

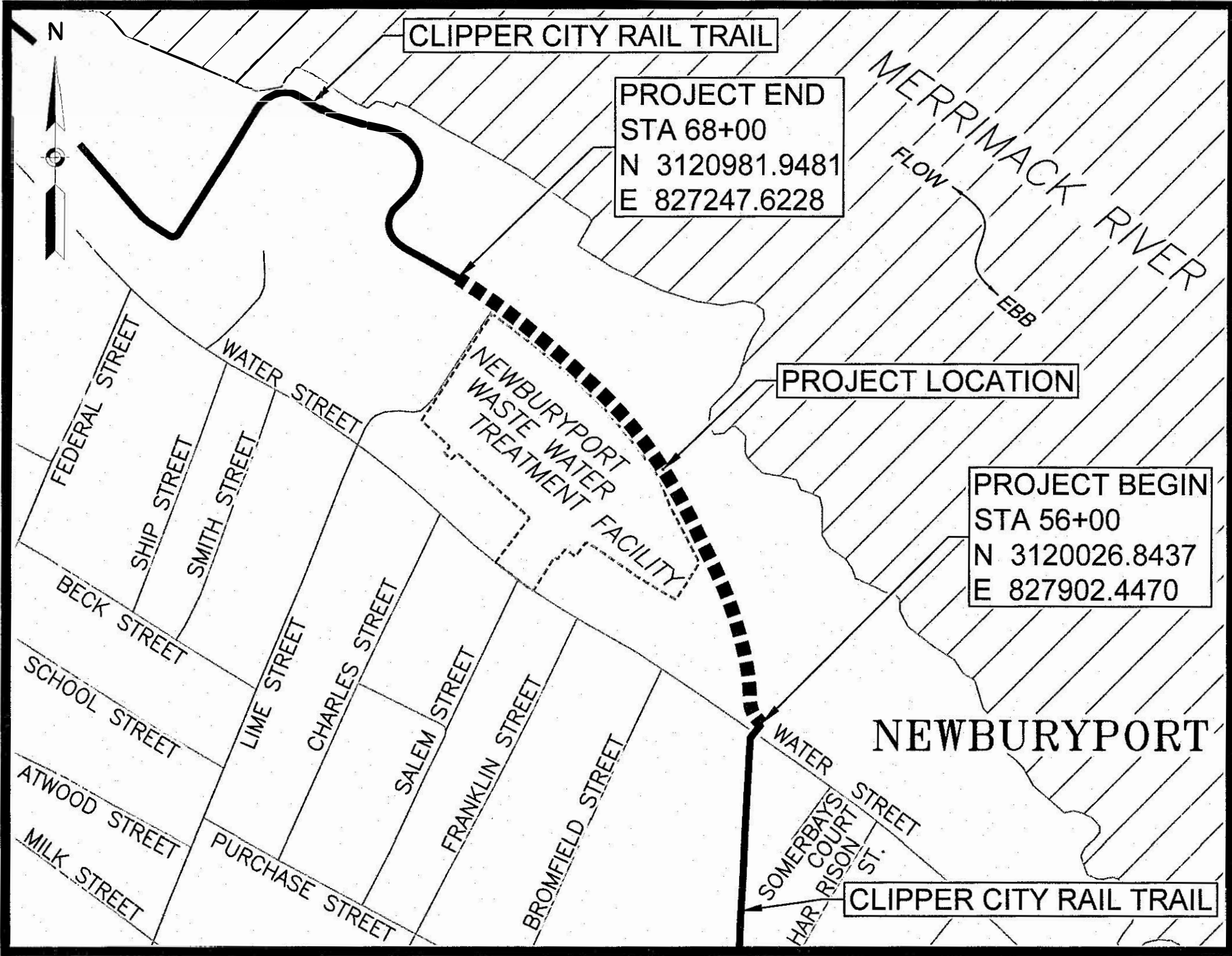
CITY OF NEWBURYPORT

PLAN AND PROFILE OF
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE PROTECTION
AND CLIPPER CITY RAIL TRAIL PROJECT
IN THE CITY OF
NEWBURYPORT
ESSEX COUNTY

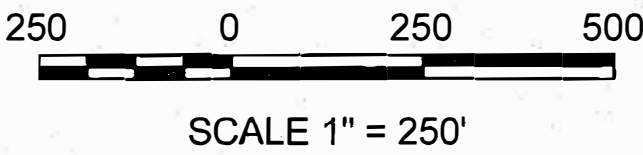
NEWBURYPORT			
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT			
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	1	35
STANTEC PROJECT NO. 210800843			
TITLE SHEET & INDEX			

FINAL SUBMISSION

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	GENERAL NOTES
4	KEY PLAN
5	ACCESS & STAGING PLAN
6	TYPICAL SECTIONS
7 - 8	CONSTRUCTION PLANS
9 - 10	PROFILES
11 - 16	SHORELINE STABILIZATION PLANS
17 - 22	GRADING PLANS
23	HORIZONTAL ALIGNMENT DATA
24 - 25	LANDSCAPE PLANS
26 - 27	LANDSCAPE DETAILS
28 - 32	CONSTRUCTION DETAILS
33 - 35	RAIL TRAIL CROSS SECTIONS



THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.



LENGTH OF PROJECT = 1,200.00 FEET = 0.227 MILES

2020-11-02	ISSUED FOR BID	0
DATE	DESCRIPTION	REV #

STAMPING FOR SHEETS 1 - 10 & 17 - 35:

65 NETWORK DRIVE | 2ND FLOOR | BURLINGTON, MA 01803

STAMPING FOR SHEETS 11 - 16:

GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	2	35
STANTEC PROJECT NO. 210800843			

LEGEND & ABBREVIATIONS

GENERAL (CONT.)

PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT-OF-WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/
TE	TEMPORARY EASEMENT
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TS	TOP STAIR (EL.)
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEELCHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK - PORTLAND ORANGE
FDW	FLASHING DON'T WALK - PORTLAND ORANGE
FYV	FLASHING AMBER VERTICAL ARROW
FR	FLASHING CIRCULAR RED
FW	FLASHING WALK - LUNAR WHITE
FY	FLASHING CIRCULAR AMBER
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FRV	FLASHING RED VERTICAL ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
OP	OPTICOM
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RV	STEADY RED VERTICAL ARROW
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK - LUNAR WHITE
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW
YR	STEADY AMBER RIGHT ARROW
YV	STEADY AMBER VERTICAL ARROW

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCH MARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
BS.	BOTTOM STAIR (EL.)
BW.	BOTTOM WALL (EL.)
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (OR EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (OR EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDPE	HIGH-DENSITY POLYETHYLENE
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HPS	HIGH PRESSURE STEAM
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACHING BASIN
LP	LIGHT POLE
LPS	LICENSED SITE PROFESSIONAL
LT	LEFT
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
MW	MONITORING WELL
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
		JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
		CATCH BASIN
		CURB INLET
		BUOY
		FLAG POLE
		GAS PUMP
		DROP INLET
		MAIL BOX
		GRANITE POST
		PLANTER
		POST
		TELEPHONE BOOTH
		VAULT
		VALVE
		WELL
		ELECTRIC MANHOLE (HANDHOLE)
		GATE POST
		FLOW LINE
		GAS GATE
		SOIL PROBE
		MONITORING WELL
		TEST BORE
		CONCRETE HEADWALL
		STONE HEADWALL
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		ADJUST ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		OTHER MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MHD BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANS. POLE
		UP W ITH FIREBOX
		POLE WITH DOUBLE LIGHT
		UP W ITH 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		FIRE ALARM BOX
		PARKING METER
		ELECTRICAL GROUND
		GATE VALVE
		RIP RAP
		OVERHEAD CABLE
		DIRECT BURIAL CABLE
		CURBING
		CONTOURS
		DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		ELECTRIC DUCT
		GAS MAIN
		SEWER MAIN
		TELEPHONE DUCT
		WATER MAIN
		BALANCE STONE WALL
		CULVERT
		GUARD RAIL
		GUTTER LINE AT DRIVEWAYS
		CHAIN LINK FENCE
		STOCKADE FENCE

GENERAL SYMBOLS (CONT.)

EXISTING	PROPOSED	
		HAY BALES/SILT FENCE
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLAN & OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND OR 200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		MATTING FOR EROSION CONTROL

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6'X 6' TYPICAL UNLESS OTHERWISE SPECIFIED)
		VIDEO SURVEILLANCE CAMERA
		MICROWAVE DETECTOR
		MAGNETOMETER (2 SHOWN)
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		OPTICOM CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD (TYPE AS NOTED OR AS SPECIFIED)
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
		PEDESTRIAN SIGNAL POST AND BASE
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		STEEL OR ALUMINUM MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (TWO POSTS)
		SIGNAL AND LIGHTING MAST ARM (OPTICOM)
		EMERGENCY PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"X12" (AND AS NOTED)
		ELECTRIC HANDHOLE 12" X 24"
		TRAFFIC SIGNAL INTERCONNECT CONDUIT
		TRAFFIC SIGNAL CONDUIT (TYPE AS NOTED)

PAVEMENT MARKINGS AND SIGNING SYSBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE - 12"
		CROSSWALK
		SOLID WHITE LANE LINE
		BROKEN WHITE LANE LINE (10' LINE, 30' SPACE TYP.)
		SOLID WHITE EDGE LINE
		YELLOW GORE LINE - 12"
		DOUBLE YELLOW CENTER LINE
		SOLID WHITE CHANNELIZATION LINE - 8"
		WHITE GORE LINE - 12"
		SOLID YELLOW EDGE LINE
		BROKEN YELLOW CENTER LINE (10' LINE, 30' SPACE TYP.) - 4"
		SOLID YELLOW CENTER LINE
		DOTTED WHITE LANE LINE - 4" (2' LINE, 4' SPACE)
		DIRECTION OF TRAFFIC FLOW

GENERAL NOTES:

- EXISTING GROUND SURFACES SHOWN ON PLANS, PROFILES AND CROSS SECTIONS ARE BASED UPON DATA OBTAINED BY FIELD SURVEYS.
- ALL GAS GATES, ELECTRIC MANHOLES AND TELEPHONE MANHOLES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED BY THE OWNING AGENCY. ALL GAS, ELECTRIC, TELEPHONE AND CATV WORK SHALL BE DONE BY THE OWNING AGENCY. THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE OWNING AGENCIES TO ADJUST AND/OR RELOCATE THESE STRUCTURES TO AVOID IMPACTING THE CONTRACTOR'S SCHEDULE OF OPERATIONS.
- CONSTRUCT DRIVEWAYS AND WALKS AS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
- EXISTING CHAIN LINK FENCE SUITABLE FOR REUSE WITHIN THE PROJECT SITE SHALL BE REMOVED AND RESET IN ACCORDANCE WITH THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
- SAW CUT EXISTING BITUMINOUS CONCRETE ROADWAYS, CEMENT CONCRETE SIDEWALKS AND BITUMINOUS CONCRETE DRIVEWAYS AS SHOWN ON THE PLANS AND AT THE PROPOSED MATCH LINE.
- WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- ALL ACCESSIBLE ROUTES, WALKWAYS, CURB CUTS, RAMPS, SIDEWALKS, DRIVEWAY OPENINGS, CLEARANCES AND SLOPE TOLERANCES SHALL CONFORM WITH THE ARCHITECTURAL ACCESS BOARD (AAB), 521 CMR AND MASSHIGHWAY CONSTRUCTION AND TRAFFIC STANDARD DRAWINGS.
- ITEMS LABELED "REM" SHALL BE REMOVED AND DISCARDED BY CONTRACTOR.
- CONSTRUCTION VEHICLES MUST FOLLOW THE APPROVED TRUCK ROUTE PROVIDED IN APPENDIX A OF THE SPECIFICATIONS. VEHICLES ACCESSING AND LEAVING THE SITE SHALL EXIT INTERSTATE 95 AT EXIT 56 AND USE THE FOLLOWING PUBLIC WAYS: SCOTLAND ROAD, PARKER STREET, GRAFF ROAD, POND STREET, HIGH STREET, FEDERAL STREET, & WATER STREET.
- THE CONTRACTOR SHALL PROTECT EXISTING SURVEY MONUMENTS AND SHALL RESET ANY MONUMENTATION DISTURBED BY HIS OPERATIONS.
- THE CONTRACTOR SHALL INSTALL OTHER NECESSARY TEMPORARY REGULATORY AND WARNING SIGNS DURING CONSTRUCTION AS REQUIRED BY THE ENGINEER FOR OTHER INCIDENTAL CONSTRUCTION ACTIVITIES. ALL SIGNAGE AND TRAFFIC CONTROL DEVICES USED MUST CONFORM TO THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD)
- THE CONTRACTOR SHALL PERFORM HIS WORK IN A MANNER ACCEPTABLE TO THE ENGINEER SO THAT INTERFERENCE WITH AND INCONVENIENCE TO BUSINESS CONCERNS AND ABUTTERS, ON ACCOUNT OF THE CONSTRUCTION WORK, IS KEPT TO A MINIMUM.
- THE CONTRACTOR SHALL NOT BE ALLOWED TO PARK EQUIPMENT OR STOCKPILE EQUIPMENT OR MATERIAL ON THE TRAVELED WAYS OVERNIGHT OR WHEN NOT IN USE.
- THE CONTRACTOR SHALL MAINTAIN SAFE AND RESPONSIBLE ACCESS TO AND FROM ABUTTING PROPERTY, PRIVATE WAYS, DRIVEWAYS AND ALL ALLEYS AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
- ALL DETECTABLE WARNING PANELS SHALL BE MOUNTED IN CEMENT CONCRETE AND INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DETAIL E107.6.5.
- TREES TO BE RETAINED OR TRIMMED SHALL BE CLEARLY MARKED TO AVOID ACCIDENTAL REMOVAL. TREE PROTECTION FENCING SHALL BE INSTALLED AND APPROVED BY RESIDENT ENGINEER PRIOR TO THE ONSET OF CONSTRUCTION.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE FINISH SURFACE.
- CONTRACTOR SHALL CONTACT AND COORDINATE WITH NATIONAL GRID PRIOR TO INITIATING WORK. NATIONAL GRID OWNS A CONCRETE ENCASED ELECTRICAL DUCT BANK THAT IS BURIED APPROXIMATELY 2.5 - 3 FEET BELOW GRADE. ADDITIONALLY, NATIONAL GRID OWNS (2) DIRECT BURY 23KV ELECTRIC CABLES AT AN UNCONFIRMED DEPTH. RECORD DOCUMENTS FROM NATIONAL GRID SHOW THAT THESE CABLES ARE BURIED IN SAND (WITH NO CONCRETE ENCASEMENT). IMPACTED NATIONAL GRID ELECTRIC MANHOLES SHOWN ON THE PLANS SHALL BE ADJUSTED BY NATIONAL GRID. THE CONTRACTOR SHALL FOLLOW NATIONAL GRID'S REQUIREMENTS WHEN WORKING NEAR NATIONAL GRID'S FACILITIES.
- THE CONTRACTOR SHALL PROVIDE ALL SUPERVISION, FACILITIES, LABOR, MATERIALS, TOOLS, EQUIPMENT, APPLIANCES, TRANSPORTATION, SURVEY, AND RELATED WORK NECESSARY TO COMPLETE THE WORK SPECIALIZED ON THESE CONTRACT DRAWINGS.
- ALL DIMENSIONS AND CONDITIONS MUST BE VERIFIED IN THE FIELD BY THE CONTRACTOR, ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH THE AFFECTED PART OF THE WORK.
- THE CONTRACTOR SHALL MAINTAIN ADEQUATE SURVEY CONTROL, AT ALL TIMES, TO ESTABLISH AND MAINTAIN ALL LINES AND ELEVATIONS.

GENERAL NOTES (CONTINUED):

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE CONSTRUCTION PROCEDURES AND SEQUENCE TO ENSURE SAFETY DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF NECESSARY SHORING OR TEMPORARY BRACING, SUCH MATERIAL SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE AFTER COMPLETION OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE TO ERECT, MAINTAIN AND REMOVE TEMPORARY MATERIALS AND EQUIPMENT. PROPOSED STAGING AREAS SHALL BE COORDINATED WITH THE CITY PRIOR TO COMMENCING WORK.
- IF THE CONTRACTOR, IN THE COURSE OF WORK, UNCOVERS OR OTHERWISE ENCOUNTERS ANY ARTIFACTS, WHETHER HISTORIC OR PREHISTORIC, THE CONTRACTOR SHALL BRING THEM TO THE IMMEDIATE ATTENTION OF THE ENGINEER, AND STOP ALL WORK IN THAT VICINITY UNTIL DIRECTED BY THE ENGINEER.
- IF THE CONTRACTOR, IN THE COURSE OF EXCAVATION, UNCOVERS OR OTHERWISE ENCOUNTERS ANY SUSPECTED HAZARDOUS OR UNIDENTIFIED SUBSTANCES, THE CONTRACTOR SHALL BRING THEM TO THE IMMEDIATE ATTENTION OF THE ENGINEER, AND STOP ALL WORK IN THAT VICINITY UNTIL DIRECTED BY THE ENGINEER.
- THE OWNER WILL ASSIGN AN INSPECTOR AND/OR RESIDENT ENGINEER TO THIS PROJECT ON EITHER A FULL TIME OR PART TIME BASIS, AS REQUIRED TO COVER THE WORK UNDER THIS CONTRACT. THE INSPECTOR OR RESIDENT ENGINEER SHALL BE THE OWNER'S REPRESENTATIVE FOR THIS PROJECT.
- THE ENGINEER MUST BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ALL MATERIAL DELIVERIES TO MAKE ARRANGEMENTS FOR THE DELIVERY TO BE INSPECTED AS THEY ARRIVE TO THE SITE.
- THE ENGINEER SHALL BE ALLOWED AT ALL TIMES TO CHECK THE LINES, GRADES, ELEVATIONS, REFERENCE MARKS, ETC. SET BY THE CONTRACTOR. ANY ERRORS OR DISCREPANCIES IN THESE ITEMS DISCOVERED SHALL BE CORRECTED BY THE CONTRACTOR. SUCH CHECKS SHALL NOT BE CONSTRUED TO BE AN APPROVAL OF THE CONTRACTOR'S WORK AND SHALL NOT RELIEVE OR DIMINISH IN ANY WAY THE RESPONSIBILITIES OF THE CONTRACTOR FOR THE ACCURATE AND SATISFACTORY COMPLETION OF THE ENTIRE WORK. THE CONTRACTOR SHALL BE AVAILABLE TO ASSIST THE ENGINEER WITH THESE CHECKS AS NEEDED.
- THE CONTRACTOR IS ADVISED THAT THE SPECIFICATIONS FORM A PART OF THE CONTRACT DOCUMENTS AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS. THE CONTRACTOR SHALL KEEP A COPY OF THE DRAWINGS AND THE SPECIFICATIONS, INCLUDING ENVIRONMENTAL PERMITS, ON SITE AT ALL TIMES DURING THE DURATION OF THE WORK.
- LOCATION OR PRESENCE OF UTILITIES SHOWN ON THESE DRAWINGS ARE APPROXIMATE. CONTRACTOR MUST NOTIFY DIGSAFE 72 HOURS PRIOR TO COMMENCING WORK. VERIFY LOCATIONS, DEPTHS AND OVERHEAD CLEARANCE OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY COMPANY AND AUTHORITY TO ALLOW MARKING OF THEIR LINES.
- THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN TEMPORARY CONSTRUCTION FENCES AND BARRIERS AROUND THE CONTRACTOR WORK AREA.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO AVOID DAMAGE TO THE EXISTING SHORELINE, ADJACENT STRUCTURES, UTILITIES, ROADWAYS, PARKING AREAS, WALKWAYS, AND OTHER MISCELLANEOUS SITE FEATURES TO REMAIN IN PLACE DURING CONSTRUCTION AND/OR AFTER CONSTRUCTION IS COMPLETE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE DONE TO STRUCTURES, UTILITIES AND THE SITE OR INJURIES TO THE PUBLIC RESULTING FROM THE CONTRACTOR'S WORK OR WORK OF THE CONTRACTOR'S SUBCONTRACTORS.
- ALL MATERIAL REMOVED AND NOT SPECIFIED TO BE SALVAGED OR REUSED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE LEGALLY DISPOSED OF.
- APPROPRIATE EROSION CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE BEGINNING OF ANY PHASE OF CONSTRUCTION, AND SHALL BE MAINTAINED DURING CONSTRUCTION IN ANY WETLAND RESOURCE AREA AND/OR BUFFER ZONES. EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AFTER EACH STORM EVENT AND REPAIRED OR REPLACED AS NECESSARY. ANY ACCUMULATED SILT ADJACENT TO THE BARRIERS SHALL BE REMOVED.
- ALL DEBRIS, FILL AND EXCAVATED MATERIAL SHALL BE STOCKPILED A LOCATION FAR ENOUGH AWAY FROM THE WETLAND RESOURCE AREAS TO PREVENT SEDIMENT FROM ENTERING WETLAND RESOURCE AREAS.
- ANY DE-WATERING OF TRENCHES OR OTHER EXCAVATION REQUIRED DURING CONSTRUCTION SHALL BE CONDUCTED SO AS TO PREVENT SILTATION OF WETLAND RESOURCE AREAS. ALL DISCHARGE FROM DE-WATERING ACTIVITIES SHALL BE FILTERED THROUGH STRAW BALE SEDIMENT TRAPS, SILT FILTER BAGS OR OTHER MEANS APPROVED BY THE CONSERVATION COMMISSION OR ITS ADMINISTRATOR.
- THE CONTRACTOR SHALL PERFORM ALL WORK AS PER THE ENVIRONMENTAL PERMITS. COPIES OF THE ENVIRONMENTAL PERMITS SHALL BE ON SITE AT ALL TIMES DURING THE WORK.
- THE CONTRACTOR SHALL PROVIDE AND POST D.E.P. WETLAND PROJECT SIGNS IN CONFORMANCE WITH THE ORDER OF CONDITIONS FOR THE SITE.
- STORAGE, FUELING AND LUBRICATION OF EQUIPMENT AND MOTOR VEHICLES SHALL BE CONDUCTED IN A MANNER THAT AFFORDS THE MAXIMUM PROTECTION AGAINST SPILL AND EVAPORATION. FUEL, LUBRICANTS AND OIL SHALL BE MANAGED AND STORED IN ACCORDANCE WITH FEDERAL, STATE, REGIONAL AND LOCAL LAWS AND REGULATIONS. CONSTRUCTION VEHICLES AND EQUIPMENT SHALL BE REFUELED, RE-OILED AND OTHERWISE MAINTAINED A LOCATION FAR ENOUGH AWAY FROM THE WETLAND RESOURCE AREAS TO PREVENT SPILLS INTO THE WETLAND RESOURCE AREAS. FUEL SPILL CONTAINMENT SYSTEMS SHALL BE ON SITE PRIOR TO CONSTRUCTION. EQUIPMENT OPERATION, ACTIVITIES, OR PROCESSES PERFORMED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH FEDERAL AND STATE AIR EMISSION AND PERFORMANCE LAWS AND STANDARDS.
- ALL WORK SHALL BE PERFORMED IN A SAFE MANNER, IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS AND SO AS TO PROTECT THE PUBLIC.

SURVEY NOTES:

- SURVEY HAS BEEN COMBINED FROM SURVEYS OF 2012, 2015, 2018, 2020 INTO ONE FILE AND ONE SURFACE. EXISTING CONDITIONS SHOWN HEREON WERE IN EXISTENCE AT THE TIME OF THE INDIVIDUAL SURVEYS. BRYANT ASSOCIATES DID NOT PERFORM A RECENT FIELD VERIFICATION OF AREAS THAT WERE PREVIOUSLY SURVEYED.
- UTILITY LINES SHOWN ARE FROM THE 2012 EXISTING CONDITION PLAN, AND ARE APPROXIMATE ONLY. SUBSURFACE UTILITIES MAY OR MAY NOT EXIST.
- HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD 1983 (2011) DERIVED VIA RTK GPS.
- VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88) DERIVED VIA RTK GPS.
- RELATIONSHIP TO NOAA TIDAL DATUMS BASED UPON DATA PUBLISHED FOR NOAA TIDE STATION 8440466-NEWBURYPORT, MERRIMACK RIVER MA. THIS INFORMATION WAS FROM THE 2018 SURVEY AND MAY NOT BE CURRENT.
- APPROXIMATE "HAT" ELEVATION SHOWN HEREON WAS DERIVED FROM NOAA STATION 8440452 (MERRIMACK RIVER ENTRANCE). THE TIDE STATION LOCATED AT THE PROJECT SITE (NOAA STATION 8440466-MERRIMACK RIVER) DID NOT PROVIDE AN "HAT" ELEVATION. THIS INFORMATION WAS FROM THE 2018 SURVEY AND MAY NOT BE CURRENT.
- THE SURFACE EVIDENCE OF THE UTILITIES SHOWN HEREON HAVE BEEN LOCATED BY FIELD SURVEY. THE LINework REPRESENTING UNDERGROUND STRUCTURES AND PIPES HAVE BEEN SHOWN IN THEIR APPROXIMATE LOCATION BASED ON AVAILABLE RECORD PLANS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. (THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE SUBSURFACE UTILITIES).

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	3	35
STANTEC PROJECT NO. 210800843			

GENERAL NOTES

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

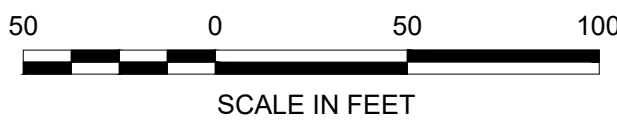
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	4	35
STANTEC PROJECT NO. 210800843			

KEY PLAN



PLAN SHEET QUICK REFERENCE CHART

	PART 1	PART 2
CONSTRUCTION PLANS	7	8
PROFILES	9	10
SHORELINE STABILIZATION PLANS	11	16
LANDSCAPE PLANS	24	25



CONSTRUCTION SIGN SUMMARY

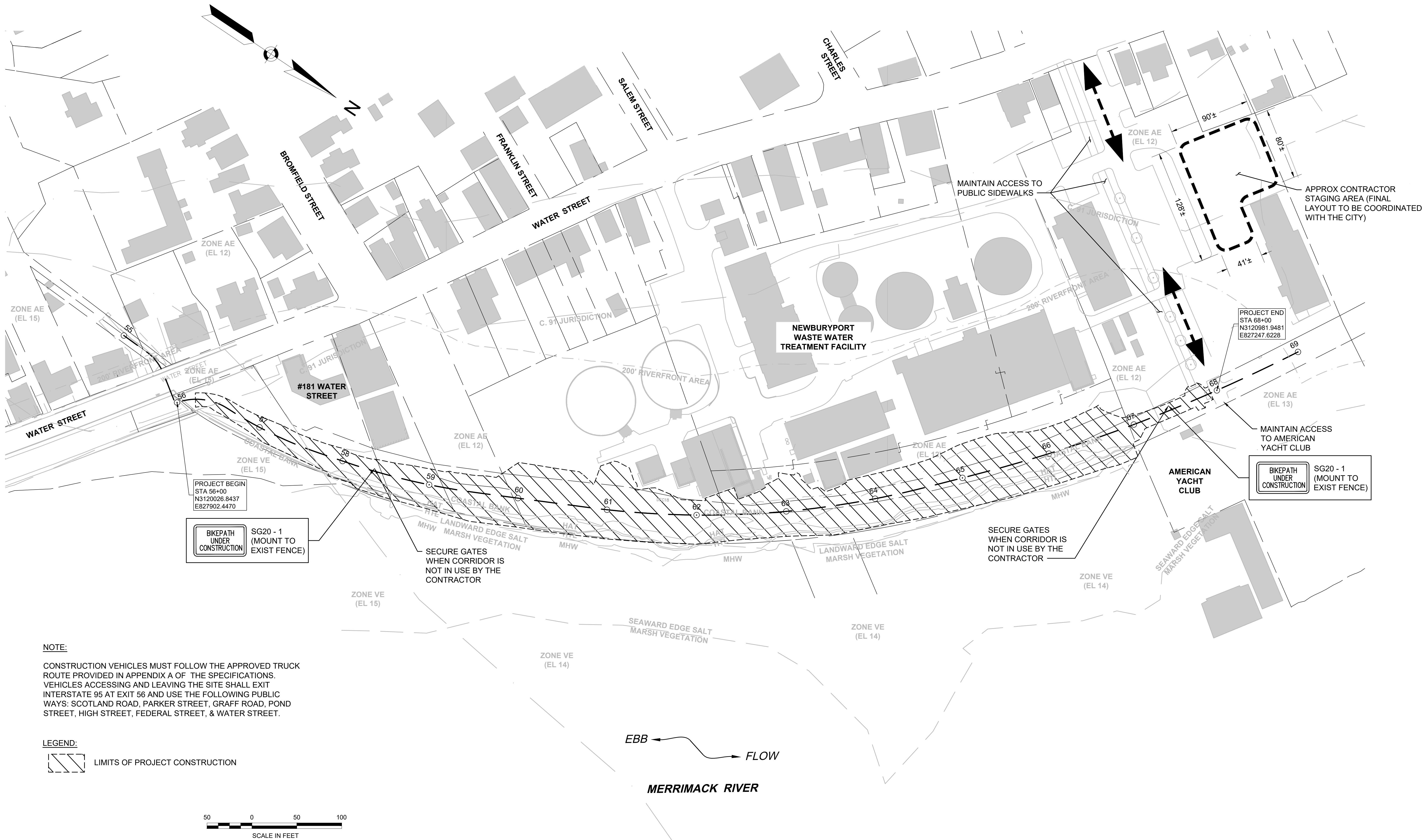
IDENTIFI- CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK- GROUND	LEGEND	BORDER		
SG20-1	48"	24"	BIKEPATH UNDER CONSTRUCTION				2	FLUOR- ESCENT ORANGE	BLACK	BLACK	MOUNT ON FENCE	16.00

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	5	35

STANTEC PROJECT NO. 210800843

ACCESS & STAGING PLAN



NOTE:

CONSTRUCTION VEHICLES MUST FOLLOW THE APPROVED TRUCK ROUTE PROVIDED IN APPENDIX A OF THE SPECIFICATIONS. VEHICLES ACCESSING AND LEAVING THE SITE SHALL EXIT INTERSTATE 95 AT EXIT 56 AND USE THE FOLLOWING PUBLIC WAYS: SCOTLAND ROAD, PARKER STREET, GRAFF ROAD, POND STREET, HIGH STREET, FEDERAL STREET, & WATER STREET.

LEGEND:

LIMITS OF PROJECT CONSTRUCTION

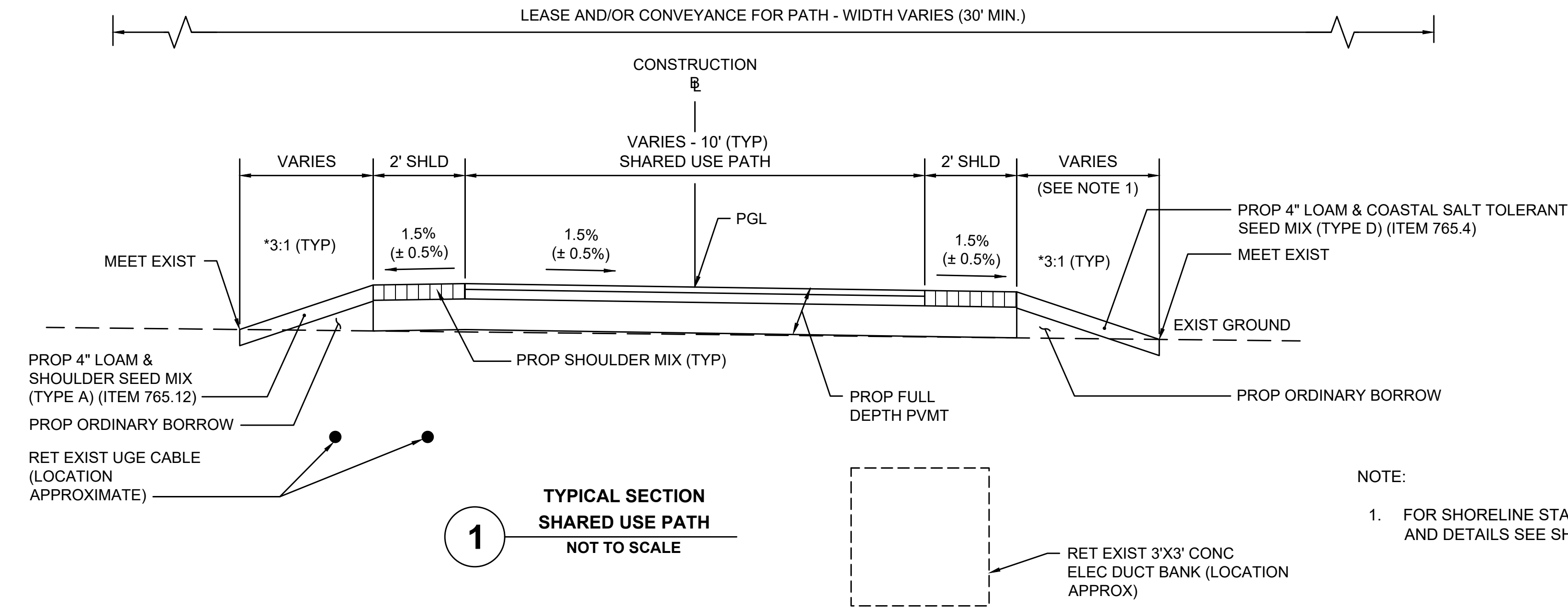
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	6	35
STANTEC PROJECT NO. 210800843			

TYPICAL SECTIONS

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT

SURFACE	1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)
BASE	8" GRAVEL BORROW, TYPE b OR EXISTING GRAVEL BORROW TO REMAIN
SHOULDERS	4" DEPTH 'CRUSHED STONE AND LOAM MIX FOR SHOULDERS' (ITEM 402.121) + SEED (ITEM 765.12 ON LANDWARD SIDE & ITEM 765.4 ON RIVER SIDE)



- NOTE:
- FOR SHORELINE STABILIZATION LIMITS AND DETAILS SEE SHEET 11 - 16.

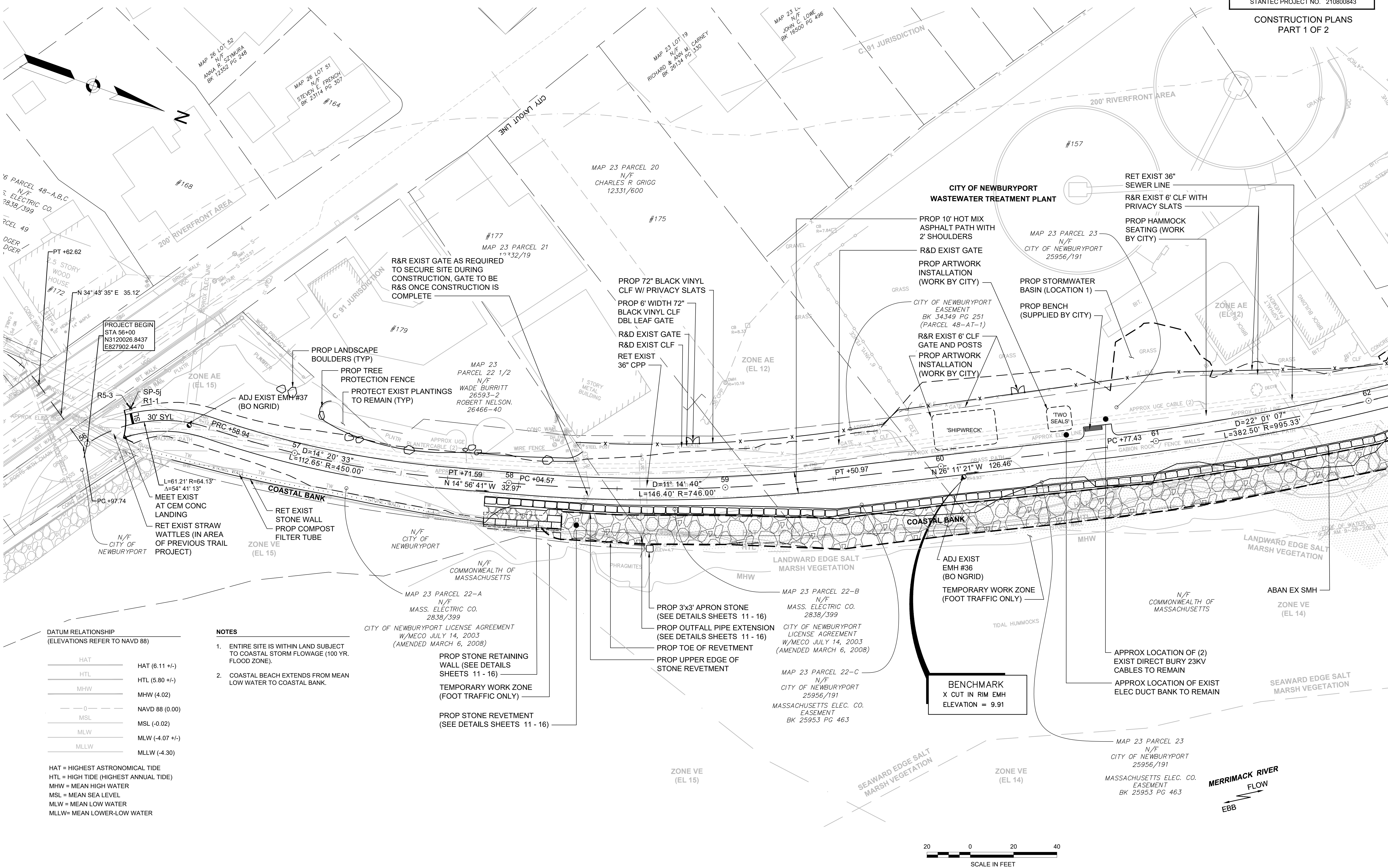
*TOLERANCE FOR CONSTRUCTION ±0.5%

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	7	35

STANTEC PROJECT NO. 210800843

CONSTRUCTION PLANS
PART 1 OF 2



DATUM RELATIONSHIP
(ELEVATIONS REFER TO NAVD 88)

HAT	HAT (6.11 +/-)
HTL	HTL (5.80 +/-)
MHW	MHW (4.02)
MSL	MSL (0.00)
MLW	MLW (-0.02)
MLLW	MLLW (-4.07 +/-)
MLLW	MLLW (-4.30)

HAT = HIGHEST ASTRONOMICAL TIDE
HTL = HIGH TIDE (HIGHEST ANNUAL TIDE)
MHW = MEAN HIGH WATER
MSL = MEAN SEA LEVEL
MLW = MEAN LOW WATER
MLLW = MEAN LOWER-LOW WATER

NOTES

- ENTIRE SITE IS WITHIN LAND SUBJECT TO COASTAL STORM FLOWAGE (100 YR. FLOOD ZONE).
- COASTAL BEACH EXTENDS FROM MEAN LOW WATER TO COASTAL BANK.

PROP STONE RETAINING WALL (SEE DETAILS SHEETS 11 - 16)

TEMPORARY WORK ZONE (FOOT TRAFFIC ONLY)

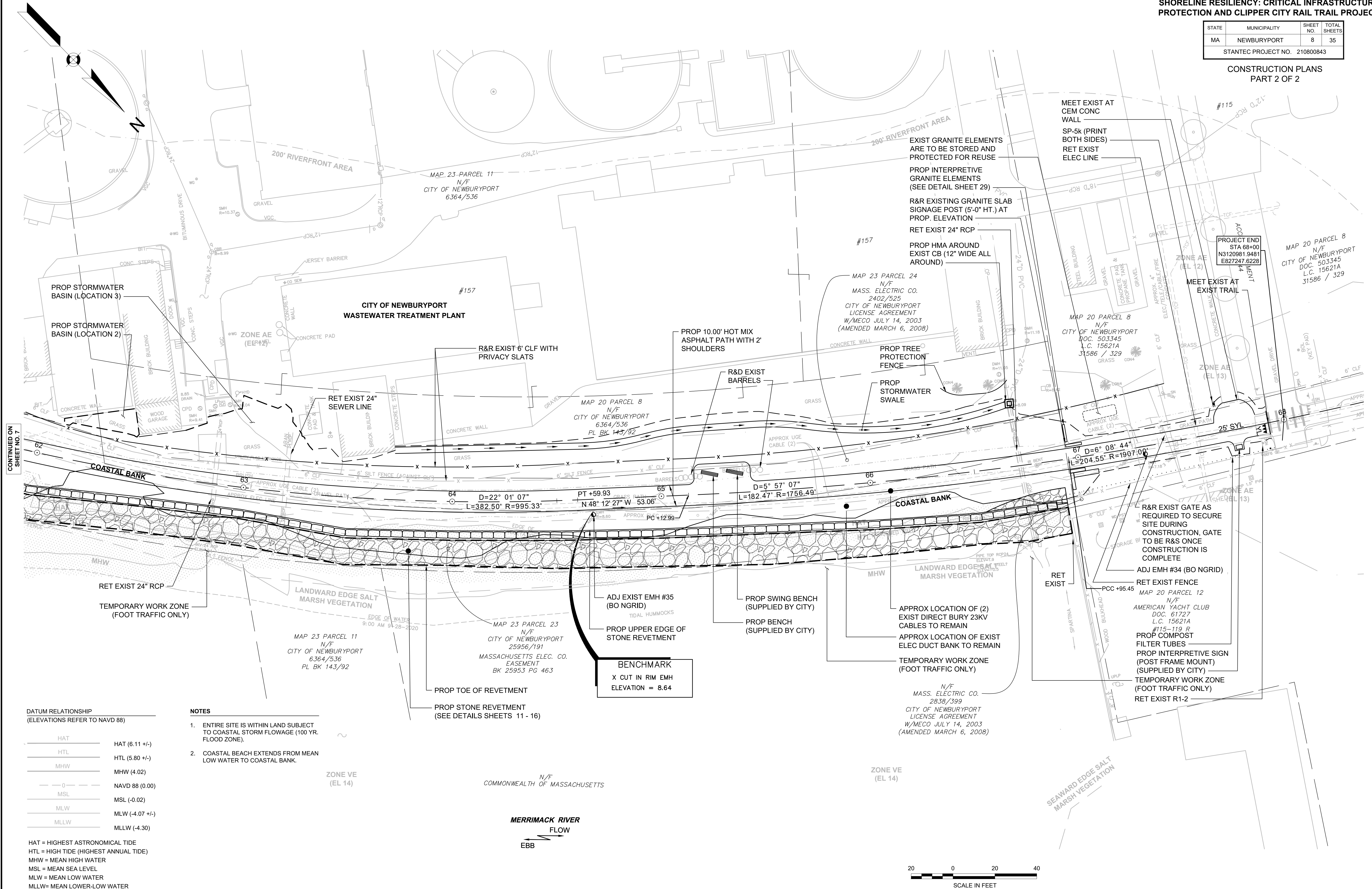
PROP STONE REVETMENT (SEE DETAILS SHEETS 11 - 16)

CONTINUED ON
SHEET NO. 8

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	8	35
STANTEC PROJECT NO. 210800843			

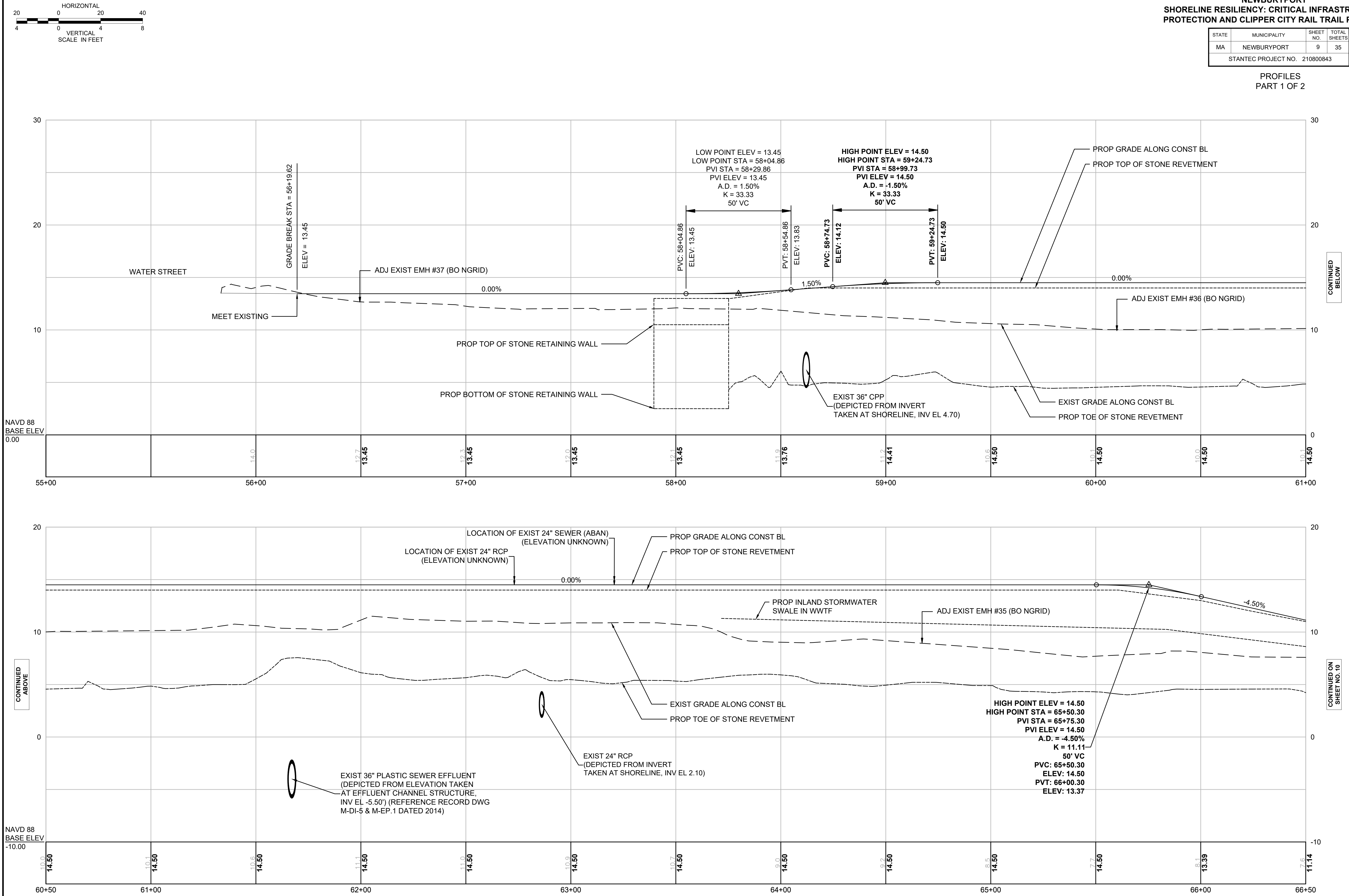
CONSTRUCTION PLANS
PART 2 OF 2



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	9	35
STANTEC PROJECT NO. 210800843			

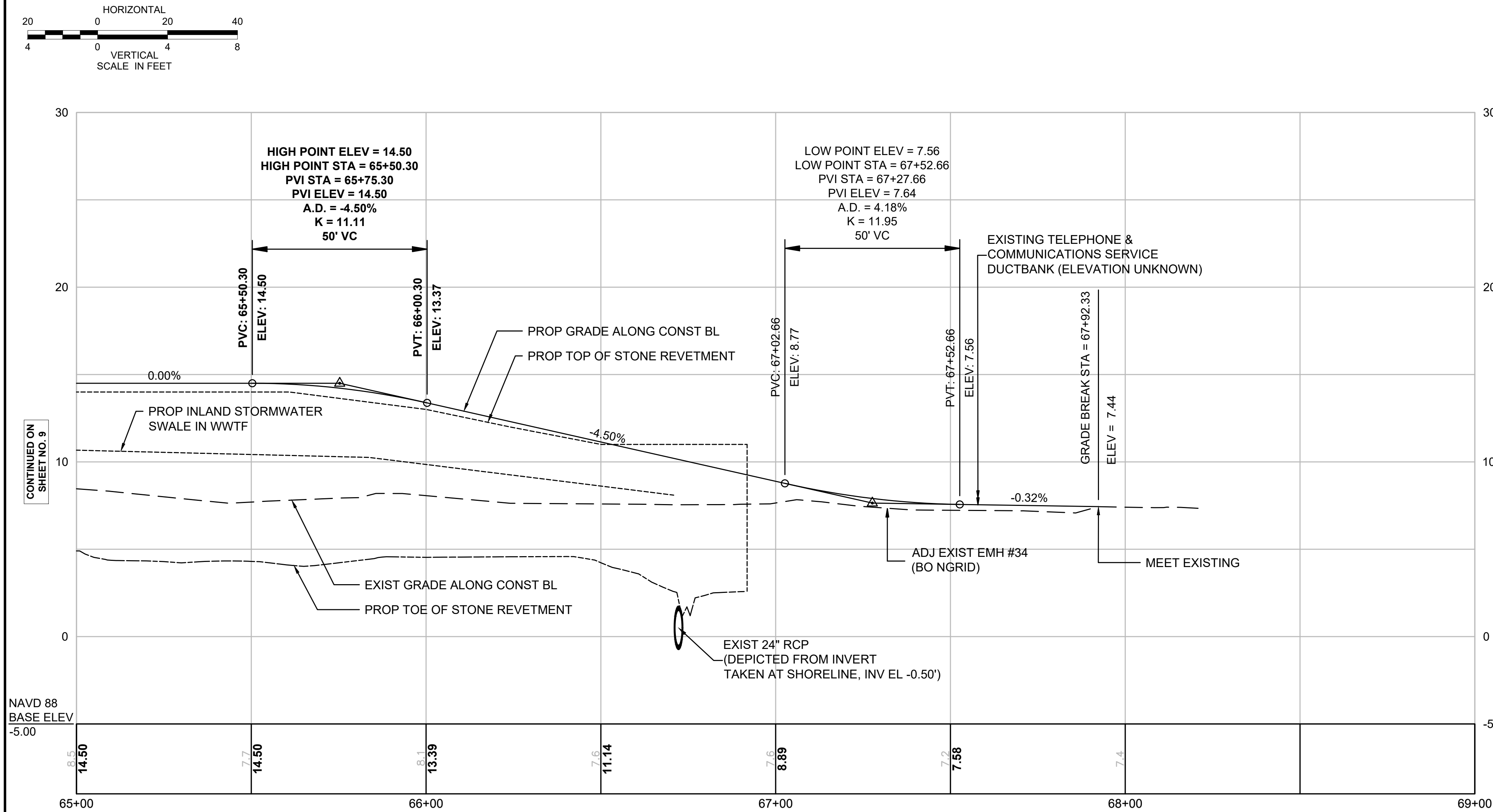
PROFILES
PART 1 OF 2



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	10	35
STANTEC PROJECT NO. 210800843			

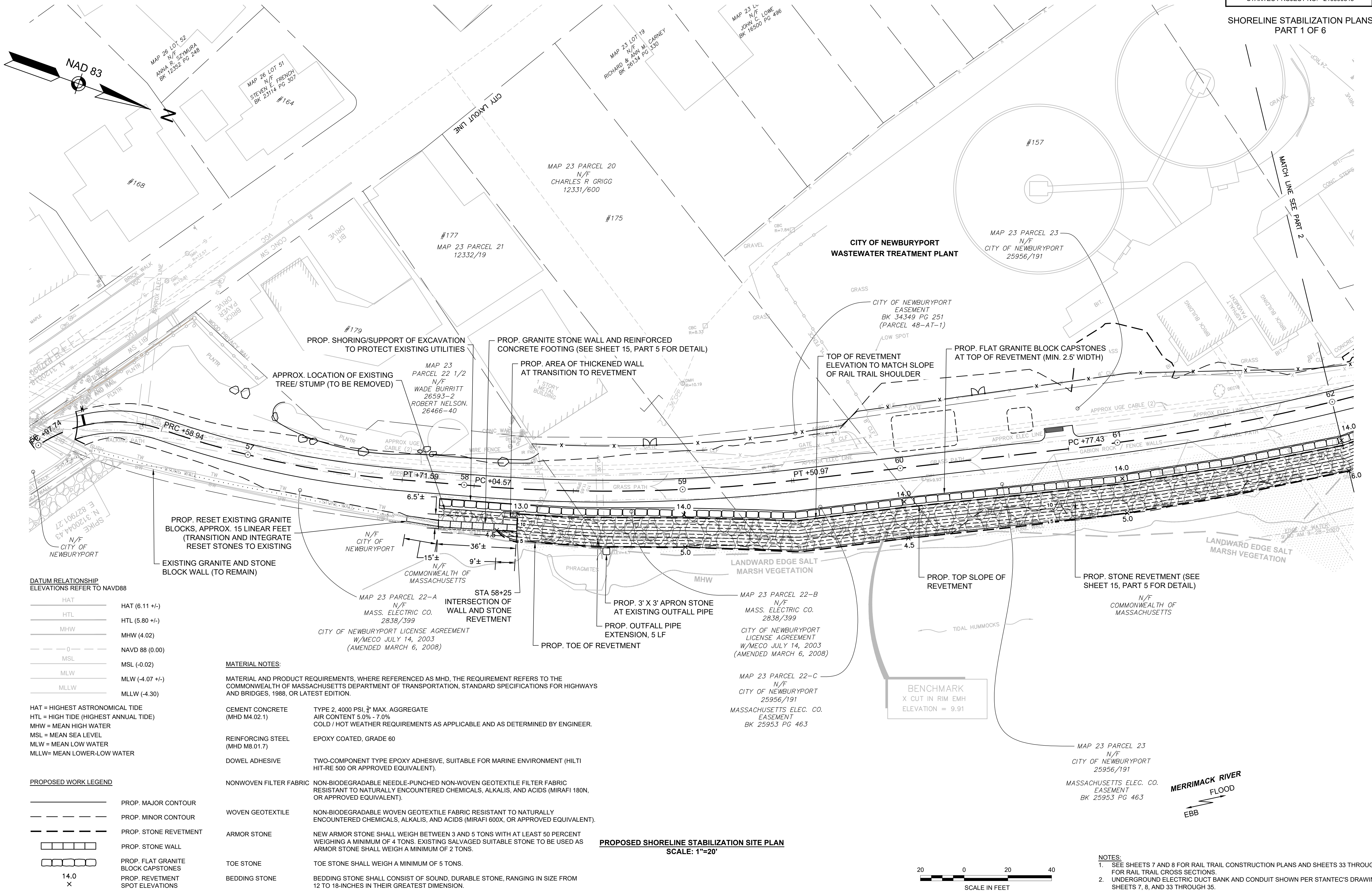
PROFILES
PART 2 OF 2



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	11	35
STANTEC PROJECT NO. 210800843			

SHORELINE STABILIZATION PLANS
PART 1 OF 6

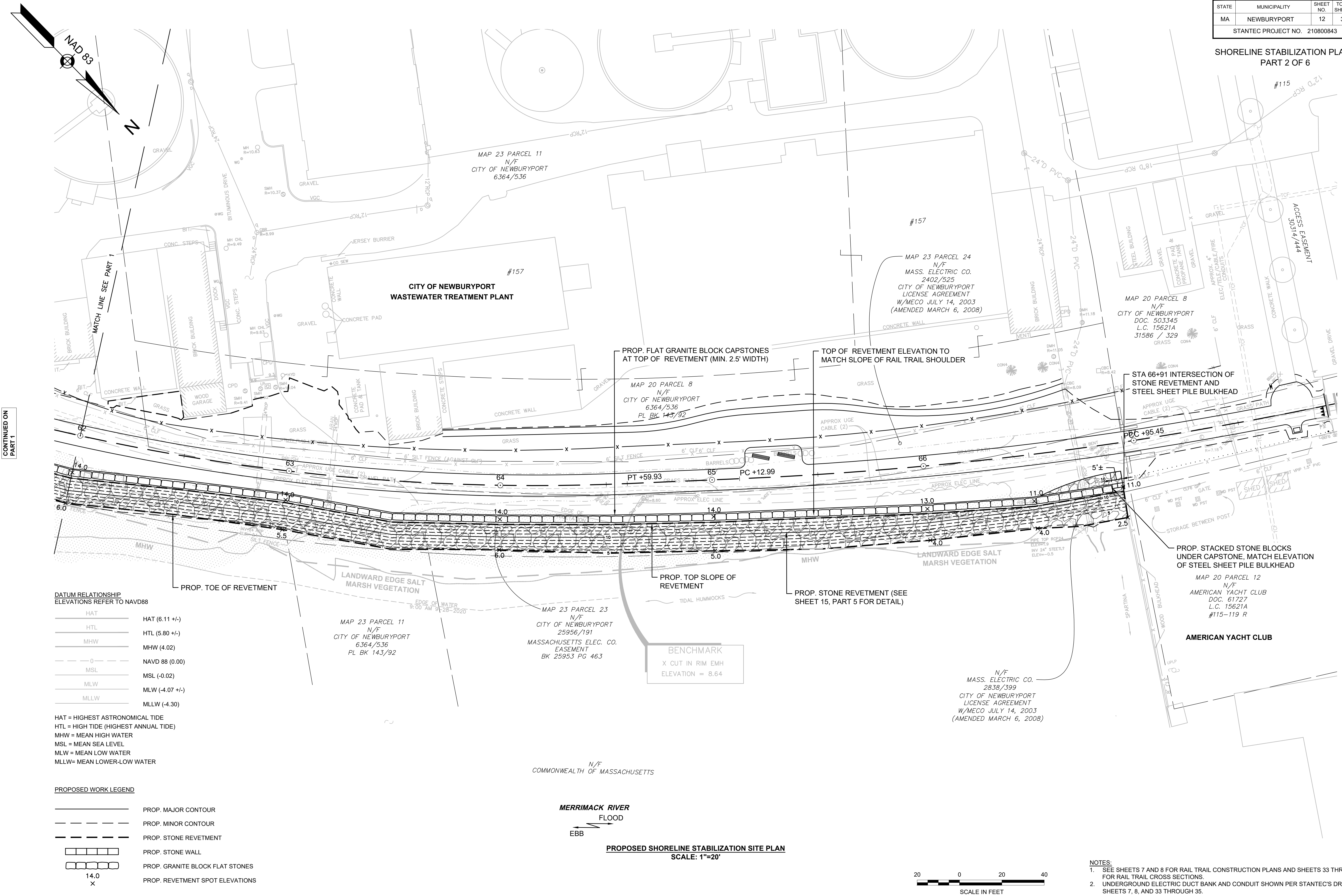


CONTINUED ON
PART 2

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

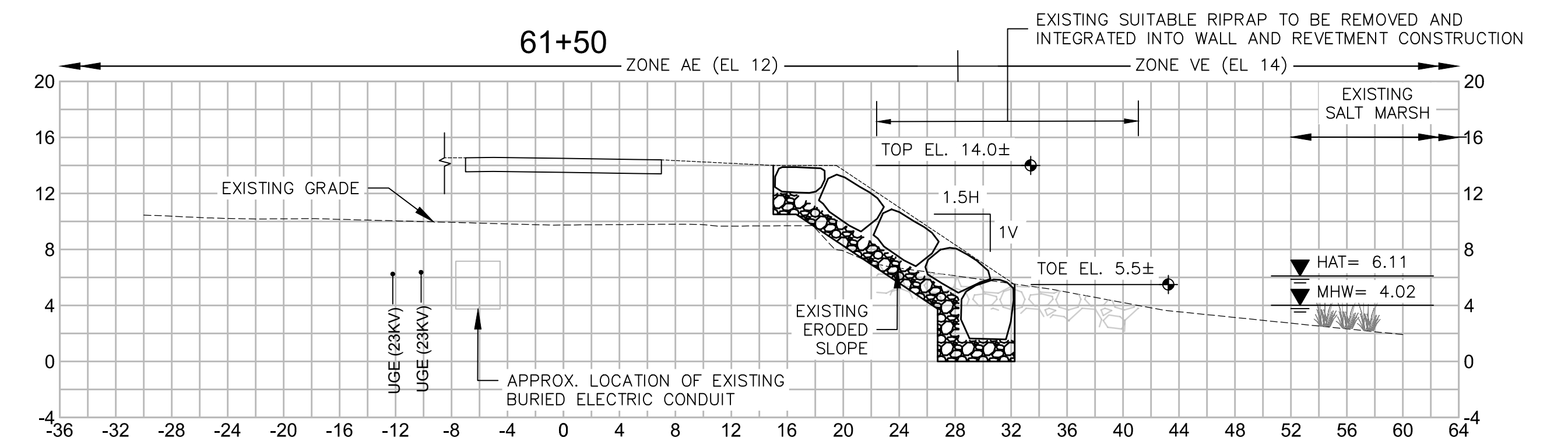
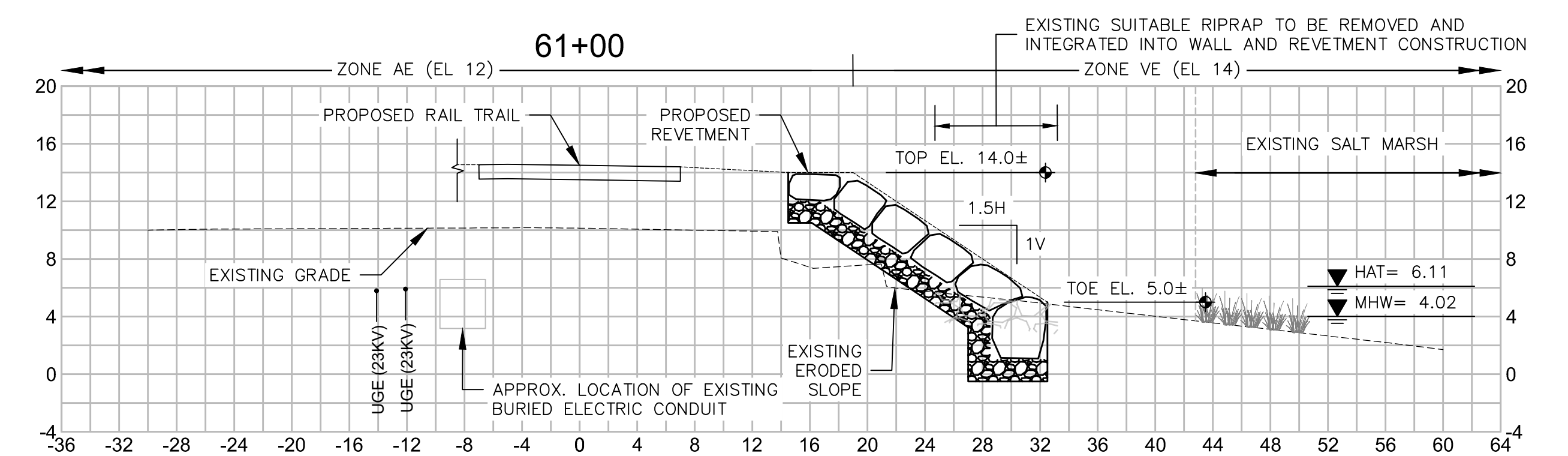
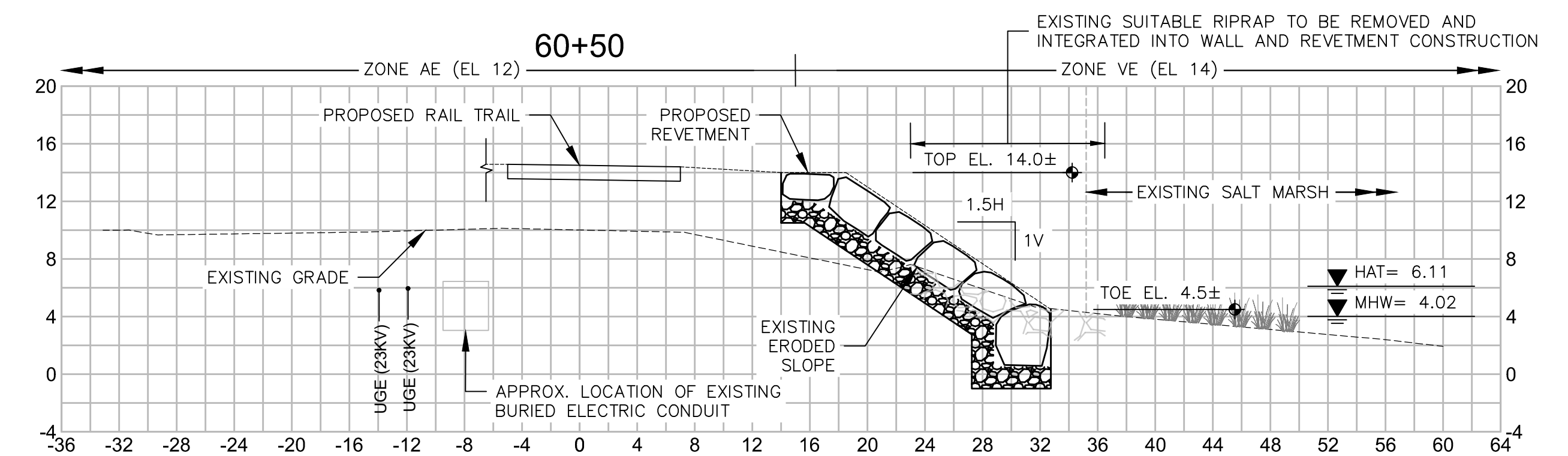
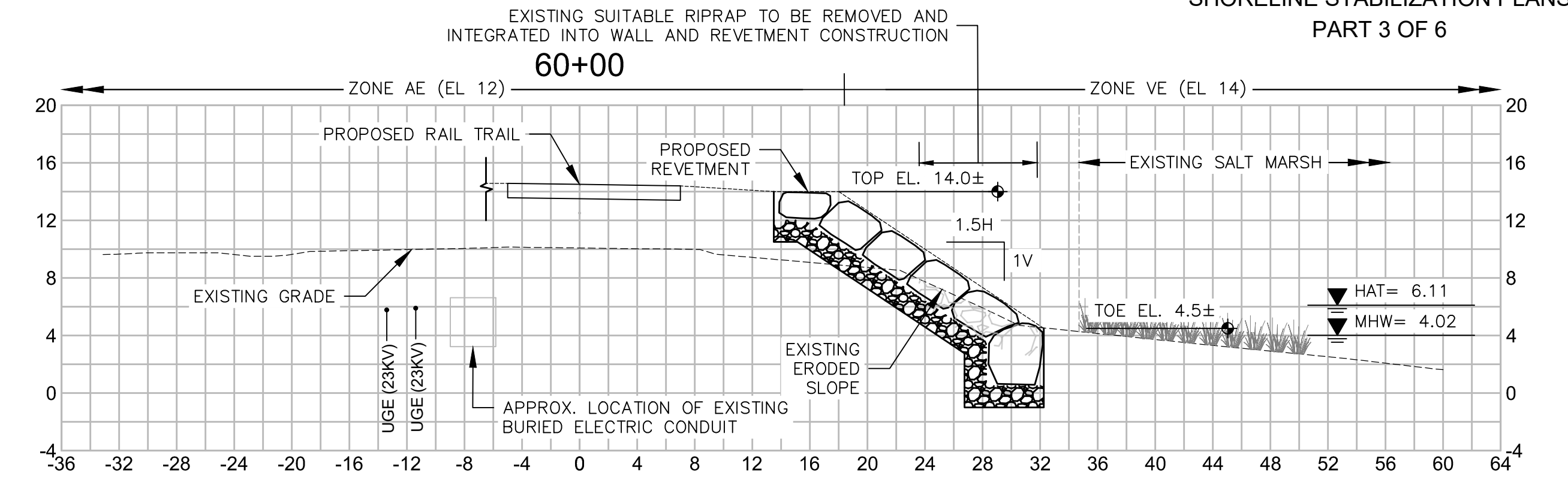
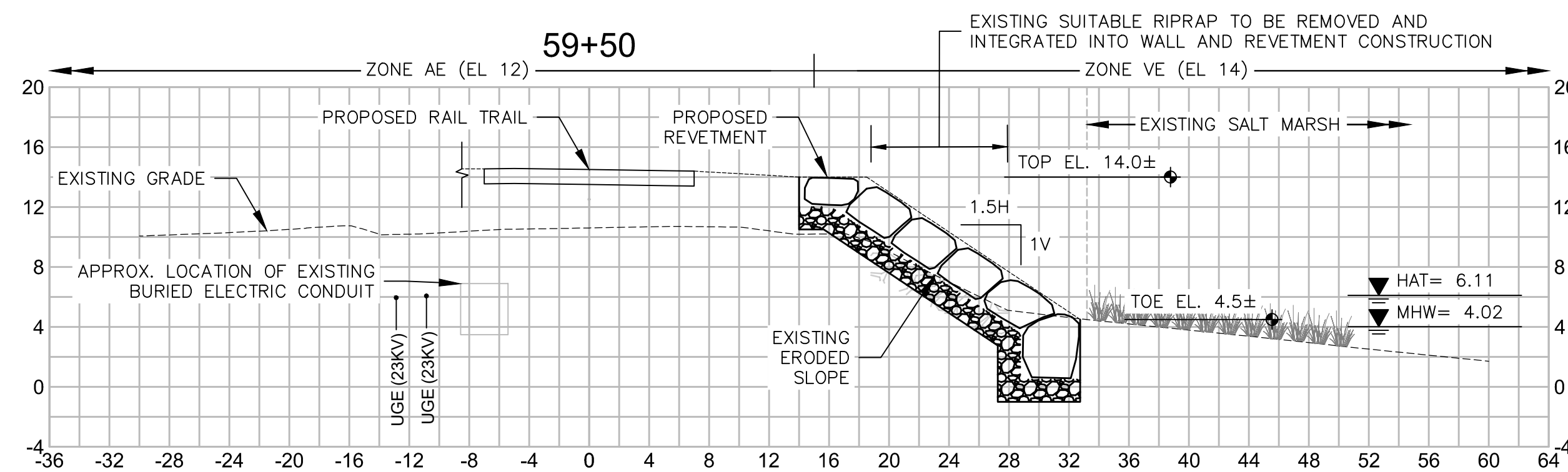
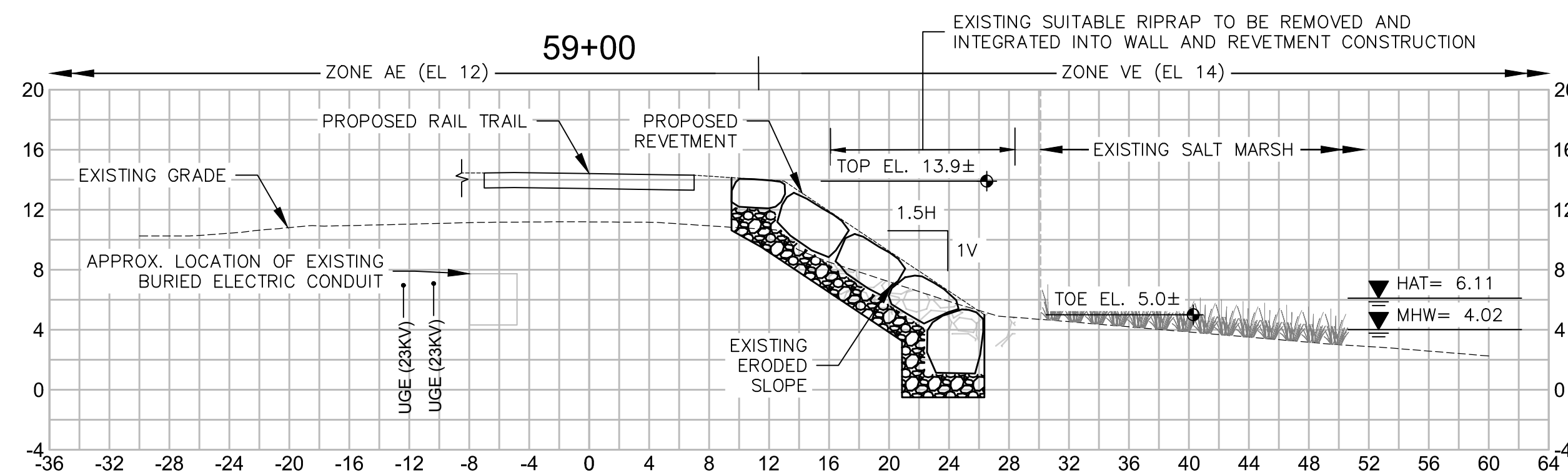
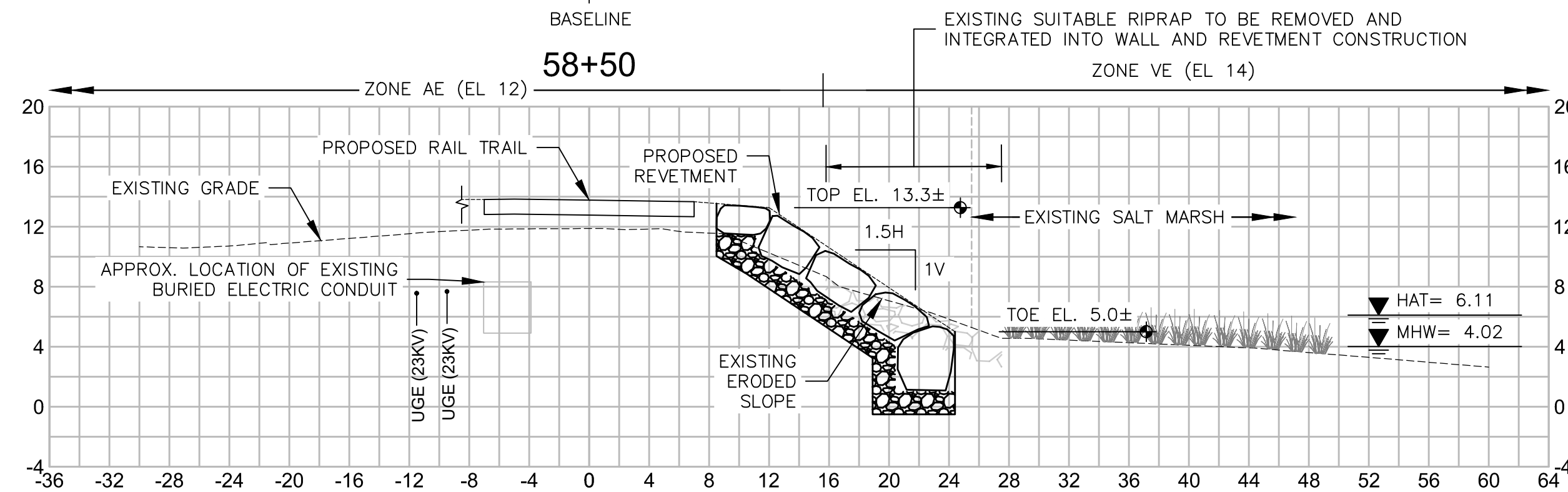
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	12	35
STANTEC PROJECT NO. 210800843			

SHORELINE STABILIZATION PLANS
PART 2 OF 6

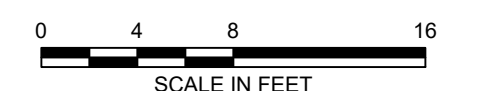


STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	13	35
STANTEC PROJECT NO. 210800843			

This cross-section diagram illustrates the proposed rail trail and stone wall construction. The horizontal axis represents the stationing, with a central point at 58+00. The vertical axis shows elevation in feet, ranging from -4 to 20. The diagram is divided into three zones: ZONE AE (EL 12), ZONE VE (EL 14), and ZONE VE (EL 15). Key features include the existing grade, the proposed rail trail, the proposed stone wall, and the existing salt marsh. The stone wall is shown with a 1.5H to 1V slope and a 4.5' base. The wall's top slope is at elevation 13.0±, and the top wall is at elevation 10.5±. The bottom wall is at elevation 2.0±. The diagram also indicates the location of existing buried electric conduits (UE) and the shoring/support of excavation to protect existing utilities. The existing salt marsh is shown with a water level of 6.11 (HAT) and a mean high water level of 4.02 (MHW). The diagram includes a note: 'EXISTING SUITABLE RIPRAP TO BE REMOVED AND INTEGRATED INTO WALL AND REVETMENT CONSTRUCTION'.



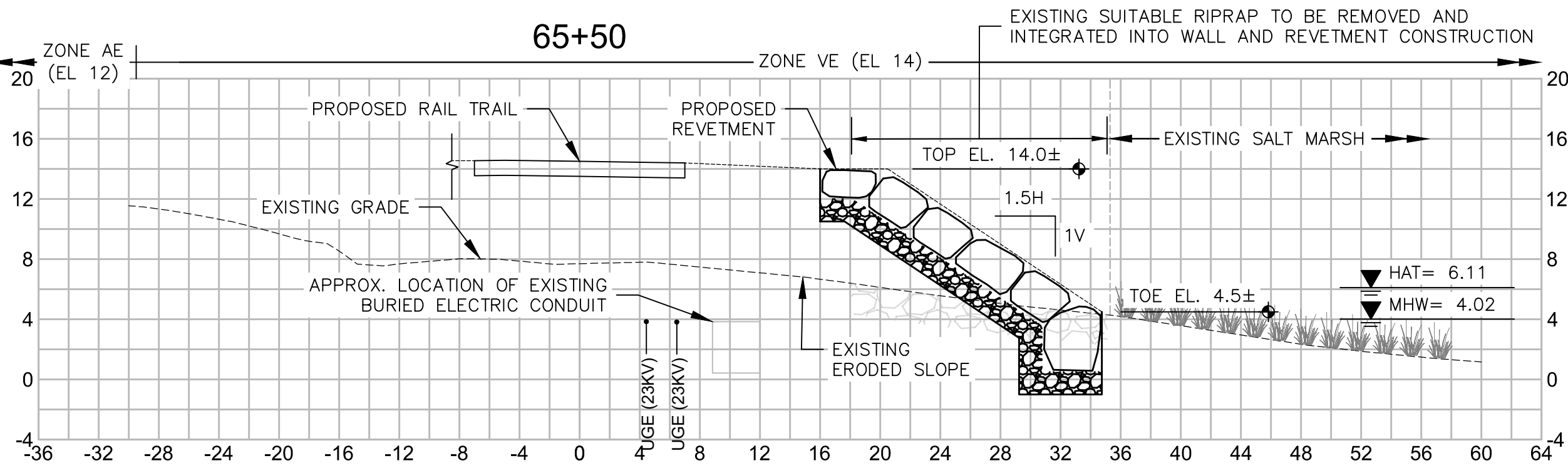
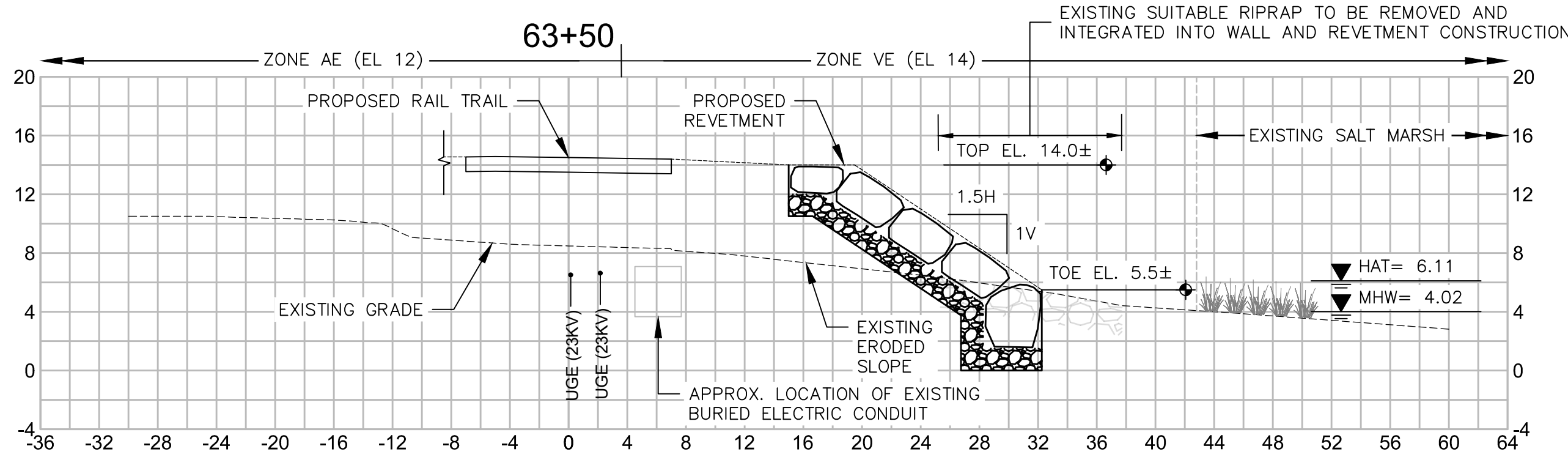
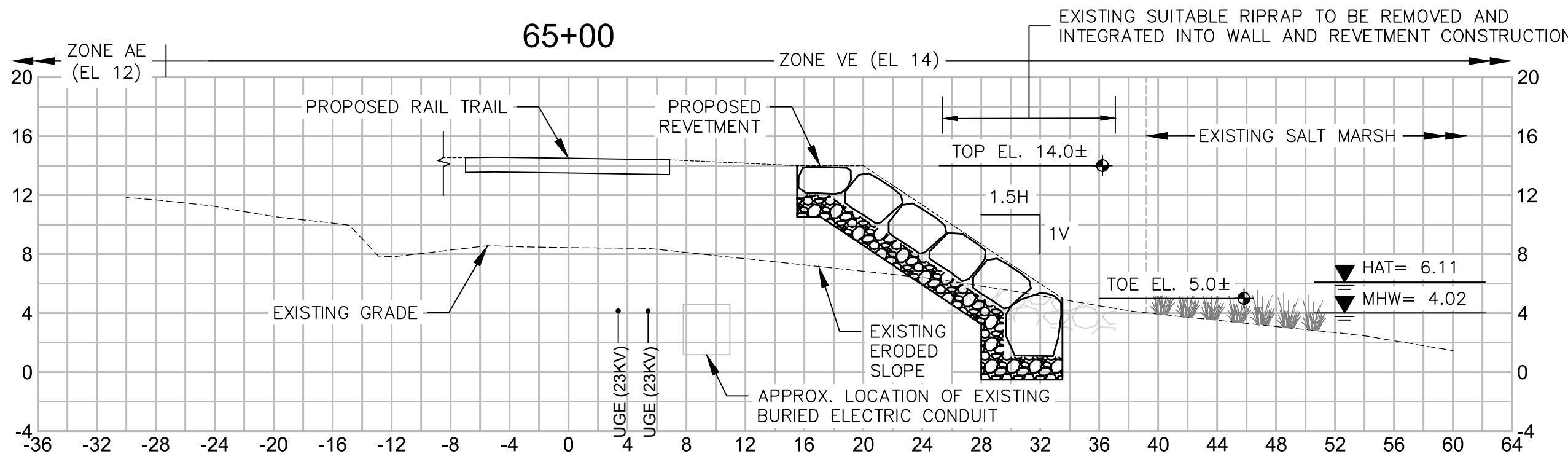
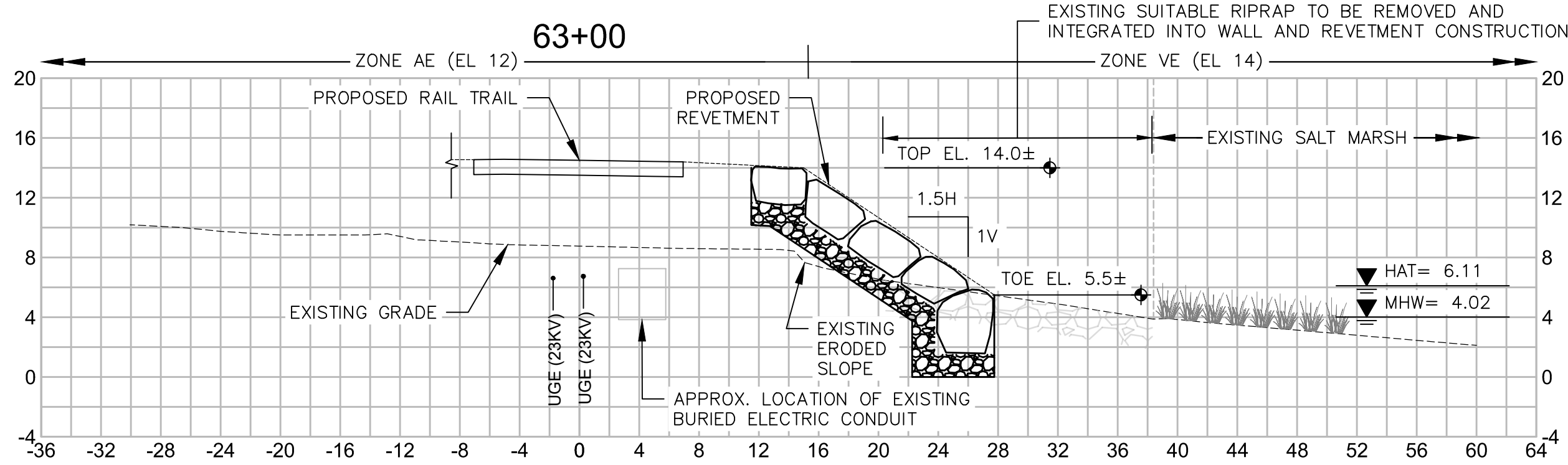
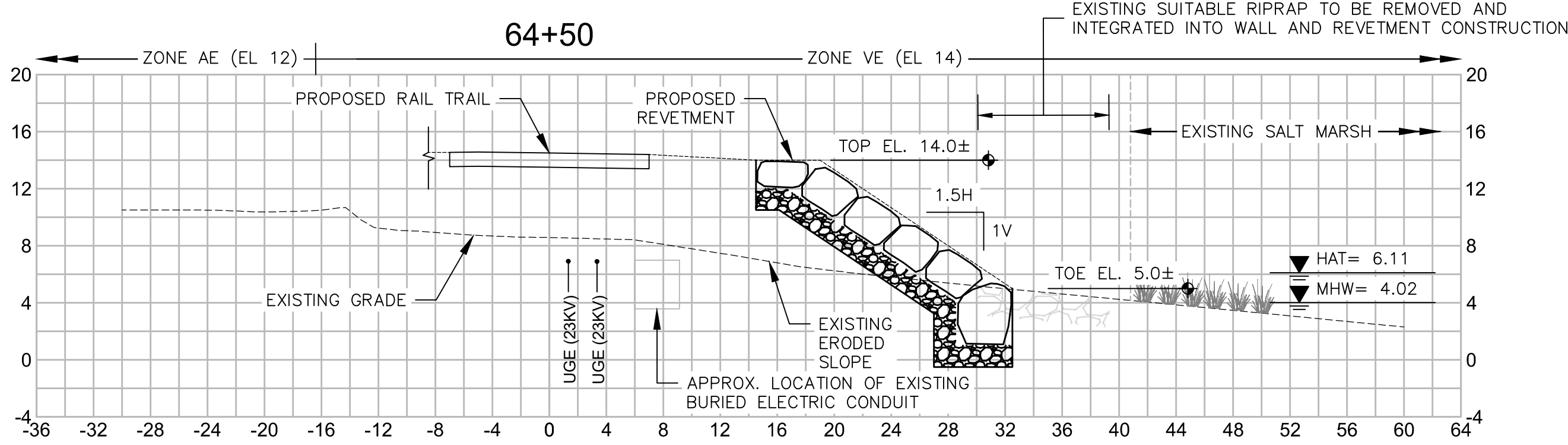
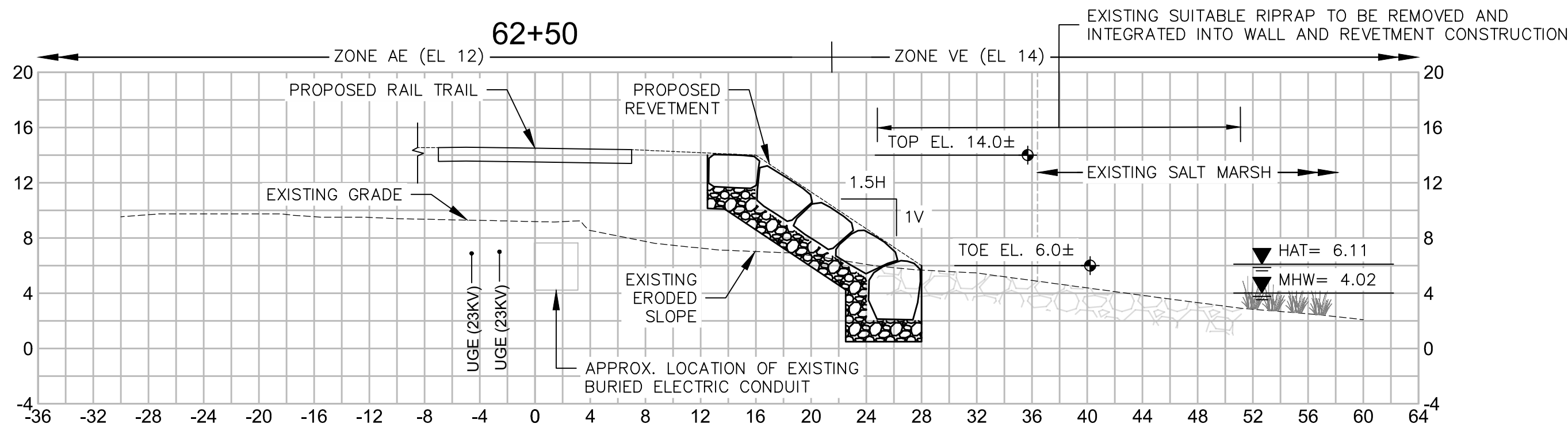
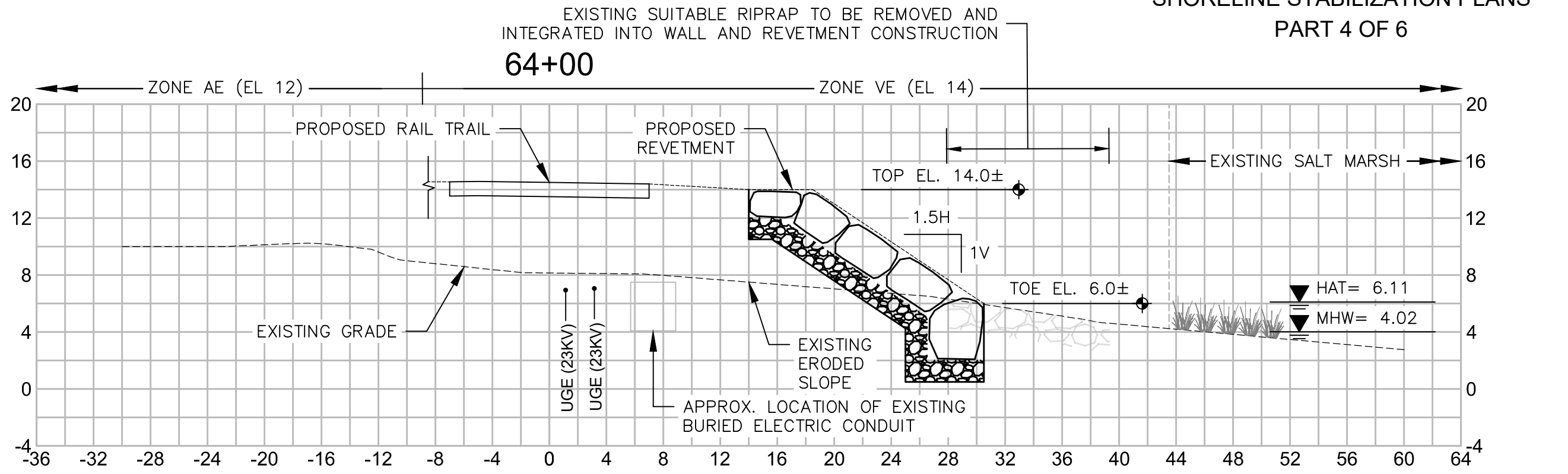
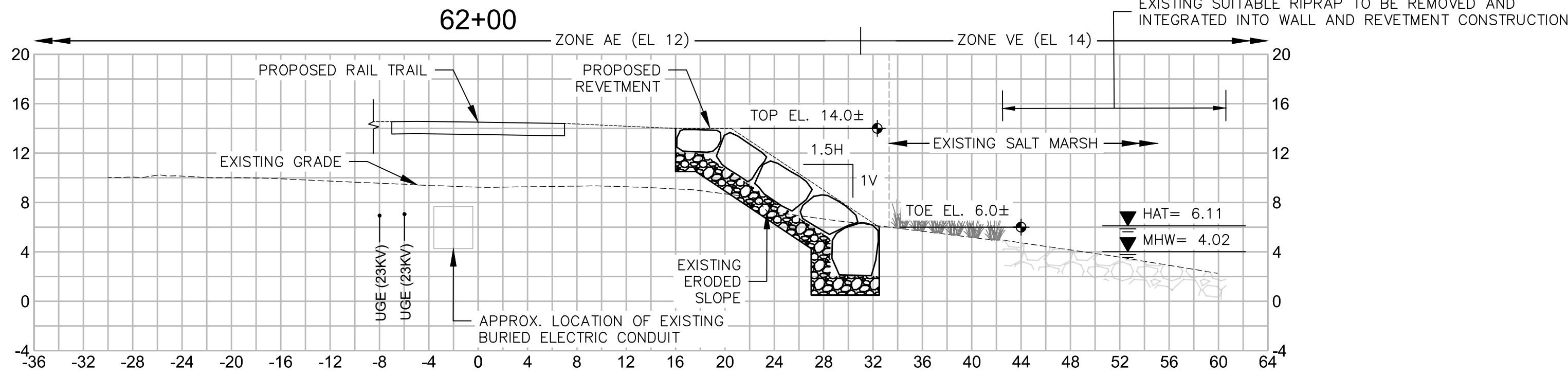
- PROPOSED SHORELINE STABILIZATION SECTIONS**
SCALE: 1"=8'



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

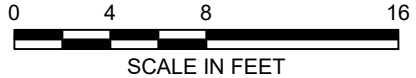
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	14	35
STANTEC PROJECT NO. 210800843			

SHORELINE STABILIZATION PLANS
PART 4 OF 6



- NOTES:
- SEE SHEETS 7 AND 8 FOR RAIL TRAIL CONSTRUCTION PLANS AND SHEETS 33 THROUGH 35 FOR RAIL TRAIL SECTION DETAILS AND LANDSIDE GRADING.
 - REFER TO REVETMENT CROSS SECTION DETAILS ON SHEET 15 FOR TYPICAL CONSTRUCTION DETAILS.
 - UNDERGROUND ELECTRIC DUCT BANK AND CONDUIT SHOWN PER STANTEC'S DRAWING SHEETS 7, 8, AND 33 THROUGH 35.
 - RAIL TRAIL FILLING/BERM CONSTRUCTION TO BE INTEGRATED WITH STONE REVETMENT CONSTRUCTION.

PROPOSED SHORELINE STABILIZATION SECTIONS
SCALE: 1"=8'



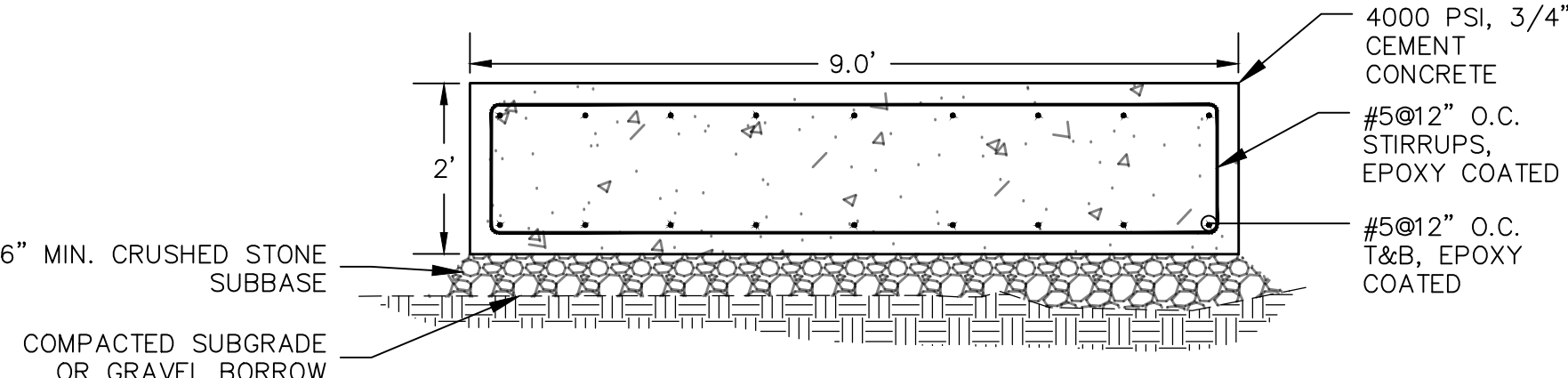
NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	15	35
STANTEC PROJECT NO. 210800843			

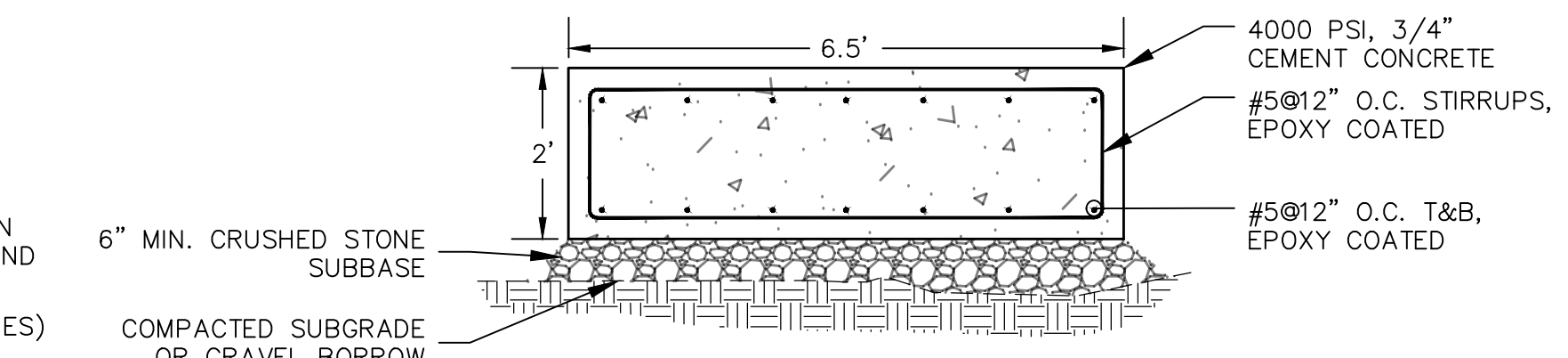
SHORELINE STABILIZATION PLANS
PART 5 OF 6

PROPOSED REVETMENT NOTES:

1. THE FACE OF THE REVETMENT SHALL BE LEFT ROUGH WITH PLACING EFFORTS CONCENTRATED ON SETTING EACH STONE FIRMLY AND WELL SUPPORTED BY UNDERLYING AND ADJACENT STONE.
2. REVETMENT STONES SHALL BE PLACES IN A STAGGERED PATTERN TO PREVENT CONTINUOUS JOINTS IN THE SURFACE.
3. THE REVETMENT SHALL HAVE AN IRREGULAR SLOPE WITH INDIVIDUAL STONES EXTENDING NO MORE THAN 18 INCHES OUTSIDE THE THEORETICAL SLOPE DESIGN LINE.



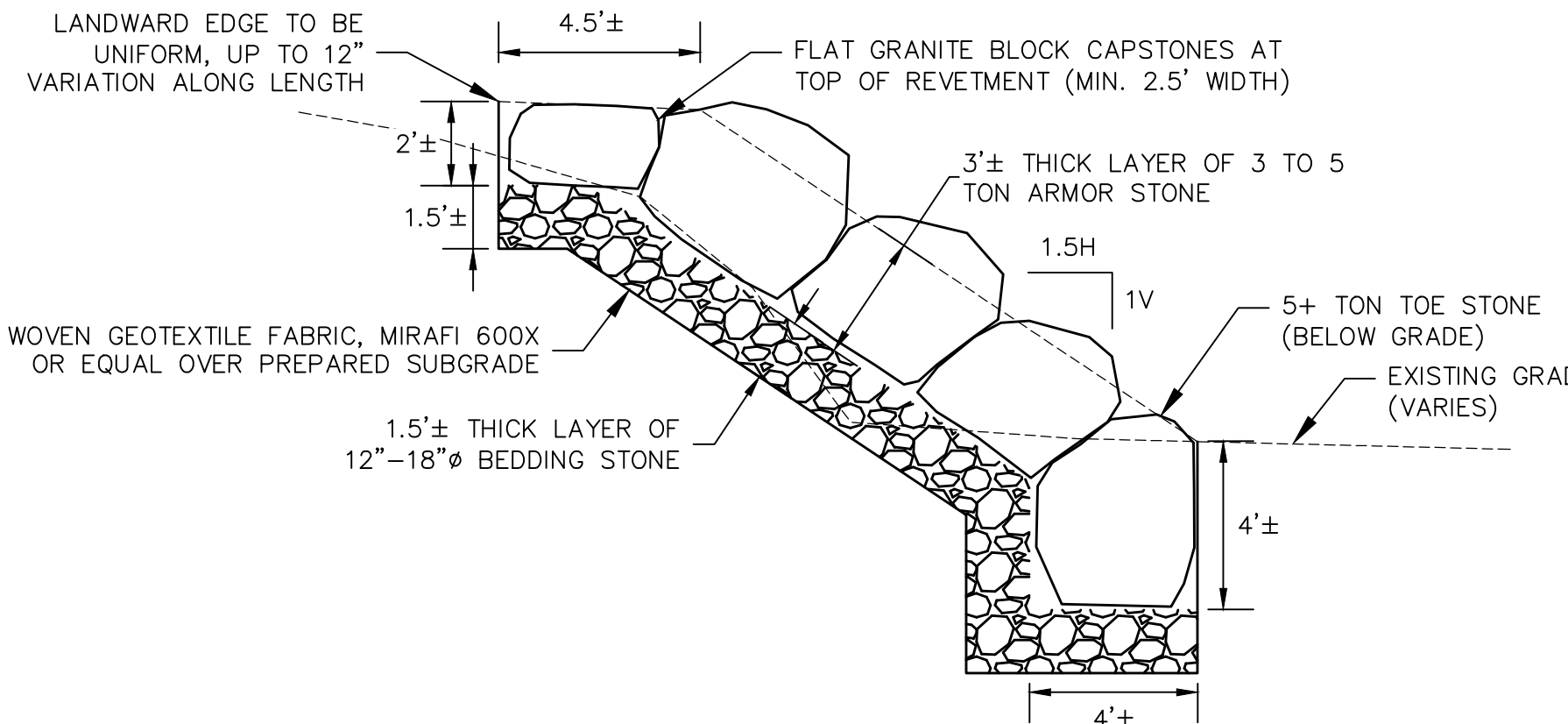
THICKENED WALL CONCRETE FOOTING DETAIL
SCALE: 1"=2'



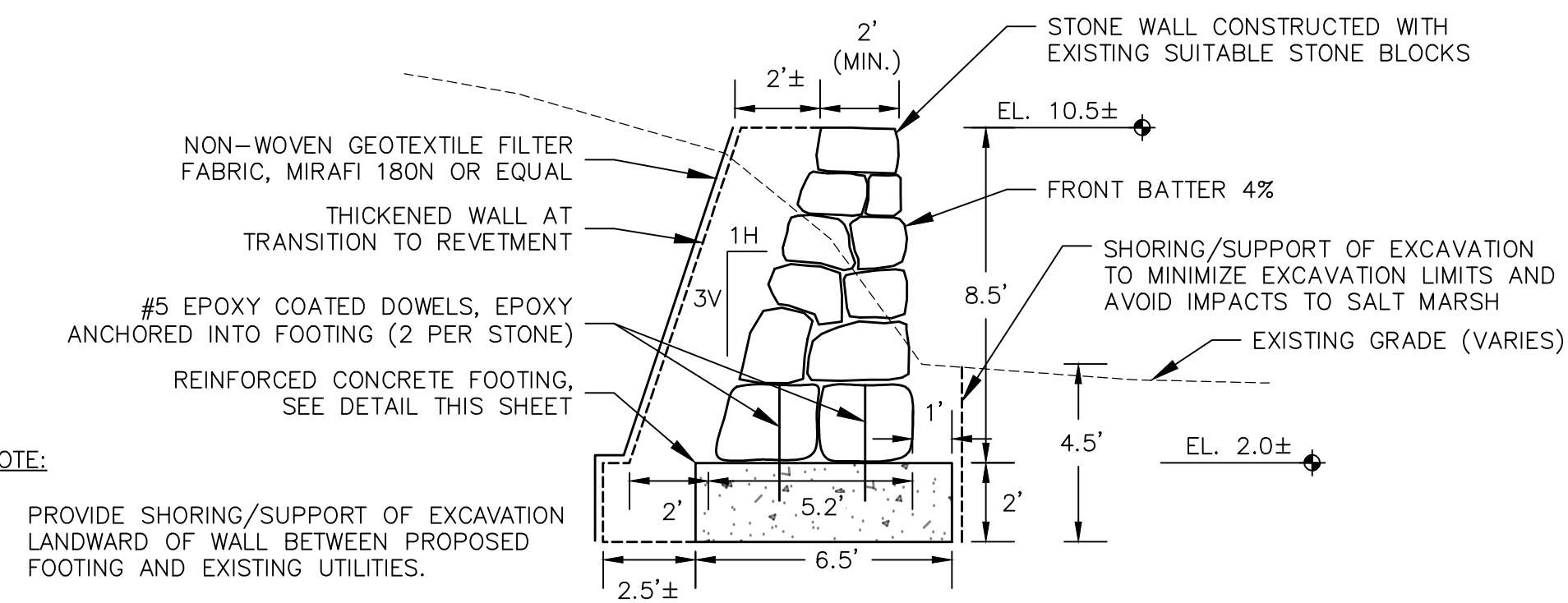
TYPICAL CONCRETE FOOTING DETAIL
SCALE: 1"=2'

PROPOSED FOOTING NOTES:

1. CEMENT CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF M4.02.1 TYPE 2, 4000 PSI, 3/4" CEMENT CONCRETE IN THE STANDARD SPECIFICATIONS.
2. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF M8.01.7 EPOXY COATED REINFORCING BARS IN THE STANDARD SPECIFICATIONS.
3. ALL REINFORCING BARS ARE TO BE A MINIMUM 3" CLEAR FROM FACE OF CONCRETE WHERE CONCRETE IS EXPOSED TO EARTH.



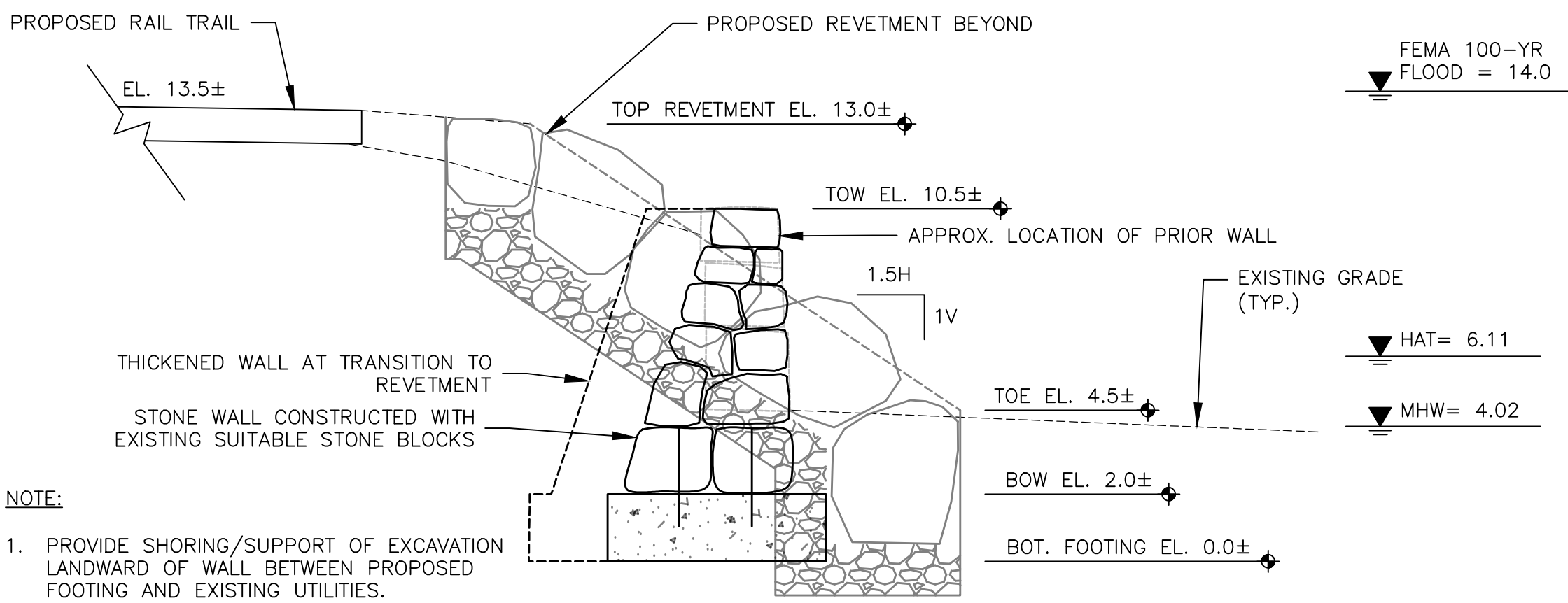
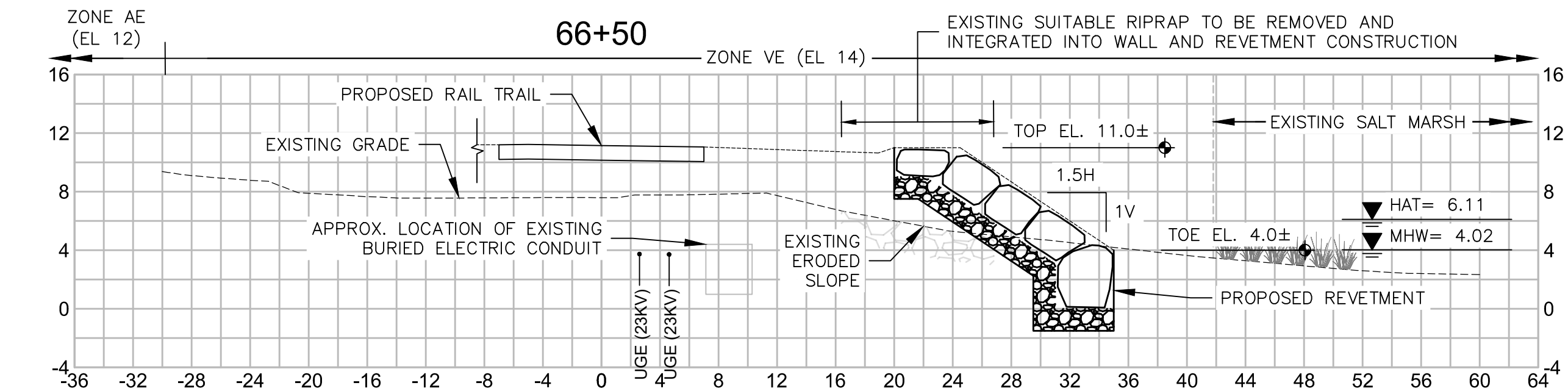
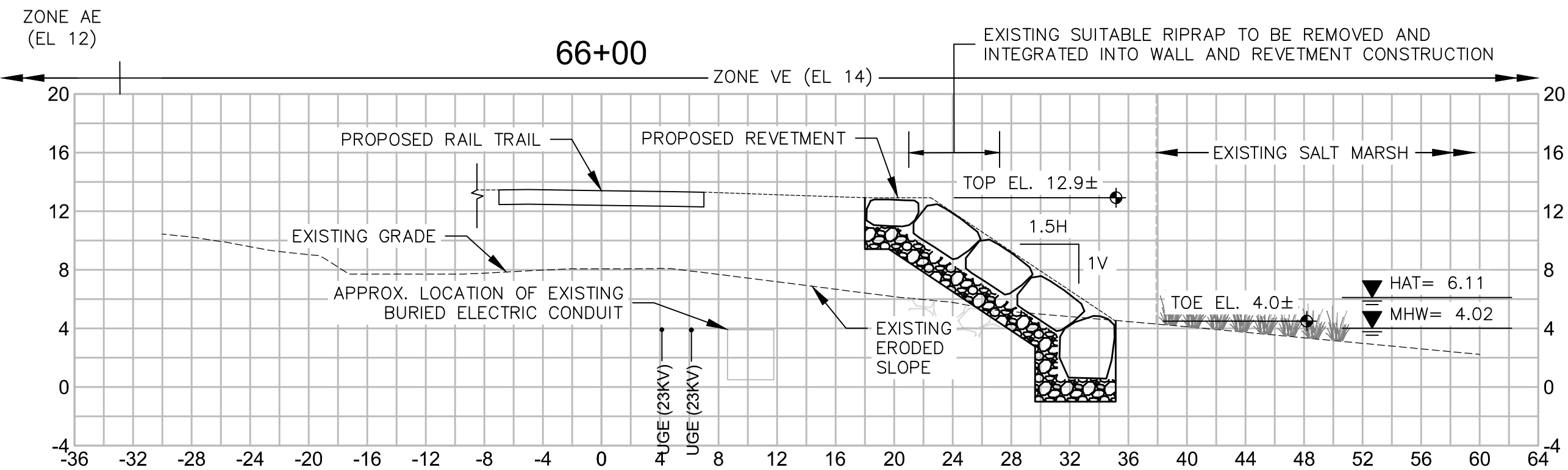
TYPICAL REVETMENT DETAIL
SCALE: 1"=4'



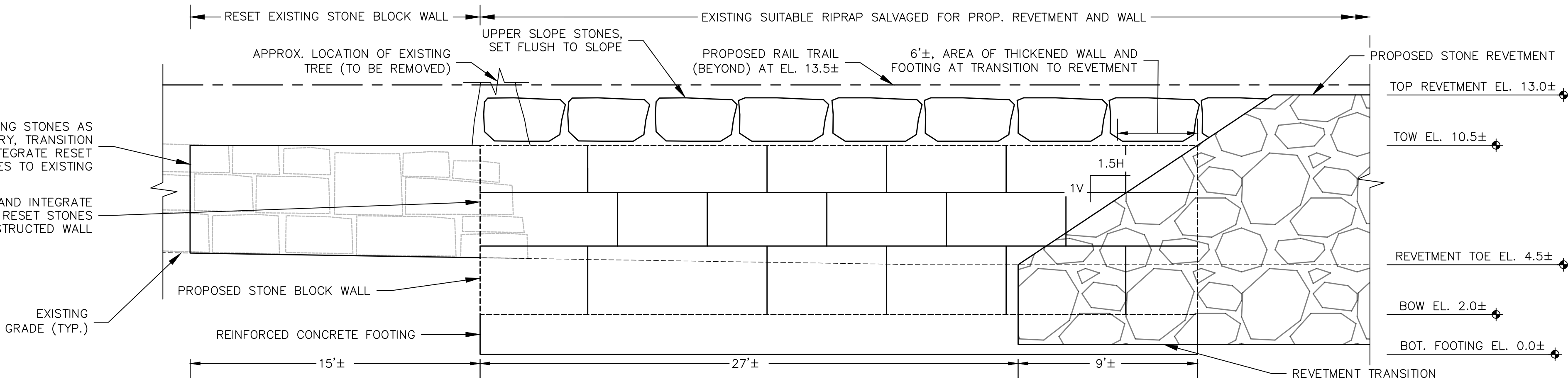
TYPICAL STONE MASONRY WALL DETAIL
SCALE: 1"=4'

NOTE:

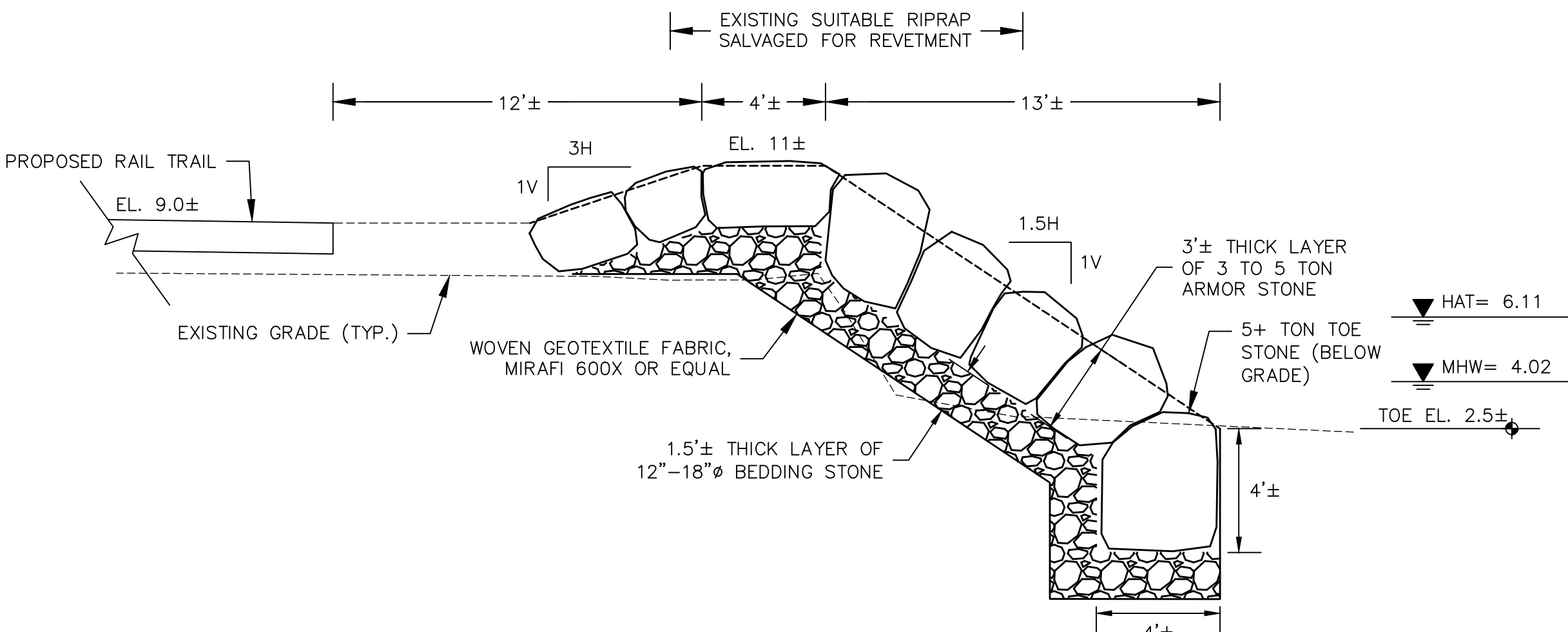
1. PROVIDE SHORING/SUPPORT OF EXCAVATION LANDWARD OF WALL BETWEEN PROPOSED FOOTING AND EXISTING UTILITIES.



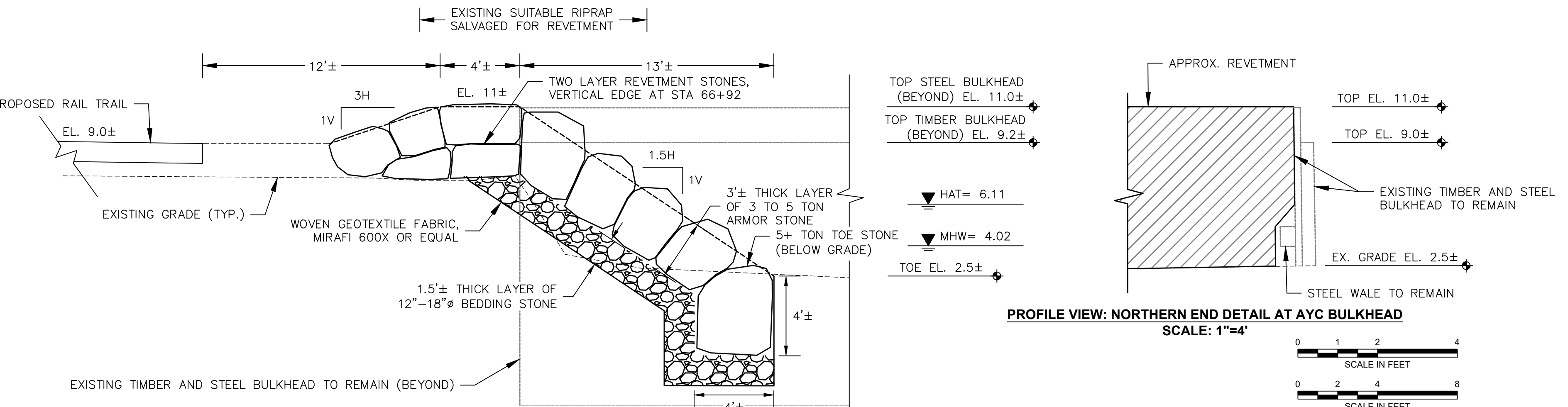
SECTION VIEW: SOUTHERN END DETAIL
SCALE: 1"=4'



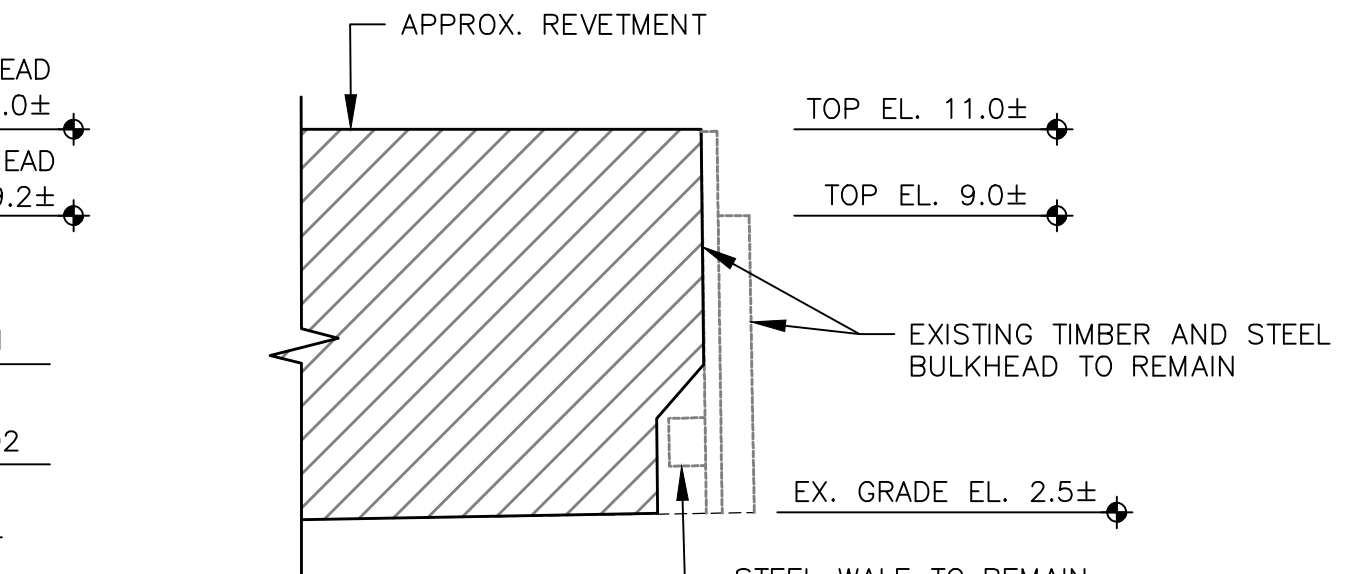
PROFILE VIEW: SOUTHERN END DETAIL
SCALE: 1"=4'



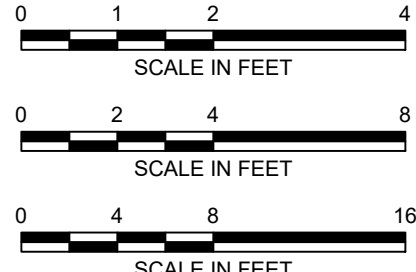
SECTION VIEW: NORTHERN END DETAIL
SCALE: 1"=4'



SECTION VIEW: NORTHERN END DETAIL AT AYC BULKHEAD (STA 66+87 TO 66+91)
SCALE: 1"=4'



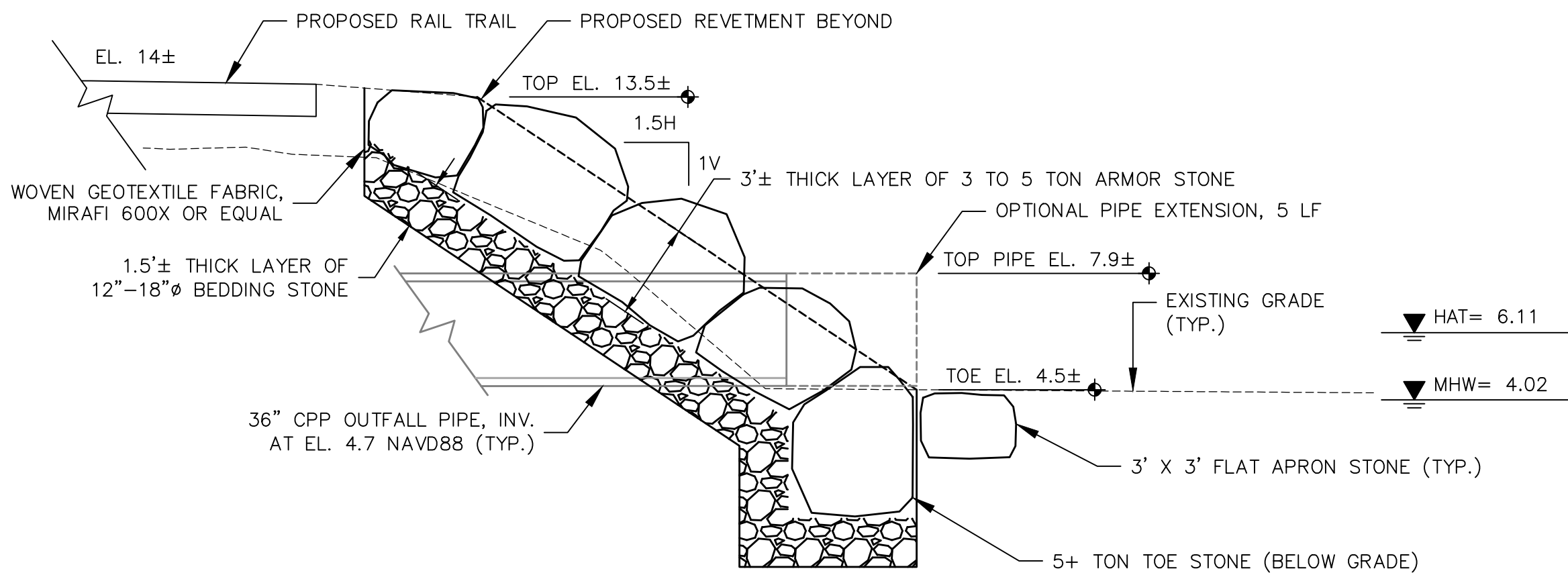
PROFILE VIEW: NORTHERN END DETAIL AT AYC BULKHEAD
SCALE: 1"=4'



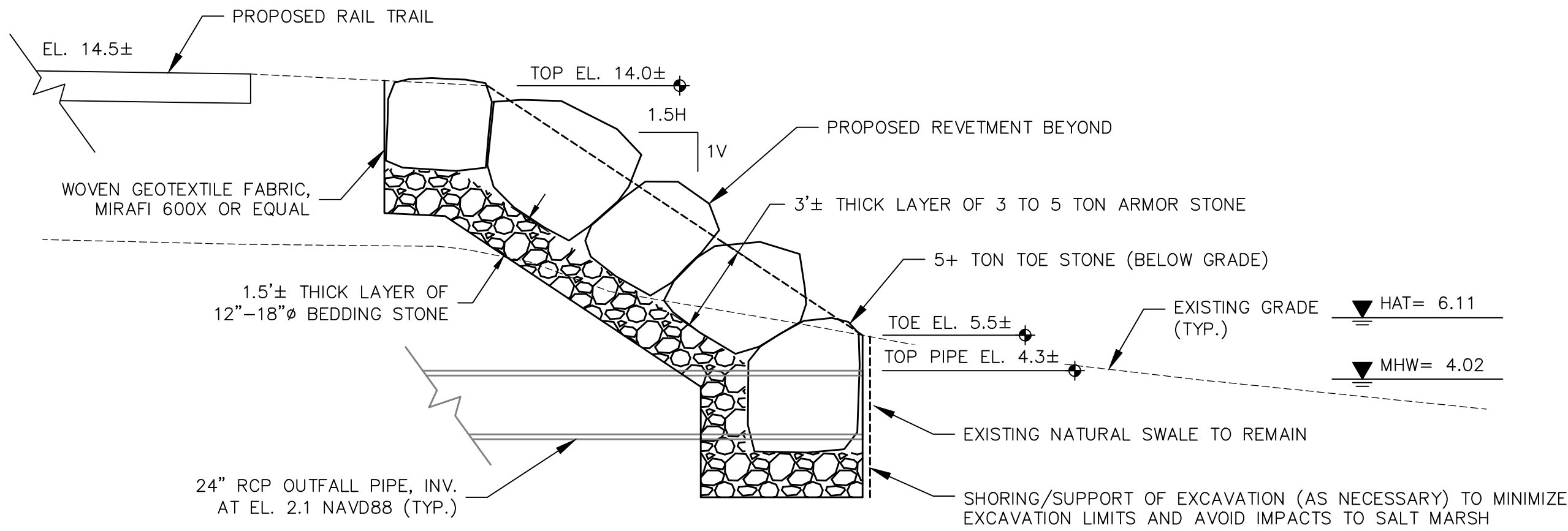
NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	16	35
STANTEC PROJECT NO. 210800843			

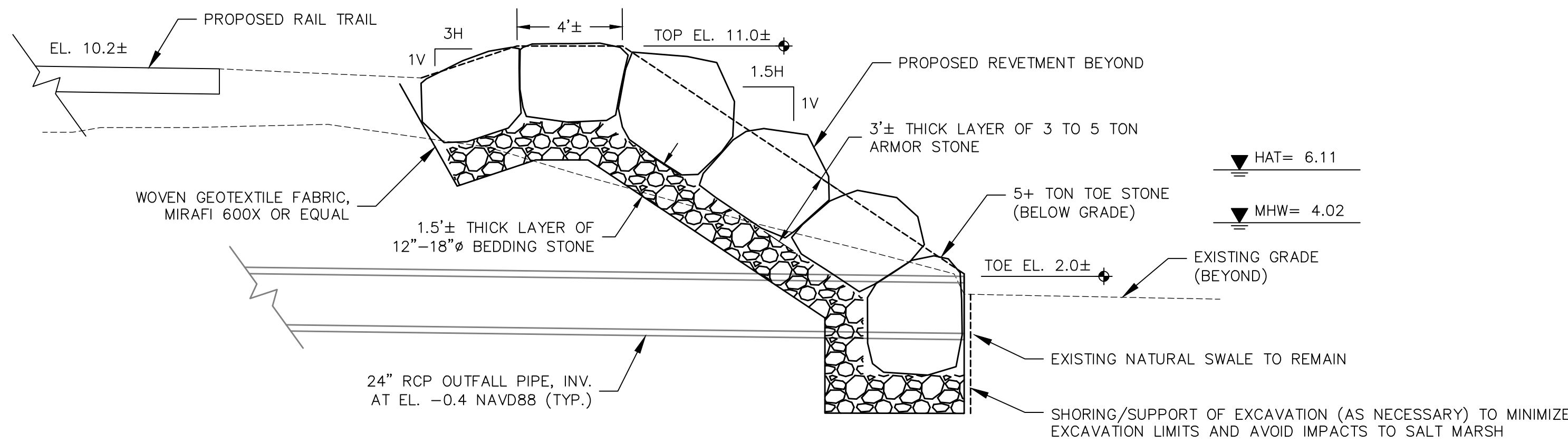
SHORELINE STABILIZATION PLANS
PART 6 OF 6



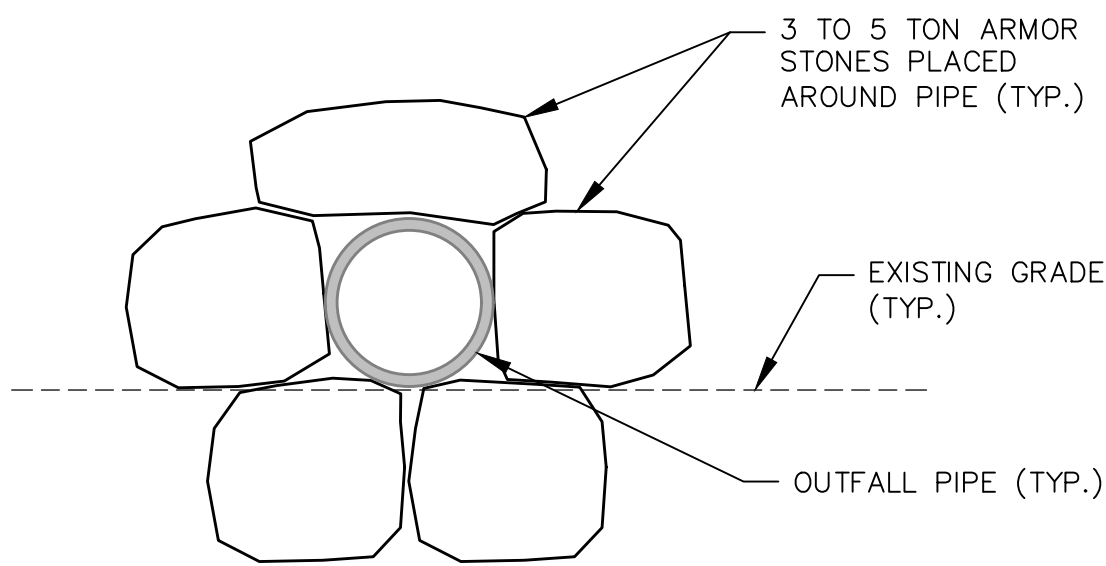
OUTFALL PIPE DETAIL: 36" CPP AT STA 58+62
SCALE: 1"=4'



OUTFALL PIPE DETAIL: 24" RCP AT STA 62+72
SCALE: 1"=4'



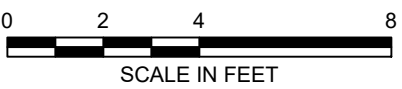
OUTFALL PIPE DETAIL: 24" RCP AT STA 66+72
SCALE: 1"=4'



PROFILE VIEW: TYPICAL OUTFALL PIPE DETAIL
SCALE: N.T.S

NOTES:

- EXISTING OUTFALL PIPES ARE TO REMAIN IN-PLACE AND BE PROTECTED THROUGHOUT THE DURATION OF CONSTRUCTION WORK.
- VOIDS BETWEEN OUTFALL PIPE(S) AND REVETMENT STONES SHALL BE KEPT TO A MINIMUM.
- LARGER STONE SHALL BE USED TO SPAN OVER PIPE(S) AND BE PLACED TO OBTAIN FIRM CONTACT WITH STONES ON EACH SIDE OF THE PIPE(S) SO THAT STONE IS NOT BEARING ON THE PIPE(S).



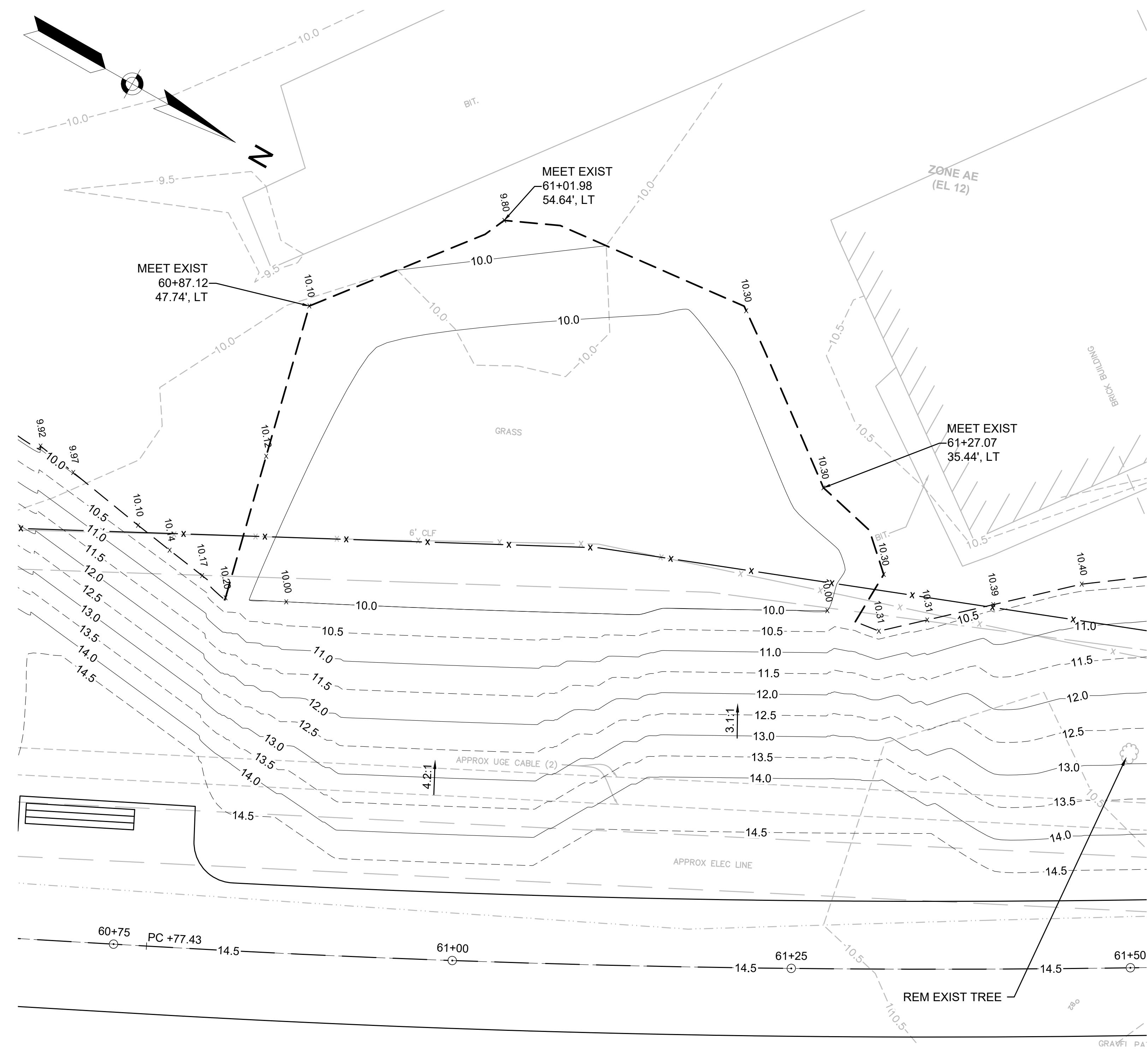
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	18	35
STANTEC PROJECT NO. 210800843			

MAP 20 PARCEL 8
N/F
CITY OF NEWBURYPORT
DOC. 503345
L.C. 15621A
31586 / 329



STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	19	35

GRADING PLANS
PART 3 OF 6



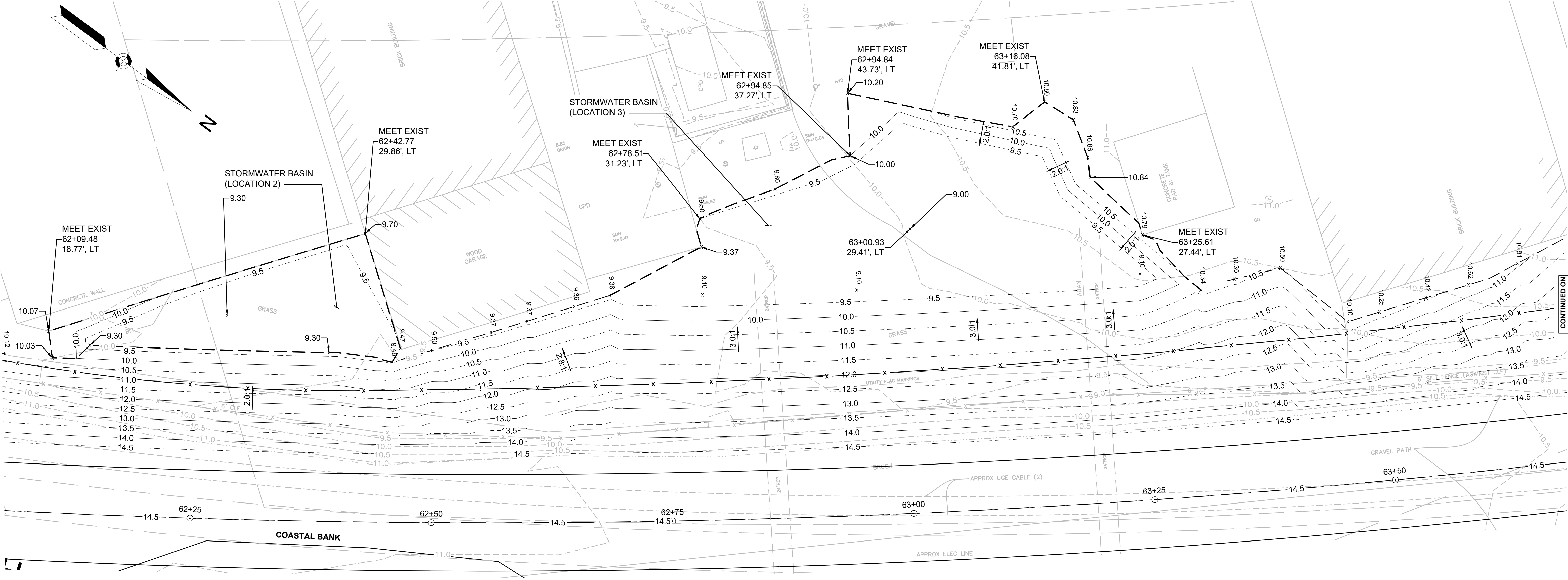
**STORMWATER BASIN
(LOCATION 1)**
SCALE: 1" = 5'



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	20	35

STANTEC PROJECT NO. 210800843
GRADING PLANS
PART 4 OF 6



**STORMWATER BASIN
(LOCATIONS 2 & 3)**
SCALE: 1" = 5'

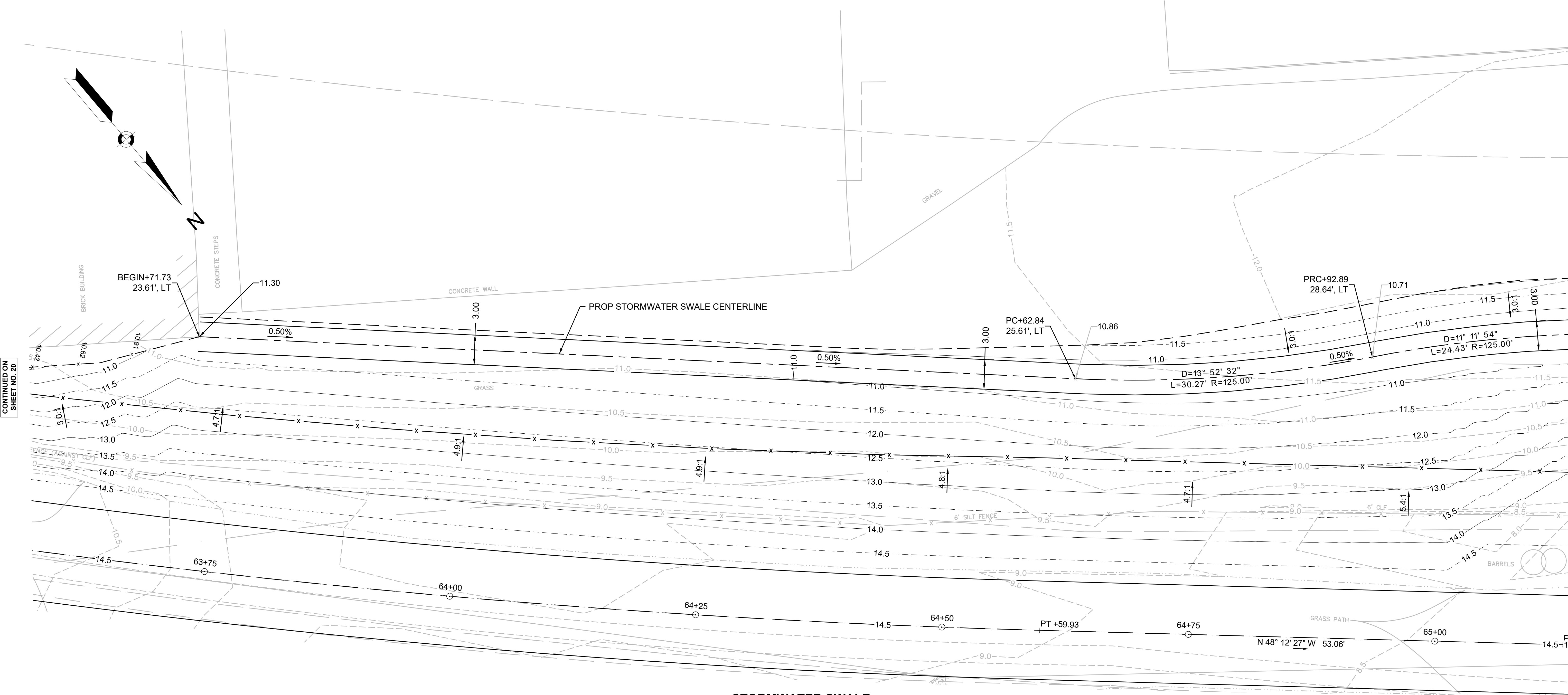


CONTINUED ON
SHEET NO. 21

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	21	35

STANTEC PROJECT NO. 210800843
GRADING PLANS
PART 5 OF 6



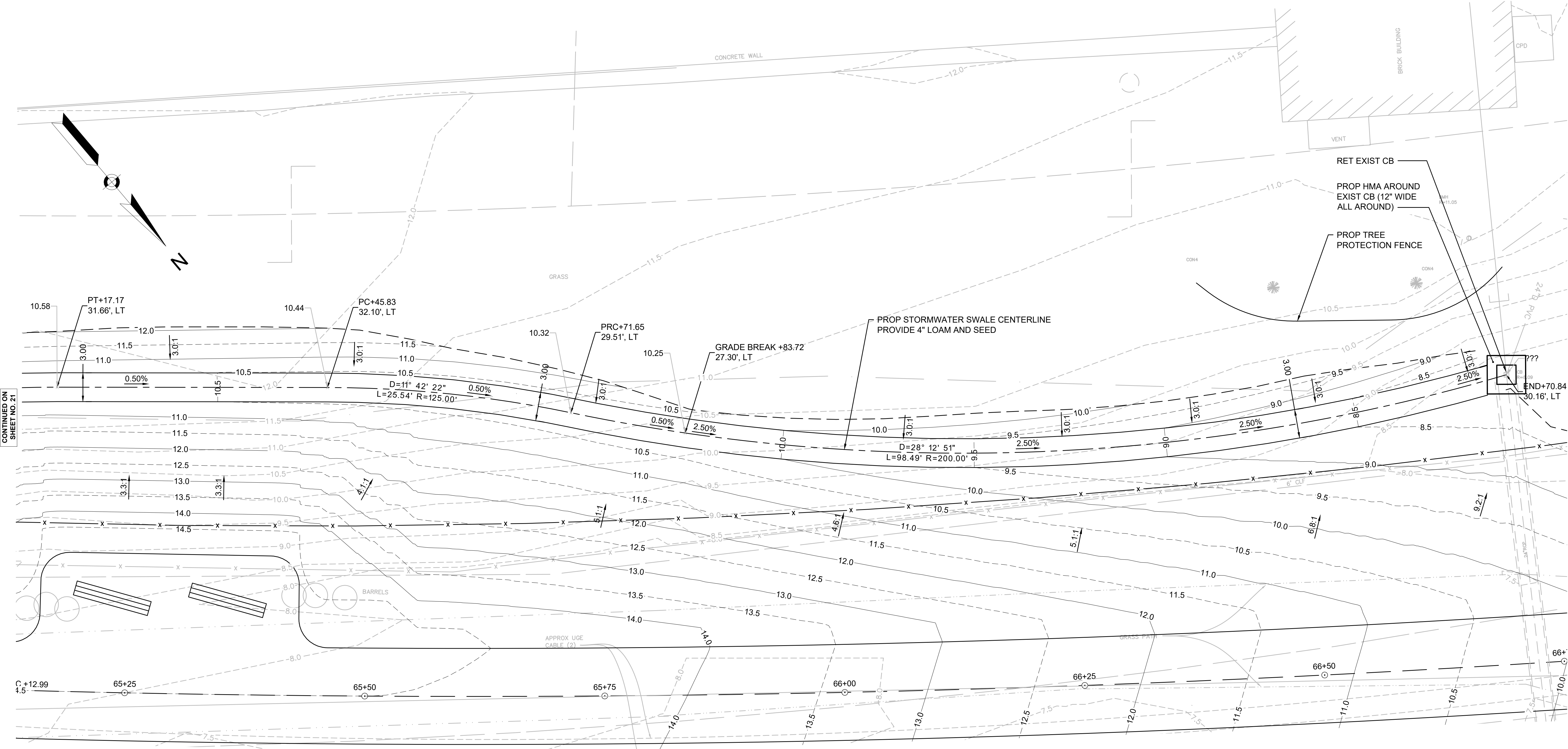
**STORMWATER SWALE
(INLAND, AT WWTF)**
SCALE: 1" = 5'



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	22	35
STANTEC PROJECT NO. 210800843			

GRADING PLANS
PART 6 OF 6



STORMWATER SWALE
(INLAND, AT WWTF)
SCALE: 1" = 5'



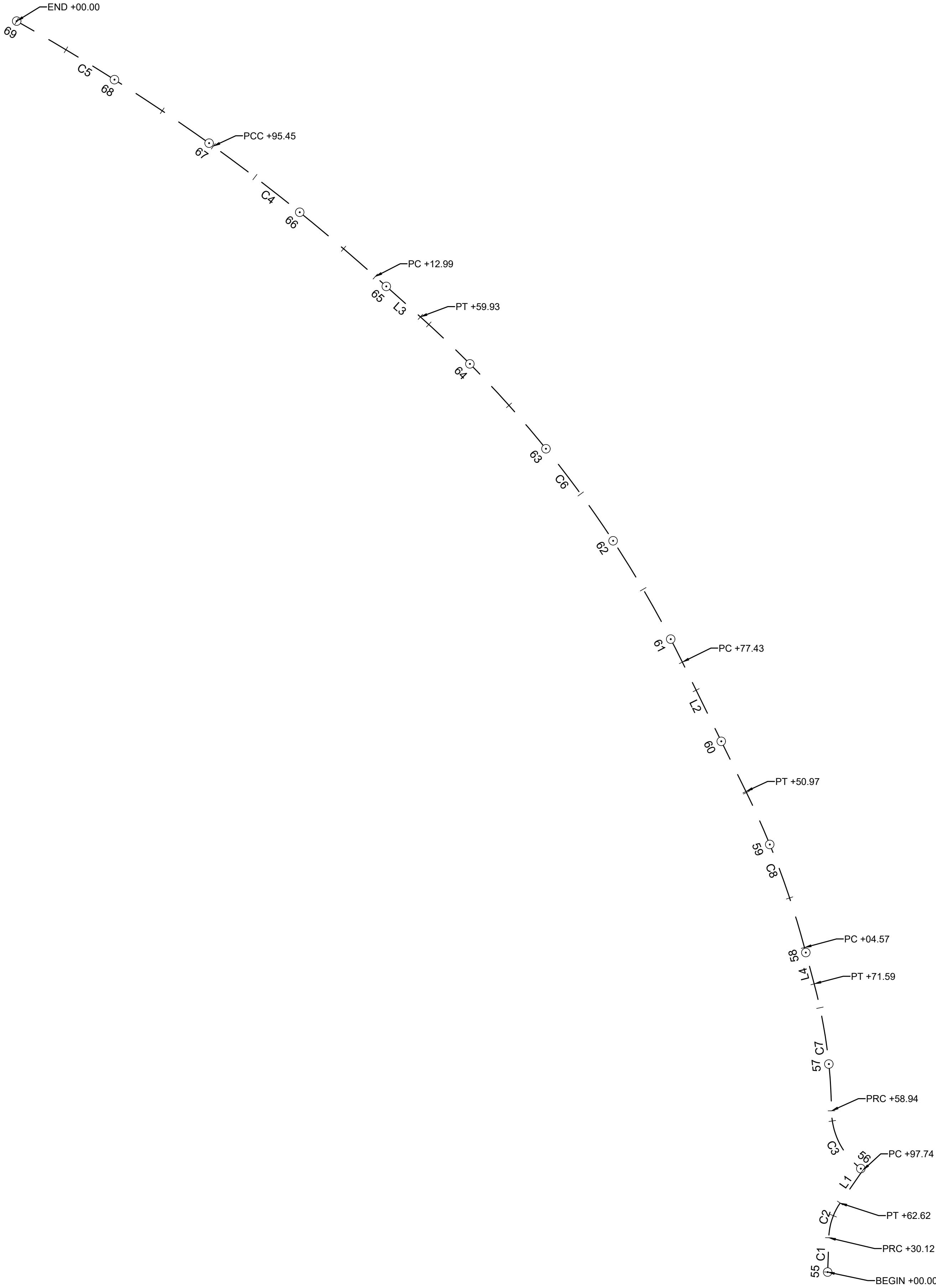
CONTINUED ON
SHEET NO. 21

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

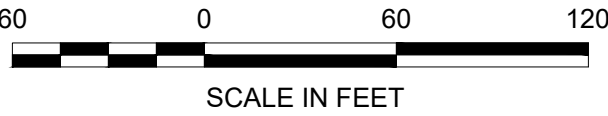
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	23	35
STANTEC PROJECT NO. 210800843			

HORIZONTAL ALIGNMENT DATA

CCRT - SHORELINE STABILIZATION - TRAIL BASELINE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	55+00.00	3119936.0966	827873.3195	R = 2000.00' Δ= 0°51'47" L=30.12' T=15.06'		55+30.12	3119966.2030	827874.3227
C2	55+30.12	3119966.2030	827874.3227	R = 56.00' Δ= 33°14'58" L=32.50' T=16.72'		55+62.62	3119996.6604	827884.2787
L1	55+62.62	3119996.6604	827884.2787		N34° 43' 35"E 35.12'	55+97.74	3120025.5224	827904.2833
C3	55+97.74	3120025.5224	827904.2833	R = 64.13' Δ= 54°41'13" L=61.21' T=33.16'		56+58.94	3120077.5703	827876.6912
C7	56+58.94	3120077.5703	827876.6912	R = 450.00' Δ= 14°20'33" L=112.65' T=56.62'		57+71.59	3120188.8906	827861.4950
L4	57+71.59	3120188.8906	827861.4950		N14° 56' 41"W 32.97'	58+04.57	3120220.7498	827852.9913
C8	58+04.57	3120220.7498	827852.9913	R = 746.00' Δ= 11°14'40" L=146.40' T=73.44'		59+50.97	3120357.6020	827801.6422
L2	59+50.97	3120357.6020	827801.6422		N26° 11' 21"W 126.46'	60+77.43	3120471.0811	827745.8306
C6	60+77.43	3120471.0811	827745.8306	R = 995.33' Δ= 22°01'07" L=382.50' T=193.64'		64+59.93	3120773.8891	827516.0011
L3	64+59.93	3120773.8891	827516.0011		N48° 12' 27"W 53.06'	65+12.99	3120809.2475	827476.4444
C4	65+12.99	3120809.2475	827476.4444	R = 1756.49' Δ= 5°57'07" L=182.47' T=91.32'		66+95.45	3120923.5765	827334.3420
C5	66+95.45	3120923.5765	827334.3420	R = 1907.00' Δ= 6°08'44" L=204.55' T=102.37'		69+00.00	3121033.2546	827161.8011



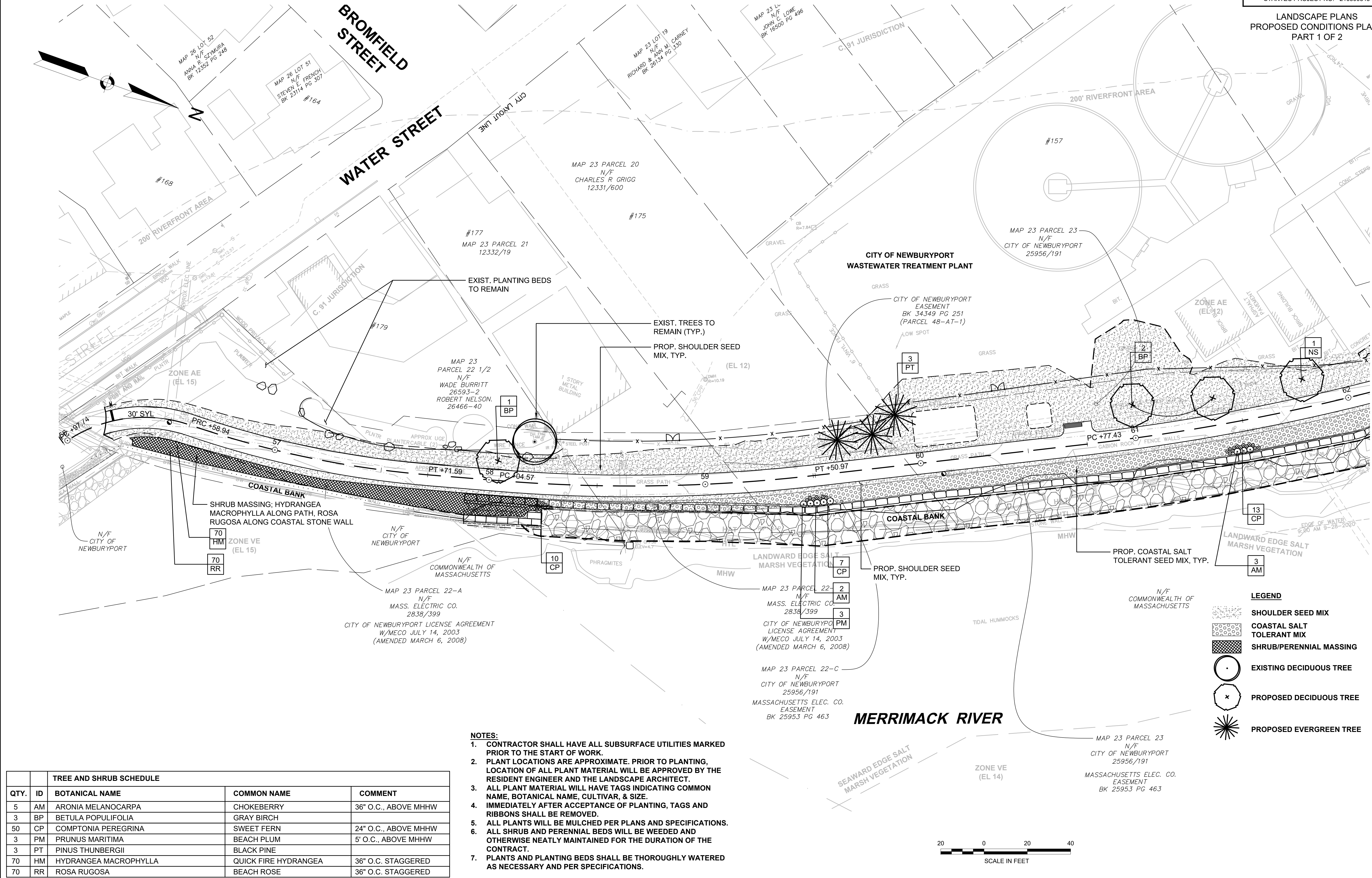
ALIGNMENT PLAN
SCALE: 1" = 60'



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	24	35
STANTEC PROJECT NO. 210800843			

LANDSCAPE PLANS
PROPOSED CONDITIONS PLANS
PART 1 OF 2



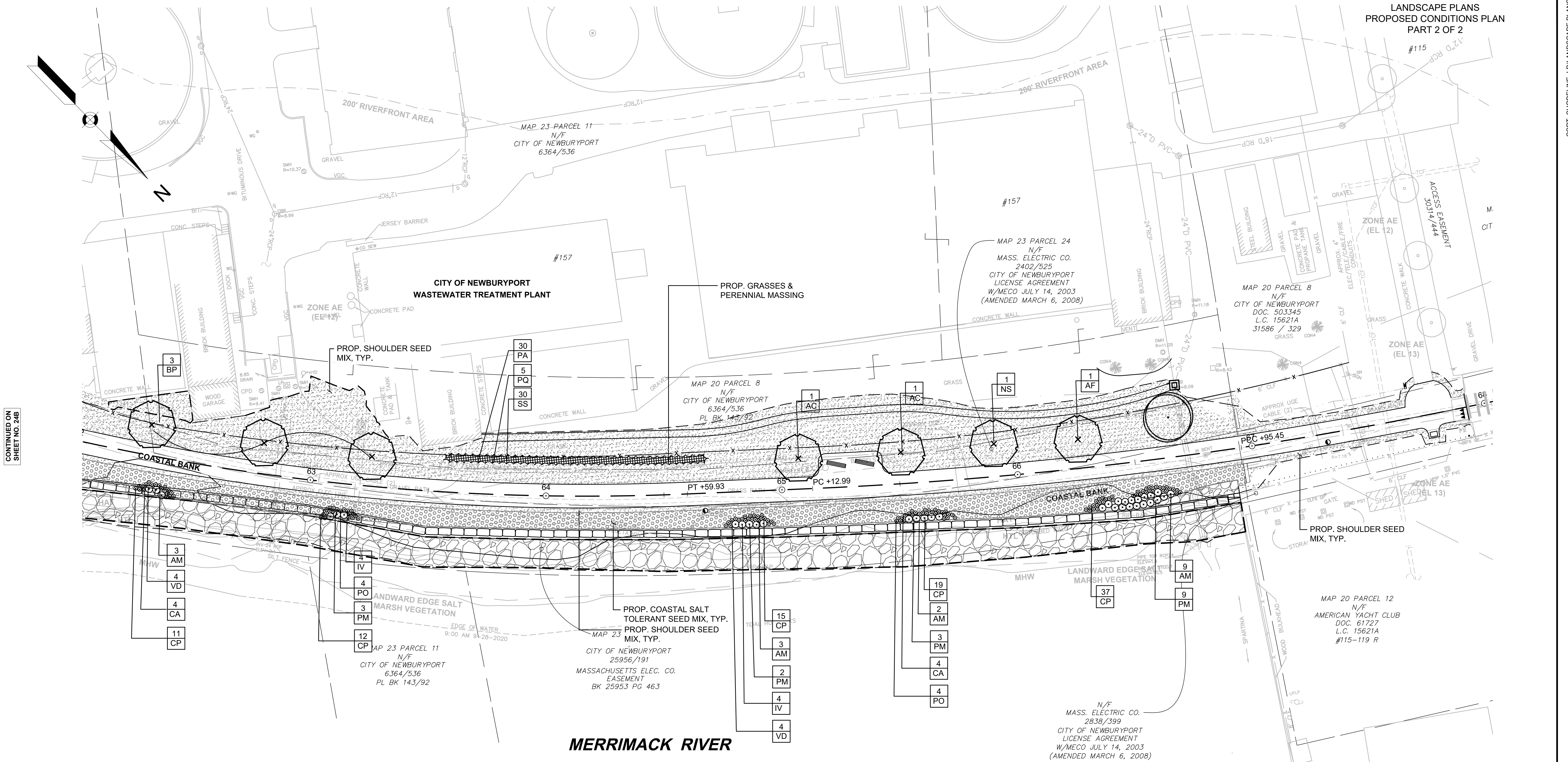
CONTINUED ON
SHEET NO. 25B

PERENNIAL SCHEDULE				
QTY.	ID	BOTANICAL NAME	COMMON NAME	COMMENT
30	PA	PANICUM AMARUM CAR. AMARULUM	COASTAL PANICGRASS	24" O.C. STAGGERED
5	PQ	PATHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	8' O.C. STAGGERED; SPACE ALONG FENCE
20	SS	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	24" O.C. STAGGERED; SPACE ALONG FENCE

**NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT**

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	25	35
STANTEC PROJECT NO. 210800843			

**LANDSCAPE PLANS
PROPOSED CONDITIONS PLAN
PART 2 OF 2**



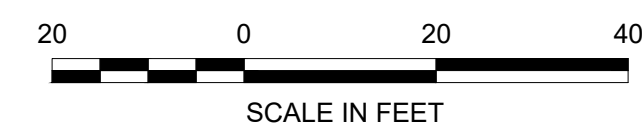
TREE AND SHRUB SCHEDULE				
QTY.	ID	BOTANICAL NAME	COMMON NAME	COMMENT
2	AC	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	
1	AF	ACER X FREEMANII 'AUTUMN BLAZE'	FREEMAN MAPLE 'AUTUMN BLAZE'	
17	AM	ARONIA MELANOCARPA	CHOKEBERRY	36" O.C., ABOVE MHHW
3	BP	BETULA POPULIFOLIA	GRAY BIRCH	
8	CA	CLETHRERA ALNIFOLIA	SWEET PEPPERBUSH	24" O.C., ABOVE MHHW
94	CP	COMPTONIA PEREGRINA	SWEET FERN	24" O.C., ABOVE MHHW
8	IV	ILEX VERTICILLATA	WINTERBERRY	36" O.C., ABOVE MHHW
2	NS	NYSSA SYLVATICA	BLACK TUPELO	
17	PM	PRUNUS MARITIMA	BEACH PLUM	5' O.C., ABOVE MHHW
8	PO	PHYSOCARPUS OPULIFOLIUS	NINEBARK	36" O.C., ABOVE MHHW
8	VD	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	36" O.C., ABOVE MHHW

NOTES:

- CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
- PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
- ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, CULTIVAR, & SIZE.
- IMMEDIATELY AFTER ACCEPTANCE OF PLANTING, TAGS AND RIBBONS SHALL BE REMOVED.
- ALL PLANTS WILL BE MULCHED PER PLANS AND SPECIFICATIONS.
- ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
- PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.

LEGEND

- SHOULDER SEED MIX
- COASTAL SALT TOLERANT MIX
- SHRUB/PERENNIAL MASSING
- EXISTING DECIDUOUS TREE
- PROPOSED DECIDUOUS TREE
- PROPOSED EVERGREEN TREE



CONTINUED ON
SHEET NO. 24B

		PLANT SCHEDULE					
QTY.	ID	BOTANICAL NAME	COMMON NAME	SIZE	COMMENT	SHEET 1	SHEET 2
		DECIDUOUS TREES					
6	BP	BETULA POPULIFOLIA	GRAY BIRCH	4-5 FT.	B&B	3	3
1	AF	ACER X FREEMANII 'AUTUMN BLAZE'	FREEMAN MAPLE 'AUTUMN BLAZE'	1.5-2 INCH CAL.	B&B	-	1
2	NS	NYSSA SYLVATICA	BLACK TUPELO	1.5-2 INCH CAL.	B&B	-	2
3	PT	PINUS THUNBERGII	BLACK PINE	4-5 FT.	B&B	3	-
		FLOWERING TREES					
2	AC	AMELANCHIER CANADENSIS	SHADBLOW SERVICE BERRY	4-5 FT.	B&B, MULTI STEM	-	2
		SHRUBS					
22	AM	ARONIA MELANOCARPA	CHOKEBERRY	18"-24" HT.	B&B	5	17
8	CA	CLETHERA ALNIFOLIA	SWEET PEPPERBUSH	18"-24" HT.	1 GALLON	-	8
124	CP	COMPTONIA PEREGRINA	SWEETFERN	18"-24" HT.	1 GALLON	30	94
70	HM	HYDRANGEA MACROPHYLLA	QUICK FIRE HYDRANGEA	18"-24" HT.	B&B	70	-
8	IV	ILEX VERTICILLATA	WINTERBERRY	18"-24" HT.	1 GALLON	-	8
20	PM	PRUNUS MARTIMA	BEACH PLUM	18"-24" HT.	B&B	3	17
8	PO	PHYSOCARPUS OPUULIFOLIUS	NINEBARK	18"-24" HT.	1 GALLON	-	8
70	RR	ROSA RUGOSA	RUGOSA ROSE	18"-24" HT.	1 GALLON, 36" O.C. STAGGERED	70	-
8	VD	VIBURNUM DENTATUM	ARROWWOOD VIBURNUM	18"-24" HT.	1 GALLON	-	8
		GROUNDCOVERS & PERENNIALS					
30	PA	PANICUM AMARUM CAR. AMARULUM	COATAL PANICGRASS	1 GALLON	24" O.C. STAGGERED	-	30
5	PQ	PATHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	1 GALLON	8' O.C STAGGERED	-	5
20	SS	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GALLON	24" O.C. STAGGERED	-	20

NEWBURYPORT

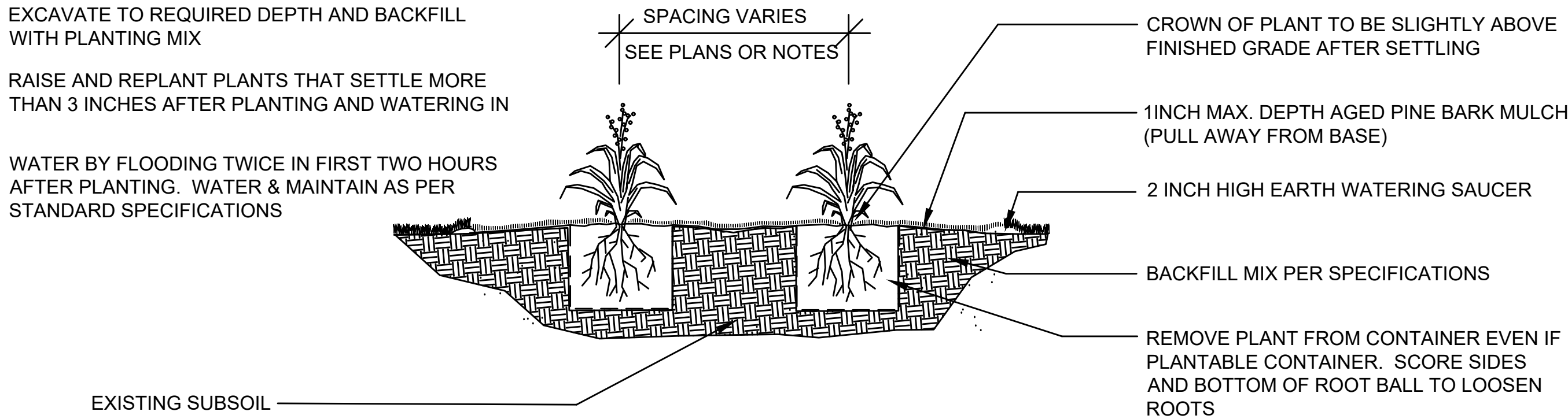
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	26	35

STANTEC PROJECT NO. 210800843

LANDSCAPE DETAILS

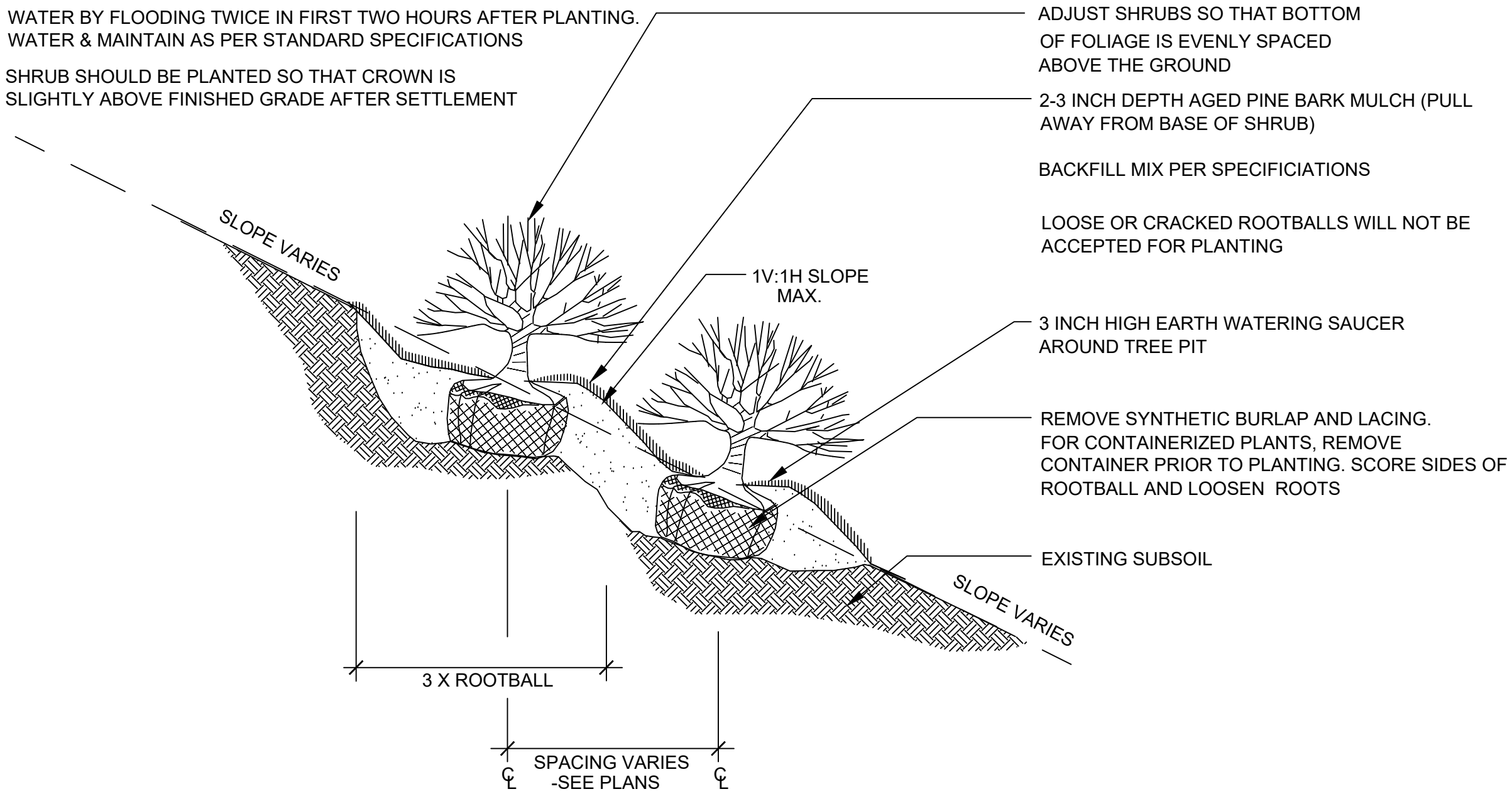
SHEET 1 OF 2



1

PERENNIAL PLANTING

NOT TO SCALE



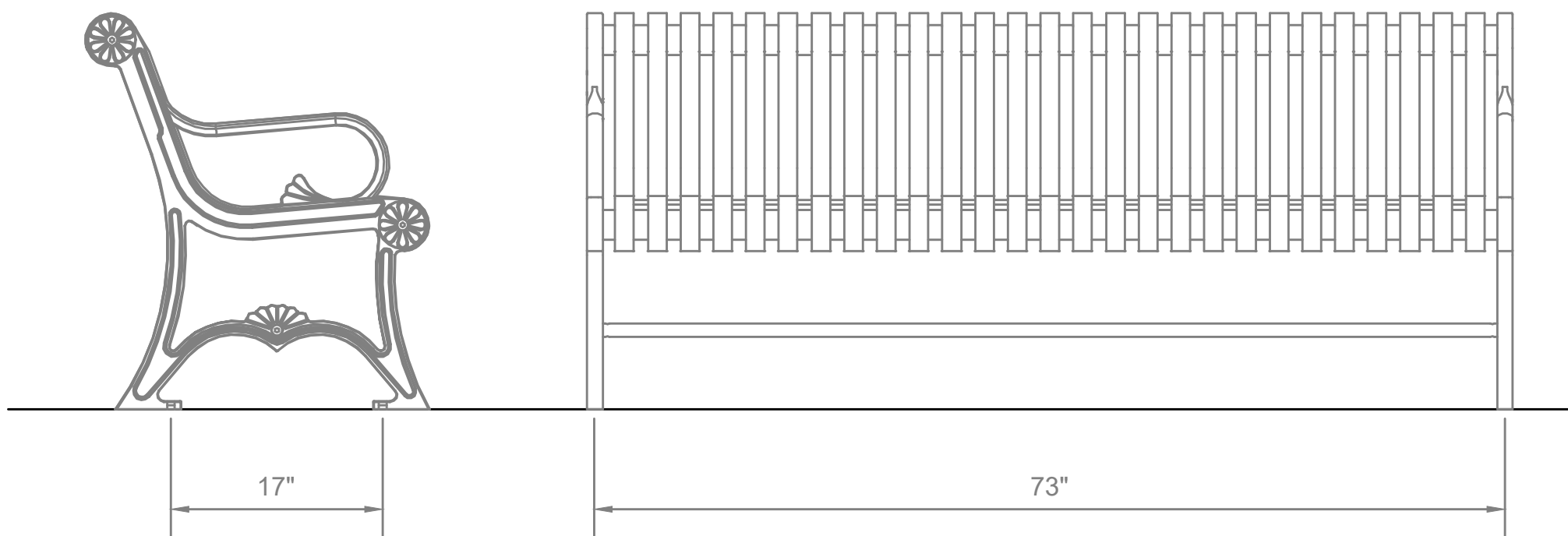
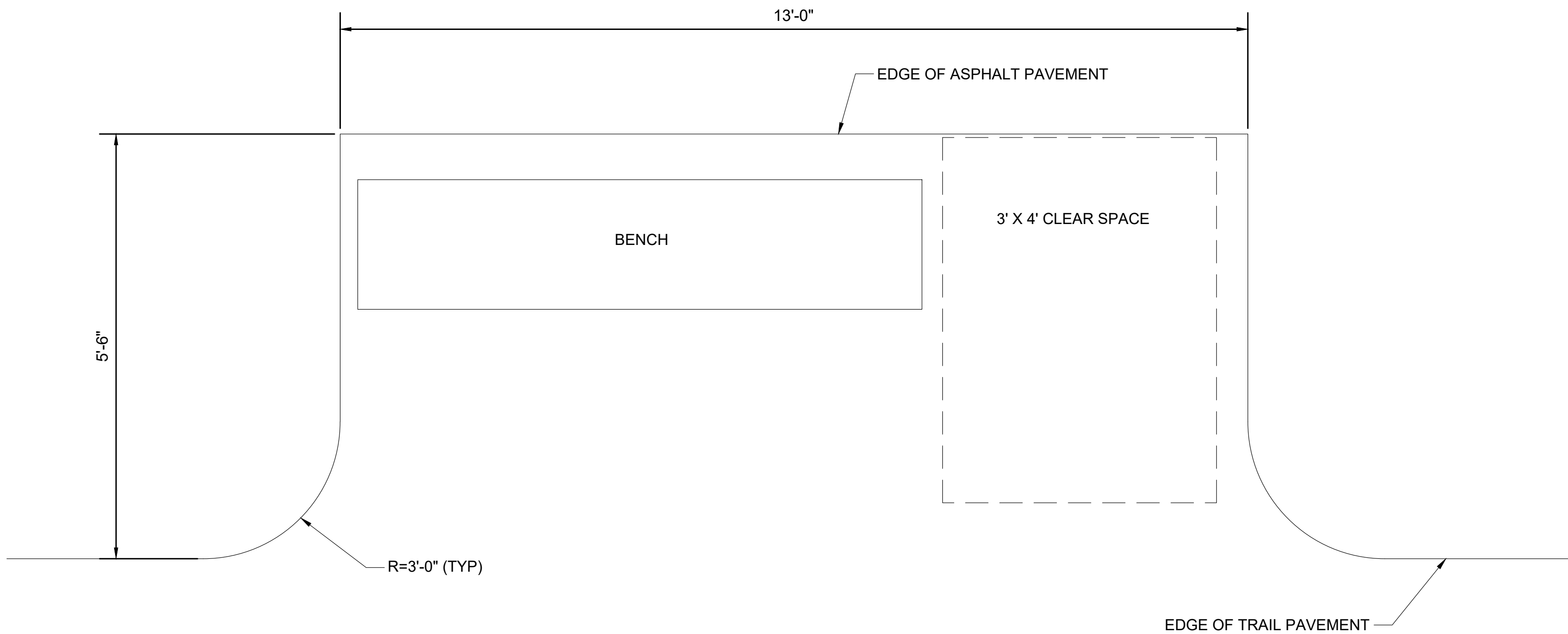
2

CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL

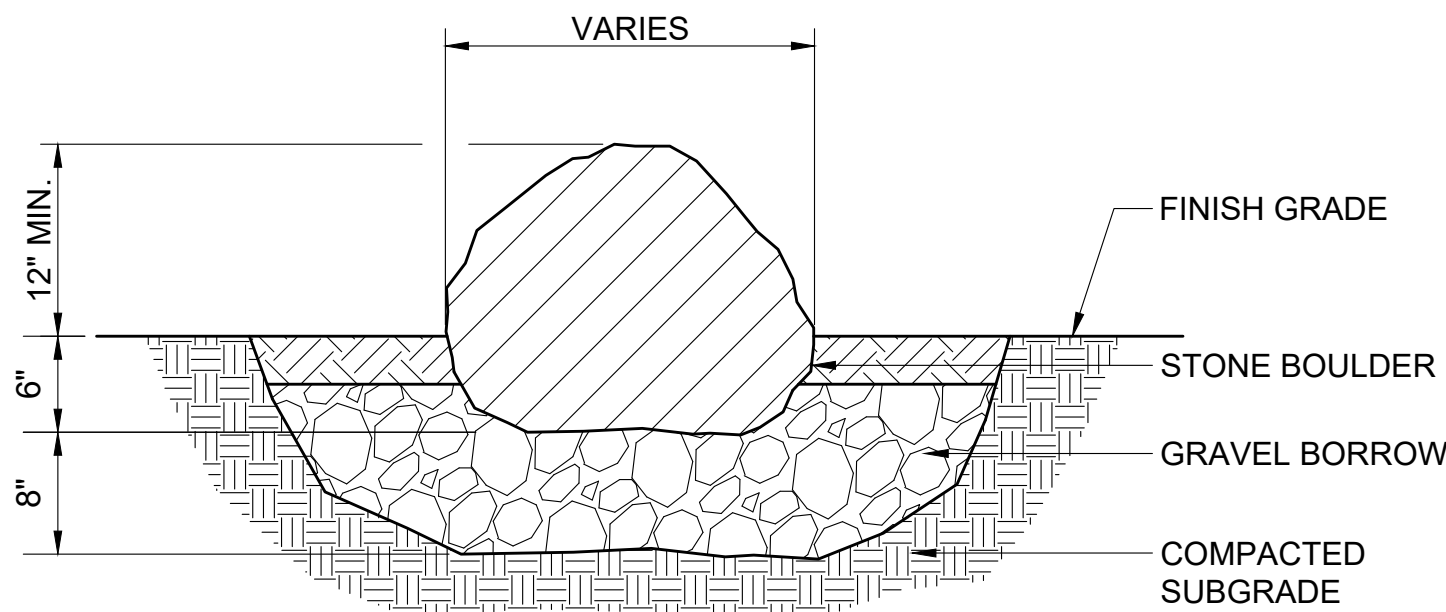
NOT TO SCALE

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	28	35
STANTEC PROJECT NO. 210800843			

CONSTRUCTION DETAILS
PART 1 OF 5



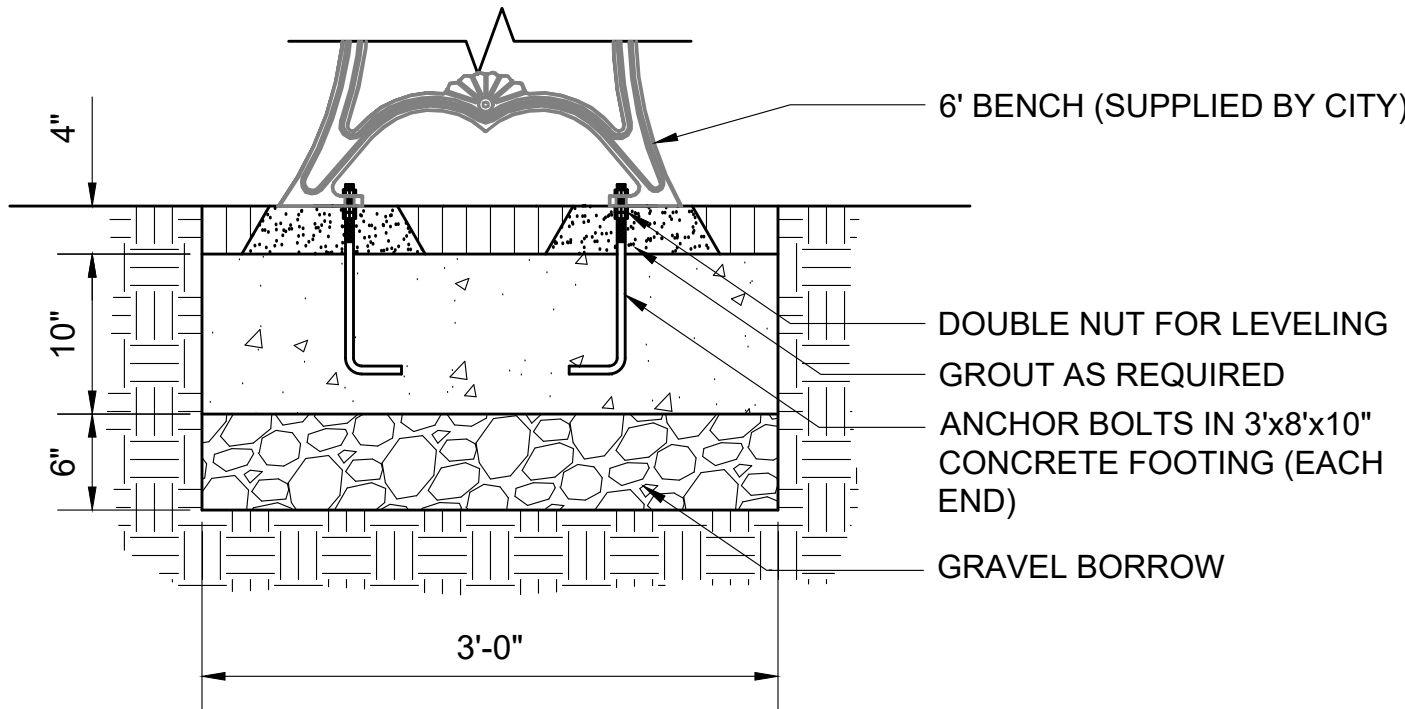
1 6' BENCH (SUPPLIED BY CITY)
SCALE: 1"=1'-0"



3 LANDSCAPE BOULDER
NOT TO SCALE

NOTE:

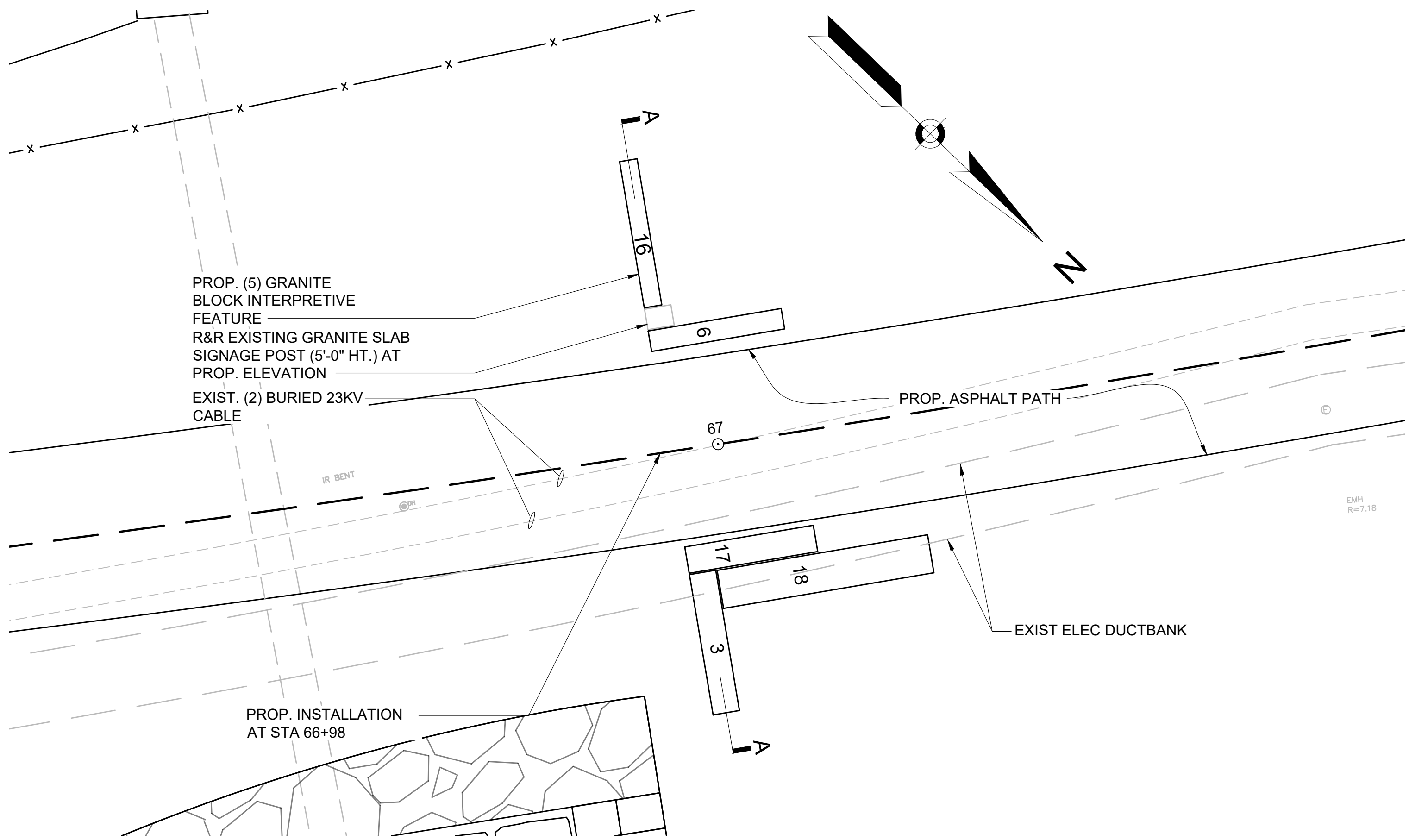
- ALL BENCH LOCATIONS AND ORIENTATION WILL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO START OF WORK.
- 6' BENCH SHALL BE SUPPLIED BY THE CITY AND INSTALLED UNDER THIS CONTRACT.
- THE CONTRACTOR SHALL CONFIRM DIMENSIONS OF THE BENCH PRIOR TO SETTING CONCRETE FOOTINGS AND ANCHOR BOLTS.



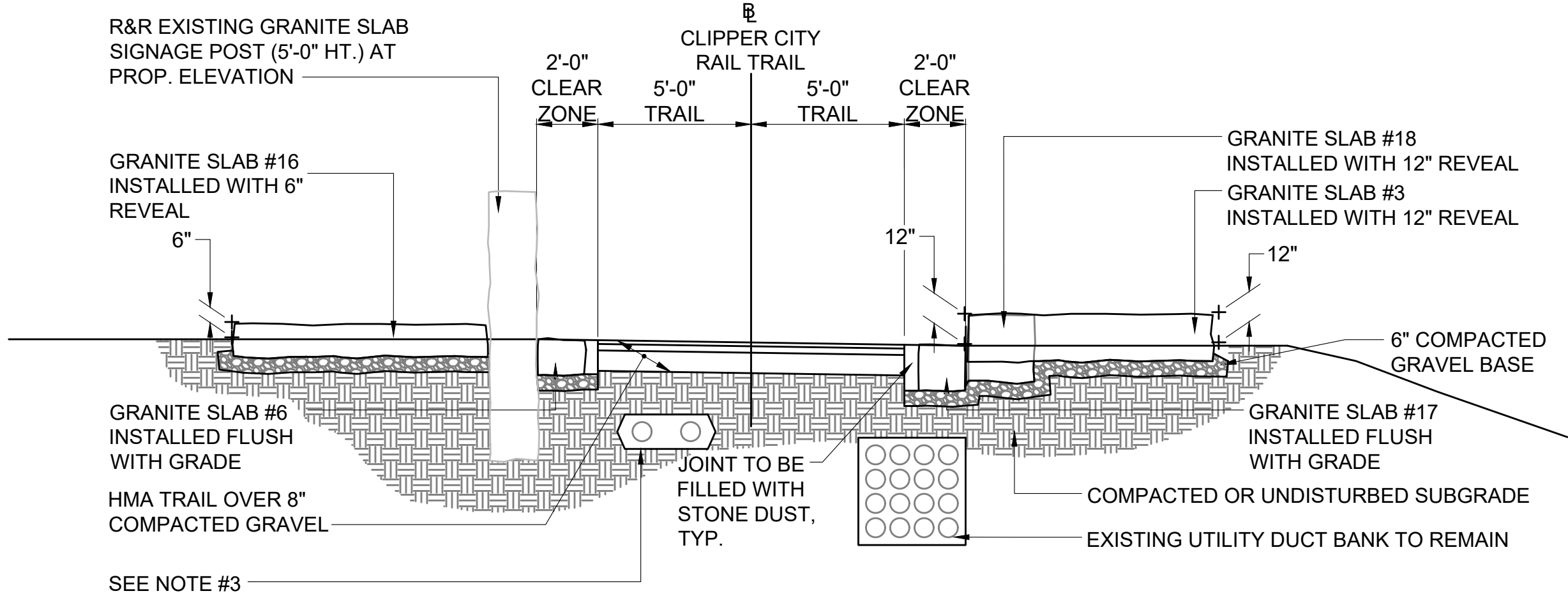
2 TYPICAL BENCH FOOTING
SCALE: 1"=1'-0"

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	29	35
STANTEC PROJECT NO. 210800843			

CONSTRUCTION DETAILS
PART 2 OF 5



1 INTERPRETIVE GRANITE LAYOUT: STA 66+96
SCALE: 3/16" = 1'-0"



2 INTERPRETIVE GRANITE SECTION: SECTION A-A
SCALE: 1/4" = 1'-0"

INTERPRETIVE GRANITE LEGEND

NUM.	DESCRIPTION	DIMENSIONS
#3	UPLAND ADDITIONAL STONE 3	12'-0"L. X2'-2"W. X 1'-4"H.
#6	FLUSH THRESHOLD STONE: 10' LONG	7'-7"L. X 1'-2"W. X 1'-6"H.
#16	ADDITIONAL WATERS EDGE STONE 2	8'-4"L. X 1'-0"W. X 1'-3"H.
#17	ADDITIONAL WATERS EDGE STONE 3	7'-4"L. X 1'-6"W. X 1'-3"H.
#18	RAISED SEAT HEIGHT STONE ON WATERSIDE OF THRESHOLD AS WHARF EDGE	8'-0"L. X 1'-6"W. X 1'-3"H.

- NOTES:
- GRANITE SLABS HAVE BEEN PRE-SELECTED AND NUMBERED BASED ON LOCATION IN THE FIELD. NUMBERING BEGINS WITH THE EASTERN MOST STONE BEING LABELED #1 AND THE WESTERN MOST STONE BEING LABELED #18. DIMENSIONS SHOULD BE TAKEN TO ENSURE ACCURACY BEFORE THEY ARE PLACED.
 - EXISTING GRANITE SLABS ARE PRESENTLY STOCKPILED AT THE PROJECT SITE. THE CONTRACTOR SHALL STORE AND PROTECT ALL EXISTING GRANITE ELEMENTS FOR REUSE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION.
 - THE LAYOUT AND POSITIONING OF ALL GRANITE ELEMENTS SHALL BE MARKED IN THE FIELD AND APPROVED BY THE LANDSCAPE ARCHITECT, PRIOR TO INSTALLATION.
 - (2) EXIST. 23KV BURIED ELECTRICAL LINES. CONTRACTOR SHALL LOCATE AND PROTECT THROUGHOUT INTERPRETIVE GRANITE EXCAVATION AND INSTALLATION.

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	30	35
STANTEC PROJECT NO. 210800843			

Diagram illustrating the cross-section of a trail shoulder. The shoulder width is 4'-6". The height of the shoulder is 5'-0". The bottom corners are rounded with a radius $R=3'-0"$ (TYP). The top edge is labeled "EDGE OF ASPHALT PAVEMENT" and the bottom edge is labeled "EDGE OF TRAIL PAVEMENT". The text "SEE NOTE 1" is centered in the shoulder area.

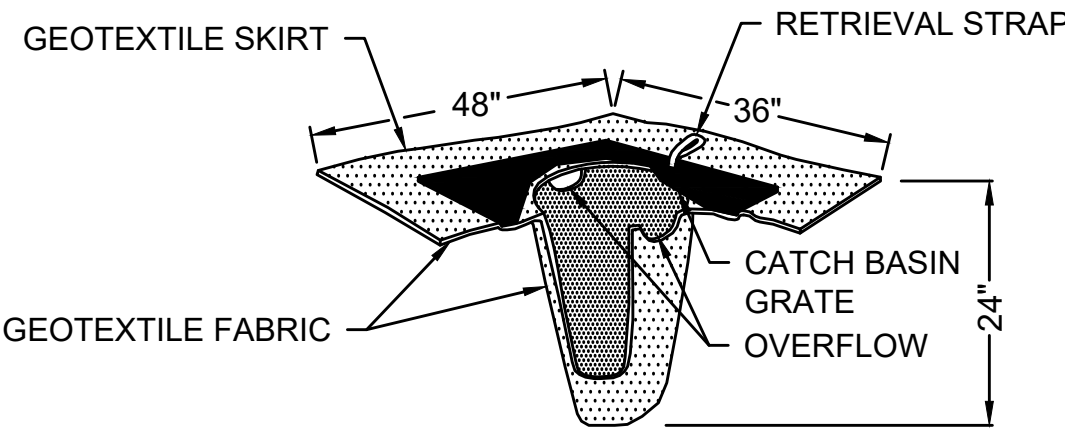
1 INTERPRETIVE SIGN
NOT TO SCALE



2 SWINGING BENCH
NOT TO SCALE

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	31	35
STANTEC PROJECT NO. 210800843			

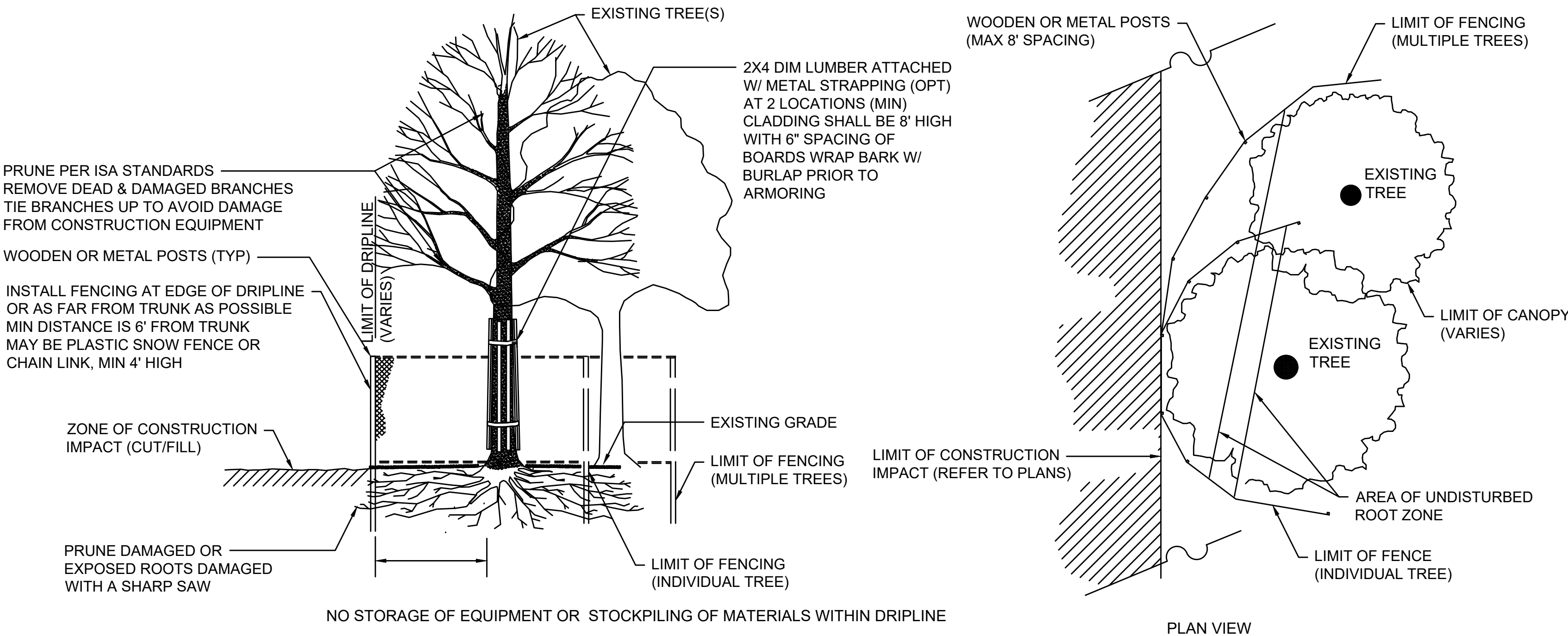
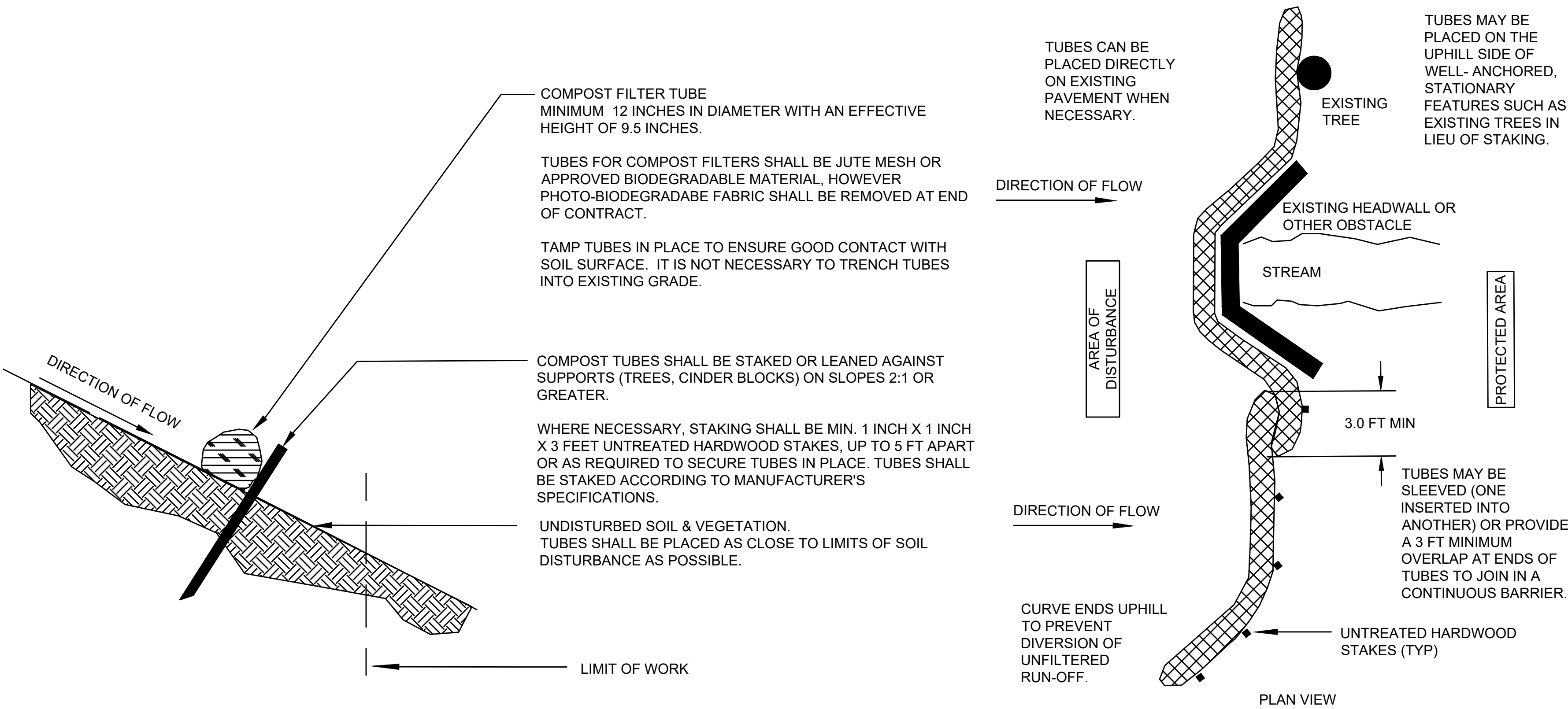
CONSTRUCTION DETAILS
PART 4 OF 5



SILT SACK FOR SEDIMENT CONTROL
NOT TO SCALE

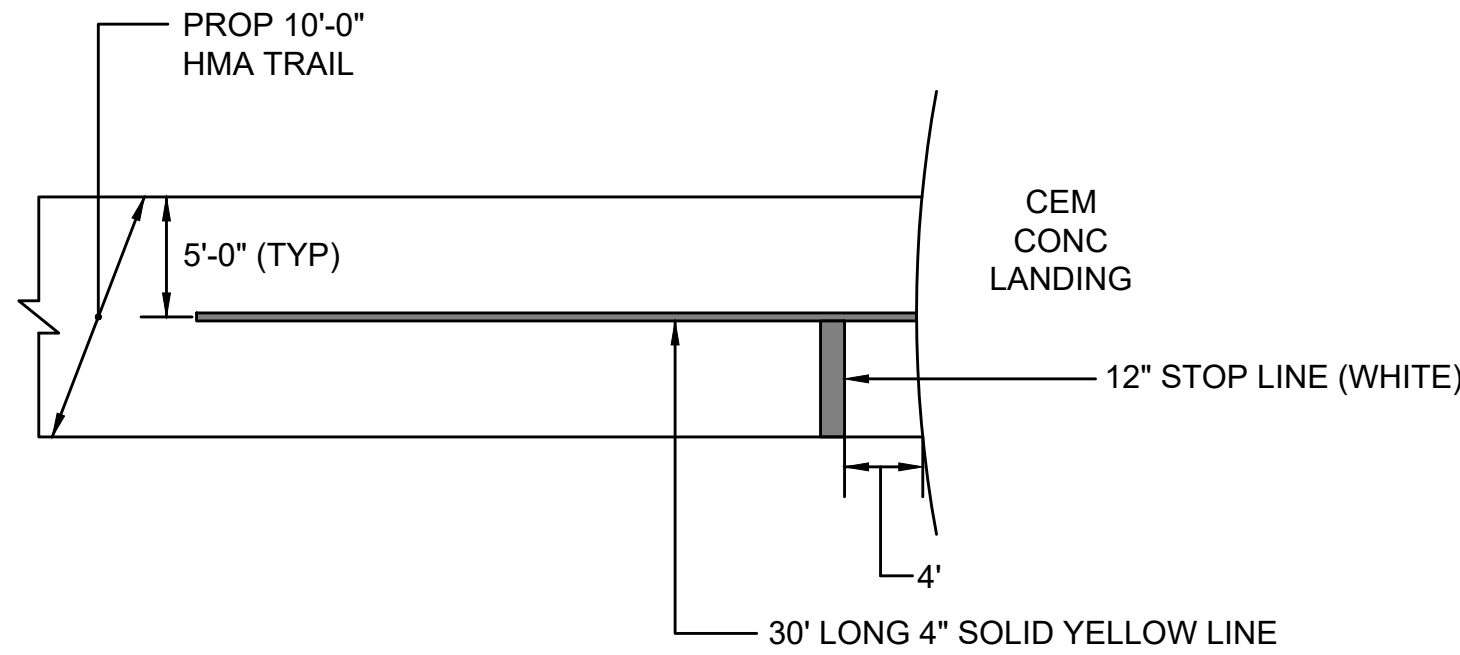
- NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
 2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
 3. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
 4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
 5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
 6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

12" COMPOST FILTER TUBE DETAILS
NOT TO SCALE

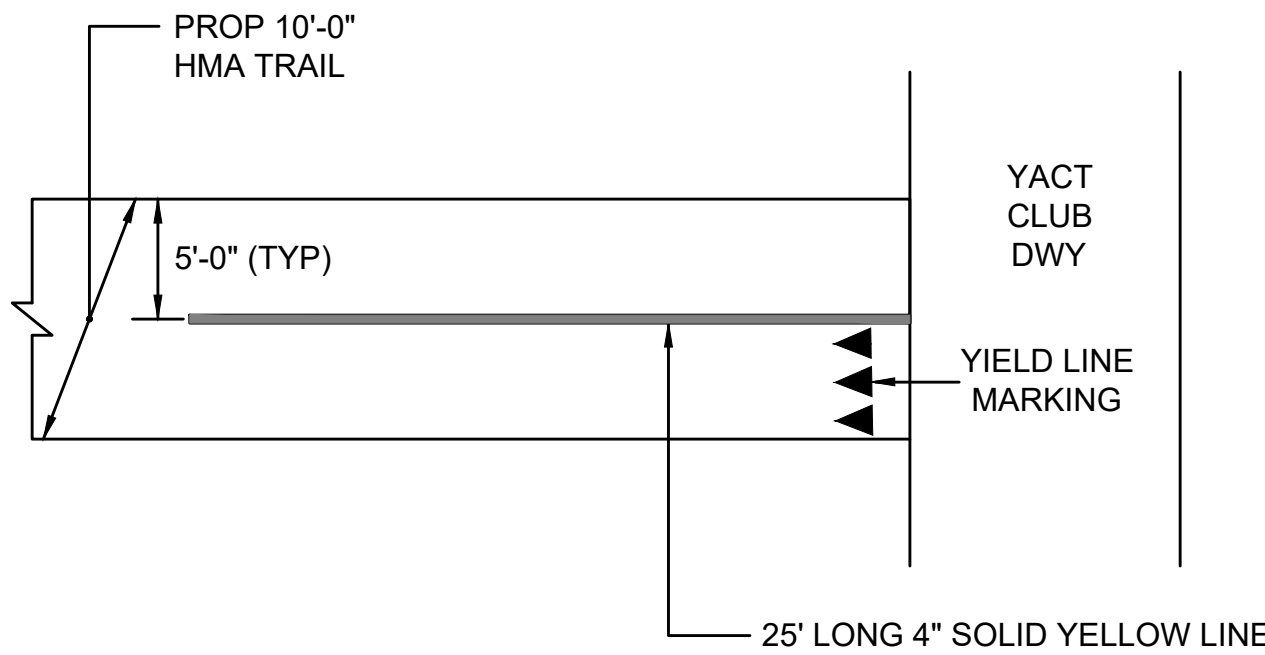


TREE PROTECTION - EXISTING TREE(S)
NOT TO SCALE

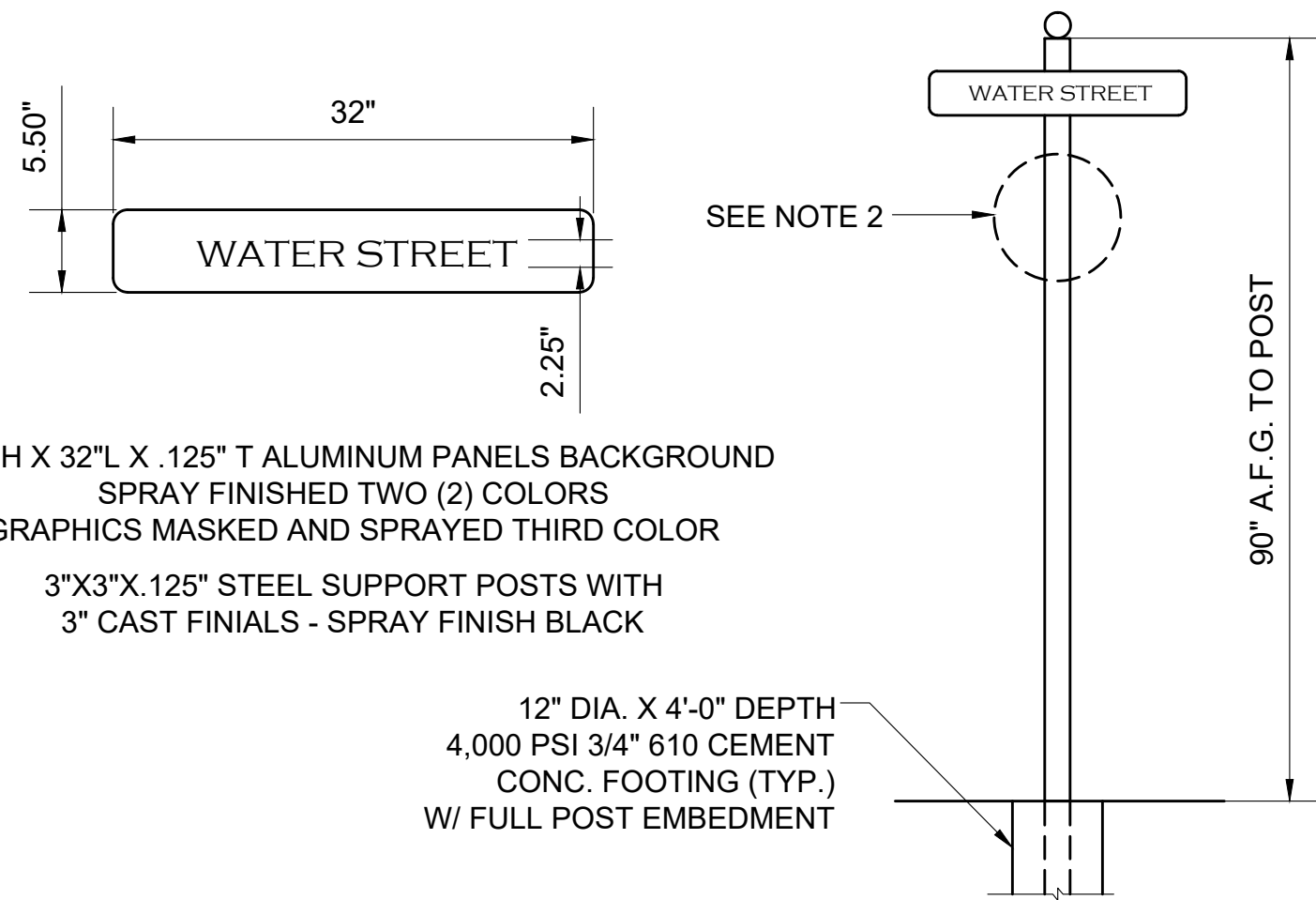
STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	32	35
STANTEC PROJECT NO. 210800843			



WATER STREET INTERSECTION DETAIL
NOT TO SCALE

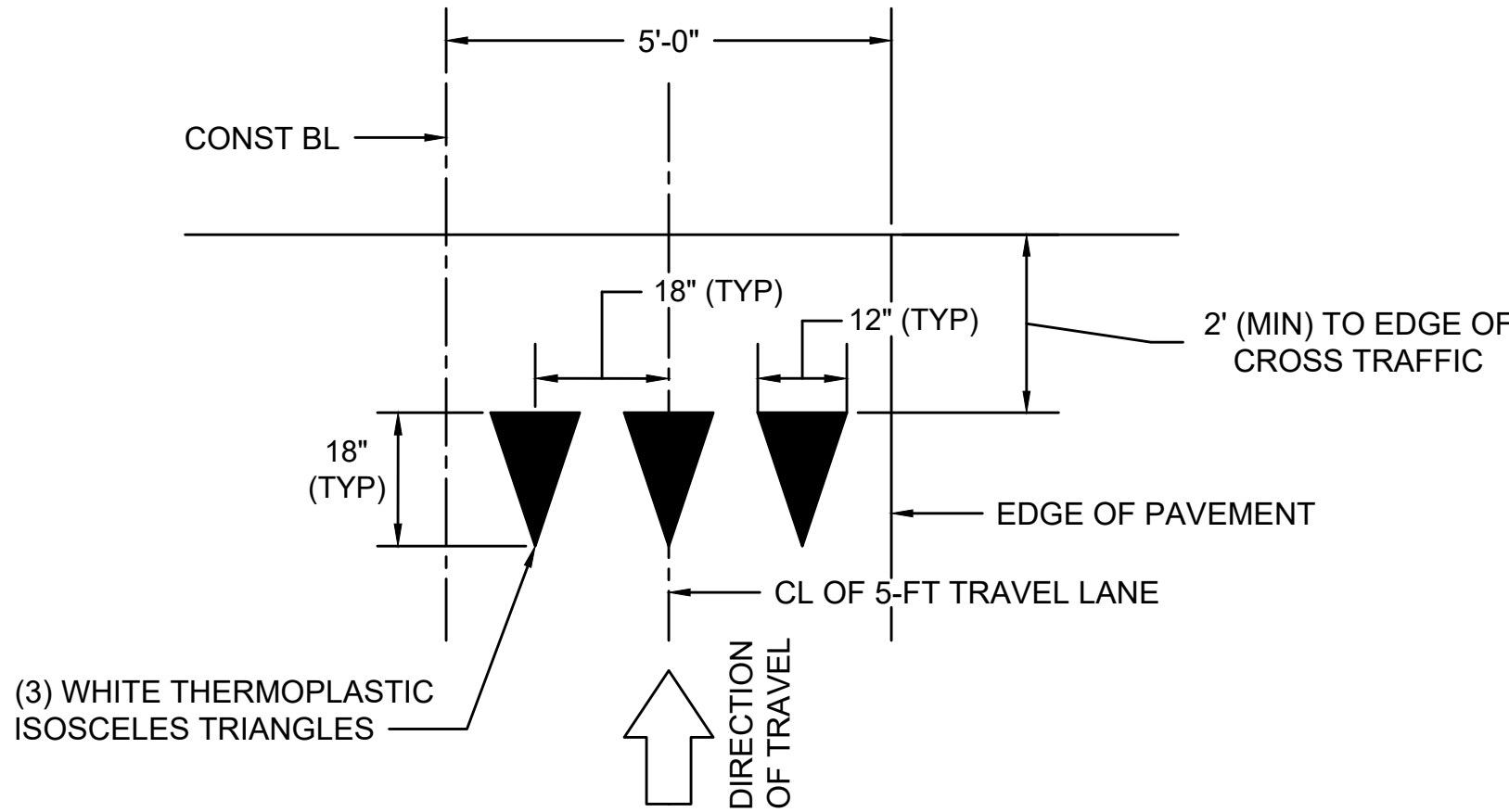


YACHT CLUB DRIVEWAY INTERSECTION DETAIL
NOT TO SCALE



STREET NAME
NOT TO SCALE

- NOTES:
1. REFER TO CONSTRUCTION PLANS FOR LOCATIONS.
 2. INCLUDE R1-1 SIGN ON POSTS WHERE NOTED.



YIELD LINE MARKING
NOT TO SCALE

TRAFFIC SIGN SUMMARY

ID NUMBER	SIZE OF SIGN		UNIT AREA (SF)	TEXT	TEXT DIMENSIONS			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	AREA (SF)
	WIDTH	HEIGHT			LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER		
R1-1	18"	18"	2.25	STOP	2009 MUTCD	2009 MUTCD	2009 MUTCD	1	RED	WHITE	WHITE	MOUNT ON 3"x3" W/ SP-5	2.25
R5-3	24"	24"	4.00	NO MOTOR VEHICLES				1	WHITE	BLACK	BLACK	MOUNT ON 3"x3" W/ SP-5	4.00

STREET SIGN SUMMARY

ID NUMBER	SIZE OF SIGN		UNIT AREA (SF)	TEXT	TEXT DIMENSIONS			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	AREA (SF)
	WIDTH	HEIGHT			LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER		
SP-5j	32"	5.50"	1.23	Water Street	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	1	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	3"x3" W/ FINAL (1)	1.23
SP-5k (PBS)	32"	5.50"	1.23	To Water Street	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	1	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	SEE STREET NAME DETAIL	3"x3" W/ FINAL (1)	1.23

NOTE:
ALL STOP AND SIGNS, PROPOSED IN THIS CONTRACT, ARE SUBJECT TO APPROVAL BY THE CITY OF NEWBURYPORT BEFORE INSTALLATION.

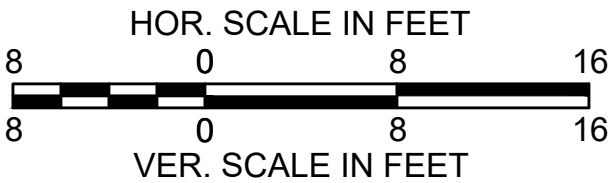
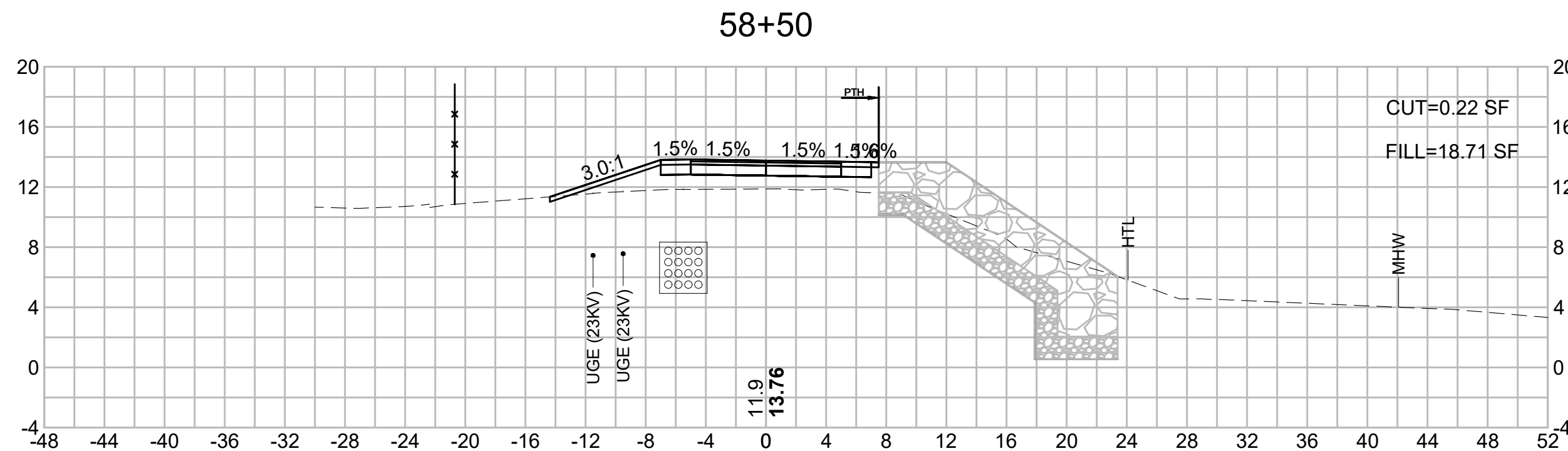
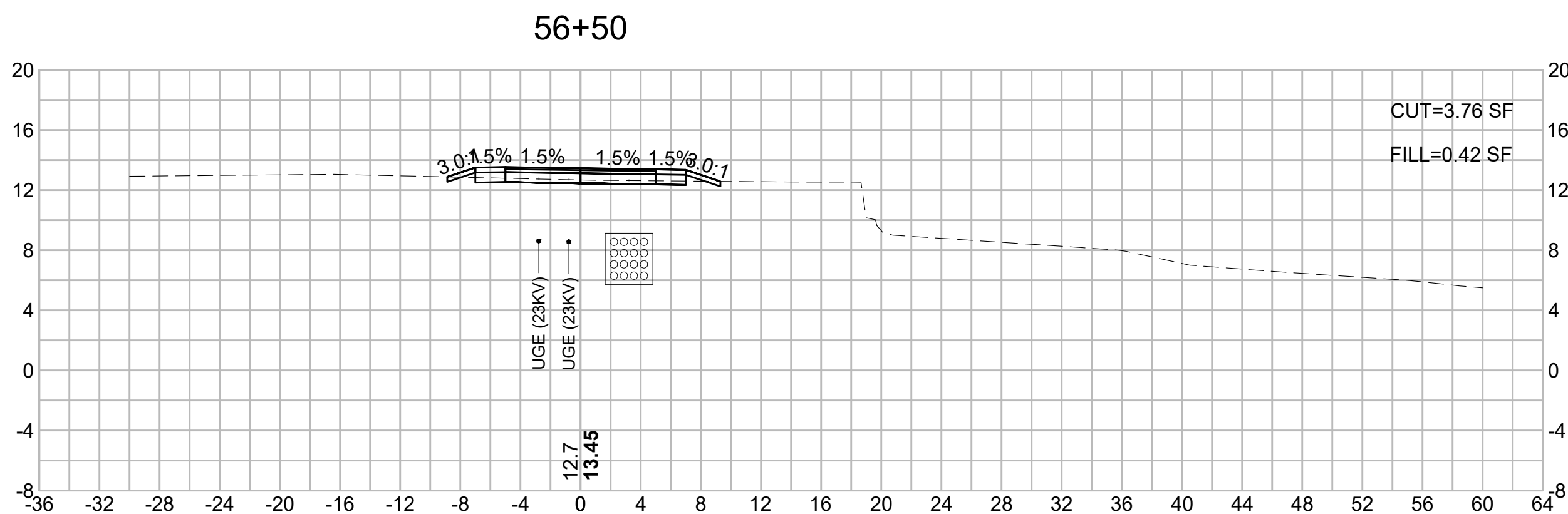
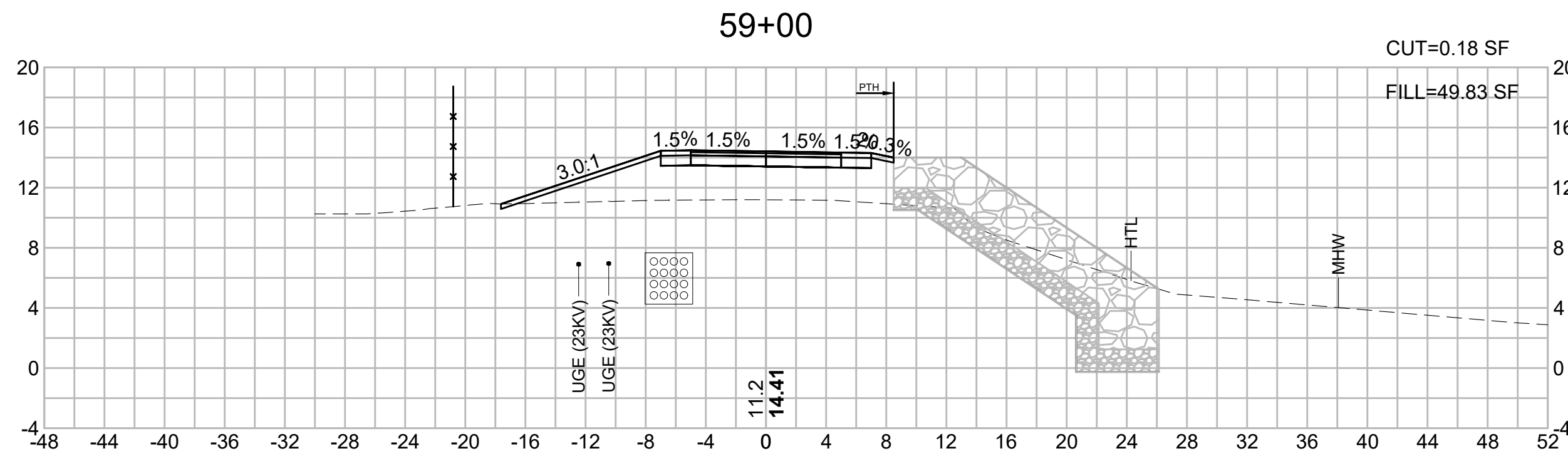
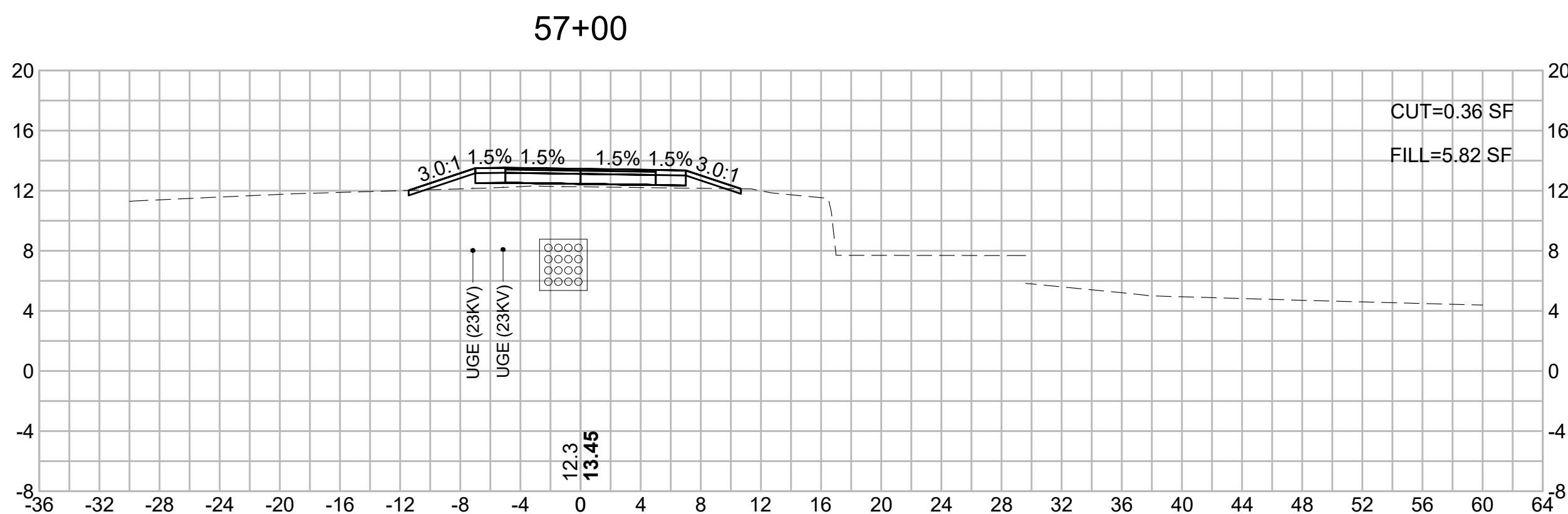
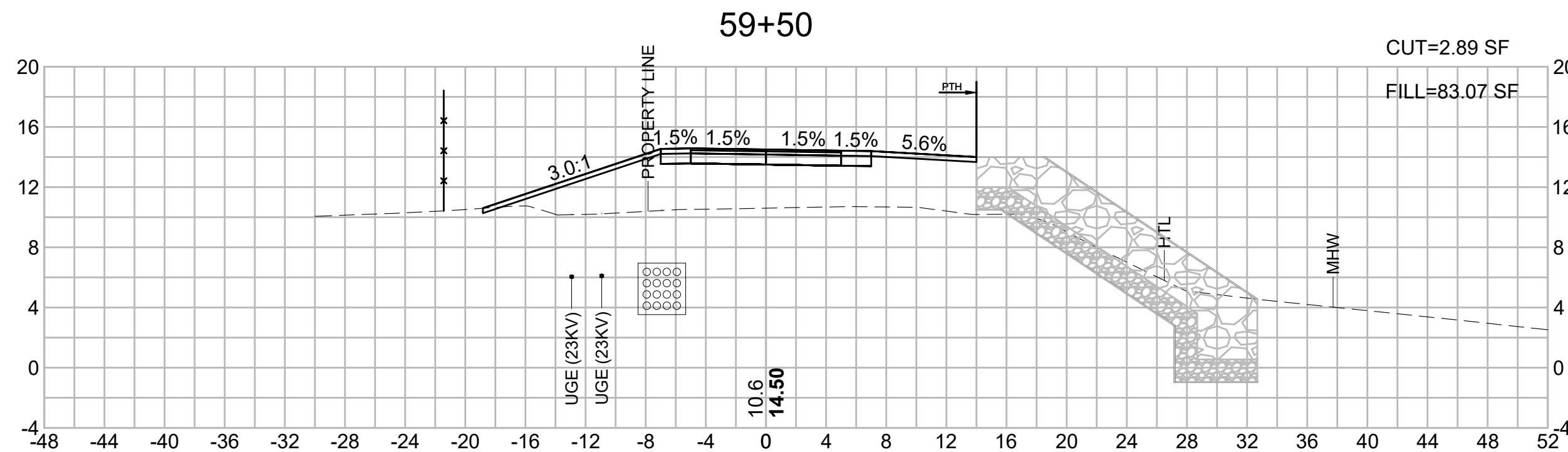
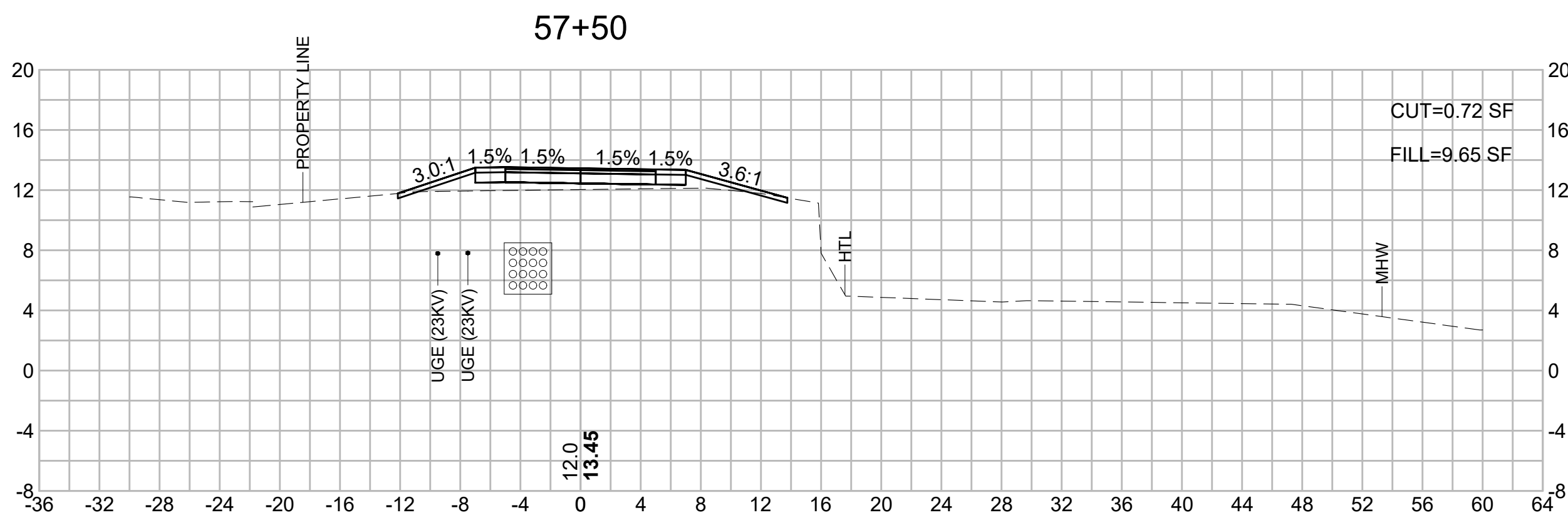
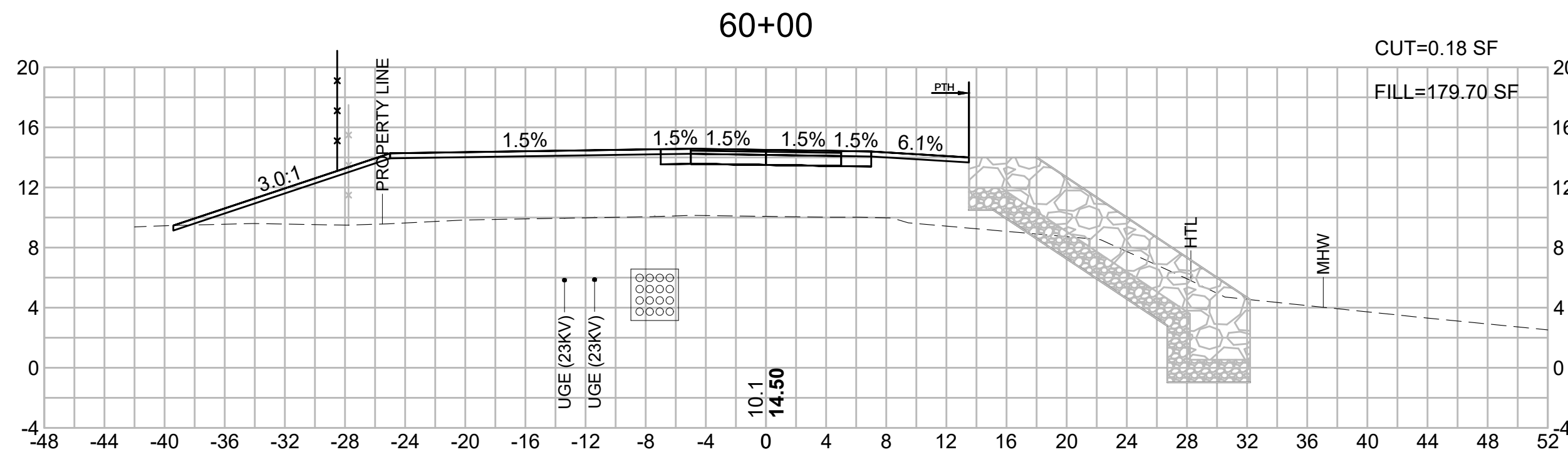
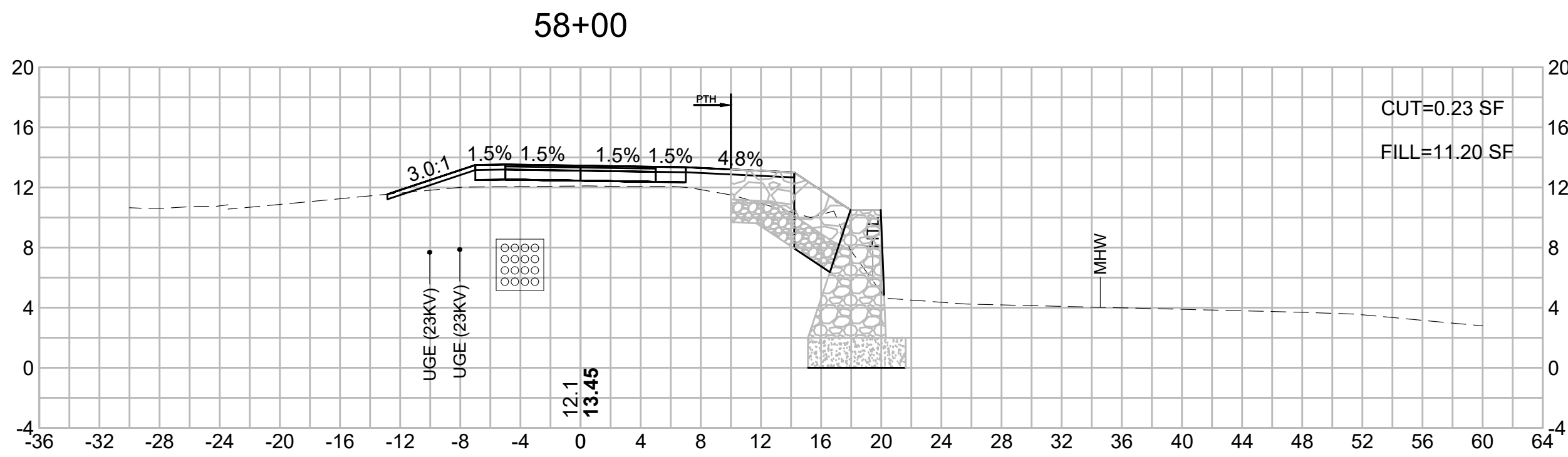
PBS = PRINT BOTH SIDES

NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	33	35
STANTEC PROJECT NO. 210800843			

RAIL TRAIL CROSS SECTIONS
PART 1 OF 3

NOTE: FOR SHORELINE STABILIZATION CROSS SECTIONS SEE SHEETS 11 - 16.

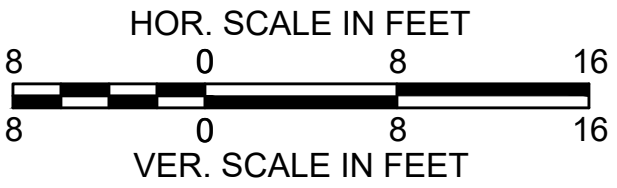
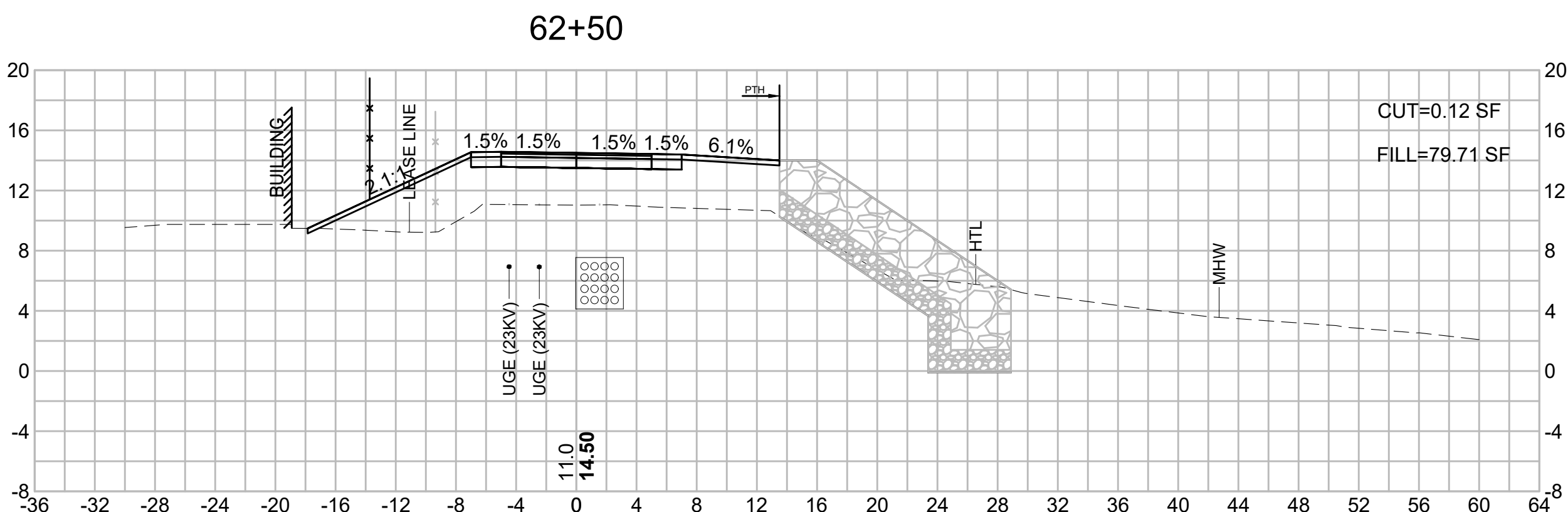
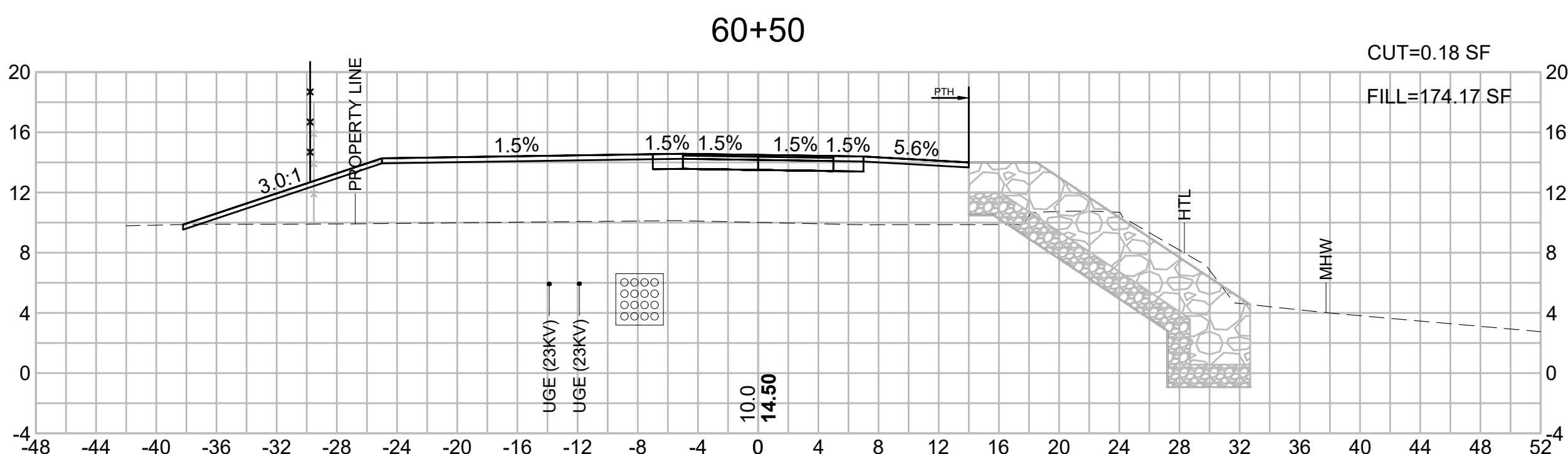
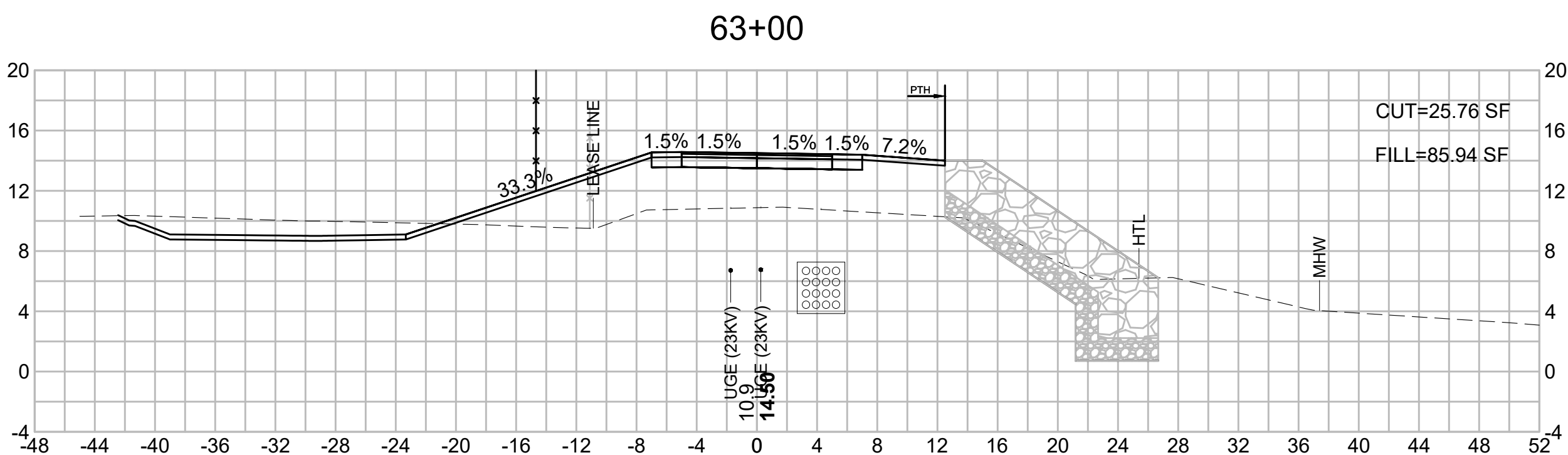
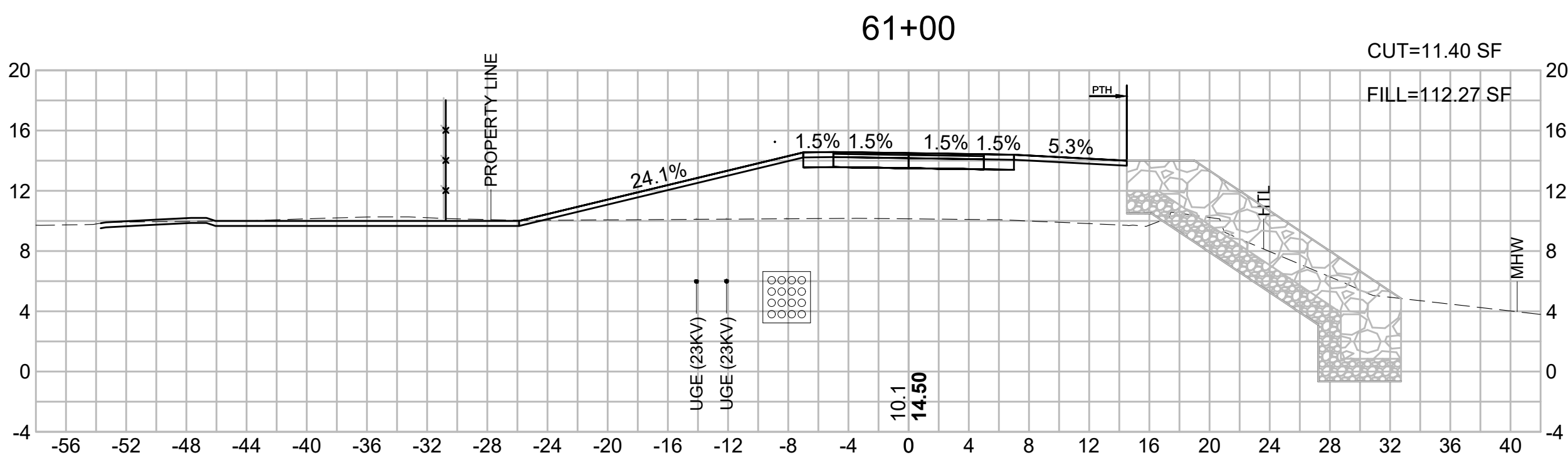
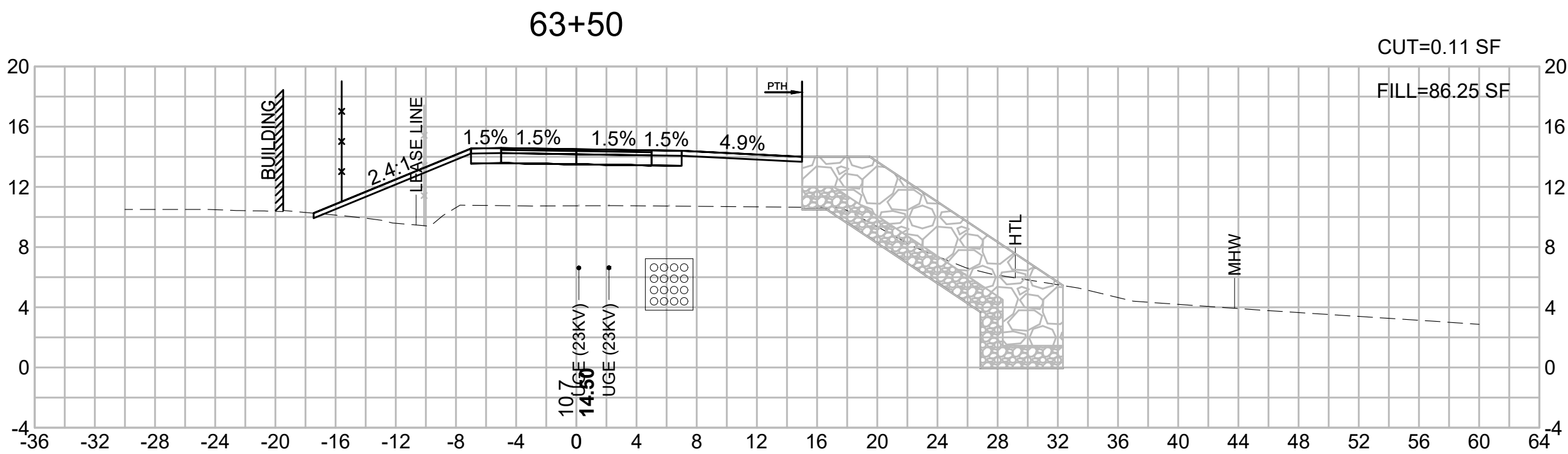
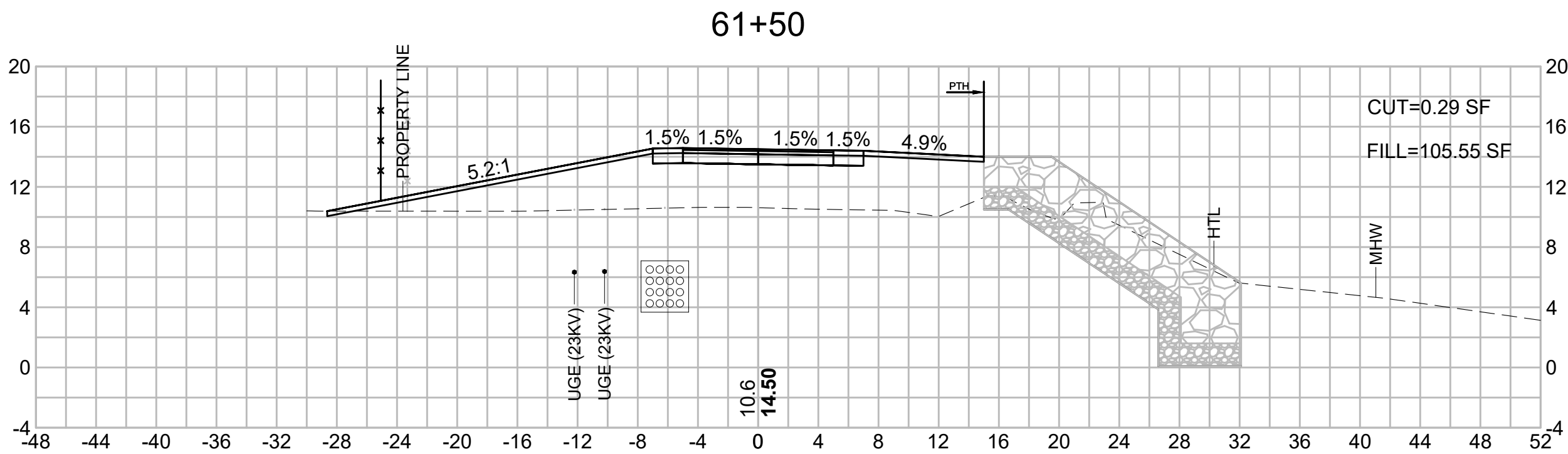
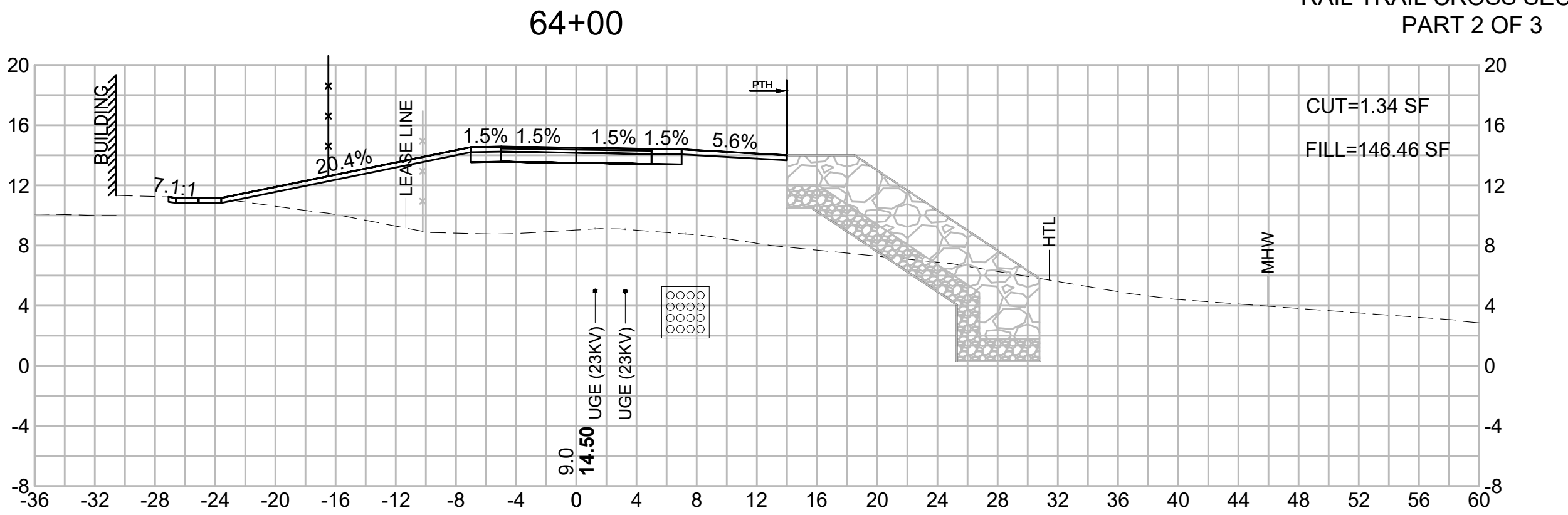
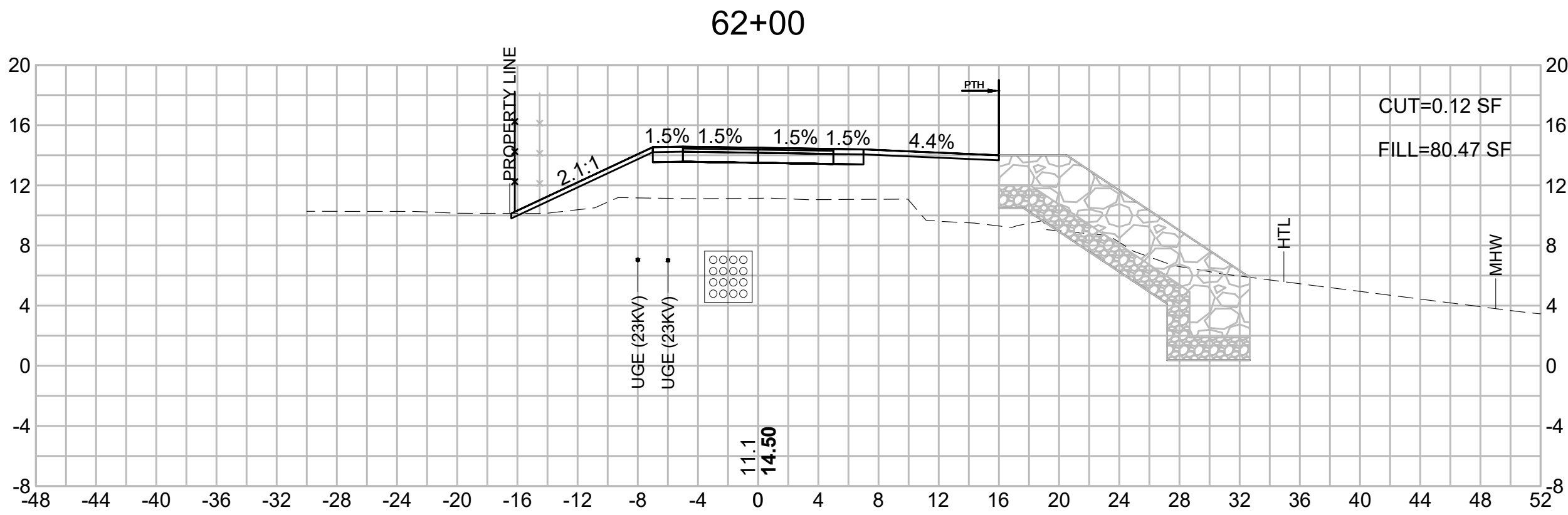


NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	34	35
STANTEC PROJECT NO. 210800843			

RAIL TRAIL CROSS SECTIONS
PART 2 OF 3

NOTE: FOR SHORELINE STABILIZATION CROSS SECTIONS SEE SHEETS 11 - 16.



NEWBURYPORT
SHORELINE RESILIENCY: CRITICAL INFRASTRUCTURE
PROTECTION AND CLIPPER CITY RAIL TRAIL PROJECT

STATE	MUNICIPALITY	SHEET NO.	TOTAL SHEETS
MA	NEWBURYPORT	35	35
STANTEC PROJECT NO. 210800843			

RAIL TRAIL CROSS SECTIONS
PART 3 OF 3

NOTE: FOR SHORELINE STABILIZATION CROSS SECTIONS SEE SHEETS 11 - 16.

