MEDWAY BATTERY ENERGY STORAGE SYSTEM
NOI PLAN SET
PARCELS: 046-005, 046-0056, 046-0057, 0056-0006
TOWN OF MEDWAY, NORFOLK COUNTY, MASSACHUSETTS

LANGAN

PROJECT NO. 151033401

CIVIL DRAWING INDEX

SHEET NUMBER	DRAWING TITLE	DATE	LAST REVISED
CS001	SITE COVER SHEET	06/08/2023	10/04/2023
CS002	MASTER LEGEND & NOTES	06/08/2023	10/04/2023
EX101	RESOURCE DELINEATION PLAN I	10/04/2023	
EX102	RESOURCE DELINEATION PLAN II	10/04/2023	
CS101	OVERALL SITE PLAN	06/08/2023	10/04/2023
CS102	UNDERGROUND TRANSMISSION LINE SITE PLAN	06/08/2023	10/04/2023
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CD101	SITE PREPARATION PLAN	06/08/2023	10/04/2023
CG101	GRADING & DRAINAGE PLAN	06/08/2023	10/04/2023
CG501	GRADING & DRAINAGE DETAILS I	06/08/2023	08/24/2023
CG502	GRADING & DRAINAGE DETAILS II	06/08/2023	10/04/2023
CG503	GRADING & DRAINAGE DETAILS III	06/08/2023	10/04/2023
CE101	SOIL & EROSION CONTROL PLAN – PHASE I	06/08/2023	10/04/2023
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CE501	SOIL & EROSION CONTROL DETAILS I	06/08/2023	08/24/2023
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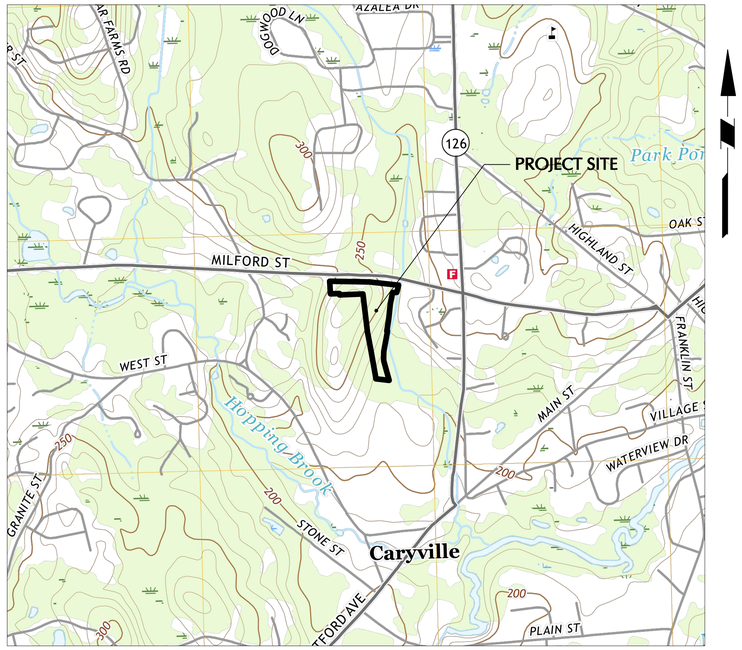
TM101	TANKER TRUCK TURNING MOVEMENT PLAN	08/24/2023	10/04/2023
TM102	LADDER TRUCK TURNING MOVEMENT PLAN	08/24/2023	10/04/2023
LL101	SITE LIGHTING PLAN	06/08/2023	10/04/2023
LL501	SITE LIGHTING DETAILS	06/08/2023	
LP101	PLANTING PLAN	06/08/2023	10/04/2023
LP501	PLANTING DETAILS	06/08/2023	10/04/2023



MAP REFERENCE: USGS 2021 HOLLISTON, MA QUADRANGLES (7.5 MINUTE SERIES)

LOCATION MAP

SCALE: 1" = 1000'

RELEASE DATES

DATE	ISSUED FOR
06/08/2023	NOTICE OF INTENT
08/24/2023	NOI COMMENT REVISIONS
10/04/2023	NOI COMMENT REVISIONS

OWNER/APPLICANT
MEDWAY GRID, LLC.
C/O: JUSTIN ADAMS
988 HOWARD AVE. SUITE 200
BURLINGAME, CA 94010
EMAIL:
JUSTIN.ADAMS@EOLIANENERGY.COM

WETLANDS & NATURAL RESOURCES
EPSILON ASSOCIATES, INC.
C/O: MARC BERGERON
3 MILL & MAIN PLACE, SUITE 250
MAYNARD, MA 01754
PHONE: 978-461-6253
EMAIL:
MBERGERON@EPSILONASSOCIATES.COM

CIVIL ENGINEER & LANDSCAPE ARCHITECT
LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, INC
C/O: FRANK HOLMES
100 CAMBRIDGE STREET
BOSTON, MA 02116
PHONE: 617-824-9100
EMAIL: FHOLMES@LANGAN.COM

GEOTECHNICAL ENGINEER
GZA GEOENVIRONMENTAL, INC.
C/O: BRUCE FAIRLESS
249 VANDERBILT AVENUE
NORWOOD, MA 02062
PHONE: 781-248-3700
EMAIL: BRUCE.FAIRLESS@GZA.COM

LAND SURVEYOR
LAND PLANNING, INC.
C/O: NORMAN G. HILL
1115 MAIN STREET
HANSON, MA 02341
PHONE: 781-294-4144

LANGAN

Date: 10/3/2023 Time: 15:30 User: jpark Style Table: Langan.stb Layout: CS001 Document Code: 151033401-0501-CS001-0101

GENERAL NOTES

1. PLANIMETRIC AND TOPOGRAPHIC INFORMATION SHOWN HEREON HAS BEEN OBTAINED FROM GROUND SURVEYS BY "LAND PLANNING, INC." CONDUCTED ON NOVEMBER 12, 2021.
2. THE SITE LIES IN FLOOD ZONE X AS SHOWN ON THE FLOOD INSURANCE RATE MAP NORFOLK COUNTY, FEMA MAP NUMBER 25021C0139E, EFFECTIVE 7/17/2012.
3. THE BOUNDARIES OF THE WETLAND RESOURCE AREAS ON THE PROJECT SITE AND ON ADJACENT PARCELS INCLUDING; 55 AND 61 MILFORD STREET (EVERSOURCE PARCELS TO THE WEST OF PROJECT SITE) AND 9 SUMMER STREET (CONSTELLATION PARCELS TO THE SOUTH OF THE PROJECT SITE) HAVE BEEN REVIEWED AND VERIFIED THROUGH EITHER AN ORDER OF RESOURCE AREA DELINEATION ("ORAD"), ISSUED ON FEBRUARY 27, 2020 OR BY REVIEW OF A THIRD-PARTY WETLAND CONSULTANT (ECOTEC, INC) ON AUGUST 3, 2023.
4. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING DIG SAFE (WWW.DIGSAFE.COM), EXCAVATION TEST HOLES, PERFORMING TEST BORINGS, AND PERFORMING WHATEVER ADDITIONAL INVESTIGATION NECESSARY TO PROTECT AND MAINTAIN ALL EXISTING UTILITIES TO REMAIN THROUGHOUT THE CONSTRUCTION PERIOD. ANY CONFLICTS BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES DISCOVERED DURING CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
5. CONTRACTOR SHALL PREVENT DUST, SEDIMENT AND DEBRIS FROM EXITING THE SITE AND SHALL BE RESPONSIBLE FOR CLEANUP, REPAIRS AND CORRECTIVE ACTION IF SUCH OCCURS. ADJOINING STREETS AND PROPERTIES TO BE KEPT FREE OF DEBRIS RESULTING FROM DEMOLITION AND SHALL BE CLEANED ON A DAILY BASIS OR AS NEEDED.
6. DUST CONTROL TREATMENTS SHALL BE APPLIED AS NECESSARY TO CONTROL AND REDUCE THE AMOUNT OF DUST WHICH MAY CAUSE OFF-SITE DAMAGE, BE A HEALTH HAZARD TO HUMANS, WILDLIFE AND PLANT LIFE, OR POSE A HAZARD TO TRAFFIC SAFETY.
7. PROPOSED SITE WORK IMPROVEMENTS SHALL CONFORM TO THE STANDARD DETAILS AND SPECIFICATIONS OF THE TOWN OF MEDWAY. IN THE ABSENCE OF LOCAL STANDARDS, SITE WORK SHALL CONFORM TO THE REQUIREMENTS OF MASSACHUSETTS DOT STANDARD DETAILS.
8. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. ANY DISCREPANCIES DISCOVERED DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
9. ANY UTILITY EASEMENTS REQUIRED BY ANY OF THE VARIOUS UTILITY COMPANIES, THE CONTRACTOR SHALL OBTAIN, EXECUTE, AND RECORD PRIOR TO ANY OF THE AFFECTED UTILITY WORK BEING PERFORMED.
10. ALL IMPROVEMENTS CONSTRUCTED IN THE TOWN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO TOWN OF MEDWAY STANDARD DETAILS. IN THE ABSENCE OF LOCAL DETAILS & REQUIREMENTS AND WORK IN THE STATE RIGHT-OF-WAY SHALL COMPLY WITH THE STATE OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES, THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (2021 EDITION) AND THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION OF TRANSPORTATION SUPPLEMENTAL SPECIFICATIONS (DATED SEPTEMBER 30, 2021).
11. FOR AREAS OUTSIDE THE PROPERTY LINES, REPAIR AND/OR REPLACE ALL DAMAGE DONE TO EXISTING ELEMENTS (SIDEWALKS, PAVING, LANDSCAPING, ETC) AS REQUIRED BY OWNER AND/OR GOVERNING AUTHORITY.
12. ALL SIGNS AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST EDITION OF THE MUTCD AND MASSACHUSETTS DEPARTMENT OF TRANSPORTATION REGULATIONS.
13. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN HEREON IS TAKEN FROM DESIGN PLANS, AS-BUILT SKETCHES, EXISTING UTILITY COMPANY RECORDS, AND OTHER SOURCES OF INFORMATION AND IS NOT TO BE CONSTRUED AS AN ACCURATE "AS-BUILT" SURVEY AND IS SUBJECT TO SUCH CORRECTIONS THAT A MORE ACCURATE SURVEY MAY DISCLOSE.IN ADDITION, OTHER UTILITIES NOT SHOWN HEREON MAY BE PRESENT. ANY DISCREPANCIES DISCOVERED DURING THE COURSE OF CONSTRUCTION SHALL BE PROMPTLY REPORTED TO THE PROJECT ENGINEER.
14. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS AND SPECIFICATIONS/DETAILS OF THE UTILITY COMPANY HAVING AUTHORITY OVER THE PROPOSED WORK. ALL PROPOSED UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL ORDINANCES/REQUIREMENTS GOVERNING THE PROPOSED WORK.
15. ALL PROPOSED UTILITIES WILL BE LOCATED UNDERGROUND UNLESS OTHERWISE NOTED.
16. RESET ALL EXISTING SANITARY AND DRAINAGE STRUCTURES TO MASSACHUSETTS STATE STANDARDS AND AS REQUIRED BY REPAIRING, MILLING OR OVERLAYING.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAVEMENT REPAIRS REQUIRED AS A RESULT OF ANY UTILITY WORK.
18. CONCRETE JOINTS ON SITE ARE TO BE FILLED WITH HOT-APPLIED JOINT FILLER, TO INCLUDE CONCRETE PAVEMENTS, MONOLITHIC CURBING AND MONOLITHIC SIDEWALKS.
19. BOTTOM AND TOP OF RETAINING WALL ELEVATION SPOT SHOTS REPRESENT THE BASE OF THE WALL AT FINISHED GROUND LEVEL AND THE TOP OF THE FACE OF THE WALL RESPECTIVELY.
20. ALL ON-SITE CONCRETE TO BE 4,500 PSI WITH 5% TO 7% AIR ENTRAPMENT UNLESS OTHERWISE NOTED.

UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF THE FIRE SERVICE LINE CONNECTIONS TO EXISTING MAINS.
2. TEST PITS ARE TO BE PERFORMED PRIOR TO INSTALLATION OF FIRE SERVICE LINE CONNECTIONS TO CONFIRM THE SIZE AND MATERIAL OF THE MAIN.
3. TAPPING SLEEVES AND GATE VALVE ASSEMBLIES SHALL BE INSTALLED AT EACH FIRE SERVICE LINE CONNECTION AND SHALL BE MANUFACTURED BY CLOW VALVE CO., MUELLER CO., OR AMERICAN VALVE AND HYDRANT.
4. SCHEDULING OF ALL FIRE SERVICE LINE CONNECTION WORK SHALL BE COORDINATED WITH THE TOWN OF MEDWAY TO ALLOW FOR A REPRESENTATIVE FROM THE AGENCY TO BE ONSITE TO OVERSEE THE CONNECTIONS AND PERFORM A WATER SHUTDOWN AS NEEDED.
5. THE DEPARTMENT SHALL APPROVE ALL MATERIALS USED IN MAKING A SERVICE CONNECTION AND SHALL INSPECT ALL WORK UPON COMPLETION AND PRIOR TO BACKFILL OF TRENCH. ALL PIPE FITTINGS, AND APPURTENANCES SHALL MEET AWWA AND DEPARTMENT STANDARDS.
6. ALL MAINS SHALL BE AT LEAST EIGHT (8) INCHES IN DIAMETER AT A DEPTH OF FIVE (5) FEET AND SHALL BE CEMENT LINED DUCTILE IRON THICKNESS CLASS 52. ALL MAINS OR SERVICES SHALL BE INSTALLED NO CLOSER THAN THREE (3) FEET VERTICALLY OR TEN (10) FEET HORIZONTALLY FROM SEWER LINE OR ENCASED IN CONCRETE OR SLEEVE SEGMENTS NOT MEETING THESE CRITERIA.
7. VALVE BOXES SHALL BE MANUFACTURED IN THE UNITED STATES AND BE CAST IRON, TAR COATED, SLIDING, HEAVY PATTERN TYPE, CONSISTING OF THREE (3) PIECES; A FLANGED BOTTOM PIECE, A FLANGED TOP PIECE, AND A COVER WITH TOW (2) LIFTING HOLES AND THE WORD "WATER" CAST ON THE TOP. A MINIMUM 6 INCH OVERLAP IS REQUIRED BETWEEN SLIDING SECTIONS. THE INSIDE DIAMETER OF BOXES SHALL BE AT LEAST 5-1/4 INCHES AND LENGTHS SHALL BE AS NECESSARY TO SUIT GROUND ELEVATION.
8. WATER SHUT-OFF BOX AND CURB STOP BOX SHALL BE ERIE STYLE.
9. ALL HYDRANTS SHALL BE STANDARDIZED TYPE AND SPECIFICATIONS OF OF THE MEDWAY WATER DIVISION. HYDRANTS SHALL BE LOCATED AT PROPERTY LINES WHEN POSSIBLE AND SHALL NOT BE SPACED MORE THAN FIVE HUNDRED (500) FEET APART. THERE SHALL ALSO BE A GATE VALVE FOR EVERY HYDRANT. ALL HYDRANTS SHALL BE BACKED WITH 0.25 CUBIC YARDS OF CONCRETE OR APPROVED THRUST BLOCK AGAINST TRENCH WALL. HYDRANTS SHALL ALSO BE SURROUNDED WITH 1 CUBIC YARD OF 3/4-INCH STONE FOR DRAINAGE. SEE CONSTRUCTION DETAIL.
10. ALL FIRE HYDRANTS SHALL RECEIVE AN ISOLATION VALVE ALONG THE HYDRANT LATERAL AND A MINIMUM OF TWO PROTECTIVE BOLLARDS.
11. HYDRANTS - AMERICAN, DARLING MODEL B-84B, OPEN LEFT. FACTORY PAINTED IN TOWN OF MEDWAY STANDARD COLOR WITH NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARD THREADS AND TWO 2-1/2 INCH NOZZLES AND ONE 4-1/2 INCH NOZZLE.
12. THE DEVELOPER SHALL PROVIDE AS-BUILT RECORD DRAWINGS OF ALL NEW AND EXISTING WATER INFRASTRUCTURE TO THE TOWN OF MEDWAY AT THE COMPLETION OF CONSTRUCTION.
13. WATER MAINS SHALL BE PRESSURE AND LEAK TESTED AS PER AMERICAN WATER WORKS ASSOCIATION (AWWA) SPECIFICATIONS AT 50 PSI OVER STATIC PRESSURE OR 150 PSI, WHICHEVER IS GREATER, FOR A PERIOD OF TWO (2) HOURS.
14. THE DEVELOPER SHALL SUBMIT AN AS-BUILT PLAN, GATE TIE CARDS, AND WATER SERVICE CARDS, PREPARED BY A REGISTERED CIVIL ENGINEER IN THE STATE OF MASSACHUSETTS TO THE MEDWAY ENGINEERING DIVISION AT THE CONCLUSION OF THE PROJECT.
15. ALL NEW CONSTRUCTION OR ALL CEMENT LINED DUCTILE IRON JOINTS AT FITTINGS (CLASS 52), VALVES AND HYDRANT LATERALS SHALL BE MECHANICAL WITH NEOPRENE GASKETS. JOINTS AT OTHER LOCATIONS SHALL BE PUSH-ON TYPE WITH NEOPRENE OR SYNTHETIC RUBBER GASKETS. ALL WATER GATES SHALL OPEN PER MUNICIPAL REQUIREMENTS. ALL WATER LINES SHALL HAVE A MINIMUM OF 5' OF GROUND COVER AND A MINIMUM HORIZONTAL SEPARATION OF 10' FROM THE SEWER SYSTEM. AT WATER AND SEWER CROSSINGS, THE SEWER LINE SHALL BE ENCASED IN 6" OF CONCRETE FOR A DISTANCE OF 10' ON EITHER SIDE OF THE CROSSING IF A MINIMUM VERTICAL SEPARATION OF 18" IS NOT MAINTAINED.
16. ENSURE ALL EXISTING (TO REMAIN) AND PROPOSED MANHOLES PROPERLY IDENTIFY UTILITIES SERVICED.
17. WHERE AN EXISTING UTILITY IS FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, THE CONTRACTOR SHALL ACCURATELY DETERMINE THE LOCATION, ELEVATION, AND SIZE OF THE UTILITY AND TRANSMIT THIS INFORMATION TO THE ENGINEER WITHOUT DELAY.
18. THE LOCATIONS OF EXISTING ELECTRICAL LINES AND GAS MAINS ARE APPROXIMATE. THE CONTRACTOR MUST CONSULT THE LOCAL UTILITY COMPANIES FOR ADDITIONAL INFORMATION. ALL PROPOSED GAS AND ELECTRICAL WORK SHALL BE IN CONFORMANCE WITH LOCAL COUNTY, STATE AND FEDERAL GUIDELINES AND REQUIREMENTS.

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
LEASE AREA		
SETBACK LINE		
WETLAND LIMITS		
25' WETLAND NO DISTURB ZONE		
100' WETLAND BUFFER ZONE		
100' RIVERFRONT AREA LIMITS		
200' RIVERFRONT AREA LIMITS		
LIMIT OF RIVER		
WETLAND BUFFER IMPACTS		
EXISTING IMPERVIOUS AREA TO BE REMOVED		
LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA		
BUILDING LINE		
PEDESTRIAN DOOR LOCATION		
SIGN		
BOLLARD		
CONCRETE		
ASPHALT		
GRAVEL		
STORMWATER MANAGEMENT FEATURE		
WATER LINE	W* W*	W
FIRE SERVICE LOOP	UFW* UFW*	FW
OVERHEAD ELECTRIC	OHW	
UNDERGROUND ELECTRIC	E* E*	UE
STORM PIPE		
STORM CURBLESS CATCH BASIN		
STORM MANHOLE		
CONTOUR	137	135
SPOT ELEVATION	×192.54	×135.19
CHAIN LINK FENCE		
RETAINING WALL		
SOUND WALL		
LIMIT OF WORK		LOW LOW
SILT FENCE & SILT SOCK		
SILT FENCE		
INLET PROTECTION		
SEDIMENT BASIN/TRAP		
STABILIZED DIVERSION CHANNEL WITH STONE CHECK DAMS		
GUARDRAIL		
TREELINE		
TREE		
PARKING ROW COUNT		58
MANHOLES		
STORM FLARED END SECTION		
CLEANOUT		C.O.
FIRE HYDRANT		
GATE VALVE		
TRANSFORMER		T
POWER POLE		
GUY WIRE		
LIGHT POLE		
GAS LINE	G	G
TEMPORARY STOCKPILE AREA		
SNOW STORAGE AREA		

ABBREVIATIONS

BC	BOTTOM OF CURB
BIT.	BITUMINOUS
BW	BOTTOM OF WALL
CB	CATCHBASIN
CC	CONCRETE CURB
CO	CLEAN OUT
CONC.	CONCRETE
CP	CONCRETE PAD
CPY	CANOPY DRAIN
DIP	DUCTILE IRON PIPE
DW	DETECTABLE WARNING
DYL	DOUBLE YELLOW LINE
EL	ELEVATION
EP	EDGE OF PAVEMENT
EX	EXISTING
FES	FLARED END SECTION
GR	GRADE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGHPOINT
INV	INVERT
LA	LANDSCAPED AREA
LF	LINEAR FEET
MH	MANHOLE
N.T.S.	NOT TO SCALE
OCS	OUTLET CONTROL STRUCTURE
PR	PROPOSED
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RET.	RETAINING
R.O.W	RIGHT OF WAY
R&D	REMOVE & DISPOSE
R&R	REMOVE & REPLACE
SD	STORM DRAIN
TC	TOP OF CURB
TD	TRENCH DRAIN
TF	TOP OF FRAME
TW	TOP OF WALL
TYP.	TYPICAL
WQU	WATER QUALITY UNIT
YD	YARD DRAIN

DEMOLITION NOTES

1. DEMOLITION CONTRACTOR SHALL COORDINATE ALL DEMOLITION SEQUENCING WITH THE GENERAL CONTRACTOR FOR TEMPORARY CONDITIONS AND PHASING.
2. THE CONTRACTOR IS TO REFER TO THE REMAINING CONSTRUCTION DRAWING SET FOR REMOVAL LIMIT COORDINATION WITH OTHER DESIGN ELEMENTS.
3. THE CONTRACTOR IS TO REMOVE AND DISPOSE OR RECYCLE ALL SITE FEATURES WITHIN THE LIMITS OF CLEARING, UNLESS OTHERWISE DIRECTED IN THE PLANS, SPECIFICATIONS AND THE SITE CONSTRUCTION DRAWINGS.
4. THE CONTRACTOR SHALL NOTIFY AND OBTAIN ALL SHUTOFFS FOR ALL APPLICABLE UTILITIES PRIOR TO THE COMMENCEMENT OF DEMOLITION.
5. THE CONTRACTOR SHALL LOCATE/CONFIRM ALL DRAINAGE INFRASTRUCTURE AND MAINTAIN ADEQUATE STORM DRAINAGE THROUGHOUT CONSTRUCTION.
6. THE CONTRACTOR SHALL COORDINATE ANY PARTIAL DEMOLITION OF DRAINAGE OR UTILITY INFRASTRUCTURE WITH THE FINAL CONDITION. SEE CONSTRUCTION DRAWINGS.
7. THE CONTRACTOR SHALL FIELD LOCATE AND PROPERLY DISCONNECT APPROPRIATE LATERALS TO LIVE MAINS PRIOR TO DEMOLITION AND IN ACCORDANCE WITH UTILITY COMPANY STANDARDS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY DEMOLITION ASSOCIATED PERMITS.
9. THE CONTRACTOR SHALL REMOVE AND LEGALLY DISPOSE OF ALL STRUCTURES WITHIN THE PROJECT LIMITS UNLESS INDICATED TO REMAIN.
10. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL TEMPORARY FACILITIES AND SERVICES NECESSARY TO SATISFY FEDERAL, STATE & LOCAL REQUIREMENTS INCLUDING BUT NOT NECESSARILY LIMITED TO BRACING, SHORING, PAVEMENT REPAIR, FENCING, PEDESTRIAN AND VEHICLE ACCESS, CONCRETE PADS, ETC.
11. THE CONTRACTOR SHALL REFER TO THE SOIL EROSION & SEDIMENT CONTROL PLANS PROVIDED BY LANGAN INCLUDED AS PART OF THIS PLAN SET.
12. ALL SIGNS WITHIN LIMIT OF CLEARING TO BE REMOVED UNLESS OTHERWISE NOTED.
13. EXISTING FOUNDATIONS/BUILDING SLABS TO BE LEFT IN PLACE IF DEEPER THAN 3 VERTICAL FEET BELOW PROPOSED BUILDING SLAB, FOOTINGS, HARDSCAPE FEATURES, OR UTILITIES. ANY SLABS LEFT IN PLACE SHALL BE BROKEN UP TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER.
14. BASEMENTS AND BELOW GRADE STRUCTURES EXIST IN VARIOUS LOCATIONS ON SITE, INCLUDING BELOW EXISTING SLABS AND PAVED AREAS.
15. IF GROUNDWATER IS ENCOUNTERED ACROSS THE EXISTING SITE. DEWATERING OF EXCAVATIONS MAY BE REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS.

GRADING & DRAINAGE NOTES

1. ALL PROPOSED STORM DRAINAGE PIPING TO UTILIZE WATER-TIGHT JOINTS.
2. CLEANOUTS SHALL BE PROVIDED FLUSH TO GRADE AT ALL LOCATIONS OF ROOF DRAIN INTERSECTIONS, BENDS AND UPSTREAM ENDS.
3. CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZES OF THE DRAINAGE STRUCTURES (CATCH BASINS, MANHOLES, YARD DRAINS, ETC.) TO ACCOMMODATE THE PIPING SHOWN.
4. STORM DRAINAGE PIPING INSTALLATION SHALL COMMENCE AT THE FURTHEST DOWNSTREAM POINT AND PROCEED UPSTREAM "IN THE DRY".
5. THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE ENTIRE DRAINAGE SYSTEM OF ALL DEBRIS AND OBSTRUCTIONS BOTH DURING CONSTRUCTION AND AT THE END OF CONSTRUCTION PRIOR TO ACCEPTANCE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, REMOVAL OF ALL FORMWORK FROM STRUCTURES, CONCRETE AND MORTAR DROPPINGS, CONSTRUCTION DEBRIS, AND DIRT. THE SYSTEM SHALL BE THOROUGHLY FLUSHED CLEAN AND THE CONTRACTOR SHALL FURNISH ALL NECESSARY HOSE, PUMPS, PIPE, AND OTHER EQUIPMENT THAT MAY BE REQUIRED FOR THIS PURPOSE. NO DEBRIS SHALL BE FLUSHED INTO EXISTING STORM DRAINS, WETLANDS, OR WATERCOURSES; ALL DEBRIS SHALL BE REMOVED FROM THE SYSTEM AND DISPOSED OF IN ACCORDANCE WITH ALL GOVERNING AGENCIES.
6. ALL MANHOLE COVERS, GRATES, INLETS, AND RIMS TO REMAIN SHALL BE ADJUSTED TO PROPOSED GRADE.
7. CONTRACTOR TO PROVIDE ALL FITTINGS AND BENDS NECESSARY TO ACCOMPLISH WORK.
8. REFER TO THE "STORMWATER OPERATION AND MAINTENANCE PLAN - MEDWAY BATTERY ENERGY STORAGE SYSTEM" FOR OPERATION OF THE STORMWATER MANAGEMENT SYSTEM.

SOIL EROSION-SEDIMENT CONTROL NOTES

PROPOSED DEVELOPMENT

1. CONSTRUCTION WILL INCLUDE EARTHWORK, CURBING, PAVING, UTILITY INSTALLATION, LANDSCAPING AND BUILDING CONSTRUCTION. ALL DEMOLITION DEBRIS AND SOIL REMOVAL RELATED TO CONSTRUCTION SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL LAWS GOVERNING SUCH ACTIVITIES.
2. THE DETAILED EROSION AND SEDIMENT CONTROL MEASURES ARE SHOWN ON DRAWINGS CE101 AND CE102. THE PROPOSED MEASURES HAVE BEEN DESIGNED TO LIMIT THE MIGRATION OF SOIL SEDIMENT FROM THE SITE. HOWEVER, THE SITE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION AND SEDIMENT CONTROLS AND SHALL SUPPLEMENT AND ADJUST THE PLAN AS NEEDED TO PREVENT SOIL EROSION TO THE MAXIMUM EXTENT FEASIBLE. TEMPORARY SEDIMENT BASINS ARE NOT SHOWN ON THE PLANS AS THE EXACT LOCATIONS ARE TO BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL CONSTRUCT AND IMPLEMENT TEMPORARY SEDIMENT BASINS THROUGHOUT THE SITE AS NEEDED TO CONTROL SITE RUNOFF AND PREVENT SEDIMENT MIGRATION.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE SOIL AND SEDIMENT CONTROL PRACTICES MUST BE INSTALLED IN ACCORDANCE WITH THE LOCAL GOVERNING AUTHORITY, THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES AND THE MASSACHUSETTS STORMWATER STANDARDS.
2. EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO START OF DEMOLITION AND CONSTRUCTION AND DISTURBANCE OF SITE CONTRIBUTORY DRAINAGE AREAS. THE OWNER OR ITS CONTRACTOR SHALL INSPECT, REPAIR AND REMOVE ALL SEDIMENT AND EROSION CONTROL DEVICES, AS INDICATED HEREIN. ALL EARTH CHANGES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED IN SUCH A MANNER SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST POSSIBLE PERIOD OF TIME. CLEARING SHALL BE PHASED TO THE EXTENT FEASIBLE TO LIMIT POTENTIAL FOR SOIL EROSION.
3. DISPOSAL OF COLLECTED SEDIMENT SHALL BE MADE TO AREA DESIGNATED BY THE OWNER'S SOIL ENGINEER.
4. FILTER FABRIC/SILT FENCE WILL BE INSTALLED ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
5. EROSION CONTROL BLANKET BIONET SC150BN OR APPROVED EQUAL AND SEEDING AS SPECIFIED ON THE PLANTING PLAN MUST BE PROVIDED ON ALL SLOPES 4H:1V TO 3:1V. FOR SLOPES 2.5H:1V TO 3H:1V, SLOPES SHALL BE STABILIZED WITH A 12-INCH THICK LAYER OF MODIFIED ROCK FILL (MASSDOT M2.02.4) PLACED ON A 6-INCH THICK BEDDING LAYER OF 3/4-INCH CRUSHED STONE OVER MIRAFI FW700 WOVEN GEOTEXTILE. ALL SITE SLOPES SHALL BE LESS THAN 2.5H:1V.
6. ALL TOPSOIL NOT TO BE USED FOR FINAL GRADING/LANDSCAPED AREAS SHALL BE REMOVED FROM THE SITE IMMEDIATELY, IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL LAW. ALL TOPSOIL TO BE USED IN LANDSCAPED AREAS SHALL BE STORED/STOCKPILED IN ACCORDANCE WITH APPLICABLE STATE AND LOCAL LAW STANDARDS.
7. THE SITE SHALL BE WETTED AS NECESSARY TO PROVIDE DUST CONTROL.
8. PAVEMENT BASE COURSE MUST BE PLACED IN ALL NEW ROADWAY AREAS UPON COMPLETION OF FINE GRADING.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAVED ROADWAYS, ON AND OFF-SITE, WHICH MUST BE KEPT FREE OF SITE GENERATED SEDIMENT AT ALL TIMES. DUST SHALL BE CONTROLLED BY SPRINKLING OR OTHER APPROVED METHOD.
10. ALL STORM DRAINAGE OUTLETS MUST BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
11. SILT FENCES AND BARRIERS MUST BE CLEANED OR REPLACED PERIODICALLY TO REMOVE BUILT-UP SILT.
12. ALL EROSION AND SEDIMENT CONTROL DEVICES MUST BE INSPECTED EVERY 14 CALENDAR DAYS AND WITHIN 24 OF EITHER A STORM EVENT THAT PRODUCES 0.25 INCHES OR MORE OF RAIN WITHIN A 24 HOUR PERIOD, OR A STORM EVENT THAT PRODUCES 0.25 INCHES OR MORE OF RAIN WITHIN A 24-HOUR PERIOD ON THE FIRST DAY OF A STORM AND CONTINUES TO PRODUCE 0.25 INCHES OR MORE OF RAIN ON SUBSEQUENT DAYS, OR A DISCHARGE CAUSED BY SNOWMELT FROM A STORM EVENT THAT PRODUCES 3.25 INCHES OR MORE OF SNOW WITHIN A 24-HOUR PERIOD..
13. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED FOR THE CONVEYANCE OF WATER AROUND, THROUGH, OR FROM DISTURBED AREAS SHALL BE DESIGNED TO LIMIT THE WATER FLOW TO A NON-EROSIVE VELOCITY.
14. THE CONTRACTOR SHALL CORRECT ANY OMISSIONS, ERRORS, OR FIELD OPERATIONS IMMEDIATELY AND IN ACCORDANCE WITH THE GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
15. THE PROPERTY OWNER AND/OR HIS/HER AGENTS MUST MAINTAIN (REPAIR/REPLACE), WHEN NECESSARY, THE SILTATION CONTROL UNTIL ALL DEVELOPMENT ACTIVITY IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.

TEMPORARY STABILIZATION

SEDIMENT DISPOSAL AREAS AND TOPSOIL STOCKPILES NOT SCHEDULED FOR CONSTRUCTION ACTIVITIES WITHIN FOURTEEN (14) DAYS OF DISTURBANCE SHALL BE STABILIZED AS FOLLOWS:

A. SOIL AMENDMENTS AS NECESSARY.
B. ANNUAL RYE GRASS SEEDING APPLIED AT A RATE OF NOT LESS THAN 1 LB. PER 1,000 SF.
C. MULCH ALL NEWLY SEEDED AREAS WITHIN 80 LBS. OF SALT HAY OR SMALL GRAIN STRAW PER 1,000 SF.
D. WHEN DISTURBED AREAS ARE SCHEDULED FOR IMMEDIATE LANDSCAPING THEY MAY BE MULCHED AND SEEDED PER ITEM C ABOVE.

PERMANENT STABILIZATION

REFER TO PLANS FOR PERMANENT STABILIZATION METHODS + PROPOSED SEED MIXES.

A. PERMANENT VEGETATION IS TO BE SEEDED OR SODDED ON ALL DISTURBED LAND AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADING. MULCH AS NECESSARY FOR SEED PROTECTION AND ESTABLISHMENT. AMEND SOIL AS NEEDED PRIOR TO PERMANENT SEEDING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER COMPLETION OF AN EARTH CHANGE OR WHEN SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. ALL DISTURBED AREAS, STOCKPILES OF FILL OR EXCAVATED MATERIAL SHALL BE STABILIZED IN SUCH A MANNER AS NOT TO CAUSE UNREASONABLE HAZARD TO PERSONS OR PROPERTY.
B. MATERIALS SPECIFICATION: LAWN + MEADOW AREAS

   (i) ANY SOIL HAVING A pH OF FOUR OR LESS CONTAINING IRON SULFIDES SHALL BE COVERED WITH A MINIMUM OF TWELVE INCHES OF SOIL HAVING A pH OF FIVE OR MORE PRIOR TO SEED BED PREPARATION.
C. MULCHING SHALL BE DONE AT THE RATE OF SEVENTY TO NINETY POUNDS (70-90 LBS) PER 1,000 SQUARE FEET WITH UNROTTED SALT HAY.
D. LIQUID MULCH BINDERS MUST BE USED TO ANCHOR SALT HAY, HAY OR STRAY MULCHES.
   (i) APPLICATIONS SHOULD BE HEAVIER AT EDGES WHERE WIND CATCHES THE MULCH IN VALLEYS AND AT CREATED BANKS. REMAINDER OF AREA SHOULD BE UNIFORM IN APPEARANCE.
   (ii) USE ONE OF THE FOLLOWING: SYNTHETIC OR ORGANIC BINDERS, BINDERS SUCH AS CURASOL DCA-70, PETRO SET, TERRA TACH, HYDRO MULCH AND AEROSPRAY MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER OF ANCHOR MULCH MATERIALS. BINDERS CONTAINING PETROLEUM PRODUCTS SHALL NOT BE USED.

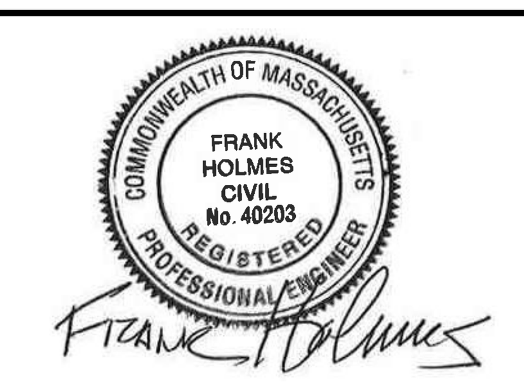
   NOTE: ALL NAMES GIVEN ABOVE ARE REGISTERED TRADE NAMES. THIS DOES NOT CONSTITUTE A RECOMMENDATION OF THESE TO THE EXCLUSION OF OTHER PRODUCTS.
D. FILL MATERIAL SHALL BE FREE FROM DEBRIS, PERISHABLE OR COMBUSTIBLE MATERIAL AND FROZEN OR WET EARTH OR STONES LARGER THAN THREE INCHES IN MAXIMUM DIMENSION.
E. CONSTRUCTION AREAS SHALL BE PERIODICALLY SPRAYED WITH WATER UNTIL THE SURFACE IS WET TO CONTROL THE GENERATION OF DUST.
F. ALL REVISIONS AFTER APPROVAL HAS BEEN GRANTED SHALL BE FORWARDED TO THE APPROPRIATE DISTRICT FOR REVIEW.
G. THE LOCAL GOVERNING AUTHORITY SHALL RECEIVE WRITTEN NOTIFICATION SEVENTY TWO HOURS BEFORE THE START OF ANY CONSTRUCTION.
H. SEEDBED PREPARATION:
   (i) TOPSOIL SHOULD BE A MINIMUM OF SIX INCHES DEEP (LIGHTLY COMPACTED) BEFORE SEEDING.
   (ii) TOPSOIL SHALL BE TESTED PRIOR TO SEEDING.
   (iii) WORK SOIL AMENDMENTS INTO SOIL AS NECESSARY AS NEARLY AS PRACTICAL TO A DEPTH OF FOUR INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE GENERAL CONTOUR. CONTINUE ALL CLAY OR SILTY SOIL AND COARSE SANDS SHOULD BE ROLLED TO FIRM THE SEED BED WHEREVER FEASIBLE.
   (iv) REMOVE FROM THE SURFACE ALL STONES ONE INCH OR LARGER IN ANY DIMENSION. REMOVE ALL OTHER DEBRIS, SUCH AS WIRE, CABLE, TREE ROOTS, PIECES OF CONCRETE, CLODS, LUMPS, OR OTHER UNSUITABLE MATERIAL.
   (v) INSPECT SEED BED JUST BEFORE SEEDING. IF TRAFFIC HAS LEFT SOIL COMPACT, THE AREA MUST BE RETILLED AND FIRMED AS ABOVE.

CONTINGENCY SOIL EROSION AND SEDIMENT CONTROL NARRATIVE

1. THE GENERAL CONTRACTOR WILL DESIGNATE PERSONNEL FOR 24 HOUR EMERGENCY RESPONSE IN THE EVENT OF SEVERE WEATHER AND INCREASED POTENTIAL FOR SEVERE EROSION.
2. THE GENERAL CONTRACTOR IS REQUIRED TO MAINTAIN ON SITE OR HAVE THE ABILITY TO RETRIEVE WITHIN 12 HOURS THE FOLLOWING MATERIALS IN THE EVENT THAT THERE ARE DEFICIENCIES IN THE SESC MEASURES:
   A. 25% OF THE INSTALLED LENGTH OF SILT FENCE
   B. EQUIVALENT TONNAGE OF STONE FOR STABILIZATION OF 2 STABILIZATION ENTRANCES. STONE COULD BE USED FOR SLOPE REPAIRS, ENERGY DISSIPATER ENHANCEMENTS, ETC.
   C. HEAVY EQUIPMENT CAPABLE OF TRENCHING/EXCAVATING LARGE AREAS TO DIVERT AND CONTROL RUNOFF IN A CONTROLLED MANNER.
   D. HAVE DESIGNATED A HYDRO-SEED CONTRACTOR CAPABLE OF RESPONDING TO THE SITE WITHIN 12 HOURS
3. ANY STUMP GRINDINGS OR WOOD CHIPS GENERATED ON-SITE SHOULD BE RETAINED FOR USE TO BACK UP SILT FENCES.

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions



LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

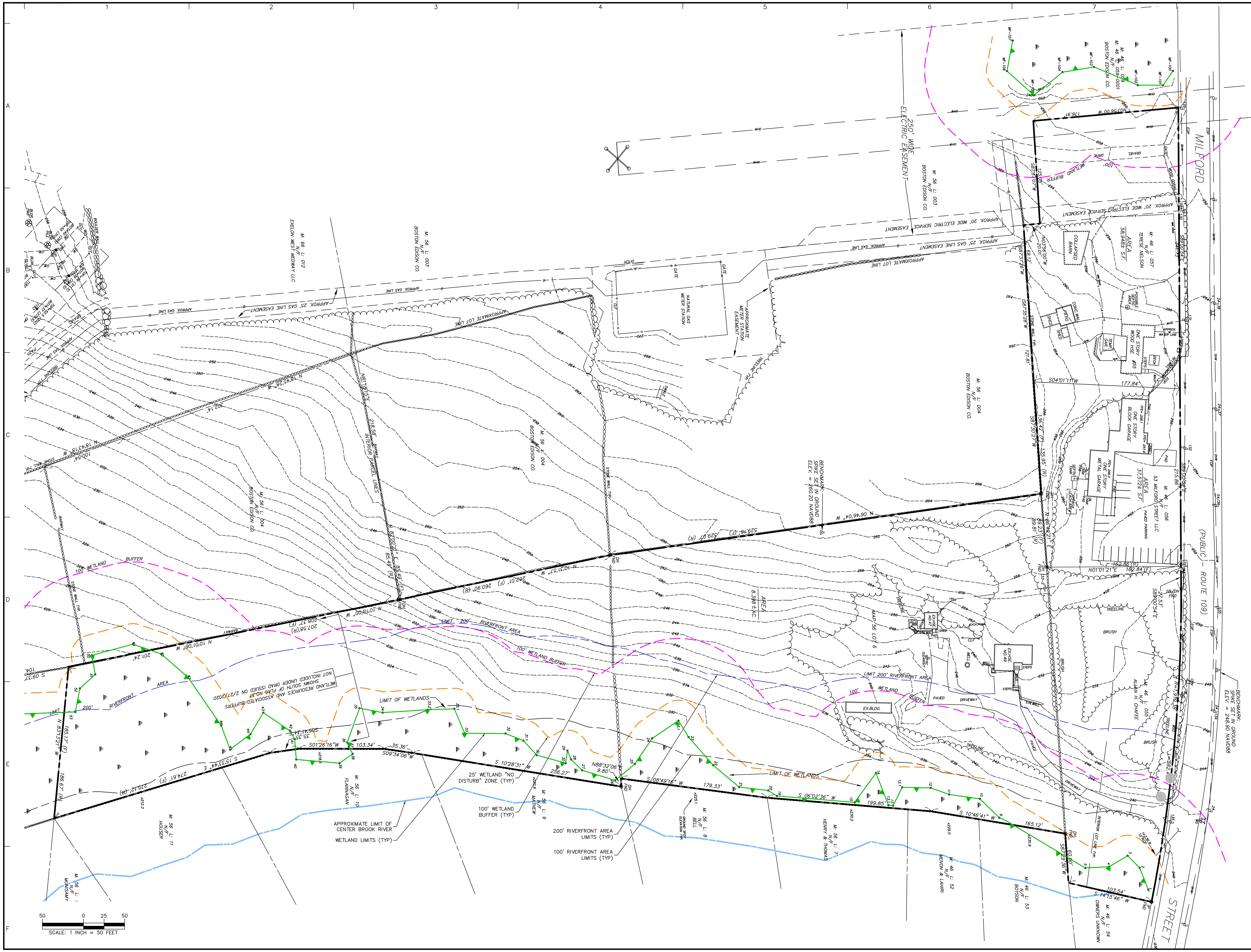
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

MASTER LEGEND AND NOTES

Project No. 151033401
Date 06/08/2023
Drawn By JNW
Checked By FH
Drawing No. CS002

Project No. 151033401



Date	Description	No.

Revisions

COMMONWEALTH OF MASSACHUSETTS FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER

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Langan Engineering and Environmental Services, Inc.

100 Cambridge Street, Suite 1310
Boston, MA 02114

T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

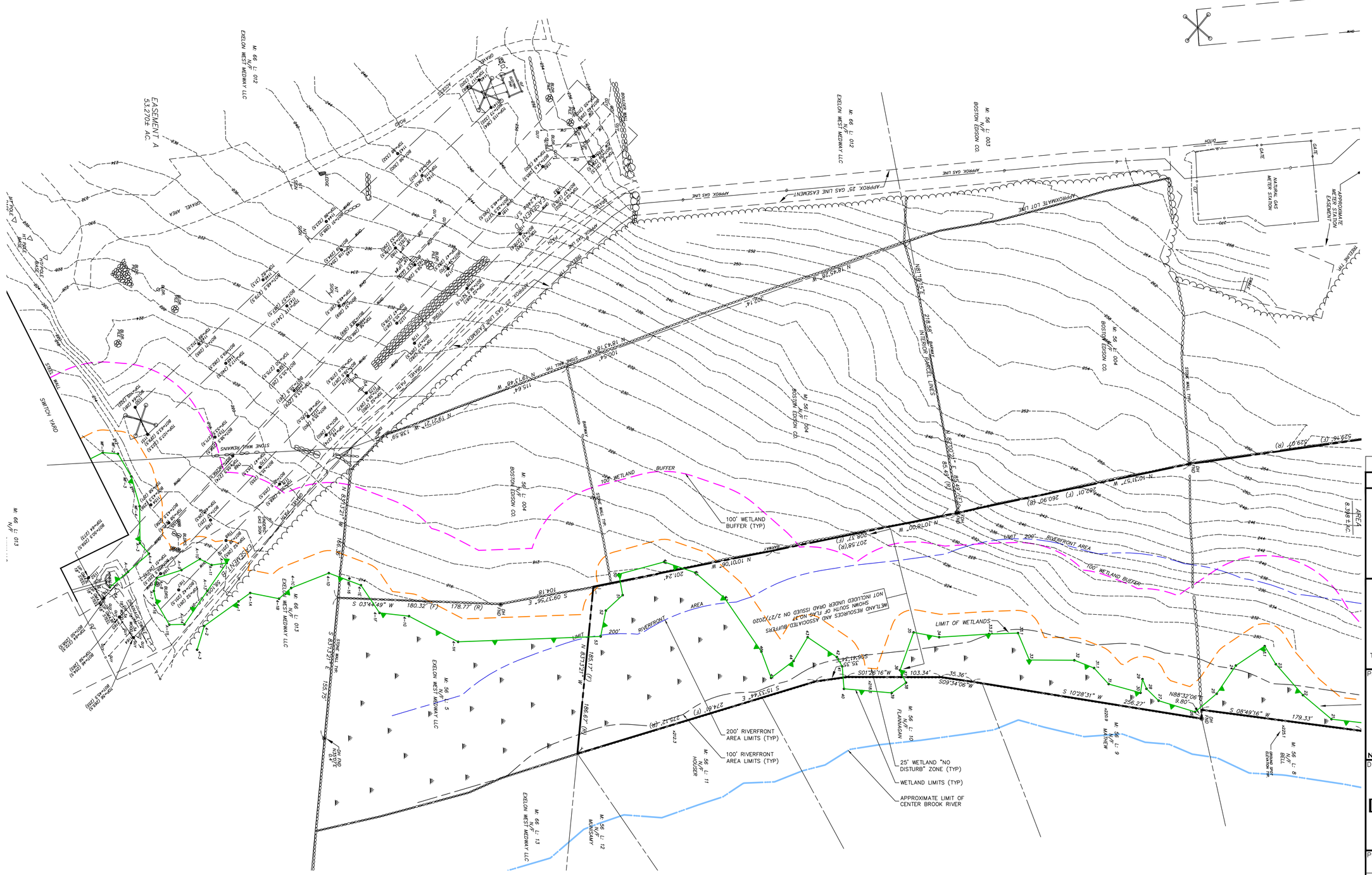
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

RESOURCE DELINEATION PLAN I

Project No. 151033401
Date 10/04/2023
Drawn By JSP
Checked By FH
Drawing No. EX101

Project No. 151033401



50 0 25 50
SCALE: 1 INCH = 50 FEET

Date	Description	No.
Revisions		

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES
CIVIL
No. 40203
REGISTERED PROFESSIONAL ENGINEER

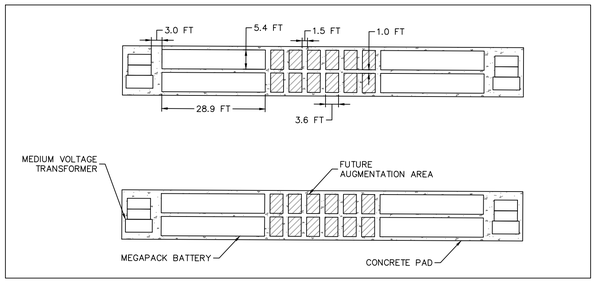
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
RESOURCE DELINEATION PLAN II

Project No.	Drawing No.
151033401	EX102
Date: 10/04/2023	
Drawn By: JSP	
Checked By: FH	

LANGAN
Project No. 151033401



BATTERY ENERGY STORAGE SYSTEM INSET

20 0 5 10 20

SCALE: 1 INCH = 20 FEET

WETLAND BUFFER IMPACT AREA #1 (6,130 SF)
ACCESS ROAD
10 FT
35 FT
15 FT
20 FT (TYP)
R20 FT
R65 FT
R45 FT
REMOVE AND RESET WOOD GUARDRAIL
REMOVE AND RELOCATE GATE
25 FT WIDE GAS LINE EASEMENT
9 FT X 18 FT PARKING STALL (TYP)
20 FT WIDE ELECTRIC EASEMENT
10-FT TALL CHAIN LINK SECURITY FENCE (TYP)
PROPERTY LINE (TYP)
SEE LANDSCAPE PLANS
FIRE HYDRANT (TYP)
MEDIUM VOLTAGE TRANSFORMER (TYP)
8 FT (TYP)
± 607 LF 22-FT TALL METAL PANEL SOUND WALL
15 FT
SETBACK LINE (TYP)
BATTERY ENERGY STORAGE SYSTEM – SEE INSET
ESTABLISH NEW EDGE OF PAVEMENT
CONCRETE BOLLARD (TYP)
RETAINING WALL (TYP)
ASPHALT PAVEMENT (TYP)
MILFORD STREET (ROUTE 109)
5 FT
CRUSHED STONE (TYP)
20' X 20' ELECTRICAL EQUIPMENT PAD
30 FT
± 710 LF 22' TALL METAL PANEL SOUND WALL
345-34.5kV TRANSFORMER
345kV BREAKER
345kV DISCONNECT SWITCH
LIGHTNING MAST
10-FT TALL CHAIN LINK SECURITY FENCE WITH BARBED WIRE (TYP)
RETAINING WALL (TYP)
34.5kV SWITCHGEAR BUILDING
ACCESS ROAD; GEN-TIE CONNECTION LIMITS TO BE COORDINATED WITH TRANSMISSION CORRIDOR PLANS BY OTHERS
PROPOSED UNDERGROUND CABLE TERMINATION STRUCTURE
LIMITS OF CRUSHED STONE COVER – TRANSITION TO SEED MIX. SEE LANDSCAPE PLANS
STORMWATER BASIN ACCESS PATH
MATCHLINE: CS102
MATCHLINE: CS101
LEASE AREA
R20 FT
R45 FT
12 FT
R38 FT
R65 FT
LIMIT OF WORK (TYP)
GUARDRAIL (TYP)
HEADWALL
SWING GATE (TYP)
PAVED ACCESS DRIVE
10 FT
20 FT
WETLAND BUFFER IMPACT AREA #3 (1,610 SF)
200' RIVERFRONT AREA LIMITS (TYP)
100' WETLAND BUFFER (TYP)
WETLAND BUFFER IMPACT AREA #2 (29,250 SF)
WETLAND LIMITS (TYP)
100' RIVERFRONT AREA LIMITS (TYP)
25' WETLAND "NO DISTURB" ZONE (TYP)
STORMWATER MANAGEMENT FEATURE
SNOW STORAGE (TYP)
SHED TO BE REMOVED, 710 SF
APPROXIMATE LIMIT OF CENTER BROOK RIVER
PAVEMENT WITHIN STORMWATER BASIN TO BE REMOVED, 2,070 SF
LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 2,610 SF
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 0'-100' RIVERFRONT AREA, 210 SF
PAVEMENT TO BE REMOVED IN ROW, 100'-200' RIVERFRONT AREA, 330 SF
PAVEMENT TO BE REMOVED IN ROW, 0'-100' RIVERFRONT AREA, 200 SF

50 0 25 50

SCALE: 1 INCH = 50 FEET

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

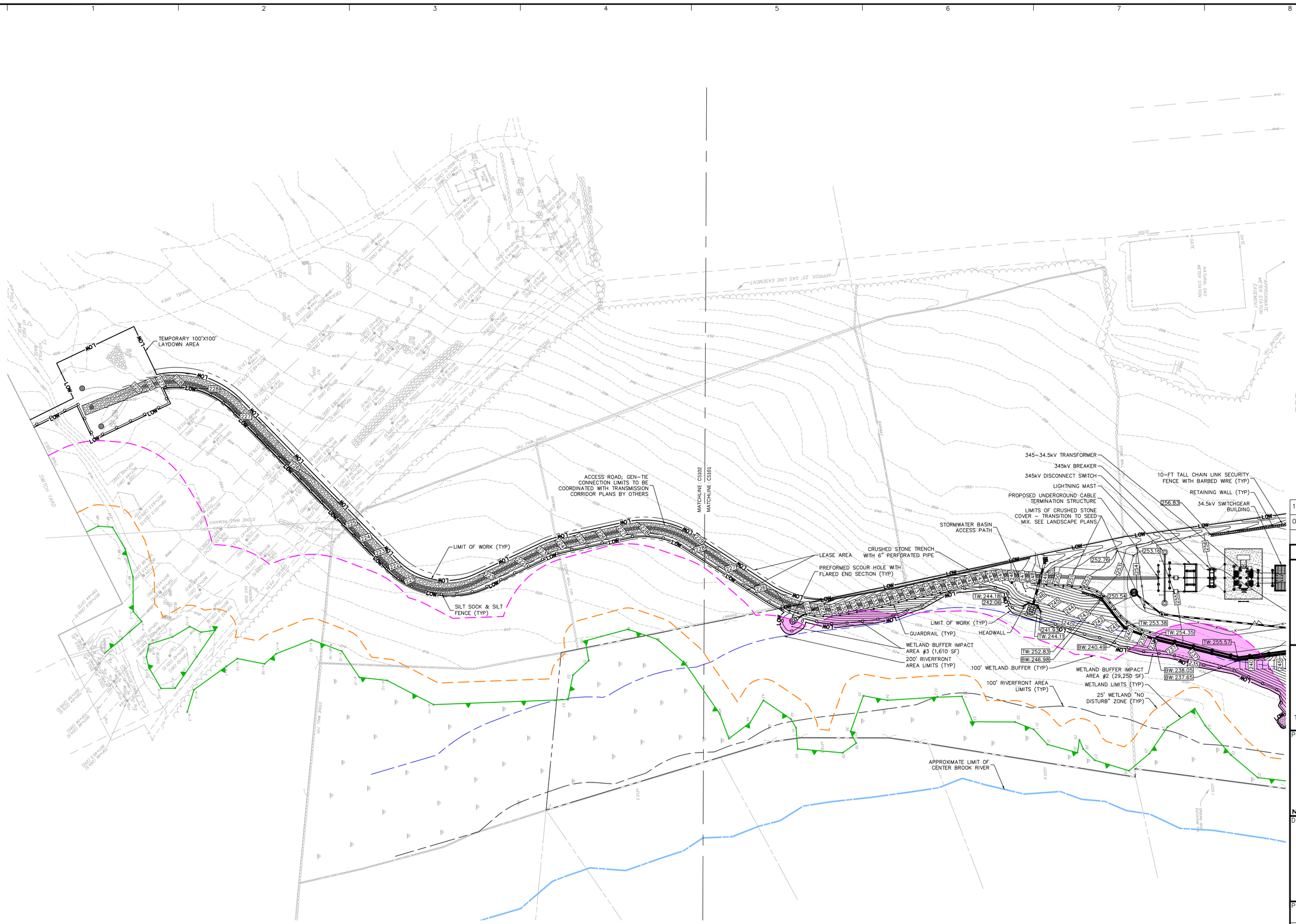
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SITE PLAN

Project No.	Drawing No.
151033401	CS101
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401



NOTE: PLEASE REFER TO POWER ENGINEER'S PROPOSED 345kV UNDERGROUND TRANSMISSION LINE PLANS FOR ADDITIONAL INFORMATION.

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

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Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

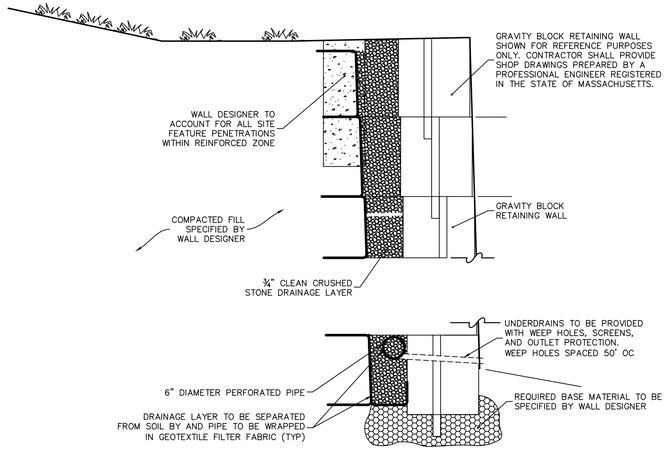
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

UNDERGROUND TRANSMISSION LINE SITE PLAN

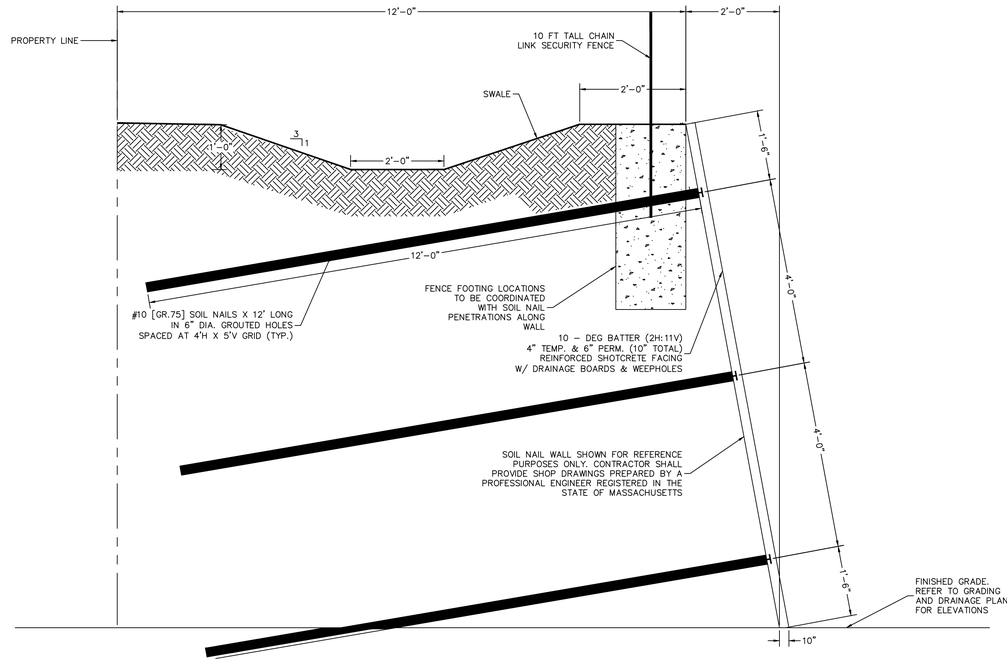
Project No. 151033401	Drawing No. CS102
Date 06/08/2023	
Drawn By JSP	
Checked By FH	

LANGAN
Project No. 151033401



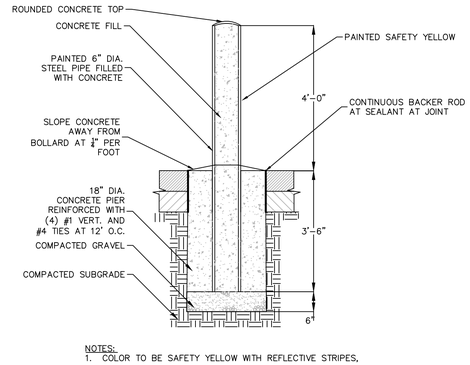
1 TYPICAL RETAINING WALL SECTION (FOR REFERENCE ONLY)

N.T.S.



2 SOIL NAIL WALL (FOR REFERENCE ONLY)

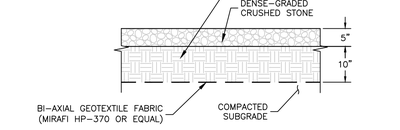
N.T.S.



NOTES:
1. COLOR TO BE SAFETY YELLOW WITH REFLECTIVE STRIPES.

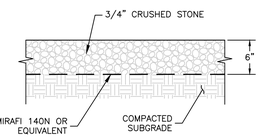
3 CONCRETE BOLLARD

N.T.S.



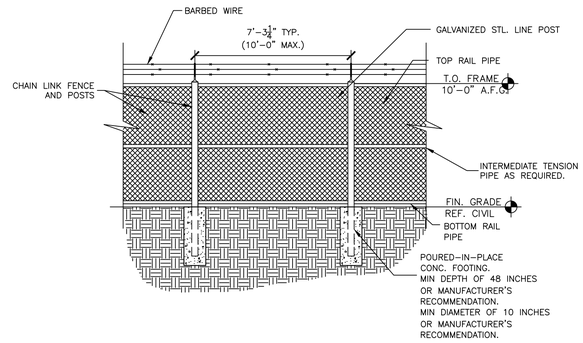
4 CRUSHED STONE ACCESS ROAD

N.T.S.



5 CRUSHED STONE SECTION

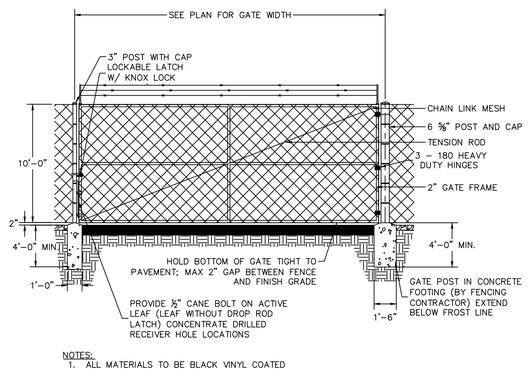
N.T.S.



NOTES:
1. FENCE AND POSTS TO BE GALVANIZED AND BLACK VINYL COATED.

6 10 FT TALL CHAIN LINK SECURITY FENCE WITH BARBED WIRE

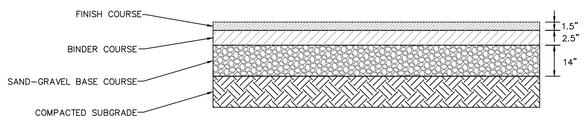
N.T.S.



NOTES:
1. ALL MATERIALS TO BE BLACK VINYL COATED

7 CHAIN LINK SWING GATE

N.T.S.



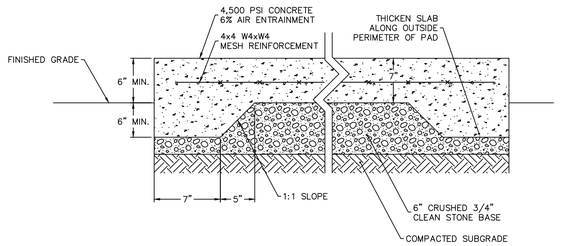
NOTES:

1. PAVING COURSES SHALL BE CONSTRUCTED IN LAYERS NOT LESS THAN 1.5 INCHES THICK PER LIFT.
2. ALL FILL MATERIALS SHALL BE FREE FROM ICE AND SNOW, ROOTS, SOD, RUBBISH AND OTHER DELETERIOUS OR ORGANIC MATTER. STRUCTURAL FILL SHALL CONFORM TO THE GRADATION REQUIREMENTS.
3. ALL AREAS TO BE PAVED SHALL BE PROOFROLLED WITH AT LEAST 4 PASSES OF A SMOOTH ROLLER HAVING A MINIMUM STATIC DRUM WEIGHT OF 10 TONS. ANY SOFT AREAS SHALL BE REMOVED AND REPLACED WITH CLEAN, GRANULAR, FREE–DRAINING SOIL. FILL SHALL BE PLACED IN LOOSE LIFTS NOT TO EXCEED 12–INCHES AND SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM DRY DENSITY AS DETERMINED BY THE GEOTECHNICAL REPORT.
4. REFER TO GEOTECHNICAL REPORT TITLED, "UPDATED GEOTECHNICAL REPORT PROPOSED ENERGY STORAGE INSTALLATION 50–53 MILFORD STREET MEDWAY, MASSACHUSETTS" BY GZA GEOENVIROMENTAL, INC. FOR FURTHER DETAIL.
5. REFER TO TABLE 1:GRADATION REQUIREMENTS FOR RECOMMENDED BASE COURSE.

TABLE 1: GRADATION REQUIREMENTS	
SIEVE SIZE	% FINER BY WEIGHT
SAND–GRAVEL	
3 INCH	10
½ INCH	50 – 85
No. 4	40 – 75
No. 40	10 – 35
No. 200	0 – 8

8 ASPHALT PAVEMENT

N.T.S.



9 CONCRETE PAD

N.T.S.

Date	Description	No.
Revisions		

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SITE DETAILS

Project No.	Drawing No.
151033401	CS501
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401

TREE SURVEYED TREE LEGEND				
NUMBER	SPECIES	DBH (Inches)	STATUS	APPROXIMATE CANOPY AREA (SF)
1	WHITE PINE	28	TO BE PROTECTED	1385
2	WHITE OAK	30	TO BE PROTECTED	1590
3	RED OAK	18	TO BE REMOVED	572
4	RED MAPLE	12	TO BE REMOVED	254
5	WHITE PINE	30	TO BE REMOVED	1590
6	RED MAPLE	12	TO BE REMOVED	254
7	WHITE OAK	12	TO BE REMOVED	254
8	RED MAPLE	18	TO BE REMOVED	572
9	POPLAR	5	TO BE REMOVED	44
10	GREY BIRCH	6	TO BE REMOVED	64
11	POPLAR	5	TO BE REMOVED	44
12	POPLAR	6	TO BE REMOVED	64
13	RED MAPLE	5	TO BE REMOVED	44
14	POPLAR	5	TO BE REMOVED	44
15	POPLAR	5	TO BE REMOVED	44
16	RED OAK	7	TO BE REMOVED	87
17	RED MAPLE	6	TO BE REMOVED	64
18	RED MAPLE	6	TO BE REMOVED	64
19	WHITE PINE	10	TO BE REMOVED	177
20	RED MAPLE	10	TO BE REMOVED	177
21	SHAGBARK HICKORY	8	TO BE REMOVED	113
22	BLACK OAK	6	TO BE REMOVED	64

NOTE:
1. ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO DEMOLITION AND SITE CLEARING ACTIVITIES, SEE DRAWING CE101.
2. TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD PER THE PLAN AND TREES TO REMAIN SHALL BE MARKED IN THE FIELD AND PROTECTED PER TREE PROTECTION DETAIL ON SHEET LP-501. ALL FIELD MARKINGS SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT AND CONSERVATION AGENT.

REMOVE PORTION OF GRAVEL DRIVE WITHIN PROPERTY LINE
WETLAND BUFFER IMPACT AREA #1 (6,130 SF)
PROPERTY LINE (TYP)
REMOVE AND RESET EXISTING GATE AND WOODEN GUARDRAIL
EXISTING UTILITY POLE TO REMAIN & BE PROTECTED
REMOVE ALL TREES WITHIN LIMIT OF DISTURBANCE AS REQUIRED
EXISTING UTILITY POLE TO REMAIN & BE PROTECTED
REMOVE OVERHEAD WIRES
SAWCUT PAVEMENT (TYP)
REMOVE PAVEMENT (TYP)
REMOVE OIL TANK
ALL COMPONENTS OF SEPTIC SYSTEM TO BE LEGALLY DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND TOWN OF MEDWAY REGULATIONS
EXISTING UTILITY POLE TO REMAIN & BE PROTECTED
MILFORD STREET (ROUTE 109)
REMOVE OVERHEAD WIRES
EXISTING UTILITY POLE TO REMAIN & BE PROTECTED
REMOVE UTILITY POLE
REMOVE UTILITY POLE
REMOVE
REMOVE BRUSH WITHIN LIMIT OF DISTURBANCE
REMOVE ALL TREES WITHIN LIMIT OF DISTURBANCE AS REQUIRED
REMOVE BUILDING AND ASSOCIATED DECKING, STAIRS, WALLS (TYP)
ALL COMPONENTS OF SEPTIC SYSTEM AND WELL TO BE LEGALLY DISPOSED OF IN ACCORDANCE WITH APPLICABLE STATE AND TOWN OF MEDWAY REGULATIONS
200' RIVERFRONT AREA LIMITS (TYP)
WETLAND BUFFER IMPACT AREA #3 (1,610 SF)
100' WETLAND BUFFER (TYP)
100' RIVERFRONT AREA LIMITS (TYP)
WETLAND LIMITS (TYP)
SURVEYED TREE TO BE REMOVED (TYP)
25' WETLAND "NO DISTURB" ZONE (TYP)
PAVEMENT WITHIN STORMWATER BASIN TO BE REMOVED, 2,070 SF
REMOVE EXISTING STONE WALL (TYP)
SHED TO BE REMOVED, 710 SF
WETLAND BUFFER IMPACT AREA #2 (29,250 SF)
LIMIT OF WORK (TYP)
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 2,610 SF
REMOVE EXISTING PAVEMENT (TYP)
PROTECT EXISTING TREELINE
SHRUBS TO REMAIN AND BE PROTECTED
TREES TO REMAIN AND BE PROTECTED
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 0'-100' RIVERFRONT AREA, 210 SF
EXISTING UTILITY POLE TO REMAIN & BE PROTECTED
PAVEMENT TO BE REMOVED IN ROW, 100'-200' RIVERFRONT AREA, 330 SF
APPROXIMATE LIMIT OF CENTER BROOK RIVER
LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA
PAVEMENT TO BE REMOVED IN ROW, 0'-100' RIVERFRONT AREA, 200 SF
MATURAL GAS METER STATION
APPROXIMATE METER STATION EASEMENT
APPROX. 25' GAS LINE EASEMENT
APPROX. 20' WIDE ELECTRIC SERVICE EASEMENT
APPROX. 20' WIDE ELECTRIC SERVICE EASEMENT
APPROXIMATE LOT LINE
APPROX. GAS LINE
DITCH
STONE WALL TYP.
BERM
DRIVE
GRAVEL SHOULDER
40 0 10 25 40
SCALE: 1 INCH = 40 FEET

10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1
Date	Description	No.

Revisions

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES
CIVIL
No. 40303
REGISTERED PROFESSIONAL ENGINEER

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SITE PREPARATION PLAN

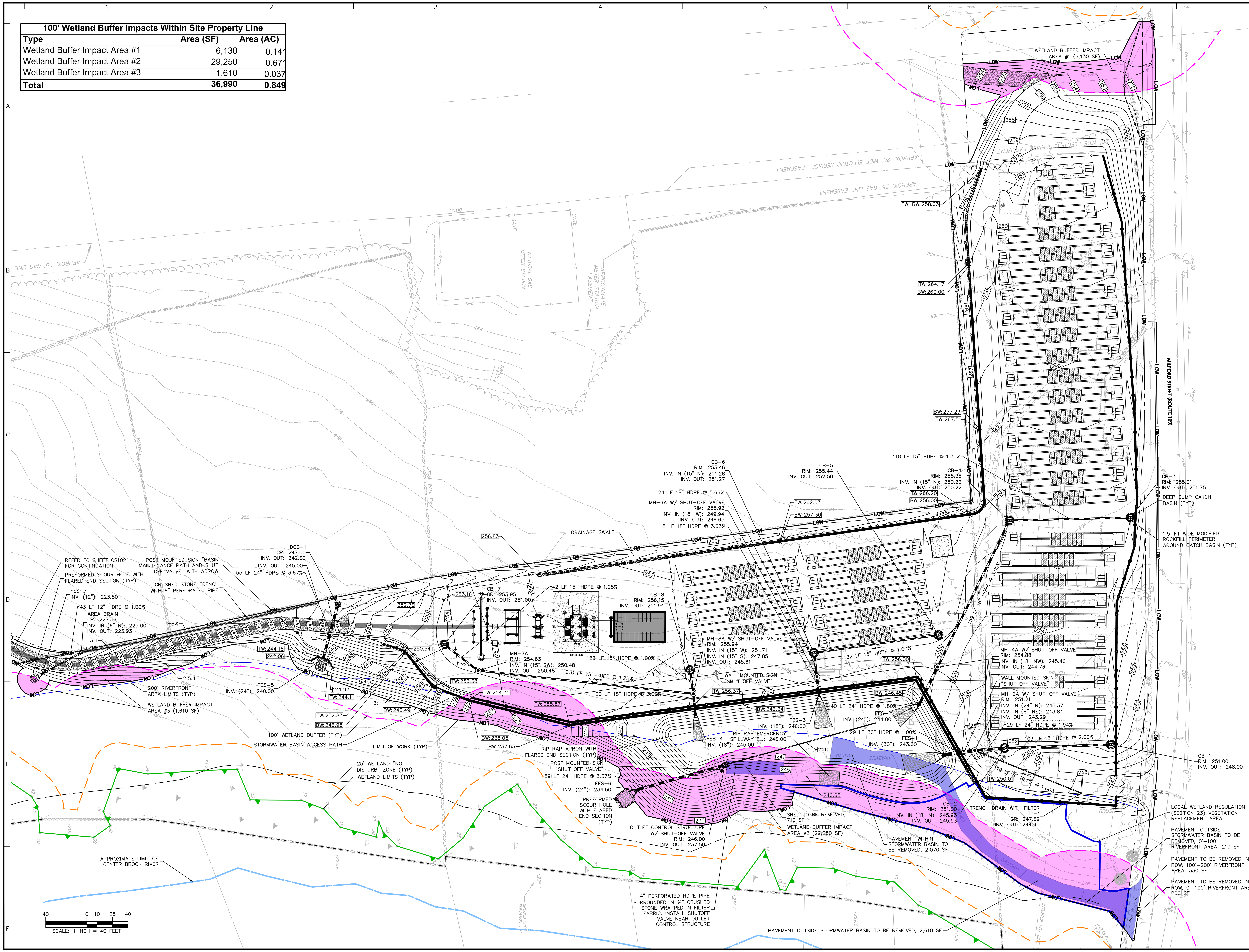
Project No.	Drawing No.
151033401	CD101
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401

Date: 10/3/2023 Time: 17:32 User: jpark Style Table: Langan.stb Layout: CD101 Document Code: 151033401-0501-CD101-0101

100' Wetland Buffer Impacts Within Site Property Line

Type	Area (SF)	Area (AC)
Wetland Buffer Impact Area #1	6,130	0.141
Wetland Buffer Impact Area #2	29,250	0.671
Wetland Buffer Impact Area #3	1,610	0.037
Total	**36,990**	**0.849**



WETLAND BUFFER IMPACT AREA #1 (6,130 SF)
APPROX. 20' WIDE ELECTRIC SERVICE EASEMENT
APPROX. 25' GAS LINE EASEMENT
APPROX. 25' GAS LINE
NATURAL GAS METER STATION
APPROXIMATE METER STATION EASEMENT
GATE
MILFORD STREET (ROUTE 109)
TW=BW: 258.63
TW: 264.17
BW: 260.00
BW: 257.23
TW: 267.51
118 LF 15" HDPE @ 1.30%
CB-6 RIM: 255.46 INV. IN (15" N): 251.28 INV. OUT: 251.27
CB-5 RIM: 255.44 INV. OUT: 252.50
CB-4 RIM: 255.35 INV. IN (15" N): 250.22 INV. OUT: 250.22
TW: 266.20
BW: 256.00
CB-3 RIM: 255.01 INV. OUT: 251.75
DEEP SUMP CATCH BASIN (TYP)
1.5-FT WIDE MODIFIED ROCKFILL PERIMETER AROUND CATCH BASIN (TYP)
24 LF 18" HDPE @ 5.66%
MH-6A W/ SHUT-OFF VALVE RIM: 255.92 INV. IN (18" W): 249.94 INV. OUT: 246.65
18 LF 18" HDPE @ 3.63%
TW: 262.03
BW: 257.30
DRAINAGE SWALE
REFER TO SHEET CS102 FOR CONTINUATION
PREFORMED SCOUR HOLE WITH FLARED END SECTION (TYP)
FES-7 INV. (12"): 223.50
43 LF 12" HDPE @ 1.00%
AREA DRAIN GR: 227.56 INV. IN (6" N): 225.00 INV. OUT: 223.93
POST MOUNTED SIGN "BASIN MAINTENANCE PATH AND SHUT OFF VALVE" WITH ARROW
CRUSHED STONE TRENCH WITH 6" PERFORATED PIPE
DCB-1 GR: 247.00 INV. OUT: 242.00 INV. OUT: 245.00
55 LF 24" HDPE @ 3.67%
CB-7 GR: 253.95 INV. OUT: 251.00
42 LF 15" HDPE @ 1.25%
CB-8 RIM: 256.15 INV. OUT: 251.94
MH-8A W/ SHUT-OFF VALVE RIM: 255.94 INV. IN (15" W): 251.71 INV. IN (15" S): 247.85 INV. OUT: 245.61
MH-7A RIM: 254.63 INV. IN (15" SW): 250.48 INV. OUT: 250.48
23 LF 15" HDPE @ 1.00%
210 LF 15" HDPE @ 1.25%
20 LF 18" HDPE @ 3.00%
WALL MOUNTED SIGN "SHUT OFF VALVE"
122 LF 15" HDPE @ 1.00%
TW: 256.00
MH-4A W/ SHUT-OFF VALVE RIM: 254.88 INV. IN (18" NW): 245.46 INV. OUT: 244.73
WALL MOUNTED SIGN "SHUT OFF VALVE"
MH-2A W/ SHUT-OFF VALVE RIM: 251.21 INV. IN (24" N): 245.37 INV. IN (8" NE): 243.84 INV. OUT: 243.29
29 LF 24" HDPE @ 1.94%
103 LF 18" HDPE @ 2.00%
159 LF 18" HDPE @ 3.00%
40 LF 24" HDPE @ 1.80%
FES-2 INV. (24"): 244.00
FES-3 INV. (18"): 246.00
FES-4 INV. (18"): 245.00
RIP RAP EMERGENCY SPILLWAY EL.: 246.00
29 LF 30" HDPE @ 1.00%
FES-1 INV. (30"): 243.00
FES-5 INV. (24"): 240.00
2.5:1
3:1
200' RIVERFRONT AREA LIMITS (TYP)
WETLAND BUFFER IMPACT AREA #3 (1,610 SF)
100' WETLAND BUFFER (TYP)
STORMWATER BASIN ACCESS PATH
LIMIT OF WORK (TYP)
RIP RAP APRON WITH FLARED END SECTION (TYP)
POST MOUNTED SIGN "SHUT OFF VALVE"
89 LF 24" HDPE @ 3.37%
FES-6 INV. (24"): 234.50
PREFORMED SCOUR HOLE WITH FLARED END SECTION (TYP)
OUTLET CONTROL STRUCTURE W/ SHUT-OFF VALVE RIM: 246.00 INV. OUT: 237.50
25' WETLAND "NO DISTURB" ZONE (TYP)
WETLAND LIMITS (TYP)
APPROXIMATE LIMIT OF CENTER BROOK RIVER
4" PERFORATED HDPE PIPE SURROUNDED IN ¾" CRUSHED STONE WRAPPED IN FILTER FABRIC. INSTALL SHUTOFF VALVE NEAR OUTLET CONTROL STRUCTURE
SHED TO BE REMOVED, 710 SF
WETLAND BUFFER IMPACT AREA #2 (29,250 SF)
PAVEMENT WITHIN STORMWATER BASIN TO BE REMOVED, 2,070 SF
CB-2 RIM: 251.00 INV. IN (18" N): 245.93 INV. OUT: 245.93
TRENCH DRAIN WITH FILTER TD-1 GR: 247.69 INV. OUT: 244.95
CB-1 RIM: 251.00 INV. OUT: 248.00
TW: 250.05
LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 0'-100' RIVERFRONT AREA, 210 SF
PAVEMENT TO BE REMOVED IN ROW, 100'-200' RIVERFRONT AREA, 330 SF
PAVEMENT TO BE REMOVED IN ROW, 0'-100' RIVERFRONT AREA, 200 SF
PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 2,610 SF
SCALE: 1 INCH = 40 FEET

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

COMMONWEALTH OF MASSACHUSETTS — FRANK HOLMES — CIVIL — No. 40203 — REGISTERED PROFESSIONAL ENGINEER

LANGAN

Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

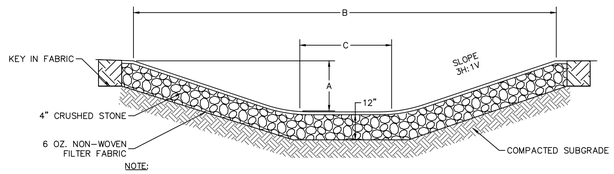
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

GRADING & DRAINAGE PLAN

Project No. 151033401
Date 06/08/2023
Drawn By JNW
Checked By FH
Drawing No. CG101

Project No. 151033401



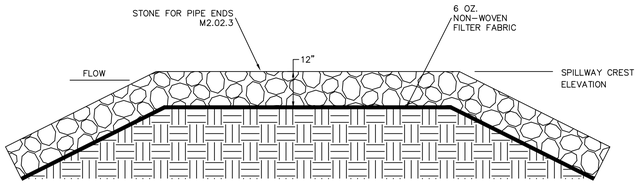
NOTE:

1. SWALE SHALL BE CRUSHED STONE.

SWALE DESIGN SCHEDULE				
SWALE LOCATION	LENGTH (FT)	A MIN. DEPTH (FT)	B MIN. TOP WIDTH (FT)	C BOTTOM WIDTH (FT)
WESTERN PROPERTY LINE	PER PLAN	1.0	8.0	2.0

1 SWALE

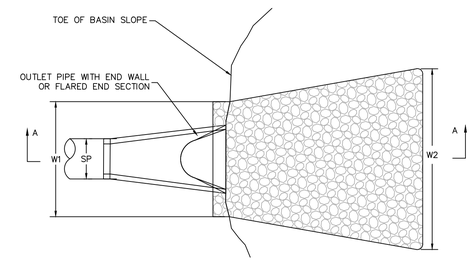
N.T.S.



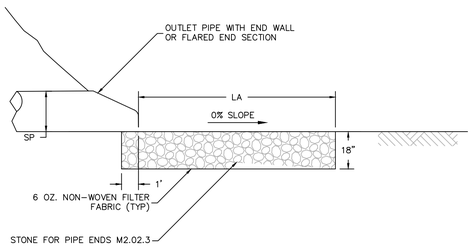
RIP-RAP SPILLWAY SCHEDULE					
LOCATION	SPILLWAY CREST ELEVATION (FT)	SPILLWAY CREST ELEVATION WIDTH (FT)	SPILLWAY TOP WIDTH (FT)	SPILLWAY SIDE SLOPES	SPILLWAY LENGTH (FT)
INFILTRATION BASIN	246	20	23	3:1	36

2 RIP RAP EMERGENCY SPILLWAY

N.T.S.



PLAN



SECTION A-A

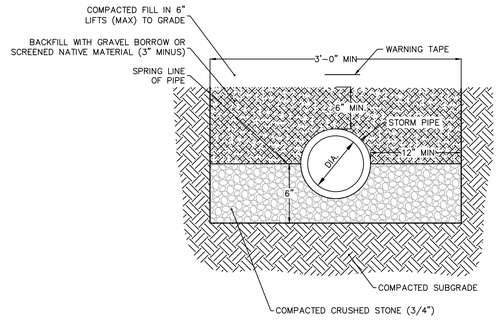
NOTES:

1. SEE GRADING AND DRAINAGE PLAN FOR SIZES/DIMENSIONS

STRUCTURE	LA [FT]	W1 [FT]	W2 [FT]	SP [FT]
FES-1	36	8	22	2.5
FES-2	21	6	21	2
FES-3	20	5	18	1.5
FES-4	23	5	14	1.5

3 RIPRAP APRON WITH FLARED END SECTION

N.T.S.

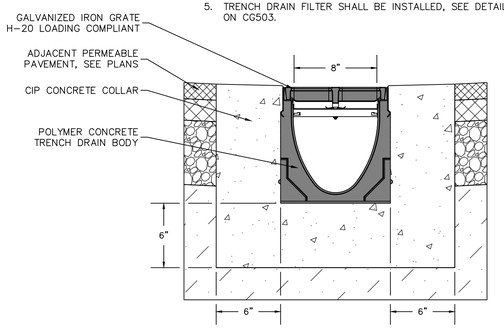


4 STORM PIPE BEDDING

N.T.S.

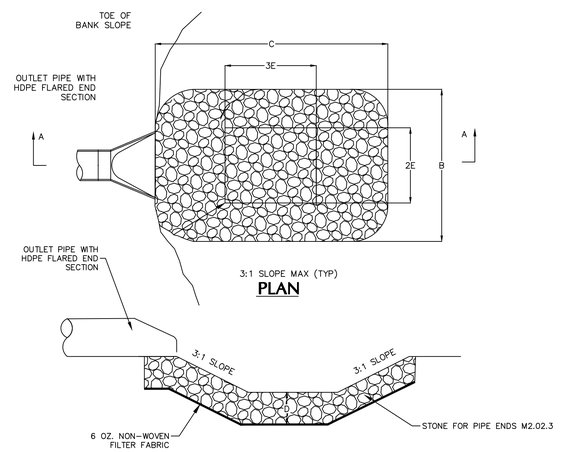
NOTES:

1. MINIMUM CONCRETE STRENGTH OF 4,000 PSI. VIBRATE TO ELIMINATE AIR POCKETS.
2. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
3. INSTALL PER MANUFACTURER INSTRUCTIONS.
4. MINIMUM TRENCH DRAIN DEPTH SHALL BE 6.5" FROM THE BOTTOM OF THE GRATE.
5. TRENCH DRAIN FILTER SHALL BE INSTALLED, SEE DETAIL 8 ON CG503.



5 TRENCH DRAIN

N.T.S.



PLAN

SECTION A - A

NOTE:

1. SIDE SLOPES SHALL BE 3:1 OR FLATTER.

STRUCTURE	E [FT]	2E [FT]	3E [FT]	DEPTH [FT]	B [FT]	C [FT]	D [FT]
FES-5	2	4	6	1	10	12	1
FES-6	2.5	5	7.5	1.25	12.5	15	1
FES-7	1.5	3	4.5	0.75	7.5	9	1

6 PREFORMED SCOUR HOLE WITH FLARED END SECTION

N.T.S.

Date	Description	No.
08/24/23	NOI COMMENT REVISIONS	1

Revisions

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
FRANK HOLMES

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

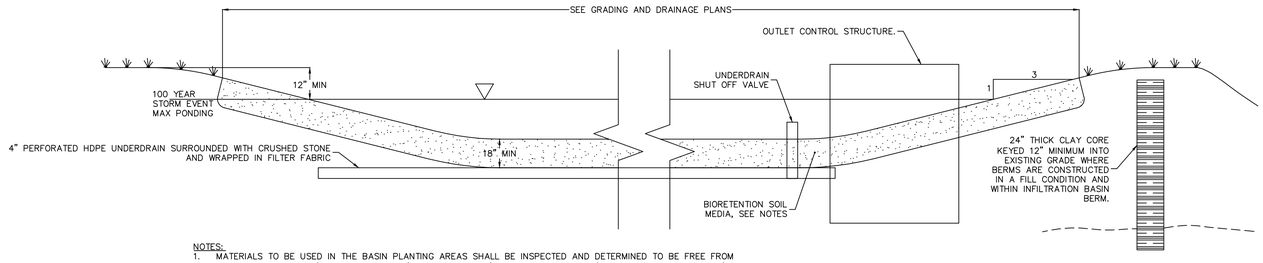
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

GRADING & DRAINAGE DETAILS

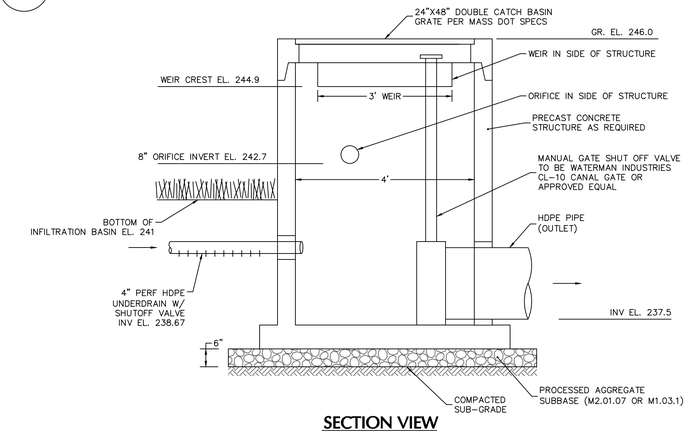
Project No.	Drawing No.
151033401	CG501
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401

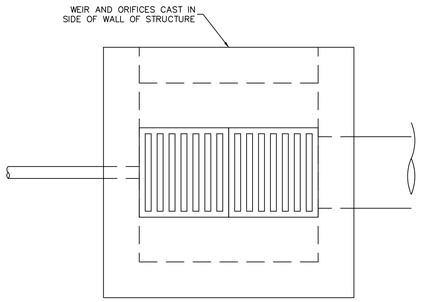


NOTES:
1. MATERIALS TO BE USED IN THE BASIN PLANTING AREAS SHALL BE INSPECTED AND DETERMINED TO BE FREE FROM PURPLE LOOSESTRIFE (LYTHRUM SALICARIA), COMMON REED (PHRAGMITES AUSTRALIS), OR REED CANARYGRASS (PHALARIS ARUNDINACEA).
2. BASIN SOIL MIX SHALL BE PLACED A MINIMUM OF 18" DEEP.
3. ENGINEER TO OBSERVE INFILTRATION BASIN SOILS DURING EXCAVATION TO ENSURE ALL UNSUITABLE SOILS HAVE BEEN REMOVE PRIOR TO FINAL GRADING.
4. COMPACTION OF BASINS AREAS AND REQUIRED BACKFILL SHALL BE MINIMIZED TO THE MAXIMUM EXTENT FEASIBLE BY THE USE OF EXCAVATION HOES, LIGHT EQUIPMENT WITH TURF TYPE TIRES, OR WIDE TRACK EQUIPMENT.
5. IF COMPACTION DOES OCCUR IN BASIN, THE COMPACTED ZONE SHALL BE TILLED TO REFRACTURE AT LEAST 12" OF NATURAL SOIL BEFORE BACKFILLED WITH SOIL MIX.
6. WHEN BACKFILLING BASIN, PLACE SOIL IN LIFTS OF 12–18" AND USE LIGHT EQUIPMENT ONLY WHEN GRADING WITHIN THE BASIN. HEAVY EQUIPMENT CAN BE USED AROUND THE PERIMETER OF THE BASIN.
7. ALLOW SOIL MIXTURE TO SETTLE NATURALLY THROUGH RAIN EVENTS OR PRESOAK AFTER PLACEMENT.
8. BIORETENTION SOIL MIX SHALL BE PER SHEET LP501.
9. SEED BASIN WITH MEADOW MIX A PER SHEET LP501.
10. SEED SHOULDERS OF BASINS WITH MEADOW MIX B PER SHEET LP501.
11. PLANTS AND SEED MIXES SHALL BE FIELD LOCATED BY A WETLAND SCIENTIST.

1 INFILTRATION BASIN
N.T.S.

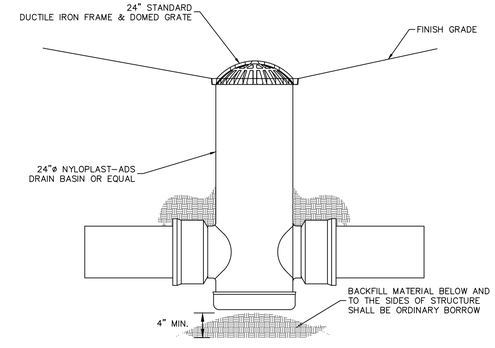


SECTION VIEW



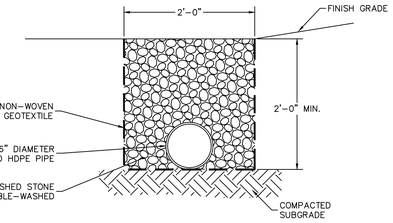
PLAN VIEW

4 OUTLET CONTROL STRUCTURE - INFILTRATION BASIN
N.T.S.



NOTES:
1. GRATE SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70–50–05.2
2. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS.
3. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N–12/HANCOR DUAL WALL), N–12 HP, & PVC SEWER.
5 ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°.

2 AREA DRAIN
N.T.S.

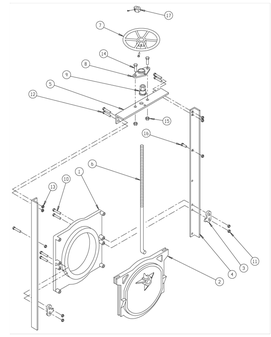


3 STONE TRENCH WITH PERFORATED PIPE
N.T.S.

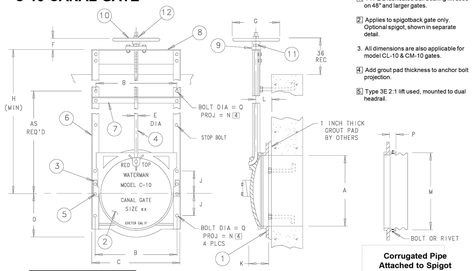
C-10 CANAL GATE PARTS

PARTS LIST		
No.	Name	Qty.
1	Frame	1
2	Cover	1
3	Wedge (R&L)	2
4	Guide Rail (R&L)	2
5	Headrail	1
6	Stem	1
7	Handwheel	1
8	Thrust Collar	1
9	Lift Nut	1
10	Wedge Bolt	4
11	Wedge Nut	4
12	Frame Bolt	4
13	Frame Nut	4
14	Collar Bolt	2
15	Collar Nut	2
16	Stop Bolt & Nut	1
17	Limit Nut (optional) *	1

* With set screw



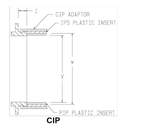
C-10 CANAL GATE



NOTES
1. TYPE 2 lubricated ball bearing lift used on 48" and larger gates.
2. Applies to spigotback gate only. Optional spigot, shown in separate detail.
3. All dimensions are also applicable for model CL-10 & CM-10 gates.
4. Add grout pad thickness to anchor bolt projection.
5. Type 3E 2:1 lift used, mounted to dual headrail.

Corrugated Pipe Attached to Spigot Back Frame

PARTS LIST		
No.	Name	Qty.
1	Frame	1
2	Cover	1
3	Wedge (Right & Left)	1 ea.
4	Stem	1
5	Wedge Bolts	4
6	Guide Rail	2
7	Stem Support	A/R
8	Head Rail	1
9	Lift Collar	1
10	Handwheel	1
11	Lift Nut	1
12	Limit Nut	1



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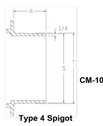


CM-10

Type 4 Spigot

A	B	C	D	E	F	G	H	J	K	L	M [2]	N	P [2]	Q	R	S	T	V	W
6	8	9¾	4	¾	2⅝	10	24	3	3½	2¾	7	3½	2¼	⅛	-	-	-	6.160	6.645
8	10	12	4¾	¾	2⅝	10	24	3	3⅝	2½	9	3½	2¼	⅛	4	3⅞	8	8.180	8.645
10	12	13¾	6	¾	2⅝	10	24	3⅜	3⅝	2½	11	3½	2¼	⅛	3⅝	9⅛	10	10.220	10.770
12	14	15¾	7	¾	2⅝	10	24	4	3½	3	13	4	2¼	⅛	4	11½	12	12.270	12.780
14	16	17¾	8	¾	2⅝	10	27	4⅜	3⅝	3½	15	4	2¼	⅛	-	-	-	-	-
15	17	18¾	8½	¾	2⅝	10	30	5	4½	3½	16	4	2½	⅛	4	14½	15	-	-
16	18⅜	20⅛	9⅛	¾	2⅝	10	32	5⅛	4½	3½	17	4½	2¼	⅛	-	-	-	-	-
18	21	22⅞	10⅛	1	3⅛	12	34	6	4½	4½	19	4½	2¼	⅛	4	17⅝	18	-	-
20	23⅛	25⅛	11⅛	1	3⅛	12	38	7	4⅝	4	21	4½	2¼	⅛	-	-	-	-	-
21	24	25⅞	12⅛	1	3⅛	12	40	7	4⅝	4	22	4½	2¼	⅛	-	-	-	-	-
24	27⅛	29⅛	13⅛	1	3⅛	12	44	8	5⅛	4½	25	4½	2¼	⅛	-	-	-	-	-
30	33⅜	36⅛	17⅜	1½	4	15	54	10	6	4½	31	6	2¼	½	-	-	-	-	-
36	39⅝	42⅛	20⅛	1½	4	15	62	12	6½	5½	37	6	2½	½	-	-	-	-	-
42	45⅞	48⅛	23⅛	1½	5	18	84	14	7	6	43	6	2½	½	-	-	-	-	-
48	51½	54⅛	26⅛	1½	6	24 [1]	90	16	7⅜	6½	49½	6	2½	½	-	-	-	-	-
54	58½	61⅛	30	2	6	30 [1]	100	18	7⅜	6½	55½	7	3	1	-	-	-	-	-
60	65	68	34	2	6	30 [1]	102	20	8⅛	7⅜	61½	8	3½	1	-	-	-	-	-
72	77⅛	80¼	41	2	13	[3]	121	25½	10⅝	8½	73½	8	3½	1	-	-	-	-	-

GATE DIMENSIONS IN INCHES

C-10 CANAL GATE

This gate is designed for use on canal and pipeline systems which operate at low "heads" and where a moderately priced gate is desired. Typical installations include: farm turnouts, control of industrial wastes, drainage and for tide control.

Construction is of grey iron with an all-bolted steel frame with ¼" minimum thickness. The standard stem is of a special leaded steel which resists corrosion. The stem is operated at the structural frame top by a heavy cast-bronze lift nut and a cast iron wheel.

Adjustable cast iron wedge blocks, held securely in place by two machine bolts, assure a dependable seating closure with a practical degree of water tightness. The cast iron seats are machined or ground. A solid rim "easy-grip" handwheel is standard.

Optional materials include: bronze seats; stainless steel structural frame and bolts; stainless steel or brass stems; and special epoxy, coal tar or ASTM galvanized coatings.

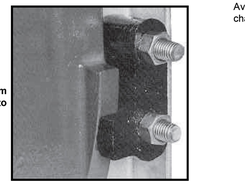
When desired, design variation in stem diameter, pitch and thread rotation are available to match existing equipment. Extended stems, special lifts, oil seals, stem guides and limit nuts are a few of the optional items available for use with these gates.

Various sizes and options are available.

Special materials available include: "Ni-Resist" iron castings, stainless steel structural frame and assembly bolts; total galvanizing per ASTM A-123; coal tar, and epoxy coatings.

Recommended Maximum Seating Heads	
6" - 24"	23 foot head
30" - 36"	11 foot head
42" - 48"	9 foot head
54" - 72"	6 foot head
Recommended Maximum Unseating Head - 0	

Frame Types for Various Installation Requirements
F ..... Flatback for headwall mounting
SB ..... Spigotback for annular or recor spiral corrugated pipe.
CIP ..... For solvent cement mounting over plastic pipe
C ..... With galvanized steel tapered setting collar for concrete or asbestos cement pipe.
SA ..... Spigotback for annular corrugated pipe.
TYPE 4 .... For mounting in plastic pipe utilizing special two part epoxy.



Features ¼" minimum thickness. Compare to competitor's gates.

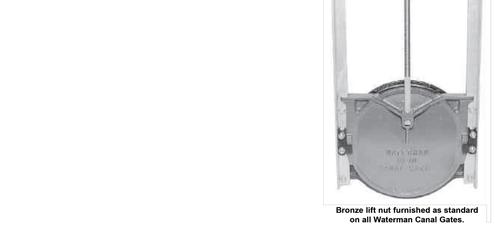
Waterman Model C-10 wedging system offers two point adjustment and larger wedging surfaces for a more positive contact.

5 SHUT-OFF VALVE
N.T.S.

CL-10 CANAL GATE

Waterman CL-10 Canal Gates are identical to our model C-10 Gates with the exception of the cast iron cover (slide) which is of a flat plate type construction with ribs reinforcing its face, to withstand the maximum heads as noted for our C-10 gates. This gate cover also features a square bottom design, which allows a more open "clog-free" flow at points of initial opening. The seat being only slightly raised above the cover plate surface helps prevent trash from collecting behind the cover which can cause difficulty in operation.

Available with threaded thrust nut for true NRS application. All parts are interchangeable with our Standard C-10 gate. Available in a variety of sizes.



Bronze lift nut furnished as standard on all Waterman Canal Gates.

Shown with optional threaded thrust nut for true non-rising stem operation

CL-10

Flat Plate Type, Square Bottom

No.	Date	Description
2	10/04/23	NOI COMMENT REVISIONS
1	08/24/23	NOI COMMENT REVISIONS

Revisions

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES
CIVIL
No. 40203
REGISTERED PROFESSIONAL ENGINEER

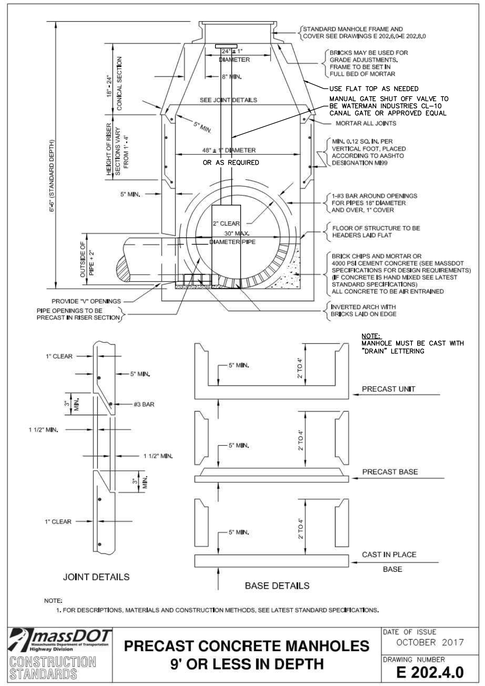
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
GRADING & DRAINAGE DETAILS II

Project No. 151033401
Date 06/08/2023
Drawn By JNW
Checked By FH
Drawing No. CG502

Project No. 151033401

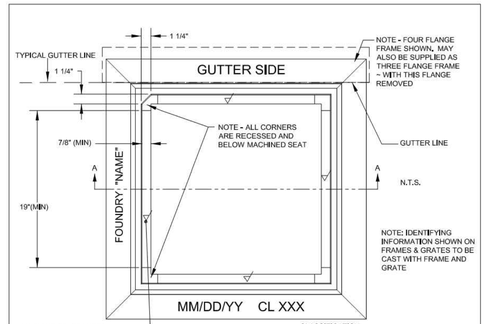


NOTE:
1. FOR DESCRIPTIONS, MATERIALS AND CONSTRUCTION METHODS, SEE LATEST STANDARD SPECIFICATIONS.

massDOT Highway Division / CONSTRUCTION STANDARDS	PRECAST CONCRETE MANHOLES 9' OR LESS IN DEPTH	DATE OF ISSUE: OCTOBER 2017 DRAWING NUMBER: E 202.4.0

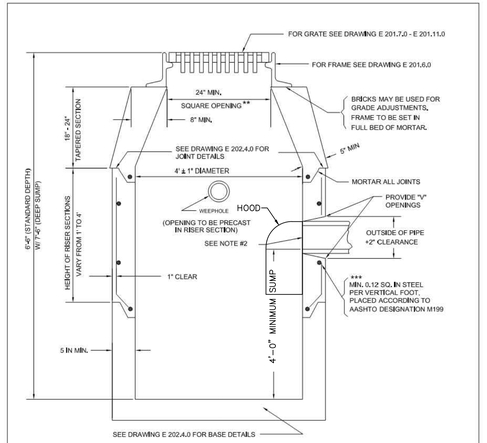
CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING MANHOLES AND PIPE PENETRATIONS PRIOR TO ISSUING SHOP DRAWINGS FOR REVIEW TO ENSURE CONSTRUCTABILITY.

1 PRECAST CONCRETE MANHOLES 9' OR LESS IN DEPTH
N.T.S.



massDOT Highway Division / CONSTRUCTION STANDARDS	CATCH BASIN FRAME	DATE OF ISSUE: OCTOBER 2017 DRAWING NUMBER: E 201.6.0

2 CATCH BASIN FRAME
N.T.S

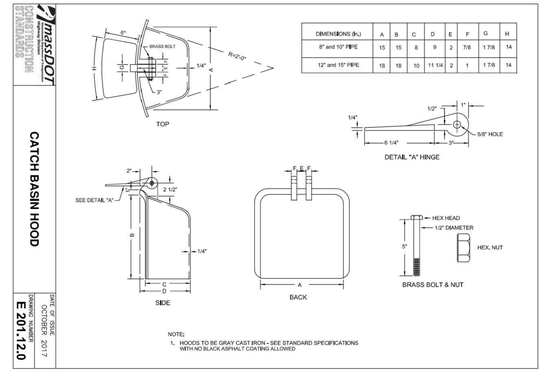


** WHEN A CURB INLET IS INSTALLED, THE OPENING IS TO BE 24"±1" X 27"±1"
*** REINFORCING STEEL BASED ON A WALL THICKNESS OF 5".

NOTES:
1. DETAILS NOT INDICATED ABOVE ARE TO BE SIMILAR TO THOSE SHOWN ON E 201,3,0
2. FACE OF PIPE FLUSH OR NOT TO PROJECT MORE THAN 4" FROM FACE OF WALL ALONG CENTERLINE OF PIPE.
3. FOR DESCRIPTION, MATERIALS AND CONSTRUCTION METHOD, SEE STANDARD SPECIFICATIONS.
4. ALL CONCRETE TO BE AIR ENTRAINED

massDOT Highway Division / CONSTRUCTION STANDARDS	PRECAST CONCRETE CATCH BASIN	DATE OF ISSUE: OCTOBER 2017 DRAWING NUMBER: E 201.4.0

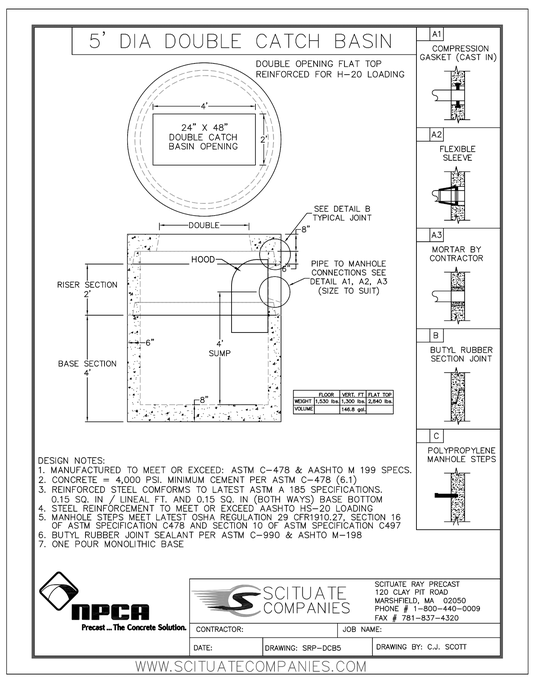
3 PRECAST CONCRETE CATCH BASIN
N.T.S.



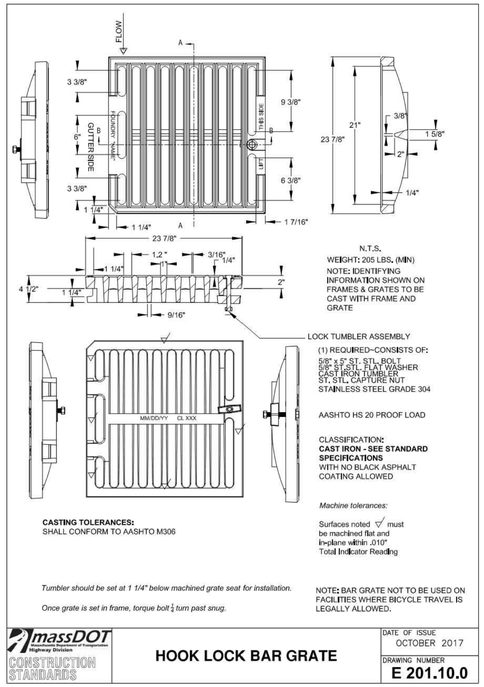
NOTE:
1. HOODS TO BE GRAY CAST IRON - SEE STANDARD SPECIFICATIONS WITH NO BLACK ASPHALT COATING ALLOWED

massDOT Highway Division / CONSTRUCTION STANDARDS	CATCH BASIN HOOD	SHT. OF SHT. DRAWING NUMBER: E 201.12.0 DATE: OCTOBER 2017

4 CATCH BASIN HOOD
N.T.S.

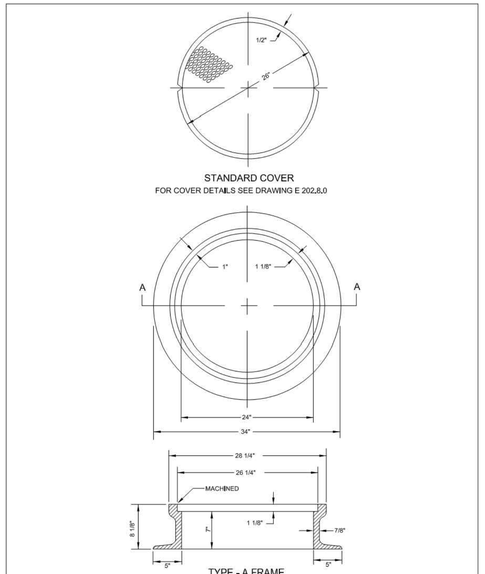


5 5' DIA DOUBLE CATCH BASIN
N.T.S.



massDOT Highway Division / CONSTRUCTION STANDARDS	HOOK LOCK BAR GRATE	DATE OF ISSUE: OCTOBER 2017 DRAWING NUMBER: E 201.10.0

6 CATCH BASIN LOCK BAR GRATE
N.T.S.

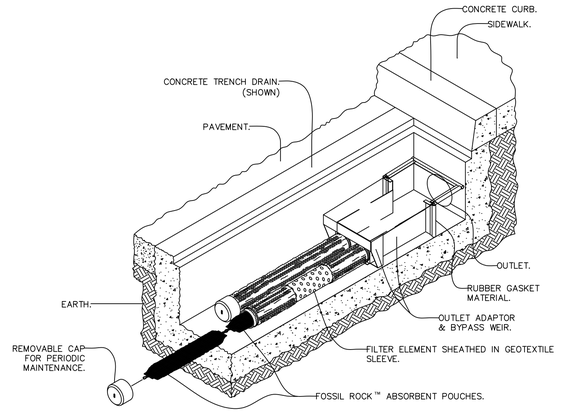


NOTES:
1. MINIMUM MASS - 265 LBS.
2. MATERIAL - CAST IRON - SEE STANDARD SPECIFICATIONS WITH NO BLACK ASPHALT COATING ALLOWED

massDOT Highway Division / CONSTRUCTION STANDARDS	MANHOLE FRAME AND COVER - A FRAME	DATE OF ISSUE: OCTOBER 2017 DRAWING NUMBER: E 202.6.0

CONTRACTOR SHALL USE SHALLOW RIMS AS NEEDED IN AREAS WITH MINIMAL COVER.

7 MANHOLE FRAME AND COVER
N.T.S.



NOTES:
1. FILTER INSERT SHALL HAVE A HIGH FLOW BYPASS FEATURE.
2. FILTER OUTLET ADAPTER SHALL BE CONSTRUCTED FROM STAINLESS STEEL TYPE 304. ALTERNATE OUTLET ADAPTOR FOR SHALLOW INSTALLATIONS SHALL BE PVC SCH-40.
3. FILTER MEDIUM SHALL BE FOSSIL ROCK™, INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

8 TRENCH DRAIN FILTER (MODEL FG-TDOF8)
N.T.S. SOURCE: OLDCASTLE

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
GRADING & DRAINAGE DETAILS III

Project No. 151033401	Drawing No. CG503
Date 06/08/2023	
Drawn By JNW	
Checked By FH	

LANGAN Project No. 151033401

CONSTRUCTION SEQUENCE

PHASE 1:
1. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. COMPLETE TREE REMOVAL AND STUMPING. COMPLETE DEMOLITION AND ABANDONMENT OF EXISTING STRUCTURES.
3. CONSTRUCT TEMPORARY ACCESS ROAD AND TEMPORARY LAYDOWN AREA.

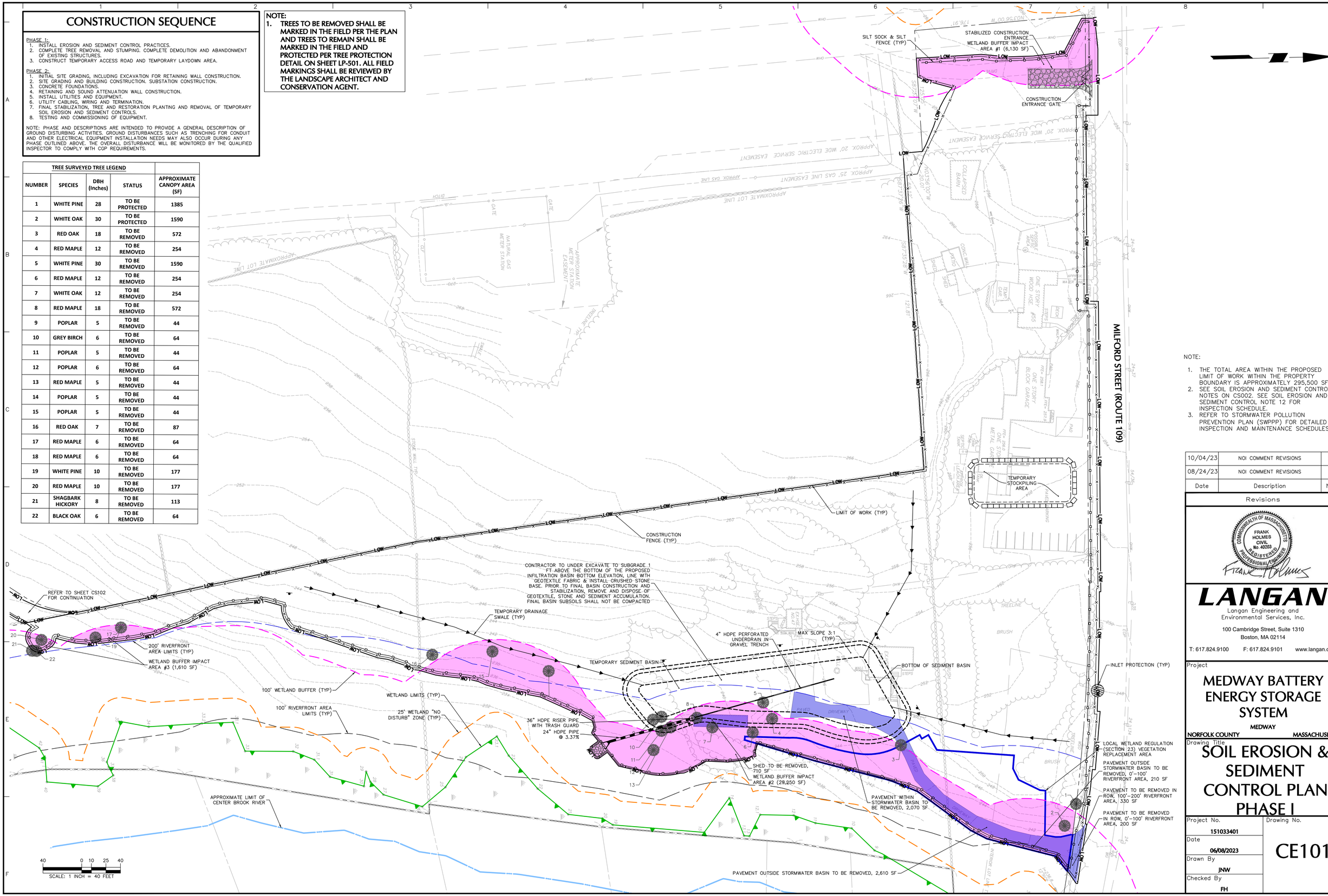
PHASE 2:
1. INITIAL SITE GRADING, INCLUDING EXCAVATION FOR RETAINING WALL CONSTRUCTION.
2. SITE GRADING AND BUILDING CONSTRUCTION. SUBSTATION CONSTRUCTION.
3. CONCRETE FOUNDATIONS.
4. RETAINING AND SOUND ATTENUATION WALL CONSTRUCTION.
5. INSTALL UTILITIES AND EQUIPMENT.
6. UTILITY CABLING, WIRING AND TERMINATION.
7. FINAL STABILIZATION, TREE AND RESTORATION PLANTING AND REMOVAL OF TEMPORARY SOIL EROSION AND SEDIMENT CONTROLS.
8. TESTING AND COMMISSIONING OF EQUIPMENT.

NOTE: PHASE AND DESCRIPTIONS ARE INTENDED TO PROVIDE A GENERAL DESCRIPTION OF GROUND DISTURBING ACTIVITIES. GROUND DISTURBANCES SUCH AS TRENCHING FOR CONDUIT AND OTHER ELECTRICAL EQUIPMENT INSTALLATION NEEDS MAY ALSO OCCUR DURING ANY PHASE OUTLINED ABOVE. THE OVERALL DISTURBANCE WILL BE MONITORED BY THE QUALIFIED INSPECTOR TO COMPLY WITH CGP REQUIREMENTS.

NOTE:
1. **TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD PER THE PLAN AND TREES TO REMAIN SHALL BE MARKED IN THE FIELD AND PROTECTED PER TREE PROTECTION DETAIL ON SHEET LP-501. ALL FIELD MARKINGS SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT AND CONSERVATION AGENT.**

TREE SURVEYED TREE LEGEND

NUMBER	SPECIES	DBH (Inches)	STATUS	APPROXIMATE CANOPY AREA (SF)
1	WHITE PINE	28	TO BE PROTECTED	1385
2	WHITE OAK	30	TO BE PROTECTED	1590
3	RED OAK	18	TO BE REMOVED	572
4	RED MAPLE	12	TO BE REMOVED	254
5	WHITE PINE	30	TO BE REMOVED	1590
6	RED MAPLE	12	TO BE REMOVED	254
7	WHITE OAK	12	TO BE REMOVED	254
8	RED MAPLE	18	TO BE REMOVED	572
9	POPLAR	5	TO BE REMOVED	44
10	GREY BIRCH	6	TO BE REMOVED	64
11	POPLAR	5	TO BE REMOVED	44
12	POPLAR	6	TO BE REMOVED	64
13	RED MAPLE	5	TO BE REMOVED	44
14	POPLAR	5	TO BE REMOVED	44
15	POPLAR	5	TO BE REMOVED	44
16	RED OAK	7	TO BE REMOVED	87
17	RED MAPLE	6	TO BE REMOVED	64
18	RED MAPLE	6	TO BE REMOVED	64
19	WHITE PINE	10	TO BE REMOVED	177
20	RED MAPLE	10	TO BE REMOVED	177
21	SHAGBARK HICKORY	8	TO BE REMOVED	113
22	BLACK OAK	6	TO BE REMOVED	64



NOTE:
1. THE TOTAL AREA WITHIN THE PROPOSED LIMIT OF WORK WITHIN THE PROPERTY BOUNDARY IS APPROXIMATELY 295,500 SF.
2. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES ON CS002. SEE SOIL EROSION AND SEDIMENT CONTROL NOTE 12 FOR INSPECTION SCHEDULE.
3. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR DETAILED INSPECTION AND MAINTENANCE SCHEDULES.

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SOIL EROSION & SEDIMENT CONTROL PLAN PHASE I

Project No.	Drawing No.
151033401	CE101
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN Project No. 151033401

CONSTRUCTION SEQUENCE

PHASE 1:
1. INSTALL EROSION AND SEDIMENT CONTROL PRACTICES.
2. COMPLETE TREE REMOVAL AND STUMPING. COMPLETE DEMOLITION AND ABANDONMENT OF EXISTING STRUCTURES.
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3. CONCRETE FOUNDATIONS.
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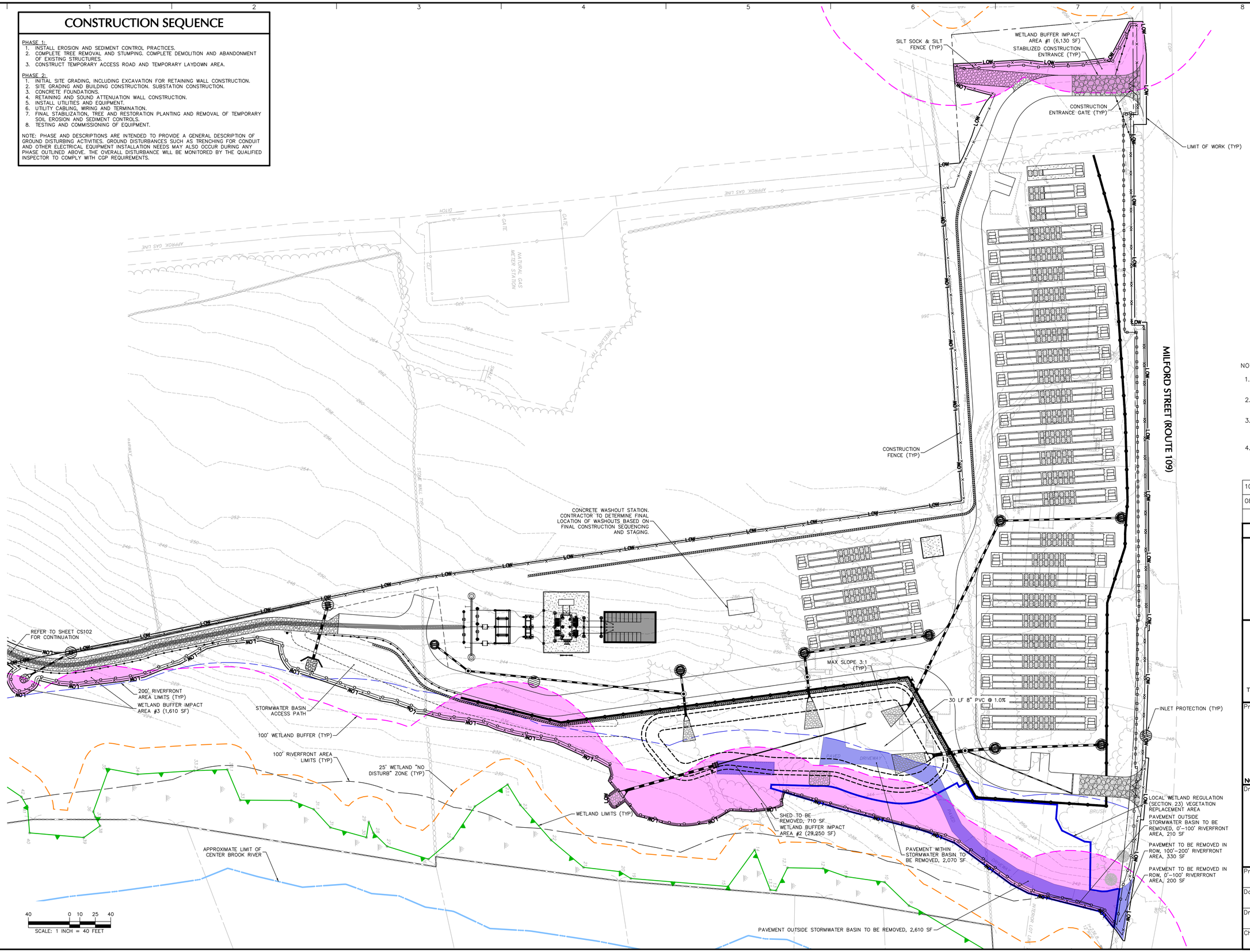
NOTE: PHASE AND DESCRIPTIONS ARE INTENDED TO PROVIDE A GENERAL DESCRIPTION OF GROUND DISTURBING ACTIVITIES. GROUND DISTURBANCES SUCH AS TRENCHING FOR CONDUIT AND OTHER ELECTRICAL EQUIPMENT INSTALLATION NEEDS MAY ALSO OCCUR DURING ANY PHASE OUTLINED ABOVE. THE OVERALL DISTURBANCE WILL BE MONITORED BY THE QUALIFIED INSPECTOR TO COMPLY WITH CGP REQUIREMENTS.



NOTE:

1. THE TOTAL AREA WITHIN THE PROPOSED LIMIT OF WORK WITHIN THE PROPERTY BOUNDARY IS APPROXIMATELY 295,500 SF.
2. THE PROJECT SITE IS ANTICIPATED TO REQUIRE AN IMPORT OF APPROXIMATELY 10,000 CY OF SOIL MATERIAL.
3. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES ON CS002. SEE SOIL EROSION AND SEDIMENT CONTROL NOTE 12 FOR INSPECTION SCHEDULE.
4. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR DETAILED INSPECTION AND MAINTENANCE SCHEDULES.

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
FRANK HOLMES

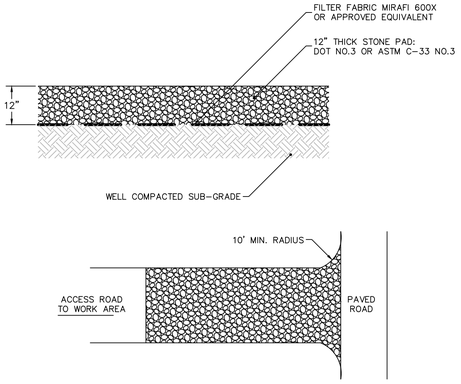
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SOIL EROSION & SEDIMENT CONTROL PLAN PHASE II

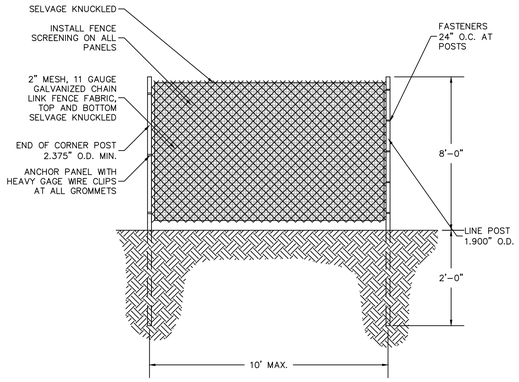
Project No.	Drawing No.
151033401	CE102
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401



NOTES:
1. CONSTRUCTION PAD LOCATION TO BE SET BY CONTRACTOR AND LOCATED AS REQUIRED FOR CONSTRUCTION SEQUENCING
2. SEE SOIL EROSION & SEDIMENT CONTROL PLAN FOR DIMENSIONS
3. WHERE SEDIMENT HAS BEEN TRACKED-OUT FROM THE SITE ONTO THE PAVED ROAD, REMOVE THE DEPOSITED SEDIMENT BY THE END OF THE SAME BUSINESS DAY IN WHICH THE TRACK-OUT OCCURS OR BY THE END OF THE NEXT BUSINESS DAY IF TRACK-OUT OCCURS ON A NON-BUSINESS DAY. IF PAD IS MUDDY, STONE IS TOO SMALL (INSTALL LARGER STONE); IF PAD IS TOO THIN INSTALL ADDITIONAL STONE; AND/OR INSTALL ADDITIONAL FILTER FABRIC UNDER PAD. IF SEDIMENT IS WASHING INTO ROAD, IMPROVE UP GRADIENT RUNOFF CONTROLS, LENGTHEN PAD, AND/OR WIDEN FLARE OF PAD AT ROAD INTERFACE.

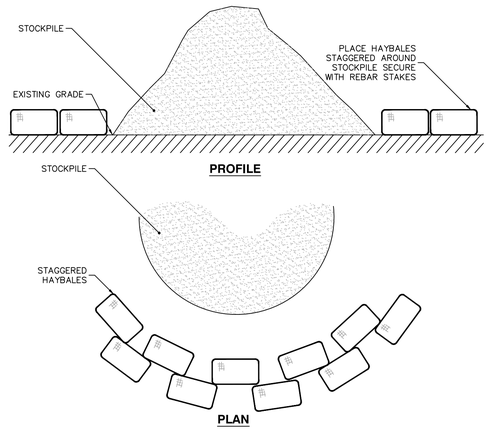
1 CONSTRUCTION ENTRANCE
N.T.S.



NOTES:
1. PIPE POSTS SHALL BE IMBEDDED INTO THE GROUND. PEDESTAL MOUNTED FENCING WILL ONLY BE ALLOWED AT AREAS APPROVED BY THE PROJECT MANAGER. WHEN ALLOWED, PROVIDE CONCRETE OR GALVANIZED-STEEL BASES FOR SUPPORTING POSTS. PROVIDE BLUE REINFORCED SCRIM SHEETING ON ALL FENCING.

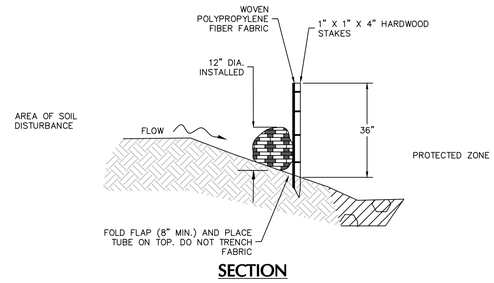
2 TEMPORARY CONSTRUCTION FENCE
N.T.S.

NOTES:
1. SEE SOIL EROSION & SEDIMENT CONTROL PLAN FOR LOCATION OF HAYBALE BARRIER



NOTES:
1. REFER TO TEMPORARY STABILIZATION NOTES ON CS002 FOR MAINTENANCE OF TEMPORARY STOCKPILES.

3 TEMPORARY STOCKPILE
N.T.S.



NOTES:
1. MAINTENANCE SHALL CONSIST OF INSPECTION AND REMOVAL OF ACCUMULATED SEDIMENT BEFORE IT HAS ACCUMULATED TO HALF OF THE ABOVE-GROUND HEIGHT OF ANY PERIMETER CONTROL. SAGGING, FRAYED, TORN OR OTHERWISE DAMAGED FABRIC OR TUBE SHOULD BE REPAIRED OR REPLACED. REPAIR END RUNS AND UNDERCUTTING. INSPECT REINFORCEMENT AND STAKING MATERIALS FOR STRUCTURAL INTEGRITY AND REPLACE WHEN NECESSARY. AFTER A STORM EVENT, IF THERE IS EVIDENCE OF STORMWATER CIRCUMVENTING OR UNDERCUTTING THE PERIMETER CONTROL, EXTEND CONTROLS AND/OR REPAIR UNDERCUT AREAS TO FIX THE PROBLEM.

4 COMPOST FILTER TUBE & SILT FENCE
N.T.S.

NOTE:
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2. THE PROJECT SITE IS ANTICIPATED TO REQUIRE AN IMPORT OF APPROXIMATELY 10,000 CY OF SOIL MATERIAL.
3. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES ON CS002. SEE SOIL EROSION AND SEDIMENT CONTROL NOTE 12 FOR INSPECTION SCHEDULE.
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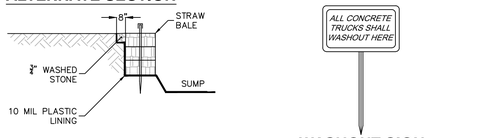
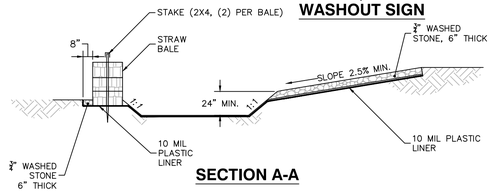
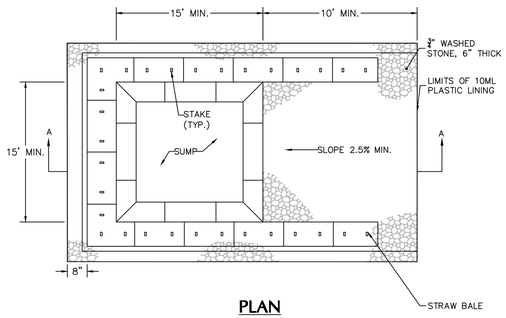
ALTERNATE SECTION

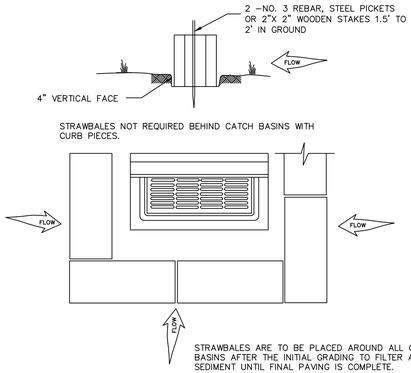


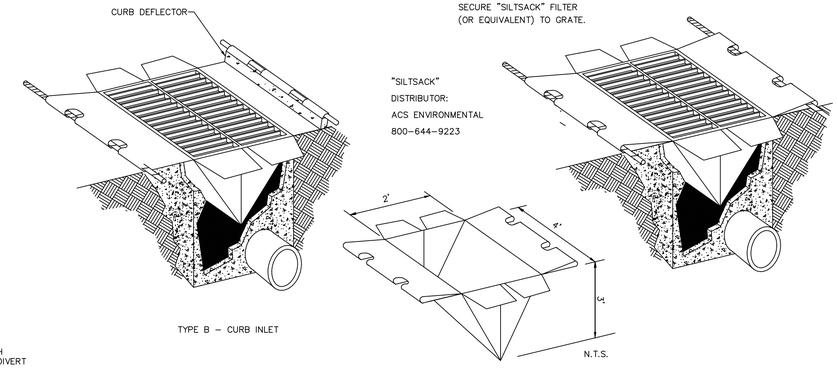
WASHOUT SIGN





5 CONCRETE WASHOUT AREA
N.T.S.





NOTES:
1. CLEAN, OR REMOVE AND OR REMOVE AND REPLACE, THE INLET PROTECTION MEASURES WHEN SEDIMENT HAS REACHED A MAXIMUM OF ONE HALF THE DEPTH OF THE SILT SACK, THE FILTER BECOMES CLOGGED, AND/OR PERFORMANCE IS COMPROMISED. WHERE THERE IS EVIDENCE OF SEDIMENT ACCUMULATION ADJACENT TO THE INLET PROTECTION MEASURE, REMOVE THE DEPOSITED SEDIMENT BY THE END OF THE SAME BUSINESS DAY IN WHICH IT IS FOUND OR BY THE END OF THE FOLLOWING BUSINESS DAY IF REMOVAL BY THE SAME BUSINESS DAY IS NOT FEASIBLE. SEDIMENT SHOULD BE DISPOSED OF IN A SUITABLE AREA AND PROTECTED FROM EROSION BY EITHER STRUCTURAL OR VEGETATIVE MEANS.
2. CONTRACTOR TO REMOVE FILTER JUST PRIOR TO PAVING.

6 INLET PROTECTION
N.T.S.

Date	Description	No.
08/24/23	NOI COMMENT REVISIONS	1

Revisions

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES
CIVIL
No. 40203
REGISTERED PROFESSIONAL ENGINEER

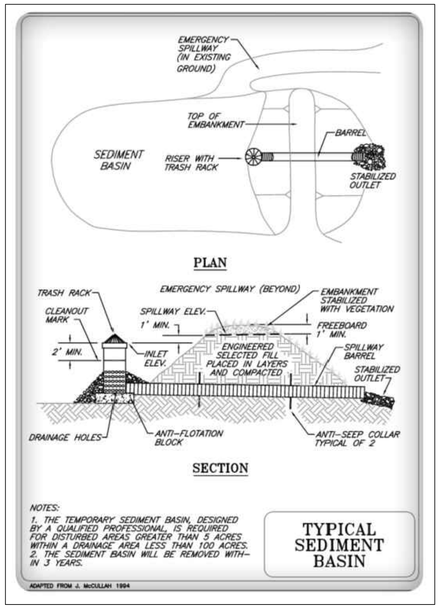
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SOIL EROSION & SEDIMENT CONTROL DETAILS I

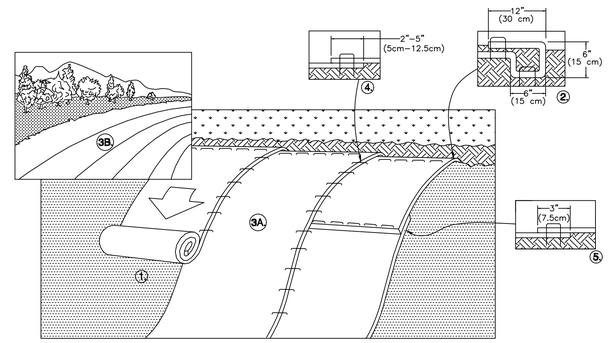
Project No.	Drawing No.
151033401	CE501
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401



NOTES:
1. CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE HEIGHT OF THE OUTLET SHOULD MAINTAIN AT LEAST 1 FOOT BELOW THE CREST OF THE EMBANKMENT. ALSO CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE. WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS. DISPOSE OF REMOVED SEDIMENT IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOTE ERODE AND SEDIMENTATION PROBLEMS. THE TEMPORARY SEDIMENT BASIN MAY BE REMOVED UPON THE STABILIZATION OF THE CONTRIBUTING DRAINAGE AREA. IF REMOVED, REFER TO GRADING AND DRAINAGE PLANS TO HOW THE AREA IS TO BE GRADED AND STABILIZED UPON REMOVAL. HEAVY EQUIPMENT IS RESTRICTED FROM USE WITHIN TEMPORARY SEDIMENT BASINS.

1 SEDIMENT BASIN
N.T.S.



NOTES:
1. EROSION CONTROL BLANKETS SHALL BE BIONET SC150BN OR APPROVED EQUAL.
2. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, SLOW-RELEASE FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED. DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
3. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF THE BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
4. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH THE APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
5. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
6. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.
7. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAT BE NECESSARY TO PROPERLY ANCHOR THE BLANKETS.
8. PROVIDE EROSION CONTROL BLANKET ON ALL SLOPES 4H:1V TO 3H:1V.
9. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, SLOW-RELEASE FERTILIZER, AND SEED.
10. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
11. SEE EROSION AND SEDIMENT CONTROL NOTE 5 ON DRAWING CS002 FOR SLOPE STABILIZATION ON SLOPES STEEPER THAN 3H:1V.

2 EROSION CONTROL BLANKETS (SLOPE STABILIZATION SLOPES 4H:1V TO 3H:1V)
N.T.S.

NOTE:
1. SEE SOIL EROSION AND SEDIMENT CONTROL NOTES ON CS002. SEE SOIL EROSION AND SEDIMENT CONTROL NOTE 12 FOR INSPECTION SCHEDULE.
2. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR DETAILED INSPECTION AND MAINTENANCE SCHEDULES.

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

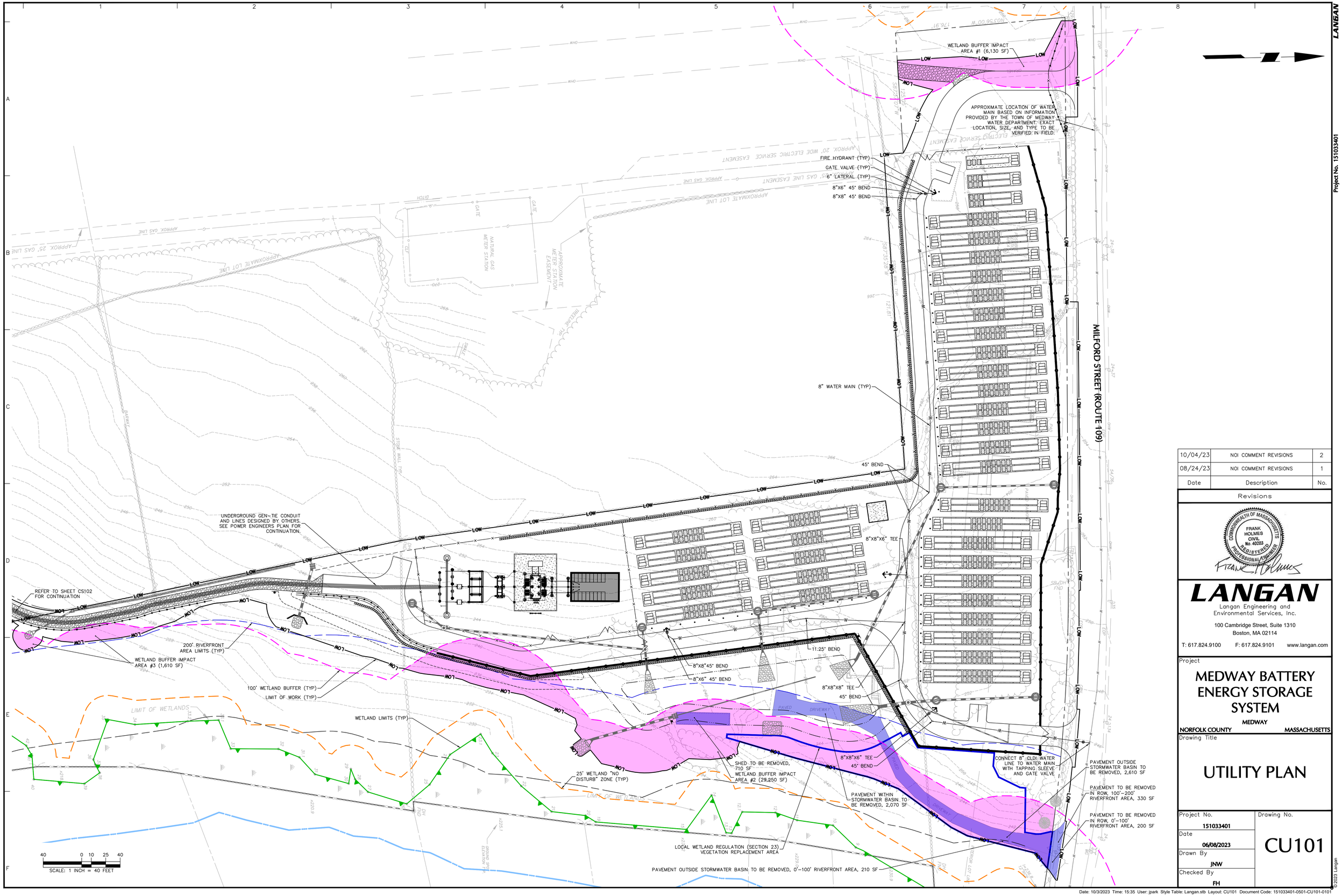
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
SOIL EROSION & SEDIMENT CONTROL DETAILS II

Project No.	Drawing No.
151033401	CE502
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401



Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

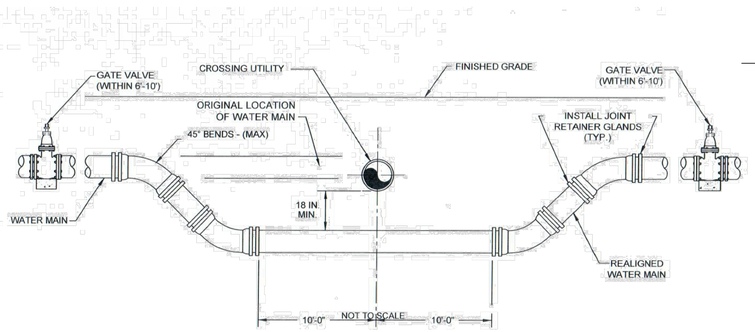
LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
UTILITY PLAN

Project No.	Drawing No.
151033401	CU101
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

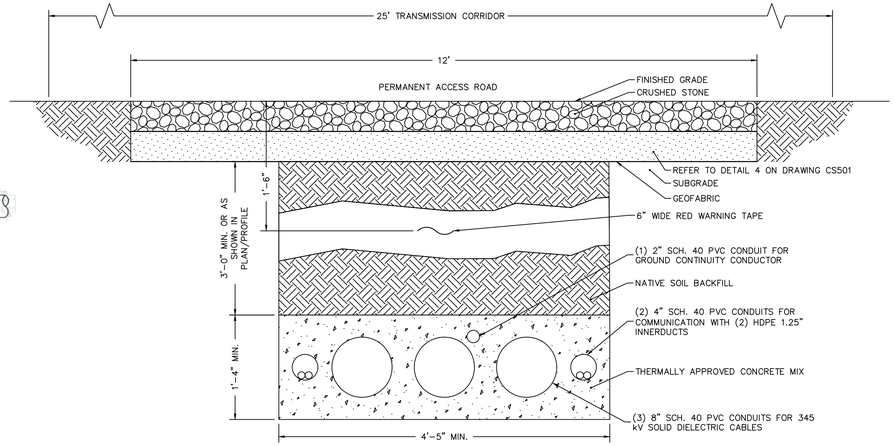
LANGAN
Project No. 151033401



NOTES:
1. ALL FITTINGS AND JOINTS IN LOWERING AREA TO BE RESTRAINED. TOWN MAY REQUIRE THREADED ROD RESTRAINS IN CERTAIN SITUATIONS.
2. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL OR VERTICAL SEPARATION AS INDICATED IN THE DETAIL ABOVE, BOTH THE WATER AND THE SEWER SHOULD BE ENCASED IN CONTROL DENSITY FILL FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF THE CROSSING.
3. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT WHEN CONTACTING CONTROL DENSITY FILL.

1 WATER MAIN LOWERING DETAIL

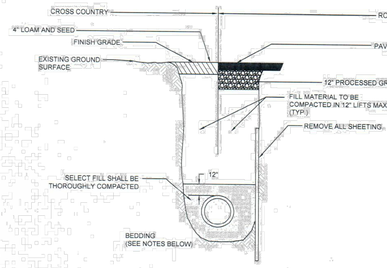
N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES



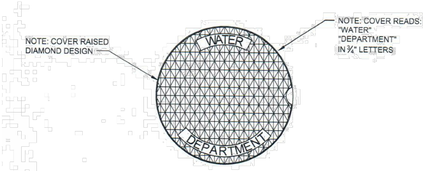
NOTES:
1. DETAIL FOR REFERENCE ONLY. REFER TO PLANS PREPARED BY POWER ENGINEERS FOR TRENCH SECTION AND CONDUIT LAYOUT SPECIFICATIONS.

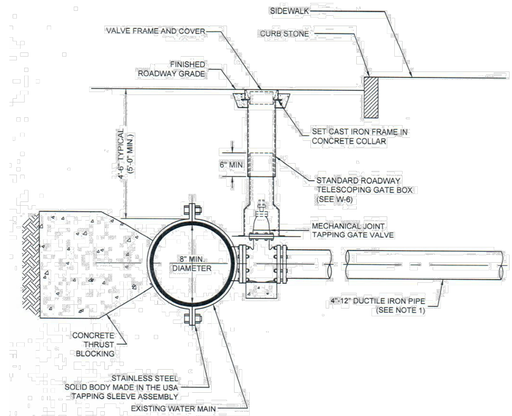
2 TYPICAL CONDUIT TRENCH SECTION

N.T.S. SOURCE: POWER ENGINEERS



NOTES:
1. TOWN OF MEDWAY MAY REQUIRE FLOWABLE FILL AT ITS DISCRETION.
2. FOR LOCATIONS WHERE LEDGE IS NOT ENCOUNTERED IN TRENCH, PIPE CAN LAY ON UNDISTURBED EARTH, OR ON SAND BEDDING CONSISTENT WITH AWWA GUIDELINES.
3. FOR LOCATIONS WHERE LEDGE IS ENCOUNTERED, SAND BEDDING SHALL BE MINIMUM 12" THICK UNDER PIPE.
4. FILL MATERIAL SHALL BE COMPACTED TO 95% PROCTOR DENSITY.
5. WATER MAIN SHALL HAVE 5'–0" MINIMUM COVER. LESS THAN 5'–0" OF COVER SHALL BE INSULATED.
6. LEDGE SHALL BE REMOVED 12 INCHES AROUND PIPE.

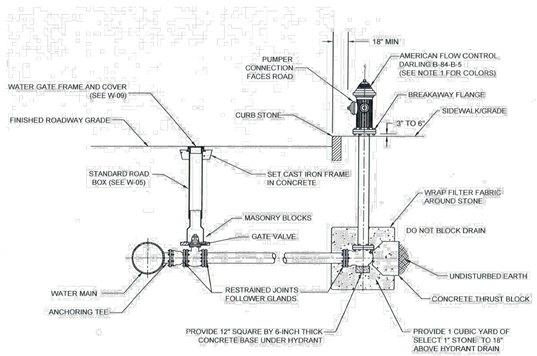




NOTES:
1. MAXIMUM TAPPING SLEEVE SHALL NOT BE GREATER THAN ½ DIAMETER OF CONNECTING MAIN.
2. MECHANICAL JOINT RESTRAINTS AND GASKETS ON ALL MECHANICAL JOINTS.
3. TOWN MAY REQUIRE THREADED ROD AS RESTRAINT.

3 WATER MAIN TRENCH

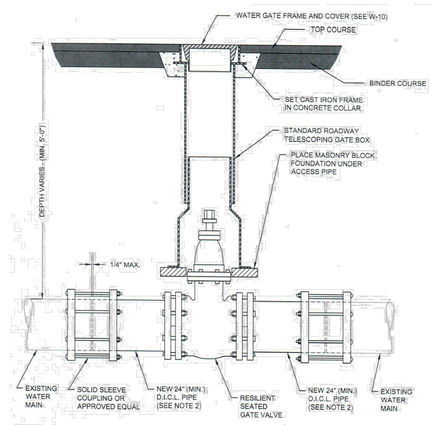
N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES



NOTES:
1. HYDRANT SHALL BE PAINTED THE FOLLOWING COLORS:
   BARREL: BLUE SAFETY (COLOR CODE: 822913)
   COVER & CAPS: SILVER (COLOR CODE: 822903)
2. HYDRANT SHALL OPEN LEFT PER TOWN STANDARDS.
3. HYDRANT LATERAL SHALL BE FULLY RESTRAINED.
4. 3'–0" CLEAR AND FLAT ALL AROUND HYDRANT PER NFPA STANDARD.

4 WATER GATE COVER

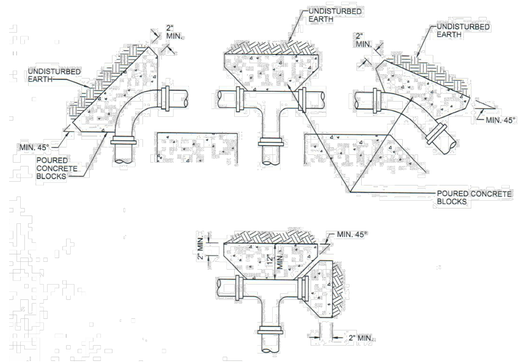
N.T.S.



NOTES:
1. ALL EXCAVATION, BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE TOWN OF MEDWAY REQUIREMENTS.
2. TO THE EXTENT PRACTICAL, VALVE TO BE INSTALLED DIRECTLY TO EXISTING MAIN TO MINIMIZE NUMBER OF MECHANICAL JOINTS.

5 TYPICAL CONNECTION (TAPPING SLEEVE)

N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES



NOTES:
1. SPECIFIC THRUST BLOCK DESIGN SHALL CONFORM TO AWWA GUIDELINES.
2. PLACE 4 MIL. POLYETHYLENE BETWEEN CONCRETE AND FITTING (CONCRETE SHALL NOT INTERFERE WITH JOINT).
3. MINIMUM CONCRETE THICKNESS SHALL BE 12 INCHES.
4. THRUST BLOCK ORIENTATION SHALL BE SUCH THAT THE CENTER OF THE FITTING CORRESPONDS WITH THE CENTER OF THE THRUST BLOCK.
5. THE MINIMUM ALLOWABLE ANGLE (EITHER VERTICAL OR HORIZONTAL) SHALL BE 45 DEGREES.

6 FIRE HYDRANT INSTALLATION

N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES

7 GATE VALVE

N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES

8 TYPICAL THRUST BLOCK

N.T.S. – SOURCE: TOWN OF MEDWAY DEPARTMENT OF PUBLIC SERVICES

Date	Description	No.
Revisions		

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
UTILITY DETAILS I

Project No.	Drawing No.
151033401	CU501
Date: 06/08/2023	
Drawn By: JNW	
Checked By: FH	

LANGAN
Project No. 151033401

ACCESS ROAD

WETLAND BUFFER IMPACT AREA #1 (6,130 SF)

10 FT

15 FT

20 FT (TYP)

35 FT

R20 FT

R20 FT

25 FT WIDE GAS LINE EASEMENT

PROPERTY LINE (TYP)

SETBACK LINE (TYP)

ASPHALT PAVEMENT (TYP)

MILFORD STREET (ROUTE 109)

APPROX. 25' GAS LINE EASEMENT

APPROX. 20' WIDE ELECTRIC SERVICE EASEMENT

APPROXIMATE LOT LINE

APPROX. GAS LINE

APPROX. 25' GAS LINE

GATE

GATE

DITCH

NATURAL GAS METER STATION

APPROXIMATE METER STATION EASEMENT

FENCE

STONE WALL

BURNAY

WETLAND BUFFER IMPACT AREA #3 (1,610 SF)

200' RIVERFRONT AREA LIMITS (TYP)

100' WETLAND BUFFER (TYP)

LIMIT OF WORK (TYP)

100' RIVERFRONT AREA LIMITS (TYP)

WETLAND LIMITS (TYP)

25' WETLAND "NO DISTURB" ZONE (TYP)

LIMIT OF WETLANDS

LIMIT OF WETLANDS

SHED TO BE REMOVED, 710 SF

WETLAND BUFFER IMPACT AREA #2 (29,250 SF)

LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA

PAVEMENT WITHIN STORMWATER BASIN TO BE REMOVED, 2,070 SF

PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 0'-100' RIVERFRONT AREA, 210 SF

PAVEMENT OUTSIDE STORMWATER BASIN TO BE REMOVED, 2,610 SF

PAVEMENT TO BE REMOVED IN ROW, 100'-200' RIVERFRONT AREA, 330 SF

PAVEMENT TO BE REMOVED IN ROW, 0'-100' RIVERFRONT AREA, 200 SF

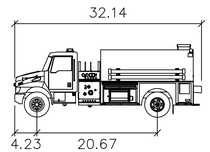
PROPOSED

DRIVEWAY

BRUSH

STEPS

SCALE: 1" = 40'



Town of Medway – Tanker 1

	feet
Width	: 8.58
Track	: 8.00
Lock to Lock Time	: 6.0
Steering Angle	: 40.1

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	1

Revisions

COMMONWEALTH OF MASSACHUSETTS
FRANK HOLMES
CIVIL
No. 40203
REGISTERED PROFESSIONAL ENGINEER

LANGAN

Langan Engineering and Environmental Services, Inc.

100 Cambridge Street, Suite 1310
Boston, MA 02114

T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

MEDWAY

NORFOLK COUNTY MASSACHUSETTS

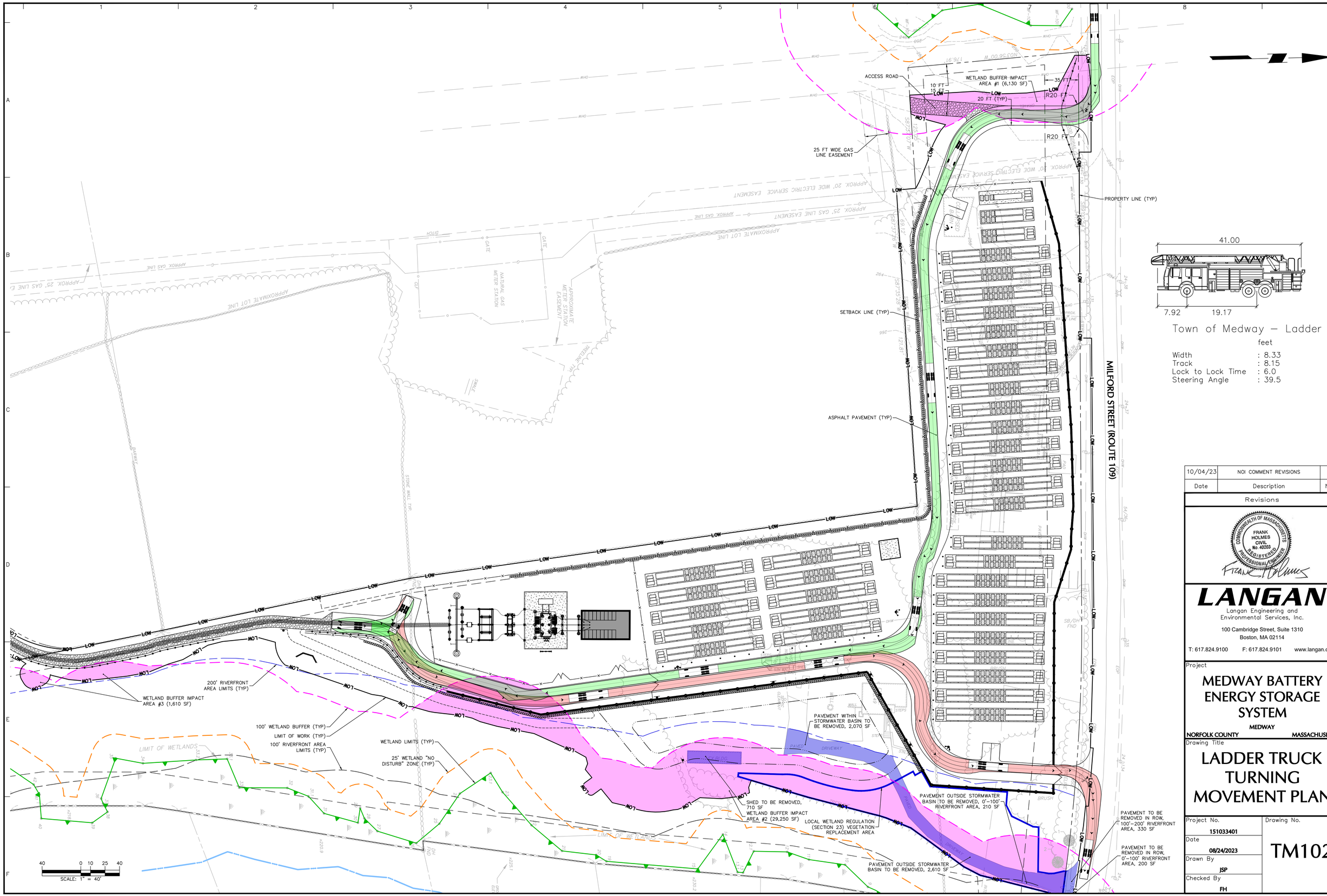
Drawing Title

TANKER TRUCK TURNING MOVEMENT PLAN

Project No.	Drawing No.
151033401	TM101
Date: 08/24/2023	
Drawn By: JSP	
Checked By: FH	

LANGAN

Project No. 151033401



Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	1

Revisions

FRANK HOLMES CIVIL No. 40203 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title

LADDER TRUCK TURNING MOVEMENT PLAN

Project No.	Drawing No.
151033401	TM102
Date: 08/24/2023	
Drawn By: JSP	
Checked By: FH	

LANGAN
Project No. 151033401

Date: 10/3/2023 Time: 15:36 User: jpark Style Table: Langan.stb Layout: TM102 Document Code: 151033401-0501-KT101-0102

SITE LIGHTING SCHEDULE

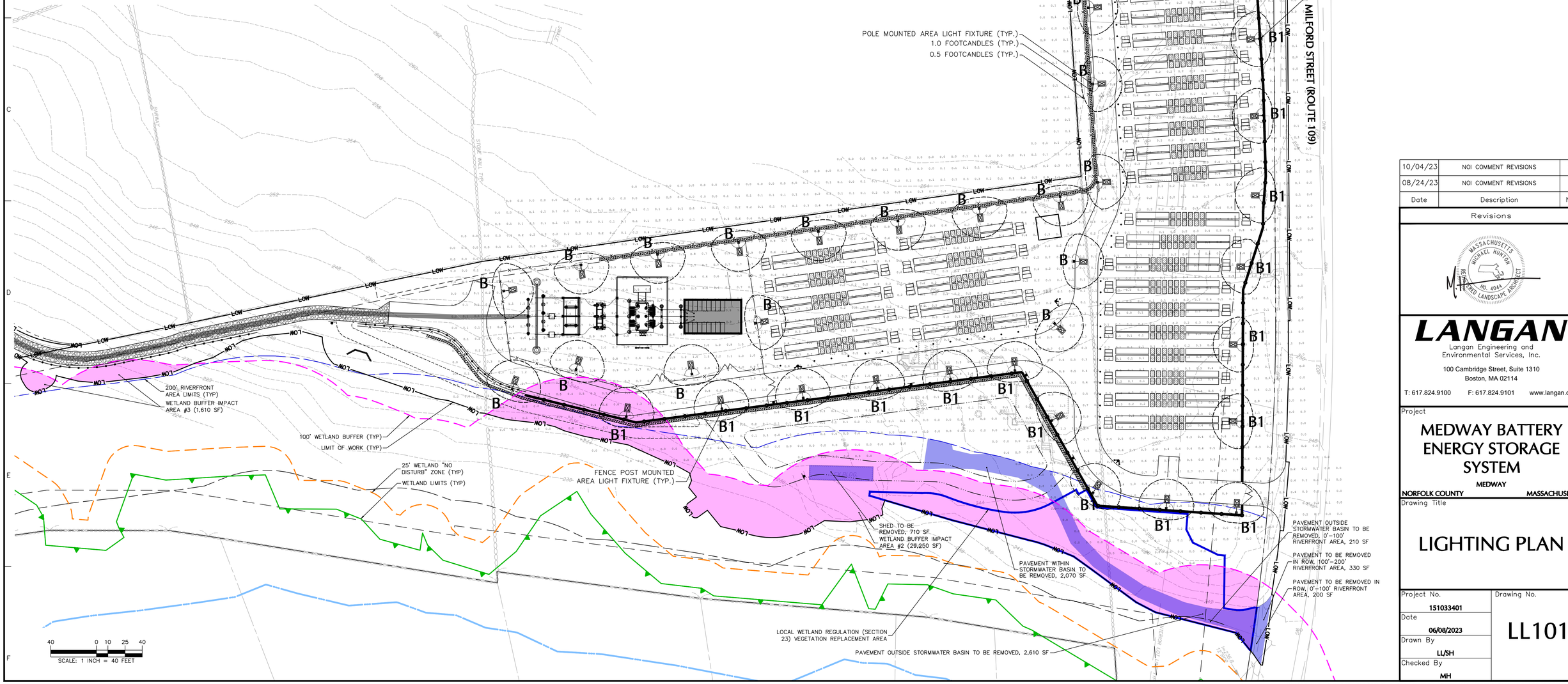
SYMBOL	KEY	QTY.	FIXTURE MANUFACTURER	FIXTURE MODEL	FIXTURE DESCRIPTION	FIXTURE MOUNTING HEIGHT	LAMP	OPTICS	LUMENS PER LAMP	LLF	COLOR TEMPERATURE	IES FILE	FIXTURE CATALOGUE NO.	POLE MANUFACTURER	POLE DESCRIPTION	POLE LENGTH	POLE CATALOGUE NO.	REMARKS
	A	2	GARDCO	PUREFORM LED	POLE MOUNTED POST TOP LIGHT; COLOR – BLACK	20'–0" (ABOVE FFE)	LED	BACK LIGHT CONTROL	3,000	0.90	3000K	P15–P–A02–730 –BLC	P15–P–A02–730–BLC	GARDCO	TAPERED ROUND STEEL; COLOR – BLACK	20'–0"	06TRS–20–11–D1 –BLP–VDA	POLE TO BE FACTORY CUT TO A LENGTH OF 17'; MOUNTED ON 3' HEIGHT EXPOSED CONCRETE BASE
	B	21	GARDCO	PUREFORM LED	POLE MOUNTED POST TOP LIGHT; COLOR – BLACK	20'–0" (ABOVE FFE)	LED	T4S	3800	0.90	3000K	P15–P–A02–730 –T4S	P15–P–A02–730–T4S	GARDCO	TAPERED ROUND STEEL; COLOR – BLACK	20'–0"	06TRS–20–11–D1 –BLP–VDA	POLE TO BE FACTORY CUT TO A LENGTH OF 17'; MOUNTED ON 3' HEIGHT EXPOSED CONCRETE BASE
	B1	18	GARDCO	PUREFORM LED	FENCE POST MOUNTED; COLOR – BLACK	20'–0" (ABOVE FFE)	LED	T4S	3800	0.90	3000K	P15–P–A02–730 –T4S	P15–P–A02–730–T4S	–	–	–	–	–

NOTES:
1. REFER TO ELECTRICAL DRAWINGS FOR SITE LIGHTING VOLTAGES AND ELECTRICAL LAYOUTS.
2. CONTRACTOR TO CONFIRM CONTROLS SYSTEM REQUIRED BY THE OWNER AND PER CODE. BID PRICING SHALL INCLUDE CONTROL SYSTEM.
3. FIXTURE CATALOG NUMBERS TO BE CONFIRMED WITH MANUFACTURER BEFORE ORDERING.

STATISTICS

DESCRIPTION	AVG.	MAX.	MIN.	MAX./MIN.	AVG./MIN.
PRIVATE AREA – FENCELINE	0.9 FC	1.5 FC	0.5 FC	3.0:1	1.7:1

NOTE:
LIGHT PHOTOMETRY AND CALCULATIONS FOR EXISTING AND ADJACENT LIGHTING TO REMAIN ARE NOT INCLUDED IN THE ABOVE STATISTICS.



Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

MASSACHUSETTS MICHAEL HUNTLEY No. 4044 REGISTERED LANDSCAPE ARCHITECT

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

MEDWAY

NORFOLK COUNTY MASSACHUSETTS

Drawing Title

LIGHTING PLAN

Project No.	Drawing No.
151033401	LL101
Date: 06/08/2023	
Drawn By: LL/SH	
Checked By: MH	

LANGAN Project No. 151033401

LIGHTING NOTES:

GENERAL

1. POINT-BY-POINT CALCULATIONS PROVIDED WITHIN HAVE BEEN PREPARED IN ACCORDANCE TO IESNA STANDARDS AND IN CONSIDERATION OF THE VARIABLES WITHIN THESE NOTES AND SITE LIGHTING SCHEDULE. THE VALUES SHOWN ON THE PLANS ARE NOT AN INDICATION OF THE INITIAL LIGHT INTENSITIES OF THE LAMPS. THESE VALUES ARE AN APPROXIMATION OF THE MAINTAINED INTENSITIES DELIVERED TO THE GROUND PLANE USING INDUSTRY STANDARD LIGHT LOSS FACTORS (LLF) WHICH COVER LAMP DEGRADATION AND NATURAL BUILDUP / DIRT DEGRADATION ON THE FIXTURE LENS. THE LIGHTING PLAN IS DESIGNED WITH AN INDUSTRY STANDARD LLF IN ACCORDANCE WITH GUIDANCE AS PROVIDED BY IESNA. MINOR VARIATIONS IN TOPOGRAPHY, PHYSICAL OBSTRUCTIONS, AMBIENT OR ADJACENT LIGHT SOURCES AND/OR OTHER POTENTIAL IMPACTS HAVE NOT BEEN INCLUDED IN THESE CALCULATIONS. THEREFORE, AS-BUILT LIGHT INTENSITIES MAY VARY, IN EITHER DIRECTION, FROM WHAT IS EXPLICITLY PORTRAYED WITHIN THESE DRAWINGS.NO GUARANTEE OF LIGHT LEVELS IS EXPRESSED OR IMPLIED BY THE POINT BY POINT CALCULATIONS SHOWN ON THESE PLANS.
2. LIGHT LEVEL POINT SPACING IS 10 FT. LEFT TO RIGHT AND 10 FT. TOP TO BOTTOM. POINT BY POINT CALCULATIONS ARE BASED ON THE LIGHT LOSS FACTOR AS STATED IN THE LIGHTING SCHEDULE.
3. ALL LIGHTING IS TO BE FULL CUT-OFF.

COMPLIANCE

3. ALL SITE LIGHTING RELATED WORK AND MATERIALS SHALL COMPLY WITH CITY, COUNTY, AND OTHER APPLICABLE GOVERNING AUTHORITY REQUIREMENTS.
4. LIGHTING LAYOUT COMPLIES WITH THE ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IESNA) SAFETY STANDARDS FOR LIGHT LEVELS.

COORDINATION

5. CONTRACTOR TO COORDINATE POWER SOURCE WITH LIGHT FIXTURES TO ENSURE ALL SITE LIGHTING IS OPERATING EFFECTIVELY, EFFICIENTLY AND SAFELY.
6. REFER TO ELECTRIFICATION PLAN FOR PROVIDING ADEQUATE POWER FOR SITE LIGHTING.
7. CONTRACTOR TO COORDINATE LOCATION OF EASEMENTS, UNDERGROUND UTILITIES AND DRAINAGE BEFORE DRILLING POLE BASES.
8. INSTALLATION OF ALL LIGHTING FIXTURES, POLES, FOOTINGS, AND FEEDER CABLE TO BE COORDINATED WITH ALL SITE WORK TRADES TO AVOID CONFLICT WITH FINISHED AND PROPOSED WORK.
9. CONTRACTOR TO COORDINATE INSTALLATION OF UNDERGROUND FEEDER CABLE FOR EXTERIOR LIGHTING WITH EXISTING AND PROPOSED UTILITIES, SITE DRAINAGE SYSTEMS, AND PAVING. CONTRACTOR SHALL PROMPTLY NOTIFY THE OWNER'S REPRESENTATIVE SHOULD ANY UTILITIES, NOT SHOWN ON THE PLANS, BE FOUND DURING EXCAVATIONS.

POLES AND FOOTINGS

10. PROVIDE A CONCRETE BASE FOR EACH LIGHT POLE AT THE LOCATIONS INDICATED ON THE CONSTRUCTION DRAWINGS AND/OR IN ACCORDANCE WITH PROJECT PLANS AND SPECIFICATIONS RELATING DIRECTLY TO CAST-IN-PLACE CONCRETE. THE USE OF ALTERNATE LIGHTING FOUNDATIONS, SUCH AS PRECAST, MAY CHANGE THE SIZING AND REINFORCEMENT REQUIREMENTS FROM THOSE SHOWN ON THESE PLANS. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR REVIEW PRIOR TO ORDERING SUBSTITUTED PRODUCTS.
11. CONTRACTOR SHALL EXAMINE AND VERIFY THAT SOIL CONDITIONS ARE SUITABLE TO SUPPORT LOADS EXERTED UPON THE FOUNDATIONS DURING EXCAVATION. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY UNSATISFACTORY CONDITIONS.
12. POLE FOUNDATIONS SHALL NOT BE POURED IF FREE STANDING WATER IS PRESENT IN EXCAVATED AREA.
13. ALL POLES HIGHER THAN 25 FT.SHALL BE EQUIPPED WITH FACTORY INSTALLED VIBRATION DAMPENERS.

WALL MOUNTED FIXTURES

14. CONTRACTOR TO COORDINATE INSTALLATION OF ALL THE WALL MOUNTED FIXTURES AND ELECTRICAL CONNECTIONS TO SITE STRUCTURE(S) WITH BUILDING MEP, ARCHITECT, AND/OR OWNER.
15. INSTALLATION AND ELECTRICAL CONNECTIONS FOR WALL MOUNTED FIXTURES TO BE COORDINATED WITH ARCHITECTURAL, STRUCTURAL, UTILITY AND SITE PLANS AND TO BE IN ACCORDANCE WITH ALL APPLICABLE CODES.

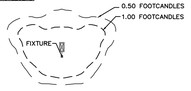
ADJUSTMENT AND INSPECTION

16. CONTRACTOR TO OPERATE EACH LUMINAIRE AFTER INSTALLATION AND CONNECTION. INSPECT FOR IMPROPER CONNECTIONS AND OPERATION.
17. CONTRACTOR TO AIM AND ADJUST ALL LUMINAIRES TO PROVIDE ILLUMINATION LEVELS AND DISTRIBUTION AS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT AND/OR OWNER.
18. CONTRACTOR TO CONFIRM THAT LIGHT FIXTURES, TILT ANGLE AND AIMING MATCH SPECIFICATIONS ON THE PLANS.

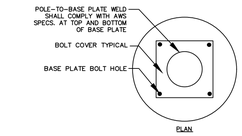
REQUIREMENTS FOR ALTERNATES

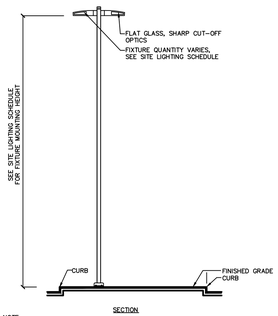
19. ALL LIGHTING SUBSTITUTIONS MUST BE MADE WITHIN 14 DAYS PRIOR TO THE BID DATE TO PROVIDE AMPLE TIME FOR REVIEW AND TO ISSUE AN ADDENDUM INCORPORATING THE SUBSTITUTION WITH THE FOLLOWING REQUIREMENTS:
    A. ANY SUBSTITUTION TO LIGHTING FIXTURES, POLES, ETC. MUST BE APPROVED BY THE OWNER, ENGINEER AND TENANTS. ANY COST ASSOCIATED WITH REVIEW AND/OR APPROVAL OF THE SUBSTITUTIONS SHALL BE ENTIRELY BORNE BY THE CONTRACTOR
    B. COMPUTER PREPARED PHOTOMETRIC LAYOUT OF THE PROPOSED LIGHTED AREA WHICH INDICATES, BY ISOFOOTCANDLE, THE SYSTEM'S PERFORMANCE.
    C. A PHOTOMETRIC REPORT FROM A NATIONAL INDEPENDENT TESTING LABORATORY WITH REPORT NUMBER, DATE, FIXTURE CATALOG NUMBER, LUMINAIRE AND LAMP SPECIFICATIONS; IES CALCULATIONS, POINT BY POINT FOOT CANDLE PLAN, STATISTIC ZONES SHOWING AVERAGE, MAXIMUM, MINIMUM AND UNIFORMITY RATIOS, SUMMARY, ISOLUX PLOT, AND CATALOGUE CUTS. CATALOGUE CUTS MUST IDENTIFY OPTICS, LAMP TYPE, DISTRIBUTION TYPE, REFLECTOR, LENS, BALLASTS, WATTAGE, VOLTAGE, FINISH HOUSING DESCRIPTION AND ALL OTHER PERTINENT INFORMATION.
    D. POLE MANUFACTURER AASHTO CALCULATIONS INDICATING THE POLE AND ANCHOR BOLTS BEING SUBMITTED ARE CAPABLE OF SUPPORTING THE POLE AND FIXTURE SYSTEMS BEING UTILIZED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
    E. THE UNDERWRITERS LABORATORY LISTING AND FILE NUMBER FOR THE SPECIFIC FIXTURE(S) TO BE UTILIZED.
    F. A COLOR PHOTOGRAPH THAT CLEARLY SHOWS THE REPLACEMENT FIXTURE POLE MOUNTED, THE FIXTURE'S COLOR, FINISH, AND PHYSICAL CHARACTERISTICS.

PHOTOMETRIC LIGHTING LEGEND:



NOTE: THE PHOTOMETRIC TEMPLATE REPRESENTS LIGHT THROW FOR EACH INDIVIDUAL FIXTURE AND DOES NOT REPRESENT LIGHT COMING FROM OTHER SOURCES.

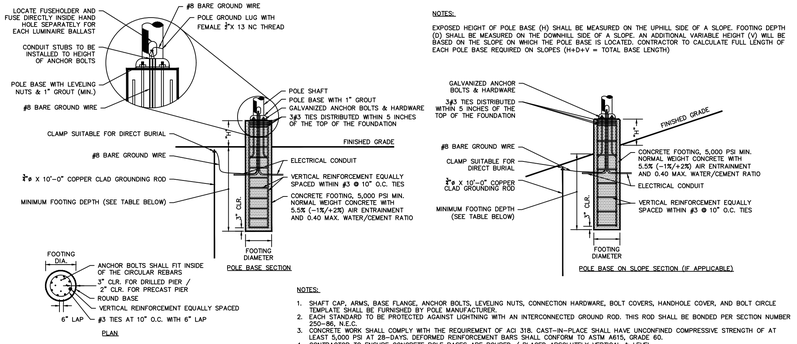




NOTE:

1. ALL LIGHTS WITH 25' MOUNTING HEIGHT OR GREATER TO RECEIVE FACTORY INSTALLED VIBRATION DAMPENERS.

LIGHT FIXTURE AND POLE



NOTES:

EXPOSED HEIGHT OF POLE BASE (H) SHALL BE MEASURED ON THE UPHILL SIDE OF A SLOPE. FOOTING DEPTH (D) SHALL BE MEASURED ON THE DOWNHILL SIDE OF A SLOPE. AN ADDITIONAL VARIABLE HEIGHT (V) WILL BE BASED ON THE SLOPE ON WHICH THE POLE BASE IS LOCATED. CONTRACTOR TO CALCULATE FULL LENGTH OF EACH POLE BASE REQUIRED ON SLOPES (H+D+V = TOTAL BASE LENGTH)

NOTES:

1. SHAFT CAP, ARMS, BASE FLANGE, ANCHOR BOLTS, LEVELING NUTS, CONNECTION HARDWARE, BOLT COVERS, HANDHOLE COVER, AND BOLT CIRCLE TEMPLATE SHALL BE FURNISHED BY POLE MANUFACTURER.
2. EACH STANDARD TO BE PROTECTED AGAINST LIGHTNING WITH AN INTERCONNECTED GROUND ROD. THIS ROD SHALL BE BONDED PER SECTION NUMBER 250-86, N.E.C.
3. CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENT OF ACI 318. CAST-IN-PLACE SHALL HAVE UNCONFINED COMPRESSIVE STRENGTH OF AT LEAST 5,000 PSI AT 28-DAYS. DEFORMED REINFORCEMENT BARS SHALL CONFORM TO ASTM A615, GRADE 60.
4. CONTRACTOR TO ENSURE CONCRETE POLE BASES ARE POURED / PLACED ABSOLUTELY VERTICAL & LEVEL.
5. IF POLE BASE IS CAST-IN-PLACE, POLE BASE SHALL BE ONE CONTINUOUS POUR. EXPOSED PORTION OF BASE SHALL BE HAND-RUBBED SMOOTH.
6. CONTRACTOR TO COMPACT SUBGRADE AROUND POLE BASE PER EARTHWORK SPECIFICATIONS / GEOTECH REPORT.
7. THE INFORMATION ILLUSTRATED IN THE LIGHT POLE FOUNDATION DETAIL HAS BEEN PROVIDED FOR GENERAL REFERENCE AND PRELIMINARY COST ESTIMATE PURPOSES. LIGHT POLE FOUNDATIONS SHOULD BE DESIGNED AND DETAILED BY A LICENSED STRUCTURAL ENGINEER BASED ON EXISTING SOIL CONDITIONS, LOCAL DESIGN STANDARDS, AND MANUFACTURERS RECOMMENDATIONS.
8. CONTRACTOR TO CONFIRM GROUNDING DESIGN WITH MEP.

MOUNTING HEIGHT	FOOTING DEPTH	FOOTING DIAMETER	VERTICAL REINFORCEMENT	'H'
20'-0"	7'-0"	2'-0"	6 #5 BARS	3'-0"

1 POLE FOOTING

NTS

GARDCO by Signify

Site & Area

PureForm

P15 small square area light

Gardco PureForm LED area small square precision P15 features a sleek, low profile design. Precision optics are optimized for maximum efficiency and uniformity. Multiple optical distributions and color temperatures are available to allow you to customize your selection.

Project:
Location:
Cat.No:
Type:
Lumens: Qty:
Notes:

Ordering guide

example: P15-P-A06-740-T5S-AR1-UNV-BL50-L3-BZ

Prefix	Optic Technology	Configuration (Nominal lumens)	Color Temperature	Distribution	Mounting	Voltage
P15	P					
P15 PureForm area small, 15° square	P Precision	A01 2,000 lumens A02 4,000 lumens A03 6,000 lumens A04 8,000 lumens A05 10,000 lumens A06 12,000 lumens A07 14,000 lumens A08 16,000 lumens	730 70CRI 3000K 740 70CRI 4000K 750 70CRI 5000K 835[1] 80CRI 3500K 827[1] 80CRI 2700K	T2M Type 2 Medium T3M Type 3 Medium T4S Type 4 Short T5S Type 5 Short BLC Back Light Control	AR1[2] Arm mount (Standard) The following mounting kits must be ordered separately (See accessories) RAM[3] Retrofit arm mount kit WAL Wall mount	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)

Options			
Dimming controls	Motion sensor lens	Electrical/Shielding	Finish
(0-10V dimming driver standard) DLEA[4] Dimming Leads Externally Accessible (controls by others) FAWS[4,5] Field Adjustable Wattage Selector BL50[4,6] Bi-level set at 50% dimming SIWI1[4,7] SiteWise integral module SRDR[4,7,8,9] SR driver connected to Zhaga socket DynaDimmer: Automatic Profile Dimming CS50[4,9] Security 50% Dimming, 7 hours CMS0[4,9] Median 50% Dimming, 8 hours CS30[4,9] Security 30% Dimming, 7 hours CM30[4,9] Median 30% Dimming, 8 hours	L2[4,9,10] PIR Sensor #2 lens L3[4,9,10] PIR Sensor #3 lens	PCB[4,10] Photocontrol Button TR7[4,11] 7-pin Twist Lock Receptacle TLP[4,10,11] 7-pin Twist Lock Receptacle w/ 3-pin Photocell SP2[1] Increased 20kA FS1[10] Single Fuse (120, 277, 347VAC) FS2[10] Double Fuse (208, 240, 480VAC) HIS Internal house side shield	Textured BK Black WH White BZ Bronze DG Dark Gray MG Medium Gray Customer specified RAL Specify optional color or RAL (ex: RAL7024) CC Custom color (Must supply color chip for required factory quote)

1. Product ships standard with 10kA.
2. Extended lead times apply. Contact factory for details.
3. Mounts to a 4"-5" OD round pole with adapter included for square poles.
4. Not available with other dimming control options (mutually exclusive).
5. Not available with motion sensor.
6. BL50 must be specified with a motion sensor lens (L2 or L3).
7. Not available with photocontrols.
8. Not available in 347 or 480V.
9. Available only in 120 or 277V.
10. Must specify input voltage.
11. All 7 pins in NEMA receptacle are connected to SR driver.
12. Not available in 480V. Order photocell separately with TR7.
13. Not available with DLEA and FAWS dimming control options.
14. When ordering SRDR with L2 or L3, controller to be used on socket must be SR compatible (See specifications for more details).

3000K only

2 FIXTURE TYPE A & B

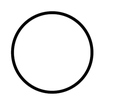
NTS

GARDCO by Signify

Pole/Bracket

Site and Area Poles

Tapered Round Steel



The Gardco TRS Tapered Round Steel pole consists of a one-piece design fabricated steel tubing circumferentially welded to a structural quality hot rolled carbon steel plate. The poles are finished with an electrostatically applied, thermally cured TGIC polyester powdercoat.

Project:
Location:
Cat.No:
Type:
Lamps: Qty:
Notes:

Ordering Guide

example: OSTRS-20-11-D1-BRP

Prefix	Height	Gauge	Drilling[1]	Finish	Options
O5TRS	20	11	D1 1 Way D2 2 Way at 180° D2@90 2 Way at 90° D3 3 Way at 90° D3@120 3 Way at 120° D4 4 Way T2 2.4" OD Tenon X 4" long T3 3" OD Tenon X 5" long T4 4" OD Tenon X 6" long P Plain Top (No Drilling/No Tenon)	BRP Bronze Paint BLP Black Paint WP White Paint MGY Medium Grey DGY Dark Grey GV Galvanized (No Paint) FPGV Finished Paint over Galvanized (specify color) OC Optional Color Paint (Specify RAL designation ex: RAL7024) SC Special Color Paint (Specify. Must supply color chip.)	FES Festoon Outlet VDA Vibration Dampener AHH Additional Hand Hole For Festoon Outlets and Additional Hand Holes, indicate height above base and orientation to original hand hole. See Pole Orientation Information on Page 4. **Nipples and Couplings** CL1/2 Coupling - Internal Thread 1/2" CL3/4 Coupling - Internal Thread 3/4" CL1 Coupling - Internal Thread 1" CL1-1/4 Coupling - Internal Thread 1-1/4" CL1-1/2 Coupling - Internal Thread 1-1/2" NL1/2 Nipple - External Thread 1/2" NL3/4 Nipple - External Thread 3/4" NL1 Nipple - External Thread 1" NL1-1/4 Nipple - External Thread 1-1/4" NL1-1/2 Nipple - External Thread 1-1/2" Indicate height above base and orientation to hand hole. See Pole Orientation Information on Page 4. **Single Side Mount Bullhorn Brackets** GM-080-19 Single - 1.9" OD (For Gardco DFL7/DFC7 only) GM-080-24 Single - 2.4" OD Indicate height above base and orientation to hand hole. See Pole Orientation Information on Page 4 Additional and alternative brackets and accessories available. Refer to the Signify product catalog (eCat) website for more information.
O6TRS	20 25[1]				
O7TRS	25 30[1] 35[1]				
O8TRS	30 35 39[1]				
O9TRS	39				

Enter the order code into the appropriate box above. **Note:** Gardco reserves the right to refuse a configuration. Not all combinations and configurations are valid. Refer to notes below for exclusions and limitations. For questions or concerns, please consult the factory.

1. Standard poles are drilled in factory for compatibility with Signify luminaires only (D* options). For non-Signify-brand luminaires, select the P drilling option.
2. Poles with a 2.4" top OD cannot be side drilled. The 2.4" top has the same OD as the T2 tenon.

Anchor Bolts for Gardco OxTRS Poles, ordered separately:

	12NC for ordering	Description (in inches)
For Pre-ship service (Order 4 per pole)	912400215784	1 x 36 x 4.5
For shipment with the pole (Order 1 per pole)	912400200208	1 x 36 x 4.5

3 POLE TYPE A & B

NTS

Date	Description	No.
Revisions		

MASSACHUSETTS MICHAEL HUNTON REGISTERED LANDSCAPE ARCHITECT NO. 4044

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project

MEDWAY BATTERY ENERGY STORAGE SYSTEM

MEDWAY

NORFOLK COUNTY MASSACHUSETTS

Drawing Title

LIGHTING DETAILS

Project No.	Drawing No.
151033401	LL501
Date: 06/08/2023	
Drawn By: LL/AS	
Checked By: MH	

LANGAN

Project No. 151033401

NON-JURISDICTIONAL ROUTE 109 SCREENING PLANTING SCHEDULE

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREE(S)						
AR	3	ACER RUBRUM	RED MAPLE	2 1/2–3" CAL.	B+B	–
CCA	8	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	2 1/2–3" CAL.	B+B	–
TA	1	TILIA AMERICANA	BASSWOOD	2 1/2–3" CAL.	B+B	–
EVERGREEN TREE(S)						
JV	9	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	8–10'	B+B	–
DECIDUOUS SHRUB(S)						
AAL	24	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	24–30"	CONTAINER	–
HVCW	23	HAMAMELIS VIRGINIANA	COMMON WITCHHAZEL	3–4'	CONTAINER	–
IVE	10	ILEX VERTICILLATA	WINTERBERRY	24–30"'	CONTAINER	–
VD	19	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	3–4'	B+B	–

NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN IN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE.

LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT AREA

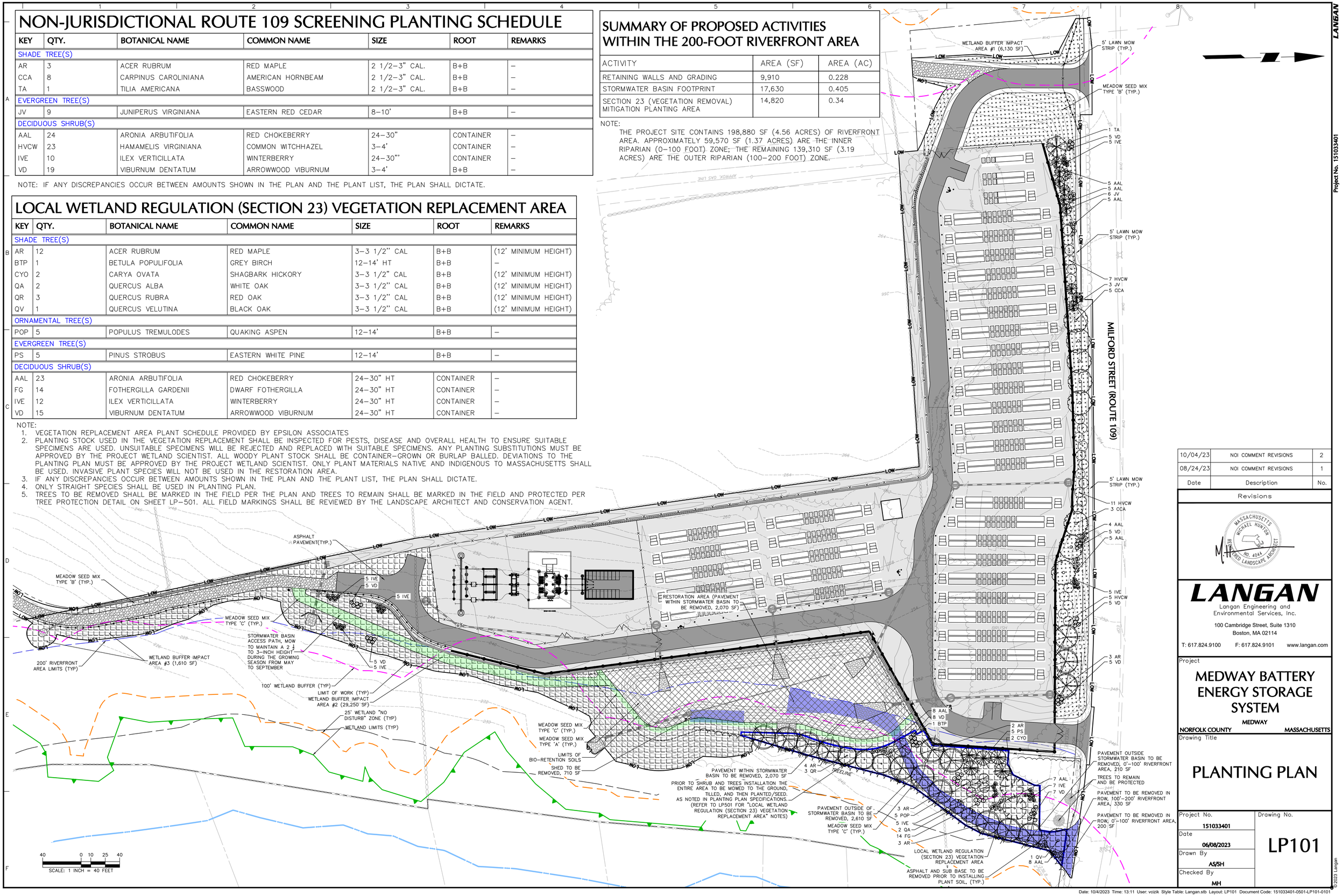
KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	REMARKS
SHADE TREE(S)						
AR	12	ACER RUBRUM	RED MAPLE	3–3 1/2" CAL	B+B	(12' MINIMUM HEIGHT)
BTP	1	BETULA POPULIFOLIA	GREY BIRCH	12–14' HT	B+B	–
CYO	2	CARYA OVATA	SHAGBARK HICKORY	3–3 1/2" CAL	B+B	(12' MINIMUM HEIGHT)
QA	2	QUERCUS ALBA	WHITE OAK	3–3 1/2" CAL	B+B	(12' MINIMUM HEIGHT)
QR	3	QUERCUS RUBRA	RED OAK	3–3 1/2" CAL	B+B	(12' MINIMUM HEIGHT)
QV	1	QUERCUS VELUTINA	BLACK OAK	3–3 1/2" CAL	B+B	(12' MINIMUM HEIGHT)
ORNAMENTAL TREE(S)						
POP	5	POPULUS TREMULODES	QUAKING ASPEN	12–14'	B+B	–
EVERGREEN TREE(S)						
PS	5	PINUS STROBUS	EASTERN WHITE PINE	12–14'	B+B	–
DECIDUOUS SHRUB(S)						
AAL	23	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	24–30" HT	CONTAINER	–
FG	14	FOTHERGILLA GARDENII	DWARF FOTHERGILLA	24–30" HT	CONTAINER	–
IVE	12	ILEX VERTICILLATA	WINTERBERRY	24–30" HT	CONTAINER	–
VD	15	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	24–30" HT	CONTAINER	–

NOTE:
1. VEGETATION REPLACEMENT AREA PLANT SCHEDULE PROVIDED BY EPSILON ASSOCIATES
2. PLANTING STOCK USED IN THE VEGETATION REPLACEMENT SHALL BE INSPECTED FOR PESTS, DISEASE AND OVERALL HEALTH TO ENSURE SUITABLE SPECIMENS ARE USED. UNSUITABLE SPECIMENS WILL BE REJECTED AND REPLACED WITH SUITABLE SPECIMENS. ANY PLANTING SUBSTITUTIONS MUST BE APPROVED BY THE PROJECT WETLAND SCIENTIST. ALL WOODY PLANT STOCK SHALL BE CONTAINER–GROWN OR BURLAP BALLED. DEVIATIONS TO THE PLANTING PLAN MUST BE APPROVED BY THE PROJECT WETLAND SCIENTIST. ONLY PLANT MATERIALS NATIVE AND INDIGENOUS TO MASSACHUSETTS SHALL BE USED. INVASIVE PLANT SPECIES WILL NOT BE USED IN THE RESTORATION AREA.
3. IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN IN THE PLAN AND THE PLANT LIST, THE PLAN SHALL DICTATE.
4. ONLY STRAIGHT SPECIES SHALL BE USED IN PLANTING PLAN.
5. TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD PER THE PLAN AND TREES TO REMAIN SHALL BE MARKED IN THE FIELD AND PROTECTED PER TREE PROTECTION DETAIL ON SHEET LP–501. ALL FIELD MARKINGS SHALL BE REVIEWED BY THE LANDSCAPE ARCHITECT AND CONSERVATION AGENT.

SUMMARY OF PROPOSED ACTIVITIES WITHIN THE 200-FOOT RIVERFRONT AREA

ACTIVITY	AREA (SF)	AREA (AC)
RETAINING WALLS AND GRADING	9,910	0.228
STORMWATER BASIN FOOTPRINT	17,630	0.405
SECTION 23 (VEGETATION REMOVAL) MITIGATION PLANTING AREA	14,820	0.34

NOTE:
THE PROJECT SITE CONTAINS 198,880 SF (4.56 ACRES) OF RIVERFRONT AREA. APPROXIMATELY 59,570 SF (1.37 ACRES) ARE THE INNER RIPARIAN (0–100 FOOT) ZONE; THE REMAINING 139,310 SF (3.19 ACRES) ARE THE OUTER RIPARIAN (100–200 FOOT) ZONE.



Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

MASSACHUSETTS MICHAEL HURTON REGISTERED LANDSCAPE ARCHITECT NO. 4048

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
PLANTING PLAN

Project No.	Drawing No.
151033401	LP101
Date: 06/08/2023	
Drawn By: AS/SH	
Checked By: MH	

LANGAN Project No. 151033401

GENERAL LANDSCAPE PLANTING NOTES

1. NAMES OF PLANTS AS DESCRIBED ON THIS PLAN CONFORM TO THOSE GIVEN IN "STANDARDIZED PLANT NAMES", 1942 EDITION, PREPARED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. NAMES OF PLANT VARIETIES NOT INCLUDED THEREIN CONFORM TO NAMES GENERALLY ACCEPTED IN NURSERY TRADE.
2. ALL EXPOSED GROUND SURFACES THAT ARE NOT PAVED WITHIN THE CONTRACT LIMIT LINE, AND THAT ARE NOT COVERED BY LANDSCAPE PLANTING OR SEEDING AS SPECIFIED, SHALL BE COVERED BY A NATURAL MULCH THAT WILL PREVENT SOIL EROSION AND THE EMANATION OF DUST.
3. NO PLANT SHALL BE PUT INTO THE GROUND BEFORE ROUGH GRADING HAS BEEN COMPLETED AND APPROVED BY THE PROJECT LANDSCAPE ARCHITECT OR PROJECT ENGINEER.
4. STANDARDS FOR TYPE, SPREAD, HEIGHT, ROOT BALL AND QUALITY OF NEW PLANT MATERIAL SHALL BE IN ACCORDANCE WITH GUIDELINES AS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK", PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL SHALL HAVE NORMAL HABIT OF GROWTH AND BE HEALTHY, VIGOROUS, AND FREE FROM DISEASES AND INSECT INFESTATION.
5. NEW PLANT MATERIAL SHALL BE NURSERY GROWN UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE SET PLUMB AND SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANT'S ORIGINAL GRADE BEFORE DIGGING. PLANT MATERIAL OF THE SAME SPECIES AND SPECIFIED AS THE SAME SIZE SHOULD BE SIMILAR IN SHAPE, COLOR AND HABIT. THE LANDSCAPE ARCHITECT HAS THE RIGHT TO REJECT PLANT MATERIAL THAT DOES NOT CONFORM TO THE TYPICAL OR SPECIFIED HABIT OF THAT SPECIES.
6. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITY AND SEWER LINES PRIOR TO THE START OF EXCAVATION ACTIVITIES. NOTIFY THE PROJECT ENGINEER AND OWNER IMMEDIATELY OF ANY CONFLICTS WITH PROPOSED PLANTING LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE.
7. THE CONTRACTOR SHALL NOT MAKE SUBSTITUTIONS. IF THE SPECIFIED LANDSCAPE MATERIAL IS NOT OBTAINABLE, THE CONTRACTOR SHALL SUBMIT PROOF OF NON-AVAILABILITY TO THE LANDSCAPE ARCHITECT AND OWNER, TOGETHER WITH A WRITTEN PROPOSAL FOR USE OF AN EQUIVALENT MATERIAL.
8. LANDSCAPE CONTRACTOR TO STAKE OUT PLANTING LOCATIONS, FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT AND/OR OWNER BEFORE PLANTING WORK BEGINS. THE LANDSCAPE ARCHITECT AND/OR OWNER SHALL DIRECT THE CONTRACTOR IN THE FINAL PLACEMENT OF ALL PLANT MATERIAL AND LOCATION OF PLANTING BEDS TO ENSURE COMPLIANCE WITH DESIGN INTENT UNLESS OTHERWISE INSTRUCTED.
9. THE LANDSCAPE ARCHITECT MAY REVIEW PLANT MATERIALS AT THE SITE, BEFORE PLANTING, FOR COMPLIANCE WITH REQUIREMENTS FOR GENUS, SPECIES, VARIETY, SIZE, AND QUALITY. THE LANDSCAPE ARCHITECT RETAINS THE RIGHT TO FURTHER REVIEW PLANT MATERIALS FOR SIZE AND CONDITION OF BALLS AND ROOT SYSTEM, INSECTS, INJURIES, AND LATENT DEFECTS, AND TO REJECT UNSATISFACTORY OR DEFECTIVE MATERIAL AT ANY TIME DURING PROGRESS OF WORK. THE CONTRACTOR SHALL REMOVE REJECTED PLANT MATERIALS IMMEDIATELY FROM PROJECT SITE AS DIRECTED BY THE LANDSCAPE ARCHITECT OR OWNER.
10. DELIVERY, STORAGE, AND HANDLING
    A. PACKAGED MATERIALS: PACKAGED MATERIALS SHALL BE DELIVERED IN CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. MATERIALS SHALL BE PROTECTED FROM DETERIORATION DURING DELIVERY, AND WHILE STORED AT SITE.
    B. TREES AND SHRUBS: THE CONTRACTOR SHALL PROVIDE TREES AND SHRUBS DUG FOR THE GROWING SEASON FOR WHICH THEY WILL BE PLANTED. DO NOT PRUNE PRIOR TO DELIVERY UNLESS OTHERWISE DIRECTED BY THE LANDSCAPE ARCHITECT. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DAMAGE BARK, BREAK BRANCHES, OR DESTROY NATURAL SHAPE. PROVIDE PROTECTIVE COVERING DURING TRANSIT. DO NOT DROP BALLED AND BURLAPPED STOCK DURING DELIVERY OR HANDLING.
    C. ALL PLANTS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN AS SPECIFIED. NO CONTAINER GROWN STOCK WILL BE ACCEPTED IF IT IS ROOT BOUND. ALL ROOTBALL WRAPPING AND BINDING MATERIAL MADE OF SYNTHETICS OR PLASTICS SHALL BE REMOVED FROM THE TOP OF THE BALL AT THE TIME OF PLANTING. IF THE PLANT IS SHIPPED WITH A WIRE BASKET AROUND THE ROOT BALL, THE WIRE BASKET SHALL BE CUT AND FOLDED DOWN 8 INCHES INTO THE PLANTING HOLE. WITH CONTAINER GROWN STOCK, THE CONTAINER SHALL BE REMOVED AND THE ROOT BALL SHALL BE CUT THROUGH THE SURFACE IN TWO LOCATIONS.
    D. THE CONTRACTOR SHALL HAVE TREES AND SHRUBS DELIVERED TO SITE AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND PLANT IMMEDIATELY. IF PLANTING IS DELAYED MORE THAN 6 HOURS AFTER DELIVERY, THE CONTRACTOR SHALL SET TREES AND SHRUBS IN SHADE, PROTECT FROM WEATHER AND MECHANICAL DAMAGE AND KEEP ROOTS MOIST BY COVERING WITH MULCH, BURLAP OR OTHER ACCEPTABLE MEANS OF RETAINING MOISTURE.
11. ALL LANDSCAPED AREAS TO BE CLEARED OF ROCKS, STUMPS, TRASH AND OTHER UNSIGHTLY DEBRIS. ALL FINE GRADED AREAS SHOULD BE HAND RAKED SMOOTH ELIMINATING ANY CLUMPS AND AND UNEVEN SURFACES PRIOR TO PLANTING OR MULCHING.
12. ALL PLANT MATERIAL SHALL BE INSTALLED AS PER DETAILS, NOTES AND CONTRACT SPECIFICATIONS. THE LANDSCAPE ARCHITECT MAY REVIEW INSTALLATION AND MAINTENANCE PROCEDURES.
13. NEW PLANT MATERIAL SHALL BE GUARANTEED TO BE ALIVE AND IN VIGOROUS GROWING CONDITION FOR A PERIOD OF ONE YEAR FOLLOWING ACCEPTANCE BY THE OWNER. PLANT MATERIAL FOUND TO BE UNHEALTHY, DYING OR DEAD DURING THIS PERIOD, SHALL BE REMOVED AND REPLACED IN KIND BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
14. THE CONTRACTOR SHALL KEEP AREA CLEAN DURING DELIVERY AND INSTALLATION OF PLANT MATERIALS. REMOVE AND DISPOSE OF OFF-SITE ANY ACCUMULATED DEBRIS OR UNUSED MATERIALS. REPAIR DAMAGE TO ADJACENT AREAS CAUSED BY LANDSCAPE INSTALLATION OPERATIONS.
15. ALL PLANTS SHALL BE WATERED THOROUGHLY TWICE DURING THE FIRST 24-HOUR PERIOD AFTER PLANTING. ALL PLANTS SHALL THEN BE WATERED WEEKLY OR AS REQUIRED BY SITE AND WEATHER CONDITIONS TO MAINTAIN VIGOROUS AND HEALTHY PLANT GROWTH.
16. THE BACKFILL MIXTURE AND SOIL MIXES TO BE INSTALLED PER THE SPECIFICATIONS.
17. AFTER PLANT IS PLACED IN TREE PIT LOCATION, ALL TWINE HOLDING ROOT BALL TOGETHER SHOULD BE COMPLETELY REMOVED AND THE BURLAP SHOULD BE PULLED DOWN SO 1/3 OF THE ROOT BALL IS EXPOSED. SYNTHETIC BURLAP SHOULD BE COMPLETELY REMOVED AFTER INSTALLATION.
18. MULCH SHOULD NOT BE PILED UP AROUND THE TRUNK OF ANY PLANT MATERIAL. NO MULCH OR TOPSOIL SHOULD BE TOUCHING THE BASE OF THE TRUNK ABOVE THE ROOT COLLAR.
19. ALL FENCE INSTALLATION SHALL BE COMPLETED PRIOR TO COMMENCEMENT OF ANY LANDSCAPE PLANTING, LAWN AND GRASSES, OR IRRIGATION WORK.
20. FOR ANY DISCREPANCIES BETWEEN THE PLANT SCHEDULE AND PLANTING PLAN THE GRAPHIC QUANTITY SHOWN SHALL GOVERN.
21. PLANT MATERIALS SHALL NOT BE PLANTED UNTIL THE FINISHED GRADING HAS BEEN COMPLETED.
22. ALL PLANT INSTALLATIONS SHALL BE COMPLETED EITHER BETWEEN APRIL 1 – JUNE 15 OR AUGUST 15 – NOVEMBER 1, UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT. SEE LAWN SEEDING DATES IN SEEDING NOTES.

LAWN WATERING SCHEDULE

THE FOLLOWING WATERING SCHEDULE COVERS ROUGHLY 8 WEEKS TO ESTABLISH A HEALTHY STAND OF GRASS FROM SEED. THE CONTRACTOR SHALL BE OBLIGATED TO ENSURE A HEALTHY STAND OF GRASS AT THE END OF THE MAINTENANCE/BOND PERIOD. ANY BARE OR DEAD AREAS IN THE LAWN SHALL BE PREPARED, RESEEDED AND REESTABLISHED PRIOR TO THE END OF THE MAINTENANCE/BOND PERIOD AND TO THE SATISFACTION OF THE PROJECT LANDSCAPE ARCHITECT AND THE OWNER.

IMPORTANT ASPECTS TO ATTAINING AND SUSTAINING A HEALTHY STAND OF GRASS ARE THE INSTALLATION OF TOPSOIL, SEED BED PREPARATION, ATTAINING OPTIMAL pH FOR THE INTENDED PLANT SPECIES, FERTILIZING, MULCH COVERING, AND SUFFICIENT WATERING PER THESE NOTES AND/OR PROJECT SPECIFICATIONS.

1. SEEDING SHALL BE DONE DURING THE SEASONS SPECIFIED IN THE LAWN SEED MIX NOTES AND/OR PROJECT SPECIFICATIONS.
2. AFTER THE SEEDBED IS PREPARED, SEED IS INSTALLED, AND MULCH IS APPLIED, WATER LIGHTLY TO KEEP THE TOP 2 INCHES OF SOIL CONSISTENTLY MOIST, NOT SATURATED. AT NO TIME SHOULD WATER BE APPLIED TO THE POINT OF RUNOFF OR THE DISPLACEMENT OF SEED.
3. DEPENDING ON SOIL TEMPERATURES, IT MAY TAKE SEVERAL WEEKS FOR GERMINATION TO OCCUR. DIFFERENT SPECIES WITHIN THE MIX GERMINATE AT DIFFERENT TIMES AND THEREFORE CONTRACTOR SHOULD CONTINUE THE LIGHT WATERING, AS DESCRIBED ABOVE, UNTIL THERE IS AT LEAST 2 INCHES OF GROWTH THROUGHOUT.
4. AT THIS POINT, WATERING FREQUENCY MAY BE REDUCED TO EVERY 3 TO 5 DAYS. WATER SHALL BE APPLIED TO WET A 6 INCH MINIMUM SOIL DEPTH TO PROMOTE HEALTHY DEEP ROOTS.

LAWN SEED MIX

1. LAWN SEED MIX: LESCO GRASS SEED – ALL PRO TRANSITION MIX (3 TURF-TYPE TALL-FESCUE GRASSES)

NOTES:
A) SEED RATE:
1) NEW ESTABLISHMENT: SEED AT A RATE OF 6–8 LBS/1000 SQ FT
2) RENOVATION: 20–50% EXISTING COVER: 5–7 LBS/1000 SQ FT
50–75% EXISTING COVER: 4–6 LBS/1000 SQ FT

GENERAL SEEDING NOTES:

1. SEEDING SHALL TAKE PLACE IN THE SPRING (APRIL 1 TO JUNE 15) OR THE FALL (SEPTEMBER 1 TO OCTOBER 15).
2. PROTECT ALL EXISTING TREES AND SHRUBS TO REMAIN PER TREE PROTECTION DETAILS. NO DRILL SEEDING OR HERBICIDE USE WITHIN DRIPLINE OF EXISTING TREES TO REMAIN.
3. ELIMINATE UNWANTED SHRUB AND BRUSH AND MOW ALL LAWN TO GRADE IN AREAS TO BE SEEDED PRIOR TO INSTALLATION.
4. ELIMINATE REMAINING VEGETATION PRIOR TO SEEDING USING A NON-SELECTIVE HERBICIDE PER MANUFACTURER'S SPECIFICATIONS.
5. ALL AREAS NOT DISTURBED DUE TO SITE GRADING SHALL NOT BE TILLED. A TRUAX-TYPE DRILL SEEDER SHALL BE USED IN THOSE LOCATIONS. IN ALL REMAINING AREAS TO BE SEEDED, CONTRACTOR IS TO SUBMIT SEEDING METHODOLOGY TO PROJECT LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL BY CONSERVATION COMMISSION PRIOR TO SEEDING.
6. THERE MUST BE CONTINUOUS SOIL MOISTURE FOR 4–6 WEEKS TO ALLOW PROPER GERMINATION.

LAWN MAINTENANCE:

1. BEGIN MAINTENANCE IMMEDIATELY AFTER EACH PORTION OF LAWN IS PLANTED AND CONTINUE FOR 8 WEEKS AFTER ALL LAWN PLANTING IS COMPLETED.
2. WATER TO KEEP SURFACE SOIL MOIST, REPAIR WASHED OUT AREAS BY FILLING WITH TOPSOIL, LIMING, FERTILIZING AND RE-SEEDING; MOW TO 2 1/2 – 3 INCHES AFTER GRASS REACHES 3 1/2 INCHES IN HEIGHT, AND MOW FREQUENTLY ENOUGH TO KEEP GRASS FROM EXCEEDING 3 1/2 INCHES. WEED BY LOCAL SPOT APPLICATION OF SELECTIVE HERBICIDE ONLY AFTER GRASS IS WELL-ESTABLISHED.

PLANTING SOIL SPECIFICATIONS

1. PLANTING SOIL, ALTERNATELY MAY BE REFERRED TO AS TOPSOIL, SHOULD BE FRIABLE, FERTILE, WELL DRAINED, FREE OF DEBRIS, TOXINS, TRASH AND STONES OVER 1/2" DIA., IT SHOULD HAVE A HIGH ORGANIC CONTENT SUITABLE TO SUSTAIN HEALTHY PLANT GROWTH AND SHOULD LOOK AESTHETICALLY PLEASING HAVING NO NOXIOUS ODORS.

2. PLANTING SOIL:

REUSE SURFACE SOILS STOCKPILED ON SITE, VERIFYING COMPLIANCE WITH PLANTING SOIL AND TOPSOIL CRITERIA IN THIS SPECIFICATION THROUGH TESTING. CLEAN SURFACE SOIL OF ALL ROOTS, PLANTS, SOD, AND GRAVEL OVER 1" IN DIAMETER AND DELETERIOUS MATERIALS. IF ON-SITE SOILS ARE TO BE USED FOR PROPOSED PLANTING, THE CONTRACTOR SHALL DEMONSTRATE, THROUGH SOIL TESTING, THAT ON-SITE SOILS MEET THE SAME CRITERIA AS INDICATED IN NOTES PLANS AND SPECIFICATIONS.

SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF SITE SOURCES WHEN TOPSOIL AND PLANTING SOIL QUANTITIES ARE INSUFFICIENT. OBTAIN SOIL DISPLACED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST 4" DEEP. DO NOT OBTAIN FROM AGRICULTURAL LAND, BOGS, MARSHES OR CONTAMINATED SITES.

CONTRACTOR SHALL TEST SOILS AND FURNISH SAMPLES UPON REQUEST. PACKAGED MATERIALS SHALL BE UNOPENED BAGS OR CONTAINERS, EACH BEARING A NAME, GUARANTEE, AND TRADEMARK OF THE PRODUCER, MATERIAL COMPOSITION, MANUFACTURER'S CERTIFIED ANALYSIS, AND THE WEIGHT OF THE MATERIALS. SOIL OR AMENDMENT MATERIALS SHALL BE STORED ON SITE TEMPORARILY IN STOCKPILES PRIOR TO PLACEMENT AND SHALL BE PROTECTED FROM INTRUSION OF CONTAMINANTS AND EROSION. AFTER MIXING, SOIL MATERIALS SHALL BE COVERED WITH A TARPAULIN UNTIL TIME OF ACTUAL USE.

ALL PLANTING SOILS SHALL BE SUBMITTED FOR TESTING TO THE STATE COOPERATIVE EXTENSION SERVICE, OR APPROVED EQUAL, PRIOR TO DELIVERY TO THE SITE. CONTRACTOR SHALL FURNISH SOIL SAMPLES AND SOIL TEST RESULTS TO LANDSCAPE ARCHITECT OR OWNER AT A RATE OF ONE SAMPLE PER 500 CUBIC YARDS TO ENSURE CONSISTENCY ACROSS THE TOTAL VOLUME OF PLANTING SOIL REQUIRED. TEST RESULTS SHALL EVALUATE FOR ALL CRITERIA LISTED IN THIS SPECIFICATION. IF TESTING AGENCY DETERMINES THAT THE SOILS ARE DEFICIENT IN ANY MANNER AND MAY BE CORRECTED BY ADDING AMENDMENTS, THE CONTRACTOR SHALL FOLLOW STATED RECOMMENDATIONS FOR SOIL IMPROVEMENT AND FURNISH SUBMITTALS FOR ALL AMENDMENTS PRIOR TO DELIVERY OF SOIL TO THE PROJECT SITE.

A. THE FOLLOWING TESTING SHOULD BE PERFORMED AND RESULTS GIVEN TO THE LANDSCAPE ARCHITECT FOR APPROVAL BEFORE INSTALLATION:
   a. PARTICLE SIZE ANALYSIS – LOAMY SAND: 60–75% SAND, 25–40% SILT, AND 5–15% CLAY.
   b. FERTILITY ANALYSIS: pH (5.5–6.5), SOLUBLE SALTS (LESS THAN 2 MMHO/CM), NITRATE, PHOSPHATE, POTASSIUM, CALCIUM AND MAGNESIUM
   c. ORGANIC MATTER CONTENT: 2.5–5% IN NATIVE SOILS; UP TO 10% IN AMENDED SOILS
   d. TOXIC SUBSTANCE ANALYSIS
   e. MATERIAL DRAINAGE RATE: 60% PASSING IN 2 MINUTES, 40% RETAINED
   f. NOT MORE THAN 1% OF MATERIAL SHALL BE RETAINED BY A #4 SIEVE

4. SOIL AMENDMENT FOR PLANT MATERIAL:
IF SOIL ORGANIC CONTENT IS INADEQUATE, SOIL SHALL BE AMENDED WITH COMPOST OR ACCEPTABLE, WEED FREE, ORGANIC MATTER. ORGANIC AMENDMENT SHALL BE WELL COMPOSTED, PH RANGE OF 6–8; MOISTURE CONTENT 35–55% BY WEIGHT 100% PASSING THROUGH 1" SIEVE; SOLUBLE SALT CONTENT LESS THAN 0.5 MM HOS/CM; MEETING ALL APPLICABLE ENVIRONMENTAL CRITERIA FOR CLEAN FILL.

A. ORGANIC MATTER AS A SOIL AMENDMENT: LEAF MOLD WITH 60–90% ORGANIC CONTENT BY WEIGHT. SHREDDED LEAF LITTER, COMPOSTED FOR A MINIMUM OF 1 YR. SHOULD BE FREE OF DEBRIS, STONES OVER 1/2", WOOD CHIPS OVER 1".

B. SOIL IN BEDS AND PLANTING ISLANDS OTHER THAN BACKFILL MATERIAL AND TOPSOIL, SHOULD BE FRIABLE, WELL DRAINED, AND FREE OF DEBRIS, INCLUDING STONES AND TRASH.

C. AMENDMENTS FOR BACK FILL IN TREE AND SHRUB PITS:
   a. GROUND LIMESTONE (WITH A MIN. OF 88% OF CALCIUM AND MAGNESIUM CARBONATES) USED PENDING RESULTS OF SOIL ANALYSIS.
      – BRING pH LEVELS TO 5.5 MIN. TO 6.5 FOR NON-ERICACEOUS PLANTS
      – BRING pH LEVELS TO 4.5 MIN. TO 5.5 FOR ERICACEOUS PLANTS
   b. TERRA-SORB BY 'PLANT HEALTH CARE' 800-421-9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN PLANTER BACKFILL MIXTURE WITH TREES AND SHRUBS.
   c. MYCOR-ROOT SAVER BY 'PLANT HEALTH CARE' 800-421-9051 (SEE MANUFACTURER RECOMMENDATIONS) USED IN BACKFILL MIXTURE WITH TREES.

5. WHERE PLANTING AREAS ARE PROPOSED FOR FORMER PAVED OR GRAVEL AREAS, BEDS SHALL BE EXCAVATED TO A MINIMUM 30" DEPTH AND, AT A MINIMUM, BE BACKFILLED WITH BOTTOM LAYER OF SANDY LOAM (ORGANIC CONTENT LESS THAN 2%) OVER WHICH TOPSOIL AND PLANTING SOILS WILL BE PLACED AT DEPTHS INDICATED IN PLANS, DETAILS AND NOTES.

6. CLEAN SOIL FILL IN LANDSCAPE AREAS:
LANDSCAPE FILL MATERIAL, BELOW PLANTING SOILS, SHALL HAVE THE PHYSICAL PROPERTIES OF A SANDY LOAM WITH AN ORGANIC CONTENT OF LESS THAN 2% AND A PH BETWEEN 5 – 7.

7. SOIL PLACEMENT:
A. CONTRACTOR TO PROVIDE SIX INCHES (6") MINIMUM DEPTH PLANTING SOIL LAYER IN LAWN AREAS, TWELVE INCHES (12") MINIMUM DEPTH PLANTING SOIL LAYER IN GROUNDCOVER AND PERENNIAL AREAS, EIGHTEEN INCHES (18") MINIMUM DEPTH PLANTING SOIL LAYER IN SHRUB AREAS, AND THIRTY-SIX INCHES (36") MINIMUM DEPTH PLANTING SOIL LAYER IN TREE PLANTING AREAS.

B. SCARIFY AND/OR TILL COMPACTED SUBSOILS TO A MINIMUM DEPTH OF 6 INCHES. THOROUGHLY MIX A 6 INCH DEPTH LAYER OF PLANTING SOIL INTO THE SUBSOIL PRIOR TO PLACING PLANTING SOIL AT THE DEPTHS INDICATED ABOVE. PLANTING SOIL SHALL BE PLACED IN 12–18" LIFTS AND WATER THOROUGHLY BEFORE INSTALLING NEXT LIFT. REPEAT UNTIL DEPTHS AND FINISH GRADES HAVE BEEN ACHIEVED. NO SOILS SHALL BE PLACED IN A FROZEN OR MUDDY CONDITION.

C. PLANTING SOIL PRESENT AT THE SITE, IF ANY, MAY BE USED TO SUPPLEMENT TOTAL AMOUNT REQUIRED. CONTRACTOR TO FURNISH AN ANALYSIS OF ON-SITE PLANTING SOIL UTILIZED IN ALL PLANTING AREAS.

8. SOIL CONDITIONING:
A. ADJUST pH AND NUTRIENT LEVELS AS REQUIRED TO ENSURE AN ACCEPTABLE GROWING MEDIUM. LOWER pH USING ELEMENTAL SULFUR ONLY. PEAT MOSS OR COPPER SULFATE MAY NOT BE USED. GROUND LIMESTONE AS A SOIL AMENDMENT MATERIAL WILL ONLY BE USED PENDING RESULTS OF SOIL ANALYSIS. PROVIDE WITH MINIMUM 88% CALCIUM AND MAGNESIUM CARBONATES AND SHALL HAVE TOTAL 100% PASSING THE 10 MESH SIEVE, MINIMUM 90% PASSING 20 MESH SIEVE, AND MINIMUM 60% PASSING 100 MESH SIEVE.

B. ALL DEBRIS EXPOSED FROM EXCAVATION AND CULTIVATION SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

C. SOIL MODIFICATIONS (PENDING RESULTS OF SOIL ANALYSIS):
   a. THOROUGHLY TILL ORGANIC MATTER (LEAF COMPOST) INTO THE TOP 6 TO 12 IN. OF MOST PLANTING SOILS TO IMPROVE THE SOIL'S ABILITY TO RETAIN WATER AND NUTRIENTS. ALL PRODUCTS SHOULD BE COMPOSTED TO A DARK COLOR AND BE FREE OF PIECES WITH IDENTIFIABLE LEAF OR WOOD STRUCTURE. AVOID MATERIAL WITH A pH HIGHER THAN 7.0. PEAT MOSS MAY NOT BE USED AS ORGANIC MATTER AMENDMENT.
   b. MODIFY HEAVY CLAY OR SILT (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) AND/OR GYPSUM. COARSE SAND MAY BE USED IF ENOUGH IS ADDED TO BRING THE SAND CONTENT TO MORE THAN 60% OF THE TOTAL MIX. IMPROVE DRAINAGE IN HEAVY SOILS BY PLANTING ON RAISED MOUNDS OR BEDS AND INCLUDING SUBSURFACE DRAINAGE LINES.
   c. MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.

LOCAL WETLAND REGULATION (SECTION 23) VEGETATION REPLACEMENT NOTES

PRIOR TO SHRUB AND TREE INSTALLATION THE ENTIRE AREA IS TO BE MOWED TO THE GROUND, TILLED, AND THEN PLANTED/SEEDED. AREA TO BE MONITORED AND IF HERBICIDE USE IS NECESSARY, A PLAN WILL BE DEVELOPED AND SUBMITTED TO THE CONSERVATION COMMISSION FOR APPROVAL PRIOR TO IMPLEMENTATION.

TOWN OF MEDWAY - WETLAND BYLAW COMPLIANCE CHART

SECTION	REQUIRED/ PERMITTED	PROVIDED/ PROPOSED	COMPLIANCE
23. F. 1	THE REPLACEMENT OF VEGETATION SHALL BE ACCORDING TO THE FOLLOWING TABLE: FOR EVERY EXISTING TRUNK (DBH) — REPLACEMENT QUANTITY 3 TO 8 INCHES — 1 8 TO 20 INCHES — 2 > 20 INCHES — 3	TOTAL TREES REQUIRED: 30 TREES TOTAL TREES PLANTED: 31 TREES	COMPLIES

MEADOW SEED NOTES

MEADOW SEED MIX A – ERNST SEED MIX ERNMX-183 (NATIVE DETENTION AREA MIX)

32%	PANICUM CLANDESTINUM, 'TIOGA'	DEERTONGUE, 'TIOGA'
20%	CAREX VULPINOIDEA	FOX SEDGE
20%	ELYMUS VIRGINICUS	VIRGINIA WILDRYE
20%	PANICUM VIRGATUM, 'SHAWNEE'	SWITCHGRASS, 'SHAWNEE'
4%	AGROSTIS PERENNANS, ALBANY PINE BUSH	AUTUMN BENTGRASS, ALBANY PINE BUSH
2%	JUNCUS TENUIS	PATH RUSH
1%	JUNCUS EFFUSUS	SOFT RUSH
1%	PANICUM RIGIDULUM	REDTOP PANICGRASS

NOTES:
SEED AT A RATE OF 20 LBS/ACRE OF 100% PURE LIVE SEED.

MEADOW SEED MIX B – NEW ENGLAND WETLAND PLANTS – NEW ENGLAND ROADSIDE MATRIX UPLAND SEED MIX

ELYMUS VIGINICUS	VIRGINIA WILD RYE
DESMODIUM PANICULATUM	PANICLEDLEAF TICK TREFOIL
SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM
ANDROPOGON GERARDII	BIG BLUESTEM
RESTUCA RUBRA	RED FESCUE
SORGHASTRUM NUTANS	INDIAN GRASS
PANICUM VIRGATUM	SWITCH GRASS
RHUS TYPHINA	STAGHORN SUMAC
CORNUS RACEMOSA	GREY DOGWOOD
CORNUS AMOMUM	SILKY DOGWOOD
OENOTHERA BIENNIS	EVENING PRIMROSE
ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED
RUDBECKIA HIRTA	BLACK EYED SUSAN
CHAMAECRISTA FASCICULATA	PARTRIDGE PEA
EUPATORIUM FISTULOSUM	HOLLOW-STEM JOE PYE WEED

NOTES:
SEED AT A RATE OF 35 LB/ACRE OF 100% PURE LIVE SEED

MEADOW SEED MIX C – ERNST NATIVE UPLAND WILDLIFE FORAGE & COVER MEADOW MIX)

34.9%	ANDROPOGON GERARDII, 'NIAGARA'	BIG BLUESTEM, 'NIAGARA'
27.0%	PANICUM VIRGATUM, 'CAVE-IN-ROCK'	SWITCHGRASS, 'CAVE-IN-ROCK'
21.0%	ELYMUS VIRGINICUS, 'MADISON'	VIRGINIA WILDRYE, 'MADISON'
9.0%	SORGHASTRUM NUTANS, 'TOMAHAWK'	INDIANGRASS, 'TOMAHAWK'
3.0%	RUDBECKIA HIRTA, PA ECOTYPE	BLACKEYED SUSAN, PA ECOTYPE
2.0%	CHAMAECRISTA FASCICULATA, PA ECOTYPE	PARTRIDGE PEA, PA ECOTYPE
1.5%	HELIOPSIS HELIANTHOIDES, PA ECOTYPE	OXEYE SUNFLOWER, PA ECOTYPE
1.0%	COREOPSIS TINCTORIA	PLAINS COREOPSIS
0.4%	DESMODIUM CANADENSE, PA ECOTYPE	SHOWY TICKTREFOIL, PA ECOTYPE
0.1%	ASCLEPIAS SYRIACA	COMMON MILKWEED
0.1%	MONARDA FISTULOSA, PA ECOTYPE	WILD BERGAMOT, PA ECOTYPE

NOTES:
SEED AT A RATE OF 20 LB/ACRE OF 100% PURE LIVE SEED

GENERAL SEEDING NOTES:

1. ALL SEEDING LOCATIONS SHALL BE STAKED IN FIELD REVIEWED AND APPROVED PRIOR TO THE APPLICATION.
2. FINAL SEED MIXTURES, RATES & SPECIES TO BE DETERMINED BASED ON CONSERVATION COMMISSION REVIEW IN MASSACHUSETTS.
3. SEEDING SHALL TAKE PLACE IN THE SPRING (APRIL 1 TO JUNE 15) OR THE FALL (SEPTEMBER 1 TO OCTOBER 15).
4. ELIMINATE UNWANTED VEGETATION PRIOR TO SEEDING USING A NON-SELECTIVE HERBICIDE PER MANUFACTURER'S SPECIFICATIONS. CONTRACTOR TO ENSURE HERBICIDE IS INDICATED FOR USE AROUND WATER BODIES.
5. IT IS RECOMMENDED THAT CONTRACTOR INSTALL SEED MIXTURE USING A NO-TILL TRUAX-TYPE DRILL WHERE APPLICABLE.
6. THERE MUST BE CONTINUOUS SOIL MOISTURE FOR 4–6 WEEKS TO ALLOW PROPER GERMINATION.

WEED CONTROL / MAINTENANCE

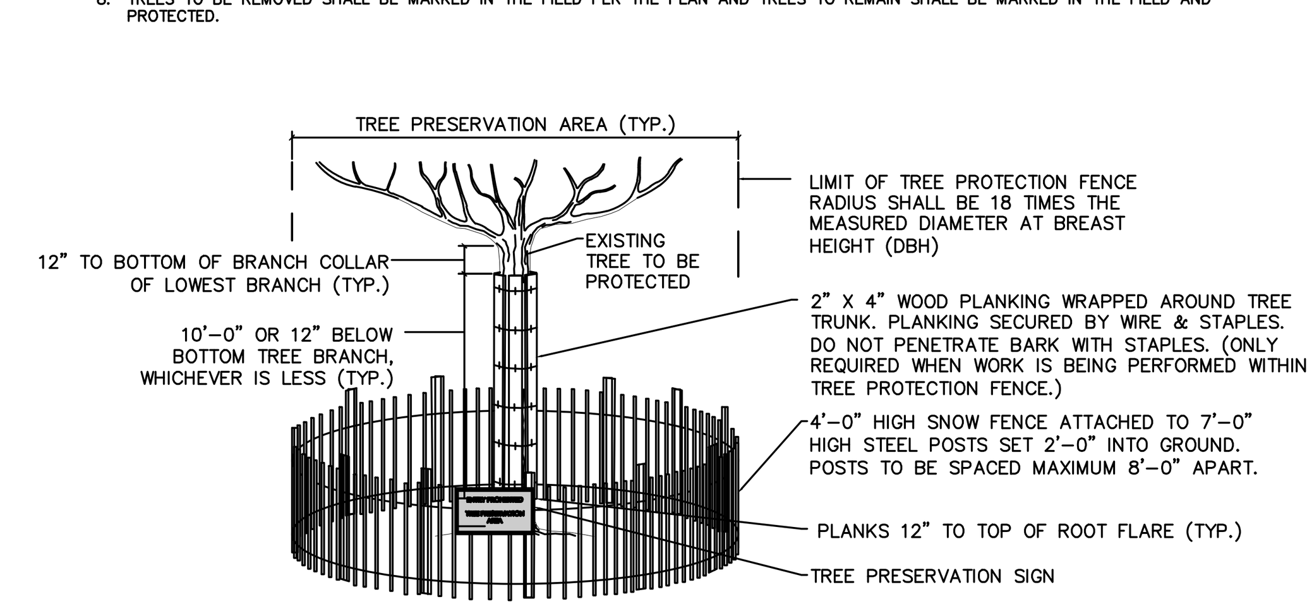
1. DURING THE ESTABLISHMENT YEAR, CONTRACTOR SHALL MOW SEEDING IF WEED HEIGHT EXCEEDS MEADOW MIX HEIGHT. MOW AT A HEIGHT OF 8"–10". DO NOT MOW CLOSE, AS SOME OF THE MEADOW MIX MAY BE DAMAGED.
2. AFTER THE FIRST GROWING SEASON, AND IF MEADOW MIX IS WELL ESTABLISHED, THE MEADOW MIX SHALL BE MOWED ONLY ONCE ANNUALLY. ANNUAL MAINTENANCE MOWING SHALL BE DONE IN OCTOBER.
3. MOW IN DETENTION BASIN AND WETLAND TRANSITION AREAS DURING DRIER SITE CONDITIONS WHEN SOIL DISTURBANCE WILL NOT OCCUR. MAINTENANCE FOR DETENTION BASIN AND WETLAND TRANSITION AREAS SHALL OCCUR DURING LATE SUMMER (JULY 15 – AUGUST 15) WHEN THE WATER TABLE IS USUALLY AT ITS LOWEST POINT OF THE YEAR. DO NOT MOW IN DETENTION BASIN, WETLAND OR WETLAND TRANSITION AREAS AFTER ESTABLISHMENT OF MEADOW MIX.

LANDSCAPE MAINTENANCE NOTES

1. MAINTENANCE OPERATIONS BEFORE APPROVAL:
   A. PLANT CARE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS SATISFACTORILY INSTALLED AND SHALL CONTINUE THROUGHOUT THE LIFE OF THE CONTRACT UNTIL FINAL ACCEPTANCE OF THE PROJECT.
   B. CARE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS AS ORIGINALLY INSTALLED, WATERING WHEN NEEDED OR DIRECTED, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
   C. CONTRACTOR SHALL REMOVE AND REPLACE ALL DEAD, DEFECTIVE AND/OR REJECTED PLANTS AS REQUIRED BEFORE FINAL ACCEPTANCE.
2. MAINTENANCE DURING CONSTRUCTION:
   A. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER PLANTING. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED, AND OTHERWISE MAINTAINED AND PROTECTED UNTIL PROVISIONAL ACCEPTANCE. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE AND POSITION, PLANTING SAUCER RESTORED AND DEAD MATERIAL REMOVED. STAKES AND WIRES SHALL BE TIGHTENED AND REPAIRED. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT.
   B. IF A SUBSTANTIAL NUMBER OF PLANTS ARE SICKLY OR DEAD AT THE TIME OF INSPECTION, ACCEPTANCE SHALL NOT BE GRANTED AND THE CONTRACTOR'S RESPONSIBILITY FOR MAINTENANCE OF ALL PLANTS SHALL BE EXTENDED FROM THE TIME REPLACEMENTS ARE MADE OR EXISTING PLANTS ARE DEEMED ACCEPTABLE BY THE LANDSCAPE ARCHITECT.
   C. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE SPECIFIED ON THE PLANT LIST OR THAT WHICH WAS TO REMAIN OR BE RELOCATED. THEY SHALL BE FURNISHED AND PLANTED AS SPECIFIED. THE COST SHALL BE BORNE BY THE CONTRACTOR. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART, VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTAILMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
   D. PLANTS SHALL BE GUARANTEED FOR A PERIOD OF TWO YEARS AFTER INSPECTION AND PROVISIONAL ACCEPTANCE.
   E. AT THE END OF THE ESTABLISHMENT PERIOD, INSPECTION SHALL BE MADE AGAIN. ANY PLANT REQUIRED UNDER THIS CONTRACT THAT IS DEAD OR UNSATISFACTORY TO THE LANDSCAPE ARCHITECT OR OWNER SHALL BE REMOVED FROM THE SITE AND REPLACED DURING THE NORMAL PLANTING SEASON.
3. MOWING MAINTENANCE(LAWN):
   A. BEGIN MOWING ONCE PER WEEK AFTER THE GRASS HAS REACHED 3 INCHES HEIGHT. MOW TO A HEIGHT OF NO LESS THAN 2-½ INCHES. AFTER 2 TO 3 WEEKS OF MOWING, CONTINUE TO WATER TO A 6 INCH MINIMUM SOIL DEPTH AS NECESSARY PER WEATHER CONDITIONS, AND SOIL MOISTURE SENSORS IF APPLICABLE.

TREE PROTECTION NOTES:

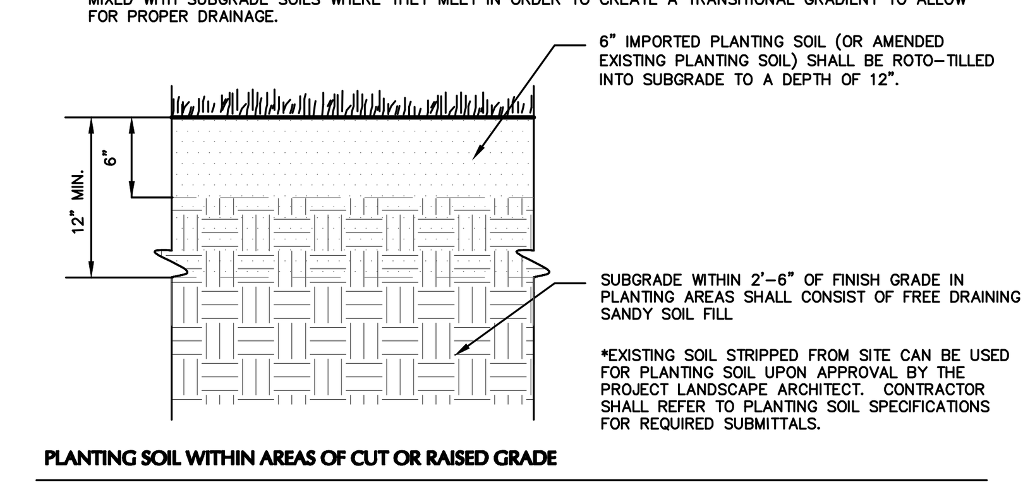
1. ALL EXISTING TREES WITHIN THE LIMITS OF TREE PROTECTION FENCING. SHALL BE PROTECTED THOUGHOUT THE DURATION OF WORK. TREE PROTECTION FENCING SHALL BE INSTALLED AT THE DRIP-LINE OF THE PROTECTED TREE UNLESS CONDITIONS WARRANT THE FENCE TO BE LOCATED WITHIN THE LIMIT OF BRANCHING. THE PROJECT LANDSCAPE ARCHITECT TO APPROVE THE LOCATION OF ALL FENCING PRIOR TO EXCAVATION.
2. TREE PROTECTION PLANKING SHALL BE INSTALLED AROUND ALL EXISTING TREES AS NOTED ON THIS DRAWING. REFER TO DETAIL ON THIS SHEET.
3. TREE PROTECTION FENCING SHALL BE MAINTAINED TO PROTECT TREES AT ALL TIMES. ANY DAMAGED FENCING SHALL BE IMMEDIATELY REPLACED WHEN DAMAGED.
4. IF TREE PROTECTION FENCING NEEDS TO BE MOVED OR BREACHED DUE TO TEMPORARY CONSTRUCTION ACTIVITY WITHIN THE TREE PROTECTION ZONE, THE FENCING WILL BE RESET TO ITS ORIGINAL LOCATION IMMEDIATELY AFTER CONSTRUCTION WITHIN THE TREE PROTECTION ZONE IS COMPLETE.
5. DEMOLITION WORK ADJACENT TO PROTECTED TREES SHALL BE PERFORMED BY NON-MECHANICAL METHODS. CONTRACTOR TO PROTECT ROOT MASS AGAINST DAMAGE DURING EXCAVATION. ANY TREE ROOTS THAT ARE DISTURBED, BROKEN, OR CUT SHALL BE PRUNED BACK WITH CLEAN SHARP TOOLS.
6. ALL EXPOSED TREE ROOTS SHALL BE THOROUGHLY IRRIGATED ON A DAILY BASIS AS DIRECTED BY THE PROJECT LANDSCAPE ARCHITECT.
7. ALL WORK TO BE PERFORMED UNDER THE DIRECT SUPERVISION OF EITHER THE OWNER'S REPRESENTATIVE OR THE PROJECT LANDSCAPE ARCHITECT.
8. TREES TO BE REMOVED SHALL BE MARKED IN THE FIELD PER THE PLAN AND TREES TO REMAIN SHALL BE MARKED IN THE FIELD AND PROTECTED.



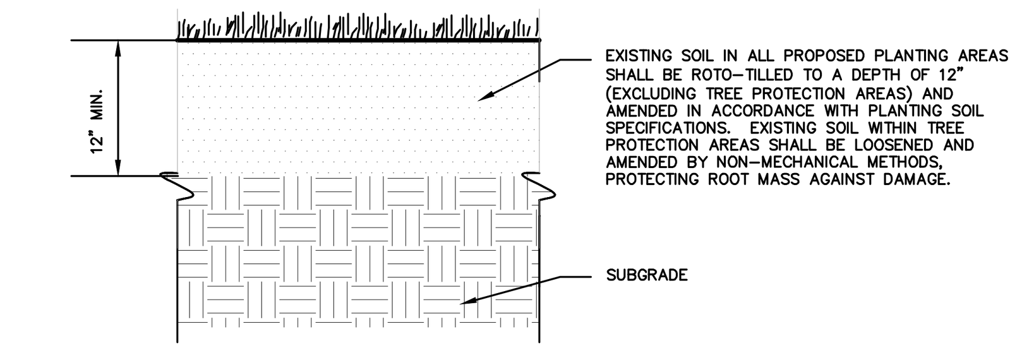
1 TREE PROTECTION FENCE AND PLANKING
NTS

GENERAL NOTE:

DUE TO GENERAL CONSTRUCTION ACTIVITIES AND ADJACENT SITE COMPACTION REQUIREMENTS, SUBGRADE SOILS WITHIN PROPOSED PLANTING AREAS TEND TO BECOME HIGHLY COMPACTED. IN ORDER TO CREATE A HEALTHY GROWTH MEDIUM TO ALLOW PROPOSED PLANTINGS TO ESTABLISH A VIGOROUS ROOT MASS, THIS SUBGRADE SOIL MUST UNDERGO A RESTORATION PROCESS. IN ADDITION, IMPORTED OR AMENDED EXISTING SOILS SHALL BE MIXED WITH SUBGRADE SOILS WHERE THEY MEET IN ORDER TO CREATE A TRANSITIONAL GRADIENT TO ALLOW FOR PROPER DRAINAGE.



PLANTING SOIL WITHIN AREAS OF CUT OR RAISED GRADE

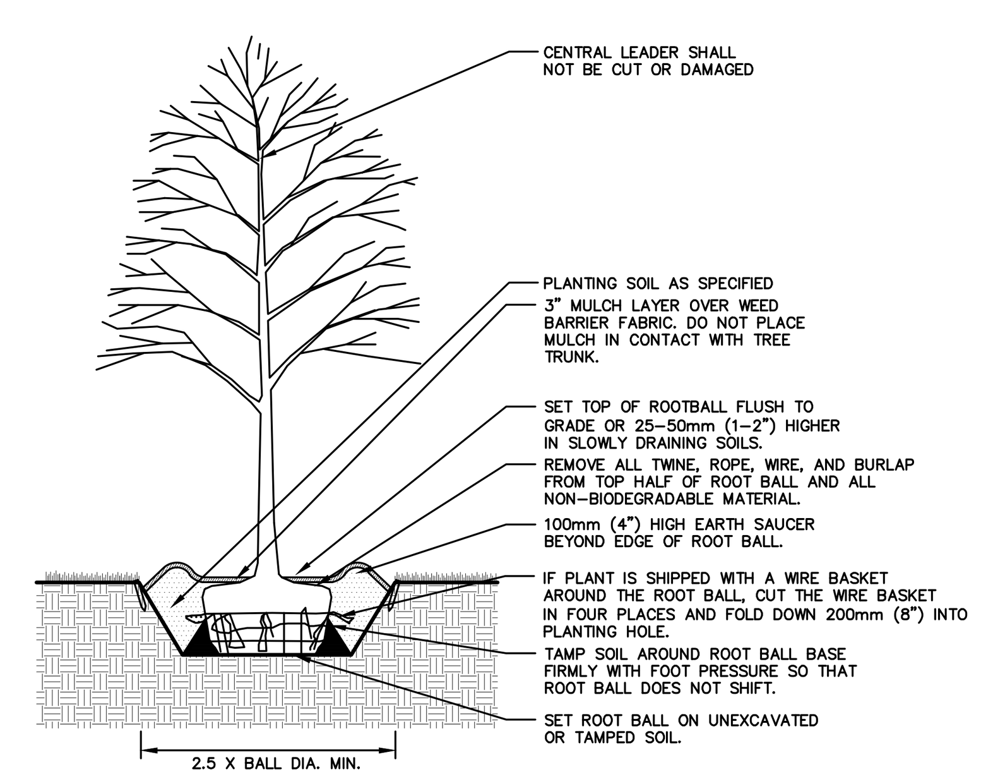


PLANTING SOIL WITHIN AREAS OF UNCHANGED GRADE

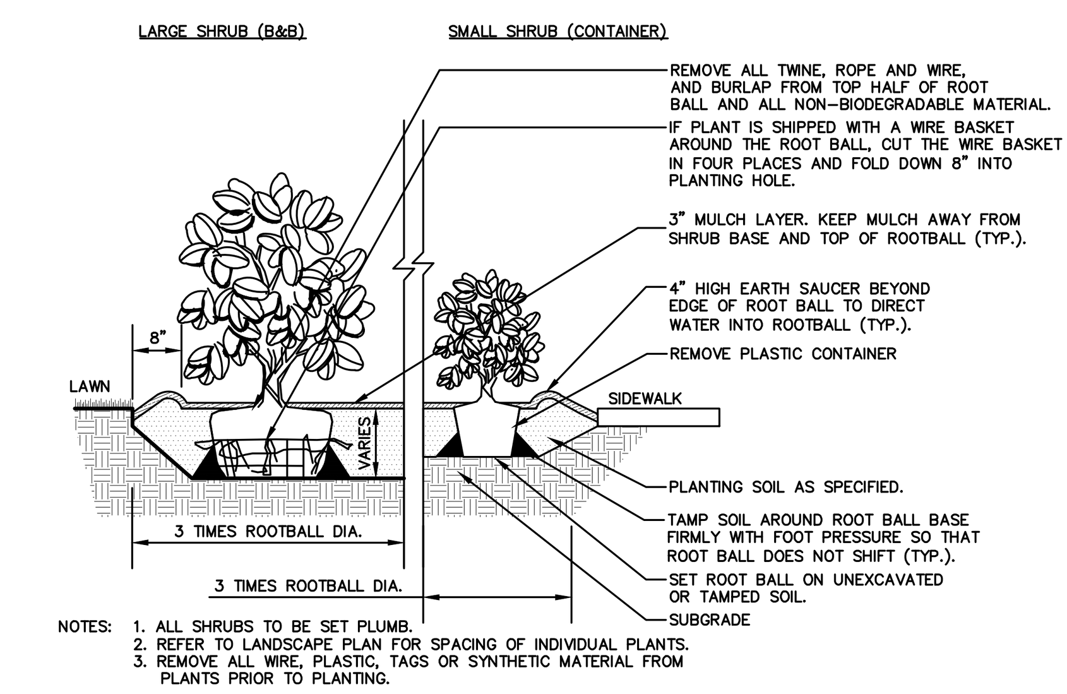
NOTES:

1. CONTRACTOR IS RESPONSIBLE TO SEND SAMPLES OF EXISTING SOILS INTENDED FOR USE IN PLANTING AREAS (1 PER 500 CY.) TO TESTING LABORATORY OR UNIVERSITY COOPERATIVE EXTENSION FOR TESTING. ALL TESTING COSTS ARE AT THE CONTRACTOR'S EXPENSE.
2. RECYCLED CRUSHED CONCRETE AND ASPHALT MILLINGS SHALL NOT BE PLACED WITHIN 2'-6" OF FINISH GRADE IN PROPOSED LANDSCAPE AREAS.
3. IMPORTED FILL SHALL CONTAIN NO CONTAMINATION IN EXCEEDENCE OF THE APPLICABLE STATE ENVIRONMENTAL STANDARDS AND MEET THE ENVIRONMENTAL REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF COMPLIANCE PRIOR TO DELIVERY OF ANY FILL TO THE SITE.
4. CONTRACTOR TO LIGHTLY COMPACT ALL PLACED PLANTING SOILS AND RAISE GRADES ACCORDINGLY TO ALLOW FOR FUTURE SETTLEMENT OF PLANTING SOILS (TYP.)
5. NO STONES, WOOD CHIPS, OR DEBRIS LARGER THAN 1/2" SHALL BE ACCEPTABLE WITHIN PLANTING AREAS.

2 PLANTING SOIL
NTS



3 TREE PLANTING
NTS



NOTES:
1. ALL SHRUBS TO BE SET PLUMB.
2. REFER TO LANDSCAPE PLAN FOR SPACING OF INDIVIDUAL PLANTS.
3. REMOVE ALL WIRE, PLASTIC, TAGS OR SYNTHETIC MATERIAL FROM PLANTS PRIOR TO PLANTING.

4 SHRUB AND ORNAMENTAL GRASS PLANTING
NTS

Date	Description	No.
10/04/23	NOI COMMENT REVISIONS	2
08/24/23	NOI COMMENT REVISIONS	1

Revisions

COMMONWEALTH OF MASSACHUSETTS — MICHAEL HUNTON — NO. 4044 — REGISTERED LANDSCAPE ARCHITECT

LANGAN
Langan Engineering and Environmental Services, Inc.
100 Cambridge Street, Suite 1310
Boston, MA 02114
T: 617.824.9100 F: 617.824.9101 www.langan.com

Project
MEDWAY BATTERY ENERGY STORAGE SYSTEM
MEDWAY
NORFOLK COUNTY MASSACHUSETTS

Drawing Title
PLANTING DETAILS

Project No. 151033401
Date 06/08/2023
Drawn By LL/AS
Checked By MH
Drawing No. LP501

LANGAN
Project No. 151033401