

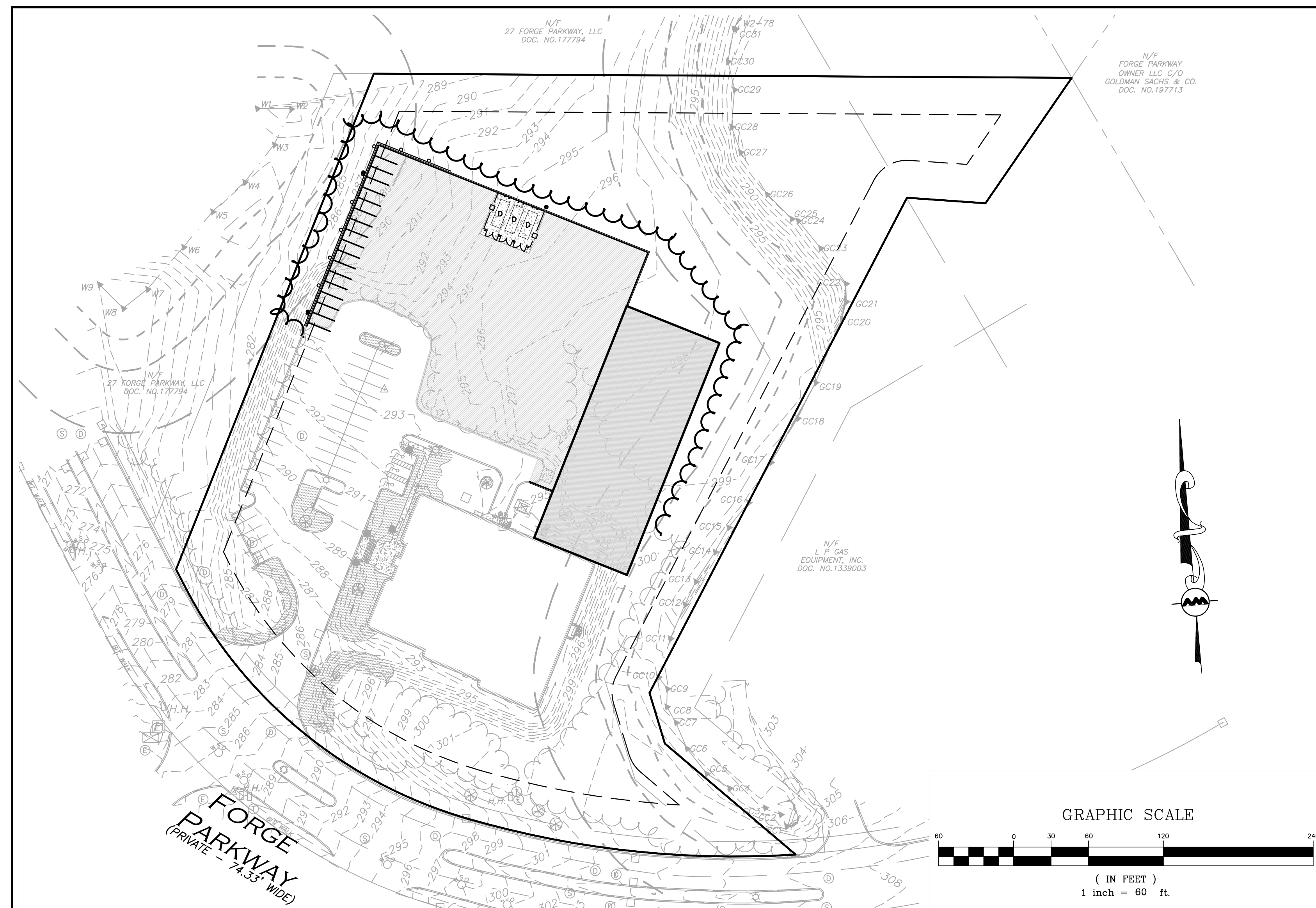
LOCUS MAP
NOT TO SCALE

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
EXISTING CONDITIONS	V-101	02-21-23	-
SITE PREPARATION PLAN	C-101	02-21-23	-
LAYOUT & MATERIALS PLAN	C-102	02-21-23	-
GRADING & DRAINAGE PLAN	C-103	02-21-23	-
LIGHTING PLAN	C-104	02-21-23	-
DETAILS	C-501	02-21-23	-
DETAILS	C-502	02-21-23	-
DETAILS	C-503	02-21-23	-



TOWN OF FRANKLIN APPROVAL STAMP



Brian D. Jones
02-21-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

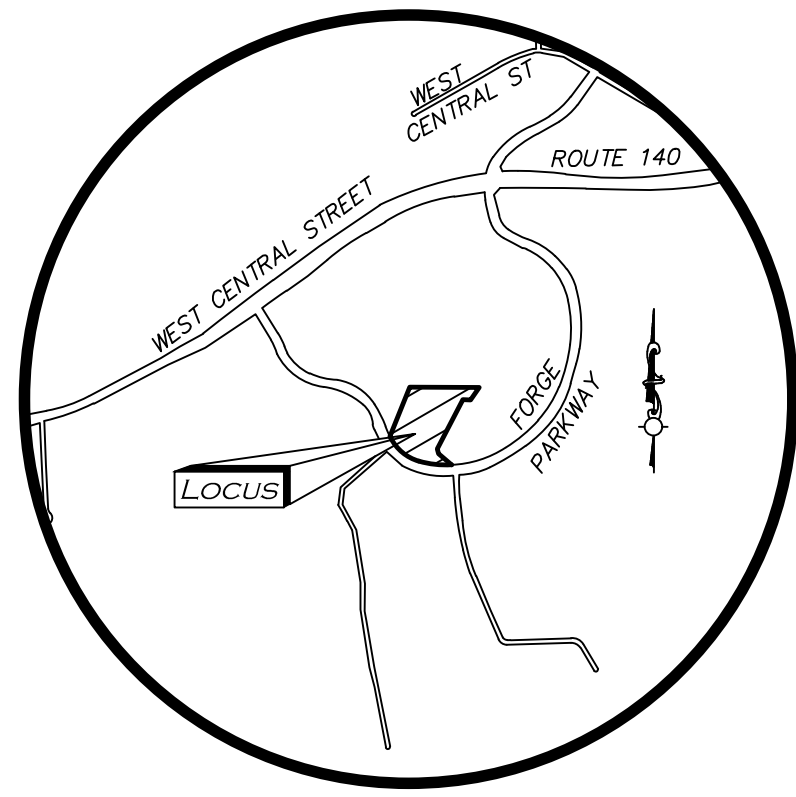
PREPARED BY:



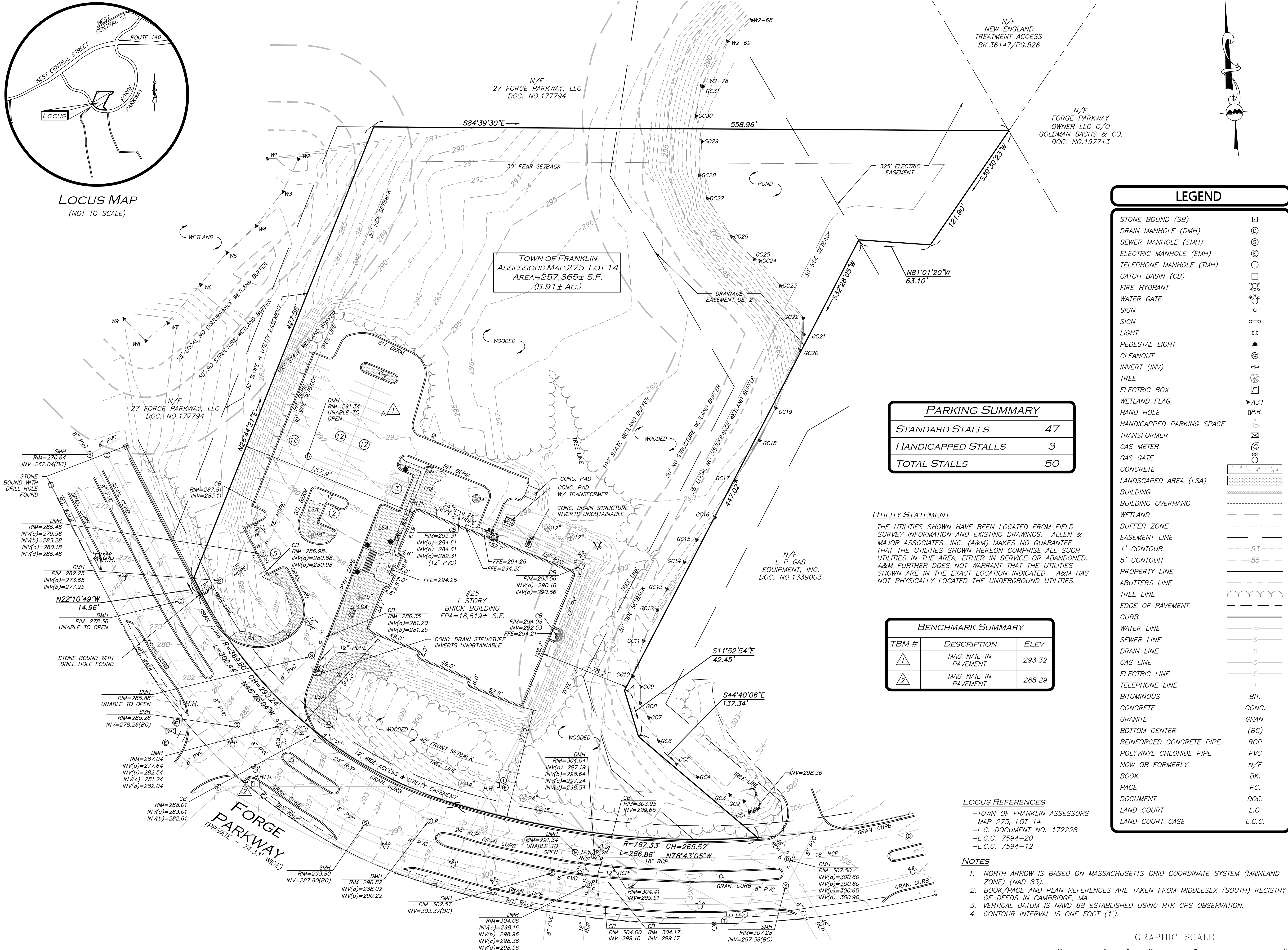
ALLEN & MAJOR ASSOCIATES, INC.
civil engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
TEL: (781) 935-6889
FAX: (781) 935-2896

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ISSUED FOR INITIAL REVIEW: FEBRUARY 21, 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.

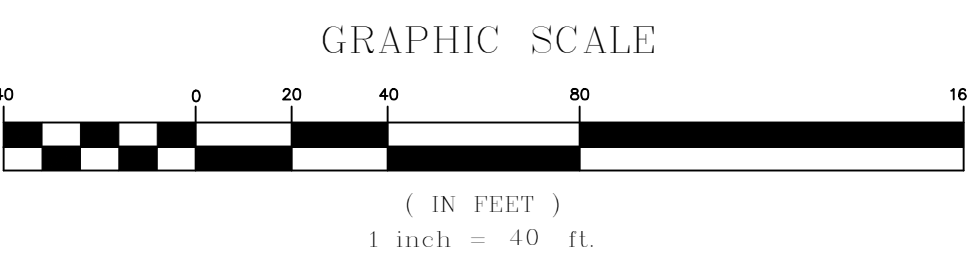
BENCHMARK SUMMARY		
TBM #	DESCRIPTION	ELEV.
1	MAG NAIL IN PAVEMENT	293.32
2	MAG NAIL IN PAVEMENT	288.29

- 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

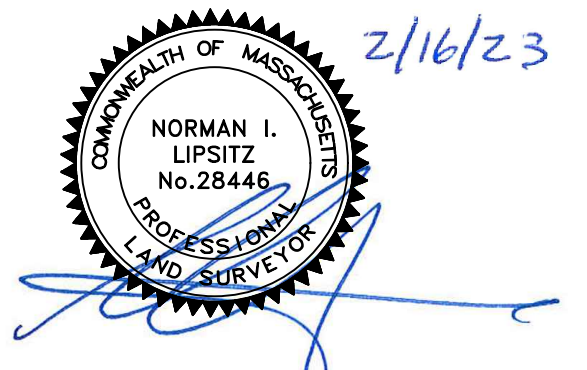
- STONE BOUND (SB)
- DRAIN MANHOLE (DMH)
- SEWER MANHOLE (SMH)
- ELECTRIC MANHOLE (EMH)
- TELEPHONE MANHOLE (TMH)
- CATCH BASIN (CB)
- FIRE HYDRANT
- WATER GATE
- SIGN
- SIGN
- LIGHT
- PEDESTAL LIGHT
- CLEANOUT
- INVERT (INV)
- TREE
- ELECTRIC BOX
- WETLAND FLAG
- HAND HOLE
- HANDICAPPED PARKING SPACE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



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.

FEB. 16, 2023
PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION
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 www.allenmajor.com 100 COMMERCE WAY WOUBURN MA 01801-8501 TEL: (781) 935-6889 FAX: (781) 935-2886		
WOUBURN, MA • LAKEVILLE, MA • MANCHESTER, NH		

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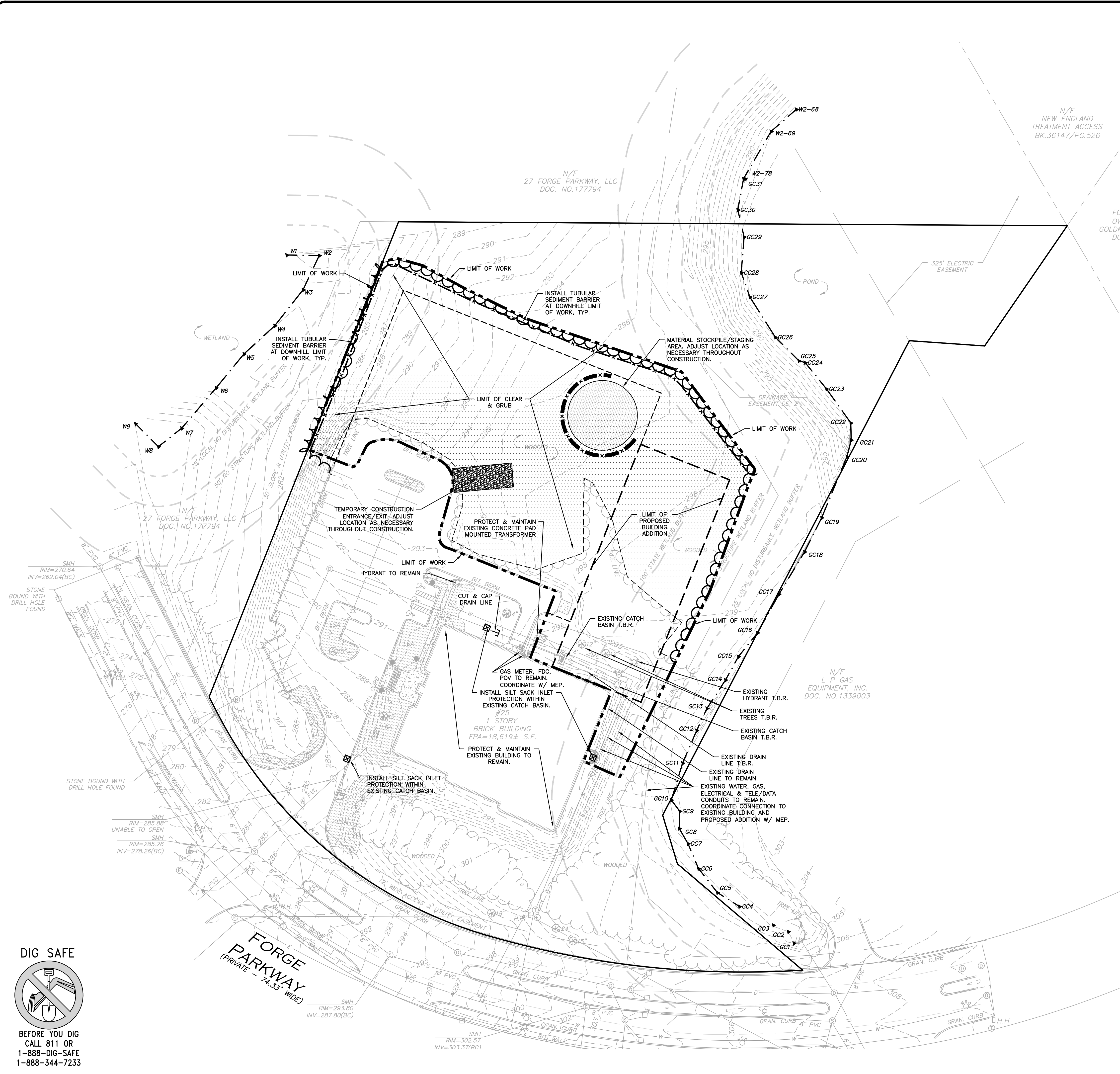
DRAWING TITLE: **EXISTING CONDITIONS** SHEET NO. **V-101**

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R:\PROJECTS\2712-02A\CIVIL\DRAWINGS\CURRENT\C-2712-02A-SITE-PRP-DWG

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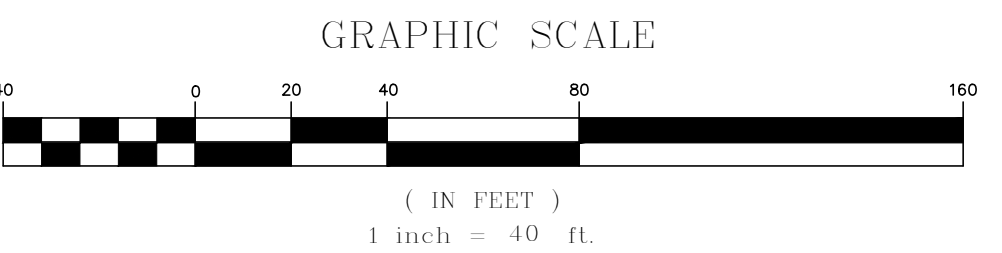
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 1-888-DIG-SAFE
 1-888-344-7233




LEGEND

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

- NOTES:**
1. 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.
 2. 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.
 3. 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.
 4. 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.
 5. 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.
 6. 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.
 7. 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.




 B. Jones
 02.21.23

PROFESSIONAL ENGINEER FOR
 ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

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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 civil engineering • land surveying
 environmental consulting • landscape architecture
 www.allenmajor.com
 100 COMMERCE WAY, SUITE 5
 WOBURN MA 01801
 TEL: (781) 935-6889
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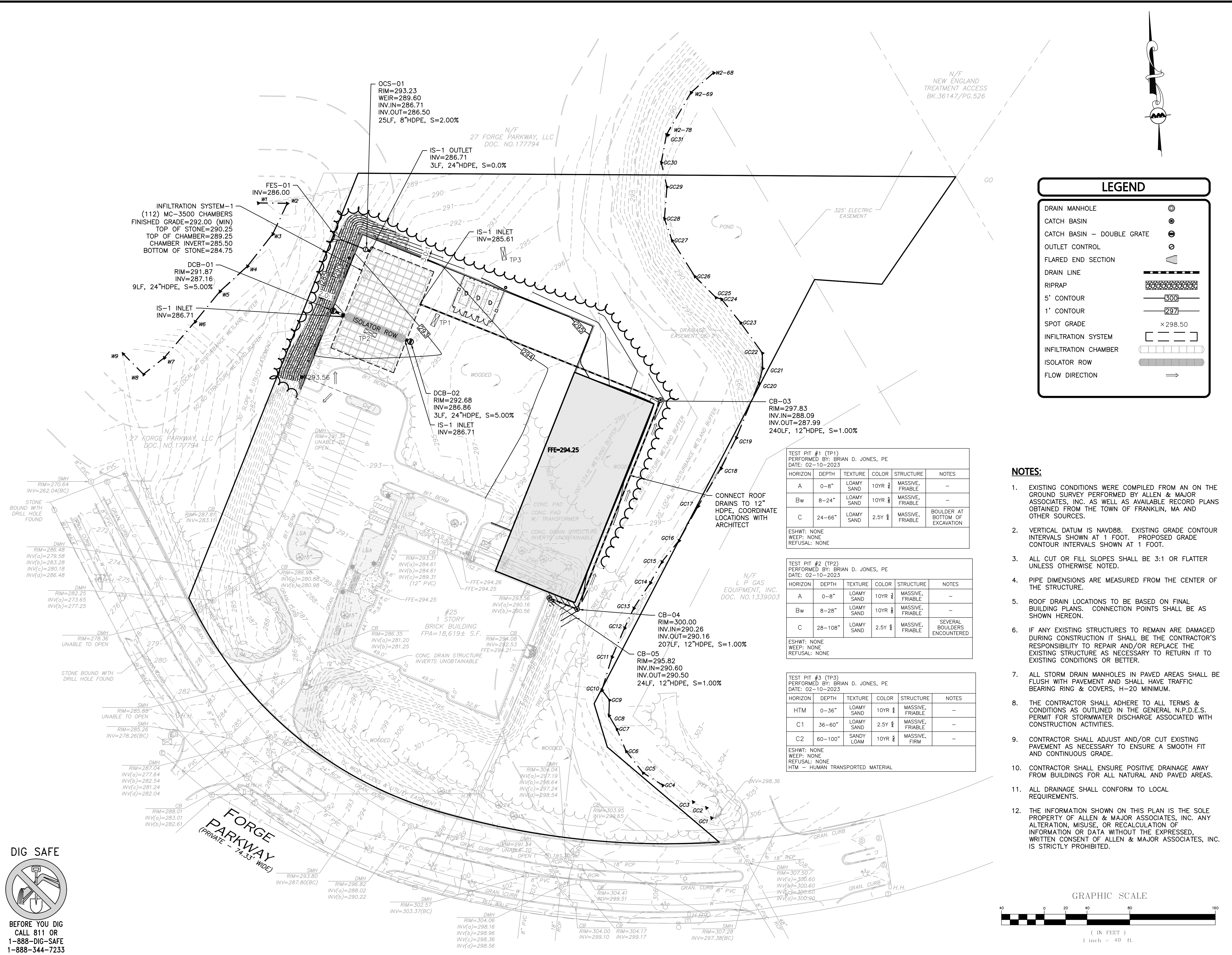
DRAWING TITLE: **SITE PREPARATION PLAN** SHEET No. **C-101**

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R:\PROJECTS\2712-02A\CIVIL\DRAWINGS\CURRENT\C-2712-02A-GRADING & DRAINAGE.DWG

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LEGEND

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

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

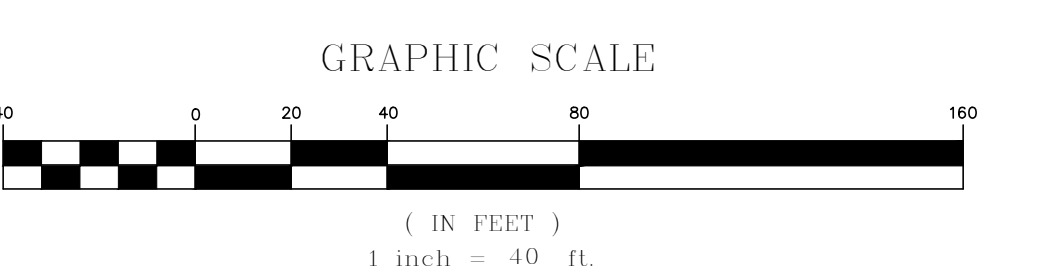
TEST PIT #3 (TP3)
 PERFORMED BY: BRIAN D. JONES, PE
 DATE: 02-10-2023


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

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 CENTER 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.
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 BRIAN D. JONES
 CIVIL
 No. 45212
 PROFESSIONAL ENGINEER
 02-21-23

PROFESSIONAL ENGINEER FOR
 ALLEN & MAJOR ASSOCIATES, INC.

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: BDI

PREPARED BY:

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

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LIGHTING LEVEL SUMMARY						
AREA	UNITS	AVERAGE	MAX	MIN	AVG/MIN	MAX/MIN
PAVEMENT AREA	Fc	0.18	3.4	0.0	N.A.	N.A.

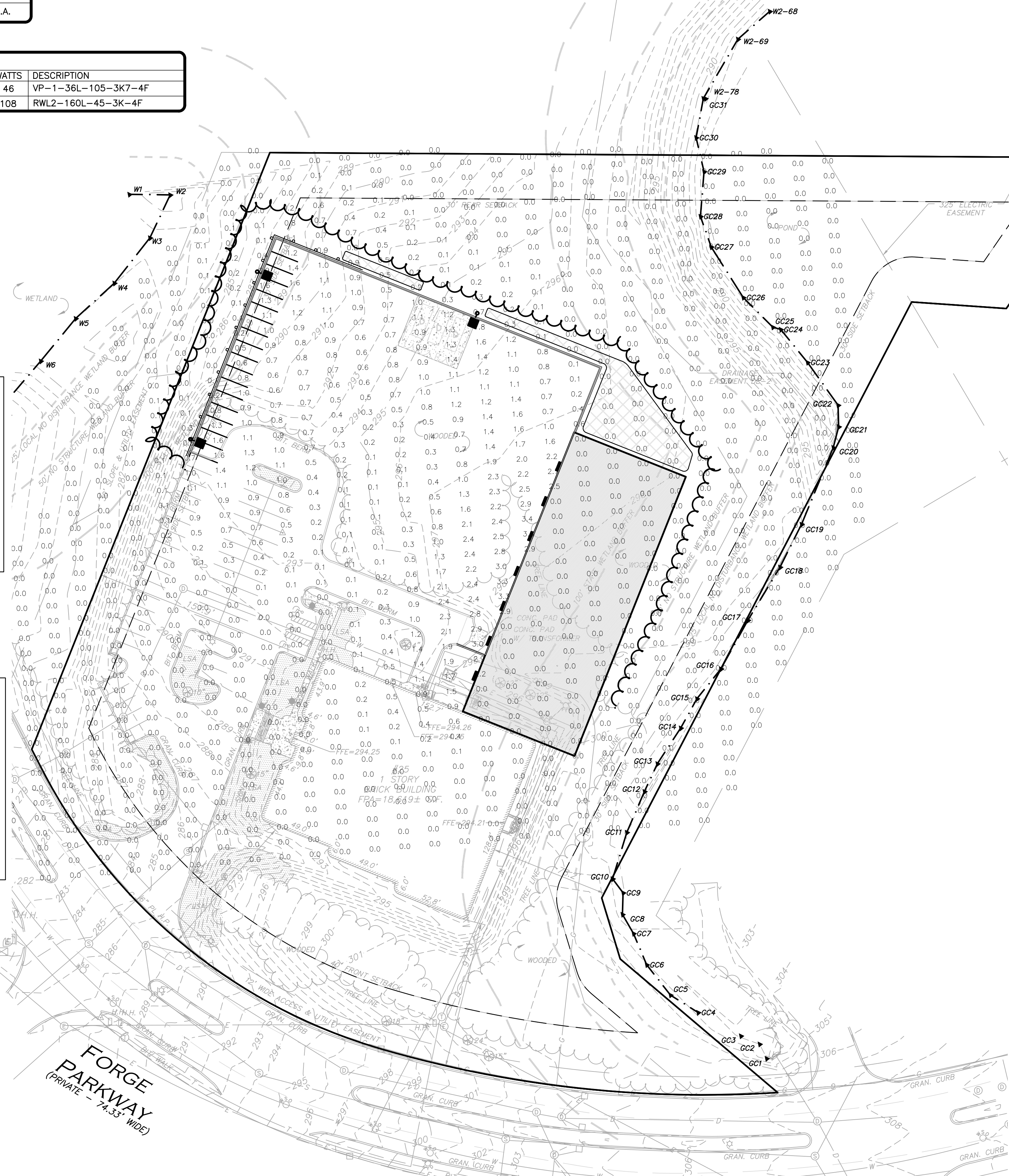
LUMINAIRE SCHEDULE							
SYMBOL	QTY	LABEL	ARRANGEMENT	HEIGHT	LUMENS	WATTS	DESCRIPTION
■	7	W1	WALL PACK	25'	5778	46	VP-1-36L-105-3K7-4F
■	3	SA	SINGLE, POLE MOUNT	30'	11027	108	RWL2-160L-45-3K-4F



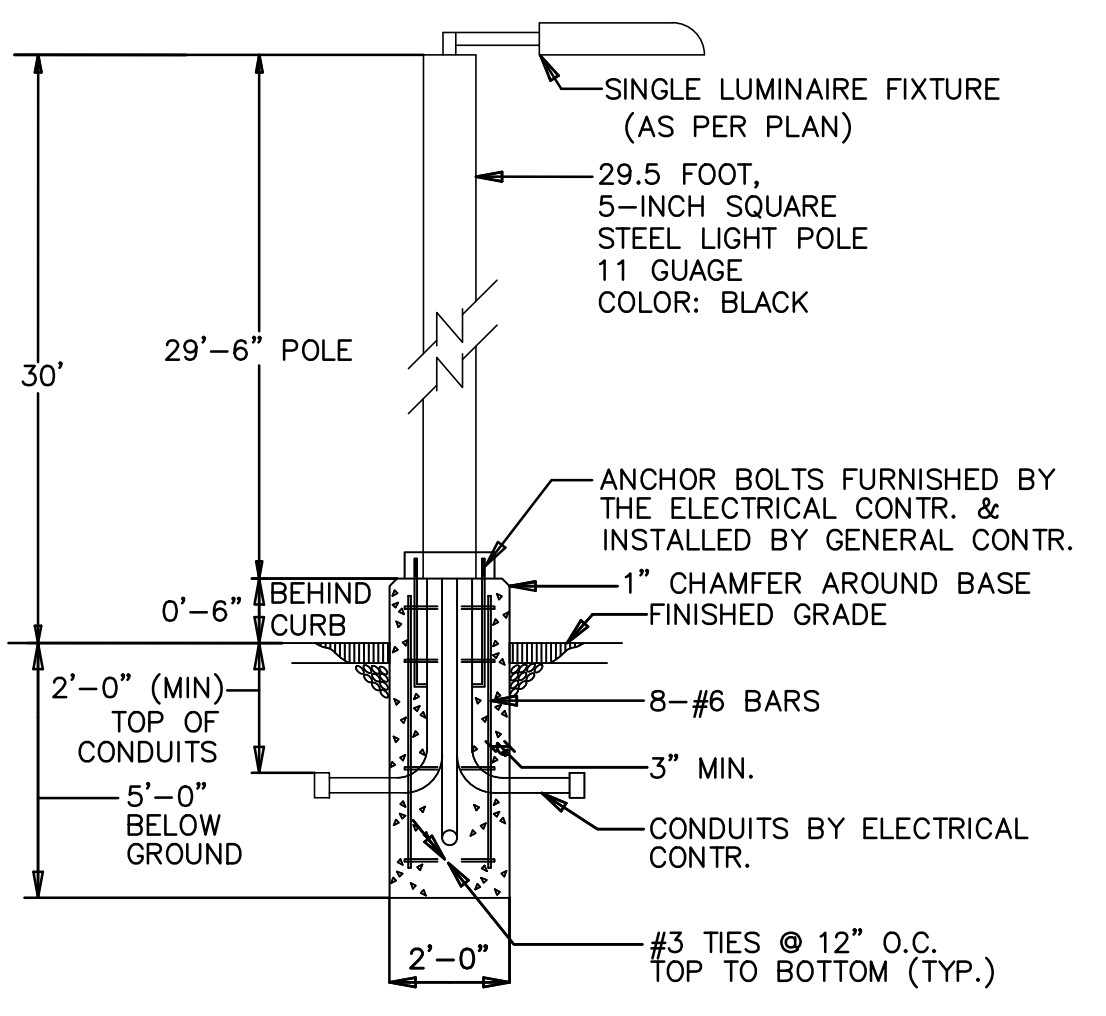
POLE LIGHT FIXTURE (LED)
HUBBELL LIGHTING INC. - RATIO SERIES



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

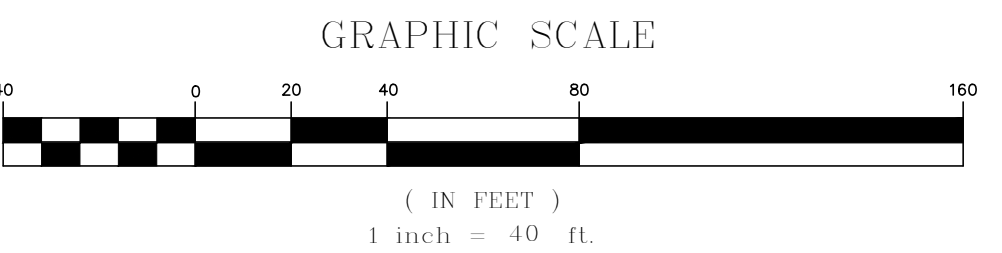


LEGEND	
SINGLE POLE LIGHT	■
WALL PACK LIGHT	■
LIGHTING LEVELS GIVEN IN FOOT-CANDLES	0.0 0.1 0.2 0.4 0.6



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. IT'S 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
02-21-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

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: BDI

PREPARED BY:



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DRAWING TITLE: LIGHTING PLAN SHEET No. C-104

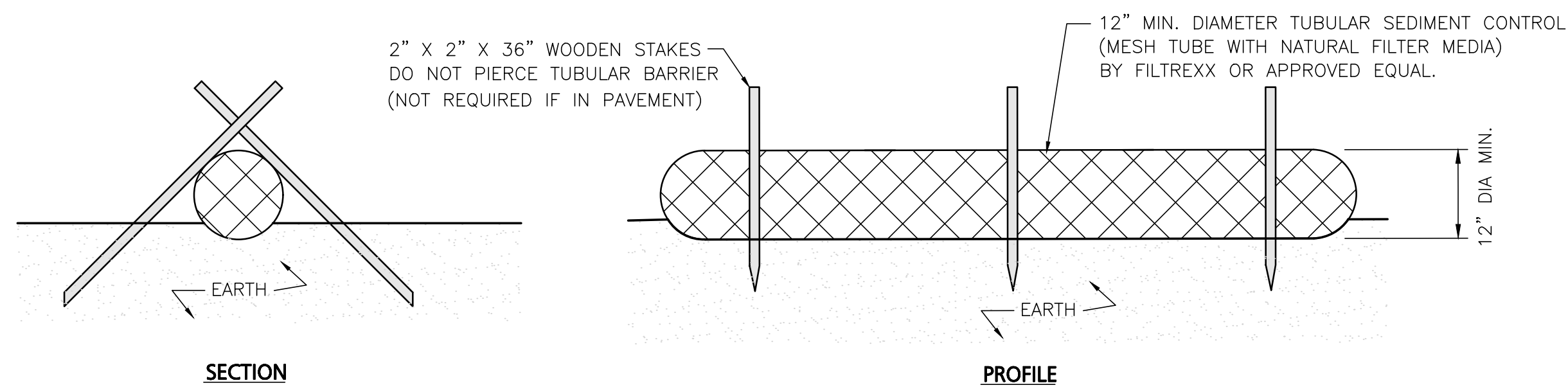
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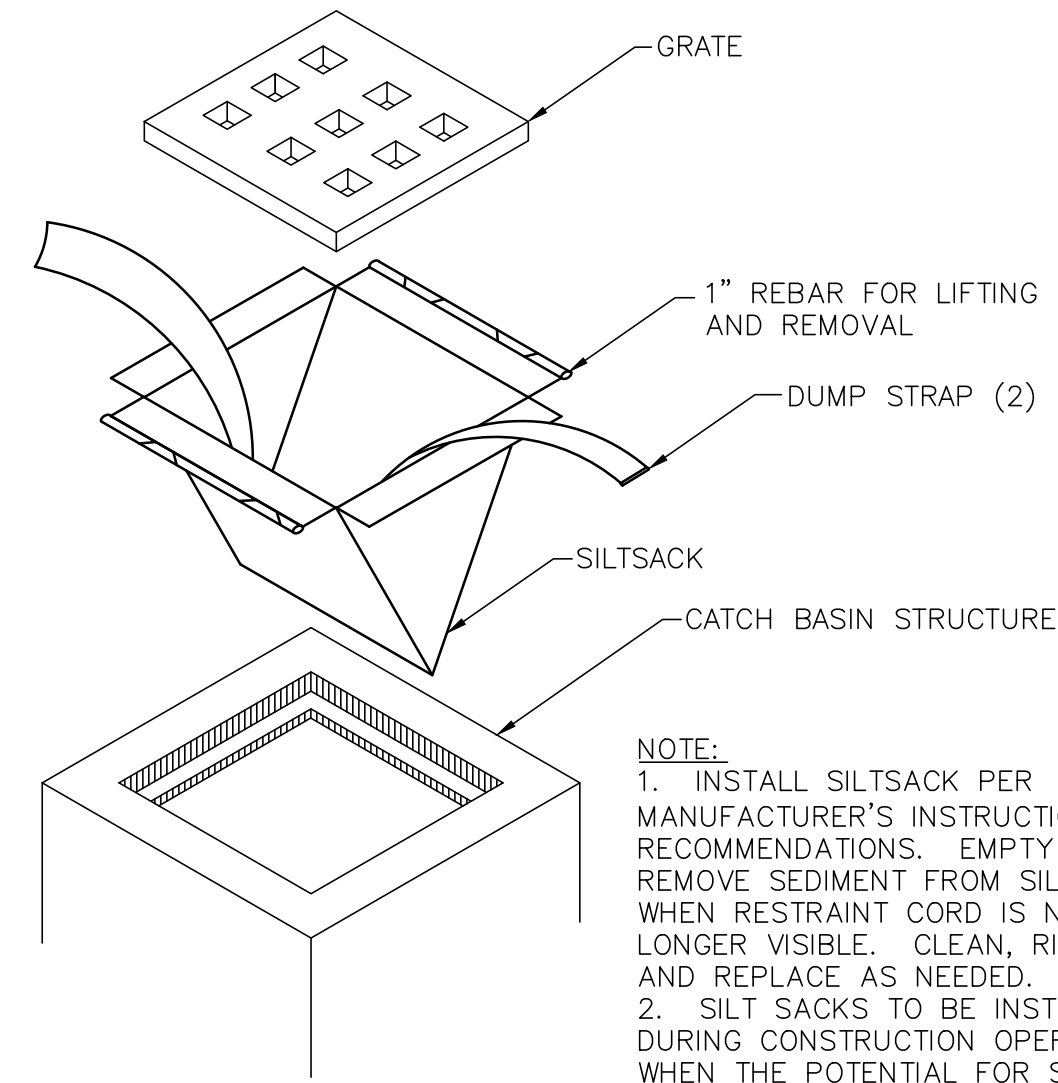
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1-888-344-7233



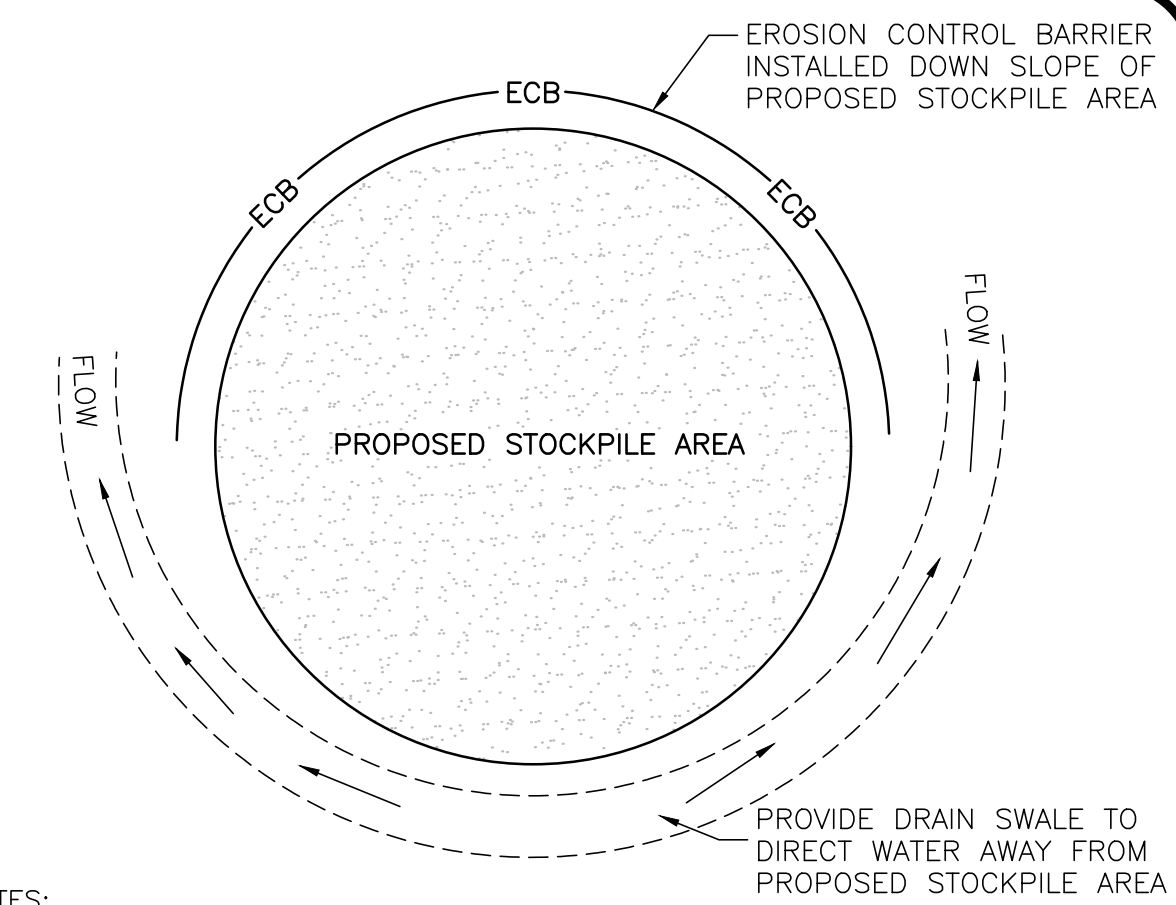
NOTES:

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 (1)

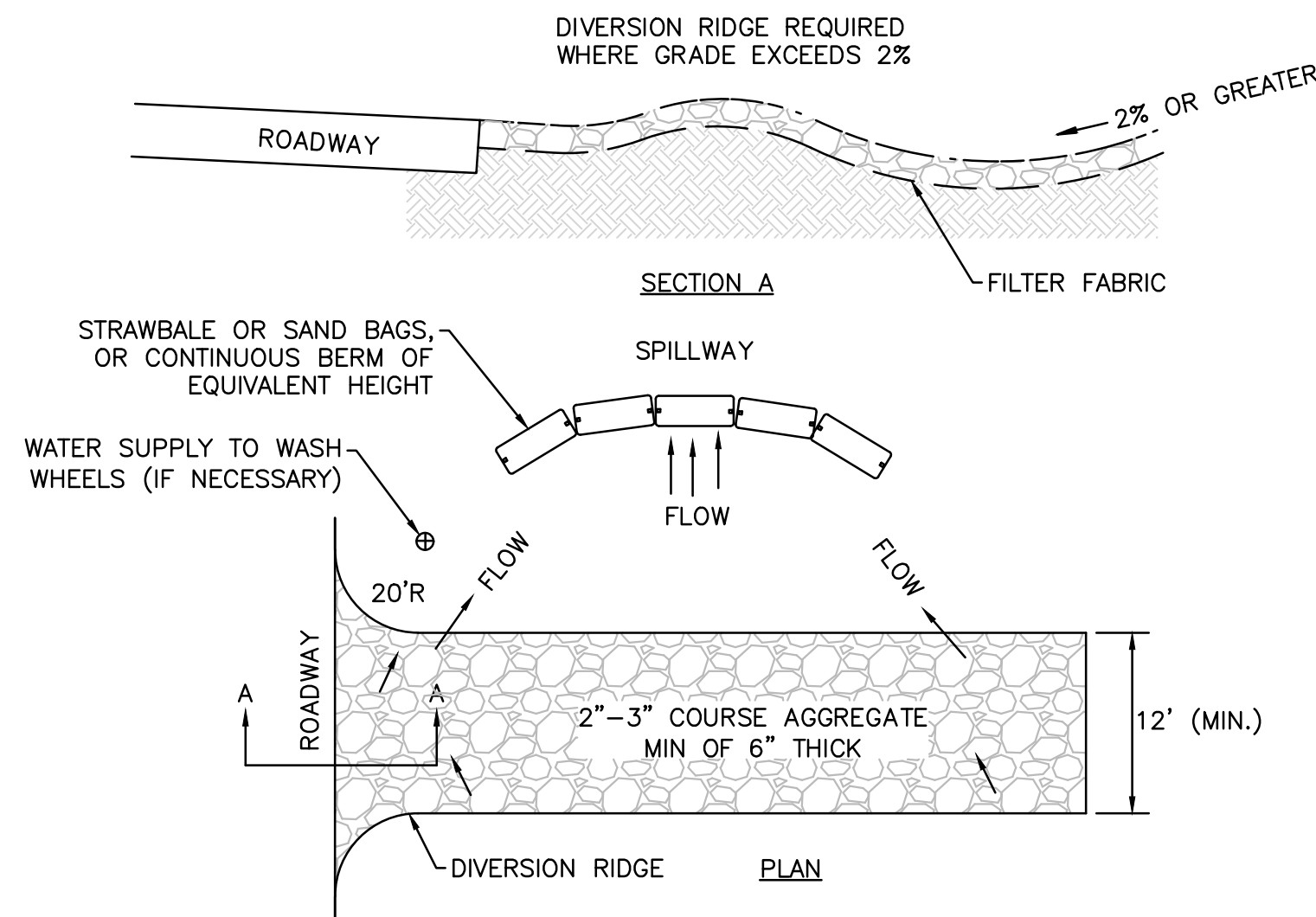


CATCH BASIN FILTER INLET DETAIL
NOT TO SCALE (2)



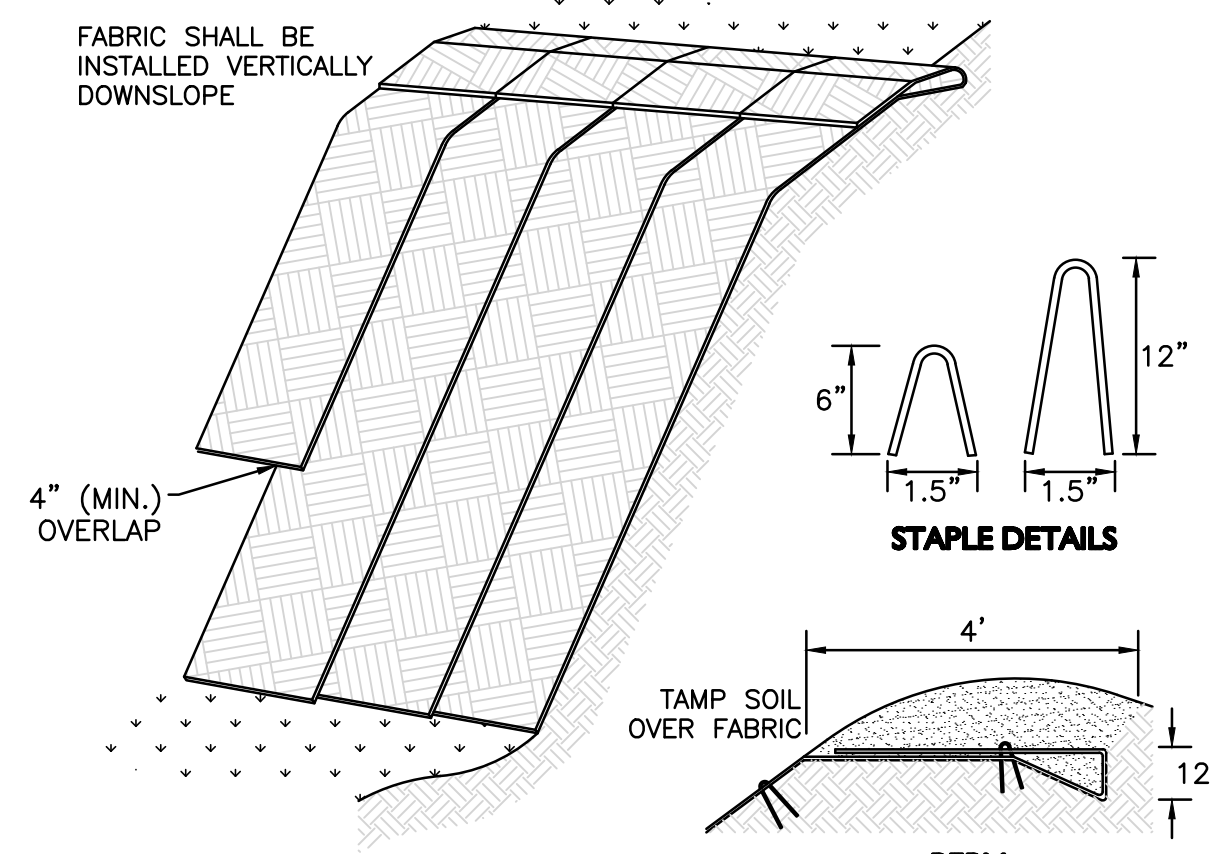
- NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LB/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
 2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEED 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 (3)



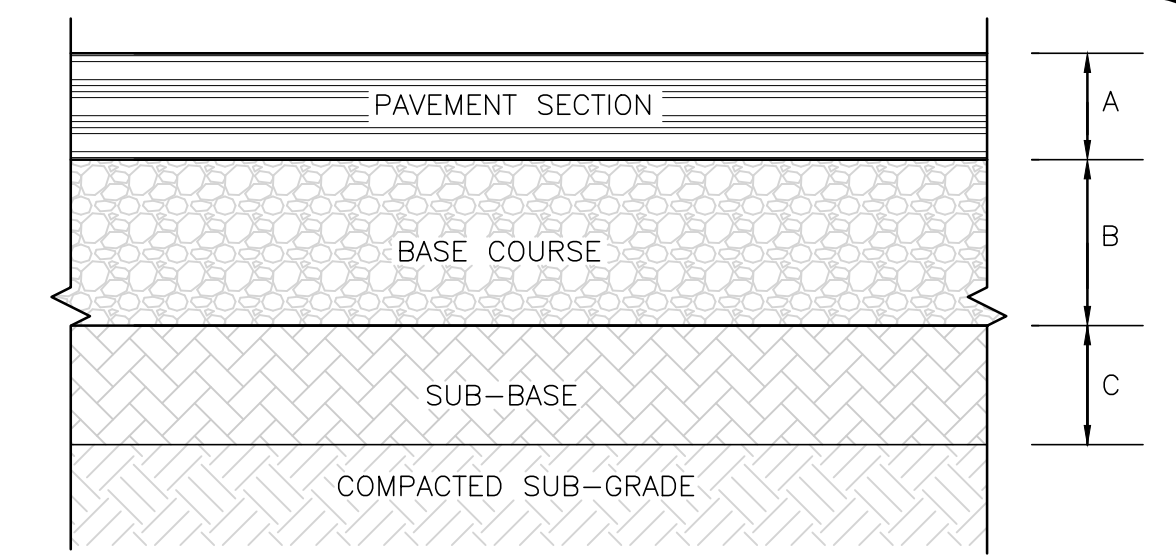
- NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTERING THE PUBLIC 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 (4)



- 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 (5)



- 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.

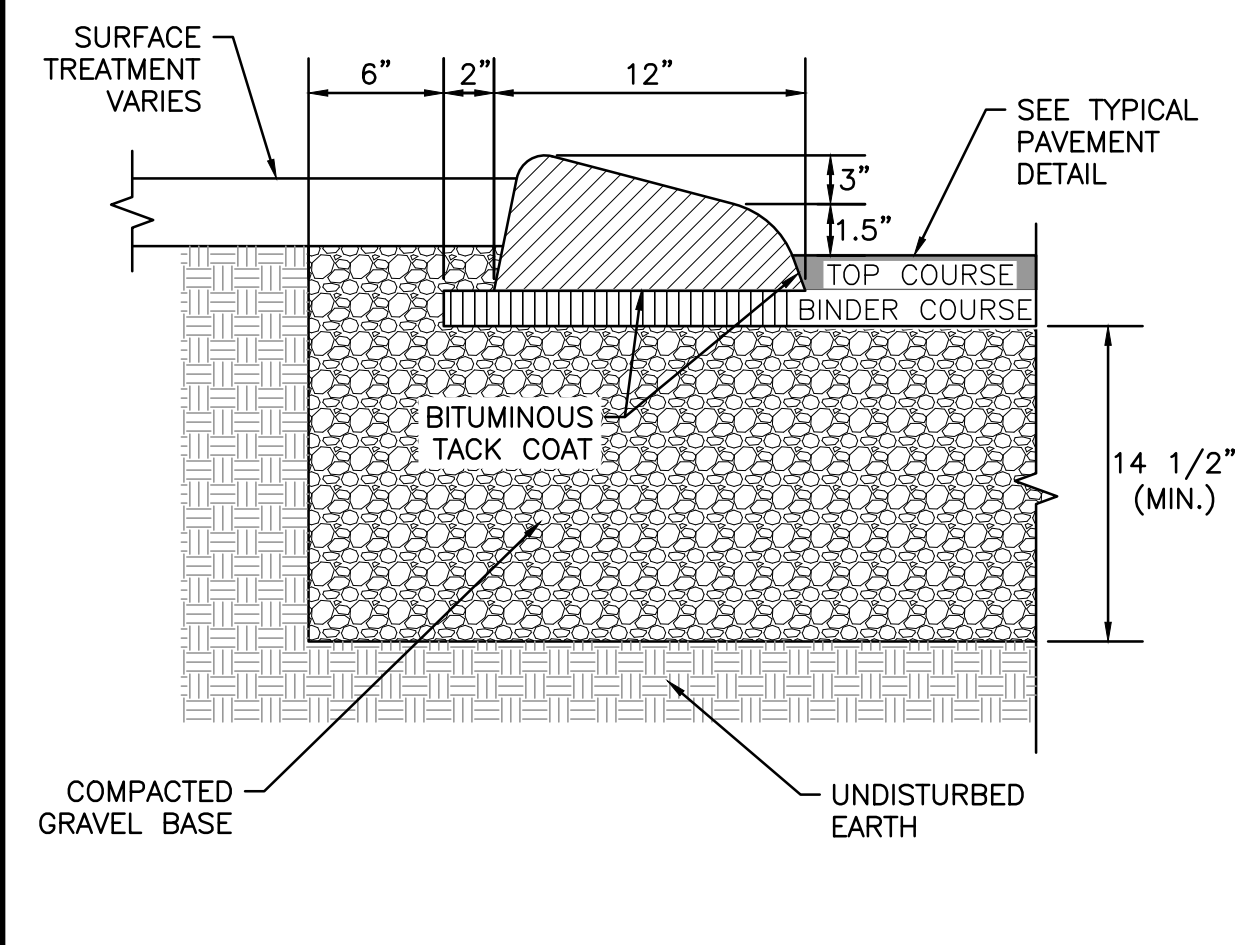
MATERIALS AND THICKNESSES:

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)

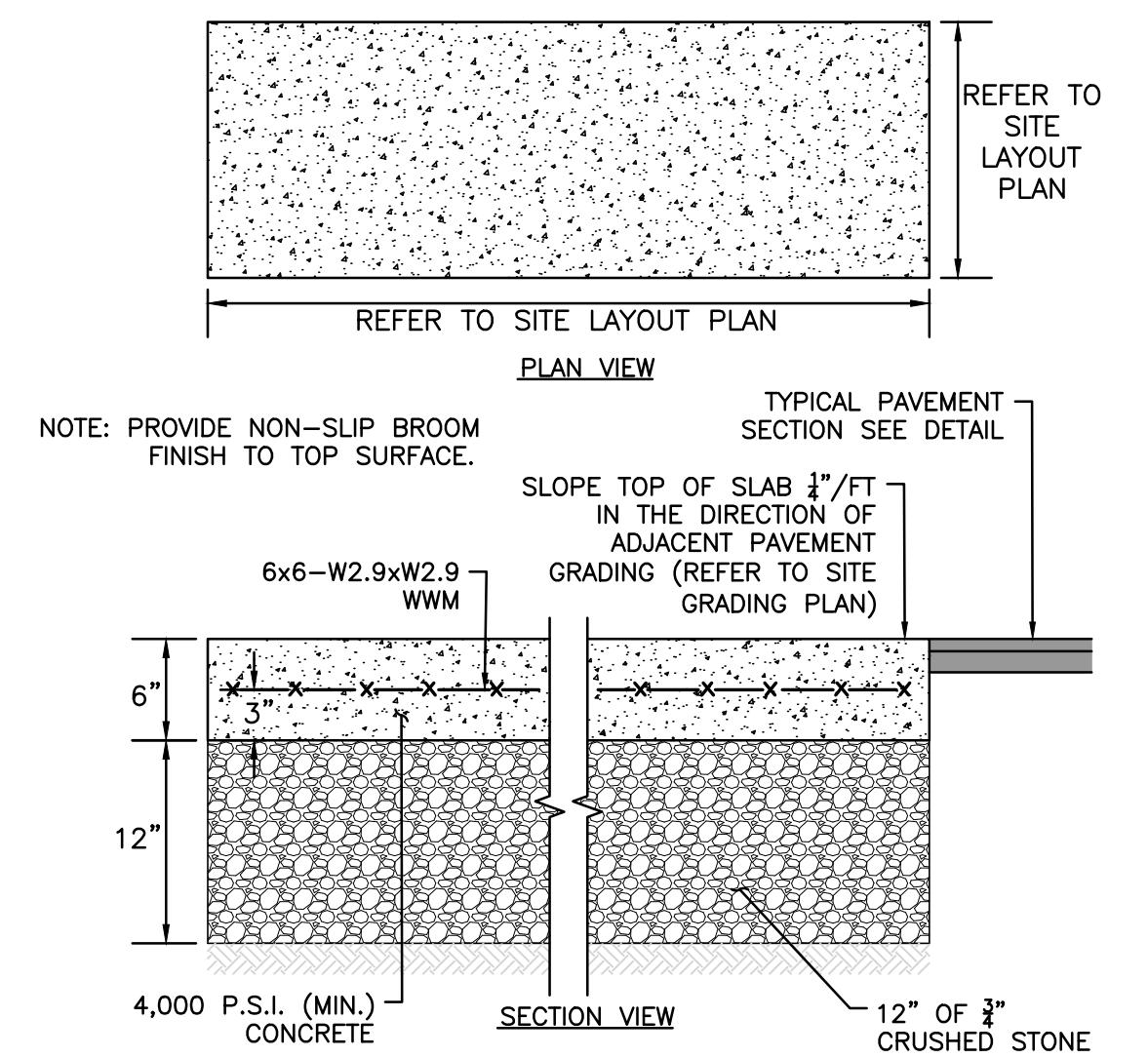
B = 6" PROCESSED GRAVEL BASE (MHD M2.01.7)

C = 12" BANK RUN GRAVEL MHD M1.03.0 TYPE B)

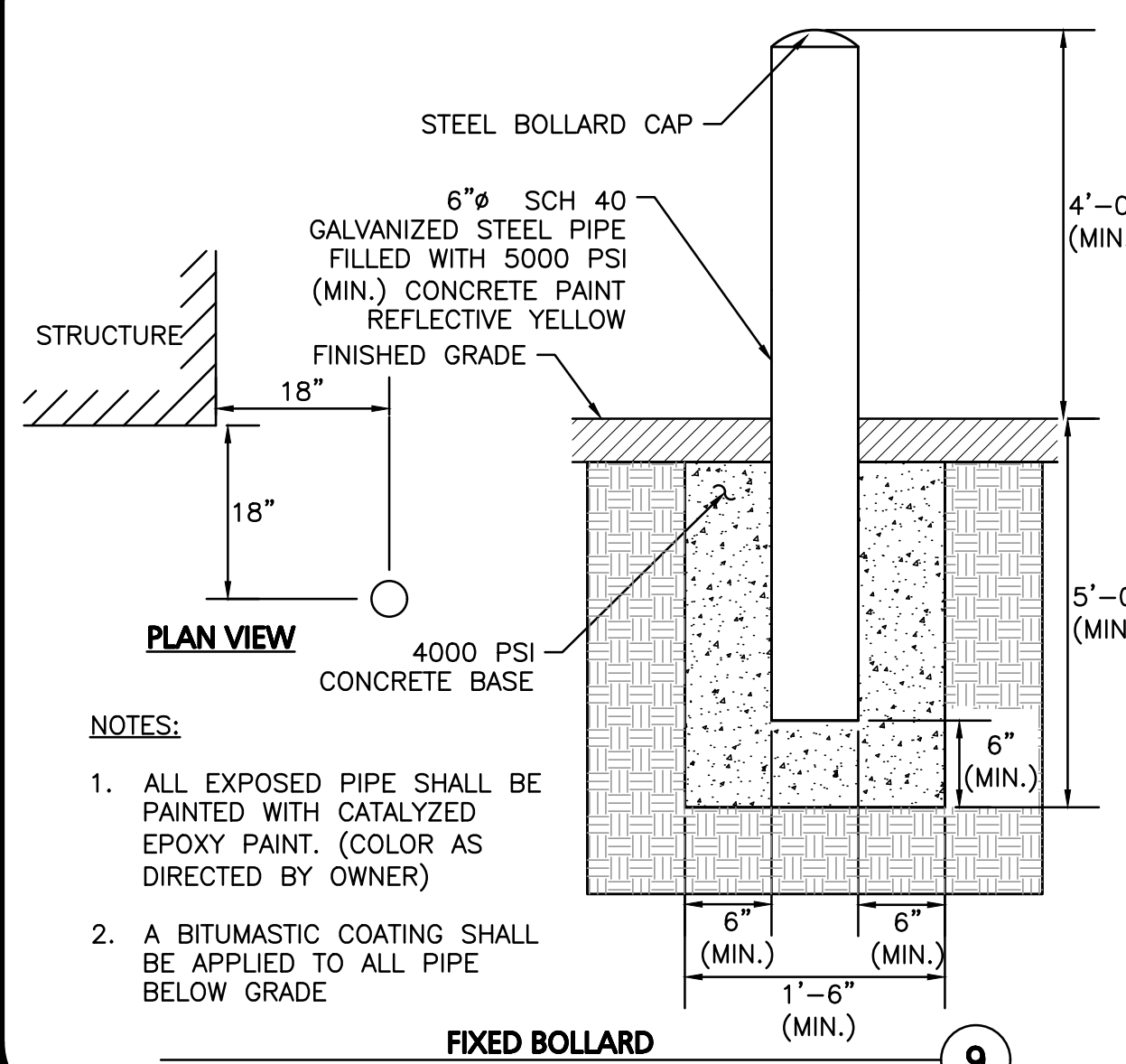
ASPHALT PAVEMENT SECTION
NOT TO SCALE (6)



CAPE COD BERM
NOT TO SCALE (7)

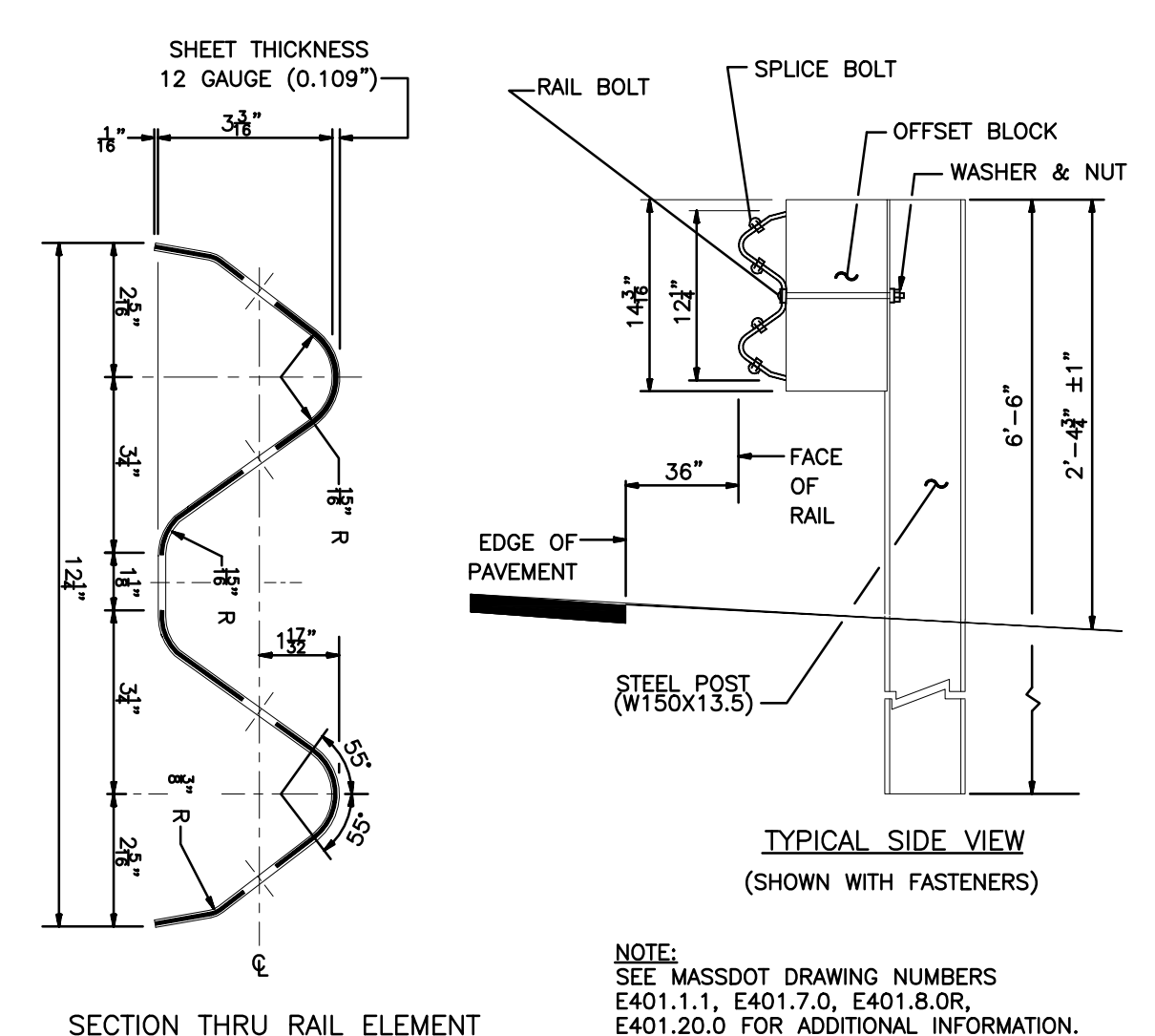


CONCRETE DUMPSTER PAD
NOT TO SCALE (8)



- 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 (9)



STEEL GUARDRAIL
NOT TO SCALE (10)



02.21.23

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

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:

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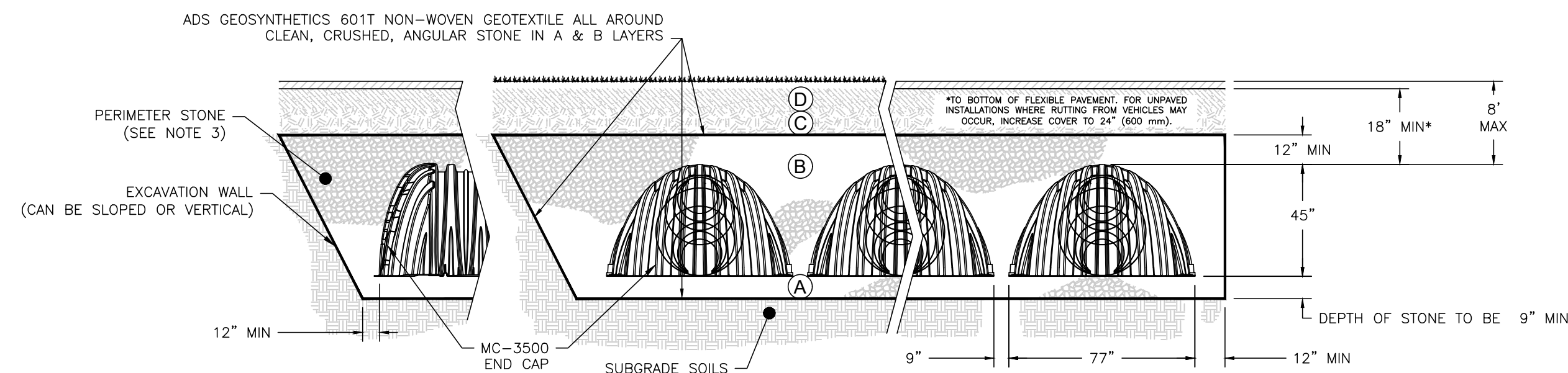
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R:\PROJECTS\2712-02A\CIVIL\DRAWINGS\CURRENT\C-2712-02A-DETAILS.DWG

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT	
D	FINAL FILL: 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.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS.
C	INITIAL FILL: 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.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 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	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

- 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.



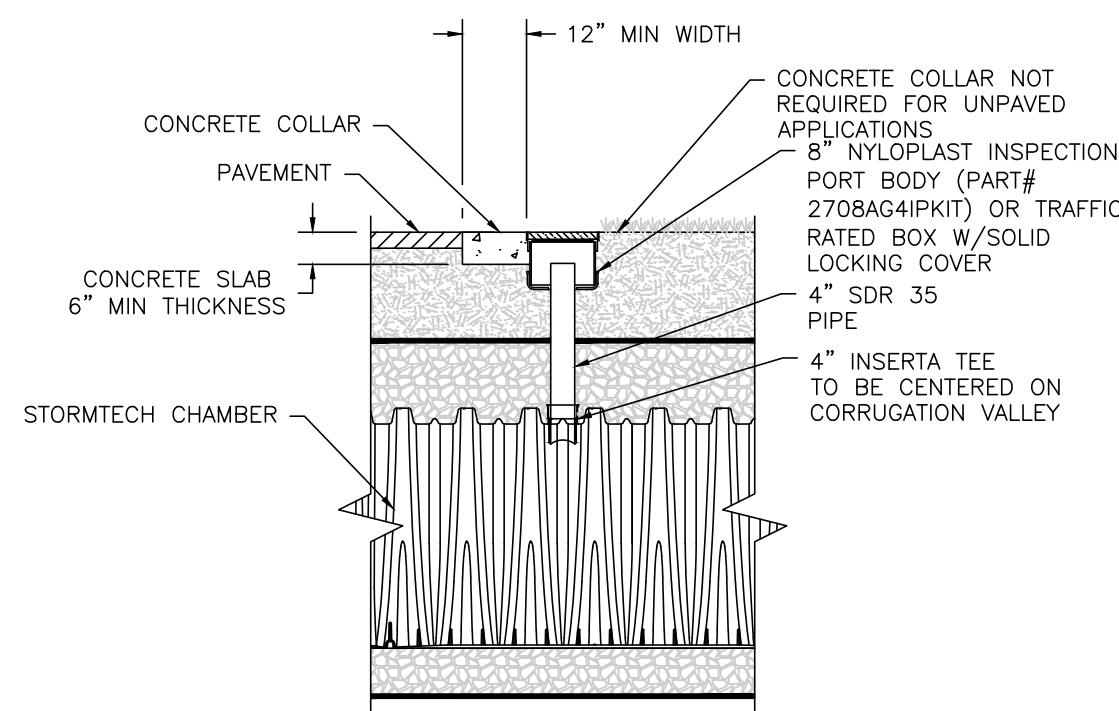
- NOTES:**
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
 - MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL 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/FT², 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/FT², THE ASC 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.

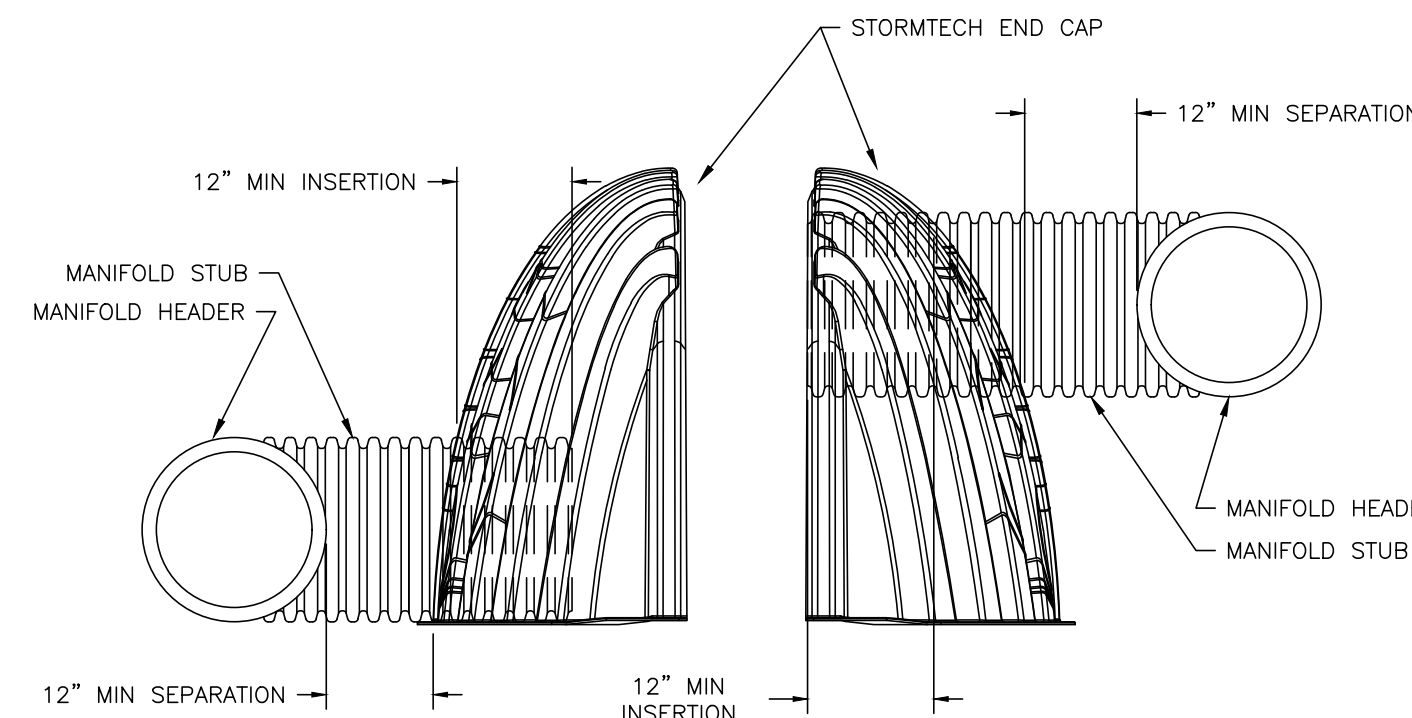


STORMTECH MC-3500 CHAMBER SYSTEM
NOT TO SCALE



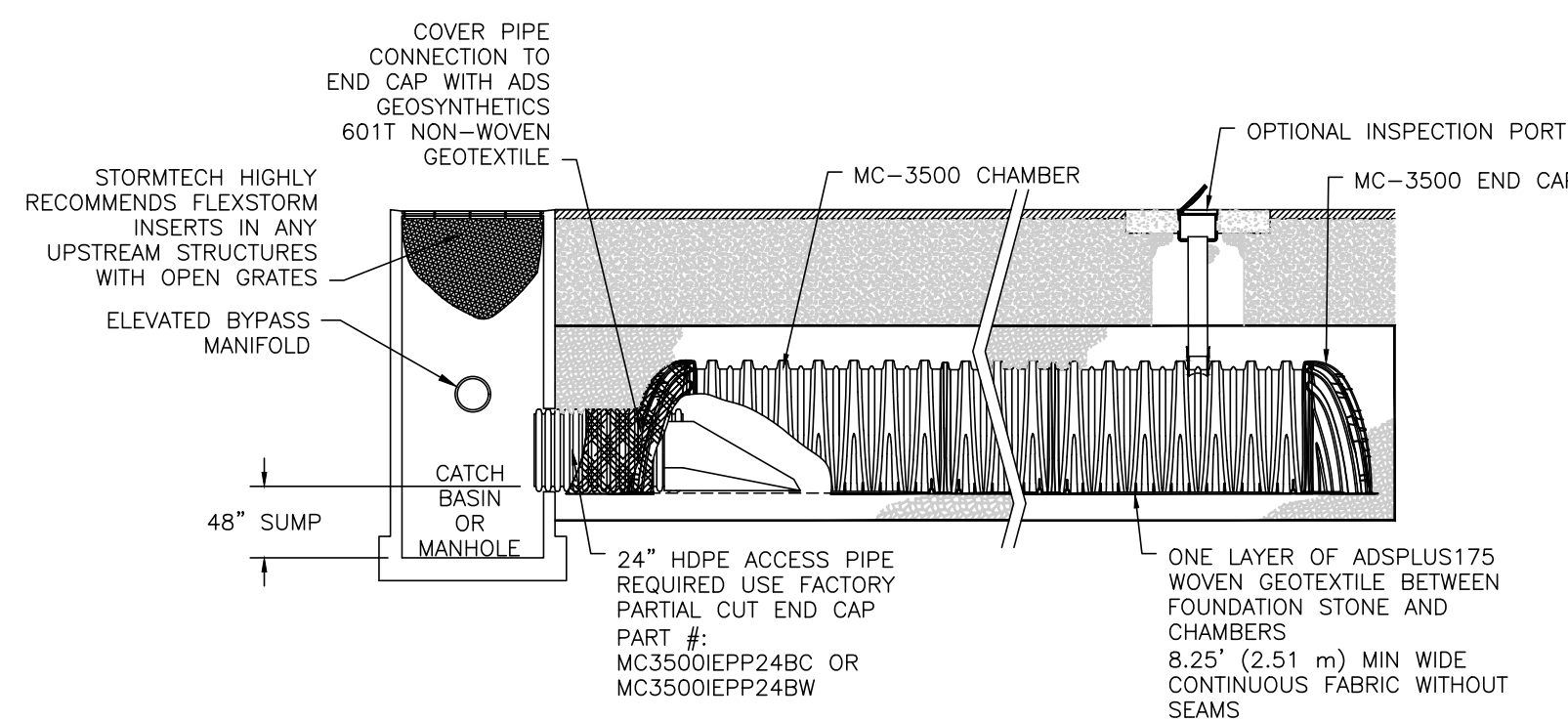
NOTE: INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4\"/>

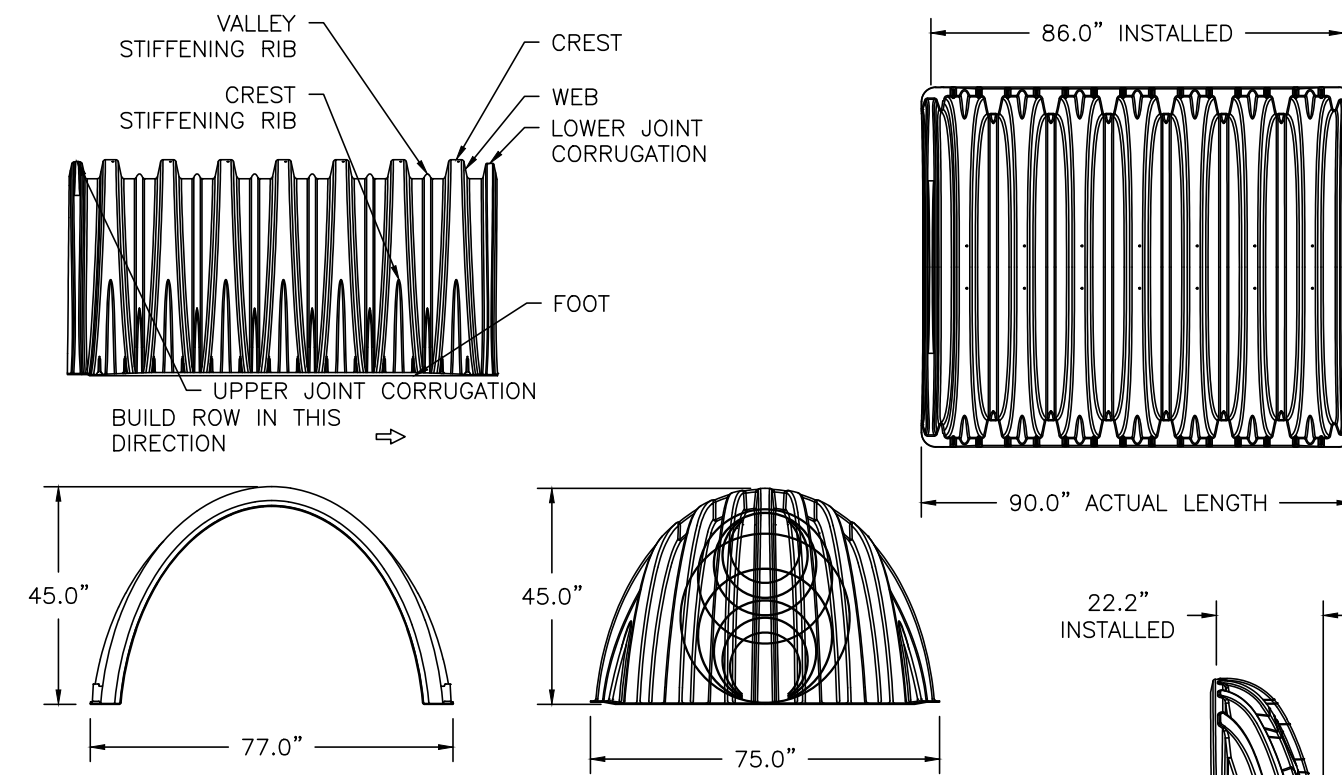


NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

END CAP INSERTION DETAIL
NOT TO SCALE



MC-3500 - ISOLATOR ROW PLUS DETAIL
NOT TO SCALE



NOMINAL CHAMBER SPECIFICATIONS
SIZE (W x H x INSTALLED LENGTH)
CHAMBER STORAGE
MINIMUM INSTALLED STORAGE*
WEIGHT
77.0" x 45.0" x 86.0"
109.9 CUBIC FEET
175.0 CUBIC FEET
134 lbs.

NOMINAL END CAP SPECIFICATIONS
SIZE (W x H x INSTALLED LENGTH)
END CAP STORAGE
MINIMUM INSTALLED STORAGE*
WEIGHT
75.0" x 45.0" x 22.2"
14.9 CUBIC FEET
45.1 CUBIC FEET
49 lbs.

*ASSUMES 12" STONE ABOVE, 9" STONE FOUNDATION, 6" STONE BETWEEN CHAMBERS, 6" STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY.

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	---	---	---
MC3500IEPP18TW	---	20.03" (509 mm)	---
MC3500IEPP18BC	---	---	---
MC3500IEPP18BW	---	---	1.77" (45 mm)
MC3500IEPP24TC	---	---	---
MC3500IEPP24TW	---	14.48" (368 mm)	---
MC3500IEPP24BC	---	---	2.06" (52 mm)
MC3500IEPP24BW	---	---	---
MC3500IEPP30BC	---	---	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.
 - 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.



Brian D. Jones
02-21-23

PROFESSIONAL ENGINEER FOR ALLEN & MAJOR ASSOCIATES, INC.

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

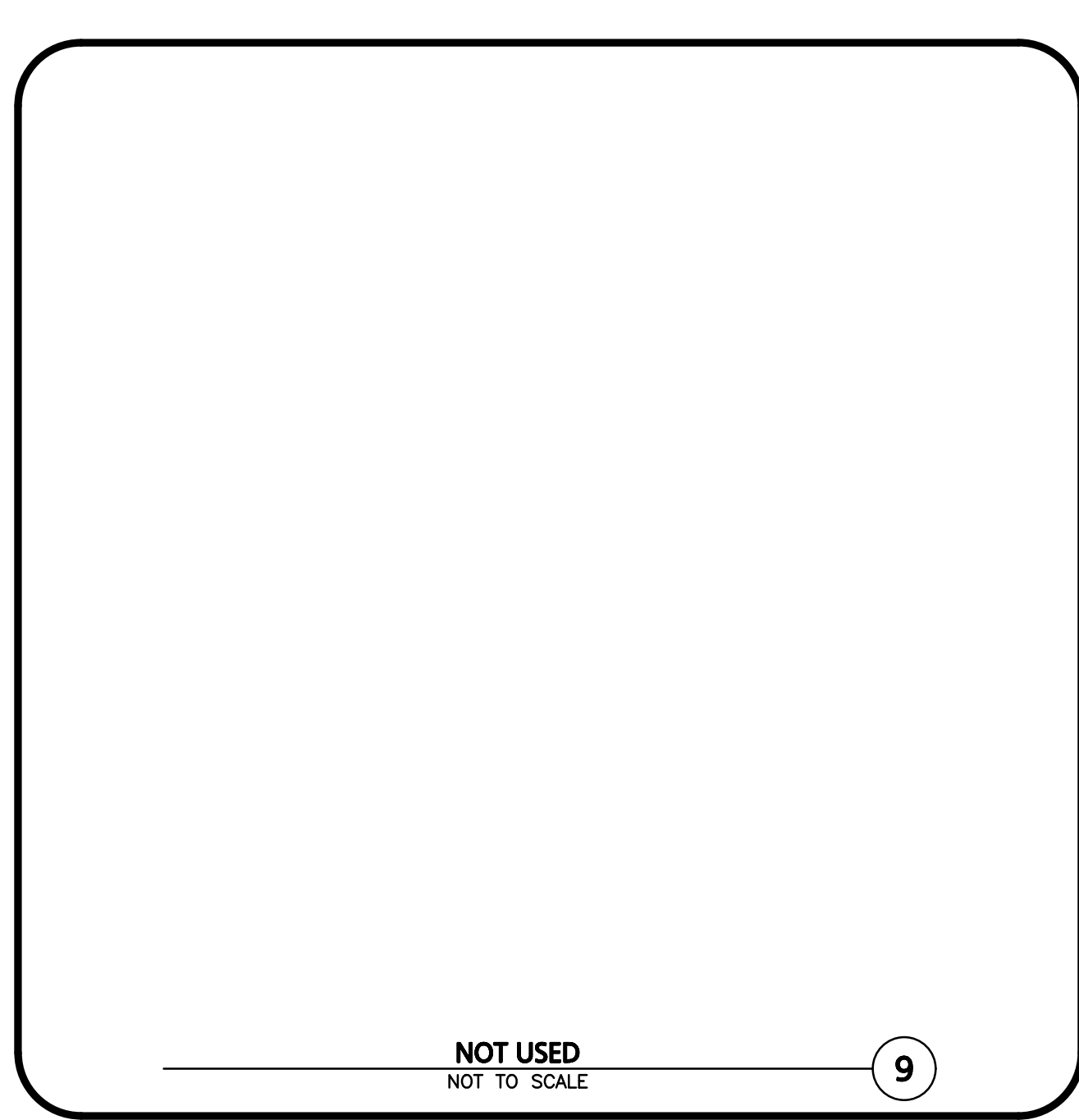
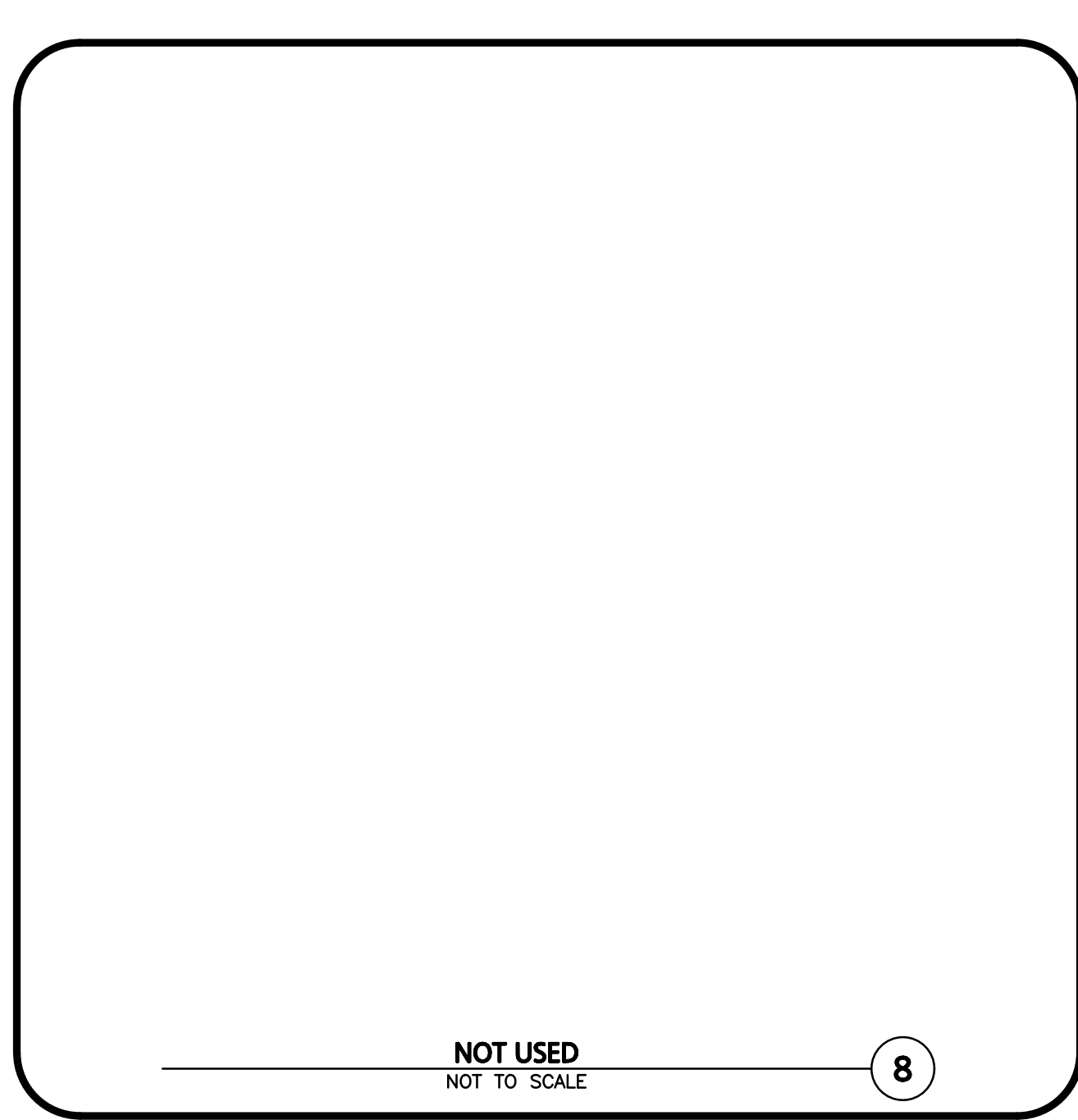
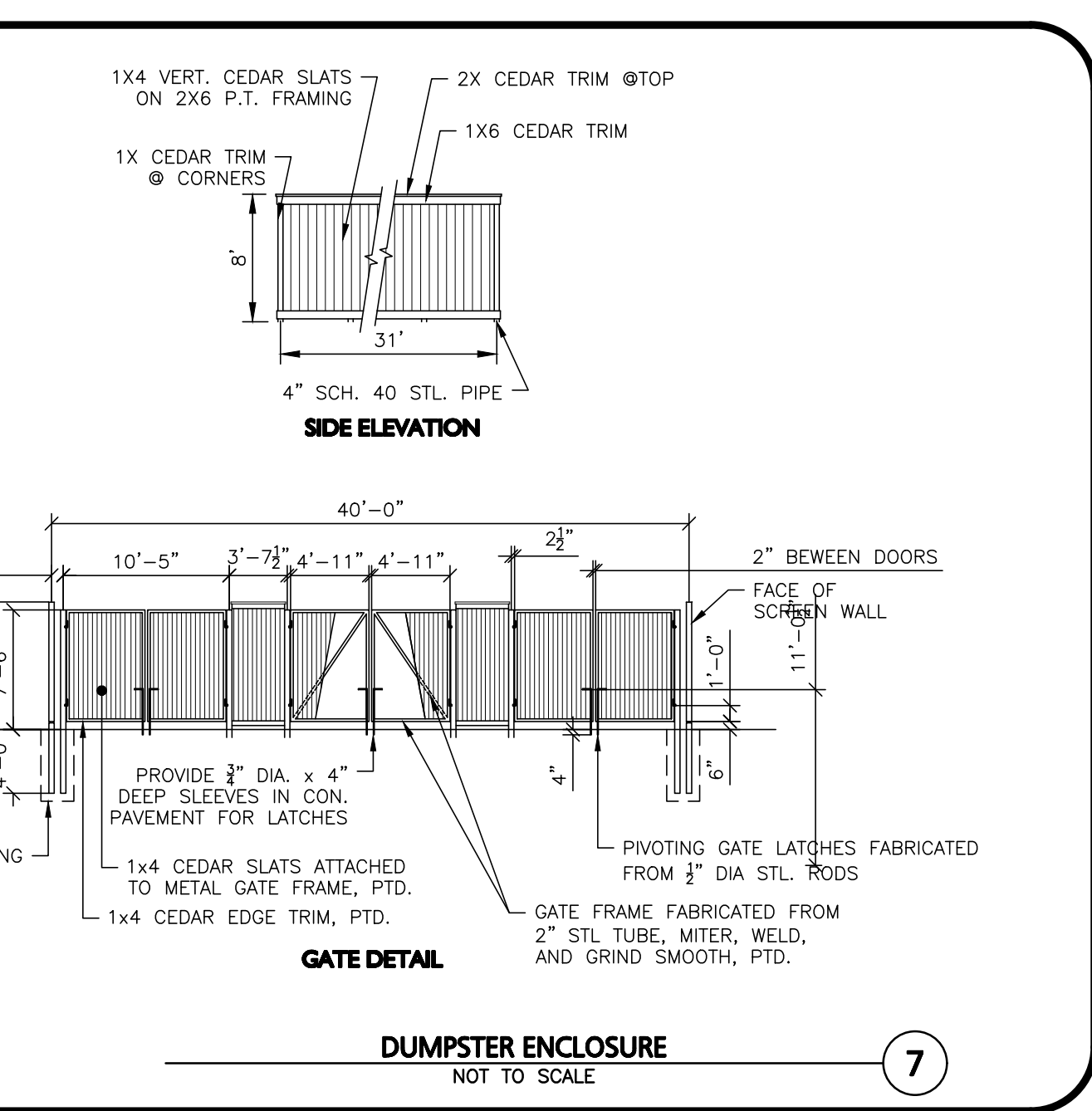
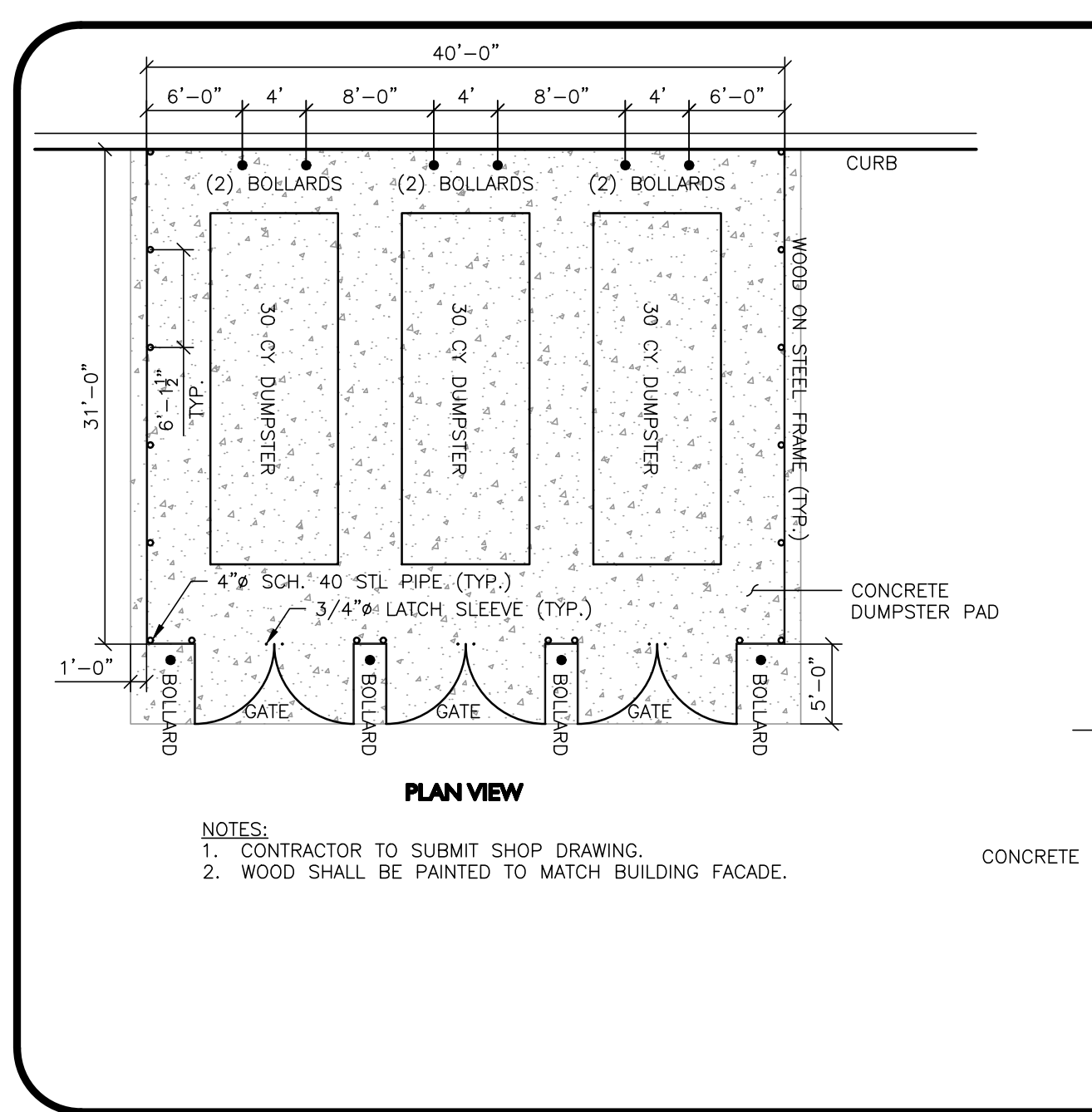
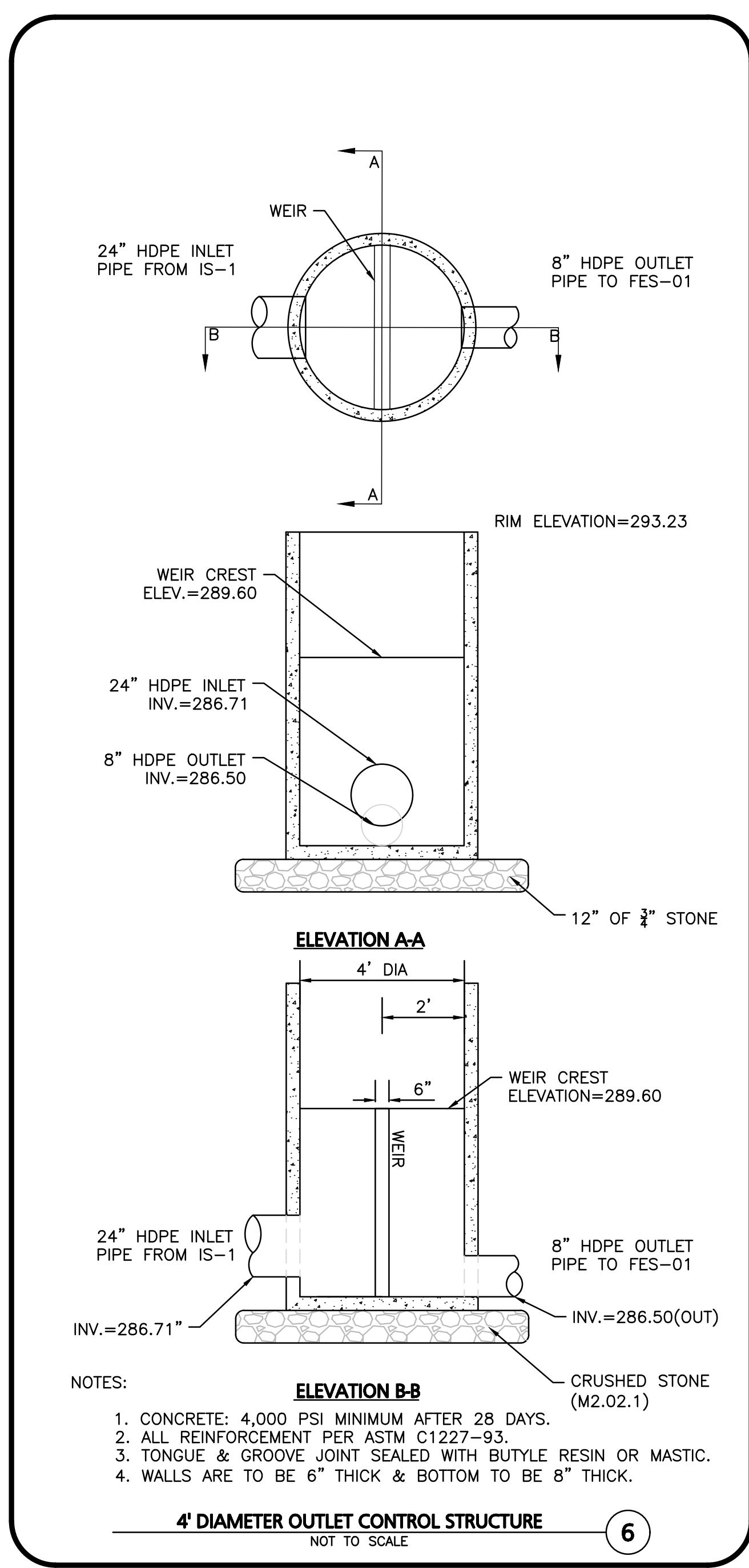
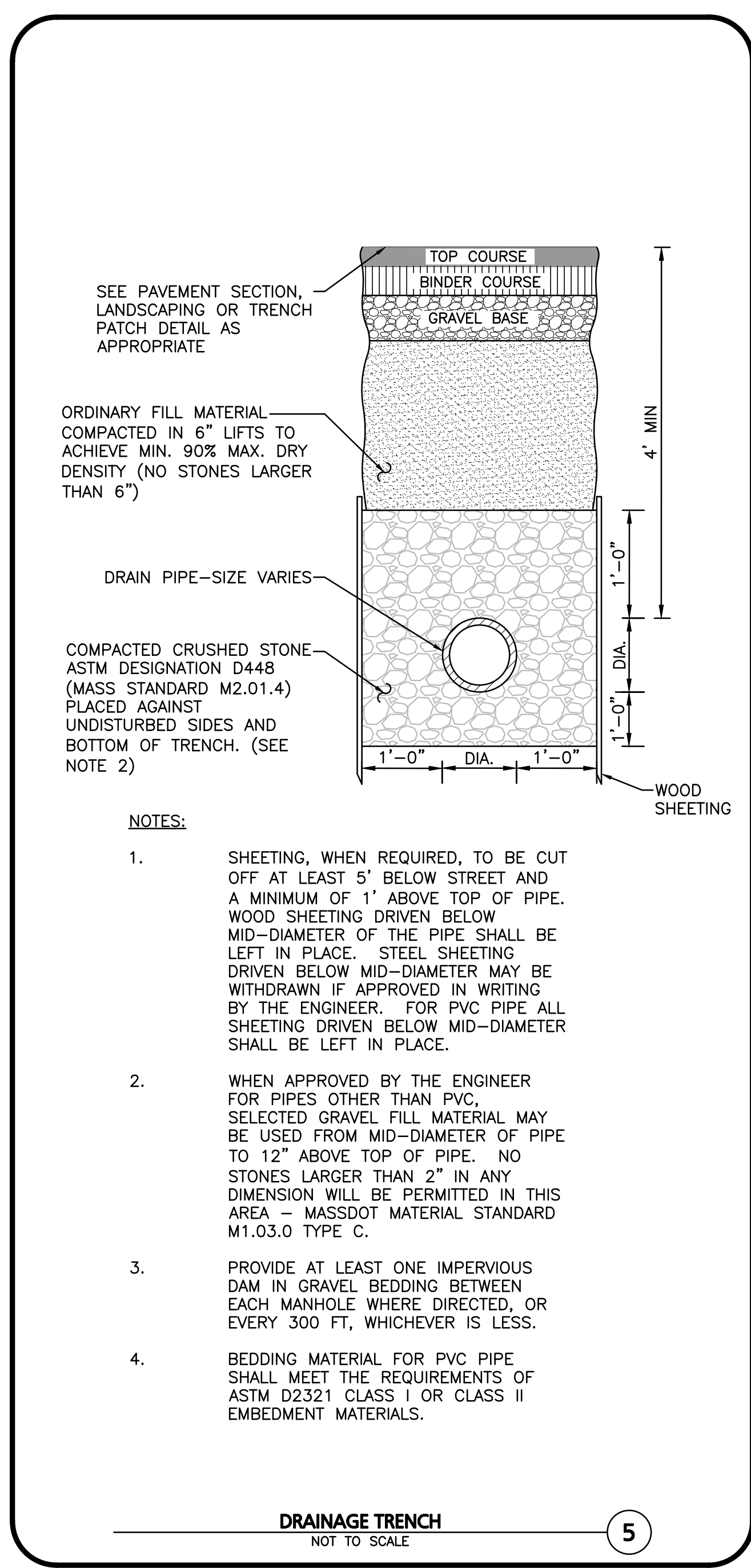
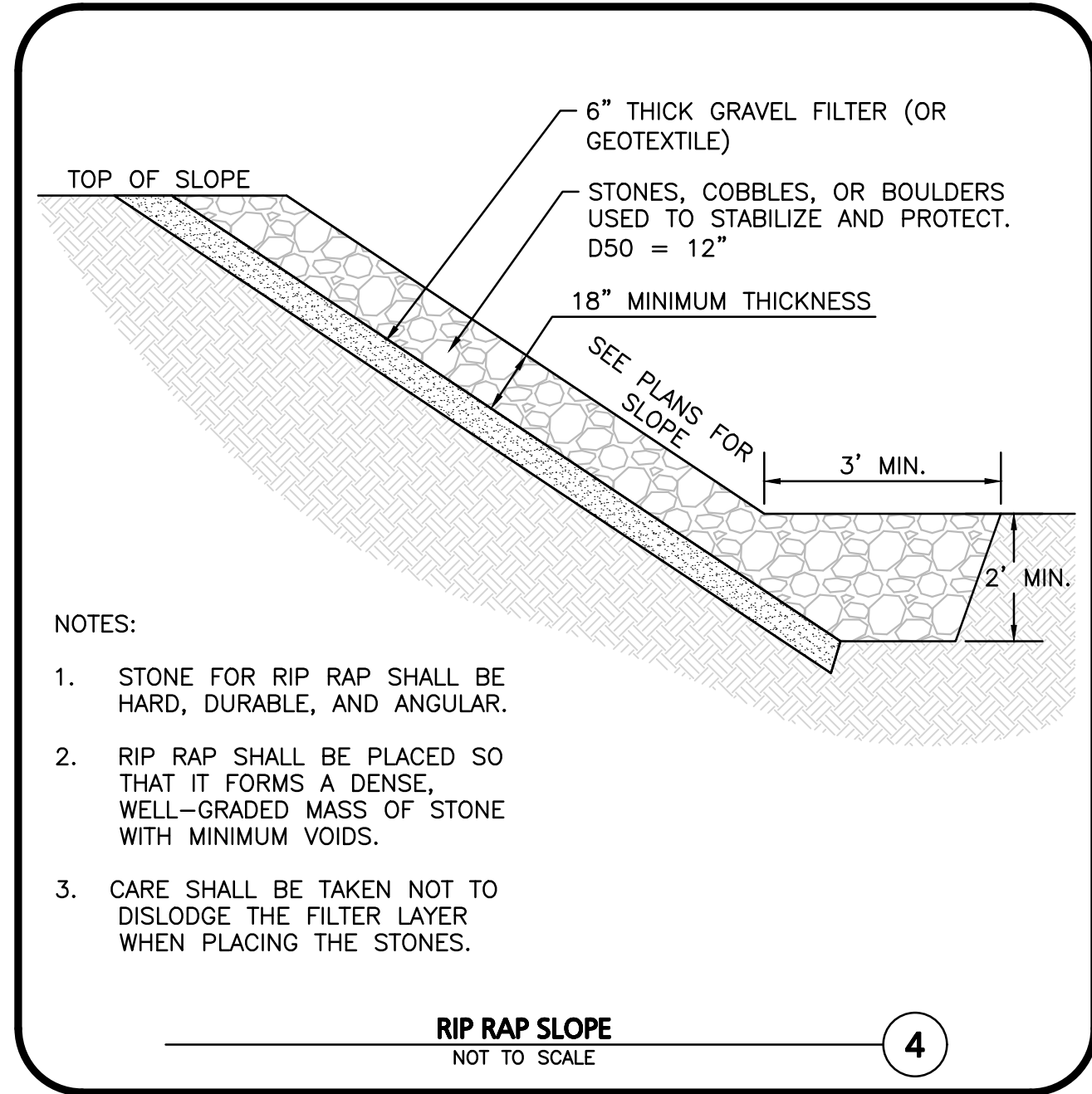
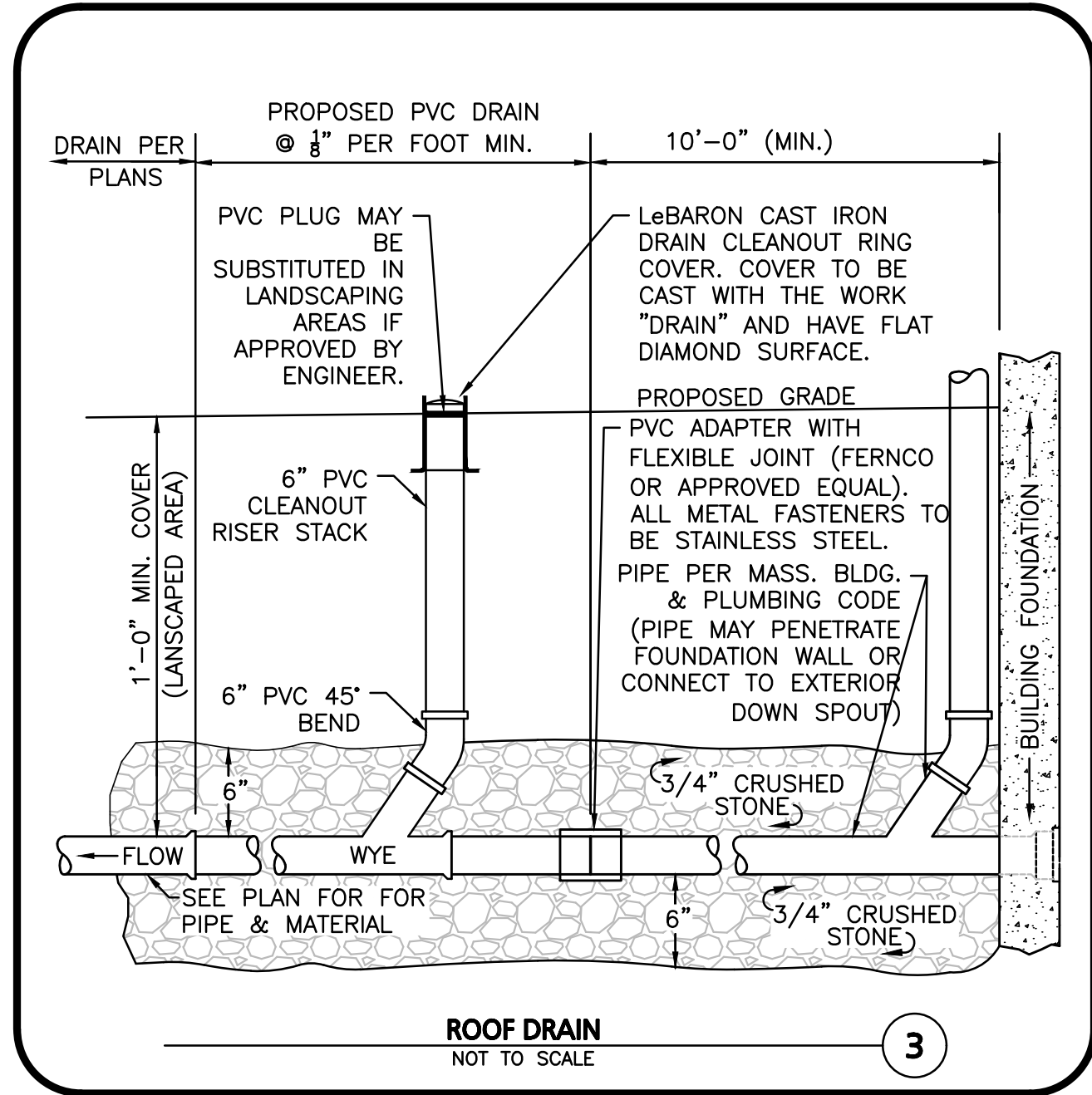
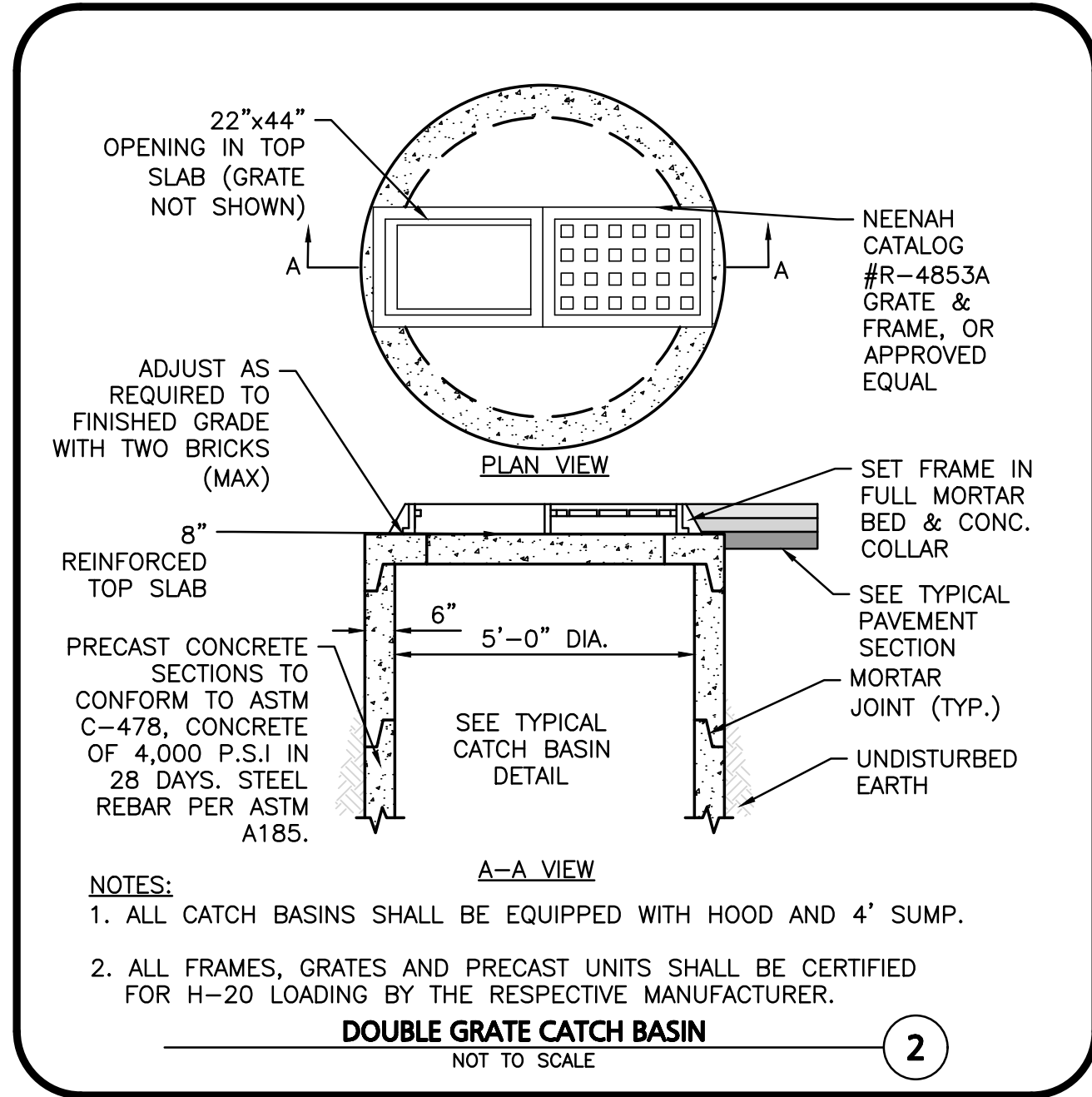
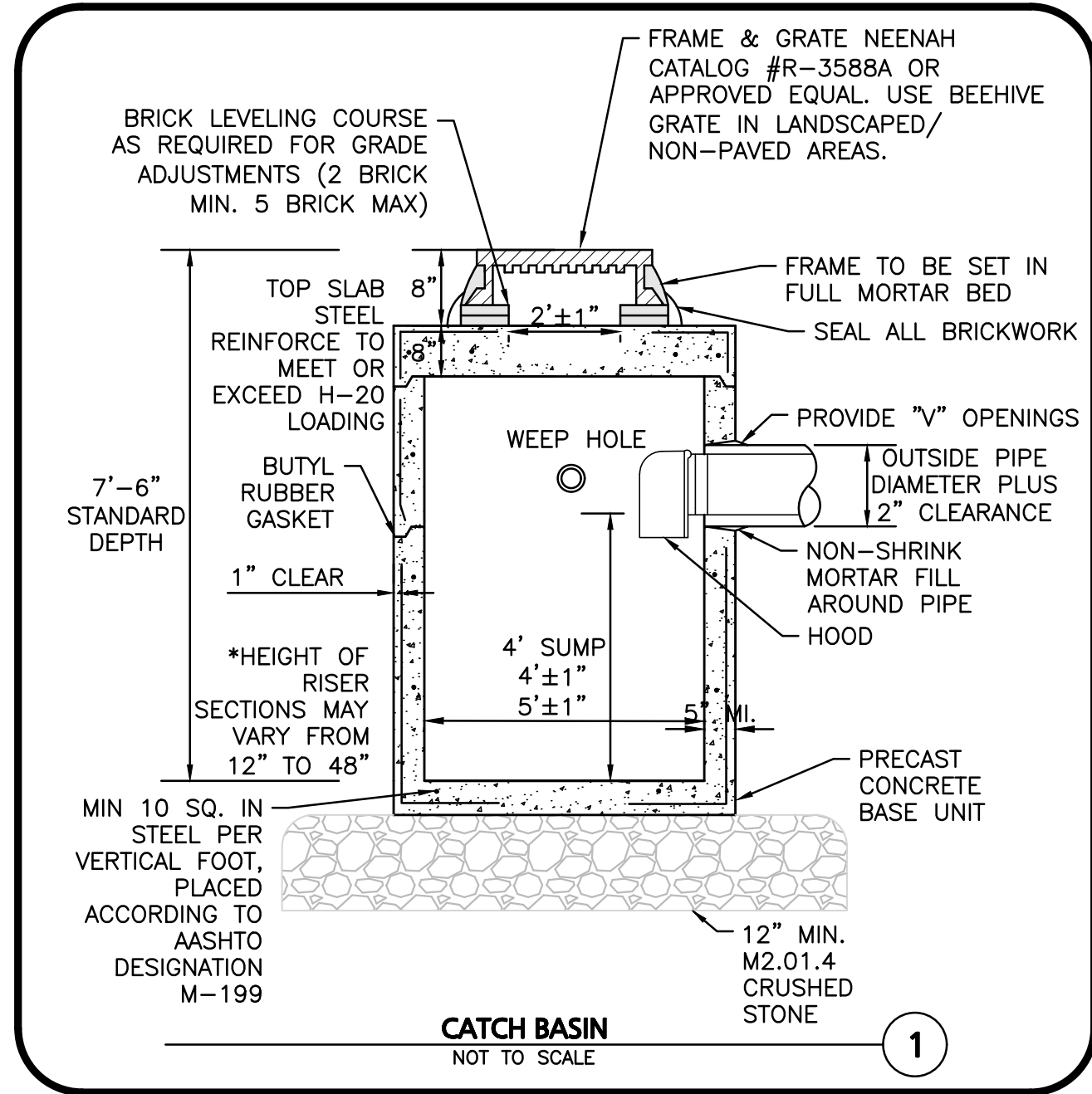
DESIGNED BY: SM/JRG CHECKED BY: BDI

PREPARED BY:

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DRAWING TITLE: DETAILS SHEET No. C-502



BRIAN D. JONES
CIVIL ENGINEER
No. 45212
02.21.23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION

APPLICANT/OWNER:
TMC HOLDINGS & DEVELOPMENT 2, LLC
24 WILLIAM WAY
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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:

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