

Prepared for The:

FOR PERMITTING NOT FOR CONSTRUCTION

SILVER LAKE DAM IMPROVEMENTS

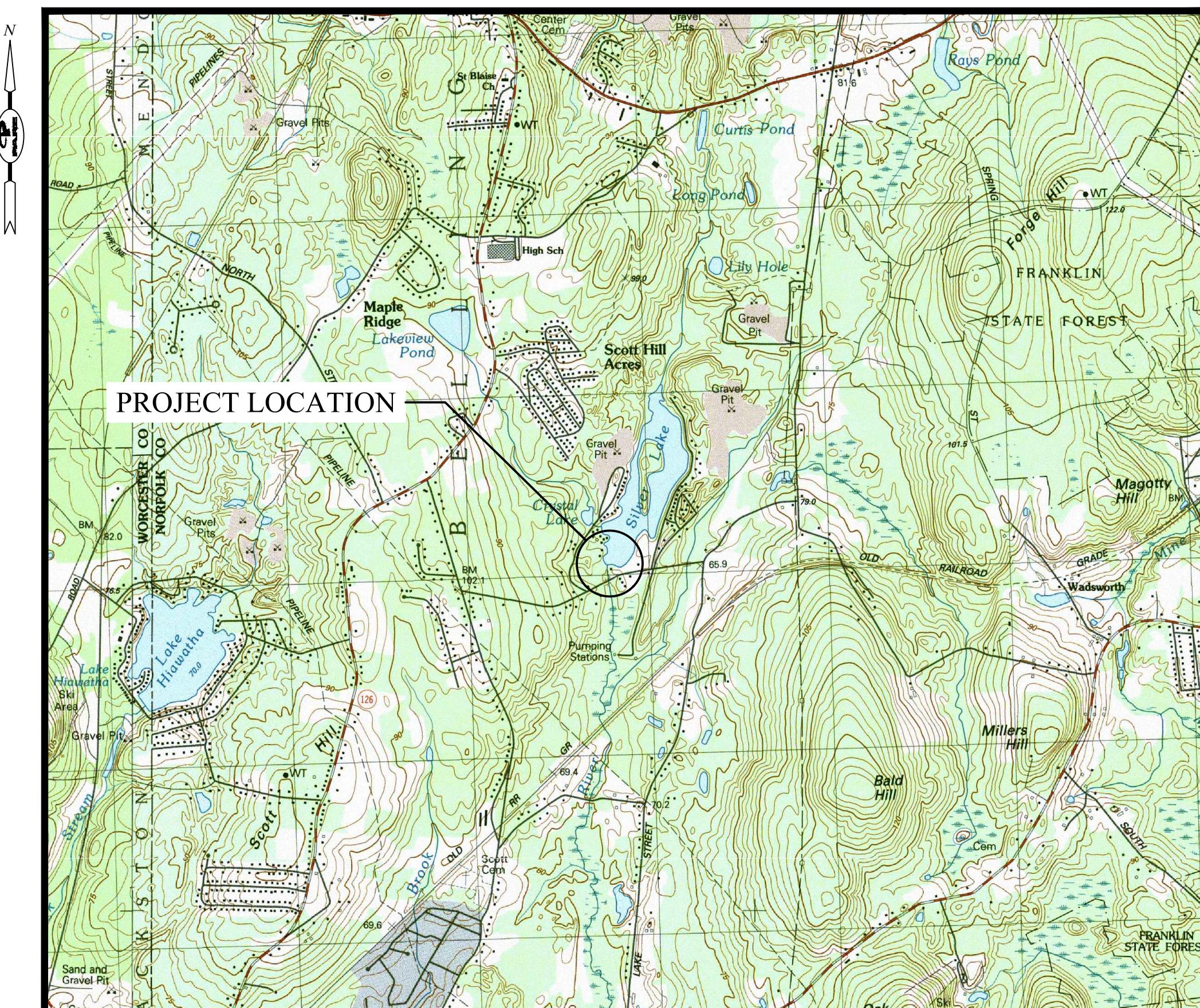
MA03097

BELLINGHAM, MASSACHUSETTS

DECEMBER 2024

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LOCUS PLAN

SCALE: 1" = 2000'



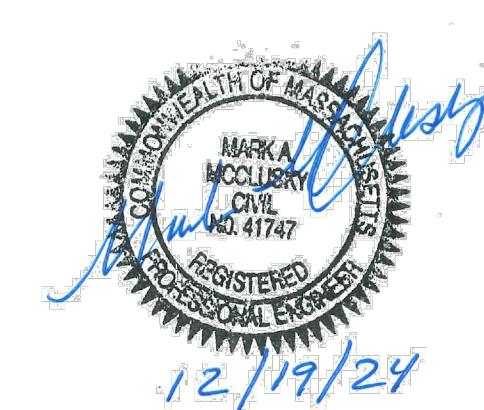
AERIAL PLAN

SCALE: 1" = 400'



TOWN OF
BELLINGHAM
MASSACHUSETTS

Prepared by:
PARE CORPORATION
Foxboro, Massachusetts



GENERAL NOTES:

1. FOR THE PURPOSE OF THIS PROJECT

OWNER -	TOWN OF BELLINGHAM
	28 BLACKSTONE STREET
	BELLINGHAM, MA 02019-1602
CONTACT -	JESSE RIEGLE, DPW DIRECTOR
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 FLOWAY 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.

DIVERSION NOTES:

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 ON SITE 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.

EROSION AND SEDIMENT CONTROL NOTES:

1. 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 WATTERS / 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 WATTERS 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.

LANDSCAPING NOTES:

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.

CONSTRUCTION SEQUENCE:

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.

MOBILIZATION

1. CONTRACTOR MOBILIZATION.
2. INSTALL ALL NECESSARY SIGNAGE.
3. INSTALL PERIMETER EROSION AND SEDIMENT CONTROL DEVICES INCLUDING TURBIDITY 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.

TREE AND STUMP REMOVAL

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.

SPILLWAY REPAIRS

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

SEEPAGE RELIEF SYSTEM

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.

EMBANKMENT IMPROVEMENTS

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

PROJECT COMPLETION

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.

EARTHWORK NOTES:

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.

SIEVE SIZE	PERCENT PASSING
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.

ACCESS AND STAGING NOTES:

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 WATTER EROSION CONTROLS SHALL SURROUND MATERIAL STORAGE AREAS WHEN INSIDE BUFFER ZONES.

LEGEND

EXISTING	PROPOSED
— 90 —	CONTOUR 5'
— 89 —	CONTOUR 1'
— — —	CART PATH
— — —	CONCRETE WALL
— — —	PROPERTY LINE
— — —	DRAIN LINE
— — —	CLEAN OUT
— — —	CO
— — —	CHAIN LINK FENCE
— — —	STONE WALL
— — —	EDGE OF WATER
— — —	100 FT. WETLAND BUFFER ZONE
— — —	200 FT. RIVERFRONT AREA
— — —	FLOODPLAIN
— — —	TURBIDITY BARRIER
— — —	COFFERDAM
— — —	STEEL SHEET PILE
— — —	TREELINE
— — —	TREE TO BE CLEARED & GRUBBED
— — —	TREE TO BE CUT & GROUND
— — —	FILTER SOCK
— — —	LIMIT OF DISTURBANCE
B#	BORING
PB#	PROBE
R#	RIVERBANK FLAG
S#	INTERMITTENT STREAM

ABBREVIATIONS

BLSF	BORDERING LAND SUBJECT TO FLOODING
BM	BENCHMARK
BMP	BEST MANAGEMENT PRACTICE
BOT.	BOTTOM
BW	BORDERING VEGETATED WETLANDS
CL	CLASS
CMR	CODE OF MASSACHUSETTS REGULATIONS
CONC.	CONCRETE
DEMO	DEMOLITION
DIA	DIAETER
EOP	EDGE OF PAVEMENT
ELEV.	ELEVATION
EX.	EXISTING
FT	FOOT
INV.	INVERT
LOD	LIMIT OF DISTURBANCE
LWW	LAND UNDERWATER
MAX.	MAXIMUM
MIN.	MINIMUM
NTS, N.T.S.	NOT TO SCALE
OHW	ORDINARY HIGH WATER
PERF.	PERFORATED
R-X	RADIUS
MASSDEP	MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
MASSDOT	MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
M.A. STD.	MASSACHUSETTS STANDARD
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
TP	TEST PIT
TP.	TEST P
UP	TOPICAL
W	UTILITY POLE
w	WITH

REVISIONS:

PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: NOT TO SCALE
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE: SILVER LAKE DAM IMPROVEMENTS
DRAWING NO.: 1.0
SHEET NO. 2 OF 9
GENERAL NOTES AND LEGEND
DRAWING NO.: 1.0
SHEET NO. 2 OF 9



SCALES ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON
ORIGINAL DRAWING

MA03097
BELLINGHAM, MASSACHUSETTS

FOR PERMITTING NOT FOR CONSTRUCTION



SCALE ADJUSTMENT GUIDE
0"  1"
BAR IS ONE INCH ON
ORIGINAL DRAWING

MA03097
BELLINGHAM, MASSACHUSETTS

JOURNAL OF
AMERICAN
STUDIES

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SILVER LAKE DAM IMPROVEMENTS

VISIONS

PROJECT NO.:	23162.0
DATE:	DECEMBER 2022
SCALE:	1" = 20'
DESIGNED BY:	WC
CHECKED BY:	MAN
DRAWN BY:	AWL/WC
APPROVED BY:	AR
DRAWING TITLE:	

EXISTING CONDITIONS

DRAWING NO.: 30

2.0

HEET NO. 3 OF 9

2.0

HEET NO. 3 OF 9

Scale: 1"=20'

0 10 20 40

1

FOR PERMITTING
NOT FOR CONSTRUCTION

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

100 BUFFER ZONE

PRIVATE RESIDENCE

EXISTING CONCRETE WALL

WOODEN DOCK

END OF DAM

EXISTING FENCE

MISCELLANEOUS DEBRIS

ACCESS GATE

MAINTENANCE EASEMENT

TREES AND BRUSH

BLANKET DRAIN

BLANKET DRAIN OUTLET

BORDERING VEGETATED WETLAND

FEMA ZONE X - AREA OF MINIMAL FLOOD HAZARD

FEMA ZONE AE EL 214.50

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

A23

A26

A27

A28

A29

A30

A31

A32

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FOR PERMITTING NOT FOR CONSTRUCTION



BAR IS ONE INCH ON
ORIGINAL DRAWING

MA03097 BELLINGHAM, MASSACHUSETT

ANSWER

CT NO.: 23162
DECEMBER 20
1" =
NED BY: W
ED BY: M
N BY: AWL/W
VED BY: A
NG TITLE:

STATE ACCESS AND EROSION CONTROL

NG NO.: 3.0

WETLANDS NOTE:

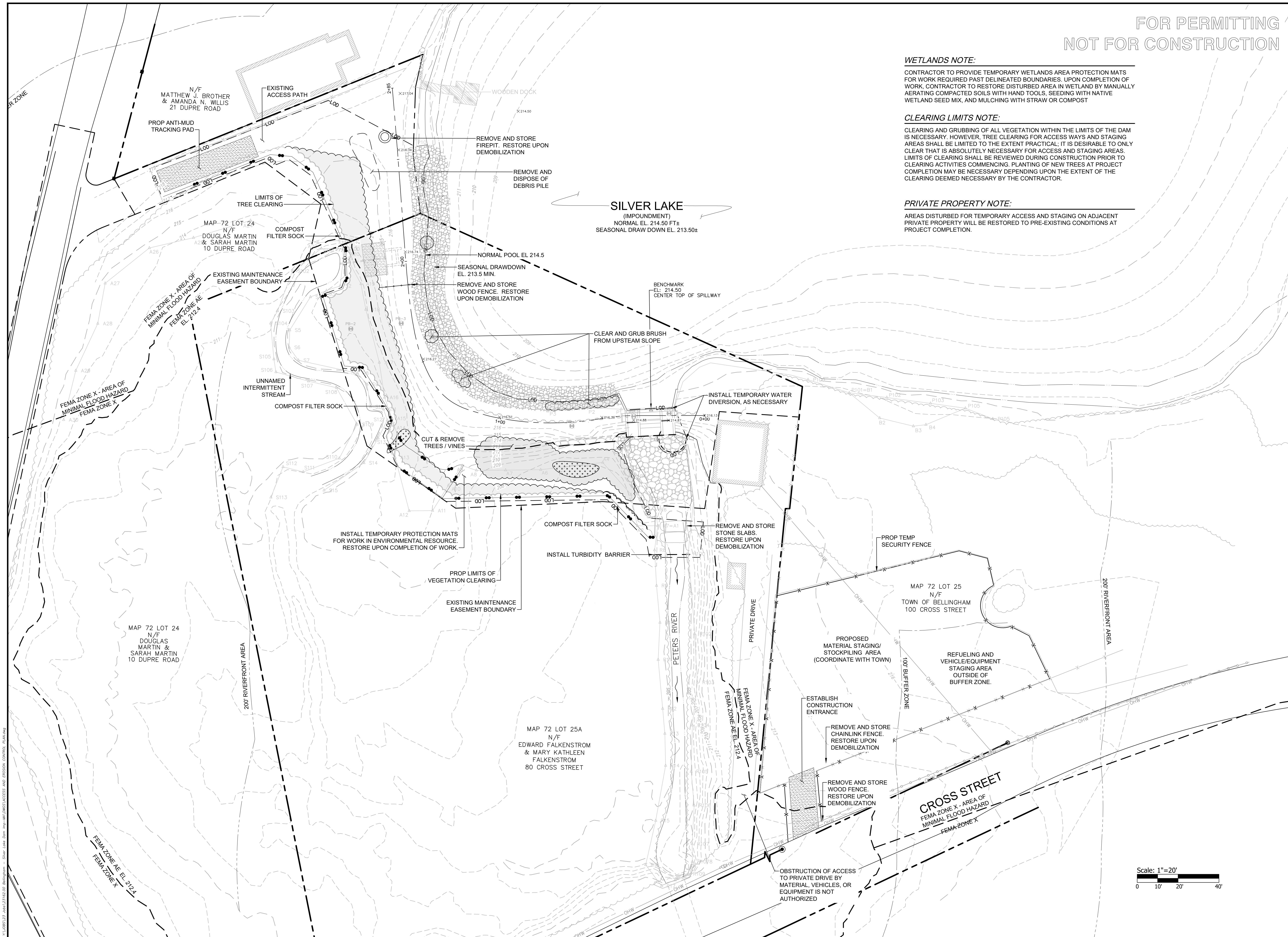
CONTRACTOR TO PROVIDE TEMPORARY WETLANDS AREA PROTECTION MATS FOR WORK REQUIRED PAST DELINEATED BOUNDARIES. UPON COMPLETION OF WORK, CONTRACTOR TO RESTORE DISTURBED AREA IN WETLAND BY MANUALLY AERATING COMPACTED SOILS WITH HAND TOOLS, SEEDING WITH NATIVE WETLAND SEED MIX, AND MULCHING WITH STRAW OR COMPOST

CLEARING LIMITS NOTE:

CLEARING AND GRUBBING OF ALL VEGETATION WITHIN THE LIMITS OF THE DAM IS NECESSARY. HOWEVER, TREE CLEARING FOR ACCESS WAYS AND STAGING AREAS SHALL BE LIMITED TO THE EXTENT PRACTICAL; IT IS DESIRABLE TO ONLY CLEAR THAT IS ABSOLUTELY NECESSARY FOR ACCESS AND STAGING AREAS. LIMITS OF CLEARING SHALL BE REVIEWED DURING CONSTRUCTION PRIOR TO CLEARING ACTIVITIES COMMENCING. PLANTING OF NEW TREES AT PROJECT COMPLETION MAY BE NECESSARY DEPENDING UPON THE EXTENT OF THE CLEARING DEEMED NECESSARY BY THE CONTRACTOR.

PRIVATE PROPERTY NOTE:

AREAS DISTURBED FOR TEMPORARY ACCESS AND STAGING ON ADJACENT PRIVATE PROPERTY WILL BE RESTORED TO PRE-EXISTING CONDITIONS AT PROJECT COMPLETION.



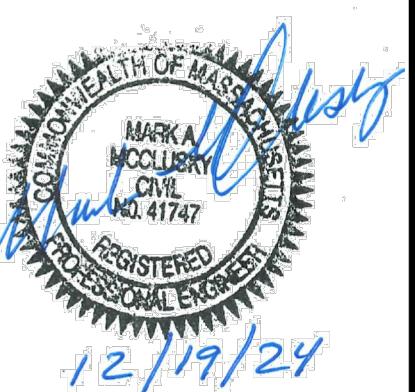
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SCALE ADJUSTMENT GUIDE
0" 1"
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ORIGINAL DRAWING

SILVER LAKE DAM IMPROVEMENTS

MA03097
BELLINGHAM, MASSACHUSETTS

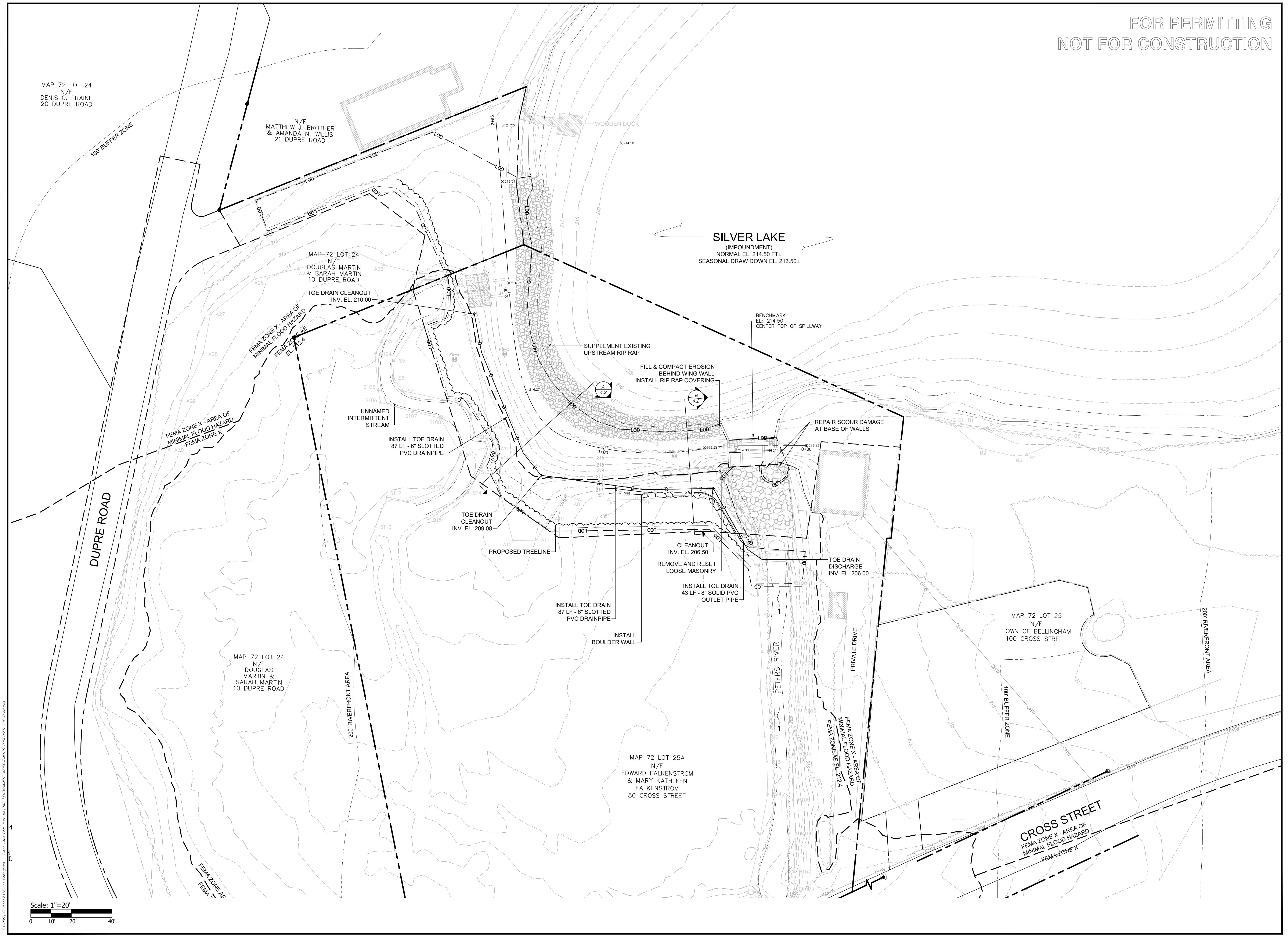


REVISIONS:

PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: 1" = 20'
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE: DAM IMPROVEMENTS

DRAWING NO.: 4.0

SHEET NO. 5 OF 9



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NOT FOR CONSTRUCTION



SCALE ADJUSTMENT GUIDE
0' 1'
BAR IS ONE INCH ON
ORIGINAL DRAWING

SILVER LAKE DAM IMPROVEMENTS

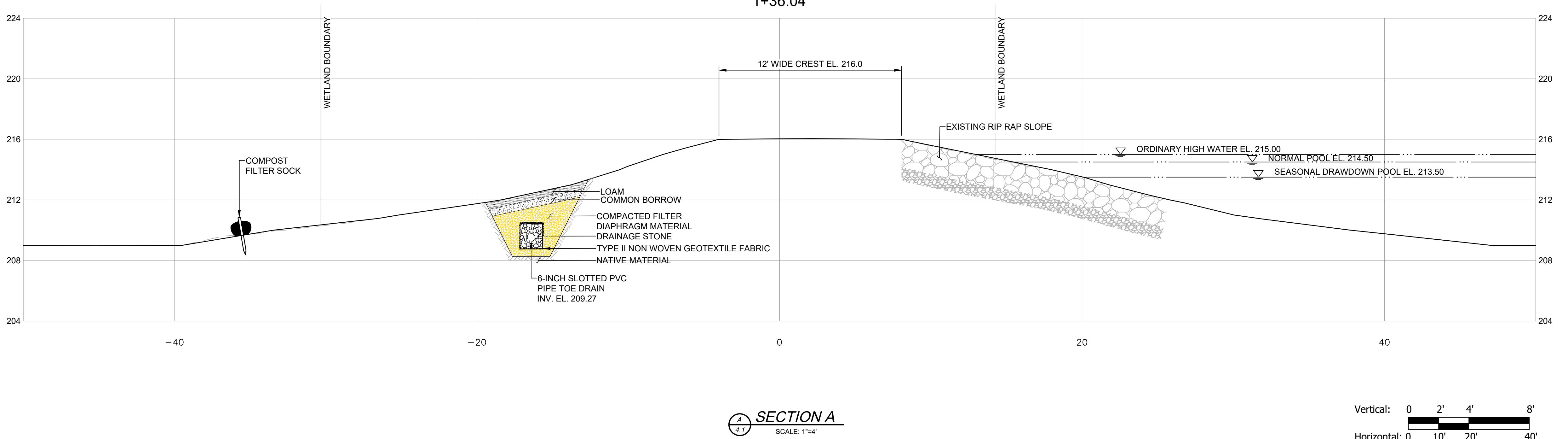
MA03097
BELLENGHAM, MASSACHUSETTS



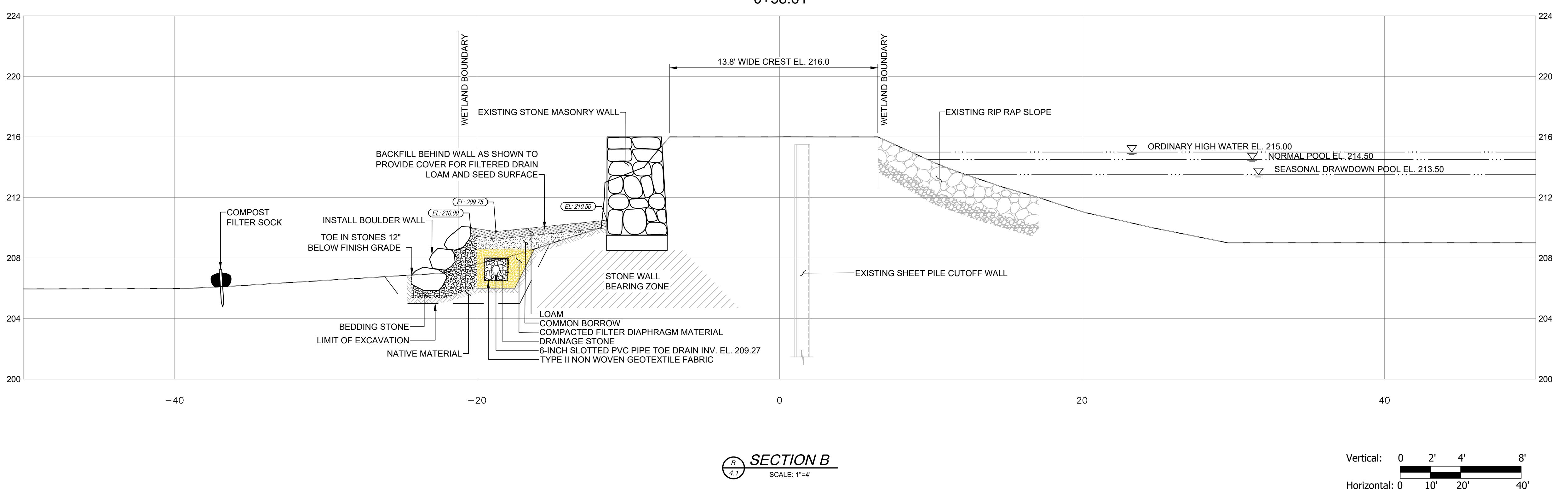
REVISIONS:

PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: AS SHOWN
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE: DAM IMPROVEMENTS SECTIONS
DRAWING NO.: 4.1
SHEET NO. 6 OF 9

1+36.04



0+58.61



FOR PERMITTING
NOT FOR CONSTRUCTION

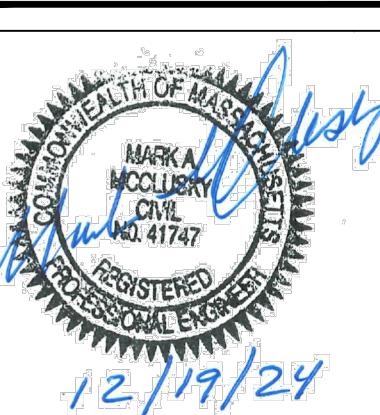


SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON
ORIGINAL DRAWING

SILVER LAKE DAM IMPROVEMENTS

MA03097

BELLINGHAM, MASSACHUSETTS



REVISIONS:

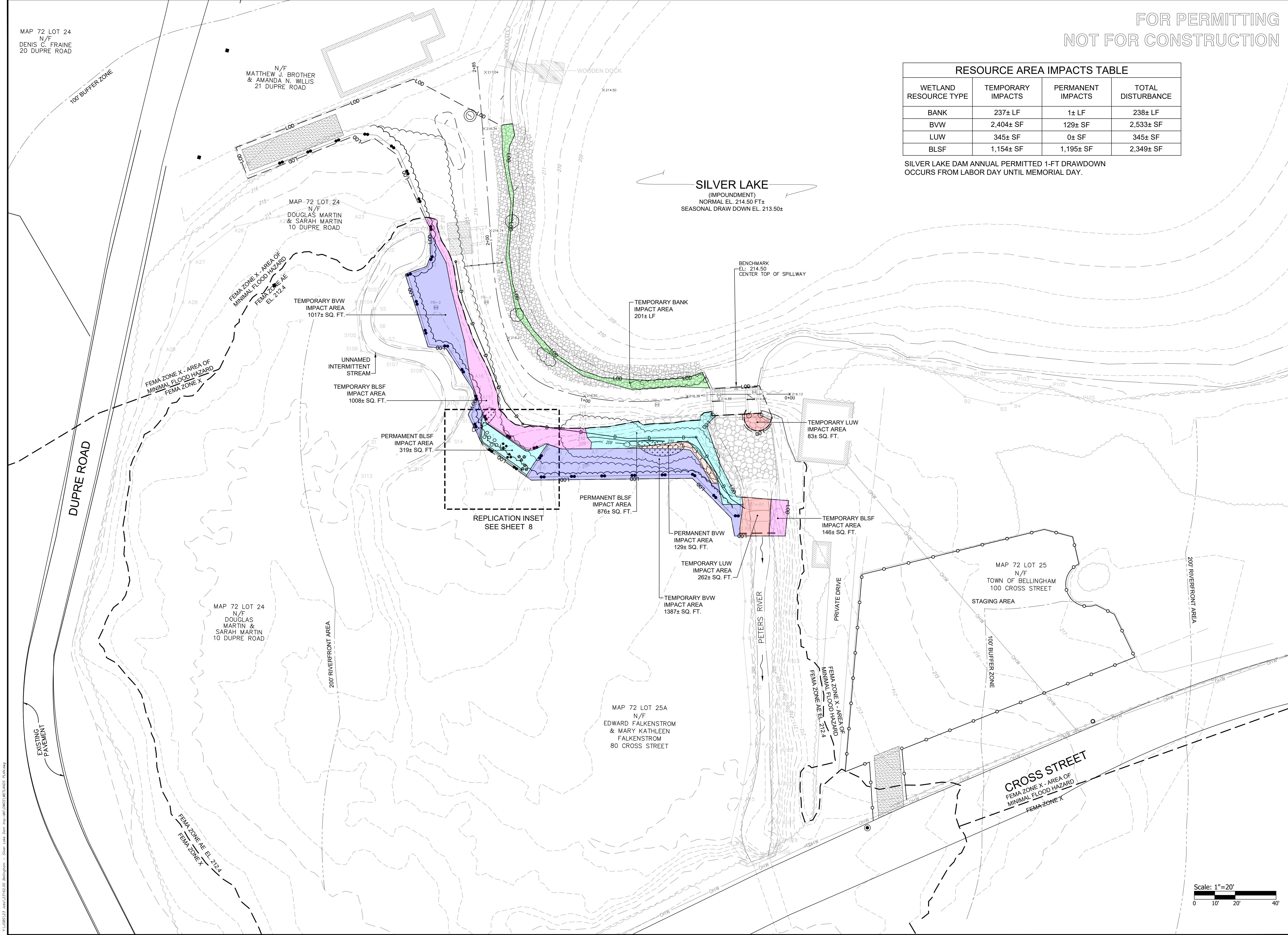
PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: 1" = 20'
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE: WETLAND IMPACT AND MITIGATION PLAN

DRAWING NO.: 5.0

DRAWING NO.: 7 OF 9

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.



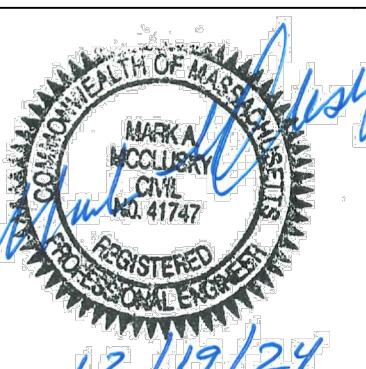


SCALE ADJUSTMENT GUIDE
0" 1"
BAR IS ONE INCH ON
ORIGINAL DRAWING

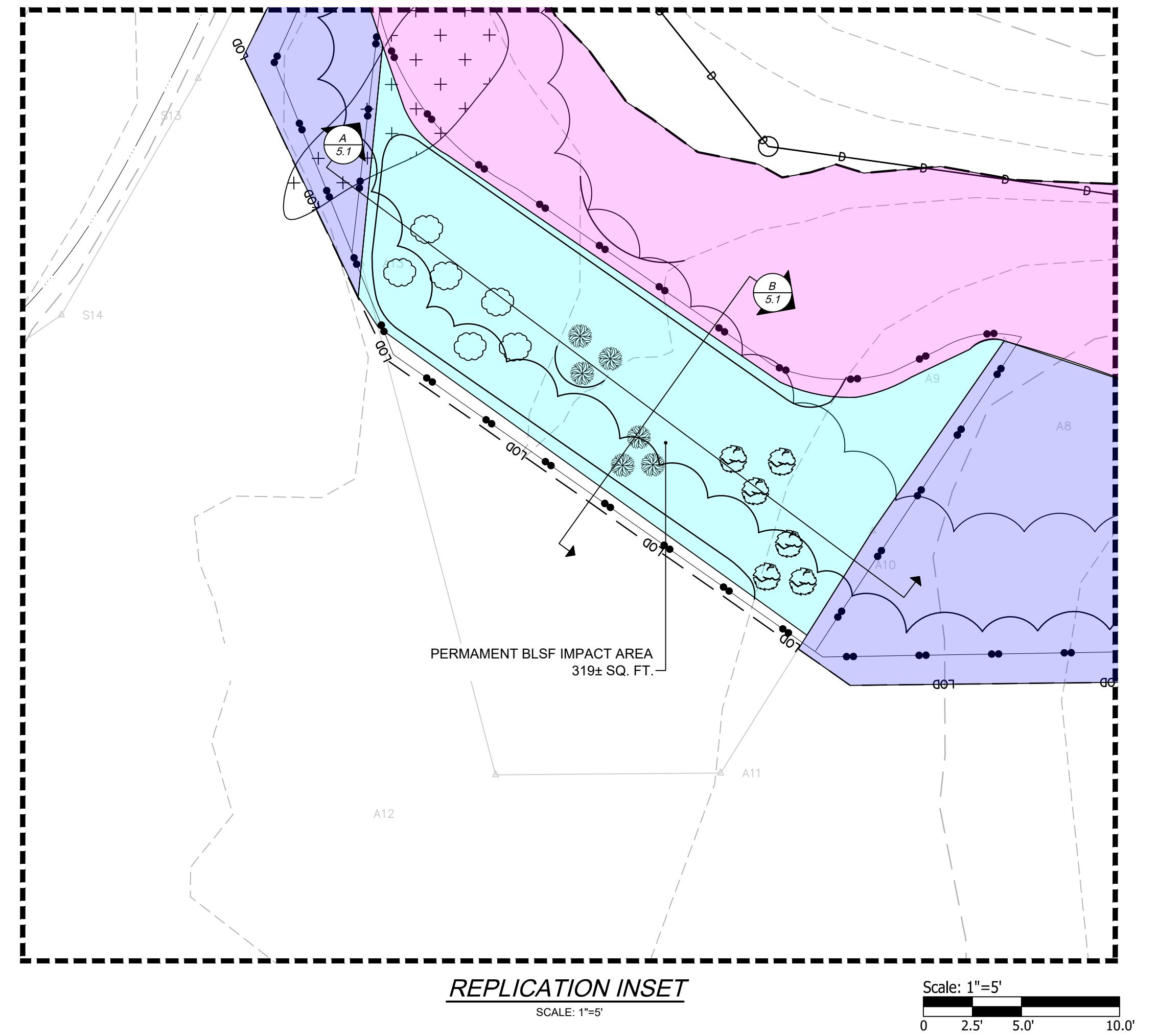
SILVER LAKE DAM IMPROVEMENTS

MA03097

BELLEGROVE, MASSACHUSETTS



12/19/24



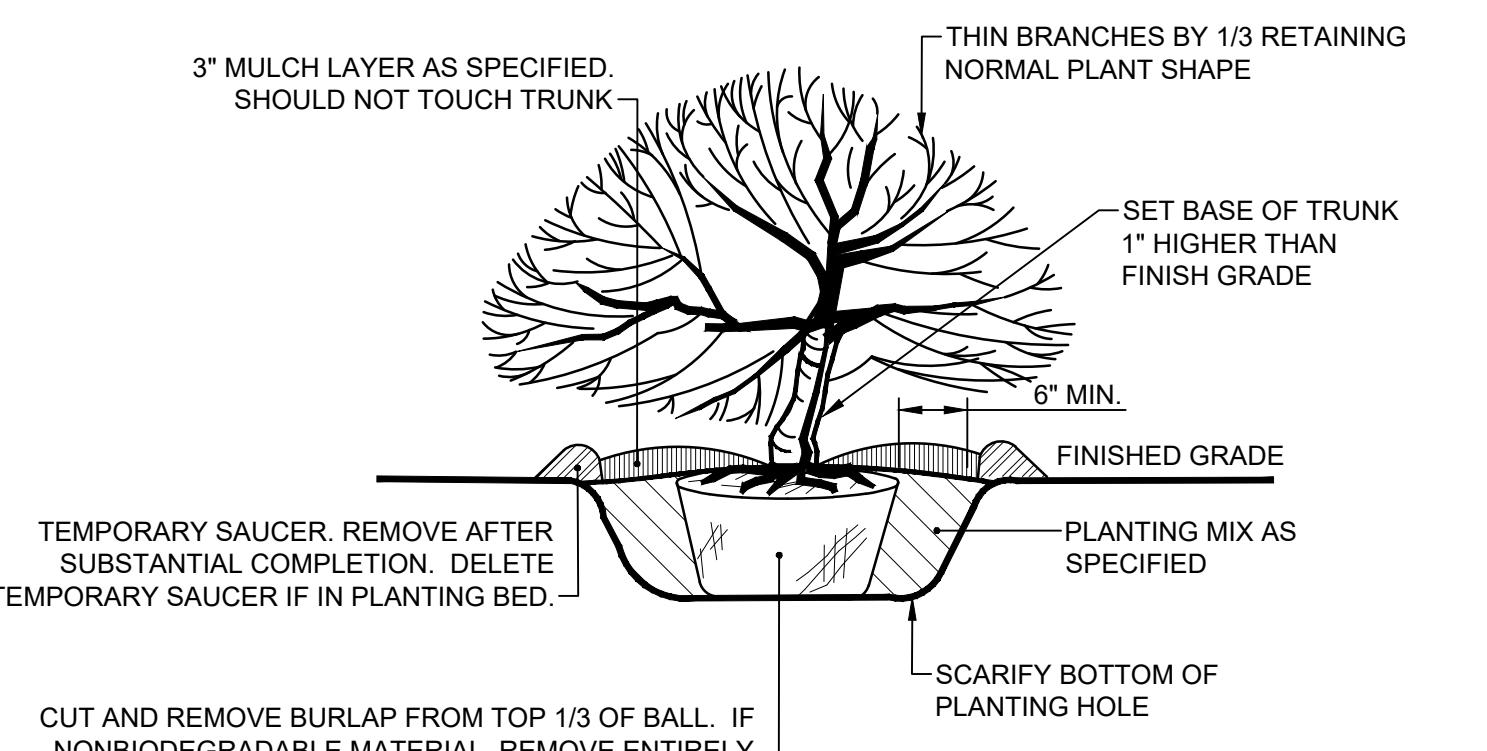
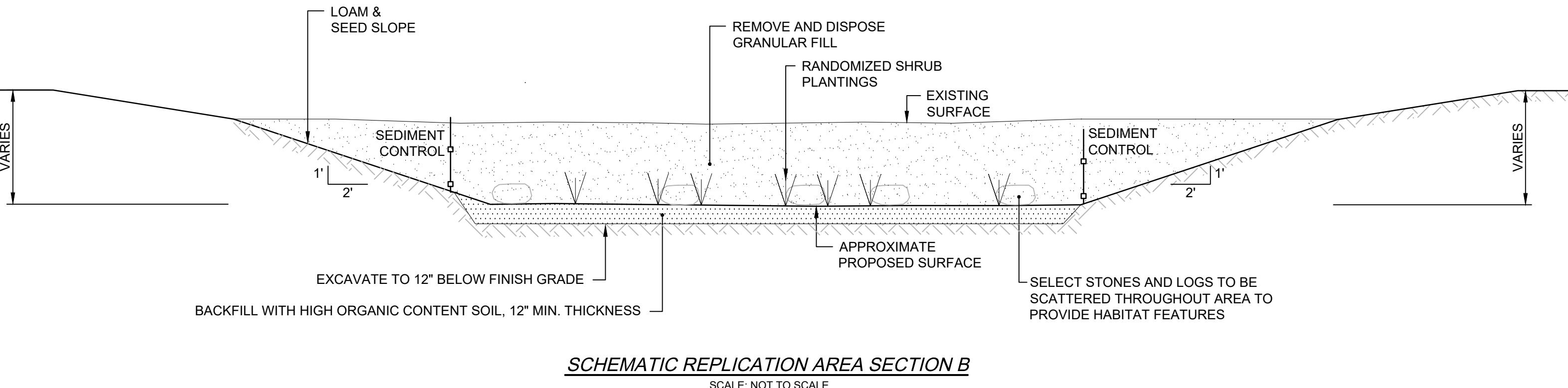
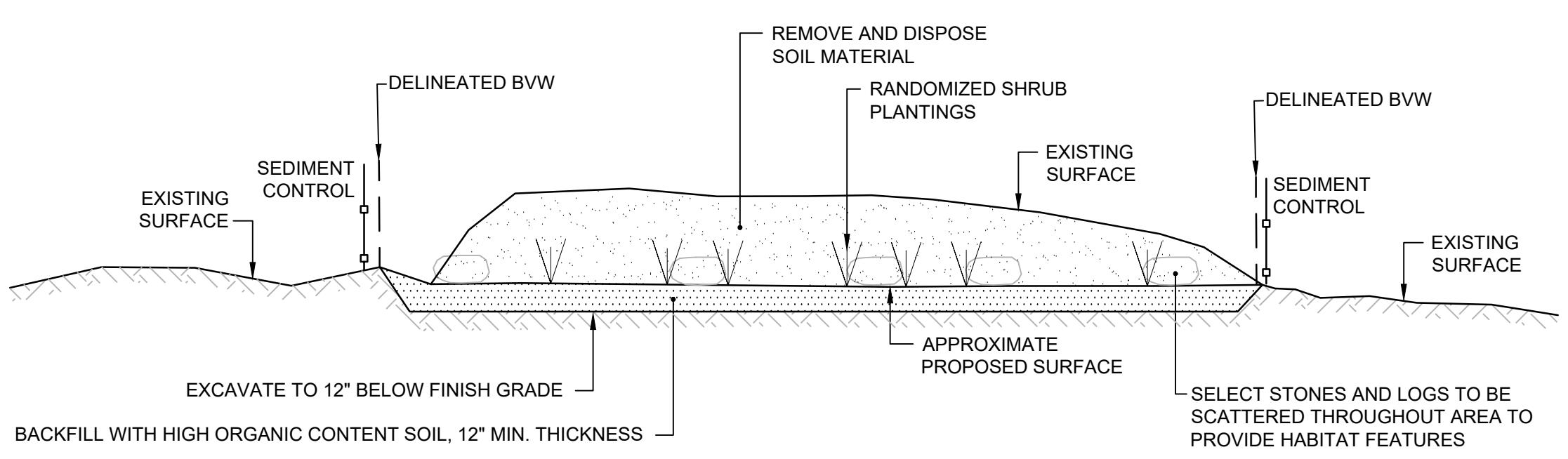
PLANTING TABLE

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 REPPLICATION 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 REPPLICATION PLAN. THIS WILL PROVIDE A REPLACEMENT RATIO OF APPROXIMATELY 2:1 AND SATISFIES THE REQUIREMENT FOR 2:1 REPLACEMENT OF BWV ESTABLISHED UNDER THE LOCAL BY-LAW.
- THE CONTRACTOR SHALL STAKE OUT THE FOLLOWING AREAS AS INDICATED ON THE WETLAND REPPLICATION 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 REPPLICATION 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 REPPLICATION 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 REPPLICATION AREA PRIOR TO PLACEMENT OF ORGANIC TOPSOIL.
- ORGANIC TOPSOIL FROM THE PERMANENTLY IMPACTED WETLAND AREA SHOULD BE SAVED AND USED AS TOPSOIL IN THE REPPLICATION AREA. IT SHALL BE COMBINED WITH IMPORTED ORGANIC TOPSOIL IN ORDER TO CREATE A SUFFICIENT VOLUME TO COVER THE REPPLICATION 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 REPPLICATION 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 REPPLICATION AREA TO COVER APPROXIMATELY 20% OF THE SURFACE AREA.
- IMMEDIATELY FOLLOWING THE PLANTING OF THE REPPLICATION AREA, A SECOND ROW OF EROSION CONTROL SHALL BE INSTALLED BETWEEN THE NEW REPPLICATION AREA AND THE UPLAND AREA AS INDICATED ON THE WETLAND REPPLICATION PLAN. THIS SHEET. SLOPES BORDERING THE AREA SHALL BE STABILIZED WITH LOAM AND SEED.
- THE REPPLICATION AREA SHALL BE VEGETATIVELY STABILIZED BY AT LEAST 75% WITHIN TWO GROWING SEASONS. ALL REPPLICATION TASKS SHALL BE DONE IN ACCORDANCE WITH THE WETLAND PROTECTION ACT AND REGULATIONS UNDER 310CMR 10.55 AND THE MASSACHUSETTS INLAND WETLAND REPPLICATION 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 BWV 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.

PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: AS NOTED
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE: REPPLICATION PLAN

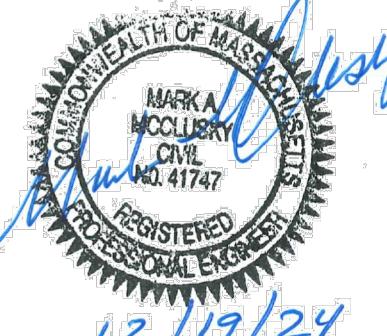
DRAWING NO.: 5.1

SHEET NO. 8 OF 9

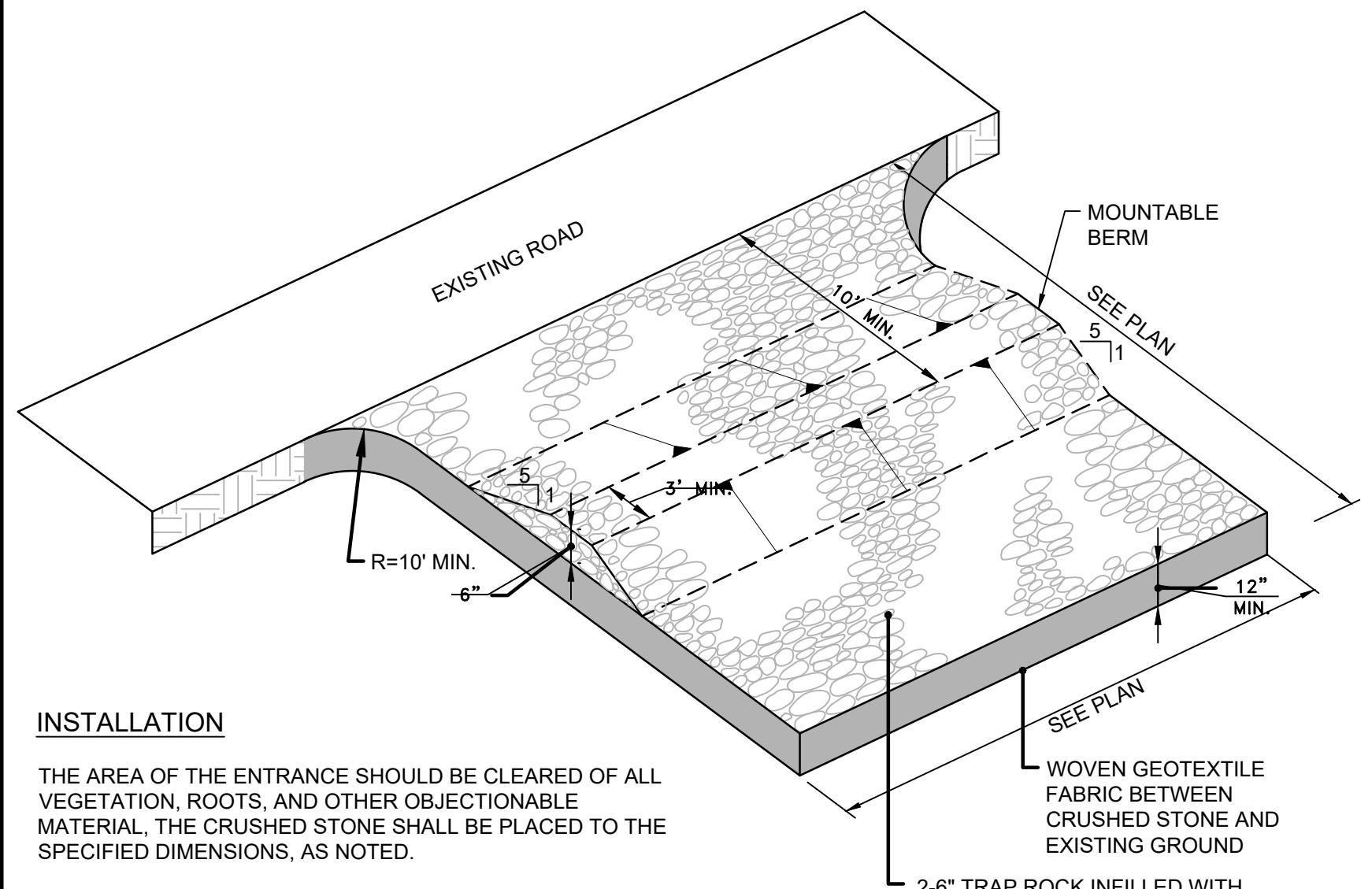


SCALE ADJUSTMENT GUIDE
0" BAR IS ONE INCH ON
ORIGINAL DRAWING

SILVER LAKE DAM IMPROVEMENTS
MA03097
BELLINGHAM, MASSACHUSETTS



PROJECT NO.: 23162.00
DATE: DECEMBER 2024
SCALE: NOT TO SCALE
DESIGNED BY: WCB
CHECKED BY: MAM
DRAWN BY: AWL/WCB
APPROVED BY: ARO
DRAWING TITLE:
CONSTRUCTION DETAILS
DRAWING NO.: 6.0
SHEET NO. 9 OF 9



INSTALLATION

THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE CRUSHED STONE SHALL BE PLACED TO THE SPECIFIED DIMENSIONS, AS NOTED.

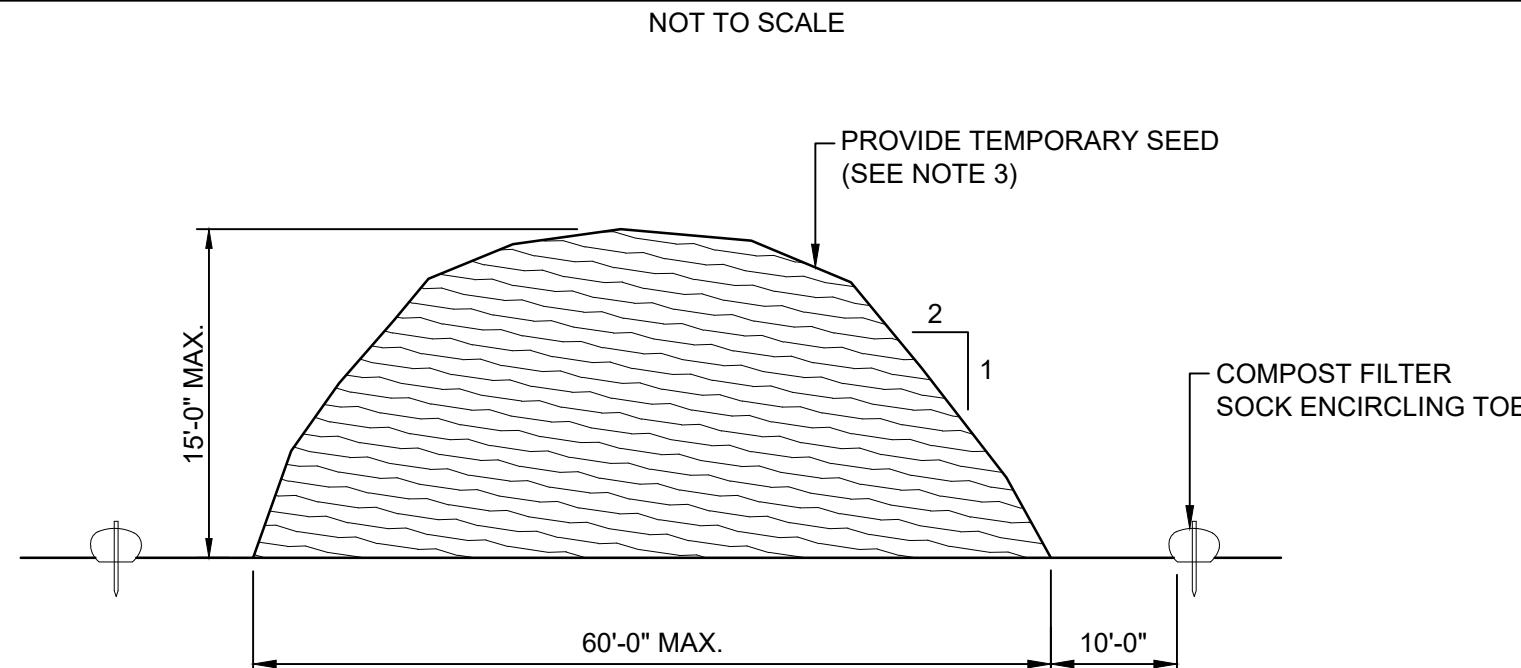
MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAYS THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE, OR ADDITIONAL LENGTH, AS CONDITIONS DEMAND, AND REPAIR, AND / OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.

LOCATION

SEE PROJECT PLANS FOR LOCATION OF CONSTRUCTION ENTRANCE.

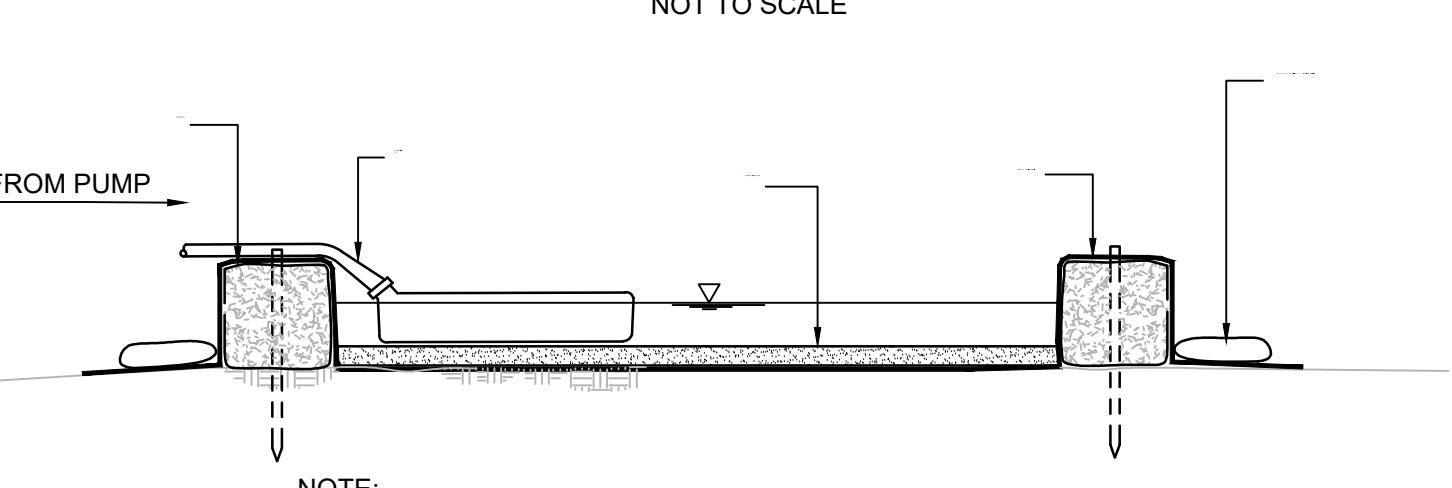
CONSTRUCTION ENTRANCE PROTECTION STONE STABILIZATION PAD



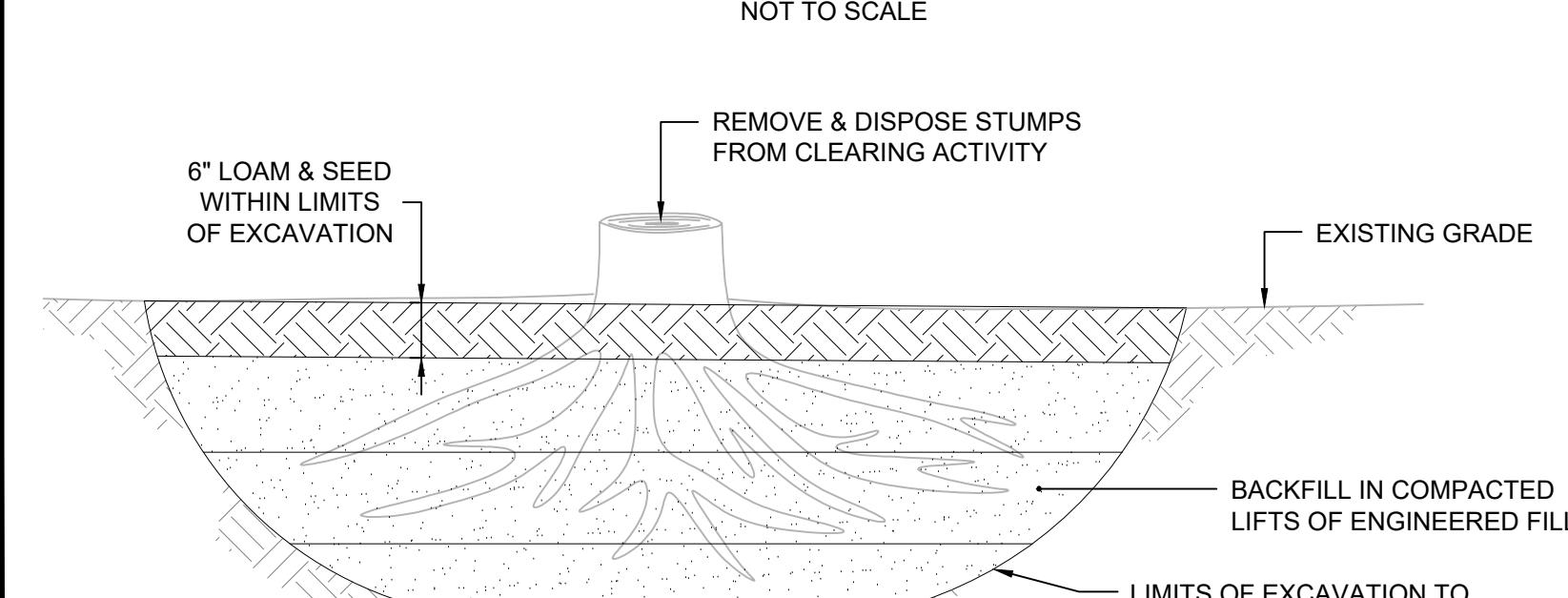
NOTES:

1. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE PROPOSED LOCATION OF ALL STOCKPILE AREAS.
2. STOCKPILE AREA SHALL NOT EXCEED SPECIFIED DIMENSIONS WITHOUT APPROVAL FROM ENGINEER.
3. STOCKPILED ERODIBLE MATERIAL THAT WILL NOT BE USED FOR GREATER THAN 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEED IMMEDIATELY FOLLOWING PLACEMENT. USE MASSDOT STD. M.6.03.1 EROSION SEED.

ERODIBLE MATERIAL STOCKPILE

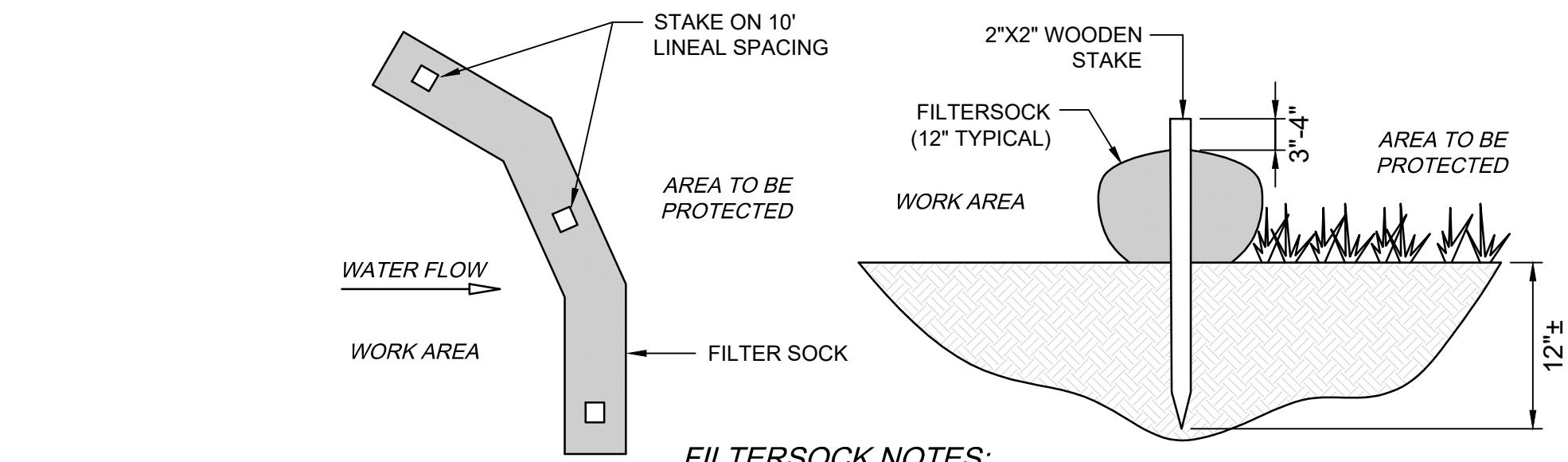


FILTER FABRIC DEWATERING BASIN



STUMP / ROOT VOID BACKFILL

From: MA03097-2024-0112-02-Bellinham - Silver Lake Dam Improvements - Details.dwg

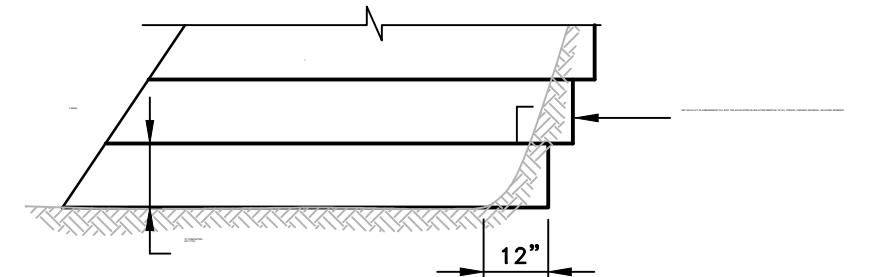


FILTERSOCK NOTES:

1. COMPOST / SOIL / ROCK / SEED FILL TO MEET APPLICATION REQUIREMENTS.
2. COMPOST MATERIAL TO BE REMOVED OR DISPERSED ON SITE AS DETERMINED BY ENGINEER.

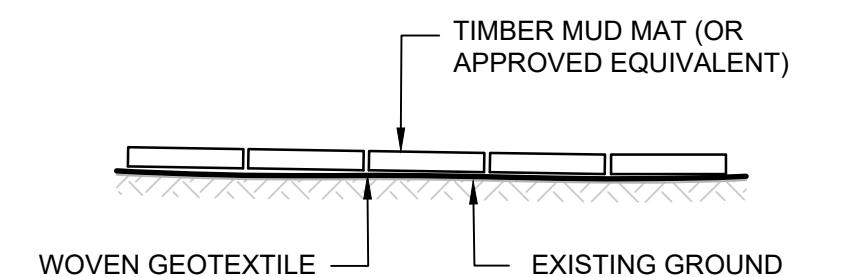
FILTERSOCK DETAIL

NOT TO SCALE



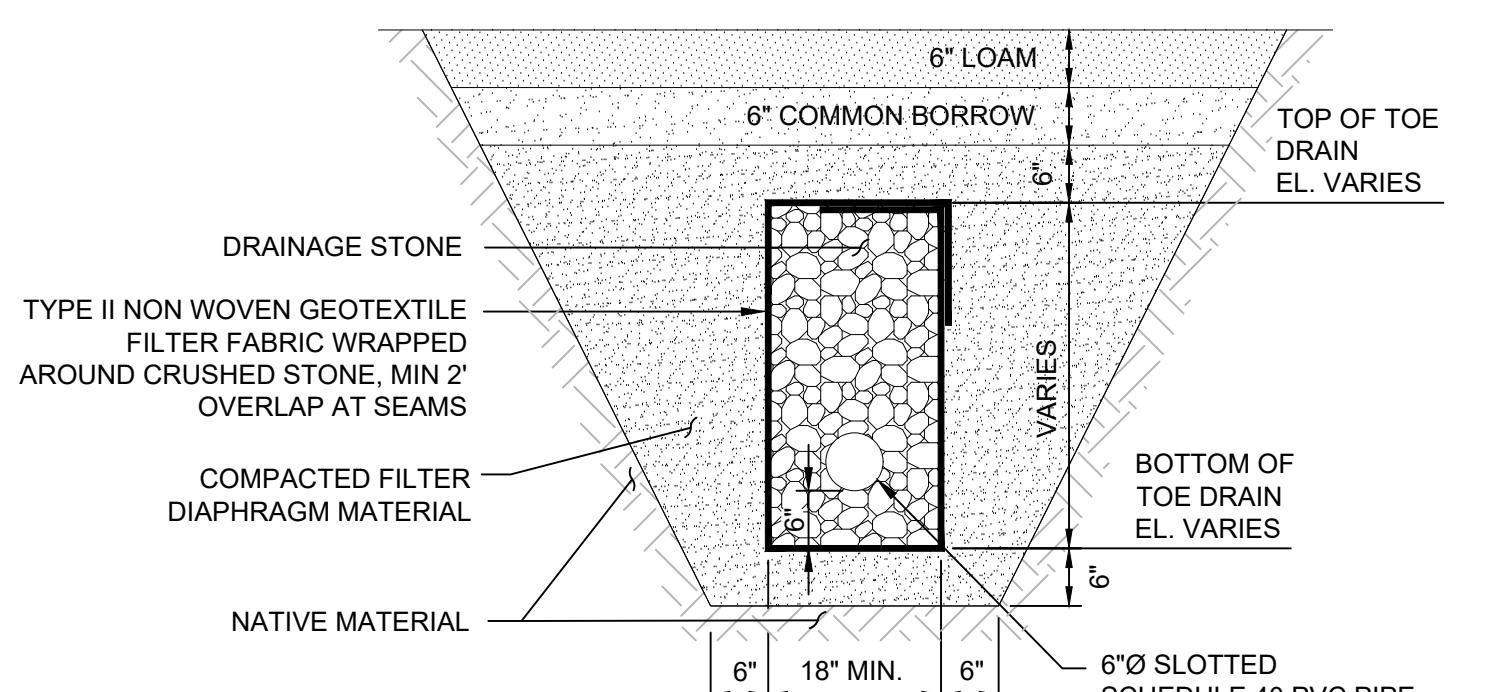
PLACEMENT OF EMBANKMENT MATERIALS

NOT TO SCALE



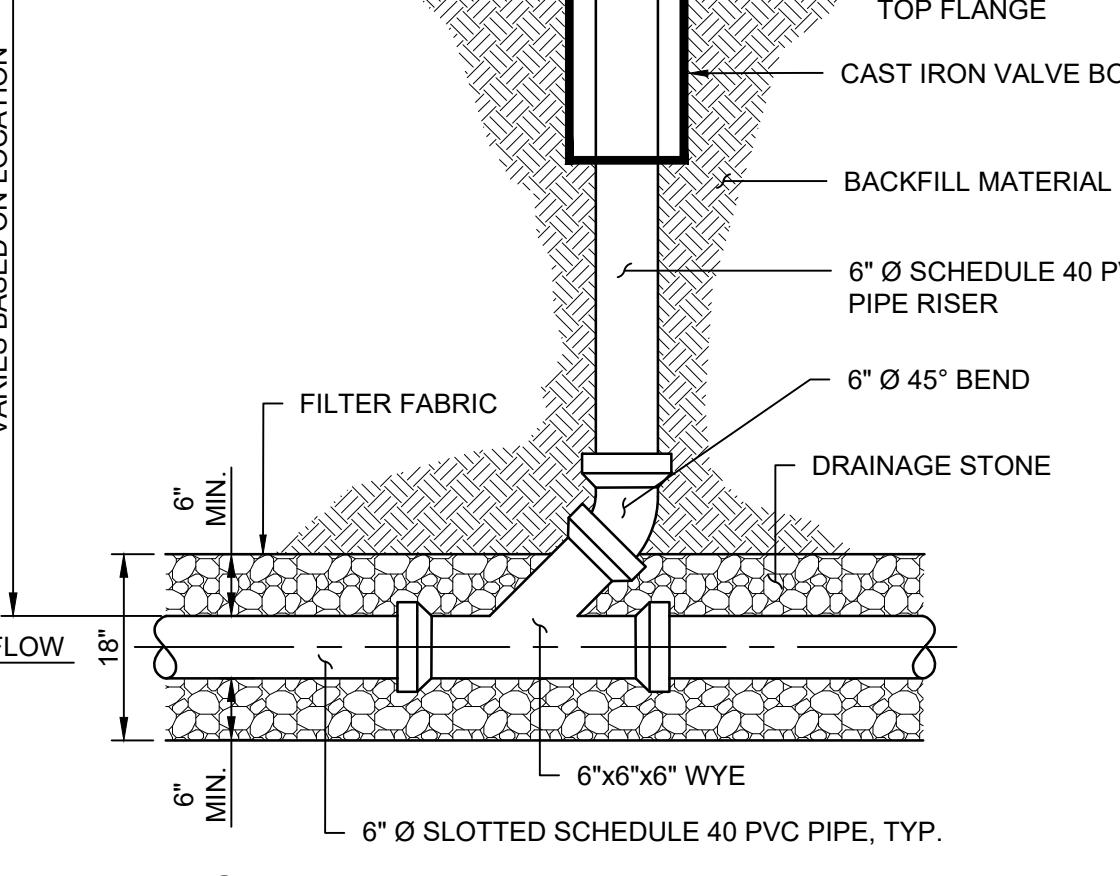
TEMPORARY WETLAND WORK PLATFORM

NOT TO SCALE



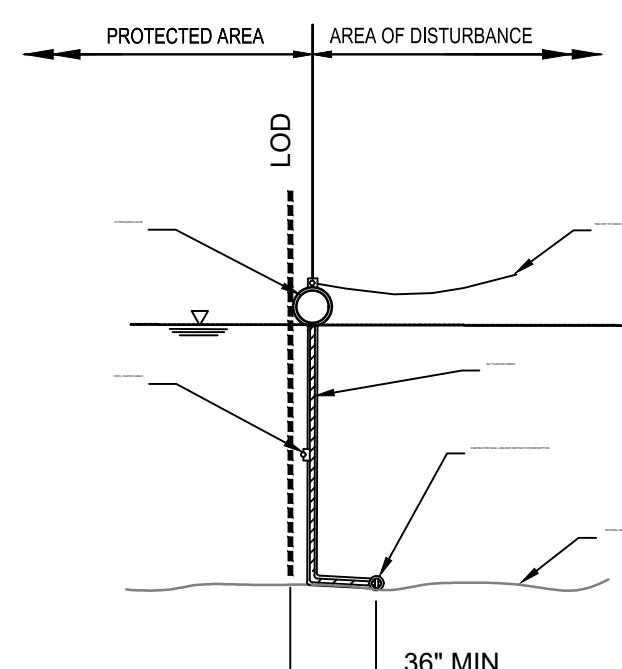
SLOTTED TOE DRAIN DETAIL

NOT TO SCALE



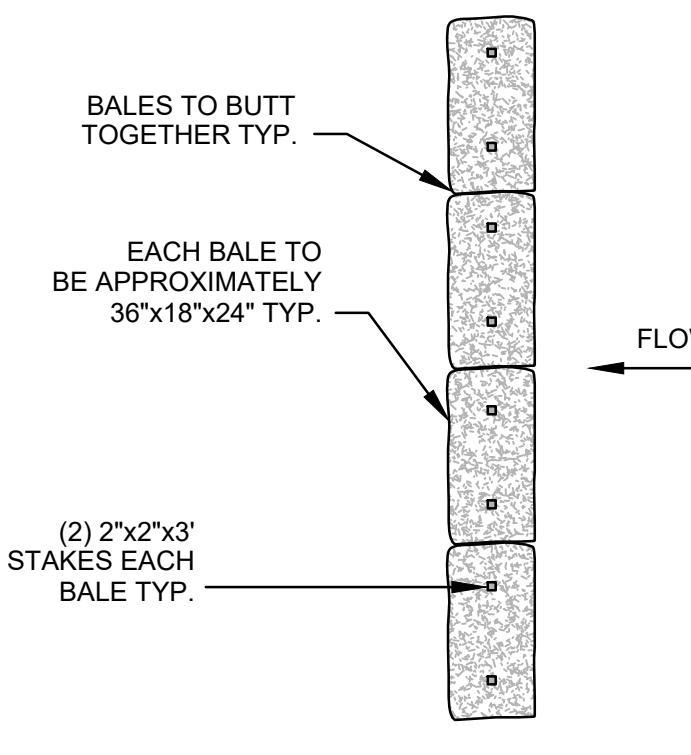
TOE DRAIN CLEANOUT DETAIL

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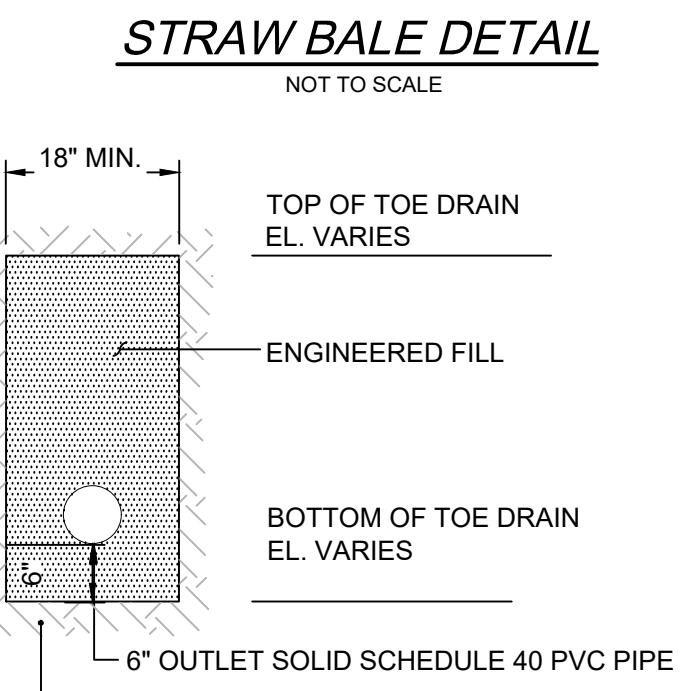
TYPICAL TURBIDITY BARRIER

NOT TO SCALE



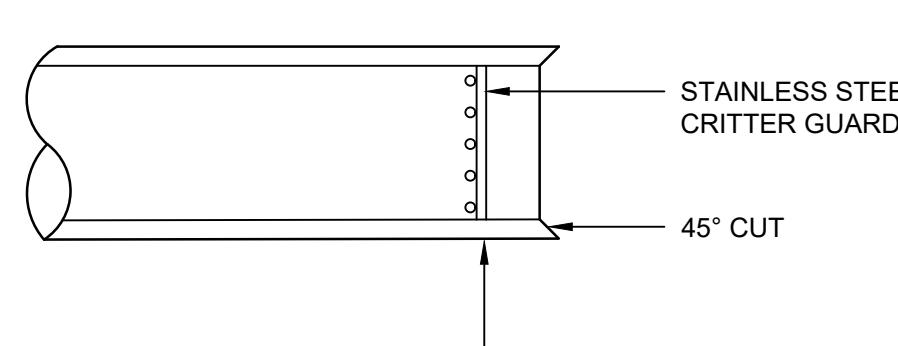
ELEVATION

NOT TO SCALE



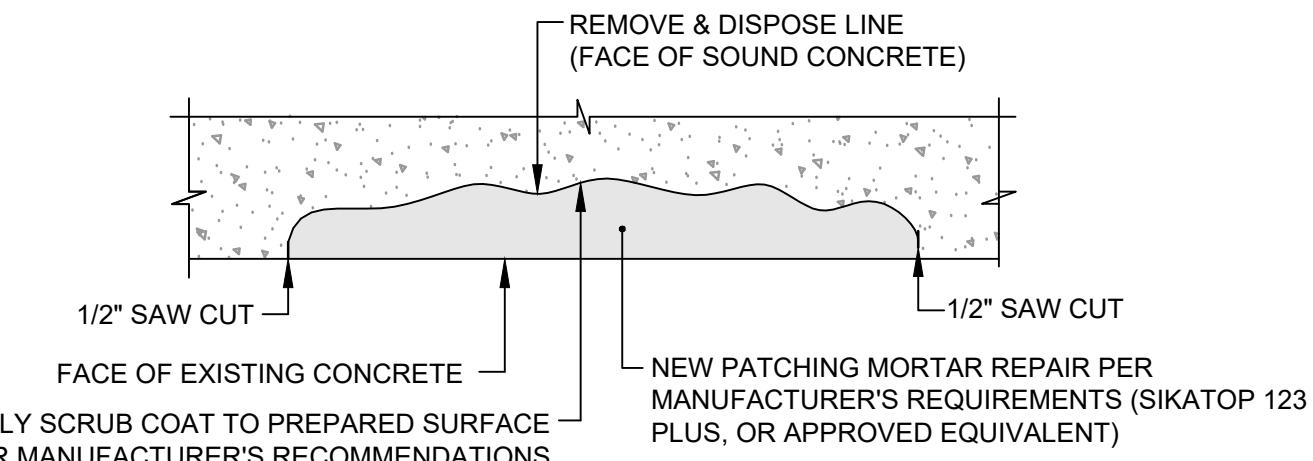
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TOE DRAIN OUTLET

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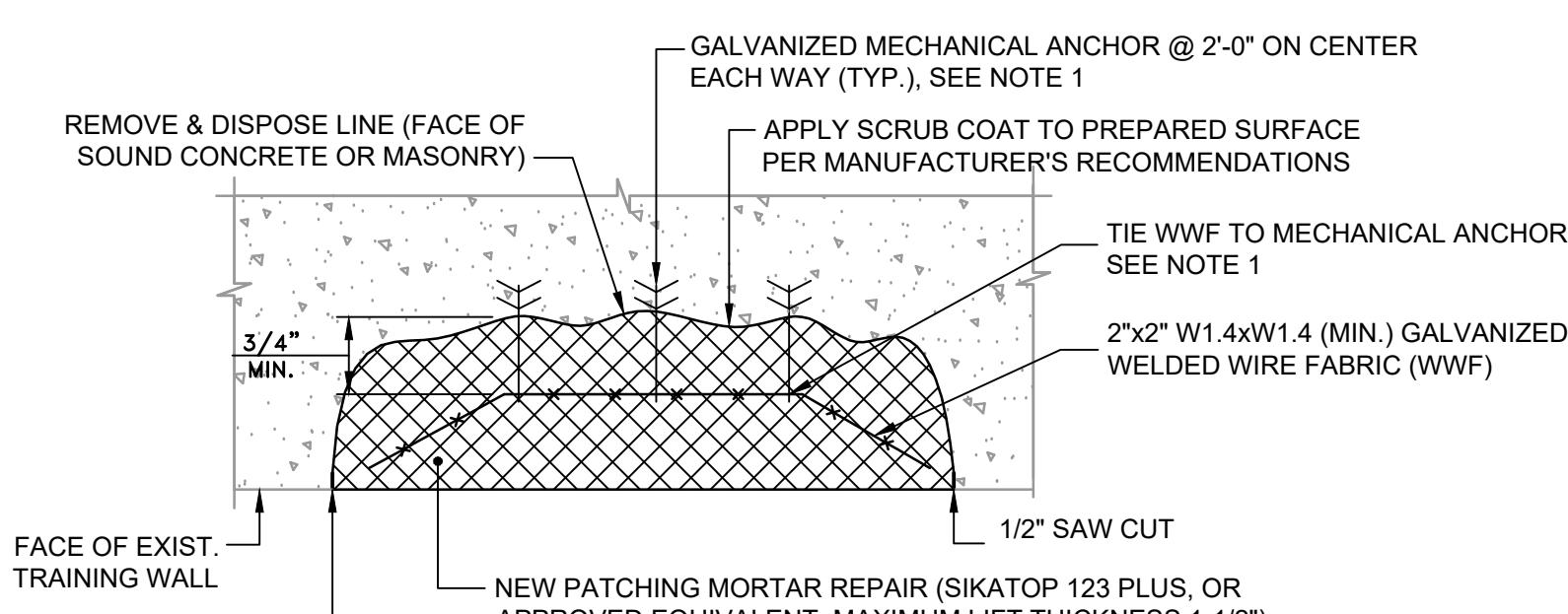


NOTES

1. DETAIL APPLIES FOR ALL HAND APPLIED CONCRETE REPAIRS LESS THAN 1 1/2" IN DEPTH. FOR REPAIRS THAT NEED TO BE FORMED AND POURED, THE CONTRACTOR SHALL USE SIKACRETE 211 SCC PLUS OR APPROVED EQUIVALENT. ALL SURFACE PREPARATION AND REPAIR MATERIAL INSTALLATION SHALL COMPLY WITH THE MORTAR MANUFACTURER'S TECHNICAL DATA SHEETS AND SPECIFICATIONS.
2. MATERIAL USED TO REPAIR CONCRETE SPALLS SHALL MATCH THE COLOR AND TEXTURE OF THE EXISTING MATERIAL.
3. MORTAR SHALL BE APPLIED IN A MANNER AS TO COMPLETELY FILL THE Voids AND PROVIDE A SMOOTH SURFACE EVEN WITH THE EXISTING FACE OF CONCRETE.

PATCH REPAIR TYPE I

NOT TO SCALE

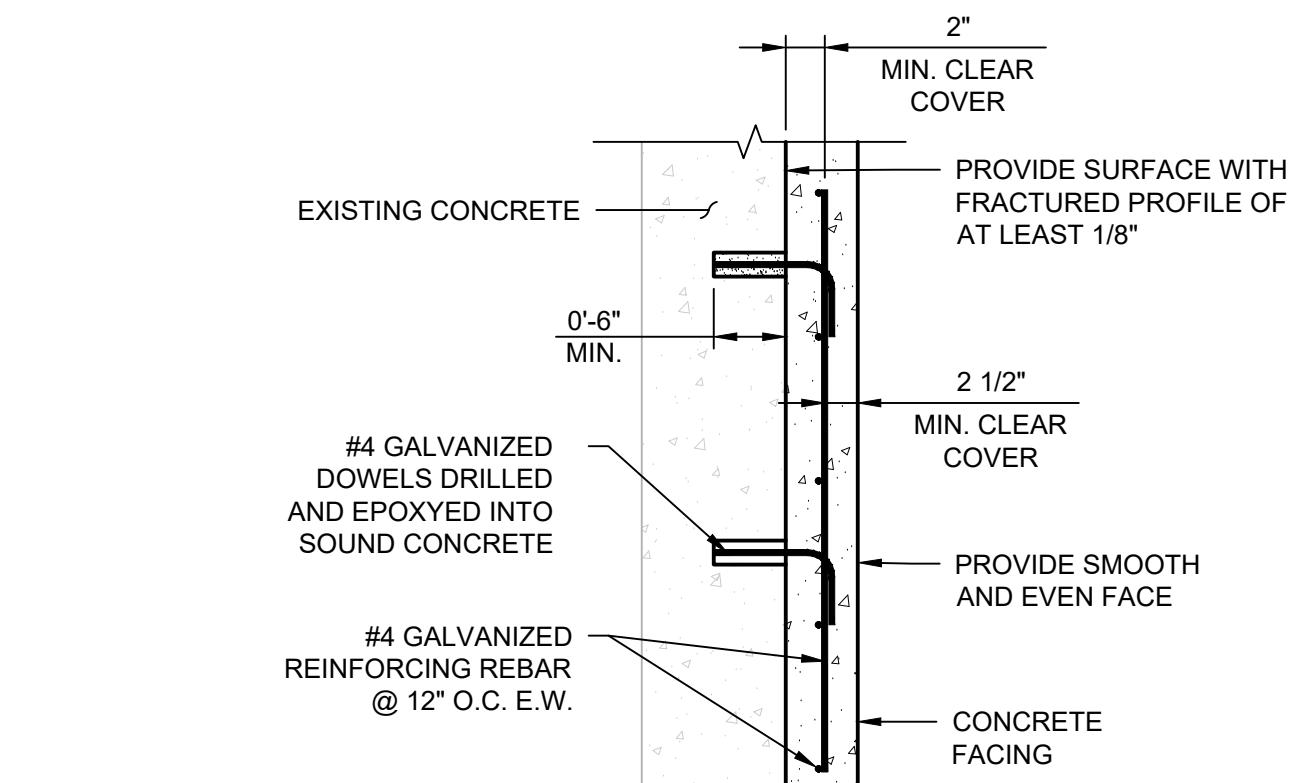


NOTES

1. DETAIL APPLIES FOR ALL HAND APPLIED CONCRETE REPAIRS 1 1/2" OR GREATER. FOR REPAIRS THAT NEED TO BE FORMED AND POURED, THE CONTRACTOR SHALL USE SIKACRETE 211 SCC PLUS OR APPROVED EQUIVALENT. ALL SURFACE PREPARATION AND REPAIR MATERIAL INSTALLATION SHALL COMPLY WITH THE MORTAR MANUFACTURER'S TECHNICAL DATA SHEETS AND SPECIFICATIONS.
2. MATERIAL USED TO REPAIR CONCRETE SPALLS SHALL MATCH THE COLOR AND TEXTURE OF THE EXISTING MATERIAL.
3. MORTAR SHALL BE APPLIED IN A MANNER AS TO COMPLETELY FILL THE Voids AND PROVIDE A SMOOTH SURFACE EVEN WITH THE EXISTING FACE OF CONCRETE.

PATCH REPAIR TYPE II

NOT TO SCALE



NOTES

1. REPAIR THICKNESS SHALL BE MINIMUM 4.5" THICK.
2. IF THE EXISTING REINFORCING IS ENCOUNTERED DURING CONCRETE REMOVAL, PERFORM THE FOLLOWING IN LIEU OF INSTALLING REINFORCING MAT IN THESE AREAS.
 - CLEAN REINFORCEMENT BY ABRASIVE BLAST, WIRE BRUSH, OR SIMILAR APPROVED METHOD UNTIL ONLY TIGHTLY ADHERED LOST RUST REMAINS. APPLY ANTI-CORROSION AGENT (SIKA ARMATEC 110 EpoCem BY SIKA CORP OR APPROVED EQUIVALENT) TO EXISTING STEEL.
 - WHERE SECTION LOSS OF REINFORCING IS MORE THAN 25 PERCENT, CUT BAR AND REMOVE AND REPLACE WITH NEW GALVANIZED REINFORCEMENT.
 - REMOVE ADDITIONAL CONCRETE AS NEEDED TO PROVIDE AT LEAST 3/4" CLEARANCE AT EXISTING REINFORCING BARS. SPLICE REPLACEMENT BARS TO EXISTING BARS ACCORDING TO ACI 318 BY LAPPING, WELDING, OR USING MECHANICAL COUPLINGS.

PATCH REPAIR TYPE III - REINFORCED CONCRETE FACING

NOT TO SCALE