D5096 0003
December 4, 2025

Breeka Li Goodlander, PWS, CERPIT
Conservation Director
Town of Franklin Conservation Commission
355 East Central Street
Franklin, MA 02038

Re: **1199 West Central Street – Garelick Farms**
MassDEP File No. CE 159-1322
Response to Peer Review

Dear Ms. Goodlander:

On behalf of the Applicant, Dandreo Brothers General Contractors, Tighe & Bond is submitting the following response to peer review comments in support of the proposed Drainage Resiliency Improvement Project at 1199 West Central Street in Franklin, Massachusetts at the existing Garelick Farms facility. The peer review of the Notice of Intent (NOI) submitted to the Franklin Conservation Commission was prepared by BETA, in a letter dated November 20, 2025. The following letter identifies the comments presented in the peer review letter, followed by Tighe & Bond's (T&B) response in bold lettering.

Plan and General Comments

A1. The Massachusetts Department of Environmental Protection (MassDEP) has not issued a file number as of this writing.

Tighe & Bond Response (T&B): MassDEP issued a file number the same day as BETA's letter without comment. The File No. is CE 159-1322.

A2. The following elements are missing from the provided Plan Set:

a. A north arrow reference should be provided on the plans per Bylaw Regulations Section 7.18.1.3.

T&B: This information has been added to the plan set.

b. Existing and proposed vegetation referenced in Bylaw Regulation Section 7.18.1.5 and 7.18.1.6 should be included on the plans, including individual trees/shrubs with a diameter greater than 1" proposed for removal. It is BETA's understanding that the Commission generally increases the size threshold for tree location based on the Project and therefore defers to the Commission on this matter. The existing and proposed tree line should be shown, and the proposed trees located along the limits of trenching should be qualified as being either removed or retained.

T&B: This information has been added to the plan set.

c. A Construction Sequence with all proposed activities within Jurisdictional Areas should be provided on the plans per Bylaw Regulations Section 7.18.1.14.

T&B: This information has been added to the plan set on sheet G-003.

d. A PLS stamp should be provided on the existing conditions plan.

T&B: The existing conditions plan was not based solely on a land survey provided by a Professional Land Surveyor. Additional data sources, including site plans provided by Garelick Farms, drone survey, partial survey of the existing drainage infrastructure, ground-penetrating radar information, and MassDOT plans were referenced in the development of site plans. We request a waiver of this requirement.

e. A PLS stamp should be provided on the existing conditions plan.

T&B: The existing conditions plan was not based solely on a land survey provided by a Professional Land Surveyor. We request a waiver of this requirement.

f. A survey benchmark should be provided on the plans.

T&B: A benchmark has been added to sheets C-102 and C-201.

Resource Area Boundary Comments

W1. BETA completed a review of the onsite Bank/MAHW and BVW delineation. Bank/MAHW is apparent based on topographic relief and has been accurately delineated. In addition, BETA concurs with the BVW delineation depicted on the plans and located along the 1B/1C Series stream. Generally, the BVW was observed at the toe of slope, where vegetation communities changed from FACU/FAC species to FAC/FACW/Obligate species. Soils within the wetland were observed to have apparent depletions/redoximorphic concentrations and qualifies as a Depleted Under Dark Surface indicator. No other additional areas of BVW were observed at the Site within 100 feet of the proposed work.

T&B: No response required.

Construction Comments

W2. Erosion and sedimentation controls should be depicted on either side of the limits of work throughout the Buffer Zone / RA and downgradient of the proposed plantings within Buffer Zone / RA.

T&B: Erosion and sediment controls have been added to the plan set per the above recommendations.

W3. Proposed erosion and sedimentation controls include use of silt fence and straw wattles. Silt fence and straw are not permitted erosion control measures in the Town of Franklin (Pg. 13 of Town of Franklin Best Development Practices Guidebook). The Applicant should coordinate with the Conservation Commission to determine the appropriate erosion control measures for the Site. Twelve (12)-inch diameter compost filter tubes may be an appropriate option commensurate with the scope of the Project.

T&B: Page 13 of the Town of Franklin Best Development Practices Guidebook states that "The Conservation Commission only allows the use of straw wattles and filter mitts as erosion control barriers." The erosion control detail has been revised to remove the silt fence component of the erosion control system, as reflected on sheet C-501, and straw wattles are proposed for erosion and sediment control.

W4. Resource Area impacts (both permanent and temporary) should be clearly depicted on the plans. The Applicant should confirm if Bank impacts are required as work (including limits of work/erosion and sedimentation control installation) appears to overlap with Bank along flag 1F- 3.

T&B: The project plans show all permanent and temporary work proposed within resource area buffer zones. Erosion controls are the only impacts proposed within 1 foot of the Bank in the area referenced above and impacts to the Bank itself are not anticipated as a result of erosion control installation and removal. Impacts associated with grading in the vicinity will be limited to areas upland of the resource area. Direct impacts to the Bank are not anticipated.

W5. The limit of existing pavement and vegetated shoulder should be labeled on the plans adjacent to the location where work is proposed.

T&B: Labels have been added to the Site Plans for the limits of existing pavement and vegetative shoulders. See sheet C-102.

Mitigation Comments

W6. The Applicant should state if vegetation will be removed within Resource Areas or Buffer Zone to complete the Project. Vegetation was observed in the locations where the headwall, outfall, and portions of the pipe are proposed.

T&B: Selective clearing and grubbing of vegetation will be required within Buffer Zone for the installation of the proposed headwall, outfall, and portions of proposed pipe. Removal of trees is not anticipated to be required for this work. A callout has been added to the drawings on sheet C-201 to identify this work.

W7. Provide specifications of the proposed seed mixture(s) for stabilization of disturbed areas within Buffer Zone and RA on the plans.

T&B: The specifications of the proposed seed mixture for stabilization of disturbed areas within Buffer Zone and RFA are depicted on sheet C-201 of the revised site plans.

W8. A Planting List with information including species of plantings and number of plantings proposed at the Site should be included on the plans.

T&B: A Planting List with information including species and number of plantings proposed at the Site is depicted on sheet C-201 of the revised site plans.

W9. A monitoring protocol should be submitted by the Applicant for the proposed mitigation plantings that includes monitoring frequency, corrective actions, metrics for success, and reporting schedule. These plantings (including areas of seeding) should be monitored for two (2) growing seasons to confirm successful establishment.

T&B: A Monitoring Protocol has been prepared and is provided in Attachment 2.

W10. Invasive species including Norway maple (Acer platanoides), bittersweet (Celastrus orbiculatus), Japanese stiltgrass (Microstegium vimineum), and callery pear (Pyrus calleryana) were observed within the area where the pipe and outfall are proposed within the

100-foot Buffer Zone. The Applicant should provide information on how invasive species will be managed to ensure no further spread occurs during and after construction, and that any post-construction restoration is successful.

T&B: The proposed Monitoring Protocol provided in Attachment 2 addresses the proposed invasive species management within the footprint of the proposed pipe and outfall installation (within the 100-foot Buffer Zone).

WPA Performance Standards Comments

The Project proposes permanent impacts to the onsite Riverfront Area and 100-foot Buffer Zone. The Performance Standards at 310 CMR 10.58(5) are being referenced for compliance with RA Performance Standards due to the Site's degraded/previously developed status.

W11. Erosion controls, grading, and the limit-of-work are depicted within 1 foot of the Banks delineated as 1F-1 through 1F-3 and 1E-4. The Applicant should state if Bank impacts are proposed as a result of construction of the headwall. If impacts are not proposed the Applicant should provide information on how Bank and LUW will be protected during construction.

T&B: Erosion controls are the only impacts proposed within 1 foot of the Bank in the area referenced above and impacts to the Bank itself are not anticipated as a result of erosion control installation and removal. Earthwork and grading are proposed at a minimum distance of 3.5 feet from the Top of Bank in this area, and impacts associated with this work will be limited to areas upland of the resource area. Impacts to the Bank are not anticipated as a result of grading in the vicinity.

Riverfront Area (310 CMR 10.58)

W12. Work within RA includes the installation of the headwall and installation of plantings along the southern side of the stream and within the Buffer Zone Mitigation Area. The Applicant should confirm if impacts associated with installation of plantings have been quantified as a part of the RA and Buffer Zone impacts.

T&B: The Massachusetts WPA Riverfront Area General Performance Standards 10.58(4)(d)(1)(d) states "the calculation of square footage of alteration shall exclude… any area of restoration within the riverfront area." We are of the opinion that restoration plantings themselves don't count against the maximum square footage threshold for work in RFA and aren't considered a new or net alteration. As such, impacts associated with the installation of plantings have not been quantified as a part of the RA impacts, but are included in the revised Buffer Zone impacts included herein as Attachment 3.

W13. The Applicant should provide further information regarding the location where restoration of RA is proposed, including existing conditions (e.g., vegetative community) to ensure that restoration is in-kind with existing conditions.

T&B: The proposed RA restoration is located adjacent to the 1-F-F flag series. This portion of the site and existing RA is currently landscaped and mulched. Existing vegetation includes a mix of non-native and native small shrubs and perennials. The proposed installation of inkberry holly (Ilex glabra) in this area is intended to provide a more natural and native landscape. The proposed plantings have been selected due to the highly adaptable nature of the species, and the ecological benefits related to the plant's berries (food source for wildlife). The plant is also a larval host plant for the Henry's elfin butterfly.

W14. If the Commission determines the Project is permittable under 310 CMR 10.58(5) then a Special Condition within the Order of Conditions should be included as required under 310 CMR 10.58(5)h that prohibits further alteration within the restoration or mitigation areas, except as may be required to maintain the area in its restored or mitigate condition, and prior to requesting the issuance of the Certificate of Compliance, the Applicant shall demonstrate the restoration or mitigation area has been successfully completed for at least two growing seasons.

T&B: The Applicant acknowledges this comment and is amenable to such a condition.

Bylaw Regulatory Comments

W15. A USGS Topographic Map, a Natural Heritage and Priority Habitats and Estimated Habitats Maps, and a FEMA Flood Plain map are required for NOI submissions to the Franklin Conservation Commission per Bylaw Section 7.17.1.

T&B: A USGS Topographic Map, a Natural Heritage and Priority Habitats and Estimated Habitats Maps, and a FEMA Flood Plain map were all submitted as part of the NOI Application Package submitted to the Commission dated September 2025. Refer to Appendix A of the NOI for these materials.

W16. The Applicant should provide the Construction Sequence on the plans per Bylaw Section 7.15.

T&B: This information has been added to the plan set on sheet G-003.

W17. The Erosion and Sediment Control Plan should include a description of the measures that will be taken to properly install and maintain the erosion control devices used during the Project and include the requirement that the erosion control will be inspected weekly and all other criteria set forth in Bylaw Regulation Section 7.12.

T&B: The Soil Erosion and Sediment Control (SESC) Plan has been revised to include all criteria set forth in Bylaw Regulation Section 7.12. A revised Soil Erosion and Sediment Control Plan is attached as Attachment 4.

W18. The Applicant submitted a Variance request for the work proposed within the 0-25-foot Buffer Zone and the 25-50-foot Buffer Zone. BETA defers to the Commission on the issuance of this waiver.

T&B: No response required.

Stormwater Management Review

The proposed stormwater management design consists of providing a redundant 36-inch drainpipe to supplement the existing 48-inch drainpipe that currently conveys stormwater to wetlands on the northeast side of the existing building. The additional pipe is designed to alleviate localized flooding that occurs during high-intensity rain events. The design also includes three (3) deep-sump, hooded catch basins that will tie into the proposed 36-inch RCP run. Runoff discharges to a new outfall and accompanying riprap on the northeast side of the existing building.

General

SW1. Provide a plan to accompany the hydraulic calculations (pipe sizing) showing the areas flowing to each catch basin/pipe.

T&B: Existing and proposed drainage area maps are attached as Attachment 5.

SW2. The hydraulic analysis indicates that all proposed pipes are HDPE. Revise to indicate RCP.

T&B: The hydraulic analysis has been revised to indicate RCP. A revised analysis is attached as Attachment 6.

SW3. The flared end section at the end of the proposed 36-inch pipe run discharges to a 3:1 (±) slope. Additionally, the flared end section is oriented at an angle that is not perpendicular to the slope, which will render the riprap less effective. BETA recommends that the angle of the outlet pipe be reevaluated, and a concrete headwall be utilized to provide an effective flat area where the riprap can dissipate flows and prevent scouring.

T&B: The location of the proposed outfall was selected based on the required outfall elevation and relative proximity of the nearby wetland resource area. A system outlet elevation of 220.0 is required based on upstream drainage system elevations, as well as hydraulic pipe capacities. A perpendicular orientation of the proposed flared end section cannot be achieved at elevation 220.0 without direct impacts to wetlands. However, a winged headwall has been added to the project plans to allow for a flatter grade at the outlet, and adjustments to the riprap outfall protection configuration have been made. See sheet C-201 for updated outfall information.

SW4. Recommend providing a detail for the replacement of curb on site.

T&B: A detail for the replacement of curbing has been added to sheet C-501.

SW5. Provide an existing and proposed drainage area map showing drainage areas and stormwater flow paths (§153-15.A.(2)). Soil boundaries should also be displayed on the map.

T&B: Existing and proposed drainage area maps, displaying soil boundaries, are attached as Attachment 5.

MassDEP Stormwater Standards

The Project as proposed must comply with the Massachusetts Stormwater Standards as outlined by MassDEP. Compliance with these standards is outlined below:

Low Impact Development (Lid) Techniques

No LID measures are proposed.

T&B: No response required.

No Untreated Stormwater (Standard Number 1): No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The project proposes a new outlet to wetlands that is equipped with a riprap outfall to prevent scouring. Additional calculations are required; Standard 1 is outstanding.

SW6. Provide riprap/outfall sizing calculations.

T&B: Riprap/outfall sizing calculations are attached as Attachment 7.

Post-Development Peak Discharge Rates (Standard Number 2): Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

The Project proposes to alleviate localized flooding during high intensity storm events by providing a redundant 36-inch drainpipe to supplement the existing system and provide backup conveyance to the wetlands north of the existing building. Calculations indicate a decrease in peak discharge rate to all points of analysis. Standard 2 is met.

T&B: No response required.

Recharge To Groundwater (Standard Number 3): Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to maximum extent practicable.

NRCS soil maps indicate that soils in the location of the proposed work are Udorthents, sandy with a hydrologic group rating (HSGR) of A (high infiltration potential), Scarboro and Birdsall soils with a HSG of A/D, and Swansea muck with a HSG of B/D. The Applicant has conducted five (5) test borings at the Site indicating the subsurface soils are predominantly fill at varying depths overlying glacial till. Groundwater was not noted during the test borings.

Groundwater recharge is not proposed as part of the Project as the intent of the design is to alleviate localized flooding on the site. Standard 3 is met to the greatest extent practicable.

T&B: No response required.

SW7. While the proposed 36-inch pipe is intended to convey floodwaters during high-intensity storm events, it will predominantly carry low flows from the parking areas under typical conditions. As the project includes a new outfall to a wetland resource area, BETA recommends that the Applicant evaluate the proposed system's ability to achieve the Total Suspended Solids (TSS) and Total Phosphorus (TP) utilizing infiltration measures. Treatment area would be considered areas that flow to the basins and not the entirety of the project site.

T&B: Infiltrative measures were considered as part of an alternatives analysis during preliminary design development. However, they were ultimately determined to be infeasible due to the highly developed nature of the project site. The complex subsurface utility system existing on-site would require utility relocation in order to site infiltrative features, which would interrupt routine plant operations and present an undue burden on the Applicant.

An improvement to TSS removal is proposed as part of the proposed Project through the implementation of deep-sump, hooded catch basins, which will provide an opportunity for floatable and solids separation prior to runoff discharge at the proposed outfall. Through the replacement of three (3) catch basins, the Project has been designed to provide 25% TSS removal. Given that the project qualifies as a redevelopment as there is no increase in impervious area, Standard 4 of the Massachusetts Stormwater Standards is met to the greatest extent practicable.

T&B: No response required.

Higher Potential Pollutant Loads (Standard Number 5): Stormwater discharges from Land Uses with Higher Potential Pollutant Loads (LUHPPLs) require the use of specific stormwater management BMPs.

The proposed use is considered a LUHPPL. Given the project qualifies as a redevelopment, Standard 5 is met to the greatest extent practicable.

T&B: No response required.

Critical Areas (Standard Number 6): Stormwater discharges to critical areas must utilize certain stormwater management BMPs approved for critical areas.

The project is located outside of any MassDEP wellhead protection areas, including Zone I, II, and any interim Wellhead Protection Areas. Standard 6 is not applicable.

T&B: No response required.

Redevelopment (Standard Number 7): Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.

The project does qualify as a redevelopment as the pre- and post-development impervious areas will be the same. Standard 7 is met by improving existing conditions.

T&B: No response required.

Erosion And Sediment Controls (Standard Number 8): Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

As the project proposes to disturb greater than one acre of land, a Notice of Intent with EPA and local Conservation Commission was submitted, and a Stormwater Pollution Prevention Plan (SWPPP) will be developed prior to construction beginning. Erosion controls are indicated on the plans including stockpile areas and construction tracking pad. A basic construction sequence and estimated dates are included in Section 2 of the Stormwater management report. Standard 8 requires minor revisions to be met.

SW8. Provide catch basin inlet protection and perimeter controls on the Existing Conditions & Site Preparation Plan.

T&B: No response required.

SW9. Indicate that proposed catch basins will be equipped with inlet protection once installed until the end of construction.

T&B: No response required.

Operations/Maintenance Plan (Standard Number 9): A Long-Term Operation and

Maintenance Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A Long-Term Stormwater Operation & Maintenance Plan was included in Appendix F of the Stormwater Management Report. The O&M Plan indicates responsible parties for the project, routine and non-routine maintenance tasks, and inspection criteria. The O&M Plan also

provides guidance on long-term pollution prevention practices for the project. Standard 9 is met.

T&B: No response required.

Illicit Discharges (Standard Number 10): All illicit discharges to the stormwater management system are prohibited. A signed Illicit Discharge Compliance Statement was not provided with the submission. The Stormwater checklist indicates that one will be provided prior to the commencement of construction. Standard 10 is met, pending receipt of the signed illicit discharge statement,

SW10. Provide a signed illicit discharge statement.

T&B: We request that the Commission consider a condition of approval requiring that the signed Illicit Discharge Statement be provided prior to construction.

We trust this information will be satisfactory in your review of the Drainage Resiliency Improvements at the Garelick Farms facility. Should you need additional information, please contact me at 413.572.3238 or jechristy@tighebond.com.

Very truly yours,

TIGHE & BOND, INC.

Jean E. Christy, PE
Principal Engineer

Attachments 1 - Revised Site Plans, dated December 2025
2 - Monitoring Protocol Memo, dated December 2025
3 - Revised Summary of Resource Area Impacts, dated December 2025
4 - Revised Erosion and Sediment Control Plan, dated December 2025
5 - Drainage Area Maps, dated December 2025
6 - Revised Hydraulic Analysis, dated December 2025
7 - Riprap Sizing Calculations, dated December 2025

Copy: Dandreo Brothers General Contractors
MassDEP CERO Wetlands

J:\G\G5099 Garelick Farms\0003 Flood MItigation Design and Permitting\Permitting\Peer Review\1199 West Center Street Response to Comments 1.docx

Tighe&Bond

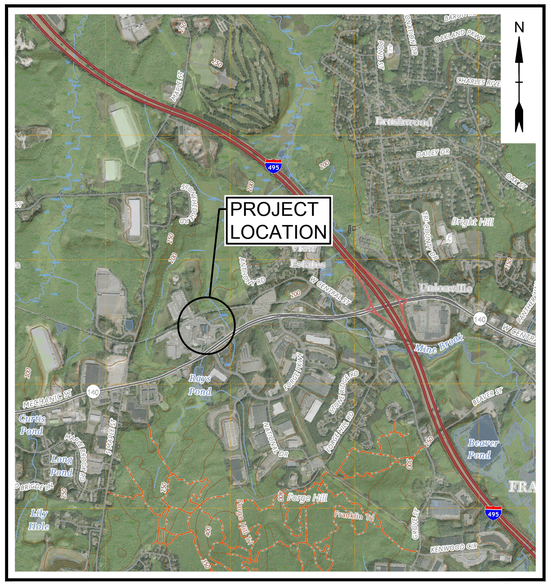
ATTACHMENT 1

FRANKLIN, MA

GARELICK FARMS
FLOODING RESILIENCY IMPROVEMENTS

PERMIT DRAWINGS
SEPTEMBER 2025
REVISED OCTOBER 2025
REVISED DECEMBER 2025

DRAWING NO.	DRAWING TITLE
G-001	COVER SHEET
G-002	LEGEND, ABBREVIATIONS & GENERAL NOTES
G-003	GENERAL NOTES
C-101	EXISTING CONDITIONS PLAN
C-102	SITE PREPARATION PLAN
C-201	DRAINAGE IMPROVEMENT PLAN
C-501	DETAILS - 1
C-502	DETAILS - 2
C-503	DETAILS - 3



SITE LOCATION MAP
SCALE: 1 = 2000'

PREPARED BY:

Tighe&Bond

12-03-2025

WAYNE BATES, PE

12/03/2025

JEAN CHRISTY, PE

PREPARED FOR:

DANDREO BROTHERS
GENERAL CONTRACTORS
AND GARELICK FARMS

THIS DOCUMENT IS RELEASED TEMPORARILY FOR PROGRESS REVIEW ONLY. IT IS NOT INTENDED FOR BIDDING OR CONSTRUCTION PURPOSES.

COMPLETE SET 9 SHEETS

Last Saved: 12/2/2025
Plotted: Dec 02, 2025 - 1:07pm By: TLabbe
Tighe & Bond: \\tighebond.com\data\Data\Projects\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Drawings\AutoCAD\Sheet\G5099-0003-G-001.dwg

LEGEND

DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
LIMIT OF WORK		
INTERMEDIATE CONTOURS		
INDEX CONTOURS	25	25
SPOT GRADE	X 141.2	+ 32.0
MAGNITUDE & DIRECTION OF SLOPE		0.0%
STORM DRAIN	SD SD	SD
STORM UNDERDRAIN		
GRAVITY SANITARY SEWER	SS SS	SS SS
SANITARY SEWER FORCE MAIN		
WATER SERVICE	W W	W W
FIRE SERVICE		
UNDERGROUND ELECTRIC	E E	E E
PRIMARY ELECTRIC SERVICE	OE OE	OE OE
OVERHEAD UTILITY (UNSPECIFIED)	OHW OHW	
CURB		
EDGE OF PAVEMENT		
FENCE - CHAIN LINK		
STORM DRAIN STRUCTURES	MANHOLE (D) CATCH BASIN	MANHOLE CATCH BASIN
SANITARY SEWER STRUCTURES	MANHOLE (S) TANK	MANHOLE TANK
WATER SERVICE STRUCTURES	HYDRANT MANHOLE (W) VALVE	HYDRANT MANHOLE (W) VALVE
GAS SERVICE STRUCTURES	MANHOLE (G) VALVE	MANHOLE (G) VALVE
ELECTRIC SERVICE STRUCTURES	UTILITY CO. POLE # MANHOLE (E) LIGHT	UTILITY CO. POLE # MANHOLE (E) LIGHT
TELECOMMUNICATIONS MANHOLE	(T)	(T)
TREELINE		
TREE	EVERGREEN DECIDUOUS STUMP	EVERGREEN DECIDUOUS
POTENTIAL SNOW STORAGE LOCATION		
NHESP PRIORITY HABITAT OF RARE SPECIES		

LEGEND

DEMOLITION / GEOTECHNICAL	
EROSION & SEDIMENT CONTROL	
ITEM TO BE DEMOLISHED	
CLEAR AND GRUB VEGETATION	
TEST PIT	

LEGEND

RESOURCE AREAS	
VEGETATED WETLAND LIMIT	
TOP OF BANK	
100-FOOT WETLAND BUFFER	
50-FOOT WETLAND BUFFER	
25-FOOT NO-DISTURB BUFFER	
200' RIVERFRONT AREA	
BORDERING LANDS SUBJECT TO FLOODING	
WETLAND FLAG	W

ABBREVIATIONS

BIT	BITUMINOUS
BLDG	BUILDING
BC	BOTTOM OF CURB
CB	CATCH BASIN
CF	CUBIC FOOT
CI	CAST IRON
CLDI	CEMENT LINED DUCTILE IRON PIPE
CONC	CONCRETE
CY	CUBIC YARD
D	DEPTH
DI	DUCTILE IRON PIPE
DIA	DIAMETER
DMH	DRAIN MANHOLE
EFF	EFFECTIVE
EG	EXISTING GRADE
EL/ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST	EXISTING
FFE	FINISHED FLOOR ELEVATION
FG	FINISH GRADE
GAL	GALLON
GPD	GALLONS PER DAY
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
IN	INCHES
INV	INVERT
L	LENGTH
LF	LINEAR FEET
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MPT	MALE PIPE THREAD
NTS	NOT TO SCALE
N/A	NOT APPLICABLE
N/F	NOW OR FORMERLY
OC	ON CENTER
OH	OVERHEAD
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYLCHLORIDE
PVMT	PAVEMENT
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
R&D	REMOVE AND DISPOSE
RD	ROOF DRAIN
REV	REVISION
R&R	REMOVE AND RESET
S	SLOPE
SCH	SCHEDULE
SF	SQUARE FOOT
SMH	SEWER MANHOLE
STA	STATION
STRM	STORM
TC	TOP OF CURB
TP	TEST PIT
TW	TOP OF WALL
TYP	TYPICAL
UP	UTILITY POLE
W	WIDTH
WV	WATER VALVE

BASE PLAN NOTES

1. THE EXISTING CONDITIONS INFORMATION SHOWN ON THE DRAWINGS IS BASED ON THE FOLLOWING:
   - ORIGINAL SITE PLAN WAS PROVIDED BY GARELICK FARMS DATED SEPTEMBER 8, 2006.
   - EXISTING TOPOGRAPHY WAS PROVIDED BY TIGHE & BOND VIA DRONE SURVEY ON JUNE 4, 2024.
   - PARTIAL SURVEY OF THE EXISTING DRAINAGE INFRASTRUCTURE WAS PERFORMED BY WSP IN MAY 2024.
   - THE RESOURCE AREA BOUNDARIES DEPICTED ON THE DRAWINGS WERE DELINEATED BY TIGHE & BOND, INC. ON MAY 1, 2025.
   - THE UTILITY INFORMATION SHOWN WAS LOCATED BY GROUND-PENETRATING RADAR PERFORMED BY UNDERGROUND SURVEYING, LLC. IN JUNE 2025.
   - EXISTING DRAINAGE INFRASTRUCTURE WITHIN WEST CENTRAL STREET WAS TAKEN FROM THE DESIGN PLAN SET TITLED "ROUTE 140 RELOCATION & I-495 INTERCHANGE 17 IMPROVEMENTS" PREPARED BY VHB AND MASSDOT DATED MARCH 20, 2002.
2. THE ACCURACY AND COMPLETENESS OF SUBSURFACE INFORMATION (E.G., EXISTING UTILITIES) SHOWN ON THESE DRAWINGS IS NOT GUARANTEED AND SOME SUBSURFACE INFORMATION MAY NOT BE SHOWN. DETERMINE THE LOCATIONS AND ELEVATIONS OF ALL SUBSURFACE FEATURES WHICH MAY AFFECT CONSTRUCTION OPERATIONS BY TEST PIT OR OTHER METHODS, AS NECESSARY TO PREVENT DAMAGE TO UTILITIES AND OTHER SUBSURFACE FEATURES, AND/OR INTERRUPTIONS IN UTILITY SERVICE. PROVIDE DATA COLLECTED THROUGH THESE INVESTIGATIONS TO THE ENGINEER PRIOR TO CONSTRUCTING THE PROPOSED IMPROVEMENTS.
3. SUB-SURFACE EXPLORATIONS ARE ANTICIPATED TO BE PERFORMED BY GEOLOGIC EARTH EXPLORATION, INC IN JULY 2025. TEST BORING LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND TESTING INFORMATION IS NOT GUARANTEED IN ANY WAY TO REPRESENT EXISTING CONDITIONS.
4. THE DRAWINGS ARE BASED ON THE FOLLOWING DATUMS: HORIZONTAL-NAD83; VERTICAL-NAVD88
5. THE EXISTING CONDITIONS SHOWN ARE APPROXIMATE. FIELD VERIFY EXISTING CONDITIONS.
6. THE PROPERTY LINES SHOWN ON THE DRAWINGS ARE APPROXIMATE AND ARE NOT BASED ON DEED OR PLAN RESEARCH.

GENERAL NOTES

1. NOTIFY DIGSAFE AT 1-888-344-7233 AND OTHER UTILITY OWNERS IN THE AREA NOT ON THE DIGSAFE LIST AT LEAST 72 HOURS PRIOR TO ANY DIGGING, TRENCHING, ROCK REMOVAL, DEMOLITION, BORING, BACKFILLING, GRADING, LANDSCAPING, OR ANY OTHER EARTH MOVING OPERATIONS.
2. THE CONTRACTOR IS RESPONSIBLE FOR SUPPORT OF EXISTING UTILITIES AND REPAIR OR REPLACEMENT COSTS OF UTILITIES DAMAGED DURING CONSTRUCTION, WHETHER ABOVE OR BELOW GRADE. REPLACE DAMAGED UTILITIES IMMEDIATELY AT NO ADDITIONAL COST TO THE OWNER AND AT NO COST TO THE PROPERTY OWNER
3. NOT ALL OF THE UTILITY SERVICES TO BUILDINGS ARE SHOWN. THE CONTRACTOR SHALL ANTICIPATE THAT EACH PROPERTY HAS SERVICE CONNECTIONS FOR THE VARIOUS UTILITIES.
4. BOLD TEXT AND LINES INDICATE PROPOSED WORK. LIGHT TEXT AND LINES INDICATE APPROXIMATE EXISTING CONDITIONS.
5. TIGHE & BOND ASSUMES NO RESPONSIBILITY FOR ANY ISSUES, LEGAL OR OTHERWISE, RESULTING FROM CHANGES MADE TO THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM TIGHE & BOND.
6. EXCAVATE ADDITIONAL TEST PITS TO LOCATE EXISTING UTILITIES AS DIRECTED OR APPROVED BY THE ENGINEER.
7. NOTIFY THE ENGINEER OF ANY UTILITIES IDENTIFIED DURING CONSTRUCTION THAT ARE NOT SHOWN ON THE DRAWINGS OR THAT DIFFER IN SIZE OR MATERIAL.
8. THE CONTRACTOR IS RESPONSIBLE FOR SITE SAFETY; COORDINATION WITH THE OWNER, ALL SUBCONTRACTORS, AND WITH OTHER CONTRACTORS WORKING WITHIN THE LIMITS OF WORK, THE MEANS AND METHODS OF CONSTRUCTING THE PROPOSED WORK.
9. OBTAIN, PAY FOR AND COMPLY WITH PERMITS, NOTICES AND FEES NECESSARY TO COMPLETE THE WORK. ARRANGE AND PAY FOR NECESSARY INSPECTIONS AND APPROVALS FROM THE JURISDICTIONAL AUTHORITIES.
10. SHORE UTILITY TRENCHES WHERE FIELD CONDITIONS DICTATE AND/OR WHERE REQUIRED BY LOCAL, STATE AND FEDERAL HEALTH AND SAFETY CODES.
11. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. IF FIELD CONDITIONS ARE OBSERVED THAT VARY SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING FOR RESOLUTION OF THE CONFLICTING INFORMATION.
12. PROTECT AND MAINTAIN ALL UTILITIES IN THE AREAS UNDER CONSTRUCTION DURING THE WORK. LEAVE ALL PIPES AND STRUCTURES WITHIN THE LIMITS OF THE CONTRACT IN A CLEAN AND OPERABLE CONDITION AT THE COMPLETION OF THE WORK. TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SAND AND SILT FROM DISTURBED AREAS FROM ENTERING THE DRAINAGE SYSTEM.
13. NOTIFY THE ENGINEER IN WRITING OF ANY CONFLICT, ERROR, AMBIGUITY, OR DISCREPANCY WITH THE PLANS OR BETWEEN THE PLANS AND ANY APPLICABLE LAW, REGULATION, CODE, STANDARD SPECIFICATION, OR MANUFACTURER'S INSTRUCTIONS.
14. EXCAVATE WITH EQUIPMENT SELECTED TO MINIMIZE DAMAGE TO EXISTING UTILITIES OR OTHER FACILITIES. HAND EXCAVATE AS NECESSARY TO LOCATE UTILITIES AND AVOID DAMAGE.
15. TAKE NECESSARY MEASURES AND PROVIDE CONTINUOUS BARRIERS OF SUFFICIENT TYPE, SIZE, AND STRENGTH TO PREVENT ACCESS TO ALL WORK AND STAGING AREAS AT THE COMPLETION OF EACH DAYS WORK.
16. NO OPEN TRENCHES WILL BE ALLOWED OVER NIGHT. THE USE OF ROAD PLATES TO PROTECT THE EXCAVATION WILL BE CONSIDERED UPON REQUEST, BUT BACKFILLING IS PREFERRED.
17. THE CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY TRAFFIC CONTROL/SAFETY DEVICES TO ENSURE SAFE VEHICULAR AND PEDESTRIAN ACCESS THROUGH THE WORK AREA, OR FOR SAFELY IMPLEMENTING DETOURS AROUND THE WORK AREA. PERFORM TRAFFIC CONTROL IN ACCORDANCE WITH THE CONTRACTOR'S APPROVED TRAFFIC CONTROL PLAN.
18. MAINTAIN EMERGENCY ACCESS TO ALL PROPERTIES WITHIN THE PROJECT AREA AT ALL TIMES DURING CONSTRUCTION.
19. WHEN WORKING IN THE ROAD, PROVIDE THE OWNER AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES A DETAILED PLAN OF APPROACH INDICATING METHODS OF PROPOSED TRAFFIC ROUTING ON A DAILY BASIS. PROVIDE COORDINATION TO ENSURE COMMUNICATION AND COORDINATION BETWEEN THE OWNER, CONTRACTOR AND LOCAL FIRE/POLICE/SCHOOL AUTHORITIES THROUGHOUT THE CONSTRUCTION PERIOD.
20. REMOVE AND DISPOSE OF ALL CONSTRUCTION-RELATED WASTE MATERIALS AND DEBRIS IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL LAWS.
21. THE TERM "DEMOLISH" USED ON THE DRAWINGS MEANS TO REMOVE AND DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
22. THE TERM "ABANDON" USED ON THE DRAWINGS MEANS TO LEAVE IN PLACE AND TAKE APPROPRIATE MEASURES TO DECOMMISSION AS SPECIFIED OR NOTED ON THE DRAWINGS.
23. ALL PROPOSED WORK MAY BE ADJUSTED IN THE FIELD BY THE OWNER'S PROJECT REPRESENTATIVE TO MEET EXISTING CONDITIONS.
24. CONTRACTOR TO FOLLOW THE STERLING WATER DEPARTMENT RULES & REGULATIONS WHEN INSTALLING WATER SERVICE TO THE NEW BUILDING AND THE DEPARTMENT SHALL REVIEW PLANS FOR WATER SERVICE CONNECTION AS PART OF THE BUILDING PERMIT APPLICATION PROCESS.

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10/22/2025

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED
PROFESSIONAL ENGINEER
10/22/2025

PERMIT SET

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Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
1	10/2025	CONCOM COMMENTS

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-G-002.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	WEB

LEGEND, ABBREVIATIONS & GENERAL NOTES

SCALE: NO SCALE

G-002

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Tighe & Bond:\1\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Drawings\AutoCAD\Sheet\G5099-0003-G-002.dwg

EROSION CONTROL AND RESOURCE AREA PROTECTION NOTES

1. PROVIDE ALL EROSION CONTROL MEASURES SHOWN, SPECIFIED, REQUIRED BY PERMIT, AND/OR REQUIRED BY THE ENGINEER PRIOR TO ANY CONSTRUCTION OR IMMEDIATELY UPON REQUEST. MAINTAIN SUCH CONTROL MEASURES UNTIL FINAL SURFACE TREATMENTS ARE IN PLACE AND/OR UNTIL PERMANENT VEGETATION IS ESTABLISHED. INSPECT AFTER EACH RAINSTORM AND DURING MAJOR STORM EVENTS TO CONFIRM THAT ALL SEDIMENTATION AND EROSION CONTROL MEASURES REQUIRED ARE IN PLACE AND EFFECTIVE.
2. PRIOR TO STARTING WORK, CLEARLY STAKE WORK LIMITS. DO NOT DISTURB VEGETATION AND TOPSOIL BEYOND THE PROPOSED LIMITS. COORDINATE WITH THE ENGINEER FOR LOCATIONS OF TEMPORARY STOCKPILING OF TOPSOIL DURING CONSTRUCTION.
3. INSTALL SILT SACKS OR OTHER APPROVED SEDIMENTATION BARRIERS IN/AT ALL CATCH BASINS IN THE PROJECT AREA.
4. COMPACT, STABILIZE, AND LOAM AND SEED SIDE SLOPES, SHOULDER AREAS AND DISTURBED VEGETATED AREAS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS REQUIRED BY PERMITS. GRADE SIDE SLOPES, SHOULDER AREAS AND DISTURBED VEGETATED AREAS TO A MAXIMUM SLOPE OF 3 HORIZONTAL TO 1 VERTICAL (3H:1V), WHERE POSSIBLE. PROVIDE BIODEGRADABLE EROSION CONTROL BLANKETS TO PREVENT EROSION WHERE SLOPES ARE STEEPER THAN 3H:1V.
5. SETTLE OR FILTER ALL SILT-LADEN WATER FROM DEWATERING ACTIVITIES IN A SEDIMENTATION OR FILTER BAG TO REMOVE SEDIMENTS PRIOR TO RELEASE USING A SEDIMENTATION OR FILTER BAG LOCATED DOWN-GRADIENT OF THE DEWATERED AREA.
6. REMOVE AND PROPERLY DISPOSE OF SILT TRAPPED AT BARRIERS IN UPLAND AREAS OUTSIDE BUFFER ZONES. REMOVE MATERIALS DEPOSITED IN ANY TEMPORARY SETTLING BASINS AT THE COMPLETION OF THE PROJECT. RESTORE ALL DISTURBED AREAS TO THEIR PRECONSTRUCTION CONDITION.
7. SWEEP, COLLECT, REMOVE AND DISPOSE OF ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS AT THE END OF EACH DAY.
8. LOAM AND SEED ALL DISTURBED VEGETATED AREAS TO ESTABLISH COVER AND STABILIZATION AS SOON AS POSSIBLE FOLLOWING DISTURBANCE.
9. MAINTAIN AN ADDITIONAL SUPPLY OF EROSION CONTROL MEASURES ON-SITE FOR EMERGENCY REPAIRS.
10. STORE FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS IN A SECONDARY CONTAINER AND REMOVE TO A SECURE LOCKED AND COVERED AREA DURING NON-WORK HOURS.
11. PROVIDE A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIALS SUCH AS BOOMS, BLANKETS, AND OIL ABSORBENT MATERIALS AT THE CONSTRUCTION SITE AT ALL TIMES TO CLEAN UP POTENTIAL SPILLS OF HAZARDOUS MATERIALS. IMMEDIATELY REPORT SPILLS OF HAZARDOUS MATERIALS TO THE STATE ENVIRONMENTAL AGENCY AND THE MUNICIPALITY WHERE THE WORK IS OCCURRING.
12. REMOVAL OF EROSION CONTROLS SHALL NOT OCCUR UNTIL ALL DISTURBED AREAS ARE FULLY STABILIZED AND APPROVAL FOR REMOVAL HAS BEEN GRANTED BY THE ENGINEER AND CONSERVATION COMMISSION.
13. EROSION CONTROL INSPECTIONS SHALL OCCUR WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS, IN ACCORDANCE WITH THE TOWN OF FRANKLIN CONSERVATION COMMISSION REGULATIONS. INSPECTIONS AND MAINTENANCE ACTIVITIES SHALL BE LOGGED AND SUBMITTED WEEKLY TO THE CONSERVATION OFFICE, NOTING THE CONDITION OF THE CONTROLS AND ANY CORRECTIVE ACTIONS TAKEN.
14. PERIMETER CONTROL SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. THEY SHALL BE REPAIRED IF THERE ARE ANY SIGNS OF EROSION OR SEDIMENTATION BELOW THEM, AND ANY REPAIRS SHALL BE MADE IMMEDIATELY. IF THERE ARE SIGNS OF UNDERCUTTING AT THE CENTER OR THE EDGES, OR IMPOUNDING OF LARGE VOLUMES OF WATER BEHIND THEM, SEDIMENT BARRIERS SHALL BE REPLACED WITH A TEMPORARY CHECK DAM.
15. SHOULD THE FABRIC ON A BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL IS NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
16. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATED 1/3 THE HEIGHT OF THE BARRIER.
17. AT THE CONCLUSION OF THE PROJECT, THE EROSION CONTROL BARRIERS WILL BE REMOVED AND PROPERLY DISPOSED OFF-SITE FOLLOWING THE STABILIZATION OF DISTURBED AREAS.

2

DRAINAGE SYSTEM IMPROVEMENTS NOTES

1. LOCATIONS OF PROPOSED STORM DRAINS AND STRUCTURES ARE APPROXIMATE AND MAY BE ADJUSTED DURING CONSTRUCTION AFTER INVESTIGATIVE WORK. FINAL STORM DRAIN LOCATIONS, AND ASSOCIATED STRUCTURES, WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ADJUSTMENTS TO THE PROPOSED STORM DRAIN LAYOUTS AND ELEVATIONS SHALL NOT BE CONSIDERED CAUSE FOR ADDITIONAL PAYMENTS. THE CONTRACTOR SHALL NOT MAKE PROPOSED STORM DRAIN LAYOUT AND ELEVATION ADJUSTMENTS WITHOUT APPROVAL FROM THE ENGINEER.
3. MANHOLES SHALL BE 48-INCH DIAMETER, UNLESS NOTED OTHERWISE.
4. DISTANCES AND SLOPES OF PROPOSED STORM DRAINS ARE BASED ON DISTANCES FROM CENTERLINE TO CENTERLINE OF STRUCTURES.
5. UNLESS OTHERWISE NOTED, PROPOSED CATCH BASIN LATERALS SHALL BE 12-INCH DIAMETER. WHERE THE MAINLINE STORM DRAIN IS SMALLER THAN 12-INCHES IN DIAMETER, THE CATCH BASIN LATERAL SHALL MATCH THE SIZE OF THE MAINLINE STORM DRAIN. MINIMUM COVER OVER CATCH BASIN LATERALS SHALL BE 4 FEET, UNLESS SHOWN OR APPROVED OTHERWISE.
6. ACTUAL LOCATION OF PROPOSED STORM DRAIN TERMINAL MANHOLES MAY BE ADJUSTED IN THE FIELD BASED ON THE LOCATION OF STORM DRAIN SERVICE CONNECTIONS.
7. MAINTAIN OPERATION OF DRAINAGE SYSTEM DURING CONSTRUCTION. PROVIDE BYPASS PUMPING OF DRAINAGE FLOWS AND/OR TEMPORARY CONNECTIONS, AS NECESSARY.
8. MAINTAIN A MINIMUM HORIZONTAL DISTANCE OF AT LEAST 10 FEET FROM ANY EXISTING OR PROPOSED WATER MAIN. IF SITE CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, A LESSER DISTANCE WILL BE ALLOWED IF THE STORM DRAIN IS CONSTRUCTED IN A SEPARATE TRENCH WITH THE TOP OF THE STORM DRAIN AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN.
9. WHENEVER A PROPOSED STORM DRAIN MUST CROSS A WATER MAIN, CONSTRUCT THE STORM DRAIN SO THE TOP OF THE STORM DRAIN IS AT LEAST 18 INCHES BELOW THE BOTTOM OF THE WATER MAIN. THE STORM DRAIN JOINTS SHALL BE EQUIDISTANT AND LOCATED AS FAR AWAY AS POSSIBLE FROM THE WATER MAIN JOINTS. WHEN THE PROPOSED STORM DRAIN CANNOT MEET THE ABOVE REQUIREMENTS, ENCASE THE PROPOSED STORM DRAIN IN CONCRETE.
10. WHERE A PROPOSED UTILITY CROSSES BELOW AN EXISTING ASBESTOS CEMENT (AC) WATER MAIN, REPLACE THE AC WATER MAIN ABOVE THE CROSSING AND 10 FEET ON EACH SIDE OF THE CROSSING WITH NEW DI PIPE. HANDLE, REMOVE, TRANSPORT AND DISPOSE OF AC PIPE IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

SURFACE RESTORATION NOTES

1. ALL PAVEMENT DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. PROVIDE SITE GRADING AT ACCESSIBLE SIDEWALK RAMPS, SIDEWALKS, AND BUILDING ENTRANCES THAT IS CONSISTENT WITH THE RELEVANT ACCESS REQUIREMENTS OF THE ARCHITECTURAL BARRIERS ACT (ABA), THE AMERICANS WITH DISABILITIES ACT (ADA), AND MA ARCHITECTURAL ACCESS BOARD REQUIREMENTS (AAB). SMALL CHANGES IN GRADE OVER RELATIVELY SHORT DISTANCES (E.G. AT PARKING SPACES, ACCESSIBLE ROUTES, AND RAMPS) MIGHT NOT BE CLEARLY DEPICTED WITHIN THE CONTOUR INTERVAL SHOWN. COMPLY WITH THE CRITERIA IN THESE STANDARDS. SELECT MAXIMUM SLOPE CRITERIA ARE REPRODUCED BELOW:

   - ACCESSIBLE PARKING STALL AND PASSENGER LOADING ZONE (ANY DIRECTION) SLOPE < 2.0%
   - LONGITUDINAL SLOPE ALONG ACCESSIBLE ROUTES < 5.0%
   - CROSS SLOPE ALONG ACCESSIBLE ROUTES < 2.0%

3. PROTECT PROJECT FEATURES (E.G., WALLS, FENCES, MAIL BOXES, SIGNS, SIDEWALKS, CURBING, STAIRS, WALKWAYS, TREES, ETC.) FROM DAMAGE DURING CONSTRUCTION, INCLUDING PROVIDING TEMPORARY SUPPORTS, WHEN APPROPRIATE.
4. IF REMOVAL OF PROJECT FEATURES IS REQUIRED IN ORDER TO PERFORM THE PROPOSED WORK, REMOVE THOSE SITE FEATURES ONLY UPON APPROVAL OF ENGINEER. REPLACE ALL REMOVED PROJECT FEATURES; NEW ITEMS SHALL BE EQUAL OR BETTER IN QUALITY AND CONDITION TO THE ITEMS REMOVED.
5. EXISTING SURVEY MONUMENTS DISTURBED BY THE CONTRACTOR SHALL BE REPLACED BY A LAND SURVEYOR LICENSED IN THE STATE IN WHICH THE WORK IS PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
6. COORDINATE THE ADJUSTMENT OF EXISTING UTILITY STRUCTURES WITH EACH RESPONSIBLE UTILITY OWNER PRIOR TO RECONSTRUCTION AND/OR PAVING OPERATIONS. RAISE ALL STRUCTURES TO FINISHED GRADES PRIOR TO THE END OF THE CONSTRUCTION SEASON AND PRIOR TO FINISHED PAVING.
7. REPAIR DISTURBED PAVED SURFACES AT THE END OF EACH WORK WEEK, UNLESS OTHERWISE APPROVED/REQUIRED BY THE OWNER.
8. PLACE TEMPORARY BITUMINOUS CONCRETE PAVEMENT AT DISTURBED PORTLAND CEMENT CONCRETE SIDEWALKS AND DRIVEWAYS AT THE END OF EACH WORK WEEK, UNLESS OTHERWISE APPROVED/REQUIRED BY THE OWNER.
9. TRANSFER ALL TEMPORARY BENCHMARKS, AS NECESSARY.
10. ACCOMMODATE PEDESTRIAN TRAFFIC WHERE A SIDEWALK IS TO BE CLOSED FOR SAFETY. "SIDEWALK CLOSED HERE" SIGNS SHALL BE USED AT THE NEAREST SAFE INTERSECTION. SEE TRAFFIC CONTROL DETAILS FOR SIGN INFORMATION.
11. RESTORE ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE PAYLINE LIMITS TO ORIGINAL CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
12. REGRADE ALL UNPAVED AREAS DISTURBED BY THE WORK AS REQUIRED. REPAIR/REPLACE PAVED SURFACES DISTURBED BY THE WORK IN-KIND, UNLESS OTHERWISE NOTED. RESTORE SURFACES TO EXISTING OR PROPOSED CONDITIONS AS INDICATED ON THE DRAWINGS.
13. PROVIDE A SMOOTH, FLUSH TRANSITION BETWEEN ALL NEW AND EXISTING PAVEMENTS AND WALKING SURFACES.

CONSTRUCTION SEQUENCE

1. CONSTRUCTION SEQUENCING IS ANTICIPATED TO OCCUR AS FOLLOWS:

- NOTIFY PERTINENT REGULATORY AGENCIES AND ABUTTERS OF THE CONSTRUCTION SCHEDULE.
- INSTALL SEDIMENTATION AND EROSION CONTROLS / PROTECTIVE MEASURES AT WORK SITE PERIMETER.
- SCHEDULE AND CONDUCT SITE WALKS WITH PERTINENT REGULATORY AGENCIES TO INSPECT CONSTRUCTION-PHASE BMPS.
- SITE MOBILIZATION AND MATERIAL STAGING.
- DEMARCATE INVASIVE SPECIES LOCATIONS AND AVOID OR REMOVE/CONTROL PRIOR TO SITE WORK.
- VEGETATION CLEARING/REMOVAL WITHIN LIMIT OF WORK.
- INSTALLATION OF DRAINAGE PIPING, CATCH BASINS AND OUTFALL. BACKFILL OF EXCAVATED TRENCHING. REPAVING AND STABILIZATION OF TRENCHED EXCAVATION LIMITS.
- INSTALLATION OF HEADWALL AND TIE-IN TO NEWLY INSTALLED DRAINAGE PIPING.
- CLEANING AND TESTING DRAINAGE PIPING.
- PERFORM FINAL STABILIZATION, RESTORATION AND MITIGATION OF TEMPORARY IMPACT AREAS, INCLUDING INSTALLATION OF RESTORATION PLANTINGS.
- WITH CONSERVATION COMMISSION AUTHORIZATION, REMOVE EROSION AND SEDIMENTATION CONTROLS / PROTECTIVE MEASURES AT WORK SITE PERIMETER AND ENTRANCE/EXIT LOCATIONS AND PROPERLY DISPOSE OFF-SITE.
- DEMOBILIZE AND PERFORM FINAL SITE CLEANUP.

2

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REGISTERED
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12-03-2025

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED
PROFESSIONAL ENGINEER

12/03/2025

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
2	12/2025	PEER REVIEW COMMENTS

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-G-002.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	WEB

GENERAL NOTES

SCALE: NO SCALE

G-003

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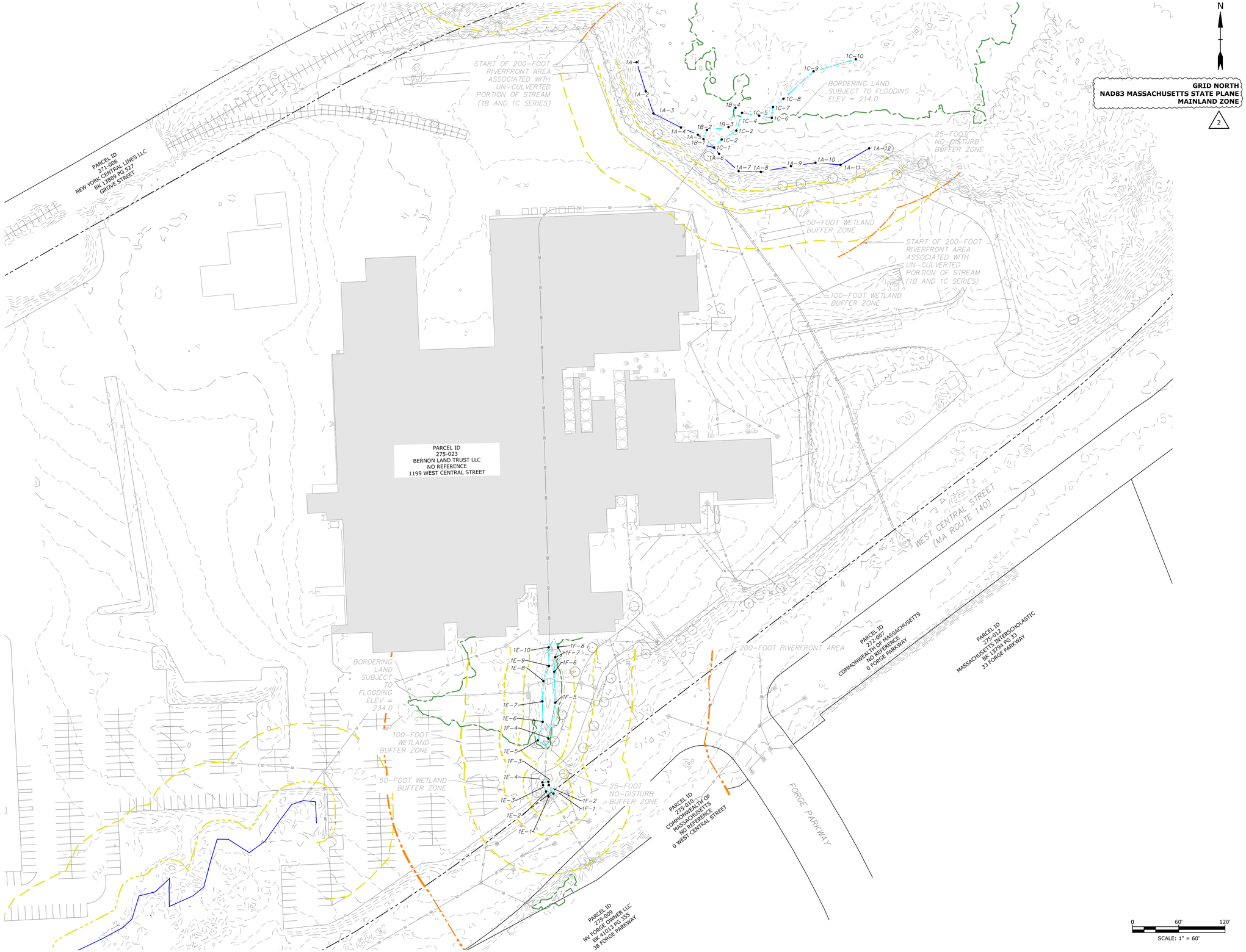
Tighe & Bond:\\tighebond.com\data\Projects\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Drawings\AutoCAD\Sheet\G5099-0003-G-002.dwg



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Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
2	12/2025	PEER REVIEW COMMENTS
1	10/2025	CONCOM COMMENTS

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-C-101.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

OVERALL EXISTING CONDITIONS PLAN

SCALE: 1" = 100'

C-101

Last Saved: 11/26/2025
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N

GRID NORTH
NAD83 MASSACHUSETTS STATE PLANE
MAINLAND ZONE

200-FOOT RIVERFRONT AREA

CB
RIM= 232.07
DEPTH=224.87
INV.1=227.67
INV.2=227.47
INV.3=UTO-BLOCKED

CB
RIM= 231.40
INV.1=227.40

CB
RIM= 229.65
DEPTH=223.55
WL=226.65
NPV-FOW

CB
RIM= 230.39
INV.1=225.59
INV.2=224.89
INV.3=225.59

DMH
RIM= 231.67
INV.1=225.77
INV.2=226.37
INV.3=226.47
INV.4=226.17

DMH
RIM= 230.26
CNO-COVER CRACKED

MATCHLINE

ABANDON
EXISTING PIPE

ABANDON
EXISTING PIPE

LIMIT OF WORK (TYP)

SILT SACK

CB
RIM= 234.64
INV.1=230.49
INV.2=230.19

INV
48"
DIA.
RCP
=
228.48

LIMITS OF SAWCUT (TYP)

R&D EXISTING CATCH
BASIN

BENCHMARK
ELEV: 241.03'
EASTING: 671370.214'
NORTHING: 2856719.895'

R&D EXISTING PAVEMENT

R&R EXISTING
GRANITE CURB

REMOVE EXISTING
PIPE. CUT AND CAP
AT CATCH BASIN

R&D EXISTING CATCH
BASIN

CB-STORMCEPTOR
RIM= 232.24
INV.1=229.69
TOP=230.69
WL=229.99

CB
RIM= 234.65
INV.1=230.90

VEGETATED SHOULDER (TYP)
R&R EXISTING
GRANITE CURB
LIMIT OF EXISTING PAVEMENT

BORDERING
LAND
SUBJECT TO
FLOODING
ELEV = 234.0

INV 48" DIA.
RCP = 230.98

200-FOOT RIVERFRONT AREA

100-FOOT
WETLAND
BUFFER ZONE

25-FOOT
NO-DISTURB
BUFFER ZONE

50-FOOT
WETLAND
BUFFER ZONE

PARCEL ID
275-010
COMMONWEALTH OF
MASSACHUSETTS
NO REFERENCE
0 WEST CENTRAL STREET

FORGE PARKWAY

INV
60"x36"
BOX
CULVERT
=
231.20

NOTES
1. REFER TO SHEET G-003 FOR EROSION CONTROL AND RESOURCE AREA PROTECTION NOTES.

BORDERING LAND SUBJECT TO FLOODING
ELEV = 214.0

REMOVE AND REPAIR SEGMENT
OF FENCE AS NECESSARY

SILT SACK

CONCRETE PAD
SECTION REMOVAL

50-FOOT WETLAND
BUFFER ZONE

25-FOOT
NO-DISTURB
BUFFER ZONE

START OF 200-FOOT
RIVERFRONT AREA
ASSOCIATED WITH
UN-CULVERTED
PORTION OF STREAM
(1B AND 1C SERIES)

100-FOOT WETLAND
BUFFER ZONE

CONSTRUCTION
TRACKOUT AREA

SOIL STOCKPILE AREA

TRUCK SCALE

LIMITS OF SAWCUT

SILT SACK

R&D EXISTING PAVEMENT

SILT SACK

R&D EXISTING BIT.
CURB

R&D EXISTING CATCH
BASIN

MATCHLINE

ABANDON
EXISTING PIPE

ABANDON
EXISTING PIPE

LIMIT OF WORK (TYP)

0 30' 60'
SCALE: 1" = 30'

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Dandreo Brothers General Contractors

Franklin, MA

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DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

EXISTING CONDITIONS AND SITE PREPARATION PLAN

SCALE: 1" = 30'

C-102

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GRID NORTH
NAD83 MASSACHUSETTS STATE PLANE
MAINLAND ZONE

200-FOOT RIVERFRONT AREA

MATCHLINE

ELECTRIC LINE ELEV = 227.2
TOP OF 36" DIA. RCP = 225.7

LIMIT OF WORK

BEDROCK APPROX ELEV = 221.0

DMH-P3
RIM = 235.1
INV IN (36" INLET) = 222.4
INV IN (CB) = 230.8
INV OUT = 222.3

WATER LINE ELEV = 229.5
TOP OF 36" DIA. RCP = 227.5

REPLACE BITUMINOUS CURB

11' OF 12" DIA. RCP @ 0.9% SLOPE

CB 3
RIM = 235.2
INV OUT = 230.9

124' OF 36" DIA. RCP @ 0.5% SLOPE

BEDROCK APPROX ELEV = 224.0

DMH-P2
RIM = 234.0
INV IN (36" INLET) = 223.1
INV IN (CB) = 228.9
INV OUT = 223.0

ELECTRIC LINE ELEV = 231.3
6" WATER INV ELEV = 226.9
BOTTOM OF 36" DIA. RCP = 223.2
TOP OF 36" DIA. RCP = 228.6

15' OF 12" DIA. RCP @ 0.7% SLOPE

CB 2
RIM = 234.7
INV OUT = 229.0

REPLACE BITUMINOUS CURB

RESTORE VEGETATED AREAS WITHIN LIMIT OF WORK

BENCHMARK
ELEV: 241.03'
EASTING: 671370.214'
NORTHING: 2856719.895'

BEDROCK APPROX ELEV = 223.0

LIMIT OF WORK (TYP)

6" WATER INV ELEV = 228.0
TOP OF 36" DIA. RCP = 230.2

ELECTRIC LINES ELEV = 231.3
TOP OF 36" DIA. RCP = 227.6

ELECTRIC LINE ELEV = 232.2
TOP OF 36" DIA. RCP = 227.7

229' OF 36 DIA. RCP @ 0.6% SLOPE

6" WATER INV ELEV = 231.0
TOP OF 36" DIA. RCP = 228.0

DMH-P1
RIM = 235.0
INV IN (36" INLET) = 225.5
INV IN (CB) = 230.8
INV OUT = 224.5

7' OF 12" DIA. RCP @ 1.4% SLOPE

CB 1
RIM = 234.7
INV OUT = 230.9

ELECTRIC LINES ELEV = 231.9
TOP OF 36" DIA. RCP = 230.4

EROSION CONTROL BARRIER (TYP)

127' OF 36" DIA. RCP @ 4.7% SLOPE

T-C LINE ELEV = 230.5
BOTTOM OF 36" DIA.
RCP = 230.6

BRUSH TO BE CLEARED WITHIN LOW

SEE INSET PLAN FOR ADDITIONAL DETAIL

CONCRETE HEADWALL
INV. 36" DIA.
RCP = 231.5

INKBERRY HOLLY (ILEX GLABRA) PLANTING (TYP OF 4)

EXISTING TREE TO BE RETAINED (TYP)

LIMIT OF WORK

CB
RIM= 232.07
DEPTH=224.87
INV.1=227.67
INV.2=227.47
INV.3=UTO-BLOCKED

CB
RIM= 231.40
INV.1=227.40

CB
RIM= 229.65
DEPTH=223.55
WL=226.65
NPV-FOW

DMH
RIM= 231.67
INV.1=225.77
INV.2=226.37
INV.3=226.47
INV.4=226.17

DMH
RIM= 230.26
CNO-COVER CRACKED

CB
RIM= 232.21
DEPTH=226.71
INV.1=228.66
INV.2=228.61

CB
RIM= 234.64
INV.1=230.49
INV.2=230.19

INV. 48" DIA. RCP = 228.48

CB-STORMCEPTOR
RIM= 232.24
INV.1=229.69
TOP=230.69
WL=229.99

INV 48" DIA. RCP = 230.98

INV 60"x36" BOX CULVERT = 231.20

BORDERING LAND SUBJECT TO FLOODING ELEV = 234.0

100-FOOT WETLAND BUFFER ZONE

25-FOOT NO-DISTURB BUFFER ZONE

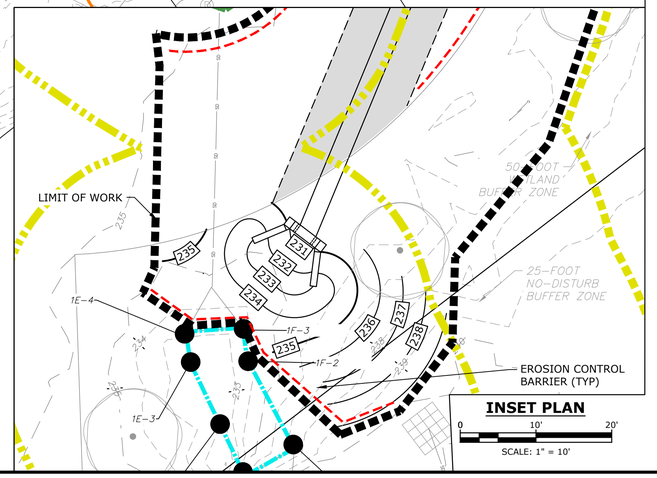
50-FOOT WETLAND BUFFER ZONE

PARCEL ID
275-021
COMMONWEALTH OF MASSACHUSETTS
NO REFERENCE
0 WEST CENTRAL STREET

PARCEL ID
272-007
COMMONWEALTH OF MASS
NO REFERENCE
0 FORGE PARK

NEW ENGLAND NATIVE WARM SEASON GRASS MIX

BOTANICAL NAME	COMMON NAME	INDICATOR
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	FACU
ANDROPOGON GERARDII	BIG BLUESTEM	FAC
ELYMUS VIRGINICUS	VIRGINIA WILD RYE	FACW-
SORGHASTRUM NUTANS	INDIAN GRASS	UPL
FESTUCA RUBRA	RED FESCUE	FACU
PANICUM VIRGATUM	SWITCH GRASS	FAC



INV 36" DIA. RCP = 220.0 AT WINGED HEADWALL WITH RIPRAP OUTFALL PROTECTION

RESTORE 50 SQFT OF AREA WITH NEW ENGLAND NATIVE WARM SEASON SEED MIX, INKBERRY HOLLY (ILEX GLABRA) PLANTING

BORDERING LAND SUBJECT TO FLOODING ELEV = 214.0

AREA OF INVASIVE SPECIES MANAGEMENT LIMITED TO LOW

BRUSH TO BE CLEARED WITHIN LOW

EXISTING TREE TO BE RETAINED (TYP)

EROSION CONTROL BARRIER (TYP)

BUFFER ZONE MITIGATION AREA TO BE PLANTED WITH NATURAL SEED MIX AND INKBERRY HOLLY (ILEX GLABRA) PLANTINGS (TYP OF 4)

LIMIT OF WORK

CUT AND REPLACE CONCRETE PAD

133' OF 36" DIA. RCP @ 0.6% SLOPE

BEDROCK APPROX ELEV = 205.5

DMH-P4
RIM = 229.5
INV IN (36" INLET) = 220.9
INV OUT = 220.8

6" SANITARY INV ELEV = 225.5
TOP OF 36" DIA. RCP = 224.7

CONSTRUCTION TRACKOUT AREA

SOIL STOCKPILE AREA

BEDROCK APPROX ELEV = 213.2

LIMIT OF WORK

ELECTRIC LINE ELEV = 230.6
TOP OF 36" DIA. RCP = 225.0

ELECTRIC LINE ELEV = 227.2
TOP OF 36" DIA. RCP = 225.3

290' OF 36" DIA. RCP @ 0.5% SLOPE

6" WATER INV ELEV =226.7
TOP OF 36" DIA. RCP = 225.4

REPLACE BITUMINOUS CURB

ELECTRIC LINE ELEV = 227.2
TOP OF 36" DIA. RCP = 225.7

LIMIT OF WORK

BEDROCK APPROX ELEV = 221.0

MATCHLINE

DMH-P3
RIM = 235.1
INV IN (36" INLET) = 222.4
INV IN (CB) = 230.8
INV OUT = 222.3

WATER LINE ELEV = 229.5
TOP OF 36" DIA. RCP = 227.5

REPLACE BITUMINOUS CURB

11' OF 12" DIA. RCP @ 0.9% SLOPE

CB 3
RIM = 235.2
INV OUT = 230.9

124' OF 36" DIA. RCP @ 0.5% SLOPE

BEDROCK APPROX ELEV = 224.0

DMH-P2
RIM = 234.0
INV IN (36" INLET) = 223.1
INV IN (CB) = 228.9
INV OUT = 223.0

15' OF 12" DIA. RCP @ 0.7% SLOPE

CB 2
RIM = 234.7
INV OUT = 229.0

REPLACE BITUMINOUS CURB

BENCHMARK

CB
RIM= 228.32
DEPTH=221.42

CB
RIM= 228.45
DEPTH=223.30
INV.1=225.05
INV.2=224.95
INV.3=224.95

CB
RIM= 231.40
INV.1=227.40

CB
RIM= 229.65
DEPTH=223.55
WL=226.65
NPV-FOW

START OF 200-FOOT RIVERFRONT AREA ASSOCIATED WITH UN-CULVERTED PORTION OF STREAM (1B AND 1C SERIES)

50-FOOT WETLAND BUFFER ZONE

25-FOOT NO-DISTURB BUFFER ZONE

100-FOOT WETLAND BUFFER ZONE

0 30' 60'
SCALE: 1" = 30'

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WAYNE EDWARD BATES
36402
DISCIPLINE CIVIL
REGISTERED PROFESSIONAL ENGINEER
12-03-2025

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED PROFESSIONAL ENGINEER
12/03/2025

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
2	12/2025	PEER REVIEW COMMENTS
1	10/2025	CONCOM COMMENTS

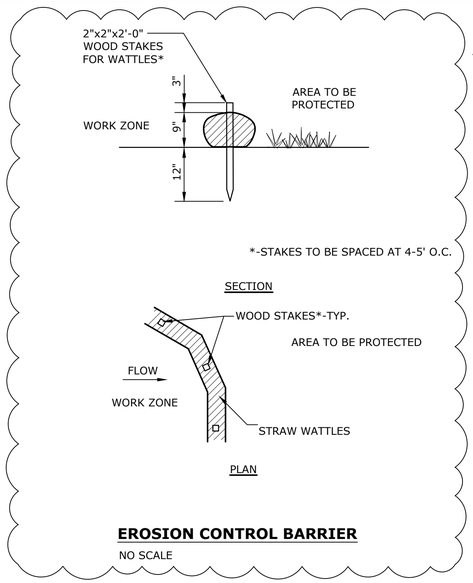
PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-C-201.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

PROPOSED SITE PLAN

SCALE: 1" = 30'

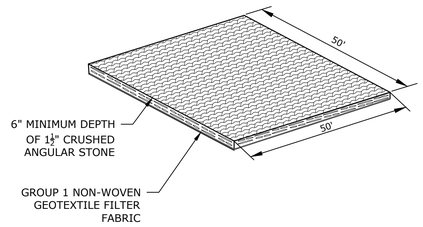
C-201

Last Saved: 12/2/2025
Plotted: Dec 02, 2025 5-1:31pm By: TLahbe
Tighe & Bond:J:\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Drawings\AutoCAD\Sheet\G5099-0003-C-201.dwg



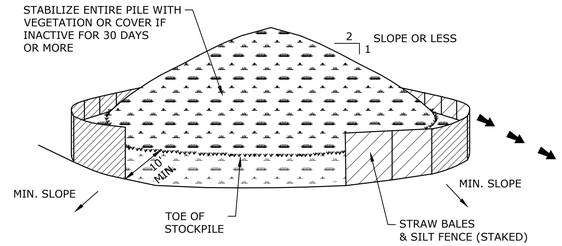
EROSION CONTROL BARRIER

NO SCALE



CONSTRUCTION TRACKOUT AREA

NO SCALE

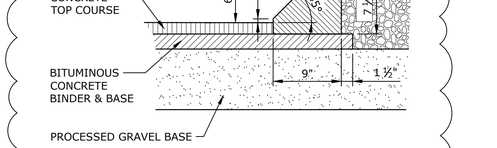


INSTALLATION NOTES:

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 2H:1V.
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAW BALES, THEN STABILIZED WITH VEGETATION OR COVERED.

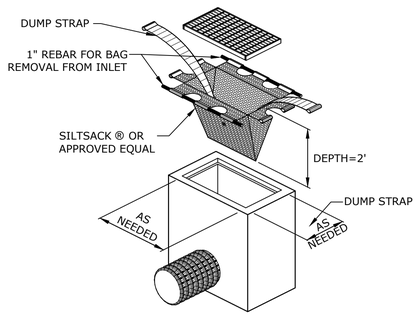
SOIL STOCKPILING

NO SCALE



BITUMINOUS CONCRETE BERM

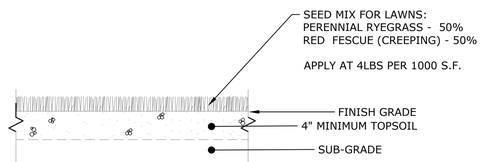
NO SCALE



SILTSACK MANUFACTURED BY:
ACF ENFIRONMENTAL
2831 CARDWELL ROAD
RICHMOND, VIRGINIA 23237

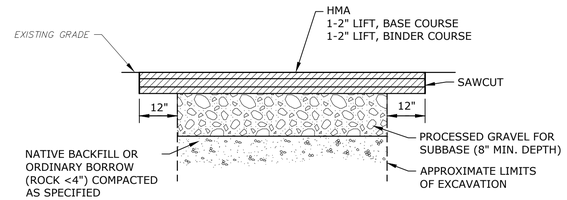
SILTSACK®

NO SCALE



LAWN AREA

NO SCALE



NOTES:

1. ROAD SECTION SHOWN SHALL BE CONSIDERED TYPICAL. FIELD MODIFICATIONS TO MATCH EXISTING CONDITIONS ARE ANTICIPATED.
2. TACK COAST SHALL BE APPLIED AT A RATE OF 0.07 GALLONS PER SQUARE YARD BETWEEN ALL PAVEMENT COURSES.

PERMANENT TRENCH REPAIR

NO SCALE

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12-03-2025

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED PROFESSIONAL ENGINEER
12/03/2025

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
2	12/2025	PEER REVIEW COMMENTS

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-C-DETL.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

DETAILS - 1

SCALE: AS SHOWN

C-501

Last Saved: 12/2/2025
Plotted On: 12/3/2025 2:12pm By: TLabbe
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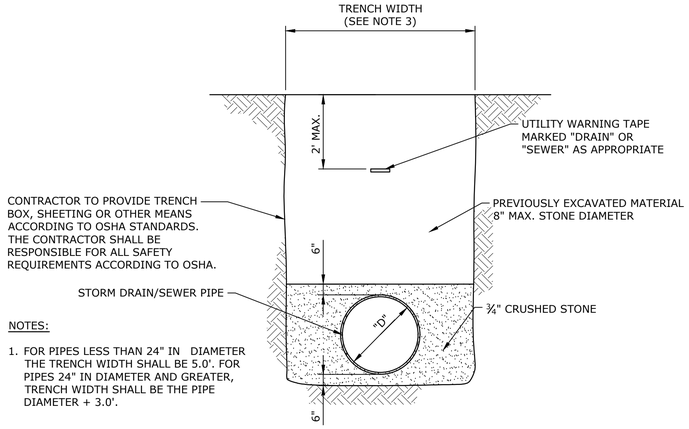
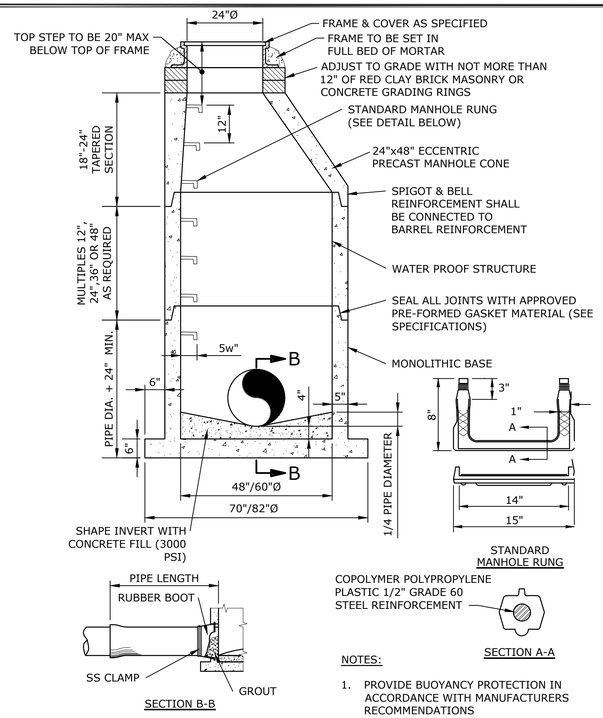


NOTES:

1. FOR PIPES LESS THAN 24" IN DIAMETER THE TRENCH WIDTH SHALL BE 5.0'. FOR PIPES 24" IN DIAMETER AND GREATER, TRENCH WIDTH SHALL BE THE PIPE DIAMETER + 3.0'.

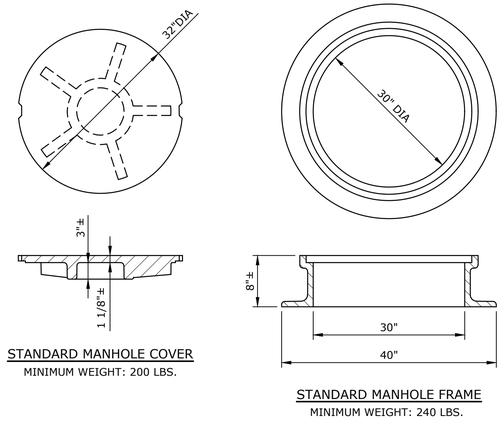
TYPICAL SEWER/DRAIN TRENCH SECTION



NOTES:

1. PROVIDE BUOYANCY PROTECTION IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS

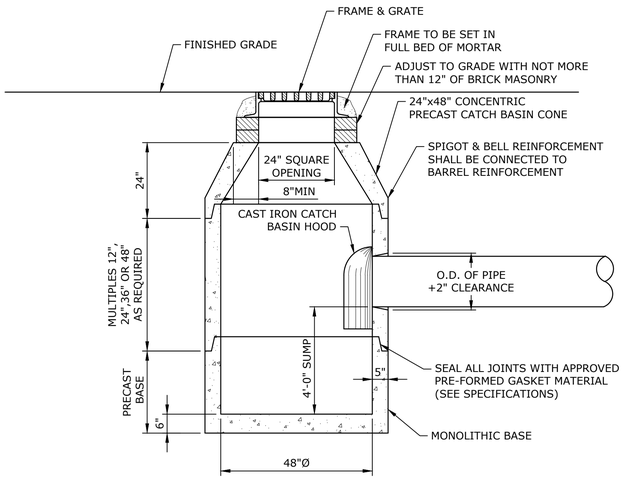
60" PRECAST DRAIN MANHOLE (DMH)



NOTES:

1. FRAME AND COVER SHALL BE PROVIDED FROM THE SAME MANUFACTURER.
2. LETTERING SHALL BE CAST INTO COVERS AS SPECIFIED.

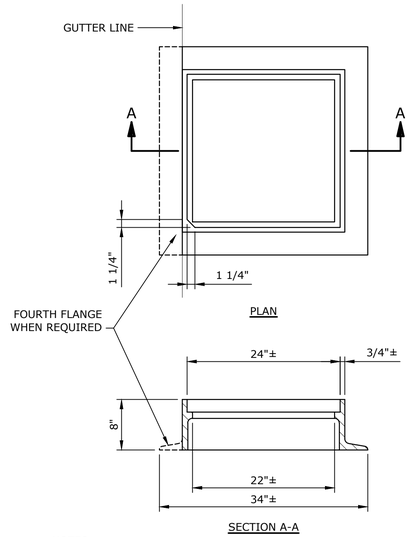
MANHOLE FRAME & COVER



NOTES:

1. FOR USE WITH PVC PIPE, PROVIDE RUBBER BOOT SIMILAR TO MANHOLE DETAIL.
2. FOR USE WITH OTHER TYPES OF PIPE, SEAL JOINT BETWEEN PIPE AND CATCH BASIN WITH GROUT.

PRECAST CONCRETE CATCH BASIN

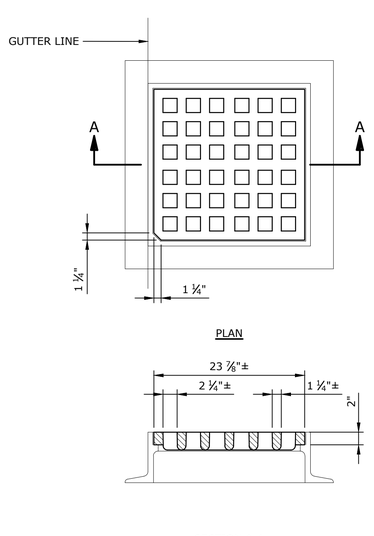


NOTES:
1. MINIMUM FRAME WEIGHT:
4 FLANGE - 295± LBS
3 FLANGE - 265± LBS

2. MATERIAL - CAST IRON, SEE SPECIFICATIONS

3. FOR ADDITIONAL INFORMATION SEE MHD 201.6.0

CATCH BASIN FRAME



NOTES:
1. MINIMUM WEIGHT OF GRATE - 190 LBS.

2. MATERIAL - CAST IRON, SEE SPECIFICATIONS.

CATCH BASIN GRATE

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WAYNE EDWARD BATES
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REGISTERED PROFESSIONAL ENGINEER
09/30/2025

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED PROFESSIONAL ENGINEER
09/30/2025

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-C-DETL.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

DETAILS - 2

SCALE: AS SHOWN

C-502

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Printed On: 9/29/2025-12:16pm By: JKlay
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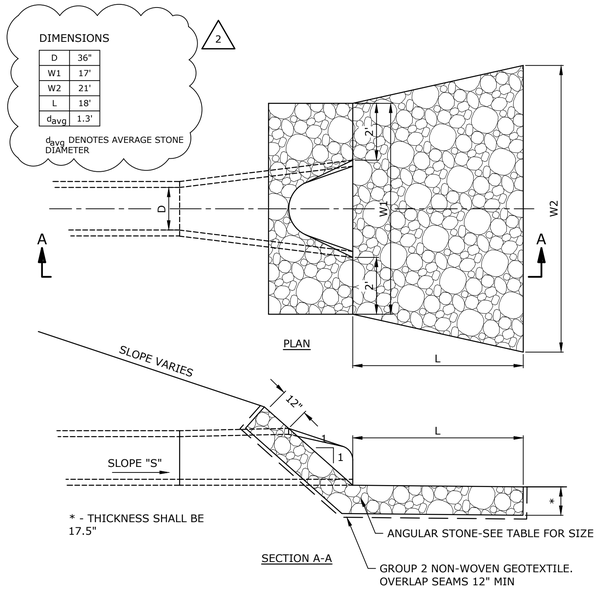
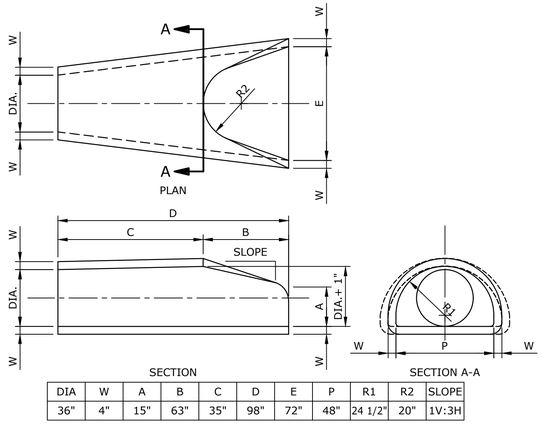


STONE OUTLET PROTECTION

NO SCALE

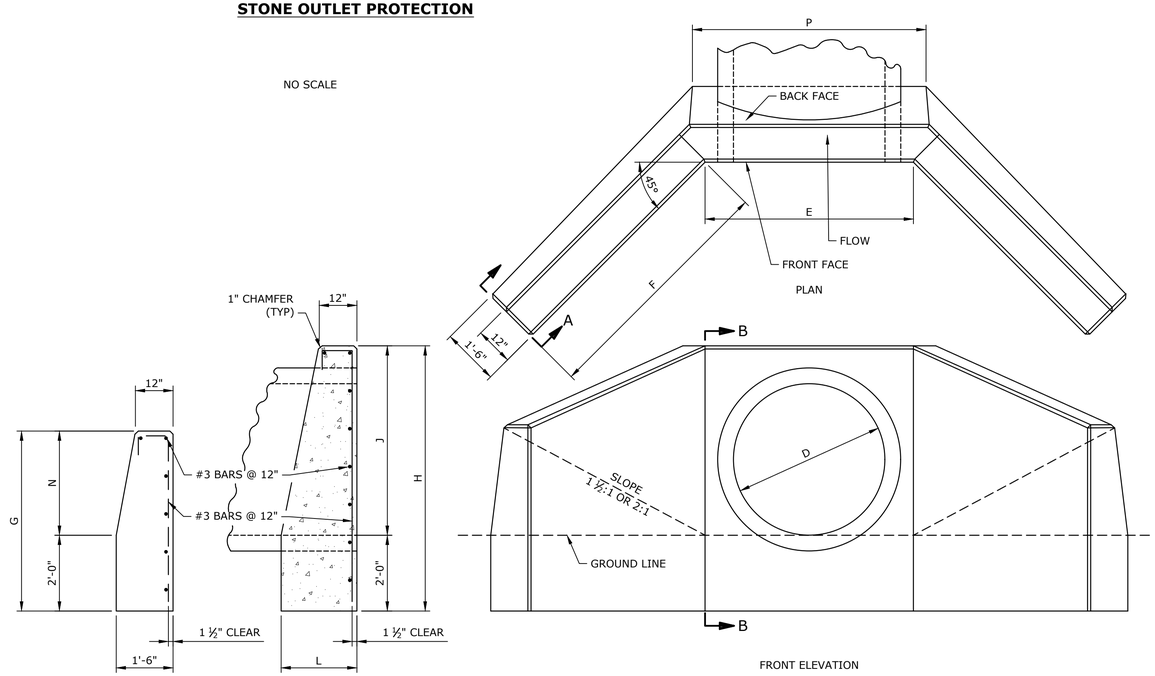


DIA	W	A	B	C	D	E	P	R1	R2	SLOPE
36"	4"	15"	63"	35"	98"	72"	48"	24 1/2"	20"	1V:3H

NOTES:
1. DIMENSIONS SHOWN ARE APPROXIMATE.
2. MATERIALS SHALL CONFORM TO AASHTO M-170 CLASS III PIPE UNLESS DESIGNATED OTHERWISE.
3. FOR ADDITIONAL DETAILS SEE MHD 206.8.0

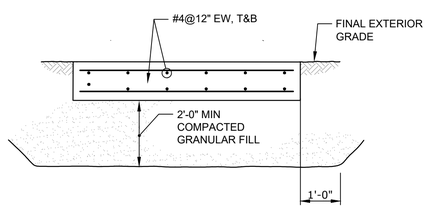
REINFORCED CONCRETE PIPE FLARED END

NO SCALE



CONCRETE ENDS FOR 30" TO 84" PIPE CULVERTS

-	**DETAIL**
-	SCALE:



CONCRETE PAD	24
NO SCALE	C-102

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REGISTERED PROFESSIONAL ENGINEER
12-03-2025
Wayne E. Bates

COMMONWEALTH OF MASSACHUSETTS
JEAN CHRISTY
CIVIL
No. 47080
REGISTERED PROFESSIONAL ENGINEER
12/03/2025

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION
2	12/2025	PEER REVIEW COMMENTS

PROJECT NO:	G5099-0003
DATE:	SEPT 2025
FILE:	G5099-0003-C-DETL.dwg
DRAWN BY:	AJW
DESIGNED BY:	AJW
CHECKED BY:	JEC
APPROVED BY:	JEC

DETAILS - 3

SCALE: AS SHOWN

C-503

Last Saved: 12/2/2025
Plotted: Dec 03, 2025-12:59pm By: TJahhe
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Tighe&Bond

ATTACHMENT 2

Monitoring and Invasive Species Management Protocol
Garelick Farms Facility
1199 West Central Street, Franklin, MA

TO: Franklin Conservation Commission

FROM: Jean E. Christy, PE

COPY: Robert Dandreo, Dandreo Brothers General Contractors

DATE: December 4, 2025

The following memorandum has been prepared in support of the Flooding Resiliency Improvements Project at the Garelick Farms facility located at 1199 West Central Street in Franklin, Massachusetts. This monitoring protocol addresses the proposed shrub plantings and areas of proposed native seed mix application at the Project Site that are located within the 200-foot Riverfront Area and Buffer Zone.

- Monitoring frequency:
  - Twice per year for 2 years, late Spring/early Summer and Fall.
  - Initial assessment within 30 days of planting to confirm shrub planting success.
- Metrics for success:
  - Vegetation health – 75% survival rate for shrubs and 75% coverage for native seed mix
  - Prevention of invasive species growth. Refer to Invasive Species Control Plan below.
- Corrective actions:
  - Record presence of invasive species within Buffer Zone in area of outfall and pipe installation; note how species were managed (eg hand pull, cutting)
  - Plant replacement if required; prune deadwood in early May/after new growth begins to emerge
  - Provide supplemental watering during the establishment period (first two years) and on an as-needed basis during periods of extended drought
  - Re-seed areas where native seed mix has not properly established
- Reporting schedule:
  - Submit a written annual report to the Franklin Conservation Commission by December 15th each year for two years.
  - The report will include a narrative description and color photographs.
  - Final report submitted prior to submittal of Request for Certificate of Compliance must confirm metrics have been met.

Invasive Species Control Plan

- In addition to native species, there are established populations of non-native and/or invasive plant species observed within the portion of the limit of work that is located within 100-foot Buffer Zone that is associated with pipe and outfall installation

(approximately 230 SF). Refer to sheet C-201 for the location and limits of proposed invasive species removal/control.

Special measures will be taken during and after the construction period to minimize the propagation of invasive species. The following measures are proposed:

- Demarcate invasive species locations within the portion of the Limit of Work that is located within the 100-foot Buffer Zone that is associated with pipe and headwall installation. Remove prior to commencement of site work (vegetation clearing, demolition, excavation and/or grading). The following removal methods will be conducted to invasive species encountered during site preparation activities:
    - When invasive species are encountered within the limit of work in the area of proposed pipe and headwall installation, they will be immediately removed by hand or with appropriate machinery.
    - If approved, herbicides may be incorporated into the management plan.
    - Disposal methods will include placement in a heavy duty, 3 mil or thicker, black contractor quality plastic cleanup bags.
    - Bags will be securely tied and transported from the site in a truck with a topper or cap in order to prevent spread or loss of the plant material during transport from the work site to an appropriate off-site disposal location.
    - Cut vegetation will not be disposed into native cover areas.
- If workers walk through an area of the project site that visibly contains invasive species, their boots will be washed as near the point of origin as practically possible.
- To prevent erosion and the introduction of invasive weeds, only certified weed-free straw wattles will be used.
- Post-construction monitoring will occur in the indicated area for two years post-construction to confirm no further growth or spread of invasive species.

The Invasive Species Control Plan will be followed before and during construction.

J:\G\G5099 Garelick Farms\0003 Flood MItigation Design and Permitting\Permitting\NOI\Application Docs\Monitoring Protocol_12.1.25.docx

Tighe&Bond

ATTACHMENT 3

Table 5-1 Summary of Resource Area Impacts (Revised 12/2025)

Resource Area	Temporary Impacts (SF) [1]	Permanent Impact (SF)
Riverfront Area (RFA)[1]	7,334	230
100-Foot Buffer Zone[2]	8,756	5,986

1: Temporary impact associated with erosion and sediment controls and drainage pipe installation, including excavation and the repaving of disturbed pavement. Permanent activities associated with installation of a headwall.

2: Temporary impact associated with erosion and sediment controls and drainage pipe installation, including excavation and the repaving of disturbed pavement. Permanent activities associated with installation of an outfall and restorative plantings and seeding.

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ATTACHMENT 4

LONG-TERM POLLUTION PREVENTION AND STORMWATER MANAGEMENT SYSTEM OPERATION AND MAINTENANCE PLAN

Garelick Farms Stormwater Improvements
Franklin, MA

September 2025
Revised December 2025

Prepared for:

Dandreo Brothers General Contractors

Table of Contents

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Section 1
Introduction

Stormwater runoff from construction activities can have a significant impact on water quality. As stormwater flows over a construction site, it can pick up pollutants like sediment, debris, and chemicals and transport these to a nearby storm sewer system or directly to a river, lake, or coastal water. Polluted stormwater runoff can harm or kill fish and other wildlife. Sedimentation can destroy aquatic habitat, and high volumes of runoff can cause stream bank erosion. Debris can clog waterways and potentially reach the ocean where it can kill marine wildlife and impact habitat.

Standard 8 of the Massachusetts Stormwater Standards requires:

> "a plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented".

The following Erosion and Sediment Control Plan (ESCP) identifies the requirements to comply with Standard 8.

Section 2
Project Information

2.1 Plan Contents

This ESCP was developed for the Garelick Farms Stormwater Improvements Project in Franklin, Massachusetts. This ESCP provides permit-related information to satisfy the requirements of Standard 8 of the Massachusetts Stormwater Handbook.

2.2 Project/ Site Information

Project Name and Address

Project/Site Name:	Garelick Farms Stormwater Improvements
Project Street/Location:	1199 West Central Street
City:	Franklin
State:	Massachusetts
ZIP Code:	02038
County or Similar Subdivision:	Norfolk

2.3 Nature of the Construction Activity

General Description of Project

The project will be performed within the eastern portion of the Garelick Farms property throughout the paved areas to install a 36" diameter stormwater pipe with associated manholes to convey stormwater from the southern portion of the site where flooding regularly occurs to the northeastern wetland located on the site. Two catch basins will be removed with existing piping abandoned and replaced. The two catch basins will be replaced and connected to the new stormwater system.

Size of Construction Project

Total size of the property: 52 acres

Total area expected to be disturbed by the construction activities: 0.5 acres

The maximum area expected to be disturbed at any one time (in acres): 0.5 acres

TABLE 2-4

Pollutant-Generating Activities

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)
Site work	Soil particles and fines
Paving and construction areas	Petroleum, concrete, vehicle fluids, paints, solvents
Concrete construction	Concrete

Pollutant-Generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)
Pavement marking	Paint
Solid waste storage	Construction debris, trash
Equipment use	Hydraulic Oils/fluids
Equipment use	Antifreeze/coolant
Portable toilets	Sewage
Staging areas	Sediment, gasoline, fuel oil, concrete, vehicle fluids, paints, solvents, fertilizers, adhesives, antifreeze/coolant, hydraulic oil/fluid, etc.

2.4 Sequence and Estimated Dates of Construction Activities

The following is an anticipated construction sequence identifying the major components of construction for the project.

2.4.1 Construction Sequence

Estimated Start Date of Construction Activities for this Phase	Spring 2025
Estimated End Date of Construction Activities for this Phase	Summer 2025
Estimated Date(s) of Application of Stabilization Measures for Areas of the Site Required to be Stabilized	Summer 2025
Estimated Date(s) when Stormwater Controls will be Removed	Fall 2025

2.5 Allowable Non-Stormwater Discharges

Water from non-stormwater sources are allowed when properly managed. The following identifies discharge sources anticipated with the project.

TABLE 2-5

List of Allowable Non-Stormwater Discharges Present at the Site

Type of Allowable Non-Stormwater Discharge	Likely to be Present at Your Site?	Location on Site
Discharges from emergency fire-fighting activities	☒ YES ☐ NO	Fire hydrants on site
Fire hydrant flushings	☐ YES ☒ NO	
Landscape irrigation	☒ YES ☐ NO	Vegetated areas on site

Waters used to wash vehicles and equipment[1]	☐ YES ☒ NO	
Water used to control dust	☐ YES ☒ NO	
Potable water including uncontaminated water line flushings	☐ YES ☒ NO	
External building wash down, provided soaps, solvents, and detergents are not used, and external surfaces do not contain hazardous substances (e.g. see Appendix A) (e.g. paint or caulk containing PCBs)	☐ YES ☒ NO	
Pavement wash waters[2]	☐ YES ☒ NO	
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO	
Uncontaminated, non-turbid discharges of ground water or spring water	☐ YES ☒ NO	
Foundation or footing drains[3]	☐ YES ☒ NO	
Construction dewatering water[4]	☒ YES ☐ NO	Throughout site, from excavated trenches*

[1]provided that there is no discharge of soaps, solvents, or detergents used for such purposes

[2]provided spills or leaks of toxic or hazardous substances have not occurred (unless all spill material has been removed) and where soaps, solvents, and detergents are not used. You are prohibited from directing pavement wash waters directly into any water of the U.S., storm drain inlet, or stormwater conveyance, unless the conveyance is connected to a sediment basin, sediment trap, or similarly effective control;

[3]where flows are not contaminated with process materials sucks as solvents or contaminated ground water

[4]discharged in accordance with applicable regulations

* **No** untreated or contaminated groundwater will be discharged to wetlands or waterways. Excess water will be discharged overland in upland areas and allowed to naturally infiltrate in well-drained soils, or discharged to wetlands or streams only after passing through filtration sacks or similar devices.

2.6 Site Maps

Site plans have been prepared which provide the Contractor will the minimum requirements for the prevention of erosion and sedimentation due to construction impacts. Erosion controls are depicted on the site plans, provided under separate cover. The site plans provide locations of perimeter erosion controls, inlet controls, and construction-period stormwter management features such as sediment traps.

Section 3
Erosion and Sediment Controls

The Contractor must implement erosion and sediment controls in accordance with the following requirements to minimize the discharge of pollutants in stormwater from construction activities. This project also includes site specific controls and permit conditions which may take precedent and are not included in the following descriptions. The Contractor shall also comply with the requirements in the project's permits.

3.1 Perimeter Controls

Provide perimeter controls to prevent sediment from entering and compromising the adjacent storm drain system.

General

Roadways and storm drainage components adjacent to the proposed project area will be protected by a row of erosion control barriers. The erosion control barriers consist of straw wattles or compost filter tubes/socks placed in a fashion that restricts the contractor(s) to the areas necessary to conduct the work and will generally define the limits of work. The locations of these barriers are shown on the project drawings.

Specific Perimeter Controls

Perimeter Control Description

- Perimeter controls include the installation of a straw wattle around the perimeter of the site. Perform work in accordance with the ESCP.

Installation

- All erosion control measures shall be installed prior to the start of any earth-disturbing activities.
- The Contractor shall maintain a reserve supply of covered and protected erosion control devices on-site for emergency use.
- Removal of erosion controls shall not occur until all disturbed areas are fully stabilized and approval for removal has been granted by the Engineer and Conservation Commission.

Maintenance Requirements

- Erosion control inspections shall occur weekly and after significant rain events, in accordance with the Town of Franklin Conservation Commission Regulations. Inspections and maintenance activities shall be logged and submitted weekly to the Conservation Office, noting the condition of the controls and any corrective actions taken.
- The contractor(s) will be required to maintain a reserve supply of erosion control barriers on-site to make repairs, as necessary.
- Perimeter control shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired if there are any signs of erosion or sedimentation below them, and any repairs shall be made immediately. If there are signs of undercutting at the center or the edges, or

impounding of large volumes of water behind them, sediment barriers shall be replaced with a temporary check dam.

- Should the fabric on a barrier decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.
- Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximated 1/3 the height of the barrier.

At the conclusion of the project, the erosion control barriers will be removed and properly disposed off-site following the stabilization of disturbed areas.

3.2 Sediment Track-Out

General

It is the Contractor's responsibility to take measures to prevent tracking of sediment from the project site. It is also the Contractor's responsibility to take measures to prevent tracking of sediment from any staging and material storage area. A stone tracking pad and street sweeping apparatus shall be used as necessary to minimize the track-out of sediment onto adjacent streets, other paved areas, and sidewalks from vehicles exiting the construction site.

Specific Track-Out Controls

Track-Out Controls Description

- Stone aggregate tracking pad
- Street sweeping

Installation

- Sediment track out controls to be installed by the Contractor include a stone aggregate tracking pad with an underlying geotextile fabric. The pad shall be constructed in accordance with the ESCP.

Maintenance Requirements

- The site exit shall be maintained in a condition which will prevent tracking of sediment onto public right-of-way. When washing is required, it shall be done in an area stabilized with aggregate which drains into a sediment trapping controls.
- If sediment is tracked out from the site to the surface of off-site streets, other paved areas, and sidewalks, the Contractor shall remove the deposited sediment by the end of the same work day in which the track-out occurs.

3.3 Stockpiled Sediment or Soil

General

Temporary soil stockpiles shall be surrounded by hay bales or silt fence and shall be stabilized by covering or temporary erosion control seeding. Stockpiles are to be located as far as possible from any surface water.

Specific Stockpile Controls

Description

- Temporary stockpiles of excavated soil may be present at the site as construction progresses.

Installation

- Install a sediment barrier consisting of silt fencing or straw bales along downgradient perimeter areas of stockpiles.

- For piles that will be unused for 14 or more days, temporary stabilization with erosion control seeding shall be used if perimeter controls and/or temporary covering are not sufficient to prevent sediment migration.

Maintenance Requirements

- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or surface water.

3.4 Minimize Dust

General

The Contactor shall be responsible for the control of dust throughout the construction period. Dust control methods shall include, but be not limited to, sprinkling water or calcium chloride on exposed areas, covering loaded dump trucks leaving the site, and temporary mulching exposed soil areas. Dust control measures shall be utilized to prevent the migration of dust from the site to abutting areas.

Specific Dust Controls

Description

- Prevent dust from becoming a nuisance or hazard. During construction, excavated material and open or stripped areas are to be policed and controlled to prevent spreading of the material.
- Dust control measures shall be utilized to prevent the migration of dust from the site to abutting areas.
- Ensure that the existing equipment, facilities, and occupied space adjacent to or nearby areas of the work do not come in contact with dust or debris as a result of concrete demolition, excavation or surface preparation.

Installation

- Dust control methods shall include, but be not limited to, sprinkling water on exposed areas, using calcium chloride, covering loaded dump trucks leaving the site, and temporary mulching.
- Use a mechanical street sweeper daily.

Maintenance Requirements

- During the work on-site, daily all paved road and driveway surfaces shall be scraped and broomed free of excavated materials on a daily basis. Prior to sweeping, or as needed during the work day, the surfaces shall be hosed down or

otherwise treated to eliminate active or potential dust conditions and the natural road or wearing surface shall be exposed.

3.5 Minimize the Disturbance of Steep Slopes

General

All slopes greater than 15% during the regular construction season are to have slope stabilization measures. This applies to all slopes greater than 8% after October 1st.

Specific Steep Slope Controls

- Where slopes greater than 3:1 will be created, synthetic erosion control fabric is to be utilized in these areas to prevent erosion until permanent vegetation is established.

3.6 Topsoil/Loam Areas

General

All areas not to be paved or otherwise treated shall receive 4-inch loam and seed. The salvaging of existing loam and topsoil is not anticipated due to the urban nature of the site.

Specific Topsoil/Loam Area Controls

Description

- Erosion of topsoil/ loam areas will be controlled by providing temporary and perminant grass cover.
- Where slopes greater than 3:1 will be created, synthetic erosion control fabric will be utilized to prevent erosion until permanent vegetation is established.

Installation

- Temporary vegetative cover shall be provided to stabilize the site in areas where additional construction activity will not occur for more than 14 calendar days.

Maintenance Requirements

- Seeding shall be inspected periodically and at a minimum 95% of the soil surface should be covered by vegetation. If any evidence of erosion is apparent, repairs shall be made and additional measures shall be used to prevent further erosion.
- Straw mulch, wood fiber mulch, or erosion control blankets shall be applied immediately after seeding.

3.7 Soil Compaction

General

In areas where final vegetative stabilization is proposed, the Contractor shall prevent excessive compaction by:

- Restricting vehicle and equipment use in these locations to avoid excessive soil compaction; or

- Prior to seeding or planting areas of exposed soil that have been compacted, use techniques that aerates the soils resulting in conditions that will support vegetative growith.

3.8 Storm Drain Inlets

General

Provide catch basin inlet protection as per construction drawings and specifications in all catch basins within the vicinity of the earth disturbing activities to protect the stormwater management system from high sediment loads and high velocities, while disturbance due to construction is occurring in the drainage area.

Specific Storm Drain Inlet Controls

Description

- Storm Drain Inlet Controls include the installation of Silt Sacks
- Refer to the ESCP for inlet control locations.

Installation

- Refer to manufacturer recommended specifications and instillation instructions.

Maintenance Requirements

- Silt sacks shall be inspected immediately after each rainfall and at least daily during prolonged rainfall. They shall be repaired or replaced as needed immediately.
- Sediment deposits should be removed after each storm event. They must be cleaned when deposits reach approximated 1/3 the height of the barrier.
- The Contractor shall remove the deposited sediment and make any repairs by the end of the same work day in which the sediment is observed or by the end of the next work day if observation occurs on a non-work day.

3.9 Sediment Traps

General

Permanent sediment basins are not proposed as part of the final stormwater management system, however, temporary sediment basins or sediment traps may be used during construction to retain runoff and settle out particles prior to discharge from the site.

Specific Sediment Basin/Sediment Trap Controls

Description

- Temporary sediment basins or sediment traps may be excavations or bermed detention areas on site with stabilized discharges.

Installation

- As required due to site conditions and activities.

Maintenance Requirements

- Contractor shall periodically remove sediments and dispose of them in an appropriate location. Discharge locations shall be inspected regularly and stabilized as necessary.

3.10 Dewatering Practices

General

Dewatering is anticipated for this project. Standard dewatering measures will be employed. No untreated groundwater will be discharged to wetlands or waterways. Excess water will be discharged overland in upgradient areas and allowed to naturally infiltrate or discharged to the drainage system only after passing through filtration sacks or similar devices.

Specific Dewatering Practices

Dewatering Practice Description

- Provide, operate and maintain adequate pumping, diversion and drainage facilities in accordance with the approved dewatering plan to maintain the excavated area sufficiently dry from groundwater and/or surface runoff so as not to adversely affect construction procedures nor cause excessive disturbance of underlying natural ground. Locate dewatering system components so that they do not interfere with construction under this or other contracts.
- Install erosion/sedimentation controls for velocity dissipation at point discharges onto non-paved surfaces.

Installation

- Install sand and gravel, or crushed stone, filters in conjunction with sumps, well points, and/or deep wells to prevent the migration of fines from the existing soil during the dewatering operation.
- Transport pumped or drained water without interference to other work, damage to pavement, other surfaces, or property. Pump water through a silt filter bag prior to discharge to grade or drainage system.
- Do not discharge water into any separated sanitary sewer system.

Maintenance Requirements

- Repair any damage resulting from the failure of the dewatering operations and any damage resulting from the failure to maintain all the areas of work in a suitable dry condition.
- Take actions necessary to ensure that dewatering discharges comply with permits applicable to the Project. Dispose of water from the trenches and excavations in such a manner as to avoid public nuisance, injury to public health or the environment, damage to public or private property, or damage to the work completed or in progress.

3.11 Site Stabilization

General

Initiate site stabilization measures immediately whenever earth-disturbing activities have permanently ceased or will be temporarily suspended on any portion of the site for more than 14 days.

Complete the stabilization activities within 14 days after the permanent or temporary cessation of earth-disturbing activities. Temporary paving of disturbed areas of existing roads should be completed at a minimum at the end of each week.

Use the following stabilization practices to protect exposed soil from erosion and prevent sediment movement.

3.11.1 Seeding

Installation

- When construction has temporarily or permanently ceased, seeding shall occur immediately in accordance with the project specifications.

Maintenance Requirements

- Periodic inspections shall occur once a week and after every rainstorm of 0.25 inches or greater until a minimum of 70% of the soil surface is covered by vegetation.

3.11.2 Mulching

Installation

- When construction has temprorarily or permanently ceased, mulching shall occur immediately, as required, for erosion control while vegetation is being established.

Maintenance Requirements

- Periodic inspections shall occur once a week and after every rainstorm 0.25 inches or greater.

3.11.3 Erosion Control Mats or Blankets

Installation

- When construction has temprorarily or permanently ceased, erosion control blanket installation shall occur immediately on slopes greater than 3:1, or as required, for erosion control while vegetation is being established.

Maintenance Requirements

- Periodic inspections shall occur once a week and after every rainstorm 0.25 inches or greater.

Section 4
Pollution Prevention Standards

A clean and orderly construction site will reduce the opportunity for pollutants to enter the stormwater runoff stream. The following identifies sources of pollution anticipated on a typical construction site and preventative measures to avoid pollution.

4.1 Potential Sources of Pollution

TABLE 4-1

Construction Site Pollutants

Pollutant-Generating Activity	Pollutants or Pollutant Constituents	Location on Site
Site work	Soil particals and fines	Where disturbance is proposed
Paving and construction areas	Petroleum, concrete, vehicle fluids, paints, solvents	Where paving and construction is proposed
Disinfection of water mains	Chlorine, dechlorination chemicals	Where water mains are proposed
Concrete construction	Concrete	Where concrete is proposed
Pavement marking	Paint	Where pavement markings are proposed
Solid waste storage	Construction debris, trash	In dumpster locations
Fertilizing	Fertilizers	In areas of proposed seeding
Equipment use	Hydraulic Oils/fluids	Leaks/broken hoses from equipment
Equipment use	Antifreeze/coolant	Leaks/broken hoses from equipment
Portable toilets	Sewage	Where portable toilets are located
Staging areas	Sediment, gasoline, fuel oil, concrete, vehicle fluids, paints, solvents, fertilizers, adhesives, antifreeze/coolant, hydraulic oil/fluid, etc.	

4.2 Spill Prevention and Response

- Manufacturer's recommended methods for cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and clean up supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas on site. Equipment and materials will include but not be limited to

brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic or metal trash containers specifically for this purpose.

- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.
- Spills of toxic or hazardous material will be reported to the appropriate state or local government agency regardless of size.
- The Spill Prevention Plan will be adjusted to include measures to prevent this type of spill from recurring and how to cleanup the spill if it recurs. A description of the spill, its cause and the cleanup measures will be included.
- The site superintendent responsible for day to day operations will be the Spill Response Coordinator (SRC). The SRC is responsible for decisive actions in the event of a spill at the facility. The SRC will supervise efforts to provide immediate containment of the spill to prevent a more difficult cleanup situation. Cleanup crews will utilize proper spill cleanup materials and employ safe work practices.

4.2.1 Federal and State Spill Notification

In accordance with 310 CMR 40.0333, the SRC shall notify the Massachusetts Department of Environmental Protection (Central Region) - (508)-792-7650, the Local Emergency Planning Committee (LEPC) and any other authorities or agencies within two hours if an accident or other type of incident results in a release to:

- Land
  - 10 Gallons for more Oils (PCB<500 ppm)
  - 1 Gallon or more Oils (PCB ≥500 ppm)
- Waterways
  - Any quantity of Oils
- Or, triggers the exposure to toxic chemical levels as listed in 301 CMR 40.1600, Revised Massachusetts Contingency Plan

The SRC shall notify the National Response Center (NRC) at **(800) 424-8802** where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with Part 2.3.3.4c and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period.

In either event, the SRC will work with state and federal agencies to ensure that all appropriate forms and reports are submitted in a timely manner.

- Note: Trigger volumes for other chemical spills vary. Contact the DEP or a Licensed Site Professional (LSP) for specific guidance on reporting thresholds and requirements for other chemicals.

4.2.2 Local Notification

The following local agencies will be called to provide emergency assistance at the facility on the judgment of the SRC:

TABLE 4-2

Emergency Assistance Notification

Fire Department 911 or (508) 528-2323	Police Department 911 or (508) 528-1212
Hospital: Milford Regional Medical Center (508) 473-1190	Department of Public Works: (508) 553-5500

4.3 Fueling and Maintenance of Equipment or Vehicles

General

Efforts shall be made to perform equipment/vehicle fueling and maintenance off-site. If fueling and/or maintenance of equipment of vehicles is performed on site, the following pollution prevention practices must be provided.

Specific Pollution Prevention Practices

- Site contractor/project manager shall provide an onsite vehicle fueling and maintenance area that is clean and dry.
- If possible keep area covered.
- Keep a spill kit at the fueling and maintenance area.
- Vehicles shall be inspected regularly for leaks and damage.
- Use drip pans, drip cloths or absorbent pads when replacing spent fluid.

4.4 Washing of Equipment and Vehicles

General

Efforts shall be made to perform equipment/vehicle washing and maintenance off-site. If washing of equipment and vehicles is performed on site, the following pollution prevention practices must be provided to minimize the discharge of pollutants.

Specific Pollution Prevention Practices

- Site contractor/project manager shall provide a proper washing area.
- Discharges from washing areas shall be infiltrated or diverted into sanitary sewer system unless no soaps or detergents are used.
- If soaps, detergents or solvents are stored onsite over must be provided to prevent these detergents from coming into contact with rainwater.

4.5 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

4.5.1 Building Products

- Site contractor/project manager shall designate a waste collection area on the site that does not receive a substantial amount of runoff from upland areas and does not drain directly to a water body.
- Ensure that containers have lids so they can be covered before periods of rain, and keep containers in a covered area whenever possible.
- Schedule waste collection to prevent the containers from overfilling.
- Clean up spills immediately. For hazardous materials, follow cleanup instructions on the package. Use an absorbent material such as sawdust or kitty litter to contain the spill.
- During the demolition phase of construction, provide extra containers and schedule more frequent pickups.
- Collect, remove, and dispose of all construction site wastes at authorized disposal areas.

4.5.2 Pesticides, Herbicides, Insecticides, Fertilizers, and Landscaping Materials

- Store new and used materials in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not possible, the materials shall be covered with polyethylene or polypropylene sheeting to protect them from the elements.
- Storage area should include precautions to contain any potential spills.
- Immediately contain and clean up any spills with absorbent materials.

4.5.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

- Store new and used petroleum products for vehicles in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not possible, the materials shall be covered with polyethylene or polypropylene sheeting to protect them from the elements.
- Storage area should include precautions to contain any potential spills.
- Immediately contain and clean up any spills with absorbent material.
- Have equipment available in fuel storage areas and in vehicles to contain and clean up any spills that occur.

4.5.4 Hazardous or Toxic Waste

- Store new and used materials in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not possible, the materials shall be covered with polyethylene or polypropylene sheeting to protect them from the elements.
- Storage areas should include precautions to contain any potential spills.

- Immediately contain and clean up any spills with absorbent materials.
- Have equipment available in fuel storage areas and in vehicles to contain and clean up any spills that occur.
- To prevent leaks, empty and clean hazerdous waste containers before disposing of them.
- Never remove the original product label from the container because it contains important safety information. Follow the manufacturer's recommended method of disposal, which should be printed on the label.
- Never mix excess products when disposing of them, unless specifically recommended by the manufacturer.

4.5.5 Construction and Domestic Waste

- All materials shall be collected and stored in securely lidded receptacles, no construction waste materials will be buried. Clean up immediately if containers overflow.

4.5.6 Sanitary Waste

- Portable sanitary units will be provided throughout the course of the project for use by the site contractor/project manager's employees. A licensed sanitary waste management contractor will regularly collect all sanitary waste from the portable units. Position portable toilets so that they are secure and will not be tipped or knocked over.

4.6 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

- The contractors should be encouraged where possible, to use washout facilities at their own plant or dispatch facility from stucco, paint, concrete, form release oils, curing compounds, and other construction materials.
- If washout of these materials in done on site:
    - Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.
    - Handle washout or cleanout wastes as follows:
        - Do not dump liquid wastes in the storm sewers
        - Dispose of liquid wastes in accordance with applicable regulations
        - Remove and dispose of hardened concrete waste consistent with your handling of other construction wastes in Section 5.5.
    - Attempts should be made to locate washout area as far away as possible from surface waters and storwmater inlets or conveyances, and to the extend practicable, designate areas to buse for these activities and conduct such activities only in these areas.
- Inspect washout facilities daily to detect leaks or tears and to identify when materials need to be removed.

4.7 Fertilizers

If fertilizers are to be used on site, the following requirements shall be followed:

- Store new and used materials in a neat, orderly manner in their appropriate containers in a covered area. If storage in a covered area is not possible, the materials shall be covered with polyethylene or polypropylene sheeting to protect them from the elements.
- Storage area should include precautions to contain any potential spills.
- Immediately contain and clean up any spills with absorbent materials.
- Apply at a rate and in amounts consistent with manufacturer's specifications, or document departures from the manufacturer's specifications.
- Apply at the appropriate time of year for the site, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth
- Avoid applying before heavy rains that could cause excessive nutrients to be discharged
- Never apply to frozen ground
- Never apply to stormwater conveyance channels with flowing water
- Follow all federal, state, tribal, and local requirements regarding fertilizer application.

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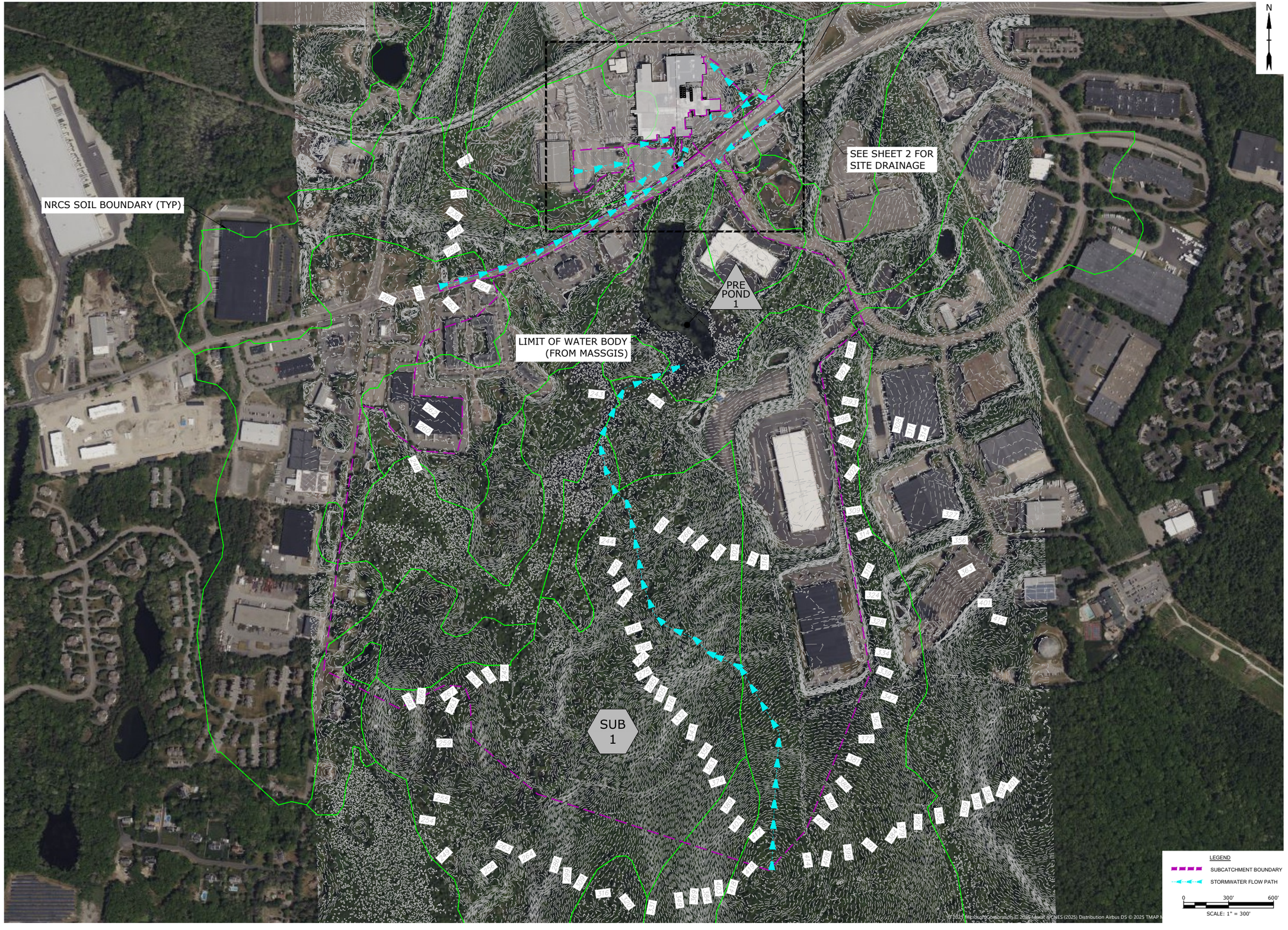
ATTACHMENT 5



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Westwood, MA 02090
(781) 708-9820

PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION

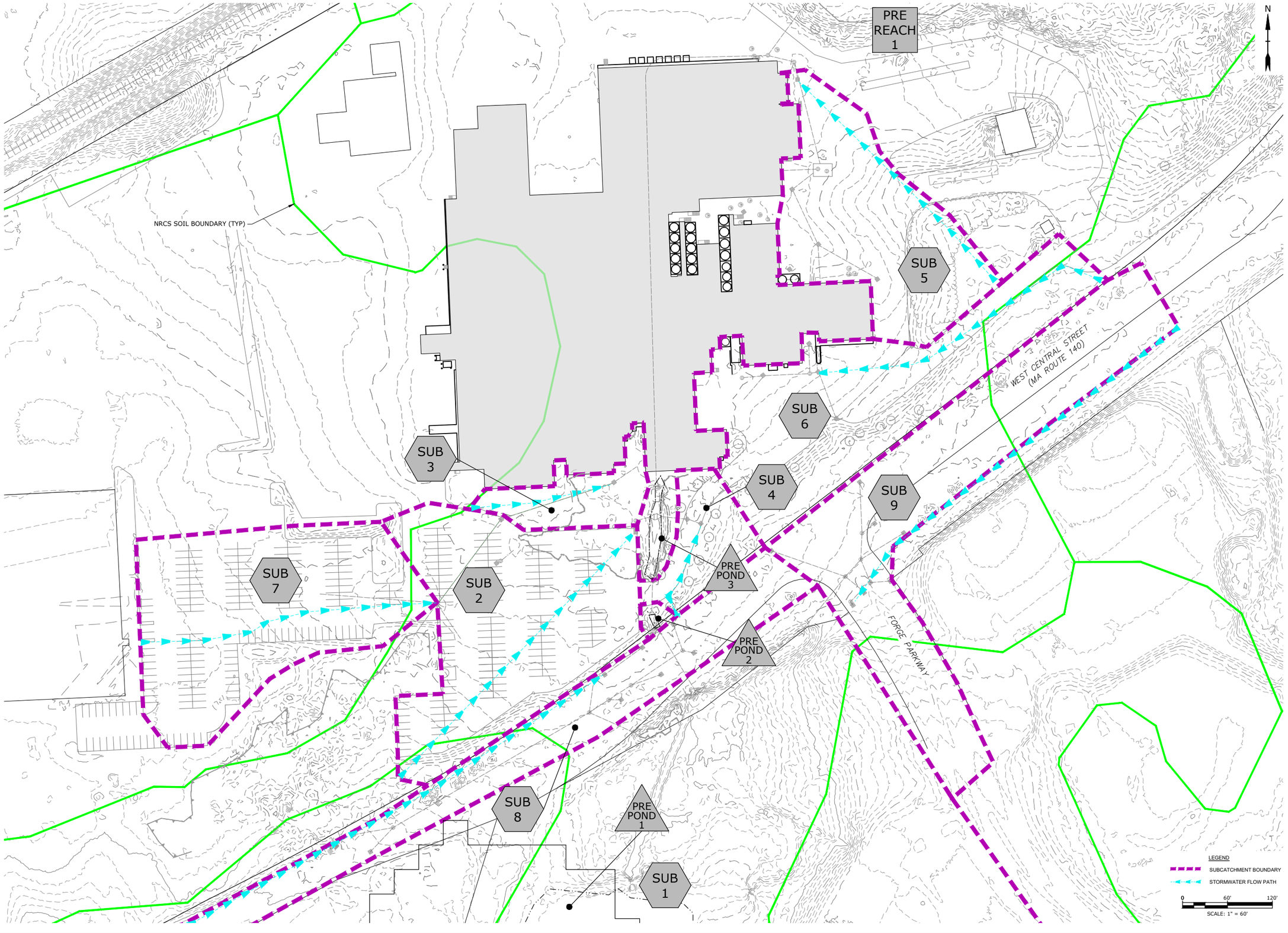
PROJECT NO:	G5099-0003
DATE:	12/2025
FILE:	G5099-0003-Existing Conditions.dwg
DRAWN BY:	AJW
DESIGNED BY:	JEC
CHECKED BY:	JEC
APPROVED BY:	JEC

EXISTING CONDITIONS DRAINAGE OVERALL SITE PLAN

SCALE: 1" = 300'

FIGURE 1

Last Saved: 12/2/2025
Printed: Dec 02, 2025 - 12:52pm By: TJabbe
Tighe & Bond:\\tighebond.com\data\Data\Projects\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Calculations\HydroCAD\G5099-0003-Existing Conditions.dwg



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PERMIT SET

Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION

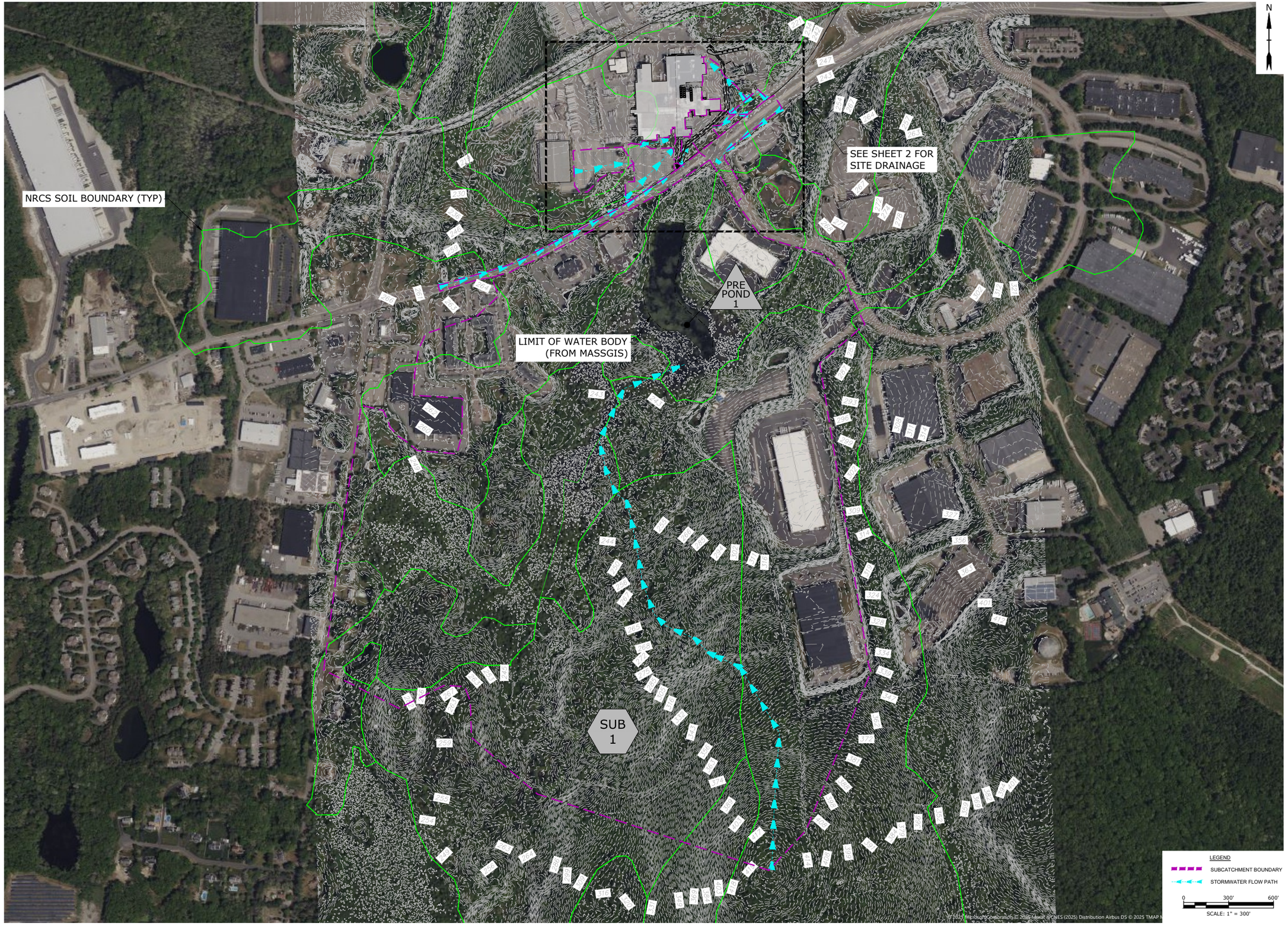
PROJECT NO:	G5099-0003
DATE:	12/2025
FILE:	G5099-0003-Existing Conditions.dwg
DRAWN BY:	AJW
DESIGNED BY:	JEC
CHECKED BY:	JEC
APPROVED BY:	JEC

EXISTING CONDITIONS DRAINAGE SITE PLAN

SCALE: 1" = 60'

FIGURE 2

Last Saved: 12/2/2025
Plotted: Dec 02, 2025 - 12:53pm By: TJahbe
Tighe & Bond: \\tighebond.com\data\Data\Projects\G\G5099 Garelick Farms\0003 Flood Mitigation Design and Permitting\Calculations\Hydro\CAD\G5099-0003-Existing Conditions.dwg



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Garelick Farms Flooding Resiliency Improvements

Dandreo Brothers General Contractors

Franklin, MA

MARK	DATE	DESCRIPTION

PROJECT NO:	G5099-0003
DATE:	12/2025
FILE:	G5099-0003-Proposed Conditions_REV.dwg
DRAWN BY:	AJW
DESIGNED BY:	JEC
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PROPOSED CONDITIONS DRAINAGE OVERALL SITE PLAN

SCALE: 1" = 300'

FIGURE 3

Last Saved: 12/26/2025
Printed: 12/26/2025 9:57am By: TM-Sparren
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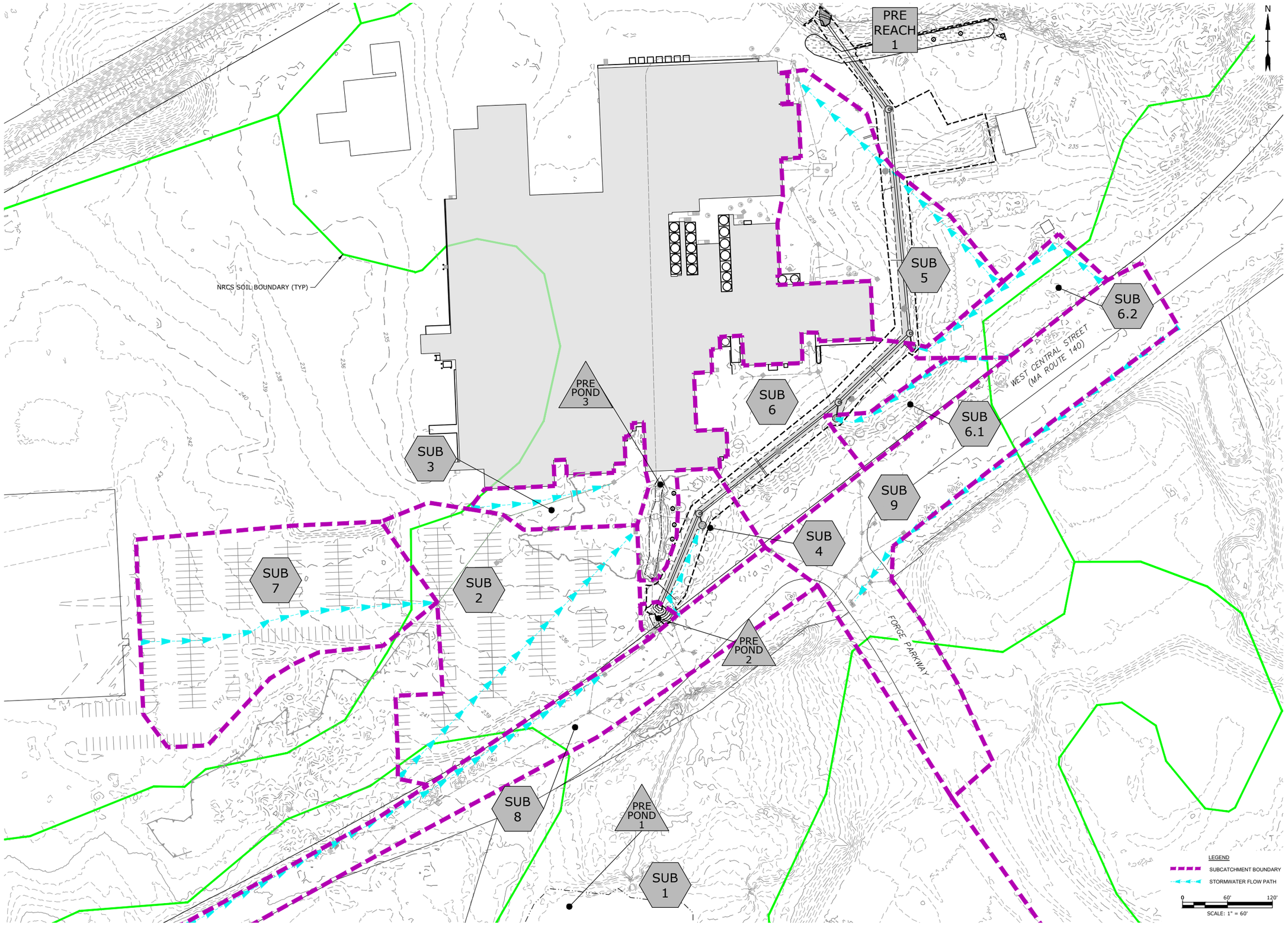

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MARK	DATE	DESCRIPTION

PROJECT NO:	G5099-0003
DATE:	12/2025
FILE:	G5099-0003-Proposed Conditions_REV.dwg
DRAWN BY:	AJW
DESIGNED BY:	JEC
CHECKED BY:	JEC
APPROVED BY:	JEC

PROPOSED CONDITIONS DRAINAGE SITE PLAN

SCALE: 1" = 60'

FIGURE 4

Last Saved: 11/26/2025 10:20am By: TLahbe
Plotted: 11/26/2025 10:20am By: TLahbe
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ATTACHMENT 6

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Project: Garelick Farms
Date: REV 12/2025
Calculated by: TAL
Checked by: JEC

	Pipe Material	
Roughness Coefficient	0.012	RCP

Upstream Structure	Downstream Structure	Anticipated Flow (cfs)*	Pipe Dia. (in)	Pipe Material	Pipe Area (sf)	Pipe Length (ft)	Upstream Invert	Downstream Invert	Pipe Slope (ft/ft)	Hydr. Radius (ft)	Full-Pipe Velocity (fps)	Full-Pipe Flow (cfs)
Headwall	DMH	23.90	36	RCP	7.069	127	231.00	228.30	0.021	0.75	14.94	105.64
CB	DMH	1.36	12	RCP	0.785	7	230.90	230.80	0.014	0.25	5.89	4.63
DMH	DMH	25.26	36	RCP	7.069	229	224.50	223.10	0.006	0.75	8.01	56.65
CB	DMH	0.21	12	RCP	0.785	15	229.00	228.90	0.007	0.25	4.02	3.16
DMH	DMH	25.47	36	RCP	7.069	124	223.00	222.40	0.005	0.75	7.13	50.40
CB	DMH	1.75	12	RCP	0.785	11	230.90	230.80	0.009	0.25	4.70	3.69
DMH	DMH	27.22	36	RCP	7.069	290	222.30	220.90	0.005	0.75	7.12	50.34
DMH	Outfall	27.22	36	RCP	7.069	133	220.80	220.00	0.006	0.75	7.95	56.19

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ATTACHMENT 7

Project Name:	Garelick Farms Flooding Resiliency Improvements
Project Location:	Franklin, MA
Description:	Riprap Outlet Protection Sizing Calculation
Prepared By:	TAL
Date:	December 2025

Objective: To size a riprap outlet protection pad that will decrease discharge velocity and prevent downstream erosion and sedimentation of Waters of the Commonwealth.

Methodology: United States Federal Highway Administration, 2006, Hydraulic Design of Energy Dissipators for Culverts and Channels, Hydraulic Engineering Center Circular Number 14

Design Flows:

Location	Pipe Diameter (inches)	100-Year Storm Design Flow (cfs)
FES-1	36	45.5

Calculations:

Stone Sizing:

$$D_{50} = 0.2\left[\frac{Q}{\sqrt{gd^{2.5}}}\right]^{1.33}\frac{d}{Tw}$$

Where:
D_{50} = Median Stone Diameter
Q = Design Flow (cfs), 100-year storm event
g = acceleration due to gravity (32.2 ft/sec^2)
Tw = Tailwater height (ft) = 0.4d
d = pipe diameter (ft)
D_{100} = Max stone diameter = 1.5 x D_{50}

Location	D_{50} (ft)	D_{50} (in)	D_{100} (in)
FES-1	1.3	15.4	23.1

Riprap Apron Sizing:
Using Table 10.1, dimensions are determined based on pipe diameter

D_{50} (in)	Apron Length (ft)	Apron Depth (in.)	
5	4D	$3.5D_{50}$	
6	4D	$3.5D_{50}$	
10	5D	$2.4D_{50}$	
14	6D	$2.2D_{50}$	FES-1
20	7D	$2.0D_{50}$	
22	8D	$2.0D_{50}$	

Apron Width = 3D + (2/3) x Length

Location	Apron Dimensions		
	Length (ft)	Width (ft)	Depth (in)
FES-1	18.0	21.0	31.2