CITY OF WALTHAM

PLAN AND PROFILE OF

WAYSIDE TRAIL

IN THE CITY/TOWN OF

WALTHAM

MIDDLESEX COUNTY

ADVERTISEMENT

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	01	114
PROJECT FILE NO.	17112.00		

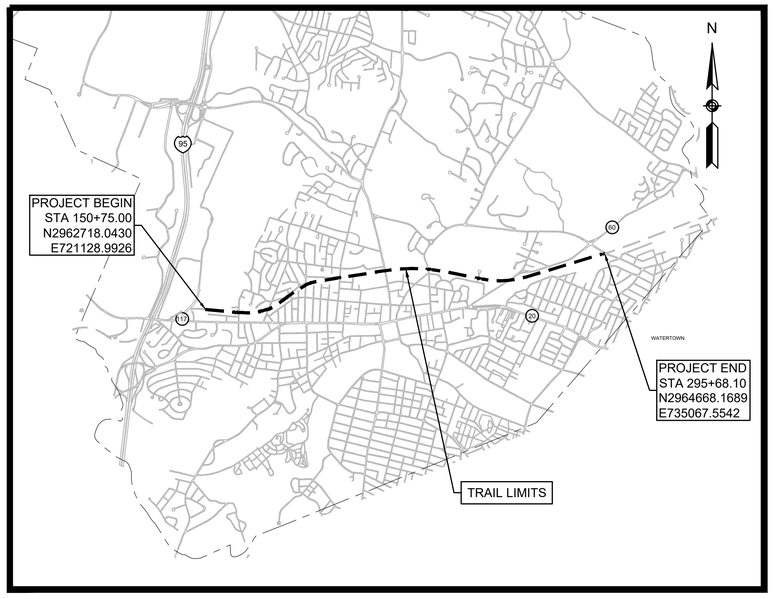
TITLE SHEET AND INDEX

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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.

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0 2,500 5,000 7,500 10,000

SCALE: 1" = 2,500'

LENGTH OF PROJECT = 14,493 FEET = 2.74 MILES

JULY 2021

DESIGN DESIGNATION (WAYSIDE TRAIL)

DESIGN SPEED	18 MPH
ADT (2017)	4,100
ADT (2037)	4,293
K	9%
D	
T (PEAK HOUR)	0%
T (AVERAGE DAY)	0%
DHV	387
DDHV	
FUNCTIONAL CLASSIFICATION	MULTI-USE PATH

DATE	DESCRIPTION	REV #

COMMONWEALTH OF MASSACHUSETTS
7/28/21
AMY J. ARCHER
CIVIL
No. 50439
REGISTERED PROFESSIONAL ENGINEER

FOR SHEETS
01 TO 33, 44 TO 55,
AND 85 TO 114

COMMONWEALTH OF MASSACHUSETTS
Gregory N. Bedrosian
Structural
No. 40820
REGISTERED PROFESSIONAL ENGINEER
7/28/2021

FOR SHEETS
56TO 61 AND 80 TO 84

PARE
PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

INCORPORATED A TOWN 1738 · WALTHAM · INCORPORATED A CITY 1884

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

CITY OF WALTHAM MAYOR **DATE**

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
99		CONTOURS (ON-THE-GROUND SURVEY DATA)
99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		EDGE OF PAVEMENT
		TOP OR BOTTOM OF SLOPE / LIMIT OF WORK / COMPOST FILTER SOCK (UNLESS NOTED OTHERWISE ON PLANS)
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		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
		WETLAND FLAG
		WETLAND EDGE
		REMOVE TREE
		TREE PROTECTION

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE - 12"
		CROSSWALK (SEE DETAIL)
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE (3-9-3)
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

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	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CFS	COMPOST FILTER SOCK
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
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
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
PVMT	PAVEMENT
PWW	PAVED WATER WAY

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	02	114
PROJECT FILE NO.	17112.00		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WCR	WHEEL CHAIR RAMP
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL ABBREVIATIONS

CAB	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY UPRAISED HAND
FDW	FLASHING UPRAISED HAND
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
FYL	FLASHING YELLOW LEFT ARROW
FYR	FLASHING YELLOW RIGHT 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
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALKING PERSON
Y	STEADY CIRCULAR YELLOW
YL	STEADY YELLOW LEFT ARROW

Plotted on 26-Jul-2021 12:21 PM
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REFERENCE

1. PROJECT LOCATION: MASSACHUSETTS CENTRAL RAILROAD RIGHT-OF-WAY, CITY OF WALTHAM.
2. PROJECT SURVEY COMPLETED BY WHITMAN & BINGHAM ASSOCIATES, LLC, DATED MARCH 2018. UTILITY LOCATIONS BASED ON AVAILABLE PLANS.
3. WETLANDS AND RESOURCE AREAS WERE DELINEATED BY PARE CORPORATION IN OCTOBER 2017. WETLAND FLAGS WERE LOCATED BY WHITMAN & BINGHAM.
4. VERTICAL DATUM IS NAVD 88. HORIZONTAL DATUM IS MASSACHUSETTS STATE PLANE.
5. EXISTING UTILITIES, SIZES, AND ELEVATIONS WERE COMPILED FROM THE CITY OF WALTHAM'S GIS MAPS ONLINE, MOST RECENTLY ACCESSED ON AUGUST 21, 2018.

GENERAL NOTES

1. THE CONTRACTOR SHALL MAKE ALL NECESSARY CONSTRUCTION NOTIFICATIONS, AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS, AND COORDINATE WITH THE ENGINEER AND OWNER'S REPRESENTATIVE AS REQUIRED.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY. THE CONTRACTOR SHALL PROVIDE TEMPORARY FENCING AND/OR BARRIERS AROUND ALL OPEN EXCAVATED AREAS IN ACCORDANCE WITH OSHA STANDARDS.
3. IF ANY DEVIATION OR ALTERATION OF THE WORK PROPOSED ON THESE DRAWINGS IS REQUIRED, THE CONTRACTOR IS TO IMMEDIATELY CONTACT AND COORDINATE WITH THE ENGINEER AND OWNER'S REPRESENTATIVE.
4. ANY AREA OUTSIDE OF THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.
5. ALL SITE WORK SHALL MEET OR EXCEED THE SITE WORK SPECIFICATIONS PREPARED FOR THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED.
6. ALL UTILITIES (LOCATION & ELEVATION) SHOWN SHALL BE CONSIDERED APPROXIMATE ONLY. BEFORE COMMENCING SITE WORK IN ANY AREA, CONTACT "DIG SAFE" AT 1-888-344-7233 AND CITY OF WALTHAM TO ACCURATELY LOCATE UNDERGROUND UTILITIES. ANY DAMAGE TO EXISTING UTILITIES OR STRUCTURES, AND THE COST TO REPAIR THE DAMAGES TO INITIAL CONDITIONS AS SHOWN ON THE PLANS, SHALL BE THE CONTRACTOR'S RESPONSIBILITY. NO EXCAVATION SHALL BE DONE UNTIL UTILITY COMPANIES ARE PROPERLY NOTIFIED.
7. ANY DAMAGE TO EXISTING PAVEMENT, BRIDGES, CONDUIT, SIDEWALK, FENCES, ETC., CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
8. THE CONTRACTOR SHALL PLACE ALL EQUIPMENT AND MATERIAL AS FAR AWAY AS POSSIBLE FROM THE EDGE OF THE ROADWAY TRAVEL LANES SO AS NOT TO CAUSE A SAFETY HAZARD.
9. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL EMPLOY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF MASSACHUSETTS TO ESTABLISH CONTROL ON THE SITE AND PERFORM FIELD MEASUREMENTS AS REQUIRED TO LAYOUT THE PROPOSED SITE IMPROVEMENTS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE EXISTING CONDITIONS ARE NOT OBLITERATED BEFORE CONTROL POINTS ARE LOCATED AND CONSTRUCTION LAYOUT IS ESTABLISHED. THE CONSTRUCTION LAYOUT SHALL BE PROVIDED IN SUFFICIENT DETAIL, THEREBY ENABLING THE CONTRACTOR TO CONSTRUCT THE PROJECT IN CONFORMITY WITH THE PLANS AND SPECIFICATIONS. SURVEY WILL BE PROVIDED BY THE CONTRACTOR. THE OWNER OR OWNER'S REPRESENTATIVE SHALL NOT AUTHORIZE CONSTRUCTION ACTIVITIES TO BEGIN UNTIL THEY ARE SATISFIED THAT ALL GROUND CONTROL HAS BEEN ESTABLISHED, TIED DOWN, AND DULY RECORDED IN STANDARD FIELD BOOKS.
11. ALL SIDEWALK AND DRIVEWAYS DESIGNATED FOR REPLACEMENT SHALL BE CUT AND MATCHED AT LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
12. THE LIMITS OF CLEARING AND SURFACE DISTURBANCE MUST BE STRICTLY ADHERED TO IN ALL AREAS. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING AND PLACING, AT HIS OWN EXPENSE, PLANTABLE SOIL AND SEED IN AREAS WHICH ARE OUTSIDE OF THE PROJECT'S AREAS OF DISTURBANCE AND WHICH ARE IMPACTED BY CONSTRUCTION OPERATIONS INCLUDING THOSE AREAS WHERE VEHICLES, EQUIPMENT AND MATERIALS ARE STORED.
13. UNDER NO CIRCUMSTANCE WILL THE CONTRACTOR BE ALLOWED TO STOCKPILE REMOVED PAVEMENT MATERIALS WITHIN THE PROJECT LIMITS.
14. CLEANING AND SWEEPING OF PAVEMENT WILL INCLUDE REMOVAL OF ALL PAVEMENT DEBRIS PRIOR TO THE PLACEMENT OF EACH BITUMINOUS PAVEMENT LIFT. ALL CLEANING AND SWEEPING SHALL BE DONE TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE.
15. PRIOR TO INSTALLATION, ALL SIGNS, MOUNTINGS AND LOCATIONS SHALL BE APPROVED OR MODIFIED BY OWNER OR OWNER'S REPRESENTATIVE.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL ROADWAYS FREE OF DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS. ALL DEBRIS SHALL BE REMOVED TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
17. NO FUEL STORAGE, VEHICLE REFUELING, OR EQUIPMENT STORAGE SHALL TAKE PLACE IN DESIGNATED WETLANDS, WETLANDS BUFFER ZONES, NOR WITHIN 100' OF ANY WATER BODY. THIS REQUIREMENT SHALL NOT SUPERSEDE ANY FEDERAL, STATE OR LOCAL LAW, ORDINANCE, RULE OR REGULATION THAT APPLIES TO THE SAME, UNLESS THIS REQUIREMENT IS MORE STRINGENT THAN SAID LAW, ORDINANCE, RULE OR REGULATION.
18. ALL EMBANKMENTS SHALL BE PLACED IN HORIZONTAL LAYERS NOT EXCEEDING 12" (AFTER COMPACTION) AND SHALL BE COMPACTED AS SPECIFIED BEFORE THE NEXT LAYER IS PLACED.
19. THE CONTRACTOR SHALL COMPACT ALL MATERIALS USED FOR SUBBASE BACKFILL IN MAXIMUM SIX-INCH LAYERS.
20. FOLLOWING CONSTRUCTION OF QPA'S, CONSTRUCTION VEHICLES OR EQUIPMENT SHALL NOT BE PLACED OR DRIVEN OVER QPA'S. COMPACTION OF THESE AREAS IS PROHIBITED. ANY QPA'S DISTURBED BY VEHICLES OR EQUIPMENT SHALL BE RECONSTRUCTED AT NO ADDITIONAL EXPENSE TO THE OWNER. REFER TO QPA DETAILS FOR SUBGRADE PREPARATION.

LAYOUT NOTES

1. ALL LINES ARE PERPENDICULAR OR PARALLEL TO THE LINES FROM WHICH THEY ARE MEASURED, UNLESS OTHERWISE INDICATED.
2. ACCESSIBLE RAMPS SHALL BE CONSTRUCTED PER THE AMERICANS WITH DISABILITIES ACT (ADA) ACCESSIBILITY GUIDELINES, LATEST REVISION.
3. CONTRACTOR TO PERFORM BENCHMARK FIELD LEVEL VERIFICATION AND COORDINATE LAYOUT CHECK PRIOR TO CONSTRUCTION. CONTRACTOR SHALL CONTACT PARE CORPORATION IF ANY DISCREPANCIES ARE FOUND.

DEMOLITION NOTES

1. ALL NOTED ITEMS TO BE REMOVED AND DISPOSED, RELOCATED, OR STACKED REPRESENT ALL KNOWN SITE CONDITIONS TO BE DEMOLISHED. CONTRACTOR TO COORDINATE ANY UNFORESEEN CONDITIONS WITH THE PROJECT ENGINEER, OWNER, AND/OR RESPECTIVE UTILITY COMPANIES PRIOR TO PROCEEDING WITH THE WORK.
2. REMOVAL OF EXISTING RAIL INCLUDES RAILS, TIES AND APPURTENANCES UNLESS OTHERWISE NOTED OR IDENTIFIED BY THE CITY.
3. WATER, SEWER, DRAINAGE, GAS, AND OTHER SITE UTILITIES SERVICING THE EXISTING FACILITIES ARE TO REMAIN ACTIVE THROUGHOUT CONSTRUCTION.
4. THERE SHALL BE NO INTERRUPTION OF UTILITY SERVICE THROUGHOUT THE DURATION OF CONSTRUCTION WITHOUT WRITTEN APPROVAL FROM THE OWNER.
5. ALL EXISTING CATCH BASINS TO REMAIN SHALL BE CLEANED PRIOR TO COMMENCING WORK.

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE CONTRACTOR AND RELEVANT SUBCONTRACTORS SHALL READ AND UNDERSTAND THE RIDEM FRESHWATER WETLANDS PERMIT, THE NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY (GENERAL PERMIT) AND THE SITE SPECIFIC SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC) PREPARED FOR THE PROJECT. ALL EROSION CONTROLS SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS EROSION AND SEDIMENT CONTROL HANDBOOK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING OR INSTALLING ALL TEMPORARY SEDIMENT AND EROSION CONTROLS AS SHOWN ON THESE PLANS AND SHALL MAINTAIN ALL EROSION CONTROL MEASURES AS NECESSARY DURING THE ENTIRE CONSTRUCTION PERIOD.
3. ANTI-TRACKING PADS SHALL BE PROVIDED AT ALL POINTS OF EGRESS OR INGRESS, PRIOR TO ANY ROADWAY ACCEPTING CONSTRUCTION TRAFFIC, AND SHALL BE MAINTAINED TO LIMIT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS.
4. EROSION CONTROL BARRIERS SHALL BE INSTALLED AS SHOWN ON THE PLANS PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS.
5. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A WEEKLY BASIS AND AFTER EACH STORM EVENT OF 0.25 INCH OR GREATER DURING CONSTRUCTION TO ENSURE THAT CHANNELS, DITCHES AND PIPES ARE CLEAR OF DEBRIS AND THAT THE EROSION CONTROL BARRIERS ARE INTACT. THE CONTRACTOR SHALL CORRECT IDENTIFIED DEFICIENCIES IMMEDIATELY.
6. DUST SHALL BE CONTROLLED BY WATERING OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
7. THE CONTRACTOR SHALL CLEAN AND MAINTAIN EROSION CONTROL BARRIER WHEN SEDIMENT ACCUMULATES TO ONE HALF THE HEIGHT OF THE BARRIER. MATERIAL COLLECTED FROM THE SEDIMENTATION BARRIERS SHALL BE REMOVED AS NECESSARY AND DISPOSED IN AN UPLAND AREA.
8. THE CONTRACTOR SHALL SCHEDULE THE CONSTRUCTION SEQUENCE TO ALLOW THE FINISHED SUBGRADE ELEVATIONS TO DRAIN PROPERLY WITHOUT PONDING. SPECIFICALLY, ALLOW WATER TO ESCAPE WHERE PROPOSED CURB MAY RETAIN RUNOFF PRIOR TO APPLICATION OF SURFACE PAVING. PROVIDE TEMPORARY POSITIVE DRAINAGE, AS REQUIRED, TO STABILIZED DISCHARGE POINTS.
9. INSTALLATION OF THE EROSION CONTROL BARRIERS AS ILLUSTRATED IS INTENDED TO REPRESENT THE MINIMUM SEDIMENTATION CONTROL FACILITIES NECESSARY TO MEET ANTICIPATED SITE CONDITIONS. ADDITIONAL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE AT NO ADDITIONAL COST TO THE OWNER.
10. REQUIRED SEDIMENTATION CONTROL FACILITIES MUST BE PROPERLY ESTABLISHED, CLEARLY VISIBLE AND IN OPERATION PRIOR TO INITIATING ANY LAND CLEARING ACTIVITY AND/OR OTHER CONSTRUCTION RELATED WORK. SUCH FACILITIES SHALL REPRESENT THE LIMIT OF WORK. WORKERS SHALL BE INFORMED THAT NO CONSTRUCTION ACTIVITY IS TO OCCUR BEYOND THE LIMIT OF WORK AT ANY TIME THROUGHOUT THE CONSTRUCTION PERIOD.
11. THE CONTRACTOR SHALL MAINTAIN A SUFFICIENT RESERVE OF VARIOUS EROSION CONTROL MATERIALS ONSITE AT ALL TIMES FOR EMERGENCY PURPOSES OR ROUTINE MAINTENANCE.
12. THE CONTRACTOR SHALL REPLACE DAMAGED EROSION CONTROL AT THE OWNER, OWNER'S REPRESENTATIVE, OR ENGINEER'S REQUEST AT NO ADDITIONAL EXPENSE TO THE OWNER.
13. DEWATERING WASTE WATERS PUMPED FROM EXCAVATIONS WILL BE CONVEYED BY HOSE TO AN UPLAND AREA AND DISCHARGED INTO A DEWATERING BAG. THE CONTRACTOR IS RESPONSIBLE FOR ALL ENGINEERING, EQUIPMENT, MATERIAL, AND LABOR REQUIRED FOR SITE WATER REMOVAL DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL NOT REMOVE ANY HAYBALES, COMPOST FILTER SOCKS, OR OTHER EROSION CONTROLS UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
15. CONSTRUCTION SITE WASTE MATERIALS WILL BE PROPERLY CONTAINED ONSITE AND DISPOSED OFF SITE AT A LOCATION IN ACCORDANCE WITH THE LOCAL AND STATE REGULATIONS.
16. RIP-RAP OR OTHER ENERGY DISSIPATERS WILL BE USED WHERE NECESSARY TO PREVENT SCOUR.
17. THE CONTRACTOR SHALL NOT LEAVE DISTURBED AREAS UNSTABILIZED FOR PERIODS MORE THAN 14 DAYS. PROVIDE TEMPORARY SEED OR MULCH ON DISTURBED AREAS THAT WILL REMAIN EXPOSED FOR GREATER THAN 14 DAYS.
18. ALL DRAINAGE STRUCTURES SHALL BE CLEARED OF ACCUMULATED SEDIMENT PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
19. NEWLY VEGETATED AREAS SHALL BE MAINTAINED REGULARLY TO ENSURE STABLE VEGETATED SURFACES.
20. EROSION AND SEDIMENTATION CONTROLS WILL BE UTILIZED AS SHOWN ON THE PLANS. POTENTIAL EROSION AND SEDIMENTATION PROBLEMS ASSOCIATED WITH THE CONSTRUCTION OF THE PROJECT WILL BE AVOIDED THROUGH THE PROJECT SCHEDULING AND THE USE OF APPROPRIATE STANDARD CONTROLS (MASSACHUSETTS EROSION AND SEDIMENT CONTROL HANDBOOK) AS ILLUSTRATED ON THE PROJECT PLANS.
21. WHERE EROSION CONTROLS ARE NEEDED ON IMPERVIOUS SURFACES, THE CONTRACTOR SHALL PROVIDE SAND BAG EROSION CONTROL BARRIER.
22. TEMPORARY DIVERSION MAY CONSIST OF A DITCH OR SWALE, OR MAY BE ACHIEVED USING WOOD CHIPS, COIR LOGS, OR SIMILAR MATERIALS.
23. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN SILT SACKS IN ALL EXISTING AND NEWLY INSTALLED CATCH BASINS UNTIL THE UPSTREAM AREA IS STABILIZED.

ELECTRICAL NOTES

1. PVC ELECTRICAL CONDUIT TO BE INSTALLED THE LENGTH OF THE TRAIL FOR POTENTIAL FUTURE LIGHTING.
2. HANDHOLES TO BE INSTALLED ALONG CONDUIT AT 200-FOOT SPACINGS.
3. PULL STRINGS SHALL BE INCLUDED TO FACILITATE FUTURE INSTALLATION.

CONSTRUCTION METHODS

1. CONSTRUCTION OF THE TRAIL SHALL BE EXECUTED WITH MINIMALLY INVASIVE METHODS.
2. LIMITS OF DISTURBANCE SHALL BE ADHERED TO TO THE EXTENT POSSIBLE TO MAINTAIN EXISTING TREE STANDS BETWEEN THE TRAIL AND ABUTTING PROPERTIES.
3. CONSTRUCTION VEHICLES SHALL BE LIMITED TO A LOADING EQUIVALENT TO A H-10 TRUCK ON BRIDGE NO. 114 (TIMBER BRIDGE), BRIDGE NO. 113 (LINDEN BRIDGE), & BRIDGE NO. 8.76 (TIMBER CULVERT - STA. 287+59). THE TIMBER ACCESS RAMP AT LINDEN STREET HAS BEEN DESIGNED BASED ON PEDESTRIAN LIVE LOAD (90 PSF) ONLY.

GRADING AND UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK WHICH WOULD BE AFFECTED. NO FIELD ADJUSTMENTS IN THE LOCATION OF SITE ELEMENTS SHALL BE MADE WITHOUT THE ENGINEER'S APPROVAL.
2. ALL WORK PERFORMED AND ALL MATERIALS FURNISHED SHALL CONFORM WITH THE LINES AND GRADES ON THE PLANS AND THE SITE WORK SPECIFICATIONS.
3. AT ALL LOCATIONS WHERE EXISTING CURBING OR PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAWCUT TO A CLEAN, SMOOTH EDGE. BLEND NEW PAVEMENT AND CURBS SMOOTHLY INTO EXISTING BY MATCHING LINES, GRADES, AND JOINTS.
4. ALL UTILITY COVERS, GRATES, ETC. SHALL BE ADJUSTED TO BE FLUSH WITH THE SURROUNDING SURFACE OR PAVEMENT FINISH GRADE. RIM ELEVATIONS OF STRUCTURES AND MANHOLES ARE APPROXIMATE. FINAL ELEVATIONS ARE TO BE SET FLUSH AND CONSISTENT WITH THE GRADING PLANS.
5. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION OF PRIVATE UTILITIES BY THE UTILITY COMPANIES, AS REQUIRED.
6. 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.
7. THE CONTRACTOR SHALL PROTECT ALL UNDERGROUND UTILITIES FROM EXCESSIVE VEHICULAR LOADS DURING CONSTRUCTION. ANY DAMAGE TO THESE UTILITIES RESULTING FROM CONSTRUCTION LOADS WILL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
8. DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY PROVIDING TEMPORARY SUPPORTS OR SHEETING AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
9. EXCAVATION REQUIRED WITHIN THE PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO THE OWNER.
10. PITCH EVENLY BETWEEN SPOT GRADES. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MIN. OF 1/8" PER FOOT UNLESS OTHERWISE SPECIFIED.
15. THE CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL ROCK AND BOULDERS UNCOVERED DURING UTILITY INSTALLATION.
16. THE CONTRACTOR IS RESPONSIBLE FOR ALL EQUIPMENT, MATERIALS, AND LABOR REQUIRED TO CLEAN OUT EXISTING CATCH BASINS AND PIPING PRIOR TO COMMENCING WORK.

STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE NOTES

DURING CONSTRUCTION

1. THE CONTRACTOR SHALL REMOVE SEDIMENT AND DEBRIS FROM ALL CATCH BASINS, MANHOLES, AND THE DRAINAGE SYSTEM ON A ROUTINE BASIS, IMMEDIATELY FOLLOWING SITE STABILIZATION, AND PRIOR TO PROJECT COMPLETION AND ACCEPTANCE.
2. THE CLOSED DRAINAGE SYSTEM AND ASSOCIATED STRUCTURES SHALL BE CLEANED AND FLUSHED BY THE CONTRACTOR AT THE COMPLETION OF CONSTRUCTION, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTION AND MAINTENANCE OF THE DRAINAGE SYSTEM UNTIL ACCEPTANCE OF THE SYSTEM BY THE ENGINEER AND THE OWNER. FOLLOWING ACCEPTANCE OF THE PROPOSED DRAINAGE SYSTEM FOR THIS SITE, THE OWNER OF THE SITE SHALL BE RESPONSIBLE FOR THE LONG-TERM INSPECTION AND MAINTENANCE OF THE DRAINAGE SYSTEM.
3. ANY ACCUMULATION OF PONDING WATER IN AREAS WITHIN THE LIMITS OF DISTURBANCE, OTHER THAN DESIGNATED AREAS, SHALL BE REMOVED ACCORDINGLY AND PREVENTED IN THE FUTURE.

FOLLOWING CONSTRUCTION, THE COMPLETION OF THE INSPECTION AND MAINTENANCE REQUIREMTNS BELOW SHALL BE THE RESPONSIBILITY OF THE OWNER.

1. TRASH, LITTER, SEDIMENT AND OTHER DEBRIS SHALL BE REMOVED FROM ANY STORMWATER FACILITY (INCLUDING CATCH BASINS, MANHOLES, AND THE STORMWATER BMP'S) AT LEAST TWICE A YEAR, PREFERABLY SPRING AND FALL.
2. THE SHARED USE PATH SHALL BE SWEPT EVERY SPRING AND FALL TO REMOVE SEDIMENTS.

BIORETENTION AREA INSPECTION, MAINTENANCE, AND REPAIR NOTES

1. ON A MONTHLY BASIS THE SOIL SHALL BE INSPECTED FOR VOID AREAS, TRASH, DEAD VEGETATION, AND OTHER PROBLEMS WITH THE BIORETENTION AREA.
2. ON A MONTHLY BASIS THE SOIL SHALL BE INSPECTED, ERODED AREAS SHALL BE REPAIRED, VOID AREAS SHALL BE REPLACED WITH STONE, AND TRASH AND LITTER SHALL BE REMOVED.
3. THE OWNER SHALL MOW THE GRASS WITHIN THE BIORETENTION AREA AND SEDIMENT FOREBAY MONTHLY.
4. DEAD VEGETATION SHALL BE REMOVED AND REPLACED SEMI-ANNUALLY.
5. OWNER SHALL PRUNE AND RE-MULCH THE BIORETENTION AREA IN SPRING EVERY YEAR.
6. UPON FAILURE, EXCAVATE BIORETENTION AREA, SCARIFY BOTTOM AND SIDES, REPLACE SOIL, REPLANT, AND MULCH.

QUALIFYING PERVIOUS AREA INSPECTION, MAINTENANCE, AND REPAIR NOTES

1. THE QUALIFYING PERVIOUS AREA (QPA) MUST BE INSPECTED TWICE YEARLY, AT A MINIMUM, FOR SEDIMENT , PONDING, EROSION, AND VEGETATION.
2. REMOVE ACCUMULATED SEDIMENT FROM THE QPA IF SEDIMENT EXCEEDS 1".
3. OWNER SHALL REPAIR ANY SLOPES THAT HAVE BEEN DAMAGED DUE TO EROSION OR OTHER MEANS. OWNER SHALL REPLACE ANY VEGETATION THAT HAS DIED OR BEEN DAMAGED.
4. OWNER SHALL MOW GRASS WITHIN THE QPA A MINIMUM OF TWICE ANNUALLY TO MAINTAIN A MINIMUM GRASS HEIGHT OF 6".
5. TRASH AND DEBRIS SHALL BE REMOVED FROM THE QPA AS NECESSARY.
6. THE QPA SHALL NOT BE USED FOR SNOW STORAGE.

DEEP SUMP CATCH BASIN INSPECTION, MAINTENANCE, AND REPAIR NOTES

1. INSPECT OR CLEAN DEEP SUMP BASINS AT LEAST FOUR TIMES PER YEAR. SEDIMENT SHALL BE REMOVED ANNUALLY OR WHEN IT HAS REACHED 24" BELOW THE INVERT.
2. SEDIMENT SHALL BE REMOVED ANNUALLY OR WHEN IT HAS REACHED 24" BELOW THE INVERT.

SEDIMENT FOREBAY INSPECTION, MAINTENANCE, AND REPAIR NOTES

1. THE SEDIMENT FOREBAY SHALL BE INSPECTED MONTHLY.
2. THE SEDIMENT FOREBAYS SHOULD BE CLEANED OF SEDIMENT FOUR TIMES PER YEAR AND WHEN SEDIMENT DEPTH IS GREATER THAN 6".

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	03	114
PROJECT FILE NO.		17112.00	

NOTES

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WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	04	114
PROJECT FILE NO.	17112.00		

KEY PLAN - 1

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CONSTRUCTION PLAN - 1
LANDSCAPE PLAN - 1

CONSTRUCTION PLAN - 2
LANDSCAPE PLAN - 1

CONSTRUCTION PLAN - 3
LANDSCAPE PLAN - 2

CONSTRUCTION PLAN - 4
LANDSCAPE PLAN - 2
STRUCTURAL WALL PLAN - 1

CONSTRUCTION PLAN - 5
LANDSCAPE PLAN - 2

CONSTRUCTION PLAN - 6
LANDSCAPE PLAN - 2

CONSTRUCTION PLAN - 7
LANDSCAPE PLAN - 3
STRUCTURAL WALL PLAN - 3

CONSTRUCTION PLAN - 8
LANDSCAPE PLAN - 3

CONSTRUCTION PLAN - 9
LANDSCAPE PLAN - 3

CONSTRUCTION PLAN - 10
LANDSCAPE PLAN - 3
LANDSCAPE PLAN - 4

CONSTRUCTION PLAN - 11
LANDSCAPE PLAN - 4

CONSTRUCTION PLAN - 12
LANDSCAPE PLAN - 4

CONSTRUCTION PLAN - 13
LANDSCAPE PLAN - 4

CONSTRUCTION PLAN - 14
LANDSCAPE PLAN - 4
LANDSCAPE PLAN - 5

CONSTRUCTION PLAN - 15
LANDSCAPE PLAN - 5

CONSTRUCTION PLAN - 16
LANDSCAPE PLAN - 5

CONSTRUCTION PLAN - 17
LANDSCAPE PLAN - 5
BRIDGE PLAN - 1

CONSTRUCTION PLAN - 18
LANDSCAPE PLAN - 5
BRIDGE PLAN - 6
BRIDGE PLAN - 11

CONTINUED ABOVE

CONTINUED BELOW

CONTINUED ON SHEET NO. 05

EDGE HILL ROAD
HILL ROAD
EDGE HILL ROAD
OVERLAND ROAD
OVERLAND ROAD
MALONE STREET
LINDA STREET
PROSPECT HILL AVENUE
COLUMBUS AVENUE
PALMER STREET
BANKS STREET
WELLINGTON STREET
PROSPECT HILL ROAD
ELSON ROAD
ELSON ROAD
STERLING ROAD
COLUMBUS AVENUE
RICH STREET
HAMMOND STREET
GUINAN STREET
GUINAN STREET
BACON STREET
EMERY STREET
CASTLE STREET
EMERSON ROAD
LEXINGTON STREET
CASTLE STREET
LYMAN STREET
MIDDLESEX CIRCLE
LINDEN STREET

150 155 160 165 170 175 180 185 190 195 200 205 210 205 210 215 220 225 230 235 240 245 250 255 260

0 200 400 600 800

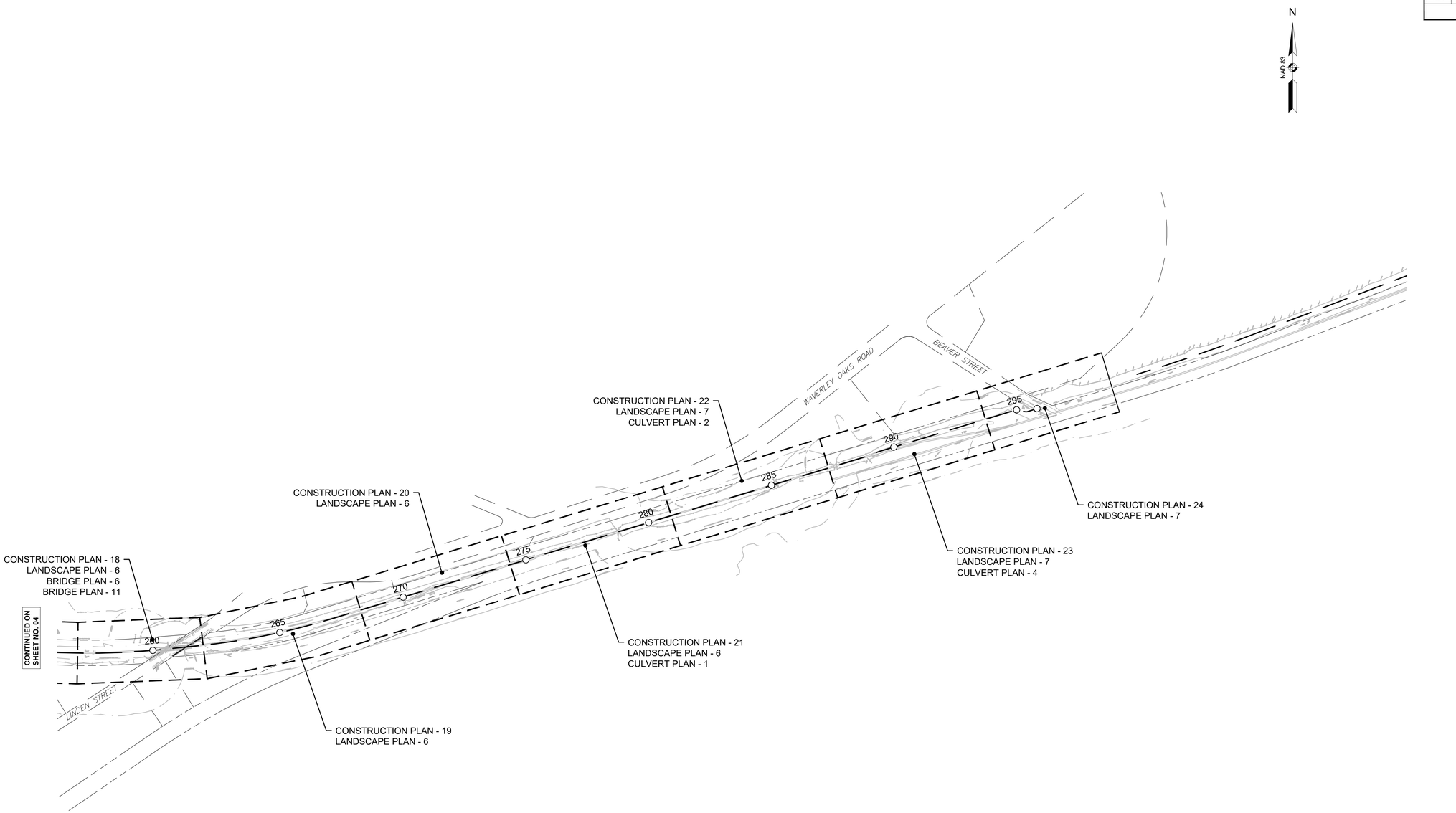
SCALE: 1" = 200'

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WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	05	114
PROJECT FILE NO.	17112.00		

KEY PLAN - 2



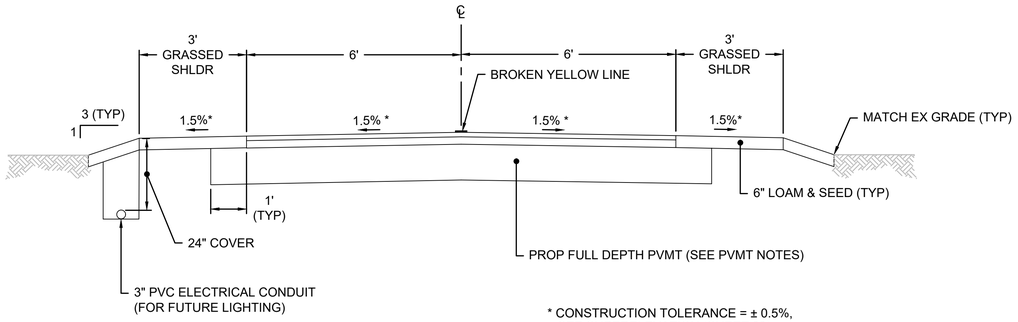
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WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	06	114
PROJECT FILE NO.	17112.00		

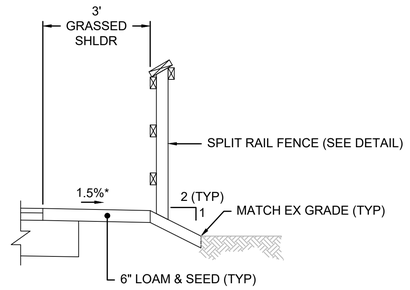
TYPICAL SECTION

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* CONSTRUCTION TOLERANCE = ± 0.5%,
SEE SUPERELEVATION (SHEET 09)

TYPICAL SECTION TRAIL
NOT TO SCALE



TYPICAL SECTION WITH SPLIT RAIL FENCE
NOT TO SCALE

PAVEMENT NOTES

FULL DEPTH CONSTRUCTION

TOP COURSE:	1.5" SUPERPAVE SURFACE COURSE - 9.5
INTERMEDIATE COURSE:	2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0
SUBBASE:	12" GRAVEL BORROW
SUBGRADE	SPECIAL BORROW AS REQUIRED BASED ON EXISTING SUBGRADE MATERIALS

NOTES:

1. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN EACH PAVEMENT COURSE.

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	06	76
PROJECT FILE NO.	XXXXXX		

CONSTRUCTION BASELINE TIES - 1

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PROP WAYSIDE TRAIL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	148+13.04	2962742.021	720868.129		S84°44'53"E 1003.83'	158+16.87	2962650.137	721867.750
C1	158+16.87	2962650.137	721867.750	R=250.00' Δ=3°25'58" L=14.98' T=7.49'		158+31.85	2962648.320	721882.615
L2	158+31.85	2962648.320	721882.615		S81°18'56"E 68.23'	159+00.08	2962638.017	721950.066
C2	159+00.08	2962638.017	721950.066	R=250.00' Δ=3°26'01" L=14.98' T=7.49'		159+15.07	2962636.200	721964.935
L3	159+15.07	2962636.200	721964.935		S84°44'57"E 165.41'	160+80.47	2962621.062	722129.646
C3	160+80.47	2962621.062	722129.646	R=250.00' Δ=5°21'23" L=23.37' T=11.69'		161+03.84	2962620.013	722152.986
L4	161+03.84	2962620.013	722152.986		N89°53'40"E 83.81'	161+87.66	2962620.168	722236.797
C4	161+87.66	2962620.168	722236.797	R=250.00' Δ=5°20'55" L=23.34' T=11.68'		162+10.99	2962619.122	722260.103
L5	162+10.99	2962619.122	722260.103		S84°45'25"E 152.71'	163+63.70	2962605.167	722412.174
C5	163+63.70	2962605.167	722412.174	R=1905.00' Δ=11°19'20" L=376.45' T=188.84'		167+40.15	2962607.909	722788.001
C6	167+40.15	2962607.909	722788.001	R=250.00' Δ=4°39'17" L=20.31' T=10.16'		167+60.46	2962609.237	722808.262
L6	167+60.46	2962609.237	722808.262		N88°34'32"E 24.82'	167+85.28	2962609.854	722833.075
C7	167+85.28	2962609.854	722833.075	R=250.00' Δ=8°11'07" L=35.72' T=17.89'		168+21.00	2962613.285	722868.595
L7	168+21.00	2962613.285	722868.595		N80°23'25"E 93.94'	169+14.94	2962628.967	722961.214
C8	169+14.94	2962628.967	722961.214	R=150.00' Δ=14°17'57" L=37.44' T=18.82'		169+52.37	2962639.733	722996.966
L8	169+52.37	2962639.733	722996.966		N66°05'28"E 21.56'	169+73.93	2962648.473	723016.679
C9	169+73.93	2962648.473	723016.679	R=150.00' Δ=10°28'33" L=27.43' T=13.75'		170+01.36	2962657.240	723042.625
L9	170+01.36	2962657.240	723042.625		N76°34'01"E 38.52'	170+39.88	2962666.190	723080.094
C10	170+39.88	2962666.190	723080.094	R=250.00' Δ=3°29'38" L=15.24' T=7.62'		170+55.13	2962669.277	723095.020
C11	170+55.13	2962669.277	723095.020	R=771.05' Δ=14°47'39" L=199.09' T=100.10'		172+54.22	2962728.438	723284.540
C12	172+54.22	2962728.438	723284.540	R=40.00' Δ=25°32'00" L=17.83' T=9.06'		172+72.04	2962732.104	723301.834
L10	172+72.04	2962732.104	723301.834		S89°12'01"E 55.03'	173+27.08	2962731.336	723356.860
C13	173+27.08	2962731.336	723356.860	R=50.00' Δ=53°07'31" L=46.36' T=25.00'		173+73.44	2962750.772	723397.133
L11	173+73.44	2962750.772	723397.133		N37°40'28"E 28.44'	174+01.88	2962773.283	723414.515
C14	174+01.88	2962773.283	723414.515	R=50.00' Δ=26°45'06" L=23.35' T=11.89'		174+25.22	2962787.825	723432.506
C15	174+25.22	2962787.825	723432.506	R=1600.00' Δ=10°11'52" L=284.77' T=142.76'		177+10.00	2962932.906	723677.115
L12	177+10.00	2962932.906	723677.115		N54°13'43"E 142.73'	178+52.72	2963016.339	723792.919
C16	178+52.72	2963016.339	723792.919	R=250.00' Δ=2°17'26" L=9.99' T=5.00'		178+62.72	2963022.017	723801.143
L13	178+62.72	2963022.017	723801.143		N56°31'09"E 40.04'	179+02.76	2963044.108	723834.542
C17	179+02.76	2963044.108	723834.542	R=250.00' Δ=2°17'26" L=9.99' T=5.00'		179+12.76	2963049.787	723842.766

PROP WAYSIDE TRAIL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L14	179+12.76	2963049.787	723842.766		N54°13'43"E 140.00'	180+52.76	2963131.627	723956.359
C18	180+52.76	2963131.627	723956.359	R=250.00' Δ=2°17'26" L=9.99' T=5.00'		180+62.76	2963137.630	723964.349
L15	180+62.76	2963137.630	723964.349		N51°56'16"E 40.04'	181+02.80	2963162.317	723995.877
C19	181+02.80	2963162.317	723995.877	R=250.00' Δ=2°17'26" L=9.99' T=5.00'		181+12.79	2963168.320	724003.868
L16	181+12.79	2963168.320	724003.868		N54°13'43"E 279.44'	183+92.24	2963331.671	724230.596
C20	183+92.24	2963331.671	724230.596	R=100.00' Δ=16°41'57" L=29.15' T=14.68'		184+21.38	2963345.046	724256.375
L17	184+21.38	2963345.046	724256.375		N70°55'40"E 22.85'	184+44.23	2963352.512	724277.969
C21	184+44.23	2963352.512	724277.969	R=100.00' Δ=16°41'57" L=29.15' T=14.68'		184+73.38	2963365.887	724303.748
L18	184+73.38	2963365.887	724303.748		N54°13'43"E 109.42'	185+82.80	2963429.848	724392.526
C22	185+82.80	2963429.848	724392.526	R=1420.00' Δ=7°53'08" L=195.43' T=97.87'		187+78.23	2963532.836	724558.442
C23	187+78.23	2963532.836	724558.442	R=30.00' Δ=41°09'34" L=21.55' T=11.26'		187+99.78	2963548.623	724572.426
C24	187+99.78	2963548.623	724572.426	R=30.00' Δ=47°16'53" L=24.76' T=13.13'		188+24.54	2963565.756	724589.319
L19	188+24.54	2963565.756	724589.319		N68°09'44"E 56.37'	188+80.91	2963586.723	724641.641
C25	188+80.91	2963586.723	724641.641	R=1260.00' Δ=16°09'03" L=355.18' T=178.77'		192+36.08	2963690.815	724979.993
L20	192+36.08	2963690.815	724979.993		N80°58'31"E 777.21'	200+13.29	2963812.730	725747.582
C26	200+13.29	2963812.730	725747.582	R=30.00' Δ=40°33'04" L=21.23' T=11.08'		200+34.53	2963822.905	725765.714
C27	200+34.53	2963822.905	725765.714	R=30.00' Δ=46°51'10" L=24.53' T=13.00'		200+59.06	2963833.418	725787.127
L21	200+59.06	2963833.418	725787.127		N87°16'37"E 60.03'	201+19.09	2963836.270	725847.088
C28	201+19.09	2963836.270	725847.088	R=30.00' Δ=41°02'17" L=21.49' T=11.23'		201+40.58	2963844.569	725866.413
C29	201+40.58	2963844.569	725866.413	R=30.00' Δ=47°37'12" L=24.93' T=13.24'		201+65.51	2963852.835	725889.181
L22	201+65.51	2963852.835	725889.181		S86°08'29"E 67.40'	202+32.91	2963848.299	725956.425
C30	202+32.91	2963848.299	725956.425	R=60.00' Δ=12°44'18" L=13.34' T=6.70'		202+46.24	2963848.882	725969.725
L23	202+46.24	2963848.882	725969.725		N81°07'13"E 865.64'	211+11.88	2963982.501	726824.987
C31	211+11.88	2963982.501	726824.987	R=2000.00' Δ=0°21'14" L=12.36' T=6.18'		211+24.24	2963984.446	726837.189
C32	213+50.26	2964020.713	727060.278	R=100.00' Δ=10°29'02" L=18.30' T=9.17'		213+68.55	2964025.280	727077.970
C33	213+68.55	2964025.280	727077.970	R=100.00' Δ=10°50'16" L=18.92' T=9.49'		213+87.47	2964029.945	727096.272
L25	213+87.47	2964029.945	727096.272		N81°07'13"E 242.26'	216+29.73	2964067.341	727335.631
C34	216+29.73	2964067.341	727335.631	R=30.00' Δ=29°55'05" L=15.67' T=8.02'		216+45.40	2964065.700	727351.031
C35	216+45.40	2964065.700	727351.031	R=30.00' Δ=30°08'13" L=15.78' T=8.08'		216+61.18	2964064.078	727366.545
L26	216+61.18	2964064.078	727366.545		N80°54'05"E 88.86'	217+50.04	2964078.130	727454.290

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	08	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION BASELINE TIES - 2

Plotted on 26-Jul-2021 12:22 PM
000000_HD\CONST BASELINE TIES - 2\).DWG

PROP WAYSIDE TRAIL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C36	217+50.04	2964078.130	727454.290	R=5730.00' Δ=13°21'30" L=1335.93' T=671.01'		230+85.97	2964134.398	728786.012
C37	230+85.97	2964134.398	728786.012	R=30.00' Δ=36°41'26" L=19.21' T=9.95'		231+05.18	2964138.994	728804.329
C38	231+05.18	2964138.994	728804.329	R=30.00' Δ=91°38'51" L=47.99' T=30.88'		231+53.17	2964129.026	728846.190
C39	231+53.17	2964129.026	728846.190	R=30.00' Δ=66°09'57" L=34.64' T=19.54'		231+87.81	2964114.600	728875.593
L27	231+87.81	2964114.600	728875.593		N83°03'04"E 116.40'	233+04.22	2964128.683	728991.139
C40	233+04.22	2964128.683	728991.139	R=30.00' Δ=53°27'37" L=27.99' T=15.11'		233+32.21	2964119.550	729016.534
C41	233+32.21	2964119.550	729016.534	R=30.00' Δ=39°45'09" L=20.81' T=10.85'		233+53.02	2964110.405	729034.768
C42	233+53.02	2964110.405	729034.768	R=5730.00' Δ=4°23'36" L=439.37' T=219.79'		237+92.39	2964042.026	729468.671
L28	237+92.39	2964042.026	729468.671		S78°50'52"E 1094.58'	248+86.96	2963830.318	730542.577
C43	248+86.96	2963830.318	730542.577	R=30.00' Δ=36°52'12" L=19.31' T=10.00'		249+06.27	2963832.723	730561.398
C44	249+06.27	2963832.723	730561.398	R=30.00' Δ=73°44'23" L=38.61' T=22.50'		249+44.88	2963825.760	730596.718
C45	249+44.88	2963825.760	730596.718	R=30.00' Δ=36°52'12" L=19.31' T=10.00'		249+64.18	2963816.392	730613.218
L29	249+64.18	2963816.392	730613.218		S78°50'52"E 96.94'	250+61.12	2963797.643	730708.324
C46	250+61.12	2963797.643	730708.324	R=30.00' Δ=36°52'12" L=19.31' T=10.00'		250+80.42	2963800.048	730727.144
C47	250+80.42	2963800.048	730727.144	R=30.00' Δ=72°26'52" L=37.93' T=21.98'		251+18.36	2963793.583	730762.006
C48	251+18.36	2963793.583	730762.006	R=30.00' Δ=35°52'24" L=18.78' T=9.71'		251+37.14	2963784.683	730778.200
L30	251+37.14	2963784.683	730778.200		S79°08'36"E 77.56'	252+14.70	2963770.073	730854.376
C49	252+14.70	2963770.073	730854.376	R=2835.00' Δ=16°37'23" L=822.51' T=414.17'		260+37.22	2963733.675	731673.199
L31	260+37.22	2963733.675	731673.199		N84°14'01"E 133.68'	261+70.90	2963747.107	731806.207
C50	261+70.90	2963747.107	731806.207	R=2750.00' Δ=11°08'00" L=534.36' T=268.03'		267+05.27	2963851.951	732329.328
L32	267+05.27	2963851.951	732329.328		N73°06'01"E 2192.08'	288+97.35	2964489.186	734426.746
C51	288+97.35	2964489.186	734426.746	R=105.00' Δ=11°28'42" L=21.04' T=10.55'		289+18.39	2964497.269	734446.128
C52	289+18.39	2964497.269	734446.128	R=95.00' Δ=11°28'42" L=19.03' T=9.55'		289+37.42	2964504.583	734463.664
L33	289+37.42	2964504.583	734463.664		N73°06'01"E 560.34'	294+97.76	2964667.473	734999.808
C53	294+97.76	2964667.473	734999.808	R=30.00' Δ=46°55'55" L=24.57' T=13.02'		295+22.33	2964664.741	735023.543
C54	295+22.33	2964664.741	735023.543	R=30.00' Δ=46°55'54" L=24.57' T=13.02'		295+46.91	2964662.009	735047.278
L34	295+46.91	2964662.009	735047.278		N73°06'02"E 35.72'	295+82.63	2964672.394	735081.460

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	09	114
PROJECT FILE NO.	XXXXXX		

SUPERELEVATION

SUPERELEVATION TABLE		
Station	Left	Right
150+77.06	-1.50%	-1.50%
169+10.00	-1.50%	-1.50%
169+35.00	-1.50%	1.50%
171+15.00	-1.50%	1.50%
171+40.00	1.50%	-1.50%
173+25.22	1.50%	-1.50%
173+55.00	-1.50%	-1.50%
188+00.00	1.50%	-1.50%
189+10.00	1.50%	-1.50%
190+40.00	-1.50%	-1.50%
197+40.00	-1.50%	-1.50%
197+65.00	-1.50%	1.50%
200+40.00	-1.50%	1.50%
200+67.19	-1.50%	-1.50%
201+10.52	-1.50%	1.50%
201+40.00	-1.50%	1.50%
206+90.00	-1.50%	-1.50%
288+97.35	-1.50%	-1.50%
289+37.42	1.50%	-1.50%
295+68.10	1.50%	-1.50%

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000000_HD\SUPERELEVATION).DWG

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 1

Plotted on 26-Jul-2021 12:28 PM
000000_HD\CONST PLAN - 1).DWG

N

NAD 83

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

REM EX RAIL (TYP)

℄ OF CONSTRUCTION

PROP FULL DEPTH PVMT

PROP LOAM & SEED

N/F 1265 MAIN STREET, LLC
#1265 MAIN STREET
BOOK 61795 PAGE 89
ASSESSORS' PARCEL R48-3-1

N/F CITY OF WALTHAM
"PROSPECT HILL PARK"
#1267 MAIN STREET
BOOK 67750 PAGE 30
ASSESSORS' PARCEL R48-3-1A

CHAIN LINK FENCE

BOS

EXISTING RAIL TRAIL

APPROX. EXXON FUEL LINE
APPROX. FIBER OPTIC
APPROX. SHELL FUEL LINE

CONCRETE STEPS

CHAIN LINK FENCE

WITH TWIN TREES

PROP LOAM & SEED

EXISTING BUILDING

PAVEMENT

BENCH MARK
SPIKE IN TWIN 14" TREES
ELEV. 123.24

N/F 11-13 LADD REALTY TRUST
#145 OVERLAND ROAD
BOOK 35534 PAGE 551
ASSESSORS' PARCEL R58-12-2

N/F VANARIA REALTY TRUST
#115-123 OVERLAND ROAD
BOOK 63702 PAGE 291
ASSESSORS' PARCEL R058-12-4

PROJECT BEGIN
STA 150+75
N2962718.0430
E721128.9926

N/F ABC COMMERCIAL PROPERTIES WALTHAM, INC.
#157 OVERLAND ROAD
BOOK 61663 PAGE 224
ASSESSORS' PARCEL R57-5-1

N/F 151 OVERLAND ROAD
CONDOMINIUM
#151 OVERLAND ROAD
MASTER DEED BK. 48441 PG. 280
ASSESSORS' PARCEL R58-12-1

N/F 11-13 LADD REALTY TRUST
#147 OVERLAND ROAD
BOOK 35534 PAGE 551
ASSESSORS' PARCEL R58-12-3

EDGE HILL ROAD

CONTINUED ON SHEET NO. 11

GRADE BREAK STA = 150+75.00
ELEV = 137.92

PVC: 151+15
ELEV: 137.04

PVI STA = 151+95.00
PVI ELEV = 135.28
A.D. = -2.80%
K = 57.14
160' VC
465.4' SSD

PVT: 152+75
ELEV: 131.28

-2.20%

-5.00%

PVC: 154+15
ELEV: 124.28

PVI STA = 155+15.00
PVI ELEV = 119.28
A.D. = 3.60%
K = 55.56
200' VC

PVT: 156+15
ELEV: 117.88

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET


NAVD 88
BASE ELEV
110.00

151+00	152+00	153+00	154+00	155+00	156+00
137.4 / 137.37	132.9 / 136.16	124.9 / 134.54	122.6 / 132.47	121.9 / 130.03	121.5 / 127.53	120.6 / 125.03	119.9 / 122.64	119.0 / 120.68	118.3 / 119.17	118.0 / 118.11	117.1 / 117.39

WALTHAM
WAYSIDE TRAIL


STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 2



CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12



000000_HD(CONST PLAN - 2).DWG Plotted on 26-Jul-2021 12:27 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 3

N

NAD 83

Plotted on 26-Jul-2021 12:28 PM

000000_HD\CONST PLAN - 3\.DWG

N/F GEORGE R. MECHAEL AND ANNA PAKULA
#31 LUNDA STREET
BOOK 46868 PAGE 210
ASSESSORS' PARCEL R58-2-6

N/F WALTHAM HOUSING AUTHORITY
#42 PROSPECT HILL ROAD
LAND COURT PLAN 21921A, BOOK 485 PAGE 101
ASSESSORS' PARCEL R58-2-7

PC +63.70

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

℄ OF CONSTRUCTION

PROP FULL DEPTH PVMT

PROP LOAM & SEED

REM EX RAIL (TYP)

PRC +40.15

2' GRASS SHLD
12' BIT PATH
2' GRASS SHLD

PC +14.94

CHAIN LINK FENCE

METAL WALL

TOS

BOS

L5 L6 L7 C5 C6 C7

163 164 165 166 167 168 169

TP-7

LIGHT POST

POLE

12" OAK

BOULDER

PT +60.46

PC +85.28

PT +21.00

REM CLF

END PROP CHAIN LINK FENCE
STA. 164+49.85

END PROP SPLIT RAIL FENCE
STA. 164+94.65

PROP LOAM & SEED

BENCH MARK
SPIKE IN 22" OAK
ELEV. 104.69

N/F DIV WALTHAM MAIN STREET, LLC
#1025 MAIN STREET
BOOK 66173 PAGE 202
ASSESSORS' PARCEL R58-10-12

N/F DIV WALTHAM MAIN STREET, LLC
#17 LUNDA STREET
BOOK 66173 PAGE 202
ASSESSORS' PARCEL R58-11-1

N/F DIV WALTHAM MAIN STREET, LLC
#1055 MAIN STREET
BOOK 66173 PAGE 202
ASSESSORS' PARCEL R58-11-2

CONTINUED ON SHEET NO. 11

CONTINUED ON SHEET NO. 13

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

PVI STA = 164+50.00
PVI ELEV = 106.28
A.D. = 1.13%
K = 66.17
75' VC

PVC: 164+12.50
ELEV: 106.75

PVT: 164+87.50
ELEV: 106.25

PVI STA = 166+10.00
PVI ELEV = 106.12
A.D. = -1.20%
K = 91.67
110' VC
954.3' SSD

PVC: 165+55
ELEV: 106.18

PVT: 166+65
ELEV: 105.41

HIGH POINT ELEV = 103.80
HIGH POINT STA = 168+41.56
PVI STA = 168+95.00
PVI ELEV = 103.92
A.D. = -2.25%
K = 57.78
130' VC
544.6' SSD

LOW POINT ELEV = 103.78
LOW POINT STA = 168+20.67
PVI STA = 167+95.00
PVI ELEV = 103.72
A.D. = 1.50%
K = 46.67
70' VC

PVC: 167+60
ELEV: 104.17

PVT: 168+30
ELEV: 103.79

PVC: 168+30
ELEV: 103.79

-1.23%

-0.10%

-1.30%

NAVD 88
BASE ELEV
100.00

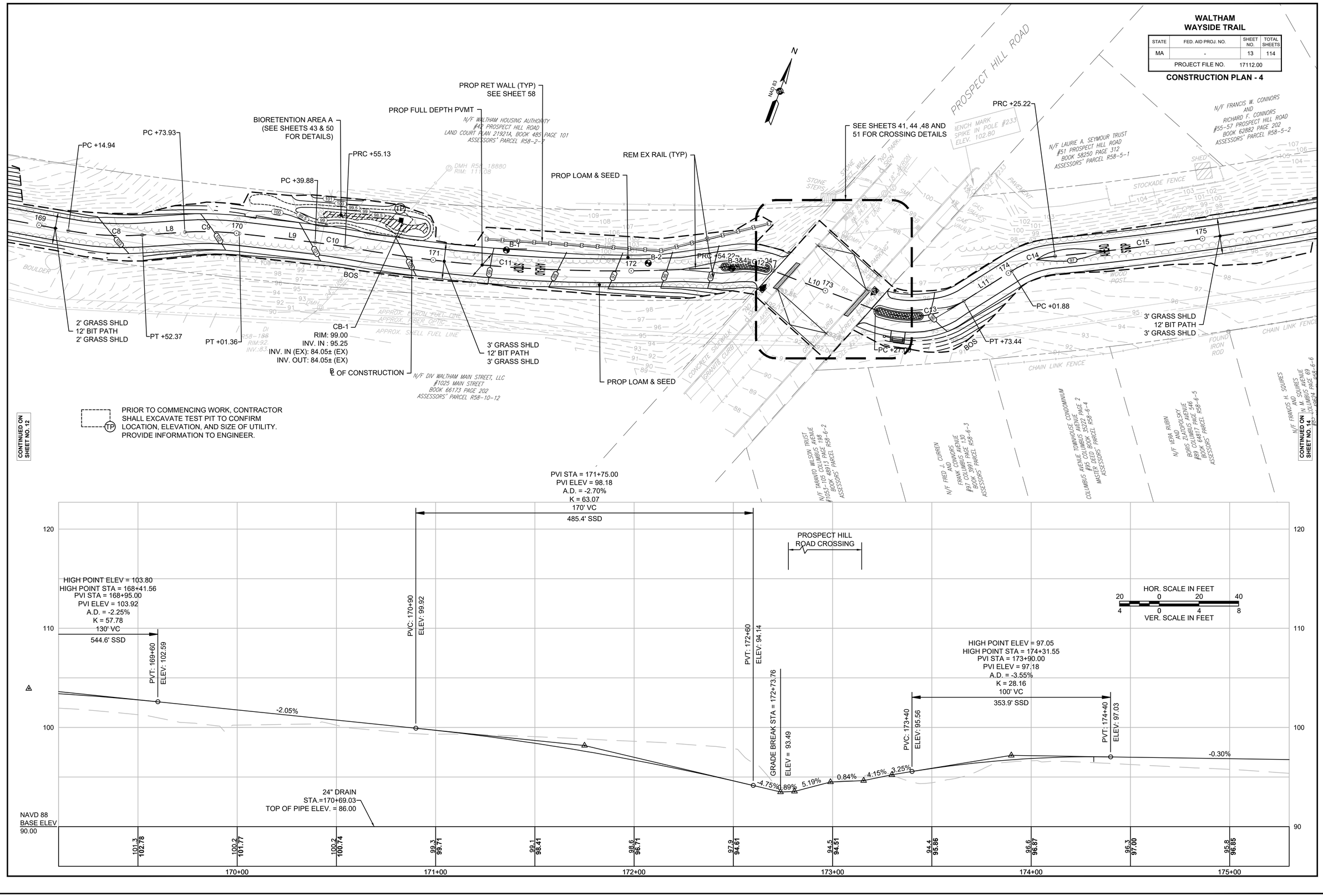
163+00	164+00	165+00	166+00	167+00	168+00	169+00
108.1 **108.13**	108.3 **107.52**	106.5 **106.90**	106.7 **106.39**	106.3 **106.23**	106.0 **106.18**	105.8 **106.02**	105.2 **105.59**	104.6 **104.95**	103.9 **104.30**	103.2 **103.82**	102.6 **103.79**	102.0 **103.50**

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 4

Plotted on 26-Jul-2021 12:28 PM
000000_HD\CONST PLAN - 4\).DWG



PRIOR TO COMMENCING WORK, CONTRACTOR SHALL EXCAVATE TEST PIT TO CONFIRM LOCATION, ELEVATION, AND SIZE OF UTILITY. PROVIDE INFORMATION TO ENGINEER.

CONTINUED ON SHEET NO. 12

CONTINUED ON SHEET NO. 14

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 5

Plotted on 26-Jul-2021 12:29 PM
000000_HD\CONST PLAN - 5\).DWG

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

N/F FRANCIS W. CONNORS AND RICHARD F. CONNORS #55–57 PROSPECT HILL ROAD BOOK 62882 PAGE 202 ASSESSORS' PARCEL R58–5–2

N/F FRANZ SYLVESTRE, JR. #5 ELSON ROAD BOOK 46789 PAGE 536 ASSESSORS' PARCEL R58–5–3

N/F NICHOLAS MARTORILLI AND DEBRA M. MARTORILLI #9–11 ELSON ROAD BOOK 63229 PAGE 481 ASSESSORS' PARCEL R58–5–4

N/F ADH-ELSON REALTY TRUST #13–15 ELSON ROAD BOOK 52161 PAGE 466 ASSESSORS' PARCEL R58–5–5

N/F NICHOLAS MARTORILLI AND DEBRA M. MARTORILLI #17–21 ELSON ROAD BOOK 63149 PAGE 147 ASSESSORS' PARCEL R58–5–6

N/F RICARDO ACEVEDO #25 ELSON ROAD BOOK 70060 PAGE 466 ASSESSORS' PARCEL R58–5–7

ELSON ROAD

NAD 83

STOCKADE FENCE

DEBRIS

PAVEMENT

REM EX RAIL (TYP)

PT +10.00

PC +52.72

WOOD RET'G WALL

VINYL FENCE POST

GUY POLE

LEDGE

OUTCROP

TOS

PROP FULL DEPTH PVMT

PROP LOAM & SEED

EDGE OF PAVEMENT

REMAINS OF CHAIN LINK FENCE

GUY

PT +12.79

176 177 178 L12 C16 L13 179 C17 L14 180 C18 L15 181 C19

BOS

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

℄ OF CONSTRUCTION

PT +62.72

PT +12.76

PROP LOAM & SEED

PC +52.76

PT +62.76

PC +02.80

ROUND STONE BOUND

CHAIN LINK FENCE

WIRE FENCE

STONE RET. WALL

PICKET FENCE

WOOD STEPS

APPROX. EXXON FUEL LINE
APPROX. FIBER OPTIC
APPROX. SHELL FUEL LINE

PC +02.76

N/F FRANCIS H. SOURES AND JOHN M. SOURES #83 COLUMBUS AVENUE BOOK 49624 PAGE 69 ASSESSORS' PARCEL R58–6–6

N/F 81 COLUMBUS AVENUE CONDOMINIUM #81 COLUMBUS AVENUE MASTER DEED BOOK 63276 PAGE 568 ASSESSORS' PARCEL R58–6–7

N/F 75 AND 73 COLUMBUS AVE. CONDOMINIUM #73–75 COLUMBUS AVENUE MASTER DEED BOOK 20213 PAGE 496 ASSESSORS' PARCEL R58–6–8

N/F ANTHONY R. HAYES AND JOANNA M. HAYES #69 COLUMBUS AVENUE BOOK 54966 PAGE 444 ASSESSORS' PARCEL R58–6–9

N/F EWHSIANG TSENG AND DEBBIE LEE TSENG #65 COLUMBUS AVENUE BOOK 60086 PAGE 306 ASSESSORS' PARCEL R59–1–1A

N/F MARY ANN MITCHELL REVOCABLE TRUST #61 COLUMBUS AVENUE BOOK 68681 PAGE 16 ASSESSORS' PARCEL R59–1–1

N/F LING LI #55 COLUMBUS AVENUE BOOK 69983 PAGE 325 ASSESSORS' PARCEL R59–1–2

N/F RJL PROPERTY HOLDINGS, LLC #51 COLUMBUS AVENUE BOOK 62301 PAGE 280 ASSESSORS' PARCEL R59–1–3

N/F ERIC J. STEELE #45 COLUMBUS AVENUE BOOK 59356 PAGE 115 ASSESSORS' PARCEL R59–1–4

N/F 41 COLUMBUS AVENUE CONDOMINIUM #41 COLUMBUS AVENUE MASTER DEED BOOK 49036 PAGE 24 ASSESSORS' PARCEL R59–1–4

N/F WELLINGTON STREET TOWNHOUSE CONDOMINIUM #64 WELLINGTON STREET MASTER DEED BOOK 41142 PAGE 579 ASSESSORS' PARCEL R59–1–6

HIGH POINT ELEV = 96.94
HIGH POINT STA = 176+70.63
PVI STA = 177+00.00
PVI ELEV = 97.20
A.D. = -3.15%
K = 31.75
100' VC
392.6' SSD

LOW POINT ELEV = 93.46
LOW POINT STA = 178+74.02
PVI STA = 178+50.00
PVI ELEV = 93.45
A.D. = 2.55%
K = 19.61
50' VC

LOW POINT ELEV = 96.66
LOW POINT STA = 175+81.58
PVI STA = 176+00.00
PVI ELEV = 96.55
A.D. = 0.95%
K = 105.26
100' VC

HIGH POINT ELEV = 93.47
HIGH POINT STA = 178+78.12
PVI STA = 179+25.00
PVI ELEV = 93.49
A.D. = -1.60%
K = 62.37
100' VC
723.0' SSD

PVC: 175+50 ELEV: 96.70
PVT: 176+50 ELEV: 96.88
PVC: 176+50 ELEV: 96.88
PVT: 177+50 ELEV: 95.95
PVC: 178+25 ELEV: 94.08
PVT: 178+75 ELEV: 93.46
PVC: 178+75 ELEV: 93.46
PVT: 179+75 ELEV: 92.71

-2.50%
-1.55%

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NAVD 88
BASE ELEV
80.00

95.2 96.70	94.5 96.67	93.9 96.88	93.4 96.81	93.0 95.95	92.5 94.70	91.7 93.61	91.3 93.43	90.5 93.05	89.8 92.32	89.0 91.55	88.5 90.77

176+00 177+00 178+00 179+00 180+00 181+00

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	114
PROJECT FILE NO.		17112.00	

CONSTRUCTION PLAN - 6

Plotted on 26-Jul-2021 12:30 PM
000000_HD\CONST PLAN - 6\.DWG

STERLING ROAD
ELSON ROAD
WELLINGTON STREET
RICH STREET
IRVING STREET

REM EX RAIL (TYP)
3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
PROP FULL DEPTH PVMT
PC +92.24
BEGIN PROP SPLIT RAIL FENCE STA. 184+38.83
TOS
℄ OF CONSTRUCTION
PC +44.23
PT +21.38
PT +73.38
BENCH MARK X-CUT IN CONC. MONUMENT ELEV. 84.86
BENCH MARK SPIKE IN 8" MAPLE ELEV. 88.80
SEDIMENT FOREBAY CHECK DAM
SEDIMENT MARKER
SEDIMENT FOREBAY
BIORETENTION AREA B (SEE SHEETS 43 & 50 FOR DETAILS)
PIPE END=79.50
BIT CURB
11LF-6"PVC S=0.000FT/FT
CB-2
RIM: 80.00
INV. IN: 78.25(W)
INV. IN: 78.25(NE)
INV. IN: 68.88±(EX)
INV. OUT: 68.88±(EX)
BOS
PC +82.80
PIPE END=79.50
13LF-6"PVC S=0.000FT/FT
END PROP SPLIT RAIL FENCE STA. 186+35.59
REM 18LF OF STONE WALL
REM VALVE AND CAP LINE
PROP LOAM & SEED
PROP LOAM & SEED
3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
R&R VALVE AS NECESSARY TO NOT SPRAY PATH
N/F REGAN FAMILY SERIES, LLC #100 HAMMOND STREET BOOK 54777 PAGE 269 ASSESSORS' PARCEL R50-37-1
N/F ABEL RAMIREZ #76-78 RICH STREET BOOK 35731 PAGE 158 ASSESSORS' PARCEL R50-36-1
N/F LUIS A. RUIZ #27-29 COLUMBUS AVENUE BOOK 27134 PAGE 136 ASSESSORS' PARCEL R50-36-4
N/F JUN FENG #31-33 COLUMBUS AVENUE BOOK 54466 PAGE 340 ASSESSORS' PARCEL R50-36-5
N/F F & V REALTY TRUST #85-87 RICH STREET BOOK 63024 PAGE 443 ASSESSORS' PARCEL R50-35-9
N/F JOHN J. MONACO AND ERNESTINE A. MONACO #96 HAMMOND STREET BOOK 32905 PAGE 173 ASSESSORS' PARCEL R50-35-1
DMH R50-17720 RIM:82.68 INV IN:79.64 INV. OUT:71.99
SMH R50-10370 RIM: 82.62 INV IN: 75.24 INV OUT: 74.34
DMH R50-17715 RIM:82.00 INV. IN:65.59 INV. OUT:65.59
NAD 83
N

PRIOR TO COMMENCING WORK, CONTRACTOR SHALL EXCAVATE TEST PIT TO CONFIRM LOCATION, ELEVATION, AND SIZE OF UTILITY. PROVIDE INFORMATION TO ENGINEER.

CONTINUED ON SHEET NO. 14
CONTINUED ON SHEET NO. 16

PVI STA = 183+50.00
PVI ELEV = 86.89
A.D. = -2.30%
K = 87.09
200' VC
569.9' SSD

HIGH POINT ELEV = 82.13
HIGH POINT STA = 186+07.18
PVI STA = 186+00.00
PVI ELEV = 82.41
A.D. = -2.27%
K = 43.99
100' VC
524.7' SSD

LOW POINT ELEV = 81.60
LOW POINT STA = 185+24.76
PVI STA = 185+00.00
PVI ELEV = 81.11
A.D. = 5.15%
K = 19.42
100' VC

LOW POINT ELEV = 80.76
LOW POINT STA = 187+79.67
PVI STA = 187+80.00
PVI ELEV = 80.66
A.D. = 1.98%
K = 20.14
40' VC

PVC: 182+50 ELEV: 88.44
PVT: 184+50 ELEV: 83.04
PVC: 184+50 ELEV: 83.04
PVC: 185+50 ELEV: 81.76
PVT: 185+50 ELEV: 81.76
PVT: 186+50 ELEV: 81.93
PVC: 187+60.07 ELEV: 80.85

-1.55%
-0.97%

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

30" DRAIN
STA.=185+55.73
ELEV. = 70.51

10" SEWER
STA.=185+59.35
ELEV. = 71.00

NAVD 88
BASE ELEV
70.00

182+00	183+00	184+00	185+00	186+00	187+00
87.2 / 89.22	86.7 / 88.44	85.9 / 87.52	85.3 / 86.31	84.8 / 84.82	82.6 / 83.04
				80.9 / 81.76	79.7 / 81.76
					80.2 / 82.13
					81.9 / 81.93
					81.6 / 81.44
					81.0 / 80.95

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	114
PROJECT FILE NO.		17112.00	

CONSTRUCTION PLAN - 7

Plotted on 26-Jul-2021 12:30 PM
000000_HD\CONST PLAN - 7\.DWG

SEE SHEETS 41, 48 AND 51 FOR CROSSING DETAILS

PT +24.54

PRC +78.23

ELSON ROAD

PROP RET WALL (TYP) SEE SHEET 60

PROP FULL DEPTH PVMT

PROP LOAM & SEED

REM EX RAIL (TYP)

BEGIN PROP SPLIT RAIL FENCE STA. 192+36.08

BOS

3' GRASS SHLD
11' BIT PATH
2' GRASS SHLD

PT +36.08

PROP LOAM & SEED

℄ OF CONSTRUCTION

PC +80.91

END PROP SPLIT RAIL FENCE STA. 189+20.42

PRC +99.78

BEGIN PROP SPLIT RAIL FENCE STA. 188+77.38

HAMMOND STREET

N/F 111 HAMMOND STREET CONDOMINIUMS
#111 HAMMOND STREET
MASTER DEED BOOK 43761 PAGE 410
ASSESSORS' PARCEL R50-27-2

N/F JOSEPH DIXON AND FRANCES DIXON
#113R HAMMOND STREET
BOOK 67549 PAGE 364
ASSESSORS' PARCEL R50-27-3

N/F GABRIELLE L. RYERSON
#7-72 GUINAN STREET
BOOK 69371 PAGE 279
ASSESSORS' PARCEL R50-27-9

N/F NICOLE S. MENNELL
#68 GUINAN STREET
BOOK 67857 PAGE 355
ASSESSORS' PARCEL R50-27-10

N/F JASON M. ROBBINS AND CHRISTINA CURTIN
#62-64 GUINAN STREET
BOOK 62383 PAGE 117
ASSESSORS' PARCEL R50-27-11

N/F GUINAN 58 LLC
#58 GUINAN STREET
BOOK 64560 PAGE 78
ASSESSORS' PARCEL R50-27-12

N/F JEANNETTE C. UMBRELLO
#97 AFT HAMMOND STREET
BOOK 46881 PAGE 456
ASSESSORS' PARCEL R50-33-50

N/F BACON STREET CONDOMINIUM
#118 BACON STREET
MASTER DEED 26881 PAGE 1
ASSESSORS' PARCEL R50-33-1

BENCH MARK SPIKE IN 8" MAPLE ELEV. 75.57

EXISTING BUILDING

NAD 83

N

CONTINUED ON SHEET NO. 15

CONTINUED ON SHEET NO. 17

LOW POINT ELEV = 80.76
LOW POINT STA = 187+79.67
PVI STA = 187+80.00
PVI ELEV = 80.66
A.D. = 1.98%
K = 20.14
40' VC

PVT: 187+99.93
ELEV: 80.86

GRADE BREAK STA = 188+30.00
ELEV = 81.16

HAMMOND STREET CROSSING

PVI STA = 191+00.00
PVI ELEV = 74.77
A.D. = 2.44%
K = 41.04
100' VC

PVC: 190+50
ELEV: 76.22

PVT: 191+50
ELEV: 74.55

PVI STA = 192+00.00
PVI ELEV = 74.32
A.D. = -0.70%
K = 142.86
100' VC
1591.6' SSD

PVC: 191+50
ELEV: 74.55

PVT: 192+50
ELEV: 73.75

1.01%
-5.22%
1.48%
1.12%
-2.89%
-1.15%

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

81.1	80.5	80.5	80.5	78.2	77.3	76.6	75.9	75.3	74.7	73.9	73.3
80.86	80.47	80.54	79.10	77.66	76.22	75.08	74.55	74.23	73.75	73.17	72.60

NAVD 88
BASE ELEV
70.00

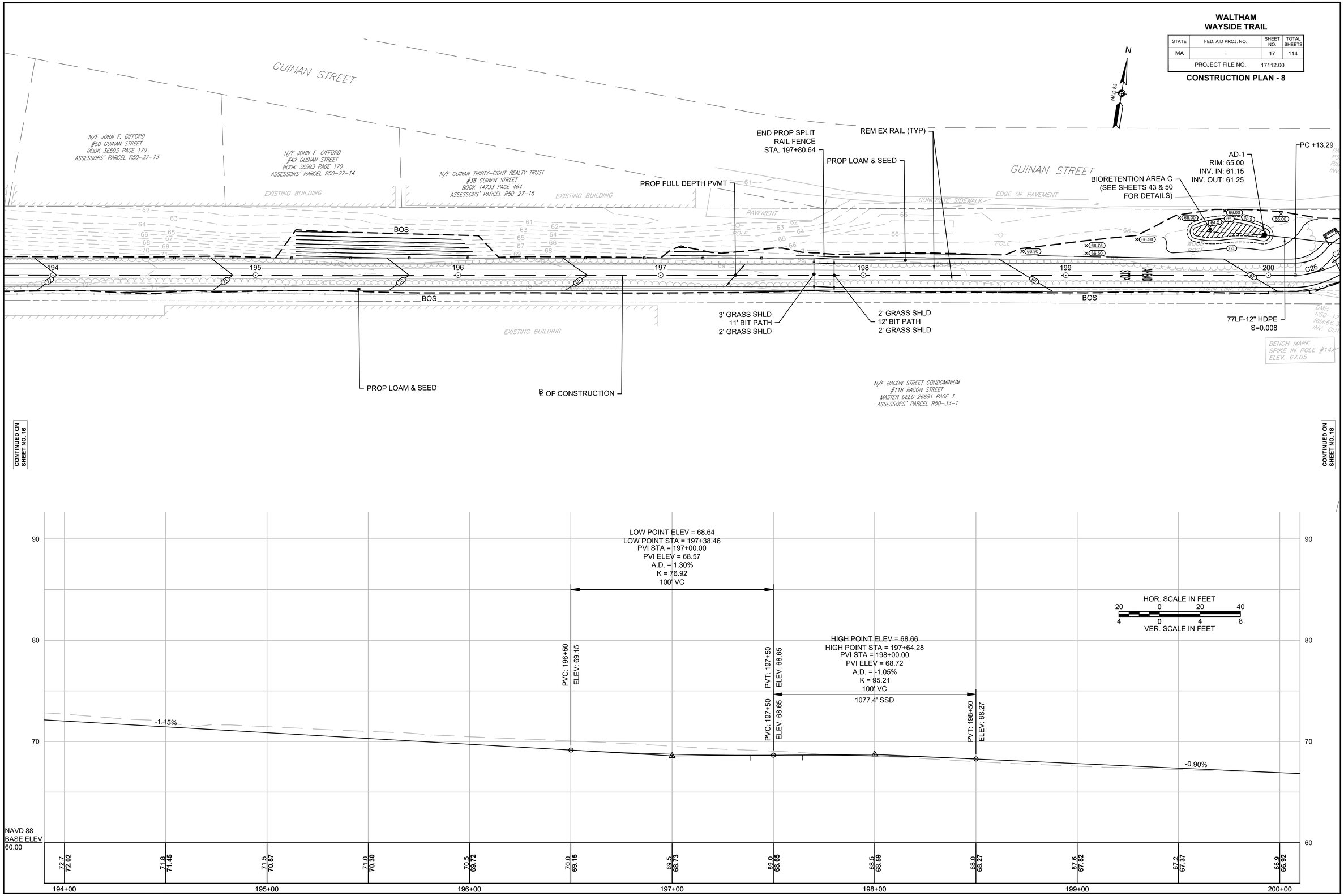
188+00 189+00 190+00 191+00 192+00 193+00

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 8

000000_HD\CONST PLAN - 8\).DWG Plotted on 26-Jul-2021 12:31 PM



CONTINUED ON SHEET NO. 16

CONTINUED ON SHEET NO. 18

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 9

Plotted on 26-Jul-2021 12:32 PM
000000_HD\CONST PLAN - 9).DWG

N

NAD 83

BIORETENTION AREA C
AD-1
RIM: 65.00
INV. IN: 61.15
INV. OUT: 61.25

PC +13.29
PT +59.06
77LF-12" HDPE
S=0.008

SEE SHEETS 41,44, 48 AND 51 FOR CROSSING DETAILS

PC +19.09
PT +65.51
PC +32.91

N/F KAPLAN PROPERTIES, LLC
#19 ATHLETIC FIELD ROAD
BOOK 46875 PAGE 475 (PARCEL NO. 8)
ASSESSORS' PARCEL R50-28-1

REM EX RAIL (TYP)
PROP LOAM & SEED
PROP FULL DEPTH PVMT

DMH
R50-12435
RIM:65.73
INV. IN:59.84

DMH
R50-12440
RIM:66.36
INV. OUT:60.4±

BENCH MARK
SPIKE IN POLE #14X
ELEV. 67.05

PROP STORMWATER MANAGEMENT AREA
PRC +34.53
DMH-1
RIM: 66±
INV. IN: 60.50
INV. IN: 60.40±
INV. OUT: 60.40±
PRC +40.58
PT +46.24
℄ OF CONSTRUCTION

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
PROP LOAM & SEED

N/F OHNEMUS FAMILY LIMITED PARTNERSHIP
#115 BACON STREET
BOOK 30136 PAGE 73
ASSESSORS' PARCEL R50-29-1

CONTINUED ON SHEET NO. 17
CONTINUED ON SHEET NO. 19

BACON STREET
CROSSING

PVI STA = 201+80.00
PVI ELEV = 64.42
A.D. = 2.08%
K = 48.06
100' VC

GRADE BREAK STA = 200+67.19
ELEV = 66.32
PVC: 201+30
ELEV: 66.06
PVT: 202+30
ELEV: 63.82

-0.43%
-3.28%
-1.77%
5.81%
-1.20%

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NAVD 88
BASE ELEV
50.00

201+00	202+00	203+00	204+00	205+00	206+00
66.5 / 66.47	66.1 / 66.08	65.4 / 65.45	64.3 / 64.27	63.6 / 63.58	63.2 / 62.98
62.8 / 62.38	62.5 / 61.78	61.7 / 61.18	61.2 / 60.58	60.7 / 59.98	59.5 / 59.38

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 10

Plotted on 26-Jul-2021 12:32 PM
000000_HD\CONST PLAN - 10).DWG

N

NAD 83

N/F FLAGG FAMILY REALTY, LLC
#47 ATHLETIC FIELD ROAD
BOOK 39082 PAGE 158
ASSESSORS' PARCEL R51-6-12

N/F EMERSON REALTY, INC.
#47 ATHLETIC FIELD ROAD
BOOK 24860 PAGE 106
ASSESSORS' PARCEL R51-6-11

N/F WALTHAM FARM & HOME REALTY TRUST
#54 EMERSON ROAD
BOOK 31459 PAGE 507
ASSESSORS' PARCEL R51-6-10

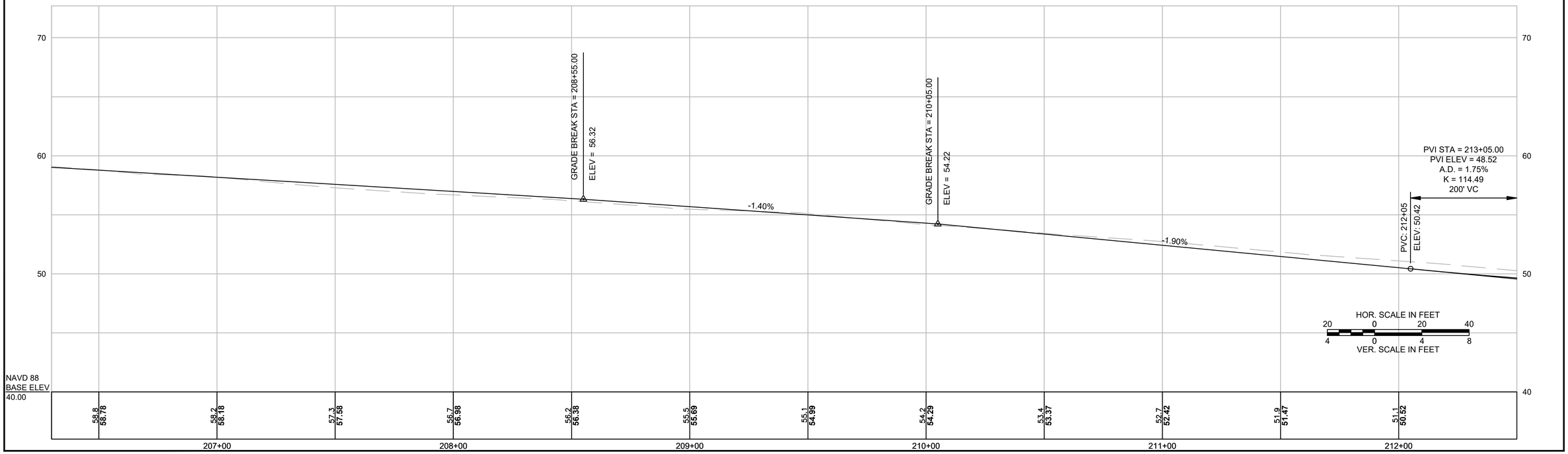
N/F 26-42 EMERSON ROAD REALTY TRUST
#42 EMERSON ROAD
BOOK 41507 PAGE 254
ASSESSORS' PARCEL R51-6-8

N/F 79 POND STREET LLC
#73 POND STREET
BOOK 66584 PAGE 349
ASSESSORS' PARCEL R51-7-21

N/F DONALD J. LEONE
AND
FRANK PANNESI
#53-55 POND STREET
BOOK 18966 PAGE 539
ASSESSORS' PARCEL R51-7-17

REM EX RAIL (TYP)
PROP LOAM & SEED
PROP FULL DEPTH PVMT
PC +11.88
PT +24.24
BOS
EXISTING BUILDING
POLE
POST
CHAIN LINK FENCE
CONCRETE BLOCK RETAINING WALL
ABANDONED TRACK
CONCRETE BLOCK BARRIER WALL ON ELEVATED CONC. PAD
CONCRETE PAD
ELEV. 61.7±
APPROXIMATE EXTENT OF PAVEMENT
CONC. BLOCK BARRIER WALL
207
208
209
210
211
C31
212
TP 13
L24
3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
3' GRASS SHLD
11' BIT PATH
3' GRASS SHLD
3' GRASS SHLD
11' BIT PATH
3' GRASS SHLD
2' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
BEGIN PROP SPLIT
RAIL FENCE
STA. 209+55.64
℄ OF CONSTRUCTION
PROP LOAM & SEED

CONTINUED ON SHEET NO. 18
CONTINUED ON SHEET NO. 20



WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 11

000000_HD\CONST PLAN - 11).DWG Plotted on 29-Jul-2021 9:47 AM

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21

N

NAD 83

PRC +68.55

PT +87.47

PROP FULL DEPTH PVMT

PROP LOAM & SEED

REM EX RAIL (TYP)

2' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

N/F 26-42 EMERSON ROAD REALTY TRUST
#42 EMERSON ROAD
BOOK 41507 PAGE 254
ASSESSORS' PARCEL R51-6-8

N/F NICHOLAS DELEGAS
AND
GEORGE DELEGAS
#146 LEXINGTON STREET
BOOK 26498 PAGE 320
ASSESSORS' PARCEL R51-6-7

BENCH MARK
SPIKE IN 8" OAK
ELEV. 50.66

EDGE OF PAVEMENT

BERM

BOULDER

EXISTING BUILDING

POLE

WIRE
EL. 67.7±

DMH
R51_1226
RIM: 46.72
INV IN: 36.72

L24

213

C32

C33

214

215

L25

216

TOS

ABANDONED IRON PIPE

CONC

DMH
R51_13230
RIM: 42.06
INV IN: 34.89
INV OUT: 34.89

WIRE
EL. 56.9±

PLANTINGS

VEM

APPROX. EXXON FUEL LINE
APPROX. FIBER OPTIC
APPROX. SHELL FUEL LINE

WIRE
EL. 63.4±

POLE

℄ OF CONSTRUCTION

END PROP SPLIT
RAIL FENCE
STA. 215+30.64

PROP LOAM & SEED

N/F WALTHAM CROSSING NOMINEE TRUST
#130 LEXINGTON STREET
BOOK 47358 PAGE 556
ASSESSORS' PARCEL R51-7-1

PC +29.73

PT +61.18

PRC +45.40

PC +50.04

SEE SHEETS 41, 45, 48 AND
51 FOR CROSSING DETAILS

SMH
R51_15405
RIM: 48.66
INV IN: 33.58
INV OUT: 33.48

C34

C35

L26

217

B9

B10

LEXINGTON STREET

N/F CITY OF WALTHAM
#155-175 LEXINGTON STREET
BOOK 10064 PAGE 235
ASSESSORS' PARCEL R51-2-18

BEGIN PROP
GRANITE CURB
STA. 217+57.28

BEGIN PROP
SPLIT RAIL FENCE
STA. 217+57.19

CB

GRAN. CURB

PAVED PARKING

218

C36

WOOD POST

CONC. POST

CHAIN LINK FENCE

CONCRETE BLOCK RETAINING WALL

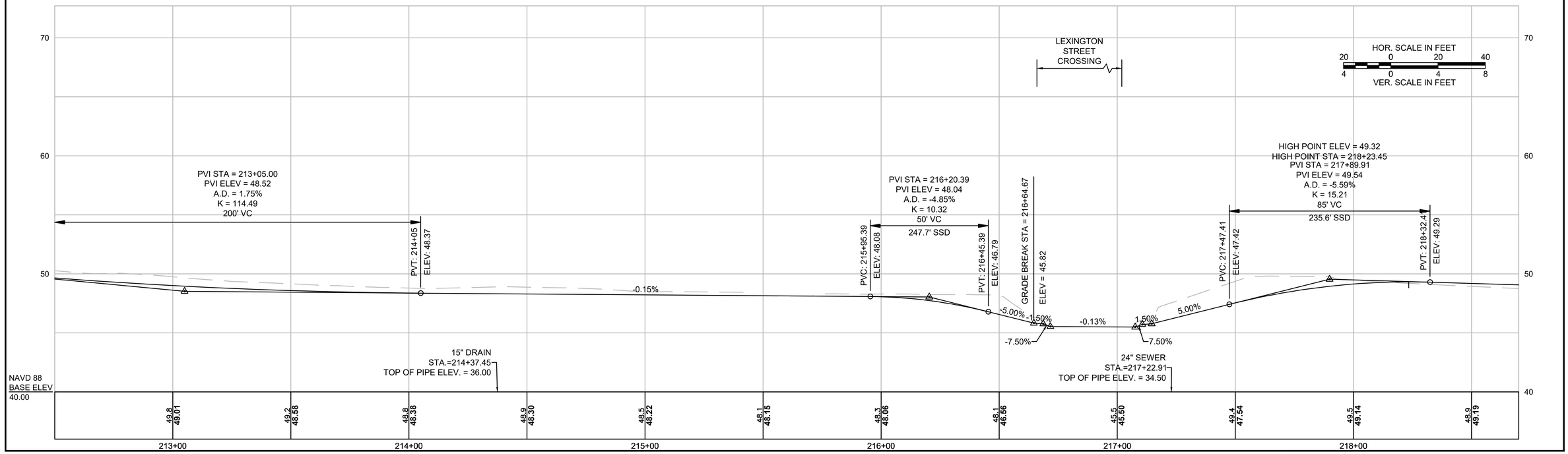
3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

SMH
R51_15400
RIM: 45.98
INV IN: 32.42
INV OUT: 32.42

BUILDING

PC +50.26

N/F 131 LEXINGTON STREET CONDOMINIUM
#131 LEXINGTON STREET
MASTER DEED BOOK 47314, PAGE 223
ASSESSORS' PARCEL R51-8-26



WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 12

Plotted on 26-Jul-2021 4:00 PM
0000000_HD\CONST PLAN - 12).DWG

N
NAD 83

BENCH MARK
CHISELED SQUARE AT SHED CORNER
ELEV. 49.23.

CONCRETE PAD/SALT SHED

APPROX. EDGE OF RIVER

POLE

PROP LOAM & SEED

END PROP
GRANITE CURB
STA. 220+00.25

PROP FULL DEPTH PVMT

4' GRASS SHLD
10' BIT PATH
4' GRASS SHLD

REM WALL

R&R POLE (BY OTHERS)

PROP SPLIT RAIL FENCE (TYP)

R&R POLE (BY OTHERS)

N/F CITY OF WALTHAM
#155-175 LEXINGTON STREET
BOOK 10064 PAGE 235
ASSESSORS' PARCEL R51-2-18

100' INNER RIPARIAN BUFFER ZONE

PAVED PARKING AREA

HYDRANT

BOLLARDS

SLIDING GATE

BUILDING

EDGE OF PAVEMENT

STONE

CONCRETE BLOCK WALL

CB

DMH

15" RC

42" LINK

219

220

221

222

223

224

225

C36

CONCRETE BLOCK BARRIER

CONC. POST

CHAIN LINK FENCE

POLE

BLOCK WALL

DEPRESSED ACCESS RAMP - 10' ± DEEP

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

℄ OF CONSTRUCTION

BEGIN PROP CHAIN LINK FENCE
STA. 220+02.90

REM BARRIER

PROP LOAM & SEED

LIMIT OF REGRADING

APPROX. EXXON FUEL LINE

APPROX. FIBER OPTIC

APPROX. SHELL FUEL LINE

GRAVEL DRIVE

LIMIT OF WORK

BOS

LIMIT OF WORK

LIMIT OF REGRADING

RAMP

DMH
RIM: 44.52
INV IN: 35.44
INV OUT: 35.44

200' RIVERFRONT AREA

NOTE:
CITY OF WALTHAM RESPONSIBLE FOR REMOVAL OF ITEMS WITHIN THE LOD ASSOCIATED WITH THE CPW OPERATIONS. CONTRACTOR TO COORDINATE WITH THE CITY FOR SCHEDULING PURPOSES.

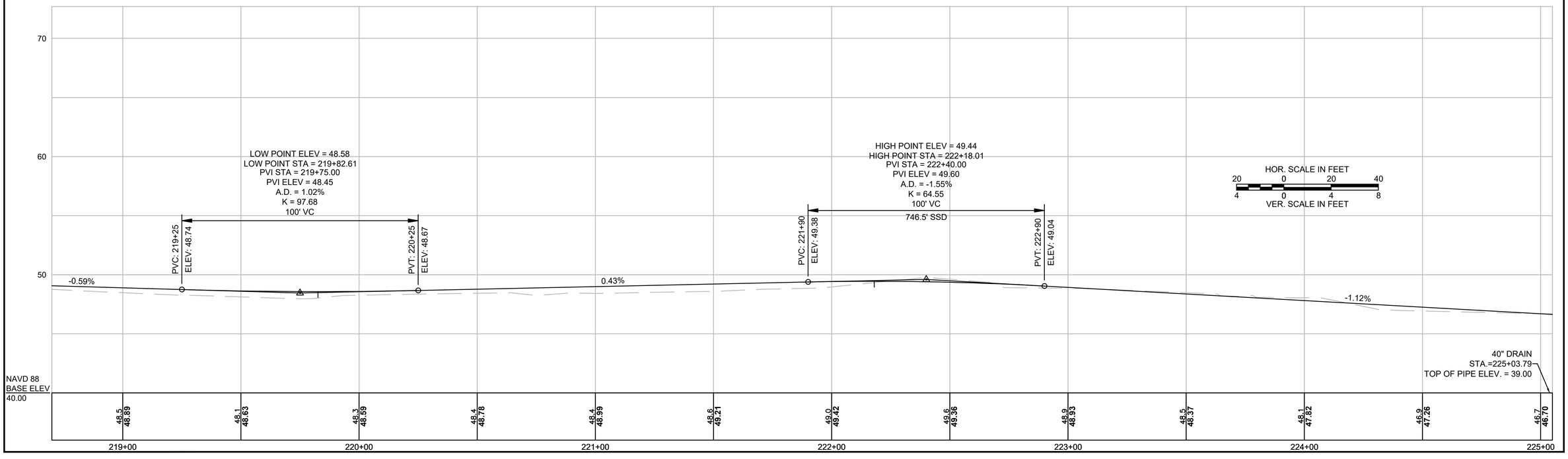
CONTINUED ON SHEET NO. 20

N/F 131 LEXINGTON STREET CONDOMINIUM
#131 LEXINGTON STREET
MASTER DEED BOOK 47314 PAGE 223
ASSESSORS' PARCEL R51-8-26

N/F 28 SUMMER AVENUE COMMERCIAL CONDOMINIUM
#28 SUMMER AVENUE
MASTER DEED BOOK 64913 PAGE 54
ASSESSORS' PARCEL R51-8-28

N/F THE CREST, INC.
#23-25 SUMMER AVENUE
BOOK 22382 PAGE 40
ASSESSORS' PARCEL R51-8-12

CONTINUED ON SHEET NO. 22



WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 13

Plotted on 26-Jul-2021 12:58 PM
000000_HD\CONST PLAN - 13).DWG

N

NAD 83

APPROX. EDGE OF RIVER

N/F CITY OF WALTHAM
#155-175 LEXINGTON STREET
ASSESSORS' PARCEL R51-2-18

N/F HOME PROPERTIES GARDENCREST, LLC
#136-140 LYMAN STREET
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R51-2-16

100' INNER RIPARIAN BUFFER ZONE

REM EX RAIL (TYP)

PROP LOAM & SEED

PROP FULL DEPTH PVMT

PRC +05.18

END PROP SPLIT RAIL FENCE
STA. 225+64.74

POLE

PAVEMENT

40" LINK FENCE

CHAIN LINK FENCE

CONCRETE CURB

ABANDONED TRACK

BOS

225 226 227 228 229 230 231

C38 C37

TP-17

CONCRETE BLOCK BARRIER

4' GRASS SHLD
10' BIT PATH
4' GRASS SHLD

℄ OF CONSTRUCTION

LOD

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

POST

DMH
R51 13 2D
RIM: 44.52
INV IN: 35.44
INV OUT: 35.44

DUMPSTER ENCLOSURE

PRC +85.97

STOCKADE FENCE

END PROP CHAIN
LINK FENCE
STA. 227+27.98

200' RIVERFRONT AREA

BENCH MARK
SPIKE IN 12" OAK
ELEV. 45.44

N/F FRANCO CHIARAVALLOTI
AND
ONOFRIO F. CHIARAVALLOTI
#12 SUMMER STREET
BOOK 68768 PAGE 288
ASSESSORS' PARCEL R51-8-6A

CONTINUED ON SHEET NO. 21

CONTINUED ON SHEET NO. 23

PVI STA = 226+05.00
PVI ELEV = 45.53
A.D. = 1.02%
K = 98.12
100' VC

PVC: 225+55
ELEV: 46.09

PVT: 226+55
ELEV: 45.48

-0.10%

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NAVD 88
BASE ELEV
40.00

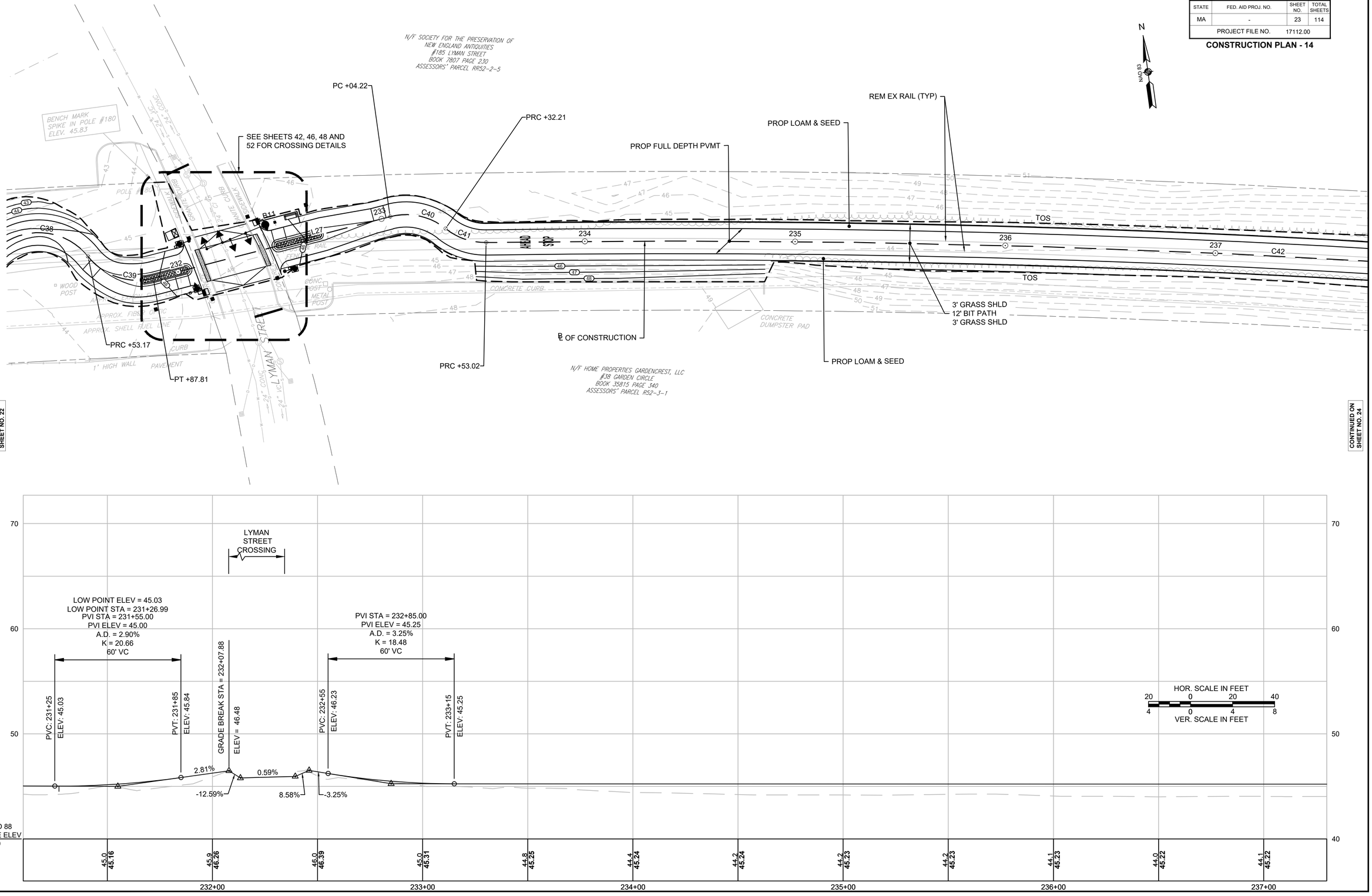
70 60 50 40

225+00	226+00	227+00	228+00	229+00	230+00	231+00
46.7 / **46.70**	46.1 / **46.14**	45.6 / **45.69**	45.3 / **45.49**	45.0 / **45.44**	44.9 / **45.39**	44.8 / **45.34**
44.7 / **45.29**	44.7 / **45.25**	44.7 / **45.20**	44.8 / **45.15**	44.8 / **45.10**	44.5 / **45.05**	

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 14



000000_HD\CONST PLAN - 14).DWG Plotted on 26-Jul-2021 12:59 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 15

Plotted on 26-Jul-2021 1:00 PM
000000_HD\CONST PLAN - 15).DWG

N/F SOCIETY FOR THE PRESERVATION OF
NEW ENGLAND ANTIQUITIES
#185 LYMAN STREET
BOOK 7807 PAGE 230
ASSESSORS' PARCEL RR52-2-5

N

S8.0°W

PT +92.39

REM EX RAIL (TYP)

PROP LOAM & SEED

PROP FULL DEPTH PVMT

BENCH MARK
SPIKE IN 6" MAPLE
ELEV. 45.56

POLE

TOS

RAISED MH

238 239 240 L28 241 242 243

3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD

APPROX. EXXON FUEL LINE
APPROX. FIBER OPTIC
APPROX. SHELL FUEL LINE

DOUBLE POLE #4

℄ OF CONSTRUCTION

PROP LOAM & SEED

N/F HOME PROPERTIES GARDENCREST, LLC
#38 GARDEN CIRCLE
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R52-3-1

CONTINUED ON SHEET NO. 23

CONTINUED ON SHEET NO. 25

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

70
60
50
40

-0.01%

NAVD 88
BASE ELEV
40.00

238+00	239+00	240+00	241+00	242+00	243+00
44.0 / 45.22	44.0 / 45.21	43.8 / 45.21	43.6 / 45.20	43.5 / 45.20	43.6 / 45.20
43.5 / 45.19	43.4 / 45.19	43.6 / 45.19	43.6 / 45.18	43.6 / 45.18	43.6 / 45.17

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 16

Plotted on 26-Jul-2021 1:00 PM
000000_HD\CONST PLAN - 16).DWG

N

NAD 83

N/F HOME PROPERTIES GARDENCREST, LLC
#22-26 MIDDLESEX CIRCLE
BOOK 35815 PAGE 340
ASSESSORS' APRCEL R52-2-4

REM EX RAIL (TYP)
PROP LOAM & SEED
PROP FULL DEPTH PVMT
ROW OF CEDARS
36" RCP
RAISED SMH
TOS
244
245
246
247
248
249
250
C43
C44
C45
L29
PRC +06.27
PRC +44.88
PC +86.96
PT +64.18
MIDDLESEX CIRCLE
ROW OF SHRUBS
HANDICAP RAMP
GRAN. CURB
12" CONC.
SMH R52_16785
RIM: 48.05
INV IN: 26.25
INV OUT: 26.15
POST
ELEC
PAVED PARKING LOT
3' GRASS SHLD
12' BIT PATH
3' GRASS SHLD
CONC. CURB
SIDEWALK
36" RCP
SMH R52_16780
RIM: 48.05
INV IN: 25.62
INV OUT: 25.62
BENCH MARK
PUNCH MARK IN HYD. NUT
ELEV. 49.90
℄ OF CONSTRUCTION
PROP LOAM & SEED
N/F HOME PROPERTIES GARDENCREST, LLC
#38 GARDEN CIRCLE
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R52-3-1
N/F HOME PROPERTIES GARDENCREST, LLC
#15-45 MIDDLESEX ROAD
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R52-4-5
SEE SHEETS 42, 48 AND 52
FOR CROSSING DETAILS

CONTINUED ON SHEET NO. 24
CONTINUED ON SHEET NO. 26

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

LOW POINT ELEV = 45.13
LOW POINT STA = 248+70.50
PVI STA = 249+20.00
PVI ELEV = 45.13
A.D. = 1.49%
K = 67.24
100' VC

PVC: 248+70
ELEV: 45.13
PVT: 249+70
ELEV: 45.87

-0.01%

36" SEWER
STA.=248+36.80
TOP OF PIPE ELEV. = 29.00

NAVD 88
BASE ELEV
40.00

244+00	245+00	246+00	247+00	248+00	249+00
43.9 / 45.17	44.1 / 45.16	43.9 / 45.16	44.0 / 45.16	44.1 / 45.15	44.1 / 45.15
44.0 / 45.14	44.2 / 45.14	44.4 / 45.14	44.6 / 45.13	45.0 / 45.20	45.2 / 45.60

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 17

CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27

MIDDLESEX CIRCLE

PC +61.12

PRC +18.36

PT +37.14

PC +14.70

PRC +80.42

BEGIN PROP SPLIT RAIL FENCE STA. 251+71.40

BEGIN PROP SPLIT RAIL FENCE STA. 252+05.47

℄ OF CONSTRUCTION

4' GRASS SHLD
10' BIT PATH
4' GRASS SHLD

4' GRASS SHLD
9' BIT PATH
4' GRASS SHLD

PROP LOAM & SEED

PROP FULL DEPTH PVMT

REM EX RAIL (TYP)

END PROP SPLIT RAIL FENCE STA. 254+81.47

END PROP SPLIT RAIL FENCE STA. 254+81.49

BEGIN PROP SPLIT RAIL FENCE STA. 256+07.69

BEGIN PROP SPLIT RAIL FENCE STA. 256+07.73

PROP TIMBER BRIDGE, SEE SHEET 62

BOS

LIMIT OF 100-YR FLOODPLAIN (ELEV. VARIES)

200' RIVERFRONT AREA

100' BUFFER ZONE

100' INNER RIPARIAN BUFFER ZONE

N/F HOME PROPERTIES GARDENCREST, LLC
#27-33 MIDDLESEX CIRCLE
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R52-2-2

N/F BENTLEY COLLEGE OF ACCOUNTING AND FINANCE
#400 BEAVER STREET
LAND COURT CERTIFICATE NO. 124507
ASSESSORS' PARCEL R52-2-1

N/F HOME PROPERTIES GARDENCREST, LLC
#15-45 MIDDLESEX ROAD
BOOK 35815 PAGE 340
ASSESSORS' PARCEL R52-4-5

N/F CS SDP WALTHAM, LLC
#90-96R LINDEN STREET
LAND COURT CERTIFICATE NO. 264646
ASSESSORS' PARCEL R52-4-1

LYMAN POND

BEAVER BROOK (PERENNIAL RIVER)

BROOK (PERENNIAL OUTLET)

TIMBER PILE RAILROAD BRIDGE BETWEEN TIES OPEN DECK

CHAIN LINK FENCE

WIRE FENCE

SHED

APPROX. EXXON FUEL LINE
APPROX. RIBER DEPC
APPROX. SHELL FUEL LINE

NAD 83

N

PVI STA = 252+00.00
PVI ELEV = 45.85
A.D. = -1.51%
K = 33.02
50' VC
737.6' SSD

MIDDLESEX CIRCLE CROSSING

LOW POINT ELEV = 45.03
LOW POINT STA = 251+22.62
PVI STA = 251+25.00
PVI ELEV = 44.65
A.D. = 3.05%
K = 32.74
100' VC

HIGH POINT ELEV = 45.97
HIGH POINT STA = 253+45.45
PVI STA = 253+75.00
PVI ELEV = 46.00
A.D. = -0.42%
K = 238.64
100' VC
2625.2' SSD

LIMITS OF TIMBER BRIDGE

PVT: 249+70
ELEV: 45.87

PVC: 250+75
ELEV: 45.38

PVT: 251+75
ELEV: 45.45

PVC: 251+75
ELEV: 45.45

PVT: 252+25
ELEV: 45.87

PVC: 253+25
ELEV: 45.96

PVT: 254+25
ELEV: 45.83

GRADE BREAK STA = 254+80.50
ELEV = 46.13

-3.36%
4.60%
1.48%
1.11%
-1.80%
-1.45%
0.09%
0.67%
1.25%

GRADE BREAK STA = 249+80.87
ELEV = 46.03

PVI STA = 254+50.00
PVI ELEV = 45.75
A.D. = 1.58%
K = 31.66
50' VC
PVC: 254+25
ELEV: 45.83
PVT: 254+75
ELEV: 46.06
LOW POINT ELEV = 45.82
LOW POINT STA = 254+35.55

HOR. SCALE IN FEET
20 0 20 40

VER. SCALE IN FEET
4 0 4 8

NAVD 88
BASE ELEV
30.00

250+00	251+00	252+00	253+00	254+00	255+00
46.0 / 45.98	45.5 / 45.74	45.0 / 45.11	45.9 / 45.15	46.1 / 45.76	46.3 / 45.89
				46.5 / 45.94	46.8 / 45.97
				47.1 / 45.90	47.6 / 45.85
					35.2 / 46.26
					46.59

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 18

Plotted on 26-Jul-2021 1:02 PM
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CONTINUED ON SHEET NO. 26

CONTINUED ON SHEET NO. 28

NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

PVI STA = 256+40.00
PVI ELEV = 47.00
A.D. = 2.11%
K = 23.70
50' VC

HIGH POINT ELEV = 47.99
HIGH POINT STA = 257+05.07
PVI STA = 256+90.00
PVI ELEV = 48.10
A.D. = -2.75%
K = 18.21
50' VC
418.1' SSD

LOW POINT ELEV = 47.61
LOW POINT STA = 257+90.78
PVI STA = 258+00.00
PVI ELEV = 47.50
A.D. = 1.57%
K = 38.10
60' VC

PVI STA = 259+70.00
PVI ELEV = 49.25
A.D. = 2.37%
K = 21.09
50' VC

PVI STA = 260+20.00
PVI ELEV = 50.95
A.D. = -2.43%
K = 20.56
50' VC
PVC: 259+95
ELEV: 50.10
PVT: 260+45
ELEV: 51.19
468.7' SSD
HIGH POINT ELEV = 51.19
HIGH POINT STA = 260+45

PVI STA = 261+80.00
PVI ELEV = 51.50
A.D. = -4.51%
K = 11.08
50' VC
PVC: 261+55
ELEV: 51.64
PVT: 262+05
ELEV: 50.24
264.2' SSD
HIGH POINT ELEV = 51.64
HIGH POINT STA = 261+55

PVI STA = 262+30.00
PVI ELEV = 48.97
A.D. = 3.65%
K = 13.71
50' VC

GRADE BREAK STA = 256+06.78
ELEV = 46.97
PVC: 256+15
ELEV: 46.98
PVT: 256+65
ELEV: 47.55
PVC: 256+65
ELEV: 47.55
PVT: 257+15
ELEV: 47.96
PVC: 257+70
ELEV: 47.66
PVT: 258+30
ELEV: 47.81
PVC: 259+45
ELEV: 48.99
PVT: 259+95
ELEV: 50.10
GRADE BREAK STA = 260+51.69
ELEV = 51.26
GRADE BREAK STA = 261+52.76
ELEV = 51.65
PVC: 262+05
ELEV: 50.24

0.09% -0.55% 1.03% 0.97% 0.39% -0.55%

LIMITS OF LINDEN STREET BRIDGE

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

NAVD 88
BASE ELEV
30.00

37.3	48.8	48.6	49.8	49.0	49.3	49.8	50.3	50.5	34.8	34.5	51.64	50.1
46.92	47.27	47.98	47.77	47.62	48.01	48.53	49.05	50.26	51.24	51.44		50.48

256+00 257+00 258+00 259+00 260+00 261+00 262+00

REM EX RAIL (TYP)
4' GRASS SHLD
9' BIT PATH
4' GRASS SHLD
PROP LOAM & SEED
PROP FULL DEPTH PVMT
BOS
4' GRASS SHLD
10' BIT PATH
4' GRASS SHLD
℄ OF CONSTRUCTION
PROP LOAM & SEED
PROP ACCESS RAMP, SEE SHEET 72
END PROP SPLIT RAIL FENCE STA. 260+28.46
2' GRASS SHLD
10' BIT PATH
2' GRASS SHLD
END PROP SPLIT RAIL FENCE STA. 260+28.42
PROP LINDEN STREET BRIDGE, SEE SHEET 67
PT +37.22
BEGIN PROP SPLIT RAIL FENCE STA. 261+52.76
PC +70.90
BEGIN PROP SPLIT RAIL FENCE STA. 261+52.76
B12
B13
L31
257
258
259
260
261
262
BENCH MARK TOP SW COR. CONC. BASE ELEV. 48.84
0.0000'
BENCH MARK SPIKE IN 14" OAK ELEV. 50.75
N/F BENTLEY COLLEGE OF ACCOUNTING AND FINANCE #400 BEAVER STREET LAND COURT CERTIFICATE NO. 124507 ASSESSORS' PARCEL R52-2-1
100' INNER RIPARIAN BUFFER ZONE
100' INNER RIPARIAN ZONE/BUFFER ZONE
100' INNER RIPARIAN ZONE
200' RIVERFRONT AREA
BEAVER BROOK (PERENNIAL RIVER)
BORDERING VEGETATED WETLANDS
EDGE OF WETLANDS
LIMIT OF 100-YR FLOODPLAIN (ELEV. VARIES)
LINDEN STREET
STEEL GIRDER TRUSS RAILROAD BRIDGE BETWEEN TIES DECK OPEN SEE DETAIL
PAVED SIDEWALK
GRANITE CURB
GRANITE BLOCK PAVEMENT
CHAIN LINK FENCE
CONCRETE BASE
CONCRETE
BRICK
PAVEMENT
BUILDING
SHED
POLE #111
BILLBOARD
SCUTCHEON PIN / LEAD PLUG
N/F V. ... #1... LAND COUR... ASSESS...
N
NAD 83

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 19

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N

NAD 83

N/F STANLEY BLOOMENTHAL AND LENI C. BLOOMENTHAL #3 WAVERLEY OAKS ROAD BOOK 66283 PAGE 445 ASSESSORS' PARCEL R53-5-1

N/F STANLEY BLOOMENTHAL AND LENI C. BLOOMENTHAL #3 WAVERLEY OAKS ROAD BOOK 66283 PAGE 445 ASSESSORS' PARCEL R53-5-1A

BENCH MARK SPIKE IN 10" OAK ELEV. 44.24

PROP SPLIT RAIL FENCE (TYP)

REM EX RAIL (TYP)

PROP LOAM & SEED

PROP FULL DEPTH PVMT

4' GRASS SHLD
10' BIT PATH
4' GRASS SHLD

C50

BOS

BOS

℄ OF CONSTRUCTION

PROP LOAM & SEED

PT +05.27

END PROP SPLIT RAIL FENCE STA. 268+60.27

APPROX. EDGE OF RIVER

APPROX. EXXON FUEL LINE

APPROX. FIBER OPTIC

APPROX. SHELL FUEL LINE

"LIMIT OF 100-YR FLOODPLAIN (ELEV. VARIES)"

BORDERING VEGETATED WETLANDS

DECIDUOUS TREE

CONCRETE BASE

WOOD POST

POLE #17

BUILDING

BUILDING

PAVEMENT

PAVEMENT

STORAGE AREA

EDGE OF PAVEMENT

PAVEMENT

100' BUFFER ZONE

100' INNER RIPARIAN ZONE

100' INNER RIPARIAN ZONE

100' BUFFER ZONE

100' BUFFER ZONE

N/F V. LOPEZ REALTY TRUST
#131 LINDEN STREET
LAND COURT CERTIFICATE NO. 252830
ASSESSORS' PARCEL R53-7-5

CONTINUED ON SHEET NO. 27

CONTINUED ON SHEET NO. 29

NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

PVI STA = 262+30.00
PVI ELEV = 48.97
A.D. = 3.65%
K = 13.71
50' VC

PVT: 262+55
ELEV: 48.62

-1.41%

PVI STA = 266+55.00
PVI ELEV = 42.97
A.D. = 1.25%
K = 79.89
100' VC

PVC: 266+05
ELEV: 43.68

PVI STA = 267+30.00
PVI ELEV = 42.85
A.D. = -1.90%
K = 26.29
50' VC
592.5' SSD

PVC: 267+05
ELEV: 42.89

PVT: 267+05
ELEV: 42.89

PVT: 267+55
ELEV: 42.33

PVC: 267+55
ELEV: 42.33

LOW POINT ELEV = 41.58
LOW POINT STA = 268+28.54
PVI STA = 267+95.00
PVI ELEV = 41.51
A.D. = 2.24%
K = 35.67
80' VC

HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

NAVD 88
BASE ELEV
35.00

60
50
40
35

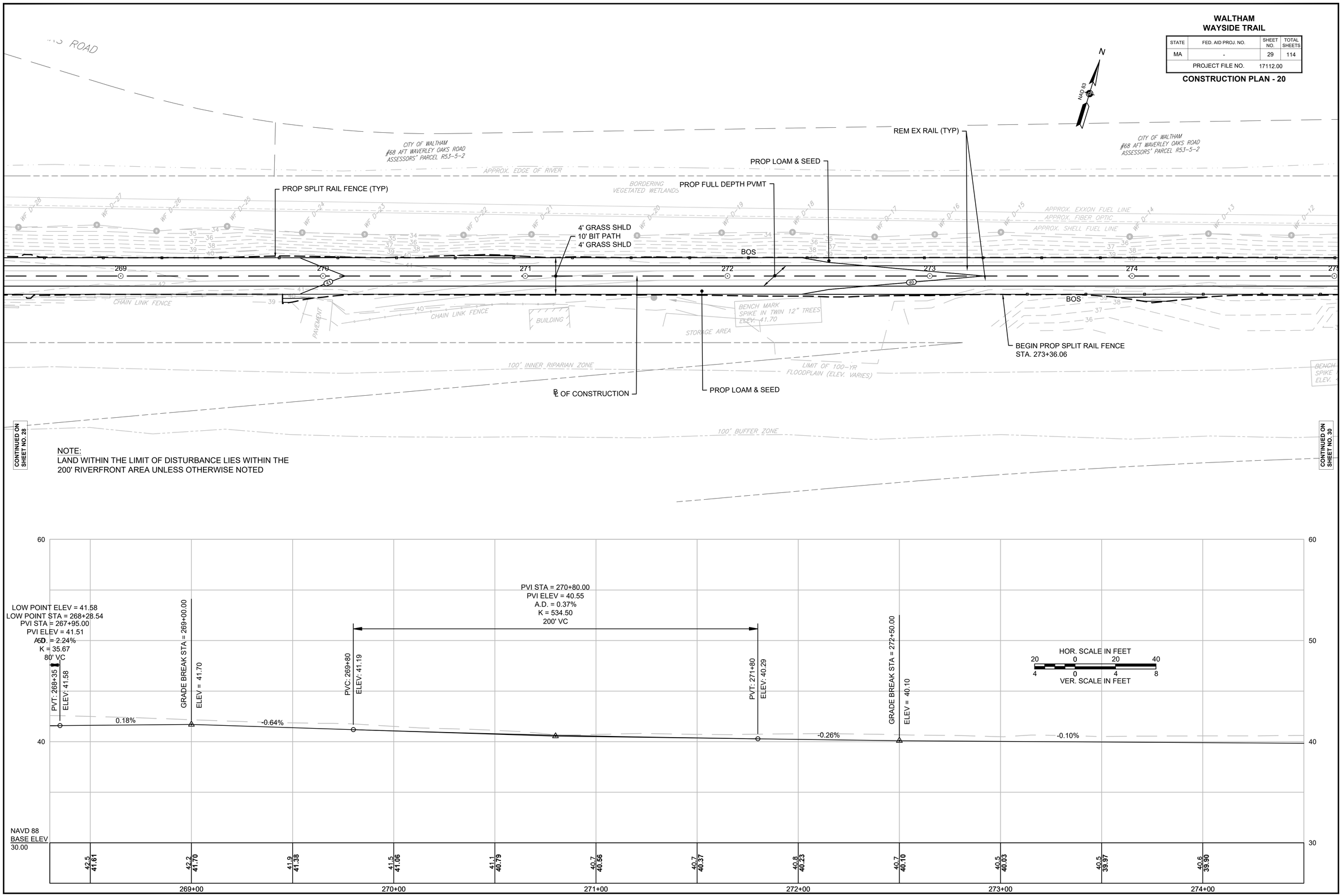
263+00	264+00	265+00	266+00	267+00	268+00
49.4 / 48.70	48.6 / 47.98	47.9 / 47.28	47.1 / 46.57	46.5 / 45.86	45.9 / 45.16	45.5 / 44.45	44.8 / 43.75	44.1 / 43.17	43.6 / 42.90	43.3 / 42.43	42.8 / 41.69

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 20

Plotted on 26-Jul-2021 1:07 PM
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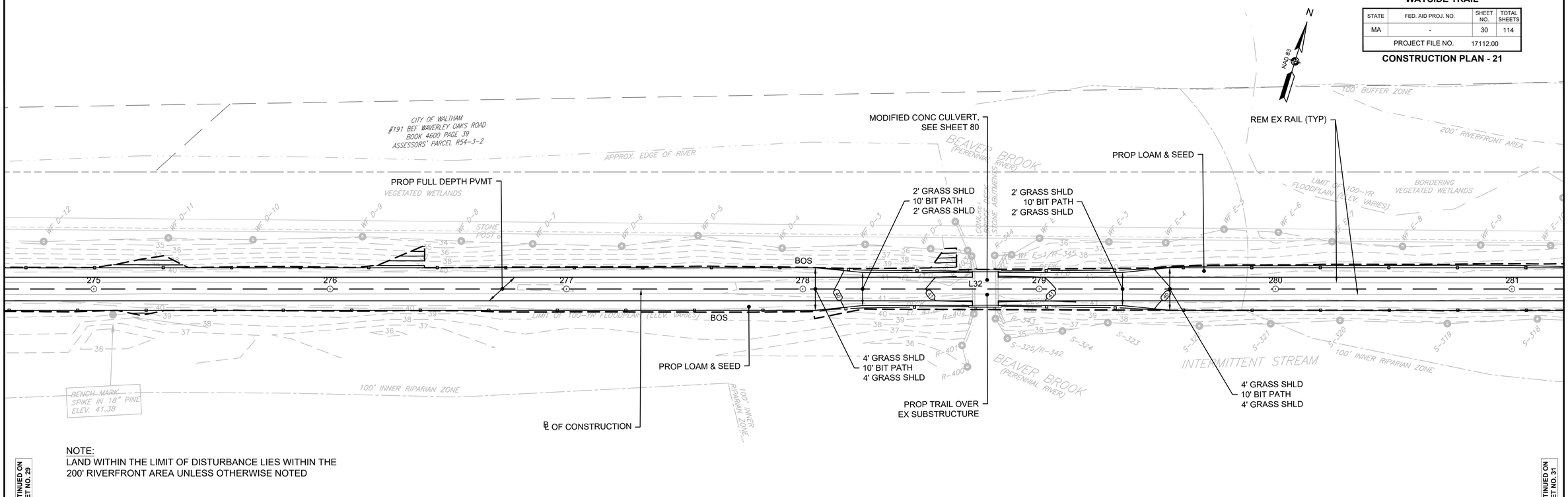
NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 21

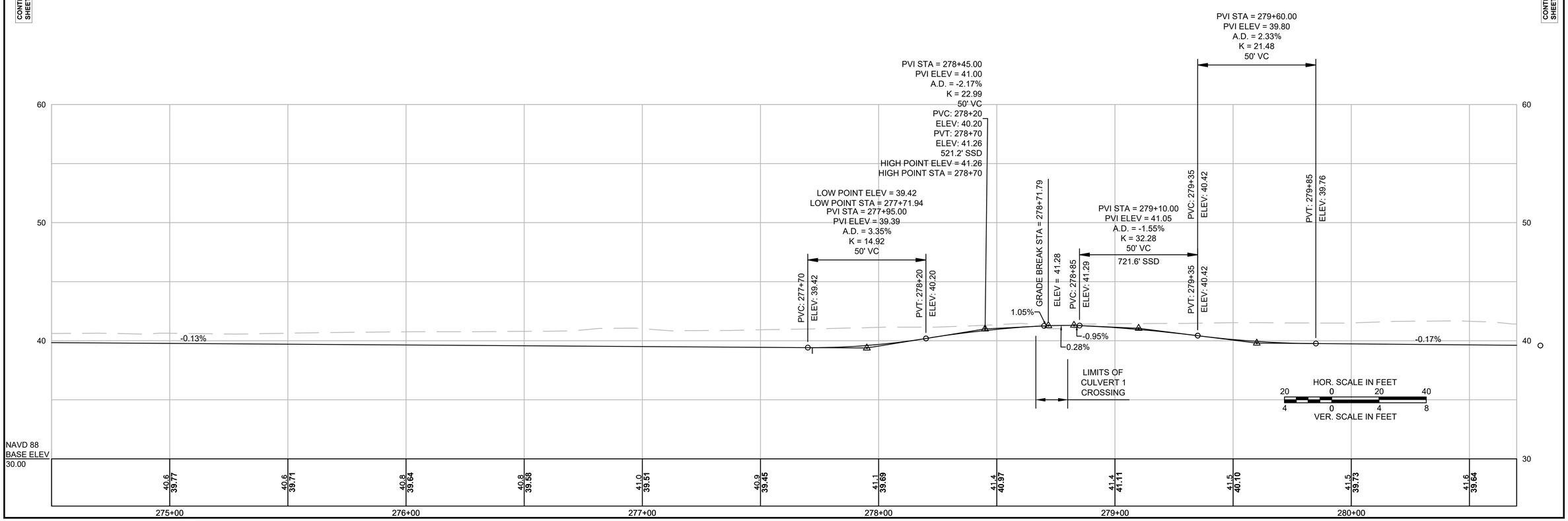
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NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

CONTINUED ON SHEET NO. 29

CONTINUED ON SHEET NO. 31

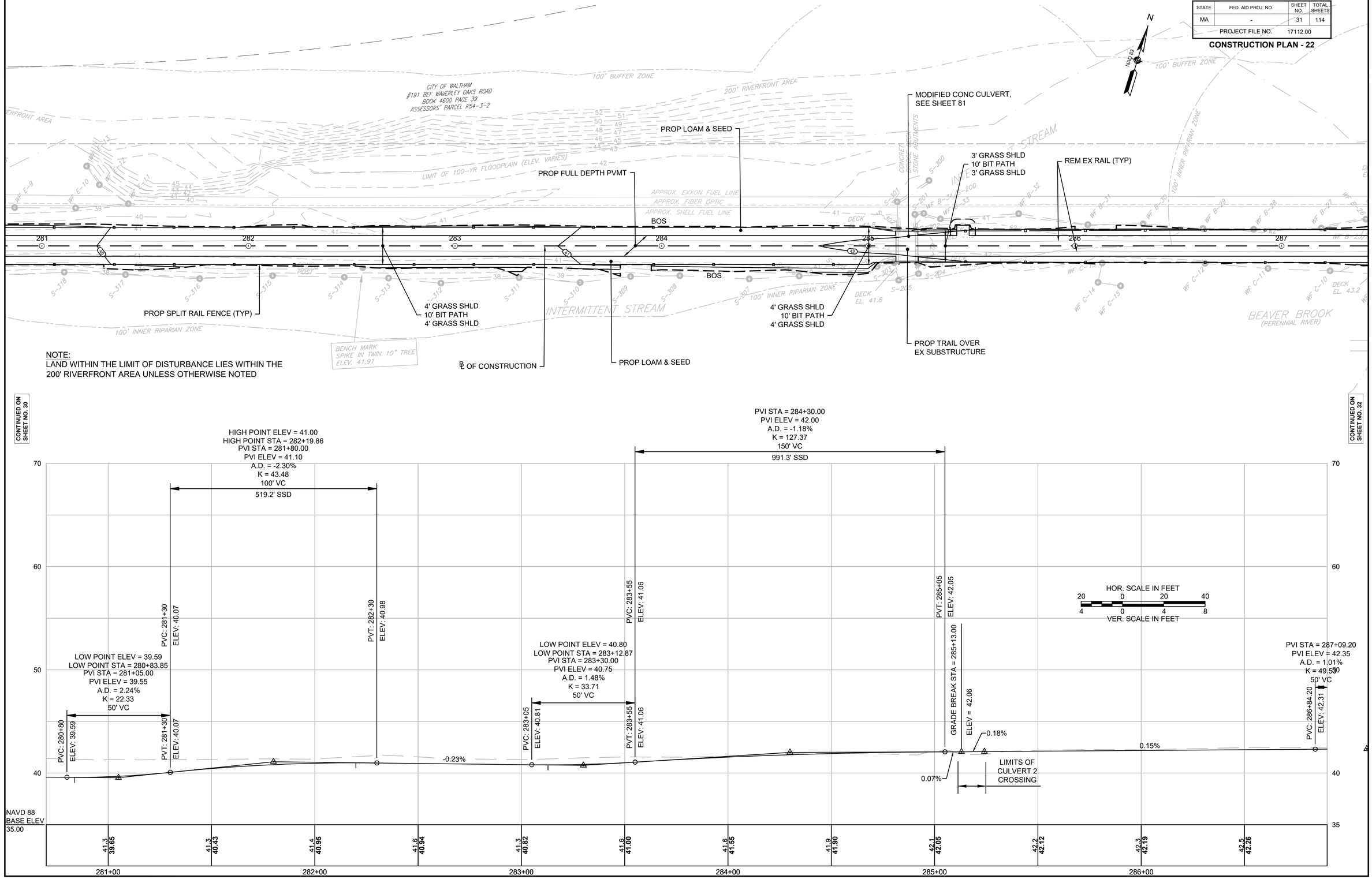


WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	114
PROJECT FILE NO.		17112.00	

CONSTRUCTION PLAN - 22

Plotted on 26-Jul-2021 1:09 PM
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NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

CONTINUED ON SHEET NO. 30

CONTINUED ON SHEET NO. 32

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	114
PROJECT FILE NO.	17112.00		

CONSTRUCTION PLAN - 23

Plotted on 29-Jul-2021 9:48 AM
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N
NAD 83

100' BUFFER ZONE
CITY OF WALTHAM
#191 BEF. WAVERLEY OAKS ROAD
BOOK 4600 PAGE 39
ASSESSORS' PARCEL R54-3-2
AMERICAN LEGION, INC.
#215 WAVERLEY OAKS ROAD
BOOK 13802 PGE 370
ASSESSORS' PARCEL R54-3-3
LIMIT OF 100-YR FLOODPLAIN (ELEV. VARIES)
APPROX. EDGE OF RIVER
BEAVER BROOK (PERENNIAL RIVER)
DECK EL. 43.1
DECK EL. 43.3
TIMBER PIER STONE ABUTMENT
DECK EL. 43.2
APPROX. EXXON FUEL LINE
APPROX. FIBER OPTIC
APPROX. SHELL FUEL LINE
RAIL STORAGE
SWITCH GEAR
ABANDONED TRACK
EXISTING MAIN LINE TRACK IN USE
100' INNER RIPARIAN/ BUFFER ZONE
WF B-27/R-302
WF B-26/R-300
WF B-25/R-301
WF B-24/R-257
WF B-23
WF B-22
WF B-21
WF B-20
WF B-19
WF B-18
WF B-17
WF B-16
WF B-15
WF B-14
WF B-13
WF B-12
WF B-11
WF B-10
WF B-9
WF B-8
WF B-7
WF B-6
WF B-5
WF B-4
WF B-3
WF B-2
WF B-1/R-245
R-244
R-243
R-242
R-241
R-240
R-239
WF C-10
WF C-9/R-304
WF C-8
WF C-7
WF C-6
WF C-5
WF C-4
WF C-3
WF C-2
WF C-1
288
289
290
291
292
293
L33
C51
C52
BOS
PRC +18.39
PC +97.35
PT +37.42
END PROP SPLIT RAIL FENCE STA. 289+40.01
10' BIT PATH
2' GRASS SHLD
PROP FULL DEPTH PVMT
REM EX RAIL (TYP)
MODIFIED TIMBER CULVERT, SEE SHEET 83
3' GRASS SHLD
10' BIT PATH
3' GRASS SHLD
END PROP SPLIT RAIL FENCE STA. 288+97.35
PROP LOAM & SEED
PROP TRAIL OVER EX SUBSTRUCTURE
BEGIN PROP CHAIN LINK FENCE STA. 288+92.72
℄ OF CONSTRUCTION

CONTINUED ON SHEET NO. 31
CONTINUED ON SHEET NO. 33

NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE 200' RIVERFRONT AREA UNLESS OTHERWISE NOTED

PVI STA = 292+32.72
PVI ELEV = 46.58
A.D. = -1.90%
K = 56.49
107' VC
621.6' SSD

LIMITS OF CULVERT 3 CROSSING

PVI STA = 287+09.20
PVI ELEV = 42.35
A.D. = 1.01%
K = 49.53
50' VC

LOW POINT ELEV = 42.67
LOW POINT STA = 288+23.16
PVI STA = 288+20.03
PVI ELEV = 42.55
A.D. = 1.82%
K = 29.02
53' VC

PVI STA = 288+76.46
PVI ELEV = 43.00
A.D. = -0.46%
K = 131.43
60' VC
2393.9' SSD

PVI STA = 291+21.54
PVI ELEV = 43.85
A.D. = 2.10%
K = 54.65
115' VC

HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

PVT: 287+34.20 ELEV: 42.64
GRADE BREAK STA = 287+85.20 ELEV = 43.00
PVC: 287+93.60 ELEV: 42.82
PVC: 288+46.46 ELEV: 42.76
PVT: 289+06.46 ELEV: 43.11
PVC: 290+64.04 ELEV: 43.65
PVC: 291+79.04 ELEV: 45.26
PVT: 291+79.04 ELEV: 45.26
PVT: 292+86.39 ELEV: 46.87

1.15% -1.02% 0.80% 0.35% 2.45% 0.25%

NAVD 88
BASE ELEV
40.00

70 60 50 40

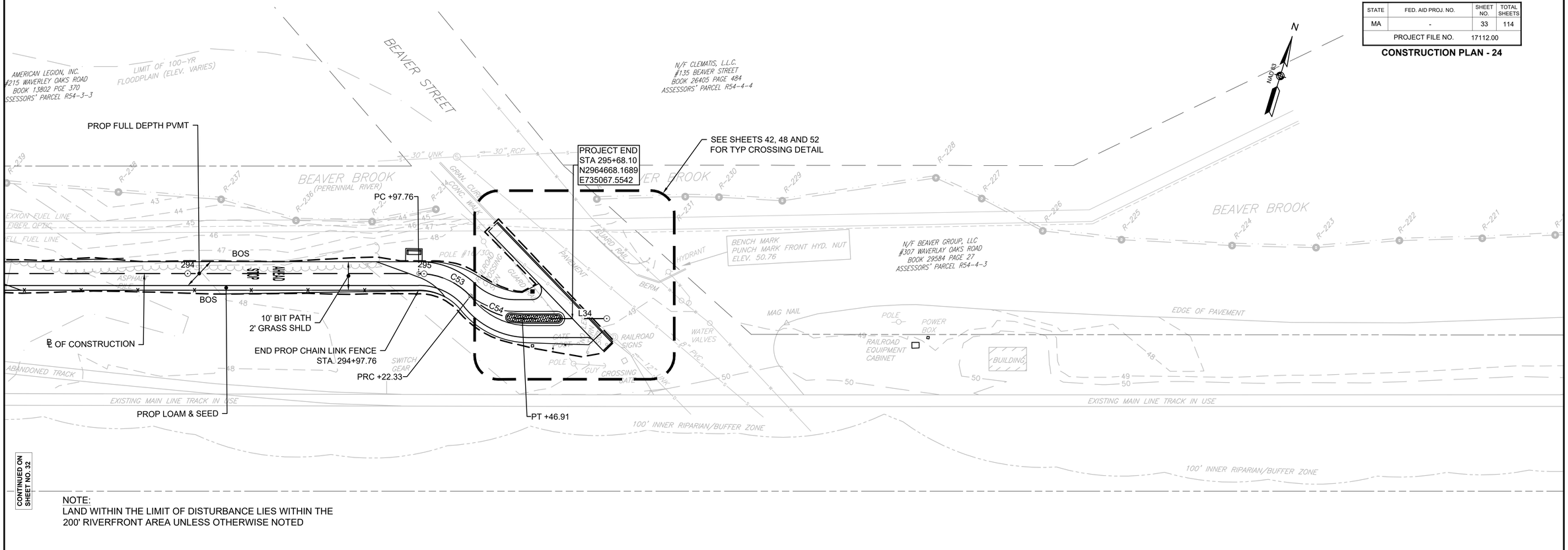
287+00	288+00	289+00	290+00	291+00	292+00	293+00
42.5 / 42.36	42.8 / 42.82	42.9 / 42.76	43.2 / 42.79	43.2 / 43.06	43.2 / 43.26	43.5 / 43.43	43.7 / 43.60	44.1 / 43.90	44.8 / 44.63	46.0 / 45.74	47.4 / 46.56	47.0 / 46.95

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	114
PROJECT FILE NO.	17112.00		

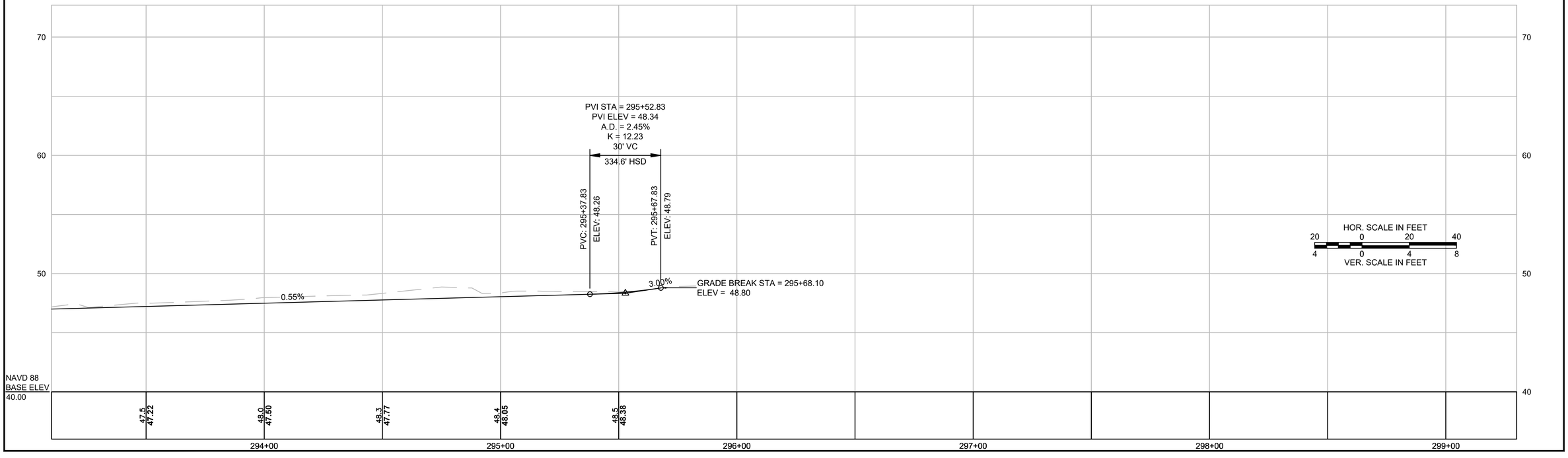
CONSTRUCTION PLAN - 24

Plotted on 26-Jul-2021 1:10 PM
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CONTINUED ON SHEET NO. 32

NOTE:
LAND WITHIN THE LIMIT OF DISTURBANCE LIES WITHIN THE
200' RIVERFRONT AREA UNLESS OTHERWISE NOTED



PLANTING NOTES:

1. BEFORE ANY TREES OR SHRUBS ARE REMOVED, THE CONTRACTOR SHALL ARRANGE A CONFERENCE ON SITE WITH THE OWNER'S REPRESENTATIVE TO IDENTIFY TREES AND SHRUBS WHICH ARE TO BE REMOVED, AS WELL AS THOSE WHICH ARE TO BE PROTECTED. DO NO CLEARING WITHOUT A CLEAR UNDERSTANDING OF EXISTING VEGETATION TO BE PRESERVED.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES TO REMAIN FOR THE LENGTH OF THE CONSTRUCTION PERIOD. VEHICLES SHALL NOT BE PARKED, NOR CONSTRUCTION MATERIALS BE STORED BENEATH THE DRIP LINE OF TREES TO BE SAVED. PROTECTION TECHNIQUES SHALL BE APPROVED BY OWNER'S REPRESENTATIVE.
3. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING AND INSTALLED UTILITY LINES PRIOR TO PLANTING AND REPORT ANY CONFLICTS TO THE OWNER'S REPRESENTATIVE.
4. ALL NEW PLANT MATERIAL SHALL CONFORM TO THE "AMERICAN STANDARD FOR NURSERY STOCK", LATEST EDITION, PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION. IN ADDITION, ALL PLANT MATERIAL SHALL BE OF SPECIMEN QUALITY., EXCEPT SMALL CONSERVATION TREES.
5. ALL NEW TREES AND SHRUBS SHALL BE BALLED AND BURLAPPED OR CONTAINER GROWN UNLESS OTHERWISE NOTED ON THE PLANT LIST.
6. CONTRACTOR SHALL SUPPLY ALL NEW PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON THE DRAWINGS. IF MINOR DISCREPANCIES EXIST BETWEEN THE NUMBER OF PLANTS DRAWN ON THE PLANTING PLAN AND THE NUMBER OF PLANTS IN THE PLANT SCHEDULE, THE PLANTING PLAN SHALL GOVERN.
7. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT, AND CULTURE AND MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
8. ALL NEW TREES SHALL BE TAGGED AND APPROVED BY THE OWNER'S REPRESENTATIVE AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO THE SITE. FOR SHRUBS AND SMALLER MATERIALS, REPRESENTATIVE TAGGING BY THE OWNER'S REPRESENTATIVE WILL BE ACCEPTABLE.
9. NO TREES SHALL BE PLANTED BEFORE ACCEPTANCE OF ROUGH GRADING. TREES SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS THEY BORE TO FINISH GRADE BEFORE BEING DUG IN THE NURSERY. PRIOR TO PLANTING, REMOVE THE TOP OF THE BURLAP AND CONFIRM THAT PLANT ROOT CROWNS ARE NOT COVERED BY SOIL FROM THE NURSERY.
10. STAKE LOCATION OF ALL PROPOSED PLANTS FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF PLANTING.
11. MULCH TREES AND PLANTING BEDS PER DETAILS AND SPECIFICATIONS, EXCEPT SMALL CONSERVATION TREES WHICH SHALL RECEIVE LOAM AND SEEDING AS SHOWN ON DRAWINGS.
12. ALL NEW PLANTS SHALL BE GUARANTEED BY THE CONTRACTOR FROM THE TIME OF WRITTEN ACCEPTANCE. SEE SPECIFICATIONS FOR LENGTH OF GUARANTEE.
13. ALL AREAS DISTURBED BY CONSTRUCTION OPERATIONS INSIDE AND OUTSIDE THE LIMIT OF WORK SHALL BE LOAMED AND SEEDED AS SPECIFIED AND WITH MIX AS DIRECTED BY OWNER'S REPRESENTATIVE.
14. ALL AREAS TO BE SEEDED SHALL RECEIVE 6" TOPSOIL PRIOR TO SEEDING.
15. ALL SLOPES STEEPER THAN 3:1 SHALL RECEIVE 6" LOAM, WOODLAND SEED MIX, AND EROSION CONTROL FABRIC.

LANDSCAPE LEGEND

CONCRETE PAVING	3 D-7
FLUSH ISLANDS	SEE TYPICAL ROADWAY CROSSING - DETAILS 2, SHEET 48
PROPOSED TREE LINE- SEE CLEARING AND PRUNING	2 D-7
PROPOSED SHADE TREE	14 D-9 / 15 D-9
PROPOSED EVERGREEN TREE	16 D-9 / 15 D-9
PROPOSED FLOWERING TREE	14 D-9 / 15 D-9
PROPOSED SHRUBS	13 D-9
PROPOSED SMALL TREES	SEE SPECIFICATIONS
6" LOAM AND LAWN SEED	SEE SPECIFICATIONS
6" LOAM AND WOODLAND SEED	SEE SPECIFICATIONS
6" LOAM AND FOREBAY SEED	SEE SPECIFICATIONS
SPLIT RAIL FENCE	SEE CIVIL SPECIFICATIONS
CHAINLINK FENCE	SEE CIVIL SPECIFICATIONS
GRANITE CURB	SEE CIVIL SPECIFICATIONS
E1 EMERGENCY CALL BOX	7 D-7
B1 SITE BENCH	5 D-7
R1 BICYCLE RACK	6 D-7
SP1 STATION PILLAR	11 D-8
D1 DESTINATION SIGN	9 D-8
I1 IDENTIFICATION SIGN	8 D-8

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES

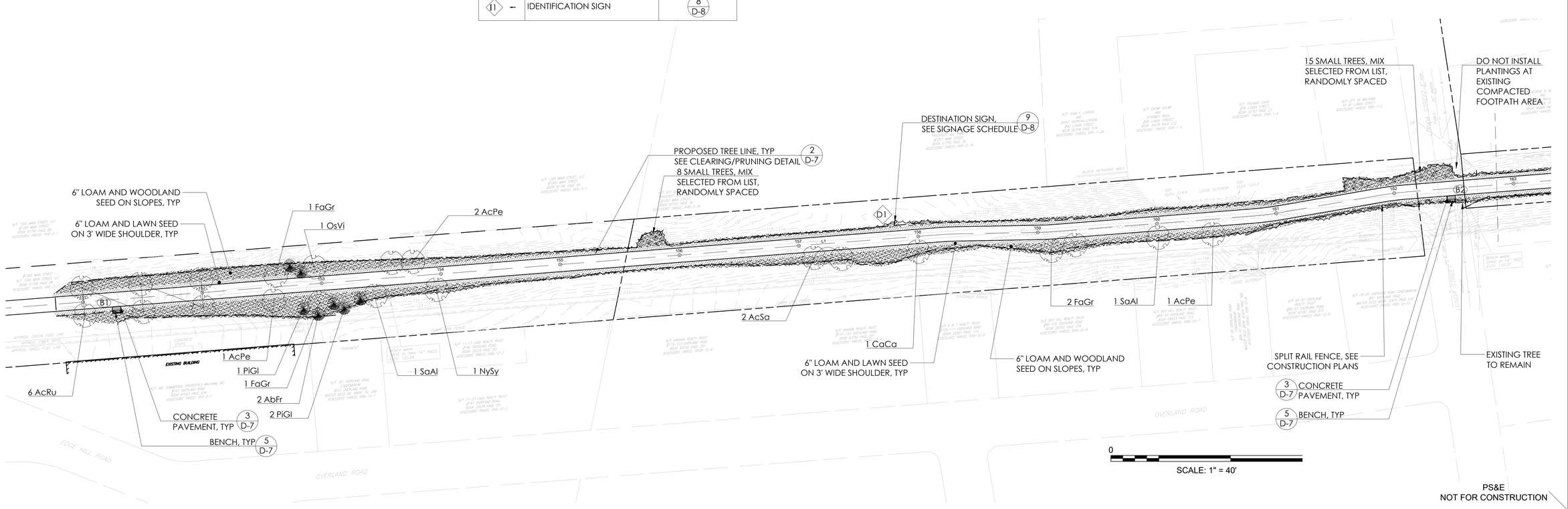
SITE AMENITIES LAYOUT NOTES:

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
2. ALL SITE AMENITIES SHALL BE 3' MIN TO EDGE OF TRAIL, TYP.
3. ALL SITE FURNISHINGS, SIGNS AND POSTS SHALL BE ORIENTED PERPENDICULAR TO TRAIL, UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.
4. ALL SITE FURNISHINGS SHALL BE PLACED 6" FROM EDGE OF CONCRETE PAD UNLESS OTHERWISE DIRECTED BY OWNER'S REPRESENTATIVE.
5. ALL POST LOCATIONS AND ORIENTATION SHALL BE CONFIRMED IN THE FIELD BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
6. ALL SIGNS SHALL PROVIDE VERTICAL CLEARANCES TO MEET ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. SIGN LOCATIONS AND ORIENTATION SHALL BE CONFIRMED IN THE FIELD BY THE OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION.
7. ALL AT ALL LOCATIONS WHERE EXISTING PAVING ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE.
8. WHERE NEW PAVING MEETS EXISTING PAVING, SMOOTHLY BLEND LINE OF EXISTING WITH NEW.
9. CONTRACTOR SHALL CONFIRM EXTENT OF NEW CONCRETE SIDEWALK BASED ON PROPOSED GRADES, SEE CONSTRUCTION PLANS.
10. FOR CURB RAMPS, SEE CONSTRUCTION PLANS.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 1



PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:02 PM

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

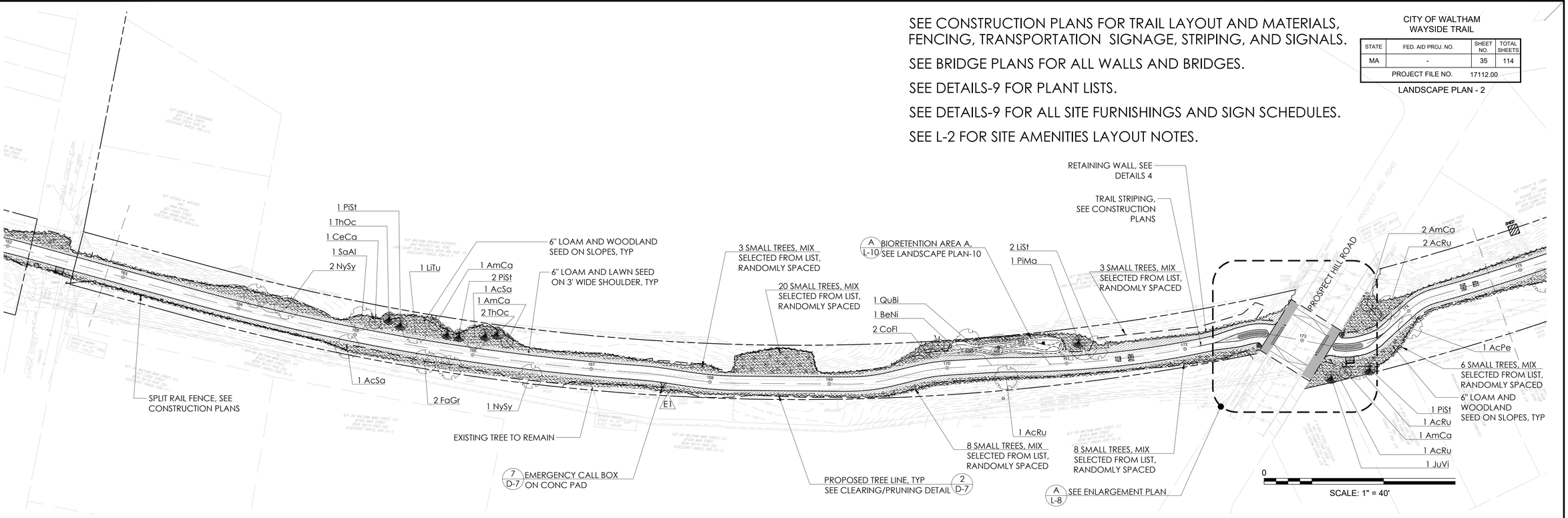
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

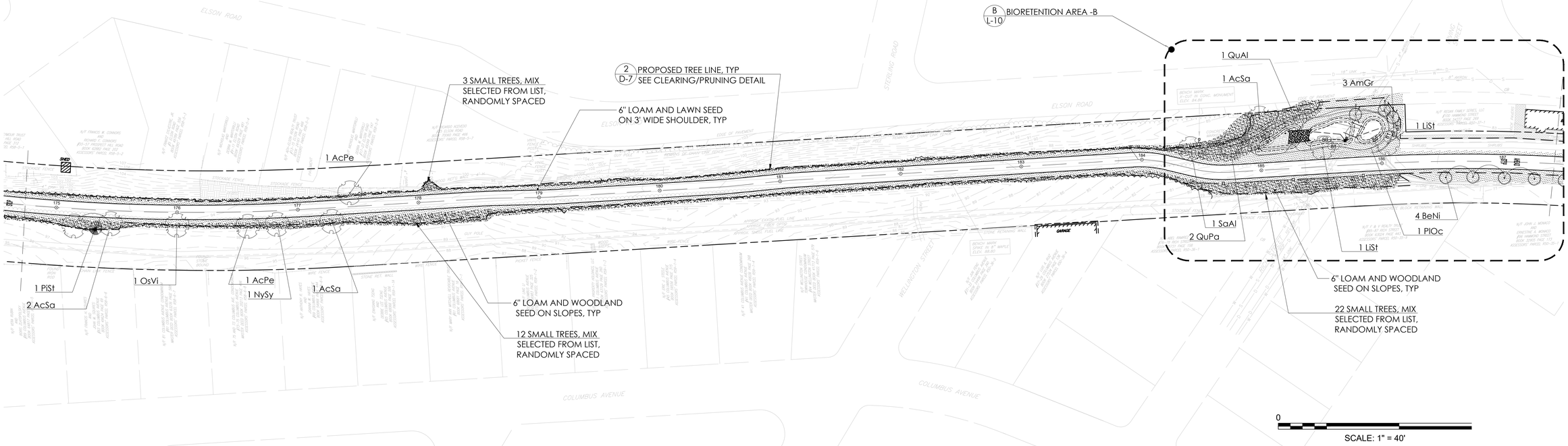
SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 2





PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:02 PM

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

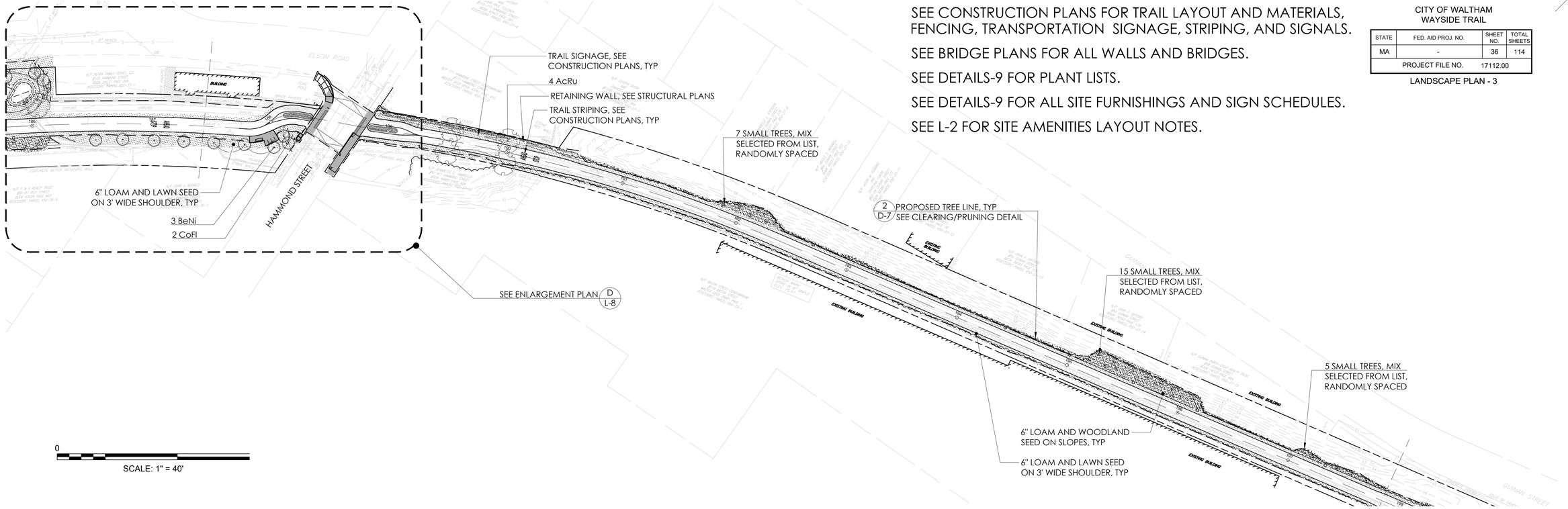
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

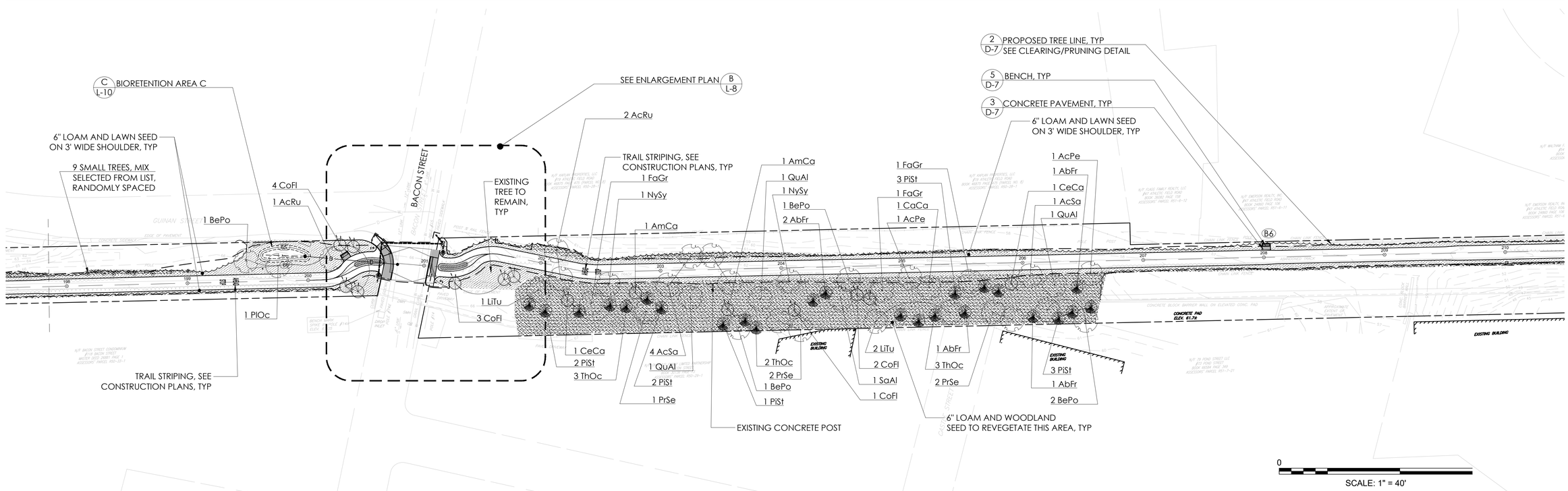
SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 3





PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:03 PM

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

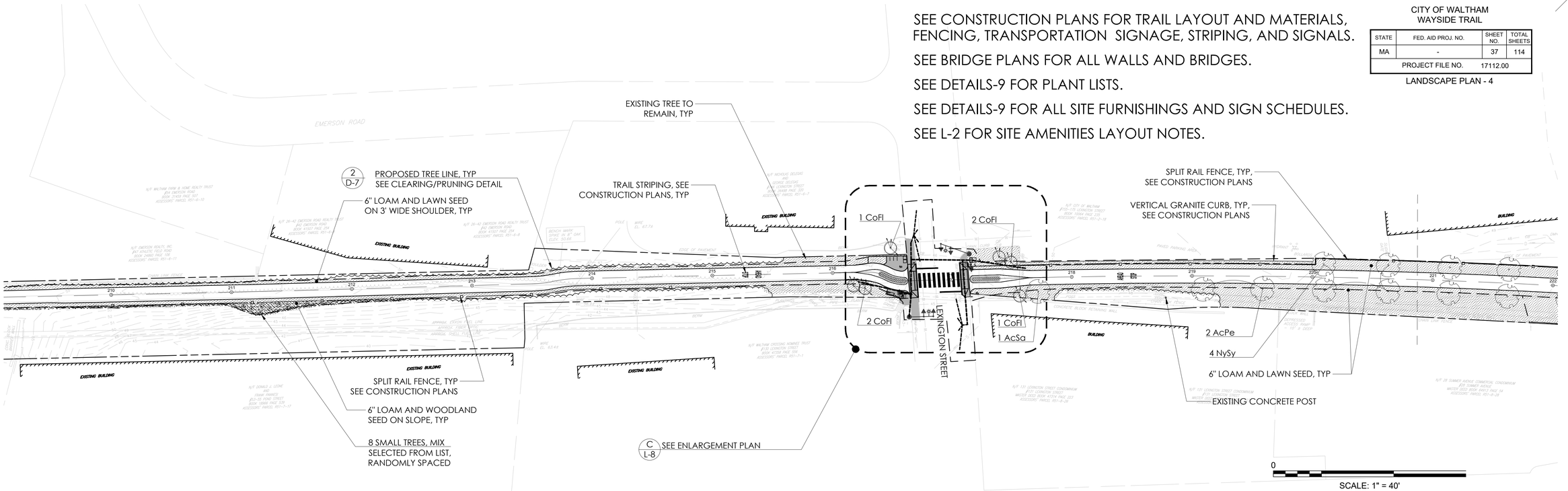
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

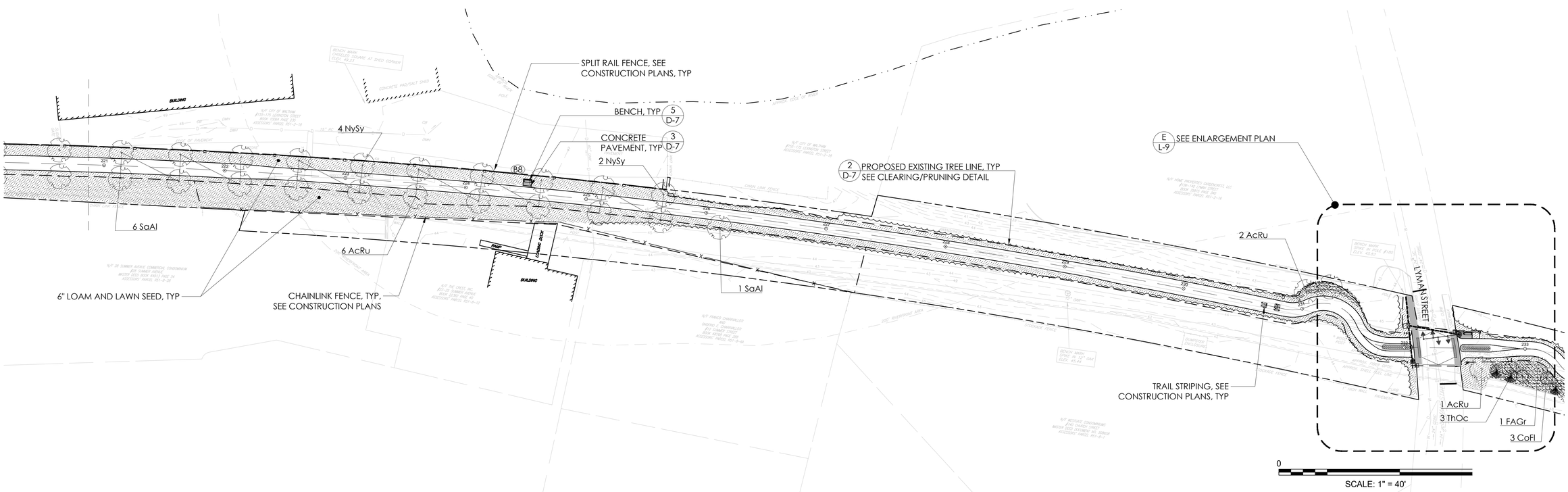
SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 4





PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:04 PM

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

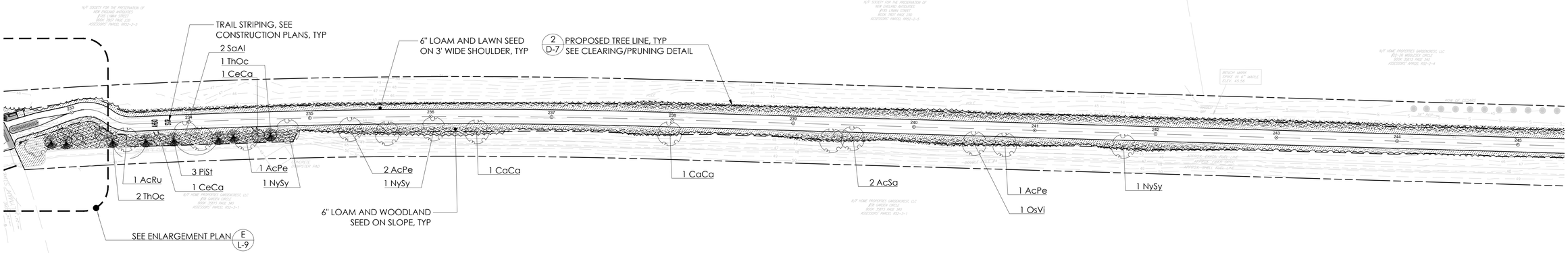
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

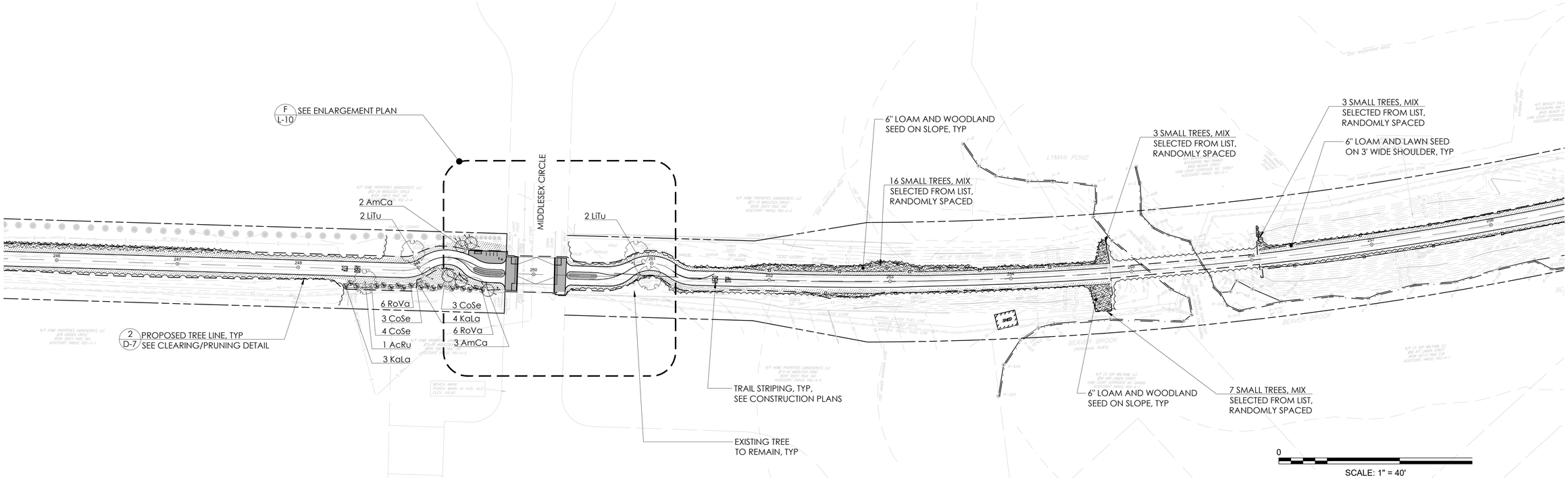
SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 5





PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:05 PM

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 6

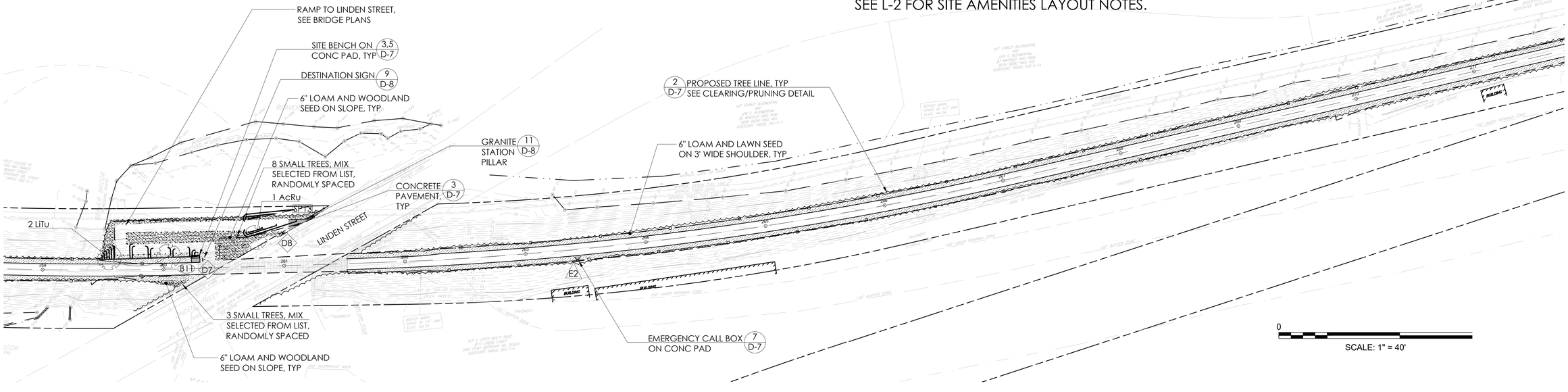
SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

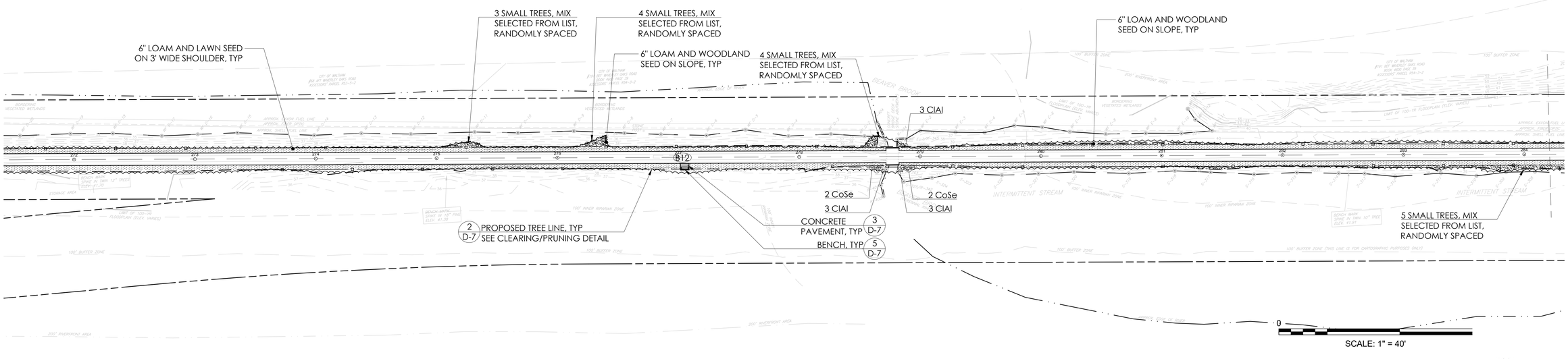
SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.





PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:06 PM

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

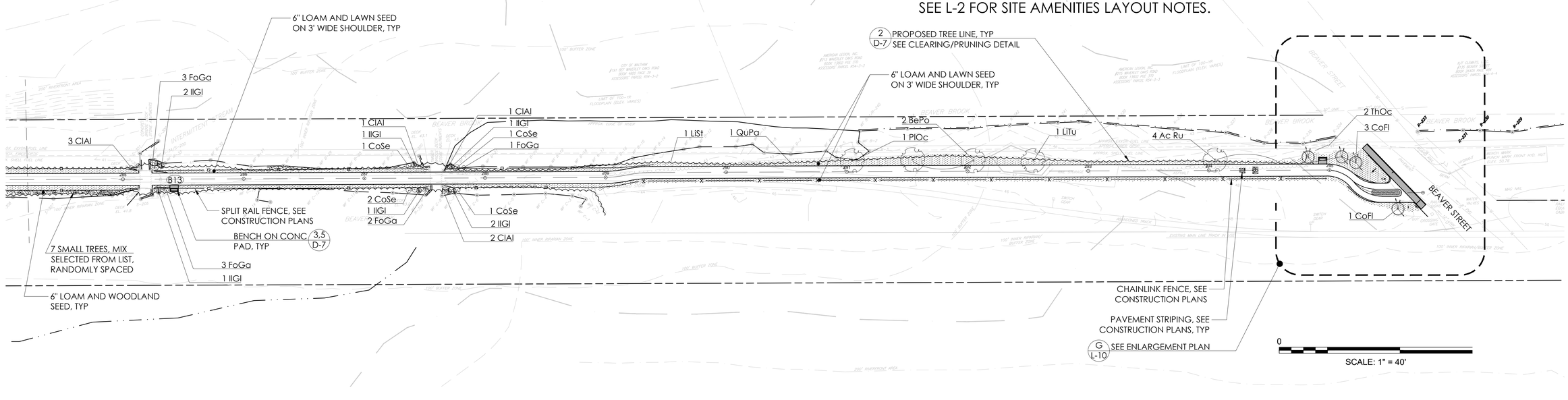
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	114
PROJECT FILE NO.	17112.00		

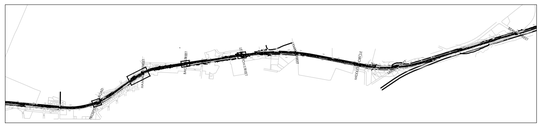
LANDSCAPE PLAN - 7



PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:07 PM

SEE LANDSCAPE PLAN 1-7 FOR CORRESPONDING PLANTING, TYP.



KEY PLAN 1"=2000'-0"

CITY OF WALTHAM
WAYSIDE TRAIL

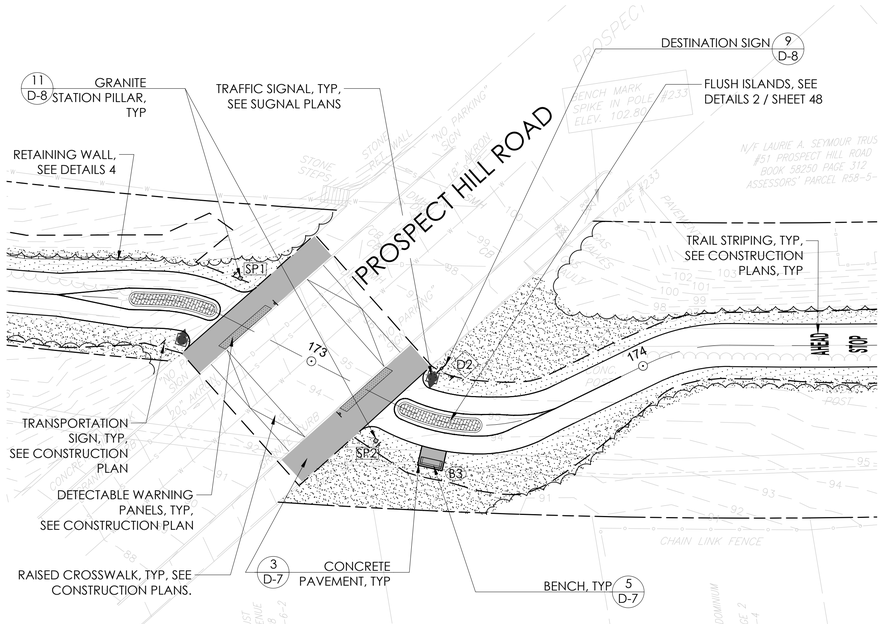
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 8

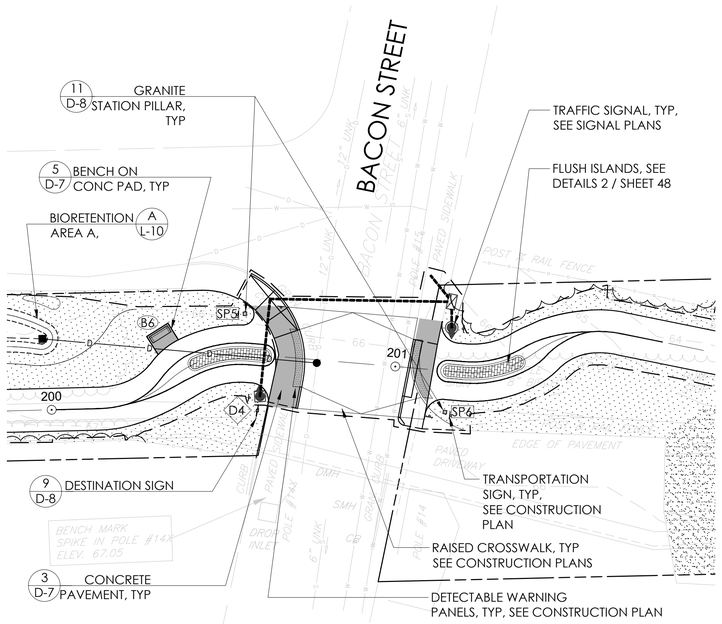
20

SCALE: 1" = 20'

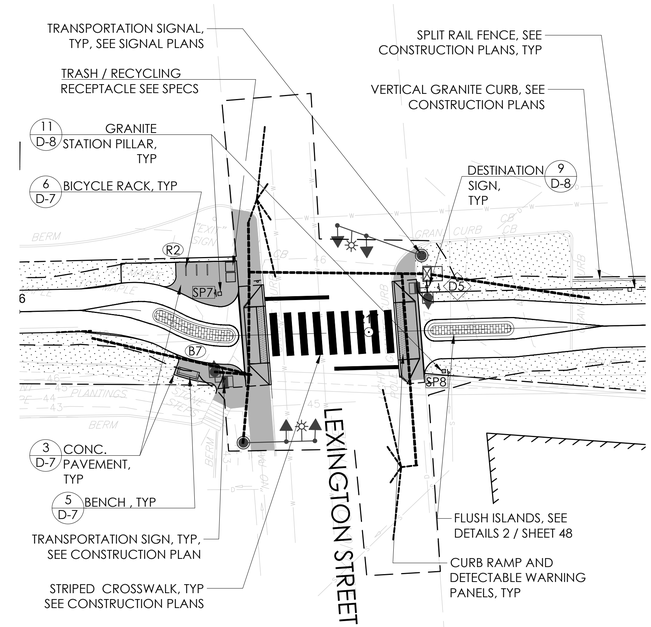
WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:10 PM



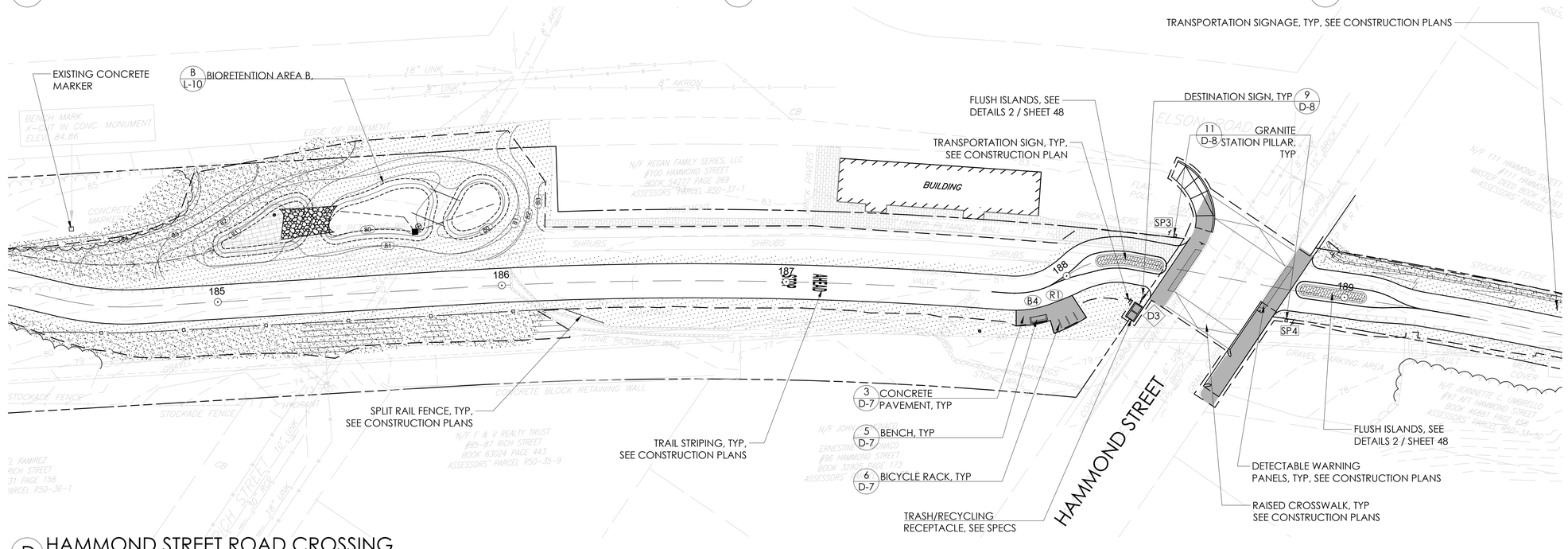
A PROSPECT HILL ROAD CROSSING



B BACON STREET ROAD CROSSING



C LEXINGTON STREET ROAD CROSSING



D HAMMOND STREET ROAD CROSSING

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

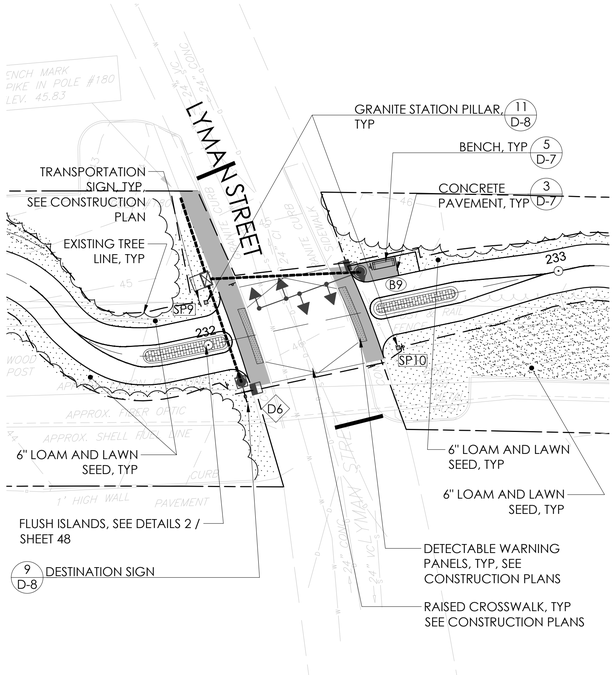
SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

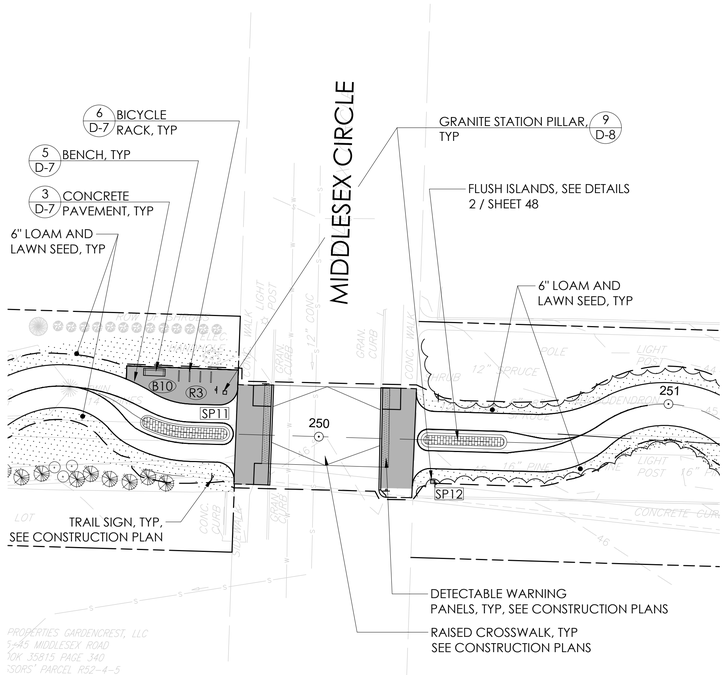
SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

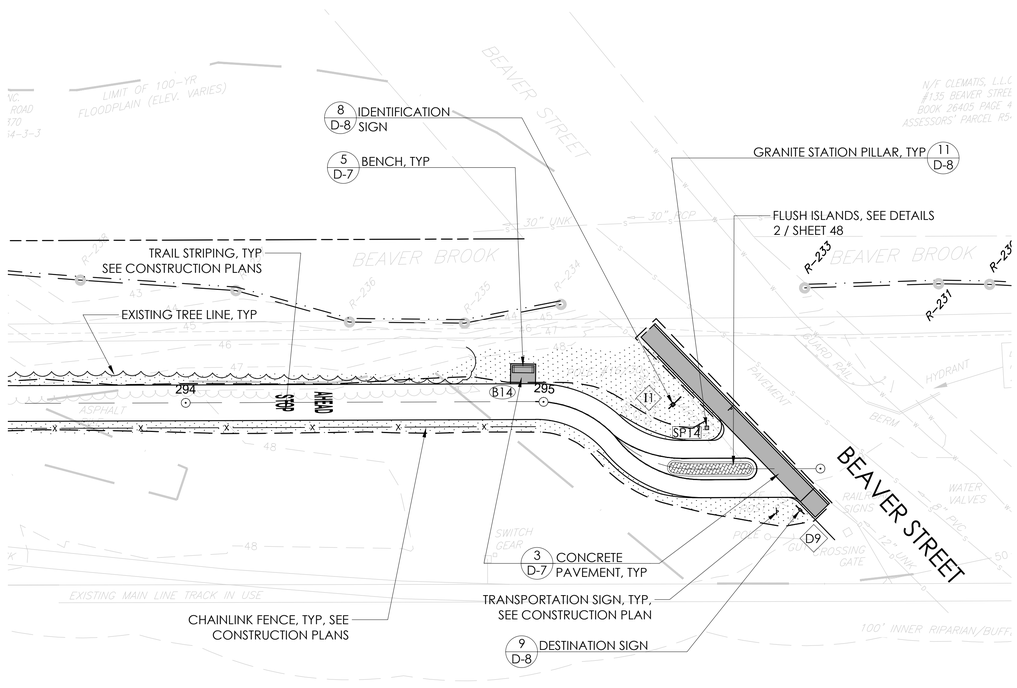
PS&E
NOT FOR CONSTRUCTION



E LYMAN STREET ROAD CROSSING



F MIDDLESEX CIRCLE ROAD CROSSING



G BEAVER STREET ROAD CROSSING



KEY PLAN 1"=2000'-0"

SEE LANDSCAPE PLAN 1-7 FOR CORRESPONDING PLANTING, TYP.

SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

SEE DETAILS-9 FOR PLANT LISTS.

SEE DETAILS-9 FOR ALL SITE FURNISHINGS AND SIGN SCHEDULES.

SEE L-2 FOR SITE AMENITIES LAYOUT NOTES.

CITY OF WALTHAM
WAYSIDE TRAIL

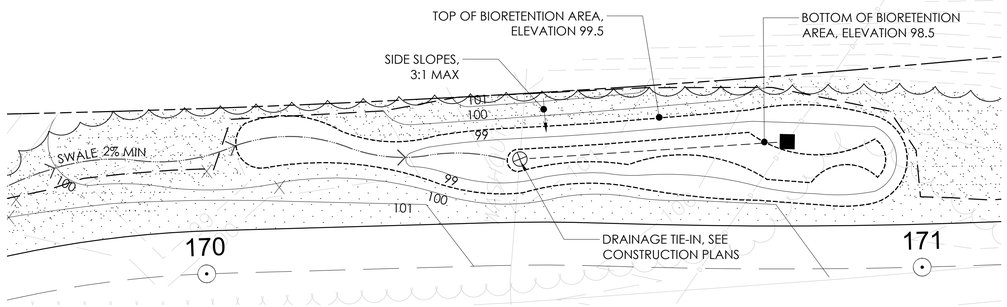
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 9

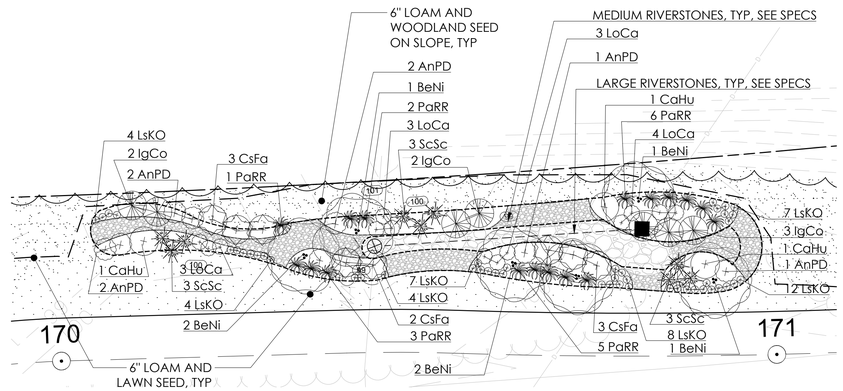
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SCALE: 1" = 20'

PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:11 PM



A BIORETENTION AREA A - GRADING PLAN
SCALE: 1"=10'-0"



BIORETENTION AREA A - PLANTING PLAN

ODOT/DWN
STREETROUTE1-SR NAME

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	114
PROJECT FILE NO.	17112.00		

LANDSCAPE PLAN - 10

10

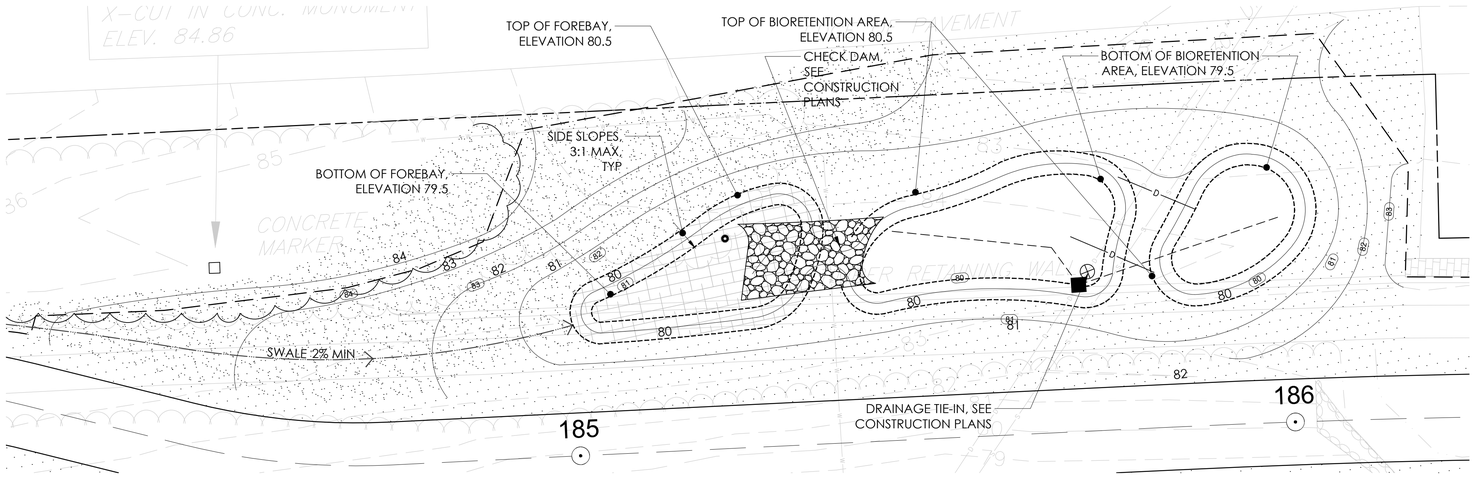
SCALE: 1" = 10'

SEE CONSTRUCTION DETAILS FOR FOREBAY AND BIORETENTION AREAS.

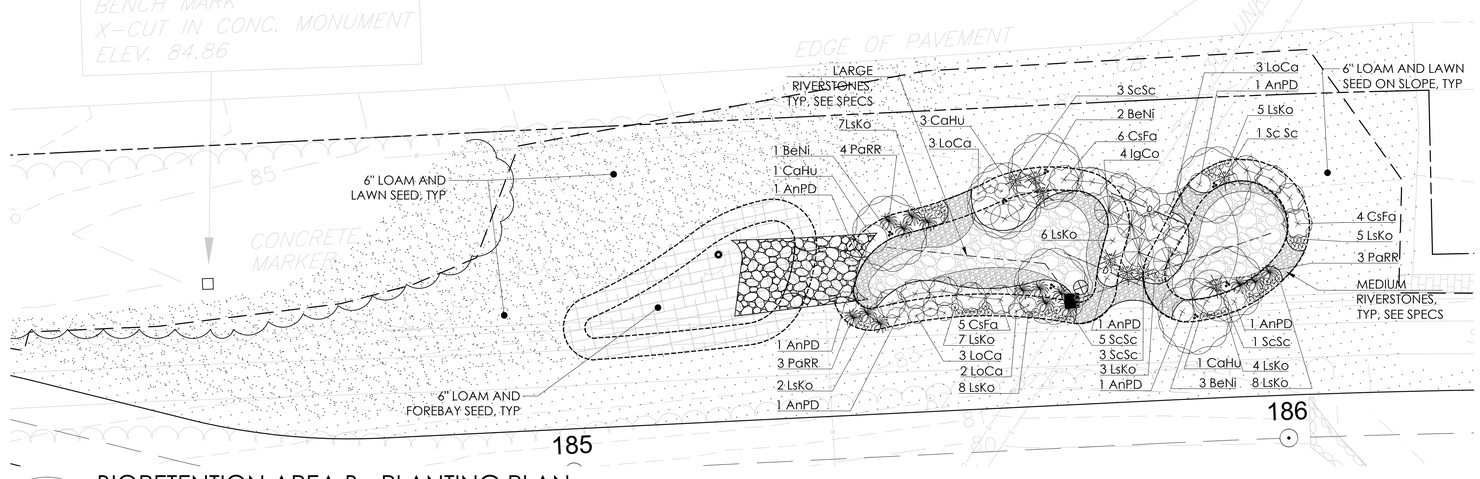
SEE CONSTRUCTION PLANS FOR TRAIL LAYOUT AND MATERIALS, FENCING, TRANSPORTATION SIGNAGE, STRIPING, AND SIGNALS.

SEE BRIDGE PLANS FOR ALL WALLS AND BRIDGES.

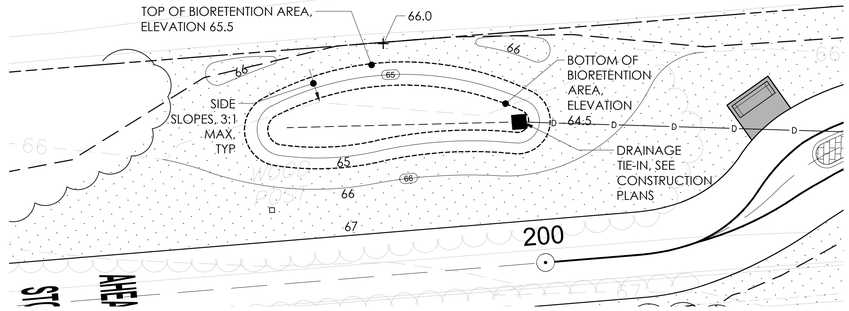
SEE DETAILS-9 FOR PLANT LISTS.



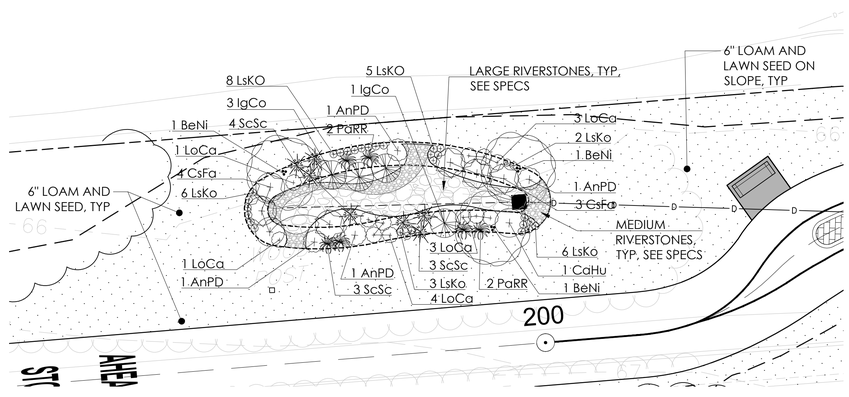
B BIORETENTION AREA B - GRADING PLAN
SCALE: 1"=10'-0"



B BIORETENTION AREA B - PLANTING PLAN
SCALE: 1"=10'-0"



C BIORETENTION AREA C - GRADING PLAN
SCALE: 1"=10'-0"



C BIORETENTION AREA C - PLANTING PLAN
SCALE: 1"=10'-0"

PS&E
NOT FOR CONSTRUCTION

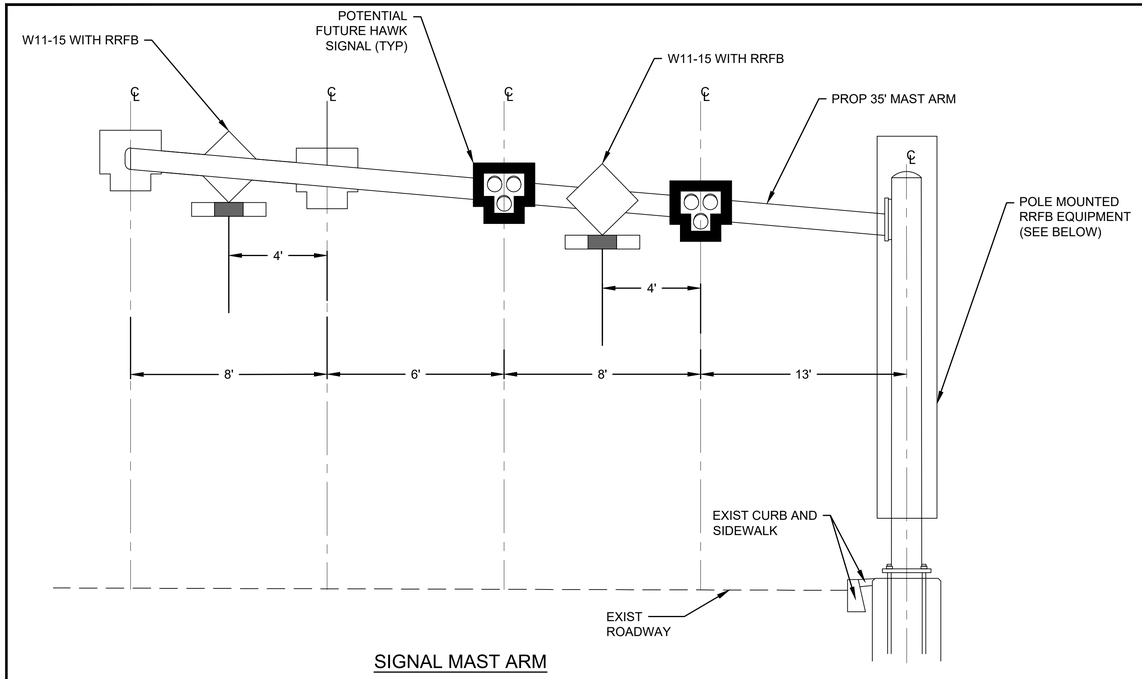
WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:12 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	114
PROJECT FILE NO.	17112.00		

SIGNAL PLAN - 1

Plotted on 26-Jul-2021 1:11 PM
000000_HD\SIGNAL - 1).DWG



SIGNAL MAST ARM

CONSTRUCTION NOTES:

1. TRAFFIC SIGNAL WORK SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTION 800 - TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL MAINTAIN ROADWAY ACCESS AT ALL TIMES.
3. PEDESTRIAN SIGNALS SHALL BE EQUIPPED WITH ACCESSIBLE PEDESTRIAN PUSHBUTTONS WITH LOCATOR TONES IN ACCORDANCE WITH SECTION 4E.12 OF THE MUTCD 2009 EDITION. THE MESSAGE SHALL SAY "YELLOW LIGHTS ARE FLASHING."
4. SIGN (R10-25) AND PUSHBUTTON SHALL BE INSTALLED SO THAT THE FACE OF THE BUTTON IS PARALLEL TO THE CROSSWALK BEING USED.
5. MAST ARM MOUNTED SIGNS SHALL HAVE A MOUNTING BRACKET MOUNTED SECURELY WITH STAINLESS STEEL BANDS. THE MOUNTING BRACKET MUST BE ADJUSTED SUCH THAT THE FACE OF THE SIGN IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC. THE MOUNTING SHALL HOLD THE SIGN RIGIDLY IN PLACE AND RESIST MOVEMENT IN ALL DIRECTIONS.
6. THE MAST ARM SHALL BE DESIGNED BY THE CONTRACTOR. FOR LOADING, THE CONTRACTOR SHALL ACCOUNT FOR THE POTENTIAL FUTURE MOUNTING OF ALL HAWK SIGNALS IN ADDITION TO THE PROPOSED SIGNS.

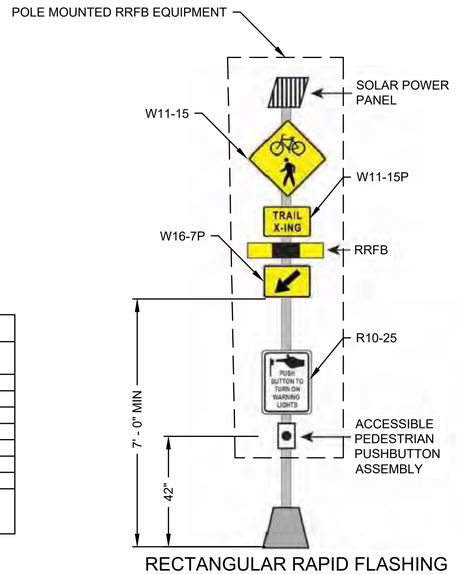
MAJOR ITEMS REQUIRED

QUANTITY PHR	QUANTITY BS	DESCRIPTION
	1	35 FOOT GALV. STEEL MAST ARM TRAFFIC SIGNAL POST AND FOUNDATION
2	1	PEDESTAL FOUNDATION
2	1	SIGNAL POST AND BASE STANDARD - 15 FOOT
2	4	SOLAR POWERED RRFB
	55	3 INCH SCHEDULE 80 ELECTRICAL CONDUIT (UNDER ROADWAY)
	45	3 INCH SCHEDULE 40 ELECTRICAL CONDUIT (UNDERGROUND)
2	2	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON DETECTOR WITH R10-25 SIGN
		PLUS ALL MOUNTING HARDWARE, EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION OF A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL

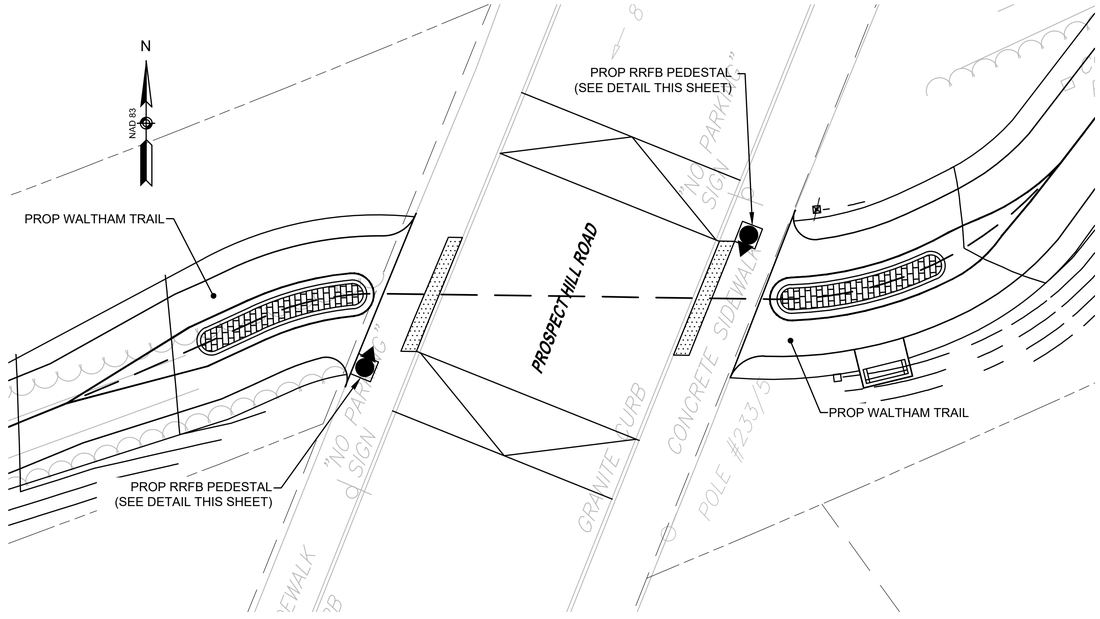
NOTE: PHR = PROSPECT HILL ROAD; BS = BACON STREET

LEGEND:

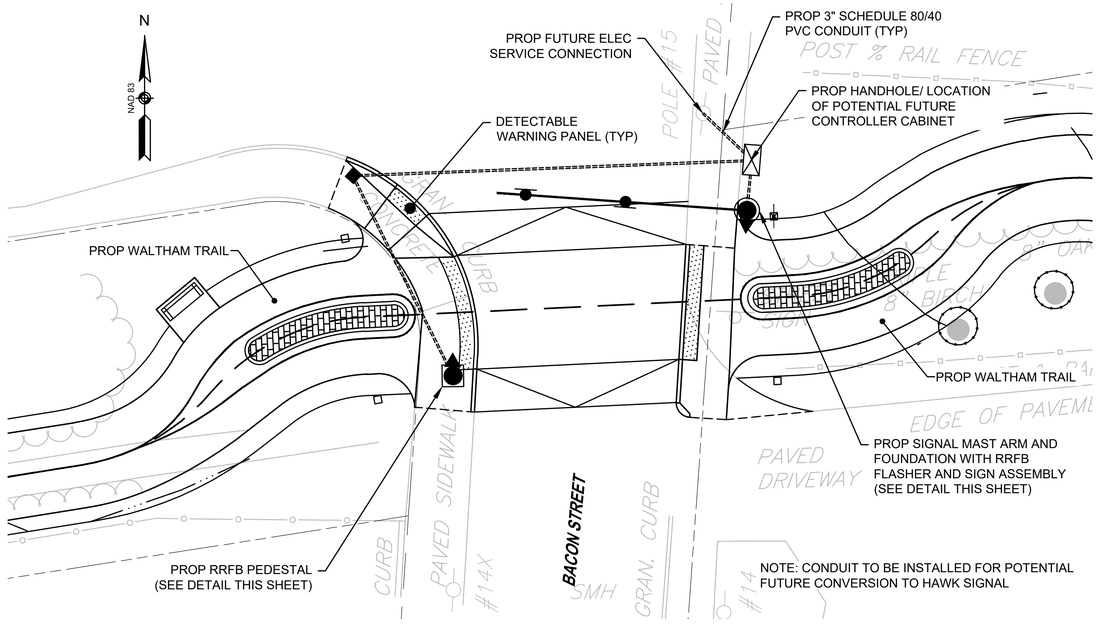
- ▼ PUSHBUTTON WITH LOCATOR TONE
- ● SIGNAL FOUNDATION
- ■ PULL BOX
- ===== CONDUIT
- ▣ PEDESTAL FOUNDATION



RECTANGULAR RAPID FLASHING BEACON (RRFB) PEDESTAL



PROSPECT HILL ROAD
SCALE: 1"=10'



NOTE: CONDUIT TO BE INSTALLED FOR POTENTIAL FUTURE CONVERSION TO HAWK SIGNAL

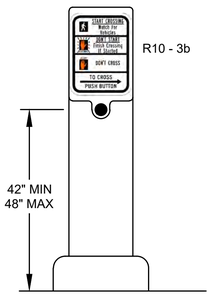
BACON STREET
SCALE: 1"=10'

SIGNAL SEQUENCE AND TIMING

APPROACH	DIRECTION	HOUSING	PHASE 1			PHASE 2			PHASE 9			FLASHING OPERATION
MINIMUM INTERVAL			12			12						
VEHICLE EXTENSION			3			3						
MAXIMUM 1			32.5			18						
MAXIMUM 2												
YELLOW CLEARANCE				3.5			3					
RED CLEARANCE					1			2				
PEDESTRIAN WALK CLEARANCE									9	11	3	
LEXINGTON STREET	NB	A, B	G	Y	R	R	R	R	R	R	R	FY
LEXINGTON STREET	SB	C,D	G	Y	R	R	R	R	R	R	R	FY
WAYSIDE TRAIL	EB	E	R	R	R	G	Y	R	R	R	R	FR
WAYSIDE TRAIL	WB	F	R	R	R	G	Y	R	R	R	R	FR
PEDESTRIAN CROSSING	ALL	P1-P2	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
DETECTOR			LOCK			NON - LOCK			NON - LOCK			
RECALL			MIN.			OFF			OFF			
			Ø 1			Ø 2 (BIKE)			Ø 9 (PED)			

NOTE:

FLASHING OPERATIONS FOR CONFLICTING PHASES SHALL BE WIRED AND PROGRAMMED PER M.U.T.C.D.; PROGRAM FLASH SHALL NOT BE USED.

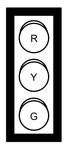
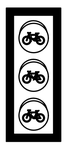
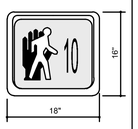


R10 - 3b

CONSTRUCTION NOTES:

1. TRAFFIC SIGNAL WORK SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTION 800 - TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS AT ALL TIMES.
3. ALL TRAFFIC CONTROL SIGNAL EQUIPMENT USED SHALL BE ON THE MASSDOT TRAFFIC SIGNAL APPROVED PRODUCTS LIST.
4. ALL RED, YELLOW, AND GREEN SIGNAL DISPLAYS SHALL BE EQUIPPED WITH LED MODULES.
5. ALL TRAFFIC SIGNAL HEADS SHALL BE BLACK IN COLOR AND FURNISHED WITH LOUVERED BACK PLATES AND SIGNAL VISORS AS SHOWN. BACK PLATES SHALL BE EQUIPPED WITH A 3" YELLOW RETROREFLECTIVE STRIP IN ACCORDANCE WITH SECTION 4D.12 OF THE MUTCD 2009 EDITION.
6. PEDESTRIAN SIGNALS SHALL BE EQUIPPED WITH ACCESSIBLE PEDESTRIAN PUSHBUTTONS WITH LOCATOR TONES IN ACCORDANCE WITH SECTION 4E.12 OF THE MUTCD 2009 EDITION.
7. SIGN (R10-3b) AND PUSHBUTTON SHALL BE INSTALLED SO THAT THE FACE OF THE BUTTON IS PARALLEL TO THE CROSSWALK BEING USED.
8. MAST ARM MOUNTED SIGNS SHALL HAVE A MOUNTING BRACKET MOUNTED SECURELY WITH STAINLESS STEEL BANDS. THE MOUNTING BRACKET MUST BE ADJUSTED SUCH THAT THE FACE OF THE SIGN IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC. THE MOUNTING SHALL HOLD THE SIGN RIGIDLY IN PLACE AND RESIST MOVEMENT IN ALL DIRECTIONS.

SIGNAL HEAD DATA

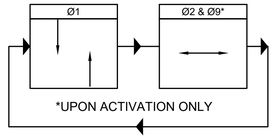
A, B, C, D	E, F	P1,P2
		
ALL 12" LENS	ALL 12" LENS	ONE SECTION

LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION, SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	Ø CALLED	DELAY TIME	EXT. TIME
1	1	2	6'x6'	1	3	3
2	1	2	6'x6'	1	3	3
3	1	2	6'x6'	2	3	3
4	1	2	6'x6'	2	3	3

PREFERENTIAL PHASE SEQUENCE



EMERGENCY VEHICLE PREEMPTION
NB/SB
REC #1 PREEMP
Ø1

NOTE:

CONTRACTOR SHALL ADJUST PREEMPTION RECEIVERS AND PREEMPTION TIMINGS AS REQUESTED BY THE CITY OF WALTHAM TO ALLOW FOR OPTIMAL RECEPTION OF THE PREEMPTION SIGNALS.

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY THE CITY PRIOR TO OPERATION.

MAJOR ITEMS REQUIRED

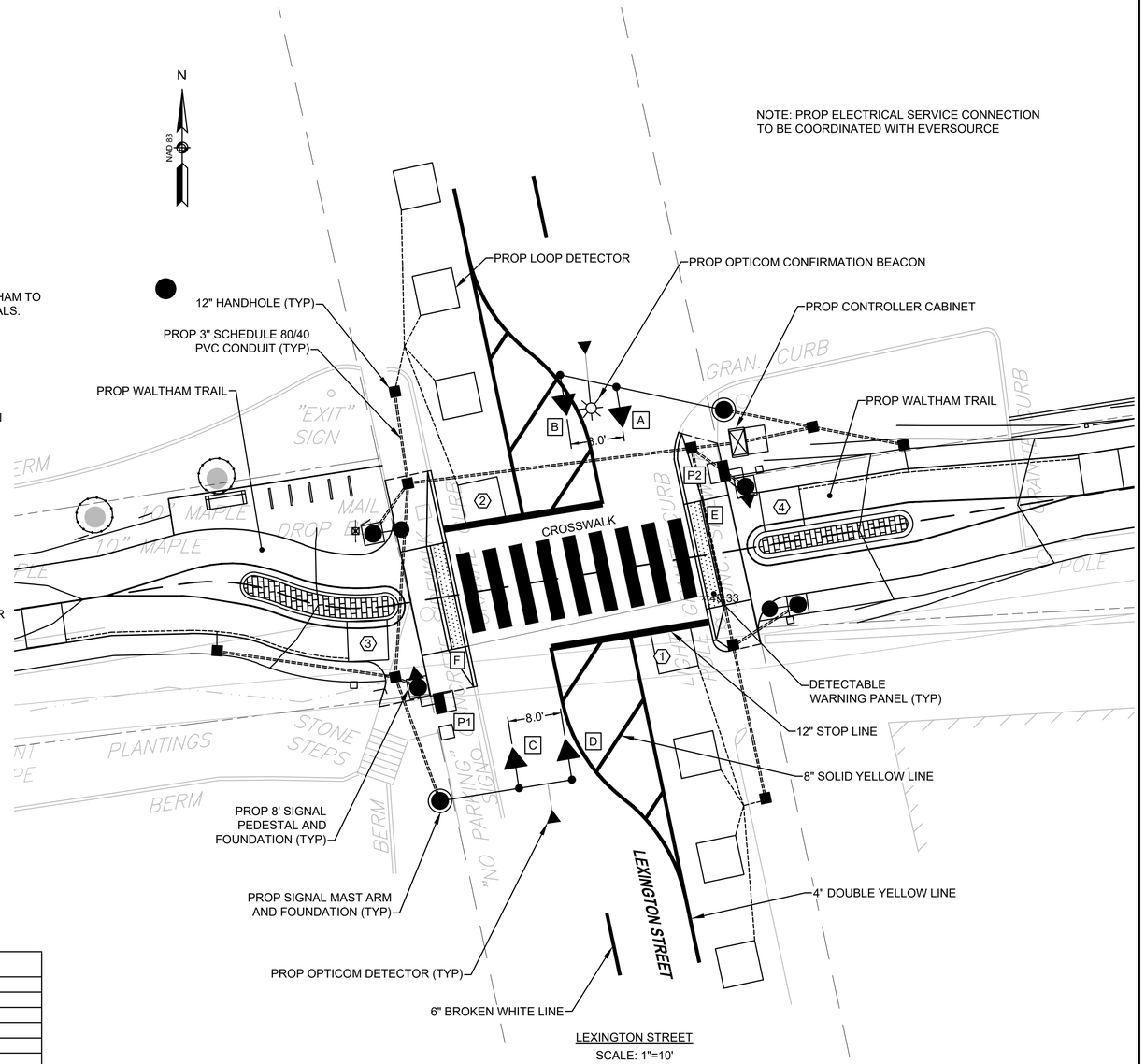
QUANTITY	DESCRIPTION
1	25 FOOT GALV. STEEL MAST ARM TRAFFIC SIGNAL POST AND FOUNDATION
1	20 FOOT GALV. STEEL MAST ARM TRAFFIC SIGNAL POST AND FOUNDATION
2	SIGNAL HEAD 1 WAY - 3 SECTION - BIKE WITH R10-10b
4	SIGNAL HEAD 1 WAY - 3 SECTION - VEHICLE
4	PEDESTAL FOUNDATION
2	SIGNAL POST AND BASE STANDARD - 8 FOOT
2	SIGNAL POST AND BASE STANDARD - 10 FOOT
2	OPTICOM DETECTOR
1	OPTICOM CONFIRMATION BEACON
43'	3 INCH SCHEDULE 80 ELECTRICAL CONDUIT (UNDER ROADWAY)
224'	3 INCH SCHEDULE 40 ELECTRICAL CONDUIT (UNDERGROUND)
9	PULL BOX 12" X 12"
12	WIRE LOOP (6' x 6')
1	TRAFFIC SIGNAL CABINET AND CONTROLLER
1	FOUR CHANNEL LOOP DETECTOR AMPLIFIER
1	OPTICOM PROCESSOR
1	SERVICE CONNECTION
2	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON DETECTOR WITH R10-3b SIGN
	PLUS ALL WIRE, CABLE, MOUNTING HARDWARE, EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION OF A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	114
PROJECT FILE NO.		17112.00	

SIGNAL PLAN - 2

NOTE: PROP ELECTRICAL SERVICE CONNECTION TO BE COORDINATED WITH EVERSOURCE



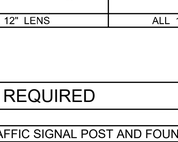
LEGEND:

- VEHICLE SIGNAL HEAD
- BICYCLE SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSHBUTTON WITH LOCATOR TONE
- SIGNAL FOUNDATION
- PEDESTAL FOUNDATION
- PULL BOX
- ===== CONDUIT

Plotted on 29-Jul-2021 9:48 AM
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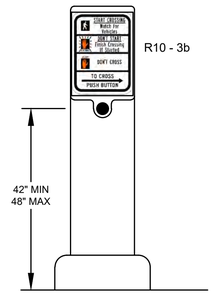
SIGNAL SEQUENCE AND TIMING

APPROACH	DIRECTION	HOUSING	PHASE 1				PHASE 2 & 9		
MINIMUM INTERVAL			33						
FLASHING YELLOW INTERVAL				5					
STEADY YELLOW INTERVAL					5				
ALL RED INTERVAL						1			
STEADY RED INTERVAL							9	5/3	
ALT FLASHING RED INTERVAL									2
LYMAN STREET	NB	A, B	DARK	FY	SY	SR	SR	SR	AFR
LYMAN STREET	SB	C,D	DARK	FY	SY	SR	SR	SR	AFR
WAYSIDE TRAIL	EB	E	R	R	R	R	G	G/Y	R
WAYSIDE TRAIL	WB	F	R	R	R	R	G	G/Y	R
BIKE PATH CROSSING	ALL	P1-P2	DW	**DW**	DW	DW	W	FDW	DW
DETECTOR			LOCK				NON - LOCK		
RECALL			MAX				OFF		
			Ø 1				Ø 2 (BIKE) & Ø 9 (PED)		

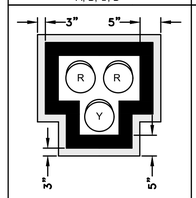
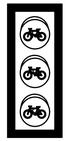
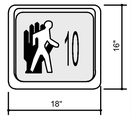


NOTE:

SIGNAL OPERATION SHALL BE IN ACCORDANCE WITH SECTION 4F.03 OF THE MUTCD 2009 EDITION WITH ALL REVISIONS.



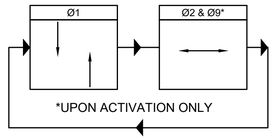
SIGNAL HEAD DATA

A, B, C, D	E, F	P1,P2
		
ALL 12" LENS	ALL 12" LENS	ONE SECTION

MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	30 FOOT GALV. STEEL MAST ARM TRAFFIC SIGNAL POST AND FOUNDATION
4	SIGNAL HEAD 1 WAY - 3 SECTION (HAWK)
2	SIGNAL - BIKE - W/R10-10b
3	PEDESTAL FOUNDATION
1	SIGNAL POST AND BASE STANDARD - 8 FOOT
2	SIGNAL POST AND BASE STANDARD - 10 FOOT
30'	3 INCH SCHEDULE 80 ELECTRICAL CONDUIT (UNDER ROADWAY)
170'	3 INCH SCHEDULE 40 ELECTRICAL CONDUIT (UNDERGROUND)
6	PULL BOX 12" X 12"
4	WIRE LOOP (6' x 6')
1	FOUR CHANNEL LOOP DETECTOR AMPLIFIER
1	TRAFFIC SIGNAL CABINET AND CONTROLLER
1	SERVICE CONNECTION
2	ACCESSIBLE PEDESTRIAN SIGNAL PUSH BUTTON DETECTOR WITH R10-3b SIGN
	PLUS ALL WIRE, CABLE, MOUNTING HARDWARE, EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPLETE THE INSTALLATION OF A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL

PREFERENTIAL PHASE SEQUENCE



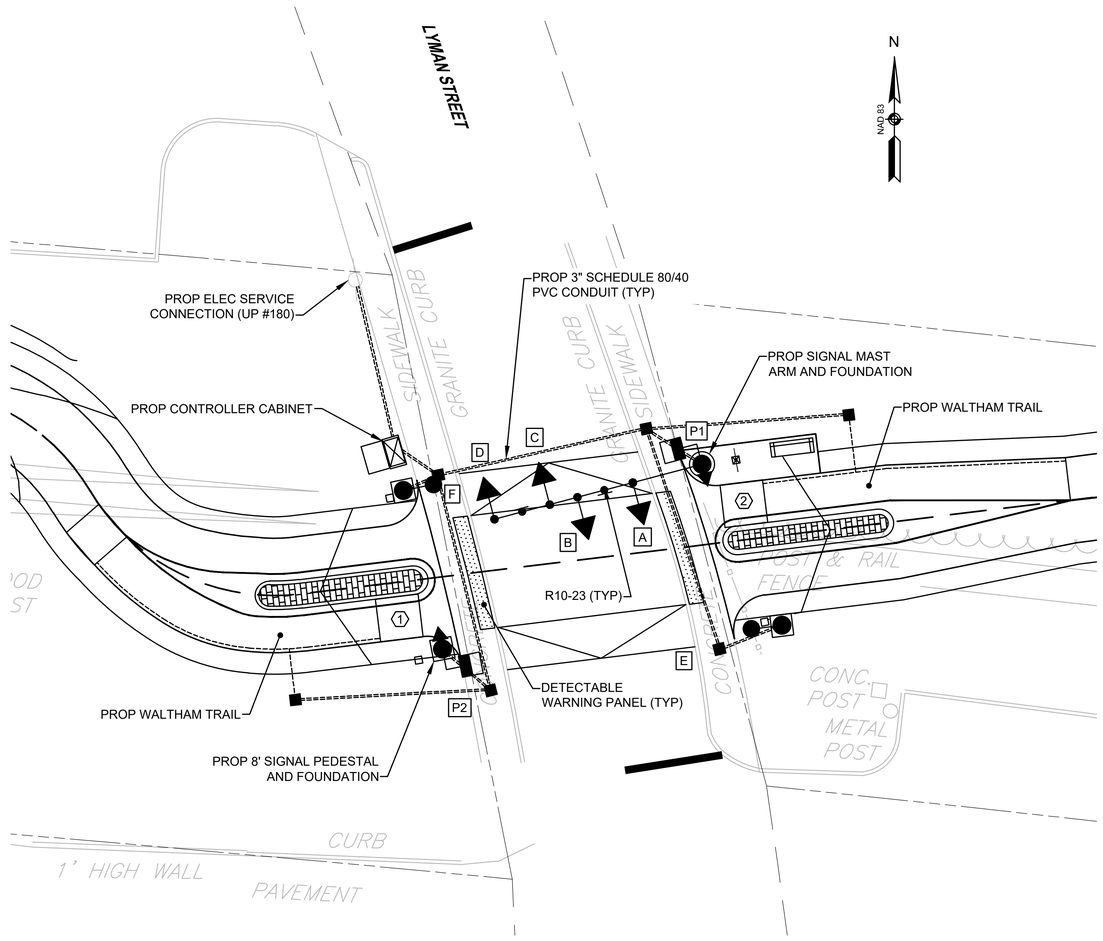
CONSTRUCTION NOTES:

1. TRAFFIC SIGNAL WORK SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SECTION 800 - TRAFFIC CONTROL DEVICES.
2. THE CONTRACTOR SHALL MAINTAIN ROADWAY ACCESS AT ALL TIMES.
3. ALL TRAFFIC CONTROL SIGNAL EQUIPMENT USED SHALL BE ON THE MASSDOT TRAFFIC SIGNAL APPROVED PRODUCTS LIST.
4. ALL RED, YELLOW, AND GREEN SIGNAL DISPLAYS SHALL BE EQUIPPED WITH LED MODULES.
5. ALL TRAFFIC SIGNAL HEADS SHALL BE BLACK IN COLOR AND FURNISHED WITH LOUVERED BACK PLATES AND SIGNAL VISORS AS SHOWN. BACK PLATES SHALL BE EQUIPPED WITH A 3" YELLOW RETROREFLECTIVE STRIP IN ACCORDANCE WITH SECTION 4D.12 OF THE MUTCD 2009 EDITION.
6. PEDESTRIAN SIGNALS SHALL BE EQUIPPED WITH ACCESSIBLE PEDESTRIAN PUSHBUTTONS WITH LOCATOR TONES IN ACCORDANCE WITH SECTION 4E.12 OF THE MUTCD 2009 EDITION.
7. SIGN (R10-3b) AND PUSHBUTTON SHALL BE INSTALLED SO THAT THE FACE OF THE BUTTON IS PARALLEL TO THE CROSSWALK BEING USED.
8. THE COUNTDOWN FEATURE OF THE PEDESTRIAN SIGNAL HEADS (ASSEMBLIES P1 & P2) SHALL ONLY BE ACTIVE AND DISPLAY THE COUNTDOWN TIME DURING THE PEDESTRIAN CLEARANCE (FLASH DON'T WALK) INTERVAL.
9. MAST ARM MOUNTED SIGNS SHALL HAVE A MOUNTING BRACKET MOUNTED SECURELY WITH STAINLESS STEEL BANDS. THE MOUNTING BRACKET MUST BE ADJUSTED SUCH THAT THE FACE OF THE SIGN IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC. THE MOUNTING SHALL HOLD THE SIGN RIGIDLY IN PLACE AND RESIST MOVEMENT IN ALL DIRECTIONS.

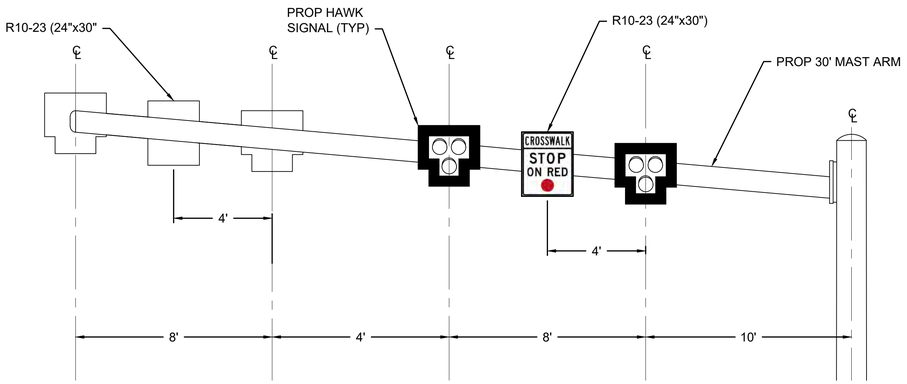
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	114
PROJECT FILE NO.	17112.00		

SIGNAL PLAN - 3



LYMAN STREET
SCALE: 1"=10'



LEGEND:

- VEHICLE SIGNAL HEAD
- PEDESTRIAN SIGNAL HEAD
- PUSHBUTTON WITH LOCATOR TONE
- SIGNAL FOUNDATION
- PEDESTAL FOUNDATION
- PULL BOX
- ===== CONDUIT

LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	Ø CALLED	DELAY TIME	EXT. TIME
1	1	2	6'x6'	2	3	3
2	1	2	6'x6'	2	3	3

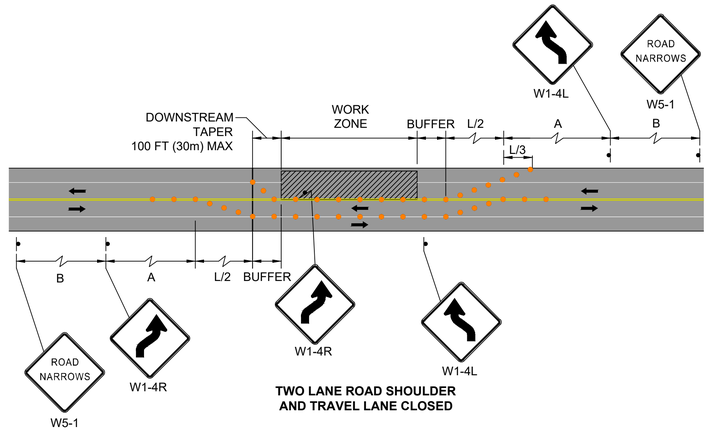
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WALTHAM
WAYSIDE TRAIL

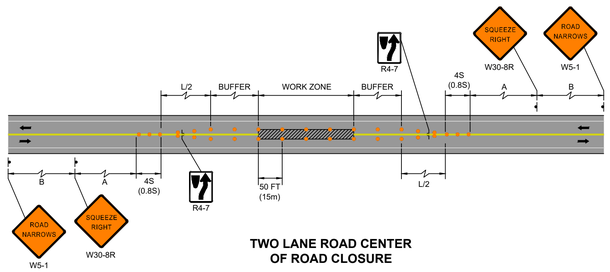
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	47	114
PROJECT FILE NO.	17112.00		

DETAILS - 1

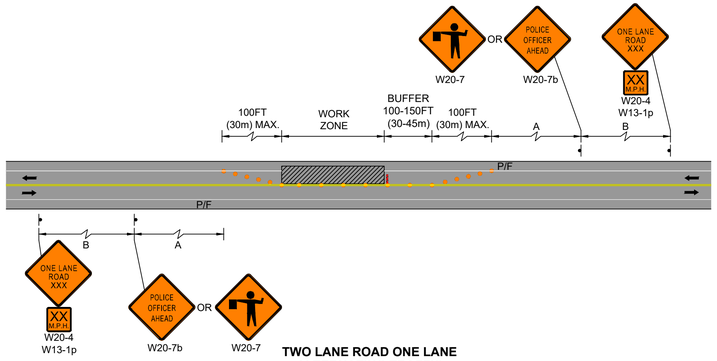
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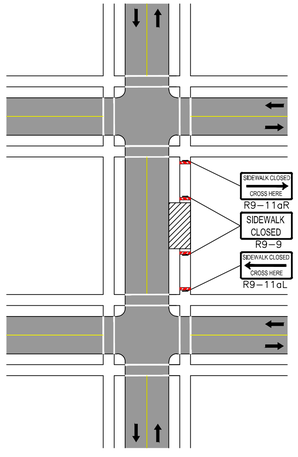
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED



TWO LANE ROAD CENTER OF ROAD CLOSURE

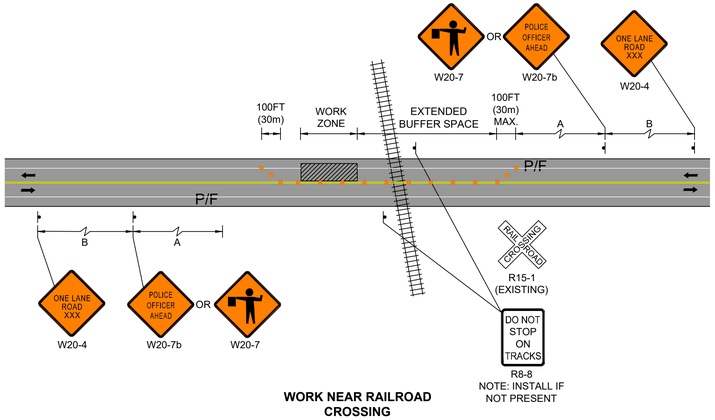


TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC



NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL STILL BE REQUIRED. All PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

SIDEWALK CLOSED WITHOUT DETOUR



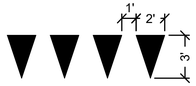
WORK NEAR RAILROAD CROSSING

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
W20-1	36	36	ROAD WORK AHEAD	SEE MUTCD			2	ORANGE	BLACK	BLACK	P5	9.0	18.0
MA-R2-10a	48	36	WORK ZONE SPEEDING FINES DOUBLED				2	ORANGE/ WHITE	BLACK	BLACK		12.0	24.0
MA-R2-10e	36	48	END ROAD WORK DOUBLE FINES END				2	ORANGE/ WHITE	BLACK	BLACK		12.0	24.0
W5-1	36	36	ROAD NARROWS				2	ORANGE	BLACK	BLACK		9.0	18.0
W1-4L	36	36					2	ORANGE	BLACK	BLACK		9.0	18.0
W1-4R	36	36					2	ORANGE	BLACK	BLACK		9.0	18.0
R4-7	24	30					2	WHITE	BLACK	BLACK		5.0	10.0
W20-4	36	36	ONE LANE ROAD XXX				2	ORANGE	BLACK	BLACK		9.0	18.0
W20-7 OR MA-W20-7b	36	36	POLICE OFFICER AHEAD				2	ORANGE	BLACK	BLACK		9.0	18.0
W30-8R	36	36	SQUEEZE RIGHT				2	ORANGE	BLACK	BLACK		9.0	18.0
R13-1P	24	24	XX M.P.H.				2	ORANGE	BLACK	BLACK		4.0	8.0
R8-8	24	30	DO NOT STOP ON TRACKS				2	WHITE	BLACK	BLACK		5.0	10.0
R9-9	24	12	SIDEWALK CLOSED				2	WHITE	BLACK	BLACK	MOUNTED ON BARRIER	2.0	4.0
R9-11aL	24	12	SIDEWALK CLOSED CROSS HERE				1	WHITE	BLACK	BLACK		2.0	2.0
R9-11aR	24	12	SIDEWALK CLOSED CROSS HERE				1	WHITE	BLACK	BLACK		2.0	2.0
TOTAL AREA OF SIGNS (SQUARE FEET)													210.00

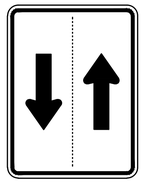
PAVEMENT MARKING NOTES:

1. MILE MARKERS SHALL BE MARKED ON THE FINAL SURFACE AT 0.5 MILE INCREMENTS, STARTING AT BEAVER STREET AND HEADING WESTWARD. EACH MARKER SHALL READ MILE X.X AND BE ENCLOSED IN A CIRCLE. BOTH LEGEND AND CIRCLE SHALL BE WHITE THERMOPLASTIC.
2. THE LYMAN STREET CROSSING SHALL HAVE STOP LINES ALONG THE ROADWAY APPROACHES AS SHOWN ON THE PLANS RATHER THAN YIELD MARKINGS.

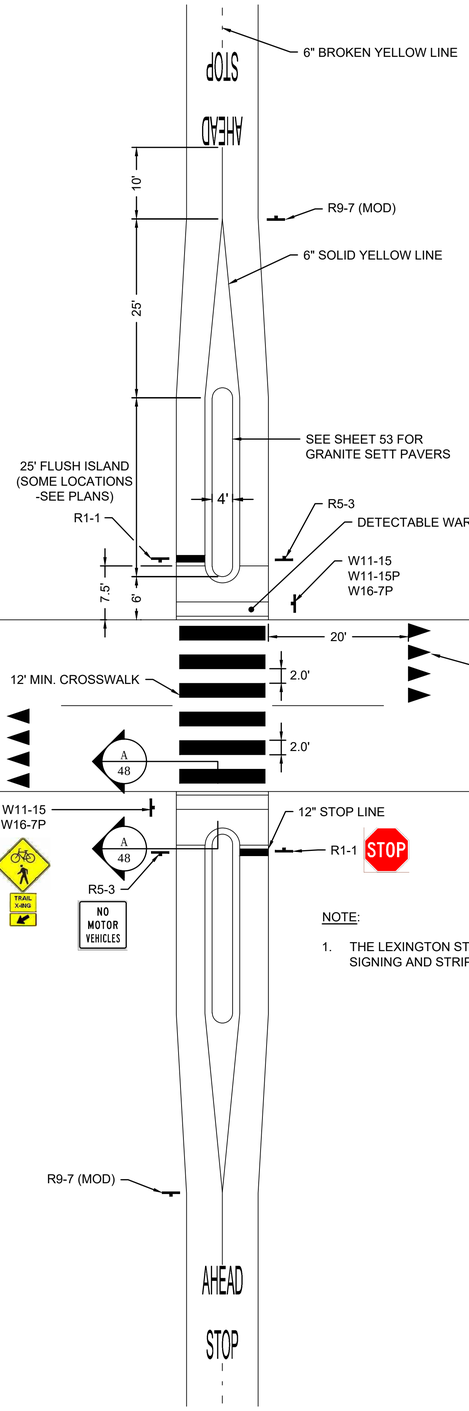


PROPOSED YIELD MARKINGS
NOT TO SCALE

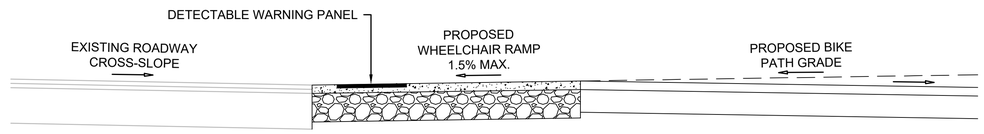
12"x18"



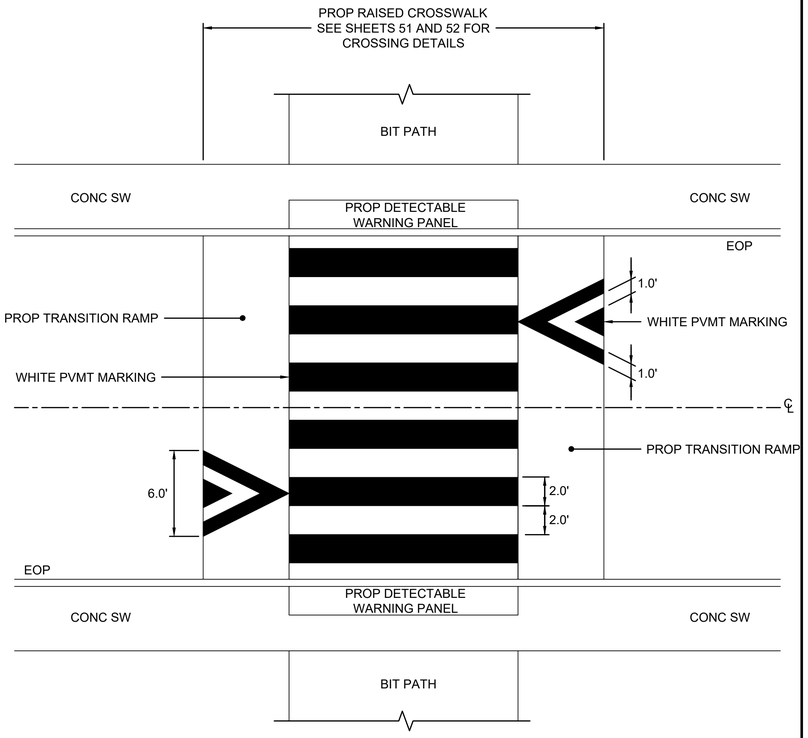
SHARED-USE RESTRICTION SIGN
(R9-7 MOD)



TYPICAL ROADWAY CROSSING
SCALE: 1'=10'



SECTION A-A
NOT TO SCALE



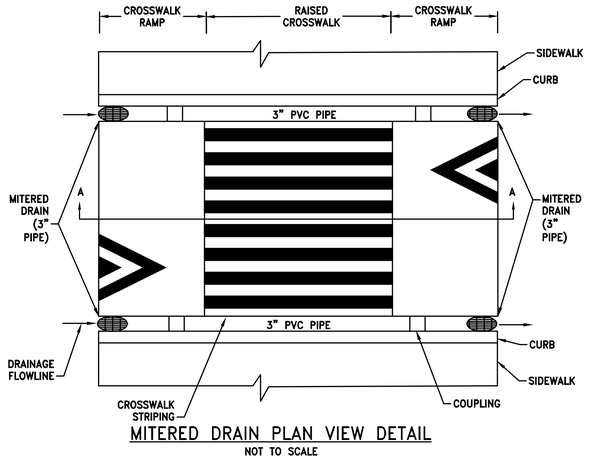
PROPOSED RAISED CROSSWALK MARKINGS
NOT TO SCALE

CROSSING	ROADWAY VOLUME (VEHICLES)	ROADWAY TRAIL VOLUME (USERS)	WARRANT
A. LEXINGTON	1597	387	FULL SIGNAL
C. LYMAN	1238	387	HAWK/PED
D. BACON	850	387	RRFB
E. PROSPECT HILL	782	387	RRFB
F. HAMMOND	277	387	UNSIG
G. MIDDLESEX	177	387	UNSIG

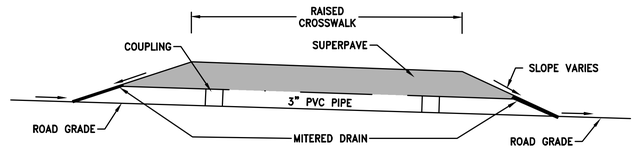
ROADWAY CROSSING SIGNALIZATION

NOTE:

1. THE LEXINGTON STREET CROSSING SHALL HAVE SIGNING AND STRIPING AS SHOWN ON THE PLANS.



MITERED DRAIN PLAN VIEW DETAIL
NOT TO SCALE



NOTE:
1. MITERED DRAIN TO BE PLACED ALONG THE CURB UNDER RAISED CROSSWALKS ON BOTH SIDES OF ROADWAYS THAT ARE CROWNED AND ON THE LOW SIDE ONLY OF ROADWAYS THAT ARE SUPERELEVATED.

MITERED DRAIN SECTION A-A
NOT TO SCALE

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	114
PROJECT FILE NO.	17112.00		

DETAILS - 2

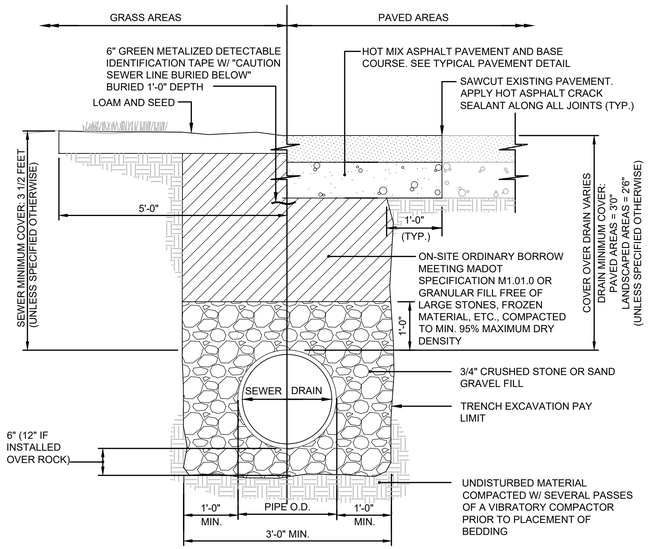
000000_HD\DETAILS - 2\.DWG Plotted on 26-Jul-2021 1:22 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	114
PROJECT FILE NO.		17112.00	

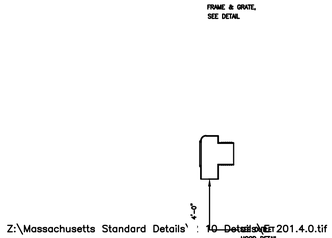
DETAILS - 3

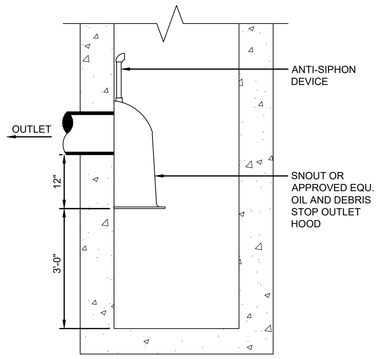
Plotted on 26-Jul-2021 1:22 PM
000000_HD\DETAILS - 3).DWG



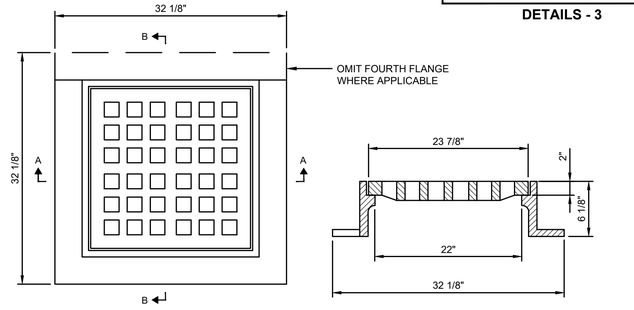
NOTES:
1. WHERE THE DISTANCE BETWEEN THE SAWCUT AND EDGE OF PAVEMENT IS 3' OR LESS, THE CONTRACTOR SHALL REPLACE THE PAVEMENT FROM THE TRENCH EDGE TO THE EXISTING EDGE OF PAVEMENT.
2. 3/4" DIA. CRUSHED STONE SHALL BE USED AS BEDDING WHERE TRENCH IS BELOW THE GROUND WATER TABLE.

GRAVITY SEWER/DRAIN TRENCH DETAIL
NOT TO SCALE



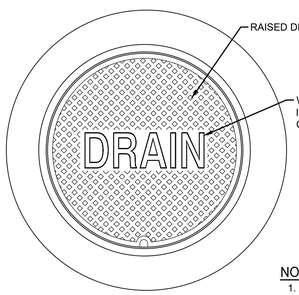


OUTLET HOOD DETAIL
NOT TO SCALE



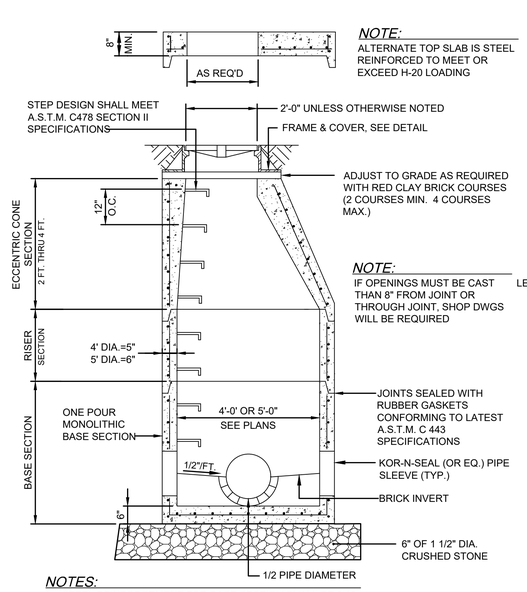
NOTES:
1. NEENAH FOUNDRY R-3405-A OR EQUIVALENT.
2. FRAME AND GRATE SHALL MEET H-20 LOADING CRITERIA.

SQUARE CATCH BASIN FRAME & GRATE
NOT TO SCALE



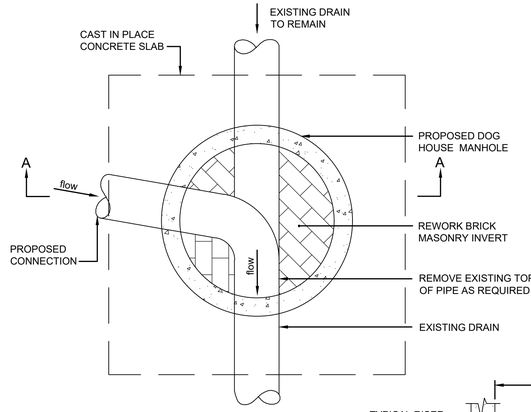
NOTES:
1. ALL FRAMES AND COVERS SHALL MEET H-20 LOADING CRITERIA.
2. PROVIDE:
   A: 24" DIA. DRAIN MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY, INC. MODEL #R-1556 OR APPROVED EQUIVALENT.
   B: 30" DIA. DRAIN MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY, INC. MODEL #R-1557 OR APPROVED EQUIVALENT.
3. ALL DRAIN MANHOLES SHALL HAVE 24" DIA. DRAIN MANHOLE COVER UNLESS NOTED OTHERWISE.

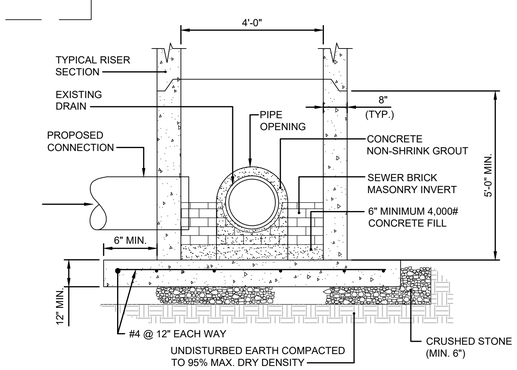
DRAIN MANHOLE FRAME & COVER
NOT TO SCALE



NOTES:
1. STEEL REINFORCEMENT FOR BASE SECTION SHALL BE 0.12 SQ. IN./LF.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT SHALL BE 0.15 SQ. IN./LF MINIMUM.
3. STRUCTURE SHALL CONFORM TO MASS HIGHWAY SPECIFICATIONS.

TYPICAL DRAIN MANHOLE DETAIL
NOT TO SCALE





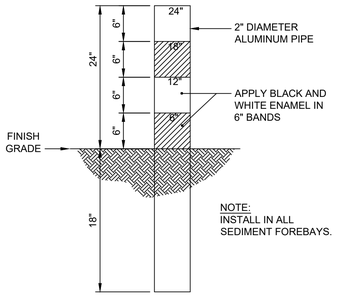
DOG-HOUSE MANHOLE BASE
NOT TO SCALE

WALTHAM
WAYSIDE TRAIL

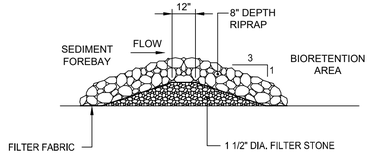
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	114
PROJECT FILE NO.	17112.00		

DETAILS - 4

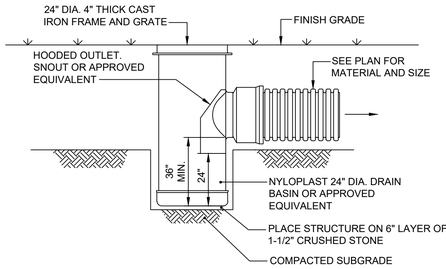
Plotted on 26-Jul-2021 1:22 PM
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SEDIMENT MARKER DETAIL
NOT TO SCALE



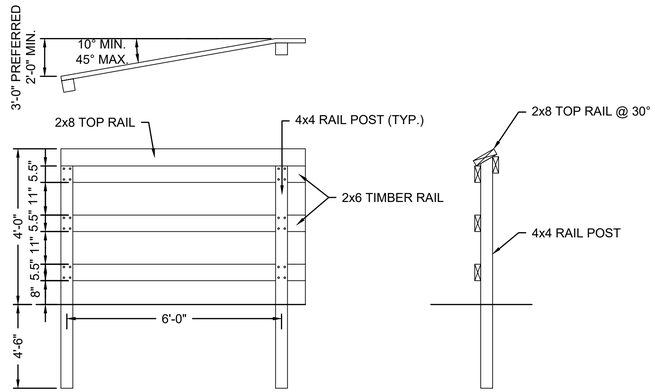
SEDIMENT FOREBAY CHECK DAM
NOT TO SCALE



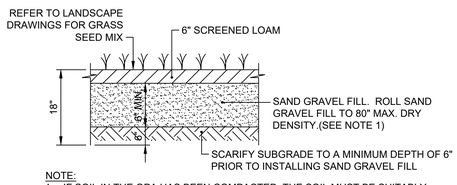
NOTES:

1. DRAIN BASIN SHALL BE CUSTOM MANUFACTURED FOR THE PROJECT WITH THE INLETS AND OUTLETS REQUIRED.
2. STRUCTURES SHALL BE CONSTRUCTED TO WITHSTAND LOADS IMPOSED BY CONSTRUCTION VEHICLES.
3. DRAIN BASIN SHALL BE CONSTRUCTED OF HIGH DENSITY POLYETHYLENE.
4. PROVIDE HOODED OUTLET ON ALL DRAIN BASINS.
5. FRAME AND GRATE SHALL BE CONSTRUCTED OF DUCTILE IRON AND CONFORM TO ASTM A536 GRADE 70-50-05. PROVIDE NYLOPLAST S499CGS OR APPROVED EQUIVALENT.

AREA DRAIN DETAIL
NOT TO SCALE

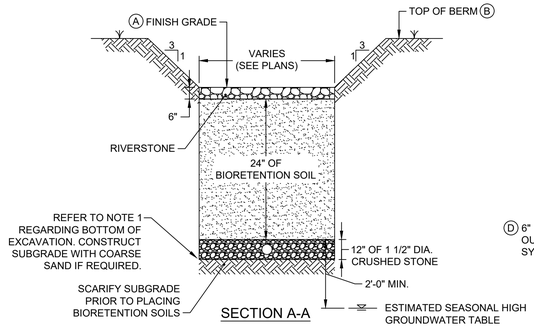


SPLIT RAIL FENCE
NOT TO SCALE

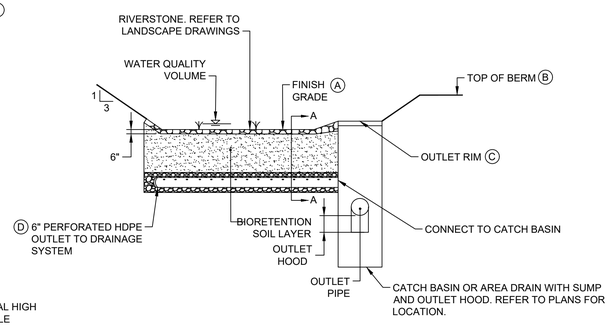


NOTE:
1. IF SOIL IN THE QPA HAS BEEN COMPACTED, THE SOIL MUST BE SUITABLY AMENDED, TILLED, AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE.

QUALIFYING PERVIOUS AREA DETAIL
NOT TO SCALE



SECTION A-A



BIORETENTION SOIL: 60% SAND, 10-20% TOPSOIL, 20-30% COMPOST ORGANIC CONTENT SHALL BE 1.5%-3%

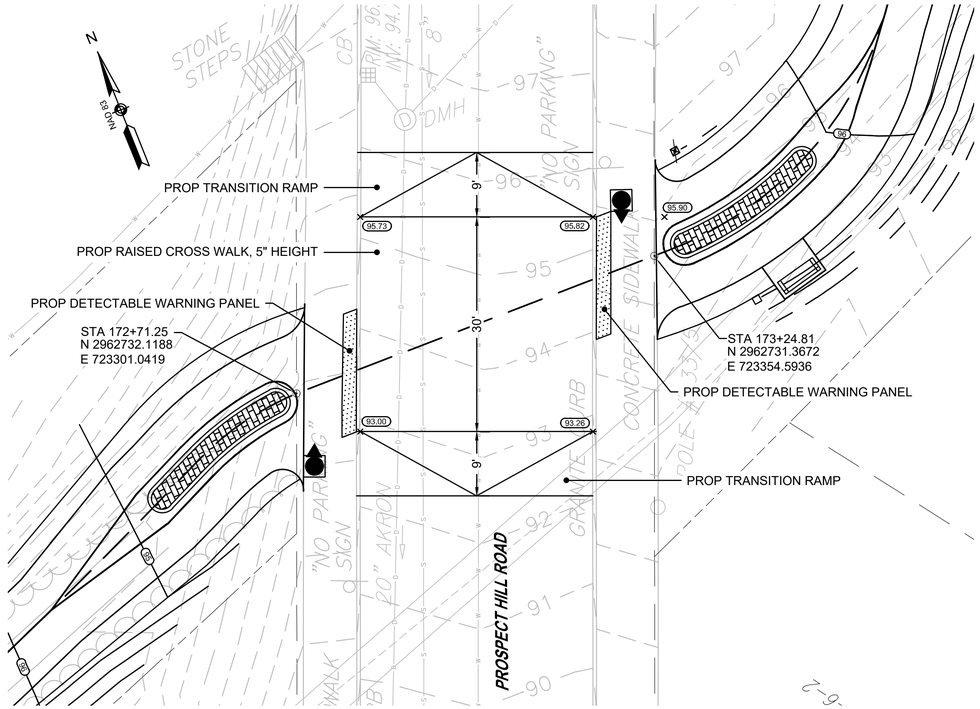
BIO	A	B	C
A	98.50	79.50	64.50
B	100.00	81.00	66.00
C	99.00	80.00	65.00
D	95.25	76.25	61.25

NOTE:
1. CONTRACTOR SHALL EXCAVATE FILL DOWN TO NATURAL SOILS. REMOVE ALL 'A'-LAYER AND 'B'-LAYER & SOILS. CONSTRUCT SUBGRADE USING COARSE SAND. REFER TO TEST PIT LOGS FOR ELEVATION OF NATURAL SOILS.

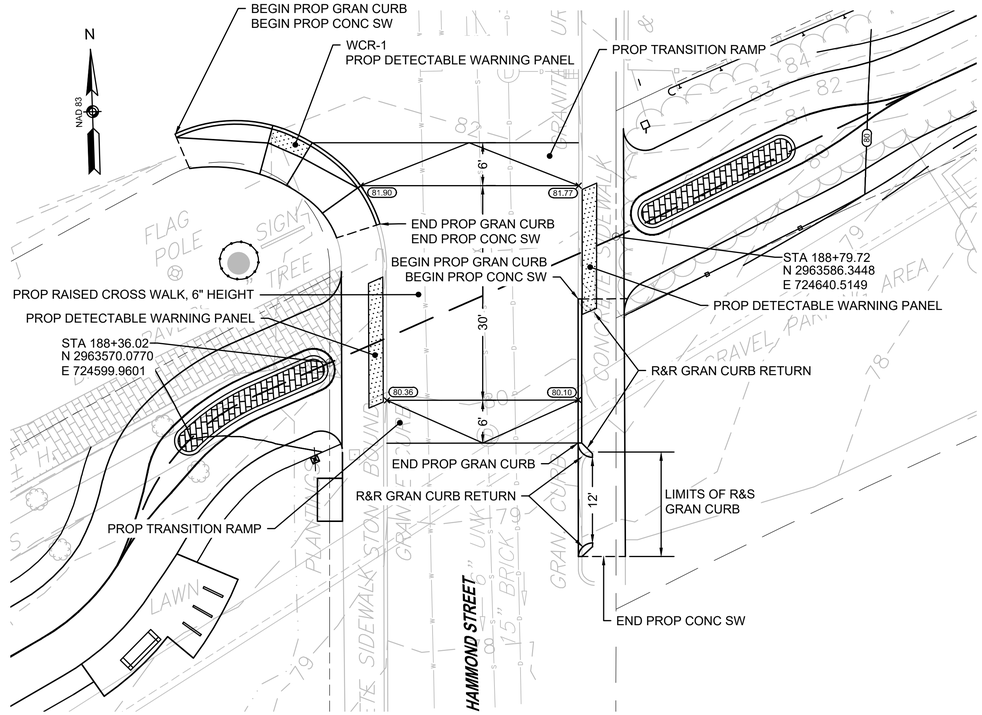
BIORETENTION DETAIL
NOT TO SCALE

TRAFFIC SIGN SUMMARY

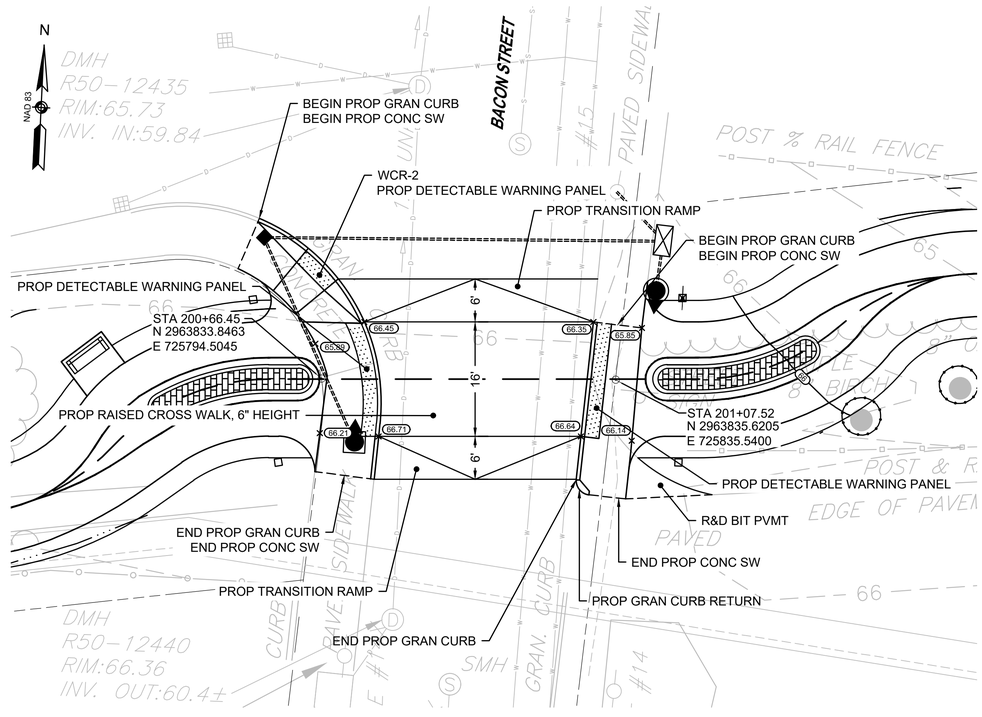
IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	TOTAL AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	18	18	STOP	SEE MUTCD			12	RED	BLACK	BLACK	P5	2.3	27.0
R5-3	24	24	NO MOTOR VEHICLES				13	WHITE	BLACK	BLACK		4.0	52.0
R9-7(MOD)	12	18					13	WHITE	BLACK	BLACK		1.5	19.5
R10-3b	9	12					4	WHITE	BLACK	BLACK		0.8	3.0
R10-10b	12	18	SIGNAL				4	WHITE	BLACK	BLACK		1.5	6.0
R10-23	24	30	CROSSWALK STOP ON RED				2	WHITE	BLACK	BLACK		5.0	10.0
R10-25	9	12	PUSH BUTTON TO TURN ON WALK/DON'T WALK LIGHTS				4	WHITE	BLACK	BLACK		0.8	3.0
W11-15	30	30					24	YELLOW	BLACK	BLACK		6.3	150.0
W11-15P	24	12	TRAIL X-ING				24	YELLOW	BLACK	BLACK		2.0	48.0
W16-7P	24	12					12	YELLOW	BLACK	BLACK		2.0	24.0
W16-9P	24	12	AHEAD				12	YELLOW	BLACK	BLACK		2.0	24.0
											TOTAL AREA OF SIGNS (SQUARE FEET)		366.50



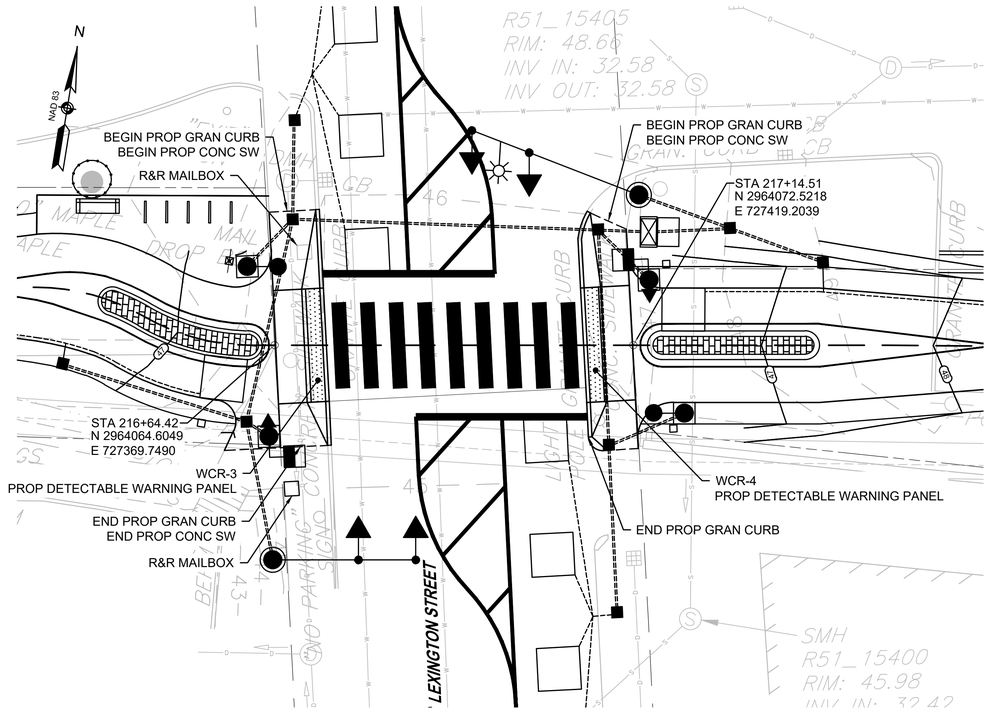
PROSPECT HILL ROAD CROSSING



HAMMOND STREET ROAD CROSSING



BACON STREET ROAD CROSSING



LEXINGTON STREET ROAD CROSSING

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	114
PROJECT FILE NO.	17112.00		

DETAILS - 5

0 10 20 30 40

SCALE: 1" = 10'

Plotted on 29-Jul-2021 9:50 AM
000000_HD\DETAILS - 5 CROSSINGS\).DWG

WALTHAM
WAYSIDE TRAIL

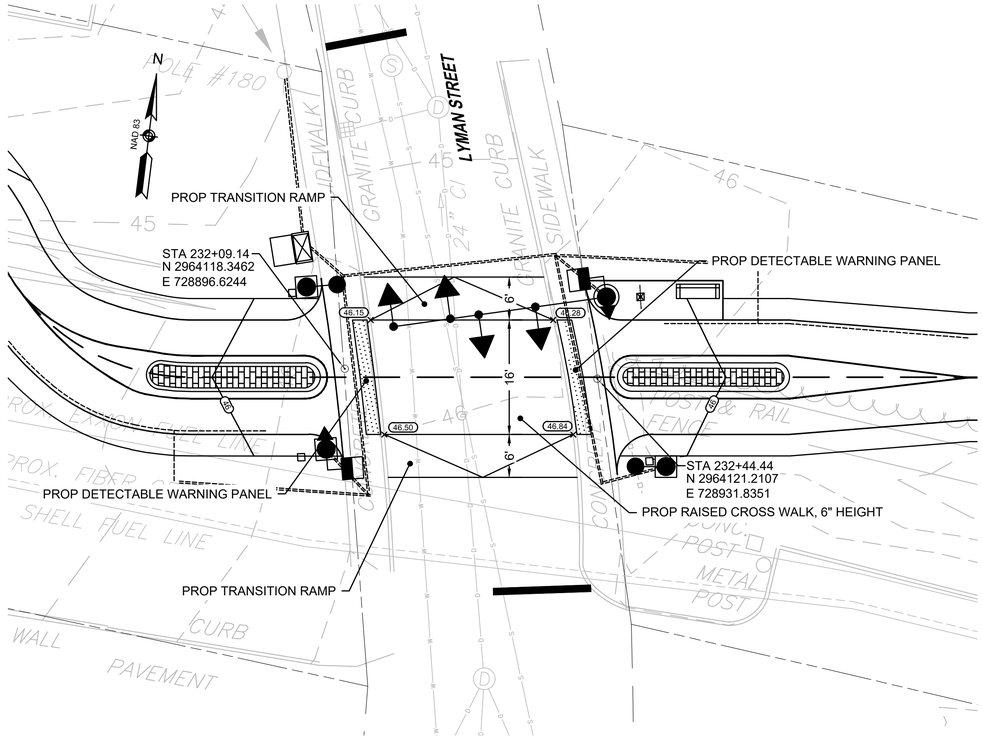
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	114
PROJECT FILE NO.	17112.00		

DETAILS - 6

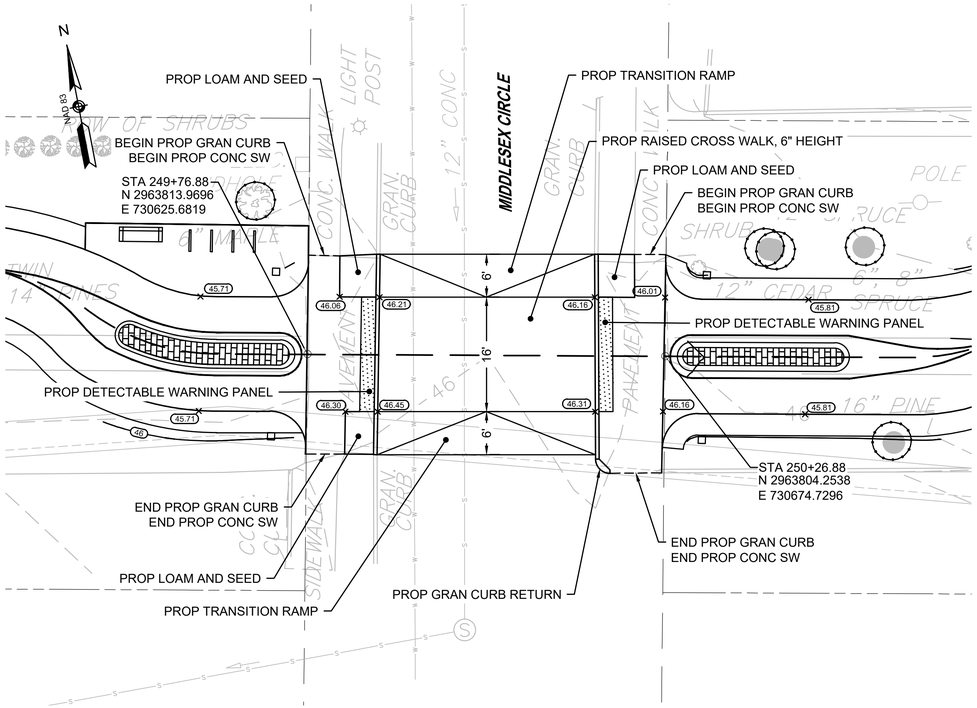
0 10 20 30 40

SCALE: 1" = 10'

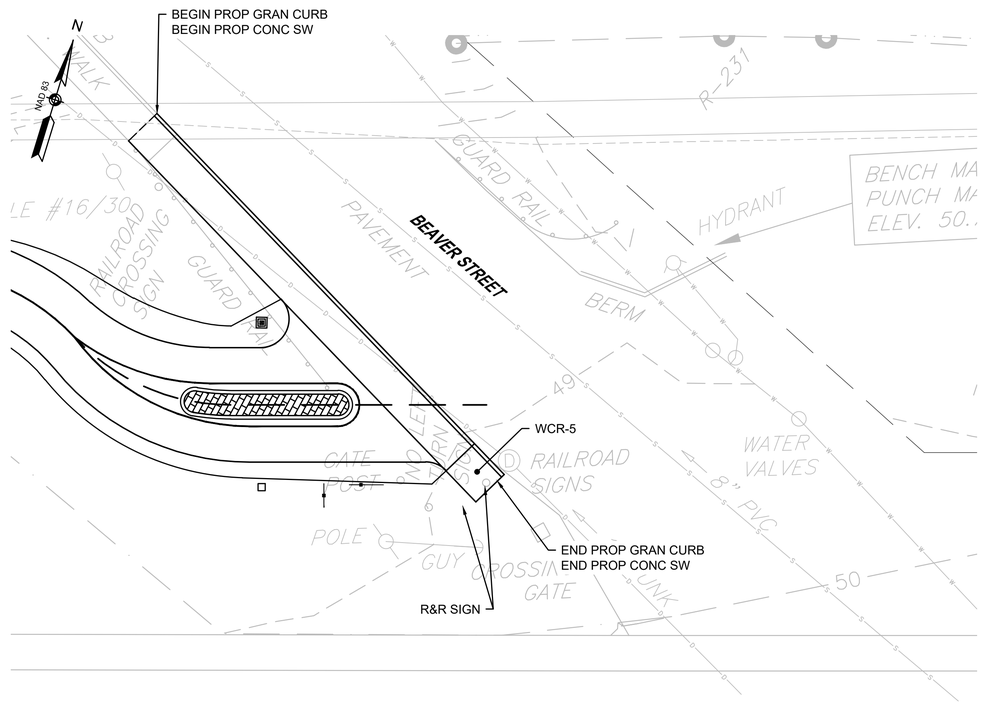
Plotted on 29-Jul-2021 9:50 AM
000000_HD\DETAILS - 6 CROSSINGS\).DWG



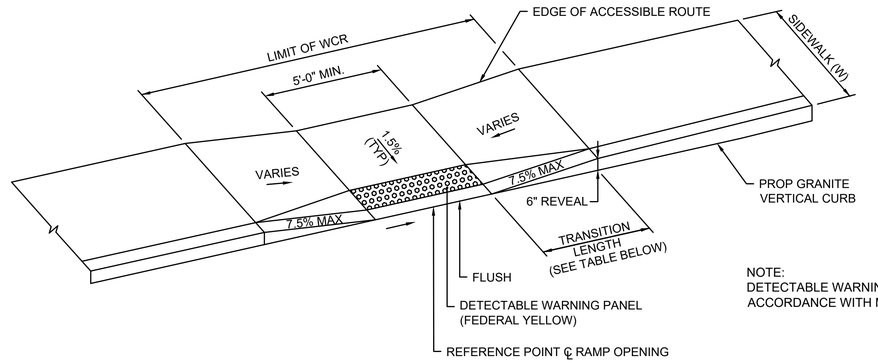
LYMAN STREET ROAD CROSSING



MIDDLESEX CIRCLE ROAD CROSSING



BEAVER STREET ROAD CROSSING



NOTE:
DETECTABLE WARNING PANEL SHALL BE IN ACCORDANCE WITH MASSDOT STANDARDS.

WCR #	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP ENTRANCE 5.0' (MIN.)	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STATION	OFFSET				LEFT SIDE	RIGHT SIDE
1	188+44.32	31.44' LT	7.0'	6.0'	-3.50%	9.0'	14.0'
2	200+66.81	16.23' LT	7.5'	6.0'	3.00%	7.0'	6.5'
3	216+71.65	-	7.0'	16.0'	-2.50%	6.5'	11.0'
4	217+07.59	-	7.0'	16.0'	-2.50%	11.0'	5.0'
5	295+87.18	11.90' RT	5.5'	5.0'	2.70%	-	6.5'

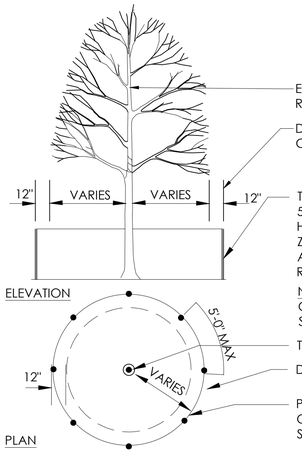
WHEELCHAIR RAMP DETAIL
NOT TO SCALE

CITY OF WALTHAM
WAYSIDE TRAIL

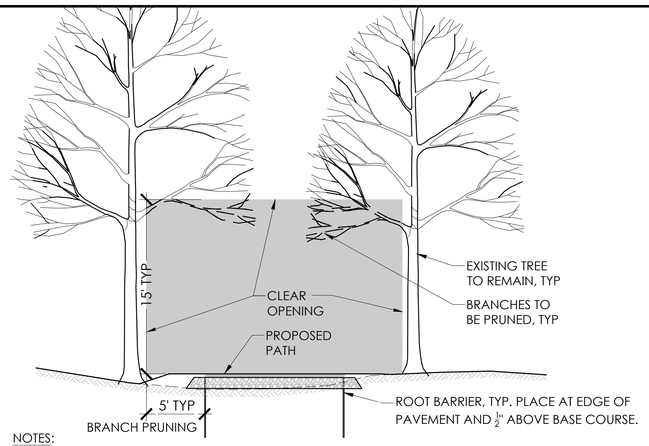
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	114
PROJECT FILE NO.	17112.00		

DETAILS - 7

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:08 PM

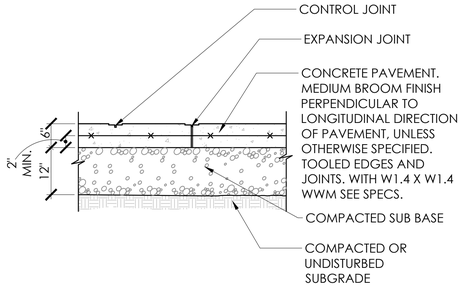


1 TREE PROTECTION

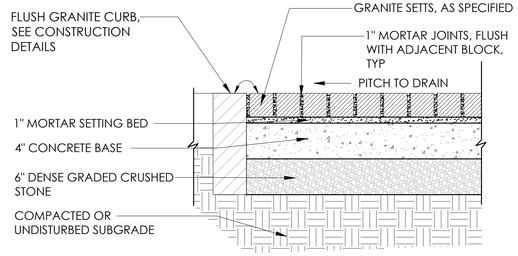


NOTES:
1. REMOVE ALL EXISTING TREES WITHIN GRADING LIMIT.
2. BRANCH PRUNING FOR CLEAR OPENING SHALL BE 15' HT AND 5' OFF BOTH SIDES OF PATH, REGARDLESS OF GRADING LIMIT LINE.
3. STAKE ALL TREES, GREATER THAN 14" CAL, TO BE REMOVED FOR REVIEW BY OWNER'S REPRESENTATIVE PRIOR TO DEMOLITION.
4. PROVIDE ROOT BARRIER ON BOTH SIDES FOR THE LENGTH OF THE PATH.

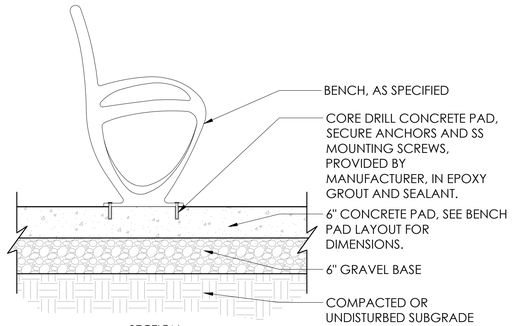
2 CLEARING/PRUNING OF EXISTING TREES



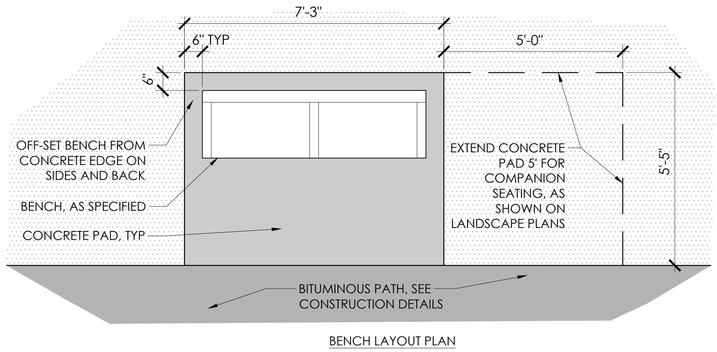
3 CONCRETE PAVING



4 GRANITE SETT PAVERS



SECTION



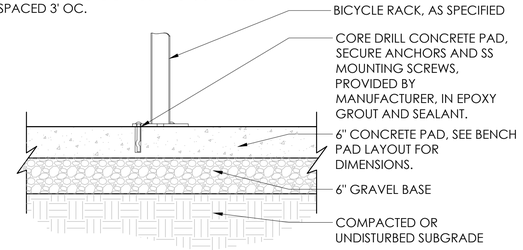
BENCH LAYOUT PLAN

BENCH SCHEDULE:

B1 WEST OF PROSPECT HILL ROAD	B9 LYMAN STREET
B2 WEST OF PROSPECT HILL ROAD	B10 MIDDLESEX CIRCLE
B3 PROSPECT HILL ROAD	B11 LINDEN STREET
B4 HAMMOND STREET	B12 EAST OF LINDEN STREET
B5 BACON STREET	B13 WEST BEAVER STREET
B6 EAST OF BACON STREET	B14 BEAVER STREET
B7 LEXINGTON STREET	
B8 EAST OF LEXINGTON STREET	

5 SITE BENCH

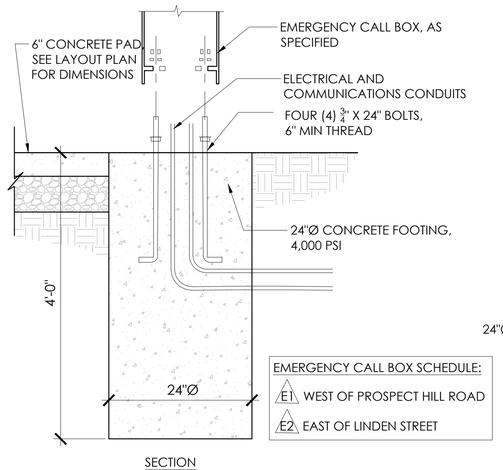
NOTE:
OFFSET BICYCLE RACKS 6" FROM BACK EDGE OF CONCRETE PAD AND 3' FROM SIDES OF CONCRETE PAD. RACKS SHALL BE SPACED 3' OC.



BICYCLE RACK SCHEDULE:

R1 HAMMOND STREET
R2 LEXINGTON STREET
R3 MIDDLESEX CIRCLE

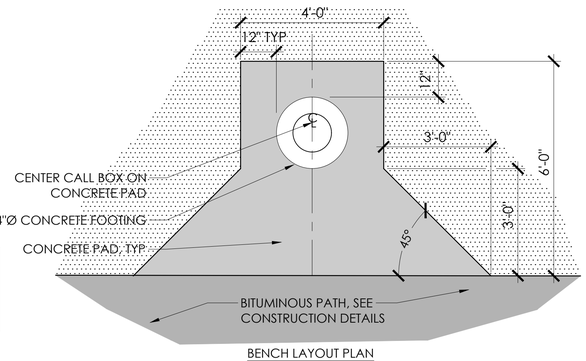
6 BICYCLE RACK



SECTION

EMERGENCY CALL BOX SCHEDULE:

E1 WEST OF PROSPECT HILL ROAD
E2 EAST OF LINDEN STREET



BENCH LAYOUT PLAN

7 EMERGENCY CALL BOX

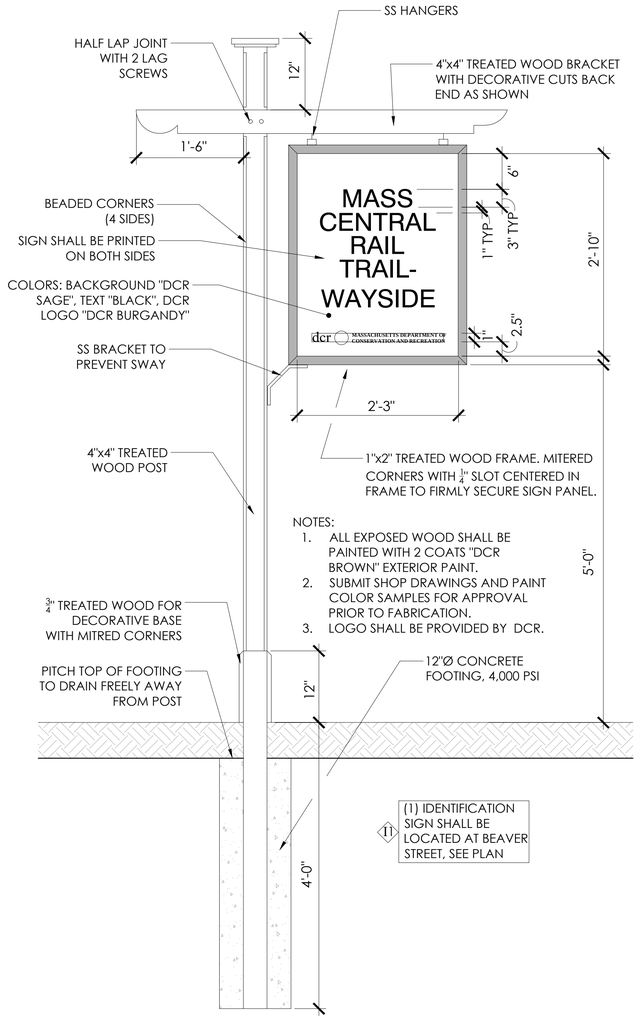
PS&E
NOT FOR CONSTRUCTION

CITY OF WALTHAM
WAYSIDE TRAIL

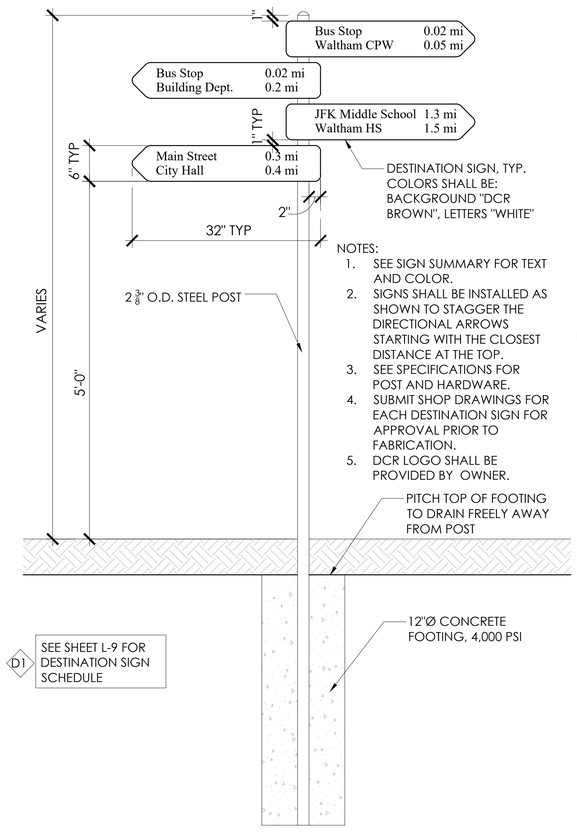
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MA	-	54	114
PROJECT FILE NO.	17112.00		

DETAILS - 8

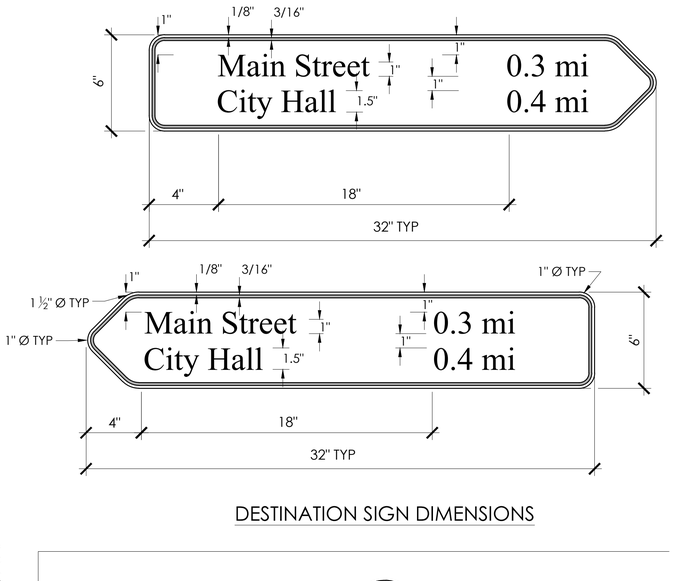
WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:08 PM



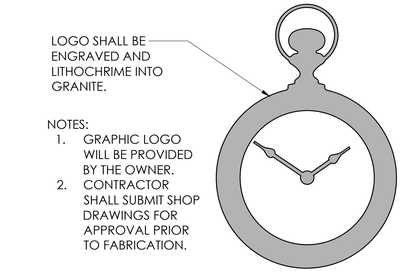
8 IDENTIFICATION SIGN



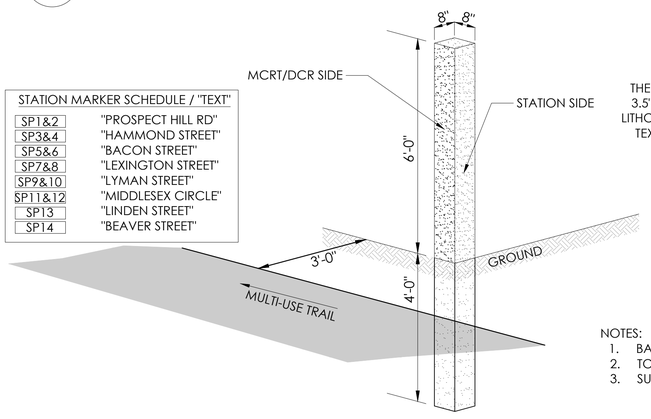
9 DESTINATION SIGN

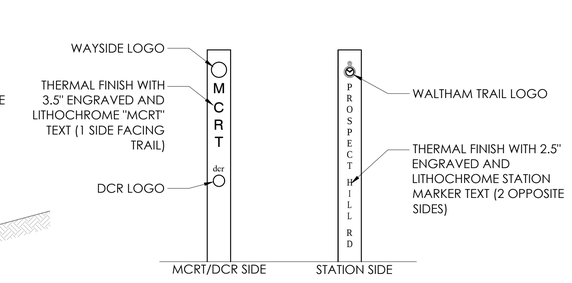


DESTINATION SIGN DIMENSIONS



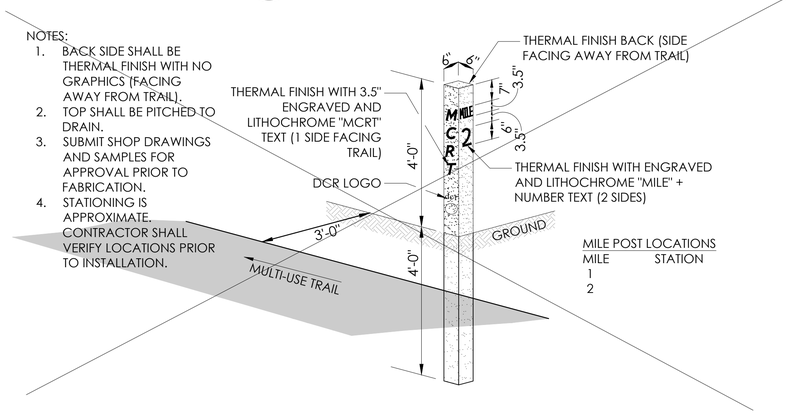
10 WALTHAM TRAIL LOGO





NOTES:
1. BACK SIDE SHALL BE THERMAL FINISH WITH NO GRAPHICS (FACING AWAY FROM TRAIL).
2. TOP SHALL BE PITCHED TO DRAIN.
3. SUBMIT SHOP DRAWINGS AND SAMPLES FOR APPROVAL PRIOR TO FABRICATION.

11 GRANITE STATION PILLAR



12 GRANITE MILE POST - N.I.C.

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PLANT LIST

QNTY	CODE	LATIN NAME	COMMON NAME	SIZE	ROOTBALL	COMMENTS
DECIDUOUS TREES						
32	AcRu	Acer rubrum	Red Maple	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
15	AcPe	Acer pensylvanicum	Striped Maple	1 ½"-2" CALIPER	B&B	6' BRANCHING HT
16	AcSa	Acer saccharum	Sugar Maple	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
8	BeNi	Betula nigra 'Heritage'	Heritage River Birch	10'-12' HT	B&B	MULTI-STEM
7	BePo	Betula populifolia	Gray Birch	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
4	CaCa	Carpinus caroliniana	American Hornbeam	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
8	FaGr	Fagus grandifolia	American Beech	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
5	LiSt	Liquidambar styraciflua	Sweet Gum	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
11	LiTu	Liriodendron tulipifera	Tulip Tree	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
20	NySy	Nyssa sylvatica	Black Gum	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
3	OsVi	Ostrya virginiana	American Hop Hornbeam	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
3	PlOc	Platanus occidentalis	Sycamore	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
5	PrSe	Prunus serotina	Black Cherry	2"-2 ½" CALIPER	B&B	6' BRANCHING HT
4	QuAl	Quercus alba	White Oak	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
3	QuPa	Quercus palustris	Pin Oak	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
1	QuRu	Quercus rubra	Northern Red Oak	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
15	SaAl	Sassafrass albinum	Sassafrass	2 ½"-3" CALIPER	B&B	6' BRANCHING HT
EVERGREEN TREES						
7	AbFr	Abies fraseri	Fraser Fir	8'-10' HT	B&B	FULL TO GROUND
1	JuVi	Juniperus virginiana	Eastern Red Cedar	8'-10' HT	B&B	FULL TO GROUND
3	PiGl	Picea gluca	White Spruce	8'-10' HT	B&B	FULL TO GROUND
1	PiMa	Picea mariana	Black Spruce	8'-10' ht	B&B	FULL TO GROUND
19	PiSt	Pinus Strobus	White Pine	8'-10' HT	B&B	FULL TO GROUND
19	ThOc	Thuja occidentalis	Eastern arbovitae	8'-10' HT	B&B	FULL TO GROUND
FLOWERING TREES						
15	AmCa	Amelanchier canadensis	Shadbush	8'-10' HT	B&B	MULTI-STEM
5	CeCa	Cercis canadensis	Eastern Redbud	8'-10 HT	B&B	MULTI-STEM
27	CoFl	Cornus florida	Flowering Dogwood	8'-10' HT	B&B	
16	ClAl	Clethra alnifolia 'Hummingbird'	Hummingbird Sweet Pepperbush	18"-24" HT,	CONT.	COMPACT FORM
19	CoSe	Cornus sericea 'Farrow'	Farrow Redosier Dogwood	18"-24" HT	CONT	COMPACT FORM
9	FaGa	Fothergilla gardenii	Dwarf Fothergilla	18"-24" HT	CONT	COMPACT FORM
7	IlGl	Ilex glabra 'Compacta'	Compact Inkberry	24"-30" HT	CONT	COMPACT FORM
7	KaLa	Kalmia latifolia	Mountain Laurel	24"-30" HT	CONT	COMPACT FORM
12	RoVa	Rhododendron vaseyi	Pinkshell Azalea	24"-30" HT	CONT	
BIORETENTION AREA PLANTS						
13	AnPD	Aster novae-angliae 'Purple Dome'	Purple Dome Aster	#2	CONT	MATURE SIZE: 18" HT x 36" SPD
16	BeNi	Betula nigra 'Heritage'	Heritage River Birch	10'-12' HT	B&B	MULTI-STEM
9	CaHu	Clethra alnifolia 'Hummingbird	Hummingbird Sweet Pepperbush	18"-24" HT	CONT	COMPACT FORM
30	CsFa	Cornus sericea 'Farrow'	Farrow Redosier Dogwood	18"-24" HT	CONT	COMPACT FORM
15	IgCo	Ilex glabra 'Compacta'	Compact Inkberry	24"-30" HT	CONT	COMPACT FORM
125	LsKo	Liatris spicata 'Kobold'	Kobold Marsh Blazing Star	#1	CONT	MATURE SIZE: 12" HT x 12" SPD
45	LoCa	Lobelia cardinalis	Cardinal Flower	#2	CONT	MATURE SIZE: 24" HT x 24" SPD
31	PaRR	Panicum virgatum 'Ruby Ribbons'	Ruby Ribbons Swtch Grass	#2	CONT	MATURE SIZE: 36" HT x 30" SPD
32	ScSc	Schizachyrium scoparium	Little Bluestem	#2	CONT	

SMALL TREES SHALL BE A MIX OF THE FOLLOWING CONSERVATION-GRADE TREES. SIZE: 3'-4' HT, ROOTBALL: #2 CONTAINER, AS AVAILABLE FROM NEW ENGLAND WETLAND PLANTS, INC.

SHADE SLOPES	
Abies balsamea	Balsam Fir
Acer saccharum	Sugar Maple
Nyssa sylvatica	Black Gum
Picea mariana	Black Spruce
Pinus strobus	White Pine
Quercus bicolor	Swamp White Oak
Quercus prinus	Chestnut Oak
Quercus rubra	Red Oak
SUN SLOPES	
Betula populifolia	Gray Birch
Juniperus virginiana	Eastern Red Cedar
Liriodendrom tulipifera	Tulip Tree
Platanus occidentalis	Sycamore
Populus deltoides	Cottonwood
Populus tremuloides	Quaking Aspen
Prunus serotina	Black Cherry
Quercus palustris	Pin Oak
Sorbus americana	Mountain Ash

SEED MIXES

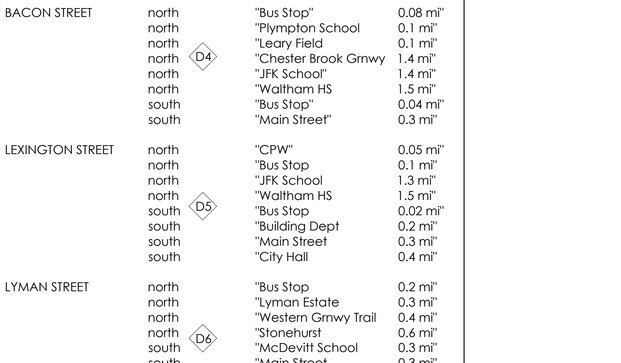
WOODLAND SEED MIX SHALL BE: New England Roadside Matrix Upland Seed Mix, as available through New England Wetland Plants, Inc., or approved equal.

FOREBAY SEED MIX SHALL BE: Retention Basin Floor Mix – Low Maintenance, as available through Ernst Seed, or approved equal.

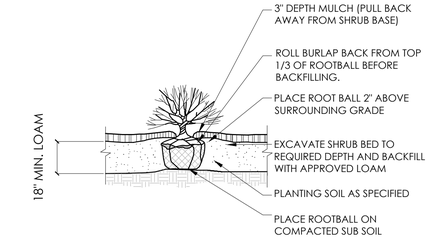
DESTINATION SIGNAGE SCHEDULE

FINAL TEXT SHALL BE CHOSEN BY THE OWNER DURING SHOP DRAWING REVIEW

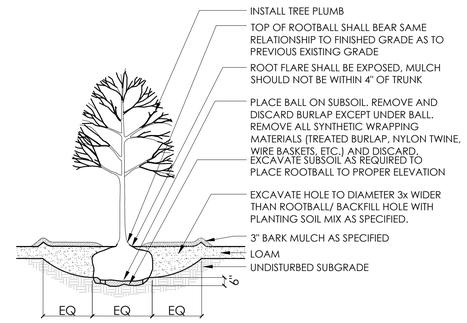
STATION/ CROSSING	DIRECTION FROM TRAIL		"TEXT" (LINE 1 AND LINE 2) PER PANEL	
157+90	north	D1	"Berry Park	0.3 mi"
PROSPECT HILL ROAD	north	D2	"Prospect Hill Park	0.4 mi"
	south		"Main Street"	0.1 mi"
HAMMOND STREET	north		"Bus Stop"	0.04 mi"
	south	D3	"Bus Stop"	0.07 mi"
	south		"Main Street"	0.2 mi"
BACON STREET	north		"Bus Stop"	0.08 mi"
	north		"Plympton School	0.1 mi"
	north		"Leary Field	0.1 mi"
	north	D4	"Chester Brook Grnwy	1.4 mi"
	north		"JFK School"	1.4 mi"
	north		"Waltham HS	1.5 mi"
	south		"Bus Stop"	0.04 mi"
	south		"Main Street"	0.3 mi"
LEXINGTON STREET	north		"CPW"	0.05 mi"
	north		"Bus Stop	0.1 mi"
	north		"JFK School	1.3 mi"
	north		"Waltham HS	1.5 mi"
	south	D5	"Bus Stop	0.02 mi"
	south		"Building Dept	0.2 mi"
	south		"Main Street	0.3 mi"
	south		"City Hall	0.4 mi"
LYMAN STREET	north		"Bus Stop	0.2 mi"
	north		"Lyman Estate	0.3 mi"
	north		"Western Grnwy Trail	0.4 mi"
	north	D6	"Stonehurst	0.6 mi"
	south		"McDevitt School	0.3 mi"
	south		"Main Street	0.3 mi"
	south		"Charles River	0.7 mi"
LINDEN STREET	north		"Linden Street"	
(top of ramp)	north		"Bus Stop	0.4 mi"
(bottom of ramp)	north		"Beaver Street	0.4 mi"
	north	D7 D8	"Bentley University	0.5 mi"
	south		"District Court	0.2 mi"
	south		"Main Street	0.3 mi"
	south		"Charles River	0.9 mi"
BEAVER STREET	north		"Soc Sec Admin	0.04 mi"
	north		"Bus Stop	0.1 mi"
	north		"UMass College of Ag	0.3 mi"
	north		"MA Farmers Market	0.3 mi"
	north	D9	"Girl Scouts East MA	0.3 mi"
	north		"Fernald School	0.3 mi"
	north		"Cedar Hill Res	0.7 mi"
	north		"Beaver Brook Res	0.8 mi"
	south		"Bus Stop	0.3 mi"
	south		"Fitzgerald School	0.3 mi"



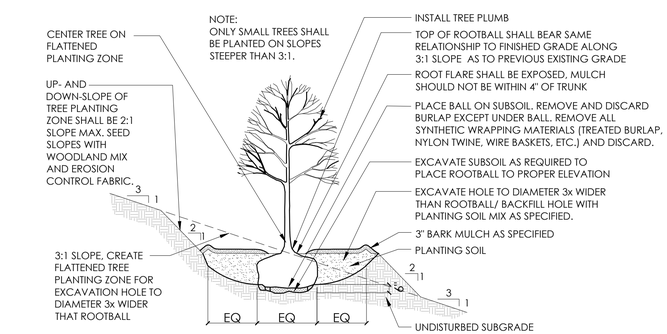
16 EVERGREEN PLANTING



13 SHRUB PLANTING



14 TREE PLANTING



15 TREE PLANTING ON 3:1 SLOPES

CITY OF WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	114
PROJECT FILE NO.		17112.00	

DETAILS - 9

PS&E
NOT FOR CONSTRUCTION

WALTHAM-SITEPLAN-3.DWG Plotted on 26-Jun-2020 12:09 PM

GENERAL NOTES

1. ALL CONSTRUCTION INDICATED ON THESE PLANS SHALL BE IN ACCORDANCE WITH:
   - THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2020.
   - THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH EDITION, 2020, INCLUDING THE LATEST INTERIM REVISIONS.
   - THE SPECIFICATIONS ACCOMPANYING AND CONTAINED WITHIN THESE PLANS.
2. ALL ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NGVD 88).
3. HORIZONTAL DATUM IS THE MASSACHUSETTS STATE PLANE.
4. THE SUITABILITY OF FOUNDATION MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF THE REINFORCED SOIL FOUNDATION (RSF) AND DRILLED SHAFTS.
5. ALL ABUTMENTS AND WALLS ARE DRAWN LOOKING AT THE EXPOSED FACES.
6. INFORMATION CONCERNING THE LOCATIONS OF THE STRUCTURES, THEIR CONDITION, AND DIMENSIONS IS FURNISHED SOLELY FOR THE INFORMATION AND CONVENIENCE OF THE CONTRACTOR, AND SHALL BE FIELD VERIFIED. THE CONTRACTOR SHALL CONDUCT ITS OWN INDEPENDENT EXAMINATION AND MEASUREMENTS OF THE SITES AND STRUCTURES' CONDITIONS FOR THE PURPOSE OF BIDDING, FABRICATION, AND CONSTRUCTION ASSOCIATED WITH THIS CONTRACT. ANY RELIANCE UPON INFORMATION MADE AVAILABLE BY THE TOWN OR THE ENGINEER SHALL BE AT THE CONTRACTOR'S RISK.

DESIGN

1. DESIGN SPECIFICATIONS:
   - AASHTO LRFD GUIDE SPECIFICATIONS SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN BRIDGES, 2ND EDITION, 2014, INCLUDING ALL INTERIM REVISIONS.
   - AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, 2017.
   - THE 2015 EDITION OF THE NATIONAL DESIGN SPECIFICATION (NDS) FOR WOOD CONSTRUCTION INCLUDING THE 2015 EDITION SUPPLEMENT.
   - MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) LRFD BRIDGE MANUAL, 2013 EDITION, INCLUDING ALL REVISIONS TO DATE.
   - FEDERAL HIGHWAY ADMINISTRATION (FHWA) GEOSYNTHETIC REINFORCED SOIL INTEGRATED BRIDGE SYSTEM INTERIM IMPLEMENTATION GUIDE (PUBLICATION NO. FHWA-HRT-11-026), JUNE 2012.
2. DESIGN LOADING:
   - PEDESTRIAN LIVE LOAD: 90 PSF
   - VEHICLE LIVE LOAD: H-10 TRUCK
   - LINDEN STREET ACCESS RAMP - PEDESTRIAN LOAD ONLY

STRUCTURAL STEEL NOTES

1. ALL NEW STEEL SHAPES AND PLATES SHALL CONFORM TO THE LATEST PROVISIONS OF AASHTO DESIGNATION M 270 (ASTM DESIGNATION A 709) GRADE 36 OR 50.
2. ALL STEEL COMPONENTS, FABRICATIONS, AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 960 OF THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, INCLUDING THE LATEST SUPPLEMENTAL AND INTERIM SPECIFICATIONS.
3. ALL STRUCTURAL STEEL COMPONENTS AND FASTENING HARDWARE SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH THE MASSDOT STANDARD SPECIFICATIONS.
4. ALL BOLTED CONNECTIONS SHALL UTILIZE HIGH STRENGTH BOLTS CONFORMING TO AASHTO M164 (ASTM A325).
5. WASHERS MEETING AASHTO M293 (ASTM F436) ARE TO BE USED OVER ALL HOLES THAT ARE MORE THAN 1/16 INCH IN DIAMETER GREATER THAN THE BOLT DIAMETER AND UNDER ALL PARTS TURNED DURING ASSEMBLY.
6. PRIOR TO FABRICATION, ALL MATERIALS SHALL BE BLAST-CLEANED TO AT LEAST SSPC-SP6 TO REMOVE ALL OIL, DIRT, GREASE, MILL SCALE AND OTHER DELETERIOUS MATERIALS FROM THE SURFACES OF THE STEEL TO BE FABRICATED.
7. PRIOR TO SHOP COATING, ALL CORNERS AND EDGES OF STEEL WHICH HAVE BEEN FLAME CUT OR OTHERWISE HARDENED SHALL BE SOFTENED BY GRINDING OR BLAST-CLEANING TO PROVIDE A SURFACE SUITABLE FOR APPLICATION OF THE SPECIFIED PAINT SYSTEM.
8. WHEN STEEL DIE STAMPS ARE TO BE USED TO IDENTIFY PIECES AND MEMBERS, FABRICATORS SHALL UTILIZE LOW STRESS STAMPS.
9. WELDING SHALL BE IN ACCORDANCE WITH THE LATEST STRUCTURAL WELDING CODE ANSI/AASHTO/AWS D1.5 (INCLUDING ALL INTERIMS TO DATE) AND APPLICABLE SUPPLEMENTAL AWS PUBLICATIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY SHORING AND BRACING TO MAINTAIN THE STRUCTURAL STABILITY OF STRUCTURES DURING CONSTRUCTION.
11. PRIOR TO ERECTION, ALL EXISTING STEEL MEMBER SURFACES THAT WILL BE IN DIRECT CONTACT WITH ANY NEW FABRICATED STEEL SHALL BE CLEANED TO AT LEAST SSPC-SP3.

TIMBER NOTES

1. SAWN LUMBER AND TIMBER SHALL CONFORM TO THE SPECIFICATIONS FOR STRUCTURAL TIMBER, LUMBER, AND PILING, AASHTO M 168 AND SHALL BE AASHTO DESIGNATION SOUTHERN PINE NO. 1 OR EQUIVALENT.
2. STRUCTURAL GLUED LAMINATED TIMBER SHALL CONFORM TO THE AMERICAN NATIONAL STANDARD ANSI/AITC A-190.1, SPECIFICATION FOR STRUCTURAL GLUED LAMINATED TIMBER AND SHALL BE AASHTO IDENTIFICATION NUMBER 47 FOR VISUALLY GRADED SOUTHERN PINE.
3. ALL SAWN LUMBER SHALL BE SOUTHERN YELLOW PINE, PRESSURE TREATED TO A MINIMUM NET RETENTION OF 0.60 POUNDS PER CUBIC FOOT OF ALKALINE COPPER QUATERNARY (ACQ) PRESERVATIVE, CONFORMING TO THE REQUIREMENTS OF THE AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) STANDARD OR AS NOTED ELSEWHERE. ACQ SHALL BE APPLIED BY A STANDARD PRESSURE PROCESS AND SHALL CONFORM TO THE RECOMMENDED PRACTICES OF THE AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA). EACH PIECE SHALL BEAR THE AMERICAN WOOD PRESERVERS BUREAU (AWPB) QUALITY MARK INDICATING COMPLIANCE WITH AWPB STANDARD LP-22.

   TIMBER BRIDGE RAILS AND EXPOSED TIMBER PLANKING SHALL BE TREATED WITH WATERBORNE PRESERVATIVES OR OIL-BORNE PRESERVATIVES IN LIGHT PETROLEUM SOLVENT PER AASHTO M 133.
4. GLUED LAMINATED TIMBER DECKS SHALL BE TREATED WITH A PENTACHLOROPHENOL TYPE A OIL PRESERVATIVE CONFORMING TO AWPA STANDARD C-28 AND P-9. RETENTION LEVEL SHALL BE 0.5 PCF AS PER AWPA STANDARD C-28.
5. PRESERVATION TREATMENT SHALL BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH AASHTO M 133 AND AWPA STANDARD M2.
6. ALL TREATED TIMBER MATERIALS SHALL FOLLOW POST-TREATMENT REQUIREMENTS SUMMARIZED IN BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS (WWPI 1996) TO ENSURE ALL SURFACES ARE FREE OF EXCESS PRESERVATIVE AND CHEMICALS ARE FIXATED IN THE WOOD.
7. TIMBER SHALL BE DRIED TO A MOISTURE CONTENT OF 19% OR LESS AFTER TREATMENT.
8. ALL FIELD CUTS AND HOLES SHALL BE TREATED WITH COPPER NAPHTHENATE IN ACCORDANCE WITH AWPA STANDARD M4.
9. THREADS ON ALL HARDWARE SHALL BE PEENED OVER AFTER TIGHTENING. TOUCH UP GALVANIZING AFTER PEENING.
10. ALL HARDWARE INCLUDING FASTENERS FOR TIMBER CONNECTIONS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A-123 OR ASTM A-153, AS APPLICABLE.
11. PRE-DRILLING IS REQUIRED FOR ALL LAG, BOLT, AND DOWEL INSTALLATIONS. HOLES FOR DOWELS IN DECK SHALL BE SIZED TO PROVIDE A TIGHT FIT.
12. ALL GLULAM SHALL BE CUT, DRILLED, AND COMPLETELY FABRICATED PRIOR TO PRESSURE TREATMENT WITH PRESERVATIVES.
13. ALL WOOD AND METAL COMPONENTS SHALL BE HANDLED AND STORED CAREFULLY SO AS NOT TO DAMAGE THE MATERIAL. IF DAMAGE DOES OCCUR, EXPOSED UNTREATED WOOD SHALL BE FIELD TREATED IN ACCORDANCE WITH AASHTO M 133.
14. HARDWARE SHALL BE COUNTERSUNK WHERE NOTED, WITH THREADED BOLT ENDS AND NUTS PLACED ON THE OUTSIDE OF WALKWAY.
15. TIMBER SURFACES AND EDGES SHALL BE PLANED AND SANDED SMOOTH.
16. WATERPROOFING MEMBRANE SHALL BE COMPATIBLE WITH THE WOOD PRESERVATIVE.
17. LIVE LOAD DEFLECTION (SERVICE LOAD) FOR LONGITUDINAL GLULAM DECKS, TIMBER STRINGERS, AND TIMBER PILE CAPS SHALL NOT EXCEED L/360. LIVE LOAD DEFLECTION (SERVICE LOAD) FOR TRANSVERSE GLULAM DECKS AND TIMBER PLANKING SHALL NOT EXCEED 0.1 INCH.

CONCRETE NOTES

1. THE FOLLOWING ELEMENTS ARE PRECAST: POSTS AND PANELS AT HAMMOND STREET AND PROSPECT HILL ROAD RETAINING WALLS.
2. MASSDOT 4000 PSI, 3/4 IN., 610 CEMENT CONCRETE SHALL BE USED FOR THE FOLLOWING:
   - TIMBER BRIDGE: GRS ABUTMENT BEAM SEATS, PILE REPAIRS
   - LINDEN BRIDGE: CURBS, BACKWALLS, TIMBER DECK SUPPORTS
3. MASSDOT 4000 PSI, 3/8 IN., 660 CEMENT CONCRETE SHALL BE USED FOR THE FOLLOWING:
   - LINDEN ACCESS RAMP: DRILLED SHAFTS
   - HAMMOND STREET RETAINING WALL: DRILLED SHAFTS
   - PROSPECT HILL ROAD RETAINING WALL: DRILLED SHAFTS
4. MASSDOT 3000 PSI, 1½ IN., 470 CEMENT CONCRETE SHALL BE USED FOR THE FOLLOWING:
   - TIMBER CULVERT: BEAM SEATS
5. MASSDOT 5000 PSI 3/4 IN., 685 HP CEMENT CONCRETE SHALL BE USED FOR THE FOLLOWING:
   - HAMMOND STREET RETAINING WALL: POSTS, PANELS
   - PROSPECT HILL ROAD RETAINING WALL: POSTS, PANELS
6. ALL EXPOSED EDGES AND REENTRANT CORNERS NOT OTHERWISE DETAILED ON THE PLANS SHALL HAVE A MINIMUM OF 3/4" CHAMFER.
7. EPOXY BONDING COMPOUND USE FOR CONCRETE REPAIRS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL CONFORM TO THE REQUIREMENTS OF THE SUPPLEMENTAL SPECIFICATIONS, SUBSECTION 901.68C AND M4.05.5 AND SHALL BE ON THE MASSDOT QUALIFIED CONSTRUCTION MATERIALS LIST.
8. ANCHOR BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM F1554, GRADE 105 AND SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH AASHTO M232.
9. ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED, UNLESS NOTED OTHERWISE.

REINFORCING STEEL

REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS, ALL BARS SHALL BE LAPPED AS FOLLOWS:

MODIFICATION CONDITION	#4 BARS	#5 BARS
1. NONE	21"	26"
2. 12" OF CONCRETE BELOW BAR	29"	36"
3. COATED BARS, COVER < 3DB, OR CLEAR SPACING < 6DB	31"	39"
4. COATED BARS, ALL OTHER CASES	25"	31"
5. CONDITION 2. AND 3.	35"	44"
6. CONDITION 2. AND 4.	34"	43"

IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF THE LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE CONSTRUCTION DRAWINGS.

ALL REINFORCING STEEL SHALL BE EPOXY COATED.

CLEANING

1. ALL EXISTING BRIDGE STRUCTURES SHALL BE CLEANED OF ALL LOOSE DEBRIS. CLEANING METHODS SHALL BE LIMITED TO CLEAN COMPRESSED AIR WITH NO ABRASIVES OR SOLVENTS. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO CONTAIN POTENTIAL CONTAMINANTS (e.g. BIRD GUANO).
2. THE CONTRACTOR SHALL PROVIDE PROTECTIVE DEVICES AS REQUIRED TO PREVENT ANY DAMAGE TO THE WORK AND TO OTHER PROPERTY OR PERSONS UNDER OR AROUND THE BRIDGE STRUCTURES DURING CLEANING AND CONSTRUCTION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT NO DEBRIS FALLS INTO ANY PROPERTY OR WATERCOURSE DURING WORK ON THE BRIDGE. THE USE OF SUSPENDED NETS OR TARPS TO CATCH FALLING DEBRIS SHALL BE EMPLOYED. ANY MATERIAL THAT DOES ENTER ANY PROPERTY OR WATERCOURSE SHALL BE REMOVED BY THE CONTRACTOR, USING HAND METHODS OR ROPES AND/OR CHAINS ATTACHED TO EQUIPMENT THAT CAN BE OPERATED FROM OUTSIDE ANY WETLAND AREA.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE EXISTING PAINT FOR LEAD CONTENT PRIOR TO PERFORMING ANY WORK. THE LEAD PAINT TEST SHALL BE PERFORMED BY A CERTIFIED LEAD PAINT TESTING COMPANY. IF LEAD IS PRESENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MITIGATION NECESSARY FOR THE PROPOSED WORK IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS.

SHIELDING NOTES

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT NO DEBRIS FALLS INTO ANY WATERCOURSE DURING ANY PHASE OF CONSTRUCTION ON THE STRUCTURES OR ONTO THE ROADWAY BELOW THE LINDEN STREET BRIDGE. THE METHOD FOR SHIELDING SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER FOR APPROVAL.
2. ANY MATERIAL THAT DOES ENTER ANY WATERCOURSE SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
3. NO CONSTRUCTION MACHINERY SHALL BE PLACED IN ANY WATERCOURSE.

FOUNDATIONS

1. FOUNDATIONS MAY BE ALTERED, IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION, WITH THE APPROVAL OF THE ENGINEER.
2. ALL UNSUITABLE MATERIAL SHALL BE REMOVED WITHIN THE LIMITS OF THE FOUNDATIONS OF THE STRUCTURES, AS DIRECTED BY THE ENGINEER.

C.I.P. CONCRETE DRILLED SHAFTS (LINDEN STREET ACCESS RAMP)

1. THE FACTORED GEOTECHNICAL RESISTANCE OF THE DRILLED SHAFT IS BASED ON A FACTORED BEARING CAPACITY OF THE SOIL BELOW THE TIP OF 6 KSF AND IS THE PRODUCT OF THE NOMINAL SOIL BEARING CAPACITY OF 12 KSF AND A RESISTANCE FACTOR OF 0.50. THE FACTORED DESIGN AXIAL LOAD PER SHAFT VARIES PER PIER AND IS BASED ON THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS STRENGTH I LOAD COMBINATION.
2. CENTERING DEVICES SHALL BE CONSTRUCTED OF AN APPROVED NON-METALLIC DURABLE MATERIAL.
3. THE NON-METALLIC CENTERING DEVICES SHALL BE OF ADEQUATE SIZE TO INSURE A MINIMUM 3" ANNULAR SPACE BETWEEN THE OUTSIDE OF THE REINFORCEMENT CAGE AND THE SIDES OF THE EXCAVATED HOLE OR INSIDE OF CASING.
4. THERE SHALL BE A MINIMUM OF 3 GROUPS OF NON-METALLIC CENTERING DEVICES FOR SHAFTS LESS THAN 26'-0" IN LENGTH.
5. NON-METALLIC CENTERING DEVICES SHALL BE PLACED AT A MAXIMUM SPACING OF 2'-6" AROUND THE CIRCUMFERENCE OF THE SHAFT.
6. EACH LONGITUDINAL BAR SHALL BE SUPPORTED BY A 3" HIGH BOLSTER OF APPROVED NON-METALLIC DURABLE MATERIAL.
7. SPLICES OF LONGITUDINAL REINFORCEMENT SHALL BE ARRANGED IN GROUPS OF TWO DIAGONALLY OPPOSITE PAIRS THAT ARE STAGGERED VERTICALLY AT LEAST 12" ON CENTER.
8. IF SPLICING OF SPIRAL REINFORCEMENT IS NECESSARY, A MINIMUM OF 2" CLEARANCE SHALL BE PROVIDED BETWEEN THE OUTSIDE SURFACE OF MECHANICAL REINFORCING BAR SPLICERS AND THE DRILLED SHAFT CASING OR EXCAVATED SURFACE.
9. WELDING OF THE REINFORCEMENT BARS IS NOT PERMITTED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. WELDING OF LONGITUDINAL REINFORCEMENT IS NOT PERMITTED.

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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	114
PROJECT FILE NO.	17112.00		

STRUCTURAL NOTES - 1

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GRS ABUTMENT GENERAL NOTES

1. SITE LAYOUT/SURVEY: CONSTRUCT THE BASE OF THE GRS ABUTMENT AND WINGWALLS WITHIN 1" OF THE STAKED ELEVATIONS. CONSTRUCT THE EXTERNAL GRS ABUTMENT AND WINGWALLS TO WITHIN ±½" OF THE SURVEYED STAKE DIMENSIONS.

2. EXCAVATION: COMPLY WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AS WELL AS STATE AND LOCAL REGULATIONS FOR ALL EXCAVATIONS.

3. COMPACTION: COMPACT BACKFILL TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY ACCORDING TO AASHTO-T-99 AND ± 2 PERCENT OPTIMUM MOISTURE CONTENT IN THE BEARING REINFORCEMENT ZONE, COMPACT TO 100% OF THE MAXIMUM DRY DENSITY ACCORDING TO AASHTO-T-99. ONLY HAND-OPERATED COMPACTION EQUIPMENT IS ALLOWED WITHIN 3 FEET OF THE WALL FACE. REINFORCEMENT SHALL EXTEND DIRECTLY BENEATH EACH LAYER OF CMU BLOCKS, COVERING ≥ 85% OF THE FULL WIDTH OF THE BLOCK TO THE FRONT FACE OF THE WALL.

4. GEOSYNTHETIC REINFORCEMENT PLACEMENT: PULL THE GEOSYNTHETIC TAUGHT TO REMOVE ANY WRINKLES AND LAY FLAT PRIOR TO PLACING AND COMPACTING THE BACKFILL MATERIAL. SPLICES SHOULD BE STAGGERED AT LEAST 24" APART AND SPLICES ARE NOT ALLOWED IN THE BEARING REINFORCEMENT ZONE. NO EQUIPMENT IS ALLOWED DIRECTLY ON THE GEOSYNTHETIC. PLACE A MINIMUM 6" LAYER OF GRANULAR FILL PRIOR TO OPERATING ONLY RUBBER-TIRED EQUIPMENT OVER THE GEOSYNTHETIC AT SPEEDS LESS THAN 5 MPH WITH NO SUDDEN BRAKING OR SHARP TURNING.

5. REINFORCED SOIL FOUNDATION (RSF) CONSTRUCTION: THE RSF SHOULD BE ENCAPSULATED IN GEOTEXTILE REINFORCEMENT ON ALL SIDES WITH MINIMUM OVERLAPS OF 3 FEET TO PREVENT WATER INFILTRATION. WRAPPED CORNERS NEED TO BE TIGHT WITHOUT EXPOSED SOIL. COMPACT BACKFILL MATERIAL IN LIFTS LESS THAN 6" IN COMPACTED HEIGHT. GRADE AND LEVEL THE TOP OF THE RSF PRIOR TO FINAL ENCAPSULATION, AS THIS WILL SERVE AS THE LEVELING PAD FOR THE CMU BLOCKS OF THE GRS ABUTMENT.

6. GRS WALL FACE ALIGNMENT: CHECK FOR LEVEL ALIGNMENT OF THE CMU BLOCK ROW AT LEAST EVERY OTHER LAYER OF THE GRS ABUTMENT. CORRECT ANY ALIGNMENT DEVIATIONS GREATER THAN ¼".

7. BEAM SEAT PLACEMENT: REINFORCED CONCRETE BEAM SEAT SHALL BE AS SPECIFIED IN THE CONCRETE NOTES, CONSTRUCTED TO THE DIMENSIONS AND LOCATIONS SHOWN ON THE PLANS. PLACE PRECUT 4" THICK FOAM BOARD ON THE TOP OF THE BEARING BED REINFORCEMENT BUTT AGAINST THE BACK FACE OF THE CMU BLOCK. SET HALF-HEIGHT OR FULL HEIGHT (DEPENDING ON WALL HEIGHT AND REQUIRED CLEAR SPACE) SOLID CMU BLOCKS ON TOP OF THE FOAM BOARD.

8. SUPERSTRUCTURE PLACEMENT: THE CRANE USED FOR THE PLACEMENT OF THE SUPERSTRUCTURE CAN BE POSITIONED ON THE GRS ABUTMENT PROVIDED THE OUTRIGGER PADS ARE SIZED FOR LESS THAN 4,000 PSF NEAR THE FACE OF THE ABUTMENT WALL.

9. SET BEAMS SQUARE AND LEVEL WITHOUT DRAGGING ACROSS THE BEAM SEAT SURFACE.

10. INTEGRATED APPROACH BACKFILL PLACEMENT: FOLLOWING THE PLACEMENT OF THE SUPERSTRUCTURE, GEOTEXTILE REINFORCEMENT LAYERS ARE PLACED ALONG THE BACK OF THE SUPERSTRUCTURE, BUILT IN MAXIMUM LIFT HEIGHTS OF 6" (MAXIMUM VERTICAL SPACING OF REINFORCEMENT ≤ 6"). THE TOP OF THE FINAL WRAP SHOULD BE APPROXIMATELY 2" BELOW THE TOP OF THE SUPERSTRUCTURE TO ALLOW AT LEAST 2" OF AGGREGATE BASE COVER OVER THE GEOSYNTHETIC TO PROTECT IT FROM HOT MIX ASPHALT.

GRS ABUTMENT MATERIALS

1. GEOSYNTHETIC REINFORCEMENT:

   - GEOTEXTILE FABRIC SHALL HAVE A MINIMUM ULTIMATE TENSILE STRENGTH OF 4,800 LB/FT IN ACCORDANCE WITH ASTM D 4595-11. TENSILE STRENGTH AT 2% STRAIN SHALL BE A MINIMUM OF 1,370 LB/FT.

2. CMU BLOCK:

   - FURNISH FACING ELEMENTS CONSISTING OF SPLIT-FACE CMU SHOULD MEET ASTM C90-11B REQUIREMENTS, WITH A MINIMUM REQUIRED COMPRESSIVE STRENGTH OF 4,000 PSI AND A MAXIMUM WATER ABSORPTION RATE OF 5% AFTER 24 HOURS.
   - CMU BLOCK UNITS SHALL BE TESTED FOR FREEZE-THAW DURABILITY IN ACCORDANCE WITH ASTM C1262-10.
   - SPECIMENS USED FOR ABSORPTION TESTING SHALL NOT SUBSEQUENTLY BE USED FOR FREEZE-THAW TESTING.
   - CMU BLOCKS SHALL BE FURNISHED WITHIN THE FOLLOWING TOLERANCES:

     THE HEIGHT OF EACH INDIVIDUAL BLOCK SHALL BE WITHIN 1/16" OF THE SPECIFIED DIMENSION.

     THE LENGTH AND WIDTH OF EACH INDIVIDUAL BLOCK SHALL BE WITHIN 1/8" OF THE SPECIFIED DIMENSION.

     HOLLOW CMU UNITS SHALL HAVE A MINIMUM FACE SHELL THICKNESS OF 1¼" AND A WEB THICKNESS OF ¾".

   - THE CMU UNITS SHALL BE RANDOMLY SAMPLED AND TESTED IN ACCORDANCE WITH ASTM C140-12.

3. BACKFILL MATERIAL NOTES:

   - FURNISH CRUSHED DURABLE PARTICLES, FRAGMENTS OF STONE GRAVEL FREE FROM ORGANIC MATTER OR OTHER DELETERIOUS MATERIAL FOR THE ABUTMENT, RSF, AND INTEGRATED APPROACH.
   - GRS, RSF, AND INTEGRATED APPROACH BACKFILL MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:

     AASHTO NO. 89 OPEN-GRADED BACKFILL GRADATION (AASHTO M-43):

US SIEVE SIZE	% PASSING
1/2 INCH	100
3/8 INCH	90-100
NO. 4	20-55
NO. 8	5-30
NO. 16	0-10
NO. 50	0-5

     PLASTICITY INDEX (PI) (AASHTO T-90): PI ≤ 6

SOUNDNESS (AASHTO T-104): THE BACKFILL SHALL BE SUBSTANTIALLY FREE OF SHALE OR OTHER POOR DURABILITY PARTICLES. THE MATERIAL SHALL HAVE A MAGNESIUM SULFATE LOSS OF LESS THAN 30 PERCENT AFTER FOUR CYCLES OR A SODIUM VALUE LESS THAN 15 PERCENT AFTER FIVE CYCLES (AASHTO T 104-99).

THE AMOUNT OF FINES PASSING THE NO. 200 SIEVE SHOULD BE AS CLOSE TO 0 PERCENT AS POSSIBLE AND NO MORE THAN 5 PERCENT.

ANGLE OF INTERNAL FRICTION SHALL BE A MINIMUM OF 38 DEGREES.

4. POLYSTYRENE FOAM BOARD NOTES:

   - AASHTO DESIGNATION M230 TYPE VI. FOAM BOARDS SHALL BE EXPANDED POLYSTYRENE FILLER OR EQUIVALENT, AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 10 PSI.

5. REINFORCING STEEL:

   - DEFORMED BARS - AASHTO M31 (ASTM A615) GRADE 60

6. CONCRETE NOTES:

   - MASSDOT 4000 PSI, 3/4 IN., 610 CEMENT CONCRETE

7. ASPHALTIC COATING:

   - AN ASPHALTIC COATING SHALL BE APPLIED TO THE TIMBER BEAMS WHEN EMBEDDED BETWEEN THE GRS ABUTMENT AND THE WINGWALL TO SEAL THE EMBEDDED TIMBER. THE COATING SHALL BE COMPATIBLE WITH THE BEAM MATERIAL AND PRESERVATIVE TREATMENT, AND SHALL BE APPLIED ACCORDING TO THE ASPHALTIC COATING AND TIMBER PRESERVATIVE MANUFACTURERS' GUIDELINES.

GRS ABUTMENT CONSTRUCTION

EXCAVATION NOTES:

1. EXCAVATION SHALL INCLUDE PROVISIONS FOR DRAINAGE WITH A SLOPED CUT TO FACILITATE THE MOVEMENT OF WATER DOWNSTREAM AND AWAY FROM THE WALL.
2. ANY OVER-EXCAVATION THAT FORMS A PIT SHALL BE BACKFILLED WITH SUITABLE FREE DRAINING MATERIAL AND COMPACTED.

REINFORCED SOIL FOUNDATION NOTES:

1. THE BASE OF THE RSF SHALL BE CUT SMOOTH AND EXCAVATED TO UNIFORM DEPTH, AND ALL LOOSE, SOFT, WET, FROZEN, ORGANIC, AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE BASE AND SIDES OF THE EXCAVATION.
2. THE BASE OF THE RSF SHALL BE GRADED LEVEL FOR THE ENTIRE AREA OF THE BASE OF SUCH BACKFILL PLUS ADDITIONAL 1' ON ALL SIDES OR TO THE LIMITS SHOWN IN THE PLANS.
3. EXCAVATION SHALL BE BACKFILLED AS SOON AS POSSIBLE TO AVOID ADVERSE WEATHER DELAYS. IF THIS CANNOT BE ACHIEVED, THE EXCAVATION SHALL BE GRADED TO ONE END TO FACILITATE THE REMOVAL OF ANY WATER. IF EXCAVATION IS FLOODED, ALL WATER SHALL BE REMOVED ALONG WITH SOFT SATURATED SOILS.
4. THE RSF SHALL BE CONSTRUCTED WITH WELL-GRADED BACKFILL MATERIAL PLACED FROM THE FACE TO THE BACK TO ROLL FOLDS OR WRINKLE TO THE FREE END OF THE REINFORCEMENT LAYER. IT SHALL BE COMPACTED IN 6" THICK LIFTS IN ACCORDANCE WITH PLACEMENT OF BACKFILL AND COMPACTION NOTES.
5. THE FILL MATERIAL SHALL BE GRADED, LEVELED, AND COMPACTED BEFORE ENCAPSULATING THE RSF.
6. THE RSF SHALL BE ENCAPSULATED IN THE GEOTEXTILE REINFORCEMENT AND PLACED PERPENDICULAR TO THE ABUTMENT FACE TO PROTECT IT FROM POSSIBLE EROSION. THE GEOTEXTILE SHALL BE SIZED TO FULLY ENCLOSE THE RSF ON THE FACE AND THE WING WALLS SIDES.
7. THE FIRST LAYER OF THE REINFORCEMENT SHALL BE PLACED ON THE UPSTREAM SIDE OF THE ABUTMENT WITH SUBSEQUENT LAYERS, IF NEEDED, OVERLAPPED A MINIMUM OF 3' ON THE TOP OF THE PRECEDING LAYER.
8. THE REINFORCEMENT SHEET SHALL OVERLAP A MINIMUM OF 3'. ALL OVERLAP SECTIONS IN THE AREA OF THE RSF SHALL BE ORIENTED TO PREVENT RUNNING WATER FROM PENETRATING LAYERS OF REINFORCEMENT.
9. THE WRAPPED CORNERS OF THE RSF NEED TO BE TIGHT AND WITHOUT EXPOSED SOIL WITHIN THE RSF TO COMPLETE THE ENCAPSULATION.

PLACEMENT OF BACKFILL AND COMPACTION NOTES:

1. FOR WELL-GRADED FILLS, THE BACKFILL MATERIAL SHALL BE COMPACTED TO AT LEAST 95% MAXIMUM DRY DENSITY ACCORDING TO AASHTO T-99-10.
2. FOR WELL-GRADED FILLS, ADJUST THE MOISTURE CONTENT OF THE COMPACTED BACKFILL MATERIALS TO WITHIN 2% OF THE OPTIMUM MOISTURE CONTENT.
3. THE GRS MASS SHALL BE CONSTRUCTED USING COMPACTED LIFTS OF 8", WHICH ARE EQUAL TO THE FACING BLOCK SIZE.
4. FOR OPEN-GRADED FILLS, COMPACT EACH LAYER USING A SUITABLE COMPACTOR CAPABLE OF COMPACTING 8" OF FILL UNTIL THERE IS NO VISIBLE EVIDENCE OF FURTHER COMPRESSION. A MINIMUM OF FOUR PASSES SHALL BE APPLIED PER LIFT.
5. COMPACTION DIRECTLY BEHIND THE CMU BLOCK SHOULD BE PERFORMED IN A MANNER THAT MAINTAINS WALL ALIGNMENT WHILE IMPROVING THE DENSITY OF FILL BEHIND THE BLOCK. THIS CAN BE ACHIEVED IN THE FOLLOWING WAYS:
   - PLACING A FILL LIFT DIRECTLY BEHIND THE CMU BLOCK FACE AND RODDING OR FOOT TAMPING ALONG THE ROW OF CMU BLOCK WHILE EXERTING DOWNWARD PRESSURE ON THE BLOCK TO PREVENT LATERAL MOVEMENT. FOR MULTIPLE LIFTS, THE TOP LIFT HEIGHT IS SLIGHTLY HIGHER THAN THE BLOCK TO COMPENSATE FOR COMPRESSION OF THE FILL DURING COMPACTION.
   - USING A LIGHTWEIGHT VIBRATORY PLATE COMPACTOR DIRECTLY BEHIND THE CMU BLOCK WHILE EXERTING DOWNWARD PRESSURE ON THE BLOCK TO PREVENT LATERAL MOVEMENT.
   - USING LARGER VIBRATORY COMPACTORS FOR THE REMAINDER OF THE FILL AREA 3' FROM THE FACE OF THE GRS WALL. CHECK FOR OUTWARD BLOCK MOVEMENT AND ADJUST ACCORDINGLY.
6. HAND-OPERATED COMPACTION EQUIPMENT, SUCH AS LIGHTWEIGHT MECHANICAL TAMPERS, PLATES, OR ROLLERS, IS REQUIRED WITHIN 3' OF THE FRONT OF THE WALL FACE SO AS NOT TO DAMAGE OR DISLOCATE THE FACING BLOCKS.
7. COMPACTION BEYOND 3' FROM THE FONT OF THE WALL FACE MAY BE PERFORMED USING VIBRATORY ROLLER COMPACTION EQUIPMENT OR OTHER SIMILAR METHODS.
8. THE TOP 5' OF THE ABUTMENT SHALL BE COMPACTED TO 100% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH AASHTO T-99-10.

PLACEMENT OF GEOSYNTHETIC REINFORCEMENT NOTES:

1. GEOSYNTHETIC REINFORCEMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SITE-SPECIFIC WALL ERECTION INSTRUCTION.
2. THE GEOSYNTHETIC REINFORCEMENT SHALL BE PLACED SO THAT THE STRONGEST DIRECTION (I.E., CROSS MACHINE DIRECTION) IS PERPENDICULAR TO THE ABUTMENT FACING.
3. REINFORCEMENT COVERAGE SHALL BE 100% OF THE EMBEDMENT AREA UNLESS OTHERWISE SHOWN IN THE WORKING DRAWINGS.
4. ADJACENT SECTIONS OF THE GEOSYNTHETIC REINFORCEMENT DO NOT NEED TO BE OVERLAPPED EXCEPT WHEN EXPOSED IN THE WRAP-AROUND FACE SYSTEM, AT WHICH TIME, THE REINFORCEMENTS ROLLS SHALL BE OVERLAPPED OR MECHANICALLY CONNECTED PER THE MANUFACTURER'S REQUIREMENTS.
5. GEOSYNTHETIC REINFORCEMENT SHALL BE LAID SO THAT IT IS TAUT AND FREE OF WRINKLES PRIOR TO BACKFILLING.
6. GEOSYNTHETIC REINFORCEMENT SHALL BE PLACED DIRECTLY ON THE COMPACTED HORIZONTAL FILL SURFACE. THE REINFORCEMENT SHALL BEAR UNIFORMLY ON THE COMPACTED REINFORCED SOIL FROM THE CONNECTION TO THE WALL TO THE FREE END OF THE REINFORCING ELEMENTS.
7. THE GEOSYNTHETIC REINFORCEMENT SHALL EXTEND BETWEEN THE LAYERS OF THE CMU BLOCK.
8. THE GEOSYNTHETIC REINFORCEMENT SHALL COVER A MINIMUM OF 85% OF THE TOP SURFACE OF THE CMU BLOCK. ANY EXCESS REINFORCEMENT MATERIAL SHOWING THROUGH THE FACE SHALL BE REMOVED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS.
9. A MINIMUM BACKFILL LAYER OF 6" SHALL BE PLACED ON THE GEOSYNTHETIC PRIOR TO OPERATING ANY VEHICLE OVER IT.
10. BEARING REINFORCEMENT BEDS SHALL BE PLACED BEHIND THE CMU BLOCK AT 4" SPACINGS IN THE TOP FIVE LAYERS OF THE GRS ABUTMENT OR AS DETERMINED BY THE DESIGN.

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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	114
PROJECT FILE NO.	17112.00		

STRUCTURAL NOTES - 2

WALL FACING NOTES:

1. CMU SHALL BE USED FOR THE GRS WALL FACING.
2. THE CMU BLOCK CONSTRUCTION SHALL BEGIN AT THE LOWEST PORTION OF THE EXCAVATION WITH EACH LAYER PLACED HORIZONTALLY.
3. EACH CMU BLOCK SHALL BE PLACED TIGHTLY AGAINST THE ADJOINING BLOCK WITHOUT ANY GAPS.
4. EACH CMU LAYER SHALL BE COMPLETELY CONSTRUCTED AND CLEANED OF ANY DEBRIS AND FILL MATERIAL PRIOR TO PLACING THE NEXT LAYER OF GEOSYNTHETIC REINFORCEMENT AND CMU.
5. A STRETCHER OR RUNNING BOND SHALL BE MAINTAINED BETWEEN COURSES OF BLOCKS TO ENSURE THAT THE JOINTS BETWEEN THE BLOCKS ARE OFFSET WITH EACH ROW.
6. IF A SCOUR COUNTERMEASURE, SUCH AS RIPRAP, IS USED, A GEOTEXTILE FILTER FABRIC SHALL BE PLACED UNDER THE COUNTERMEASURE AND ANCHORED BETWEEN THE FIRST AND SECOND COURSE OF THE CMU BLOCK.
7. CMU BLOCKS DISPLACED OUT OF REQUIRED ALIGNMENT DURING CONSTRUCTION SHALL BE CAREFULLY MOVED BACK INTO POSITION BY METHODS THAT WILL NOT CAUSE DAMAGE TO THE CMU BLOCKS OR OTHER WORK.
8. ANY DAMAGED CMU BLOCKS SHALL BE REPLACED TO RETAIN THE NEW WALL INTEGRITY.
9. BATTERED WALL ALIGNMENT SHALL BE MAINTAINED FOLLOWING THE SAME PROCEDURES AS FOR VERTICAL WALLS.
10. DETAIL FACING TO ACCOUNT FOR WALL BATTER AND CORNERS.
11. ALL CUTS SHALL BE PERFORMED TO MAINTAIN THE STANDARD RUNNING OR STRETCHER BOND BETWEEN THE ROWS OF THE DRY-STACKED BLOCKS, WITH THE VERTICAL JOINTS OF EACH COURSE MIDWAY BETWEEN THOSE OF ADJOINING COURSES.
12. IN SUPERELEVATIONS, THE TOP COURSE OF CMU BENEATH THE SUPERSTRUCTURE SHALL BE TRIMMED TO MATCH THE ELEVATION DIFFERENCE AND CLEAR SPACE ACROSS THE ABUTMENT.
13. FACING WALL AND WING WALL COURSES SHALL BE STAGGERED TO FORM A TIGHT INTERLOCKING STABLE CORNER.
14. CORNER DETAILS SHALL BE SUBMITTED TO ACCOMMODATE CORNERS OTHER THAN RIGHT ANGLES.
15. THE TOP THREE COURSES OF CMU BLOCKS SHALL BE FILLED WITH CONCRETE WALL FILL, PINNED WITH NO. 4 REINFORCING STEEL BARS, AND EMBEDDED WITH A MINIMUM OF 2" COVER.

LEVELING COURSE NOTES:

1. THE FIRST COURSE OF THE FACING BLOCK SHALL BE SET LEVEL AND TO GRADE.
2. A THIN LEVELING LAYER OF FINE AGGREGATE, WHICH SHALL NOT EXCEED ½", MAY BE USED ON THE TOP OF THE RSF TO FACILITATE CONSTRUCTION OF THE FIRST COURSE OF THE FACING BLOCK. IF THE LEVELING LAYER REQUIRED EXCEEDS ½", A MORTAR OR GROUT SHALL BE PLACED IN THE GAP BETWEEN THE RSF AND THE FIRST CMU BLOCK COURSE.

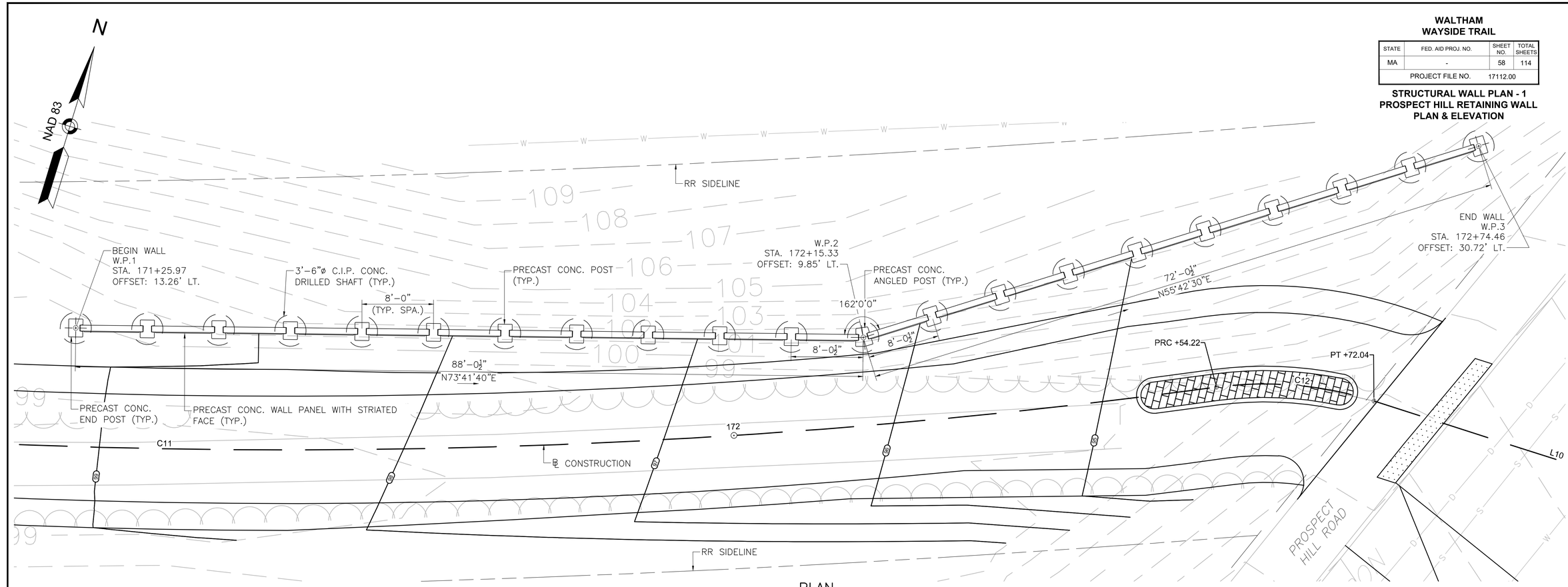
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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	114
PROJECT FILE NO.	17112.00		

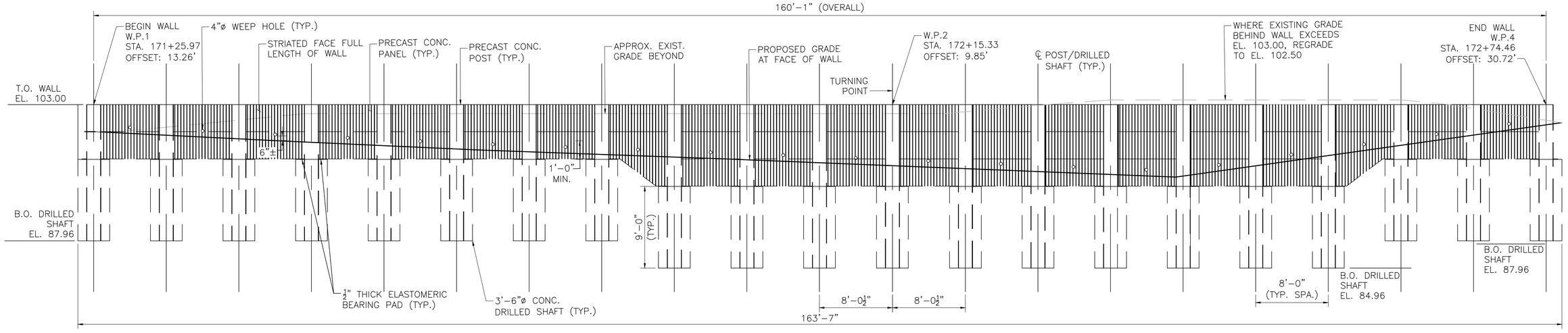
STRUCTURAL WALL PLAN - 1
PROSPECT HILL RETAINING WALL
PLAN & ELEVATION

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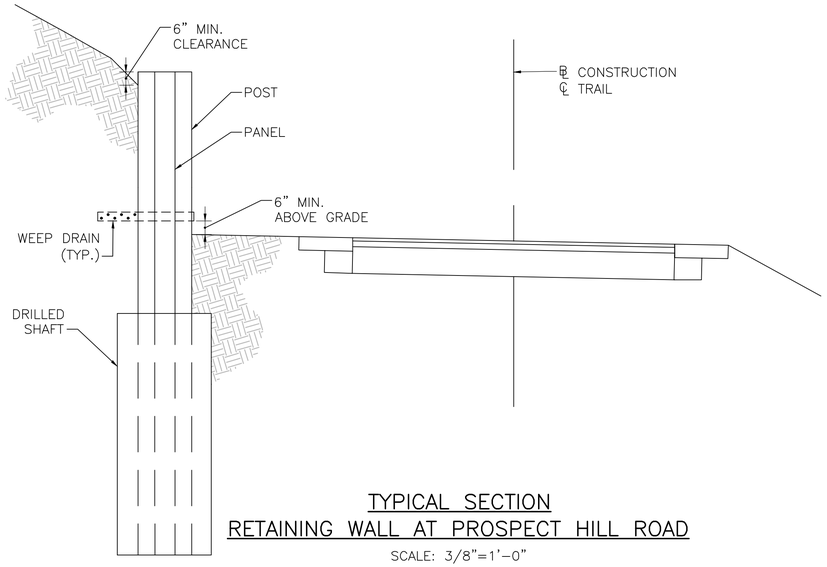
PLAN
RETAINING WALL AT PROSPECT HILL ROAD

SCALE: 3/16"=1'-0"



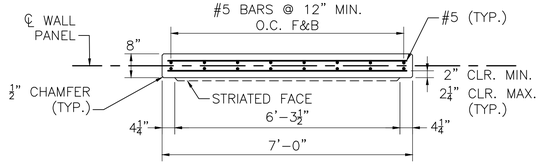
ELEVATION
RETAINING WALL AT PROSPECT HILL ROAD

SCALE: 3/16"=1'-0"



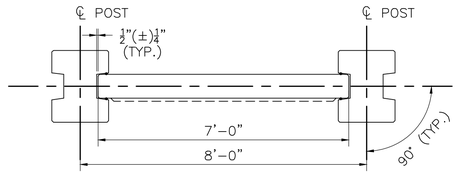
TYPICAL SECTION RETAINING WALL AT PROSPECT HILL ROAD

SCALE: 3/8"=1'-0"



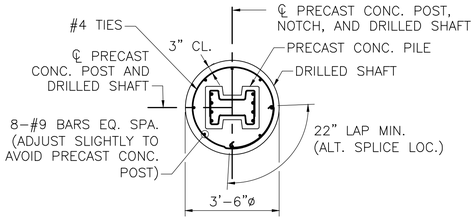
PANEL PLAN DETAIL

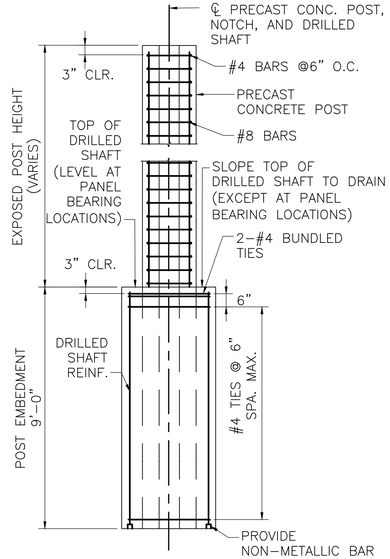
SCALE: 1/2"=1'-0"



PANEL PLAN

SCALE: 1/2"=1'-0"





NOTE:
LOWER WALL PANELS SHALL BEAR ON 5"X5"X½" THICK ELASTOMERIC BEARING PADS (SHEAR MODULUS G=160 PSI) AT TOP OF DRILLED SHAFT.

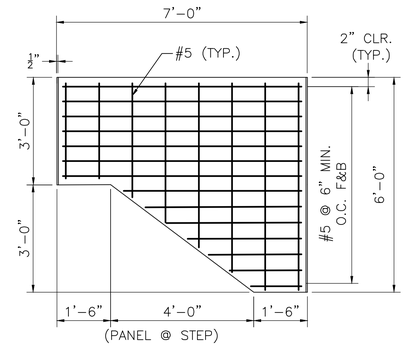
DRILLED SHAFT DETAILS

SCALE: 3/8"=1'-0"

WALTHAM
WAYSIDE TRAIL

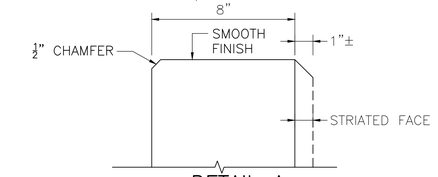
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	59	114
PROJECT FILE NO.	17112.00		

STRUCTURAL WALL PLAN - 2
PROSPECT HILL ROAD RETAINING WALL DETAILS



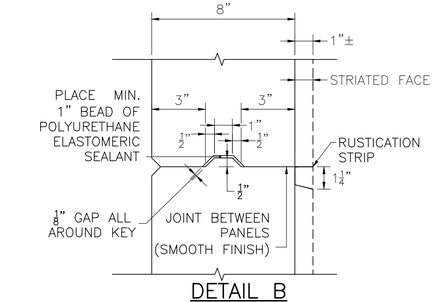
PANEL ELEVATIONS

SCALE: 1/2"=1'-0"



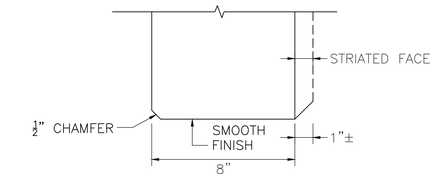
DETAIL A

SCALE: 3"=1'-0"



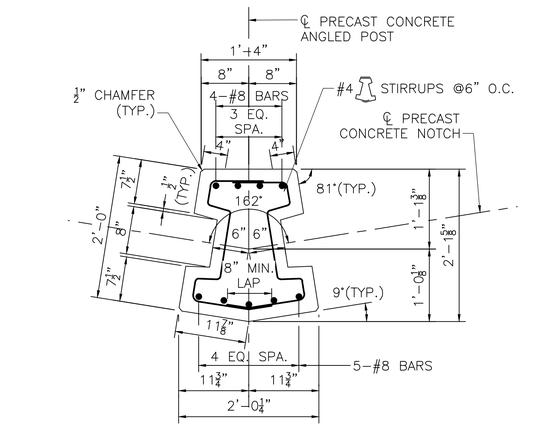
DETAIL B

SCALE: 3"=1'-0"



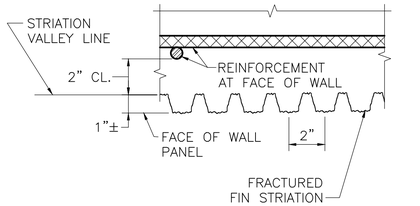
DETAIL C

SCALE: 3"=1'-0"



ANGLED IN-LINE CONCRETE POST SECTION

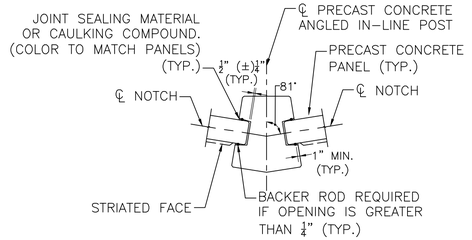
SCALE: 1"=1'-0"



NOTE:
THE CONTRACTOR SHALL MAKE SURE THAT THE STRIATION FINS ARE PLUMB AND LINED UP VERTICALLY FROM PANEL TO PANEL FOR THE FULL HEIGHT OF THE WALL.

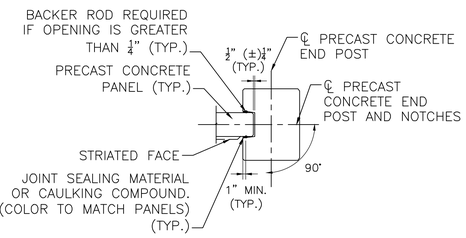
TYPICAL STRIATION DETAIL

SCALE: 3"=1'-0"



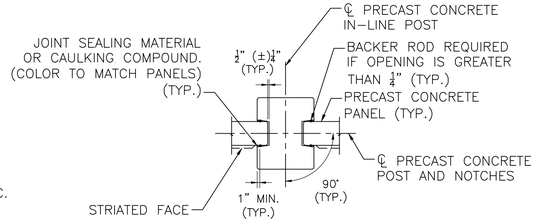
ANGLED IN-LINE POST DETAIL

SCALE: 1/2"=1'-0"



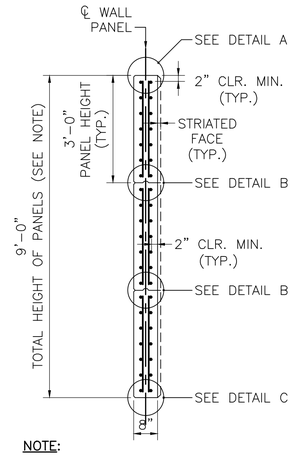
END POST DETAIL

SCALE: 1/2"=1'-0"



IN-LINE POST DETAIL

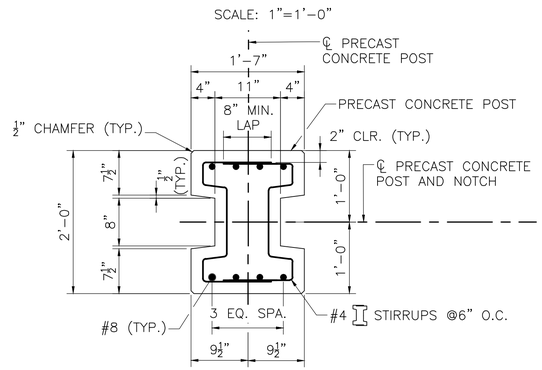
SCALE: 1/2"=1'-0"



NOTE:
THREE-PANEL WALL HEIGHT SHOWN, TWO-PANEL WALL HEIGHT SIMILAR.

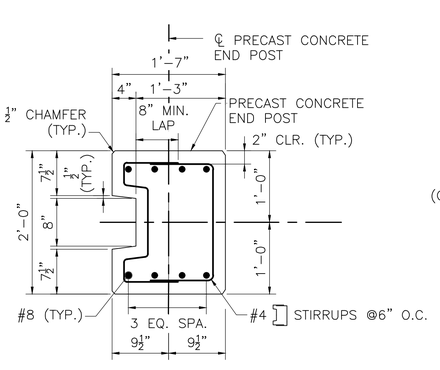
PANEL WALL SECTION

SCALE: 1/2"=1'-0"



IN-LINE CONCRETE POST SECTION

SCALE: 1"=1'-0"



END CONCRETE POST SECTION

SCALE: 1"=1'-0"

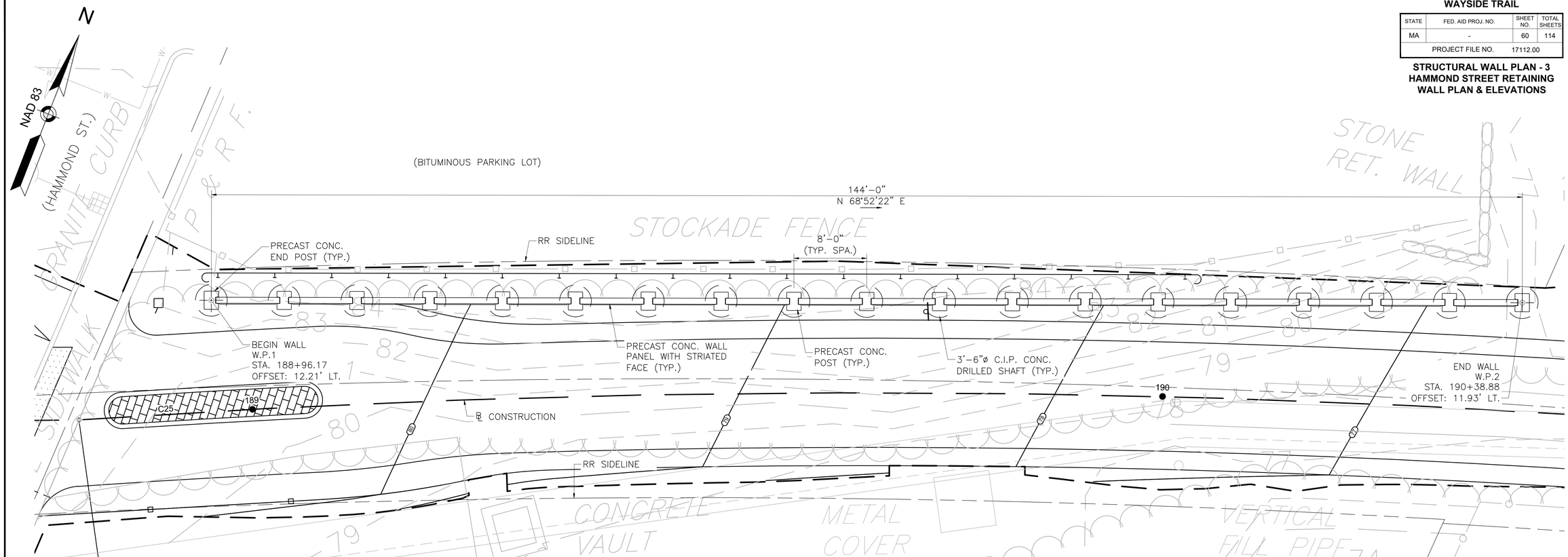
000000_BR(PROSPECT HILL ROAD DETAILS).DWG Plotted on 29-Jul-2021 11:32 AM

WALTHAM
WAYSIDE TRAIL

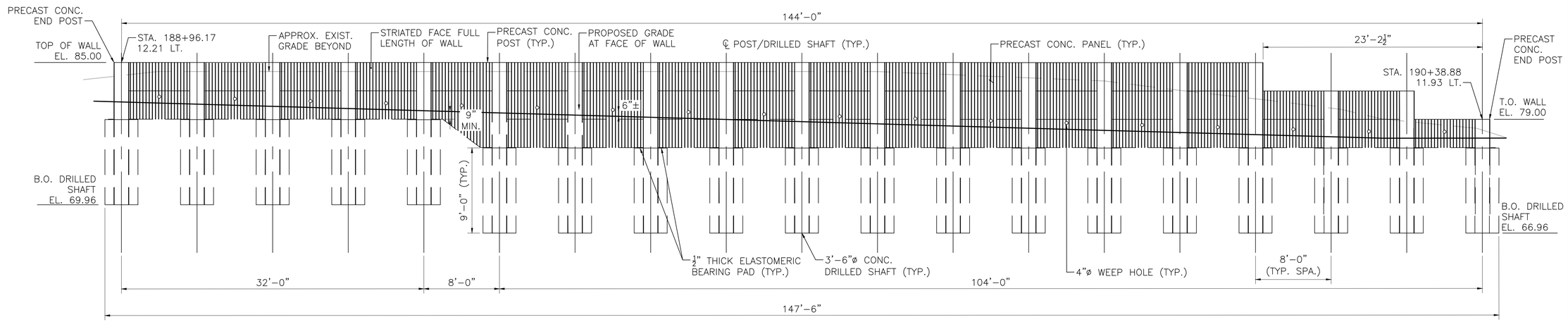
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	60	114
PROJECT FILE NO.	17112.00		

STRUCTURAL WALL PLAN - 3
HAMMOND STREET RETAINING
WALL PLAN & ELEVATIONS

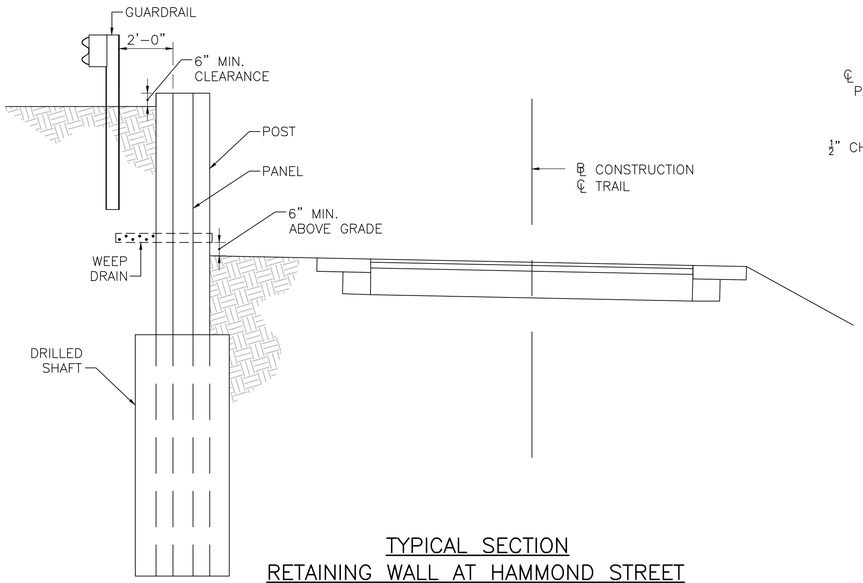
000000_BR(HAMMOND STREET PLAN & ELEVATION).DWG Plotted on 29-Jul-2021 4:27 PM



PLAN
RETAINING WALL AT HAMMOND STREET
SCALE: 3/16"=1'–0"

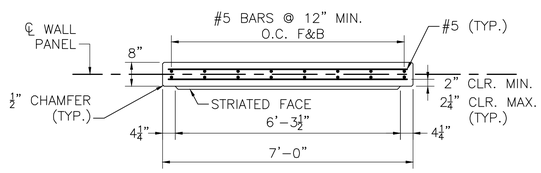


ELEVATION
RETAINING WALL AT HAMMOND STREET
SCALE: 3/16"=1'–0"



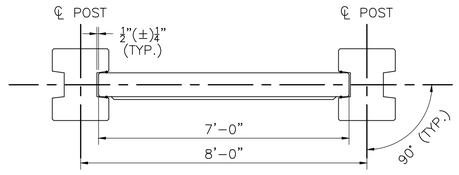
TYPICAL SECTION RETAINING WALL AT HAMMOND STREET

SCALE: 3/8"=1'-0"



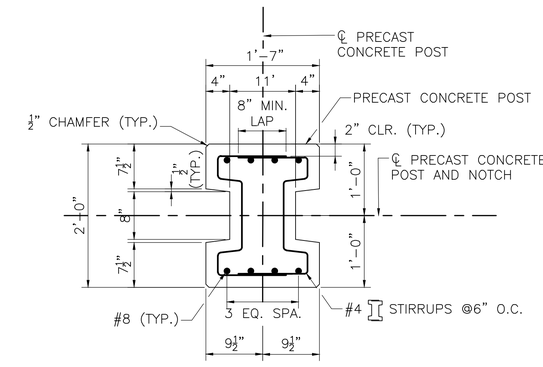
PANEL PLAN DETAIL

SCALE: 1/2"=1'-0"



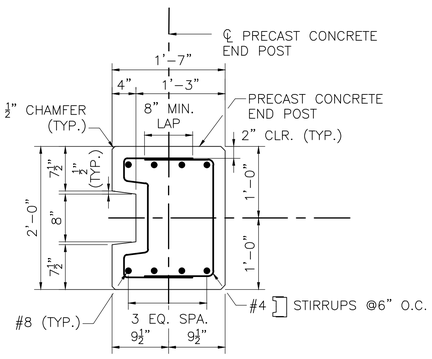
PANEL PLAN

SCALE: 1/2"=1'-0"



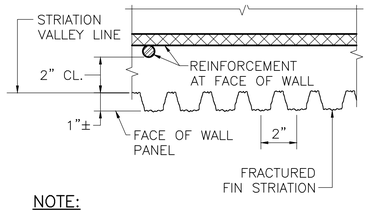
IN-LINE CONCRETE POST SECTION

SCALE: 1"=1'-0"



END CONCRETE POST SECTION

SCALE: 1"=1'-0"

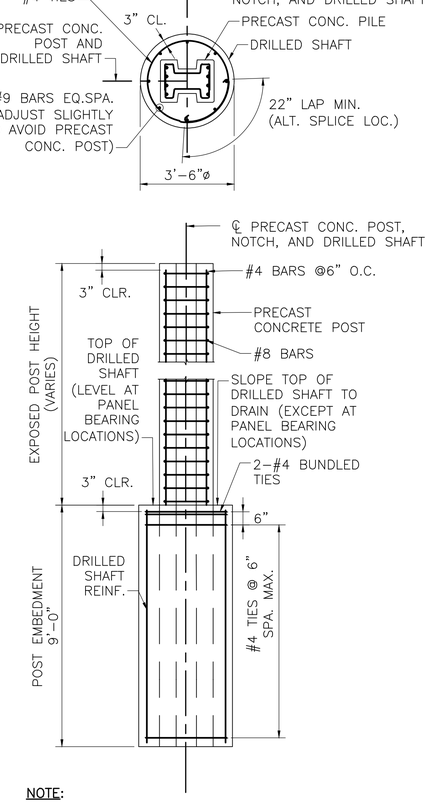


NOTE:

THE CONTRACTOR SHALL MAKE SURE THAT THE STRIATION FINS ARE PLUMB AND LINED UP VERTICALLY FROM PANEL TO PANEL FOR THE FULL HEIGHT OF THE WALL.

TYPICAL STRIATION DETAIL

SCALE: 3"=1'-0"

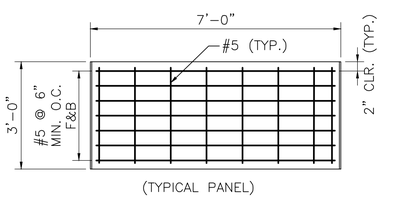


NOTE:

LOWER WALL PANELS SHALL BEAR ON 5"X5"X½" THICK ELASTOMERIC BEARING PADS (SHEAR MODULUS G=160 PSI) AT TOP OF DRILLED SHAFT.

DRILLED SHAFT DETAILS

SCALE: 3/8"=1'-0"

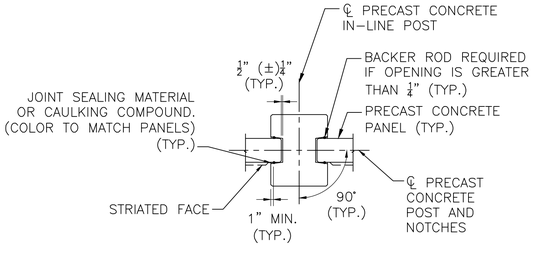


(PANEL @ STEP)

(TYPICAL PANEL)

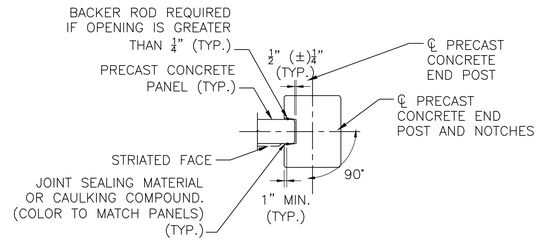
PANEL ELEVATIONS

SCALE: 1/2"=1'-0"



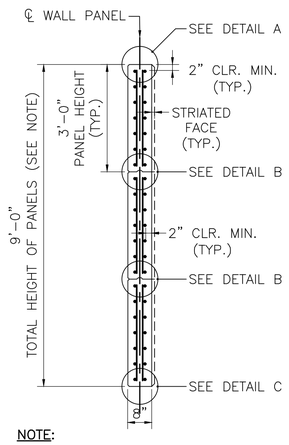
IN-LINE POST DETAIL

SCALE: 1/2"=1'-0"



END POST DETAIL

SCALE: 3/8"=1'-0"

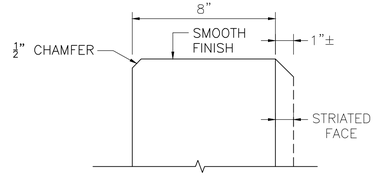


NOTE:

THREE-PANEL WALL HEIGHT SHOWN, TWO-PANEL WALL HEIGHT SIMILAR.

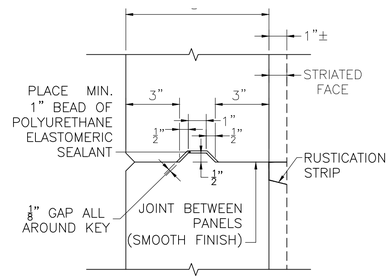
PANEL WALL SECTION

SCALE: 1/2"=1'-0"



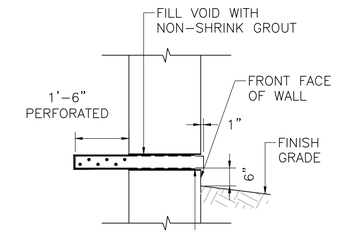
DETAIL A

SCALE: 3"=1'-0"



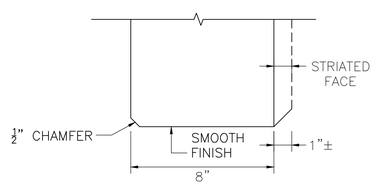
DETAIL B

SCALE: 3"=1'-0"



WEEP DRAIN DETAIL

SCALE: 1/2"=1'-0"



DETAIL C

SCALE: 3"=1'-0"

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	61	114
PROJECT FILE NO.	17112.00		

STRUCTURAL WALL PLAN - 4
HAMMOND STREET RETAINING WALL DETAILS

Plotted on 29-Jul-2021 11:33 AM
000000_BR\HAMMOND STREET DETAILS).DWG

WAYSIDE TRAIL

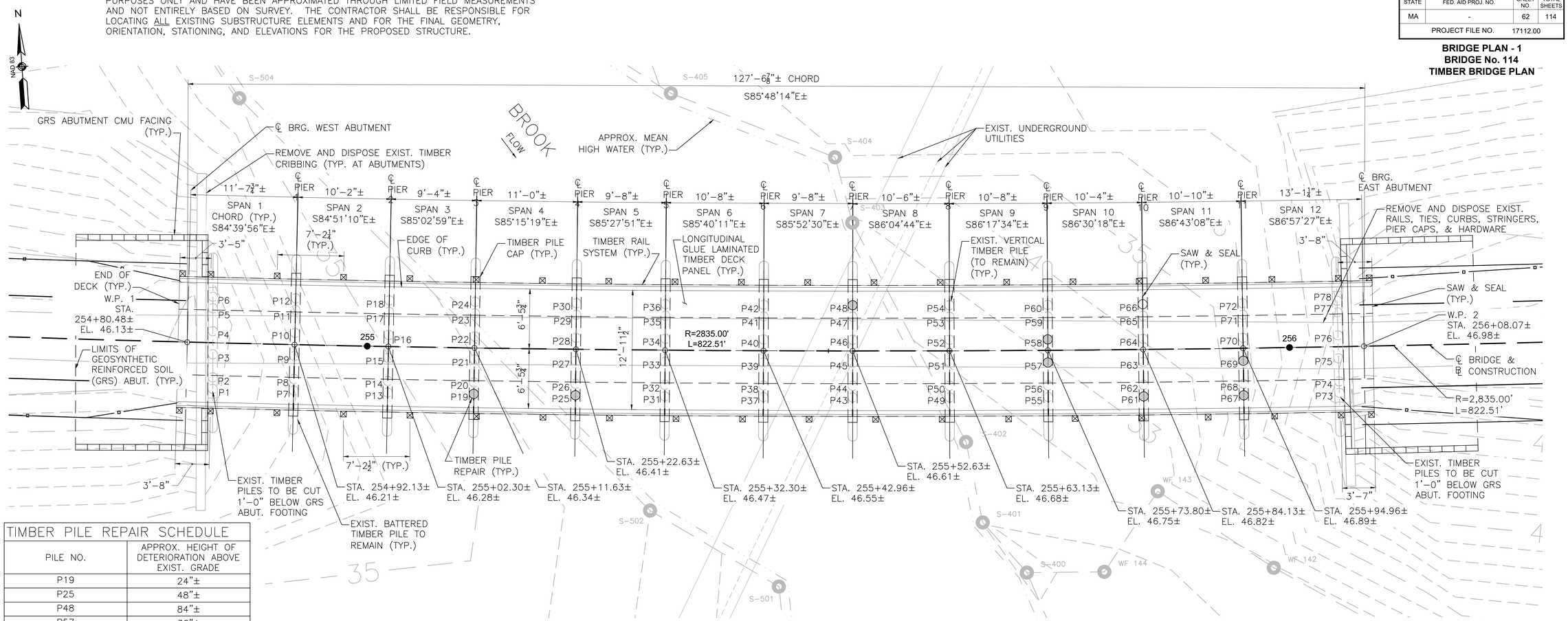
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	62	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 1
BRIDGE No. 114
TIMBER BRIDGE PLAN

000000_BR(TIMBER BRIDGE PLAN).DWG Plotted on 27-Jul-2021 4:40 PM

NOTE:

1. BRIDGE ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND HAVE BEEN APPROXIMATED THROUGH LIMITED FIELD MEASUREMENTS AND NOT ENTIRELY BASED ON SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SUBSTRUCTURE ELEMENTS AND FOR THE FINAL GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS FOR THE PROPOSED STRUCTURE.

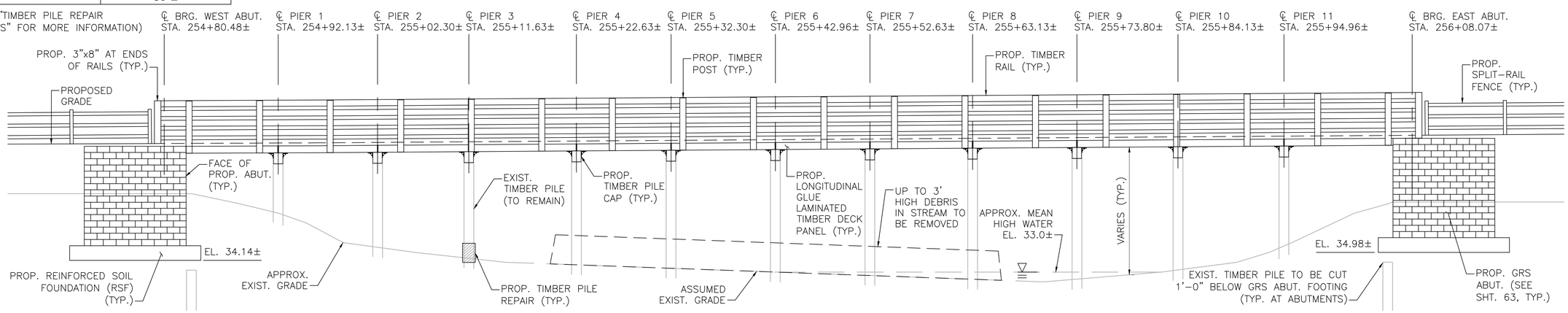


PLAN VIEW

SCALE: 3/16" = 1"=0'

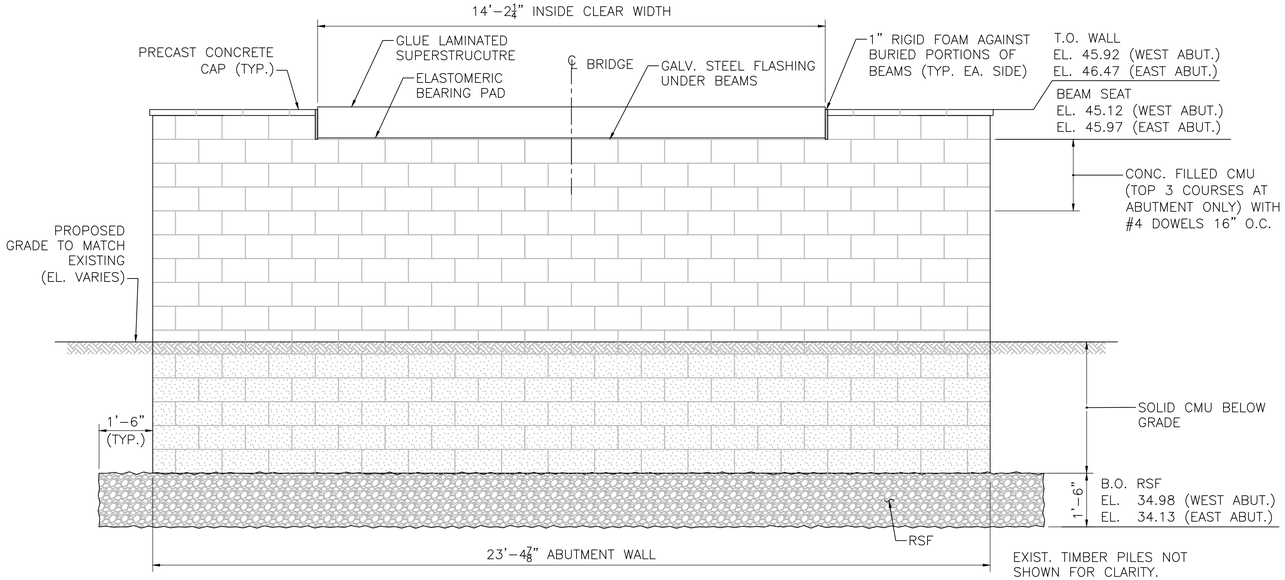
TIMBER PILE REPAIR SCHEDULE	
PILE NO.	APPROX. HEIGHT OF DETERIORATION ABOVE EXIST. GRADE
P19	24"±
P25	48"±
P48	84"±
P57	36"±
P58	36"±
P61	12"±
P66	36"±
P67	6"±
P69	36"±

(SEE "TIMBER PILE REPAIR DETAILS" FOR MORE INFORMATION)



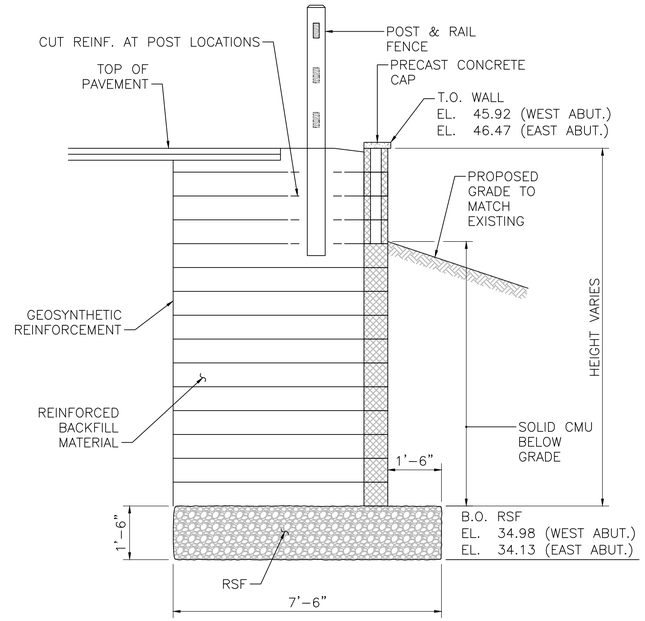
ELEVATION

SCALE: 3/16" = 1"=0'



TYPICAL GRS ABUTMENT ELEVATION

SCALE: 1/2" = 1'–0"



TYPICAL WINGWALL/ RETAINING WALL SECTION

SCALE: 1/2" = 1'–0"

WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	63	114
PROJECT FILE NO.	17112.00		

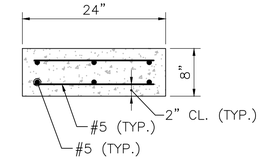
BRIDGE PLAN - 2
BRIDGE No. 114
TIMBER BRIDGE GRS ABUTMENTS

ABBREVIATIONS:

RSF – REINFORCED SOIL FOUNDATION
CMU – CONCRETE MASONRY UNIT
GRS – GEOSYNTHETIC REINFORCED SOIL
MSE – MECHANICALLY STABILIZED EARTH
B.O. – BOTTOM OF
T.O. – TOP OF
EL. – ELEVATION

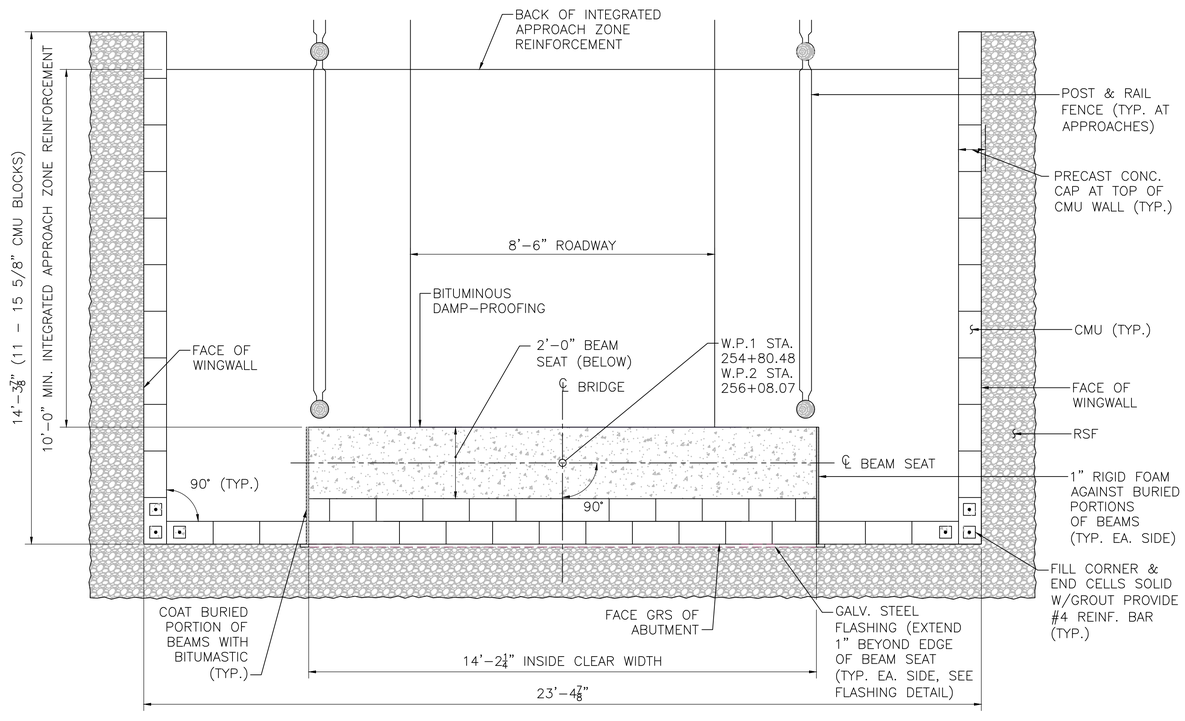
NOTE:

FOR NOTES, SEE "GRS ABUTMENT/WALL NOTES" SHEET.



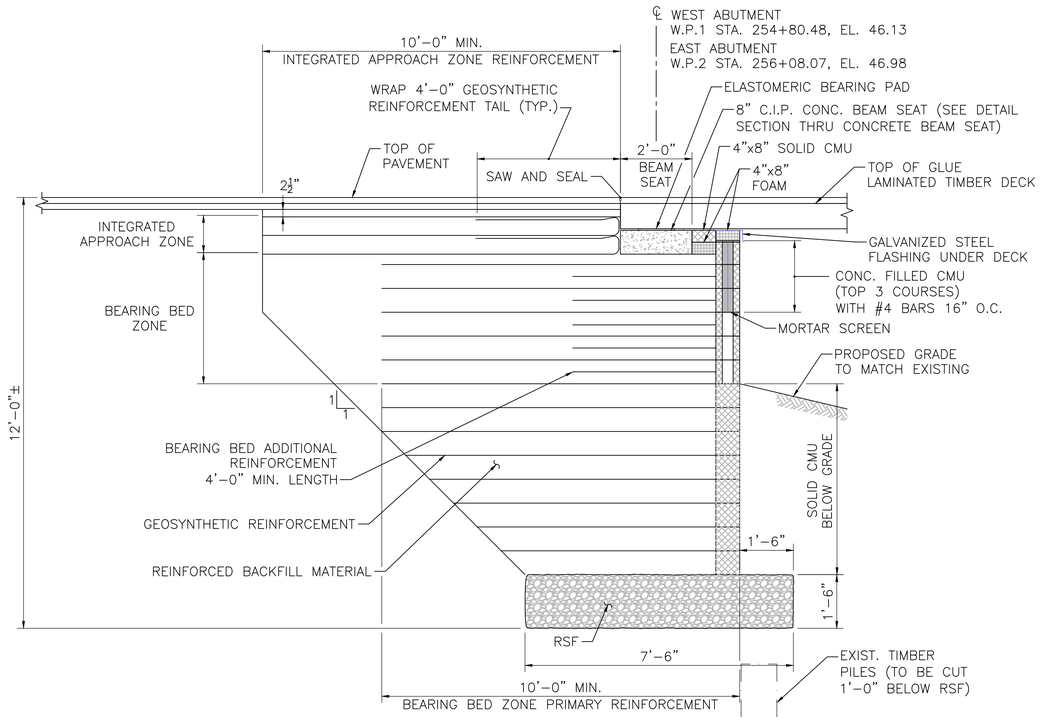
C.I.P. CONCRETE BEAM SEAT DETAIL

SCALE: 1" = 1'–0"



TYPICAL ABUTMENT PLAN

SCALE: 1/2" = 1'–0"



TYPICAL ABUTMENT SECTION

SCALE: 1/2" = 1'–0"

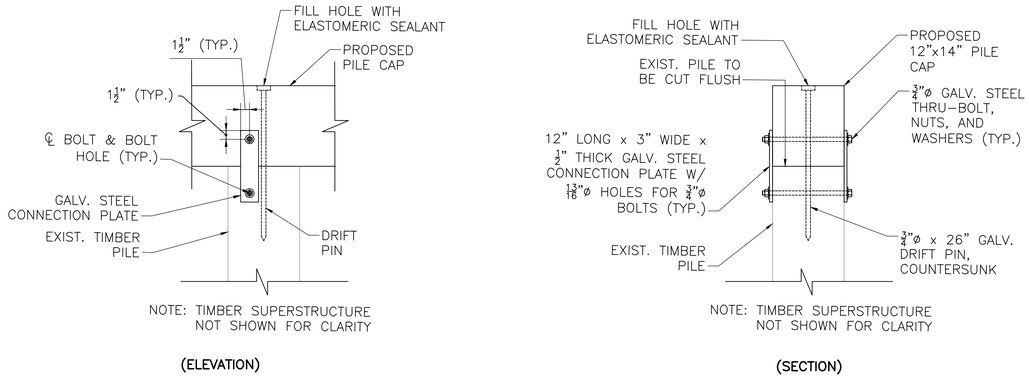
NOT FOR CONSTRUCTION

000000_BRITIMBER BRIDGE GRS ABUT).DWG Plotted on 27-Jul-2021 3:30 PM

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	64	114
PROJECT FILE NO.	17112.00		

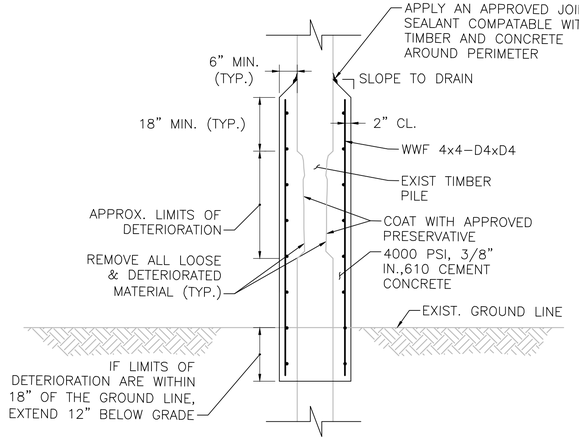
BRIDGE PLAN - 3
BRIDGE No. 114
TIMBER BRIDGE DETAILS

000000_BR(TIMBER BRIDGE DETAILS).DWG Plotted on 26-Jul-2021 1:35 PM



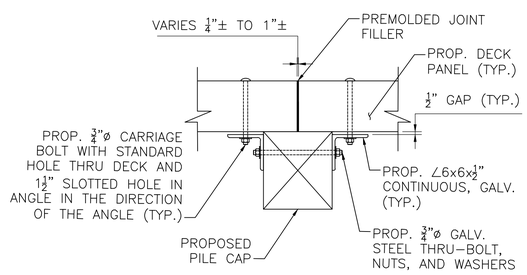
PILE CAP TO EXISTING PILE CONNECTION DETAIL

SCALE: 1" = 1'-0"



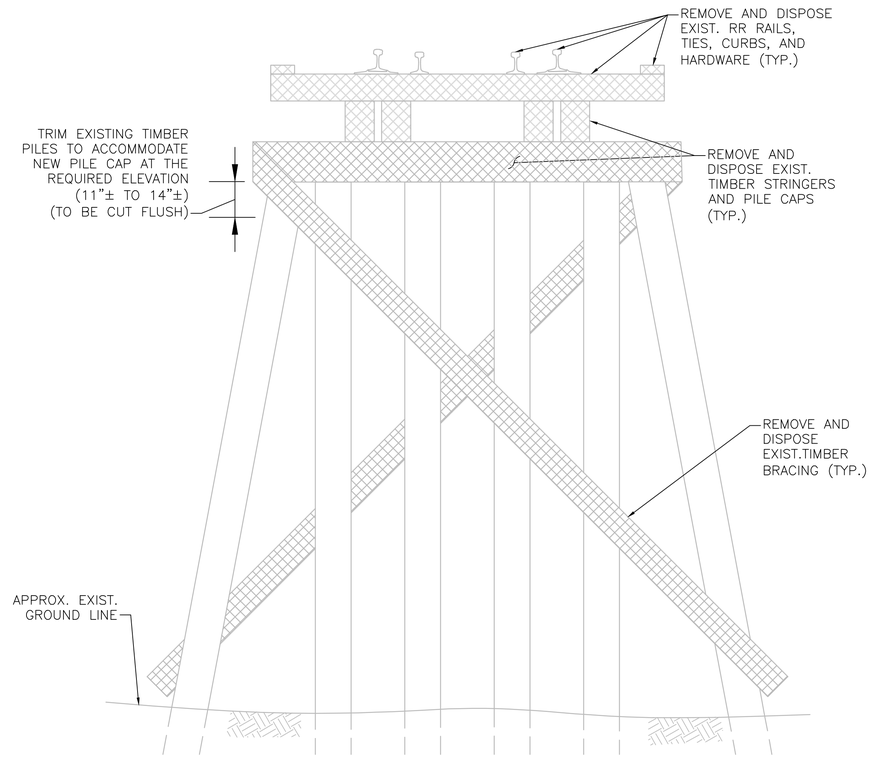
TIMBER PILE REPAIR DETAIL

SCALE: 1/2" = 1'-0"



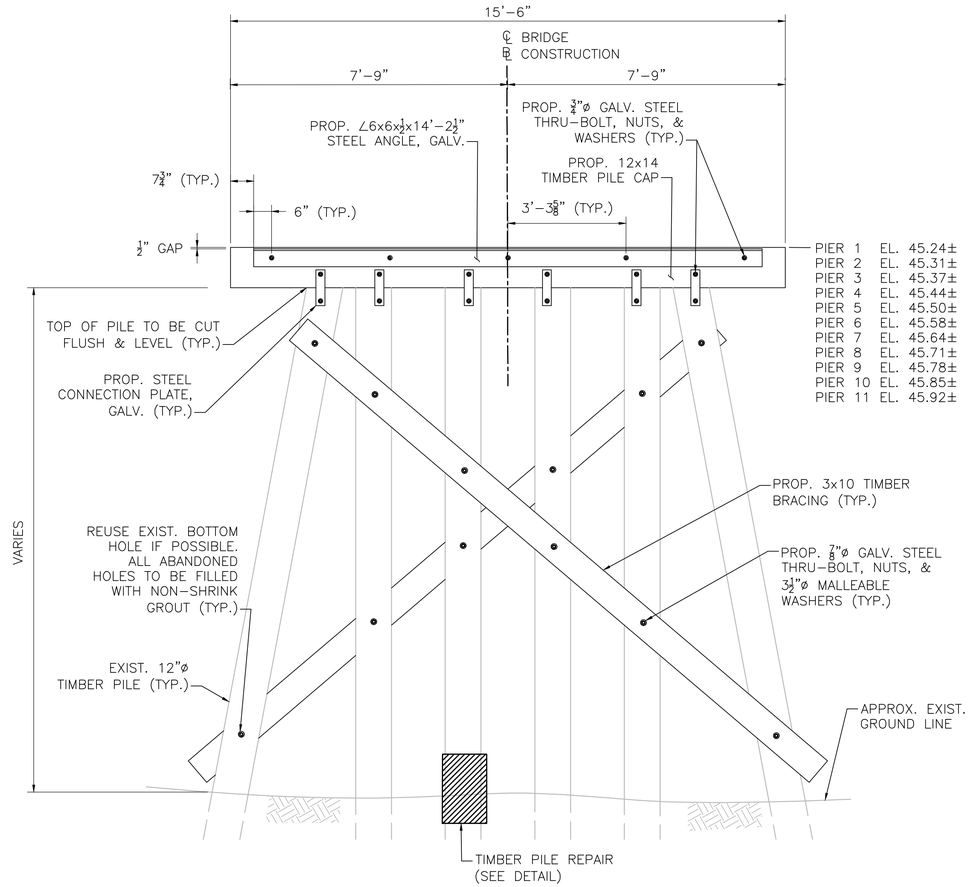
DECK PANEL TO PILE CAP CONNECTION DETAIL-SECTION

SCALE: 1" = 1'-0"



TYPICAL DEMOLITION SECTION

SCALE: 1/2" = 1'-0"



TYPICAL PIER ELEVATION

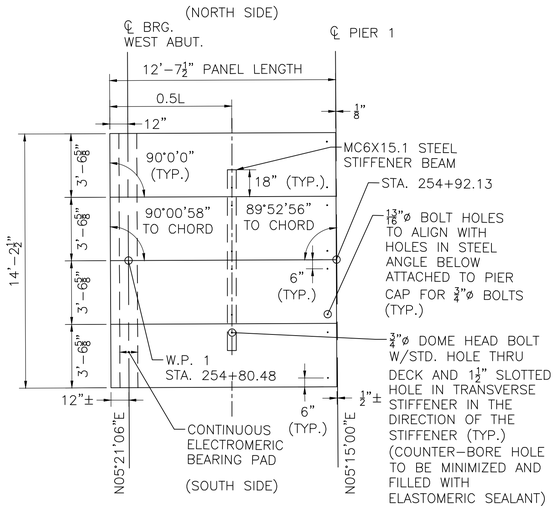
SCALE: 1/2" = 1'-0"

NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

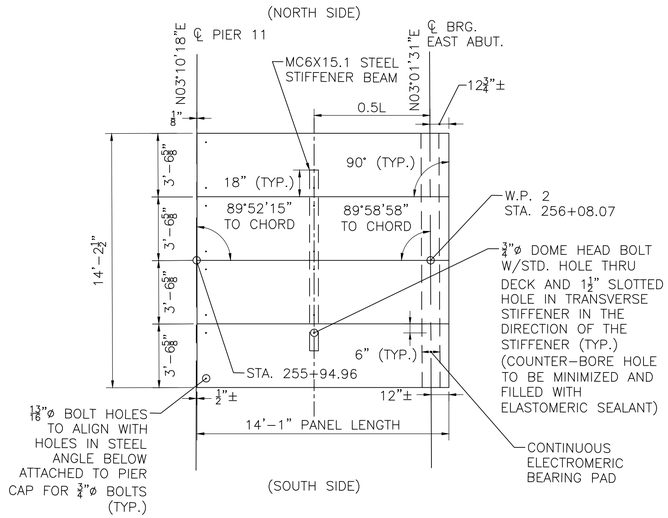
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	65	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 4
BRIDGE No. 114
TIMBER BRIDGE DECK DETAILS



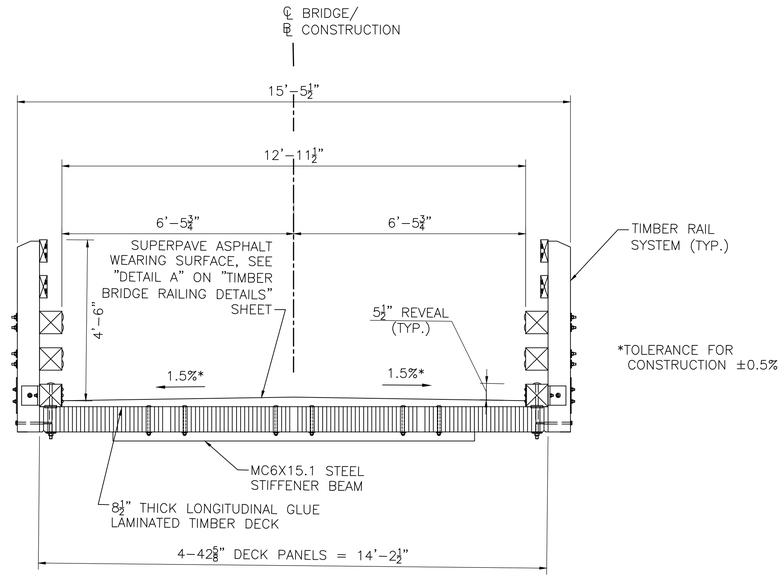
SPAN 1 DECK PLAN

SCALE: 1/4" = 1'-0"



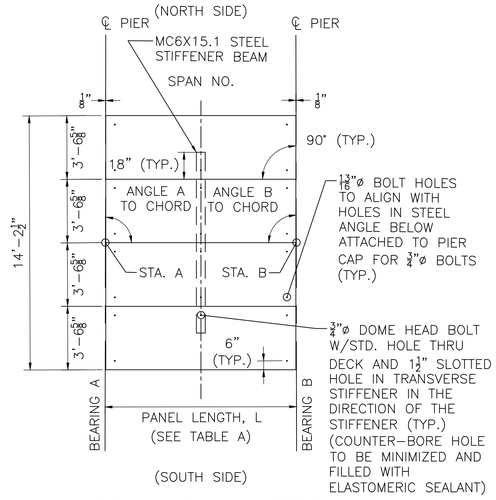
SPAN 12 DECK PLAN

SCALE: 1/4" = 1'-0"



TYPICAL SECTION TIMBER BRIDGE

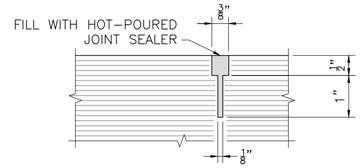
SCALE: 1/2" = 1'-0"



SPAN 2–11 DECK PLAN

SCALE: 1/4" = 1'-0"

TABLE A						
SPAN NO.	STA. A (±)	STA. B (±)	ANGLE A = B (±)	BEARING A (±)	BEARING B (±)	PANEL LENGTH, L (±)
2	254+92.13	255+02.30	89°53'50"	N05°15'00"E	N05°02'40"E	10'-1 1/2"
3	255+02.30	255+11.63	89°54'20"	N05°02'40"E	N04°51'21"E	9'-3 1/2"
4	255+11.63	255+22.63	89°53'20"	N04°51'21"E	N04°38'01"E	10'-11 3/8"
5	255+22.63	255+32.30	89°54'08"	N04°38'01"E	N04°26'17"E	9'-7 1/2"
6	255+32.30	255+42.96	89°53'32"	N04°26'17"E	N04°13'21"E	10'-7 3/8"
7	255+42.96	255+52.63	89°54'08"	N04°13'21"E	N04°01'38"E	9'-7 1/2"
8	255+52.63	255+63.13	89°53'38"	N04°01'38"E	N03°48'54"E	10'-5 3/8"
9	255+63.13	255+73.80	89°53'32"	N03°48'54"E	N03°35'58"E	10'-7 3/8"
10	255+73.80	255+84.13	89°53'44"	N03°35'58"E	N03°23'26"E	10'-3 1/2"
11	255+84.13	255+94.96	89°53'26"	N03°23'26"E	N03°10'18"E	10'-9 3/8"

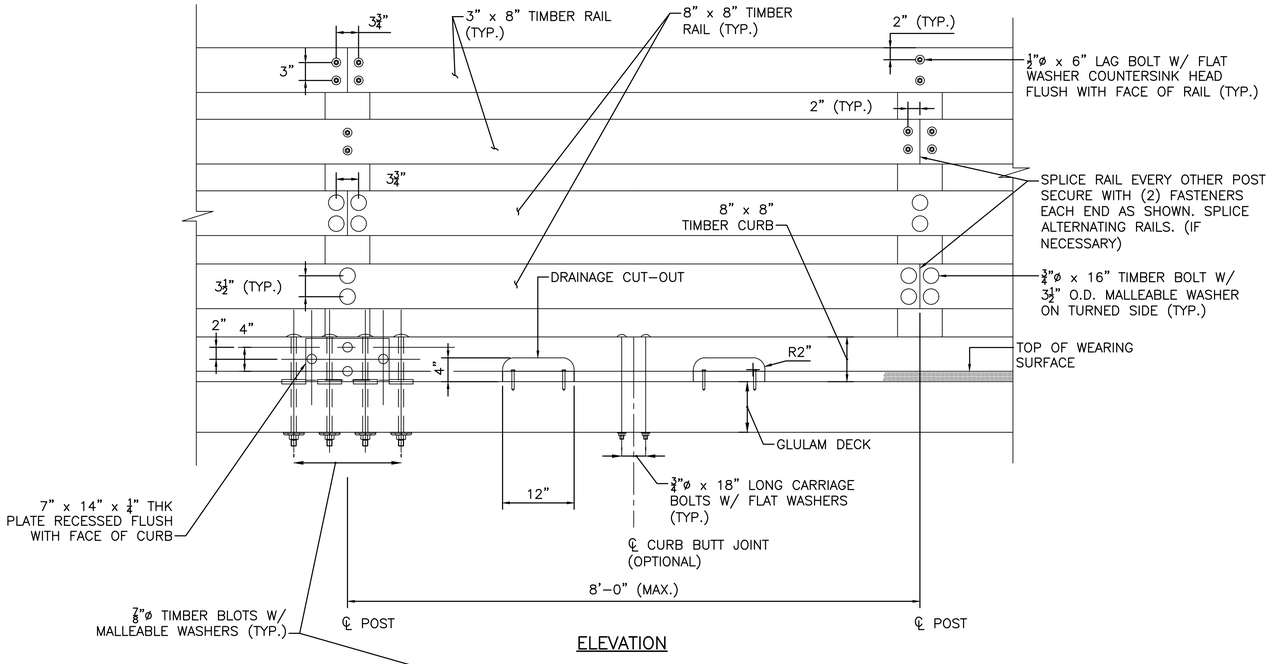


PAVEMENT SAWCUT DETAIL

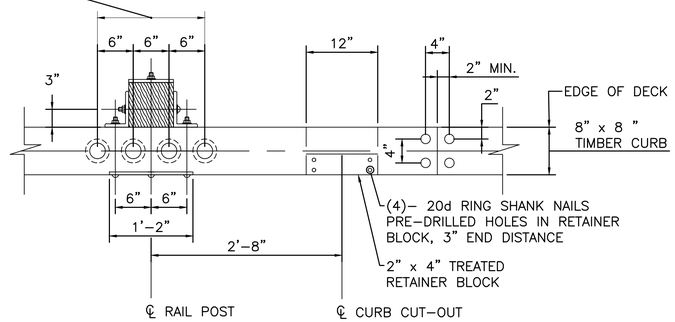
SCALE: 1" = 1'-0"

NOT FOR CONSTRUCTION

000000_BR(TIMBER BRIDGE DECK DETAILS).DWG Plotted on 26-Jul-2021 1:36 PM



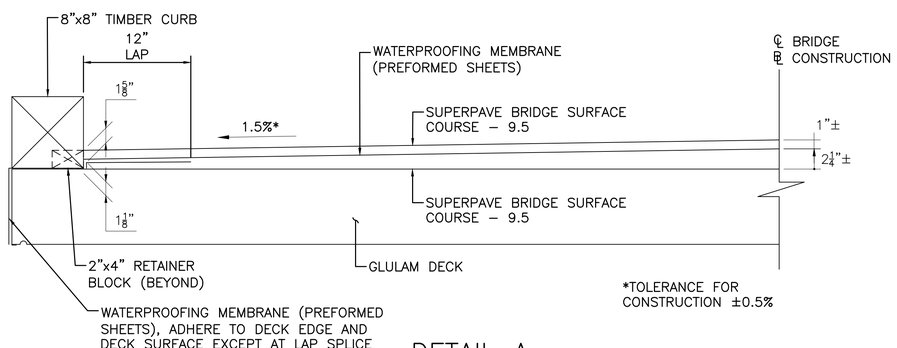
ELEVATION



PLAN

CURB AND RAIL POST ATTACHMENT DETAIL

SCALE: 1" = 1'-0"

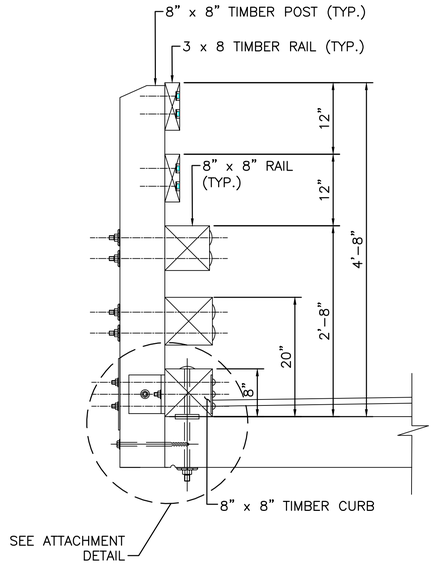


DETAIL A

SCALE: 1 1/2" = 1'-0"

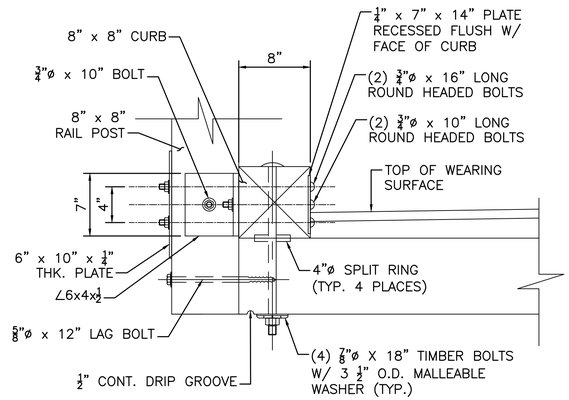
NOTES:

1. ALLOW FIRST BRIDGE SURFACE COURSE TO COOL SUFFICIENTLY SO WATERPROOFING MEMBRANE DOES NOT TEAR WHEN APPLYING THE SECOND BRIDGE SURFACE COURSE.
2. SEE "DETAIL B", THIS SHEET.



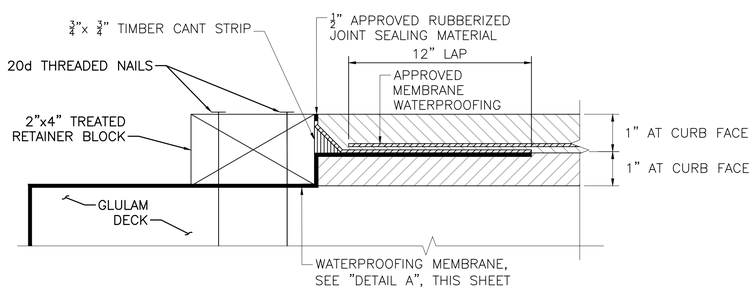
RAIL DETAIL

SCALE: 1" = 1'-0"



ATTACHMENT DETAIL

SCALE: 1 1/2" = 1'-0"



DETAIL B

NOT TO SCALE

NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	66	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 5
BRIDGE No. 114
TIMBER BRIDGE RAILING DETAILS

000000_BR(TIMBER BRIDGE RAILING-DETAILS).DWG Plotted on 28-Jul-2021 7:31 AM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	67	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 6
BRIDGE No. 113
LINDEN ST. BRIDGE

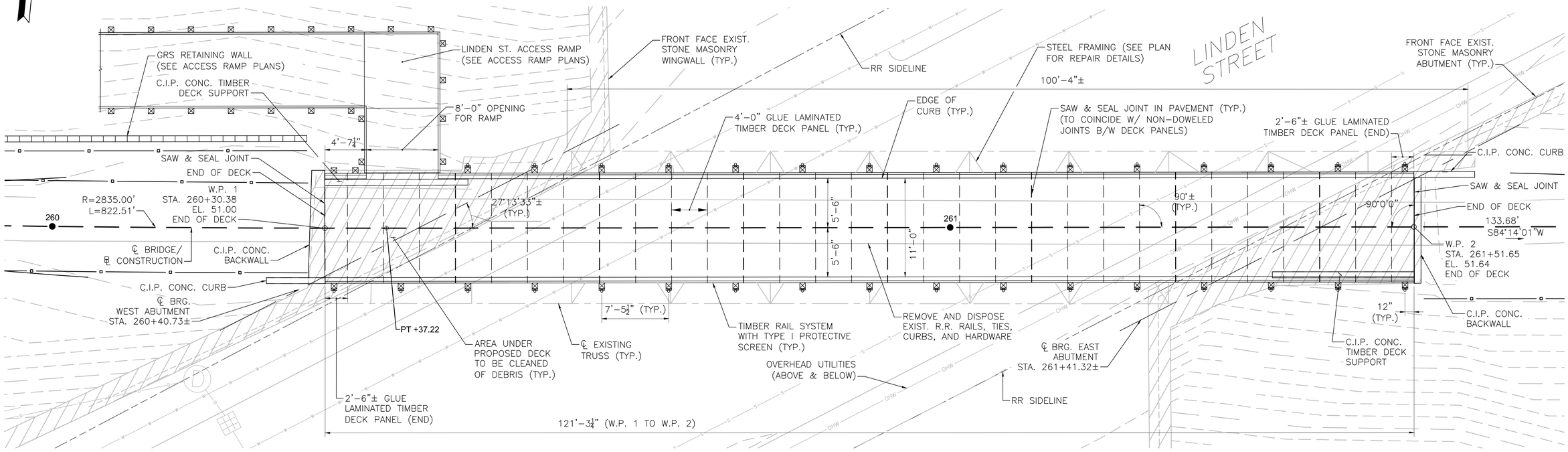
000000_BR(LINDEN BRIDGE PLAN).DWG Plotted on 27-Jul-2021 4:44 PM

N

NAD 83

NOTE:

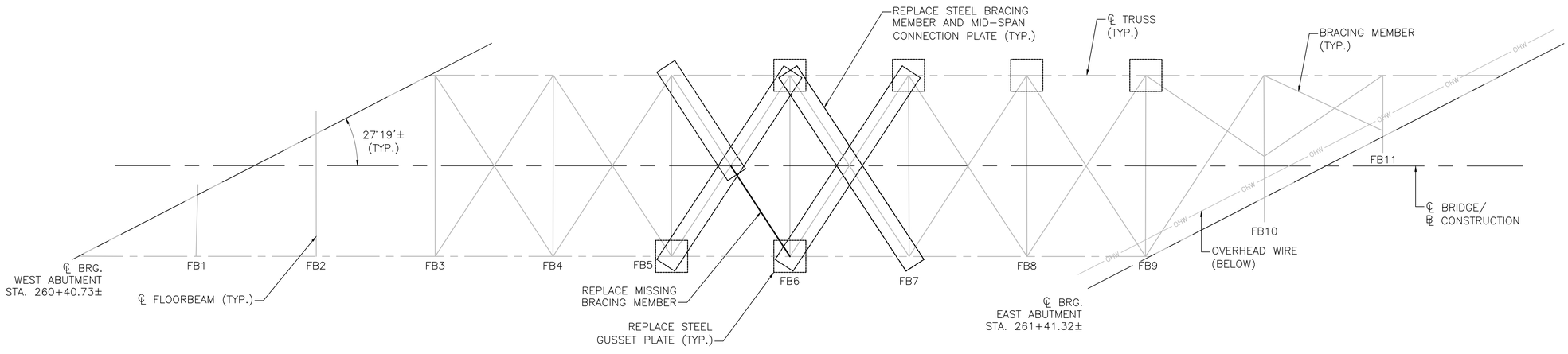
1. BRIDGE ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY AND HAVE NOT BEEN FIELD VERIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING ELEMENTS FOR THE PURPOSE OF LAYING OUT THE GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS FOR THE PROPOSED STRUCTURE.



PLAN VIEW
SCALE: 3/16" = 1'-0"

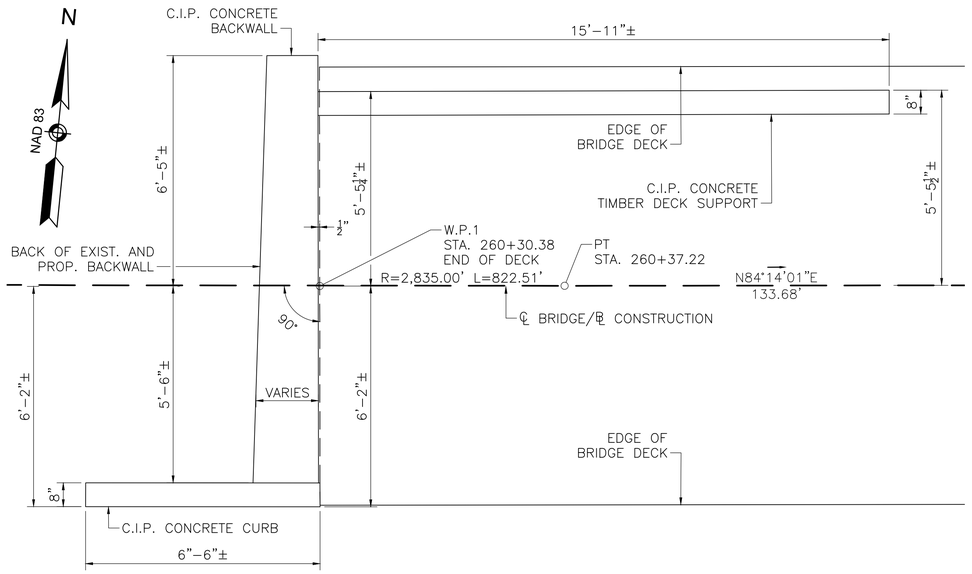
N

NAD 83



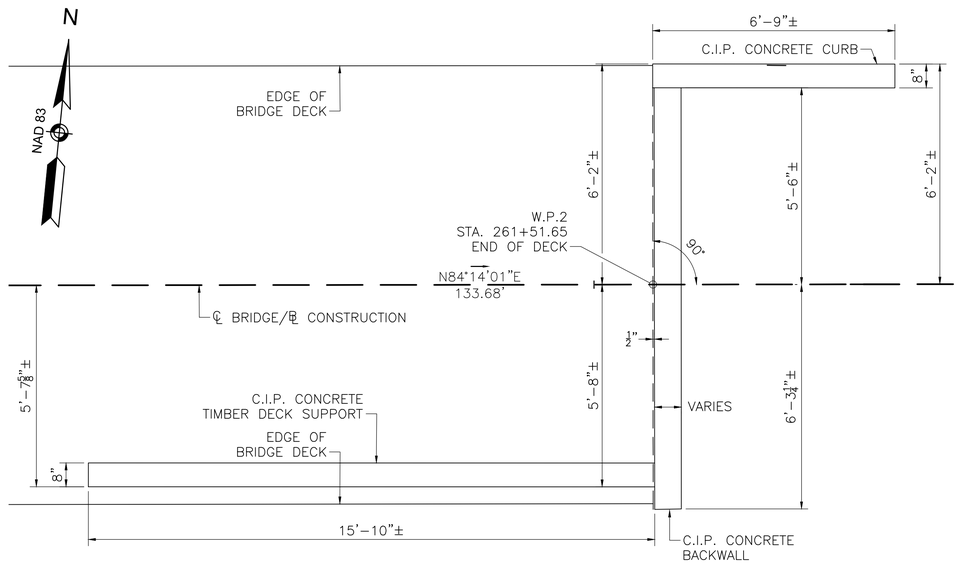
FRAMING PLAN–LOWER BRACING (REPAIRS)
SCALE: 3/16" = 1'-0"

NOT FOR CONSTRUCTION



WEST ABUTMENT C.I.P. CONCRETE LAYOUT

SCALE: 1/2" = 1'-0"



EAST ABUTMENT C.I.P. CONCRETE LAYOUT

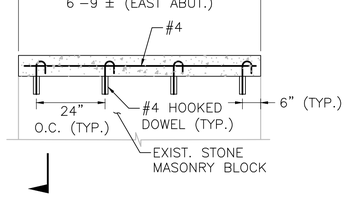
SCALE: 1/2" = 1'-0"

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	68	114
PROJECT FILE NO.	17112.00		

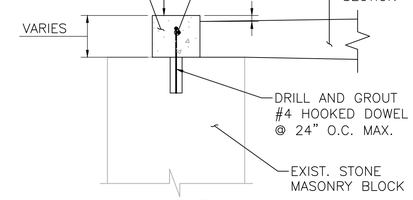
BRIDGE PLAN - 7
BRIDGE No. 113
LINDEN BRIDGE SUBSTRUCTURE LAYOUT

000000_BR\LINDEN BRIDGE SUB LAYOUT\.DWG Plotted on 27-Jul-2021 3:32 PM



ELEVATION

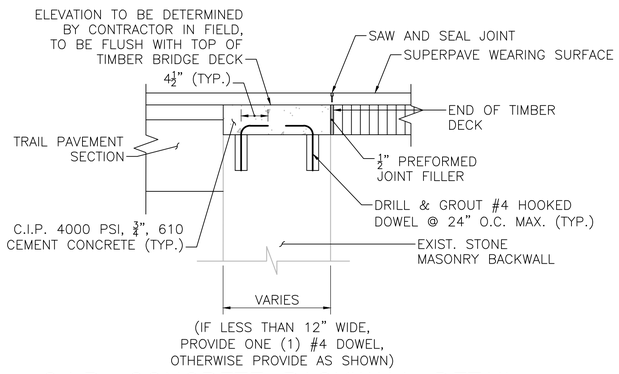
SCALE: 1/2" = 1'-0"



SECTION 3

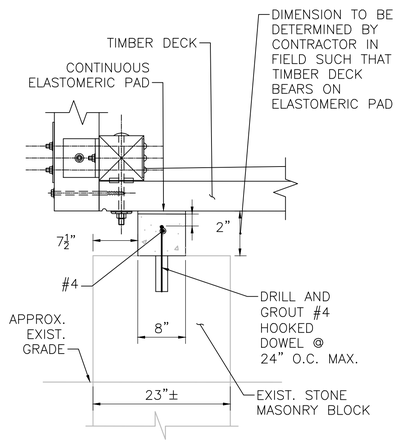
SCALE: 1" = 1'-0"

C.I.P CONCRETE CURB DETAIL



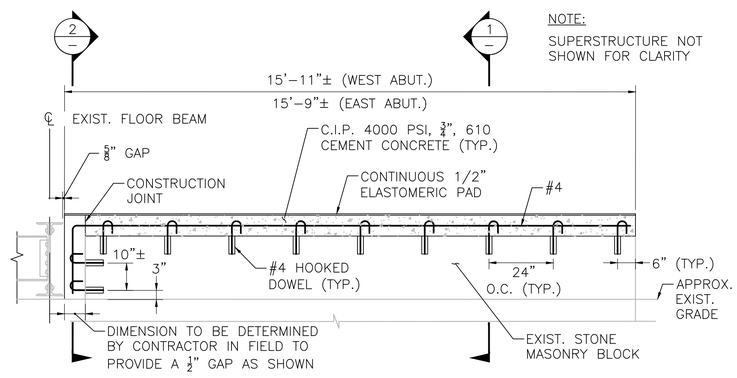
C.I.P. CONCRETE BACKWALL DETAIL

SCALE: 1" = 1'-0"



SECTION 1

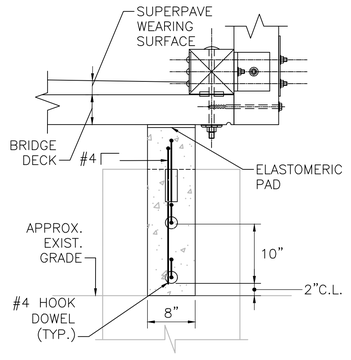
SCALE: 1" = 1'-0"



ELEVATION

C.I.P. CONCRETE TIMBER DECK SUPPORT DETAIL

SCALE: 1/2" = 1'-0"



SECTION 2

SCALE: 1" - 1'-0"

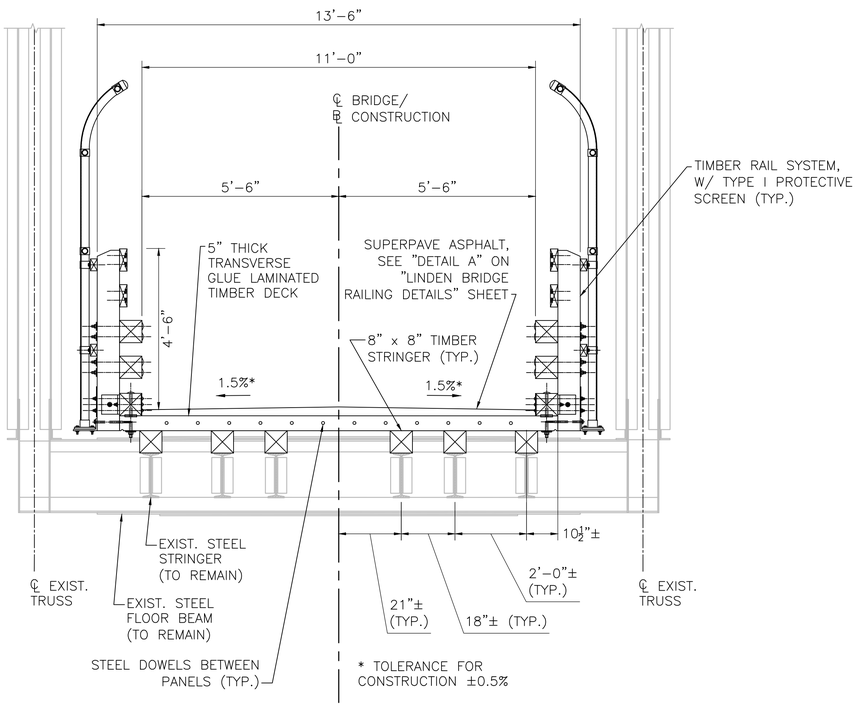
NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	69	114
PROJECT FILE NO.	17112.00		

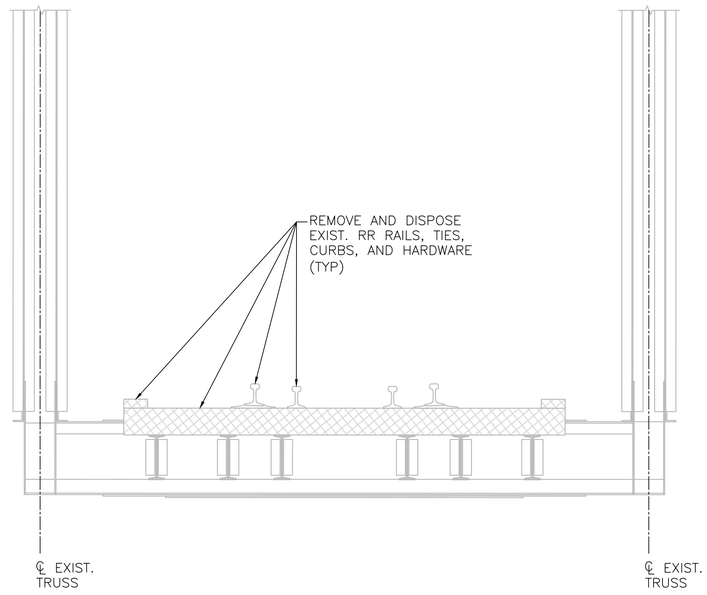
BRIDGE PLAN - 8
BRIDGE No. 113
LINDEN BRIDGE DETAILS

000000_BR(LINDEN BRIDGE DETAILS).DWG Plotted on 27-Jul-2021 3:32 PM



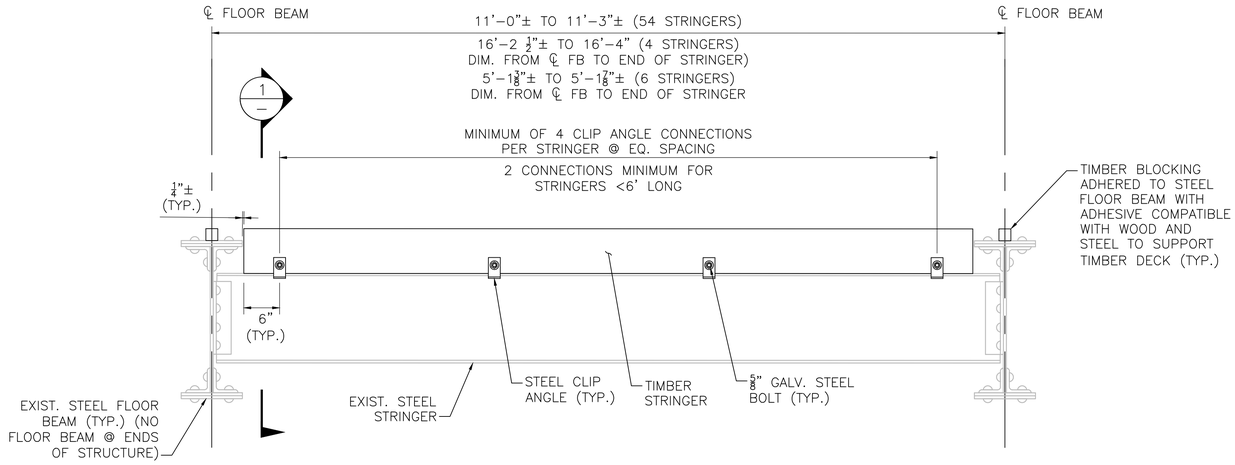
TYPICAL BRIDGE SECTION

SCALE: 1/2" = 1'



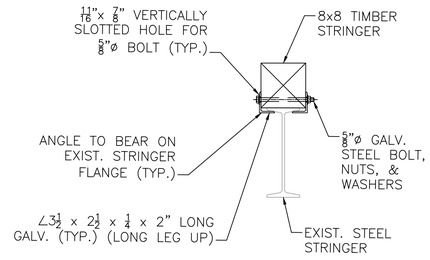
EXISTING DEMOLITION SECTION

SCALE: 1/2" = 1'



TYPICAL TIMBER STRINGER TO STEEL STRINGER CONNECTION

SCALE: 1" = 1'–0"



SECTION 1

SCALE: 1" = 1'–0"

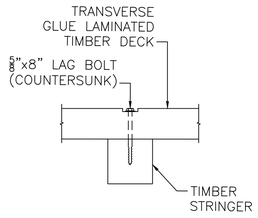
NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	70	114
PROJECT FILE NO.	17112.00		

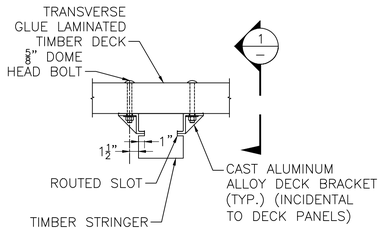
BRIDGE PLAN - 9
BRIDGE No. 113
LINDEN BRIDGE DECK DETAILS

000000_BR(LINDEN BRIDGE DECK DETAILS).DWG Plotted on 27-Jul-2021 3:32 PM



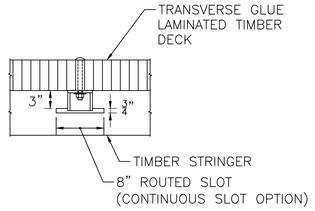
DECK PANEL CONNECTION DETAIL–ALTERNATE

(ONLY TO BE USED WHERE TYPICAL DECK PANEL CONNECTION DETAIL CANNOT BE MADE DUE TO ACCESS RESTRICTIONS)
SCALE: 1" = 1'–0"



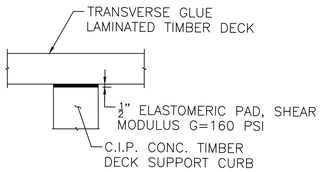
TYPICAL DECK PANEL CONNECTION DETAIL

SCALE: 1" = 1'–0"



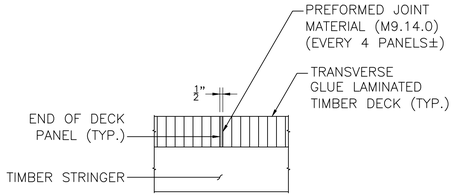
SECTION 1

SCALE: 1" = 1'–0"



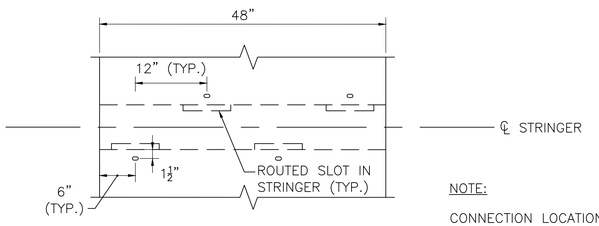
DECK PANEL OVER CONCRETE CURB DETAIL

SCALE: 1" = 1'–0"

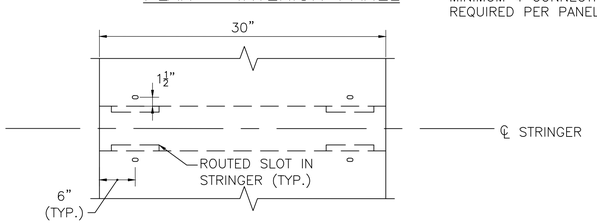


DECK JOINT DETAIL

SCALE: 1" = 1'–0"



PLAN – INTERIOR PANEL



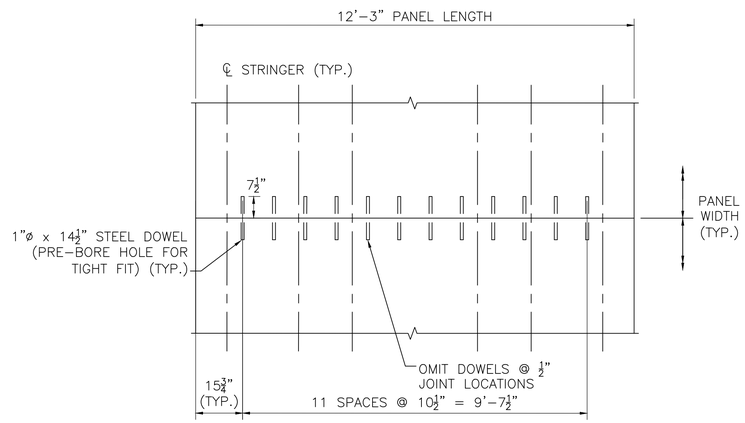
PLAN – END PANEL

NOTE:

CONNECTION LOCATIONS TO BE ADJUSTED AS NECESSARY WHEN LOCATED OVER FLOOR BEAMS. MINIMUM 4 CONNECTIONS ARE REQUIRED PER PANEL.

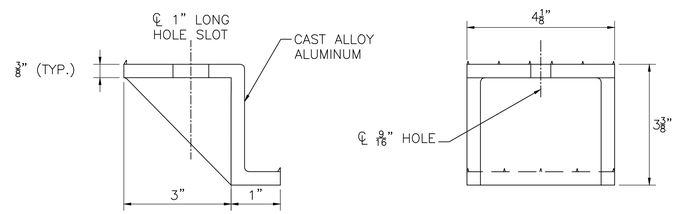
DECK PANEL CONNECTION PLACEMENT

SCALE: 1" = 1'–0"



DECK DOWEL CONNECTION DETAIL

SCALE: 1/2" = 1'–0"



DECK BRACKET DETAIL

SCALE: N.T.S.

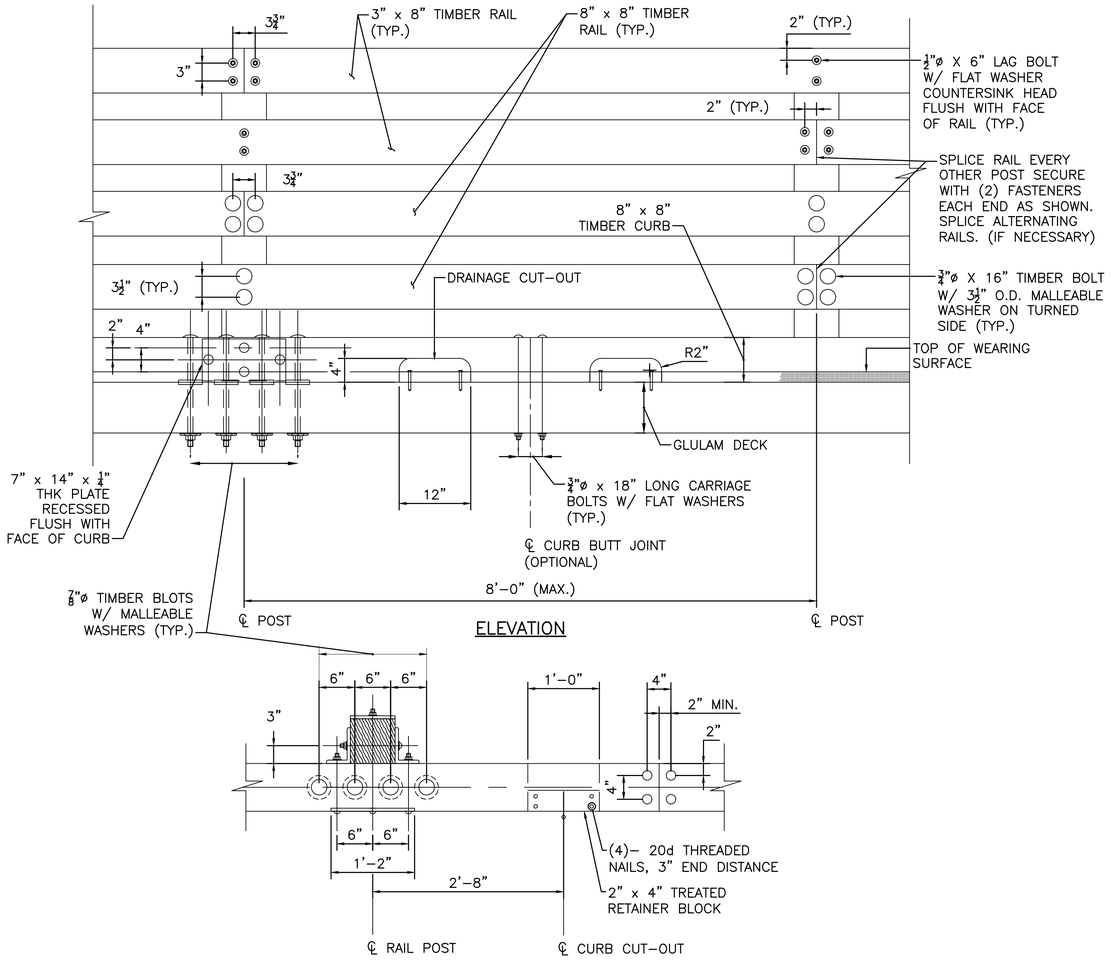
NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	71	114
PROJECT FILE NO.	17112.00		

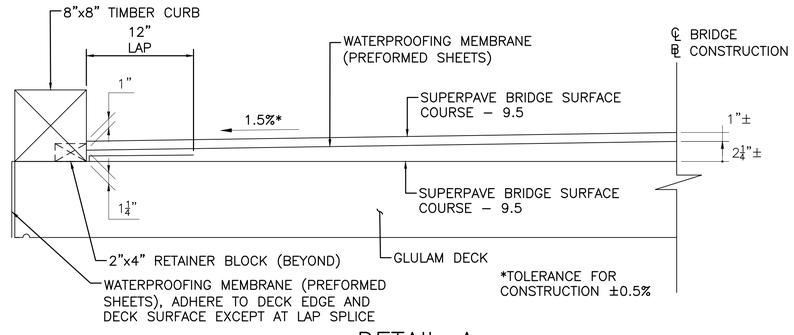
BRIDGE PLAN - 10
BRIDGE No. 113
LINDEN BRIDGE RAILING - DETAILS

000000_BRL(LINDEN BRIDGE RAILING).DWG Plotted on 28-Jul-2021 7:34 AM



CURB AND RAIL POST ATTACHMENT DETAIL

SCALE: 1" = 1'-0"

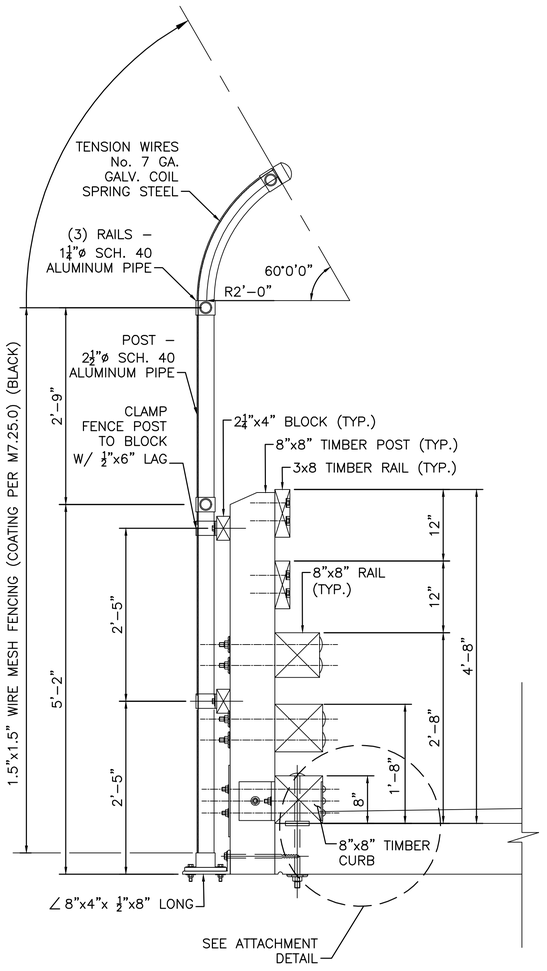


DETAIL A

SCALE: 1 1/2" = 1'-0"

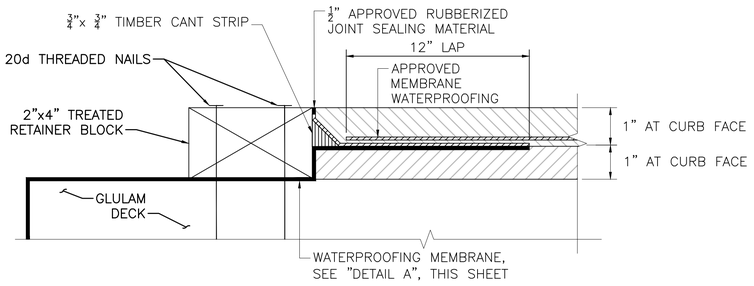
NOTES:

1. ALLOW FIRST BRIDGE SURFACE COURSE TO COOL SUFFICIENTLY SO WATERPROOFING MEMBRANE DOES NOT TEAR WHEN APPLYING THE SECOND BRIDGE SURFACE COURSE.
2. SEE "DETAIL B" AND "DETAIL C", THIS SHEET.



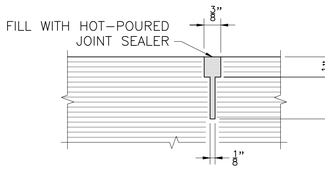
RAIL DETAIL

SCALE: 1" = 1'-0"



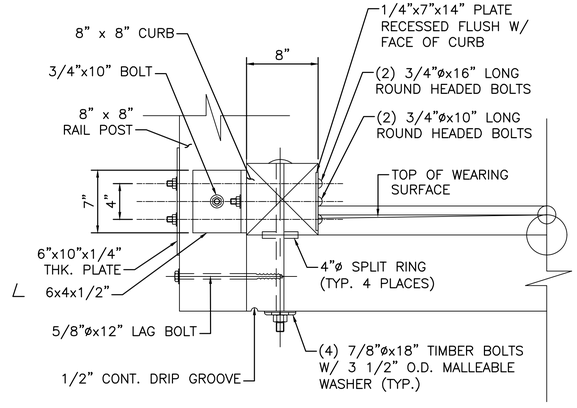
DETAIL B

NO SCALE



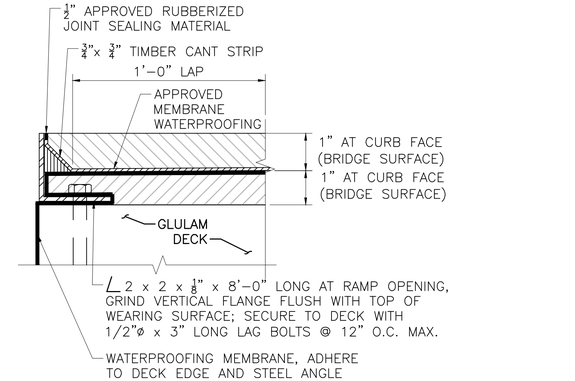
PAVEMENT SAWCUT DETAIL

SCALE: 1" = 1'-0"



ATTACHMENT DETAIL

SCALE: 1 1/2" = 1'-0"



DETAIL C

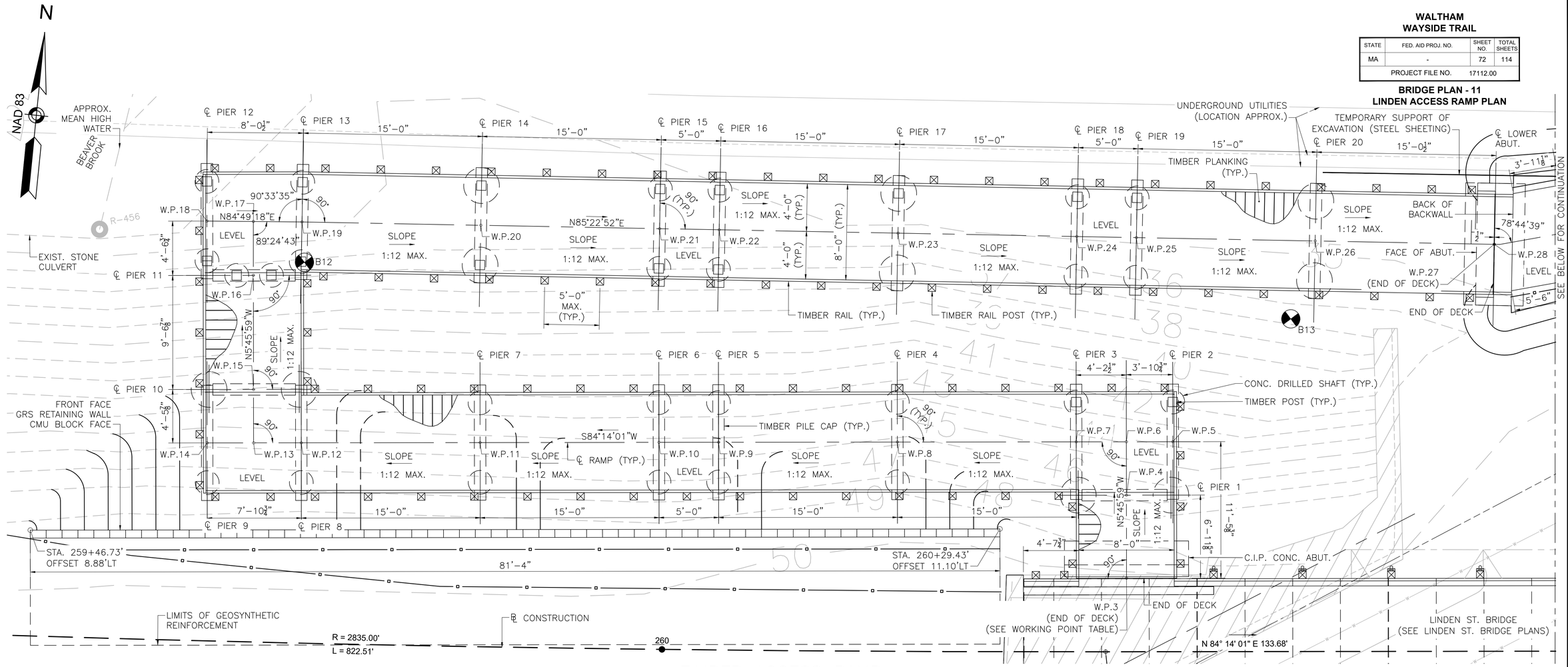
(AT ACCESS RAMP OPENING)
NO SCALE

NOT FOR CONSTRUCTION

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	72	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 11
LINDEN ACCESS RAMP PLAN



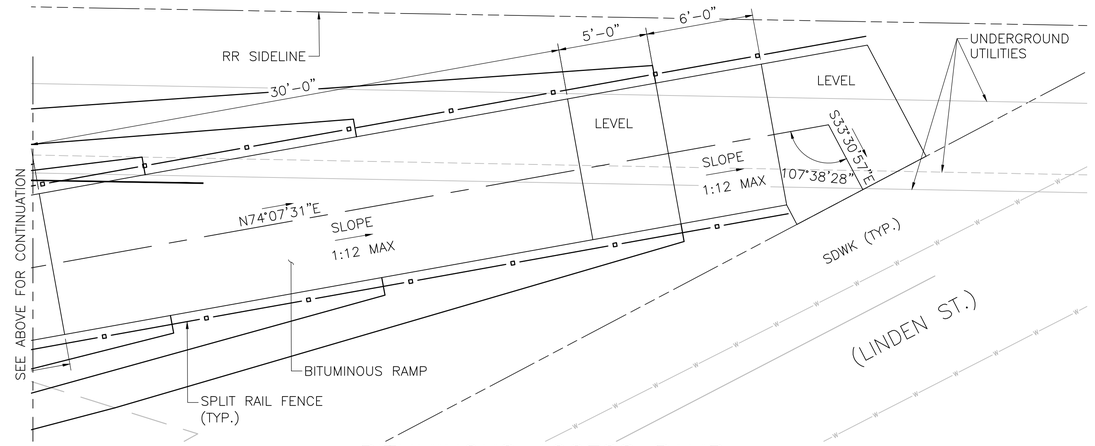
TIMBER ACCESS RAMP

SCALE: 1/4" = 1'-0"

WORKING POINT TABLE				
W.P.	STATION	OFFSET	ELEVATION	DESCRIPTION
3	260+38.98	6.17' LT.	51.50	END OF DECK
4	260+38.98	13.13' LT.	50.92	CL PIER 1
5	260+42.88	17.62' LT.	50.90'	CL PIER 2
6	260+38.98	17.62' LT.	50.90'	INTERSECTION OF RAMP CL
7	260+34.76	17.62' LT.	50.90'	CL PIER 3
8	260+19.66	17.57' LT.	49.65'	CL PIER 4
9	260+04.57	17.43' LT.	48.40'	CL PIER 5
10	259+99.54	17.37' LT.	48.40'	CL PIER 6
11	259+84.45	17.13' LT.	47.15'	CL PIER 7
12	259+69.36	16.81' LT.	45.90'	CL PIER 8
13	259+65.34	16.71' LT.	45.90'	INTERSECTION OF RAMP CL
14	259+61.42	16.61' LT.	45.90'	CL PIER 9
15	259+65.23	21.2' LT.	45.88'	CL PIER 10
16	259+64.98	30.76' LT.	45.08'	CL PIER 11
17	259+64.86	35.28' LT.	45.06'	INTERSECTION OF RAMP CL
18	259+60.93	35.22' LT.	45.06'	CL PIER 12
19	259+69.00	35.34' LT.	45.06'	CL PIER 13
20	260+84.19	35.36' LT.	43.81'	CL PIER 14
21	259+99.38	35.3' LT.	42.56'	CL PIER 15
22	260+04.44	35.26' LT.	42.56'	CL PIER 16
23	260+19.63	35.1' LT.	41.31'	CL PIER 17
24	260+34.81	34.85' LT.	40.06'	CL PIER 18
25	260+39.84	34.75' LT.	40.06'	CL PIER 19
26	260+54.84	34.45' LT.	38.81'	CL PIER 20
27	260+69.83	34.14' LT.	37.56'	END OF DECK
28	260+69.88	34.15' LT.	37.56'	CL ABUTMENT

NOTES:

1. BRIDGE GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY. FINAL LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR BASED ON FIELD MEASUREMENTS.
2. FOR MORE INFORMATION, SEE BRIDGE GENERAL NOTES SHEETS.
3. WORKING POINTS ARE GIVEN AT THE TOP OF THE TIMBER PLANKING.



BITUMINOUS ACCESS RAMP

SCALE: 1/4" = 1'-0"

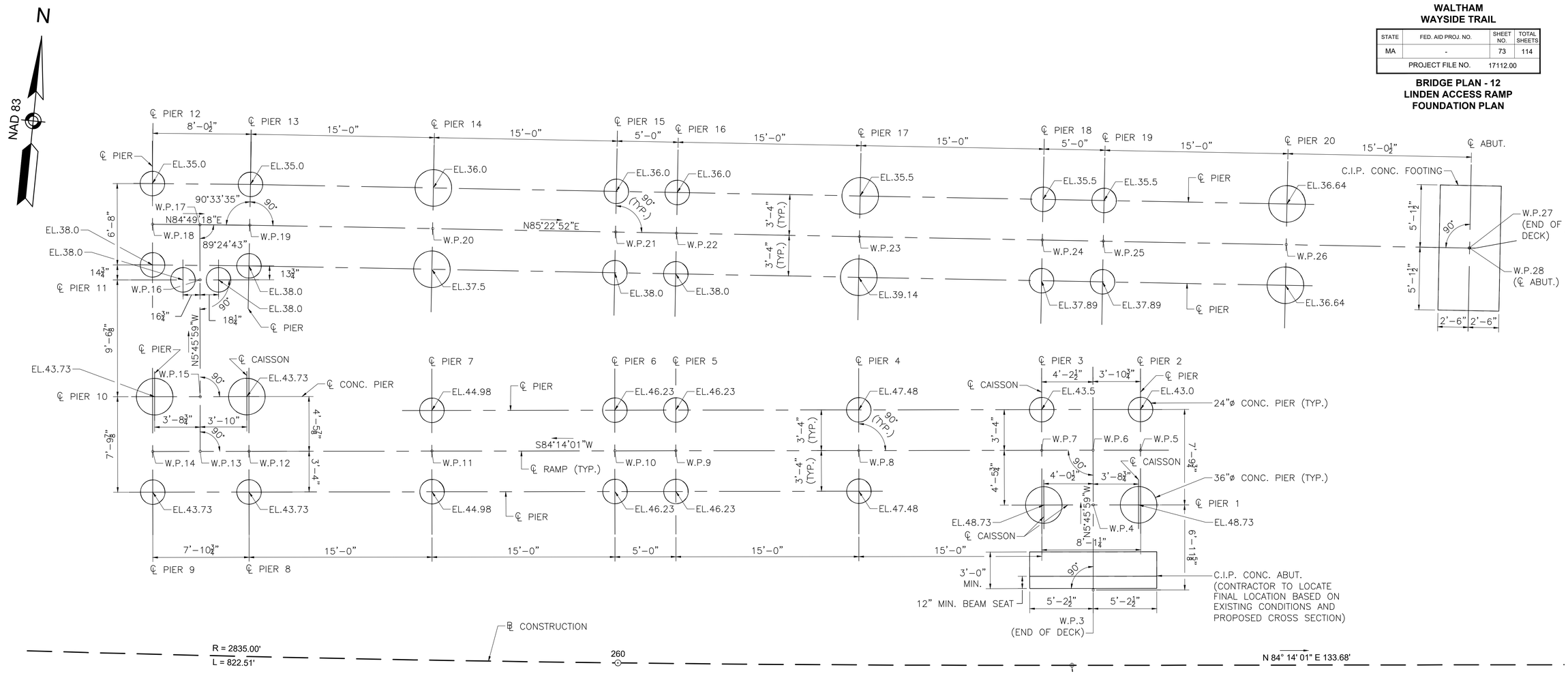
000000_BR(LINDEN ACCESS RAMP PLAN).DWG Plotted on 27-Jul-2021 3:33 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	73	114
PROJECT FILE NO.	17112.00		

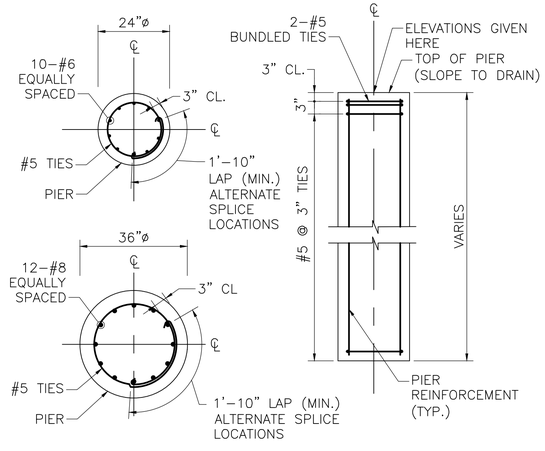
BRIDGE PLAN - 12
LINDEN ACCESS RAMP
FOUNDATION PLAN

000000_BR(LINDEN ACCESS RAMP SUB PLAN).DWG Plotted on 26-Jul-2021 1:47 PM



TIMBER ACCESS RAMP FOUNDATION PLAN

SCALE: 1/4" = 1'–0"



CONCRETE PIER DETAILS

SCALE: 1/2" = 1'–0"

NOTES:

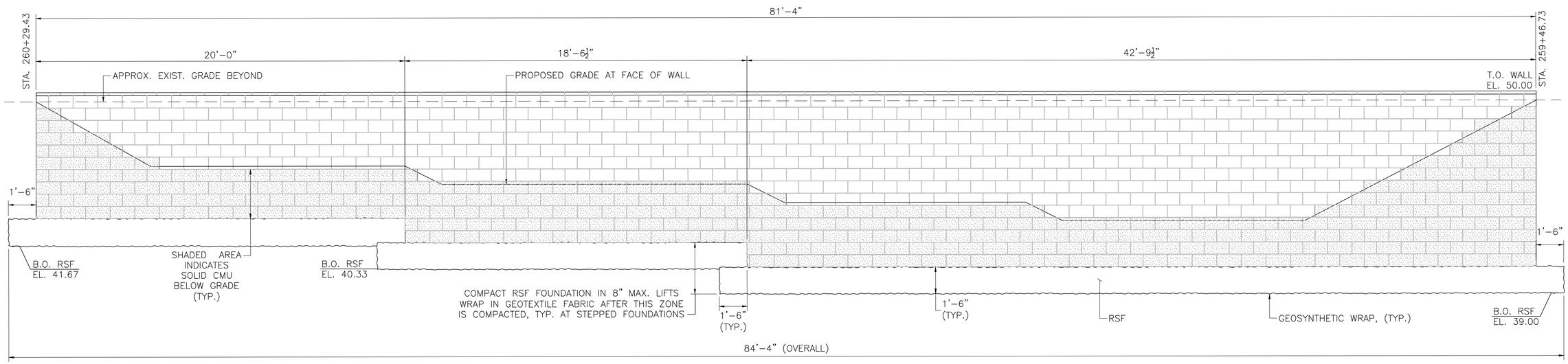
1. SEE LINDEN ACCESS RAMP PLAN FOR WORKING POINT INFORMATION.
2. ELEVATIONS SHOWN ARE AT TOP OF THE CONCRETE PIERS.
3. FOR BOTTOM OF PIER ELEVATIONS, SEE LINDEN ACCESS RAMP PIER ELEVATION DETAILS – 1 & 2 SHEETS.

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	74	114
PROJECT FILE NO.	17112.00		

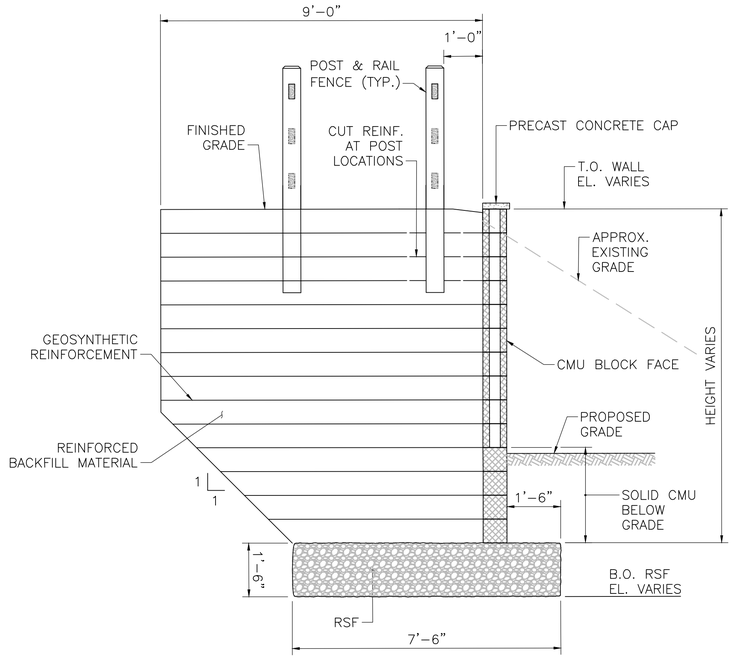
BRIDGE PLAN - 13
LINDEN ACCESS RAMP PIER
GRS RETAINING WALL PLAN

000000_BR(LINDEN ACCESS RAMP GRS WALL).DWG Plotted on 26-Jul-2021 1:47 PM



GRS RETAINING WALL ELEVATION

SCALE: 3/8" = 1'



TYPICAL RETAINING WALL SECTION

SCALE: 1/2" = 1'

EXISTING CONCRETE CULVERT – STA. 285+19

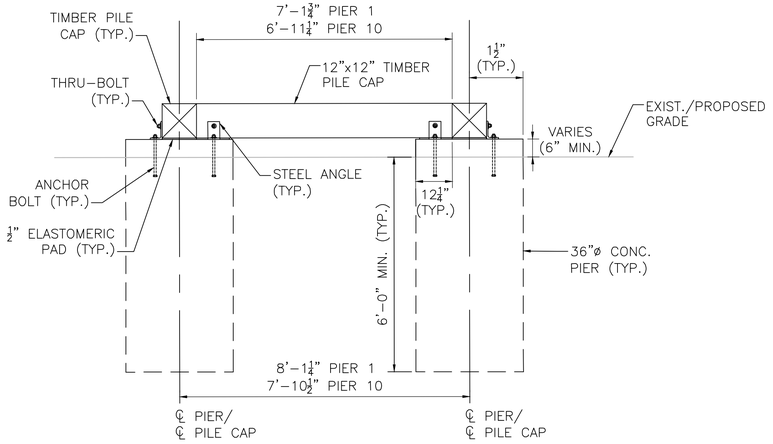
SCALE: 1/2"=1'-0"

ABBREVIATIONS:

RSF – REINFORCED SOIL FOUNDATION
CMU – CONCRETE MASONRY UNIT
GRS – GEOSYNTHETIC REINFORCED SOIL
MSE – MECHANICALLY STABILIZED EARTH
B.O. – BOTTOM OF
T.O. – TOP OF
EL. – ELEVATION

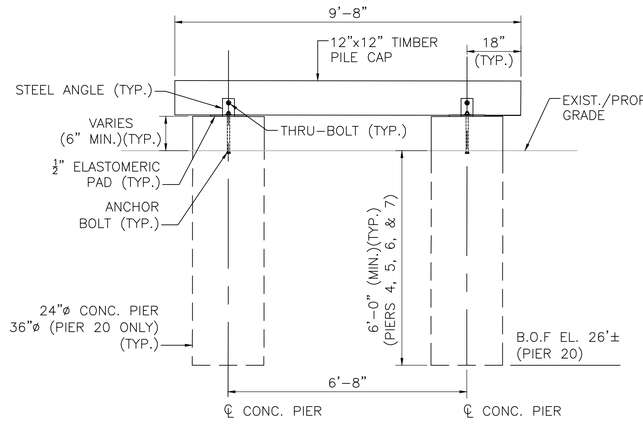
NOTE:

FOR NOTES SEE "GRS ABUTMENT/WALL NOTES" SHEET.



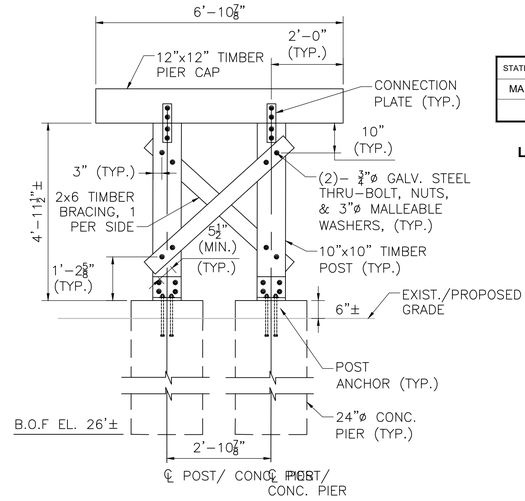
ELEVATION – PIER 1 & 10

(SOUTH ELEVATION)
SCALE: 1/2" = 1'



ELEVATION – PIER 4, 5, 6, 7, & 20

(EAST ELEVATION)
SCALE: 1/2" = 1'



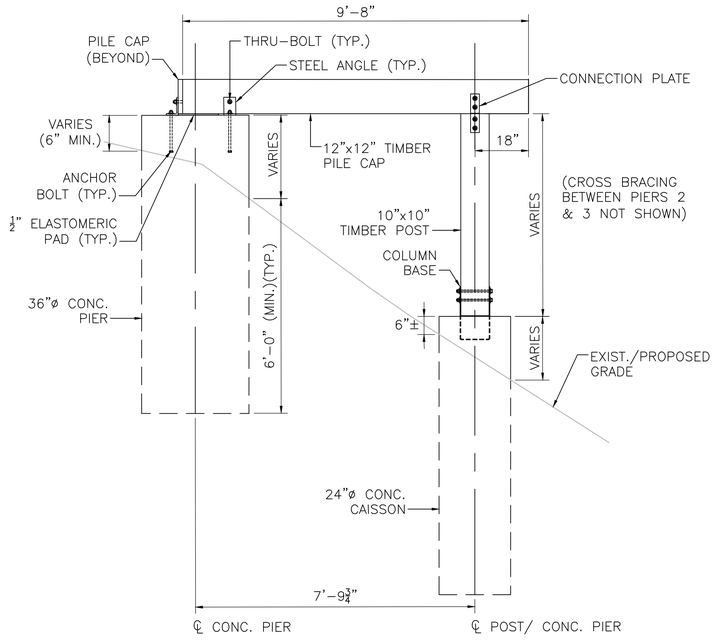
ELEVATION – PIER 11

(SOUTH ELEVATION)
SCALE: 1/2" = 1'

WALTHAM
WAYSIDE TRAIL

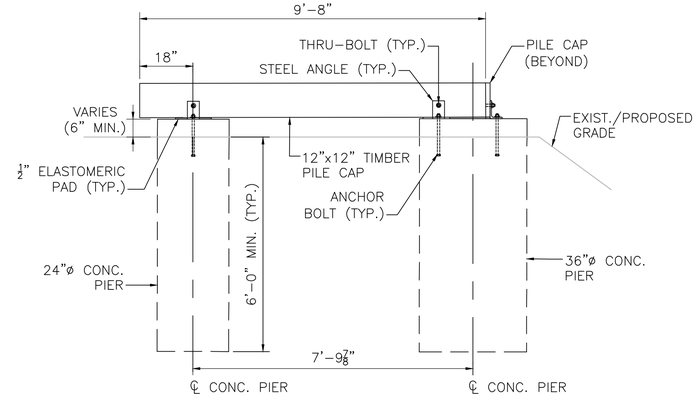
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	75	114
PROJECT FILE NO.		17112.00	

BRIDGE PLAN - 14
LINDEN ACCESS RAMP PIER
ELEVATION DETAILS - 1



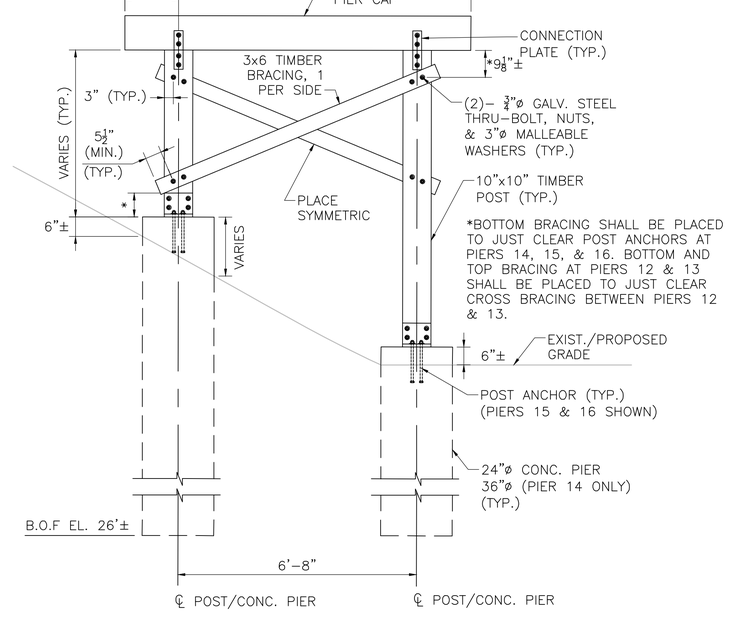
ELEVATION – PIER 2 & 3

(EAST ELEVATION)
SCALE: 1/2" = 1'



ELEVATION – PIER 8

(EAST ELEVATION)
(PIER 9 TYPICAL, OPPOSITE HAND)
SCALE: 1/2" = 1'



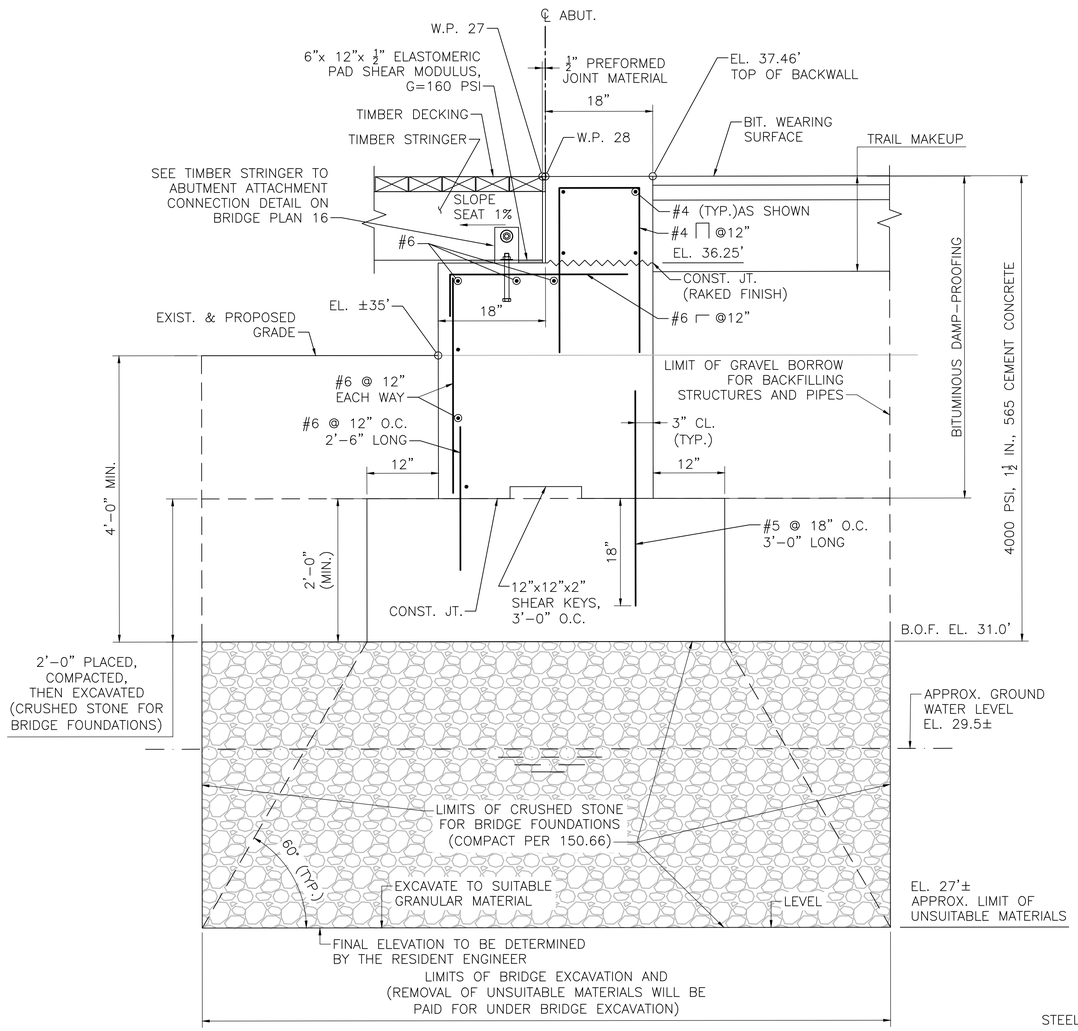
ELEVATION – PIER 12, 13, 14, 15, & 16

(EAST ELEVATION)
SCALE: 1/2" = 1'

NOTES:

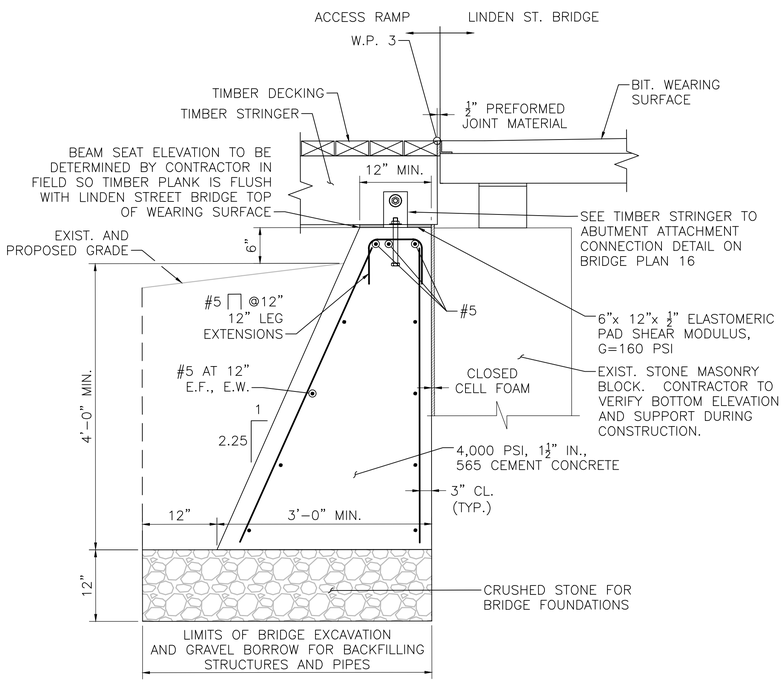
1. FOR CONNECTION DETAILS, SEE "LINDEN ACCESS RAMP PIER CONNECTION DETAILS" SHEET.
2. FOR CAISSON DETAILS, SEE "LINDEN ACCESS RAMP FOUNDATION PLAN" SHEET.
3. FOR MORE INFORMATION, SEE "BRIDGE GENERAL NOTES" SHEET.

000000_BRILINDEN ACCESS RAMP PIER EL 1).DWG Plotted on 26-Jul-2021 1:48 PM



LOWER ABUTMENT SECTION

SCALE: 1" = 1'



UPPER ABUTMENT SECTION

SCALE: 1" = 1'

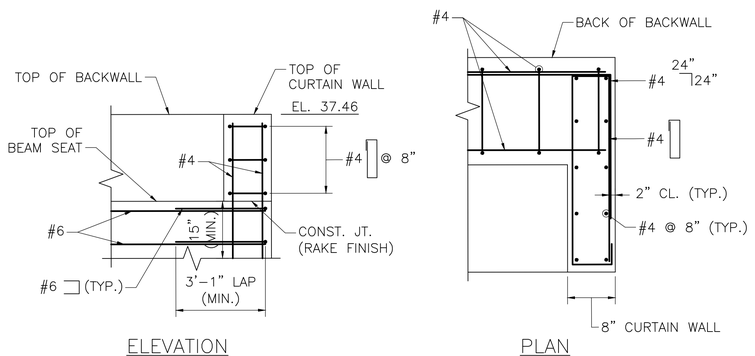
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	76	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 15
LINDEN ACCESS RAMP PIER
ELEVATION DETAILS - 2

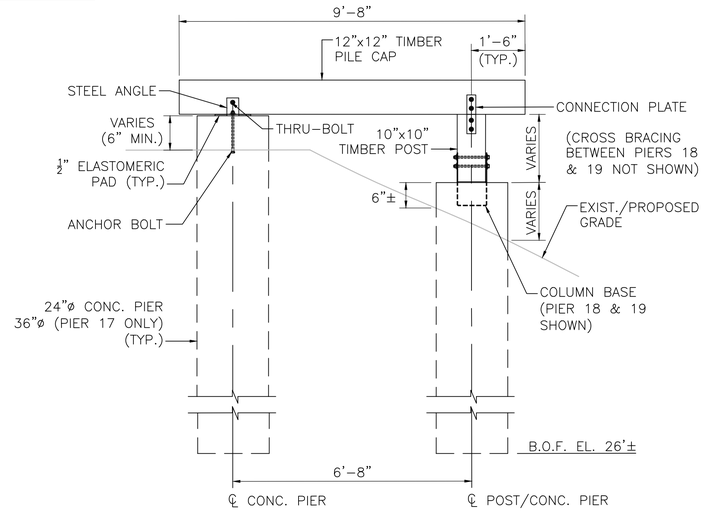
NOTES:

1. FOR CONNECTION DETAILS, SEE "LINDEN ACCESS RAMP PIER CONNECTION DETAILS" SHEET.
2. FOR CAISSON DETAILS, SEE "LINDEN ACCESS RAMP FOUNDATION PLAN" SHEET.
3. FOR MORE INFORMATION, SEE "BRIDGE GENERAL NOTES" SHEET.



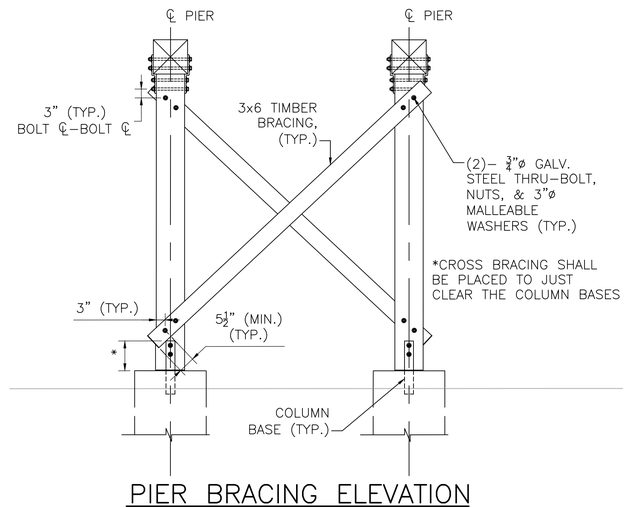
CURTAIN WALL DETAILS

SCALE: 1" = 1'



ELEVATION – PIER 17, 18, & 19

(EAST ELEVATION)
SCALE: 1/2" = 1'



PIER BRACING ELEVATION TYPICAL BETWEEN PIER 2 & 3, PIER 12 & 13, AND PIER 18 & 19

SCALE: 1/2" = 1'

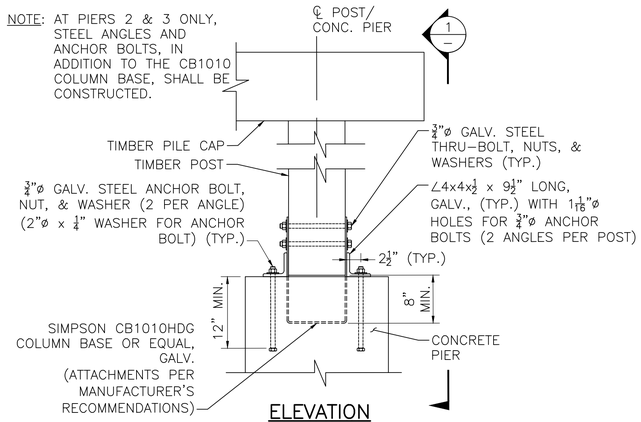
000000_BRL\LINDEN ACCESS RAMP PIER EL 2).DWG Plotted on 27-Jul-2021 3:34 PM

WALTHAM
WAYSIDE TRAIL

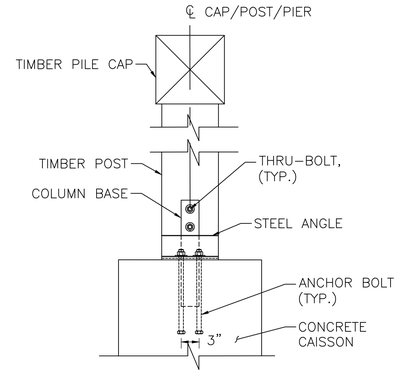
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	77	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 16
LINDEN ACCESS RAMP PIER CONNECTION DETAILS

000000_BRI(LINDEN ACCESS RAMP PIER DTL).DWG Plotted on 27-Jul-2021 3:34 PM



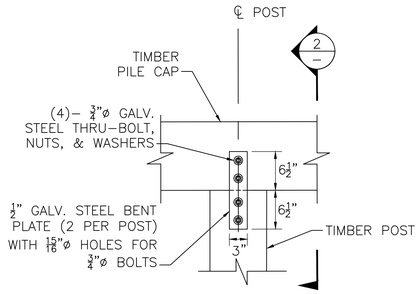
ELEVATION



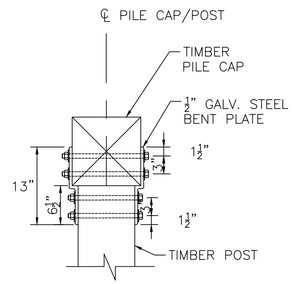
SECTION 1

TIMBER POST TO CONCRETE CAISSON CONNECTION DETAIL 1

(USE AT PIERS 2, 3, 12, 13, 18, & 19)
SCALE: 1" = 1'



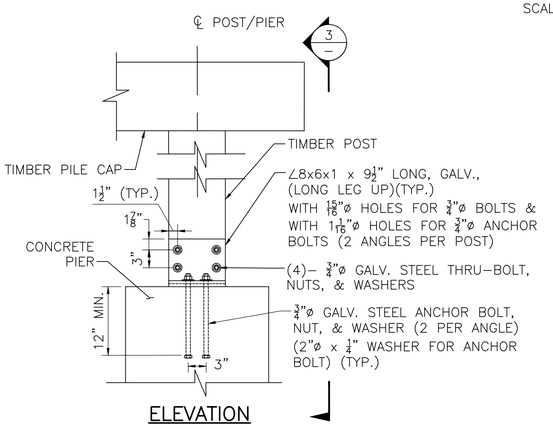
ELEVATION



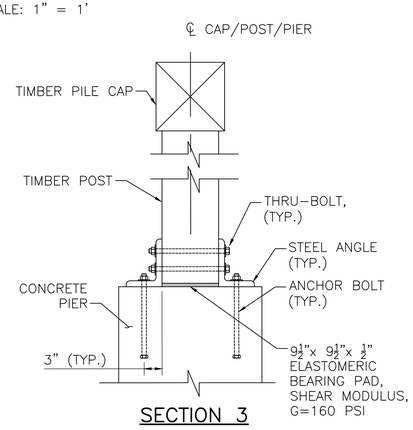
SECTION 2

TIMBER PILE CAP TO POST CONNECTION DETAIL

SCALE: 1" = 1'



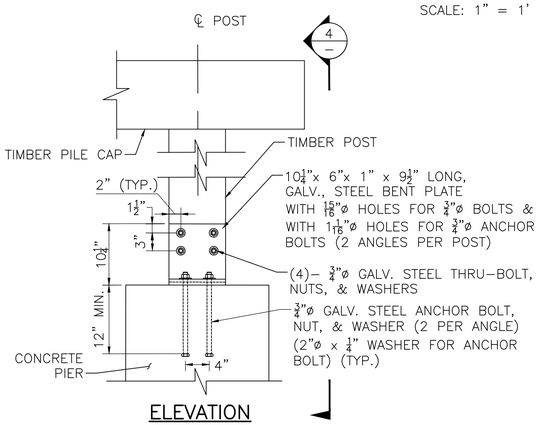
ELEVATION



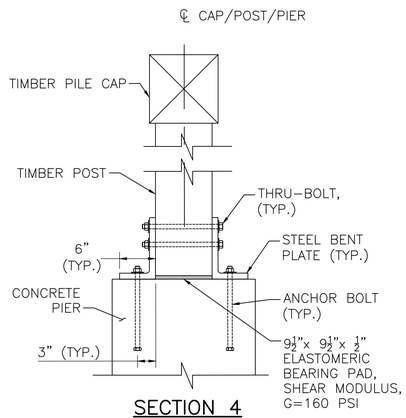
SECTION 3

TIMBER POST TO CONCRETE CAISSON CONNECTION DETAIL 2

(USE AT PIERS 11, 15, & 16)
SCALE: 1" = 1'



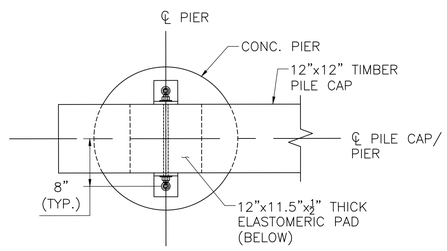
ELEVATION



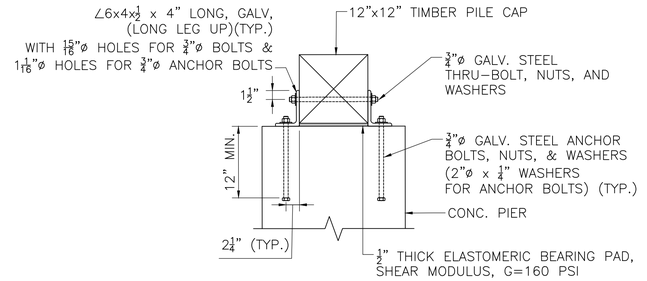
SECTION 4

TIMBER POST TO CONCRETE CAISSON CONNECTION DETAIL 3

(USE AT PIERS 14 & 17)
SCALE: 1" = 1'



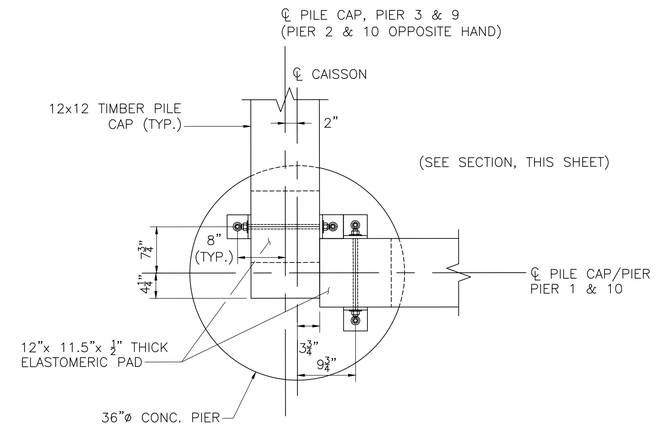
PLAN



SECTION

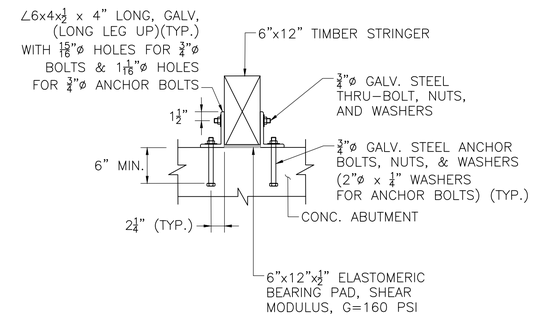
PILE CAP TO 24"ø CONC. PIER CONNECTION DETAILS

SCALE: (USE AT PIERS 4, 5, 6, 7, 8, & 9)
SCALE: 1" = 1'



PILE CAP TO 36"ø CONC. PIER CONNECTION DETAILS PIER 1 & 10

SCALE: 1" = 1'



TIMBER STRINGER TO ABUTMENT CONNECTION DETAIL

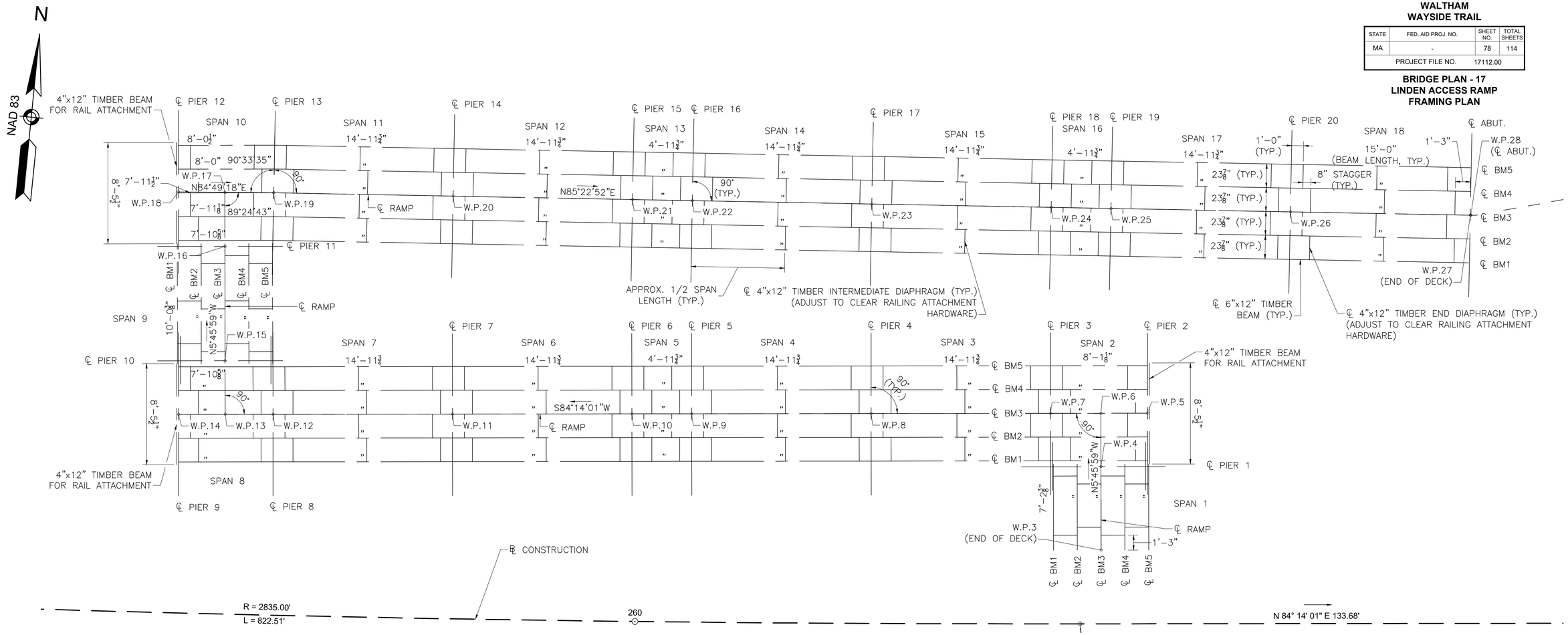
SCALE: 1" = 1'

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	78	114
PROJECT FILE NO.	17112.00		

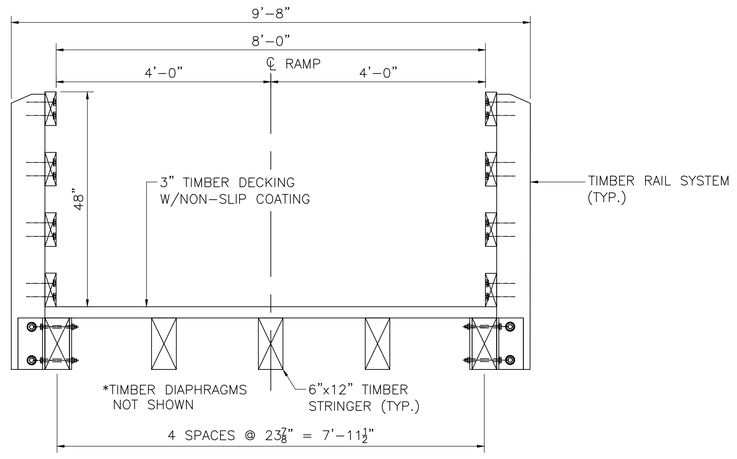
BRIDGE PLAN - 17
LINDEN ACCESS RAMP
FRAMING PLAN

000000_BRLINDEN ACCESS RAMP FRAMING PLAN).DWG Plotted on 26-Jul-2021 1:50 PM



TIMBER ACCESS RAMP FRAMING PLAN

SCALE: 1/4" = 1'-0"



TRANSVERSE SECTION

SCALE: 3/4" = 1'-0"

EXISTING CONCRETE CULVERT – STA. 285+19

SCALE: 1/2"=1'-0"

NOTE:

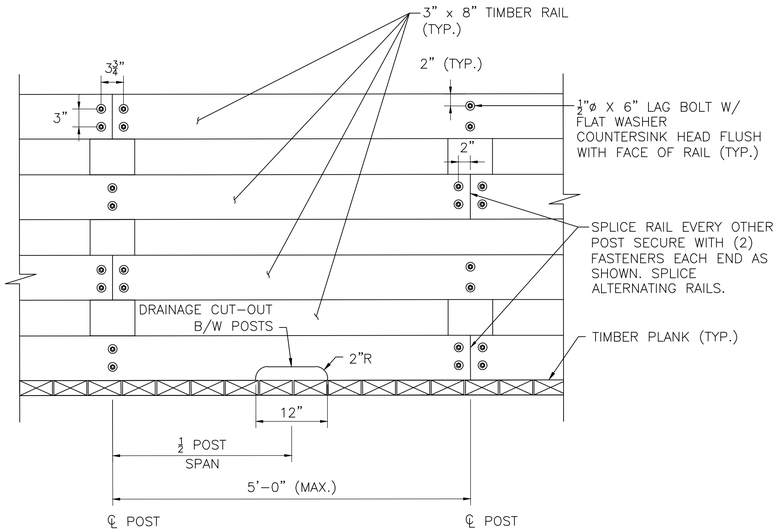
1. SEE LINDEN ACCESS RAMP PLAN FOR WORKING POINT INFORMATION.

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	79	114
PROJECT FILE NO.	17112.00		

BRIDGE PLAN - 18
LINDEN ACCESS RAMP
SUPERSTRUCTURE CONNECTION & RAIL DETAILS

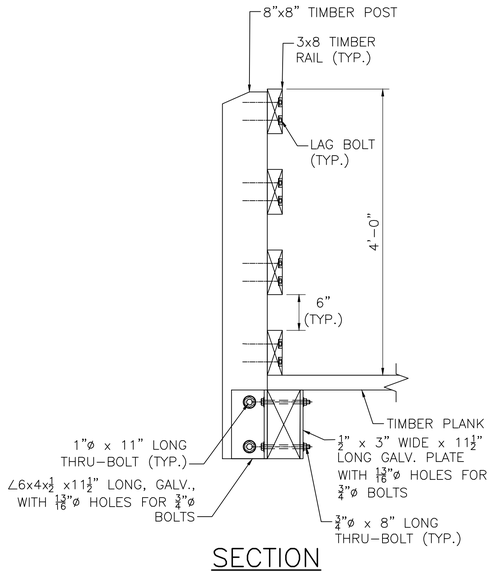
000000_BR(LINDEN ACCESS RAMP RAL DTL).DWG Plotted on 26-Jul-2021 1:51 PM



ELEVATION

TIMBER RAIL DETAIL

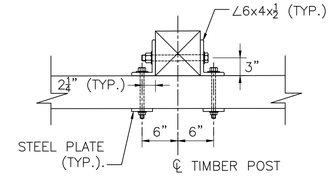
SCALE: 1" = 1'



SECTION

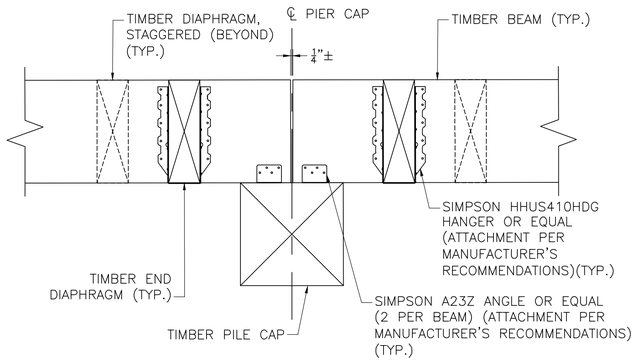
TIMBER RAIL DETAIL

SCALE: 1" = 1'



POST ATTACHMENT DETAIL

SCALE: 1" = 1'

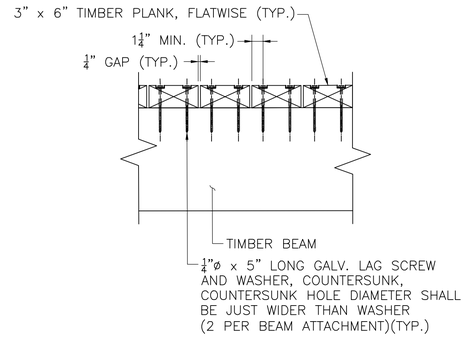


TIMBER BEAM TO TIMBER PILE CAP CONNECTION DETAIL

SCALE: 1-1/2" = 1'-0"

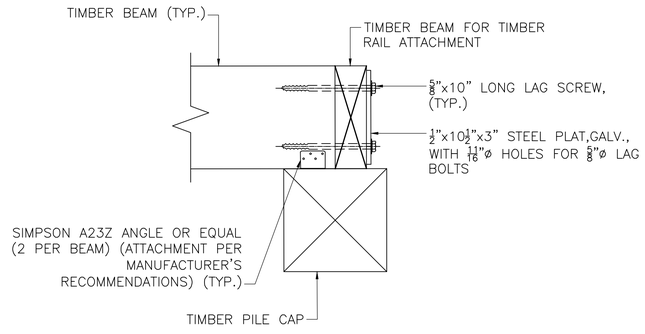
NOTE:

1. BOTTOM OF TIMBER BEAMS TO SIT FLUSH WITH PILE CAP. WHERE BEAMS ARE SLOPED, NO CUTTING OF THE PILE CAP WILL BE ALLOWED. ELASTOMERIC PADS OR PROPERLY PRESSURE TREATED BLOCKING MAY BE USED AS SHIMS IF NECESSARY.



TIMBER DECK PLANK CONNECTION DETAIL

SCALE: 1-1/2" = 1'-0"



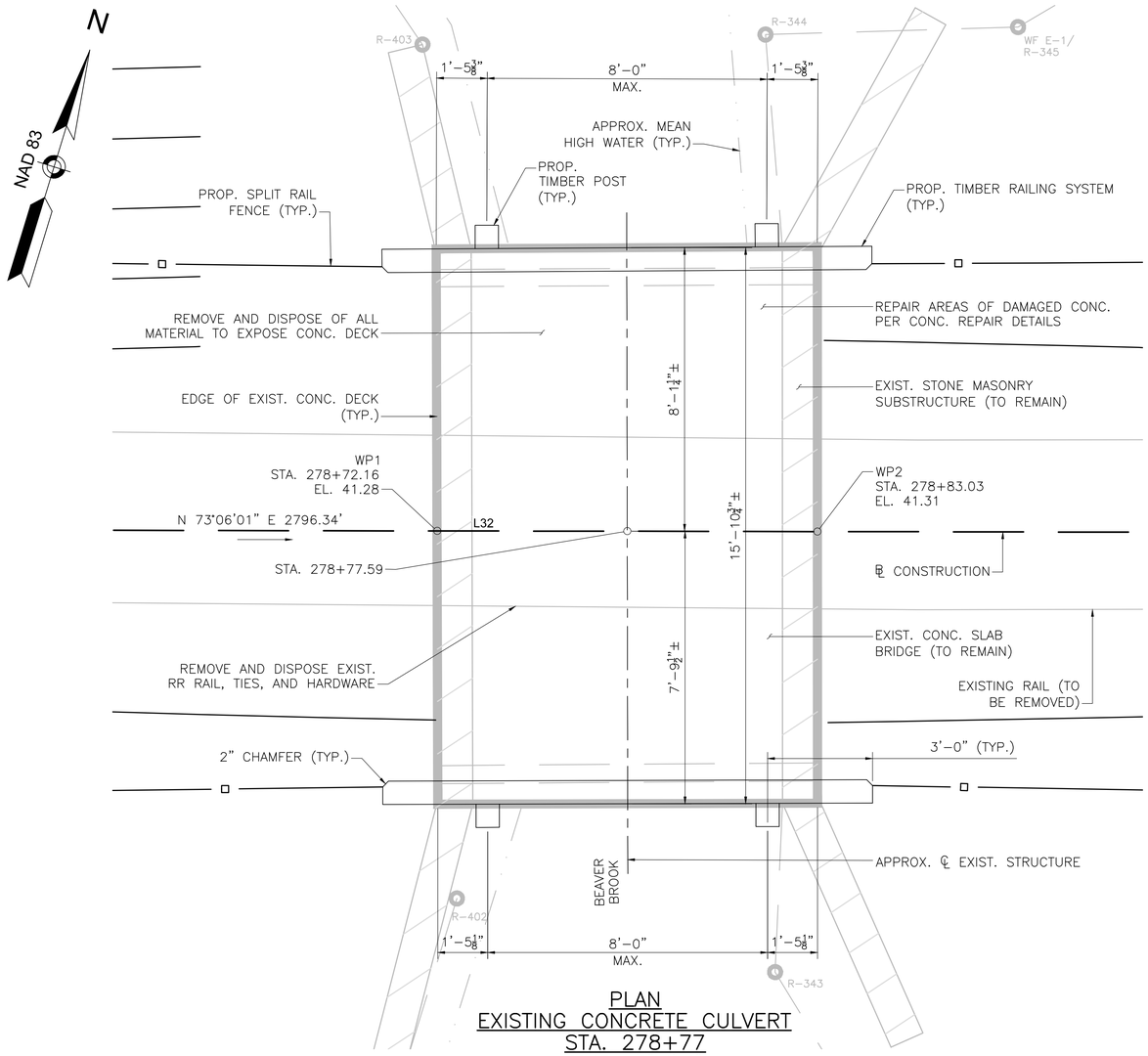
TIMBER BEAM TO TIMBER PILE CAP CONNECTION DETAIL @ PIER 2, PIER 9, & PIER 12

SCALE: 1-1/2" = 1'-0"

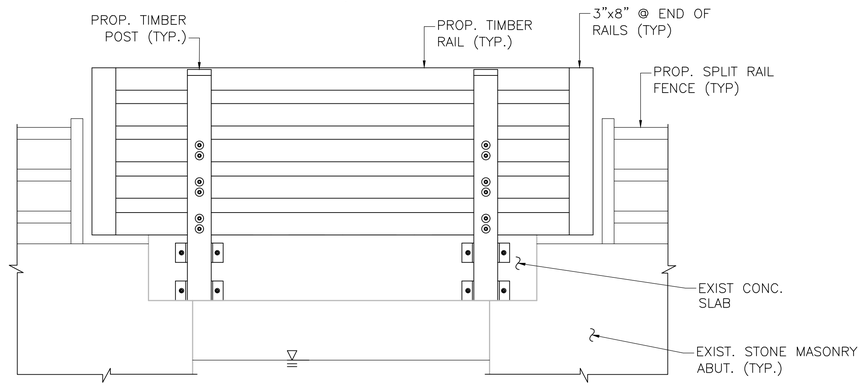
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	80	114
PROJECT FILE NO.	17112.00		

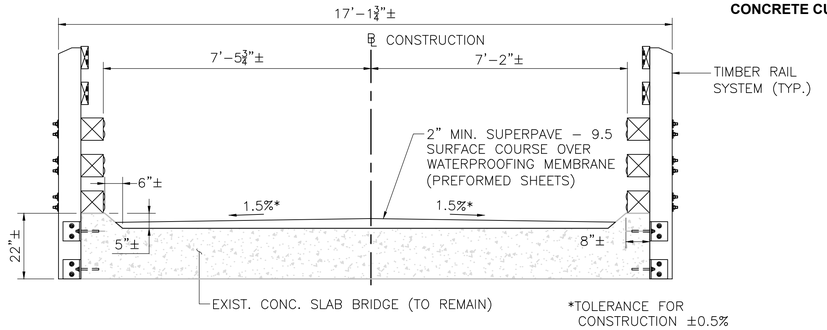
CULVERT PLAN - 1
BRIDGE NO. 8.92
CONCRETE CULVERT STA. 278+77



PLAN
EXISTING CONCRETE CULVERT
STA. 278+77
SCALE: 1/2"=1'-0"



ELEVATION
EXISTING CONCRETE CULVERT – STA. 278+77
SCALE: 1/2"=1'-0"



TYPICAL SECTION
EXISTING CONCRETE CULVERT – STA. 278+77
SCALE: 1/2"=1'-0"

NOTES:

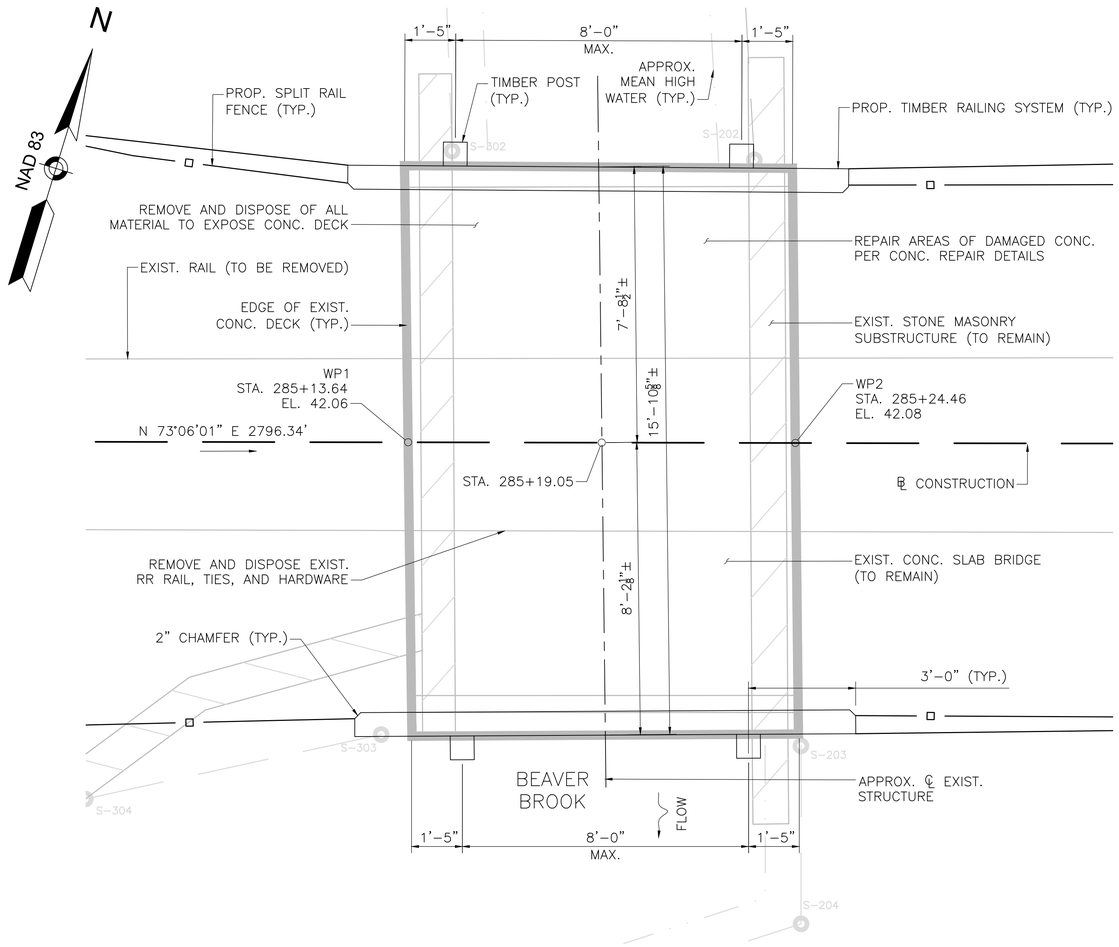
1. BRIDGE GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY. FINAL LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR BASED ON FIELD MEASUREMENTS.
2. FOR TIMBER BRIDGE RAIL DETAILS, SEE "CONCRETE CULVERT DETAILS" SHEET.
3. FOR MORE INFORMATION, SEE "BRIDGE GENERAL NOTES" SHEETS.

000000_BRI\CONCRETE CULVERT STA 278+77).DWG Plotted on 26-Jul-2021 1:56 PM

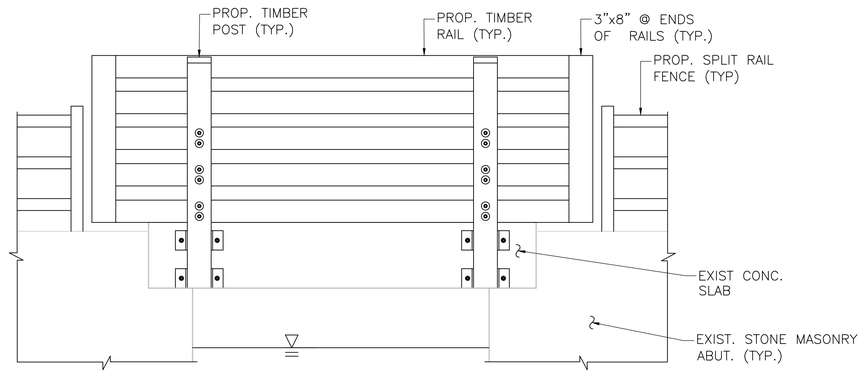
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	81	114
PROJECT FILE NO.	17112.00		

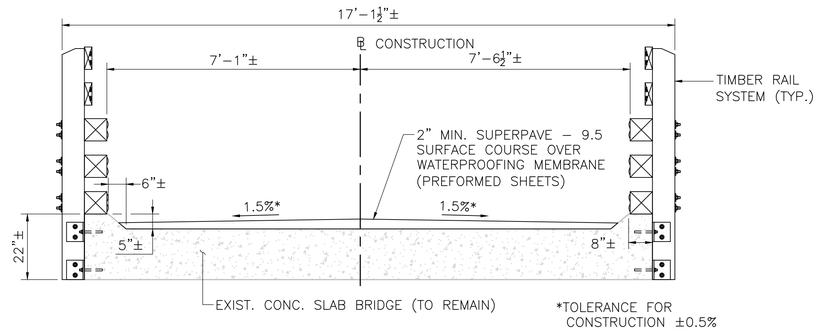
CULVERT PLAN - 2
BRIDGE No. 8.80
CONCRETE CULVERT STA. 285+19



PLAN
EXISTING CONCRETE CULVERT – STA. 285+19
SCALE: 1/2"=1'-0"



ELEVATION
EXISTING CONCRETE CULVERT – STA. 285+19
SCALE: 1/2"=1'-0"



TYPICAL SECTION
EXISTING CONCRETE CULVERT – STA. 285+19
SCALE: 1/2"=1'-0"

NOTES:

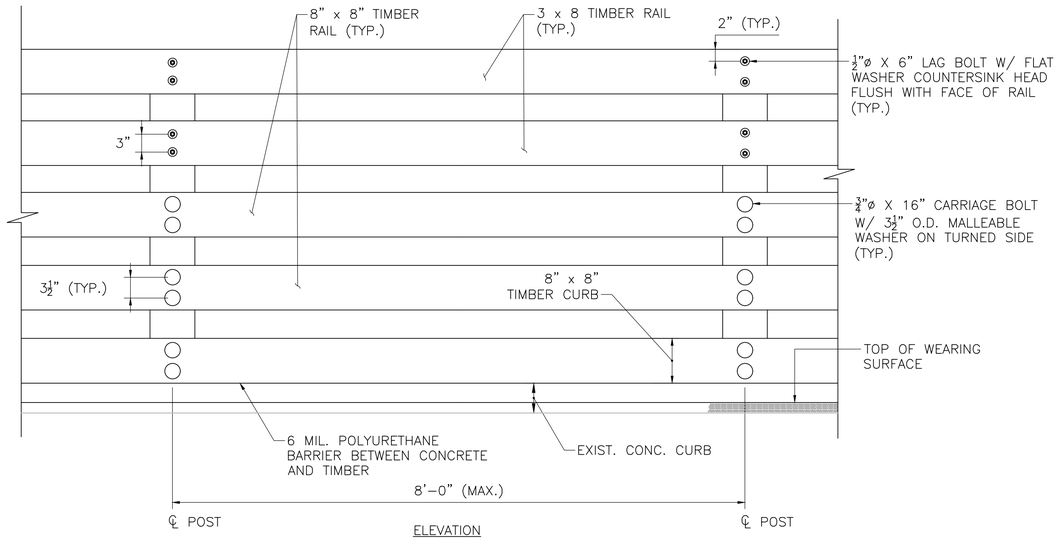
1. BRIDGE GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY. FINAL LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR BASED ON FIELD MEASUREMENTS.
2. FOR TIMBER BRIDGE RAIL DETAILS, SEE "CONCRETE CULVERT DETAILS" SHEET.
3. FOR MORE INFORMATION, SEE "BRIDGE GENERAL NOTES" SHEETS.

Plotted on 27-Jul-2021 3:35 PM
000000_BRI(CONCRETE CULVERT STA 285+19).DWG

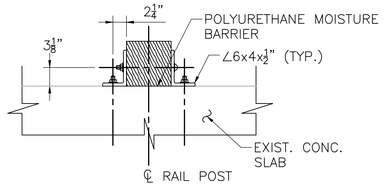
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	82	114
PROJECT FILE NO.	17112.00		

CULVERT PLAN - 3
CONCRETE CULVERT DETAILS



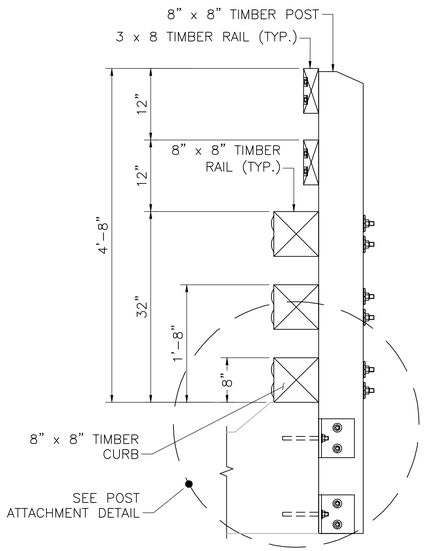
ELEVATION



PLAN

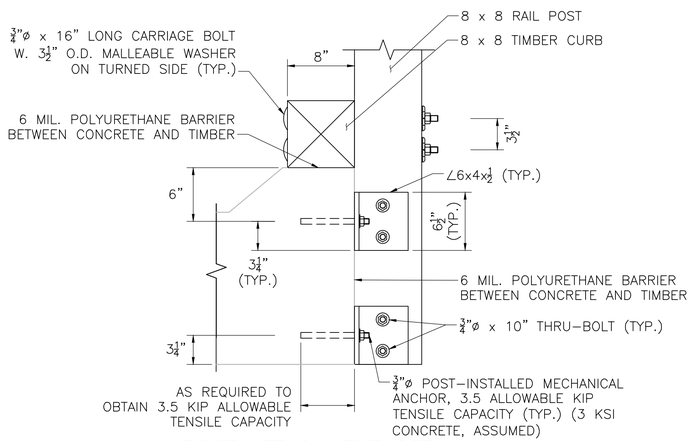
TIMBER RAIL AND POST ATTACHMENT DETAIL

SCALE: 1"=1'–0"



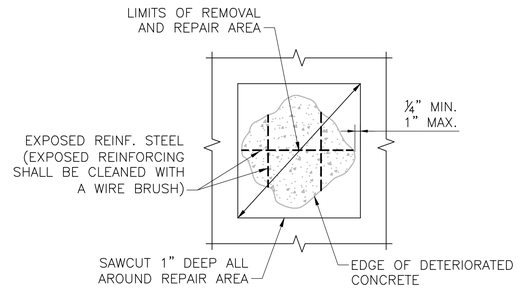
TIMBER RAIL DETAIL

SCALE: 1"=1'–0"



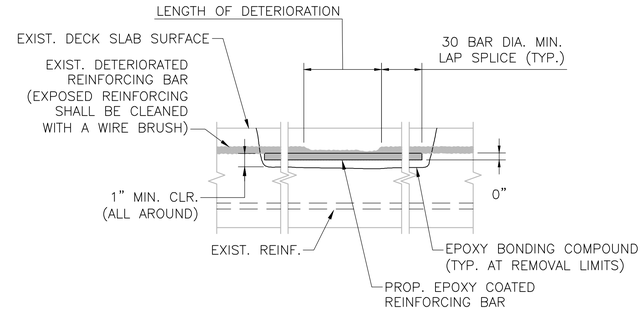
POST ATTACHMENT DETAIL

SCALE: 1–1/2"=1'–0"



LIMITS OF REPAIR (PLAN VIEW) TYPICAL FOR DECK REPAIR

NOT TO SCALE



DETERIORATED DECK REINFORCING BAR REPAIR DETAIL

NOT TO SCALE

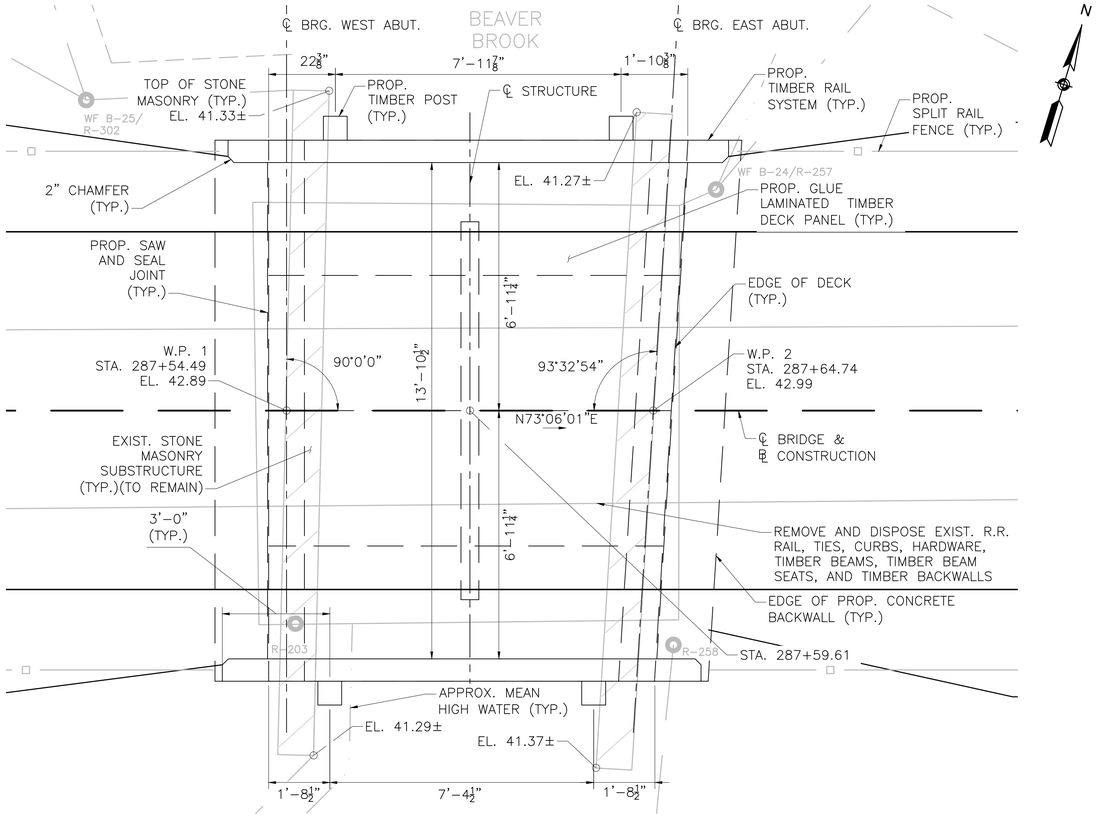
000000_BR\CONCRETE CULVERT DETAILS\.DWG Plotted on 26-Jul-2021 1:57 PM

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	83	114
PROJECT FILE NO.	17112.00		

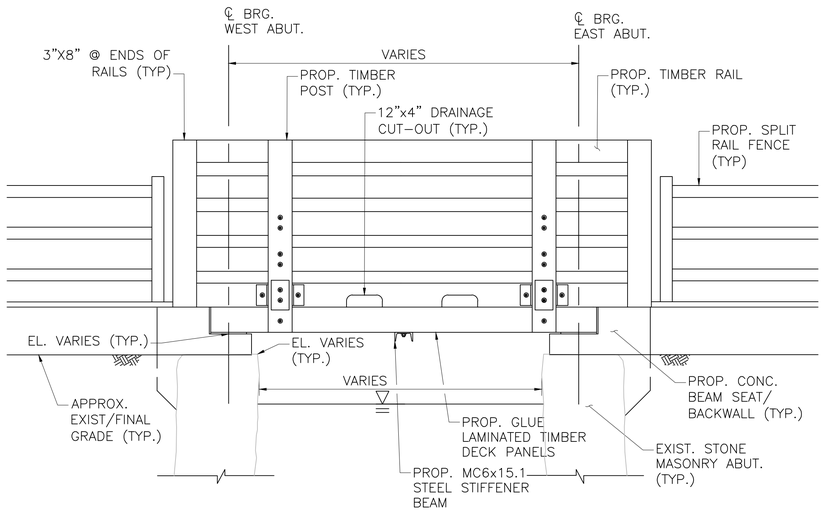
CULVERT PLAN - 4
BRIDGE No. 8.75
TIMBER CULVERT - STA. 287+59

000000_BR(TIMBER CULVERT-PSE).DWG Plotted on 27-Jul-2021 4:26 PM



CULVERT PLAN

SCALE: 1/2"=1'-0"

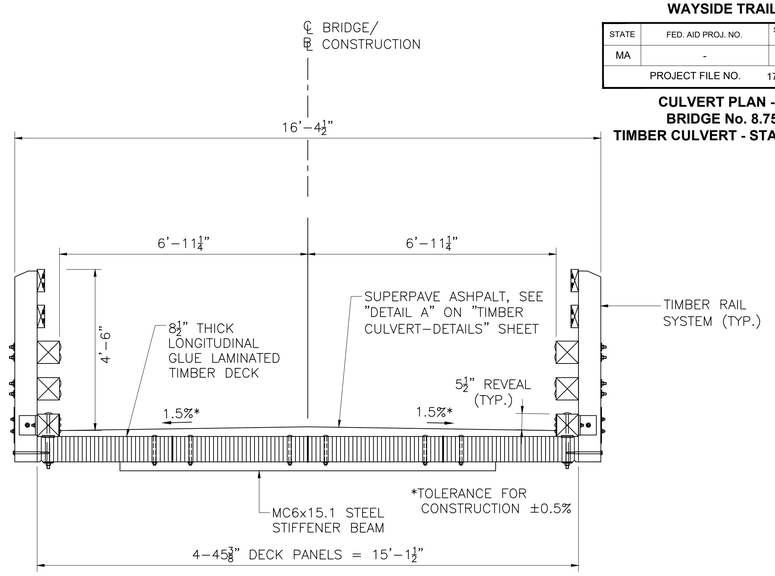


CULVERT ELEVATION

SCALE: 1/2"=1'-0"

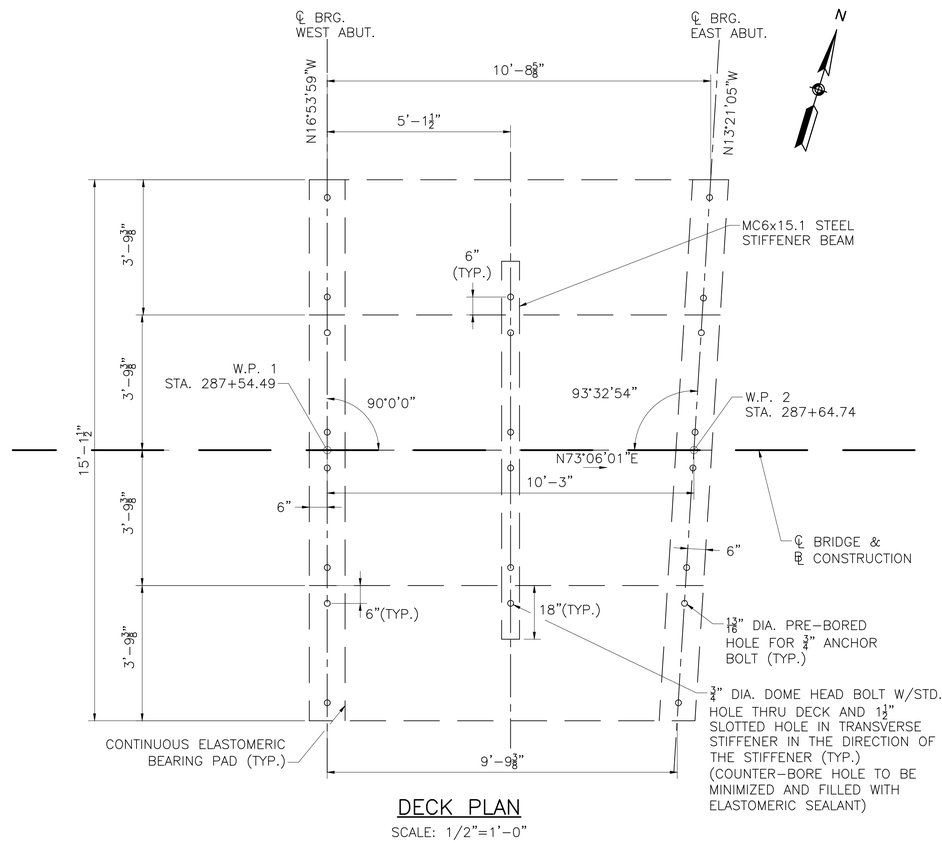
NOTES:

1. BRIDGE GEOMETRY, ORIENTATION, STATIONING, AND ELEVATIONS ARE SHOWN FOR ESTIMATING PURPOSES ONLY. FINAL LAYOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR BASED ON FIELD MEASUREMENTS.
2. FOR MORE INFORMATION, SEE "TIMBER CULVERT-DETAILS" AND "BRIDGE GENERAL NOTES" SHEETS.



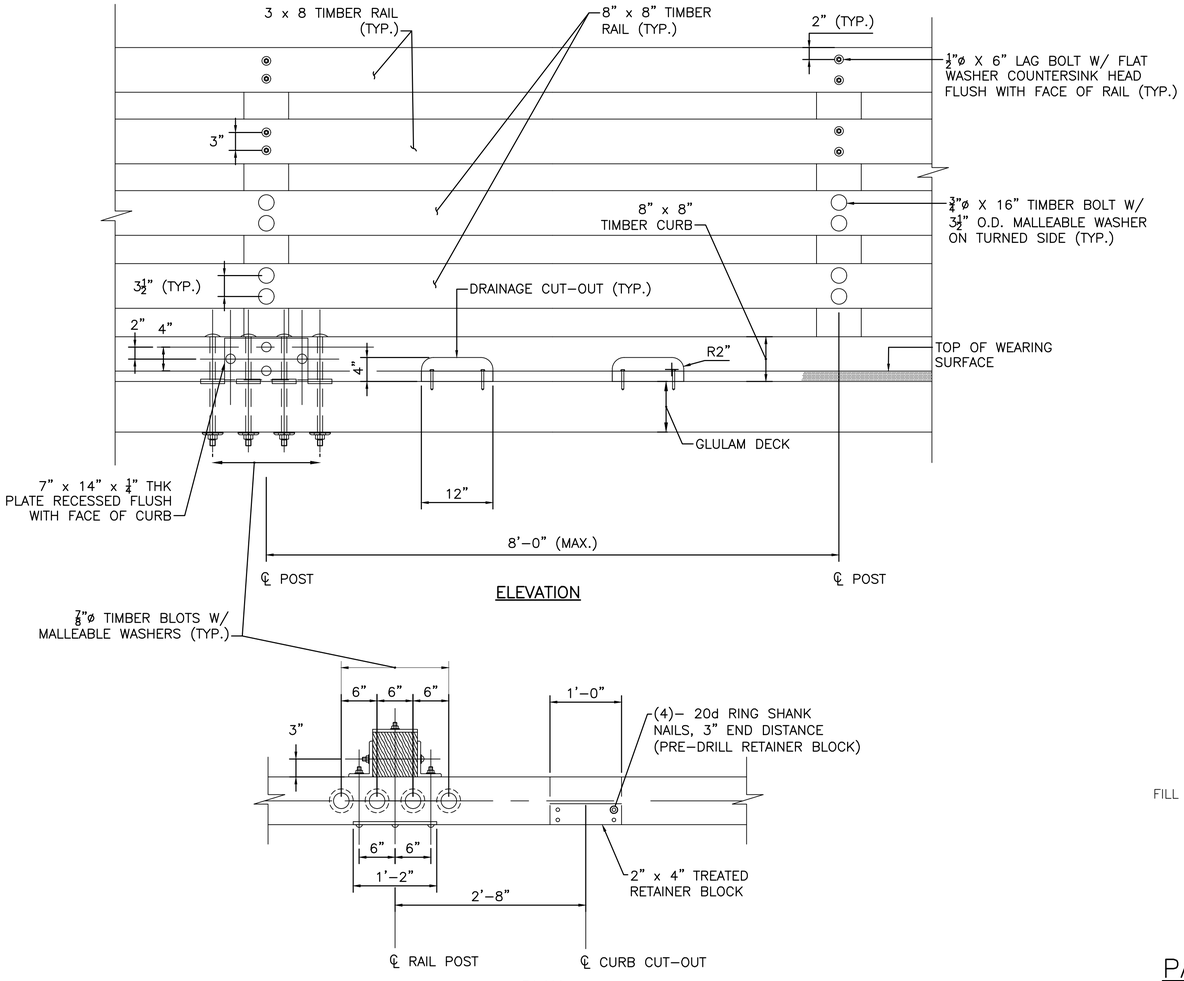
TYPICAL SECTION TIMBER CULVERT

SCALE: 1/2"=1'-0"



DECK PLAN

SCALE: 1/2"=1'-0"

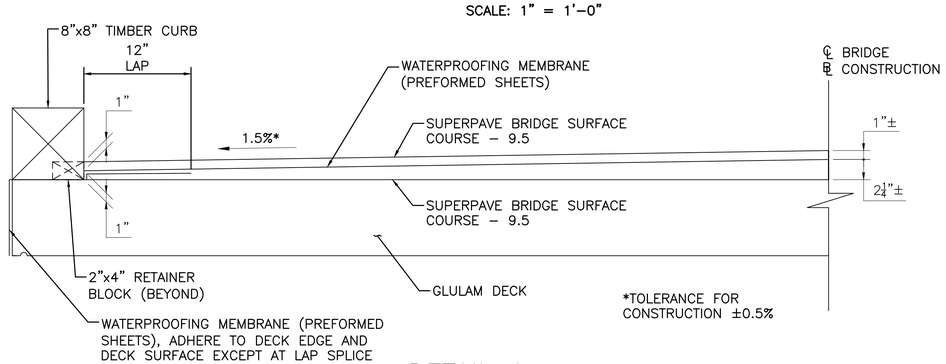


ELEVATION

PLAN

CURB AND RAIL POST ATTACHMENT DETAIL

SCALE: 1" = 1'-0"

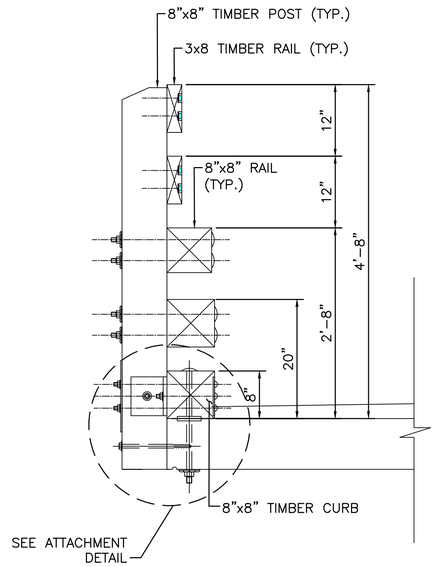


DETAIL A

SCALE: 1 1/2" = 1'-0"

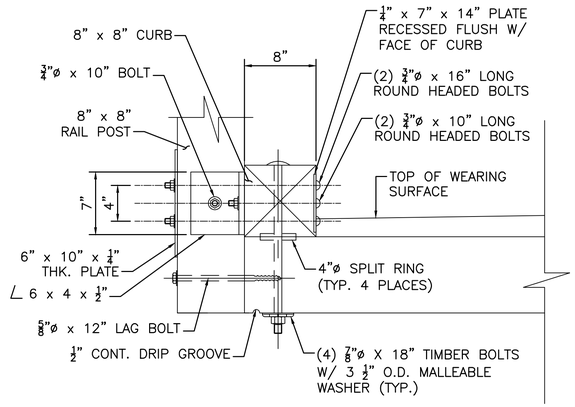
NOTES:

1. ALLOW FIRST BRIDGE SURFACE COURSE TO COOL SUFFICIENTLY SO WATERPROOFING MEMBRANE DOES NOT TEAR WHEN APPLYING THE SECOND BRIDGE SURFACE COURSE.
2. SEE "DETAIL B", THIS SHEET.



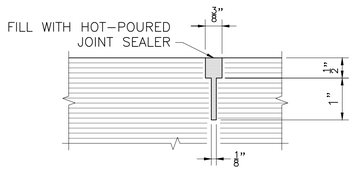
RAIL DETAIL

SCALE: 1" = 1'-0"



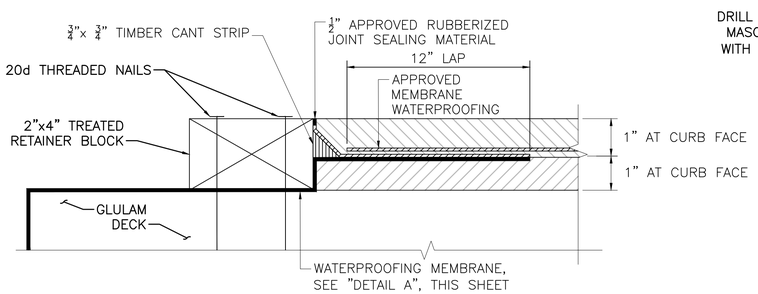
ATTACHMENT DETAIL

SCALE: 1 1/2" = 1'-0"



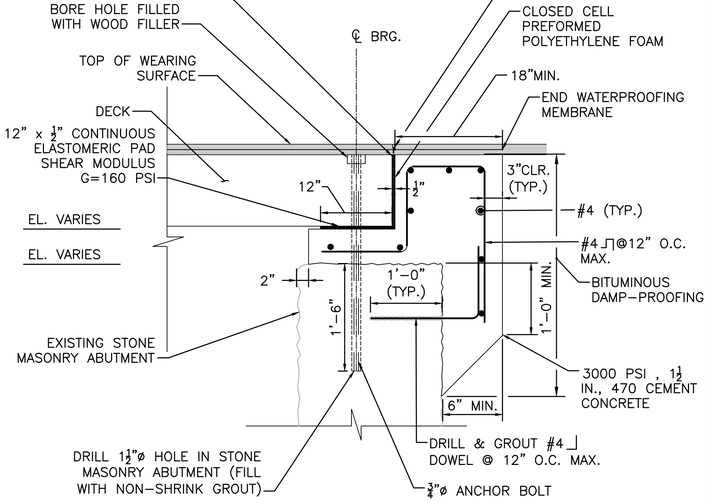
PAVEMENT SAWCUT DETAIL

SCALE: 1" = 1'-0"



DETAIL B

NO SCALE



TYPICAL BEAM SEAT DETAIL

SCALE: 1" = 1'-0"

WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	84	114
PROJECT FILE NO.	17112.00		

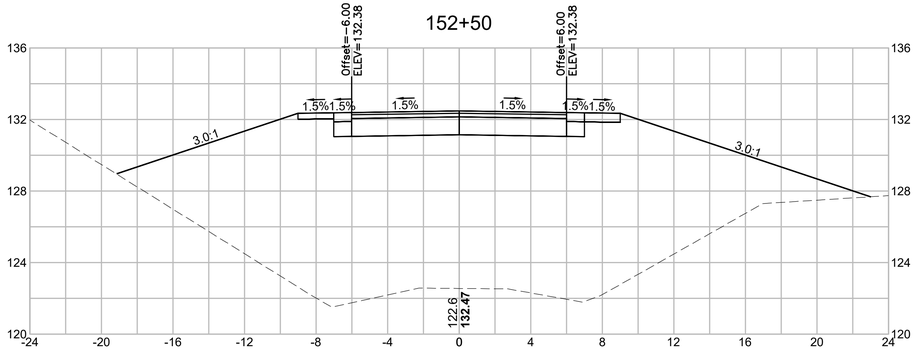
CULVERT PLAN - 5
BRIDGE No. 8.75
TIMBER CULVERT - DETAILS

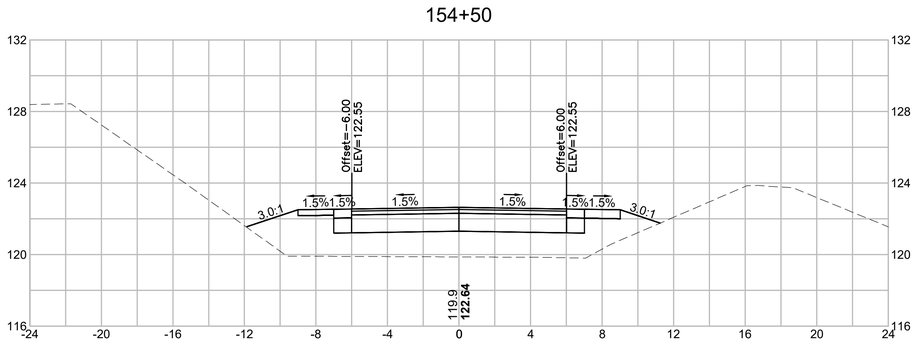
000000_BR(TIMBER CULVERT-DETAILS).DWG Plotted on 28-Jul-2021 7:37 AM

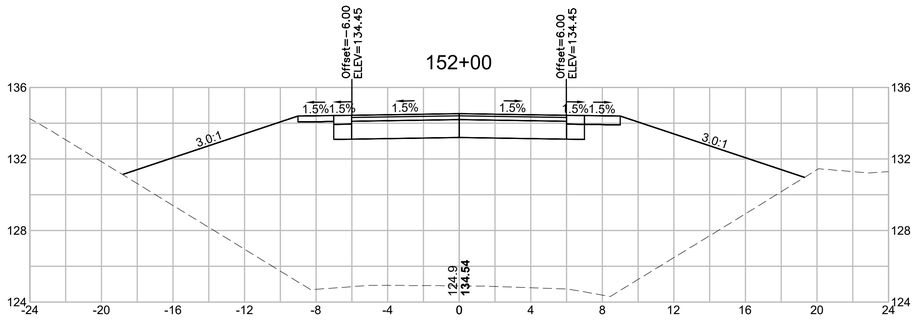
WALTHAM
WAYSIDE TRAIL

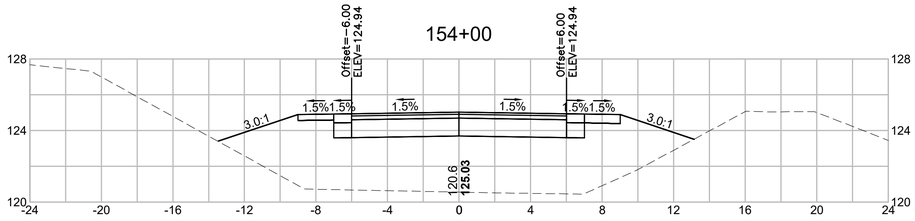
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	85	114
PROJECT FILE NO.	17112.00		

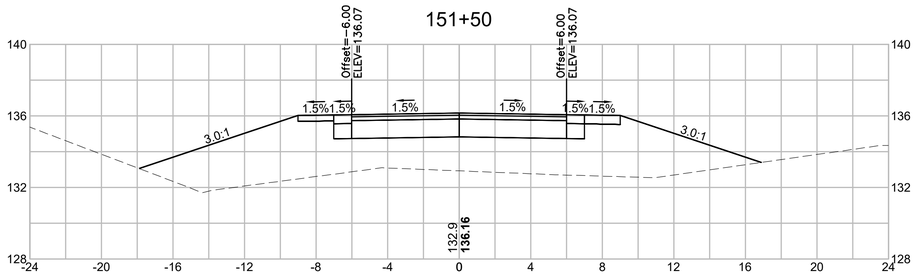
CROSS SECTIONS - 1

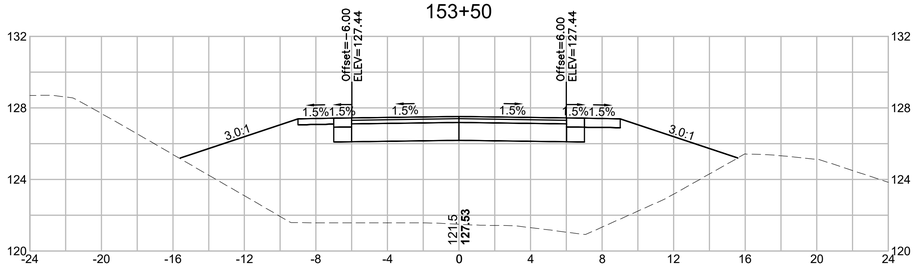


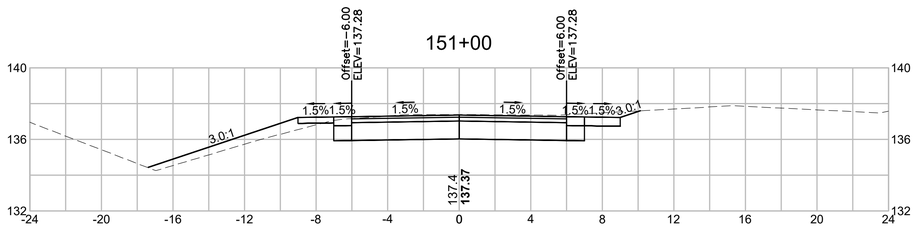


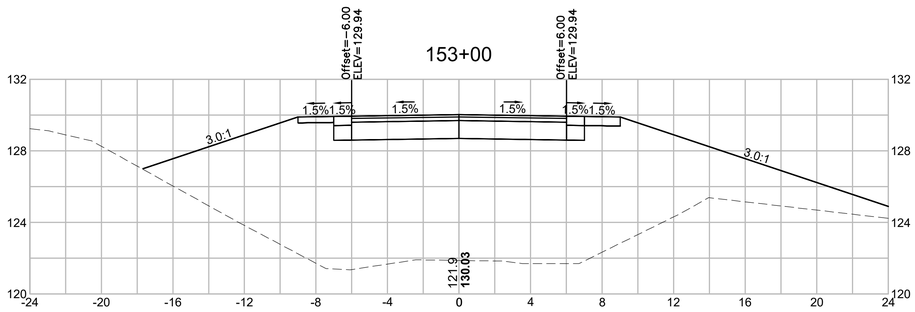












HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

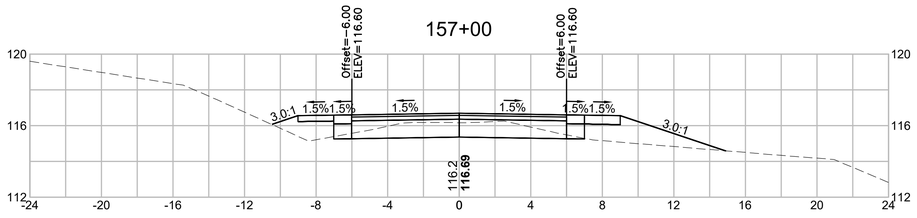
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WALTHAM
WAYSIDE TRAIL

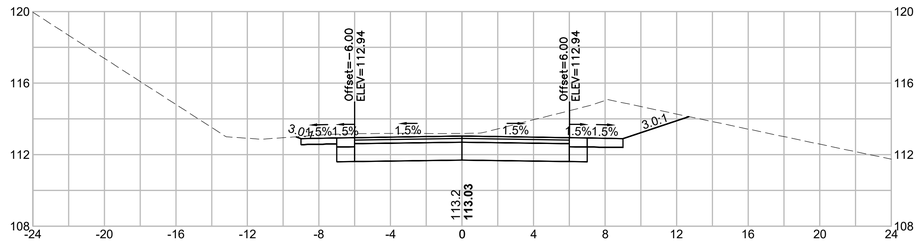
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	86	114
PROJECT FILE NO.	17112.00		

CROSS SECTIONS - 2

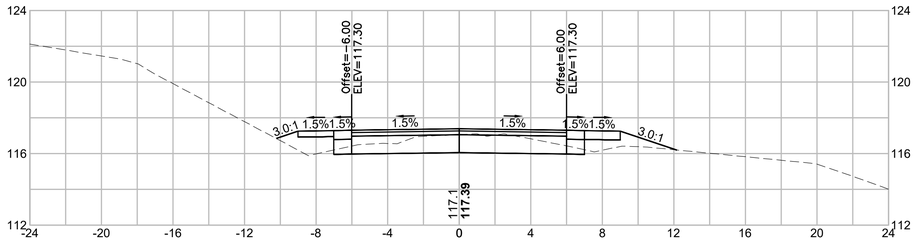
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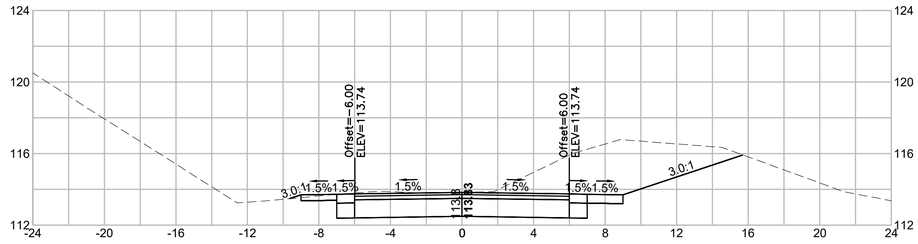
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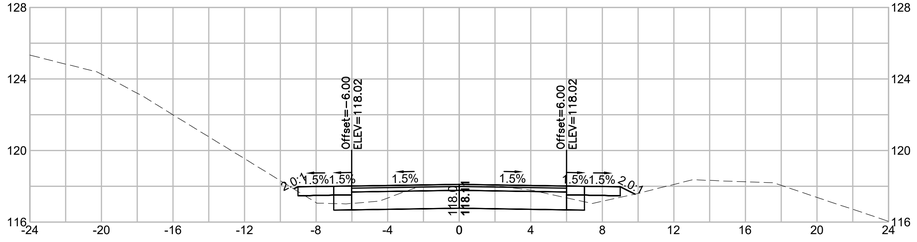
156+50



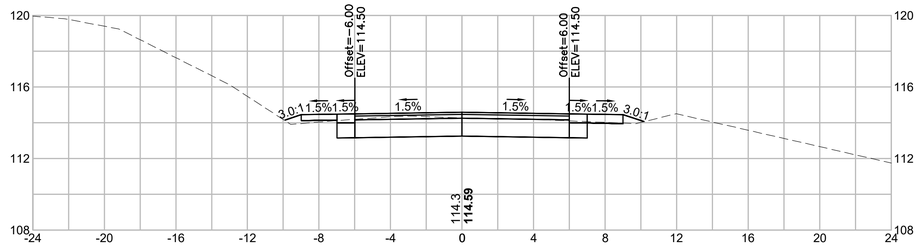
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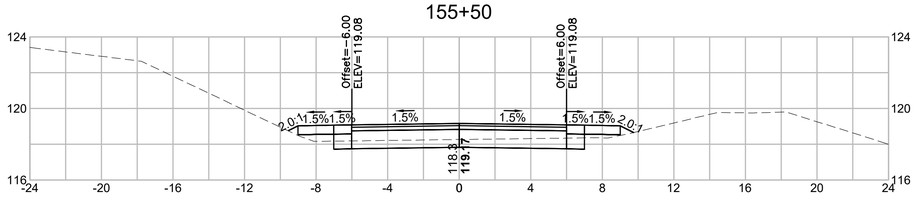
156+00



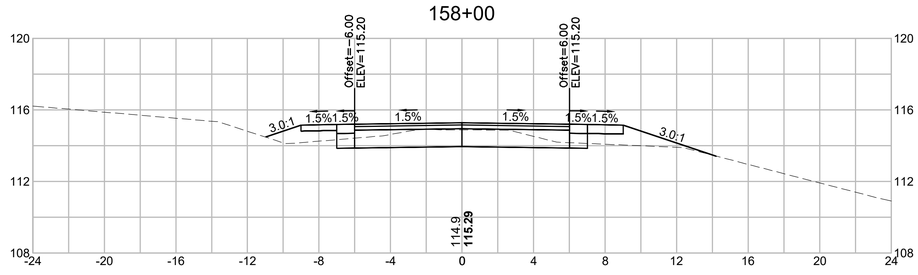
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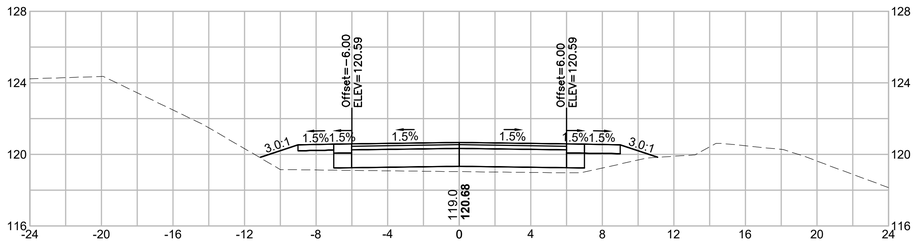
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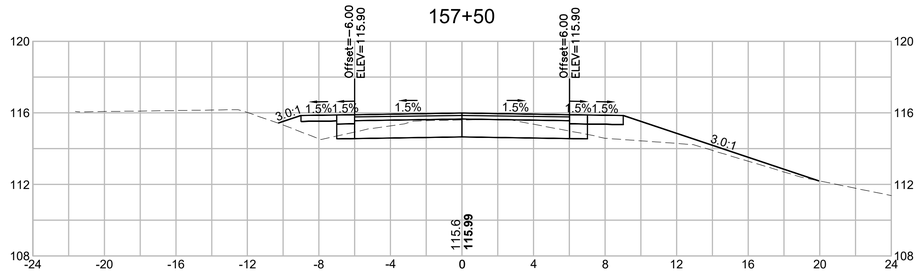
158+00



155+00



157+50



HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

000000_HD\SECTIONS\.DWG Plotted on 26-Jul-2021 2:12 PM

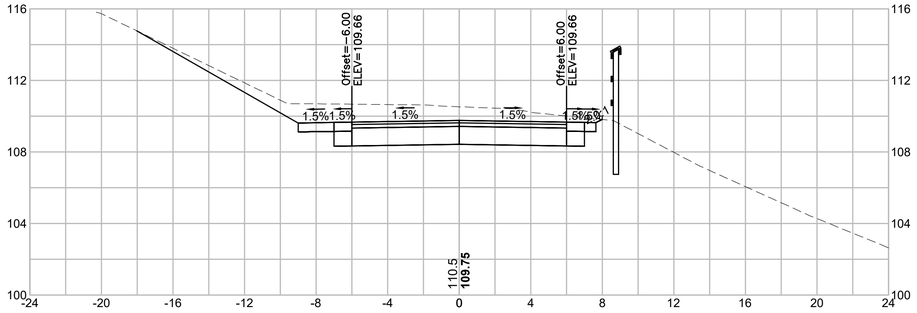
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	87	114
PROJECT FILE NO.	17112.00		

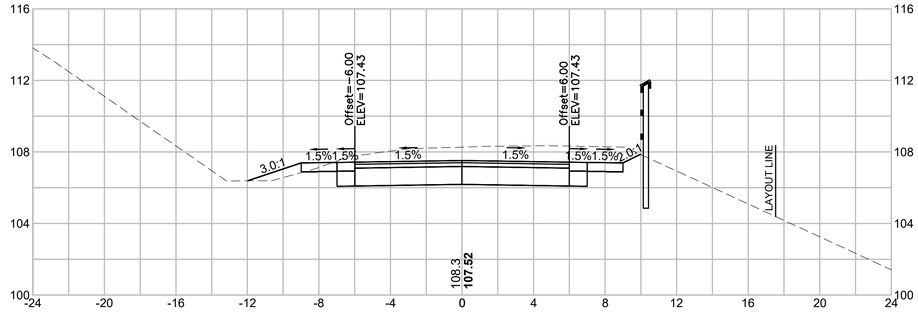
CROSS SECTIONS - 3

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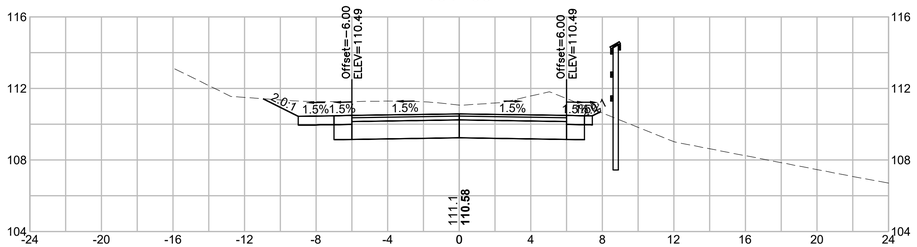
161+50



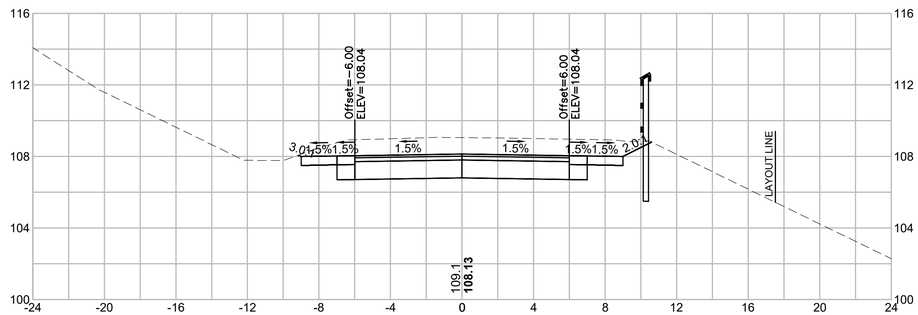
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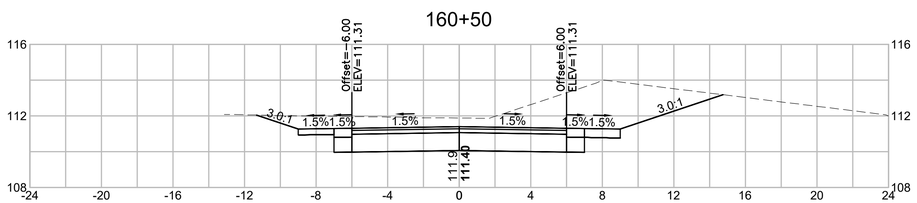
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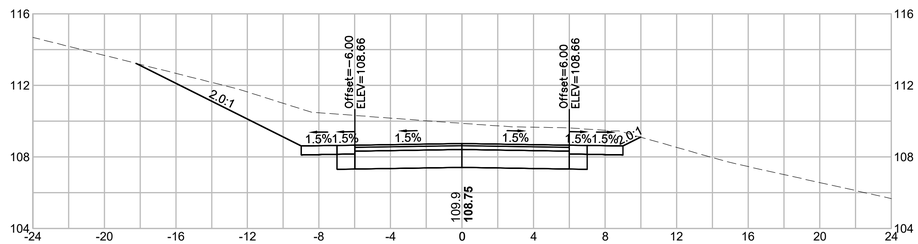
163+00



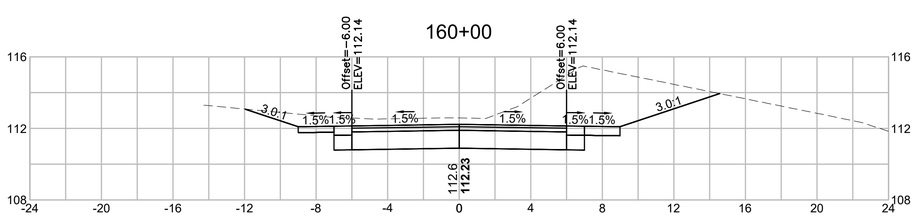
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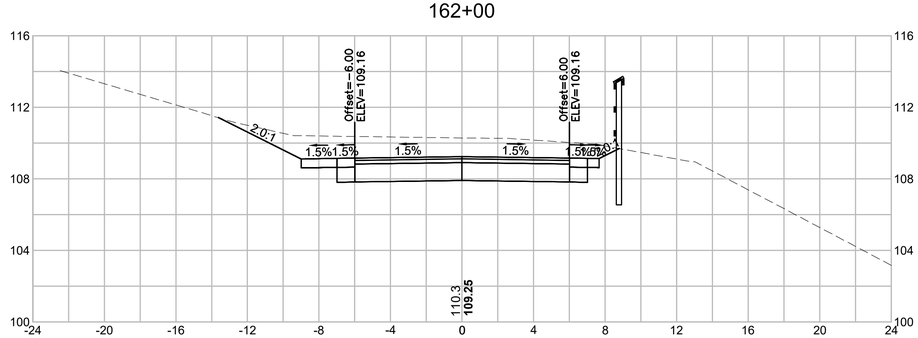
162+50



160+00



162+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

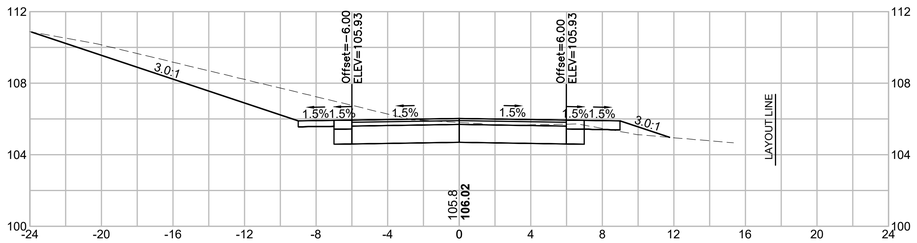
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	88	114
PROJECT FILE NO.	17112.00		

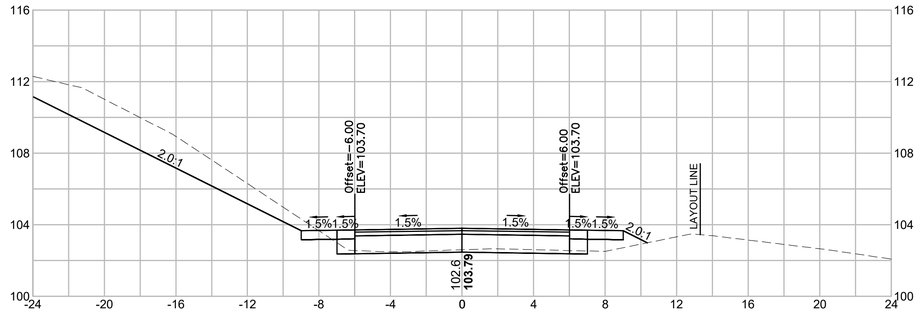
CROSS SECTIONS - 4

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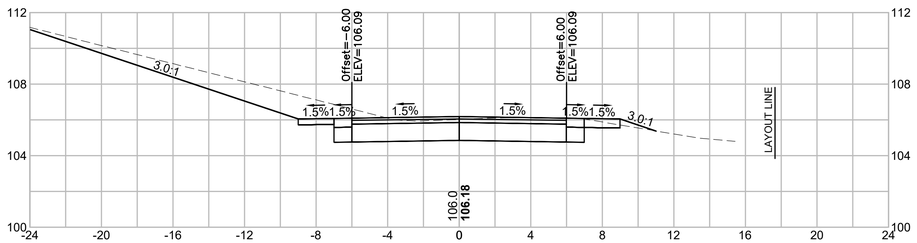
166+00



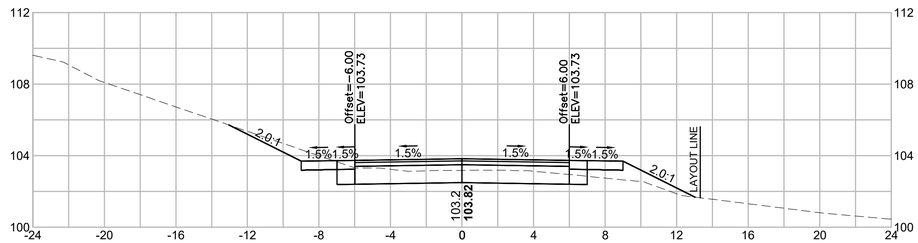
168+50



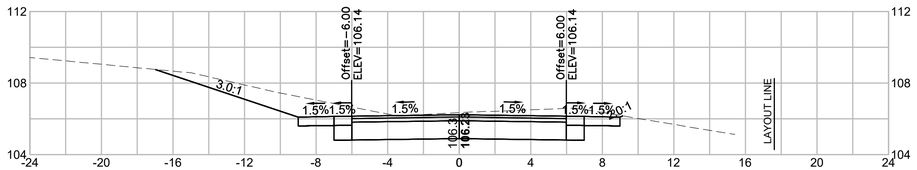
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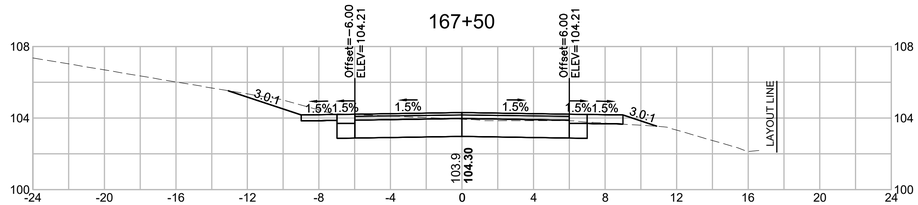
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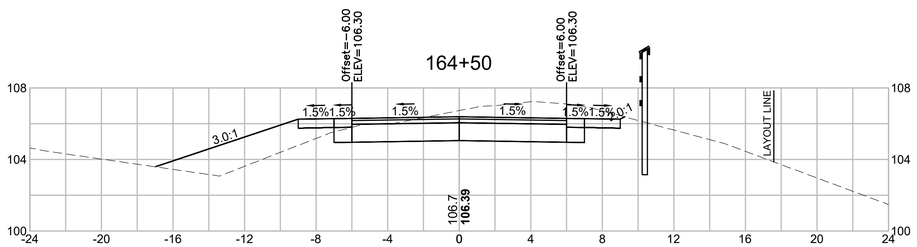
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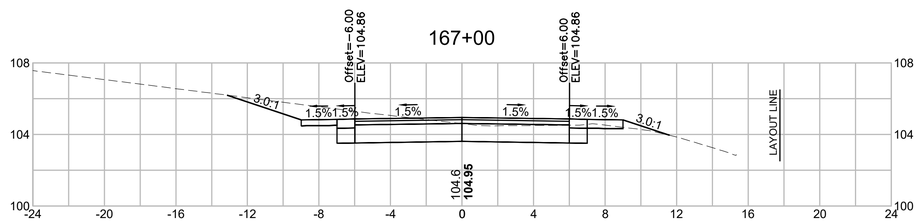
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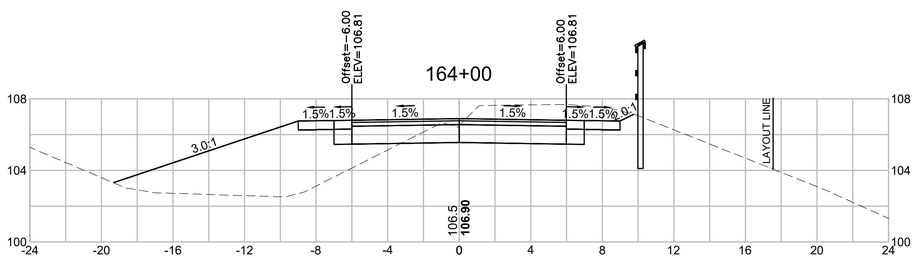
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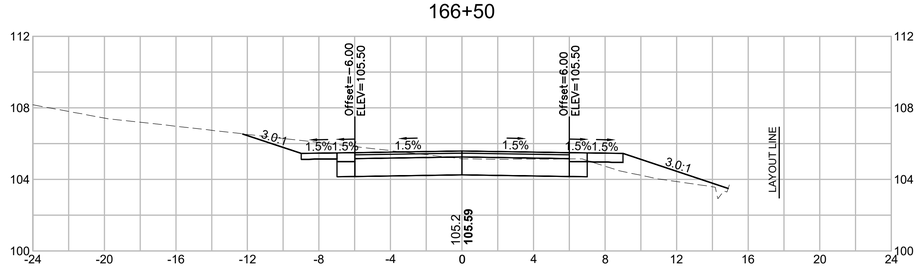
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164+00



166+50



HOR. SCALE IN FEET
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VER. SCALE IN FEET

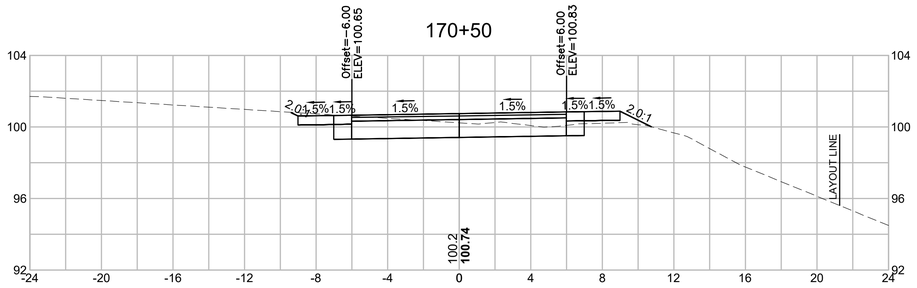
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	89	114
PROJECT FILE NO.	17112.00		

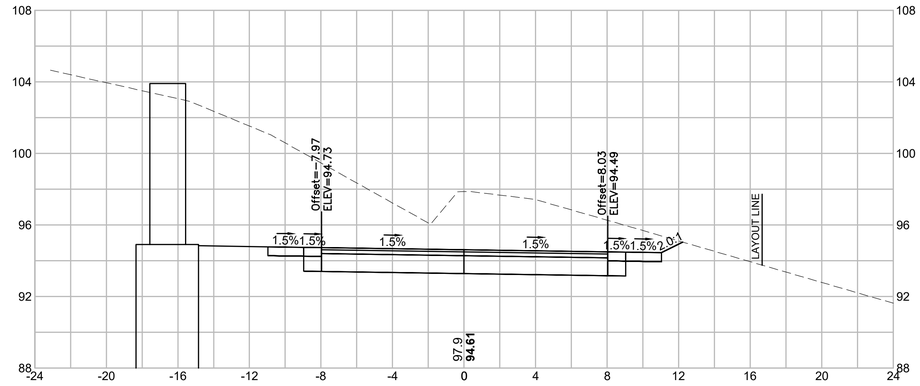
CROSS SECTIONS - 5

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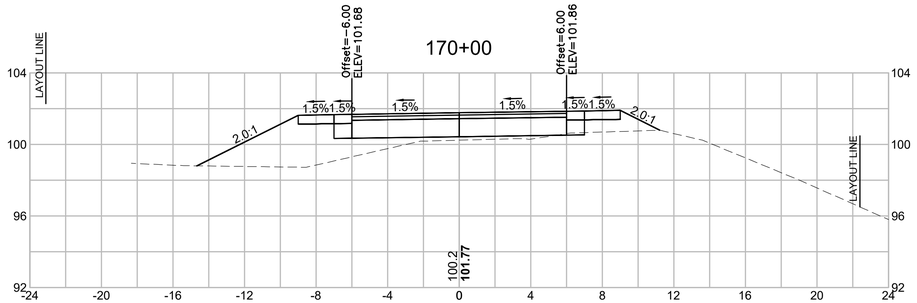
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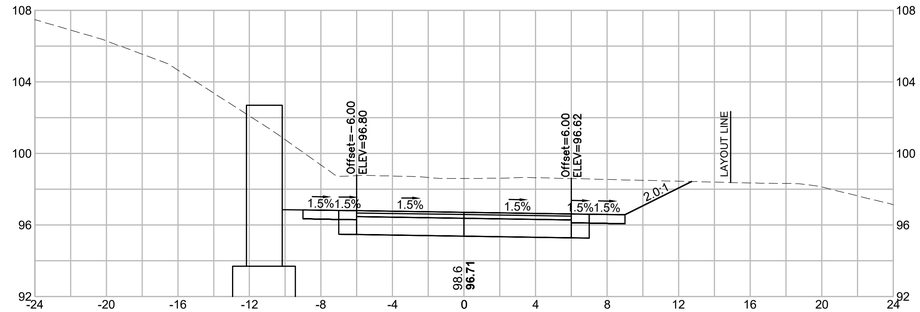
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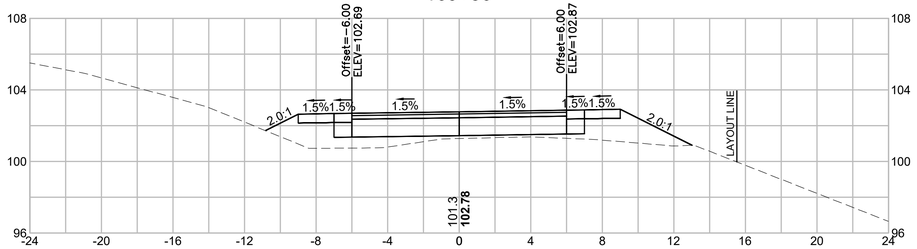
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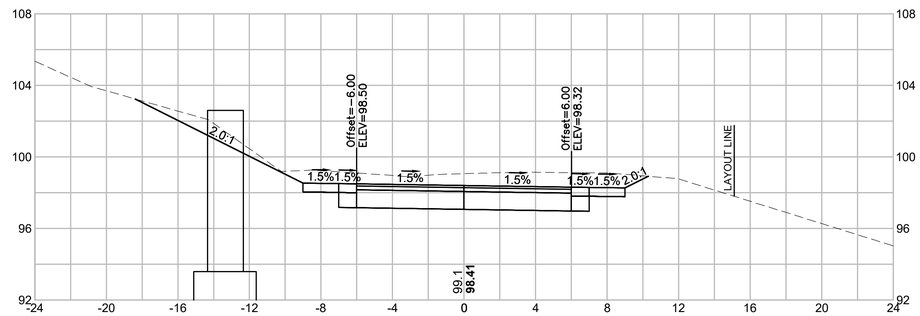
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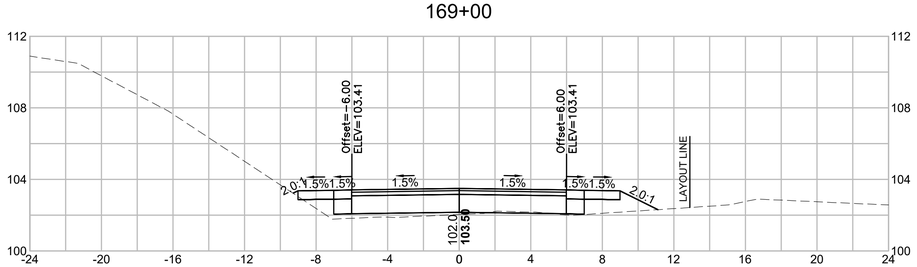
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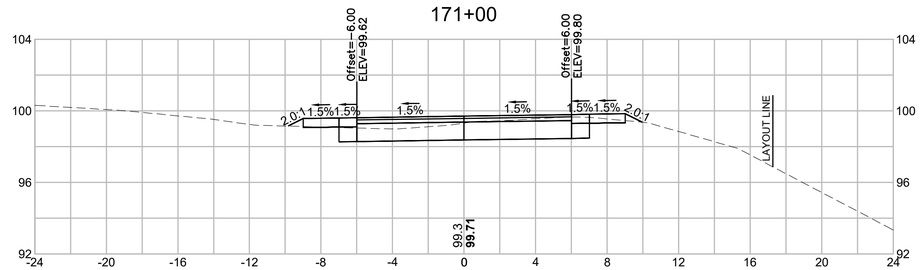
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169+00



171+00



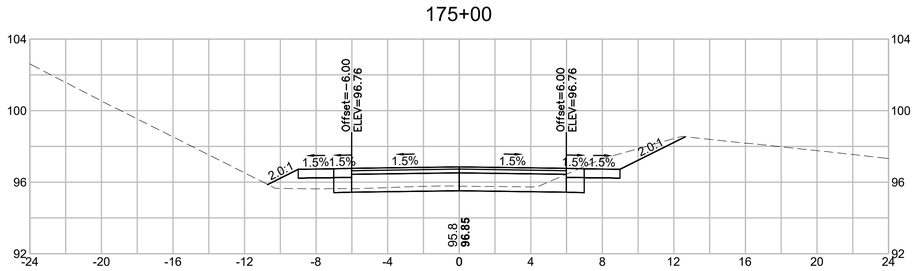
HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

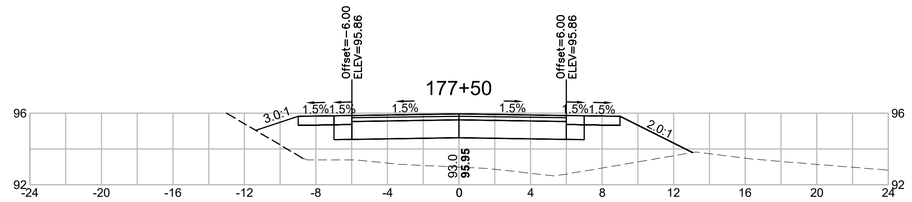
WALTHAM
WAYSIDE TRAIL

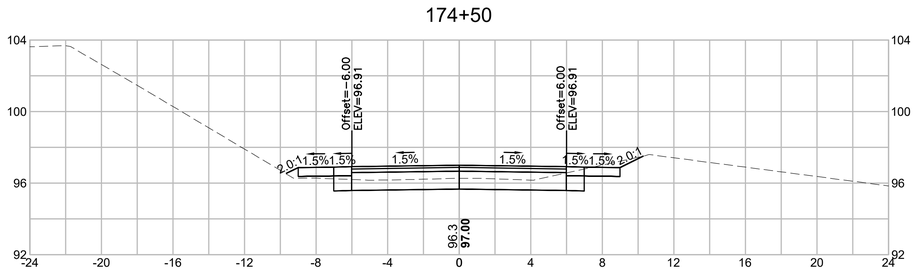
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	90	114
PROJECT FILE NO.	17112.00		

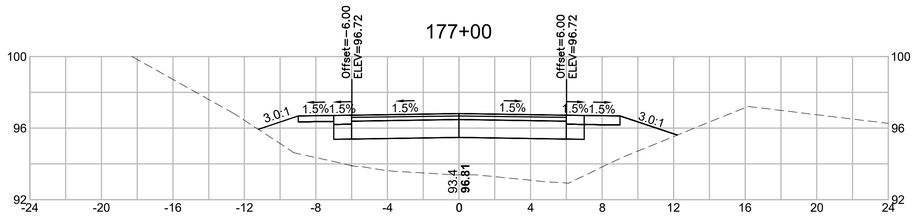
CROSS SECTIONS - 6

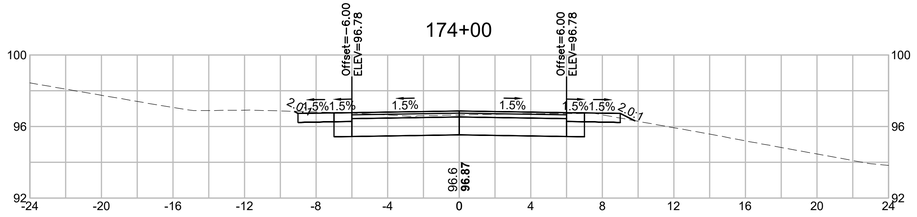
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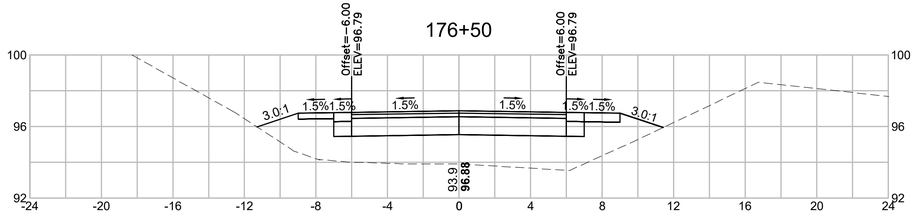


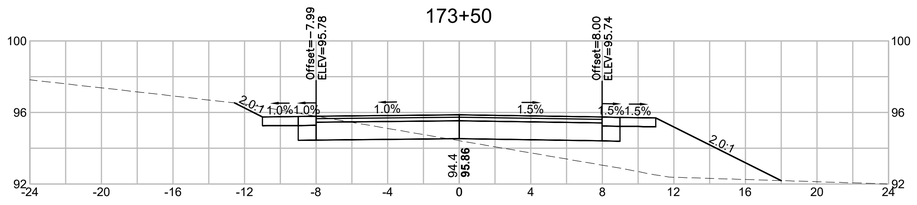


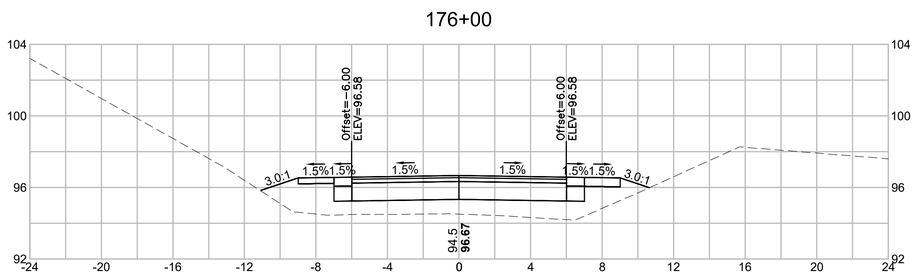


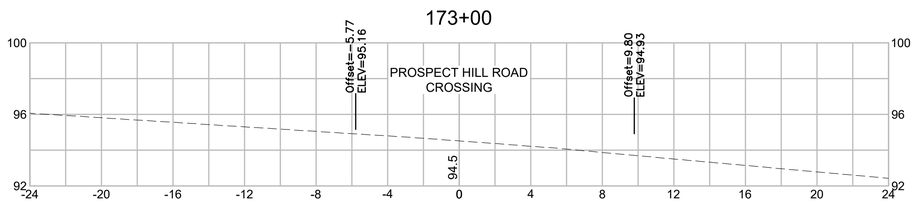


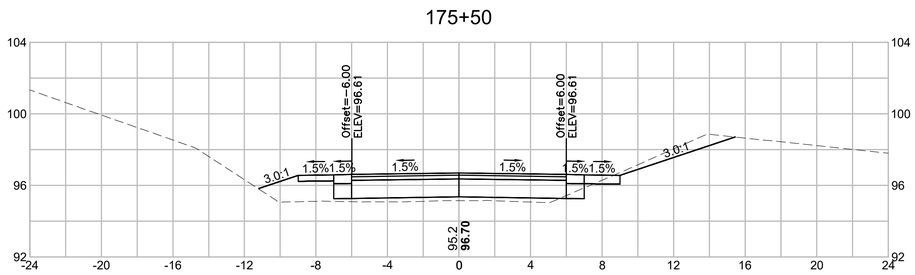


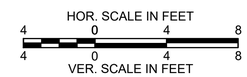










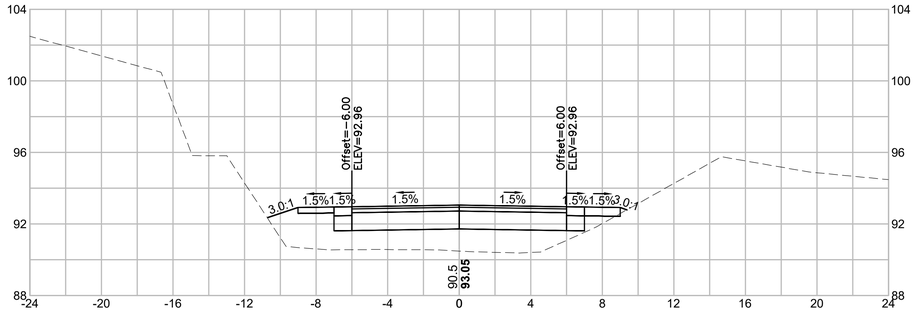


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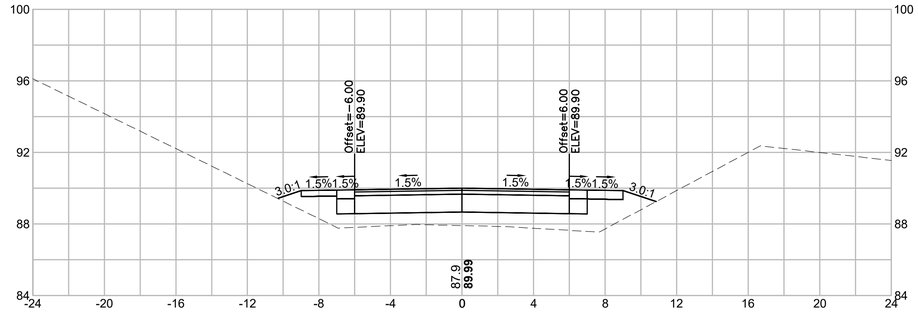
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	91	114
PROJECT FILE NO.	17112.00		

CROSS SECTIONS - 7

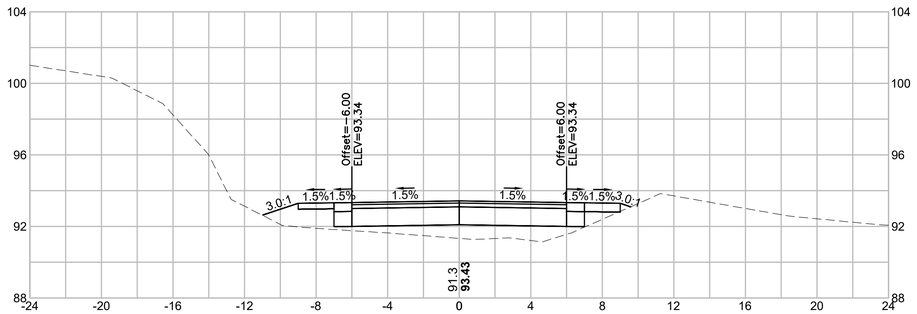
179+50



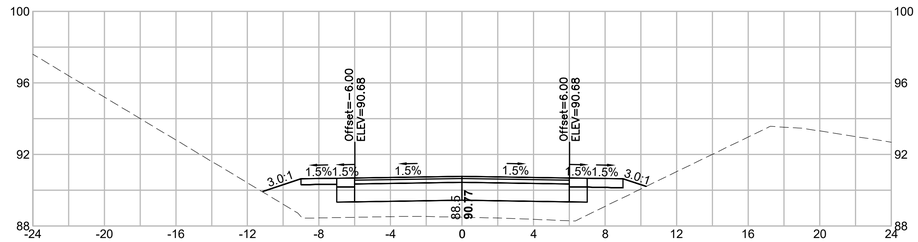
181+50



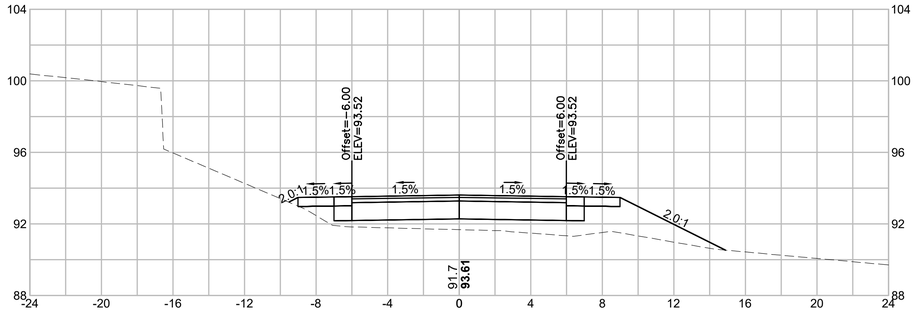
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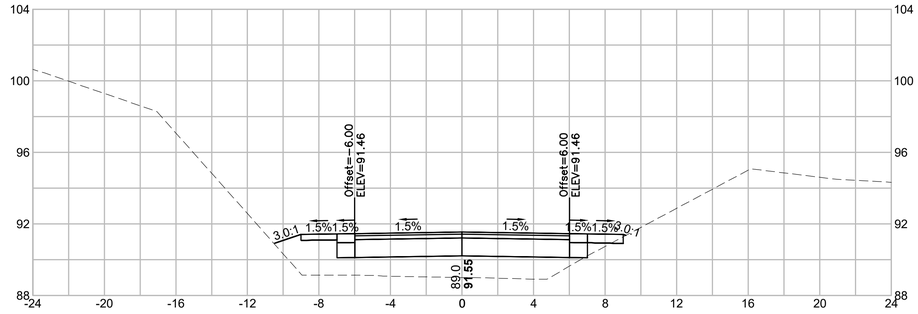
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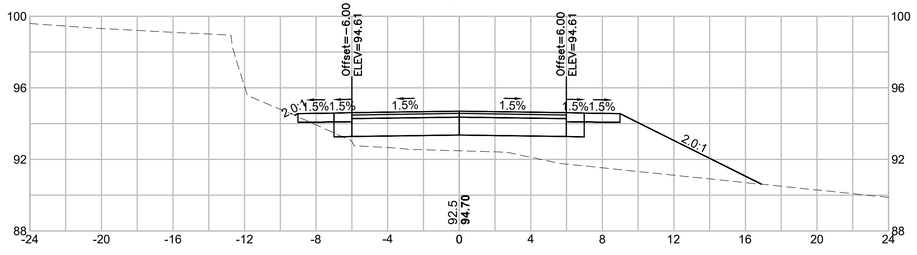
178+50



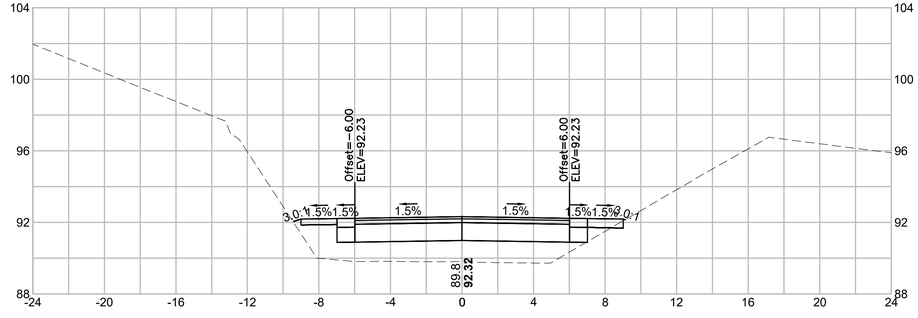
180+50



178+00



180+00



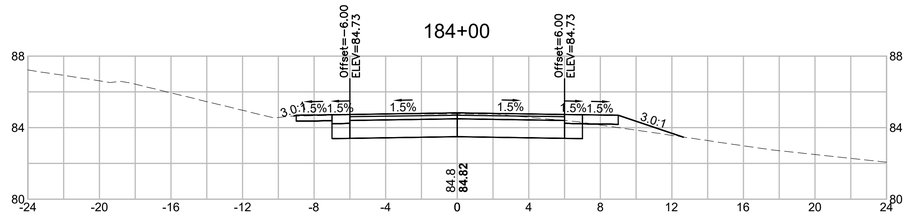
HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

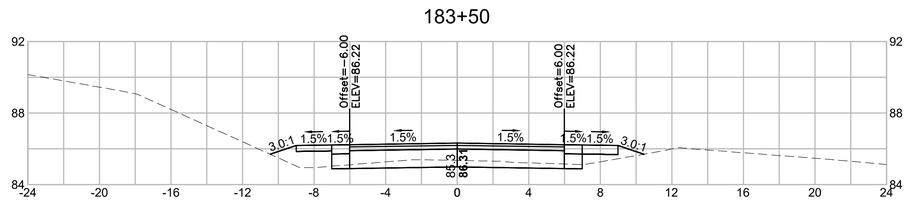
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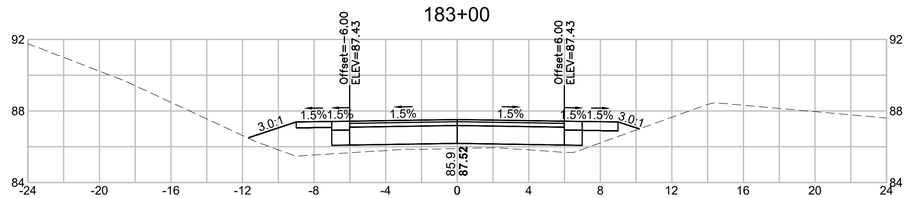
WALTHAM
WAYSIDE TRAIL

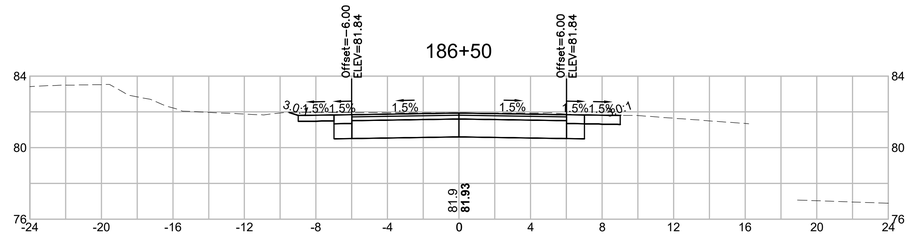
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	92	114
PROJECT FILE NO.	17112.00		

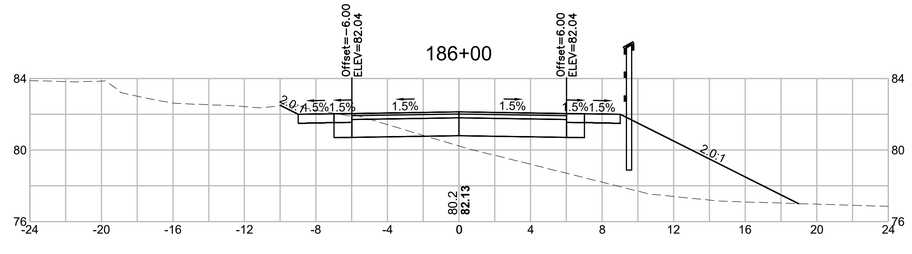
CROSS SECTIONS - 8

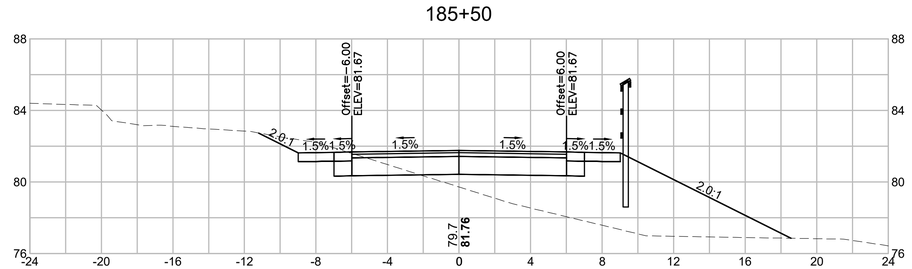


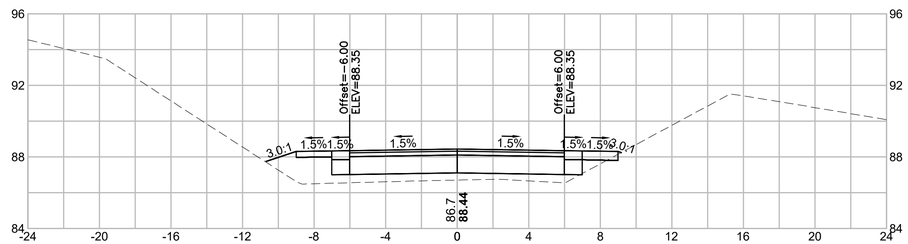


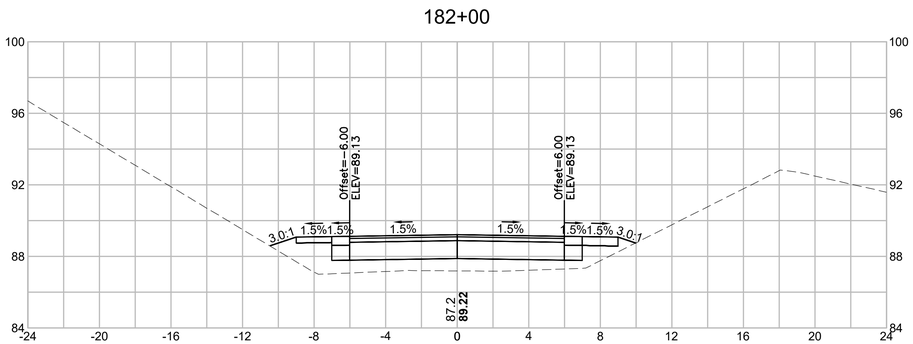


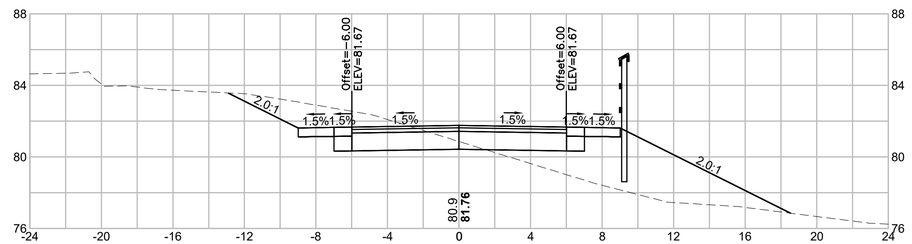


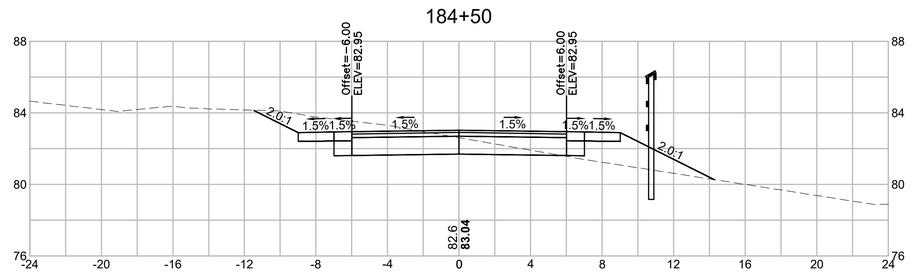












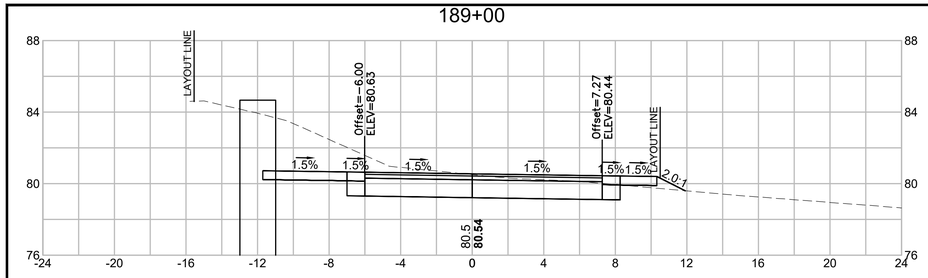
HOR. SCALE IN FEET
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4 0 4 8
VER. SCALE IN FEET

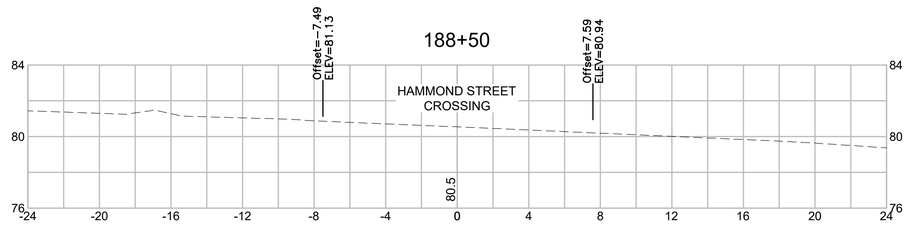
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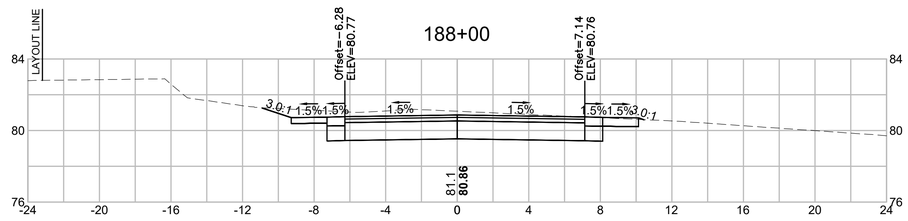
WALTHAM
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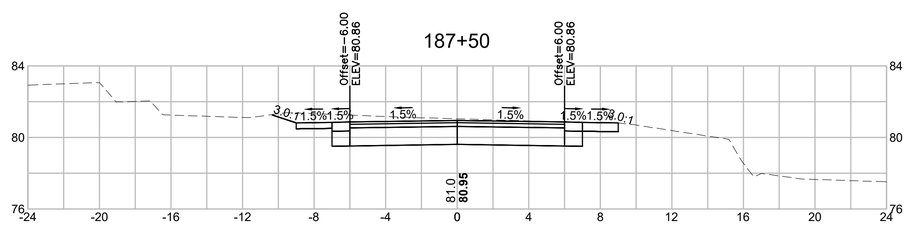
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	93	114
PROJECT FILE NO.	17112.00		

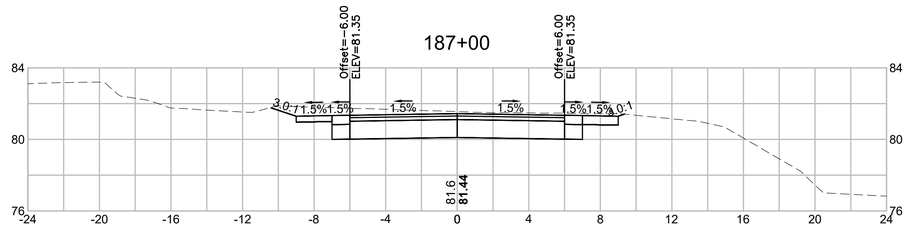
CROSS SECTIONS - 9

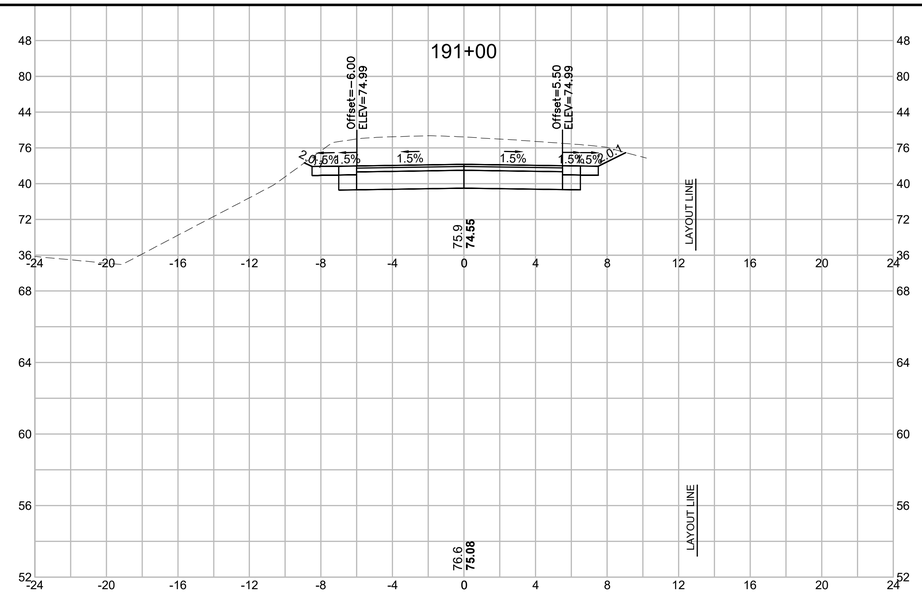


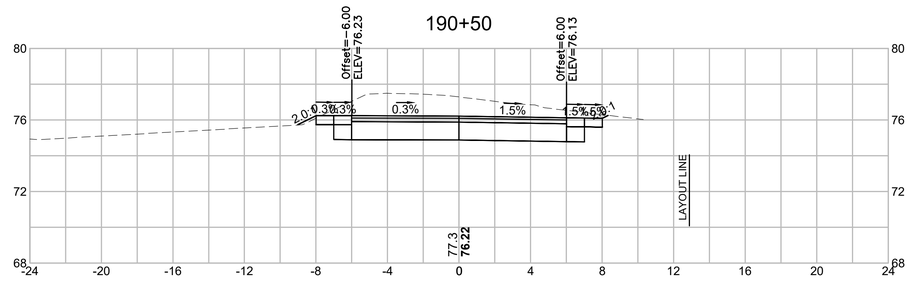


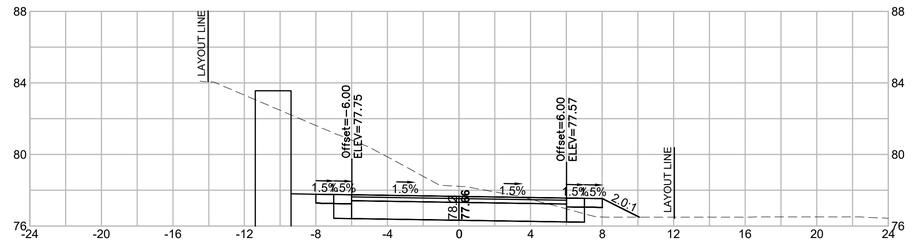


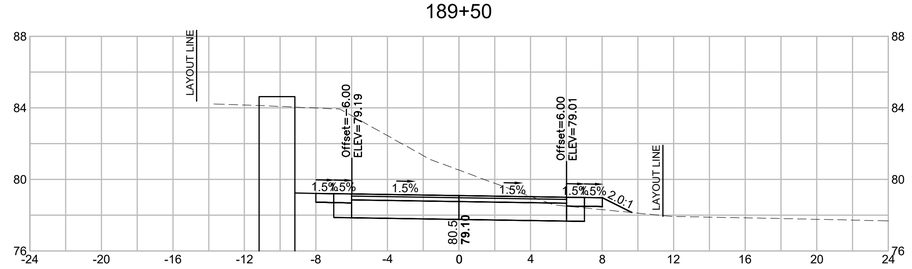












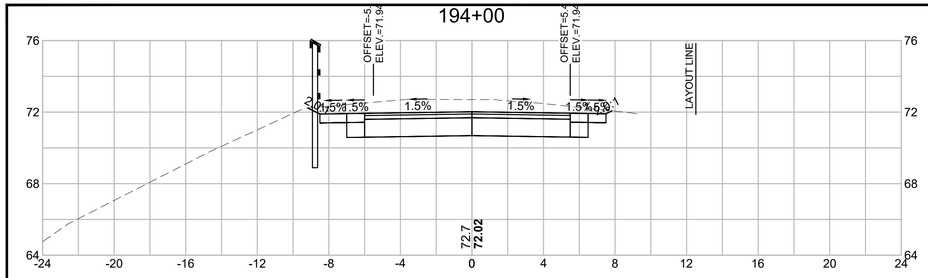
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

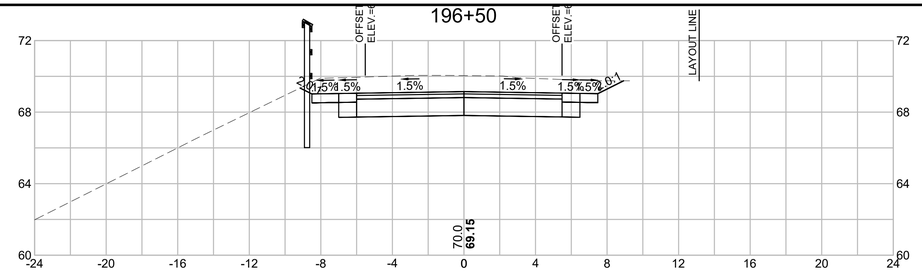
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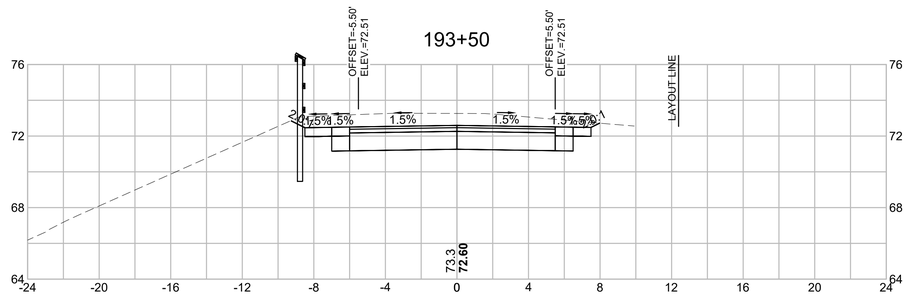
WALTHAM
WAYSIDE TRAIL

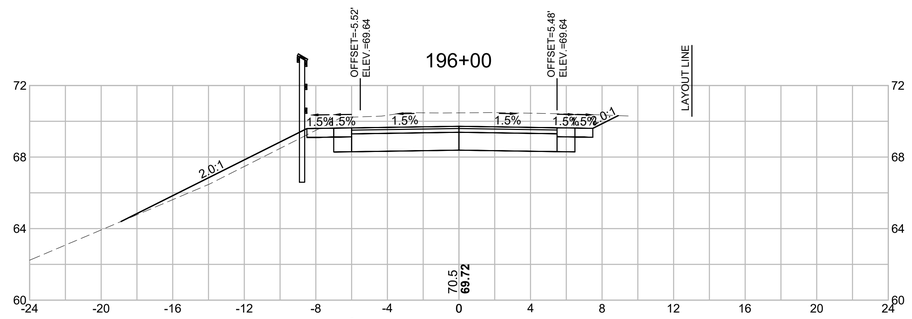
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	94	114
PROJECT FILE NO.	XXXXXX		

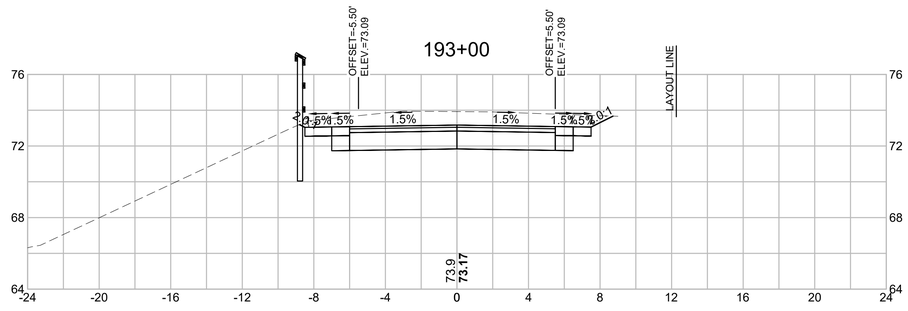
CROSS SECTIONS - 10

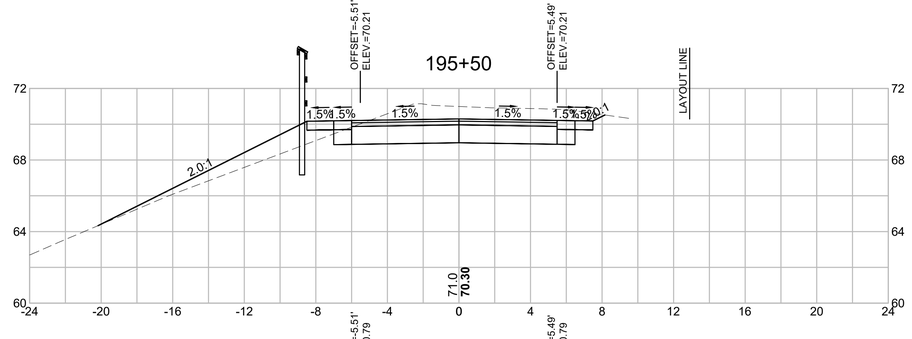


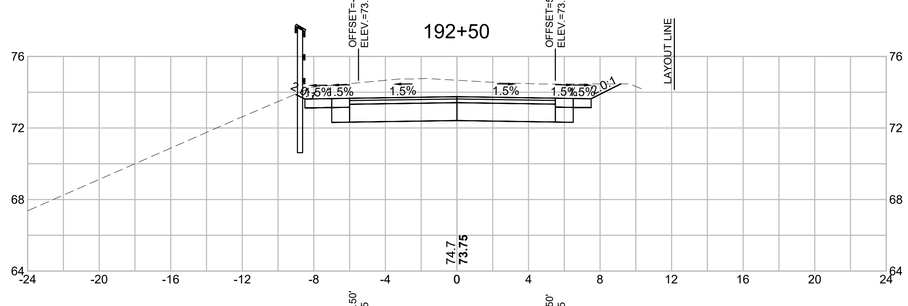


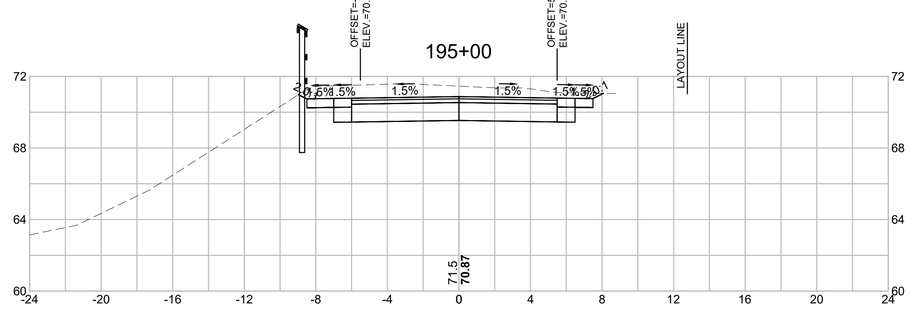


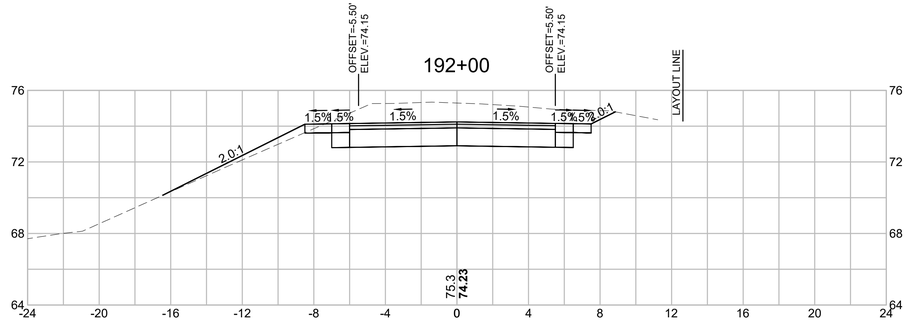


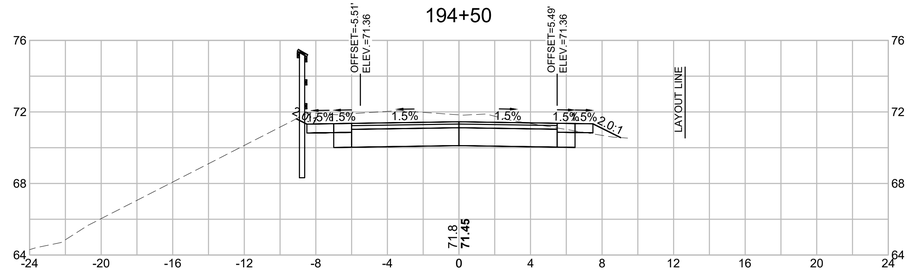












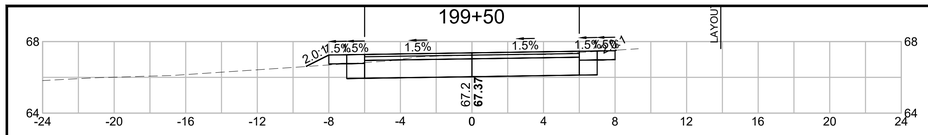
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VER. SCALE IN FEET

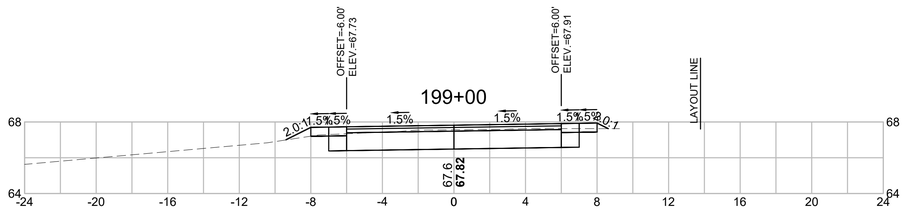
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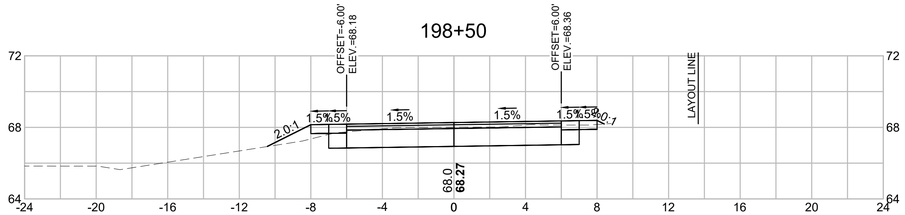
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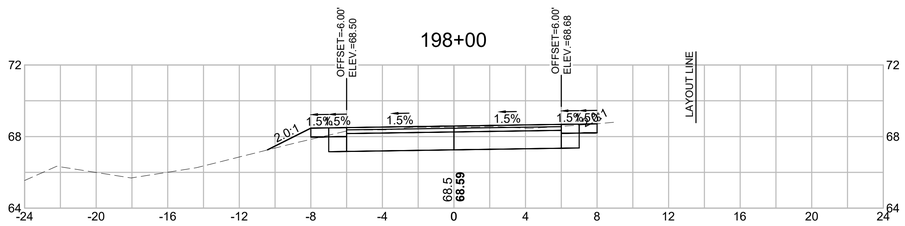
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	95	114
PROJECT FILE NO.	XXXXXX		

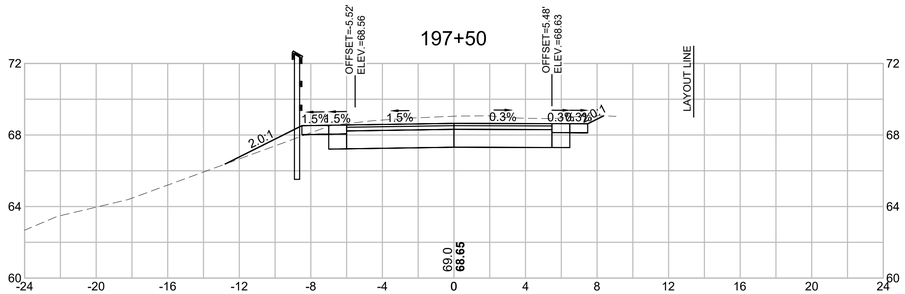
CROSS SECTIONS - 11

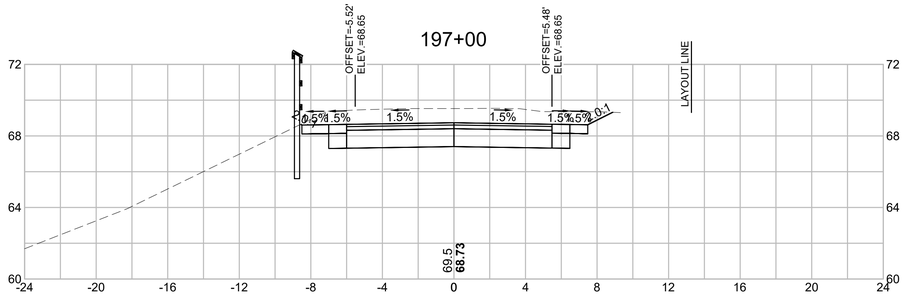


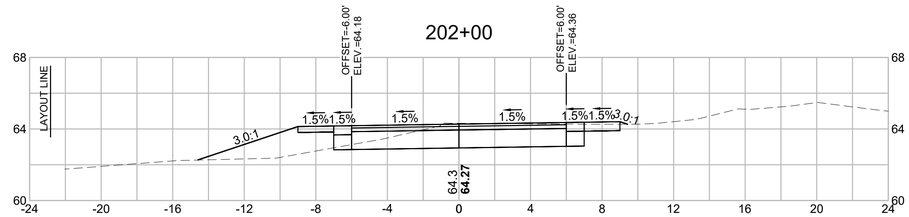


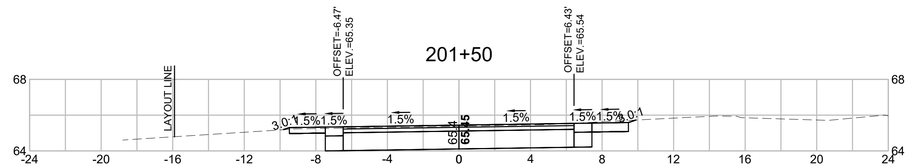


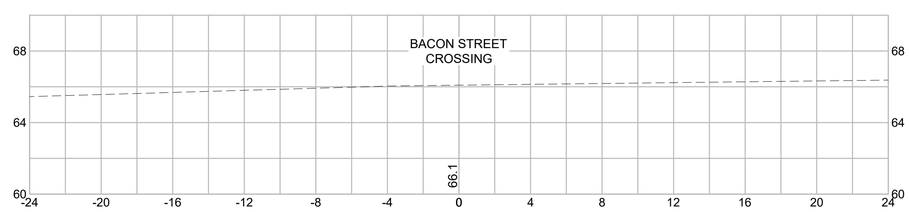


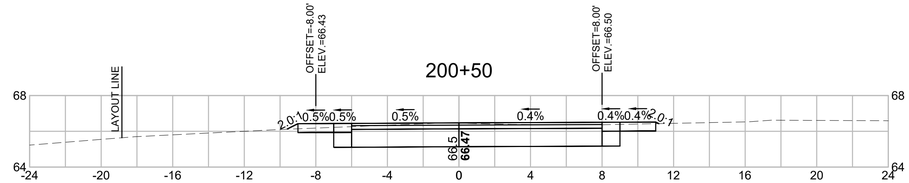


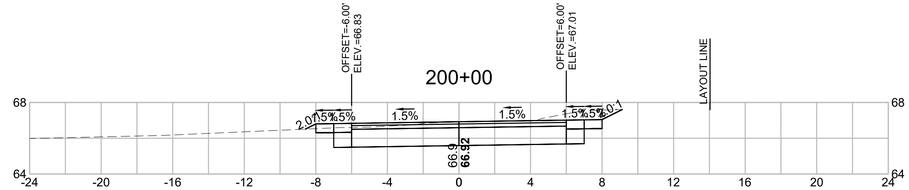






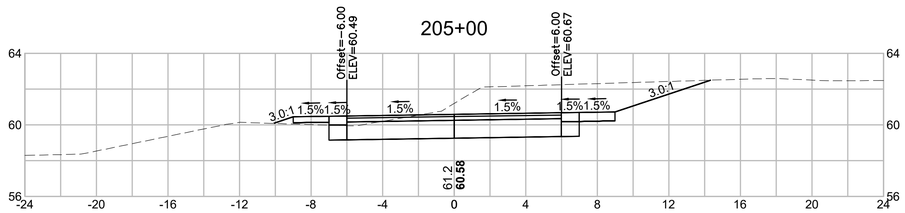


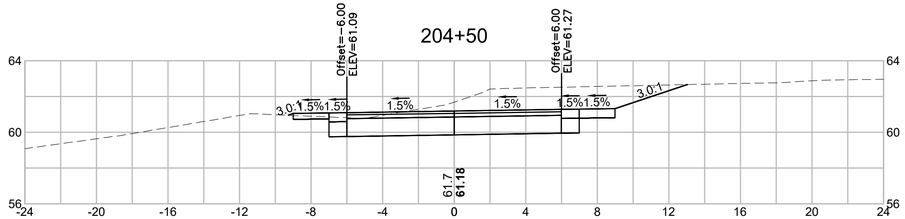


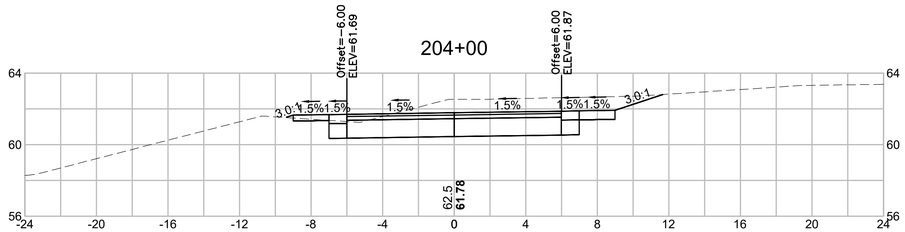


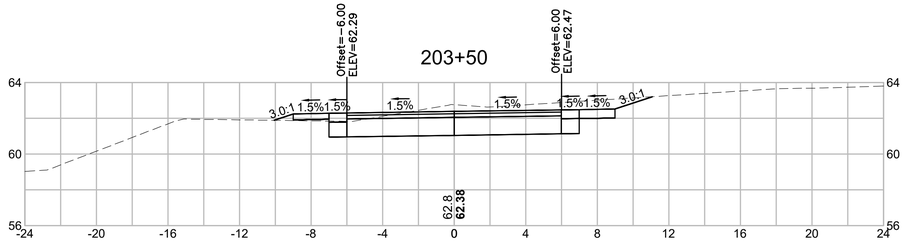
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VER. SCALE IN FEET

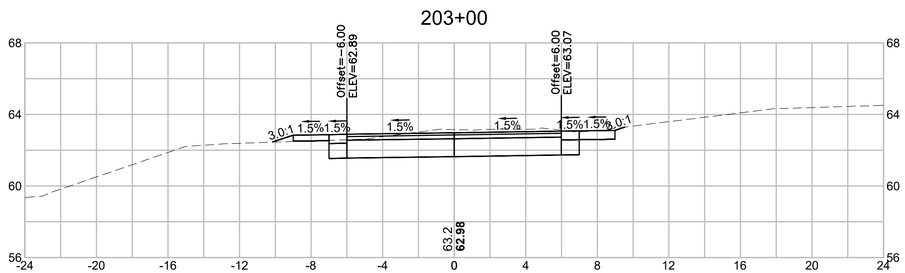
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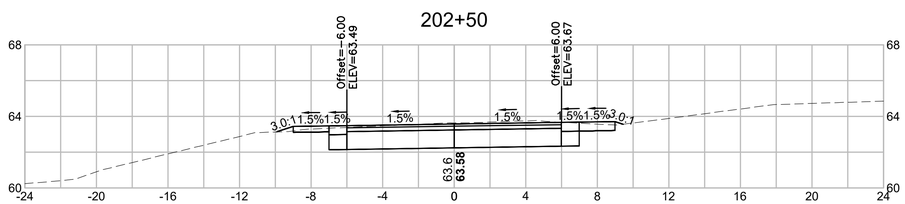


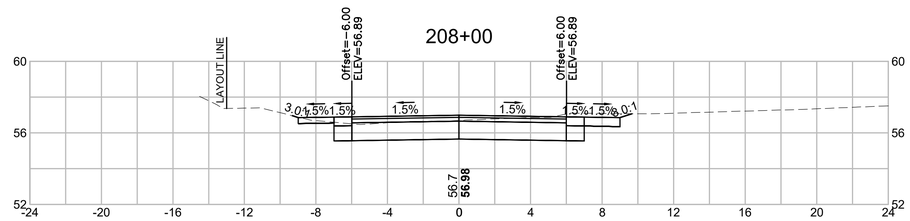


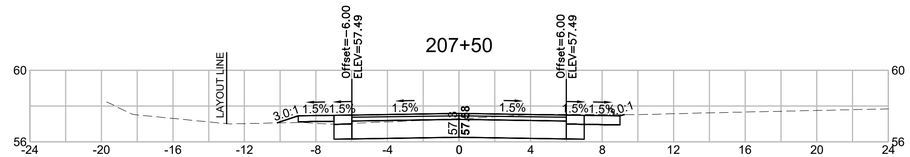


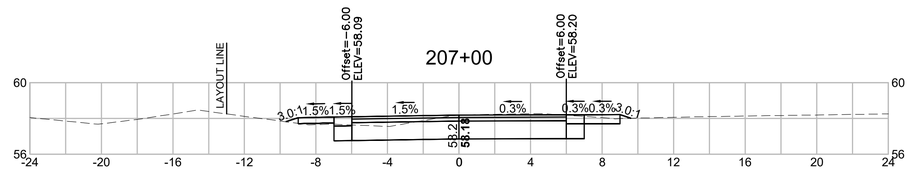


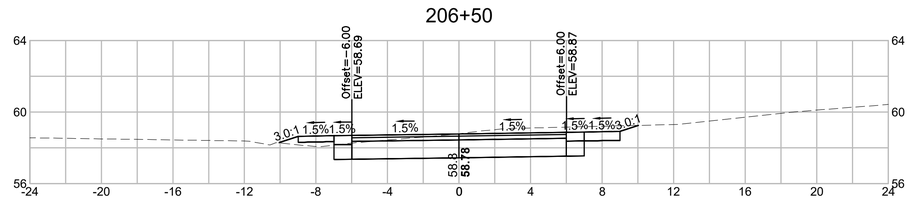


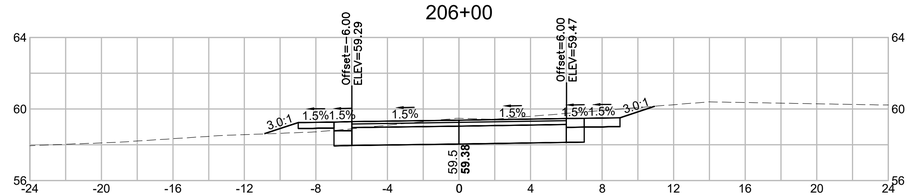


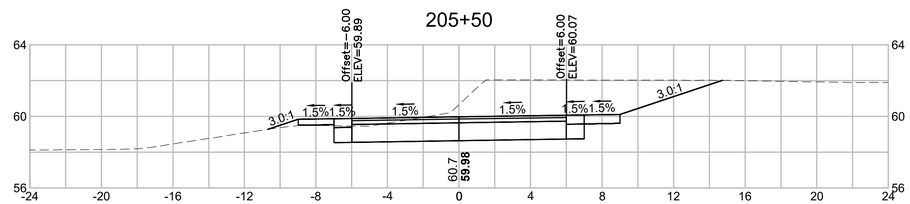












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MA	-	96	114
PROJECT FILE NO.		17112.00	

CROSS SECTIONS - 12

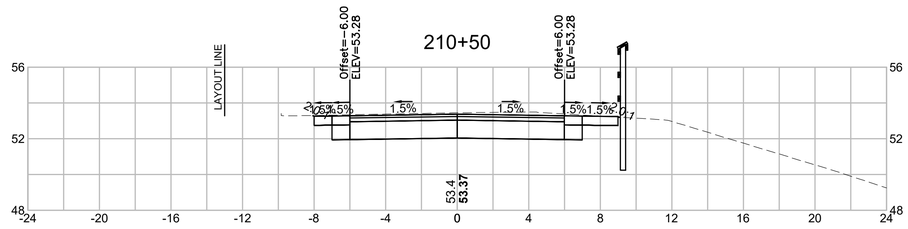
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VER. SCALE IN FEET
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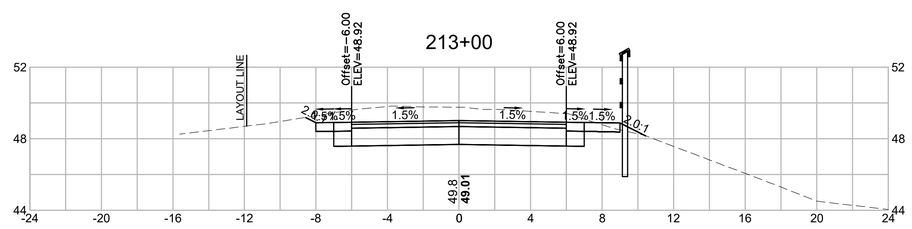
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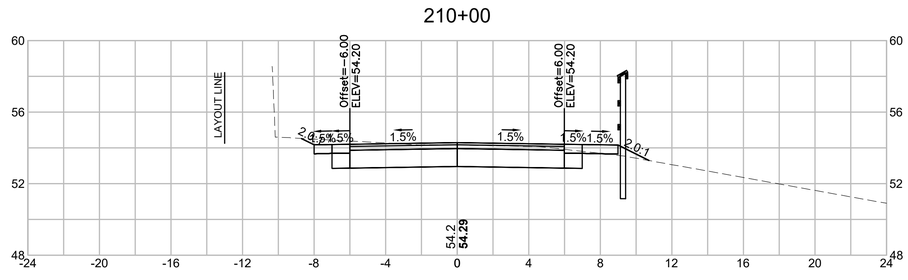
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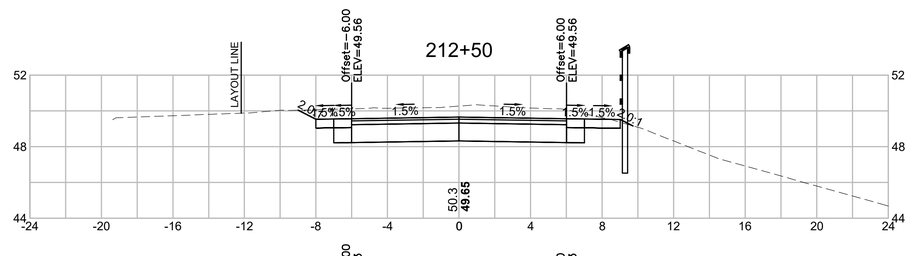
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	97	114
PROJECT FILE NO.	17112.00		

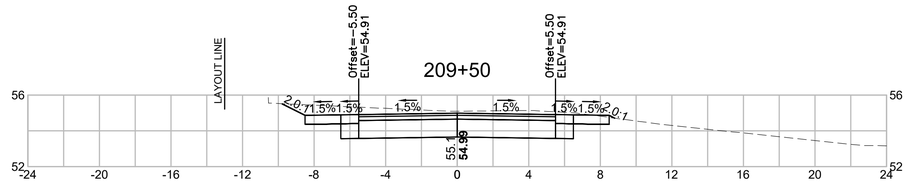
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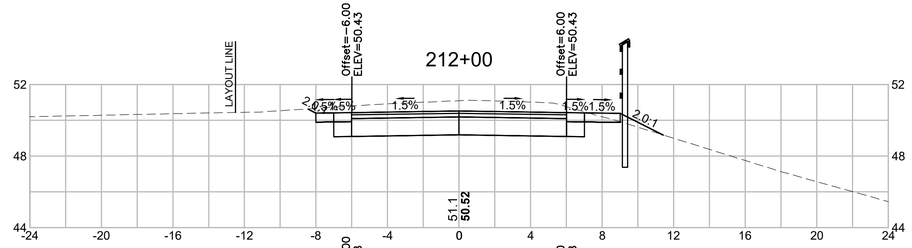


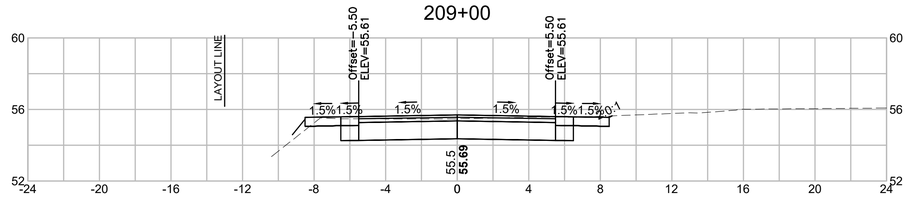


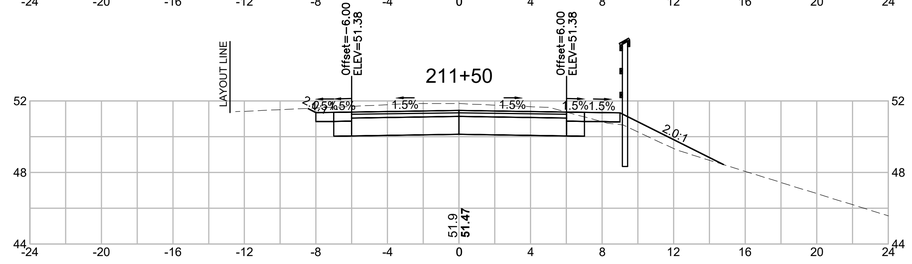


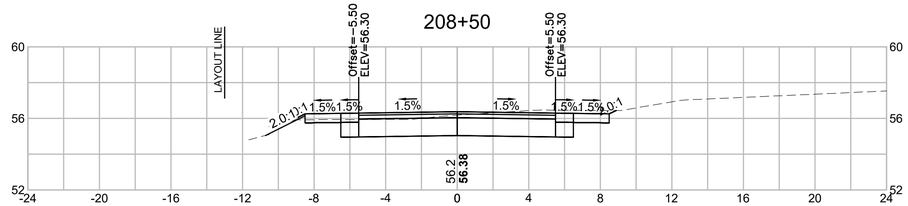


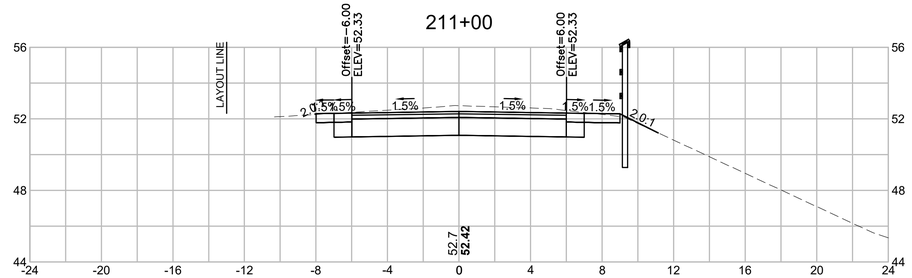












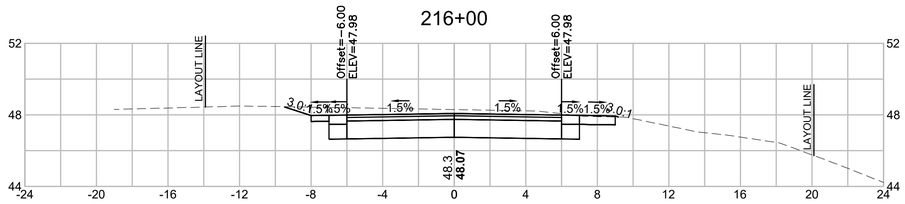
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VER. SCALE IN FEET
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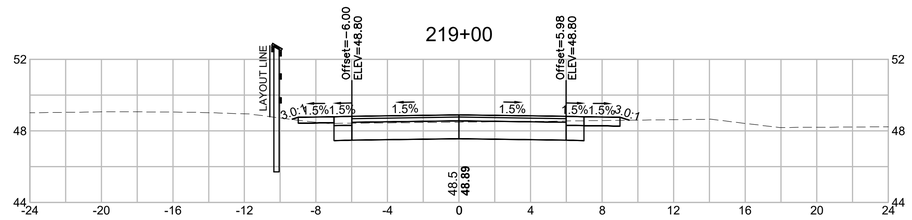
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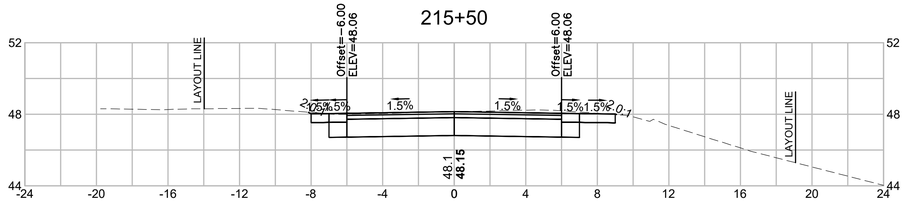
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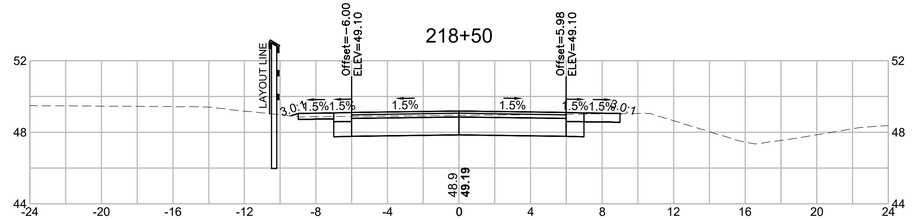
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	98	114
PROJECT FILE NO.	17112.00		

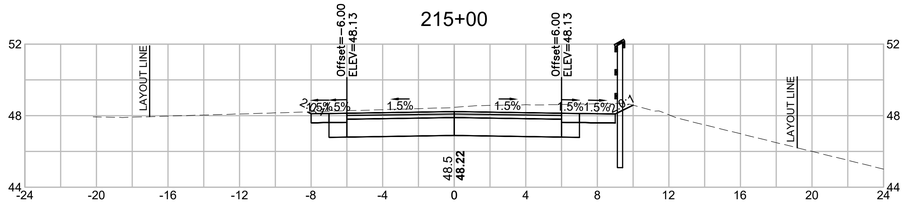
CROSS SECTIONS - 14

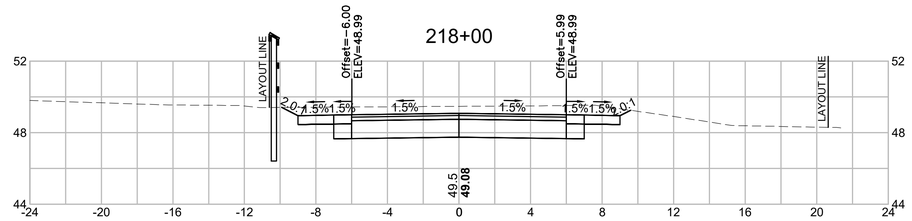


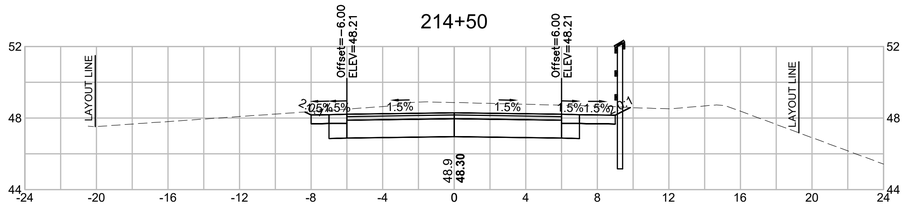


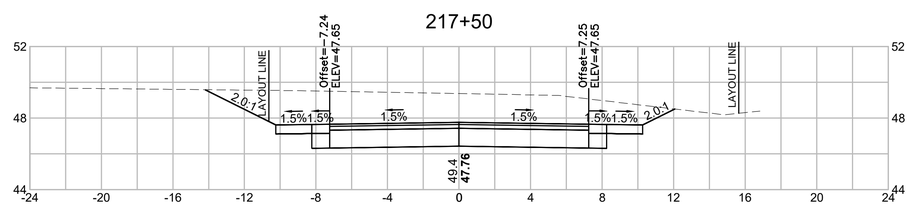


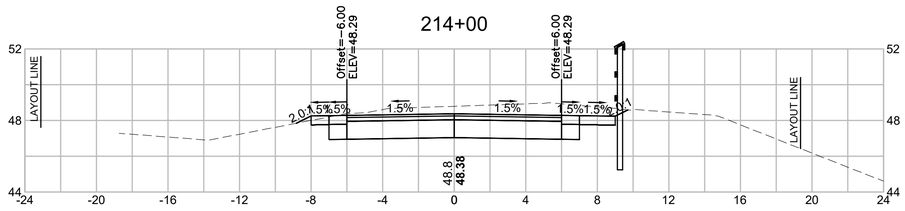


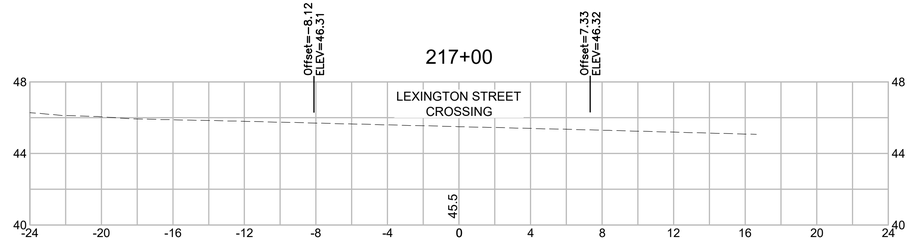


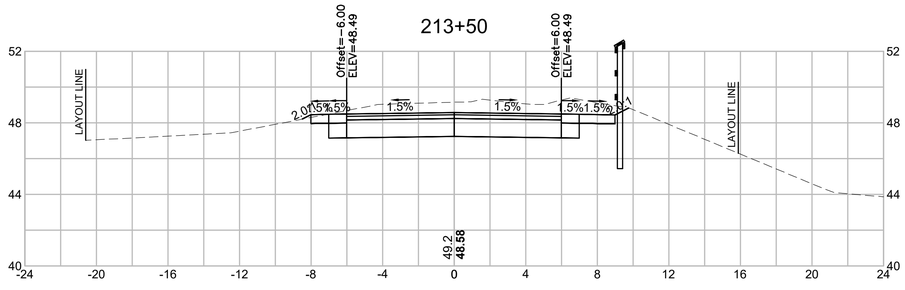


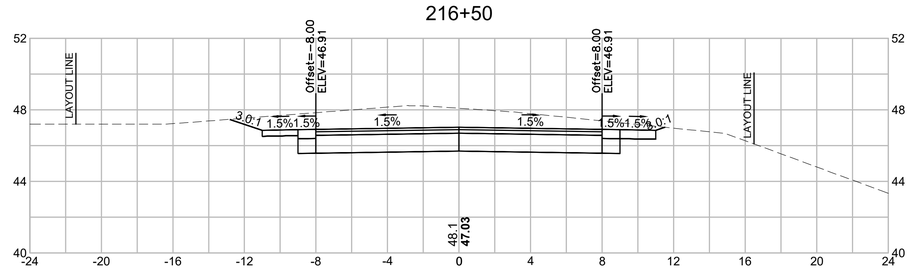












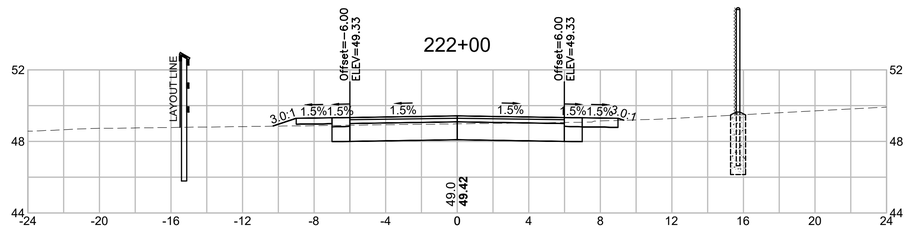
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VER. SCALE IN FEET

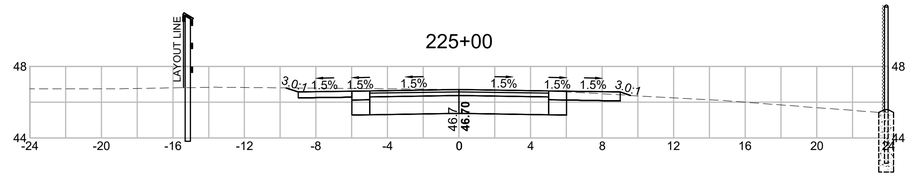
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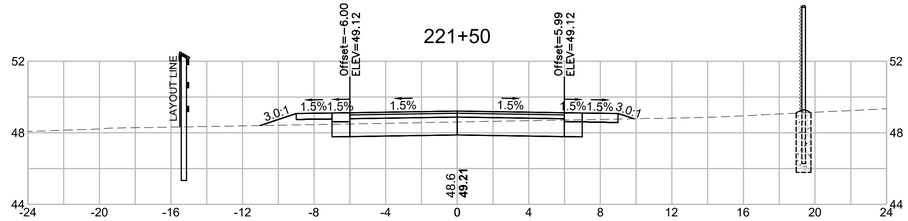
WALTHAM
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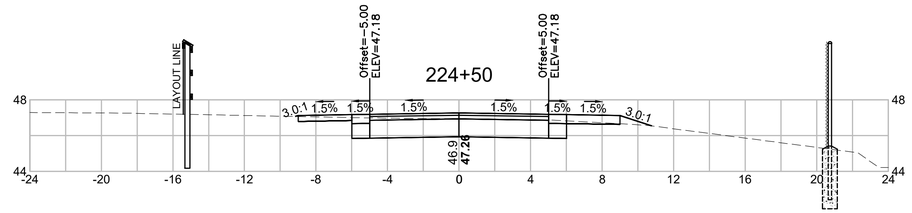
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	99	114
PROJECT FILE NO.	17112.00		

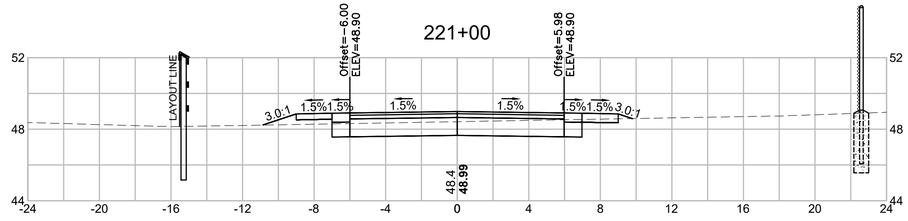
CROSS SECTIONS - 15

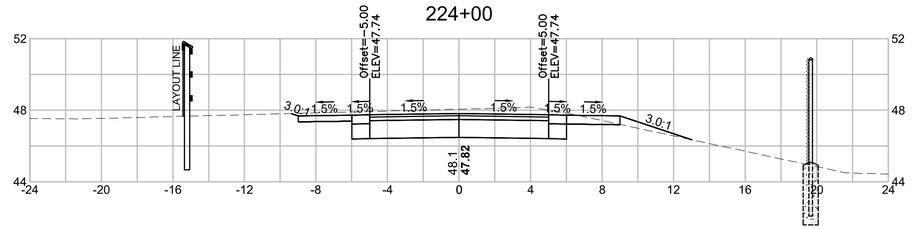


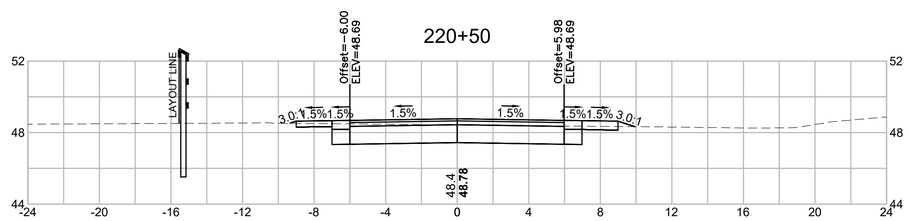


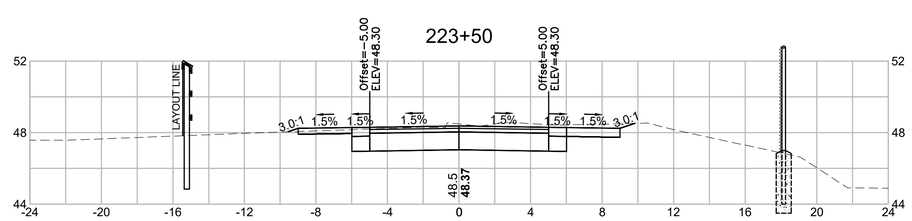


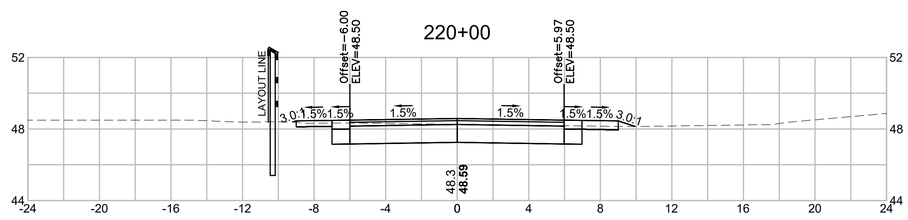


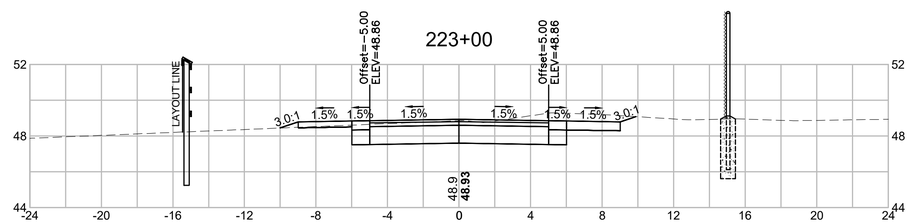


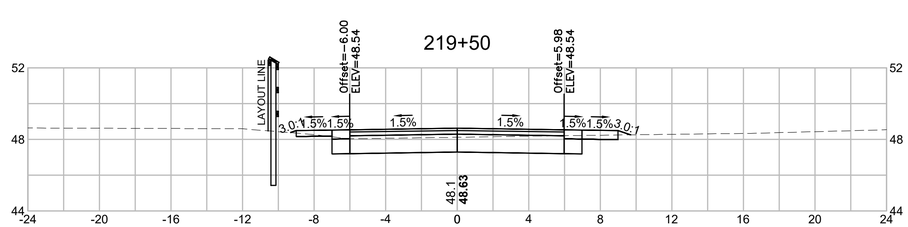


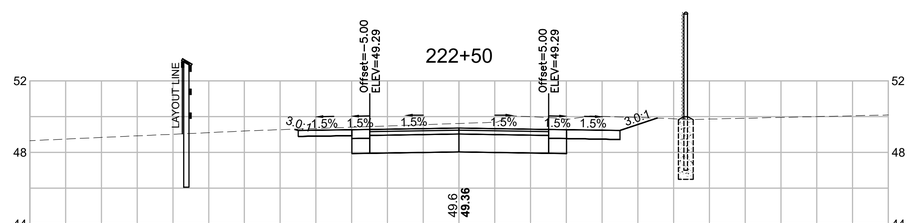












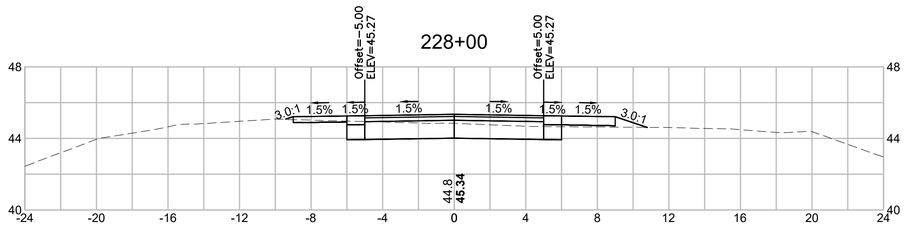
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

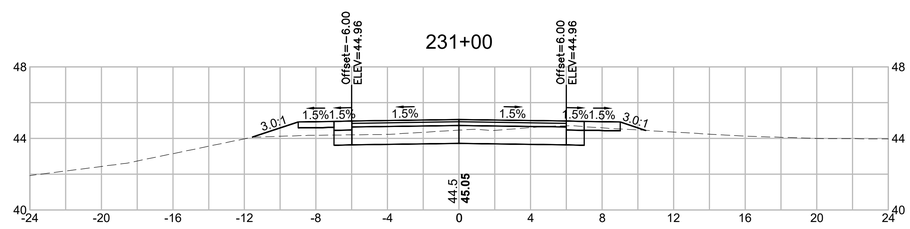
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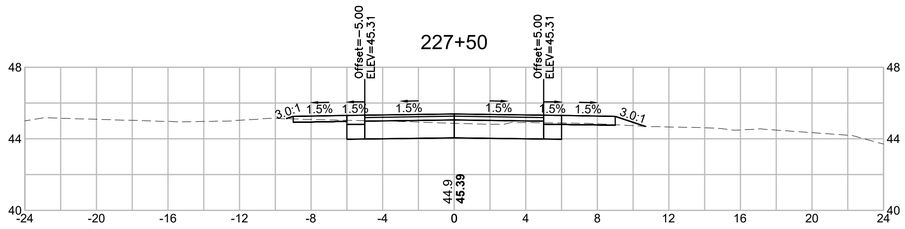
WALTHAM
WAYSIDE TRAIL

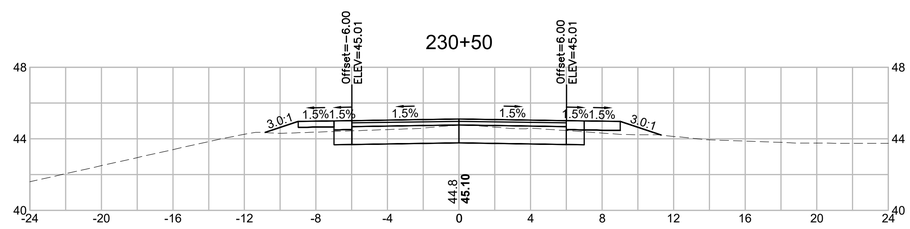
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	100	114
PROJECT FILE NO.	17112.00		

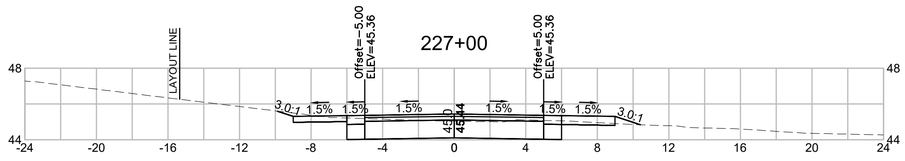
CROSS SECTIONS - 16

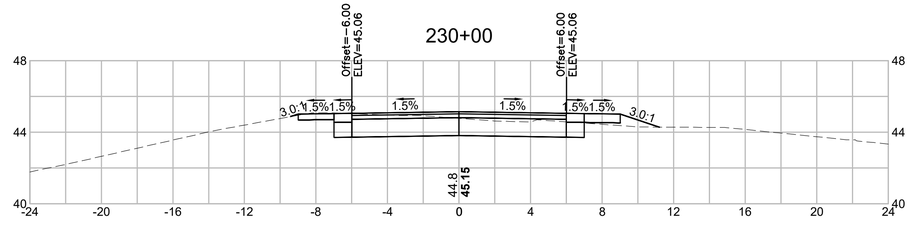


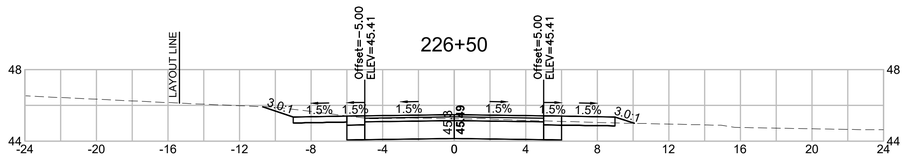


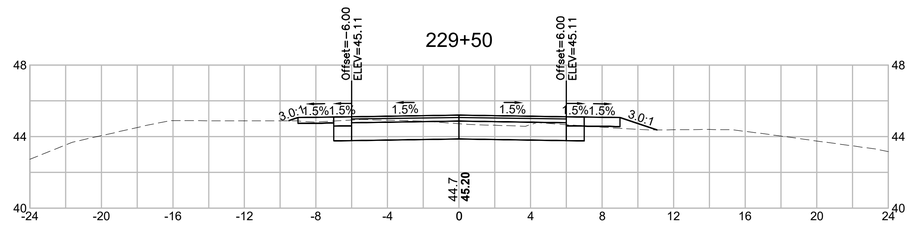


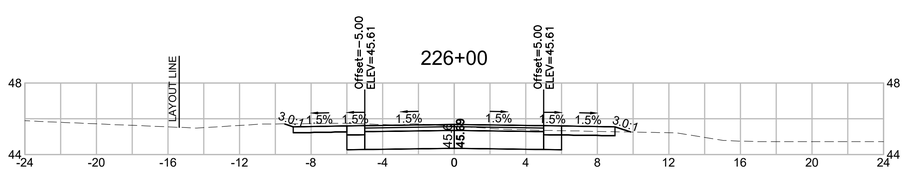


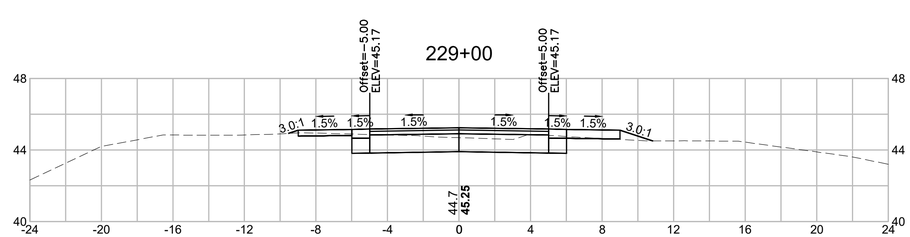


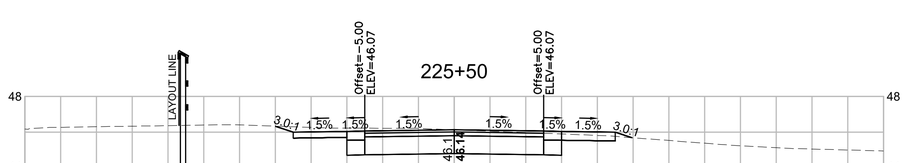


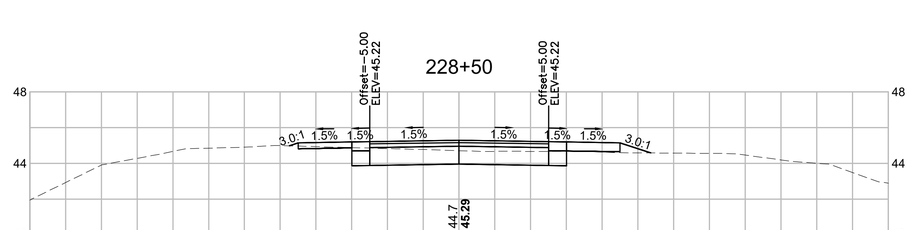












HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

000000_HD\SECTIONS\.DWG Plotted on 26-Jul-2021 2:43 PM

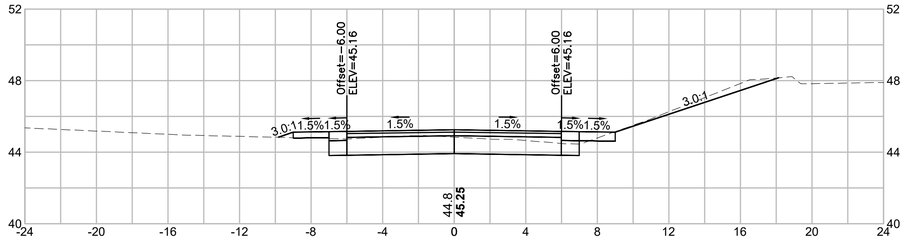
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	101	114
PROJECT FILE NO.	17112.00		

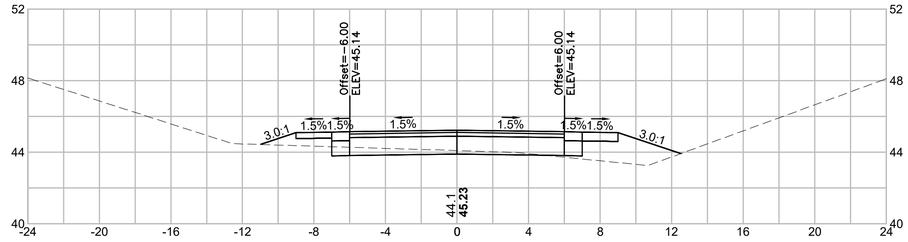
CROSS SECTIONS - 17

000000_HD\SECTIONS\.DWG Plotted on 26-Jul-2021 2:45 PM

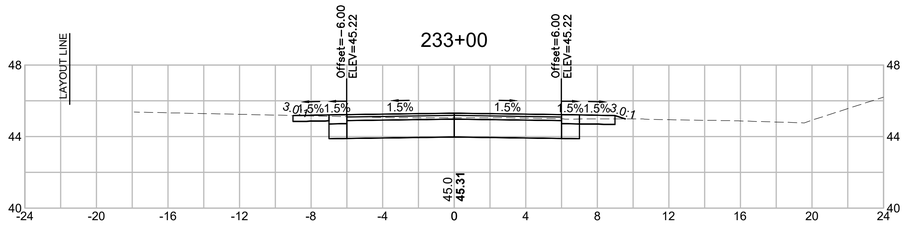
233+50



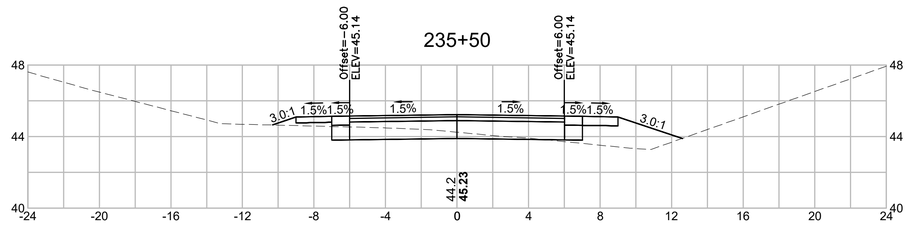
236+00



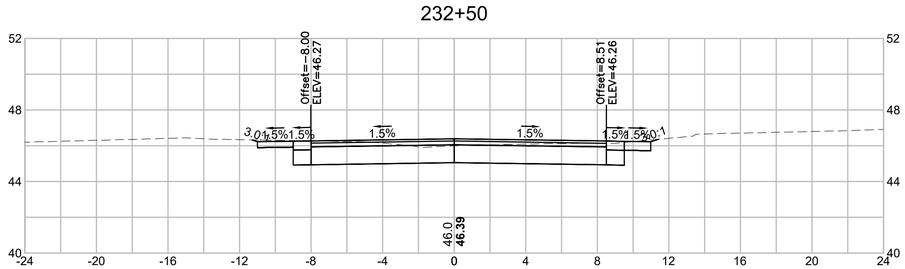
233+00



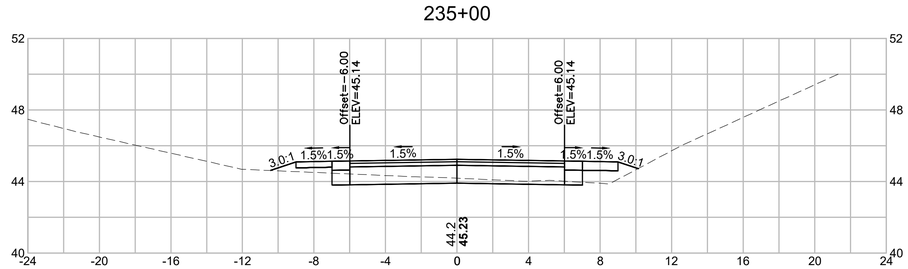
235+50



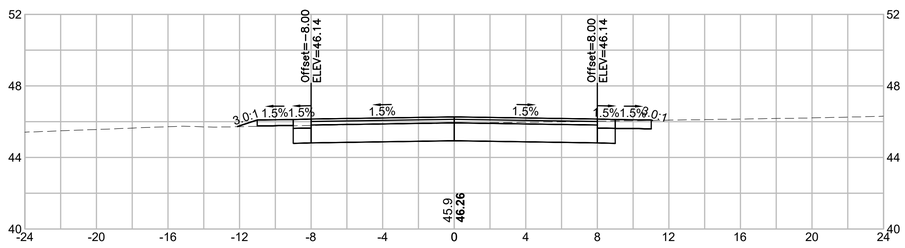
232+50



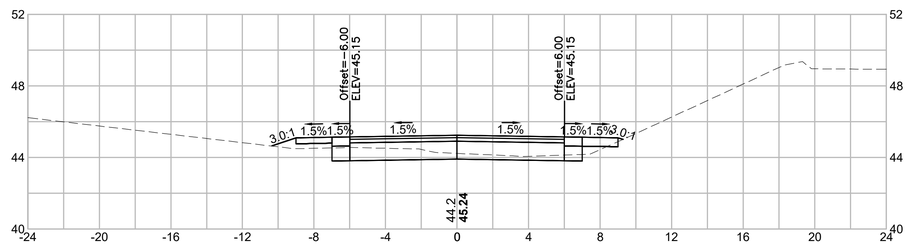
235+00



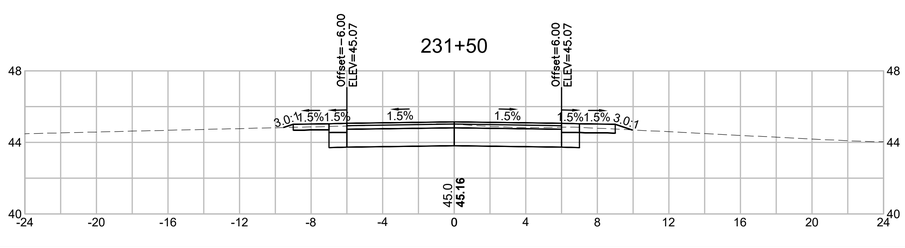
232+00



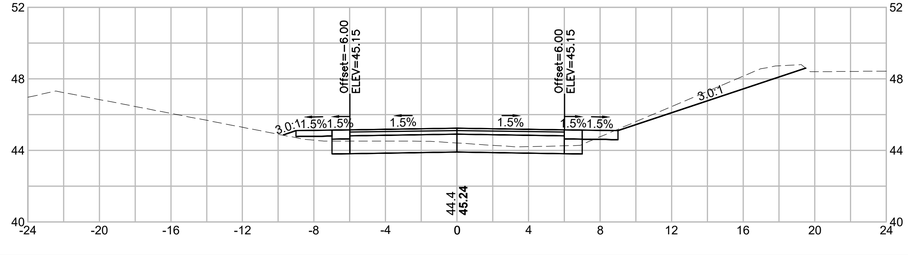
234+50



231+50



234+00

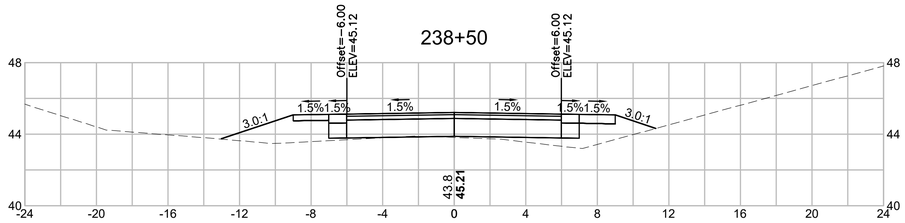


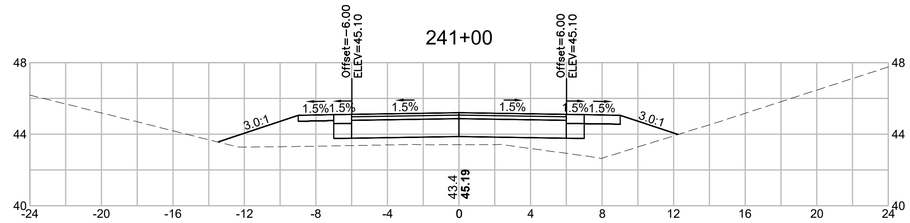
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

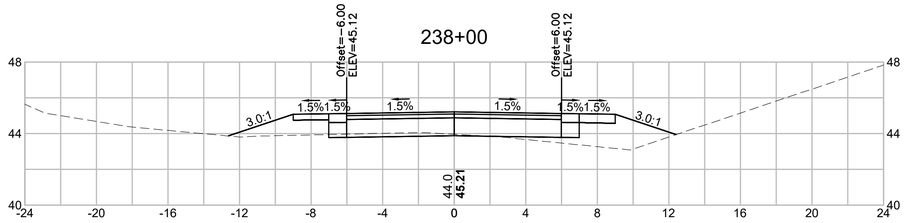
WALTHAM
WAYSIDE TRAIL

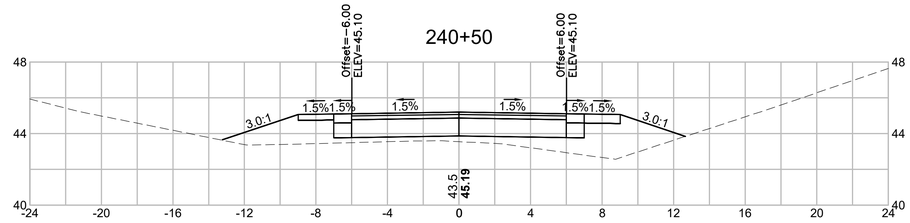
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	102	114
PROJECT FILE NO.	17112.00		

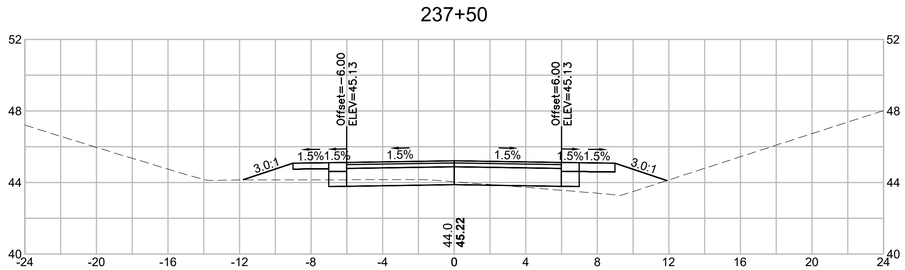
CROSS SECTIONS - 18

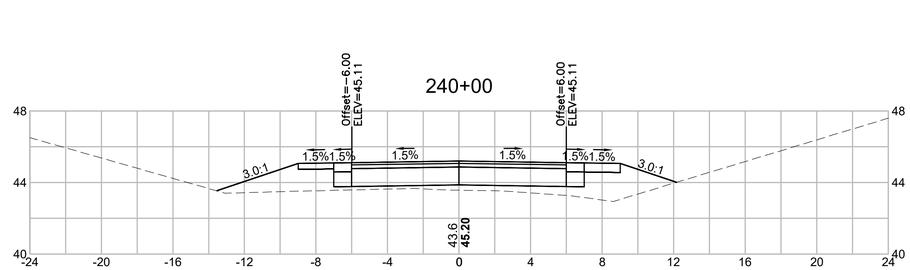


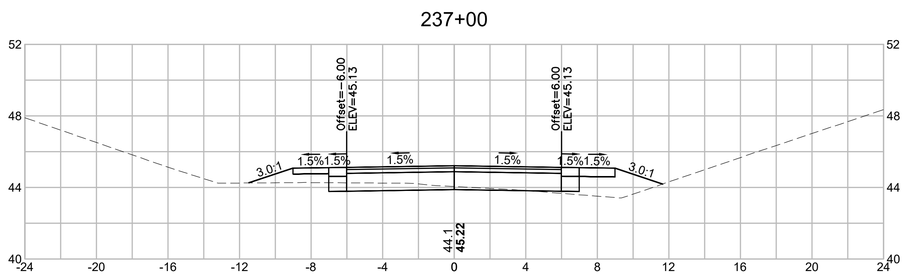


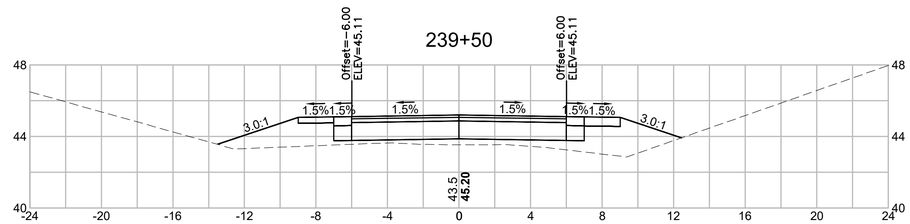


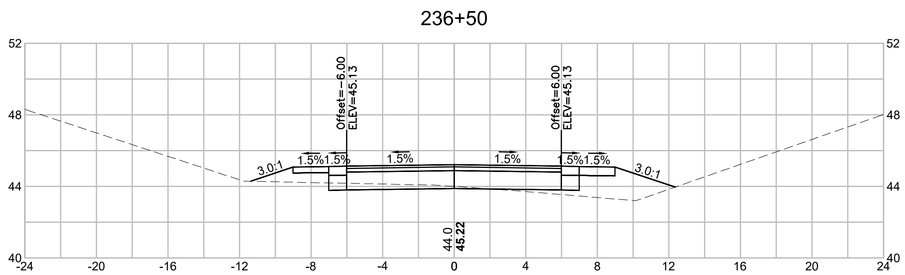


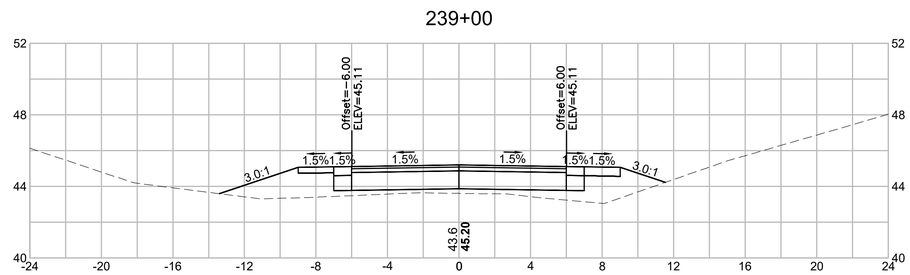












HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

000000_HD\SECTIONS\.DWG Plotted on 26-Jul-2021 2:46 PM

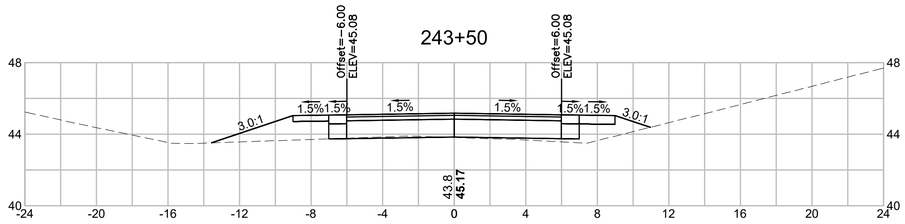
WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	103	114
PROJECT FILE NO.	17112.00		

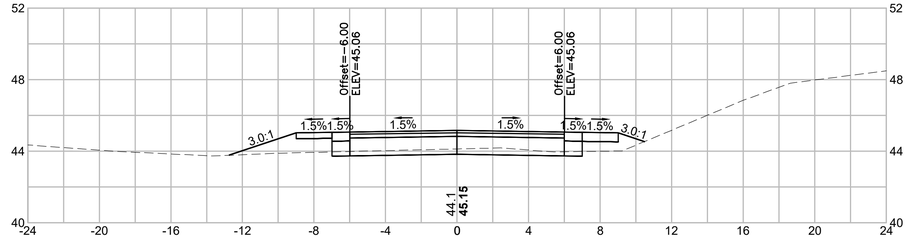
CROSS SECTIONS - 19

000000_HD\SECTIONS\.DWG Plotted on 26-Jul-2021 2:48 PM

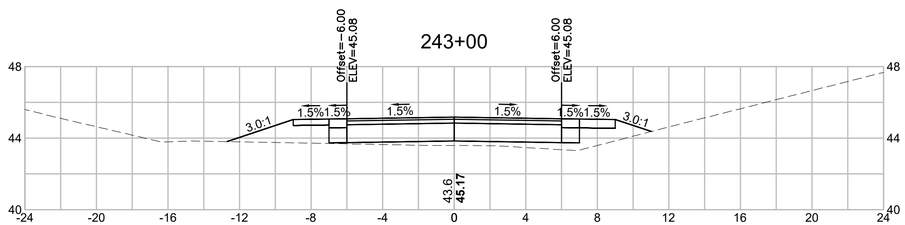
243+50



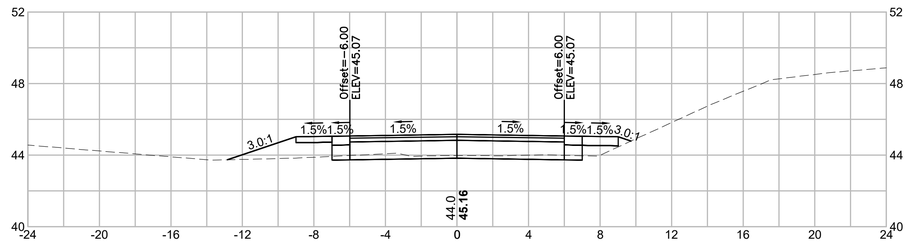
246+00



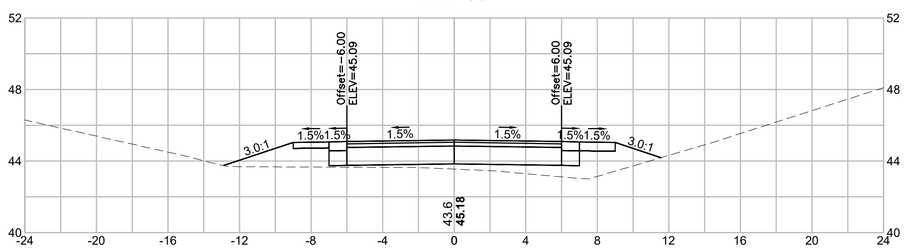
243+00



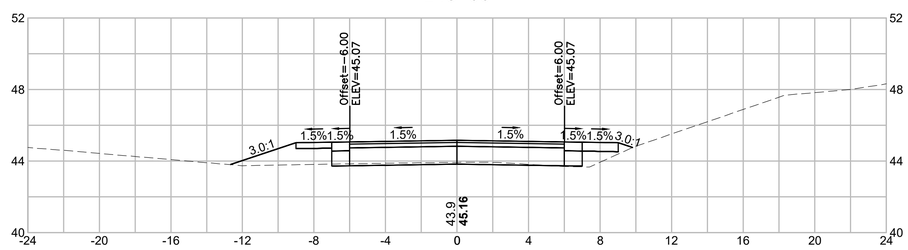
245+50



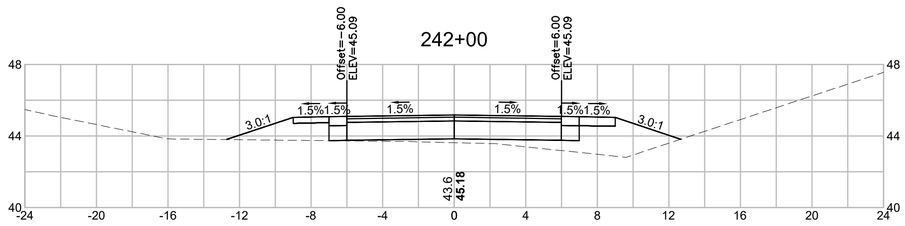
242+50



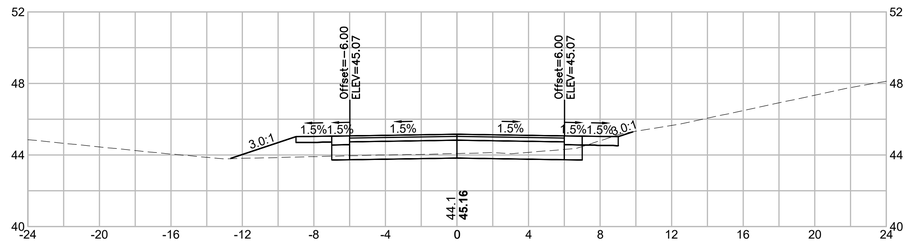
245+00



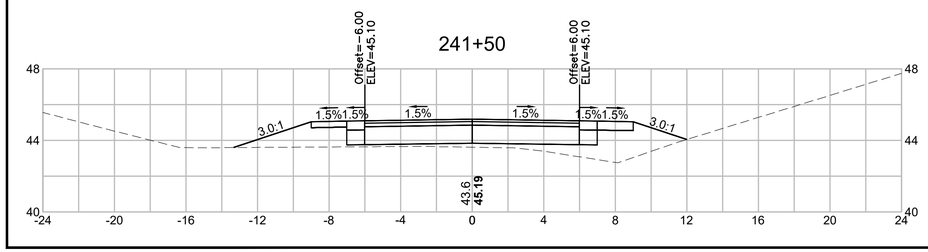
242+00



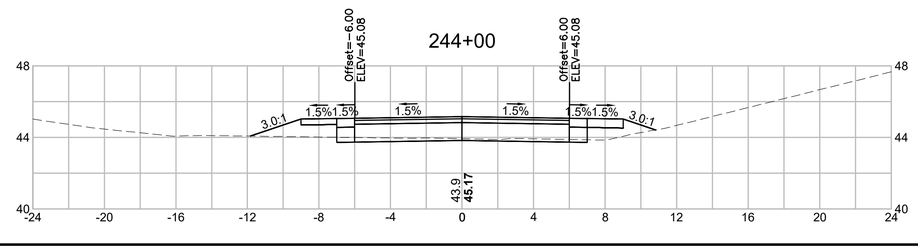
244+50



241+50



244+00

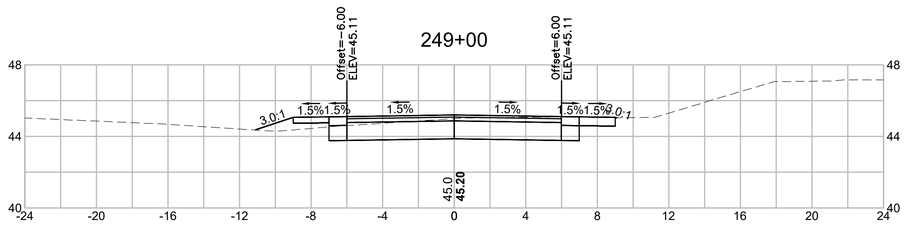


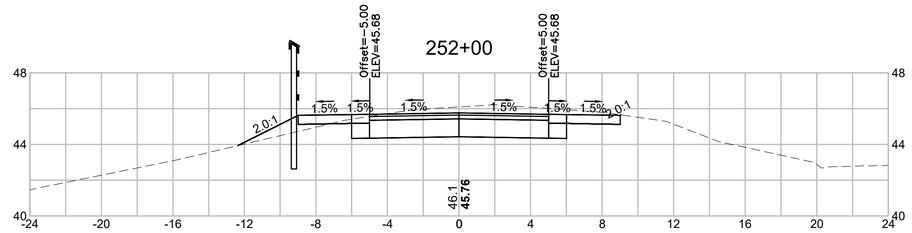
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

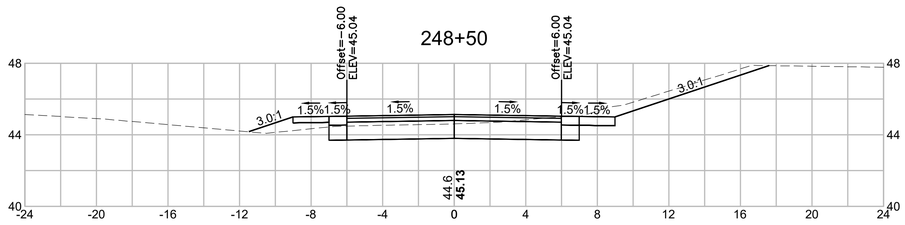
WALTHAM
WAYSIDE TRAIL

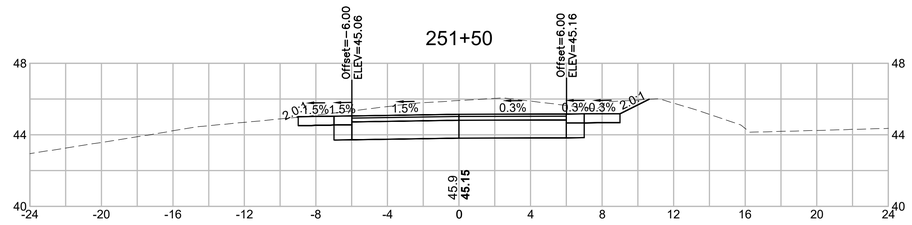
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	104	114
PROJECT FILE NO.	17112.00		

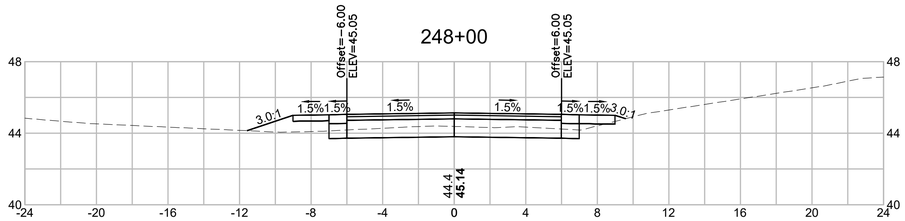
CROSS SECTIONS - 20

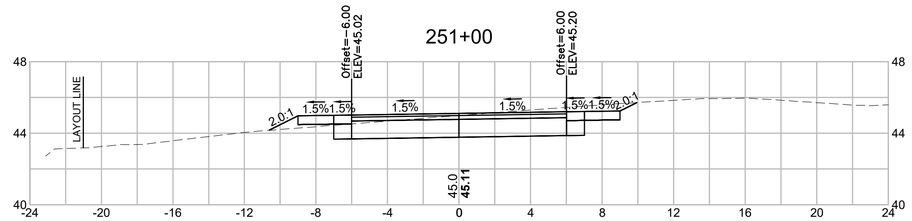


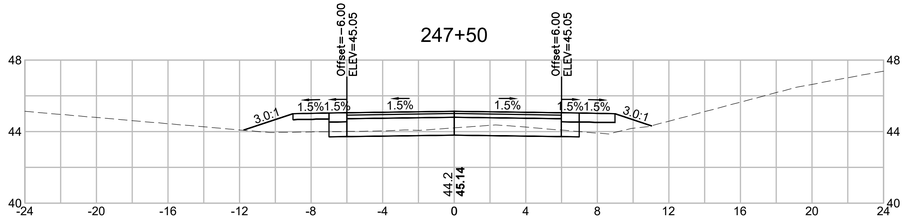


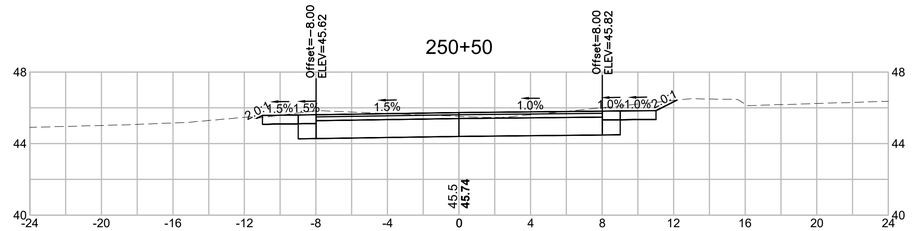


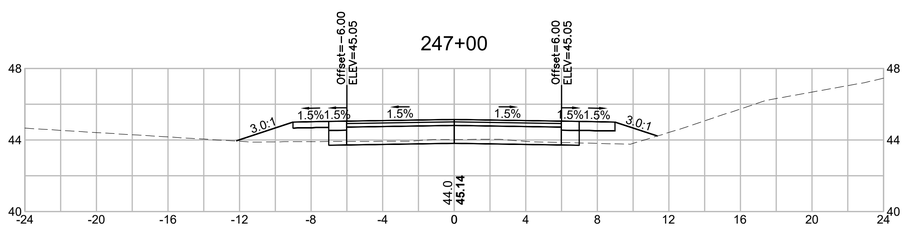


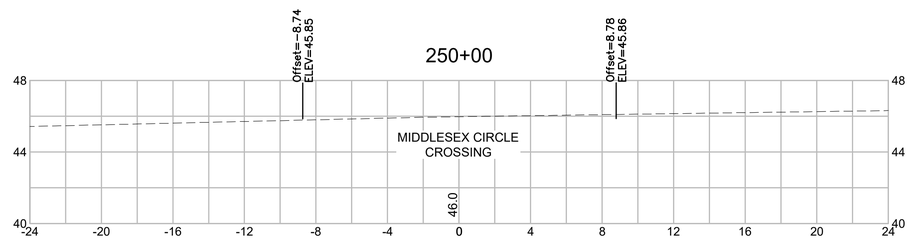


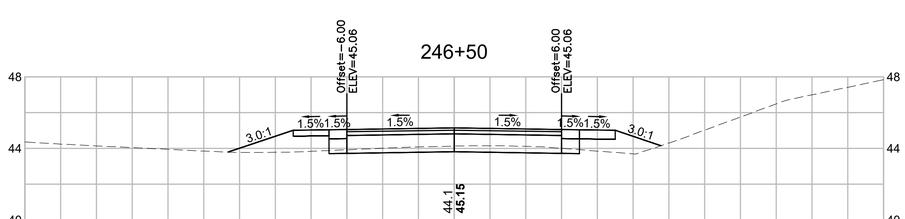


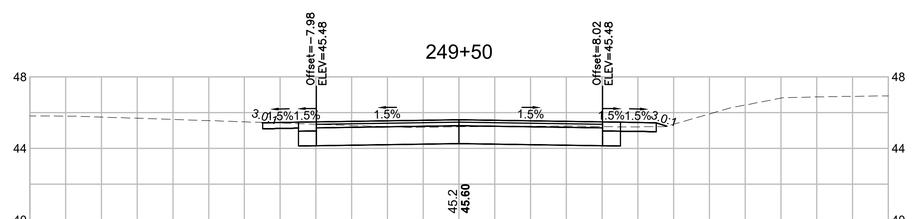






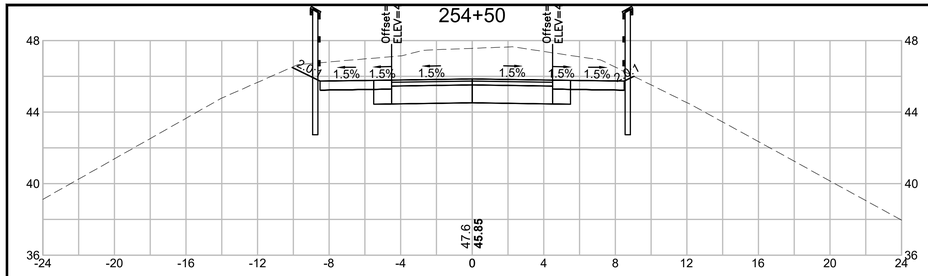


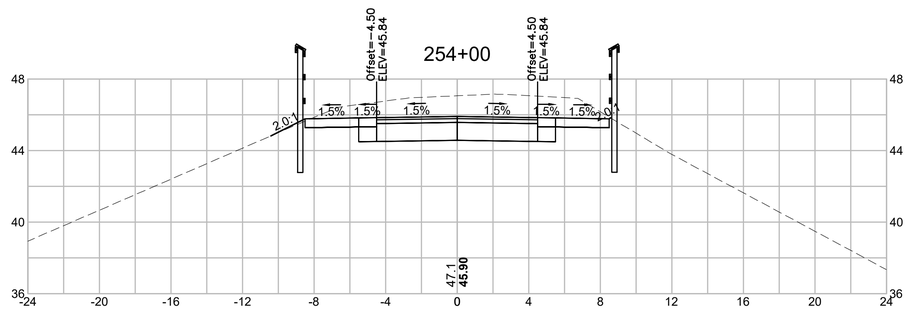


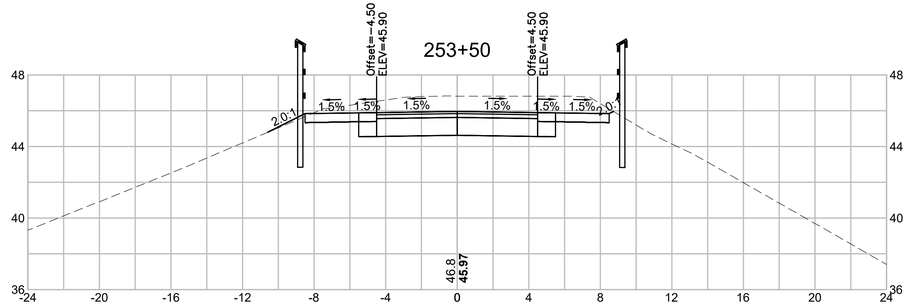


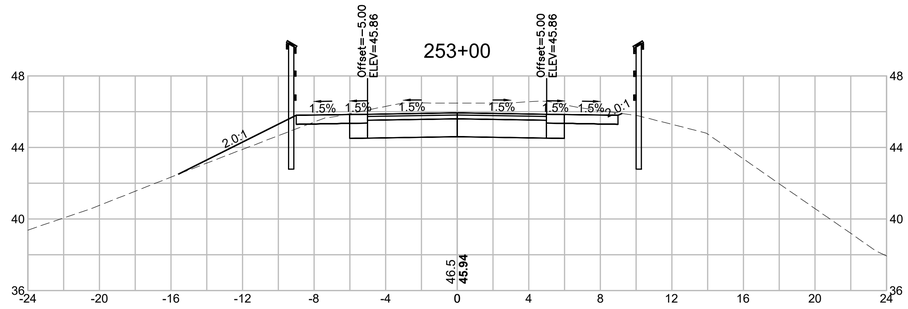
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4 0 4 8
VER. SCALE IN FEET

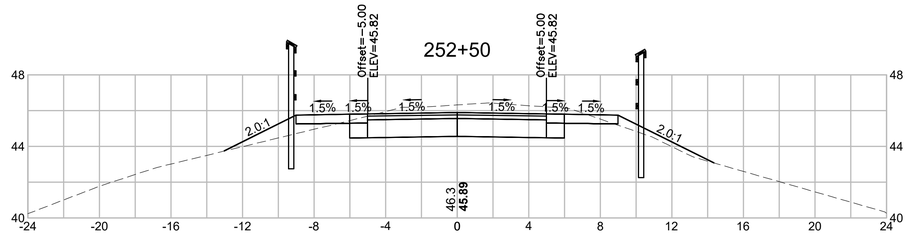
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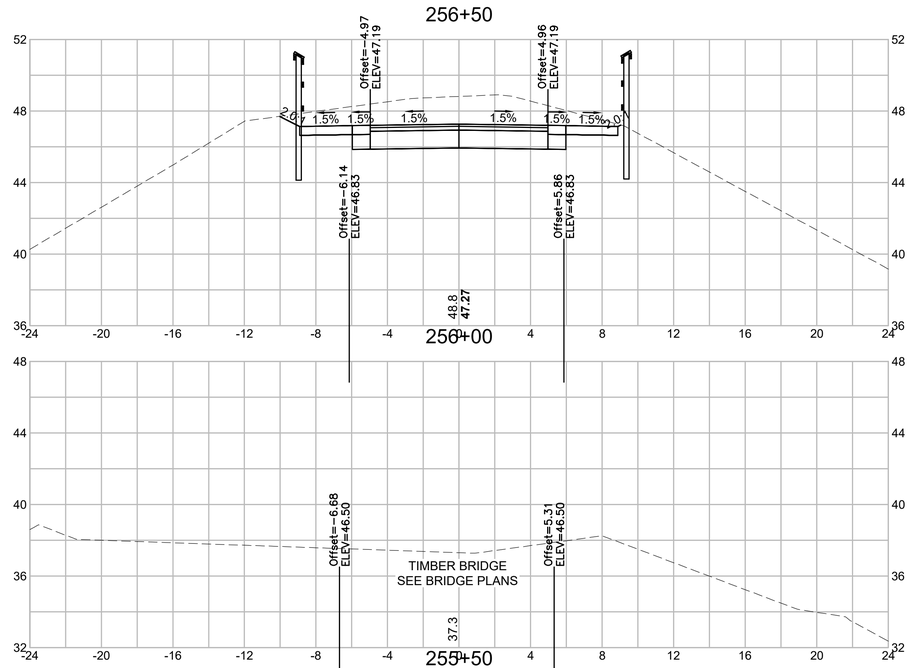


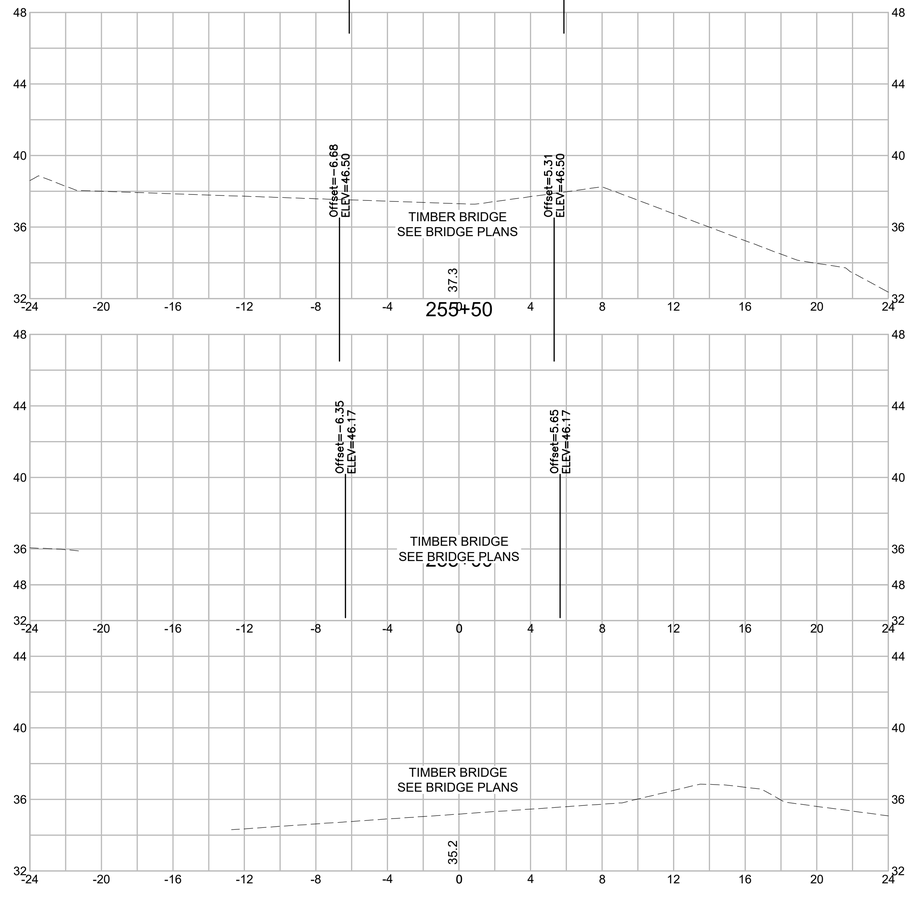












WALTHAM
WAYSIDE TRAIL

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	105	114
PROJECT FILE NO.	17112.00		

CROSS SECTIONS - 21

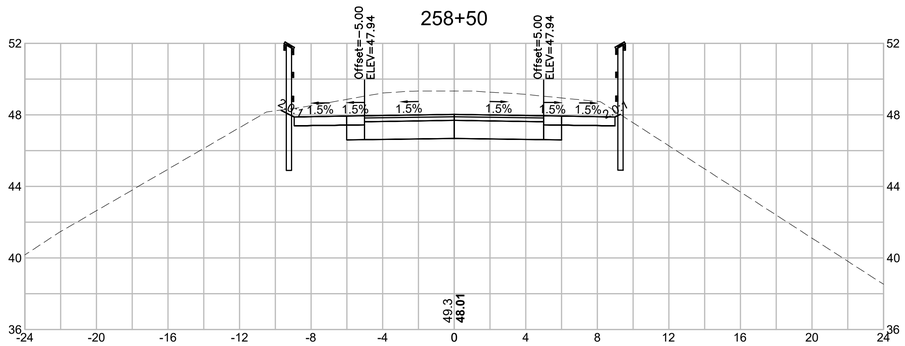
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VER. SCALE IN FEET
4 0 4 8

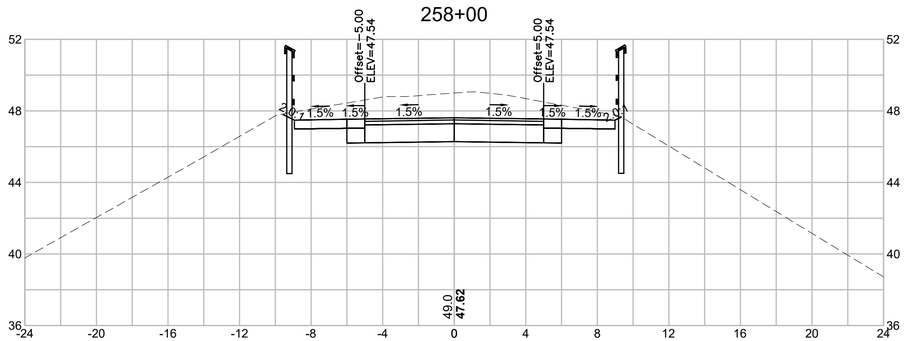
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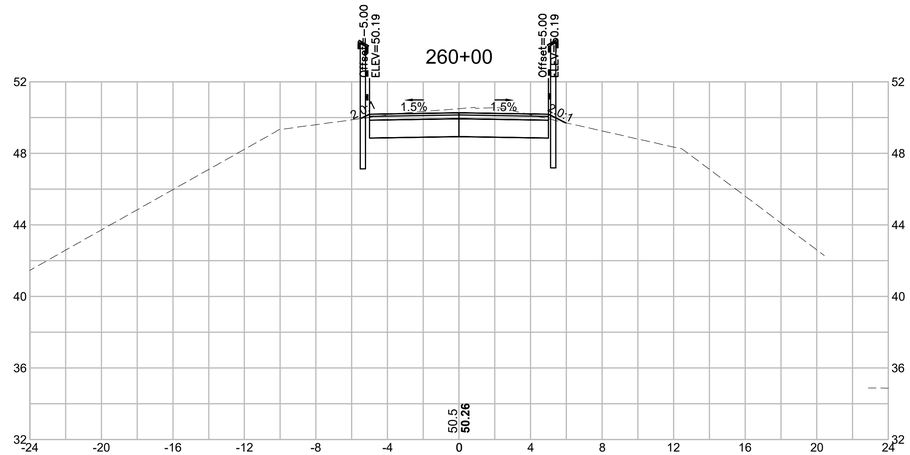
WALTHAM
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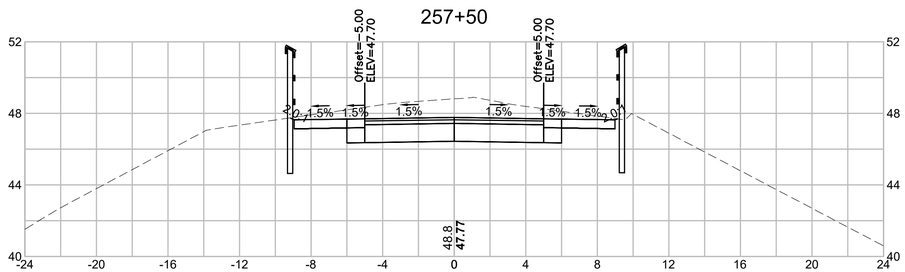
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	106	114
PROJECT FILE NO.	17112.00		

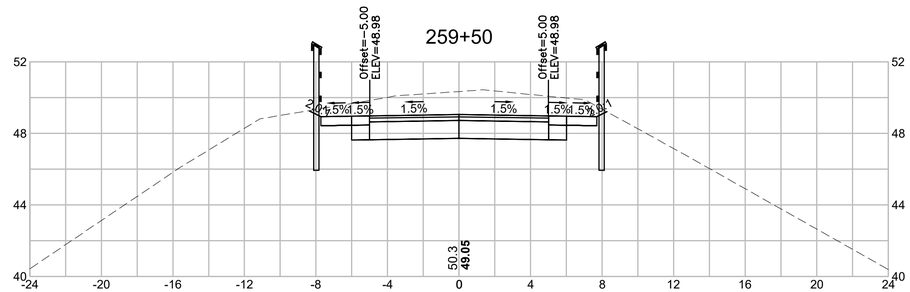
CROSS SECTIONS - 22

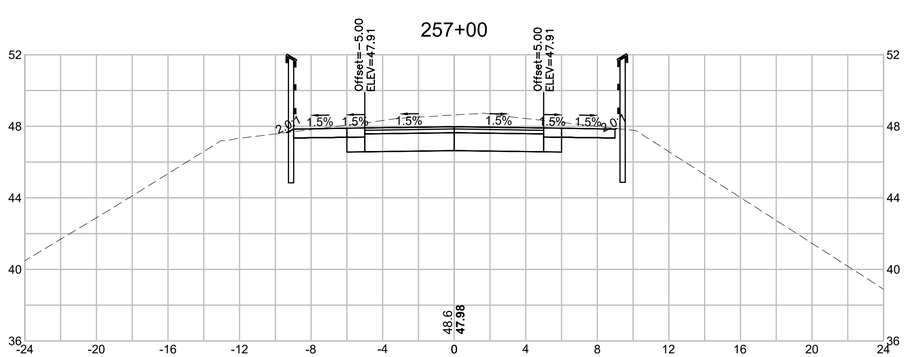


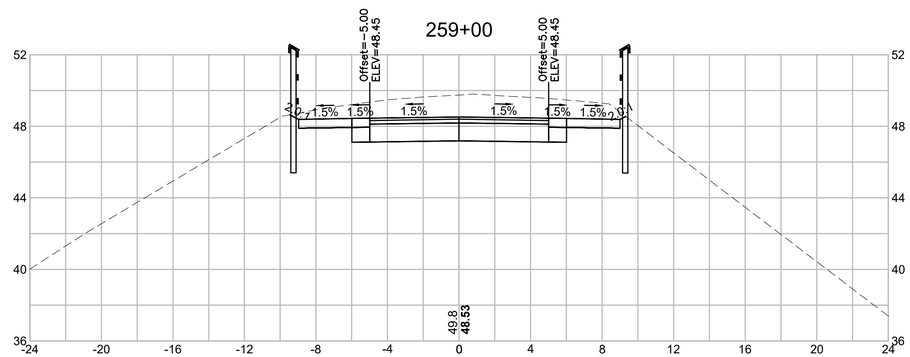






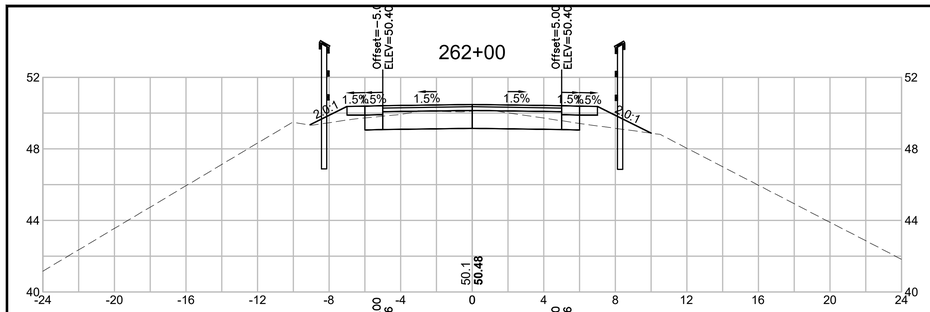


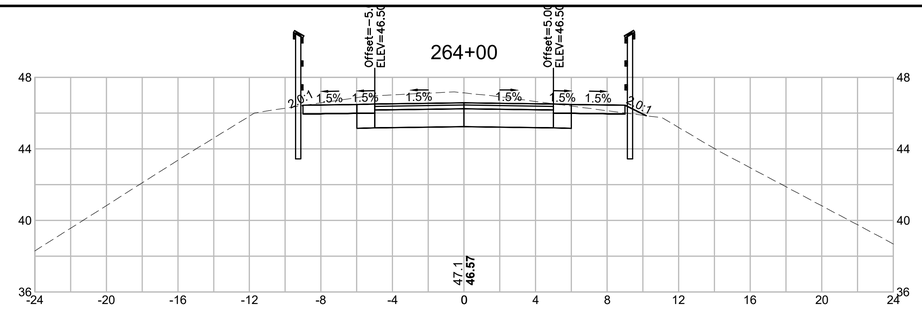


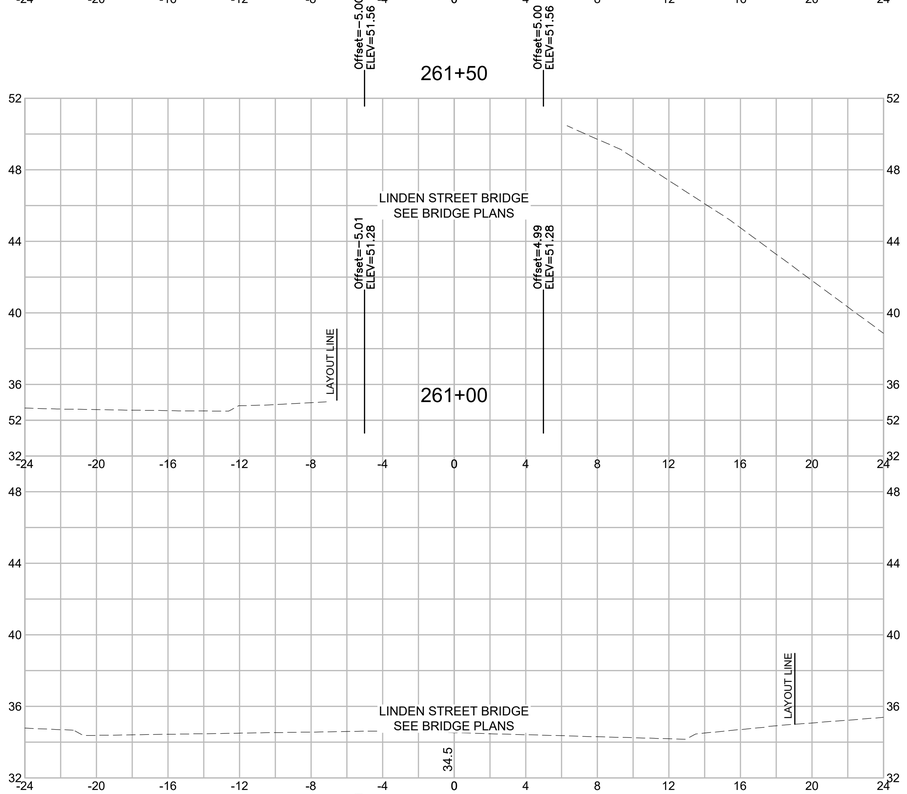


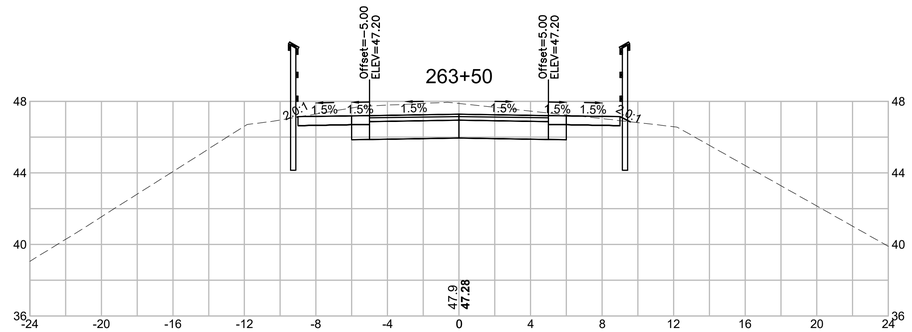
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VER. SCALE IN FEET

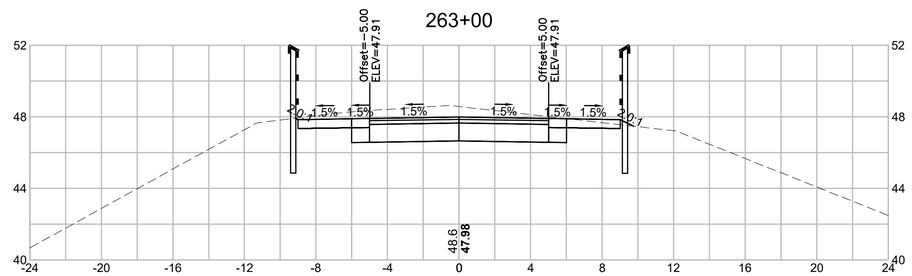
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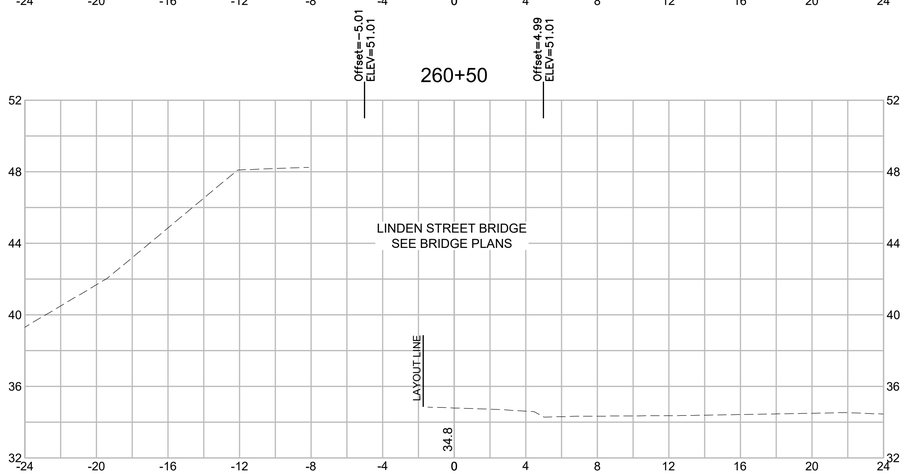


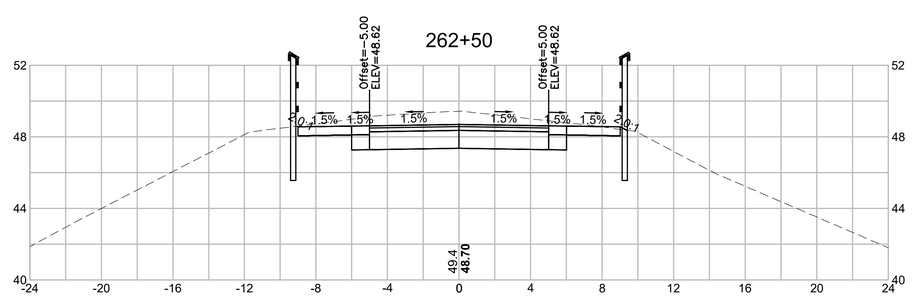












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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	107	114
PROJECT FILE NO.		17112.00	

CROSS SECTIONS - 23

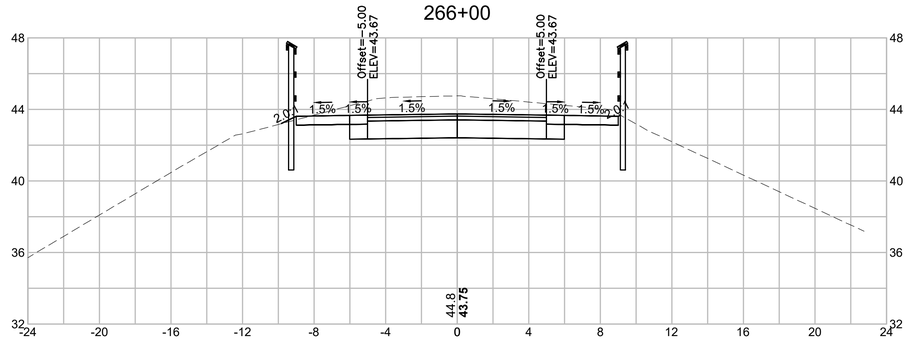
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VER. SCALE IN FEET

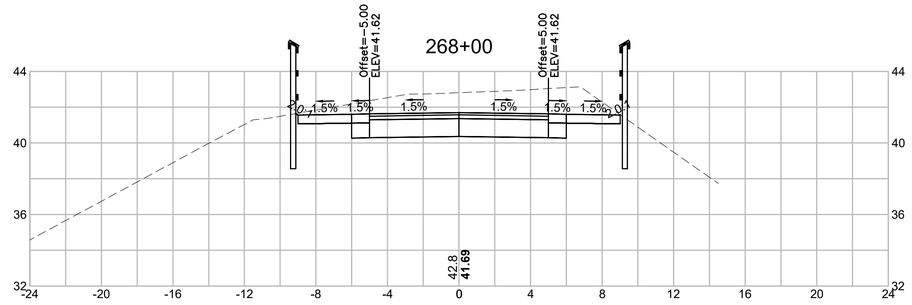
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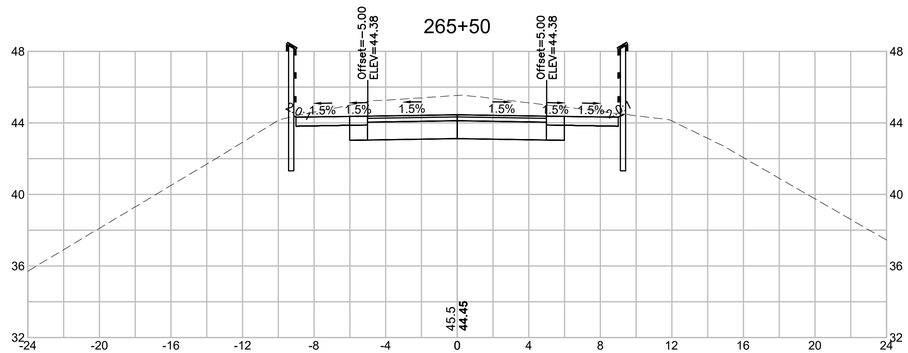
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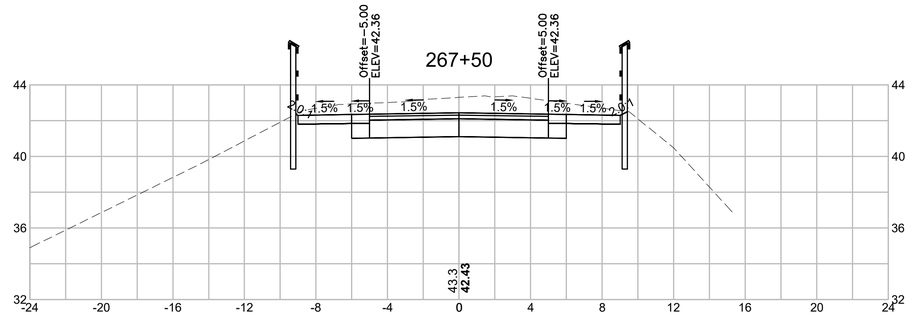
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	108	114
PROJECT FILE NO.		17112.00	

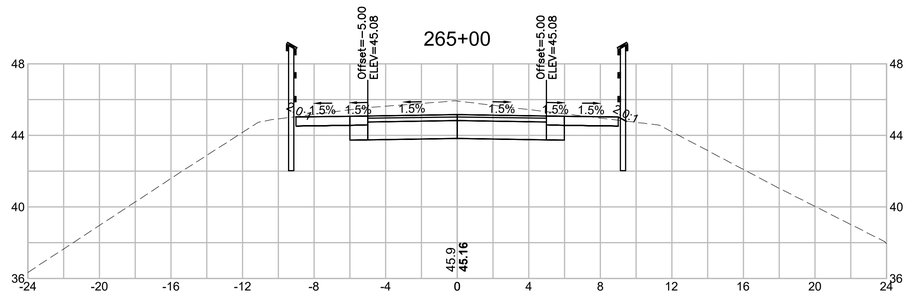
CROSS SECTIONS - 24

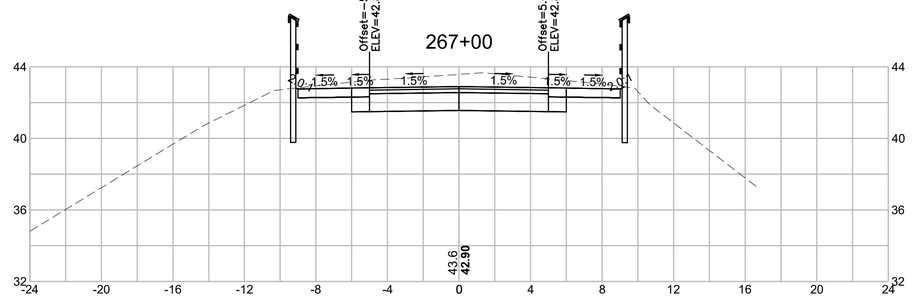


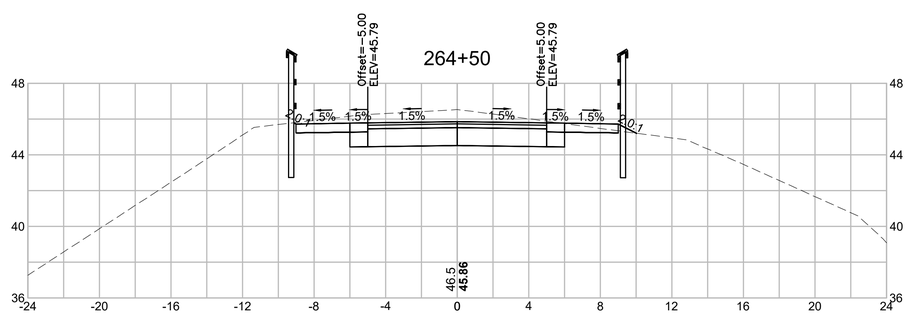


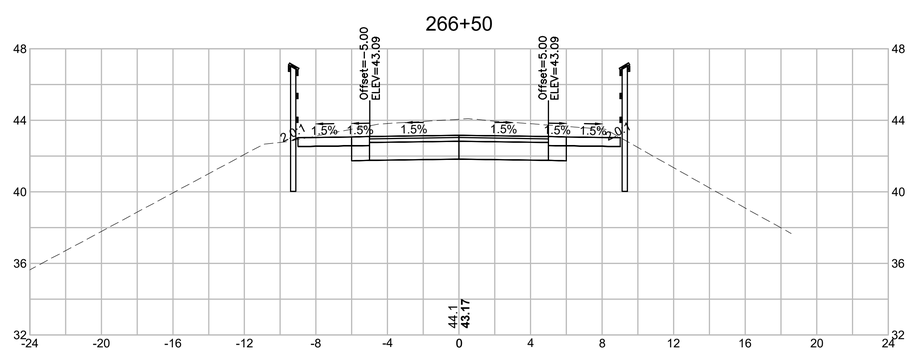






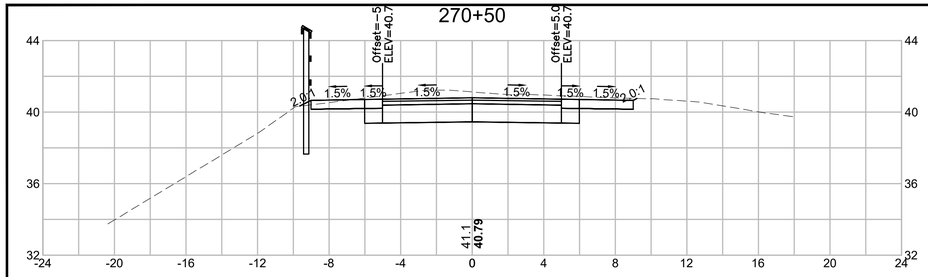


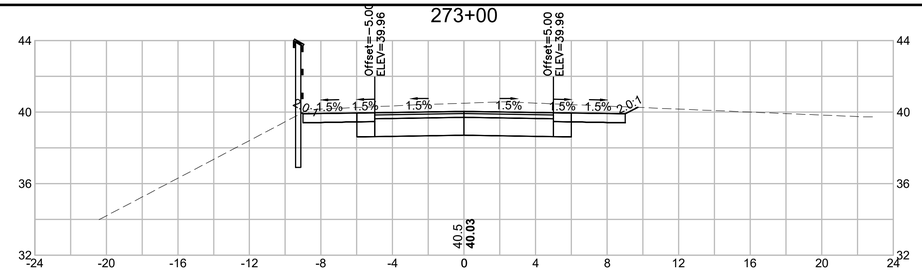


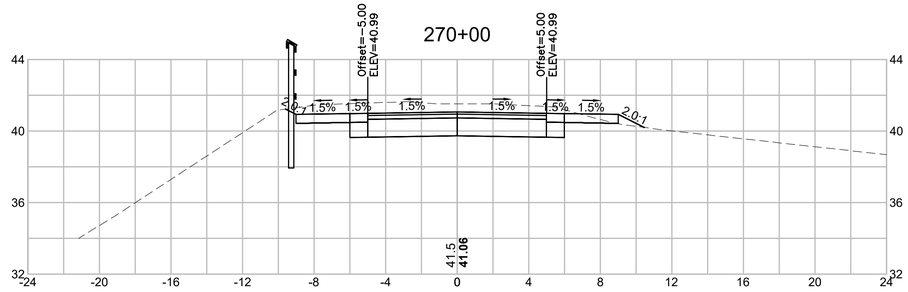


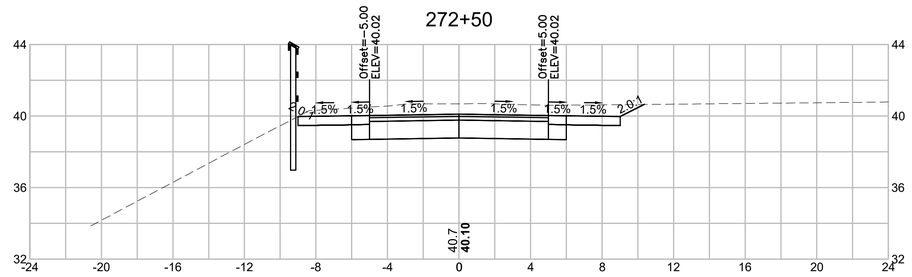
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VER. SCALE IN FEET

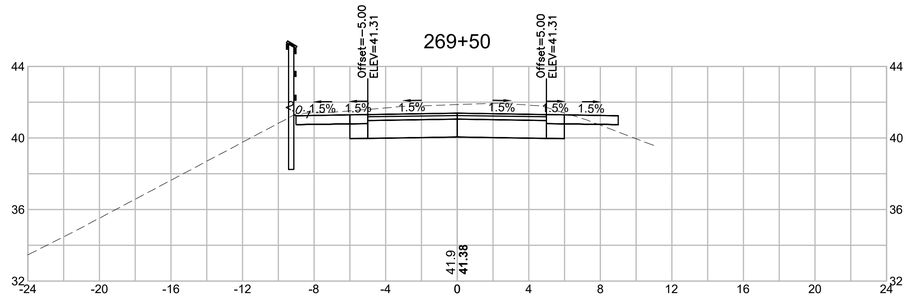
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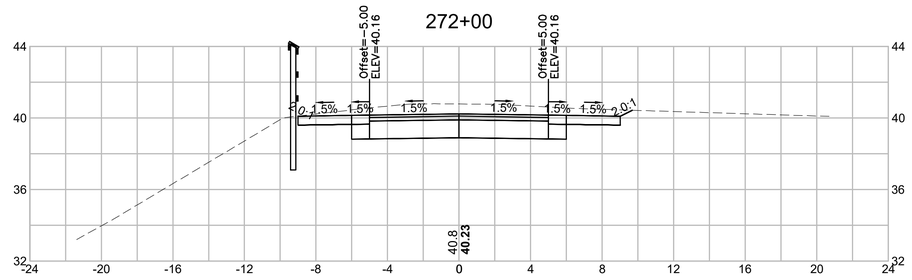


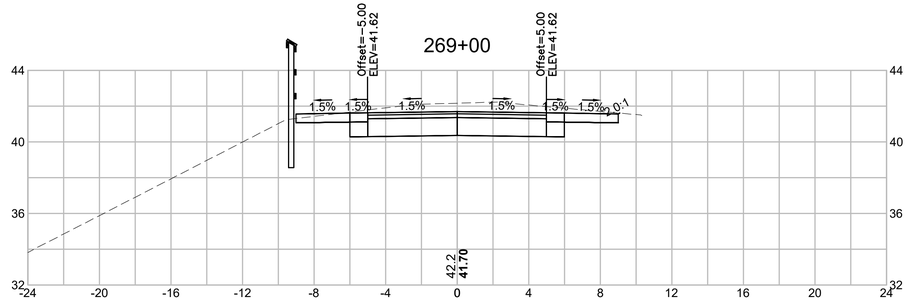


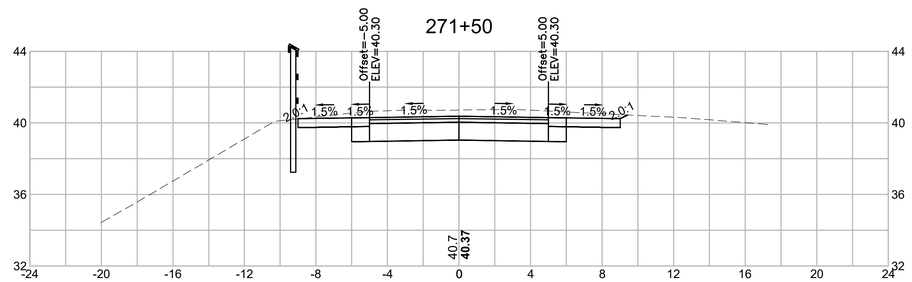


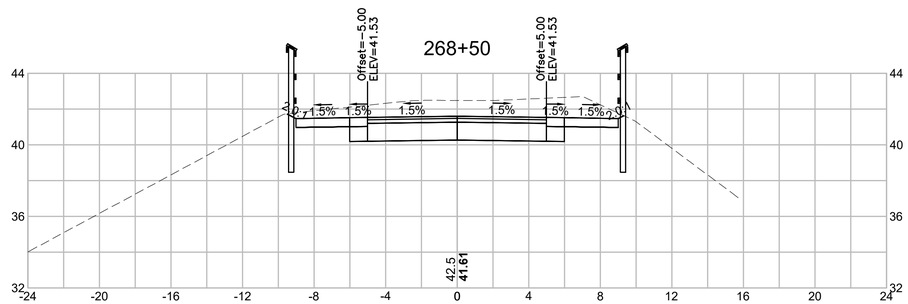


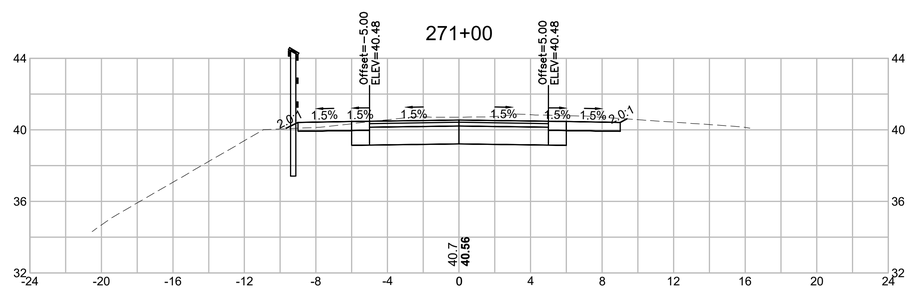












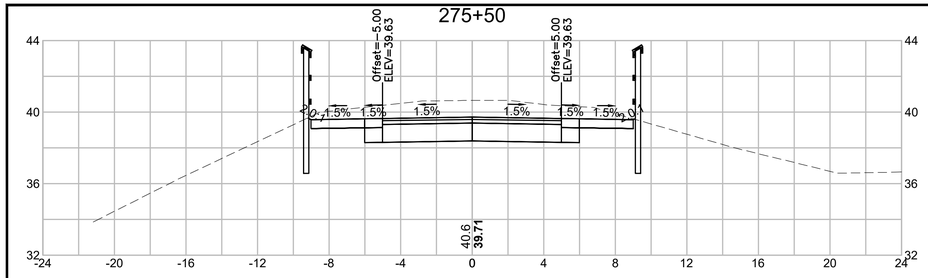
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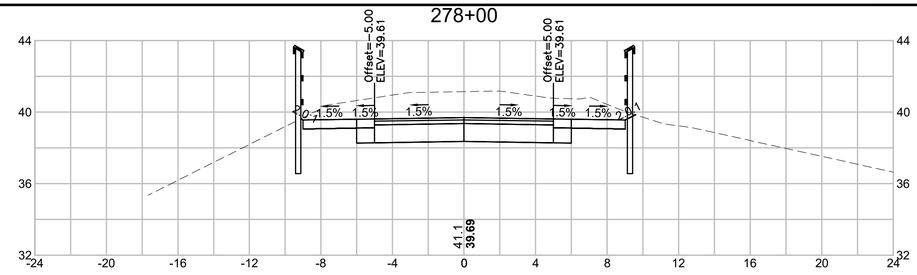
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	109	114
PROJECT FILE NO.	17112.00		

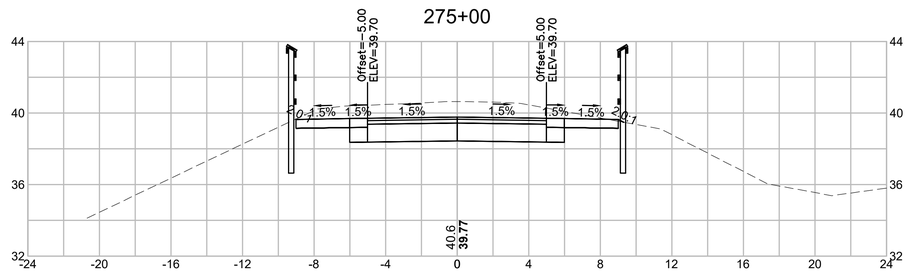
CROSS SECTIONS - 25

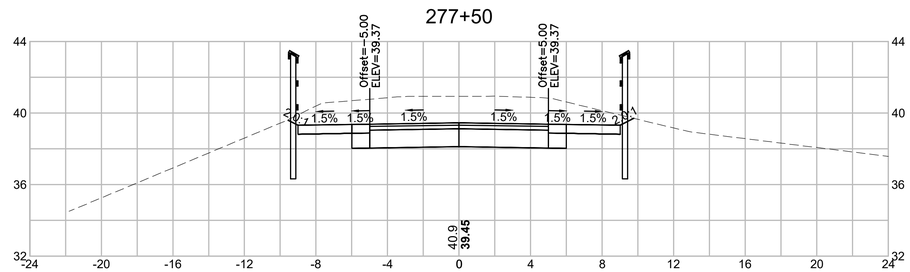
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

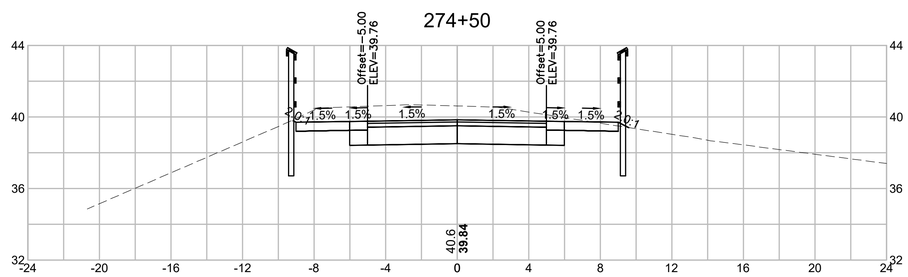
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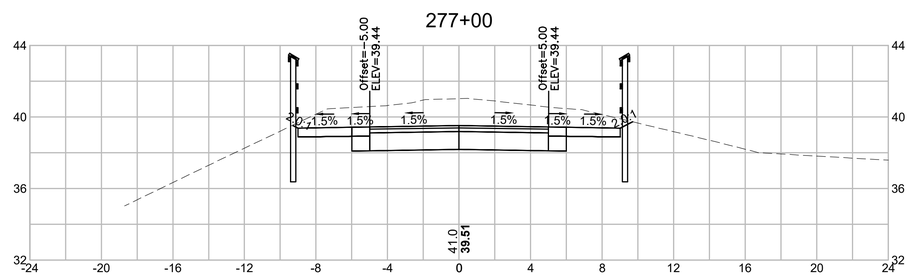


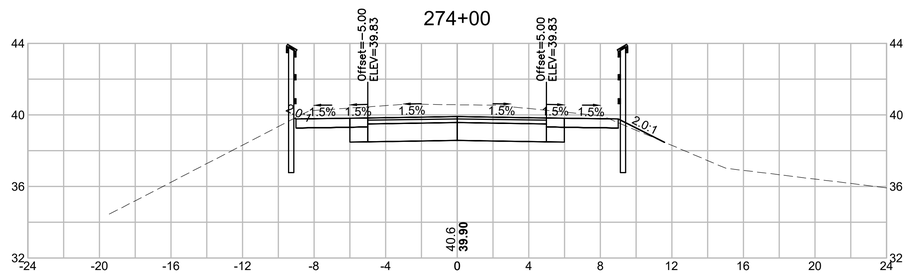


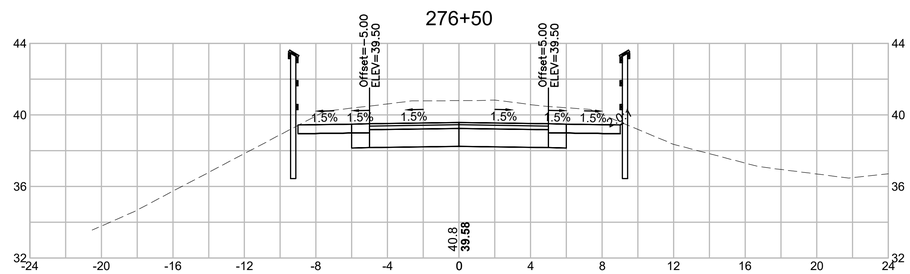


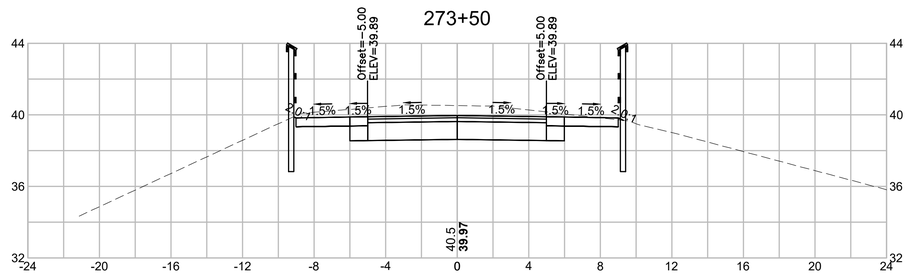


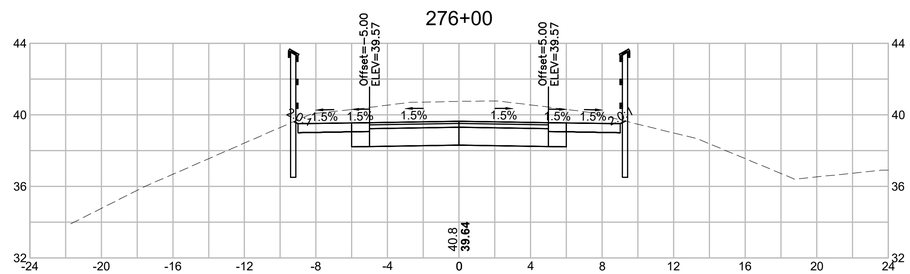












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STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	110	114
PROJECT FILE NO.		17112.00	

CROSS SECTIONS - 26

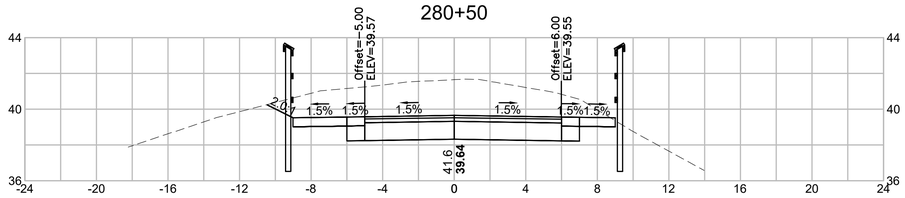
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VER. SCALE IN FEET
4 0 4 8

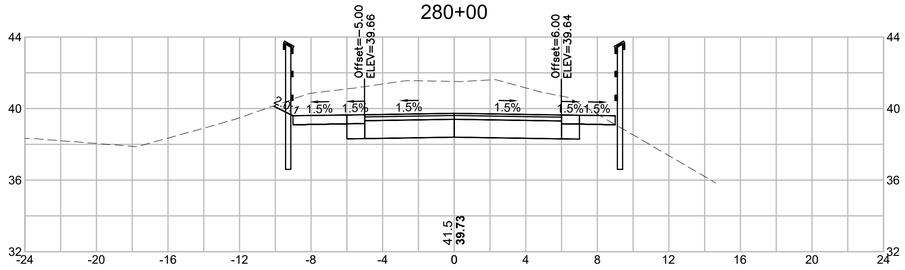
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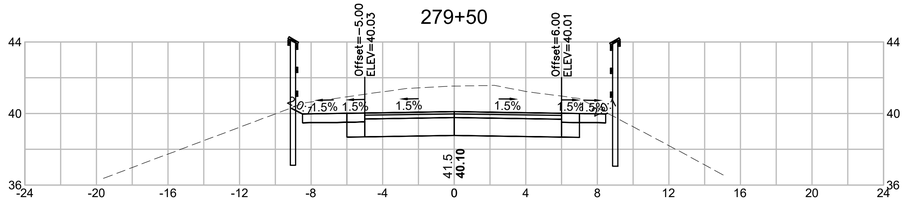
WALTHAM
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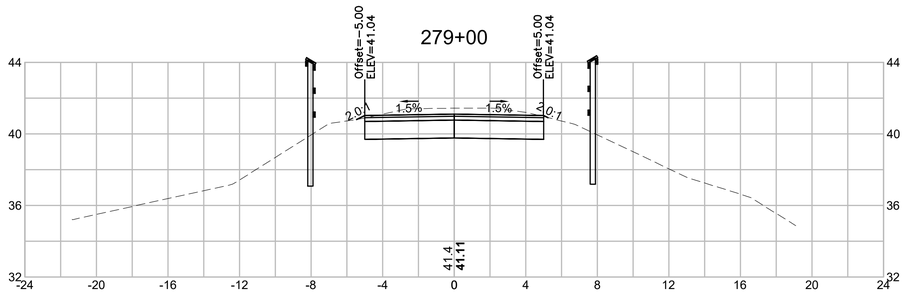
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	111	114
PROJECT FILE NO.	17112.00		

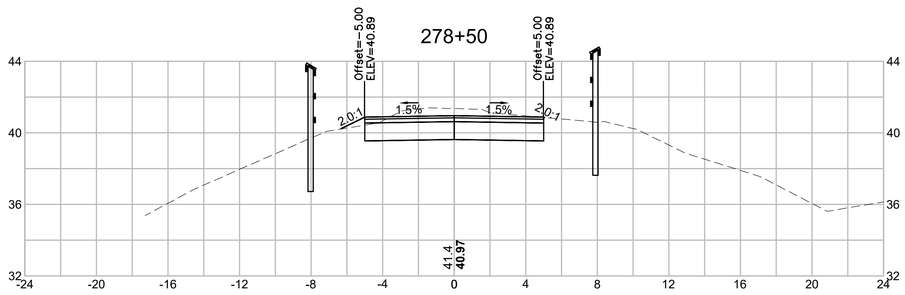
CROSS SECTIONS - 27

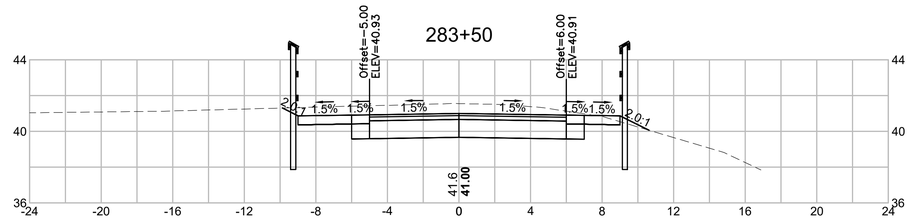


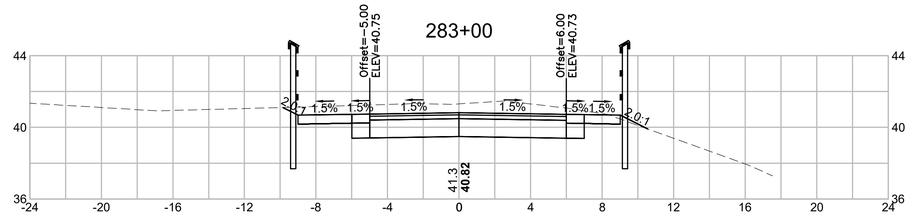


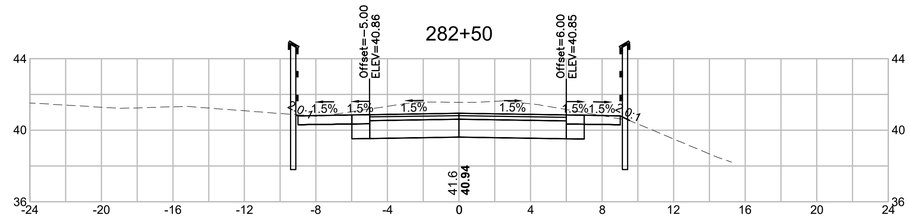


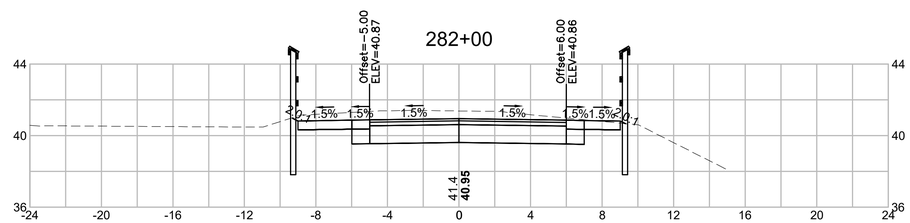


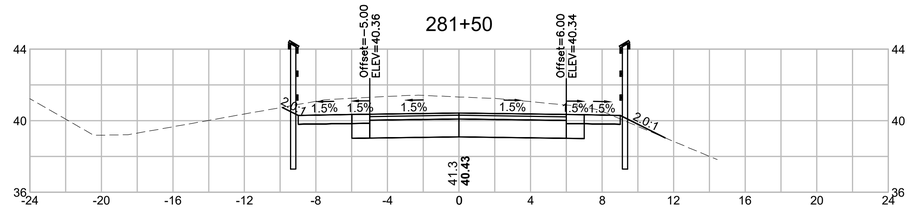


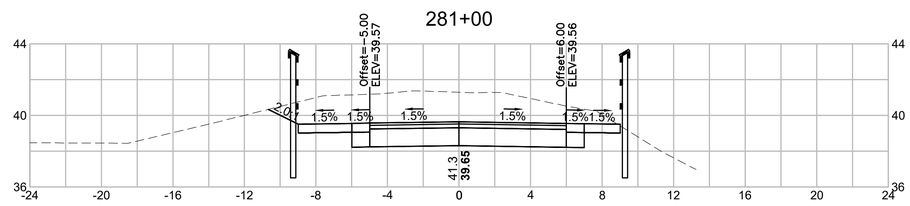












HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

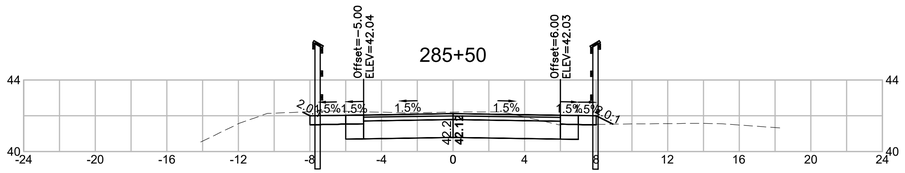
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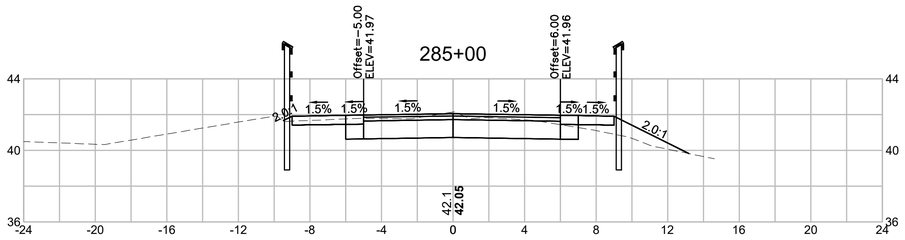
WALTHAM
WAYSIDE TRAIL

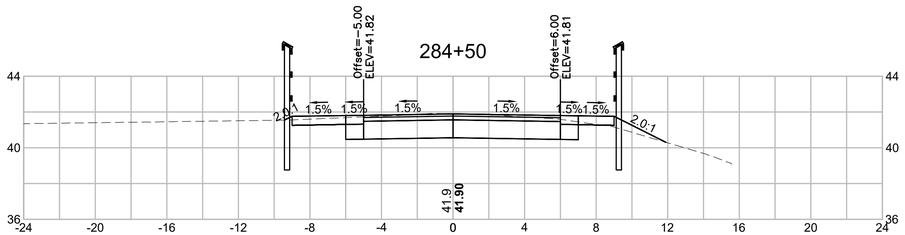
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MA	-	112	114
PROJECT FILE NO.	17112.00		

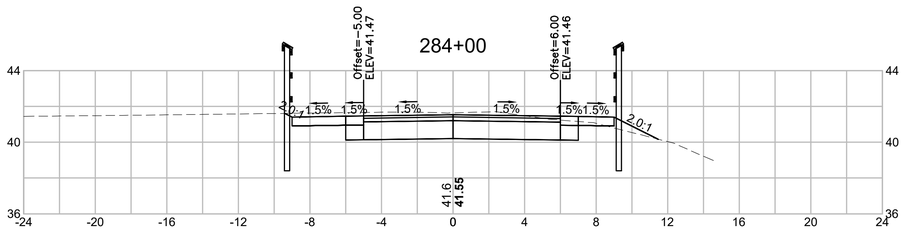
CROSS SECTIONS - 28

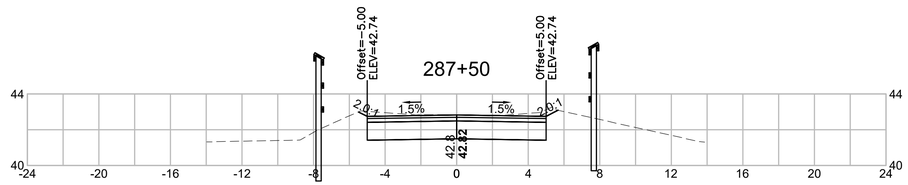
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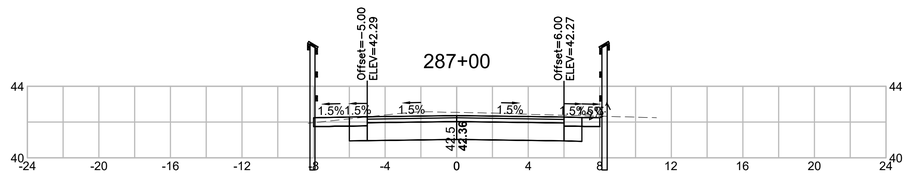


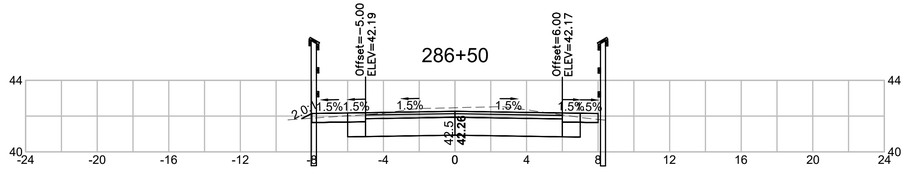


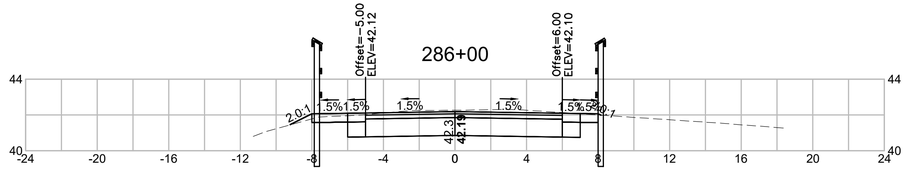










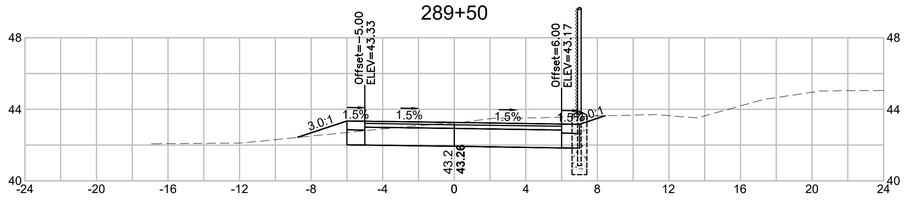


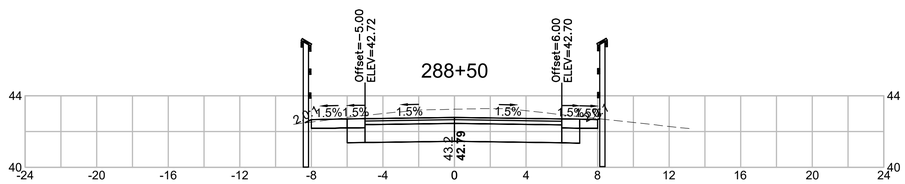
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

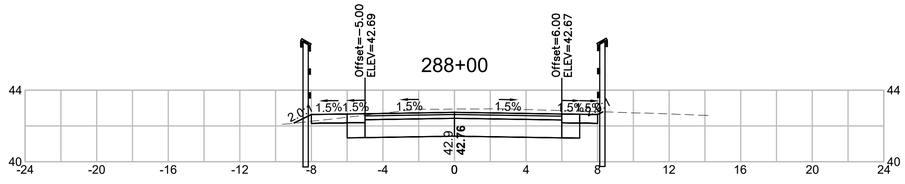
WALTHAM
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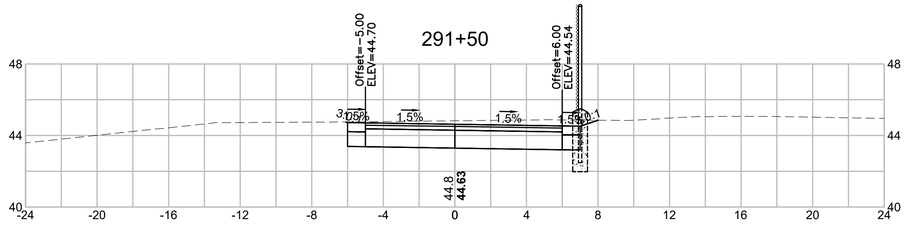
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	113	114
PROJECT FILE NO.	17112.00		

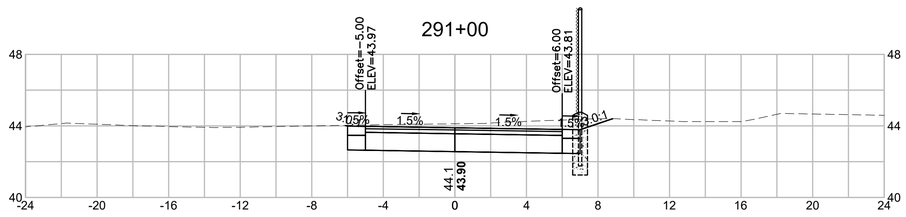
CROSS SECTIONS - 29

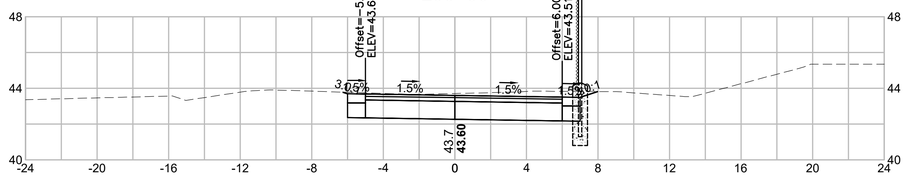


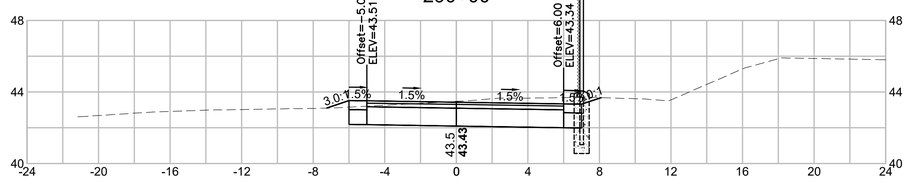












HOR. SCALE IN FEET
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VER. SCALE IN FEET

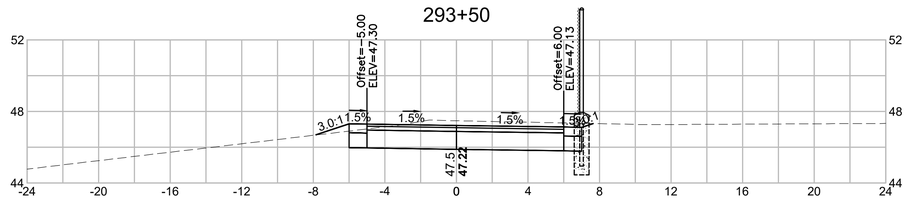
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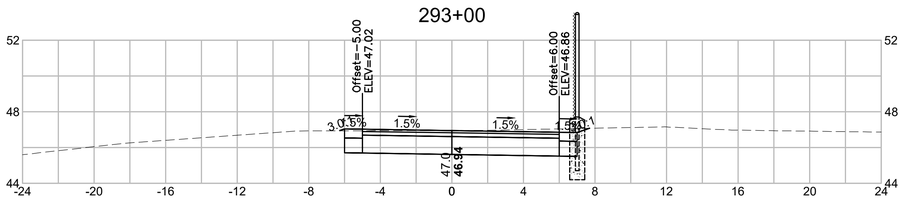
WALTHAM
WAYSIDE TRAIL

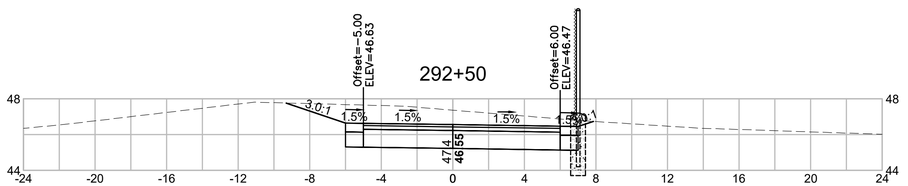
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	114	114
PROJECT FILE NO.	17112.00		

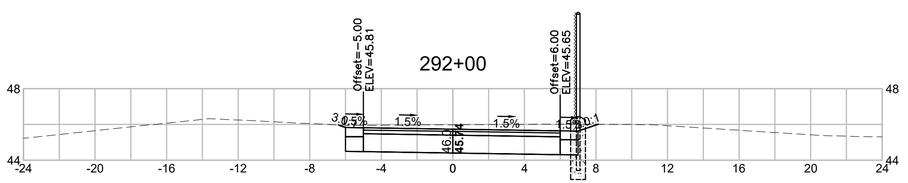
CROSS SECTIONS - 30

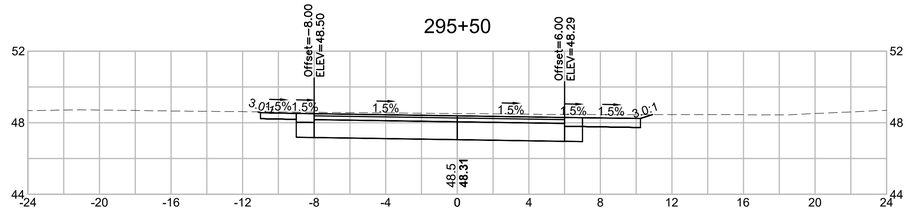
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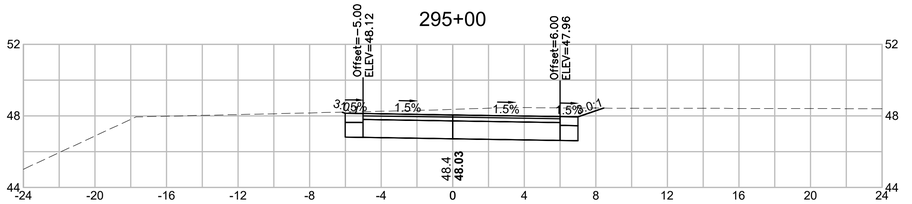


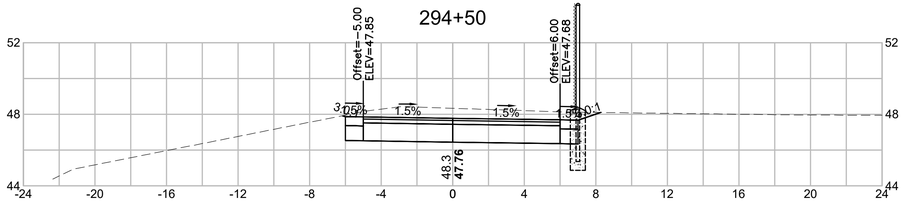


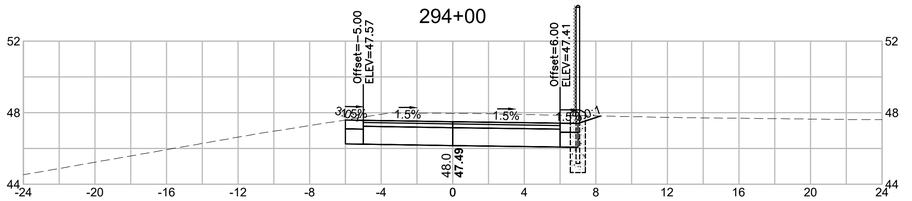












HOR. SCALE IN FEET
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VER. SCALE IN FEET