

BID PLAN SET

SAWYER ROAD

CULVERT REPLACEMENT PROJECT

BOLTON DPW # 2024-001

NOTES:

GENERAL NOTES

1. VERTICAL ELEVATIONS SHOWN HEREON REFER TO NAVD 1988.
2. RESOURCE AREAS AS DEFINED BY THE MASSACHUSETTS WETLANDS PROTECTION ACT AND THE TOWN OF BOLTON WETLANDS BYLAW WERE DELINEATED BY DILLIS & ROY CIVIL DESIGN GROUP, INC.
3. EXISTING UTILITIES SHOWN ON THIS PLAN WERE COMPILED FROM FIELD MEASUREMENT AND RECORD PLANS. THE UTILITIES SHOWN ON THIS PLAN ARE FOR REFERENCE ONLY AND SHOULD NOT BE ASSUMED TO BE CORRECT NOR SHOULD IT BE ASSUMED THAT THE UTILITIES SHOWN ARE THE ONLY UTILITIES LOCATED ON OR NEAR THE SITE. THE CONTRACTOR SHALL CALL DIG SAFE 1-888-DIG-SAFE PRIOR TO CONSTRUCTION IN ACCORDANCE WITH STATE LAWS.
4. CONTRACTOR SHALL REFER TO THE ORDER OF CONDITIONS FROM (MADEP FILE NO 112-0727) THE BOLTON CONSERVATION COMMISSION PRIOR TO CONSTRUCTION.
5. THE PROJECT DOES NOT FALL WITHIN A FLOOD HAZARD AREA AS SHOWN ON FIRM MAP 25027C0467F, EFFECTIVE 07/16/2014.
6. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND SECURING EQUIPMENT AND MATERIAL STORAGE. EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN EASEMENTS OR ON PRIVATE PROPERTY WITHOUT WRITTEN PERMISSION FROM PROPERTY OWNER.

MATERIAL SPECIFICATIONS

1. LOAM SHALL CONFORM TO M1.05.0.
2. CULVERT PIPE SHALL BE SMOOTH LINED HDPE PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC OR APPROVED EQUAL.
3. STONE RIPRAP SHALL CONFORM TO M2.02.0 PLACED OVER FILTER FABRIC.
4. CRUSHED STONE SHALL CONFORM TO M2.01.1, 1 1/2".
5. HEADWALLS SHALL BE MODULAR BLOCK IN CONSTRUCTION, 48"x42"x18" LONDON BLOCK OR EQUAL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS STAMPED BY REGISTERED PROFESSIONAL ENGINEER FOR EACH HEADWALL.
6. BEAVER FENCE AND FLOW CONTROL DEVICE SHALL BE BY BEAVER SOLUTIONS OR APPROVED EQUAL.

EXCAVATION AND BACKFILL SPECIFICATIONS

1. PROPOSED CULVERT SHALL BE PLACED AS SHOWN ON CONTRACT DOCUMENTS. REFER TO PLANS FOR ELEVATION.
2. ALL BACKFILL MATERIAL SHALL BE COMPACTED TO 95% OF THE MODIFIED PROCTOR DENSITY.
3. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, STOCKPILING, AND LEGAL DISPOSAL OF ALL EXCESS MATERIAL GENERATED DURING CONSTRUCTION ACTIVITIES INCLUDING BITUMINOUS ASPHALT, GRANULAR MATERIAL, AND UNSUITABLE MATERIALS. EXCAVATED WETLAND AND STREAM BED SOILS SHALL BE STOCKPILED ON SITE FOR REUSE.

EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS

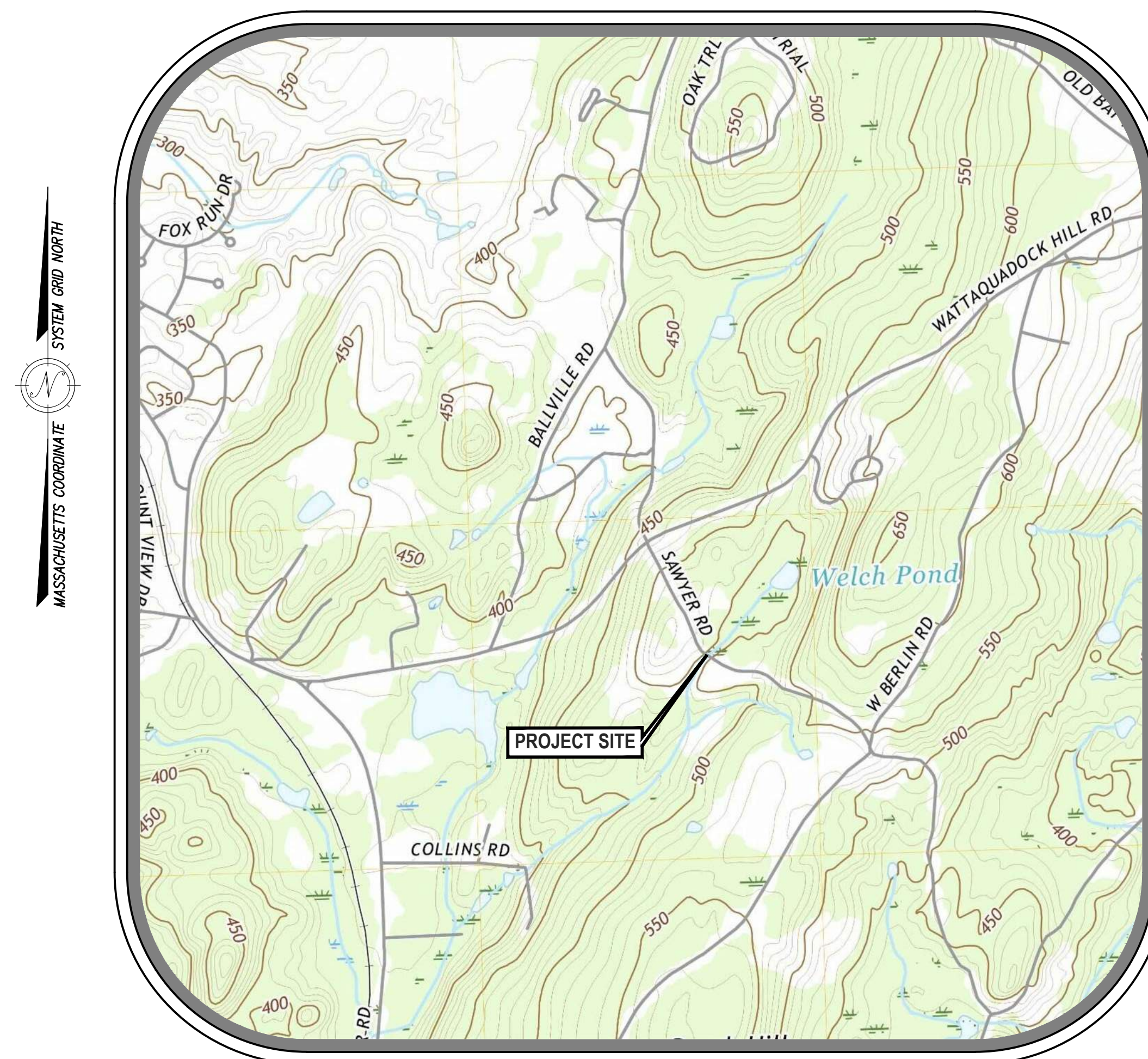
1. REFER TO THE ORDER OF CONDITIONS FROM THE BOLTON CONSERVATION COMMISSION FOR CONDITIONS RELATIVE TO EROSION AND SEDIMENTATION CONTROL PRIOR TO CONSTRUCTION.
2. PLACE EROSION CONTROL BARRIERS PER THE DETAILS ON THIS PLAN PRIOR TO CONSTRUCTION. NOTIFY THE BOLTON CONSERVATION COMMISSION AFTER INSTALLATION FOR INSPECTION.
3. ALL PUMPED DISCHARGES MUST BE TO A SEDIMENT CONTROL DEVICE (SEDIMENT TRAP, FILTER BOX, SEDIMENT TANK OR GEOTEXTILE FILTER BAG).
4. RESTORE DISTURBED AREAS WITH 6" TOPSOIL, SEED AND MULCH UNLESS OTHERWISE NOTED ON THE PLANS.
5. AFTER THE SITE HAS BEEN STABILIZED AND AFTER APPROVAL FROM THE BOLTON CONSERVATION COMMISSION, REMOVE EROSION AND SEDIMENTATION CONTROL BARRIER.

RESTORATION SPECIFICATIONS

1. RIPRAP SHALL BE IN ACCORDANCE TO MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTION M2.02.0
2. RESTORE SHOULDERS WITH 6" TOP SOIL, SEED, FERTILIZER AND MULCH UNLESS OTHERWISE NOTED ON THE PLANS AND SPECIFICATIONS.

SHEET INDEX

SHEET NUMBER	SHEET TITLE	LAST REVISION
SHEET C0.0	COVER SHEET & GENERAL NOTES	4/12/2024
SHEET C1.0	EXISTING CONDITIONS & DEMOLITION PLAN	4/12/2024
SHEET C2.0	PROPOSED CONDITIONS	4/12/2024
SHEET C3.0	DRAINAGE IMPROVEMENTS DETAILS	4/12/2024
SHEET C3.1	SOIL EROSION & SEDIMENT CONTROL DETAILS	4/12/2024



LOCUS MAP
SCALE: 1"=1,000'

ISSUED FOR BID

PREPARED BY:

DILLIS & ROY
CIVIL DESIGN GROUP

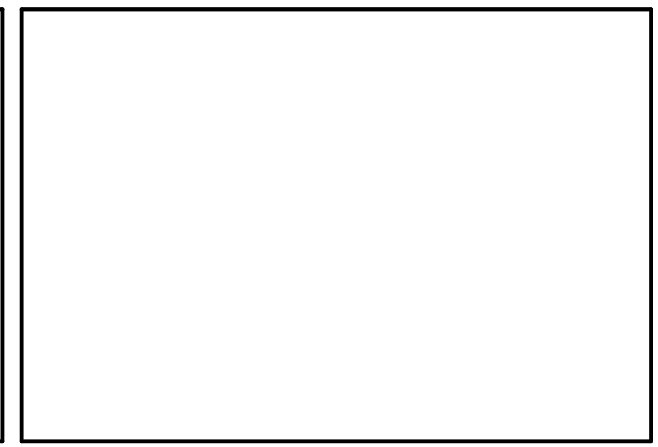
CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS
1 MAIN STREET, SUITE 1 PHONE: (978) 779-6091
LUNENBURG, MA 01462 www.dillisandroy.com

OWNER:
BOLTON DEPARTMENT OF PUBLIC WORKS
12 FORBUSH ROAD
BOLTON, MA

APPLICANT:
BOLTON DEPARTMENT OF PUBLIC WORKS
12 FORBUSH ROAD
BOLTON, MA

SCALE:

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DATE: 9/29/2023

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DRAWN BY: MMK

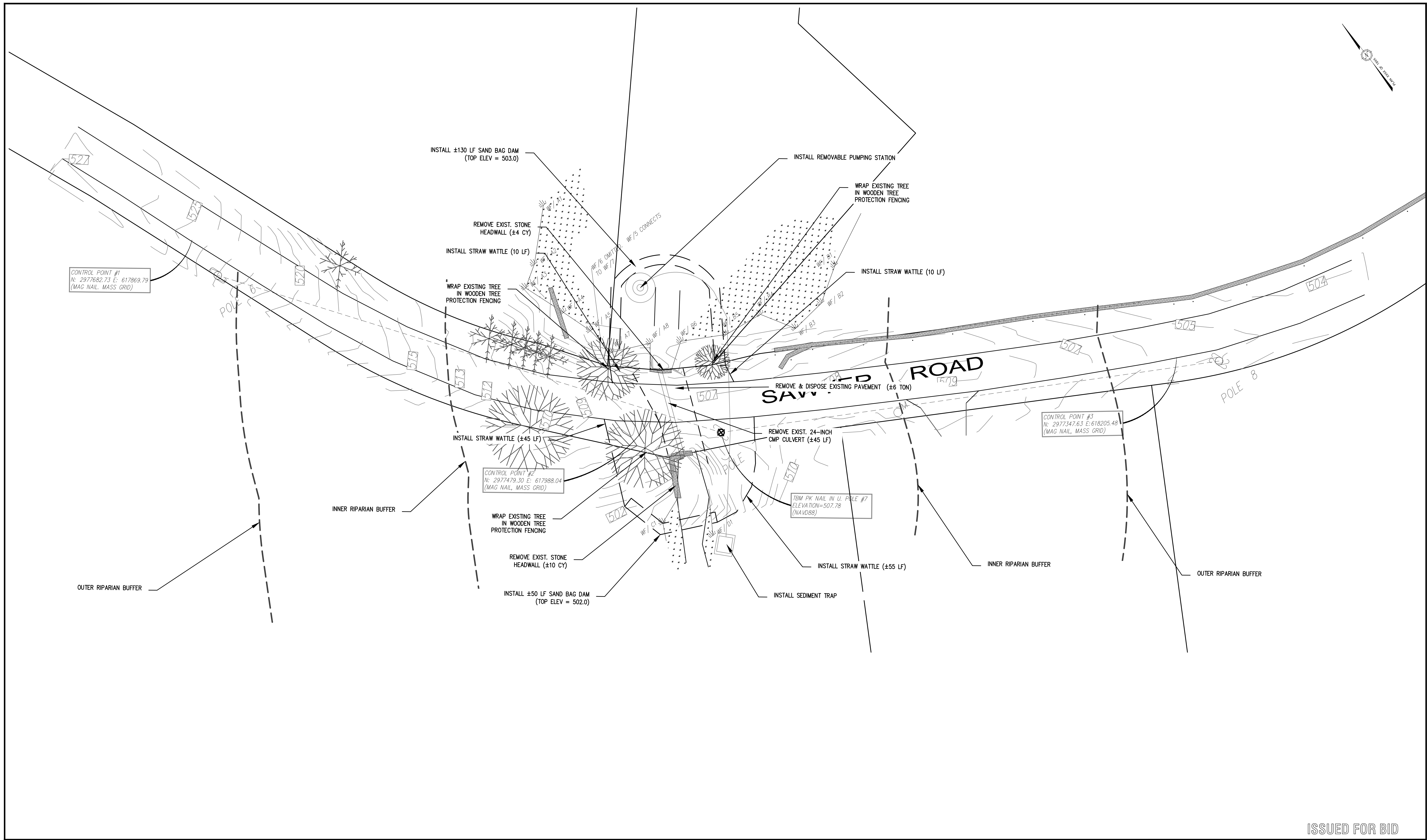
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COVER SHEET SAWYER ROAD BOLTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	04/12/24	ISSUED FOR BID	FMM

JOB NO. 7073

DRAWING NO. 7073-TITLE

SHEET NO. **C0.0**



ISSUED FOR BID

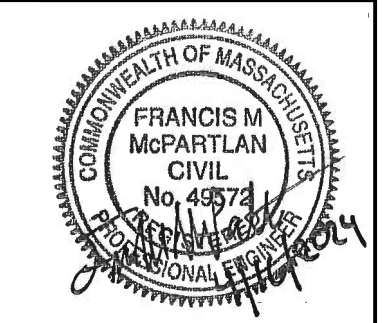
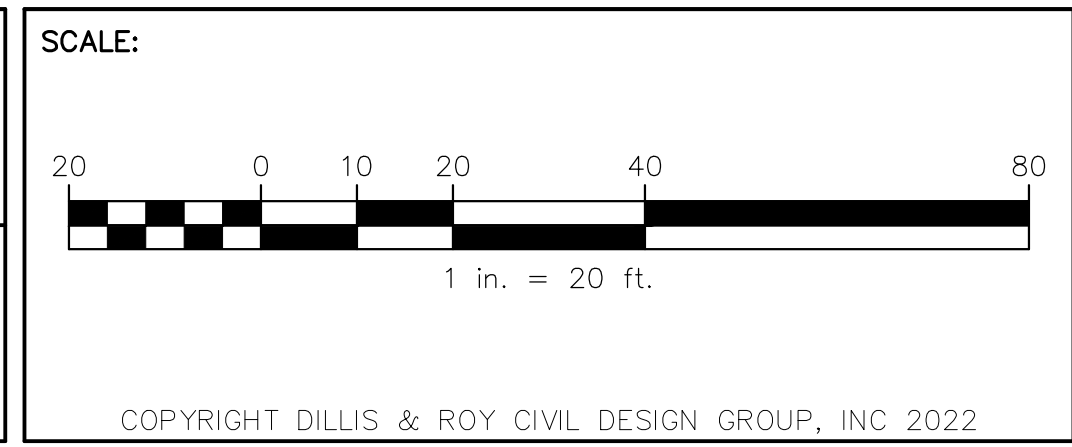
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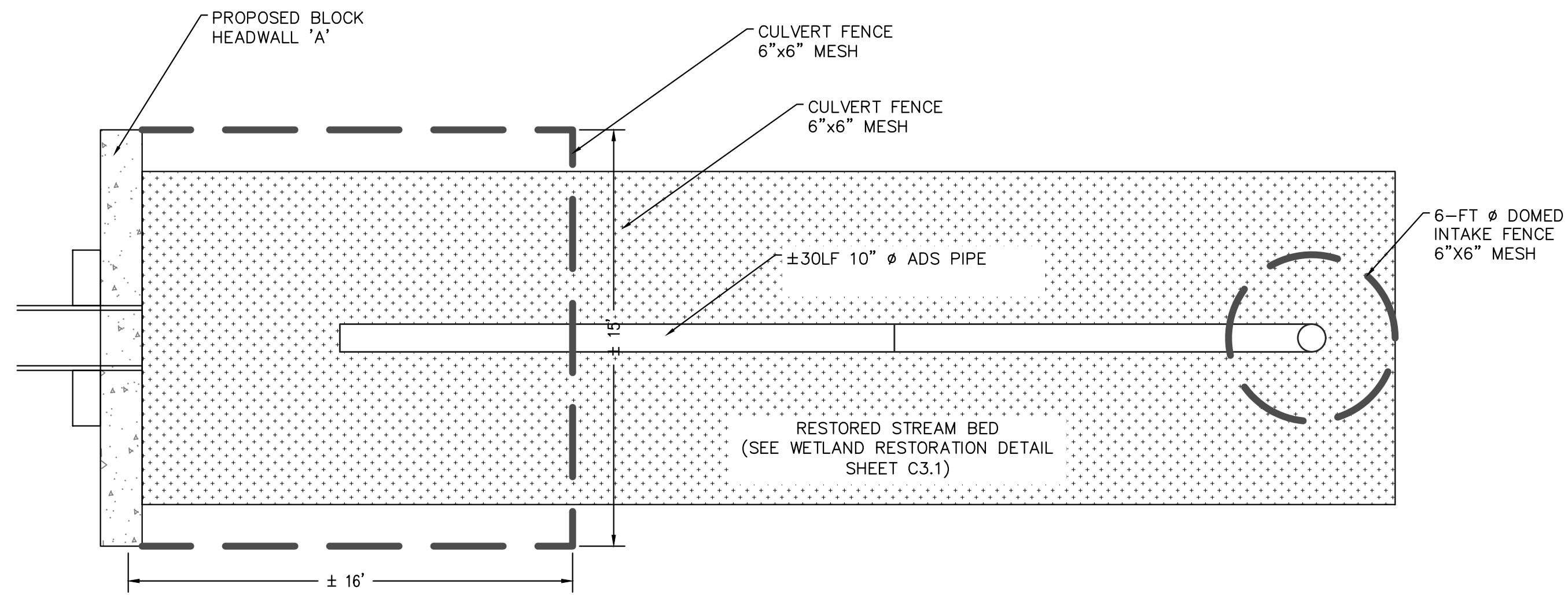
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EXISTING CONDITIONS & DEMOLITION PLAN			
SAWYER ROAD			
BOLTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	04/12/24	ISSUED FOR BID	FMM

JOB NO. 7073

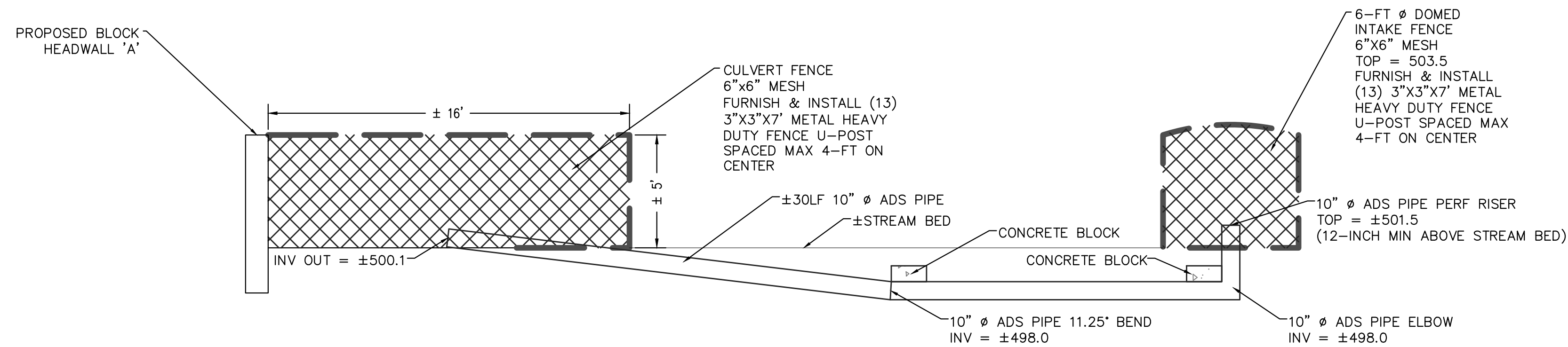
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SHEET NO. **C1.0**



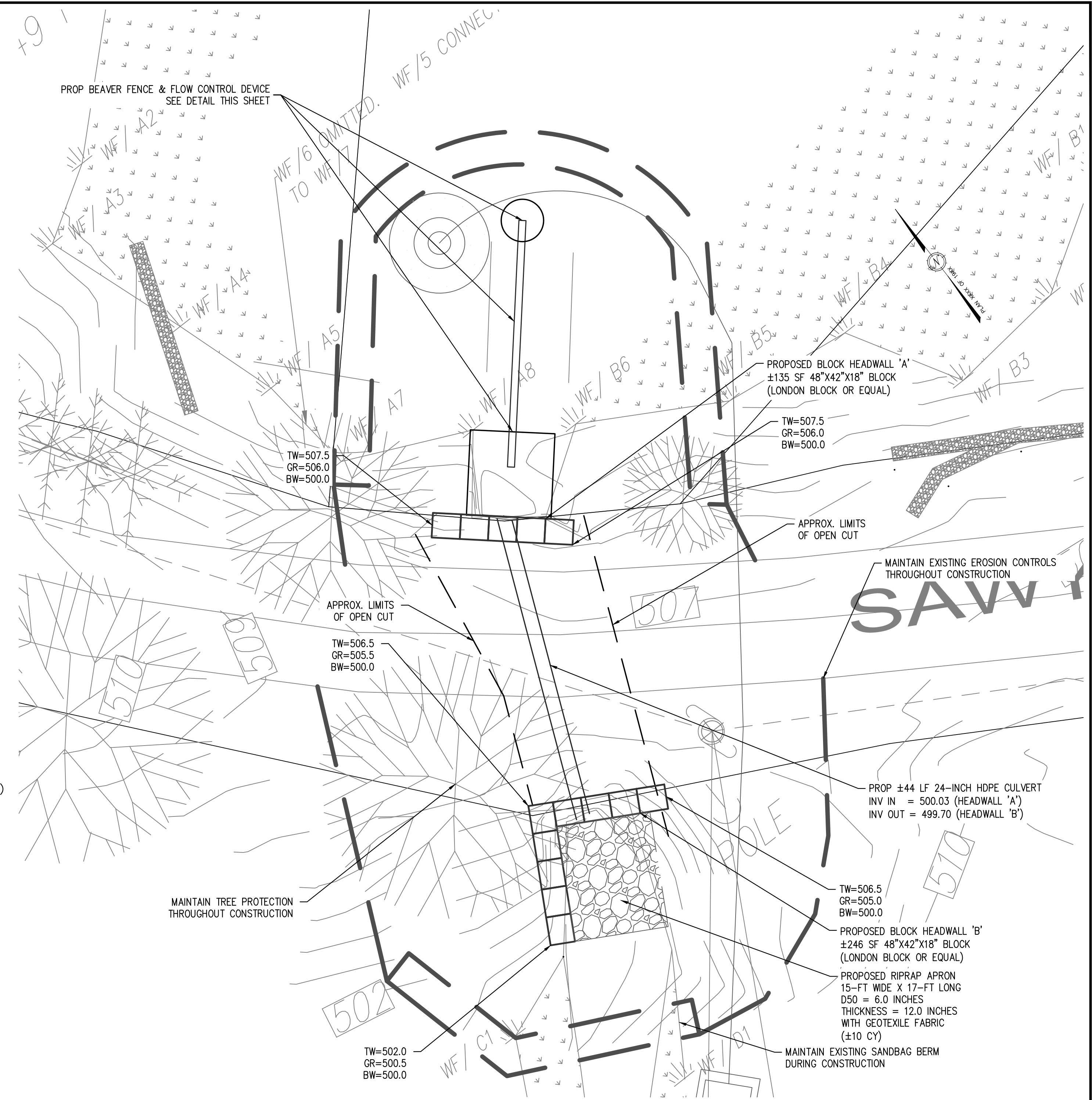
BEAVER FENCE & FLOW CONTROL DEVICE - PLAN

NOT TO SCALE



BEAVER FENCE & FLOW CONTROL DEVICE - PROFILE

NOT TO SCALE



PLAN VIEW

SCALE: 1" = 10'

ISSUED FOR BID

PREPARED BY:

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SCALE:

1 in. = 10 ft.

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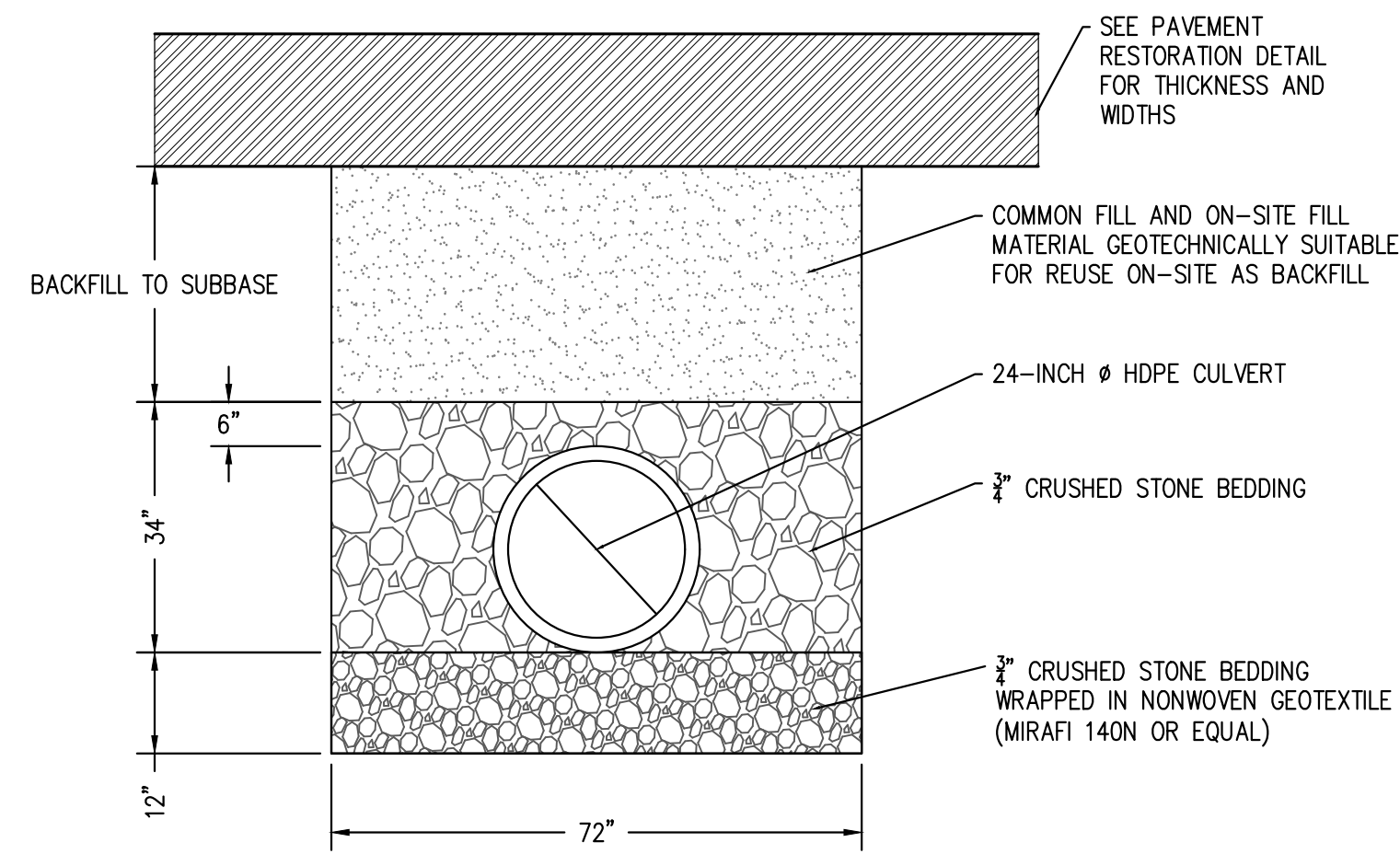
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DESIGN BY:	FMM
DRAWN BY:	MK
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PROPOSED CONDITIONS			
SAWYER ROAD			
BOLTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	04/12/24	ISSUED FOR BID	FMM

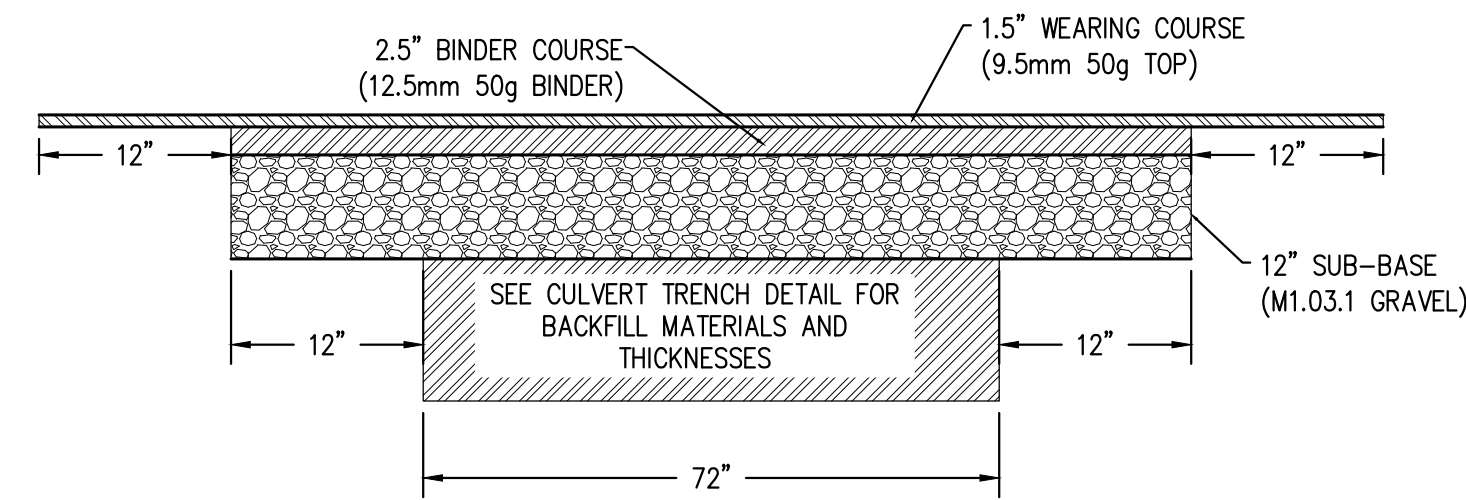
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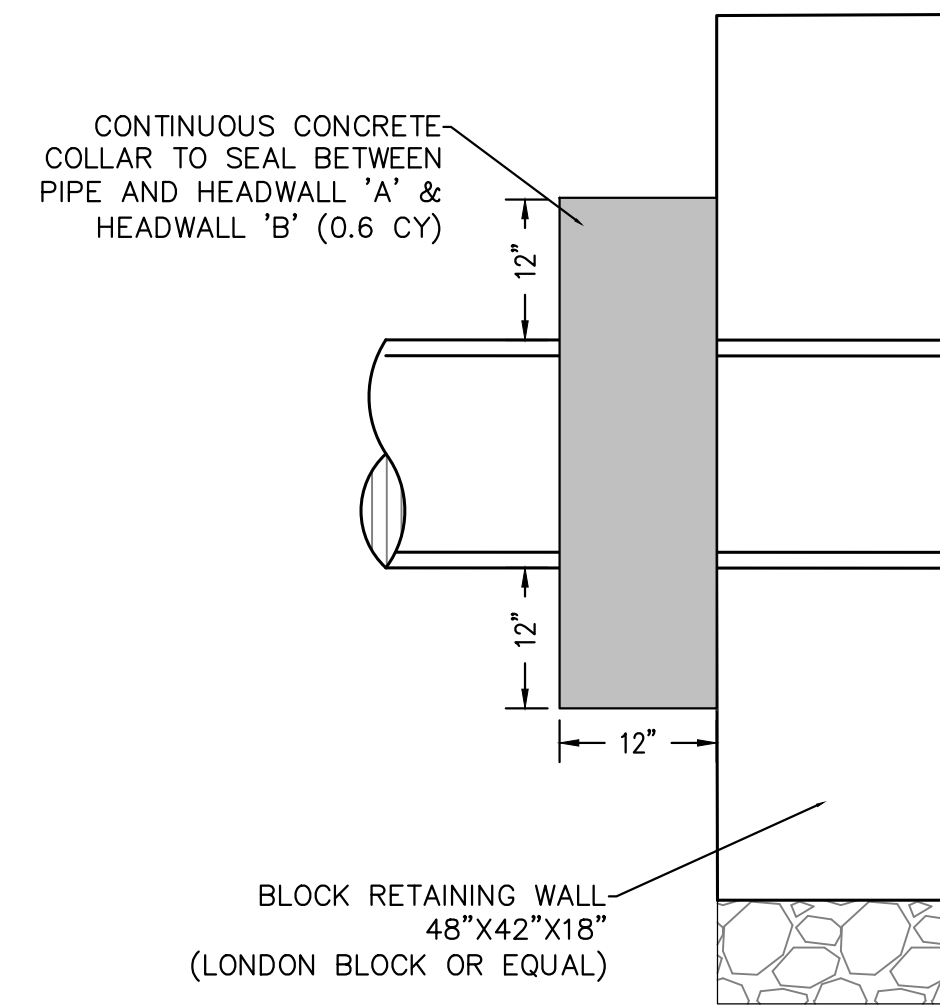
SHEET NO. **C2.0**



CULVERT TRENCH DETAIL
NOT TO SCALE



FULL DEPTH PAVEMENT DETAIL
NOT TO SCALE



CONCRETE COLLAR
NOT TO SCALE

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PREPARED BY:

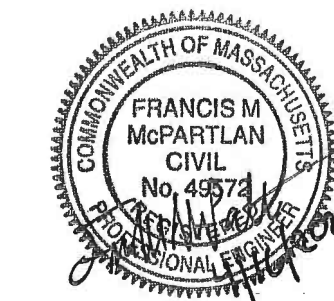
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 BOLTON, MASSACHUSETTS

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 BOLTON DEPARTMENT OF PUBLIC WORKS
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 BOLTON, MASSACHUSETTS

SCALE:

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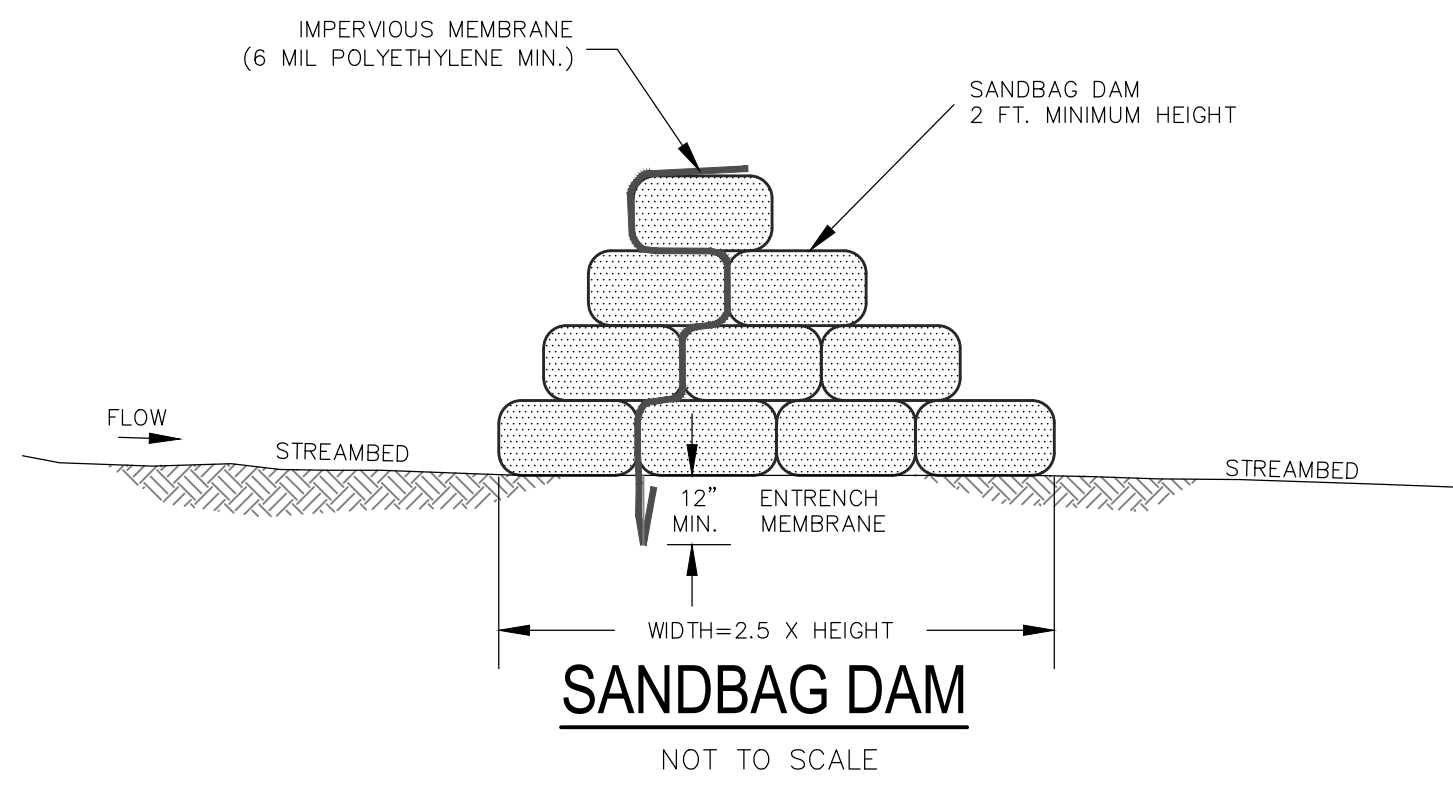
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DRAINAGE IMPROVEMENT DETAILS			
SAWYER ROAD			
BOLTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	04/12/24	ISSUED FOR BID	FMM

JOB NO. 7073

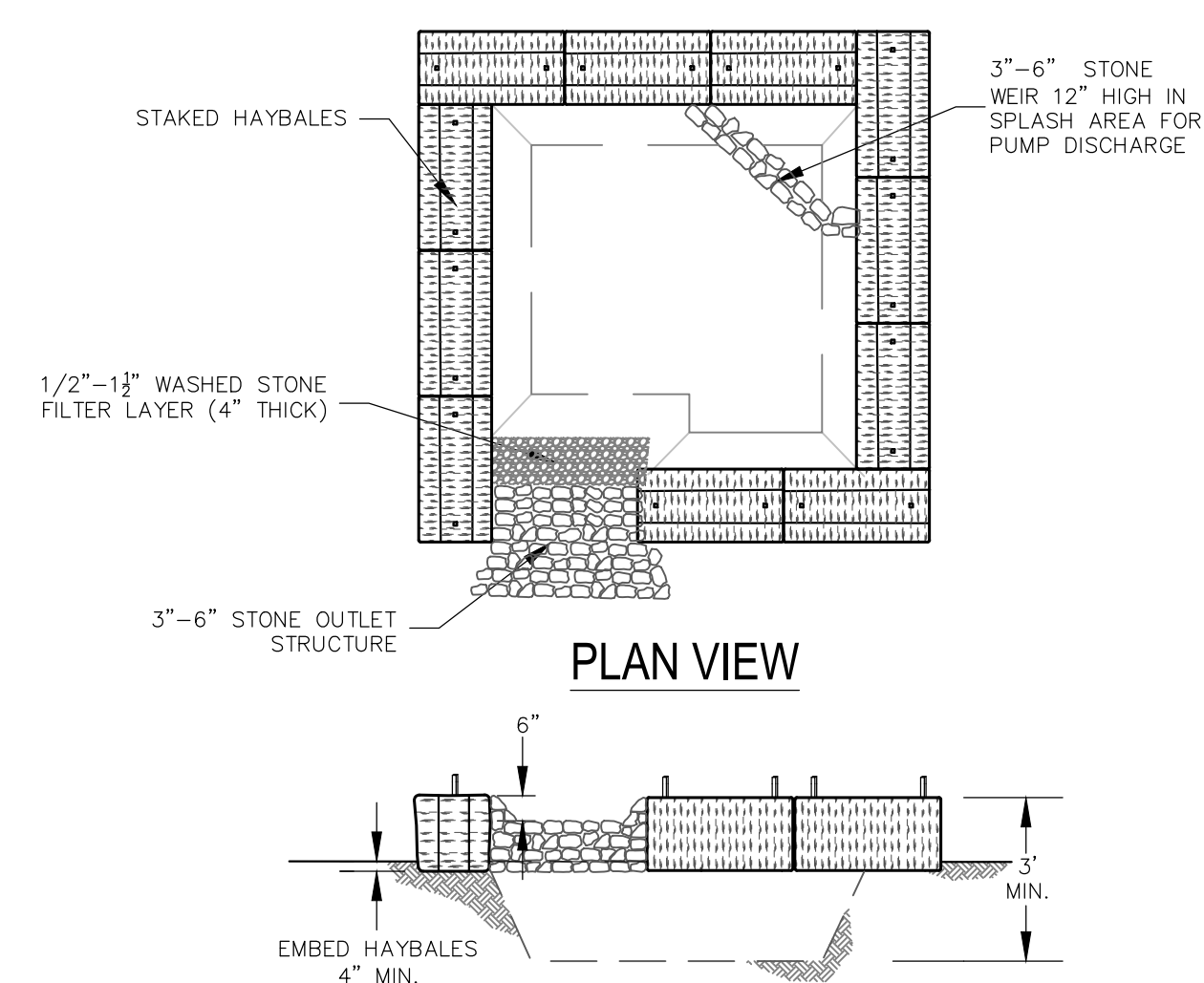
DRAWING NO. 7073-DETAILS

SHEET NO. **C3.0**



DETOUR NOTES:

1. CONTRACTOR SHALL PROVIDE MASSDOT AND MUTCD COMPLIANT DETOUR SIGNAGE AT THE FOLLOWING INTERSECTIONS WHEN SAWYER ROAD IS IMPASSABLE:
 - 1.1. SAWYER ROAD & WATTAQUADOCK ROAD
 - 1.2. SAWYER ROAD & WEST BERLIN ROAD
 - 1.3. WATTAQUADOCK ROAD & WEST BERLIN ROAD
2. DETOUR SIGNAGE SHALL BE SUFFICIENT TO DIRECT TRAFFIC TO FARM STAND AT 116 SAWYER ROAD FROM WATTAQUADOCK ROAD AND WEST BERLIN ROAD.
3. AT A MINIMUM, CONTRACTOR SHALL PROVIDE THE FOLLOWING DETOUR SIGNAGE:
 - 3.1. TWO (2) ROAD CLOSED TO THRU TRAFFIC (MUTCD R11-4) 12.5 SF EACH
 - 3.2. FOUR (4) DETOUR (MUTCD W20-2) 9 SF EACH
 - 3.3. EIGHT (8) DETOUR ARROW (MUTCD M4-10) 6 SF EACH
4. CONTRACTOR SHALL NOTIFY THE FOLLOWING ENTITIES ONE BUSINESS WEEK PRIOR TO CLOSING SAWYER ROAD:
 - 4.1. TOWN OF BOLTON DEPARTMENT OF PUBLIC WORKS (978-779-6402)
 - 4.2. TOWN OF BOLTON POLICE DEPARTMENT (978-779-2203)
 - 4.3. TOWN OF BOLTON FIRE DEPARTMENT (978-779-2203)
 - 4.4. DEE BUS SERVICE, INC (978-425-4706)



SEDIMENT TRAP
NOT TO SCALE

CONSTRUCTION NOTES:

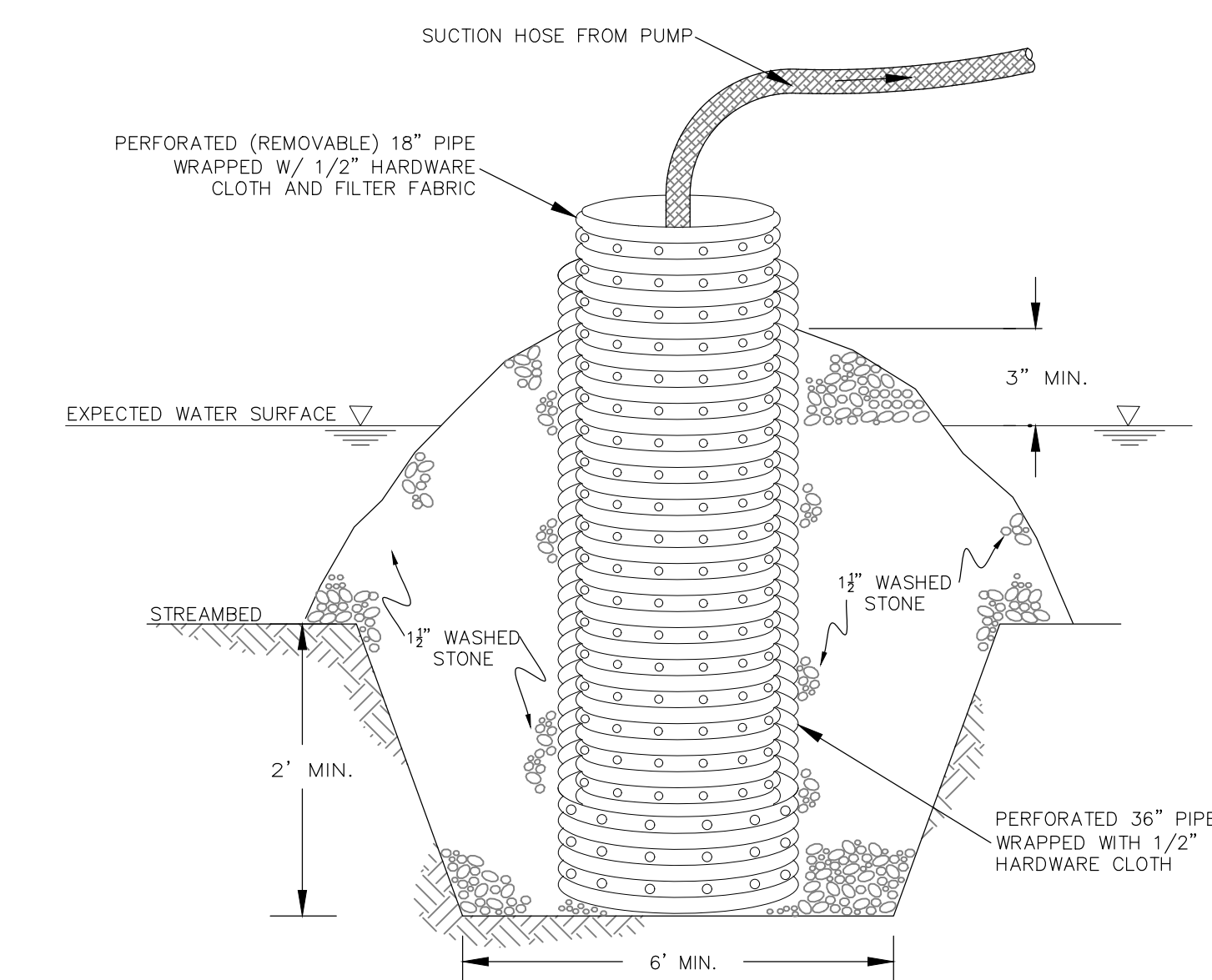
- EROSION AND SEDIMENTATION CONTROL SPECIFICATIONS**
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CONSTRUCTION SEQUENCE

1. POST DEP FILE NUMBER ON SITE.
2. NOTIFY CONSERVATION COMMISSION ABOUT COMMENCEMENT OF PROJECT.
3. INSTALL TREE PROTECTION, EROSION CONTROL BARRIER, PUMPING STATION, SEDIMENT TRAP, AND TEMPORARY SAND BAG BERM.
4. SAWCUT & REMOVE PAVEMENT AND EXCAVATE FOR CULVERT REPLACEMENT.
5. INSTALL PROPOSED CULVERT, HEADWALLS, BEAVER FENCE & FLOW CONTROL DEVICE, AND BACK FILL MATERIAL.
6. RESTORE DISTURBED AREA INCLUDING STREAM BED AND BANKS.
7. NOTIFY CONSERVATION COMMISSION THAT WORK IS COMPLETE AND SITE IS STABLE.
8. REMOVE EROSION CONTROL ONCE CONSERVATION COMMISSION GRANTS PERMISSION.

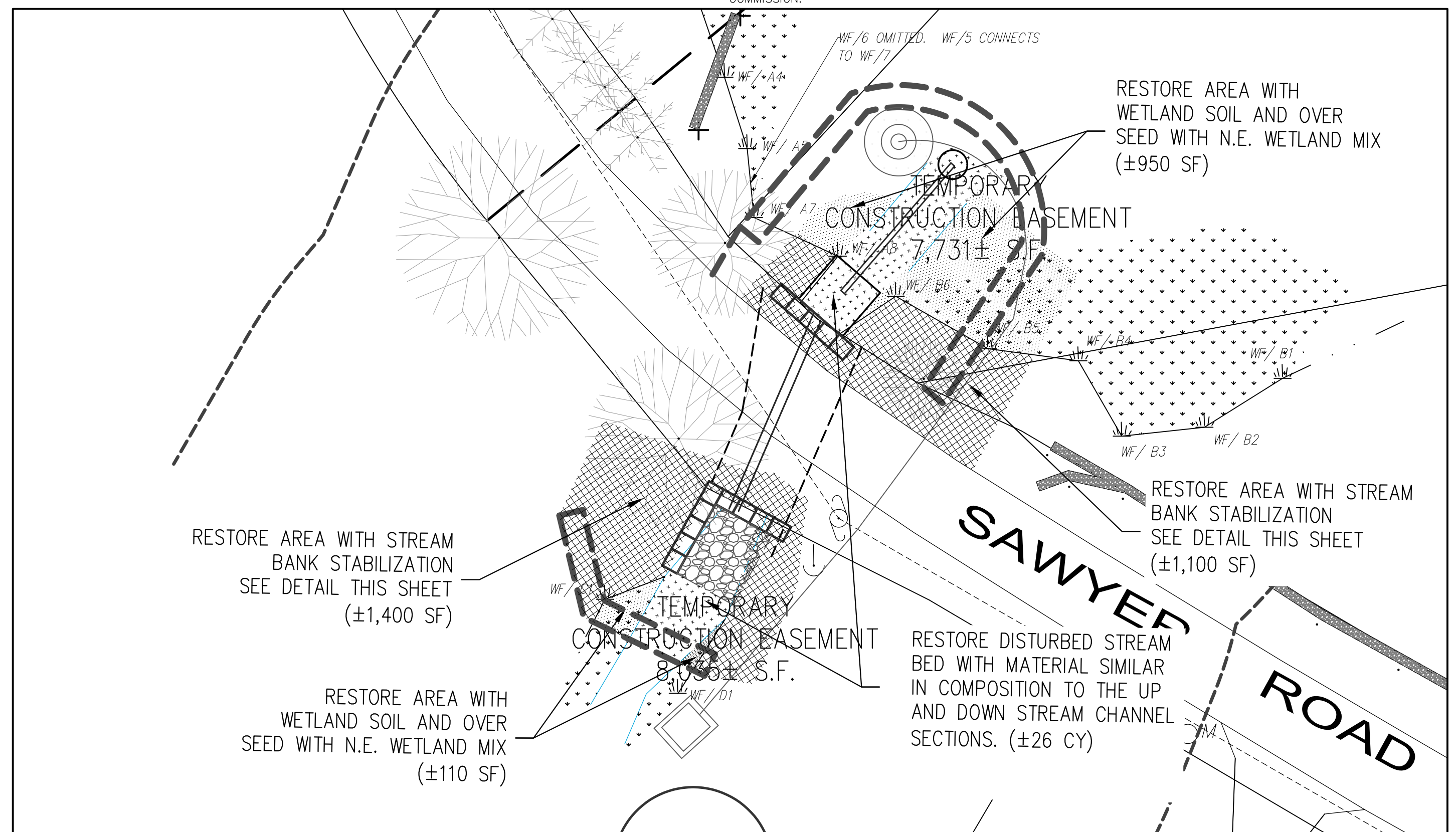
POST-CONSTRUCTION INVASIVE PLANT MONITORING

THE AREA SHOULD BE MONITORED FOR THE PRESENCE OF INVASIVE SPECIES IN CONJUNCTION WITH THE ROUTINE MAINTENANCE OF THE AREA. INVASIVE SPECIES PLANT PARTS REMOVED AS A RESULT OF PERIODIC MAINTENANCE SHOULD BE BAGGED AND REMOVED FOR DISPOSAL BY INCINERATION. IF INVASIVE SPECIES BECOME ESTABLISHED, THE INVASIVE SPECIES SHOULD BE REMOVED IN ACCORDANCE WITH RECOMMENDED PRACTICES FOR THE GIVEN SPECIES. APPLICATION OF HERBICIDES BY FOLIAR SPRAY IS NOT APPROPRIATE AT THIS SITE AND IS NOT TO BE USED. REMOVAL METHODS, OTHER THAN THE MAINTENANCE CUTTING REFERENCED HEREON, MUST BE APPROVED BY THE CONSERVATION COMMISSION.



- NOTES:**
1. THE OUTER PIPE SHALL BE A 36" DIA. CORRUGATED METAL OR HDPE PIPE. THE OUTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH TO PREVENT BACKFILL MATERIAL FROM ENTERING THE PERFORATIONS. AFTER INSTALLING THE OUTER PIPE, BACKFILL AROUND OUTER PIPE WITH 1 1/2" WASHED STONE.
 2. THE INSIDE STANDPIPE (CENTER PIPE) SHOULD BE CONSTRUCTED BY PERFORATING AN 18" CORRUGATED METAL, HDPE OR PVC PIPE. THE PERFORATIONS SHALL BE 1" DIAMETER HOLES 6" ON CENTER. THE CENTER PIPE SHALL BE WRAPPED WITH 1/2" HARDWARE CLOTH FIRST, THEN WRAPPED AGAIN WITH FILTER FABRIC (MIRAFI 140N OR EQUAL).
 3. THE CENTER PIPE SHOULD EXTEND 12" TO 18" ABOVE THE ANTICIPATED WATER SURFACE ELEVATION OR RISER CREST ELEVATION WHEN DEWATERING A BASIN.

REMOVABLE PUMPING STATION
NOT TO SCALE



WETLAND RESTORATION PLAN
SCALE 1"=20'

WETLAND RESTORATION NOTES:

- A. SPECIFICATIONS**
1. CONTRACTOR SHALL STOCKPILE ALL EXCAVATED WETLAND SOIL ON SITE FOR REUSE.
 2. CONTRACTOR TO EXCAVATE ALL RESTORATION AREAS PRIOR TO EXCAVATING WITHIN THE EXISTING WETLAND DISTURBANCE AREAS.
 3. PLACE STOCKPILED WETLAND SOIL TO MEET EXISTING GRADES IN ALL DISTURBED WETLAND AREAS.
 4. CONTRACTOR TO PROVIDE ADDITIONAL WETLAND SOIL AS REQUIRED TO ACHIEVE THE 12" MINIMUM DEPTH IN THE RESTORATION AREAS.
 5. SUPPLEMENTAL SOIL SHALL CONSIST OF EQUAL VOLUMES OF A GOOD QUALITY LOAM AND WELL COMPOSTED ORGANIC MATERIAL. THE LOAM AND COMPOST SHOULD BE FREE OF LARGE STONES AND DEBRIS. CONTRACTOR TO FURNISH CONSERVATION COMMISSION WITH THE SOURCE OF OFF SITE SOIL ADDITIVES.
 6. CONTRACTOR TO PLACE WETLAND SOIL WITH SIMILAR DENSITY AS OBSERVED WITHIN THE EXISTING WETLAND AREA.
 7. THE ENTIRE RESTORATION AREAS WILL BE SEEDING WITH "NEW ENGLAND WET MIX" (WETLAND SEED MIX) AT AN APPLICATION RATE OF 1 LB/2500 S.F. SEEDING: THE MIX MAY BE APPLIED BY MECHANICAL SPREADER, OR BY HAND. WHEN APPLYING ON BARE SOIL, RAKE THE SOIL TO CREATE GROOVES, APPLY SEED, THEN LIGHTLY RAKE OVER. SEEDING SHALL BE COVERED WITH LIGHT MULCHING OF WEED FREE STRAW TO CONSERVE MOISTURE PER MANUFACTURER'S RECOMMENDATIONS.

ISSUED FOR BID

PREPARED BY:

DILLIS & ROY
CIVIL DESIGN GROUP

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BOLTON, MASSACHUSETTS

APPLICANT:
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12 FORBUSH MILL ROAD
BOLTON, MASSACHUSETTS

SCALE:

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DATE:	9/29/2023
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DRAWN BY:	MK
CHECKED BY:	FMM

DRAINAGE IMPROVEMENT DETAILS			
SAWYER ROAD			
BOLTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	04/12/24	ISSUED FOR BID	FMM

JOB NO. 7073

DRAWING NO. 7073-DETAILS

SHEET NO. **C3.1**