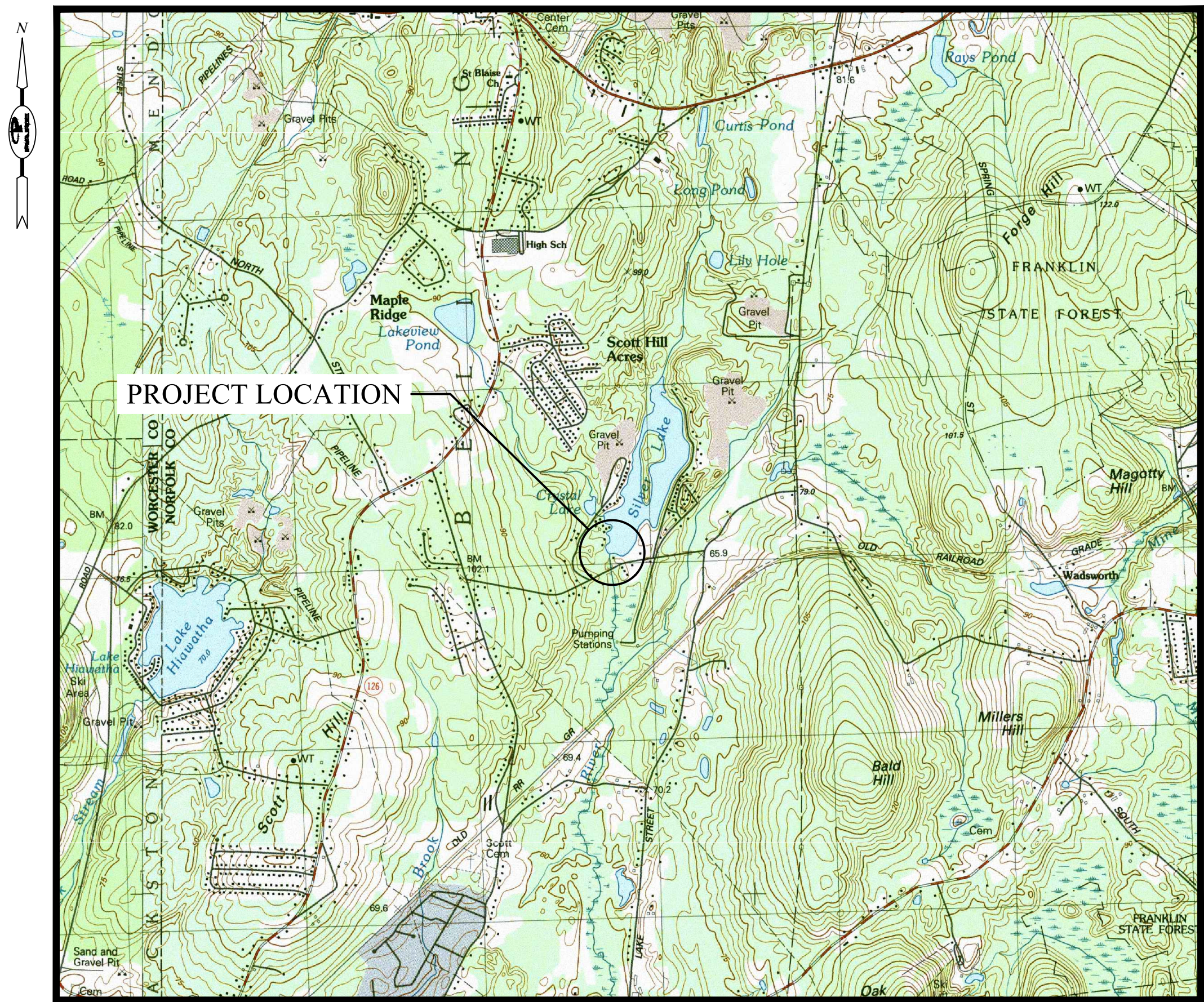


Prepared for The:
TOWN OF BELLINGHAM
SILVER LAKE DAM IMPROVEMENTS
MA03097
BELLINGHAM, MASSACHUSETTS
DECEMBER 2024

Drawing Index

- 0.0 COVER SHEET
- 1.0 GENERAL NOTES AND LEGEND
- 2.0 EXISTING CONDITIONS
- 3.0 SITE ACCESS AND EROSION CONTROL
- 4.0 DAM IMPROVEMENTS
- 4.1 DAM IMPROVEMENTS SECTIONS
- 5.0 WETLAND IMPACT AND MITIGATION PLAN
- 5.1 REPLICATION PLAN
- 6.0 CONSTRUCTION DETAILS



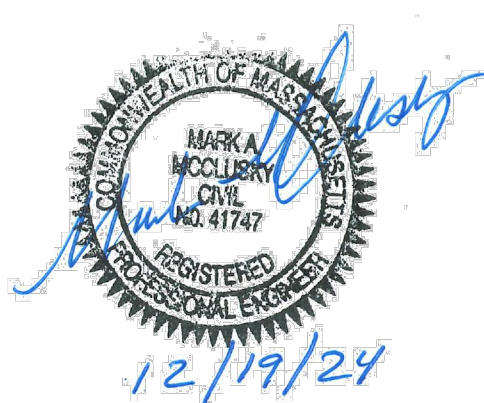
LOCUS PLAN
SCALE: 1" = 2000'



AERIAL PLAN
SCALE: 1" = 400'



Prepared by:
PARE CORPORATION
Foxboro, Massachusetts



FOR THE PURPOSE OF THIS PROJECT

OWNER -	TOWN OF BELLINGHAM 28 BLACKSTONE STREET BELLINGHAM, MA 02019-1602
CONTACT -	JESSE RIEDLE, DPW DIRECTOR
ENGINEER -	PARE CORPORATION 10 LINCOLN ROAD, SUITE 210 FOXBORO, MA 02035
CONTACT -	MARK MCCLUSKY, P.E.

2. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE MASSACHUSETTS STATE BUILDING CODE, THE SPECIFICATIONS INCLUDED IN THIS CONTRACT, AND 302 CMR 10.00 DAM SAFETY. THESE PLANS ARE INCOMPLETE UNLESS ACCOMPANIED BY THE SPECIFICATIONS INCLUDED IN THE CONTRACT DOCUMENTS.

3. THE PLANS WERE DEVELOPED FROM AVAILABLE HISTORIC INFORMATION ON FILE WITH THE TOWN OF BELLINGHAM, NOTES TAKEN DURING SITE INSPECTIONS, RELATIVE ELEVATION SITE SURVEY PERFORMED BY PARE PERSONNEL, AND LIDAR AND BATHYMETRY CONTOURS IMPORTED FROM MASSGIS DATA BASES. PROPERTY LINES ARE FROM A PLAN TITLED "ACCESS AND MAINTENANCE EASEMENTS ACROSS REGISTERED LAND IN BELLINGHAM, MASS" PREPARED BY GUERRIERE & HALNON, INC. OF FRANKLIN MASSACHUSETTS, DATED JANUARY 22, 1999. ENVIRONMENTAL RESOURCES WERE FLAGGED BY PARE PERSONNEL ON OCTOBER 4, 2023.

4. ELEVATIONS REFERENCE AN ASSUMED DATUM OF 214.50 FEET CORRESPONDING TO THE UPSTREAM CENTER LINE TOP OF CONCRETE OVERFLOW SPILLWAY. HORIZONTAL DATUM REFERENCE NAD 1983.

5. FEMA FLOODWAY AND ZONE AE AND ZONE X LIMITS BASED ON FEMA FLOOD INSURANCE RATE MAP (FIRM) 25021C0311E EFFECTIVE JULY 17, 2012.

6. SOIL BORINGS WERE COMPLETED BY GUILD DRILLING COMPANY OF EAST PROVIDENCE, RI. ON DECEMBER 3, 1999 AS PART OF PREVIOUS REPAIR PROJECTS. BORINGS WERE OBSERVED BY PARE PERSONNEL. DEPTHS AND THICKNESS OF THE SUBSURFACE STRATA INDICATED HEREIN ARE GENERALIZED FROM THE SUBSURFACE DATA COLLECTED. INFORMATION SHOWN FOR THE DAM IS INTERPOLATED AND MAY DIFFER DUE TO THE VARYING NATURE OF FILL MATERIALS AND GLACIAL DEPOSITS. BORING LOGS ARE INCLUDED WITHIN THE SPECIFICATIONS.

7. ANY DISCREPANCIES ON THESE PLANS WITH REGARD TO DIMENSIONS OR CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PORTION OF WORK.

8. BRUSH AND TREE GROWTH HAS CONTINUED SINCE THE DATE OF THE SURVEY AND THE EXTENTS SHOULD BE FIELD VERIFIED BY THE CONTRACTOR.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS. PLANS SHALL NOT BE SCALED FOR DIMENSIONS.

10. CONSTRUCTION SHALL BE MADE FROM APPROVED SHOP DRAWINGS ONLY.

11. NOTES, TYPICAL DETAILS, AND SCHEDULES APPLY TO ALL WORK UNLESS OTHERWISE NOTED. FOR CONDITIONS NOT SPECIFICALLY SHOWN, PROVIDE DETAILS OF SIMILAR NATURE. VERIFY APPLICABILITY BY SUBMITTING SHOP DRAWINGS FOR REVIEW.

12. INFORMATION REGARDING THE LOCATION OF SURROUNDING STRUCTURES, UTILITIES, AND THE AS-BUILT CONFIGURATION AND CONDITION OF THE EXISTING DAM AND OUTLET WORKS IS FURNISHED SOLELY FOR THE CONVENIENCE OF THE CONTRACTOR AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL CONDUCT ITS OWN INDEPENDENT EXAMINATION OF SITE CONDITIONS FOR THE PURPOSE OF BIDDING, FABRICATION, AND CONSTRUCTION ASSOCIATED WITH THE PROJECT. ANY RELIANCE UPON INFORMATION MADE AVAILABLE BY THE OWNER OR THE ENGINEER SHALL BE AT THE CONTRACTOR'S RISK.

13. THE CONTRACTOR SHALL PROTECT ALL ADJACENT STRUCTURES, RESIDENTIAL DWELLINGS, PRIVATE PROPERTY AND UTILITIES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OF ALL DAMAGE TO ADJACENT STRUCTURES AND UTILITIES AT NO ADDITIONAL COST TO THE OWNER.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL PROJECT DEMOLITION AND EXCESS MATERIAL IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL LAWS.

15. THE CONTRACTOR SHALL FOLLOW ALL OSHA AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL STANDARDS FOR ALL PROJECT COMPONENTS AND ACTIVITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SITE SAFETY PROCEDURES AND PRACTICES REGARDLESS OF THE PRESENCE OF THE OWNER OR ENGINEER.

16. ALL CONSTRUCTION ACTIVITIES SHALL BE CONFINED TO THE LIMITS OF WORK AND TEMPORARY EASEMENTS DEFINED HEREIN.

17. WHERE REFERENCE IS MADE TO ANY STANDARD SPECIFICATION IT SHALL MEAN THE MOST RECENT SPECIFICATION, CODE, STANDARD, OR INTERIM SPECIFICATIONS OF THE ORGANIZATION REFERRED TO AND SHALL BE CONSIDERED A PART OF THESE CONTRACT DOCUMENTS TO THE EXTENT INDICATED. IN CASE OF CONFLICT, THE MORE STRICT REQUIREMENTS AND CODES SHALL GOVERN. THESE CODES INCLUDE, BUT ARE NOT LIMITED TO: AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM).

18. THE CONTRACTOR SHALL STAGE ALL EQUIPMENT IN THE DESIGNATED STAGING AREA. ALL GREASING AND REFUELING ACTIVITIES SHALL OCCUR IN THE STAGING AREA.

19. THE CONTRACTOR SHALL MAINTAIN A SECURE SITE AND PROVIDE APPROPRIATE SAFETY MEASURES TO PREVENT ACCIDENTS. THE SAFETY MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO SIGNAGE, BARRICADES, FENCES, FLASHING WARNING LIGHTS, AND POLICING IF NECESSARY.

20. NO WORK OR DISCHARGES, OTHER THAN THOSE SHOWN, SHALL BE PERFORMED WITHIN WETLANDS WITHOUT FIRST RECEIVING PROPER PERMITS FROM THE REGULATORY AGENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESTORING, AND REPAIRING ALL DAMAGE AS A RESULT OF UNAUTHORIZED WORK OR DISCHARGES TO THE WETLAND AREA AT NO ADDITIONAL COST TO THE OWNER. UNAUTHORIZED WORK IN RESOURCE AREAS MAY RESULT IN FINES.

21. CONTRACTOR IS NOT AUTHORIZED TO INITIATE ANY DRAWDOWN OF THE IMPOUNDMENT. A SEASONAL ONE FOOT DRAWDOWN SHALL NOT COMMENCE UNTIL AFTER LABOR DAY. IMPOUNDMENT REFILL SHALL COMMENCE FROM LABOR DAY TO MEMORIAL DAY.

22. UPON COMPLETION OF THE WORK ALL DISTURBED AREAS SHALL BE DRESSED AND SEEDED WITH APPROVED SEED MIX AND MAINTAINED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

23. UPON COMPLETION OF THE PROJECT, CONTRACTOR IS TO PROVIDE TWO AS-BUILT PLAN SETS TO THE OWNER DEPICTING ANY FIELD CHANGES OF DIMENSION OR DETAIL, LOCATION OF UNDERGROUND STRUCTURES AND/OR UTILITIES, CONSTRUCTION DEVIATIONS, CHANGES DUE TO FIELD OR CHANGE ORDER, AND DETAILS NOT ON THE ORIGINAL DRAWINGS.

24. BE AWARE OF THE PRESENCE OF NORTHERN WATER SNAKES AND OTHER TYPES SNAKES AND WILDLIFE.

1. THE CONTRACTOR SHALL MAINTAIN NORMAL SEASONAL BASEFLOW THROUGHOUT CONSTRUCTION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOSS AND DAMAGE DUE TO A FAILURE OF ANY DIVERSION STRUCTURES CONSTRUCTED DURING THE WORK.
3. THE CONTRACTOR SHALL REGULATE DISCHARGES AND PHASE CONSTRUCTION SO THAT CONSTRUCTION EQUIPMENT DOES NOT PASS THROUGH FLOWING WATER.
4. ANY NECESSARY COFFERDAMS AND DIVERSIONS SHALL BE DESIGNED AND BEAR THE STAMP OF A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER HIRED BY THE CONTRACTOR. REVIEW AND APPROVAL BY THE OWNER AND ENGINEER IS REQUIRED PRIOR TO INSTALLATION. ALL COFFERDAMS AND DIVERSIONS SHALL BE INSTALLED AND REMOVED IN THEIR ENTIRETY AT NO ADDITIONAL COSTS TO THE OWNER.
5. THE CONTRACTOR SHALL MAINTAIN A STOCKPILE OF MATERIAL ONSITE TO BE UTILIZED TO STABILIZE THE EXCAVATION IN THE EVENT OF HIGH WATER OR OTHER CONDITIONS WHICH MAY COMPROMISE THE COFFERDAM STABILITY. THE STOCKPILE SHALL BE MAINTAINED IN ACCORDANCE WITH A FLOOD EMERGENCY RESPONSE PLAN TO BE DEVELOPED BY THE CONTRACTOR AND SUBJECT TO APPROVAL BY THE ENGINEER, OWNER, AND OFFICE OF DAM SAFETY.

- CONTRACTOR SHALL DETERMINE THE TYPE OF EROSION AND SEDIMENT CONTROL DEVICES TO BE UTILIZED FOR THE PROJECT BASED UPON THE ANTICIPATED LIMITS OF DISTURBANCE ASSOCIATED WITH THEIR MEANS AND METHODS AND GROUND CONDITIONS/EXPOSED POND BOTTOM AT THE TIME THE WORK IS COMPLETED. IF CONDITIONS ALLOW, THE CONTRACTOR MAY UTILIZE STRAW WATTLES / FILTER SOCK IN LIEU OF TURBIDITY BARRIERS ALONG THE UPSTREAM LIMITS OF WORK.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR SHALL REMOVE ALL EROSION AND SEDIMENT CONTROL DEVICES UPON COMPLETION OF THE WORK AND AUTHORIZATION TO REMOVE BY APPLICABLE REGULATORY AGENCIES.
3. TURBIDITY BARRIER (IF USED) SHALL CONSIST OF A TYPE I CURTAIN SECURELY ANCHORED TO THE POND/CHANNEL BOTTOM. BARRIER SHALL INCLUDE FLOTATION ELEMENTS SIZED ADEQUATELY TO RESIST EXPECTED SITE CONDITIONS. BARRIER CURTAIN MATERIAL SHALL BE SLIT FILM WOVEN POLYPROPYLENE WITH A MINIMUM 200 LB. TENSILE STRENGTH.
4. STRAW WATTLES SHALL BE FILLED WITH 100% WEED FREE STRAW MATRIX WITHIN UV STABILIZED PHOTODEGRADABLE TUBULAR NETTING. MINIMUM DIAMETER SHALL BE 12-INCHES IF UTILIZED ALONG THE POND BOTTOM EXPOSED BY THE DRAWDOWN. MINIMUM DIAMETER SHALL BE 9-INCHES IN ALL OTHER LOCATIONS.
5. FILTER SOCKS SHALL BE BIODEGRADABLE SEDIMENT-TRAPPING DEVICES WITH A MINIMUM DIAMETER OF 12 INCHES MANUFACTURED BY FILTREXX OR EQUAL.
6. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL DEVICES FOR THE DURATION OF THE PROJECT.
7. THE CONTRACTOR SHALL PREVENT SEDIMENT FROM ENTERING THE IMPOUNDMENT, DOWNSTREAM CHANNELS, OR RESOURCE AREAS.
8. NO WORK OR DISCHARGES, OTHER THAN THAT SHOWN, SHALL BE PERFORMED WITHIN THE WETLANDS AREA WITHOUT FIRST RECEIVING PROPER PERMITS FROM THE REGULATORY AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING, RESTORING, AND REPAIRING ALL DAMAGE AS A RESULT OF UNAUTHORIZED WORK OR DISCHARGES TO THE WETLAND AREA AT NO ADDITIONAL COST TO THE OWNER.
9. THE CONTRACTOR SHALL INSTALL AND MAINTAIN TURBIDITY BARRIERS AS INDICATED IN THE CONTRACT DOCUMENTS. TURBIDITY BARRIERS SHALL BE ANCHORED SECURELY AS NECESSARY TO INSURE COLLECTION OF SEDIMENT AND ENABLE THE WORK TO BE PERFORMED.
10. STOCKPILES SHALL BE A MINIMUM OF 3-FOOT FROM THE EDGE OF ANY SLOPE TO LIMIT RUNOFF DOWN THE SLOPES.
11. EROSION CONTROL BARRIERS SHALL BE MODIFIED OR EXPANDED AS FIELD CONDITIONS WARRANT OR AS DIRECTED BY CONSERVATION COMMISSION.
12. ALL EROSION CONTROL BARRIERS SHALL BE INSPECTED AT LEAST ONCE PER WEEK AND AFTER EACH STORM EVENT OF 0.5 INCH OR GREATER.
13. ANY DAMAGED AREAS SHALL BE REPAIRED WITHIN 24 HOURS OF DISCOVERY.
14. DEWATERING BASINS SHALL CONSIST OF STRAW BALE ENCLOSURES, TANKS, PERMEABLE BLADDERS, OR OTHER APPROPRIATE METHOD. DEWATERING WASTE WATERS SHALL BE PUMPED TO THE DEWATERING BASINS AND TREATED PRIOR TO DISCHARGE.
15. DISCHARGE OF TURBID WATER TO THE IMPOUNDMENT, CHANNEL, OR ANY WETLAND IS PROHIBITED.
16. UPON COMPLETION OF GRADING, ALL EXPOSED SURFACES NOT OTHERWISE TO BE TREATED SHALL BE COVERED WITH A MINIMUM OF 6" OF LOAM AND SEEDED. MULCH SHALL BE APPLIED AS NECESSARY TO PROVIDE TEMPORARY STABILIZATION UNTIL PERMANENT VEGETATIVE COVER IS ESTABLISHED.

1. LOAM BORROW SHALL BE IMPORTED MATERIAL CONFORMING TO M1.07.0 OF THE MHD STANDARD SPECIFICATIONS.
2. SEED IN UPLAND AREAS SHALL CONFORM TO THE REQUIREMENTS FOR SLOPES AND SHOULDER SEE MIX AS PER M6.03.0 OF THE MHD STANDARD SPECIFICATIONS.
3. SEED IN WETLAND AREAS SHALL BE NEW ENGLAND WETLAND PLANTS WETMIX, OR APPROVED EQUIVALENT.

THE FOLLOWING SEQUENCE IS INTENDED TO BE GENERAL IN NATURE AND SHALL NOT BE CONSIDERED DIRECTION BY THE ENGINEER OR THE OWNER. ALTHOUGH IT IS LIKELY THAT SOME OF THE WORK ITEMS WILL OVERLAP, CONSTRUCTION SEQUENCES FOR THE VARIOUS PROJECT COMPONENTS ARE DESCRIBED SEPARATELY AND MAY NOT NECESSARILY PROCEED IN CONSECUTIVE ORDER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.

1. CONTRACTOR MOBILIZATION.
2. INSTALL ALL NECESSARY SIGNAGE.
3. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES INCLUDING TUBIDITY BARRIER.
4. REMOVE AND DISPOSE OR STOCKPILE EXISTING SITE FEATURES AS NECESSARY TO FACILITATE SITE ACCESS.
5. INSTALL/CONSTRUCT TEMPORARY SITE ACCESS AND STAGING AREAS.
6. INSTALL WATER DIVERSION AND CONTROL OF WATER DEVICES AS NECESSARY.

1. CLEAR, GRUB, AND STRIP ALL TREES, SHRUBS, BRUSH FROM WITHIN THE LIMITS OF WORK.
2. REMOVE ALL STUMPS AND OTHER UNDESIRABLE MATERIALS FROM CLEARED AREAS.
3. FILL RESULTING VOIDS WITH APPROVED MATERIAL IN COMPACTED LIFTS.

1. COMPLETE CONCRETE SPILLWAY CRACK SEALING.
2. COMPLETE CONCRETE SPILLWAY TRAINING WALL AND CHANNEL REPAIR PATCHES.
3. RESET MASONRY AS REQUIRED.

1. EXCAVATE AND STOCK PILE TOPSOIL ON SITE.
2. EXCAVATE TRENCH FOR SEEPAGE RELIEF SYSTEM TO DEPTHS INDICATED ON THE PLANS.
3. CONTRACTOR SHALL NOT EXCAVATE MORE THAN 25 LINEAR FEET OF OPEN TRENCH AT ANY POINT DURING CONSTRUCTION. NO OPEN TRENCH IS PERMITTED TO BE LEFT OVERNIGHT.
4. INSTALL WELL POINTS OR SUMP PUMP IN DOWN GRADIENT END OF TRENCH IF SEEPING GROUND WATER IS ENCOUNTERED AT TARGET DEPTHS.
5. INSTALL ZONED SOIL FILTER AND PIPING TO LIMITS AND CONSTRUCTION DETAILS SHOWN.
6. BACKFILL AND COMPACT LOWER DOWNSTREAM TOE WITH ENGINEERED FILL. INSTALL BOULDER LANDSCAPING WALL IN AREA INDICATED ON THE PLANS.
7. FINE GRADE AND SHAPE FILL AREA AND TOE TO PROPOSED ELEVATIONS SHOWN ON PLAN.

1. REPLACE / RESET RIP-RAP PROTECTIVE SURFACE TREATMENT ON UPSTREAM SLOPE.

1. PLACEMENT OF LOAM AND SEED ON THE DOWNSTREAM SLOPE AND ALL AREAS DISTURBED BY THE CONSTRUCTION ACTIVITIES.
2. NOTIFY ENGINEER OF SUBSTANTIAL PROJECT COMPLETION.
3. DEMOBILIZE AND RETURN DISTURBED AREAS OF THE SITE TO PRE-CONSTRUCTION CONDITIONS.

1. FILL MATERIALS SHALL CONSIST OF HARD, DURABLE, SAND AND GRAVEL AND SHALL BE FREE FROM ICE AND SNOW, ROOTS, SOD, RUBBISH, AND OTHER DELETERIOUS OR ORGANIC MATTER.
2. ENGINEERED FILL SHALL BE IMPORTED OR REUSED MATERIAL CONFORMING TO ITEM M1.03.0 OF THE MHD STANDARD SPECIFICATIONS HAVING THE FOLLOWING GRADATION. ENGINEERED FILL SHALL BE UTILIZED TO COMPLETE ALL BACKFILLING WORK, UNLESS OTHERWISE SPECIFIED.

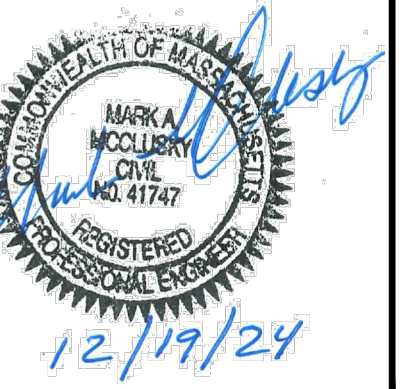
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3 INCH	100
2 INCH	90-95
3/4 INCH	65-90
NO. 4	50-75
NO. 40	25-40
NO. 60	20-35
NO. 200	15-20
3. PRIOR TO PLACING ANY BACKFILL, REMOVE ALL TRASH, DEBRIS, AND/OR ANY OTHER UNSUITABLE MATERIAL FROM AREAS WHERE BACKFILL IS TO BE PLACED. DO NOT PLACE FROZEN BACKFILL. DO NOT PLACE BACKFILL ON FROZEN GROUND OR IN AREAS WHERE STANDING WATER IS PRESENT.
4. PLACE MATERIAL IN 12-INCH MAXIMUM LOOSE LIFTS AND COMPACT EACH LIFT TO NOT LESS THAN 98 PERCENT RELATIVE COMPACTION. MAKE PROPER ALLOWANCES FOR SURFICIAL MATERIALS SPECIFIED.

1. THE CONTRACTOR SHALL ONLY IMPEDE PUBLIC ACCESS AT LOCATIONS OF ONGOING WORK.
2. STAGING AREAS SHALL BE SECURED NIGHTLY TO PREVENT UNAUTHORIZED ACCESS.
3. AREAS OF FENCING REMOVED TO FACILITATE SITE ACCESS SHALL BE SECURED WHEN THE CONTRACTOR IS NOT ON SITE AND SHALL BE REPLACED UPON DEMOBILIZATION.
4. OVERNIGHT STORAGE OF MECHANICAL EQUIPMENT, VEHICLES, AND COMBUSTIBLE FUELS SHALL BE OUTSIDE OF BUFFER ZONES.
5. REFUELING OF EQUIPMENT & VEHICLES SHALL TAKE PLACE OUTSIDE OF BUFFER ZONES AND WITHIN AREA SHOWN IN STAGING AREA.
6. STRAW WATTLE EROSION CONTROLS SHALL SURROUND MATERIAL STORAGE AREAS WHEN INSIDE BUFFER ZONES.





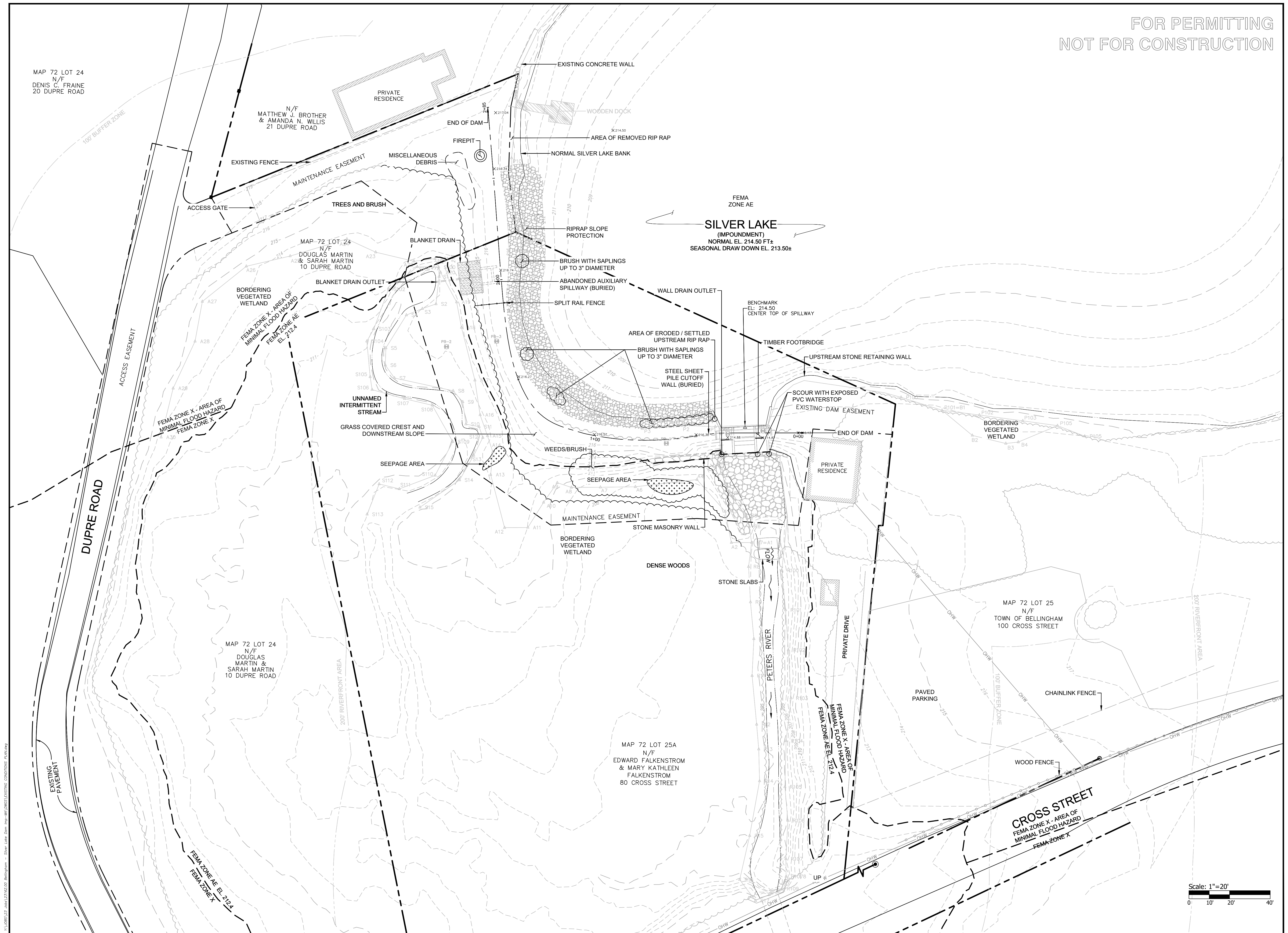
SILVER LAKE DAM IMPROVEMENTS
MA03097
BELLINGHAM, MASSACHUSETTS

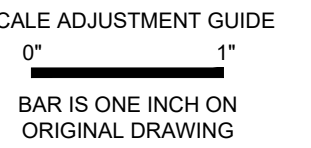


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CHECKED BY:	MAM
DRAWN BY:	AWL/WCB
APPROVED BY:	ARC
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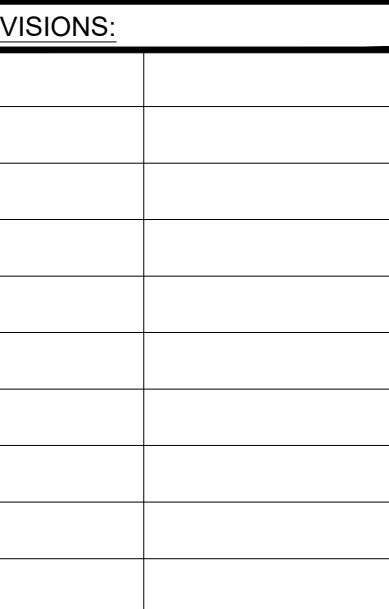
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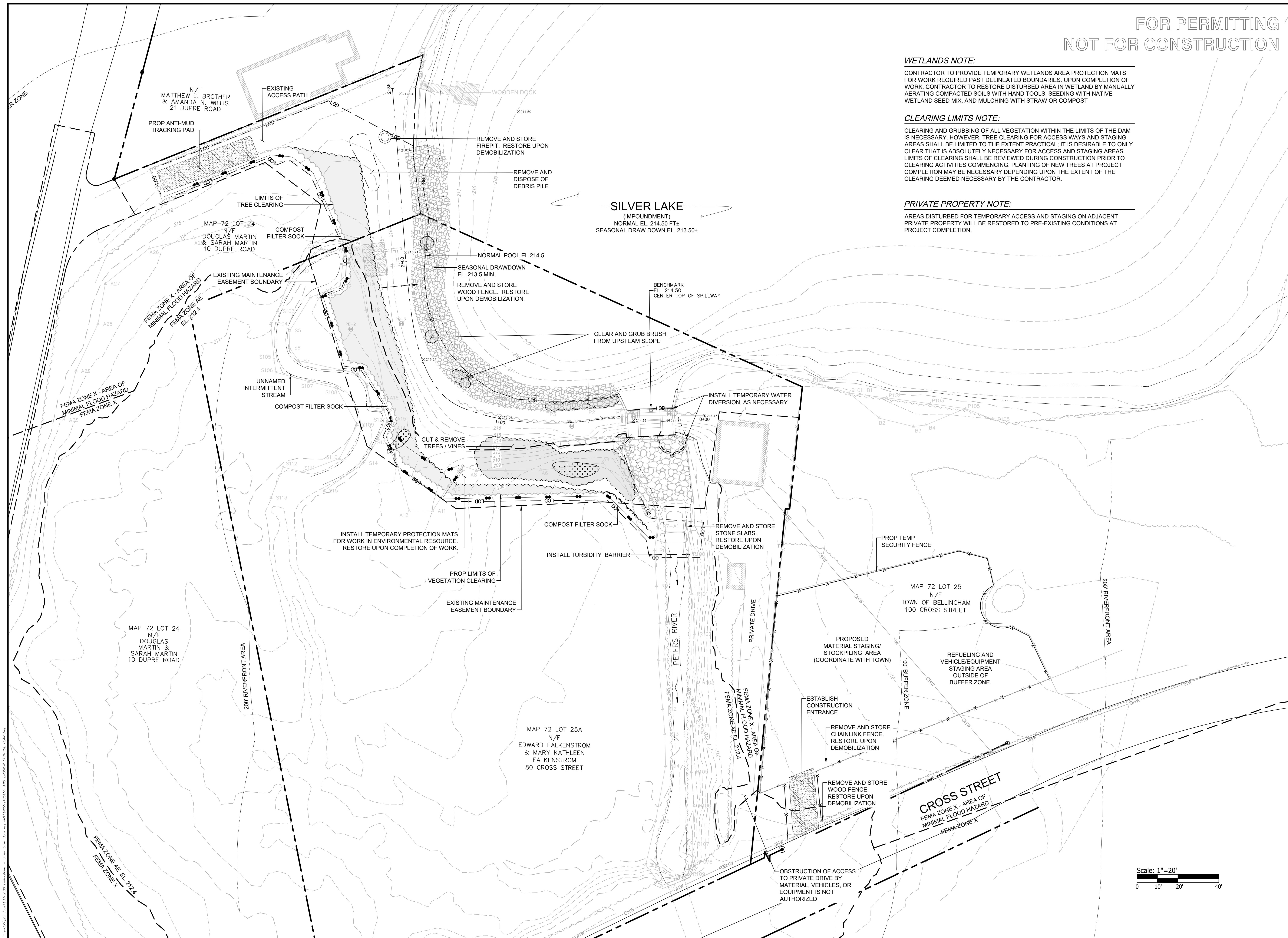
MA03097
BELLINGHAM, MASSACHUSETTS



WHITE ACCESS AND CORROSION CONTROL

AWING NO.: 3.0

EET NO. 4 OF 9

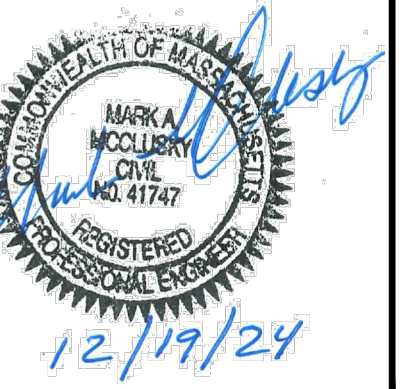




PARE



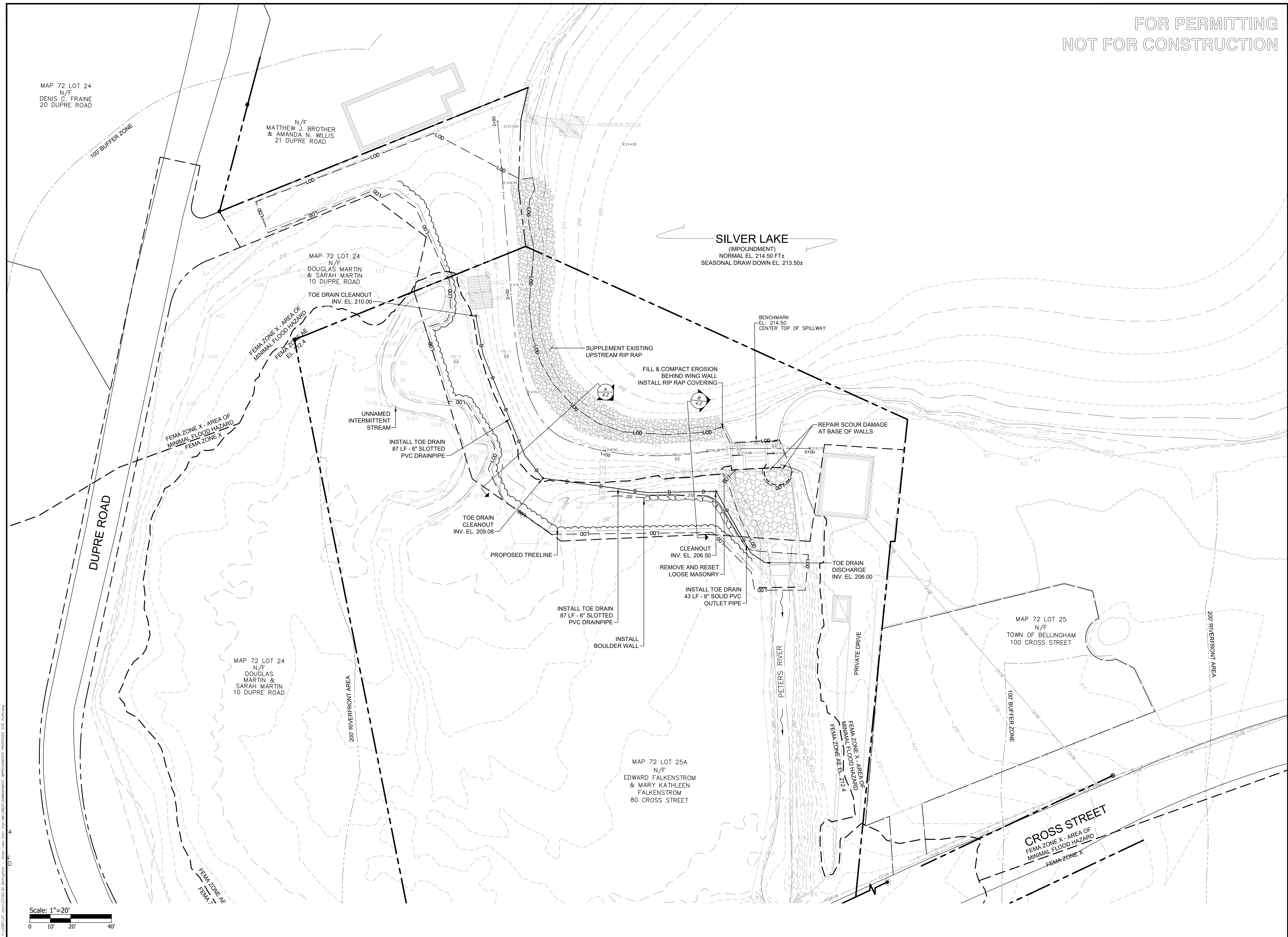
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MA03097
BELLINGHAM, MASSACHUSETTS

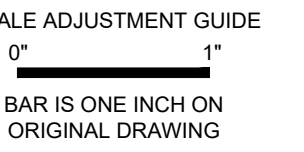


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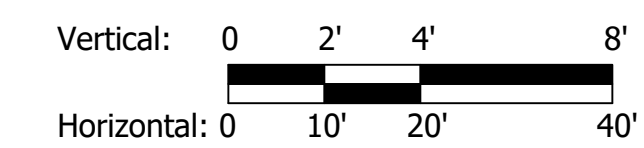
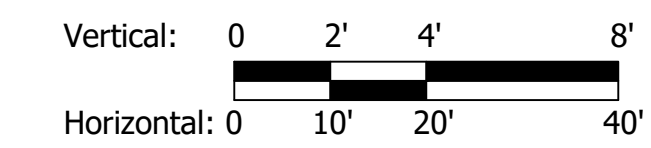


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DAM IMPROVEMENTS SECTIONS

AWING NO.: 4.1

EET NO. 6 OF 9



MAP 72 LOT 24
N/F
DENIS C. FRAINE
20 DUPRE ROAD

N/F
MATTHEW J. BROTHER
& AMANDA N. WILLIS
21 DUPRE ROAD

MAP 72 LOT 24
N/F
DOUGLAS MARTIN
& SARAH MARTIN
10 DUPRE ROAD

MAP 72 LOT 24
N/F
DOUGLAS MARTIN
& SARAH MARTIN
10 DUPRE ROAD

MAP 72 LOT 25A
N/F
EDWARD FALKENSTROM
& MARY KATHLEEN
FALKENSTROM
80 CROSS STREET

FOR PERMITTING
NOT FOR CONSTRUCTION

RESOURCE AREA IMPACTS TABLE

WETLAND RESOURCE TYPE	TEMPORARY IMPACTS	PERMANENT IMPACTS	TOTAL DISTURBANCE
BANK	237± LF	1± LF	238± LF
BVW	2,404± SF	129± SF	2,533± SF
LUW	345± SF	0± SF	345± SF
BLSF	1,154± SF	1,195± SF	2,349± SF

SILVER LAKE DAM ANNUAL PERMITTED 1-FT DRAWDOWN
OCCURS FROM LABOR DAY UNTIL MEMORIAL DAY.

SILVER LAKE

(IMPOUNDMENT)
NORMAL EL. 214.50 FT±
SEASONAL DRAW DOWN EL. 213.50±

BENCHMARK
EL. 214.50
CENTER TOP OF SPILLWAY

TEMPORARY BANK
IMPACT AREA
201± LF

TEMPORARY BVW
IMPACT AREA
1017± SQ. FT.

UNNAMED
INTERMITTENT
STREAM

TEMPORARY BLSF
IMPACT AREA
1008± SQ. FT.

PERMANENT BLSF
IMPACT AREA
319± SQ. FT.

PERMANENT BLSF
IMPACT AREA
876± SQ. FT.

PERMANENT BVW
IMPACT AREA
129± SQ. FT.

TEMPORARY LUW
IMPACT AREA
262± SQ. FT.

TEMPORARY BVW
IMPACT AREA
1387± SQ. FT.

TEMPORARY LUW
IMPACT AREA
63± SQ. FT.

TEMPORARY BLSF
IMPACT AREA
146± SQ. FT.

MAP 72 LOT 25
N/F
TOWN OF BELLINGHAM
100 CROSS STREET

STAGING AREA

CROSS STREET
FEMA ZONE X - AREA OF
MINIMAL FLOOD HAZARD
FEMA ZONE X

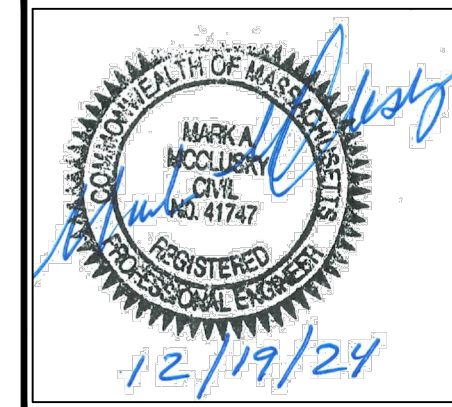
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0 10' 20' 40'



SCALE ADJUSTMENT GUIDE
0" 1"
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ORIGINAL DRAWING

SILVER LAKE DAM IMPROVEMENTS

MA03097
BELLINGHAM, MASSACHUSETTS



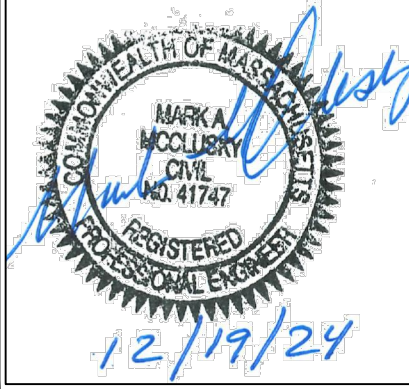
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CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE:

WETLAND IMPACT
AND MITIGATION
PLAN

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5.0
SHEET NO. 7 OF 9

SILVER LAKE DAM IMPROVEMENTS
MA03097
BELLINGHAM, MASSACHUSETTS

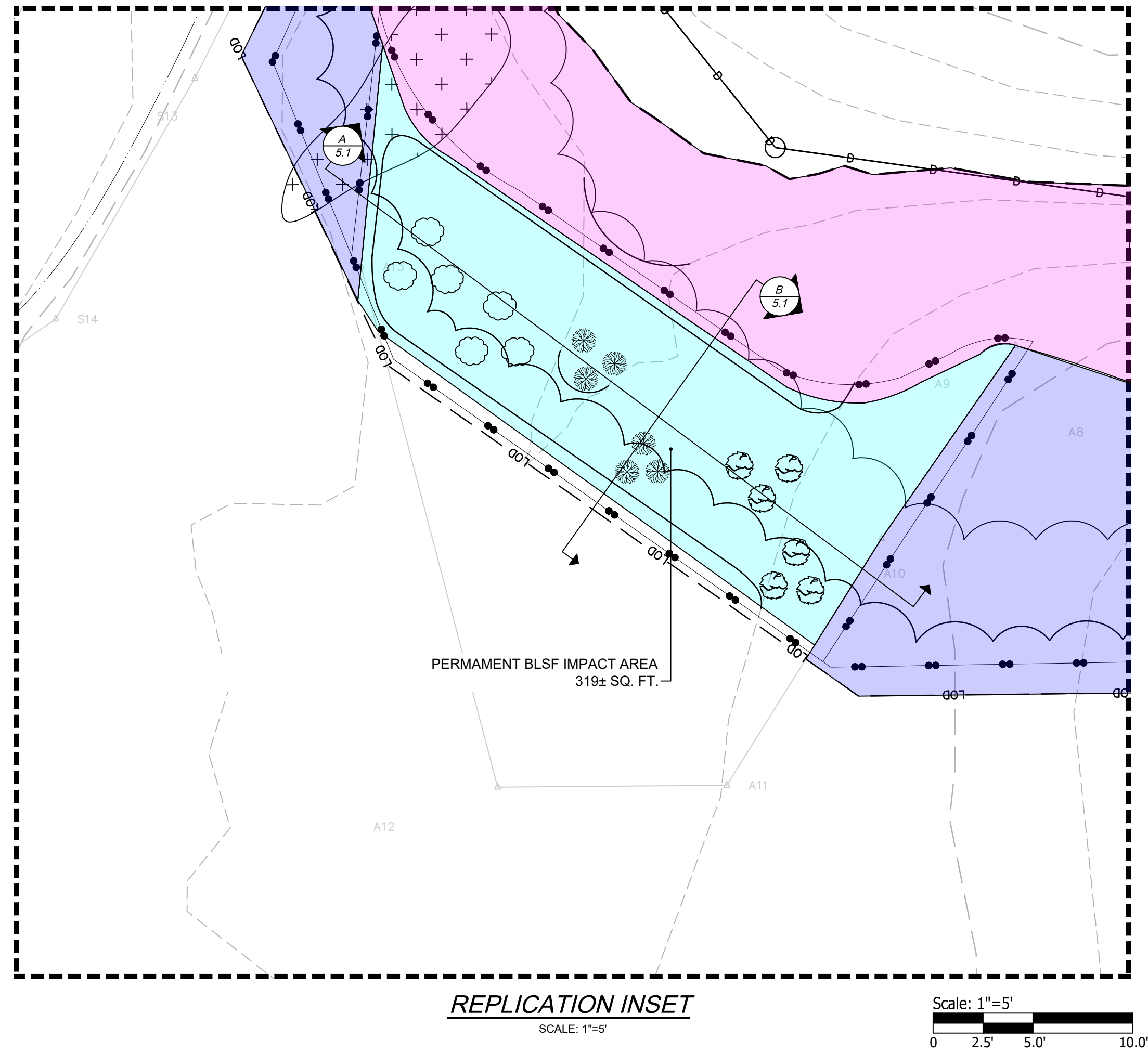


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REPLICATION PLAN

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SHEET NO. 8 OF 9



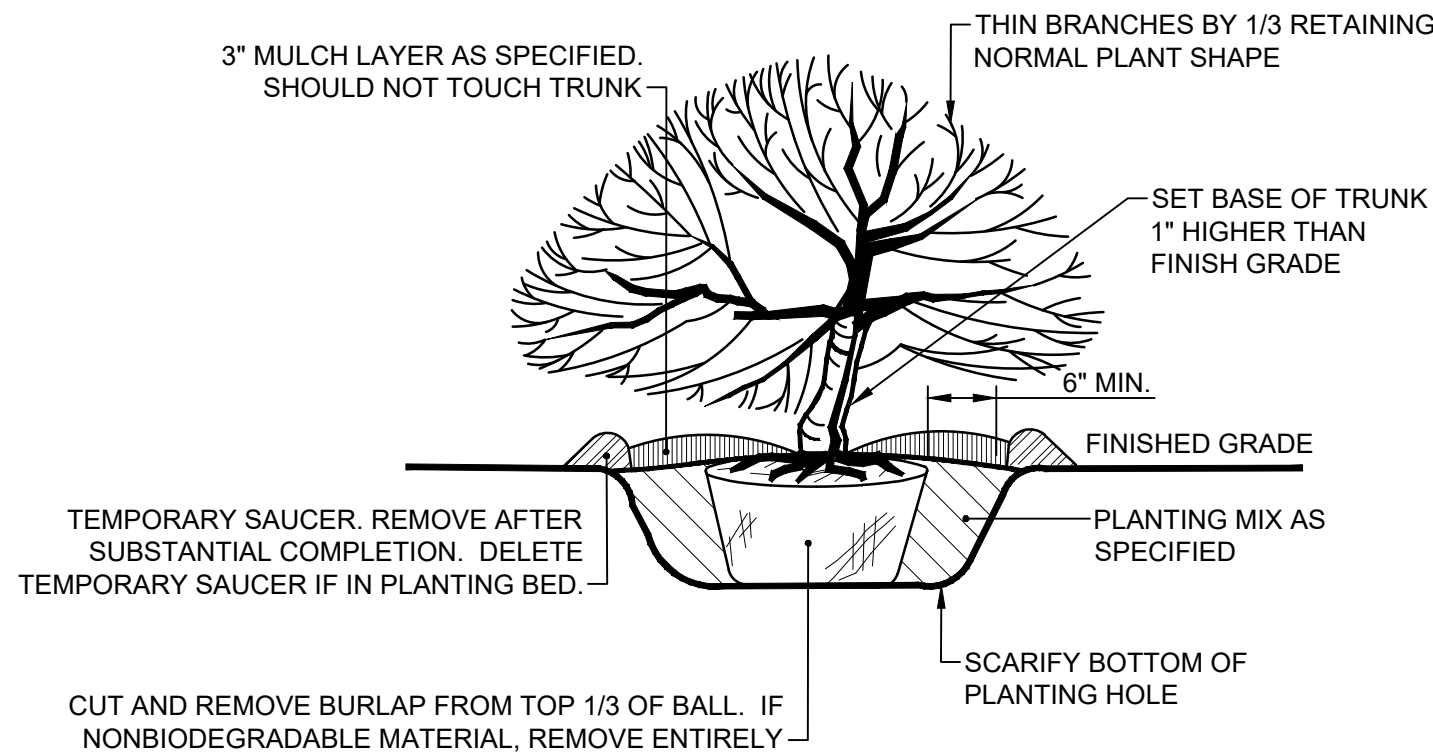
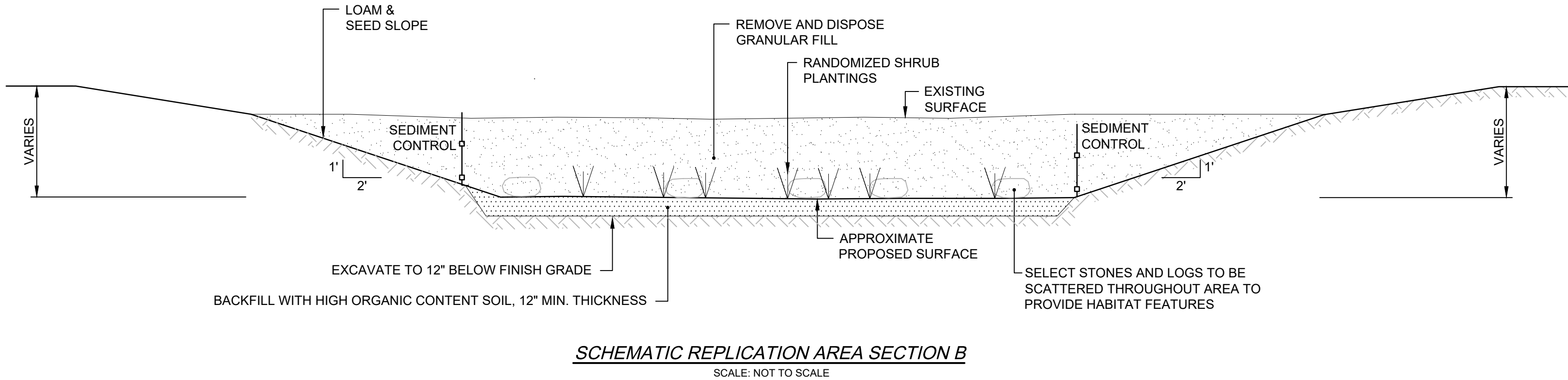
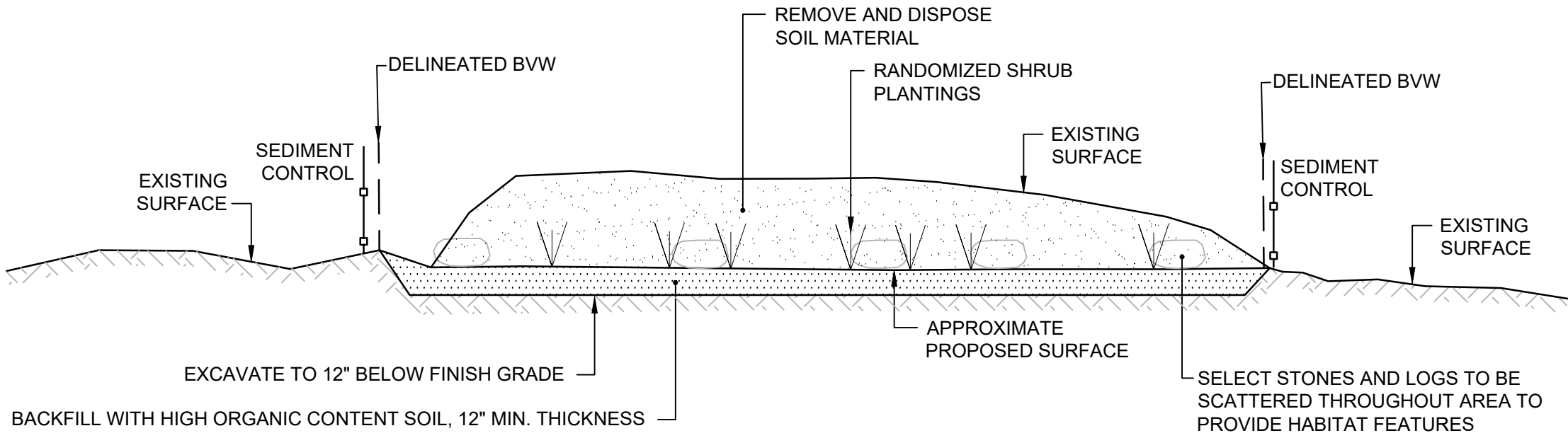
PLANTING TABLE

SYMBOL	COMMON NAME	SCIENTIFIC NAME	SIZE	QUANTITY	SPACING
	COMMON WINTERBERRY	ILEX VERTICILLATA	1-3'	6	CLUSTERS OF 3 (6'-8' O.C.)
	HIGHBRUSH BLUEBERRY	VACCINIUM CORYMBOSUM	1-3'	6	CLUSTERS OF 3 (6'-8' O.C.)
	NORTHERN SPICEBUSH	LINDERA BENZOIN	1-3'	6	CLUSTERS OF 3 (6'-8' O.C.)
	WETLAND SEED MIX**	----	----	----	THROUGHOUT

** NEW ENGLAND WETLAND PLANTS WETMIX OR APPROVED EQUIVALENT.

WETLAND REPLICATION NOTES

- APPROXIMATELY 129 SQUARE FEET OF VEGETATED WETLANDS WILL BE PERMANENTLY ALTERED IN THIS PROJECT. APPROXIMATELY 319 SQUARE FEET SHALL BE REPLICATED ON-SITE, AS SHOWN ON THE WETLAND REPLICATION PLAN. THIS WILL PROVIDE A REPLACEMENT RATIO OF APPROXIMATELY 2:1 AND SATISFIES THE REQUIREMENT FOR 2:1 REPLACEMENT OF BVW ESTABLISHED UNDER THE LOCAL BYLAW.
- THE CONTRACTOR SHALL STAKE OUT THE FOLLOWING AREAS AS INDICATED ON THE WETLAND REPLICATION PLAN:
 - EROSION CONTROL/LIMIT OF WORK
 - REPLICATION AREA
- EROSION CONTROL SHALL BE INSTALLED IN ACCORDANCE WITH THE CONTRACT PLANS AND DOCUMENTS. SEE EROSION AND SEDIMENT CONTROL NOTES.
- ALL STAGES OF CONSTRUCTION SHALL BE OBSERVED BY A WETLAND SPECIALIST.
- ALL VEGETATION WITHIN THE REPLICATION AREA SHALL BE REMOVED. EXISTING TREES MAY BE SELECTED TO REMAIN ON HUMMOCKS IF APPROPRIATE. SELECT INORGANIC MATERIALS SUCH AS ROCKS AND BOULDERS AND SELECT TREES AND LOGS MAY BE STOCKPILED FOR USE IN THE REPLICATION AREA TO PROVIDE WILDLIFE HABITAT AND PROTECTIVE BARRIER.
- EXCAVATE TO APPROPRIATE SUBGRADES APPROXIMATELY 12 INCHES BELOW ELEVATION OF ADJOINING WETLAND EDGE. MATERIAL SHALL BE SPREAD TO CREATE A MOUND AND POOL TOPOGRAPHY FOR THE FINAL GRADE.
- THE WETLAND SPECIALIST SHALL CONFIRM THE ELEVATIONS OF THE REPLICATION AREA PRIOR TO PLACEMENT OF ORGANIC TOPSOIL.
- ORGANIC TOPSOIL FROM THE PERMANENTLY IMPACTED WETLAND AREA SHOULD BE SAVED AND USED AS TOPSOIL IN THE REPLICATION AREA. IT SHALL BE COMBINED WITH IMPORTED ORGANIC TOPSOIL IN ORDER TO CREATE A SUFFICIENT VOLUME TO COVER THE REPLICATION AREA TO AN AVERAGE DEPTH OF 12 INCHES. SUPPLEMENTAL TOPSOIL SHALL CONSIST OF A 50/50 MIX OF LOAM AND ORGANIC MATERIAL. TOPSOIL SHALL CONSIST OF A 50/50 MIX OF LOAM AND ORGANIC MATERIAL.
- THE REPLICATION AREA SHALL BE PLANTED WITH INDIGENOUS PLANTS SPECIFIED IN THE PLANTING TABLE. SHRUBS WILL BE STAGGERED RANDOMLY AT AN AVERAGE SPACING OF 6'-8' ON CENTER. PLANTS SHALL BE PLANTED IN A RANDOM ARRANGEMENT TO MIMIC THE NATURAL SURROUNDINGS. FOLLOWING INSTALLATION OF PLANTINGS, A NEW ENGLAND WETLAND SEED MIX SHALL BE ADDED TO PROVIDE HERBACEOUS COVER.
- INORGANIC MATERIALS AND SAVED TREES/LOGS SHALL BE SCATTERED THROUGHOUT THE REPLICATION AREA TO COVER APPROXIMATELY 20% OF THE SURFACE AREA.
- IMMEDIATELY FOLLOWING THE PLANTING OF THE REPLICATION AREA, A SECOND ROW OF EROSION CONTROL SHALL BE INSTALLED BETWEEN THE NEW REPLICATION AREA AND THE UPLAND AREA AS INDICATED ON THE WETLAND REPLICATION PLAN, THIS SHEET. SLOPES BORDERING THE AREA SHALL BE STABILIZED WITH LOAM AND SEED.
- THE REPLICATION AREA SHALL BE VEGETATIVELY STABILIZED BY AT LEAST 75% WITHIN TWO GROWING SEASONS. ALL REPLICATION TASKS SHALL BE DONE IN ACCORDANCE WITH THE WETLAND PROTECTION ACT AND REGULATIONS UNDER 310CMR 10.55 AND THE MASSACHUSETTS INLAND WETLAND REPLICATION GUIDE. EROSION CONTROL BETWEEN THE EXISTING WETLAND AND THE CREATED WETLAND SHALL BE REMOVED ONCE THE 75% STABILIZATION RATE HAS OCCURRED AND HAS BEEN VERIFIED BY THE CONSERVATION COMMISSION.
- FOLLOWING CONSTRUCTION, ALL AREAS OF TEMPORARY BVW DISTURBANCE SHALL BE RESTORED BY MANUALLY AERATING COMPACTED SOILS USING HAND TOOLS, AND INSTALLING NEW ENGLAND WETLAND PLANTS "WETMIX" OR APPROVED EQUIVALENT TO PROVIDE NATIVE HERBACEOUS COVER.



NOTE:
SPACE PLANTS AS INDICATED ON DRAWINGS.

