## ENGINEER: CRAIG J. FERRARI SF #13871

ENGINEER: STANLEY ST. FERRARO, SE #10071

WITNESS: ANNETTE GRACZEWSKI

DATE: 7/24/2018

PERC. RATE = &lt; 2 MIN/INCH

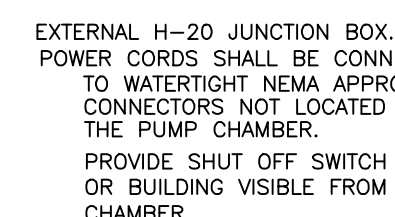
CLASS \_\_\_\_\_ SOILS

 UNSUITABLE SOIL

Figure 10 consists of two cross-section diagrams of a bridge pier and abutment. The left diagram shows a pier with a height of 126' and a width of 18.5'. The right diagram shows an abutment with a height of 144' and a width of 17'. Both diagrams show a cross-section of the structure with various layers and materials. The pier diagram shows a cross-section with a height of 126' and a width of 18.5'. The abutment diagram shows a cross-section with a height of 144' and a width of 17'. Both diagrams show a cross-section of the structure with various layers and materials.

NO GROUNDWATER ENCOUNTERED

NO GROUNDWATER ENCOUNTERED



ALL HARDWARE INSIDE PUMP CHAMBER TO BE STAINLESS STEEL

STAINLESS STEEL  
LIFTING CHAINS  
GALVANIZED CHAINS WILL BE  
REJECTED BY OWNERS ENGINEER

ALUMINUM PLATE 48" X 36"  
BILCO H-20 OR EQUAL  
SET IN PRECAST REINFORCED CONCRETE RISE  
WITH (4) #4'S CONTINUOUS AROUND MIN.

TO ACCOMPANY

## Q1

#744 MAIN STREET  
DENNIS, MA

PREPARED FOR

VILLAGE COURTYARD LLC

DATE: FEBRUARY 27 2023

REV: AUGUST 4, 2023

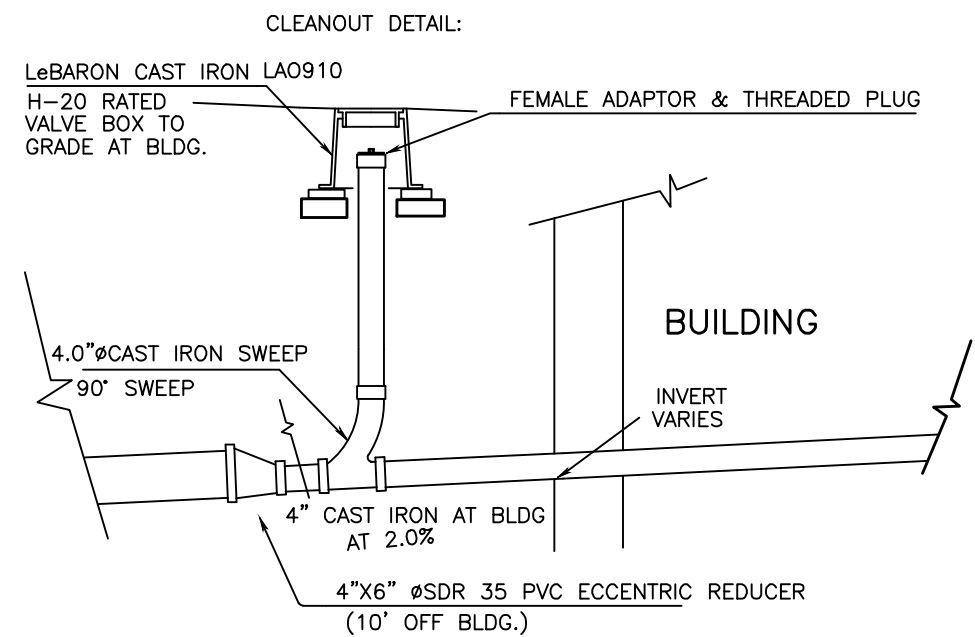
Scale: 1" = 20'

0 10 20 30 40 50 FFF

C201

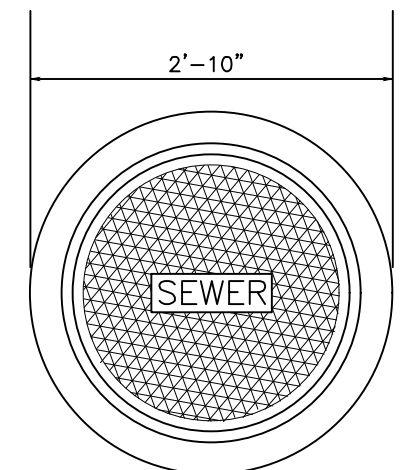
 off 508-362-4541  
fax 508-362-9888  
downcape.com  
**engineering, inc.**  
civil engineer  
land surveyor  
Street ( Rte 6A)  
THPORT MA 02671

PERMIT SET - NOT FOR CONSTRUCTION



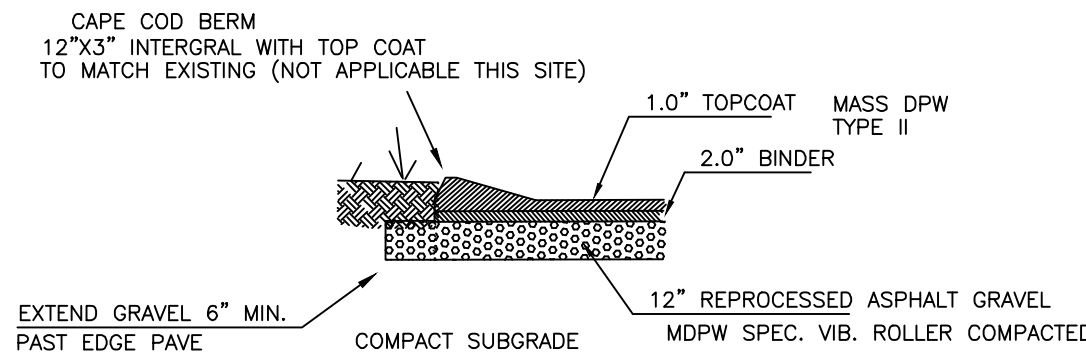
## PIPING DETAILS

NOT TO SCALE



## TYPICAL ACCESS COVER

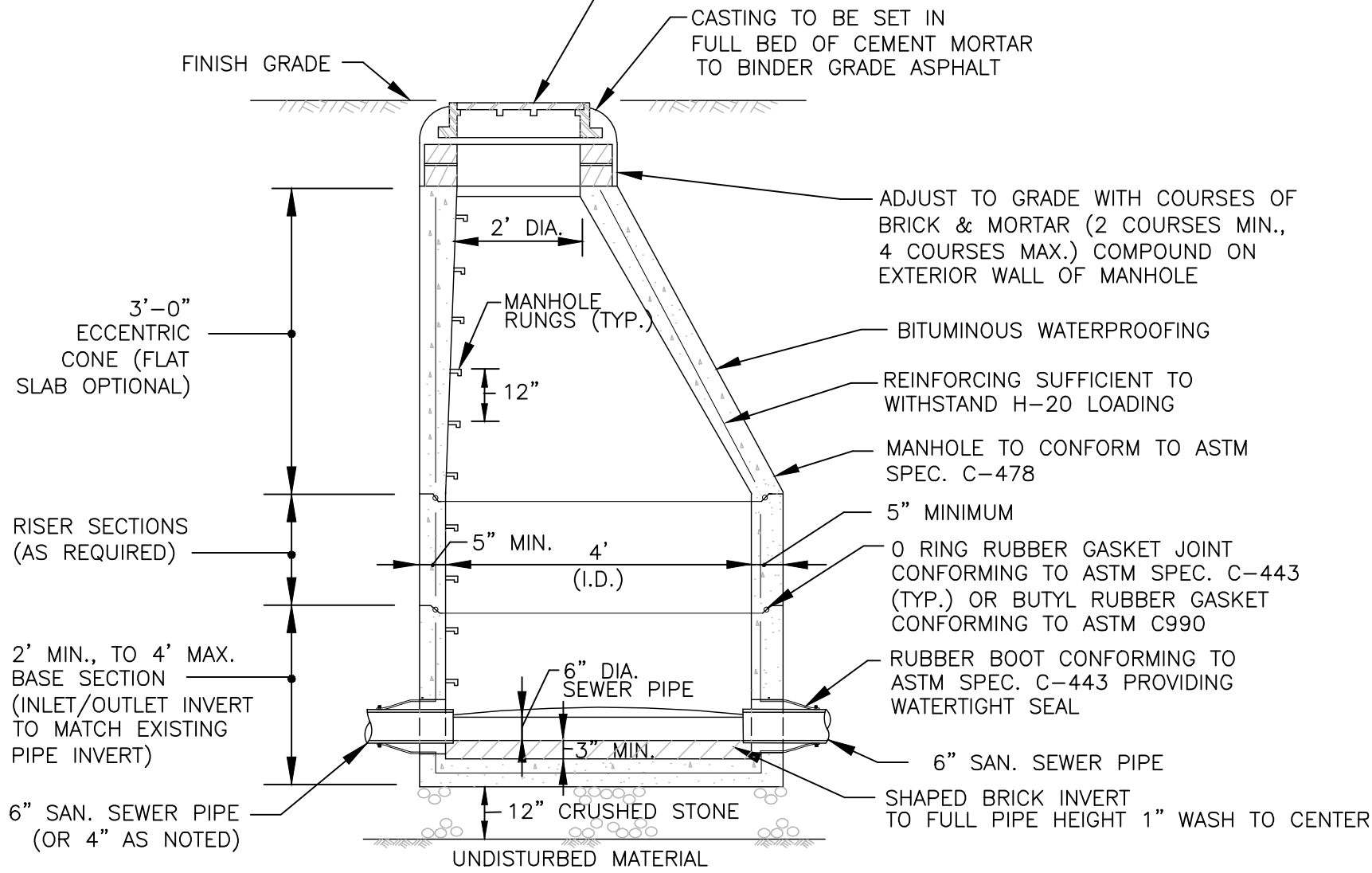
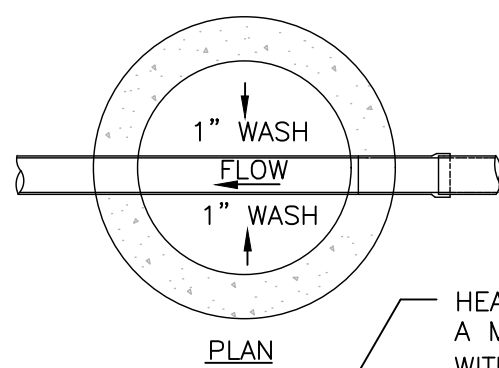
SCALE: 3/4\"/>



## PAVEMENT CROSS SECTION

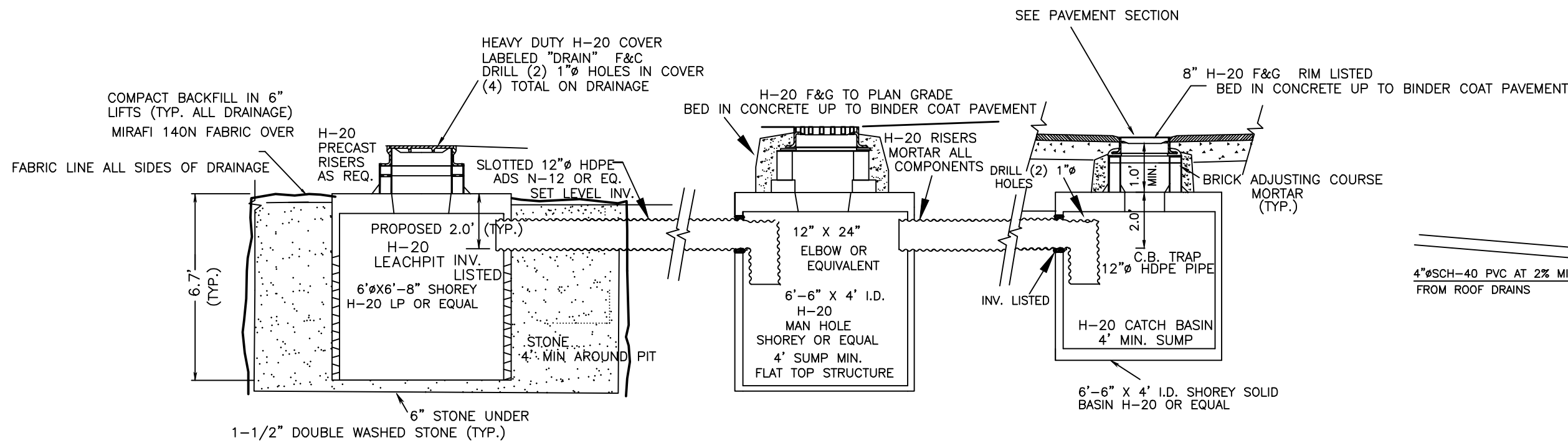
NOT TO SCALE

DRAINAGE SCHEDULE			
STRUCTURE	RIM	INVERT IN	INVERT OUT
CB1	27.20	—	24.20
MH1	27.40	24.00	23.60
LP1	27.70	23.40	23.40
LP2	27.50	23.40	23.40
CB2	26.80	—	23.80
MH2	27.00	23.60	23.60
CB3	26.20	—	23.20
MH3	26.40	23.00	23.00
LP3	26.90	22.80	22.80
LP4	27.40	22.80	22.80
CB4	27.10	—	24.10
MH4	27.40	23.90	23.90
LP5	27.70	23.70	23.70
LP6	28.40	23.70	23.70
CB5	27.10	—	24.10
MH5	27.30	23.90	23.90
LP7	27.50	23.70	23.70
LP8	27.90	23.70	23.70
CB6	27.10	—	24.10
MH6	27.30	23.80	23.30
LP9	27.50	22.10	22.10
LP10	27.30	22.10	22.10
CB7	25.50	—	22.50
MH7	25.90	22.30	22.30
LP11	26.30	22.10	22.10



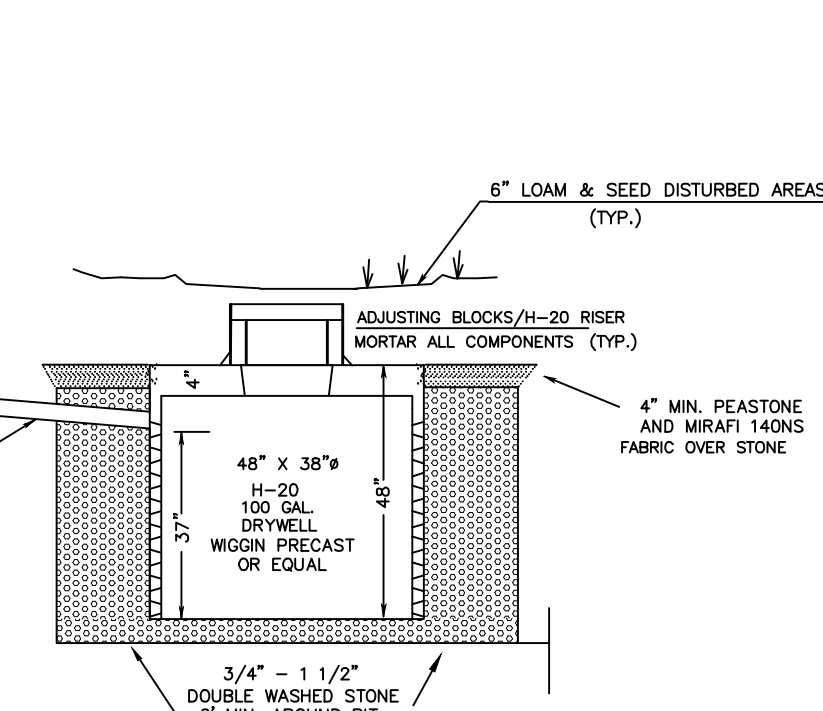
## PRECAST SEWER MANHOLE DETAIL

NTS



## DRAINAGE CROSS SECTION

NOT TO SCALE

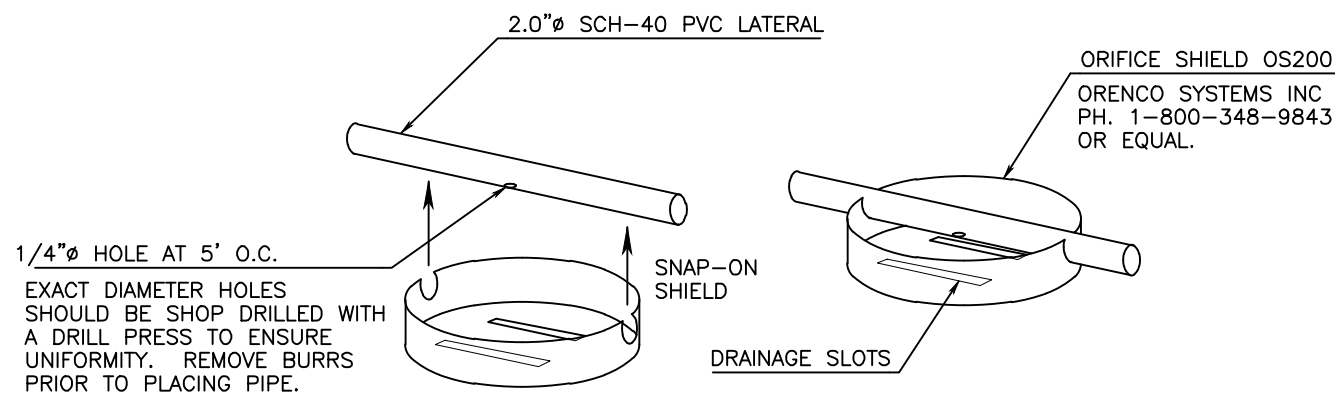


## ROOF DRAIN SECTION

NOT TO SCALE

ALL TANKS SHALL BE MANUFACTURED TO WITHSTAND AASHTO H-20 WHEEL LOADING AT THE DEPTHS OF COVER INDICATED ON THE SYSTEM PROFILE /PLANS. TANKS SHALL BE DELIVERED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND SHALL BE GUARANTEED BY THE INSTALLER TO BE WATER TIGHT AFTER INSTALLATION. TANKS AND PRESSURE PIPING SHALL BE DEMONSTRATED TO BE WATER TIGHT UNDER OPERATING PRESSURES BY FILLING TANKS AND OPERATING PUMPS WITH CLEAN WATER PRIOR TO BACKFILLING THE LEACHING FIELD. PUMP CHAMBER SHALL HAVE WATER PROOF MASTIC COATING ON OUTSIDE OF TANK.

ALL PRECAST CONCRETE COMPONENTS SHALL BE AS AVAILABLE FROM ACME PRECAST, 520 THOMAS LANDERS ROAD, HATCHVILLE, MA, OR SHOREY PRECAST OR EQUAL. ALL COMPONENTS SHALL BE AASHTO H-20 WHEEL LOAD RATED. PUMP CHAMBER SHALL BE SET ON A LEVEL BED OF 3/4\"/>



## ORIFICE SHIELD DETAIL

NOT TO SCALE

## INSPECTIONS:

THE DENNIS BOARD OF HEALTH SHALL REQUIRE THE FOLLOWING INSPECTIONS:

- INSPECTION OF UNSUITABLE MATERIAL AND INSPECTION OF REPLACEMENT SAND.
- VERIFICATION OF SOIL CONDITIONS AND/OR GROUNDWATER ELEVATION (IF NECESSARY)
- VERIFICATION OF CESSPOOL/LEACH PIT REMOVAL OR ABANDONMENT
- INSPECTION OF CONTAMINANT WALL OR FLOW BARRIER INSTALLATION
- INSPECTION OF THE 3/4\"/>

## GENERAL SCOPE OF WORK:

(SEE ALSO ALL NOTES AND DETAILS AND ITEMS ON PLANS):

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE SEPTIC SYSTEM UPGRADE SHOWN ON THESE PLANS. CONTRACTOR TO VISIT THE SITE PRIOR TO PLACING BID, AND MAKE SUCH INSPECTIONS AND INQUIRIES AS REQUIRED TO ACCURATELY ESTIMATE THE COST OF THE SEPTIC SYSTEM REPAIR. THE CONTRACTORS SCOPE OF WORK SHALL INCLUDE ALL NECESSARY PERMITS AND FEES, LIKELY INCLUDING BUT NOT LIMITED TO DISPOSAL WORKS CONSTRUCTION PERMIT, PLUMBING PERMIT, TRENCH PERMIT, ELECTRICAL PERMIT, COORDINATION WITH VERIZON, EVERSOURCE, WATER DEPARTMENT, GAS COMPANY, AND OTHER UTILITIES AS REQUIRED TO COMPLETE THE WORK SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE FOR PUMPING OF ALL EXISTING TANKS AND COMPONENTS, AND SHALL CRUSH AND REMOVE OR FILL WITH COMPACTED SAND ALL ABANDONED SEPTIC COMPONENTS. ALL PER TITLE 5 REQUIREMENTS. NOTE SIGNIFICANT EARTHWORK REQUIRED ON THIS SITE. SOIL REMOVAL IS REQUIRED. SEE PROFILE SECTION AND SOIL LOSS FOR DETAILS. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THEIR ELECTRIC SUBCONTRACTOR AND UTILITY COMPANIES AS NEEDED. THE CONTRACTOR SHALL PROVIDE THE LICENSED ELECTRICIANS AND WORK TO CONNECT THE PUMP CHAMBER EFFLUENT PUMPS, PANELS AND ANY TIMERS AND SHALL RIG ALL FLOATS TO PLAN AND PROVIDE A CLEARWATER TEST OF PUMPS PER PLAN NOTES. SAFETY OF STRUCTURES AND PUBLIC AND ANY TRAFFIC CONTROL REQUIRED ON THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL NEW FIRST QUALITY PRODUCTS AND CLEAN DOUBLE WASHED STONE FOR THE PROJECT. THE CONTRACTOR SHALL COMPACT ALL BACKFILL TO 95% OF THE MODIFIED PROCTOR DENSITY OF THE BACKFILL IN ALL PLACES, AND SHALL PROVIDE GRAVEL AND NEW PAVEMENT PER THE PAVEMENT SECTION. THE CONTRACTOR IS RESPONSIBLE FOR REGRADING OVER THE NEW LEACHING AND PITCHING THE PARKING LOT TO MATCH ORIGINAL GRADES WITHOUT FORMING PUDDLES. ANY DEFICIENT WORK SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY AND TRAFFIC MANAGEMENT FOR THE PROJECT. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION OF FILL, AND PROVIDING 4\"/>

## PUMP INSTALLATION

- PRESSURE DOSING PUMPS SHALL BE MYERS 3MHV 5-HP PUMPS OR EQUAL CAPABLE OF 198 GPM AT 34 FT TDH. SINGLE PHASE 220 VOLT PUMPS WITH 6.75\"/>

- CONTROLS: PUMP CONTROLS SHALL BE LOCATED ON OUTSIDE WALL OR IN AN ACCESSIBLE AREA AND SHALL BE ENCLOSED AS REQUIRED TO MEET ALL STATE AND LOCAL CODES AND REGULATIONS. THE PUMPS SHALL ALTERNATE. CAST IRON CHECK VALVES WITH BALL VALVES OVER PRIOR TO WYING THE 4\"/>

## DETAIL SHEET 2

TO ACCOMPANY

## SITE PLAN

OF

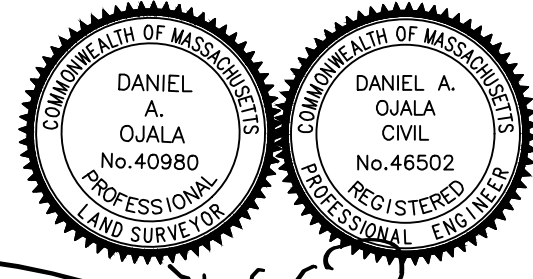
**#744 MAIN STREET  
DENNIS, MA**

PREPARED FOR

## VILLAGE COURTYARD LLC

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023

Scale: 1\"/>

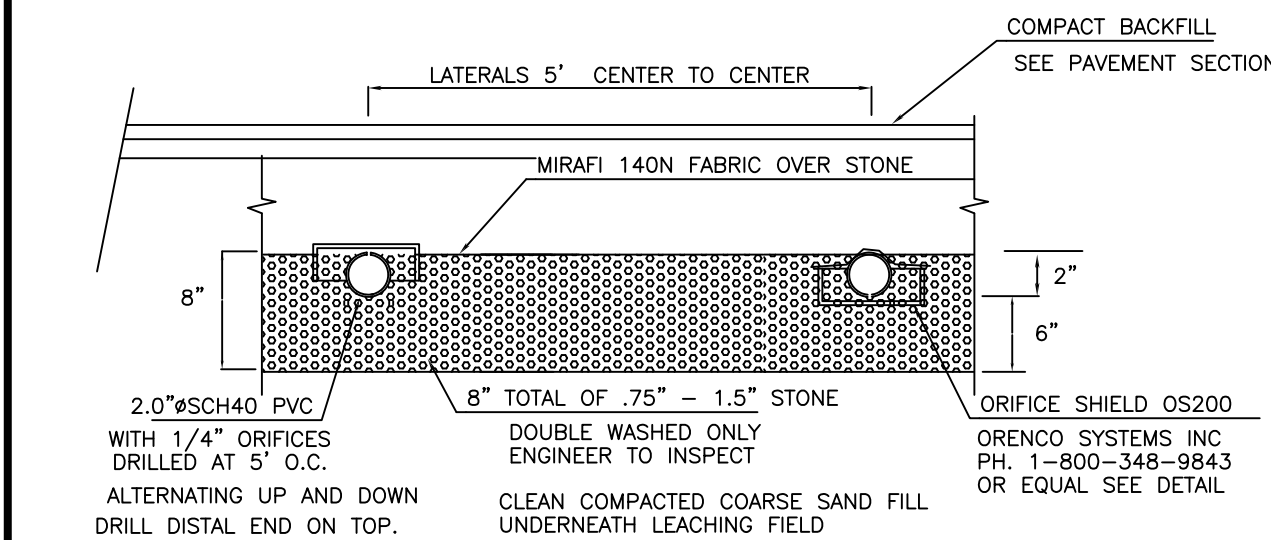
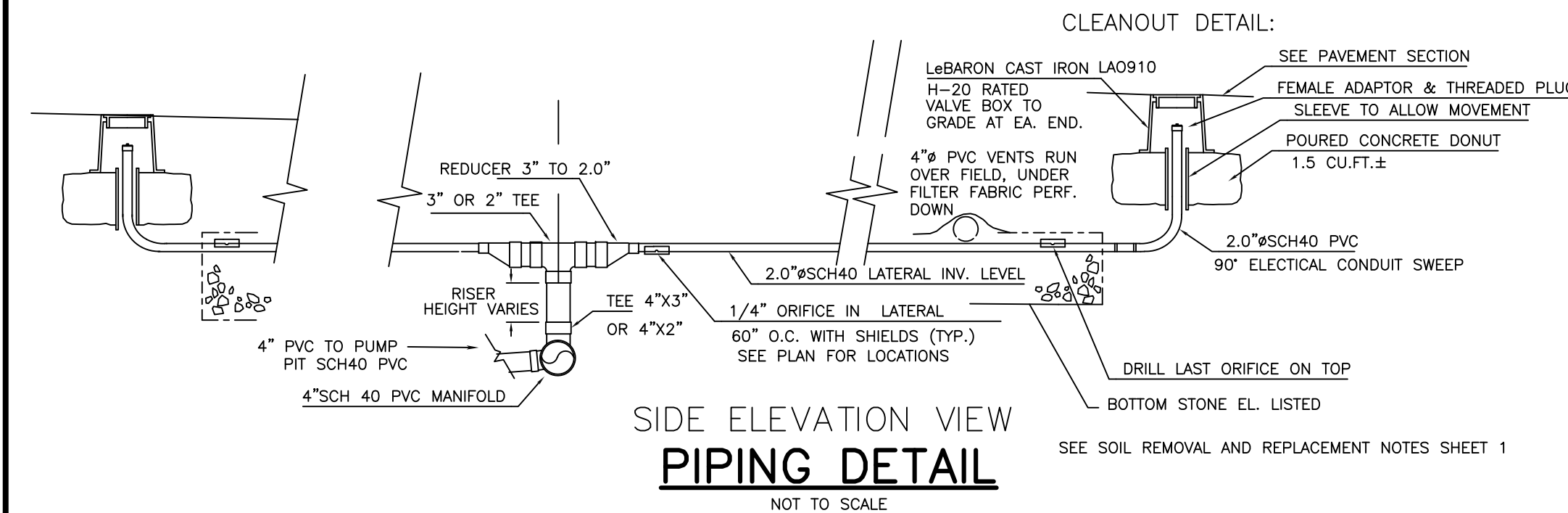
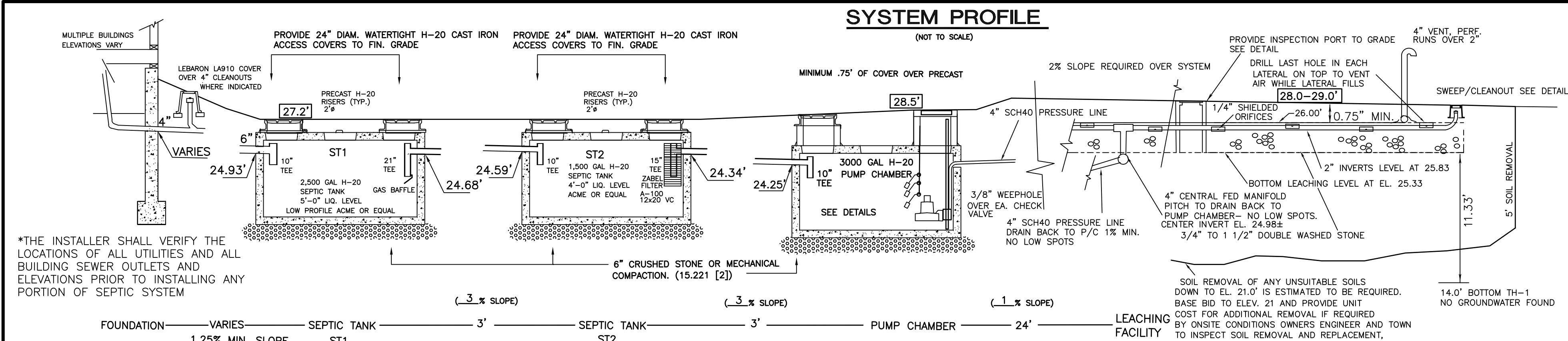


DANIEL A. OJALA, P.E., P.L.S.  
DATE: 8-4-2023

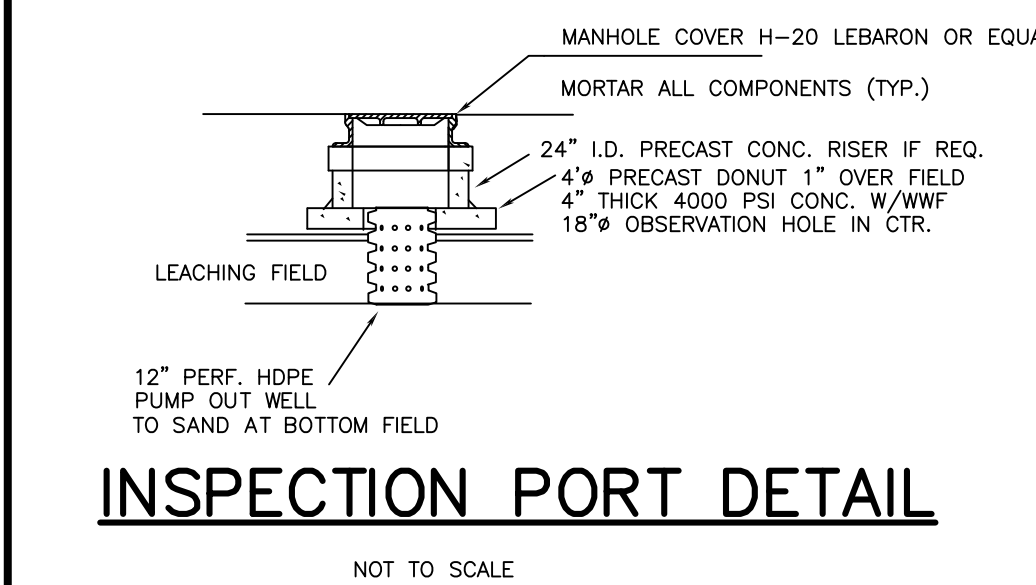
**down cape engineering, inc.**  
civil engineers  
land surveyors  
939 Main Street ( Rte 6A )  
YARMOUTHPORT MA 02675

PERMIT SET - NOT FOR CONSTRUCTION

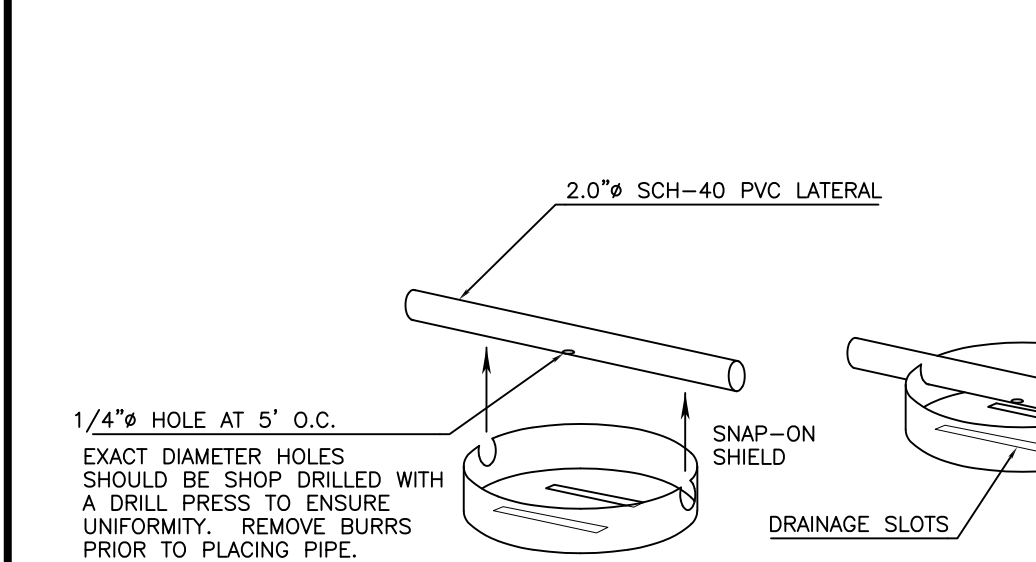




## LEACHING FIELD SECTION



## INSPECTION PORT DETAIL



## ORIFICE SHIELD DETAIL



DCE #18-243

## TEST HOLE LOGS

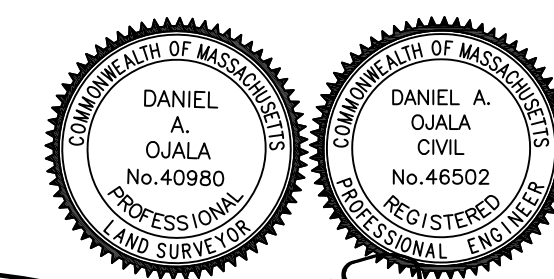
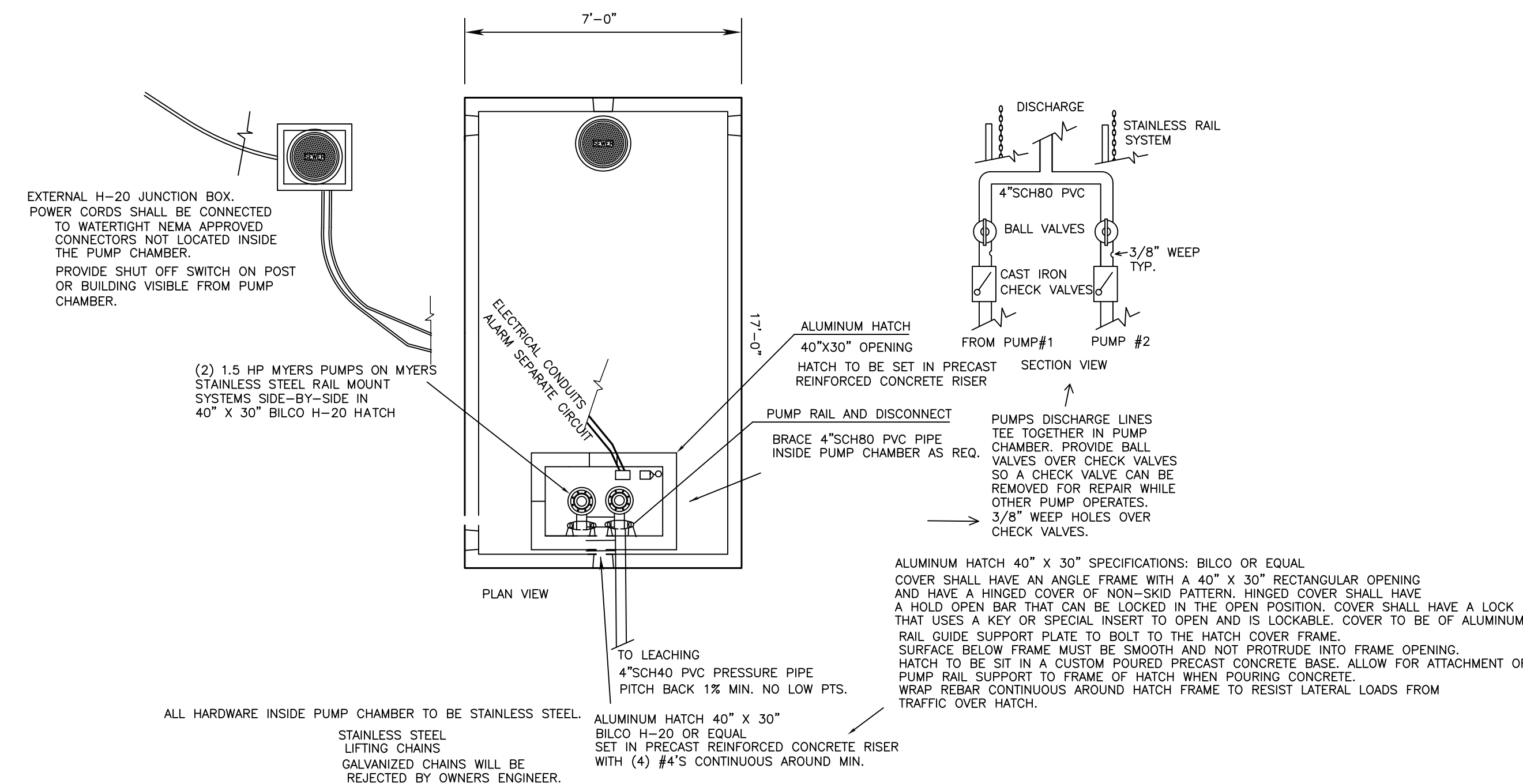
ENGINEER: CRAIG J. FERRARI, SE #13871  
WITNESS: ANNETTE GRACZEWSKI  
DATE: 7/24/2018  
PERC. RATE = < 2 MIN/INCH

CLASS	SOILS	ELEV.
0"	A LS 10YR 3/2	25'
24"	B LS 10YR 5/8	21'
48"	C1 MS 10YR 7/4	17'
96"	C2 FS 10YR 7/2	14'
132"		

NO GROUNDWATER ENCOUNTERED

THE DENNIS BOARD OF HEALTH SHALL REQUIRE THE FOLLOWING INSPECTIONS:

1. INSPECTION OF UNSUITABLE MATERIAL (IF ANY).
2. VERIFICATION OF SOIL CONDITIONS AND/OR GROUNDWATER ELEVATION (IF NECESSARY)
3. VERIFICATION OF CESSPOOL/LEACH PIT REMOVAL OR ABANDONMENT (IF NECESSARY)
4. INSPECTION OF CONTAINMENT WALL OR FLOW BARRIER INSTALLATION (IF ANY)
5. INSPECTION OF THE 3/4 - 1 1/2 INCH STONE PRIOR TO PLACEMENT
6. FINAL INSPECTION OF ALL COMPONENTS PRIOR TO BACKFILLING
7. FINAL GRADING INSPECTION
8. INSPECTION OF THE START-UP OF INNOVATIVE/ALTERNATIVE TECHNOLOGY (IF ANY) WITH VENDOR REPRESENTATIVE

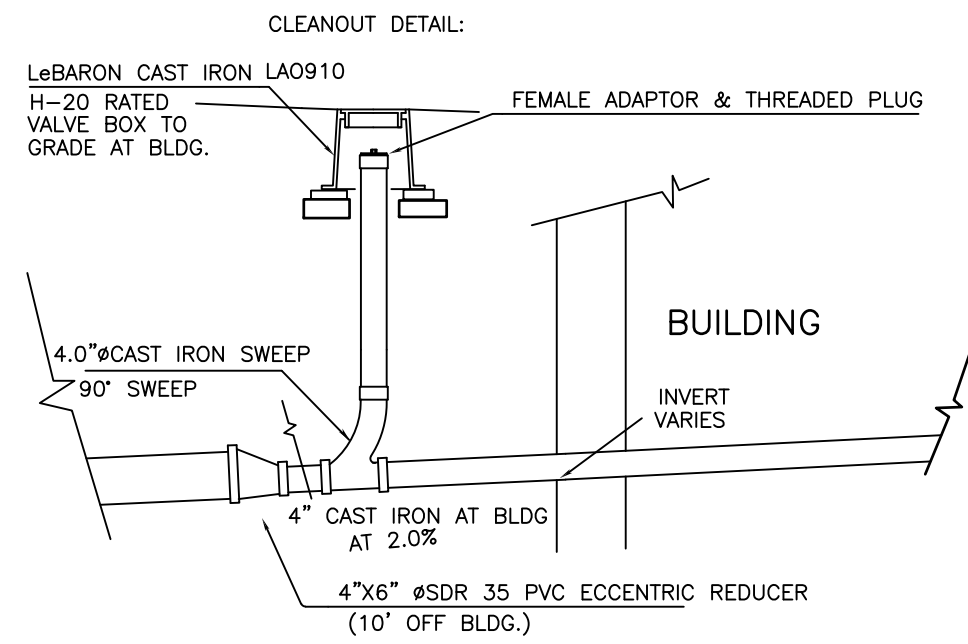


DANIEL A. OJALA, P.E., P.L.S. DATE 8-4-2023

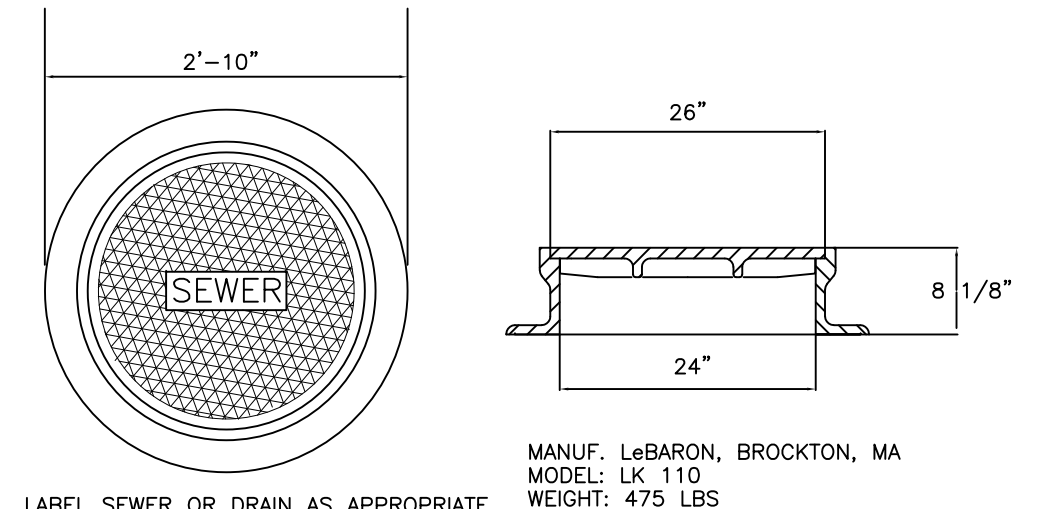
**down cape engineering, inc.**  
civil engineers  
and surveyors  
939 Main Street (Rte 6A)  
YARMOUTHPORT MA 02675

PERMIT SET - NOT FOR CONSTRUCTION

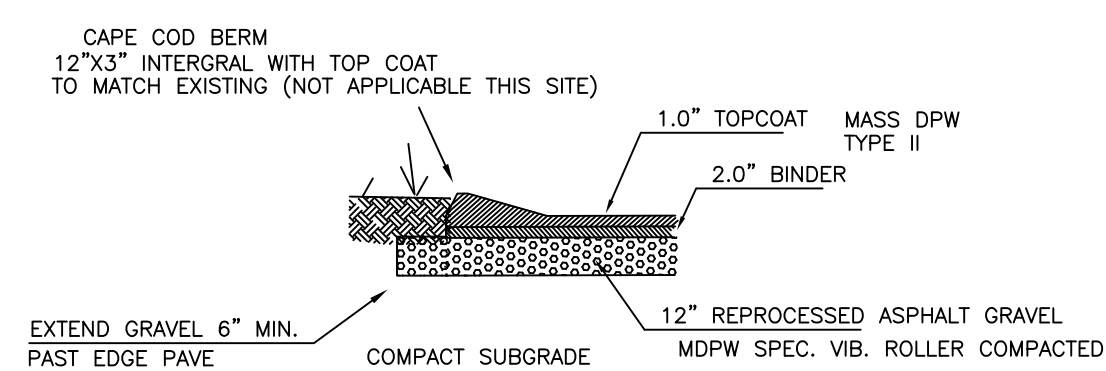




**PIPING DETAILS**  
NOT TO SCALE



**TYPICAL ACCESS COVER**  
SCALE: 3/4" = 1'-0"

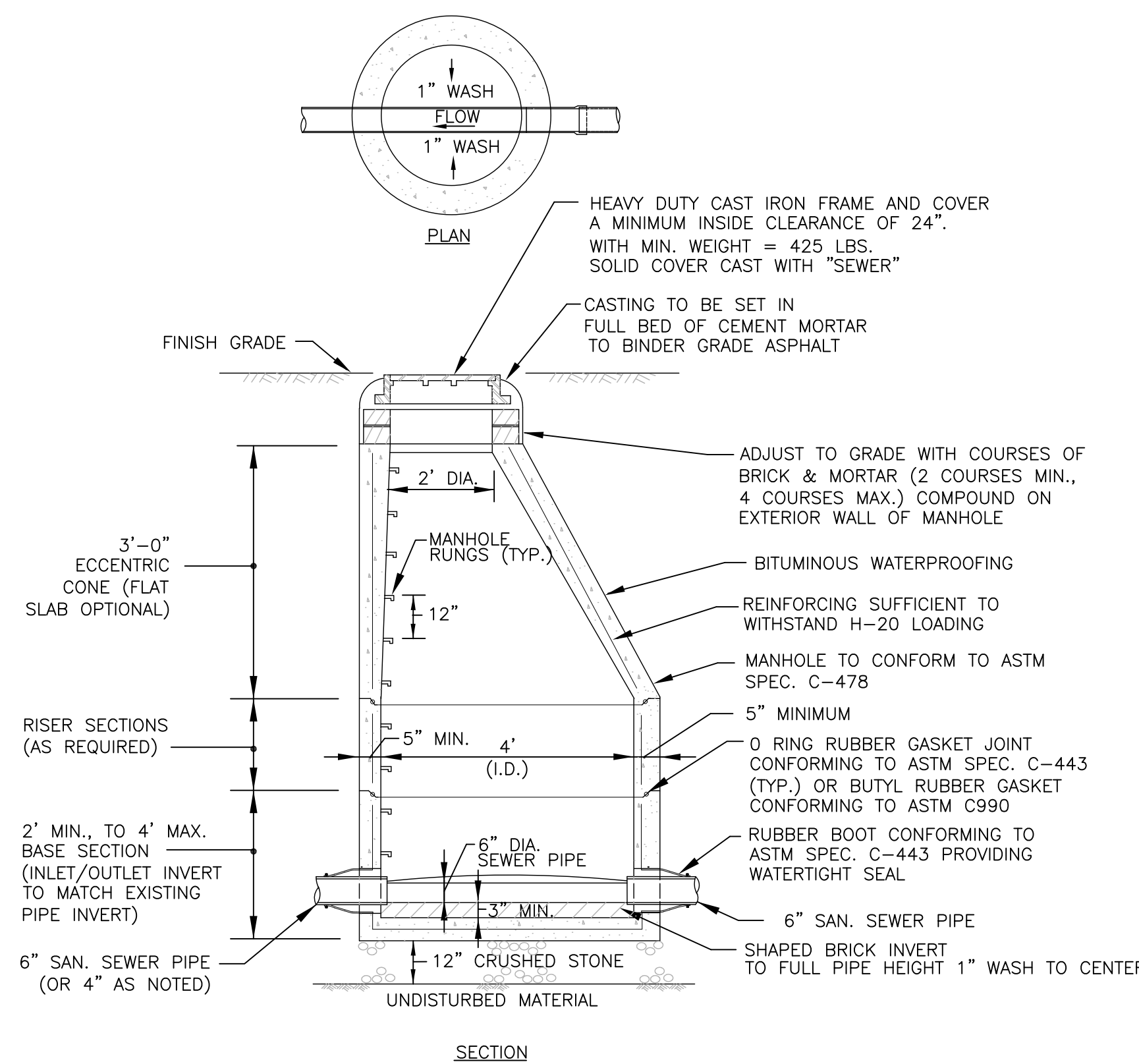


**PAVEMENT CROSS SECTION**  
NOT TO SCALE

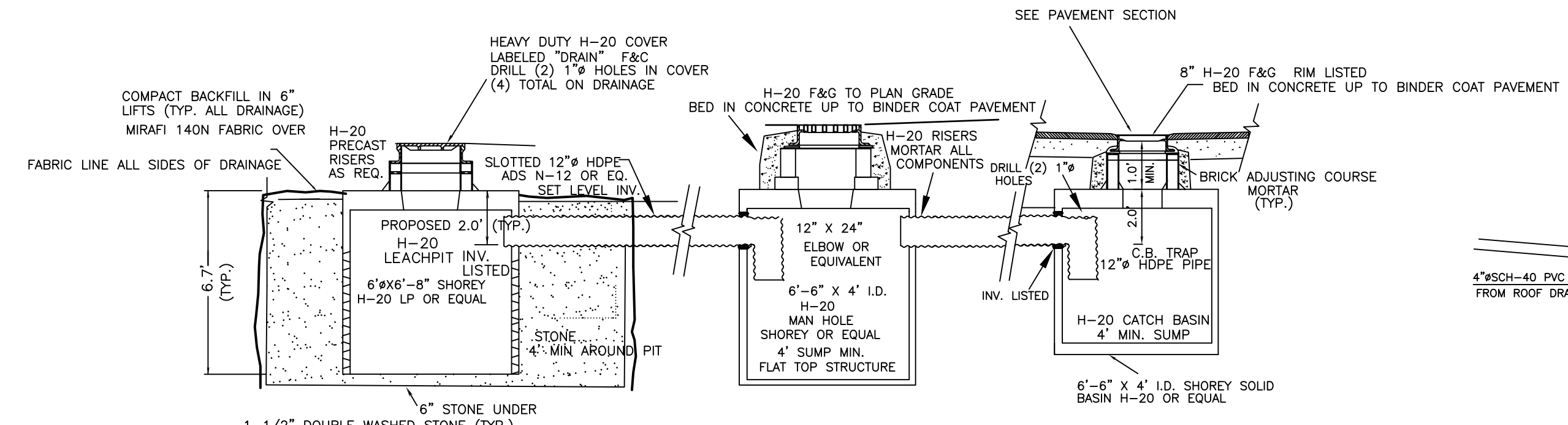
DRAINAGE SCHEDULE			
STRUCTURE	RIM	INVERT IN	INVERT OUT
CB1	27.20	—	24.20
MH1	27.40	24.00	23.60
LP1	27.70	23.40	23.40
LP2	27.50	23.40	23.40
CB2	26.80	—	23.80
MH2	27.00	23.60	23.60
CB3	26.20	—	23.20
MH3	26.40	23.00	23.00
LP3	26.90	22.80	22.80
LP4	27.40	22.80	22.80
CB4	27.10	—	24.10
MH4	27.40	23.90	23.90
LP5	27.70	23.70	23.70
LP6	28.40	23.70	23.70
CB5	27.10	—	24.10
MH5	27.30	23.90	23.90
LP7	27.50	23.70	23.70
LP8	27.90	23.70	23.70
CB6	27.10	—	24.10
MH6	27.30	23.80	23.30
LP9	27.50	22.10	22.10
LP10	27.30	22.10	22.10
CB7	25.50	—	22.50
MH7	25.90	22.30	22.30
LP11	26.30	22.10	22.10

ALL TANKS SHALL BE MANUFACTURED TO WITHSTAND ASHTO H-20 WHEEL LOADING AT THE DEPTHS OF COVER INDICATED ON THE SYSTEM PROFILE /PLANS. TANKS SHALL BE DELIVERED AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS AND SHALL BE GUARANTEED BY THE INSTALLER TO BE WATER TIGHT AFTER INSTALLATION. TANKS AND PRESSURE PIPING SHALL BE DEMONSTRATED TO BE WATER TIGHT UNDER OPERATING PRESSURES BY FILLING TANKS AND OPERATING PUMPS WITH CLEAN WATER PRIOR TO BACKFILLING THE LEACHING FIELD. PUMP CHAMBER SHALL HAVE WATER PROOF MASTIC COATING ON OUTSIDE OF TANK.

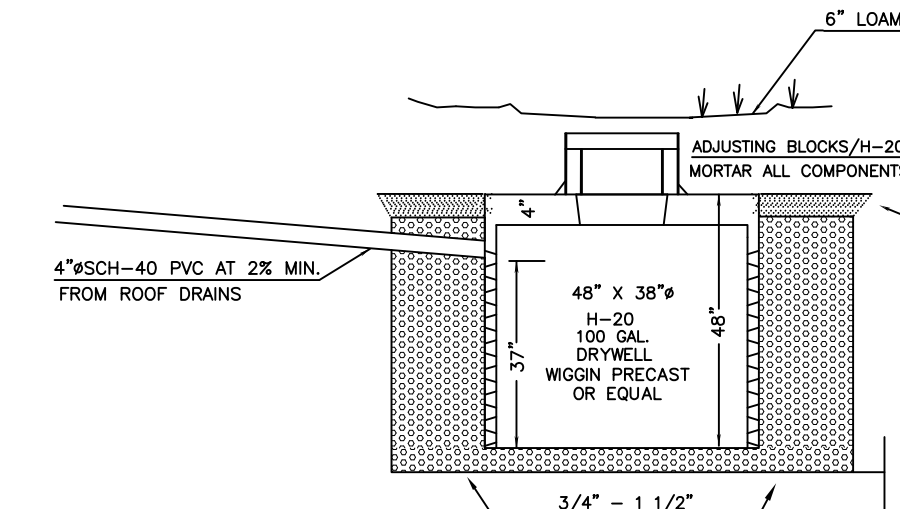
ALL PRECAST CONCRETE COMPONENTS SHALL BE AS AVAILABLE FROM ACME PRECAST, 520 THOMAS LANDERS ROAD, HATCHVILLE, MA, OR SHOREY PRECAST OR EQUAL. ALL COMPONENTS SHALL BE ASASHO H-20 WHEEL LOAD RATED. PUMP CHAMBER SHALL BE SET ON A LEVEL BED OF 3/4" TO 1-1/2" WASHED STONE, AT LEAST SIX INCHES IN DEPTH OR AS OTHERWISE REQUIRED BY THE TANK MANUFACTURER TO GUARANTEE A WATER TIGHT SEAL AT TANK JOINTS.



**PRECAST SEWER MANHOLE DETAIL**  
NTS



**DRAINAGE CROSS SECTION**  
NOT TO SCALE



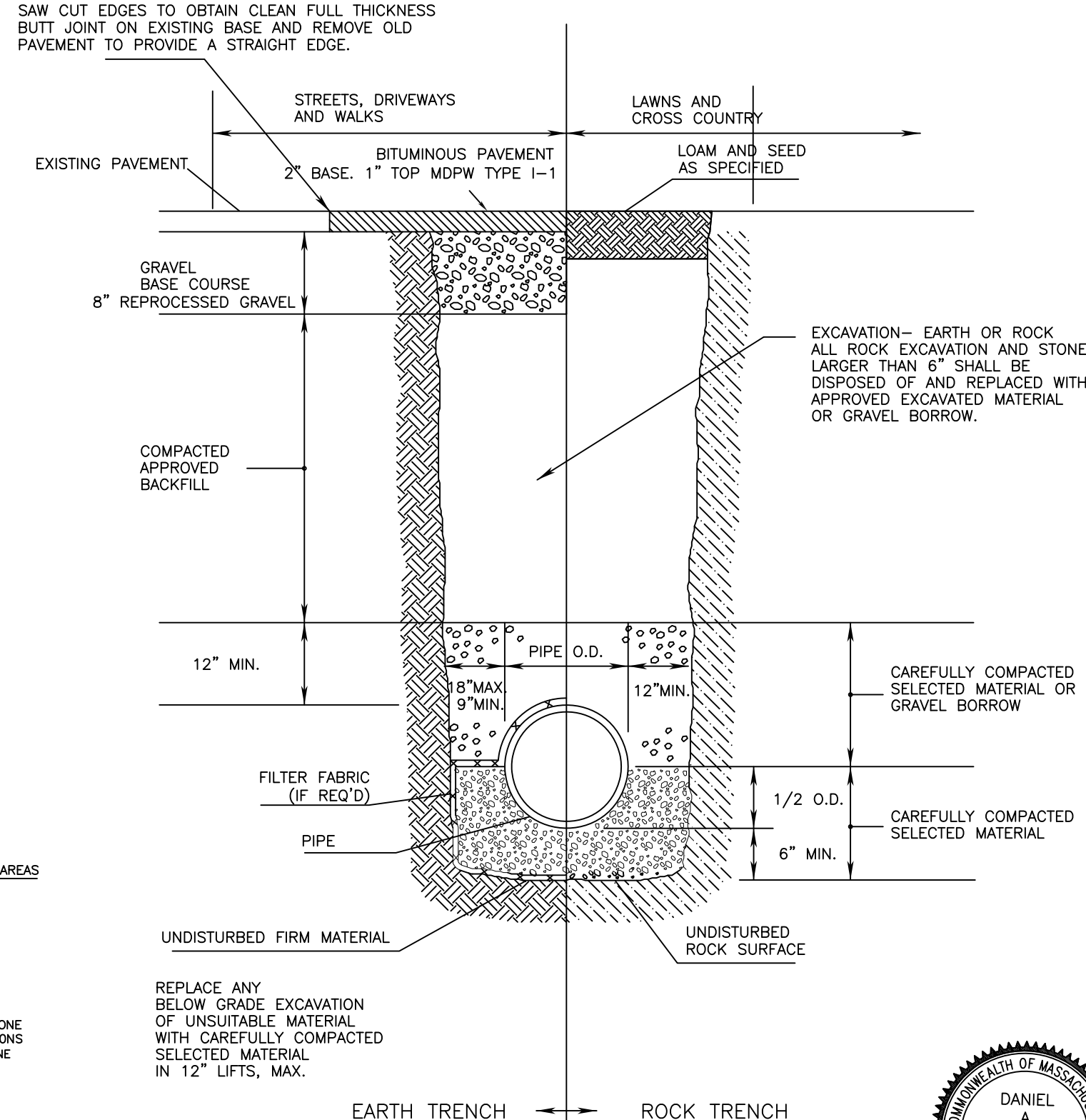
**ROOF DRAIN SECTION**  
NOT TO SCALE

## INSPECTIONS:

- THE DENNIS BOARD OF HEALTH SHALL REQUIRE THE FOLLOWING INSPECTIONS:
- INSPECTION OF UNSUITABLE MATERIAL AND INSPECTION OF REPLACEMENT SAND.
  - VERIFICATION OF SOIL CONDITIONS AND/OR GROUNDWATER ELEVATION (IF NECESSARY)
  - VERIFICATION OF CESSPOOL/LEACH PIT REMOVAL OR ABANDONMENT
  - INSPECTION OF CONTAMINANT WALL OR FLOW BARRIER INSTALLATION
  - INSPECTION OF THE 3/4" x 1 1/2" INCH STONE PRIOR TO PLACEMENT
  - FINAL INSPECTION OF ALL COMPONENTS PRIOR TO BACKFILLING/CLEARWATER TEST
  - FINAL GRADING INSPECTION
  - INSPECTION OF THE START-UP OF INNOVATIVE/ALTERNATIVE TECHNOLOGY (IF ANY) WITH VENDOR REPRESENTATIVE
  - OWNERS ENGINEER TO INSPECT THE DOUBLE WASHED STONE TO ENSURE IT IS FREE OF DUST AND FINES.
  - ENGINEER TO INSPECT THE SHOP DRILLED ORIFICES TO ENSURE BURRS HAVE BEEN REMOVED FROM LATERALS.
  - PROPER FUNCTIONING OF THE PUMPS, CONTROLS AND ALARMS SHALL BE DEMONSTRATED BY CLEAN WATER TESTING PRIOR TO BACKFILLING THE SAS FIELD.
  - CERTIFIED AS-BUILT PLAN WITH INVERT ELEVATIONS AND FIELD LOCATION IS TO BE PREPARED FOR THE TOWN BY THE OWNERS ENGINEER.
  - INSTALLER TO COORDINATE INSPECTIONS. 24 HR. NOTICE REQUIRED.

## GENERAL SCOPE OF WORK:

(SEE ALSO ALL NOTES AND DETAILS AND ITEMS ON PLANS): THE CONTRACTOR SHALL PROVIDE THE OWNER WITH ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE SEPTIC SYSTEM UPGRADE, SHOWN ON THESE PLANS. CONTRACTOR TO VISIT THE SITE PRIOR TO PLACING BID, AND MAKE SUCH INSPECTIONS AND INQUIRIES AS REQUIRED TO ACCURATELY ESTIMATE THE COST OF THE SEPTIC SYSTEM REPAIR. THE CONTRACTORS SCOPE OF WORK SHALL INCLUDE ALL NECESSARY PERMITS AND FEES, LIKELY INCLUDING BUT NOT LIMITED TO DISPOSAL WORKS, CONSTRUCTION PERMIT, PLUMBING PERMIT, TRENCH PERMIT, ELECTRICAL PERMIT, COORDINATION WITH VERIZON, EVERSOURCE, WATER DEPARTMENT, GAS COMPANY, AND OTHER UTILITIES AS REQUIRED TO COMPLETE THE WORK SHOWN ON THE PLANS. THE CONTRACTOR SHALL PROVIDE FOR PUMPING OF ALL EXISTING TANKS AND COMPONENTS, AND SHALL CRUSH AND REMOVE OR FILL WITH COMPACTED SAND ALL ABANDONED SEPTIC COMPONENTS, ALL PER TITLE 5 REQUIREMENTS. NOTE SIGNIFICANT EARTHWORK REQUIRED ON THIS SITE. SOIL REMOVAL IS REQUIRED. SEE PROFILE SECTION AND SOIL LOGS FOR DETAILS. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THEIR ELECTRIC SUBCONTRACTOR AND UTILITY COMPANIES AS NEEDED. THE CONTRACTOR SHALL PROVIDE THE LICENSED ELECTRICIANS AND WORK TO CONNECT THE PUMP CHAMBER EFFLUENT PUMPS, PANELS AND ANY TIMERS, AND SHALL RIG ALL FLATS TO PLAN AND PROVIDE A CLEARWATER TEST OF PUMPS PER PLAN NOTES. SAFETY OF STRUCTURES AND PUBLIC AND ANY TRAFFIC CONTROL REQUIRED ON THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE ALL NEW FIRST QUALITY PRODUCTS AND CLEAN DOUBLE WASHED STONE FOR THE PROJECT. THE CONTRACTOR SHALL COMPACT ALL BACKFILL TO 85% OF THE MODIFIED PROCTOR DENSITY OF THE BACKFILL IN ALL PLACES, AND SHALL PROVIDE GRAVEL AND NEW PAVEMENT PER THE PAVEMENT SECTION. THE CONTRACTOR IS RESPONSIBLE FOR REGRADE OVER THE NEW LEACHING AND PITCHING THE PARKING LOT TO MATCH ORIGINAL GRADES WITHOUT FORMING PUDDLES. ANY DEFICIENT WORK SHALL BE REMOVED AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY AND TRAFFIC MANAGEMENT FOR THE PROJECT. CONTRACTOR TO PROVIDE BACKFILL AND COMPACTION OF FILL, AND PROVIDING 4" OF LOAM OVER ALL DISTURBED AREAS NOT REPAVED UNLESS MODIFIED BY CONTRACT. IT IS UNDERSTOOD BY ALL PARTIES THAT TIME IS OF THE ESSENCE IN THIS SEPTIC SYSTEM WORK, AND THE CONTRACTOR SHALL ULTIMATELY BE RESPONSIBLE FOR THE PROMPT COMPLETION OF ALL PHASES OF WORK DESCRIBED ON THESE PLANS, AND FINAL PAYMENT CAN BE WITHHELD UNTIL THE OWNERS ENGINEER IS SATISFIED ALL WORK HAS BEEN COMPLETED PER THE PLANS AND FINAL CLEANUP IS COMPLETE. ANY WRITTEN CONTRACT BETWEEN THE OWNER AND CONTRACTOR WILL GOVERN OVER LANGUAGE IN THIS SCOPE WHERE NOT CONTRARY TO THE DESIGN INTENT, CODES, AND THE PERMITTING AUTHORITIES JURISDICTION.



**PIPE IN TRENCH**  
NOT TO SCALE

## NOTES

- DATUM IS NAVD 88
- MUNICIPAL WATER IS PROPOSED
- MINIMUM PIPE PITCH TO BE 1/8" PER FOOT.
- DESIGN LOADING FOR ALL PROPOSED PRECAST UNITS TO BE ASASHO 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 UKO.
- 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 DISSAFE (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.
- EXISTING LEACHING FACILITY SHALL BE PUMPED AND REMOVED OR PUMPED AND FILLED WITH CLEAN SAND.
- ACCESS FOR ROUTINE MAINTENANCE MUST BE PROVIDED FOR ZABEL FILTER. INSTALLER MUST FOLLOW MANUFACTURER'S SPECIFICATIONS FOR PROPER FILTER INSTALLATION. INSTRUCT OWNER ON MAINTENANCE.
- INSTALLER TO VERIFY THE ELECTRICAL SYSTEM IS SUITABLE FOR PUMP CONNECTION PRIOR TO ORDERING PUMPS. ELECTRICAL PERMIT REQUIRED.
- COORDINATE UTILITY INSTALLATIONS WITH APPROPRIATE VENDORS.
- PER TITLE V 310 CMR 15.254 D: PUMPS, ALARMS AND OTHER EQUIPMENT REQUIRING PERIODIC OR ROUTINE INSPECTION AND MAINTENANCE SHALL BE OPERATED, INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S AND THE DESIGNER'S SPECIFICATIONS. IN NO INSTANCE SHALL INSPECTION BE PERFORMED LESS FREQUENTLY THAN ONCE EVERY THREE MONTHS FOR A SYSTEM SERVING A FACILITY WITH A DESIGN FLOW OF 2,000 GALLONS PER DAY OR GREATER. THE SYSTEM OWNER SHALL SUBMIT THE RESULTS OF SUCH INSPECTIONS TO THE APPROVING AUTHORITY BY JANUARY 31st OF EACH YEAR FOR THE PREVIOUS CALENDAR YEAR.

## PUMP INSTALLATION

- PRESSURE DOSING PUMPS SHALL BE MYERS 3WHV 1.5-HP PUMPS OR EQUAL CAPABLE OF 78 GPM AT 18 FT TDH. SINGLE PHASE 220 VOLT PUMPS WITH 5.5" IMPELLERS. PUMPS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURERS SPECIFICATIONS. PRIOR TO ORDERING PUMPING EQUIPMENT AND THE INSTALLER SHALL PROVIDE THE DESIGN SHOP DRAWINGS OF THE ALL PUMPING EQUIPMENT FOR APPROVAL. INSTALLER SHALL CONFIRM THAT THE REQUIRED POWER CONFIGURATION FOR THE PUMP(S) IS AVAILABLE AT THE SITE PRIOR TO ORDERING EQUIPMENT.
- CONTROLS: PUMP CONTROLS SHALL BE LOCATED ON OUTSIDE WALL OR IN AN ACCESSIBLE AREA AND SHALL BE ENCLOSED AS REQUIRED TO MEET ALL STATE AND LOCAL CODES AND REGULATIONS. THE PUMPS SHALL ALTERNATE. CAST IRON CHECK VALVES WITH BALL VALVES OVER PRIOR TO WYING THE 4" LINES TOGETHER. PUMPS SHALL BE PROVIDED WITH A LOW LEVEL OVERRIDE AND REDUNDANT LOW LEVEL ALARM SET SUCH THAT THE PUMPS REMAIN SUBMERGED. PUMPS SHALL OPERATE FOLLOWING SEQUENCE:
  - PUMPS OFF
  - LEAD PUMP ON
  - ALARM ON AND LAG PUMP ON (TWO PUMPS OPERATE OR ALTERNATE PUMP SUBSTITUTES FOR FAILED PUMP)
  - PUMPS MUST ALTERNATE
 AN ELAPSED TIME METER AND EVENT COUNTER SHALL BE INSTALLED IN THE PANEL.
- ALARM: PUMPS SHALL BE EQUIPPED WITH AN ALARM POWERED BY A CIRCUIT SEPARATE FROM THE PUMP POWER. THE ALARM SHALL CONSIST OF A RED WARNING LIGHT AND AUDIBLE SIGNAL WITH PRESS TO SILENCE SWITCH. THE ALARM SHALL SIGNAL A LOW WATER CONDITION (PUMPS NOT SUBMERGED) AND A HIGH WATER LEVEL CAUSED BY PUMP FAILURE. ELECTRIC PERMIT REQUIRED.
- PROPER FUNCTION OF PUMPS, CONTROLS AND ALARMS SHALL BE DEMONSTRATED BY CLEAN WATER TESTING PRIOR TO BACKFILLING SAS FIELD.

## DETAIL SHEET 2

TO ACCOMPANY

## SITE PLAN

OF

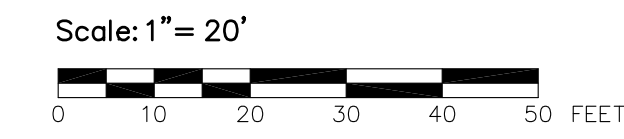
## #18 HOPE LANE

## DENNIS, MA

PREPARED FOR

## VILLAGE COURTYARD LLC

DATE: FEBRUARY 27, 2023  
REV: AUGUST 4, 2023



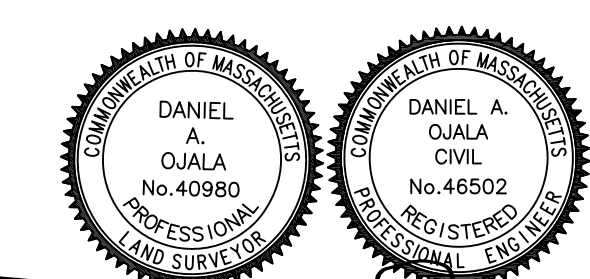
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**down cape engineering, inc.**

civil engineers  
land surveyors

939 Main Street (Rte 6A)  
YARMOUTHPORT MA 02675



DANIEL A. OJALA, P.E., P.L.S. DATE 8-1-2023

PERMIT SET - NOT FOR CONSTRUCTION