

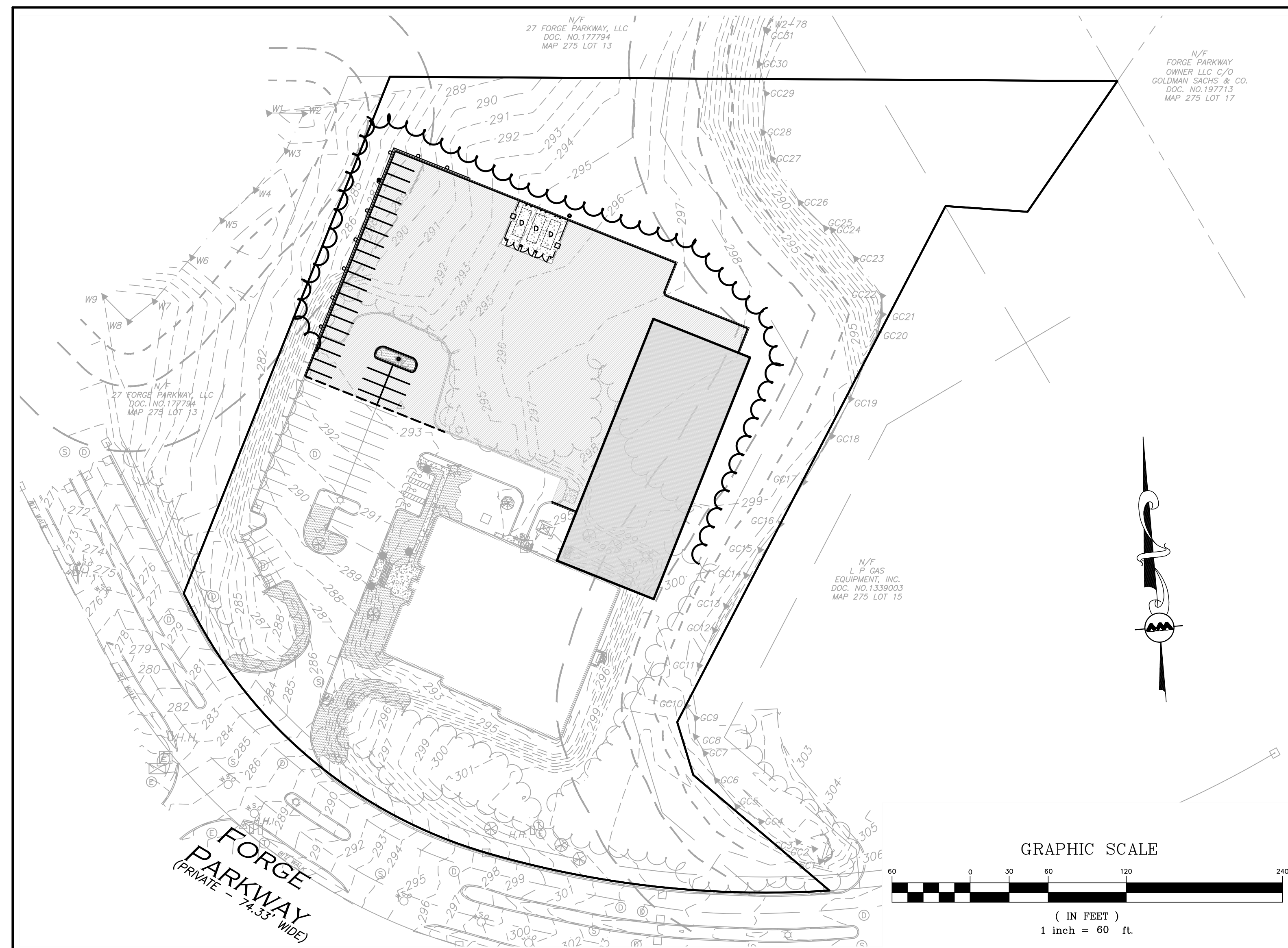
**LOCUS MAP**  
NOT TO SCALE

# SITE DEVELOPMENT PLANS FOR 25 FORGE PARKWAY FRANKLIN, MA 02038 TAX MAP 275, LOT 14

**APPLICANT/OWNER:**  
TMC HOLDINGS & DEVELOPMENT 2, LLC  
25 FORGE PARKWAY  
FRANKLIN, MA 02038

**CIVIL ENGINEER:**  
ALLEN & MAJOR ASSOCIATES, INC.  
400 HARVEY ROAD  
MANCHESTER, NH 03103

**SURVEYOR:**  
ALLEN & MAJOR ASSOCIATES, INC.  
100 COMMERCE WAY  
WOBURN, MA 01801



LIST OF DRAWINGS				
DRAWING TITLE	SHEET NO.	ISSUED	REVISION 1	REVISION 2
EXISTING CONDITIONS	V-101	02-21-23	04-04-23	-
EROSION CONTROL & SITE PREPARATION NOTES	C-001	-	04-04-23	04-14-23
SITE PREPARATION PLAN	C-101	02-21-23	04-04-23	04-14-23
LAYOUT & MATERIALS PLAN	C-102	02-21-23	04-04-23	04-14-23
GRADING & DRAINAGE PLAN	C-103	02-21-23	04-04-23	04-14-23
LIGHTING PLAN	C-104	02-21-23	04-04-23	04-14-23
SITE PLAN & CROSS-SECTION	C-201	-	-	04-14-23
DETAILS	C-501	02-21-23	04-04-23	04-14-23
DETAILS	C-502	02-21-23	04-04-23	04-14-23
DETAILS	C-503	02-21-23	04-04-23	04-14-23
LANDSCAPE PLAN	L-101	-	04-04-23	04-14-23
LANDSCAPE NOTES & DETAILS	L-501	-	04-04-23	04-14-23



TOWN OF FRANKLIN APPROVAL STAMP



*Brian D. Jones*  
04.14.23

PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

PREPARED BY:

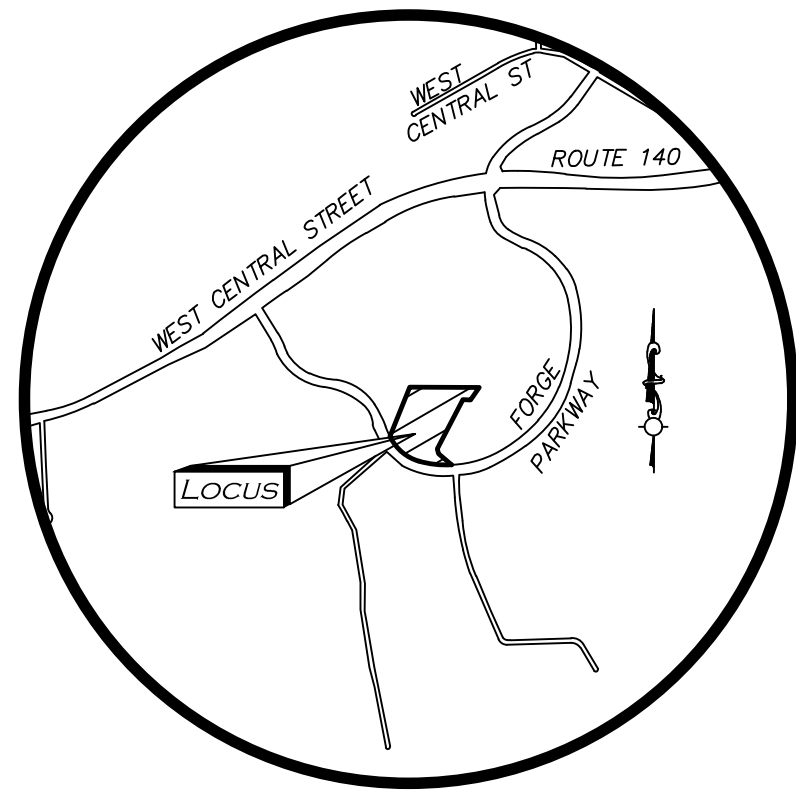


**ALLEN & MAJOR ASSOCIATES, INC.**

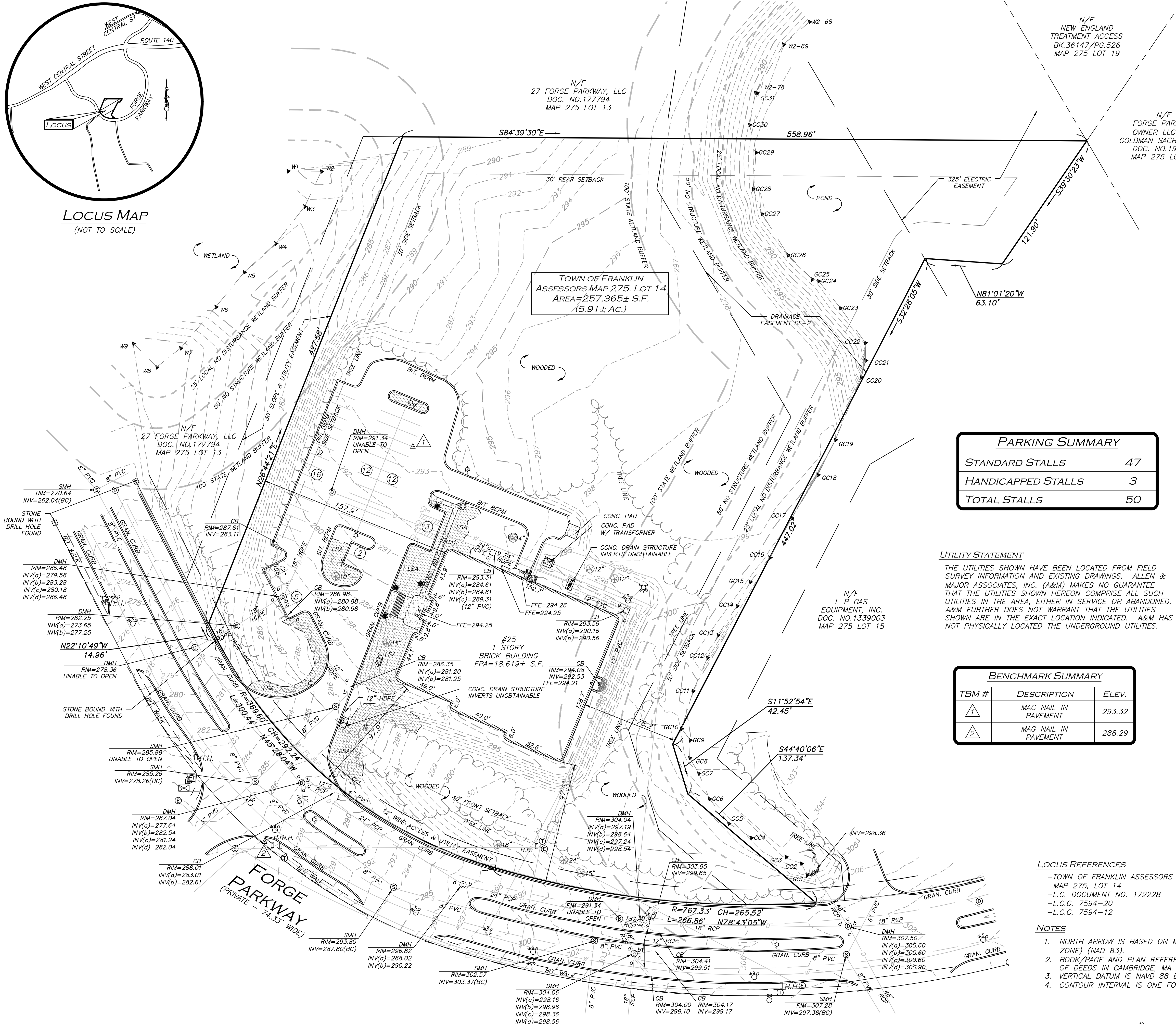
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www.allenmajor.com  
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FAX: (781) 935-2896

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ISSUED FOR INITIAL REVIEW: FEBRUARY 21, 2023  
REVISION 1: APRIL 4, 2023  
REVISION 2: APRIL 14, 2023



LOCUS MAP  
(NOT TO SCALE)



TOWN OF FRANKLIN  
ASSESSORS MAP 275, LOT 14  
AREA=257,365± S.F.  
(5.91± AC.)

PARKING SUMMARY	
STANDARD STALLS	47
HANDICAPPED STALLS	3
TOTAL STALLS	50

**UTILITY STATEMENT**  
THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

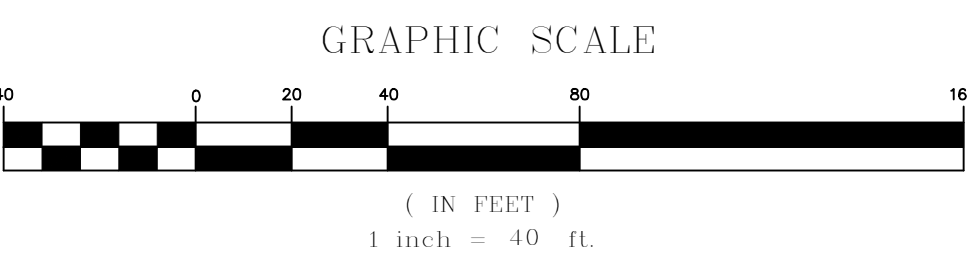
BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	MAG NAIL IN PAVEMENT	293.32
2	MAG NAIL IN PAVEMENT	288.29

**LOCUS REFERENCES**  
-TOWN OF FRANKLIN ASSESSORS MAP 275, LOT 14  
-L.C. DOCUMENT NO. 172228  
-L.C.C. 7594-20  
-L.C.C. 7594-12

- NOTES**
- NORTH ARROW IS BASED ON MASSACHUSETTS GRID COORDINATE SYSTEM (MAINLAND ZONE) (NAD 83).
  - BOOK/PAGE AND PLAN REFERENCES ARE TAKEN FROM MIDDLESEX (SOUTH) REGISTRY OF DEEDS IN CAMBRIDGE, MA.
  - VERTICAL DATUM IS NAVD 88 ESTABLISHED USING RTK GPS OBSERVATION.
  - CONTOUR INTERVAL IS ONE FOOT (1').

**LEGEND**

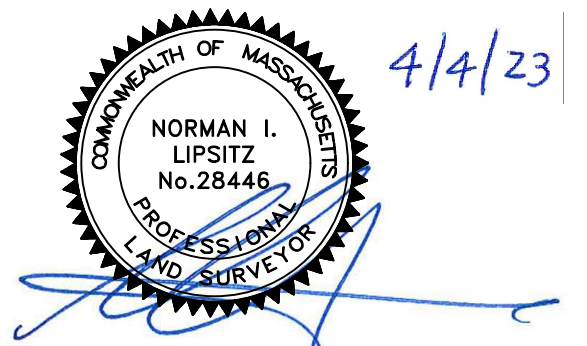
- STONE BOUND (SB) [Symbol]
- DRAIN MANHOLE (DMH) [Symbol]
- SEWER MANHOLE (SMH) [Symbol]
- ELECTRIC MANHOLE (EMH) [Symbol]
- TELEPHONE MANHOLE (TMH) [Symbol]
- CATCH BASIN (CB) [Symbol]
- FIRE HYDRANT [Symbol]
- WATER GATE [Symbol]
- SIGN [Symbol]
- SIGN [Symbol]
- LIGHT [Symbol]
- PEDESTAL LIGHT [Symbol]
- CLEANOUT [Symbol]
- INVERT (INV) [Symbol]
- TREE [Symbol]
- ELECTRIC BOX [Symbol]
- WETLAND FLAG [Symbol]
- HAND HOLE [Symbol]
- HANDICAPPED PARKING SPACE [Symbol]
- TRANSFORMER [Symbol]
- GAS METER [Symbol]
- GAS GATE [Symbol]
- CONCRETE [Symbol]
- LANDSCAPED AREA (LSA) [Symbol]
- BUILDING [Symbol]
- BUILDING OVERHANG [Symbol]
- WETLAND [Symbol]
- BUFFER ZONE [Symbol]
- EASEMENT LINE [Symbol]
- 1' CONTOUR [Symbol]
- 5' CONTOUR [Symbol]
- PROPERTY LINE [Symbol]
- ABUTTERS LINE [Symbol]
- TREE LINE [Symbol]
- EDGE OF PAVEMENT [Symbol]
- CURB [Symbol]
- WATER LINE [Symbol]
- SEWER LINE [Symbol]
- DRAIN LINE [Symbol]
- GAS LINE [Symbol]
- ELECTRIC LINE [Symbol]
- TELEPHONE LINE [Symbol]
- BITUMINOUS [Symbol]
- CONCRETE [Symbol]
- GRANITE [Symbol]
- BOTTOM CENTER [Symbol]
- REINFORCED CONCRETE PIPE [Symbol]
- POLYVINYL CHLORIDE PIPE [Symbol]
- NOW OR FORMERLY [Symbol]
- BOOK [Symbol]
- PAGE [Symbol]
- DOCUMENT [Symbol]
- LAND COURT [Symbol]
- LAND COURT CASE [Symbol]



R:\PROJECTS\2712-02\SURVEY\DRAWINGS\CURRENT\5-2712-02-EC.DWG

WE HEREBY CERTIFY THAT THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN APRIL 1, 2021 AND FEBRUARY 15, 2023.

APR. 4, 2023  
PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION
1.	04/04/23	PEER REVIEW COMMENTS

APPLICANT/OWNER:  
**GREEN SITE SERVICES GROUP**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02	DATE:	2/15/23
SCALE:	1" = 40'	DWG. NAME:	S-2712-02-EC
DRAFTED BY:	AJR	CHECKED BY:	NIL

PREPARED BY:  
**ALLEN & MAJOR ASSOCIATES, INC.**  
civil engineering • land surveying  
environmental consulting • landscape architecture  
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100 COMMERCE WAY  
WOBURN MA 01801-8501  
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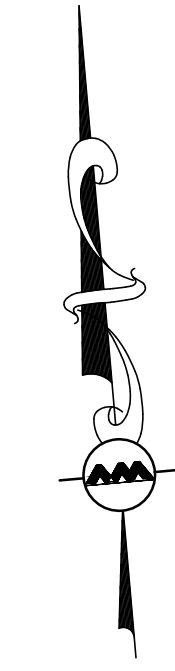
DRAWING TITLE:	SHEET NO.
EXISTING CONDITIONS	V-101

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**GENERAL SEQUENCE OF CONSTRUCTION:**

- CONTACT THE TOWN ENGINEERING DEPARTMENT AT LEAST TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION. GROUND BREAKING IS EXPECTED TO BEGIN ON JUNE 1, 2023 AND THE PROJECT IS ANTICIPATED TO TAKE 12 MONTHS UNTIL COMPLETION.
- INSTALL STABILIZED CONSTRUCTION ENTRANCES. SITE ACCESS SHALL BE ACHIEVED ONLY FROM THE DESIGNATED CONSTRUCTION ENTRANCE.
- PREPARE TEMPORARY PARKING AND STORAGE AREA. UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., DENOTE THEM ON THE SITE MAPS IMMEDIATELY AND NOTE ANY CHANGES IN THE LOCATIONS AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.
- INSTALL THE TUBULAR BARRIERS AND SILT SACKS AS SHOWN HEREON. EROSION CONTROL BARRIERS MUST BE INSPECTED AND APPROVED BY A PROFESSIONAL ENGINEER OR LICENSED WETLANDS SCIENTIST. NO SEDIMENTATION BARRIER MAY BE REMOVED WITHOUT PRIOR APPROVAL OF THE COMMISSION OR ITS STAFF.
- CLEAR AND GRUB THE SITE.
- CONSTRUCT TEMPORARY SEDIMENTATION AND SEDIMENT TRAP BASINS AS NECESSARY.
- CONSTRUCT STORMWATER MEASURES. SITE SHALL BE STABILIZED PRIOR TO STORMWATER MEASURES RECEIVING RUNOFF.
- START CONSTRUCTION OF BUILDING PAD AND STRUCTURES. TEMPORARILY SEED DENUDED AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDDED / LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE, EXCEPT WHERE RIP RAP IS APPLIED.
- INSTALL BUILDING, UTILITIES, STORM SEWERS, CURBS AND GUTTERS.
- INSTALL INLET PROTECTION DEVICES AROUND ALL STORM DRAIN STRUCTURES.
- INSTALL RIP RAP AROUND OUTLET STRUCTURES.
- FINALIZE GRADING, AND PREPARE SITE FOR PAVING. NOTE, ALL PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
- PAVE SITE. COMPLETE FINISH GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
- ONCE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.
- ALL EROSION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER ALL RAINFALL EVENTS GREATER THAN 0.25", AND SHALL BE MAINTAINED, REPAIRED OR REPLACED AS REQUIRED OR AT THE DIRECTION OF THE OWNER'S ENGINEER, OR THE TOWN ENGINEER.
- SEDIMENT ACCUMULATION UP-GRADIENT OF THE TUBULAR BARRIERS GREATER THAN 6" IN DEPTH SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.
- IF IT APPEARS THAT SEDIMENT IS EXITING THE SITE, SILT SACKS SHALL BE INSTALLED IN ALL CATCH BASINS ADJACENT TO THE SITE. SEDIMENT ACCUMULATION ON ALL ADJACENT CATCH BASIN INLETS SHALL BE REMOVED AND THE SILT SACK REPLACED IF TORN OR DAMAGED.
- THE CONTRACTOR SHALL COMPLY WITH THE GENERAL AND EROSION NOTES AS SHOWN ON THE SITE DEVELOPMENT PLANS, SEE ALSO SHEET C-001.

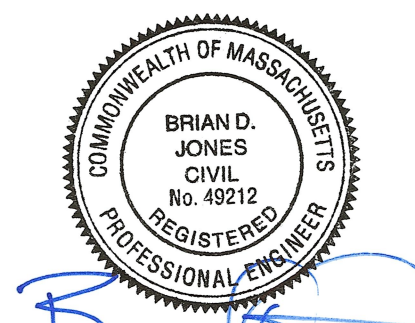


**LEGEND**

LIMIT OF DISTURBANCE	---
LIMIT OF 'CLEAR AND GRUB'	----
STABILIZED ENTRANCE	▨
STOCKPILE/STAGING AREA	▩
TUBULAR BARRIER	x-x
UTILITY CUT AND CAP	E
CATCH BASIN FILTER	⊠

**NOTES:**

- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AND STRUCTURES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF VARIOUS UTILITY COMPANIES AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THIS INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE LOCATION OF ALL UNDERGROUND UTILITIES AND STRUCTURES SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- ALTHOUGH CERTAIN ITEMS HAVE BEEN NOTED ON THIS DRAWING FOR DEMOLITION, NO ATTEMPT HAS BEEN MADE TO DELINEATE EACH AND EVERY ITEM THAT REQUIRES DEMOLITION FOR THE COMPLETION OF THE PROJECT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL NECESSARY DEMOLITION WORK TO COMPLETE THE PROJECT. ALLEN & MAJOR ASSOCIATES, INC. IS NOT RESPONSIBLE FOR SITE DEMOLITION ITEMS NOT SHOWN ON THE SURVEY, OR SPECIFICALLY NOTED. THE DEMOLITION NOTES AND ARROWS ON THIS PLAN ARE TYPICAL AND DO NOT REFLECT QUANTITY.
- THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY UTILITIES INTERFERING WITH THE PROPOSED CONSTRUCTION AND APPROPRIATE REMEDIAL ACTION TAKEN BEFORE PROCEEDING WITH THE WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.
- EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. IF IT ADDITIONAL MEASURES ARE NECESSARY DURING CONSTRUCTION THEY SHALL BE INSTALLED IMMEDIATELY AND WITHOUT DELAY. SEE DETAIL SHEET C-501 FOR ADDITIONAL INFORMATION.
- INLET PROTECTION SHALL BE INSTALLED IN PROPOSED CATCH BASINS IMMEDIATELY UPON CONSTRUCTION.
- THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.



Brian D. Jones  
07.14.23  
PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
**TMC HOLDINGS & DEVELOPMENT 2, LLC**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	1" = 40'	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

PREPARED BY:

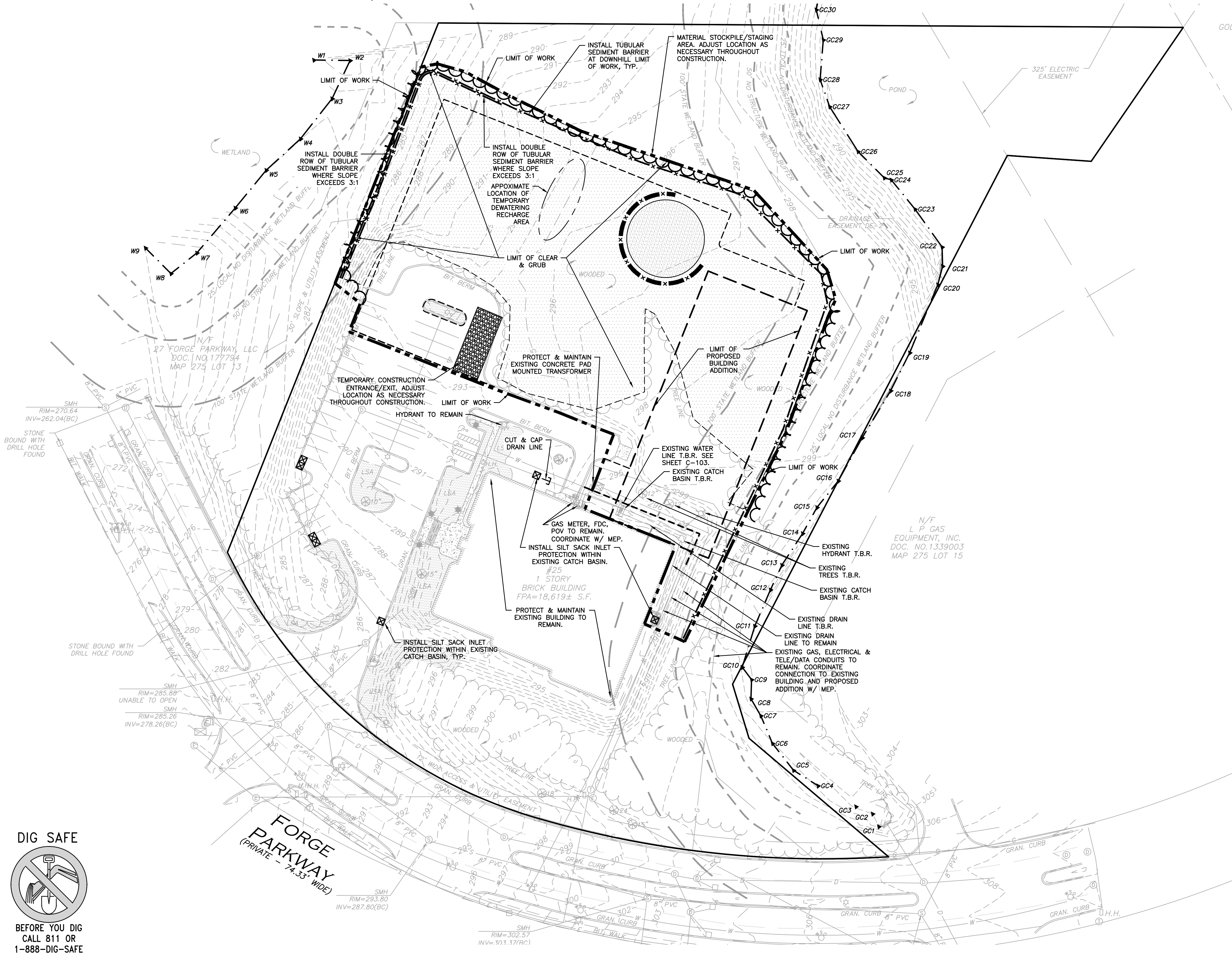
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DRAWING TITLE:	SHEET No.
<b>SITE PREPARATION PLAN</b>	<b>C-101</b>

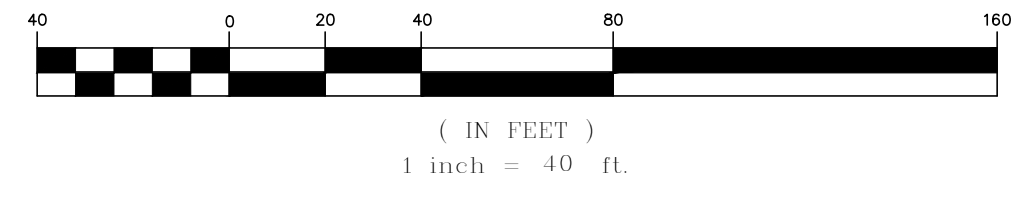
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FC  
OI  
GOLDI  
DC  
MA

N/F  
L P GAS  
EQUIPMENT, INC.  
DOC. NO. 13330003  
MAP 275 LOT 15

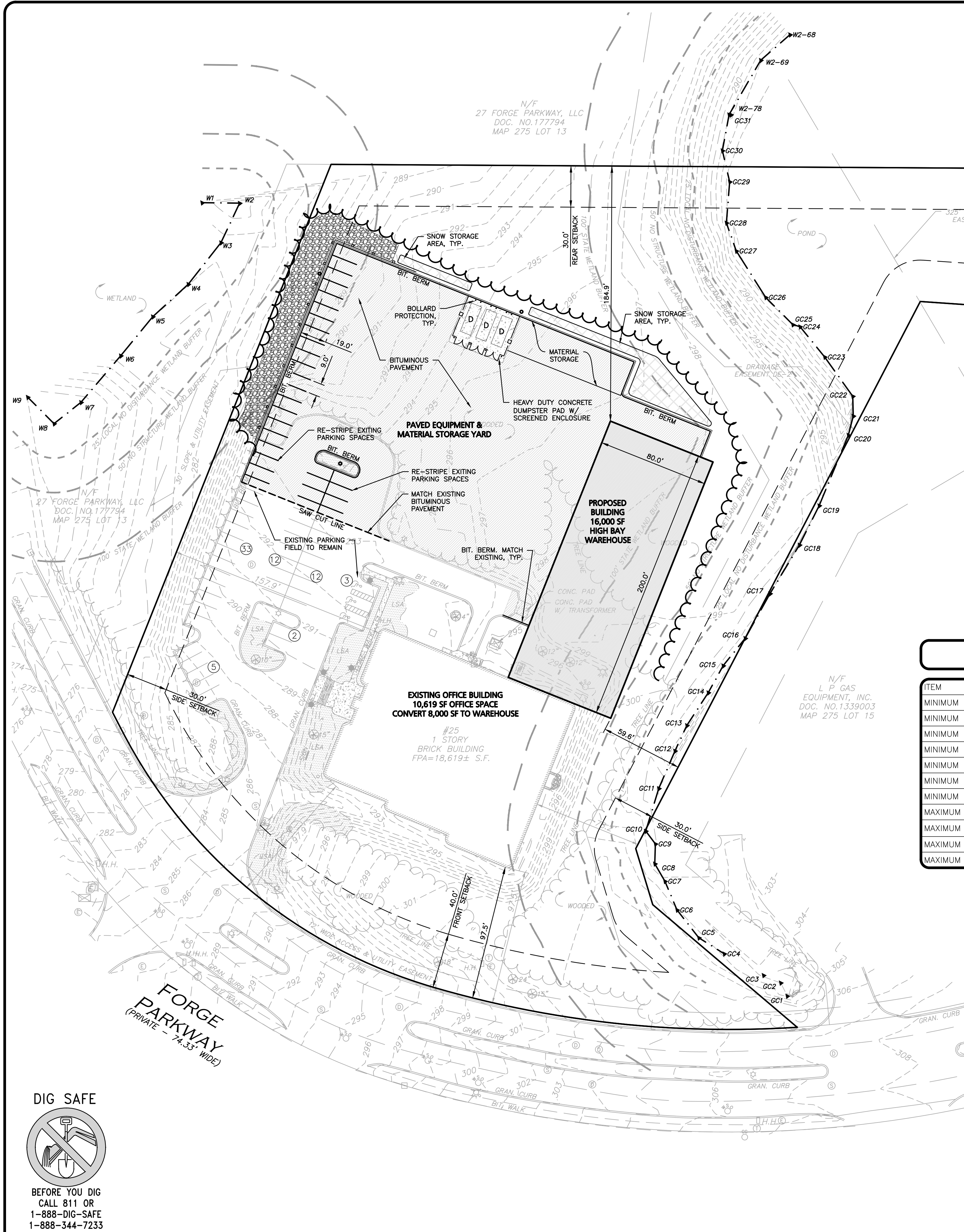
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R:\PROJECTS\2712-02A\CIVIL\DRAWINGS\CURRENT\C-2712-02A\_LAYOUT & MATERIALS.DWG



**OFF-STREET PARKING AND LOADING SUMMARY TABLE**

USE: EXISTING OFFICE BUILDING: 10,619 SF	REQUIRED	
1 SPACES PER 250 SQUARE FEET	42	PARKING SPACES
10,619 SF / 250 = 42 SPACES		
USE: WAREHOUSE: 24,000 SQUARE FEET (16,000 + 8,000 FROM EX. BLDG.)		
1 SPACE REQUIRED PER 1,000 SQUARE FEET	24	PARKING SPACES
24,000 SF / 1,000 = 24 SPACES		
TOTAL REQUIRED PARKING =		66 PARKING SPACES
ACCESSIBLE PARKING SPACE REQUIREMENT:		
FOR 51 TO 75 SPACES, 3 SHALL BE ACCESSIBLE,		
1 SHALL BE VAN ACCESSIBLE)	3	ADA SPACES
TOTAL PARKING PROVIDED: 67 PARKING SPACES		
STANDARD	64	
ACCESSIBLE	3	

TABLE NOTES:  
 1. PROPOSED PARKING SPACES SHALL BE A MINIMUM OF 9 FEET IN WIDTH AND 19 FEET IN DEPTH FOR 90° PARKING.

**TOWN OF FRANKLIN INDUSTRIAL (I) DISTRICT**

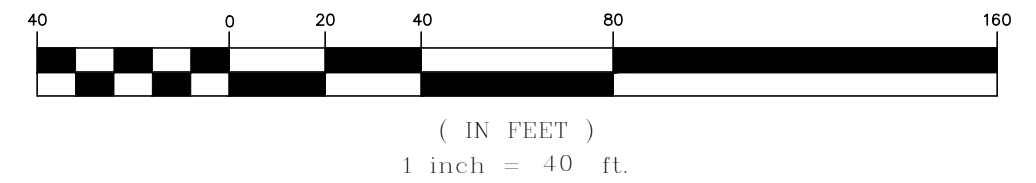
ITEM	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	40,000 SF	257,365 SF	257,365 SF
MINIMUM CONTINUOUS FRONTAGE	175 FEET	582 FEET	582 FEET
MINIMUM LOT DEPTH	200 FEET	619 FEET	619 FEET
MINIMUM LOT WIDTH	157.5 FEET	196 FEET	196 FEET
MINIMUM FRONT SETBACK	40 FEET	97.5 FEET	97.5 FEET
MINIMUM SIDE SETBACK	30 FEET	78.2 FEET	59.6 FEET
MINIMUM REAR SETBACK	30 FEET	336.7 FEET	184.9 FEET
MAXIMUM BUILDING STORIES	3	1	1
MAXIMUM BUILDING HEIGHT	N/A	20± FEET	28 FEET
MAXIMUM STRUCTURE COVERAGE	70%	7.23%	13.5%
MAXIMUM IMPERVIOUS COVERAGE	80%	18.5%	39.2%

**LEGEND**

PROPERTY LINE	
BOLLARD	
BUILDING	
CURB	
PARKING STRIPING	
HEAVY DUTY CONCRETE	
BITUMINOUS PAVEMENT	
SNOW STORAGE	
STEEL GUARDRAIL	
WOOD FENCE	
SETBACK LINE	
SAW-CUT LINE	
PARKING COUNT	
RIPRAP	
TREE LINE	

- NOTES:**
- ALL CURB RADII SHALL BE 3' UNLESS OTHERWISE NOTED.
  - PARKING DIMENSIONS ARE TAKEN FROM THE FACE OF CURB UNLESS OTHERWISE NOTED.
  - CONSTRUCTION DURING WET WEATHER OR WINTER CONDITIONS IS TO BE ANTICIPATED AND PROVISIONS TO ADEQUATELY ADDRESS THESE CONDITIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
  - ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE TOWN OF FRANKLIN, MADOT, MADEP, MUTCD, AND AASHTO.
  - WRITTEN DIMENSIONS ON THIS PLAN TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL USE CAUTION WHEN SCALING REPRODUCED PLANS. IN THE EVENT OF A CONFLICT BETWEEN THIS PLAN SET AND ANY OTHER DRAWINGS AND/OR SPECIFICATIONS OR CONDITIONS, THE ENGINEER SHALL BE NOTIFIED BY THE CONTRACTOR. ALL SITE ITEMS SHALL BE LAID OUT AND AS BUILT BY A LICENSED LAND SURVEYOR.
  - EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES, INC. AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE TOWN OF FRANKLIN, MA AND OTHER SOURCES.
  - THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY, ANY GOVERNING PERMITTING AUTHORITY, AND "DIGSAFE" AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK. THE CONTRACTOR SHALL ALSO CONTACT THE TOWN OF FRANKLIN, MA DEPARTMENT OF PUBLIC WORKS AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION WORK TO REQUEST EXACT FIELD LOCATION OF LOCAL UTILITIES.
  - THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
  - FLOOR DRAINS IN THE PROPOSED BUILDING ADDITION SHALL FLOW THROUGH A GAS TRAP PRIOR TO DISCHARGE TO THE MUNICIPAL SANITARY SYSTEM.

**GRAPHIC SCALE**



*Brian D. Jones*  
 07.14.23  
 PROFESSIONAL ENGINEER FOR  
 ALLEN & MAJOR ASSOCIATES, INC.

2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW
REV	DATE	DESCRIPTION

APPLICANT/OWNER:  
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 24 WILLIAM WAY  
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PROJECT:  
**25 FORGE PARKWAY**  
 FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	1" = 40'	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

PREPARED BY:

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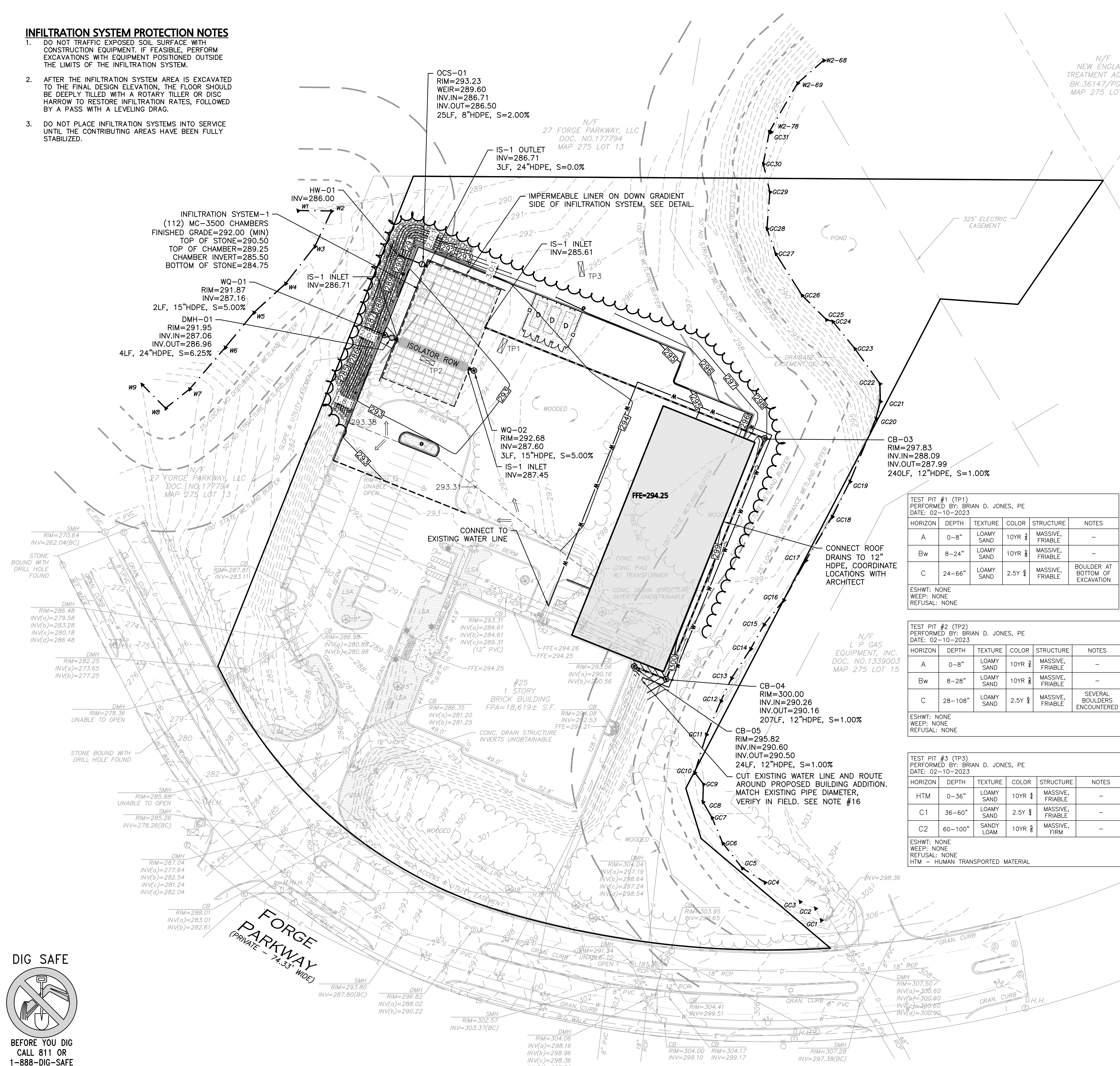
DRAWING TITLE: **LAYOUT & MATERIALS PLAN** SHEET No. **C-102**

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 1-888-344-7233

**INFILTRATION SYSTEM PROTECTION NOTES**

- DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEM.
- AFTER THE INFILTRATION SYSTEM AREA IS EXCAVATED TO THE FINAL DESIGN ELEVATION, THE FLOOR SHOULD BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW TO RESTORE INFILTRATION RATES, FOLLOWED BY A PASS WITH A LEVELING DRAG.
- DO NOT PLACE INFILTRATION SYSTEMS INTO SERVICE UNTIL THE CONTRIBUTING AREAS HAVE BEEN FULLY STABILIZED.



**LEGEND**

- DRAIN MANHOLE
- CATCH BASIN
- CATCH BASIN - DOUBLE GRATE
- OUTLET CONTROL
- HEADWALL
- DRAIN LINE
- RIPRAP
- 5' CONTOUR
- 1' CONTOUR
- SPOT GRADE
- INFILTRATION SYSTEM
- INFILTRATION CHAMBER
- ISOLATOR ROW
- FLOW DIRECTION
- WATER LINE

**NOTES:**

- EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES, INC. AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE TOWN OF FRANKLIN, MA AND OTHER SOURCES.
- VERTICAL DATUM IS NAVD88. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
- ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
- PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE EDGE OF THE STRUCTURE.
- ROOF DRAIN LOCATIONS TO BE BASED ON FINAL BUILDING PLANS. CONNECTION POINTS SHALL BE AS SHOWN HEREON.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM DRAIN MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING & COVERS, H=20 MINIMUM.
- THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE GENERAL N.P.D.E.S. PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
- CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT AND CONTINUOUS GRADE.
- CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
- ALL DRAINAGE SHALL CONFORM TO LOCAL REQUIREMENTS.
- THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.
- THE PROJECT RESULTS IN A NET EXPORT OF APPROXIMATELY 3,650 CUBIC YARDS OF MATERIAL. THIS VALUE DOES NOT INCLUDE EXCAVATION REQUIRED FOR BUILDING FOUNDATION, UTILITIES, OR STORMWATER INFRASTRUCTURE.
- PRIOR TO CONSTRUCTION, ONE ADDITIONAL TEST PIT SHALL BE PERFORMED WITHIN THE FOOTPRINT OF THE PROPOSED INFILTRATION SYSTEM TO CONFIRM SEPARATION TO ESTIMATED SEASONAL HIGH GROUND WATER. THE TEST PIT SHALL BE OBSERVED BY THE ENGINEER OF RECORD.
- FLOOR DRAINS IN THE PROPOSED BUILDING ADDITION SHALL FLOW THROUGH A GAS TRAP PRIOR TO DISCHARGE TO THE MUNICIPAL SANITARY SYSTEM.
- ALL WATERLINE WORK SHALL CONFORM TO THE MOST RECENT FRANKLIN DPW WATERLINE MATERIALS AND INSTALLATION STANDARDS.

TEST PIT #1 (TP1)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
A	0-8"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
Bw	8-24"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
C	24-66"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	BOULDER AT BOTTOM OF EXCAVATION

ESHWIT: NONE  
WEEP: NONE  
REFUSAL: NONE

TEST PIT #2 (TP2)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

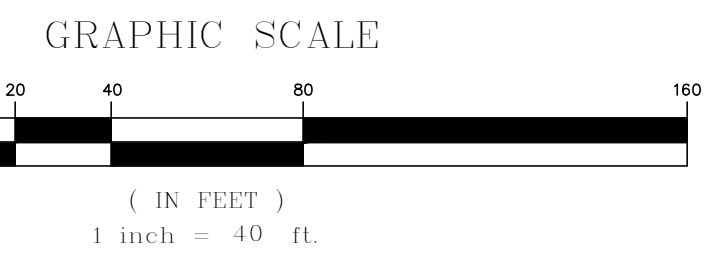
HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
A	0-8"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
Bw	8-28"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
C	28-108"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	SEVERAL BOULDERS ENCOUNTERED

ESHWIT: NONE  
WEEP: NONE  
REFUSAL: NONE

TEST PIT #3 (TP3)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0-36"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
C1	36-60"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	-
C2	60-100"	SANDY LOAM	10YR 2	MASSIVE, FIRM	-

ESHWIT: NONE  
WEEP: NONE  
REFUSAL: NONE  
HTM - HUMAN TRANSPORTED MATERIAL



PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
**TMC HOLDINGS & DEVELOPMENT 2, LLC**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	1" = 40'	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

PREPARED BY:

**ALLEN & MAJOR ASSOCIATES, INC.**  
civil engineering • land surveying  
environmental consulting • landscape architecture  
www.allenmajor.com  
100 COMMERCE WAY, SUITE 5  
WOBURN MA 01801  
TEL: (781) 935-6889  
FAX: (781) 935-2896

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DRAWING TITLE: **GRADING & DRAINAGE PLAN** SHEET No. **C-103**

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1-888-DIG-SAFE  
1-888-344-7233

**LUMINAIRE SCHEDULE**

SYMBOL	QTY	LABEL	ARRANGEMENT	HEIGHT	LUMENS	WATTS	DESCRIPTION
■	7	W1	WALL PACK	25'	5778	46	RWL2-160L-45-3K-4F
□	1	2SA	DOUBLE, POLE MOUNT	30'	14960	105	TWIN VP-ST-1-36L-105-3K7-4F
●	1	SA	SINGLE, POLE MOUNT	30'	14960	105	VP-ST-1-36L-105-3L7-4F
■	1	SB	SINGLE, POLE MOUNT	22'	12189	105	VP-ST-1-36L-39-27K8-4F-UNIV-BC

**LIGHTING LEVEL SUMMARY**

AREA	UNITS	AVERAGE	MAX	MIN	AVG/MIN	MAX/MIN
PAVEMENT AREA	Fc	0.26	4.1	0.0	N.A.	N.A.



**POLE LIGHT FIXTURE (LED)  
BEACON LIGHTING - VIPER LUMINAIRE**

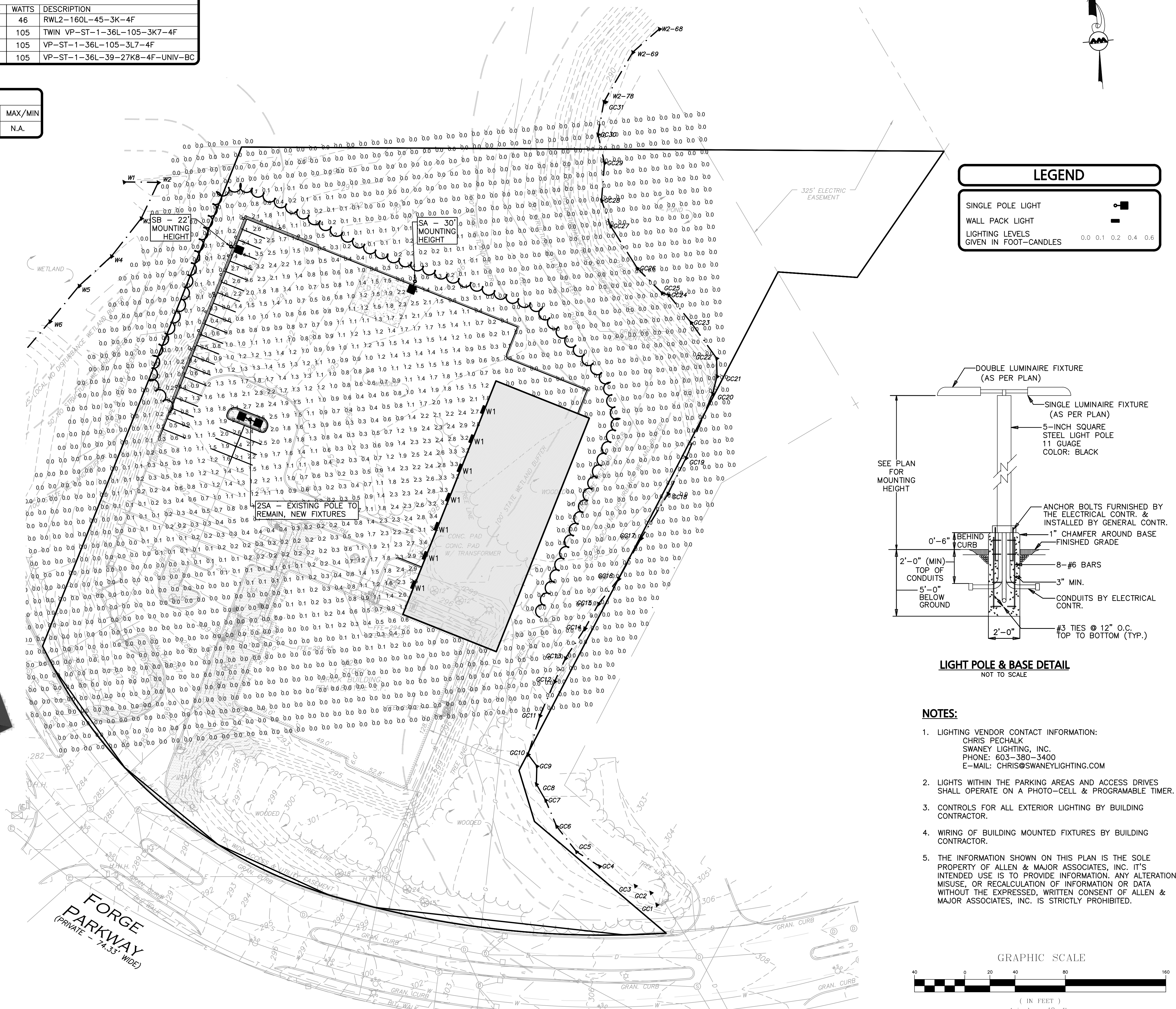


**WALL PACK LIGHT FIXTURE (LED)  
HUBBELL LIGHTING INC. - RATIO WALL**

DIG SAFE

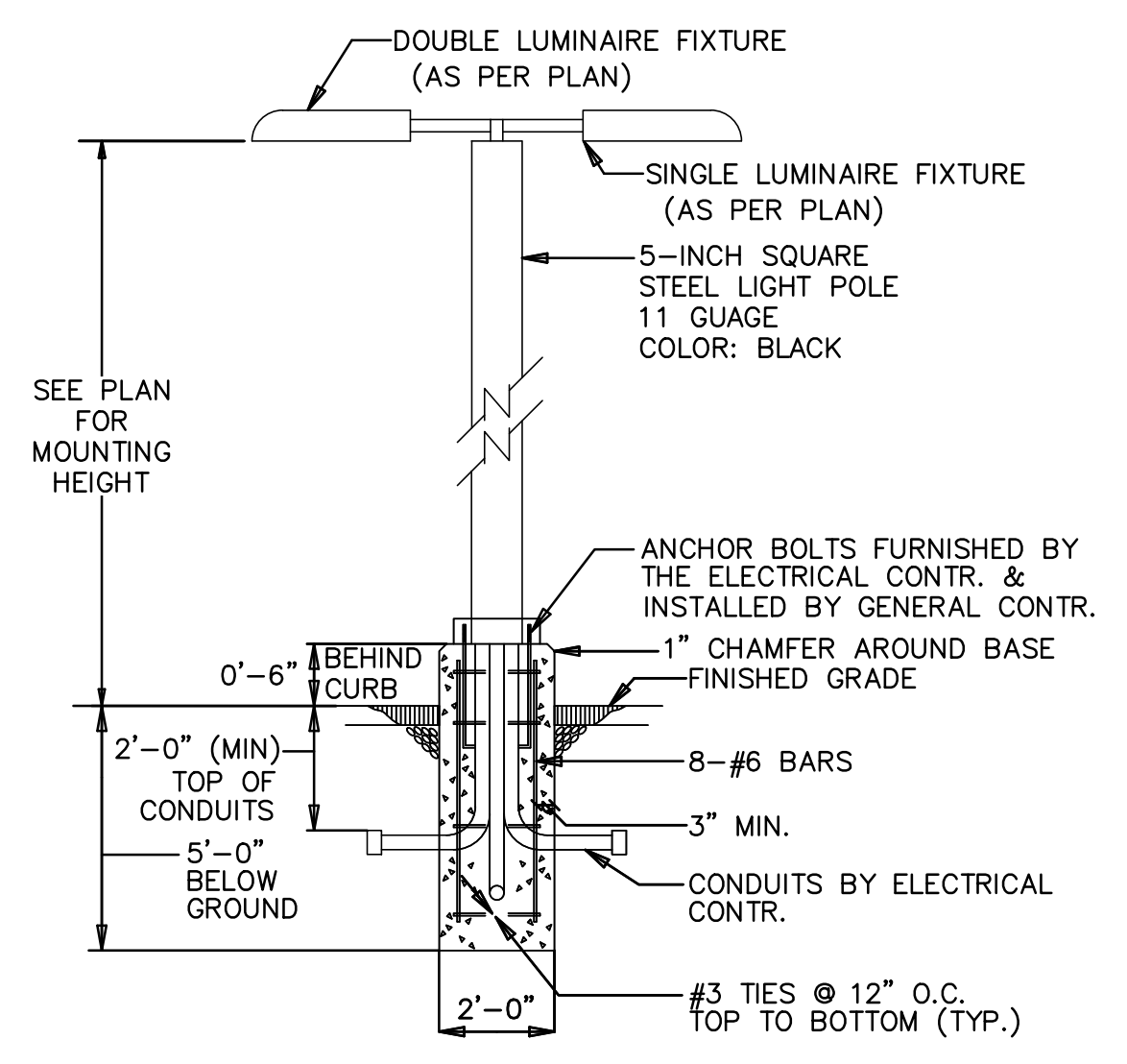


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1-888-DIG-SAFE  
1-888-344-7233



**LEGEND**

SINGLE POLE LIGHT	●
WALL PACK LIGHT	■
LIGHTING LEVELS GIVEN IN FOOT-CANDLES	0.0 0.1 0.2 0.4 0.6

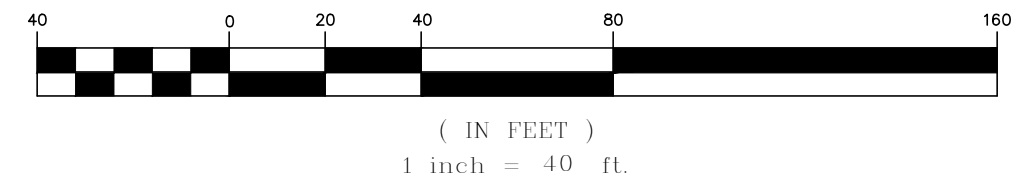


**LIGHT POLE & BASE DETAIL**  
NOT TO SCALE

**NOTES:**

- LIGHTING VENDOR CONTACT INFORMATION:  
CHRIS PECHALK  
SWANEY LIGHTING, INC.  
PHONE: 603-380-3400  
E-MAIL: CHRIS@SWANEYLIGHTING.COM
- LIGHTS WITHIN THE PARKING AREAS AND ACCESS DRIVES SHALL OPERATE ON A PHOTO-CELL & PROGRAMMABLE TIMER.
- CONTROLS FOR ALL EXTERIOR LIGHTING BY BUILDING CONTRACTOR.
- WIRING OF BUILDING MOUNTED FIXTURES BY BUILDING CONTRACTOR.
- THE INFORMATION SHOWN ON THIS PLAN IS THE SOLE PROPERTY OF ALLEN & MAJOR ASSOCIATES, INC. ITS INTENDED USE IS TO PROVIDE INFORMATION. ANY ALTERATION, MISUSE, OR RECALCULATION OF INFORMATION OR DATA WITHOUT THE EXPRESSED, WRITTEN CONSENT OF ALLEN & MAJOR ASSOCIATES, INC. IS STRICTLY PROHIBITED.

**GRAPHIC SCALE**



*Brian D. Jones*  
07.14.23  
PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
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24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	1" = 40'	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

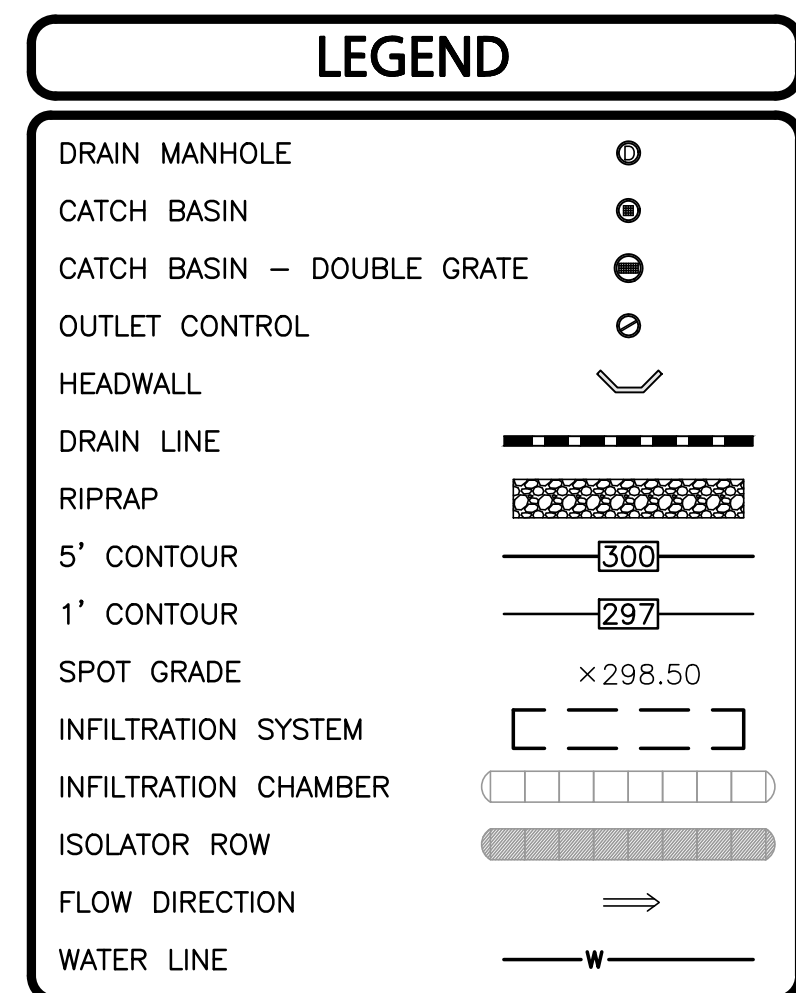
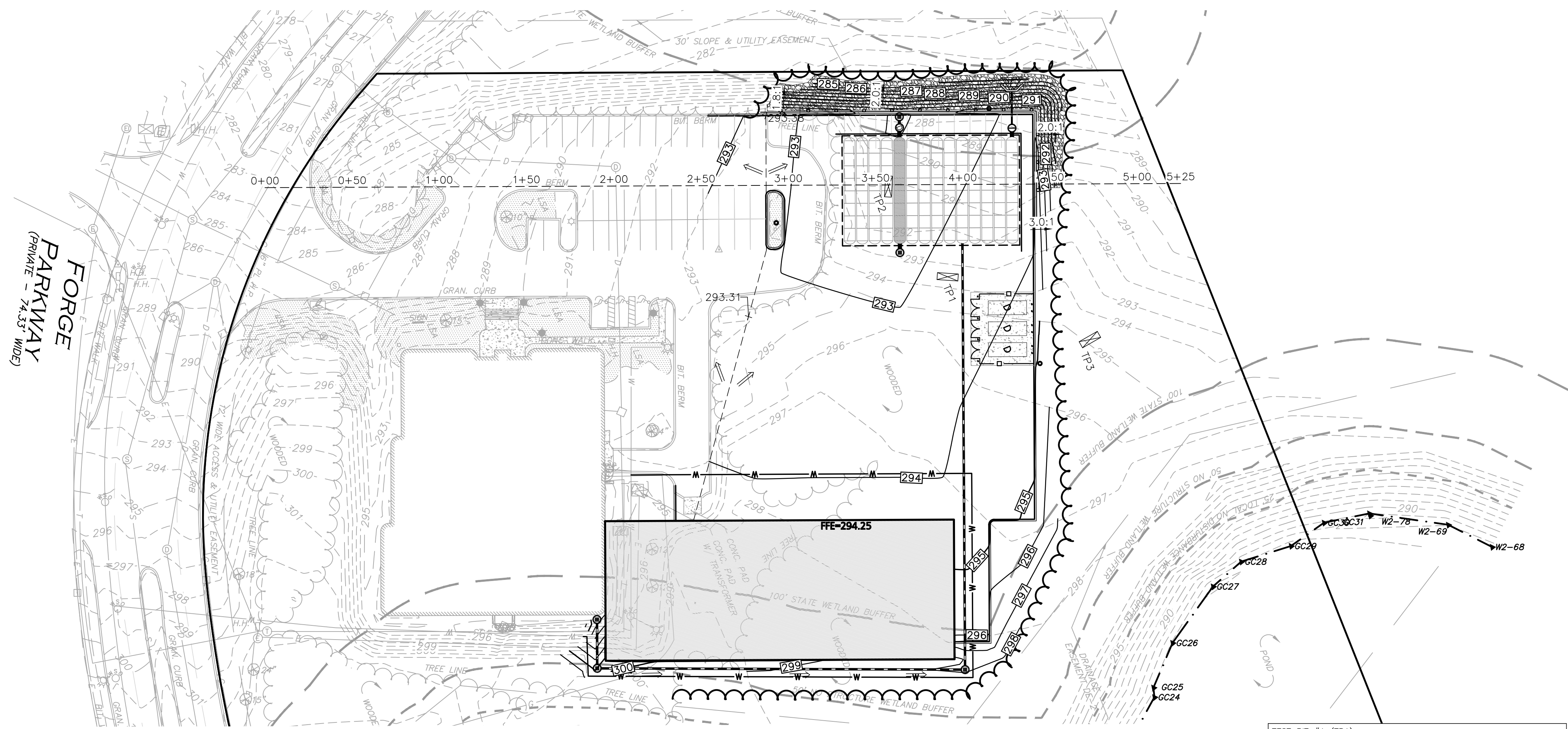
PREPARED BY:

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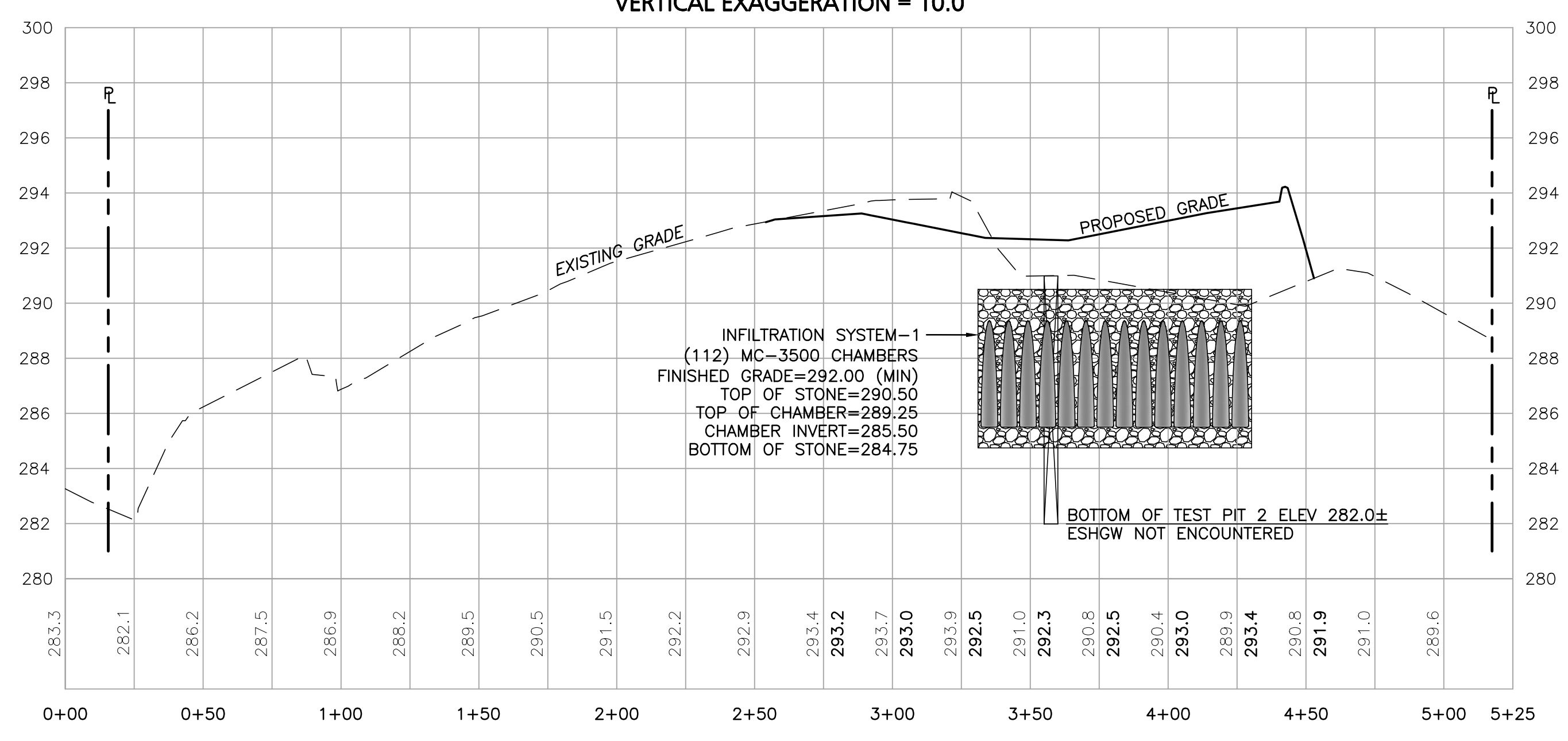
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DRAWING TITLE: **LIGHTING PLAN** SHEET No. **C-104**



- NOTES:**
- EXISTING CONDITIONS WERE COMPILED FROM AN ON THE GROUND SURVEY PERFORMED BY ALLEN & MAJOR ASSOCIATES, INC. AS WELL AS AVAILABLE RECORD PLANS OBTAINED FROM THE TOWN OF FRANKLIN, MA AND OTHER SOURCES.
  - VERTICAL DATUM IS NAVD88. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
  - ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
  - IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
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**SITE SECTION  
VERTICAL EXAGGERATION = 10.0**



TEST PIT #1 (TP1)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
A	0-8"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
Bw	8-24"	LOAMY SAND	10YR 8	MASSIVE, FRIABLE	-
C	24-66"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	BOULDER AT BOTTOM OF EXCAVATION

ESHWT: NONE  
WEEP: NONE  
REFUSAL: NONE

TEST PIT #2 (TP2)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
A	0-8"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
Bw	8-28"	LOAMY SAND	10YR 8	MASSIVE, FRIABLE	-
C	28-108"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	SEVERAL BOULDERS ENCOUNTERED

ESHWT: NONE  
WEEP: NONE  
REFUSAL: NONE

TEST PIT #3 (TP3)  
PERFORMED BY: BRIAN D. JONES, PE  
DATE: 02-10-2023

HORIZON	DEPTH	TEXTURE	COLOR	STRUCTURE	NOTES
HTM	0-36"	LOAMY SAND	10YR 2	MASSIVE, FRIABLE	-
C1	36-60"	LOAMY SAND	2.5Y 2	MASSIVE, FRIABLE	-
C2	60-100"	SANDY LOAM	10YR 8	MASSIVE, FIRM	-

ESHWT: NONE  
WEEP: NONE  
REFUSAL: NONE  
HTM - HUMAN TRANSPORTED MATERIAL



BRIAN D. JONES  
PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
**TMC HOLDINGS & DEVELOPMENT 2, LLC**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	1" = 40'	DWG. NAME:	C-2712-02A
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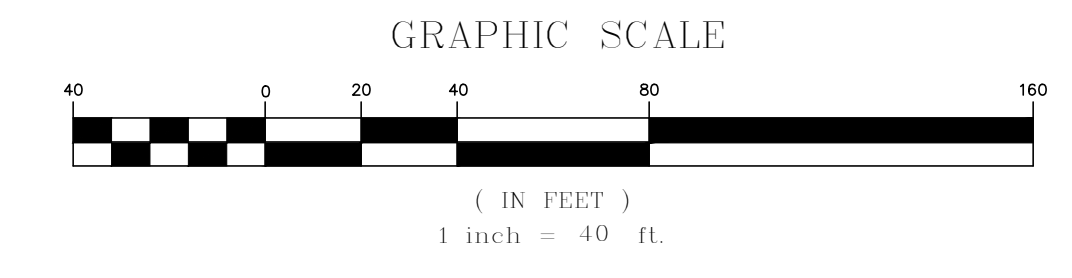
PREPARED BY:

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DRAWING TITLE: **SITE PLAN & CROSS-SECTION**  
SHEET No. **C-201**

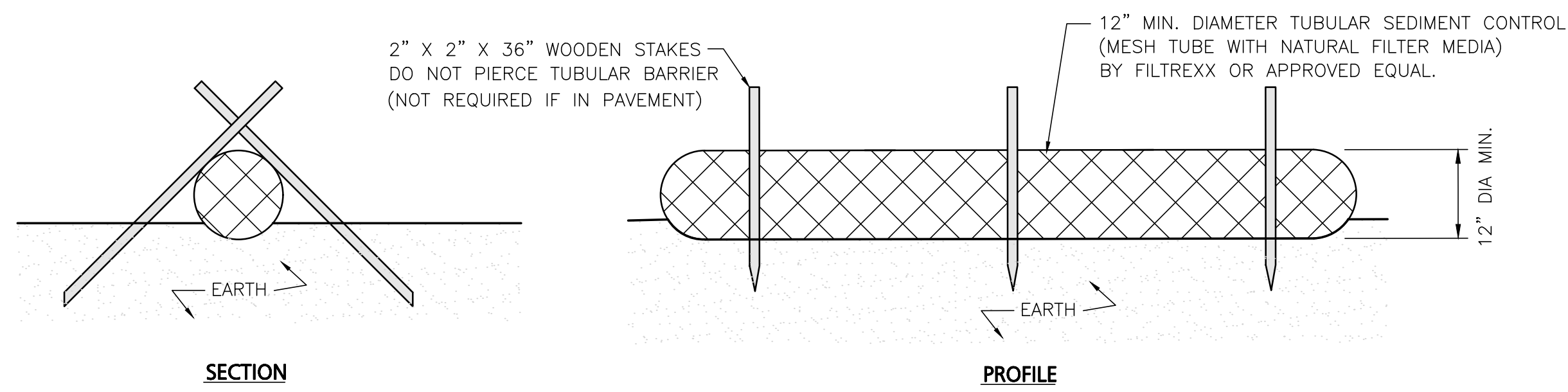


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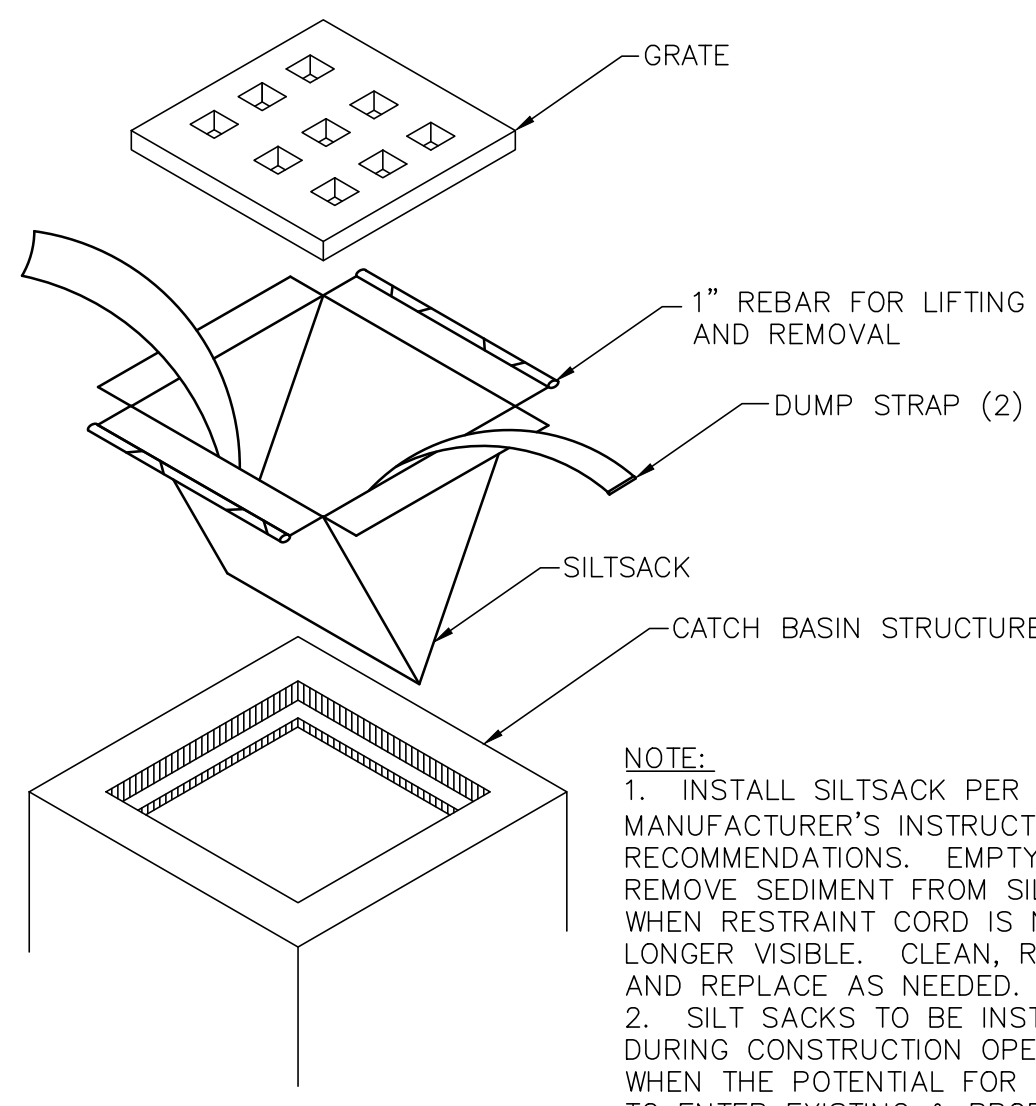




NOTES:

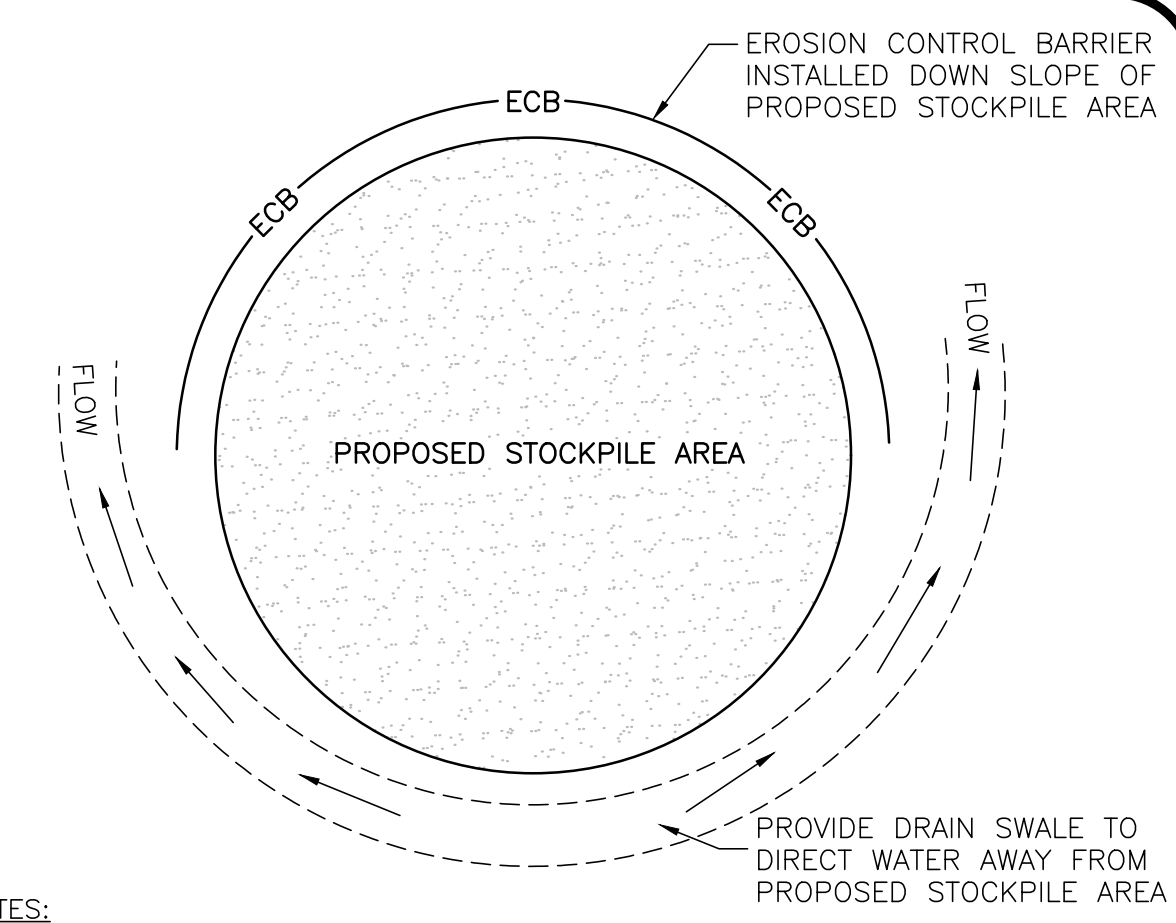
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
3. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
4. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY INSPECTED BY THE CONTRACTOR.
5. WHERE THE TUBULAR BARRIERS REQUIRE REPAIR OR SEDIMENT REMOVAL, IT WILL BE COMPLETED BY THE CONTRACTOR AT NO ADDITIONAL COST.
6. AT A MINIMUM, THE CONTRACTOR SHALL REMOVE SEDIMENTS COLLECTED AT THE BASE WHEN THEY REACH 1/3 THE EXPOSED HEIGHT OF THE BARRIER.

**TUBULAR SEDIMENT BARRIER**  
NOT TO SCALE



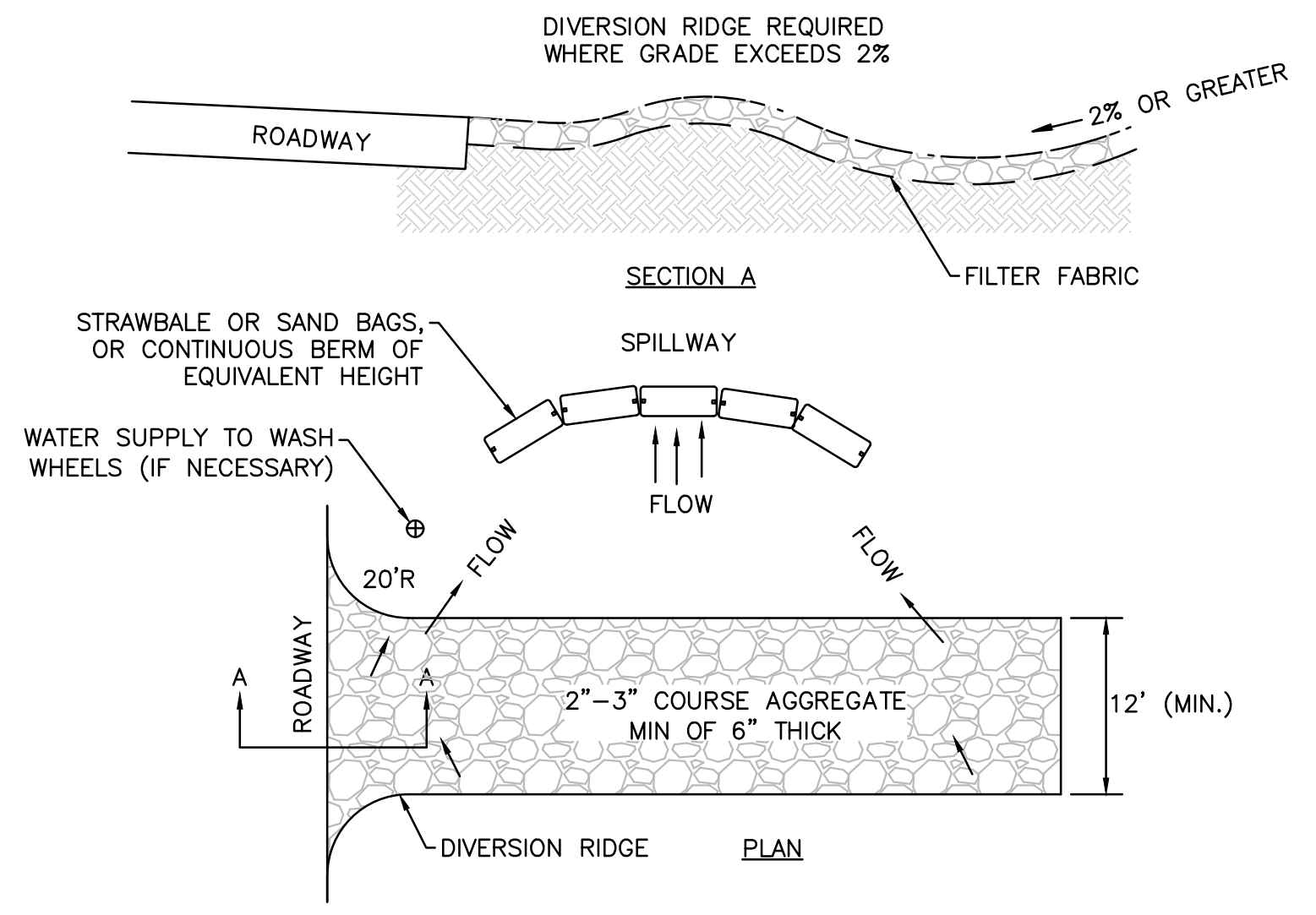
- NOTE:
1. INSTALL SILTSACK PER MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. EMPTY OR REMOVE SEDIMENT FROM SILTSACK WHEN RESTRAINT CORD IS NO LONGER VISIBLE. CLEAN, RINSE, AND REPLACE AS NEEDED.
  2. SILT SACKS TO BE INSTALLED DURING CONSTRUCTION OPERATIONS WHEN THE POTENTIAL FOR SEDIMENT TO ENTER EXISTING & PROPOSED BASINS EXISTS.

**CATCH BASIN FILTER INLET DETAIL**  
NOT TO SCALE



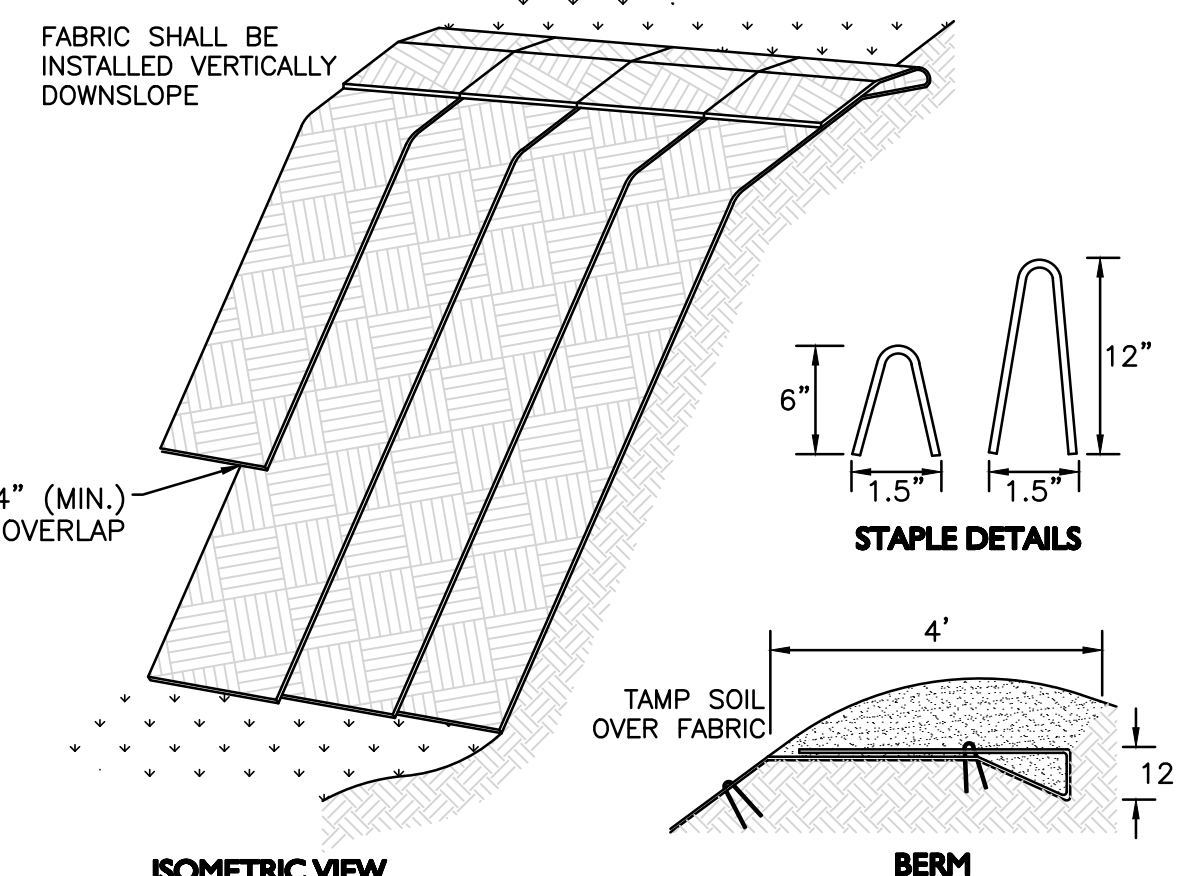
- NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LB/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
  2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED WITH WINTER RYE (FOR FALL SEEDING AT 1LB/1,000 SF) OR OATS (FOR SUMMER SEEDING AT 2LB/1,000 SF) AND THEN COVERED WITH STRAW MULCH (AT 100LB/1,000 SF) OR AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.

**STOCKPILE PROTECTION DETAIL**  
NOT TO SCALE



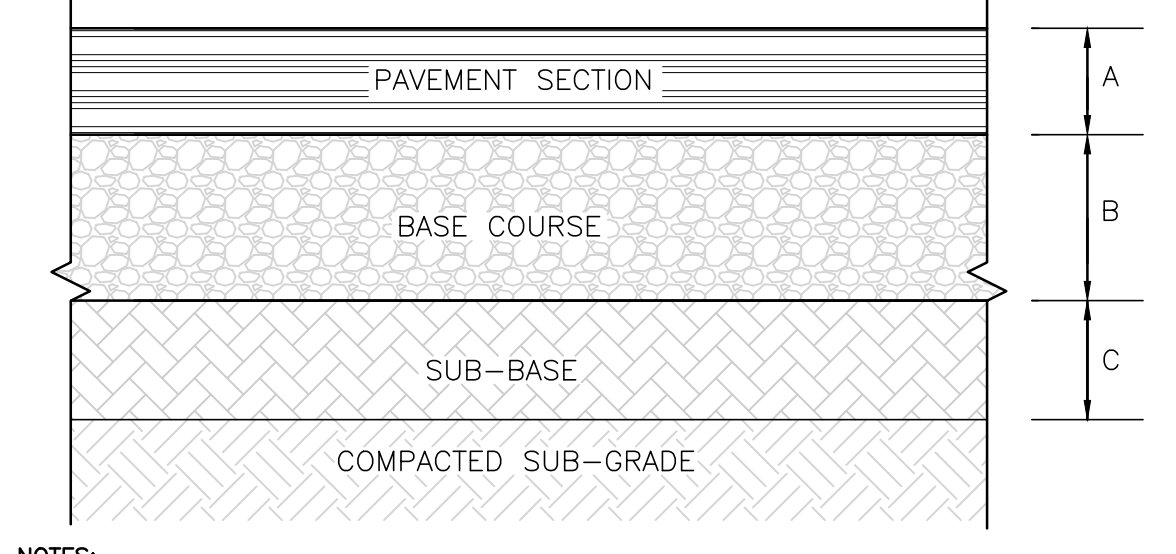
- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
  2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC RIGHT-OF-WAY.
  3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
  4. USE SANDBAGS, STRAW BALES, OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO BASIN AS REQUIRED.

**TEMPORARY CONSTRUCTION ENTRANCE**  
NOT TO SCALE



- NOTE:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLOUDS, STICKS AND GRASS. FABRIC SHALL HAVE GOOD SOIL CONTACT.
  2. APPLY PERMANENT SEEDING BEFORE PLACING FABRIC.
  3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
  4. CHOOSE MATERIAL BASED ON SLOPE, SOILS, AND APPLICATION.

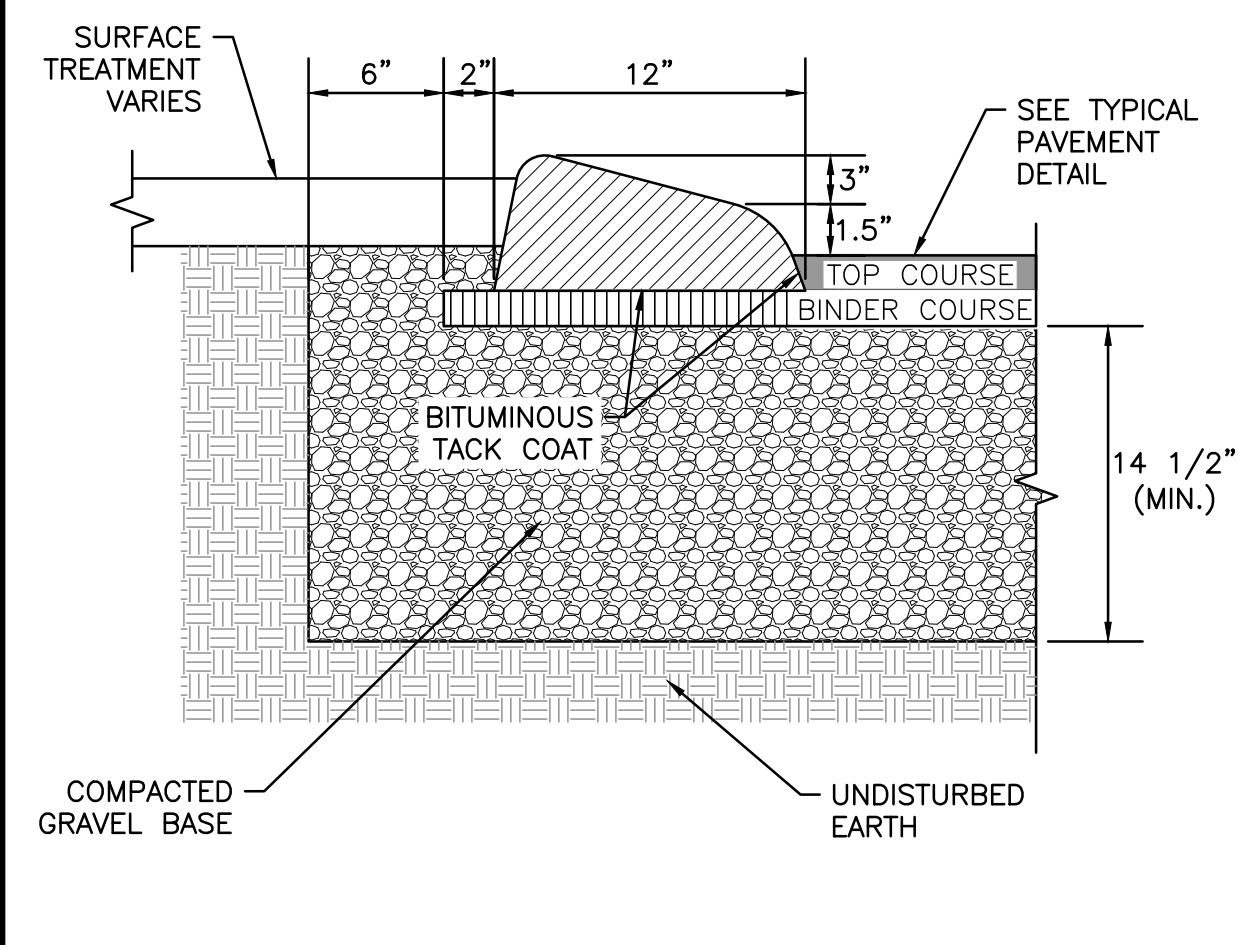
**EROSION CONTROL FABRIC**  
NOT TO SCALE



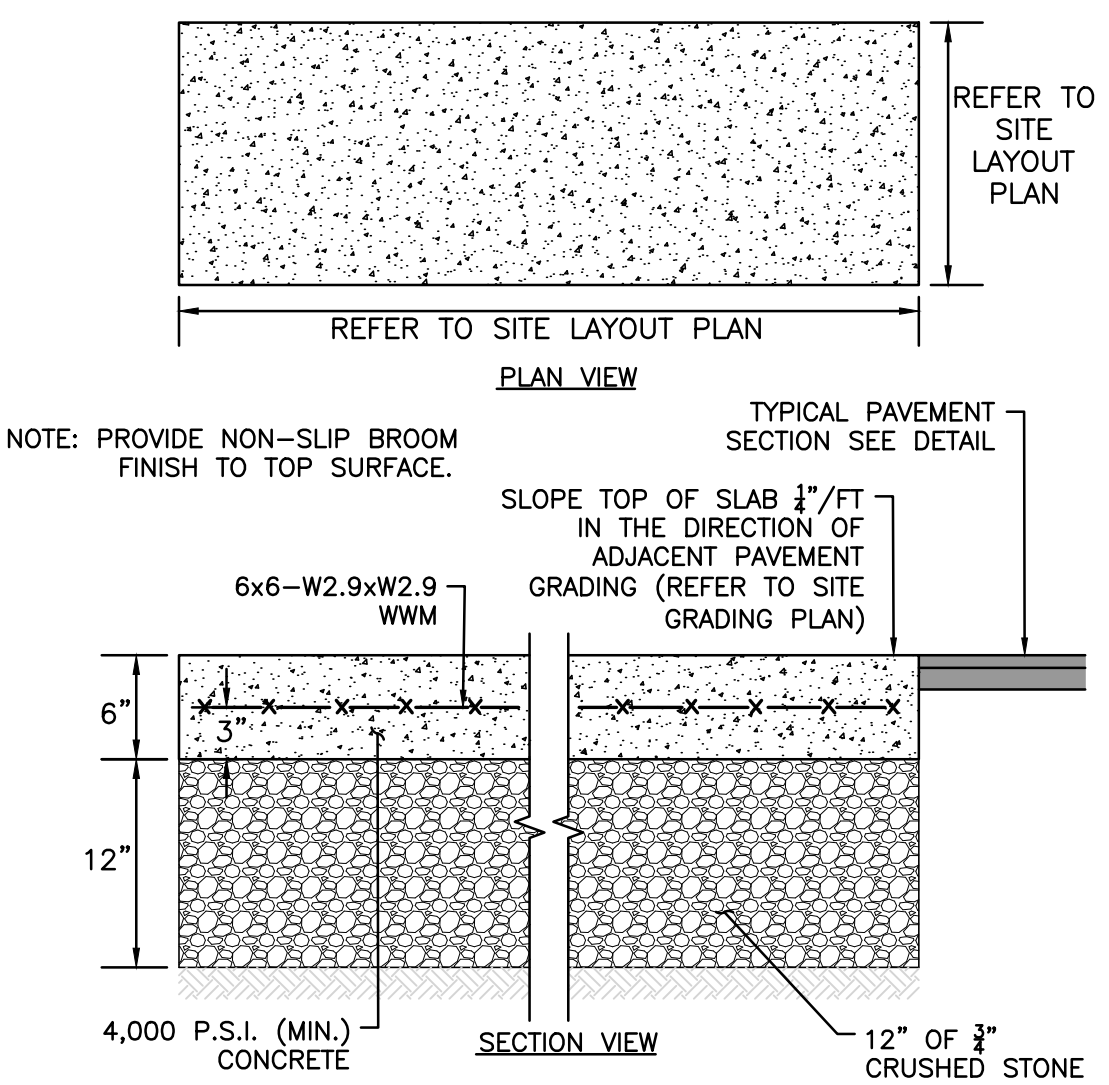
- NOTES:
1. PAVEMENT SECTION, BASE COURSE, AND SUBGRADE SHALL BE PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. IN THE ABSENCE OF A GEOTECHNICAL ENGINEER'S RECOMMENDATION, THE MATERIALS AND THICKNESS SHALL BE AS SHOWN HEREON.
  2. SUBGRADE SHALL BE COMPACTED TO 95% OF PROCTOR
  3. EXISTING SUBSURFACE SOILS SHALL BE PROOF-ROLLED.
  4. CLEANLY SAW CUT EXISTING PAVEMENT AND ENSURE A SMOOTH TRANSITION BETWEEN EXISTING AND PROPOSED PAVEMENT.

- MATERIALS AND THICKNESSES:
- A = 1.5" ASPHALT CONCRETE - SURFACE COURSE (M3.11.0, TABLE A, TOP COURSE)  
2.5" ASPHALT CONCRETE - BINDER COURSE (M3.11.0, TABLE A, BINDER COURSE)
- B = 6" PROCESSED GRAVEL BASE (MHD M2.01.7)
- C = 12" BANK RUN GRAVEL MHD M1.03.0 TYPE B)

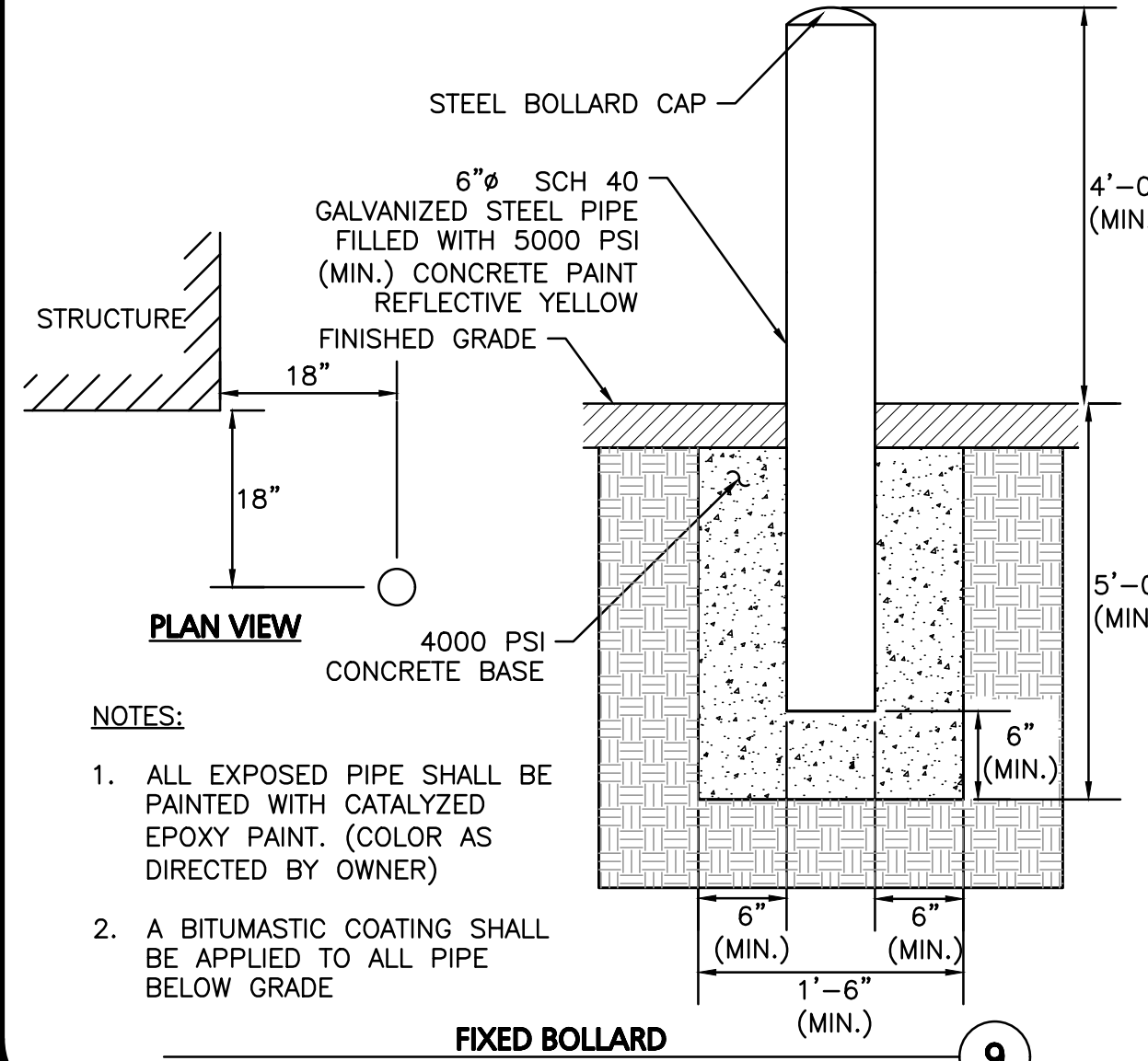
**ASPHALT PAVEMENT SECTION**  
NOT TO SCALE



**CAPE COD BERM**  
NOT TO SCALE

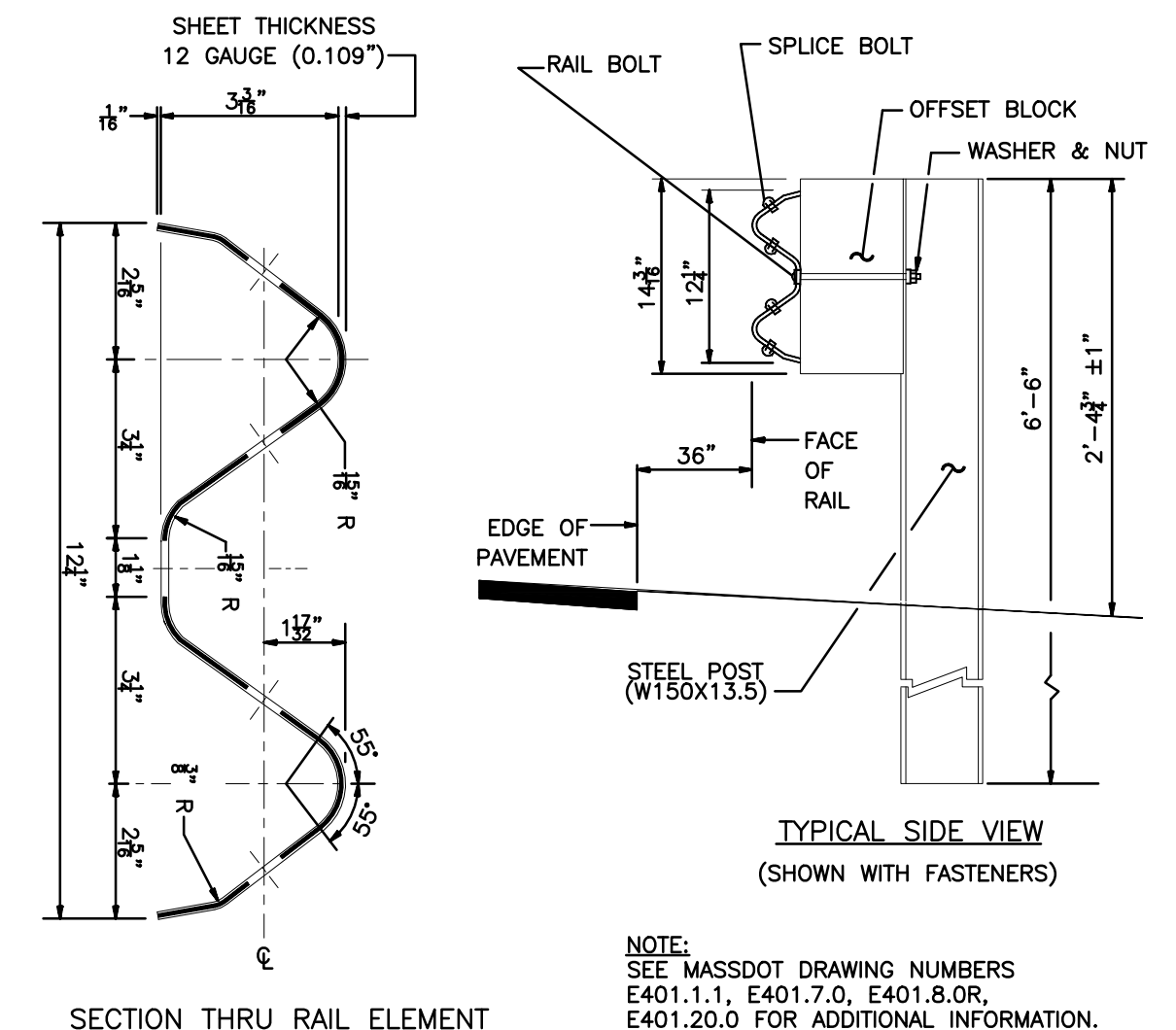


**CONCRETE DUMPSTER PAD**  
NOT TO SCALE

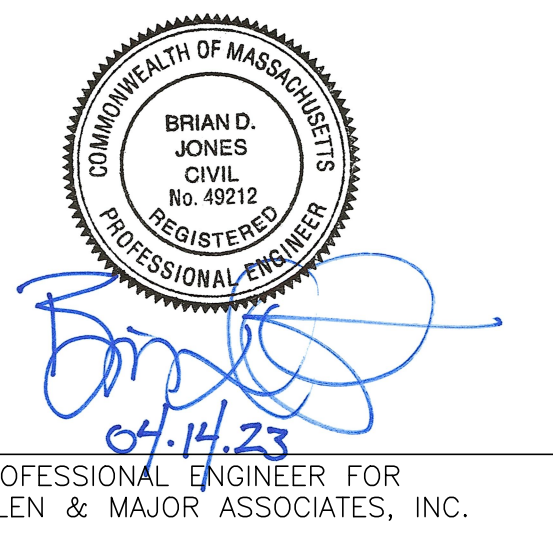


- NOTES:
1. ALL EXPOSED PIPE SHALL BE PAINTED WITH CATALYZED EPOXY PAINT. (COLOR AS DIRECTED BY OWNER)
  2. A BITUMASTIC COATING SHALL BE APPLIED TO ALL PIPE BELOW GRADE

**FIXED BOLLARD**  
NOT TO SCALE



**STEEL GUARDRAIL**  
NOT TO SCALE



REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
**TMC HOLDINGS & DEVELOPMENT 2, LLC**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO.	2712-02A	DATE:	02-21-23
SCALE:	AS SHOWN	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

PREPARED BY:

**ALLEN & MAJOR ASSOCIATES, INC.**

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WOBURN, MA • LAKEVILLE, MA • MANCHESTER, NH

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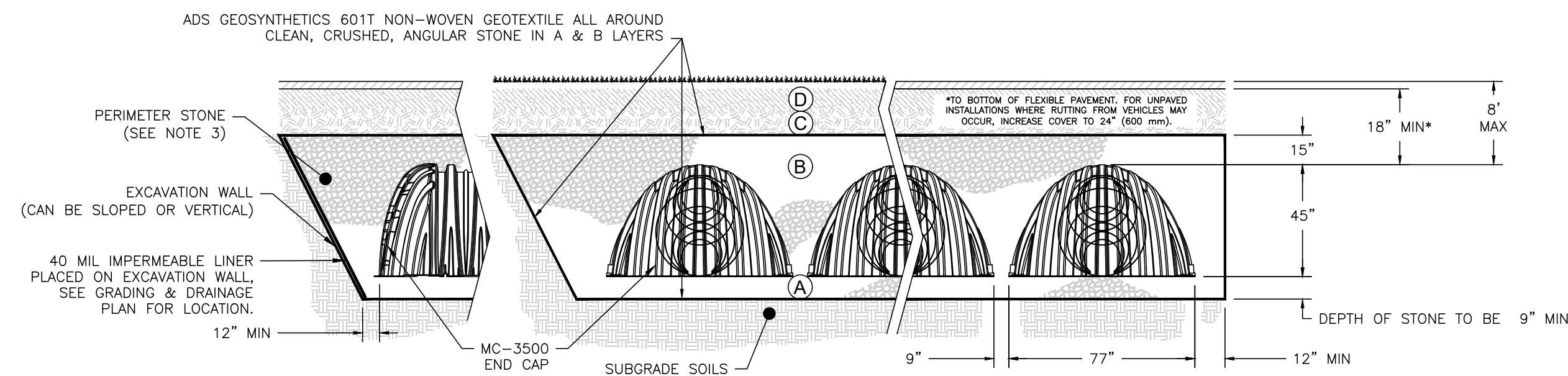
DRAWING TITLE:	SHEET No.
DETAILS	C-501

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**ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS**

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	<b>FINAL FILL:</b> FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS.
C	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3  OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 <sup>1</sup> 3, 4	
A	<b>FOUNDATION STONE:</b> FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 <sup>1</sup> 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. <sup>2,3</sup>

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
  - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
  - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
  - ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



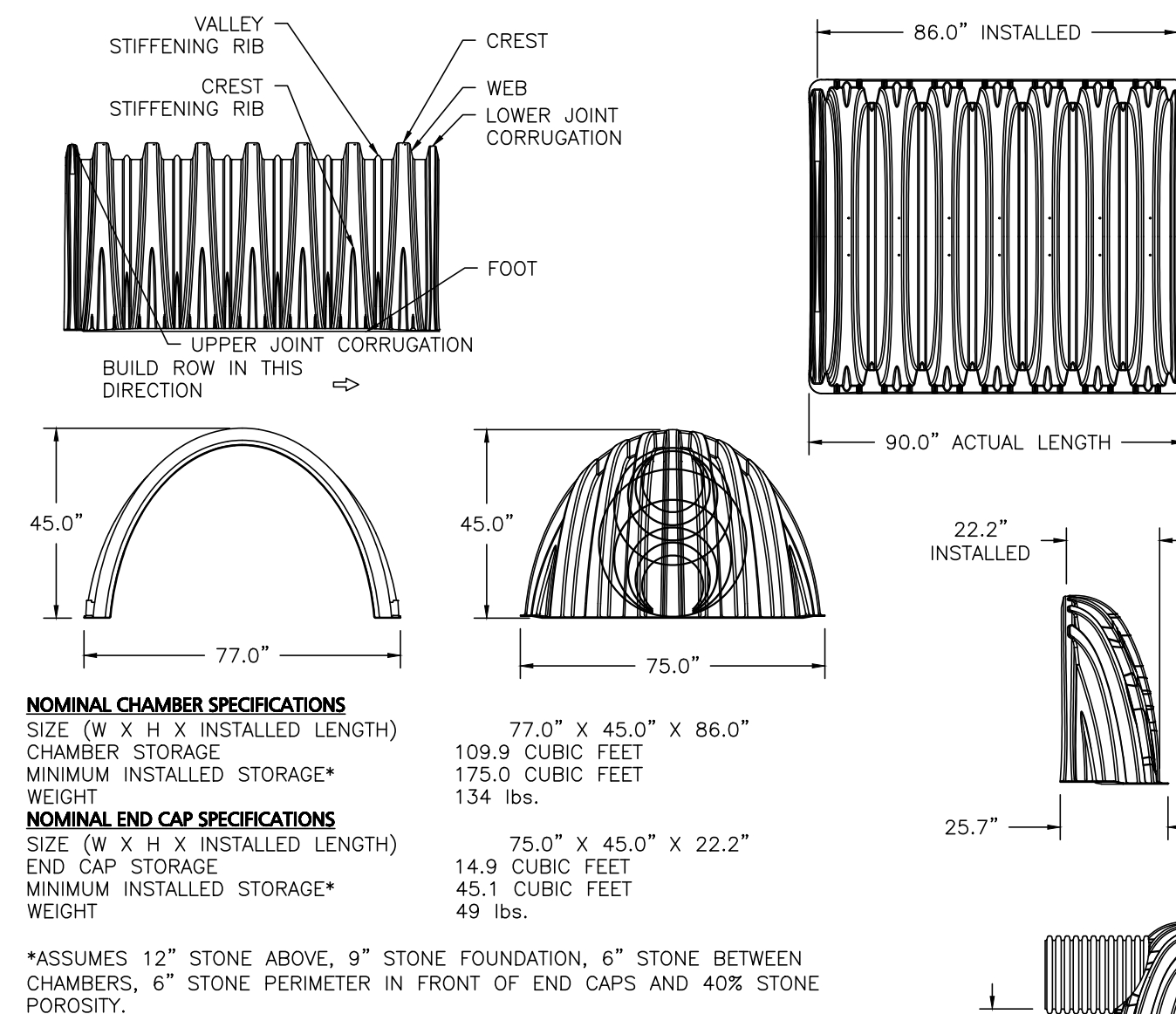
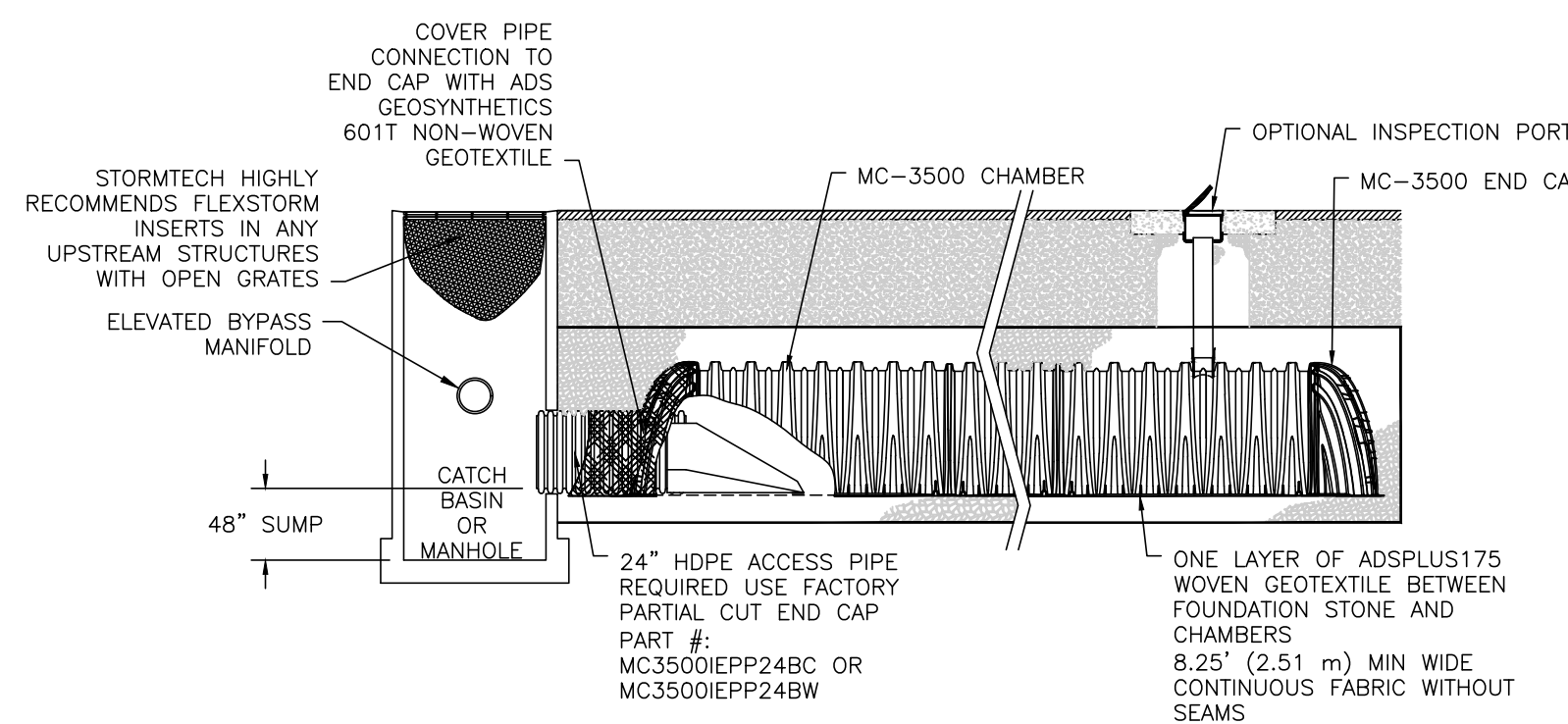
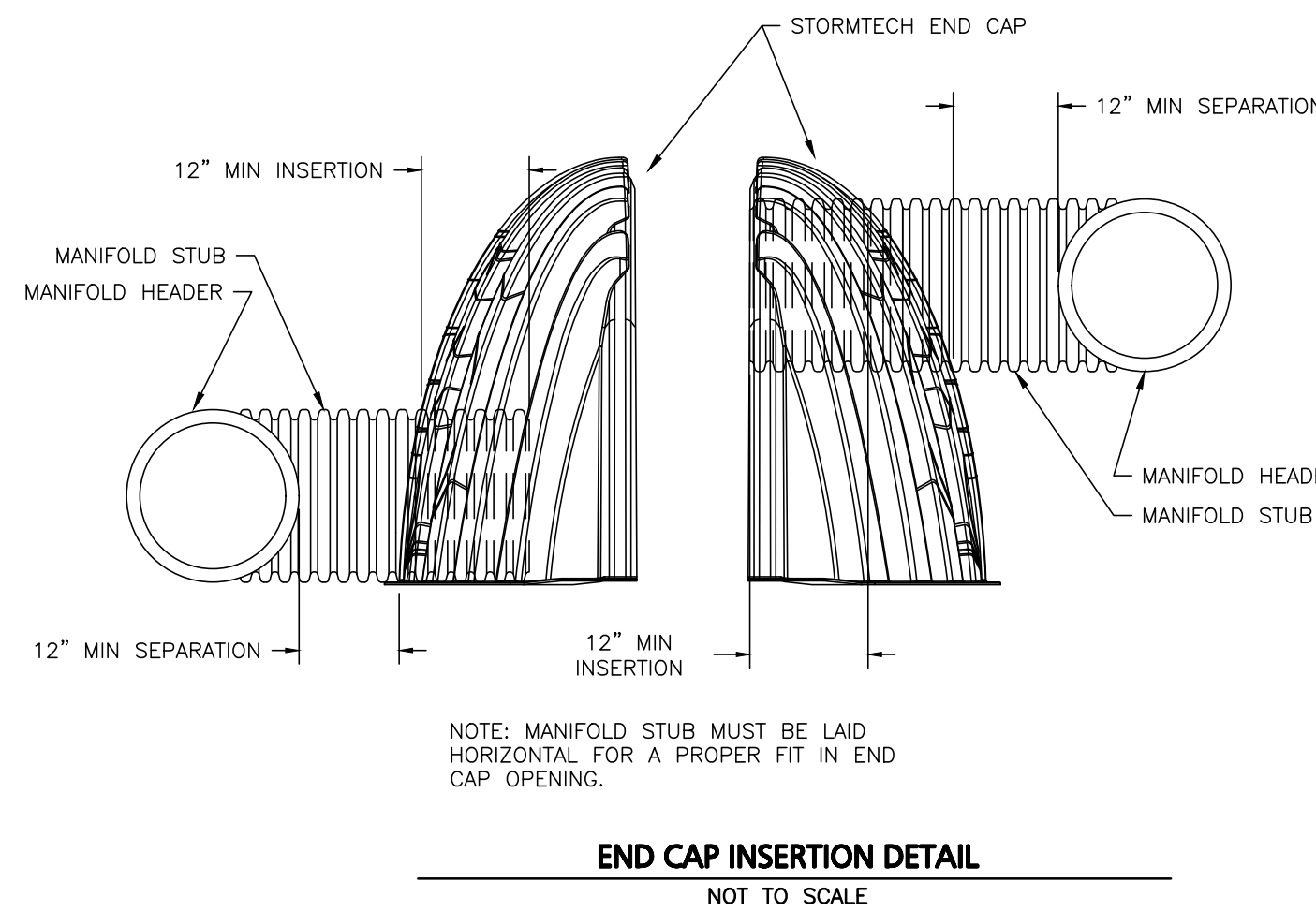
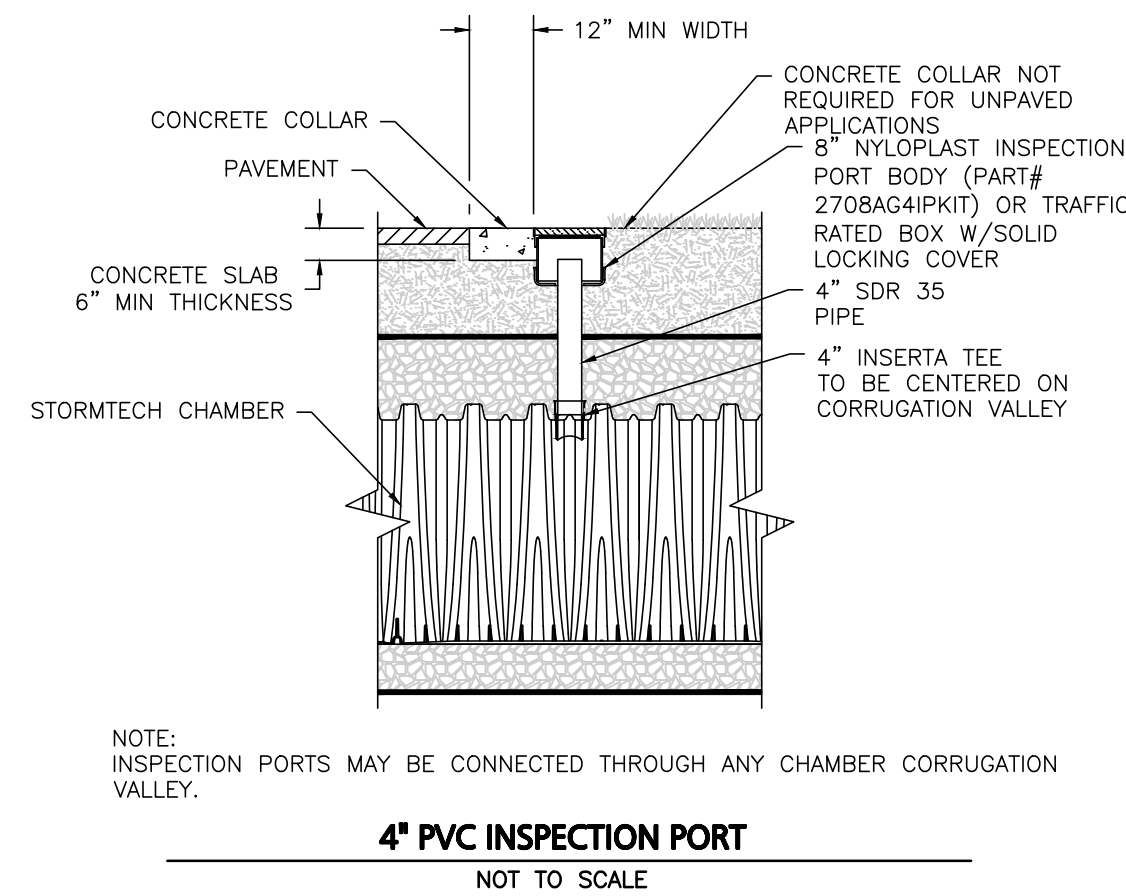
- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
  - MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
  - PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
  - REQUIREMENTS FOR HANDLING AND INSTALLATION:
    - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
    - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
    - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT AS DEFINED IN SECTION 6.2.8 OF ASTM F2418 SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT.<sup>2</sup>, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

**MC-3500 STORMTECH CHAMBER SPECIFICATIONS**

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 500 LBS/FT.<sup>2</sup>, THE ASK IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.



**STORMTECH MC-3500 CHAMBER SYSTEM**  
NOT TO SCALE



PARTIAL CUT HOLES AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"  
PARTIAL CUT HOLES AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"  
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"  
END CAPS WITH A WELDED CROWN PLATE END WITH "C"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B	---	---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B	---	---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B	---	---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B	---	---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B	---	---	1.50" (38 mm)
MC3500IEPP18TC	---	20.03" (509 mm)	---
MC3500IEPP18TW	---	---	1.77" (45 mm)
MC3500IEPP18BC	---	---	---
MC3500IEPP18BW	---	---	---
MC3500IEPP24TC	---	14.48" (368 mm)	---
MC3500IEPP24TW	---	---	---
MC3500IEPP24BC	---	---	2.06" (52 mm)
MC3500IEPP24BW	---	---	---
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

**TECHNICAL SPECIFICATIONS**  
NOT TO SCALE

**INSPECTION & MAINTENANCE**

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- INSPECTION PORTS (IF PRESENT)
    - REMOVE/OPEN LID ON NYLONPLAST INLINE DRAIN
    - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
    - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
  - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

**NOTES**

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.



PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

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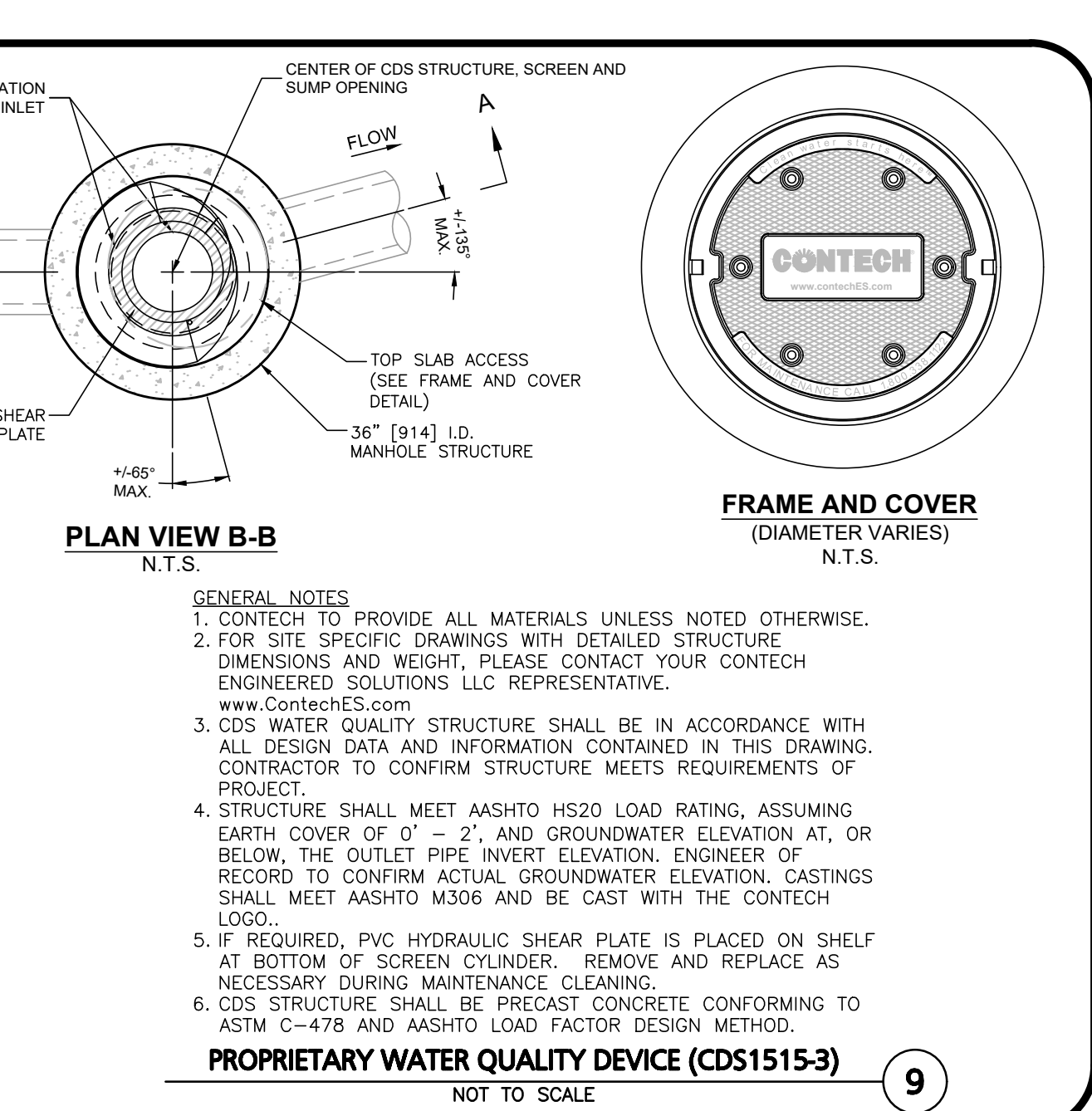
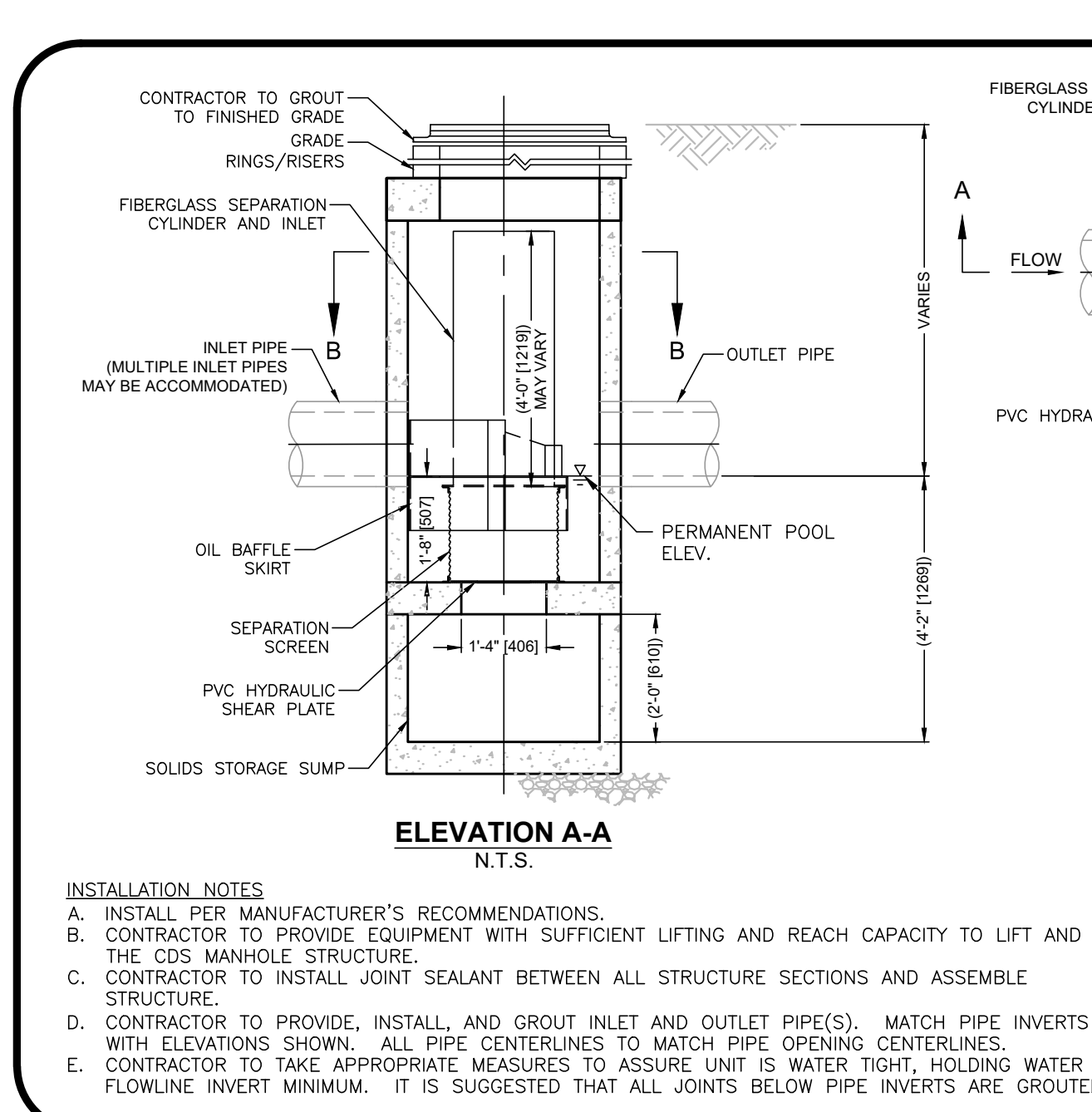
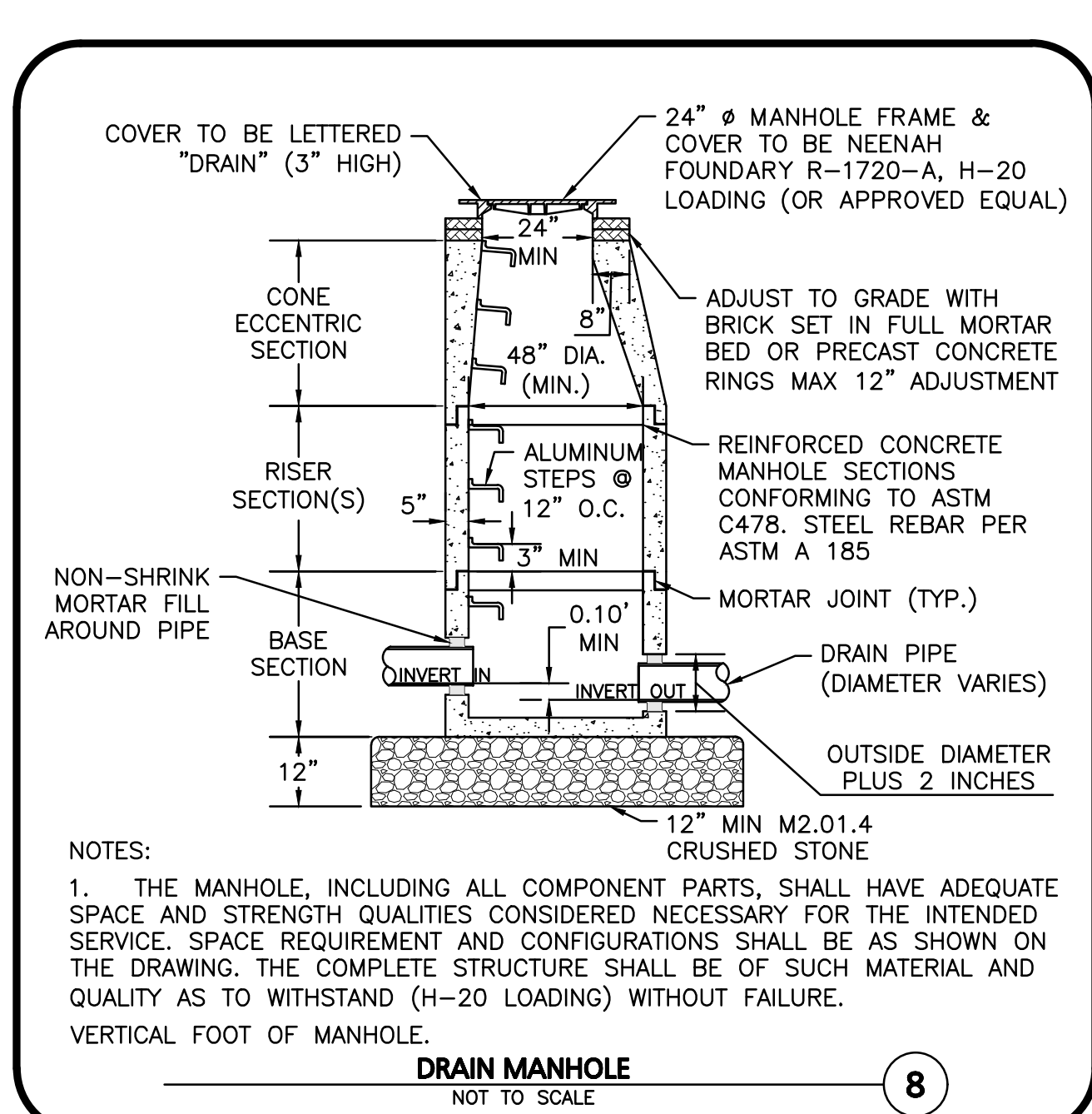
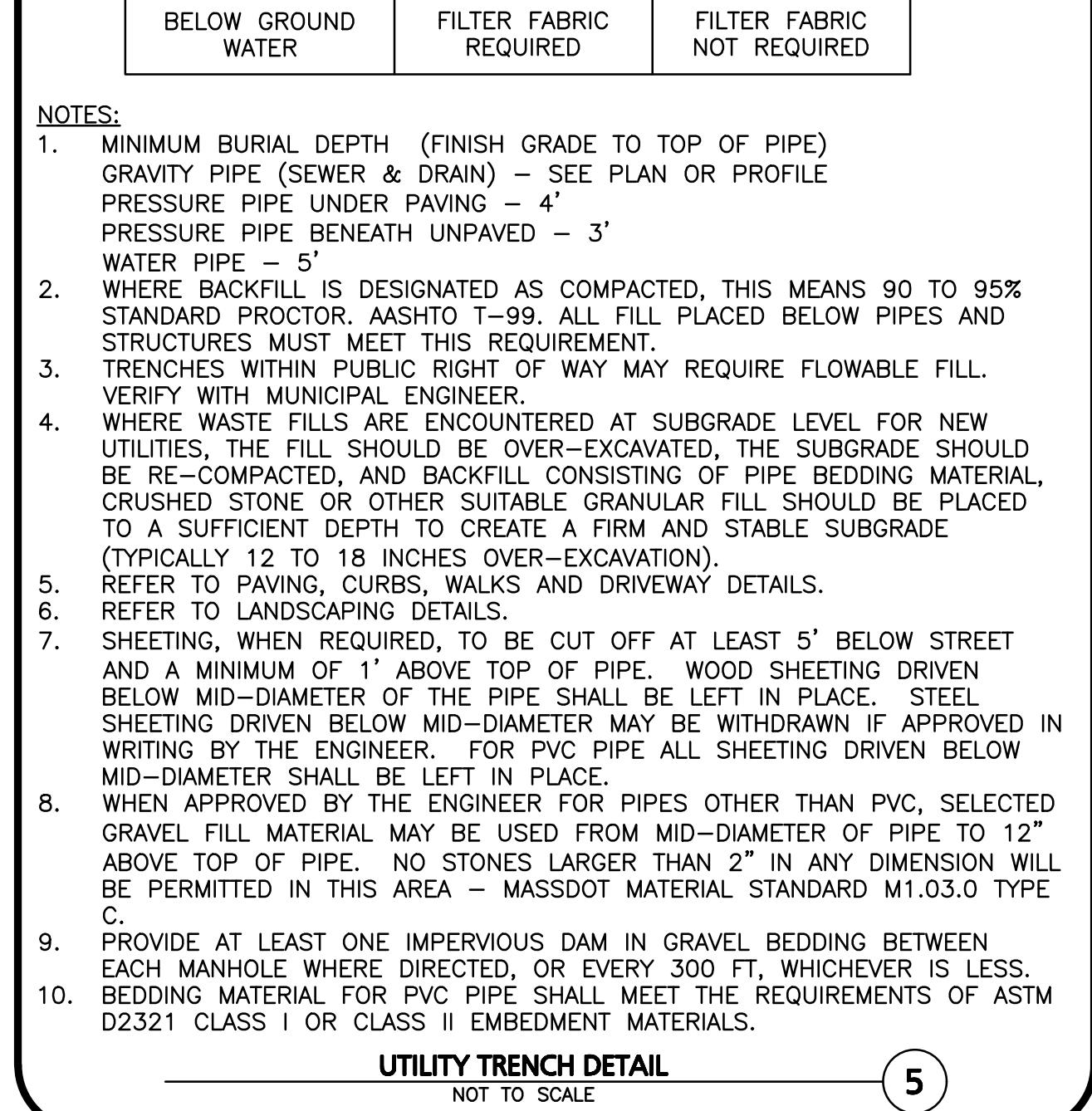
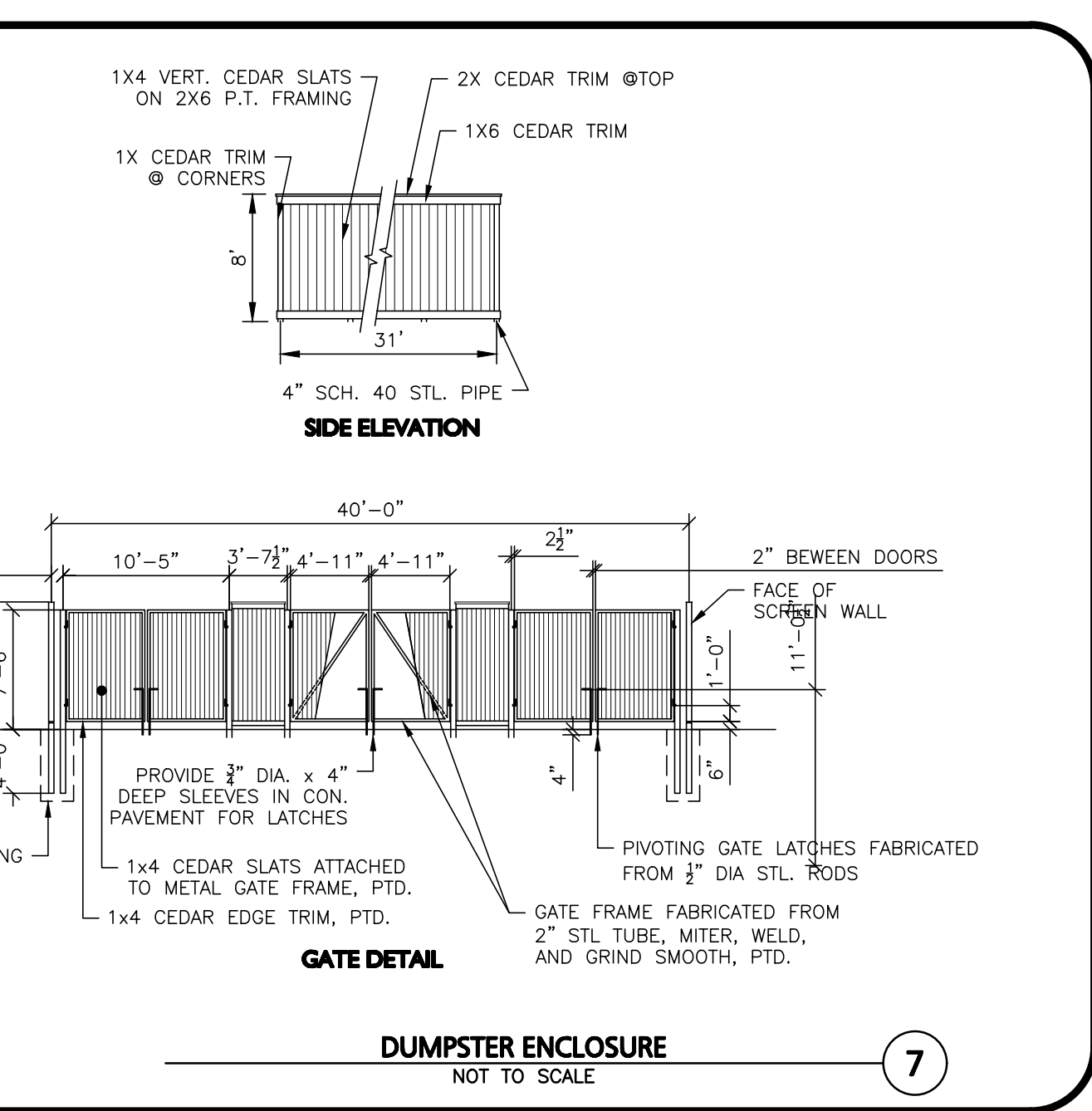
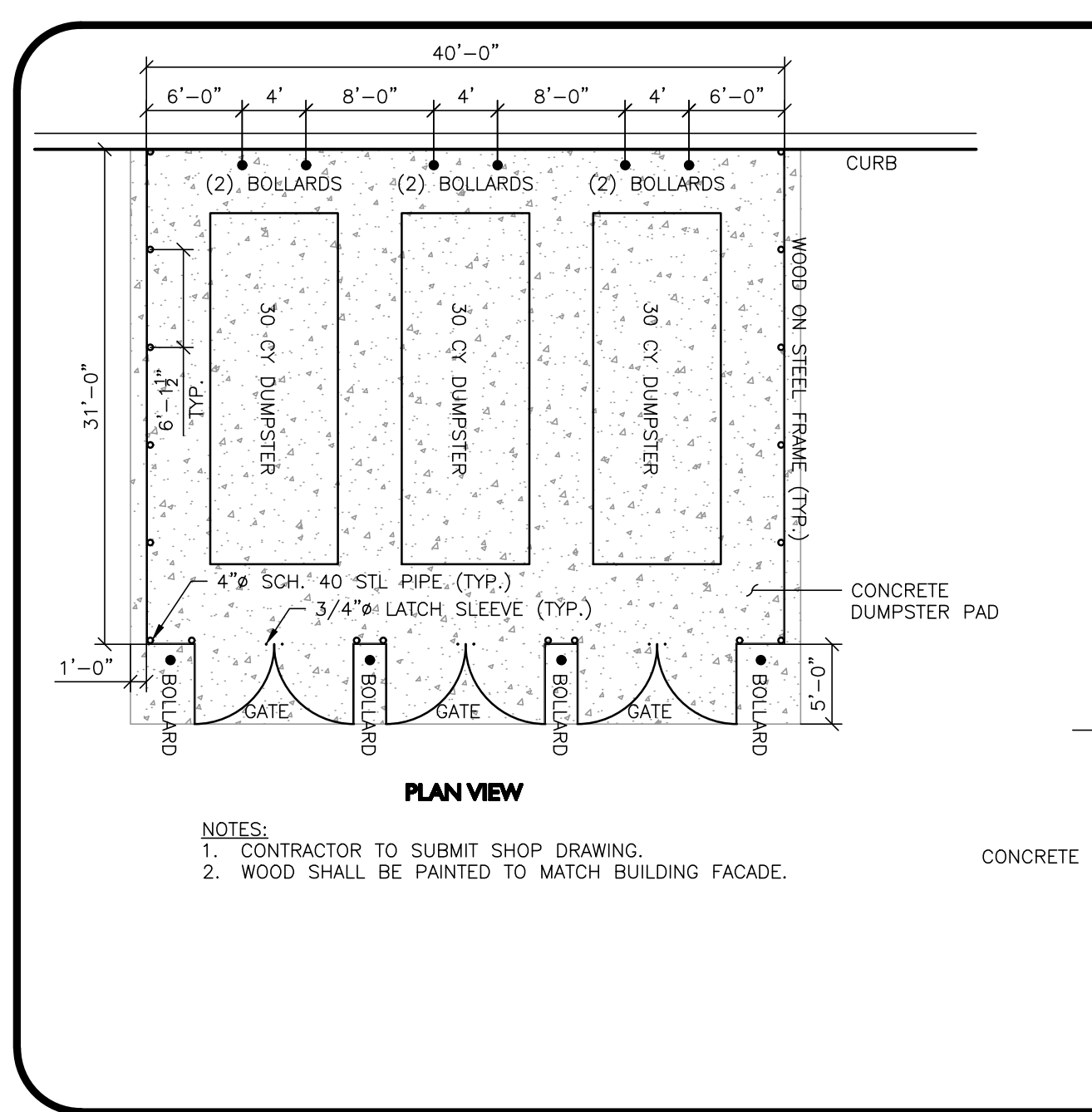
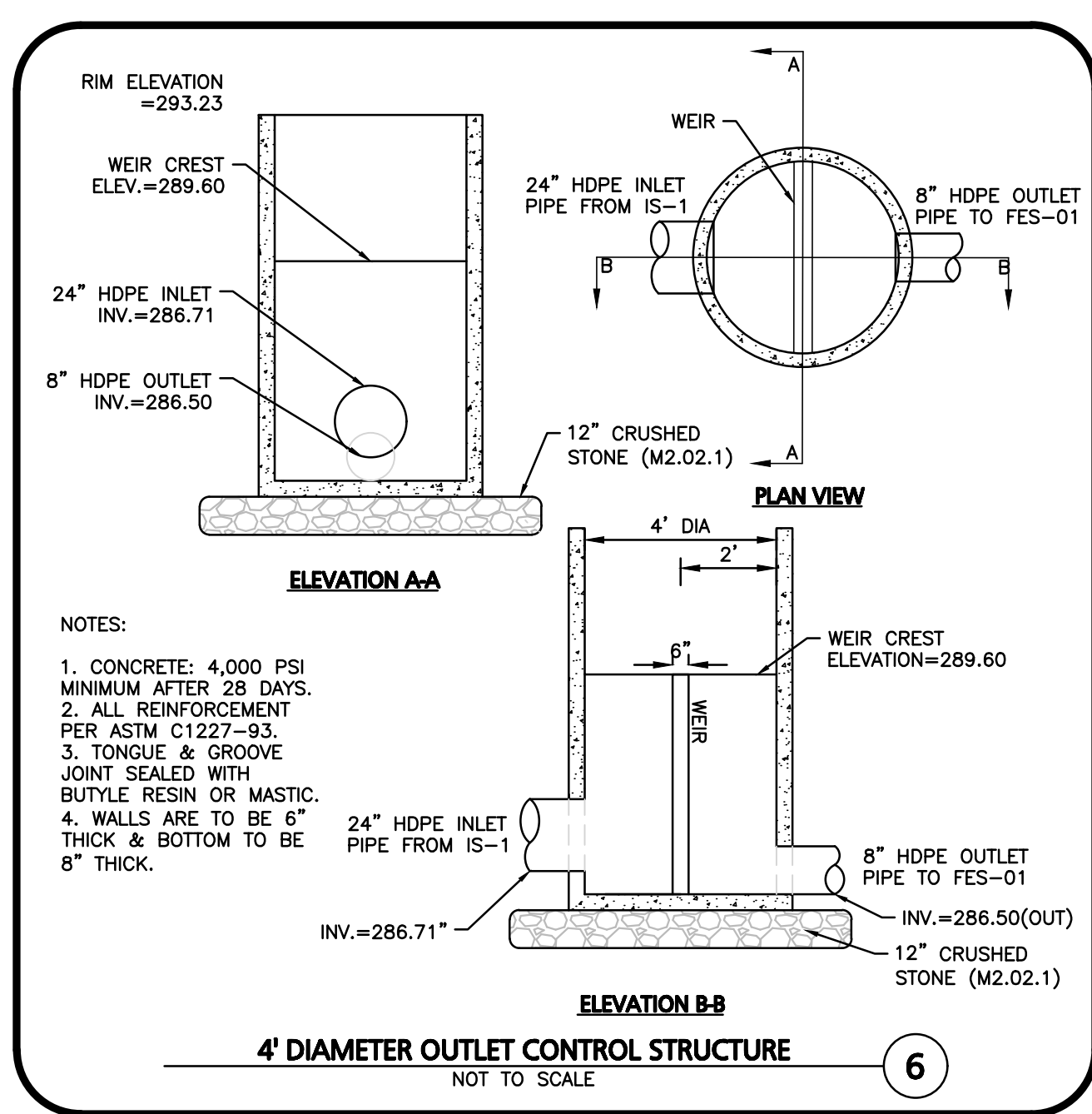
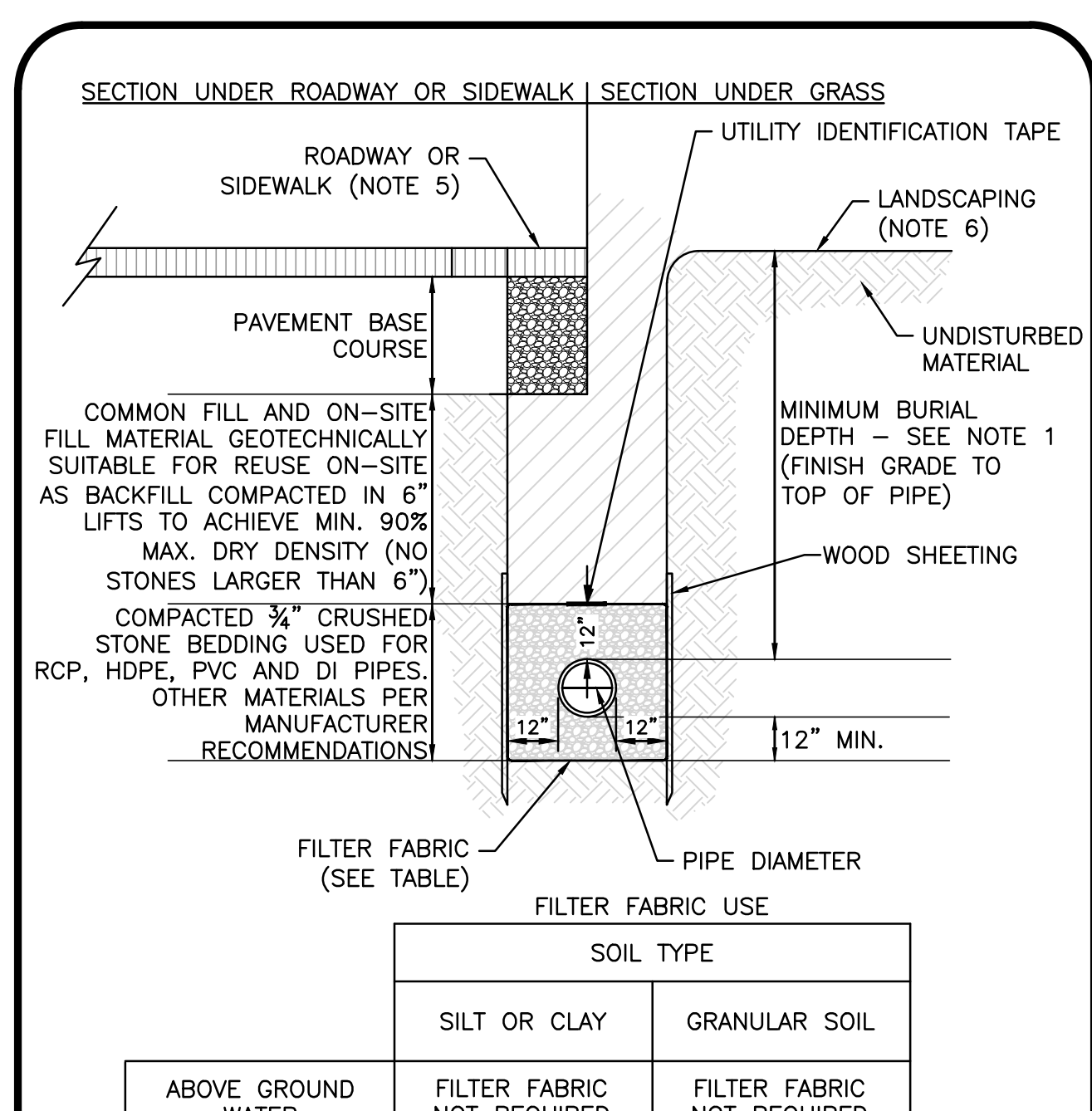
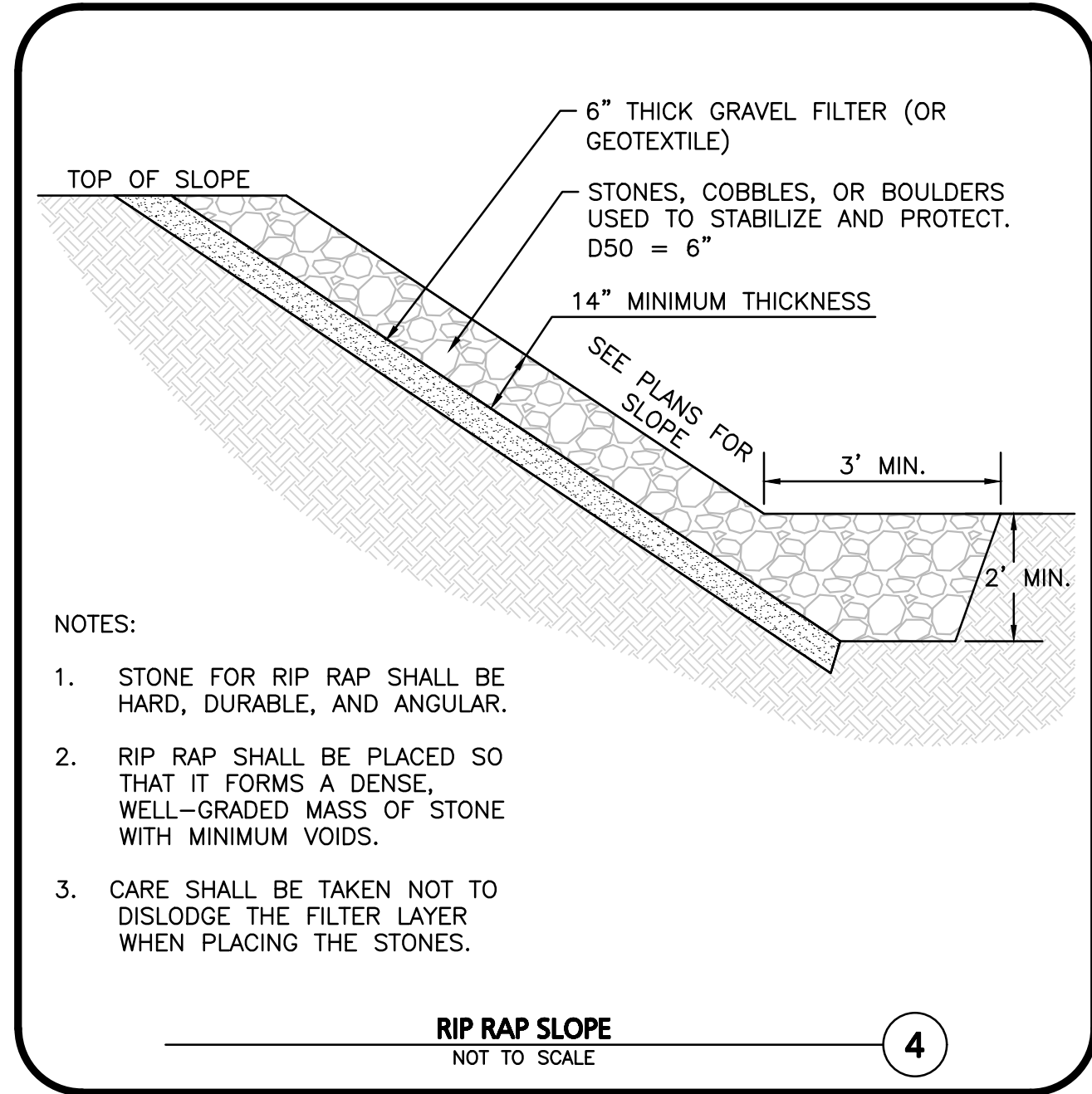
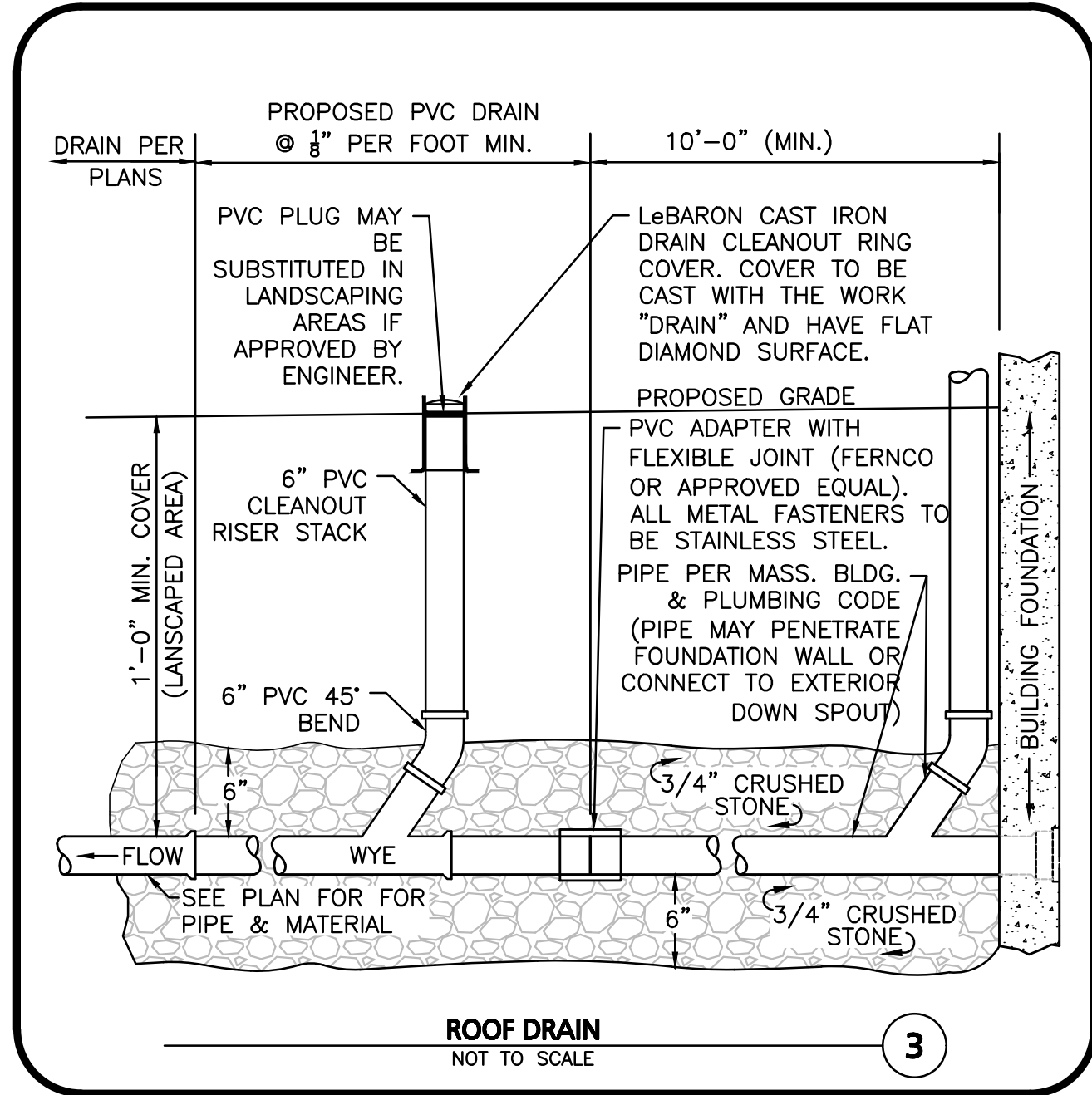
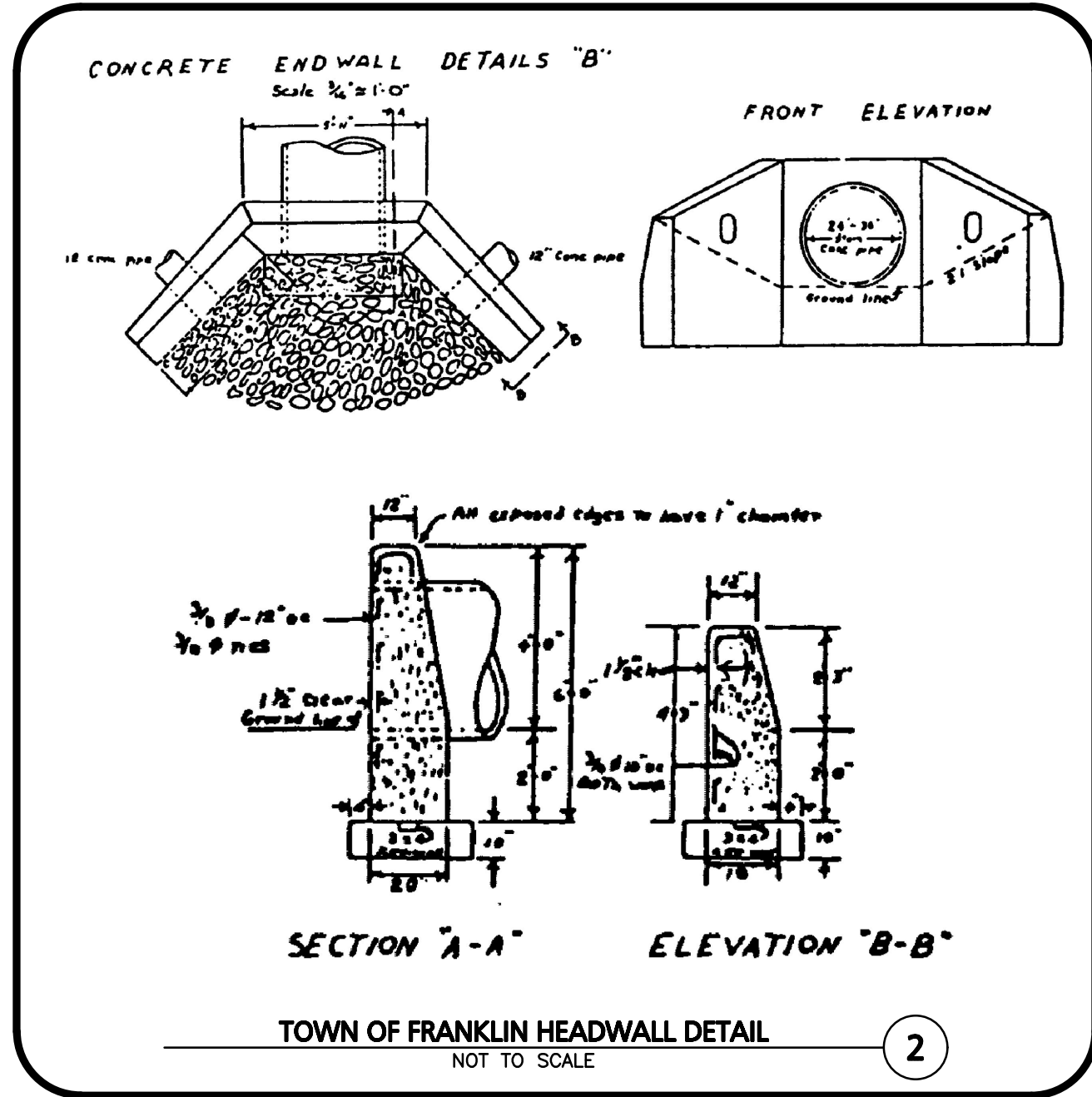
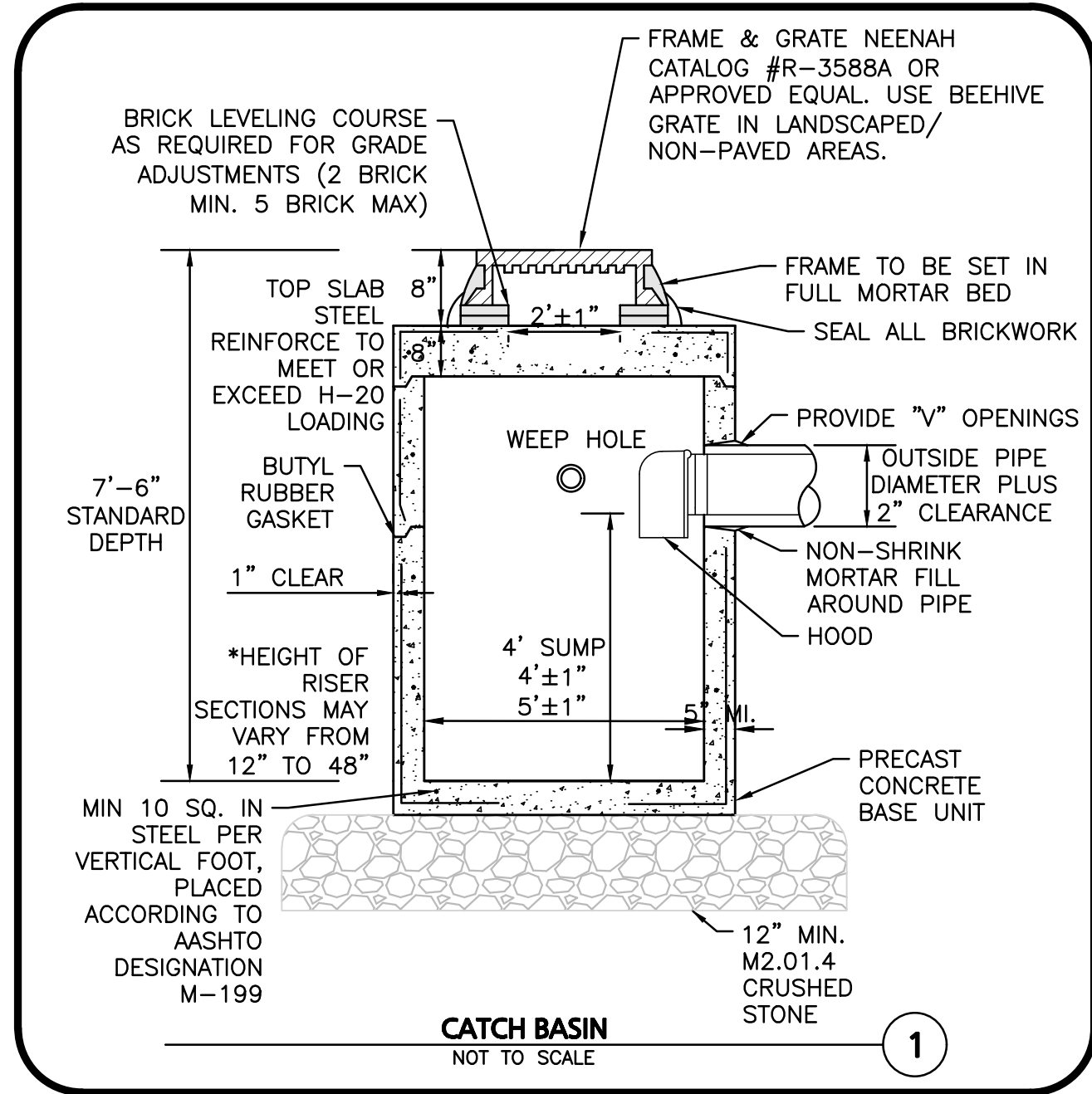
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DETAILS	C-502



BRIAN D. JONES  
CIVIL  
No. 49212  
REGISTERED ENGINEER  
07.14.23  
PROFESSIONAL ENGINEER FOR  
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
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DRAWING TITLE: **DETAILS** SHEET NO. **C-503**

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**PLANTING SCHEDULE**

DECIDUOUS AND FLOWERING TREES						
KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
AR	2	ACER RUBRUM 'AUTUMN RADIANCE'	AUTUMN RADIANCE MAPLE	2.5"-3" CAL.	AS SHOWN	B&B
SHRUBS						
IV	15	ILEX VERTICILLATA	WINTERBERRY	#5	AS SHOWN	POT
IVM	2	ILEX VERTICILLATA MALE POLLINATOR	MALE WINTERBERRY	#3	AS SHOWN	POT
SD	3	SALIX DISCOLOR	PUSSYWILLOW	#10	AS SHOWN	POT
VL	3	VIBURNUM LENTAGO	NANNYBERRY VIBURNUM	#10	AS SHOWN	POT
PERENNIALS						
RF	40	RUDBECKIA FULGIDA VAR. FULGIDA	BLACK EYED SUSAN	#1	AS SHOWN	POT

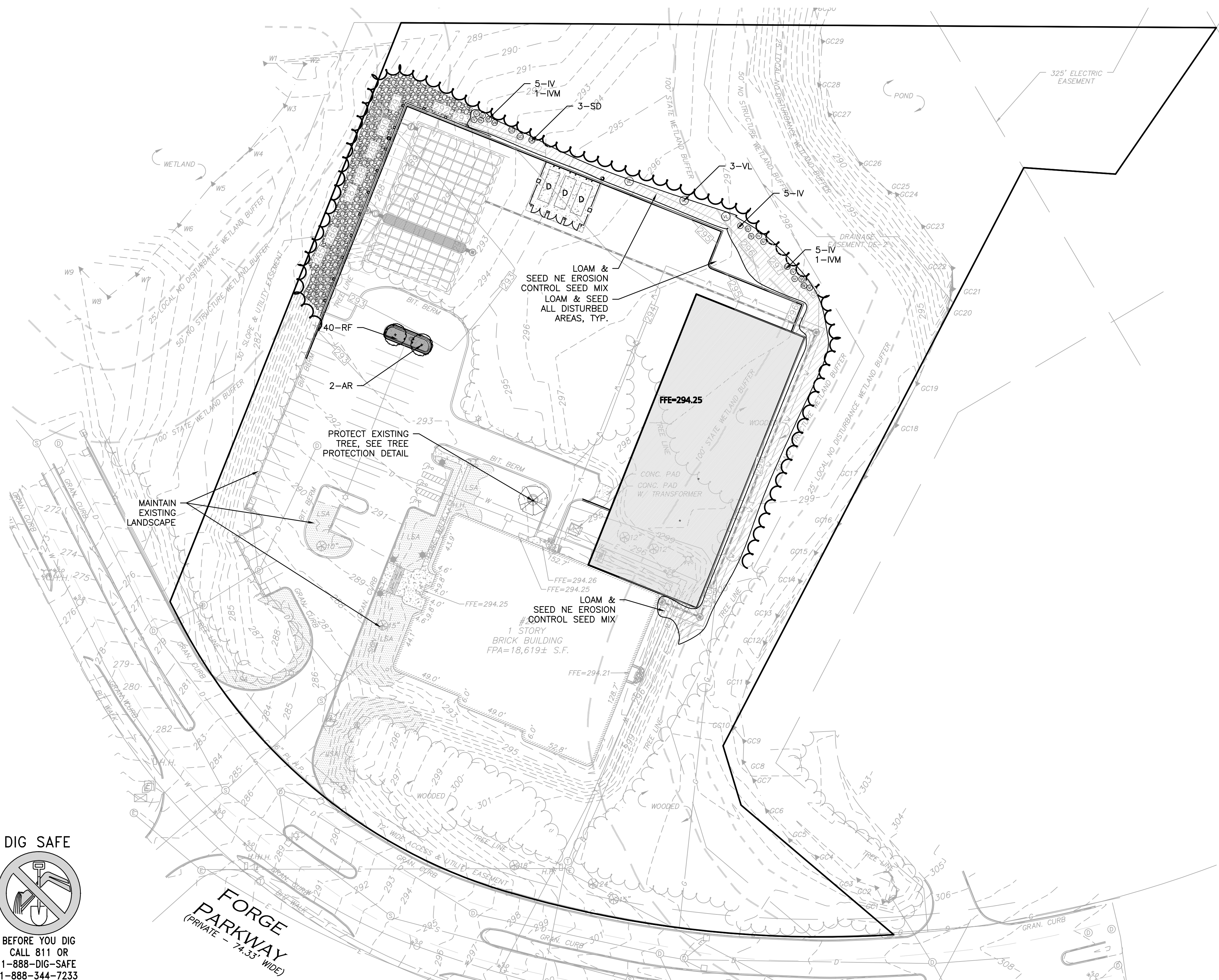
**LEGEND**

- DECIDUOUS TREE
- EXISTING TREE
- FLOWERING TREE
- SHRUBS
- MULCH BED
- PERENNIALS/GROUNDCOVER
- EROSION CONTROL SEED MIX



**LANDSCAPE NOTES**

- ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FRANKLIN, MA.
- PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES, ANY PERMITTING AGENCIES, AND "DIG-SAFE" (1-888-344-7233) AT LEAST 72 HOURS IN ADVANCE OF ANY WORK THAT WILL REQUIRE EXCAVATION. CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE OF ANY CONFLICTS IN WRITING.
  - NO PLANT MATERIAL SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA, ANY TREES NOTED AS "SEAL OR SELECTED SPECIMEN" SHALL BE TAGGED AND SEALED BY THE LANDSCAPE ARCHITECT.
  - ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
  - CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
  - ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
  - ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
  - ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.
  - ALL DISTURBED AREAS NOT OTHERWISE NOTED SHALL RECEIVE 6" OF SUITABLE LOAM & SEED LAWNS WITH 3:1 OR GREATER SLOPES SHALL BE PROTECTED WITH AN EROSION CONTROL BLANKET.
  - ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
  - TREES SHALL HAVE A BRANCHING PATTERN AS INDICATED ON THE PLANTING SCHEDULE TAKEN ONE FOOT ABOVE THE ROOT CROWN.
  - ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH.
  - ALL DECIDUOUS TREES ADJACENT TO WALKWAYS AND ROADWAYS SHALL HAVE A BRANCHING PATTERN TO ALLOW FOR A MINIMUM OF 7' OF CLEARANCE BETWEEN THE GROUND AND THE LOWEST BRANCH.
  - ALL TREE STAKES SHALL BE STAINED DARK BROWN.
  - CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
  - ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
  - SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
  - ALL PROPOSED LANDSCAPE AREAS INCLUDING MOWED LAWNS, TREES, SHRUB BEDS, AND PERENNIALS SHALL BE PROVIDED WITH WATER EFFICIENT UNDERGROUND IRRIGATION. DESIGN AND INSTALLATION OF IRRIGATION SYSTEM TO BE PERFORMED BY AN APPROVED IRRIGATION DESIGN BUILD CONTRACTOR OR BY AN APPROVED EQUAL, TO BE DETERMINED BY THE OWNERS REPRESENTATIVE AND LANDSCAPE ARCHITECT. IRRIGATION SYSTEM IS TO BE DESIGNED FOR EFFICIENT WATER USAGE INCLUDING: USE OF DRIP IRRIGATION FOR SHRUBS AND PERENNIALS, IRRIGATION SYSTEM WITH HEAD-TO-HEAD COVERAGE, A CENTRAL SHUT-OFF VALVE, SEPARATE ZONES FOR EACH TYPE OF BEDDING AREA BASED ON WATERING NEEDS, AND A RAIN SENSOR TO SHUT OFF IRRIGATION DURING RAIN EVENTS.



*Betty C. Day*  
PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
2	04-14-23	REVISION 2 PER DPW COMMENTS
1	04-04-23	REVISION 1 PER PEER REVIEW

APPLICANT/OWNER:  
**TMC HOLDINGS & DEVELOPMENT 2, LLC**  
24 WILLIAM WAY  
BELLINGHAM, MA 02019

PROJECT:  
**25 FORGE PARKWAY**  
FRANKLIN, MA

PROJECT NO. 2712-02A DATE: 02-21-23

SCALE: 1" = 40' DWG. NAME: L-2712-02A

DESIGNED BY: BCD CHECKED BY: BDI

PREPARED BY:

**ALLEN & MAJOR ASSOCIATES, INC.**  
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environmental consulting • landscape architecture  
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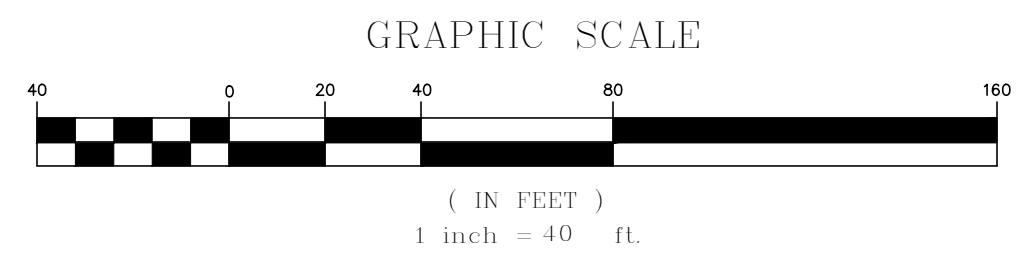
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DRAWING TITLE: LANDSCAPE PLAN SHEET No. L-101

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