



**US Army Corps  
of Engineers®**  
New England District  
696 Virginia Road  
Concord, MA 01742-2751

# PUBLIC NOTICE

**Comment Period Begins:** March 7, 2023  
**Comment Period Ends:** April 6, 2023  
**File Number:** NAE-2023-00256  
**In Reply Refer To:** Dan Vasconcelos  
**Phone:** (978) 318-8653  
**E-mail:** daniel.b.vasconcelos@usace.army.mil

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The District Engineer has received a permit application to conduct work in waters of the United States from the Massachusetts Department of Transportation (MassDOT) – Highway Division, 10 Park Plaza, Boston, Massachusetts 02116. This work is proposed in the Wading River and associated vegetated wetlands at the bridges conveying Balcom Street over the Wading River in Mansfield, Massachusetts. The site coordinates are: Latitude 42° 0' 1.928" N, Longitude 71° 15' 36.622" W.

Note: Although this project is eligible for review under the General Permits for Massachusetts (MA GPs), the work is not expected to be complete until after the MA GPs expire on April 5, 2023. The applicant is therefore seeking an individual permit to allow more time to complete the work.

The work involves the permanent discharge of 235 square feet of fill material below the Ordinary High Water (OHW) mark of the Wading River, and 78 square feet within vegetated wetlands, associated with the replacement of the bridges conveying Balcom Street over the Wading River. The work includes replacement of the two existing bridges with a new single-span bridge, removal of the center island between the existing bridges, installation of new abutments, removal of the existing abutments, placement of scour protection, and roadway widening, including installation of a sidewalk on the north side. An additional 4,011 square feet of temporary impacts below OHW, and 242 square feet of temporary impacts to vegetated wetlands, are proposed resulting from temporary construction access, installation of cofferdams, and associated dewatering behind cofferdams to allow work to occur in the dry.

The applicant's stated project purpose is to replace the deficient bridges and abutments to improve safety and accessibility at the crossing. The work is shown on the enclosed plans entitled "MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION PLAN AND PROFILE OF BALCOM STREET OVER WADING RIVER IN THE TOWN OF MANSFIELD BRISTOL COUNTY USACE IP PLANS" on 12 sheets, and dated "FEBRUARY 14, 2023".

The project has been designed to avoid and minimize impacts to waters of the United States, including wetlands, through the use of various best management practices, including the installation of erosion and sedimentation controls at the project limits, conducting work within a cofferdam to reduce turbidity, and covering the rip-rap scour protection with natural streambed material. A wider bridge alternative with sidewalks on each side was rejected in order to avoid impacts to wetlands. No federal compensatory mitigation is proposed because the impacts are considered minimal.

## AUTHORITY

Permits are required pursuant to:

- ☐ Section 10 of the Rivers and Harbors Act of 1899
- ☒ Section 404 of the Clean Water Act
- ☐ Section 103 of the Marine Protection, Research and Sanctuaries Act.
- ☐ Section 14 of the Rivers and Harbors Act of 1899 (33 USC 408)

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers, New England District (USACE), is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. The USACE will consider all comments received to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Where the activity involves the discharge of dredged or fill material into waters of the United States or the transportation of dredged material for the purpose of disposing it in ocean waters, the evaluation of the impact of the activity in the public interest will also include application of the guidelines promulgated by the Administrator, U.S Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act, and/or Section 103 of the Marine Protection Research and Sanctuaries Act of 1972, as amended.

## NATIONAL HISTORIC PRESERVATION ACT

The Federal Highway Administration (FHWA) is the lead federal agency responsible for coordination pursuant to Section 106 of the National Historic Preservation Act. MassDOT has initiated coordination with the State Historic Preservation Officer (SHPO), Massachusetts Board of Underwater Archaeological Resources (BUAR), and relevant Tribal Historic Preservation Officers (THPOs) on behalf of the FHWA. Although FHWA has taken the lead on this consultation, based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. The Corps will continue review and consultation as required to fulfil the requirements of the National Historic Preservation Act as part of the permit review process.

## ENDANGERED SPECIES CONSULTATION

FHWA is the lead federal agency responsible for coordination pursuant to Section 7 of the Endangered Species Act. Although FHWA is the lead federal agency, the Corps has reviewed the application for the potential impact on Federally-listed threatened or endangered species and their designated critical habitat pursuant to section 7 of the Endangered Species Act as amended. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect a listed species or their critical habitat. FHWA is coordinating with the U.S. Fish and Wildlife Service on listed species under their jurisdiction and the ESA consultation will be concluded prior to the final decision.

## OTHER GOVERNMENT AUTHORIZATIONS

The following authorizations have been applied for, or have been, or will be obtained:

- ☐ Permit, license or assent from State.
- ☐ Permit from local wetland agency or conservation commission.
- ☒ Water Quality Certification in accordance with Section 401 of the Clean Water Act.

## COMMENTS

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. Comments should be submitted in writing by the above date. If you have any questions, please contact Dan Vasconcelos at (978) 318-8653, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The USACE holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

**THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.**

*Ruthann Brien*

for

**Paul M. Maniccia  
Chief, Permits and Enforcement Branch  
Regulatory Division**

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If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at [bettina.m.chaisson@usace.army.mil](mailto:bettina.m.chaisson@usace.army.mil).

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION  
HIGHWAY DIVISION

MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	12
PROJECT FILE NO.		603796	

TITLE SHEET & INDEX

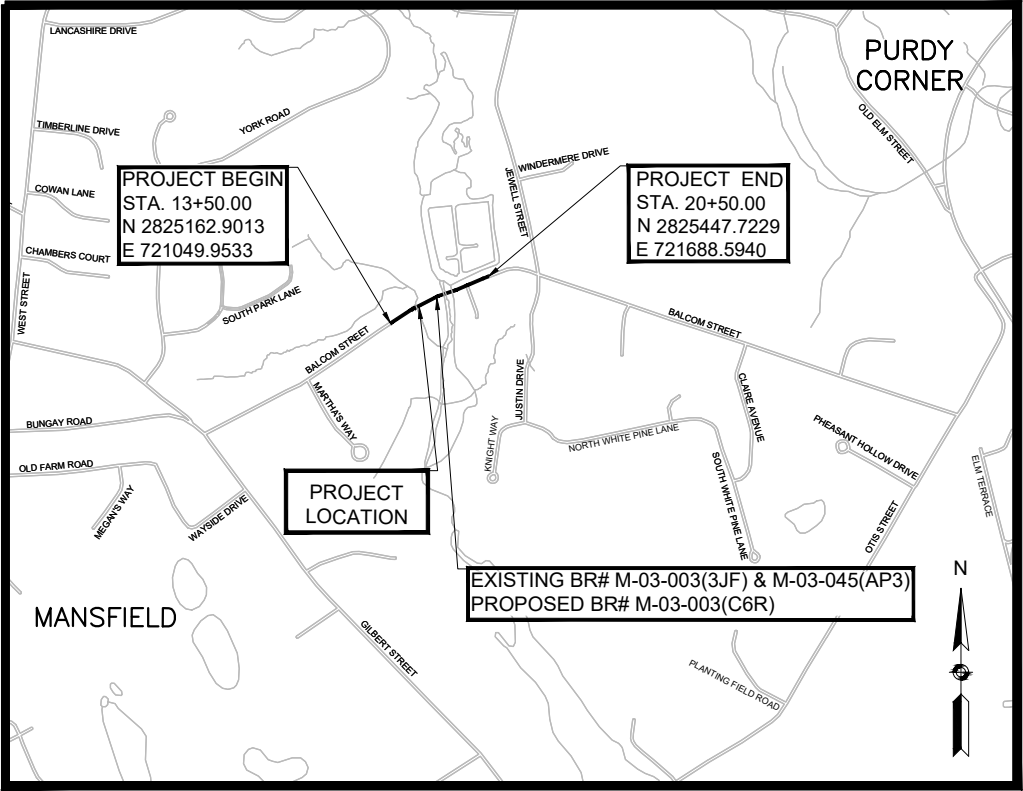
PLAN AND PROFILE OF  
BALCOM STREET OVER WADING RIVER

IN THE TOWN OF  
MANSFIELD  
BRISTOL COUNTY

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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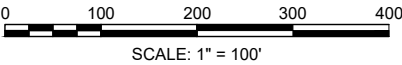
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	TYPICAL SECTIONS
4 - 5	CONSTRUCTION PLANS & PROFILES
6 - 7	CURB TIE & GRADING PLANS
8 - 9	DRAINAGE AND UTILITY PLANS
10	LANDSCAPE PLAN AND DETAILS
11 - 12	CONSTRUCTION DETAILS





DESIGN DESIGNATION (BALCOM STREET)

DESIGN SPEED	35 MPH
ADT (2020)	2,280 VPD
ADT (2040)	2,520 VPD
K	12.6%
D	63.4% WB
T (PEAK HOUR)	2.7%
T (AVERAGE DAY)	1.9%
DHV	320 VPH
DDHV	200 VPH
FUNCTIONAL CLASSIFICATION	LOCAL


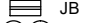





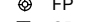

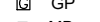

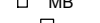





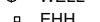





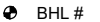



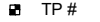











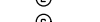



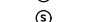















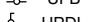


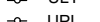

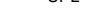





























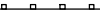

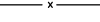










































FEBRUARY 14, 2023































LENGTH OF PROJECT = 700.00 FEET = 0.132 MILES

	02/14/2023	WOTUS IMPACT REVISIONS	1
	01/25/2023	1ST USACE-DEP SUBMISSION	0
	DATE	DESCRIPTION	REV #
			
APPROVED			
 Engineering Design Planning Construction Management 578.570.2999 Greenman-Pedersen, Inc. 181 Ballardvale Street, Suite 202 Wilmington, MA 01887 GPI.NET.COM		CHIEF ENGINEER, P.E.	DATE

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		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
		SILT FENCE/COMPOST FILTER TUBES
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		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

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

GENERAL NOTES

- TOPOGRAPHICAL INFORMATION WAS PROVIDED IN NAVD 1988 VERTICAL DATUM AND MA MAINLAND NAD 83 HORIZONTAL DATUM. EXISTING CONDITIONS AND TOPOGRAPHICAL SURVEY PROVIDED BY GREENMAN-PEDERSEN, INC., MAY 2018, (978-570-2999).
- THE LOCATIONS AND SIZES OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE EXACTLY AND TO PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CALL "DIG-SAFE" 1-888-DIGSAFE (344-7233) AT LEAST 72 HOURS BEFORE COMMENCING CONSTRUCTION.
- WHERE AN EXISTING UNDERGROUND UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS, OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE & RESET" (R&R).
- ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS NOTED OTHERWISE.
- ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
- ALL EXISTING STATE, COUNTY, CITY AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
- ALL TRANSVERSE JOINTS, AND ALL LONGITUDINAL JOINTS BETWEEN NEW SURFACE PAVEMENT AND EXISTING SURFACE PAVEMENT TO REMAIN SHALL BE COATED WITH A HOT POURED RUBBERIZED ASPHALT SEALANT MEETING THE REQUIREMENTS OF ITEM 453.
- ALL DISTURBED AREAS NOT DESIGNATED TO BE PAVED SHALL HAVE LOAM BORROW PLACED AND SEEDED. THE LOAM BORROW SHALL HAVE A MINIMUM DEPTH OF 4 INCHES AND SHALL BE PLACED FLUSH WITH THE TOP OF THE ADJACENT CURB, EDGING, BERM OR PAVEMENT SURFACE.
- THE LIMIT OF WORK AREA SHALL BE THE STREET RIGHT OF WAY UNLESS SHOWN OTHERWISE.
- PRIOR TO THE START OF ANY NEW UTILITY WORK, ALL ELEVATIONS OF EXISTING UTILITIES IN THOSE AREAS ARE TO BE VERIFIED. THE ENGINEER IS TO BE NOTIFIED IMMEDIATELY SHOULD ANY DISCREPANCIES OCCUR.
- ALL CASTINGS SHALL BE SET FLUSH WITH FINISHED GRADE.
- ALL PUBLICLY OWNED GATE BOXES, SERVICE BOXES, MANHOLE FRAMES AND COVERS SHALL BE ADJUSTED TO GRADE BY THE CONTRACTOR.
- ALL NEW SIDEWALKS AND DRIVEWAY GRADES SHALL MATCH EXISTING GRADES AT BACK OF SIDEWALK LINE UNLESS SHOWN OTHERWISE ON THE PLANS AND CROSS SECTIONS.
- THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO PROTECT ALL EXISTING TREES AND ROOTS THAT ARE NOT DESIGNATED FOR REMOVAL.
- CONTRACTOR TO CONTACT ENGINEER PRIOR TO INSTALLATION OF BOUNDS FOR FINAL LOCATIONS.
- DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

GENERAL ABBREVIATIONS

DHV	DESIGN HOURLY VOLUME	LT	LEFT	REM	REMOVE
DI	DROP INLET	MAX	MAXIMUM	RET	RETAIN
DIA	DIAMETER	MB	MAILBOX	RET WALL	RETAINING WALL
DIP	DUCTILE IRON PIPE	MH	MANHOLE	ROW	RIGHT OF WAY
DW	STEADY DON'T WALK - PORTLAND ORANGE	MHB	MASSACHUSETTS HIGHWAY BOUND	RR	RAILROAD
DWY	DRIVEWAY	MIN	MINIMUM	R&R	REMOVE AND RESET
ELEV (or EL.)	ELEVATION	NIC	NOT IN CONTRACT	R&S	REMOVE AND STACK
EMB	EMBANKMENT	NO.	NUMBER	RT	RIGHT
EOP	EDGE OF PAVEMENT	PC	POINT OF CURVATURE	SB	STONE BOUND
EXIST (or EX)	EXISTING	PCC	POINT OF COMPOUND CURVATURE	SHLD	SHOULDER
EXC	EXCAVATION	PCR	PEDESTRIAN CURB RAMP	SMH	SEWER MANHOLE
F&C	FRAME AND COVER	P.G.L.	PROFILE GRADE LINE	ST	STREET
F&G	FRAME AND GRATE	PI	POINT OF INTERSECTION	STA	STATION
FDN.	FOUNDATION	POC	POINT ON CURVE	SSD	STOPPING SIGHT DISTANCE
FLDSTN	FIELDSTONE	POT	POINT ON TANGENT	SHLO	STATE HIGHWAY LAYOUT LINE
GAR	GARAGE	PRC	POINT OF REVERSE CURVATURE	SW	SIDEWALK
GD	GROUND	PROJ	PROJECT	T	TANGENT DISTANCE OF CURVE/TRUCK %
GG	GAS GATE	PROP	PROPOSED	TAN	TANGENT
GI	GUTTER INLET	PSB	PLANTABLE SOIL BORROW	TEMP	TEMPORARY
GIP	GALVANIZED IRON PIPE	PT	POINT OF TANGENCY	TC	TOP OF CURB
GRAN	GRANITE	PVC	POINT OF VERTICAL CURVATURE	TOS	TOP OF SLOPE
GRAV	GRAVEL	PVCC	POINT OF VERTICAL COMPOUND CURVATURE	TYP	TYPICAL
GRD	GUARD	PVI	POINT OF VERTICAL INTERSECTION	UP	UTILITY POLE
HDW	HEADWALL	PVRC	POINT OF VERTICAL REVERSE CURVATURE	VAR	VARIES
HMA	HOT MIX ASPHALT	PVT	POINT OF VERTICAL TANGENCY	VERT	VERTICAL
HOR	HORIZONTAL	PVMT	PAVEMENT	VC	VERTICAL CURVE
HYD	HYDRANT	PWW	PAVED WATER WAY	WG	WATER GATE
INV	INVERT	R	RADIUS OF CURVATURE	WIP	WROUGHT IRON PIPE
JCT	JUNCTION	R&D	REMOVE AND DISPOSE	WM	WATER METER/WATER MAIN
L	LENGTH OF CURVE	RCP	REINFORCED CONCRETE PIPE	X-SECT	CROSS SECTION
LB	LEACH BASIN	RD	ROAD		
LP	LIGHT POLE	RDWY	ROADWAY		

MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	12
PROJECT FILE NO.		603796	

LEGEND & ABBREVIATIONS

MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	12
PROJECT FILE NO.		603796	

TYPICAL SECTIONS

PAVEMENT NOTES

FULL DEPTH HMA CONSTRUCTION

SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER  
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER

BASE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER  
8" GRAVEL BORROW TYPE B

FULL DEPTH HMA CONSTRUCTION LESS THAN 4 FEET

SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER  
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER

SUBBASE: 8" GRAVEL BORROW TYPE B (OR SUITABLE EXISTING MATERIAL)

PAVEMENT FINE MILLING & HMA OVERLAY

SURFACE COURSE: 1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER

SURFACE MILLING: VARIABLE DEPTH (1.5" MAX.) PAVEMENT FINE MILLING (ITEM 415.2)

CEMENT CONCRETE SIDEWALKS

SURFACE COURSE: 4" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610) OVER

SUBBASE: 8" GRAVEL BORROW TYPE B

CEMENT CONCRETE SIDEWALKS AT DRIVEWAYS

SURFACE COURSE: 6" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610) OVER

SUBBASE: 8" GRAVEL BORROW TYPE B

HMA DRIVEWAYS

SURFACE COURSE: 1.5" HOT MIX ASPHALT SURFACE COURSE 9.5 (SSC-9.5) OVER  
2.5" HOT MIX ASPHALT SURFACE COURSE 12.5 (SSC-12.5) OVER

SUBBASE: 8" GRAVEL BORROW TYPE B

BRIDGE PAVEMENT

SURFACE COURSE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE - 9.5 (SSC-B-9.5) OVER

PROTECTIVE COURSE: 1.5" SUPERPAVE BRIDGE PROTECTIVE COURSE - 9.5 (SPC-B-9.5)

GENERAL NOTES

- THE CONTRACTOR IS HEREBY NOTIFIED THAT IT IS ANTICIPATED THAT THE EXISTING SUBBASE MAY BE SUITABLE FOR REUSE AS GRAVEL BORROW MATERIAL. THE EXISTING SUBBASE MATERIAL WILL BE TESTED BY MASSDOT. IF THE TESTING REVEALS THAT THE EXISTING SUBBASE MATERIAL IS SUITABLE FOR REUSE AS GRAVEL BORROW FOR FULL DEPTH AREAS, IT SHALL BE RETAINED AND THE QUANTITIES FOR EXCAVATION AND GRAVEL BORROW SHALL BE ADJUSTED ACCORDINGLY.
- ALL HMA SHALL BE IN ACCORDANCE WITH QUALITY ASSURANCE OF HMA AND SUPERPAVE SPECIFICATIONS. ASPHALT EMULSION FOR TACK COAT RS-1H SHALL BE APPLIED TO PAVEMENT LAYERS PRIOR TO PAVING FOR BONDED STRENGTH. HMA JOINT ADHESIVE SHALL BE APPLIED TO ALL COLD JOINTS IN SURFACE COURSE.
- PAVEMENT MILLING SHALL ACHIEVE THE CROSS SLOPES AS NOTED ON THE TYPICAL SECTIONS FOR NORMAL SECTION AND MAINTAIN EXISTING CROSS SLOPE FOR TRANSITIONS AND SUPERELEVATED SECTIONS.
- SUITABLE EXCAVATED MATERIAL FROM WITHIN THE RIGHT-OF-WAY SHALL BE USED ON SITE AS DIRECTED BY ENGINEER.
- ALL SIDEWALKS SHALL HAVE A CROSS SLOPE OF 1.5% (0.015FT/FT). TOLERANCE FOR CONSTRUCTION SHALL BE  $\pm 0.50\%$ . IN NO CASE SHALL THE SIDEWALK CROSS SLOPE EXCEED 2.0% (0.02 FT/FT). SIDEWALKS SHALL HAVE A MINIMUM CLEAR PATH OF 36" FREE OF OBSTRUCTION (UTILITY POLES, HYDRANTS, ETC.).

\* TOLERANCE FOR CONSTRUCTION  $\pm 0.5\%$

TYPICAL SECTION - BALCOM STREET

STA. 16+82 TO STA. 17+65

\* TOLERANCE FOR CONSTRUCTION  $\pm 0.5\%$

TYPICAL SECTION - BALCOM STREET

STA. 16+45 TO STA. 16+82  
STA. 17+65 TO STA. 18+19

PROP. PAVEMENT MILLING MULCH  
UNDER GUARDRAIL (TYP.)

TYPICAL SECTION - BALCOM STREET

STA. 14+00 TO STA. 16+45  
STA. 19+19 TO STA. 20+00

TYPICAL SECTION - BALCOM STREET

STA. 13+50 TO STA. 14+00  
STA. 20+00 TO STA. 20+50



ENVIRONMENTAL NOTES:  
1. PLEASE REFER TO DRAINAGE AND UTILITY PLANS FOR COLOR WETLAND IMPACTS AND LEGEND

MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	12
PROJECT FILE NO.		603796	

CONSTRUCTION PLANS & PROFILES

PROP. FULL DEPTH HMA DRIVEWAY (TYP.) (RET.) INV. 36" RCP EL. = 122.74  
END PROP. TOWN LAYOUT ALTERATION

PROP. STREAM BANK IMPACT PERM. = 27 LF  
PROP. WATERS OF THE US IMPACT PERM. = 63 SF

PROP. GRAN. CURB TYPE VB (TYP.)  
PROP. FULL DEPTH HMA CONSTRUCTION

WADING RIVER EAST CHANNEL  
PROP. STREAM BANK IMPACT TEMP. = 142 LF  
PERM. = 54 LF  
PROP. WATERS OF THE US IMPACT TEMP. = 2537 SF  
PERM. = 109 SF  
PROP. 6.0' CEM. CONC. SIDEWALK  
PROP. M-03-003(C6R)  
PROP. STONE MASONRY RET. WALL

R&R GATE  
CITY OF ATTLEBORO  
N/F BK/PG 764/350  
250 BALCOM ST  
MAP 3 LOT 2

PROP. LOAM & SEED (TYP.)  
PROP. PERM. EASEMENT (TYP.)  
PROP. TREE TRIMMING STA. 13+50 TO STA. 18+75 LT  
PROP. PAVEMENT MILLING MULCH UNDER GUARDRAIL (TYP.)

PROP. CLEARING & GRUBBING (TYP.) STA. 13+50 TO STA. 18+75 LT  
REM. TREES (2)  
PROP. TREE PROTECTION FENCE  
RET. TREES (2)

PROP. FULL DEPTH HMA CONSTRUCTION (RET.) INV. 24" RCP EL. = 126.52

PROP. EOP  
PROP. SEDIMENT CONTROL BARRIER (TYP.)  
PROP. PAVEMENT FINE MILLING & HMA OVERLAY (RET.)

BEGIN PROP. TOWN LAYOUT ALTERATION

BALCOM STREET



HOR. SCALE IN FEET

N/F STEPHEN R. HUFTALEN, JR. AND TARSHA M. HUFTALEN  
BK/PG 18801/180  
PB/PL 70/60  
296 BALCOM ST  
MAP 3 LOT 93

BEGIN PROJECT STA. 13+50.00  
MEET EXISTING N 2825162.9013  
E 721049.9533

PROP. TEMP. EASEMENT (TYP.)  
PROP. CLEARING & GRUBBING (TYP.) STA. 13+50 TO STA. 18+50 RT  
PROP. SLOPE LIMIT (TYP.)  
BOS  
BEGIN PROP. GRASS DRAINAGE SWALE

PROP. GRASS DRAINAGE SWALE  
PROP. EOP  
PROP. SEDIMENT CONTROL BARRIER (TYP.)  
PROP. PERM. EASEMENT (TYP.)  
PROP. GUARDRAIL TANGENT END TREATMENT, TL-2

PROP. PAVEMENT MILLING MULCH UNDER GUARDRAIL (TYP.)  
R&D HIGHWAY GUARD

WADING RIVER WEST CHANNEL  
PROP. STREAM BANK IMPACT TEMP. = 126 LF  
PERM. = 50 LF  
PROP. WATERS OF THE US IMPACT TEMP. = 1474 SF  
PERM. = 63 SF  
PROP. BWV IMPACT TEMP. = 242 SF  
PERM. = 78 SF  
PROP. WETLAND REPLICATION AREA = 197 SF

R&D HIGHWAY GUARD

PROP. CONST. 2' & PGL

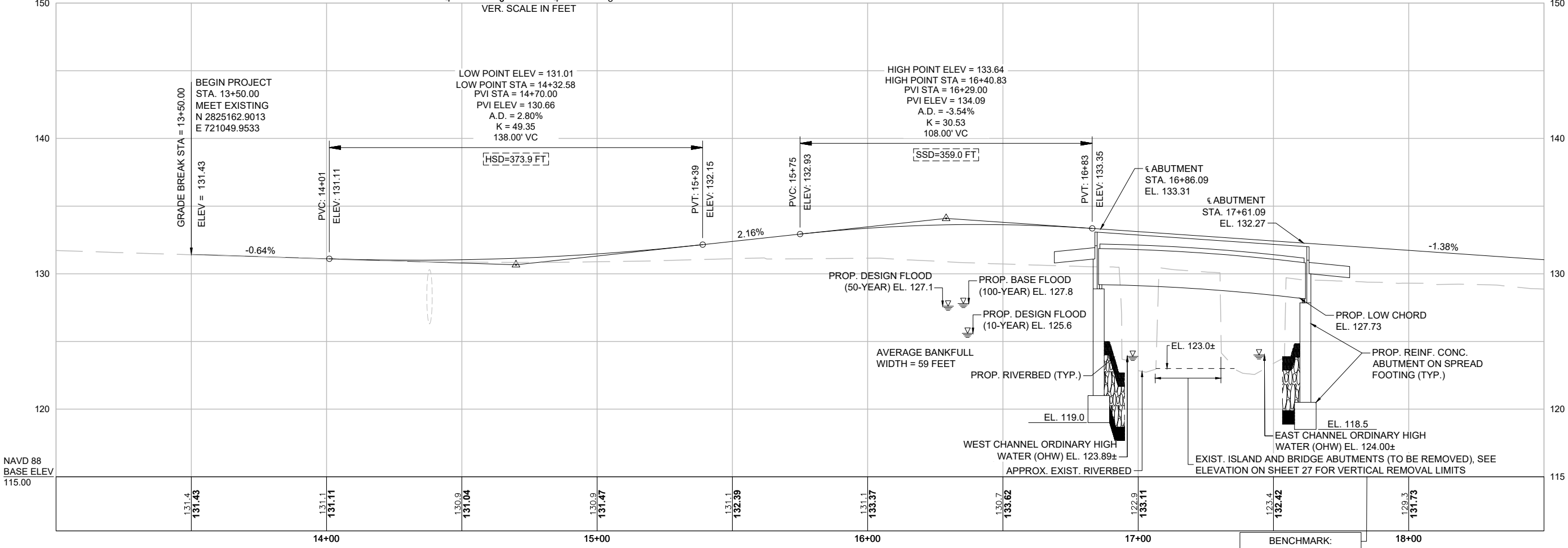
PROP. LOAM & SEED (TYP.)

PROP. MODIFIED ROCKFILL CHANNEL

PROP. PERM. DRAINAGE EASEMENT

PROP. FULL DEPTH HMA DRIVEWAY (TYP.) (RET.)

CONTINUED ON SHEET 5

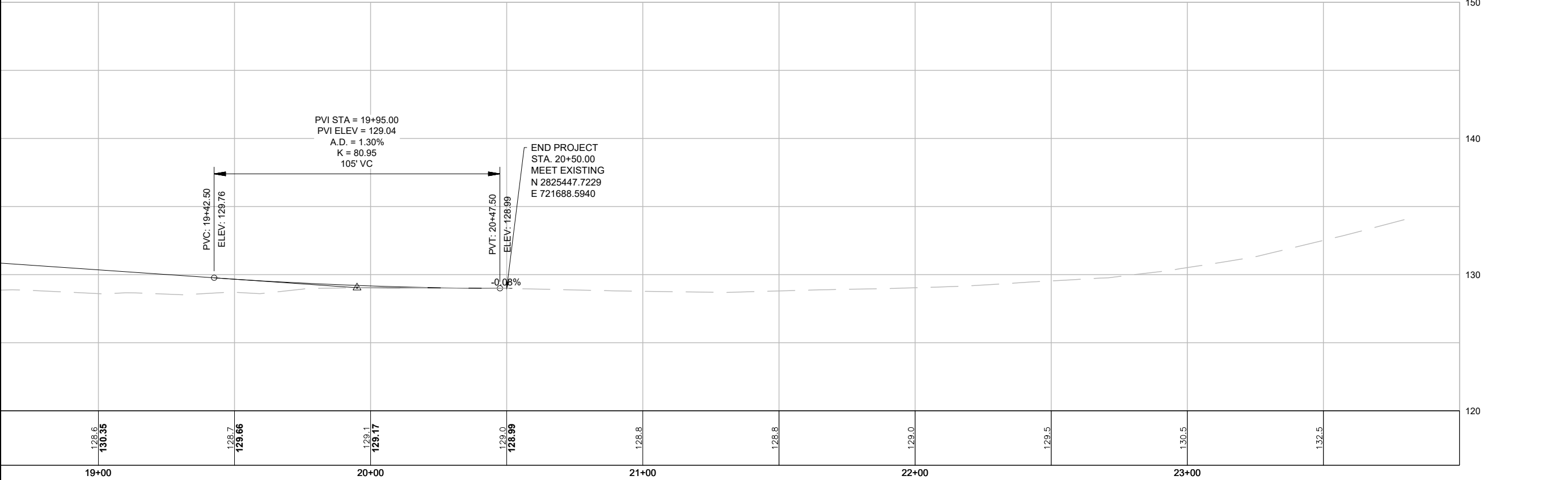
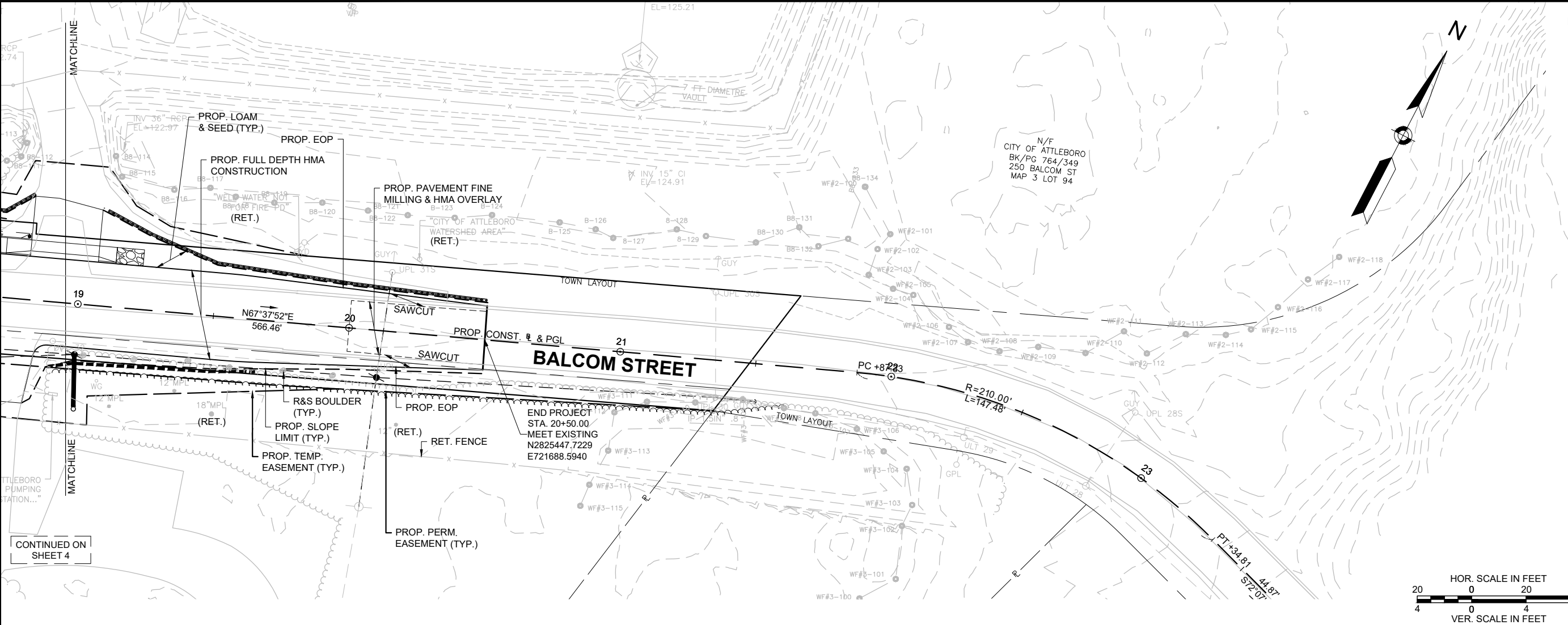




MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	12
PROJECT FILE NO.		603796	

CONSTRUCTION PLANS & PROFILES



BALCOM STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	2824966.9429	720760.0242		N55°20'34"E 234.82'	12+34.82	2825100.4766	720953.1788
C1	12+34.82	2825100.4766	720953.1788	R=1800.00' Δ=12°17'18" L=386.05' T=193.77'		16+20.87	2825284.4080	721291.7530

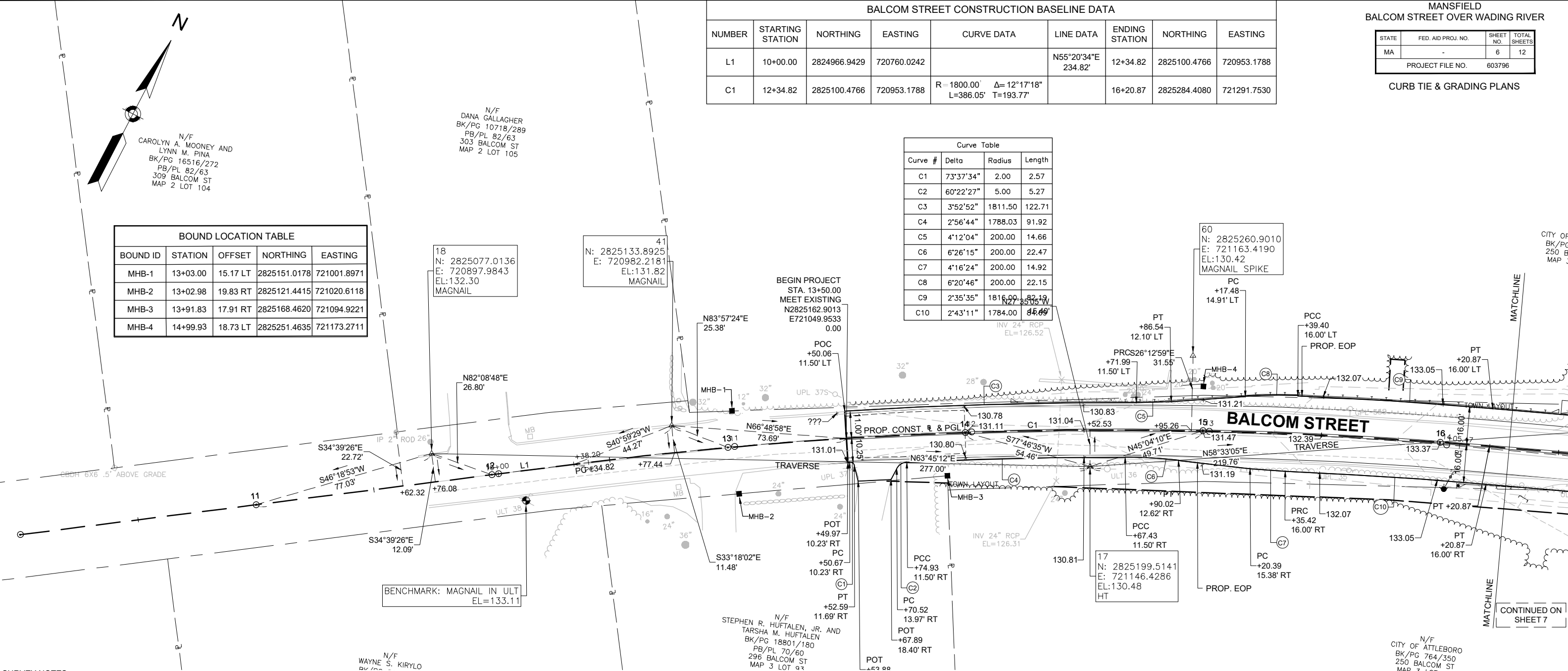
MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	12
PROJECT FILE NO.		603796	

CURB TIE & GRADING PLANS

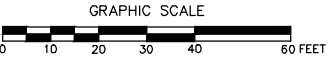
BOUND LOCATION TABLE				
BOUND ID	STATION	OFFSET	NORTHING	EASTING
MHB-1	13+03.00	15.17 LT	2825151.0178	721001.8971
MHB-2	13+02.98	19.83 RT	2825121.4415	721020.6118
MHB-3	13+91.83	17.91 RT	2825168.4620	721094.9221
MHB-4	14+99.93	18.73 LT	2825251.4635	721173.2711

Curve Table			
Curve #	Delta	Radius	Length
C1	73°37'34"	2.00	2.57
C2	60°22'27"	5.00	5.27
C3	3°52'52"	1811.50	122.71
C4	2°56'44"	1788.03	91.92
C5	4°12'04"	200.00	14.66
C6	6°26'15"	200.00	22.47
C7	4°16'24"	200.00	14.92
C8	6°20'46"	200.00	22.15
C9	2°35'35"	1816.00	82.19
C10	2°43'11"	1784.00	85.69



SURVEY NOTES

- THE BASEPLAN WAS PREPARED FROM AN ACTUAL ON THE GROUND INSTRUMENT FIELD SURVEY PERFORMED BY GREENMAN-PEDERSEN, INC. BETWEEN JUNE & JULY 2017. CONTROL POINTS #1923 & #1924 ESTABLISHED BY MASSDOT IN JUNE 2017 WERE HELD AS THE BASIS FOR THE SURVEY CONTROL. GREENMAN-PEDERSEN, INC. EXTENDED THE CONTROL NETWORK VIA TRADITIONAL TRAVERSING AND LEVELING. THE AVERAGE COMBINED GROUND TO GRID SCALE FACTOR OF THE MASSDOT CONTROL IS 0.9999687724413575.
- THE HORIZONTAL DATUM SHOWN HEREON IS BASED UPON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM - MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83) (2011) EPOCH 2010.00 AS ESTABLISHED BY MASSDOT IN JUNE 2017 VIA GPS OBSERVATION IN CONJUNCTION WITH THE MACORS WRENTHAM BASE STATION.
- THE VERTICAL DATUM SHOWN HEREON REFERENCES THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AS ESTABLISHED BY MASSDOT IN JUNE 2017 VIA GPS OBSERVATION APPLYING THE GEOID 12B MODEL WITH LEVELS TO RECORD GEODETIC CONTROL 438P.
- THE UNITS SHOWN HEREON ARE US SURVEY FEET.
- CONTOUR INTERVAL: 1 FOOT
- THE STATE, COUNTY AND CITY/TOWN RIGHT-OF-WAYS WERE ESTABLISHED BY A CADASTRAL SURVEY AND FOUND MONUMENTATION.
- PROPERTY LINES SHOWN HEREON ARE APPROXIMATE ONLY AND ARE BASED UPON RECORD DEEDS, PLANS AND ASSESSORS INFORMATION OBTAINED AT THE REGISTRY OF DEEDS AND THE TOWN OF MANSFIELD AND CITY OF ATTLEBORO ENGINEERING DEPARTMENTS.
- SUBSURFACE UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE ONLY AND WAS COMPILED FROM SURFACE EVIDENCE AND SUPPLEMENTED WITH RECORD UTILITY INFORMATION WHERE AVAILABLE. IT IS IN COMPLIANCE WITH THE FEDERAL HIGHWAY ADMINISTRATION UTILITY DATA QUALITY LEVEL C. GREENMAN-PEDERSEN, INC. ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. COORDINATION WITH THE APPROPRIATE UTILITIES BEFORE AND DURING DESIGN OF FUTURE CONNECTIONS IS REQUIRED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE EXACTLY AND TO PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY IRON PIPE, REBAR PROPERTY CORNERS, MASSACHUSETTS HIGHWAY BOUNDS, AND ANY CITY/TOWN BOUNDS THAT ARE DAMAGED OR DESTROYED DURING CONSTRUCTION.
- CONTACT "DIG SAFE" AT 1 (888) 344-7233 PRIOR TO CONSTRUCTION.



BOUND LOCATION TABLE				
BOUND ID	STATION	OFFSET	NORTHING	EASTING
MHB-5	18+24.93	21.11 RT	2825342.550	721488.4944
MHB-6	21+64.36	26.26 LT	2825515.5292	721784.3539

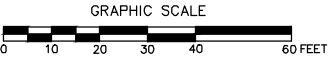
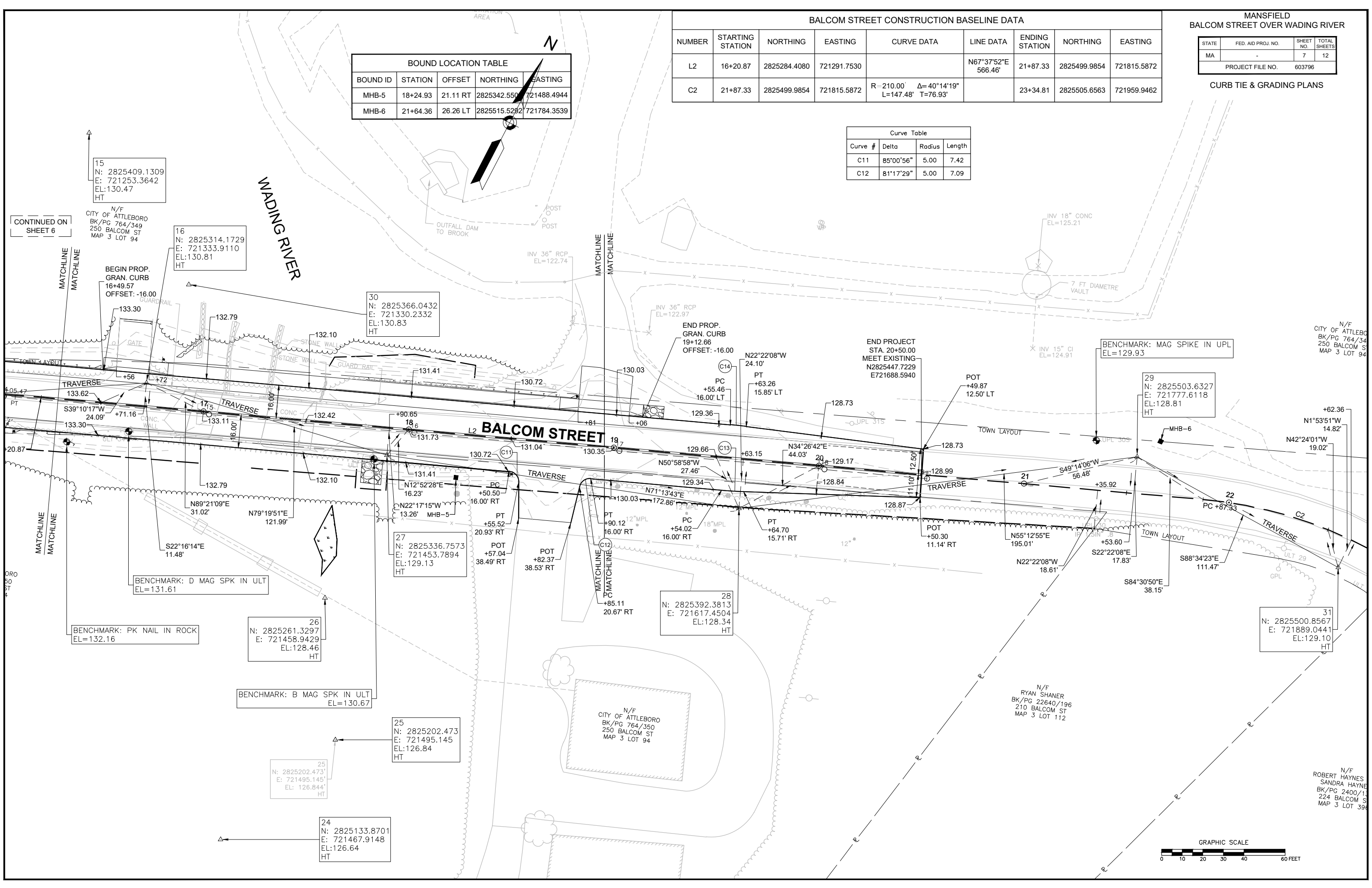
BALCOM STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	16+20.87	2825284.4080	721291.7530		N67°37'52"E 566.46'	21+87.33	2825499.9854	721815.5872
C2	21+87.33	2825499.9854	721815.5872	R=210.00' Δ=40°14'19" L=147.48' T=76.93'		23+34.81	2825505.6563	721959.9462

Curve Table			
Curve #	Delta	Radius	Length
C11	85°00'56"	5.00	7.42
C12	81°17'29"	5.00	7.09



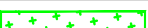
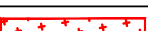


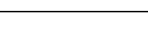
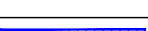

MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	12
PROJECT FILE NO.		603796	

CURB TIE & GRADING PLANS



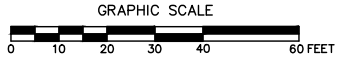
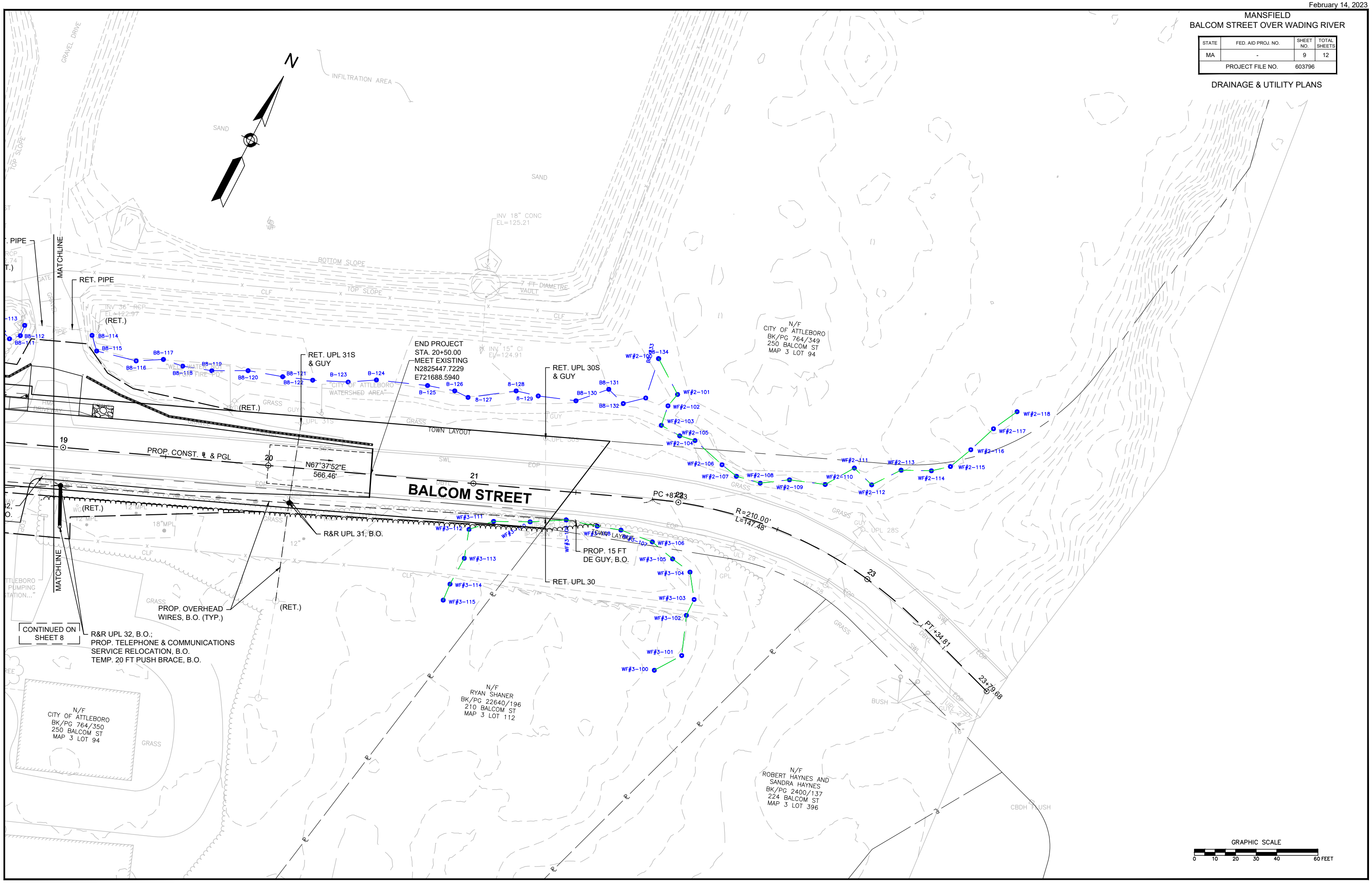


WETLAND RESOURCE AREA LEGEND		TOTAL IMPACTS ON SHEET
 B# _____	LIMIT OF OHW / STREAMBANK	N / A
 WF# _____	LIMIT OF VEGETATED WETLANDS	N / A
	TEMPORARY VEGETATED WETLAND (VW) IMPACT (TO BE RESTORED IN PLACE)	242 SF
	PERMANENT VEGETATED WETLAND (VW) IMPACT	78 SF
	TEMPORARY STREAMBANK IMPACT	268 LF
	PERMANENT STREAMBANK IMPACT	131 LF
	TEMPORARY WATERS OF THE US IMPACT (TO BE RESTORED)	4,011 SF
	PERMANENT WATERS OF THE US IMPACT	235 SF
	PROPOSED VEGETATED WETLAND REPLICATION AREA	197 SF

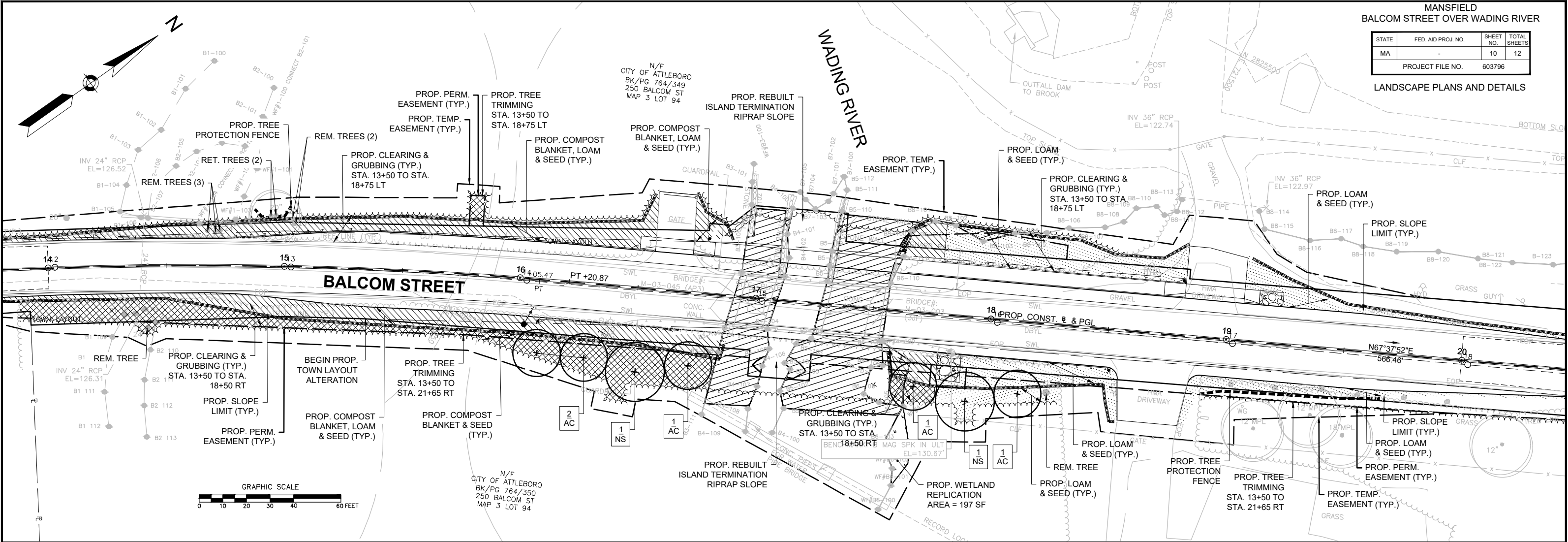
MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	12
PROJECT FILE NO.		603796	

DRAINAGE & UTILITY PLANS







MANSFIELD  
BALCOM STREET OVER WADING RIVER

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	12
PROJECT FILE NO.		603796	

LANDSCAPE PLANS AND DETAILS

DECIDUOUS TREE PLANTING

NOT TO SCALE

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.

2. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.

3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, CULTIVAR, & SIZE.

4. IMMEDIATELY AFTER ACCEPTANCE OF PLANTING, TAGS AND RIBBONS SHALL BE REMOVED.

5. ALL PLANTS WILL BE MULCHED PER PLANS AND SPECIFICATIONS.

6. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.

7. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.

8. RIVERBANK SEED SHALL BE BROADCAST MANUALLY.

LEGEND

EXISTING TREE TO REMAIN (TYP.)

PROP. DECIDUOUS TREE (TYP.)

PROP. SEDIMENT CONTROL BARRIER (TYP.)

PROP. TREE PROTECTION FENCE (TYP.)

PROP. LIMIT OF CLEARING & GRUBBING

PROP. LAWN SEED OVER LOAM

PROP. RIVERBANK SEED OVER LOAM

PLANT LIST

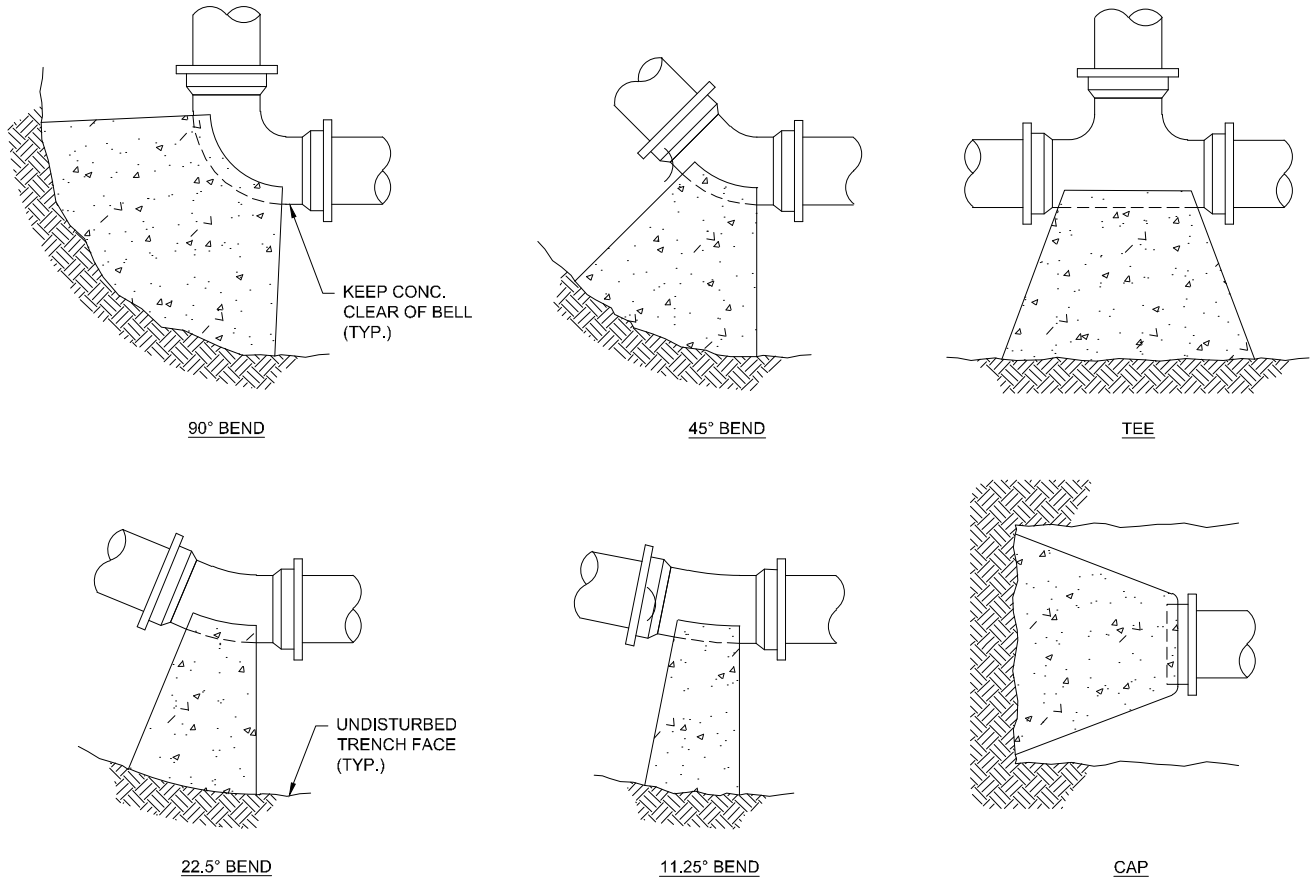
QTY.	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
TREES					
5	AC	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	6'-7' CLUMP	B&B
2	NS	NYSSA SYLVATICA	TUPELO	2-2.5" CAL.	B&B





STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	12
PROJECT FILE NO.		603796	

CONSTRUCTION DETAILS



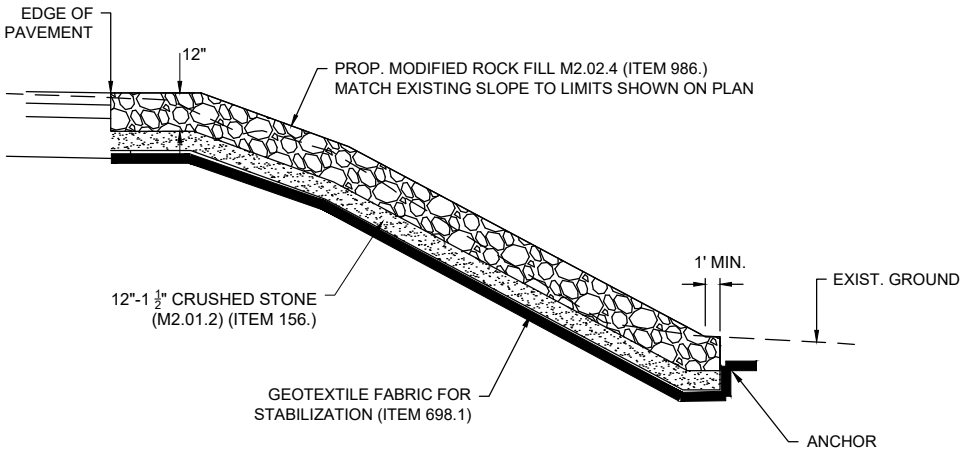
PIPE SIZE	THRUST BEARING REQUIREMENTS					
	MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL (SQUARE FEET)					
	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEE	CAP
6"	4.0	3.0	2.0	1.0	3.0	3.0
8"	7.0	4.0	2.0	1.0	5.0	5.0
12"	16.0	10.0	5.0	3.0	11.0	11.0
14"	22.0	12.0	5.0	3.0	16.0	16.0
16"	29.0	17.0	8.0	5.0	21.0	21.0
18"	36.0	20.0	10.0	5.0	26.0	26.0
20"	45.0	24.0	13.0	7.0	32.0	32.0
24"	64.0	35.0	18.0	9.0	46.0	46.0

- NOTES:
- FIGURES SHOWN REPRESENT THE MINIMUM BEARING AREA REQUIRED IN SQUARE FEET.
  - BEARING AREAS SHOWN ARE BASED ON SANDY SOILS AT 200 PSF AND MAX. HYDROSTATIC PRESSURE OF 200 PSI.
  - ALL FITTINGS SHALL BE ANCHORED BY MECHANICAL MEANS AND BY CONCRETE THRUST BLOCKS, REQUIRED BY THE TOWN OR AS NOTED ON THE CONTRACT PLANS.
  - THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF THE FITTING.
  - ALL DI PIPE & FITTINGS SHALL BE WRAPPED IN POLYETHYLENE.
  - THRUST BLOCKS SHALL BE 3000 PSI CONCRETE & SHALL HAVE A MINIMUM THICKNESS OF 12".
  - NO JOINTS SHALL BE COVERED WITH CONCRETE.
  - THRUST BLOCK DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. ADDITIONAL RESTRAINT MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.
  - WHEN REQUIRED, THREADED RODS SHALL BE ANSI A242 FY50 WITH NUTS TO MATCH AWWA C111. THREADED RODS TO BE FIELD COATED WITH PAINT.

8

THRUST BLOCK DETAIL

NOT TO SCALE



9

MODIFIED ROCKFILL CHANNEL

NOT TO SCALE