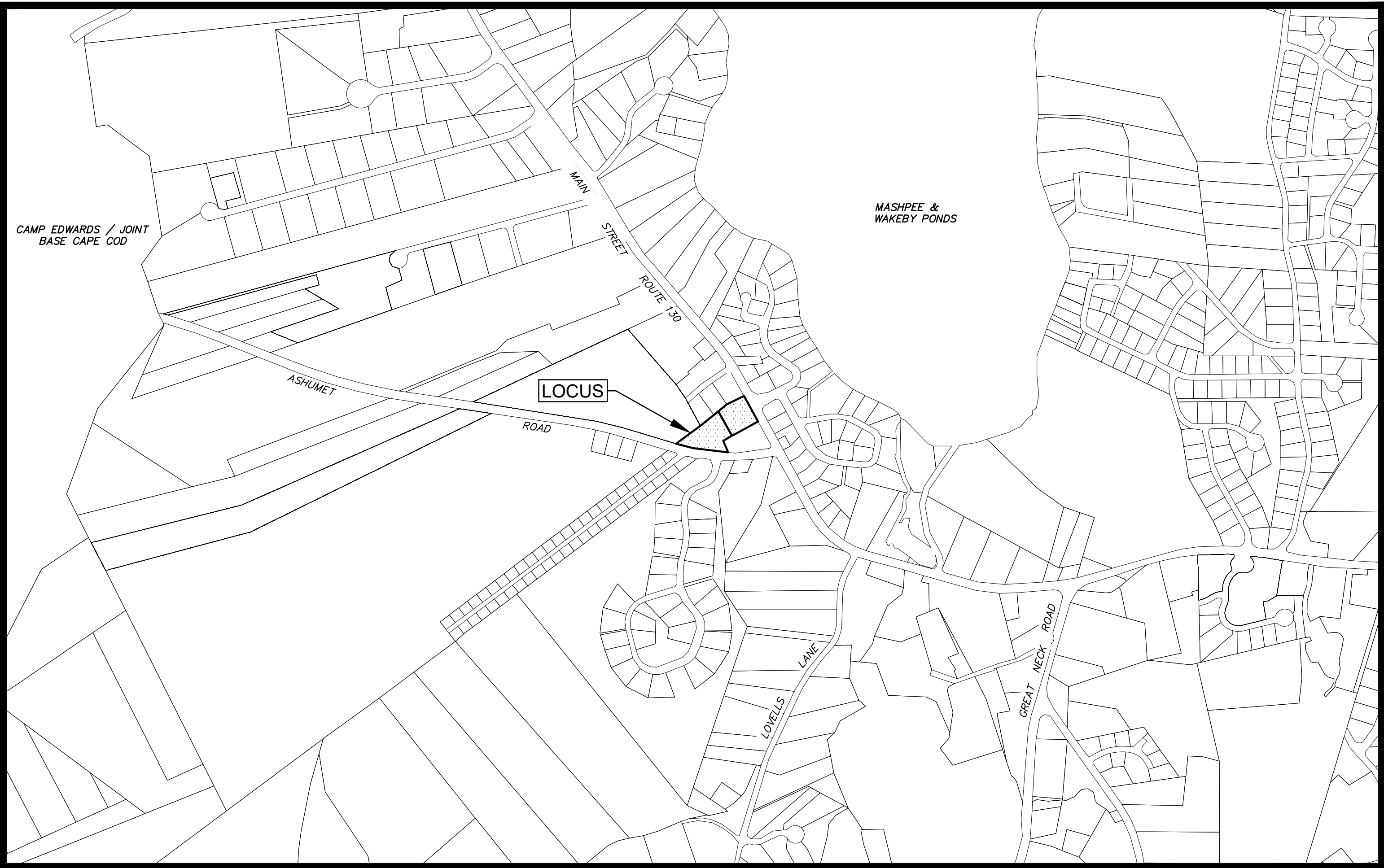


PROPOSED SITE DEVELOPMENT
AT
#474 MAIN STREET & 31 ASHUMET ROAD
MASHPEE, MASSACHUSETTS

FEBRUARY 19, 2024

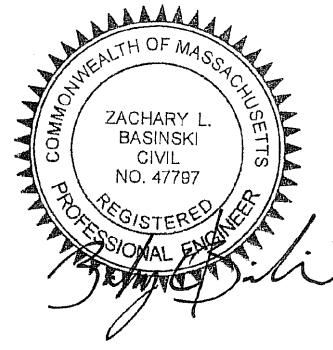
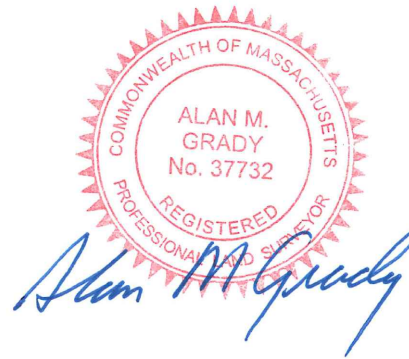
SHEET INDEX	REVISED DATES						△ CONSTRUCTION REVISIONS
1	TITLE SHEET						
2	CONSTRUCTION NOTES						
3	EXISTING CONDITIONS and SITE PREPARATION						
4	LAYOUT, ZONING and LANDSCAPING						
5	GRADING, DRAINAGE and UTILITIES						
6	CONSTRUCTION DETAILS						
7	CONSTRUCTION DETAILS						

1. LOCUS: #474 MAIN STREET
PARCEL 27-001-000A
&
#31 ASHUMET ROAD
PARCEL 27-001-000B
2. OWNER: JOAO L. JUNQUEIRA
53 MERCANTILE WAY, UNIT 6
MASHPEE, MA 02649
3. DEED REF: Deed Bk: 36014 Pg: 239
4. PLAN REF: Plan Bk: 629 Pg: 44 (LOTS 1 & 3)
5. ZONING DISTRICT: C-3 & R-5
6. LOCUS DOES NOT FALL WITHIN A SPECIAL FLOOD HAZARD ZONE AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25001C-0538-J dated 07/16/2014.
7. LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.
8. LOCUS DOES FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA.
9. THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-800-322-4844.



LOCUS MAP

Scale : 1" = 500'



CIVIL ENGINEER / LAND SURVEYOR:



49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(Tel) 508.833.0070
(Fax) 508.833.2282

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OWNER/APPLICANT:

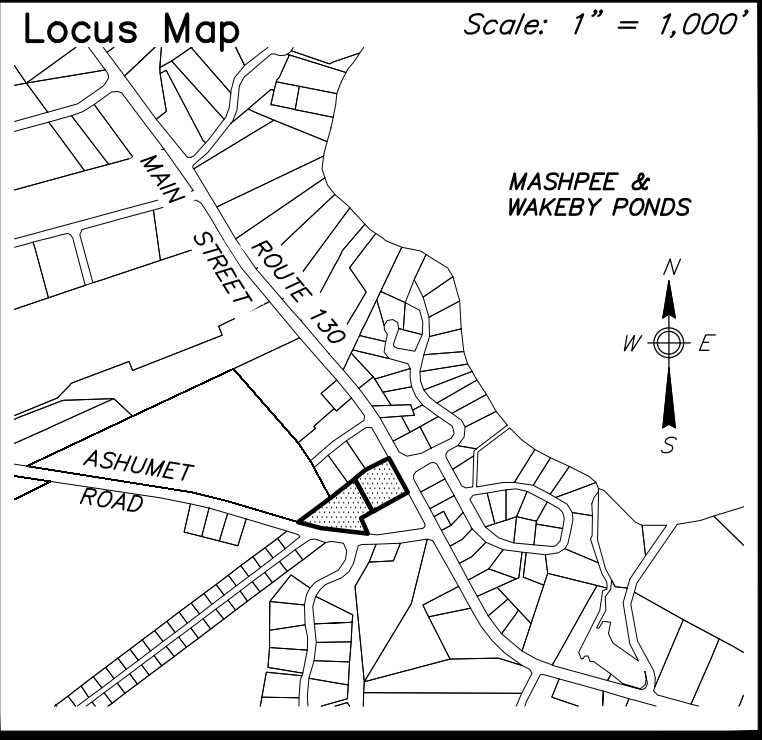
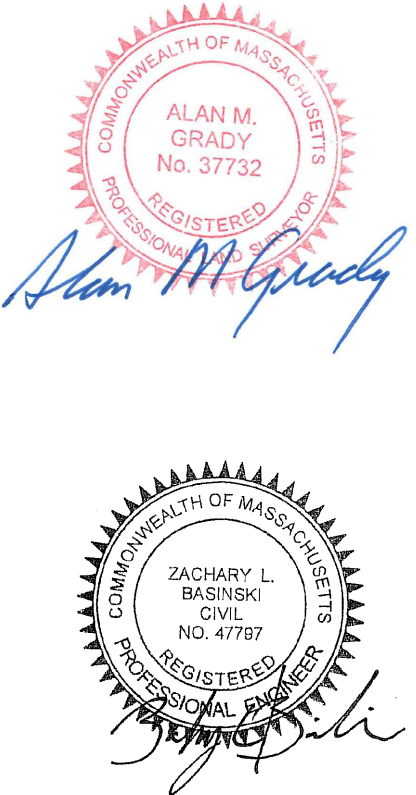
JOAO L. JUNQUEIRA
53 MERCANTILE WAY, UNIT 6
MASHPEE, MA 02649

SOIL LOGS

DATE PERFORMED: DECEMBER 14, 2023
SOIL EVALUATOR: ROBERT E. DEWAR, EIT, SE#14230
WITNESSED BY: CHRISTINE WILLANDER, ASST. HEALTH AGENT
MAX. GROUND WATER ELEV.: NONE TO 83.8
METHOD OF DETERMINATION: NO WATER / NO REDOX

TP NO. 1 GRD. EL. 98.8 GW. EL. NONE TO 86.8	TP NO. 2 GRD. EL. 98.9 GW. EL. NONE TO 86.9
0" FILL	0" FILL
84" Apb SANDY LOAM 10YR 3/2	72" Apb SANDY LOAM 10YR 3/2
96" Bw LOAMY SAND 10YR 4/6	76" Bw LOAMY SAND 10YR 4/6
120" C MEDIUM SAND 2.5Y 6/6 20% GRAVEL 5% STONE	96" C MEDIUM SAND 2.5Y 6/6 20% GRAVEL 5% STONE
180" NO REDOX NO WATER	144" NO REDOX NO WATER

TP NO. 3 & 4 GRD. EL. 98.1 GW. EL. NONE TO 87.1	TP NO. DTP#1 GRD. EL. 96.0 GW. EL. NONE TO 84.0
0" FILL	0" A/C LOAMY SAND 10YR 3/4
54" Bw LOAMY SAND 10YR 5/8	10" Bw SANDY LOAM 10YR 3/4
72" C MEDIUM SAND 2.5Y 6/4 20% GRAVEL 5% STONE	36" C MEDIUM SAND 2.5Y 6/4 WITH LENSES OF GRAVEL
132" NO REDOX NO WATER	144" NO REDOX NO WATER



PROJECT NOTES

- LOCUS: #474 MAIN STREET PARCEL 27-001-000A & #31 ASHUMET ROAD PARCEL 27-001-000B
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- THE CONTRACTOR SHALL REPORT TO THE OWNER AND ENGINEER ANY SIGNIFICANT VARIATIONS IN EXISTING SITE CONDITIONS FROM THOSE SHOWN ON THESE PLANS. ANY PROPOSED REVISIONS TO THE WORK, IF REQUIRED BY THESE SITE CONDITIONS, SHALL NOT BE UNDERTAKEN UNTIL REVIEWED AND APPROVED BY THE OWNER AND ENGINEER.
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- THE MASHPEE WATER DEPARTMENT SHALL BE NOTIFIED BY THE CONTRACTOR PRIOR TO ANY WORK ON, OR AFFECTING THE WATER SYSTEM.
- PROJECT ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- ALL DISTURBED LANDSCAPE AND HARDSCAPE AREAS TO BE RE-ESTABLISHED UNLESS OTHERWISE STATED ON THESE PLANS.

ZONING REQUIREMENTS:
C-3 (LIMITED COMMERCIAL)

MIN. LOT SIZE.....	40,000 S.F.
FRONTAGE.....	200' MIN.
FRONT YARD.....	75' MIN.
SIDE YARD.....	20' MIN.
REAR YARD.....	20' MIN.
LOT COVERAGE.....	20% MAX.
HEIGHT.....	35' MAX.

Prepared By:



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Sheet Title:

EXISTING CONDITIONS &
SITE PREPARATION

Project:

PROPOSED SITE DEVELOPEMENT
IN MASPHEE, MASSACHUSETTS

Prepared For:

JOAO JUNQUEIRA
#474 MAIN STREET
PARCEL 27-001-000A
&
31 ASHUMET ROAD
PARCEL 27-001-000B

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No.	Date	Revision Description		By
Date:	FEBRUARY 19, 2024	Drawn:	Checked:	Sheet:
		RED/BEI	ZLB/AMG	3 of 7

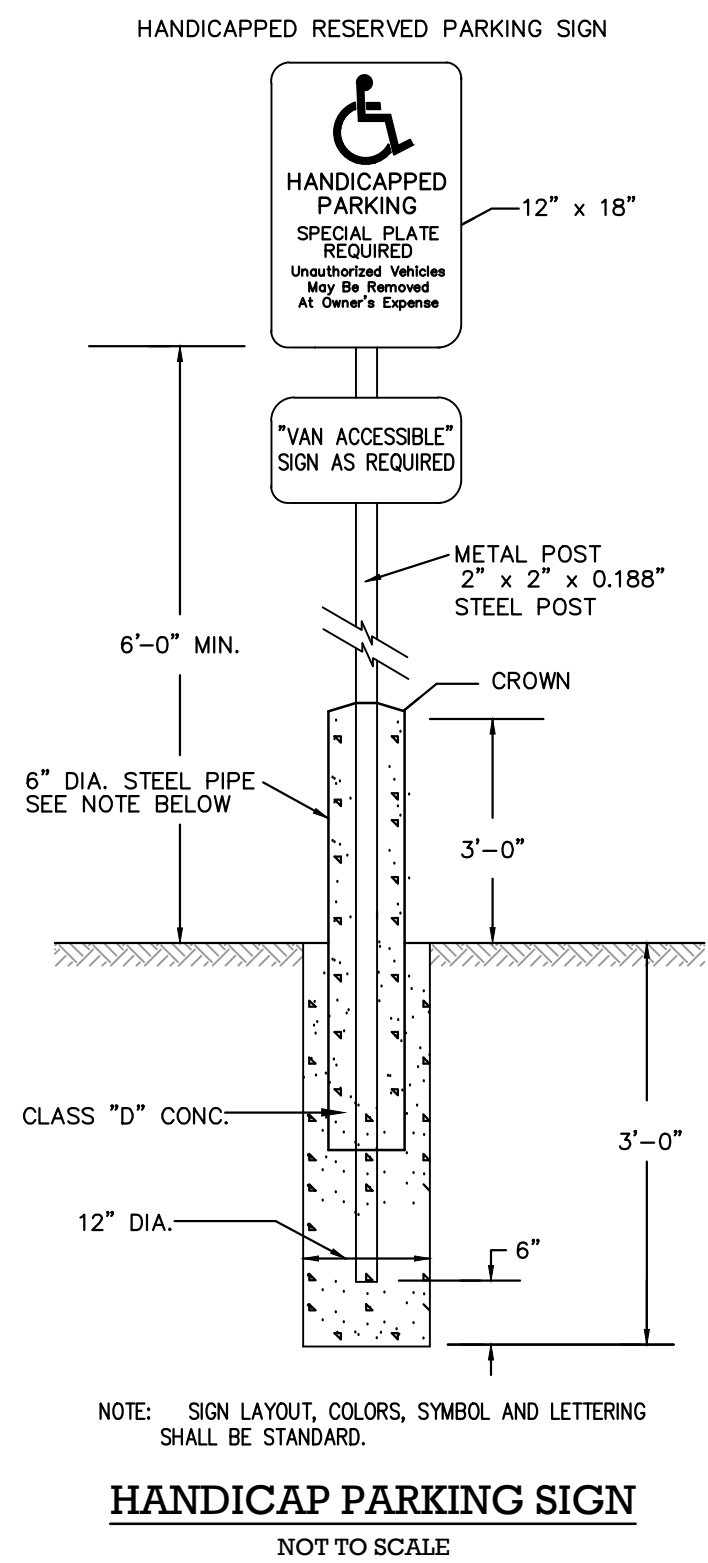
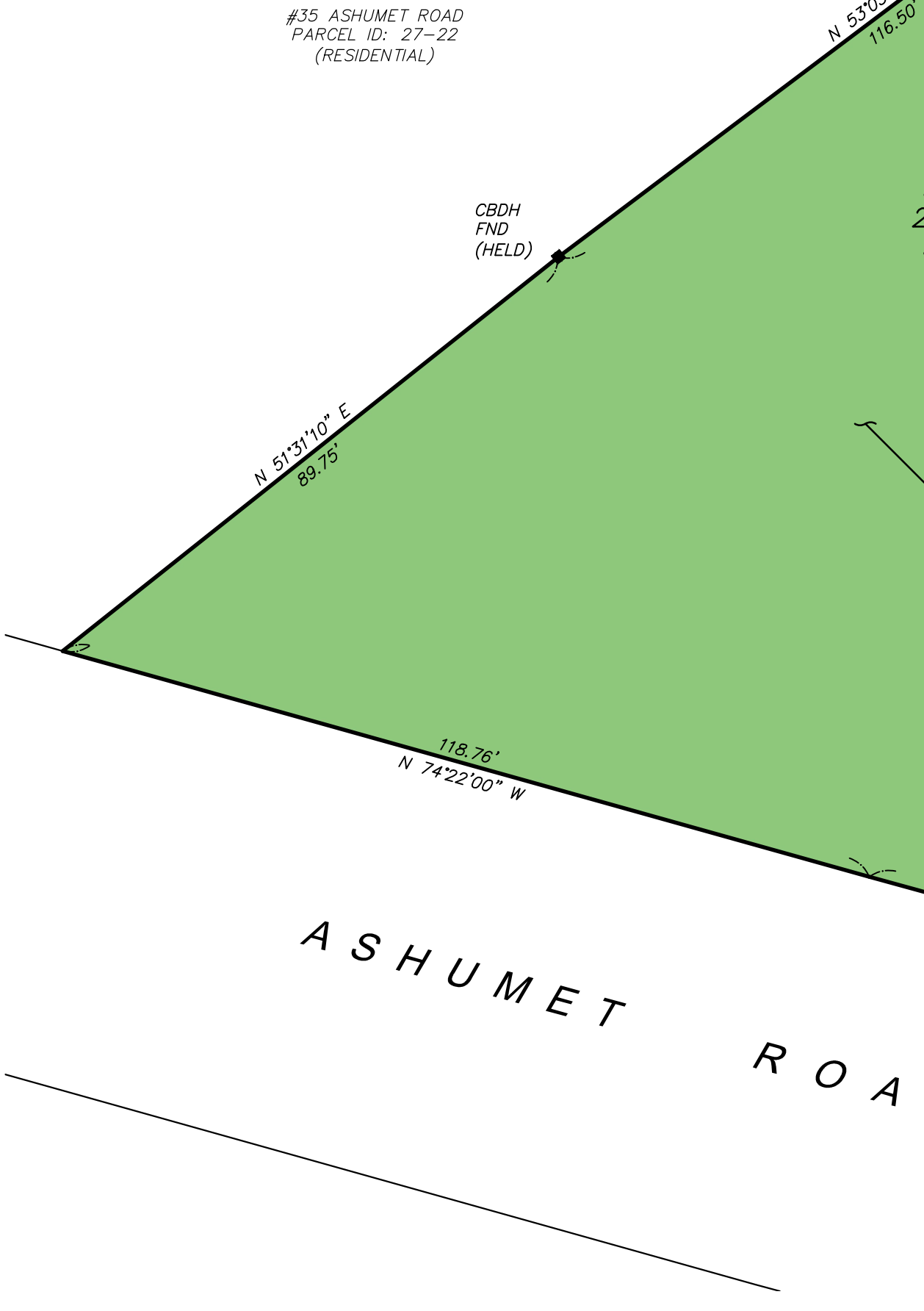
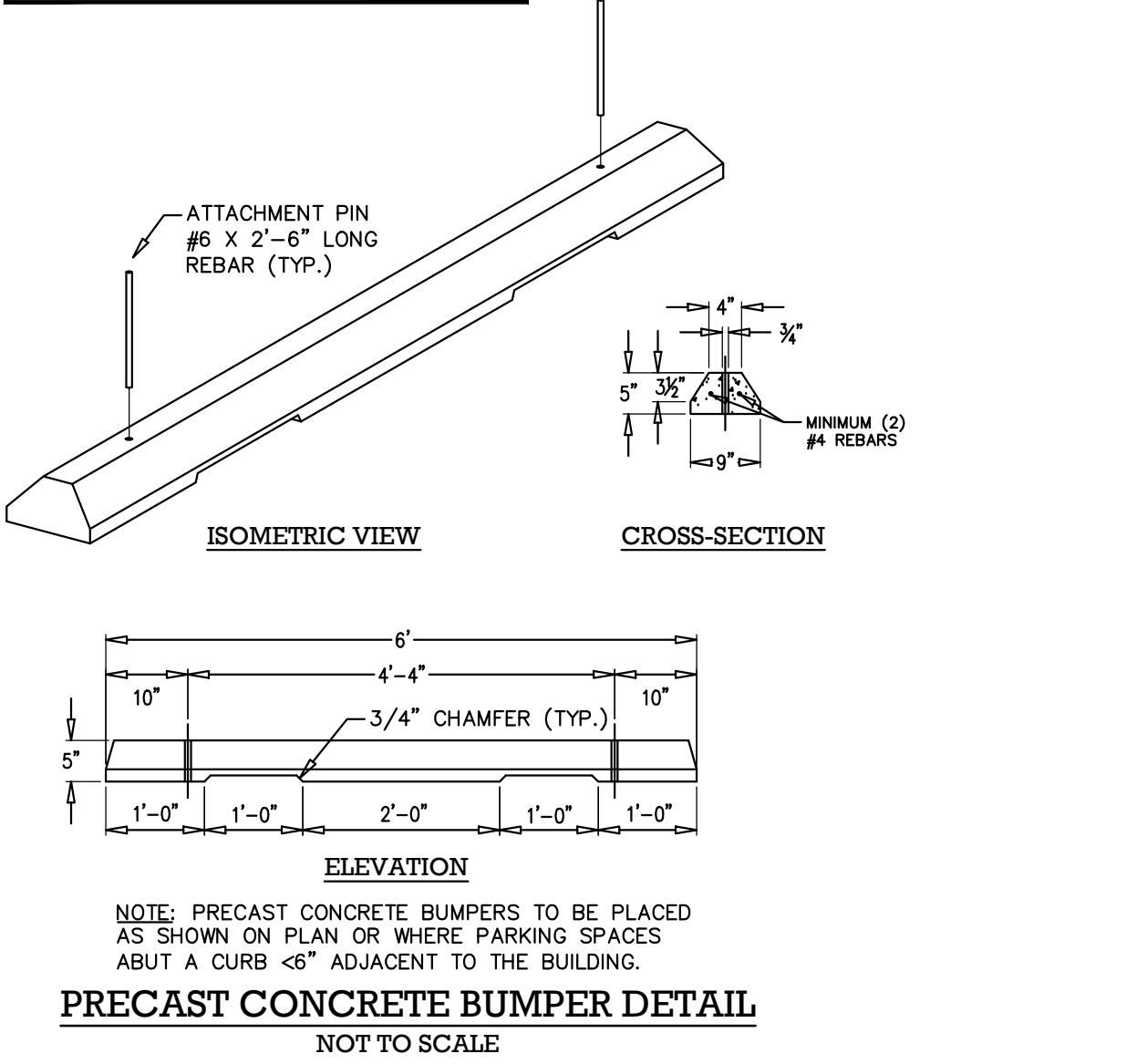
ZONING SUMMARY		
ZONING DISTRICT: C-3	REQUIRED	PROPOSED
MINIMUM LOT AREA	40,000 S.F.	98,740 S.F.
MINIMUM FRONTAGE	200'	200.48'
MINIMUM FRONT YARD	75'	76.1±
MINIMUM SIDE YARD	20'	21.0±
MINIMUM REAR YARD	20'	N/A
MAXIMUM LOT COVERAGE	20% (MAX.)	6.1%
MAXIMUM HEIGHT	35'	<35'

PARKING SUMMARY		
USE	REQUIRED	TOTAL
HARDWARE STORE (1,248 S.F.)	1 SPACE / 300 S.F. 4 SPACES	4
WAREHOUSE (4,752 S.F.)	1 SPACE / 900 S.F. 5 SPACES	5
TOTAL REQUIRED = 9 SPACES		
TOTAL PROVIDED = 9 SPACES		

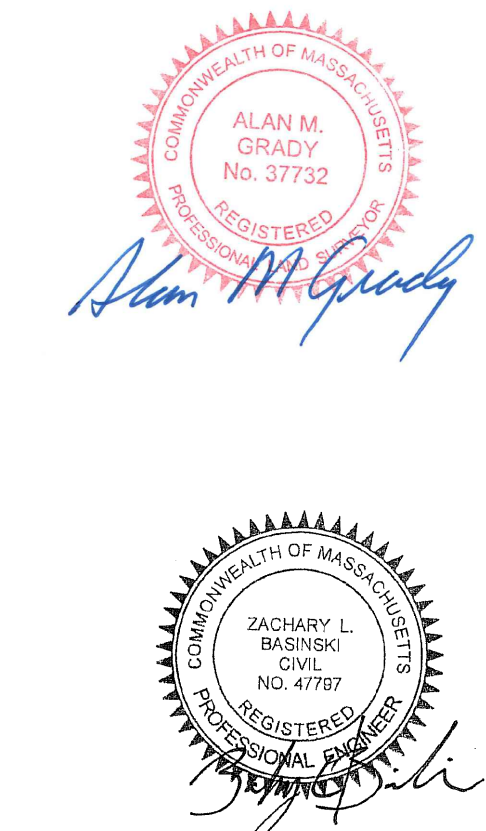
ADA PARKING SUMMARY
per §821 CMR 23.2.1

REQUIRED:
TOTAL PARKING SPACES = 9
MIN. ACCESSIBLE SPACES REQUIRED = 1 (MIN. of 1 VAN ACCESSIBLE)

PROVIDED:
(1) VAN ACCESSIBLE SPACE



- PROJECT NOTES**
- LOCUS: #474 MAIN STREET PARCEL 27-001-000A & #31 ASHUMET ROAD PARCEL 27-001-000B
 - OWNER: JOAO L. JUNQUEIRA, 53 MERCANTILE WAY, UNIT 6 MASHPEE, MA 02649
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Prepared By:

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Sheet Title:

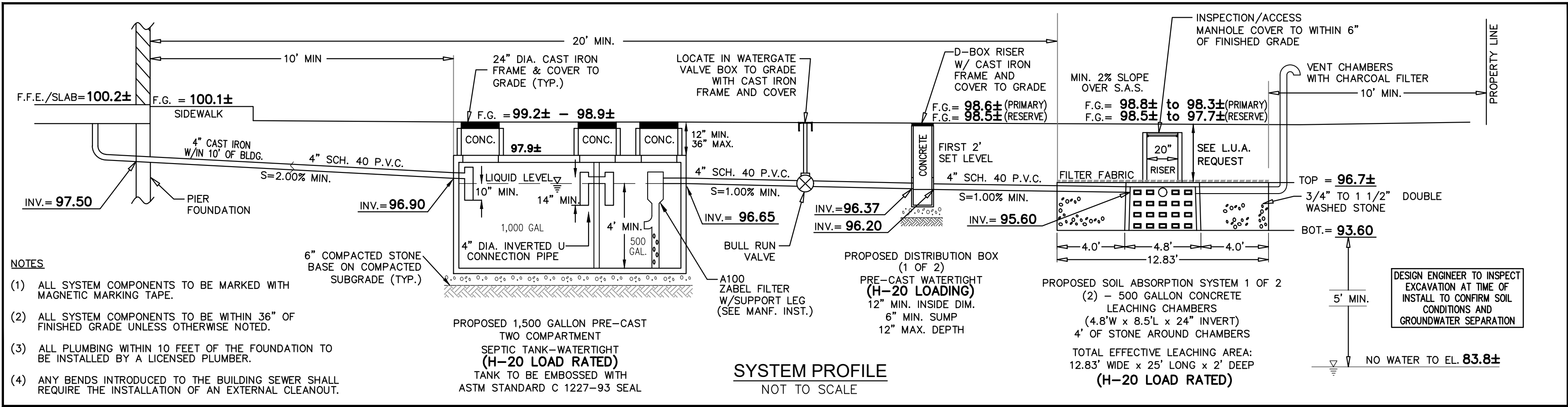
LAYOUT, ZONING
& LANDSCAPING

Project:

PROPOSED SITE DEVELOPEMENT
IN MASPHEE, MASSACHUSETTS
Prepared For:
JOAO JUNQUEIRA
#474 MAIN STREET
PARCEL 27-001-000A
&
31 ASHUMET ROAD
PARCEL 27-001-000B

No.	Date	Revision	Description	By

Date: FEBRUARY 19, 2024
Drawn: RED/BE
Checked: ZLB/AMG
Sheet: 4 of 7



- ON-SITE SEWAGE DISPOSAL NOTES:**
- BENCHMARK: ELEVATION = 101.96 (NAVD88) MAG NAIL IN PAVEMENT
 - ALL CONSTRUCTION METHODS AND MATERIALS TO CONFORM TO TITLE 5 AND THE TOWN OF MASHPEE BOARD OF HEALTH REGULATIONS.
 - ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
 - NO FIELD MODIFICATION TO THE SYSTEM SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE DESIGN ENGINEER AND BOARD OF HEALTH.
 - ALL JOINTS AND COVERS TO BE WATERTIGHT.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES.
 - A CERTIFICATE OF COMPLIANCE MUST BE OBTAINED PRIOR TO BACKFILLING SYSTEM.
 - THE DESIGN IS INTENDED TO MEET TITLE 5 AND OTHER APPLICABLE REQUIREMENTS. THIS PLAN DOES NOT GUARANTEE THAT THE SYSTEM WILL BE INSTALLED AS DESIGNED, NOR DOES THIS PLAN GUARANTEE THE OPERATION OF THE SYSTEM.
 - THIS SYSTEM IS NOT DESIGNED NOR INTENDED FOR USE WITH A GARBAGE GRINDER.
 - THE SYSTEM OWNER SHALL BE RESPONSIBLE TO PUMP THE SEPTIC TANK AT LEAST ONCE EVERY THREE YEARS.
 - LOCUS DOES FALL WITHIN A ZONE II WELLHEAD PROTECTION AREA AND THE MASHPEE GROUND WATER PROTECTION DISTRICT.
 - CONTRACTOR SHALL FULLY CONSTRUCT BOTH THE PRIMARY AND RESERVE SOIL ABSORPTION SYSTEMS.
 - ALL SEPTIC COMPONENTS TO BE H-20 LOAD RATED UNLESS OTHERWISE STATED.
 - CONTRACTOR TO GIVE 24 HOUR NOTICE TO DESIGN ENGINEER FOR ALL SURVEY AND/OR INSPECTIONS.
 - EXCAVATION NOTE:
THIS SYSTEM WILL REQUIRE THE EXCAVATION OF ALL UNSUITABLE SOIL WITHIN 5' OF THE SOIL ABSORPTION SYSTEM. SOIL SHALL BE EXCAVATED TO THE EXISTING "C" SAND HORIZON. THE EXCAVATION SHALL BE INSPECTED BY THE DESIGN ENGINEER AND MASHPEE HEALTH DEPARTMENT PRIOR TO BACKFILLING. SOIL IS TO BE REPLACED WITH SAND CONFORMING TO 310 CMR SECTION 15.255, CONSTRUCTION IN FILL. CONTRACTOR IS RESPONSIBLE TO PROVIDE ENGINEER WITH SAND SAMPLE FOR SIEVE ANALYSIS UPON REQUEST.
 - SOIL CONDITIONS ENCOUNTERED DURING EXCAVATION MAY DIFFER FROM THE PREVIOUSLY OBSERVED CONDITIONS AT THE TEST PITS. ADDITIONAL REMOVAL AND REPLACEMENT OF SOIL MAY BE REQUIRED. IF UNDESIRABLE CONDITIONS ARE ENCOUNTERED, THE DESIGN ENGINEER SHALL BE CONSULTED.

- DRAINAGE & GRADING NOTES:**
- ALL BURIED DRAINAGE COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
 - LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OF MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-800-322-4844.
 - FINAL PLANT SELECTION FOR RAIN GARDENS TO BE COORDINATED.
 - NO SLOPE SHALL BE CUT GREATER THAN 3:1 NOR FILLED GREATER THAN 4:1.
 - RAIN GARDEN SIDE SLOPES SHALL BE ESTABLISHED AT 3:1.
 - FINAL UTILITY LOCATIONS & CONNECTIONS TO BE COORDINATED BY CONTRACTOR WITH APPROPRIATE MUNICIPAL AND UTILITY AGENCIES.

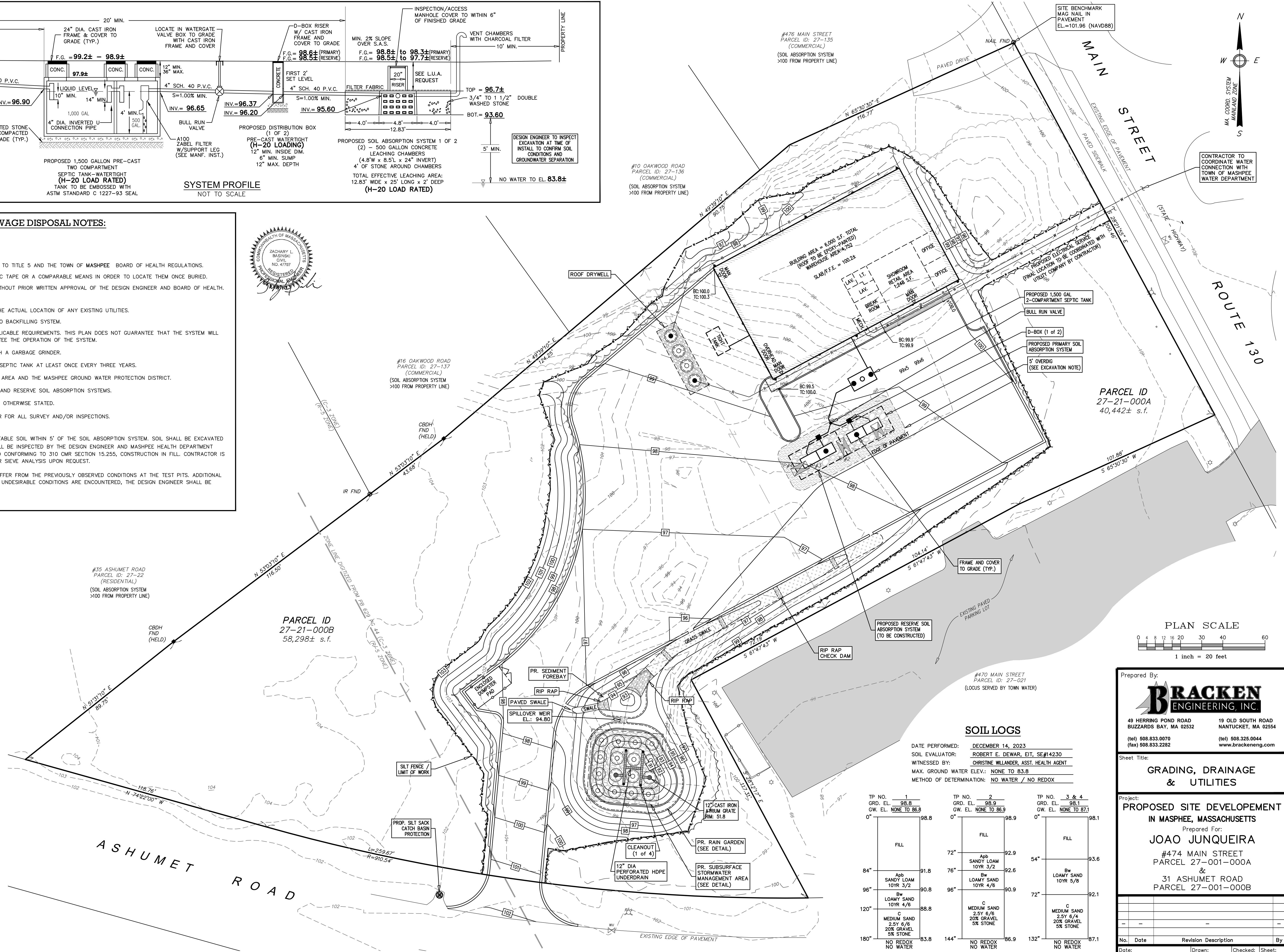
SEPTIC DESIGN CALCULATIONS

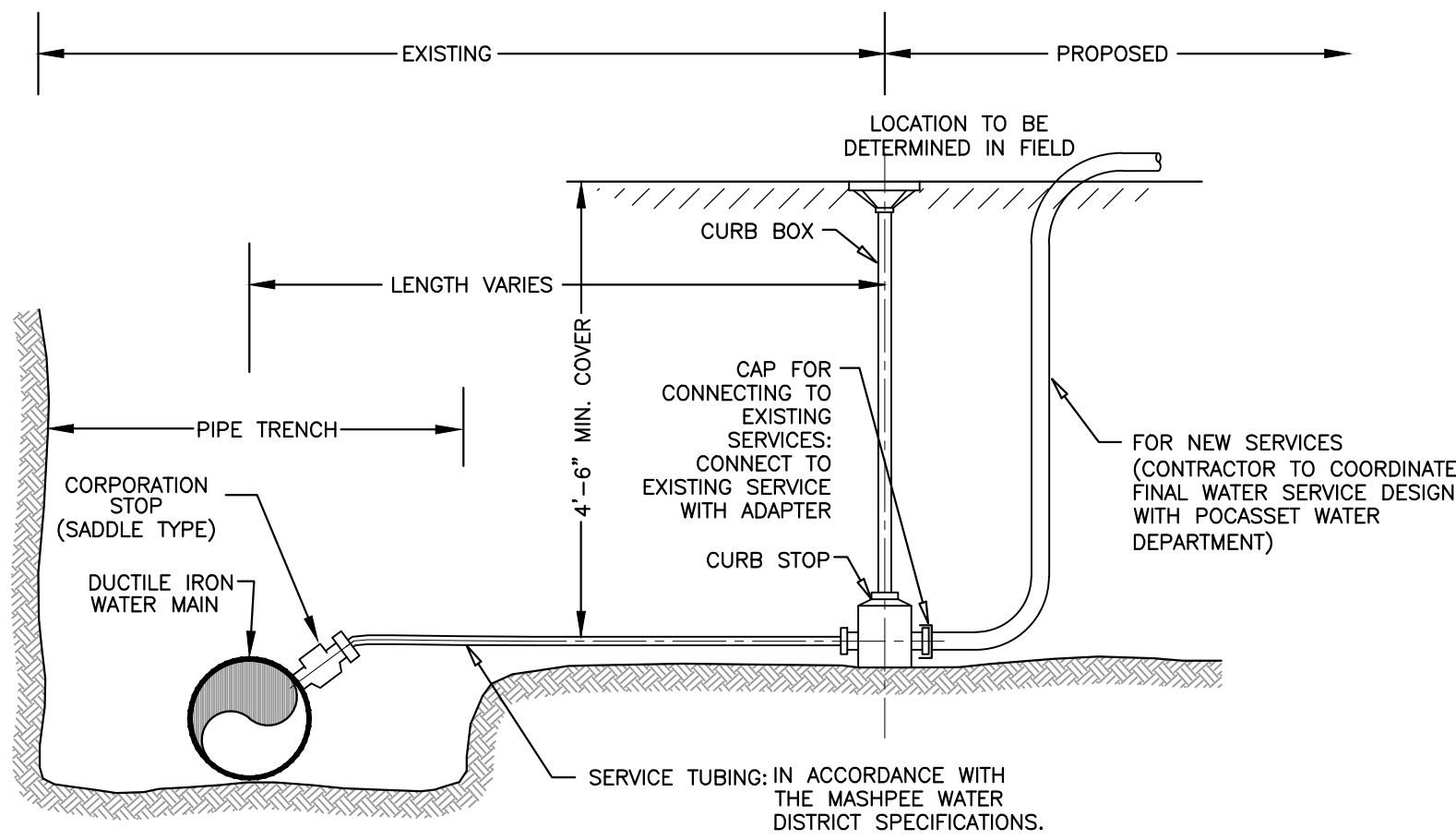
SOIL TEXTURAL CLASS: CLASS I
PERC. RATE: < 2 MINUTES/INCH
DESIGN FLOW REQUIRED:
10 EMPLOYEES @ 15 GPD PER EMPLOYEE (WAREHOUSE) = 150 GPD
1,248 S.F. RETAIL SPACE @ 50 GPD PER 1,000 S.F. = 62.4 GPD
150 GPD + 62.4 GPD = 212.4 GPD -> 213 GPD

SEPTIC TANK REQUIRED:
(2) COMPARTMENT TANK: 1st COMPARTMENT = 426 GAL. (MIN.)
2nd COMPARTMENT = 213 GAL. (MIN.)
SEPTIC TANK PROVIDED: 1500 GALLONS (2 COMPARTMENT) (1,000/500)

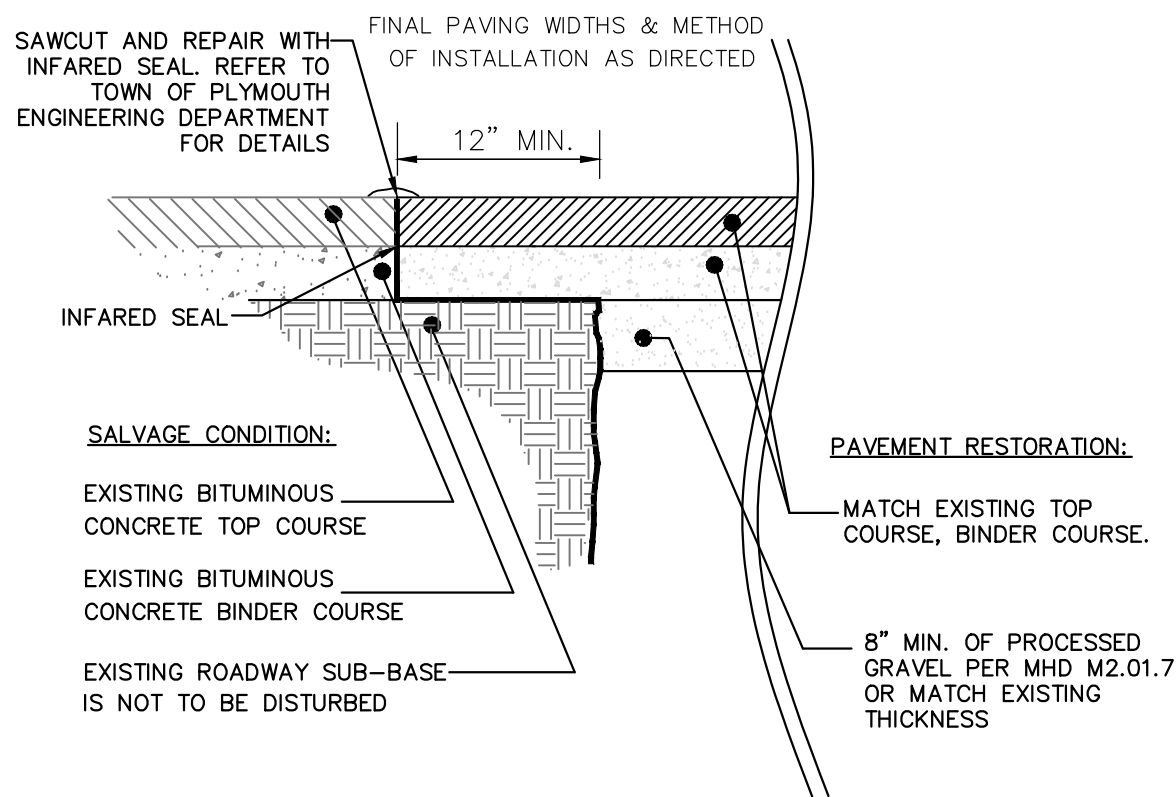
LEACHING SYSTEMS:
(2) 500 GALLON CONCRETE LEACHING CHAMBERS IN A (12.83') WIDE x (25') LONG x (2') DEEP STONE BED

EFFECTIVE LEACHING:
12.83' WIDE x 25' LONG x 2' DEEP
BOTTOM AREA = 320 S.F.
SIDEWALL AREA = 151 S.F. TOTAL = 471 S.F.
LOADING RATE = 0.74 GPD/SF
FLOW PROVIDED: 348 GPD > 213 GPD
MAXIMUM FLOW ALLOWED IN ZONE II = 440 GPD/40,000 S.F.

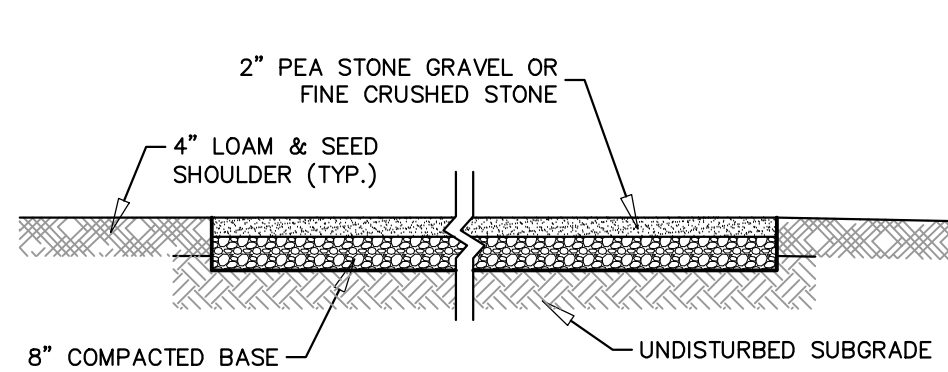




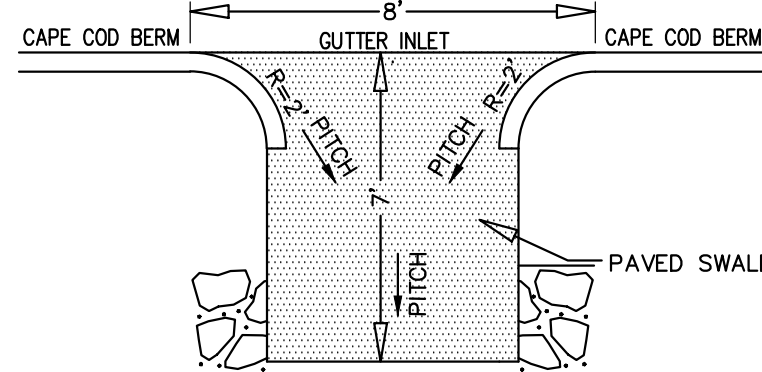
TYPICAL WATER SERVICE CONNECTION
NOT TO SCALE



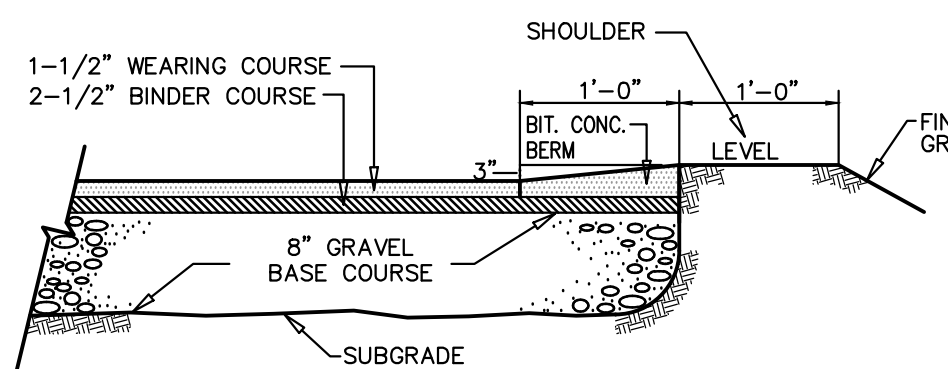
PAVEMENT SAW CUT & INFARED SEAL DETAIL
NOT TO SCALE



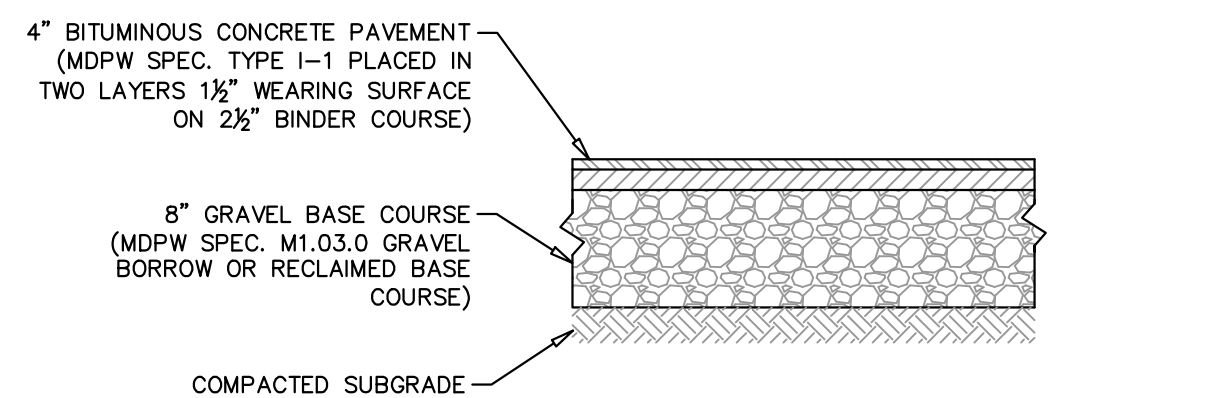
GRAVEL SECTION



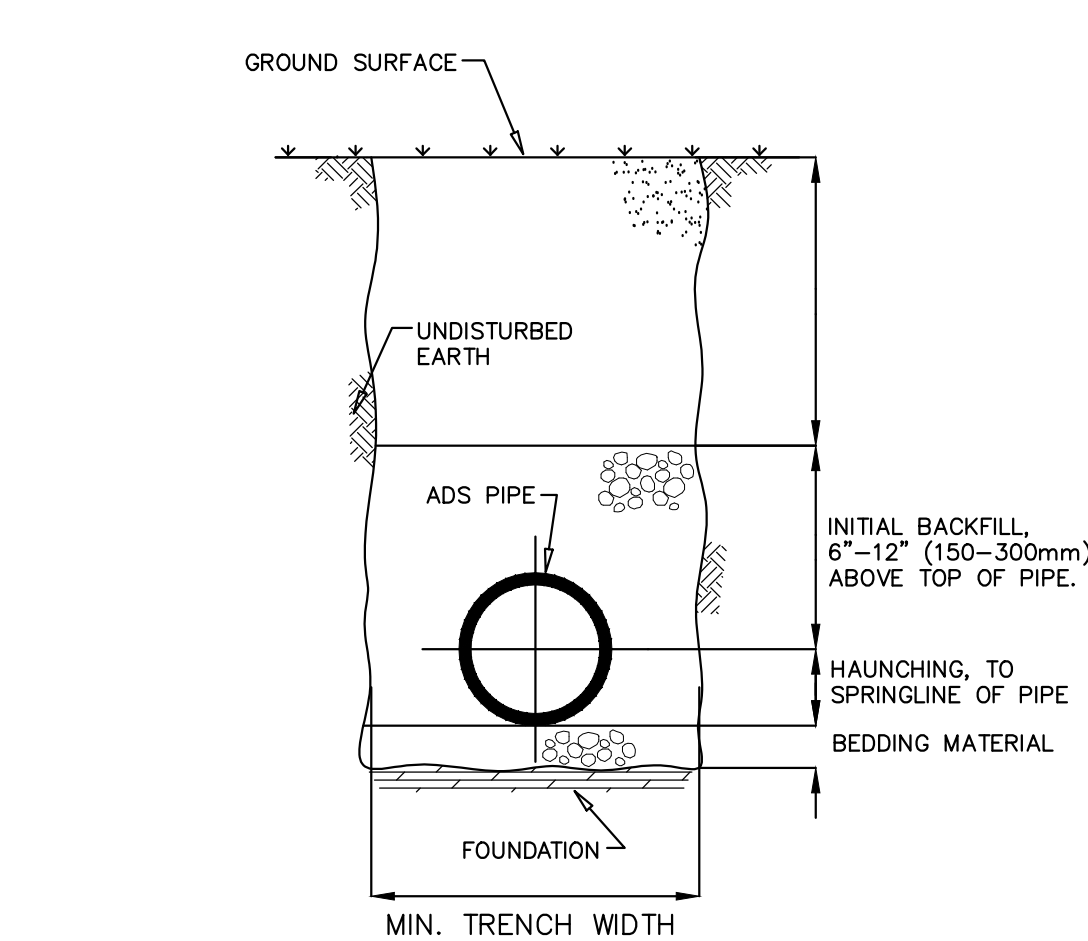
PAVED SWALE DETAIL
NOT TO SCALE



CAPE COD BERM
NOT TO SCALE



PARKING AREA PAVEMENT SECTION
NOT TO SCALE



NOTES:

1. **FOUNDATION:** WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321. "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
2. **BEDDING, HAUNCHING & INITIAL BACKFILL:** SUITABLE MATERIAL SHALL CONSIST OF CLEAN, HARD, PARTICLES OF GRAVEL MEETING THE FOLLOWING:

SIEVE SIZES	PASSING %
No. 4	85-95%
No. 8	5-15%
No. 16	0-2%

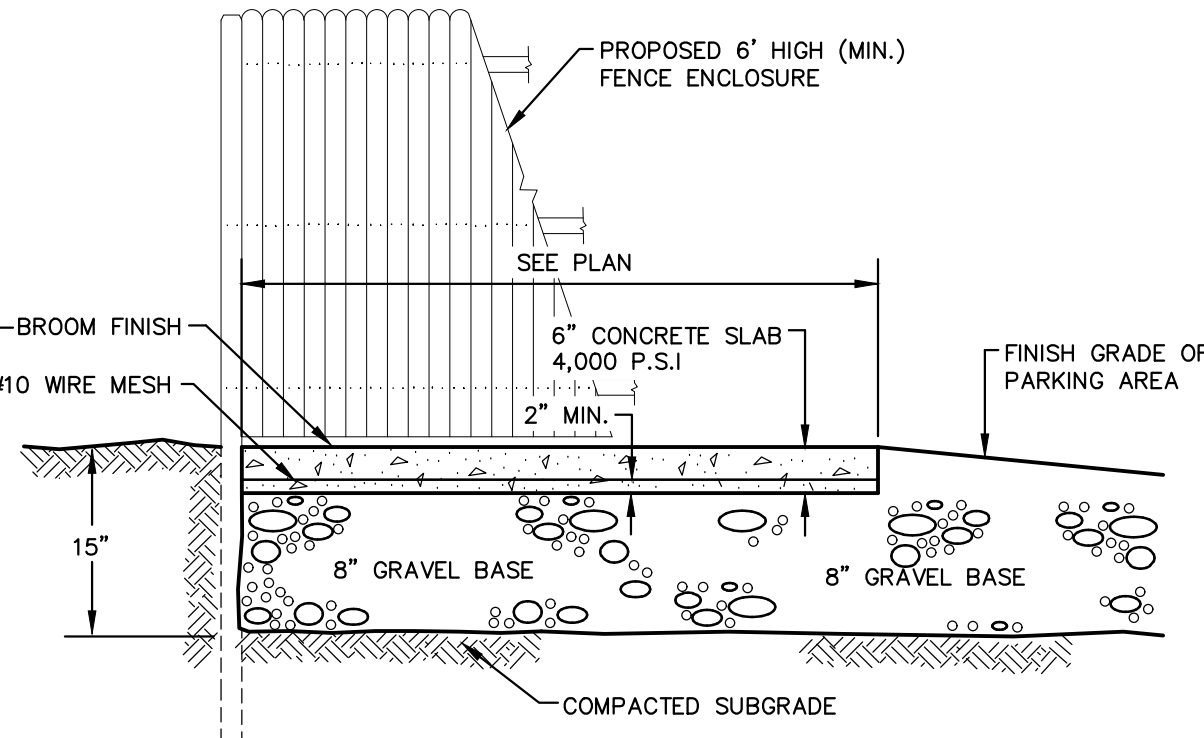
 MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
3. **MINIMUM BEDDING THICKNESS** SHALL BE 4" (100MM) FOR 4"-24" (100-600MM) AND 42"-48" (1050-1200MM) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150MM) FOR 30"-36" (750-900MM) CPEP.
4. **MINIMUM TRENCH WIDTHS** SHALL BE AS FOLLOWS:

NOMINAL Ø in (mm)	MIN. RECOMMENDED TRENCH WIDTH, in (mm)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)
5. **MINIMUM COVER:** MINIMUM RECOMMENDED DEPTHS OF COVER FOR VARIOUS LIVE LOADING CONDITIONS ARE SUMMARIZED IN THE FOLLOWING TABLE. UNLESS OTHERWISE NOTED, ALL DIMENSIONS ARE TAKEN FROM THE TOP OF PIPE TO THE GROUND SURFACE.

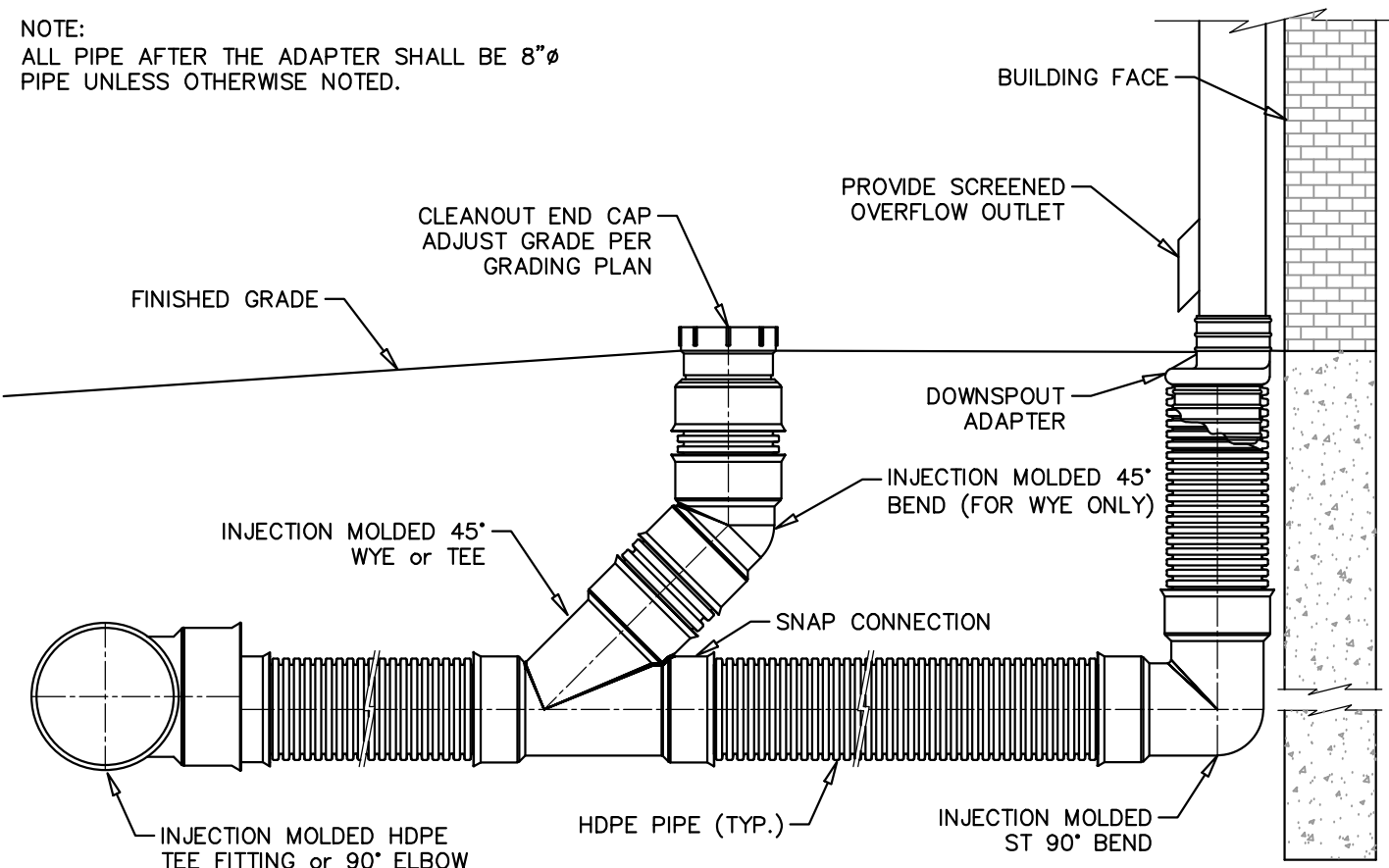
SURFACE LIVE LOADING CONDITION	MINIMUM RECOMMENDED COVER, in (mm)
H25 (FLEXIBLE PAVEMENT)	12 (300)
H25 (RIGID PAVEMENT)	12 (300)
E80 RAILWAY	24 (610)
HEAVY CONSTRUCTION	48 (1220)

 *TOP OF PIPE TO BOTTOM OF BITUMINOUS PAVEMENT SECTION

TRENCH CROSS-SECTION & A.D.S. PIPE INSTALLATION DETAIL
NOT TO SCALE



CONCRETE PAD and FENCE FOR TRASH CONTAINER
NOT TO SCALE



TYPICAL ROOF DRAIN DETAIL
NOT TO SCALE

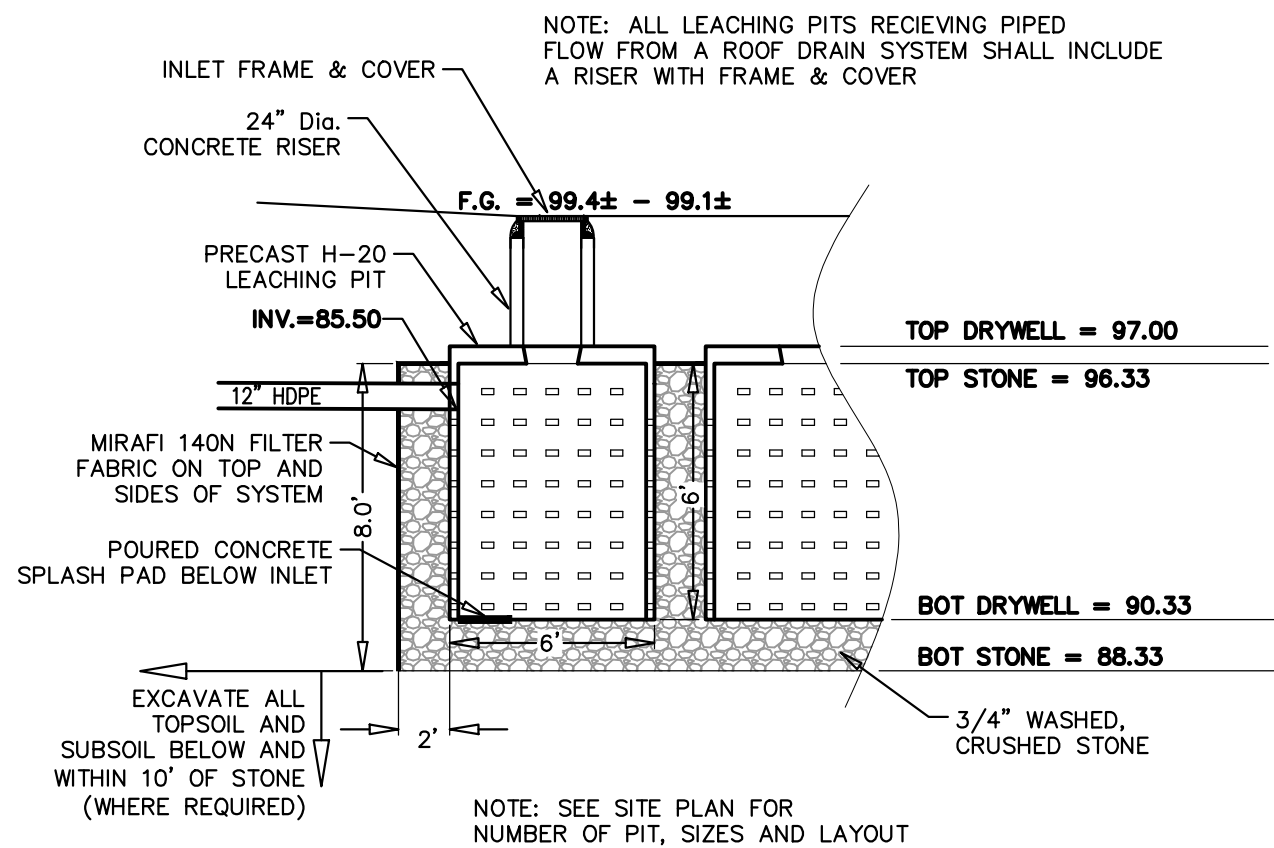
SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22 1/2° BENDS	11 1/4° BENDS
3"-4"	5	4	2	2
6"-12"	12	9	5	2

NOTES:

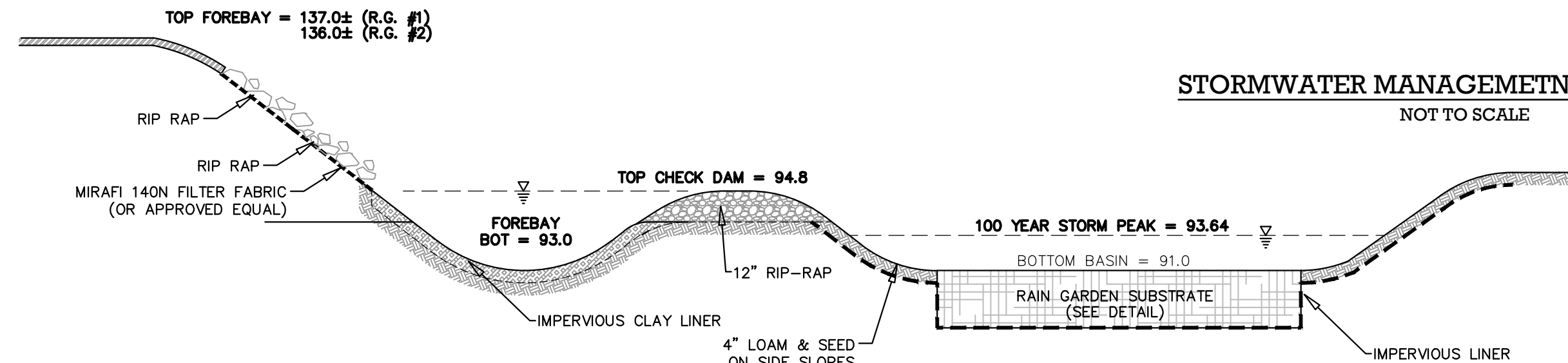
1. ALL FORCE MAIN FITTINGS SHALL HAVE CONCRETE BACKING FOR THRUST RESTRAINT UNLESS OTHERWISE SPECIFIED.
2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS.
3. VOLUME AND ACTUAL PLACEMENT DETERMINED BY CHART.
4. PLACE ALL CONCRETE ON UNDISTURBED SOIL OR ROCK.
5. ENGINEER MAY REQUIRE THRUST RODS TO BE USED INSTEAD OF CONCRETE ANCHORS, AT NO ADDITIONAL COST DUE TO FIELD CONDITIONS.
6. REINFORCING (TIE) RODS TO BE #8 BARS. COAT EXPOSED BAR WITH ASPHALT.
7. RESTRAINED JOINT RETAINER GLANDS SHALL BE USED WHERE DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

CONCRETE THRUST RESTRAINT FOR FITTINGS

NOT TO SCALE

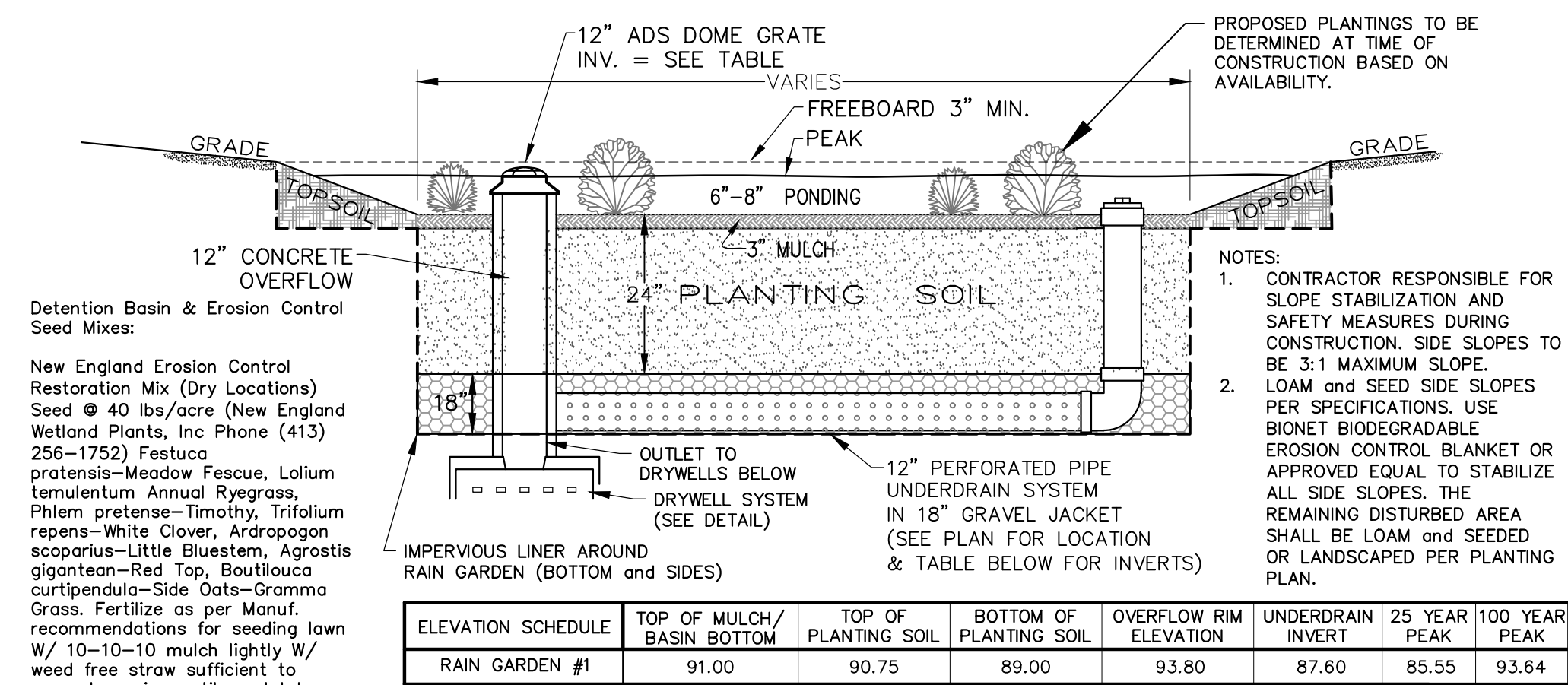


STORMWATER MANAGEMENT AREA DETAIL
NOT TO SCALE



- NOTES:**
1. CONTRACTOR RESPONSIBLE FOR SLOPE STABILIZATION AND SAFETY MEASURES DURING CONSTRUCTION. SIDE SLOPES TO BE 3:1 MAXIMUM SLOPE.
 2. LOAM AND SEED SIDE SLOPES PER SPECIFICATIONS. USE BIONET BIODEGRADABLE EROSION CONTROL BLANKET OR APPROVED EQUAL TO STABILIZE ALL SIDE SLOPES. THE REMAINING DISTURBED AREA SHALL BE LOAM AND SEEDED OR LANDSCAPED PER PLANTING PLAN.

TYPICAL FOREBAY TO RAIN GARDEN DETAIL
NOT TO SCALE



USE ENGINEERED SOIL MIX FOR BIOTENTION/RAIN GARDEN SYSTEMS

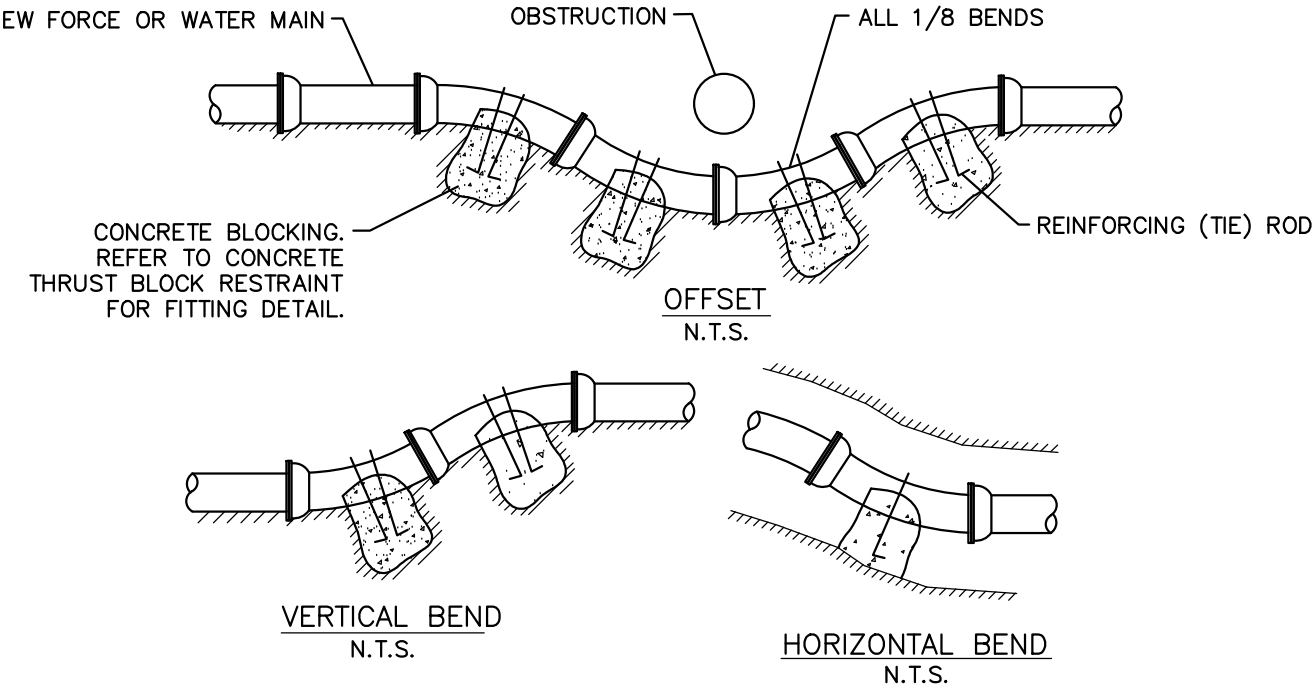
- THE SOIL MIX SHOULD BE A MIXTURE OF SAND, COMPOST AND SOIL. (40% SAND; 20-30% TOPSOIL; 30-40% COMPOST)
- THE SOIL MIX MUST BE UNIFORM, FREE OF STONES, STUMPS, ROOTS OR SIMILAR OBJECTS LARGER THAN 2 INCHES. CLAY CONTENT SHOULD NOT EXCEED 5%.
- SOIL pH SHOULD GENERALLY BE BETWEEN 5.5-6.5.

- USE SOILS WITH 1.5% TO 3% ORGANIC CONTENT AND MAXIMUM 500 ppm SOLUBLE SALTS.
- THE SAND COMPONENT SHOULD BE GRAVELLY SAND THAT MEETS ASTM D422.
- THE TOPSOIL COMPONENT SHALL BE A LOAMY SAND TEXTURE.
- THE COMPOST COMPONENT MUST BE PROCESSED FROM YARD WASTE

IN ACCORDANCE WITH MassDEP GUIDELINES (SEE [HTTP://WWW.MASS.GOV/DEP/RECYCLE/REDUCE/LEAFGUID.DOC](http://www.mass.gov/dep/recycle/reduce/leafguid.doc)), THE COMPOST MUST NOT CONTAIN BIOSOLIDS.

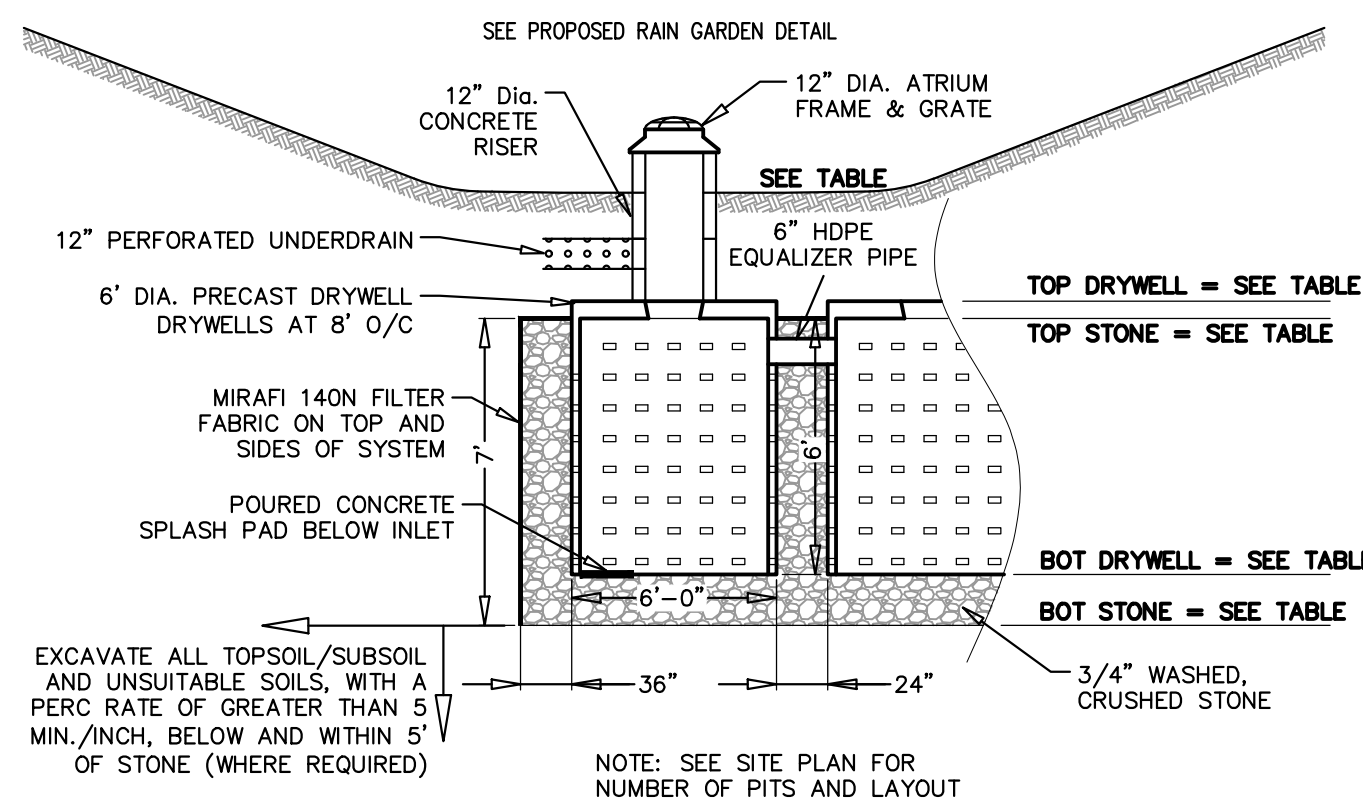
- ON-SITE SOIL MIXING OR PLACEMENT IS NOT ALLOWED IF SOIL IS SATURATED OR SUBJECT TO WATER WITHIN 48 HOURS COVER AND STORE SOIL TO PREVENT WETTING OR SATURATION.
- PLACE PLANTING SOLS IN 6" LIFTS AND COMPACT WITH MINIMAL PRESSURE UNTIL THE DESIRED ELEVATION IS REACHED.

ELEVATION SCHEDULE	TOP OF MULCH/ BASIN BOTTOM	TOP OF PLANTING SOIL	BOTTOM OF PLANTING SOIL	OVERFLOW RIM ELEVATION	UNDERDRAIN INVERT	25 YEAR PEAK	100 YEAR PEAK
RAIN GARDEN #1	91.00	90.75	89.00	93.80	87.60	85.55	93.64



ANCHORAGE DETAILS

NOT TO SCALE



ELEVATION SCHEDULE	INLET RIM ELEVATION	TOP OF DRYWELL	TOP OF STONE	INVERT IN	BOTTOM OF DRYWELL	BOTTOM OF STONE
SWMA #1	93.80	87.00	86.33	87.60	81.00	79.00

STORMWATER MANAGEMENT AREA DETAIL
NOT TO SCALE



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Sheet Title:

CONSTRUCTION DETAILS

Project:

**PROPOSED SITE DEVELOPEMENT
IN MASHPPEE, MASSACHUSETTS**

Prepared For:

JOAO JUNQUEIRA
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No.	Date	Revision	Description	By
1	FEBRUARY 19, 2024			
2				
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Date: FEBRUARY 19, 2024 Drawn: RED/BEI Checked: ZLB/AMG Sheet: 6 of 7

ISSUED FOR PERMIT

