MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

MAIN STREET (ROUTE 122A)

IN THE TOWN OF

GRAFTON

WORCESTER COUNTY

FEDERAL AID PROJECT NO.

NOI PLANS

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO	SHEET NO.	TOTAL SHEETS
MA	TBD	1	296
PROJECT FILE NO	607603		

TITLE SHEET & INDEX

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.

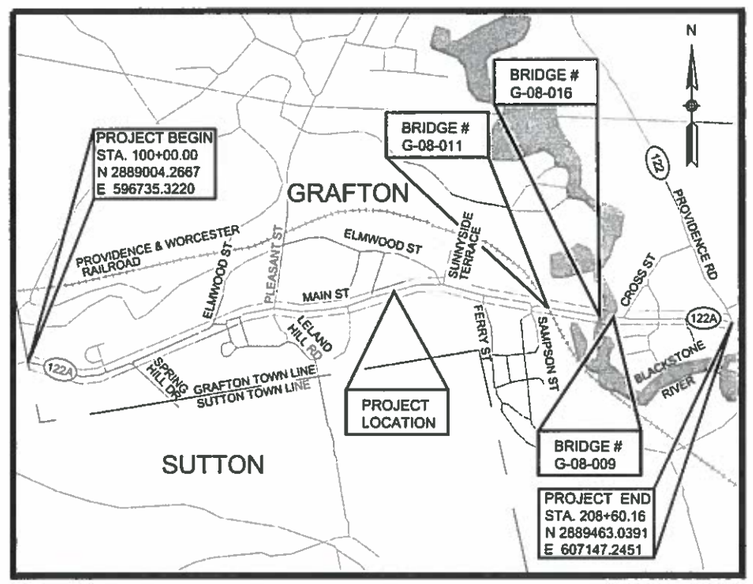
RECEIVED TOWN CLERK
2020 NOV 12 AM 11:31

RECEIVED
NOV 12 2020
Zoning Board of Appeals

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND
3	ABBREVIATIONS & NOTES
4	KEY PLAN
5-8	TYPICAL SECTIONS & PAVEMENT NOTES
9-29	CONSTRUCTION PLANS
30-51	PROFILES
52	WALL PLAN & PROFILE
53-73	ALIGNMENT & GRADING PLANS
~~74-95~~	~~TRAFFIC SIGN & PAVEMENT MARKINGS~~
~~96-97~~	~~TRAFFIC SIGN SUMMARY~~
~~98-102~~	~~TEMPORARY TRAFFIC CONTROL PLANS~~
103-123	UTILITY PLANS
124-130	CONSTRUCTION DETAILS
~~131-144~~	~~WHEELCHAIR RAMP/DRIVEWAY DETAILS~~
~~145-296~~	~~CROSS SECTIONS~~

Cross sections available upon request



0 1000 2000 3000 4000
SCALE: 1" = 1000'

LENGTH OF PROJECT = 10,860.16 FEET = 2.057 MILES

APRIL 28, 2020

DESIGN DESIGNATION (MAIN STREET/RTE 122A)

DESIGN SPEED	30 MPH
ADT (2015)	6,925 VPD
ADT (2035)	8,450 VPD
K	9%
D	53.1% EB
T (PEAK HOUR)	2.0%
T (AVERAGE DAY)	1.0%
DHV	780 VPH
DDHV	414 VPH
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DATE	DESCRIPTION	REV #
4-28-20	NOI SUBMISSION	0

COMMONWEALTH OF MASSACHUSETTS
GREGORY J. RUSSELL
CIVIL
No. 47929
REGISTERED PROFESSIONAL ENGINEER
4/28/20

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

APPROVED

HIGHWAY ADMINISTRATOR DATE

607603_HDI(COV)_NOI.DWG Plotted on 28-Apr-2020 10:41 AM

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	2	296
PROJECT FILE NO.	607903		

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
	JB	JERSEY BARRIER
	CB	CATCH BASIN
	DCB	DOUBLE CATCH BASIN
		CATCH BASIN CURB INLET
	FP	FLAG POLE
	GP	GAS PUMP
	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
	WELL	WELL
	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
	GG	GAS GATE
	BHL #	BORING HOLE
	MW #	MONITORING WELL
	TP #	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
	MHB	MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
	TPL or GUY	TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
	UFB	UTILITY POLE W/ FIREBOX
	UPDL	UTILITY POLE WITH DOUBLE LIGHT
	ULT	UTILITY POLE W / 1 LIGHT
	UPL	UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
	WG	WATER GATE
	PM	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
		HAY BALES/SILT FENCE
		TEMPORARY CONSTRUCTION FENCE
		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'BZ		100 FT WETLAND BUFFER
200'RA		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
		FULL DEPTH PAVEMENT
		FISHERVILLE HISTORIC DISTRICT
		FARNUMSVILLE HISTORIC DISTRICT
		BLACKSTONE CANAL HISTORIC DISTRICT

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
Ø1	Ø1	CONTROLLER PHASE
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		QUADRUPOLE WIRE LOOP DETECTOR
		BICYCLE WIRE LOOP DETECTOR, TYPE B-2
		VIDEO DETECTION CAMERA
		PEDESTRIAN PUSH BUTTON, SIGN AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD, WITH/WITHOUT BACKPLATE
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED, WITH/WITHOUT BACKPLATE
		FLASHING BEACON, WITH/WITHOUT BACKPLATE
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
		SIGNAL POST AND BASE
		MAST ARM, SHAFT AND BASE
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		OVERHEAD SIGN
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE - SD2.022 (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
	SL	STOP LINE - 12"
	CW	CROSSWALK - 12" UNLESS OTHERWISE NOTED
	SWL	SOLID WHITE LINE - 4"
	SYL	SOLID YELLOW LINE - 4"
	BWL	BROKEN WHITE LINE, 10' LINE W/30' SPACING - 4"
	BYL	BROKEN YELLOW LINE, 10' LINE W/30' SPACING - 4"
	DWLEx	DOTTED WHITE LINE, 2' LINE W/4' OR 6' SPACING, AS NOTED - 4"
	DYLEx	DOTTED YELLOW LINE, 2' LINE W/6' SPACING - 4"
	LDWL	LONG DASHED WHITE LINE EXTENSION, 3' LINE W/9' SPACING - 4"
	DBYL	DOUBLE YELLOW CENTER LINE - 4"
	SWCHL	SOLID WHITE CHANNELIZATION LINE - 12" UNLESS OTHERWISE NOTED
	SYCHL	SOLID YELLOW CHANNELIZATION LINE - 12" UNLESS OTHERWISE NOTED

LANDSCAPING SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PROP TREE (LARGE)
		PROP TREE (SMALL)
		PROP TREE PROTECTION

607903_HDLEG1.DWG Plotted on 26-Apr-2020 7:02 PM

GENERAL ABBREVIATIONS

ABAN	ABANDON
ADJ	ADJUST
APPROX	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS / CONTINUED
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DIA	DIAMETER
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EQ	EQUAL
EXIST (or EX)	EXISTING
EXC	EXCAVATION
FDN.	FOUNDATION
FDP	FULL DEPTH PAVEMENT
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HWY	HIGHWAY
JCT	JUNCTION
LOAM	LOAM BORROW
LSA	LANDSCAPED AREA
LT	LEFT
MAHWL	MEAN AVERAGE HIGH WATER LINE
MAX	MAXIMUM
MB	MAILBOX
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
MOD	MODIFIED
MSE	MECHANICALLY STABILIZED EARTH
NERR	NEW ENGLAND RAILROAD
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
P.G.L.	PROFILE GRADE LINE
PREV	PREVIOUS/PREVIOUSLY
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PVMT	PAVEMENT
R&D	REMOVE AND DISCARD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RD	ROAD
RDWY	ROADWAY
REB	REBUILD
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SHLO/S.H.L.O.	STATE HIGHWAY LAYOUT LINE

GENERAL ABBREVIATIONS (CONT)

ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TRANS	TRANSITION
TRM	TURF REINFORCING MAT
TYP	TYPICAL
VAR	VARIES
VERT	VERTICAL
W/	WITH
WCR	WHEEL CHAIR RAMP
WP	WORKING POINT
X-SECT	CROSS SECTION

UTILITY ABBREVIATIONS

CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
DCB	DOUBLE CATCH BASIN
DI	DROP INLET
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
GG	GAS GATE
GI	GUTTER INLET
GICI	GUTTER INLET WITH CURB INLET
GIP	GALVANIZED IRON PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HDW	HEADWALL
HYD	HYDRANT
INV	INVERT
LB	LEACH BASIN
LP	LIGHT POLE
MH	MANHOLE
MW	MONITORING WELL
OHW	OVERHEAD WIRE
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
SMH	SEWER MANHOLE
TSV&B	TAPPING SLEEVE VALVE & BOX
UP	UTILITY POLE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN

ALIGNMENT & GRADING ABBREVIATIONS

CC	CENTER OF CURVE
HP	HIGH POINT
I.T.	INTERSECTION OF TANGENT
LP	LOW POINT
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PNT	POINT
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
∠PT	ANGLE POINT
R	RADIUS OF CURVATURE
T	TANGENT DISTANCE OF CURVE
TAN	TANGENT
25.45	SPOT ELEVATION

PROFILE ABBREVIATIONS

A.D.	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
L	LENGTH OF CURVE
PVC	POINT OF VERTICAL CURVATURE
PVCC	POINT OF VERTICAL COMPOUND CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVRC	POINT OF VERTICAL REVERSE CURVATURE
PVT	POINT OF VERTICAL TANGENCY
SSD	STOPPING SIGHT DISTANCE
VC	VERTICAL CURVE

TRAFFIC & SIGNAL ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC
CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
COND	CONDUIT
CW	CROSS WALK
DW	STEADY DON'T WALK - PORTLAND ORANGE
DHV	DESIGN HOURLY VOLUME
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
HH	HAND HOLE
OL	OVERLAP
PB	PULL BOX
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
SL	STOP LINE
T	TRUCK %
TS OR TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	3	296
PROJECT FILE NO.	607903		

ABBREVIATIONS & NOTES

GENERAL NOTES:

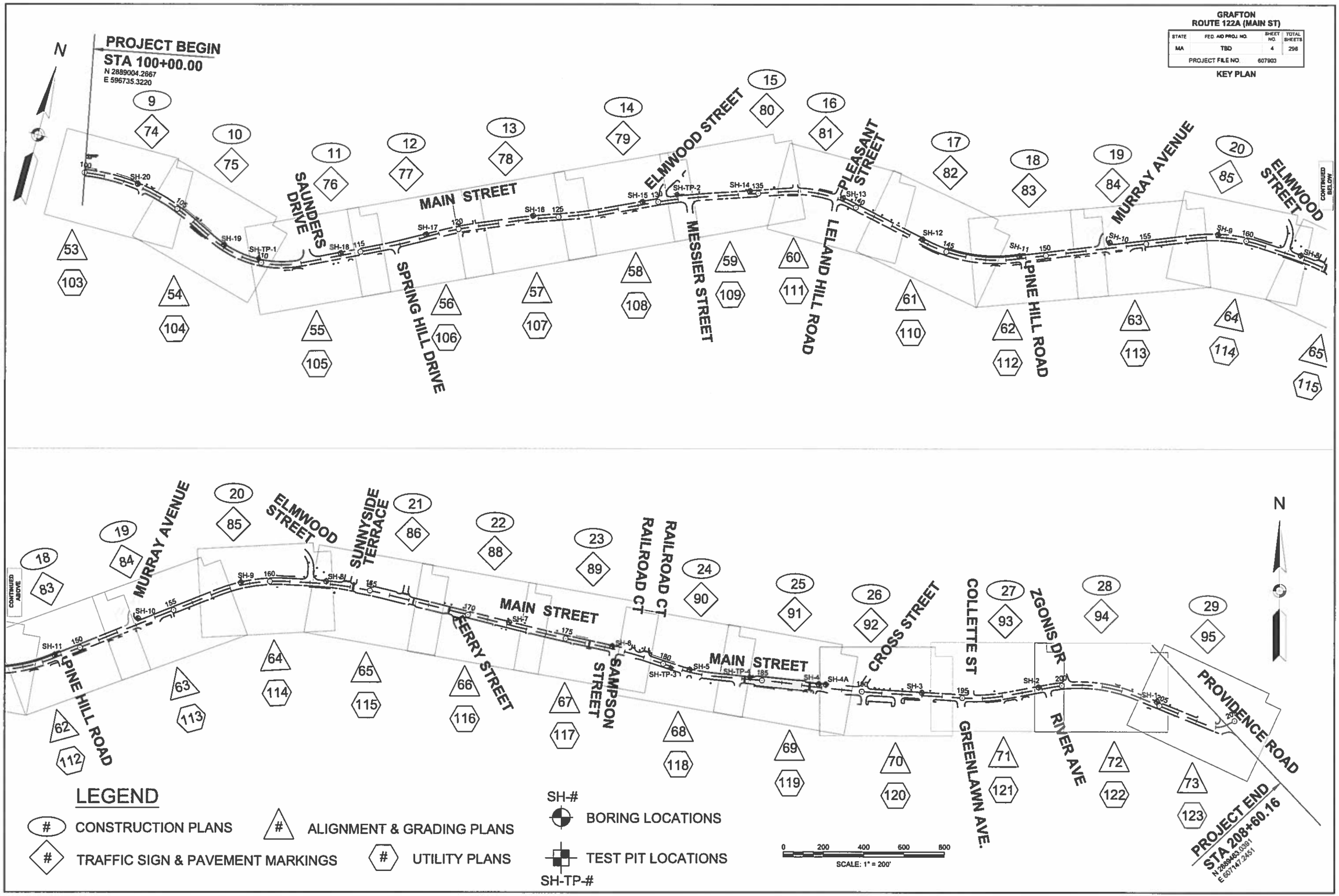
1. EXISTING CONDITIONS AND TOPOGRAPHICAL INFORMATION FROM AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. IN APRIL AND MAY, 2015 AND SUPPLEMENTED IN DECEMBER 2015 AND AUGUST 2016.
2. THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS U.S. FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
4. THE LOCATIONS 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 SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
5. 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.
6. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED CONDUIT AND SIGNAL EQUIPMENT. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER.
7. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.
8. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.
9. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
10. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS, IF REQUIRED.
11. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
12. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
13. 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).
14. JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
15. AFTER MILLING OPERATIONS AND PRIOR TO PAVING THE SUPERPAVE SURFACE COURSES THE ENGINEER SHALL EVALUATE THE MILLED SURFACE AND SHALL APPLY THE APPROPRIATE REPAIR METHOD IF REQUIRED.
16. EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
17. IF SUITABLE, ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB. ALL PROPOSED CURB SHALL BE GRANITE CURB TYPE VA4 UNLESS NOTED OTHERWISE.
18. 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.
19. DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER.
20. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.
21. EXISTING PAVEMENTS TO REMAIN SHALL BE SAWCUT AT ALL OPENINGS FOR UTILITY WORK, FOR NEW OR RESET CURB, AT LIMITS OF PAVEMENT MICRO-MILLING AND FULL DEPTH PAVEMENT, SIDEWALK AND DRIVEWAY CONSTRUCTION, AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO THE VARIOUS BID ITEMS.

607903_HDI(LEGI).DWG Plotted on 26-Apr-2020 7:02 PM

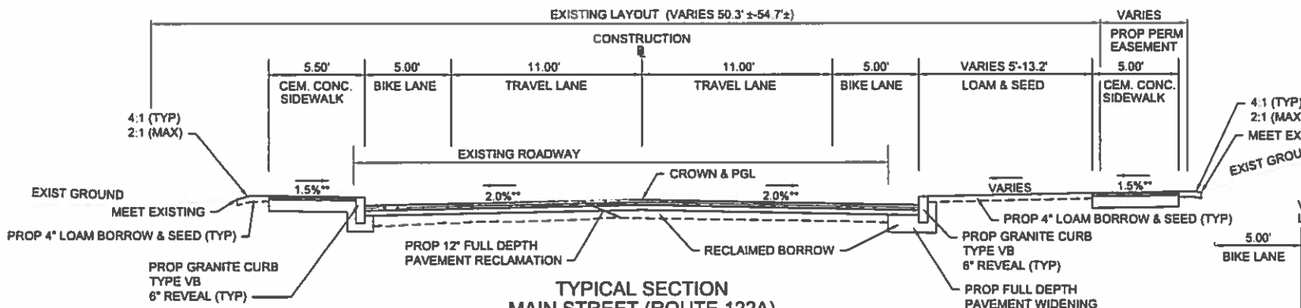
GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	4	296
PROJECT FILE NO.	607903		

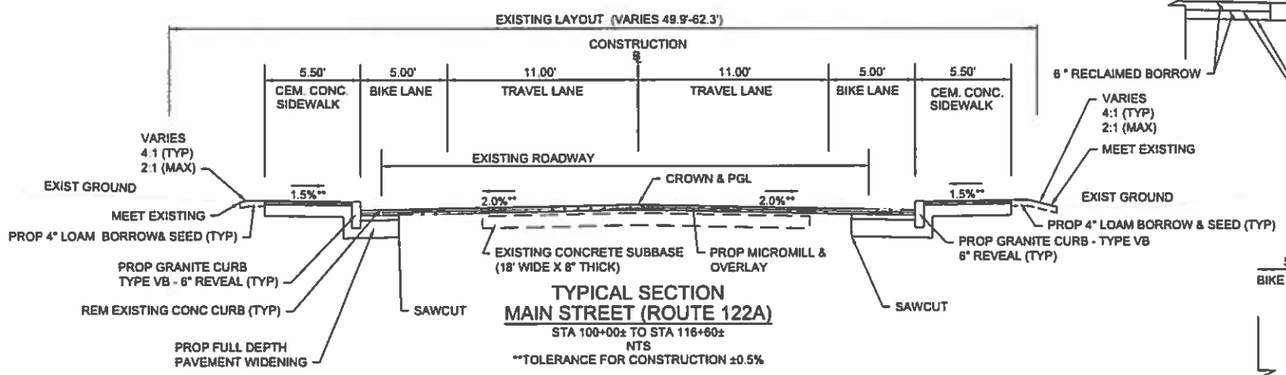
KEY PLAN



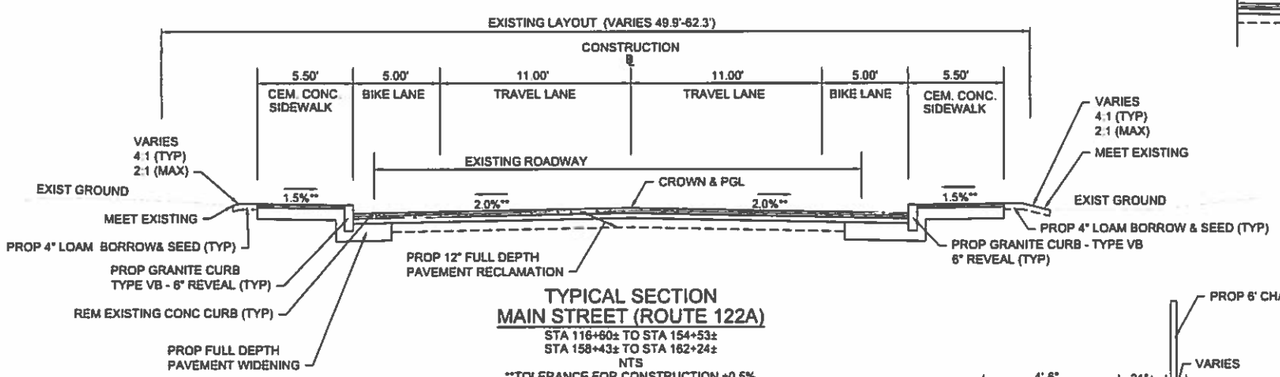
607903_HD(KEY).DWG Plotted on 28-Apr-2020 7:05 PM



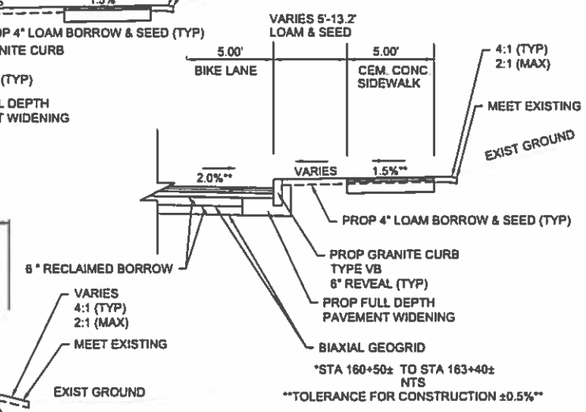
TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 154+53± TO STA 158+43±
STA 162+24± TO STA 163+35±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



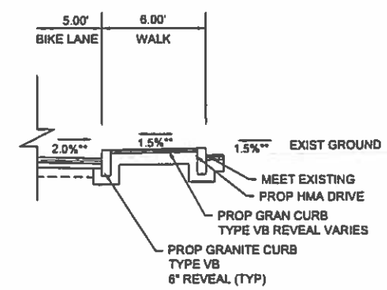
TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 100+00± TO STA 116+60±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



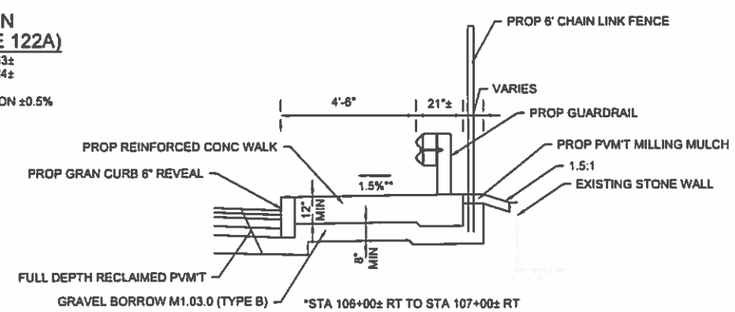
TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 116+60± TO STA 154+53±
STA 158+43± TO STA 162+24±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



*STA 160+50± TO STA 163+40±
NTS
TOLERANCE FOR CONSTRUCTION ±0.5%



*STA 132+00± RT TO STA 133+20± RT
NTS
TOLERANCE FOR CONSTRUCTION ±0.5%



*STA 106+00± RT TO STA 107+00± RT
*STA 120+05± RT TO STA 120+55± RT
NTS
TOLERANCE FOR CONSTRUCTION ±0.5%

PAVEMENT NOTES

PAVEMENT NOTES CONTINUED ON SHEET 6

PROPOSED PAVEMENT RECONSTRUCTION WITH BIAXIAL GEOGRID
(STA. 160+50 TO 163+40 & STA. 189+20 TO 196+50, & STA. 202+00 TO 208+60

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)
OVER 3" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)

SUBBASE: 6" RECLAIMED BORROW PLACED OVER BIAXIAL GEOGRID
OVER 6" RECLAIMED BORROW PLACED OVER BIAXIAL GEOGRID
OVER EXISTING SUBGRADE

PROPOSED PAVEMENT RECLAMATION

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)
OVER 3" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)

SUBBASE: 8" RECLAIMED SUBBASE MATERIAL
RECLAMATION TO A DEPTH OF 12"

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

BASE: 3" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)

SUBBASE: 8" GRAVEL BORROW, TYPE B.

PROPOSED FULL DEPTH PAVEMENT - WIDENING (ADJACENT TO RECLAMATION)

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

BASE: 3" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0)

SUBBASE: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL)

PROPOSED FULL DEPTH PAVEMENT - WIDENING LESS THAN 4'
(ADJACENT TO MICROMILL & OVERLAY)

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE

SUBBASE: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL) OR
8" GRAVEL BORROW , TYPE b

PROPOSED PAVEMENT MICROMILLING & OVERLAY OVER EXISTING CONCRETE

SURFACE: 1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
OVER 1.75" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

3" PAVEMENT MICROMILLING DEPTH

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP AND WALK

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610

FOUNDATION: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL) OR
8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE DRIVEWAY

SURFACE: 6" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI, 3/4", 610

FOUNDATION: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL) OR
8" GRAVEL BORROW, TYPE b

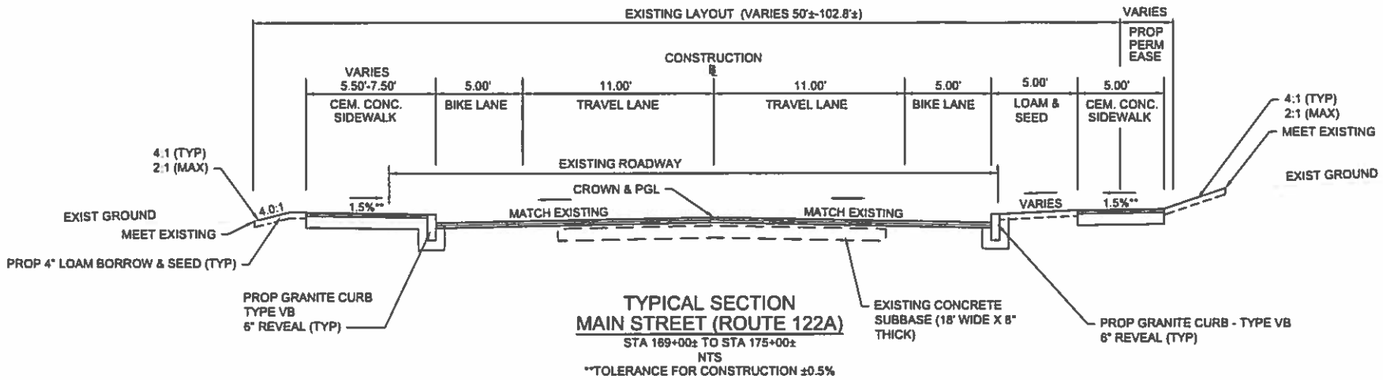
DWG FILE: 607903_TS1.DWG 25-Apr-2025

GRAFTON
ROUTE 122A (MAIN ST)

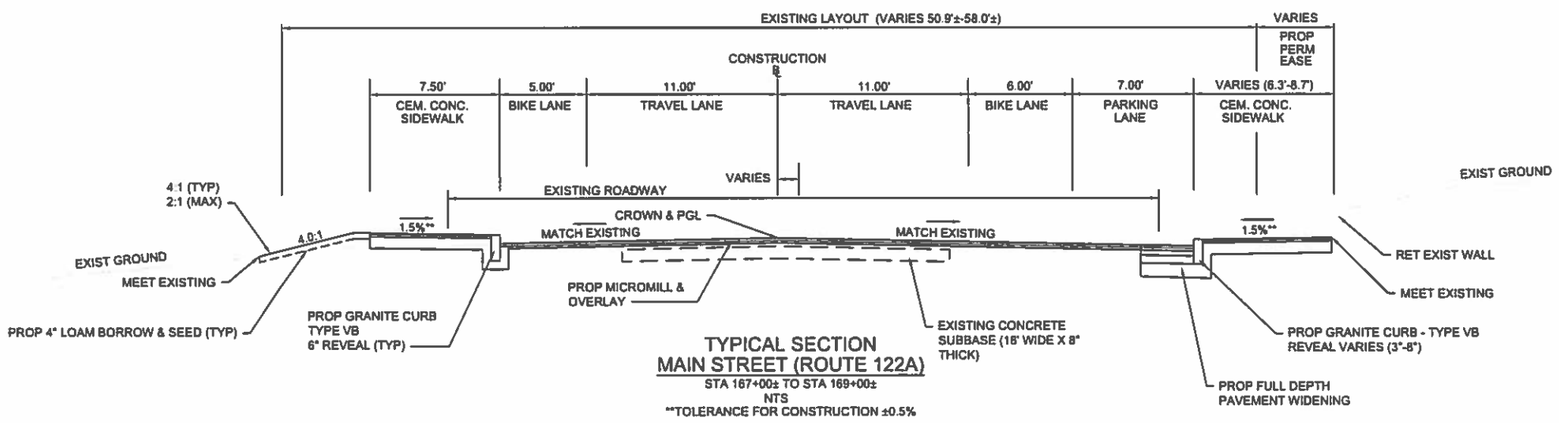
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	6	296
PROJECT FILE NO.	607903		

TYPICAL SECTIONS
AND PAVEMENT NOTES

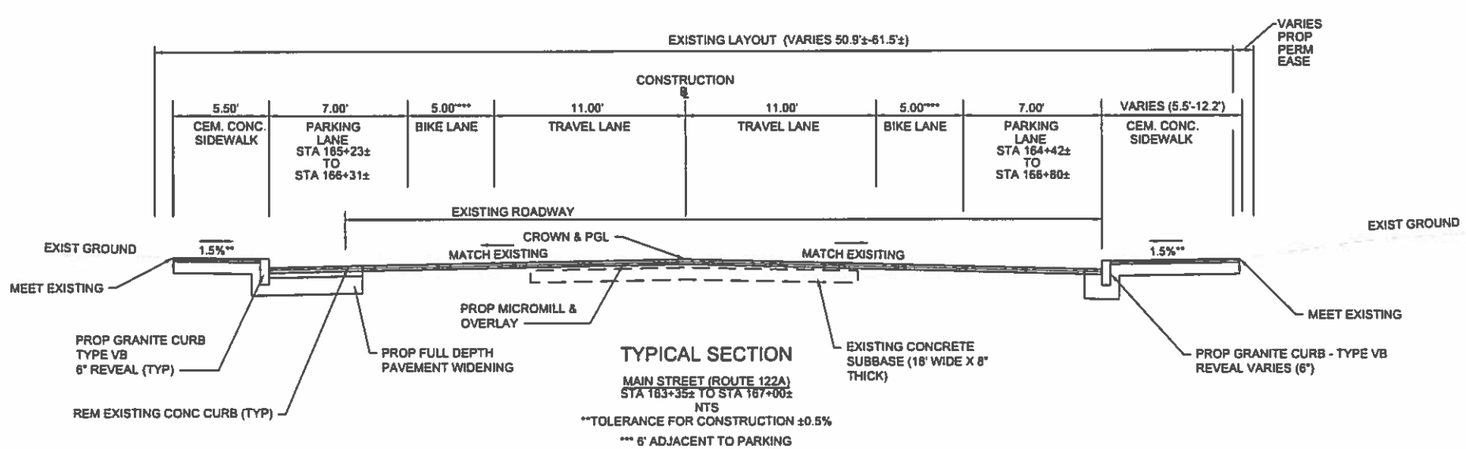
607903_HD(TYP).DWG 29-Apr-2020



TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 169+00± TO STA 175+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 167+00± TO STA 169+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 163+35± TO STA 167+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%
*** 6' ADJACENT TO PARKING

CONTINUED FROM PAVEMENT NOTES ON SHEET 5

PROPOSED HOT MIX ASPHALT WALK

SURFACE: 1¼" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
1¼" SUPERPAVE INTERMEDIATE COURSE -12.5 (SIC-12.5)

FOUNDATION: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL) OR
8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1½" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

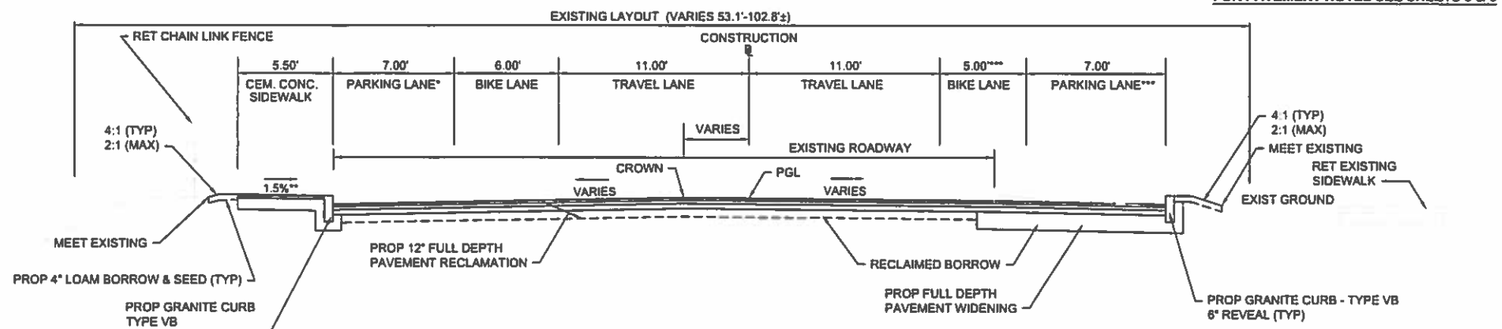
FOUNDATION: 8" RECLAIMED SUBBASE MATERIAL
(FROM EXCESS RECLAIMED MATERIAL) OR
8" GRAVEL BORROW, TYPE b

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	7	296
PROJECT FILE NO.	607903		

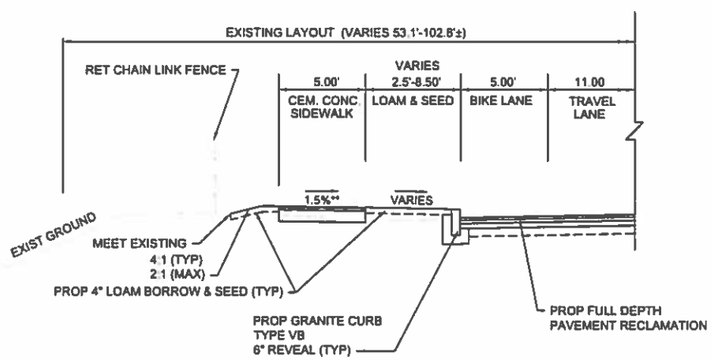
TYPICAL SECTIONS
AND PAVEMENT NOTES

FOR PAVEMENT NOTES SEE SHEETS 5 & 6

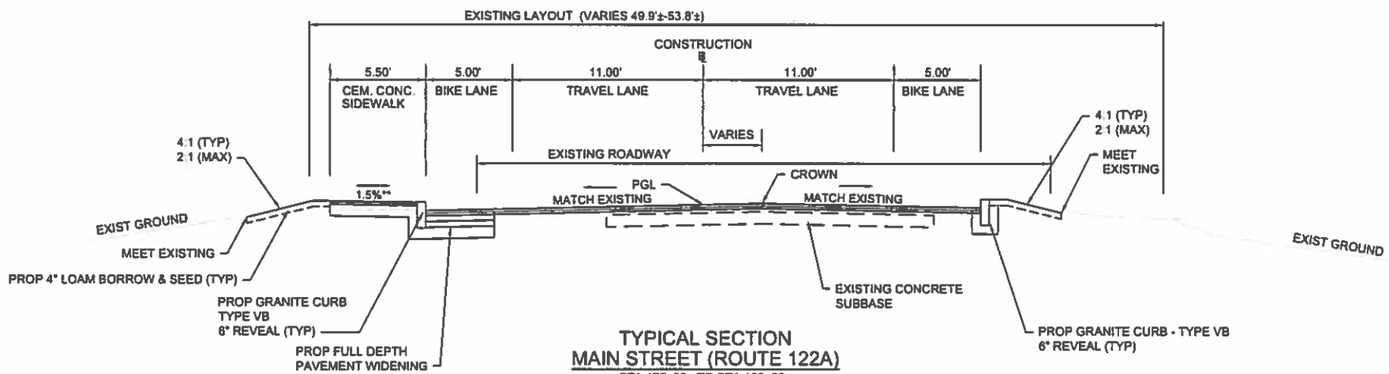


TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 183+00± TO STA 188+31±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%

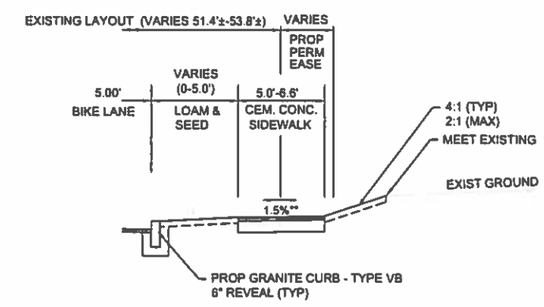
***6' SHOULDER NEXT TO PARKING LANE FROM STATION 184+72± TO 187+10± RT



*STA 183+41± TO STA 184+67±
STA 187+16± TO 188+06±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 175+00± TO STA 183+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



*STA 175+00± TO STA 177+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%

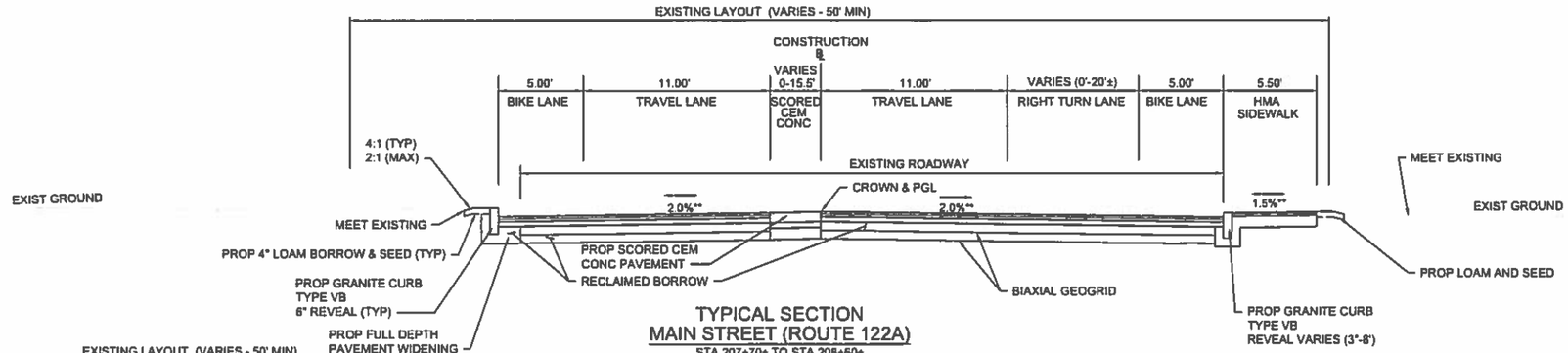
607903_HD(TYP).DWG 28-Apr-2020

GRAFTON
ROUTE 122A (MAIN ST)

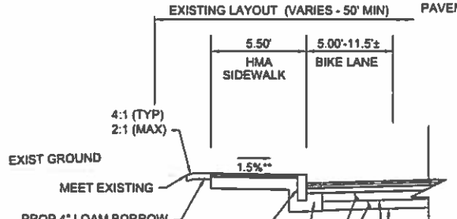
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	8	296
PROJECT FILE NO.	607903		

TYPICAL SECTIONS
AND PAVEMENT NOTES

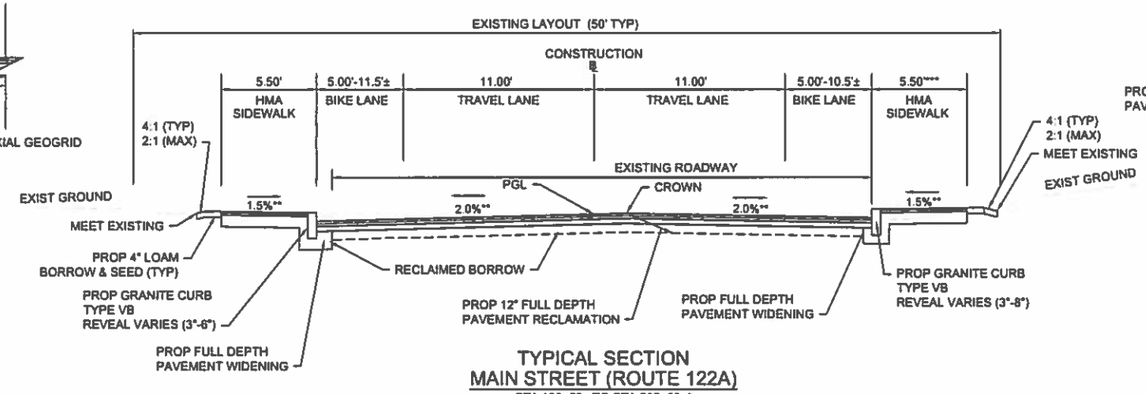
FOR PAVEMENT NOTES SEE SHEETS 5 & 6



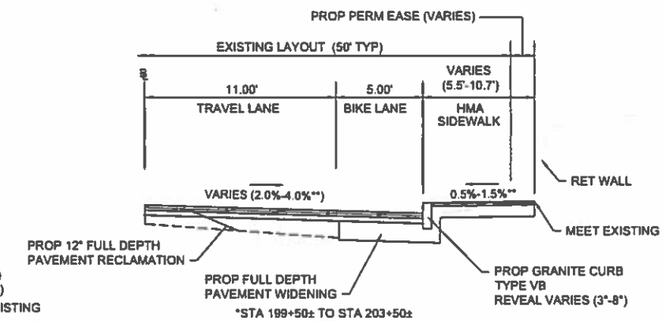
TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 207+70± TO STA 208+50±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



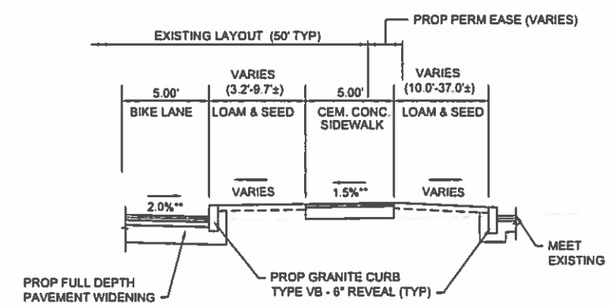
*STA 202+00± TO STA 207+70±
*STA 189+20± TO STA 196+50±
NTS
TOLERANCE FOR CONSTRUCTION ±0.5%



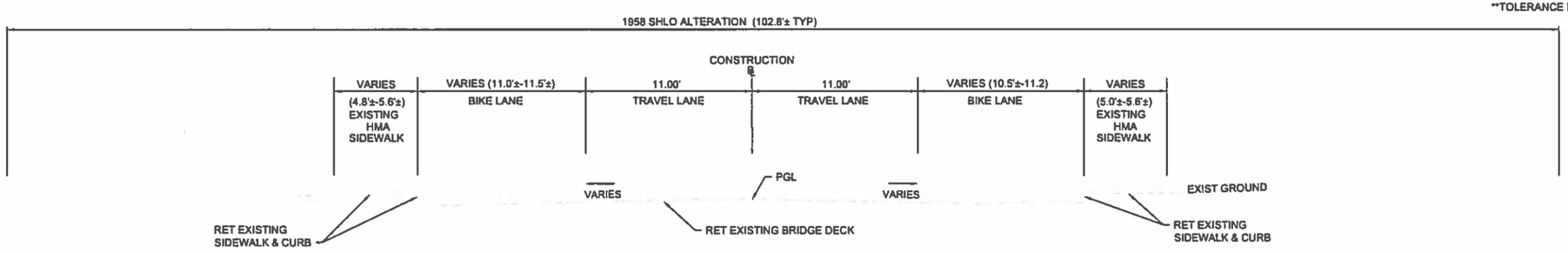
TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 196+50± TO STA 202+00±*
NTS
*CROSS SLOPE VARIES (-3.0% - 6.0%) FROM STA 193+50 TO STA 204+50
2.0% CROSS SLOPE FROM STA 189+20 TO STA 193+50 AND STA 204+50 TO STA 207+70
**TOLERANCE FOR CONSTRUCTION ±0.5%



*STA 199+50± TO STA 203+50±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



***STA 188+50± TO STA 192+00±
NTS
**TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
MAIN STREET (ROUTE 122A)
STA 188+31± TO STA 189+20±
NTS

607903_HD(TYP).DWG 28-Apr-2020

HIGHWAY GUARD DETAILS

NONE

WATER SUPPLY ALTERATIONS

SEE UTILITY PLANS
SHEET 113

DRAINAGE DETAILS

SEE UTILITY PLANS
SHEET 113

PLANT SCHEDULE SHEET 19

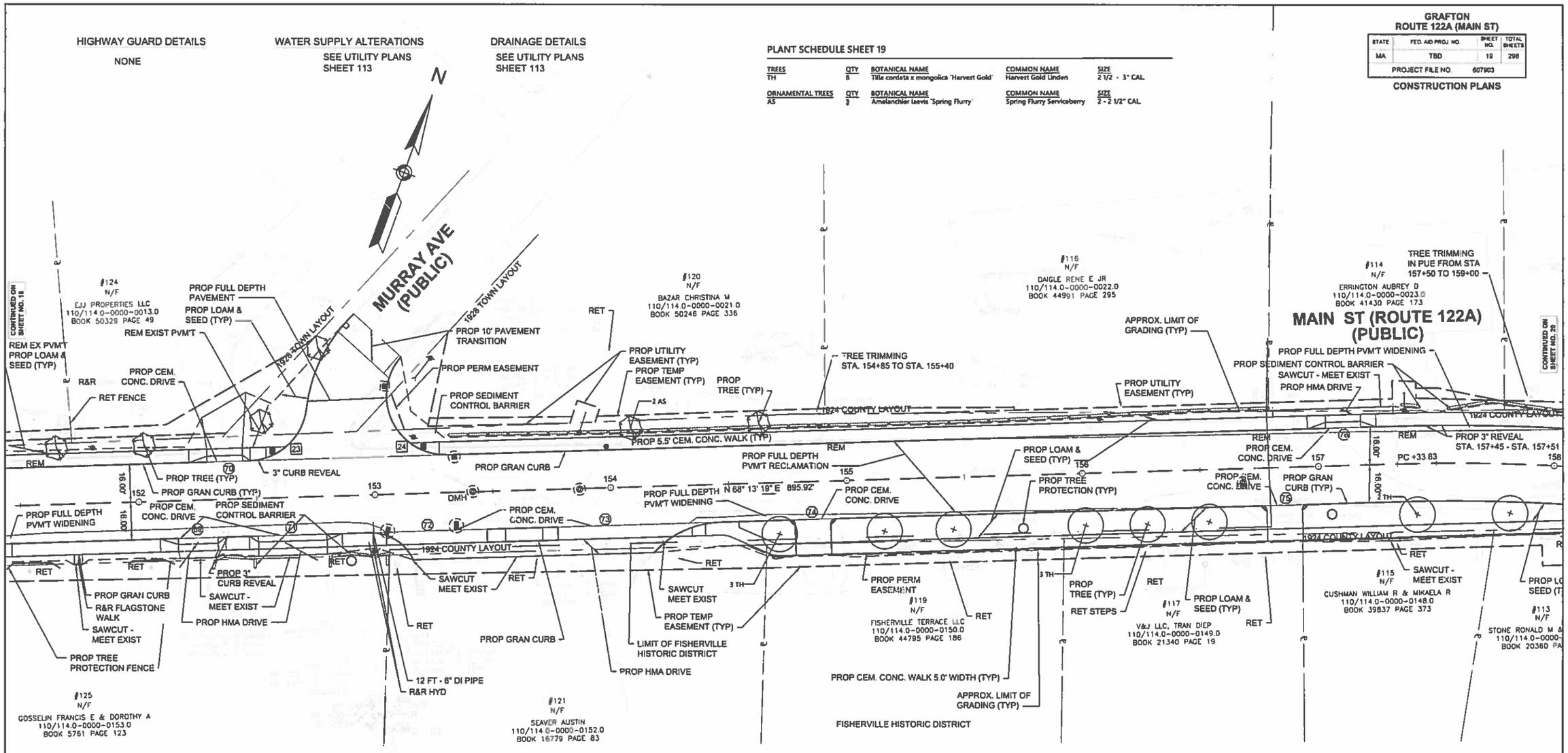
TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE
TH	8	Tilia cordata x mongolica 'Harvest Gold'	Harvest Gold Linden	2 1/2 - 3" CAL

ORNAMENTAL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE
AS	3	Amelanchier laevis 'Spring Flurry'	Spring Flurry Serviceberry	2 - 2 1/2" CAL

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	19	296
PROJECT FILE NO. 607903			

CONSTRUCTION PLANS



MAIN ST (ROUTE 122A) CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	148+37.72	2889785.3483	601299.7394		N68°13'19"E 895.92'	157+33.63	2890117.7435	602131.7119
C11	157+33.63	2890117.7435	602131.7119	R=800.00' Δ=24°50'52" L=346.94' T=176.24'		160+80.57	2890173.6931	602471.3611

0 20 50 100

SCALE: 1" = 20'

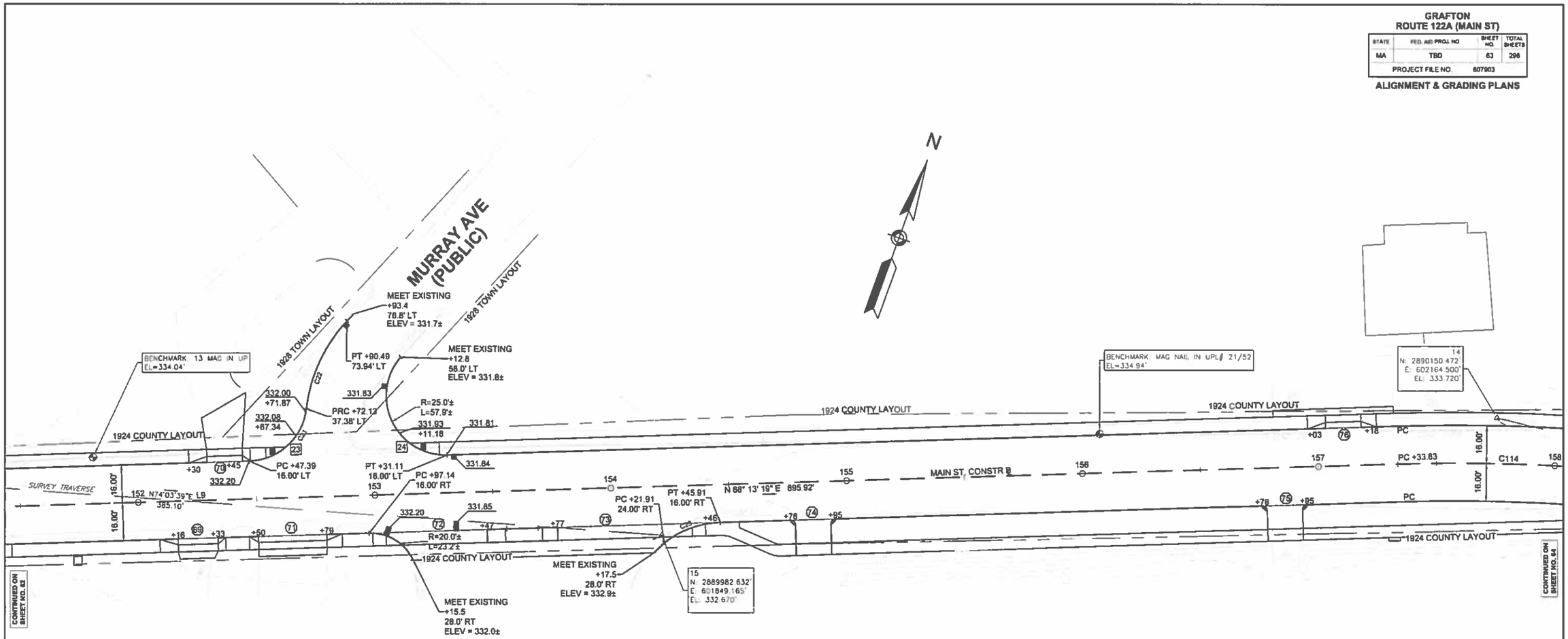
FOR PROFILES:
SEE SHEET NOS. 39-41

607903_HD(GEN).DWG Plotted on 26-Apr-2020 7:09 PM

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	63	296
PROJECT FILE NO.	607903		

ALIGNMENT & GRADING PLANS



Curve Table			
Curve #	Delta	Radius	Length
C21	81°40'36"	25.00	35.64
C22	36°41'24"	65.00	41.62
C23	36°52'12"	40.00	25.74

MAIN ST (ROUTE 122A) CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	148+37.72	2889785.3483	601299.7394		N68°13'19"E 895.92'	157+33.63	2890117.7435	602131.7119
C114	157+33.63	2890117.7435	602131.7119	R=800.00' Δ=24°50'52" L=346.94' T=176.24'		160+80.57	2890173.6931	602471.3611

0 20 50 100
SCALE: 1" = 20'

607903_HO(ALIGN).DWG Plotted on 26-Apr-2023 7:17 PM

HIGHWAY GUARD DETAILS
NONE

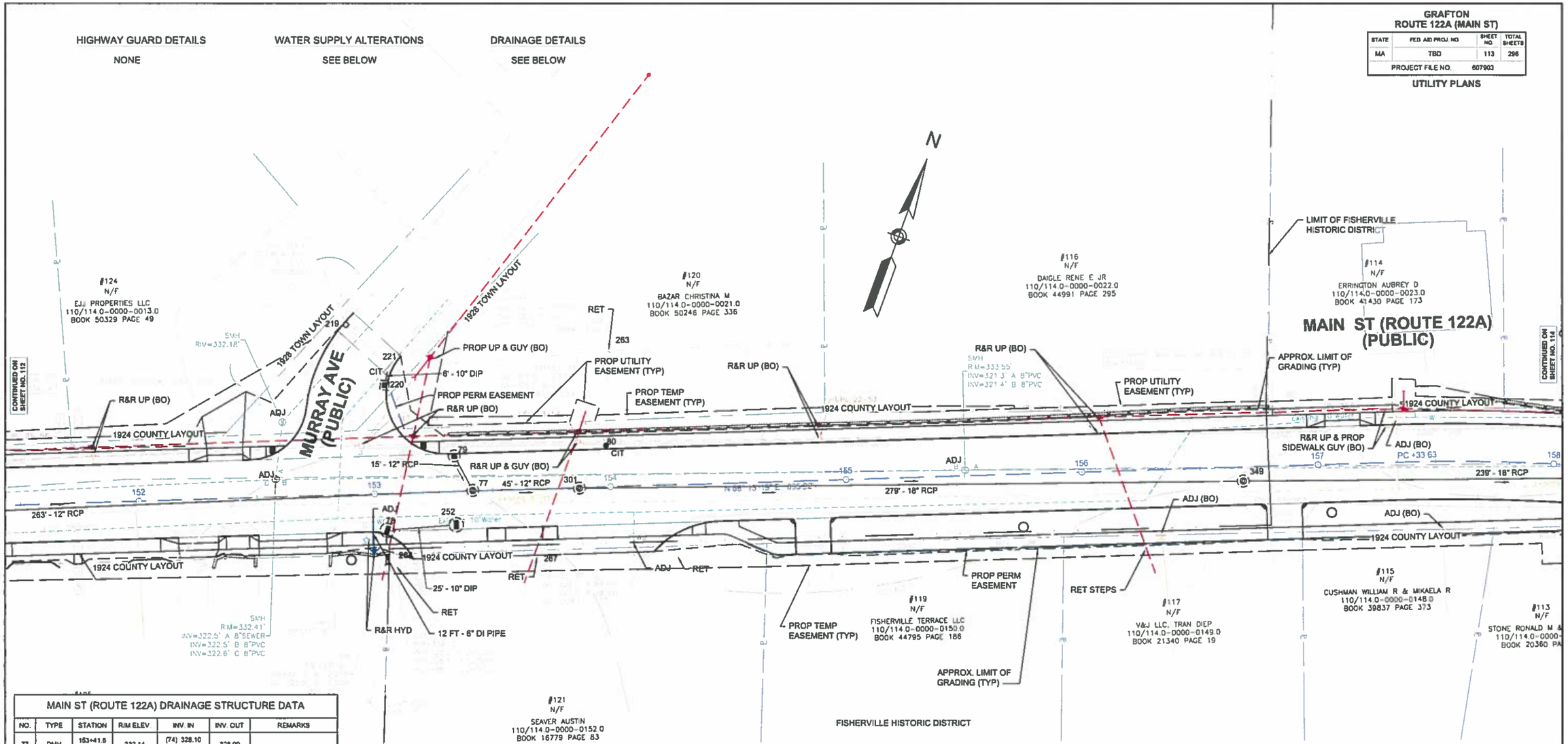
WATER SUPPLY ALTERATIONS
SEE BELOW

DRAINAGE DETAILS
SEE BELOW

GRAFTON
ROUTE 122A (MAIN ST)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	TBD	113	296
PROJECT FILE NO.	607903		

UTILITY PLANS



MAIN ST (ROUTE 122A) DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV.	INV. IN	INV. OUT	REMARKS
77	DMH	153+41.6 0.1 LT	332.14	(74) 328.10 (79) 328.10	328.00	
78	DCB	153+04.9 15.6 RT	332.20	(252) 328.70	328.70	
79	CBCI	153+34.1 15.0 LT	331.84		328.30	
80	CIT	153+98.6 17.4 LT	332.68	(301) 327.60	327.50	
219	EX CB	152+90.0 72.0 LT	331.87		329.70	PROP F&G
220	GICI	153+05.6 45.8 LT	331.83		329.30	
221	EX DMH	153+07.6 53.8 LT	331.38	(220) 329.20 (219) 329.10	329.20	REPLACE F&G W/ F&C
252	DCB	153+34.1 14.1 RT	331.65		328.90	
263	EX CB	154+01.1 57.4 LT	333.04	(80) 327.45 (221) 329.04	327.45	
264	EX DMH	153+07.9 30.4 RT	333.58	(78) 328.70	328.50	
267	EX CB	153+67.6 28.7 RT	331.95	(264) 328.70	327.90	
301	DMH	153+66.6 0.3 RT	332.36	(77) 327.75 (267) 327.72	327.72 (80) 328.20 (349)	
349	DMH	156+66.1 6.0 RT	334.00	(301) 328.30	328.20	

607903_HD(UTL).DWG Plotted on 26-Apr-2026 7:33 PM