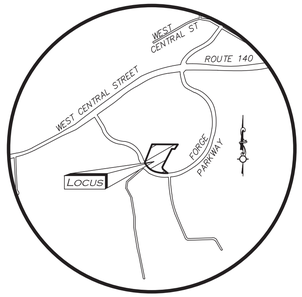
SITE DEVELOPMENT PLANS FOR
25 FORGE PARKWAY
FRANKLIN, MA 02038
TAX MAP 275, LOT 14

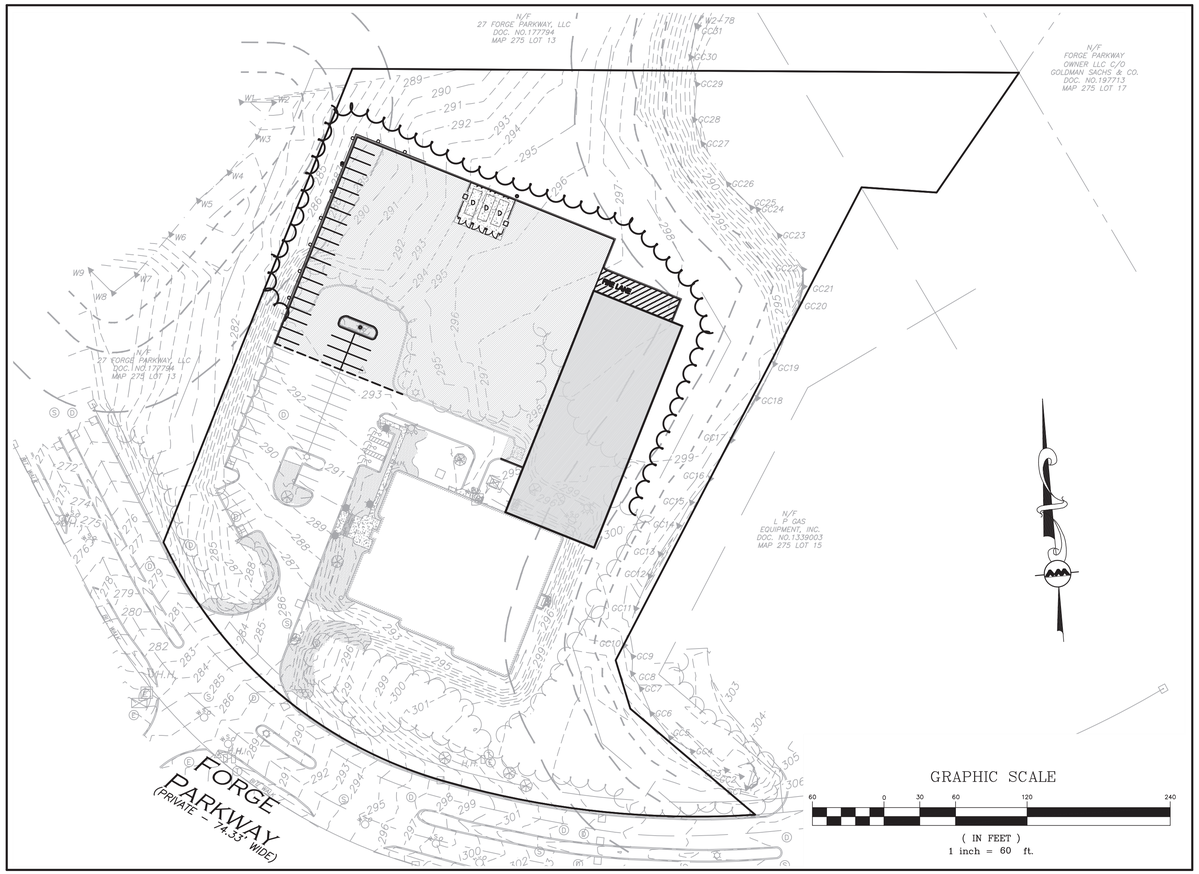


LOCUS MAP
NOT TO SCALE

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	REVISION 3
EXISTING CONDITIONS	V-101	02-21-23	04-04-23	-	-
EROSION CONTROL & SITE PREPARATION NOTES	C-100	-	04-04-23	04-14-23	05-31-23
SITE PREPARATION PLAN	C-101	02-21-23	04-04-23	04-14-23	05-01-23
LAYOUT & MATERIALS PLAN	C-102	02-21-23	04-04-23	04-14-23	05-01-23
GRADING & DRAINAGE PLAN	C-103	02-21-23	04-04-23	04-14-23	05-01-23
LIGHTING PLAN	C-104	02-21-23	04-04-23	04-14-23	05-01-23
SITE PLAN & CROSS-SECTION	C-201	-	-	04-14-23	05-01-23
DETAILS	C-501	02-21-23	04-04-23	04-14-23	05-01-23
DETAILS	C-502	02-21-23	04-04-23	04-14-23	05-01-23
DETAILS	C-503	02-21-23	04-04-23	04-14-23	05-01-23
LANDSCAPE PLAN	L-101	-	04-04-23	04-14-23	05-01-23
LANDSCAPE NOTES & DETAILS	L-501	-	04-04-23	04-14-23	05-01-23

TOWN OF FRANKLIN APPROVAL STAMP

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER

05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

PREPARED BY:
ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ♦ landscape architecture
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WOBURN, MA ♦ LAKEVILLE, MA ♦ MANCHESTER, NH

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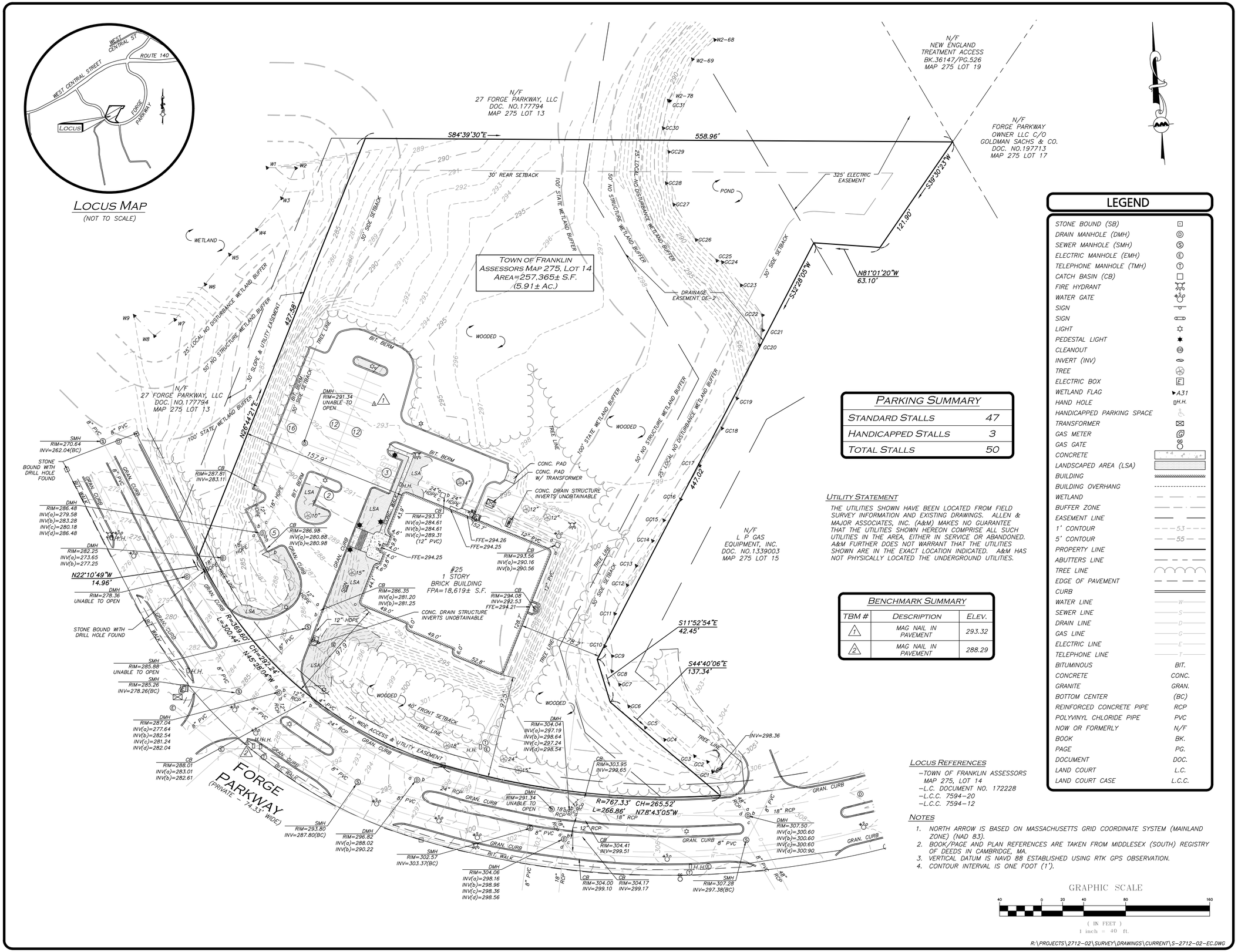
ISSUED FOR INITIAL REVIEW: FEBRUARY 21, 2023
REVISION 1: APRIL 4, 2023
REVISION 2: APRIL 14, 2023
REVISION 3: MAY 1, 2023

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

LOCUS MAP
(NOT TO SCALE)



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

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

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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

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	A31
HAND HOLE	H.H.
HANDICAPPED PARKING SPACE	
TRANSFORMER	
GAS METER	
GAS GATE	
CONCRETE	
LANDSCAPED AREA (LSA)	
BUILDING	
BUILDING OVERHANG	
WETLAND	
BUFFER ZONE	
EASEMENT LINE	
1' CONTOUR	53
5' CONTOUR	55
PROPERTY LINE	
ABUTTERS LINE	
TREE LINE	
EDGE OF PAVEMENT	
CURB	
WATER LINE	W
SEWER LINE	S
DRAIN LINE	D
GAS LINE	G
ELECTRIC LINE	E
TELEPHONE LINE	T
BITUMINOUS	BIT.
CONCRETE	CONC.
GRANITE	GRAN.
BOTTOM CENTER	(BC)
REINFORCED CONCRETE PIPE	RCP
POLYVINYL CHLORIDE PIPE	PVC
NOW OR FORMERLY	N/F
BOOK	BK.
PAGE	PG.
DOCUMENT	DOC.
LAND COURT	L.C.
LAND COURT CASE	L.C.C.

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.

COMMONWEALTH OF MASSACHUSETTS
NORMAN I. LIPSITZ
No. 28446
PROFESSIONAL LAND SURVEYOR

4/4/23

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:

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environmental consulting ◆ landscape architecture
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DRAWING TITLE: EXISTING CONDITIONS

SHEET No. V-101

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EROSION CONTROL NOTES

EROSION & SEDIMENTATION CONTROL NOTES:

1. EROSION CONTROL SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS TO SILT CONTROLS SHOWN ON THE APPROVED PLANS AS A RESULT OF ACTUAL FIELD CONDITIONS OR CONSTRUCTION PRACTICES SHALL BE INSTALLED IN ACCORDANCE WITH B.M.P. (BEST MANAGEMENT PRACTICES) PER THE E.P.A. 2022 "CONSTRUCTION GENERAL PERMIT" MANUAL, AND MASSACHUSETTS 2003 EROSION & SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, ANY SUCH MODIFICATIONS FROM THE ABOVE MANUALS SHALL BE INSTALLED AS APPROVED BY THE ENGINEER OR THE LOCAL MUNICIPALITY.

2. AREAS OF EXPOSED SOIL UNDERGOING CONSTRUCTION THAT WILL NOT BE COVERED AND OR FINISHED GRADED SHALL BE STABILIZED AS SOON AS PRACTICABLE BUT IN NO CASE MORE THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY (UNLESS MUNICIPALITY HAS STRICTER REQUIREMENTS WHICH SHALL BE FOLLOWED) IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY EROSION CONTROL MEASURES SHALL INCLUDE EROSION CONTROL MESH, NETTING OR MULCH AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND SHOWN ON THE DESIGN PLANS. IF MULCH IS USED, STRAW MULCH SHALL BE APPLIED AT THE RATE OF 4 BALES PER 1,000 SQUARE FEET. APPLICATION AREA SHALL BE SUFFICIENTLY COVERED WITH MULCH TO AVOID ANY VISIBLE SOIL EXPOSURE. MULCH SHALL BE KEPT MOIST TO AVOID LOSS DUE TO WIND. MULCH AND NETTING SHALL BE APPLIED IN THE BASE OF ALL GRASSED WATERWAYS, IN VEGETATIVE SLOPES WHICH EXCEED 15% AND DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS.

3. IF DISTURBED AREAS DO NOT RECEIVE FINAL SEEDING BY OCTOBER 1ST OF THE CONSTRUCTION YEAR, THEN ALL DISTURBED AREAS SHALL BE SEEDED WITH A WINTER COVER CROP AT THE RATE OF 3 LBS PER 1,000 SQUARE FEET. WINTER SEEDING SHALL BE COVERED WITH EROSION CONTROL MESH (MULCH AND NETTING). HEAVY GRADE MATS SHALL BE USED IN THE BASE OF ALL GRASSED WATERWAYS ON VEGETATED SLOPES IN EXCESS OF 15%, AND ANY DISTURBED AREAS WITHIN 100 FEET OF WETLANDS OR STREAMS. MULCH AND NETTING SHALL ALSO BE PROVIDED FOR ADDITIONAL WINTER PROTECTION.

4. ALL TOPSOIL SHALL BE COLLECTED, STOCKPILED, SEEDED WITH RYE AT 3LBS PER 1,000 SQUARE FOOT AND MULCHED, AND REUSED AS REQUIRED. TUBULAR BARRIERS SHALL BE PLACED DOWN GRADIENT FROM STOCKPILED LOAM. LOAM SHALL BE STOCKPILED AT LOCATIONS DESIGNATED BY THE OWNER AND ENGINEER.

5. ALL TUBULAR BARRIERS, SILT SACKS, AND EROSION CONTROL BERMS SHALL BE INSTALLED ACCORDING TO THE SITE PREPARATION PLAN. THESE SHALL BE MAINTAINED DURING DEVELOPMENT TO REMOVE SEDIMENT FROM RUNOFF WATER. ALL THE FILTER BARRIERS AND EROSION CONTROL BERMS SHALL BE INSPECTED AFTER ANY RAINFALL OR RUNOFF EVENT, MAINTAINED AND CLEANED UNTIL ALL AREAS HAVE AT LEAST 85–90% VIGOROUS PERENNIAL COVER OF GRASSES.

6. ADJACENT ROADS SHALL BE PERIODICALLY SWEPT OR WASHED TO AVOID TRACKING MUD, DUST OR DEBRIS FROM THE CONSTRUCTION AREA AS OFTEN AS NECESSARY (WHICH COULD BE ON A DAILY BASIS) TO REMOVE ANY SOIL OR SEDIMENTS AT NO ADDITIONAL COST TO THE OWNER. A WATERING TRUCK WILL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AT NO ADDITIONAL COST TO THE OWNER.

7. THE CONTRACTOR SHALL USE EXTREME CAUTION TO AVOID ALLOWING SEDIMENTS TO ENTER THE STORM DRAIN SYSTEM DURING CONSTRUCTION. BOTH EXISTING AND PROPOSED CATCH BASIN INLETS SHALL BE PROTECTED DURING CONSTRUCTION BY THE USE SILT SACKS AND/OR TUBULAR BARRIERS AROUND EACH INLET AS NOTED ON THE PLANS. INLET PROTECTION MAY BE REMOVED ONLY AFTER FINISHED AREAS ARE PAVED AND THE VEGETATED SLOPES ARE ESTABLISHED WITH AT LEAST 85–90% OF VIGOROUS PERENNIAL GROWTH.

8. AS APPLICABLE, EROSION CONTROL MESH SHALL BE APPLIED IN ACCORDANCE WITH THE PLANS OVER ALL FINISHED SEEDED AREAS AS SPECIFIED ON THE DESIGN PLANS.

9. AT A MINIMUM, ALL TUBULAR BARRIERS AND FILTER FABRIC SHALL REMAIN IN PLACE UNTIL SEEDINGS OR PLANTINGS HAVE BECOME 85–90% ESTABLISHED. THE LOCAL CONSERVATION COMMISSION MUST APPROVE THE REMOVAL OR RELOCATION OF ANY OF THE TUBULAR BARRIERS AND FILTER FABRIC. ONCE THE TUBULAR BARRIERS ARE REMOVED THE AREAS ARE TO BE LOAMED AND SEEDED TO ACHIEVE FULL STABILIZATION.

10. AT THE OWNER'S DISCRETION ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED TO MAINTAIN STABILITY OF EARTHWORKS AND FINISHED GRADED AREAS. THE CONTRACTOR, AT HIS EXPENSE, WILL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ANY ADDITIONAL MEASURES AS SPECIFIED BY THE OWNER. THIS INCLUDES BUT IS NOT LIMITED TO REQUESTS BY MA DEP, THE ENGINEER AND THE LOCAL MUNICIPALITY, AS AUTHORIZED BY THE OWNER. FAILURE TO COMPLY WITH THE OWNER'S DIRECTIONS WILL RESULT IN DISCONTINUATION OF CONSTRUCTION ACTIVITIES.

11. INSPECTIONS AND MONITORING MAINTENANCE MEASURES SHALL BE APPLIED AS NEEDED DURING THE ENTIRE CONSTRUCTION CYCLE. WEEKLY INSPECTIONS SHALL BE HELD THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. WEEKLY INSPECTION REPORTS SHALL BE MAINTAINED BY THE CONTRACTOR AND LOCATED IN THE CONTRACTORS FIELD OFFICE ONSITE. IN ADDITION TO THE NORMAL WEEKLY INSPECTIONS, THE CONTRACTOR SHALL PERFORM AN INSPECTION OF ALL EROSION CONTROL MEASURES AFTER EACH RAINFALL OF 0.25" OR MORE, AND PERFORM THE NECESSARY REPAIRS. THE INSPECTIONS SHALL INCLUDE BUT NOT BE LIMITED TO THE SITE'S DOWN STREAM DISCHARGE POINTS.

12. IF ANY EVIDENCE OF SEDIMENTATION IS OBSERVED AT THE STORMWATER MANAGEMENT AREA INLETS, THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROVIDE A PLAN TO THE ENGINEER TO REMOVE ANY ACCUMULATED SEDIMENT IN THESE AREAS. THE CONTRACTOR SHALL ALSO IMMEDIATELY PROVIDE ADDITIONAL ON SITE EROSION AND SEDIMENTATION CONTROL MEASURES TO PREVENT FURTHER DEGRADATION OF THE AREA.

13. FOLLOWING THE TEMPORARY OR FINAL SEEDINGS, THE CONTRACTOR SHALL INSPECT THE WORK AREA SEMI–MONTHLY TO ENSURE THE AREAS HAVE A MINIMUM OF 85–90% VEGETATED VIGOROUS GROWTH. RE–SEEDING SHALL BE CARRIED OUT BY THE CONTRACTOR WITH FOLLOW UP INSPECTIONS IN THE EVENT OF ANY FAILURES UNTIL VEGETATION IS ADEQUATELY ESTABLISHED.

14. CONTRACTOR & ALL SITE SUBCONTRACTORS SHALL BE FAMILIAR WITH & FOLLOW ALL APPROVED PERMITS AND CONDITIONS. CONTRACTOR SHALL MAINTAIN A COPY OF ALL APPROVED PERMITS ONSITE. ALL CONDITIONS & RECOMMENDATIONS WITHIN THE APPROVED PERMITS SHALL BE COMPLETED.

15. ALL EROSION MEASURES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND SHALL BE ADEQUATE TO MAINTAIN SEDIMENT ON SITE. ANY MODIFICATIONS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER OR THE LOCAL MUNICIPALITY.

16. EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED DURING CONSTRUCTION, AND SHALL REMAIN IN PLACE UNTIL ALL SITE WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.

17. TOP OF STOCKPILES SHALL BE COVERED IN SUCH MANNER THAT STORMWATER DOES NOT INFILTRATE THE MATERIALS AND THEREBY RENDER THE SAME UNSUITABLE FOR FILL USE.

EROSION & SEDIMENTATION CONTROL NOTES (CONTINUED):

18. ALL DISTURBED OR EXPOSED AREAS SUBJECT TO EROSION SHALL BE STABILIZED WITH MULCH OR SEEDED FOR TEMPORARY VEGETATIVE COVER. NO AREA, SUBJECT TO EROSION SHALL BE LEFT DISTURBED AND UNSTABILIZED FOR PERIODS LONGER THAN IS ABSOLUTELY NECESSARY TO CARRY OUT THAT PORTION OF THE CONSTRUCTION WORK OR SIX MONTHS AFTER SOIL HAS BEEN DISTURBED WHICHEVER IS LESS.

19. CULVERT/PIPE INLETS AND OUTFALLS SHALL BE PROTECTED BY TUBULAR BARRIER FILTERS AND STONE CHECK DAMS UNTIL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

20. TUBULAR BARRIER DIKES SHALL BE CONSTRUCTED AT ALL EXISTING & PROPOSED CATCH BASINS. NO SEDIMENTATION SHALL ENTER THE ON–SITE OR OFF–SITE DRAINAGE SYSTEMS AT ANY TIME.

21. ALL EROSION CONTROL MEASURES SHALL BE ROUTINELY INSPECTED, CLEANED AND REPAIRED OR REPLACED AS NECESSARY THROUGHOUT ALL PHASES OF CONSTRUCTION. IN ADDITION, INSPECTIONS SHALL TAKE PLACE WEEKLY AND BEFORE AND AFTER EACH RAINFALL EVENT.

22. ALL PROPOSED SLOPES STEEPER THAN 3:1 SHALL BE STABILIZED WITH JUTE MESH AND PROTECTED FROM EROSION UNTIL WORK IS COMPLETE AND GROUND COVER IS ESTABLISHED.

23. THE CONTRACTOR SHALL KEEP ON SITE AT ALL TIMES ADDITIONAL TUBULAR BARRIERS FOR INSTALLATION AT THE DIRECTION OF THE ENGINEER OR THE TOWN ENGINEER TO MITIGATE ANY EMERGENCY CONDITION.

24. AS CONSTRUCTION DISTURBANCE IS GREATER THAN 1 ACRE, A NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION GENERAL PERMIT NOI, AND STORM WATER POLLUTION PREVENTION PLAN (SWPPP) WILL NEED TO BE SUBMITTED TO THE EPA. THE NPDES PERMIT FOR STORM WATER DISCHARGE, & CONSTRUCTION GENERAL PERMIT NOI WILL BE REQUIRED TO BE SUBMITTED AT LEAST 14 DAYS PRIOR TO COMMENCING CONSTRUCTION BY THE CONTRACTOR.

25. OWNER AND CONTRACTOR ARE RESPONSIBLE FOR COMPLIANCE WITH THE CONSTRUCTION GENERAL PERMIT NOI. WEEKLY SWPPP INSPECTION REPORTS TO BE PERFORMED BY CONTRACTOR. COPIES OF ALL SWPPP INSPECTION REPORTS SHALL BE PROVIDED TO THE LOCAL MUNICIPALITY, EPA, DEP, OR ANY OTHER AUTHORITY REQUESTING WITHIN 3 DAYS OF EACH INSPECTION.

26. APPLICABLE WORK AND MATERIALS SHALL COMPLY WITH ALL LOCAL, MA DEP, EPA CONSTRUCTION GENERAL PERMIT STANDARDS. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE SITE PLAN REGULATIONS FROM THE LOCAL AND USDA SOIL CONSERVATION SERVICE VEGETATIVE PRACTICES IN SITE DEVELOPMENT.

27. A WATERING TRUCK SHALL BE USED TO PERIODICALLY SPRINKLE CONSTRUCTION AREAS IN ORDER TO KEEP THE LEVEL OF DUST TO A MINIMUM DURING THE DRY MONTHS AND AS REQUIRED.

28. IF DEWATERING IS NECESSARY IT SHALL ONLY BE COMPLETED AS FOLLOWS: THE DISCHARGE SHALL BE STOPPED IMMEDIATELY IF THE RECEIVING AREA SHOWS ANY SIGN OF INSTABILITY OR EROSION. ALL CHANNELS, SWALES, AND DITCHES DUG FOR DISCHARGING WATER FROM THE EXCAVATED AREA SHALL BE STABLE PRIOR TO DIRECTING DISCHARGE TO THEM. IF A CONSTRUCTION EQUIPMENT BUCKET IS USED, IT SHALL EMPTY THE MATERIAL TO A STABLE AREA. NO DEWATERING SHALL OCCUR DURING PERIODS OF INTENSE, HEAVY RAIN. FLOW TO THE SEDIMENT REMOVAL STRUCTURE SHALL NOT EXCEED THE STRUCTURE'S CAPACITY TO SETTLE AND FILTER FLOW OR ITS VOLUME CAPACITY. WHENEVER POSSIBLE, THE DISCHARGE FROM THE SEDIMENT REMOVAL STRUCTURE SHALL DRAIN TO A WELL–VEGETATED BUFFER BY SHEET FLOW WHILE MAXIMIZING THE DISTANCE TO THE NEAREST WATER RESOURCE AND MINIMIZING THE SLOPE OF THE BUFFER AREA. THERE SHALL BE NO DIRECT DISCHARGE TO EXISTING WETLANDS OR STREAMS. ALL DISCHARGE SHALL BE IN COMPLIANCE WITH STATE, LOCAL, AND FEDERAL REQUIREMENTS.

29. INITIATE STABILIZATION OF EXPOSED AREAS IMMEDIATELY IF CONSTRUCTION WORK TEMPORARILY OR PERMANENTLY CEASES.

30. ALL DISCHARGES FROM POLLUTION SOURCES ARE PROHIBITED ONSITE SUCH AS FUELS, WASTEWATER FROM WASH OUT OF CONCRETE, WASTEWATER FROM CLEAN OUT OF PAINTS, FORM RELEASE OILS, SOLVENTS, ADHESIVES, CURING COMPOUNDS, POLLUTANTS USED FOR MAINTENANCE OF VEHICLES AND EQUIPMENT, SOAPS & SOLVENTS, TOXIC OR HAZARDOUS SUBSTANCES, CHEMICALS AND OILS. IF A POLLUTANT IS DISCHARGED IT NEEDS TO BE IMMEDIATELY CLEANED UP BY REMOVING THE CHEMICAL AND AFFECTED SOIL OR AREA OF SPILL FROM THE SITE IN ACCORDANCE WITH BOTH THE MANUFACTURER RECOMMENDATIONS, FEDERAL, STATE, AND LOCAL REQUIREMENTS. DO NOT HOSE DOWN AND SPREAD SPILLED ITEM. ALL CHEMICALS USED ON THE SITE SHALL BE IN LEAK–PROOF CONTAINERS STORED AWAY FROM WETLANDS, SURFACE WATERS, STORMWATER INLETS, AND DRAINAGE MEASURES. SPILL KITS SHALL BE AVAILABLE ONSITE FOR EMERGENCY USE. THERE SHALL BE A SECONDARY CONTAINMENT MEASURE OF ALL CHEMICALS IN ADDITION TO SPILL–PROOF CONTAINERS.

31. PRIOR TO COMMENCEMENT OF CONSTRUCTION, APPLICABLE CONTRACTOR PERSONNEL MUST HAVE AN UNDERSTANDING OF THE EPA CONSTRUCTION GENERAL PERMIT REQUIREMENTS AND THEIR SPECIFIC RESPONSIBILITIES UNDER THE PERMIT. AT A MINIMUM, PERSONNEL MUST BE TRAINED AND UNDERSTAND THE FOLLOWING: LOCATION OF ALL STORMWATER CONTROLS AND HOW TO MAINTAIN THEM, PROCEDURES FOR COMPLYING WITH THE POLLUTION PREVENTION REQUIREMENTS. PROCEDURES FOR CONDUCTING INSPECTIONS, RECORDING FINDINGS, AND TAKING CORRECTIVE ACTION.

32. ALL SEDIMENT TRACKED ONTO ROADWAYS MUST BE REMOVED AT END OF EACH WORK DAY.

33. ALL USE OF CATIONIC TREATMENT CHEMICALS (EXAMPLES INCLUDE POLYMERS, CHITOSAN, CATIONIC PAM, FLOCCULANTS OR OTHER CHEMICAL UTILIZED FOR STABILIZATION) ARE PROHIBITED. IF ALL OTHER AVAILABLE STABILIZATION MEASURES ARE NOT POSSIBLE AND USE OF CATIONIC CHEMICALS IS ABSOLUTELY NECESSARY THE CONTRACTOR WILL NEED TO CONTACT THE EPA NEW ENGLAND OFFICE IN WRITING FOR APPROVAL AND SPECIFIC REQUIREMENTS (MAXIMUM DOSAGE RATE, RESIDUAL TESTING, SPECIFIC LIMITATIONS, ETC) PRIOR TO USE.

34. IF USING NON–VEGETATIVE STABILIZATION MEASURES, IT MUST BE COMPLETED NO LATER THAN 14 DAYS AFTER INITIATING STABILIZATION. ALL AREAS OF EXPOSED SOILS MUST BE COVERED.

35. INSPECTIONS OF EROSION CONTROL MEASURES SHALL BE AT LEAST ONCE EVERY 7 DAYS BY THE CONTRACTOR. AT A MINIMUM INSPECTIONS SHALL INCLUDE ALL DISTURBED AREAS, ALL STORMWATER CONTROLS AND POLLUTION PREVENTION MEASURES, ALL LOCATIONS WHERE STABILIZATION MEASURES HAVE BEEN IMPLEMENTED, EQUIPMENT AND MATERIAL STORAGE AREAS, ALL AREAS WHERE STORMWATER FLOWS AND ALL POINTS OF DISCHARGE. WHEN CORRECTIVE ACTIONS ARE REQUIRED, THE CONTRACTOR MUST IMMEDIATELY TAKE ALL STEPS TO PREVENT POLLUTANT DISCHARGES UNTIL A PERMANENT SOLUTION IS IMPLEMENTED. AS NECESSARY NEW OR MODIFIED CONTROLS MUST BE INSTALLED AND OPERATIONAL, THE REPAIR MUST BE COMPLETED WITHIN 7 DAYS FROM THE TIME OF DISCOVERY. WITHIN 24 HOURS OF A TRIGGERING CONDITION OCCURRING THAT REQUIRES A CORRECTIVE ACTION, A CORRECTIVE ACTION REPORT MUST BE COMPLETED.

MAINTENANCE:

ALL MEASURES STATED ON THE STORMWATER POLLUTION PREVENTION PLANS, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION BY CONTRACTOR UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A HEALTHY STAND OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.

3. ALL SEDIMENT CONTROLS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE TUBULAR SEDIMENT CONTROLS WHEN IT REACHES HALF THE HEIGHT OF THE CONTROL MEASURE OR AS REQUESTED BY THE OWNER OR ENGINEER.

4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.

5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

CONSTRUCTION GENERAL PERMIT NOTES AND NARRATIVE:

NARRATIVE: THE STORMWATER POLLUTION PREVENTION PLANS CONSIST OF THE SITE PREPARATION PLAN TOGETHER WITH AN EXISTING CONDITIONS PLANS, GRADING PLANS, ABBREVIATIONS AND NOTES SHEETS, AND DETAIL SHEETS.

THE EROSION CONTROL PLAN WILL BE IMPLEMENTED TO:

A. TREAT EROSION AS SOON AS POSSIBLE AFTER DISTURBANCE.

B. PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION AREA AND ENTERING THE RECEIVING WATERS.

C. CONSTRUCTION ACTIVITIES SHALL BE SCHEDULED TO MINIMIZE EROSION.

D. ONLY DISTURB, CLEAR, OR GRADE AREAS NECESSARY FOR CONSTRUCTION.

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49213
REGISTERED PROFESSIONAL ENGINEER

05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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:	NONE	DWG. NAME:	C-2712-02A
DESIGNED BY:	SM/JRG	CHECKED BY:	BDJ

PREPARED BY:

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DRAWING TITLE:

EROSION CONTROL &
SITE PREPARATION NOTES

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SHEET No.

C-100

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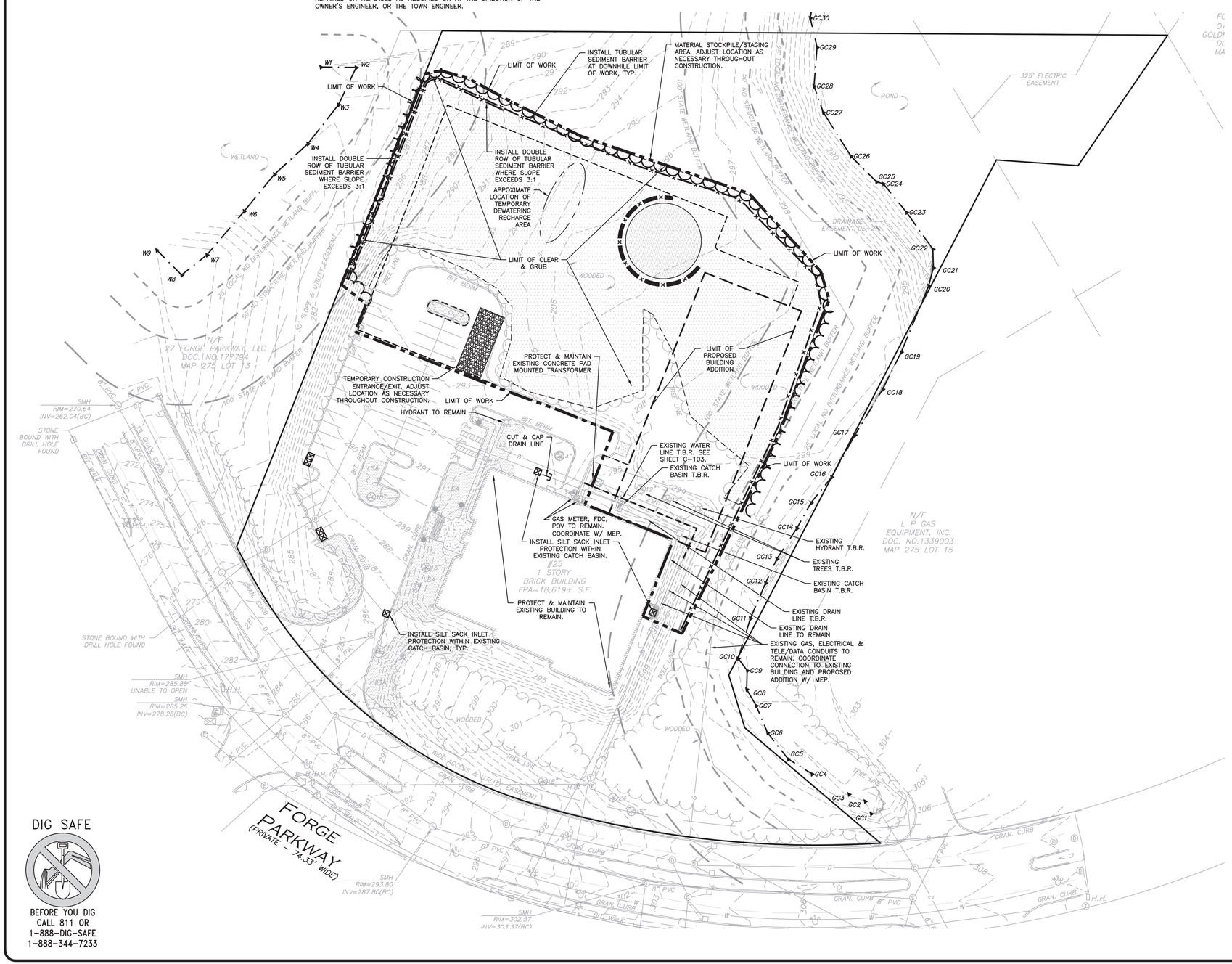
GENERAL SEQUENCE OF CONSTRUCTION:

1. CONTACT THE TOWN ENGINEERING DEPARTMENT AT LEAST TWO (2) WEEKS PRIOR TO START OF CONSTRUCTION. GROUNDBREAKING IS EXPECTED TO BEGIN ON JUNE 1, 2023 AND THE PROJECT IS ANTICIPATED TO TAKE 12 MONTHS UNTIL COMPLETION.
2. INSTALL STABILIZED CONSTRUCTION ENTRANCES. SITE ACCESS SHALL BE ACHIEVED ONLY FROM THE DESIGNATED CONSTRUCTION ENTRANCE.
3. PREPARE TEMPORARY PARKING AND STORAGE AREA. UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAY DOWN, WHEEL WASH, CONCRETE WASHOUT, MASONS 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.
4. 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.
5. CLEAR AND GRUB THE SITE.
6. CONSTRUCT TEMPORARY SEDIMENTATION AND SEDIMENT TRAP BASINS AS NECESSARY.
7. CONSTRUCT STORMWATER MEASURES. SITE SHALL BE STABILIZED PRIOR TO STORMWATER MEASURES RECEIVING RUNOFF.
8. START CONSTRUCTION OF BUILDING PAD AND STRUCTURES. TEMPORARILY SEED DENUDED AREAS. ALL CUT AND FILL SLOPES SHALL BE SEEDED / LOAMED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE, EXCEPT WHERE RIP RAP IS APPLIED.
9. INSTALL BUILDING, UTILITIES, STORM SEWERS, CURBS AND GUTTERS.
10. INSTALL INLET PROTECTION DEVICES AROUND ALL STORM DRAIN STRUCTURES.
11. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
12. FINALIZE GRADING, AND PREPARE SITE FOR PAVING. NOTE, ALL PARKING LOTS SHALL BE STABILIZED WITHIN 72 HOURS OF ACHIEVING FINISH GRADE.
13. PAVE SITE. COMPLETE FINISH GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
14. ONCE SITE IS STABILIZED, REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.
15. 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.
16. 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.
17. 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.
18. 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	
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. INLET PROTECTION SHALL BE INSTALLED IN PROPOSED CATCH BASINS IMMEDIATELY UPON CONSTRUCTION.
8. 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

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(IN FEET)
1 inch = 40 ft.

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DRAWING TITLE: SITE PREPARATION PLAN

SHEET No. C-101

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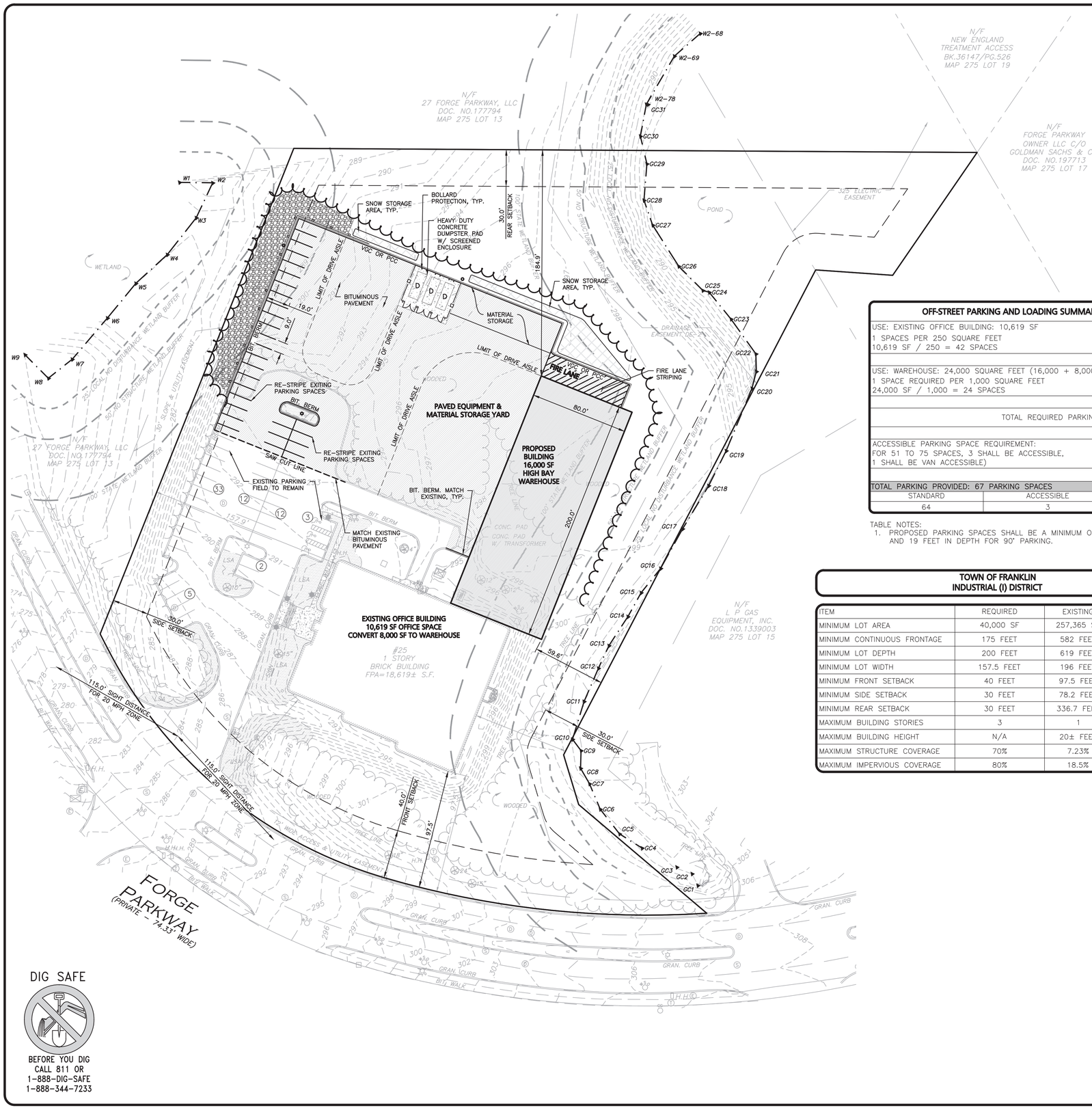

OFF-STREET PARKING AND LOADING SUMMARY TABLE

USE: EXISTING OFFICE BUILDING: 10,619 SF 1 SPACES PER 250 SQUARE FEET 10,619 SF / 250 = 42 SPACES	42	REQUIRED PARKING SPACES
USE: WAREHOUSE: 24,000 SQUARE FEET (16,000 + 8,000 FROM EX. BLDG.) 1 SPACE REQUIRED PER 1,000 SQUARE FEET 24,000 SF / 1,000 = 24 SPACES	24	PARKING 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	ACCESSIBLE	
64	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	< 9°
HEAVY DUTY CONCRETE	
BITUMINOUS PAVEMENT	
SNOW STORAGE	
STEEL GUARDRAIL	
WOOD FENCE	
SETBACK LINE	
SAW-CUT LINE	
PARKING COUNT	10
RIPRAP	
TREE LINE	
VERTICAL GRANITE CURB	VGC
PRECAST CONCRETE CURB	PCC

NOTES:

1. ALL CURB RADII SHALL BE 3' UNLESS OTHERWISE NOTED.
2. PARKING DIMENSIONS ARE TAKEN FROM THE FACE OF CURB UNLESS OTHERWISE NOTED.
3. 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.
4. ALL CONSTRUCTION SHALL CONFORM TO THE APPLICABLE REGULATIONS AND STANDARDS INCLUDING THE TOWN OF FRANKLIN, MADOT, MADEP, MUTCD, AND AASHTO.
5. 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.
6. 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.
7. 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.
8. 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.
9. FLOOR DRAINS IN THE PROPOSED BUILDING ADDITION SHALL FLOW THROUGH A GAS TRAP PRIOR TO DISCHARGE TO THE MUNICIPAL SANITARY SYSTEM.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

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COMMONWEALTH OF MASSACHUSETTS
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05-01-23

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DRAWING TITLE: LAYOUT & MATERIALS PLAN

SHEET No. C-102

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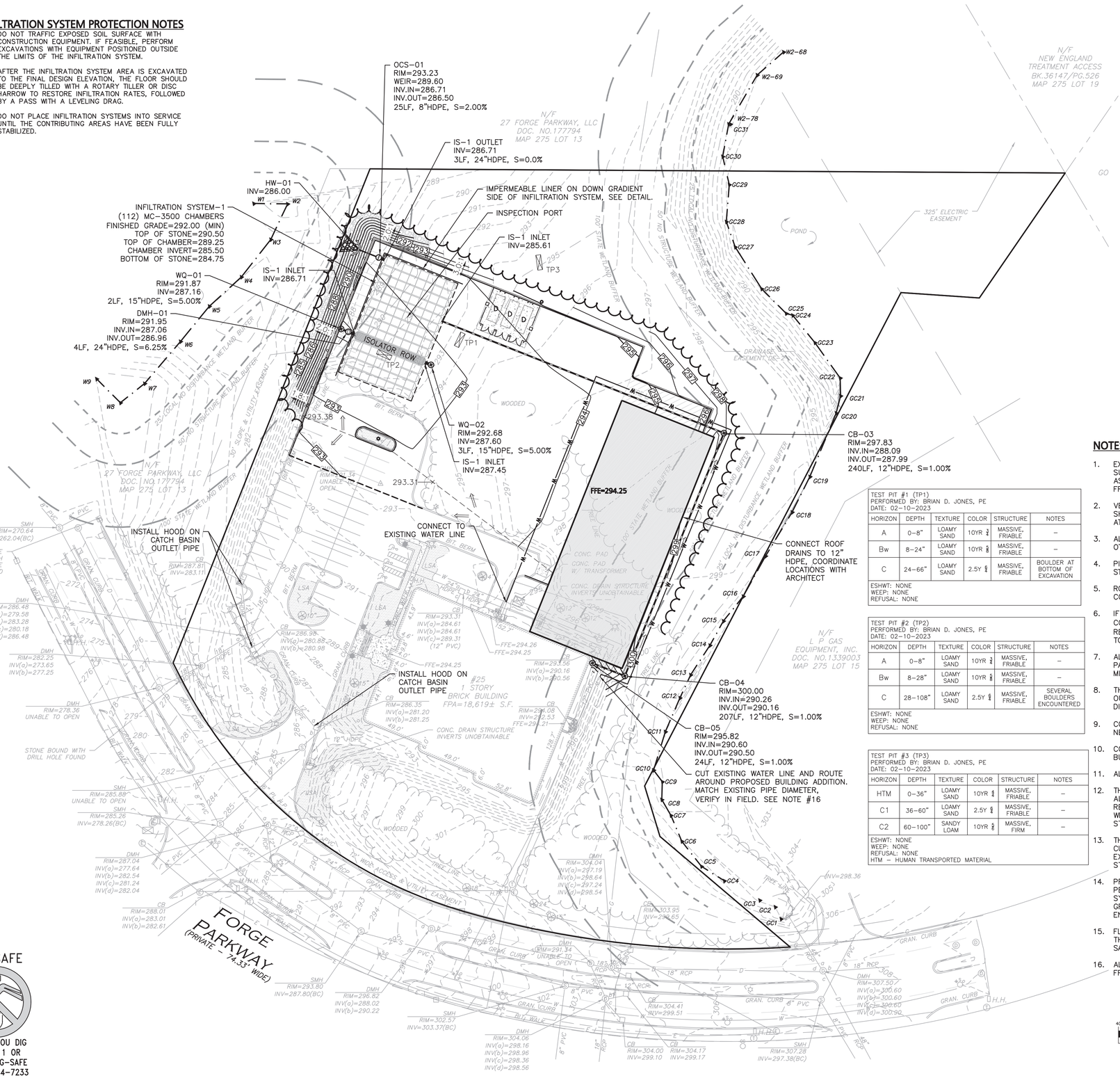
INFILTRATION SYSTEM PROTECTION NOTES

1. DO NOT TRAFFIC EXPOSED SOIL SURFACE WITH CONSTRUCTION EQUIPMENT. IF FEASIBLE, PERFORM EXCAVATIONS WITH EQUIPMENT POSITIONED OUTSIDE THE LIMITS OF THE INFILTRATION SYSTEM.
2. 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.
3. 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 OUTFALL	
5' CONTOUR	300
1' CONTOUR	297
SPOT GRADE	×298.50
INFILTRATION SYSTEM	
INFILTRATION CHAMBER	
ISOLATOR ROW	
FLOW DIRECTION	
WATER LINE	W

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 3/2	MASSIVE, FRIABLE	–
Bw	8–24"	LOAMY SAND	10YR 5/6	MASSIVE, FRIABLE	–
C	24–66"	LOAMY SAND	2.5Y 5/2	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 3/2	MASSIVE, FRIABLE	–
Bw	8–28"	LOAMY SAND	10YR 5/6	MASSIVE, FRIABLE	–
C	28–108"	LOAMY SAND	2.5Y 5/2	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 3/1	MASSIVE, FRIABLE	–
C1	36–60"	LOAMY SAND	2.5Y 5/2	MASSIVE, FRIABLE	–
C2	60–100"	SANDY LOAM	10YR 5/6	MASSIVE, FIRM	–

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

NOTES:

1. 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.
2. VERTICAL DATUM IS NAVD88. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
3. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
4. PIPE DIMENSIONS ARE MEASURED FROM THE INSIDE EDGE OF THE STRUCTURE.
5. ROOF DRAIN LOCATIONS TO BE BASED ON FINAL BUILDING PLANS. CONNECTION POINTS SHALL BE AS SHOWN HEREON.
6. 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.
7. ALL STORM DRAIN MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT AND SHALL HAVE TRAFFIC BEARING RING & COVERS, H-20 MINIMUM.
8. 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.
9. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ENSURE A SMOOTH FIT AND CONTINUOUS GRADE.
10. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.
11. ALL DRAINAGE SHALL CONFORM TO LOCAL REQUIREMENTS.
12. 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.
13. 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.
14. 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.
15. FLOOR DRAINS IN THE PROPOSED BUILDING ADDITION SHALL FLOW THROUGH A GAS TRAP PRIOR TO DISCHARGE TO THE MUNICIPAL SANITARY SYSTEM.
16. ALL WATERLINE WORK SHALL CONFORM TO THE MOST RECENT FRANKLIN DPW WATERLINE MATERIALS AND INSTALLATION STANDARDS.

GRAPHIC SCALE

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DRAWING TITLE: GRADING & DRAINAGE PLAN

SHEET No. C-103

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LUMINAIRE SCHEDULE

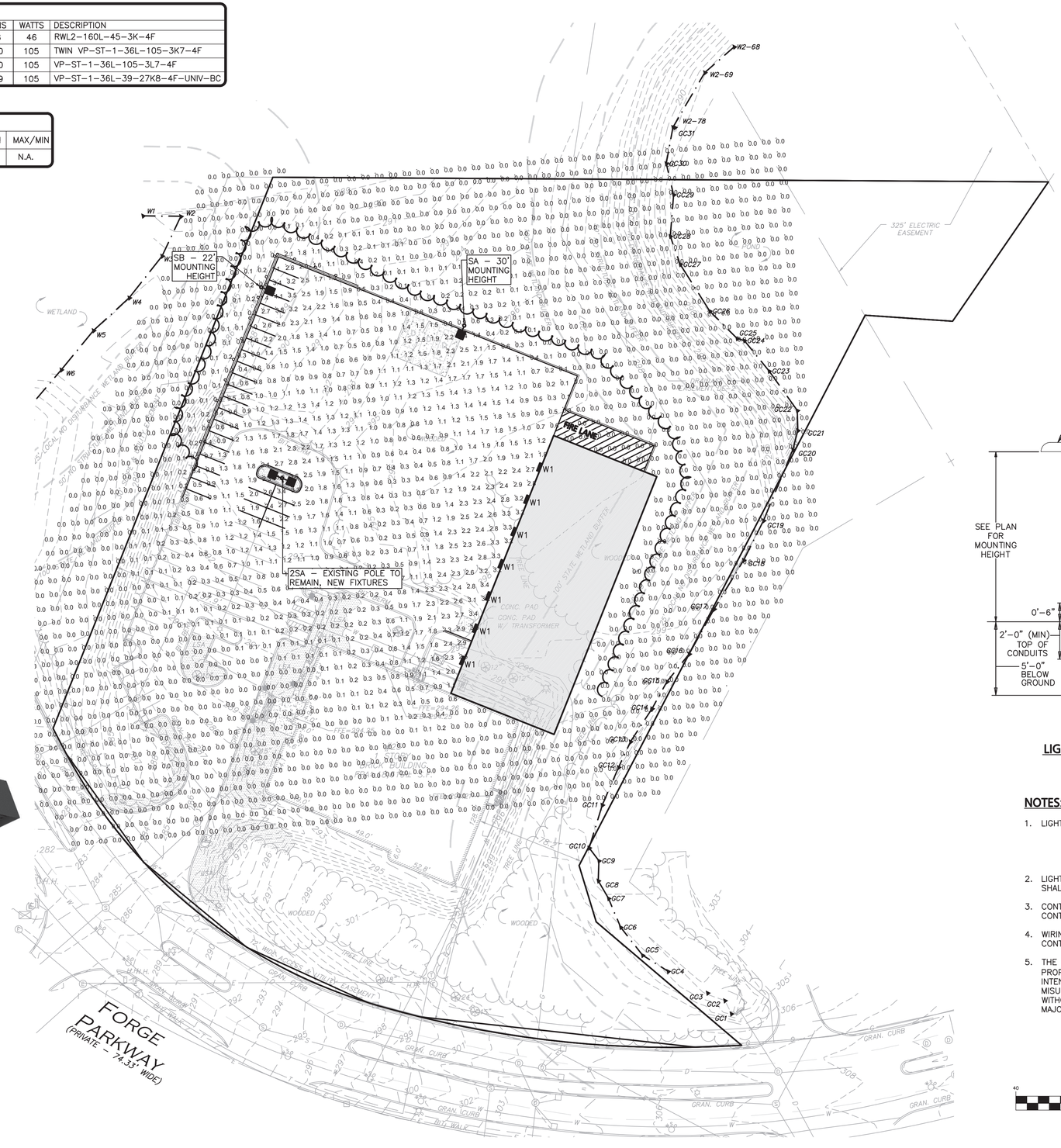
SYMBOL	QTY	LABEL	ARRANGEMENT	HEIGHT	LUMENS	WATTS	DESCRIPTION
	7	W1	WALL PACK	25'	5778	46	RWL2-160L-45-3K-4F
	1	2SA	DOUBLE, POLE MOUNT	30'	14960	105	TWIN VP-ST-1-36L-105-3K7-4F
	1	SA	SINGLE, POLE MOUNT	30'	14960	105	VP-ST-1-36L-105-3L7-4F
	1	SB	SINGLE, POLE MOUNT	22'	12189	105	VP-ST-1-36L-39-27K8-4F-UNIV-BC

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.

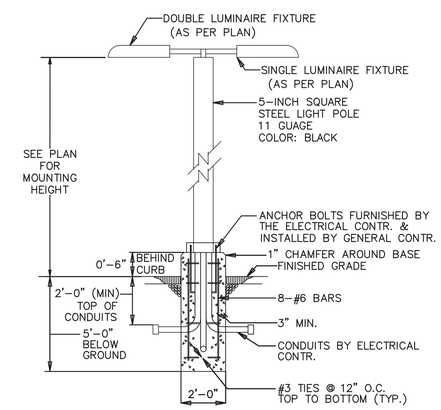
POLE LIGHT FIXTURE (LED)
BEACON LIGHTING - VIPER LUMINAIRE

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



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:

1. LIGHTING VENDOR CONTACT INFORMATION:
   CHRIS PECHALK
   SWANEY LIGHTING, INC.
   PHONE: 603-380-3400
   E-MAIL: CHRIS@SWANEYLIGHTING.COM
2. LIGHTS WITHIN THE PARKING AREAS AND ACCESS DRIVES SHALL OPERATE ON A PHOTO-CELL & PROGRAMABLE TIMER.
3. CONTROLS FOR ALL EXTERIOR LIGHTING BY BUILDING CONTRACTOR.
4. WIRING OF BUILDING MOUNTED FIXTURES BY BUILDING CONTRACTOR.
5. 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.

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1 inch = 40 ft.

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COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49213
REGISTERED PROFESSIONAL ENGINEER
05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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
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DRAWING TITLE: LIGHTING PLAN
SHEET No. C-104

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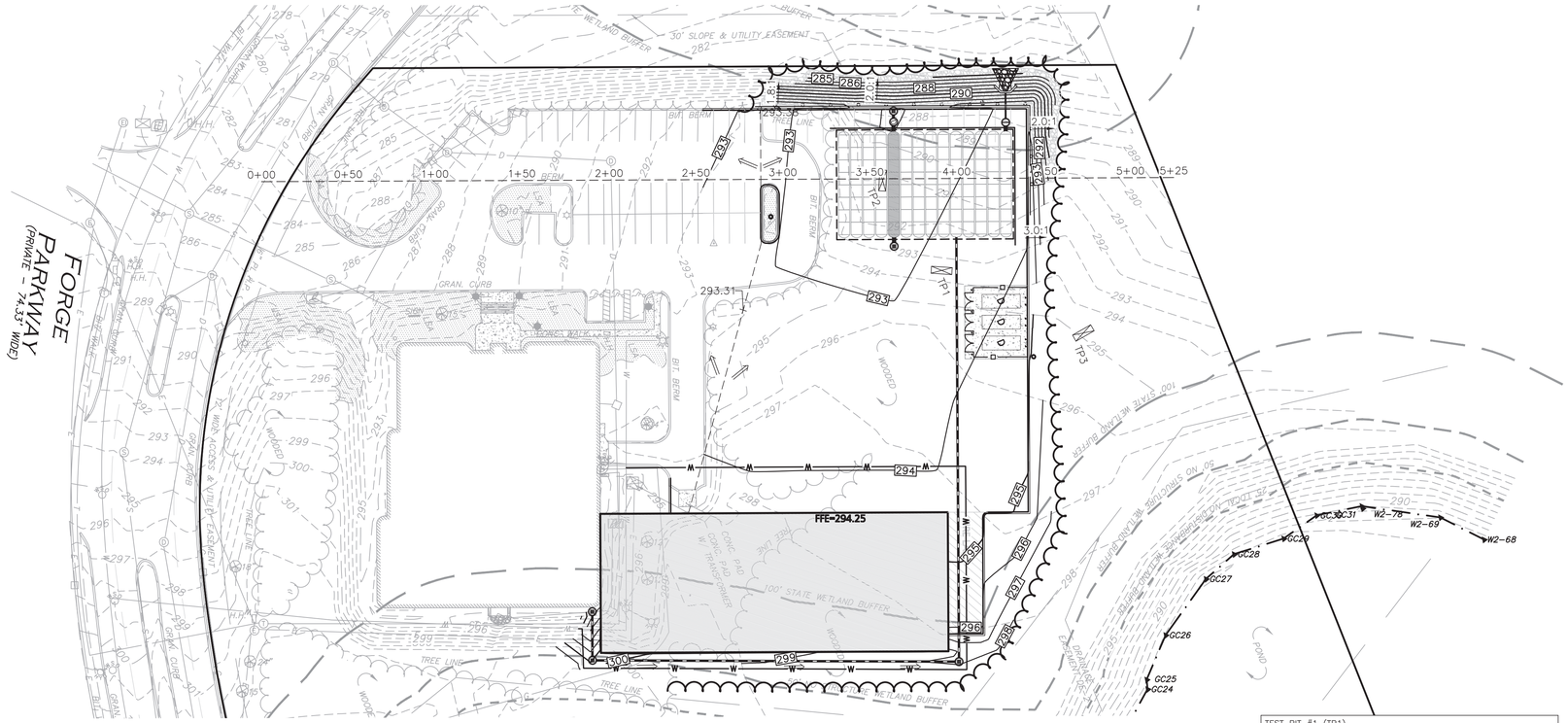
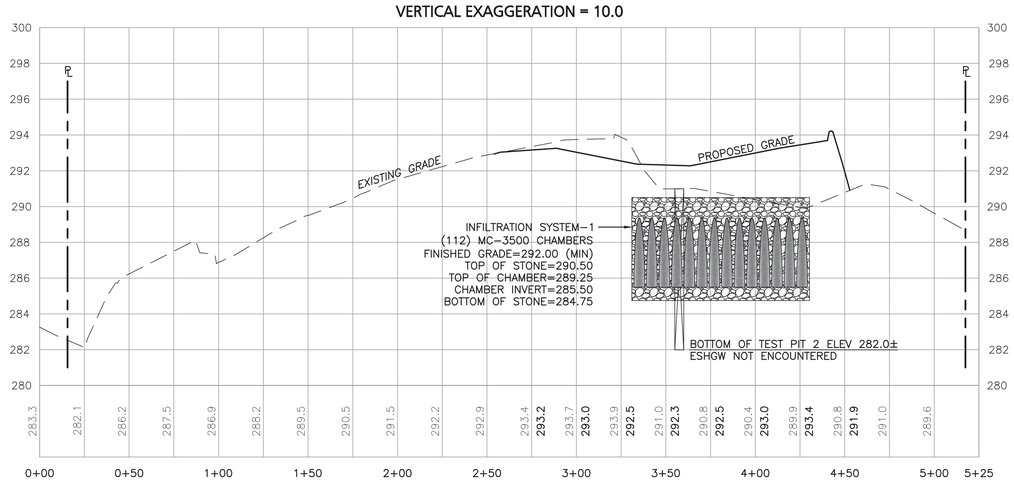


SITE SECTION
VERTICAL EXAGGERATION = 10.0



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 3/2	MASSIVE, FRIABLE	–
Bw	8–24"	LOAMY SAND	10YR 5/6	MASSIVE, FRIABLE	–
C	24–66"	LOAMY SAND	2.5Y 5/2	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 3/2	MASSIVE, FRIABLE	–
Bw	8–28"	LOAMY SAND	10YR 5/6	MASSIVE, FRIABLE	–
C	28–108"	LOAMY SAND	2.5Y 5/2	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 3/1	MASSIVE, FRIABLE	–
C1	36–60"	LOAMY SAND	2.5Y 5/2	MASSIVE, FRIABLE	–
C2	60–100"	SANDY LOAM	10YR 5/2	MASSIVE, FIRM	–

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

LEGEND

- DRAIN MANHOLE
- CATCH BASIN
- CATCH BASIN – DOUBLE GRATE
- OUTLET CONTROL
- HEADWALL
- DRAIN LINE
- RIPRAP OUTFALL
- 5' CONTOUR — 300
- 1' CONTOUR — 297
- SPOT GRADE × 298.50
- INFILTRATION SYSTEM
- INFILTRATION CHAMBER
- ISOLATOR ROW
- FLOW DIRECTION
- WATER LINE — W —

NOTES:

1. 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.
2. VERTICAL DATUM IS NAVD88. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT. PROPOSED GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT.
3. ALL CUT OR FILL SLOPES SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE NOTED.
4. 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.
5. 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.

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COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49212
REGISTERED PROFESSIONAL ENGINEER
05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
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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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civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
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DRAWING TITLE:
SITE PLAN &
CROSS-SECTION

SHEET No.
C-201

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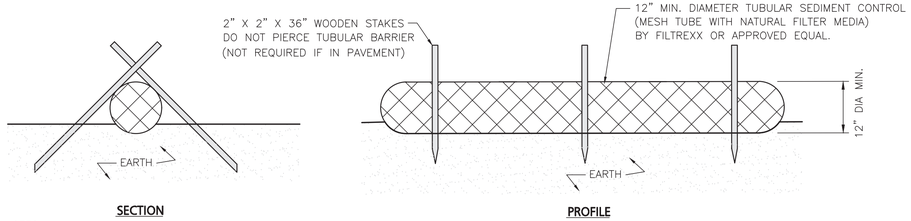
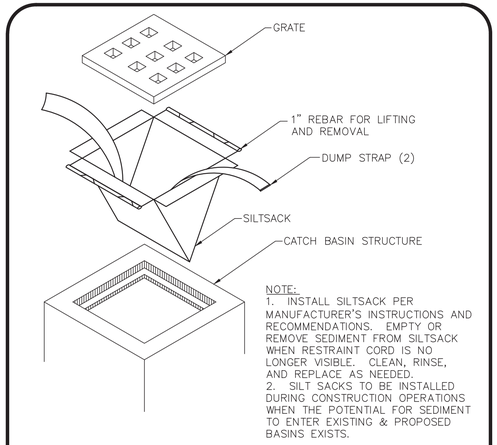


NOTES:

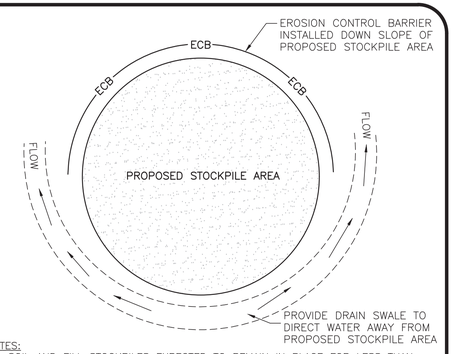
1. ALL MATERIALS TO MEET MANUFACTURERS SPECIFICATIONS.
2. INSTALL WOODEN STAKES IN A CRISS-CROSS PATTERN EVERY 8' ON CENTER.
2. OVERLAP TUBULAR BARRIER SEGMENTS A MINIMUM OF 12".
3. THE CONTRACTOR SHALL MAINTAIN THE TUBULAR BARRIERS IN A FUNCTIONAL CONDITION AT ALL TIMES. THE CONTROLS SHALL BE ROUTINELY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

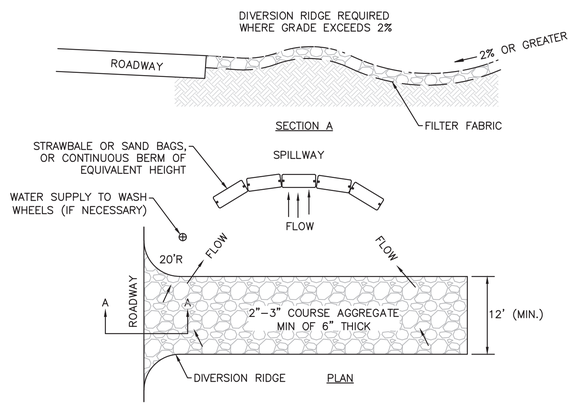
CATCH BASIN FILTER INLET DETAIL (2)
NOT TO SCALE



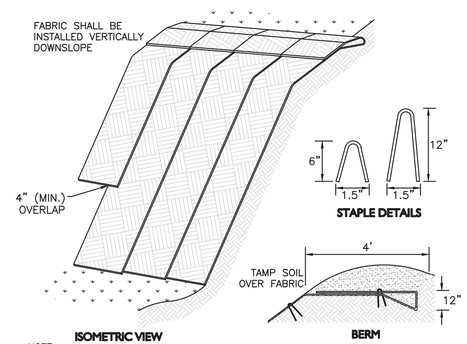
NOTES:
1. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR LESS THAN 90 DAYS SHALL BE COVERED WITH STRAW AND MULCH (AT 100LBS/1,000 SF), OR WITH AN ANCHORED TARP WITHIN 7 DAYS OR PRIOR TO ANY RAINFALL.
2. SOIL AND FILL STOCKPILES EXPECTED TO REMAIN IN PLACE FOR 90 DAYS OR MORE SHALL BE SEEDED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

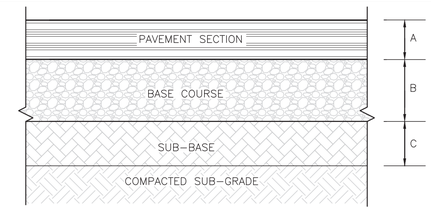


TEMPORARY CONSTRUCTION ENTRANCE (4)
NOT TO SCALE



NOTE:
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, 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 (5)
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.

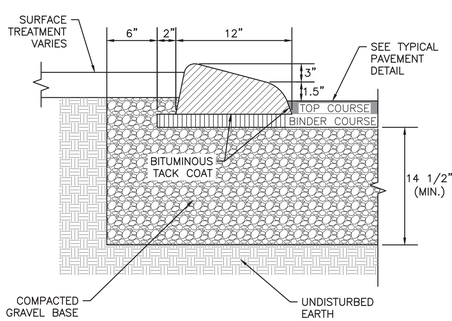
MATERIALS AND THICKNESSES:

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)

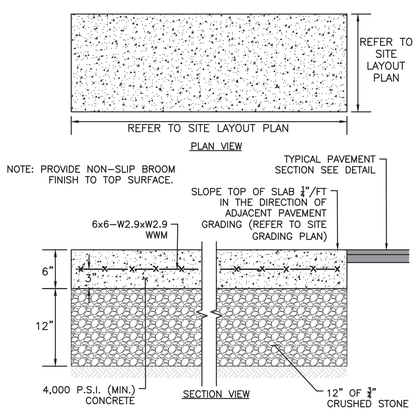
B = 6" PROCESSED GRAVEL BASE (MHD M2.01.7)

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

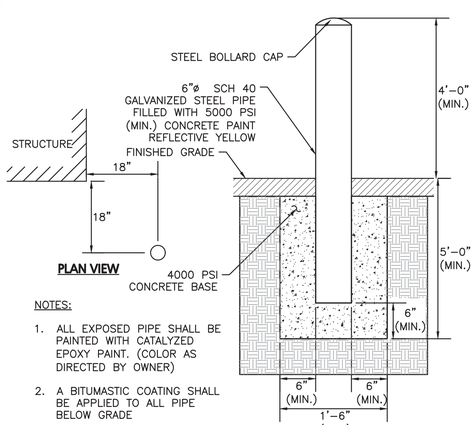
ASPHALT PAVEMENT SECTION (6)
NOT TO SCALE



CAPE COD BERM (7)
NOT TO SCALE



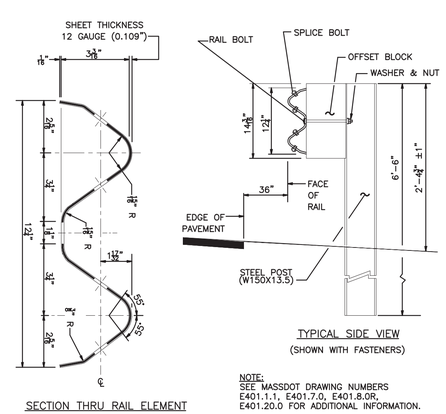
CONCRETE DUMPSTER PAD (8)
NOT TO SCALE



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 (9)
NOT TO SCALE



NOTE:
SEE MASSDOT DRAWING NUMBERS E401.1.1, E401.7.0, E401.8.0R, E401.20.0 FOR ADDITIONAL INFORMATION.

STEEL GUARDRAIL (10)
NOT TO SCALE

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49213
REGISTERED PROFESSIONAL ENGINEER
05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

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DRAWING TITLE: DETAILS

SHEET No. C-501

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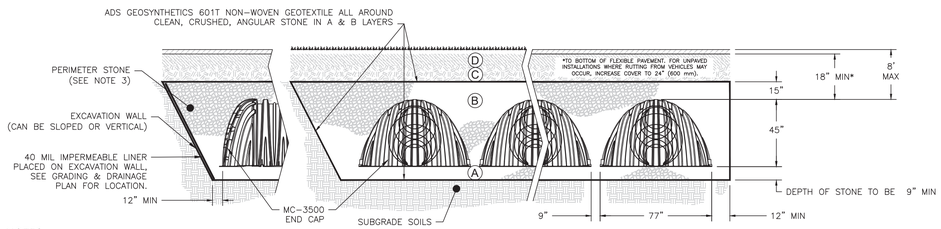
R:\PROJECTS\2712-02A\CIVIL\DRAWINGS\CURRENT\C-2712-02A_DETAILS.DWG

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:
1. 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".
2. 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.
3. 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.
4. 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:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
4. 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/%. 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 - CROSS SECTION DETAIL
NOT TO SCALE

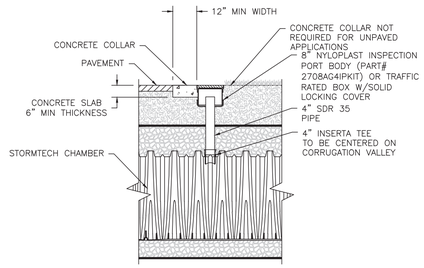
MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. 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.
6. 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.
7. 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 450 LBS/FT/%. 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.
8. 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.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

Advanced Drainage Systems, Inc.

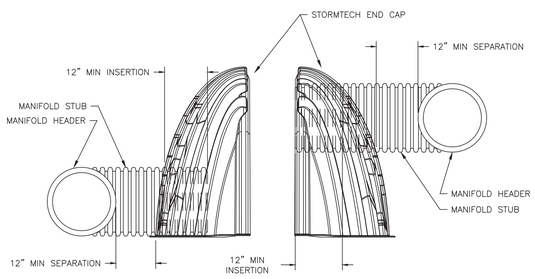
STORMTECH MC-3500 CHAMBER SYSTEM
NOT TO SCALE

I



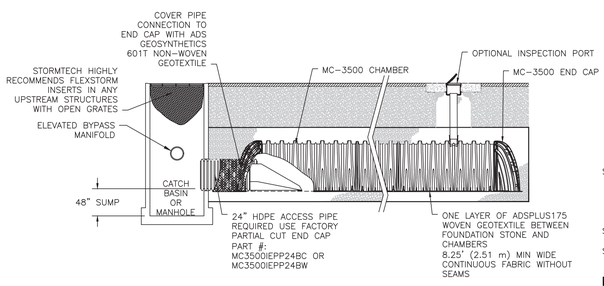
NOTE:
INSPECTION PORTS MAY BE CONNECTED THROUGH ANY CHAMBER CORRUGATION VALLEY.

4" PVC INSPECTION PORT
NOT TO SCALE

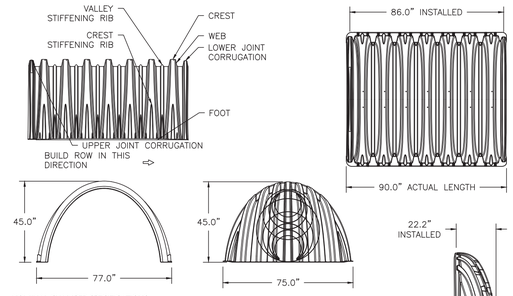


NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

END CAP INSERTION DETAIL
NOT TO SCALE



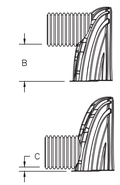
MC-3500 - ISOLATOR ROW PLUS DETAIL
NOT TO SCALE



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

NOMINAL END CAP SPECIFICATIONS
SIZE (W X H X INSTALLED LENGTH) 75.0" X 45.0" X 22.2"
END CAP STORAGE 14.9 CUBIC FEET
MINIMUM INSTALLED STORAGE* 45.1 CUBIC FEET
WEIGHT 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	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

CUSTOM PARTIAL CUT INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

TECHNICAL SPECIFICATIONS
NOT TO SCALE

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. 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. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. 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

1. 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.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49213
REGISTERED PROFESSIONAL ENGINEER
05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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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environmental consulting ◆ landscape architecture
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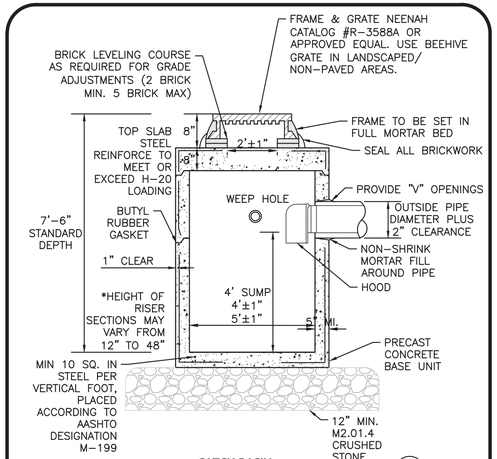
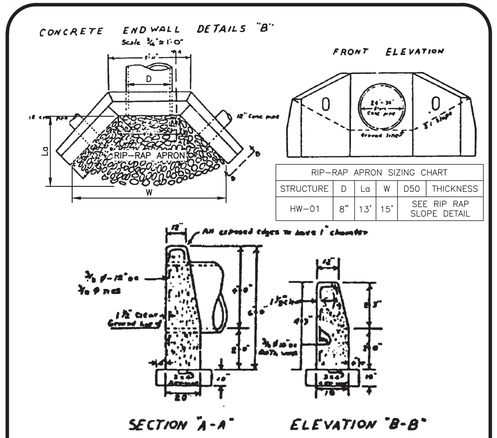
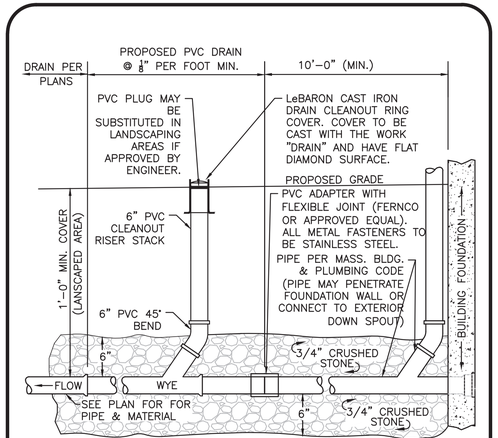


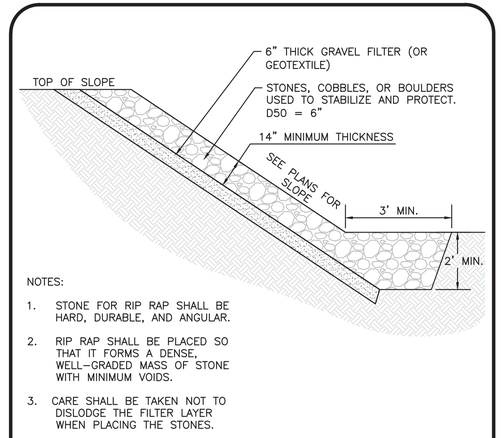
CATCH BASIN
NOT TO SCALE
1



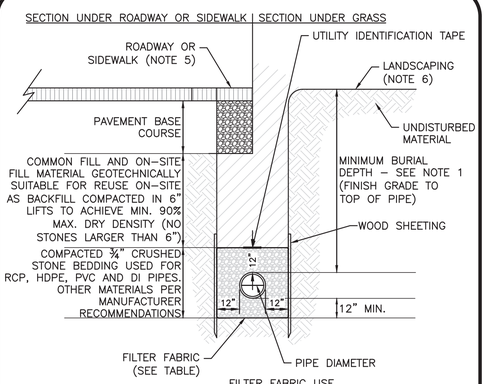
TOWN OF FRANKLIN HEADWALL DETAIL
NOT TO SCALE
2



ROOF DRAIN
NOT TO SCALE
3



RIP RAP SLOPE
NOT TO SCALE
4

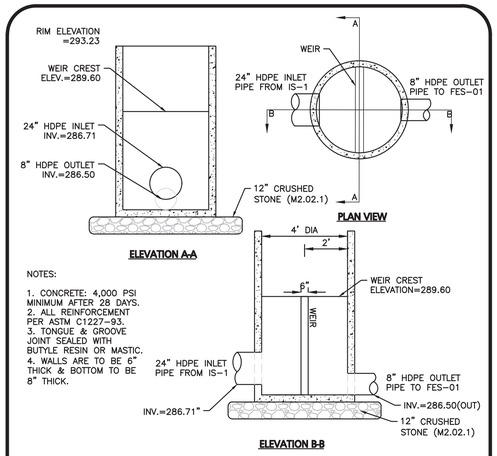


FILTER FABRIC USE

	SOIL TYPE	
	SILT OR CLAY	GRANULAR SOIL
ABOVE GROUND WATER	FILTER FABRIC NOT REQUIRED	FILTER FABRIC NOT REQUIRED
BELOW GROUND WATER	FILTER FABRIC REQUIRED	FILTER FABRIC NOT REQUIRED

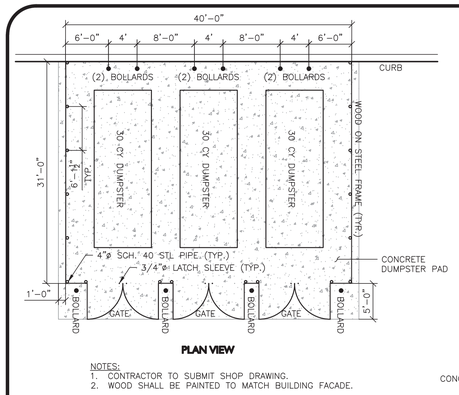
NOTES:
1. MINIMUM BURIAL DEPTH (FINISH GRADE TO TOP OF PIPE)
   GRAVITY PIPE (SEWER & DRAIN) – SEE PLAN OR PROFILE
   PRESSURE PIPE UNDER PAVING – 4'
   PRESSURE PIPE BENEATH UNPAVED – 3'
   WATER PIPE – 5'
2. WHERE BACKFILL IS DESIGNATED AS COMPACTED, THIS MEANS 90 TO 95% STANDARD PROCTOR. AASHTO T-99. ALL FILL PLACED BELOW PIPES AND STRUCTURES MUST MEET THIS REQUIREMENT.
3. TRENCHES WITHIN PUBLIC RIGHT OF WAY MAY REQUIRE FLOWABLE FILL. VERIFY WITH MUNICIPAL ENGINEER.
4. WHERE WASTE FILLS ARE ENCOUNTERED AT SUBGRADE LEVEL FOR NEW UTILITIES, THE FILL SHOULD BE OVER-EXCAVATED, THE SUBGRADE SHOULD BE RE-COMPACTED, AND BACKFILL CONSISTING OF PIPE BEDDING MATERIAL, CRUSHED STONE OR OTHER SUITABLE GRANULAR FILL SHOULD BE PLACED TO A SUFFICIENT DEPTH TO CREATE A FIRM AND STABLE SUBGRADE (TYPICALLY 12 TO 18 INCHES OVER-EXCAVATION).
5. REFER TO PAVING, CURBS, WALKS AND DRIVEWAY DETAILS.
6. REFER TO LANDSCAPING DETAILS.
7. SHEETING, WHEN REQUIRED, TO BE CUT OFF AT LEAST 5' BELOW STREET AND A MINIMUM OF 1' ABOVE TOP OF PIPE. WOOD SHEETING DRIVEN BELOW MID-DIAMETER OF THE PIPE SHALL BE LEFT IN PLACE. STEEL SHEETING DRIVEN BELOW MID-DIAMETER MAY BE WITHDRAWN IF APPROVED IN WRITING BY THE ENGINEER. FOR PVC PIPE ALL SHEETING DRIVEN BELOW MID-DIAMETER SHALL BE LEFT IN PLACE.
8. WHEN APPROVED BY THE ENGINEER FOR PIPES OTHER THAN PVC, SELECTED GRAVEL FILL MATERIAL MAY BE USED FROM MID-DIAMETER OF PIPE TO 12" ABOVE TOP OF PIPE. NO STONES LARGER THAN 2" IN ANY DIMENSION WILL BE PERMITTED IN THIS AREA – MASSDOT MATERIAL STANDARD M1.03.0 TYPE C.
9. PROVIDE AT LEAST ONE IMPERVIOUS DAM IN GRAVEL BEDDING BETWEEN EACH MANHOLE WHERE DIRECTED, OR EVERY 300 FT, WHICHEVER IS LESS.
10. BEDDING MATERIAL FOR PVC PIPE SHALL MEET THE REQUIREMENTS OF ASTM D2321 CLASS I OR CLASS II EMBEDMENT MATERIALS.

UTILITY TRENCH DETAIL
NOT TO SCALE
5



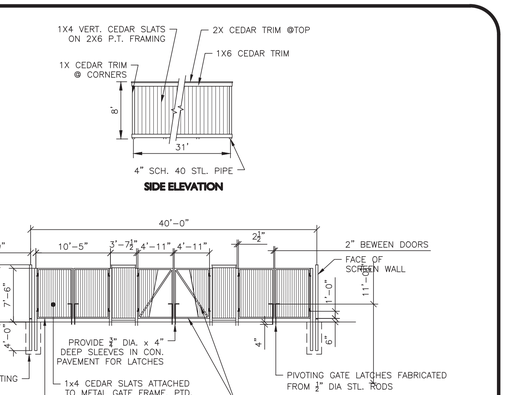
NOTES:
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
2. ALL REINFORCEMENT PER ASTM C1227-93.
3. TONGUE & GROOVE JOINT SEALED WITH BUTYLE RESIN OR MASTIC.
4. WALLS ARE TO BE 6" THICK & BOTTOM TO BE 8" THICK.

4' DIAMETER OUTLET CONTROL STRUCTURE
NOT TO SCALE
6

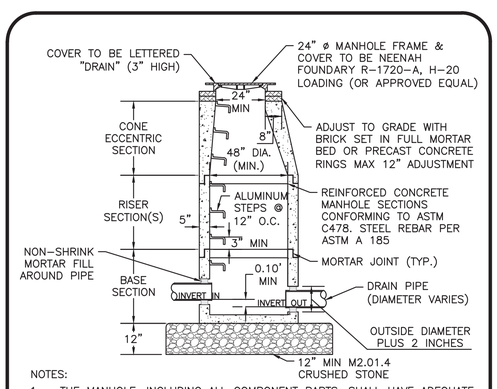


PLAN VIEW

NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWING.
2. WOOD SHALL BE PAINTED TO MATCH BUILDING FACADE.



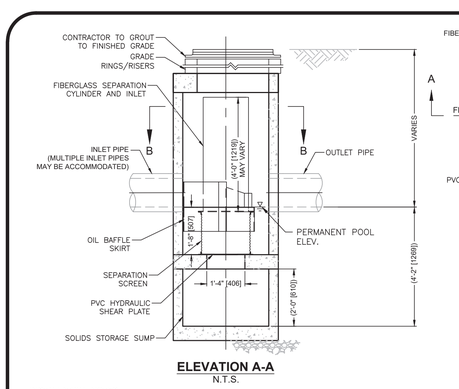
DUMPSTER ENCLOSURE
NOT TO SCALE
7



NOTES:
1. THE MANHOLE, INCLUDING ALL COMPONENT PARTS, SHALL HAVE ADEQUATE SPACE AND STRENGTH QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE. SPACE REQUIREMENT AND CONFIGURATIONS SHALL BE AS SHOWN ON THE DRAWING. THE COMPLETE STRUCTURE SHALL BE OF SUCH MATERIAL AND QUALITY AS TO WITHSTAND (H-20 LOADING) WITHOUT FAILURE.

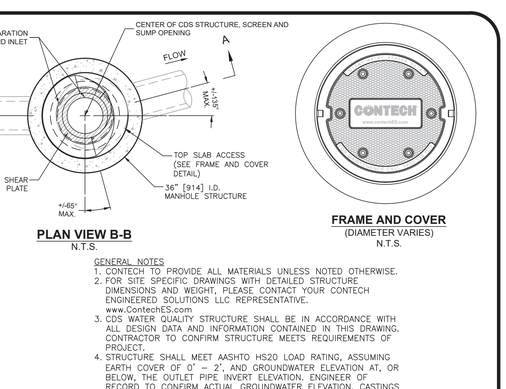
VERTICAL FOOT OF MANHOLE.

DRAIN MANHOLE
NOT TO SCALE
8



ELEVATION A-A
N.T.S.

INSTALLATION NOTES
A. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.



PLAN VIEW B-B
N.T.S.

FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' – 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

PROPRIETARY WATER QUALITY DEVICE (CDS1515-3)
NOT TO SCALE
9

COMMONWEALTH OF MASSACHUSETTS
BRIAN D. JONES
CIVIL
No. 49213
REGISTERED PROFESSIONAL ENGINEER
05-01-23

PROFESSIONAL ENGINEER FOR
ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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.
civil engineering ◆ land surveying
environmental consulting ◆ landscape architecture
www.allenmajor.com
100 COMMERCE WAY, SUITE 5
WOBURN MA 01801
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: DETAILS

SHEET No. C-503

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PLANTING SCHEDULE

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MIN. SIZE	SPACING	COMMENTS
DECIDUOUS AND FLOWERING TREES						
AR	2	ACER RUBRUM 'AUTUMN RADIANCE'	AUTUMN RADIANCE MAPLE	2.5"–3" CAL.	AS SHOWN	B&B
SHRUBS						
LB	15	LINDERA BENZOIN	SPICEBUSH	#5	AS SHOWN	POT
CA	3	CORNUS ALTERNIFOLIA	ALTERNATE LEAF DOGWOOD	#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

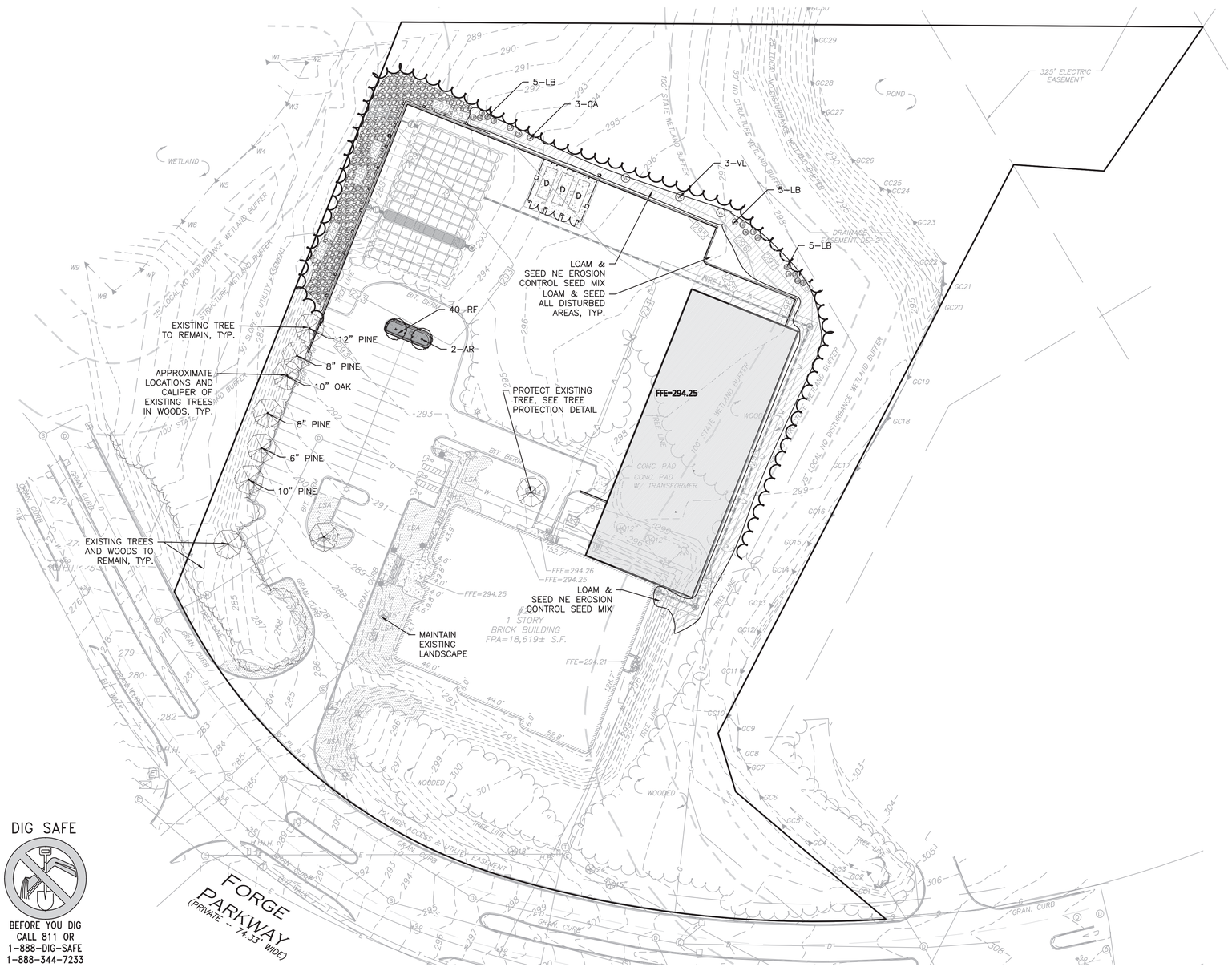
FLOWERING TREE

SHRUBS

MULCH BED

PERENNIALS/GROUNDCOVER

EROSION CONTROL SEED MIX



DIG SAFE

BEFORE YOU DIG
CALL 811 OR
1-888-DIG-SAFE
1-888-344-7233

LANDSCAPE NOTES

ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF FRANKLIN, MA.

1. PLANTING PLAN IS DIAGRAMMATIC IN NATURE. FINAL PLACEMENT OF PLANTS TO BE APPROVED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
2. 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 NAY CONFLICTS IN WRITING.
3. 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.
4. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B) UNLESS OTHERWISE NOTED OR APPROVED BY THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
5. CONTRACTOR SHALL VERIFY QUANTITIES SHOWN ON PLANT LIST. QUANTITIES SHOWN ON PLANS SHALL GOVERN OVER PLANT LIST.
6. ANY PROPOSED PLANT SUBSTITUTIONS MUST BE APPROVED IN WRITING BY OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT.
7. ALL PLANT MATERIALS INSTALLED SHALL MEET THE GUIDELINES ESTABLISHED BY THE STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN.
8. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE.
9. 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.
10. ANY FALL TRANSPLANTING HAZARD PLANTS SHALL BE DUG IN THE SPRING AND STORED FOR FALL PLANTING.
12. TREES SHALL HAVE A MINIMUM CALIPER AS INDICATED ON THE PLANTING SCHEDULE TAKEN ONE FOOT ABOVE THE ROOT CROWN.
13. ALL PLANT BEDS AND TREE SAUCERS TO RECEIVE 3" OF PINE BARK MULCH. GROUND COVER AREAS SHALL RECEIVE 1" OF PINE BARK MULCH
14. 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.
15. ALL TREE STAKES SHALL BE STAINED DARK BROWN.
16. CONTRACTOR RESPONSIBLE FOR WATERING, AND RESEEDING OF BARE SPOTS UNTIL A UNIFORM STAND OF VEGETATION IS ESTABLISHED AND ACCEPTED.
17. ALL PARKING ISLANDS PLANTED WITH SHRUBS SHALL HAVE 24" OF TOP SOIL. FINISH GRADE SHALL BE EQUAL TO THE TOP OF CURB.
18. SOIL SAMPLES, TESTS, AND SHOP DRAWINGS SHALL BE PROVIDED TO THE LANDSCAPE ARCHITECT OR THE OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
19. 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.

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

MASSACHUSETTS BETHANY C. DERMODY REGISTERED LANDSCAPE ARCHITECT No. 4071 5-1-23

PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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:	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
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WOBURN, MA ◆ LAKEVILLE, MA ◆ MANCHESTER, NH

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DRAWING TITLE: LANDSCAPE PLAN

SHEET No. L-101

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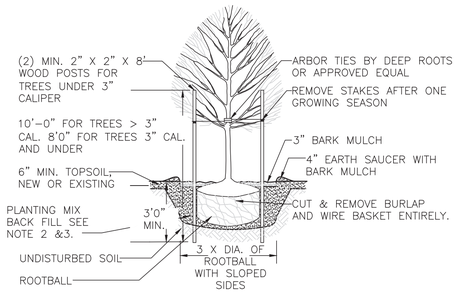
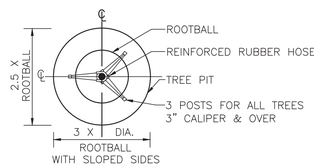
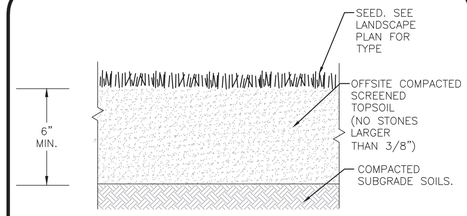


NOTES:

1. ALL TREES SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. ROOT FLARE SHALL BE 2" ABOVE FINISH GRADE. REMOVE SOIL FROM TRUNK FLARE OF TREE TO DETERMINE ACTUAL ROOTBALL AREA.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.



DECIDUOUS TREE PLANTING DETAIL (1)
NOT TO SCALE



TEXTURE CLASS	% OF TOTAL WEIGHT
SAND	45% – 65%
SILT	15% – 35%
CLAY	5% – 20%

SIEVE	% PASSING
3/8"	100
NO. 4	85–100
NO. 40	60–85
NO. 100	38–60
NO. 200	10–35
20 um	LESS THAN 5%

NOTES:

1. TOP OF LOAM (TOPSOIL) IS FINISH GRADE.
2. ALL TOPSOIL (BOTH ONSITE AND OFFSITE SOURCES) SHALL BE COMPOSED OF A NATURAL, FERTILE, FRIABLE SOIL TYPICAL OF CULTIVATED TOPSOILS OF THE LOCALITY. OFFSITE SOIL SHALL BE SUITABLE FOR THE GERMINATION OF SEEDS AND SUPPORT OF VEGETATIVE GROWTH, WITH ADDITIVES, IF REQUIRED, TO ACHIEVE PARTICLE DISTRIBUTION AND ORGANIC CONTENT BELOW. TOPSOIL SHALL BE TAKEN FROM A WELL–DRAINED, ARIABLE SITE, FREE OF SUBSOIL, LARGE STONES, EARTH CLODS, STICKS, STUMPS, CLAY LUMPS, ROOTS, OTHER OBJECTIONABLE, EXTRANEOUS MATTER OR DEBRIS NOR CONTAIN TOXIC SUBSTANCES.
3. THE CONTRACTOR SHALL PROVIDE THE OWNER / LANDSCAPE ARCHITECT WITH TOPSOIL TEST RESULTS (RECOMMEND UMASS AMHERST SOIL TESTING LAB) FOR APPROVAL PRIOR TO OBTAINING AND PLACING THE SOIL. IF ANY TOPSOIL IS PURCHASED OR PLACED PRIOR TO APPROVAL BY OWNER / LANDSCAPE ARCHITECT, IT IS AT CONTRACTORS RISK, AND IT CAN BE REMOVED AT NO ADDITIONAL COST TO THE OWNER. IF THE PLANTING SOIL (BOTH ONSITE AND OFFSITE SOURCES) DOES NOT FALL WITHIN THE REQUIRED SIEVE ANALYSIS, TEXTURAL CLASS, ORGANIC CONTENT, OR PH RANGE, IT SHALL BE ADJUSTED TO MEET THE SPECIFICATIONS THROUGH THE ADDITION OF SAND, COMPOST, LIMESTONE, OR ALUMINUM SULFATE TO BRING IT WITHIN THE SPECIFIED LIMITS AT NO ADDITIONAL COST TO THE OWNER.
4. TOPSOIL SHALL HAVE A PH VALUE BETWEEN 5.5 AND 6.5. TOPSOIL SHALL CONTAIN BETWEEN 4% AND 8% ORGANIC MATTER OF TOTAL DRY WEIGHT AND SHALL CONFORM TO THE FOLLOWING GRADATION AND TEXTURE CLASS ABOVE.

TOPSOIL FOR LAWN, TREES, SHRUBS, & PERENNIALS (2)
NOT TO SCALE

SEED MIX:

NEW ENGLAND WETLAND PLANTS
820 WEST STREET, AMHERST, MA 01002
PHONE: 413–548–8000 FAX 413–549–4000
EMAIL: INFO@NEWP.COM WEB ADDRESS: WWW.NEWP.COM

NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES

BOTANICAL NAME	COMMON NAME	WETLAND INDICATOR
ELYMUS CANADENSIS	CANADA WILD RYE	FACU+
FESTUCA RUBRA	RED FESCUE	FACU
LOLIUM MULTIFLORUM	ANNUAL RYEGRASS	
LOLIUM PERENNE	PERRENIAL RYEGRASS	
PANICUM VIRGATUM	SWITCH GRASS	FAC
SORGHASTRUM NUTANS	INDIAN GRASS	UPL
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
AGROSTIS PERENNANS	UPLAND BENTGRASS	FACU

THE NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES PROVIDES AN APPROPRIATE SELECTION OF NATIVE AND NATURALIZED GRASSES TO ENSURE THAT DRY AND RECENTLY DISTURBED SITES WILL BE QUICKLY REVEGETATED AND THE SOIL SURFACE STABILIZED. IT IS AN APPROPRIATE SEED MIX FOR ROAD CUTS, PIPELINES, STEEPER SLOPES, AND AREAS REQUIRING QUICK COVER DURING THE ECOLOGICAL RESTORATION PROCESS. THE MIX MAY BE APPLIED BY HYDRO–SEEDING, BY MECHANICAL SPREADER, OR ON SMALL SITES IT CAN BE SPREAD BY HAND. LIGHTLY RAKE, OR ROLL TO ENSURE PROPER SOIL–SEED CONTACT. BEST RESULTS ARE OBTAINED WITH A SPRING OR LATE SUMMER SEEDING. LATE SPRING THROUGH MID–SUMMER SEEDING WILL BENEFIT FROM A LIGHT MULCHING OF WEED–FREE STRAW TO CONSERVE MOISTURE. IF CONDITIONS ARE DRIER THAN USUAL, WATERING WILL BE REQUIRED. FERTILIZATION IS NOT
REQUIRED UNLESS THE SOILS ARE PARTICULARLY INFERTILE. PREPARATION OF A CLEAN WEED FREE SEED BED IS NECESSARY FOR OPTIMAL RESULTS.

APPLY: 35 LBS/ACRE :1250 SQ FT/LB

EROSION CONTROL BLANKET FOR SLOPES SEE LANDSCAPE NOTES

LOAM AND SEEDING NOTES:

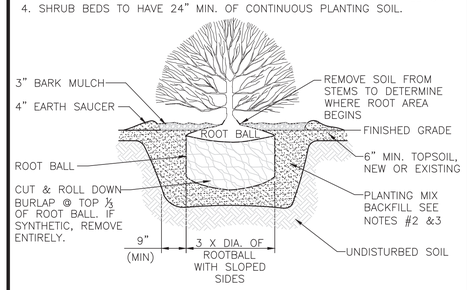
CONTRACTOR SHALL SEED ALL DISTURBED AREAS NOT NOTED TO RECEIVE OTHER MATERIALS, AND AT AREAS SHOWN ON THE PLAN PER SPECIFICATIONS BELOW

SCIENTIFIC NAME	COMMON NAME	PROPORTION BY WEIGHT	PERCENT PURITY	PERCENT GERMINATION
FESTUCA RUBRA "RUBRA"	CREEPING RED FESCUE	37%	95%	90%
PAO PRAENTENSIS "BARON"	BARON KENTUCKY BLUEGRASS	40%	85%	90%
LOLIUM PERENNE "PALMER"	PALMER PERENNIAL RYEGRASS	15%	95%	90%
FESTUCA RUBRA COMMUTATA WILMA	WILMA CHEWINGS	8%	95%	80%

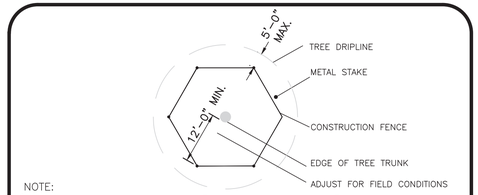
1. SEED TO BE SPREAD AT MINIMUM RATE OF 5 LBS. PER 1000 SQ. FT.
2. SEEDING TO BE COMPLETED "IN SEASON" BETWEEN APRIL 1 TO JUNE 15 OR AUGUST 15 TO OCTOBER 1, EXCEPT FOR RESEEDING OF BARE SPOTS. IF UNABLE TO SEED WITHIN THESE TIMEFRAMES, CONTRACTOR TO INSTALL EROSION CONTROL MATS ON ALL SLOPES 3:1 AND OVER, HYDROSEED ALL EXPOSED AREAS, ADD SOIL STABILIZER "FLUX TERRA HP–FGM SOIL STABILIZER" AS MANUFACTURED BY "PROFILE" TO HYDROSEED (AT RATE OF 3,000 LBS PER ACRE), AT NO ADDITIONAL COST TO THE OWNER. CONTRACTOR TO COMPLETE ALL ABOVE "OUT OF SEASON" REQUIREMENTS AND THEN ALSO BE RESPONSIBLE FOR RE–GRADING AND RE–SEEDING ALL DISTURBED, ERODED, OR BARE SPOTS WITHIN NEXT CLOSEST PLANTING SEASON IN FALL OR SPRING AT NO ADDITIONAL COST TO OWNER. CONTRACTOR RESPONSIBLE FOR ALL MAINTENANCE UNTIL FINAL ACCEPTANCE OF LAWN AREAS INCLUDING: WATERING, ADDING FERTILIZERS AND LIME AND MOWING AT NO ADDITIONAL COST TO OWNER.
3. COMMERCIAL FERTILIZER SHALL BE APPLIED AT THE RATE OF 25 POUNDS PER 1000 SQ. FT. OR AS RECOMMENDED BY THE TESTING AGENCY. LIME TO BE SPREAD AT THE RATE OF 100 POUNDS PER 1000 SQ. FT OR AS RECOMMENDED BY THE TESTING AGENCY. COMMERCIAL FERTILIZER SHALL BE A COMPLETE FERTILIZER CONTAINING AT LEAST 50% OF THE NITROGEN OF WHICH IS DERIVED FROM NATURAL ORGANIZE SOURCES OF UREAFORM. IT SHALL CONTAIN THE FOLLOWING PERCENTAGES BY WEIGHT: NITROGEN (N) 10%, PHOSPHORUS (P) 6%, POTASH (K) 4%. LIME SHALL BE AN APPROVED AGRICULTURAL LIMESTONE CONTAINING NOT LESS THAN 85% OF TOTAL CARBONATES. LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT 50% WILL PASS A 100 MESH SIEVE AND 90% WILL PASS THROUGH A 20 MESH SIEVE.
4. LAWN AREAS TO BE SEEDED BY SOWING EVENLY WITH AN APPROVED MECHANICAL SEEDER AT THE RATE OF TEN POUNDS PER 1000 SQUARE FEET.
5. CONTRACTOR RESPONSIBLE FOR WATERING, MOWING, AND RESEEDING OF LAWN BARE SPOTS UNTIL A UNIFORM, HEALTHY STAND OF GRASS IS ESTABLISHED AND ACCEPTED.

NOTES:

1. ALL SHRUBS SHALL HAVE THE SAME RELATIONSHIP TO FINISH GRADE AFTER PLANTING AS THEY HAD AT THE ORIGINAL NURSERY SETTING. SET SHRUB 1"–2" ABOVE FINISH GRADE.
2. BACKFILL WITH PLANTING MIX. PLANT MIX TO BE: 50% NATIVE TOPSOIL, 20% COMPOST (LEAVES & ORGANIC MATERIAL, NO ASH) 20% PEAT MOSS, 10% SAND.
3. ADD MYCORRHIZA SOIL ADDITIVES AND SLOW RELEASE FERTILIZER WHEN PLANT HOLES ARE 50% FILLED AND WATER THOROUGHLY AT COMPLETION.
4. SHRUB BEDS TO HAVE 24" MIN. OF CONTINUOUS PLANTING SOIL.

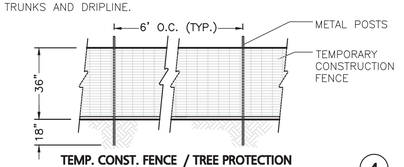


SHRUB PLANTING DETAIL (3)
NOT TO SCALE



NOTE:

1. CONSTRUCTION FENCE TO BE "VISUAL BARRIER FENCE" AS MANUFACTURED BY EXXON CHEMICAL COMPANY ATLANTA, GA; "KONTROL SAFETY FENCE" AS MANUFACTURED BY MIRAFI, CHARLOTTE, N.C. OR APPROVED EQUAL.
2. IF GROUPS OF TREES ARE TO BE PROTECTED, EXTEND FENCE AROUND PERIMETER TO CONFORM TO MINIMUM DIMENSIONS FOR TREE TRUNKS AND DRIPLINE.



TEMP. CONST. FENCE / TREE PROTECTION (4)
NOT TO SCALE

MASSACHUSETTS REGISTERED LANDSCAPE ARCHITECT BETHANY C. DERMODY No. 4071 5-1-23

PROFESSIONAL LANDSCAPE ARCHITECT FOR ALLEN & MAJOR ASSOCIATES, INC.

REV	DATE	DESCRIPTION
3	05-01-23	REVISION 3 PER REVIEW COMMENTS
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:	L-2712-02A
DESIGNED BY:	BCD	CHECKED BY:	BDJ

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
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environmental consulting ◆ landscape architecture
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DRAWING TITLE: LANDSCAPE NOTES & DETAILS

SHEET No. L-501

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