

HAYWARD LANDING RETAINING WALLS REPAIR PROJECT

SITE:

Hayward Landing Apartments
26 North Street
Douglas, Massachusetts 01516

DATE:

May 15, 2025

Owner:

Hayward Landing Associates
26 North Street
Douglas, MA 01516

INVITATION TO BID

This is an invitation to bid. Sealed bids will be received by Hayward Landing Associates of 26 North Street, Douglas, Massachusetts 01516 for the repair of two existing timber retaining walls as described in the specifications and presented in the design drawings. Contractors shall submit their bids for the entire work on the Bid Form provided, clearly marked, and delivered to Hayward Landing Associates, 26 North Street, Douglas, Massachusetts 01526

Date: May 15, 2025	Invitation to Bid	Project Title: Hayward Landing Retaining Walls Repair
Location: Plainville, Massachusetts	Due Date: June 6, 2025, 4:00 pm	Type of Bid: Lump Sum/Unit Cost
Last Day for Questions: May 29, 2025	Bid Walk Date: May 22, 2025, 10:00 am	Prebid Location: 26 North Street, Douglas, MA

The owner will open bids at a later date.

No oral interpretation shall be made to any bidder as to the meaning of the Drawings and Specifications. Every request for such interpretation shall be made in writing by a bidder and e-mailed to the project engineer, Jay Johonnett, P.E. at jjohonnett@aries-eng.com.

Each bidder shall visit the site of the proposed work and fully acquaint themselves with the conditions as they exist. By submitting a bid, the Bidder represents that (i) the Bidder has read and understands the scope of the work for which the bid is being submitted; (ii) the Bidder is familiar with the conditions under which the work is to be performed; (iii) the bid is based upon all of the requirements set forth in the Specifications, including but not limited to, the materials, equipment and performance requirements set forth therein; and (iv) the Bidder, if awarded the contract, shall perform the work in accordance with the terms and conditions of the attached documents or any relevant existing agreement between the bidder and owner.

Owner reserves the right to reject any and/or all bids and to award the contract to other than the low bidder. No notice of such rejection shall be required to be given bidders, and the Owner shall not be deemed to have accepted any bid unless and until a duly executed copy of the contract has been delivered to the Bidder. The Owner, if a contract is to be awarded, will make the award of a contract, within thirty

days after the opening of bids. The Owner reserves the right to accept or reject any bid, for any reason, at their discretion.

BID COST FORM
RETAINING WALLS REPAIR
26 North Street, Douglas, MA

May 9, 2025

Item No.	Description	Units	Est. Quantity	Rate	Total, In Dollars
1 Mobilization/Demobilization/Health and Safety/Submittals					
1-A	Mobilization/Demobilization (Not to exceed 10% of total project bid amount)	LUMP SUM	1		\$
1-B	Health and Safety	LUMP SUM	1		\$
1-C	Dig Safe/Trenching/Utility Disconnection Permits	LUMP SUM	1		\$
1-D	Finalize Project Work Plan, Submittals	LUMP SUM	1		\$
SUB TOTAL:					\$ -
2 Temporary Facilities and Controls					
2-A	Temporary Facilities - PortaJohn	MO	1		\$
2-B	Excess Soil Staging Areas	LUMP SUM	1		\$
2-C	Remove Light Pole Base, Provide Temporary Connection to Remaining Lights	LUMP SUM	1		\$
SUB TOTAL:					\$ -
3 Fencing and Erosion/Stormwater Controls, Installed					
3-A	Barricades/Fencing Around Work Area	LUMP SUM	1		\$
3-B	Straw Wattle	LF	550		\$
3-C	Catch Basin Silt Sack	EA	5		\$
SUB TOTAL:					\$ -
4 Excavation/Removal					
4-A	Pavement Removal	SF	5,900		\$
4-B	Excavation of Soils	CY	685		\$
4-C	Soils Staging/Stockpile Maintenance	LUMP SUM	1		\$
4-D	Excess Soils Off-Site Transportation & Disposal Coordination	LUMP SUM	1		\$
SUB TOTAL:					\$ -
5 Disposal of Excess Soils					
5-A	Excess Soil Disposal (Concentrations Less Than RC-S1), Transportation & Disposal	CY	420		\$
5-B	Excess Soils Loading Into Truck	CY	420		\$
SUB TOTAL:					\$ -
6 Backfill Materials, Geogrid Installation, Wall Reconstruction					
6-A	Imported Select Backfill, Installation & Compaction	CY	420		\$
6-B	Geogrid Tensar UX1500 or Equivalent	SF	9,000		\$
6-C	Geogrid Installation, Place and Connect to Wall	LUMP SUM	1		\$
6-D	Alternate Retaining Wall Replacement, Pre-Cast Block Style, Including Design by Manufacturer (items 6-A through 6-C would be replaced by 6-D if less costly)	LUMP SUM	1		\$
SUB TOTAL:					\$ -

BID COST FORM
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May 9, 2025

Item No.	Description	Units	Est. Quantity	Rate	Total, In Dollars
7 Solid Waste & Recyclables					
7-A	Solid Waste Disposal	ROLL OFF	1		\$
7-B	Asphalt Recycling	TONS	100		\$
SUB TOTAL:					\$ -
8 Site Restoration					
8-A	Install New Concrete Light Pole Base and Connect	LUMP SUM	1		\$
8-B	Reinstall Guardrail System	LUMP SUM	1		\$
8-C	Asphalt, Placed and Installed. (2" base, 1-1/2" wear course).	SF	5,900		\$
8-D	Install New Curbing to Match	LUMP SUM	1		\$
8-E	Paint New Lines and Striping to Match	LUMP SUM	1		\$
SUB TOTAL:					\$ -
9 Unit Costs to Remove Additional Materials Beyond the Quantities Specified in RFP, if Needed					
9-A	Excess Soil Disposal Unit Rate (RC-S1), Transportation & Disposal	TONS	1		\$
9-B	Excess Soil Disposal (Unrestricted), Transportation & Disposal	TONS	1		\$
9-C	Additional importation of Common Fill (per ton)	TONS	1		\$
9-D	Additional Geogrid (per sf)	SF	1		\$
9-E	Excavator plus operator (per day)	DAY	1		\$
9-F	Mini Excavator plus operator (per day)	DAY	1		\$
9-G	Loader plus operator (per day)	DAY	1		\$
9-H	Compactor plus operator (per day)	DAY	1		\$
9-I	Dump truck plus operator, (per day)	DAY	1		\$
9-J	Site supervisor (per hr)	HR	1		\$
9-K	Site laborer (per hr)	HR	1		\$
9-L	Site engineer (per hr)	HR	1		\$

BID COST FORM
RETAINING WALLS REPAIR
26 North Street, Douglas, MA

May 9, 2025

Item No.	Description	Units	Est. Quantity	Rate	Total, In Dollars
10 Prepare for and Participate in Meeting: assume 1 kickoff					
10-A	Project Kickoff Meeting	LUMP SUM	1		\$ -
SUB TOTAL:					\$ -
PROJECT TOTAL:					\$ -

GENERAL CONDITIONS

THE WORK

The Contractor shall furnish all labor, materials, equipment, freight, testing, insurance, bonds, permits and taxes to perform the work as specified.

PERMITS, ORDINANCES AND CODES:

All work shall be installed by licensed personnel, as required, and in accordance with the laws, rules and regulations of all local, state and other governmental authorities having jurisdiction. Contractors are advised that it is necessary for the owner to attain approval for permits from the Town Building and Conservation Commission before work may commence on this project.

Before start of work, the contractor shall obtain and pay for all appropriate permits required to perform the work. Copies of permits shall be forwarded to the owner and posted on the job site.

THE OWNER AND CONDUCT:

The owner, herein referred to, is the property manager (or his/her appointed representative) for the site representing Hayward Landing Associates, 26 North Street, Douglas, MA 01516.

The owner shall have the authority to reject work that does not conform to the contract documents stated herein.

The contractor shall directly supervise or appoint a full-time qualified representative "superintendent" to deal directly with the owner. The superintendent shall represent the contractor and communication given to the superintendent shall be as binding as if given to the contractor. Important communications shall be confirmed in writing.

The contractor or his representative shall, at all times, enforce strict discipline and good professional order among their employees. Names of all contractors' employees shall be submitted to the owner for security purposes.

The use of alcohol, drugs, abusive language, or other unprofessional conduct will not be tolerated on the site. Individuals violating these conditions will be asked to leave the property and not be allowed to return to the site.

PROTECTION OF PERSONS AND PROPERTY:

Safety precautions and programs: The contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs required by OSHA and other state and federal regulatory agencies, in connection with the work required within this contract.

Safety of persons and property: The contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection to prevent damage, injury or loss to all persons and property.

INSURANCE:

The contractor and his sub-contractors shall not commence work until they have obtained all the insurance as required hereinafter to protect them from liability under Worker's Compensation Acts and other Employee Benefits Acts in accordance with all laws in force. Additionally, the contractor shall obtain insurance for liability from damage because of bodily injury, including death and property damage, including accident claims due to automobiles, all under contractor's bodily injury and property form of policies, which may arise both out of and during work under this contract, whether such work is done by the contractor themselves or anyone else directly employed by them. The contractor and all sub-contractors shall comply fully with OSHA standards and requirements during the construction period.

Certificates evidencing all insurance policies and coverage in effect shall be filed with the owner and all insurance policies shall list Hayward Landing Associates, 26 North Street, Douglas, Massachusetts, 01516 as the additional insured and certificate holders. Insurance policies and coverage shall be subject to the owner's approval for adequacy of protection and shall be delivered to the owner before the contract can be executed. Approval of the insurance by the owner shall not relieve or decrease the liability of the contractor.

Hayward Landing Associates requires that all insurers:

1. Be licensed or approved to do business within the State of Massachusetts.
2. Write required insurance on a per occurrence basis.
3. Hayward Landing Associates and its, officers, and employees, and agents as "Additional Insureds" on the general liability, automobile, and umbrella/excess liability policies. A waiver of subrogation must be provided on the worker's compensation policy.
4. Possess a minimum A.M. Best's Insurance Guide rating of A VII or better.
5. Provide a minimum of 30 days advance written notice of cancellation or non-renewal of policies.

6. Provide a completed Certificate of Insurance prior to the contract start date.

7. All policies of insurance must be on a primary basis, non-contributory basis.

INSURANCE REQUIREMENTS	MINIMUM LIMITS	NOTES
Commercial General Liability–ISO 2007 form CG0001 or equivalent	\$1,000,000 per occurrence bodily injury & property damage	Contracts must include Additional Insured language and/or Waiver of Subrogation language that clearly states that the insurer paying any claim arising by reason of any operations under the lease will not seek reimbursement from Hayward Landing Associates
Business Automobile Coverage	\$1,000,000 each accident limit for bodily injury and \$500,000 for property damage	Required where a vehicle will be used on the premises. Coverage must include: All owned, leased, hired, non-owned and employee non-owned vehicles and, where applicable, Personal Injury Protection.
Workers' Compensation (Statutory) & Employers Liability	Coverage A, in compliance with the laws of the State of Massachusetts; and Coverage B, \$500,000/\$500,000/\$500,000	This coverage must include statutory coverage for states in which employees are engaging in work. A waiver of subrogation must be provided.
Umbrella/Excess	\$1,000,000 each occurrence/aggregate	Contracts must include Additional Insured language and/or Waiver of Subrogation language that clearly states that the insurer paying any claim arising by reason of any operations under the lease will not seek reimbursement from Hayward Landing Associates

The contractor shall defend, indemnify and hold the owner, its respective members, partners, shareholders, officers, representatives, agents, and employees, harmless from all loss, damage and expense sustained by the contractor and from all claims, liability, expense, obligations, losses, demands, actions and costs including attorney's fees and other professional charges suffered by it by reason of any property damage (including loss or use thereof), infringement of rights (including patent and trademark rights), personal injury or other claim or action brought by any other person, firm or corporation that results from the contract services referred to in this contract, provided that the contractor shall have no responsibility with respect to liability resulting solely from owner's gross negligence.

Insurance Continued:

The contractor shall be liable for the loss or damage to the owner's property while such property is in the possession of the contractor. The contractor shall maintain in serviceable condition, preserve and account for all property furnished by the owner hereunder and shall not use or dispose of the same except in accordance with the owner's instructions. The contractor shall also be liable for all losses to the owner occasioned by the contractor's failure to furnish timely written notice to it of loss or damage to the owner furnished property suffered in transit or prior to receipt at the contractor's plant.

The contractor agrees to defend, indemnify and hold the owner harmless of all loss, claims, fines, demands, costs, injuries, penalties, or damage resulting from failure by the contractor or its subcontractors to comply with standards set out in the federal Occupational Safety and Health Act of 1970, or any applicable state laws pursuant thereto, which are within their control.

CONSTRUCTION SCHEDULES:

After contract award, the contractor shall prepare and submit to the owner, for approval, a construction schedule for the work indicating expedient and practical execution of the work. The construction schedule shall be the basis for delineating critical timing required to limit system downtime for critical parking as well as providing a schedule of values for anticipated job progress and monthly progress payments.

The contractor shall coordinate and schedule all work efforts with management and in the best interests of the owner. The contractor shall adhere to the work format and otherwise keep the owner informed of changes as they occur.

PROJECT CONDITIONS:

The contractor shall only use access to the work areas for all trades as designated by the owner. The contractor shall provide all equipment necessary to perform the work. Equipment shall comply with all applicable municipal, state and national safety regulations including OSHA guidelines. The owner shall have free access to the work. **The contractor shall provide for the safety of the general public in the vicinity of all work areas.**

The contractor shall be responsible for furnishing, maintaining, and removing erosion control devices around the perimeter of the work area to control soil erosion and runoff from any construction activities that may be commensurable with the excavation for asphalt and/or repairs to the retaining walls. The town conservation commission shall be the authority having jurisdiction for proper protection of the river.

The buildings will be occupied. Minimize disruption to the occupants at all times. Dispose of debris in a legal manner, off site, as required by state and local ordinances. Conduct debris to trucks in an approved manner without disrupting the building operations or exposing pedestrians to danger. Do not leave operating equipment unattended at any time.

Any and all damages, whether to the owner, tenants, or others, caused by the contractor's lack of protection shall be corrected/repared or reimbursed, in a manner satisfactory to the owner, by the contractor at no additional charge to the owner.

SHOP DRAWINGS AND MATERIAL SUBMITTALS:

The contractor shall review, coordinate and submit two copies of shop drawings, product data, diagram samples and similar submittals for review and approval by the owner. These submittals shall represent that the contractor has coordinated the work with the manufacturer and has obtained material and installation approvals for the products being used for this project. Manufacturer and material supplier shall provide engineering approvals required for operation, product performance and warranty and verified field dimensions for product installation. No materials shall be delivered to the site without submittal approval.

STORAGE:

The contractor shall be responsible for the storage of all tools, materials, equipment and supplies required to perform the work. The contractor shall schedule with the owner and otherwise make provisions to deliver and store equipment, tools and supplies for the work in areas designated by the owner and with minimum disturbance to the building residents.

BATHROOM FACILITIES:

The contractor shall be allowed to use the property toilet facilities provided they are not abused. The owner may remove this privilege should they determine that the facility is not being respected.

OWNER UTILITIES:

The Contractor will be allowed to utilize the owner's water, electrical power, and other utilities to a limited degree and as determined by the owner.

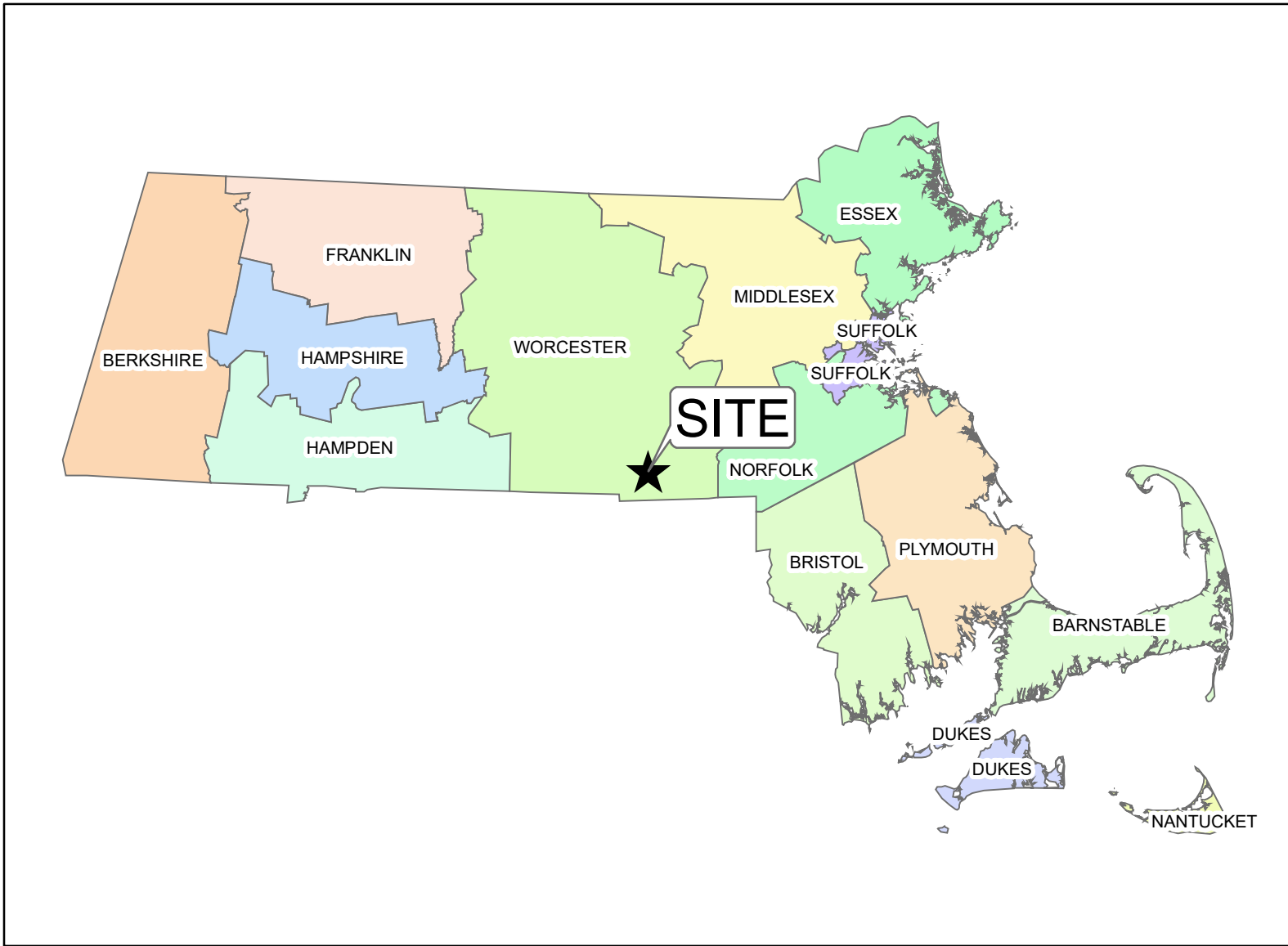
CLEAN UP:

The contractor shall, on a daily basis, keep the premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under the contract. At the completion of the work, the contractor shall remove from and about the project, waste materials, rubbish, the contractor's tools, construction equipment, machinery and surplus materials.

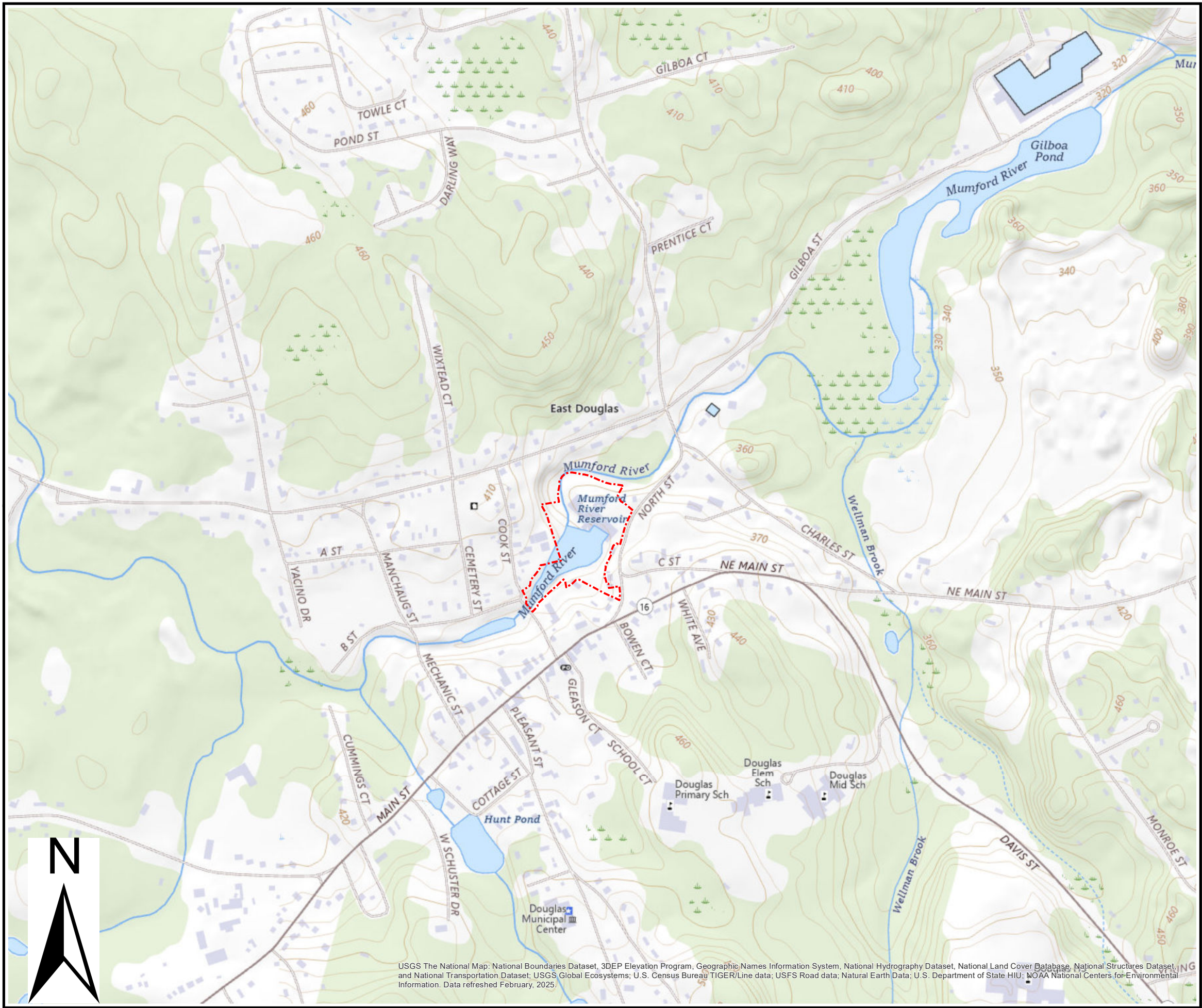
RETAINING WALLS REPAIR
HAYWARD LANDING
26 NORTH STREET
DOUGLAS, MASSACHUSETTS
MAP 141, LOT5

LEGEND

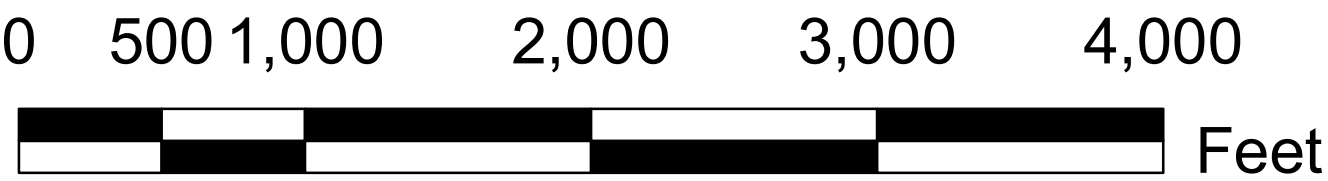
 Site Boundary



MASSACHUSETTS STATE MAP



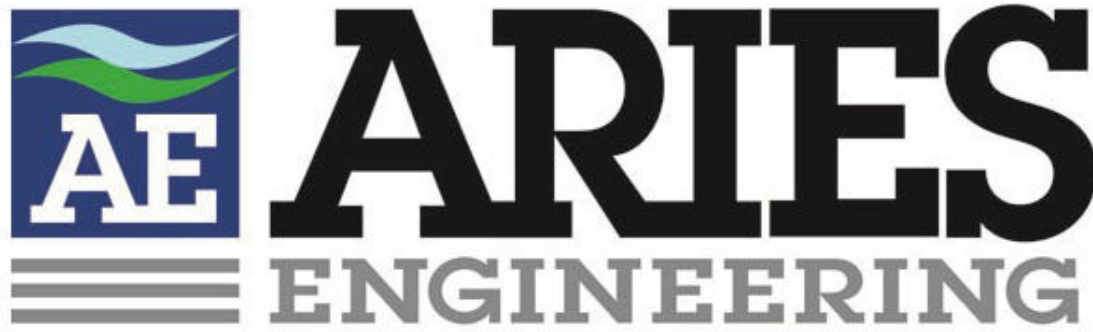
LOCATION PLAN



SHEET INDEX

- SHEET C.1 - LOCUS PLAN & INDEX
- SHEET C.2 - EXISTING CONDITIONS PLAN
- SHEET C.3 - EXCAVATION AND MODIFICATION PLAN
- SHEET C.4 - GENERAL NOTES AND SEDIMENT AND EROSION CONTROLS
- SHEET C.5 - MATERIAL SPECIFICATIONS
- SHEET C.6 - ELEVATIONS
- SHEET C.7 - SECTIONS AND DETAILS

PREPARED BY:



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jjohonnett@aries-eng.com


PREPARED FOR:

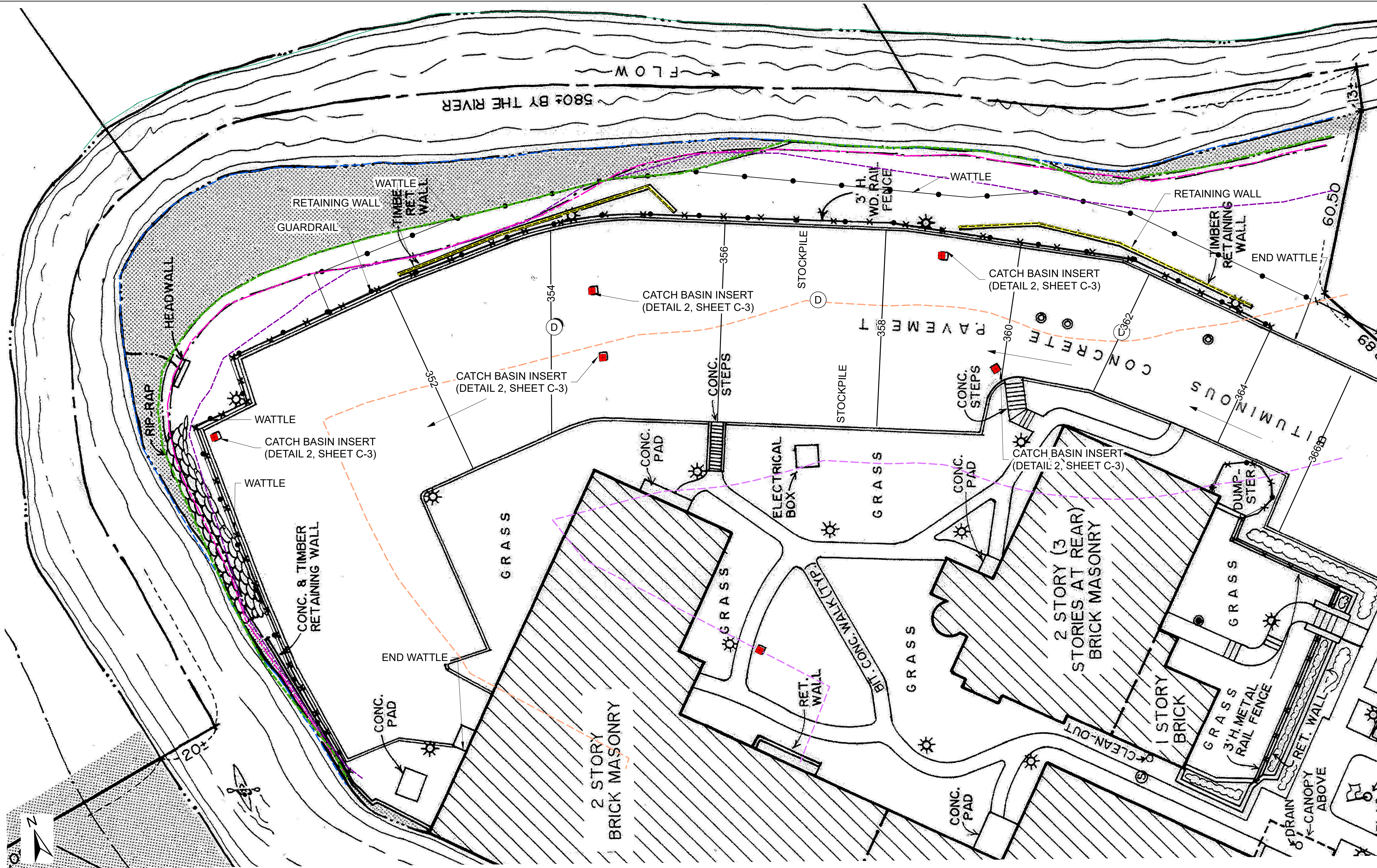
HAYWARD LANDING ASSOCIATES
26 NORTH STREET
DOUGLAS, MA 01516

SITE CONTACT:

Tony Berthod
tberthod@hallKeen.com
(508) 476-3777

No.	Date	Revision Description

	Aries Project # 2024-047 File # 2024-047(C1)4-25.MDX
	APRIL 1, 2025
	SHEET C.1



- LEGEND**
- WETLAND AREA
 - EDGE OF WATER
 - EDGE OF WETLAND
 - LIMIT OF 100 YEAR FLOOD PLAIN (APPROXIMATE)
 - FENCE LINE
 - STONE WALL
 - STONE BOUND
 - ESCUTCHEON PIN IN LEAD PLUG IN STONE BOUND
 - IRON PIPE
 - DRILL HOLE
 - DRAIN MANHOLE
 - DRAIN CATCH BASIN
 - DRAIN PIPE OUTLET
 - SEWER MANHOLE
 - MANHOLE (TYPE UNDETERMINED)
 - WATER GATE VALVE
 - WATER VALVE POST
 - HYDRANT
 - UTILITY POLE
 - OVERHEAD WIRE
 - LIGHT POST
 - BITUMINOUS CONCRETE BERM
 - GRANITE OR CONCRETE CURB (AS NOTED)
 - Arrow
 - Cont
 - RETAINING WALL
 - 100-FOOT BUFFER
 - 50-FOOT BUFFER
 - EDGE OF WETLAND
 - FLOOD INSURANCE STUDY NO. 25027CV004B - REVISED 7/16/2014
 - 100-YEAR FLOOD LIMIT BY GUERRIERE & HALNON, INC. 11/17/93
 - WATTLE

NOT FOR CONSTRUCTION PURPOSES



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EXISTING CONDITIONS PLAN

HAYWARD LANDING
26 NORTH STREET
DOUGLAS, MASSACHUSETTS
MAP 141, LOT 5

NOTES:

1. DRAWING BASED ON: A "SITE PLAN OF LAND "AS-BUILT" IN DOUGLAS, MASS.", PREPARED BY GUERRIERE & HALNON, INC. DATED NOVEMBER 17, 1993; AND AN "EXISTING CONDITIONS PLAN" PREPARED BY GEI CONSULTANTS OF WOBURN, MA, DATED FEBRUARY 19, 2025.

2. ARIES HAS ADDED COLORED LINES TO PERTINENT FEATURES OF THE PLAN.

3. LIMIT OF APPROXIMATE 100-YEAR FLOOD PLAIN ON DRAWING FROM FEDERAL INSURANCE RATE MAP OF THE TOWN OF DOUGLAS DATED JUNE 1, 1982, SHOWN IN MAGENTA.

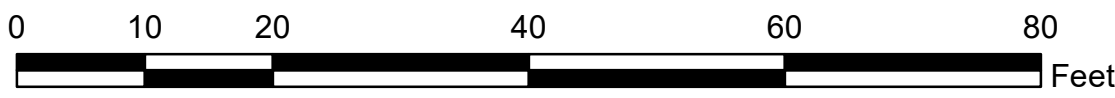
4. REVISED 100-YEAR FLOOD LIMIT (SHOWN IN PURPLE) IS APPROXIMATE AND BASED ON FLOOD ELEVATIONS FROM FLOOD INSURANCE STUDY NO. 25027CV004B (REVISED 7/16/2014), FLOOD ELEVATIONS AND LINE FROM DIGITAL FLOOD INSURANCE MAPS AVAILABLE FROM THE FEMA FLOOD MAP SERVICE CENTER, FLOOD MAP NUMBER 25027C1004E WITH EFFECTIVE DATE OF 7/04/2011, AND SPOT ELEVATIONS AT THE SITE.

5. ELEVATIONS PROVIDED BY HAYWARD LANDING ON RETAINING WALL REPAIR DRAWINGS DATED MARCH 2017. CONTOURS ARE NOT AVAILABLE. SPOT ELEVATIONS

ARE PROVIDED IN FRONT OF WALL.

6. ELEVATIONS ARE FROM RANSOM ENVIRONMENTAL AND ARE REFERENCED TO THE DRAINAGE MANHOLD RIM ELEVATION OF 367.22 FEET LOCATED ON NORTH STREET AS SHOWN ON "SITE PLAN OF LAND IN DOUGLAS, MASSACHUSETTS" - HAYWARD LANDING AS PREPARED BY LOUIS L. GUERRIERO, P.E. ON NOVEMBER 10, 1989.

6. THE PROPOSED GRADES WILL NOT CHANGE. ASPHALT SHALL MATCH EXISTING PAVEMENT GRADES. PAVEMENT SHALL PROVIDE FOR PROPER DRAINAGE AND PITCH 1% AWAY FROM THE WALL TOWARDS CATCH BASINS.



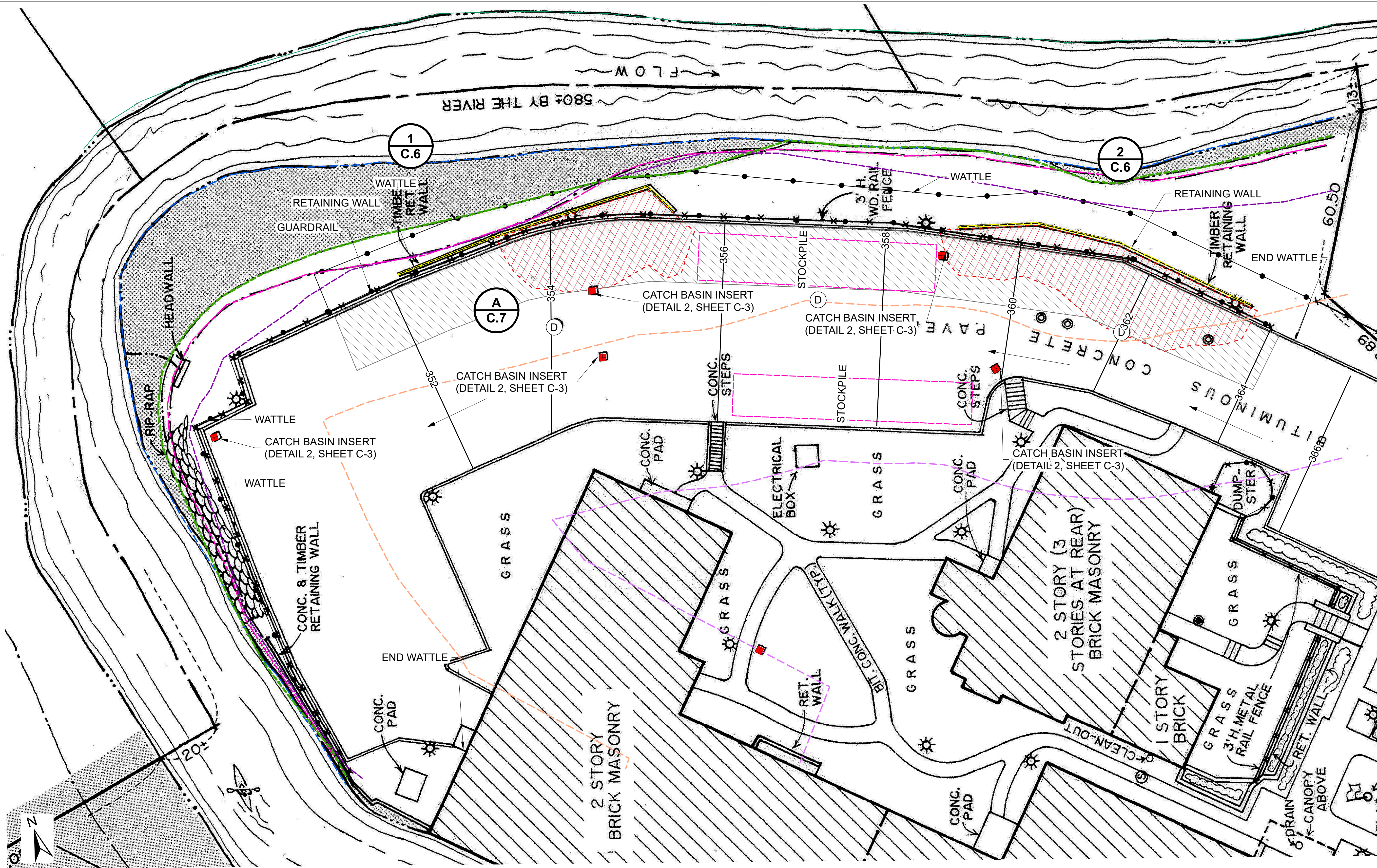
No.	Date	Revision Description



Aries Project # 2024-047
File # 2024-047(C2)4-25.MDX

APRIL 1, 2025

SHEET C.2



- LEGEND**
- WETLAND AREA
 - EDGE OF WATER
 - EDGE OF WETLAND
 - LIMIT OF 100 YEAR FLOOD PLAIN (APPROXIMATE)
 - FENCE LINE
 - STONE WALL
 - STONE BOUND
 - ESCUTCHEON PIN IN LEAD PLUG IN STONE BOUND
 - IRON PIPE
 - DRILL HOLE
 - DRAIN MANHOLE
 - DRAIN CATCH BASIN
 - DRAIN PIPE OUTLET
 - SEWER MANHOLE
 - MANHOLE (TYPE UNDETERMINED)
 - WATER GATE VALVE
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 - OVERHEAD WIRE
 - Light Post
 - BITUMINOUS CONCRETE BERM
 - GRANITE OR CONCRETE CURB
 - RETAINING WALL
 - 100-FOOT BUFFER
 - 50-FOOT BUFFER
 - EDGE OF WETLAND
 - FLOOD INSURANCE STUDY NO. 25027CV004B - REVISED 7/16/2014
 - 100-YEAR FLOOD LIMIT BY GUERRIERE & HALNON, INC. 11/17/93
 - WATTLE
 - Stockpile
 - ASPHALT REPLACEMENT AREA
 - EXCAVATION AREA

NOT FOR CONSTRUCTION PURPOSES



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EXCAVATION AND MODIFICATION PLAN

HAYWARD LANDING
26 NORTH STREET
DOUGLAS, MASSACHUSETTS
MAP 141, LOT5

NOTES:

1. DRAWING BASED ON: A "SITE PLAN OF LAND "AS-BUILT" IN DOUGLAS, MASS.", PREPARED BY GUERRIERE & HALNON, INC. DATED NOVEMBER 17, 1993; AND AN "EXISTING CONDITIONS PLAN" PREPARED BY GEI CONSULTANTS OF WOBURN, MA, DATED FEBRUARY 19, 2025.

2. ARIES HAS ADDED COLORED LINES TO PERTINENT FEATURES OF THE PLAN.

3. LIMIT OF APPROXIMATE 100-YEAR FLOOD PLAIN ON DRAWING FROM FEDERAL INSURANCE RATE MAP OF THE TOWN OF DOUGLAS DATED JUNE 1, 1982, SHOWN IN MAGENTA.

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5. ELEVATIONS PROVIDED BY HAYWARD LANDING ON RETAINING WALL REPAIR DRAWINGS DATED MARCH 2017. CONTOURS ARE NOT AVAILABLE. SPOT ELEVATIONS

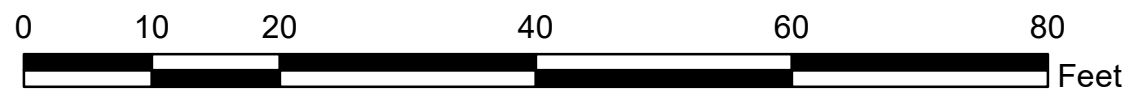
ARE PROVIDED IN FRONT OF WALL.

6. ELEVATIONS ARE FROM RANSOM ENVIRONMENTAL AND ARE REFERENCED TO THE DRAINAGE MANHOLD RIM ELEVATION OF 367.22 FEET LOCATED ON NORTH STREET AS SHOWN ON "SITE PLAN OF LAND IN DOUGLAS, MASSACHUSETTS" - HAYWARD LANDING AS PREPARED BY LOUIS L. GUERRIERO, P.E. ON NOVEMBER 10, 1989.

7. THE PROPOSED GRADES WILL NOT CHANGE. ASPHALT SHALL MATCH EXISTING PAVEMENT GRADES. PAVEMENT SHALL PROVIDE FOR PROPER DRAINAGE AND PITCH 1% AWAY FROM THE WALL TOWARDS CATCH BASINS.

8. NOTIFY ENGINEER OR OWNER OF WOOD THAT IS NOT IN SOUND CONDITION.

9. CONTRACTOR SHALL NOT UNDERMINE MANHOLES OR CATCH BASINS. PROTECT ALL UTILITIES WITH CONTRACTOR DESIGNED SUPPORT OF EXCAVATION, AS NEEDED. SAW CUT ADDITIONAL ASPHALT, AS NEEDED, IN THESE AREAS. SAW CUTS SHALL BE SQUARE CUTS.



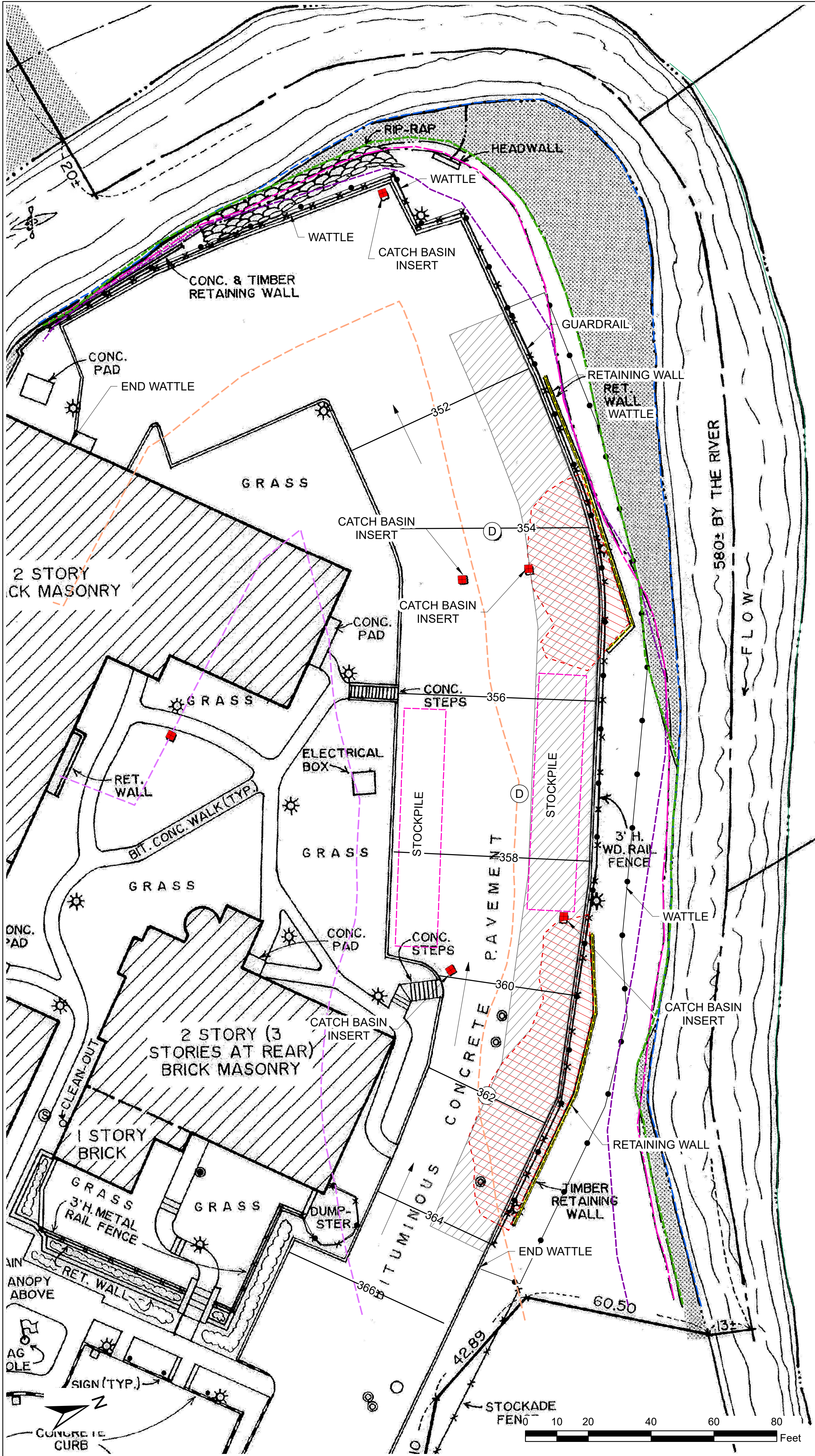
No.	Date	Revision Description



Aries Project # 2024-047
File # 2024-047(C3)4-25.MDX

APRIL 1, 2025

SHEET C.3



- GENERAL NOTES:
1. THE LOCATION OF THE RETAINING WALL REPAIR IS AT 26 NORTH STREET IN DOUGLAS, MA 01516.
 2. ON THE GROUND SURVEY PERFORMED BY GUERRIERE AND HALNON, INC. ENGINEERING AND LAND SURVEYING OF WHITINSVILLE, MA AS SHOWN ON DRAWING TITLED "SITE PLAN OF LAND - AS BUILT" AND DATED NOVEMBER 17, 1993. PLAN WAS PREPARED FOR HAYWARD LANDING ASSOCIATES.
 3. ALL DIMENSIONS, ELEVATIONS, AND EXISTING SITE CONDITIONS TO BE VERIFIED IN THE FIELD BY CONTRACTOR. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH AFFECTED PORTION OF WORK.
 4. CONTRACTOR IS RESPONSIBLE FOR THE HEALTH AND SAFETY OF ITS PERSONNEL AND MUST PERFORM WORK IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL LAWS, INCLUDING BUT NOT LIMITED TO THE ORDER OF CONDITIONS ISSUED FOR THE PROJECT BY THE DOUGLAS CONSERVATION COMMISSION, AND THE OSHA HAZWOPER STANDARD (29 CFR 1910.120).
 5. PETROLEUM-IMPACTED SOIL IS PRESENT WITHIN THE WORK AREA BUT AT CONCENTRATIONS BELOW THE REPORTABLE CONCENTRATIONS PROVIDED IN THE MASSACHUSETTS CONTINGENCY PLAN (MCP) (310 CMR 40.0000). THESE SOILS DO NOT MEET THE CRITERIA OF REMEDIATION WASTE BUT DO REQUIRE MANAGEMENT IN ACCORDANCE WITH THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION (MASSDEP) ANTI-DEGRADATION PROVISIONS.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A CONSTRUCTION SITE SAFETY PLAN TO THE OWNER. CONTRACTOR SHALL PROVIDE CONSTRUCTION SEQUENCE, SCHEDULE, AND OUTLINE AREAS REQUIRED FOR EQUIPMENT, SPOILS, AND OTHER MATERIALS REQUIRED TO PERFORM THE RETAINING WALL REPAIRS.
 7. DURING CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE A FLAG PERSON, AS REQUIRED, TO DIRECT VEHICLES SAFELY AROUND THE WORK AREAS.
 8. AT A MINIMUM, PROVIDE 6-FOOT-TALL TEMPORARY CHAIN LINK SECURITY FENCE AROUND WORK AREA AND JERSEY BARRIERS TO PROTECT EXCAVATIONS FROM VEHICLES.
 9. CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY AND PROTECTION OF THE WORK AREA.
 10. CONTRACTOR TO NOTIFY DIGSAFE AND OBTAIN BURIED UTILITY CLEARANCE PRIOR TO STARTING WORK. KNOWN UTILITIES INCLUDE DRAIN, ELECTRICAL, AND WATER. APPROXIMATE LOCATIONS ARE SHOWN ON THE EXISTING CONDITIONS PLAN AND SHALL BE FIELD VERIFIED.
 11. CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING THE PAVEMENT REMAINING IN THE WORK AREA TO PREVENT TRACKING OF SOIL BEYOND THE WORK AREA. CONTRACTOR SHALL SWEEP PAVEMENT OUTSIDE WORK AREA AS NEEDED.
- SUGGESTED CONSTRUCTION SEQUENCE:
1. DELINEATE THE WORK AREA USING WORK ZONE SAFETY DEVICES SUCH AS JERSEY BARRIERS, FILLED BARRELS, FENCING, SPEED BUMPS, REFLECTORS, BLINKING LIGHTS, AND WARNING AND DIRECTIONAL SIGNS.
 2. INSTALL EROSION CONTROLS ALONG THE BANK OF THE MUMFORD RIVER AND AS SHOWN ON DRAWING C.4.
 3. REMOVE ONE EXISTING POLE LIGHT AND TEMPORARILY RECONNECT/SPLICE THE FEED WIRING PROVIDING POWER TO OTHER POLE LIGHTS. REMOVE AND DISPOSE OF THE EXISTING POLE LIGHT CONCRETE BASE.
 4. REMOVE EXISTING GUARD RAILS IN WORK AREA.
 5. SAW CUT AND REMOVE EXISTING ASPHALT AND BEVELED CURBING. DISPOSE OF ASPHALT MATERIALS OFF SITE TO AN APPROVED MASSACHUSETTS DISPOSAL/RECYCLING FACILITY.
 6. EXCAVATE AND REMOVE EXISTING FILL. EXCAVATIONS SHOULD BE PERFORMED FOR ONE WALL AT A TIME. THE SIZE OF THE EXCAVATION AREAS WILL LIKELY BE LIMITED BY THE AVAILABLE STOCKPILE AREAS.
 7. CUT AND REMOVE EXISTING TIMBER TIE BACKS. TEMPORARILY SUPPORT THE EXISTING RETAINING WALL TIMBER FACING EXPOSED BY THIS EXCAVATION OR REMOVE AND REPLACE TIMBER FACING.
 8. A CUT-OFF TRENCH CONSISTING OF A 60-MIL POLYPROPYLENE (HDPE) LINER, HORIZONTAL PVC DRAIN PIPE, AND 1.5-INCH CRUSHED STONE IS PRESENT WITHIN A PORTION OF THE EXCAVATION AREA, AS ARE VERTICAL PVC MONITORING WELLS/CLEANOUTS AND ROAD BOXES. WHERE ENCOUNTERED WITHIN THE EXCAVATION AREA, THE HDPE LINER, PVC PIPING AND ROAD BOXES SHOULD BE REMOVED AND DISPOSED OFF SITE. THE CRUSHED STONE SHOULD BE STOCKPILED SEPARATELY OR WITH THE PETROLEUM-IMPACTED SOIL FOR LATER REUSE OR DISPOSAL AS DETERMINED BY THE GEOTECHNICAL ENGINEER.
 9. INSTALL VERTICAL 2-INCH BY 6-INCH PRESSURE TREATED TIMBER ALONG THE BACK SIDE OF THE TIMBER FACING AT 5-FOOT SPACING, AS SHOWN ON DRAWING C.7. FASTEN AT THE CENTER OF EACH HORIZONTAL TIMBER.
 10. PROOF ROLL THE BOTTOM OF THE EXCAVATION IN PRESENCE OF ENGINEER.
 11. PLACE FILTER FABRIC AT THE BOTTOM OF THE EXCAVATION BETWEEN THE REINFORCED FILL AND THE BASE OF THE WALL IF REQUESTED BY THE ENGINEER. PLACE CRUSHED STONE AND INSTALL PERFORATED DRAIN PIPING AT BASE OF EXCAVATION. INSTALL WEEP HOLES AND CONNECT TO DRAIN PIPING, AS SHOWN ON DRAWING C.7.
 12. PLACE GEOGRID AND GEOTEXTILE TO WRAP AROUND THE FIRST LAYER OF REINFORCEMENT. PLACE GEOGRID IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS INCLUDING PLACING FILL BETWEEN OVERLAPPING LAYERS OF GEOGRID, AS SHOWN ON DRAWING C.7.
 13. PLACE AND COMPACT REINFORCED FILL IN THE REINFORCED FILL ZONE IN TWO EQUAL VERTICAL LIFTS BETWEEN THE GEOGRID LAYERS. PLACE AND COMPACT ORDINARY FILL BEHIND THE REINFORCED FILL ZONE. PLACE AND COMPACT FILL IN A MANNER THAT MAINTAINS TENSION IN THE GEOGRID.
 14. INSTALL FACING CONNECTION BY INSTALLING THREADED ROD THROUGH THE TIMBER FACING AND CONNECTING WITH PLATE WASHER AND NUT. PLACE CRUSHED STONE AROUND THE CONNECTION.
 15. REPEAT PROCESS OF INSTALLING LAYERS AND FACING CONNECTIONS WITH STONE.

- MAINTAIN AT LEAST ONE LAYER OF REINFORCED FILL, GEOGRID, AND GEOTEXTILE ABOVE EACH FACING CONNECTION.
16. INSTALL NEW CONCRETE LIGHT BASE, CONDUIT, ELECTRICAL WIRE, AND BASE PLATE AND REINSTALL EXISTING LIGHT POLE.
 17. REINSTALL GUARDRAIL POSTS AND GUARD RAILING.
 18. INSTALL NEW 2-INCH BASE COURSE ASPHALT AND 1-1/2-INCH WEAR COURSE.
 19. INSTALL NEW CURBING TO MATCH EXISTING CURBING.
 20. PAINT NEW LINES, STRIPING, AND HANDICAP INSIGNIA TO MACH EXISTING PARKING LOT LAYOUT.
- SOIL / DEBRIS STOCKPILE NOTES:
1. SOIL / DEBRIS STOCKPILE DESIGN IS CONCEPTUAL. CONTRACTOR'S FINAL DESIGN SHALL MEET THE INTENT OF THE CONCEPT AND BE APPROVED BY ENGINEER.
 2. ROLLOFF CONTAINERS MAY BE USED IN LIEU OF STOCKPILE DETAIL, SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
 3. CONCEPTUAL STOCKPILE SIZES AND LOCATION SHOWN ON DRAWING C.3 WILL STORE UP TO APPROXIMATELY 200 CUBIC YARDS OF SOIL. ACTUAL SIZE OF STOCKPILES TO BE DETERMINED AND FIELD VERIFIED BY CONTRACTOR. CONTRACTOR SHOULD STAGE EXCAVATION AND WALL CONSTRUCTION / REPAIR WORK TO MINIMIZE STOCKPILE SIZES. STOCK PILE LOCATIONS SHALL NOT BE DIRECTLY BEHIND THE RETAINING WALLS.
 4. DEBRIS SHALL BE DISPOSED ON A REGULAR BASIS TO MINIMIZE STORAGE ON SITE. DISPOSE OF DEBRIS TO AN APPROVED MASSACHUSETTS DISPOSAL/RECYCLING FACILITY.
 5. EXCAVATED SOIL SHOULD BE SEGREGATED IN SEPARATE STOCKPILES AS DIRECTED BY THE GEOTECHNICAL ENGINEER AND/OR THE ENVIRONMENTAL SCIENTIST. SEPARATE STOCKPILE AREAS MAY BE REQUIRED FOR REINFORCED FILL, ORDINARY FILL, PETROLEUM-IMPACTED SOIL, AND CRUSHED STONE.
 6. STOCKPILE AREA SHOULD BE ENCLOSED ON THE DOWNSLOPE AND ADJACENT SIDES BY HAYBALES OR JERSEY BARRIERS. A MINIMUM 40 MIL LINER SHOULD BE PLACED ON THE BOTTOM OF THE STOCKPILE AREA AND EXTEND OVER THE PERIMETER BARRIERS TO PROVIDE CONTAINMENT. STOCKPILES MUST BE COVERED BY A MINIMUM 6 MIL POLYETHYLENE COVER WHEN NOT IN USE.
 7. EXCESS SOIL TO BE DISPOSED OFF SITE MUST BE TRANSPORTED TO AN APPROVED RECEIVING FACILITY BASED ON SOIL CHEMICAL ANALYSES. BASED ON THE PRE-CONSTRUCTION SAMPLING, THE WORK AREA IS OUTSIDE OF THE DISPOSAL SITE BOUNDARY. HOWEVER, IF PETROLEUM-IMPACTED SOILS ARE ENCOUNTERED, THEY SHOULD BE STOCKPILED SEPARATELY. ALL SOILS NOT PROPOSED FOR REUSE AT THE SITE MUST BE CHARACTERIZED FOR OFF-SITE DISPOSAL OR RECYCLING BY THE ENVIRONMENTAL SCIENTIST. BASED ON THE ANALYTICAL RESULTS, THE CONTRACTOR MUST IDENTIFY POTENTIAL RECEIVING FACILITIES FOR THE SOILS TO BE TRANSPORTED OFF SITE. THE ENVIRONMENTAL SCIENTIST WILL PREPARE THE APPROPRIATE SHIPPING DOCUMENTS AND WASTE PROFILES REQUIRED BY THE RECEIVING FACILITY(IES) IDENTIFIED BY THE CONTRACTOR.

- SEDIMENT AND EROSION CONTROL NOTES:
1. PROTECTION FROM SOIL EROSION AND CONSTRUCTION DEBRIS OR SILT FROM ENTERING THE MUMFORD RIVER SHALL BE PROVIDED BY THE INSTALLATION OF WATTLES AS SHOWN ON DRAWING C.4. COMPLY WITH THE REQUIREMENTS OF THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES, LATEST EDITION, AND CONSERVATION COMMISSIONS ORDER OF CONDITIONS.
 2. ALL EROSION CONTROLS SHALL REMAIN IN PLACE AND SHALL BE MAINTAINED UNTIL ALL DISTURBED AREAS ARE STABILIZED WITH PAVEMENT, CRUSHED STONE, OR RIP RAP. OBTAIN OWNER'S APPROVAL PRIOR TO REMOVAL.
 3. WATTLES USED FOR EROSION CONTROL SHALL BE PLACED AS INDICATED OR AS OTHERWISE DIRECTED BY THE OWNER AND ENGINEER. REPLACE WATTLES AS NECESSARY TO PROVIDE PROPER FILTERING ACTION.
 4. WATTLES SHALL BE STRAW AND FREE OF INVASIVE PLANTS.
 5. CATCH BASIN INSERT SHALL BE "SILTSACK", BY ACF ENVIRONMENTAL OR APPROVED EQUIVALENT.
 6. CATCH BASIN INSERTS ARE TO BE PLACED IN ALL CATCH BASINS IN CONSTRUCTION WORK AREAS AND IN AREAS SUSCEPTIBLE TO RUNOFF. CATCH BASIN INSERTS ARE TO BE PROTECTED AS SHOWN, WITH MINIMUM WEEKLY MAINTENANCE, OR AS REQUIRED AND REPLACED IF NECESSARY. CATCH BASIN INSERTS ARE TO BE REMOVED UPON COMPLETION OF WORK.
 7. INSPECT ALL SEDIMENTATION AND EROSION CONTROL DEVICES DURING THE WORK ON A WEEKLY BASIS AND FOLLOWING ALL PRECIPITATION EXCEEDING 0.5 INCH IN 24 HOURS. MAKE REPAIRS AND REMOVE ACCUMULATED SEDIMENT AS NEEDED TO MAINTAIN FUNCTIONALITY.

- LEGEND
- WETLAND AREA
 - EDGE OF WATER
 - EDGE OF WETLAND
 - LIMIT OF 100 YEAR FLOOD PLAIN (APPROXIMATE)
 - FENCE LINE
 - STONE WALL
 - STONE BOUND
 - ESCUTCHEON PIN IN LEAD PLUG IN STONE BOUND
 - IRON PIPE
 - DRILL HOLE
 - DRAIN MANHOLE
 - DRAIN CATCH BASIN
 - DRAIN PIPE OUTLET
 - SEWER MANHOLE
 - MANHOLE (TYPE UNDETERMINED)
 - WATER GATE VALVE
 - WATER VALVE POST
 - HYDRANT
 - UTILITY POLE
 - OVERHEAD WIRE
 - LIGHT POST
 - BITUMINOUS CONCRETE BERM
 - GRANITE OR CONCRETE CURB (AS NOTED)
 - RETAINING WALL
 - 100-FOOT BUFFER
 - 50-FOOT BUFFER
 - EDGE OF WETLAND
 - FLOOD INSURANCE STUDY NO. 25027CV004B - REVISED 7/16/2014
 - 100-YEAR FLOOD LIMIT BY GUERRIERE & HALNON, INC. 11/17/93
 - WATTLE
 - Stockpile
 - ASPHALT REPLACEMENT AREA
 - EXCAVATION AREA

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GENERAL NOTES AND
EROSION AND SEDIMENT
CONTROLS
HAYWARD LANDING
26 NORTH STREET
DOUGLAS, MASSACHUSETTS
MAP 141, LOT5

No.	Date	Revision Description
1	5/1/25	Update Note 7, under "Soil/Debris Stockpile Notes"



Aries Project # 2024-047
File # 2024-047(C4)4-25.MDX

APRIL 1, 2025

SHEET C.4

WALL MATERIALS:

GEOTEXTILE:

1. GEOTEXTILE SHALL BE A NEEDLE PUNCHED NON WOVEN GEOTEXTILE THAT MEETS THE REQUIREMENTS OF AASHTO M288-06 CLASS 3 FOR ELONGATION >50%. GEOTEXTILE SHALL BE MIRAFI N140 OR EQUAL.

2. GEOTEXTILE SHALL OVERLAP A MINIMUM OF 24 INCHES.

GEOGRID:

1. GEOGRID SHALL BE TENSAR UX 1500 OR EQUAL.

2. GEOGRID SHALL OVERLAP PER MANUFACTURERS SPECIFICATIONS.

TIMBER:

1. NEW TIMBERS, 6-INCH BY 6-INCH NOMINAL AND 2-INCH BY 6-INCH NOMINAL, SHALL BE SOUTHERN YELLOW PINE MEETING PRESSURE TREATMENT TO AWWPA USE CATEGORY EQUAL TO OR HIGHER THAN UC4A GROUND CONTACT, GENERAL USE.

2. THE CONTRACTOR SHALL SUBMIT SPECIFICATIONS FOR MEETING STANDARDS FOR APA STANDARD U1. CONTRACTOR IS REQUIRED TO HAVE WRITTEN APPROVAL OF SUBMITTAL PRIOR TO DELIVERY OF ANY MATERIALS ONTO THE SITE.

HARDWARE:

1. ALL HARDWARE SHALL BE HOT DIPPED GALVANIZED MEETING ASTM-153 STANDARDS.

- 1.1. 5/8-INCH-ROUND PLATE WASHER, 2-1/2-INCH OD, 1/4-INCH-THICKNESS.
1.2. 5/8-INCH-DIAMETER ALL-THREAD BAR, GRADE 60.
1.3. HEX NUT TO MATCH THREADED ROD.
1.4. 10-FOOT-LENGTH OF 2-1/2-INCH-DIAMETER SCHEDULE 80 PIPE.
1.5. 1/4-INCH-DIAMETER HEX HEAD, 4-INCH-LENGTH LAG SCREWS.

DRAIN PIPE:

1. DRAIN PIPE SHALL BE SLOTTED 4-INCH-DIAMETER SINGLE WALL CORRUGATED HDPE MANUFACTURED BY ADS OR APPROVED EQUAL. PERFORATIONS SHALL BE SLOTS WITH A MAXIMUM WIDTH OF 0.12 INCHES. PIPE JOINTS SHALL BE SOIL TIGHT.

2. WEEP HOLES SHALL BE SOLID 4-INCH-DIAMETER SINGLE WALL CORRUGATED HDPE MANUFACTURED BY ADS OR APPROVED EQUAL.

3. CONNECTIONS SHALL BE MANUFACTURED BY THE SAME COMPANY AS THE PIPE.

4. A PERFORATED INTERNAL END PLUG MANUFACTURED BY ADS OR APPROVED EQUAL SHALL BE PLACED AT THE WEEP HOLE OUTLET TO PREVENT ANIMALS FROM ENTERING. PERFORATION SHALL HAVE A MAXIMUM DIAMETER OF 0.313 INCHES.

MISCELLANEOUS MATERIALS:

GUARD RAILS

1. INCLUDE IN THE BASE BID THE REPLACING THE EXISTING GUARDRAILS AND GUARDRAIL POSTS THAT WERE REMOVED TO ACCOMPLISH THE RETAINING WALL PROJECT.

2. GUARDRAIL SHALL MATCH EXISTING TIMBER DIMENSIONS.

3. PROTECT THE NEW WALL'S GEOGRID, GEOTEXTILE, AND THREADED BAR FROM DAMAGE DURING INSTALLATION OF GUARDRAIL POSTS.

4. HARDWARE: BOLTS, NUTS, WASHERS, ETC. SHALL MATCH EXISTING DIMENSIONS AND QUANTITY. HARDWARE SHALL BE HOT DIPPED GALVANIZED MEETING ASTM-153 STANDARDS.

LIGHT BASE:

1. INCLUDE IN THE BASE BID THE REPLACING OF THE EXISTING SITE LIGHT CONCRETE BASE, CONDUIT, AND WIRING ALL OF WHICH WERE REMOVED TO ACCOMPLISH THE RETAINING WALL PROJECT.

2. THE REPLACEMENT MATERIALS SHALL BE SIMILAR TO THE EXISTING MATERIALS.

3. ALL WIRING SHALL BE PERFORMED BY A LICENSED ELECTRICIAN AND CONFORM TO THE MASSACHUSETTS BUILDING CODE.

4. LIGHT POLE AND FIXTURE SHALL BE REUSED.

5. PROTECT THE NEW WALL'S GEOGRID, GEOTEXTILE, AND THREADED BAR FROM DAMAGE DURING INSTALLATION OF CONCRETE BASE AND CONDUITS.

EARTHWORK / SOIL MATERIALS:

COMPACTION NOTES:

1. THE OWNER'S ENGINEER WILL PERFORM FIELD DENSITY TESTING TO ASSURE PROPER MATERIAL AND COMPACTION IS ATTAINED. CONTRACTOR SHALL COORDINATE WITH OWNER'S ENGINEER AND ALLOW ACCESS TO PERFORM TESTING.

EXISTING SOIL:

1. GRADATION TESTS WERE PERFORMED ON SOIL SAMPLES TAKEN FROM THE TEST PITS THAT WERE EXCAVATED IN THE PAVEMENT AREA BETWEEN THE BOILER BUILDING AND EXISTING RETAINING WALL. TWO TYPES OF SOILS WERE OBSERVED, ONE MET THE GRADATION REQUIREMENTS FOR REINFORCED FILL AND THE OTHER MET THE GRADATION REQUIREMENT FOR ORDINARY FILL. IT IS EXPECTED THAT SUFFICIENT QUANTITIES OF REINFORCED FILL AND ORDINARY FILL WILL BE AVAILABLE FOR REUSE. THE ENGINEER MAY REQUIRE ADDITIONAL GRADATION TESTS IF THE EXCAVATED MATERIAL APPEARS TO BE DIFFERENT THAN THE MATERIAL OBSERVED IN THE TEST PITS.

2. IF EXCAVATED MATERIAL IS NOT SUITABLE FOR REUSE, IT SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AT AN APPROVED MASSACHUSETTS DISPOSAL FACILITY. UNSUITABLE MATERIALS MAY CONSIST OF BUT NOT LIMITED TO ASPHALT, CONCRETE, TOPSOIL, SILT, CLAY, WOOD, OR MATERIALS NOT MEETING REQUIREMENTS OF THE SPECIFICATIONS. SEE SOIL / STOCKPILE NOTE 7 ON DWG. NO. G-2.

REINFORCED FILL:

1. REINFORCED FILL SHALL CONSIST OF HARD, DURABLE SAND AND GRAVEL, FREE OF CLAY, ORGANIC MATTER, SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE NO. 200 SIEVE (THE "FINES") SHALL BE NON-PLASTIC. REINFORCED FILL SHALL MEET THE FOLLOWING GRADATION:

REINFORCED FILL	
SIEVE SIZE	% PASSING (BY WEIGHT)
4 INCHES	100
No. 4	0 - 60
No. 200 (FINES)	0 - 15

2. REINFORCED FILL SHALL BE COMPACTED IN MAXIMUM 9-INCH-THICK LOOSE LIFTS TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED AASHTO COMPACTION).

ORDINARY FILL:

1. ORDINARY FILL SHALL CONSIST OF HARD, DURABLE SAND AND GRAVEL, FREE OF CLAY, ORGANIC MATTER, SURFACE COATINGS, AND OTHER DELETERIOUS MATERIALS. SOIL FINER THAN THE NO. 200 SIEVE (THE "FINES") SHALL BE NON-PLASTIC. ORDINARY FILL SHALL MEET THE FOLLOWING GRADATION:

ORDINARY FILL	
SIEVE SIZE	% PASSING (BY WEIGHT)
6 INCHES	100
3 INCHES	80 - 100
No. 4	20 - 100
No. 200 (FINES)	0 - 20

2. ORDINARY FILL SHALL BE COMPACTED IN MAXIMUM 12-INCH-THICK LOOSE LIFTS TO AT LEAST 92 PERCENT OF THE MAXIMUM DRY DENSITY DETERMINED IN ACCORDANCE WITH ASTM D1557 (MODIFIED AASHTO COMPACTION).

3/4 INCH CRUSHED STONE:

1. 3/4 INCH CRUSHED STONE SHALL CONSIST OF DURABLE ROCK OR CRUSHED GRAVEL STONE AND SHALL CONFORM TO THE REQUIREMENTS OF MASSDOT M2.01. THE STONE SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

3/4 INCH CRUSHED STONE	
SIEVE SIZE	% PASSING (BY WEIGHT)
1 INCH	100
3/4 INCH	90
1/2 INCH	10-50
3/8 INCH	0-20
NO. 4	0-5

GRAVEL BORROW:

1. GRAVEL BORROW SHALL MEET THE REQUIREMENTS OF MASSDOT M1.03.0 TYPE B WITH MAXIMUM STONE SIZE OF 3 INCHES. GRAVEL BORROW SHALL BE COMPACTED WITH AT LEAST FOUR COVERAGES OF A VIBRATORY PLATE COMPACTOR WITH A STATIC WEIGHT OF AT LEAST 250 POUNDS AND A CENTRIFUGAL FORCE OF AT LEAST 3,000 POUNDS, OR A VIBRATORY SMOOTH DRUM ROLLER.

DENSE GRADED AGGREGATE:

1. DENSE GRADED AGGREGATE SHALL MEET THE REQUIREMENTS OF MASSDOT M2.01.7 DENSE GRADED CRUSHED STONE FOR SUB-BASE. DENSE GRADED AGGREGATE SHALL BE COMPACTED WITH AT LEAST FOUR COVERAGES OF A VIBRATORY PLATE COMPACTOR WITH A STATIC WEIGHT OF AT LEAST 175 POUNDS AND A CENTRIFUGAL FORCE OF AT LEAST 3,000 POUNDS, OR A VIBRATORY SMOOTH DRUM ROLLER.

PAVEMENT:

ASPHALT:

1. PROVIDE 2 INCHES OF BASE COURSE AND 1-1/2 INCHES OF WEAR COURSE BITUMINOUS CONCRETE.

2. PLACE ASPHALT TO ALLOW FOR PROPER DRAINAGE AND MEET EXISTING CONTOURS.

3. ASPHALT SHALL BE PLACED AT MINIMUM TEMPERATURE OF 325 DEGREES FAHRENHEIT (107 DEGREES CELSIUS), AND WHEN THE AMBIENT AIR TEMPERATURE IS AT LEAST 40 DEGREES FAHRENHEIT (4 DEGREES CELSIUS) AND RISING.

4. PLACE ASPHALT CONCRETE MIXTURE ON PREPARED SURFACES BY MACHINE. USE MINIMUM 10 TON ROLLER. BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. COMPACT MIXTURE WITH HOT HAND TAMPERS AND VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.

5. CONTINUE ROLLING UNTIL MIXTURE HAS BEEN THOROUGHLY COMPACTED. PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND COURSE HAS ATTAINED MAXIMUM DENSITY. AFTER FINAL ROLLING, DO NOT ALLOW VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED. ERECT BARRICADES TO PROTECT PAVEMENT FROM TRAFFIC UNTIL MIXTURE HAS COOLED.

ASPHALT BASE COURSE:

1. NEW BASE COURSE ASPHALT SHALL BE 2 INCHES COMPACTED THICKNESS. THE TOP SHALL BE ESTABLISHED 1-1/2 INCHES BELOW THE WEAR COURSE.

2. BLEND TO CATCH BASINS, EXISTING CURB/WALKWAY CUTS, EXISTING ASPHALT, AND CONCRETE DRIVES.

3. ASPHALT CEMENT - PERCENT OF MIX = 4.8 TO 6.0.

BASE COURSE MIX FORMULA	
SIEVE SIZE	3/4-INCH % PASSING (BY WEIGHT)
3/4 INCH	95 - 100
1/2 INCH	70 - 92
3/8 INCH	60 - 80
No. 4	42 - 57
No. 10	28 - 38
No. 20	16 - 24
No. 40	7 - 9
No. 80	3 - 11
No. 200 (FINES)	0 - 4

ASPHALT WEAR COURSE:

1. ASPHALT WEAR COURSE SHALL BE A COMPACTED THICKNESS OF 1-1/2 INCHES USING THE FOLLOWING SUGGESTED WEAR COURSE FORMULA. THE SUCCESSFUL PAVING CONTRACTOR SHALL SHOW THE OWNER AND HIS SUPERINTENDENT A SAMPLE OF WEAR FINISH AT A PREVIOUS SITE AS AN EXAMPLE FOR APPROVAL OF TYPE OF FINISH PRIOR TO PROCEEDING WITH THIS CONTRACT. THE JOB MIX FORMULA SHALL THEN BE SUBMITTED TO TECHNICAL SERVICES FOR FINAL APPROVAL.

2. ASPHALT CEMENT - PERCENT OF MIX = 6.25 TO 7.0

SUGGESTED WEAR COURSE MIX	
SIEVE SIZE	3/4-INCH % PASSING (BY WEIGHT)
3/8 INCH	100
No. 4	64 - 80
No. 10	44 - 55
No. 20	25 - 35
No. 40	15 - 25
No. 80	6 - 16
No. 200 (FINES)	2 - 6

CURBING:

1. CAPE COD BERMS SHALL HAVE A FOUNDATION EQUAL TO THE ROAD BASE WITH A 12-INCH-WIDE, 2-INCH-THICK ASPHALT BASE TO FULLY SUPPORT THE ASPHALT CURB. PRIOR TO PLACING THE CURB, THE FOUNDATION COURSE SHALL BE THOROUGHLY CLEANED OF ALL FOREIGN AND OBJECTIONABLE MATERIAL.

2. STRING OR CHALK LINES SHALL BE POSITIONED ON THE PREPARED BASE TO PROVIDE GUIDE LINES.

3. THE CURB FOUNDATION SHALL BE UNIFORMLY PAINTED WITH A TACK COAT OF AC-5 - AC-20 ASPHALT CEMENT.

4. THE CURB SHALL BE PLACED BY AN APPROVED POWER OPERATED EXTRUDING TYPE MACHINE.

LINE STRIPING:

1. RESTRIPE PARKING LOTS. INCLUDE ALL ADA REQUIREMENTS TO INCLUDE HANDICAP INSIGNIA STENCILS, CROSSHATCHING AT HANDICAP PARKING, CATCH BASIN PERIMETERS, AND PARKING SPACES.

2. PAVEMENT MARKING PAINT SHALL BE LATEX BASED, FAST DRYING, TRAFFIC-LINE MARKING PAINT WITH 63% SOLIDS BY WEIGHT AND 44% SOLIDS BY VOLUME. VOC GRAMS 410. DRY TO TOUCH 20 MINUTES. #80000125 AS MANUFACTURED BY SHERWIN WILLIAMS OR EQUAL.

3. MAIN COLOR - WHITE, HANDICAP INSIGNIA - BLUE, CATCH BASIN GRATES AND PERIMETER MARKING - YELLOW.

4. PAINT MARKINGS SHALL MATCH EXISTING PARKING LOT LAYOUT.

NOT FOR CONSTRUCTION PURPOSES



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MATERIAL SPECIFICATIONS

HAYWARD LANDING
26 NORTH STREET
DOUGLAS, MASSACHUSETTS
MAP 141, LOT5

No.	Date	Revision Description

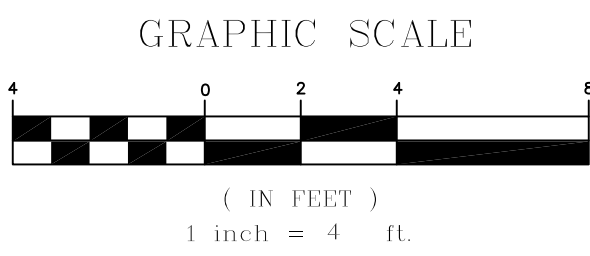


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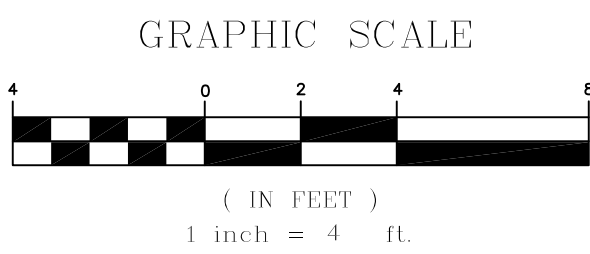
APRIL 1, 2025

SHEET C.5

1	ELEVATION
C.3	EXISTING RETAINING WALL

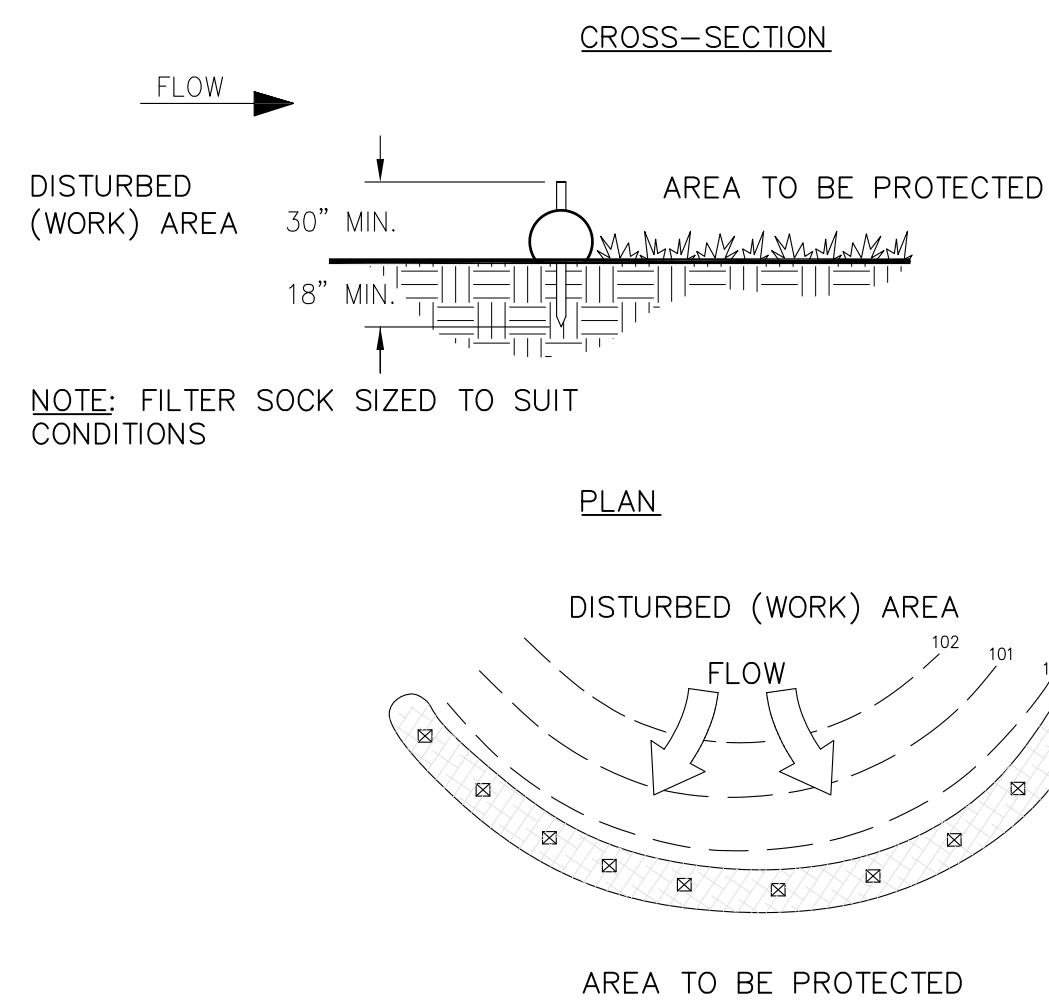
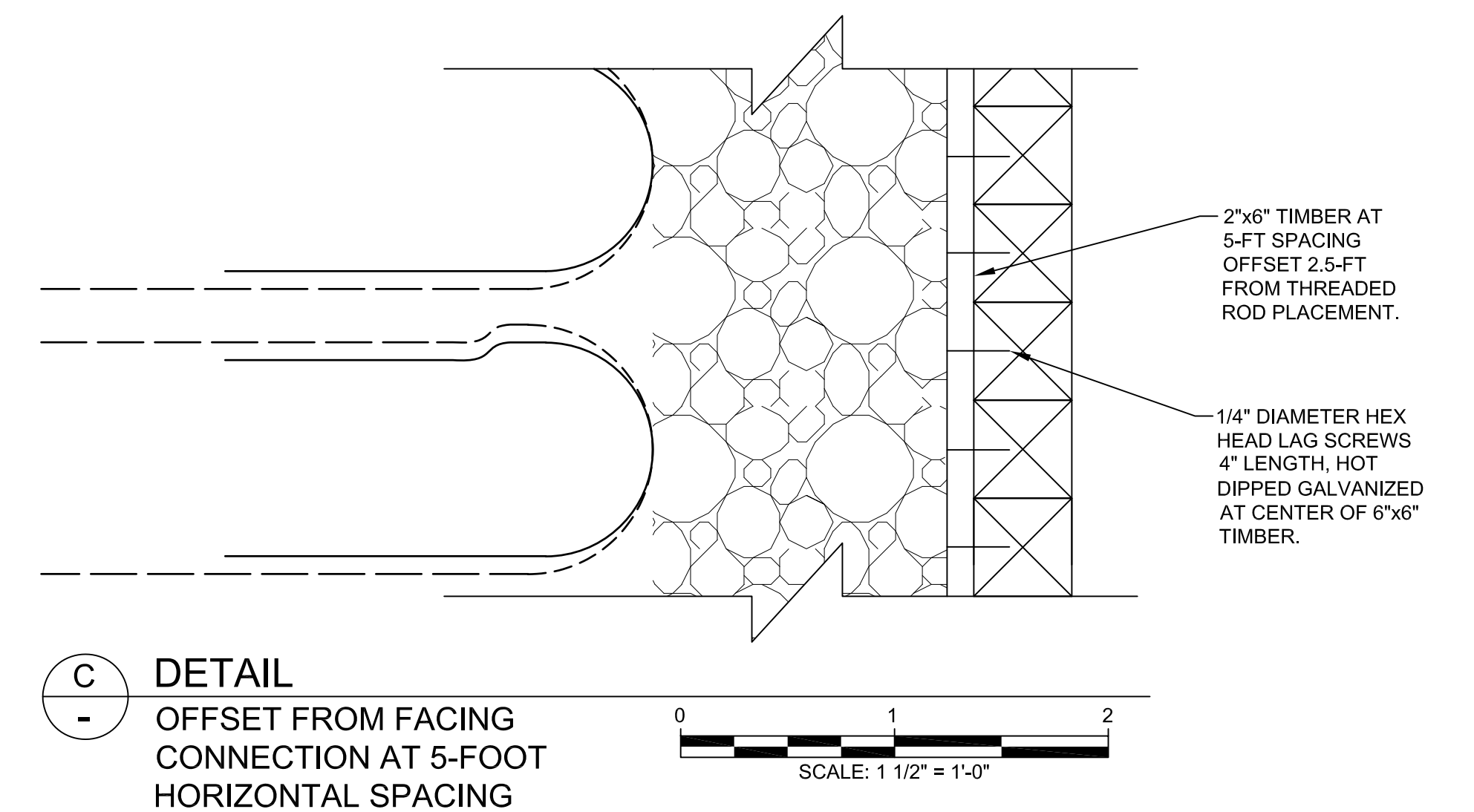
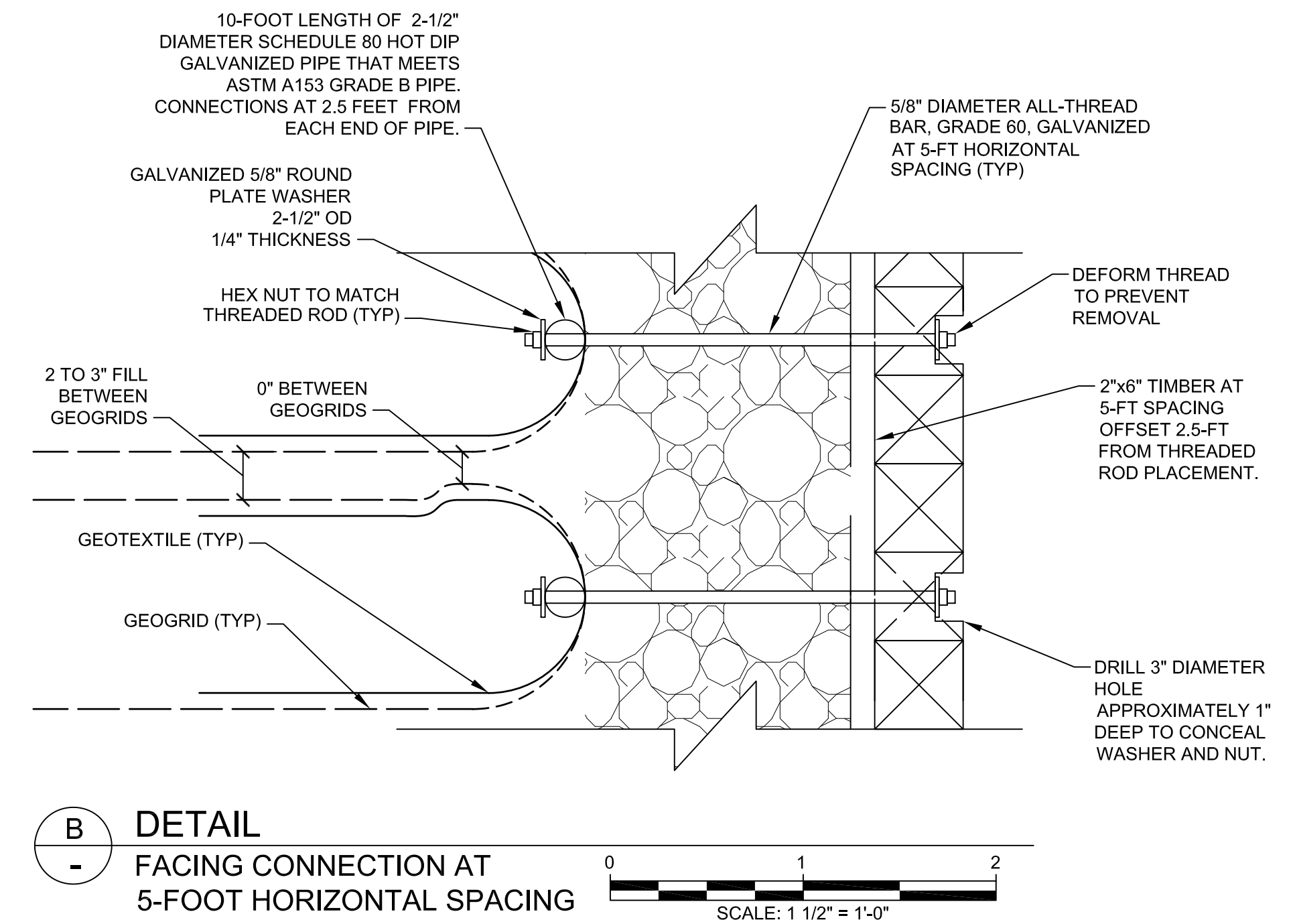


2 ELEVATION
C.3 EXISTING RETAINING WALL



2. RIP RAP REMOVED FROM TOE OF TIMBER FACING PER COMMENT FROM CONSERVATION COMMISSION.





1. EXCAVATION SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR.
2. THE OWNER'S GEOTECHNICAL ENGINEER OR INDEPENDENT TESTING AGENCY SHALL VERIFY THE COMPETENCY OF THE FOUNDATION SOILS
3. BACKFILL AND COMPACT THE FILL MATERIALS BEHIND THE WALL AS THE WALL IS INSTALLED.
4. COMPACTION TESTS SHALL BE CONDUCTED AS THE WALL IS INSTALLED. AT LEAST ONE TEST PER LIFT SHALL BE COMPLETED FOR EACH WALL.
5. COMPACTION SHALL BE TO A MINIMUM OF 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY.
6. RECOMMENDED COMPACTION EQUIPMENT WITHIN 15 FEET OF THE BACK OF THE WALL IS AS FOLLOWS:
 - 0 - 4 FEET: HAND TAMP OR VIBRATORY PLATE COMPACTOR
 - 4 - 15 FEET: NOTHING LARGER THAN TWO-DRUM, WALK-BEHIND VIBRATORY ROLLER (LARGER ROLLERS CAN BE USED STATICALLY, PROVIDED LIFT SIZE DOES NOT COMPROMISE ACHIEVEMENT OF COMPACTION RATES.)
7. ALL WORK SHALL BE PERFORMED WITHIN THE PROPERTY OF, AND EASEMENTS SECURED BY, THE OWNER.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DATA COLLECTION AND PREPARATION OF RECORD DRAWINGS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR CONTROLLING EROSION IN ALL AREAS DISTURBED BY HIS ACTIONS. COSTS FOR REQUIRED EROSION CONTROL, REGARDLESS OF WHETHER OR NOT SUCH MEASURES ARE SHOWN ON THE ENGINEERING DRAWINGS, SHALL BE BORNE BY HIM.
10. UTILITY LOCATIONS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR LOCATION AND PROTECTION OF EXISTING UTILITIES AND SHALL REPAIR ANY DAMAGE AS QUICKLY AS POSSIBLE AT HIS OWN EXPENSE. ALL UTILITIES ENCOUNTERED SHALL BE LOCATED BY DEPTH AND TIES AND SHOWN BY THE CONTRACTOR ON HIS "AS BUILT" DRAWINGS. HAND EXCAVATION SHALL BE DONE WHEREVER UNDERGROUND UTILITIES ARE SHOWN OR ANTICIPATED. THE CONTRACTOR SHALL CONTACT DIG SAFE AND THE APPROPRIATE AUTHORITIES PRIOR TO ANY CONSTRUCTION IN ORDER TO VERIFY EXISTING CONDITIONS AND UTILITY LOCATIONS.

HAYWARD LANDING
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DOUGLAS, MASSACHUSETTS

No.	Date	Revision Description



Project #: 2024-047
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