TOWN OF FRANKLIN, MA

GROVE STREET IMPROVEMENTS

PHASE 2

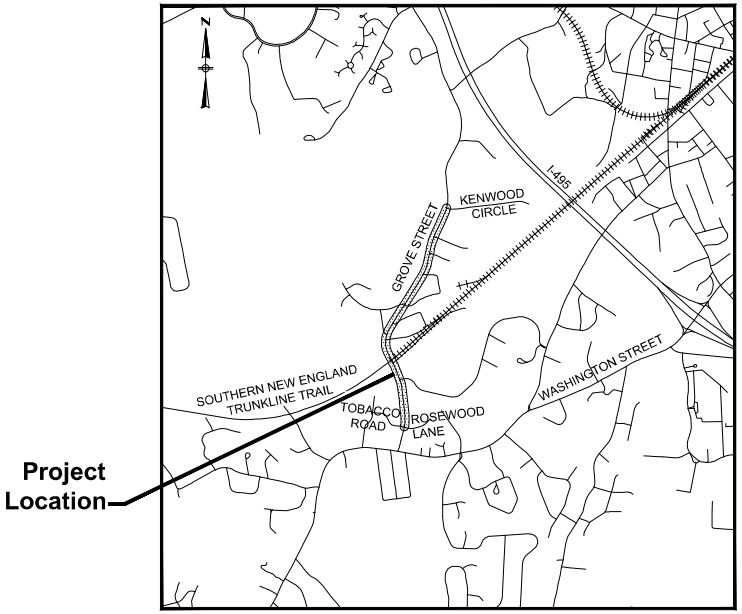
FEBRUARY 2023

TOWN ADMINISTRATOR

JAMIE HELLEN

DEPARTMENT OF PUBLIC WORKS

ROBERT A. CANTOREGGI, DIRECTOR
MIKE MAGLIO, TOWN ENGINEER



PROJECT LOCATION

LOCATION MAP
NOT TO SCALE

PLAN INDEX

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PERMITTING SUBMISSION

PREPARED BY:

BETA
www.BETA-Inc.com

ISSUE DATE: AUGUST 26, 2022

COMMONWEALTH OF MASSACHUSETTS
WILLIAM P McGRATH
CIVIL
No. 33716
REGISTERED PROFESSIONAL ENGINEER

2/15/23

REGISTERED PROFESSIONAL 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
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 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
		RETAINING WALL (TYPE AS NOTED)
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE or LIMIT OF CLEARING AND GRUBBING
		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
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
ECB	ECB	EROSION CONTROL BARRIER/COMPOST FILTER TUBES
		SIGN AND POST
		CONSTRUCTION BASELINE
N00°00'00"E 000.00'		SURVEY LINE
		WHEELCHAIR RAMP
24" PINE		TREE (SIZE AND TYPE AS NOTED)

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
STOP	STOP	LEGEND "STOP" - WHITE
AHEAD	AHEAD	LEGEND "AHEAD" - WHITE
SIGNAL	SIGNAL	LEGEND "SIGNAL" - WHITE
	SL	STOP LINE - 12" WHITE LINE
	CW	CROSSWALK - 12" WHITE LINES, 12" GAP
	SWL	SOLID WHITE LINE - 6"
	SYL	SOLID YELLOW LINE - 6"
	BWL	BROKEN WHITE LINE - 6" AT 3' LINE AND 9' GAP
	BYL	BROKEN YELLOW LINE - 6" AT 3' LINE AND 9' GAP
	DWLEx	DOTTED WHITE LINE EXTENSION - 6" AT 2' LINE AND 6' GAP
	DYLEx	DOTTED YELLOW LINE EXTENSION - 6" AT 2' LINE AND 6' GAP
	DBWL	DOUBLE WHITE LINE - 2-6" LINES
	DBYL	DOUBLE YELLOW LINE - 2-6" LINES

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
		CONTROL CABINET POLE MOUNTED
	Ø2	CONTROLLER PHASE
	MA-1	MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
		VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED)
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		VEHICULAR SIGNAL HEAD (REMOVED & RESET)
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
HH		PULL BOX 12"x12" OR 24"x24" HANDHOLE
		LOOP DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		PRE-EMPTION DETECTOR
		PRE-EMPTION CONFIRMATION STROBE
		SIGNAL CONDUIT (SINGLE RUN)
		SIGNAL CONDUIT (DOUBLE RUN)
		SIGNAL POST & BASE
	M	MAGNETIC DETECTOR
		SCHOOL ZONE SPEED LIMIT SIGN
		MICROWAVE OR ULTRASONIC DETECTOR
		VIDEO DETECTION CAMERA
		VIDEO DETECTION ZONE

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR YELLO
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR YELLOW
←FY	FLASHING YELLOW LEFT ARROW
R→	STEADY RED RIGHT ARROW
Y→	STEADY YELLOW RIGHT ARROW
G→	STEADY GREEN RIGHT ARROW
←R	STEADY RED LEFT ARROW
←Y	STEADY YELLOW LEFT ARROW
←G	STEADY GREEN LEFT ARROW
W	STEADY WALK (PERSON WALKING) - LUNAR WHITE
DW	STEADY DON'T WALK (HAND) - PORTLAND ORANGE
FDW	FLASHING DON'T WALK (FLASHING HAND) - PORTLAND ORANGE

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
T.S.	TRAFFIC SIGNAL

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
ALT	ALTERATION
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL (or ℄)	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BOW	BOTTOM OF WALL
BR.	BRIDGE
BSW	BACK OF SIDEWALK
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
COND	CONDUIT
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
FM	FORCE MAIN
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
IP	IRON PIPE
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE or LOW POINT
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
O.C.	ON CENTER
PC	POINT OF CURVATURE

ABBREVIATIONS (cont.)

GENERAL

PCC	POINT OF COMPOUND CURVATURE
PCR	PEDESTRIAN CURB RAMP
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 or POLY-VINYL -CHLORIDE-PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SD	SUBDRAIN
SHLD	SHOULDER
SHT	SHEET
SMH	SEWER MANHOLE
SP	STRAIN POLE
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
TOW	TOP OF WALL
TS	TRAFFIC SIGNAL
TSV&B	TAPPING SLEEVE, VALVE AND BOX
TYP	TYPICAL
UP	UTILITY POLE
UPL	UTILITY POLE w/ LIGHT
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VGC	VERTICAL GRANITE CURB
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
WQU	WATER QUALITY UNIT
WWM	WELDED WIRE MESH (10-GUAGE, 6"x6")
X-SECT	CROSS SECTION

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: BB
CHECKED BY: BM

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 Registered Professional Engineer 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS PHASE 2
LEGEND & ABBREVIATIONS
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 2

2/14/2023 11:19 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_LEGEND.DWG (BETA STB BW.STB)

PAVEMENT NOTES

FULL DEPTH PAVEMENT BOX WIDENING

SURFACE COURSE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
BASE COURSE:	4" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
SUB-BASE:	12" GRAVEL BORROW, TYPE b

FULL DEPTH PAVEMENT BOX WIDENING ≤4' WIDE

SURFACE COURSE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
BASE COURSE:	6" HES CEMENT CONCRETE BASE COURSE OVER
SUB-BASE:	8" GRAVEL BORROW, TYPE b

PAVEMENT MILLING AND OVERLAY

SURFACE COURSE:	1-1/2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT OVER
PAVEMENT MILLING:	1-1/2" PAVEMENT MICROMILLING

CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS

SURFACE:	4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 OVER
BASE COURSE:	8" GRAVEL BORROW, TYPE b

HMA SIDEWALKS

SURFACE:	1-1/4" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 1-3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
BASE COURSE:	8" GRAVEL BORROW, TYPE b

HMA DRIVEWAYS

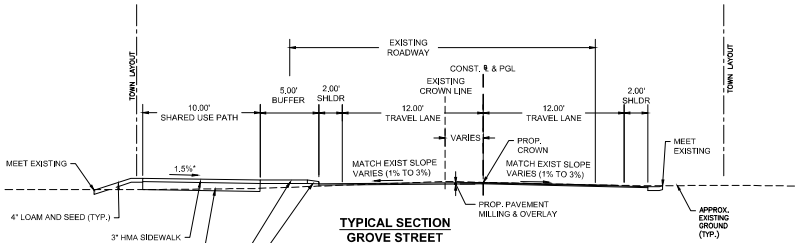
SURFACE:	2" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
BASE COURSE:	8" GRAVEL BORROW, TYPE b

PAVEMENT NOTES

1. ALL HMA FOR PATCHING, ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE INSTALLED PER SECTION 450.
2. TACK COAT SHALL BE APPLIED FOR UNIFORM COVERAGE OF 90% AT RATE OF 0.07 GALLONS PER SQUARE YARD FOR MILLED SURFACES AND 0.05 GALLONS PER SQUARE YARD FOR SMOOTH TIGHT PAVED SURFACES.

GENERAL NOTES

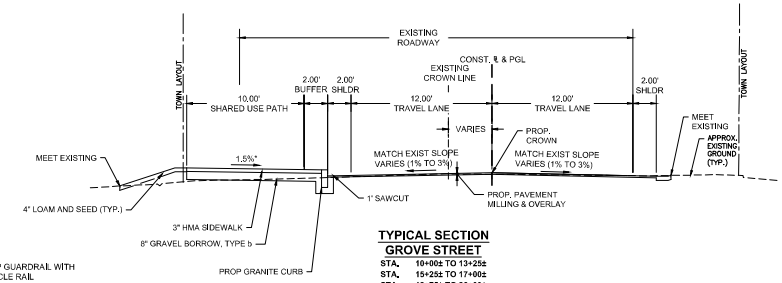
1. HORIZONTAL CONTROL, IN FEET, IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83). THE VERTICAL CONTROL IS REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). EXISTING 1-FT CONTOURS SHOWN WERE PROVIDED FROM NOAA LIDAR DATA.
2. SURVEY PLAN HAS BEEN PREPARED BY GUERRIERE & HALNON, INC ENGINEERING & LAND SURVEYING ON MARCH 23, 2021. SUPPLEMENTAL SURVEY BY GUERRIERE & HALNON ON SEPTEMBER 8, 2022. WETLAND FLAGS IDENTIFYING RESOURCE AREAS WERE PLACED AND LOCATED BY BETA GROUP, INC OTHERWISE NOTED. WETLAND DELINEATIONS WERE CONDUCTED ON MAY 13, 2021. THE CONTRACTOR SHALL VERIFY BASEPLAN INFORMATION SHOWN ON THE PLANS TO ENSURE THAT CONSTRUCTION CAN PROCEED AS INTENDED.
3. THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSIVE WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
4. 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.
5. 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 THE RESOLUTION OF THE CONFLICT.
6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ABUTTING PROPERTIES AT ALL TIMES AND NOTIFY ALL ABUTTERS IN ADVANCE OF ANY INTERRUPTIONS TO ACCESS.
7. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL SANITARY AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
8. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
9. 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.
10. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
11. JOINTS BETWEEN NEW BITUMINOUS CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
12. DRAINAGE STRUCTURES SHALL BE RETAINED UNLESS NOTED OTHERWISE.
13. CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.
14. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.
15. CONSTRUCTION BASELINE TIES ARE SHOWN ON CONSTRUCTION PLANS.
16. THE LOCATION OF THE PROPOSED DRIVEWAY OPENINGS ARE SHOWN ON CONSTRUCTION PLANS. EXACT LOCATIONS MAY BE ADJUSTED IF NECESSARY OR AS REQUIRED BY THE ENGINEERS IN THE FIELD.
17. CONTRACTOR SHALL VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
18. IN FILL AREAS, TOP SOIL SHALL BE REMOVED FOR A DEPTH OF 12" (MIN.) OR AS DIRECTED BY THE ENGINEER. SUBGRADE AREAS WILL BE COMPACTED PRIOR TO THE PLACEMENT OF FILL MATERIAL.
19. ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VB, UNLESS OTHERWISE NOTED ON THE PLANS.
20. ALL NEW HMA CURB SHALL BE MASSDOT TYPE 2, UNLESS OTHERWISE NOTED ON THE PLANS.
21. ALL PROPOSED PAVEMENT MARKINGS ON ROADWAYS SHALL BE REFLECTORIZED WHITE AND YELLOW EPOXY.
22. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
23. TREES TO BE RETAINED WHICH RESTRICT SIGHT DISTANCE OR RESTRICT HORIZONTAL OR VERTICAL CLEARANCES SHALL BE TRIMMED AS REQUIRED BY THE ENGINEER.
24. WHEN WORKING NEXT TO EXISTING WALLS, BERMS, AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
25. ALL PAVEMENT MARKINGS AND/OR SIGN NOTES ARE SHOWN ON THE SIGNS AND PAVEMENT MARKING PLANS.
26. THE EXPOSED EDGES OF ALL LONGITUDINAL AND TRANSVERSE SAW CUT JOINTS SHALL BE TREATED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALANT MEETING MASSDOT SPECIFICATIONS.
27. WHEN NEW CEMENT CONCRETE SIDEWALK MATCHES EXISTING CONCRETE SIDEWALK, SAWCUT EXISTING SIDEWALK AT NEAREST JOINT.



TYPICAL SECTION
GROVE STREET

STA.	6+50± TO 10+00±
STA.	13+25± TO 15+25±
STA.	17+00± TO 18+75±
STA.	26+00± TO 30+25±
STA.	39+75± TO 41+75±
STA.	53+00± TO 60+75±
STA.	62+00± TO 64+50±

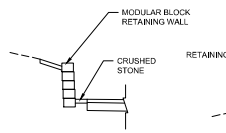
NOT TO SCALE



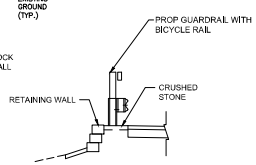
TYPICAL SECTION
GROVE STREET

STA.	10+00± TO 13+25±
STA.	15+25± TO 17+00±
STA.	18+75± TO 26+00±
STA.	30+25± TO 39+75±
STA.	41+75± TO 53+00±
STA.	60+75± TO 62+00±

NOT TO SCALE

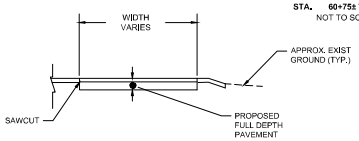


WALL TYPICAL SECTION - IN CUT
STA. 35+25± TO 36+75±



WALL TYPICAL SECTION - IN FILL

STA.	20+50± TO 21+25±
STA.	45+00± TO 48+50±



FULL DEPTH BOX WIDENING

STA.	16+00± TO 20+50±
STA.	22+50± TO 51+50±
STA.	53+25± TO 59+25±

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: BB
CHECKED BY: BM

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 — 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

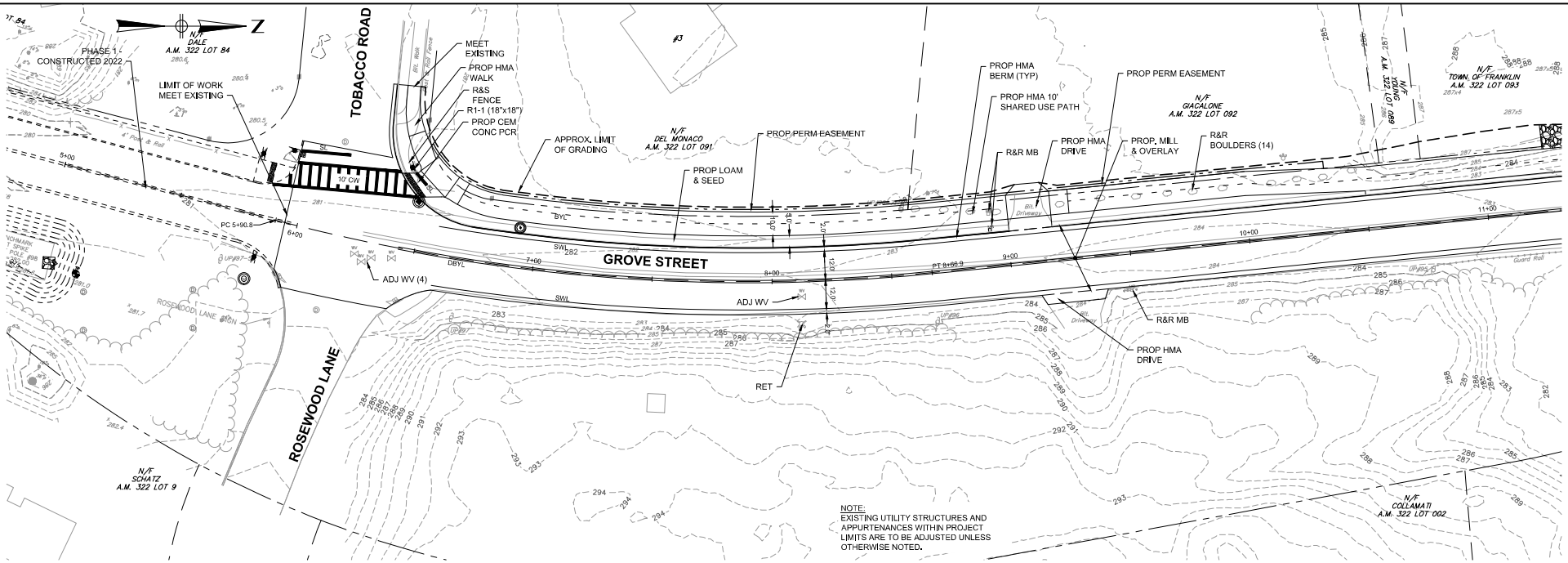
SCALE: NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

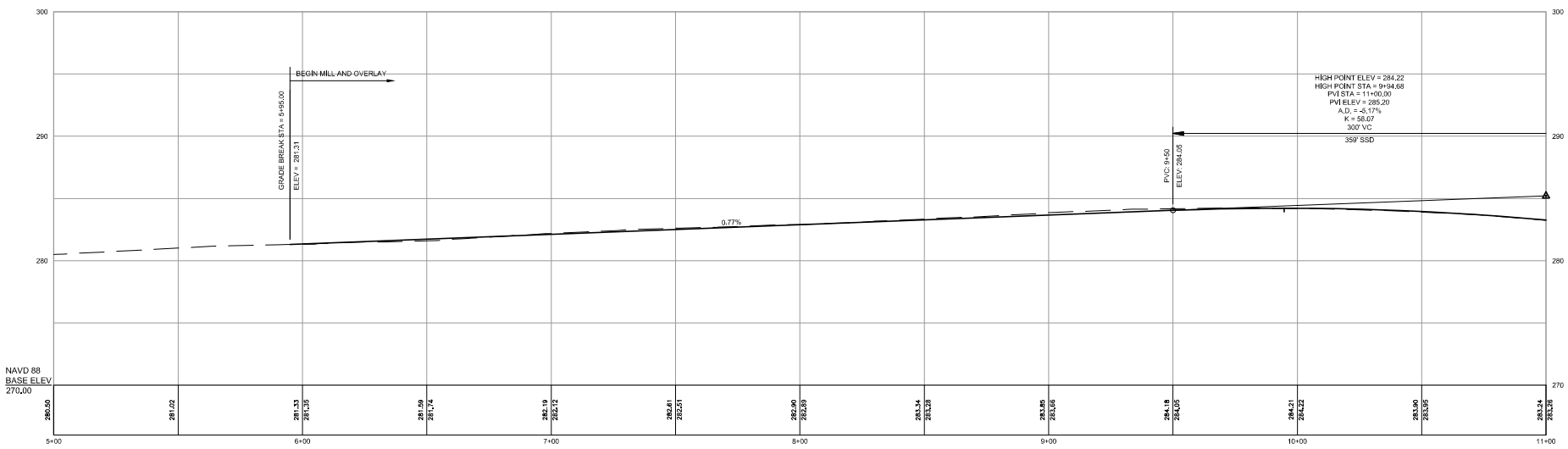
TITLE: **GROVE STREET IMPROVEMENTS PHASE 2**
GENERAL NOTES & TYPICAL SECTIONS
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 3

2/14/2023 11:19 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_TYP SEC & DETAILS.DWG (BETA STB BW.STB)



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM F. McGRATH, CIVIL, No. 35718, COMMONWEALTH OF MASSACHUSETTS, 7/5/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

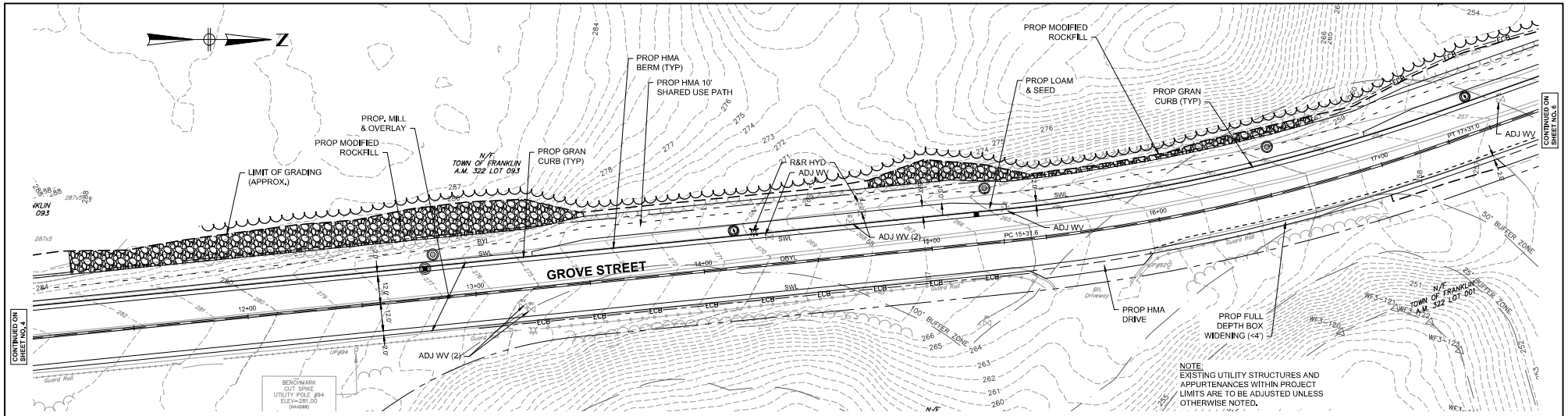
TITLE: **GROVE STREET IMPROVEMENTS**

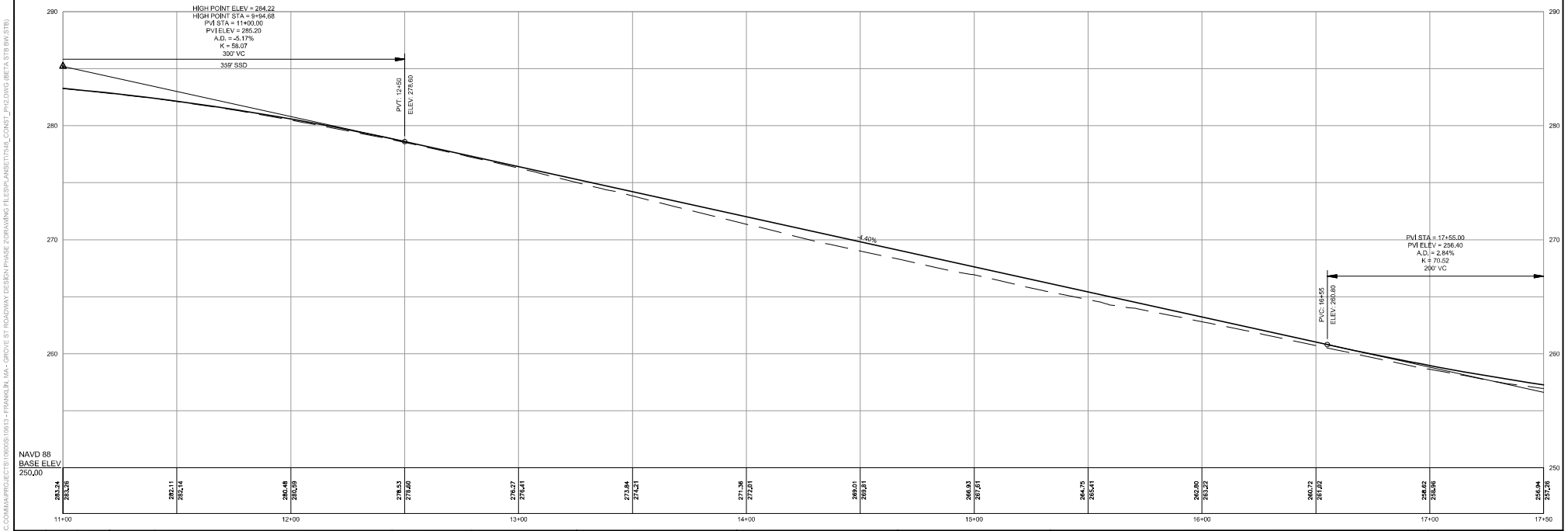
CONSTRUCTION PLAN & PROFILE - SHEET 1

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 4

2/15/2023 2:26 PM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 35718, Registered Professional Engineer, 6/5/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

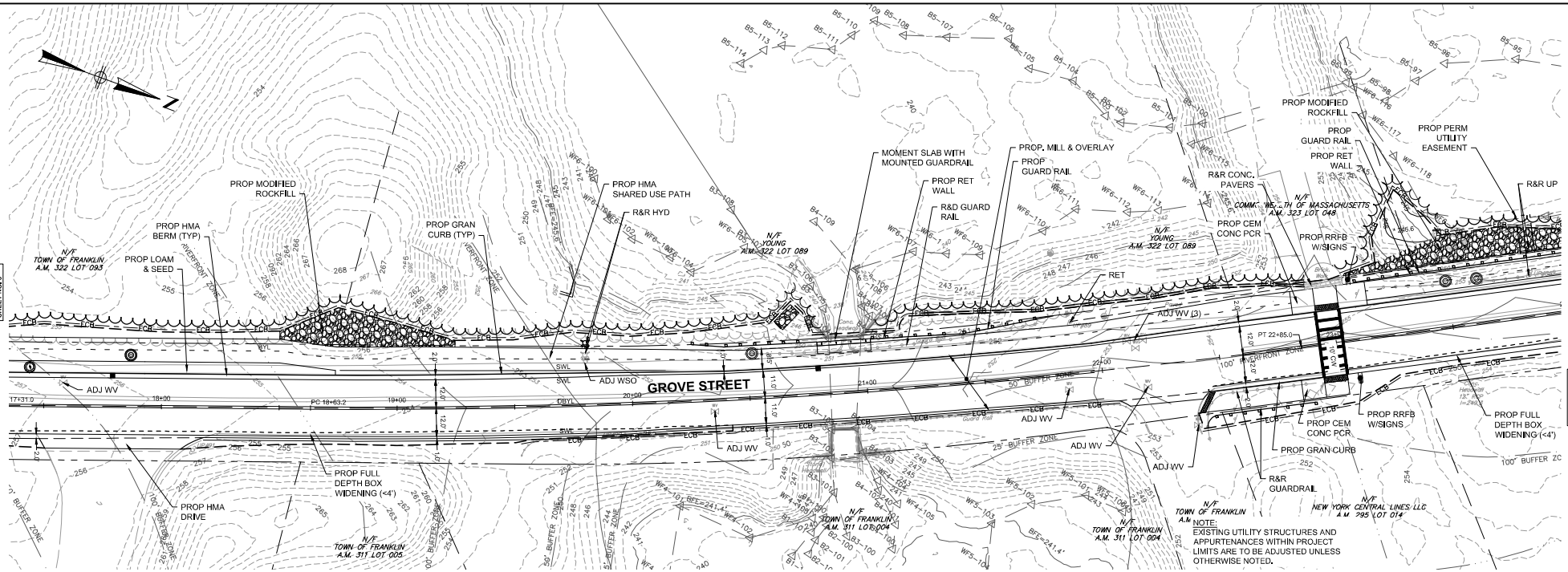
TITLE: **GROVE STREET IMPROVEMENTS**

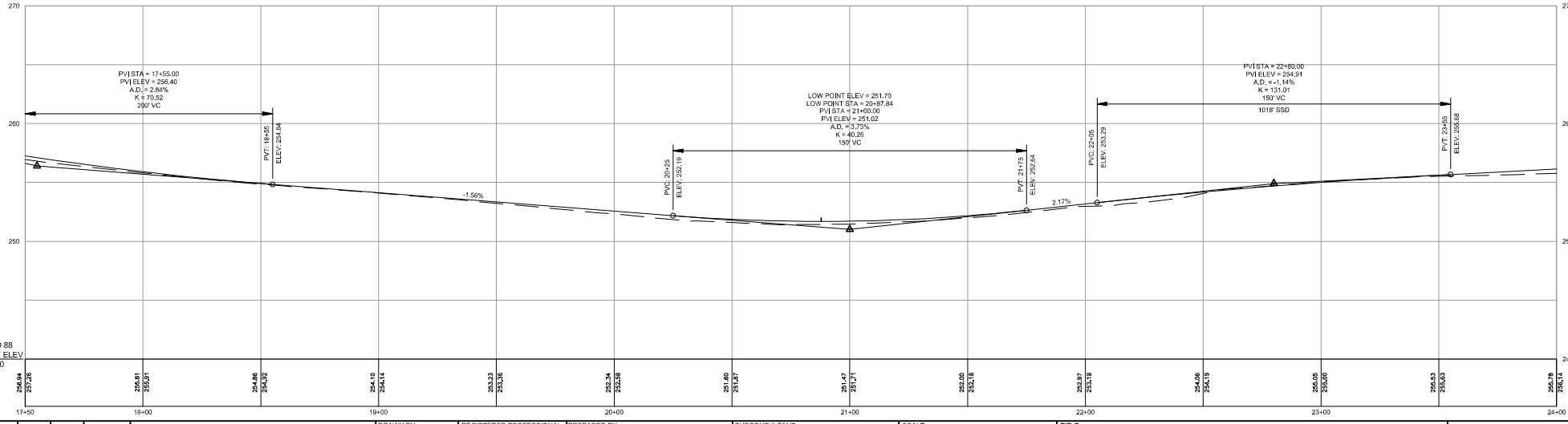
CONSTRUCTION PLAN & PROFILE - SHEET 2

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 5

2/14/2023 11:24 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 35716, STATE OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

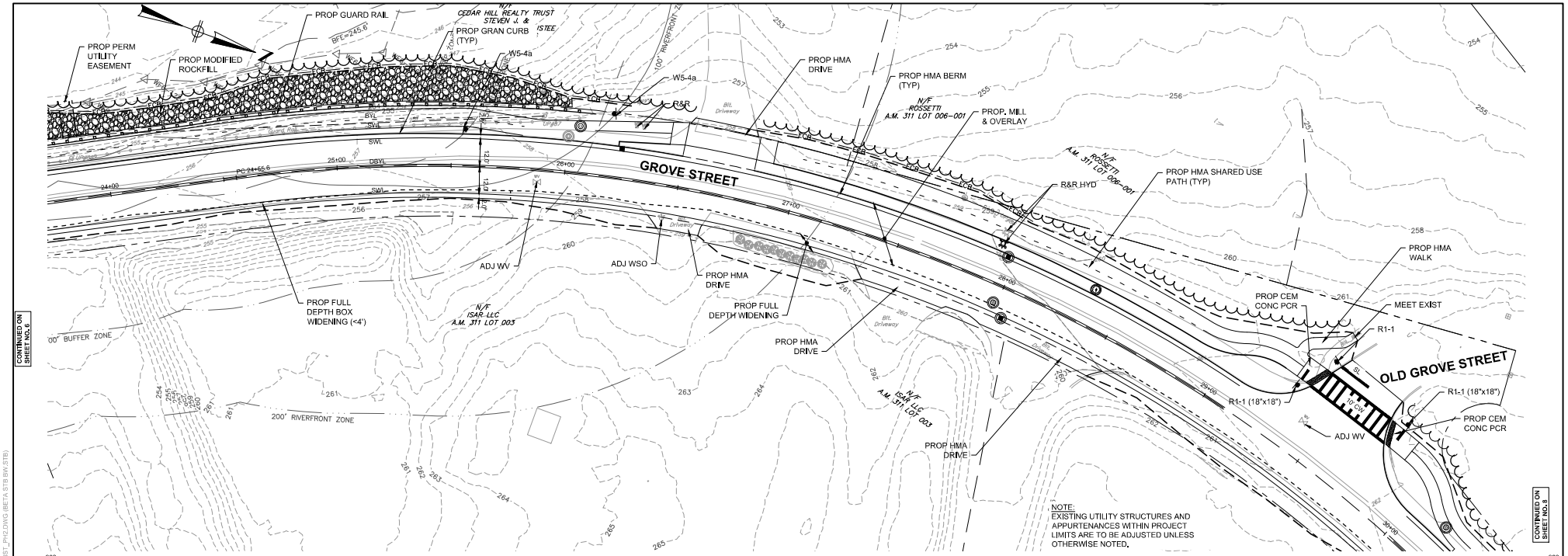
GROVE STREET IMPROVEMENTS

CONSTRUCTION PLAN & PROFILE - SHEET 3

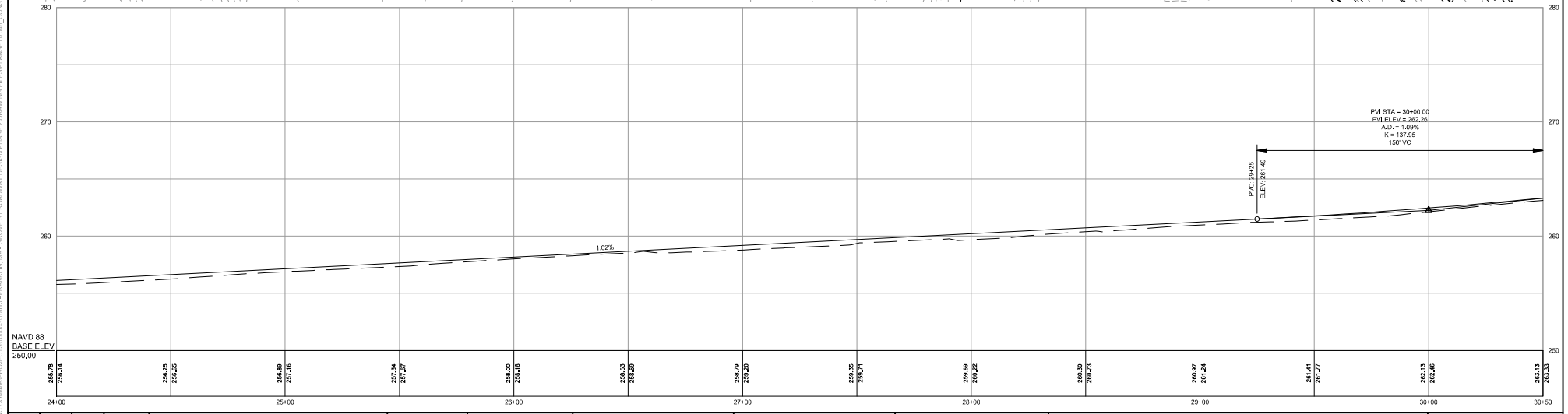
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 6

2/14/2023 11:25 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 39716, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

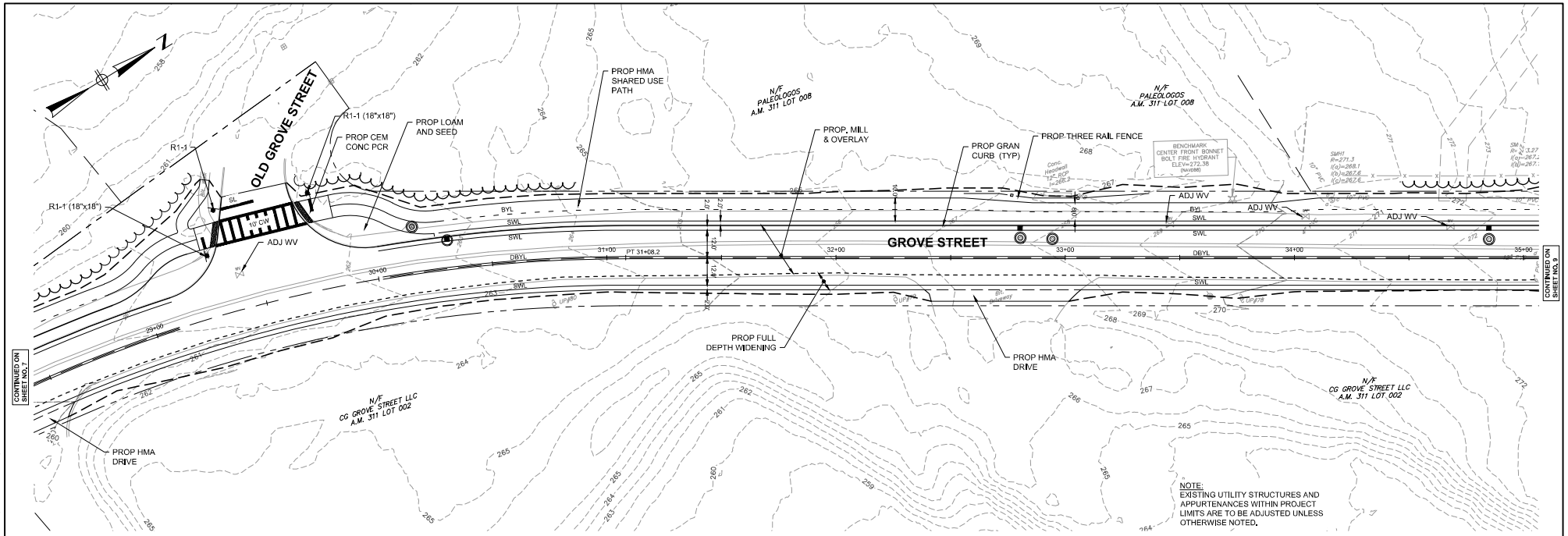
TITLE: **GROVE STREET IMPROVEMENTS**

CONSTRUCTION PLAN & PROFILE - SHEET 4

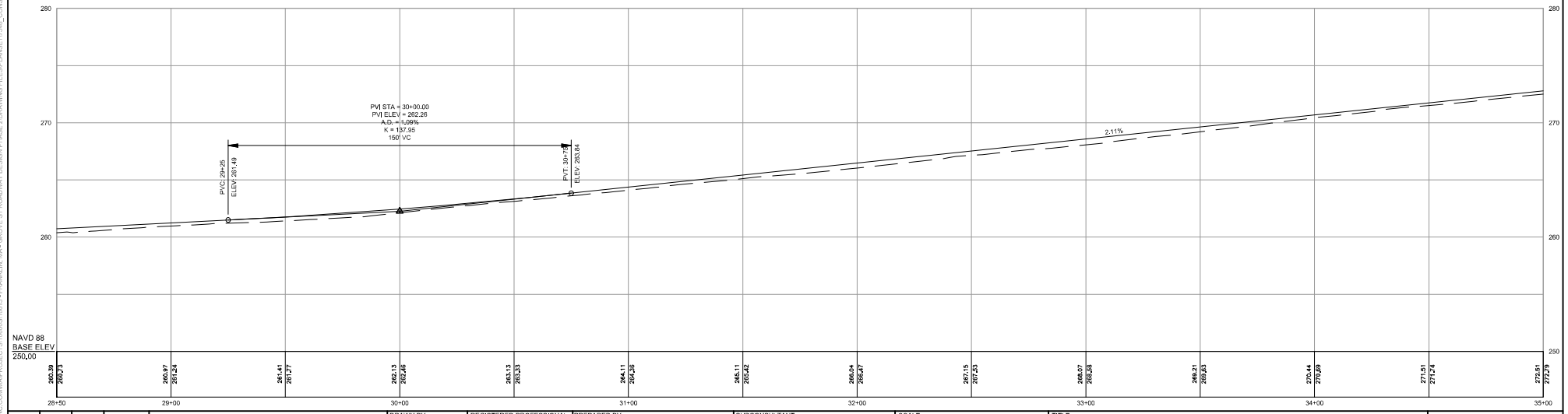
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 7

2/14/2023 11:25 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 39716, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

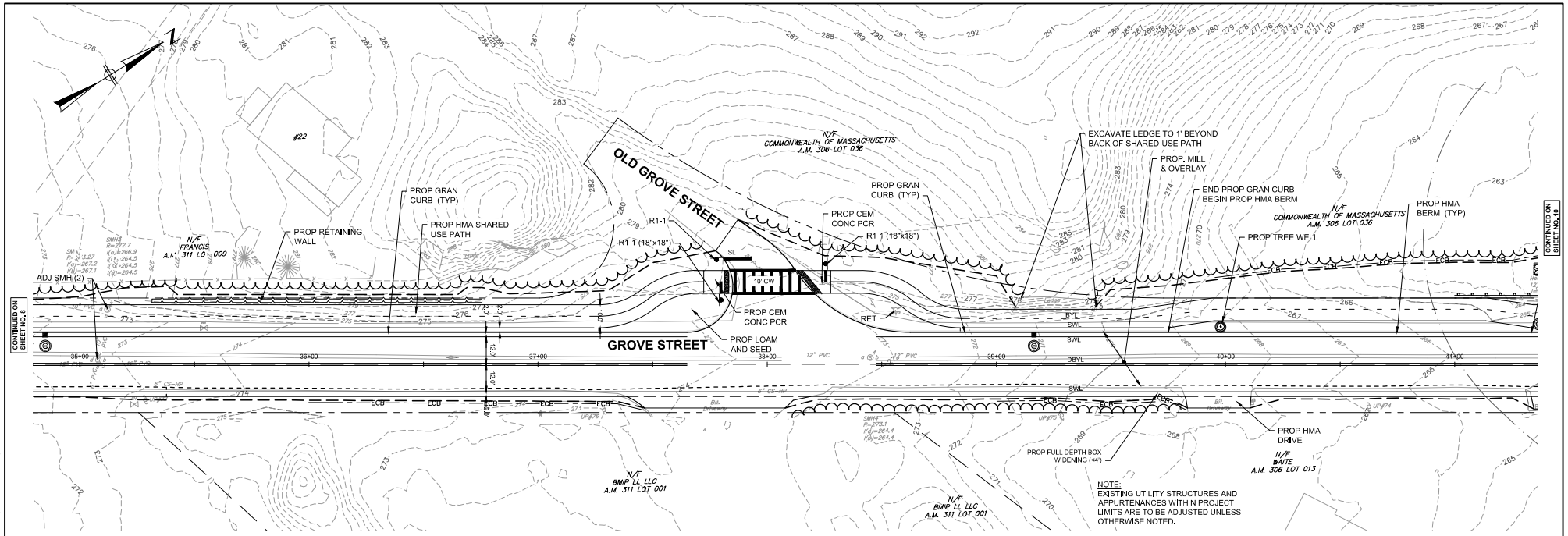
TITLE: **GROVE STREET IMPROVEMENTS**

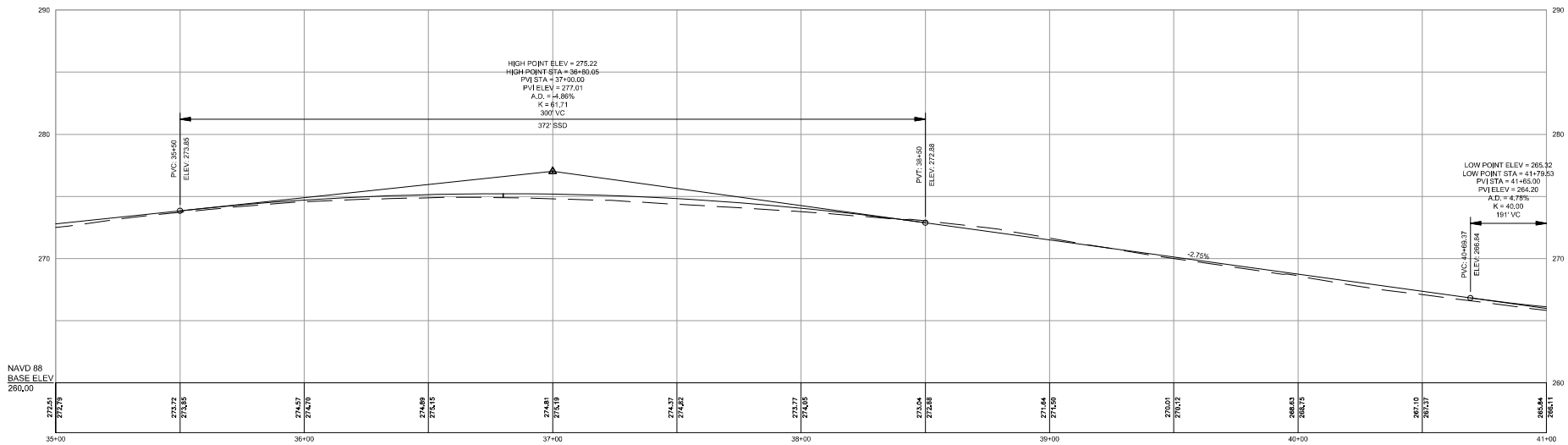
CONSTRUCTION PLAN & PROFILE - SHEET 5

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 8

2/14/2023 11:25 AM \\BETA-INC.COM\BA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 35716, Registered Professional Engineer, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

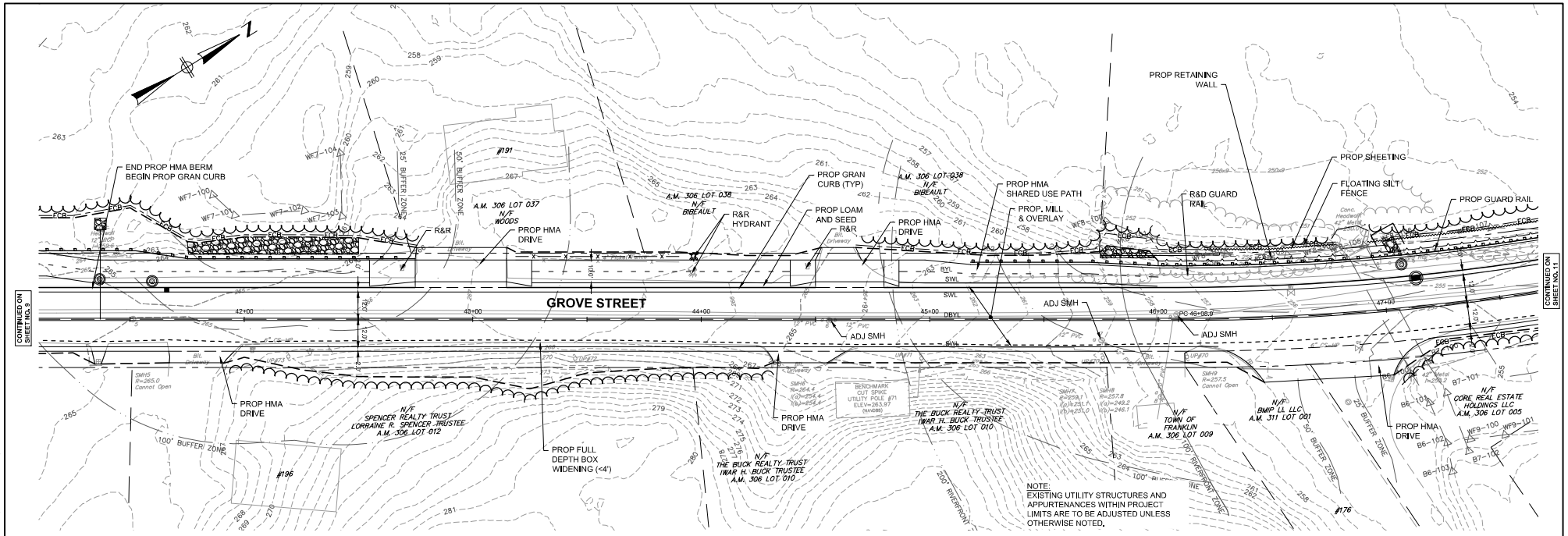
GROVE STREET IMPROVEMENTS

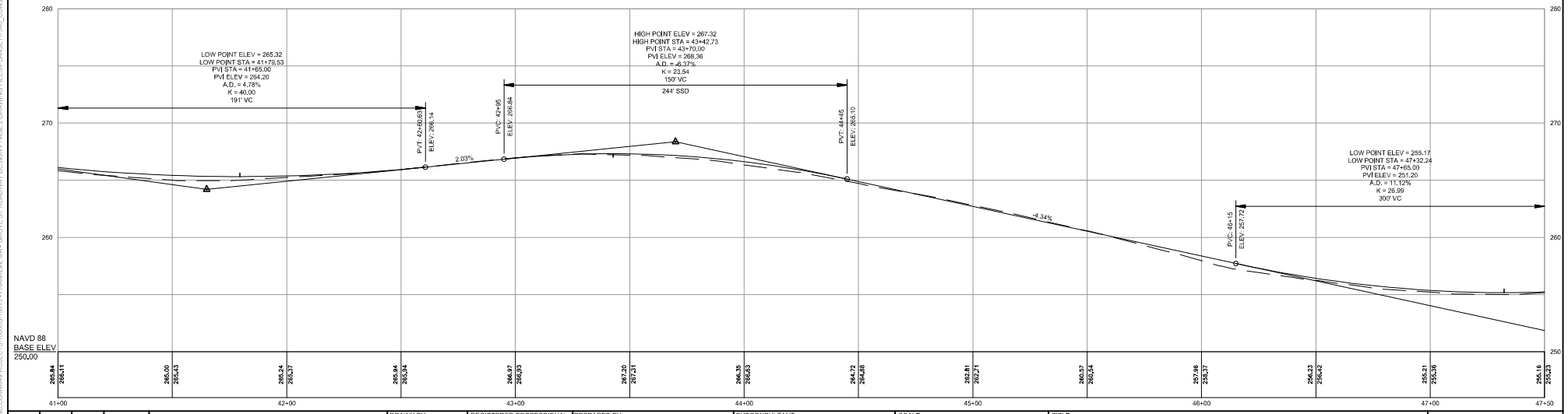
CONSTRUCTION PLAN & PROFILE - SHEET 6

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 9

2/14/2023 11:25 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL

DESIGNED BY: RS

CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, No. 35716

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20' (20 0 20 40); VER. SCALE IN FEET: 1"=4' (4 0 4 8)

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

GROVE STREET IMPROVEMENTS

CONSTRUCTION PLAN & PROFILE - SHEET 7

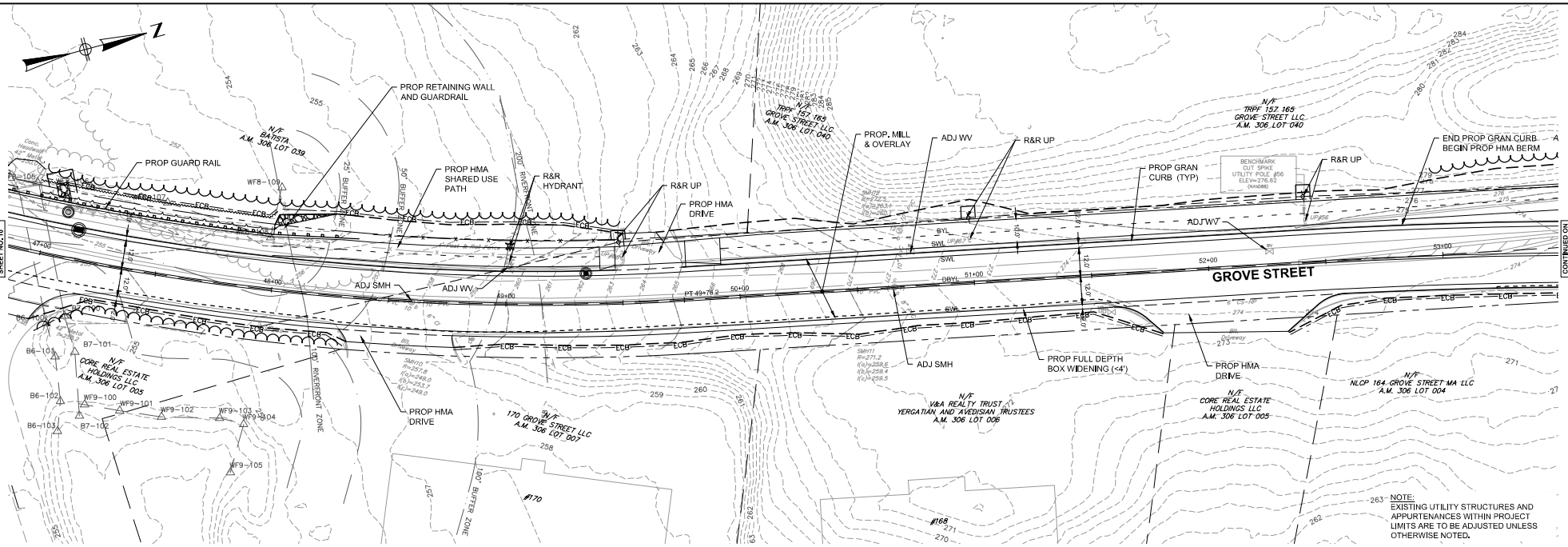
FRANKLIN, MA

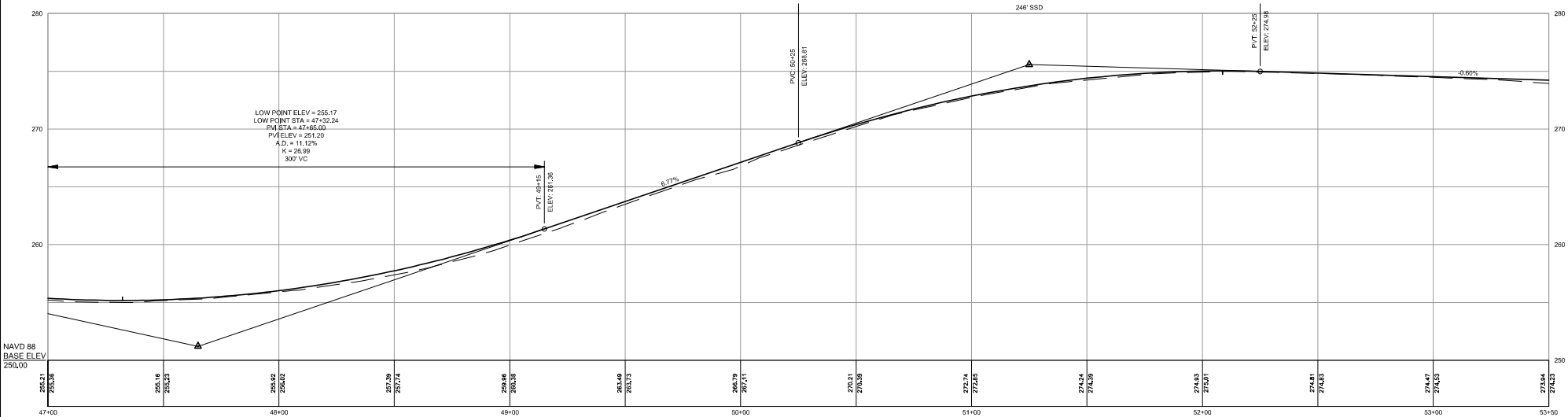
BETA JOB NO. 10613

ISSUE DATE 02/2023

SHEET NO. 10

2/14/2023 11:25 AM \\BETA-INC.COM\BA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 33716, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20' (20 0 20 40); VER. SCALE IN FEET: 1"=4' (4 0 4 8)
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

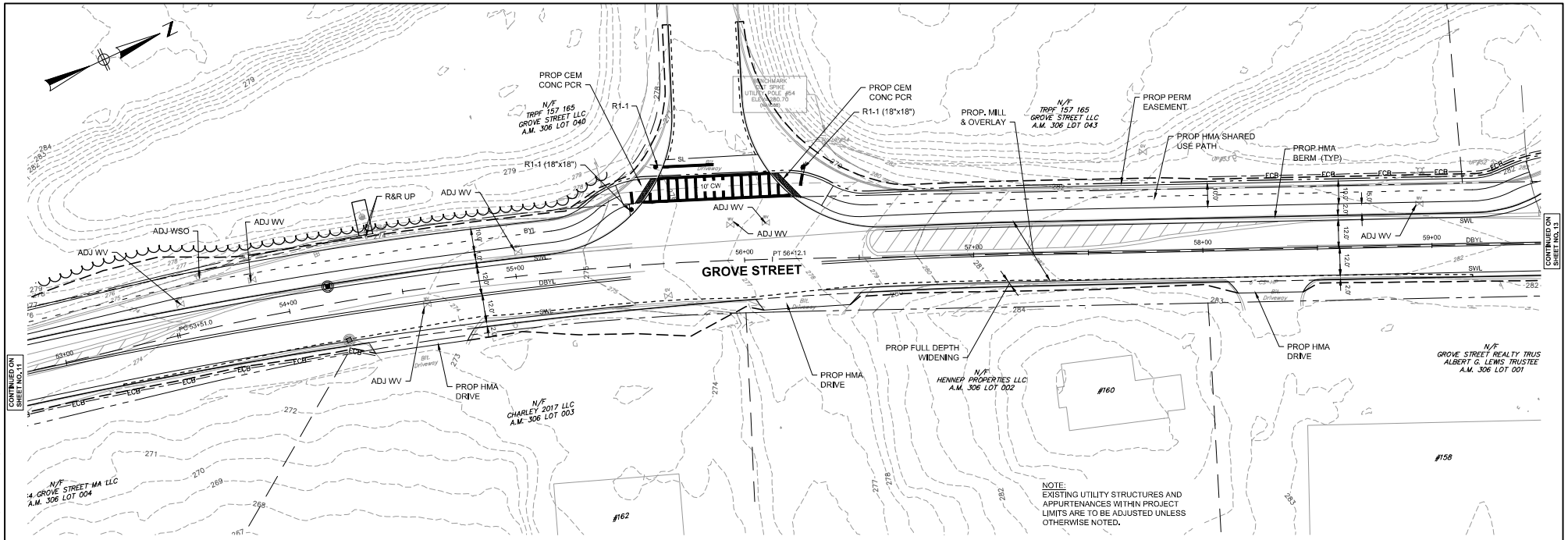
TITLE: **GROVE STREET IMPROVEMENTS**

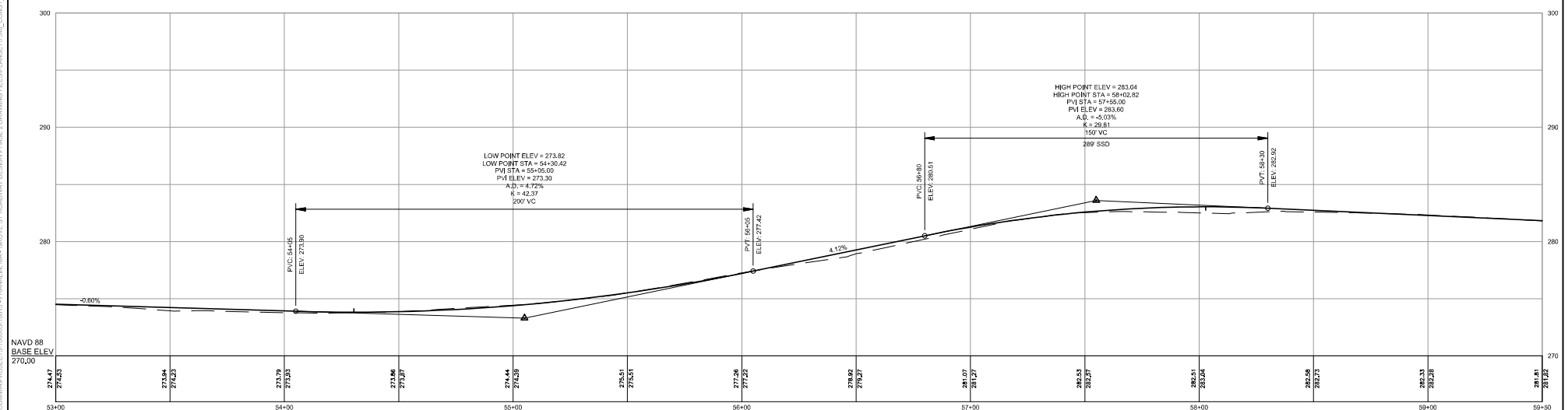
CONSTRUCTION PLAN & PROFILE - SHEET 8

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 11

2/14/2023 11:25 AM \\BETA-INC.COM\RA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 39716, STATE OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: HOR. SCALE IN FEET: 1"=20'; VER. SCALE IN FEET: 1"=4'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

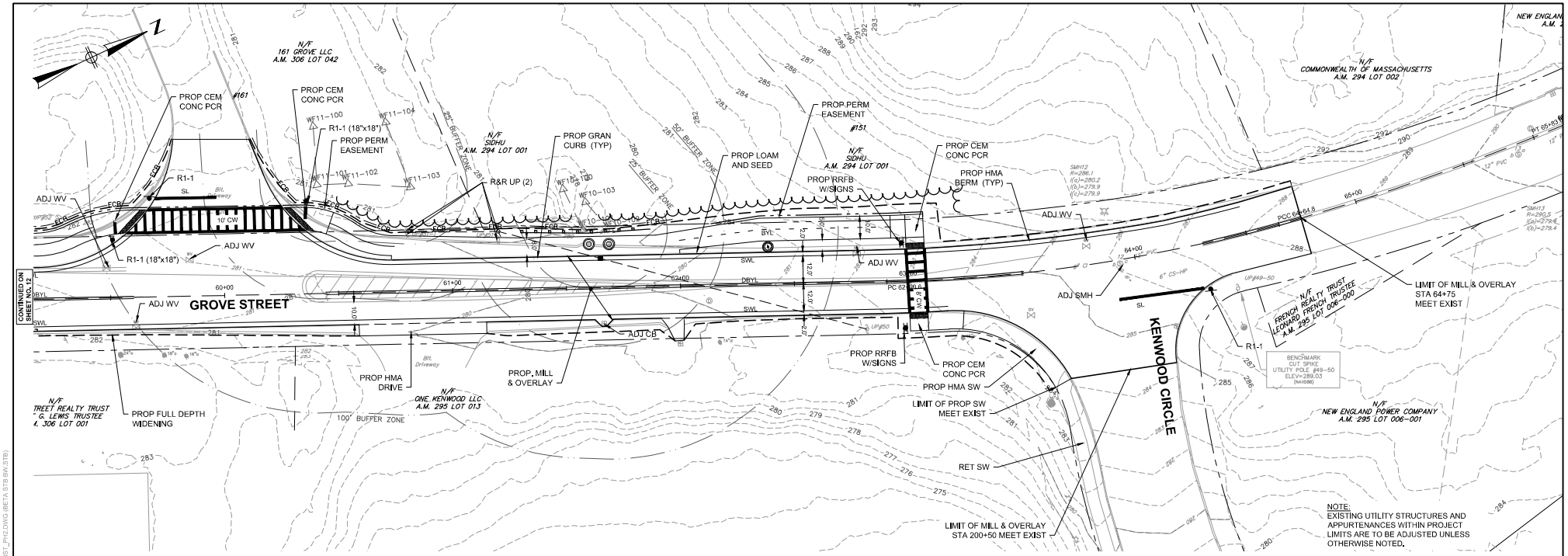
TITLE: **GROVE STREET IMPROVEMENTS**

CONSTRUCTION PLAN & PROFILE - SHEET 9

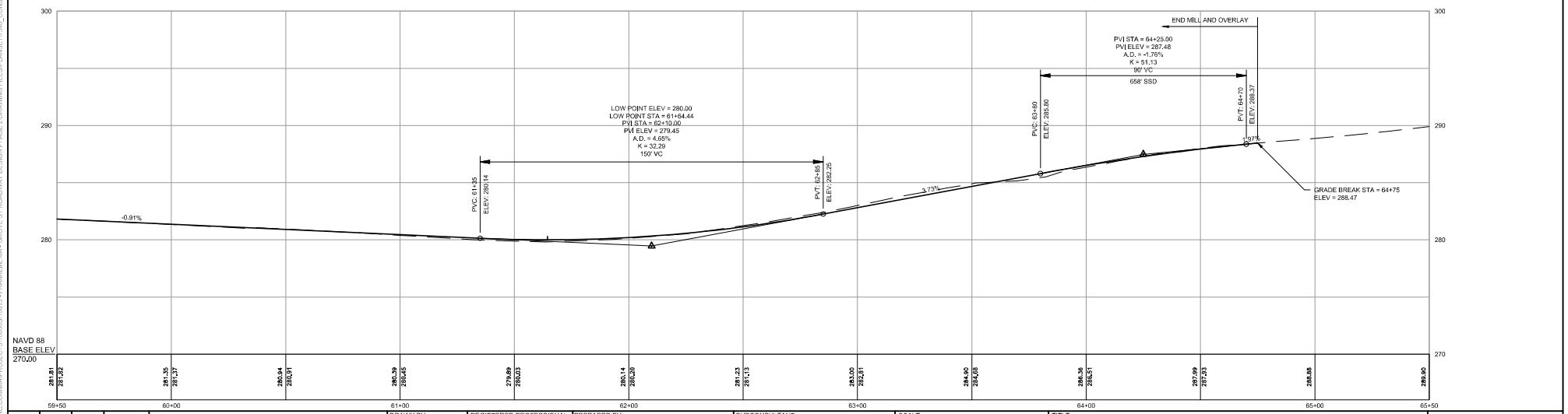
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 12

2/14/2023 11:25 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.



NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, No. 36790, No. 057116, Commonwealth of Massachusetts, Professional Engineer, 6/5/23

PREPARED BY: BETA
www.BETA-Inc.com

SUBCONSULTANT

SCALE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

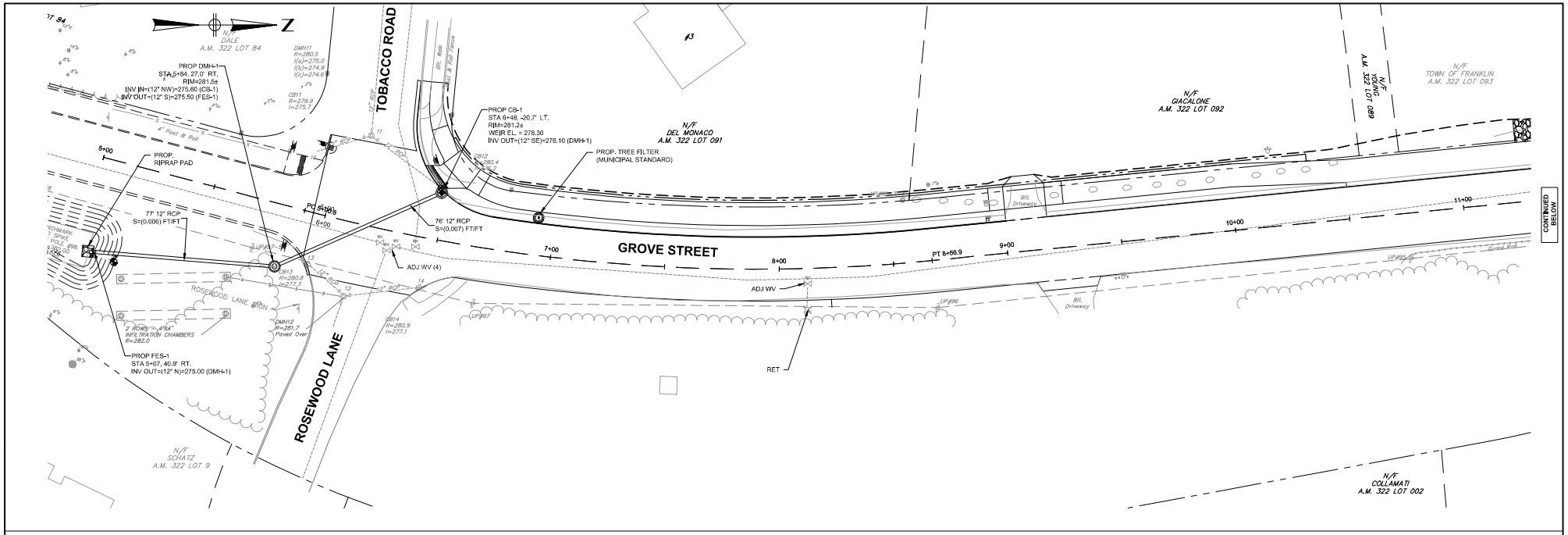
GROVE STREET IMPROVEMENTS

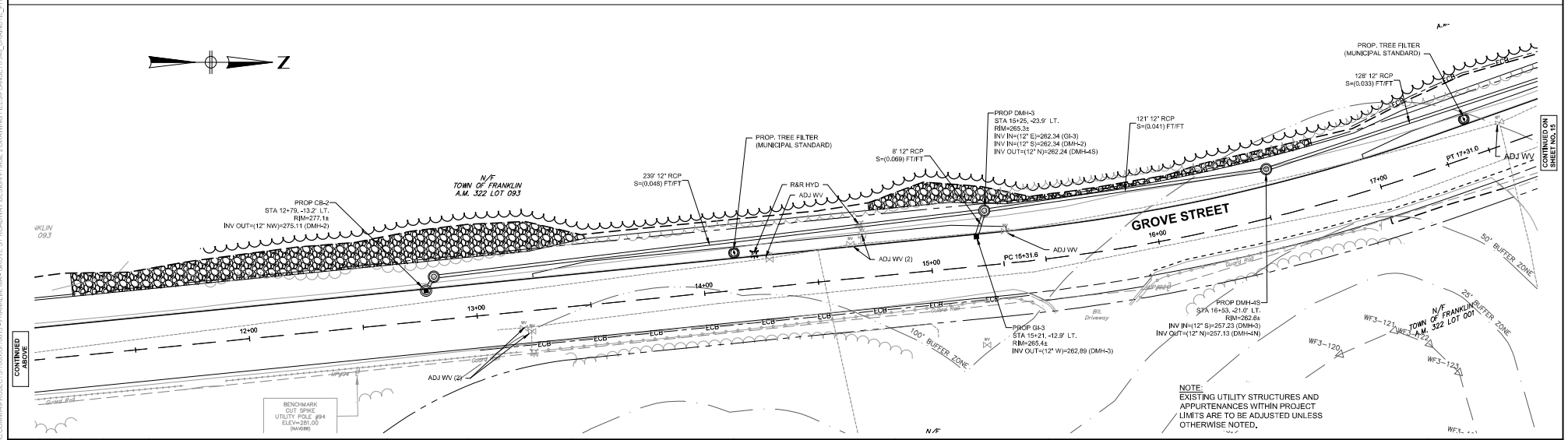
CONSTRUCTION PLAN & PROFILE - SHEET 10

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 13

2/14/2023 11:25 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_CONST_PH2.DWG (BETA STB BW.STB)





NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, No. 35716, 6/5/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

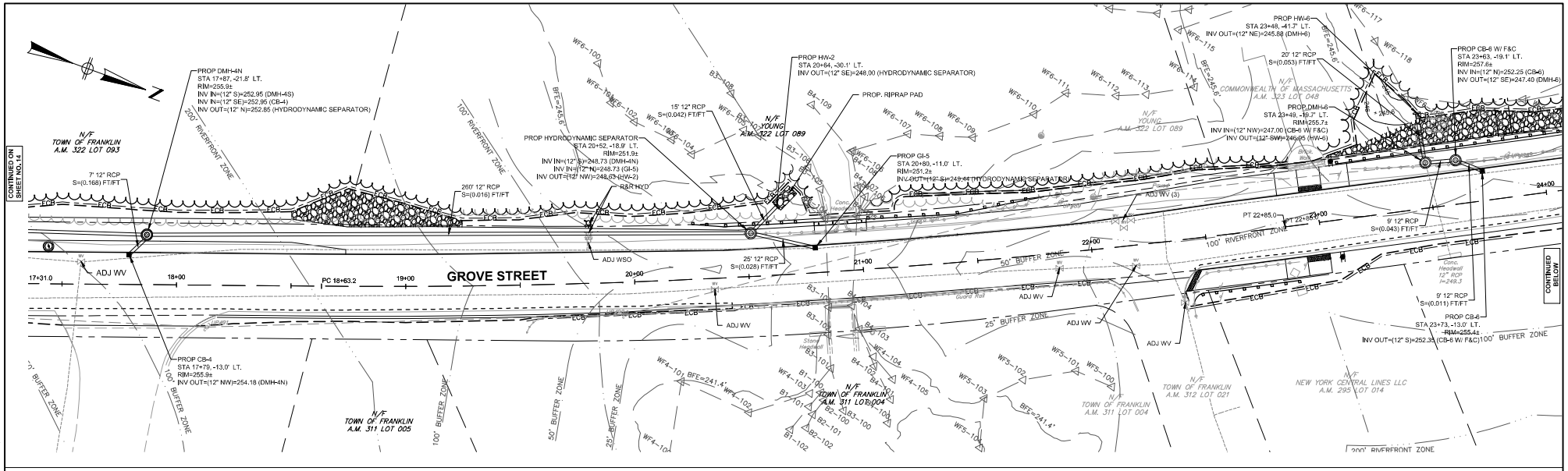
GROVE STREET IMPROVEMENTS

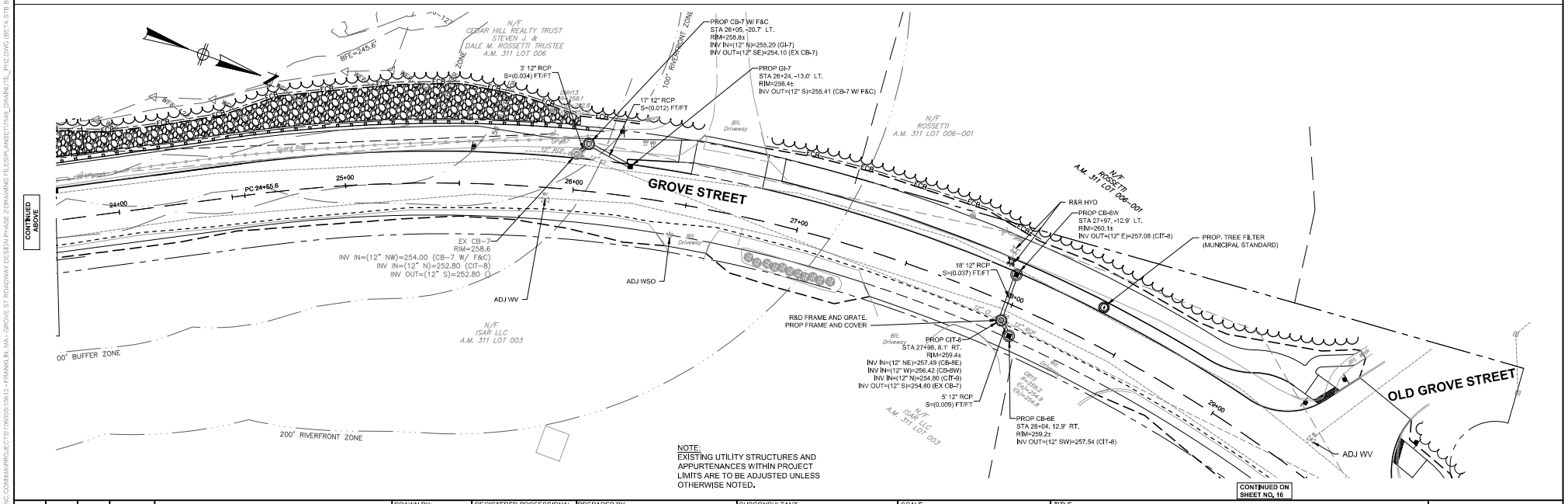
DRAINAGE AND UTILITY PLAN 1

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 14

2/14/2023 11:39 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_DRAIN_UTIL_PH2.DWG (BETA STB BW.STB)





NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, JR. No. 35716 — 6/15/23

PREPARED BY: BETA — www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

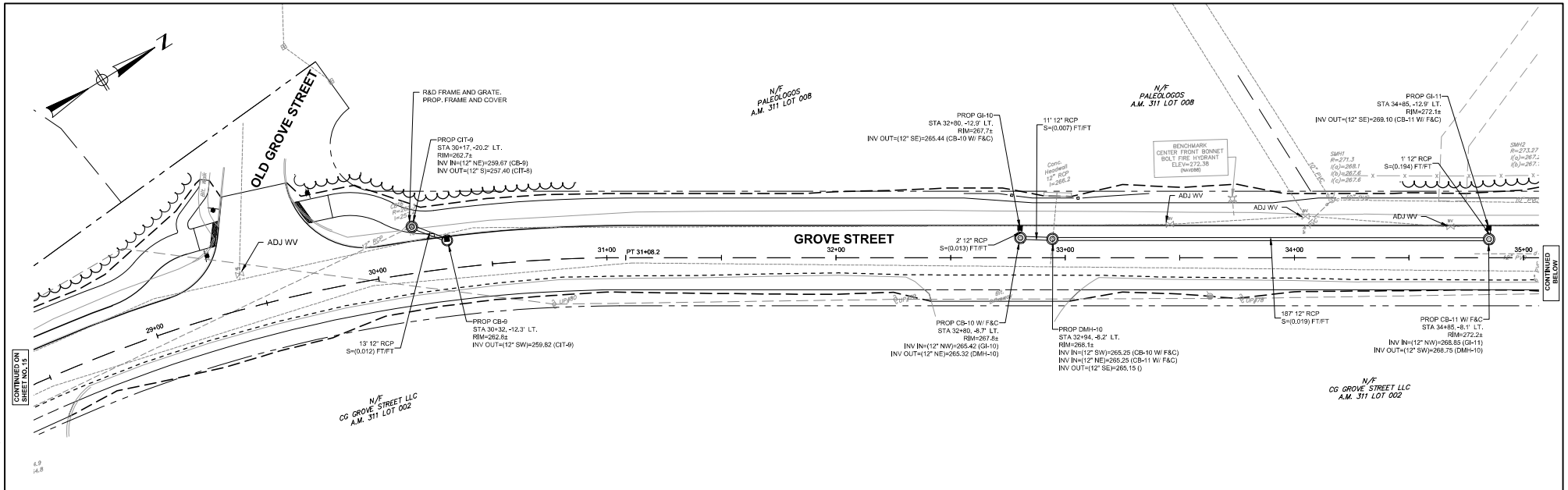
GROVE STREET IMPROVEMENTS

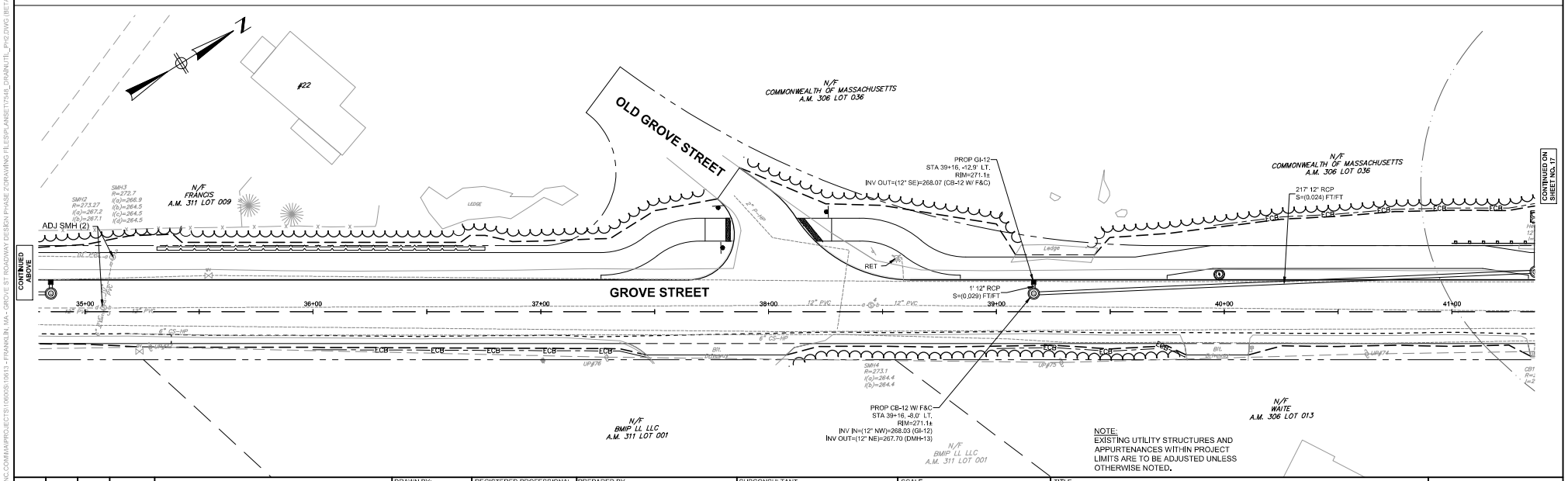
DRAINAGE AND UTILITY PLAN 2

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 15

2/14/2023 11:39 AM \\BETA-INC.COM\BA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_DRAIN_UTIL_PH2.DWG (BETA STB BW.STB)





NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, No. 36216, Professional Engineer, Commonwealth of Massachusetts, 12/5/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

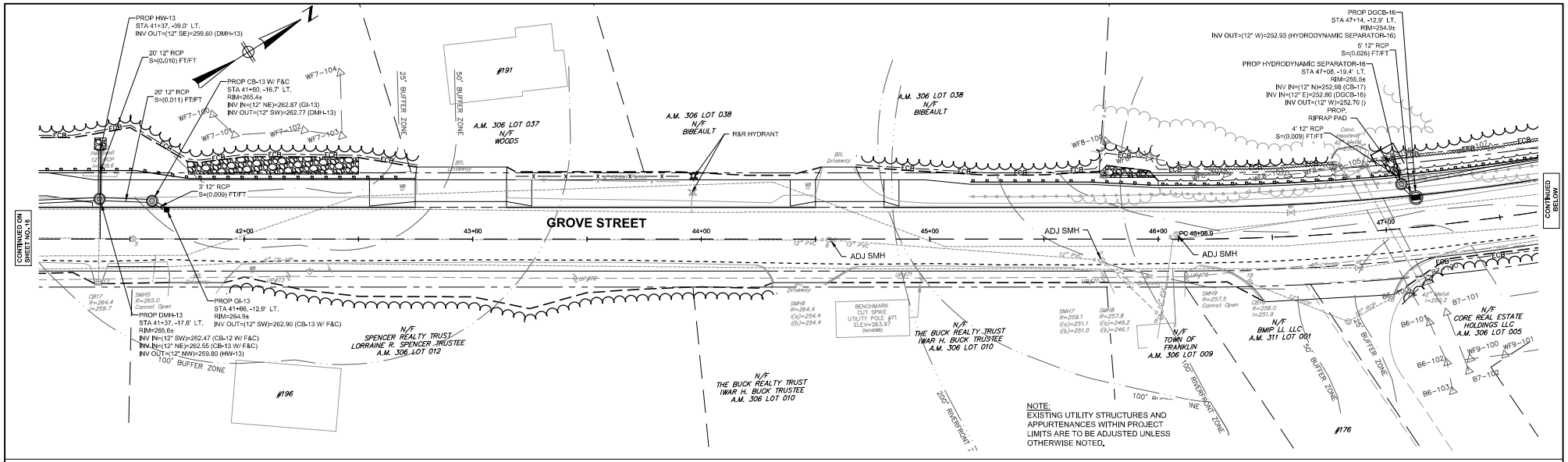
GROVE STREET IMPROVEMENTS

DRAINAGE AND UTILITY PLAN 3

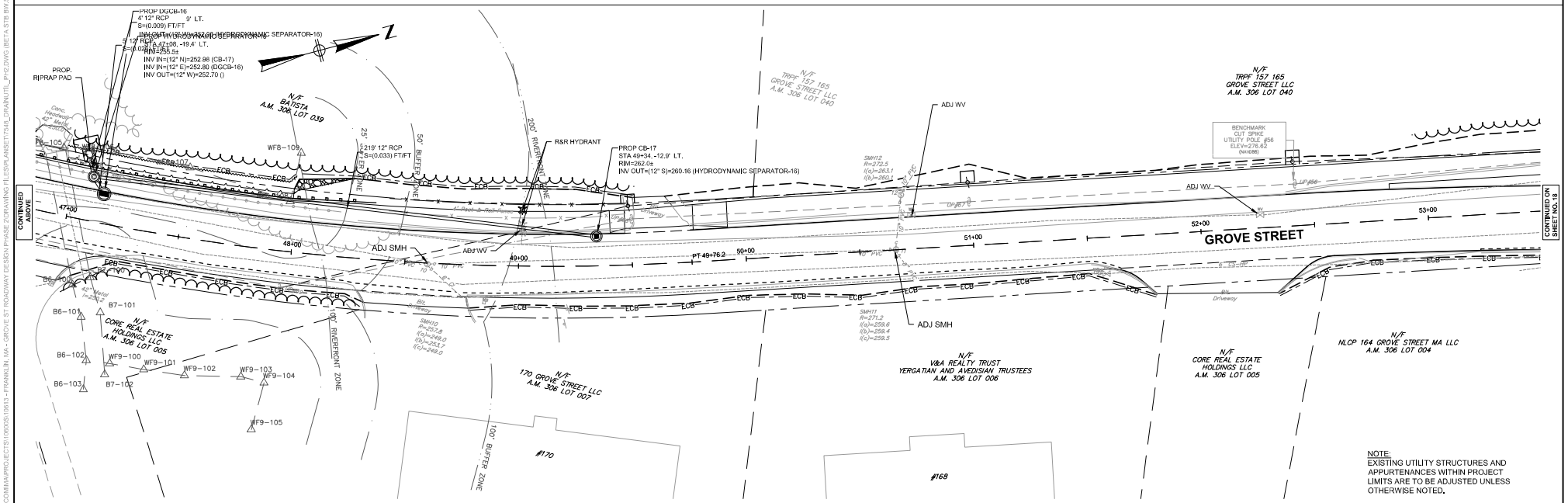
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 16

2/14/2023 11:39 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_DRAIN_UTIL_PH2.DWG (BETA STB BW.STB)



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.



NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 35716, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

GROVE STREET IMPROVEMENTS

DRAINAGE AND UTILITY PLAN 4

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 17

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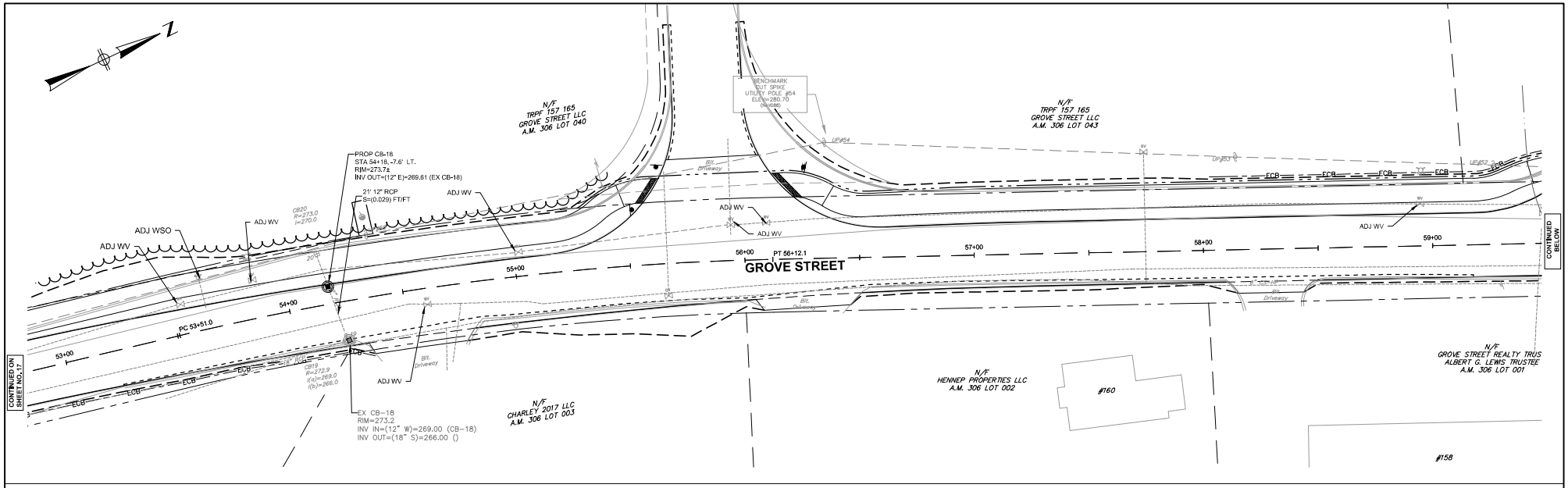
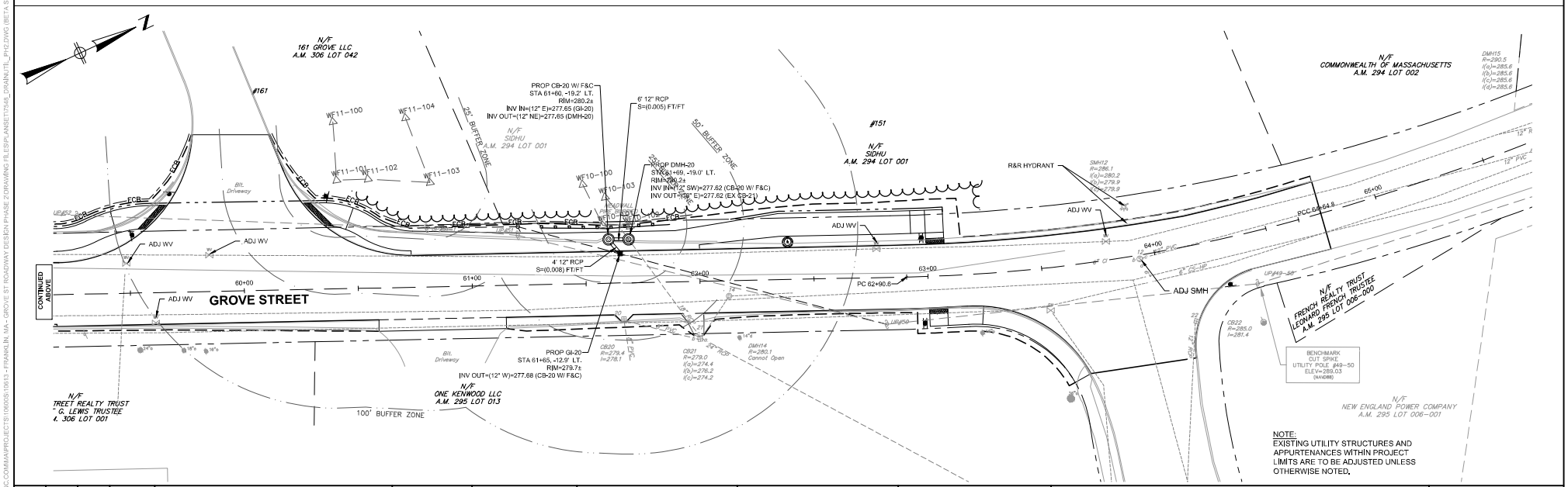




NOTE:
EXISTING UTILITY STRUCTURES AND APPURTENANCES WITHIN PROJECT LIMITS ARE TO BE ADJUSTED UNLESS OTHERWISE NOTED.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 30716, COMMONWEALTH OF MASSACHUSETTS, 6/5/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

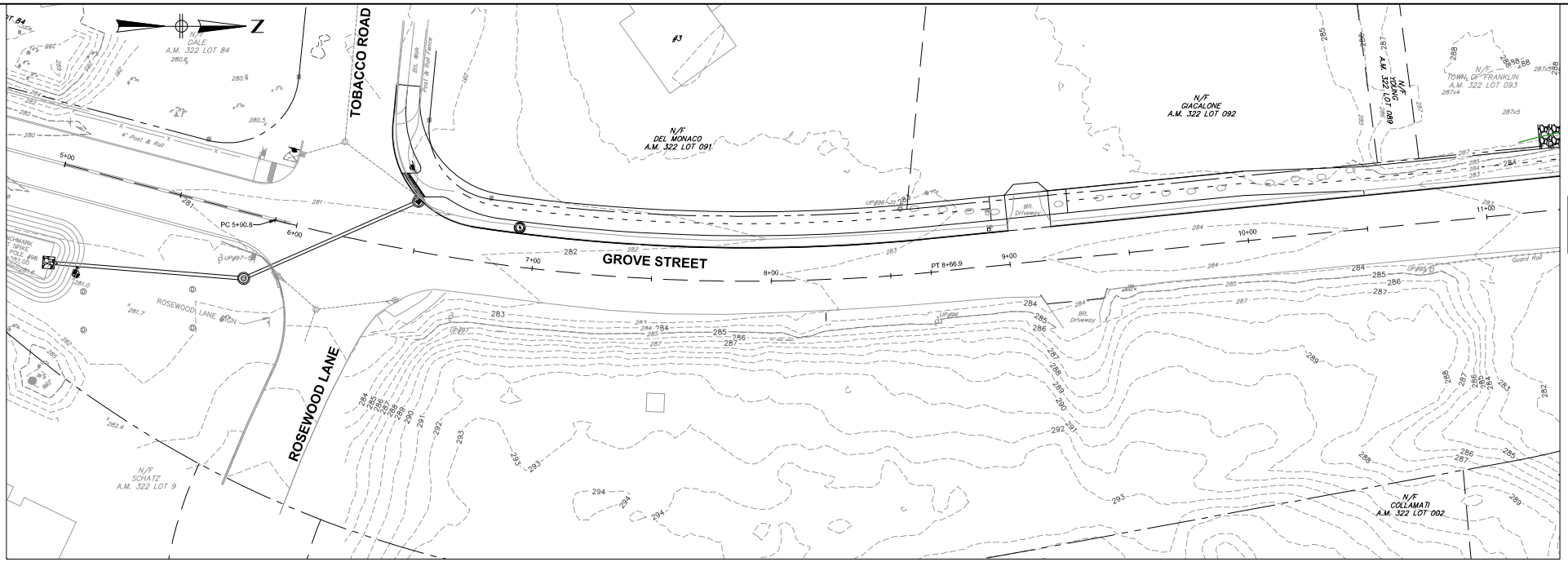
GROVE STREET IMPROVEMENTS

DRAINAGE AND UTILITY PLAN 5

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 18

2/14/2023 11:39 AM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_DRAIN_UTIL_PH2.DWG (BETA STB BW.STB)



RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
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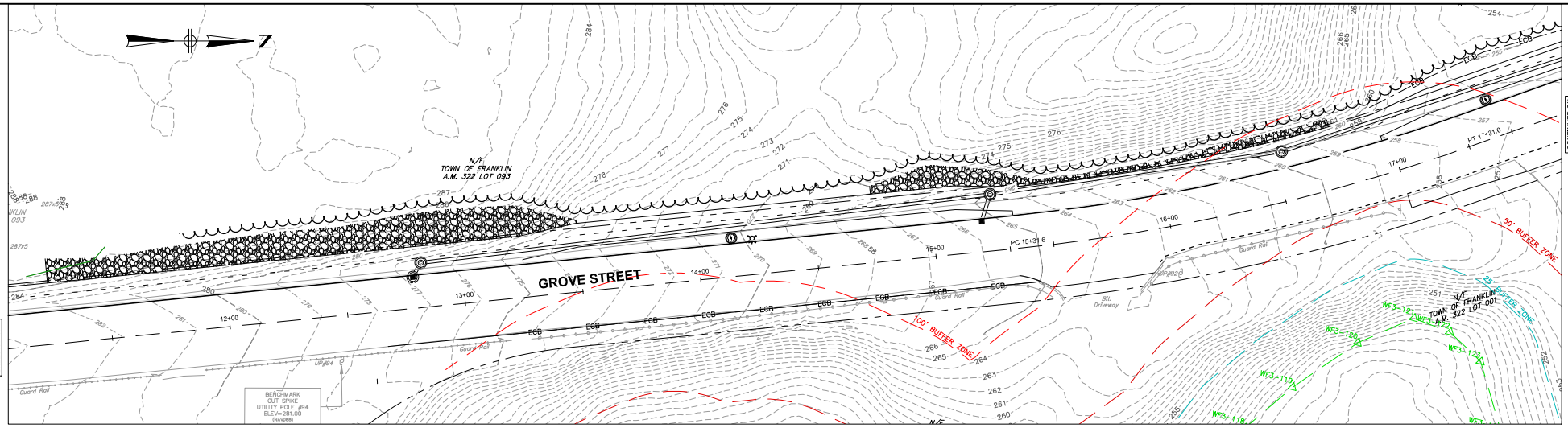
TITLE: **GROVE STREET IMPROVEMENTS**

RESOURCE AREA PLAN 1

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 19

2/14/2023 11:35 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7546_RESOURCE AREA PLANS.DWG (BETA STB BW.STB)



RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM F McGRATH CIVIL No. 35718 PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

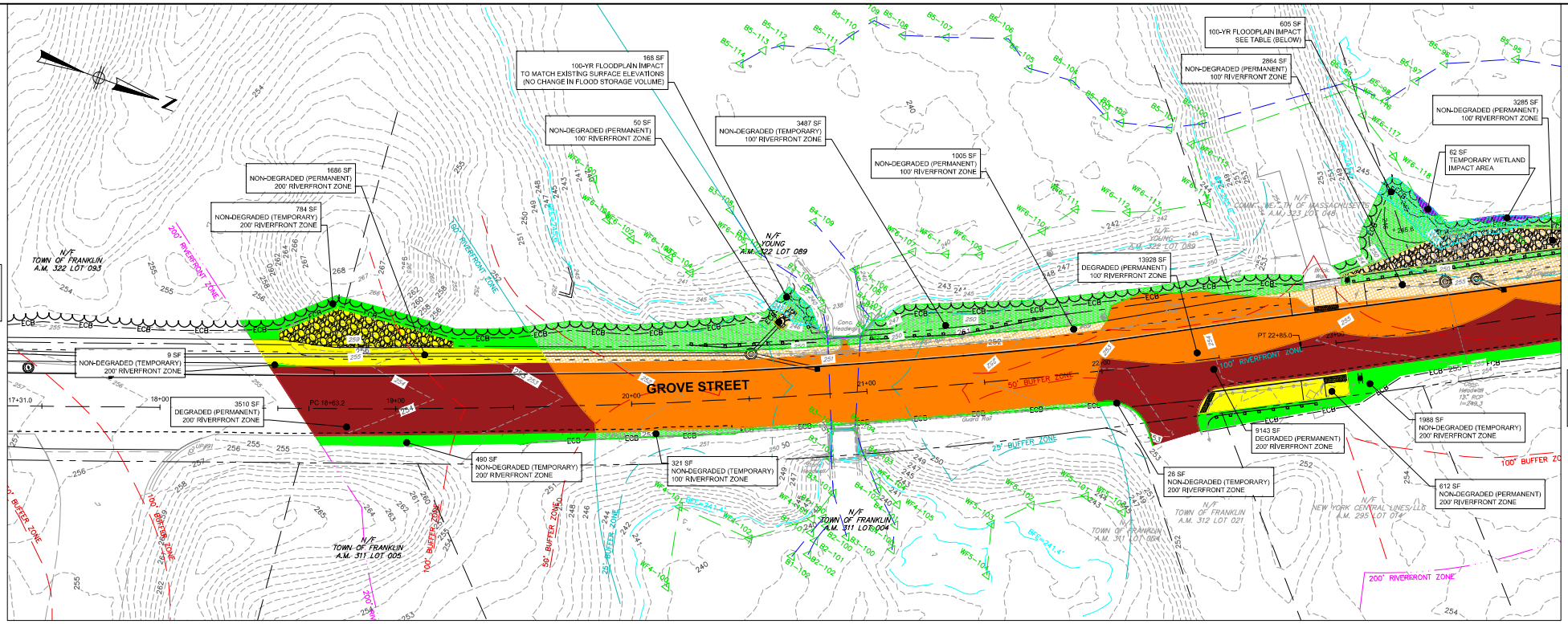
TITLE: **GROVE STREET IMPROVEMENTS**

RESOURCE AREA PLAN 2

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 20

BETA GROUP INC. - TEMPLATE (BETA_STANDARD_24X36_SHEET_TEMPLATE - 1.0.2020) CIVIL 3D (2020) PLOTSTYLE (BETA STB BW.STB)
2/14/2023 11:35 AM \\BETA-INC.COM\MAPROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7546_RESOURCE AREA PLANS.DWG (BETA STB BW.STB)



	Floodplain Impact Volumes	
Elevation Range	Fill (CF)	Cut (CF)
244'-245'	7	15
245'-245.6'	104	107

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL

DESIGNED BY: RS

CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 — SCALE IN FEET: 1"=20'

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TITLE

GROVE STREET IMPROVEMENTS

RESOURCE AREA PLAN 3

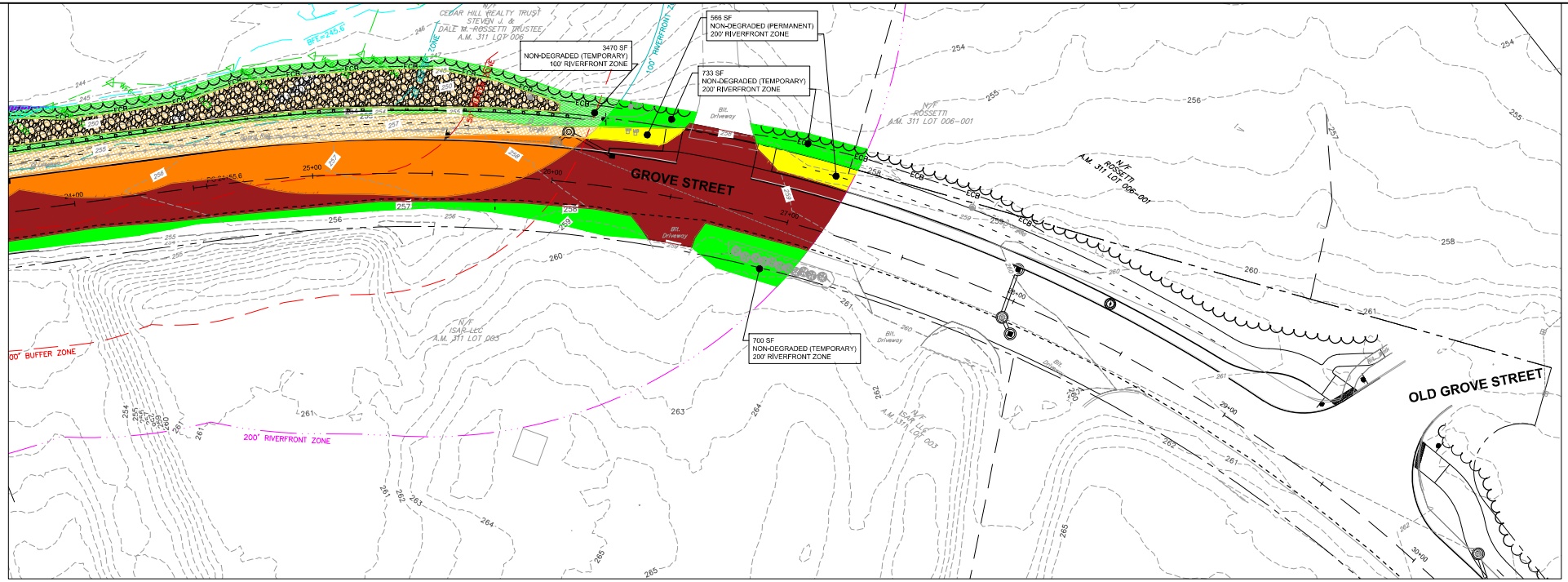
FRANKLIN, MA

BETA JOB NO. 10613

ISSUE DATE 02/2023

SHEET NO. 21

2/14/2023 11:35 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7546_RESOURCE AREA PLANS.DWG (BETA STB BW.STB)



RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
RESOURCE AREA PLAN 4
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 22

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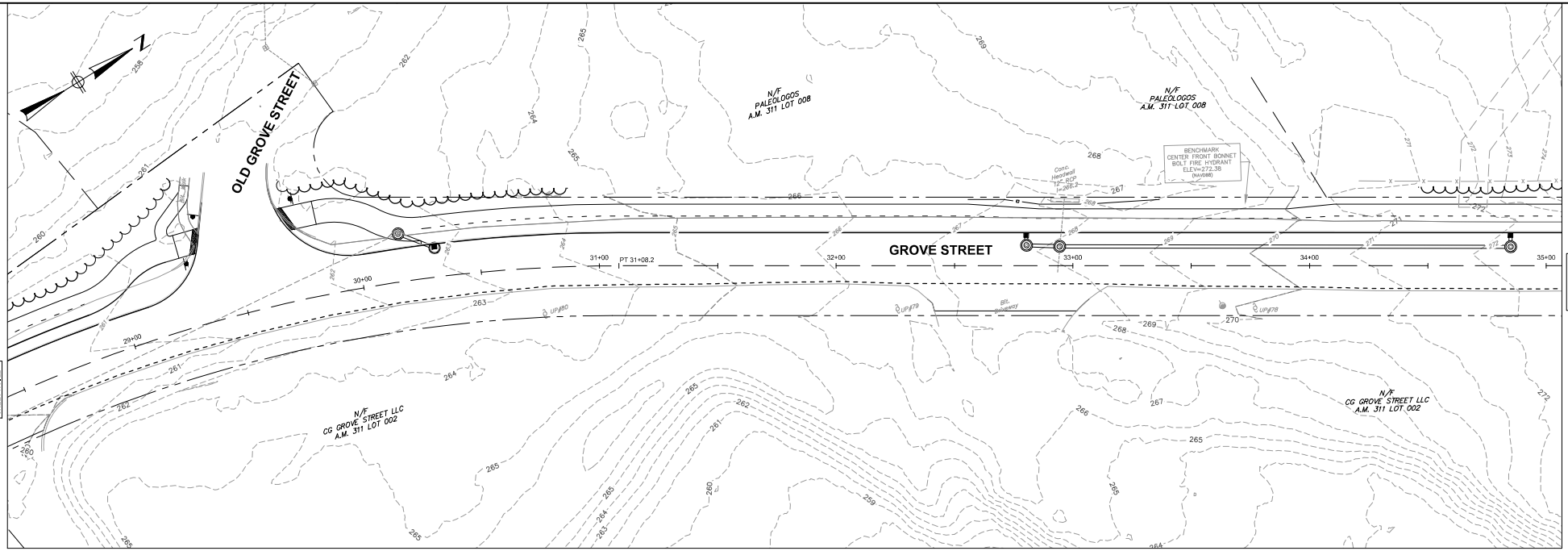

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: **GROVE STREET IMPROVEMENTS**

RESOURCE AREA PLAN 5

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 23

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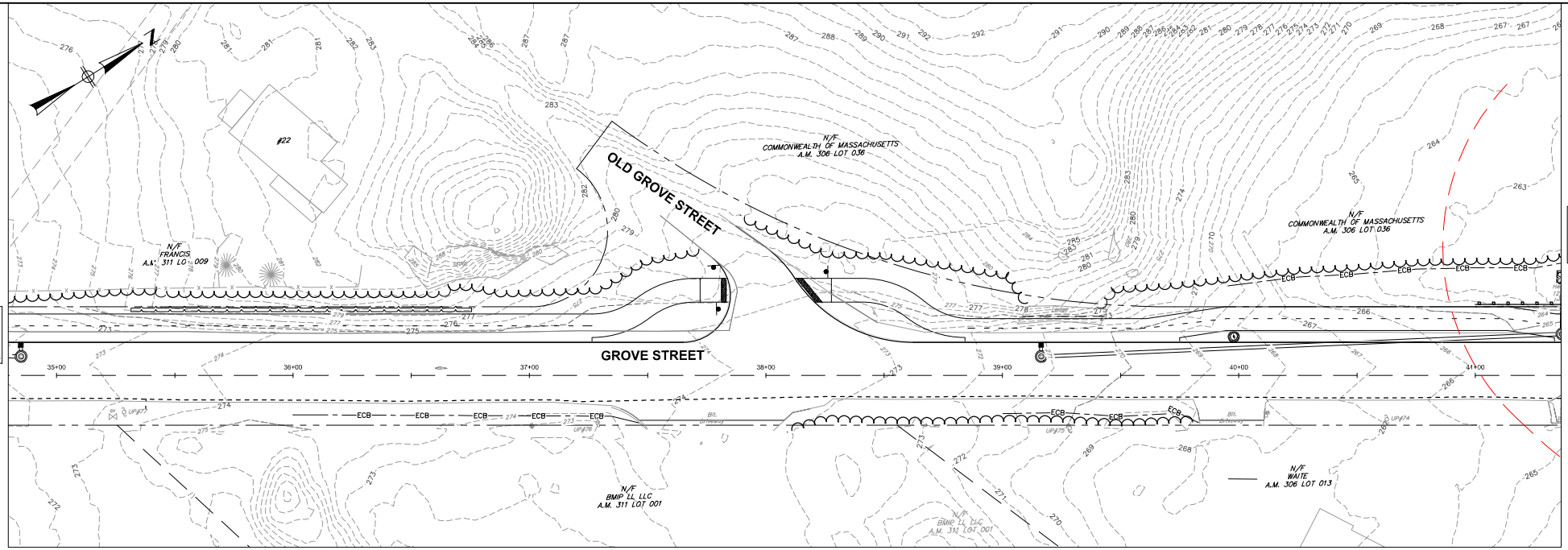

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
RESOURCE AREA PLAN 6
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 24

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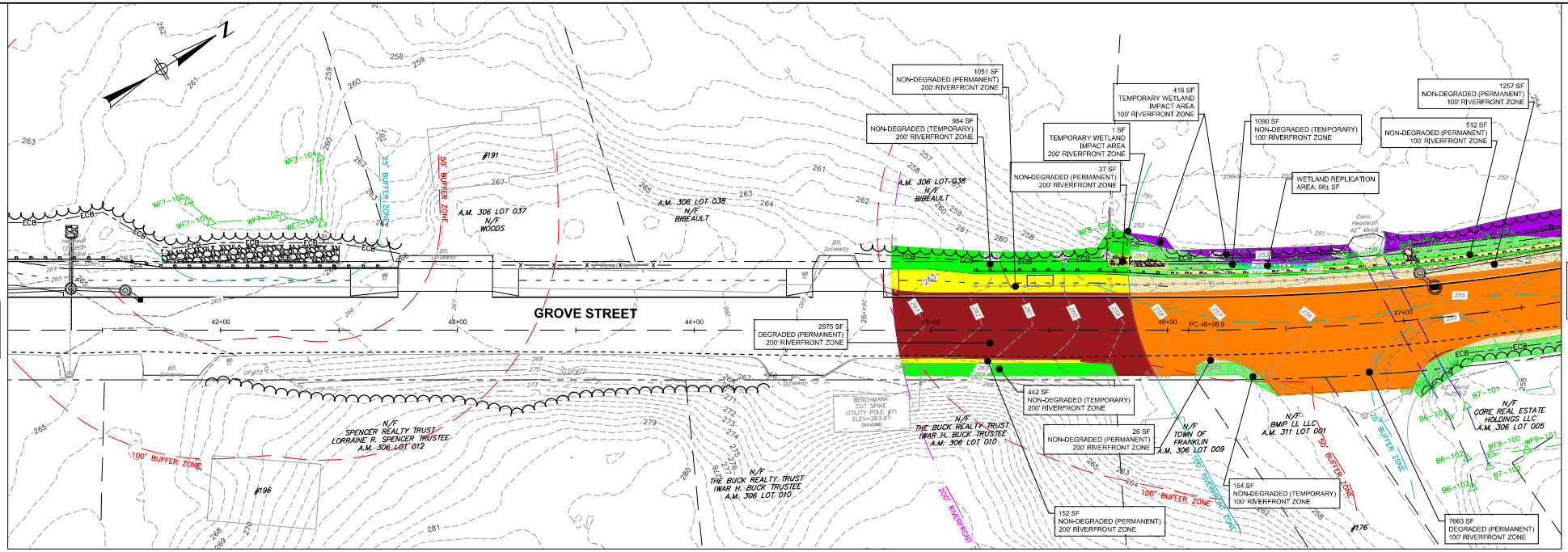

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
RESOURCE AREA PLAN 7
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 25

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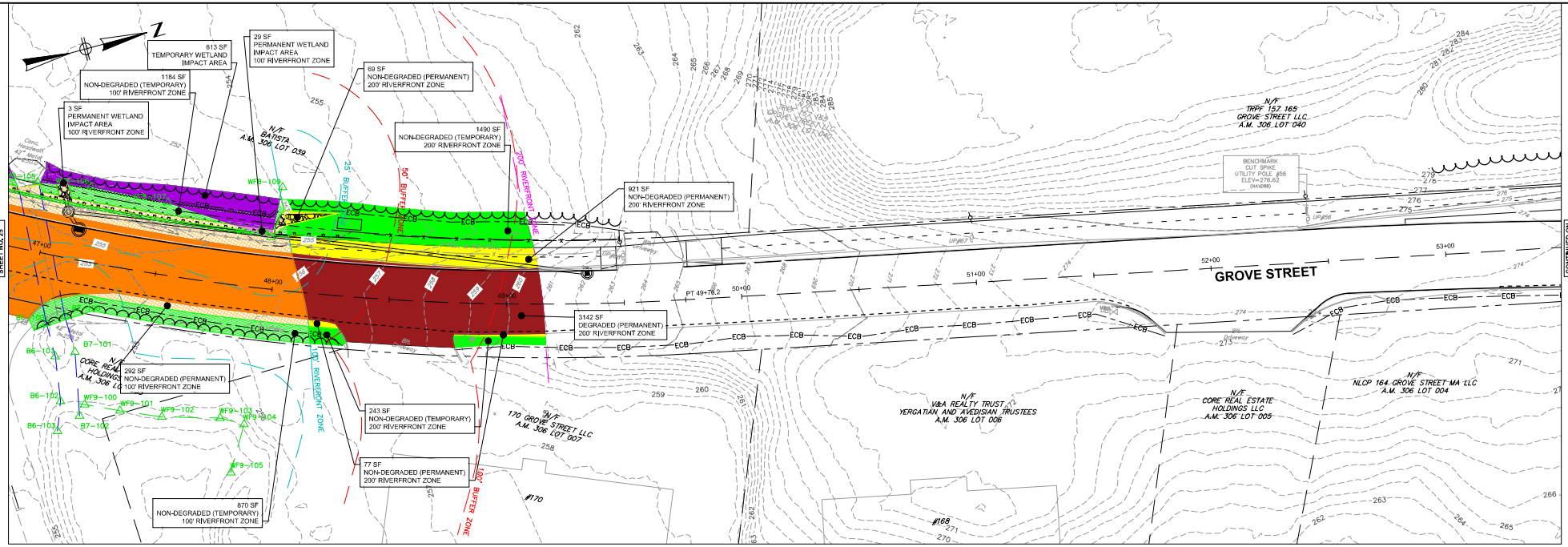

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
RESOURCE AREA PLAN 8
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 26

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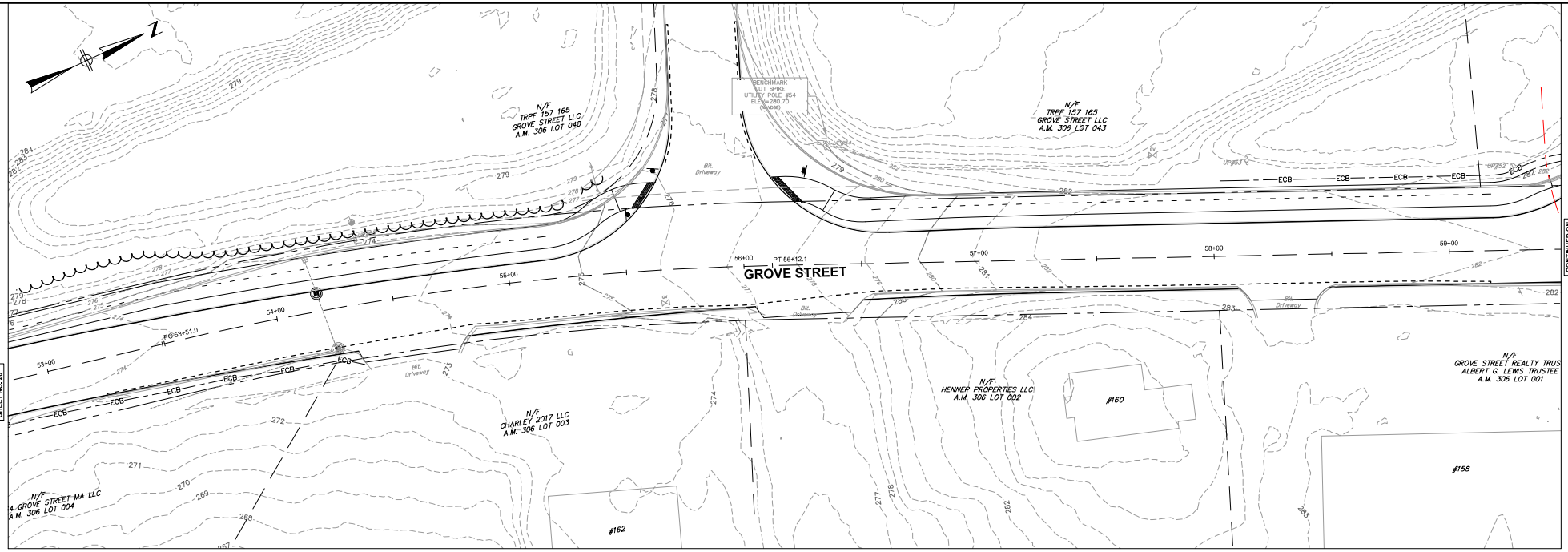


RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

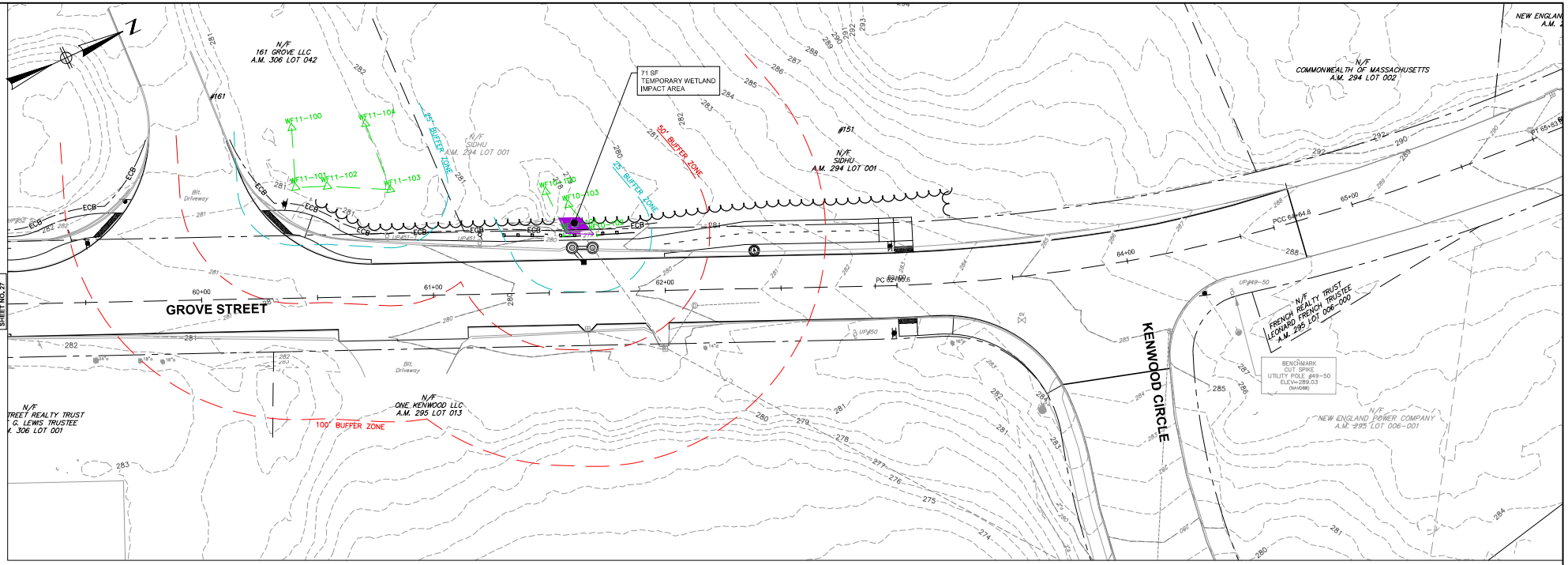
SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
RESOURCE AREA PLAN 9
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 27

2/14/2023 11:36 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7546_RESOURCE AREA PLANS.DWG (BETA STB BW.STB)



CONTINUED ON SHEET NO. 27

RESOURCE AREA LEGEND

LINETYPE/ HATCH	DESCRIPTION
WF	WETLAND BOUNDARY
BF	BANK BOUNDARY
	LIMIT OF 25 FT WETLAND BUFFER ZONE
	LIMIT OF 50 FT WETLAND BUFFER ZONE
	LIMIT OF 100 FT WETLAND BUFFER ZONE
	LIMIT OF 200 FT RIVERFRONT ZONE
	100 YEAR FLOOD ZONE
	100 YEAR FLOOD PLAIN IMPACT
	TEMPORARY WETLAND IMPACT
	PERMANENT WETLAND IMPACT
	WETLAND REPLICATION AREA
	PERMANENT DEGRADED 100' RIVERFRONT
	PERMANENT NON-DEGRADED 100' RIVERFRONT
	TEMPORARY NON-DEGRADED 100' RIVERFRONT
	PERMANENT DEGRADED 200' RIVERFRONT
	PERMANENT NON-DEGRADED 200' RIVERFRONT
	TEMPORARY NON-DEGRADED 200' RIVERFRONT

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL

DESIGNED BY: RS

CHECKED BY: BB

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: 20 0 20 40 SCALE IN FEET: 1"=20'

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE

GROVE STREET IMPROVEMENTS

RESOURCE AREA PLAN 10

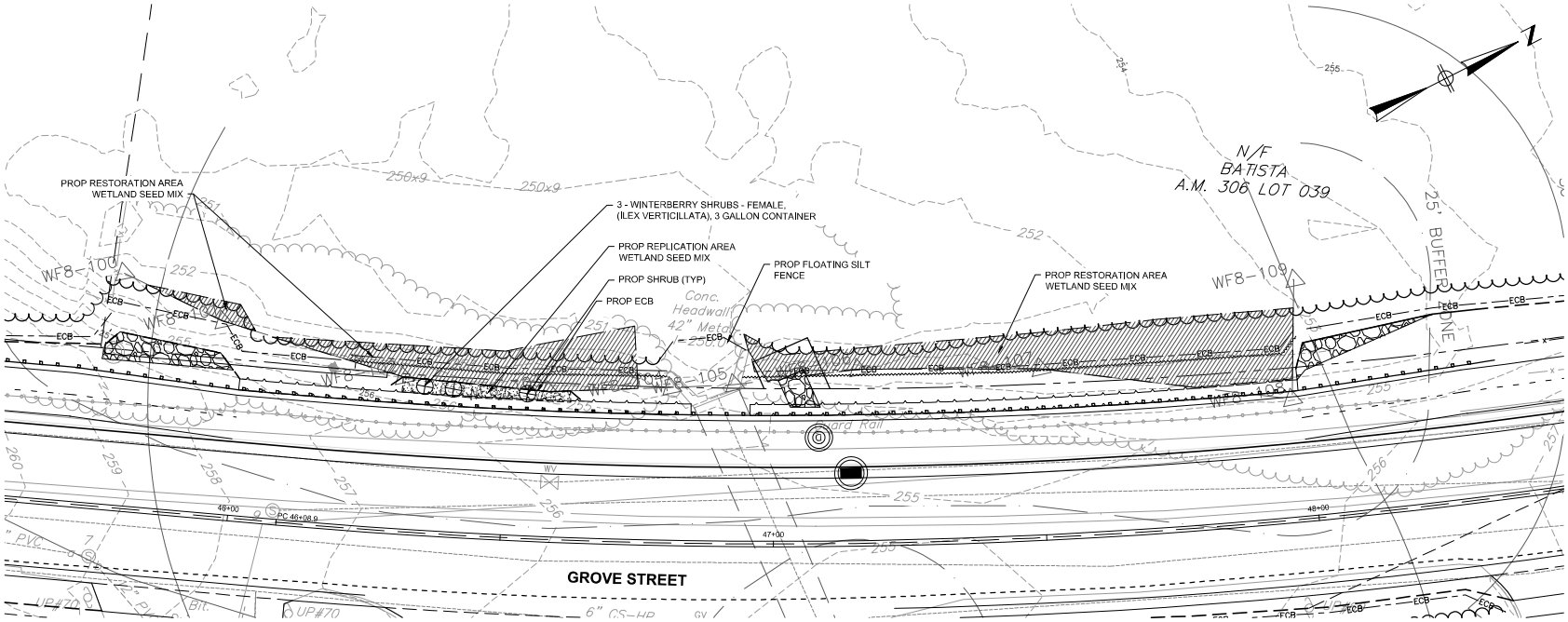
FRANKLIN, MA

BETA JOB NO. 10613

ISSUE DATE 02/2023

SHEET NO. 28

2/14/2023 11:36 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7546_RESOURCE AREA PLANS.DWG (BETA STB BW.STB)



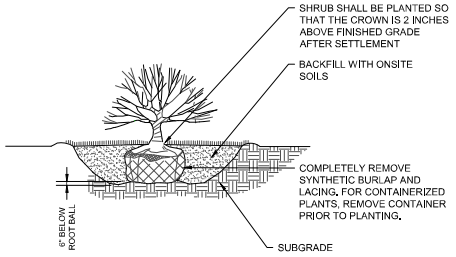
WETLAND REPLICATION & RESTORATION PLAN

SCALE: 1"= 10'

WETLAND SEED MIX SPECIFICATIONS:

WETLAND SEED MIX SHALL BE COMPARABLE TO NEW ENGLAND WETLAND PLANTS WET MIX AND INCLUDE FOX SEDGE (CAREX VULPINOIDEA), LURID SEDGE (CAREX LURIDA), BLUNT BROOM SEDGE (CAREX SCOPARIA), BLUE VERVAIN (VERBENA HASTATA), FOWL BLUEGRASS (POA PALUSTRIS), HOP SEDGE (CAREX LUPULINA), GREEN BULRUSH (SCIRPUS ATROVIRENS), CREEPING SPIKE RUSH (ELEOCHARIS PALUSTRIS), FRINGED SEDGE (CAREX CRINITA), SOFT RUSH (JUNCUS EFFUSUS), SPOTTED JOE PYE WEED (EUPATORIUM MACULATUM), RATTLESNAKE GRASS (GLYCERIA CANADENSIS), SWAMP ASTER (ASTER PUNICEUS), BLUEFLAG (IRIS VERSICOLOR), SWAMP MILKWEED (ASCLEPIAS INCARNATA), AND SQUARE STEMMED MONKEY FLOWER (MIMULUS RINGENS).

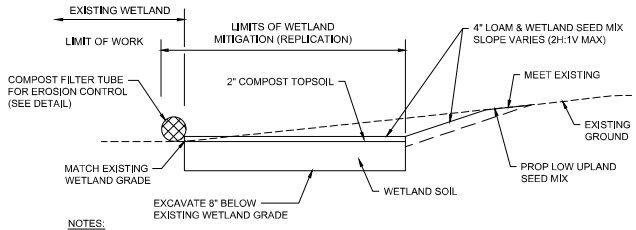
APPLICATION RATE = 1 LB./2500 SQ. FT.
18 LBS./ACRE



NOTE:
LOOSE OR CRACKED ROOTBALLS WILL NOT BE ACCEPTED FOR PLANTING

SHRUB PLANTING

NOT TO SCALE



NOTES:

1. PROVIDE PLANTINGS AS DETAILED ON THIS SHEET.
2. ALL DISTURBED WETLAND AREAS SHALL BE RESTORED WITH WETLAND SEED MIX.

WETLAND REPLICATION AREA DETAIL

NOT TO SCALE

WETLAND REPLICATION NOTES:

1.) PRIOR TO GRADING THE REPLICATION AREA, EROSION CONTROLS SHALL BE INSTALLED ALONG THE DOWNGRADIENT AND UPGRADIENT EXTENTS.

2.) ALL SPECIES IDENTIFIED ON THIS PLAN SHALL BE USED UNLESS DIRECTED OTHERWISE BY THE FRANKLIN CONSERVATION COMMISSION. CULTIVARS SHALL NOT BE PLANTED.

3.) THE PLACEMENT OF PLANTINGS DEPICTED ON THIS PLAN SHALL BE USED AS A GUIDE AND IS NOT INTENDED TO DISCOURAGE FIELD ADJUSTMENTS BASED ON CONDITIONS. A QUALIFIED WETLAND PROFESSIONAL SHALL OVERSEE PLANTING WITHIN THE WETLAND REPLICATION AREA AND DIRECT THE CONTRACTOR ON EXACT PLACEMENT AND CLUSTERING OF PLANTS.

4.) A QUALIFIED PROFESSIONAL SHALL OVERSEE GRADING WITHIN THE WETLAND REPLICATION AREA AND DIRECT THE CONTRACTOR TO ACHIEVE THE APPROPRIATE GRADE FOR THE REPLICATION AREA.

5.) THE WETLAND REPLICATION AREA SHALL BE IMMEDIATELY SEEDED WITH NEW ENGLAND WETLAND PLANTS WET MIX OR A COMPARABLE BLEND OF NATIVE, HYDROPHYTIC SPECIES AS APPROVED BY THE FRANKLIN CONSERVATION COMMISSION. SHOULD FAVORABLE GROWING CONDITIONS NOT BE PRESENT, THE REPLICATION AREA SHALL BE COVERED WITH STRAW MULCH FREE OF SEED-HEADS AND SEEDED UPON COMMENCEMENT OF THE NEXT GROWING SEASON.

6.) SEE THE ACCOMPANYING NOTICE OF INTENT NARRATIVE FOR INFORMATION ON SEQUENCING OF ESTABLISHING THE REPLICATION AREAS.

7.) PLANTINGS SHALL BE SUFFICIENTLY IRRIGATED FOLLOWING INSTALLATION.

8.) WF 8 SERIES HYDROLOGY IS PRIMARILY PROVIDED THROUGH SURFACE WATER. THE SURFACE WATER ELEVATION WITHIN THE REPLICATION AREA WILL BE CONSISTENT WITH THE WF 8 SERIES.

9.) SOIL APPROPRIATE FOR THE REPLICATION AREA ME BE EITHER HYDRIC SOIL EXCAVATED AND STOCKPILED FROM THE IMPACTED WETLAND OR A MANUFACTURED MIX OF HALF COMPOST AND HALF CLEAN LOAM, OR A COMBINATION THEREOF, AS APPROVED BY A QUALIFIED WETLAND PROFESSIONAL. IF HYDRIC SOIL FROM THE IMPACTED WETLAND IS INFESTED WITH INVASIVE PLANT SPECIES, THE SOIL SHALL NOT BE USED IN THE REPLICATION AREA.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CWS, No. 35716, COMMONWEALTH OF MASSACHUSETTS, 2/15/23

PREPARED BY: BETA, www.BETA-Inc.com

SUBCONSULTANT

SCALE: AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

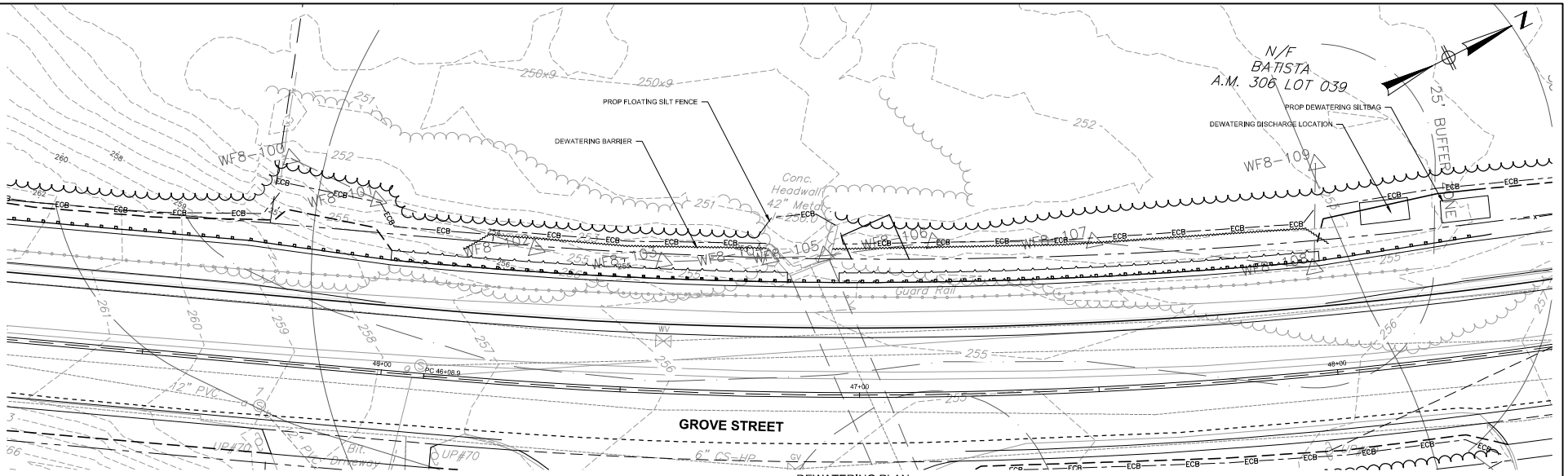
TITLE: **GROVE STREET IMPROVEMENTS**

WETLAND REPLICATION PLAN

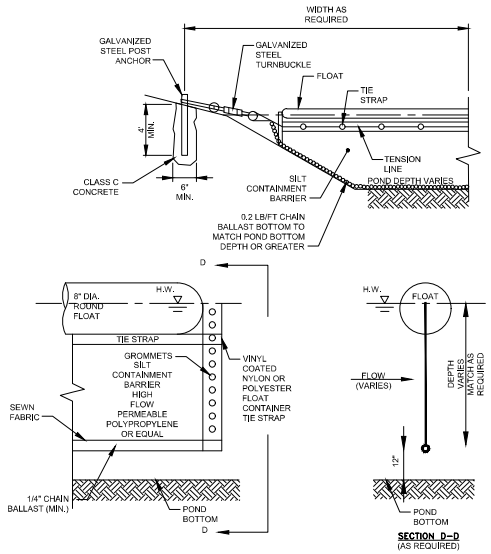
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 29

2/14/2023 11:40 AM \\BETA-INC.COM\RA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_REPLICATION_PH2.DWG (BETA STB BW.STB)



DEWATERING PLAN
SCALE: 1"= 10'



FLOATING SILT FENCE
NOT TO SCALE

NOTE:
-DEWATERING CONFIGURATION MAY CHANGE AFTER COORDINATION WITH THE CONTRACTOR.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: RS
CHECKED BY: BB

REGISTERED PROFESSIONAL: WILLIAM P. McDEADE, CIVIL, No. 35716, COMMONWEALTH OF MASSACHUSETTS, 6/5/23

PREPARED BY: BETA www.BETA-Inc.com

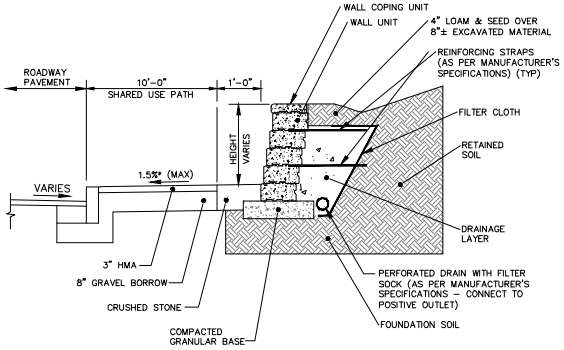
SUBCONSULTANT

SCALE: AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: GROVE STREET IMPROVEMENTS
DEWATERING PLAN
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 30

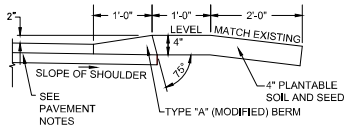
2/14/2023 3:50 PM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_DEWATERING_PH2.DWG (BETA STB BW.STB)



* – TOLERANCE FOR CONSTRUCTION ±0.5% (TYPICAL)

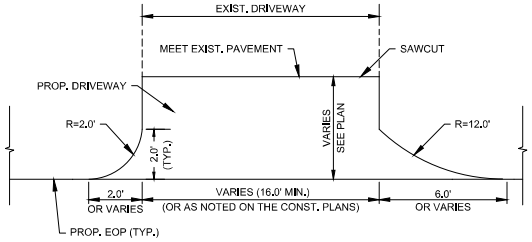
DETAIL FOR MODULAR BLOCK RETAINING WALL (INTERLOCKING) WITH SHARED USE PATH

NOT TO SCALE



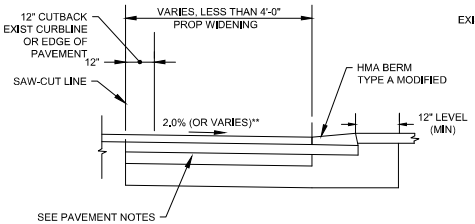
HMA BERM - TYPE "A" (MODIFIED) "CAPE COD BERM"

NOT TO SCALE



DETAIL FOR DRIVEWAY WITHOUT SIDEWALK (W/O BERM)

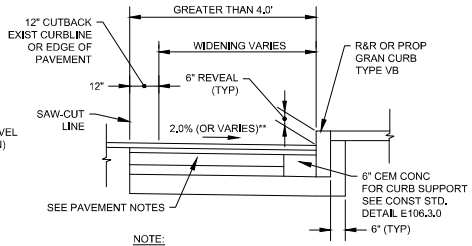
NOT TO SCALE



NOTE:
SEE PAVEMENT NOTES SHEET 5

DETAIL FOR BOX WIDENING 4.0' OR LESS

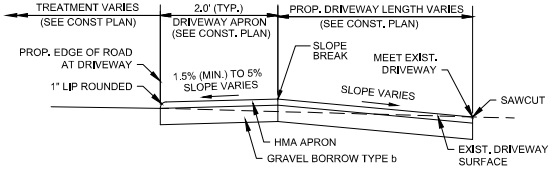
NOT TO SCALE



NOTE:
SEE PAVEMENT NOTES SHEET 5

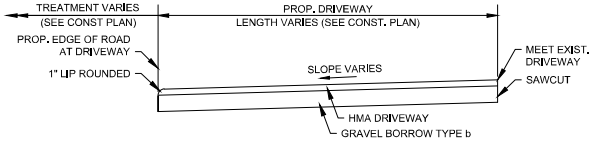
DETAIL FOR FULL DEPTH CONSTRUCTION

NOT TO SCALE



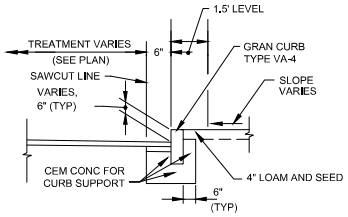
SECTION FOR DRIVEWAY WITHOUT SIDEWALK (EXIST. DRIVEWAY SLOPING AWAY FROM ROAD)

NOT TO SCALE



SECTION FOR DRIVEWAY WITHOUT SIDEWALK (EXIST. DRIVEWAY SLOPING TOWARD ROAD)

NOT TO SCALE



DETAIL FOR GRANITE CURB WITHOUT SIDEWALK

NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: BB
CHECKED BY: BM

REGISTERED PROFESSIONAL: WILLIAM P. McGRATH, CIVIL, No. 35718, 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

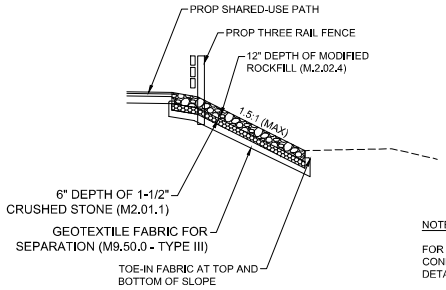
SCALE: NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: **GROVE STREET IMPROVEMENTS PHASE 2**
CONS. DETAILS 1
FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 31

2/14/2023 11:45 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_TYP SEC & DETAILS.DWG (BETA STB BW.STB)



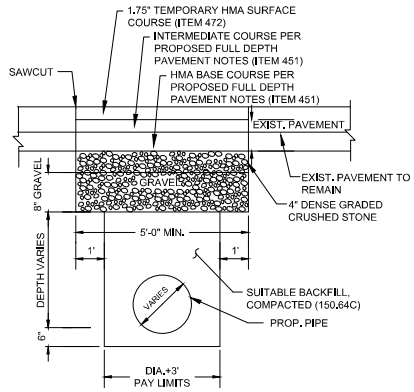
STA 1+00 LT TO 3+00 LT

MODIFIED ROCKFILL

NOT TO SCALE

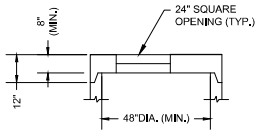
NOTES:

FOR TRAFFIC SIGNAL CONDUIT TRENCH DETAILS SEE SHEET 17



PERMANENT TRENCH PATCH DETAIL IN MILLED AREAS

NOT TO SCALE

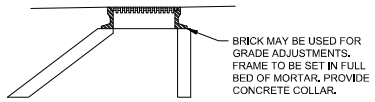


ALTERNATE TOP SLAB FOR CATCH BASIN

NOT TO SCALE

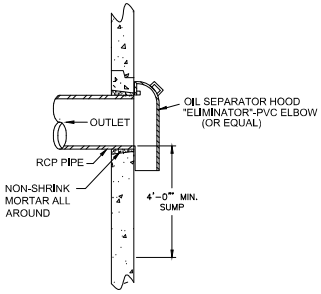
NOTES:

1. BASED ON ACTUAL FIELD CONDITIONS: THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.



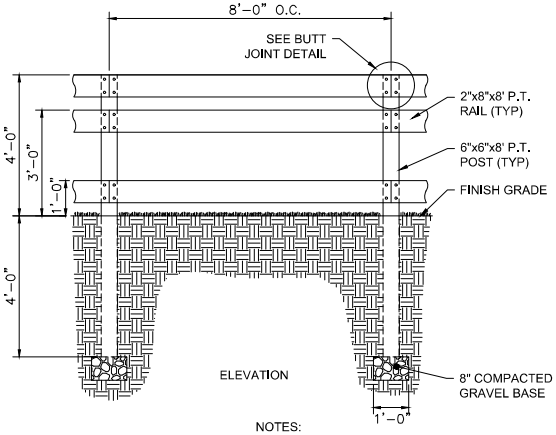
ALTERNATE ECCENTRIC CONE SECTION FOR CATCH BASIN

NOT TO SCALE

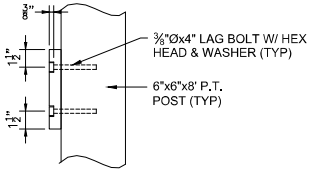


CATCH BASIN HOOD DETAIL

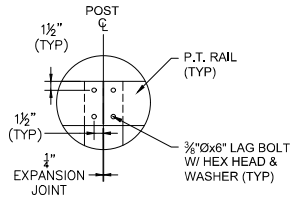
NOT TO SCALE



ELEVATION



STEEL PLATE MOUNTING

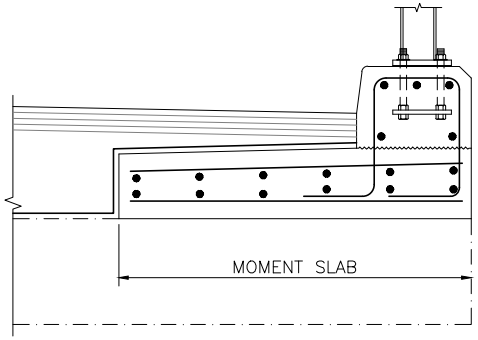


BUTT JOINT
N.T.S.

NOTES:
1. AFTER SETTING POSTS, TAMP BACKFILL FIRMLY IN PLACE.
2. DO NOT BACKFILL WITH CONCRETE.

3 RAIL FENCE

SCALE: ½"=1'



MOMENT SLAB SECTION

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: BB
CHECKED BY: BM

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 Registered Professional Engineer 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

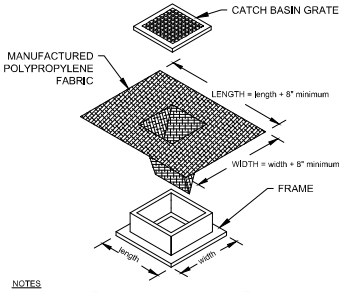
TITLE: **GROVE STREET IMPROVEMENTS PHASE 2**

CONS. DETAILS 2

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 32

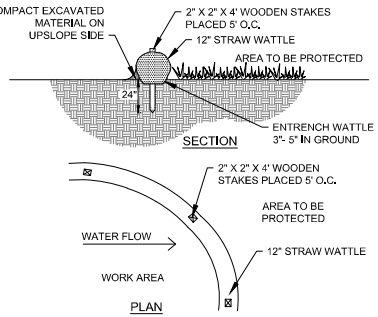
2/14/2023 11:45 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_TYP SEC & DETAILS.DWG (BETA STB BW.STB)



NOTES:
1. LENGTH AND WIDTH OF POLYPROPYLENE FABRIC MUST EXCEED EXISTING CATCH BASIN FRAME DIMENSIONS BY A MINIMUM OF 8".
2. REMOVE CATCH BASIN GRATE AND INSTALL POLYPROPYLENE FABRIC OVER CATCH BASIN FRAME. REPLACE CATCH BASIN GRATE TO SECURE POLYPROPYLENE FABRIC IN PLACE.

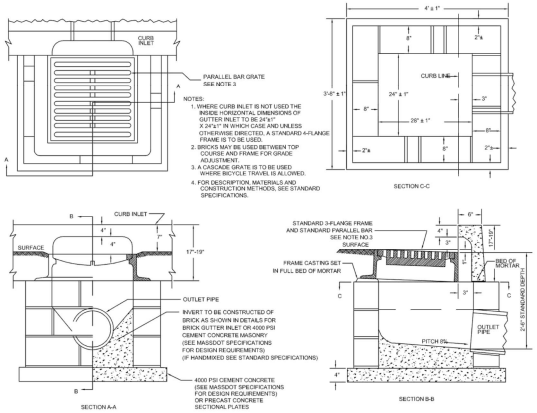
CATCH BASIN EROSION CONTROL PROTECTION (TYP)

NOT TO SCALE



EROSION CONTROL BARRIER

NOT TO SCALE



GUTTER INLET

NOT TO SCALE

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL
DESIGNED BY: BB
CHECKED BY: BM

REGISTERED PROFESSIONAL: STATE OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 35718 REGISTERED PROFESSIONAL ENGINEER 2/15/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT:

SCALE: NONE

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

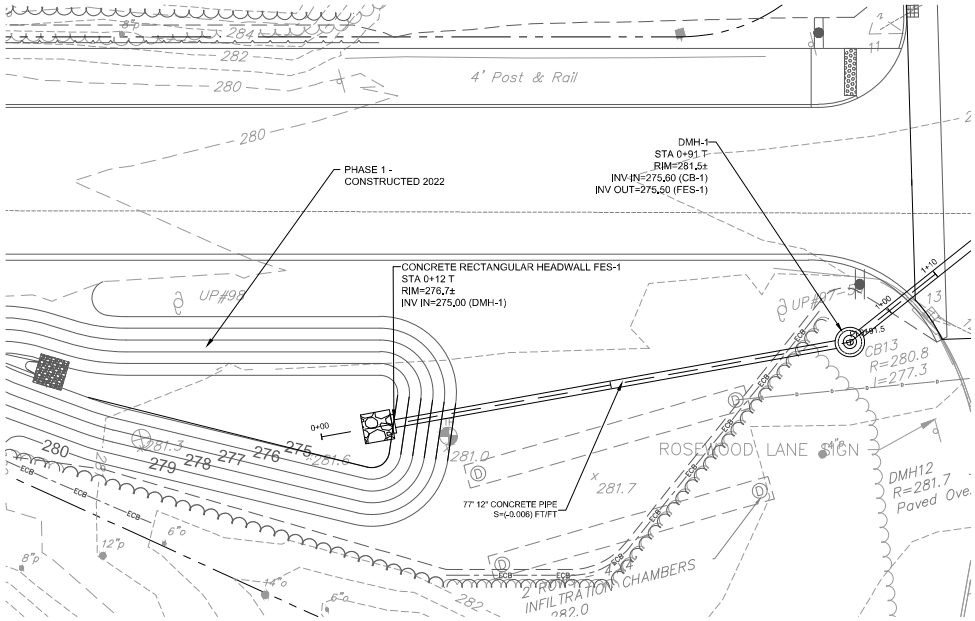
TITLE: **GROVE STREET IMPROVEMENTS PHASE 2**

CONS. DETAILS 3

FRANKLIN, MA

BETA JOB NO. 10613
ISSUE DATE 02/2023
SHEET NO. 33

2/14/2023 11:45 AM \\BETA-INC.COM\NA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST ROADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_TYP SEC & DETAILS.DWG (BETA STB BW.STB)



PLAN: PROPOSED DRAINAGE NETWORK

SCALE = 1" = 10'

BMP - PHASE 2

INFILTRATION BASIN

PRETEATMENT VOLUME REQ'D: 628 CF (3,198 CF PROJECT-WIDE)

PRETREATMENT VOLUME PROVIDED: 2,675 CF (EXCESS STORAGE FROM PHASE 1)

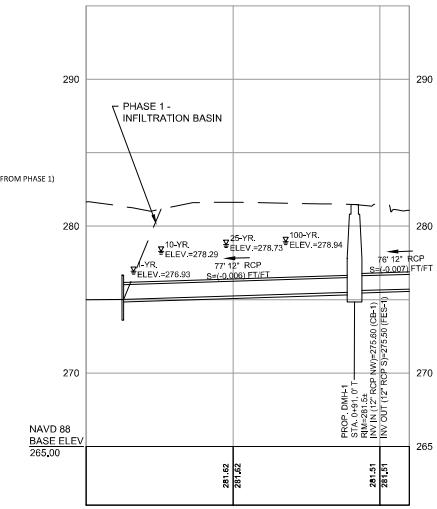
WQV PROVIDED: 2,675 CF

PEAK INFLOW RATES:

- 1-YEAR: 1.62 CFS
- 10-YEAR: 2.88 CFS
- 25-YEAR: 3.54 CFS
- 100-YEAR: 4.52 CFS

PEAK OUTFLOW RATES

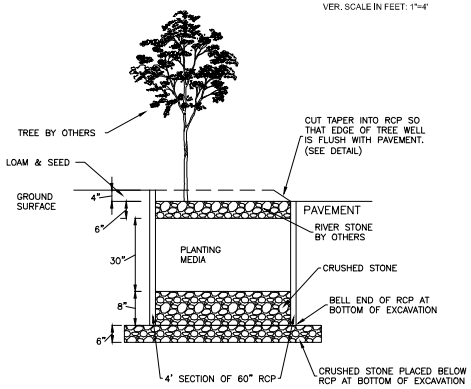
- 1-YEAR: 0.25 CFS
- 10-YEAR: 0.37 CFS
- 25-YEAR: 0.41 CFS
- 100-YEAR: 0.42 CFS



PROFILE: PROPOSED DRAINAGE NETWORK

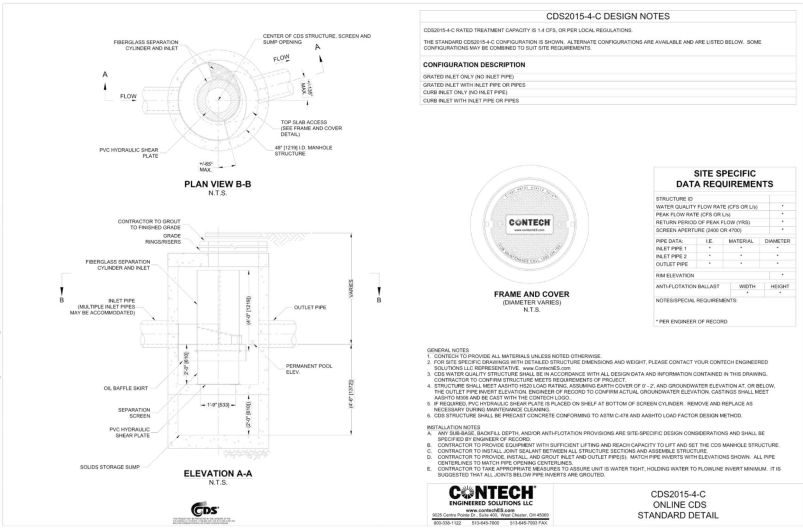
HOR. SCALE IN FEET: 1"=20'

VER. SCALE IN FEET: 1"=4'



TREE WELL

N.T.S.



CONTECH CDS2015-4-C

NOT TO SCALE

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: CL/SR

DESIGNED BY: BB

CHECKED BY: BM

REGISTERED PROFESSIONAL: COMMONWEALTH OF MASSACHUSETTS WILLIAM P. McGRATH CIVIL No. 30716 — 4/5/23

PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

SCALE: AS SHOWN

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: **GROVE STREET IMPROVEMENTS PHASE 2**

CONS. DETAILS 4

FRANKLIN, MA

BETA JOB NO. 10613

ISSUE DATE 02/2023

SHEET NO. 34

2/15/2023 4:58 PM \\BETA-INC.COM\MA\PROJECTS\10600S\10613 - FRANKLIN, MA - GROVE ST BOADWAY DESIGN PHASE 2\DRAWING FILES\PLANSET\7548_BMP DETAIL.DWG (BETA-STR BW-STB)