

PROPOSED COMPREHENSIVE PERMIT

PLAN SET

500 MAIN STREET

TITLE SHEET

ZONING INFORMATION

ZONING DISTRICT: GENERAL BUSINESS (GB) OVERLAY DISTRICT: N/A			
DESCRIPTION	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA	40,000 SF	– SF	* (1)
MIN. FRONTAGE	175 FT	110 FT	110 FT
MIN. FRONT YARD	20 FT	>20 FT	>20 FT
MIN. SIDE YARD	15 FT	>15 FT	>15 FT
MIN. REAR YARD	15 FT	>15 FT	>15 FT
MAX. IMPREVIOUS COVERAGE	50%	–%	<50%
MAX. BUILDING HEIGHT	35 FT	– FT	58.08'
MAX. STORIES	3	3	–
MAX. GSF	–	–	277,788 SF
UNITS PER ACRE	2	–	7.56
MIN. NUMBER OF PARKING SPACES/UNIT	1.5	–	2
MAX. NUMBER OF PARKING SPACES/UNIT	3	–	2
TOTAL PARKING	316	–	404

(1) REFER TO PLAN OF LAND FOR 500 MAIN STREET GROTON MA DATED 2/09/2023



LOCUS MAP

SCALE: 1" = 1,000'

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PREPARED BY:

DILLIS & ROY

CIVIL DESIGN GROUP

CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1

LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisandroy.com

OWNER:

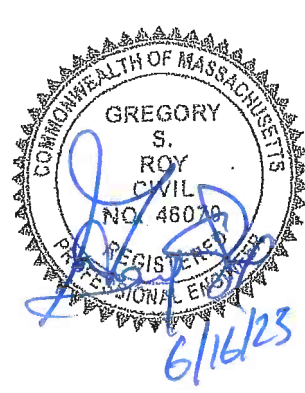
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

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DATE:
2/09/2023

DESIGN BY:
GSR

DRAWN BY:
RPV

CHECKED BY:
GSR

TITLE SHEET GROTON FARMS 500 MAIN STREET GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842

DRAWING NO.
6842-TITLE

SHEET NO.
C1.1

NOTES/REFERENCES:

A. GENERAL NOTES:

1. BASE MAPPING WAS PERFORMED BY DILLIS & ROY CIVIL DESIGN GROUP IN 2022.
2. PROPERTY LINE INFORMATION SHOWN ON THIS PLAN IS BASED ON FIELD MEASUREMENT AND RECORD PLANS AND DEEDS.
3. ELEVATIONS REFER TO NGVD 88.
4. SEVERAL BORDERING VEGETATED WETLANDS ARE LOCATED ON AND AJACENT TO THE PROPERTY AND HAVE BEEN SHOWN ON THE SITE PLANS.
5. SOIL TESTING DEPICTED ON THESE PLANS WAS PERFORMED BY DILLIS & ROY CIVIL DESIGN GROUP, INC.
6. 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.
7. THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION UNLESS IT HAS BEEN ISSUED FOR CONSTRUCTION.

B. LAYOUT AND MATERIAL NOTES:

1. TOWNHOME DRIVEWAYS SHALL BE 10- FEET IN WIDTH FOR EACH PROPOSED UNIT.
2. DRIVEWAYS SHALL BE 1 1/2" BITUMINOUS WEARING COURSE OVER, 1 1/2" BITUMINOUS BASE COURSE OVER, 8" OF GRAVEL MEETING M1.03.0, TYPE B.
3. REFER TO THE TYPICAL ROAD SECTION FOR REQUIRED GRAVEL AND BITUMINOUS SPECIFICATIONS.
4. THE PROPOSED ROAD WIDTH SHALL BE 24- FEET WIDE MEASURED FROM GUTTER LINE TO GUTTER LINE.
5. CURB ROUNDS AT THE INTERSECTION OF MAIN STREET & THE PROPOSED ROAD SHALL BE GRANITE.
6. CURBING THROUGH THE REMAINDER OF THE DEVELOPMENT SHALL BE VERTICAL BIT. BERM (TYPE II).

C. UTILITY NOTES:

1. SEWER:
 - 1.1. THE ENTIRE DEVELOPMENT WILL BE SERVED BY MUNICIPAL SEWER.
 - 1.2. THE GRAVITY SEWER MAIN SHALL BE 10" HDPE PVC.
 - 1.3. REFER TO THE SEWER MANHOLE DETAIL ON THE CONSTRUCTION DETAILS PAGE FOR SPECIFICATIONS & INSTALLATION REQUIREMENTS.
 - 1.4. ALL SEWER MAIN SHALL BE BACKFILLED WITH MAGNETIC SEWER TAPE.
 - 1.5. CONTRACTOR TO FURNISH ALL APPURTENANCES.
 - 1.6. CONTRACTOR SHALL COORDINATE WITH THE GROTON SEWER DEPARTMENT FOR THE CONNECTION THE EXISTING SEWER MANHOLE IN MAIN STREET.
2. WATER:
 - 2.1. ALL WATER MAINS, VALVES, HYDRANTS, FITTINGS AND OTHER APPURTENANCES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE GROTON WATER DEPARTMENT.
 - 2.2. CONTRACTOR TO OBTAIN ALL REQUIRED APPROVALS AND OBTAIN REQUIRED INSPECTION SCHEDULES PRIOR TO CONSTRUCTION OF THE WATER MAIN.
 - 2.3. CONTRACTOR SHALL COORDINATE WITH THE WATER DEPARTMENT TO DETERMINE THE APPROPRIATE CONNECTION AND VALVE CONFIGURATION AT THE INTERSECTION OF MAIN STREET AND THE PROPOSED ROAD.
 - 2.4. PROPOSED WATER MAIN SHALL BE 8".
 - 2.5. VALVES SHALL BE RESILIENT WEDGE GATE VALVES AS MANUFACTURED BY WATEROUS SERIES 500, OR APPROVED EQUAL. ALL BOLTS SHALL BE STAINLESS STEEL. VALVES SHALL OPEN LEFT.
 - 2.6. FIRE HYDRANTS SHALL BE AS MANUFACTURED BY WATEROUS WB-67, OR CLOW MEDALLION WITH NO SUBSTITUTIONS. HYDRANTS SHALL OPEN LEFT.
 - 2.7. WATER SERVICES SHALL BE 1"ø POLYETHYLENE RATED FOR 200 PSI. EACH SERVICE TO BE EQUIPPED WITH A CORP STOP AT THE MAIN, A CURB STOP AND BOX, WATER METER AND PRESSURE REDUCING VALVE. TRACER WIRE SHALL BE RUN WITH THE SERVICE LINE.
 - 2.8. WATER MAIN SHALL BE TESTED IN ACCORDANCE WITH THE GROTON WATER DEPARTMENT SPECIFICATIONS.
3. ELECTRICAL, TELEPHONE & CABLE:
 - 3.1. CONTRACTOR SHALL COORDINATE WITH THE GROTON ELECTRIC LIGHT DEPARTMENT FOR THE DISCONNECTION OF THE ELECTRIC UTILITIES CURRENTLY SERVING THE PROPERTY (POLES, TRANSFORMERS, ELECTRIC LINE, ETC.)
 - 3.2. CONTRACTOR SHALL COORDINATE WITH THE GROTON ELECTRIC LIGHT DEPARTMENT FOR THE PROPOSED CONNECTION.
 - 3.3. CONTRACTOR TO PROVIDE ALL REQUIRED CONDUITS FOR ELECTRIC, TELEPHONE AND CABLE SERVICE TO THE DEVELOPMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY.
 - 3.4. QUANTITY, LOCATION AND SIZE OF PROPOSED TRANSFORMERS, PULL BOXES, SERVICE BOXES, TELEPHONE DISCONNECTS, ETC. SHALL BE SPECIFIED BY THE APPLICABLE UTILITY COMPANY.
 - 3.5. OWNER SHALL PROVIDE THE REQUIRED EASEMENTS TO THE UTILITY COMPANY AS REQUIRED FOR THE INSTALLATION OF THE INFRASTRUCTURE.

D. GRADING NOTES:

1. GRADES SHOWN ON THIS PLAN REFER TO FINAL FINISHED GRADES.
2. REFER TO THE CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION PERTAINING TO TYPICAL CROSS SECTIONS AND OTHER PERTINENT DETAILS.
3. ALL DRIVEWAYS SHALL BE GRADED AS DEPICTED ON THE SITE PLANS.
4. REFER TO THE ROAD PROFILE (C6.1, C6.2, C6.3) FOR PROPOSED ROAD ELEVATIONS.

E. DRAINAGE NOTES:

1. STORM DRAIN PIPE TO BE SMOOTH LINED HDPE PIPE AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC. OR APPROVED EQUAL.
2. THE CONTRACTOR SHALL USE ALL MEANS NECESSARY TO MINIMIZE COMPACTION OF SOILS IN RECHARGE AREAS BOTH DURING AND AFTER CONSTRUCTION.
3. REFER TO STORMWATER MANAGEMENT NOTES FOR ADDITIONAL INFORMATION RELATIVE TO THE PROPOSED DRAINAGE BASIN.

F. RESTORATION NOTES:

1. ALL DISTURBED AREAS SHALL BE RESTORED WITH A MINIMUM OF 4 INCHES OF TOPSOIL, SEED, FERTILIZER AND MULCH.
2. STREET TREES SHALL BE 3-INCH CALIPER MEASURED FOUR FEET FROM THE GROUND LEVEL, TEN FEET IN HEIGHT, AND WARRANTED BY THE NURSERY FOR AT LEAST 1-YEAR.
3. TREES SHALL BE NATIVE TO MASSACHUSETTS.
4. REFER TO TREE PLANTING DETAIL ON THE CONSTRUCTION DETAILS SHEETS PROPOSED STREET TREES.

EROSION CONTROL NOTES:

A. MANAGEMENT STRATEGIES:

1. CONSTRUCTION SHALL BE SEQUENCED SO THAT GRADING OPERATIONS CAN BEGIN AND END AS QUICKLY AS POSSIBLE.
2. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE ON SITE.
3. AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. RETAIN EXISTING VEGETATION WHERE FEASIBLE.
4. THERE SHALL BE NO STORAGE OF ANY KIND OF ANY CHEMICALS, PESTICIDES, FUELS AND OTHER POTENTIALLY TOXIC OR HAZARDOUS MATERIALS ON SITE.
5. NO DEBRIS, JUNK, RUBBISH OR OTHER WASTE MATERIALS SHALL BE BURIED ON THE SITE.
6. STUMPS AND OTHER WOOD DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH THE "POLICY ON THE DISPOSAL OF WOODWASTES" PUBLISHED BY THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS, DATED AUGUST 14, 1987.
7. THE JOB SUPERINTENDENT SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

B. MAINTENANCE/ PERFORMANCE STANDARDS:

ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED WEEKLY AND AFTER EACH RAINFALL WITH AN ACCUMULATION OF 1/2" OR MORE. THE FOLLOWING ITEMS SHALL BE CHECKED IN PARTICULAR:

1. THE SILT FENCE BARRIERS SHALL BE CHECKED REGULARLY FOR TEARS, DETERIORATION, AND UNDERMINING.
2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE RESEEDD AS NEEDED.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO THE PUBLIC ROAD. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2 INCH STONE AS CONDITIONS DEMAND AND OR CLEANOUT/REPLACEMENT OF STONE IF CLOGGING OR SEDIMENTATION OCCURS. ALL MATERIALS SPILLED DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO THE TOWN ROAD MUST BE REMOVED DAILY BY SWEEPING OR OTHER SUITABLE MEANS.
4. ALL AREAS ON SITE SUBJECT TO EROSION/SEDIMENTATION SHALL BE INSPECTED ON A REGULAR BASIS. ALL ITEMS SPECIFIED ON THIS AND OTHER PLANS SHALL BE INSPECTED TO VERIFY THAT THEY ARE OPERATING AS DESIGNED AND INTENDED. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND REPAIR ALL STRUCTURES.
5. THE ENTIRE DRAINAGE SYSTEM SHALL BE INSPECTED ON A REGULAR BASIS AND PRIOR TO AND IMMEDIATELY AFTER ANY RAINFALL EVENT WHILE THE SITE IS DISTURBED.
 - CATCH BASINS SHALL BE INSPECTED WEEKLY TO ENSURE THAT THEY ARE WATER TIGHT, HAVE ADEQUATE SUMP CAPACITY, THAT OIL AND GAS TRAPS ARE IN PLACE. THEY SHALL ALSO BE INSPECTED AFTER EVERY SIGNIFICANT RAINFALL EVENT (I.E. A TWO-YEAR STORM EVENT OR GREATER) DURING THE FIRST THREE (3) MONTHS OF BEING PLACED IN SERVICE TO ENSURE THAT THEY ARE FUNCTIONING IN AN ADEQUATE FASHION. THE BASINS SHALL BE CLEANED WITH A VACUUM TRUCK WHEN 1/3 OF THE SUMP IS FILLED WITH SEDIMENT BUT NOT LESS THAN TWO (2) TIMES PER YEAR. AFTER THE FIRST THREE (3) MONTHS OF SERVICE THE BASINS SHALL BE INSPECTED NOT LESS THAN ONE (1) TIME PER YEAR TO ENSURE ADEQUATE FUNCTIONALITY. OIL/GAS TRAPS SHALL BE CLEANED WITH A VACUUM TRUCK AND MONITORED FOR HYDROCARBON BUILD UP SEMIANNUALLY
 - DRAINAGE SWALES DURING CONSTRUCTION SHALL BE INSPECTED MONTHLY FOR EROSION, SEDIMENT ACCUMULATION AND LEAF BUILDUP. ALL ERODED AREAS SHALL BE STABILIZED. SEDIMENT SHALL BE REMOVED AND LEAF LITTER REMOVED.
 - DEWATERING OF EXCAVATIONS DURING CONSTRUCTION SHALL BE ADDRESSED ON AN INDIVIDUAL BASIS AS NEEDED. IF TEMPORARY DEWATERING IS REQUIRED ON THE SITE OR IN CLOSE PROXIMITY TO THE 100 FT BUFFER ZONE, SEDIMENT BASINS SHALL BE CONSTRUCTED OR SILT TRAPS SHALL BE UTILIZED. SILT TRAPS AND SEDIMENT BASINS SHALL BE MAINTAINED DURING THE DEWATERING OPERATION.

C. TEMPORARY MEASURES:

1. PLACE SILT FENCE AND SILT FENCE WITH STRAW BALES AS SHOWN ON THE EROSION CONTROL PLAN.
2. IF LOAM IS PLACED OUTSIDE OF THE NORMAL GROWING SEASON SILT FENCE OR STRAW WADDLES SHALL BE PLACED BETWEEN THE LAWN AREA AND PAVEMENT.
3. CONSTRUCT TEMPORARY STONE PAD AT EXIT TO THE SITE AS SHOWN ON THE EROSION CONTROL PLAN.
4. DURING DRY PERIODS, PROVIDE MEANS FOR MITIGATION OF DUST, SUCH AS WATERING OF EXPOSED AREAS.
5. STOCKPILE LOCATIONS SHALL BE WITHIN THE PROPOSED LIMIT OF WORK. PLACE SILT FENCE AROUND ALL STOCK PILE AREAS. PILES LEFT FOR 21 DAYS OR MORE SHALL BE SEEDD OR COVER WITH PLASTIC SHEETING.
6. WASTE DISPOSAL RECEPTACLES AND TRAILERS WILL BE USED FOR THE DISPOSAL OF CONSTRUCTION DEBRIS, WHICH WILL BE REMOVED FROM THE SITE ACCORDING TO STATE, LOCAL AND FEDERAL GUIDELINES. CONSTRUCTION DEBRIS WILL INCLUDE PAVEMENT, UTILITY, EARTH AND BUILDING MATERIALS THAT CANNOT BE REUSED. THE RECEPTACLES WILL BE LOCATED ON-SITE AND COVERED.
7. PLACE STRAW BALES AROUND CATCH BASINS AND OTHER STORM DRAIN INLETS AFTER CONSTRUCTED. CATCH BASIN INSERTS MAY BE USED IN AREAS WHERE MANEUVERABILITY AROUND APPURTENANCES IS AN ISSUE.
8. IN ADDITION TO WHAT IS DEPICTED ON THE PLANS, SILT FENCE SHALL BE PLACED DOWN GRADIENT (UP-GRADIENT OF ANY STORM WATER APPURTENANCES, WETLAND BUFFER ZONES AND AREAS TO BE LEFT UNDISTURBED) TO EACH STRUCTURE DURING THE CONSTRUCTION PROCESS UNTIL THE DISTURBED AREA IS RESTORED.

D. PERMANENT STABILIZATION:

1. SLOPES IN EXCESS OF 3 TO 1 SHALL BE HYDRO-MULCHED. LOAMED (6" MIN.) AND SEEDED SLOPES WILL BE PROTECTED FROM WASHOUT BY MULCHING OR OTHER ACCEPTABLE SLOPE PROTECTION UNTIL VEGETATION IS ESTABLISHED.
2. SLOPES STEEPER THAN 3 TO 1 SHALL BE RESTORED WITH 6" OF LOAM (MIN.), SEED, FERTILIZER AND STAKED DOWN EROSION CONTROL BLANKET (NORTH AMERICAN GREEN SC 150 BN, OR EQUAL). INSTALL IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTIONS.
3. THE TEMPORARY MEASURES WILL NOT BE REMOVED UNTIL PERMANENT STABILIZATION HAS OCCURRED.
4. DESIGNATED RECHARGE AREAS SHALL BE PROTECTED FROM COMPACTION OF SOILS DURING AND AFTER CONSTRUCTION.

E. CONSTRUCTION SEQUENCE:

DURING THIS SEQUENCE ALL EROSION CONTROLS SHALL BE INSPECTED AND MAINTAINED. ALL DISTURBED AREAS SHALL BE STABILIZED BY SEEDING OR SODDING AS SOON AS POSSIBLE AFTER GRADING IS COMPLETE. EROSION BARRIERS SHALL BE REMOVED AFTER SLOPE STABILIZATION IS COMPLETE.

1. INSTALL EROSION AND SEDIMENT CONTROL MEASURES.
2. DELINEATE AND FENCE STORMWATER MANAGEMENT AREAS.
3. EXCAVATE TO SUBGRADE IN CUT SECTIONS; BRING FILL SECTIONS TO SUBGRADE USING EXCAVATED SOIL.
4. INSTALL BUILDING FOUNDATION, UNDERGROUND UTILITIES, AND BUILDING PAD. UTILITIES INCLUDE DRAINAGE SYSTEM, WATER, GAS AND ELECTRICAL UTILITIES.
5. PLACE COMPACTED BASE GRAVEL FOR THE PAVED AREAS; ROUGH GRADE AREAS TO BE LOAMED AND SEEDED.
6. INSTALL PAVEMENT.
7. FINALIZE GRADING. LOAM, SEED AND MULCH DISTURBED AREAS.
8. PLANT TREES, SHRUBS AND GROUND COVER AS INDICATED ON LANDSCAPE PLAN.

G. DEWATERING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEWATERING OPERATIONS DURING CONSTRUCTION.
2. DEWATERING SHALL BE PREFORMED TO ACHIEVE CONSTRUCTION OF FOOTINGS, FOUNDATIONS, PAVEMENTS, AND OTHER SUBSURFACE UTILITIES AND APPURTENANCES IN DRY CONDITIONS.
3. DEWATERING SHALL BE PERFORMED THROUGH THE USE OF IN TRENCH SUMP PUMPS, WELLS, DRAINS AND OTHER ITEMS NECESSARY FOR CONSTRUCTION. CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, OPERATE AND REMOVE ALL DEWATERING DEVICES AND APPURTENANCES AS REQUIRED FOR CONSTRUCTION. SUCH ACTIVITIES SHALL BE INCLUDED IN THE CONTRACTORS BID.
4. THE FLOW FROM DEWATERING PUMPS SHALL BE DISCHARGED TO A SEDIMENTATION TRAP OR DEVICE PRIOR TO DISCHARGE TO A RESOURCE AREA. REFER TO THE DETAILS ON THIS PLAN.

H. LANDSCAPE NOTES:

1. GUARANTEE: ALL PLANT MATERIAL SHALL BE GUARANTEED FOR TWELVE (12) MONTHS FROM THE DAY OF FINAL APPROVAL BY THE ARBORIST OR ENGINEER. ANY PLANT MATERIAL TWENTY-FIVE (25%) OR MORE OF WHICH IS DEAD SHALL BE CONSIDERED DEAD. A TREE SHALL BE CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED OR 25% OF THE CROWN IS DEAD. IF THE PLANT FAILS TO SURVIVE DURING THIS PERIOD, REPLACEMENT SHALL BE MADE AT THE BEGINNING OF THE FIRST SUCCESSIVE GROWING SEASON. ALL REPLACEMENTS SHALL HAVE A GUARANTEE EQUAL TO THAT STATED ABOVE. ANY DEAD PLANT MATERIAL SHALL BE REPLACED AND INSTALLED BASED ON AVAILABILITY. PROPOSED PLANT MATERIAL MAY BE SUBSTITUTED WITH SIMILAR PLANT PRIOR TO INSTALLATION BASED ON AVAILABILITY.
2. IN THE EVENT THAT ANY DISCREPANCIES BETWEEN THE QUANTITIES OF PLANTS INDICATED ON THE PLANT SCHEDULE AND THOSE INDICATED ON THE PLAN, THE QUANTITIES INDICATED ON THE PLAN SHALL GOVERN.
3. NOTIFY ALL UTILITY COMPANIES PRIOR TO EXCAVATING PLANT PITS. PLANT LOCATIONS MAY BE ADJUSTED IN THE FIELD TO AVOID INTERFERENCE WITH UTILITIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING AT CORRECT GRADES AND ALIGNMENT.
5. PLANTS SHALL BE TYPICAL OF THEIR SPECIES AND VARIETY; HAVE NORMAL GROWTH HABITS; WELL DEVELOPED BRANCHES; DENSELY FOLIATED, VIGOROUS ROOT SYSTEMS AND BE FREE FROM DEFECTS AND INJURY.
6. THE CONTRACTOR SHALL REPORT ANY SOIL OR DRAINAGE CONDITION CONSIDERED DETRIMENTAL TO THE GROWTH OF PLANT MATERIAL.
7. QUALITY AND SIZE OF THE PLANTS, SPREAD OF ROOTS AND SIZE OF BALLS SHALL BE IN ACCORDANCE WITH "AMERICAN STANDARD FOR NURSERY STOCK" ANSI 260 (MOST RECENT EDITION) AS PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
8. B & B PLANTS SHALL BE HANDLED FROM THE BOTTOM OF THE ROOT BALL ONLY. PLANTS WITH BROKEN, SPLIT OR DAMAGED ROOT BALLS SHALL BE REJECTED.
9. TREES SHALL BE LOCATED IN A MANNER WHICH WILL NOT OBSTRUCT ACCESS TO UTILITIES OR VISIBILITY OF STREET OR TRAFFIC SIGNS.
10. PLANTING OPERATIONS SHALL BE PERFORMED DURING PERIODS WITHIN THE PLANTING SEASON WHEN WEATHER AND SOIL CONDITIONS ARE SUITABLE. SPRING PLANTING SEASON SHALL BE: MARCH 21 TO MAY 30 FOR DECIDUOUS / APRIL 1 TO JUNE 15 FOR EVERGREEN. FALL PLANTING SEASON SHALL BE: OCTOBER 1 TO DECEMBER 1 FOR DECIDUOUS / AUGUST 15 TO OCTOBER 15 FOR EVERGREEN.
11. SEED MIX IN THE SEDIMENT FOREBAY SLOPES AND BOTTOMS SHALL CONSIST OF NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DRY SITES AS SPECIFIED BY NEW ENGLAND WETLAND PLANTS, INC. (OR EQUAL)

I. STORMWATER MANAGEMENT AREAS:

1. THE AREA PLANNED FOR THE STORMWATER MANAGEMENT AREAS SHOULD BE ROPED OFF TO PREVENT HEAVY EQUIPMENT FROM COMPACTING THE UNDERLYING SOILS BEFORE THE DEVELOPMENT SITE IS GRADED.
2. EXCAVATION SHALL BE LIMITED TO WITHIN TWO FEET OF THE FINAL DESIGN ELEVATION OF THE STORMWATER MANAGEMENT AREA FLOOR IF IT IS TO BE USED AS A TEMPORARY SEDIMENT BASIN DURING THE CONSTRUCTION PHASE. THE SEDIMENT THAT ACCUMULATES DURING THE CONSTRUCTION PHASE CAN THEN BE REMOVED BEFORE THE BASIN UNDERGOES FINAL EXCAVATION AT THE COMPLETION OF THE DEVELOPMENT. IF THE BASIN IS NOT INTENDED FOR SEDIMENT CONTROL, DIVERSION BERMS SHALL BE PLACED AROUND ITS PERIMETER DURING ALL PHASES OF CONSTRUCTION TO DIVERT ALL SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE BASIN. ACTUAL CONSTRUCTION OF THE BASIN SHOULD BEGIN ONLY AFTER THE SITE HAS BEEN COMPLETELY STABILIZED.
3. TO PREVENT COMPACTION OF THE SUBSOIL WHICH WILL REDUCE ITS INFILTRATION CAPACITY, STORMWATER MANAGEMENT AREAS SHALL BE EXCAVATED WITH LIGHT EARTH MOVING EQUIPMENT, PREFERABLY WITH TRACKS OR OVER-SIZED TIRES RATHER THAN THE NORMAL RUBBER TIES. ONCE THE FINAL CONSTRUCTION PHASE IS REACHED, THE FLOOR OF THE BASIN SHALL BE DEEPLY TILLED WITH A ROTARY TILLER OR DISC HARROW AND SMOOTHED OVER WITH A LEVELING DRAG OR EQUIVALENT GRADING EQUIPMENT.
4. WITHIN A WEEK OF CONSTRUCTION, THE FLOOR AND THE SIDE SLOPES OF ABOVE GROUND STORMWATER MANAGEMENT AREAS SHALL BE SEEDED WITH WATER TOLERANT, LOW MAINTENANCE AND RAPID GERMINATING GRASSES SUCH AS FESCUE. THE CONDITION OF THE NEWLY ESTABLISHED VEGETATION SHALL BE CHECKED SEVERAL TIMES OVER THE FIRST FEW MONTHS, AND, IF NECESSARY, REMEDIAL ACTIONS SUCH AS RE-SEEDING, FERTILIZING AND IRRIGATION SHOULD BE UNDERTAKEN.
5. THE TOP OF THE ABOVE GROUND STORMWATER MANAGEMENT AREAS BERM SHALL BE SEEDED WITH NEW ENGLAND CONSERVATION/WILDLIFE MIX AS SPECIFIED BY NEW ENGLAND WETLAND PLANTS (OR APPROVED EQUAL)
6. THE EXISTING TOPSOIL SHALL BE USED TO RESTORE THE BOTTOM OF THE CONSTRUCTED STORMWATER AREAS.

SOIL TEST DATA						NAME OF SOIL EVALUATOR: DILLIS & ROY CIVIL DESIGN GROUP STAN DILLIS
DEEP TEST PIT: 1122-1	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-12"	AP	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	12-30"	BW	L.S.	10YR 5/6	ø 30"	
	30-84"	C		MED SAND	2.5YR 6/4	NONE
(SURFACE ELEV. = 215.34)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 30" (ELEVATION = 212.8)		
DEEP TEST PIT: 1122-2	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-12"	AP	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	12-30"	BW	L.S.	10YR 5/6	ø 30"	
	30-84"	C		MED SAND	2.5YR 6/4	NONE
(SURFACE ELEV. = 215.34)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 30" (ELEVATION = 212.8)		
DEEP TEST PIT: 1122-3	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-12"	AP	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	12-30"	BW	L.S.	10YR 5/6	ø 30"	
	30-84"	C		MED SAND	2.5YR 6/4	NONE
(SURFACE ELEV. = 215.34)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 30" (ELEVATION = 212.8)		
DEEP TEST PIT: 1122-4	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-48"	A	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	48-66"	BW	L.S.	10YR 5/6	NONE	
	66-96"	C		MED SAND	25YR 6/4	ø 66"
(SURFACE ELEV. = 215.94)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 66" (ELEVATION = 210.40)		
DEEP TEST PIT: 1122-5	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-36"	A	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	36-66"	BW	L.S.	10YR 5/6	NONE	
	66-96"	C		MED SAND	25YR 6/4	ø 66"
(SURFACE ELEV. = 215.44)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 66" (ELEVATION = 209.9)		
DEEP TEST PIT: 1122-6	DEPTH	HOR.	TEX.	COLOR	MOTT.	
DATE OF TEST: 11/23/22	0-48"	A	SL	10YR 3/4	NONE	
REFUSAL AT: NONE OBSERVED	48-66"	BW	L.S.	10YR 5/6	NONE	
	66-108"	C		MED SAND	25YR 6/4	ø 66"
(SURFACE ELEV. = 218.04)						
ESTIMATED SEASONAL HIGH GROUND WATER				AT 66" (ELEVATION = 212.5)		

LEGEND

EXIST. FEATURE	DESCRIPTION	EXIST. SYM.	DESCRIPTION
	STREAMS/RIVERS		TELEPHONE POLE
	WETLANDS		GUY WIRE
	LIMIT OF BUFFER ZONE		HYDRANT
	PROPERTY LINE		SEWER MANHOLE
	WIRE FENCE		WELL
	WATER LINE		MISCELLANEOUS MANHOLE
	GAS LINE		WETLAND FLAG
	ELECTRICAL LINE		CATCH BASIN
	STORM DRAIN		WATER GATE VALVE
	EXISTING OVER-HEAD WIRES		SIGN
	EXISTING CONTOUR (INDEX)		PERC TEST
	EXISTING CONTOUR (INTERMEDIATE)		TEST PIT

LEGEND

PROP. FEATURE	DESCRIPTION	PROP. SYM.	DESCRIPTION
	PROPERTY LINE		PROPOSED TELEPHONE POLE
	EASEMENT LINE		PROPOSED HYDRANT
	STRAWBALES		PROPOSED SANITARY MANHOLE
	WIRE FENCE		PROPOSED WATER SHUTOFF
	PROPOSED WATER LINE		PROPOSED WATER GATE VALVE
	PROPOSED ELECTRICAL LINE		PROPOSED ELECTRICAL JUNCTION BOX
	PROPOSED SANITARY SEWER		PROPOSED SIGN
	PROPOSED EDGE OF PAVEMENT		BORING
	PROPOSED CONTOUR (INDEX)		PROPOSED RIPRAP
	PROPOSED CONTOUR (INTERMEDIATE)		STANDARD TREE
	PROPOSED SPOT ELEVATION		PINE TREE
	PROPOSED BUILDING/HOUSE		SHRUB
	TREE LINE		
	PROPOSED STORMWATER MANAGEMENT AREA		

PREPARED BY:

DILLIS & ROY
CIVIL DESIGN GROUP

CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1
LUNENBURG, MA 01462

PHONE: (978) 779-6091
www.dillissandroy.com

OWNER:

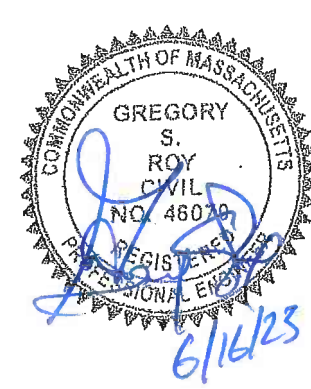
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

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DATE:
2/09/2023

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GSR

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RPV

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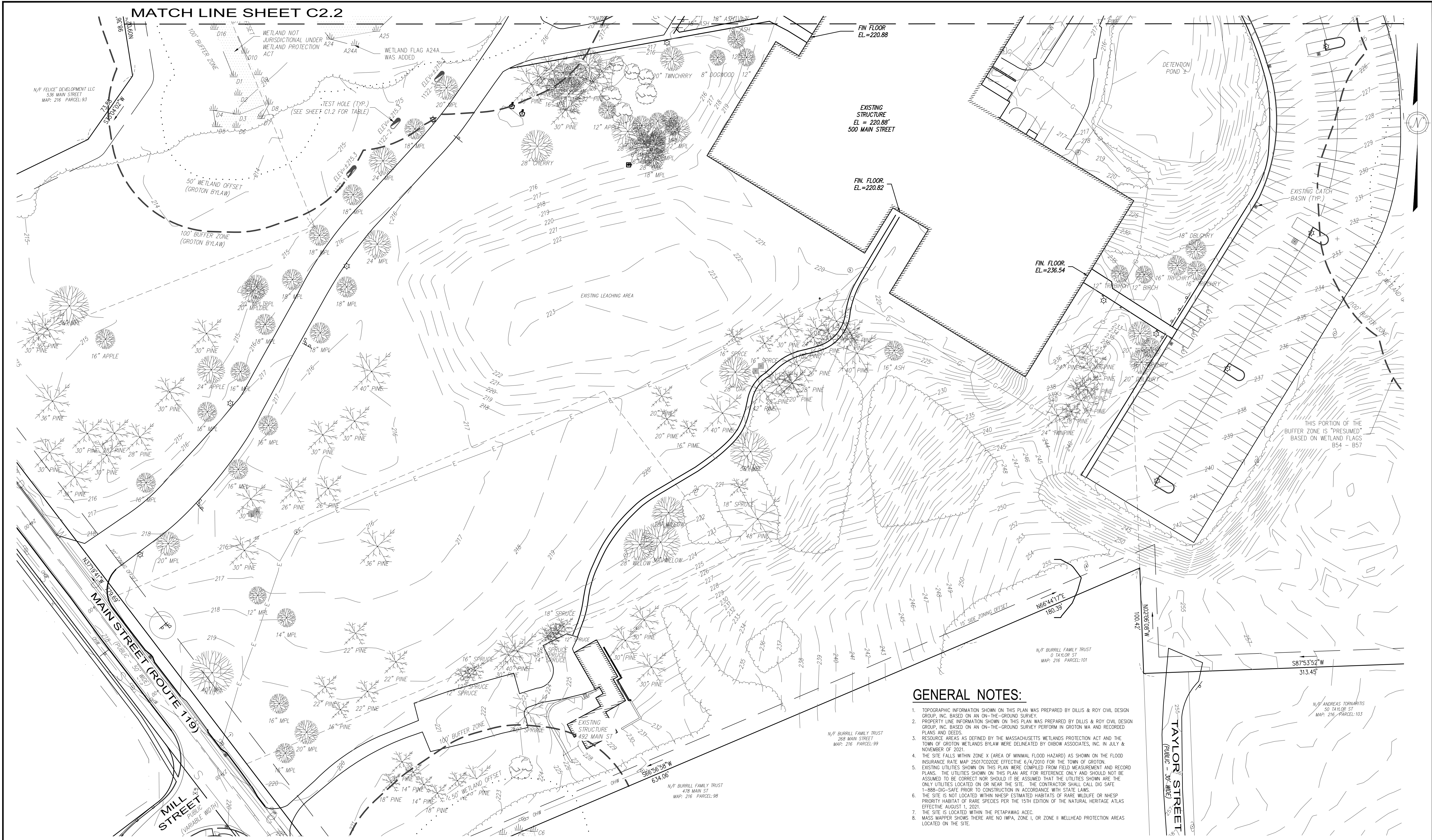
NOTES SHEET
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842

DRAWING NO.
6842-NOTES

SHEET NO.
C1.2



GENERAL NOTES:

1. TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN WAS PREPARED BY DILLIS & ROY CIVIL DESIGN GROUP, INC. BASED ON AN ON-THE-GROUND SURVEY.
2. PROPERTY LINE INFORMATION SHOWN ON THIS PLAN WAS PREPARED BY DILLIS & ROY CIVIL DESIGN GROUP, INC. BASED ON AN ON-THE-GROUND SURVEY PERFORM IN GROTON MA AND RECORDED PLANS AND DEEDS.
3. RESOURCE AREAS AS DEFINED BY THE MASSACHUSETTS WETLANDS PROTECTION ACT AND THE TOWN OF GROTON WETLANDS BYLAW WERE DELINEATED BY OXBOW ASSOCIATES, INC. IN JULY & NOVEMBER OF 2021.
4. THE SITE FALLS WITHIN ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON THE FLOOD INSURANCE RATE MAP 2501C0202E EFFECTIVE 6/4/2010 FOR THE TOWN OF GROTON.
5. 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.
6. THE SITE IS NOT LOCATED WITHIN NHESP ESTIMATED HABITATS OF RARE WILDLIFE OR NHESP PRIORITY HABITAT OF RARE SPECIES PER THE 15TH EDITION OF THE NATURAL HERITAGE ATLAS EFFECTIVE AUGUST 1, 2021.
7. THE SITE IS LOCATED WITHIN THE PETAPANAG ACEC.
8. MASS MAPPER SHOWS THERE ARE NO IMPA, ZONE I, OR ZONE II WELLHEAD PROTECTION AREAS LOCATED ON THE SITE.

PREPARED BY:

DILLIS & ROY
CIVIL DESIGN GROUP

CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1
LUNENBURG, MA 01462

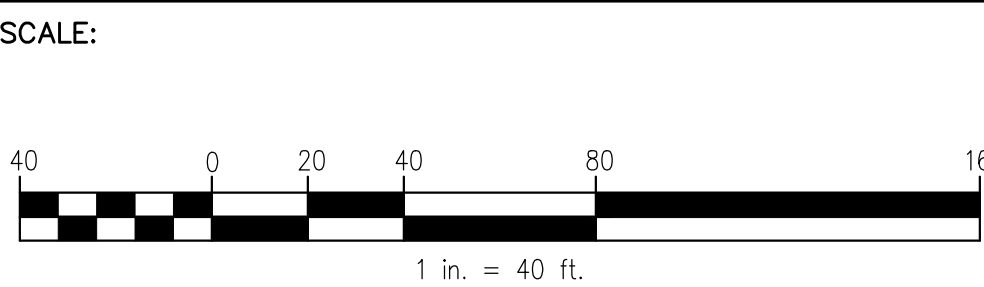
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OWNER:

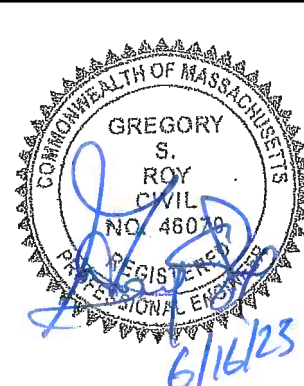
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS



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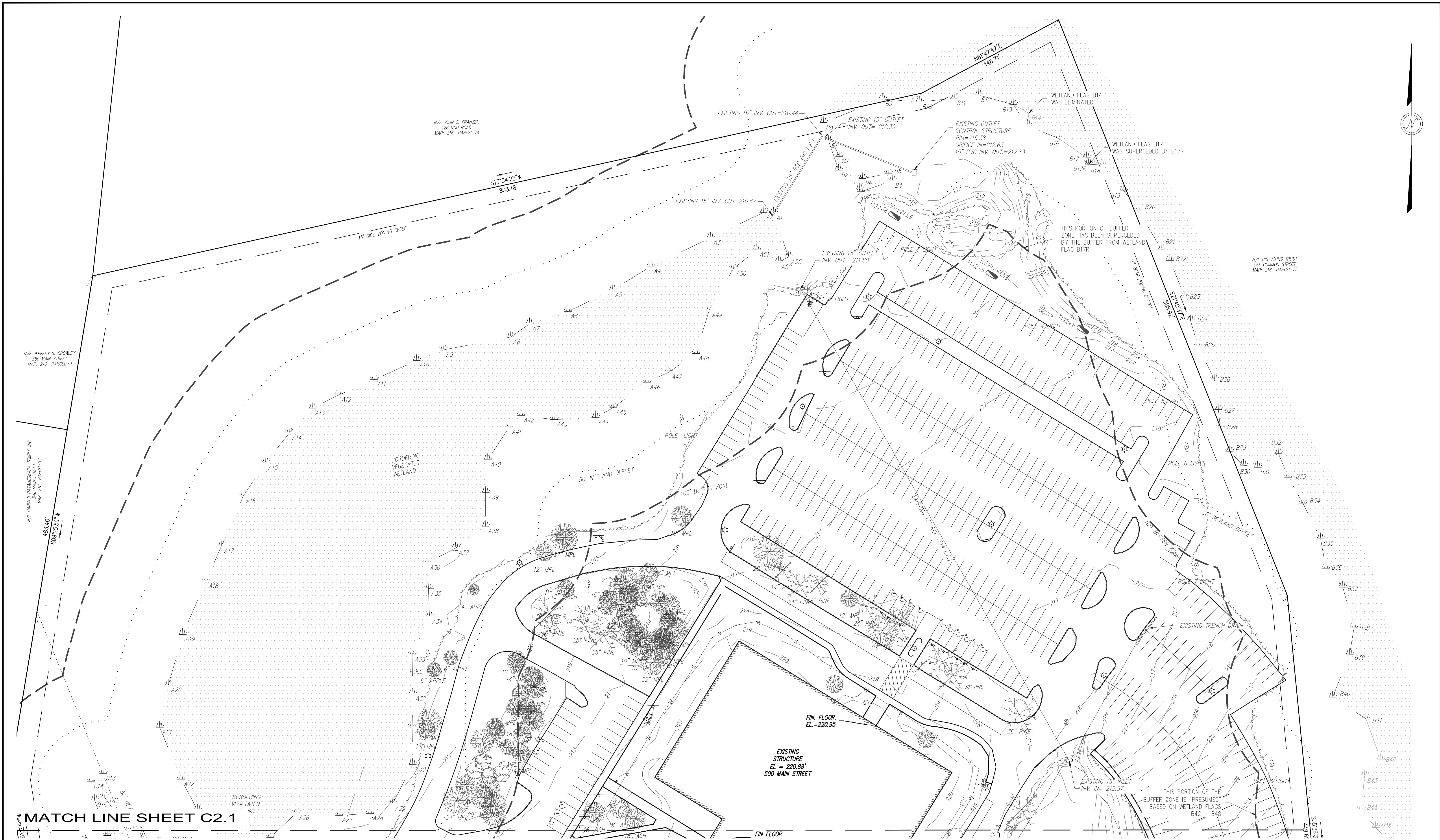
CHECKED BY:
GSR

EXISTING CONDITIONS PLAN			
GROTON FARMS			
500 MAIN STREET			
GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842

DRAWING NO.
6842-EXIST

SHEET NO.
C2.1



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1 MAIN STREET, SUITE 1 PHONE: (978) 779-6091
LUNENBURG, MA 01462 www.dillisandroy.com

OWNER:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

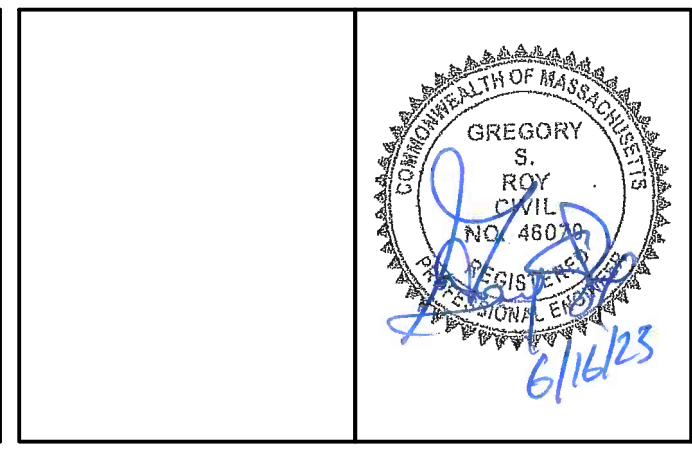
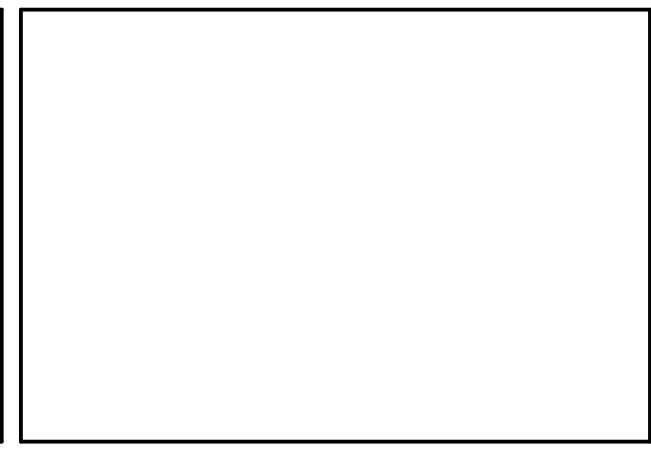
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SCALE:



1 in. = 40 ft.

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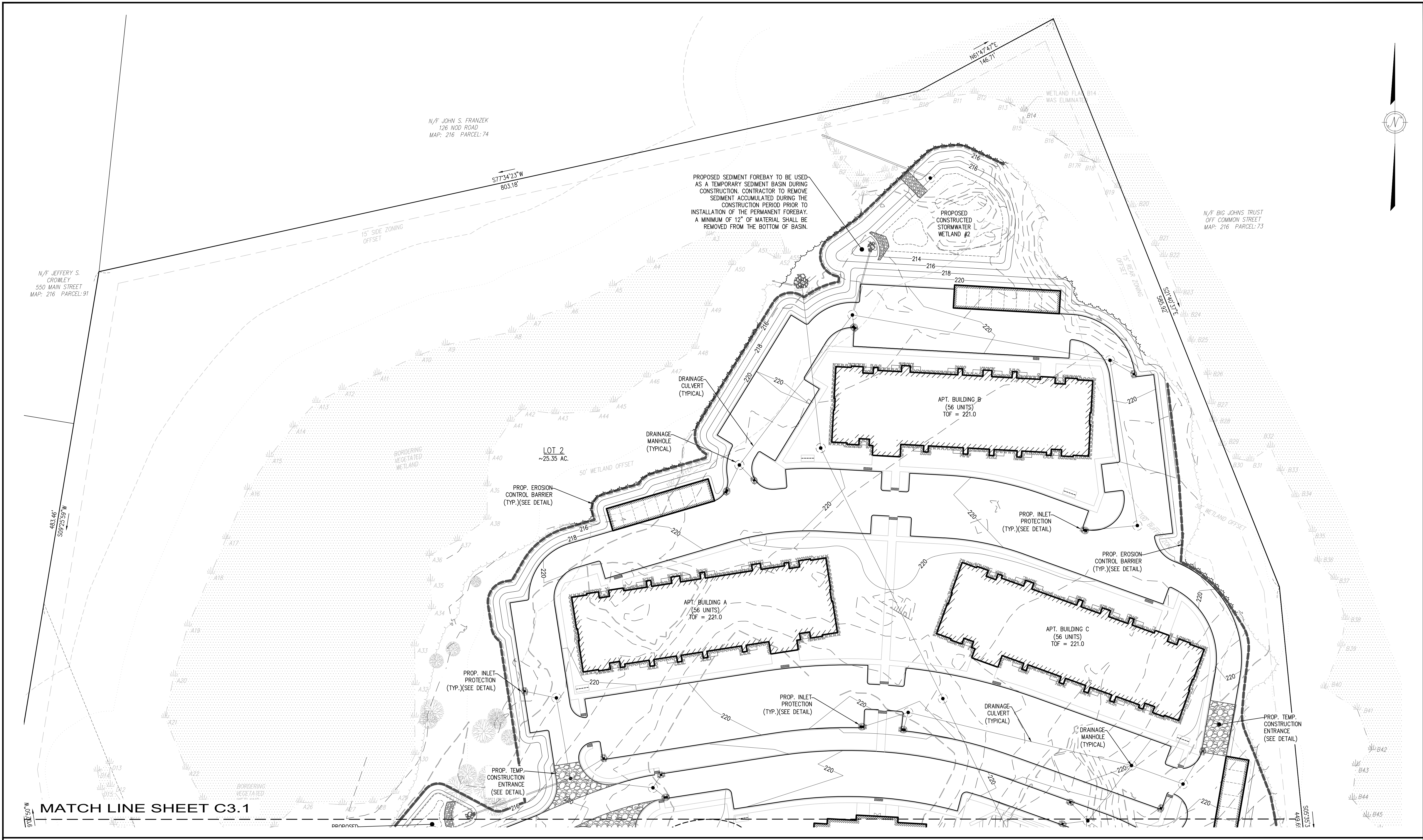


DATE:	EXISTING CONDITIONS PLAN					JOB NO.
2/09/2023	GROTON FARMS					6842
DESIGN BY:	500 MAIN STREET					DRAWING NO.
GSR	GROTON, MASSACHUSETTS					6842-EXIST
DRAWN BY:	NO.	DATE	DESCRIPTION		BY	SHEET NO.
RPV	1.	06/16/23	REVISED PER PEER REVIEW COMMENTS		RPV	C2.2
CHECKED BY:						
GSR						

[illegible]


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C3.1



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CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1

LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisandroy.com

OWNER:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

4000204080160

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RPV

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SOIL EROSION & SEDIMENTATION CONTROL PLAN

GROTON FARMS

500 MAIN STREET

GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

6842

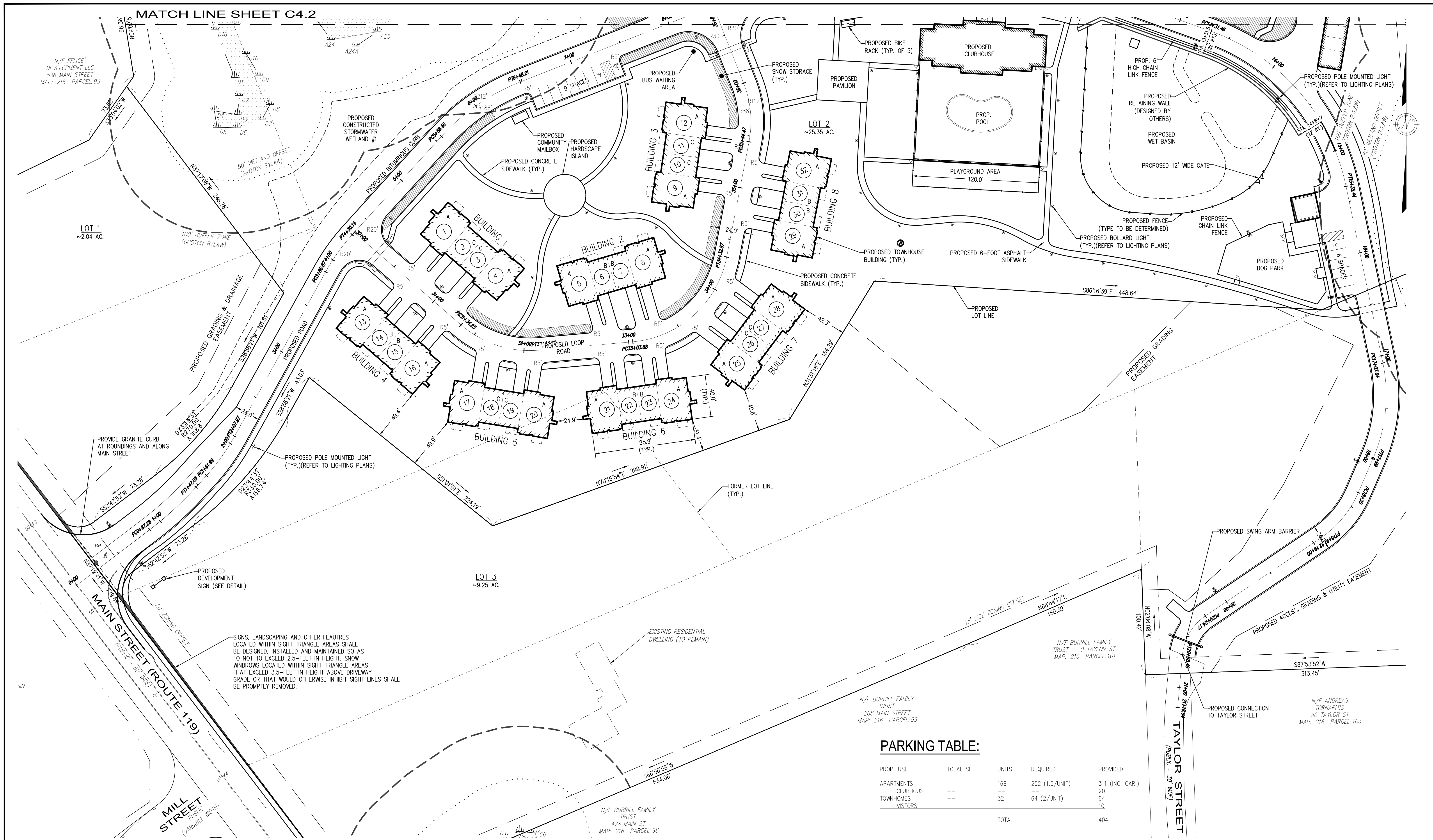
DRAWING NO.

6842-SESC

SHEET NO.

C3.2

6/16/23



PARKING TABLE:

PROP. USE	TOTAL SF	UNITS	REQUIRED	PROVIDED
APARTMENTS	--	168	252 (1.5/UNIT)	311 (INC. GAR.)
CLUBHOUSE	--	--	--	20
TOWNHOMES	--	32	64 (2/UNIT)	64
VISITORS	--	--	--	10
		TOTAL		404

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CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462 PHONE: (978) 779-6091 www.dillisandroy.com

OWNER:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

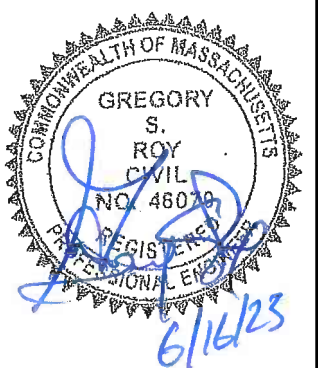
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6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:



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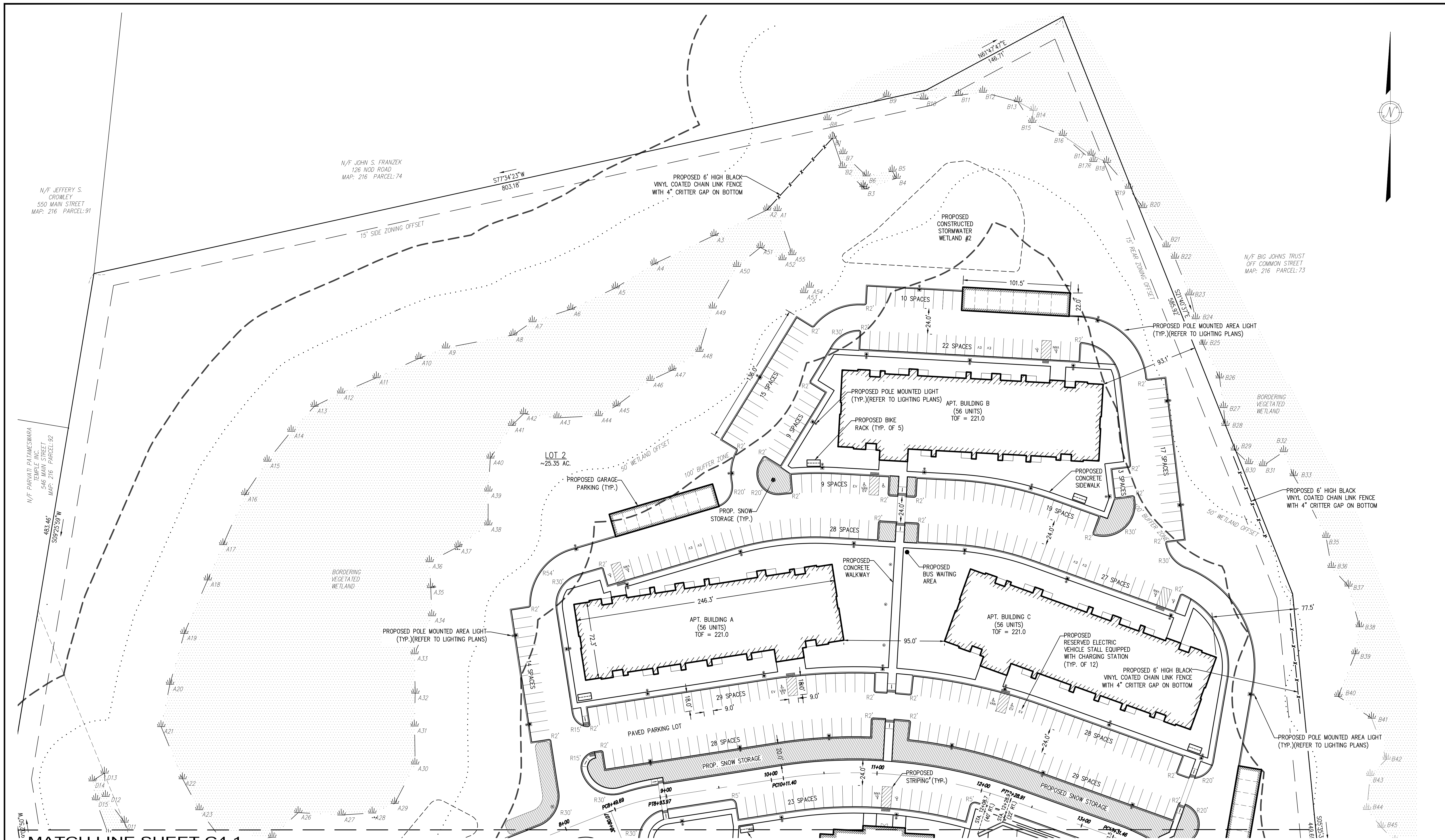


DATE: 2/09/2023
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LAYOUT & MATERIALS PLAN
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

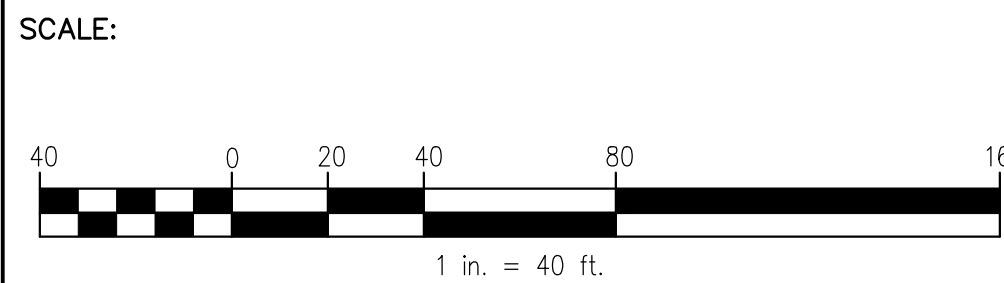
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DRAWING NO. 6842-LAYOUT
SHEET NO. **C4.1**



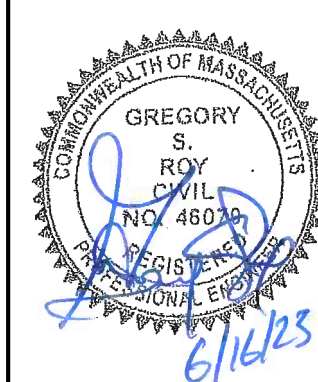
MATCH LINE SHEET C4.1

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

OWNER:
500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS
APPLICANT:
500 MG LLC
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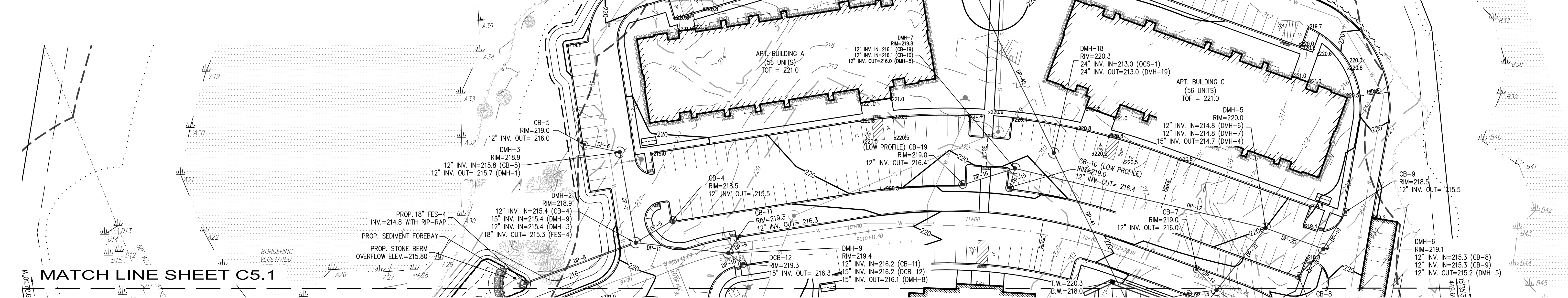
LAYOUT & MATERIALS PLAN			
GROTON FARMS			
500 MAIN STREET			
GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842
DRAWING NO.
6842-LAYOUT
SHEET NO.
C4.2

[illegible]

JOB NO.	6842
DRAWING NO.	6842-GRD & DRN
SHEET NO.	C5.1

PIPE ID	IN-INVERT (feet)	OUT-INVERT (feet)	LENGTH (feet)	SLOPE (ft/ft)	DIAMETER (inches)	INLET STRUCTURE	OUTLET STRUCTURE	PIPE ID	IN-INVERT (feet)	OUT-INVERT (feet)	LENGTH (feet)	SLOPE (ft/ft)	DIAMETER (inches)	INLET STRUCTURE	OUTLET STRUCTURE
DP-1	215.60	215.40	27.00	0.0074	12.00	CB-1	DMH-1	DP-37	215.90	215.70	20.00	0.0100	12.00	CB-24	DMH-17
DP-2	216.20	215.40	20.00	0.0400	12.00	CB-2	DMH-1	DP-38	215.90	215.70	28.00	0.0071	12.00	CB-23	DMH-17
DP-3	216.50	215.40	38.00	0.0289	12.00	CB-3	DMH-1	DP-39	212.80	212.50	61.00	0.0050	18.00	DMH-14	FES-6
DP-4	215.30	214.80	56.00	0.0089	18.00	DMH-1	FES-3	DP-40	214.10	214.00	35.00	0.0029	24.00	DMH-4	FES-5
DP-5	215.50	215.30	37.00	0.0054	12.00	CB-4	DMH-2	DP-41	213.43	213.00	156.00	0.0028	24.00	OCS-1	DMH-18
DP-6	216.00	215.80	31.00	0.0065	12.00	CB-5	DMH-3	DP-42	213.00	212.25	267.00	0.0028	24.00	DMH-18	DMH-19
DP-7	215.70	215.30	70.00	0.0057	12.00	DMH-3	DMH-2	DP-43	212.25	211.80	157.00	0.0029	24.00	DMH-19	FES-7
DP-8	215.30	214.80	101.00	0.0050	18.00	DMH-2	FES-4	DP-44	215.70	214.80	101.00	0.0089	15.00	FES-1	FES-2
DP-9	216.30	216.20	14.00	0.0071	12.00	CB-11	DMH-9	DP-45	215.50	215.30	12.00	0.0167	12.00	DCB-20	DMH-14
DP-10	216.30	216.20	14.00	0.0071	12.00	DCB-12	DMH-9	DP-45	212.50	210.44	111.00	0.0186	15.00	OCS-2	OUTLET
DP-11	216.10	215.40	79.00	0.0089	15.00	DMH-9	DMH-2	DP-46	214.80	214.00	25.00	0.0320	12.00	RISER	OUTLET
DP-13	216.00	215.50	24.00	0.0208	12.00	CB-6	DMH-4								
DP-14	216.00	215.50	24.00	0.0208	12.00	CB-7	DMH-4								
DP-15	216.40	216.10	17.00	0.0176	12.00	CB-10	DMH-7								
DP-16	216.40	216.10	45.00	0.0067	12.00	CB-19	DMH-7								
DP-17	216.00	214.80	220.00	0.0055	12.00	DMH-7	DMH-5								
DP-18	215.50	215.30	32.00	0.0063	12.00	CB-8	DMH-6								
DP-19	215.50	215.30	37.00	0.0054	12.00	CB-9	DMH-6								
DP-20	215.20	214.80	52.00	0.0077	12.00	DMH-6	DMH-5								
DP-21	214.70	214.20	67.00	0.0075	15.00	DMH-5	DMH-4								
DP-22	218.10	214.50	122.00	0.0295	15.00	DMH-10	DMH-4								
DP-23	218.90	218.20	15.00	0.0467	12.00	CB-13	DMH-10								
DP-24	218.90	218.20	15.00	0.0467	12.00	CB-14	DMH-10								
DP-25	231.60	218.20	198.00	0.0677	12.00	DMH-11	DMH-10								
DP-26	239.90	231.70	110.00	0.0745	12.00	DMH-12	DMH-11								
DP-27	232.20	231.70	15.00	0.0333	12.00	CB-15	DMH-11								
DP-28	232.20	231.70	15.00	0.0333	12.00	CB-16	DMH-11								
DP-29	246.40	240.00	84.00	0.0762	12.00	DMH-13	DMH-12								
DP-30	247.40	246.50	18.00	0.0500	12.00	CB-17	DMH-13								
DP-31	247.40	246.50	18.00	0.0500	12.00	CB-18	DMH-13								
DP-32	215.50	215.20	50.00	0.0060	12.00	DCB-22	DMH-16								
DP-33	215.10	214.30	160.00	0.0050	12.00	DMH-16	DMH-15								
DP-34	216.20	215.70	26.00	0.0192	12.00	CB-21	DMH-15								
DP-35	214.20	212.90	250.00	0.0052	15.00	DMH-15	DMH-14								
DP-36	215.60	214.70	180.00	0.0050	12.00	DMH-17	DMH-14								



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DILLIS & ROY

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CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1

LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisandroy.com

OWNER:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:



1 in. = 40 ft.

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DATE:

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GSR

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RPV

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GRADING & DRAINAGE PLAN
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

6842

DRAWING NO.

6842-GRD & DRN

SHEET NO.

C5.2

CONSTRUCTED STORMWATER WETLANDS NOTES:

- A. GENERAL NOTES
1. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ANY DISTURBANCE ON SITE.
 2. AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE CLEARLY MARKED BY FLAGS, SIGNS, ETC. RETAIN EXISTING VEGETATION WHERE FEASIBLE.
 3. CONSTRUCTED STORMWATER WETLAND SHALL BE ROUGH EXCAVATED WITH THE BOTTOM LEFT AT LEAST 1-FOOT ABOVE FINAL FINISHED GRADE DURING THE CONSTRUCTION OF THE SITE. FINAL GRADING AND PLANTING OF THE STORMWATER WETLAND AREAS SHALL BE AFTER UPGRADIENT AREAS HAVE BEEN STABILIZED.
 4. OVER-EXCAVATE BOTTOM OF BASIN AND PROVIDE ORGANIC WETLAND SOIL AS NEEDED TO ACHIEVE 12-INCH SOIL THICKNESS WITHIN THE PROPOSED CONSTRUCTED STORMWATER WETLAND.
 5. SEED THE ENTIRE AREA WITH NEW ENGLAND WETLAND MIX, AS MANUFACTURED BY NEW ENGLAND WETLAND PLANTS, INC. AMHERST, MA.
 6. STORMWATER WETLAND AREAS SHALL BE STAKED PRIOR TO CONSTRUCTION.
 7. ALL PLANTING SHOULD OCCUR AT THE BEGINNING OR END OF THE GROWING SEASON UNLESS A WATERING PLAN IS SUBMITTED AND APPROVED BY THE ENGINEER. FALL PLANTINGS SHOULD BE DONE BEFORE THE FIRST FROST. SHRUBS SHALL BE PLANTED IN ACCORDANCE WITH PLANTINGS SHOWN ON PLAN. REFER TO PLANTING DETAIL FOR TREES AND SHRUBS. SEED MIXTURES SHALL BE SOWN IN ACCORDANCE WITH NURSERY SPECIFICATIONS. NEW ENGLAND WET MIX SHALL BE SPREAD THROUGHOUT THE REPLICATION AREAS IN ACCORDANCE WITH NURSERY SPECIFICATIONS. UPON COMPLETION OF PLANTINGS REPLICATION AREAS SHALL BE COVERED WITH CLEAN STRAW HAY AND WATERED.
 8. PLANTS SHALL BE REPLACED AS NECESSARY TO ENSURE A 75% SURVIVAL RATE.
 9. EROSION CONTROLS SHALL BE REMOVED PRIOR TO ISSUANCE OF A CERTIFICATE OF COMPLIANCE.

- C. OVERSIGHT/MONITORING
1. INSPECTIONS BY THE ENGINEER SHOULD OCCUR AT THE FOLLOWING POINTS:
 - 1.1. AFTER FINAL ROUGH GRADING OF THE BOTTOM AND BEFORE PLACEMENT OF THE 12-INCH ORGANIC WETLAND SOIL.
 - 1.2. AFTER PLACEMENT AND FINAL GRADING OF THE WETLAND SOIL.
 - 1.3. DURING PLANTING AND SEEDING.
 - 1.4. AFTER ONE GROWING SEASON TO OBSERVE VEGETATION DEVELOPMENT AND REGULATORY COMPLIANCE.
 - MONITORING SHALL INCLUDE THE DOCUMENTATION AND REMOVAL OF INVASIVE SPECIES.
 - 1.5. AFTER TWO GROWING SEASONS TO DETERMINE VEGETATION DEVELOPMENT AND REGULATORY COMPLIANCE.

- D. EROSION CONTROL SPECIFICATIONS
1. WORK SHALL BE PERFORMED DURING A DRY PERIOD, OR WHEN LESS THEN A 1/4" OF RAIN IS EXPECTED IN A 24 HOUR PERIOD.
 2. DURING CONSTRUCTION OF THE CONSTRUCTED STORMWATER WETLAND AREA IF AN EXCESSIVELY WET PERIOD OCCURS AND THE AREA BECOMES PONDED, THE TEMPORARY PUMPING STATION SHALL BE USED TO DIVERT WATER TO AN ENPAC BOSS DEWATERING FILTER BAG, OR EQUAL.
 3. DURING CONSTRUCTION OF THE CONSTRUCTED STORMWATER WETLAND AREA IF DRAUGHT CONDITIONS OCCUR THE CONTRACTOR SHALL MAINTAIN SOIL MOISTURE CONTENT UTILIZING SPRINKLERS TO ENSURE GERMINATION CAN OCCUR WITHIN THE SUBJECT AREA.
 4. RESTORE ALL SLOPES IMMEDIATELY UPGRADIENT TO WETLAND AREAS BY HYDROSEEDING USING "NEW ENGLAND CONSERVATION SEED MIX" (UPLAND SEED MIX) WITH A POLYACRYLAMIDE TACKIFIER AND MULCH. THE APPLICATION RATE OF THE UPLAND SEED MIX SHALL BE 1 LB/1750 S.F.

CONSTRUCTED STORMWATER WETLAND #1 - SITE PLAN VIEW

SCALE: 1" = 20'

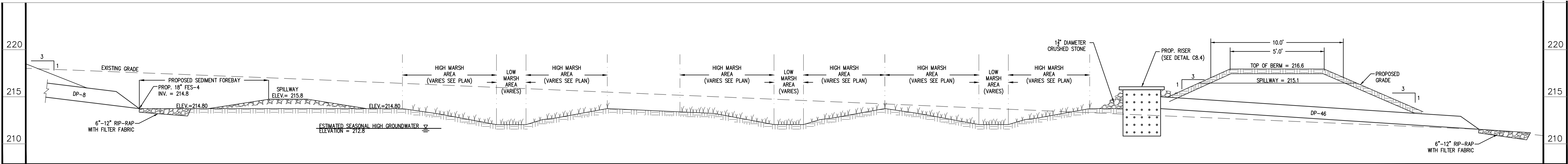
HIGH MARSH PLANTING SCHEDULE

SYMBOL:	COMMON NAME:	BOTANICAL NAME:	SIZE:	SPACING:	QUANTITY:
	SWEET PEPPERBUSH	CLETHRA ALNIFOLIA	4-9' HEIGHT	AS SHOWN	33
	SWITCH GRASS	PANICUM VIRGATUM	3-6' HEIGHT	AS SHOWN	60
	WITCH HAZEL	HAMAMELIS VIRGINIANA	18-24" HEIGHT	AS SHOWN	132

LOW MARSH PLANTING SCHEDULE

SYMBOL:	COMMON NAME:	BOTANICAL NAME:	SIZE:	SPACING:	QUANTITY:
	RED OSIER DOGWOOD	CORNUS SERICEA	4-9' HEIGHT	AS SHOWN	28
	TUFTED HAIRGRASS	DESCHAMPSIA CESPITOSA	20-60" HEIGHT	AS SHOWN	25
	FOX SEDGE	CAREX VULPINOIDEA	18-24" HEIGHT	AS SHOWN	62
	INK BERRY	ILEX GLABRA	5-8" HEIGHT	AS SHOWN	77

NOTE: THE ENTIRE REPLICATION AREA WILL BE SEEDED 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. IN NEW ENGLAND, THE BEST RESULTS ARE OBTAINED WITH AN EARLY SPRING SEEDING. SUMMER SEEDING CAN BE SUCCESSFUL WITH A LIGHT MULCHING OF WEED FREE STRAW TO CONSERVE MOISTURE. LATE FALL AND WINTER DORMANT SEEDING REQUIRE A SLIGHT INCREASE IN THE SEEDING RATE. FERTILIZATION IS NOT REQUIRED UNLESS THE SOIL IS PARTICULARLY INFERTILE.

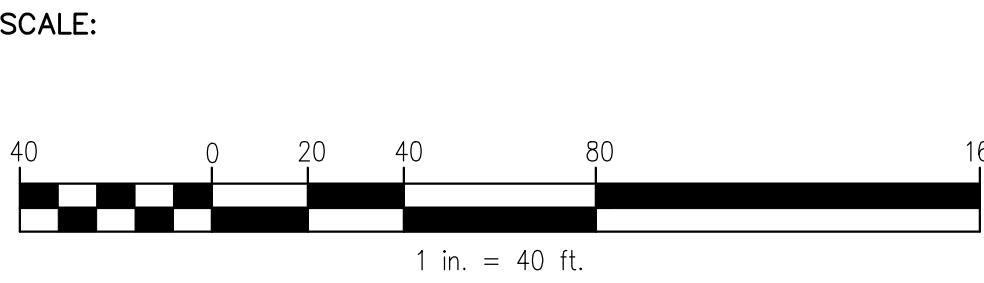


STORMWATER WETLAND #1 BERM CROSS-SECTION "A"

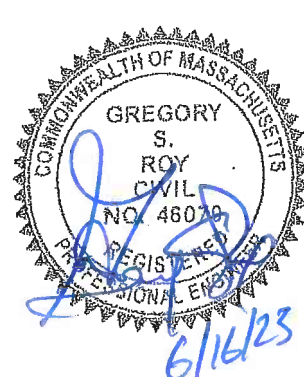
NOT TO SCALE

PREPARED BY:
DILLIS & ROY
CIVIL DESIGN GROUP
CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS
1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462
PHONE: (978) 779-6091
www.dillisandroy.com

OWNER:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS
APPLICANT:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS



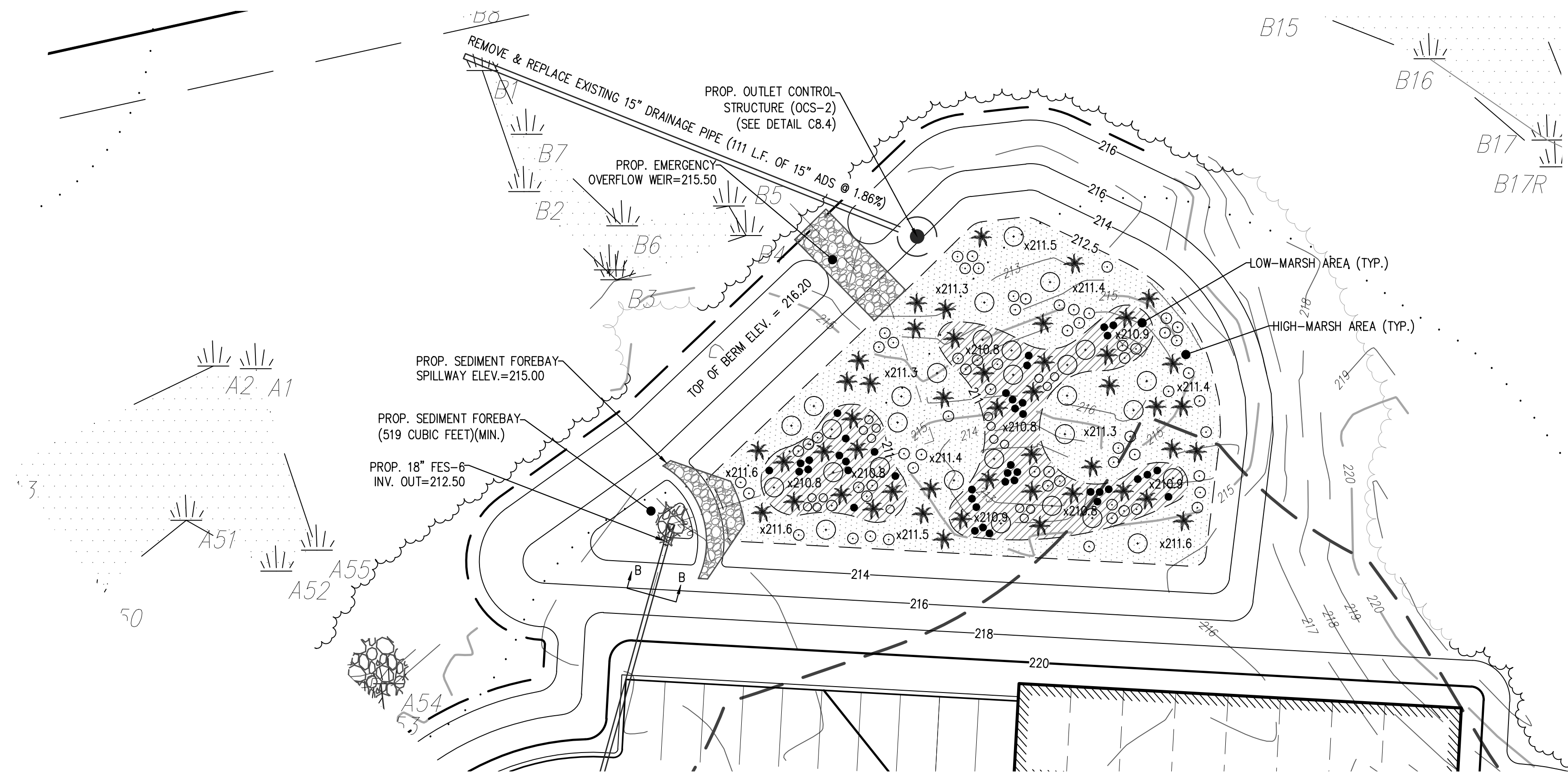
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DRAWN BY:
RPV
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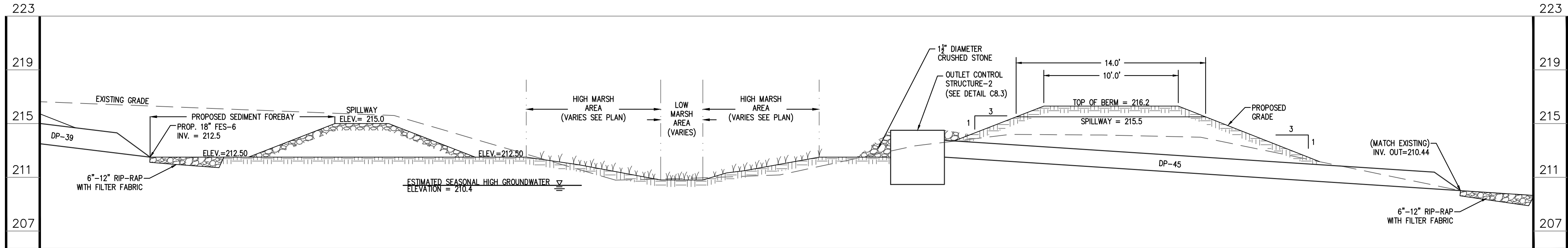
CONSTRUCTED STORMWATER WETLAND DETAILS 1			
GROTON FARMS 500 MAIN STREET GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842
DRAWING NO.
6842-GRD & DRN
SHEET NO.
C5.3



CONSTRUCTED STORMWATER WETLAND #1 - SITE PLAN VIEW

SCALE: 1" = 20'



STORMWATER WETLAND #2 BERM CROSS-SECTION "B"

NOT TO SCALE

HIGH MARSH PLANTING SCHEDULE

SYMBOL:	COMMON NAME:	BOTANICAL NAME:	SIZE:	SPACING:	QUANTITY:
	SWEET PEPPERBUSH	CLETHRA ALNIFOLIA	4-9' HEIGHT	AS SHOWN	15
	SWITCH GRASS	PANICUM VIRGATUM	3-6' HEIGHT	AS SHOWN	21
	WITCH HAZEL	HAMAMELIS VIRGINIANA	18-24" HEIGHT	AS SHOWN	42

LOW MARSH PLANTING SCHEDULE

SYMBOL:	COMMON NAME:	BOTANICAL NAME:	SIZE:	SPACING:	QUANTITY:
	RED OSIER DOGWOOD	CORNUS SERICEA	4-9' HEIGHT	AS SHOWN	14
	TUFTED HAIRGRASS	DESCHAMPSIA CESPITOSA	20-60" HEIGHT	AS SHOWN	24
	FOX SEDGE	CAREX VULPINOIDEA	18-24" HEIGHT	AS SHOWN	41
	INK BERRY	ILEX GLABRA	5-8" HEIGHT	AS SHOWN	42

NOTE: THE ENTIRE REPLICATION AREA WILL BE SEEDED WITH "NEW ENGLAND WET MIX" (WETLAND SEED MIX) AT AN APPLICATION RATE OF 1 LB/2500 S.F.
SEEDING:
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PREPARED BY:



CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1

LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisandroy.com

OWNER:

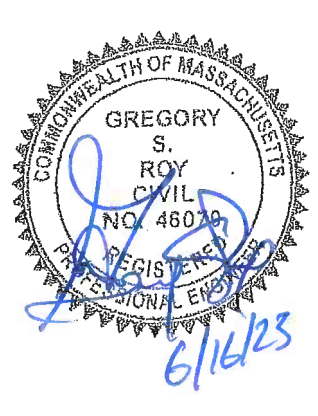
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

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2/09/2023

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GSR

DRAWN BY:

RPV

CHECKED BY:

GSR

CONSTRUCTED STORMWATER WETLAND DETAILS 2

GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

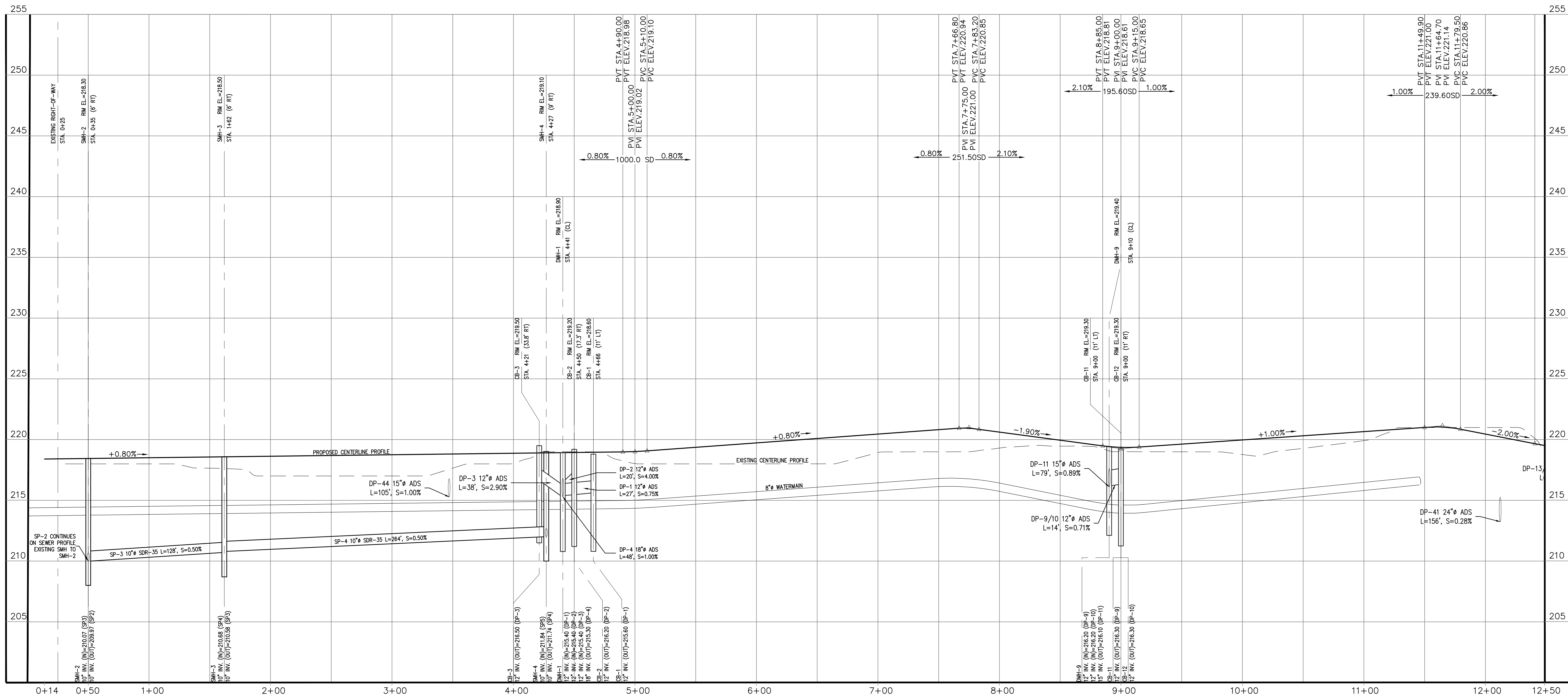
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DRAWING NO.

6842-GRD & DRN

SHEET NO.

C5.4



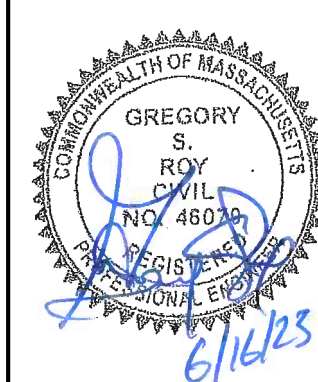
ROAD PROFILE STA. 0+00 - 12+50

SCALE: 1" = 40' (HOR.)
1" = 4' (VERT.)

PREPARED BY:
DILLIS & ROY
CIVIL DESIGN GROUP
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1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462
PHONE: (978) 779-6091
www.dillisonandroy.com

OWNER:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS
APPLICANT:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

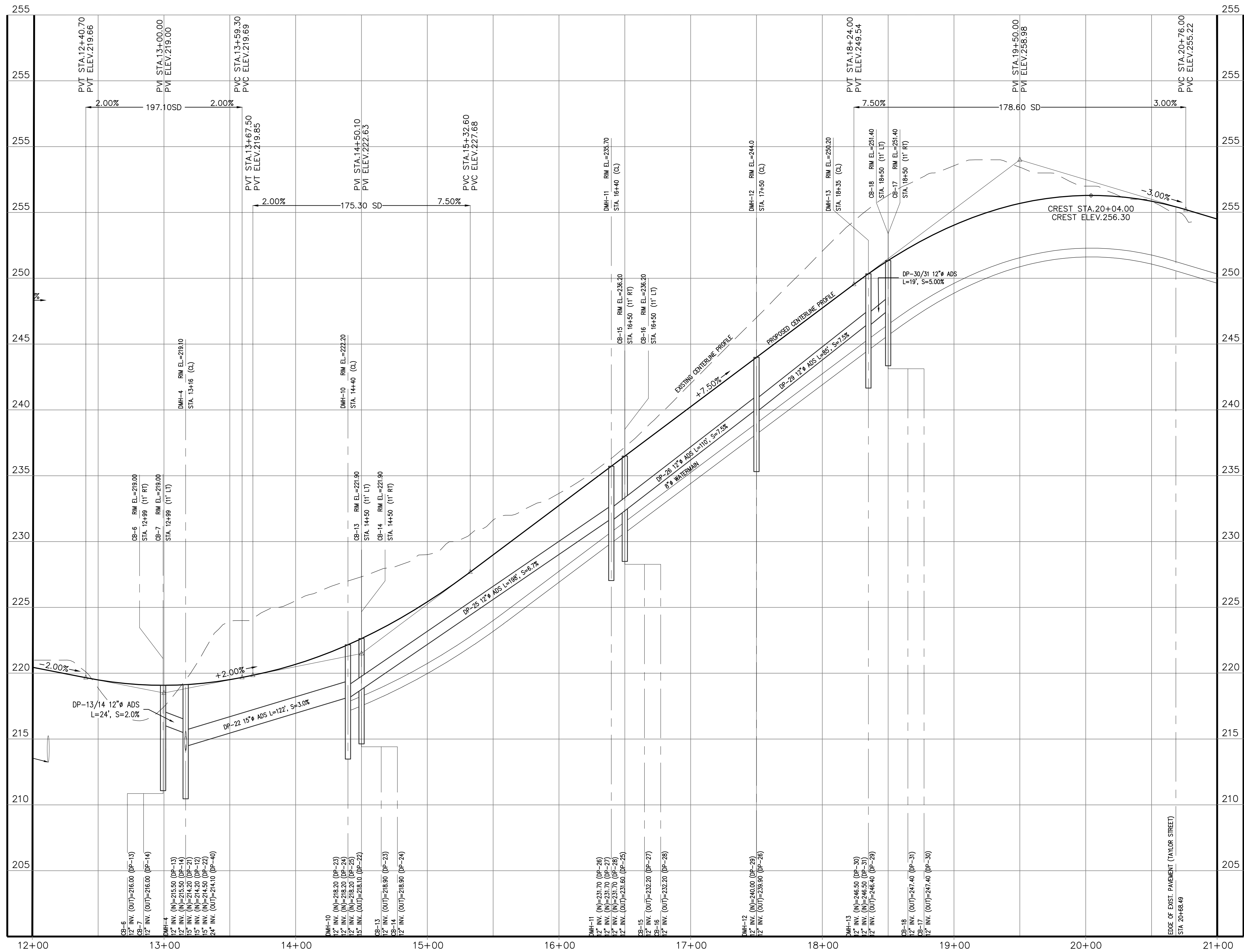
SCALE:
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2/09/2023
DESIGN BY:
GSR
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RPV
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GSR

PROFILE PLAN GROTON FARMS 500 MAIN STREET GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842
DRAWING NO.
6842-PROFILE
SHEET NO.
C6.1



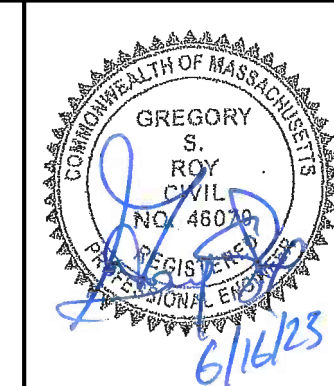
ROAD PROFILE STA. 12+00 - 21+00

SCALE: 1" = 40' (HOR.)
1" = 4' (VERT.)

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CIVIL DESIGN GROUP
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PHONE: (978) 779-6091
www.dillisandroy.com

OWNER:
500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS
APPLICANT:
500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

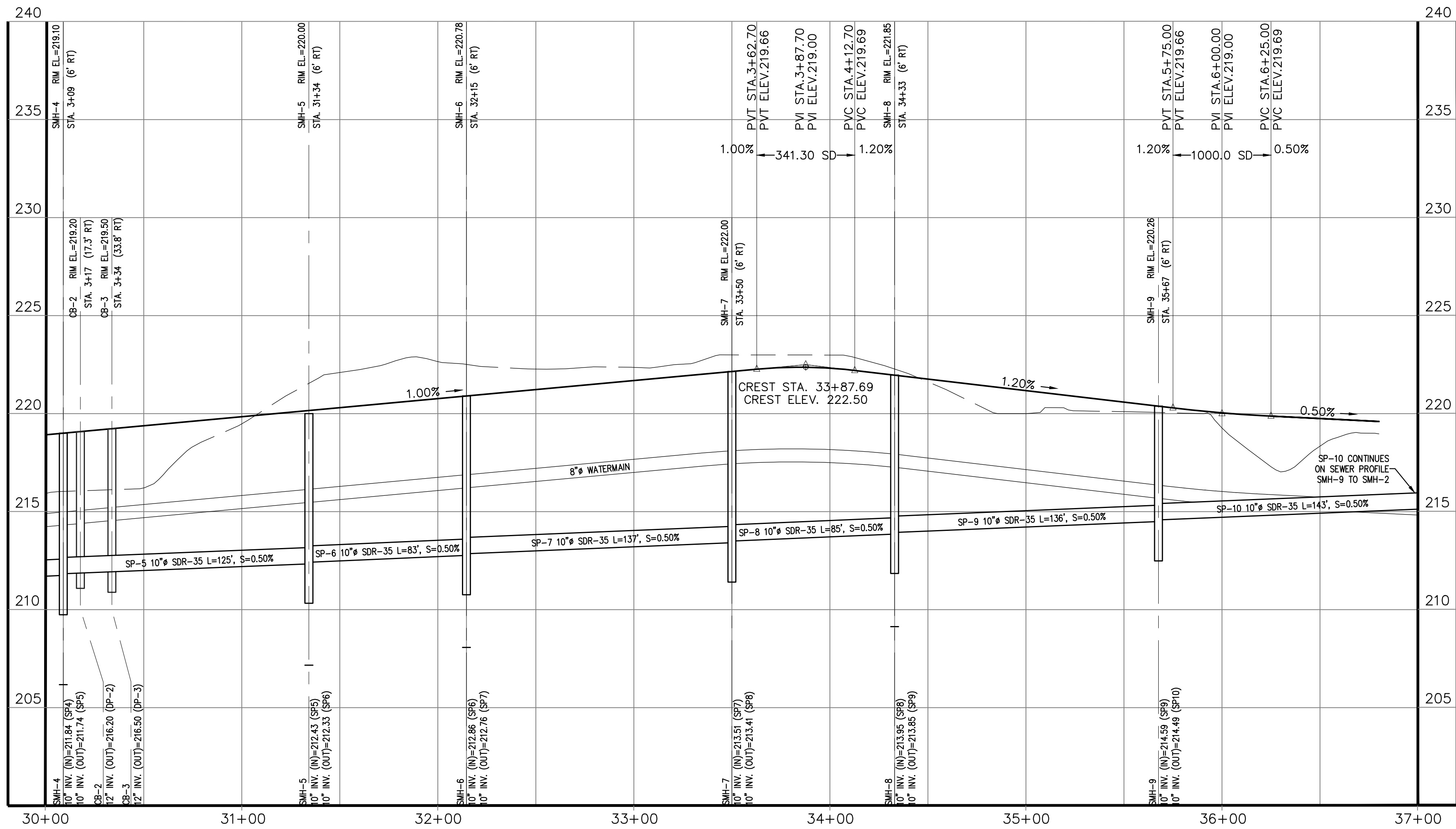
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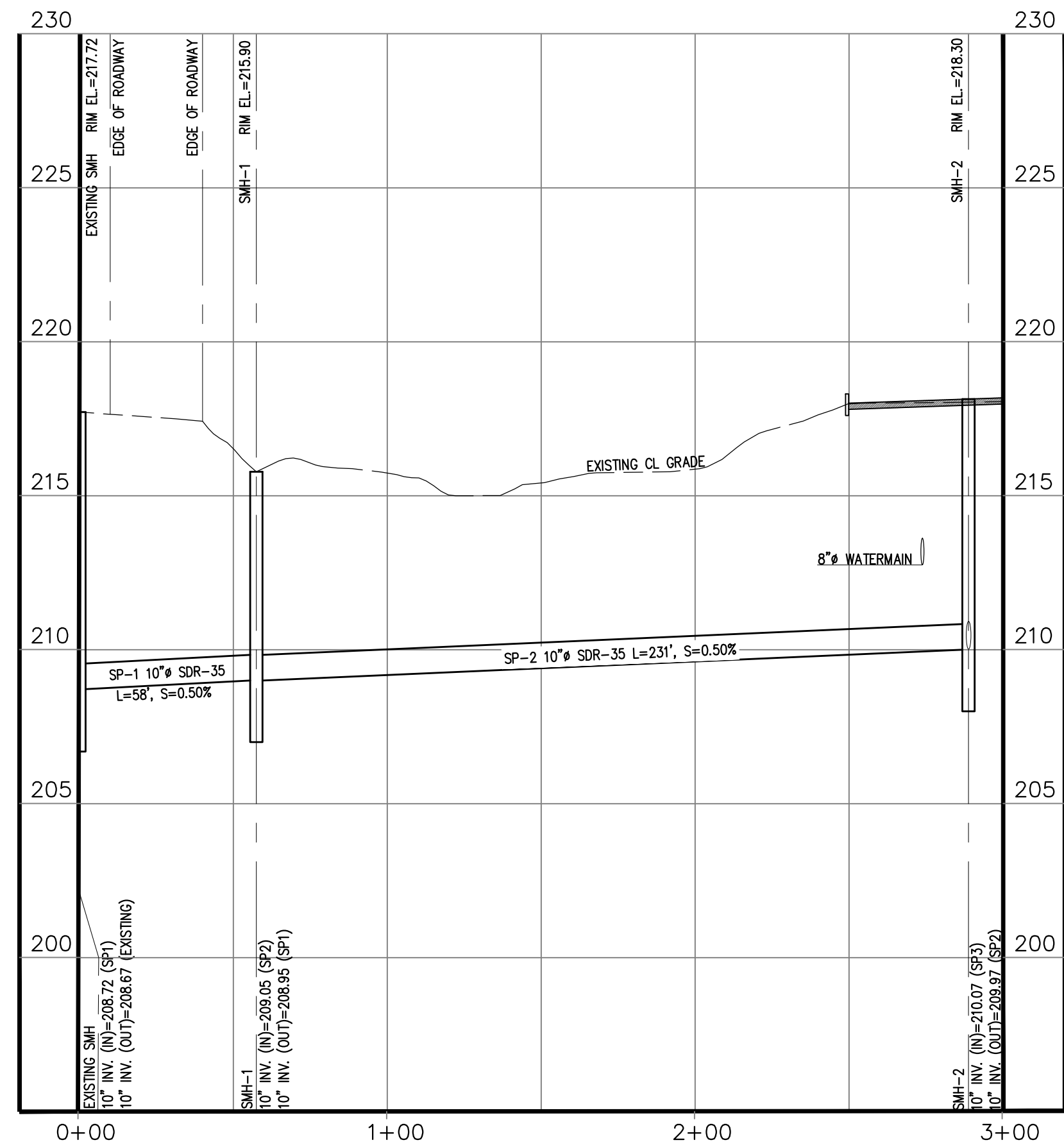
PROFILE PLAN GROTON FARMS 500 MAIN STREET GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842
DRAWING NO.
6842-PROFILE
SHEET NO.
C6.2



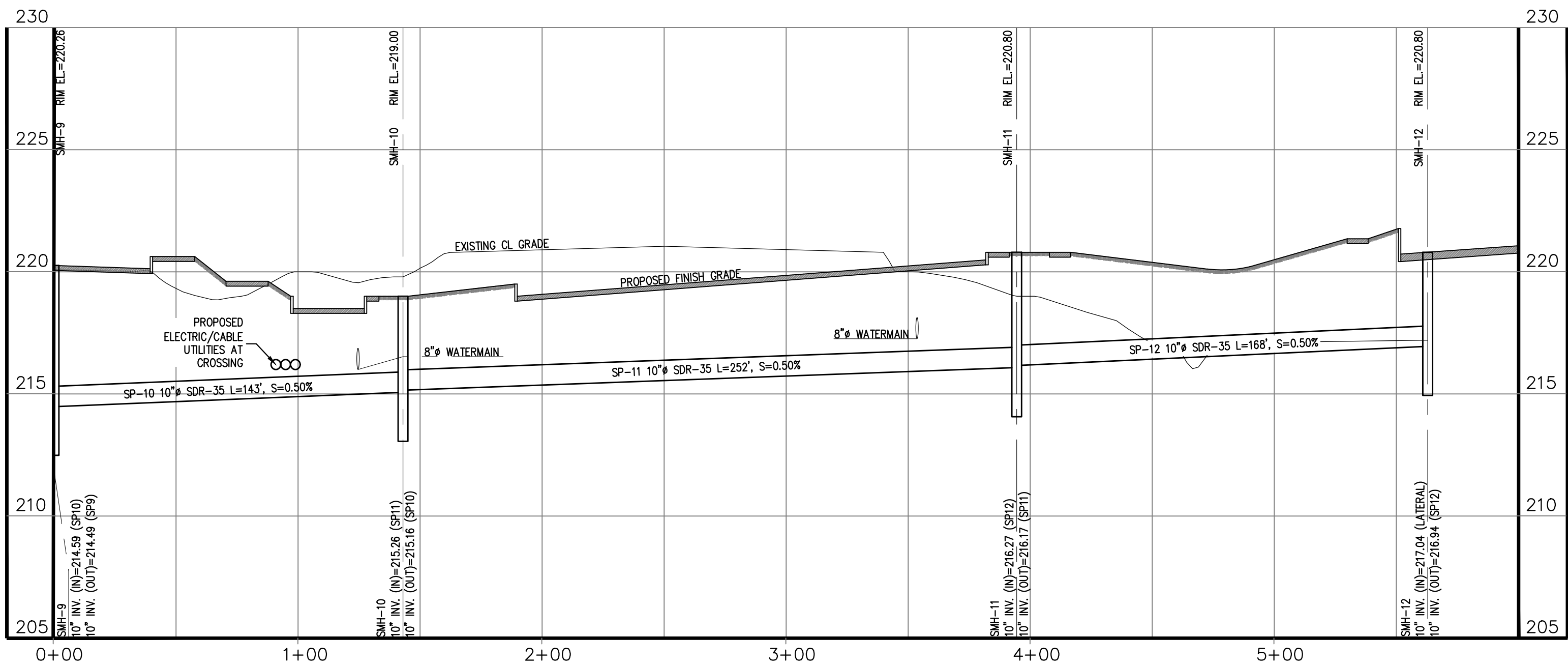
LOOP ROAD PROFILE STA. 30+00 - 36+80.07

SCALE: 1" = 40' (HOR.)
1" = 4' (VERT.)



SEWER PROFILE - EXISTING SMH 1 - SMH-2

SCALE: 1" = 40' (HOR.)
1" = 4' (VERT.)



SEWER PROFILE - SMH 9 - SMH-12

SCALE: 1" = 40' (HOR.)
1" = 4' (VERT.)

PREPARED BY:



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

OWNER:

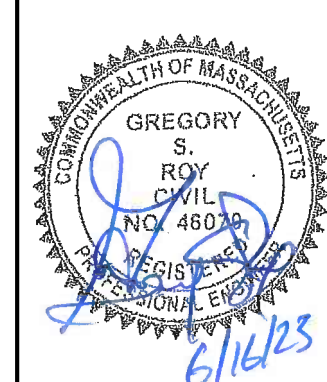
500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

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PROFILE PLAN

GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

6842

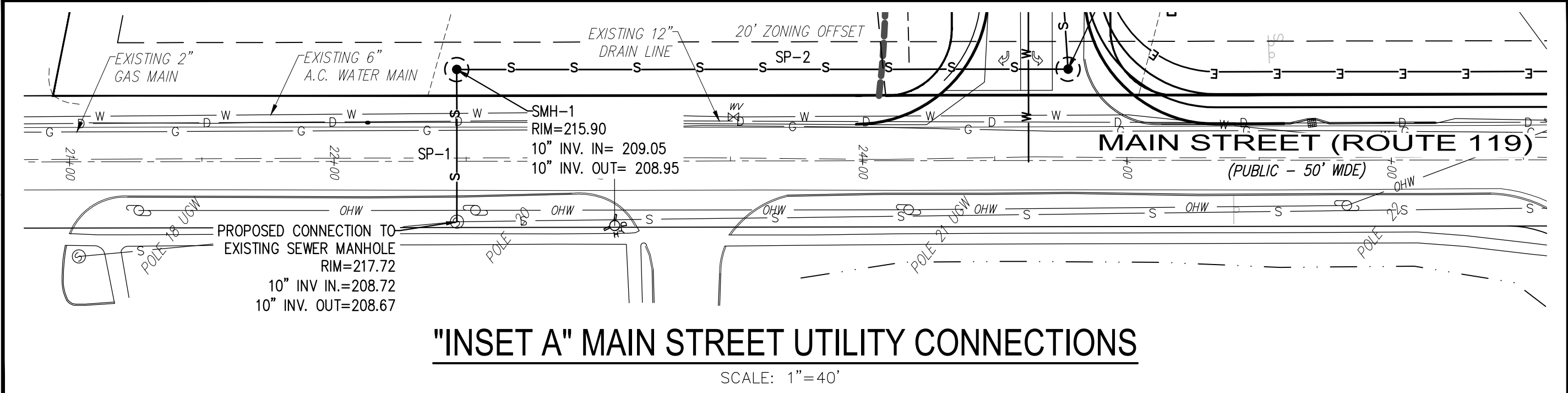
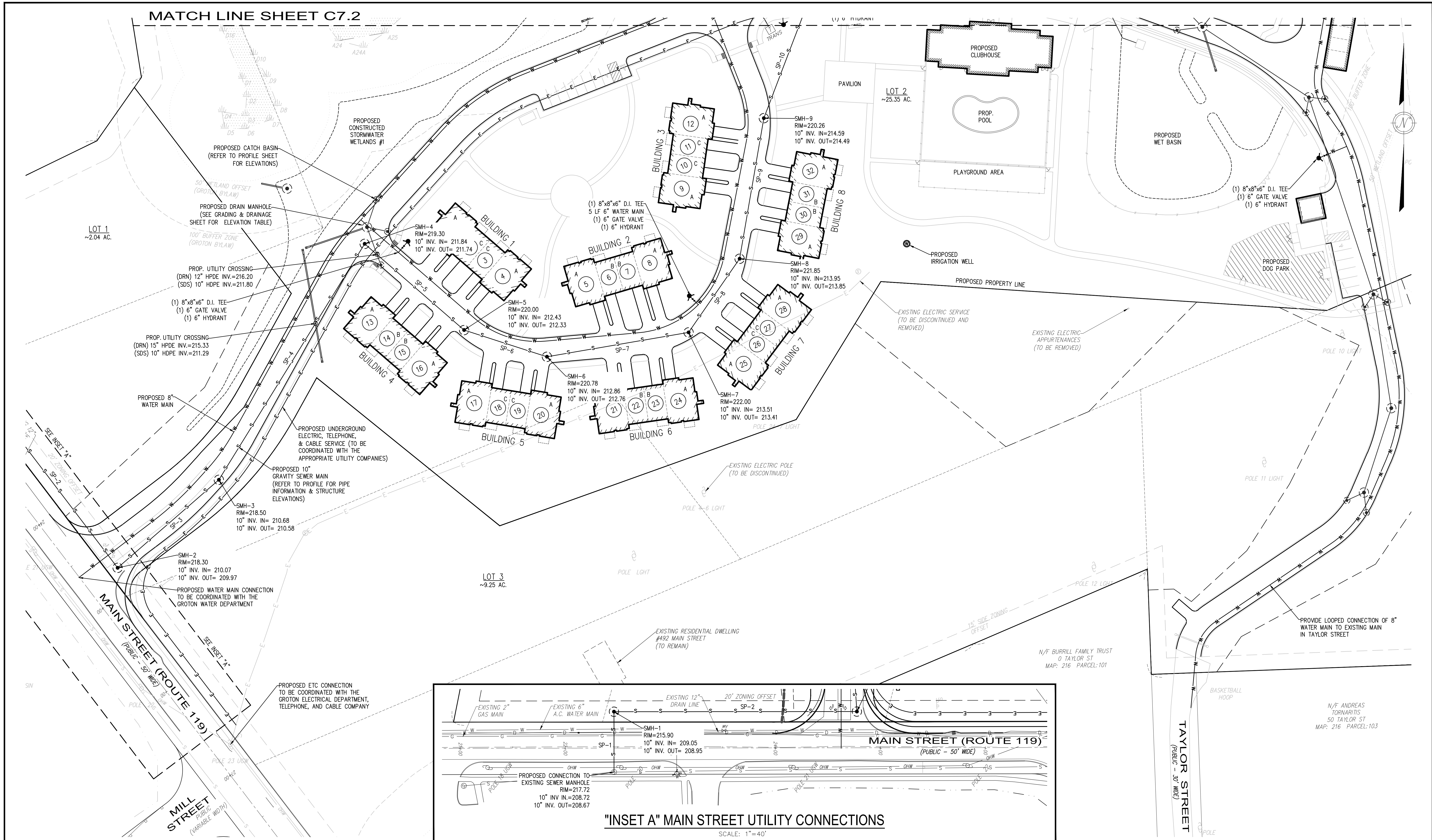
DRAWING NO.

6842-PROFILE

SHEET NO.

C6.3

MATCH LINE SHEET C7.2



PREPARED BY:

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CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisaroy.com

OWNER:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

1 in. = 40 ft.

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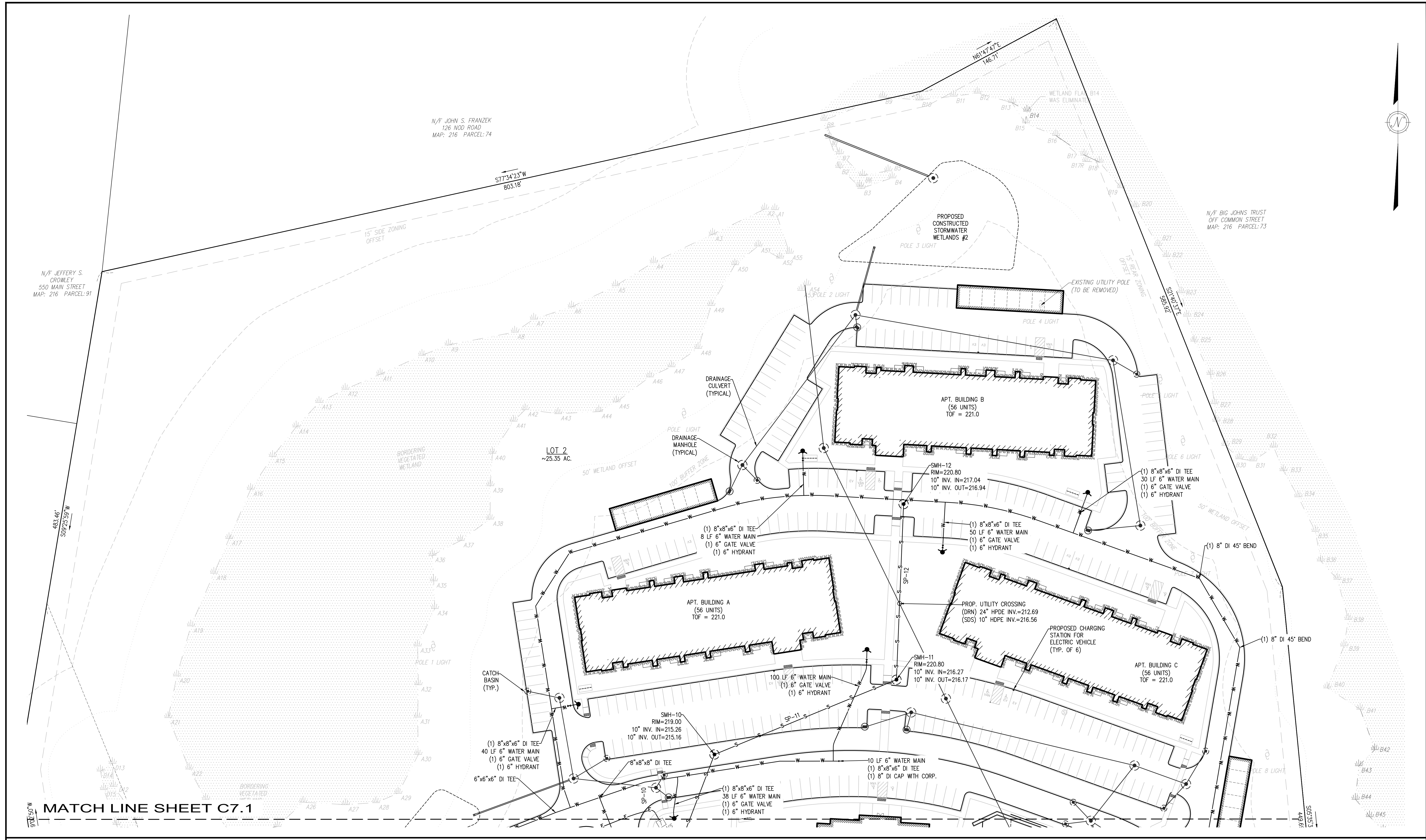
UTILITY PLAN
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO. 6842

DRAWING NO. 6842-UTILITY

SHEET NO. C7.1



PREPARED BY:



CIVIL ENGINEERS

LAND SURVEYORS

WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1
LUNENBURG, MA 01462

PHONE: (978) 779-6091
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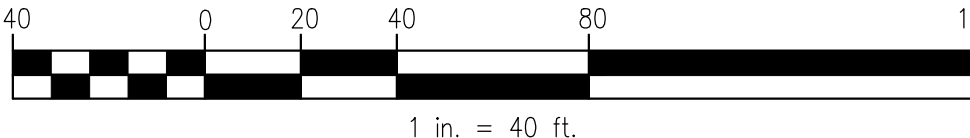
OWNER:

500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

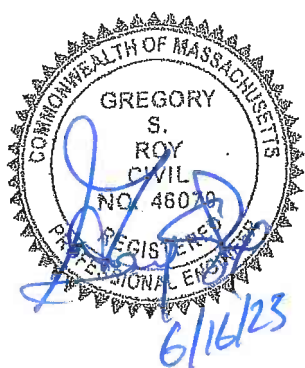
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:



1 in. = 40 ft.

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UTILITY PLAN
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

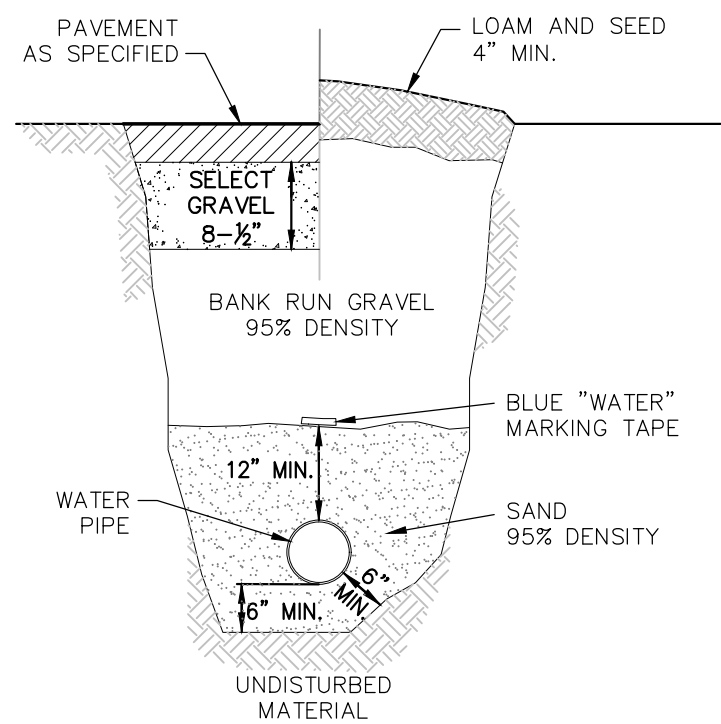
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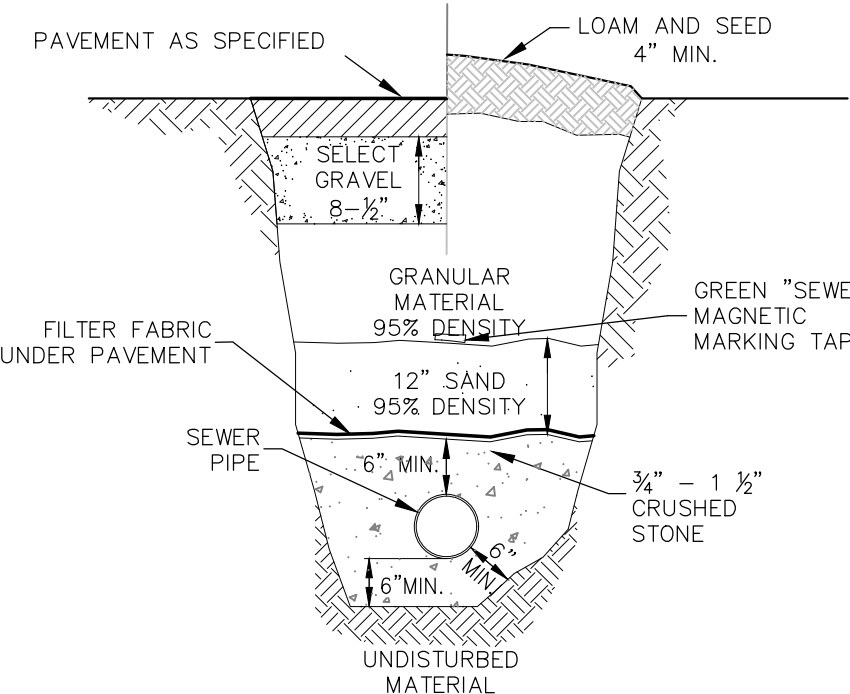
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SHEET NO.

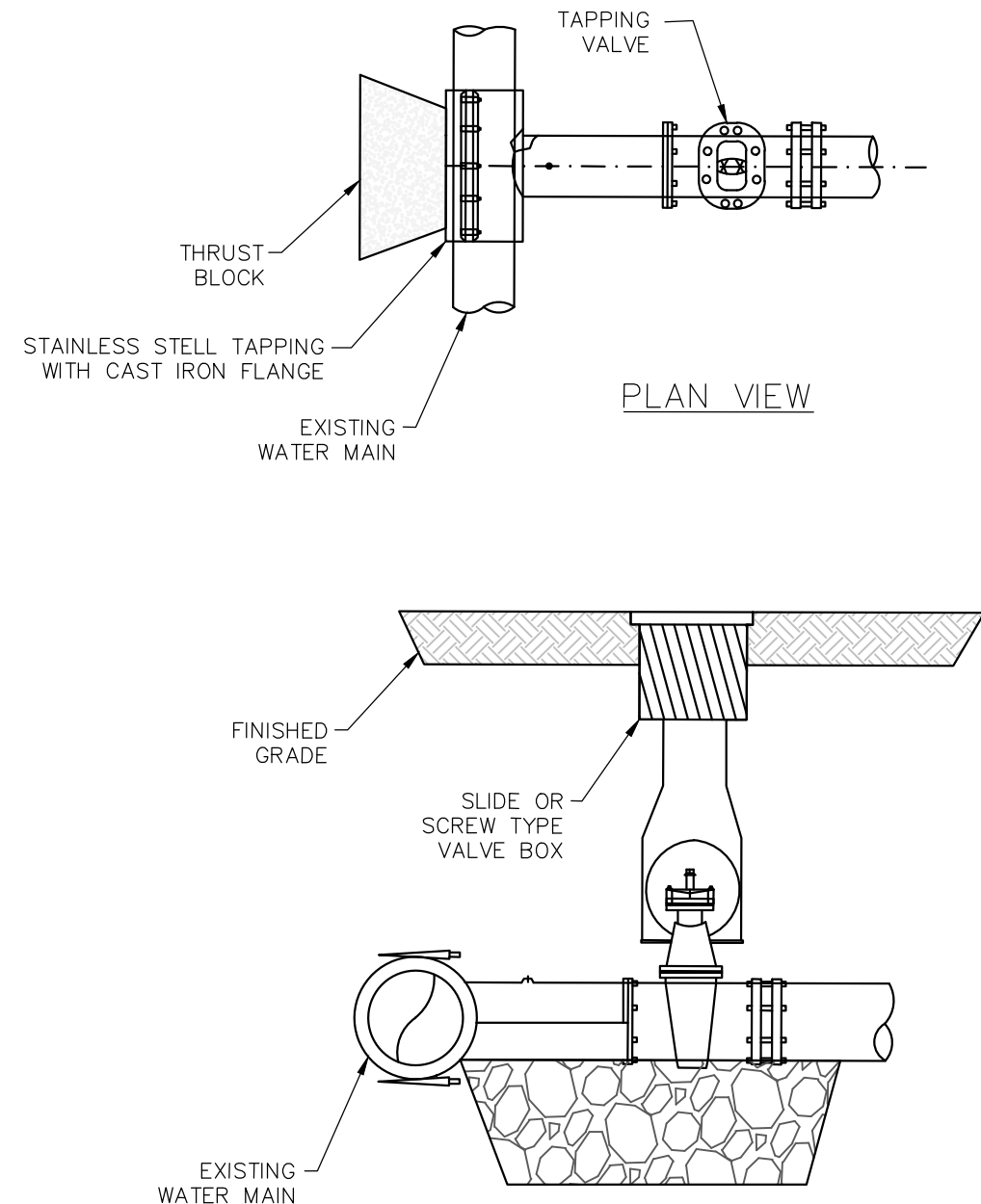
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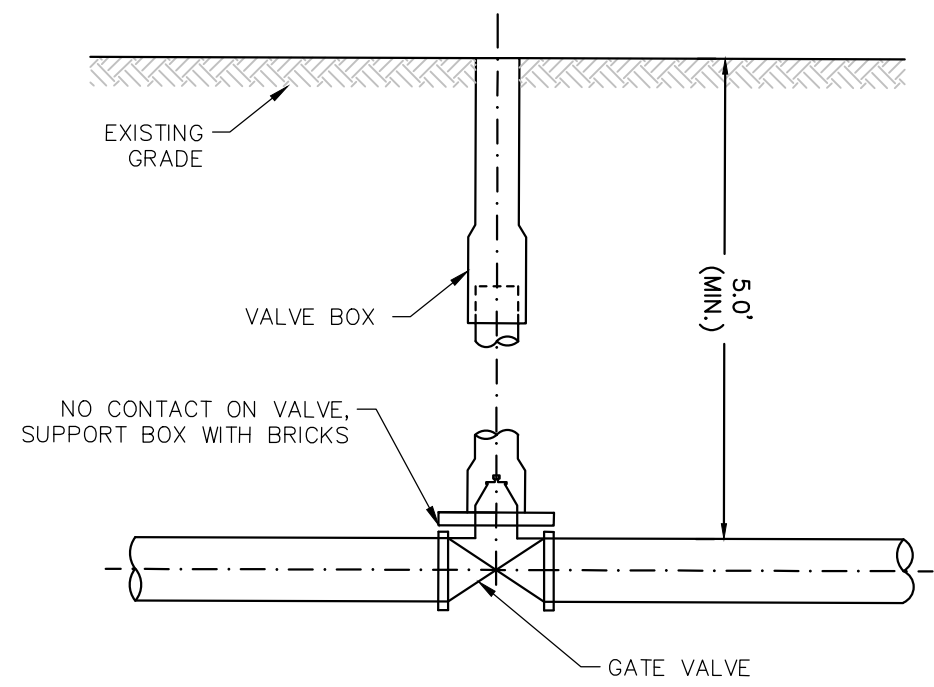
WATER MAIN IN TRENCH DETAIL
NOT TO SCALE



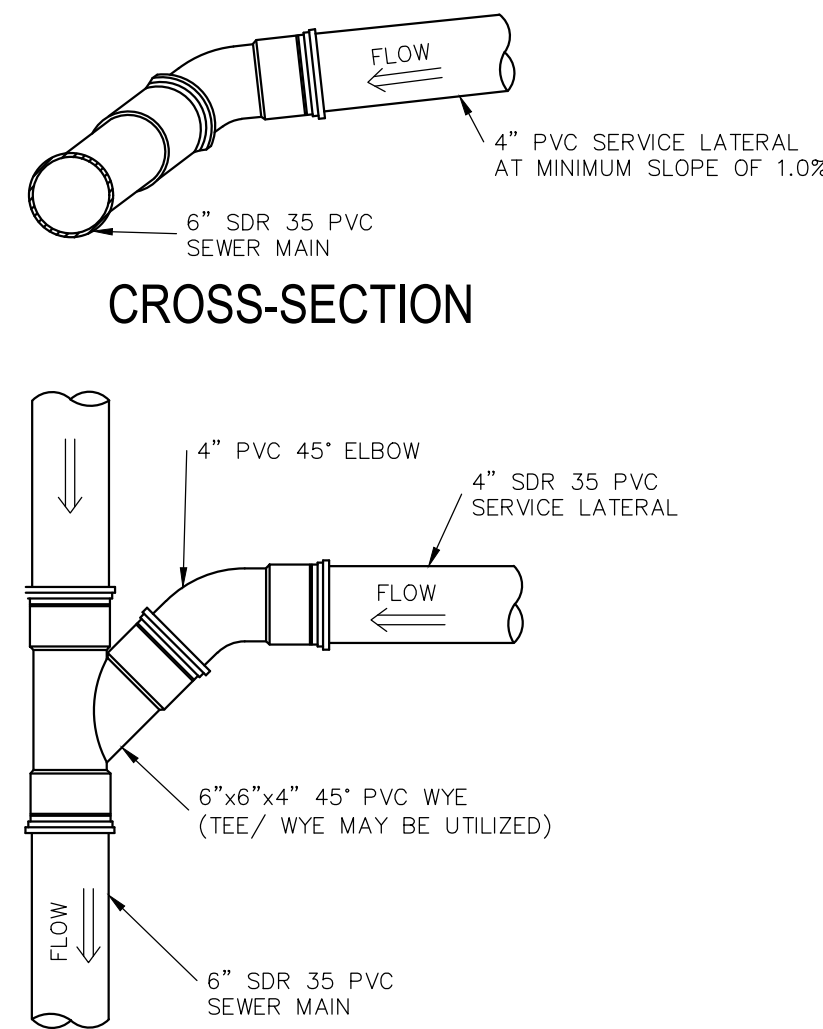
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NOT TO SCALE



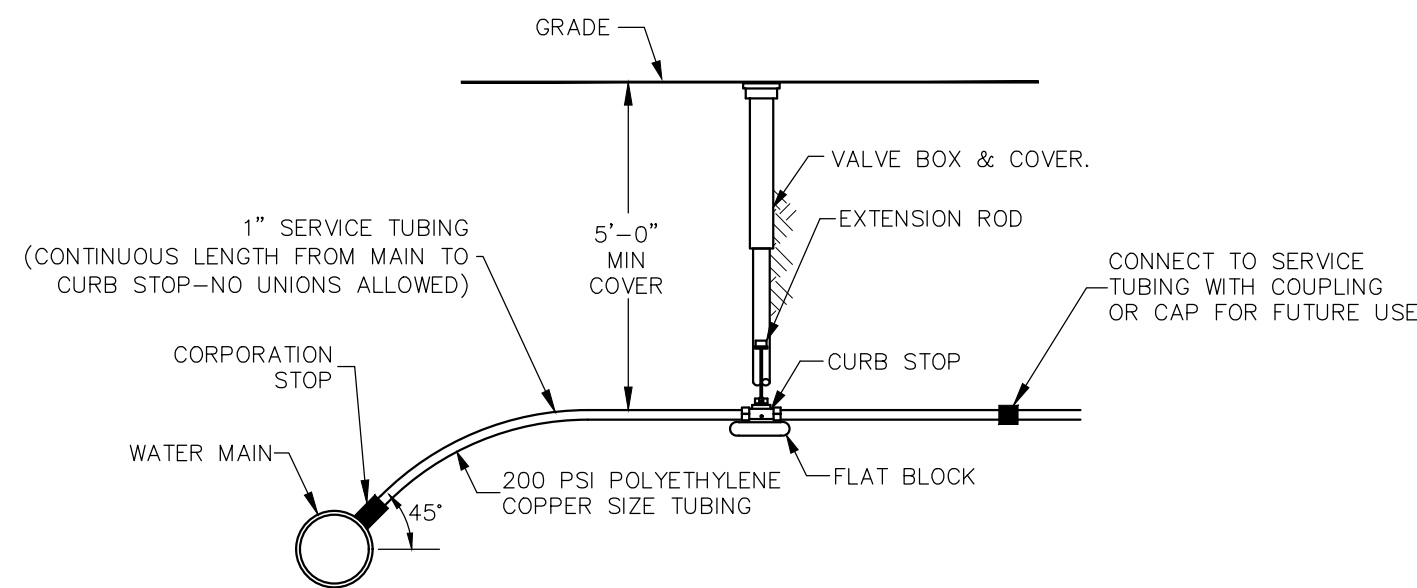
TAPPING SLEEVE AND VALVE DETAIL
NOT TO SCALE



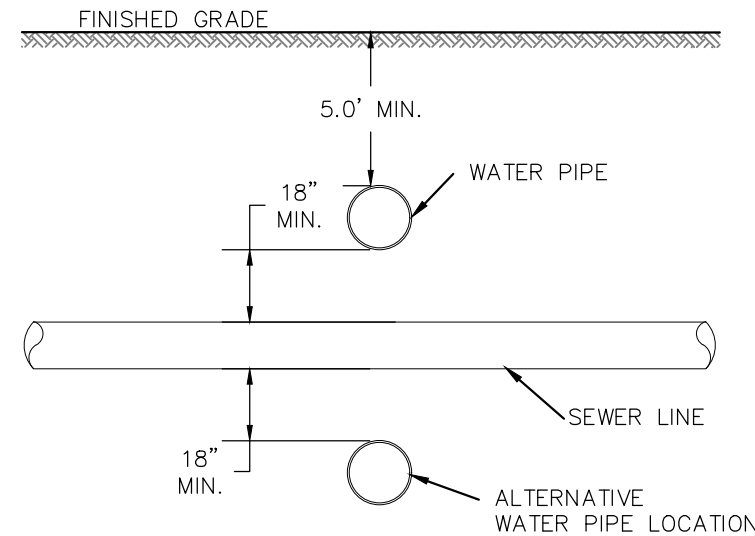
GATE VALVE DETAIL
NOT TO SCALE



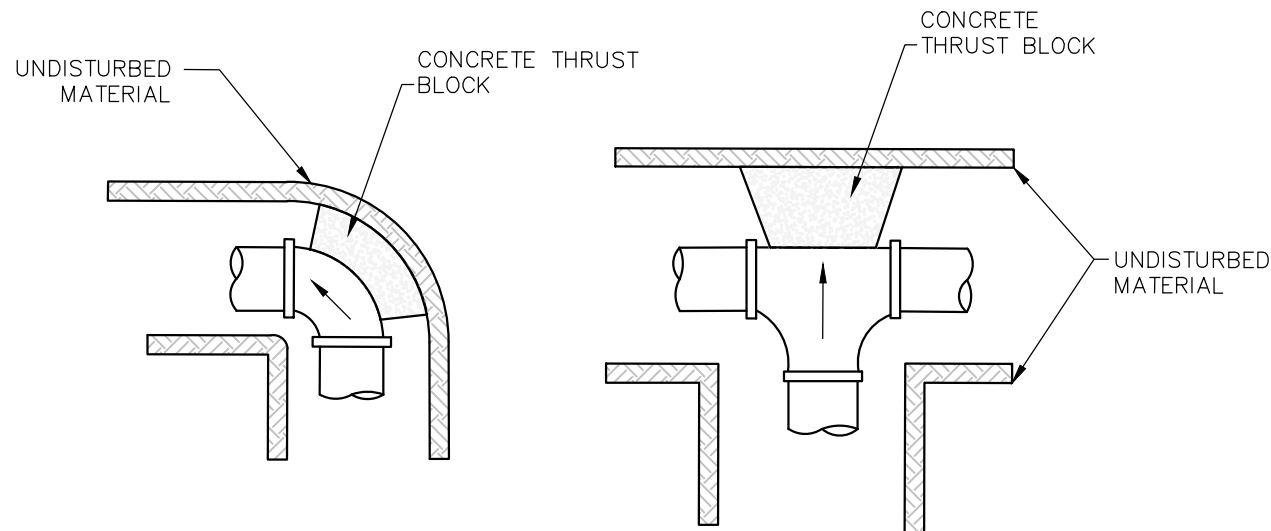
SEWER SERVICE CONNECTION
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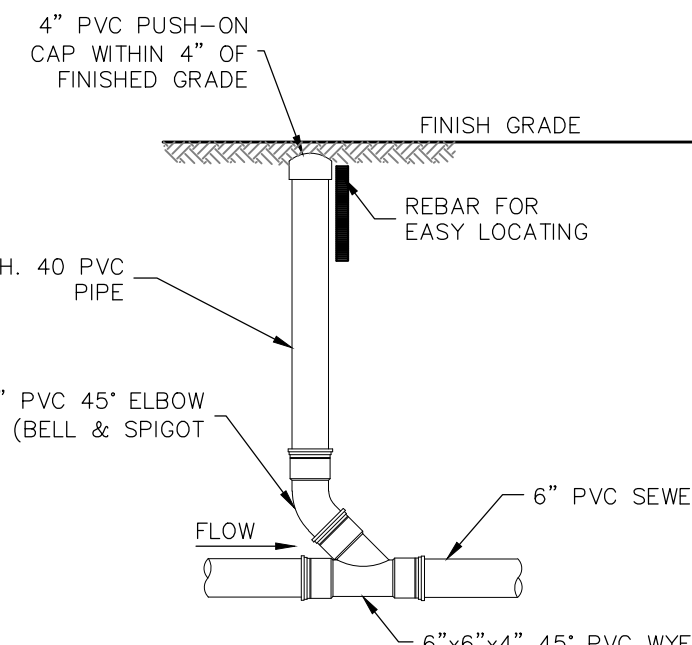
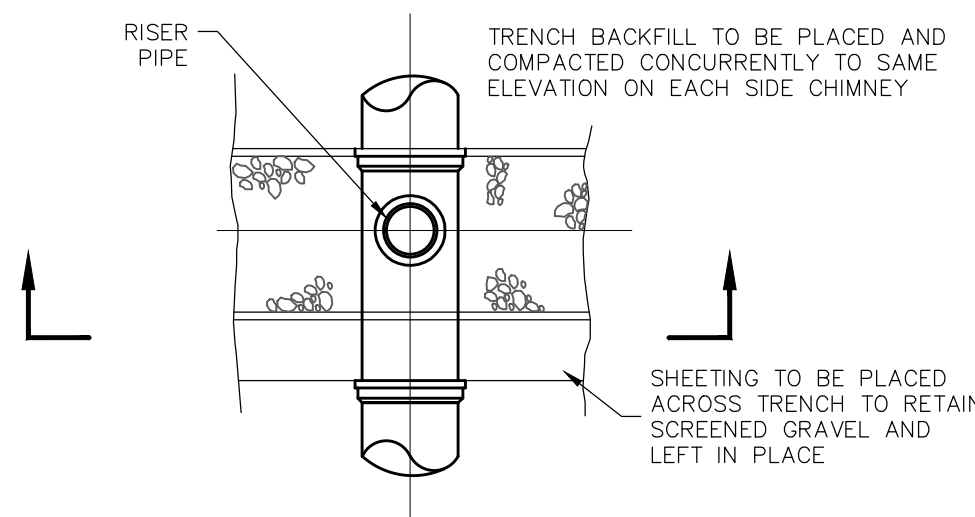
WATER SERVICE DETAIL
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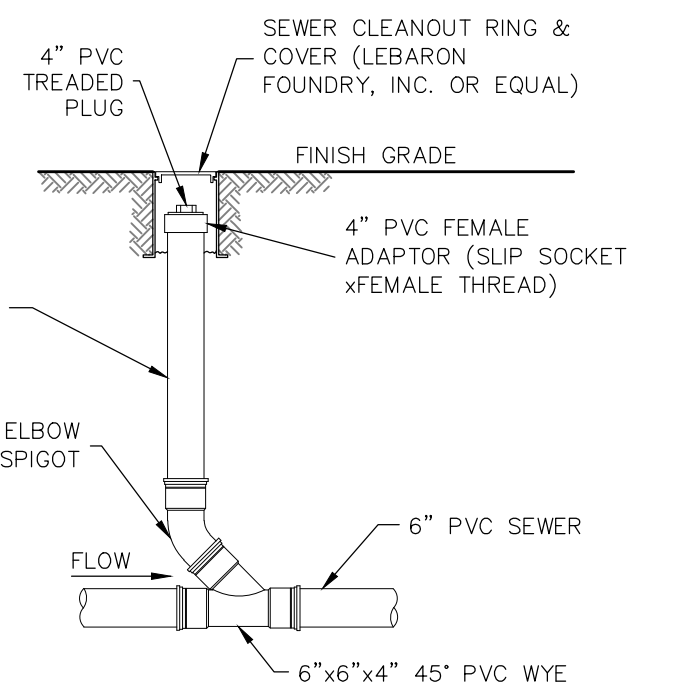
WATER AND SEWER LINE CROSSING
NOT TO SCALE



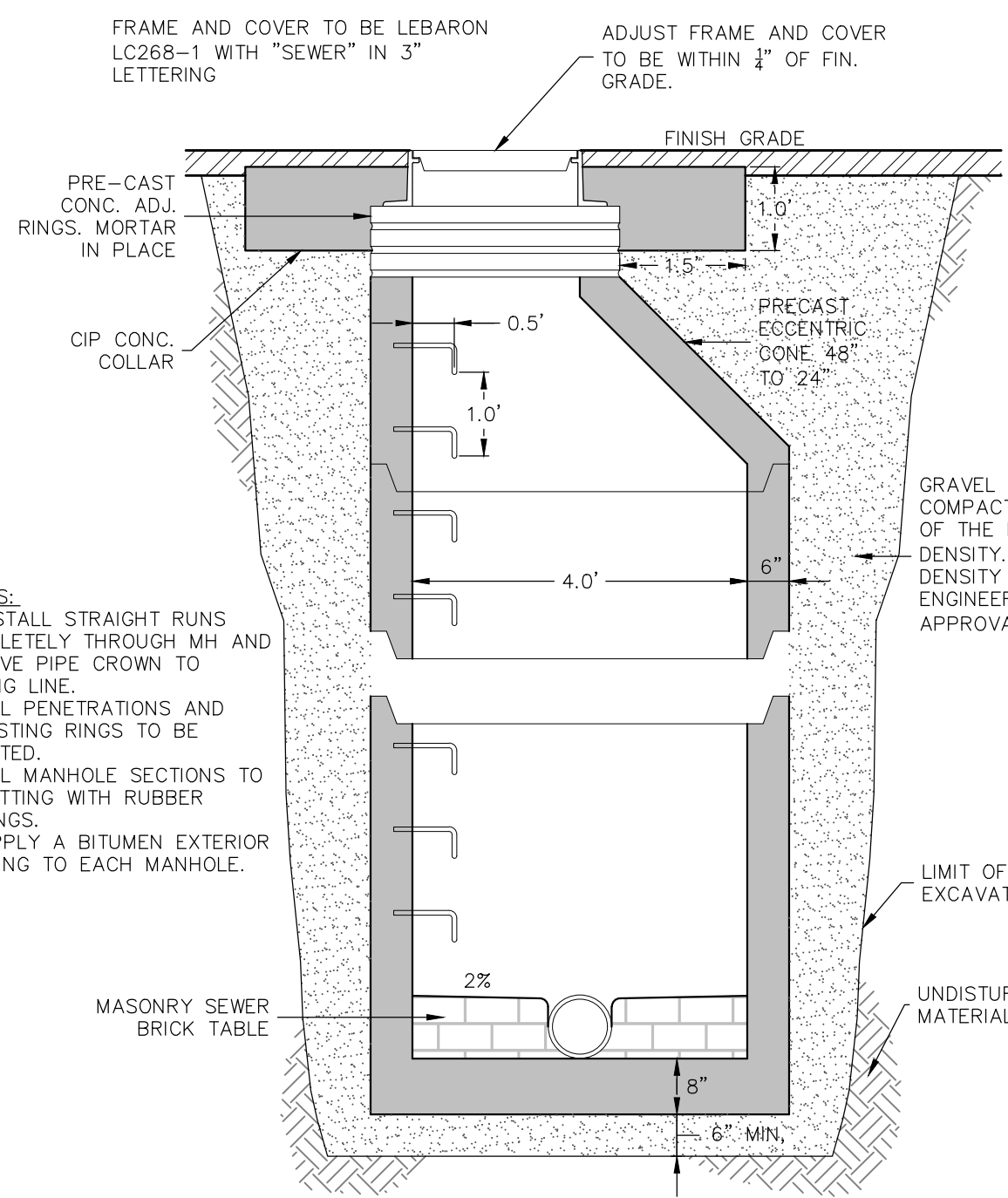
THRUST BLOCK DETAIL
NOT TO SCALE



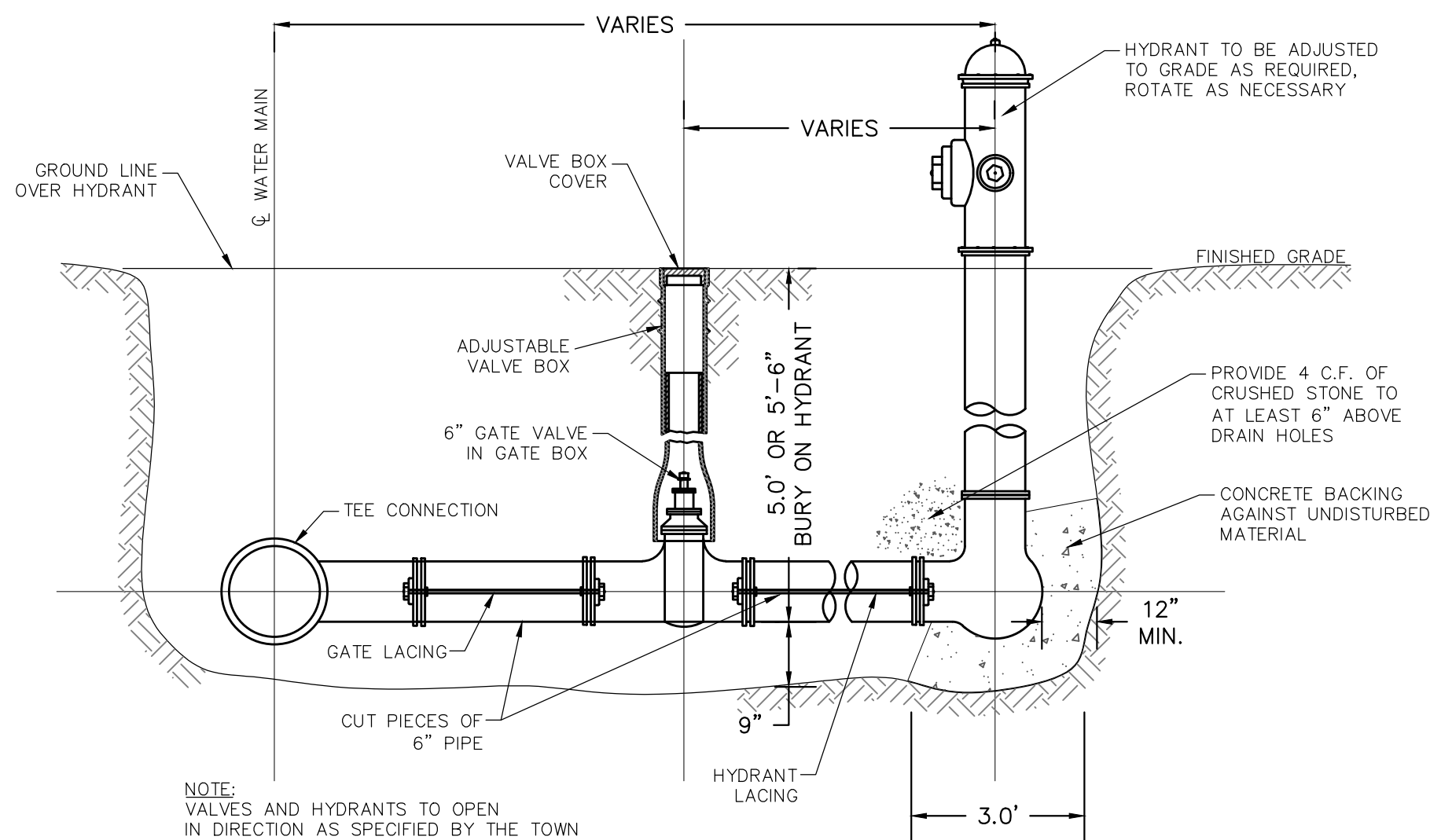
SEWER CLEANOUT DETAIL (GRASS/GARDEN AREAS)
NOT TO SCALE



SEWER CLEANOUT DETAIL (PAVED AREAS)
NOT TO SCALE

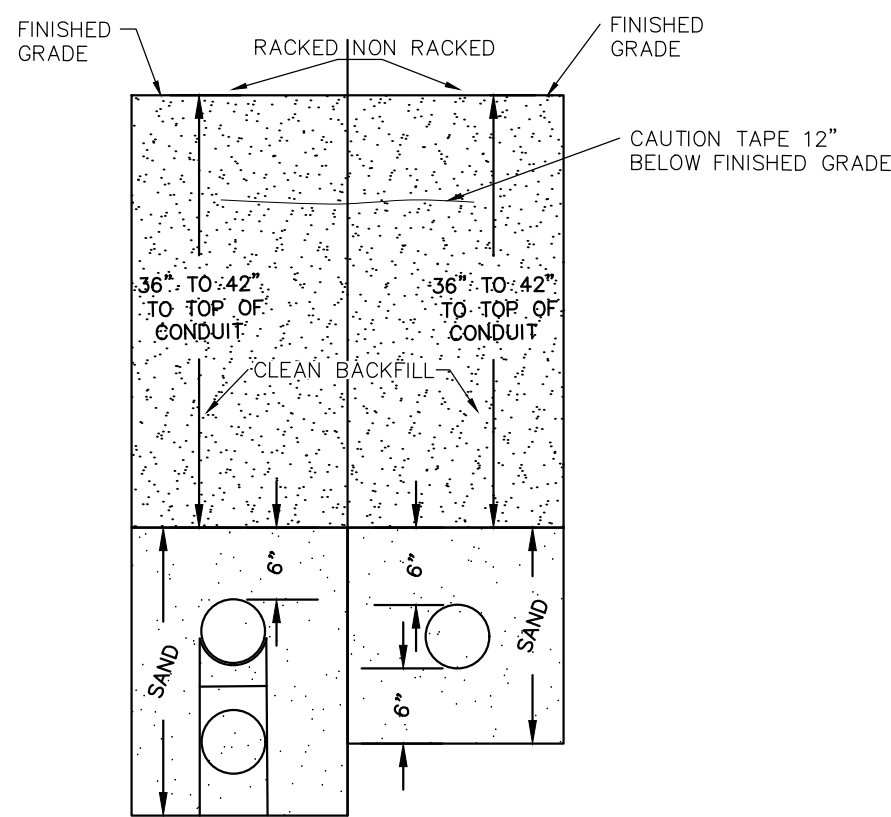


SEWER MANHOLE DETAIL
NOT TO SCALE



HYDRANT
NOT TO SCALE

- NOTES:
- 5" CONDUIT TO BE USED FOR THREE PHASE PRIMARY
 - 4" CONDUIT TO BE USED FOR SINGLE PHASE PRIMARY
 - 2.5" CONDUIT TO BE USED FOR GELD OWNED SECONDARY
 - 10" STEEL CONDUIT WITH LONG RADIUS 90 STEEL SWEEP TO BE USED AT RISER POLE FOR ALL PRIMARY.
 - ALL PRIMARY RUNS ARE TO BE UNDER 650'
 - TOTAL OF ALL BENDS FOR A SINGLE RUN ARE TO BE LESS THAN 270°
 - ALL ROAD AND DRIVEWAY CROSSINGS ARE TO BE GALVANIZED, SCHEDULE 80 OR SCHEDULE 40 ENCASED IN CONCRETE.

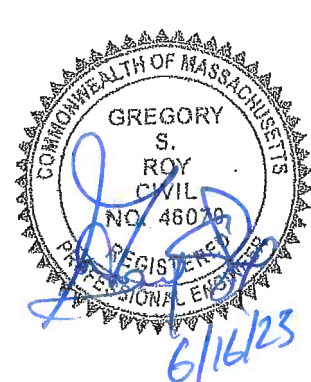


UNDERGROUND CONDUIT DETAIL
NOT TO SCALE

PREPARED BY:
DILLIS & ROY
CIVIL DESIGN GROUP
CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS
1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462
PHONE: (978) 779-6091
www.dillisandroy.com

OWNER:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS
APPLICANT:
500 MG LLC
6 LYBERTY WAY
WESTFORD, MASSACHUSETTS

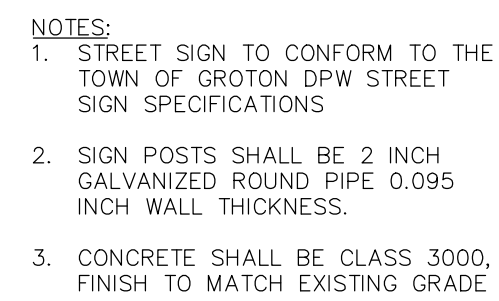
SCALE:
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DATE:
2/09/2023
DESIGN BY:
GSR
DRAWN BY:
RPV
CHECKED BY:
GSR

CONSTRUCTION DETAILS PLAN			
GROTON FARMS			
500 MAIN STREET			
GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.
6842
DRAWING NO.
6842-DETAILS
SHEET NO.
C8.1



SILT SACK DETAIL

NOT TO SCALE



ACCESSIBLE PARKING SPACE SIGN(R7-8A)

NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



NOTES:

1. REFER TO CURB DETAIL FOR SPECIFICATIONS PERTAINING TO INSTALLATION OF CURBING.
2. RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND MAAB STANDARDS.
3. DETECTABLE WARNING TILES TO BE AS MANUFACTURED BY ADA SOLUTIONS, INC.



ACCESSIBLE RAMP DETAIL #1

SCALE: 1"=4'



NOTES:

1. REFER TO CURB DETAIL FOR SPECIFICATIONS PERTAINING TO INSTALLATION OF CURBING.
2. RAMPS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND MAAB STANDARDS.
3. DETECTIBLE WARNING TILES TO BE AS MANUFACTURED BY ADA SOLUTIONS, INC.



ACCESSIBLE RAMP DETAIL #2

SCALE: 1"=4'



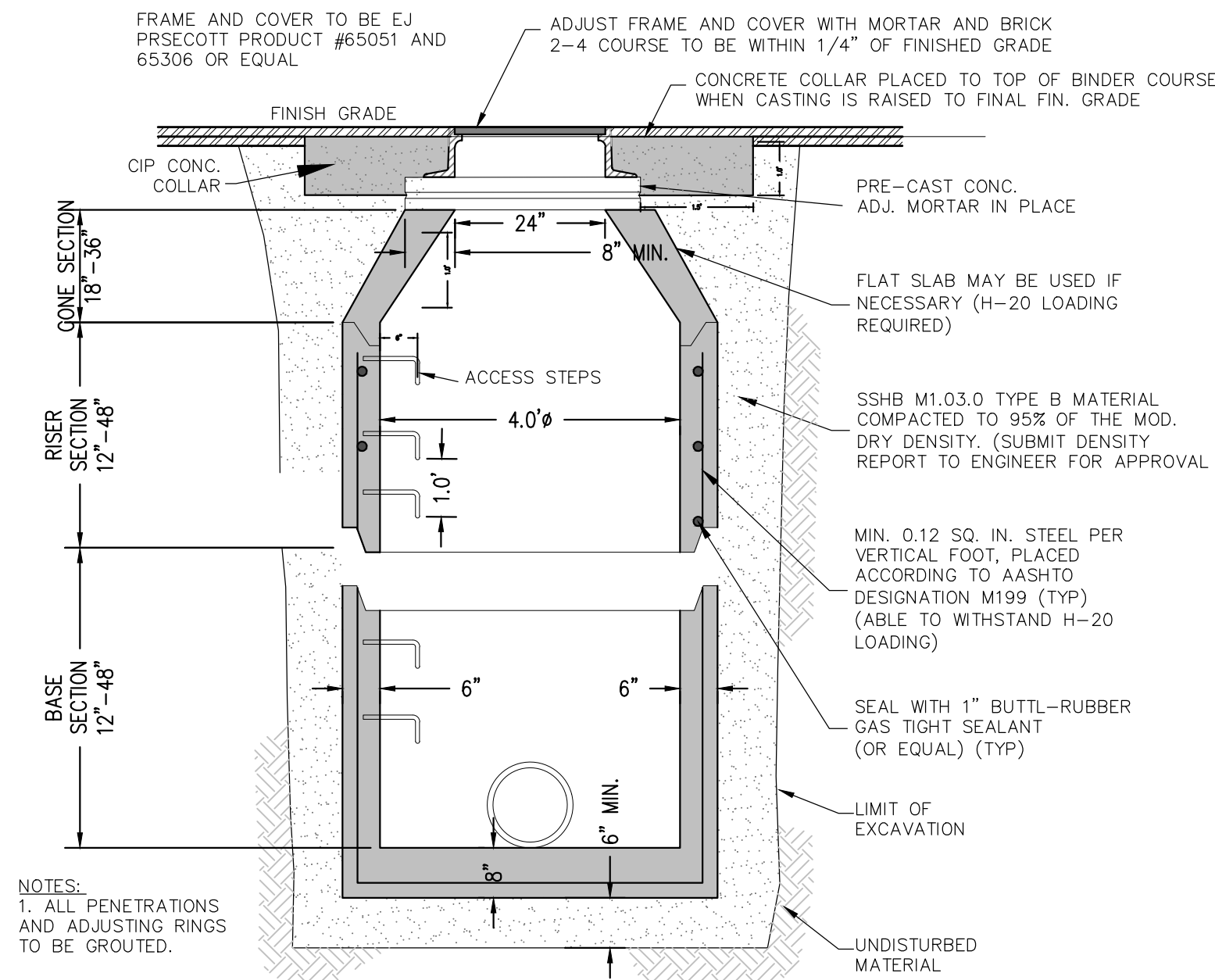
SCALE 1"=5'



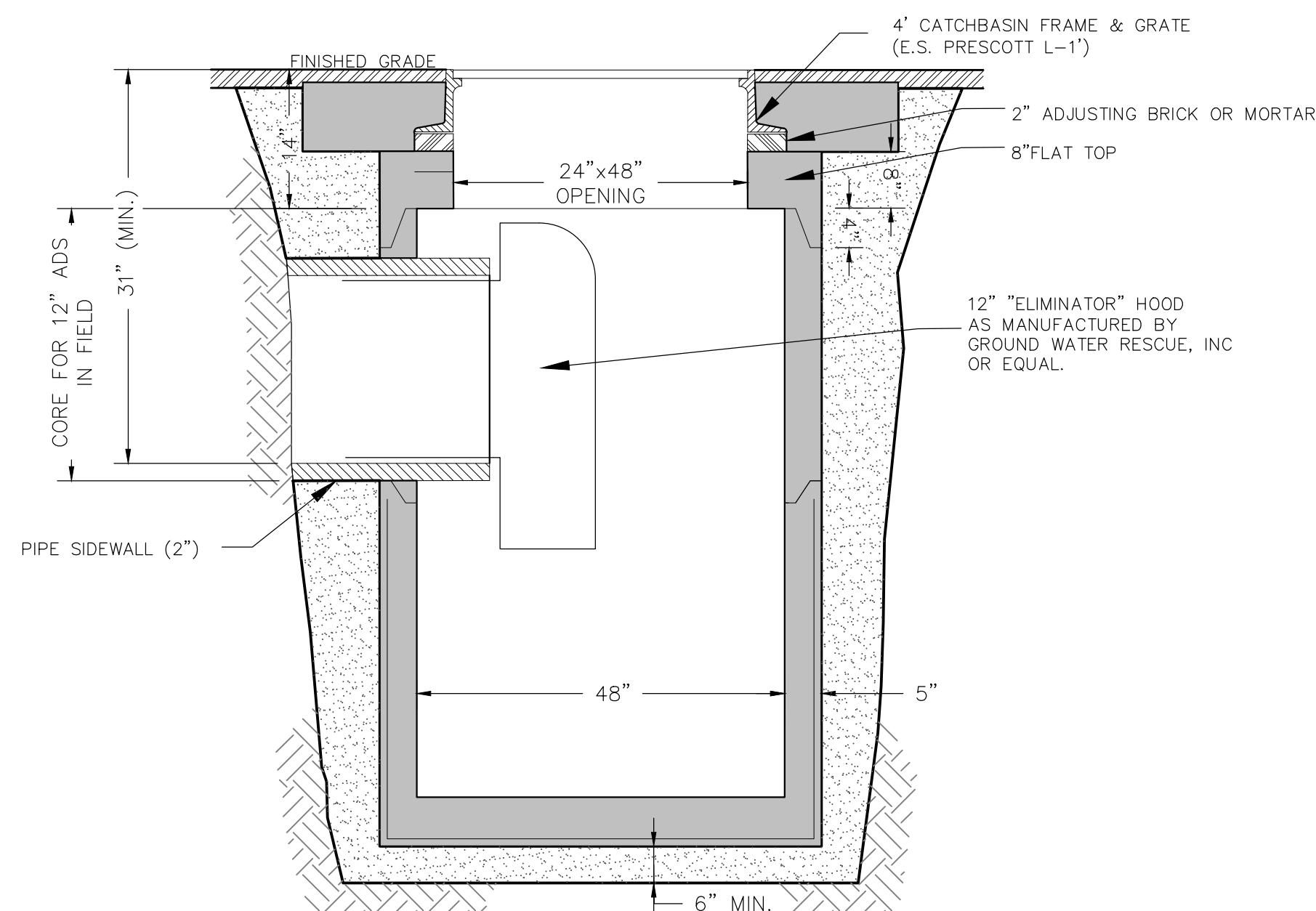
DILLIS & ROY
CIVIL DESIGN GROUP

COMMONWEALTH OF MASSACHUSETTS
GREGORY
S.
ROY
CIVIL
NO. 46032
REGISTERED
PROFESSIONAL ENGINEER
6/14/23

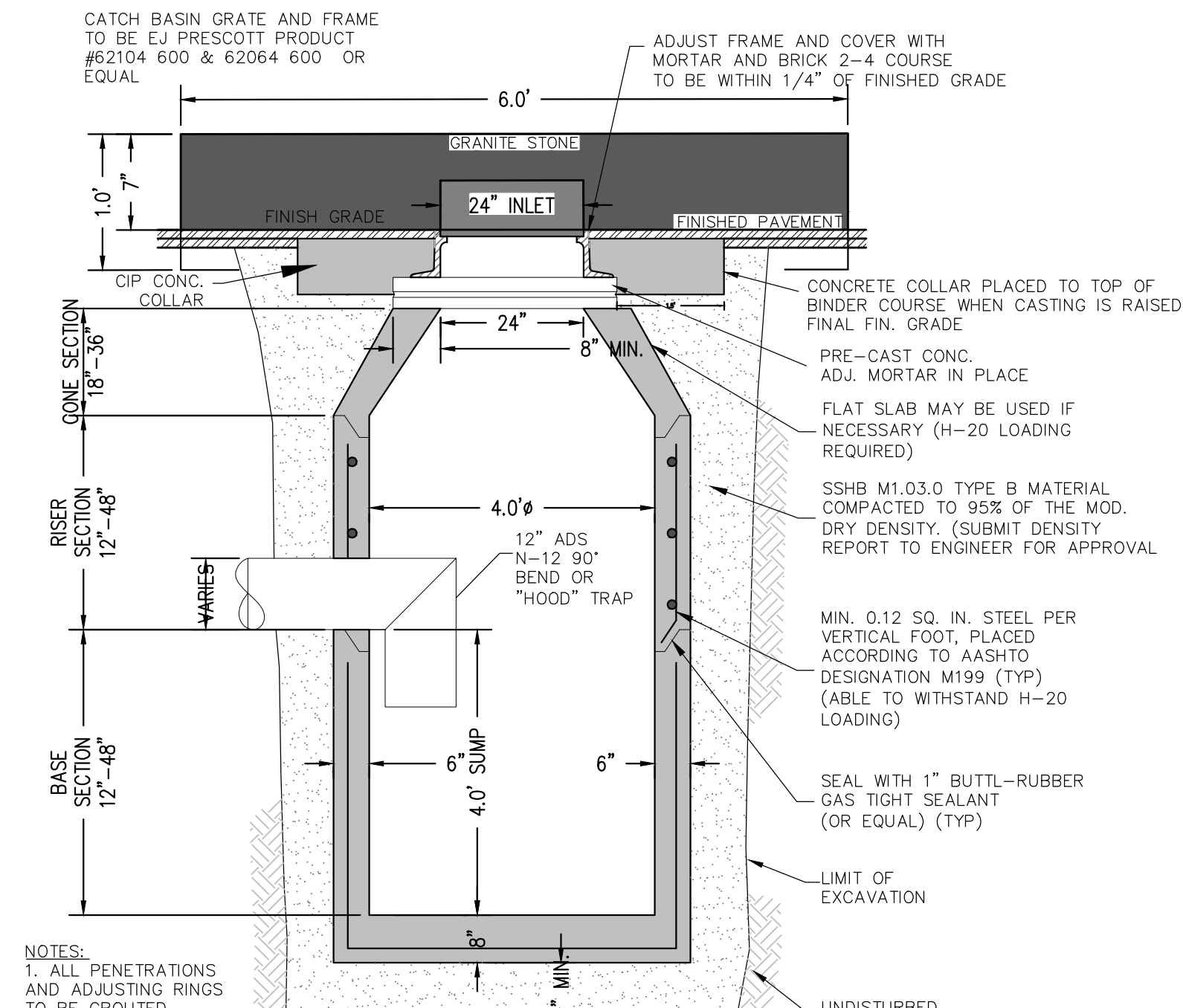
SHEET NO.
C8.2



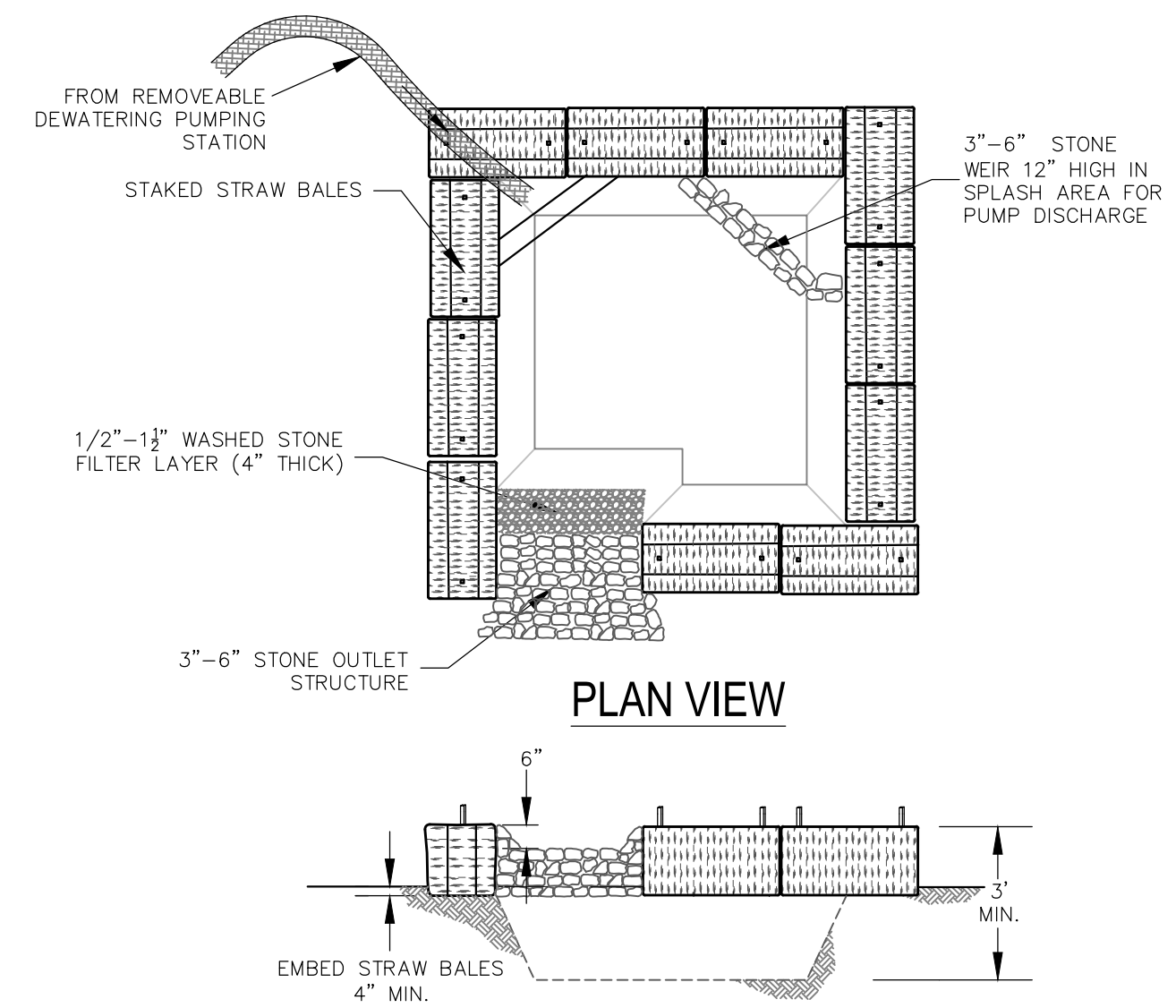
DRAIN MANHOLE DETAIL
NOT TO SCALE



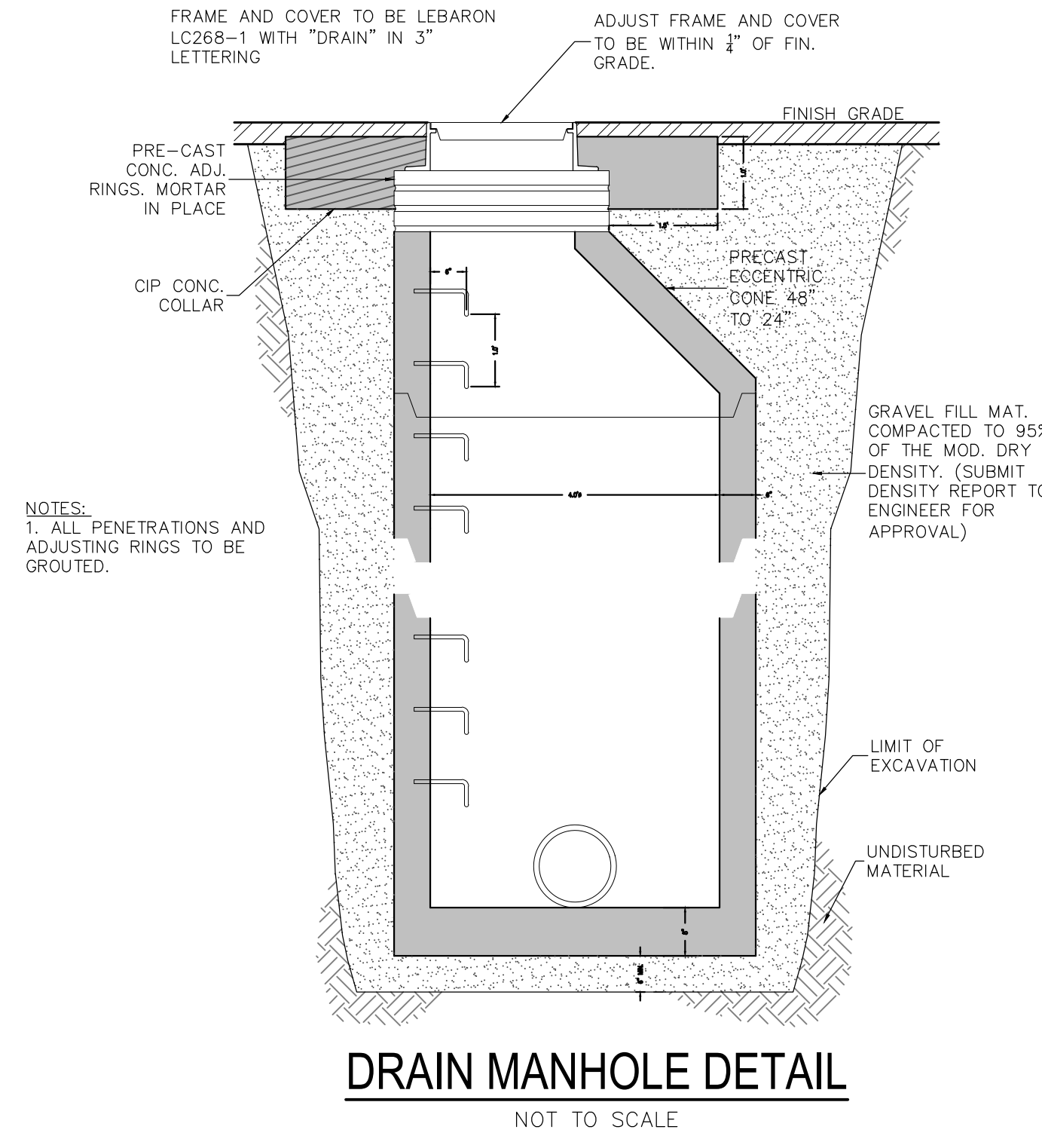
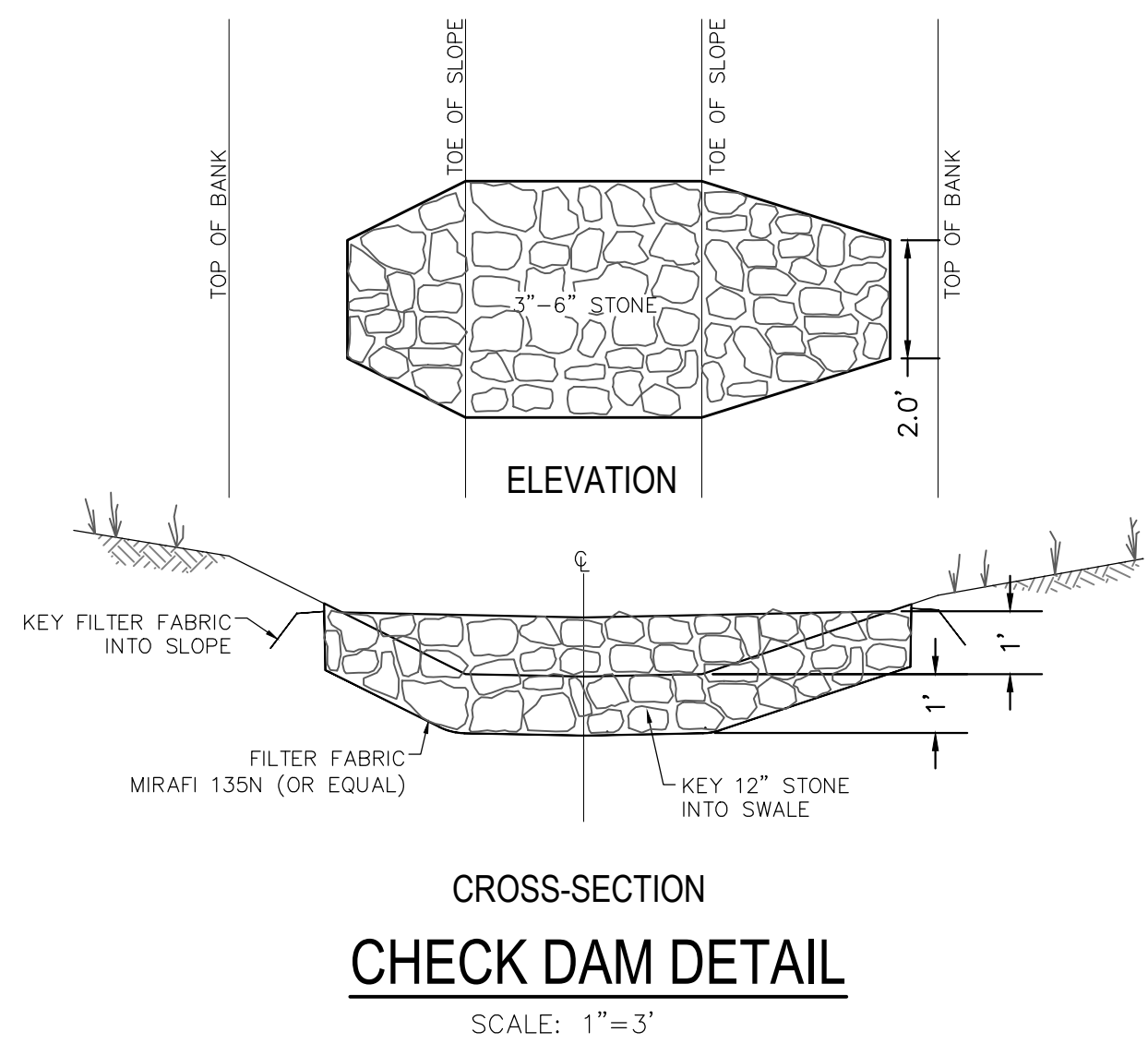
LOW PROFILE CATCH BASIN
NOT TO SCALE



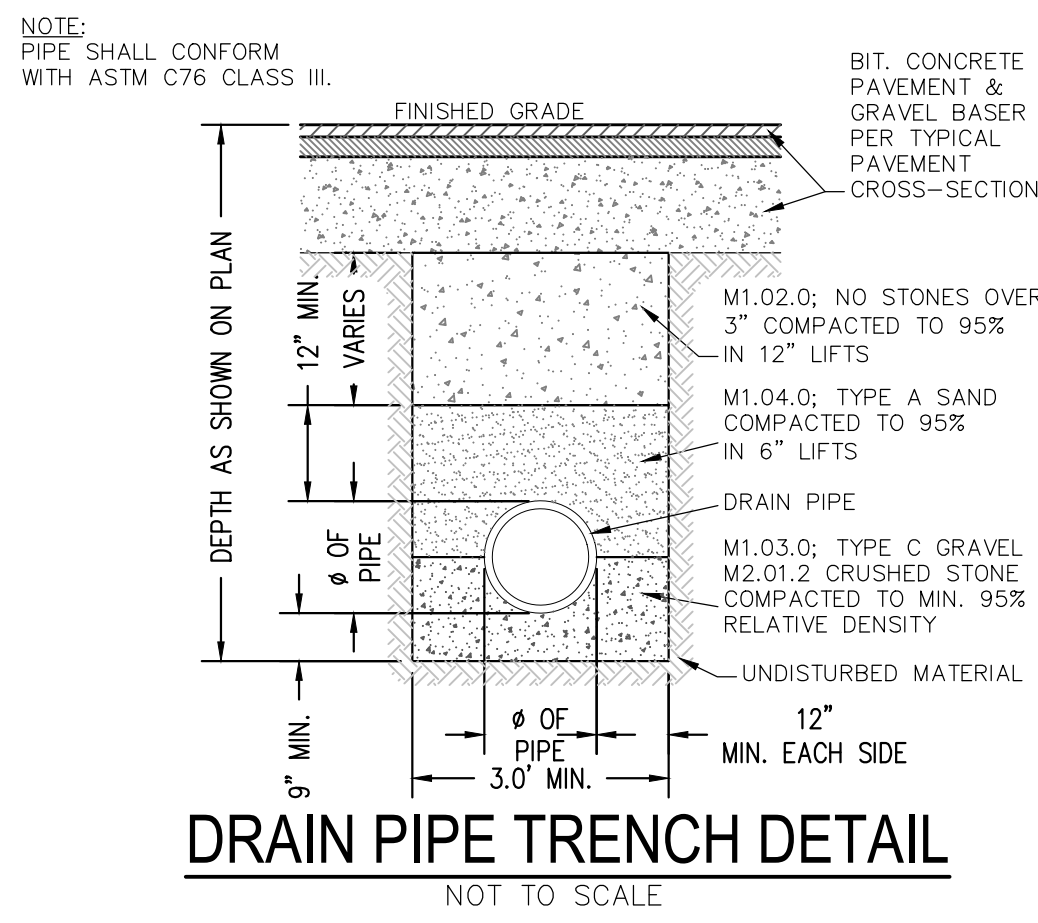
DEEP SUMP CONCRETE CATCH BASIN
NOT TO SCALE



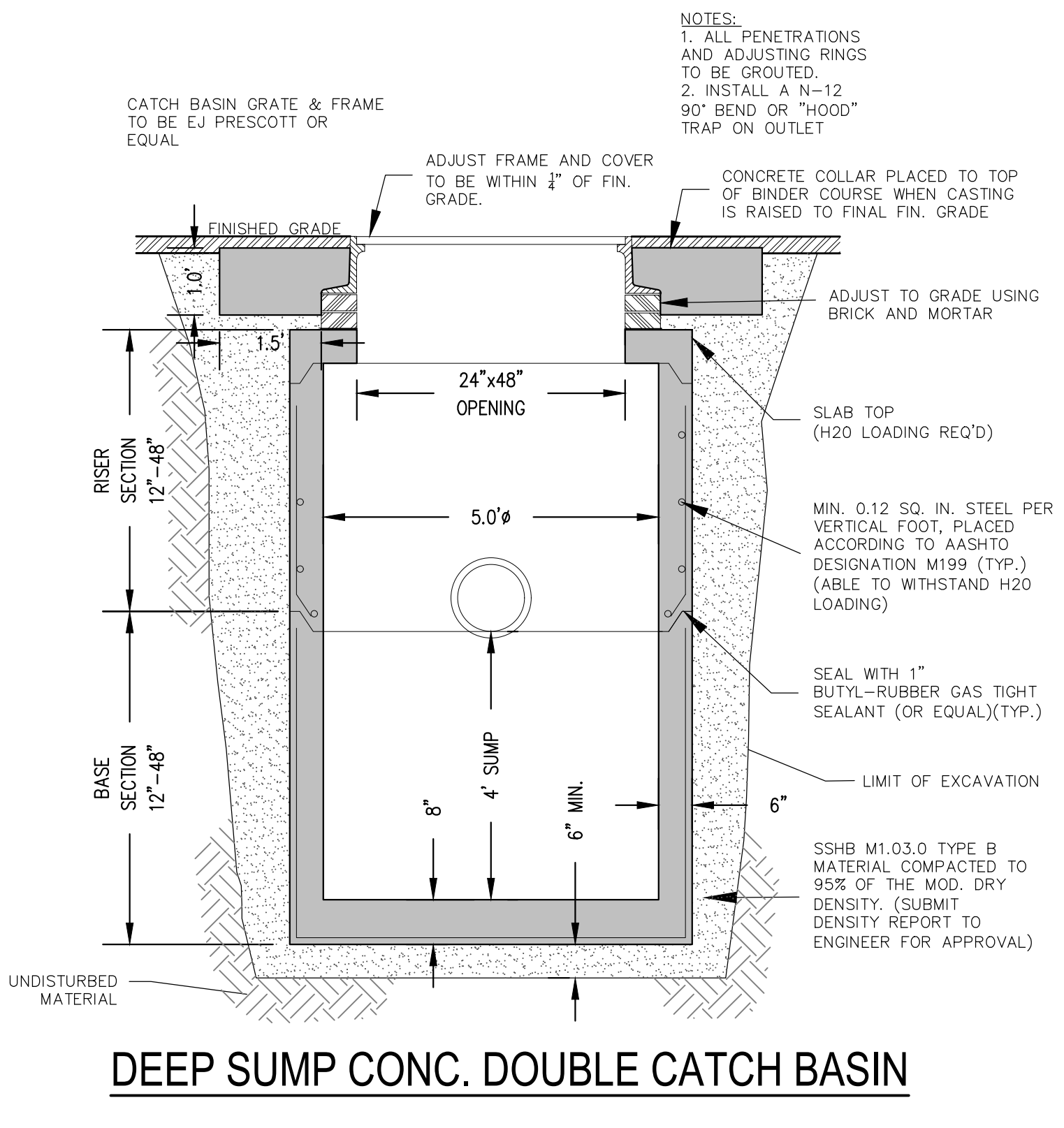
SEDIMENT TRAP
NOT TO SCALE



DRAIN MANHOLE DETAIL
NOT TO SCALE



DRAIN PIPE TRENCH DETAIL
NOT TO SCALE



DEEP SUMP CONC. DOUBLE CATCH BASIN

PREPARED BY:

DILLIS & ROY

CIVIL DESIGN GROUP

CIVIL ENGINEERS LAND SURVEYORS WETLAND CONSULTANTS

1 MAIN STREET, SUITE 1 LUNENBURG, MA 01462

PHONE: (978) 779-6091

www.dillisandroy.com

OWNER:

500 MG LLC

6 LYBERTY WAY

WESTFORD, MASSACHUSETTS

APPLICANT:

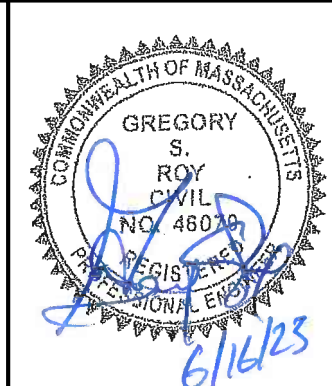
500 MG LLC

6 LYBERTY WAY

WESTFORD, MASSACHUSETTS

SCALE:

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DATE:

2/09/2023

DESIGN BY:

GSR

DRAWN BY:

RPV

CHECKED BY:

GSR

CONSTRUCTION DETAILS PLAN			
GROTON FARMS			
500 MAIN STREET			
GROTON, MASSACHUSETTS			
NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

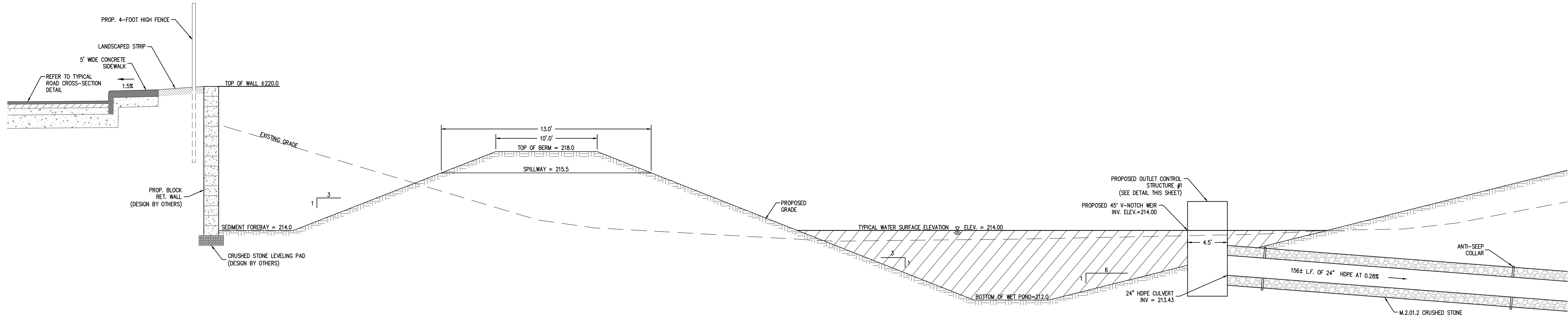
6842

DRAWING NO.

6842-DETAILS

SHEET NO.

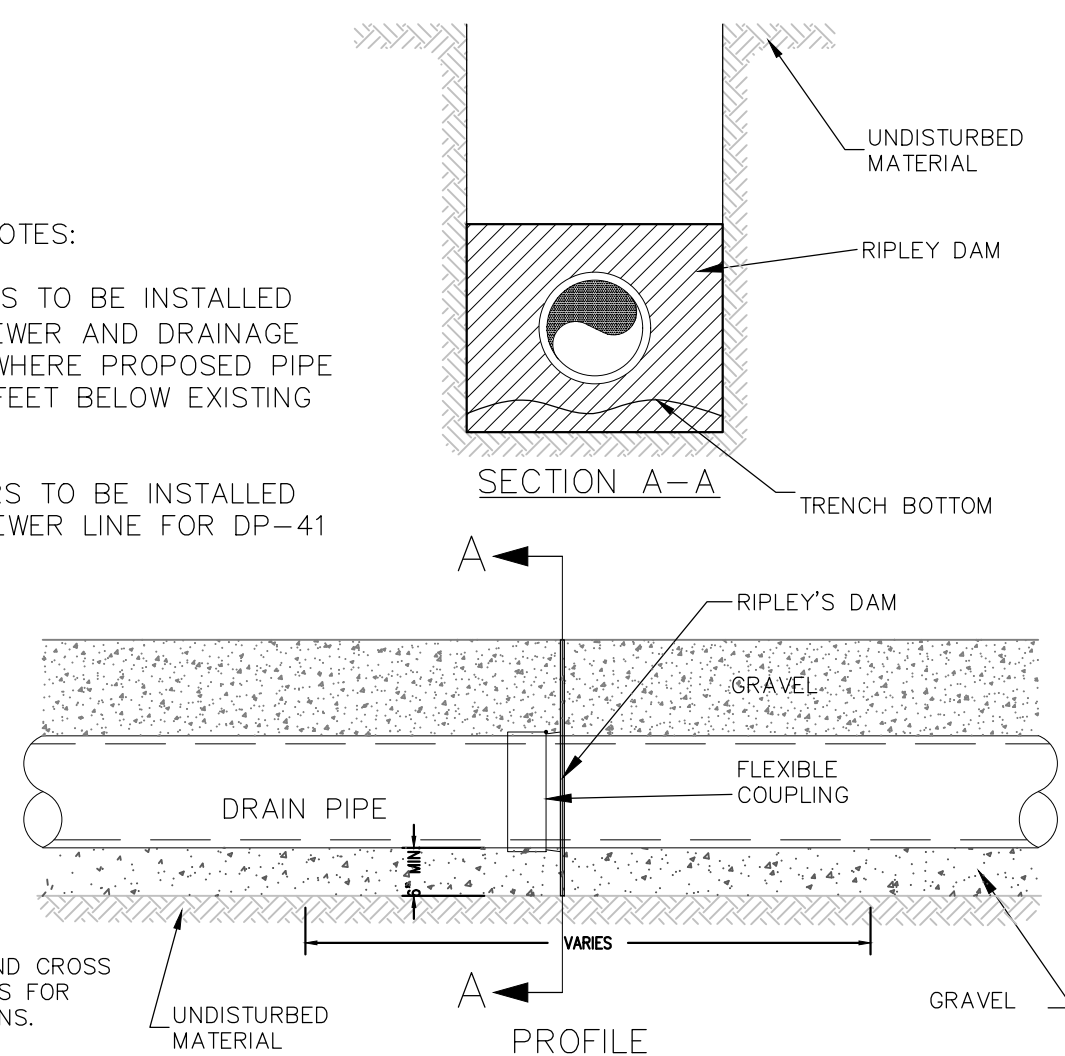
C8.3



WET BASIN BERM CROSS-SECTION
NOT TO SCALE

ANTI-SEEP COLLAR NOTES:

1. ANTI-SEEP COLLARS TO BE INSTALLED EVERY 100' ALONG SEWER AND DRAINAGE LINES IN LOCATIONS WHERE PROPOSED PIPE IS GREATER THAN 5 FEET BELOW EXISTING GRADE.
2. ANTI-SEEP COLLARS TO BE INSTALLED ALONG THE ENTIRE SEWER LINE FOR DP-41 THROUGH DP-43



ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

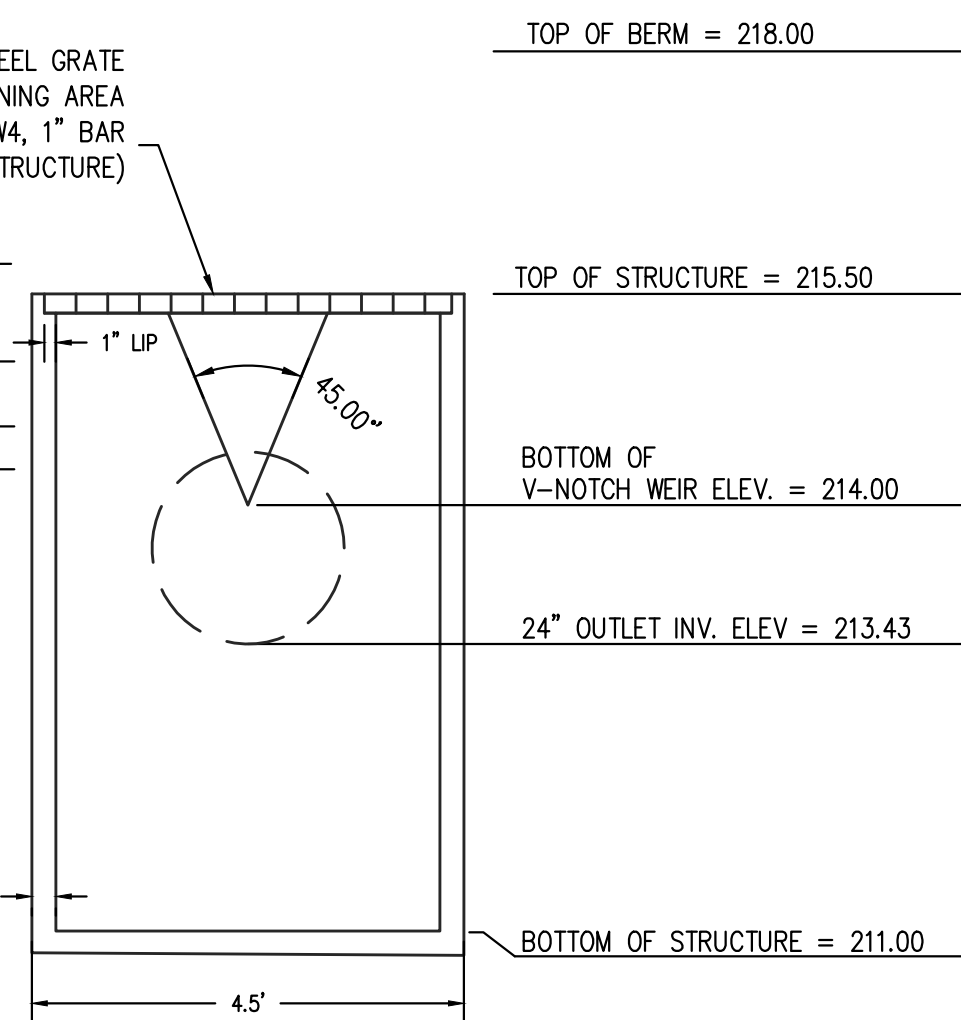
PROP. 4'-2" X 4'-2" GALV. STEEL GRATE
4" MIN. OPENING AREA
NEENAH UNIT BANDED TYPE 19 W4, 1" BAR
(GRATE TO SET IN GROOVE ON STRUCTURE)

100 YR ELEV. = 215.73

25 YR ELEV. = 215.01

10 YR ELEV. = 214.69

2 YR ELEV. = 214.39



OUTLET CONTROL STRUCTURE #1 DETAIL

SCALE: 1"=2'

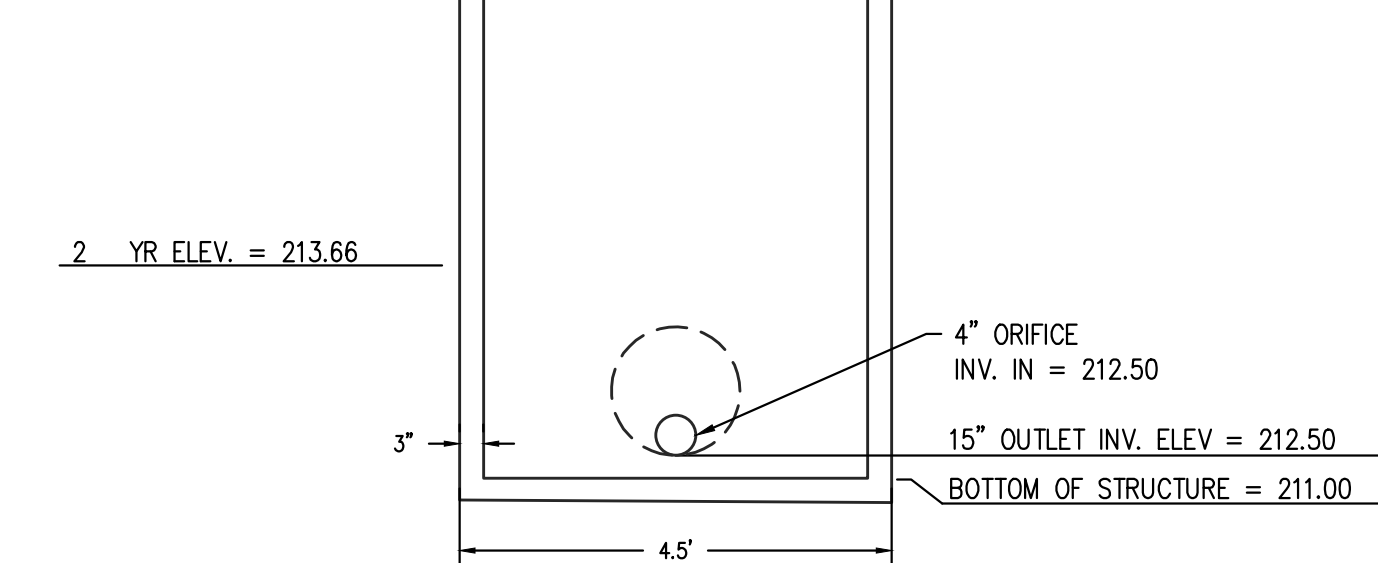
PROP. 4'-2" X 4'-2" GALV. STEEL GRATE
4" MIN. OPENING AREA
NEENAH UNIT BANDED TYPE 19 W4, 1" BAR
(GRATE TO SET IN GROOVE ON STRUCTURE)

100 YR ELEV. = 215.11

25 YR ELEV. = 214.70

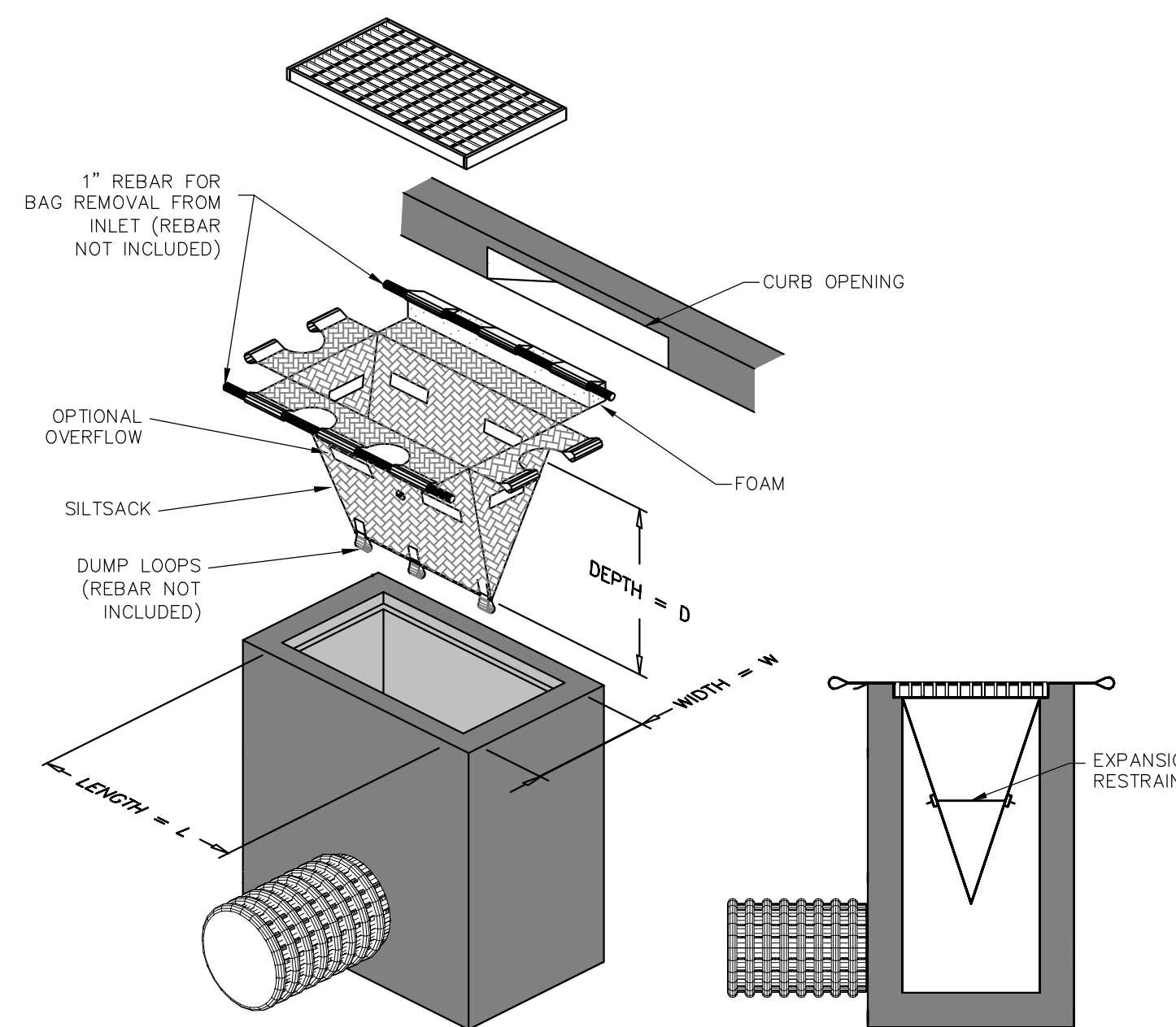
10 YR ELEV. = 214.32

2 YR ELEV. = 213.66



OUTLET CONTROL STRUCTURE #2 DETAIL

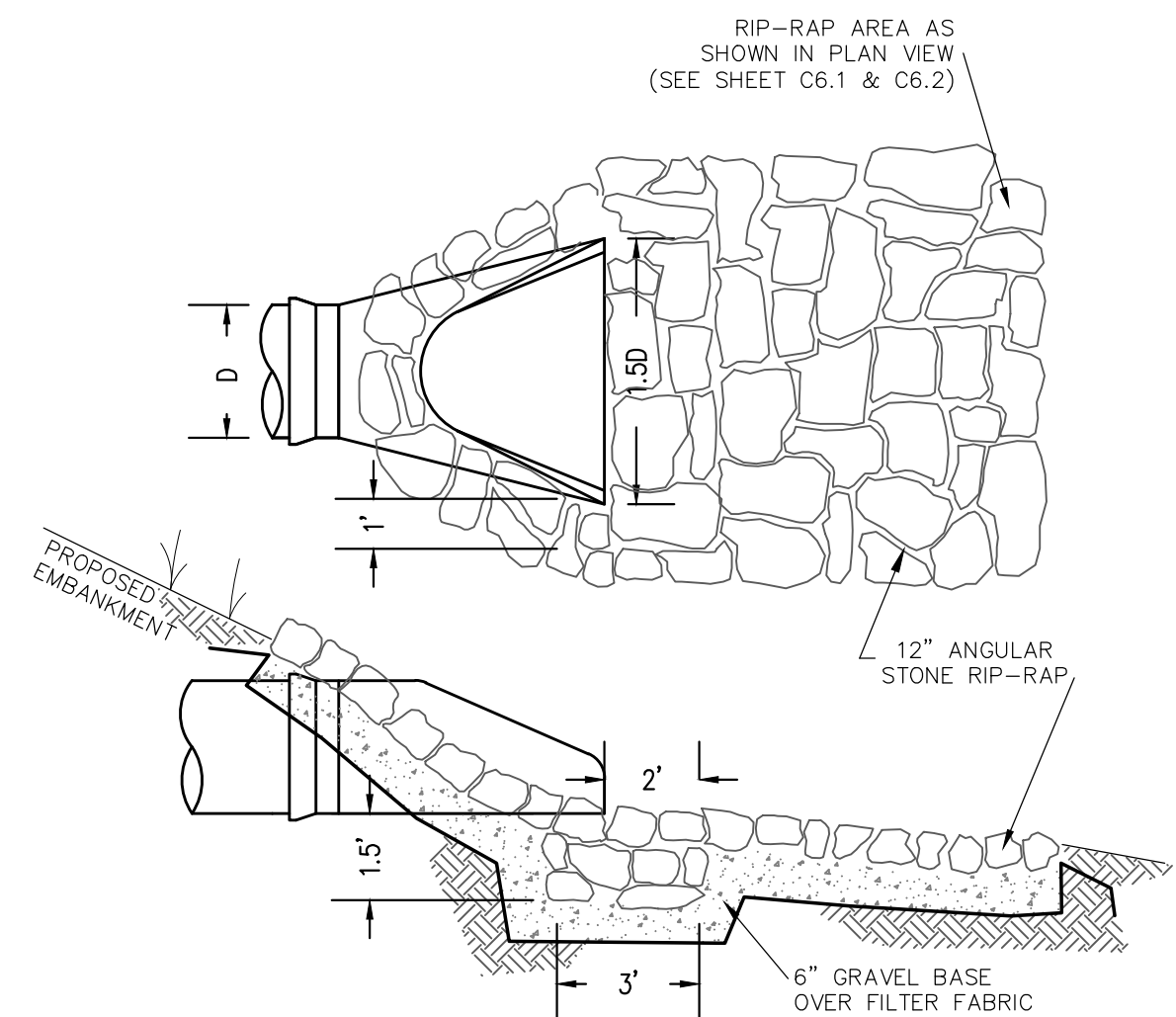
NOT TO SCALE



SIDE VIEW INSTALLED

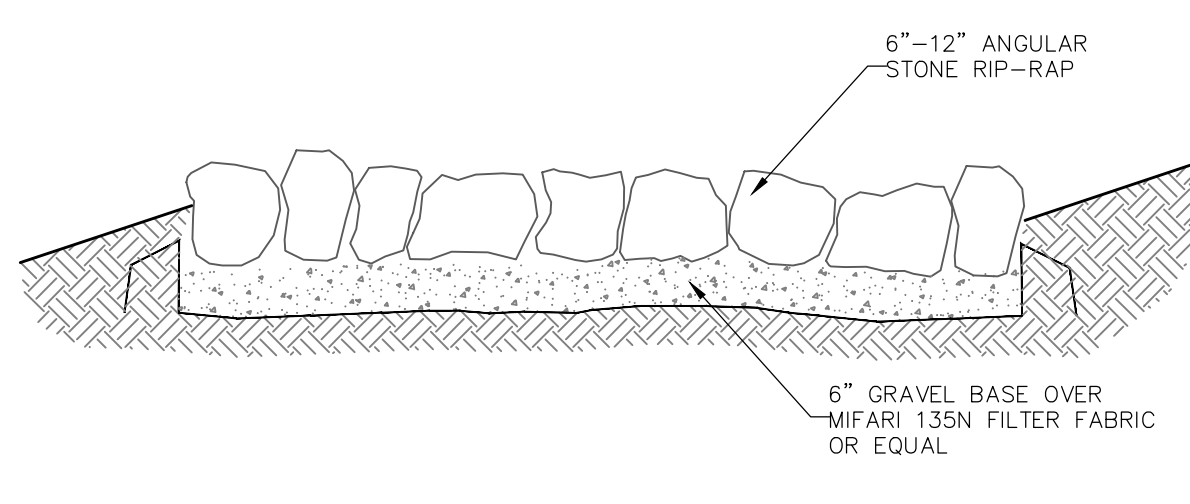
INSTALLATION DETAIL

SILT SACK
NOT TO SCALE



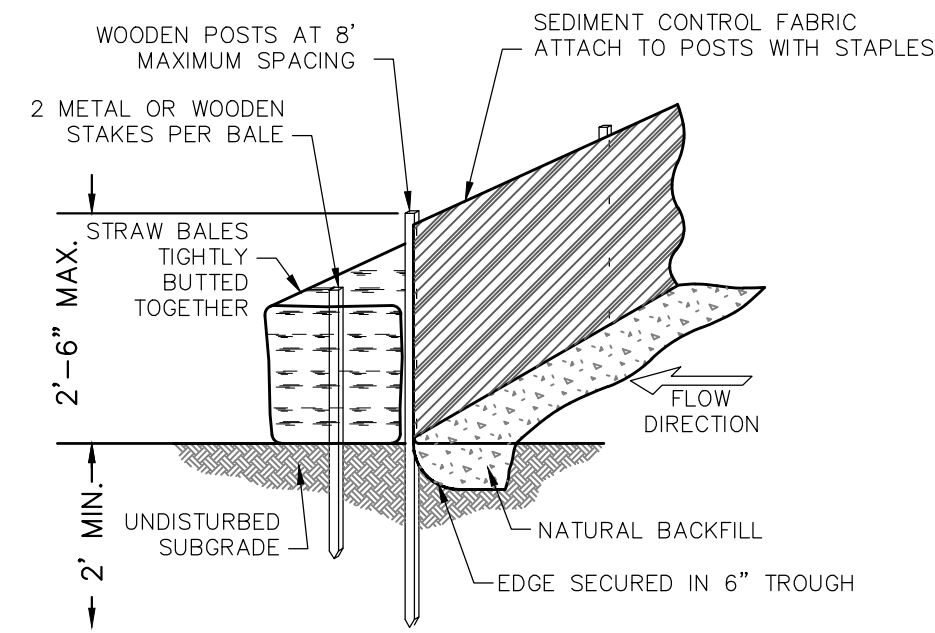
FLARED END SECTION

NOT TO SCALE



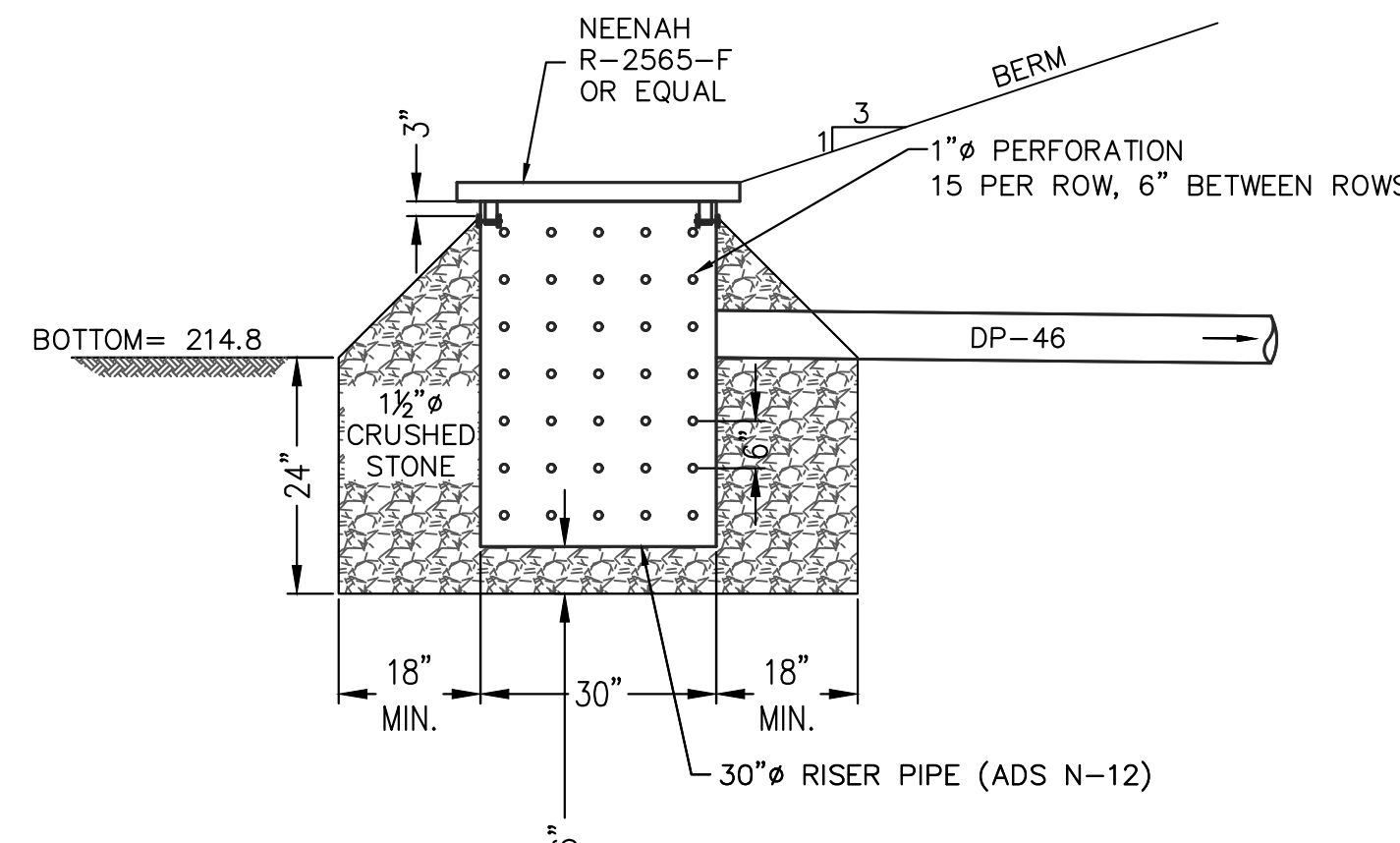
STONE RIP-RAP DETAIL

NOT TO SCALE



EROSION CONTROL BARRIER

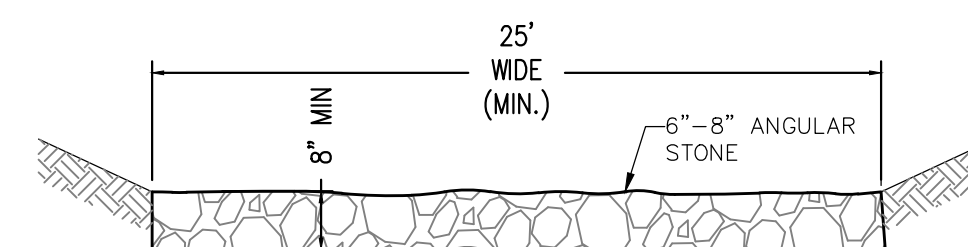
NOT TO SCALE



RISER DETAIL (CONSTRUCTED WETLAND #1)

SCALE: 1" = 2'

NOTE:
LENGTH = 50' MINIMUM
SEE PLAN FOR LOCATION(S)



TEMP. CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE

PREPARED BY:

DILLIS & ROY
CIVIL DESIGN GROUP

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OWNER:

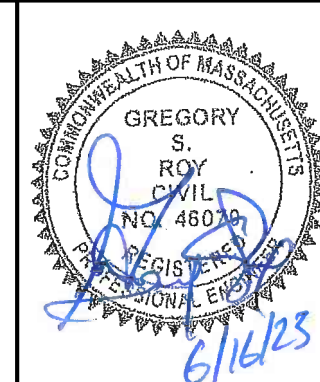
500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

APPLICANT:

500 MG LLC
6 LIBERTY WAY
WESTFORD, MASSACHUSETTS

SCALE:

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DATE:

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GSR

DRAWN BY:

RPV

CHECKED BY:

GSR

CONSTRUCTION DETAILS PLAN
GROTON FARMS
500 MAIN STREET
GROTON, MASSACHUSETTS

NO.	DATE	DESCRIPTION	BY
1.	06/16/23	REVISED PER PEER REVIEW COMMENTS	RPV

JOB NO.

6842

DRAWING NO.

6842-DETAILS

SHEET NO.

C8.4