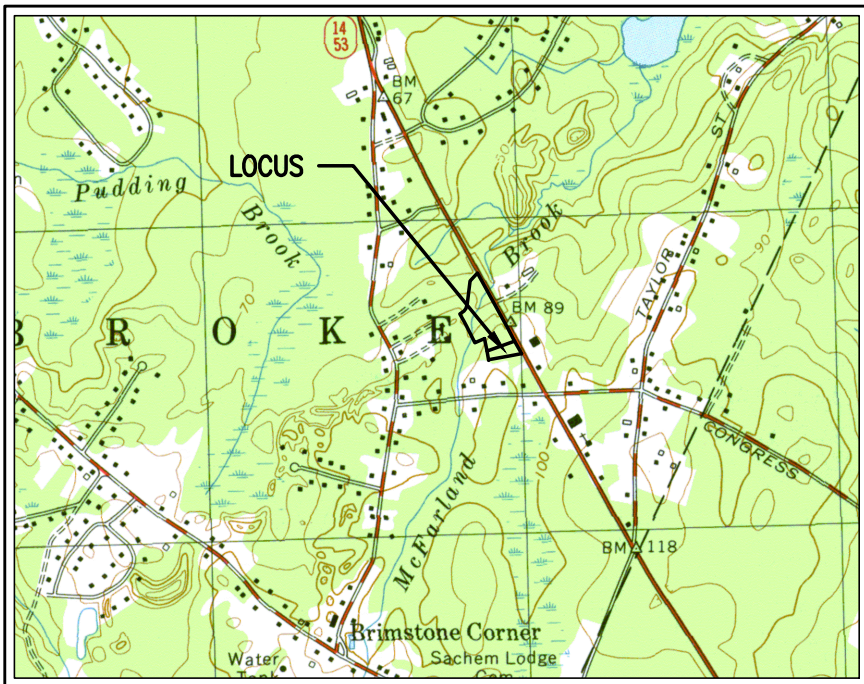




I HEREBY CERTIFY THAT AND INSTRUMENT BOUNDARY SURVEY HAS BEEN CONDUCTED ON THIS PROPERTY AND I CERTIFY THAT THE LOCATIONS OF THE BUILDING, SETBACKS AND ALL OTHER DIMENSIONS, ELEVATIONS AND MEASUREMENTS ARE ACCURATE.

TIMOTHY BENNETT, P.L.S.

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

TIMOTHY BENNETT, P.L.S.

RECORD OWNER:
ASSESSOR MAP F9 LOT 24
DANIEL P. & SUSAN M SPURLING, TRUSTEES OF ROSE REALTY TRUST
DEED BOOK 48500 PAGE 216

PLAN REFERENCES
1. PLAN No. 282 OF 1956
2. PLAN No. 561 OF 1973
3. PLAN No. 663 OF 1973
4. PLAN No. 226 OF 1994
5. PLAN No. 308 OF 1995
6. MASSACHUSETTS STATE HIGHWAY LAYOUT No. 2771

ZONE:	RESIDENTIAL-COMMERCIAL			
EXISTING USE:	COMMERCIAL BUILDING			
PROPOSED USE:	ALLOWED USE PER ZBL SECTION IV 2.A.4 - LIGHT INDUSTRY, INCLUDING FABRICATION, ASSEMBLY, FINISHING, PACKAGING OR RESEARCH, TO INCLUDE THE MANUFACTURE, ASSEMBLY, AND PACKAGING OF MERCHANDISE.			
PARCEL SIZE:	225,565± SF (133,330 CONTIGUOUS UPLAND)			
DIMENSIONAL REQUIREMENTS:				
LOT AREA (RECORD 185,565 S.F.)	REQUIRED 120,000 S.F.	EXISTING 182,484 SF	PROPOSED 182,484 S.F.	
LOT AREA EXCLUSIVE OF WETLANDS	120,000 S.F.	102,291 S.F.	102,2910 S.F.	
LOT PERIMETER RATIO (182484/1,859)	55:1	98:1	98:1	
LOT FRONTAGE	250 FT	658.04 FT	658.04 FT	
(BUILDING, STRUCTURES, PAVED AREAS)				
FRONT SETBACK	100 FT	N/A FT	50.0 FT*	
SIDE SETBACK	40 FT	N/A FT	42.6 FT	
REAR SETBACK	50 FT	N/A FT	60.7 FT	
MAX HEIGHT	2.5 STORIES	N/A	1 STORIES	
MAX BUILDING FLOOR AREA (%)	35%	N/A	2.74%	
COVERAGE (%)	60%	N/A	24.0%	
LANDSCAPING	40%	N/A	76.0%	
FRONT 40% OF ANY YARD SHALL BE LANDSCAPED OR LEFT IN A NATURAL STARE (50% ABUTTING RESIDENTIAL USE)				
FRONT 100 X.4	40 FT		50.3 FT	
SIDE 40 X.4 (ABUT RESIDENTIAL)	16 FT		20.8 FT	
SIDE 40 X.5 (ABUT RESIDENTIAL)	40 FT		20.8 FT	
REAR 50 X.4 (ABUT RESIDENTIAL)	20 FT		38.6 FT	
PARKING	V.4.A.1.G. FOR WHOLESALE, STORAGE OR INDUSTRIAL ESTABLISHMENTS, ONE PARKING SPACE FOR EVERY THREE PERSONS EMPLOYED AT ANY ONE PEAK PERIOD. 9 EMPLOYEES			
V.4.A.1.E. FOR OFFICE BUILDINGS, ONE PARKING SPACE FOR EVERY SIX HUNDRED SQUARE FEET OF RENTABLE SPACE				
(COMMERCIAL) 1SP/3 EMPLOYEES x 9 EMPLOYEES	REQUIRED 3 SPACES	PROPOSED 7 SPACES		
OFFICE 1SP/600 SF * (5000 SF PROPOSED)	9 SPACES	10 SPACES		
TOTAL	11 SPACES	21 SPACES		

FOR REGISTRY USE ONLY



ZONING VARIANCE REQUEST
1. SECTION IV.2.D.4 (FRONT YARDS) - BUILDINGS, STRUCTURES AND PAVED AREAS OTHER THAN ACCESS WAYS SHALL BE LOCATED 100 FT FROM THE FRONT LOT LINE. PARKING PROPOSED 50 FT AND BUILDING PROPOSED 50 FT FROM FRONT LOT LINE.
2. SECTION IV.2.D.5 (SIDE YARDS) - BUILDINGS, STRUCTURES AND PAVED AREAS OTHER THAN ACCESS WAYS SHALL BE LOCATED 40 FT FROM THE FRONT LOT LINE. PARKING AND RETAINING WALL PROPOSED 10 FT FROM SIDE YARD LINE.

SITE PLAN APPROVAL REQUEST
SECTION V.7.B - NO STRUCTURE SHALL HEREFTER BE CONSTRUCTED, ERECTED, RELOCATED, OR EXTERNALLY ENLARGED AND NO USE SHALL BE ESTABLISHED, ADDED, CHANGED, OR EXPANDED IN ANY DISTRICT EXCEPT IN CONFORMANCE WITH A SITE PLAN REVIEW, AND CONDITIONS THEREON, APPROVED BY THE PLANNING BOARD.

WAIVER REQUEST
SECTION VI 4.15 DEVELOPMENT IMPACT STATEMENT - PREPARED FOR COMMERCIAL PROJECTS OF 5,000 S.F. OR MORE.
SECTION IV 4.22 TRAFFIC IMPACT STUDY - PREPARED BY REGISTERED PROFESSIONAL TRAFFIC ENGINEER
SECTION V 5.4 PARKING AND LOADING - VERTICAL GRANITE CURBING AT ACCESS DRIVE RADI
SECTION V.5.7.1 ACCESS CONNECTIONS - WAIVER FOR CURBING AT THE EDGE OF ALL PAVED SURFACES
SECTION V.5.1.6 50 FT BUFFER TO RESIDENTIAL PROPERTIES - ACCESS CONNECTION SPACING TABLE (FROM 350' TO 222').
50 FT LANDSCAPE BUFFER TO BE PROVIDED TO ALL RESIDENTIAL ABUTTING PROPERTIES (ZBL REQUIRES 40 FT)

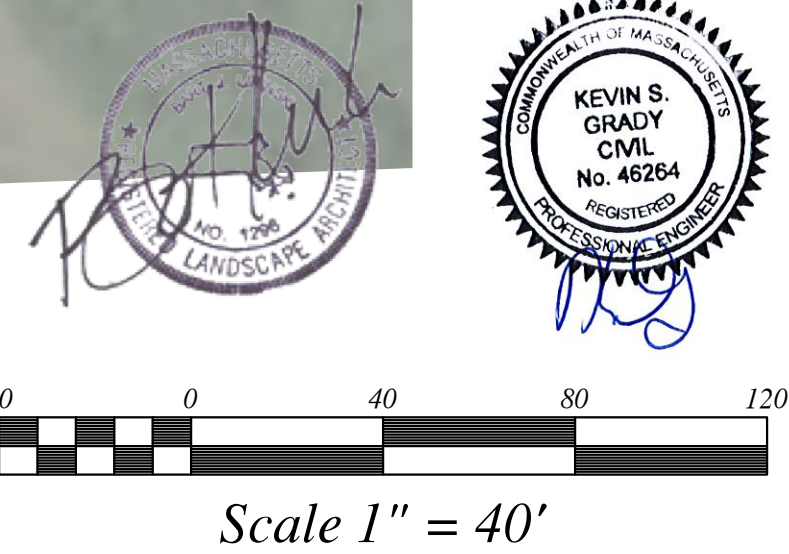
PEMBROKE PLANNING BOARD
THIS SITE PLAN DOES NOT NECESSARILY INDICATE COMPLIANCE WITH THE PEMBROKE ZONING BYLAW
DATE APPROVED: _____

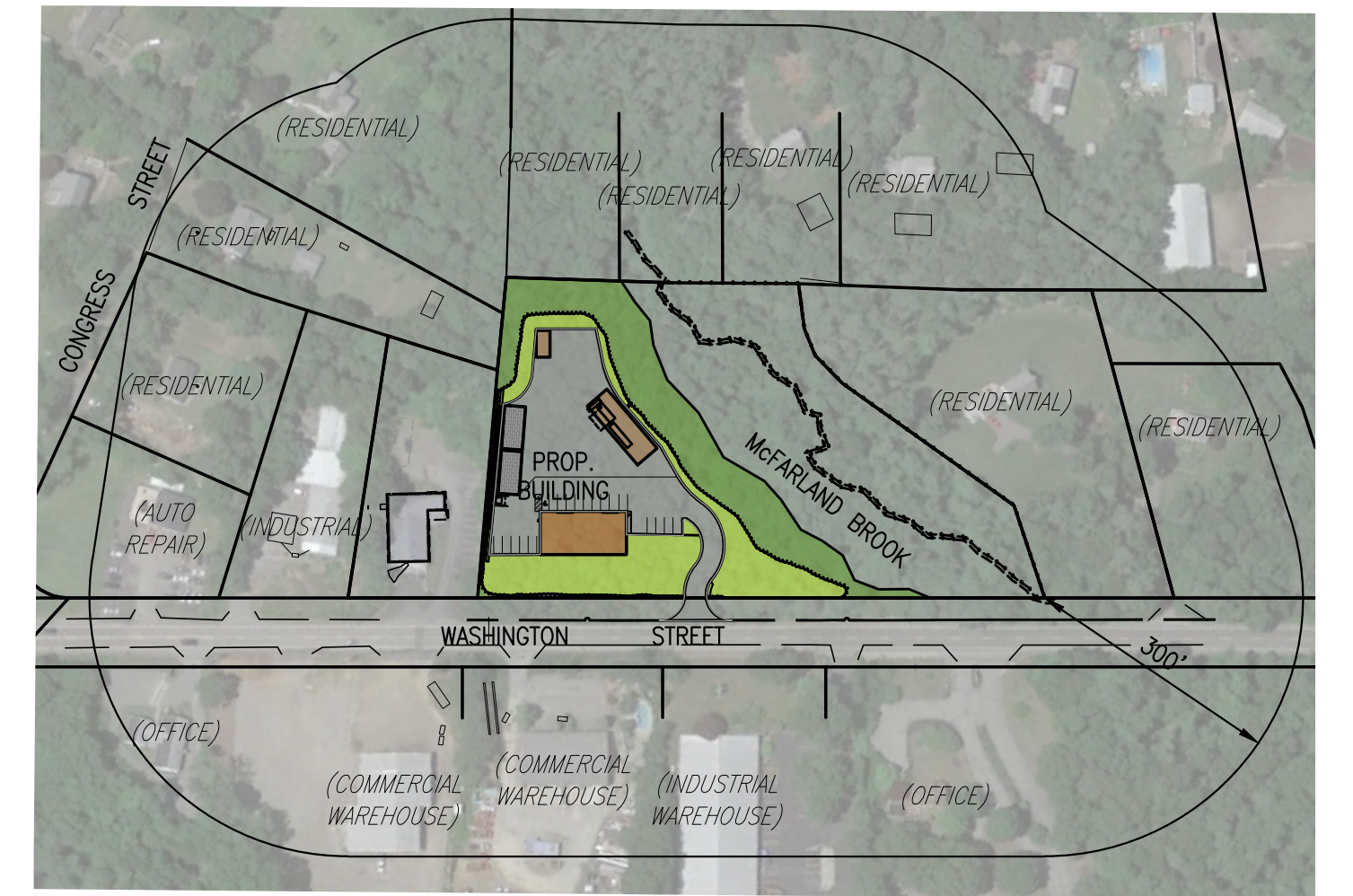
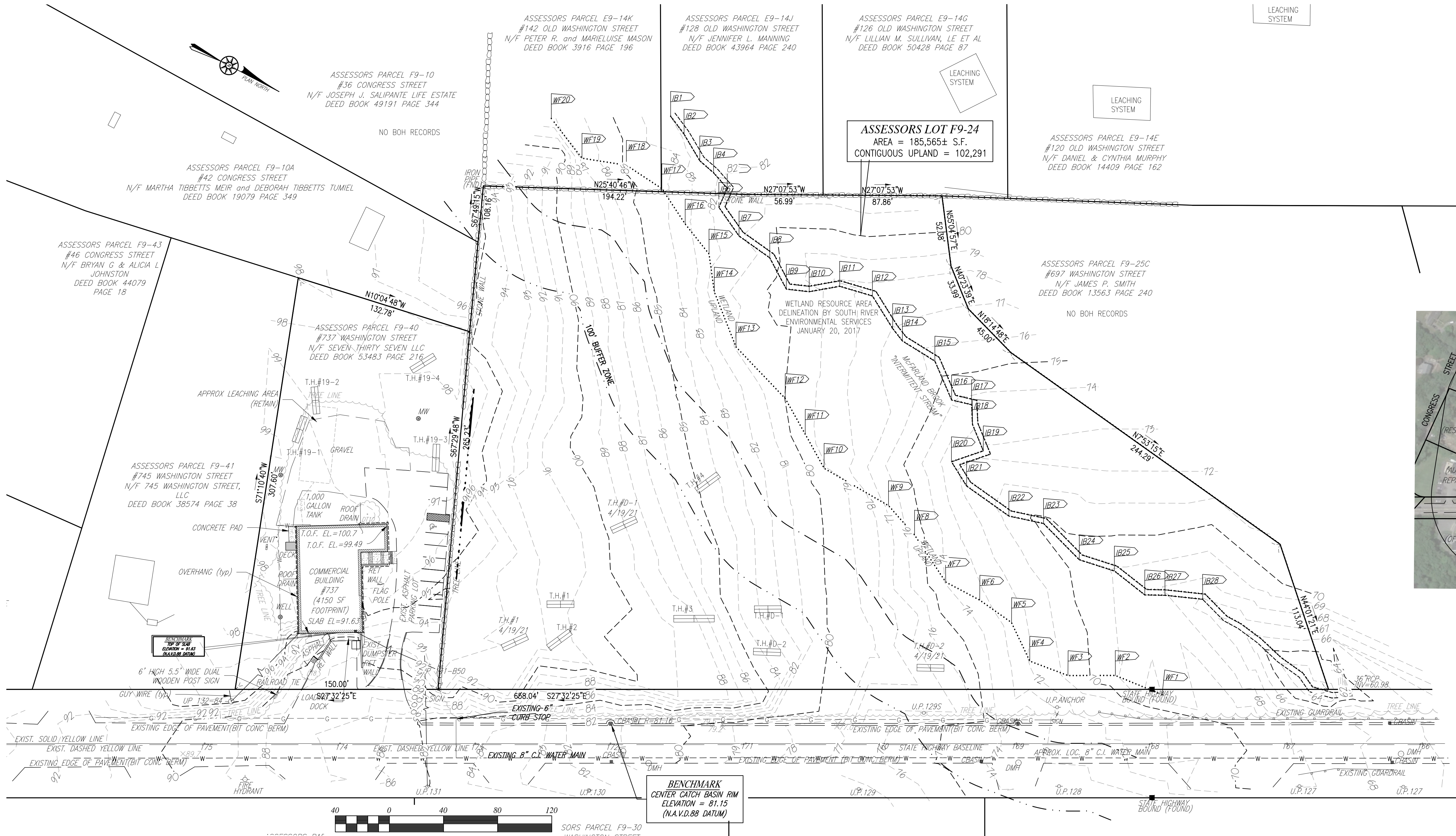
DATE SIGNED: _____

PEMBROKE TOWN CLERK
I, TOWN CLERK OF THE TOWN OF PEMBROKE, MA HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE PLANNING BOARD HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO APPEAL WAS RECEIVED DURING THE NEXT TWENTY DAYS AFTER RECEIPT AND RECORDING OF SAID NOTICE.
DATE: _____
TOWN CLERK, TOWN OF PEMBROKE: _____

SHEET INDEX		REVISIONS	
SHEET 1	ZONING	2021-05-28	PLANNING BOARD AND PEER REVIEW COMMENTS
SHEET 2	EXISTING CONDITIONS		
SHEET 3	GRADING		
SHEET 4	SEPTIC		
SHEET 5	UTILITIES & DRAINAGE		
SHEET 6	LANDSCAPE, LIGHTING, & SITE DISTANCE		
SHEET 7	DETAILS		
SHEET 8	DETAILS		
SHEET 9	DETAILS		
SHEET 10	EROSION CONTROL PLAN		
SHEET 11	DETAILS		

SITE PLAN
WILDLAND TIMBER
#715 WASHINGTON STREET
(ASSESSORS MAP F9 LOT 24)
PEMBROKE, MASSACHUSETTS
PREPARED FOR: GEORGE THIBEAULT
599 SUMMER STREET
MARSHFIELD, MA 02050
JANUARY 11, 2021
SCALE: 1"=40'
JOB No. 20-365
GRADY CONSULTING, L.L.C.
Civil Engineers and Land Surveyors
71 Evergreen Street, Suite 1, Kingston, MA 02364
Phone (781) 585-2300 Fax (781) 585-2378





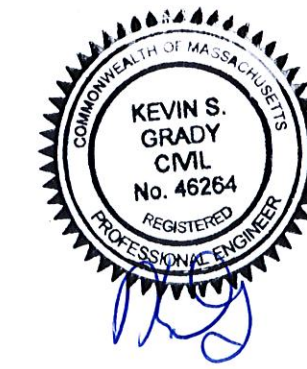
VICINITY MAP WITHIN 300 FT
SCALE: 1"=200'

T.H.#D-1 EL. 83.10	T.H.#D-2 EL. 84.25	T.H.#1 EL. 91.90	T.H.#2 EL. 92.20	T.H.#3 EL. 88.50	T.H.#4 EL. 85.00	T.H.#19-1 EL. 99.10	T.H.#19-2 EL. 98.90	T.H.#19-3 EL. 97.50	T.H.#19-4 EL. 98.20	T.H.#D-1 4/19/21 EL. 89.05	T.H.#D-2 4/19/21 EL. 77.00
0'-8" A LOAM 8'-30" B SANDY LOAM 30'-84" C1 GRAVELLY SANDY LOAM (REMOVE) 84'-120" C2 MEDIUM SAND BOULDERS D=10'-0" NO WATER	0'-8" A LOAM 8'-28" B SANDY LOAM 28'-60" C1 GRAVELLY SANDY LOAM (REMOVE) 60'-108" C2 MEDIUM SAND BOULDERS D=9'-0" NO WATER	0'-6" A LOAM 6'-22" B SANDY LOAM 22'-48" C1 GRAVELLY SAND 48'-96" C2 GRAVELLY SANDY LOAM 96'-152" C3 MEDIUM SAND D=12'-8" NO WATER	0'-6" A LOAM 6'-22" B SANDY LOAM 22'-48" C1 GRAVELLY SAND 48'-96" C2 GRAVELLY SANDY LOAM 96'-180" C3 MEDIUM SAND D=15'-0" NO WATER	0'-6" A LOAM 6'-18" B SANDY LOAM 18'-60" C1 GRAVELLY SAND 60'-90" C2 GRAVELLY SANDY LOAM 108'-108" C3 MEDIUM SAND D=9'-0" NO WATER	0'-8" A LOAM 8'-24" B SANDY LOAM 24'-60" C1 GRAVELLY SAND 60'-90" C2 GRAVELLY SANDY LOAM 108'-108" C3 MEDIUM SAND D=9'-0" NO WATER	0'-32" FILL 32'-36" A LOAM 36'-40" B LOAMY SAND 40'-132" C1 LOAMY SAND D=11'-0" WATER @ 10'-10"	0'-24" FILL 24'-30" A LOAM 30'-84" C1 MED SAND 84'-120" C2 MED SAND D=10'-0" NO WATER	0'-24" FILL 24'-30" A LOAM 30'-40" B LOAMY SAND 40'-72" C LOAMY SAND D=6'-0" NO WATER	0'-6" A LOAM 6'-30" B LOAMY SAND 30'-120" C LOAMY SAND D=10'-0" NO WATER	0'-4" A LOAM 6'-32" B SANDY LOAM (REMOVE) 88'-150" GRAVELLY MEDIUM SAND D=12'-6" NO WATER	0'-6" A LOAM 6'-28" B SANDY LOAM 28'-90" SANDY LOAM (REMOVE) 90'-108" MEDIUM TO COARSE SAND D=9'-0" MOTTLING @ 3'-6" (EL=73.50)

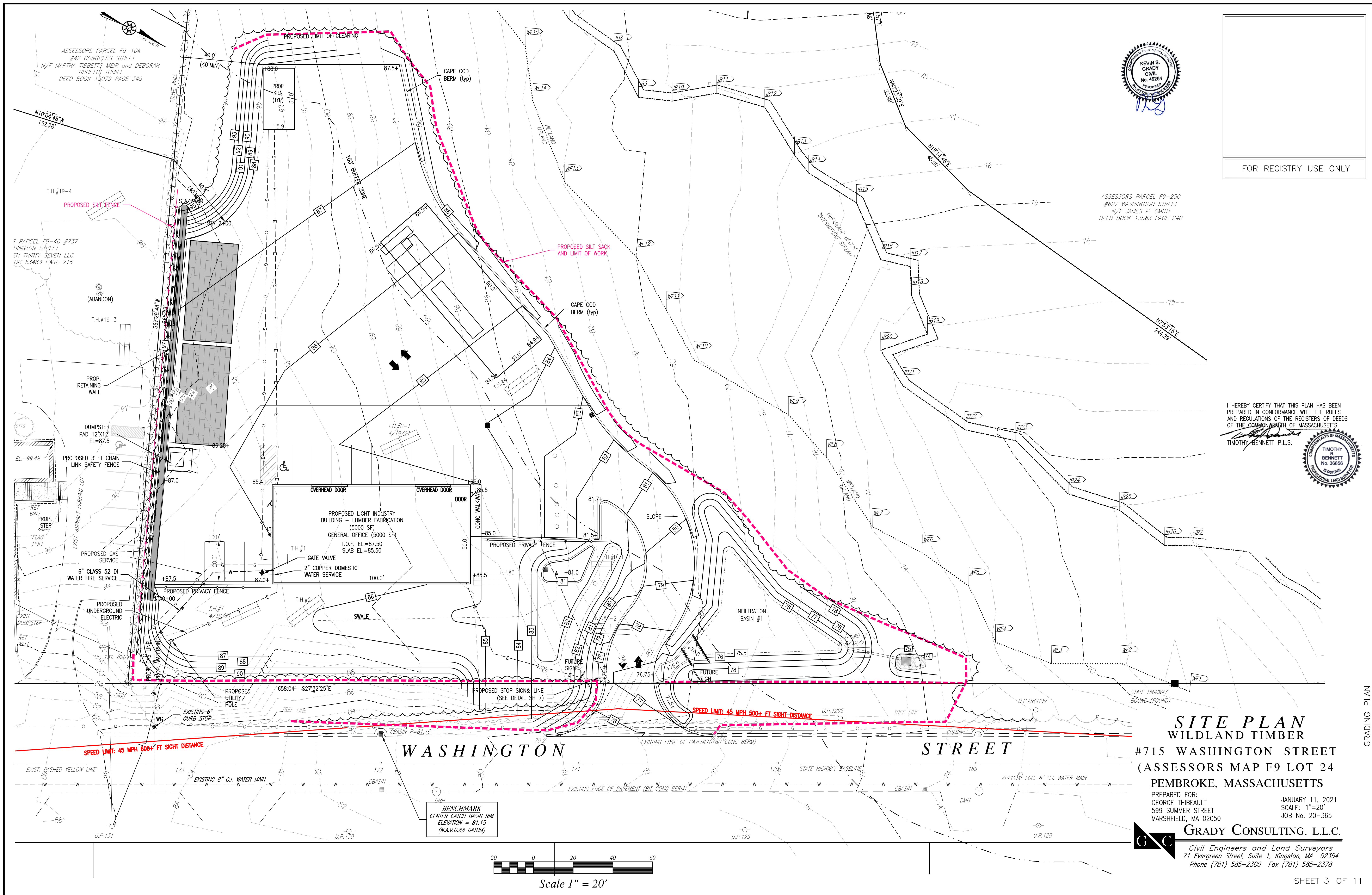
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TIMOTHY BENNETT P.L.S.



SITE PLAN
WILDLAND TIMBER
#715 WASHINGTON STREET
(ASSESSORS MAP F9 LOT 24)
PEMBROKE, MASSACHUSETTS
PREPARED FOR:
GEORGE THIBEAULT
599 SUMMER STREET
MARSHFIELD, MA 02050
JANUARY 11, 2021
SCALE: 1"=40'
JOB No. 20-365
GRADY CONSULTING, L.L.C.
Civil Engineers and Land Surveyors
71 Evergreen Street, Suite 1, Kingston, MA 02364
Phone (781) 585-2300 Fax (781) 585-2378



EXISTING CONDITIONS

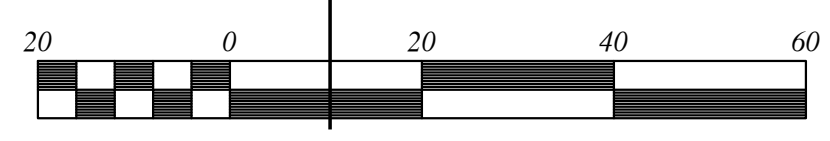


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SITE PLAN
WILDLAND TIMBER
#715 WASHINGTON STREET
(ASSESSORS MAP F9 LOT 24
PEMBROKE, MASSACHUSETTS
PREPARED FOR:
GEORGE THIBAUT
599 SUMMER STREET
MARSHFIELD, MA 02050
JANUARY 11, 2021
SCALE: 1"=20'
JOB No. 20-365
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Scale 1" = 20'

GRADING PLAN

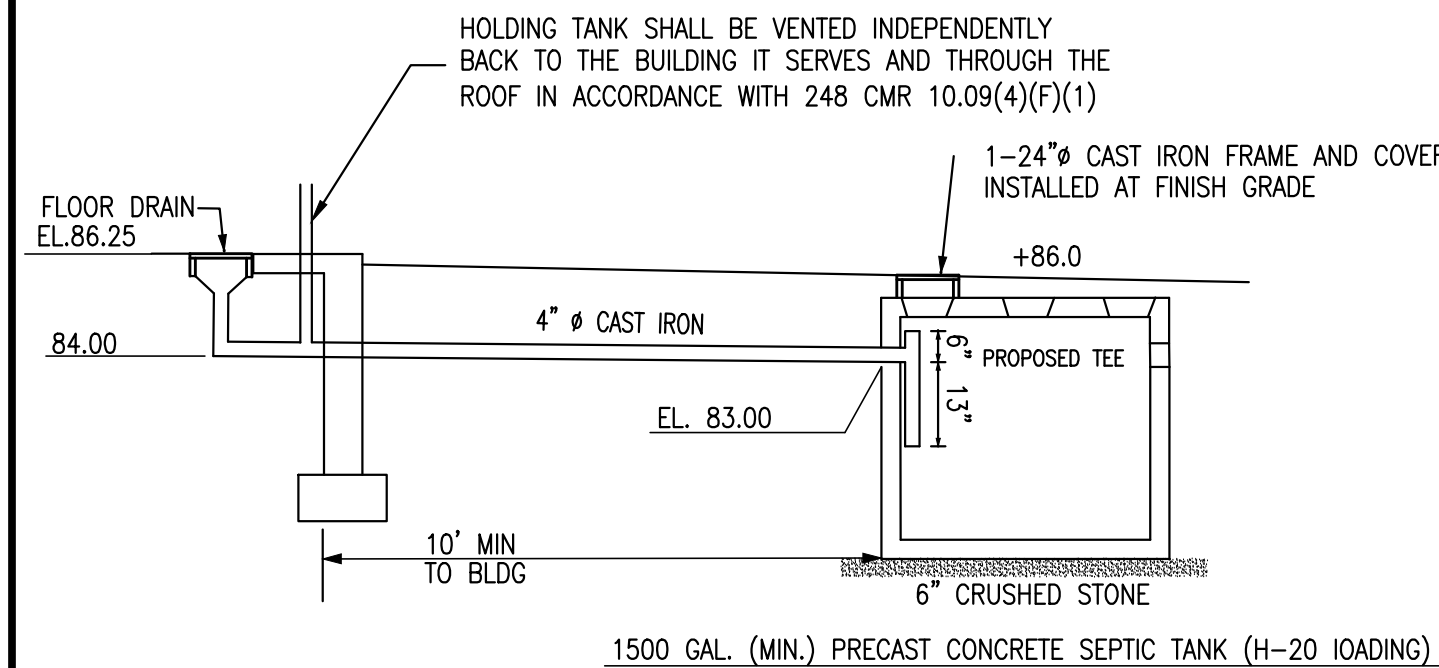
T.H.#1 E.L. 91.90		T.H.#2 E.L. 92.20		T.H.#3 E.L. 88.50		T.H.#4 E.L. 85.00	
0"-6" A LOAM	91.40	0"-6" A LOAM	91.70	0"-6" A LOAM	88.00	0"-8" A LOAM	84.33
6"-22" B SANDY LOAM	90.07	6"-22" B SANDY LOAM	90.37	6"-18" B SANDY LOAM	87.00	8"-24" B SANDY LOAM	83.00
22"-48" C1 GRAVELLY SAND	87.90	22"-48" C1 GRAVELLY SAND	88.20	18"-60" C1 GRAVELLY SAND	83.50	24"-60" C1 GRAVELLY SAND	80.00
48"-96" C2 GRAVELLY SANDY LOAM	83.90	48"-96" C2 GRAVELLY SANDY LOAM	84.20	60"-108" C2 GRAVELLY SANDY LOAM	79.50	60"-90" C2 GRAVELLY SANDY LOAM	77.50
PERC 96"-152" C3 MEDIUM SAND	79.23	PERC 96"-180" C3 MEDIUM SAND	77.20	108"+ LARGE ROCKS D=9'-0"	79.50	90"-108" C3 MEDIUM SAND D=9'-0"	76.00
D=12'-8"		D=15'-0"		NO WATER		NO WATER	



NOTES:
CONCRETE TANK: T-2000 H-20
CONCRETE: 5,000 PSI AFTER 28 DAYS
REINFORCEMENT PER ASTM C1227-93
DISTRIBUTED THROUGH PEMBROKE CONCRETE PRODUCTS INC.(781-826-6463)

PLASTIC TANK: ROTH MODEL NO. RMT-1060
DISTRIBUTED THROUGH CAPE COD WINWATER WORKS(508-862-0166)

INSTALLER TO COORDINATE WITH PEMBROKE CONCRETE PRODUCTS INC. & CAPE COD WINWATER WORKS FOR CONSTRUCTION OF THE HOLDING TANK.



SPECIAL INSTRUCTIONS & NOTES FOR HOLDING TANK INSTALLATION:

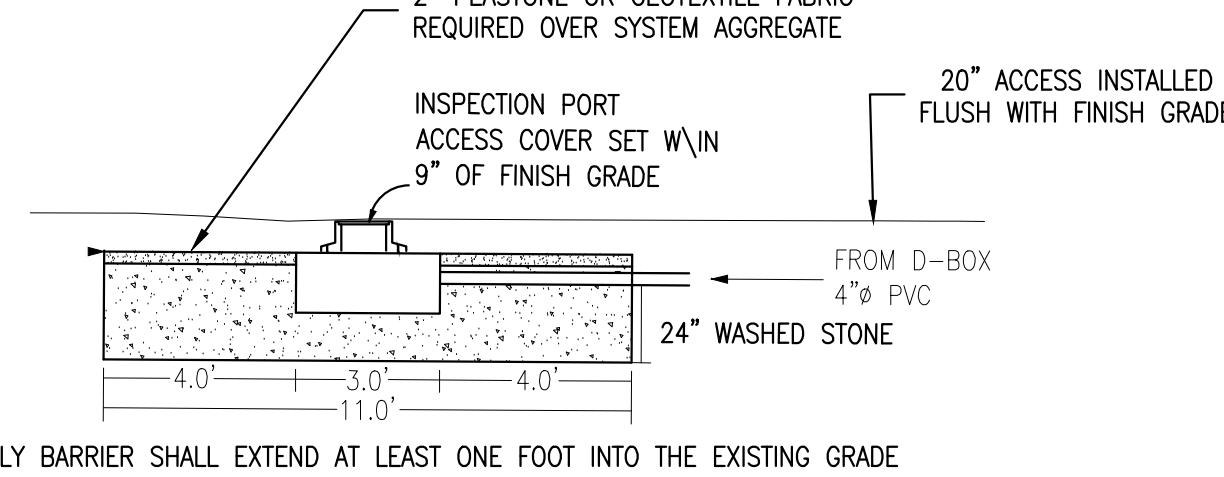
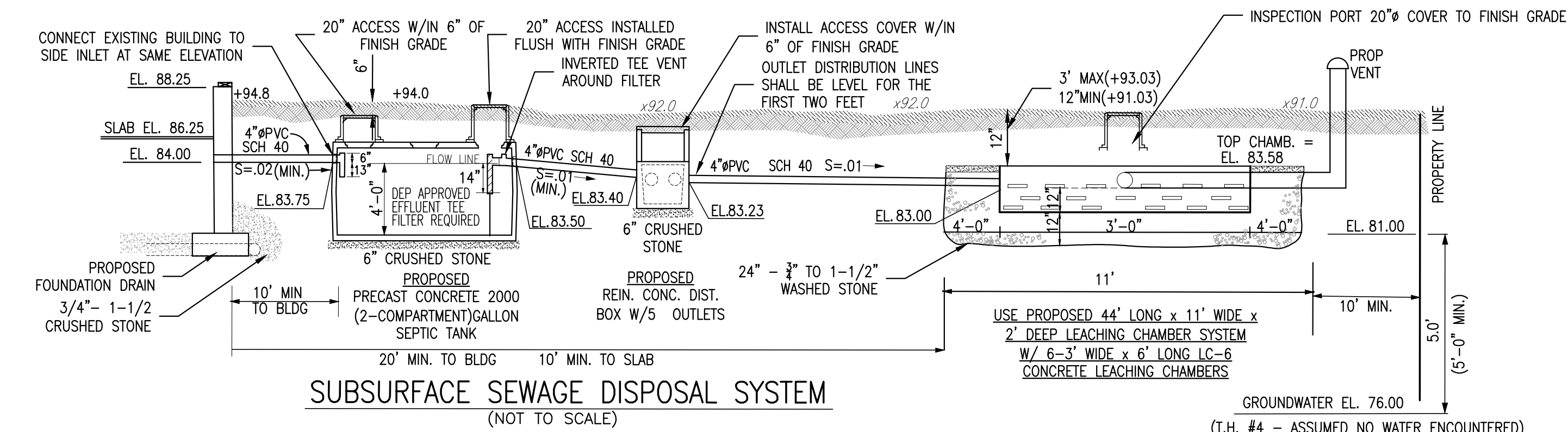
1. THE TANK SHALL BE INSTALLED ONTO A LEVEL (AND COMPACTED) BED OF SAND.
2. HOLDING TANK TO BE INSPECTED EVERY 3 MONTHS TO ENSURE PROPER OPERATION AND MAINTENANCE 310 CMR 15.260 (I).
3. THE HOLDING TANK WILL BE WATERPROOF AND WATERTIGHT 310 CMR 15.260(J).
4. VENTING SHALL BE PROVIDED THROUGH THE ROOF OF THE BUILDING IN ACCORDANCE WITH THE MASSACHUSETTS PLUMBING CODE.
5. INSTALL RHOMBUS TANK ALERT 2 HIGHWATER ALARM WITH SUE RAIL FLOAT.
6. A PLaque OR SIGN WITH "NON-HAZARDOUS INDUSTRIAL WASTEWATER" SHALL BE INSTALLED NEAR TANK.

FAILURE BY THE APPLICANT TO PROPERLY MAINTAIN THE HOLDING TANK
MAY CONSTITUTE GROUNDS FOR THE REVOCATION OF THE HOLDING TANK PERMIT.



HOLDING TANK DETAIL

(MONOLITHIC TANK WITH EXTENDED BASE)
NOT TO SCALE



SCHWABE PRECAST

If You Can Draw It - We Can Build It

1-800-468-0000 • FAX 800-774-0177 • See Us At: 1000
 Box 700 • 1000 • P.O. Box 700 • Mount Pleasant, MI 48858

Leading-Edge, Low-Cost

Low-Cost Concrete Joist:

1. Over one (1) 20' x 21' Joist - 8" deep
2. Available in 10' to 20' lengths
3. Standard concrete per ASTM A611 Grade 40

21'

8"

10'

8"

10'

21'

8"

10'

8"

10'

Schwabe Precast
 Concrete Pipe
 & More

The Schwabe Companies

NPCA
 National Precast Concrete Association

1. DESIGN DAILY FLOW:

OFFICE:	5,000 S.F. x 75 GPD/1000 S.F.	= 375 GPD
WAREHOUSE:	9 PROJECTED EMPLOYEES x 15 GPD/EMPLOYEE	= <u>135 GPD</u>
(WITHOUT CAFETERIA)	TOTAL	= 510 GPD

2. SEPTIC TANK: $510 \text{ GPD} \times 2 = 1020 \text{ GAL.}$ USE: 1500 GAL (MIN)
2 COMPARTMENT TANK (SEE DETAIL)

3. LEACHING CHAMBERS: P.R. <2 MIN/IN CLASS I

TOTAL:1-44' LONG X 11' WIDE X 2' DEEP LEACHING CHAMBER SYSTEM

TITLE 5

PROPOSED AREA: $2(2 \times 11) + 2(2 \times 44) + (11 \times 44) = 704$ SF
CAPACITY: $704 \text{ S.F.} \times 0.74 \text{ GPD/S.F.} = 520 > 510 \text{ GPD(D.D.F.)}$

1. PROPERTY LINE DATA FROM THE FOLLOWING PLANS RECORDED AT PLYMOUTH COUNTY REGISTRY OF DEEDS: PLAN No. 282 OF 1956, PLAN No. 561 OF 1973, PLAN No. 663 OF 1973, PLAN No. 226 OF 1994, PLAN No. 308 OF 1995, AND MASSACHUSETTS STATE HIGHWAY LAYOUT No. 2771.
2. TOPOGRAPHIC SURVEY BY GRADY CONSULTING JANUARY 2017 & DECEMBER 2020.
3. SOILS TESTING BY KEVIN GRADY, GRADY CONSULTING WITNESSED BY HEALTH AGENT FRED LEARY AUGUST 14, 2007. ADDITIONAL TESTING BY KEVIN GRADY, GRADY CONSULTING WITNESSED BY HEALTH AGENT LISA CULLITY AUGUST 9, 2019.
4. CALL DIG SAFE 1-888-344-7233 AT LEAST 4 DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
5. NOTIFY TOWN AND GRADY CONSULTING PRIOR TO BACKFILLING OF SYSTEM.
6. NO KNOWN WELLS EXIST WITHIN 200' OF THE PROPOSED SYSTEM
7. THE SITE IS NOT LOCATED IN AN AQUIFER PROTECTION ZONE II.
8. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED (310 CMR 15.221(12))
9. NO STREAMS, SURFACE & SUBSURFACE DRAINS AND WETLANDS EXIST WITHIN 100 FT OF THE PROPOSED SYSTEM, EXCEPT AS SHOWN.
10. THE SITE IS NOT LOCATED IN A FLOOD PLAIN DISTRICT.
11. NO KNOWN EASEMENTS ARE IN THE AREA OF THE PROPOSED SYSTEM.
12. EXCAVATE ALL MATERIAL (A,B, C1, C2 LAYERS) TO FINE SAND C3 LAYER (96"±), 5' AROUND SYSTEM. REPLACE WITH CLEAN COARSE SAND IN ACCORDANCE WITH 310 CMR 15.255 (3). EXCAVATION TO BE INSPECTED BY GRADY CONSULTING L.L.C. AND TOWN PRIOR TO SOIL REPLACEMENT

APPROXIMATE PERC SAND VOLUME = $484 \text{ SF} \times (84.2 - 83.5) / 27 + 20\% = 20 \pm \text{C.Y.}$

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN
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AND REGULATIONS OF THE REGISTERS OF DEEDS
OF THE COMMONWEALTH OF MASSACHUSETTS

TIMOTHY BENNETT P.L.S.



#715 WASHINGTON STREET
(ASSESSORS MAP F9 LOT 24

PEMBROKE, MASSACHUSETTS

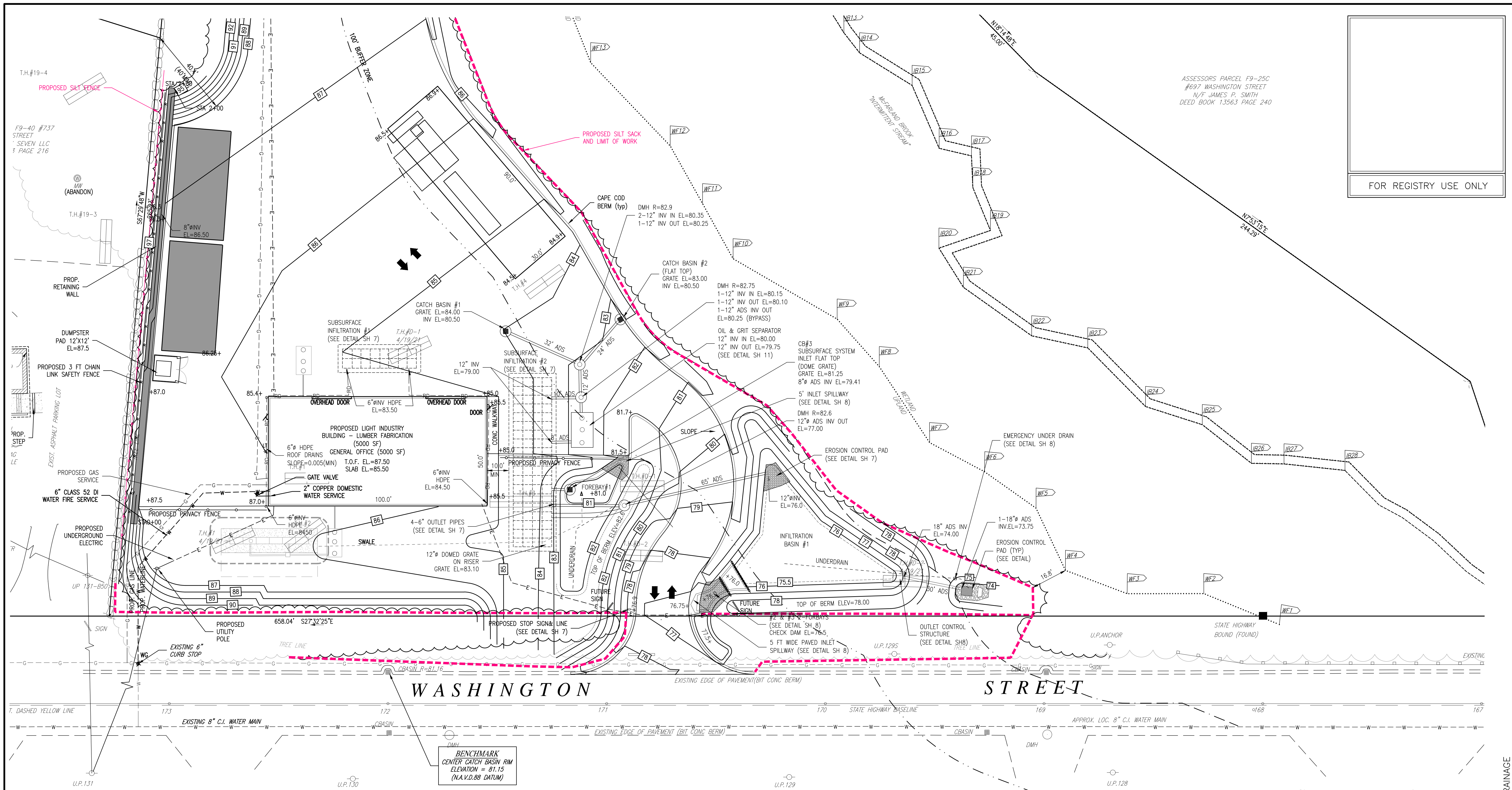
PREPARED FOR:
GEORGE THIBEAULT
599 SUMMER STREET
MARSHFIELD, MA 02050

JANUARY 11, 2021
SCALE: 1"=20'
JOB No. 20-365

GRADY CONSULTING, L.L.C.

Civil Engineers and Land Surveyors
71 Evergreen Street, Suite 1, Kingston, MA 02364
Phone (781) 585-2300 Fax (781) 585-2378

SHEET 1 OF 1



ASSESSORS PARCEL F9-25C
#697 WASHINGTON STREET
N/F JAMES P. SMITH
DEED BOOK 13563 PAGE 240

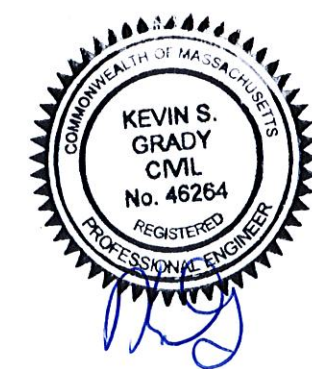
FOR REGISTRY USE ONLY

SITE PLAN WILDLAND TIMBER #715 WASHINGTON STREET (ASSESSORS MAP F9 LOT 24 PEMBROKE, MASSACHUSETTS

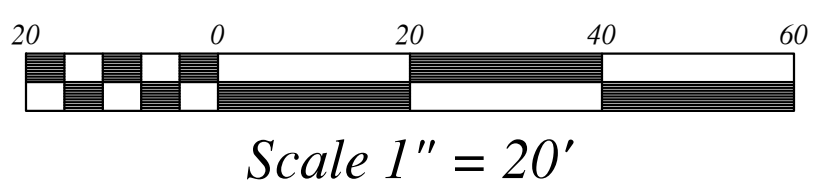
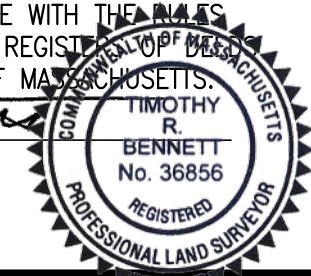
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MARSHFIELD, MA 02050

JANUARY 11, 2021
SCALE: 1"=20'
JOB No. 20-365

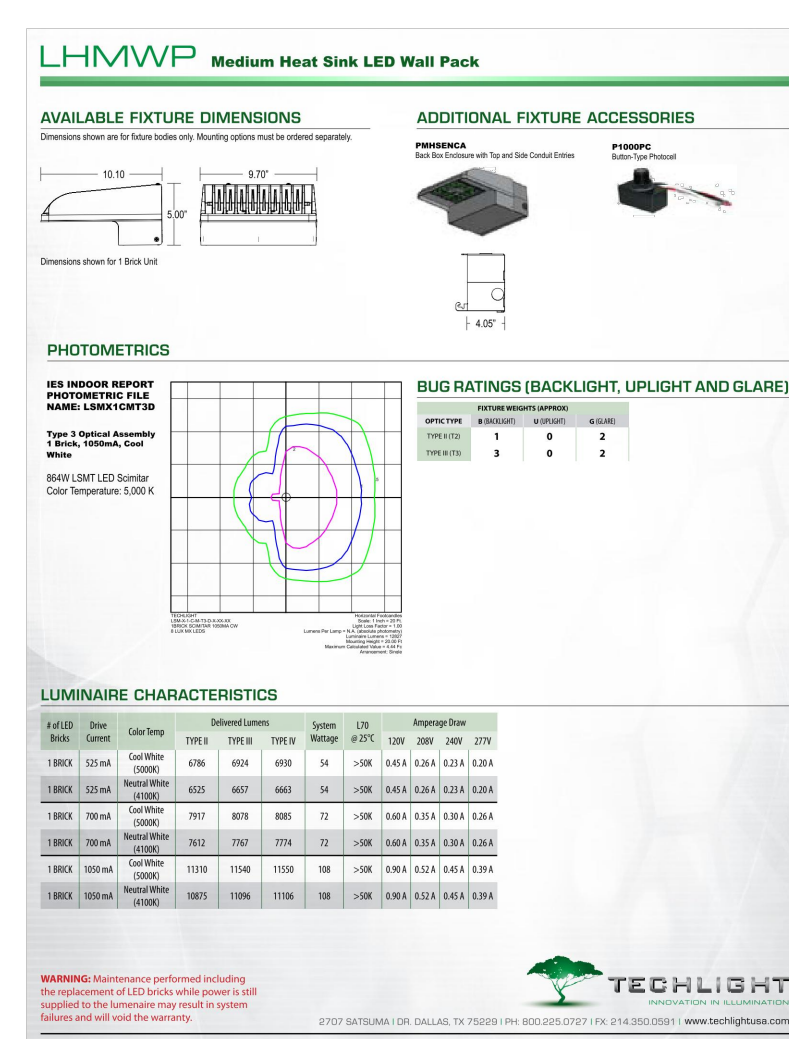
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Phone (781) 585-2300 Fax (781) 585-2378



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AND REGULATIONS OF THE REGISTERED
PROFESSIONAL LAND SURVEYORS
OF THE COMMONWEALTH OF MASSACHUSETTS
TIMOTHY BENNETT P.L.S.



UTILITIES & DRAINAGE



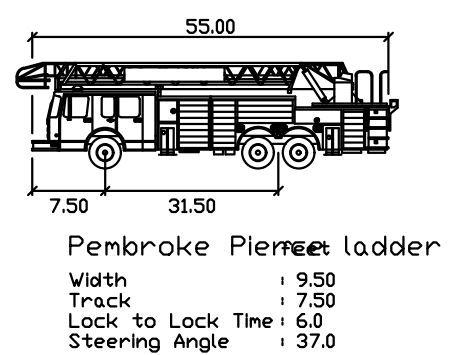
Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
SITE	Illuminance	Fc	0.25	10.0	0.0	N.A.	N.A.
PARKING AND DRIVE	Illuminance	Fc	0.99	7.2	0.0	N.A.	N.A.

LumNo	Label	Z-luminaire height	Tilt
1	A	12	0
2	A	12	0
3	A	12	0
4	A	12	0
5	A	12	0

Luminaire Schedule						
Symbol	Qty	Label	Lumens/Lamp	Arrangement	LLF	Description
	5	A	N.A.	SINGLE	0.900	LHMWP-1-N-M-T3-D-ONE BRICK TYPE 3 1050MA LED WALL PACK

Notes:

1. Calculation at grade.
2. Based on 12' AFG fixture mounting.



FIRE TRUCK DETAIL
NOT TO SCALE

- NOTES:
1. SIGHT DISTANCES SHOWN HEREON ARE BASED UPON THE AASHTO TRAFFIC CODE
 2. POSTED SPEED LIMIT IS 45 MPH
 3. AASHTO SECTION 1340 DIAGRAM 3 REQUIRES A 500' STOPPING DISTANCE FROM A DRIVEWAY FOR A POSTED SPEED LIMIT OF 45 MPH
 4. INTERSECTION LINE OF SIGHT MAY BE TAKEN FROM ANY POINT FROM 10' TO 18' OFF THE EDGE OF ROADWAY PAVEMENT PER AASHTO SECTION 1340
 5. FOR INTERSECTION SIGHT DISTANCE STUDIES THE HEIGHT OF MOTORISTS EYE IS 3.5' AND THE HEIGHT OF APPROACHING OBJECT IS 3.5' PER AASHTO
 6. FOR STOPPING SIGHT DISTANCE THE HEIGHT OF MOTORISTS EYE IS 3.5' AND THE HEIGHT OF OBJECT IS 2.0' PER AASHTO

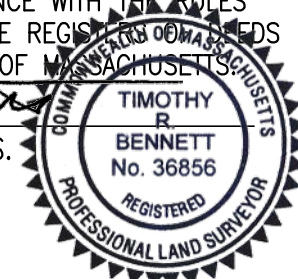


NOTE:
SEE DETAIL SHEET 9 FOR PLANT DETAILS,
NOTES AND SEED SPECIFICATIONS

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.

Timothy Bennett
TIMOTHY BENNETT P.L.S.

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY BENNETT
No. 26866



SITE PLAN
WILDLAND TIMBER

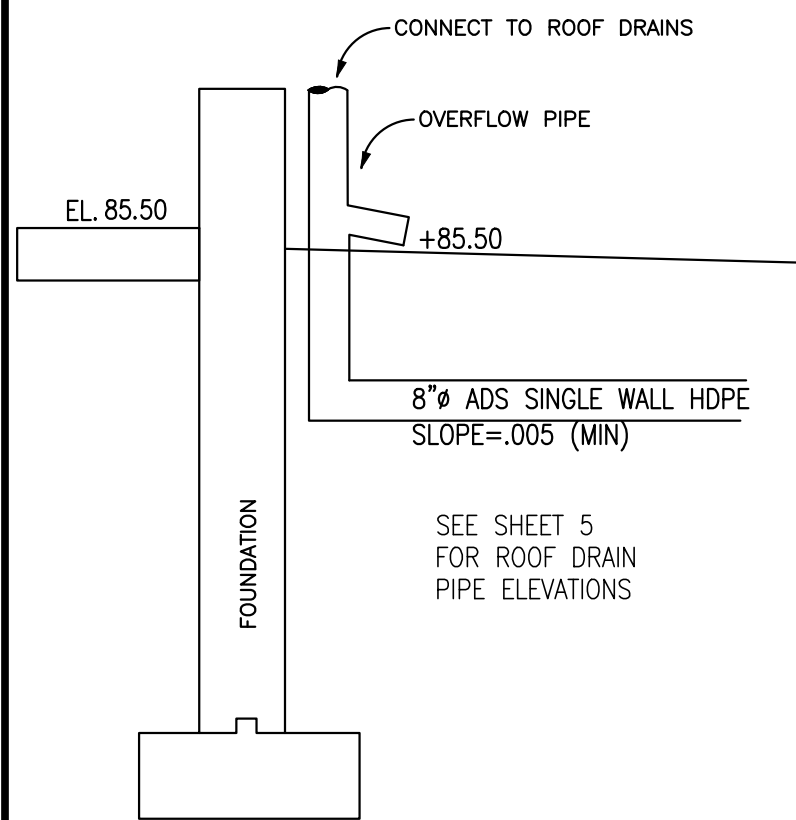
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PEMBROKE, MASSACHUSETTS

PREPARED FOR:
GEORGE THIBEAULT
599 SUMMER STREET
MARSHFIELD, MA 02050

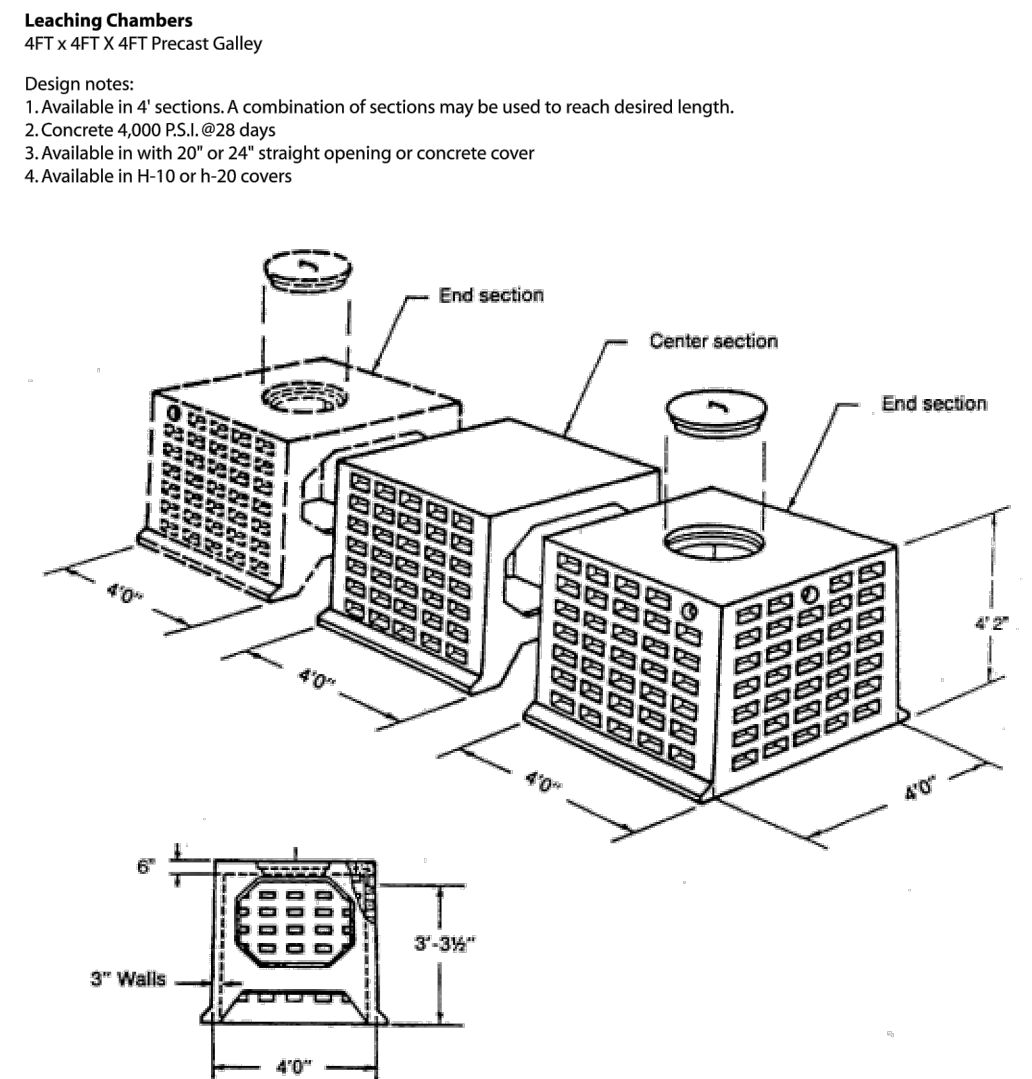
JANUARY 11, 2021
SCALE: 1"=40'
JOB NO. 20-365

 **GRADY CONSULTING, L.L.C.**

Civil Engineers and Land Surveyors
71 Evergreen Street, Suite 1, Kingston, MA 02364
Phone (781) 585-2300 Fax (781) 585-2378

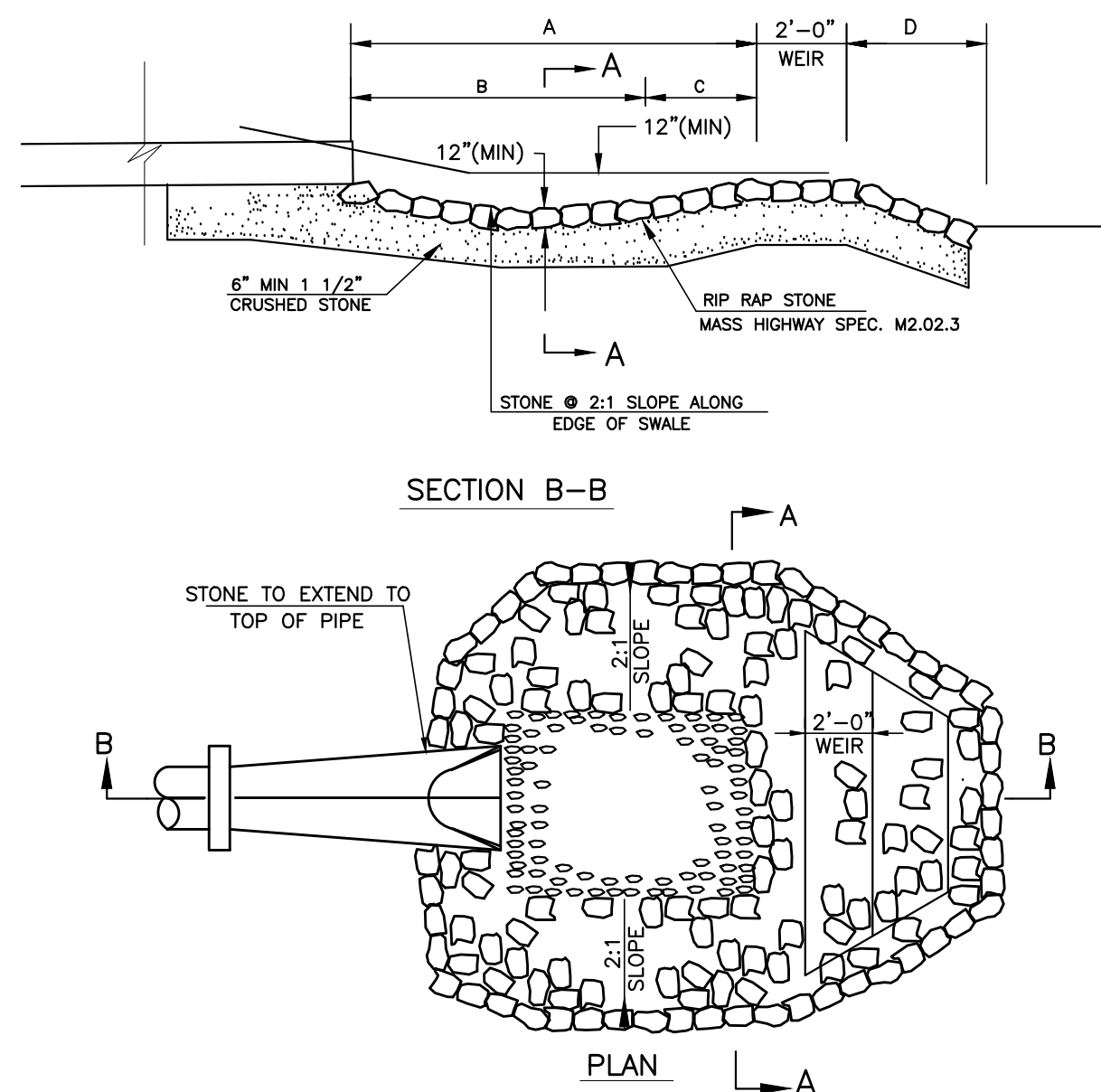
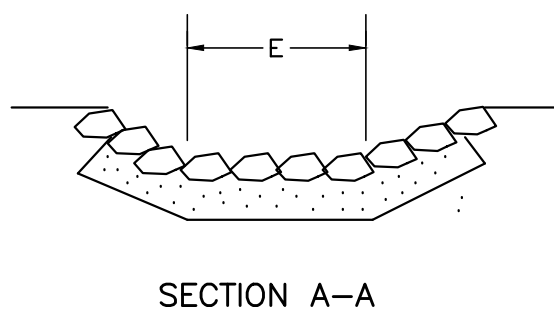


ROOF DRAIN & DOWNSPOUT DETAIL
(NOT TO SCALE)

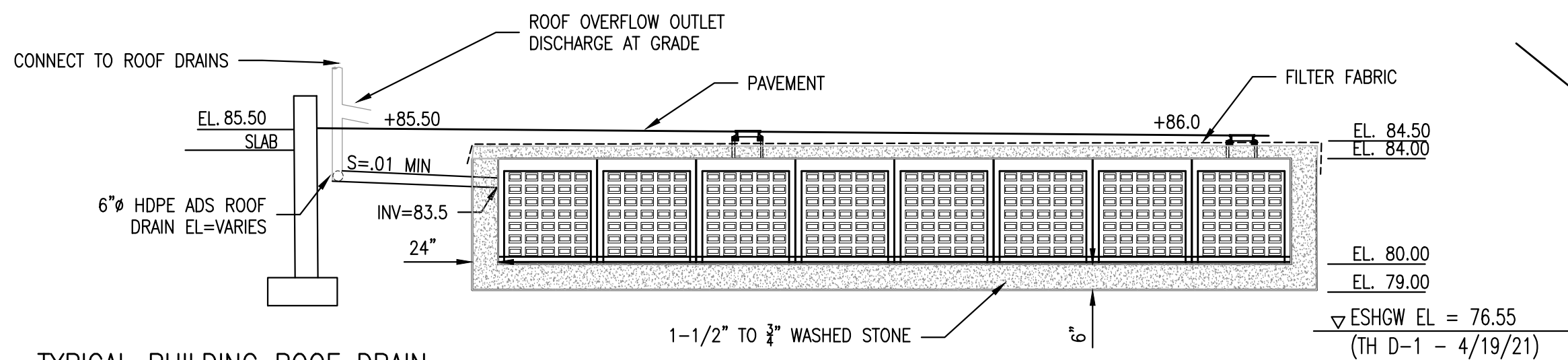


PIPE DIA.	10"	12"	18"
A	5'-0"	10'-0"	15'-0"
B	2'-6"	7'-6"	11'-3"
C	2'-6"	2'-6"	3'-9"
D	3'-0"	3'-0"	4'-6"
E	3'-0"	4'-0"	6'-0"

- NOTES:
- STONE FOR EROSION CONTROL PADS SHALL COMPLY WITH MDPW MATERIAL SPEC. M. 2.02.3
 - STONE BERM FOR SILT TRAP SHALL BE CONSTRUCTED AROUND SIDES OF EROSION CONTROL PADS
- NOTE: DIMENSIONS DESIGNATED S.B. REFER TO SEDIMENTATION BASIN
DIMENSIONS DESIGNATED D.B. REFER TO DETENTION BASIN



DETAIL – SILT TRAP, EROSION CONTROL PAD FROM
OUTLET CONTROL STRUCTURE BASIN #1
(NOT TO SCALE)



TYPICAL BUILDING ROOF DRAIN
CONNECTION

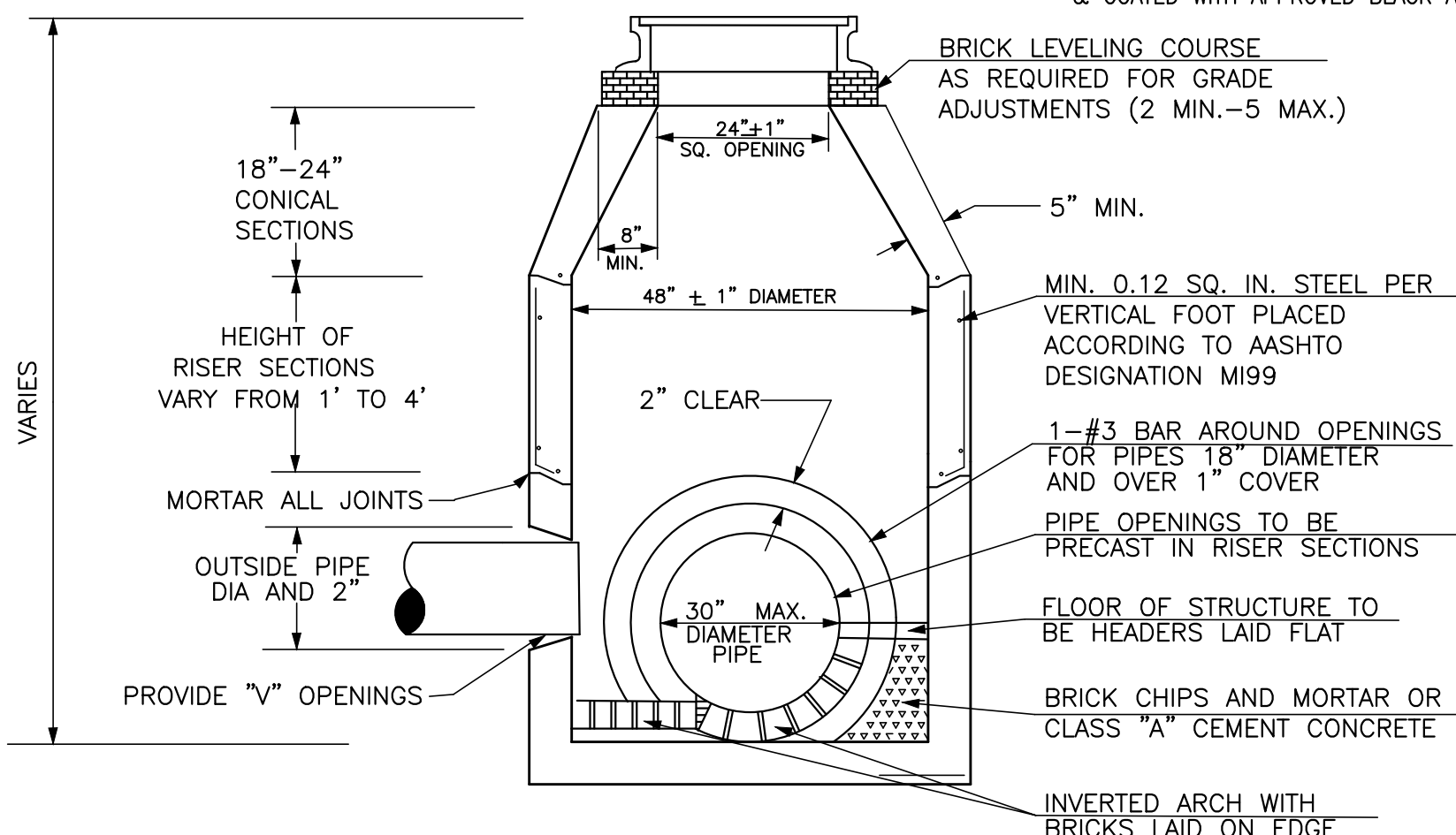
SUBSURFACE SYSTEM#1

CHAMBER MODEL = CONCRETE GALLEY 4X4X4 (CONCRETE GALLEY, UCPI 4X4X4 GALLEY OR EQUIVALENT)
8 CHAMBERS/ROW X 4.00' LONG = 32.00' ROW LENGTH +24.0" END STONE X 2 = 36.00' BASE LENGTH
2 ROWS X 52.8" WIDE + 24.0" SIDE STONE X 2 = 12.80' BASE WIDTH
12.0" BASE + 48.0" CHAMBER HEIGHT + 6.0" COVER = 5.50' FIELD HEIGHT
16 CHAMBERS X 44.3 CF = 709.5 CF CHAMBER STORAGE
16 CHAMBERS X 58.9 CF = 942.0 CF DISPLACEMENT
2,534.4 CF FIELD - 942.0 CF CHAMBERS = 1,592.4 CF STONE X 40.0% VOIDS = 637.0 CF STONE STORAGE
CHAMBER STORAGE + STONE STORAGE = 1,346.5 CF = 0.031 AF
OVERALL STORAGE EFFICIENCY = 53.1%
OVERALL SYSTEM SIZE = 36.00' X 12.80' X 5.50'

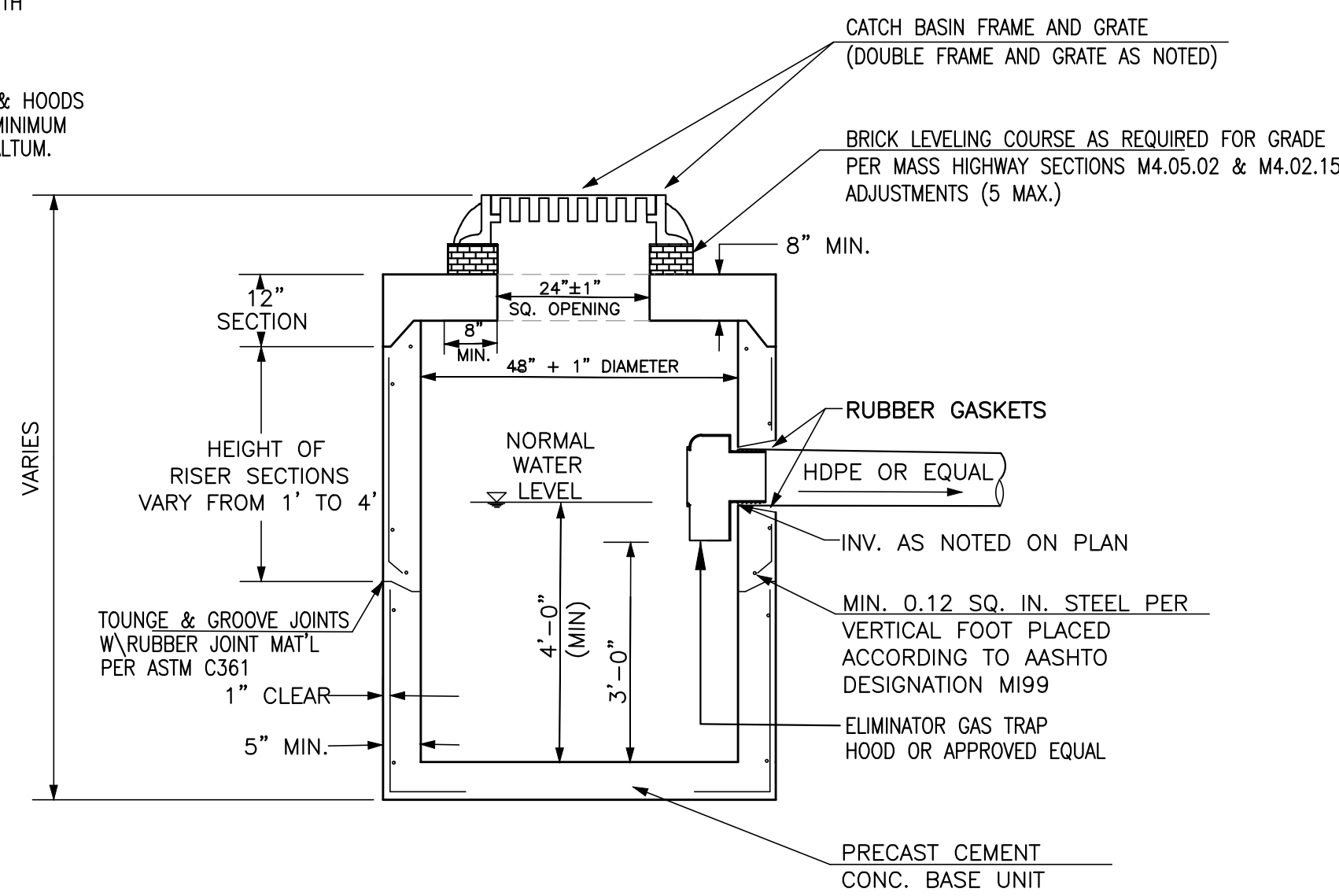
SUBSURFACE INFILTRATION SYSTEM #1 (NOT TO SCALE)

NOTES:

- PRECAST CONCRETE UNITS TO CONFORM TO THE MASS HIGHWAY SECTION M4.02.14
- 4000 PSI MINIMUM COMPRESSIVE STRENGTH
- PRECAST UNITS TO BE HS-20 LOADING
- EXTERIOR SURFACES TO BE SEALED W/ COLD APPLIED BITUMINOUS SEALER
- CASTINGS FOR FRAME, GRATES, COVERS & HOODS TO CONFORM TO ASTM A48, GRADE 30 MINIMUM & COATED WITH APPROVED BLACK ASPHALTUM.



PRECAST CONCRETE MANHOLE
(NOT TO SCALE)



FLAT-TOP PRECAST GASOLINE TRAP CATCH BASIN
(NOT TO SCALE)

SUBSURFACE SYSTEM#2 (SEE SHEET 5 FOR CONNECTION INFORMATION)

19 CHAMBERS/ROW X 4.00' LONG = 76.00' ROW LENGTH +24.0" END STONE X 2 = 80.00' BASE LENGTH
4 ROWS X 52.8" WIDE + 24.0" SIDE STONE X 2 = 21.60' BASE WIDTH
12.0" BASE + 48.0" CHAMBER HEIGHT + 12.0" COVER = 6.00' FIELD HEIGHT
76 CHAMBERS X 44.3 CF = 3,370.2 CF CHAMBER STORAGE
76 CHAMBERS X 58.9 CF = 4,474.6 CF DISPLACEMENT
10,368.0 CF FIELD - 4,474.6 CF CHAMBERS = 5,893.4 CF STONE X 40.0% VOIDS = 2,357.4 CF STONE STORAGE

CHAMBER STORAGE + STONE STORAGE = 5,727.6 CF = 0.131 AF
OVERALL STORAGE EFFICIENCY = 55.2%
OVERALL SYSTEM SIZE = 80.00' X 21.60' X 6.00'

SUBSURFACE INFILTRATION SYSTEM #2 (NOT TO SCALE)

GENERAL NOTES:

- PROVIDE 24" x 24" OPENING AND EAST JORDAN FRAME AND GRATE FOR SINGLE GRATE CATCH BASIN (CB) OR APPROVED EQUAL.
- CATCH BASIN HOOD WILL NOT BE INSTALLED.
- SET FRAME IN FULL BED OF MORTAR. BRICKS MAY BE USED FOR GRADE ADJUSTMENT.
- MORTAR ALL JOINTS.
- PROVIDE "V" KNOCKOUTS FOR PIPES W/ 2" CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
- REINFORCED STEEL CONFORMS TO LATEST ASTM SPEC. 0.12 SQ. IN./LINEAR FT. AND 0.12 SQ. IN. (BOTH WAYS) BASE BOTTOM.
- CONCRETE COMPRESSIVE STRENGTH-4000 PSI MIN.
- MANHOLE DESIGN SPECS CONFORM TO LATEST ASTM C-478 SPEC FOR PRECAST CONCRETE MANHOLE SECTIONS

BEEHIVE FRAMES AND GRATES



OMA801300020 22" x 6" frame and beehive grate

EJ BEEHIVE GRATE OR APPROVED EQUAL

BEEHIVE GRATE (CB#3) (NOT TO SCALE)

Frame Height	Flange Size	Grate Size	Grate Height	Product Number
6	28 1/4	22	7	OMA801300020
7	35 7/16	26	6	OMN120500025

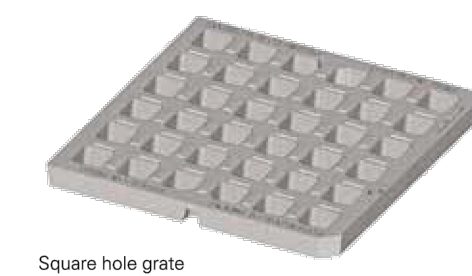
Note: all dimensions are in inches.

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERED PROFESSIONAL LAND SURVEYOR OF THE COMMONWEALTH OF MASSACHUSETTS.

TIMOTHY BENNETT P.L.S.



Massachusetts Municipal Drainage Frames and Grates



Square hole grate

Grate Type	Product Number
Standard grate	OMA552000074
Square hole grate	OMA552000075
Cascade grate (left)	OMA552000076
Cascade grate (right)	OMA552000077
ADA grate	OMA552000078

Note: 2 grates required per frame

New England Municipal and Construction Castings

Massachusetts Municipal Manhole Frames and Covers

V-1600/V-1800 FRAMES AND COVERS



V-1600-4 assembly

Features

Heavy duty
Reversible frame (BF = V-1600, TF = V-1800)

Options

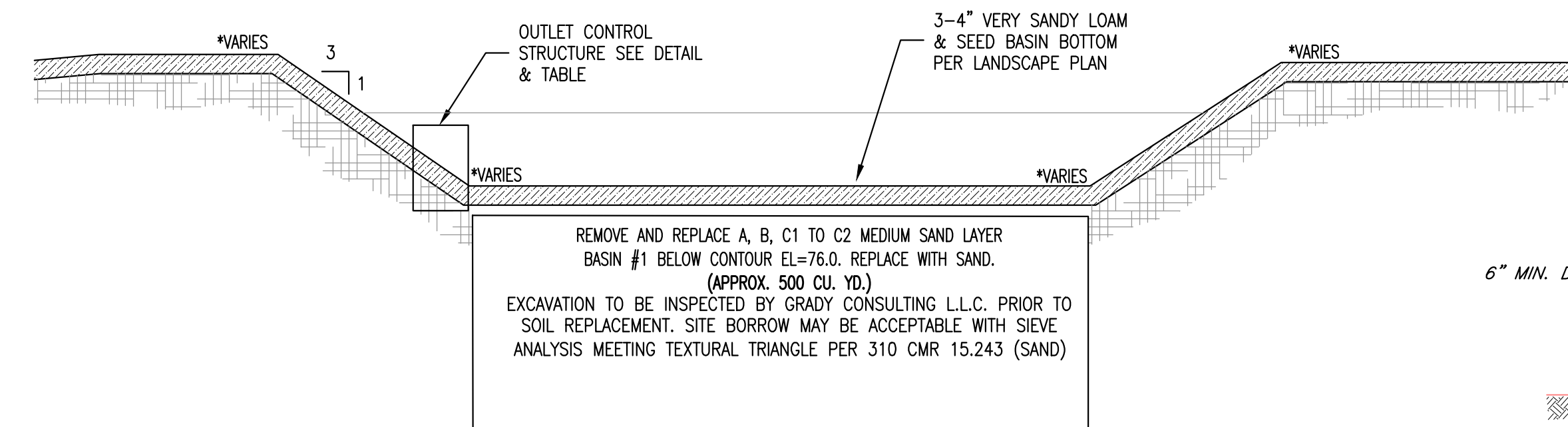
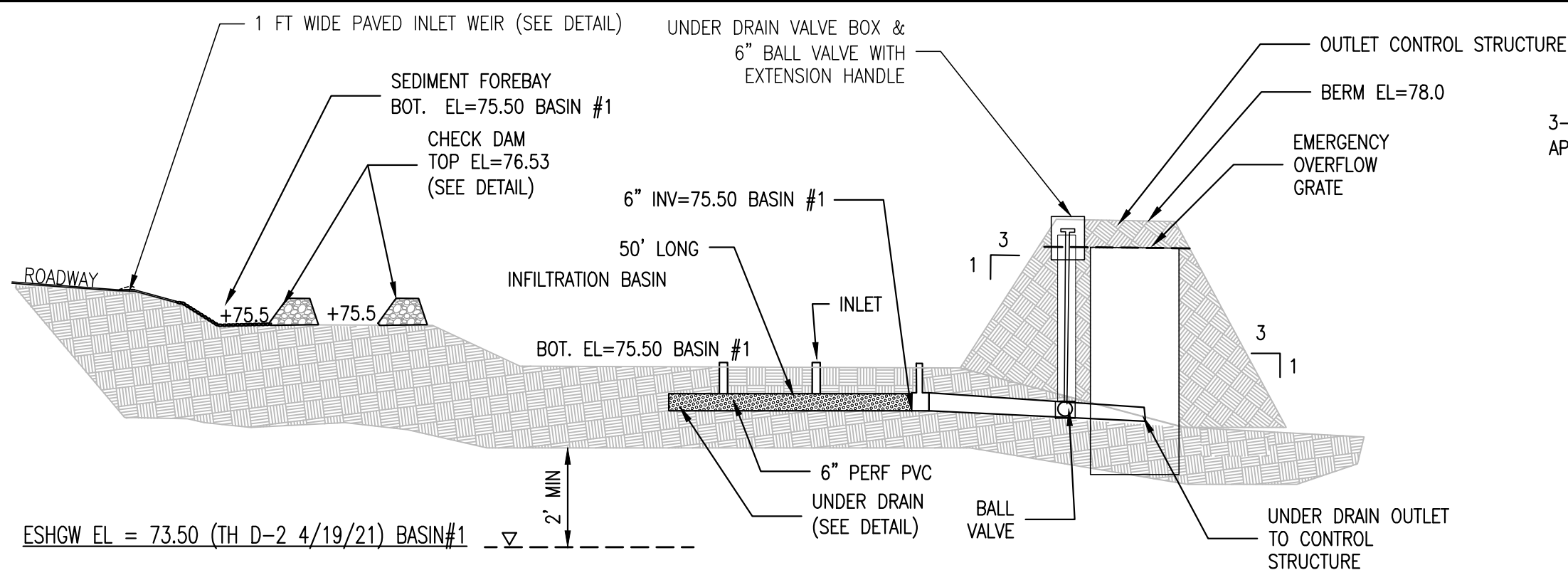
Solid or vented covers
Special lettered covers
Custom logo covers
Bolted assemblies
Grates (see V-3600/V-3800)
Hinged unit available in select sizes

V-1600/V-1800 Frame and Cover Options

Catalog Number	A Cover Diameter	B Cover Thickness	C Clear Opening	D Frame Opening	E Flange Diameter	F Height
V-1600-1	19 1/4	1 1/2	18 1/4	19 1/2	24	4
V-1600-2	23 1/2	1 1/2	22	23 3/4	28 1/2	4
V-1600-3	25 3/8	1 1/2	24	25 5/8	32 1/8	4
V-1600-4	31 3/4	1 3/8	30	32 1/8	38	4
V-1600-5	38	2	36	38 1/4	46	6
V-1600-6	50 1/4	2	48	50 1/2	56 1/2	6
V-1800-1	19 1/4	1 1/2	18 1/4	20 1/2	24	4
V-1800-2	23 1/2	1 1/2	22	24 3/4	28 1/2	4
V-1800-3	25 3/8	1 1/2	24	26 5/8	32 1/8	4
V-1800-4	31 15/16	1 3/8	30	33 1/8	38	4
V-1800-5	38	2	36	40	46	6
V-1800-6	50 1/4	2	48	52	56 1/2	6

Note: all dimensions are in inches.

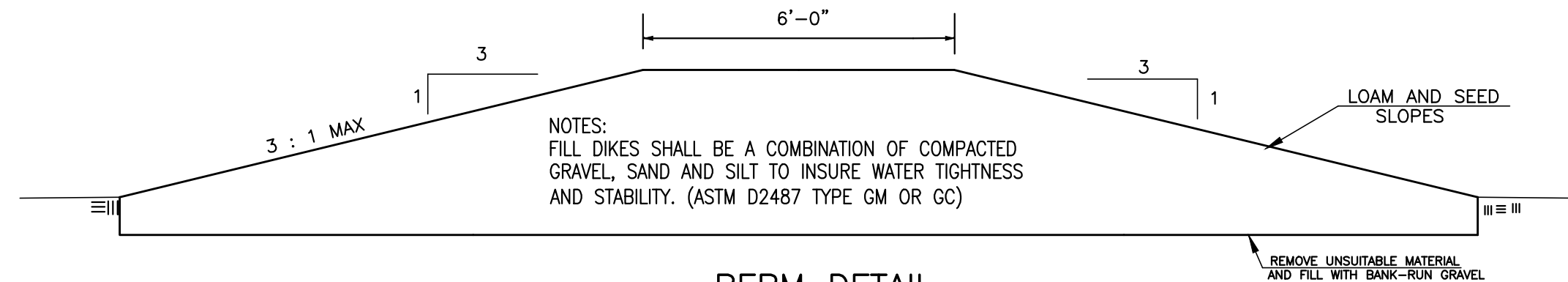
SITE PLAN
WILDLAND TIMBER
#715 WASHINGTON STREET
(ASSESSORS MAP F9 LOT 24
PEMBROKE, MASSACHUSETTS
PREPARED FOR:
GEORGE THIBEAULT
599 SUMMER STREET
MARSHFIELD, MA 02050
JANUARY 11, 2021
SCALE: AS NOTED
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Civil Engineers and Land Surveyors
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Phone (781) 585-2300 Fax (781) 585-2378



ELEVATION TABLE			
BASIN	BOTTOM BASIN	BASIN TOP BERM	GROUNDWATER
1	75.50	78.00	73.50 (TH D-1) 2021-04-19

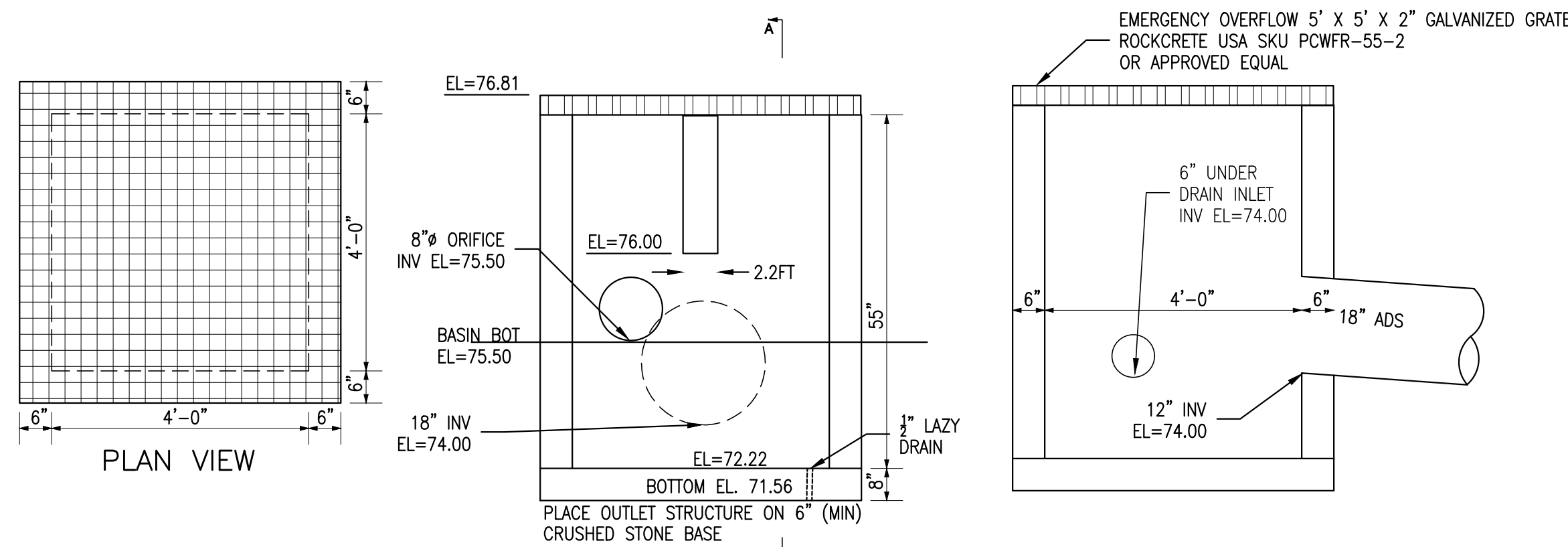
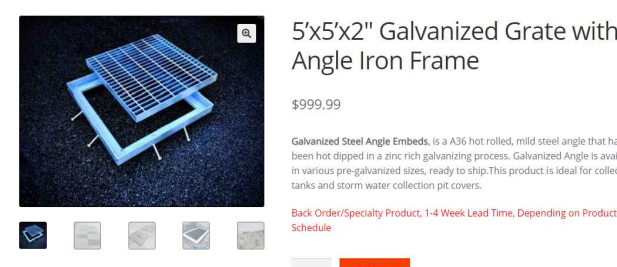
BASIN DETAIL

(NOT TO SCALE)



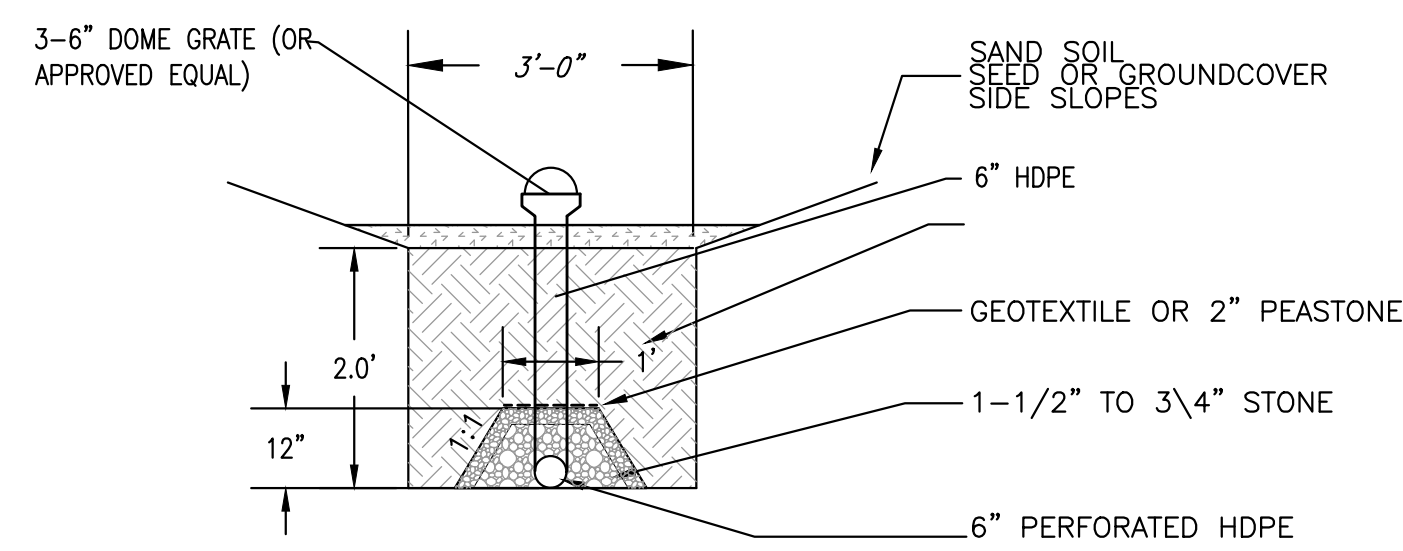
BERM DETAIL

(NOT TO SCALE)



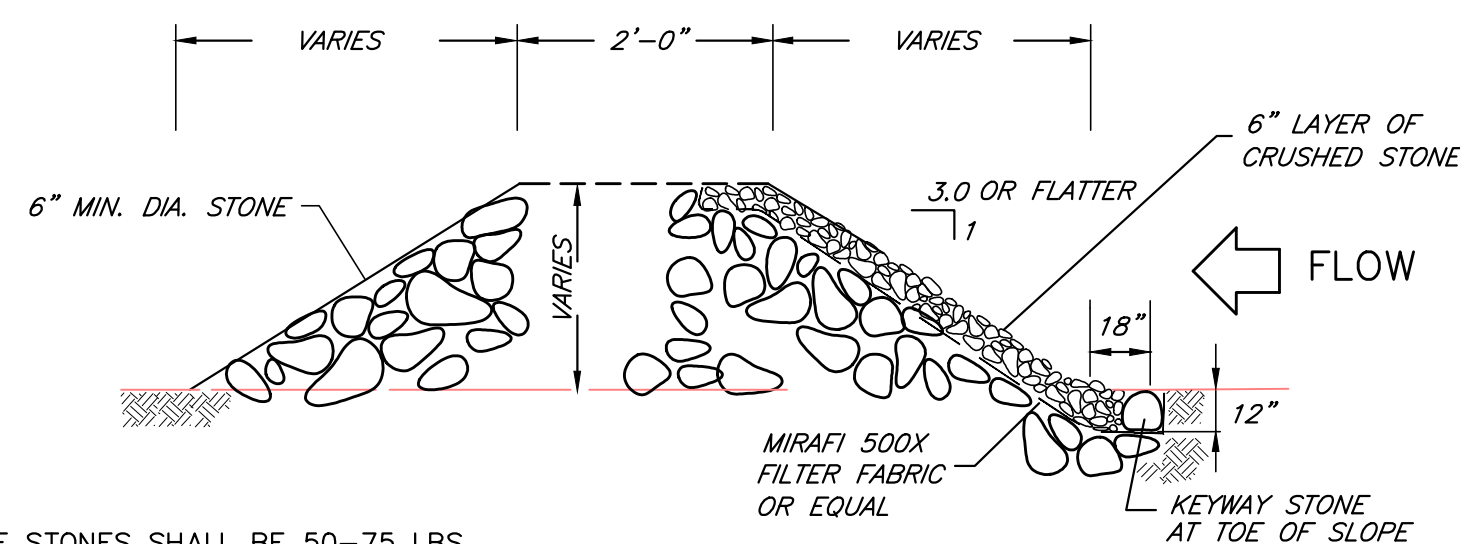
OUTLET CONTROL STRUCTURE-BASIN#1

(NOT TO SCALE)



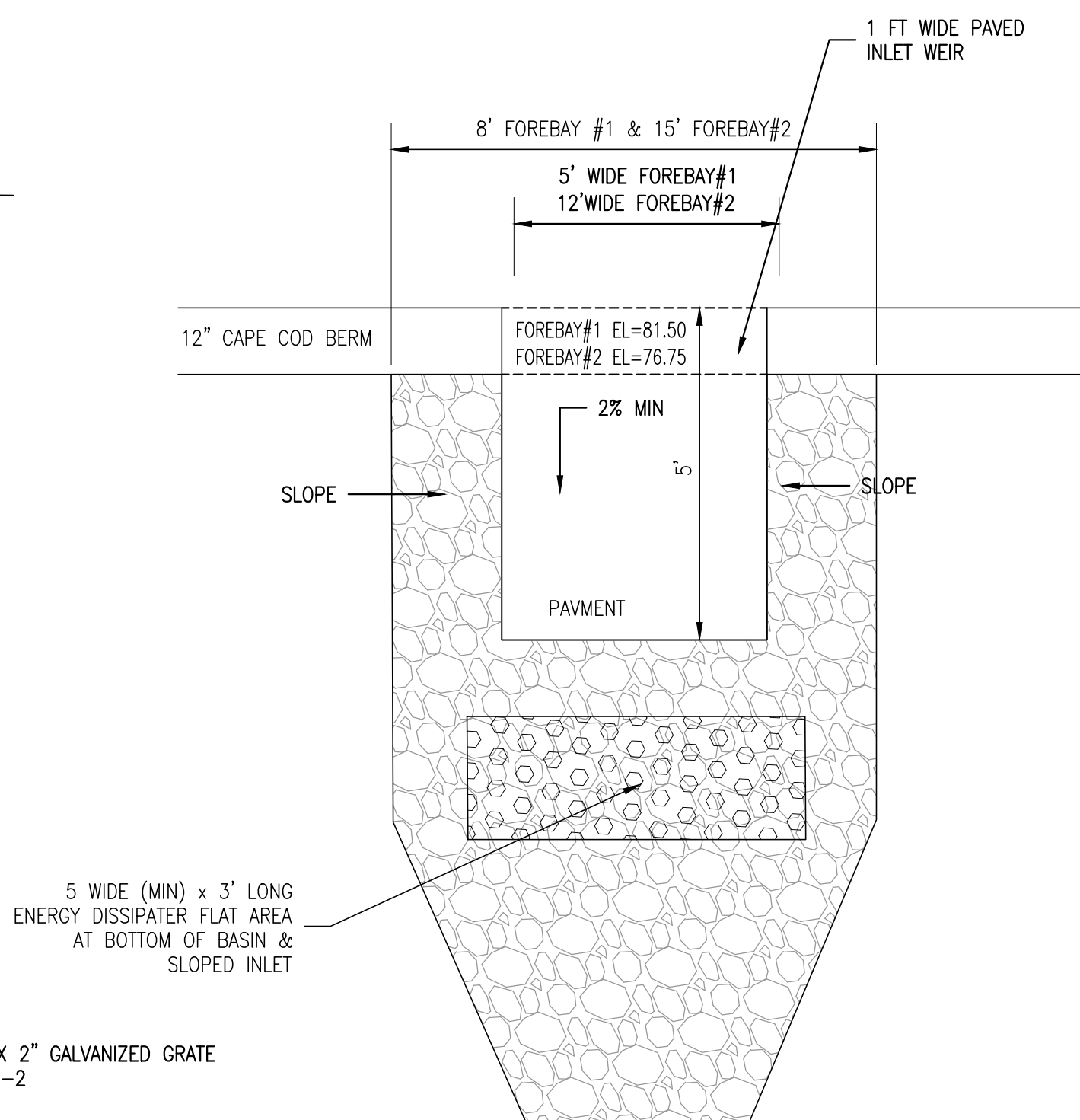
UNDER DRAIN CROSS SECTION DETAIL

(NOT TO SCALE)



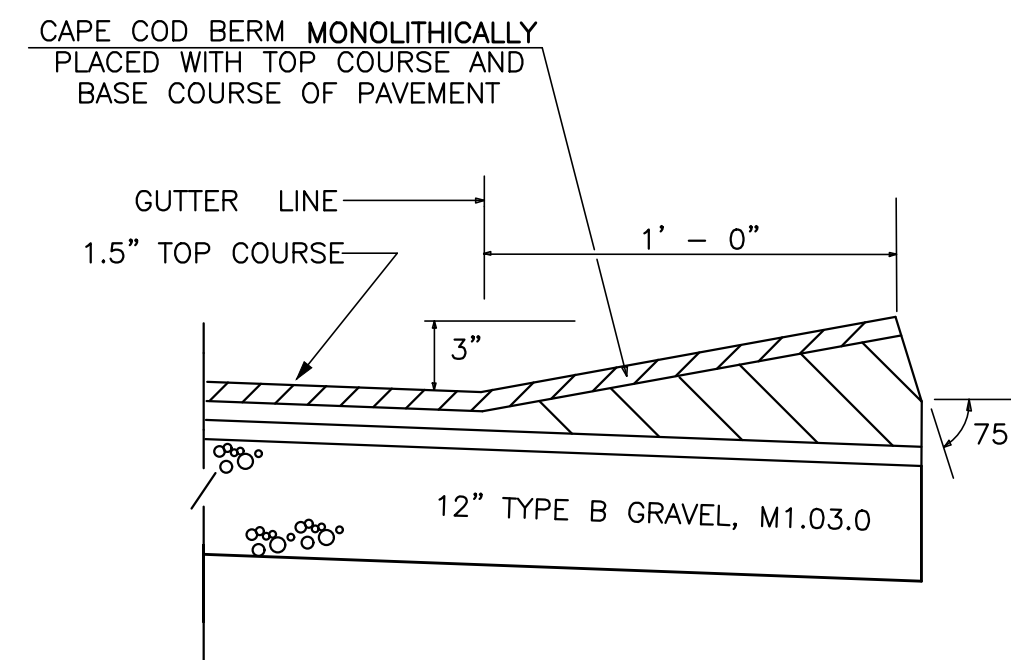
DETAIL - CHECK DAM

(NOT TO SCALE)



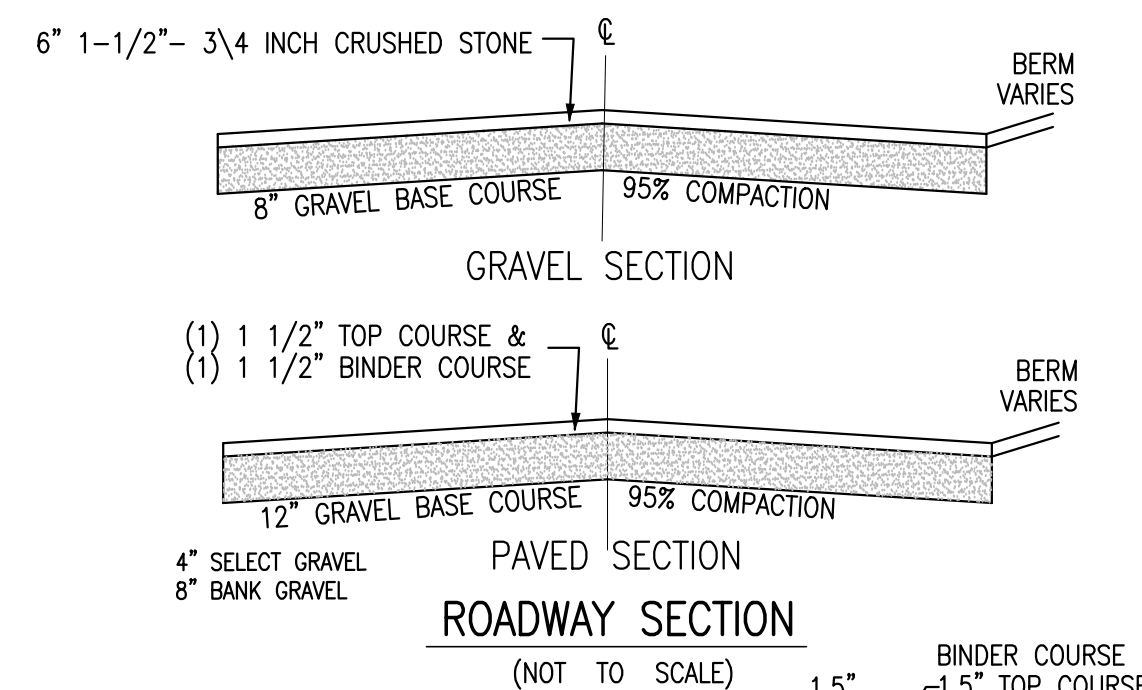
INLET SPILLWAY DETAIL

(NOT TO SCALE)



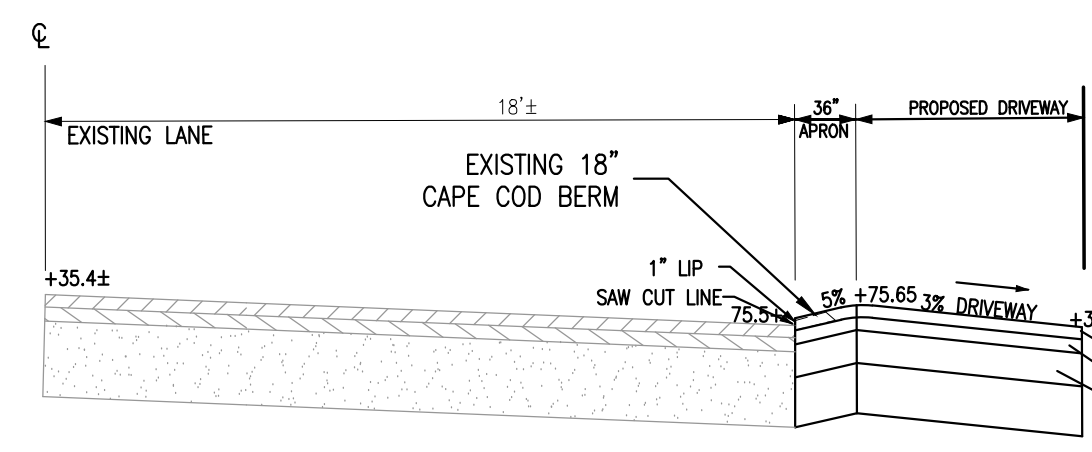
CAPE COD BERM DETAIL

(NOT TO SCALE)



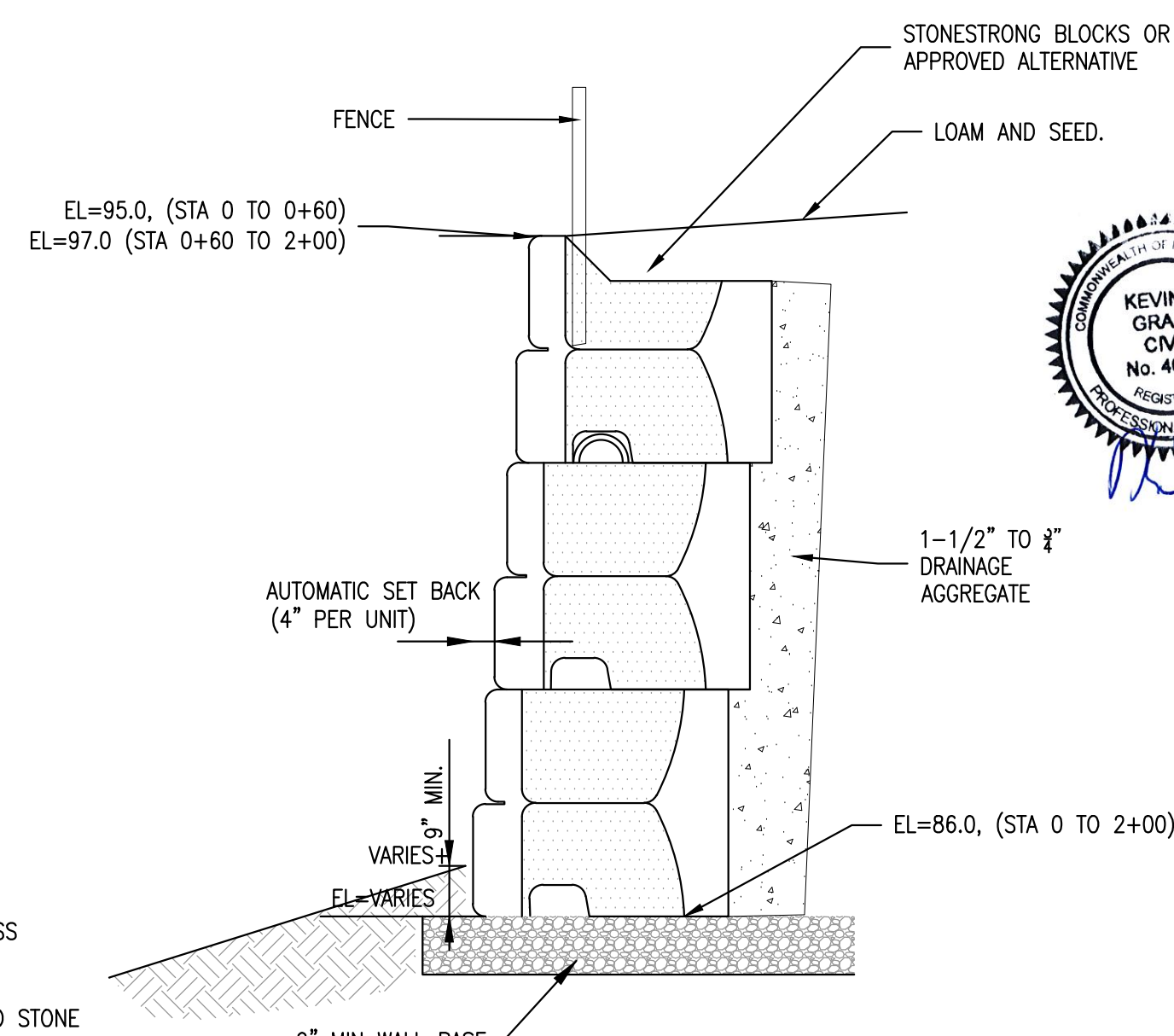
PAVEMENT TO GRAVEL TRANSITION

(NOT TO SCALE)



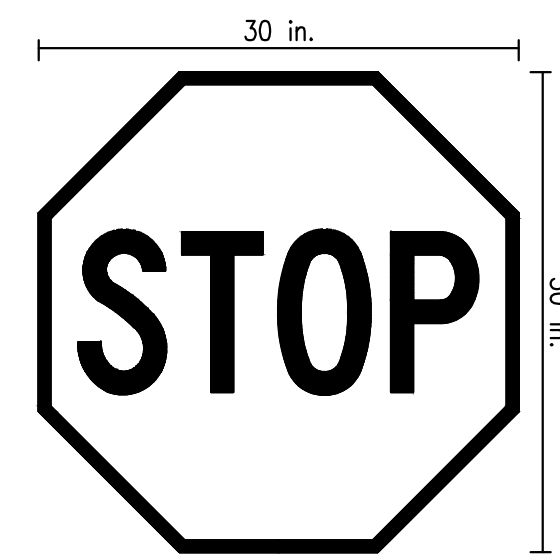
SECTION A-A X-SECTION

(NOT TO SCALE)



RETAINING WALL DETAIL

(NOT TO SCALE)

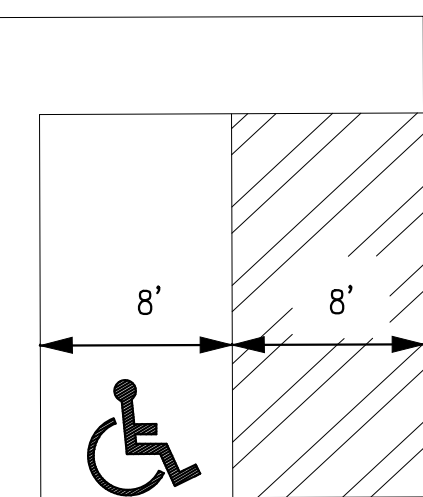


STOP SIGN SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES WITH THE EXCEPTION OF BEING DIAMOND GRADE. (R1-1)

12" WIDE x 12 FT LONG STOP LINE TO BE PLACED 5 FT IN ADVANCE OF NEAREST CROSSWALK OR WAY.

STOP SIGN DETAIL

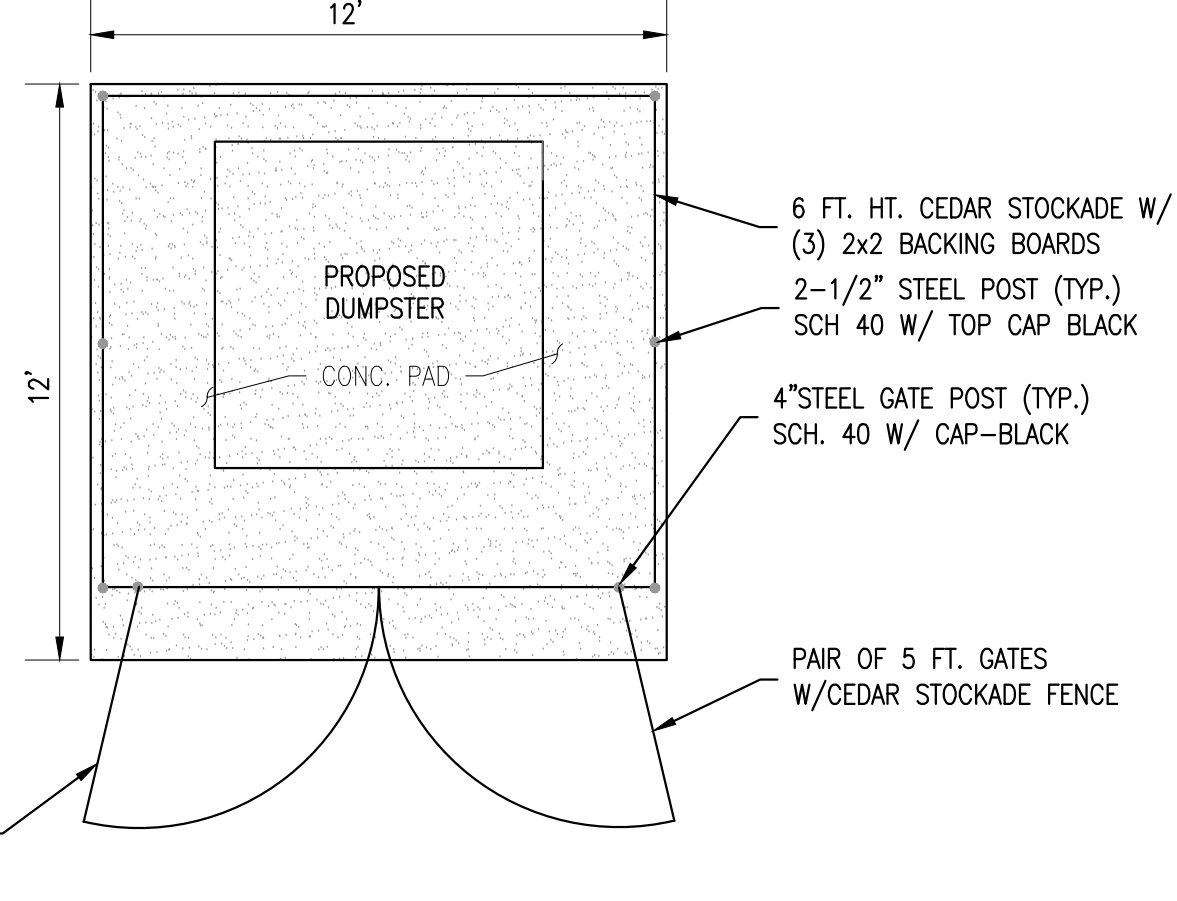
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STANDARD HANDICAPP VAN ACCESSIBLE SPACES

WHEELCHAIR RAMP & HANDICAP SPACE STRIPING DETAIL

(NOT TO SCALE)



DUMPSTER DETAIL

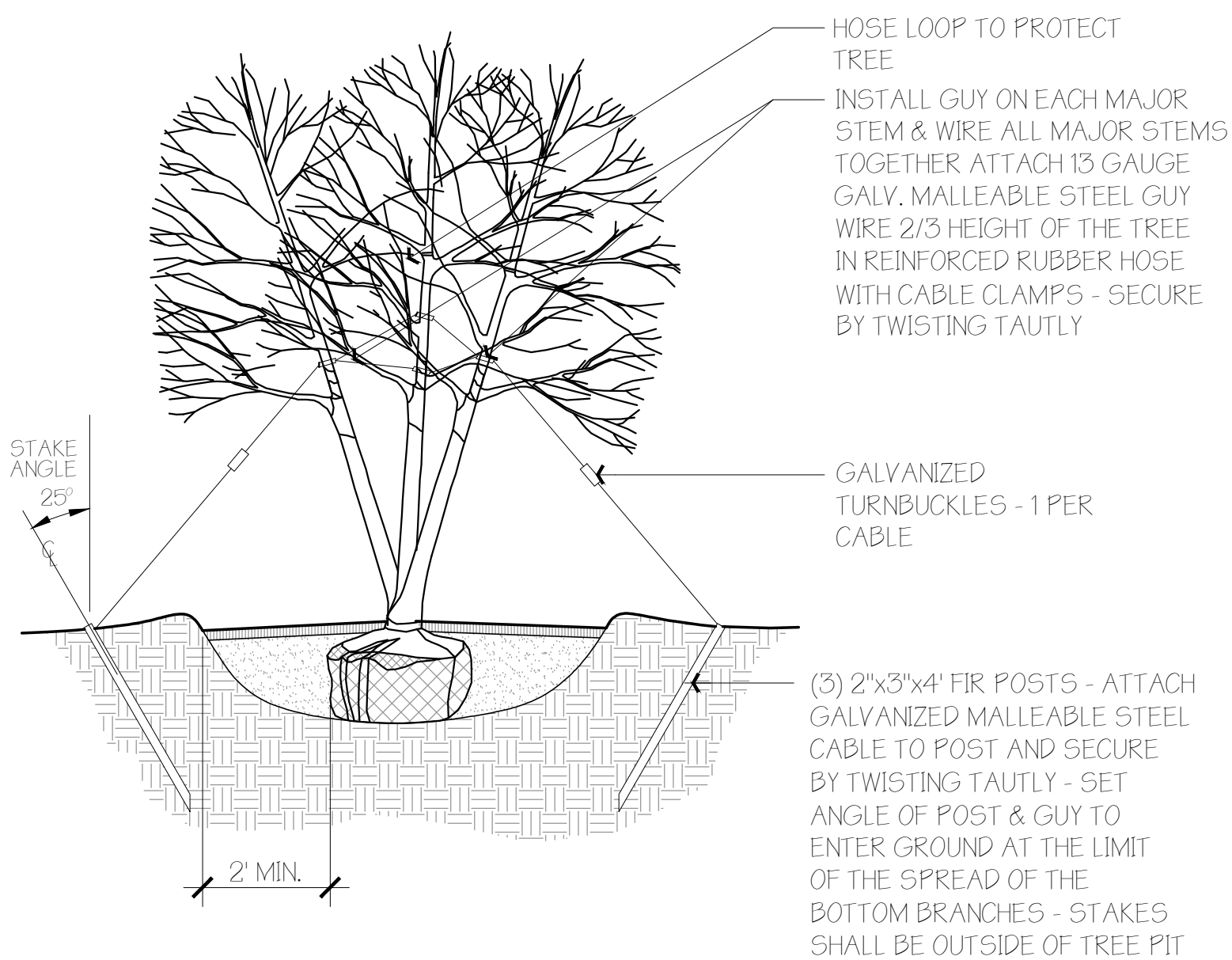
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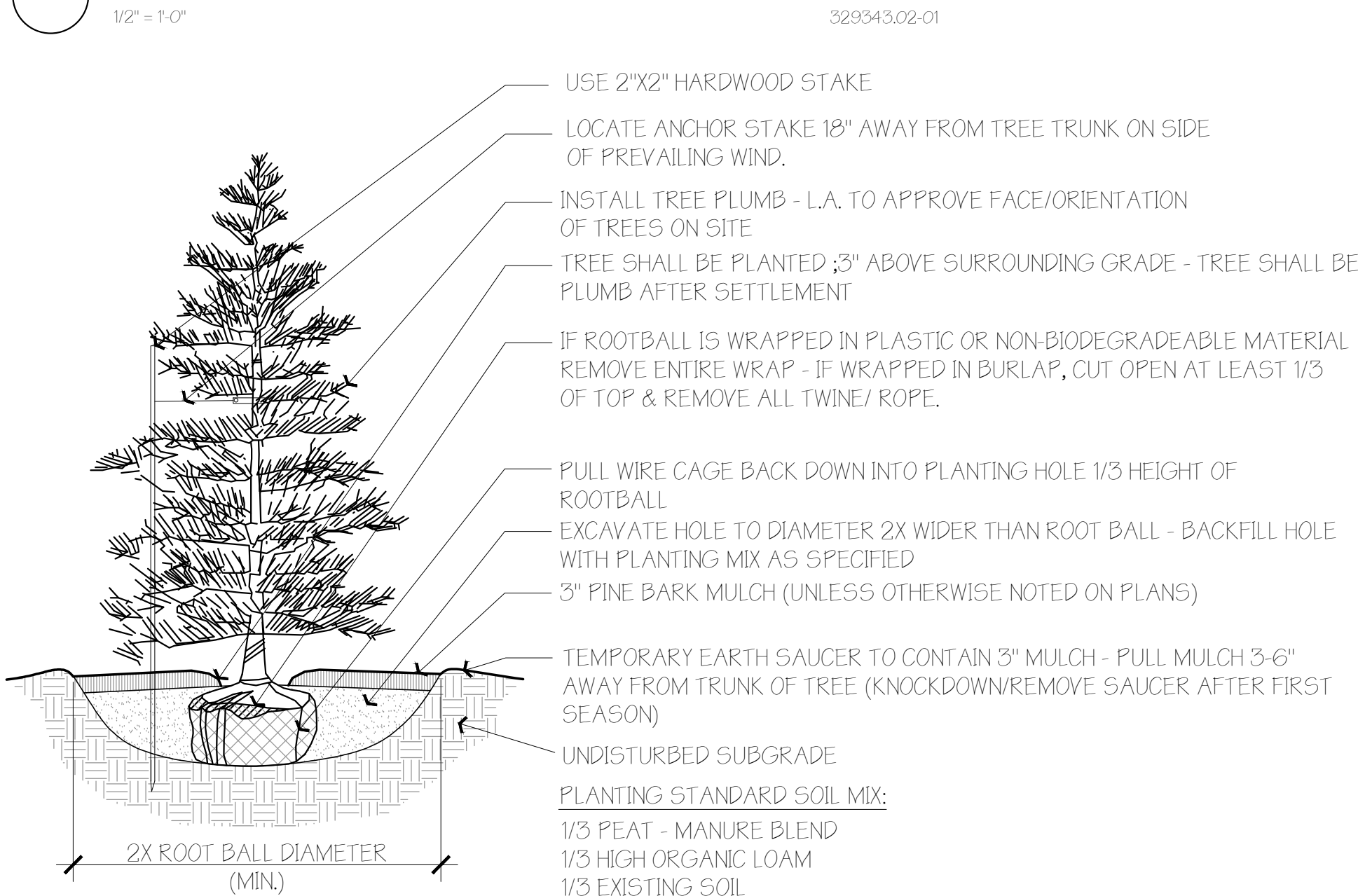
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TIMOTHY BENNETT P.L.S.

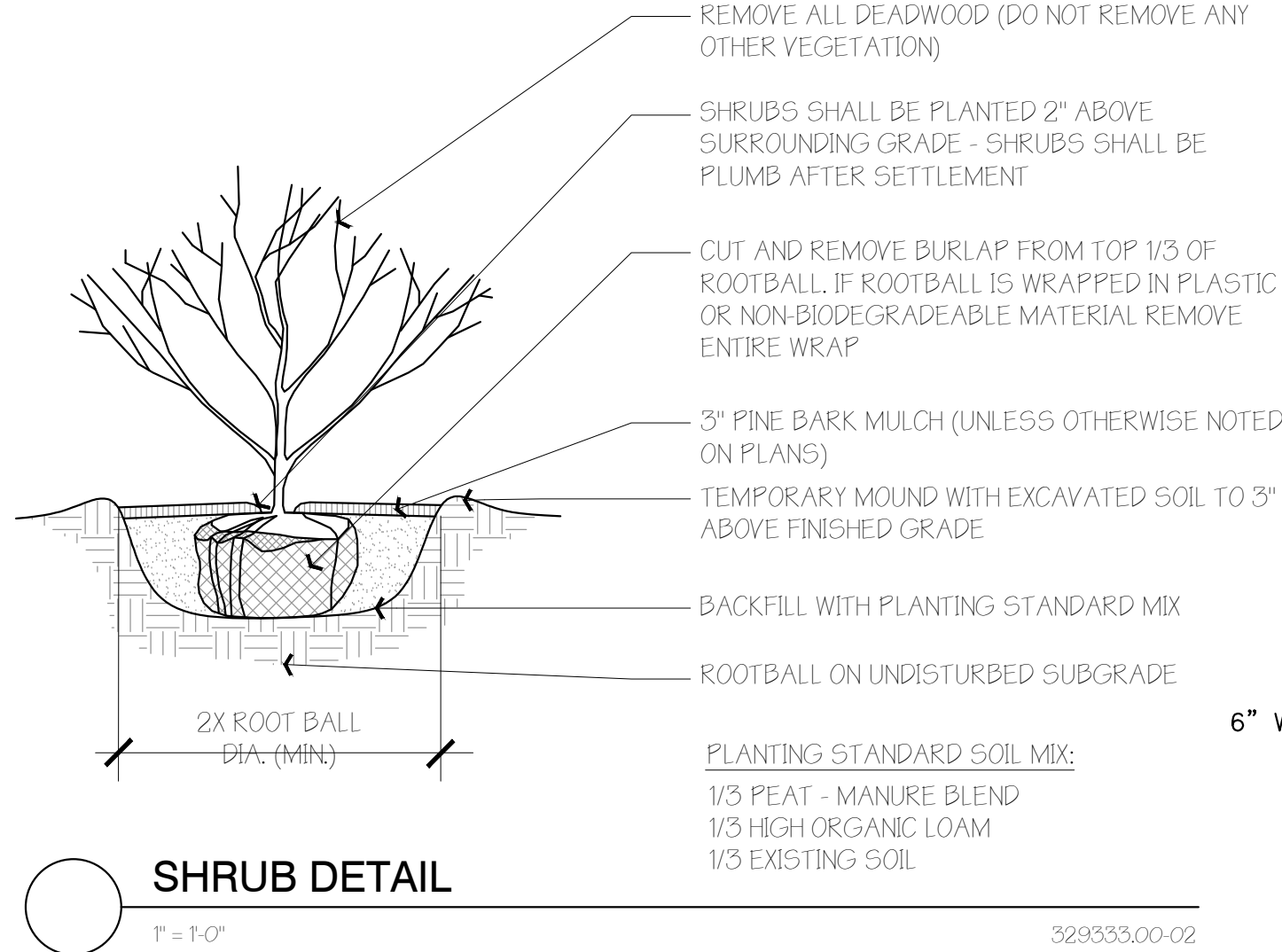
SITE PLAN
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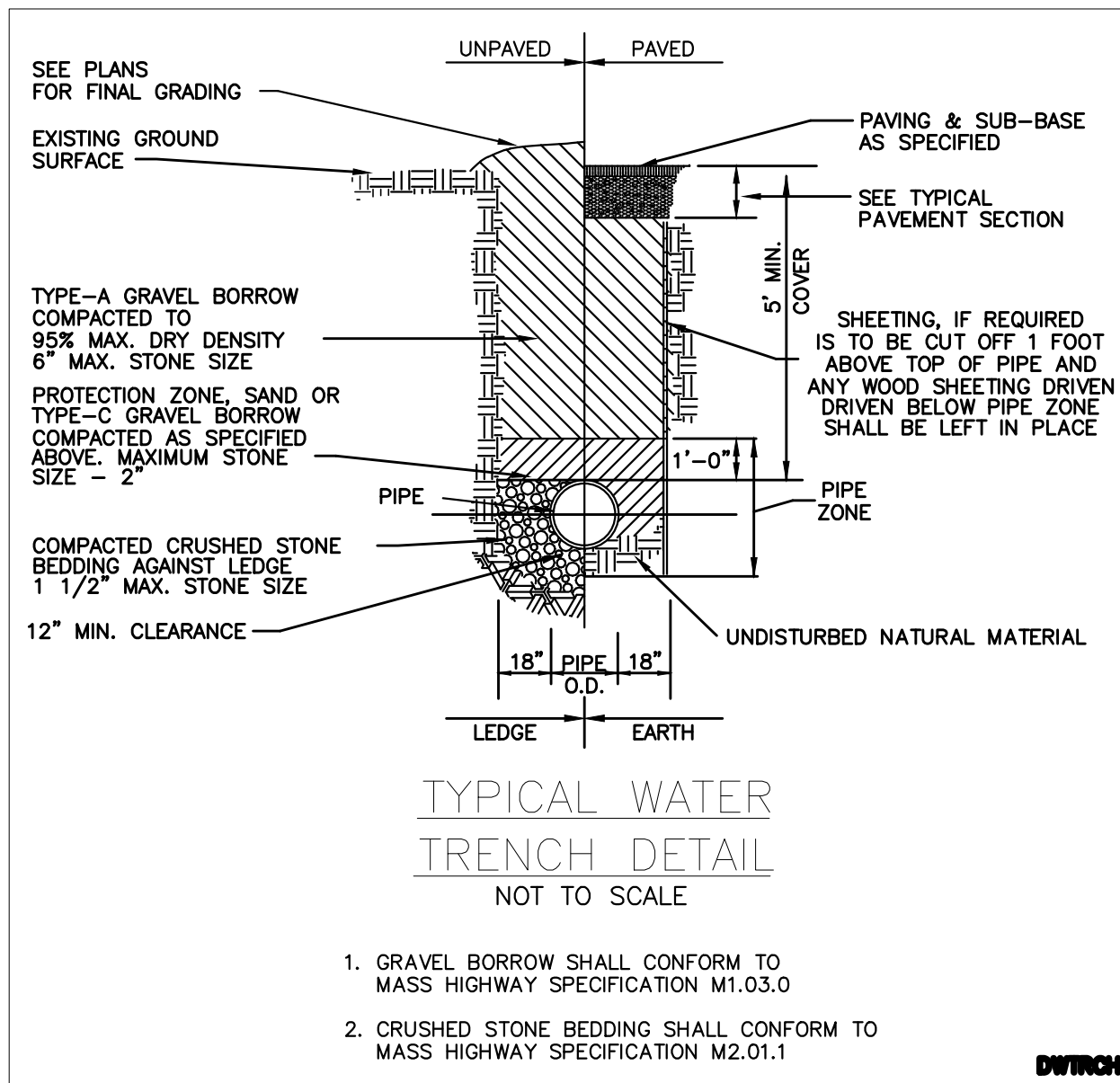
TREE GUYING DETAIL - MULTISTEM



EVERGREEN TREE DETAIL



SHRUB DETAIL

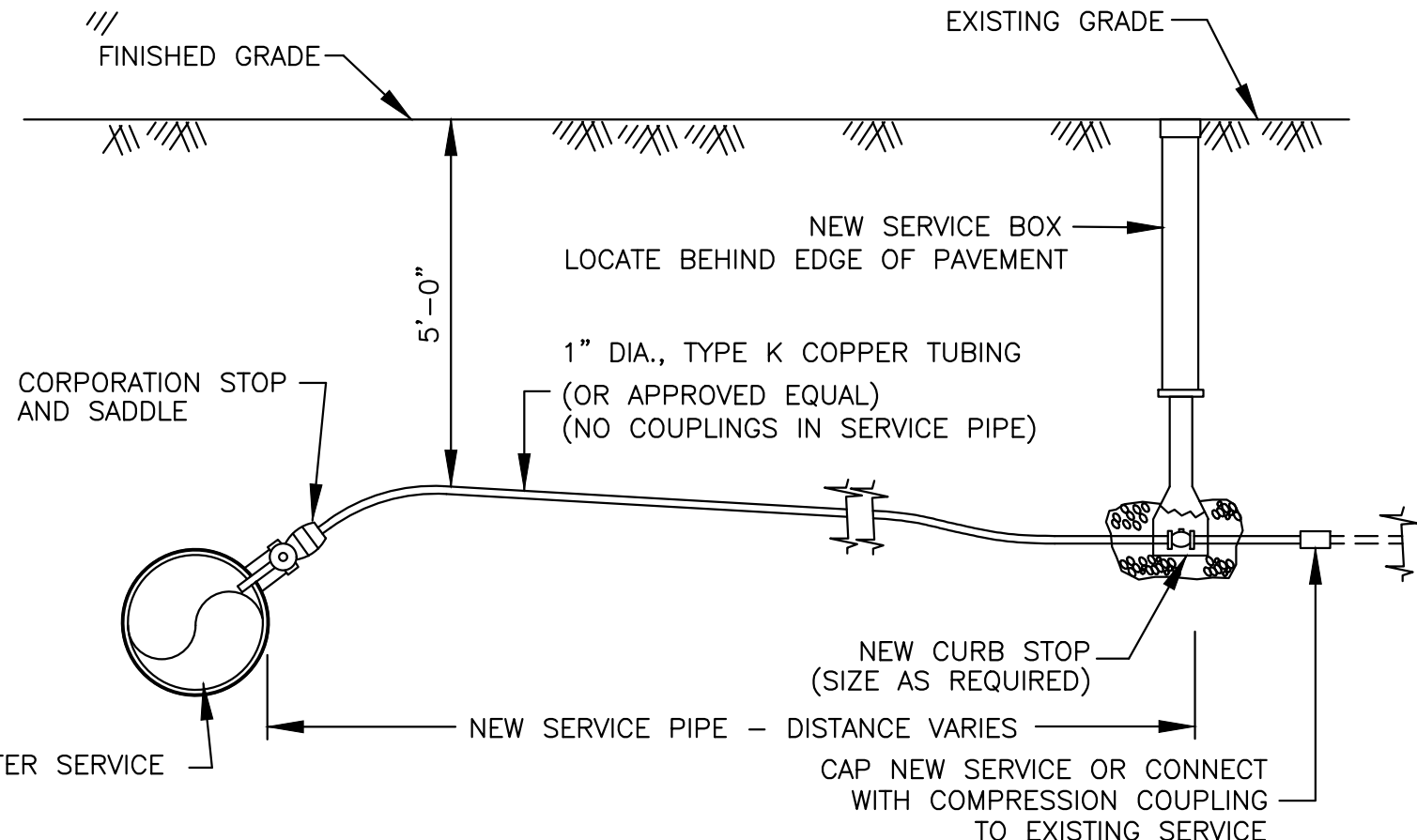


TYPICAL WATER TRENCH DETAIL
NOT TO SCALE

1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.1

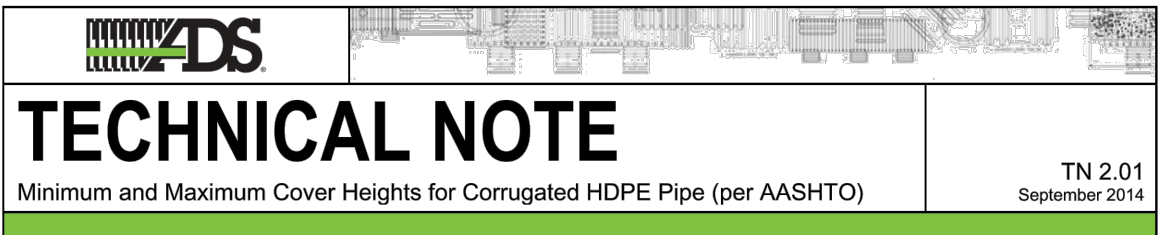
PLANTING NOTES

- 1) NOTIFY DIG-SAFE AND LOCAL AUTHORITIES PRIOR TO ANY TYPE OF SITE PREPARATION OR CONSTRUCTION.
- 2) ALL PLANTS TO HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER SETTLEMENT AS TO THEIR ORIGINAL GRADE BEFORE DIGGING. LOCATE PLANT COLLAR TWO OR THREE INCHES HIGHER THAN PLANTING SOIL MIX TO INSURE CORRECT FINAL RELATIONSHIP.
- 3) APPLY AN APPROVED ANTI-DESICCANT TO ALL PLANTS IN LEAF AT PLANTING TIME, AND TO ALL EVERGREENS BEFORE THEIR FIRST WINTER.
- 4) FLOOD ALL PLANTS WITH CLEAN WATER TWICE IN THE FIRST 24 HOUR AFTER PLANTING. CONTRACTOR TO ARRANGE FOR ALL PLANTS TO BE PLANTED WITHIN THREE DAYS AFTER DELIVERY TO THE SITE UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
- 5) NEVER CUT A LEADER.
- 6) TRIM ONLY BROKEN OR DEAD BRANCHES FROM EVERGREEN PLANTS.
- 7) THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL AND MULCH IN SUFFICIENT QUANTITIES TO COMPLETE PLANTING AS SHOWN ON THE DRAWINGS. DRAWING QUANTITIES TAKE PRECEDENCE OVER PLANT LIST QUANTITIES.
- 8) ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES BY "THE AMERICAN STANDARD FOR NURSERY STOCK," PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
- 9) ALL TREES SHALL HAVE "BEST FACE" SIDE TAGGED AT NURSERY PRIOR TO DIGGING.
- 10) ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN, UNLESS OTHERWISE APPROVED BY THE LANDSCAPE ARCHITECT.
- 11) CONTRACTOR TO STAKE TREE LOCATIONS FOR APPROVAL BY LANDSCAPE ARCHITECT.
- 12) LANDSCAPE ARCHITECT TO APPROVE IN PLACE ALL SHRUBS, PERENNIALS AND VINES PRIOR TO PLANTING.
- 13) ALL TREES TO RECEIVE A MINIMUM OF THREE INCHES OF MULCH. ALL SHRUBS, VINES AND GROUND COVERS TO RECEIVE A MINIMUM OF TWO INCHES OF MULCH.
- 14) WHERE SPECIFIED, CALIPER SIZE TO BE OVERKING FACTOR IN TREE SELECTION.
- 15) STAKE OR GUY ALL TREES AND LARGE EVERGREEN MATERIAL.
- 16) CONTRACTOR TO PROVIDE TWO YEAR GUARANTEE ON ALL MATERIAL. CONTRACTOR TO MAINTAIN ALL PLANTING AND LAWNS UNTIL FINAL PROJECT ACCEPTANCE. GUARANTEE PERIOD TO BEGIN AT FINAL ACCEPTANCE.
- 17) ALL PLANT MATERIAL SHALL BE INSTALLED PRIOR TO FINAL TOP-DRESSING AND SODDING/SEEDING.
- 18) COORDINATE LANDSCAPE INSTALLATION WITH INSTALLATION OF UNDERGROUND SPRINKLER SYSTEM & LANDSCAPE LIGHTING (IF APPLICABLE).
- 19) NO PLANTING BEFORE THE ACCEPTANCE OF ROUGH GRADING.
- 20) CONTRACTOR TO PROVIDE SOIL TESTS IN AREAS DESIGNATED BY LANDSCAPE ARCHITECT IN FIELD FOR EXISTING SOILS TO DETERMINE APPROPRIATE SOIL AMENDMENTS PRIOR TO THE DISTURBANCE OF SITE.
- 21) ALL PLANTING BEDS TO BE TREATED WITH PREEN AND GREEN OR APPROVED EQUAL TO PROHIBIT WEED GERMINATION AND GROWTH PRIOR TO THE SPREADING OF MULCH.
- 22) ALL PERENNIALS ARE TO BE PLANTED INTO DAMP SOIL.
- 23) PLANT LIST: A COMPLETE LIST OF PLANTS INCLUDING A SCHEDULE OF QUANTITIES, SIZES, TYPES AND NAMES IS INCLUDED IN THIS SET OF DRAWINGS. IN THE EVENT OF DISCREPANCIES BETWEEN QUANTITIES OF PLANTS IN THE PLANT LIST AND THE QUANTITIES SHOWN ON THE DRAWINGS, THE PLAN SHALL GOVERN. WHEN MULTIPLE PLANT SPECIES ARE LISTED IN ONE PLANT CATEGORY, THE GOAL IS TO PROVIDE THE BEST PLANTS AVAILABLE AT THE TIME OF INSTALLATION. GRADY CONSULTING SHALL SELECT OR COORDINATE THE SELECTION OF THE APPROPRIATE PLANTS AT LOCAL NURSERIES. GRADY CONSULTING HAS THE RIGHT TO REJECT ANY PLANT THAT DOES NOT MEET THE SPECIFICATIONS LISTED IN THE PLANT TABLE.
- 24) PLANT SUBSTITUTION ARE NOT ALLOWED UNLESS APPROVED BY GRADY CONSULTING.
- 25) ALL DISTURBED AREAS TO BE LOAMED AND SEEDED AND BLENDED INTO EXISTING GRADE AND CONDITIONS (REFER TO ENGINEER'S SOIL STABILIZATION AND EROSION CONTROL PLAN FOR FURTHER INFORMATION).



1. SERVICES SHALL CONSIST OF COPPER TUBING, A CORPORATION COCK AT THE MAIN, A CURB STOP AND CURB BOX AT THE PROPERTY LINE AND AN INSIDE VALVE AND METER ON THE OWNERS PREMISES.
2. ALL SERVICE PIPE SHALL BE OF TYPE "K" COPPER TUBING, THE SIZE TO BE DETERMINED BY THE DEPARTMENT.
3. SERVICE PIPE SHALL BE PLACED FIVE FEET BELOW FINAL GRADE.
4. SERVICE BOXES SHALL BE CENTERED OVER THE CURB STOP AND SET FLUSH WITH THE GROUND SURFACE.
5. CONNECTIONS TO WATER MAINS SHALL BE DONE BY THE DEPARTMENT. A SERVICE CHARGE WILL BE LEVED FOR THIS SERVICE.
6. NO PIPE OR FITTING SHALL BE BACKFILLED BEFORE INSPECTION BY A PERSON DESIGNATED BY THE DEPARTMENT.
7. ALL DAMAGE OF WHATEVER NATURE RESULTING FROM THE WORK, OR RESULTING TO THE WORK FROM WHATEVER CAUSE SHALL BE BORNE AND SUSTAINED BY THE CONTRACTOR.
8. DAMAGES TO ANY EXISTING UNDERGROUND STRUCTURE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
9. NO WATER SERVICE SHALL BE INSTALLED NEARER THAN 10 FEET TO ANY SEPTIC TANK, CESSPOOL, LEACHING FIELD DRAINAGE PIT, SEWER LINE OR DRAIN LINE AS PER DEP 310 CMR, SECTION 15.211.
10. THE CONTRACTOR WILL HAVE AN APPROVED STREET OPENING PERMIT FROM THE PEMBROKE DEPARTMENT OF PUBLIC WORKS (THE DEPARTMENT) PRIOR TO THE START OF ANY WORK PERFORMED IN A PUBLIC WAY. A SERVICE LINE INSTALLED BY A PRIVATE CONTRACTOR IN A PUBLIC WAY MUST BE GUARANTEED FOR ONE YEAR FROM THE DATE OF COMPLETION. THE CONTRACTOR SHALL REPAIR ANY SETTLEMENT OF THE TRENCH PAVEMENT BY A METHOD APPROVED BY THE DEPARTMENT AND AT HIS OWN EXPENSE FOR THE SAME ONE-YEAR PERIOD STARTING FROM THE DATE OF COMPLETION.

1"Ø DOMESTIC WATER SERVICE DETAIL



Introduction

The information in this document is designed to provide answers to general cover height questions; the data provided is not intended to be used for project design. The design procedure described in the Structures section (Section 2) of the Drainage Handbook provides detailed information for analyzing most common installation conditions. This procedure should be utilized for project specific designs.

The two common cover height concerns are minimum cover in areas exposed to vehicular traffic and maximum cover heights. Either may be considered "worst case" scenario from a loading perspective, depending on the project conditions.

Minimum Cover in Traffic Applications

Pipe diameters from 4- through 48-inch (100-1200 mm) installed in traffic areas (AASHTO H-25 or HS-25 loads) must have at least one foot (0.3m) of cover over the pipe crown, while 54- and 60-inch (1350 and 1500 mm) pipes must have at least 24 inches (0.6m) of cover. The backfill envelope must be constructed in accordance with the Installation section (Section 5) of the Drainage Handbook and the requirements of ASTM D2321. The backfill envelope must be of the type and compaction listed in Appendix A-5, Table A-5-2 of the Drainage Handbook. In Table 1 below, this condition is represented by a Class III material compacted to 90% standard Proctor density, although other material can provide similar strength at slightly lower levels of compaction. Structural backfill material should extend six inches (0.15m) over the crown of the pipe; the remaining cover should be appropriate for the installation and as specified by the design engineer. If settlement or rutting is a concern, it may be appropriate to extend the structural backfill to grade. Where pavement is involved, sub-base material can be considered in the minimum burial depth. While rigid pavements can be included in the minimum cover, the thickness of flexible pavements should not be included in the minimum cover.

Additional information that may affect the cover requirements is included in the Installation section (Section 5) of the Drainage Handbook. Some examples of what may need to be considered are temporary heavy equipment, construction loading, paving equipment and similar loads that are less than the design load, the potential of pipe flotation, and the type of surface treatment which will be installed over the pipe zone.

Table 1 Minimum Cover Requirements for ADS N-12 [®] , N-12 ST, and N-12 WT (per AASHTO) with AASHTO H-25 or HS-25 Load					
Inside Diameter, ID, in.(mm)	Minimum Cover, ft. (m)	Inside Diameter, ID, in.(mm)	Minimum Cover, ft. (m)	Inside Diameter, ID, in.(mm)	Minimum Cover, ft. (m)
4 (100)	1 (0.3)	24 (600)	1 (0.3)	54 (1350)	2 (0.6)
6 (150)	1 (0.3)	30 (750)	1 (0.3)	60 (1500)	2 (0.6)
8 (200)	1 (0.3)	36 (900)	1 (0.3)		
10 (250)	1 (0.3)	42 (1050)	1 (0.3)		
12 (300)	1 (0.3)	48 (1200)	1 (0.3)		
16 (400)	1 (0.3)	54 (1350)	2 (0.6)		
18 (450)	1 (0.3)	60 (1500)	2 (0.6)		

Note: Minimum covers presented here were calculated assuming Class III backfill material compacted to 90% standard Proctor density around the pipe and a minimum of 6-inches (0.15m) structural backfill over the pipe crown, as recommended in Section 5 of the Drainage Handbook, with an additional layer of compacted traffic lane sub-base for a total cover as required. In shallow traffic installations, especially where pavement is involved, a good quality compacted material to grade is required to prevent surface settlement and rutting.

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ALL DRAIN PIPE TO BE ADS N-12
EQUIVALENT OR APPROVED EQUAL

DRAIN PIPE DETAIL

(NOT TO SCALE)

FOR REGISTRY USE ONLY

WATER SUPPLY NOTES

1. THERE SHALL BE NO PHYSICAL CONNECTION BETWEEN A PUBLIC OR PRIVATE POTABLE WATER SUPPLY SYSTEM AND A SEWER, OR APPURTENANCE THERETO WHICH WOULD PERMIT THE PASSAGE OF ANY WASTEWATER OR POLLUTED WATER INTO THE POTABLE SUPPLY.
2. THE SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER MAIN PROVIDED THAT IT IS
A. LAID IN A SEPARATE TRENCH, AND
B. THE ELEVATION OF THE TOP(CROWN) OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM(INVERT) OF THE WATER MAIN.
3. WHENEVER SEWERS MUST CROSS UNDER WATER MAINS, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THIS REQUIREMENT, THE WATER MAIN SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL JOINT PIPE FOR A DISTANCE OF 10 FEET ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER MAIN SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.
4. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER MAIN AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL JOINT CAST IRON PIPE AND SHALL BE PRESSURE TESTED TO ASSURE WATERTIGHTNESS.

SPECIFICATIONS

1. ALL WATER MAIN PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH A WW A C 151. PIPE SHALL BE DUCTILE IRON, THICKNESS CLASS 52. THE INSIDE OF THE PIPE SHALL BE GIVEN A CEMENT LINING AND ASPHALTIC SEAL COAT IN ACCORDANCE WITH A WW A C 104.
2. ALL INSTALLED WATER PIPE SHALL HAVE FIVE FEET OF COVER MEASURED AT FINAL GRADE.
3. GENERALLY, NO PIPE SMALLER THAN EIGHT INCHES IN INTERNAL DIAMETER SHALL BE UTILIZED FOR WATER MAINS CONNECTED TO A HYDRANT.
4. ALL FITTINGS SHALL BE MECHANICAL JOINT, CONFORM TO THE REQUIREMENTS OF A WW A CL 10 OR C153, AND BE CAPABLE OF WITHSTANDING 250 PSI.
5. TAPPING SLEEVES SHALL HAVE STAINLESS STEEL WRAP TEES.
6. ALL VALVES AND FITTINGS SHALL BE BRACED AGAINST MOVEMENT UTILIZING APPROVED JOINT RESTRAINT SYSTEMS (I.E. MEGALUG® FITTINGS SERIES 1100 OR APPROVED EQUAL).
7. WATER VALVES SHALL BE RESILIENT WEDGE TYPE GATE VALVES MANUFACTURED TO AWWA C509 STANDARDS. VALVES SHALL OPEN RIGHT (CLOCKWISE). ALL VALVES THAT ARE 16 INCHES IN SIZE OR GREATER, SHALL BE BUTTERFLY VALVES. BUTTERFLY VALVES SHALL BE IN ACCORDANCE WITH "RUBBER SEATED BUTTERFLY VALVES", AWWA DESIGNATION C504. ALL GATE VALVES AND BUTTERFLY VALVES SHALL BE MANUFACTURED BY MUELLER CO.
8. GATE BOXES SHALL BE SET PLUMB AND FLUSH WITH THE GROUND SURFACE AND CONFORM TO A WWA C500. GATE VALVE BOXES SHALL BE EQUIPPED WITH PAVEMENT FLANGE.
9. NO PIPE OR FITTING SHALL BE BACKFILLED BEFORE INSPECTION BY A PERSON DESIGNATED BY THE WATER DEPARTMENT.
10. HYDRANTS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C502. HYDRANTS SHALL BE SET PLUMB, WITH THE STEAMER NOZZLE FACING THE ROAD. THE AREA AROUND THE DRIPS SHALL BE FILLED WITH CLEAN STONE. APPROVED JOINT RESTRAINT FITTINGS SHALL BE UTILIZED FOR HYDRANT INSTALLATION. HYDRANTS SHALL BE PLACED SO THAT THEY ARE WITHIN ONE FOOT OF THE PROPERTY LINE AND SHALL BE THE 5 1/4 CENTURION MODEL AS MANUFACTURED BY MUELLER COMPANY.
11. THE COMPLETED WATER MAIN SHALL BE CHLORINATED BY USING ONE PART SOLUTION OF AVAILABLE CHLORINE IN SUCH VOLUME THAT THE RATE OF DOSAGE OF THE WATER CONTENT OF THE MAIN SHALL BE AT LEAST FIFTY PARTS PER MILLION AVAILABLE CHLORINE. THE CONTACT PERIOD SHALL BE AT LEAST TWENTY-FOUR HOURS, LONGER IF THE TEST FOR RESIDUAL CHLORINE INDICATES THAT IT IS NECESSARY FOR PROPER DISINFECTION. WATER MAIN DISINFECTION SHALL BE IN ACCORDANCE WITH AN APPROVED A WW A METHOD FOR DISINFECTING WATER MAINS. THE DEPARTMENT WILL TAKE BACTERIA SAMPLES AND PERFORM ANALYSIS. THE CUSTOMER SHALL BE RESPONSIBLE FOR FLUSHING AND PRESSURE TESTING NEW WATER MAIN. NO WATER MAIN SHALL BE PLACED INTO SERVICE UNTIL THE DEPARTMENT HAS GIVEN APPROVAL.
12. ALL DAMAGES OF WHATEVER NATURE RESULTING FROM THE WORK OR RESULTING TO THE WORK, FROM WHATEVER CAUSE SHALL BE BORNE AND SUSTAINED BY THE CONTRACTOR.
13. DAMAGE TO ANY EXISTING UNDERGROUND STRUCTURE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
14. PRESSURE TESTS OF THE NEW WATER MAIN SHALL BE CARRIED OUT AT 150 POUNDS GAUGE FOR ONE HOUR. LEAKAGE TESTS SHALL BE PERFORMED IF THE PRESSURE DROPS AFTER THE ONE HOUR TIME PERIOD. THE RATE OF LEAKAGE SHALL NOT EXCEED ONE GALLON PER DAY PER LINEAR FOOT OF JOINT.
15. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR AFTER THE COMPLETION OF STRENGTH AND LEAKAGE TESTS.
16. IN THE CASE WHERE THE TOWN OF PEMBROKE SUPPLIES WATER TO INDIVIDUAL HOUSES IN A DEVELOPMENT AND AFTER ALL THE FOREGOING CONDITIONS HAVE BEEN MET, AND BEFORE THE TOWN ACCEPTS THE ROAD OR ROADS AND/OR UTILITIES, THE OWNER OF THE DEVELOPMENT SHALL PAY, AT COST, FOR- ANY REPAIRS TO THE MAINS AND APPURTENANCES WHICH MAY BECOME NECESSARY.
17. THE WATER MAIN SHOULD HAVE A MINIMUM OF 18" OF CLEARANCE BETWEEN ANY UTILITIES WHETHER RUNNING PARALLEL OR CROSSING A UTILITY.
18. THE WATER MAIN, FITTINGS AND HYDRANTS LATERALS SHALL BE POLYETHYLENE ENCASED WITH V-BIO IN ANY INSTANCE THE WATER SYSTEM APPURTENANCES MAY BE INSTALLED WITHIN THE SEASONAL HIGH GROUND WATER.

I HEREBY CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN CONFORMANCE WITH THE RULES AND REGULATIONS OF THE REGISTERED PROFESSIONAL LAND SURVEYORS OF THE COMMONWEALTH OF MASSACHUSETTS.
TIMOTHY BENNETT P.L.S.



SITE PLAN
WILDLAND TIMBER

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PEMBROKE, MASSACHUSETTS

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JANUARY 11, 2021
SCALE: AS NOTED
JOB No. 20-365

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