

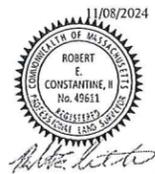
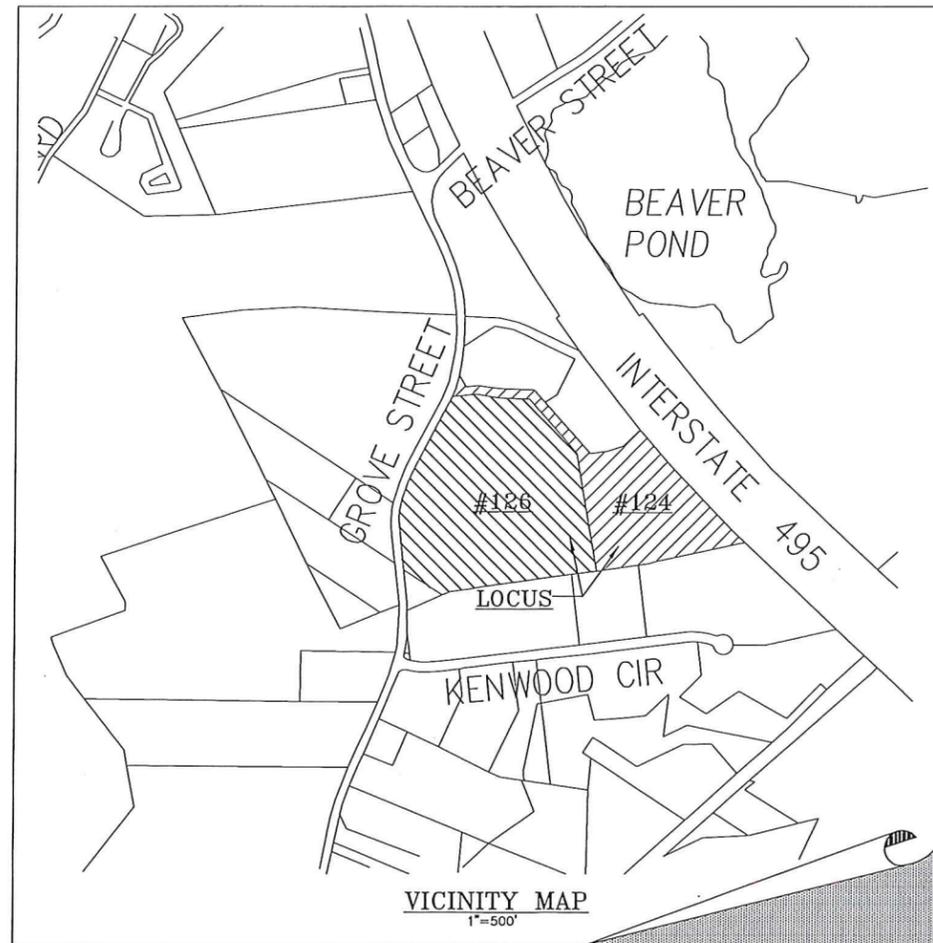
"124/ 126 GROVE STREET"

Site Plan Modification Franklin, Massachusetts

Date: NOVEMBER 5, 2024

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 17. CONSTRUCTION DETAILS
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- DRAFT RETAINING WALL DESIGN PLAN (BY OTHERS)
(TO BE FINALIZED PRIOR TO PLAN ENDORSEMENT)



F4593

APPROVED DATE: _____
FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. DEVELOPERS SHOULD BE CONSIDERED APPROXIMATELY LOCATING EXCAVATION. THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS. GEN. LAWS, CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

A.M. 295 LOT 4
KEY BOSTON, INC.
126 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6876 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
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124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS

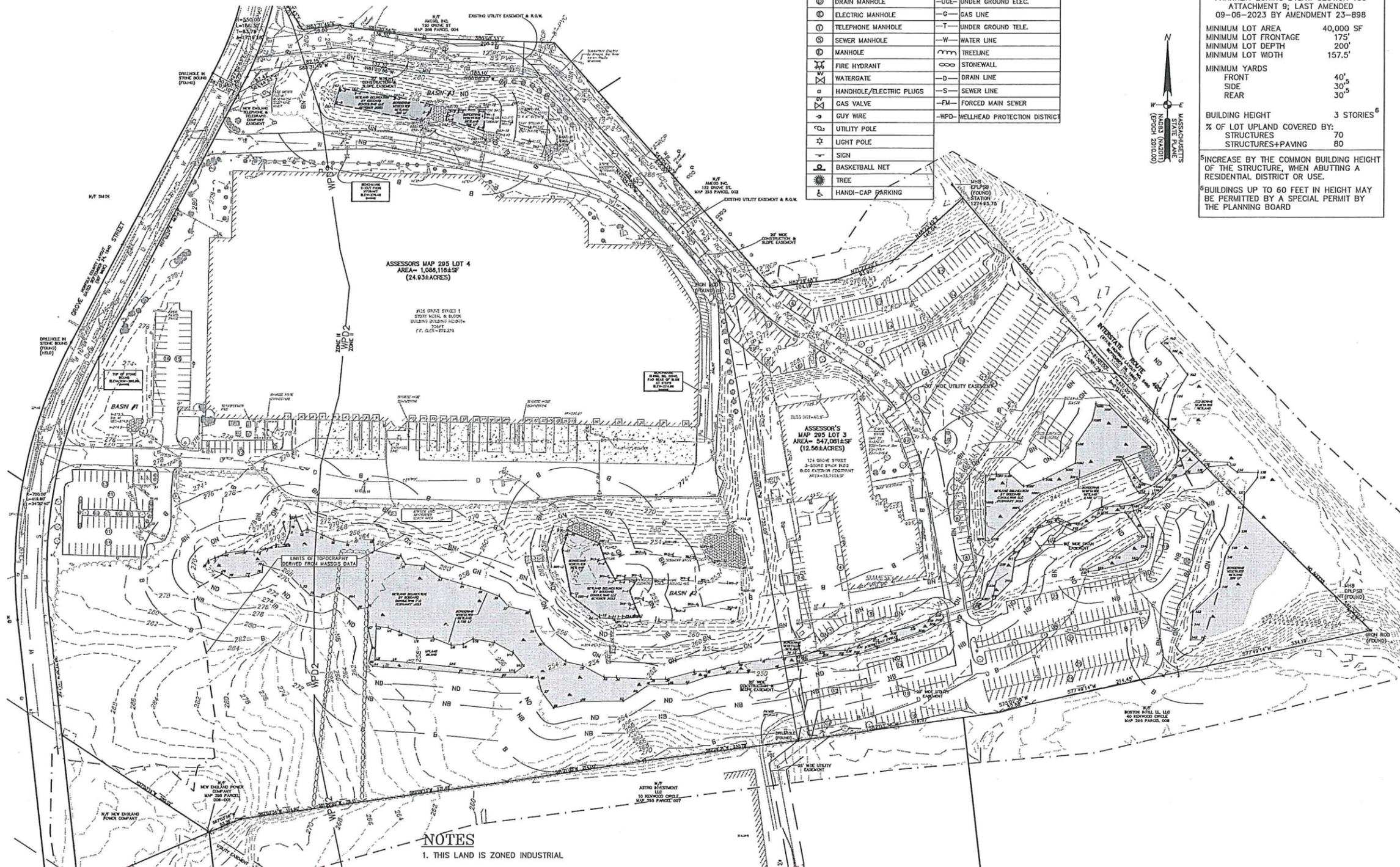
COVER

NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION

RECEIVED
2024 NOV 12 A 10:28
TOWN OF FRANKLIN
TOWN CLERK

Guerriere & Halnon, Inc.
ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gandhengineering.com



LEGEND

⊠	CATCH BASIN	-OW-	OVERHEAD WIRE
⊙	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊕	ELECTRIC MANHOLE	-G-	GAS LINE
⊖	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊗	SEWER MANHOLE	-W-	WATER LINE
⊘	MANHOLE	-T-	TREELINE
⊙	FIRE HYDRANT	⊞	STONEWALL
⊙	WATERGATE	-D-	DRAIN LINE
⊙	HANDHOLE/ELECTRIC PLUGS	-S-	SEWER LINE
⊙	GAS VALVE	-FM-	FORCED MAIN SEWER
⊙	GUY WIRE	-WPD-	WELLHEAD PROTECTION DISTRICT
⊙	UTILITY POLE		
⊙	LIGHT POLE		
⊙	SIGN		
⊙	BASKETBALL NET		
⊙	TREE		
⊙	HANDI-CAP PARKING		

INDUSTRIAL
FRANKLIN ZONING BYLAW SECTION 185
ATTACHMENT 9; LAST AMENDED
09-06-2023 BY AMENDMENT 23-898

MINIMUM LOT AREA	40,000 SF
MINIMUM LOT FRONTAGE	175'
MINIMUM LOT DEPTH	200'
MINIMUM LOT WIDTH	157.5'

MINIMUM YARDS

FRONT	40'
SIDE	30.5'
REAR	30'

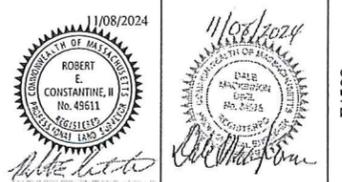
BUILDING HEIGHT 3 STORIES⁶

% OF LOT UPLAND COVERED BY:

STRUCTURES	70
STRUCTURES+PAVING	80

⁵ INCREASE BY THE COMMON BUILDING HEIGHT OF THE STRUCTURE, WHEN ABUTTING A RESIDENTIAL DISTRICT OR USE.

⁶ BUILDINGS UP TO 60 FEET IN HEIGHT MAY BE PERMITTED BY A SPECIAL PERMIT BY THE PLANNING BOARD



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FRANKLIN PLANNING BOARD

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OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

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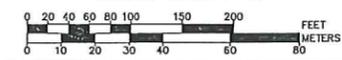
**124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS**

**EXISTING
CONDITIONS**

NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION

GRAPHIC SCALE: 1"=80'



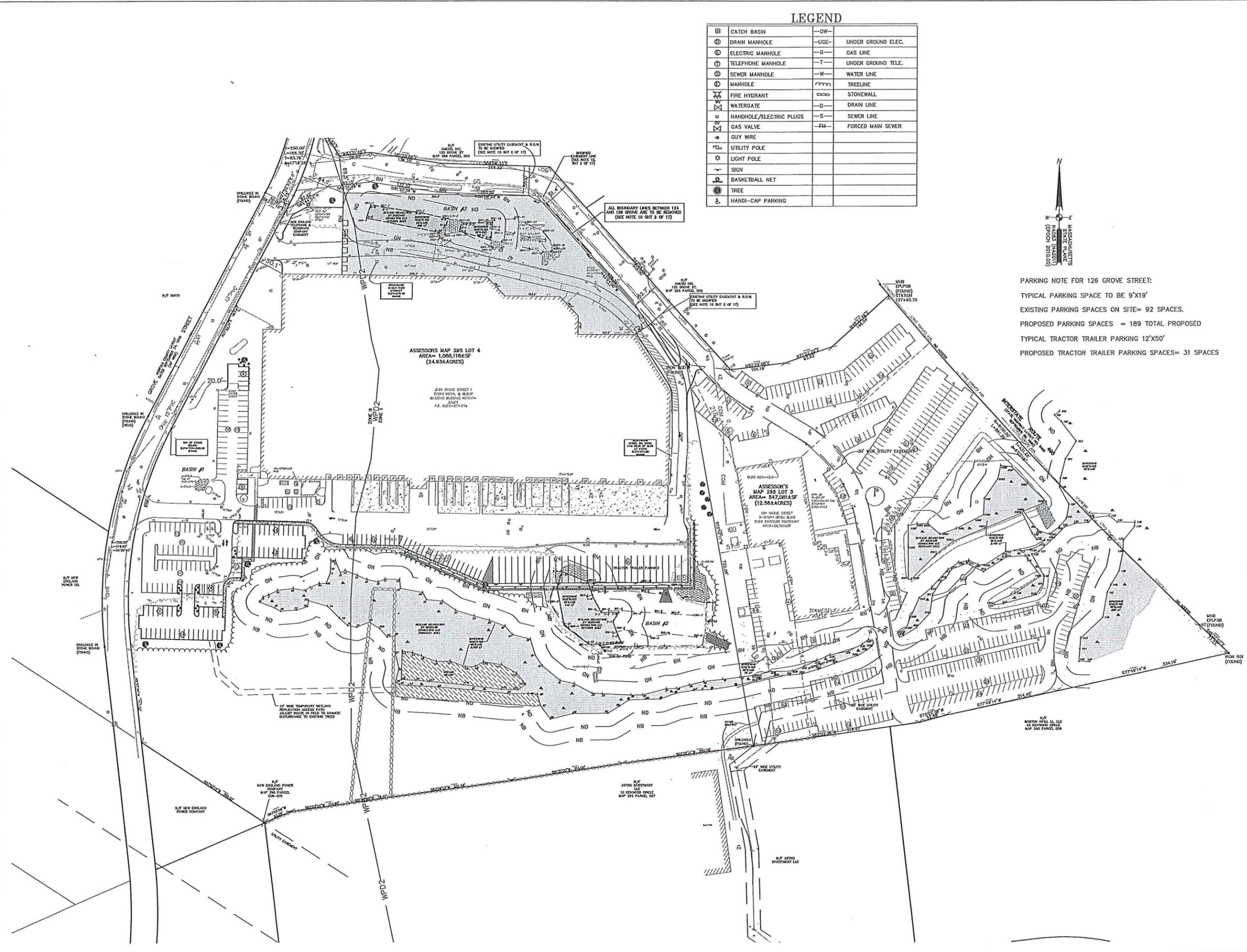
Guerriere & Halnon, Inc.
ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gandhengineering.com

NOTES

1. THIS LAND IS ZONED INDUSTRIAL.
2. THIS SITE IS NOT LOCATED FLOOD HAZARD ZONE PER FEMA FLOOD MAP 25021C0308E, EFFECTIVE DATE 7/17/2012.
3. THE WETLANDS WERE FLAGGED BY GODDARD CONSULTING IN FEBRUARY 2023, LOCATED BY GUERRIERE AND HALNON, INC.
4. REFER TO FRANKLIN ASSESSORS MAP 295 LOTS 3 AND 4.
5. A PORTION OF THIS SITE IS LOCATED IN A WELLHEAD PROTECTION AREA ZONE II DISTRICT.
6. ALL REFERENCED DEEDS ARE ON RECORD AT THE NORFOLK REGISTRY OF DEEDS.
7. THIS SITE IS NOT LOCATED WITHIN A NATURAL HERITAGE AND ENDANGERED SPECIES PROGRAM AREA.
8. ELEVATIONS ARE BASED ON HORIZONTAL DATUM:NAD83; VERTICAL DATUM: NAVD88.
9. THE EXISTING FEATURES DEPICTED HEREON ARE THE RESULT OF AN ON GROUND DATA COLLECTION SURVEY CONDUCTED BY GUERRIERE & HALNON, INC BETWEEN FEBRUARY 8, 2023 AND FEBRUARY 12, 2024 ALONG WITH RECORD DATA OBTAINED DURING PRIOR LAND TITLE SURVEYS CONDUCTED BY THIS FIRM.
10. AN ANR PLAN DEPICTING THE REMOVAL OF THE BOUNDARY LINE BETWEEN 124 AND 126 GROVE STREET AND THE ADJUSTMENT OF THE UTILITY EASEMENT AND R.O.W. FOR THE BENEFIT OF THE AMEGO, INC PROPERTY SHALL BE FILED AND ENDORSED BY THE PLANNING BOARD PRIOR TO THE ISSUANCE OF A BUILDING PERMIT.
11. TOTAL LAND AREA AFTER COMBINING 37.49±AC.

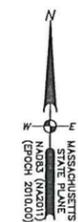
TESTING NOTE

SEE REPORT ENTITLED "GEOTECHNICAL ENGINEERING REPORT PROPOSED WAREHOUSE ADDITION 126 GROVE STREET FRANKLIN, MA." BY NORTHEAST GEOTECHNICAL, INC. DATED AUGUST 22, 2022 FOR TESTING DATA AND LOCATIONS.

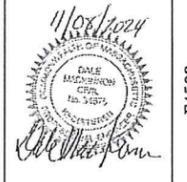
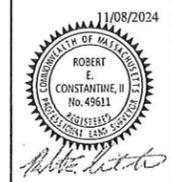


LEGEND

⊞	CATCH BASIN	-DW-	
⊕	DRAIN MANHOLE	-UC-	UNDER GROUND ELEC.
⊙	ELECTRIC MANHOLE	-G-	GAS LINE
⊖	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊗	SEWER MANHOLE	-W-	WATER LINE
⊘	MANHOLE	m	TREELINE
⊕	FIRE HYDRANT	∞	STONEWALL
⊖	WATERGATE	-D-	DRAIN LINE
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⊖	GAS VALVE	-FM-	FORCED MAIN SEWER
→	GUY WIRE		
⊕	UTILITY POLE		
☆	LIGHT POLE		
⊖	SIGN		
⊖	BASKETBALL NET		
⊖	TREE		
⊖	HAND-CAP PARKING		



PARKING NOTE FOR 126 GROVE STREET:
 TYPICAL PARKING SPACE TO BE 9'X19'
 EXISTING PARKING SPACES ON SITE= 92 SPACES.
 PROPOSED PARKING SPACES = 189 TOTAL PROPOSED
 TYPICAL TRACTOR TRAILER PARKING 12'X50'
 PROPOSED TRACTOR TRAILER PARKING SPACES= 31 SPACES



F4593

APPROVED DATE: _____
 FRANKLIN PLANNING BOARD

 BEING A MAJORITY

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OWNER

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 NEAG REAL ESTATE LLC
 126 GROVE ST
 FRANKLIN, MA
 DEED BOOK 41715 PAGE 121
 PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

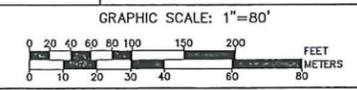
A.M. 295 LOT 4
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 126 GROVE STREET
 FRANKLIN, MA 02038
 DEED BOOK 6353 PAGE 200
 DEED BOOK 6878 PAGE 112
 PLAN No. 238 OF 1984 PLAN Bk. 309
 PLAN No. 1655 OF 1985 PLAN Bk. 330

**124/ 126 GROVE STREET
 BUILDING EXPANSION
 SITE PLAN MODIFICATION
 FRANKLIN MASSACHUSETTS**

**SITE PLAN
 OVERVIEW**

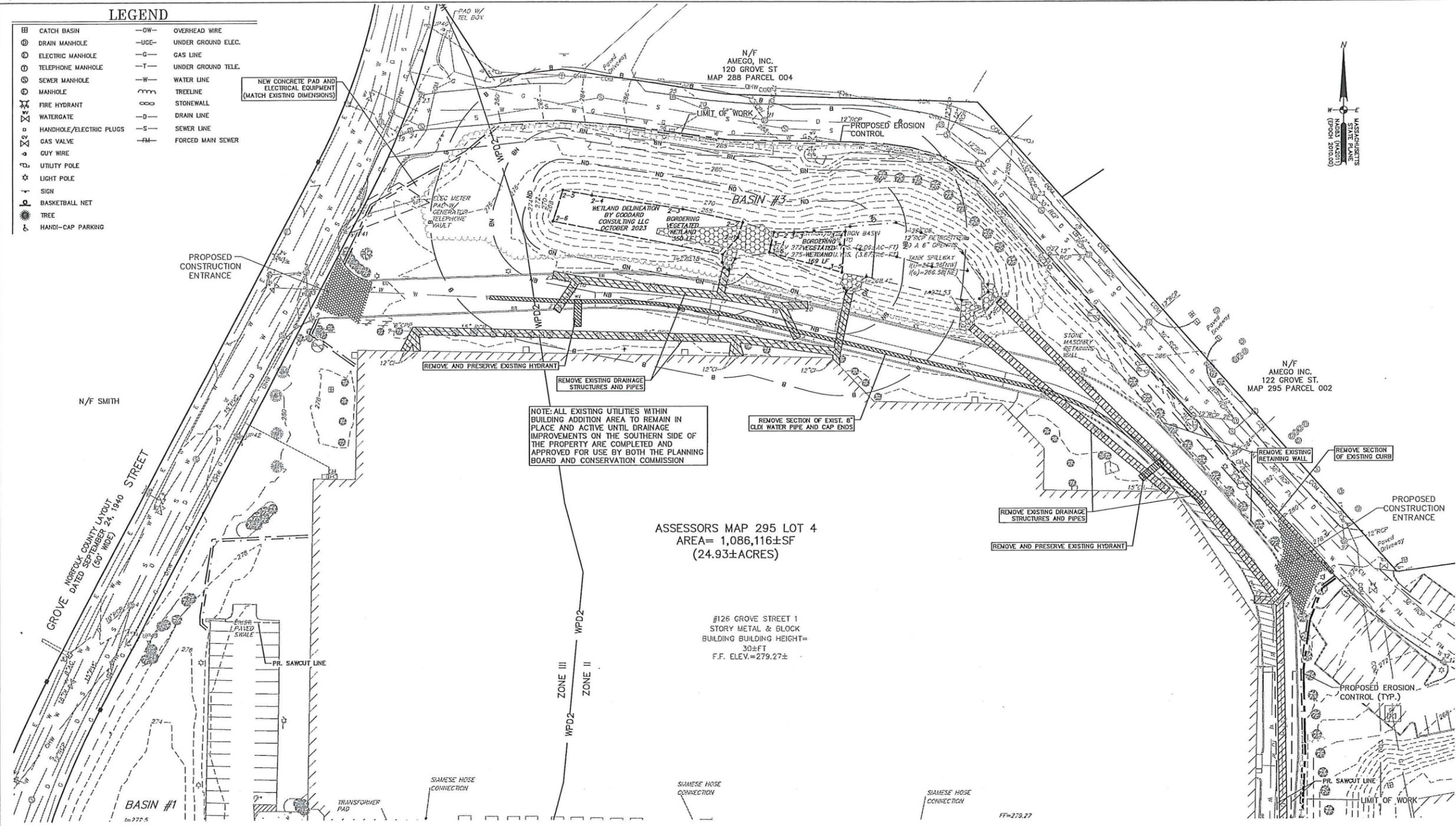
NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION



Guerriere & Halnon, Inc.
 ENGINEERING & LAND SURVEYING
 55 WEST CENTRAL ST. PH. (508) 528-3221
 FRANKLIN, MA 02038 FX. (508) 528-7921
 www.gandengineering.com

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11/08/2024

11/08/2024

ROBERT E. CONSTANTINE, II
No. 45611
REGISTERED PROFESSIONAL LAND SURVEYOR

DALE M. MASON
No. 34275
REGISTERED PROFESSIONAL LAND SURVEYOR

F4593

APPROVED DATE:
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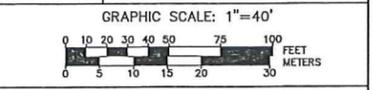
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124/ 126 GROVE STREET
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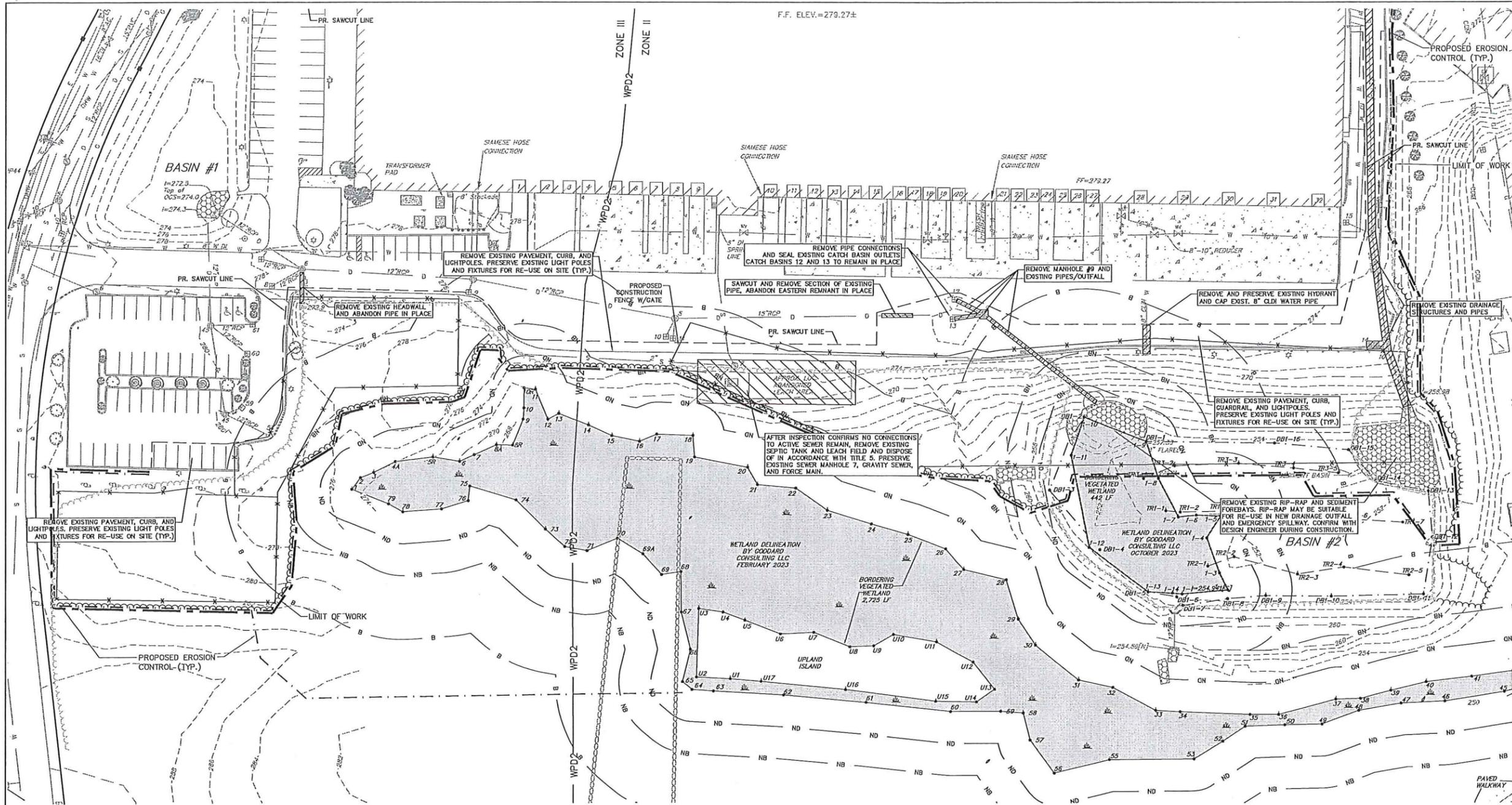
EROSION CONTROL
& DEMOLITION PLAN
NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION



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FRANKLIN, MA 02038 FX. (508) 528-7921
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F.F. ELEV.=279.27±



F4593

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124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS

EROSION CONTROL & DEMOLITION PLAN

NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION

GRAPHIC SCALE: 1"=40'



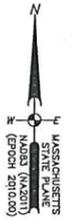
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www.gandhengineering.com

DEBRIS NOTE:

- PRIOR TO ANY WORK COMMENCING THE PROPERTY, THE OWNER WILL LIMIT CONSTRUCTION DEBRIS AND MATERIALS ON THE SITE. IN THE EVENT THAT DEBRIS IS CARRIED ONTO ANY PUBLIC WAY, THE OWNER/APPLICANT AND HIS ASSIGNS SHALL BE RESPONSIBLE FOR ALL CLEANUP OF THE ROADWAY. ALL CLEANUPS SHALL OCCUR WITHIN 24 HOURS AFTER FIRST WRITTEN NOTIFICATION TO THE OWNER/APPLICANT BY THE BOARD OR ITS DESIGNEE.

EROSION CONTROL AND DRAINAGE CONSTRUCTION PHASING

- a. A NPDES NOI SHALL BE FILED WITH THE EPA.
- b. RECORD ORDER OF CONDITIONS - THE SITE SUPERINTENDENT SHALL BE AWARE OF ALL THE CONDITIONS CONTAINED WITHIN THE ORDER INCLUDING INSPECTION SCHEDULES
- c. INSTALL DEP FILE # SIGN PRIOR TO COMMENCEMENT OF WORK.
- d. PRIOR TO ANY WORK ON THE SITE INCLUDING TREE/BRUSH CLEARING, THE APPROVED LIMIT OF CLEARING AS WELL AS THE LOCATION OF THE PROPOSED EROSION CONTROL DEVICES (SUCH AS MULCH SOCKS) MUST BE STAKED ON THE GROUND UNDER THE DIRECTION OF A MASSACHUSETTS REGISTERED PROFESSIONAL LAND SURVEYOR.
- e. INSTALL EROSION CONTROL BARRIERS AND TEMPORARY CONSTRUCTION ENTRANCES AT LOCATIONS DEPICTED ON THE PLANS.
- f. EROSION CONTROL TO BE INSPECTED BY EITHER THE DESIGN ENGINEER (OR AGENT) OR AN EROSION CONTROL MONITOR APPOINTED BY THE TOWN OF FRANKLIN.
- g. PERFORM TREE/BRUSH REMOVAL.
- h. STRIP OFF TOP AND SUBSOIL STOCKPILE MATERIAL TO BE REUSED AWAY FROM THE WETLAND, REMOVE EXCESS MATERIAL FROM THE SITE. INSTALL AND MAINTAIN EROSION CONTROL BARRIER AROUND STOCKPILE.
- i. ROUGH GRADE SITE, MAINTAINING TEMPORARY LOW AREAS/SEDIMENT TRAPS FOR SEDIMENT ACCUMULATION AND AWAY FROM THE WETLANDS AND PREVENT SEDIMENTATION FROM MIGRATING FROM THE SITE.
- j. CONSTRUCT RETAINING WALL, DRAINAGE OUTFALLS, UNDERDRAINS, STORMWATER BASINS, AND CULTCET CHAMBER SYSTEMS/SUBSURFACE DETENTION SYSTEM. PROTECT ALL STORMWATER INLETS, BASINS, AND CHAMBERS WITH ADDITIONAL EROSION CONTROL AS NECESSARY TO PREVENT SILTATION DURING CONSTRUCTION. STABILIZE SIDE SLOPES WITH LOAM, SEED AND MULCH.
- k. INSTALL UNDERGROUND UTILITIES, INCLUDING MANHOLES AND CATCH BASINS; PROTECT ALL OPEN DRAINAGE STRUCTURES WITH EROSION/SILTATION CONTROL DEVICES.
- l. BEGIN CONSTRUCTION OF BUILDING FOUNDATION.
- m. INSTALL BINDER COURSE OF BITUMINOUS ASPHALT.
- n. COMPLETE CONSTRUCTION OF BUILDING.
- o. INSTALL WEARING COURSE OF ASPHALT, AND STRIPING (WHERE REQUIRED).
- p. MAINTAIN ALL EROSION CONTROL DEVICES UNTIL SITE IS STABILIZED AND A CERTIFICATE OF COMPLIANCE IS ISSUED BY THE CONSERVATION COMMISSION.
- q. THE CONTRACTOR SHALL BE RESPONSIBLE TO SCHEDULE ANY REQUIRED INSPECTIONS OF HIS/HER WORK.



LEGEND

⊠	CATCH BASIN	-OW-	OVERHEAD WIRE
⊙	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊙	ELECTRIC MANHOLE	-G-	GAS LINE
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INDUSTRIAL			
FRANKLIN ZONING BYLAW SECTION 185			
ATTACHMENT 9, LAST AMENDED			
09-06-2023 BY AMENDMENT 23-898			
	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	40,000 SF	1,633,197 SF	1,633,197 SF
MINIMUM LOT FRONTAGE	175'	1249.98'	1249.98'
MINIMUM LOT DEPTH	200'	465.2'	465.2'
MINIMUM LOT WIDTH	157.5'	1218.6'	1218.6'
MINIMUM YARDS			
FRONT	40'	50.1'	50.1'
SIDE	30'5"	122.1'	51.4'
REAR	30'5"	30'	N/A
MAXIMUM BUILDING HT.			
STORIES	35	3	3
FEET	N/A	N/A	N/A
% OF LOT UPLAND COVERED BY:			
STRUCTURES	70	18.6%	23.9%
STRUCTURES+PAVING	80.3	44.5%	53.8%
TOTAL LOT AREA WITHIN THE WATER RESOURCE DISTRICT			1,228,359±SF
TOTAL LOT UPLAND WITHIN THE WATER RESOURCE DISTRICT			1,115,088±SF (90.8%)
TOTAL IMPERVIOUS COVERAGE WITHIN THE WATER RESOURCE DISTRICT			EXISTING 50.1%
			PROPOSED 59.1%

- 3 SEE DEFINITION OF 'UPLAND IN SECTION 185-3 & 185-36, IMPERVIOUS SURFACES, AND SECTION 185-40, WATER RESOURCE DISTRICT
- 5 INCREASE BY THE COMMON BUILDING HEIGHT OF THE STRUCTURE, WHEN ABUTTING A RESIDENTIAL USE.
- 6 BUILDINGS UP TO 60 FEET IN HEIGHT MAY BE PERMITTED BY A SPECIAL PERMIT FROM THE PLANNING BOARD

LEGEND			
☐	CATCH BASIN	-OW-	OVERHEAD WIRE
⊙	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
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⊙	GUY WIRE		
⊙	UTILITY POLE		
⊙	LIGHT POLE		
⊙	SIGN		
⊙	BASKETBALL NET		
⊙	TREE		
⊙	HANDI-CAP PARKING		

11/08/2024

ROBERT E. CONSTANTINE, II
No. 49611
REGISTERED PROFESSIONAL LAND SURVEYOR

11/08/2024

ELIAB B. BROWN
No. 25176
REGISTERED PROFESSIONAL LAND SURVEYOR

F4593

APPROVED DATE:

FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. IT IS THE RESPONSIBILITY OF THE UNDERGROUND UTILITY LOCATING EXCAVATION. THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS.G.L. CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
128 GROVE ST
FRANKLIN, MA
DEED BOOK 4175 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

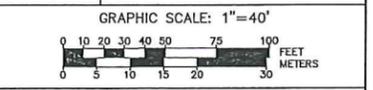
A.M. 295 LOT 4
KEY BOSTON, INC.
128 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6876 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
PLAN No. 1655 OF 1985 PLAN Bk. 330

124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS

PROPOSED SITE LAYOUT

NOVEMBER 5, 2024

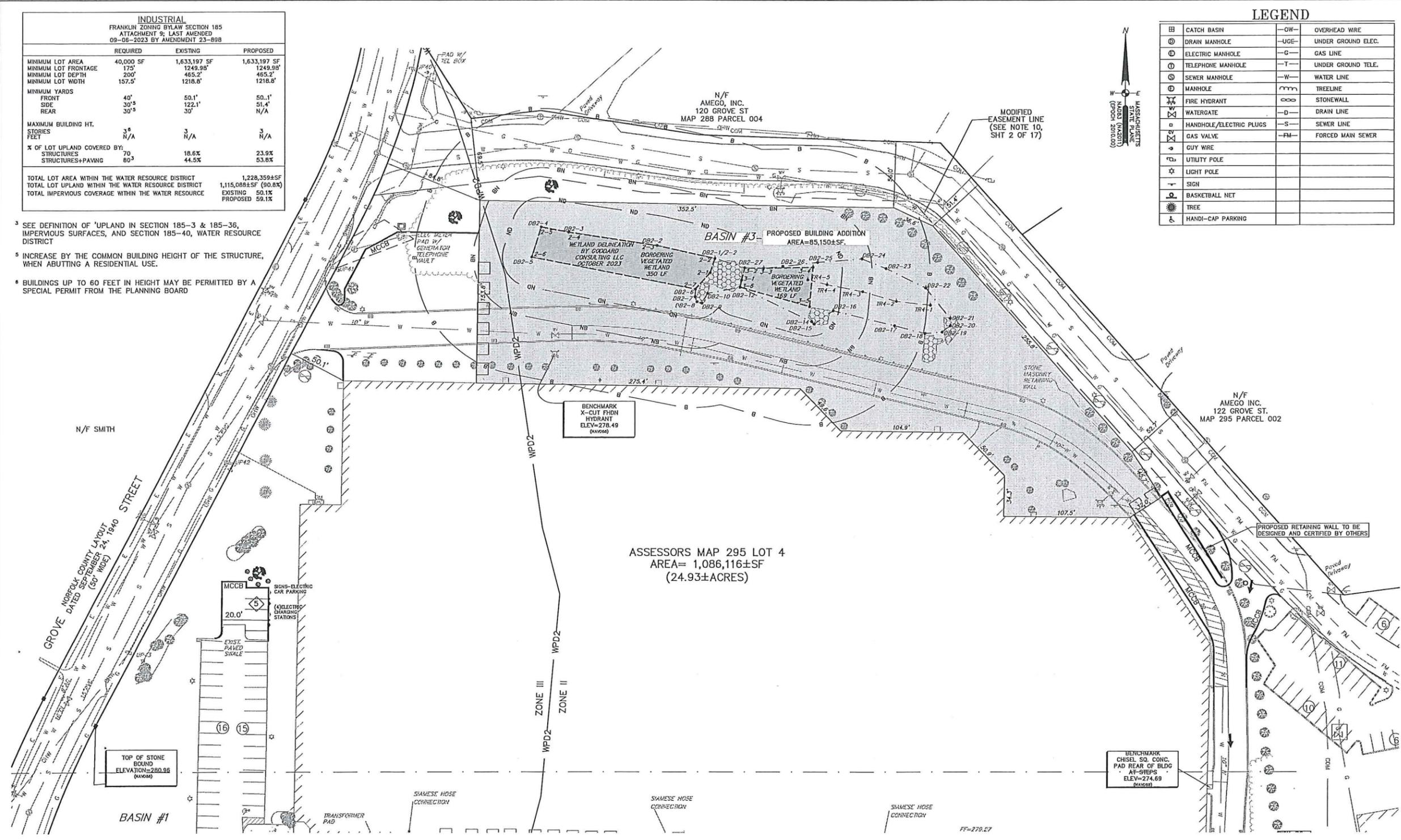
DATE	REVISION DESCRIPTION



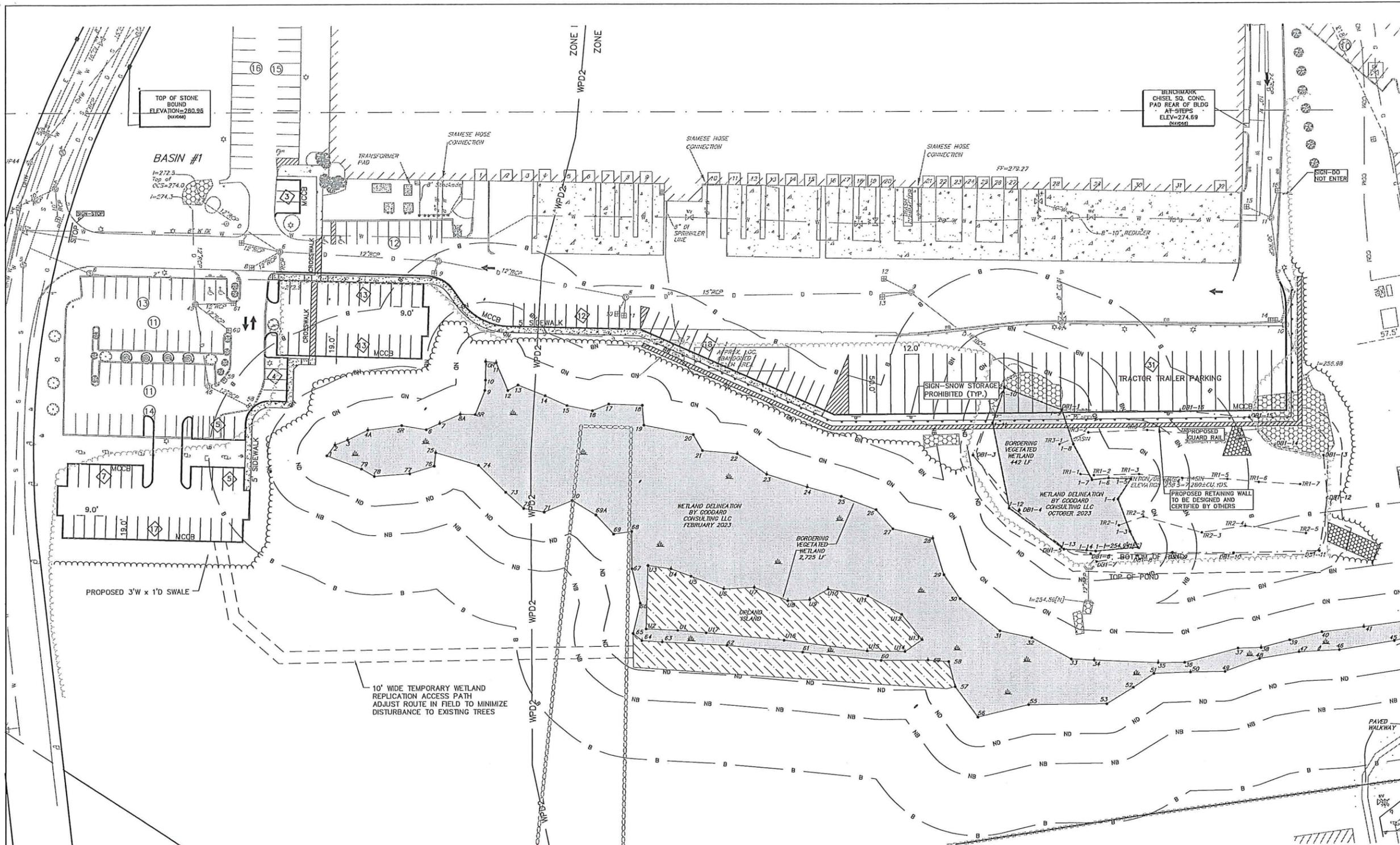
Guerriere & Halnon, Inc.

ENGINEERING & LAND SURVEYING

55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gandhengineering.com



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11/08/2024
 ROBERT E. CONSTANTINE, II
 No. 49511
 REGISTERED PROFESSIONAL LAND SURVEYOR

11/08/2024
 DALE BLANCHARD
 No. 34675
 REGISTERED PROFESSIONAL LAND SURVEYOR

F4593

APPROVED DATE:
 FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. DEVELOP A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. PRIOR TO EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DETERMINED. NATIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS.G.L. CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE[7233].

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER
 A.M. 295 LOT 003
 NEAG REAL ESTATE LLC
 126 GROVE ST
 FRANKLIN, MA
 DEED BOOK 41715 PAGE 121
 PLAN No. 253 OF 1989 PLAN Bk. 379

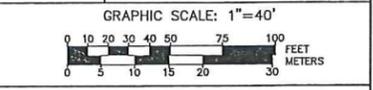
APPLICANT
 A.M. 295 LOT 4
 KEY BOSTON, INC.
 126 GROVE STREET
 FRANKLIN, MA 02038
 DEED BOOK 6353 PAGE 200
 DEED BOOK 6876 PAGE 112
 PLAN No. 238 OF 1984 PLAN Bk. 309
 PLAN No. 1655 OF 1985 PLAN Bk. 330

124/ 126 GROVE STREET
 BUILDING EXPANSION
 SITE PLAN MODIFICATION
 FRANKLIN MASSACHUSETTS

PROPOSED SITE LAYOUT

NOVEMBER 5, 2024

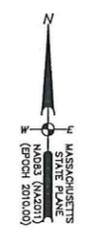
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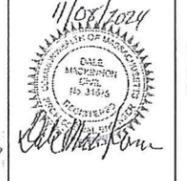
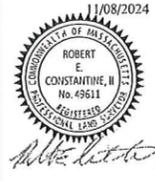
Guerriere & Halnon, Inc.
 ENGINEERING & LAND SURVEYING
 55 WEST CENTRAL ST. PH. (508) 528-3221
 FRANKLIN, MA 02038 FX. (508) 528-7921
 www.gandhengineering.com

LEGEND

⊠	CATCH BASIN	-OW-	OVERHEAD WIRE
⊙	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊙	ELECTRIC MANHOLE	-G-	GAS LINE
⊙	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊙	SEWER MANHOLE	-W-	WATER LINE
⊙	MANHOLE	---	TREELINE
⊙	FIRE HYDRANT	---	STONEWALL
⊙	WATERGATE	-D-	DRAIN LINE
⊙	HANDHOLE/ELECTRIC PLUGS	-S-	SEWER LINE
⊙	GAS VALVE	-FM-	FORCED MAIN SEWER
⊙	GUY WIRE		
⊙	UTILITY POLE		
⊙	LIGHT POLE		
⊙	SIGN		
⊙	BASKETBALL NET		
⊙	TREE		
⊙	HANDI-CAP PARKING		



LEGEND			
▣	CATCH BASIN	-OW-	OVERHEAD WIRE
⊙	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊙	ELECTRIC MANHOLE	-G-	GAS LINE
⊙	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊙	SEWER MANHOLE	-W-	WATER LINE
⊙	MANHOLE	---	TREELINE
⊙	FIRE HYDRANT	---	STONEWALL
⊙	WATERGATE	-D-	DRAIN LINE
⊙	HANDHOLE/ELECTRIC PLUGS	-S-	SEWER LINE
⊙	GAS VALVE	-FM-	FORCED MAIN SEWER
⊙	GUY WIRE		
⊙	UTILITY POLE		
⊙	LIGHT POLE		
⊙	SIGN		
⊙	BASKETBALL NET		
⊙	TREE		
⊙	HANDI-CAP PARKING		



F4593

APPROVED DATE: _____
 FRANKLIN PLANNING BOARD

 BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. THE LEVEL OR VIEW OF THE UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE. PRIOR TO ANY EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY DETERMINED AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY BE DISCOVERED IN ACCORDANCE WITH MASS.G.L. CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE[7233].

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OWNER

A.M. 295 LOT 003
 NEAG REAL ESTATE LLC
 126 GROVE ST
 FRANKLIN, MA
 DEED BOOK 41715 PAGE 121
 PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

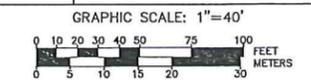
A.M. 295 LOT 4
 KEY BOSTON, INC.
 126 GROVE STREET
 FRANKLIN, MA 02038
 DEED BOOK 6353 PAGE 200
 DEED BOOK 6876 PAGE 112
 PLAN No. 238 OF 1984 PLAN Bk. 309
 PLAN No. 1655 OF 1985 PLAN Bk. 330

124/ 126 GROVE STREET
 BUILDING EXPANSION
 SITE PLAN MODIFICATION
 FRANKLIN MASSACHUSETTS

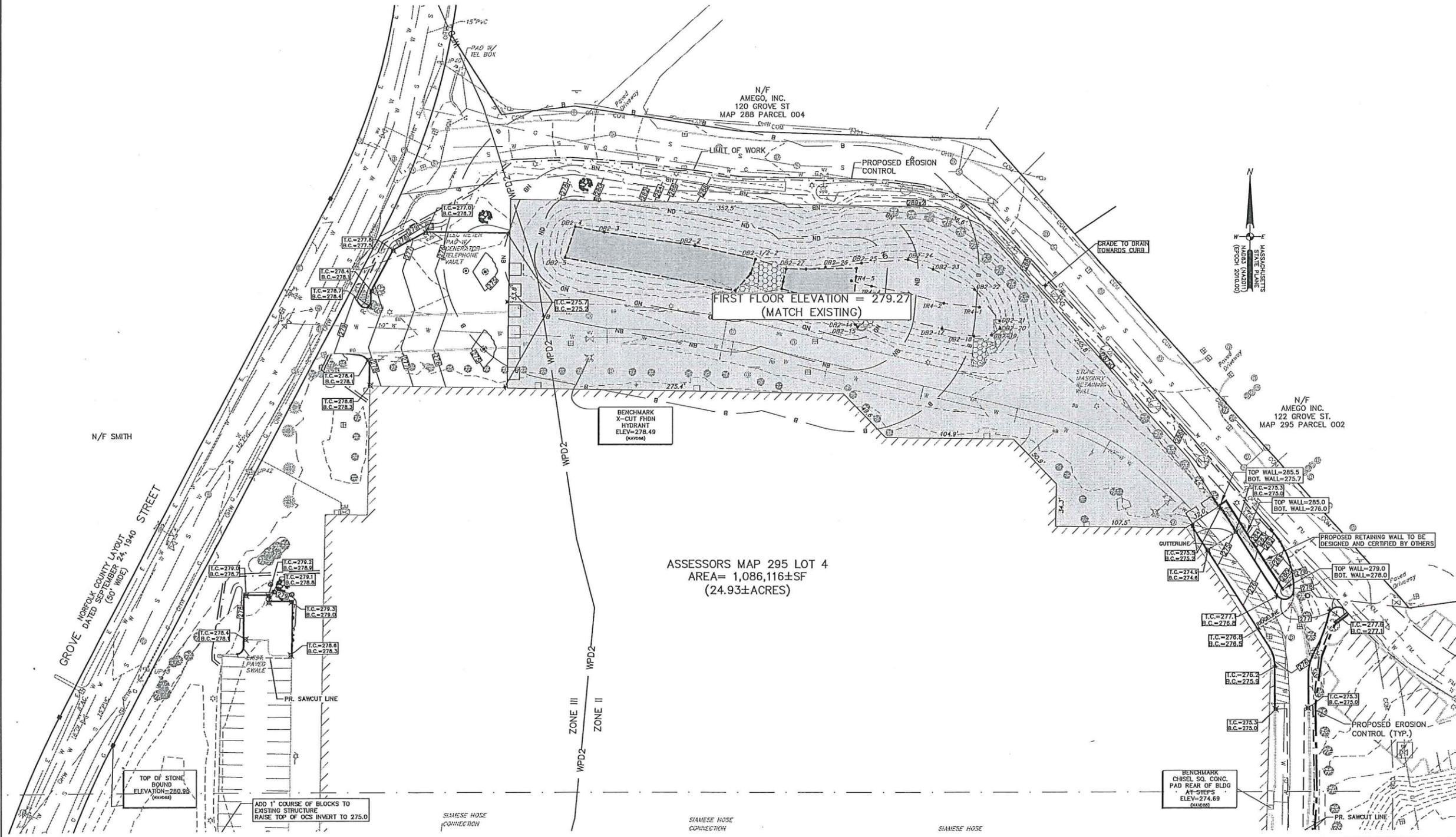
GRADING PLAN

NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION



Guerriere & Halnon, Inc.
 ENGINEERING & LAND SURVEYING
 55 WEST CENTRAL ST. PH. (508) 528-3221
 FRANKLIN, MA 02038 FX. (508) 528-7921
 www.gondhengineering.com



ASSESSORS MAP 295 LOT 4
 AREA= 1,086,116±SF
 (24.93±ACRES)

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STORM DRAINAGE NOTES

- ALL DRAINAGE PIPES TO BE 12" RCP UNLESS OTHERWISE NOTED. WHERE LESS THAN 3.5' OF COVER IS PROVIDED, CLASS V RCP SHALL BE USED.
 - EXISTING DRAINAGE INFRASTRUCTURE WHICH DRAINS TO EXISTING BASIN #3, AS WELL AS THE STRUCTURES AND PIPES CONVEYING EXCESS STORMWATER FROM BASIN 3 TO BASIN 2, SHALL REMAIN IN PLACE AND ACTIVE UNTIL THE PROPOSED SUBSURFACE DETENTION SYSTEM IS CONSTRUCTED AND READY TO RECEIVE FLOWS FROM DMH 24-14.
- SPECIAL CONSIDERATION FOR INLET CONTROLS FOR EROSION COLLECTION BEFORE ENTERING DRAINAGE SYSTEM:
- INSTALL SILT SACKS.
 - INSTALL EROSION CONTROL BARRIER AROUND CATCH BASIN, COMPOST SOCK OR EQUAL.
 - INSTALL FILTER FABRIC ON ALL DRAIN MANHOLE OUTLETS DISCHARGING TO INFILTRATION BASINS AND SUBSURFACE DETENTION SYSTEM.
 - INSPECTIONS BEFORE AND AFTER STORM EVENTS ARE REQUIRED TO INSURE ADEQUACY OF EROSION CONTROL MEASURES.
 - CONTRACTOR & ARCHITECT ARE TO VERIFY SITE UTILITIES PRIOR TO DESIGN & CONSTRUCTION.
 - ALL PIPE GASKETS SHALL BE PRE-MOLDED NEOPRENE O-RING TYPE (300-11 B.(2)(A)).

SITE DRAINAGE INSTALLATIONS NOTES

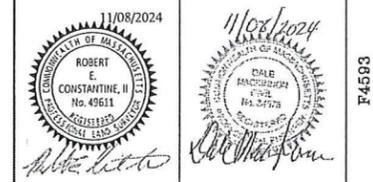
- EACH SUBSURFACE DETENTION PIPE WILL BE INSTALLED SEPARATELY TO DESIGN ELEVATION.
- INSTALL CONNECTIONS TO CATCH BASINS, WATER QUALITY MANHOLE (WQMH) AND DRAIN MANHOLES.
- EXCAVATE AND INSTALL SUBSURFACE UNIT, BACKFILL W/ STONE MAINTAINING 18"-24" COVER AND AS-BUILT EACH SECTION.

UTILITY NOTES

- ALL UTILITIES SHALL BE CONSTRUCTED AND TESTED ACCORDING TO STATE AND LOCAL REGULATIONS.
- ALL WATER AND UTILITIES TO COMPLY WITH THE TOWN OF FRANKLIN DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS. WHERE CONFLICTS EXIST, THE TOWN'S SPECIFICATIONS SHALL CONTROL.
- ALL WATER WORK WITHIN THE STREET OR SIDEWALK MUST UTILIZE FLOWABLE FILL TO THE SATISFACTION OF THE FRANKLIN DEPARTMENT OF PUBLIC WORKS.
- RELOCATION OF EXISTING TRANSFORMER AND TELECOM EQUIPMENT TO BE COORDINATED WITH UTILITY PROVIDERS.
- ALL UTILITIES SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE SHOWN ON THIS PLAN.

LEGEND

⊞	CATCH BASIN	-OW-	OVERHEAD WIRE
⊕	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊙	ELECTRIC MANHOLE	-G-	GAS LINE
⊖	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊗	SEWER MANHOLE	-W-	WATER LINE
⊘	MANHOLE	mm	TREELINE
⊙	FIRE HYDRANT	oo	STONEWALL
⊖	WATERGATE	-D-	DRAIN LINE
⊖	HANDHOLE/ELECTRIC PLUGS	-S-	SEWER LINE
⊖	GAS VALVE	-FM-	FORCED MAIN SEWER
⊖	GUY WIRE		
⊖	UTILITY POLE		
⊖	LIGHT POLE		
⊖	SIGN		
⊖	BASKETBALL NET		
⊖	TREE		
⊖	HANDI-CAP PARKING		



APPROVED DATE: _____
 FRANKLIN PLANNING BOARD

 BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. DEVELOP A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. PRIOR TO ANY EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASSACHUSETTS CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

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OWNER
 A.M. 295 LOT 003
 NEAG REAL ESTATE LLC
 126 GROVE ST
 FRANKLIN, MA
 DEED BOOK 41715 PAGE 121
 PLAN No. 253 OF 1989 PLAN Bk. 379

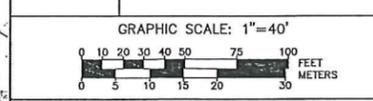
APPLICANT
 A.M. 295 LOT 4
 KEY BOSTON, INC.
 126 GROVE STREET
 FRANKLIN, MA 02038
 DEED BOOK 6353 PAGE 200
 DEED BOOK 6876 PAGE 112
 PLAN No. 238 OF 1984 PLAN Bk. 309
 PLAN No. 1655 OF 1985 PLAN Bk. 330

**124/ 126 GROVE STREET
 BUILDING EXPANSION
 SITE PLAN MODIFICATION
 FRANKLIN MASSACHUSETTS**

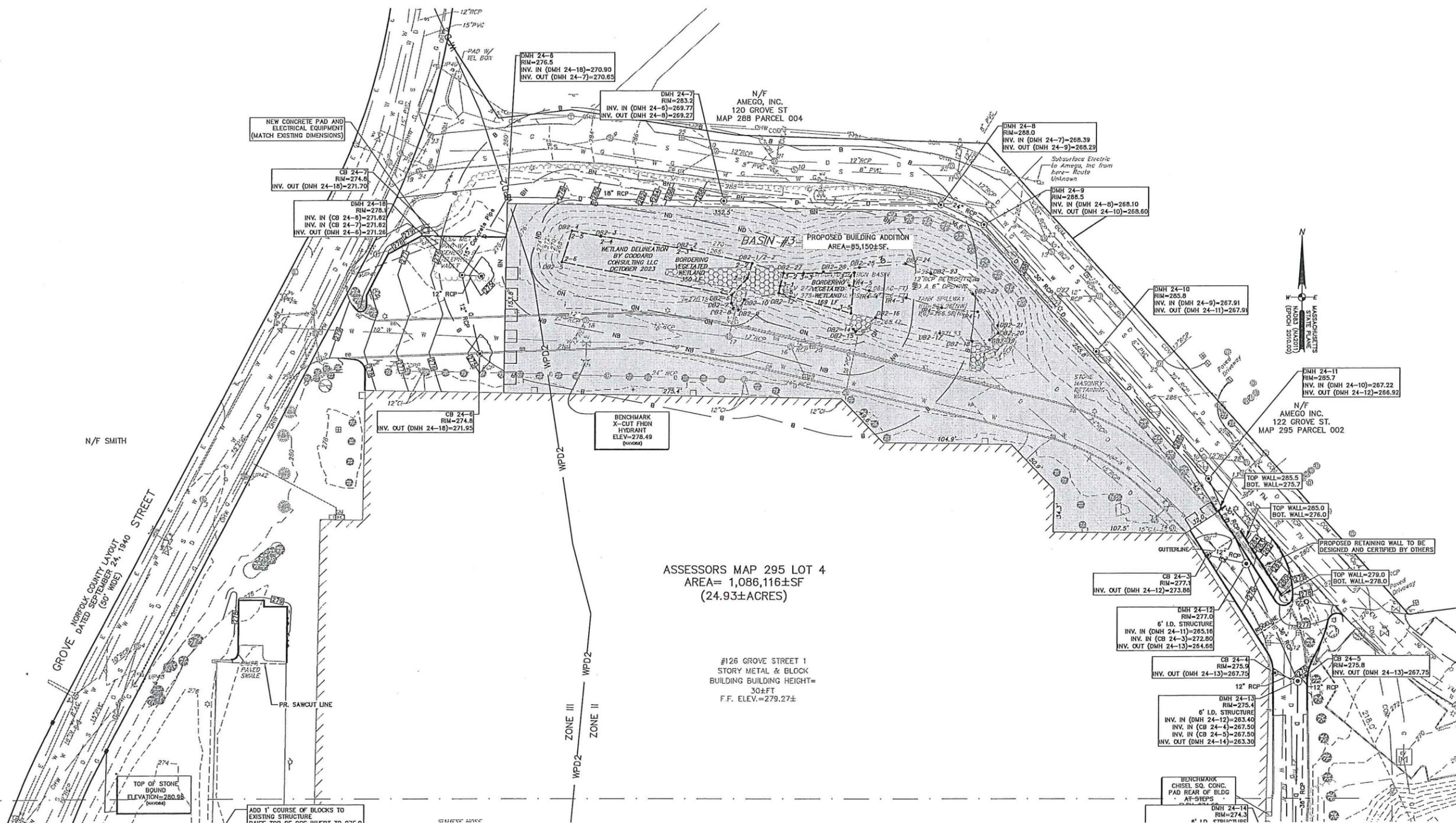
UTILITY & DRAINAGE PLAN

DATE: OCTOBER 31, 2024

DATE	REVISION DESCRIPTION



Guerriere & Halnon, Inc.
 ENGINEERING & LAND SURVEYING
 55 WEST CENTRAL ST. PH. (508) 528-3221
 FRANKLIN, MA 02038 FX. (508) 528-7921
 www.gondengineering.com



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STORM DRAINAGE NOTES

- ALL DRAINAGE PIPES TO BE 12" RCP UNLESS OTHERWISE NOTED. WHERE LESS THAN 3.5' OF COVER IS PROVIDED, CLASS V RCP SHALL BE USED.
- SPECIAL CONSIDERATION FOR INLET CONTROLS FOR EROSION COLLECTION BEFORE CONSTRUCTING DRAINAGE SYSTEM:
 - INSTALL SILT SACKS.
 - INSTALL EROSION CONTROL BARRIER AROUND CATCH BASIN, COMPOST SOCK OR EQUAL.
 - INSTALL FILTER FABRIC ON ALL DRAIN MANHOLE OUTLETS DISCHARGING TO INFILTRATION BASINS AND SUBSURFACE DETENTION SYSTEM.
 - INSPECTIONS BEFORE AND AFTER STORM EVENTS ARE REQUIRED TO INSURE ADEQUACY OF EROSION CONTROL MEASURES.
 - CONTRACTOR & ARCHITECT ARE TO VERIFY SITE UTILITIES PRIOR TO DESIGN & CONSTRUCTION.
 - ALL PIPE GASKETS SHALL BE PRE-MOLDED NEOPRENE O-RING TYPE (300-11 B.(2)(A)).

SITE DRAINAGE INSTALLATIONS NOTES

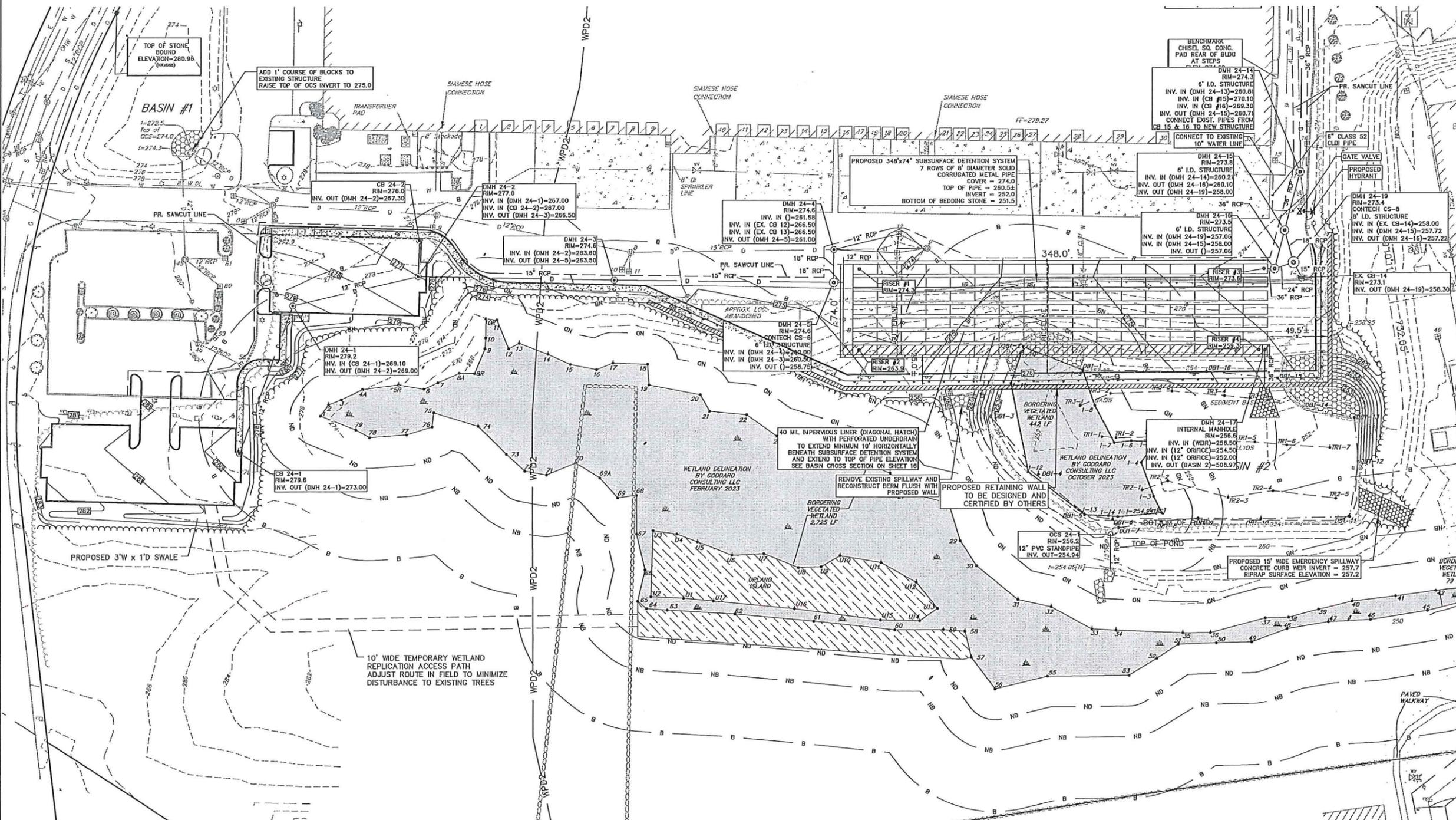
- EACH SUBSURFACE DETENTION PIPE WILL BE INSTALLED SEPARATELY TO DESIGN ELEVATION.
- INSTALL CONNECTIONS TO CATCH BASINS, WATER QUALITY MANHOLE (WQMH) AND DRAIN MANHOLES.

UTILITY NOTES

- ALL UTILITIES SHALL BE CONSTRUCTED AND TESTED ACCORDING TO STATE AND LOCAL REGULATIONS.
- ALL WATER AND UTILITIES TO COMPLY WITH THE TOWN OF FRANKLIN DEPARTMENT OF PUBLIC WORKS STANDARD DETAILS. WHERE CONFLICTS EXIST, THE TOWN'S SPECIFICATIONS SHALL CONTROL.
- ALL WATER WORK WITHIN THE STREET OR SIDEWALK MUST UTILIZE FLOWABLE FILL TO THE SATISFACTION OF THE FRANKLIN DEPARTMENT OF PUBLIC WORKS.
- ALL UTILITIES SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE SHOWN ON THIS PLAN.

LEGEND

⊠	CATCH BASIN	-OW-	OVERHEAD WIRE
⊕	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊖	ELECTRIC MANHOLE	-G-	GAS LINE
⊙	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊗	SEWER MANHOLE	-W-	WATER LINE
⊘	MANHOLE	-M-	TREELINE
⊕	FIRE HYDRANT	OO	STONEWALL
⊖	WATERGATE	-D-	DRAIN LINE
⊙	HANDHOLE/ELECTRIC PLUGS	-S-	SEWER LINE
⊖	GAS VALVE	-FM-	FORCED MAIN SEWER
⊕	GUY WIRE		
⊖	UTILITY POLE		
⊕	LIGHT POLE		
⊖	SIGN		
⊕	BASKETBALL NET		
⊖	TREE		
⊕	HAND-CAP PARKING		



11/08/2024

ROBERT E. CONSTANTINE, II
No. 45611
MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

11/08/2024

DANE MANCINI
No. 31545
MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

F4593

APPROVED DATE:

FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. DEVELOP A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. ANY EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS. GEN. LAWS CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIGSAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

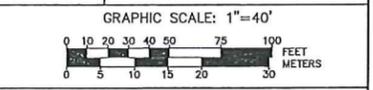
A.M. 295 LOT 4
KEY BOSTON, INC.
126 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6876 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
PLAN No. 1655 OF 1985 PLAN Bk. 330

**124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS**

DRAINAGE PLAN

NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION



Guerriere & Halnon, Inc.

ENGINEERING & LAND SURVEYING

55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gondhengineering.com

G:\CD\Franklin\F4593\DWG\F4593-SITE.dwg, 11/08/2024 10:20:33 AM, [REDACTED]

BUFFER NOTE

AREA OF WETLAND TO BE FILLED = 7,842±SF.

SEE DETAIL SHEET 17 FOR ISOLATED VEGETATED WETLAND REPLICATION PLAN DATED OCTOBER 31, 2024 AND PREPARED BY GODDARD CONSULTING, LLC.

LEGEND

▣	CATCH BASIN	-OW-	OVERHEAD WIRE
⊖	DRAIN MANHOLE	-UGE-	UNDER GROUND ELEC.
⊕	ELECTRIC MANHOLE	-G-	GAS LINE
⊙	TELEPHONE MANHOLE	-T-	UNDER GROUND TELE.
⊗	SEWER MANHOLE	-W-	WATER LINE
⊘	MANHOLE	---	TREELINE
⊕	FIRE HYDRANT	---	STONEWALL
⊕	WATERGATE	-D-	DRAIN LINE
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⊕	GUY WIRE		
⊕	UTILITY POLE		
⊕	LIGHT POLE		
⊕	SIGN		
⊕	BASKETBALL NET		
⊕	TREE		
⊕	HAND-CAP PARKING		



11/08/2024

ROBERT E. CONSTANTINE, II
No. 49611

11/08/2024

DALE MARCHIONNI
No. 49611

Robert E. Constantine, II
Dale Marchionni

APPROVED DATE:

FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. IT IS THE VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. PRIOR TO EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY DETERMINED AND RELIABLY DEPICTED. CONTRACTORS (IN ACCORDANCE WITH MASS. REGS. 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

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OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

A.M. 295 LOT 4
KEY BOSTON, INC.
126 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6876 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
PLAN No. 1655 OF 1985 PLAN Bk. 330

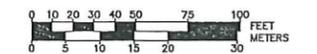
**124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS**

REPLICATION PLAN

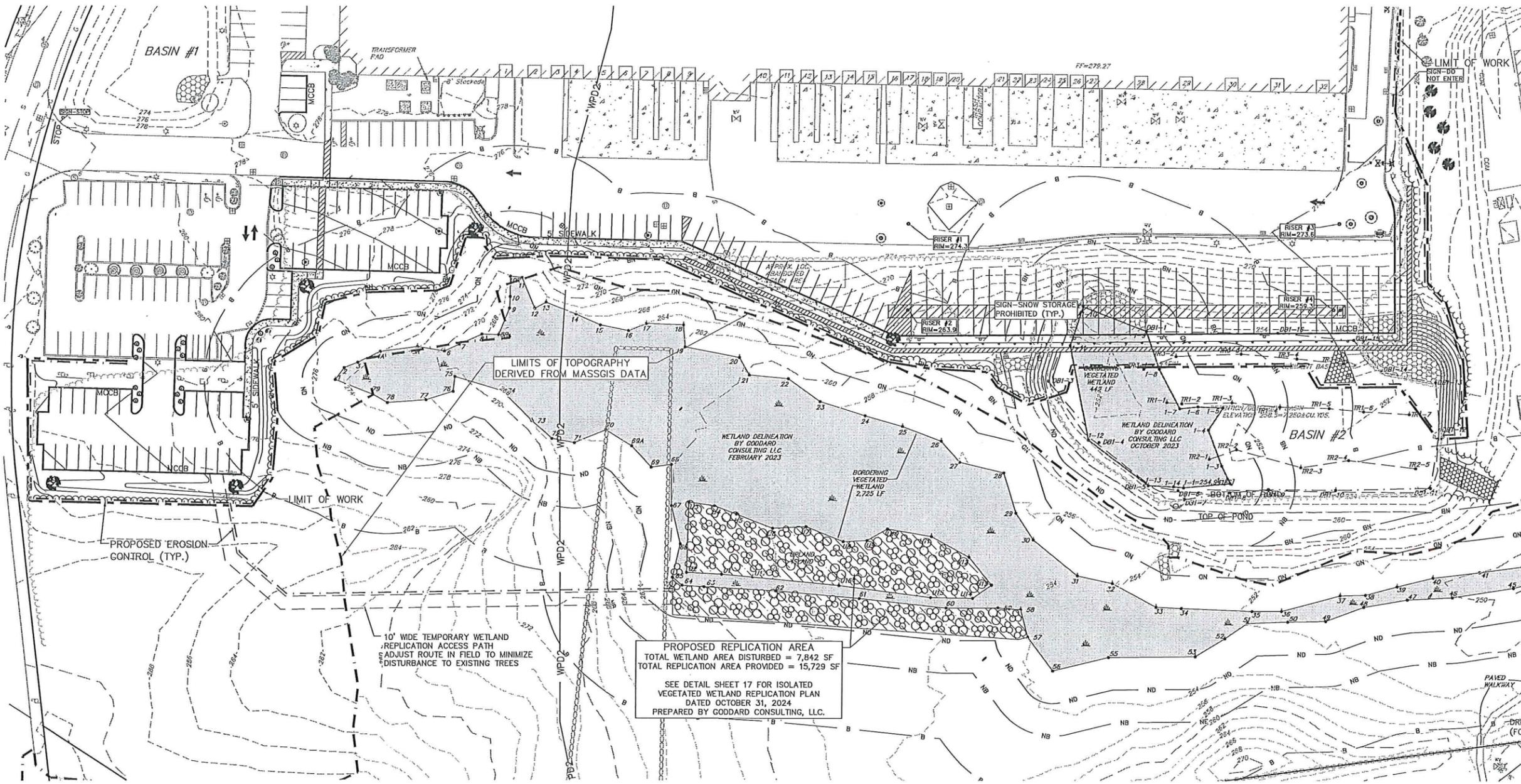
NOVEMBER 5, 2024

DATE	REVISION DESCRIPTION

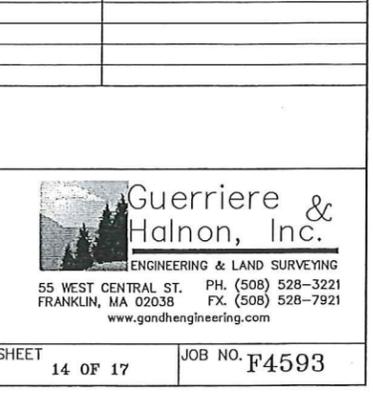
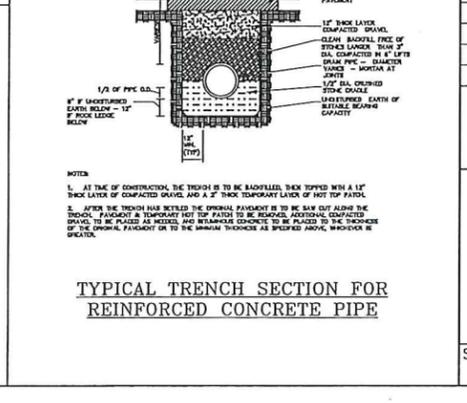
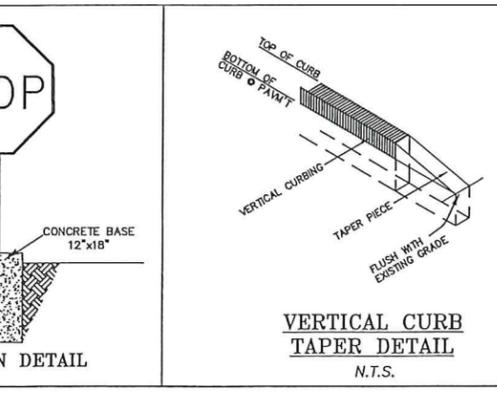
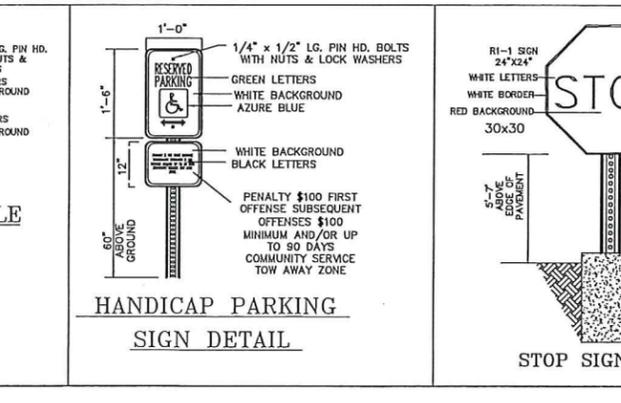
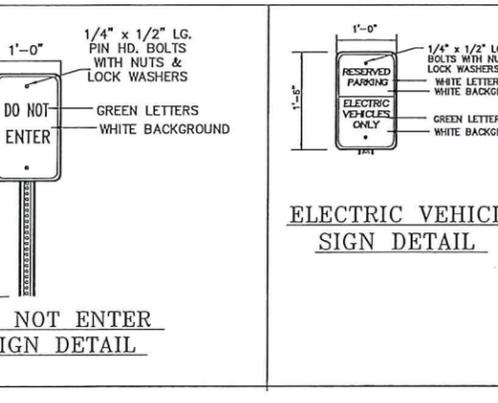
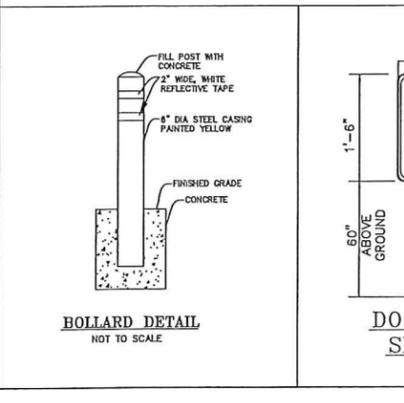
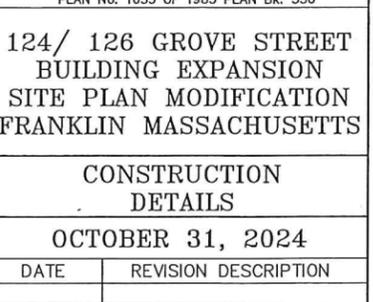
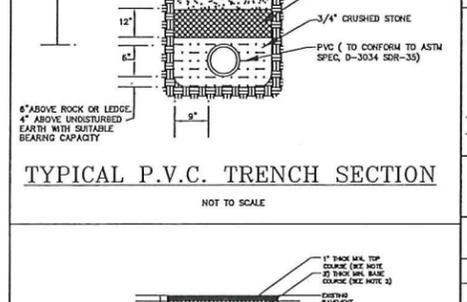
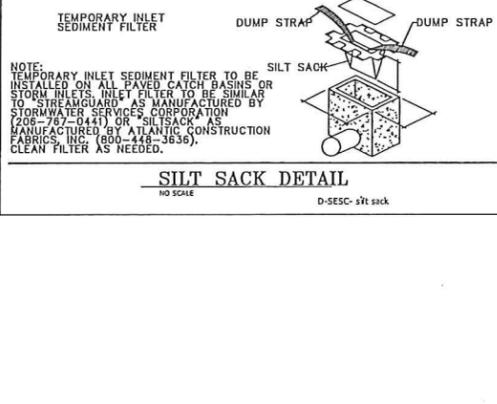
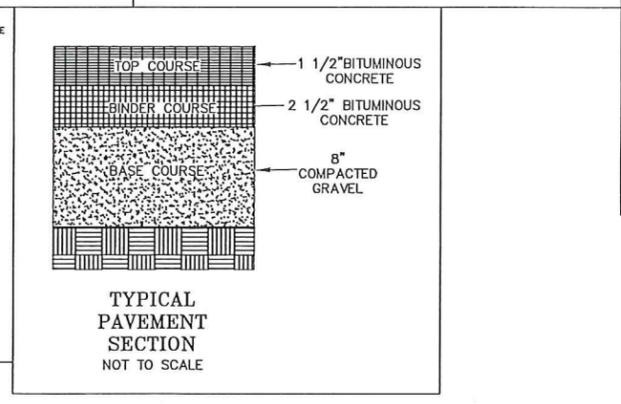
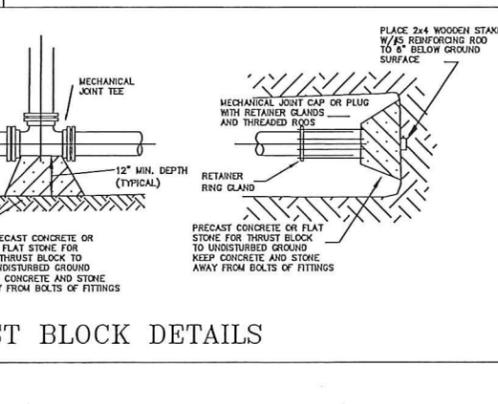
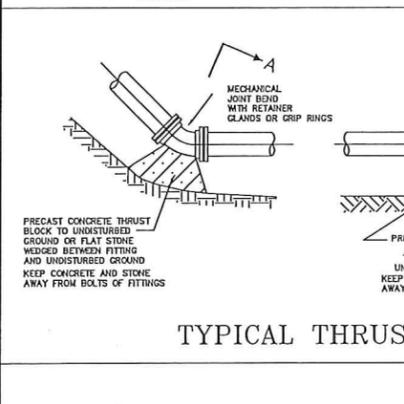
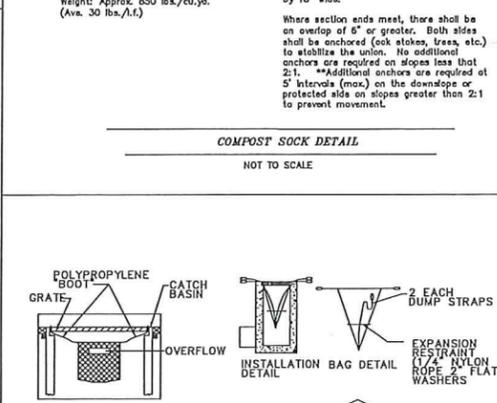
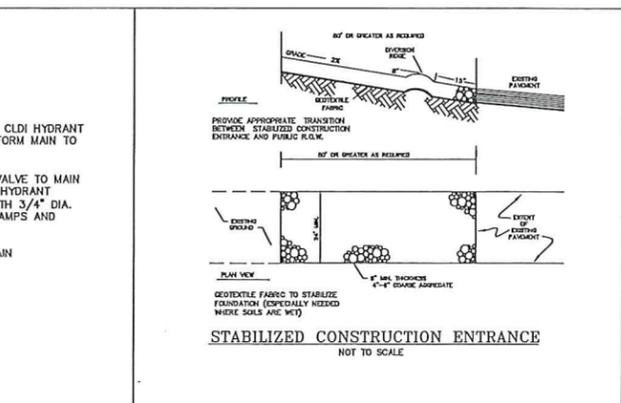
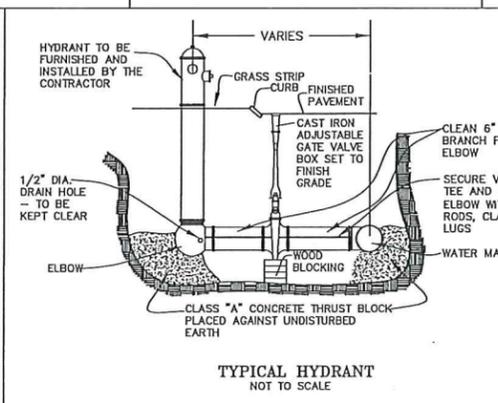
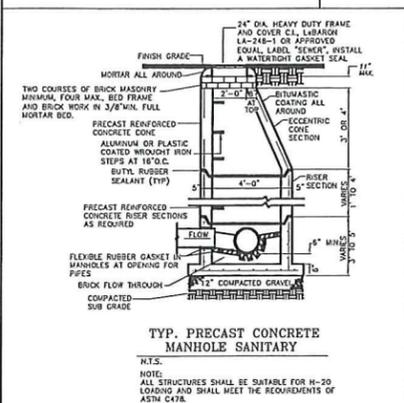
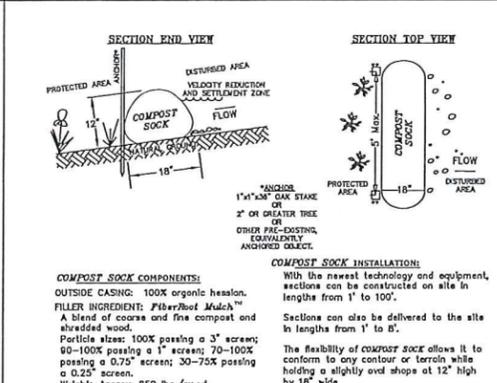
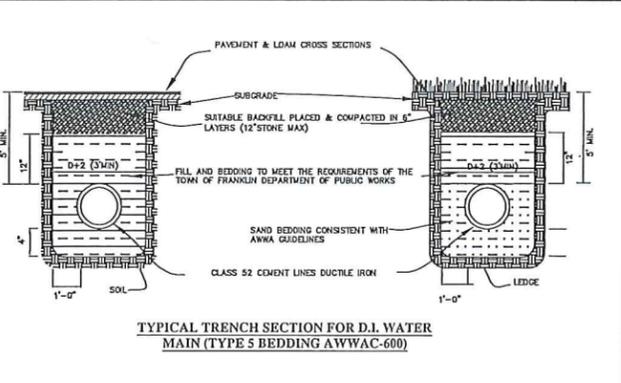
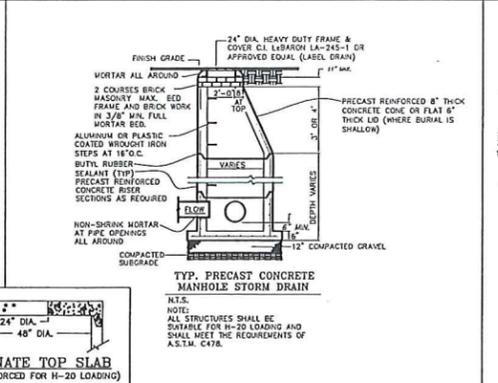
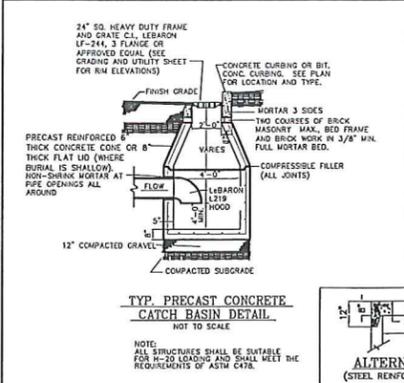
GRAPHIC SCALE: 1"=40'



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ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST. PH. (508) 528-3221
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GENERAL EROSION CONTROL AND CONSTRUCTION NOTES

- THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL REMAIN TOTALLY UNDISTURBED.
- INSPECT ALL SEDIMENT AND EROSION CONTROL MEASURES AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS AFTER EVERY RAINFALL EVENT.
- MAINTAIN ALL EROSION AND SEDIMENT CONTROL MEASURES OR REPLACE AS REQUIRED TO ASSURE PROPER FUNCTION.
- CONTRACTOR SHALL IMMEDIATELY REPAIR ANY AND ALL EROSION AND SEDIMENT CONTROL MEASURES THAT FAIL TO BE FAULTY.
- ANY AND ALL DEBRIS AND LITTER WHICH ACCUMULATES IN THE BASINS SHALL BE REMOVED WEEKLY.
- THE CONTRACTOR SHALL IMPLEMENT ALL REASONABLE EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO THE ACTUAL COMMENCEMENT OF CONSTRUCTION ACTIVITIES INCLUDING THE CLEARING AND/OR GRUBBING OF ANY PORTION OF THE PROPERTY. THESE MEASURES SHALL BE MAINTAINED IN EFFECT THROUGHOUT THE ENTIRE CONSTRUCTION PHASE, OR UNTIL THE SITE HAS BECOME STABILIZED WITH AN ADEQUATE VEGETATIVE COVER.
- SEDIMENT BUILD UP BEHIND FILTERMATS SHALL BE MONITORED AND BE REMOVED WHENEVER IT HAS ACCUMULATED TO FOUR INCHES IN DEPTH.
- CATCH BASINS SHALL BE PROTECTED WITH SILT FILTERS (SILT SOCKS). INSPECT SILT FILTERS AT LEAST ONCE PER WEEK AND WITHIN 24 HOURS AFTER RAINFALL THAT PRODUCES RUNOFF.
- CLEAN OR REPLACE FILTERS WITHIN 24 HOURS OF INSPECTION WHEN SEDIMENT REACHES ONE HALF OF THE FILTER SOCK DEPTH. CATCH BASINS SHALL BE PROTECTED BY SEDIMENT FILTERS THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED. SIFPS SHALL BE CLEANED WHENEVER SEDIMENT HAS ACCUMULATED TO A DEPTH OF 24 INCHES AND IMMEDIATELY FOLLOWING INSTALLATION OF PERMANENT PAVEMENT.
- THE CONTRACTOR SHALL MAINTAIN AN ADEQUATE STOCKPILE OF EROSION CONTROL MATERIALS ON-SITE AT ALL TIMES FOR EMERGENCY OR ROUTINE REPLACEMENT AND SHALL INCLUDE MATERIALS TO REPAIR OR REPLACE SILT FENCE, MULCH SOCK, STONE FILTER DICES OR ANY OTHER DEVICES PLANNED FOR USE DURING CONSTRUCTION.
- THE CONTRACTOR IS TO INSPECT ALL CONTROLS NO LESS THAN WEEKLY, AND IN ANTICIPATION OF RAINFALL EVENTS EXPECTED TO EXCEED 1/2 INCH IN DEPTH. ALL DEFICIENCIES NOTED DURING SAID INSPECTION SHALL BE REPAIRED IMMEDIATELY AND IN NO CASE SHALL A DEFICIENCY BE ALLOWED TO GO UNCORRECTED DURING A RAINFALL EVENT. THE EROSION CONTROL DEVICES SHALL BE MAINTAINED, REINFORCED, OR REPLACED IF NECESSARY. ALL ACCUMULATED SEDIMENTS AND OTHER MATERIALS COLLECTED BY THE SEDIMENTATION CONTROL SYSTEMS SHALL BE REMOVED AS NECESSARY TO INSURE PROPER FUNCTION OF SYSTEMS AND DISPOSED OF IN A MANNER THAT IS CONSISTENT WITH THE INTENT OF THIS PLAN, IN AN UPLAND AREA.
- TEMPORARY EARTH OR STONE DIKES, DRAINAGE SWALES AND/OR TEMPORARY SLOPE DRAINS SHALL BE INSTALLED WHERE OFF-SITE OR ON-SITE RUNOFF IS SUFFICIENT ENOUGH SUCH THAT IT WILL BE NECESSARY TO DIVERT THE FLOW AROUND THE SITE OR PREVENT EROSION WITHIN THE LIMITS OF WORK.
- STORM DRAIN INLET PROTECTION SHALL BE USED FOR ALL EXISTING AND PROPOSED CATCH BASINS IN THE PROJECT AREA. PRIOR TO COMPLETION OF THE PROJECT, ALL CATCH BASINS WITHIN THE PROJECT AREA SHALL BE CLEANED.
- ALL DISTURBED EARTH SLOPES AREA TO BE STABILIZED WITH PERMANENT VEGETATIVE COVER, TO BE ESTABLISHED AS SOON AS POSSIBLE. DISTURBED AREAS THAT ARE NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL RECEIVE A PERMANENT OR TEMPORARY VEGETATIVE COVER AS SOON AS FINAL CONTOURS ARE ESTABLISHED. TEMPORARY VEGETATIVE COVER IS TO BE ESTABLISHED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES WILL NOT REQUIRE ADDITIONAL DISTURBANCE FOR PERIOD OF 30 DAYS OR MORE. IF THE SEASON PREVENTS THE ESTABLISHMENT OF VEGETATIVE COVER, DISTURBED AREAS SHALL BE MULCHED AND THEN SEEDED AS SOON AS WEATHER CONDITIONS ALLOW.
- THERE SHALL BE NO DIRECT DISCHARGE OF DEWATERING OPERATIONS INTO ANY DRAINAGE SYSTEM UNLESS THIS DISCHARGE IS CLEAN AND FREE OF SETTLEABLE SOLIDS. ANY DEWATERING DISCHARGE CONTAINING SETTLEABLE SOLIDS (SEDIMENTS) SHALL BE PASSED THROUGH A SEDIMENTATION CONTROL DEVICE (FILTER BAG) TO REMOVE THESE SOLIDS. THE CONTRACTOR IS TO MAINTAIN SAID SEDIMENT CONTROL DEVICE THROUGHOUT THE ENTIRE DEWATERING OPERATION AND REPAIR DEFICIENCIES IMMEDIATELY.
- SOIL STOCKPILE AREAS FOR CONSTRUCTION MATERIALS SHALL BE LOCATED OUTSIDE WETLAND AREAS AND ASSOCIATED BUFFERS.
- ALL PLANTINGS SHALL BE ACCOMPLISHED BY THE CONTRACTOR AS EARLY AS THE POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION.
- ALL PLANTINGS SHALL BE WATERED AND MAINTAINED BY THE CONTRACTOR TO INSURE SURVIVAL.
- EROSION CONTROL SHALL REMAIN IN PLACE UNTIL THE CERTIFICATE OF COMPLETION IS ISSUED.

APPROVED DATE:
FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORDED DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE. THE DEPTH AND VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. ANY BREAKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY BE ENCOUNTERED. CONTRACTORS (IN ACCORDANCE WITH MASSACHUSETTS CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER
A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT
A.M. 295 LOT 4
KEY BOSTON, INC.
126 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6676 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
PLAN No. 1655 OF 1985 PLAN Bk. 330

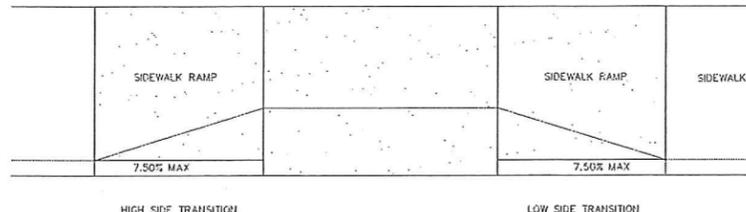
**124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS**

**CONSTRUCTION
DETAILS**

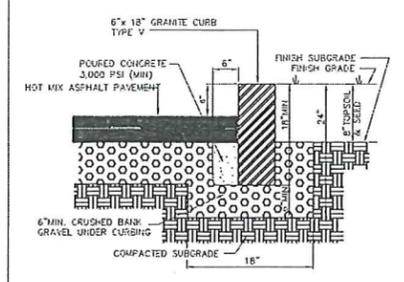
OCTOBER 31, 2024

DATE	REVISION DESCRIPTION

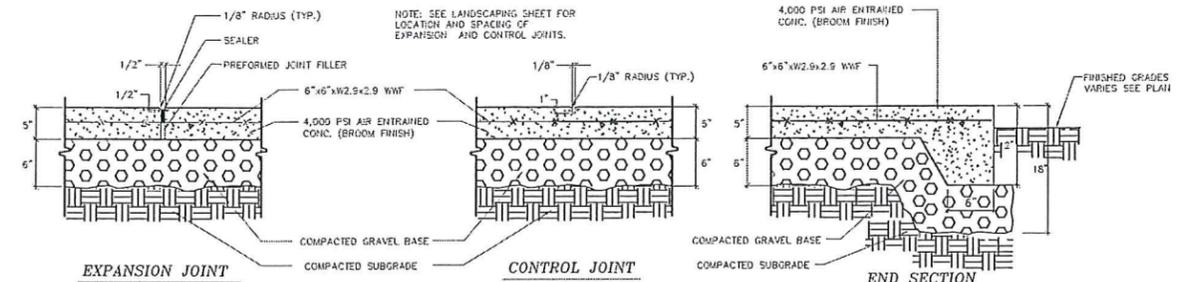
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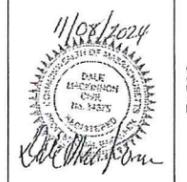
NOTE:
1. DRIVEWAYS ENTRANCES SHALL BE IN ACCORDANCE WITH MASSDOT STANDARD DRAWINGS AND SPECIFICATIONS.



NOTE:
1. INSTALL AS SHOWN ON PLANS
VERTICAL GRANITE CURB DETAIL
N.T.S.

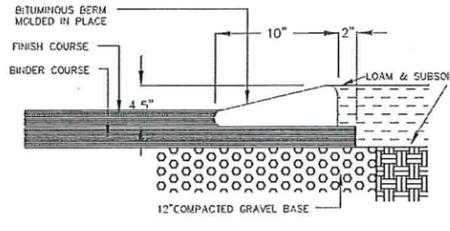
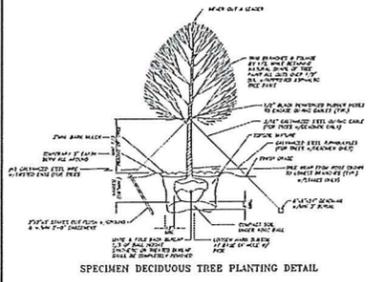


NOTE: SEE LANDSCAPING SHEET FOR LOCATION AND SPACING OF EXPANSION AND CONTROL JOINTS.
TYP. CONC. SIDEWALK DETAILS
N.T.S.

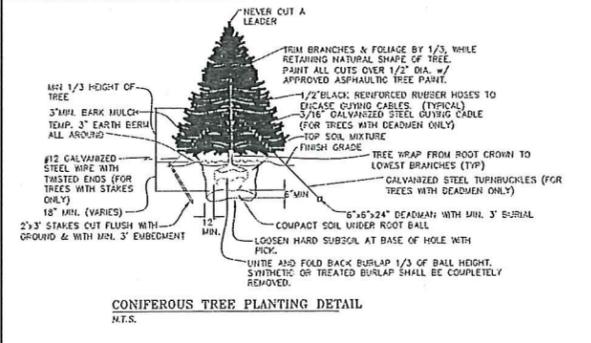


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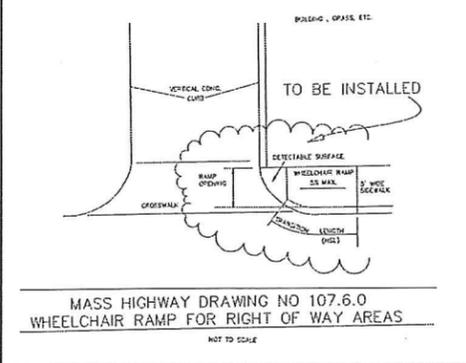
APPROVED DATE:
FRANKLIN PLANNING BOARD



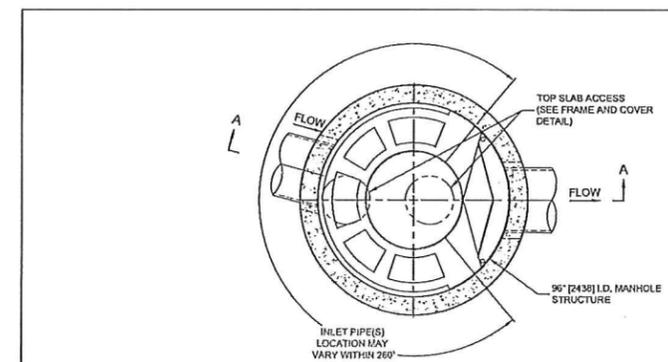
MODIFIED BITUMINOUS CAPE COD BERM DETAIL
N.T.S.



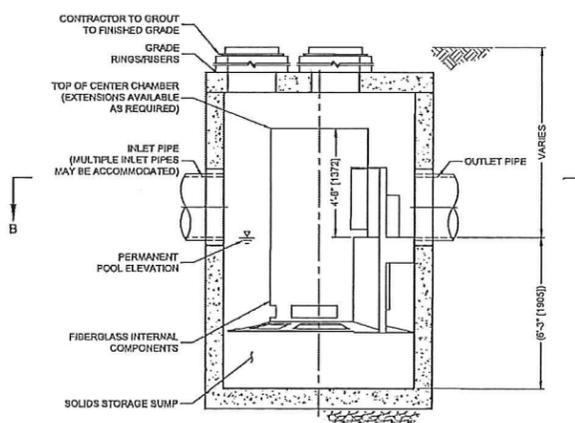
CONIFEROUS TREE PLANTING DETAIL
N.T.S.



MASS HIGHWAY DRAWING NO. 107.6.0
WHEELCHAIR RAMP FOR RIGHT OF WAY AREAS
NOT TO SCALE



PLAN VIEW B-B
NOT TO SCALE



ELEVATION A-A
NOT TO SCALE

CASCADE separator™

CASCADE SEPARATOR DESIGN NOTES

CS-8 RATED TREATMENT CAPACITY IS 12.00 GPM, OR PER LOCAL REGULATIONS. THE STANDARD CS-8 CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	WATER QUALITY FLOW RATE (cfs [L/s])	PEAK FLOW RATE (cfs [L/s])	RETURN PERIOD OF PEAK FLOW (yrs)	RIM ELEVATION
INLET PIPE 1				
INLET PIPE 2				
OUTLET PIPE				

PIPE DATA: INVERT MATERIAL DIAMETER

NOTES/SPECIAL REQUIREMENTS:



FRAME AND COVER
(DIAMETER VARIES)
NOT TO SCALE

GENERAL NOTES

- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
- CASCADE SEPARATOR 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.
- CASCADE SEPARATOR STRUCTURE SHALL MEET AASHTO H20 LOAD RATING, ASSUMING EARTH COVER OF 7'-2" [10], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M199 AND BE CAST WITH THE CONTECH LOGO.
- CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
- ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

INSTALLATION NOTES

- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
- CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
- CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
- 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.



CS-8
CASCADE SEPARATOR
STANDARD DETAIL

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD UTILITIES MARKINGS AND OTHER OBSERVED UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES. THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE GUARANTEED COMPLETELY AND RELIABLY DEPENDING ON THE QUALITY AND ACCURACY OF THE RECORD UTILITIES OR OBSERVED PHYSICAL EVIDENCE. CONTRACTORS (IN ACCORDANCE WITH MASSDOT CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIGSAFE(7233).

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DEED BOOK 6353 PAGE 200
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124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS

CONSTRUCTION DETAILS
OCTOBER 31, 2024

DATE	REVISION DESCRIPTION

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www.gondengineering.com

SHEET 15 OF 17 JOB NO. F4593

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Isolated Vegetated Wetland Replication Plan

for
124 & 126 Grove Street
(Map: 29, Lots: 3 & 4)
Franklin, MA 02038

DATE:
October 31, 2024

ADDRESSED TO:
Franklin Conservation Commission
Franklin Municipal Building
Franklin, MA 02038

PREPARED BY:
Goddard Consulting LLC
291 Main Street, Suite 8
Northborough, MA 01532

PREPARED FOR:
Ryan Lichwell
New England Appliance Group
126 Grove Street
Franklin, MA 02038

goddardconsulting.com • 291 Main Street, Suite 8, Northborough, MA 01532 • 508.393.3744

All plantings will be removed from burlap sacks, wire cages, and plastic containers prior to planting. Trees will be planted on mounds, while shrubs and herbaceous species will be planted in depressions. Each plant will have its roots loosened prior to planting to encourage root growth away from the planting bulb. Plants will be adequately watered immediately following planting. Leaf litter will be spread throughout the area if it is available. Any significant disturbances shall be seeded with a wetland seed mix as specified in the Planting List tables in Section D.

Restoration Monitoring

a. Seasonal monitoring reports shall be prepared for the enhancement areas by a qualified wetland scientist for a period of 2 additional years after installation or every year until a COC is issued by the Franklin Conservation Commission. This monitoring program will consist of early summer and early fall inspections and will include photographs and details about the vitality of the enhancement area. Monitoring reports shall be submitted to the Commission by the end of each year. Monitoring reports shall describe, using narratives, plans, and color photographs, the physical characteristics of the enhancement area with respect to stability, survival of vegetation and plant mortality, aerial extent and distribution, species diversity and vertical stratification (i.e., herb, shrub, and tree layers).

b. At least 75% of the surface area of the restoration areas shall be re-established with indigenous plant species within two growing seasons. If the enhancement area does not meet the 75% re-vegetation requirement by the end of the second growing season after installation, the applicant shall submit a remediation plan to the Commission for approval that will achieve enhancement goals, under the supervision of a Wetland Scientist. This plan must include an analysis of why the areas have not successfully re-vegetated and how the applicant intends to resolve the problem.

D. PLANTING LIST

Wetland Replication Area (15,729 SF)			
Common Name	Scientific Name	Number	Size
Trees (90)*			
Red Maple (FAC)	<i>Acer rubrum</i>	21	4-5'
Yellow Birch (FAC)	<i>Betula alleghaniensis</i>	21	4-5'
Black Tupelo (FAC)	<i>Nyssa sylvatica</i>	24	4-5'
Swamp White Oak (FACW)	<i>Quercus bicolor</i>	24	4-5'

Common Name	Scientific Name	Number	Size
Shrubs (201)*			
Highbush Blueberry (FACW)	<i>Vaccinium corymbosum</i>	36	1 or 2 gal. pots
Silky Dogwood (FACW)	<i>Cornus amomum</i>	33	1 or 2 gal. pots
Northern Spicebush (FACW)	<i>Lindera benzoin</i>	33	1 or 2 gal. pots
Common Winterberry (FACW)	<i>Ilex verticillata</i>	33	1 or 2 gal. pots
Sweet Pepperbush (FAC)	<i>Claytonia alnifolia</i>	33	1 or 2 gal. pots
Speckled Alder (FACW)	<i>Alnus incana</i>	33	1 or 2 gal. pots
Seed Mix			

A. EXISTING CONDITIONS

The Project Site, 124 & 126 Grove Street, Franklin, MA 02038 (Map: 29, Lots: 3 & 4) The site is comprised of two parcels and is approximately 37.49-acres. The site is primarily developed. The interior of the site is comprised of an existing 269,105sf industrial/commercial building, truck parking and turnarounds, and car parking lots. The southern portion of the site is primarily forested. The property is bordered by commercial/industrial developments to the south and east, and single-family house lots to the north and west on with frontages on Grove Street.

As approved in the ORAD (DEP File #159-1290), several wetland resource areas are located on the locus site. A BVW exists in the southern portion of 126 Grove Street. An intermittent stream, originating in the southern BVW, flows east through 126 and 124 Grove Street, and eventually off the property. Additional BVW is located 124 Grove Street and directly connects to the intermittent stream. An Isolated Vegetated Wetland (IVW) exists within the northern portion of 126 Grove Street. A second IVW is located south of the existing building on 126 Grove Street. These IVWs are only jurisdictional under the Franklin Wetland Bylaw and Regulations.

According to the MassGIS data layers for NHESP, the property is not located within any Estimated Habitat of Rare Wildlife / Priority Habitat of Rare Species. No potential or certified vernal pools or Outstanding Resource Waters (ORW) are mapped within the site. The property does not fall within a jurisdictional FEMA Flood Zone. The site is not located in an Area of Critical Environmental Concern (ACEC).

B. PROPOSED CONDITIONS

The applicant proposes an 85,150sf addition to the north side of the existing commercial building on-site. South of the proposed building, additional truck parking, and turnaround space is proposed for additional access to the existing loading bays and building. A retaining wall is proposed bordering the proposed parking expansion south of the existing building. In order to construct the proposed project, portions of the 25, 50 and 100-foot Buffer Zones will inevitably be impacted. The addition to the building and the truck parking expansion will result in the filling of +/- 7,842sf of Isolated Vegetated Wetland. The project has been designed minimize impacts to BVW. Alternative designs would result in a far greater impact on BVW.

As mitigation, a greater than 2:1 (15,729sf) replication area is proposed to the south of the parking lots within a BVW system. This replication area will result in the net gain of 7,887sf of wetland. A temporary access path is proposed in the southern portion of the site to access the wetland replication area. Due to the presence of an upland island, the access path will need to temporarily impact BVW (±185sf) to excavate the wetland replication area. This path has been designed for the least amount of tree removal and temporary BVW impacts. The wetland replication area and the temporarily impacted BVW will be seeded and planted with appropriate native species as described in Section D. Shrub and tree quantities have been selected based on DEP spacing guidelines. 90 trees and 201 shrubs will be planted within the proposed isolated vegetated wetland replication areas. The proposed tree species include Red Maple / *Acer rubrum*, Black Tupelo / *Nyssa sylvatica*, Swamp White Oak / *Quercus bicolor*, and Yellow Birch / *Betula alleghaniensis*. The proposed shrub species include Common Winterberry / *Ilex verticillata*, Highbush Blueberry / *Vaccinium corymbosum*, Northern Spicebush / *Lindera benzoin*, Silky Dogwood / *Cornus amomum*, Speckled Alder / *Alnus incana*, and Sweet Pepperbush / *Claytonia alnifolia*.

New England Wetland Plants WBTMIX or equivalent* 7 lbs.

*Species selection dependent on nursery availability.

E. CONCLUSION

This mitigation will enhance the Bordering Vegetated Wetlands over current conditions and will improve the functions and values of the BVW. All local, state, and federal statutory interests and performance standards have been protected and will be met by the project, as described above.

Sincerely,
Goddard Consulting, LLC

[Signature] Kristina McEvoy
Kristina McEvoy
Wetland Scientist

Tom Schutz, WPIT
Wetland Scientist

Kristina McEvoy
Wetland Scientist

C. GENERAL INSTALLATION PROCEDURES

Supervision: All work within the restoration areas shall be supervised by a qualified wetland scientist. The supervisor shall submit monitoring reports to the Franklin Conservation Commission as described below. Reports shall contain details of all work performed and photographs of completed conditions.

Timing: The installation of the plantings should be accomplished during the spring or fall growing seasons (between April 16 and May 31 or between September 16 and October 30).

Stake Limits of Work: Prior to planting, the limits of work will be staked, and wetland flags confirmed. Erosion control barriers shall be installed along the limits of work for the replication area. These will remain in place until the replication areas have stabilized, and approval is received from the Franklin Conservation Commission. The wetland scientist shall have the authority to require additional erosion control measures if deemed necessary.

Identify Plants in Replication & BVW Impact Area: The wetland scientist shall identify, and flag native species found within the replication and the BVW impact areas that may be dug up and stockpiled for use as additional plantings.

Excavation: A storage area for soil and leaf litter from the BVW impact area will be prepared prior to excavation, outside of any resource areas or buffer zone. Wetland soil from the impact zone will be excavated and transported to the replication area. The upland soils immediately surrounding the BVW impact area will be transported to the edges of the replication area to create a natural transition. Large trees should be avoided when excavating.

An excavator or backhoe will remove existing soils in the entirety of the soils in the replication zone, to a depth at which redoximorphic features become visible in the C-horizon at the soil's surface and at least one foot below the proposed final grade. This removal will be supervised and directed by the wetland scientist. Topsoil and subsoil shall be removed from the area to either be reused or removed from the site. Subsoil of the C-horizon will be loosened prior to final grading to ensure the soils aren't compacted before topsoil placement.

Once existing soils have been removed to the proper depth determined by the wetland scientist, the organic soils from the BVW impact areas will be placed into the replication zone. If the soil from the impact area is not sufficient, supplemental soil shall be imported and sourced from composted organic materials and shall consist of a 50:50 mix of loam and organic material with an organic content between 12% and 20%. Topsoil shall be placed within the replication area to a depth of 6-12", to be determined by the wetland scientist. Placement of the soil shall be such that no equipment drives over or compacts the placed soil. Final grading will mimic topography with areas of pooling and flooding during heavy rain events, and surface water during wetter seasons.

Planting: Plantings will be installed according to the plan. The precise siting of plants may be determined by the wetland scientist or landscaper in the field prior to installation. All plantings (reference the planting list in section D) shall be distributed randomly throughout the area with trees spaced at 12-15' on center, shrubs spaced at 8-10' on center, and herbaceous species 3' or less on center. Shrubs shall be placed in clumps of 3-4 of the same species. Same species will be placed in groupings that more closely mimic natural conditions.

11/08/2024
DATE
APPROVED
BY
FRANKLIN PLANNING BOARD

F4593

APPROVED DATE:
FRANKLIN PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DRAWINGS, MARKINGS AND OTHER OBSERVED FEATURES. FOR A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. PRIOR TO ANY EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE RELIABLY DETERMINED COMPLETELY AND RELIABLY DEPICTED. NATIONAL UTILITIES, NOT EVIDENCED BY RECORD DRAWINGS OR OBSERVED PHYSICAL EVIDENCE, MAY BE CONTRACTORS (IN ACCORDANCE WITH MASSACHUSETTS CHAPTER 82 SECTION 49 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIGSAFE(7233).

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER

A.M. 295 LOT 003
NEAG REAL ESTATE LLC
126 GROVE ST
FRANKLIN, MA
DEED BOOK 41715 PAGE 121
PLAN No. 253 OF 1989 PLAN Bk. 379

APPLICANT

A.M. 295 LOT 4
KEY BOSTON, INC.
126 GROVE STREET
FRANKLIN, MA 02038
DEED BOOK 6353 PAGE 200
DEED BOOK 6876 PAGE 112
PLAN No. 238 OF 1984 PLAN Bk. 309
PLAN No. 1655 OF 1985 PLAN Bk. 330

124/ 126 GROVE STREET
BUILDING EXPANSION
SITE PLAN MODIFICATION
FRANKLIN MASSACHUSETTS

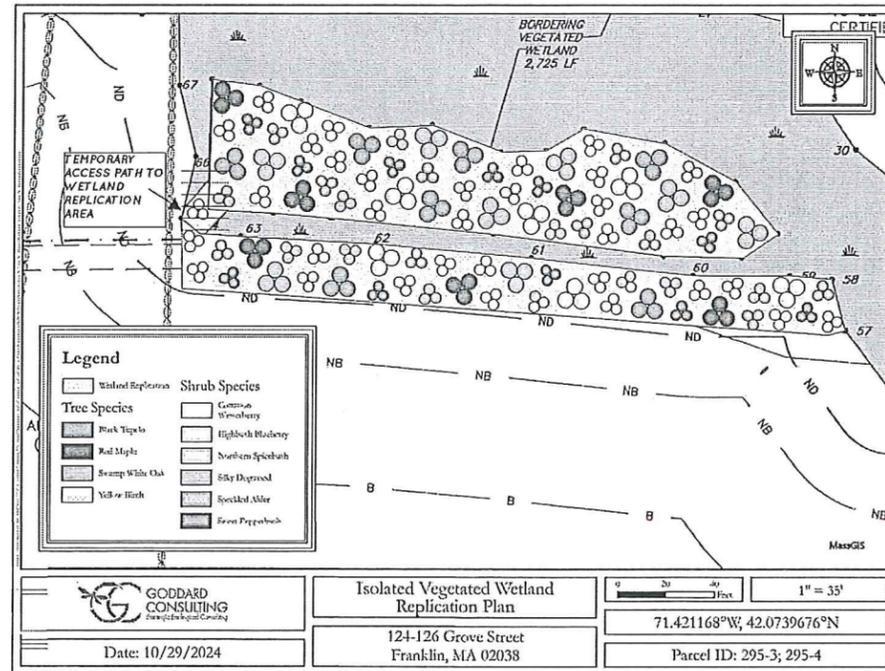
CONSTRUCTION DETAILS

OCTOBER 31, 2024

DATE REVISION DESCRIPTION

DATE	REVISION DESCRIPTION

Guerriere & Halnon, Inc.
ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST. PH. (508) 528-3221
FRANKLIN, MA 02038 FX. (508) 528-7921
www.gondengineering.com



GODDARD CONSULTING
Ecological Consulting
Isolated Vegetated Wetland Replication Plan
124-126 Grove Street
Franklin, MA 02038
Date: 10/29/2024
71.421168°W, 42.0739676°N
Parcel ID: 295-3; 295-4

PROJECT SUMMARY

CALCULATION DETAILS

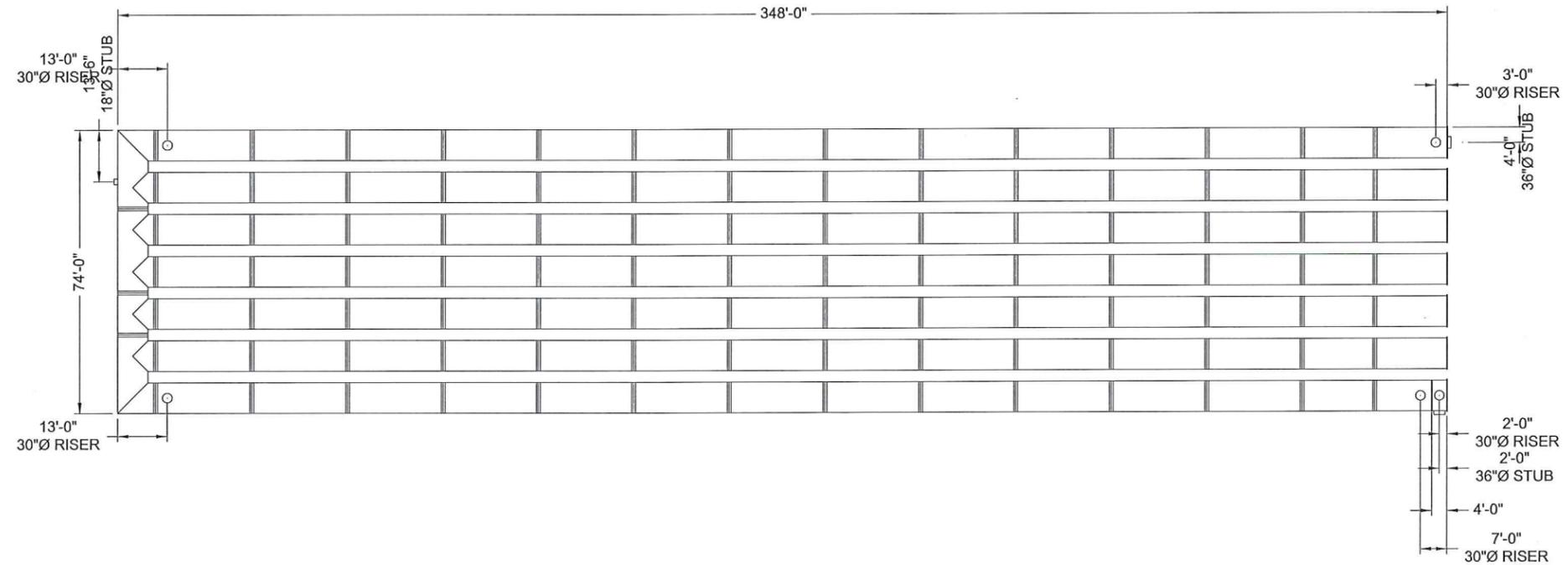
- LOADING = HS20/HS25

STORAGE SUMMARY

- PIPE STORAGE VOLUME = 123,351 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 123,351 CF

PIPE DETAILS

- DIAMETER = 96"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 36"



NOTES

- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2²/₃" x 1¹/₂" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN, QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.

ASSEMBLY
SCALE: 1" = 40'

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ENGINEERED SOLUTIONS LLC
www.ContechES.com

9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

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CMP DETENTION SYSTEMS
CONTECH
DYODS
DRAWING

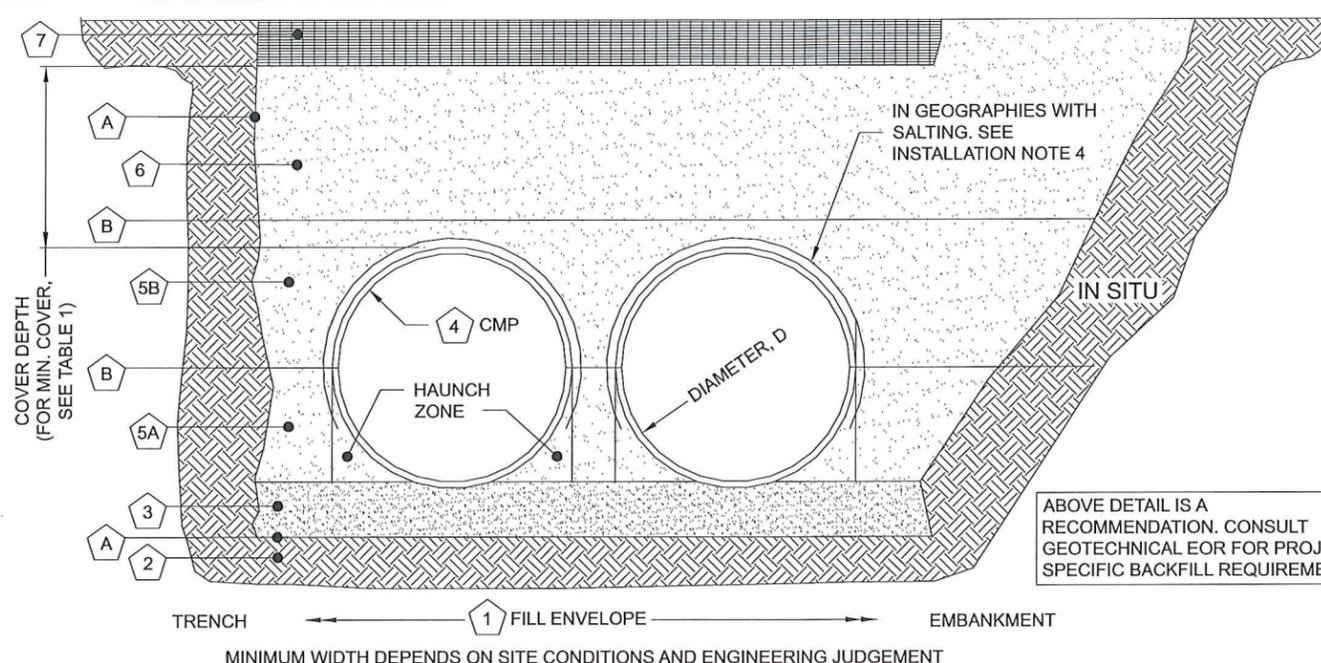
DY062805 124/126 Grove Street
96" Detention System
Franklin, MA
DETENTION SYSTEM

PROJECT No.: 44573	SEQ. No.: 62805	DATE: 11/7/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:		1

TABLE 1:

DIAMETER, D	MIN. COVER	CORR. PROFILE
6"-10"	12"	1 1/2" x 1/4"
12"-48"	12"	2 2/3" x 1/2"
>48"-96"	12"	3" x 1", 5" x 1"
>96"	D/8	3" x 1", 5" x 1"

- STRUCTURAL BACKFILL MUST EXTEND TO LIMITS OF THE TABLE
- TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT
- ULTRAFLO ALSO AVAILABLE FOR SIZES 18" - 120" WITH 3/4"x 3/4"x 7 1/2" CORRUGATION



INSTALLATION NOTES

- WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES.
- OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.
- BACKFILL USING CONTROLLED LOW-STRENGTH MATERIAL (CLSM, "FLASH FILL" OR "FLOWABLE FILL") MAY BE USED WHEN THE SPACING BETWEEN THE PIPES WILL NOT ALLOW FOR PLACEMENT AND ADEQUATE COMPACTION OF THE BACKFILL. CONTACT CONTECH FOR FURTHER EVALUATION.
- IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, A GEOMEMBRANE BARRIER IS RECOMMENDED OVER THE UPPER HALF OF THE PIPE. THE GEOMEMBRANE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

TABLE 2: SOLID STANDARD

CMP DETENTION AND CMP DRAINAGE STANDARD BACKFILL SPECIFICATIONS			
MATERIAL LOCATION	MATERIAL SPECIFICATION	DESCRIPTION	
1 FILL ENVELOPE WIDTH	PER ENGINEER OF RECORD	MINIMUM TRENCH WIDTH MUST ALLOW ROOM FOR PROPER COMPACTION OF HAUNCH MATERIALS UNDER THE PIPE. THE SUGGESTED MINIMUM TRENCH WIDTH, OR EOR RECOMMENDATION: PIPE ≤ 12": D + 16" PIPE > 12": 1.5D + 12"	MINIMUM EMBANKMENT WIDTH (IN FEET) FOR INITIAL FILL ENVELOPE: PIPE < 24": 3.0D PIPE 24" - 144": D + 4'0" PIPE > 144": D + 10'0"
2 FOUNDATION	AASHTO 26.5.2 OR PER ENGINEER OF RECORD	PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND FOUNDATION BROUGHT BACK TO GRADE WITH A FILL MATERIAL APPROVED BY THE ENGINEER OF RECORD.	
3 BEDDING	AASHTO M 43: 3, 357, 4, 467, 5, 56, 57 (APPROVED REGIONAL EQUIVALENTS INCLUDE CA-7)	ENGINEER OF RECORD TO DETERMINE IF BEDDING IS REQUIRED. PIPE MAY BE PLACED ON THE TRENCH BOTTOM OF A RELATIVELY LOOSE, NATIVE SUITABLE WELL GRADED GRANULAR MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH. THE BEDDING MATERIAL MAY BE SUITABLE FOUNDATION SOILS CONFORMING TO AASHTO SOIL CLASSIFICATIONS A1, A2, OR A3 WITH MAXIMUM PARTICLE SIZE OF 3" PER AASHTO 26.3.8.1	
4		CORRUGATED METAL PIPE	
5A CRITICAL BACKFILL	AASHTO M 145: A-1, A-2, A-3 *	HAUNCH ZONE MATERIAL SHALL BE HAND SHOVELED OR SHOVEL SLICED INTO PLACE TO ALLOW FOR PROPER COMPACTION WITHOUT SOFT SPOTS. BACKFILL SHALL BE PLACED IN 8" +/- LOOSE LIFTS AND COMPACTED TO 90% STANDARD PROCTOR PER AASHTO T 99. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A THREE LIFT (24") DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHOULD BE ADVANCED ALONG THE LENGTH OF THE SYSTEM TO AVOID DIFFERENTIAL LOADING. WELL GRADED GRANULAR MATERIAL WHICH MAY CONTAIN SMALL AMOUNTS OF SILT OR CLAY AND MAXIMUM PARTICLE SIZE OF 3" (PER AASHTO 26.3.8.1 AND 12.4-1.3).	
5B BACKFILL	AASHTO M 145: A-1, A-2, A-3		
6 COVER MATERIAL	UP TO MIN. COVER - SEE 5A AND 5B ABOVE ABOVE MIN. COVER - PER ENGINEER OF RECORD	COVER MATERIAL MAY INCLUDE NON-BITUMINOUS, GRANULAR ROAD BASE MATERIAL WITHIN MIN COVER LIMITS	
7 RIGID OR FLEXIBLE PAVEMENT (IF APPLICABLE)	PER ENGINEER OF RECORD	FLEXIBLE PAVEMENT SHOULD NOT BE COUNTED AS PART OF THE FILL HEIGHT OVER THE CMP. FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.	
A OPTIONAL SIDE GEOTEXTILE	NONE	GEOTEXTILE LAYER IS RECOMMENDED ON SIDES OF EXCAVATION TO PREVENT SOIL MIGRATION.	
B OPTIONAL GEOTEXTILE BETWEEN LAYERS	NONE	IF SOIL TYPES DIFFER AT ANY POINT ABOVE PIPE INVERT, A GEOTEXTILE LAYER IS RECOMMENDED TO BE PLACED BETWEEN THE LAYERS TO PREVENT SOIL MIGRATION.	

NOTES:

- FOR MULTIPLE BARREL INSTALLATIONS, THE RECOMMENDED STANDARD SPACING BETWEEN PARALLEL PIPE RUNS SHALL BE THE PIPE DIAMETER /2 BUT NO LESS THAN 12" FOR DIAMETERS <72". FOR 72" AND LARGER DIAMETERS, THE MINIMUM SPACING IS 36". CONTACT YOUR CONTECH REPRESENTATIVE FOR NONSTANDARD SPACING.
- * APPROVED REGIONAL EQUIVALENTS FOR SECTION 5A INCLUDE CA-7, CODOT #67, MIDOT #67, MIDOT 34G, OR 21AA STONE OR GRAVEL; #8; #57; MIDOT 6A, 2G, 3G, 34G.

MANUFACTURER RECOMMENDED BACKFILL

NOT TO SCALE

DATE	REVISION DESCRIPTION	BY

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DYODS
DRAWING

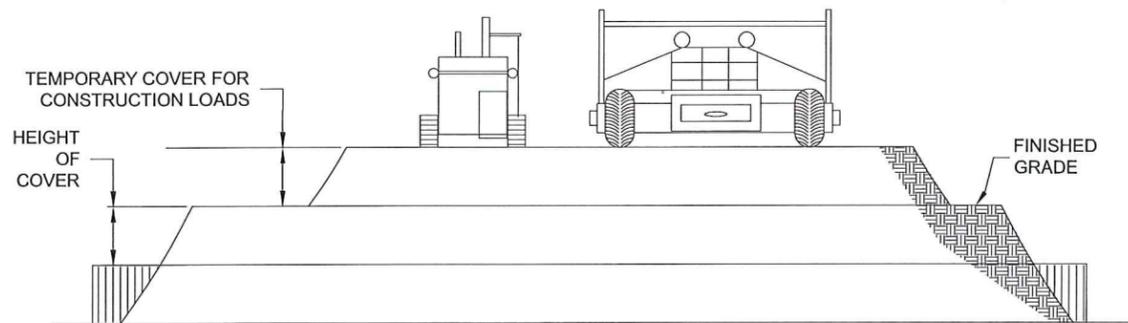
DY062805 124/126 Grove Street
96" Detention System
Franklin, MA
DETENTION SYSTEM

PROJECT No.: 44573	SEQ. No.: 62805	DATE: 11/7/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET No.:		1

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CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM

SCALE: N.T.S.

SPECIFICATION FOR DESIGNED DETENTION SYSTEM:

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE DESIGNED DETENTION SYSTEM DETAILED IN THE PROJECT PLANS.

MATERIAL

THE MATERIAL SHALL CONFORM TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMINUM COILS SHALL CONFORM TO THE APPLICABLE OF AASHTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS

CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURER'S OR NCSPA GUIDELINES.

NOTE:
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PIPE

THE PIPE SHALL BE MANUFACTURED IN ACCORDANCE TO THE APPLICABLE REQUIREMENTS LISTED BELOW:

ALUMINIZED TYPE 2: AASHTO M-36 OR ASTM A-760

GALVANIZED: AASHTO M-36 OR ASTM A-760

APPLYABLE COATED: AASHTO M-245 OR ASTM A-762

ALUMINUM: AASHTO M-196 OR ASTM B-745

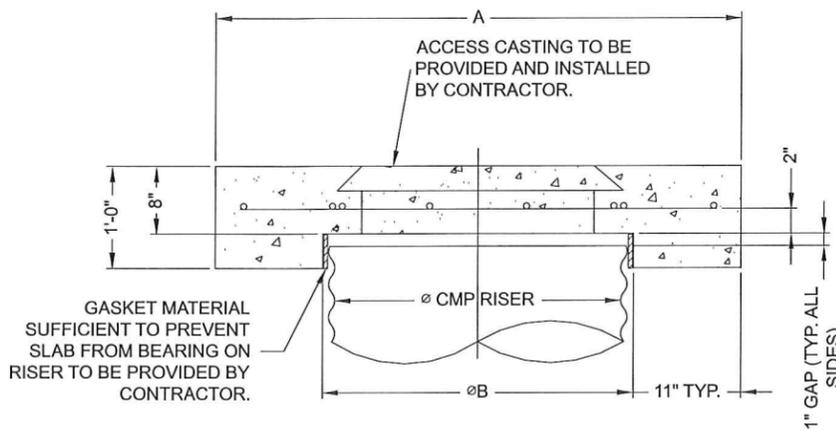
HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH NCSP'S (NATIONAL CORRUGATED STEEL ASSOCIATION) FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL. SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS FOR ALUMINUM PIPE.

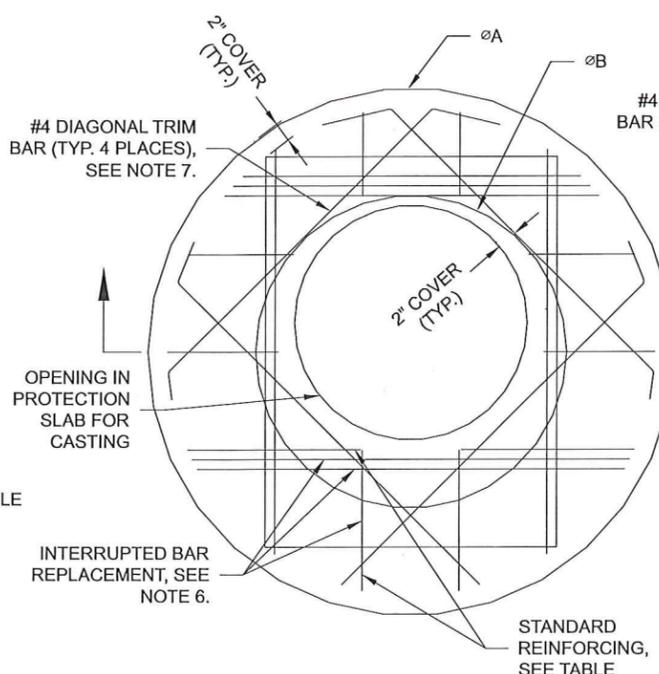
INSTALLATION

SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II DIVISION II OR ASTM A-798 (FOR ALUMINIZED TYPE 2, GALVANIZED OR POLYMER COATED STEEL) OR ASTM B-788 (FOR ALUMINUM PIPE) AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

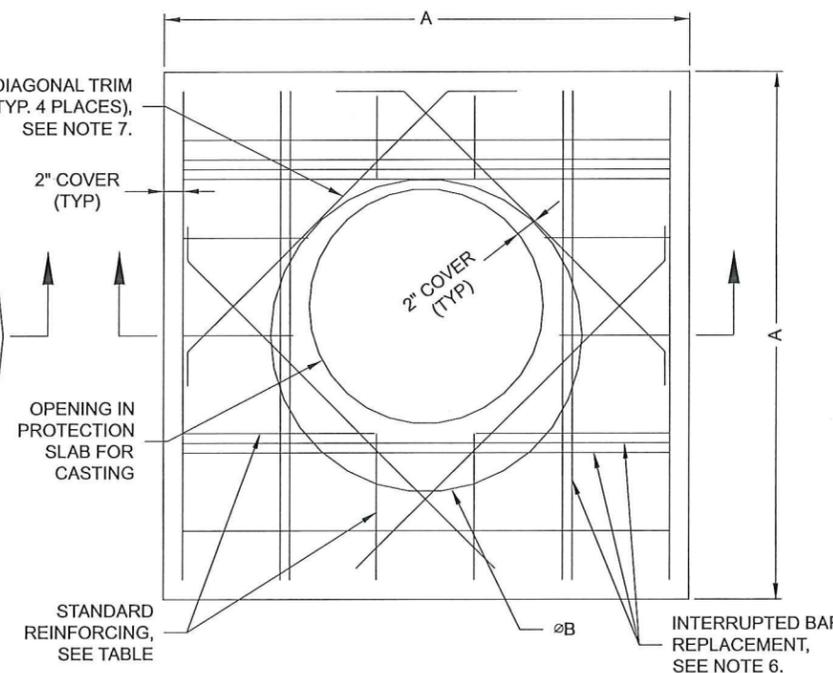
IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.



SECTION VIEW



ROUND OPTION PLAN VIEW



SQUARE OPTION PLAN VIEW

NOTES:

- DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
- DESIGN LOAD HS25.
- EARTH COVER = 1' MAX.
- CONCRETE STRENGTH = 3,500 psi
- REINFORCING STEEL = ASTM A615, GRADE 60.
- PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
- TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
- PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
- DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL

SCALE: N.T.S.

Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY

DY062805 124/126 Grove Street
96" Detention System
Franklin, MA
DETENTION SYSTEM

PROJECT No.: 44573	SEQ. No.: 62805	DATE: 11/7/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
SHEET NO.:		1



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CONTECH
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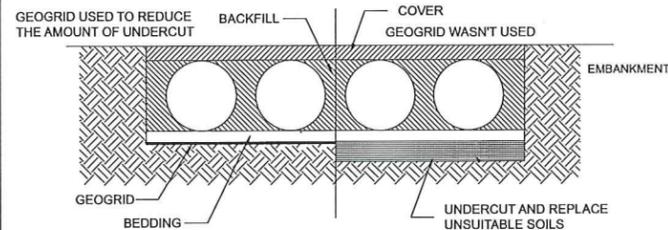
CMP DETENTION INSTALLATION GUIDE

PROPER INSTALLATION OF A FLEXIBLE UNDERGROUND DETENTION SYSTEM WILL ENSURE LONG-TERM PERFORMANCE. THE CONFIGURATION OF THESE SYSTEMS OFTEN REQUIRES SPECIAL CONSTRUCTION PRACTICES THAT DIFFER FROM CONVENTIONAL FLEXIBLE PIPE CONSTRUCTION. CONTECH ENGINEERED SOLUTIONS STRONGLY SUGGESTS SCHEDULING A PRE-CONSTRUCTION MEETING WITH YOUR LOCAL SALES ENGINEER TO DETERMINE IF ADDITIONAL MEASURES, NOT COVERED IN THIS GUIDE, ARE APPROPRIATE FOR YOUR SITE.

FOUNDATION

CONSTRUCT A FOUNDATION THAT CAN SUPPORT THE DESIGN LOADING APPLIED BY THE PIPE AND ADJACENT BACKFILL WEIGHT AS WELL AS MAINTAIN ITS INTEGRITY DURING CONSTRUCTION.

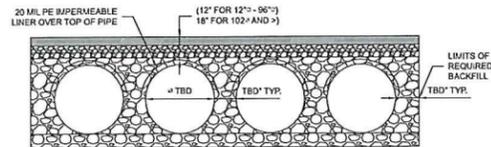
IF SOFT OR UNSUITABLE SOILS ARE ENCOUNTERED, REMOVE THE POOR SOILS DOWN TO A SUITABLE DEPTH AND THEN BUILD UP TO THE APPROPRIATE ELEVATION WITH A COMPETENT BACKFILL MATERIAL. THE STRUCTURAL FILL MATERIAL GRADATION SHOULD NOT ALLOW THE MIGRATION OF FINES, WHICH CAN CAUSE SETTLEMENT OF THE DETENTION SYSTEM OR PAVEMENT ABOVE. IF THE STRUCTURAL FILL MATERIAL IS NOT COMPATIBLE WITH THE UNDERLYING SOILS AN ENGINEERING FABRIC SHOULD BE USED AS A SEPARATOR. IN SOME CASES, USING A STIFF REINFORCING GEOGRID REDUCES OVER EXCAVATION AND REPLACEMENT FILL QUANTITIES.



GRADE THE FOUNDATION SUBGRADE TO A UNIFORM OR SLIGHTLY SLOPING GRADE. IF THE SUBGRADE IS CLAY OR RELATIVELY NON-POROUS AND THE CONSTRUCTION SEQUENCE WILL LAST FOR AN EXTENDED PERIOD OF TIME, IT IS BEST TO SLOPE THE GRADE TO ONE END OF THE SYSTEM. THIS WILL ALLOW EXCESS WATER TO DRAIN QUICKLY, PREVENTING SATURATION OF THE SUBGRADE.

GEOMEMBRANE BARRIER

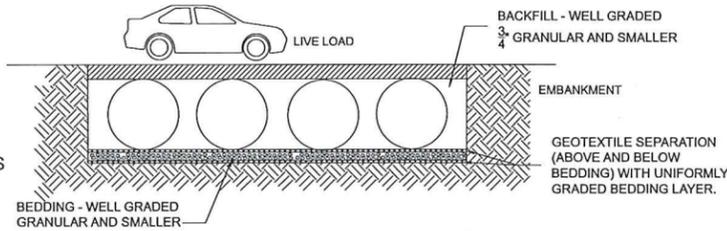
THE RESISTIVITY OF A PROJECT SITE MAY CHANGE OVER TIME DUE TO THE USE OF VARIOUS SALTING, DE-ICING, AND AGRICULTURAL AGENTS APPLIED ON OR NEAR THE AREA. TO MITIGATE THE POTENTIAL IMPACT OF THESE AGENTS, AN HDPE MEMBRANE LINER WILL BE INSTALLED ON THE CROWN OF EACH PIPE, CREATING AN IMPERMEABLE BARRIER. THIS MEASURE IS DESIGNED TO PROTECT THE SYSTEM FROM ENVIRONMENTAL CHANGES THAT COULD LEAD TO PREMATURE CORROSION AND REDUCE THE OVERALL SERVICE LIFE.



IN-SITU TRENCH WALL

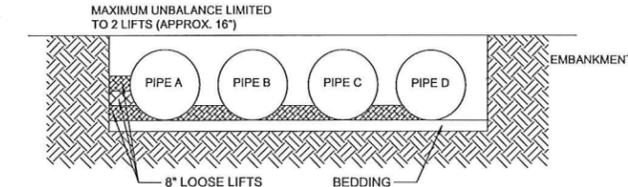
IF EXCAVATION IS REQUIRED, THE TRENCH WALL NEEDS TO BE CAPABLE OF SUPPORTING THE LOAD THAT THE PIPE SHEDS AS THE SYSTEM IS LOADED. IF SOILS ARE NOT CAPABLE OF SUPPORTING THESE LOADS, THE PIPE CAN DEFLECT. PERFORM A SIMPLE SOIL PRESSURE CHECK USING THE APPLIED LOADS TO DETERMINE THE LIMITS OF EXCAVATION BEYOND THE SPRING LINE OF THE OUTER MOST PIPES.

IN MOST CASES THE REQUIREMENTS FOR A SAFE WORK ENVIRONMENT AND PROPER BACKFILL PLACEMENT AND COMPACTION TAKE CARE OF THIS CONCERN.



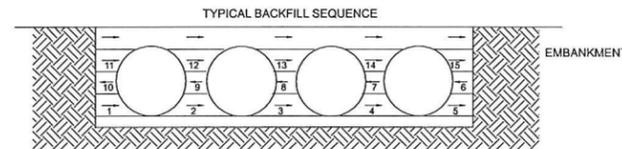
BACKFILL PLACEMENT

MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS.

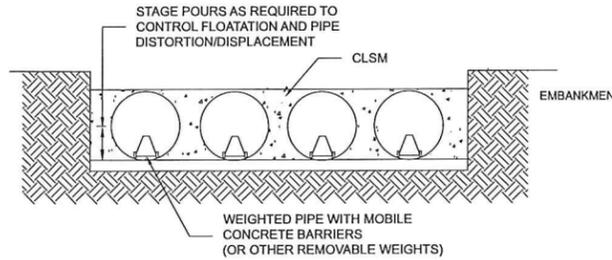


IF AASHTO T99 PROCEDURES ARE DETERMINED INFEASIBLE BY THE GEOTECHNICAL ENGINEER OF RECORD, COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE GEOTECHNICAL ENGINEER OF RECORD (OR REPRESENTATIVE THEREOF) IS SATISFIED WITH THE LEVEL OF COMPACTION.

FOR LARGE SYSTEMS, CONVEYOR SYSTEMS, BACKHOES WITH LONG REACHES OR DRAGLINES WITH STONE BUCKETS MAY BE USED TO PLACE BACKFILL. ONCE MINIMUM COVER FOR CONSTRUCTION LOADING ACROSS THE ENTIRE WIDTH OF THE SYSTEM IS REACHED, ADVANCE THE EQUIPMENT TO THE END OF THE RECENTLY PLACED FILL, AND BEGIN THE SEQUENCE AGAIN UNTIL THE SYSTEM IS COMPLETELY BACKFILLED. THIS TYPE OF CONSTRUCTION SEQUENCE PROVIDES ROOM FOR STOCKPILED BACKFILL DIRECTLY BEHIND THE BACKHOE, AS WELL AS THE MOVEMENT OF CONSTRUCTION TRAFFIC. MATERIAL STOCKPILES ON TOP OF THE BACKFILLED DETENTION SYSTEM SHOULD BE LIMITED TO 8- TO 10- FEET HIGH AND MUST PROVIDE BALANCED LOADING ACROSS ALL BARRELS. TO DETERMINE THE PROPER COVER OVER THE PIPES TO ALLOW THE MOVEMENT OF CONSTRUCTION EQUIPMENT SEE TABLE 1, OR CONTACT YOUR LOCAL CONTECH SALES ENGINEER.



WHEN FLOWABLE FILL IS USED, YOU MUST PREVENT PIPE FLOATATION. TYPICALLY, SMALL LIFTS ARE PLACED BETWEEN THE PIPES AND THEN ALLOWED TO SET-UP PRIOR TO THE PLACEMENT OF THE NEXT LIFT. THE ALLOWABLE THICKNESS OF THE CLSM LIFT IS A FUNCTION OF A PROPER BALANCE BETWEEN THE UPLIFT FORCE OF THE CLSM, THE OPPOSING WEIGHT OF THE PIPE, AND THE EFFECT OF OTHER RESTRAINING MEASURES. THE PIPE CAN CARRY LIMITED FLUID PRESSURE WITHOUT PIPE DISTORTION OR DISPLACEMENT, WHICH ALSO AFFECTS THE CLSM LIFT THICKNESS. YOUR LOCAL CONTECH SALES ENGINEER CAN HELP DETERMINE THE PROPER LIFT THICKNESS.

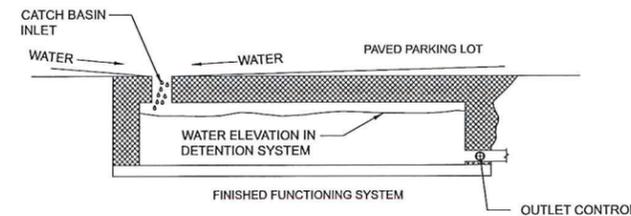


CONSTRUCTION LOADING

TYPICALLY, THE MINIMUM COVER SPECIFIED FOR A PROJECT ASSUMES H-20 LIVE LOAD. BECAUSE CONSTRUCTION LOADS OFTEN EXCEED DESIGN LIVE LOADS, INCREASED TEMPORARY MINIMUM COVER REQUIREMENTS ARE NECESSARY. SINCE CONSTRUCTION EQUIPMENT VARIES FROM JOB TO JOB, IT IS BEST TO ADDRESS EQUIPMENT SPECIFIC MINIMUM COVER REQUIREMENTS WITH YOUR LOCAL CONTECH SALES ENGINEER DURING YOUR PRE-CONSTRUCTION MEETING.

ADDITIONAL CONSIDERATIONS

BECAUSE MOST SYSTEMS ARE CONSTRUCTED BELOW-GRADE, RAINFALL CAN RAPIDLY FILL THE EXCAVATION; POTENTIALLY CAUSING FLOATATION AND MOVEMENT OF THE PREVIOUSLY PLACED PIPES. TO HELP MITIGATE POTENTIAL PROBLEMS, IT IS BEST TO START THE INSTALLATION AT THE DOWNSTREAM END WITH THE OUTLET ALREADY CONSTRUCTED TO ALLOW A ROUTE FOR THE WATER TO ESCAPE. TEMPORARY DIVERSION MEASURES MAY BE REQUIRED FOR HIGH FLOWS DUE TO THE RESTRICTED NATURE OF THE OUTLET PIPE.



CMP DETENTION SYSTEM INSPECTION AND MAINTENANCE

UNDERGROUND STORMWATER DETENTION AND INFILTRATION SYSTEMS MUST BE INSPECTED AND MAINTAINED AT REGULAR INTERVALS FOR PURPOSES OF PERFORMANCE AND LONGEVITY.

INSPECTION

INSPECTION IS THE KEY TO EFFECTIVE MAINTENANCE OF CMP DETENTION SYSTEMS AND IS EASILY PERFORMED. CONTECH RECOMMENDS ONGOING, ANNUAL INSPECTIONS. SITES WITH HIGH TRASH LOAD OR SMALL OUTLET CONTROL ORIFICES MAY NEED MORE FREQUENT INSPECTIONS. THE RATE AT WHICH THE SYSTEM COLLECTS POLLUTANTS WILL DEPEND MORE ON SITE SPECIFIC ACTIVITIES RATHER THAN THE SIZE OR CONFIGURATION OF THE SYSTEM.

INSPECTIONS SHOULD BE PERFORMED MORE OFTEN IN EQUIPMENT WASHDOWN AREAS, IN CLIMATES WHERE SANDING AND/OR SALTING OPERATIONS TAKE PLACE, AND IN OTHER VARIOUS INSTANCES IN WHICH ONE WOULD EXPECT HIGHER ACCUMULATIONS OF SEDIMENT OR ABRASIVE/ CORROSIVE CONDITIONS. A RECORD OF EACH INSPECTION IS TO BE MAINTAINED FOR THE LIFE OF THE SYSTEM

MAINTENANCE

CMP DETENTION SYSTEMS SHOULD BE CLEANED WHEN AN INSPECTION REVEALS ACCUMULATED SEDIMENT OR TRASH IS CLOGGING THE DISCHARGE ORIFICE.

ACCUMULATED SEDIMENT AND TRASH CAN TYPICALLY BE EVACUATED THROUGH THE MANHOLE OVER THE OUTLET ORIFICE. IF MAINTENANCE IS NOT PERFORMED AS RECOMMENDED, SEDIMENT AND TRASH MAY ACCUMULATE IN FRONT OF THE OUTLET ORIFICE. MANHOLE COVERS SHOULD BE SECURELY SEATED FOLLOWING CLEANING ACTIVITIES. CONTECH SUGGESTS THAT ALL SYSTEMS BE DESIGNED WITH AN ACCESS/INSPECTION MANHOLE SITUATED AT OR NEAR THE INLET AND THE OUTLET ORIFICE. SHOULD IT BE NECESSARY TO GET INSIDE THE SYSTEM TO PERFORM MAINTENANCE ACTIVITIES, ALL APPROPRIATE PRECAUTIONS REGARDING CONFINED SPACE ENTRY AND OSHA REGULATIONS SHOULD BE FOLLOWED.

ANNUAL INSPECTIONS ARE BEST PRACTICE FOR ALL UNDERGROUND SYSTEMS. DURING THIS INSPECTION, IF EVIDENCE OF SALTING/DE-ICING AGENTS IS OBSERVED WITHIN THE SYSTEM, IT IS BEST PRACTICE FOR THE SYSTEM TO BE RINSED, INCLUDING ABOVE THE SPRING LINE SOON AFTER THE SPRING THAW AS PART OF THE MAINTENANCE PROGRAM FOR THE SYSTEM.

MAINTAINING AN UNDERGROUND DETENTION OR INFILTRATION SYSTEM IS EASIEST WHEN THERE IS NO FLOW ENTERING THE SYSTEM. FOR THIS REASON, IT IS A GOOD IDEA TO SCHEDULE THE CLEANOUT DURING DRY WEATHER.

THE FOREGOING INSPECTION AND MAINTENANCE EFFORTS HELP ENSURE UNDERGROUND PIPE SYSTEMS USED FOR STORMWATER STORAGE CONTINUE TO FUNCTION AS INTENDED BY IDENTIFYING RECOMMENDED REGULAR INSPECTION AND MAINTENANCE PRACTICES. INSPECTION AND MAINTENANCE RELATED TO THE STRUCTURAL INTEGRITY OF THE PIPE OR THE SOUNDNESS OF PIPE JOINT CONNECTIONS IS BEYOND THE SCOPE OF THIS GUIDE.

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CONTECH
CMP DETENTION SYSTEMS

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DY062805 124/126 Grove Street
96" Detention System
Franklin, MA
DETENTION SYSTEM

PROJECT No.: 44573	SEQ. No.: 62805	DATE: 11/7/2024
DESIGNED: DYO	DRAWN: DYO	
CHECKED: DYO	APPROVED: DYO	
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