MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

PLAN AND PROFILE OF

SHREWSBURY STREET

IN THE TOWN OF

HOLDEN

WORCESTER COUNTY

FEDERAL AID PROJECT NO.

100% SUBMITTAL

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	1	206
PROJECT FILE NO. 609219			

TITLE SHEET & INDEX

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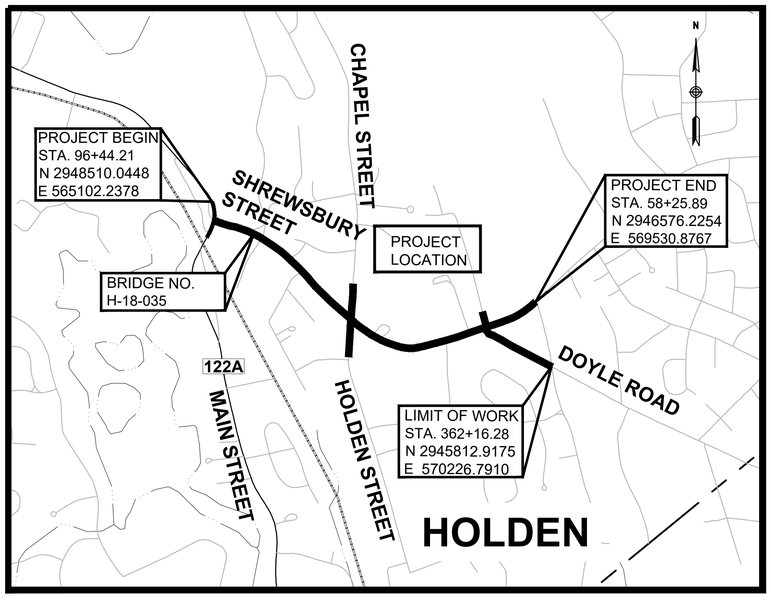
THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND
3	GENERAL NOTES & ABBREVIATIONS
4	KEY PLAN
5-8	TYPICAL SECTIONS
9-21	CONSTRUCTION PLANS
22-30	PROFILES
31-40	PROFILES - SIDE STREETS
41-42	PROFILES - WALL
43-55	ALIGNMENT & GRADING PLANS
56-68	SIGNING AND MARKINGS PLANS
69-72	TRAFFIC SIGN SUMMARY
73-76	TRAFFIC SIGNAL PLANS
77-82	TEMPORARY TRAFFIC CONTROL PLANS
83-95	UTILITY PLANS
96-98	LANDSCAPING PLANS
99-117	CONSTRUCTION DETAILS
118-206	CROSS SECTIONS



0 1000 2000 3000 4000

SCALE: 1" = 1000'

LENGTH OF PROJECT = 5,495.01 = 1.041 MILES

DESIGN DESIGNATION (SHREWSBURY STREET)

DESIGN SPEED	35 mph
ADT (2018)	14,705 vpd
ADT (2030)	15,615 vpd
K	9%
D	63% WB
T (PEAK HOUR)	5.2%
T (AVERAGE DAY)	6.5%
DHV	1,330 vph
DDHV	835 vph
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DESIGN DESIGNATION (DOYLE ROAD)

DESIGN SPEED	35 mph
ADT (2018)	10,500 vpd
ADT (2030)	11,150 vpd
K	9%
D	75.5% NB
T (PEAK HOUR)	3.5%
T (AVERAGE DAY)	4.8%
DHV	1,010 vph
DDHV	765 vph
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DATE	DESCRIPTION	REV #
01-05-2023	100% SUBMISSION	5
05-11-2022	75% SUBMISSION	4
09-08-2021	25% RESUBMISSION 3 FT SHOULDER	3
09-11-2020	25% SUBMISSION	2
06-29-2019	10% SUBMISSION	1

vhb
120 FRONT STREET
SUITE 500
WORCESTER, MA 01608

massDOT
Massachusetts Department of Transportation
Highway Division

APPROVED

CHIEF ENGINEER DATE

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	2	206
PROJECT FILE NO. 609219			

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
		CATCH BASIN WITH FRAME & COVER
		CHANGE IN TYPE
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
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		EROSION CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

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)
/TS		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
ONLY	ONLY	LEGEND "ONLY" - WHITE
		BICYCLE LANE WORD, SYMBOL AND/OR ARROW - WHITE
		BICYCLE DETECTOR - WHITE
		SHARED LANE - WHITE
		BICYCLE BOX - WHITE
SL	SL	STOP LINE -WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
	CW	CROSSWALK-WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
SWL	SWL	SOLID WHITE LINE, 6" WIDTH
SYL	SYL	SOLID YELLOW LINE, 6" WIDTH
BWL	BWL	BROKEN WHITE LINE, 10' LINE W/30' SPACING, 6" WIDTH
BYL	BYL	BROKEN YELLOW LINE, 10' LINE W/30' SPACING, 6" WIDTH
DWLEx	DWLEx	DOTTED WHITE LINE, 2' LINE W/6' SPACING, 6" WIDTH
DYLEx	DYLEx	DOTTED YELLOW LINE, 2' LINE W/6' SPACING, 6" WIDTH
LDWLEx	LDWLEx	LONG DASHED WHITE LINE EXTENSION, 3' LINE W/9' SPACING, 6" WIDTH
DBYL	DBYL	DOUBLE YELLOW LINE, 6" WIDTH
SWCHL	SWCHL	SOLID WHITE CHANNELIZATION LINE, 12" WIDTH UNLESS OTHERWISE NOTED
SYCHL	SYCHL	SOLID YELLOW CHANNELIZATION LINE, 12" WIDTH UNLESS OTHERWISE NOTED
	WDWL	WIDE DOTTED WHITE LINE, 2' LINE W/2' SPACING - 12" WIDTH

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ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
APPROX.	APPROXIMATE
A.C.	ASPHALT CONCRETE
ACCM PIPE	ASPHALT COATED CORRUGATED METAL PIPE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BD.	BOUND
BL	BASELINE
BLDG	BUILDING
BM	BENCHMARK
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BR.	BRIDGE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CC	CEMENT CONCRETE
CCM	CEMENT CONCRETE MASONRY
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CSP	CORRUGATED STEEL PIPE
CO.	COUNTY
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CR GR	CROWN GRADE
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	STEADY DON'T WALK - PORTLAND ORANGE
DWY	DRIVEWAY
ELEV (or EL.)	ELEVATION
EMB	EMBANKMENT
EOP	EDGE OF PAVEMENT
EXIST (or EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
GAR	GARAGE
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
INV	INVERT
JCT	JUNCTION
L	LENGTH OF CURVE
LB	LEACH BASIN
LP	LIGHT POLE
LSA	LANDSCAPED AREA
LT	LEFT
MAX	MAXIMUM
MB	MAILBOX
MH	MANHOLE
MHB	MASSACHUSETTS HIGHWAY BOUND
MIN	MINIMUM
NIC	NOT IN CONTRACT
NO.	NUMBER
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
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
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
⟨– FR –	FLASHING RED LEFT ARROW
– FR –⟩	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
⟨– FY –	FLASHING YELLOW LEFT ARROW
– FY –⟩	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
⟨– G –	STEADY GREEN LEFT ARROW
– G –⟩	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
⌃ G	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
⟨– R –	STEADY RED LEFT ARROW
– R –⟩	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR YELLOW
⟨– Y –	STEADY YELLOW LEFT ARROW
– Y –⟩	STEADY YELLOW RIGHT ARROW

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	3	206
PROJECT FILE NO. 609219			

GENERAL NOTES & ABBREVIATIONS

GENERAL NOTES:

1. EXISTING CONDITIONS AND TOPOGRAPHICAL INFORMATION FROM AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. IN OCTOBER, 2018 AND SUPPLEMENTED IN APRIL, 2022.
2. THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US 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 HMA JOINT SEALER AND BACKSANDED.
15. AFTER MILLING OPERATIONS AND PRIOR TO PAVING THE SUPERPAVE INTERMEDIATE OR SURFACES 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 DISPOSITIONED AS INDICATED ON THE DRAWINGS.
17. IF SUITABLE, EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
18. ALL PROPOSED HOT MIX ASPHALT CURB SHALL BE MASSDOT TYPE 3.
19. 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.
20. PROPOSED BOUNDS SHALL BE PLACED BY A LICENSED PROFESSIONAL SURVEYOR. THE CONTRACTOR SHALL EXERCISE DUE CARE WHEN WORKING AROUND ALL PROPERTY BOUNDS WHICH ARE TO REMAIN. SHOULD ANY DAMAGE TO A BOUND RESULT FROM THE ACTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE THE BOUND REPLACED AND/OR REALIGNED BY A LICENSED PROFESSIONAL SURVEYOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.
21. DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER.
22. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.

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HOLDEN
SHREWSBURY STREET

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MASS.	XXXX	4	206
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KEY PLAN

609219_HDK(KEY).DWG Plotted on 4-Jan-2023 1:05 PM

LEGEND

CONSTRUCTION PLANS XX
SIGNING AND MARKING PLANS XX
TRAFFIC SIGNAL PLANS XX
UTILITY PLANS XX

BEGIN PROJECT
STA 96+44.21
N: 2948510.0448
E: 565102.2378

9+42.50 SHREWSBURY STREET BL=
604+60.50 JUG HANDLE BL

9+68.54 SHREWSBURY STREET BL=
102+81.87 1927 SHBL

LIMIT OF WORK
STA 104+86.15
N: 2947761.8705
E: 565286.7442

MAIN STREET
(ROUTE 122A)

BRIDGE NO. H-18-035

WACHUSETT STREET

16+75 SHREWSBURY STREET BL=
700+00.00 WACHUSETT STREET BL

SHREWSBURY STREET

33+74.55 SHREWSBURY STREET BL=
207+03.00 CHAPEL-HOLDEN BL

LIMIT OF WORK
STA 202+34.90
N: 2947024.7089
E: 567293.1541

CHAPEL STREET

HOLDEN STREET

CONTINUED
SEE BELOW

0 100 200 300 400
SCALE: 1" = 100'

N

54+28.58 SHREWSBURY STREET BL=
420+00.00 MT. VIEW DRIVE BL

MT. VIEW DRIVE

SHREWSBURY STREET

END PROJECT
STA 58+25.89
N: 2946576.2254
E: 569530.8767

54+28.58 SHREWSBURY STREET BL=
350+00.00 DOYLE ROAD BL

DOYLE ROAD

361+19.76 DOYLE ROAD BL=
506+00.00 BRATTLE STREET SOUTH BL

BRATTLE STREET

LIMIT OF WORK
STA 362+16.28
N: 2945812.9175
E: 570226.7910

HOLDEN STREET

CONTINUED
SEE ABOVE

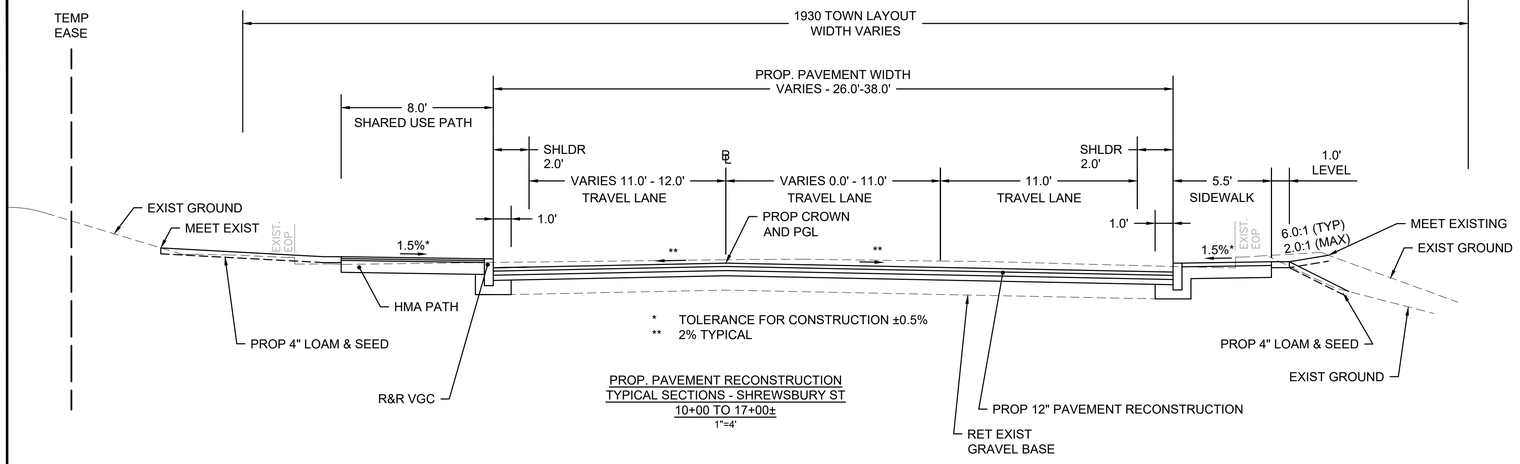
LIMIT OF WORK
STA 213+46.09
N: 2945915.5171
E: 567234.3944

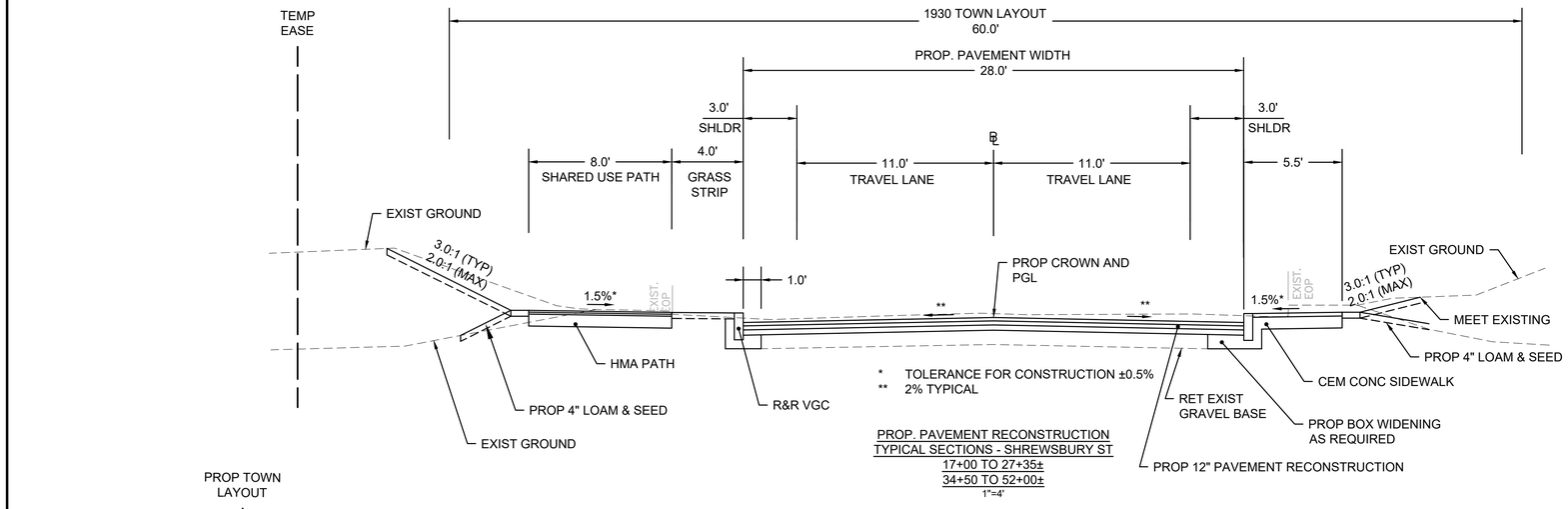
SHREWSBURY STREET

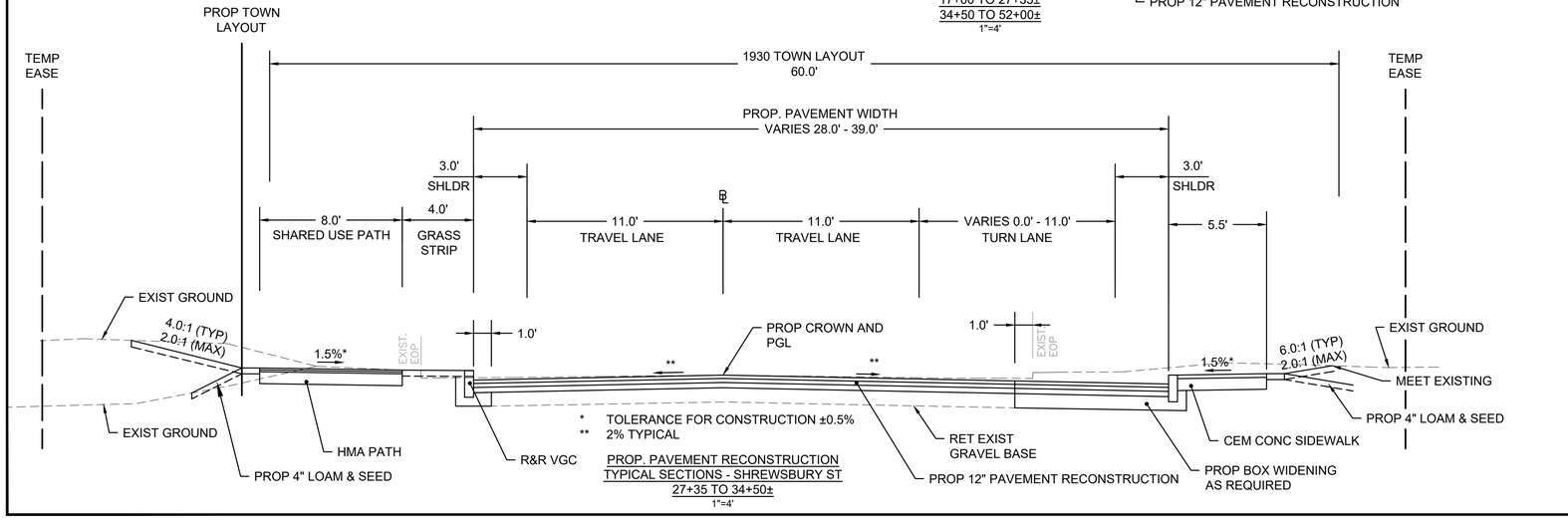
LEGEND

CONSTRUCTION PLANS XX
SIGNING AND MARKING PLANS XX
TRAFFIC SIGNAL PLANS XX
UTILITY PLANS XX

0 100 200 300 400
SCALE: 1" = 100'







HOLDEN
SHREWSBURY STREET

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MASS.	XXXX	5	206
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TYPICAL SECTIONS

PAVEMENT NOTES

PROPOSED 12" PAVEMENT RECONSTRUCTION (SHREWSBURY STREET)

SURFACE: 4.5" HOT MIX ASPHALT*
(2" SUPERPAVE SURFACE COURSE - 12.5 - P (SSC-12.5-P) LEVEL 3 OVER
2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)) LEVEL 3 OVER

BASE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) LEVEL 3)

SUBBASE: 3 1/2" MIN DENSE GRADED CRUSHED STONE OVER

REMOVE 12" MIN OF EXISTING PAVEMENT AND BASE MATERIALS, LEVEL WITH DENSE GRADED CRUSHED STONE, COMPACT EXISTING GRAVEL BORROW TO PROPER GRADE LINES

PROPOSED STANDARD MILL & OVERLAY (DOYLE ROAD & MAIN STREET)

4 1/4" HOT MIX ASPHALT
(2" SUPERPAVE SURFACE COURSE - 12.5 - P (SSC-12.5-P) OVER
2 1/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)

4" STANDARD MILLING DEPTH

ASPHALT EMULSION FOR TACK COAT (RS-1) AT 0.07 TO 0.09 GAL/SY OVER MILLING SURFACE

PROPOSED FINE MILL & OVERLAY (CHAPEL - HOLDEN & SIDE STREETS)

2" HOT MIX ASPHALT
(2" SUPERPAVE SURFACE COURSE - 12.5 - P (SSC-12.5-P))

2" FINE MILLING DEPTH

ASPHALT EMULSION FOR TACK COAT (RS-1) AT 0.07 TO 0.09 GAL/SY OVER MILLING SURFACE

PROPOSED FULL DEPTH PAVEMENT - WIDENING (LESS THAN 4.00' WIDE)

SURFACE: 4.5" HOT MIX ASPHALT*
(2" SUPERPAVE SURFACE COURSE - 12.5 - P (SSC-12.5-P) LEVEL 3 OVER
2.5" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)) LEVEL 3 OVER

BASE: 6" CEMENT CONCRETE BASE COURSE

SUBBASE: 8" GRAVEL BORROW, TYPE b.

PROPOSED FULL DEPTH PAVEMENT - WIDENING (GREATER THAN 4.00' WIDE)

SURFACE: 4.5" HOT MIX ASPHALT*
(2" SUPERPAVE SURFACE COURSE - 12.5 - P (SSC-12.5-P) LEVEL 3 OVER
2.5" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5)) LEVEL 3 OVER

BASE: 4" SUPERPAVE BASE COURSE - 37.5 (SBC-37.5) LEVEL 3)

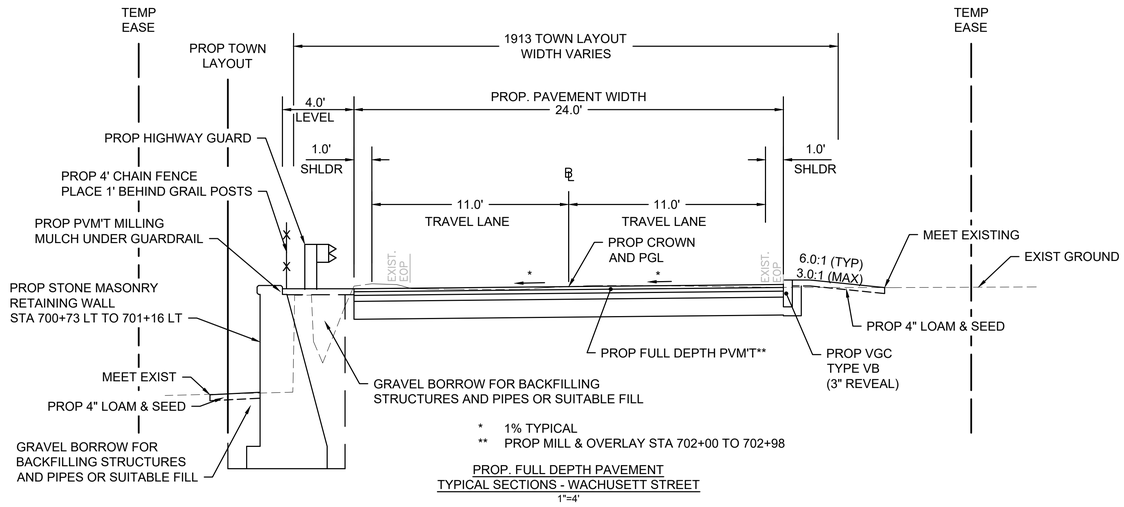
SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW, TYPE b.

PROPOSED HMA DRIVEWAY

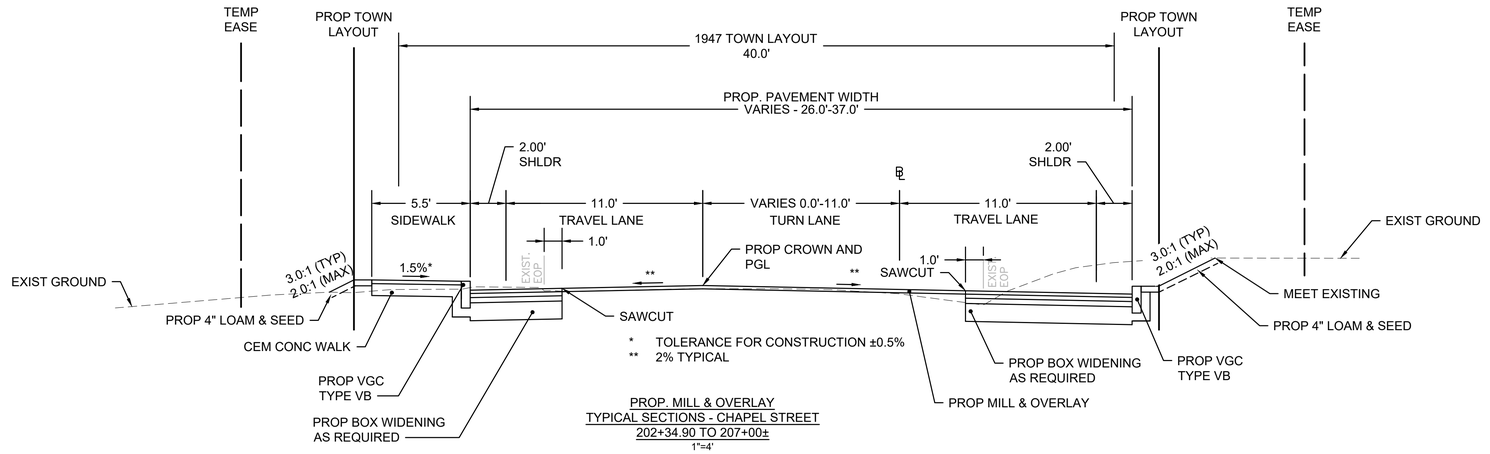
SURFACE: 4" HOT MIX ASPHALT
(1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5))

SUBBASE: 8" GRAVEL BORROW TYPE b

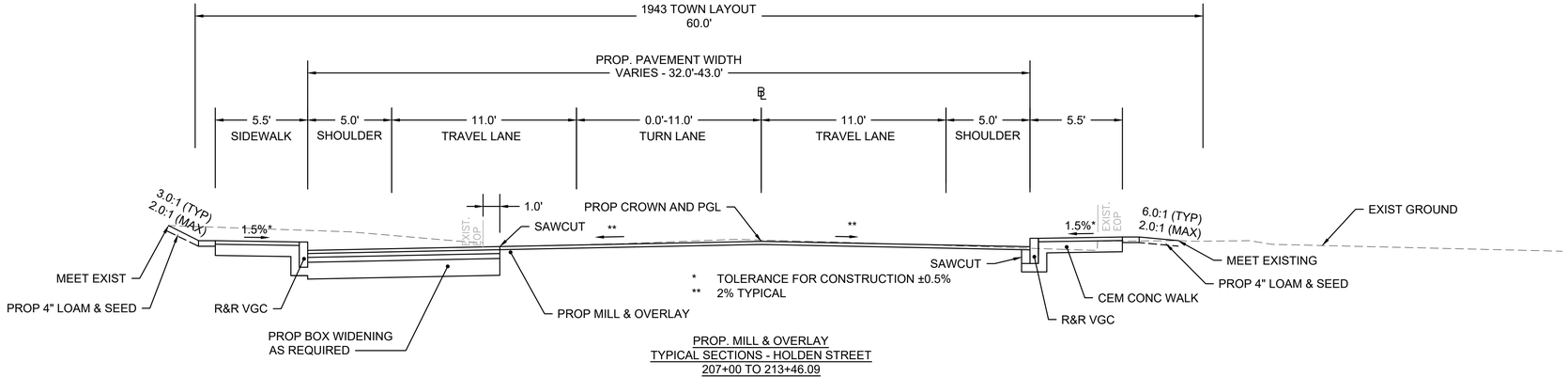
609219_HD(TYP).DWG Plotted on 4-Jan-2023 1:05 PM



PROP. FULL DEPTH PAVEMENT
TYPICAL SECTIONS - WACHUSETT STREET
1"=4'



PROP. MILL & OVERLAY
TYPICAL SECTIONS - CHAPEL STREET
202+34.90 TO 207+00±
1"=4'



PROP. MILL & OVERLAY
TYPICAL SECTIONS - HOLDEN STREET
207+00 TO 213+46.09
1"=4'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	6	206
PROJECT FILE NO. 609219			

TYPICAL SECTIONS

PAVEMENT NOTES (CONT.)

PROPOSED CEMENT CONCRETE WALK/ PCR

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

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE DRIVEWAY

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

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED HMA WALK/SUP

SURFACE: 3" HOT MIX ASPHALT
(1 1/4" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
1 3/4" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5))

SUBBASE: 8" GRAVEL BORROW TYPE b

PROP STAMPED CEMENT CONCRETE PVM'T

SURFACE: 8" CEMENT CONCRETE
AIR ENTRAINED 4000 PSI,
3/4", 610 (REINFORCED)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE ISLAND

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

FOUNDATION: 8" GRAVEL BORROW, TYPE b

609219_HD(TYP).DWG Plotted on 4-Jan-2023 1:05 PM

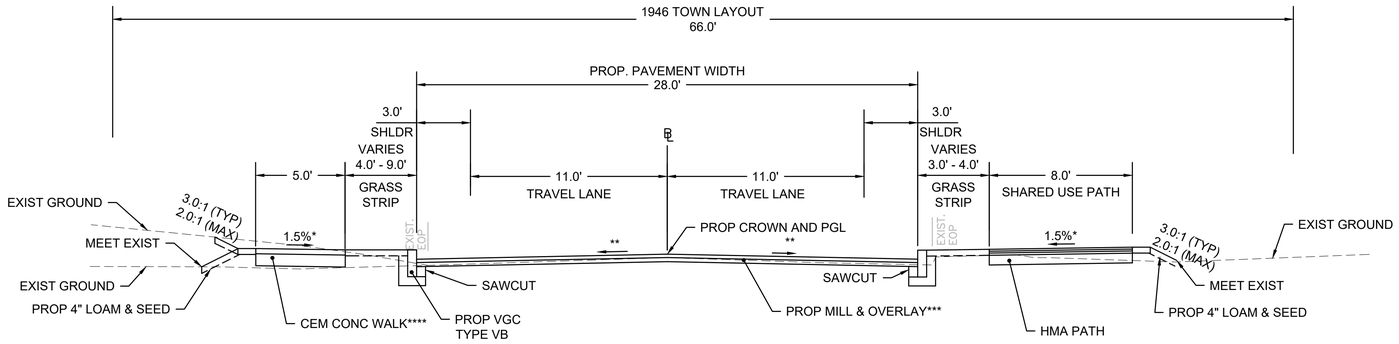
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	7	206
PROJECT FILE NO. 609219			

TYPICAL SECTIONS

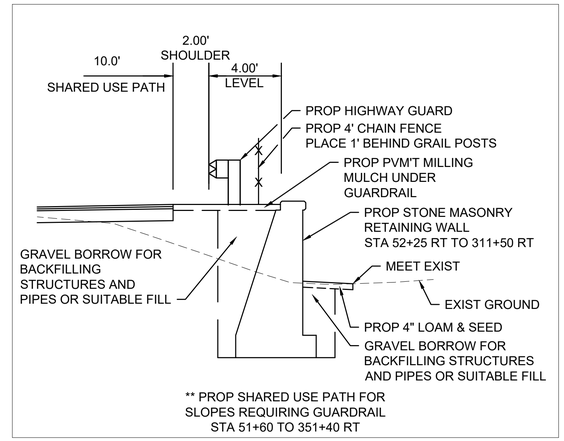
609219_HD(TYP).DWG Plotted on 4-Jan-2023 1:05 PM

NOTE: SEE SHEETS 5 & 6 FOR PAVEMENT NOTES.

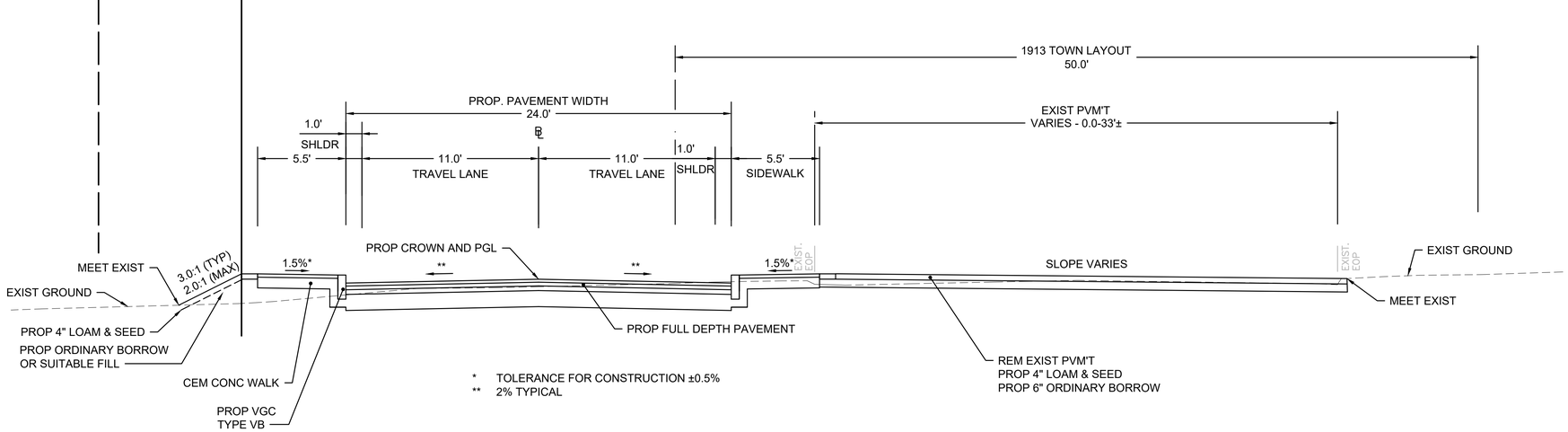


* TOLERANCE FOR CONSTRUCTION ±0.5%
** 2% TYPICAL
*** PROP FULL DEPTH PVM'T FROM STA 350+00 TO 354+72
**** PROP 10' HMA SHARED USE PATH FROM STA 350+00 TO 353+22 LT

PROP. MILL & OVERLAY
TYPICAL SECTIONS - DOYLE ROAD
350+00 TO 362+16.11
1"=4'



** PROP SHARED USE PATH FOR
SLOPES REQUIRING GUARDRAIL
STA 51+60 TO 351+40 RT



* TOLERANCE FOR CONSTRUCTION ±0.5%
** 2% TYPICAL

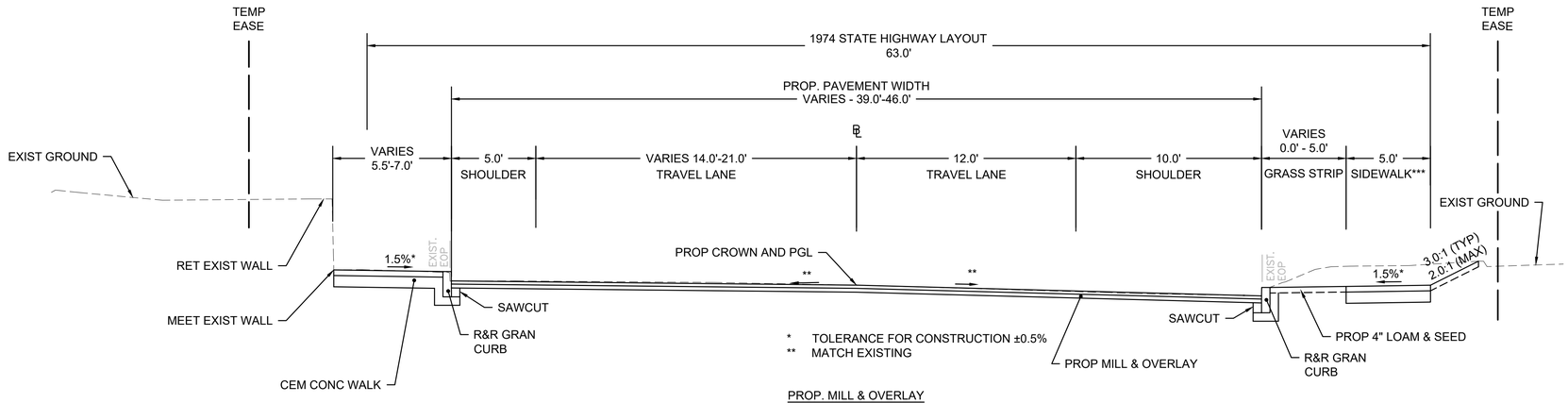
PROP. FULL DEPTH PAVEMENT
TYPICAL SECTIONS - BRATTLE STREET
506+00 TO 507+41.61
1"=4'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	8	206
PROJECT FILE NO. 609219			

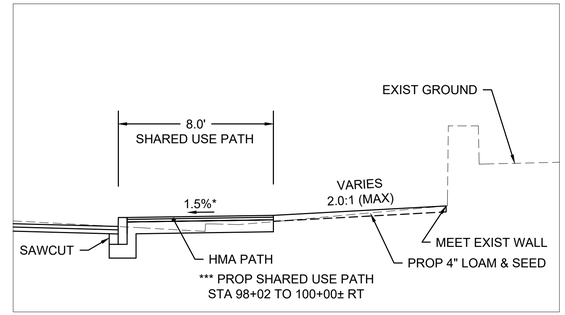
TYPICAL SECTIONS

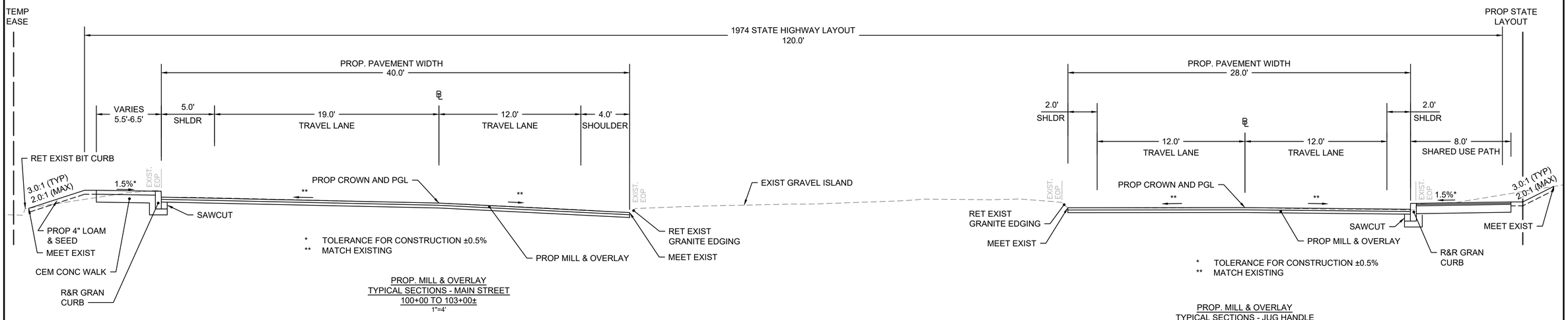
609219_HD(TYP).DWG Plotted on 4-Jan-2023 1:06 PM



PROP. MILL & OVERLAY
TYPICAL SECTIONS - MAIN STREET
96+44.21 TO 100+00±
1"=4'

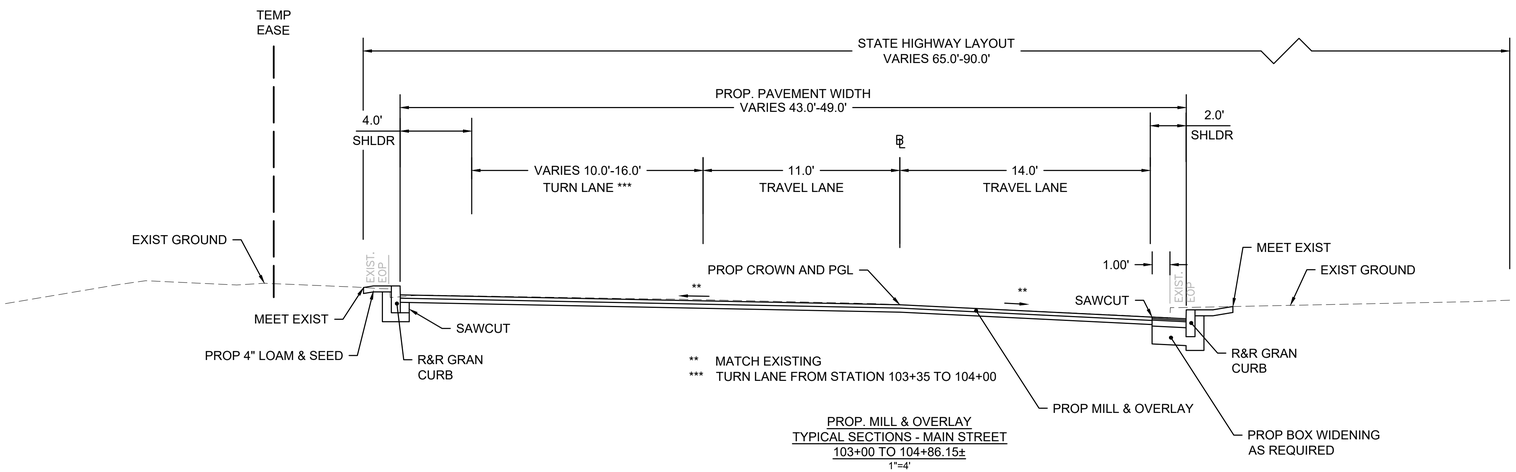
NOTE: SEE SHEETS 5 & 6 FOR PAVEMENT NOTES.





PROP. MILL & OVERLAY
TYPICAL SECTIONS - MAIN STREET
100+00 TO 103+00±
1"=4'

PROP. MILL & OVERLAY
TYPICAL SECTIONS - JUG HANDLE
600+00 TO 604+60.50±
1"=4'



PROP. MILL & OVERLAY
TYPICAL SECTIONS - MAIN STREET
103+00 TO 104+86.15±
1"=4'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 73

WATER SUPPLY ALTERATIONS

SEE SHEET 83

DRAINAGE DETAILS

SEE SHEET 83

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	9	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:07 PM

BEGIN PROJECT
STA 96+44.21
N: 2948510.0448
E: 565102.2378

MAIN STREET

1927 STATE HIGHWAY LAYOUT

1974 STATE HIGHWAY LAYOUT

1915 STATE HIGHWAY LAYOUT

1997 COUNTY ALTERATION

EXIST TOWN LAYOUT

EXIST TOWN LAYOUT

PROP TEMP EASEMENT

PROP HMA DRIVE

PROP LOAM & SEED
9"CON

REM STUMP

PROP 5.5' CEM CONC WALK

MATCH EXIST

SAWCUT
MATCH EXIST

S40°41'53"E
456.60'

PROP CEM CONC DRIVE 2

PROP PVM'T
MILLING & OVERLAY

PROP GRAN CURB (TYP)

RET BOLLARDS

PROP PERM EASEMENT

RET STONE MASONRY WALL
CAPPED WITH CONCRETE

"MASSACHUSETTS STATE POLICE HOLDEN" SIGN

"YIELD TO EXISTING EMERGENCY VEHICLES"

CONC. RAMP WITH HANDRAILS

N/F
COMMONWEALTH OF MASS
600 MAIN ST
199-4
BOOK 2515 PAGE 53

ADJ SAWCUT

PROP 6.5' CEM CONC WALK

PROP CEM CONC DRIVE 3

REM EXIST CURB

PROP 3" REVEAL

RET LP

PROP HMA DRIVE

PROP WOOD CHIP MULCH

PROP HMA CURB

PROP CEM CONC DRIVE 4

PROP PVM'T
MILLING & OVERLAY

FLEET NATIONAL BANK CC#81946
N/F
560 MAIN ST
199-28
BOOK 73836 PAGE 59

PROP TEMP EASEMENT

ADJ EHH

APPROX LIMIT OF GRADING

PROP LOAM & SEED (TYP)

PROP LAYOUT ALTERATION

PROP 5.5' CEM CONC WALK

RET LP

RET CURB

PROP CEM CONC DRIVE 1

PROP GRAN CURB (TYP)

S28°22'29"E
80.75'

PC +80.75

PROP 8' HMA SHARED USE PATH

Δ=26°55'59"
R=314.00'
L=147.60'
T=75.19'

REM TREE

PROP PVM'T
MILLING MULCH

REM TREE
PROP HMA CURB

RET SIGN
PROP BIKE RAMP 48

REM EX HIGHWAY GUARD

PROP ROADSIDE POLLINATOR
MEADOW SEED MIX

PROP HMA DRIVE

PROP TEMP EASEMENT

PROP CEM CONC WALK

RET CONC. RET. WALL TOPPED WITH CURB

RET

RET GRAVEL

RET TREES

RET LSA

RET LSA
RET GRAVEL
ISLAND

RET EX TS

PROP GRAN CURB (TYP)

PROP BIKE RAMP 1

Δ=69°22'35"
R=500.00'
L=605.42'
T=346.06'

1927 SHBL

PT +28.35

JUG HANDLE CONST

603 S1°26'30"E
108.22'

PROP PVM'T
MILLING & OVERLAY

PC +36.57

PROP LAYOUT ALETRATION

REM EX HIGHWAY GUARD

PROP TEMP EASEMENT

REM EX RET WALL

REM BUILDING

REM TREE

PROP PERM EASEMENT

PROP GRAN EDGING

RET TS

R&R COBBLESTONE

R&S TS

Δ=49°43'34"
R=156.00'
L=135.39'
T=72.29'

PROP 8' HMA SHARED USE PATH

R&R BD

PROP LOAM & SEED

9+42.50 SHREWSBURY STREET BL=
604+60.50 JUG HANDLE BL

APPROX LIMIT OF GRADING

9+68.54 SHREWSBURY STREET BL=
102+81.87 1927 SHBL

PROP LOAM & SEED

RET TREE

FOR PROFILE PLANS
SEE SHEETS 35-37

CONTINUED ON
SHEET NO. 10

1 STORY BUILDING

1 STORY BUILDING

BITUMINOUS PARKING LOT

N/F
DRAPOS, ALEXANDER E TRUSTEE
633 MAIN ST
199-5
BOOK 20837 PAGE 279

N/F
HOLDEN TOWN OF
MAIN ST
199-18
BOOK 5067 PAGE 417

BORING #1

CB
RIM=742.81'
INV.=740.5' 8"DI
INV.=739.4' 12"CPP

CB
RIM=742.94'
INV.=739.6' 12"CPP

SMH
RIM=741.96'
INV.=738.0' 10"PVC
INV.=734.0' 10"PVC
INV.=733.8' 10"PVC
INV.=733.8' 10"PVC

CB
RIM=732.79'
INV.=729.8' 4"VCP
INV.=729.8'
INV.=728.8'

CB
RIM=742.97'
FILLED WITH SAND

DMH
RIM=729.86'
INV.=721.5' 12"RCP
INV.=721.5' 12"CMP
INV.=721.5' 12"RCP

CB
RIM=727.18'
INV.=721.8' 4"VCP
INV.=722.0'
INV.=722.4' 12"RCP
INV.=722.4' 12"RCP

BENCHMARK
CONCRETE
EL=730.1

PCR 2

PCR 3

PCR 6

96 97 98 99 100 101 102 103 600 601 602 603 604

+56.60 PC

43.0'

48.0'

28.0'

0 20 50 100

SCALE: 1" = 20'

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 73

WATER SUPPLY ALTERATIONS

SEE SHEET 84

DRAINAGE DETAILS

SEE SHEET 84

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	10	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:08 PM

CONTINUED ON SHEET NO. 9

CONTINUED ON SHEET NO. 11

N

JUG HANDLE CONST BL

PT

603+36.57 ST 26°30'E 108.22'

PROP PVM'T MILLING & OVERLAY

PC 1+36.57

RET LSA

RET TREES

RET LSA RET GRAVEL ISLAND

COBBLESTONE EDGES TYPICAL

RET

RET LSA

RET

PROP TEMP EASEMENT

HOLDEN N/F TOWN OF HOLDEN BOOK 5067 PAGE 417

REM EX HIGHWAY GUARD

REM EX RET WALL

REM EX BUILDING

PROP LOAM & SEED

REM TREE

EXIST TOWN LAYOUT

APPROX LIMIT OF GRADING

R&R BD

9+42.50 SHREWSBURY STREET BL= 604+60.50 JUG HANDLE BL

9+68.54 SHREWSBURY STREET BL= 102+81.87 1927 SHBL

RET

RET TS

RET

PROP LOAM & SEED

PCR 6

PROP FULL DEPTH WIDENING

1932 STATE HIGHWAY LAYOUT

PROP GRAN CURB (TYP)

PROP TEMP EASEMENT (TYP)

PROP HMA DRIVE

ADJ CB RIM=714.39' INV.=710.7' DIP INV.=710.3' RCP SIZES NOT NOTED

LIMIT OF WORK STA 104+86.15 N: 2947761.8705 E: 565288.7442

EX 10"PVC SEWER

EX 8"PVC SEWER

SMH RIM=714.17' INV.=701.1' 8"PVC INV.=699.2' 10"PVC INV.=685.6' 6"PVC INV.=707.8' 6"PVC INV.=699.2' 10"PVC

BENCHMARK 14: SPIKE SET 1' UP ULT 2A EL=713.76'

HOLDEN N/F TOWN OF HOLDEN BOOK 5067 PAGE 417

603

40.0'

Δ=89°22'35" R=500.00' L=780.42' T=496.06'

1927 STATE HIGHWAY LAYOUT

RET LP

APPROX LIMIT OF GRADING

PROP LAYOUT ALERTATION

PROP LOAM & SEED (TYP)

RET

RET EX TS

1927 SHBL

PROP PVM'T MILLING & OVERLAY

PROP GRAN CURB (TYP)

PROP BIKE RAMP 1

1997 COUNTY ALTERATION

RET LSA

RET

PROP TEMP EASEMENT (TYP)

BENCHMARK 1: CHISEL SQUARE ON CONCRETE BASE OF MASTARM EL=730.15'

DMH RIM=729.85' INV.=721.5' 12"RCP INV.=721.5' 12"CMP INV.=721.5' 12"RCP

CB RIM=725.41' INV.=721.7' 4"VCP INV.=721.7' 12"RCP

CB RIM=726.32' INV.=721.7' 12"RCP

R&S LP

PROP HMA DRIVE

PROP PERM EASEMENT

REM EXIST BIT WALK PROP LOAM & SEED (TYP)

PCR 2

PCR 3

PCR 4

RET TS

1927 SHLO

PROP HMA DRIVE 5

PROP 8' HMA SHARED USE PATH

R&R

PROP GRAN CURB (TYP)

S71°40'23"E 542.61'

PROP 12" PVM'T RECONSTRUCTION

SHREWSBURY STREET CONST BL

PROP GRAN CURB (TYP)

PROP CEM CONC DRIVE 6

PCR 8

PCR 9

PROP 5.5' CEM CONC WALK (TYP)

PROP 5.5' CEM CONC WALK

R&R

1930 TOWN LAYOUT

REM TREE

PROP WOOD CHIP MULCH

RET TS

RET TREE

PROP TREE PROTECTION - ARMORING & PRUNING (TYP)

APPROX LIMIT OF GRADING

PROP TEMP EASEMENT

PROP HMA DRIVE

PROP WOOD CHIP MULCH

PROP TREE PROTECTION - ARMORING & PRUNING (TYP)

TOWN OF HOLDEN SEWER EASEMENT

BITUMINOUS PARKING LOT

DMH RIM=727.46' INV.=720.2' 12"RCP INV.=719.7' 12"RCP INV.=720.1' 12"RCP INV.=719.9' 12"RCP INV.=719.9' 12"RCP

CB RIM=720.58' INV.=715.9' 12"RCP

DMH RIM=719.56' INV.=713.5' 12"RCP INV.=713.5' 12"RCP INV.=713.5' 12"RCP

N/F CHAFFIN REALTY CO., LLC 5 SHREWSBURY ST 199-7 BOOK 25652 PAGE 235

PROP HMA CURB REM

PROP GRAN CURB

PROP 8' HMA SHARED USE PATH

PROP GRAN CURB (TYP)

1932 STATE HIGHWAY LAYOUT

MAIN STREET

PT +62.02

102

103

104

105

Δ=49°43'34" R=156.00' L=135.39' T=72.29'

PROP 8' HMA SHARED USE PATH

29.0

604

PROP GRAN EDGING

R&R COBBLESTONE

9+42.50

10

11

12

13

14

1927 SHLO

R&R

PROP 8' HMA SHARED USE PATH

PROP LOAM & SEED

PCR 5

PCR 7

PROP 5.5' CEM CONC WALK

R&R

REM TREE

PROP WOOD CHIP MULCH

RET TS

RET TREE

PROP FULL DEPTH WIDENING

PROP GRAN CURB

PROP GRAN CURB (TYP)

PROP 8' HMA SHARED USE PATH

PROP TEMP EASEMENT (TYP)

PROP HMA DRIVE

1927 STATE HIGHWAY LAYOUT

1930 TOWN LAYOUT

REM TREE

RET TREE

RET TREE

RET TREE

PROP WOOD CHIP MULCH

PROP TREE PROTECTION - ARMORING & PRUNING (TYP)

PROP HMA DRIVE

PROP TEMP EASEMENT

APPROX LIMIT OF GRADING

200' RIVERFRONT BUFFER

BENCHMARK 2: SPIKE IN ULT 3 EL=716.06'

N/F ALDEN RE HOLDINGS, LLC 2 SHREWSBURY ST 176-13 BOOK 35600 PAGE 234

PROP HMA DRIVE (TYP)

RET TREE

PROP 8' HMA SHARED USE PATH

R&R

1997 COUNTY ALTERATION

PROP GRAN CURB (TYP)

PROP 5.5' CEM CONC WALK (TYP)

RET TREE

RET TREE

TOWN OF HOLDEN SEWER EASEMENT

BITUMINOUS PARKING LOT

PROP WOOD CHIP MULCH

PROP TREE PROTECTION - ARMORING & PRUNING (TYP)

DMH RIM=715.38' INV.=710.4' 12"RCP INV.=709.8' 12"RCP INV.=709.8' 12"RCP INV.=709.7' 12"RCP

CB RIM=715.30' INV.=710.4' 12"RCP

DMH RIM=715.48' INV.=712.5' 12"DIP INV.=712.4' 12"RCP

SHREWSBURY STREET

JUG HANDLE BL CONSTRUCTION BASELINE DATA							
STARTING STATION	NORTHING	EASTING	CURVE DATA		ENDING STATION	NORTHING	EASTING
602+28.35	2948179.5543	565279.8287		S1°26'30"E 108.22'	603+36.57	2948071.3729	565282.5515
603+36.57	2948071.3729	565282.5515	R= 156.00' Δ= 49°43'34" L=135.39' T=72.29'		604+71.96	2947953.7761	565340.6837

0 20 50 100

SCALE: 1" = 20'

FOR PROFILE PLANS SEE SHEET 22, 35-37

HIGHWAY GUARD DETAILS

TRAILING END, TL-2, STA 700+95 RT
HIGHWAY GUARDRAIL, TL-2, STA 15+69 LT TO STA 701+42 LT
HIGHWAY GUARDRAIL, TL-2, DEEP POST, STA 701+08 RT TO STA 701+50 RT
TANGENT END SECTION, TL-2, STA 15+56 LT, STA 701+42 LT, STA 701+50 RT

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 85

DRAINAGE DETAILS

SEE SHEET 85

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	11	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:08 PM

CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12

N

N11°23'56"W 97.42'
MATCH EXIST
SAWCUT
703' SAWCUT
PROP WALK TO BE CONNECTED WITH FUTURE TOWN PROJECT
PROP TEMP EASEMENT (TYP)
LIMIT OF BANK
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP PVMT MILLING & OVERLAY
PT +69.82
END RET HEDGES
BEGIN REM HEDGES
END PROP FULL DEPTH PVM'T
BEGIN PVM'T MILLING & OVERLAY
PROP LOAM & SEED
APPROX LIMIT OF GRADING (TYP)
WACHUSETT STREET
Δ=25°35'32"
R=200.00'
L=89.32'
T=45.36'
PROP PERM EASEMENT
MATCH EXIST CURB
PROP TEMP EASEMENT (TYP)
25' NO DISTURBANCE ZONE
END HIGHWAY GUARD +63
37.62'
PC +80.60
N14°08'36"E 64.54'
PROP BENCH
PROP HIGHWAY GUARD (DEEP POST)
100' WETLAND BUFFER
LIMIT OF BVW
PROP DRAINAGE EASEMENT
RET EXIST CLF
PROP COMPOST FILTER TUBE (TYP)
END HIGHWAY GUARD +55
PROP GRAN CURB
3' REVEAL
BEGIN GRAN CURB +38
INSTALL DEEP POSTS BETWEEN TWIN CULVERTS
PROP ROADSIDE POLLINATOR MEADOW SEED MIX
RET HEADWALL
PT +16.06
BEGIN HIGHWAY GUARD +95
PROP CLF (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP HMA DRIVE (TYP)
PROP TEMP EASEMENT (TYP)
PROP FIELDSTONE MASONRY HEADWALL
PC +67.45
N11°22'29"E 16.88'
PROP PARK BENCH (TYP)
PROP 5' HMA WALK
REM EX PVM'T
PROP LOAM & SEED
LINCOLN AVENUE
PT +50.56
RET CLF
RET TREE
RET TREE
RET STONE WALL
BEGIN HIGHWAY GUARD +56
PROP TEMP EASEMENT (TYP)
PROP CLEARING & GRUBBING
PROP HIGHWAY GUARD
R&S CLF
RET HEADWALL
PROP PERM EASEMENT
END GRAN CURB +21
PROP FULL DEPTH PVM'T
PC +31.10
REM TREE
PROP 4' GRASS STRIP
PROP HMA DRIVE (TYP)
PROP HMA DRIVE 9
PROP 8' HMA SHARED USE PATH (TYP)
1930 TOWN LAYOUT
PCR 10
PCR 11
PROP GRAN CURB (TYP)
REM INVASIVE BITTERSWEET ALONG FENCE
SHREWSBURY STREET CONST B
PT +53.42
N33°40'27"E 31.10'
S56°19'33"E 174.83'
PROP HMA DRIVE 7
Δ=15°20'51"
R=787.00'
L=210.81'
T=106.04'
PROP 12" PVM'T RECONSTRUCTION
28.0'
PC +28.24
Δ=15°14'14"
R=2250.00'
L=598.36'
T=300.96'
PROP FULL DEPTH PVM'T WIDENING
PC +42.61
END PROP MULCH; BEGIN LOAM & SEED
PCR 12
PCR 13
PROP CEM CONC DRIVE 8
PROP CEM CONC DRIVE 10
1997 COUNTY ALTERATION
PROP GRAN CURB (TYP)
PROP 5.5' CEM CONC WALK (TYP)
16+75 SHREWSBURY STREET BL= 700+00.00 WACHUSETT STREET
RET HIGHWAY GUARD
PROP PERM UTILITY EASEMENT
PROP LOAM & SEED (TYP)
SAWCUT MATCH EXIST
PROP HMA DRIVE
R&R MB
PROP HMA DRIVE
1930 TOWN LAYOUT
PROP COMPOST FILTER TUBE (TYP)
RET TREE
APPROX LIMIT OF GRADING (TYP)
PROP PVM'T MILLING & OVERLAY (SIDE STREETS)
SOUTH WACHUSETT STREET
100' WETLAND BUFFER
200' RIVERFRONT BUFFER
25' NO DISTURBANCE AREA
200' RIVERFRONT BUFFER
100' WETLAND BUFFER
200' RIVERFRONT BUFFER

N/F ALDEN RE HOLDINGS, LLC 2 SHREWSBURY ST 176-13 BOOK 35600 PAGE 234
N/F ALDEN RE HOLDINGS, LLC SHREWSBURY ST 188-50 BK 35600 PG 234
N/F CHAFFIN REALTY CO., LLC 5 SHREWSBURY ST 199-7 BOOK 25652 PAGE 235
N/F FRIENDS OF THE RED BARN, INC. SHREWSBURY ST. 200-1 BOOK 22359 PAGE 221
N/F POWERS, MARY M 51 SHREWSBURY ST 199-8 BOOK 47550 PAGE 280
N/F DAVIS, KENNETH E 57 SHREWSBURY ST 199-9 BOOK 40440 PAGE 311

BENCHMARK 3: SPIKE SE EL=726.76'

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE PLANS SEE SHEET 23

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 86

DRAINAGE DETAILS

SEE SHEET 86

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	12	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:08 PM

CONTINUED ON SHEET NO. 11

N/F TIRMACCO, ROBERT JR
50 RED BARN RD
200-120
BOOK 38511 PAGE 26

N/F OUELLETTE, NICHOLAS G
4 TYLER DR
200-119
BOOK 52322 PAGE 84

N/F SLAVIN, CHRISTOPHER E
54 RED BARN RD
200-121
BOOK 28752 PAGE 259

N/F NGUYEN, HOA
7 TYLER DR
200-117
BOOK 24975 PAGE 114

N/F REED, AARON AND LYNN
5 TYLER DR
200-118
BOOK 56257 PAGE 126

N/F MILLETT, CHARLEGNE F
90 SHREWSBURY ST
200-81
BOOK 21079 PAGE 283

N/F LOWELL, ROSS D AND JILL M.
100 SHREWSBURY ST
200-107
BOOK 18460 PAGE 299

TOWN OF HOLDEN SEWER EASEMENT

TYLER DRIVE

PROP PVMT MILLING & OVERLAY (SIDE STREETS)

SAWCUT MATCH EXIST

PROP 5' HMA WALK

REM & REBUILT BALANCE STONE WALL

PROP PERM UTILITY EASEMENT

R&R BOUND IN PLACE

PROP TEMP EASEMENT (TYP)

PROP CLEARING & GRUBBING

R&S EXIST FENCE

R&R STONE WALL (TYP)

PROP 4' GRASS STRIP

PROP LOAM & SEED (TYP)

PROP HMA DRIVE (TYP)

PROP HMA DRIVE 13

PROP LOAM & SEED (TYP)

REM SHRUBS

R&S

PROP TEMP EASEMENT (TYP)

APPROX LIMIT OF GRADING (TYP)

R&R MB

PROP HMA DRIVE 14

PROP 8' HMA SHARED USE PATH (TYP)

REM TREE

PROP GRAN CURB (TYP)

PROP GRAN CURB CORNER (TYP)

PROP GRAN CURB 3" REVEAL

PROP FULL DEPTH PVM'T WIDENING

PROP GRAN CURB (TYP)

PROP CEM CONC DRIVE 11

PROP CEM CONC DRIVE 12

PROP 12" PVM'T RECONSTRUCTION

PROP FULL DEPTH PVM'T WIDENING

PROP GRAN CURB (TYP)

PROP CEM CONC WALK (TYP)

PROP 5.5' CEM CONC WALK (TYP)

PROP CEM CONC DRIVE 10

PROP HMA DRIVE

PROP LOAM & SEED (TYP)

PROP HMA DRIVE

PROP TREE TRIMMING

PROP TREE PROTECTION FENCE

PROP PERM UTILITY EASEMENT (TYP)

PROP TREE TRIMMING; REM BRANCHES WITHIN LAYOUT

PROP PVM'T MILLING & OVERLAY (SIDE STREETS)

PROP LOAM & SEED (TYP)

PROP TEMP EASEMENT (TYP)

PROP CEM CONC DRIVE 15

PROP HMA DRIVE

PROP FULL DEPTH PVM'T WIDENING

PROP GRAN CURB (TYP)

R&R MB

1930 TOWN LAYOUT

SHREWSBURY STREET

HOMESTEAD ROAD

SHREWSBURY STREET CONST

PCR 14

PCR 15

PCR 16

PCR 17

PCR 18

PCR 19

PT +26.60

Δ=15°14'14"
R=2250.00'
L=598.36'
T=300.96'

S41°05'19"E
191.19'

BENCHMARK 3: SPIKE SET IN ULT9
EL=726.76'

BENCHMARK 4: SPIKE SET IN UPL 12
EL=744.89'

N/F DIK, CHRISTOPHER
65 SHREWSBURY ST
200-94
BK 49352 PG 87

N/F DOUCETTE, DARRELL
67 SHREWSBURY ST
200-108
BOOK 42852 PAGE 370

N/F SUGAR, ROBERT
79 SHREWSBURY ST
200-83
BOOK 25563 PAGE 103

N/F BESHOY & VERONA REALTY, LLC
87 SHREWSBURY ST
200-82
BOOK 58811 PAGE 006

N/F GARCIA, LUIS AND ERIN
97 SHREWSBURY ST
200-62
BOOK 51499 PAGE 141

N/F BOUCHARD, SHARON AND DEN
103 SHREWSBURY ST
200-63
BOOK 54981 PAGE 194

N/F GOODALE, ROSS A
11 HOMESTEAD RD
200-84
BOOK 45598 PAGE 24

N/F GOODE, ATTANYA MOURADIAN
14 HOMESTEAD RD
200-61
BOOK 48761 PAGE 16

0 20 50 100
SCALE: 1" = 20'

FOR PROFILE PLANS
SEE SHEET 24

CONTINUED ON SHEET NO. 13

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 87

DRAINAGE DETAILS

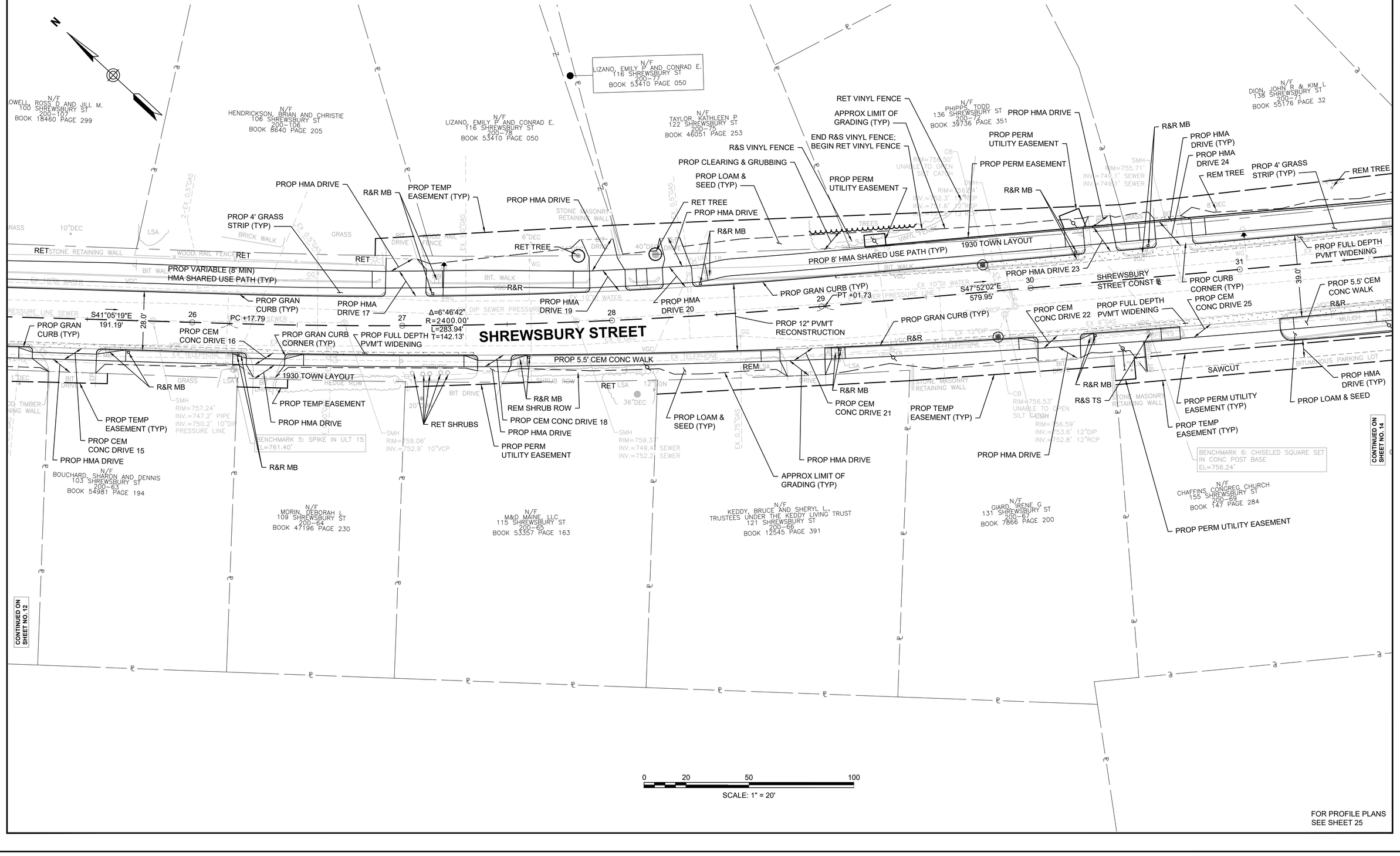
SEE SHEET 87

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	13	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:09 PM



FOR PROFILE PLANS
SEE SHEET 25

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	14	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
SEE SHEET 75

WATER SUPPLY ALTERATIONS
SEE SHEET 88

DRAINAGE DETAILS
SEE SHEET 88

CONTINUED ON SHEET NO. 21

CHAPEL STREET
1947 TOWN LAYOUT
PROP PERM EASEMENT
APPROX LIMIT OF GRADING (TYP)
PROP PERM UTILITY EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP HMA DRIVE (TYP)
PROP HMA SHARED USE PATH
R&R MASONRY STONE WALL
PROP FULL DEPTH PVM'T WIDENING
R&S FENCE
REM TREE
SAWCUT
R&R MB
PROP PVMT MILLING & OVERLAY
CHAPEL-HOLDEN STREET CONST ℄
PROP CEM CONC DRIVE 69
R&R STONES & BOULDERS
RET TREE
PROP HMA DRIVE
PROP LOAM & SEED
REM TREE
COTE, JEROLD A. AND CECILE M.
416 SHREWSBURY ST
BOOK 30744 PAGE 321
N/F
DION, JOHN R. & KIM L
138 SHREWSBURY ST
200-71
BOOK 55176 PAGE 32
R&S CONC BOUND
PROP PERM EASEMENT
APPROX LIMIT OF GRADING (TYP)
PROP TEMP EASEMENT (TYP)
REM TREE
REM STUMPS
REM SHRUBS
R&S BOUND
PROP 4' GRASS STRIP (TYP)
REM TREE
1930 TOWN LAYOUT
PROP 8' HMA SHARED USE PATH (TYP)
PROP FULL DEPTH PVM'T WIDENING
R&R
PROP GRAN CURB (TYP)
PROP LOAM & SEED
PROP GRAN CURB
REM
PCR 20
PCR 22
206
S3°30'16"W
127.63'
ADJ
S47°52'02"E
579.95'
207
R&S TS
PC +81.68
PROP GRASS STRIP (VARIES) (TYP)
PROP PERM UTILITY EASEMENT (TYP)
R&S CONC BOUND
PROP HMA DRIVE
PROP HMA DRIVE 27
SAWCUT
PCR 24
BENCHMARK 7: PUNCH MARK IN HYDRANT HEAD BOLT
EL=753.14'
FRASER, SHERMAN A. ETAL
160 SHREWSBURY ST
200-17
BOOK 55718 PAGE 55
N/F
SHULER, GREGORY AND SUSANA
190 SHREWSBURY ST
200-21
BOOK 54152 PAGE 371
PROP COMPOST FILTER TUBE (TYP)
APPROX LIMIT OF GRADING (TYP)
REM EXIST BIT WALK
PROP LOAM & SEED (TYP)
PROP TEMP EASEMENT
PROP HMA DRIVE
PROP HMA DRIVE 30
REM CONC PAD
PROP 4' GRASS STRIP (TYP)
1930 TOWN LAYOUT
PROP 8' HMA SHARED USE PATH (TYP)
PROP GRAN CURB (TYP)
PROP 12" PVM'T RECONSTRUCTION
Δ=23°20'12"
R=1350.00'
L=549.86'
T=278.79'
PROP GRAN CURB CORNER (TYP)
SHREWSBURY STREET CONST ℄
R&R
APPROX LIMIT OF GRADING (TYP)
PROP TEMP EASEMENT
PROP CEM CONC DRIVE 29
PROP HMA DRIVE (TYP)
CONTINUED ON SHEET NO. 15
SHREWSBURY STREET
PROP FULL DEPTH PVM'T WIDENING
PROP GRAN CURB (TYP)
PROP 5.5' CEM CONC WALK
R&R
PROP HMA DRIVE (TYP)
PROP LOAM & SEED
PROP CEM CONC DRIVE 26
PROP PERM UTILITY EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP CEM CONC WALK
SAWCUT
BITUMINOUS PARKING LOT
RET
REM STUMP
REM TREE
N/F
CHAFFINS CONGREG CHURCH
155 SHREWSBURY ST
200-69
BOOK 147 PAGE 284
PROP FULL DEPTH PVM'T WIDENING
R&S TS
PCR 21
REM TREE
APPROX LIMIT OF GRADING
R&S TS
ADJ
PCR 23
208
207+03.00 CHAPEL-HOLDEN BL=
33+74.55 SHREWSBURY STREET BL
REM EXIST CONC WALK
PROP LOAM & SEED (TYP)
HOLDEN, TOWN OF
1 HOLDEN ST
BOOK 2201 PAGE 545
PROP GRAN CURB
R&S TS
PROP CEM CONC CUT THRU
REM
PROP LOAM & SEED
PROP 48" CLF
PCR 25
PROP GATE
R&R
R&S GATE
R&S VINYL FENCE
CHAPEL-HOLDEN STREET CONST ℄
PROP CEM CONC WALK (TYP)
PROP PERM EASEMENT
RET VINYL FENCE
END R&S EXIST VINYL FENCE
BEGIN RET EXIST VINYL FENCE
PROP TEMP EASEMENT (TYP)
PROP DETENTION BASIN
(SEE DETAIL ON SHEET 103)
R&S CLF
PROP PERM DRAINAGE EASEMENT
PROP CEM CONC DRIVE 28
PROP HMA DRIVE
REM TREE
PROP LOAM & SEED (TYP)
R&R MB
PROP PERM UTILITY EASEMENT
PROP TEMP EASEMENT
CHARBONNEAU, SCOTT E. AND LOUISE E.
181 SHREWSBURY ST
213-2
BOOK 6677 PAGE 98
N/F
LEVY, AND GAREEPY, VORAK T.
171 SHREWSBURY ST
213-1
BOOK 33457 PAGE 168
PROP CLEARING & GRUBBING
PROP PERM UTILITY EASEMENT (TYP)
R&R STONE WALL
REM
PROP CEM CONC DRIVE 70
PROP CEM CONC DRIVE 71
PROP PVMT MILL & OVERLAY
209
43.0'
SAWCUT
PROP PERM EASEMENT
PROP TEMP EASEMENT
PROP HMA DRIVE
PROP 5.5' CEM CONC WALK
PROP FULL DEPTH PVM'T WIDENING
1943 TOWN LAYOUT
PROP 5' CEM CONC
PROP HMA DRIVE
PROP TEMP EASEMENT (TYP)
HOLDEN STREET
BENCHMARK 16: X-CUT ON HYDRANT BONNET BOLT
EL=758.39'
TEMPLATE, AEMI, AND N/F
PROPRIETORS OF OUEKEREO
BOOK 35008 PAGE 68
CONTINUED ON SHEET NO. 13
CONTINUED ON SHEET NO. 21
FOR PROFILE PLANS
SEE SHEET 26 & 31-32
0 20 50 100
SCALE: 1" = 20'

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:09 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 89

DRAINAGE DETAILS

SEE SHEET 89

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	15	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

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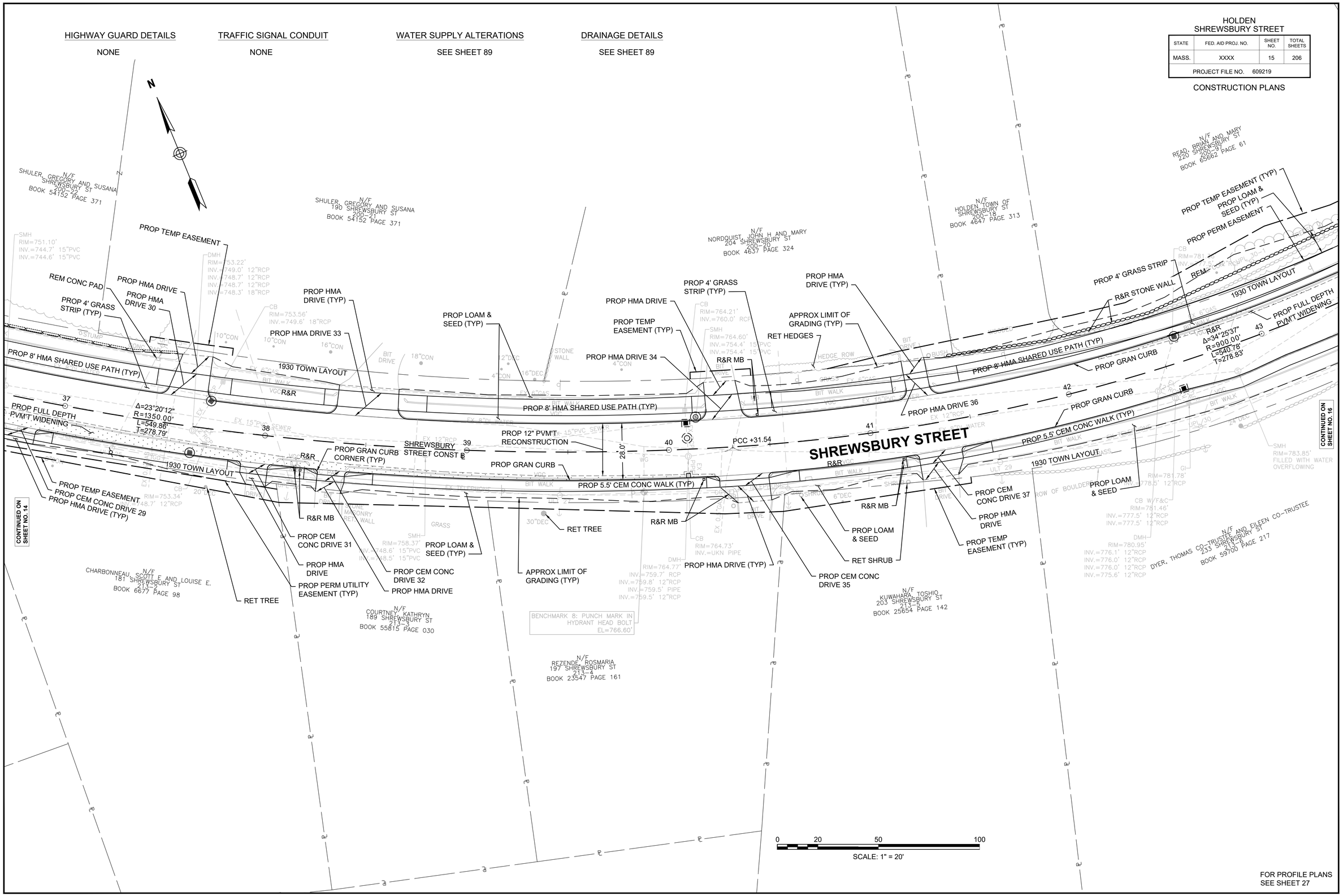

FOR PROFILE PLANS
SEE SHEET 27

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 90

DRAINAGE DETAILS

SEE SHEET 90

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	16	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

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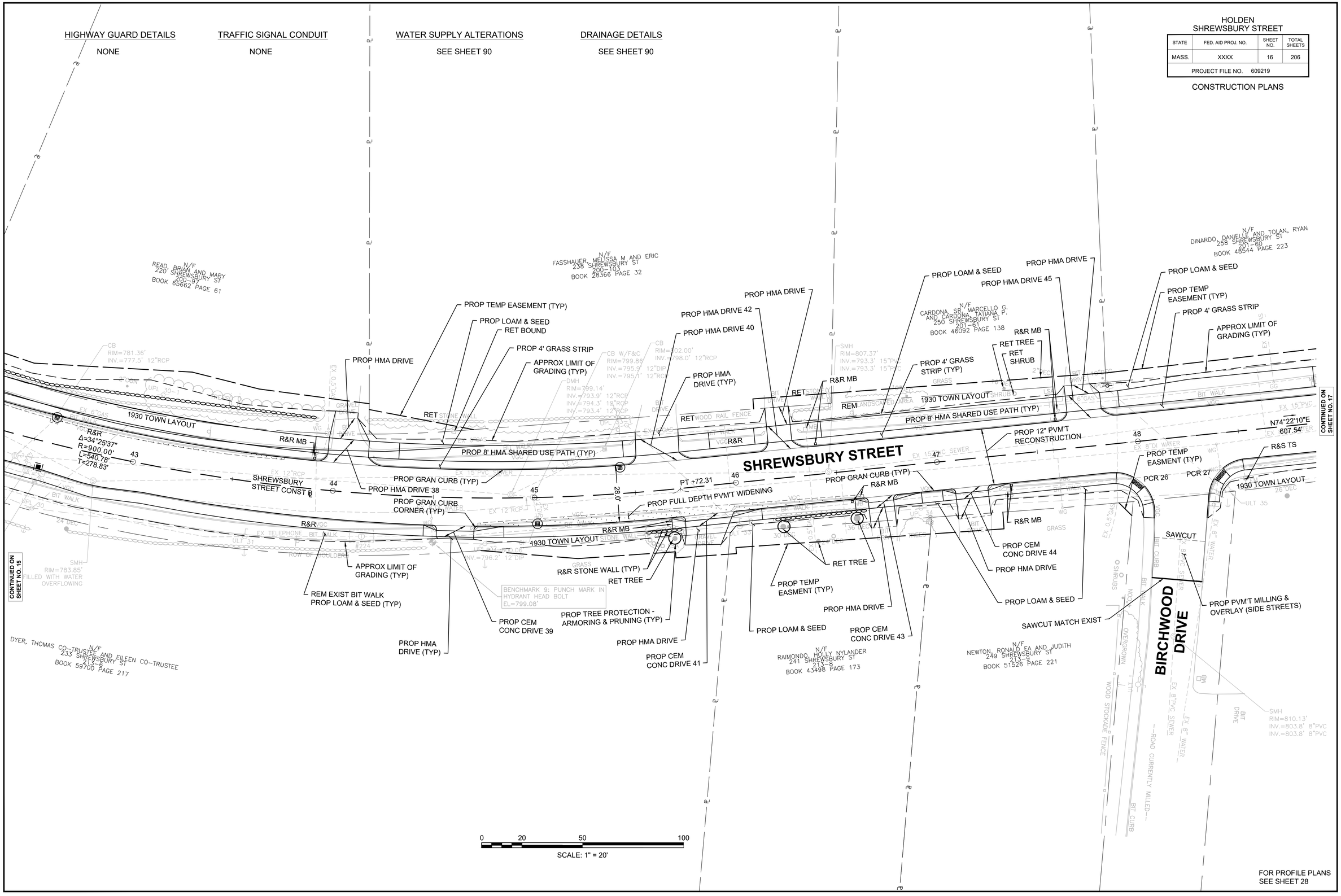


HIGHWAY GUARD DETAILS

TRAILING END, TL-2, STA 51+58
HIGHWAY GUARDRAIL, TL-2,
STA 51+71 RT TO STA 351+26 RT

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 91

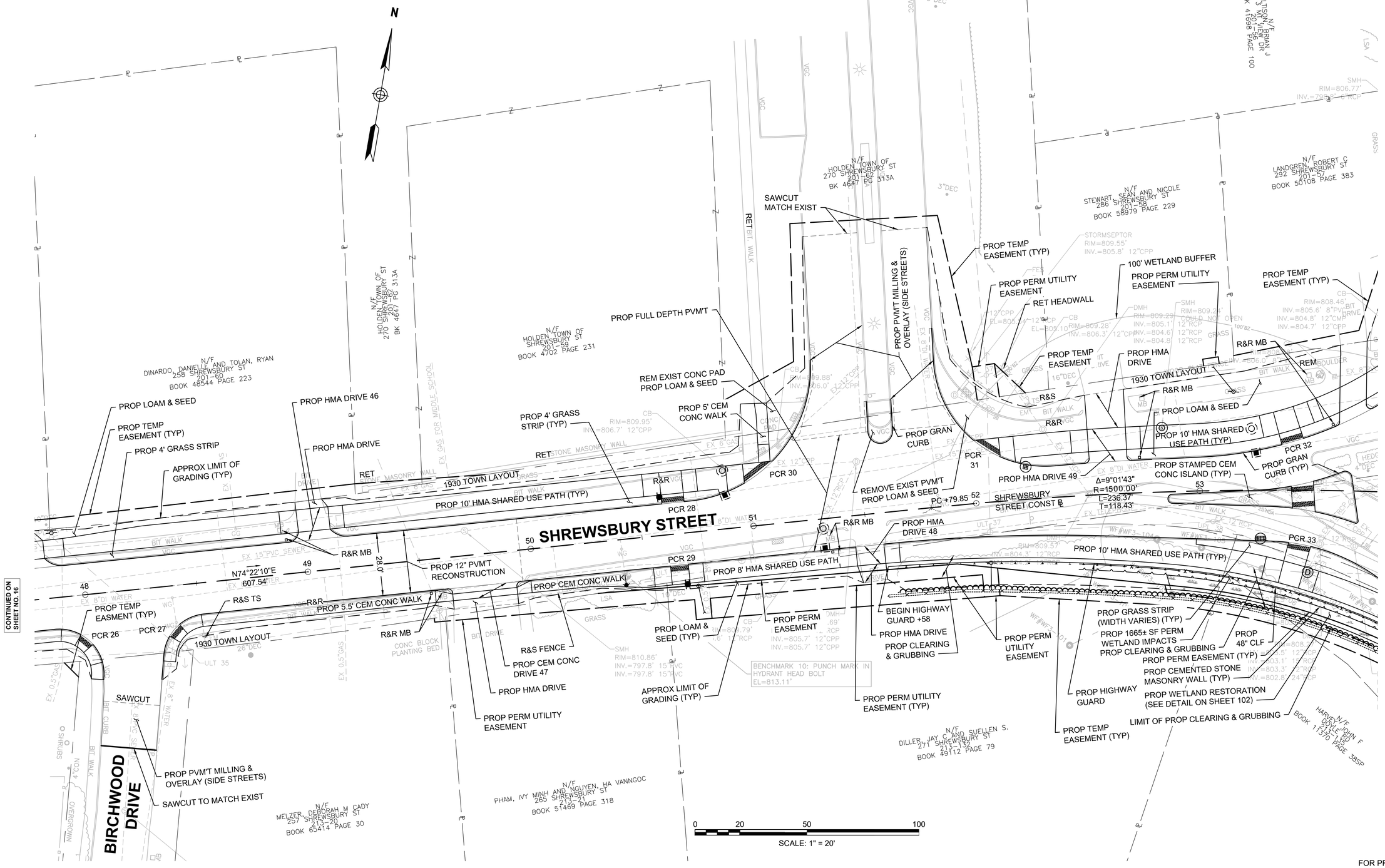
DRAINAGE DETAILS

SEE SHEET 91

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	17	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS



FOR PROFILE PLANS
SEE SHEET 29

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:10 PM

HIGHWAY GUARD DETAILS
HIGHWAY GUARDRAIL, TL-2, STA 51+71 RT TO STA 351+26 RT
TANGENT END SECTION, TL-2, STA 351+26 RT

TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
SEE SHEET 92

DRAINAGE DETAILS
SEE SHEET 92

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	18	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

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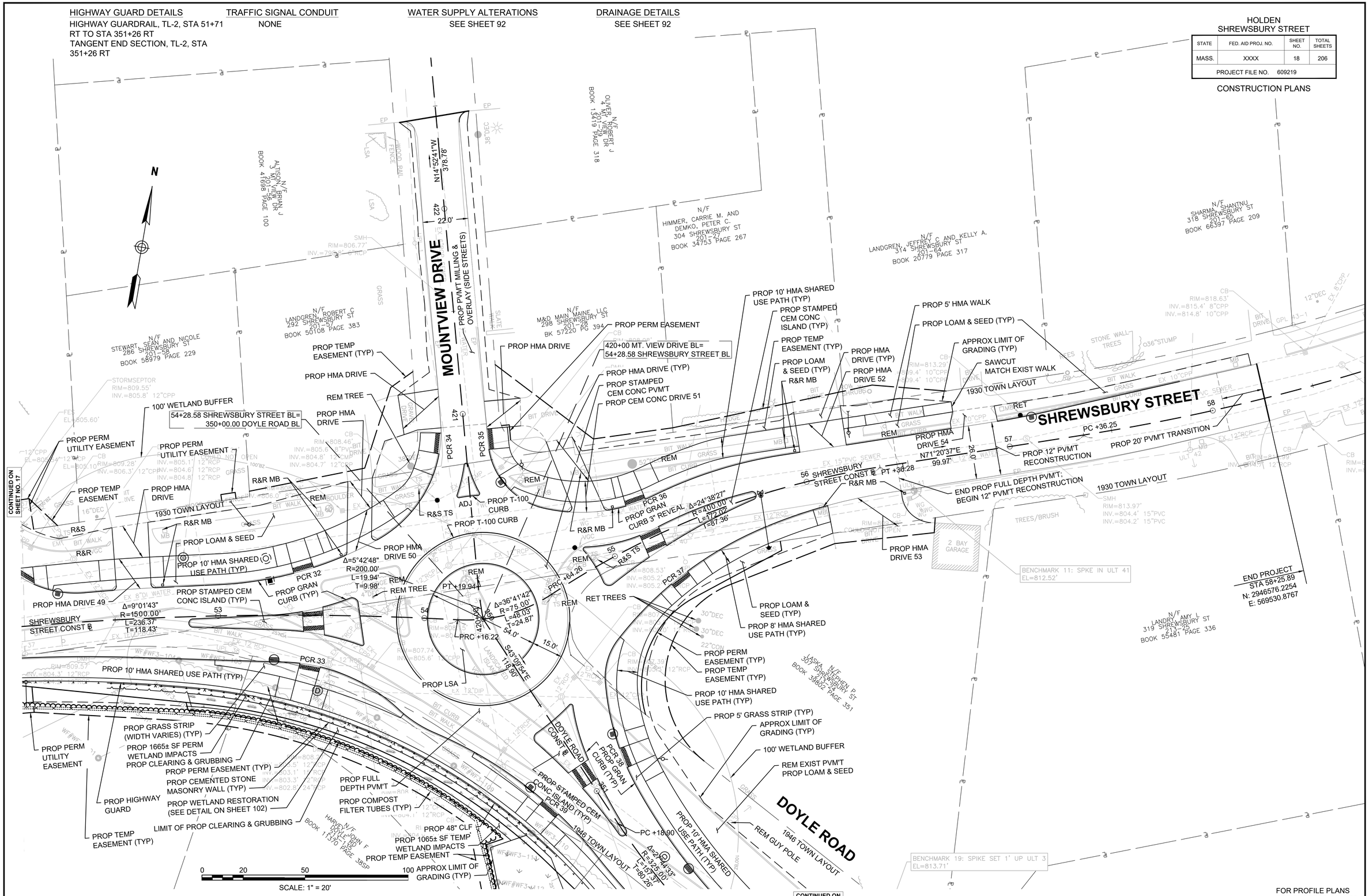


CONTINUED ON SHEET NO. 17

CONTINUED ON SHEET NO. 19

FOR PROFILE PLANS SEE SHEET 30, 33, & 39

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	19	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

HIGHWAY GUARD DETAILS

HIGHWAY GUARDRAIL, TL-2,
STA 51+71 RT TO STA 351+26 RT
TANGENT END SECTION, TL-2,
STA 351+26 RT

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 93

DRAINAGE DETAILS

SEE SHEET 93

DOYLE ROAD

1946 TOWN LAYOUT

N/F
LASKA, STEPHEN P.
307 SHREWSBURY ST
213-24
BOOK 39802 PAGE 351

N/F
DONALDSON, STEVEN AND SUZANNE
22 DOYLE RD
213-26
BOOK 21435 PAGE 165

N/F
HUDSON, KATHERINE R
32 DOYLE RD
213-32
BOOK 37540 PAGE 371

N/F
WOLFE, JOANN M
34 DOYLE RD
213-137
BOOK 5339 PAGE 53

N/F
STONE, WILLIAM C.
42 DOYLE RD
213-53
BOOK 52737 PAGE 50

N/F
KASPARSON, NORMAN L AND ANJ
43 BRATTLE ST
213-36
BOOK 4354 PAGE 81

BENCHMARK 19: SPIKE SET 1' UP ULT 3
EL=813.71'

BENCHMARK 20: SPIKE SET 1' UP ULT 7
EL=822.01'

PROP TEMP EASEMENT (TYP)
REM GUY POLE
PROP LOAM & SEED (TYP)
PROP HMA DRIVE
RET TREE
PROP GRASS STRIP (WIDTH VARIES) (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP PERM UTILITY EASEMENT
END PROP FULL DEPTH PVM'T; BEGIN PVM'T MILLING & OVERLAY
PROP HMA DRIVE R&R MB
PROP LOAM & SEED (TYP)
PROP PERM UTILITY EASEMENT
PROP HMA DRIVE
PROP MULCH
PROP 4' GRASS STRIP (TYP)
PROP TREE PROTECTION FENCE
PROP TREE TRIMMING
PROP LOAM & SEED (TYP)
PROP 5' CEM CONC WALK
PROP HMA DRIVE
RET WALL
PROP HMA DRIVE (TYP)
PROP CEM CONC DRIVE 61
PROP TEMP EASEMENT (TYP)
PROP LOAM & SEED (TYP)
PROP CLEARING & GRUBBING
PROP 5' CEM CONC WALK (TYP)
PROP 10' HMA SHARED USE PATH (TYP)
PROP CEM CONC DRIVE 57
Δ=8°52'42"
R=523.00'
L=81.04'
T=40.60'
PT +72.28
PC +91.24
SAWCUT
PROP CEM CONC DRIVE 58
PROP CEM CONC DRIVE 60
S62°01'45"E
165.29'
R&R MB
PC +37.57
Δ=0°16'19"
R=5000.00'
L=23.72'
PT +61.29
T=11.86'
PROP PVM'T MILLING & OVERLAY
357
DOYLE ROAD
CONST ℄
PC +18.90
Δ=21°44'33"
R=325.00'
L=157.37'
T=80.26'
PT +76.27
S70°54'27"E
114.97'
PROP HMA DRIVE 55
PROP GRAN CURB (TYP)
PROP GRAN CURB (TYP)
PROP 8' HMA SHARED USE PATH
PROP 8' HMA SHARED USE PATH (TYP)
PROP FULL DEPTH PVM'T
PROP LOAM & SEED (TYP)
100' WETLAND BUFFER (TYP)
PROP HMA DRIVE (TYP)
PROP HMA DRIVE 56
PROP TEMP EASEMENT (TYP)
PROP GRASS STRIP
PROP HMA DRIVE (TYP)
PROP HMA DRIVE 59
PROP TEMP EASEMENT (TYP)
PROP TREE PROTECTION - ARMORING & PRUNING (TYP)
PROP 5' GRASS STRIP
RET TREE
PROP HMA DRIVE 62
PROP HMA DRIVE
PROP HMA DRIVE 63
PROP HMA DRIVE
PROP 5' GRASS STRIP
RET TREE
PROP WETLAND REPLICATION AREA
END HIGHWAY GUARD +39
PROP TEMP EASEMENT
PROP COMPOST FILTER TUBES (TYP)
PROP PERM EASEMENT
REM CONC PAD
PROP GRASS STRIP (WIDTH VARIES) (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP PERM UTILITY EASEMENT
PROP CLEARING & GRUBBING

N/F
HOLDEN TOWN OF
DOYLE RD
213-23
BOOK 4526 PAGE 29

N/F
HARVEY, JOHN F
DOYLE RD
213-135
BOOK 11370 PAGE 385

N/F
OLEARY, MICHAEL
29 DOYLE RD
213-136
BOOK 61342 PAGE 264

N/F
VAJDA, JOSEPH J AND MARY L.
33 DOYLE RD
213-129
BOOK 30600 PAGE 108

N/F
ARVIDSON, MICHAEL R
39 DOYLE RD
213-130
BOOK 30576 PAGE 258

N/F
CADDEN, BARBARA J
47 DOYLE RD
213-131
BOOK 18648 PAGE 32

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 18

CONTINUED ON SHEET NO. 20

FOR PROFILE PLANS SEE SHEETS 33-34

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:10 PM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 94

DRAINAGE DETAILS

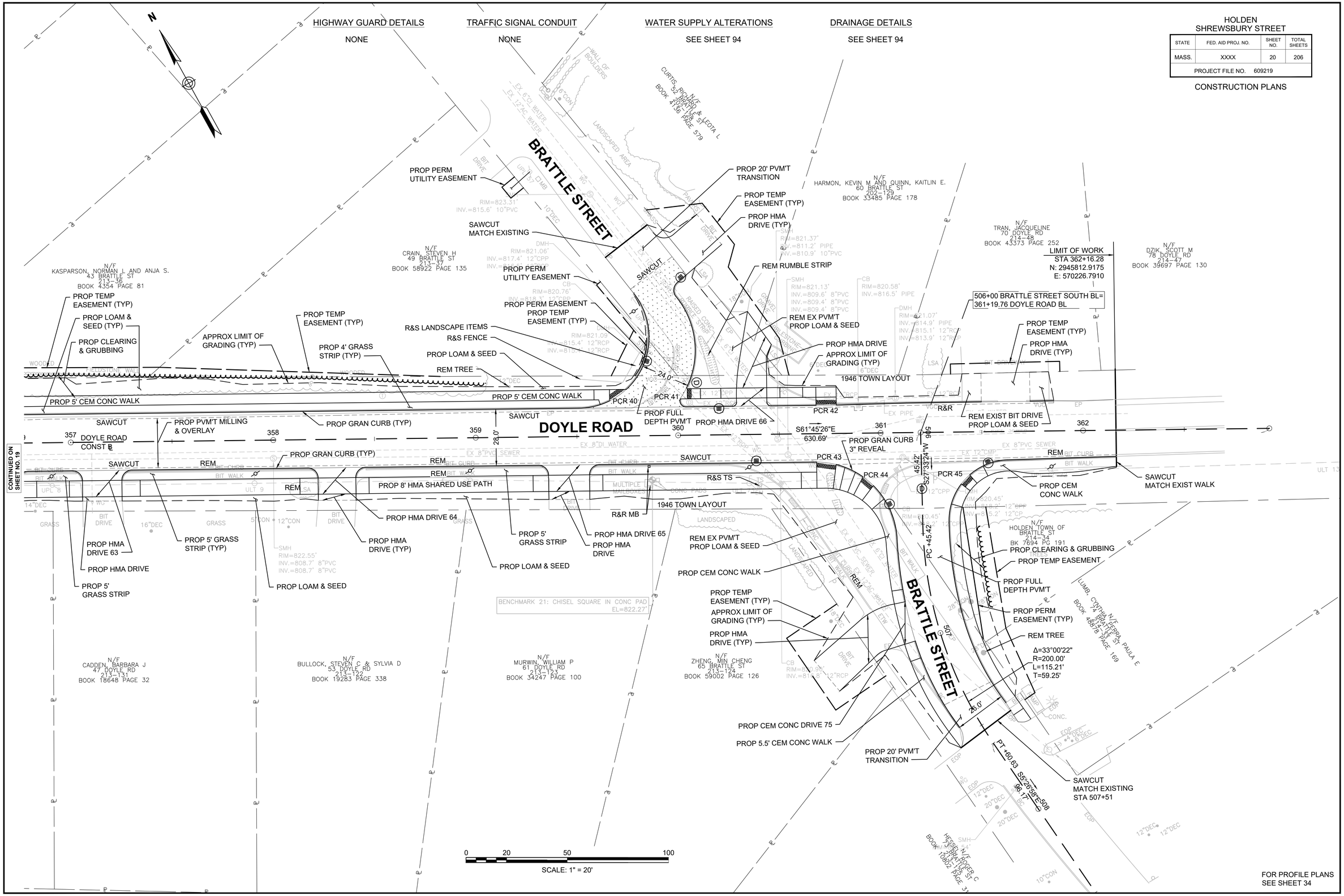
SEE SHEET 94

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	20	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:11 PM



HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 95

DRAINAGE DETAILS

SEE SHEET 95

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	21	206
PROJECT FILE NO. 609219			

CONSTRUCTION PLANS

609219_HD(GEN).DWG Plotted on 4-Jan-2023 1:11 PM

N/F VAUGH, RAYMOND E & RITA E 44 CHAPEL ST 200-11 BOOK 36048 PAGE 97

N/F WOODWARD, BRUCE L 40 CHAPEL ST 200-12 BOOK 49971 PAGE 103

N/F ROSEN, MICHAEL J 36 CHAPEL ST 200-13 BOOK 12399 PAGE 226

N/F BRAMAN, DAVID N. AND PAMELA 28 CHAPEL ST 200-14 BOOK 53824 PAGE 129

N/F CASTAGNA, RITA M 20 CHAPEL ST 200-15 BOOK 19178 PAGE 331

N/F DEWITT, STEVEN H 4 CHAPEL ST 200-16 BOOK 25691 PAGE 319

LIMIT OF WORK
STA 200+72.00
N: 2947187.3084
E: 567303.1122

LIMIT OF PAVING
STA 202+34.90
N: 2947024.7089
E: 567293.1541

BENCHMARK 18: SPIKE SET 1' UP UPL 3
EL=745.57'

PROP TEMP EASEMENT (TYP)
PROP PERM UTILITY EASEMENT (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP LOAM & SEED (TYP)
PROP CLEARING & GRUBBING
PROP TREE PROTECTION FENCE
RET ROW OF TREES
PROP PERM EASEMENT
PROP HMA DRIVE
PROP CEM CONC DRIVE 68
REM TREE
R&R MB
1947 TOWN LAYOUT
PROP 5.5' CEM CONC WALK
REM WOOD TIMBER CURBING
REM BIT CURB
PROP GRAN CURB CORNER (TYP)
PROP GRAN CURB 3" REVEAL
PROP CEM CONC DRIVE 67
PROP 5' CEM CONC WALK
PROP GRAN CURB (TYP)
R&S FENCE
SAWCUT
CONTINUED ON SHEET NO. 14

CHAPEL STREET

200+00
201
202
203
204
205
37.0'
S3°30'16"W
1227.63'
CHAPEL-HOLDEN STREET CONST
PROP PVM'T MILLING & OVERLAY
PROP GRAN CURB (TYP)
PROP FULL DEPTH PVM'T WIDENING
EX 8"PVC SEWER
EX 10"RCP

PROP TREE PROTECTION FENCE
PROP TEMP EASEMENT (TYP)
APPROX LIMIT OF GRADING (TYP)
PROP HMA DRIVE
REM TREE
R&R STONES & BOULDERS
PROP HMA DRIVE
RET TREE
REM TREE
COTE, JERROLD O AND CECILE M. 146 SHREWSBURY ST 200-104 BOOK 30144 PAGE 321
PROP PERM EASEMENT

N/F DIPILATO, THOMAS E 19 CHAPEL ST 200-105 BK 13861 PG 356

N/F VERDINI, PAUL M 45 CHAPEL ST 200-98 BOOK 19176 PAGE 286

N/F DACRI, LOUISE A TRUSTEE CHAPEL ST 200-99 BOOK 25348 PAGE 119

N/F DACRI, ROBERT J AND JUDITH M. 33 CHAPEL ST 200-95 BOOK 12339 PAGE 111

0 20 50 100
SCALE: 1" = 20'

N/F SARY, LEAK AND CAREEPY, VORAK T. 171 SHREWSBURY ST 213-1 BOOK 33457 PAGE 168

N/F TIEMO, AEMI AND OJEIKERE, OLUFEMI 14 HOLDEN ST 213-87 BOOK 39048 PAGE 68

N/F HADLEY, RYAN T 22 HOLDEN ST 213-86 BOOK 55722 PAGE 341

N/F GERECEKEN, DAVID AND SUZANNE 30 HOLDEN ST 213-134 BK 18172 PG 327

N/F RIEDLE, JESSE M 31 HOLDEN ST 213-132 BOOK 58538 PAGE 264

BENCHMARK 17: SPIKE SET 1' UP ULT #15
EL=750.55'

LIMIT OF WORK
STA 213+46.09
N: 2945915.5171
E: 567234.3944

N/F BROWN, RICHARD ONEIL 40 HOLDEN ST 213-84 BOOK 20630 PAGE 58

PROP TEMP EASEMENT (TYP)
PROP PERM UTILITY EASEMENT (TYP)
PROP CLEARING & GRUBBING
REM & REBUILT BALANCE STONE WALL
R&S 9' OF FIELDSTONE WALL
PROP PERM EASEMENT
PROP HMA DRIVE
PROP TEMP EASEMENT
PROP PERM UTILITY EASEMENT (TYP)
REM TREE
PROP HMA DRIVE
R&S 21' FIELDSTONE WALL
RET TREE
R&S LP
PROP TREE TRIMMING
APPROX LIMIT OF GRADING (TYP)
RET TREE
PROP TEMP EASEMENT (TYP)
PROP LOAM & SEED (TYP)
RET TREE
PROP HMA DRIVE
1943 TOWN LAYOUT
PROP 5.5' CEM CONC WALK
R&R STONE WALL
PROP CEM CONC DRIVE 71
PROP FULL DEPTH PVM'T WIDENING
PROP GRAN CURB 12" REVEAL
PROP GRAN CURB 8" REVEAL
PROP CEM CONC DRIVE 73
PROP CEM CONC DRIVE 74
PROP CEM CONC DRIVE 72
PROP GRAN CURB CORNER (TYP)
PROP PVM'T MILL & OVERLAY
SAWCUT
209
210
211
212
213
43.0'
S3°30'16"W
1227.63'
CHAPEL-HOLDEN STREET CONST
PC +27.63
PROP GRAN CURB 8" REVEAL
Δ=9°39'16"
R=765.00'
L=128.90'
T=64.60'
PT +56.53
S6°08'59"E
39.58'
213+96.11
CONTINUED ON SHEET NO. 14

HOLDEN STREET

PROP CEM CONC DRIVE 70
PROP GRAN CURB (TYP)
PROP 5.5' CEM CONC WALK
PROP CEM CONC WALK
1943 TOWN LAYOUT
PROP HMA DRIVE
PROP TEMP EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP HMA DRIVE
PROP HMA DRIVE (TYP)
APPROX LIMIT OF GRADING (TYP)
R&R CONC PAVERS
RET TREE
PROP TEMP EASEMENT
PCR 46
PCR 47
RET TREE
PROP PERM UTILITY EASEMENT
PROP TEMP EASEMENT
REM EXIST WALK
PROP LOAM & SEED

MARLEN ROAD
PROP PVM'T MILLING & OVERLAY (SIDE STREET'S)

N/F HOLDEN TOWN OF 1 HOLDEN ST 200-23 BOOK 2271 PAGE 545

N/F HOLDEN TOWN OF HOLDEN ST 200-24 BOOK 2548 PAGE 363

N/F BEDIAKO, NICOLE 27 HOLDEN ST 200-25 BOOK 55157 PAGE 272

N/F BREEN, TIMOTHY E AND KATHLEEN M. 37 HOLDEN ST 212-66 BOOK 17486 PAGE 126

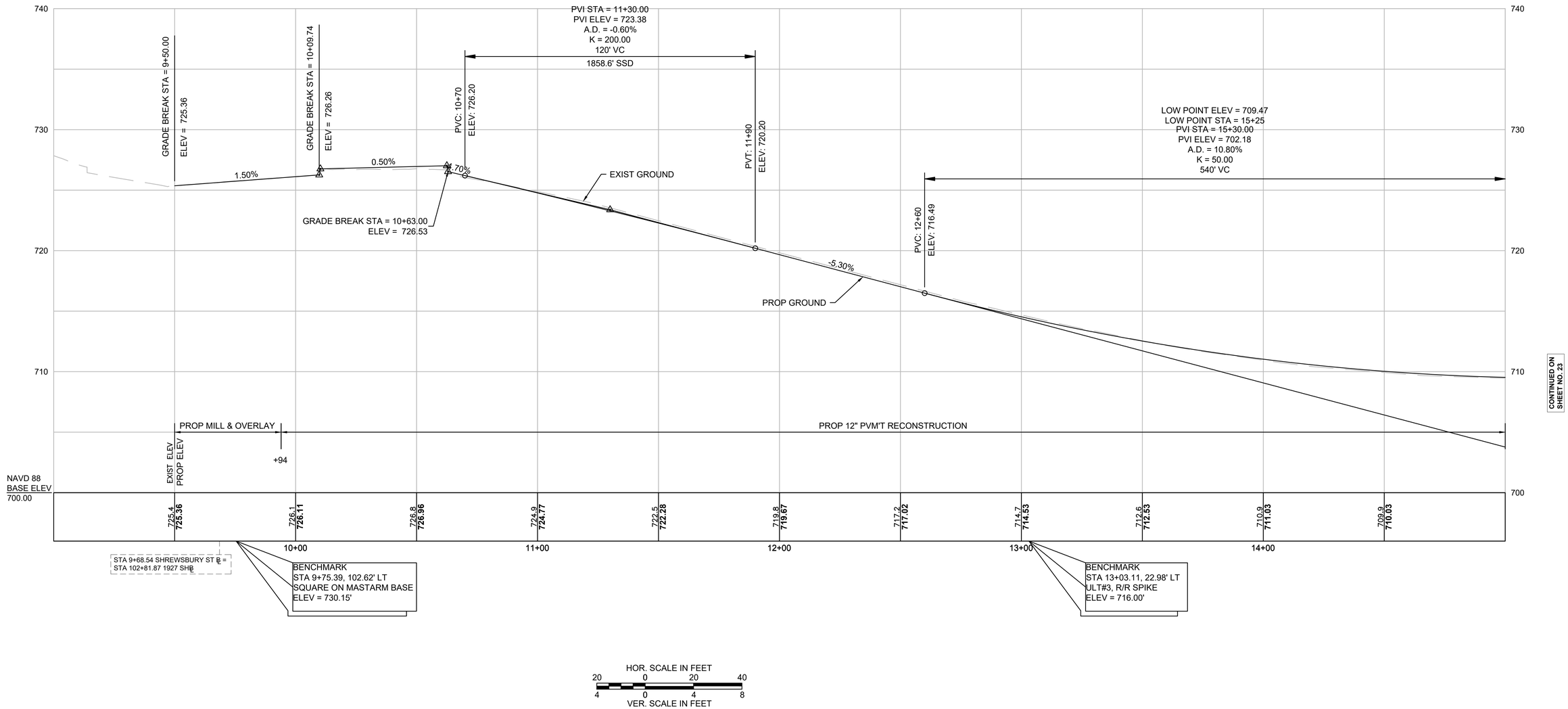
0 20 50 100
SCALE: 1" = 20'

FOR PROFILE PLANS
SEE SHEETS 31-32

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	22	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET



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

609219_HD(PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	23	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET

CONTINUED ON SHEET NO. 22

CONTINUED ON SHEET NO. 24

740
730
720
710
700
690

LOW POINT ELEV = 709.47
LOW POINT STA = 15+25
PVI STA = 15+30.00
PVI ELEV = 702.18
A.D. = 10.80%
K = 50.00
540' VC

PVT: 18+00
ELEV: 717.03

5.50%

PROP GROUND

EXIST GROUND

WACHUSETT STREET
+55 +80

SOUTH WACHUSETT STREET
+75 +95

BRIDGE NO. H-18-035
+00 +20

EXIST ELEV
PROP ELEV

EX 40" DIP

PROP 12" PVM'T RECONSTRUCTION

NAVD 88
BASE ELEV
690.00

15+00	16+00	17+00	18+00	19+00	20+00
709.5 / **709.53**	709.5 / **709.53**	710.1 / **710.03**	711.2 / **711.03**	712.8 / **712.53**	715.0 / **714.53**	717.4 / **717.03**	720.0 / **719.78**	722.8 / **722.53**	725.5 / **726.28**	728.2 / **728.03**

STA 16+75 SHREWSBURY ST ℄ =
STA 700+00 WACHUSETT ST ℄

BENCHMARK
STA 19+44.87, 27.62' RT
ULT#9, R/R SPIKE
ELEV = 726.76'

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

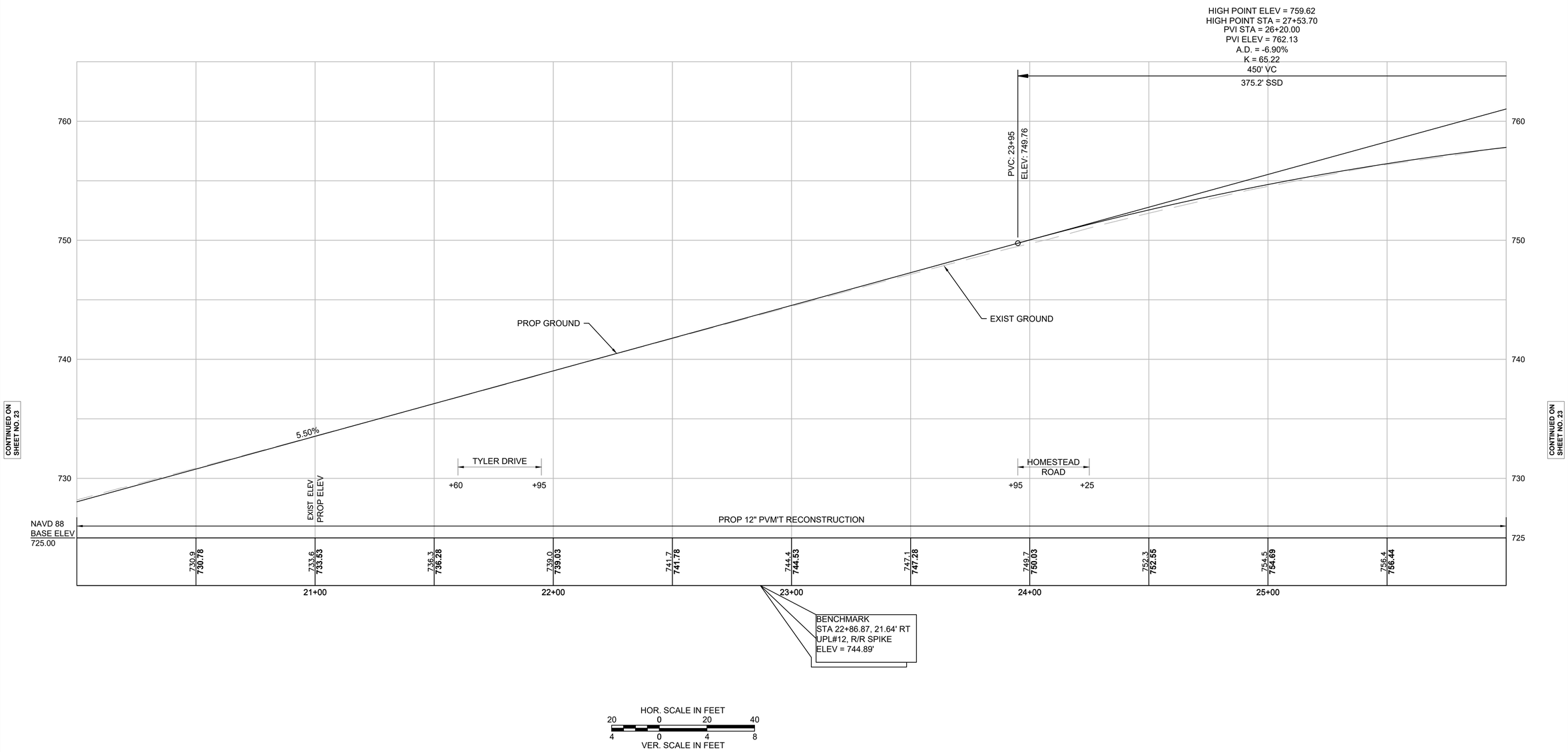
609219_HD\PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	24	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET

609219_HD\PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM



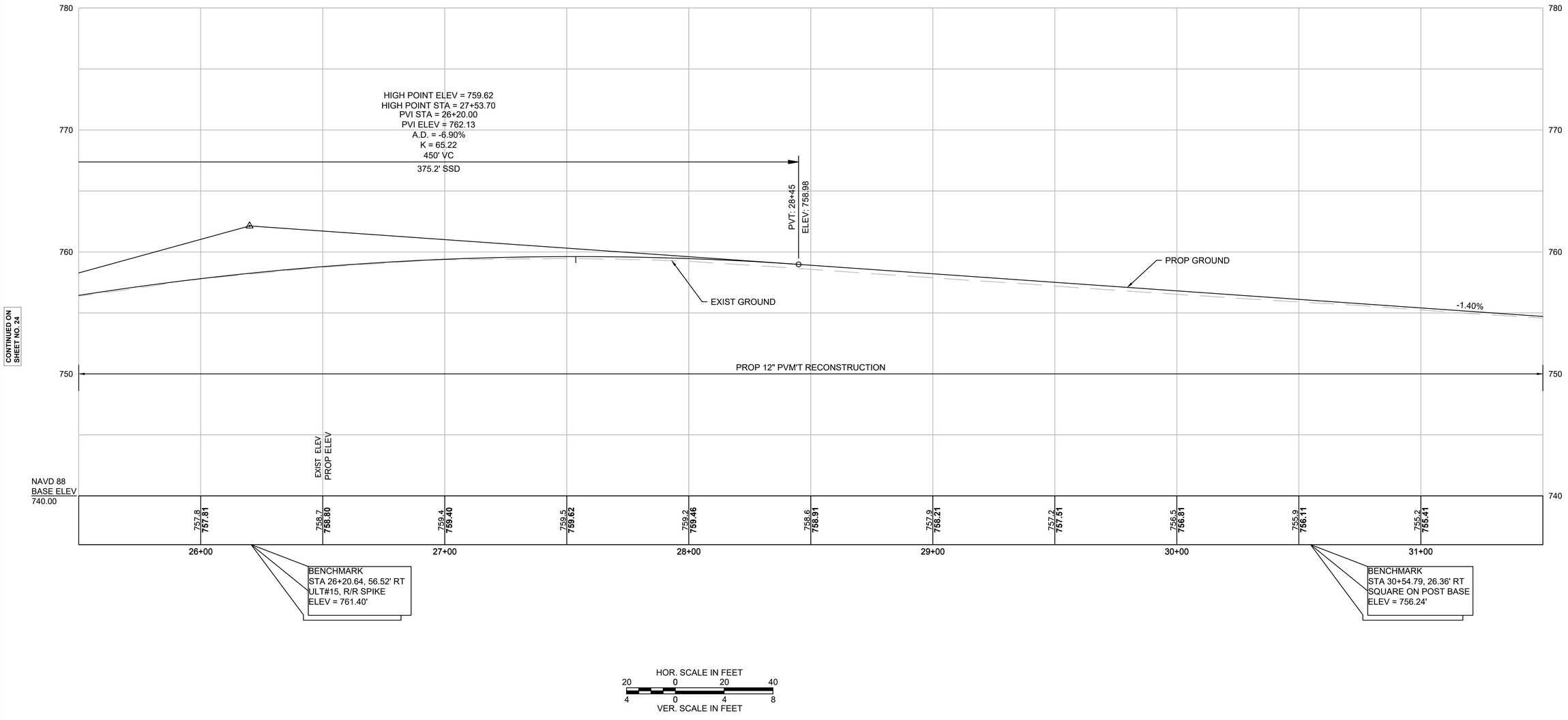
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	25	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET

609219_HD\PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM



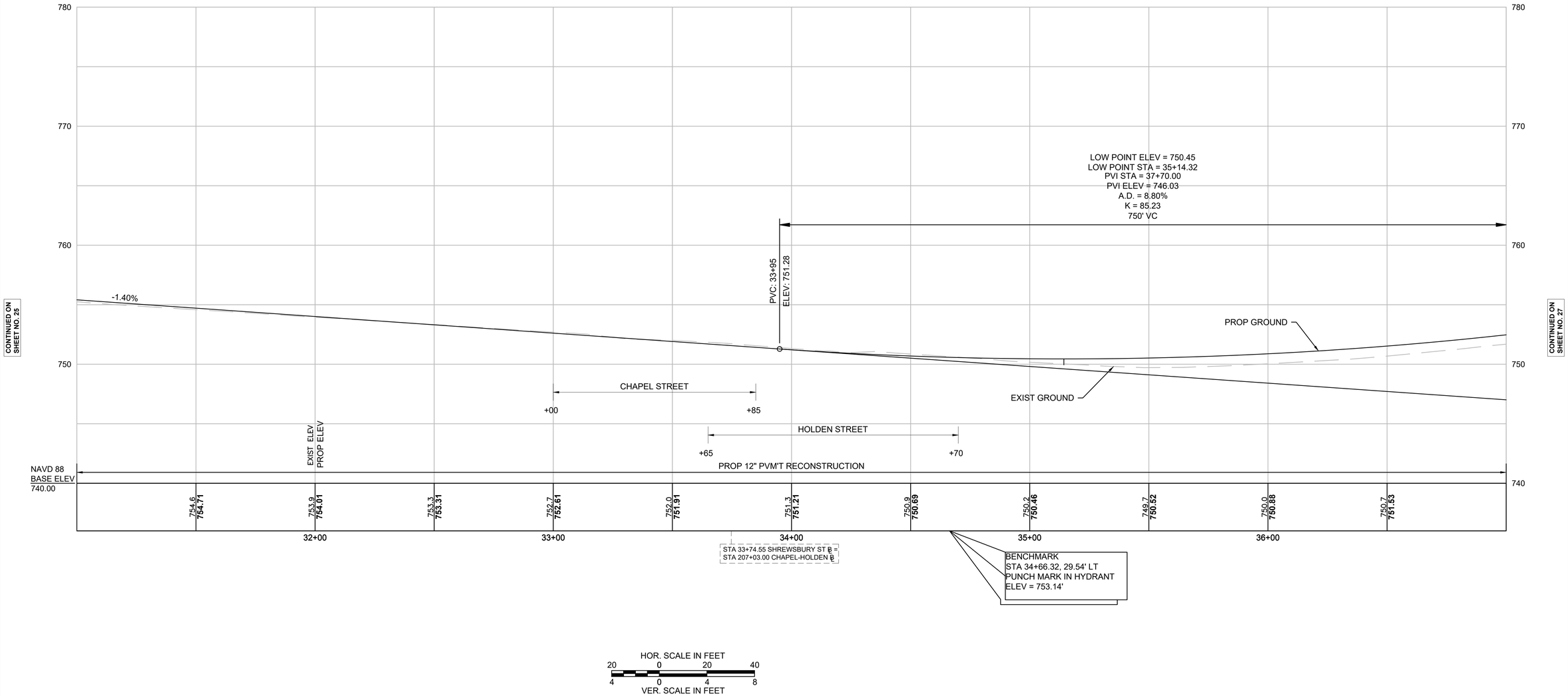
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	26	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET

609219_HD\PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

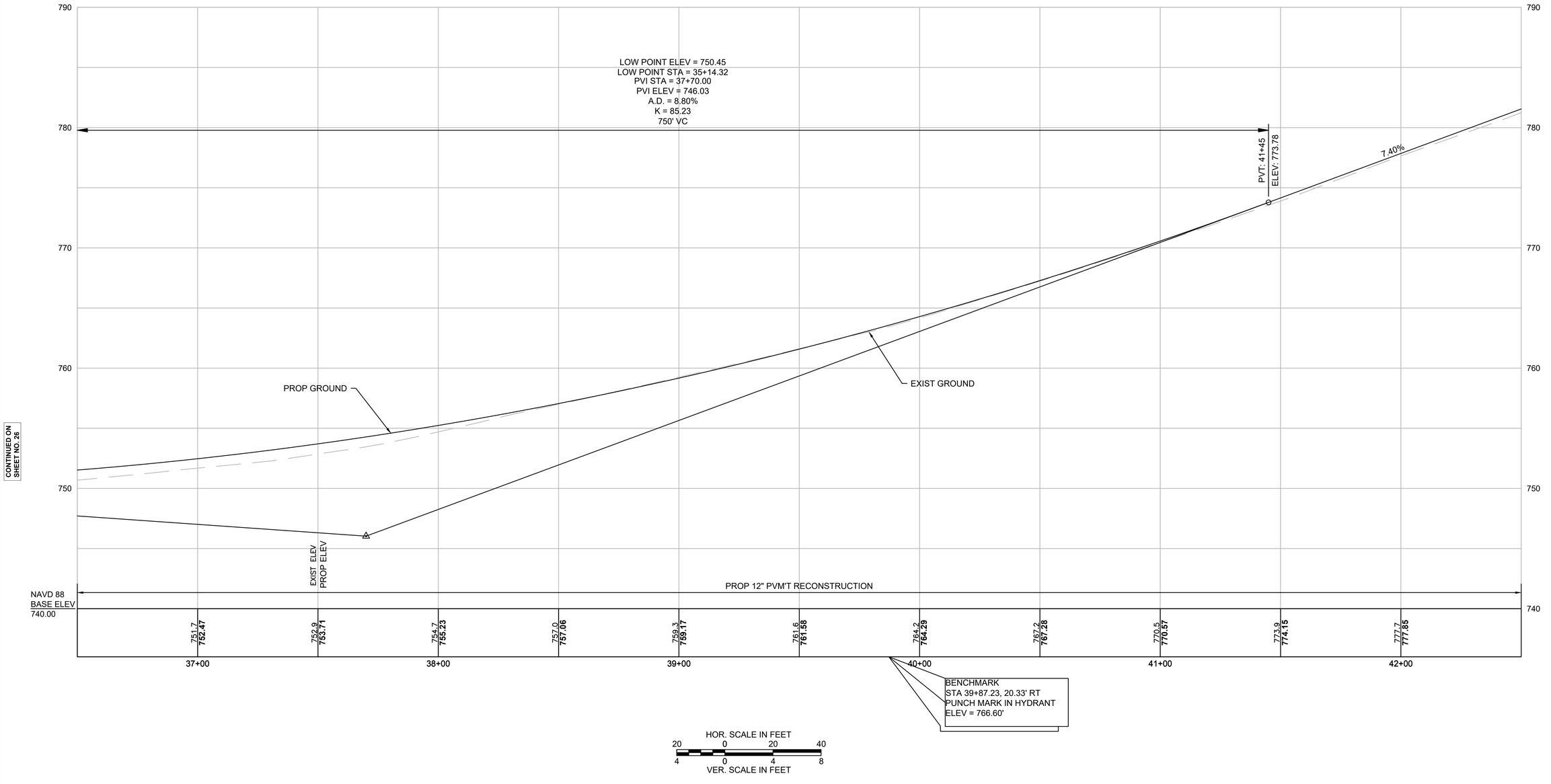


HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	27	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET



CONTINUED ON SHEET NO. 26

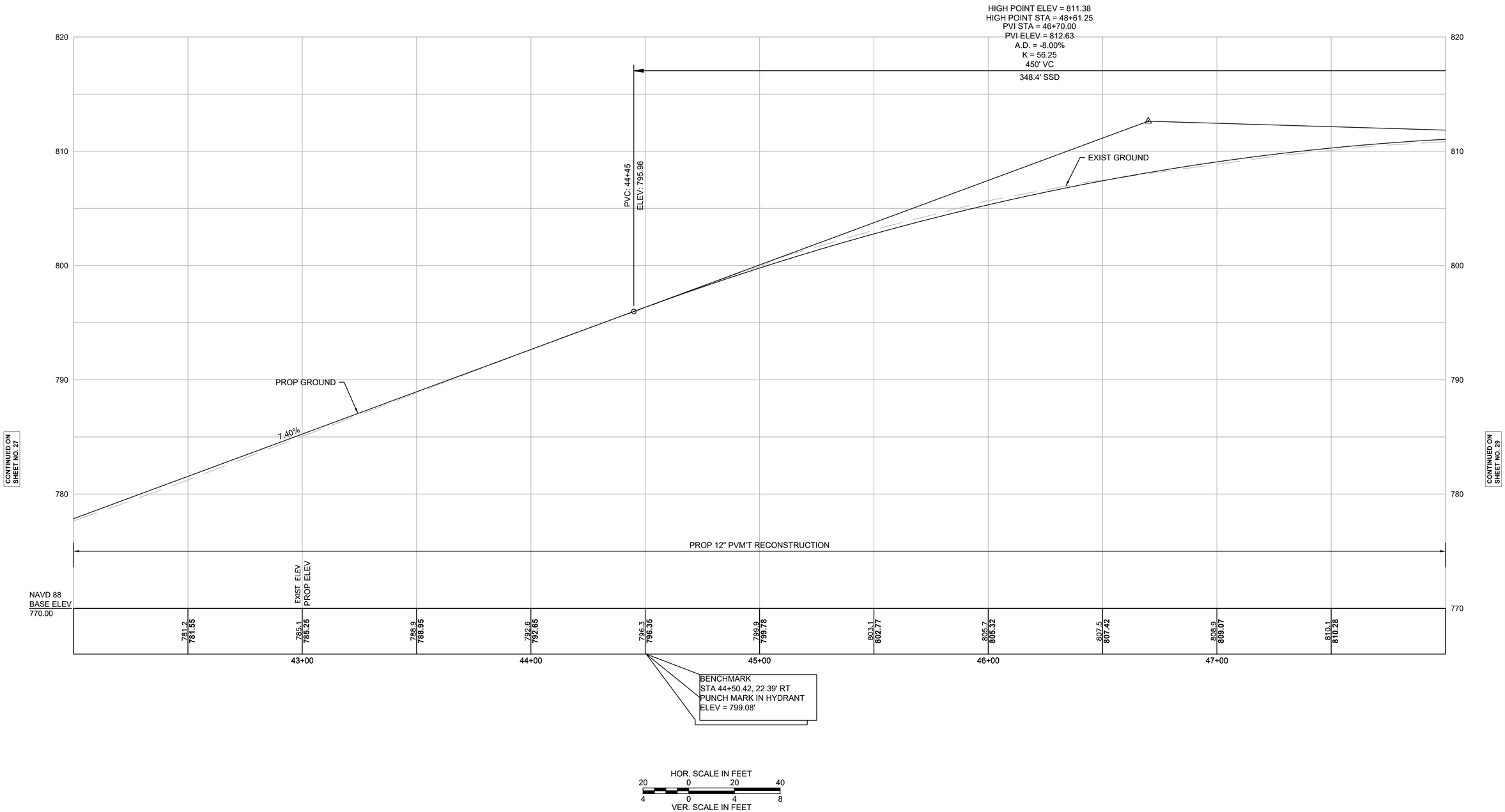
CONTINUED ON SHEET NO. 28

609219_HD(PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	28	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET



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

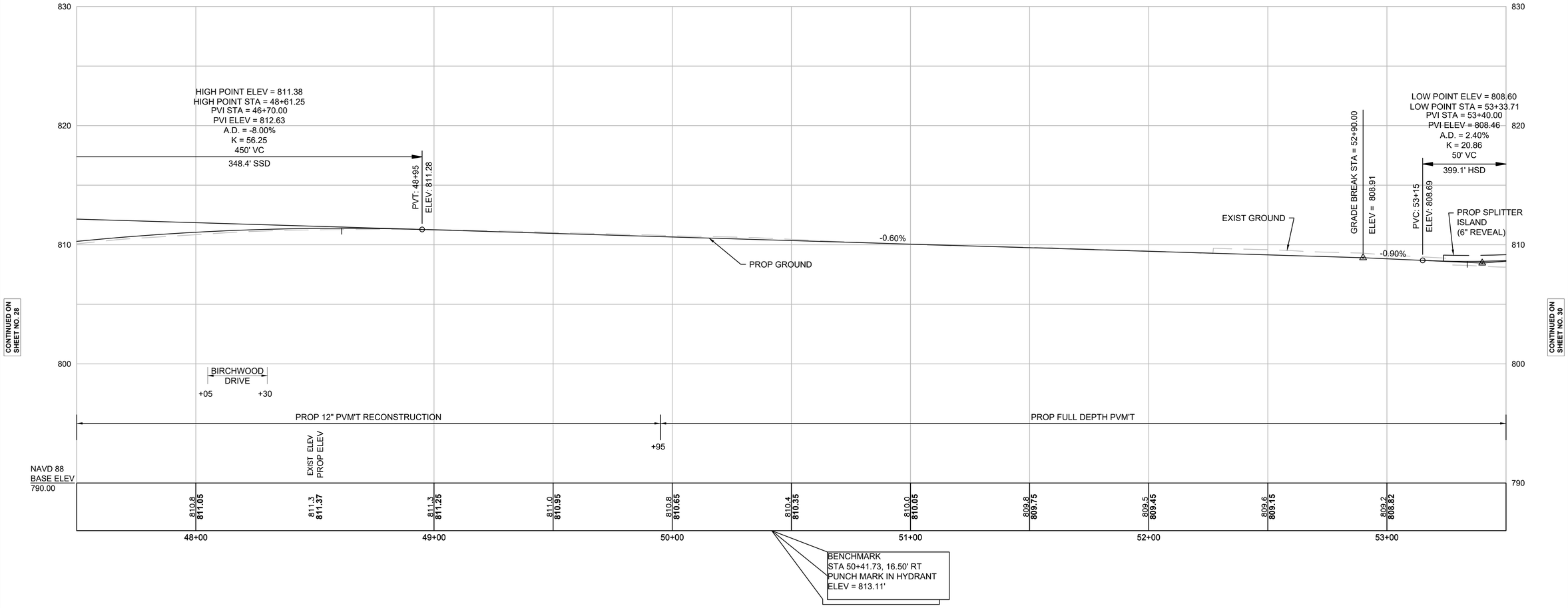
609219_HD\PROFILE_SHREWSBURY\.DWG Plotted on 4-Jan-2023 1:12 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	29	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET

609219_HD\PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

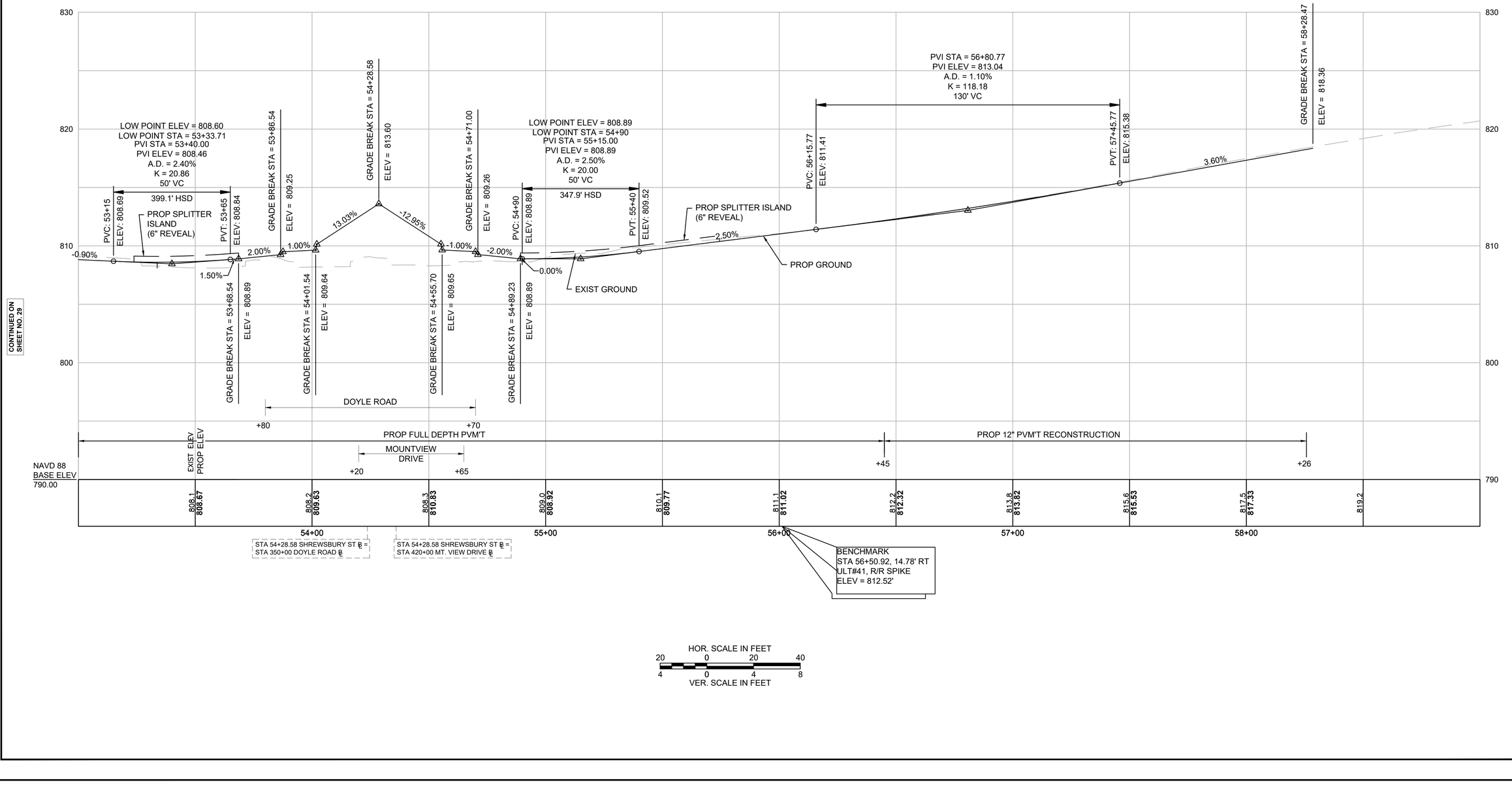


HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	30	206
PROJECT FILE NO. 609219			

PROFILE
SHREWSBURY STREET



CONTINUED ON SHEET NO. 29

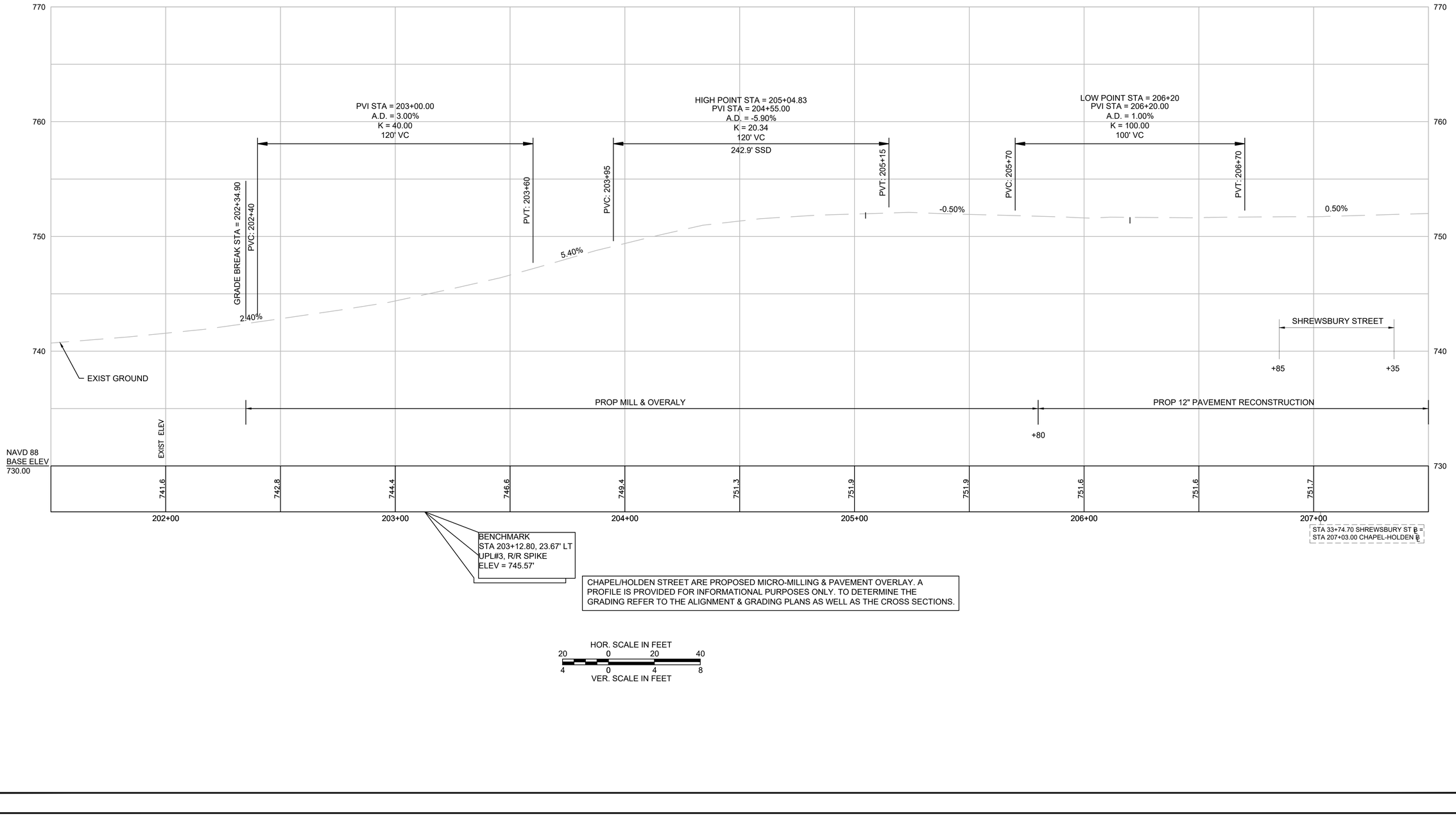
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

609219_HD(PROFILE_SHREWSBURY).DWG Plotted on 4-Jan-2023 1:12 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	31	206
PROJECT FILE NO. 609219			

PROFILE
CHAPEL STREET / HOLDEN STREET



CHAPEL/HOLDEN STREET ARE PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. A PROFILE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. TO DETERMINE THE GRADING REFER TO THE ALIGNMENT & GRADING PLANS AS WELL AS THE CROSS SECTIONS.

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

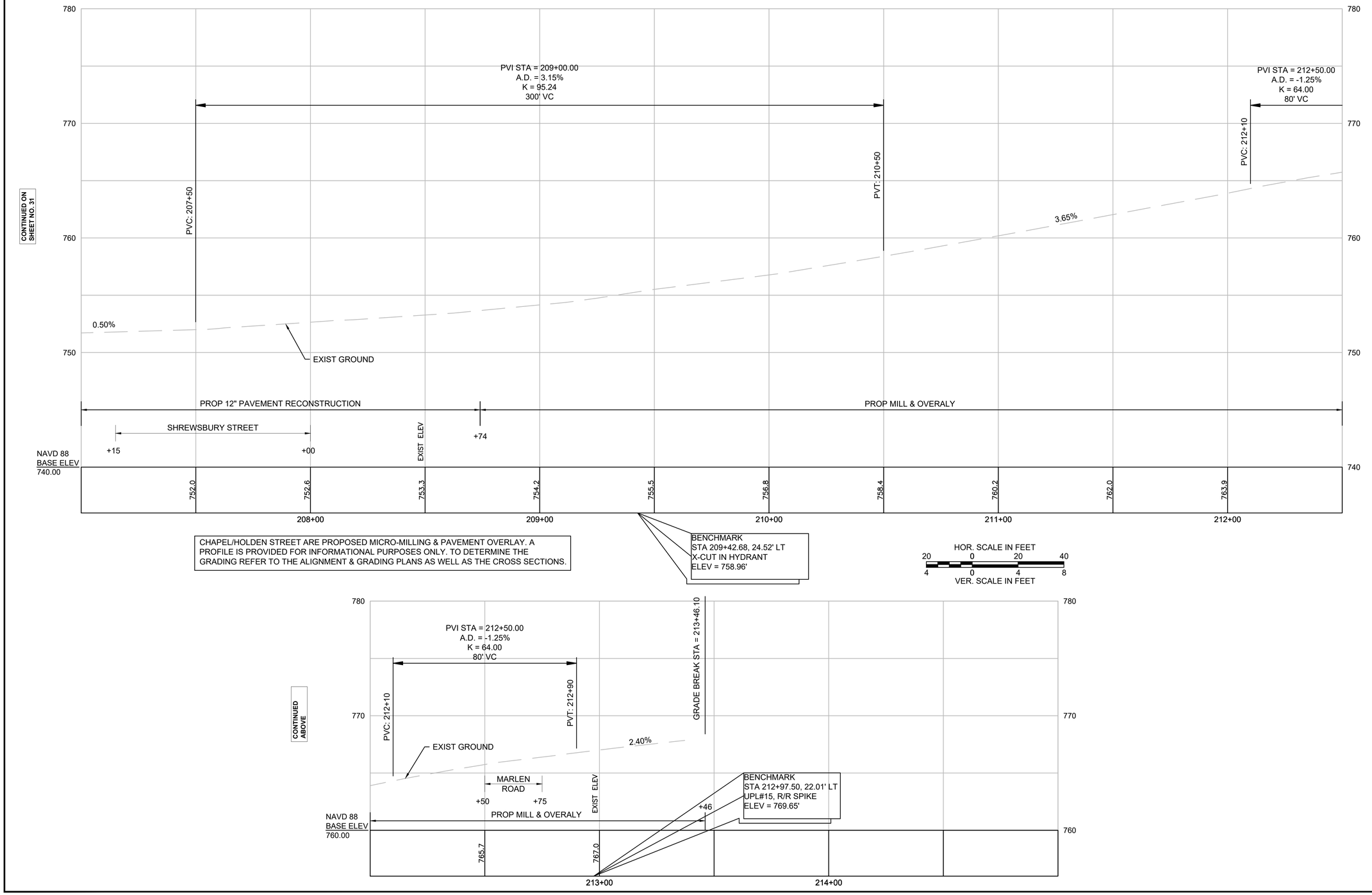
CONTINUED ON SHEET NO. 32

609219_HD\PROFILE_CHAPEL).DWG Plotted on 4-Jan-2023 1:13 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	32	206
PROJECT FILE NO. 609219			

PROFILE
CHAPEL STREET / HOLDEN STREET



CHAPEL/HOLDEN STREET ARE PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. A PROFILE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. TO DETERMINE THE GRADING REFER TO THE ALIGNMENT & GRADING PLANS AS WELL AS THE CROSS SECTIONS.

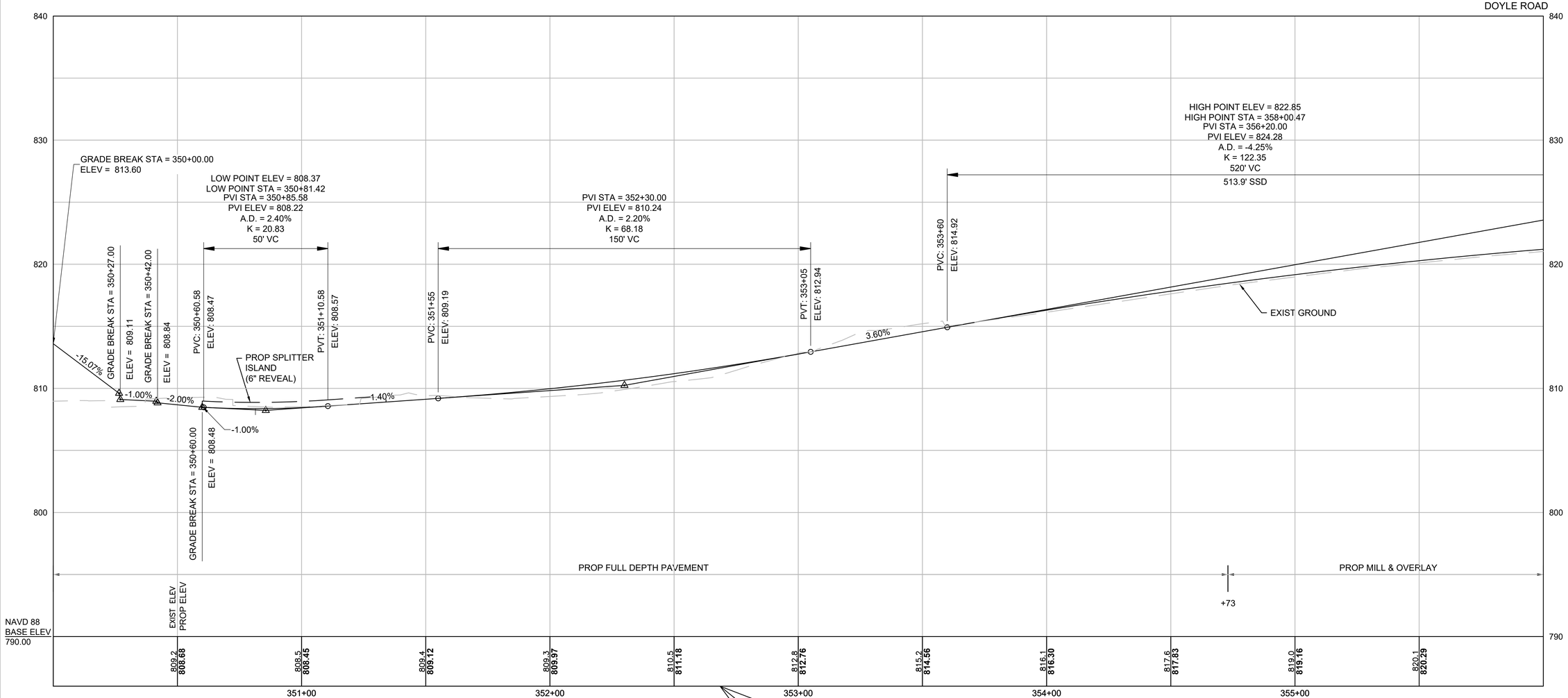
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

609219_HD(PROFILE_CHAPEL).DWG Plotted on 4-Jan-2023 1:13 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	33	206
PROJECT FILE NO. 609219			

PROFILE
DOYLE ROAD



BENCHMARK
STA 352+68.52, 8.20' LT
ULT#3, R/R SPIKE
ELEV = 813.71'

DOYLE ROAD IS PROPOSED MICRO-MILLING & PAVEMENT OVERLAY FROM STA 354+73 TO STA 362+16. MINOR PROFILE ADJUSTMENTS ARE PROPOSED FOR DOYLE ROAD TO RAISE THE PROFILE 1/4" HIGHER THAN EXISTING.

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

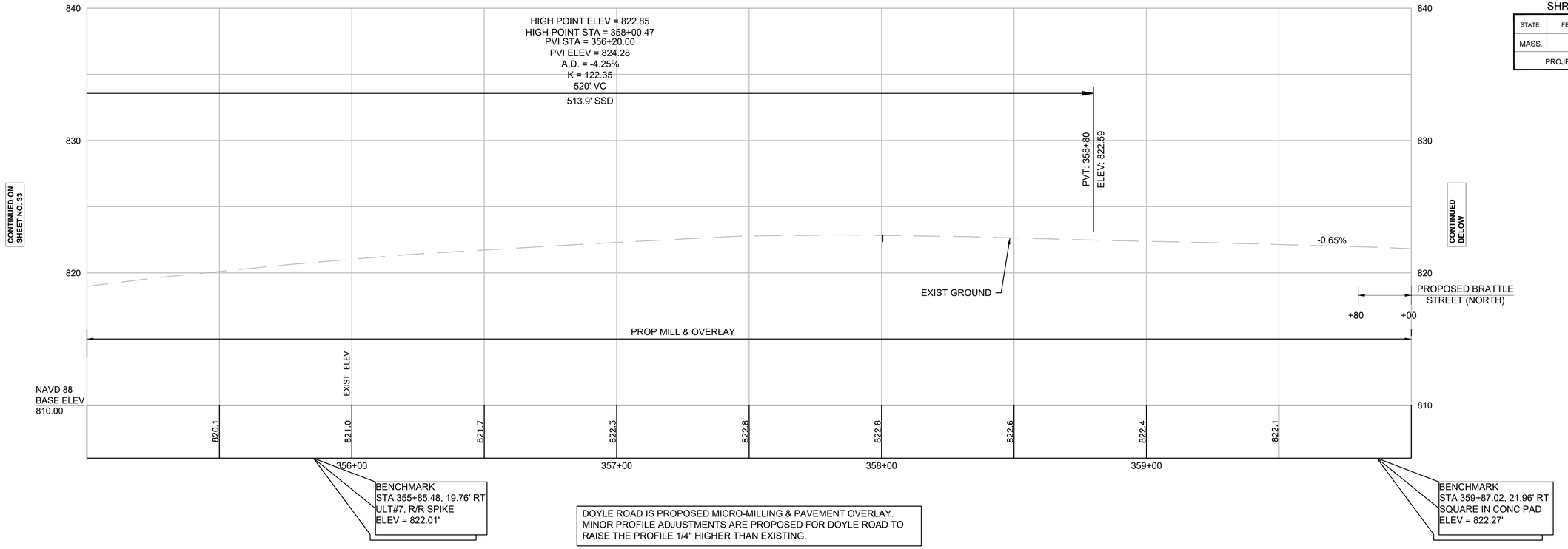
CONTINUED ON SHEET NO. 34

609219_HD(PROFILE_DOYLE).DWG Plotted on 4-Jan-2023 1:13 PM

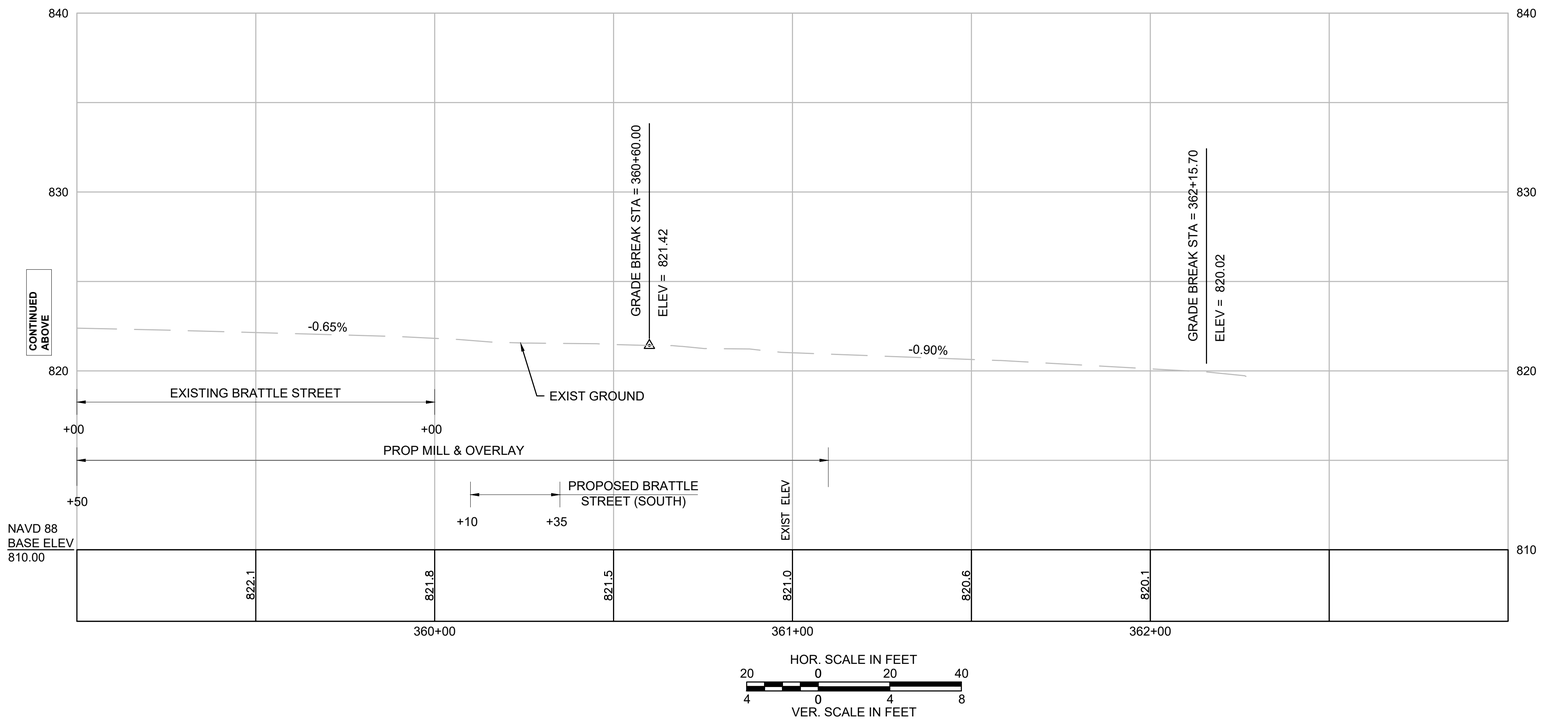
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	34	206
PROJECT FILE NO. 609219			

PROFILE
DOYLE ROAD



DOYLE ROAD IS PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. MINOR PROFILE ADJUSTMENTS ARE PROPOSED FOR DOYLE ROAD TO RAISE THE PROFILE 1/4" HIGHER THAN EXISTING.



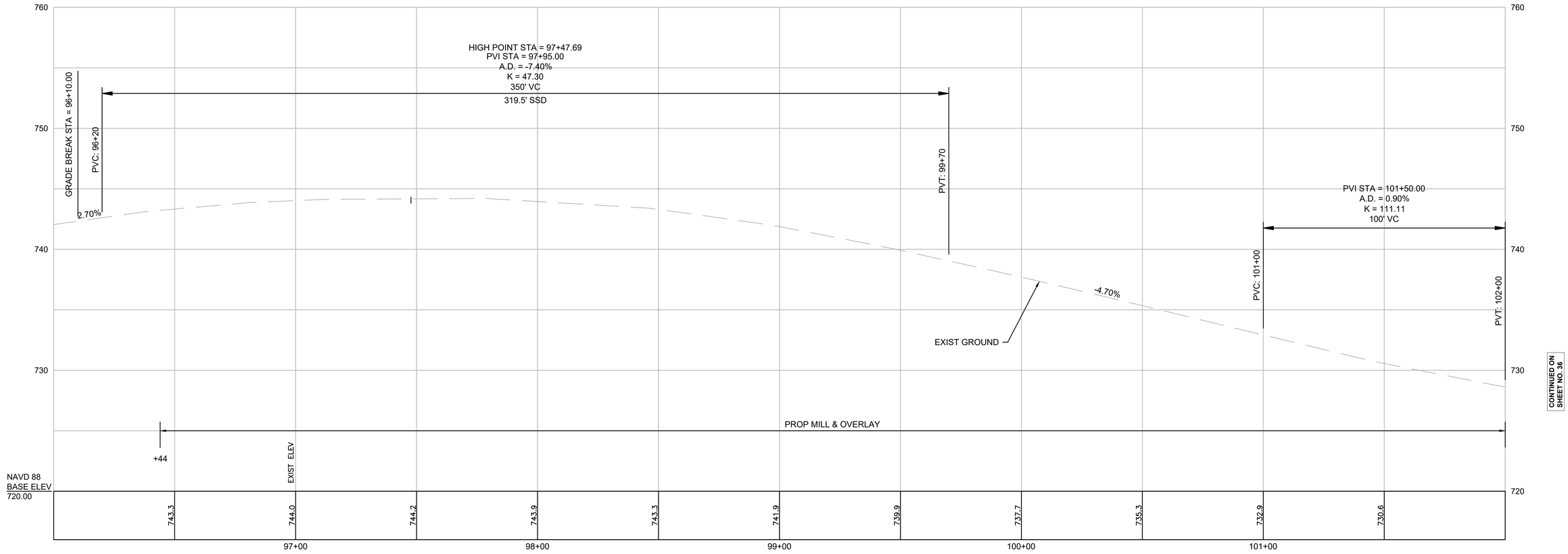
HOR. SCALE IN FEET
20 0 20 40
VER. SCALE IN FEET
4 0 4 8

609219_HD(PROFILE_DOYLE).DWG Plotted on 4-Jan-2023 1:14 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	35	206
PROJECT FILE NO. 609219			

PROFILE
MAIN STREET



MAIN STREET IS PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. NO PROFILE ADJUSTMENTS ARE PROPOSED FOR MAIN STREET. A PROFILE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

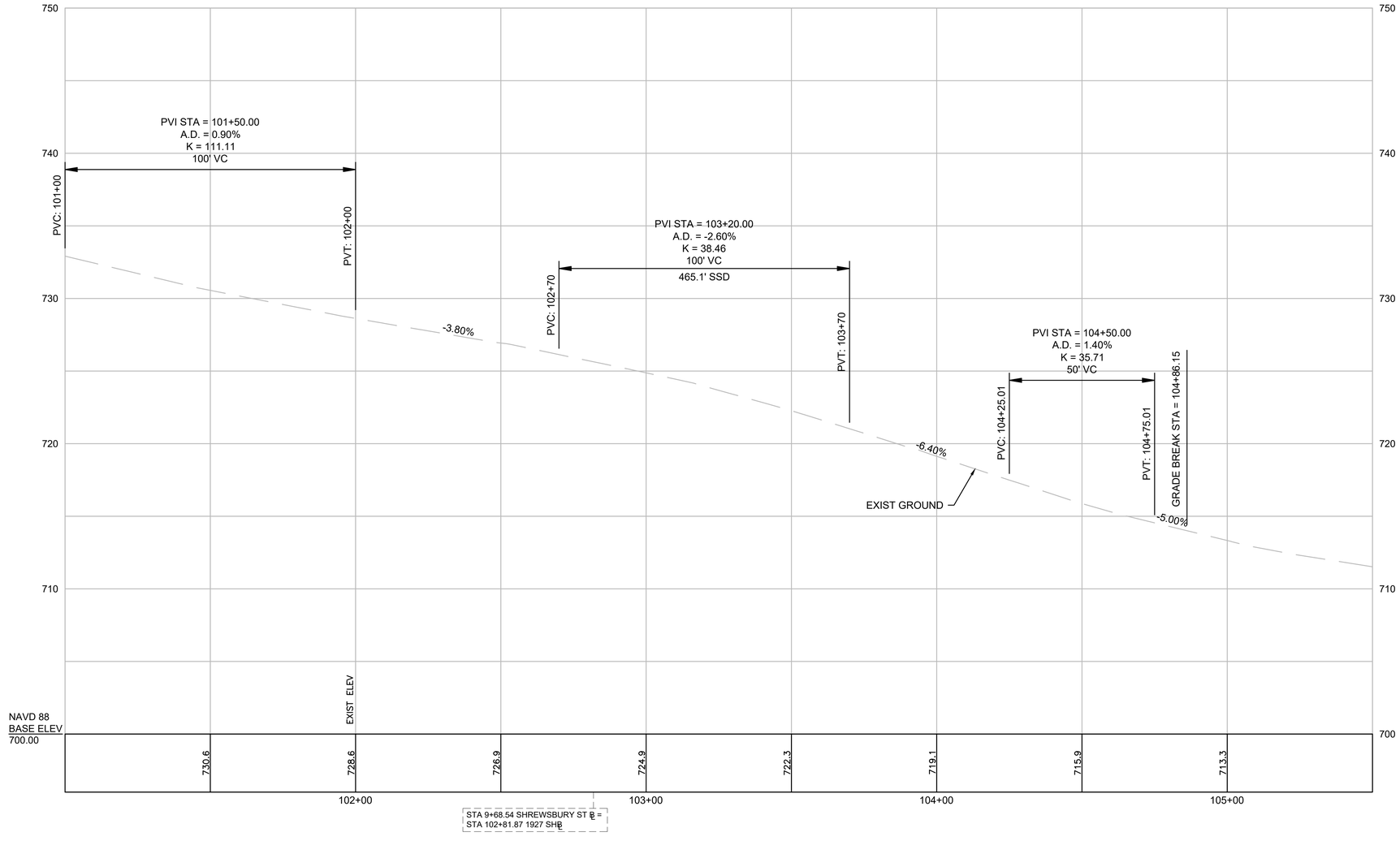
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

609219_HD\PROFILE_MAIN).DWG Plotted on 4-Jan-2023 1:14 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	36	206
PROJECT FILE NO. 609219			

PROFILE
MAIN STREET



CONTINUED ON SHEET NO. 35

MAIN STREET IS PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. NO PROFILE ADJUSTMENTS ARE PROPOSED FOR MAIN STREET. A PROFILE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

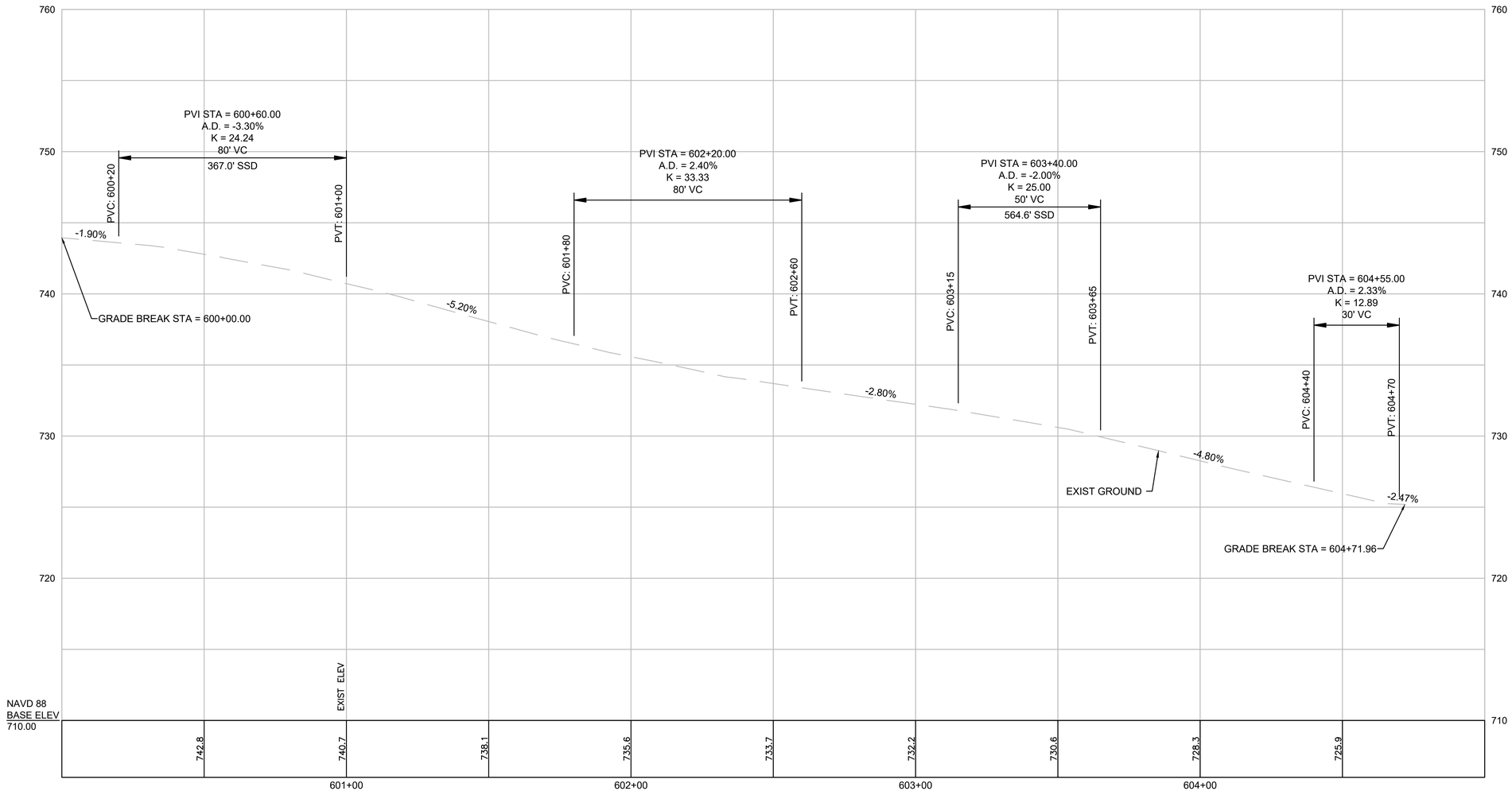
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

609219_HD\PROFILE_MAIN).DWG Plotted on 4-Jan-2023 1:14 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	37	206
PROJECT FILE NO. 609219			

PROFILE
JUG HANDLE



THE JUG HANDLE IS PROPOSED MICRO-MILLING & PAVEMENT OVERLAY. NO PROFILE ADJUSTMENTS ARE PROPOSED FOR THE JUG HANDLE. A PROFILE IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

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

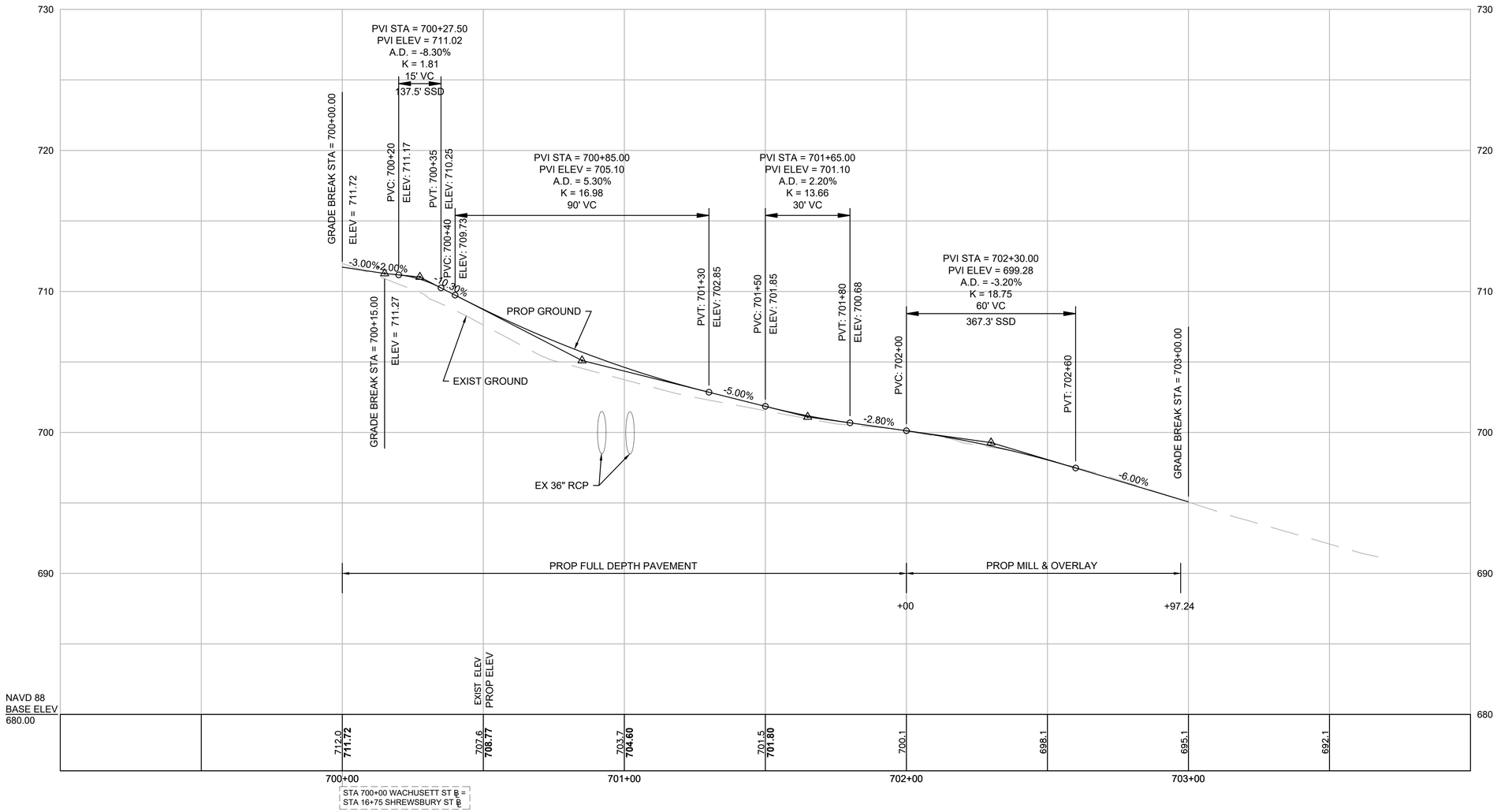
609219_HD(PROFILE_MAIN).DWG Plotted on 4-Jan-2023 1:14 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	38	206
PROJECT FILE NO. 609219			

PROFILE
WACHUSETT STREET

609219_HD(PROFILE_WACHUSETT).DWG Plotted on 4-Jan-2023 1:15 PM



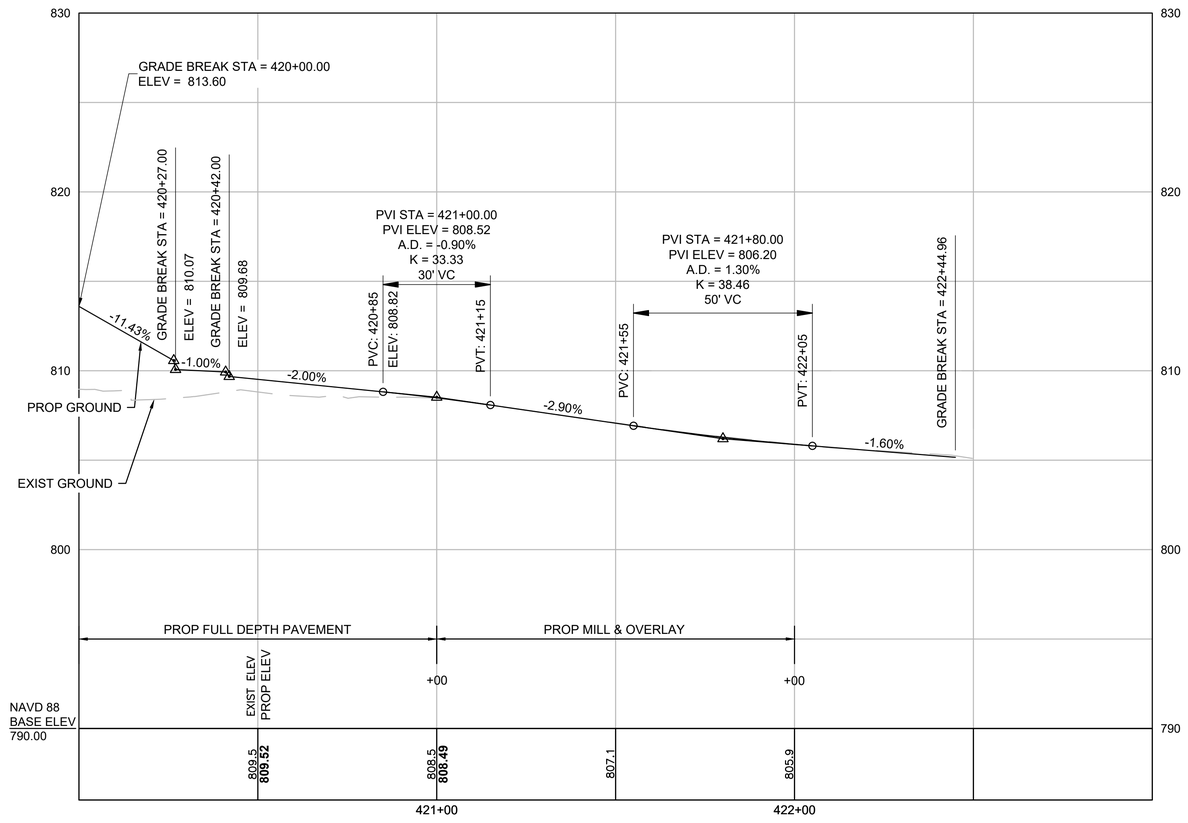
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	39	206
PROJECT FILE NO. 609219			

PROFILE
MOUNTAIN VIEW DRIVE

609219_HD\PROFILE_MTVIEW).DWG Plotted on 4-Jan-2023 1:15 PM



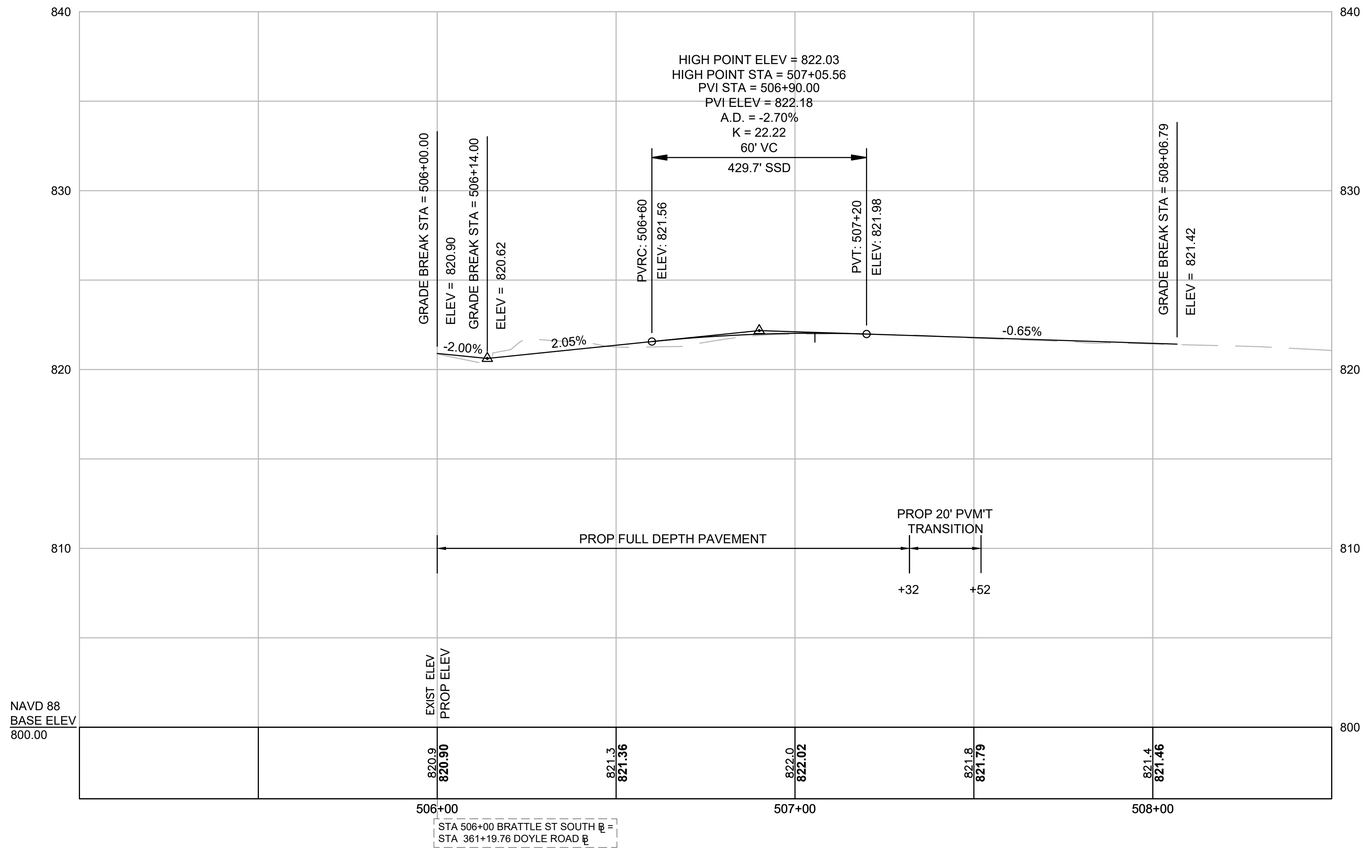
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	40	206
PROJECT FILE NO. 609219			

PROFILE
BRATTLE STREET

609219_HD(PROFILE_BRATTLE).DWG Plotted on 4-Jan-2023 1:16 PM



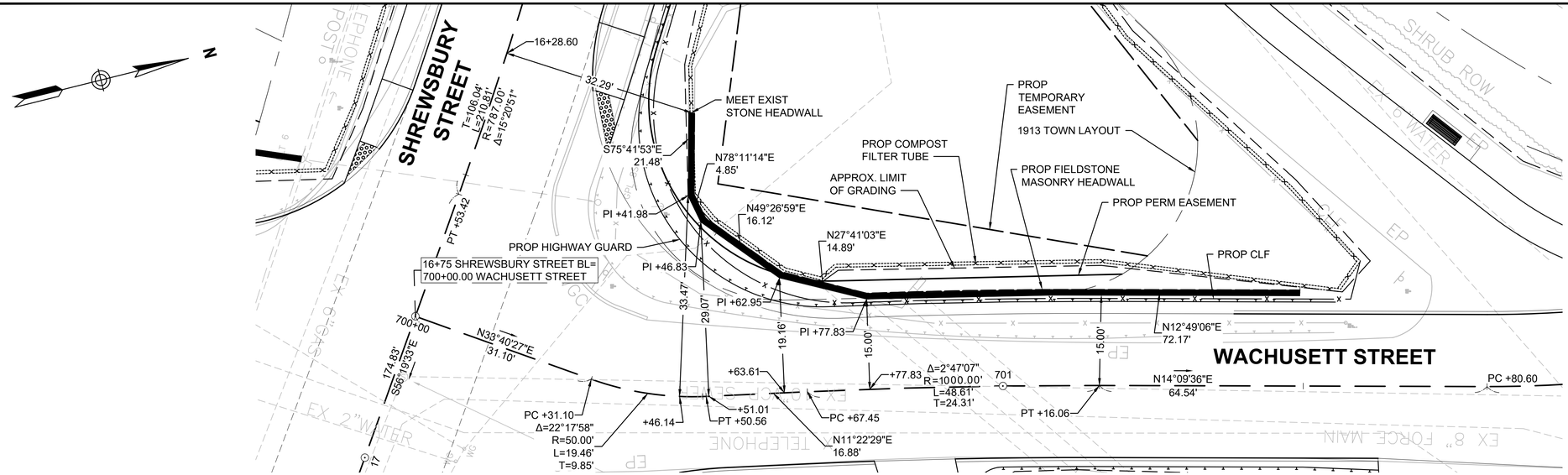
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

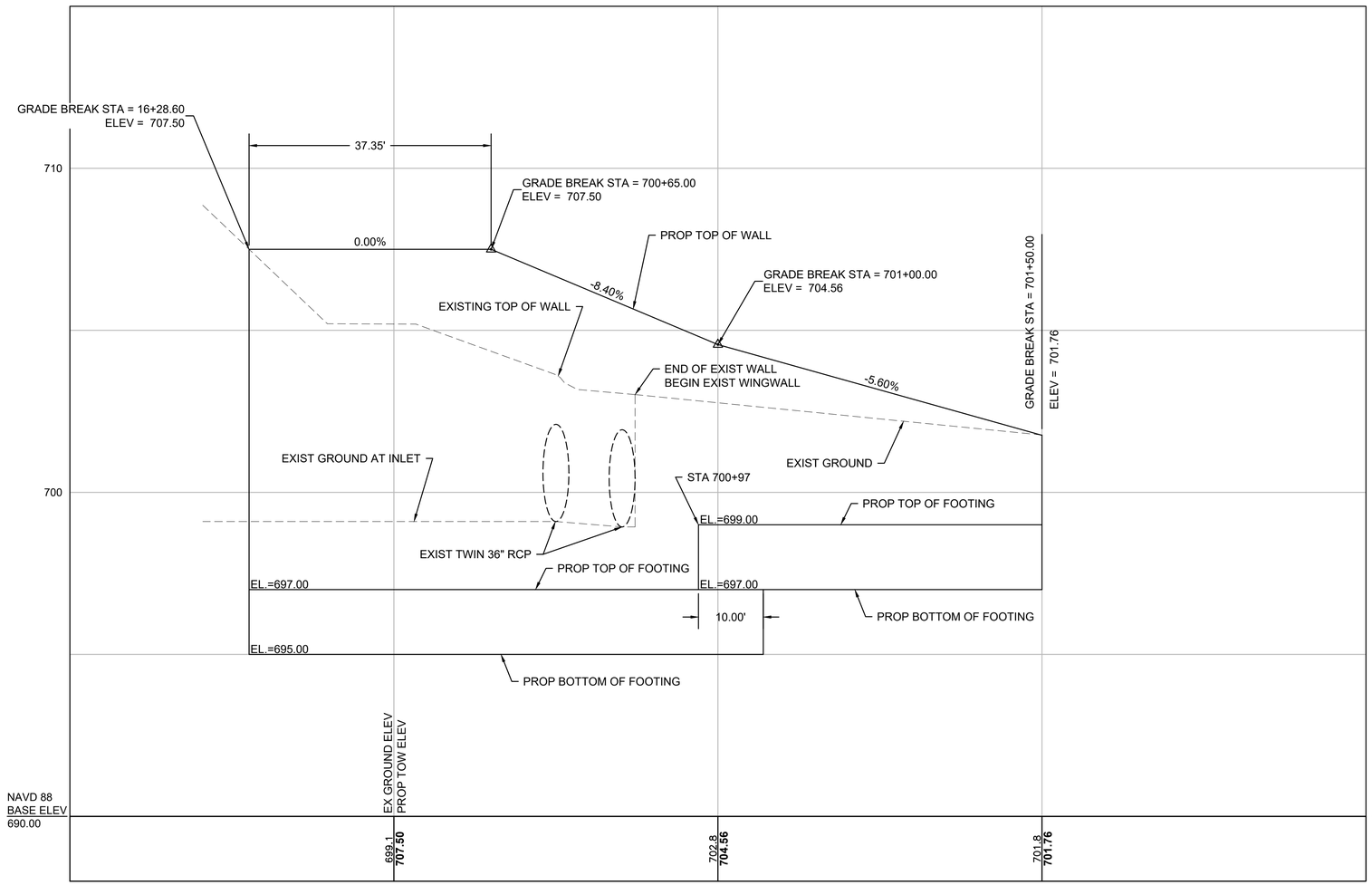
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	41	206
PROJECT FILE NO.	609219		

PROFILES - WALL

609219_HDJWALL-PROFILE).DWG Plotted on 4-Jan-2023 1:16 PM



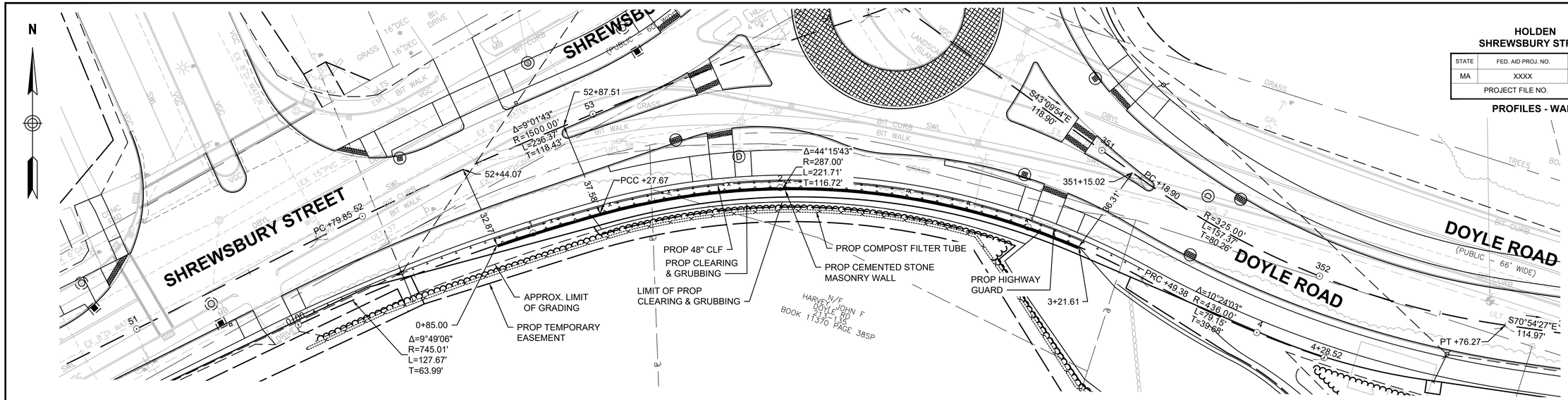


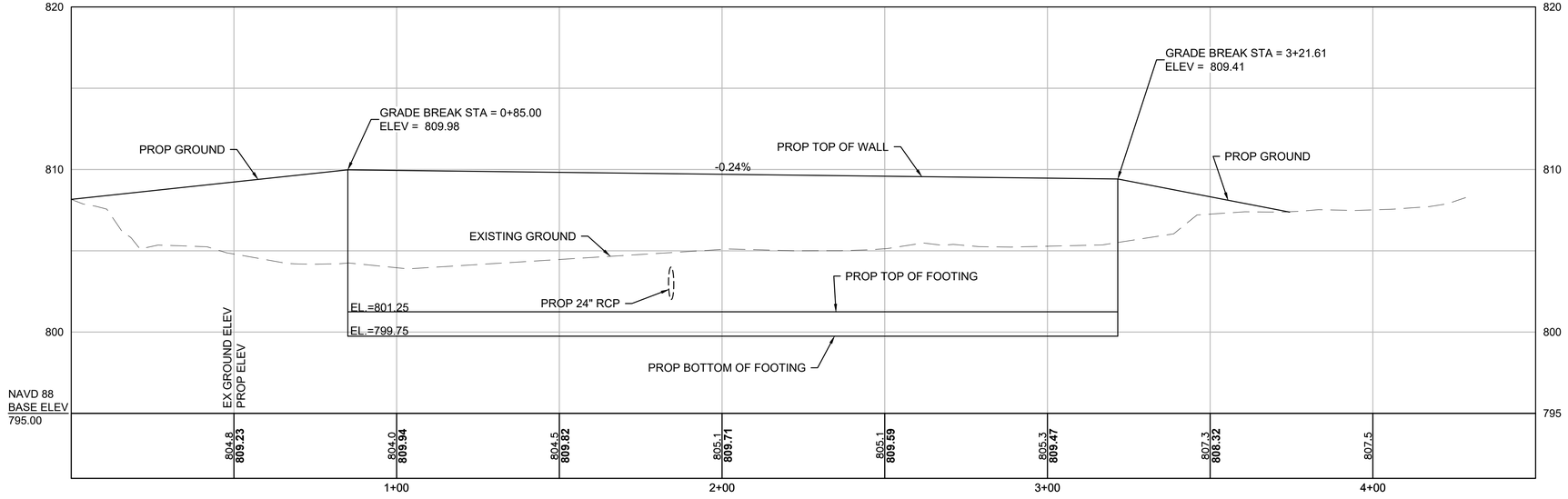
HOR. SCALE IN FEET
10 0 10 20
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	42	206
PROJECT FILE NO.	609219		

PROFILES - WALL





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

609219_HD(WALL-PROFILE).DWG Plotted on 4-Jan-2023 1:19 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	43	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:20 PM

1927 SHBL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	94+00.00	2948695.1911	564942.9971		S40°41'53"E 456.60'	98+56.60	2948349.0175	565240.7343
C1	98+56.60	2948349.0175	565240.7343	R=500.00' Δ=69°22'35" L=605.42' T=346.06'		104+62.02	2947783.0354	565300.3212

BEGIN PROJECT
STA 96+44.21
N: 2948510.0448
E: 565102.2378

98+00 1927 SHBL=
600+00.00 JUG HANDLE BL

MEET EXIST
+44.2
21.4' L
ELEV.= 742.5±

PC+57.81
21.36' L

PC+17.20
23.91' L
R=5.00'
L=8.16'

PT+56.47
24.00' L

PC+56.60
24.00' L

PT+70.11
21.60' L

R=3.00'
L=4.37'

∠PT +93.92
22.70' R

∠PT +55.44
19.21' R

PC 600+16.93
15.84' R

R=7.50'
L=23.29'

PC+55.74
34.20' R

∠PT +65.20
34.18' RT

∠PT +83.61
31.58' RT

∠PT +34.65
38.94' RT

MEET EXIST
+44.2
22.4' R
ELEV.= 742.7±

14
N: 2948474.164'
E: 565106.462'
EL: 743.210'
NAIL SET

1
N: 2948250.564'
E: 565334.483'
EL: 738.940'
NAIL SET

1927 STATE HIGHWAY LAYOUT

1974 STATE HIGHWAY LAYOUT

EXIST TOWN LAYOUT

MAIN STREET

SURVEY TRAVERSE
S45°33'39"E 319.36'

SURVEY TRAVERSE
S28°15'38"E 359.23'

Curve Table			
Curve #	Delta	Radius	Length
C1	39°22'19"	300.00	206.15
C2	30°57'58"	524.00	283.20
C3	11°18'36"	50.00	9.87
C4	11°18'36"	50.00	9.87
C5	51°21'02"	170.00	152.36
C6	11°35'06"	100.00	20.22
C7	21°14'11"	70.00	25.95
C10	138°16'58"	2.00	4.83
C11	129°34'59"	3.00	6.78
C12	5°28'20"	450.00	42.98
C16	96°16'37"	3.00	5.04
C21	63°15'51"	5.00	5.52
C35	2°57'12"	200.00	10.31

PT+26.83
24.00' L

PC+87.13
27.63' L

PT+26.66
9.00' R

PC+63.88
9.00' R

PT+73.69
9.97' R

PC+88.98
13.03' R

PT+98.79
14.00' R

PC+36.57
14.00' R

102+05.64
32.37' L
728.45 BC

PC+07.46
27.22'

PCC+27.85
41.06' L
728.37 BC

CC+42.89
27.42' L

CC+67.52
26.99' L

PC 604+58.69
18.15' L

PT 604+56.09
14.63' L

1997 COUNTY ALTERATION

JUG HANDLE CONST ℄

1927 SHBL

JUG HANDLE BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	600+00.00	2948391.9291	565203.8269		S28°22'29"E 80.75'	600+80.75	2948320.8780	565242.2036
C1	600+80.75	2948320.8780	565242.2036	R=314.00' Δ=26°55'59" L=147.60' T=75.19'		602+28.35	2948179.5543	565279.8287
L2	602+28.35	2948179.5543	565279.8287		S1°26'30"E 108.22'	603+36.57	2948071.3729	565282.5515
C2	603+36.57	2948071.3729	565282.5515	R=156.00' Δ=49°43'34" L=135.39' T=72.29'		604+71.96	2947953.7761	565340.6837

1 STORY BUILDING

BITUMINOUS PARKING LOT

1 STORY BUILDING

1 STORY BRICK PUMP HOUSE

METAL GEN.

CONC. STOOP

SHED

BORING #1

STONE MASONRY WALL CAPPED WITH CONCRETE

CONC. RAMP WITH HANDRAILS

CONC. RET. WALL TOPPED WITH CLF

FENCE

CONC. WALK

BIT. CURB

MULCH

CONC PAD

GRASS

SIGN

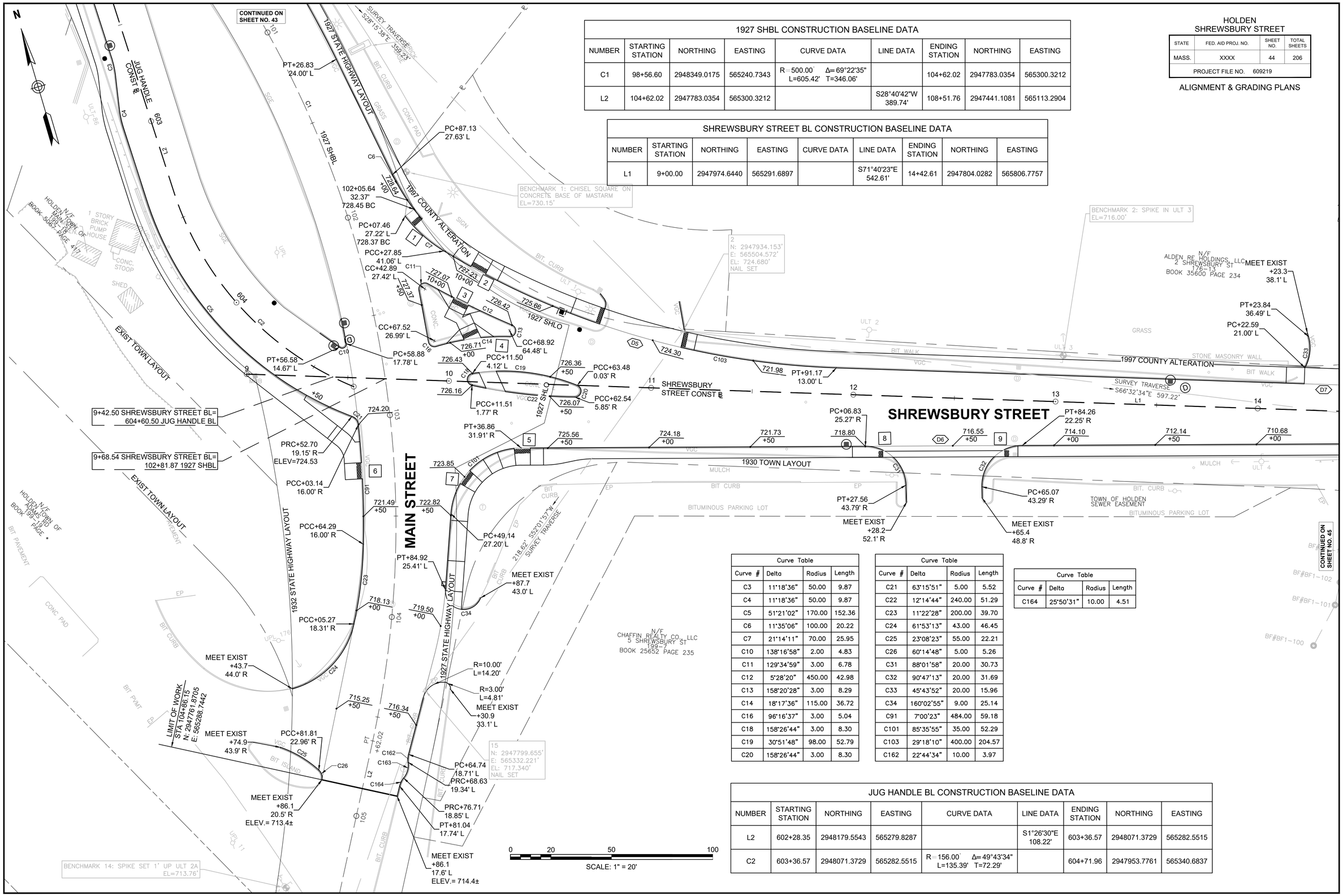
SAWCUT MEET EXIST

0 20 50 100
SCALE: 1" = 20'

9+42.50 SHREWSBURY STREET BL=
604+60.50 JUG HANDLE BL

9+68.54 SHREWSBURY STREET BL=
102+81.87 1927 SHBL

CONTINUED ON SHEET NO. 44



1927 SHBL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	98+56.60	2948349.0175	565240.7343	R=500.00' Δ=69°22'35" L=605.42' T=346.06'		104+62.02	2947783.0354	565300.3212
L2	104+62.02	2947783.0354	565300.3212		S28°40'42"W 389.74'	108+51.76	2947441.1081	565113.2904

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	9+00.00	2947974.6440	565291.6897		S71°40'23"E 542.61'	14+42.61	2947804.0282	565806.7757

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	44	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

Curve Table			
Curve #	Delta	Radius	Length
C3	11°18'36"	50.00	9.87
C4	11°18'36"	50.00	9.87
C5	51°21'02"	170.00	152.36
C6	11°35'06"	100.00	20.22
C7	21°14'11"	70.00	25.95
C10	138°16'58"	2.00	4.83
C11	129°34'59"	3.00	6.78
C12	5°28'20"	450.00	42.98
C13	158°20'28"	3.00	8.29
C14	18°17'36"	115.00	36.72
C16	96°16'37"	3.00	5.04
C18	158°26'44"	3.00	8.30
C19	30°51'48"	98.00	52.79
C20	158°26'44"	3.00	8.30

Curve Table			
Curve #	Delta	Radius	Length
C21	63°15'51"	5.00	5.52
C22	12°14'44"	240.00	51.29
C23	11°22'28"	200.00	39.70
C24	61°53'13"	43.00	46.45
C25	23°08'23"	55.00	22.21
C26	60°14'48"	5.00	5.26
C31	88°01'58"	20.00	30.73
C32	90°47'13"	20.00	31.69
C33	45°43'52"	20.00	15.96
C34	160°02'55"	9.00	25.14
C91	7°00'23"	484.00	59.18
C101	85°35'55"	35.00	52.29
C103	29°18'10"	400.00	204.57
C162	22°44'34"	10.00	3.97

Curve Table			
Curve #	Delta	Radius	Length
C164	25°50'31"	10.00	4.51

JUG HANDLE BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	602+28.35	2948179.5543	565279.8287		S1°26'30"E 108.22'	603+36.57	2948071.3729	565282.5515
C2	603+36.57	2948071.3729	565282.5515	R=156.00' Δ=49°43'34" L=135.39' T=72.29'		604+71.96	2947953.7761	565340.6837

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:20 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	45	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

Curve Table			
Curve #	Delta	Radius	Length
C33	45°43'52"	20.00	15.96
C37	16°54'54"	650.00	191.90
C39	88°19'45"	35.00	53.96
C40	109°15'21"	40.00	76.28
C41	90°42'29"	35.00	55.41
C42	67°42'02"	70.00	82.71

WACHUSETT STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	700+00.00	2947699.9227	566013.6442		N33°40'27"E 31.10'	700+31.10	2947725.8061	566030.8895
C1	700+31.10	2947725.8061	566030.8895	R=50.00' Δ=22°17'58" L=19.46' T=9.85'		700+50.56	2947743.6683	566038.2972
L2	700+50.56	2947743.6683	566038.2972		N11°22'29"E 16.88'	700+67.45	2947760.2203	566041.6271
C2	700+67.45	2947760.2203	566041.6271	R=1000.00' Δ=2°47'07" L=48.61' T=24.31'		701+16.06	2947807.6258	566052.3690
L3	701+16.06	2947807.6258	566052.3690		N14°09'36"E 64.54'	701+80.60	2947870.2091	566068.1585
C3	701+80.60	2947870.2091	566068.1585	R=200.00' Δ=25°33'32" L=89.22' T=45.36'		702+69.82	2947958.6630	566070.2902
L4	702+69.82	2947958.6630	566070.2902		N11°23'56"W 97.42'	703+67.24	2948054.1654	566051.0354

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	9+00.00	2947974.6440	565291.6897		S71°40'23"E 542.61'	14+42.61	2947804.0282	565806.7757
C1	14+42.61	2947804.0282	565806.7757	R=787.00' Δ=15°20'51" L=210.81' T=106.04'		16+53.42	2947711.8905	565995.6818
L2	16+53.42	2947711.8905	565995.6818		S56°19'33"E 174.83'	18+28.24	2947614.9546	566141.1729
C2	18+28.24	2947614.9546	566141.1729	R=2250.00' Δ=15°14'14" L=598.36' T=300.96'		24+26.60	2947221.2541	566589.4266

CONTINUED ON SHEET NO. 44

CONTINUED ON SHEET NO. 46

N

SAWCUT
703
SAWCUT
L4
PT +69.82
C3
WACHUSETT STREET
702
PC +80.60
N14°09'36"E
64.54'
L3
701
C2
PT +16.06
LINCOLN AVENUE
PC +67.45
GRAVEL DRIVE
25
N: 2947834.941'
E: 566052.886'
EL: 701.910'
MAG NAIL
STONE MASONRY RETAINING WALLS AND WATERWAY
DIRT DRIVE
CONCRETE WATERWAY
EOP
GRASS
CLF
UPL
WF#WF1-207
WF#WF1-209
WF#WF1-210
BF#BF1-212
WF#WF1-211
WF#WF1-205
N/F
ALDEN RE HOLDINGS, LLC
2 SHREWSBURY ST
176-13
BOOK 35600 PAGE 234
N/F
ALDEN RE HOLDINGS, LLC
SHREWSBURY ST
168-50
BK 35600 PG 234
PRC+73.72
12.00' L
ELEV=706.49
PC+53.60
12.00' R
ELEV=708.55
PT +50.56
S0°11'09"W
138.52'
SURVEY TRAVERSE
3
N: 2947696.421'
E: 566052.437'
EL: 712.900'
NAIL SET
CHAIN LINK FENCE
N/F
FRIENDS OF THE RED BARN, INC.
SHREWSBURY ST.
200-1
BOOK 22359 PAGE 221
BRICK WOOD FIRE OVEN
MEET EXIST
+44.3
47.5' L
MEET EXIST
+23.3
38.1' L
PT +64.01
21.00' LT
PT+23.84
36.49' L
PC+22.59
21.00' L
C33
STONE MASONRY WALL
BIT WALK
VGC
GRASS
1997 COUNTY ALTERATION
SURVEY TRAVERSE
S66°32'34"E 597.22'
L1
D7
PC
PC +42.61
PC+43.24
16.04' R
709.71
+50
710.68
+00
712.14
+50
709.25
+00
709.27
+50
C37
C1
14
15
16
MULCH
ULT 4
1930 TOWN LAYOUT
BIT. CURB
TOWN OF HOLDEN
SEWER EASEMENT
BITUMINOUS PARKING LOT
N/F
CHAFFIN REALTY CO., LLC
5 SHREWSBURY ST
199-7
BOOK 25652 PAGE 235
PRC+16.71
13.00' L
ELEV=710.05
PT +53.42
708.51
+50.56
709.92
700+40
C1
C42
PC +31.10
710.74
700+28
C40
L2
711.32
700+28
L1
10
11
12
13
17
18
19
PC
PT +45.98
14.00' L
ELEV=714.07
PC+48.82
26.00' L
R=50.00'
L=13.56'
PRC+62.07
24.21' L
R=50.00'
L=12.98'
PT+74.77
22.50' L
PRC+78.91
24.02' L
R=50.00'
L=12.24'
PC+66.92
22.50' L
STONE WALL
GRAVEL
1930 TOWN LAYOUT
PC+48.82
18.00' L
PC +28.24
PT+59.96
16.50' L
R=42.00'
L=11.36'
SURVEY TRAVERSE
S48°29'11"E 477.24'
D8
D9
D10
C2
PT+30.23
14.00' R
713.40 BC
L2
GUTTER LINE
712.75
711.07
PCC+38.50
13.00' R
710.49 BC
BLDG
C39
C41
16+75 SHREWSBURY STREET BL=
700+00.00 WACHUSETT STREET
PT+74.12
46.61' R
709.96 BC
MEET EXIST
+74.8
62.9' R
ELEV.= 709.9±
PC+95.23
49.43' R
709.78 BC
MEET EXIST
+95.4
62.7' R
ELEV.= 709.6±
SOUTH WACHUSETT STREET
N/F
POWERS, MARY M
51 SHREWSBURY ST
199-8
BOOK 47550 PAGE 280
N/F
DAVIS, KENNETH E.
57 SHREWSBURY ST
199-9
BOOK 40440 PAGE 311
BENCHMARK 3: SPIKE SE
EL=726.76'
BIT DRIVE
ULT 9
0 20 50 100
SCALE: 1" = 20'

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:21 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	46	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C2	18+28.24	2947614.9546	566141.1729	R=2250.00' Δ=15°14'14" L=598.36' T=300.96'		24+26.60	2947221.2541	566589.4266
L3	24+26.60	2947221.2541	566589.4266		S41°05'19"E 191.19'	26+17.79	2947077.1578	566715.0795

CONTINUED ON SHEET NO. 45

CONTINUED ON SHEET NO. 47

N/E
TIRMACCO, ROBERT JR
50 RED BARN RD
200-120
BOOK 38511 PAGE 26

N/E
OUELLETTE, NICHOLAS G
4 TYLER DR
200-119
BOOK 52322 PAGE 84

N/E
SLAVIN, CHRISTOPHER E
54 RED BARN RD
200-121
BOOK 28752 PAGE 259

N/E
NGUYEN, HOA
7 TYLER DR
200-117
BOOK 24975 PAGE 114

N/E
REED, AARON AND LYNN
5 TYLER DR
200-118
BOOK 56257 PAGE 126

N/E
MILLETT, CHARLENE F
90 SHREWSBURY ST
200-51
BOOK 21079 PAGE 283

N/E
LOWELL, ROSS D AND JILL M.
100 SHREWSBURY ST
200-107
BOOK 18460 PAGE 299

TYLER DRIVE

MEET EXIST
+75.6
77.1' L
ELEV.= 735.1±

MEET EXIST
+02.4
72.4' L
ELEV.= 734.8±

PC+97.01
51.55' L
736.20 BC

PT+65.22
39.24' L
736.20 BC HP

PC+32.26
14.00' L

PT+62.67
25.28' L

R=50.00'
L=5.28'

PT+89.68
22.50' L

PC+84.46
22.78' L

R=100.00'
L=12.30'

PC+50.71
26.00' L

PC+50.71
18.00' L

PRC+78.91
24.02' L

R=50.00'
L=13.12'

PT+91.75
25.61' L

PT+91.70
17.61' L

R=50.00'
L=12.24'

PC+66.92
22.50' L

1930 TOWN LAYOUT

R=92.00'
L=11.31'

PT+61.74
17.33' L

R=42.00'
L=10.06'

PC+81.80
16.50' L

SHREWSBURY STREET

SHREWSBURY STREET CONST ℄

PRC+25.44
14.00' L
740.15 BC

PT +26.60

PCC+71.01
14.00' R
748.16 BC

PT+96.44
39.66' R
ELEV=749.08

PC+25.13
36.92' R
750.10 BC

PT+50.07
14.00' R
752.27 BC

MEET EXIST
+96.0
59.1' R
ELEV.= 749.2±

MEET EXIST
+23.2
59.8' R
ELEV.= 749.9±

HOMESTEAD ROAD

1930 TOWN LAYOUT

738.61

736.09

748.90

751.16

SURVEY TRAVERSE
S48°29'11"E 477.24'

SURVEY TRAVERSE
S54°45'55"E 233.78'

SURVEY TRAVERSE
S32°53'15"E 243.64'

BENCHMARK 3: SPIKE SET IN ULT9
EL=726.76'

BENCHMARK 4: SPIKE SET IN UPL 12
EL=744.89'

4
N: 2947380.108'
E: 566409.793'
EL: 738.010'
NAIL SET

5
N: 2947245.234'
E: 566600.744'
EL: 750.960'
NAIL SET

Curve Table			
Curve #	Delta	Radius	Length
C43	73°22'59"	35.00	44.83
C44	104°13'02"	30.00	54.57
C45	91°50'49"	25.00	40.08
C46	85°14'16"	25.00	37.19

N/F
DIK, CHRISTOPHER
65 SHREWSBURY ST
200-54
BK 49352 PG 87

N/F
DOUCETTE, DARRELL
67 SHREWSBURY ST
200-108
BOOK 42852 PAGE 370

N/F
BENJAMIN, ANDREW J
69 SHREWSBURY ST
200-109
BOOK 51078 PAGE 139

N/F
SUGAR, ROBERT
79 SHREWSBURY ST
200-83
BOOK 23563 PAGE 103

N/F
BESHOY & VERONA REALTY, LLC
87 SHREWSBURY ST
200-82
BOOK 58811 PAGE 006

N/F
GARCIA, LUIS AND ERIN
97 SHREWSBURY ST
200-62
BOOK 51499 PAGE 141

N/F
BOUCHARD, SHARON AND DEN
103 SHREWSBURY ST
200-63
BOOK 54981 PAGE 194

N/F
GOODALE, ROSS A
11 HOMESTEAD RD
200-84
BOOK 43598 PAGE 24

N/F
GOODE, ATTANYA MOURADIAN
14 HOMESTEAD RD
200-61
BOOK 48761 PAGE 16

TOWN OF HOLDEN SEWER EASEMENT

0 20 50 100
SCALE: 1" = 20'

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:21 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	47	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:21 PM

N/F
OWELL, ROSS D AND JILL M.
100 SHREWSBURY ST
200-107
BOOK 18460 PAGE 299

N/F
HENDRICKSON, BRIAN AND CHRISTIE
106 SHREWSBURY ST
200-106
BOOK 8640 PAGE 205

N/F
LIZANO, EMILY P AND CONRAD E.
116 SHREWSBURY ST
200-78
BOOK 53410 PAGE 050

N/F
LIZANO, EMILY P AND CONRAD E.
116 SHREWSBURY ST
200-77
BOOK 53410 PAGE 050

N/F
TAYLOR, KATHLEEN P
122 SHREWSBURY ST
200-75
BOOK 46051 PAGE 253

N/F
PHIPPS, TODD
136 SHREWSBURY ST
200-72
BOOK 39736 PAGE 351

N/F
DION, JOHN R & KIM L
138 SHREWSBURY ST
200-71
BOOK 55176 PAGE 32

SHREWSBURY STREET

SHREWSBURY STREET CONST

1930 TOWN LAYOUT

SURVEY TRAVERSE
S32°53'15"E 243.64'

SURVEY TRAVERSE
S49°55'09"E 671.68'

SURVEY TRAVERSE
S49°55'09"E 671.68'

PC
PC +17.79
PT
PT +01.73
PT+17.81
25.00' R
PC+67.86
25.00' R
PC+22.38
36.00' R
R=5.50'
L=8.64'
PT+16.88
30.50' R
PC+87.45
14.00' R
MEET EXIST
+51.9
44.4' R

L3
L4
C3
C47

26
27
28
29
30
31

D15 757.53 +00
D16 758.52 +50
D17 759.12 +00
D18 759.33 +50
759.14 +00
758.56 +50
D19
D20
D21 757.82 +00
757.07 +50
D22 756.34 +00
D23 755.62 +50
D24 754.92 +00
D25

GRASS
WOOD RAIL FENCE
BIT WALK
VGC
BIT DRIVE
BIT. WALK
STONE MASONRY RETAINING WALL
VINYL FENCE
UPL 18
ULT 17
ULT 16
ULT 15
MULCH
BITUMINOUS PARKING LOT
STONE MASONRY RETAINING WALL
OD TIMBER-
NING WALL

6
N: 2947040.640'
E: 566733.038'
EL: 758.680'
NAIL SET

BENCHMARK 5: SPIKE IN ULT 15
EL=761.40'

BENCHMARK 6: CHISELED SQUARE SET IN CONC POST BASE
EL=756.24'

N/F
BOUCHARD, SHARON AND DENNIS
103 SHREWSBURY ST
200-63
BOOK 54981 PAGE 194

N/F
MORIN, DEBORAH L
109 SHREWSBURY ST
200-64
BOOK 47196 PAGE 230

N/F
M&D MAINE, LLC
115 SHREWSBURY ST
200-65
BOOK 53357 PAGE 163

N/F
KEDDY, BRUCE AND SHERYL L, TRUSTEES UNDER THE KEDDY LIVING TRUST
121 SHREWSBURY ST
200-66
BOOK 12545 PAGE 391

N/F
GIARD, IRENE G
131 SHREWSBURY ST
200-67
BOOK 7866 PAGE 200

N/F
CHAFFINS CONGREG CHURCH
155 SHREWSBURY ST
200-69
BOOK 147 PAGE 284

CONTINUED ON SHEET NO. 46

CONTINUED ON SHEET NO. 48

Curve Table			
Curve #	Delta	Radius	Length
C47	6°46'42"	4500.00	532.38

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	24+26.60	2947221.2541	566589.4266		S41°05'19"E 191.19'	26+17.79	2947077.1578	566715.0795
C3	26+17.79	2947077.1578	566715.0795	R=2400.00' Δ=6°46'42" L=283.94' T=142.13'		29+01.73	2946874.6817	566913.8986
L4	29+01.73	2946874.6817	566913.8986		S47°52'02"E 579.95'	34+81.68	2946485.6192	567343.9860

0 20 50 100
SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	48	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:21 PM

CONTINUED ON SHEET NO. 55

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	29+01.73	2946874.6817	566913.8986		S47°52'02"E 579.95'	34+81.68	2946485.6192	567343.9860
C4	34+81.68	2946485.6192	567343.9860	R=1350.00' Δ=23°20'12" L=549.86' T=278.79'		40+31.54	2946208.7619	567814.6620

CHAPEL-HOLDEN BL CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2947259.1738	567307.5134		S3°30'16"W 1227.63'	212+27.63	2946033.8420	567232.4706

Curve Table

Curve #	Delta	Radius	Length
C36	129°31'16"	3.00	6.78
C48	85°30'43"	15.00	22.39
C49	124°59'13"	52.00	113.43
C50	3°38'22"	200.00	12.70
C51	27°16'06"	74.00	35.22
C52	129°07'07"	3.00	6.76
C53	128°37'42"	3.00	6.73
C54	128°14'48"	3.00	6.71
C56	44°14'46"	150.00	115.84
C57	128°37'42"	3.00	6.73
C58	128°13'54"	3.00	6.71
C59	25°06'24"	81.00	35.49
C60	25°42'52"	15.00	6.73
C61	90°00'00"	20.00	31.42
C62	90°00'00"	20.00	31.42
C63	2°39'34"	405.00	18.80
C64	126°31'12"	55.00	121.45
C74	25°42'52"	5.00	2.24
C86	90°00'00"	2.00	3.14
C88	84°56'16"	2.00	2.96
C108	33°33'58"	15.00	8.79
C110	38°37'42"	5.00	3.37
C111	51°22'18"	5.00	4.48
C135	64°46'12"	5.00	5.65
C136	63°51'30"	5.00	5.57

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 47
CONTINUED ON SHEET NO. 49

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	49	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:22 PM

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C4	34+81.68	2946485.6192	567343.9860	R=1350.00' Δ=23°20'12" L=549.86' T=278.79'		40+31.54	2946208.7619	567814.6620
C5	40+31.54	2946208.7619	567814.6620	R=900.00' Δ=34°25'37" L=540.78' T=278.83'		45+72.31	2946194.0487	568347.1372

N/F
SHULER, GREGORY AND SUSANA
190 SHREWSBURY ST
200-21
BOOK 54152 PAGE 371

N/F
SHULER, GREGORY AND SUSANA
190 SHREWSBURY ST
200-21
BOOK 54152 PAGE 371

N/F
NORDQUIST, JOHN H AND MARY
204 SHREWSBURY ST
200-20
BOOK 4637 PAGE 324

N/F
HOLDEN, TOWN OF
SHREWSBURY ST
200-18
BOOK 4647 PAGE 313

N/F
READ, BRIAN AND MARY
220 SHREWSBURY ST
200-19
BOOK 65662 PAGE 61

SHREWSBURY STREET

1930 TOWN LAYOUT

SHREWSBURY STREET CONST ℄

SURVEY TRAVERSE
S46°00'05"E 399.01'

SURVEY TRAVERSE
S68°58'37"E 534.09'

SURVEY TRAVERSE
S68°58'37"E 534.09'

PCC

PCC +31.54

PCC

C4

C5

C116

R=5.00' L=6.63'
R=5.00' L=7.92'
R=5.00' L=7.67'
R=5.00' L=7.82'
R=5.00' L=8.08'
R=5.00' L=7.12'
R=5.00' L=8.02'
R=5.00' L=7.76'

PC+73.43
15.17' R

PI+07.24
14.00' R

PI+57.95
14.00' R

PI+07.42
19.50' R

PT+91.76
15.17' R

PI+82.60
21.52' R

PI+57.77
19.50' R

37 38 39 40 41 42 43

D29 D30 D31 D32 D33 D34 D35 D36 D37

UPL 25-1 UPL 26 ULT 27 UPL 28 ULT 29 UPL 30-1

CONC PAD
BIT DRIVE
BIT WALK
VGC
GRASS
STONE MASONRY RET. WALL

CONTINUED ON SHEET NO. 48

CONTINUED ON SHEET NO. 50

8
N: 2946330.999'
E: 567533.996'
EL: 752.570'
NAIL SET

9
N: 2946139.398'
E: 568032.535'
EL: 782.450'
MAG NAIL

BENCHMARK 8: PUNCH MARK IN HYDRANT HEAD BOLT
EL=766.60'

N/F
CHARBONNEAU, SCOTT E AND LOUISE E.
181 SHREWSBURY ST
213-2
BOOK 6677 PAGE 98

N/F
COURTNEY, KATHRYN
189 SHREWSBURY ST
213-3
BOOK 55815 PAGE 030

N/F
REZENDE, ROSMARIA
197 SHREWSBURY ST
213-4
BOOK 23547 PAGE 161

N/F
KUWAHARA, TOSHIO
203 SHREWSBURY ST
213-5
BOOK 25654 PAGE 142

N/F
DYER, THOMAS CO-TRUSTEE AND EILEEN CO-TRUSTEE
233 SHREWSBURY ST
213-6
BOOK 59700 PAGE 217

Curve Table			
Curve #	Delta	Radius	Length
C116	10°41'46"	100.00	18.67

0 20 50 100
SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	50	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:22 PM

N

N/F
READ, BRIAN AND MARY
220 SHREWSBURY ST
200-97
BOOK 69662 PAGE 61

N/F
FASSHAUER, MELISSA M AND ERIC
238 SHREWSBURY ST
200-103
BOOK 28366 PAGE 32

N/F
CARDONA, SR MARCELLO G.
AND CARDONA, TATIANA P.
250 SHREWSBURY ST
201-61
BOOK 46092 PAGE 138

N/F
DINARDO, DANIELLE AND TOLAN, RYAN
258 SHREWSBURY ST
201-60
BOOK 48544 PAGE 223

1930 TOWN LAYOUT

SHREWSBURY STREET

SHREWSBURY STREET CONST BL

SURVEY TRAVERSE
N75°32'28"E 533.38'

SURVEY TRAVERSE
N71°22'29"E 620.05'

PI+57.95
14.00' R

PC+73.43
15.17' R

PI+07.24
14.00' R

PI+57.77
19.50' R

PI+82.60
21.52' R

PT+91.76
15.17' R

PI+07.42
19.50' R

PT +72.31

PT

R=5.00'
L=6.86'

R=10.00'
L=9.32'

R=5.00'
L=7.63'

R=10.00'
L=9.27'

R=5.00'
L=7.79'

R=10.00'
L=9.25'

R=10.00'
L=9.27'

R=5.00'
L=6.85'

PC+89.93
26.00' L

R=100.00'
L=5.67'

PC+25.17
27.84' L

R=100.00'
L=5.67'

PT+95.60
26.16' L

PT+30.84
28.00' L

PT+51.85
14.00' R
811.10 BC

PC+84.83
14.00' R
810.58 BC

GUTTER LINE

810.92

811.18

810.99

PC+32.18
30.37' R

END CURB
+30.20
41.11' R

PT+04.56
37.25' R
810.80 BC

MEET EXIST
+00.2
67.8' R
ELEV.= 810.6±

MEET EXIST
+24.4
72.3' R
ELEV.= 810.7±

BIRCHWOOD DRIVE

10
N: 2946272.575'
E: 568549.021'
EL: 811.170'
MAG NAIL

26
N: 2946118.443'
E: 568616.909'
EL: 809.400'
MAG NAIL

BENCHMARK 9: PUNCH MARK IN HYDRANT HEAD BOLT
EL=799.08'

N/F
DYER, THOMAS CO-TRUSTEE AND EILEEN CO-TRUSTEE
233 SHREWSBURY ST
213-6
BOOK 59700 PAGE 217

N/F
RAIMONDO, HOLLY NYLANDER
241 SHREWSBURY ST
213-8
BOOK 43498 PAGE 173

N/F
NEWTON, RONALD EA AND JUDITH
249 SHREWSBURY ST
213-9
BOOK 51526 PAGE 221

CONTINUED ON SHEET NO. 49

CONTINUED ON SHEET NO. 51

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C5	40+31.54	2946208.7619	567814.6620	R=900.00' Δ=34°25'37" L=540.78' T=278.83'		45+72.31	2946194.0487	568347.1372
L5	45+72.31	2946194.0487	568347.1372		N74°22'10"E 607.54'	51+79.85	2946357.7422	568932.2117

Curve Table			
Curve #	Delta	Radius	Length
C65	99°20'38"	20.00	34.68
C66	79°32'00"	20.00	27.76

0 20 50 100

SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

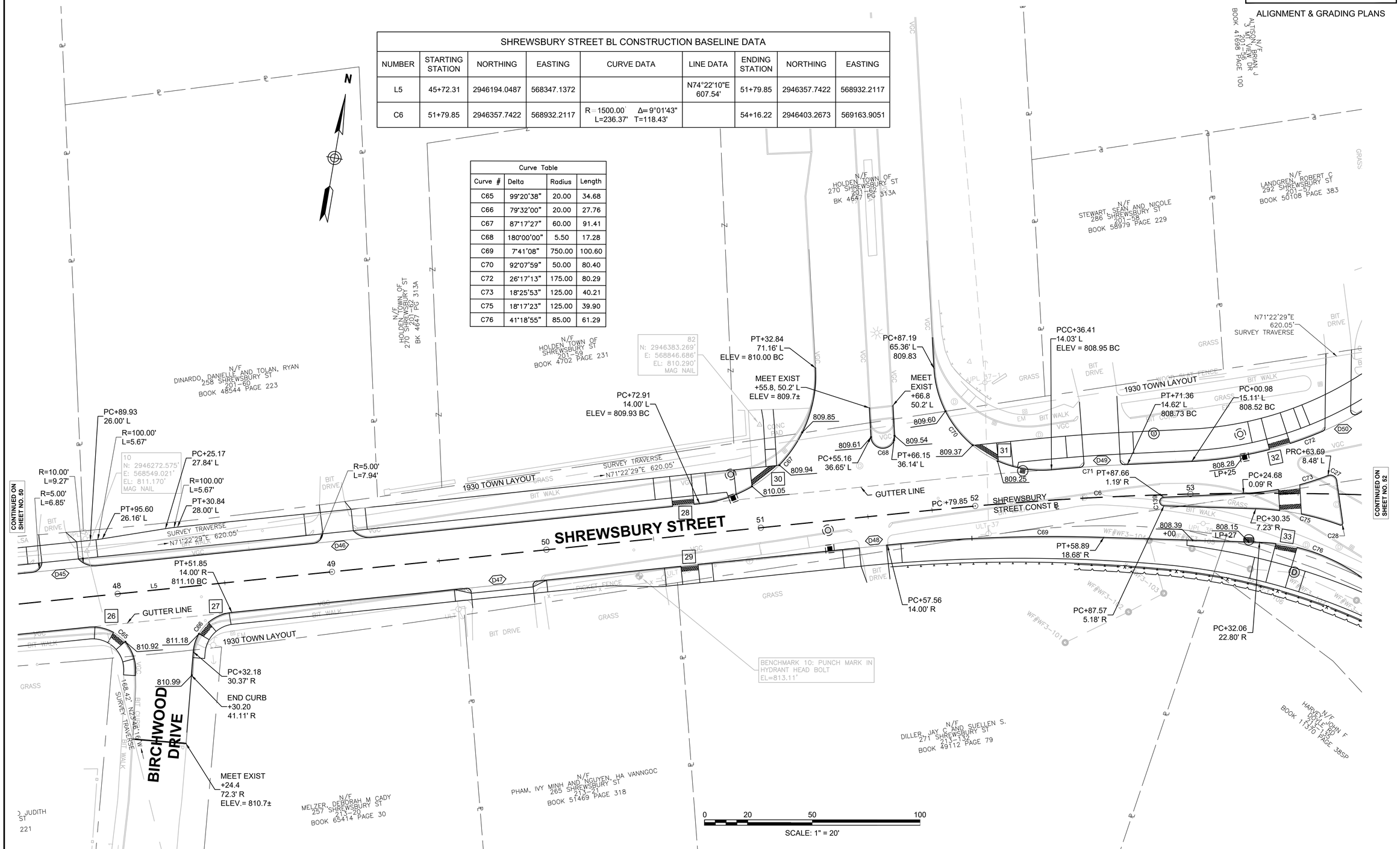
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	51	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:22 PM

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	45+72.31	2946194.0487	568347.1372		N74°22'10"E 607.54'	51+79.85	2946357.7422	568932.2117
C6	51+79.85	2946357.7422	568932.2117	R=1500.00' Δ=9°01'43" L=236.37' T=118.43'		54+16.22	2946403.2673	569163.9051

Curve Table			
Curve #	Delta	Radius	Length
C65	99°20'38"	20.00	34.68
C66	79°32'00"	20.00	27.76
C67	87°17'27"	60.00	91.41
C68	180°00'00"	5.50	17.28
C69	7°41'08"	750.00	100.60
C70	92°07'59"	50.00	80.40
C72	26°17'13"	175.00	80.29
C73	18°25'53"	125.00	40.21
C75	18°17'23"	125.00	39.90
C76	41°18'55"	85.00	61.29



Curve Table			
Curve #	Delta	Radius	Length
C27	103°01'03"	3.00	5.39
C28	118°15'23"	1.00	2.06
C29	119°40'24"	1.00	2.09
C30	157°01'04"	1.00	2.74
C69	7°41'08"	750.00	100.60
C71	2°31'40"	800.00	35.30
C72	26°17'13"	175.00	80.29
C73	18°25'53"	125.00	40.21
C75	18°17'23"	125.00	39.90
C76	41°18'55"	85.00	61.29
C77	62°43'53"	60.00	65.69
C78	20°09'54"	60.00	21.12
C79	28°36'01"	200.00	99.83
C80	10°42'37"	80.00	14.95
C81	116°22'50"	1.00	2.03
C82	13°51'24"	60.00	14.51
C83	128°24'25"	1.00	2.24
C84	8°30'16"	60.00	8.91
C85	105°09'20"	3.00	5.51
C87	11°59'44"	100.00	20.94

Curve Table			
Curve #	Delta	Radius	Length
C89	16°15'41"	100.00	28.38
C92	176°36'30"	2.00	6.16
C93	13°45'54"	250.00	60.06
C94	67°55'14"	35.00	41.49
C95	39°07'31"	80.00	54.63
C96	32°15'34"	280.00	157.65
C97	24°22'45"	126.00	53.61
C98	42°15'42"	30.00	22.13
C99	29°05'08"	175.00	88.84
C100	17°18'52"	214.50	64.82
C102	17°12'41"	60.00	18.02
C105	14°11'30"	200.00	49.54
C106	170°20'14"	2.00	5.95
C107	15°15'24"	300.00	79.88
C109	14°15'55"	250.00	62.24
C112	3°25'36"	400.00	23.92
C137	104°25'07"	3.00	5.47
C138	128°15'01"	1.00	2.24
C139	175°26'51"	2.00	6.12

SHREWSBURY STREET BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C6	51+79.85	2946357.7422	568932.2117	R=1500.00' Δ=9°01'43" L=236.37' T=118.43'		54+16.22	2946403.2673	569163.9051
C7	54+16.22	2946403.2673	569163.9051	R=75.00' Δ=36°41'42" L=48.03' T=24.87'		54+64.26	2946423.1844	569206.7157
C8	54+64.26	2946423.1844	569206.7157	R=400.00' Δ=24°38'27" L=172.02' T=87.36'		56+36.28	2946511.0429	569353.0716
L6	56+36.28	2946511.0429	569353.0716		N71°20'37"E 99.97'	57+36.25	2946543.0236	569447.7919
C9	57+36.25	2946543.0236	569447.7919	R=1000.00' Δ=25°43'19" L=448.93' T=228.31'		61+85.19	2946775.7403	569827.2934

DOYLE ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	350+00.00	2946405.6904	569176.0075		S43°09'54"E 118.90'	351+18.90	2946318.9626	569257.3503
C1	351+18.90	2946318.9626	569257.3503	R=325.00' Δ=27°44'33" L=157.37' T=80.26'		352+76.27	2946234.1728	569388.0958

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	52	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:23 PM

MEET EXIST +43.7 16.0' L
MEET EXIST +46.2 16.0' R
MOUNTVIEW DRIVE
N/F ROBERT J OLIVER 4 MT. VIEW DR BOOK 15419 PAGE 318
N/F HIMMER, CARRIE M. AND DEMKO, PETER C. 304 SHREWSBURY ST 201-27 BOOK 34753 PAGE 267
N/F LANDGREN, JEFFREY C AND KELLY A. 314 SHREWSBURY ST 201-64 BOOK 20779 PAGE 317
N/F SHARMA, SHANTNU 318 SHREWSBURY ST 201-65 BOOK 66397 PAGE 209
11 N: 2946470.605' E: 569136.598' EL: 809.090' MAG NAIL
12 N: 2946589.804' E: 569501.155' EL: 817.190' MAG NAIL
N/F M&O MAIN MAINE, LLC 298 SHREWSBURY ST 201-28 BK 57220 PG 394
420+00 MT. VIEW DRIVE BL= 54+28.58 SHREWSBURY STREET BL
54+28.58 SHREWSBURY STREET BL= 350+00.00 DOYLE ROAD BL
SHREWSBURY STREET CONST ℄
1930 TOWN LAYOUT
SHREWSBURY STREET
PC +36.25
56 SHREWSBURY STREET CONST ℄ PT +36.28
1946 TOWN LO
DOYLE ROAD CONST ℄
DOYLE ROAD
1946 TOWN LAYOUT
SURVEY TRAVERSE N61°42'56"E 396.10'
SURVEY TRAVERSE N71°53'38"E 383.55'
SURVEY TRAVERSE S53°18'32"E 544.48'
N71°22'29"E 620.05' SURVEY TRAVERSE
CC+75.05 0.58' L
+94.26 10.90' R ELEV.= 808.16
PC+81.76 11.09' R 808.36 BC
CC+72.72 0.84' L
PT+94.26 11.10' L ELEV.= 808.30
CC+60.97 3.70' R
PCC 54+82.50 37.30' L 809.02 BC
PRC+29.33 18.14' L 809.29 BC
808.63 +10
809.40 +50
PT+91.30 15.62' L
PT+96.04 13.01' L
PT+19.94 13.92' L
MEET EXIST +26.1 17.1' L
MEET EXIST +25.5 11.2' R
PCC+36.41 14.03' L ELEV = 808.95 BC
PT+71.36 14.62' L 808.73 BC
PC+00.98 15.11' L 808.52 BC
CC+60.70 5.34' L
420+34.54 22.95' L 809.63 BC
PRC+89.74 10.95' L
PRC+23.81 3.38' L
809.25 HP 53+81
PCC+76.16 37.15' L
420+34.91 24.40' R 809.49 BC
PRC+88.33 9.88' L 809.16 BC
PRC +64.26
PCC+72.14 15.78' R
PT+36.54 13.00' R
2 BAY GARAGE
BENCHMARK 11: SPIKE IN ULT 41 EL=812.52'
END PROJECT STA 58+25.89 N: 2946576.2254 E: 569530.8767
N/F LANDRY, AMY L 319 SHREWSBURY ST 213-25 BOOK 55481 PAGE 336
PRC+63.69 8.48' L
L=19.94' R=200.00' Δ=5° 42' 48"
PT +19.94
PT+67.77 6.19' L 808.92 BC
PRC+88.98 8.07' R 808.85 BC
808.28 LP+25
PC+24.68 0.09' R
PT+87.66 1.19' R
PC+30.35 7.23' R
PC+71.04 13.24' R 808.81 BC
PRC +16.22
350+36.64 20.53' L 808.97 BC
808.75 55+00
PCC+04.37 9.52' R
PRC+92.52 11.35' R
PCC 54+80.43 35.76' R 808.69 BC
350+09.78 40.85' R 808.91 BC
PRC 350+57.78 11.96' L 808.54 BC
808.39 +00
808.15 LP+27
PT+58.89 18.68' R
PRC 350+33.23 49.96' R 808.46 BC
PCC 350+58.17 32.60' L 808.48 BC
PRC 350+59.17 13.09' L
PRC 350+60.41 8.77' R 808.44 BC
807.91 LP+81
808.24 350+59
808.26 +00
PC+87.57 5.18' R
PC+32.06 22.80' R
PRC+69.72 14.36' R
PRC 350+13.97 58.35' R 808.55 BC
PCC+09.13 17.30' L 808.21 BC
PC +18.90
CC+63.40 8.71' R
CC+23.36 0.50' R
807.83 LP+81
808.04 +00
BENCHMARK 19: SPIKE SET 1' UP ULT 3 EL=813.71'
ALASKA, STEPHEN P JOYCE, SHREWSBURY ST 213-25 BOOK 39802 PAGE 351
HARVEY, DOYLE-GIBB F DOYLE-FERD BOOK 11370 PAGE 385SP
CONTINUED ON SHEET NO. 51
CONTINUED ON SHEET NO. 53
SCALE: 1" = 20'
0 20 50 100

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	53	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:23 PM

DOYLE ROAD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	350+00.00	2946405.6904	569176.0075		S43°09'54"E 118.90'	351+18.90	2946318.9626	569257.3503
C1	351+18.90	2946318.9626	569257.3503	R=325.00' Δ=27°44'33" L=157.37' T=80.26'		352+76.27	2946234.1728	569388.0958
L2	352+76.27	2946234.1728	569388.0958		S70°54'27"E 114.97'	353+91.24	2946196.5677	569496.7388
C2	353+91.24	2946196.5677	569496.7388	R=523.00' Δ=8°52'42" L=81.04' T=40.60'		354+72.28	2946164.2432	569570.9677
L3	354+72.28	2946164.2432	569570.9677		S62°01'45"E 165.29'	356+37.57	2946086.7181	569716.9498
C3	356+37.57	2946086.7181	569716.9498	R=5000.00' Δ=0°16'19" L=23.72' T=11.86'		356+61.29	2946075.5424	569737.8741
L4	356+61.29	2946075.5424	569737.8741		S61°45'26"E 630.69'	362+91.99	2945777.0927	570293.4845

N

DOYLE ROAD

1946 TOWN LAYOUT

N/F
LASKA, STEPHEN P.
307 SHREWSBURY ST
213-24
BOOK 39802 PAGE 351

N/F
DONALDSON, STEVEN AND SUZANNE
22 DOYLE RD
213-26
BOOK 21435 PAGE 165

N/F
HUDSON, KATHERINE R
32 DOYLE RD
213-32
BOOK 37540 PAGE 371

N/F
WOLFE, JOANN M
34 DOYLE RD
213-137
BOOK 5339 PAGE 53

N/F
STONE, WILLIAM C.
42 DOYLE RD
213-33
BOOK 52737 PAGE 50

N/F
KASPARSON, NORMAN L AND ANJ
43 BRATTLE ST
213-36
BOOK 4354 PAGE 81

BENCHMARK 19: SPIKE SET 1' UP ULT 3
EL=813.71'

SURVEY TRAVERSE
S53°18'32"E 544.48'

PC+09.13
17.30' L
808.21 BC

CC+23.36
0.50' R

PRC+26.08
17.34' R

PC+58.92
28.00' L

R=50.00'
L=11.98'

PC+45.86
21.57' L

L=85.23'
R=550.00'

L=84.45'
R=545.00'

PT+37.10
19.43' L

PC+58.92
23.00' L

PT+57.73
23.00' L

PC+25.23
18.00' L

R=50.00'
L=11.98'

PC+01.75
16.90' R

PT+41.58
23.94' L

PT+41.30
18.95' L

PT +72.28

PC +91.24

R=15.00'
L=11.39'

R=5.00'
L=6.85'

R=5.00'
L=7.53'

R=5.00'
L=5.82'

R=208.00'
L=32.23'

R=200.00'
L=30.99'

PC+01.92
24.90' R

R=5.00'
L=6.78'

PT+35.05
17.72' R

PT+34.45
25.70' R

R=10.00'
L=9.27'

R=5.00'
L=6.85'

R=10.00'
L=9.27'

R=5.00'
L=6.85'

R=10.00'
L=9.27'

R=10.00'
L=10.47'

R=5.00'
L=7.69'

R=5.00'
L=7.88'

R=5.00'
L=7.85'

R=5.00'
L=7.85'

R=5.00'
L=7.85'

818.54
+00

819.52
+50

820.50
+00

821.37
+50

822.02
+00

818.63
+00

819.76
+50

820.70
+00

821.46
+50

821.98
+00

PC +37.57

PT +61.29

DOYLE ROAD
CONST ℄

SURVEY TRAVERSE
S60°35'34"E 566.61'

20
N: 2946145.278'
E: 569573.199'
EL: 818.680'
NAIL SET

BENCHMARK 20: SPIKE SET 1' UP ULT 7
EL=822.01'

PC +18.90

PT

PT +76.27

PRC

PT

PC

PT

PC

PT

P

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	54	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:23 PM

Curve Table			
Curve #	Delta	Radius	Length
C114	127°30'42"	35.00	77.89
C115	72°51'24"	42.00	53.41
C116	88°29'25"	5.00	7.72
C117	124°19'19"	3.00	6.51
C118	87°30'44"	40.00	61.10
C119	13°24'11"	213.00	49.83
C120	20°26'51"	140.00	49.96
C121	21°11'49"	125.00	46.24
C122	15°03'56"	187.00	49.17
C123	89°12'11"	30.00	46.71

DOYLE ROAD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	356+61.29	2946075.5424	569737.8741		S61°45'26"E 630.69'	362+91.99	2945777.0927	570293.4845

BRATTLE STREET SOUTH BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	506+00.00	2945858.5905	570141.7636		S27°33'24"W 45.42'	506+45.42	2945818.3260	570120.7526
C1	506+45.42	2945818.3260	570120.7526	R=200.00' Δ=33°00'22" L=115.21' T=59.25'		507+60.63	2945706.8075	570098.9674
L2	507+60.63	2945706.8075	570098.9674		S5°26'58"E 96.17'	508+56.80	2945611.0729	570108.1005

CONTINUED ON SHEET NO. 53

DOYLE ROAD
CONST ℄

BRATTLE STREET

BRATTLE STREET

1946 TOWN LAYOUT

SURVEY TRAVERSE
S60°35'34"E 566.61'

BENCHMARK 21: CHISEL SQUARE IN CONC PAD
EL=822.27'

22
N: 2945867.068'
E: 570066.799'
EL: 821.560'
NAIL SET

LIMIT OF WORK
STA 362+16.28
N: 2945812.9175
E: 570226.7910

506+00 BRATTLE STREET SOUTH BL=
361+19.76 DOYLE ROAD BL

MEET EXIST
+05.0
79.3' L
PC+00.48
75.48' L
ELEV = 822.15 BC

PRC+99.78
68.54' L
ELEV = 822.23 BC

PT+78.96
70.31' L

PC+51.19
14.00' L

PRC+01.62
18.69' L
ELEV = 821.52

PT+04.09
14.00' L
ELEV = 821.42 BC

∠PT +12.95
14.62' LT
ELEV = 820.61 BC

∠PT +74.72
14.00' LT

MEET EXIST
+85.7, 14.9' L
ELEV = 820.1±

PC+67.53
14.00' R
ELEV = 821.01 BC

PCC+51.71
13.00' R
ELEV = 821.14 BC

PRC+68.18
20.01' R

PCC+44.37
13.00' L
ELEV = 820.98 BC

PCC+95.87
13.00' L

PT+62.69
14.03' R
ELEV = 820.37 BC

PT+01.46
19.82' R

R=100.00'
L=10.02'

PC+91.48
20.63' R

PT+79.69
20.99' R

MEET EXIST
+16.2
12.9' R

R=50.00'
L=11.58'

MEET EXIST
+51.3
16.4' L
ELEV.= 821.5±

PCC+19.02
12.00' R

MEET EXIST
+54.0
14.6' R
ELEV.= 821.4±

PT +60.63

R=5.00'
L=7.85'

R=5.00'
L=7.85'

R=5.00'
L=7.85'

R=5.00'
L=7.85'

N/F
KASPARSON, NORMAN L AND ANJA S.
43 BRATTLE ST
213-36
BOOK 4354 PAGE 81

N/F
CRAIN, STEVEN H
49 BRATTLE ST
213-37
BOOK 58922 PAGE 135

N/F
CURTIS, RICHARD E. BRATTLE & SLEFOTA L
52 BRATTLE ST
BOOK 41567 PAGE 579

N/F
HARMON, KEVIN M AND QUINN, KAITLIN E.
60 BRATTLE ST
202-129
BOOK 33485 PAGE 178

N/F
TRAN, JACQUELINE
70 DOYLE RD
214-48
BOOK 43373 PAGE 252

N/F
DZIK, SCOTT M
78 DOYLE RD
214-47
BOOK 39697 PAGE 130

N/F
CADDEN, BARBARA J
47 DOYLE RD
213-131
BOOK 18648 PAGE 32

N/F
BULLOCK, STEVEN C & SYLVIA D
53 DOYLE RD
213-122
BOOK 19283 PAGE 338

N/F
MURWIN, WILLIAM P
61 DOYLE RD
213-123
BOOK 34247 PAGE 100

N/F
ZHENG, MIN CHENG
65 BRATTLE ST
213-124
BOOK 59002 PAGE 126

N/F
HOLDEN, TOWN OF
BRATTLE ST
214-34
BK 7694 PG 191

N/F
LUMB, CYNTHIA L
74 BRATTLE ST
BOOK 46878 PAGE 169

N/F
FERRA, PAULA E
BRATTLE ST

N/F
ROPER, C
75 BRATTLE ST
BOOK 10602 PAGE 31

0 20 50 100
SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	55	206
PROJECT FILE NO. 609219			

ALIGNMENT & GRADING PLANS

609219_HD(ALIGN).DWG Plotted on 4-Jan-2023 1:24 PM

N/F VAUGH, RAYMOND E & RITA E 44 CHAPEL ST 200-11 BOOK 36048 PAGE 97

N/F WOODWARD, BRUCE L 40 CHAPEL ST 200-12 BOOK 49971 PAGE 103

N/F ROSEN, MICHAEL J 36 CHAPEL ST 200-13 BOOK 12399 PAGE 226

N/F BRAMAN, DAVID N. AND PAMELA 28 CHAPEL ST 200-14 BOOK 53824 PAGE 129

N/F CASTAGNA, RITA M 20 CHAPEL ST 200-15 BOOK 19178 PAGE 331

N/F DEWITT, STEVEN H 4 CHAPEL ST 200-16 BOOK 25691 PAGE 319

LIMIT OF WORK
STA 200+72.00
N: 2947187.3084
E: 567303.1122

LIMIT OF PAVING
STA 202+34.90
N: 2947024.7089
E: 567293.1541

BENCHMARK 18: SPIKE SET 1' UP UPL 3
EL=745.57'

18
N: 2947111.444'
E: 567318.804'
EL: 740.530'
NAIL SET

17
N: 2946837.115'
E: 567303.062'
EL: 750.740'
NAIL SET

MEET EXIST
+37.1
18.5' L
ELEV.= 742.4±

PC+58.38
18.48' L

PT+66.48
18.48' L

PC+90.33
23.67' L

PT+06.54
24.00' L

1947 TOWN LAYOUT

SURVEY TRAVERSE
S3°17'04"W 274.78'

SURVEY TRAVERSE
S13°46'02"W 235.22'

EXIST & PROP CROWN LINE

746.77 CHAPEL-HOLDEN STREET CONST ℄

CHAPEL STREET

CONTINUED ON SHEET NO. 48

200+00 201 202 203 204 205

MEET EXIST
+33.8
9.5' R
ELEV.= 742.0±

PC+72.20
8.87' R

PT+82.92
8.98' R

PC+83.86
12.72' R

PT+94.17
12.97' R

PC+20.59
13.00' R

PT+33.28
13.41' R

CHAPEL-HOLDEN BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2947259.1738	567307.5134		S3°30'16"W 1227.63'	212+27.63	2946033.8420	567232.4706

Curve Table			
Curve #	Delta	Radius	Length
C50	3°38'22"	200.00	12.70
C124	2°19'23"	400.00	16.22
C125	1°28'41"	400.00	10.32
C126	3°04'14"	200.00	10.72
C127	2°19'16"	200.00	8.10

N/F COTE, JERROLD O AND CECILE M. 146 SHREWSBURY ST 200-104 BOOK 30144 PAGE 321

N/F VERDINI, PAUL M 45 CHAPEL ST 200-98 BOOK 19176 PAGE 286

N/F DACRI, LOUISE A TRUSTEE CHAPEL ST 200-99 BOOK 25348 PAGE 119

N/F DACRI, ROBERT J AND JUDITH M. 33 CHAPEL ST 200-95 BOOK 12399 PAGE 111

N/F DIPILATO, THOMAS E 19 CHAPEL ST 200-105 BK 13861 PG 356

0 20 50 100
SCALE: 1" = 20'

N/F SARY, LEAK AND CAREEPY, VORAK T. 171 SHREWSBURY ST 213-1 BOOK 33457 PAGE 168

N/F TIEMO, AEMI AND OJEIKERE, OLUFEMI 14 HOLDEN ST 213-87 BOOK 39048 PAGE 68

N/F HADLEY, RYAN T 22 HOLDEN ST 213-86 BOOK 55722 PAGE 341

N/F GERECEKEN, DAVID AND SUZANNE 30 HOLDEN ST 213-134 BK 18172 PG 327

N/F RIEDLE, JESSE M HOLDEN ST 213-1 BOOK 58538 PAGE 264

N/F BROWN, RICHARD ONEIL 40 HOLDEN ST 213-84 BOOK 20630 PAGE 58

BENCHMARK 16: X-CUT IN HYDRANT BONNET BOLT
EL=758.96'

BENCHMARK 17: SPIKE SET 1' UP ULT #15
EL=750.55'

LIMIT OF WORK
STA 213+46.09
N: 2945915.5171
E: 567234.3944

MEET EXIST
+46.1
15.3' L

PC+16.85
16.51' L

PCC+43.95
16.00' L

PT+00.31
26.56' L
756.47 BC

PC+81.52
27.00' L

1943 TOWN LAYOUT

HOLDEN STREET

CHAPEL-HOLDEN STREET CONST ℄

PC +27.63
R=800'
L=154'

PT +56.53

213+96.11

PT+04.60
16.00' L

MEET EXIST
+46.1
15.0' R

PC+25.07
16.00' R

PT+24.53
14.95' R

PRC+96.64
15.24' R

PC+30.83
16.00' R

PT+66.87
16.00' R

PT+35.83
21.00' R

PC+56.87
26.26' R

PT+51.60
41.18' R
ELEV=764.2±

PC+73.14
40.60' R
ELEV = 764.6±

PC+72.85
16.00' R

PT+92.85
36.00' R

PT+33.23
16.00' R

PC+13.23
36.00' R

MEET EXIST
+92.8
55.8' R

MEET EXIST
+13.2
55.8' R

19
N: 2946182.947'
E: 567220.228'
EL: 759.660'
NAIL SET

MARLEN ROAD

CHAPEL-HOLDEN BL CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	200+00.00	2947259.1738	567307.5134		S3°30'16"W 1227.63'	212+27.63	2946033.8420	567232.4706
C1	212+27.63	2946033.8420	567232.4706	R=765.00' Δ=9°39'16" L=128.90' T=64.60'		213+56.53	2945905.1249	567235.4424

Curve Table			
Curve #	Delta	Radius	Length
C61	90°00'00"	20.00	31.42
C62	90°00'00"	20.00	31.42
C63	2°39'34"	405.00	18.80
C128	90°02'37"	5.00	7.86
C129	91°29'47"	10.00	15.97
C130	3°52'41"	395.00	26.74
C131	83°24'08"	28.00	40.76
C132	4°32'34"	749.00	59.39
C133	89°21'06"	25.00	38.99
C134	2°05'42"	778.00	28.45

N/F HOLDEN TOWN OF 1 HOLDEN ST 200-23 BOOK 2271 PAGE 545

N/F HOLDEN TOWN OF HOLDEN ST 200-24 BOOK 2548 PAGE 363

N/F BEDIAKO, NICOLE 27 HOLDEN ST 200-25 BOOK 57157 PAGE 272

0 20 50 100
SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	56	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:25 PM

CONSTRUCTION NOTES

1. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE ADDRESSED AS NOTED:
   - RET = RETAIN
   - R&R = REMOVE AND RESET
   - R&S = REMOVE AND STACK
   - R&D = REMOVE AND DISCARD

CONTINUED ON SHEET NO. 57

MEET RESURFACING PROJECT PVMT MKGS

BEGIN PROJECT
STA 96+44.21
N: 2948510.0448
E: 565102.2378

MAIN STREET (ROUTE 122A)

REPLACE EMERGENCY BEACON VEHICLE DETECTION IN KIND

SEE 'DO NOT BLOCK' DETAIL ON SHEET 114.

RET EMERGENCY BEACON

SWL @ 45°, 20' O.C (TYP)

12" SWCHL, 10' O.C.

2' DWLEx W/6' GAPS (TYP)

1974 STATE HIGHWAY LAYOUT

1915 STATE HIGHWAY LAYOUT

SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	57	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:25 PM

CONTINUED ON SHEET NO. 56

CONTINUED ON SHEET NO. 58

MAIN STREET (ROUTE 122A)

SHREWSBURY STREET

1974 STATE HIGHWAY LAYOUT

1915 STATE HIGHWAY LAYOUT

1927 SHLO

1997 COUNTY ALTERATION

1930 TOWN LAYOUT

1932 STATE HIGHWAY LAYOUT

R9-5 MTD ON TS POST
D1-2a
SP-4L
SP-2L
R6-1L
R6-1R
R5-1
MA-D3-1a
D6-1
D8-1
R1-1
R3-8LR
R7-1d
R3-3
R6-1L, R6-1R
R5-1
R3-3
OM1-1
R4-7
M4-5
M1-1(I-190)
M6-3
W4-2R
SP-3L
R10-25 MTD ON TS POST
MA-D3-1a X2
D6-3
D8-3
R3-8R
R3-2 FACING MAIN ST SB
R3-2 FACING PLAZA EXIT
2' DWL W/ 6' GAPS (TYP)
MEET EXIST PVM'T MKG
R2-1(35)
R2-1(25)

LIMIT OF WORK
STA 104+86.15
N: 2947761.8705
E: 565288.7442

CONSTRUCTION NOTES

1. SEE SHEETS 73 AND 74 FOR TRAFFIC SIGNAL INFORMATION.
2. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE ADDRESSED AS NOTED:
   - RET = RETAIN
   - R&R = REMOVE AND RESET
   - R&S = REMOVE AND STACK
   - R&D = REMOVE AND DISCARD

0 20 50 100

SCALE: 1" = 20'

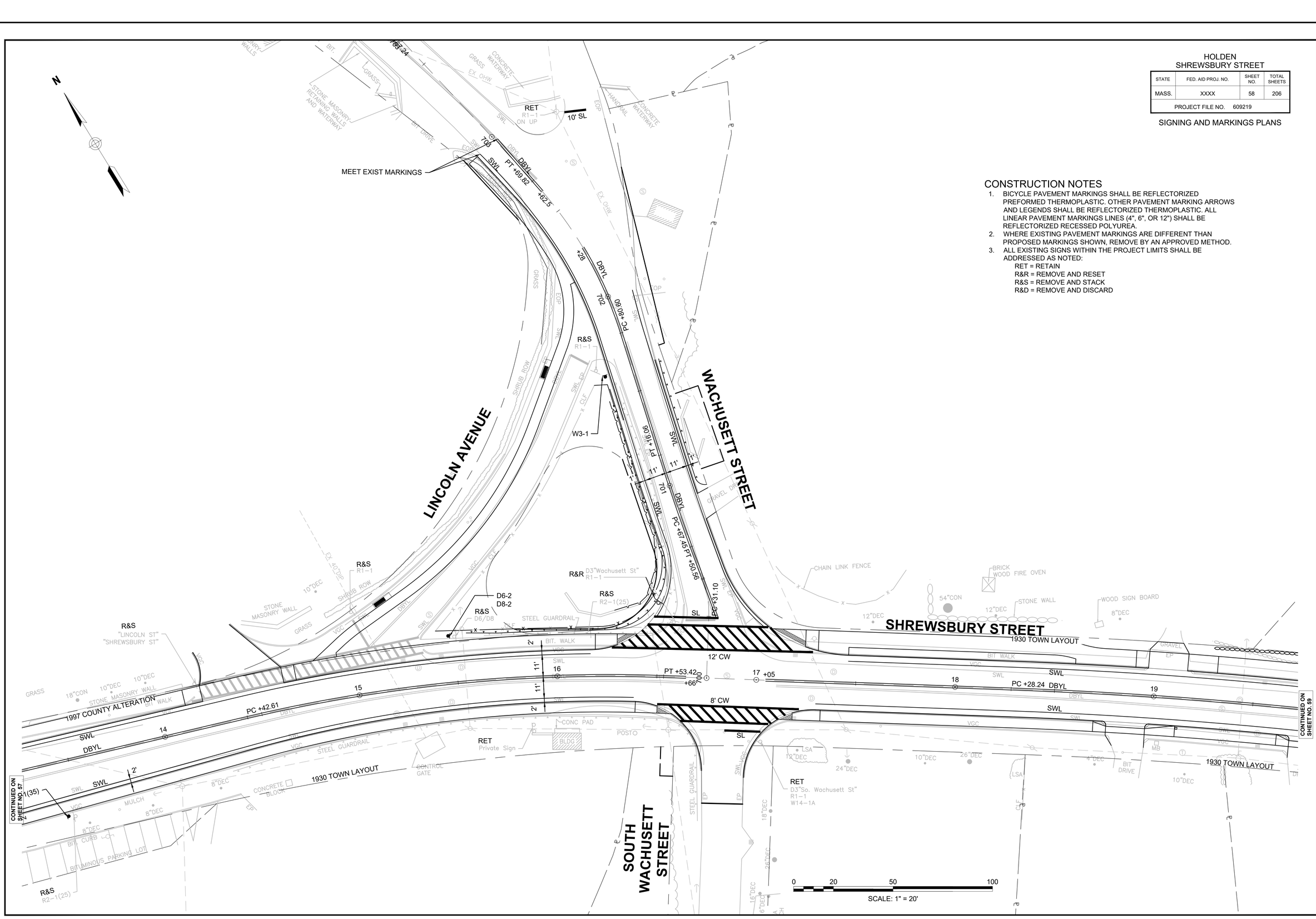
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	58	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

CONSTRUCTION NOTES

1. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE ADDRESSED AS NOTED:
   - RET = RETAIN
   - R&R = REMOVE AND RESET
   - R&S = REMOVE AND STACK
   - R&D = REMOVE AND DISCARD



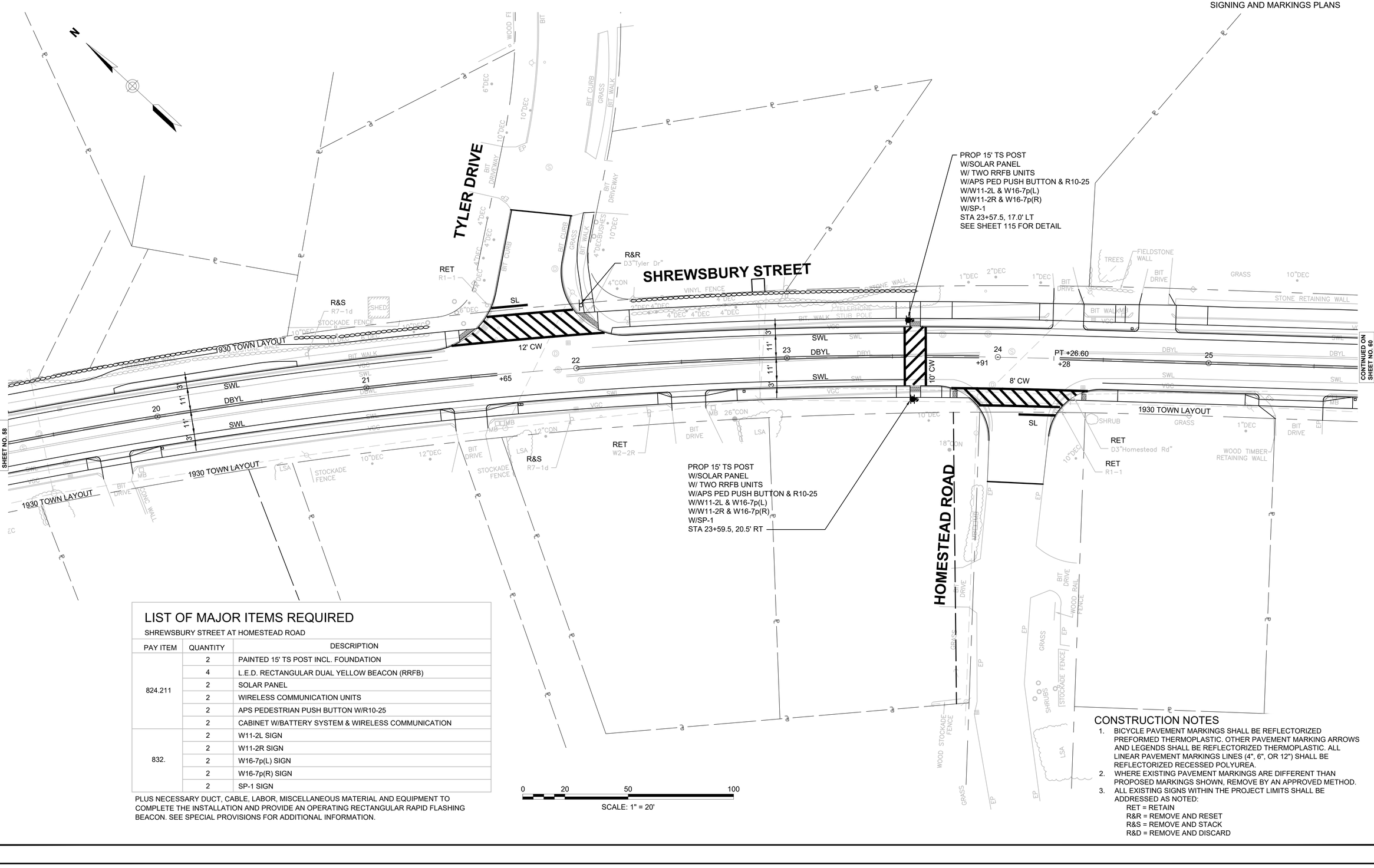
609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:25 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	59	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:25 PM



LIST OF MAJOR ITEMS REQUIRED

SHREWSBURY STREET AT HOMESTEAD ROAD

PAY ITEM	QUANTITY	DESCRIPTION
824.211	2	PAINTED 15' TS POST INCL. FOUNDATION
	4	L.E.D. RECTANGULAR DUAL YELLOW BEACON (RRFB)
	2	SOLAR PANEL
	2	WIRELESS COMMUNICATION UNITS
	2	APS PEDESTRIAN PUSH BUTTON W/R10-25
	2	CABINET W/BATTERY SYSTEM & WIRELESS COMMUNICATION
832.	2	W11-2L SIGN
	2	W11-2R SIGN
	2	W16-7p(L) SIGN
	2	W16-7p(R) SIGN
	2	SP-1 SIGN

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING RECTANGULAR RAPID FLASHING BEACON. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

0 20 50 100

SCALE: 1" = 20'

CONSTRUCTION NOTES

1. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
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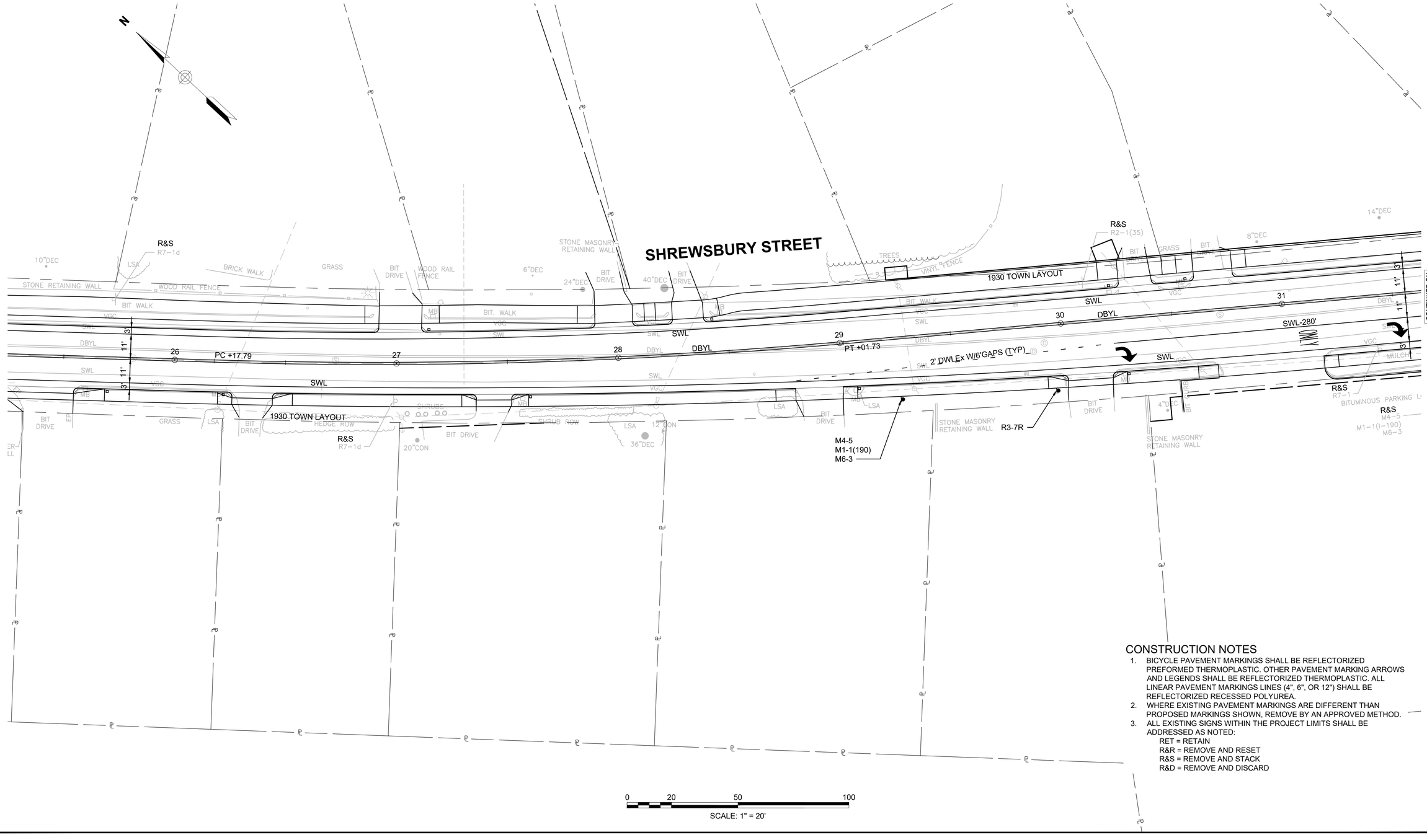
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	60	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:26 PM



CONSTRUCTION NOTES

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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	61	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:26 PM

CONTINUED ON SHEET NO. 68

CHAPEL STREET

SHREWSBURY STREET

HOLDEN STREET

1930 TOWN LAYOUT

1943 TOWN LAYOUT

R&S
R7-1d
MTD ON UP

PROP SHARROW (TYP)
SEE CONSTRUCTION DETAIL ON SHEET 114.

SP-2L

SP-3R

2' DWLEx w/6' GAPS (TYP)

OM1-1

Sign Missing

D1-2b

R&S
R5-1
R1-2

R6-1L
R6-1R
R5-1
R1-2
SP-3R

R6-1L
R6-1R
R5-1
R3-2

R9-5 MTD ON TS POST

D1-2c

R9-5 MTD ON TS POST

R&R TO TS POST
D3 Chapel St
MTD ON TS POST

MA-R10-12A

R10-11b

R3-7R

R&S
R7-1

BITUMINOUS PARKING LOT

R&S
M4-5
M1-1(I-190)
M6-3

SIGN IN LSA
WITH FLOOD LIGHTS

R3-17

R&S
"HOLDEN
CENTER"
MTD ON TS POST

PROP BIKE LANE MARKING (TYP)
SEE DETAIL ON SHEET 114.

R&R TO TS POST
D3 Holden St
MTD ON UP

R6-1L
R6-1R
R5-1

R6-1L
R6-1R
R5-1
R3-2

R&S
R5-1

OM1-1

2' DWLEx w/6' GAPS (TYP)

R3-17
R3-17bp

R4-4

R3-7L

R&S
R7-1d

CONTINUED ON SHEET NO. 60

CONTINUED ON SHEET NO. 62

CONTINUED ON SHEET NO. 68

0 20 50 100
SCALE: 1" = 20'

CONSTRUCTION NOTES

1. SEE SHEETS 75 AND 76 FOR TRAFFIC SIGNAL DATA.
2. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	62	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

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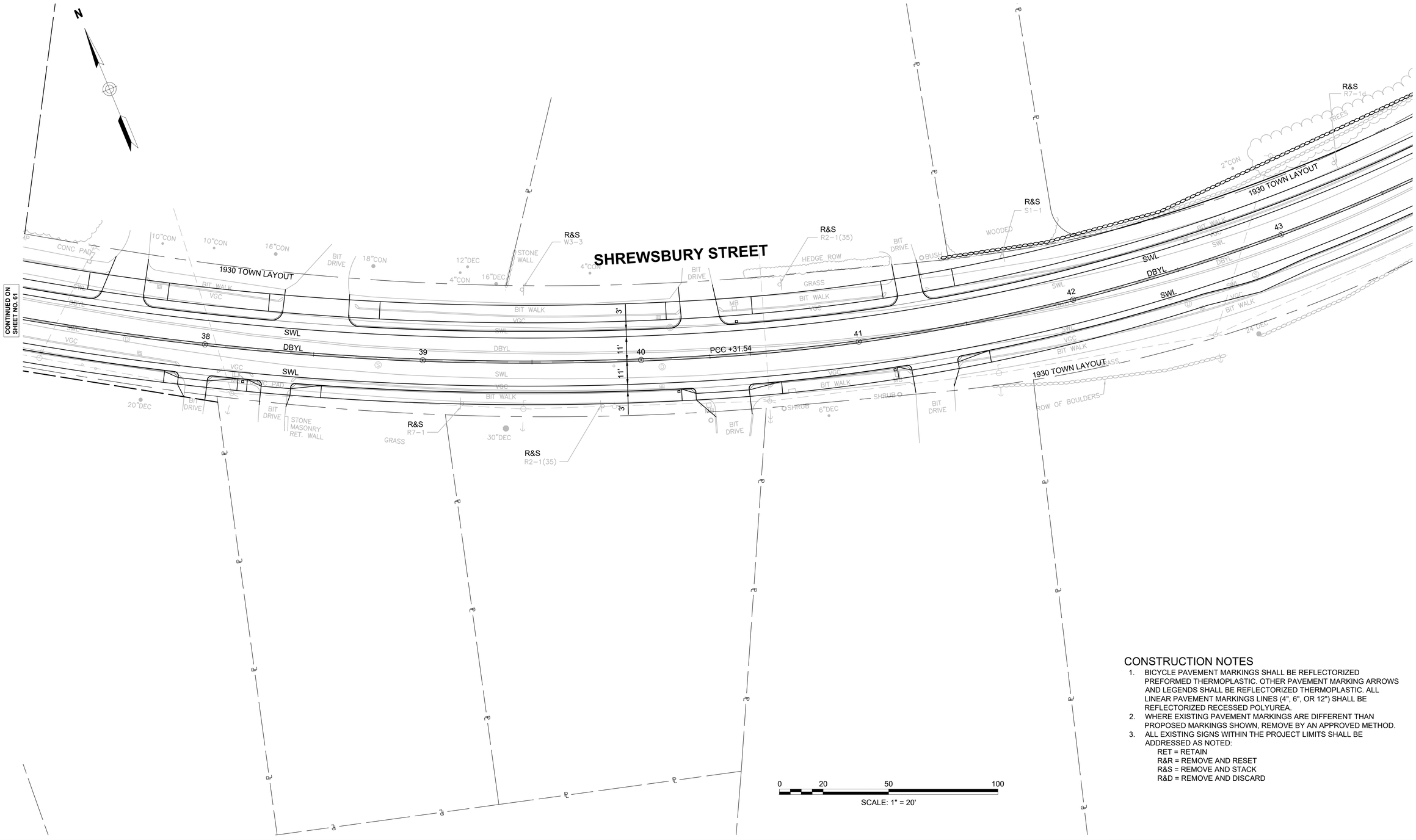

CONSTRUCTION NOTES

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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	63	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HDITSIG).DWG Plotted on 4-Jan-2023 1:26 PM

LIST OF MAJOR ITEMS REQUIRED

SHREWSBURY STREET AT LOCATION NO. 1

PAY ITEM	QUANTITY	DESCRIPTION
824.351	1	PAINTED 15' TS POST INCL. FOUNDATION
	1	SIDE-OF-POST MOUNTED CONTROL CABINET ASSEMBLY
	2	1-SECTON SIGNAL HOUSING 8" YELLOW LED SIGNAL MODULE
	1	S5-1a SIGN
	1	12" HOUSING W/9" LED SPEED MESSAGE SIGN
	1	SOLAR PANEL

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING SCHOOL ZONE SPEED LIMIT SYSTEM. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

CONSTRUCTION NOTES

1. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
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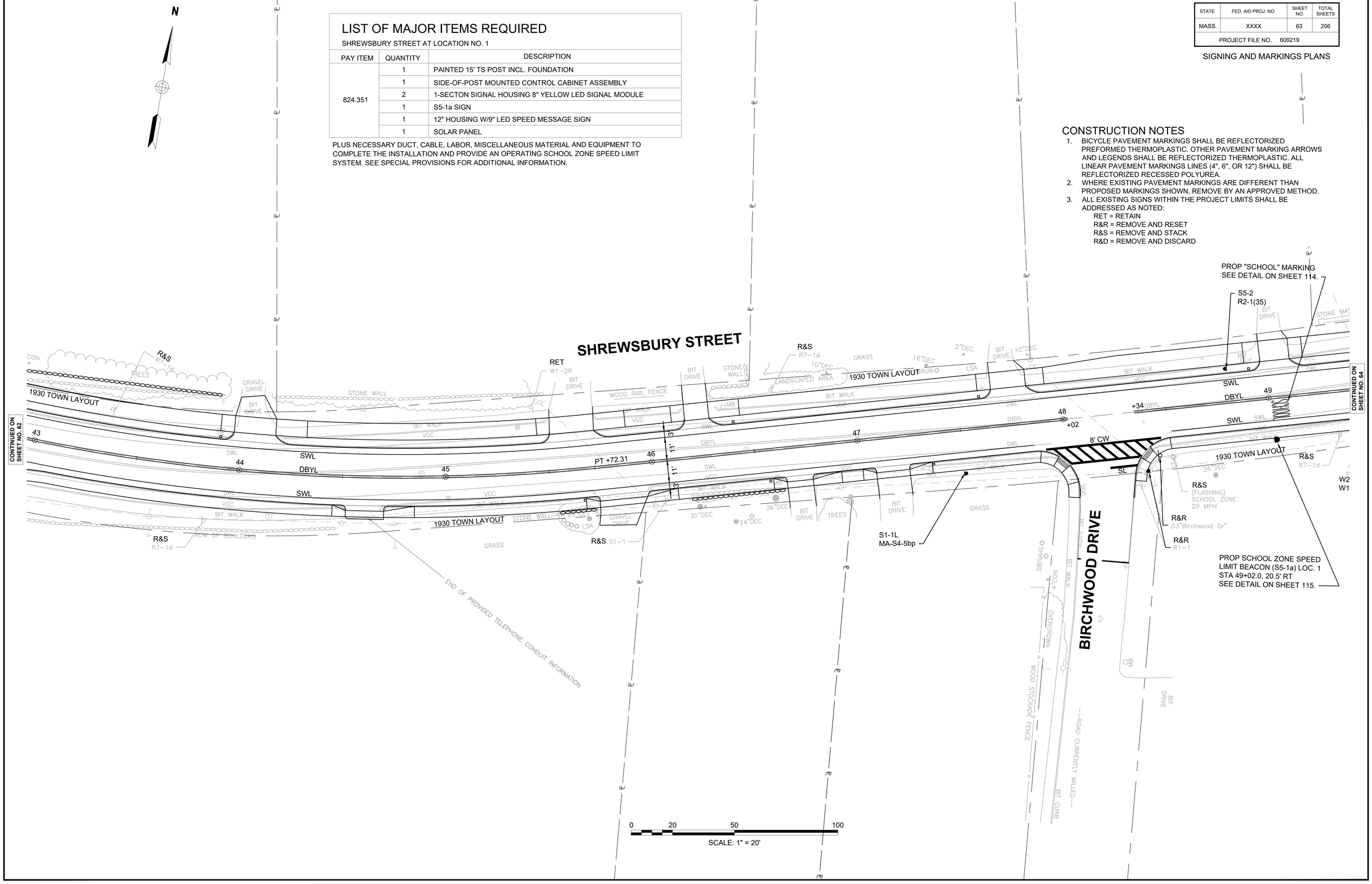

LIST OF MAJOR ITEMS REQUIRED

SHREWSBURY STREET AT MONTVIEW MIDDLE SCHOOL

PAY ITEM	QUANTITY	DESCRIPTION
824.212	2	PAINTED 15' TS POST INCL. FOUNDATION
	4	L.E.D. RECTANGULAR DUAL YELLOW BEACON (RRFB)
	2	SOLAR PANEL
	2	WIRELESS COMMUNICATION UNITS
	2	APS PEDESTRIAN PUSH BUTTON W/R10-25
	2	CABINET W/BATTERY SYSTEM & WIRELESS COMMUNICATION
832.	2	S1-1L SIGN
	2	S1-1R SIGN
	2	W16-7p(L) SIGN
	2	W16-7p(R) SIGN
	2	SP-1 SIGN

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING RECTANGULAR RAPID FLASHING BEACON. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

LIST OF MAJOR ITEMS REQUIRED

SHREWSBURY STREET AT LOCATION NO. 2

PAY ITEM	QUANTITY	DESCRIPTION
824.352	1	PAINTED 15' TS POST INCL. FOUNDATION
	1	SIDE-OF-POST MOUNTED CONTROL CABINET ASSEMBLY
	2	1-SECTON SIGNAL HOUSING 8" YELLOW LED SIGNAL MODULE
	1	S5-1a SIGN
	1	12" HOUSING W/9" LED SPEED MESSAGE SIGN
	1	SOLAR PANEL

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING SCHOOL ZONE SPEED LIMIT SYSTEM. SEE SPECIAL PROVISIONS FOR ADDITIONAL INFORMATION.

CONSTRUCTION NOTES

1. R&S ALL TRAFFIC SIGNAL EQUIPMENT AND ABANDON ALL TS CONDUIT. SEE SUGGESTED ROUNDABOUT STAGING PLAN ON SHEET 78 FOR SEQUENCING OF REMOVAL.
2. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	64	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

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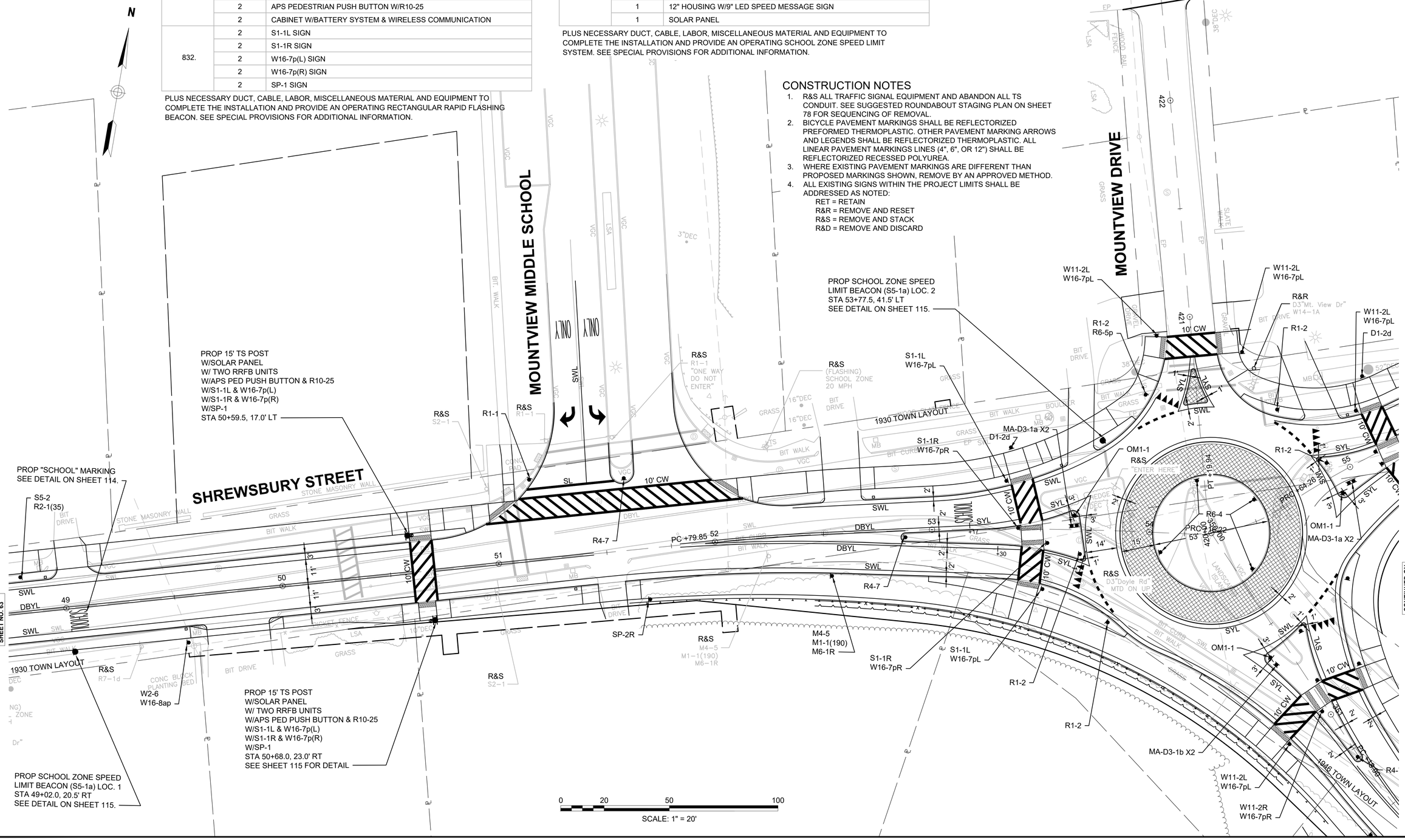

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	65	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

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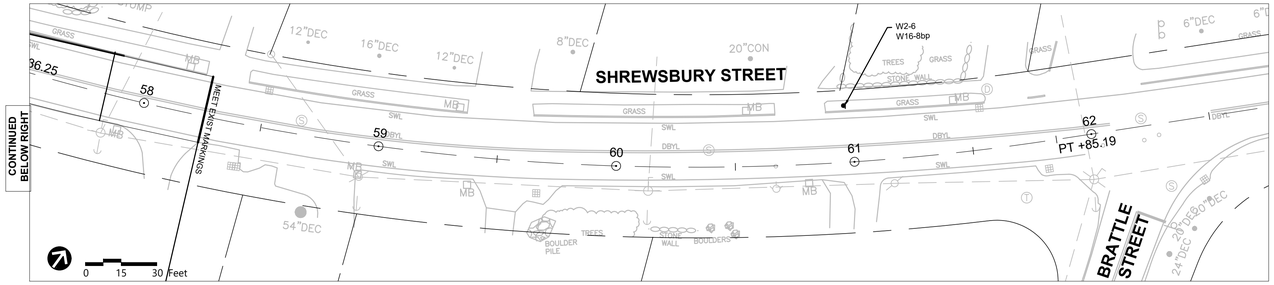

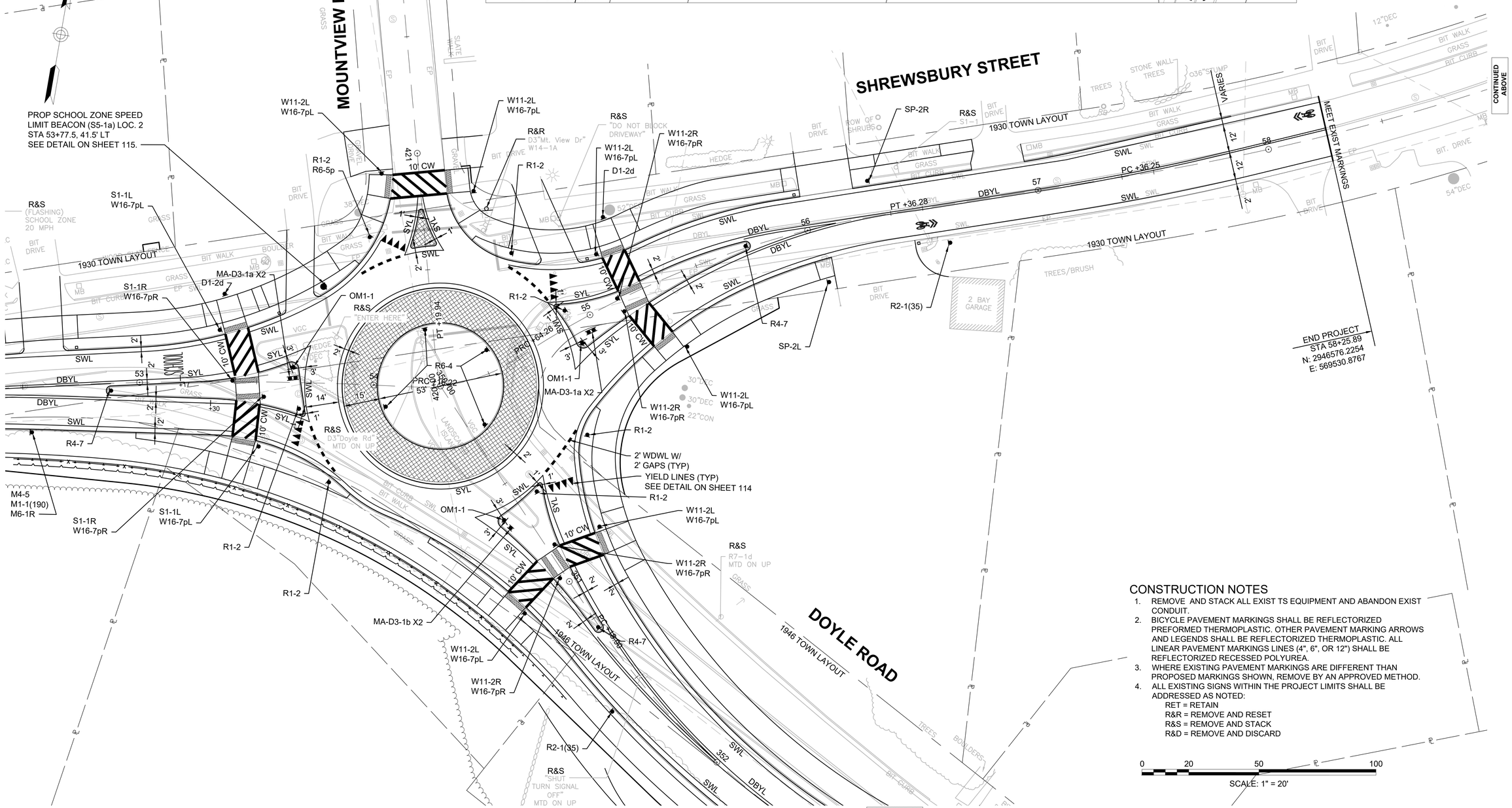

CONSTRUCTION NOTES

1. REMOVE AND STACK ALL EXIST TS EQUIPMENT AND ABANDON EXIST CONDUIT.
2. BICYCLE PAVEMENT MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC. OTHER PAVEMENT MARKING ARROWS AND LEGENDS SHALL BE REFLECTORIZED THERMOPLASTIC. ALL LINEAR PAVEMENT MARKINGS LINES (4", 6", OR 12") SHALL BE REFLECTORIZED RECESSED POLYUREA.
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0 20 50 100

SCALE: 1" = 20'

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	66	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

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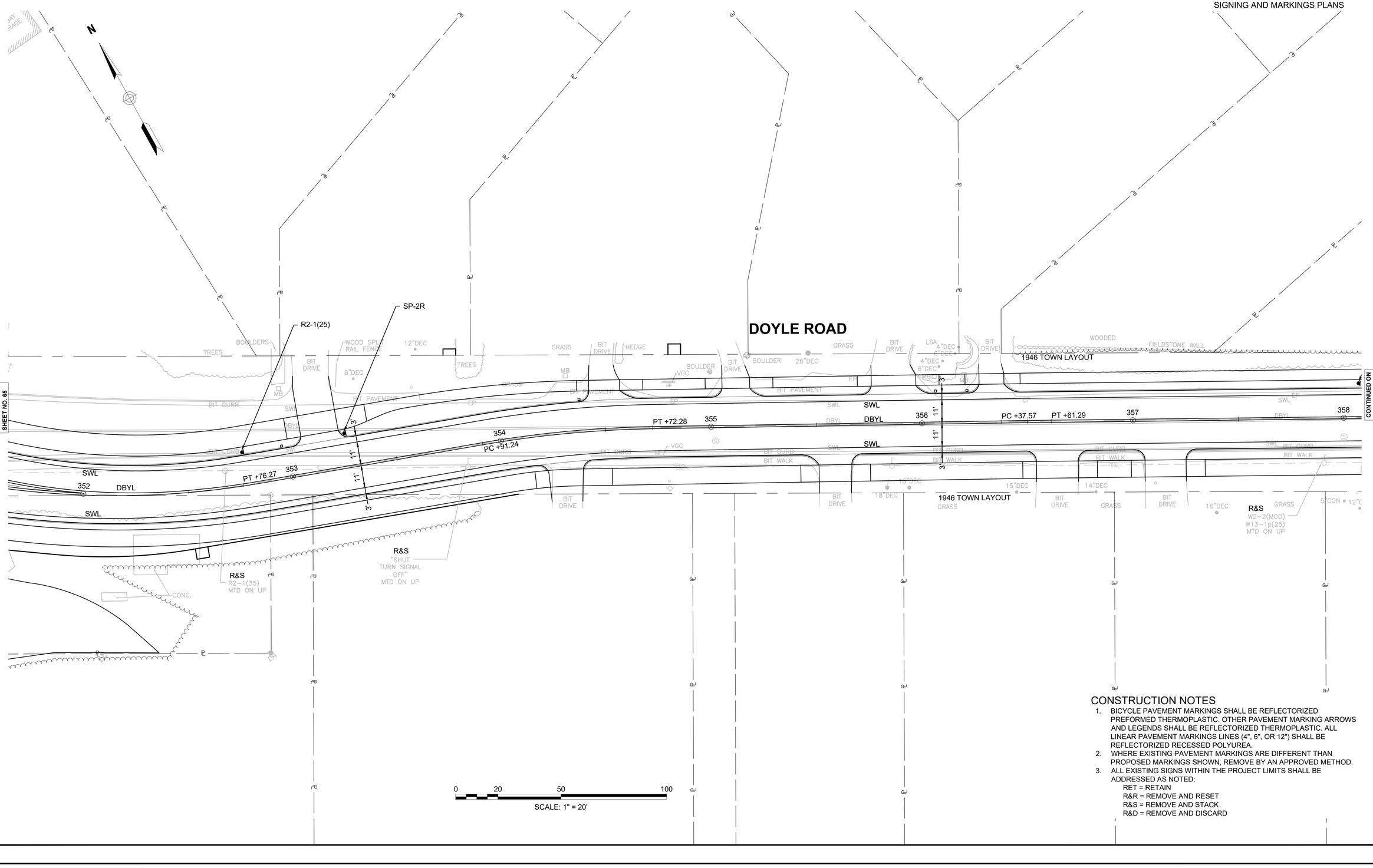

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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	67	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

CONSTRUCTION NOTES

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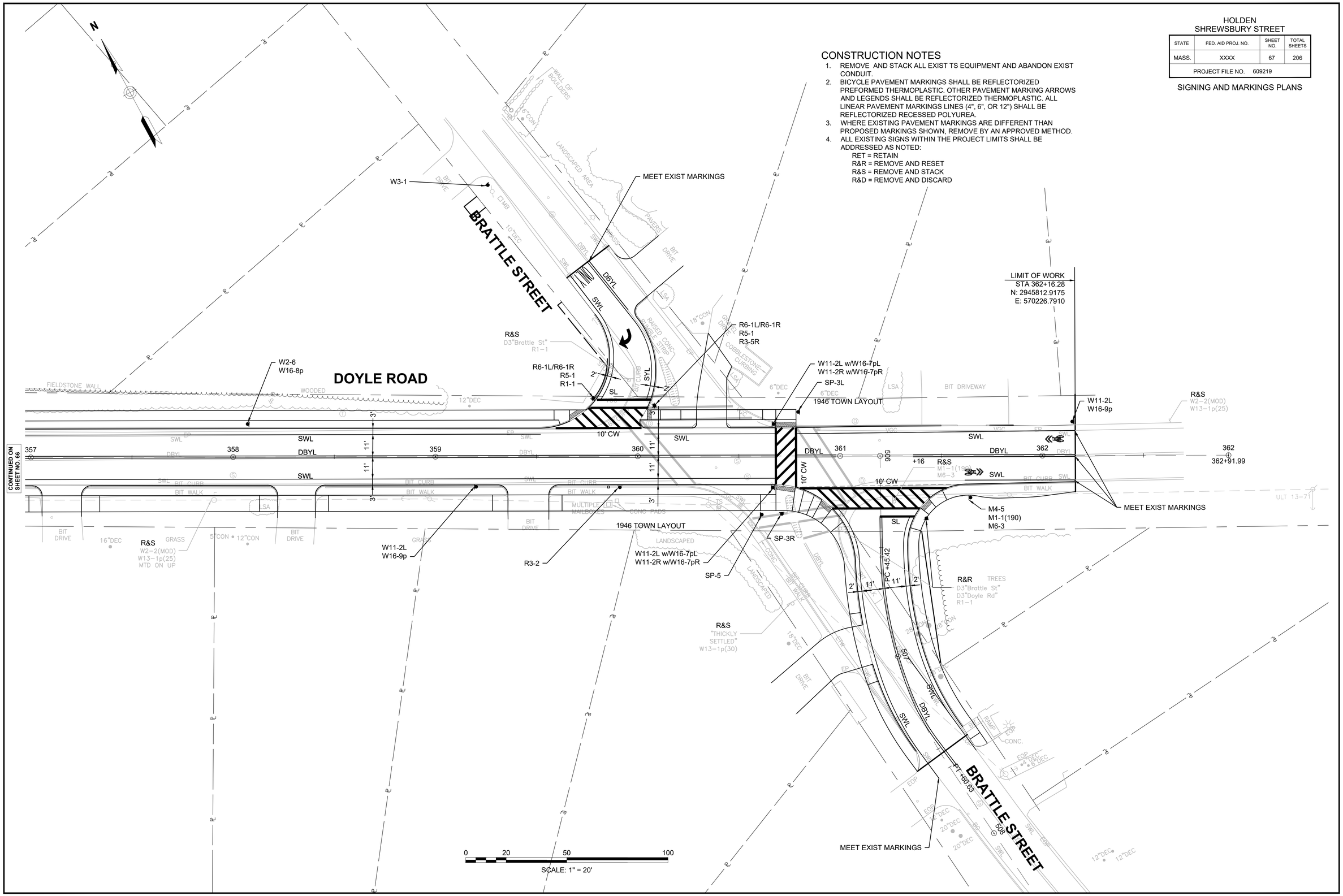

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:27 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	68	206
PROJECT FILE NO. 609219			

SIGNING AND MARKINGS PLANS

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:27 PM

N

LIMIT OF WORK
STA 200+72.00
N: 2947187.3084
E: 567303.1122

LIMIT OF PAVING
STA 202+34.90
N: 2947024.7089
E: 567293.1541

CHAPEL STREET

1947 TOWN LAYOUT

MEET EXIST MARKINGS

SWL

DBYL

2' DWLEx W/6' GAPS(TYP)

200 201 202 203 204 205

SWL-235'

R3-7L

11' 11' 11'

CONTINUED ON SHEET NO. 61

0 20 50 100
SCALE: 1" = 20'

HOLDEN STREET

1943 TOWN LAYOUT

SWL-210'

ONLY

209 210 211 212 213

PC +27.63

PT +56.53

+75

2' DWLEx W/6' GAPS(TYP)

10' CW

R3-17

R3-17bp

R&R
DJ"MARLEN RD"

R1-1

SL

MARLEN ROAD

LIMIT OF WORK
STA 213+46.09
N: 2945915.5171
E: 567234.3944

MEET EXIST MARKINGS

5' 11' 11' 11' 5'

CONTINUED ON SHEET NO. 61

0 20 50 100
SCALE: 1" = 20'

CONSTRUCTION NOTES

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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	69	206
PROJECT FILE NO. 609219			

TRAFFIC SIGN SUMMARY

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
R1-1	30"	30"	STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			4	RED	WHITE	WHITE	P5-4	6.25	25.00
R1-2	36"X36"X36"		YIELD				9	WHITE	RED	WHITE	P5-9	3.90	35.10
R2-1(25)	24"	30"	SPEED LIMIT 25				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R2-1(35)	24"	30"	SPEED LIMIT 35				4	WHITE	BLACK	BLACK	P5-4	5.00	20.00
R3-2	24"	24"					5	WHITE	RED/ BLACK	BLACK	P5-2 3 MTD W/OTHERS	4.00	20.00
R3-3	24"	24"	NO TURNS				3	WHITE	BLACK	BLACK	P5-2 1 MTD W/OTHERS	4.00	12.00
R3-5R	30"	36"	ONLY				1	WHITE	BLACK	BLACK	1 MTD W/OTHER	7.50	7.50
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				2	WHITE	BLACK	BLACK	P5-2	6.25	12.50
R3-7R	30"	30"	RIGHT LANE MUST TURN RIGHT				2	WHITE	BLACK	BLACK	P5-2	6.25	12.50
R3-8LR	36"	30"	ONLY ONLY				1	WHITE	BLACK	BLACK	P5-1	7.50	7.50
R3-8R	30"	30"	ONLY ONLY				1	WHITE	BLACK	BLACK	P5-1	6.25	6.25
R3-17	30"	24"	BIKE LANE				4	BLACK — WHITE	WHITE — BLACK	WHITE — BLACK	P5-4	5.00	20.00
R3-17bp	30"	12"	ENDS				2	WHITE	BLACK	BLACK	2 MTD W/R3-17	2.50	5.00
R4-4	36"	30"	BEGIN RIGHT TURN LANE YIELD TO BIKES				1	WHITE	BLACK	BLACK	P5-1	7.50	7.50
R4-7	24"	30"	BOTTOM OF SIGN TO BE MOUNTED 4' ABOVE ROADWAY				6	WHITE	BLACK	BLACK	P5-6	5.00	30.00
R5-1	30"	30"	DO NOT ENTER				9	WHITE	RED/ WHITE	-	P5-8 1 MTD W/OTHERS	6.25	56.25

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
R5-1a	36"	24"	WRONG WAY	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			2	RED	WHITE	WHITE	P5-2	6.00	12.00
R6-1L	36"	12"	ONE WAY PAINTED ONE SIDE				9	BLACK	WHITE	WHITE	9 MTD W/OTHER	3.00	27.00
R6-1R	36"	12"	ONE WAY PAINTED ONE SIDE				9	BLACK	WHITE	WHITE	9 MTD W/OTHER	3.00	27.00
R6-4	30"	24"	BOTTOM OF SIGN TO BE MOUNTED 5' ABOVE ROADWAY				4	WHITE	BLACK	BLACK	P5-4	5.00	20.00
R6-5p	30"	30"					1	WHITE	BLACK	BLACK	1 MTD W/R1-2	6.25	6.25
R7-1d	12"	18"	NO PARKING ANY TIME				9	WHITE	RED	RED	P5-9	1.50	13.50
R9-5	12"	18"	USE PED SIGNAL				8	WHITE	BLACK	BLACK	8 MTD ON TS POST	1.50	13.50
R10-3e(D)	9"	15"	START CROSSING Watch For Vehicles; DON'T START Finish Crossing; 3 Seconds TIME REMAINING To Finish Crossing; DON'T CROSS; PUSH BUTTON TO CROSS				1	WHITE	WHITE/ BLACK/ ORANGE	BLACK	1 MTD ON TS POST/POLE	PAID FOR UNDER ITEM 816.01	
R10-3e(L)	9"	15"	START CROSSING Watch For Vehicles; DON'T START Finish Crossing; 3 Seconds TIME REMAINING To Finish Crossing; DON'T CROSS; PUSH BUTTON TO CROSS				7	WHITE	WHITE/ BLACK/ ORANGE	BLACK	7 MTD ON TS POST/POLE	PAID FOR UNDER ITEMS 816.01 & 816.02	
R10-3e(R)	9"	15"	START CROSSING Watch For Vehicles; DON'T START Finish Crossing; 3 Seconds TIME REMAINING To Finish Crossing; DON'T CROSS; PUSH BUTTON TO CROSS				7	WHITE	WHITE/ BLACK ORANGE	BLACK	7 MTD ON TS POST/POLE	PAID FOR UNDER ITEMS 816.01 & 816.02	
R10-11b	36"	36"	NO TURN ON RED				2	WHITE	BLACK	BLACK	2 MTD ON MAST ARM	9.00	18.00
MA-R10-12A	30"	36"	LEFT TURN YIELD ON FLASHING	AS PER MASSDOT STANDARD			2	WHITE	BLACK/ YELLOW	BLACK	2 MTD ON MAST ARM	7.50	15.00
R10-25	9"	12"	PUSH BUTTON TO TURN ON WARNING LIGHTS	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			4	WHITE	BLACK	BLACK	4 MTD ON TS POST	PAID UNDER ITEMS 824.211 & 824.212	

TRAFFIC SIGN SUMMARY (CONTINUED ON NEXT SHEET)

609219_HD(TSS).DWG Plotted on 4-Jan-2023 1:27 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	70	206
PROJECT FILE NO. 609219			

TRAFFIC SIGN SUMMARY

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
W2-6	30"	30"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			3	YELLOW	BLACK	BLACK	3 MTD W/OTHERS	6.25	18.75
W3-1	30"	30"					2	YELLOW	BLACK/ RED	BLACK	P5-2	6.25	12.50
W4-2R	36"	36"					1	YELLOW	BLACK	BLACK	P5-1	9.00	9.00
W11-2L	30"	30"					14	FLUORESCENT YELLOW GREEN	BLACK	BLACK	P5-12 2 MTD ON TS POST	6.25	87.50
W11-2R	30"	30"					8	FLUORESCENT YELLOW GREEN	BLACK	BLACK	P5-6 2 MTD ON TS POST	6.25	50.00
W16-7pL	24"	12"					14	FLUORESCENT YELLOW GREEN	BLACK	BLACK	10 MTD W/OTHERS 4 MTD ON TS POST	2.00	28.00
W16-7pR	24"	12"					12	FLUORESCENT YELLOW GREEN	BLACK	BLACK	8 MTD W/OTHERS 4 MTD ON TS POST	2.00	24.00
W16-9p	24"	12"	AHEAD				2	FLUORESCENT YELLOW GREEN	BLACK	BLACK	2 MTD W/W11-2L	2.00	4.00
W16-8p	30"	8"	Shrewsbury St 2" (TYP)	4"B	1.75" 2.25"	N/A	1	YELLOW W/1.5"R	BLACK	0.375" BLACK W/0.375" OFFSET	1 MTD W/W2-6	1.67	1.67
W16-8ap	36"	15"	Mountview Dr Doyle Rd	4"B 4"B	2.25" 2.25" 2.5	2"x6" @180° 2"x6" @0°	1	YELLOW W/1.5"R	BLACK	0.375" BLACK W/0.375" OFFSET	1 MTD W/W2-6	4.43	4.43
W16-8bp	36"	15"	Doyle Rd Mountview Dr	4"B 4"B	2.25" 2.25" 2.5	2"x6" @180° 2"x6" @0°	1	YELLOW W/1.5"R	BLACK	0.375" BLACK W/0.375" OFFSET	1 MTD W/W2-6	4.43	4.43
M1-1(190)	30"	24"	INTERSTATE 190	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			4	RED/ BLUE	WHITE	WHITE	P5-4	5.00	20.00
MA-M1-5(122A)	30"	24"	122A	AS PER MASSDOT STANDARD			1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
M3-1	24"	12"	NORTH	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			1	WHITE	BLACK	BLACK	1 MTD W/OTHER	2.00	2.00
M4-5	24"	12"	TO				4	BLUE	WHITE	WHITE	4 MTD W/OTHER	2.00	8.00
M6-1R	21"	15"					1	BLUE	WHITE	WHITE	1 MTD W/OTHER	2.19	2.19
M6-3	21"	15"					3	BLUE	WHITE	WHITE	3 MTD W/OTHER	2.19	6.57

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
OM1-1	24"	24"	BOTTOM OF SIGN TO BE MOUNTED 4' ABOVE ROADWAY	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			7	YELLOW	YELLOW CLUSTER	- - -	P5-7	4.00	28.00
S1-1L	36"	36"					5	FLUORESCENT YELLOW GREEN	BLACK	BLACK	P5-2 1 MTD W/MA-S4-5bP 2 MTD ON TS POST	9.00	45.00
S1-1R	36"	36"					4	FLUORESCENT YELLOW GREEN	BLACK	BLACK	P5-2 2 MTD ON TS POST	9.00	36.00
MA-S4-5bP	24"	24"	SCHOOL ZONE AHEAD	AS PER MASSDOT STANDARD			1	FLUORESCENT YELLOW /GREEN	BLACK	BLACK	1 MTD W/OTHER	4.00	4.00
S5-1a	24"	60"	SCHOOL SPEED LIMIT 20 WHEN FLASHING	8" HOUSING 12" HOUSING 8" HOUSING	4D 4E 4E 8" LED 9" LED 8"LED 2.5D 2.5D	2" 5 2" 0.5" 0.5" 2" 3"	N/A	2	FLUORESCENT YELLOW /GREEN - - - WHITE	BLACK	0.625" BLACK W/0.625" OFFSET	2 MTD ON TS POST	PAID UNDER ITEM 824.351 & ITEM 824.352	
S5-2	24"	30"	END SCHOOL ZONE	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			1	WHITE	BLACK	BLACK	1 MTD W/OTHER	5.00	5.00
SP-1	9"	12"	WAIT FOR VEHICLES TO STOP BEFORE CROSSING	1"C 1"C 1"C 1"C 1"C	1.5" 1" 1" 1" 1" 1.5"	N/A	4	YELLOW	BLACK	BLACK	4 MTD ON TS POST	0.75	3.00
SP-2L	30"	36"	USE RAMP	4"C	5" 3" 3.5" 5"	8.5" BIKE 7"ARROW	3	GREEN	WHITE	WHITE	P5-3	7.50	22.50
SP-2R	30"	36"	USE RAMP	4"C	5" 3" 3.5" 5"	8.5" BIKE 7"ARROW	4	GREEN	WHITE	WHITE	P5-2 2 MTD W/OTHERS	7.50	30.00
SP-3L	18"	24"	SHARED USE PATH	2"C 2"C	3" 2" 2" 2" 3"	4" BIKE/PED 4" ARROW	3	GREEN	WHITE	WHITE	P5-5	3.00	15.00
SP-3R	18"	24"	SHARED USE PATH	2"C 2"C	3" 2" 2" 2" 3"	4" BIKE/PED 4" ARROW	4	GREEN	WHITE	WHITE	P5-2	3.00	6.00
SP-4L	18"	24"	HOLDEN PIZZA	2"C 2"C	3" 2" 2" 2" 3"	4" BIKE/PED 4" ARROW	1	GREEN	WHITE	WHITE	P5-1	3.00	3.00
SP-5	18"	24"	SHARED USE PATH ENDS	2"C 2"C 2"C	3" 3" 2" 2" 3"	4" BIKE	2	GREEN	WHITE	WHITE	P5-2	3.00	6.00

TRAFFIC SIGN SUMMARY (CONTINUED ON NEXT SHEET)

609219_HD(TSS).DWG Plotted on 8-Jan-2023 3:00 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	71	206
PROJECT FILE NO. 609219			

TRAFFIC SIGN SUMMARY

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
D6-1	60"	60"	122A NORTH Holden Rutland →	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	5" O.D. STEEL PIPE POST	25.00	25.00
D6-2	60"	60"	122A NORTH Holden Rutland NEXT RIGHT	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	5" O.D. STEEL PIPE POST	25.00	25.00
D6-3	60"	60"	TO INTERSTATE 190 W. Boylston Shrewsbury →	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	5" O.D. STEEL PIPE POST	25.00	25.00
D8-1	54"	42"	122A SOUTH Worcester ←	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	MTD W/ D6-1	15.75	15.75
D8-2	54"	42"	122A SOUTH Worcester NEXT LEFT	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	MTD W/ D6-2	15.75	15.75
D8-3	48"	48"	↑ NORTH 122A Holden	SEE LAYOUT ON SHEET 72			1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	MTD W/ D6-3	16.00	16.00

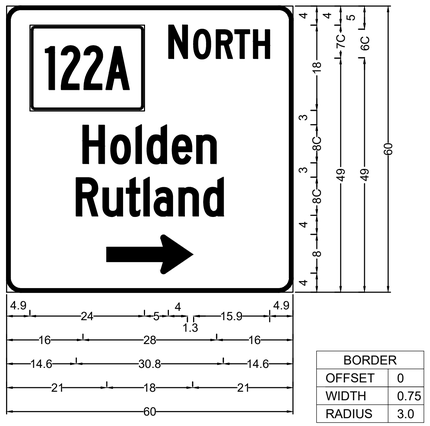
TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-D3-1a	54"	12"	Shrewsbury St	SEE LAYOUT ON SHEET 72			7	GREEN	WHITE	WHITE	P5-8 (SEE CONST. DETAIL)	PAID UNDER ITEM 874	
MA-D3-1b	36"	12"	Doyle Rd	SEE LAYOUT ON SHEET 72			2	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874	
D1-2a	30"	24"	SHARED USE PATH MOUNTVIEW MIDDLE SCHOOL → DOYLE ROAD →	SEE LAYOUT ON SHEET 72			1	GREEN	WHITE	WHITE	P5-1	5.00	5.00
D1-2b	30"	24"	SHARED USE PATH MAIN ST/RT 122A → ← MOUNTVIEW MIDDLE SCHOOL	SEE LAYOUT ON SHEET 72			1	GREEN	WHITE	WHITE	P5-1	5.00	5.00
D1-2c	30"	24"	SHARED USE PATH ← MAIN ST/RT 122A MOUNTVIEW MIDDLE SCHOOL →	SEE LAYOUT ON SHEET 72			1	GREEN	WHITE	WHITE	P5-1	5.00	5.00
D1-2d	30"	24"	SHARED USE PATH ← MOUNTVIEW MIDDLE SCHOOL ← MAIN ST/RT 122A	SEE LAYOUT ON SHEET 72			2	GREEN	WHITE	WHITE	P5-2	5.00	10.00

NOTES:
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED.

609219_HD(TSS).DWG Plotted on 8-Jan-2023 2:56 PM

D6-1



BORDER	
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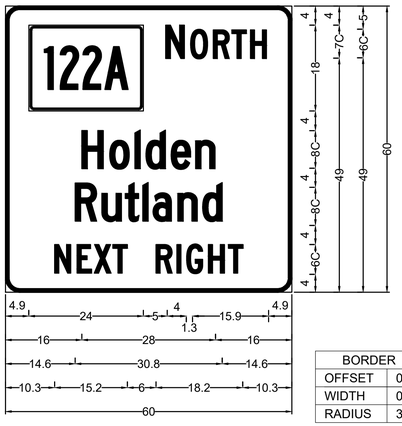
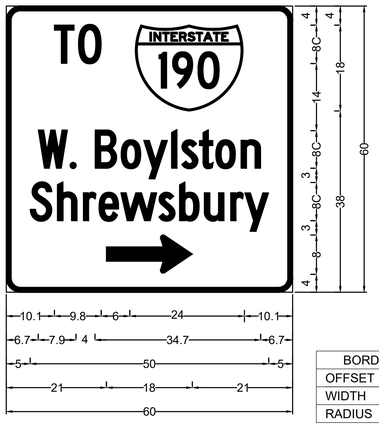
WIDTH	0.75
RADIUS	3.0

D6-2



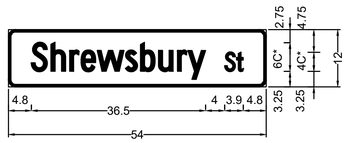
BORDER	
OFFSET	0
WIDTH	0.75
RADIUS	3.0

D6-3



BORDER	
OFFSET	0
WIDTH	0.75
RADIUS	3.0

MA-D3-1a



*85% SPACING

BORDER	
OFFSET	0
WIDTH	0.5
RADIUS	1.5

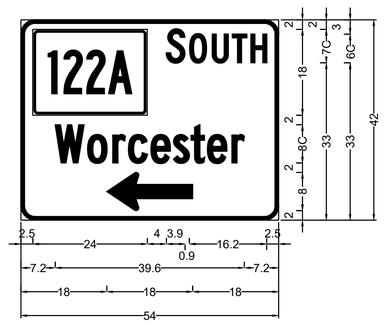
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	72	206
PROJECT FILE NO. 609219			

TRAFFIC SIGN SUMMARY

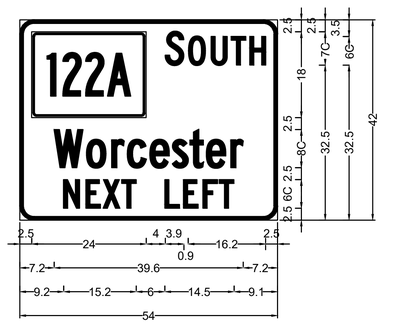
NOTES:
1. ALL MEASUREMENTS ARE IN INCHES.

D8-1



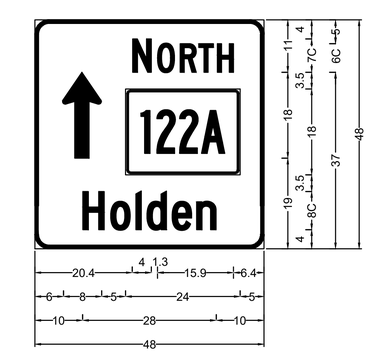
BORDER	
OFFSET	0
WIDTH	0.75
RADIUS	3.0

D8-2



BORDER	
OFFSET	0
WIDTH	0.75
RADIUS	3.0

D8-3



BORDER	
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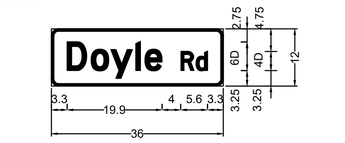
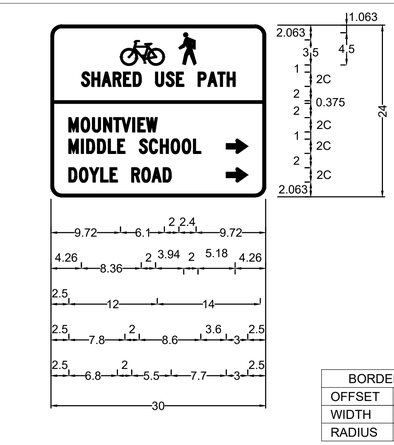
WIDTH	0.75
RADIUS	3.0

MA-D3-1b



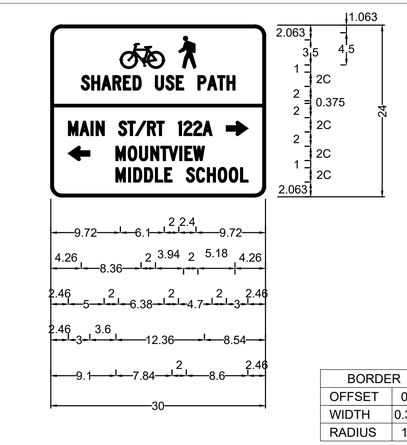
BORDER	
OFFSET	0
WIDTH	0.5
RADIUS	1.5

D1-2a



BORDER	
OFFSET	0
WIDTH	0.375
RADIUS	1.5

D1-2b



BORDER	
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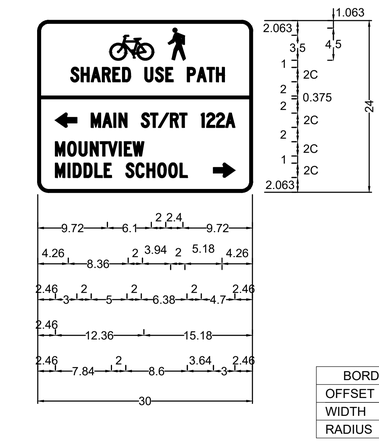
WIDTH	0.375
RADIUS	1.5

D1-2c



BORDER	
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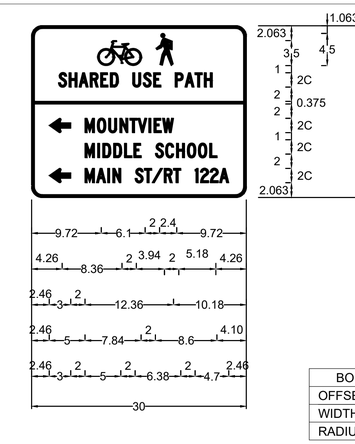
WIDTH	0.375
RADIUS	1.5

D1-2d



BORDER	
OFFSET	0
WIDTH	0.375
RADIUS	1.5

609219_HD(TSS).DWG Plotted on 8-Jan-2023 3:00 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	73	206
PROJECT FILE NO. 609219			

TRAFFIC SIGNAL PLANS
LOCATION NO. 1

CONSTRUCTION NOTES

1. SEE SHEET 74 FOR TRAFFIC SIGNAL DATA.
2. RETAIN ALL EXISTING TS EQUIPMENT AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
3. PROP TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
4. SIGNAL HEAD L TO BE SIDE-MOUNTED TO 14-FOOT TS POST, NOT TOP-MOUNTED.
5. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.
6. SEE SHEET 57 FOR SIGNING AND PAVEMENT MARKINGS.

R&S EXIST 4-SECTION SIGNALS B & L
PROP 3-SECTION SIGNAL HEAD B
PROP PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(R)

PROP 8' TS POST
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(R)
STA 10+16.5, 63.0' LT

PROP 14' TS POST
W/ SIGNAL HEAD (SEE NOTE 4)
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(R)
STA 10+11.0, 31.5' LT

CUT & EXTEND EXIST CONDUIT

BREAK INTO EXIST HH

PROP 8' TS POST
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(D)
STA 10+26.5, 1.0' LT

R&S EXIST TS POST AND
SIGNAL HEAD

CUT & EXTEND EXIST CONDUIT

PROP 10' TS POST
W/ SIGNAL HEAD
STA 9+43.0, 19.0' LT

REMOVE EXIST HH

BREAK INTO EXIST HH

CUT & EXTEND EXIST CONDUIT

R&S EXIST SIGNAL HEAD J (CIRCULAR INDICATIONS)
PROP SIGNAL HEAD J (LEFT ARROW INDICATIONS)

RET EXIST CONDUIT TO FIRE STATION

MODIFY EXIST TS CONTROLLER AND CABINET ASSEMBLY
TO ACCOMMODATE PROPOSED CHANGES SHOWN

CONSTRUCT HH OVER EXIST CONDUIT

PROP 8' TS POST
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(L)
STA 9+49.5, 45.5' RT

RET EXIST SERVICE CONNECTION

RET EXIST POWER SOURCE

PROP 8' TS POST
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(L)
STA 10+37.5, 41.5' RT

CONSTRUCT HH OVER EXIST CONDUIT

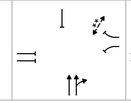
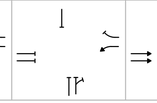
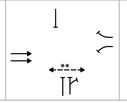
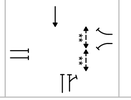
PROP 8' TS POST
W/ PED SIGNAL HEAD
W/APS PED PUSH BUTTON
W/R10-3e(L)
STA 10+18.0, 51.0' RT

MAIN STREET
(ROUTE 122A)

SHREWSBURY STREET

0 20 50 100
SCALE: 1" = 20'

609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:29 PM

ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9(PED)	
NOT USED				NOT USED		NOT USED		NOT USED	

EXISTING /PROPOSED SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL (ISOLATED)

APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH
MAIN STREET (ROUTE 122A)	NB	A				G	Y	R	R	R	R	R	R	R				R	R	R				R	R	R				FY
MAIN STREET (ROUTE 122A)	NB	B				G	Y	R	R	R	R	R	R	R				R	R	R				R	R	R				FY
MAIN STREET (ROUTE 122A)	SB	C,D,E				R	R	R	R	R	R	R	R	R				G	Y	R				R	R	R				FY
JUGHANDLE	EB	F,G,H				R	R	R	R	R	R	G	Y	R				R	R	R				R	R	R				FR
SHREWSBURY STREET	WB	J,K				R	R	R	G	Y	R	R	R	R				R	R	R				R	R	R				FR
SHREWSBURY STREET	WB	L				R	R	R	G	Y	R	R	R	R				R	R	R				R/G	R/Y	R				FR
SHREWSBURY STREET	WB	M,N				R	R	R	R	R	R	R	R	R				R	R	R				G	Y	R				FR
PEDESTRIAN X-ING	EB-WB	P1-P2				DW	DW	DW	DW	DW	DW	W/FDW	DW	DW				DW	DW	DW				DW	DW	DW				OUT
PEDESTRIAN X-ING	NB-SB	P3-P4				DW	DW	DW	DW	DW	DW	DW	DW	DW				W/FDW	DW	DW				DW	DW	DW				OUT
PEDESTRIAN X-ING	NB-SB	P5-P6				DW	DW	DW	DW	DW	DW	DW	DW	DW				W/FDW	DW	DW				DW	DW	DW				OUT
PEDESTRIAN X-ING	NB-SB	P7-P8				W/FDW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW				OUT
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)						20			10			15						20						10						CONFLICT FLASH OPERATION ONLY
PASSAGE TIME (VEHICLE)						3			2.5			2.5						3						2.5						
MAXIMUM 1						40			15			25						40						20						
MAXIMUM 2						40			15			25						40						20						
YELLOW CLEARANCE							4.5			3			4						4.5						4					
RED CLEARANCE								1			2.5			1						1						1				
PEDESTRIAN WALK						7						7						7												
PEDESTRIAN CLEARANCE						7						10						12												
DETECTOR MEMORY						NON-LOCK			NON-LOCK			NON-LOCK						NON-LOCK						NON-LOCK						
RECALL						SOFT			OFF			OFF						SOFT						OFF						

NOTES:
1. AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D., AS AMENDED.
2. ** NORMALLY DW, W/FDW UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. OL = OVERLAP
4. PERM = PERMISSIVE
5. Ø4 & Ø8 DUAL ENTRY
6. SIMULTANEOUS GAP-OUT FOR Ø2 & Ø6 SHALL NOT BE ENABLED
7. MAXIMUM 1 = NORMAL OPERATION
8. MAXIMUM 2 = NOT USED
9. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.
10. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL NOT BE IN EFFECT.

PROPOSED APS WALK INDICATION

CROSSING	PHASE	MESSAGE
P1-P2	Ø4	WALK SIGN IS ON TO CROSS MAIN STREET
P3-P6	Ø6	PERCUSSIVE TONE
P7-P8	Ø2	PERCUSSIVE TONE

SEQUENCE & TIMING NOTES:

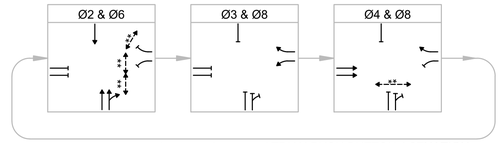
1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	74	206
PROJECT FILE NO. 609219			

TRAFFIC SIGNAL PLANS
LOCATION NO. 1

PROPOSED PREFERENTIAL PHASE SEQUENCE



** NORMALLY DW, W/FDW UPON PEDESTRIAN PUSH BUTTON ACTUATION

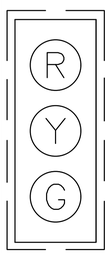
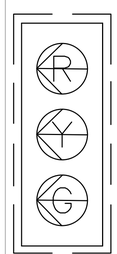
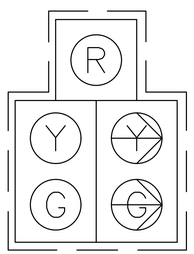
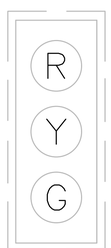
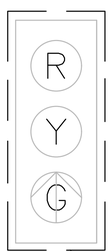
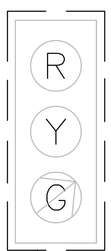
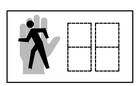
EXISTING EMERGENCY VEHICLE PRE-EMPTION OPERATION

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH DETECTORS D1, D2 OR D3 ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (D1 HIGHEST AND D3 LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION PHASES AS NECESSARY.
4. MINIMUM GREEN AND NORMAL VEHICLE & PEDESTRIANS CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ACTIVE.

PRE-EMPTION PHASING & PRIORITY

DETECTOR & PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		Ø2
D2	2		Ø6
D3	3		Ø3 & Ø8

EXISTING /PROPOSED SIGNAL HEAD DATA

B	J , K	L	J,K	A,C,D,E,F,G,H	M,N	B,L	P1-P8
			R&S J,K 			R&S B,L	 W/COUNTDOWN TIMER
ALL 12" LENS			ALL 12" LENS				ALL 16" HOUSING

NOTES:
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
2. ALL PROP SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± NON- LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.
3. ALL PROP SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
4. ALL PROP SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

R&S EXIST LOUVERED BACKPLATES
PROP 5" LOUVERED BACKPLATES WITH 2" WIDE REFLECTIVE YELLOW BORDER

PROPOSED LOOP DETECTOR DATA

DETECTOR NO.	NO. SECTION/ SIZE	NO. OF TURNS	OPERATIONS	DELAY /EXT	CALL PHASE	LOOP CONNECTION
1	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø2	SERIES
2	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø2	SERIES
3	1-6'X10' BIKE QUADRUPOLE	2-4-2	PRESENCE	0	Ø2	SINGLE
4	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø6	SINGLE
5	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø4	SINGLE
6	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø4	SERIES
7	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø8	SINGLE
8	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø3	SINGLE

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

LIST OF MAJOR ITEMS REQUIRED

MAIN STREET (ROUTE 122A) AT SHREWSBURY STREET

PAY ITEM	QUANTITY	DESCRIPTION
816.01	1	MODIFY EXIST TS CONTROLLER AND CABINET ASSEMBLY TO ACCOMMODATE PROPOSED CHANGES SHOWN
	5	TS POST 8' STANDARD, INCL. FOUNDATION
	1	TS POST 10' STANDARD, INCL. FOUNDATION
	1	TS POST 14' STANDARD, INCL. FOUNDATION
	3	SIGNAL HEAD, 3-SECTION, 12" LENSES
	1	SIGNAL HEAD, VERTICAL 5-SECTION, 12" LENSES
	9	3-SECTION, 5" LOUVERED BACKPLATE W/2" REFLECTIVE BORDER
	8	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
	3	PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE
	3	PEDESTRIAN PUSH BUTTON W/R10-3e(R) AND SIGN SADDLE
	1	PEDESTRIAN PUSH BUTTON W/R10-3e(D) AND SIGN SADDLE
	15	WIRE LOOP DETECTOR
804.3	170'±	3" CONDUIT, SCHEDULE 80, TYPE NM
811.22	4	13"x24" ELECTRIC HANDHOLE-SD2.022
811.31	1	PULL BOX-12"x12"

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

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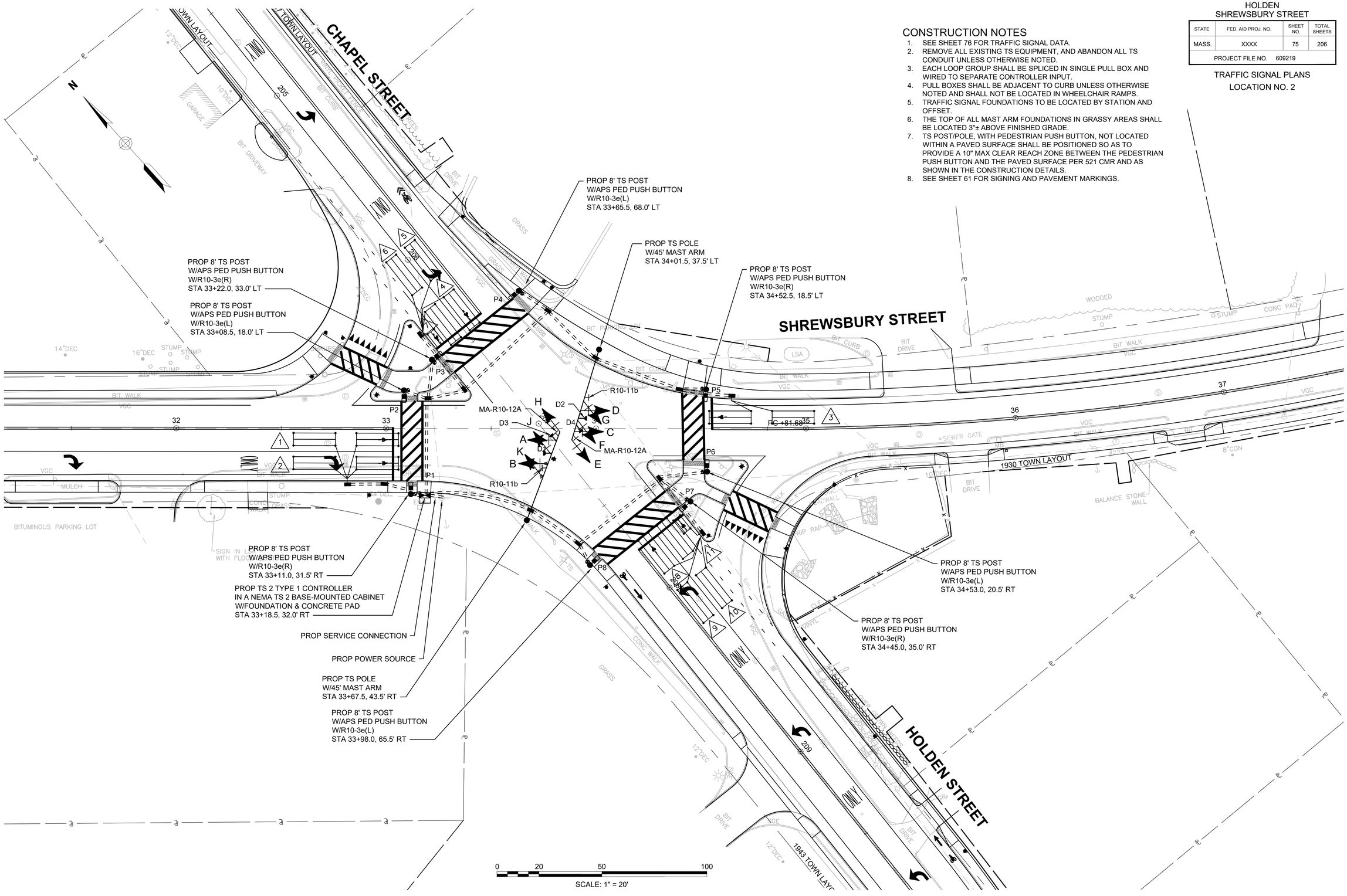
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	75	206
PROJECT FILE NO. 609219			

TRAFFIC SIGNAL PLANS
LOCATION NO. 2

CONSTRUCTION NOTES

1. SEE SHEET 76 FOR TRAFFIC SIGNAL DATA.
2. REMOVE ALL EXISTING TS EQUIPMENT, AND ABANDON ALL TS CONDUIT UNLESS OTHERWISE NOTED.
3. EACH LOOP GROUP SHALL BE SPLICED IN SINGLE PULL BOX AND WIRED TO SEPARATE CONTROLLER INPUT.
4. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
5. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
6. THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 3"± ABOVE FINISHED GRADE.
7. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.
8. SEE SHEET 61 FOR SIGNING AND PAVEMENT MARKINGS.



609219_HD(TSIG).DWG Plotted on 4-Jan-2023 1:29 PM

ø1	ø2	ø3	ø4	ø5	ø6	ø7	ø8	ø9(PED)*
NOT USED	Y	Y	Y PERM	NOT USED	Y	Y OL	Y PERM	Y

SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL (ISOLATED)

APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH
SHREWSBURY STREET	EB	A				G	Y	R	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R	R	R	R	FY
SHREWSBURY STREET	EB	B				G	Y	R	R	R	R	R	R	R				R	R	R	R–G R	R–Y R	R	R	R	R	R	R	R	FY
SHREWSBURY STREET	WB	C,D				R	R	R	R	R	R	R	R	R				G	Y	R	R	R	R	R	R	R	R	R	R	FY
HOLDEN STREET	NB	E				R	R	R	R	R	R	FY	Y	R				R	R	R	G	Y	R	R	R	R	R	R	R	FR
HOLDEN STREET	NB	F,G				R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	R	R	R	R	R	R	FR
CHAPEL STREET	SB	H				R	R	R	G	Y	R	R	R	R				R	R	R	R	R	R	FY	Y	R	R	R	R	FR
CHAPEL STREET	SB	J,K				R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	G	Y	R	R	R	R	FR
PEDESTRIAN X–ING	ALL	P1–P8				DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)						10			6			8						10			6			8			–			CONFLICT FLASH OPERATION ONLY
PASSAGE TIME (VEHICLE)						3			2.5			3						3			2.5			3			–			
MAXIMUM 1						40			15			20						40			15			20			–			
MAXIMUM 2						40			15			20						40			15			20			–			
YELLOW CLEARANCE							4.5			3			4.5						4.5			3.5			4.5			3		
RED CLEARANCE								2.5			3			1.5						2.5			2			1.5			3	
PEDESTRIAN WALK																											7			
PEDESTRIAN CLEARANCE																												10		
DETECTOR MEMORY						NON–LOCK			NON–LOCK			NON–LOCK						NON–LOCK			NON–LOCK			NON–LOCK			LOCK			
RECALL						SOFT			OFF			OFF						SOFT			OFF			OFF			OFF			

NOTES:
1. AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D., AS AMENDED.
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. OL = OVERLAP
4. PERM = PERMISSIVE
5. Y = YIELD CONTROL
6. Ø4 & Ø8 DUAL ENTRY
7. SIMULTANEOUS GAP-OUT FOR Ø2 & Ø6 SHALL NOT BE ENABLED
8. MAXIMUM 1 = NORMAL OPERATION
9. MAXIMUM 2 = NOT USED
10. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.
11. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL BE IN EFFECT.

SEQUENCE & TIMING NOTES:

1. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
2. THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
3. IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
4. IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	76	206
PROJECT FILE NO. 609219			

TRAFFIC SIGNAL PLANS
LOCATION NO. 2

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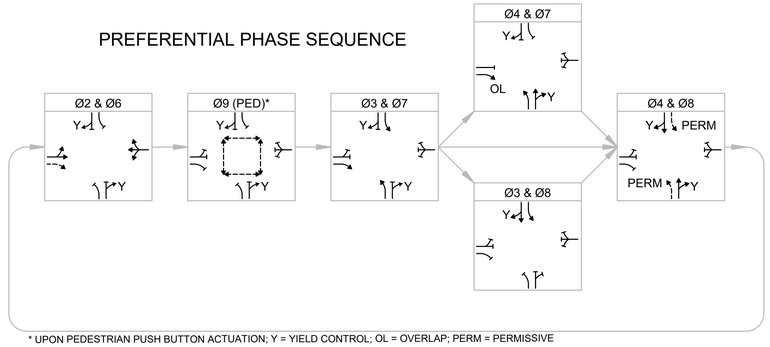
PREFERENTIAL PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION; Y = YIELD CONTROL; OL = OVERLAP; PERM = PERMISSIVE

EXISTING EMERGENCY VEHICLE PRE-EMPTION OPERATION

1. EMERGENCY VEHICLE PRE-EMPTION SIGNALS SHALL BE OPTICALLY TRANSMITTED BY OPTICAL EMITTERS MOUNTED IN EMERGENCY VEHICLES AND RECEIVED BY OPTICAL DETECTORS LOCATED AT EACH INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH DETECTORS D1, D2, D3 OR D4 ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (D1 HIGHEST AND D4 LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION PHASES AS NECESSARY.
4. MINIMUM GREEN AND NORMAL VEHICLE & PEDESTRIANS CLEARANCE SHALL BE PROVIDED ON PHASES THAT ARE TO BE TERMINATED BY PRE-EMPTION DEMAND.
5. PRE-EMPTION STROBE SHALL BE ILLUMINATED WHENEVER ANY EMERGENCY VEHICLE PRE-EMPTION GREEN IS ACTIVE.

PRE-EMPTION PHASING & PRIORITY

DETECTOR & PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		Ø2
D2	2		Ø6
D3	3		Ø3 & Ø8
D4	4		Ø4 & Ø7

MAST ARM FOUNDATION DATA

BORING #	ARM LENGTH	MAST ARM LOCATION	SOIL TYPE	FOUNDATION DIAMETER	FOUNDATION DEPTH	VERTICAL BARS	TIE BARS
B-2	45	33+67.5, 43.5' RT	*	4'-6"	10'-6"	**	**
B-3	45'	34+01.5, 37.5' LT	*	4'-6"	12'-0"	**	**

NOTES:
1. * BEDROCK ENCOUNTERED TOO SHALLOW FOR MASSDOT STANDARD FOUNDATION.
2. ** SEE SHEET 116 FOR DETAILS.
3. SEE SPECIAL PROVISION FOR ADDITIONAL INFORMATION.

SIGNAL HEAD DATA

A,C,D,F,G,J,K	B	E,H	P1-P8
R Y G	R Y Y G G	R Y FY G	W/COUNTDOWN TIMER
ALL 12" LENS			ALL 16" HOUSINGS

NOTES:
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± NON- LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 3" WIDE YELLOW REFLECTIVE BORDER.
3. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
4. ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.

LOOP DETECTOR DATA

DETECTOR NO.	NO. SECTION/ SIZE	NO. OF TURNS	OPERATIONS	DELAY /EXT	CALL PHASE	EXTEND PHASE	LOOP CONNECTION
1	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø2	Ø2	SERIES
2	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø2	Ø2	SERIES
3	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø6	Ø6	SERIES
4	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø3	Ø3	SINGLE
5	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø3	Ø8	SINGLE
6	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø8	Ø8	SERIES
7	1-4'X8' BIKE QUADRUPOLE	2-4-2	PRESENCE	0	Ø8	Ø8	SINGLE
8	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø7	Ø7	SINGLE
9	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø7	Ø4	SINGLE
10	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	Ø4	Ø4	SERIES
11	1-4'X8' BIKE QUADRUPOLE	2-4-2	PRESENCE	0	Ø4	Ø4	SINGLE

NOTE: DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

APS WALK INDICATION

CROSSING	PHASE	MESSAGE
ALL	Ø9 (PED)	WALK SIGN IS ON TO CROSS

LIST OF MAJOR ITEMS REQUIRED

SHREWSBURY STREET AT HOLDEN STREET & CHAPEL STREET

PAY ITEM	QUANTITY	DESCRIPTION
816.02	1	TS 2 TYPE 1 CONTROLLER IN A NEMA TS 2 BASE-MOUNTED CABINET, INCLUDING FOUNDATION AND CONCRETE PAD
	2	TS 45' MAST ARM TYPE 2, STEEL, (PAINTED) INCL. FOUNDATION
	8	TS POST 8' STANDARD (PAINTED) INCL. FOUNDATION
	7	SIGNAL HEAD, 3-SECTION, 12" LENSES
	2	SIGNAL HEAD, 4-SECTION, 12" LENSES, FLASHING YELLOW ARROW
	1	SIGNAL HEAD, 5-SECTION, 12" LENSES
	8	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
	4	PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE
	4	PEDESTRIAN PUSH BUTTON W/R10-3e(R) AND SIGN SADDLE
	6	TYPE C, 2-CHANNEL CARD RACK LOOP DETECTOR AMPLIFIER
	16	WIRE LOOP DETECTOR
	4	EMERGENCY PRE-EMPTION OPTICAL DETECTORS & DETECTOR CABLE
	1	EMERGENCY PRE-EMPTION 4 CHANNEL PHASE SELECTOR
	1	EMERGENCY PRE-EMPTION SYSTEM CHASSIS
	1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
	1	SERVICE CONNECTION (OVERHEAD)
804.3	600'±	3" CONDUIT, SCHEDULE 80, TYPE NM
811.22	13	13"x24" ELECTRIC HANDHOLE-SD2.022

PLUS NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION AND PROVIDE AN OPERATING TRAFFIC CONTROL SIGNAL.

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED; THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), ROADSIDE DESIGN GUIDE; AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS; AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

2. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).

3. WORK HOURS SHALL BE 7:00AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER. WORK SHALL NOT AFFECT TRAFFIC PATTERNS DURING PEAK TRAFFIC PERIODS. PEAK TRAFFIC PERIODS ARE DEFINED AS MONDAY THRU FRIDAY 7:00AM-9:00AM AND 4:00PM-6:00PM.

4. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY THE DAY BEFORE, AFTER OR ON A STATE RECOGNIZED HOLIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.

6. ALL DRUMS AND SIGNS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY AS APPROVED BY THE ENGINEER TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.

7. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 48 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.

8. ON LOCAL ROADWAYS A MINIMUM OF ONE LANE OF TRAVEL SHALL BE MAINTAINED AT ALL TIMES, AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER.

9. FOR DROP-OFFS 3" OR LESS WITHIN THE CLEAR ZONE, CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES. FOR DROP-OFFS GREATER THAN 3" BUT NO MORE THAN 36", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH W8-9 SIGN AND TEMPORARY CHANNELIZATION DEVICES IN ACCORDANCE WITH MASSDOT WORK ZONE SAFETY GUIDE OR W8-9 SIGN WITH A 2H:1V (MIN) WEDGE OR TO REMOVE THE HAZARD. FOR DROP-OFFS 36" OR GREATER USE TEMPORARY BARRIER IN ACCORDANCE WITH MASSDOT WORK ZONE POSITIVE PROTECTION GUIDELINES.

10. CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 3" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF IS MITIGATED WITHOUT BARRIER PER NOTE 11.

11. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
    4' IF POSTED SPEED IS LESS THAN 35 MPH
    8' IF POSTED SPEED IS 35 MPH
    15' IF POSTED SPEED IS 40 MPH

11. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.

12. NON-ESSENTIAL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.

13. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.

14. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.

15. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.

16. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN NCHRP 350 AND/OR MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD.SIGNS SHALL NOT BE MOUNTED TO OR LEANED AGAINST DRUMS OR CONES.

17. ALL TEMPORARY MARKINGS FOR ROADWAY SHALL BE WATER-BORNE PAINT.

18. ALL TEMPORARY CROSSWALKS AND STOP LINES SHALL BE 12 INCHES WIDE.

19. TEMPORARY DOUBLE YELLOW LINES (DBYL) SHALL BE 6 INCHES WIDE AT THE INTERSECTION OF MAIN STREET AND SHREWSBURY STREET. TEMPORARY DBYL SHALL BE 4 INCHES WIDE AT ALL OTHER LOCATIONS.

20. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AND SHALL BE OPERATING, AT A MINIMUM, BETWEEN DUSK AND DAWN, WHEN TAPER IS DEPLOYED.

21. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.

22. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.

23. W21-7 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.

24. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.

25. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.

26. W20-1c OR MA-R2-10a SIGNS SHOWN ON THE ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF THOSE SIGNS SHOWN ON TYPICAL DETAILS ON THE TEMPORARY TRAFFIC CONTROL PLANS IF MINIMUM SIGN SPACING IS MET.

27. ARROW BOARD FLASHING CAUTION SHALL FLASH IN FOUR-POINT CAUTION MODE ONLY.

28. CONTRACTOR SHALL SECURE WORK AREAS BY APPROPRIATE MEANS TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.

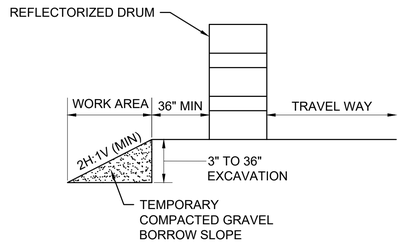
29. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON STATE RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

30. SEE SHEET 78 FOR SUGGESTED SEQUENCING OF THE PROPOSED ROUNDABOUT AT THE INTERSECTION OF SHREWSBURY STREET AND DOYLE ROAD/MOUNTVIEW DRIVE.

31. TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE TRANSVERSELY PLACED RUMBLE STRIPS EVENLY SPACED. SPACING SHALL BE 10 FT ON CENTER OR AS DIRECTED BY THE ENGINEER.

32. CONTRACTOR SHALL PROVIDE SIX (6) PORTABLE CHANGE MESSAGE SIGNS (PCMS) A MINIMUM OF 14 DAYS PRIOR TO AND POST START OF CONSTRUCTION AND 7 DAYS PRIOR TO AND POST CHANGE OF EACH MAJOR CONSTRUCTION STAGE. SEE SHEET 81 FOR LOCATIONS. MESSAGES AND LOCATIONS FOR THE REMAINDER OF CONSTRUCTION SHALL BE AT THE DISCRETION OF THE ENGINEER.

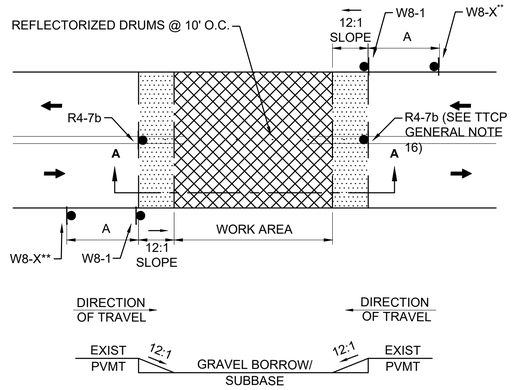
33. CONTRACTOR SHALL COORDINATE WITH ALDEN LABS WHEN WORKING IN THE VICINITY OF WACHUSETT STREET TO COORDINATE DELIVERIES USING LARGER VEHICLES. IF TRUCK DETOURS ARE NEEDED, CONTRACTOR IS RESPONSIBLE FOR DETOUR-RELATED SIGNAGE AND COORDINATING WITH TOWN ON SELECTING THE APPROPRIATE ROUTE.



NOTE:
1. CONTRACTOR SHALL INSTALL W8-9 SIGN ON ALL ROADWAYS 350 FEET IN ADVANCE OF THE START OF DROP-OFF CONDITION.

TYPICAL ROADWAY DROP-OFF PROTECTION

SCALE: NTS DWG: TTCP1f DATE: FEB 2022



SECTION A-A

NOTES:
1. SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY.
2. ** CONTRACTOR SHALL INSTALL W8-1 AT LIMIT OF EXCAVATION AND A W8-3, W8-8, W8-15, OR W8-24 SIGN, AS APPROPRIATE, ON ALL ROADWAYS IN ADVANCE OF THE TRANSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. R4-7b SIGNS AND DRUMS MAY BE OMITTED AT THE DISCRETION OF THE ENGINEER.

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS DWG: TTCP1g DATE: FEB 2022

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	77	206
PROJECT FILE NO. 609219			

TEMPORARY TRAFFIC CONTROL PLANS
GENERAL NOTES & LEGEND

LEGEND	
P	POLICE OFFICER
S	TRAFFIC SIGNAL
●	REFLECTORIZED DRUM
◉	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS (SEE NOTE 20)
	TEMPORARY CONSTRUCTION SIGN
▲	TRAFFIC CONE
	TYPE III BARRICADE
	ARROW BOARD (AB) (RIGHT OR LEFT)
	ARROW BOARD (AB) (CAUTION)
	TEMPORARY PORTABLE RUMBLE STRIPS
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	TEMPORARY IMPACT ATTENUATOR (TYPE NOTED)
	WORK AREA (PUBLIC ACCESS RESTRICTED)
←	TRAFFIC FLOW
	PEDESTRIAN ROUTE
	CONSTRUCTION FENCE
	PEDESTRIAN CHANNELIZATION BARRICADE
NTS	NOT TO SCALE
TTCP	TEMPORARY TRAFFIC CONTROL PLAN

BUFFER SPACING	
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305

ADVANCE SIGN SPACING			
	DISTANCE BETWEEN SIGNS (FEET)		
ROAD	A	B	C
MAIN ST, SHREWSBURY ST, CHAPEL ST, HOLDEN ST, DOYLE ST	500	500	500
ALL OTHER ROADWAYS	100	100	100

LANE TAPER LENGTH FORMULAS
L= TAPER LENGTH IN FEET
W= WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET
S= POSTED SPEED LIMIT IN MPH
POSTED SPEED
40 MPH OR LESS
$L = \frac{WS^2}{60}$

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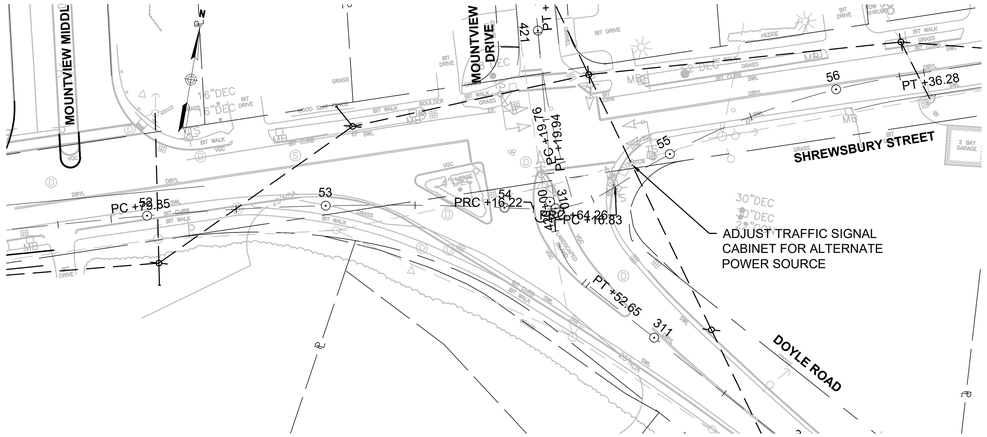
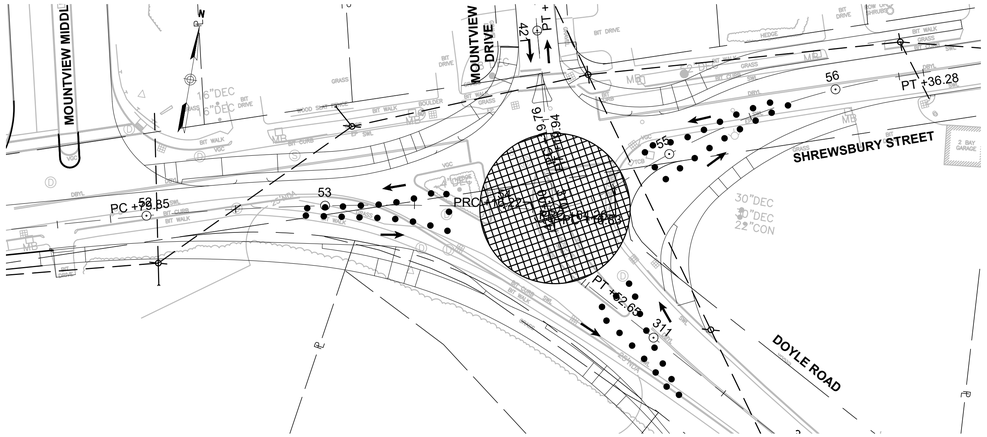


STAGE 1



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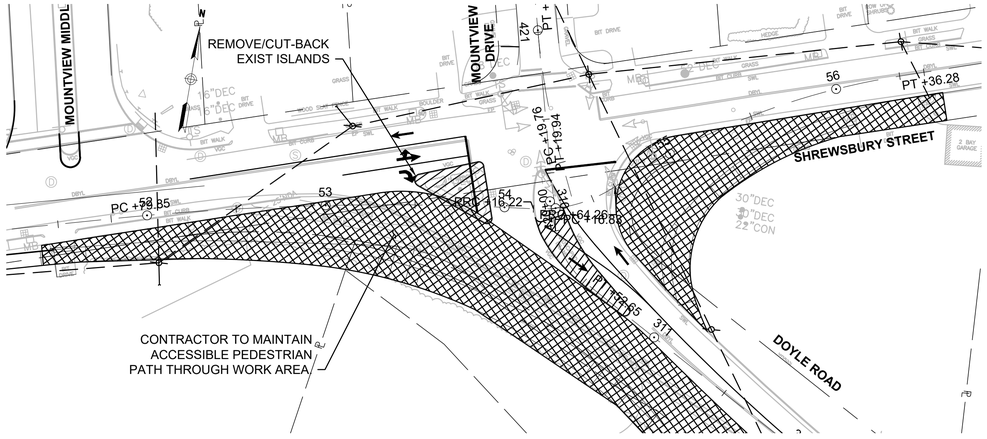
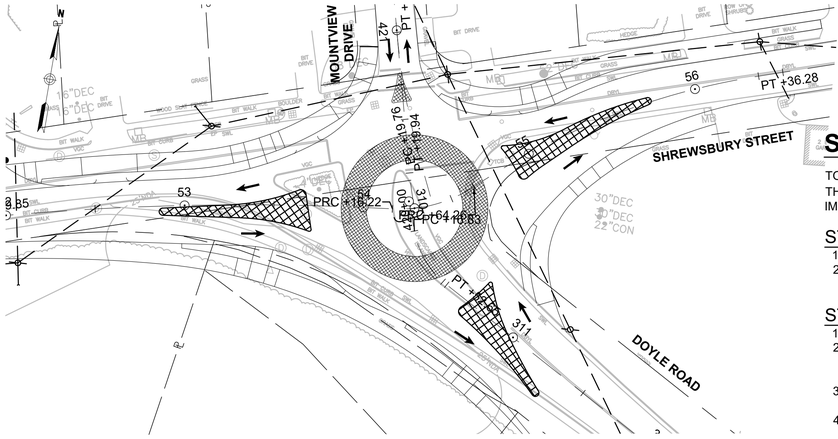
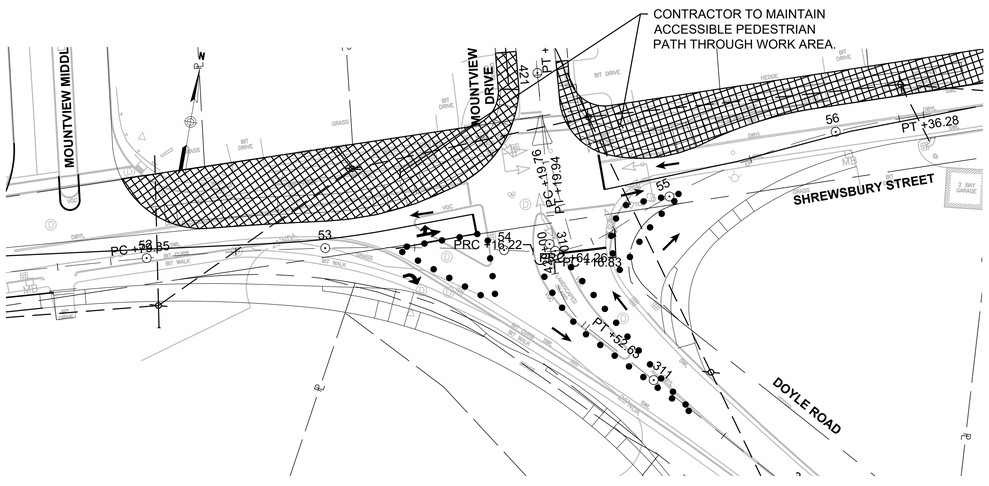


STAGE 2



STAGE 5



STAGE 3

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	78	206
PROJECT FILE NO. 609219			

TEMPORARY TRAFFIC CONTROL PLANS
SUGGESTED ROUNDABOUT STAGING

SUGGESTED SEQUENCING NOTES

TO MINIMIZE TRAFFIC CONGESTION, IT IS SUGGESTED CONSTRUCTION OF THE ROUNDABOUT IS SUBSTANTIALLY COMPLETE PRIOR TO IMPLEMENTING CHANGES TO BRATTLE STREET AT DOYLE STREET.

STAGE 1

1. RELOCATE EXIST OVERHEAD UTILITY.
2. EXISTING TRAFFIC SIGNAL CABINET TO BE RETROFIT WITH GENERATOR TRANSFER SWITCH FOR CONTRACTOR TO MAINTAIN POWER.

STAGE 2

1. MAINTAIN TRAFFIC SIGNAL OPERATION..
2. REMOVE EXISTING ISLAND ON SHREWSBURY STREET AND PROVIDE HMA PAVEMENT PATCH. CUT-BACK SOUTHERLY END OF ISLAND ON DOYLE ROAD. REFORM WITH DRUMS AS NECESSARY.
3. RETAIN THE FRONT PORTION OF THE MEDIAN ISLAND ON DOYLE ROAD TO FORMALIZE APPROACH TRAVEL LANE.
4. WIDEN SOUTHERLY CORNERS TO BINDER COURSE TO MATCH EXIST GRADE.
5. CONSTRUCT FINAL CURB, HMA PATH, PCR, WALL, GUARDRAIL, DRAINAGE UTILITY, ON SOUTHERLY CORNERS.
6. MAINTAIN ROADWAY DRAINAGE AT ALL TIMES.
7. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES. REFER TO PEDESTRIAN BYPASS DETAIL ON SHEET 80 TO PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATION AS NECESSARY.

STAGE 3

1. MAINTAIN TRAFFIC SIGNAL OPERATION.
2. CONSTRUCT MAJORITY OF NORTHERLY ROADWAY NARROWING, MAINTAINING 13' MIN TRAVEL LANES.
3. FORM SPLITTER ISLANDS AND NORTHERLY CURB LINES WITH DRUMS.
4. CONSTRUCT CENTER ISLAND AND APRON.
5. MAINTAIN ROADWAY DRAINAGE AT ALL TIMES.
6. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES. REFER TO PEDESTRIAN BYPASS DETAIL ON SHEET 80 TO PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATION AS NECESSARY.

STAGE 4

1. REMOVE PORTION OF MEDIAN ISLAND AND CONSTRUCT CENTER CIRCULATORY ISLAND. DELINEATE WITH DRUMS.
2. MAINTAIN TRAFFIC SIGNAL OPERATION AS LONG AS POSSIBLE PRIOR TO ROUNDABOUT IMPLEMENTATION.
3. REMOVE REMAINING PORTION OF THE MEDIAN ISLAND ON DOYLE ROAD.
4. IMPLEMENT ROUNDABOUT OPERATION.
5. CONSTRUCT TRUCK APRON.
6. PROVIDE ROUNDABOUT SIGNAGE AND ARROW BOARDS AS DIRECTED BY THE ENGINEER.
7. MAINTAIN ROADWAY DRAINAGE AT ALL TIMES.
8. MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES. REFER TO PEDESTRIAN BYPASS DETAIL ON SHEET 80 TO PROVIDE TEMPORARY PEDESTRIAN ACCOMMODATION AS NECESSARY.

STAGE 5

1. CONSTRUCT SPLITTER ISLANDS.
2. NARROW NORTHERLY SIDE OF ROUNDABOUT.
3. FINALIZE CURB INSTALLATION. CONSTRUCT HMA PATH, PCR, AND DRAINAGE UTILITY.
4. PERFORM FINAL PAVING AND PAVEMENT MARKINGS.
5. OPEN SIDEWALKS/SHARED USE PATH TO THE PUBLIC.

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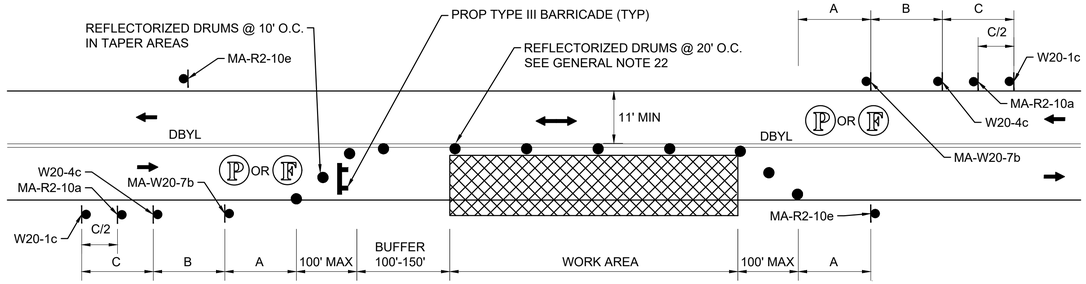
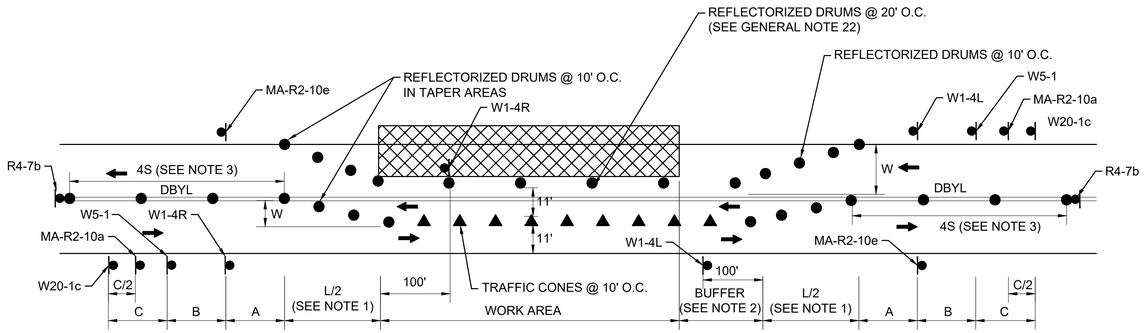


NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE TTCP GENERAL NOTE 26 REGARDING ADVANCE SIGNAGE (i.e., MA-R2-10a, W20-1c, MA-R2-10e)

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS DWG: TTCP2b DATE: FEB 2022

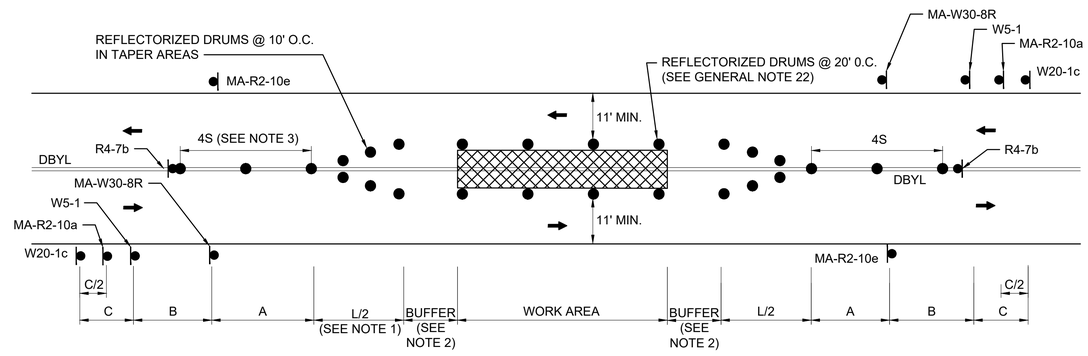


NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
3. S = POSTED SPEED OF ROADWAY IN MPH.
4. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
5. SEE TTCP GENERAL NOTE 26 REGARDING ADVANCE SIGNAGE (i.e., MA-R2-10a, W20-1c, MA-R2-10e)

TYPICAL TWO-WAY STREET LANE SHIFT

SCALE: NTS DWG: TTCP2a DATE: FEB 2022



NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES & LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
3. S = POSTED SPEED OF ROADWAY IN MPH.
4. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
5. SEE TTCP GENERAL NOTE 26 REGARDING ADVANCE SIGNAGE (i.e., MA-R2-10a, W20-1c, MA-R2-10e)

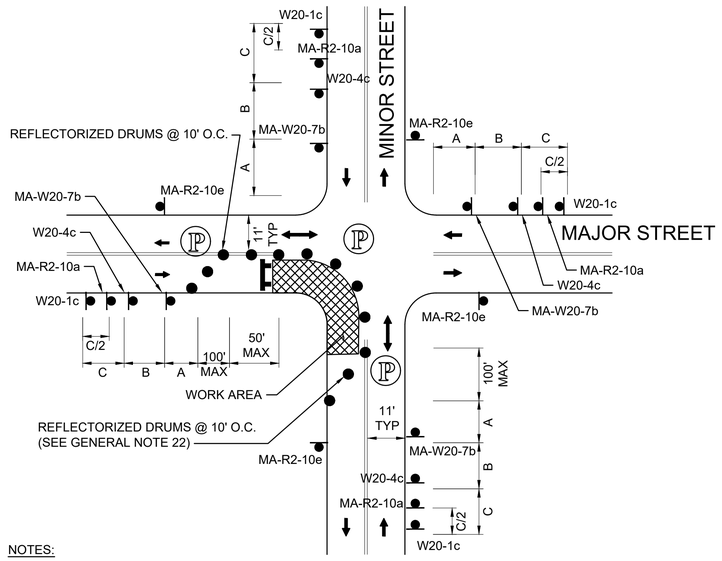
TYPICAL TWO-WAY STREET CENTER WORK AREA

SCALE: NTS DWG: TTCP2c DATE: FEB 2022

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	79	206
PROJECT FILE NO. 609219			

TEMPORARY TRAFFIC CONTROL PLANS
TYPICAL DETAILS

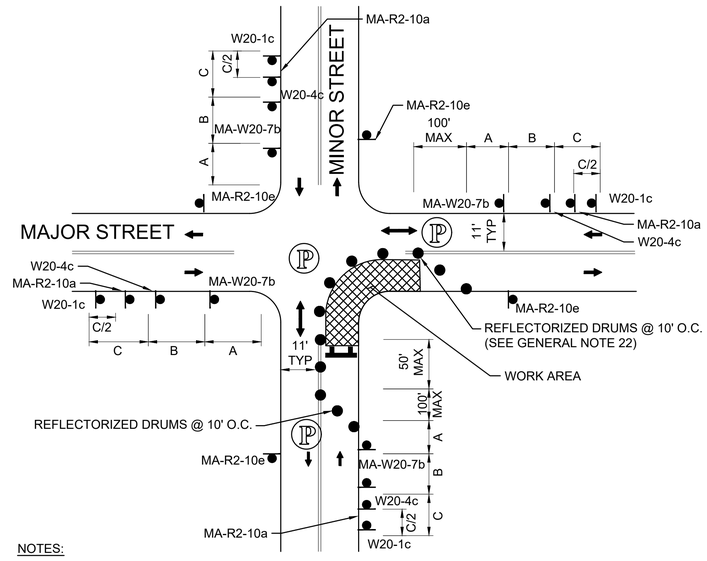


NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE TTCP GENERAL NOTE 26 REGARDING ADVANCE SIGNAGE (i.e., MA-R2-10a, W20-1c, MA-R2-10e)

ONE LANE BI-DIRECTIONAL TRAFFIC AT-INTERSECTIONS - NEAR SIDE

SCALE: NTS DWG: TTCP4d DATE: FEB 2022



NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.
3. SEE TTCP GENERAL NOTE 26 REGARDING ADVANCE SIGNAGE (i.e., MA-R2-10a, W20-1c, MA-R2-10e)

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS - FAR SIDE

SCALE: NTS DWG: TTCP4c DATE: FEB 2022

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HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	80	206
PROJECT FILE NO. 609219			

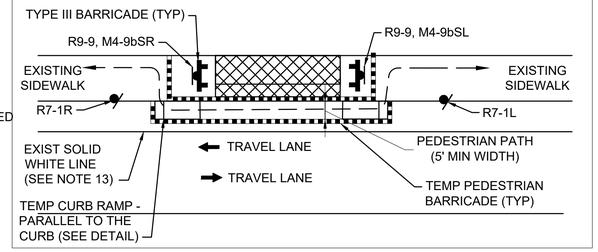
TEMPORARY TRAFFIC CONTROL PLANS
TYPICAL DETAILS

609219_HD(TTCP).DWG Plotted on 4-Jan-2023 1:31 PM

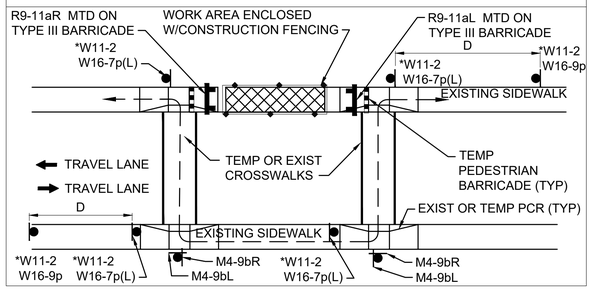
NOTES:

1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ◄- — -► INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, THE APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AT EXISTING OR TEMPORARY CROSSWALKS AS SHOWN IN PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS AND INCLUDE THE USE OF COMPLIANT TEMPORARY PEDESTRIAN BARRICADES AND TEMPORARY PEDESTRIAN CURB RAMPS AT ALL TIMES.
8. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS. A 5' x 5' PASSING AREA SHALL BE PROVIDED IN INTERVALS NOT EXCEEDING 200 FEET.
9. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
10. TEMPORARY PEDESTRIAN BARRICADES SHALL BE PAID FOR UNDER ITEM 852.11 TEMPORARY PEDESTRIAN BARRICADE.
11. TEMPORARY PEDESTRIAN CURB RAMPS SHALL BE PAID FOR UNDER ITEM 852.12 TEMPORARY PEDESTRIAN CURB RAMP.
12. * INDICATES SIGNS ARE NOT REQUIRED IF EXISTING CROSSWALKS ARE USED.
13. IF INSUFFICIENT SHOULDER WIDTH EXISTS THE CONTRACTOR SHALL SHIFT TRAFFIC UTILIZING THE TYPICAL TWO-WAY STREET LANE SHIFT DETAIL OR THE TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC DETAIL PROVIDED ON SHEET 79.

PEDESTRIAN BYPASS TYPE I

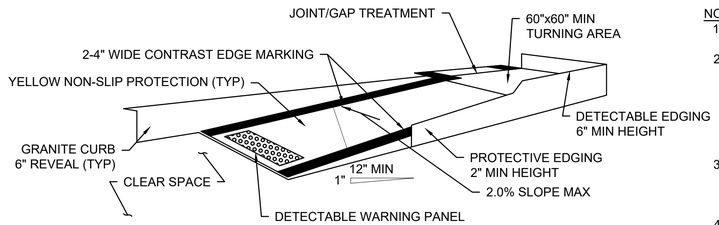


PEDESTRIAN BYPASS TYPE II

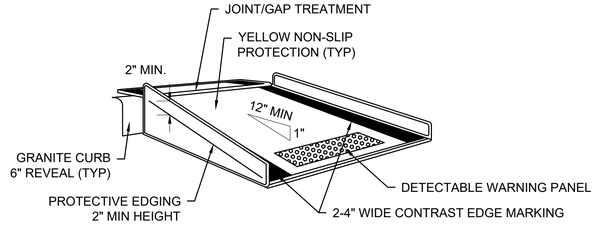


PEDESTRIAN BYPASS DETAIL

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB



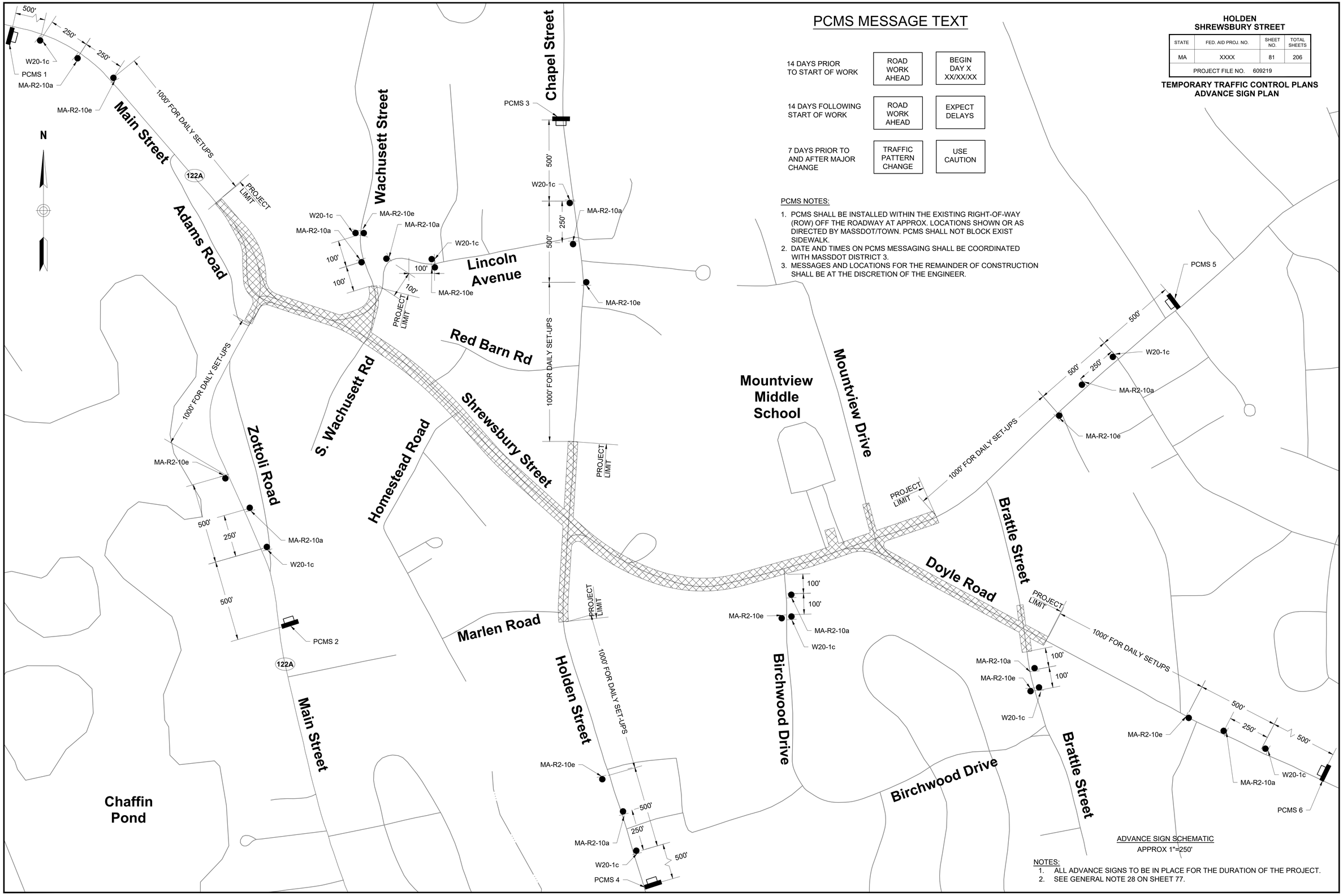
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

NOTES:

1. CURB RAMPS SHALL BE 60" MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2" MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.
3. DETECTABLE EDGING WITH 6" MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. THE CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE OF A SOLID CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
5. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
6. CLEAR SPACE OF 48"x48" MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5" WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5" LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25" HIGH, AND BEVELED AT 1:2 BETWEEN 0.25" AND 0.5" HEIGHT.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE ADHERED TO THE BASE OF THE RAMP. IF IT LEADS TO A PROTECTED PEDESTRIAN BYPASS THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC, THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.

TEMPORARY CURB RAMPS

SCALE: NTS



PCMS MESSAGE TEXT

14 DAYS PRIOR TO START OF WORK	ROAD WORK AHEAD	BEGIN DAY X XX/XX/XX
14 DAYS FOLLOWING START OF WORK	ROAD WORK AHEAD	EXPECT DELAYS
7 DAYS PRIOR TO AND AFTER MAJOR CHANGE	TRAFFIC PATTERN CHANGE	USE CAUTION

PCMS NOTES:

1. PCMS SHALL BE INSTALLED WITHIN THE EXISTING RIGHT-OF-WAY (ROW) OFF THE ROADWAY AT APPROX. LOCATIONS SHOWN OR AS DIRECTED BY MASSDOT/TOWN. PCMS SHALL NOT BLOCK EXIST SIDEWALK.
2. DATE AND TIMES ON PCMS MESSAGING SHALL BE COORDINATED WITH MASSDOT DISTRICT 3.
3. MESSAGES AND LOCATIONS FOR THE REMAINDER OF CONSTRUCTION SHALL BE AT THE DISCRETION OF THE ENGINEER.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	81	206
PROJECT FILE NO. 609219			

TEMPORARY TRAFFIC CONTROL PLANS
ADVANCE SIGN PLAN

ADVANCE SIGN SCHEMATIC
APPROX 1"=250'

NOTES:
1. ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.
2. SEE GENERAL NOTE 28 ON SHEET 77.

609219_HD(TTCP).DWG Plotted on 4-Jan-2023 1:31 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	XXXX	82	206
PROJECT FILE NO. 609219			

TEMPORARY TRAFFIC CONTROL PLANS
SIGN SUMMARY

609219_HD(TTCP).DWG Plotted on 4-Jan-2023 1:31 PM

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA (S.F.)
MA-R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE / WHITE	BLACK	BLACK	12.00
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END				FLUORESCENT ORANGE / WHITE	BLACK	BLACK	12.00
R4-7b	24"	30"	KEEP RIGHT	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	BLACK	BLACK	5.00
R7-1L	12"	18"	NO PARKING ANY TIME				WHITE	RED	RED	1.50
R7-1R	12"	18"	NO PARKING ANY TIME				WHITE	RED	RED	1.50
R9-9	24"	12"	SIDEWALK CLOSED				WHITE	BLACK	BLACK	2.00
R9-11aL	24"	12"	SIDEWALK CLOSED ← CROSS HERE				WHITE	BLACK	BLACK	2.00
R9-11aR	24"	12"	SIDEWALK CLOSED → CROSS HERE				WHITE	BLACK	BLACK	2.00
W1-4L	36"	36"					FLUORESCENT ORANGE	BLACK	BLACK	9.00
W1-4R	36"	36"					FLUORESCENT ORANGE	BLACK	BLACK	9.00
W5-1	36"	36"	ROAD NARROWS				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-1	36"	36"	BUMP				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-3	36"	36"	PAVEMENT ENDS				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-8	36"	36"	ROUGH ROAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-9	36"	36"	LOW SHOULDER				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W8-15	36"	36"	GROOVED PAVEMENT				FLUORESCENT ORANGE	BLACK	BLACK	9.00

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY (CONTINUED)

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	TEXT DIMENSIONS (INCHES) VERTICAL SPACING	TEXT DIMENSIONS (INCHES) ARROW RTE. MKR.	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	UNIT AREA (S.F.)
W11-2	36"	36"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT YELLOW GREEN	BLACK	BLACK	9.00
W16-7pL	24"	12"					FLUORESCENT YELLOW GREEN	BLACK	BLACK	2.00
W16-9p	24"	12"	AHEAD				FLUORESCENT YELLOW GREEN	BLACK	BLACK	2.00
W20-1c	36"	36"	ROAD WORK AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
W20-4c	36"	36"	ONE LANE ROAD AHEAD				FLUORESCENT ORANGE	BLACK	BLACK	9.00
MA-W20-7b	36"	36"	FLAGGER OFFICER AHEAD	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE	BLACK	BLACK	9.00
W21-7	36"	36"	UTILITY WORK	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT ORANGE	BLACK	BLACK	9.00
MA-W28-1	36"	36"	RUMBLE STRIPS AHEAD	AS PER MASSDOT STANDARD			FLUORESCENT ORANGE	BLACK	BLACK	9.00
MA-W30-8R	36"	36"	SQUEEZE RIGHT				FLUORESCENT ORANGE	BLACK	BLACK	9.00
M4-9bL	30"	24"	DETOUR ←	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9bR	30"	24"	DETOUR →				FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9bSL	30"	24"	DETOUR				FLUORESCENT ORANGE	BLACK	BLACK	5.00
M4-9bSR	30"	24"	DETOUR				FLUORESCENT ORANGE	BLACK	BLACK	5.00

NOTES:
1. HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSHIGHWAY DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED.
2. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	83	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:33 PM

BEGIN PROJECT
STA 96+44.21
N: 2948510.0448
E: 565102.2378

MAIN STREET

1927 STATE HIGHWAY LAYOUT

1974 STATE HIGHWAY LAYOUT

1997 COUNTY ALTERATION

S40°41'53"E
456.60'

S28°22'29"E
80.75'

PC +80.75

Δ=26°55'59"
R=314.00'
L=147.60'
T=75.19'

PT +28.35

S1°26'30"E
108.22'

PC +36.57

Δ=69°22'35"
R=500.00'
L=605.47'
T=346.06'

Δ=49°43'34"
R=156.00'
L=135.39'
T=72.29'

PROP TEMP EASEMENT

PROP PERM EASEMENT

PROP TEMP EASEMENT (TYP)

ADJ EX SMH

ADJ EHH (B.O.)

ADJ DMH

ADJ CB
RIM=742.81'
INV.=740.5' 8"DI
INV.=739.4' 12"CPP

ADJ SMH
RIM=741.96'
INV.=738.0' 10"PVC
INV.=734.0' 10"PVC
INV.=733.8' 10"PVC
INV.=733.8' 10"PVC

ADJ CB
RIM=742.94'
INV.=439.6' 12"CPP

N/F
COMMONWEALTH OF MASS
600 MAIN ST
199-4
BOOK 2515 PAGE 53

N/F
DRAPOS, ALEXANDER E TRUSTEE
633 MAIN ST
199-3
BOOK 20837 PAGE 279

N/F
FLEET NATIONAL BANK CC#81946
560 MAIN ST
199-28
BOOK 73936 PAGE 59

"MASSACHUSETTS STATE POLICE HOLDEN" SIGN

"YIELD TO EXISTING EMERGENCY VEHICLES"

CONC. RAMP WITH HANDRAILS

STONE MASONRY WALL CAPPED WITH CONCRETE

CONC. RET. WALL TOPPED WITH CLF

RET LP

RET UP

ADJ WG

RET WG

RET

RET TS

RET EX TS

RET TCB

RET EHH

REM EHH

REM EX CB

ADJ EHH R&S TS

PROP TS

ADJ

ADJ (B.O.)

3 FT - 12" RCP

4 FT - 12" RCP

5 FT - 12" RCP

16 FT - 6" DIP

RET CB
RIM=742.97'
FILLED WITH SAND

CIT CB
RIM=732.79'
INV.=729.8' 4"VCP
INV.=729.8' 4"VCP
INV.=728.8' 12"RCP

CIT
RIM=727.18'
INV.=721.8' 4"VCP
INV.=722.0' 4"VCP
INV.=722.4' 12"RCP
INV.=722.4' 12"RCP

DMH
RIM=729.86'
INV.=721.5' 12"RCP
INV.=721.5' 12"CMP
INV.=721.5' 12"RCP

R&R HYD
REPLACE EX POLE (B.O.)

PROP TEMP EASEMENT

APPROX LIMIT OF GRADING

EXIST TOWN LAYOUT

JUG HANDLE CONST.

1 STORY BUILDING

BITUMINOUS PARKING LOT

BORING #1

MULCH

BIT. CURB

CONC. WALK

CONC. PAD

GRAVEL

COBBLESTONE EDGE

COBBLESTONE EDGES TYPICAL

STEEL GUARDRAIL

OVERHEAD SIGN

BRICK SIGN BASE

WOODED

KING LOT

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	CB	9+47.38	26.9 L	726.16		I=721.60' (2)	
2	DMH	9+50.27	18.6 L	725.85	I=721.20' (153) I=721.50' (1) I=721.30' (154)	I=EXIST (3)	5' DIA
3	EX DMH	9+79.90	37.7 L	727.46	I=720.20' (2)	I=719.70' (106)	

JUG HANDLE BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
151	CB	602+58.15	8.0 R	733.29		I=729.00' (152)	
152	CIT	602+63.48	12.4 R	732.97	I=728.90' (151)	I=728.80' (153)	R&S F&G PROP F&C
153	CIT	604+13.61	13.4 L	727.23	I=722.40' (152)	I=722.40' (2)	R&S F&G PROP F&C
154	CB	604+53.41	13.9 L	725.75		I=721.40' (2)	

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

0 20 50 100
SCALE: 1" = 20'

CONTINUED ON SHEET NO. 84

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	84	206
PROJECT FILE NO. 609219			

UTILITY PLANS

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CONTINUED ON SHEET NO. 83

N

JUG HANDLE CONST ☒

3 FT - 12" RCP

RET UP

PROP TEMP EASEMENT

HOLDEN N/F TOWN OF HOLDEN 199-158 BOOK 5067 PAGE 417

PROP 10" X 6" WYE

REPLACE EX POLE (B.O.)

16 FT - 6" DIP

R&R HYD

EXIST TOWN LAYOUT

Δ=89°22'35" R=500.00' L=780.42' T=496.22' 1927 STATE HIGHWAY LAYOUT

S71°26'30"E 108.22'

PC 4+36.57

1927 SHBL

PROP PERM EASEMENT

1927 COUNTY ALTERATION

PROP TEMP EASEMENT (TYP)

R&R HYD PROP 14 FT-6" DIP

RET UP

R&S LP

R&S TS

ADJ (3)

5 FT - 12" RCP

4 FT - 12" RCP

9 FT - 12" RCP

ADJ EHH (B.O.)

1927 SHLO

Δ=49°43'34" R=156.00' L=135.39' T=72.29'

REM EHH

SHREWSBURY STREET CONST ☒

S71°40'23"E 542.61'

PROPOSED BORING

ADJ (B.O.)

1930 TOWN LAYOUT

80 FT - 12" RCP

RET UP

4 FT - 12" RCP

ADJ (B.O.)

CIT CB RIM=727.16' INV.=721.8' 4"VCP INV.=722.0' 4"VCP INV.=722.4' 12"RCP INV.=722.4' 12"RCP

RET TS

RET

HOLDEN N/F TOWN OF HOLDEN 199-158 BOOK 1691 PAGE

RIM=725.85' INV.=720.9' 12"RCP INV.=721.2' 12"RCP

1932 STATE HIGHWAY LAYOUT

ADJ TMH (B.O.)

RET TS

RET UP AND GUY

PROP TEMP EASEMENT (TYP)

ADJ CB RIM=714.39' INV.=710.7' DIP INV.=710.3' RCP SIZES NOT NOTED

LIMIT OF WORK STA 104+86.15 N: 294776.18705 E: 565288.7442

MAIN STREET

1927 STATE HIGHWAY LAYOUT

PT 104+82.0212

ADJ TMH (B.O)

SMH RIM=714.17' INV.=701.1' 8"PVC INV.=699.2' 10"PVC INV.=685.6' 6"PVC INV.=707.8' 6"PVC INV.=699.2' 10"PVC

N/F CHAFFIN REALTY CO. 5 SHREWSBURY ST LLC 199-7 BOOK 25652 PAGE 235

ADJ DMH RIM=729.85' INV.=721.5' 12"RCP INV.=721.5' 12"CMP INV.=721.5' 12"RCP

ADJ DMH RIM=725.50'

ADJ DMH RIM=727.46' INV.=722.2' 12"RCP INV.=719.7' 12"RCP INV.=720.1' 12"RCP INV.=719.9' 12"RCP INV.=719.9' 12"RCP

ADJ CB RIM=720.58' INV.=715.9' 12"RCP

ADJ DMH RIM=719.56' INV.=713.5' 12"RCP INV.=713.5' 12"RCP INV.=713.5' 12"RCP

CB CIT RIM=725.41' INV.=721.7' 4"VCP INV.=721.7' 4"VCP INV.=721.4' 12"RCP

CB RET RIM=726.32' INV.=721.4' 12"CMP

ADJ DMH RIM=715.38' INV.=710.4' 12"RCP INV.=709.8' 12"RCP INV.=709.8' 12"RCP INV.=709.7' 12"RCP

CB REM RIM=715.30' INV.=710.4' 12"RCP

N/F ALDEN RE HOLDINGS, LLC 2 SHREWSBURY ST 176-13 BOOK 35600 PAGE 234

ADJ DMH RIM=715.48' INV.=712.5' 12"DIP INV.=712.4' 12"RCP

REM RIM=715.

PROP TEMP EASEMENT (TYP)

TOWN OF HOLDEN SEWER EASEMENT

CONTINUED ON SHEET NO. 85

BF#BF1~102

BF#BF1~101

JUG HANDLE BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
151	CB	602+58.15	8.0 R	733.29		I=729.00' (152)	
152	CIT	602+63.48	12.4 R	732.97	I=728.90' (151)	I=728.80' (153)	R&S F&G PROP F&C
153	CIT	604+13.61	13.4 L	727.23	I=722.40' (152)	I=722.40' (2)	R&S F&G PROP F&C
154	CB	604+53.41	13.9 L	725.75		I=721.40' (2)	

1927 SHBL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
105	EX CB	103+82.16	24.4 L	720.72		I=EXIST (106)	
106	EX DMH	103+93.66	0.4 R	719.56	I=EXIST (105) I=713.50' (3)		

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	CB	9+47.38	26.9 L	726.16		I=721.60' (2)	
2	DMH	9+50.27	18.6 L	725.85	I=721.20' (153) I=721.50' (1) I=721.30' (154)	I=EXIST (3)	5' DIA
3	EX DMH	9+79.90	37.7 L	727.46	I=720.20' (2)	I=719.70' (106)	
4	GICI	10+54.60	36.0 L	725.53		I=721.60' (5)	
5	CIT	10+63.69	27.6 L	725.35	I=721.40' (4)	I=EXIST (6)	R&S F&G PROP F&C
6	EX DMH	10+70	21.6 L	725.77	I=721.30' (5)	I=EXIST (9)	
7	CB	11+97.40	24.6 R	719.32		I=EXIST (8)	
8	EX DMH	12+80.49	19.1 R	715.07	I=712.50' (7)	I=EXIST (9)	
9	EX DMH	12+80.76	10.9 L	715.22	I=EXIST (6) I=EXIST (8)	I=709.70' (12)	
10	CB ECC	13+56.43	12.5 L	712.06		I=708.38' (12)	
12	DMH	13+63.89	9.0 L	711.89	I=EXIST (9) I=708.30' (10)	I=708.20' (17)	

0 20 50 100

SCALE: 1" = 20'

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	85	206
PROJECT FILE NO. 609219			

UTILITY PLANS

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SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
10	CB ECC	13+56.43	12.5 L	712.06		I=708.38' (12)	
12	DMH	13+63.89	9.0 L	711.89	I=EXIST (9) I=708.30' (10)	I=EXIST (17)	
15	CBCI ECC	15+24.11	12.6 L	709.22		I=EXIST (17)	
16	GICI	15+25.50	12.6 R	709.22	I=702.72' (158)	I=706.70' (158)	
17	EX DMH	15+30.99	9.5 L	709.28	I=703.90' (12) I=703.90' (158) I=704.84' (15)	I=EXIST (20)	
18	CB	15+37.79	12.0 L	709.25		I=704.80' ()	
19	CB	15+44.37	12.3 R	709.26		I=705.10' ()	
20	EX DMH	15+52.35	7.4 L	709.40	I=EXIST (17) I=703.30' ()	I=702.10' ()	
23	EX DMH	17+28.05	8.3 R	713.43	I=710.00' (24)	I=709.90' (26)	
24	CB	17+33.65	13.0 R	713.56		I=EXIST (23)	
26	EX DMH	17+38.71	5.4 L	713.93	I=EXIST (23) I=709.70' (27) I=709.90' (28)	I=705.50' (25)	
27	CB	17+46.02	13.0 L	714.09		I=709.80' (26)	
28	EX DMH	19+43.27	1.5 L	724.88	I=718.60' (32) I=720.60' (29) I=720.10' (30)	I=718.60' (26)	
29	CB	19+53.24	13.0 R	725.20		I=EXIST (28)	
31	CB	19+57	13.0 L	725.41		I=720.35' (30)	
158	EX CB	15+17.16	12.0 R	709.24	I=706.60' (16)	I=703.50' (16) I=EXIST (17)	ADJ CB PROP F&C

CONTINUED ON SHEET NO. 84

CONTINUED ON SHEET NO. 86

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

SCALE: 1" = 20'

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
28	EX DMH	19+43.27	1.5 L	724.88	I=EXIST (32) I=720.60' (29) I=720.10' (30)	I=EXIST (26)	
29	CB	19+53.24	13.0 R	725.20		I=EXIST (28)	
31	CB	19+57	13.0 L	725.41		I=720.35' (30)	
32	EX DMH	21+90.87	7.6 L	738.38	I=EXIST (37) I=EXIST (35) I=EXIST (33)	I=EXIST (28)	
33	EX CB	21+97.05	12.3 L	738.62	I=734.40' (36)	I=EXIST (32)	ADJ EX CB PROP F&C
34	CB	22+00.21	13.0 R	738.78		I=735.10' (35)	
35	EX DMH	22+02.01	5.9 R	739.02	I=735.00' (34)	I=EXIST (32)	
36	GICI	22+22.80	13.1 L	740.02		I=EXIST (33)	
37	EX DMH	23+73.98	10.4 L	748.39	I=EXIST (38)	I=EXIST (32)	
38	EX DMH	23+95.29	10.8 L	749.56	I=744.70' (40) I=EXIST (39)	I=EXIST (37)	
39	EX CB	24+40.77	13.4 R	751.84	I=747.00' (42)	I=EXIST (38)	ADJ EX CB PROP F&C
40	CIT	24+44.92	18.9 L	752.59	I=747.60' (41)	I=EXIST (38)	R&S F&G PROP F&C
41	CB	24+60.27	12.9 L	752.76		I=747.80' (40)	
42	GICI	24+60.37	13.0 R	752.76		I=EXIST (39)	

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	86	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:34 PM

CONTINUED ON SHEET NO. 85

CONTINUED ON SHEET NO. 87

SHREWSBURY STREET

TYLER DRIVE

HOMESTEAD ROAD

1930 TOWN LAYOUT

TIRIMACCO, N/F ROBERT J JR
50 RED BARN RD
200-120
BOOK 36511 PAGE 26

OUELLETTE, N/F NICHOLAS G
4 TYLER DR
200-119
BOOK 52322 PAGE 84

SLAVIN, N/F CHRISTOPHER E
54 RED BARN RD
200-121
BOOK 28752 PAGE 259

NGUYEN, N/F HOA
7 TYLER DR
200-117
BOOK 24975 PAGE 114

REED, N/F AARON AND LYNN
3 TYLER DR
200-116
BOOK 55257 PAGE 126

LOWELL, N/F ROSS D AND JILL M.
100 SHREWSBURY ST
200-107
BOOK 18460 PAGE 299

DIK, N/F CHRISTOPHER
65 SHREWSBURY ST
200-94
BK 49352 PG 87

N/F DOUCETTE, DARRELL
67 SHREWSBURY ST
200-108
BOOK 42852 PAGE 370

N/F SUGAR, ROBERT
79 SHREWSBURY ST
200-103
BOOK 23565 PAGE 103

N/F BESHOY & VERONA REALTY, LLC
87 SHREWSBURY ST
200-82
BOOK 58811 PAGE 006

N/F GARCIA, LUIS AND ERIN
97 SHREWSBURY ST
200-62
BOOK 51499 PAGE 141

N/F BOUCHARD, SHARON AND DENN
103 SHREWSBURY ST
200-63
BOOK 54981 PAGE 194

TOWN OF HOLDEN SEWER EASEMENT

PROP TEMP EASEMENT (TYP)

PROP PERM UTILITY EASEMENT (TYP)

PROP 8 FT - 6" DIP

PROP OHW (TYP)

PROP SIDEWALK

PROP F&C

R&R HYD

R&R UP

R&R UP & PUSH BRACE (B.O.)
R&R COBRA HEAD

GUY (B.O.)

RET UP

REM TELE POLE (BO)

23 LF - 10" DIP

Δ=15°14'14"
R=2250.00'
L=598.36'
T=300.96'

3 FT - 12" RCP

2 FT - 12" RCP

13 FT - 12" RCP

16 LF - 10" DIP

PT +26.60

S41°05'19"E
191.19'

CIT CB
RIM=738.67'
COULD NOT OPEN
SILT CATCH

ADJ DMH
RIM=738.28'
INV.=734.3' 12"RCP
INV.=732.6' 12"RCP
INV.=734.3' 12"RCP
INV.=732.6' 12"RCP

REM CB
RIM=736.31'
COULD NOT OPEN
SILT CATCH

DMH ADJ
RIM=736.39'
INV.=731.5' PIPE
INV.=731.5' PIPE
INV.=730.8' 12"RCP

SMH
RIM=734.24'
INV.=728.8' 8"PVC

ADJ DMH
RIM=748.21'
INV.=741.6' 12"RCP
INV.=743.4' 12"CPP
INV.=741.6' 12"RCP

ADJ SMH
RIM=750.10'
INV.=UKN 10"DIP PRESSURE LINE
INV.=744.0' 10"VCP

ADJ DMH
RIM=749.26'
INV.=744.7' 12"RCP
INV.=744.6' 12"RCP
INV.=741.9' 12"RCP

CIT CB
RIM=751.89'
COULD NOT OPEN
SILT CATCH

ADJ DMH
RIM=749.26'
INV.=744.8' 12"RCP
INV.=744.3' 12"CPP
INV.=744.3' 12"CPP
12"CPP'S SILTED OVER

ADJ DMH
RIM=738.94'
INV.=736.1' 12"DIP
INV.=734.9' 12"RCP

REM CB
RIM=738.47'
INV.=736.3' 12"DIP

ADJ SMH
RIM=738.52'
INV.=732.4' 10"VCP
INV.=732.3' 10"VCP

ADJ CB
RIM=751.39'
INV.=746.6' 12"RCP

REMOD CB
RIM=725.55'
OLD NOT OPEN

ADJ SMH
RIM=724.89'
INV.=717.2' 10"PVC
INV.=717.2' 10"PVC
INV.=717.1' 10"PVC

REM CB
RIM=725.38'
INV.=723.0' 12"DIP

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

0 20 50 100
SCALE: 1" = 20'

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
43	CB	29+78.22	13.0 L	756.86		I=751.85' ()	
44	EX CB	29+82.52	22.0 R	756.62		I=EXIST (45)	REMODEL
45	EX DMH	29+86.66	11.4 R	756.77	I=EXIST (44)	I=EXIST (46)	
46	EX DMH	29+91.85	8.1 R	756.76	I=EXIST (45) I=751.60' ()	I=EXIST (49)	

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	87	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:34 PM

N

N/F
OWELL, ROSS D AND JILL M.
100 SHREWSBURY ST
200-107
BOOK 18460 PAGE 299

N/F
HENDRICKSON, BRIAN AND CHRISTIE
106 SHREWSBURY ST
200-106
BOOK 8640 PAGE 205

N/F
LIZANO, EMILY P AND CONRAD E.
116 SHREWSBURY ST
200-78
BOOK 53410 PAGE 050

N/F
LIZANO, EMILY P AND CONRAD E.
116 SHREWSBURY ST
200-77
BOOK 53410 PAGE 050

N/F
TAYLOR, KATHLEEN P
122 SHREWSBURY ST
200-75
BOOK 46051 PAGE 253

N/F
PHIPPS, TODD
136 SHREWSBURY ST
200-72
BOOK 39736 PAGE 351

N/F
DION, JOHN R & KIM L
138 SHREWSBURY ST
200-71
BOOK 55176 PAGE 32

PROP TEMP EASEMENT (TYP)

R&R HYD

PROP TEMP EASEMENT (TYP)

PROP PERM EASEMENT

R&R UP (B.O.)

R&R HYD

REM CB
RIM=756.50'
UNABLE TO OPEN
SILT CATCH

ADJ DMH
RIM=756.64'
INV.=742.3' 12"RCP
INV.=752.6' 12"RCP
INV.=752.4' 12"RCP

ADJ SMH
RIM=755.71'
INV.=749.1' SEWER
INV.=749.1' SEWER

STONE MASONRY RETAINING WALL

RET UP

R&R UP (B.O.)

1930 TOWN LAYOUT

PROP 14 FT - 6" DIP

RET

ADJ (B.O.)

ADJ

Δ=6°46'42"
R=2400.00'
L=283.94'
T=142.13'

PC +17.79

PT +01.73

PROP OHW (TYP)

S41°05'19"E
191.19'

S47°52'02"E
579.95'

2 FT - 12" RCP

SHREWSBURY STREET CONST

SHREWSBURY STREET

R&R UP (B.O.)

R&R UP (B.O.)
R&R COBRA HEAD

RET

ADJ (B.O.)

R&R UP (B.O.)

RET UP

RET UP

RET UP

1930 TOWN LAYOUT

PROP TEMP EASEMENT (TYP)

ADJ
RIM=757.24'
INV.=747.2' PIPE
INV.=750.2' 10"DIP
PRESSURE LINE

ADJ
RIM=759.06'
INV.=752.9' 10"VCP

ADJ
RIM=759.37'
INV.=749.4' SEWER
INV.=752.2' SEWER

PROP PERM UTILITY EASEMENT (TYP)

R&R UP (B.O.)
R&R COBRA HEAD

REMOD
RIM=756.53'
UNABLE TO OPEN
SILT CATCH

ADJ
RIM=756.59'
INV.=753.6' 12"DIP
INV.=752.8' 12"RCP

STONE MASONRY RETAINING WALL

PROP PERM UTILITY EASEMENT (TYP)

PROP TEMP EASEMENT (TYP)

N/F
BOUCHARD, SHARON AND DENNIS
103 SHREWSBURY ST
200-63
BOOK 54981 PAGE 194

N/F
MORIN, DEBORAH L
109 SHREWSBURY ST
200-64
BOOK 47196 PAGE 230

N/F
M&D MAINE, LLC
115 SHREWSBURY ST
200-65
BOOK 53357 PAGE 163

N/F
KEDDY, BRUCE AND SHERYL L.
TRUSTEES UNDER THE KEDDY LIVING TRUST
121 SHREWSBURY ST
200-66
BOOK 12545 PAGE 391

N/F
GIARD, IRENE G
131 SHREWSBURY ST
200-67
BOOK 7866 PAGE 200

N/F
CHAFFINS CONGREG CHURCH
155 SHREWSBURY ST
200-69
BOOK 147 PAGE 284

CONTINUED ON SHEET NO. 86

CONTINUED ON SHEET NO. 88

0 20 50 100

SCALE: 1" = 20'

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	88	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:35 PM

CONTINUED ON SHEET NO. 95

CONTINUED ON SHEET NO. 87

CONTINUED ON SHEET NO. 89

CONTINUED ON SHEET NO. 95

CHAPEL STREET

SHREWSBURY STREET

HOLDEN STREET

1947 TOWN LAYOUT

1930 TOWN LAYOUT

1943 TOWN LAYOUT

SHREWSBURY STREET CONST

CHAPEL-HOLDEN STREET CONST

PROP OHW (TYP)

PROP PERM EASEMENT

PROP PERM UTILITY EASEMENT (TYP)

PROP TEMP EASEMENT (TYP)

R&R UP & GUY WIRE (B.O.)

R&R COBRA HEAD

41 FT - 12" RCP

PROP TS EQUIPMENT (TYP)

PROP TS CONDUIT (TYP)

R&R UP (B.O.)

R&R HYD PROP 14 FT - 6" DIP

RET UP

2 FT - 12" RCP

ADJ EX DMH

ABAND PIPE

PROP OHW Δ=23°20'12" R=1350.00' L=549.86' T=278.79'

7 FT - 12" RCP

ADJ TMH (B.O.)

13 FT - 12" RCP

30 FT - 15" RCP

17 FT - 12" RCP

12 FT - 18" RCP

REBUILD DETENTION BASIN SEE DETAIL ON SHEET 103

PROP PERM UTILITY EASEMENT (TYP)

PROP TEMP EASEMENT (TYP)

REM HEADWALL

R&R UP & GUY WIRE (B.O.)

PROP TEMP EASEMENT

RET UP

ADJ DMH RIM=753.22' INV.=749.0' 12"RCP INV.=748.7' 12"RCP INV.=748.7' 12"RCP INV.=748.3' 18"RCP

ADJ DMH RIM=751.10' INV.=744.7' 15"PVC INV.=744.6' 15"PVC

ADJ DMH RIM=749.72' A,B=745.2' 18"CMP C=745.2' 18"CMP D=745.1' 18"CMP

ADJ DMH RIM=749.62' INV.=744.1' 12"RCP INV.=744.1' 12"RCP INV.=746.4' 12"RCP INV.=746.0' 12"RCP INV.=744.6' 18"RCP

CIT RIM=749.66' A=746.0' 12"RCP B=745.7' 18"CMP C=745.4' 12"CMP

REM RIM=749.46' INV.=746.4' 12"RCP

CIT RIM=750.39' 2"RCP 12"RCP'S

CIT RIM=750.01' A=746.3' 12"RCP B=746.3' 12"RCP

REM UP(B.O.) 14 FT - 12" RCP

ADJ DMH RIM=752.92' COULD NOT OPEN

REM RIM=752.76' INV.=750.0' 12"RCP

ADJ DMH RIM=752.82' INV.=748.0' 12"RCP INV.=748.2' 12"CMP INV.=748.2' 12"RCP

CIT RIM=753.09' INV.=749.4' 12"RCP INV.=749.4' 12"RCP

PROP PERM EASEMENT 13 LF - 10" DIP

PROP TEMP EASEMENT (TYP)

RET PIPE

S9°30'16"W 122.63'

44 FT - 12" RCP

1930 TOWN LAYOUT

21 FT - 12" RCP

S47°52'02"E 579.95'

REM EHH

R&S TS

38 FT - 12" RCP

ADJ (B.O.)

R&R UP (B.O.) R&R COBRA HEAD

BITUMINOUS PARKING LOT

PROP TEMP EASEMENT (TYP)

PROP PERM UTILITY EASEMENT (TYP)

ADJ DMH RIM=752.68' INV.=748.6' 12"CMP INV.=750.7' 6"DIP INV.=750.7' 6"DIP INV.=749.1' 12"RCP

REM CB RIM=752.58' INV.=750.8' 6"DIP INV.=750.8' 6"DIP

2 FT - 12" RCP

R&S TS

ADJ SMH RIM=752.00' INV.=746.6' 10"VCP INV.=743.6' 12"PVC INV.=745.5' 12"PVC INV.=742.5' 15"PIPE

CIT CB RIM=751.71' INV.=748.2' 12"RCP

ADJ DMH RIM=752.65' INV.=748.0' 12"RCP INV.=747.9' 12"RCP INV.=748.1' 12"RCP

ADJ (B.O.)

HOLDEN N/F TOWN OF HOLDEN 2007 ST BOOK 23917 PAGE 545

55 FT - 12" RCP

CIT CB RIM=753.26' INV.=750.6' 12"RCP

65 FT - 12" RCP

PROP TEMP EASEMENT (TYP)

R&R HYD PROP 8 FT - 6" DIP

R&R COBRA HEAD

PROP PERM UTILITY EASEMENT (TYP)

R&R UP PROP GUY (B.O.)

REM (B.O.)

ADJ DMH RIM=753.36' INV.=748.2' 12"RCP

PROP TEMP EASEMENT (TYP)

R&R UP (B.O.) R&R COBRA HEAD

N/F SHULER, GREGORY AND SUSANA 190 SHREWSBURY ST 200-22 BOOK 54152 PAGE 371

N/F FRASER, KATHLEEN A. ET AL 160 SHREWSBURY ST 200-17 BOOK 50718 PAGE 55

N/F COTE, JERROLD AND CECILE M. 116 SHREWSBURY ST 200-73 BOOK 30744 PAGE 321

N/F DION, JOHN R & KIM L 138 SHREWSBURY ST 200-71 BOOK 55176 PAGE 32

N/F CHARBONNEAU, SCOTT E. AND LOUISE E. 181 SHREWSBURY ST 213-2 BOOK 6677 PAGE 1

N/F HOLDEN N/F TOWN OF HOLDEN 2007 ST BOOK 23917 PAGE 545

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
61B	EX CB	35+23.20	24.8 R		I=746.50' (61A)	I=746.50' (62)	
61A	FES	35+20.96	39.4 R	748.09		I=EXIST (62)	
61	EX DMH	35+17.59	19.2 R	750.60	I=EXIST (118)	I=EXIST (61B)	
62	EX DMH	35+30.20	35.0 L	747.41	I=745.20' (60) I=EXIST (61B)		
63	CB	35+31.43	13.0 L	750.20		I=745.90' (60)	
64	CB	35+35.25	13.0 R	750.21		I=EXIST (65)	
65	EX DMH	35+53.85	4.7 R	750.44	I=EXIST (69) I=745.60' (64)	I=744.50' (66)	

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
47	CB	32+36.05	13.0 L	753.25		I=749.60' (48)	
48	CIT	32+61.26	14.0 L	752.87	I=749.40' (47)	I=EXIST (49)	
49	EX DMH	32+72.11	7.1 R	752.86	I=748.40' (46) I=748.40' (48)	I=EXIST (50)	
50	EX DMH	32+80.58	13.8 R	752.61	I=EXIST (49)	I=EXIST (51)	
51	EX DMH	32+80.82	15.4 L	752.82	I=EXIST (50) I=748.20' (115)	I=748.00' (54)	
52	DBCBCI	33+35.28	25.5 R	751.86		I=748.60' (53)	
53	CIT	33+73.37	44.1 R	751.36	I=748.20' (117) I=748.20' (52)	I=748.20' (118)	
54	CIT	34+32.95	17.7 L	750.48	I=746.40' (116) I=EXIST (51)	I=746.30' ()	REMOD
55	CB	35+04.85	10.0 R	750.25	I=747.50' (56)	I=746.30' (59)	CB W/ F&C
56	GICI	35+08.66	18.1 R	750.26		I=747.57' (55)	
57	CB	35+10.68	24.5 L	750.82	I=747.30' (58)	I=745.60' (60)	F&C
58	GICI	35+10.70	13.0 L	750.19		I=747.70' (57)	
59	CIT	35+15.89	12.8 R	750.19	I=746.30' (61) I=746.20' (55)	I=746.20' (60)	R&S F&G PROP F&C
60	CIT	35+16.30	21.7 L	750.77	I=745.70' (63) I=745.80' (59) I=745.50' (57)	I=745.40' (62)	R&S F&G PROP F&C

CHAPEL-HOLDEN BL DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
113	DBCBCI	206+03.38	31.4 R	749.56	751.33	I=748.20' (115)	
114	CB	206+11.98	24.3 L	752.98		I=748.40' (115)	
115	CIT	206+15.12	20.5 R	752.06	I=748.10' (114) I=748.10' (113)	I=748.10' (51)	R&S F&G PROP F&C
116	CB	206+75.19	31.8 L	750.64	750.32	I=747.00' (54)	
117	DBCBCI	207+37	22.9 R	750.71	752.09	I=748.30' (53)	
118	EX DMH	208+12.99	7.7 L	752.94	I=748.00' (53) I=748.10' (125)	I=747.90' (61)	
119	FES	208+28.53	62.3 L		I=EXIST (121)		
121	EX DMH	208+52.77	10.4 L	752.94	I=748.30' (122) I=750.20' (123)	I=748.00' (119)	
122	CB	208+62.15	26.0 L	752.60		I=EXIST (121)	
123	CIT	208+65.57	20.9 R	752.78	I=750.60' (124)	I=EXIST (121)	R&S F&G PROP F&C
124	CB	209+34.26	15.0 R	754.92		I=751.40' (123)	

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

0 20 50 100

SCALE: 1" = 20'

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
68	CB	37+64.16	13.0 R	753.85		I=EXIST (69)	
69	EX DMH	37+64.20	2.0 R	754.07	I=748.90' (68) I=749.40' (70) I=EXIST (74)	I=748.30' (65)	
70	CB	37+71.37	13.7 L	754.05		I=EXIST (69)	
71	GICI	40+08.87	13.0 L	764.54		I=761.00' (73)	
72	EX CB	40+09.08	13.0 R	764.55		I=EXIST (74)	
73	CB	40+09.19	5.5 L	764.70	I=760.70' (71)	I=EXIST (74)	CB W/ F&C
74	EX DMH	40+09.48	3.5 R	764.76	I=759.50' (72) I=759.70' (73) I=EXIST (75)	I=EXIST (69)	
75	EX DMH	42+42.85	10.5 R	780.81	I=776.00' (76)	I=EXIST (74)	
76	REMOD DMH	42+49.82	16.2 R	781.78	I=777.50' () I=778.50' (77)	I=EXIST (75)	
77	CBCI	42+55.18	13.0 R	781.67		I=778.80' (76)	
79	CBCI	42+58.32	13.1 L	781.91		I=777.50' ()	REMOD

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	89	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:35 PM

N

N/F
SHULER, GREGORY AND SUSANA
190 SHREWSBURY ST
200-21
BOOK 54152 PAGE 371

N/F
SHULER, GREGORY AND SUSANA
SHREWSBURY ST
200-22
BOOK 54152 PAGE 371

N/F
NORDQUIST, JOHN H AND MARY
204 SHREWSBURY ST
200-20
BOOK 4637 PAGE 324

N/F
HOLDEN, TOWN OF
SHREWSBURY ST
200-18
BOOK 4647 PAGE 313

N/F
READ, BRIAN AND MARY
220 SHREWSBURY ST
200-91
BOOK 65662 PAGE 61

SHREWSBURY STREET

1930 TOWN LAYOUT

SHREWSBURY STREET CONST ℄

PROP TEMP EASEMENT (TYP)

PROP PERM EASEMENT

RET UP

PROP OHW
Δ=23°20'12"
R=1350.00'
L=549.86'
T=278.79'

PROP TEMP EASEMENT (TYP)

7 FT - 12" RCP

R&R UP (B.O.)
R&R COBRA HEAD

ADJ (B.O.)

PROP PERM UTILITY EASEMENT (TYP)

RET UP

RET HYD

ADJ (B.O.)

RET UP

PROP TEMP EASEMENT (TYP)

BEGIN EVERSOURCE GAS UPGRADE STA 40+50

4 LF - 10" DIP

PCC +31.54

2 FT - 12" RCP

3 FT - 10" RCP

RET UP

Δ=34°25'37"
R=900.00'
L=540.78'
T=278.83'

ADJ
RIM=753.22'
INV.=749.0' 12"RCP
INV.=748.7' 12"RCP
INV.=748.7' 12"RCP
INV.=748.3' 18"RCP

REM
RIM=753.56'
INV.=749.6' 18"RCP

REM
RIM=753.34'
INV.=748.7' 12"RCP

ADJ SMH
RIM=758.37'
INV.=748.6' 15"PVC
INV.=748.5' 15"PVC

ADJ DMH
RIM=764.77'
INV.=759.7' RCP
INV.=759.8' 12"RCP
INV.=759.5' PIPE
INV.=759.5' 12"RCP

CB REM
RIM=764.21'
INV.=760.0' RCP

SMH REMOD
RIM=764.60'
INV.=754.4' 15"PVC
INV.=754.4' 15"PVC

CB ADJ
RIM=764.73'
INV.=UKN PIPE

REM CB
RIM=781.36'
INV.=777.5' 12"RCP

REM GI
RIM=781.78'
INV.=778.5' 12"RCP

REMOD
CB W/ F&C
RIM=781.46'
INV.=777.5' 12"RCP
INV.=777.5' 12"RCP

ADJ DMH
RIM=780.95'
INV.=776.1' 12"RCP
INV.=776.0' 12"RCP
INV.=776.0' 12"RCP
INV.=775.6' 12"RCP

SMH ADJ
RIM=783.85'
FILLED WITH WATER
OVERFLOWING

CONTINUED ON SHEET NO. 88

CONTINUED ON SHEET NO. 90

N/F
CHARBONNEAU, SCOTT E AND LOUISE E.
181 SHREWSBURY ST
213-3
BOOK 6677 PAGE 98

N/F
COURTNEY, KATHRYN
189 SHREWSBURY ST
213-3
BOOK 55815 PAGE 030

N/F
REZENDE, ROSMARIA
197 SHREWSBURY ST
213-4
BOOK 23547 PAGE 161

N/F
KUWAHARA, TOSHIO
203 SHREWSBURY ST
213-5
BOOK 25654 PAGE 142

N/F
DYER, THOMAS CO-TRUSTEE AND EILEEN CO-TRUSTEE
233 SHREWSBURY ST
213-8
BOOK 59700 PAGE 217

0 20 50 100

SCALE: 1" = 20'

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
75	EX DMH	42+42.85	10.5 R	780.81	I=776.00' (76)	I=EXIST (74)	
76	REMOD DMH	42+49.82	16.2 R	781.78	I=777.50' () I=778.50' (77)	I=EXIST (75)	
77	CBCI	42+55.18	13.0 R	781.67		I=778.80' (76)	
79	CBCI	42+58.32	13.1 L	781.91		I=777.50' ()	REMOD
80	EX DMH	44+88.33	1.6 L	798.99	I=EXIST (81) I=795.20' (82) I=795.20' (83)		
81	EX DMH	44+99.16	0.2 L	799.72		I=EXIST (80)	
82	CB	45+01.16	13.0 R	799.60		I=EXIST (80)	
83	CB	45+43.27	13.0 L	802.13		I=EXIST (80)	

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	90	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:36 PM

N

N/F READ, BRIAN AND MARY 220 SHREWSBURY ST 200-97 BOOK 69662 PAGE 61

N/F FASSHAUER, MELISSA M AND ERIC 238 SHREWSBURY ST 200-103 BOOK 28366 PAGE 32

N/F CARDONA, SR MARCELLO G. AND CARDONA, TATIANA P. 250 SHREWSBURY ST 201-61 BOOK 46092 PAGE 138

N/F DINARDO, DANIELLE AND TOLAN, RYAN 258 SHREWSBURY ST 201-60 BOOK 48544 PAGE 223

PROP PERM EASEMENT
R&R UP IN PLACE
REMOD RIM=781.36' INV.=777.5' 12"RCP
ADJ
ADJ (B.O.)
PROP TEMP EASEMENT (TYP)
END EVERSOURCE GAS UPGRADE STA 40+50
REM CB W/F&C RIM=799.86 INV.=795.9' 12"DIP INV.=795.1' 12"RCP
REM CB RIM=802.00' INV.=798.0' 12"RCP
DMH ADJ RIM=799.14' INV.=793.9' 12"RCP INV.=794.3' 15"RCP INV.=793.4' 12"RCP
RET UP
SMH ADJ RIM=807.37' INV.=793.3' 15"PVC INV.=793.3' 15"PVC
R&R UP (B.O.)
PROP TEMP EASEMENT (TYP)
1930 TOWN LAYOUT
SHREWSBURY STREET
N74°22'10"E 607.54'
R&S TS
ADJ
1930 TOWN LAYOUT
RET UP
2 FT - 12" RCP
3 FT - 10" RCP
Δ=34°25'37" R=900.00' L=540.78' T=278.83'
SHREWSBURY STREET CONST
52 FT - 12" RCP
15 FT - 12" RCP
PT +72.31
REM 1930 TOWN LAYOUT
RET UP
ADJ (B.O.)
RET HYD
PROP INDIVIDUAL TREE PROTECTION (TYP)
PROP TEMP EASMENT (TYP)
RET UP
PROP TEMP EASMENT (TYP)
RET UP
ADJ SMH RIM=783.85' FILLED WITH WATER OVERFLOWING
CONTINUED ON SHEET NO. 89
CONTINUED ON SHEET NO. 91
SMH RIM=810.13' INV.=803.8' 8"I INV.=803.8' 8"I
DYER, THOMAS CO-TRUSTEE AND EILEEN CO-TRUSTEE 233 SHREWSBURY ST 213-6 BOOK 59700 PAGE 217
N/F RAIMONDO, HOLLY NYLANDER 241 SHREWSBURY ST 213-8 BOOK 43498 PAGE 173
N/F NEWTON, RONALD EA AND JUDITH 249 SHREWSBURY ST 213-9 BOOK 51526 PAGE 221

0 20 50 100
SCALE: 1" = 20'

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
84	EX CB	50+88.62	26.1 L	810.44	I=806.70' (85)	I=EXIST (88)	ADJ EX CB PROP F&C
85	GICI	50+88.73	15.0 L	809.82		I=EXIST (84)	
86	EX CB	51+30.87	4.3 R	809.78	I=806.60' (87)	I=EXIST (88)	ADJ EX CB PROP F&C
87	GICI	51+30.87	13.0 R	809.61		I=EXIST (86)	
88	EX DMH	51+48.64	23.8 L	809.89	I=805.70' (84) I=EXIST (86)	I=EXIST (89)	
89	EX DMH	52+32.13	30.7 L	809.57	I=EXIST (88) I=805.35' (157)	I=EXIST (90)	REMODEL
90	EX DMH	52+50.51	0.4 L	809.14	I=EXIST (89)		REMODEL
91	GICI	53+25.27	16.7 L	808.29		I=805.70' (155)	
92	HDW	53+44.91	48.2 R		I=802.60' (93)		
93	DMH	53+48.53	36.6 R	808.83	I=EXIST (94) I=803.12' (130) I=803.60' (97)	I=802.80' (92)	
94	EX DMH	53+54.07	24.0 R	809.03	I=803.30' () I=EXIST (96)	I=802.80' (93)	
95	EX DMH	53+67.85	5.0 R	808.76	I=EXIST (99)	I=803.30' ()	REMODEL
96	EX DMH	53+69.54	24.7 R	808.62		I=EXIST (94)	REMODEL
97	DBCBCI	53+27	21.6 R	808.19		I=803.80' (93)	

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
155	CB	53+23.31	27.5 L	808.93	I=805.40' (91)	I=805.30' (98)	F&C
157	CB	52+23.18	14.5 L	809.54		I=805.54' (89)	

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	91	206
PROJECT FILE NO. 609219			

UTILITY PLANS

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SHREWSBURY STREET

N74°22'10"E 607.54'

PROP TEMP EASEMENT (TYP)
PROP RRFB (TYP)
7 LF - 10" DIP
5 LF - 10" DIP
R&R HYD 5 FT - 6" DIP
R&S TS
RET UP
R&R UP PROP GUY (B.O.) R&R COBRA HEAD
PROP PERM UTILITY EASEMENT
PROP PERM UTILITY EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
RET HEADWALL
1930 TOWN LAYOUT
SHREWSBURY STREET CONST B
PC +79.85
Δ=9°01'43" R=1500.00' L=236.37' T=118.43'
PROP OHW
PROP OHW (TYP)
7 FT - 10" RCP
84 FT - 12" RCP
22 FT - 12" RCP
8 FT - 24" RCP
92 - PROP FIELD STONE MASONRY HEADWALL
PROP STONE MASONRY WALL (TYP)
ADJ (B.O.)
ADJ (3)
RET
REM
REMOD
ADJ
CONC BLOCK PLANTING BED
STONE MASONRY WALL
BIT WALK
BIT DRIVE
BIT CURB
GRASS
VGC
EX 8"DI WATER
EX 15"PVC SEWER
EX 0.5"GAS
EX TELEPHONE
EX 12"CPP
EX 8"PVC SEWER
EX 8"DI WATER
EX 8"GAS
EX 6"GAS
EX 15"PVC SEWER
EX 12"CPP
EX 8"DI WATER
EX 8"DI WATER
EX 8"DI WATER
EX 12"CPP
EX 8"DI WATER
EX 8"DI WATER
EX 8"DI WATER

DOYLE ROAD DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
130	EX DMH	350+52.42	11.0 L	808.65	I=804.60' () I=803.80' (133) I=803.80' (132) I=805.90' (131)	I=803.70' (93)	
131	CBCI	350+81.16	21.7 L	808.90		I=EXIST (130)	
132	CBCI	350+80.75	25.7 R	807.85		I=EXIST (130)	
133	DMH	351+45.47	8.9 L	808.88	I=804.40' (135) I=804.40' (134)	I=EXIST (130)	
134	DBCBCI	351+57.74	14.3 L	808.95		I=804.60' (133)	
135	DBCBCI	351+51.22	14.8 R	808.84		I=804.60' (133)	

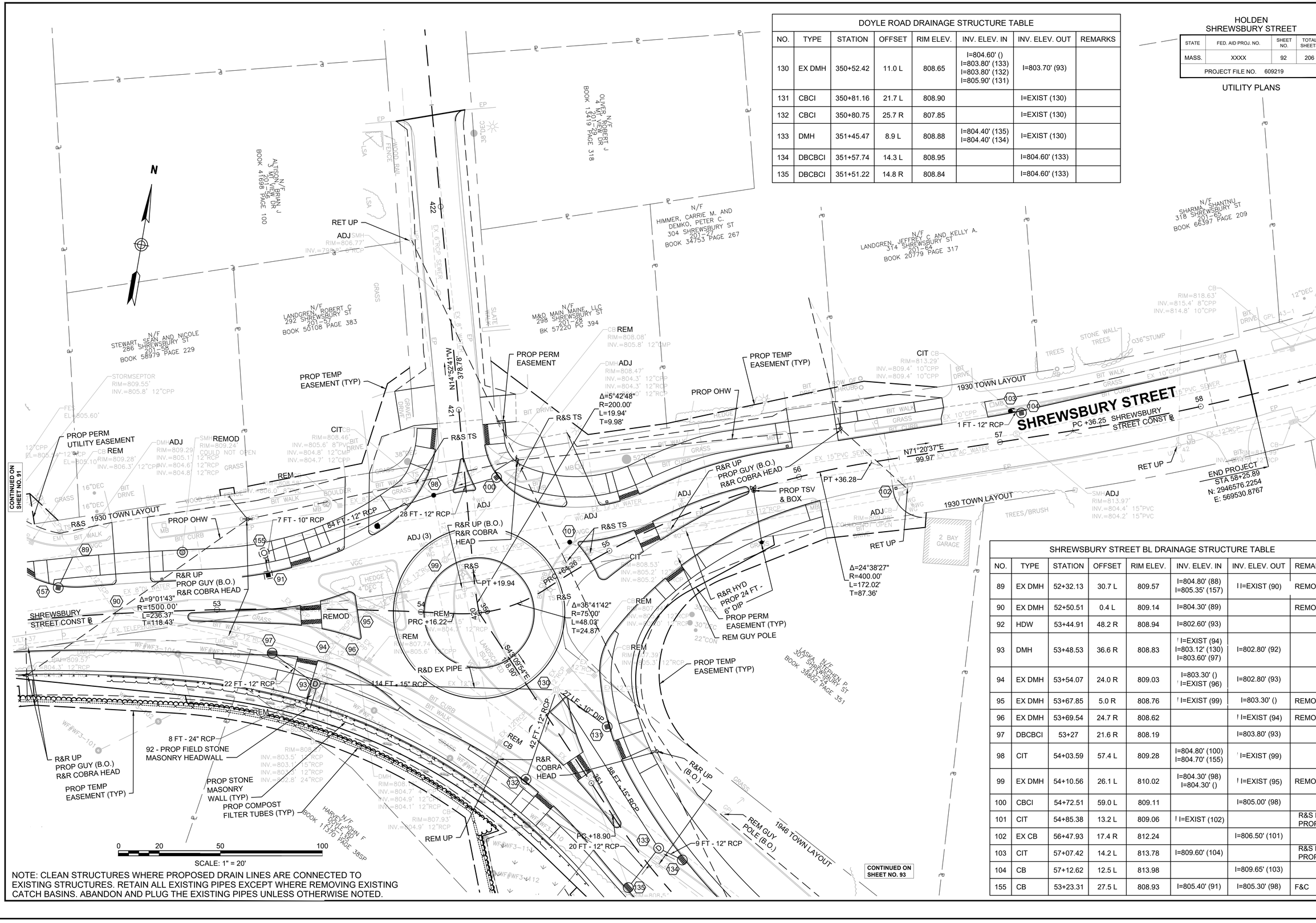
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	92	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:37 PM

SHREWSBURY STREET BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
89	EX DMH	52+32.13	30.7 L	809.57	I=804.80' (88) I=805.35' (157)	I I=EXIST (90)	REMODEL
90	EX DMH	52+50.51	0.4 L	809.14	I=804.30' (89)		REMODEL
92	HDW	53+44.91	48.2 R	808.94	I=802.60' (93)		
93	DMH	53+48.53	36.6 R	808.83	' I=EXIST (94) I=803.12' (130) I=803.60' (97)	I=802.80' (92)	
94	EX DMH	53+54.07	24.0 R	809.03	I=803.30' () ' I=EXIST (96)	I=802.80' (93)	
95	EX DMH	53+67.85	5.0 R	808.76	' I=EXIST (99)	I=803.30' ()	REMODEL
96	EX DMH	53+69.54	24.7 R	808.62		' I=EXIST (94)	REMODEL
97	DBCBCI	53+27	21.6 R	808.19		I=803.80' (93)	
98	CIT	54+03.59	57.4 L	809.28	I=804.80' (100) I=804.70' (155)	' I=EXIST (99)	
99	EX DMH	54+10.56	26.1 L	810.02	I=804.30' (98) I=804.30' ()	' I=EXIST (95)	REMODEL
100	CBCI	54+72.51	59.0 L	809.11		I=805.00' (98)	
101	CIT	54+85.38	13.2 L	809.06	' I=EXIST (102)		R&S F&G PROP F&C
102	EX CB	56+47.93	17.4 R	812.24		I=806.50' (101)	
103	CIT	57+07.42	14.2 L	813.78	I=809.60' (104)		R&S F&G PROP F&C
104	CB	57+12.62	12.5 L	813.98		I=809.65' (103)	
155	CB	53+23.31	27.5 L	808.93	I=805.40' (91)	I=805.30' (98)	F&C



NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	93	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:37 PM

CONTINUED ON SHEET NO. 92

CONTINUED ON SHEET NO. 94

N/F
LASKA, STEPHEN P.
307 SHREWSBURY ST
213-24
BOOK 39802 PAGE 351

N/F
DONALDSON, STEVEN AND SUZANNE
22 DOYLE RD
213-26
BOOK 21435 PAGE 165

N/F
HUDSON, KATHERINE R
32 DOYLE RD
213-32
BOOK 37540 PAGE 371

N/F
WOLFE, JOANN M
34 DOYLE RD
213-137
BOOK 5339 PAGE 53

N/F
STONE, WILLIAM C.
42 DOYLE RD
213-53
BOOK 52737 PAGE 50

N/F
KASPARSON, NORMAN L AND ANJ
43 BRATTLE ST
213-36
BOOK 4354 PAGE 81

PROP TEMP EASEMENT (TYP)

R&R UP (B.O.)

REM GUY POLE (B.O.)

9 FT - 12" RCP

PC +18.90
20 FT - 12" RCP

DOYLE ROAD CONST ℄

Δ=27°44'33"
R=325.00'
L=157.37'
T=80.26'

DOYLE ROAD

PROP OHW (TYP)

R&R UP PROP SIDEWALK GUY, MINIMUM 80" VERTICAL CLEARANCE (B.O.) R&R COBRA HEAD

PROP UP PROP GUY (B.O.)

PROP PERM UTILITY EASEMENT (TYP)

R&D EX PIPE

ADJ

PC +91.24

Δ=8°52'42"
R=523.00'
L=81.04'
T=40.60'

PT +72.28

PT +76.27

S70°54'27"E
114.97'

4 FT - 12" RCP

R&R UP (B.O.)

S62°01'45"E
165.29'

PC +37.57

PT +61.29
Δ=0°16'19"
R=5000.00'
L=23.72'
T=11.86'

DOYLE ROAD CONST ℄

1946 TOWN LAYOUT

REM UP (B.O.)

R&R UP (B.O.)
R&R COBRA HEAD

REMOD CB
RIM=817.82'
INV.=812.7' 12"PIPE

RET HYD

ADJ
RIM=818.33'
INV.=806.8' 8"PVC
INV.=806.8' 8"PVC
INV.=806.8' 8"PVC

R&R UP & PROP SIDEWALK GUY, MINIMUM 80" VERTICAL CLEARANCE (B.O.) R&R COBRA HEAD

R&R UP (B.O.)

100' WETLAND BUFFER (TYP)

PROP TEMP EASEMENT (TYP)

PROP PERM UTILITY EASEMENT

PROP PERM EASEMENT

PROP TEMP EASEMENT (TYP)

PROP COMPOST FILTER TUBES (TYP)

N/F
HOLDEN TOWN OF
DOYLE RD
213-23
BOOK 4526 PAGE 29

N/F
HARRIS, ELLEN F
RON D
213-135
BOOK 11370 PAGE 385

N/F
OLEARY, MICHAEL
29 DOYLE RD
213-136
BOOK 61342 PAGE 264

N/F
VAJDA, JOSEPH J AND MARY L.
33 DOYLE RD
213-129
BOOK 30600 PAGE 108

N/F
ARVIDSON, MICHAEL R
39 DOYLE RD
213-130
BOOK 30576 PAGE 258

N/F
CADDEN, BARBARA J
47 DOYLE RD
213-131
BOOK 18648 PAGE 32

INV 8" CMP
EL=805.40'

WF#WF3-117

WF#WF3-118 END

0 20 50 100
SCALE: 1" = 20'

DOYLE ROAD DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
133	DMH	351+45.47	8.9 L	808.88	I=804.40' (135) I=804.40' (134)	I=EXIST (130)	
134	DBCBCI	351+57.74	14.3 L	808.95		I=804.60' (133)	
135	DBCBCI	351+51.22	14.8 R	808.84		I=804.60' (133)	
136	EX DMH	354+73.96	5.6 L	818.20	I=814.30' (138) I=EXIST (137)		
137	EX CB	354+74.43	13.0 R	817.90		I=EXIST (136)	REMODEL
138	CB	354+77.16	13.0 L	818.12		I=EXIST (136)	

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

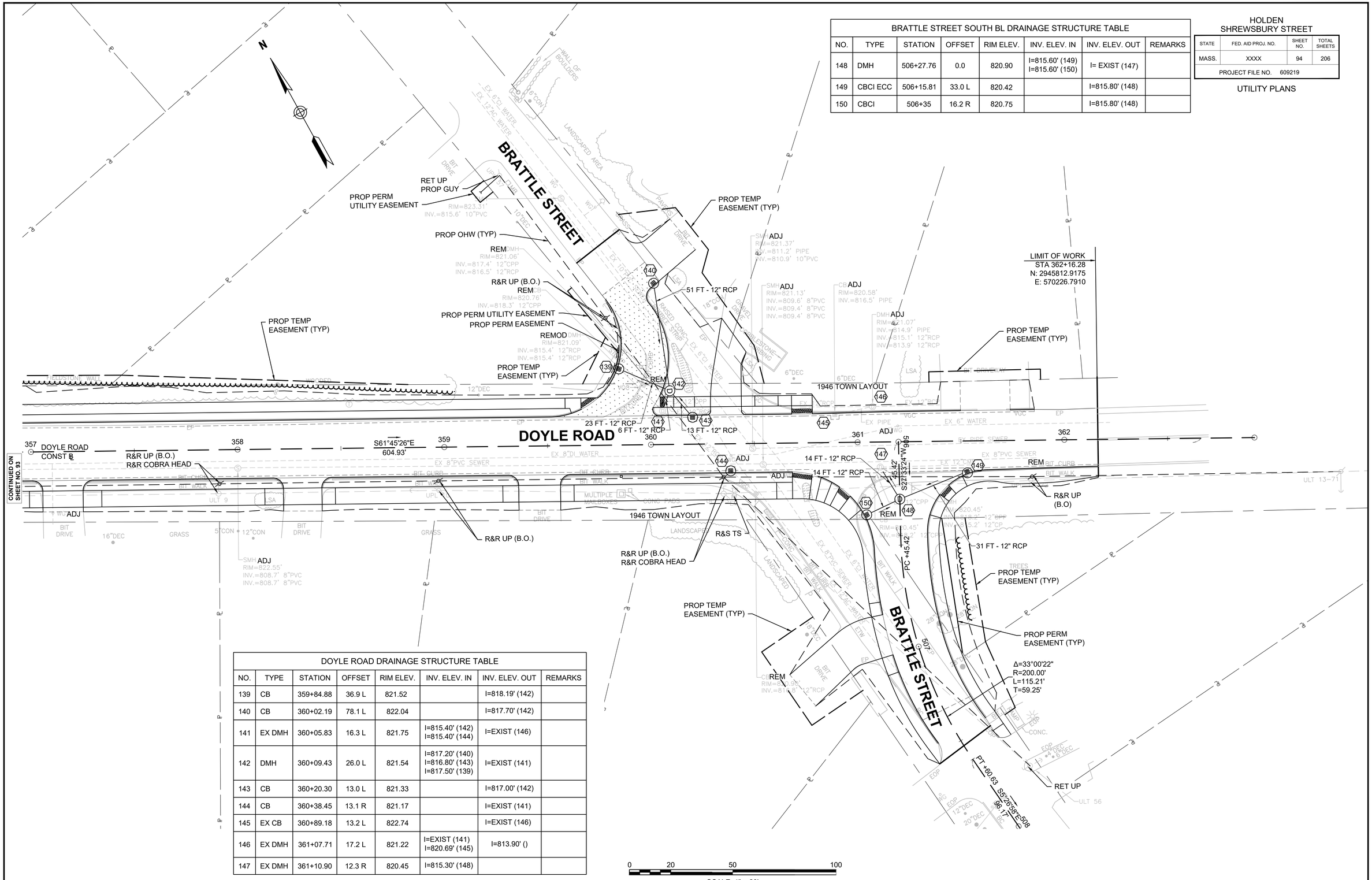
BRATTLE STREET SOUTH BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
148	DMH	506+27.76	0.0	820.90	I=815.60' (149) I=815.60' (150)	I= EXIST (147)	
149	CBCI ECC	506+15.81	33.0 L	820.42		I=815.80' (148)	
150	CBCI	506+35	16.2 R	820.75		I=815.80' (148)	

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	94	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:38 PM


BRATTLE STREET
DOYLE ROAD
DOYLE ROAD CONST ℄
CONTINUED ON SHEET NO. 93
R&R UP (B.O.)
R&R COBRA HEAD
S61°45'26"E
604.93'
RET UP
PROP GUY
PROP PERM UTILITY EASEMENT
RIM=823.31'
INV.=815.6' 10"PVC
PROP OHW (TYP)
REM DMH
RIM=821.06'
INV.=817.4' 12"CPP
INV.=816.5' 12"RCP
R&R UP (B.O.)
REM CB
RIM=820.76'
INV.=818.3' 12"CPP
PROP PERM UTILITY EASEMENT
PROP PERM EASEMENT
REMOD DMH
RIM=821.09'
INV.=815.4' 12"RCP
INV.=815.4' 12"RCP
PROP TEMP EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
51 FT - 12" RCP
23 FT - 12" RCP
6 FT - 12" RCP
13 FT - 12" RCP
14 FT - 12" RCP
14 FT - 12" RCP
1946 TOWN LAYOUT
1946 TOWN LAYOUT
R&R UP (B.O.)
R&R UP (B.O.)
R&R COBRA HEAD
R&S TS
REM
REM
REM
R&R UP (B.O)
31 FT - 12" RCP
PROP TEMP EASEMENT (TYP)
PROP TEMP EASEMENT (TYP)
PROP PERM EASEMENT (TYP)
LIMIT OF WORK
STA 362+16.28
N: 2945812.9175
E: 570226.7910
Δ=33°00'22"
R=200.00'
L=115.21'
T=59.25'
PC +45.42
PT +60.63
S57°26'58"E
96.17
S27°33'24"W
45.42
ADJ
SMH ADJ
RIM=821.37'
INV.=811.2' PIPE
INV.=810.9' 10"PVC
SMH ADJ
RIM=821.13'
INV.=809.6' 8"PVC
INV.=809.4' 8"PVC
INV.=809.4' 8"PVC
CB ADJ
RIM=820.58'
INV.=816.5' PIPE
DMH ADJ
RIM=821.07'
INV.=814.9' PIPE
INV.=815.1' 12"RCP
INV.=813.9' 12"RCP
SMH ADJ
RIM=822.55'
INV.=808.7' 8"PVC
INV.=808.7' 8"PVC
ADJ
ADJ
ADJ
ADJ
357
358
359
360
361
362
139
140
141
142
143
144
145
146
147
148
149
150
507
EX 8"DI WATER
EX 8"PVC SEWER
EX 6"DI WATER
EX 12"AC WATER
EX 6"CON
EX 12"CPP
EX 6" WATER
EX PIPE SEWER
EX 12"CPP
EX 12"RCP
EX 12"RCP
EX 12"CPP
EX 8"PVC SEWER
EX 6"DI WATER
EX 8"PVC SEWER
EX 6" WATER
EX PIPE SEWER
EX 8"PVC SEWER
WALL OF BOULDERS
LANDSCAPED AREA
PAVERS
BIT DRIVE
BIT DRIVE
BIT DRIVE

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	95	206
PROJECT FILE NO. 609219			

UTILITY PLANS

609219_HD(GEN-UTIL).DWG Plotted on 4-Jan-2023 1:39 PM

LIMIT OF WORK
STA 200+72.00
N: 2947187.3084
E: 567303.1122

LIMIT OF PAVING
STA 202+34.90
N: 2947024.7089
E: 567293.1541

PROP TREE PROTECTION FENCE
PROP PERM UTILITY EASEMENT
PROP TEMP EASEMENT (TYP)
R&R UP (B.O.)
PROP PERM UTILITY EASEMENT (TYP)
PROP OHW (TYP)
PROP PERM EASEMENT
1947 TOWN LAYOUT
R&R UP & GUY WIRE (B.O.)
R&R COBRA HEAD
CHAPEL STREET
CHAPEL-HOLDEN STREET CONST
9 FT - 12" RCP
160 FT - 12" RCP
S3°30'16"W 1227.63'
CONTINUED ON SHEET NO. 88
PROP TEMP EASEMENT (TYP)
ADJ SMH RIM=752.82' INV.=748.0' 12"RCP INV.=748.2' 12"CMP INV.=748.2' 12"RCP
ADJ SMH RIM=751.84' INV.=742.9' 8"PVC
SMH RIM=741.49' INV.=732.4' 8"PVC INV.=732.3' 8"PVC
N/F COTE, JERROLD O AND CECILE M. 146 SHREWSBURY ST 200-104 BOOK 30144 PAGE 321
CB RIM=753.09' INV.=749.4' 12"RCP INV.=749.4' 12"RCP

CHAPEL-HOLDEN BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
107	CIT	200+75.22	16.3 L	739.64	I=735.80' (109) I=735.80' (108)		R&S F&G PROP F&C
108	DMH	200+80.66	5.3 L	740.43	I=736.10' (112)	I=736.00' (107)	
109	CB	200+85.21	16.8 L	739.70		I=735.90' (107)	
110	CB	202+43.87	17.5 L	742.49		I=738.50' (112)	
111	CB	202+44.29	8.3 R	742.53		I=738.00' (112)	
112	DMH	202+44.57	4.7 L	742.63	I=737.90' (111) I=738.40' (110)	I=737.80' (108)	

0 20 50 100
SCALE: 1" = 20'

LIMIT OF WORK
STA 213+46.09
N: 2945915.5171
E: 567234.3944

PROP PERM UTILITY EASEMENT (TYP)
R&R UP
PROP GUY (B.O)
PROP TEMP EASEMENT (TYP)
R&R UP & RISERS (B.O.)
R&R COBRA HEAD
R&S LP
PROP OHW (TYP)
R&R UP (B.O.)
1943 TOWN LAYOUT
14 FT - 12" RCP
27 FT - 12" RCP
65 FT - 12" RCP
R&R HYD
PROP 8 FT - 6" DIP
REM (B.O.)
ADJ (B.O.)
S3°30'16"W 1227.63'
CHAPEL-HOLDEN STREET CONST
PC +27.63
Δ=9°39'16" R=765.00' L=128.90' T=64.60'
PT +56.53
S6°08'59"E 39.58'
213+96.11
HOLDEN STREET
MARLEN ROAD
PROPOSED BORING
PROP TEMP EASEMENT (TYP)
PROP TEST PIT TO DETERMINE DEPTH OF TELEPHONE
PROP UNDERGROUND SERVICE CONNECTION (B.O.)
PROP TEMP EASEMENT (TYP)
PROP UP & PROP GUY (B.O.)
PROP PERM UTILITY EASEMENT
RET UP
CONTINUED ON SHEET NO. 88
ADJ DMH RIM=764.70' INV.=760.9' 12"CPP INV.=760.7' 12"RCP
ADJ CB RIM=764.83' INV.=761.7' 12"CPP
ADJ SMH RIM=758.15' INV.=751.4' 8"PVC INV.=751.4' 8"PVC
ADJ SMH RIM=766.15' INV.=752.9' 8"PVC INV.=752.8' 8"PVC
N/F SARY, LEAK AND GAREEPY, VORAK T. 171 SHREWSBURY ST 213-1 BOOK 33457 PAGE 168
N/F TIEMO, AEMI AND OJEIKERE, OLUFEMI 14 HOLDEN ST 213-87 BOOK 39048 PAGE 68
N/F HADLEY, RYAN T 22 HOLDEN ST 213-86 BOOK 55722 PAGE 341
N/F GERECEKEN, DAVID AND SUZANNE 30 HOLDEN ST 213-134 BK 18172 PG 327
N/F RIEDLE, JESSE M HOLDEN ST 213-121 BOOK 59538 PAGE 264
N/F BROWN, RICHARD ONEIL 40 HOLDEN ST 213-84 BOOK 20630 PAGE 58
N/F HOLDEN TOWN OF 1 HOLDEN ST 200-23 BOOK 2271 PAGE 545
N/F HOLDEN TOWN OF HOLDEN ST 200-24 BOOK 2548 PAGE 363
N/F BEDIAKO, NICOLE 27 HOLDEN ST 200-25 BOOK 55157 PAGE 272
N/F BREEN, TIMOTHY E AND KATHLEEN M. 37 HOLDEN ST 212-66 BOOK 17486 PAGE 126

0 20 50 100
SCALE: 1" = 20'

NOTE: CLEAN STRUCTURES WHERE PROPOSED DRAIN LINES ARE CONNECTED TO EXISTING STRUCTURES. RETAIN ALL EXISTING PIPES EXCEPT WHERE REMOVING EXISTING CATCH BASINS. ABANDON AND PLUG THE EXISTING PIPES UNLESS OTHERWISE NOTED.

CHAPEL-HOLDEN BL DRAINAGE STRUCTURE TABLE							
NO.	TYPE	STATION	OFFSET	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
124	CB	209+34.26	15.0 R	754.92		I=751.40' (123)	
125	EX DMH	210+26.54	1.1 L	758.14	I=EXIST (127) I=753.80' (126)	I=753.50' (118)	
126	CB	210+48.63	23.3 L	757.93		I=EXIST (125)	
127	EX DMH	212+21	2.4 L	764.64	I=760.80' (128)	I=EXIST (125)	
128	CB	212+34.55	15.1 L	764.83		I=EXIST (127)	

PLANT SCHEDULE SUMMARY

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
NS	5	Nyssa sylvatica	Tupelo 2-2.5 inch caliper	2 - 2 1/2" CAL.		783.467
QC	4	Quercus coccinea	Scarlet Oak	1 1/2 - 2" CAL.		777.241
TA	4	Tilia americana 'Redmond'	Linden - American - 'Redmond'	1 1/2 - 2" CAL.		775.146
FLOWERING TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**		**REMARKS**
AL	8	Amelanchier laevis	Shad Tree - Allegheny Clump 8-10 Feet	4 - 5` HT. CLUMP		783.010
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CP	6	Comptonia peregrina	Sweet Fern	18 - 24" SPD	48" o.c.	794.805
IN	6	Ilex verticillata 'Nana'	Red Sprite Winterberry	18 - 24" HT.	36" o.c.	795.160
MP	3	Myrica pensylvanica	Northern Bayberry 18-24 Inch	18 - 24" HT.	48" o.c.	794.810
RG	12	Rhus aromatica `Gro-Low`	Sumac - Fragrant `Gro-Low`	18 - 24" SPD	48" o.c.	794.345
SAW	17	Spiraea x bumalda `Anthony Waterer`	Spiraea - Anthony Waterer	18 - 24" SPD	36" o.c.	793.728
ORNAMENTAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
PS2	9	Panicum virgatum `Shenandoah`	Switch Grass	2 GAL.	36" o.c.	796.456
SL	24	Schizachyrium scoparium	Little Bluestem	1 GAL.	24" o.c.	
PERENNIALS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
EP	9	Echinacea purpurea	Coneflower	1 GAL.	24" o.c.	796.820
MF	9	Monarda fistulosa	Bergamot	1 GAL.	24" o.c.	796.716
SR2	28	Solidago rugosa	Rough-Stemmed Goldenrod	1 GAL.	24" o.c.	796.792
GROUND COVERS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
HR	37	Hemerocallis x `Rosy Returns`	Daylily - `Rosy Returns`	1 GAL.	24" o.c.	796.762

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	96	206
PROJECT FILE NO. 609219			

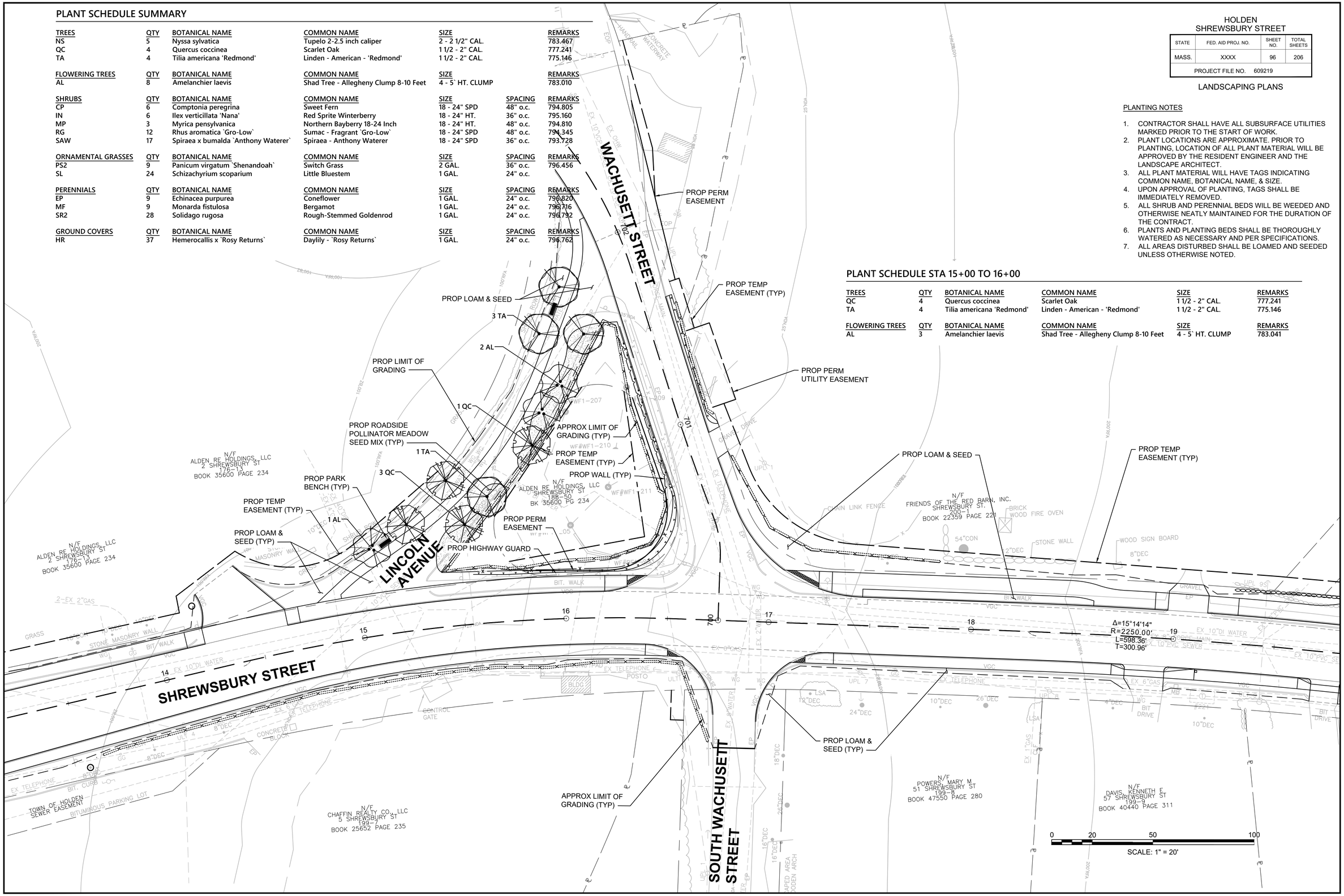
LANDSCAPING PLANS

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, & SIZE.
4. UPON APPROVAL OF PLANTING, TAGS SHALL BE IMMEDIATELY REMOVED.
5. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
6. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.
7. ALL AREAS DISTURBED SHALL BE LOAMED AND SEEDED UNLESS OTHERWISE NOTED.

PLANT SCHEDULE STA 15+00 TO 16+00

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
QC	4	Quercus coccinea	Scarlet Oak	1 1/2 - 2" CAL.	777.241
TA	4	Tilia americana 'Redmond'	Linden - American - 'Redmond'	1 1/2 - 2" CAL.	775.146
FLOWERING TREES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**REMARKS**
AL	3	Amelanchier laevis	Shad Tree - Allegheny Clump 8-10 Feet	4 - 5` HT. CLUMP	783.041



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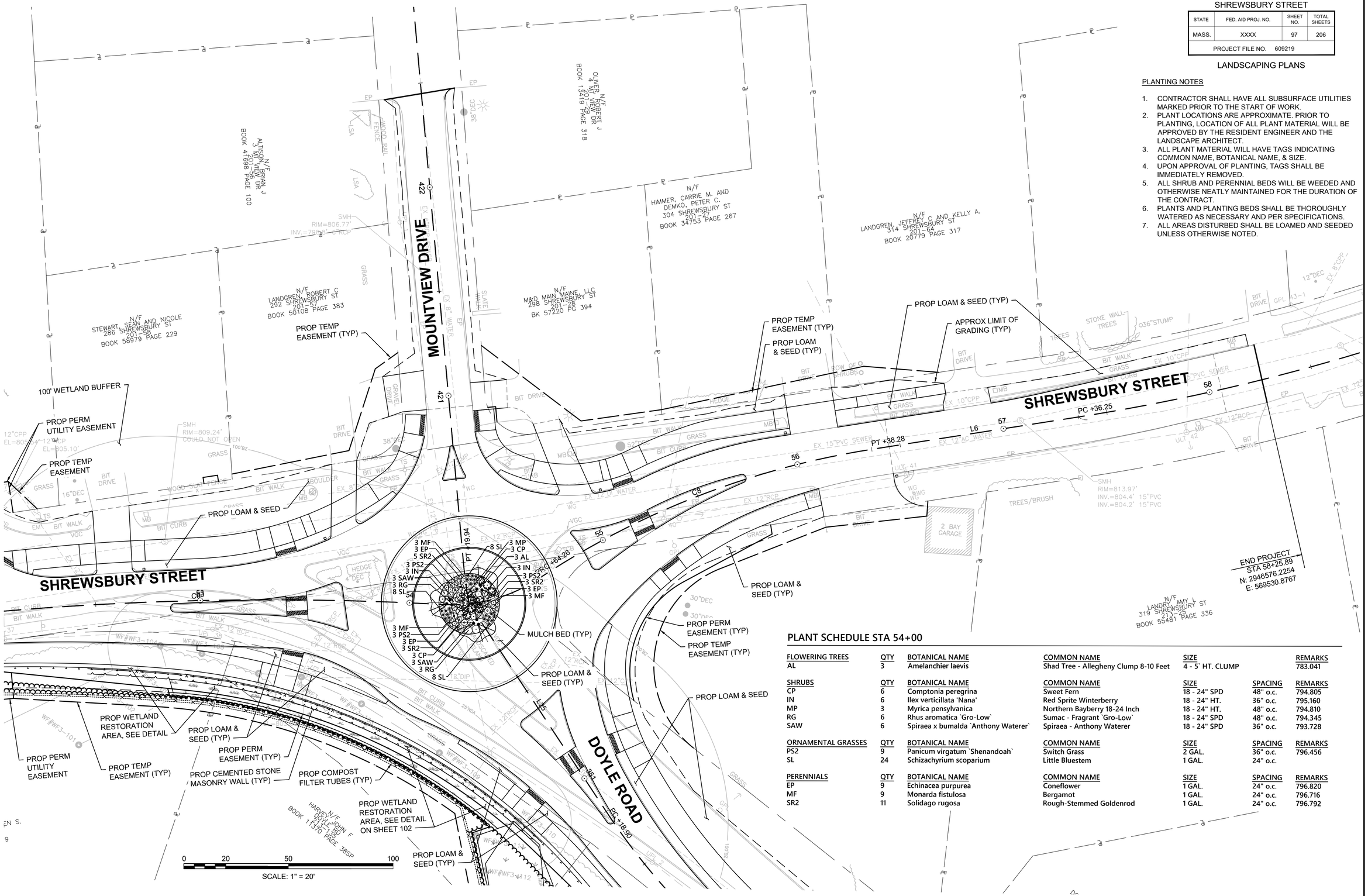
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	97	206
PROJECT FILE NO. 609219			

LANDSCAPING PLANS

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, & SIZE.
4. UPON APPROVAL OF PLANTING, TAGS SHALL BE IMMEDIATELY REMOVED.
5. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
6. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.
7. ALL AREAS DISTURBED SHALL BE LOAMED AND SEEDED UNLESS OTHERWISE NOTED.



PLANT SCHEDULE STA 54+00

FLOWERING TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE		REMARKS
AL	3	Amelanchier laevis	Shad Tree - Allegheny Clump 8-10 Feet	4 - 5` HT. CLUMP		783.041
SHRUBS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
CP	6	Comptonia peregrina	Sweet Fern	18 - 24" SPD	48" o.c.	794.805
IN	6	Ilex verticillata 'Nana'	Red Sprite Winterberry	18 - 24" HT.	36" o.c.	795.160
MP	3	Myrica pensylvanica	Northern Bayberry 18-24 Inch	18 - 24" HT.	48" o.c.	794.810
RG	6	Rhus aromatica `Gro-Low`	Sumac - Fragrant `Gro-Low`	18 - 24" SPD	48" o.c.	794.345
SAW	6	Spiraea x bumalda `Anthony Waterer`	Spiraea - Anthony Waterer	18 - 24" SPD	36" o.c.	793.728
ORNAMENTAL GRASSES	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
PS2	9	Panicum virgatum `Shenandoah`	Switch Grass	2 GAL.	36" o.c.	796.456
SL	24	Schizachyrium scoparium	Little Bluestem	1 GAL.	24" o.c.	
PERENNIALS	**QTY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**SPACING**	**REMARKS**
EP	9	Echinacea purpurea	Coneflower	1 GAL.	24" o.c.	796.820
MF	9	Monarda fistulosa	Bergamot	1 GAL.	24" o.c.	796.716
SR2	11	Solidago rugosa	Rough-Stemmed Goldenrod	1 GAL.	24" o.c.	796.792

609219_HD(LA).DWG Plotted on 4-Jan-2023 1:41 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	98	206
PROJECT FILE NO. 609219			

LANDSCAPING PLANS

PLANTING NOTES

1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.
2. PLANT LOCATIONS ARE APPROXIMATE. PRIOR TO PLANTING, LOCATION OF ALL PLANT MATERIAL WILL BE APPROVED BY THE RESIDENT ENGINEER AND THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, & SIZE.
4. UPON APPROVAL OF PLANTING, TAGS SHALL BE IMMEDIATELY REMOVED.
5. ALL SHRUB AND PERENNIAL BEDS WILL BE WEEDED AND OTHERWISE NEATLY MAINTAINED FOR THE DURATION OF THE CONTRACT.
6. PLANTS AND PLANTING BEDS SHALL BE THOROUGHLY WATERED AS NECESSARY AND PER SPECIFICATIONS.
7. ALL AREAS DISTURBED SHALL BE LOAMED AND SEEDED UNLESS OTHERWISE NOTED.

LIMIT OF WORK
STA 362+16.28
N: 2945812.9175
E: 570226.7910

BRATTLE STREET

DOYLE ROAD

PROP TEMP EASEMENT (TYP)

PROP PERM UTILITY EASEMENT

PROP PERM EASEMENT

PROP TEMP EASEMENT

PROP LOAM & SEED

APPROX LIMIT OF GRADING (TYP)

PROP PERM EASEMENT (TYP)

MULCH BED (TYP)

N/F KASPARSON, NORMAN L AND ANJA S. 43 BRATTLE ST 213-36 BOOK 4354 PAGE 81

N/F CRAIN, STEVEN H 49 BRATTLE ST 213-37 BOOK 58922 PAGE 135

N/F CURTIS, RICHARD E. & BRATTLE & SLEOTA L 52 BRATTLE ST 213-28 BOOK 41567 PAGE 579

N/F HARMON, KEVIN M AND QUINN, KAITLIN E. 60 BRATTLE ST 202-129 BOOK 33485 PAGE 178

N/F TRAN, JACQUELINE 70 DOYLE RD 214-48 BOOK 43373 PAGE 252

N/F DZIK, SCOTT M 78 DOYLE RD 214-47 BOOK 39697 PAGE 130

N/F HOLDEN TOWN OF BRATTLE ST 214-34 BK 7694 PG 191

N/F FERRA, CYNTHIA L & PAULA E 74 BRATTLE ST BOOK 46878 PAGE 169

N/F CADDEN, BARBARA J 47 DOYLE RD 213-131 BOOK 18648 PAGE 32

N/F BULLOCK, STEVEN C & SYLVIA D 53 DOYLE RD 213-122 BOOK 19283 PAGE 338

N/F MURWIN, WILLIAM P 61 DOYLE RD 213-123 BOOK 34247 PAGE 100

N/F ZHENG, MIN CHENG 65 BRATTLE ST 213-124 BOOK 59002 PAGE 126

N/F ROPER, C 75 BRATTLE ST BOOK 10602 PAGE 31

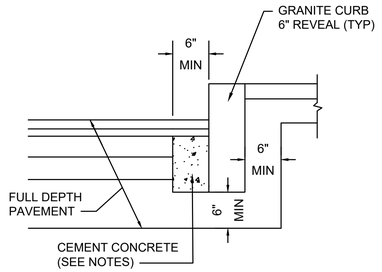
PLANT SCHEDULE STA 360+50 TO 362+00

	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
TREES						
NS	3	Nyssa sylvatica	Tupelo 2-2.5 inch caliper	2 - 2 1/2" CAL.		783.467
FLOWERING TREES						
AL	2	Amelanchier laevis	Shad Tree - Allegheny Clump 8-10 Feet	4 - 5` HT. CLUMP		783.041
SHRUBS						
RG	6	Rhus aromatica `Gro-Low`	Sumac - Fragrant `Gro-Low`	18 - 24" SPD	48" o.c.	794.345
SAW	11	Spiraea x bumalda `Anthony Waterer`	Spiraea - Anthony Waterer	18 - 24" SPD	36" o.c.	793.728
PERENNIALS						
SR2	17	Solidago rugosa	Rough-Stemmed Goldenrod	1 GAL.	24" o.c.	796.792
GROUND COVERS						
HR	37	Hemerocallis x `Rosy Returns`	Daylily - `Rosy Returns`	1 GAL.	24" o.c.	796.762

0 20 50 100
SCALE: 1" = 20'

609219_HD(LA).DWG Plotted on 4-Jan-2023 1:41 PM

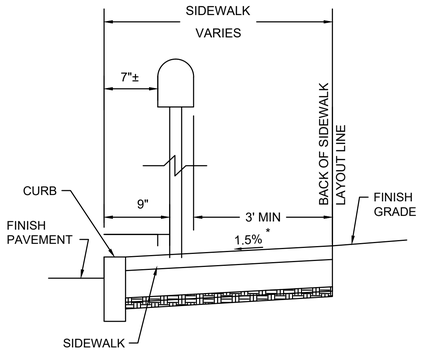
609219_HD(DET).DWG Plotted on 4-Jan-2023 1:41 PM



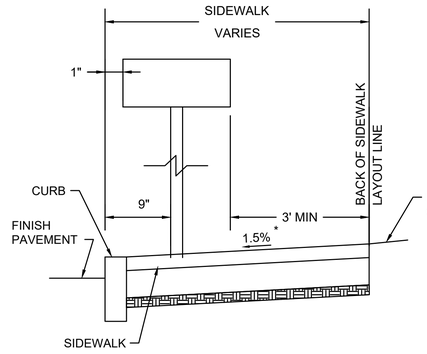
NOTES:
1. TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN FULL DEPTH PAVEMENT

SCALE: N.T.S. DWG: CURB-05 DATE: MARCH 2013



MAILBOX PARALLEL TO CURB



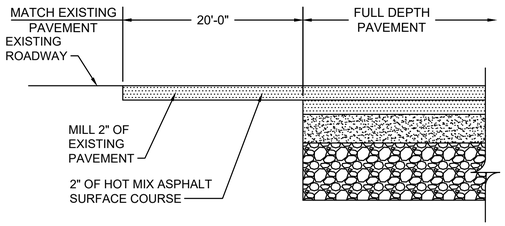
MAILBOX PERPENDICULAR TO CURB

* TOLERANCE FOR CONSTRUCTION ±0.5%

NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALK SHALL BE 36" EXCLUDING THE CURB. THE CLEAR PATH SHALL BE MEASURED TO FIRST VERTICAL FACE ENCOUNTERED ON THE MAILBOX OR PAPER TUBE (INCLUDING ALL PROTRUSIONS LESS THAN 6'-8" IN HEIGHT).
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL MAILBOXES AND PAPER TUBES TO BE SET WITHIN THE SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36". CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION THAT CANNOT MEET THE CLEARANCE REQUIREMENTS.
3. REFER TO MASSDOT STANDARD DETAIL E 504.1.0 FOR ADDITIONAL INFORMATION.

SIDEWALK CLEARANCE MAILBOXES AND PAPER TUBES

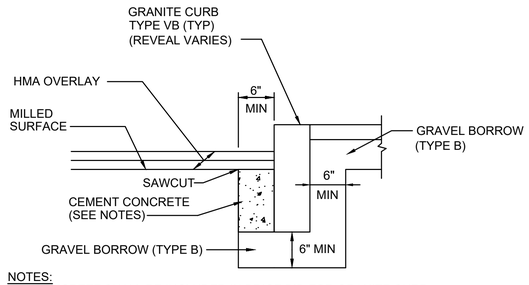
SCALE: N.T.S. DWG: WALK-05 DATE: JUNE 2018



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

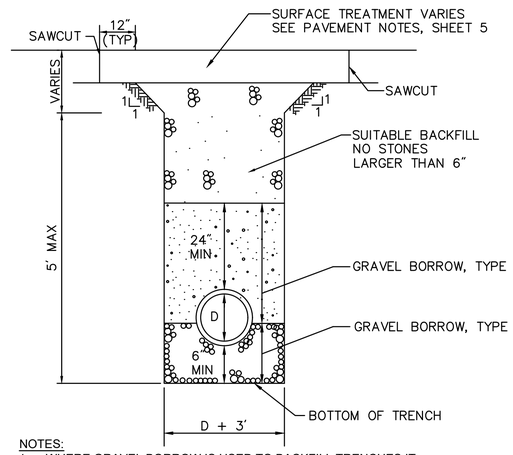
SCALE: N.T.S. DWG: PVMT-03 DATE: OCT. 2012



NOTES:
1. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.
2. SAWCUT 6" FROM CURB LINE AND REMOVE EXISTING PAVEMENT AND GRAVEL. REPLACE WITH CEMENT CONCRETE.
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN PAVEMENT MILLING AND OVERLAY

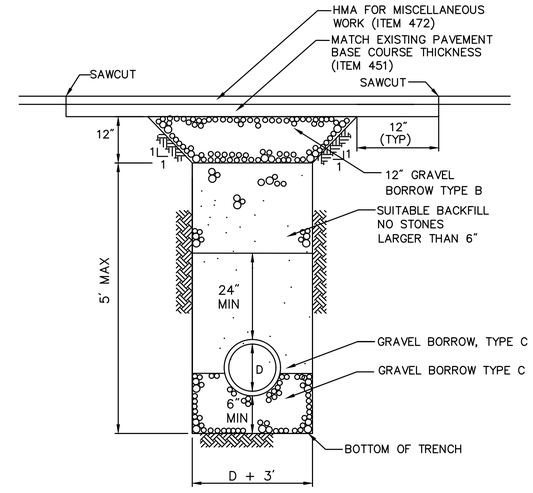
SCALE: N.T.S. DWG: CURB-04 DATE: APRIL 2003



NOTES:
1. WHERE GRAVEL BORROW IS USED TO BACKFILL TRENCHES IT SHALL BE PAID FOR UNDER ITEM 151.2, REGARDLESS OF STONE SIZE

DRAINAGE TRENCH DETAIL - FULL DEPTH PAVEMENT

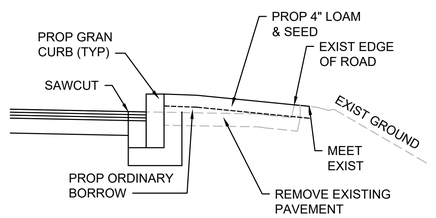
SCALE: N.T.S.



NOTES:
1. WHERE GRAVEL BORROW IS USED TO BACKFILL TRENCHES IT SHALL BE PAID FOR UNDER ITEM 151.2, REGARDLESS OF STONE SIZE

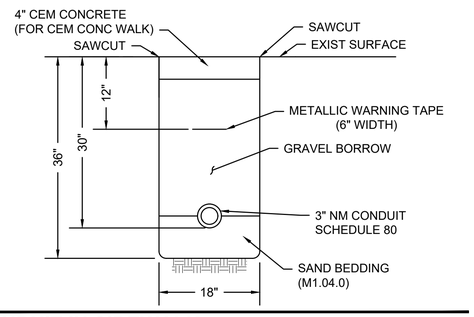
TRENCH IN MILL & PVM'T OVERLAY AREA

SCALE: N.T.S. DWG: TRENCH-04 DATE: OCT. 2012



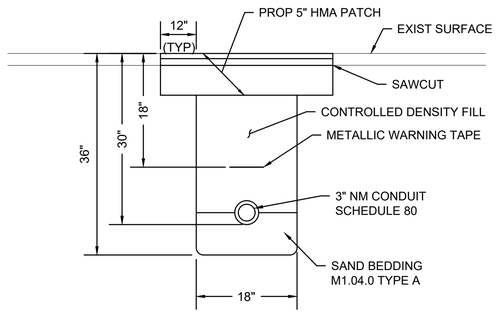
REMOVAL OF EXIST ROADWAY

SCALE: N.T.S. DWG: PVMT-08 DATE: FEB. 2012



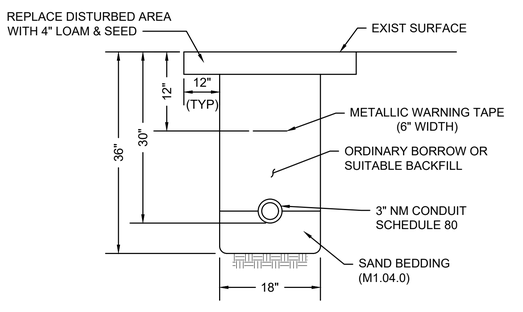
CONDUIT IN SIDEWALK

SCALE: N.T.S.



CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S. DWG: TRENCH-01 DATE: MARCH 2013



CONDUIT IN GRASS

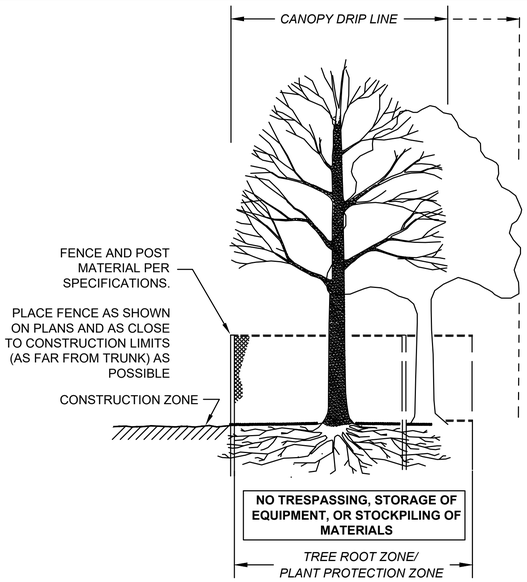
SCALE: N.T.S.

HOLDEN
SHREWSBURY STREET

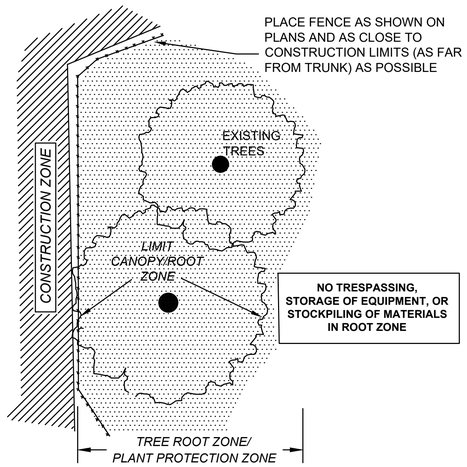
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	100	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:42 PM



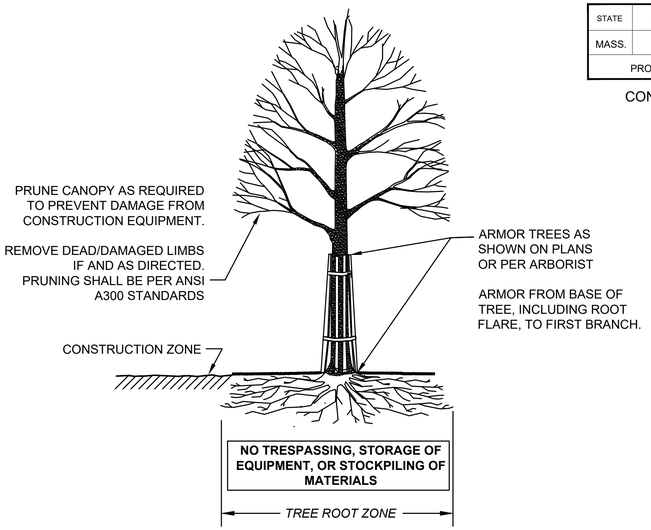
SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE

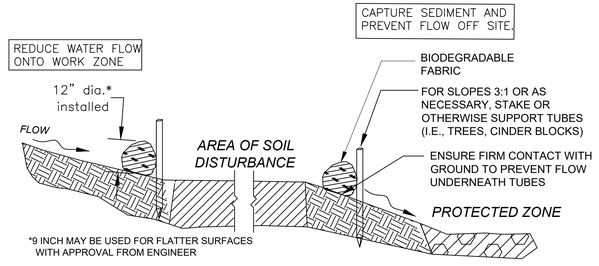
TREE PROTECTION ROOT ZONE

NOT TO SCALE



SECTION - TRUNK ARMORING & PRUNING

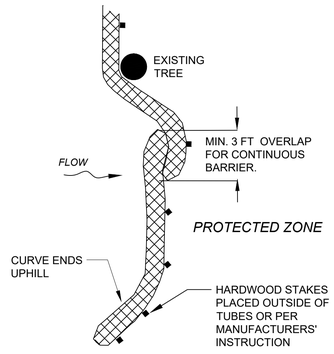
TREE PROTECTION TRUNK



SECTION

SEDIMENT BARRIERS - COMPOST FILTER TUBES

NOT TO SCALE



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

PLACE AS CLOSE TO LIMIT OF SOIL DISTURBANCE AS POSSIBLE

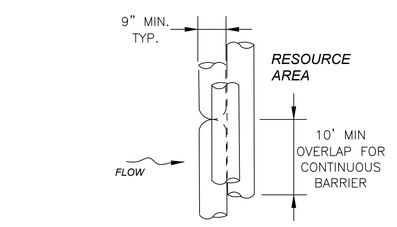
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

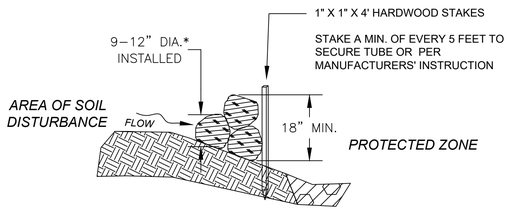
PLAN VIEW

SEDIMENT BARRIERS

NOT TO SCALE



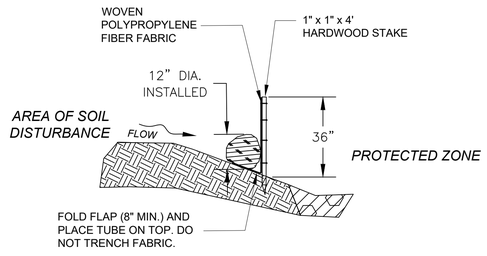
PLAN VIEW



SECTION

COMPOST FILTER TUBE BERM (SLOPES 2:1 OR STEEPER)

NOT TO SCALE



SECTION

COMPOST FILTER TUBE & SILT FENCE

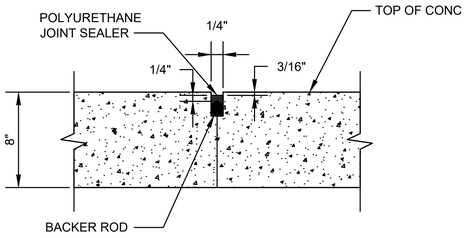
NOT TO SCALE

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	101	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

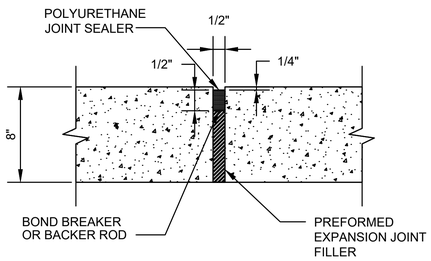
609219_HD(DET).DWG Plotted on 4-Jan-2023 1:42 PM



NOTE: REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS.

SEALED CONSTRUCTION JOINT DETAILS

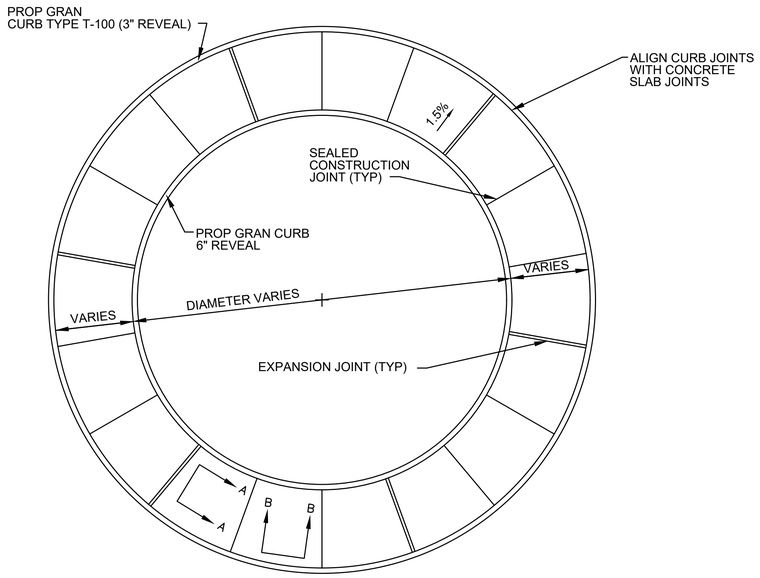
SCALE: N.T.S. DWG: -- DATE: OCT. 2012



NOTE: REINFORCEMENT SHALL END 2" CLEAR OF EXPANSION JOINT.

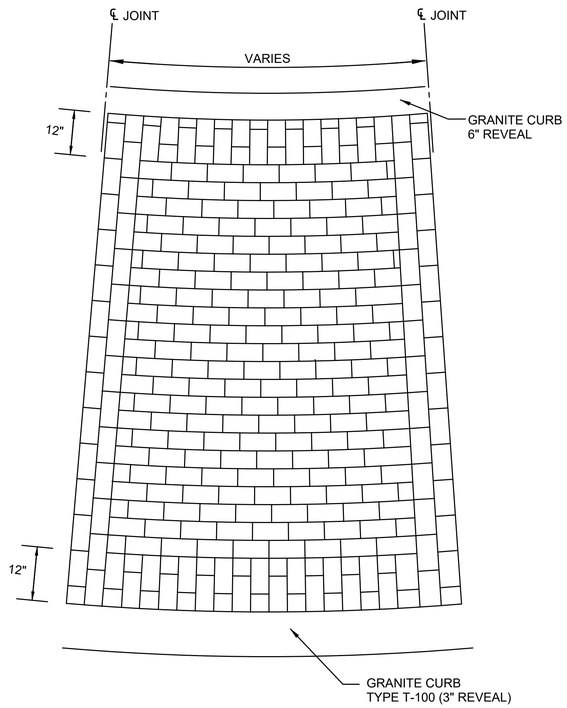
EXPANSION CONTROL JOINT

SCALE: N.T.S. DWG: DATE: APR. 2014



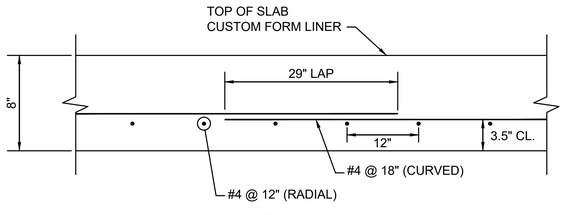
JOINT LAYOUT

SCALE: N.T.S. DWG: -- DATE: APR. 2014

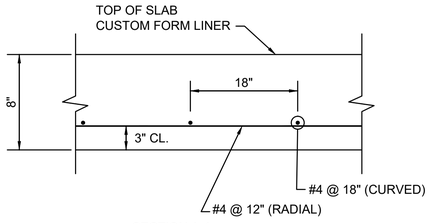


STAMPED CEMENT CONCRETE PAVEMENT

SCALE: N.T.S. DWG: -- DATE: APR. 2014



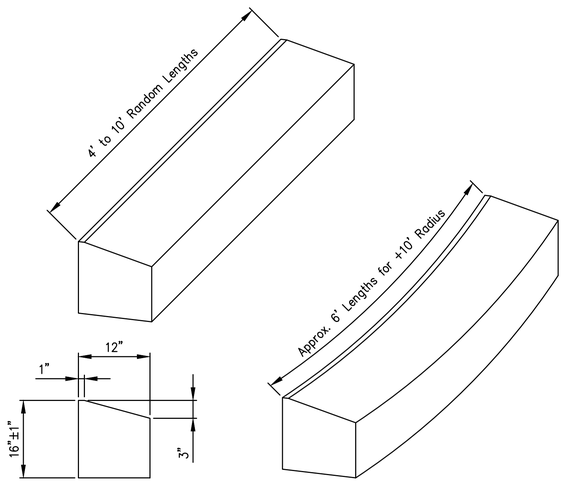
SECTION B-B



SECTION A-A

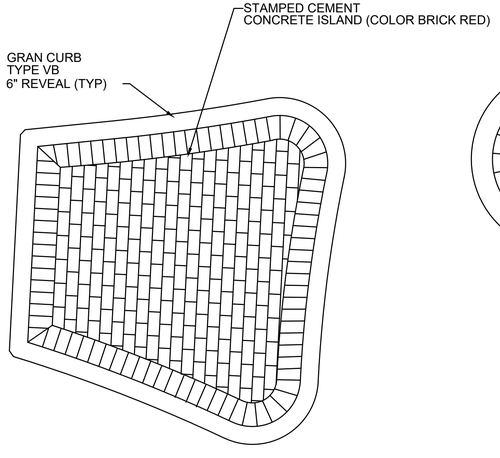
CONCRETE PAVEMENT REINFORCING DETAILS

SCALE: N.T.S. DWG: -- DATE: OCT. 2012



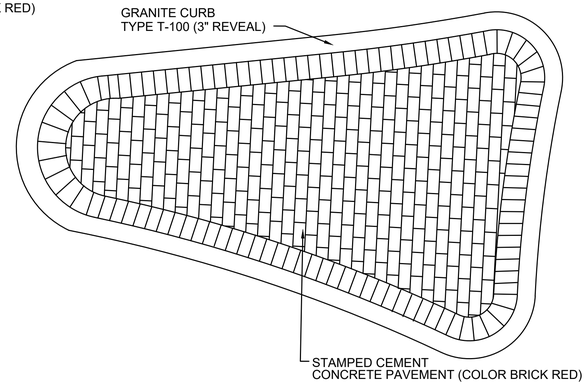
TYPE T-100 TRAVERSABLE GRANITE CURBING

SCALE: N.T.S. DWG: -- DATE:



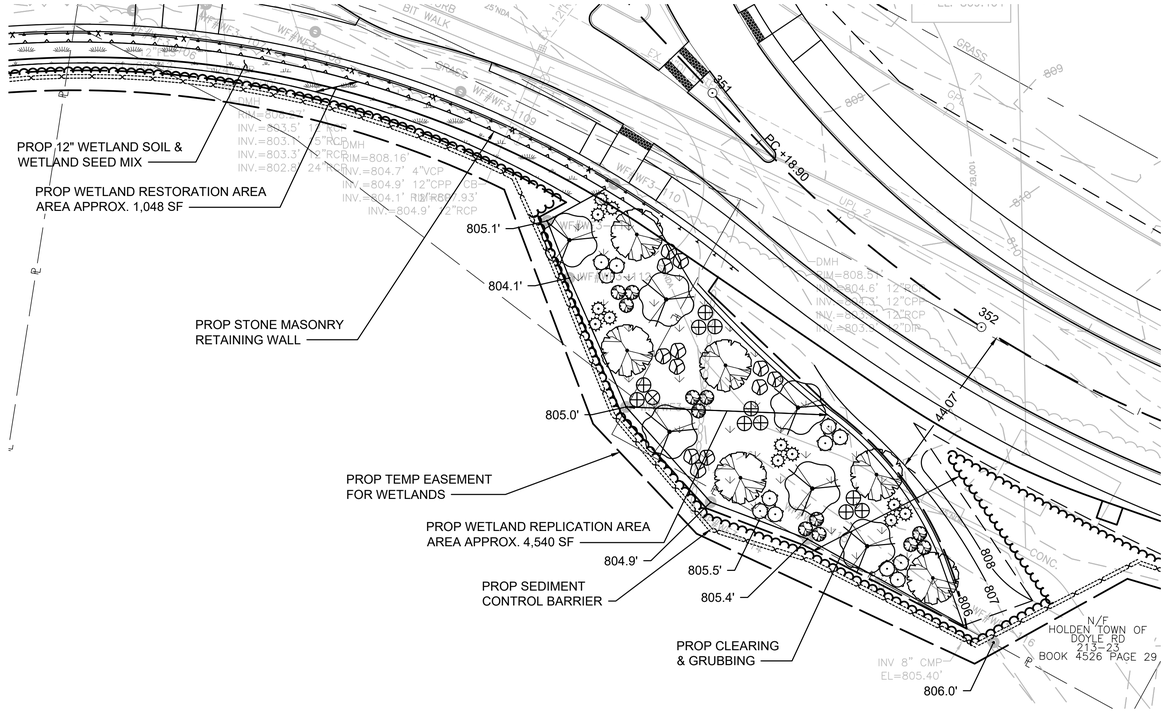
STAMPED CEMENT CONCRETE ISLAND PATTERN

SCALE: N.T.S. DWG: -- DATE: APR. 2014



STAMPED CEMENT CONCRETE PAVEMENT

SCALE: N.T.S. DWG: -- DATE: APR. 2014



WETLAND REPLICATION DETAIL

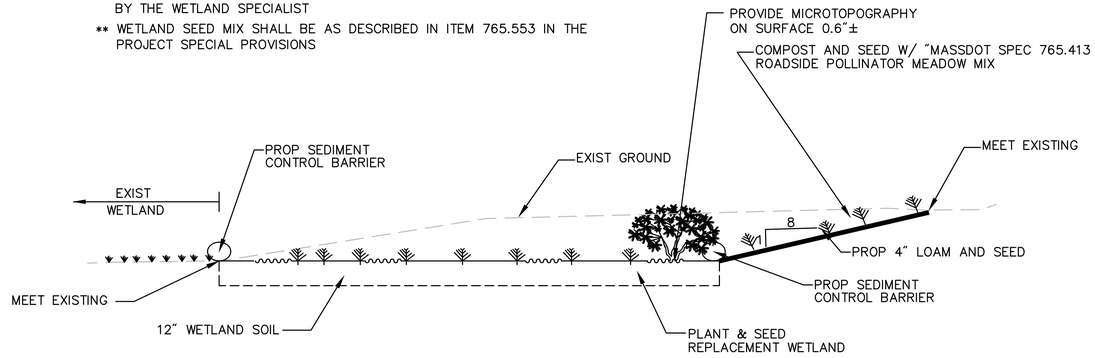
SCALE: 1"=20'

PLANT SCHEDULE - 4,540 SF REPLICATION AREA

PLANT LIST*			
COMMON NAME	BOTANICAL NAME	SIZE	QTY
BLACK TUPELO	NYSSA SYLVATICA	1.5–2" CAL.	6
SWAMP WHITE OAK	QUERCUS BICOLOR	1.5–2" CAL.	6
WILLOW	SALIX DISCOLOR	24–30" HT.	12
WINTERBERRY	ILEX VERTICILATA	24–30" HT.	12
SILKY DOGWOOD	SWIDA AMOMUM	24–36" HT.	12
HIGHBUSH BLUEBERRY	VACCINIUM CORYMBOSUM	24–36" HT.	12
NANNYBERRY	VIBURNUM LENTAGO	24–36" HT.	12
WETLAND SEED MIXTURE**		18 LBS/ACRE	
		TOTAL PLANTS	72

* PLANT LOCATIONS ARE SCHEMATIC AND MAY BE ADJUSTED IN THE FIELD BY THE WETLAND SPECIALIST

** WETLAND SEED MIX SHALL BE AS DESCRIBED IN ITEM 765.553 IN THE PROJECT SPECIAL PROVISIONS



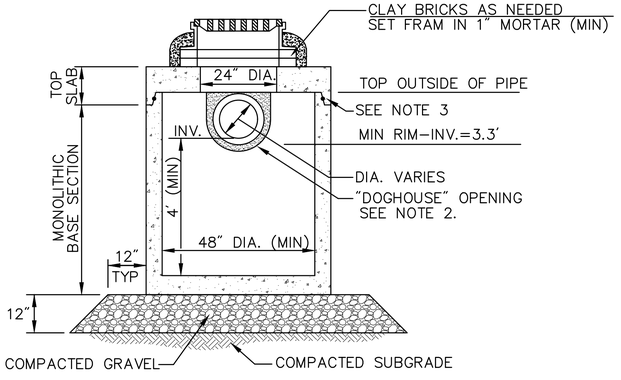
TYPICAL SECTION AT WETLAND REPLACEMENT AREA

SCALE: N.T.S.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	102	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

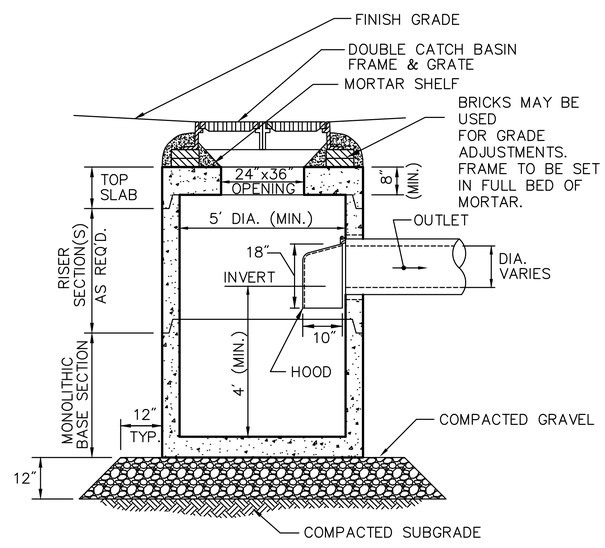


NOTES:

1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE (4"DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH CLAY BRICK AND MORTAR AS REQUIRED.

CATCH BASIN SHALLOW COVER (CBSC)

SCALE: N.T.S.



DOUBLE GRATE CATCH BASIN WITH HOOD

SCALE: N.T.S.

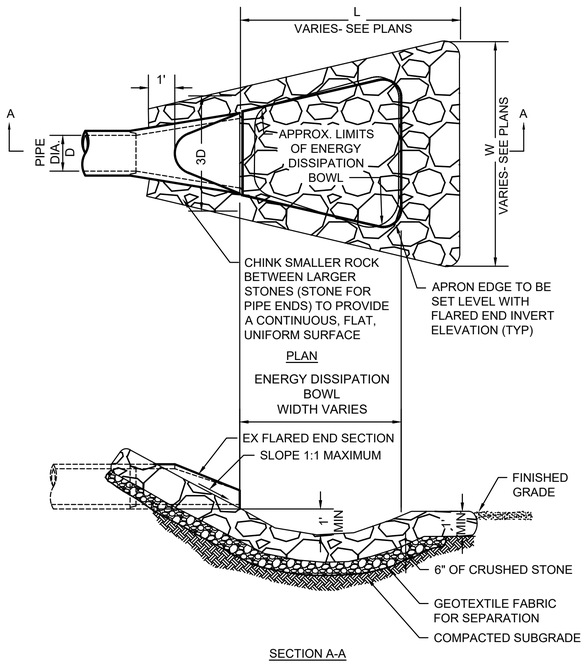
609219_HD(DET_WETLAND).DWG Plotted on 4-Jan-2023 1:43 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	103	206
PROJECT FILE NO. 609219			

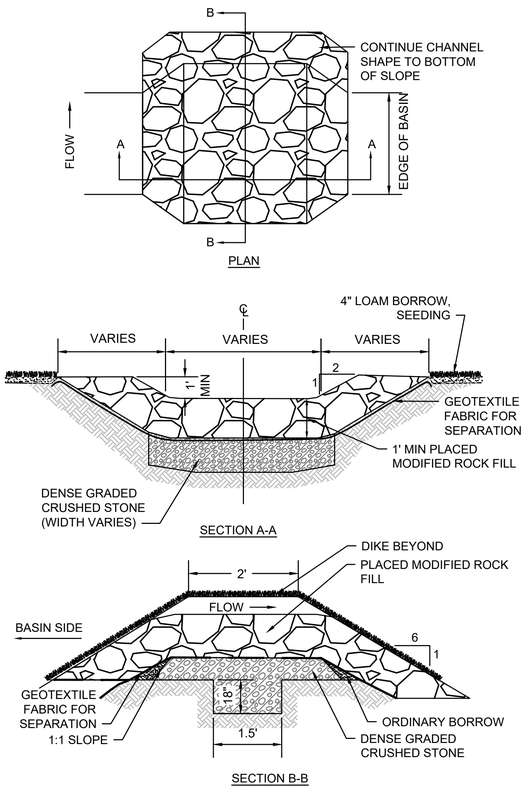
CONSTRUCTION DETAILS

609219_HD(DET_WETLAND).DWG Plotted on 4-Jan-2023 1:44 PM



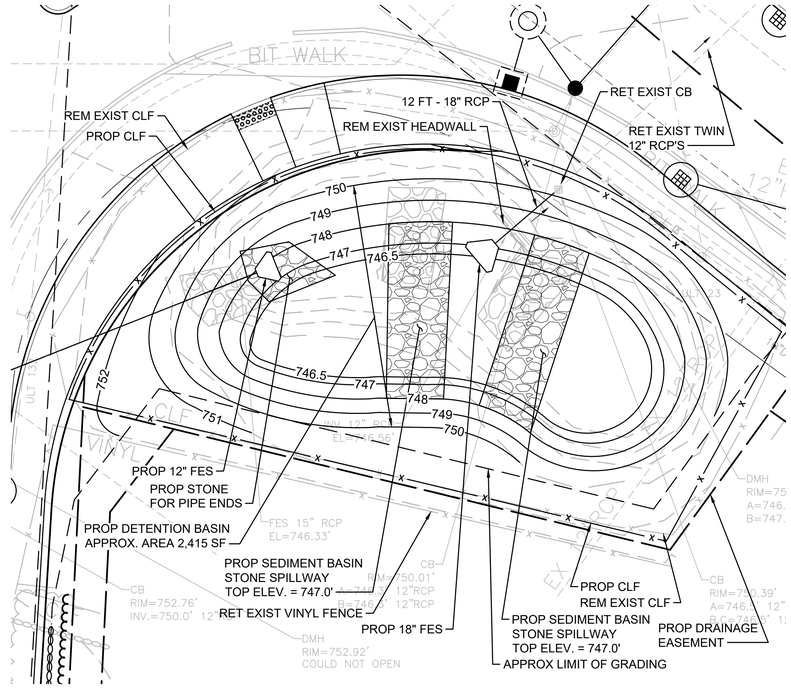
FLARED END SECTION (FES) WITH STONE FOR PIPE ENDS

SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 7 2015



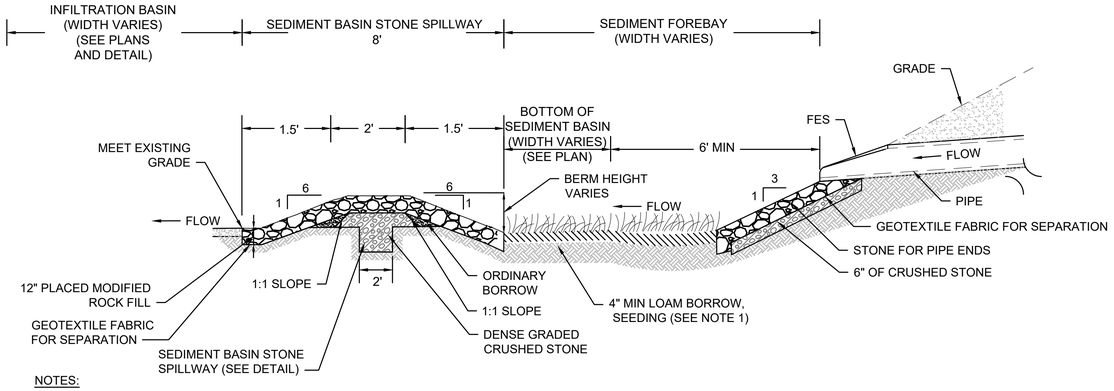
SEDIMENT BASIN STONE SPILLWAY

SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 5 2015



DETENTION BASIN DETAIL

SCALE: 1"=10'

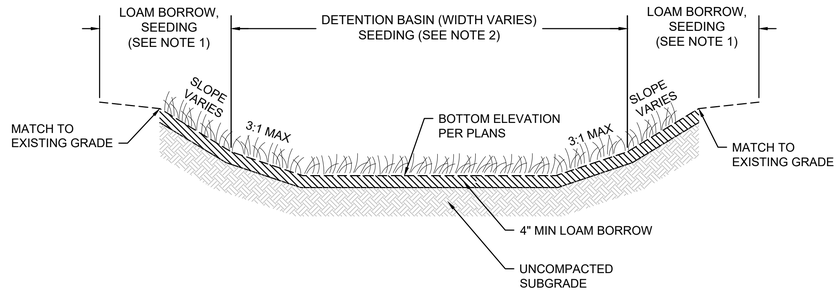


NOTES:

1. PLACE LOAM BORROW TO A MINIMUM DEPTH OF 4". SEEDED WITH ITEM 765.554 DETENTION BASIN MIX.

SEDIMENT FOREBAY

SCALE: N.T.S. SOURCE: VHB DATE: APRIL 2022

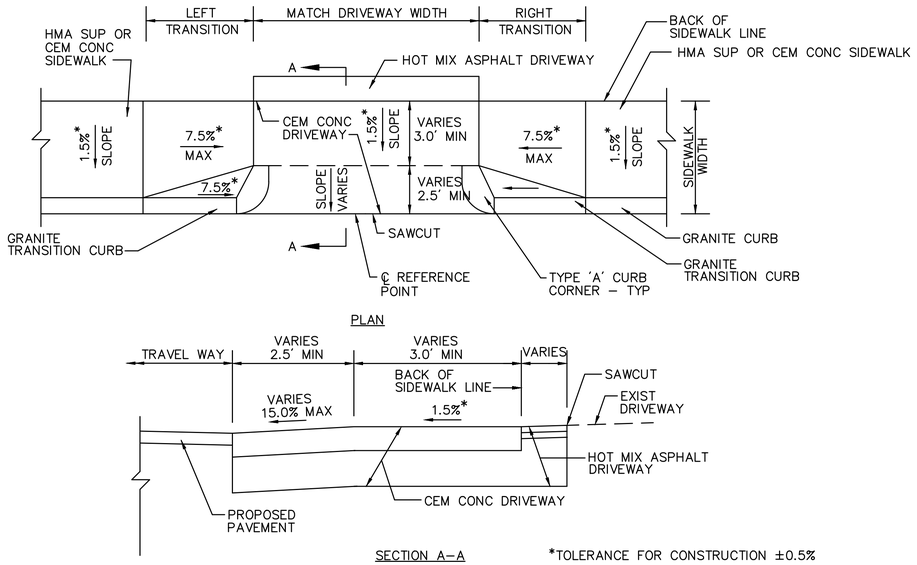


NOTES:

1. SIDES OF BASIN SHALL BE SEEDED WITH ITEM 765., SEEDING.
2. BOTTOM OF BASIN SHALL BE SEEDED WITH ITEM 765.554, SEEDING- DETENTION BASIN SEASONALLY FLOODED MIX

DETENTION BASIN - TYPICAL SECTION

SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 6 2015

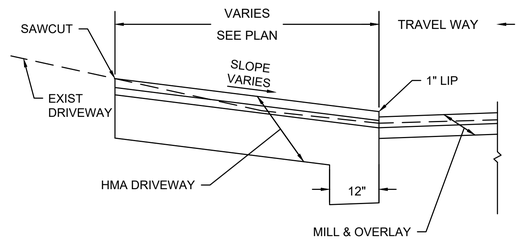


TYPICAL DRIVEWAY WITH SIDEWALK AND CURB CORNERS NO GRASS STRIP

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D8	18+86.59 14.00' RT SHREWSBURY ST	5.5'	5.50%	6"	15'-0"	6"	6'-6"	721.76
D10	19+77.61 14.00' RT SHREWSBURY ST	5.5'	5.50%	6"	15'-0"	6"	6'-6"	726.52
D11	21+50.00 14.00 RT SHREWSBURY ST	5.5'	5.50%	6"	15'-0"	6"	6'-6"	735.88
D12	22+54.00 15.00' RT SHREWSBURY ST	5.5'	5.50%	6"	15'-0"	6"	6'-6"	741.72
D15	25+39.59 14.00' RT SHREWSBURY ST	5.5'	3.10%	6"	14'-0"	6"	6'-6"	755.83
D16	26+36.40 13.81' RT SHREWSBURY ST	5.5'	1.98%	6"	9'-0"	6"	6'-6"	758.25
D18	27+44.00 14.58' RT SHREWSBURY ST	5.5'	0.42%	6"	7'-8"	6"	6'-6"	759.30
D22	30+10.00 23.74' RT SHREWSBURY ST	5.5'	-1.44%	6"	6'-6"	6"	9'-0"	756.18
D28	35+76.18 14.00' RT SHREWSBURY ST	5.5'	0.70%	6"	7'-8"	6"	6'-6"	750.40
D29	36+79.23 14.00' RT SHREWSBURY ST	5.5'	1.95%	6"	9'-0"	6"	6'-6"	751.76
D31	37+98.00 14.00' RT SHREWSBURY ST	5.5'	3.30%	6"	14'-0"	6"	6'-6"	754.99
D32	38+33.00 14.00' RT SHREWSBURY ST	5.5'	3.50%	6"	14'-0"	6"	6'-6"	756.22
D35	40+36.24 14.00' RT SHREWSBURY ST	5.5'	6.20%	6"	15'-0"	6"	6'-6"	766.15
D37	41+32.47 14.00' RT SHREWSBURY ST	5.5'	7.20%	6"	15'-0"	6"	6'-6"	772.59
D39	44+61.03 14.00' RT SHREWSBURY ST	5.5'	7.40%	6"	15'-0"	6"	6'-6"	796.87
D41	45+83.00 14.00' RT SHREWSBURY ST	5.5'	4.95%	6"	15'-0"	6"	6'-6"	804.40
D43	46+70.00 14.00' RT SHREWSBURY ST	5.5'	3.40%	6"	14'-0"	6"	6'-6"	807.95
D44	47+15.74 14.00' RT SHREWSBURY ST	5.5'	2.60%	6"	11'-0"	6"	6'-6"	809.22
D47	49+78.00 14.00' RT SHREWSBURY ST	5.5'	-0.60%	6"	6'-6"	6"	7'-8"	810.59
D67	204+00.00 24.00' LT CHAPEL ST	5.5'	5.30%	6"	6'-6"	3"	7'-6"	749.56
D71	209+62.25 27.00' LT HOLDEN ST	5.5'	2.65%	6"	6'-6"	6"	11'-0"	755.51
D73	210+70.00 23.53' LT HOLDEN ST	5.5'	3.75%	6"	6'-6"	6"	18'-8"	758.72

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

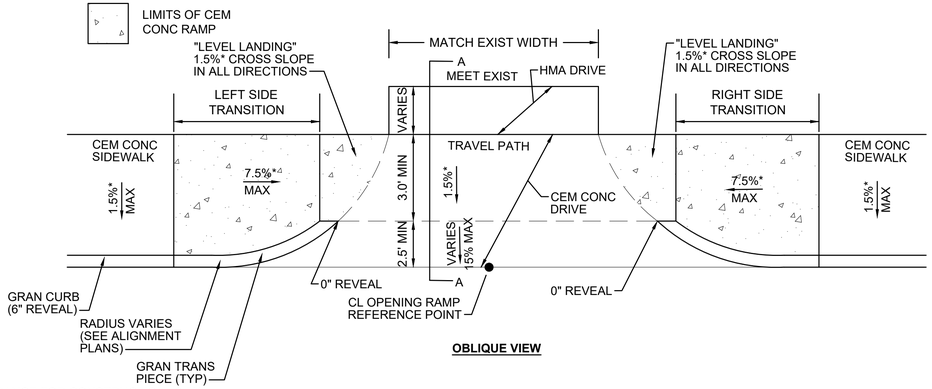


TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK TYPE II

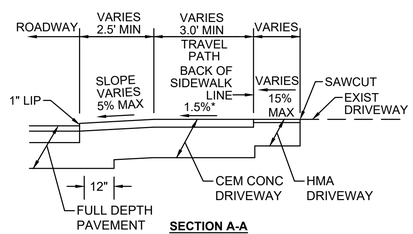
SCALE: N.T.S. DWG: DRIVE-03 DATE: JUNE 2013

LEGEND

LIMITS OF CEM CONC RAMP



*TOLERANCE FOR CONSTRUCTION ±0.5%



CEMENT CONCRETE WALK AT DRIVE

SCALE: NTS

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D2	97+32.00 24.00' LT MAIN ST	5.5'	1.40%	6"	9'-0"	6"	6'-6"	744.22
D26	31+91.09 25.00' RT SHREWSBURY ST	5.5'	-1.40%	6"	6'-6"	6"	9'-0"	753.72
D70	209+00.00 16.18' RT HOLDEN ST	5.5'	2.25%	6"	11'-0"	6"	6'-6"	754.06
D72	210+48.84 16.00' RT HOLDEN ST	5.5'	3.75%	6"	14'-0"	6"	6'-6"	758.25

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

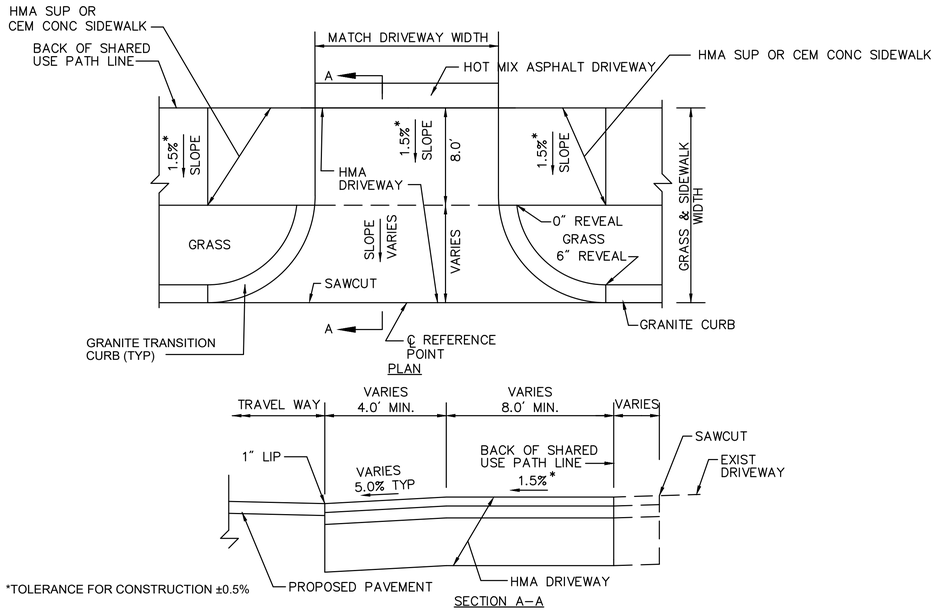
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	104	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM



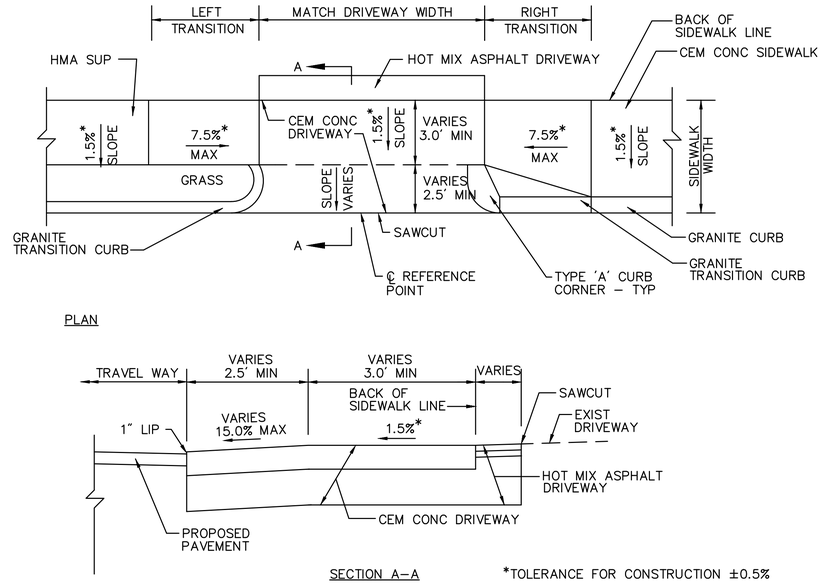
TYPICAL DRIVEWAY WITH SHARED USE PATH AND CURVED TRANSITION CURB AND GRASS STRIP

SCALE: N.T.S. DWG: DRIVE-09

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D30	37+60.00 14.00' LT SHREWSBURY ST	8'	2.90%	6"	6'-6"	6"	11'-0"	753.69
D33	38+50.00 14.00' LT SHREWSBURY ST	8'	3.95%	6"	6'-6"	6"	14'-0"	756.76
D34	40+28.00 14.00' LT SHREWSBURY ST	8'	6.05%	6"	6'-6"	6"	15'-0"	765.66
D36	41+28.00 14.00' LT SHREWSBURY ST	8'	7.20%	6"	6'-6"	6"	15'-0"	772.18
D38	44+07.24 14.00' LT SHREWSBURY ST	8'	7.40%	6"	6'-6"	6"	15'-0"	792.61
D40	45+62.00 14.00' LT SHREWSBURY ST	8'	5.30%	6"	6'-6"	6"	15'-0"	803.01
D42	46+25.16 14.00' LT SHREWSBURY ST	8'	4.20%	6"	6'-6"	6"	15'-0"	806.15
D45	47+77.72 14.00' LT SHREWSBURY ST	8'	1.60%	6"	6'-6"	6"	9'-0"	810.49
D46	49+03.58 14.00' LT SHREWSBURY ST	10'	-0.60%	6"	7'-8"	6"	6'-6"	810.95

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D55	353+15.00 14.45' LT DOYLE RD	10'	3.60%	6"	6'-6"	6"	14'-0"	813.00
D56	354+30.00 14.00' RT DOYLE RD	8'	3.05%	6"	14'-0"	6"	6'-6"	817.07
D57	354+50.00 14.00' LT DOYLE RD	5'	2.90%	6"	6'-6"	6"	11'-0"	817.61
D58	355+10.00 14.00' LT DOYLE RD	5'	1.96%	6"	6'-6"	6"	11'-0"	818.82
D59	355+60.00 14.00' RT DOYLE RD	8'	1.88%	6"	6'-6"	6"	9'-0"	819.98
D60	355+85.00 14.00' LT DOYLE RD	5'	1.96%	6"	6'-6"	6"	11'-0"	820.27
D61	356+32.00 13.99' LT DOYLE RD	5'	1.75%	6"	6'-6"	6"	9'-0"	821.16
D62	356+65.00 14.00' RT DOYLE RD	8'	1.04%	6"	9'-0"	6"	6'-6"	821.61
D63	357+15.00 14.00' RT DOYLE RD	8'	0.96%	6"	9'-0"	6"	6'-6"	822.12
D64	358+30.00 14.00' RT DOYLE RD	8'	-0.50%	6"	6'-6"	6"	7'-8"	822.40
D65	359+45.00 14.00' RT DOYLE RD	8'	-0.60%	6"	6'-6"	6"	7'-8"	821.86

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



TYPICAL DRIVEWAY WITH SIDEWALK AND ONE CURB CORNERS W/ ONE GRASS STRIP

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D1	97+25.00 20.78' RT MAIN ST	5'	0.77%	6"	9'-0"	6"	6'-6"	743.59

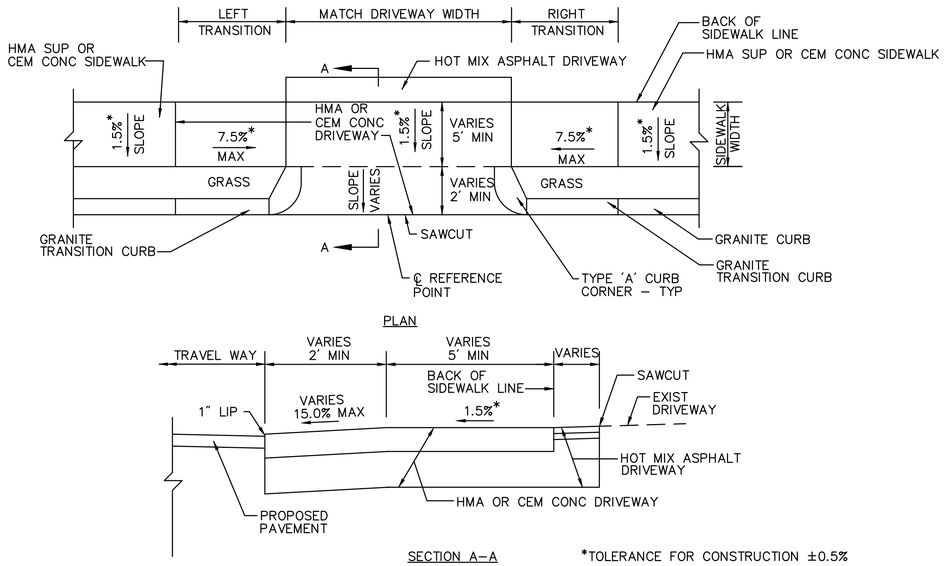
ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	106	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM

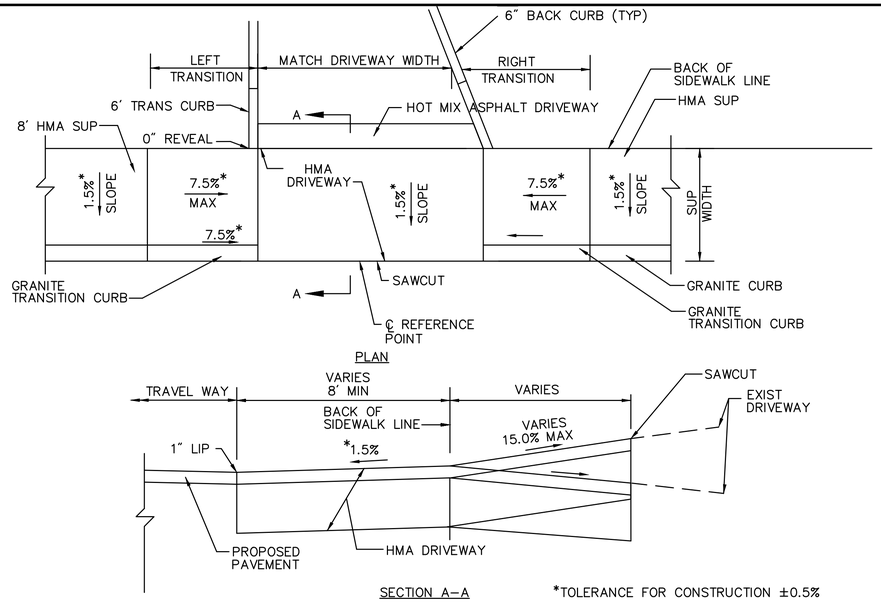


TYPICAL DRIVEWAY WITH SIDEWALK OR SUP WITH CURB CORNERS AND GRASS STRIP

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D13	24+32.96 14.00 LT SHREWSBURY ST	8'	4.90%	6"	6'-6"	6"	15'-0"	751.45
D14	24+74.00 14.00' LT SHREWSBURY ST	8'	4.40%	6"	6'-6"	6"	15'-0"	753.39
D17	27+00.00 14.00' LT SHREWSBURY ST	8'	0.80%	6"	6'-6"	6"	7'-8"	759.13
D19	27+96.00 14.00' LT SHREWSBURY ST	8'	-0.65%	6"	7'-8"	6"	5'-5"	759.18
D20	28+32.00 14.00' LT SHREWSBURY ST	8'	-1.20%	6"	7'-6"	6"	6'-6"	758.87
D23	30+36.00 14.00' LT SHREWSBURY ST	8'	-1.40%	6"	9'-0"	6"	5'-5"	756.11
D24	30+70.22 14.00' LT SHREWSBURY ST	8'	-1.40%	6"	7'-6"	6"	6'-6"	755.55
D27	35+54.00 14.00' LT SHREWSBURY ST	8'	0.50%	6"	6'-6"	6"	7-8"	750.27
D49	52+60.00 14.50' LT SHREWSBURY ST	10'	-0.60%	6"	7'-8"	6"	6'-6"	808.89
D50	53+68.63 32.87' LT SHREWSBURY ST	10'	-0.50%	6"	7'-8"	6"	6'-6"	808.99
D51	54+98.74 25.04' LT SHREWSBURY ST	10'	1.20%	6"	6'-6"	3"	-	808.65
D66	360+36.51 14.00' LT DOYLE RD	5'	-0.50%	6"	7'-8"	6"	6'-6"	821.26

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

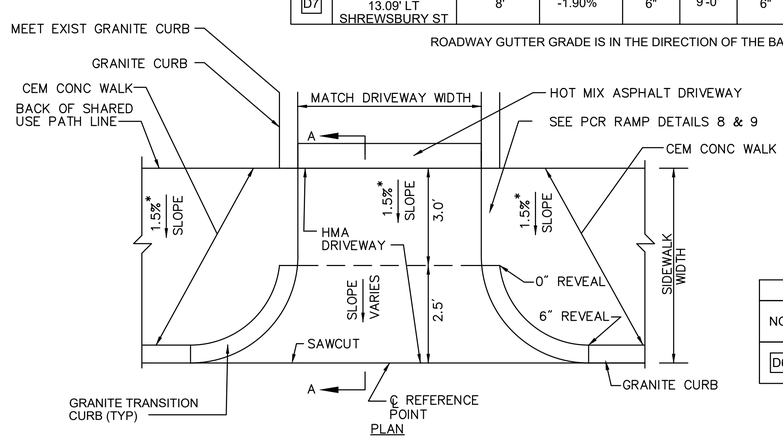


TYPICAL DRIVEWAY WITH SIDEWALK AND CURB INTO SITE

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D5	10+93.63 25.07' LT SHREWSBURY ST	8'	-2.72%	6"	15'-0"	6"	6'-6"	724.48
D7	14+40.00 13.09' LT SHREWSBURY ST	8'	-1.90%	6"	9'-0"	6"	6'-6"	710.00

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



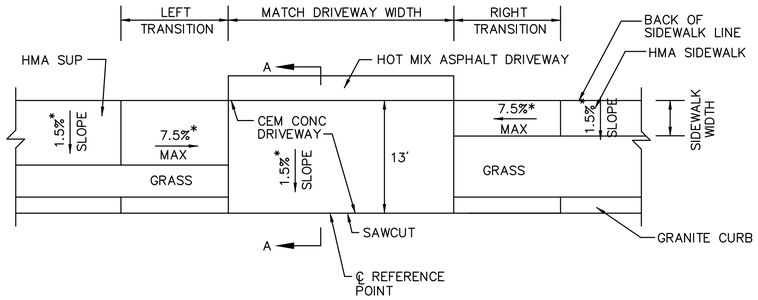
DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D6	12+50.00 23.76' RT SHREWSBURY ST	5.5'	-5.23%	6"	6'-6"	6"	15'-0"	716.55

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

TYPICAL DRIVEWAY WITH SHARED USE PATH AND CURVED TRANSITION CURB AND CURB INTO SITE DRIVE

SCALE: N.T.S. DWG: DRIVE-09

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM



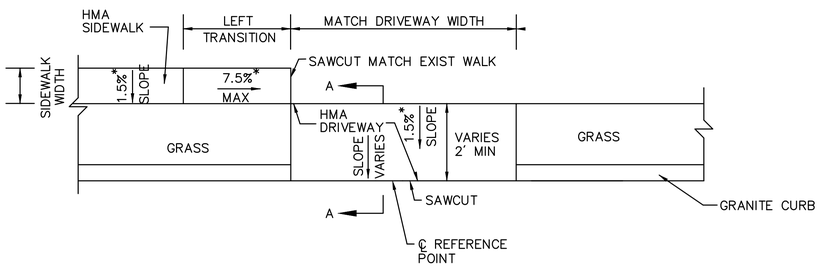
*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL DRIVEWAY WITH SIDEWALK AND STRAIGHT CURB WITH VARIED WIDTH GRASS STRIPS

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA									
NO.	LOCATION	ROADWAY GUTTER	LEFT SIDE			RIGHT SIDE			℄ OPENING ELEVATION
			SIDEWALK WIDTH	REVEAL	TRANS	SIDEWALK WIDTH	REVEAL	TRANS	
D52	56+11.30 13.80' LT SHREWSBURY ST	2.70%	10'	6"	6'-6"	5'	6"	11'-0"	811.13

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



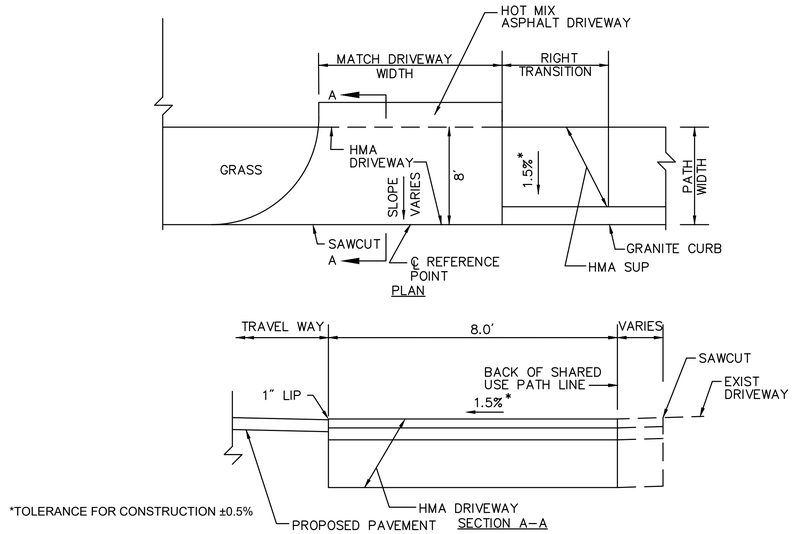
*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL DRIVEWAY WITH SIDEWALK ONE SIDE AND VARYING WIDTH GRASS STRIPS

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	
D54	56+84.67 13.00' LT SHREWSBURY ST	5'	3.00%	6"	14'-0"	813.18

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



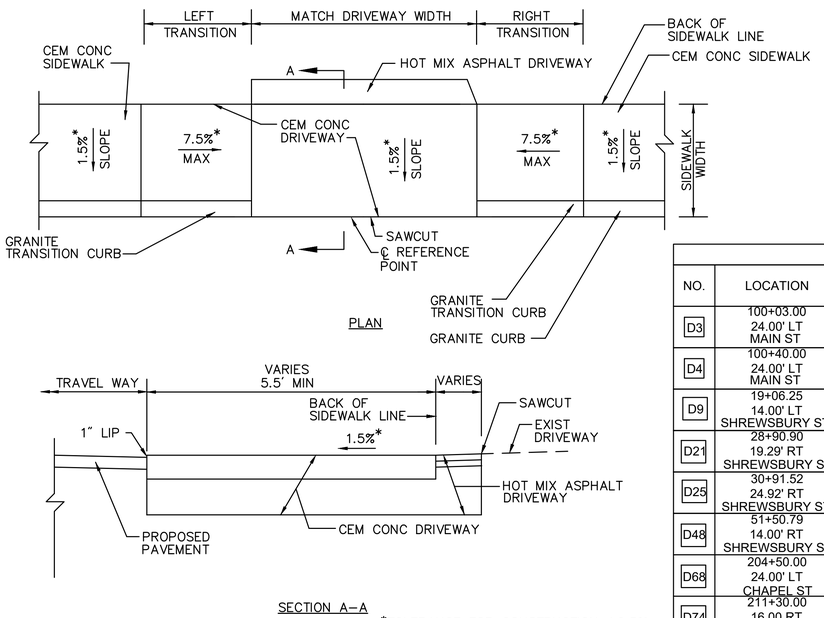
*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL DRIVEWAY WITH SHARED USE PATH AND STRAIGHT CURB RIGHT SIDE

SCALE: N.T.S. DWG: DRIVE-09

DRIVEWAY WITH SIDEWALK DATA						
NO.	LOCATION	PATH WIDTH	ROADWAY GUTTER	RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	
D53	56+27.51 13.01' RT SHREWSBURY ST	8'	2.00%	6"	6'-6"	811.56

ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.



*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL DRIVEWAY WITH SIDEWALK

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA									
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D3	100+03.00 24.00' LT MAIN ST	5.5'	-4.40%	6"	15'-0"	3"	3'-3"	738.12
D4	100+40.00 24.00' LT MAIN ST	5.5'	-4.28%	3"	3'-6"	6"	6'-6"	736.41
D9	19+06.25 14.00' LT SHREWSBURY ST	8'	5.50%	6"	6'-6"	6"	15'-0"	722.89
D21	28+90.90 19.29' RT SHREWSBURY ST	5.5'	-1.48%	6"	6'-6"	6"	9'-0"	757.98
D25	30+91.52 24.92' RT SHREWSBURY ST	5.5'	-1.40%	6"	6'-6"	6"	9'-0"	755.01
D48	51+50.79 14.00' RT SHREWSBURY ST	8.5'	-0.60%	6"	6'-6"	6"	7'-8"	809.47
D68	204+50.00 24.00' LT CHAPEL ST	5.5'	4.10%	3"	3'-3"	6"	15'-0"	751.00
D74	211+30.00 16.00 RT HOLDEN ST	5.5'	3.35%	6"	14'-0"	6"	6'-6"	761.03
D75	506+89.91 13.00' RT BRATTLE ST	5.5'	1.20%	6"	9'-0"	6"	6'-6"	821.62

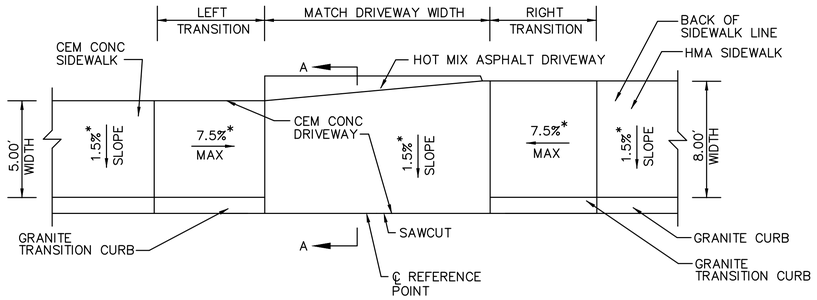
ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

HOLDEN
SHREWSBURY STREET

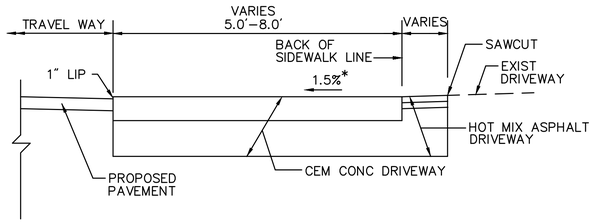
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	108	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM



PLAN



SECTION A–A

*TOLERANCE FOR CONSTRUCTION ±0.5%

TYPICAL DRIVEWAY WITH SIDEWALK - STA 205+85.00 LT

SCALE: N.T.S. DWG: DRIVE-09 DATE: JUNE 2013

DRIVEWAY WITH SIDEWALK DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
D69	205+85.00 24.00' LT CHAPEL ST	5.5'	-0.85%	6"	6'-6"	6"	7'-8"	751.37

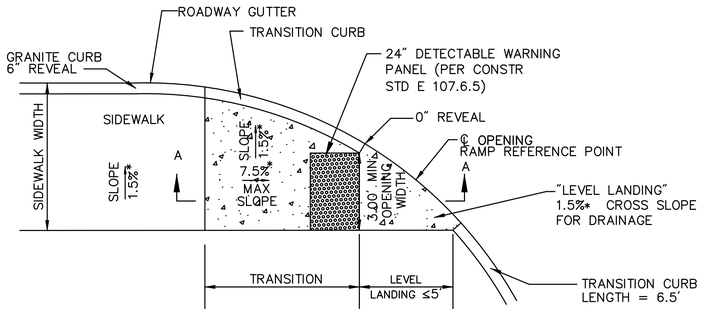
ROADWAY GUTTER GRADE IS IN THE DIRECTION OF THE BASELINE.

HOLDEN
SHREWSBURY STREET

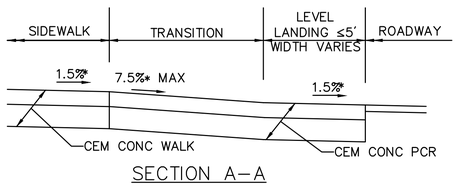
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	109	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:44 PM



* TOLERANCE FOR CONSTRUCTION ±0.5%

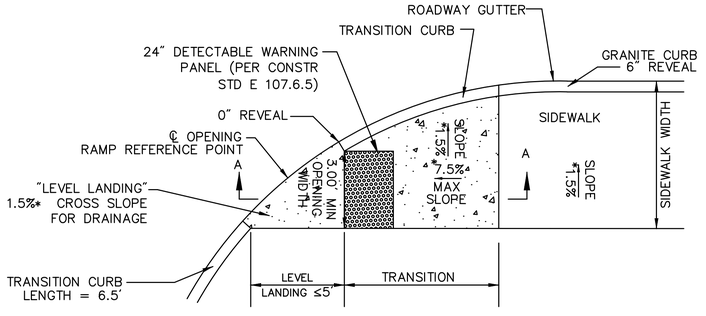


SECTION A–A

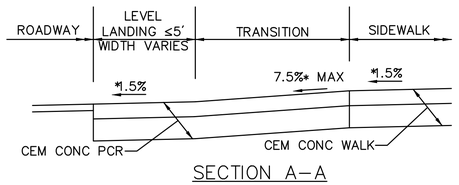
PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
8	12+18.39 28.41' RT SHREWSBURY ST	5.5'	-5.30%	6"	15'-0"	718.68
18	23+84.05 17.57' RT SHREWSBURY ST	5.5'	4.63%	3"	3'-3"	748.74

PEDESTRIAN CURB RAMP - SINGLE DIRECTION LEVEL LANDING ≤ 5.0'

SCALE: N.T.S.

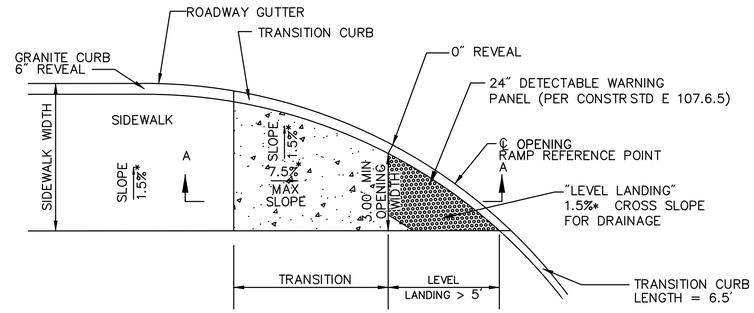


TOLERANCE FOR CONSTRUCTION ±0.5% *

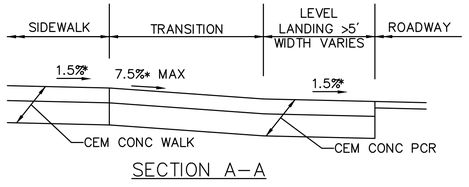


SECTION A–A

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
9	12+72.98 26.27' RT SHREWSBURY ST	5.5'	-4.60%	6"	6'-6"	716.01
19	24+37.18 17.57' RT SHREWSBURY ST	5.5'	6.53%	6"	15'-0"	751.33



* TOLERANCE FOR CONSTRUCTION ±0.5%

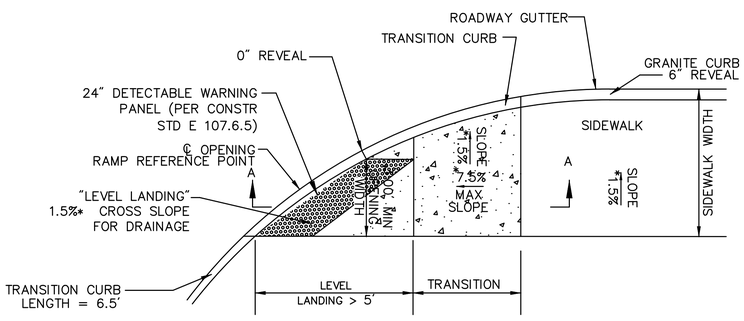


SECTION A–A

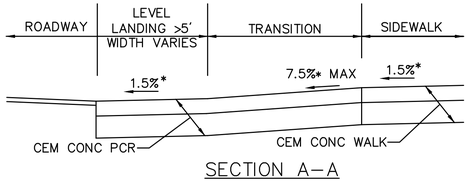
PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
12	16+54.55 16.61' RT SHREWSBURY ST	5.5'	2.76%	6"	11'-0"	710.96
46	212+37.93 19.33' RT HOLDEN ST	5.5'	3.30%	6"	6'-6"	765.20

PEDESTRIAN CURB RAMP - SINGLE DIRECTION LEVEL LANDING > 5.0'

SCALE: N.T.S.



TOLERANCE FOR CONSTRUCTION ±0.5% *



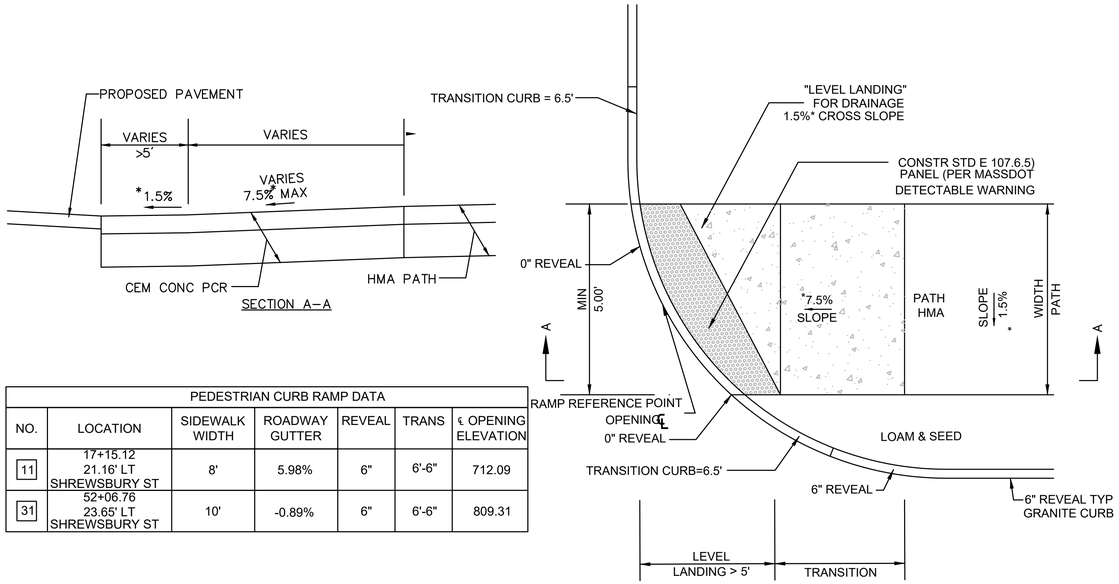
SECTION A–A

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
13	16+35.09 17.91' LT SHREWSBURY ST	5.5'	3.25%	6"	14'-0"	712.88
10	17+14.83 17.56' RT SHREWSBURY ST	8'	1.97%	6"	11'-0"	710.77
14	21+50.74 19.45' LT SHREWSBURY ST	8'	0.55%	6"	6'-6"	736.06
47	212+84.80 18.61' RT HOLDEN ST	5'	2.60%	6"	11'-0"	766.64

PEDESTRIAN CURB RAMP - SINGLE DIRECTION LEVEL LANDING > 5.0'

SCALE: N.T.S.

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM

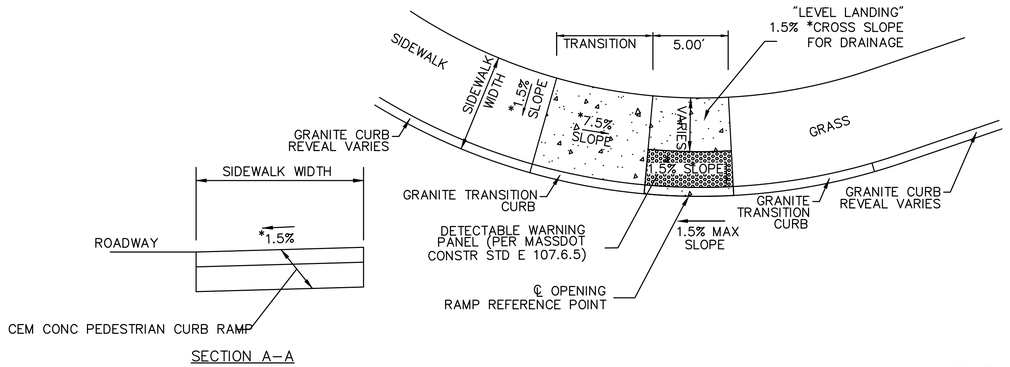


PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
11	17+15.12 21.16' LT SHREWSBURY ST	8'	5.98%	6"	6'-6"	712.09
31	52+06.76 23.65' LT SHREWSBURY ST	10'	-0.89%	6"	6'-6"	809.31

SCALE: N.T.S.

PEDESTRIAN CURB RAMP - "T" INTERSECTION GRASS ADJACENT ONE SIDE

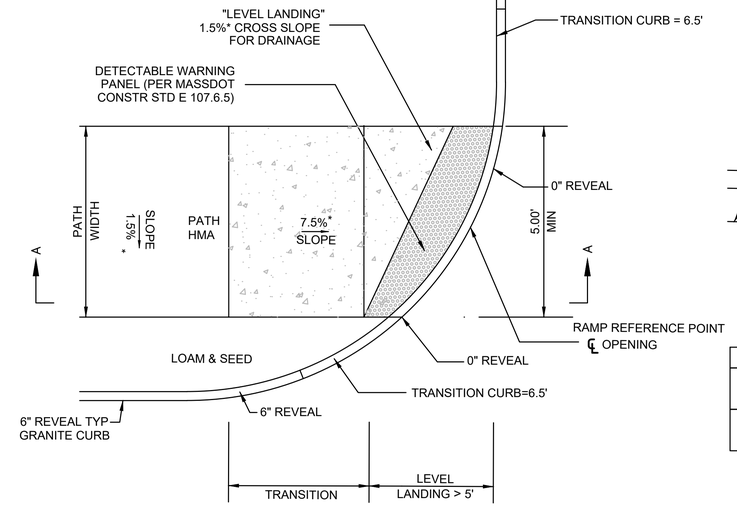
TOLERANCE FOR CONSTRUCTION ±0.5% *

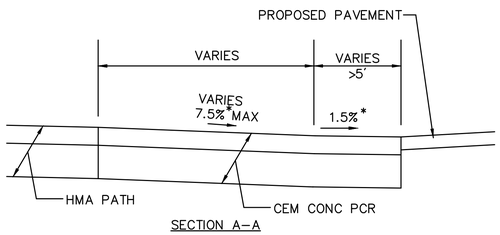


SCALE: N.T.S.

PEDESTRIAN CURB RAMP - ON CURVE WITH NO GRASS STRIP- WING ON LEFT SIDE ONLY

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
20	32+76.96 34.75' LT SHREWSBURY ST	12'	-2.89%	6"	6'-6"	752.05
34	54+03.86 84.98' LT SHREWSBURY ST	10'	-1.86%	6"	9'-0"	808.44

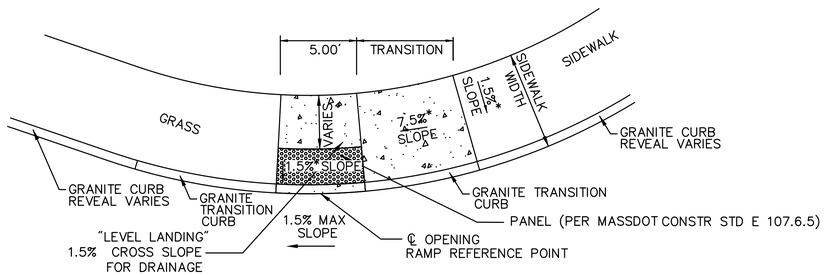




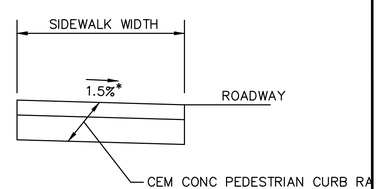
PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
40	359+70.78 19.99' LT DOYLE RD	5'	-0.65%	6"	7'-8"	822.34

SCALE: N.T.S.

PEDESTRIAN CURB RAMP - "T" INTERSECTION GRASS ADJACENT ONE SIDE



PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
35	54+77.39 80.07' LT SHREWSBURY ST	10'	-1.61%	6"	9'-0"	808.28



SCALE: N.T.S.

PEDESTRIAN CURB RAMP - ON CURB WITH NO GRASS STRIP- WING ON RIGHT SIDE ONLY

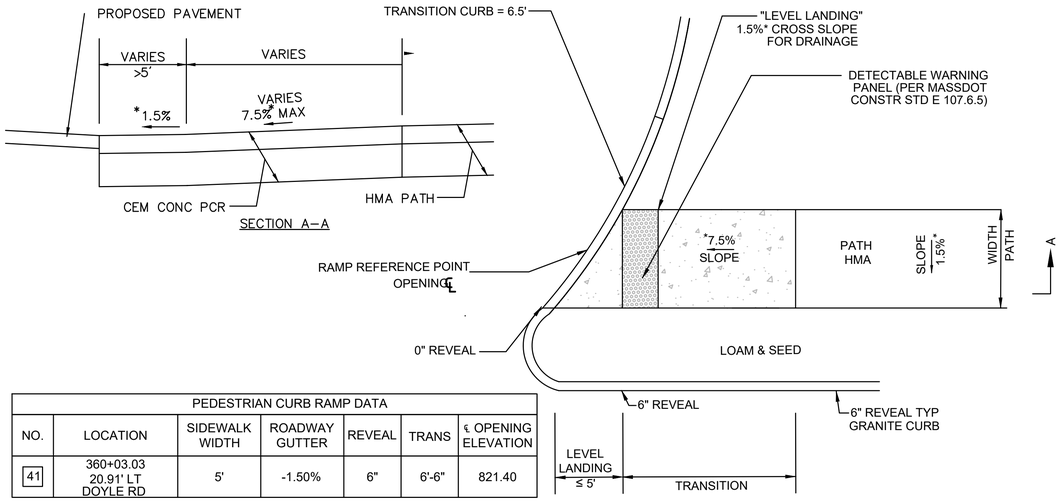
* TOLERANCE FOR CONSTRUCTION ±0.5%

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	111	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

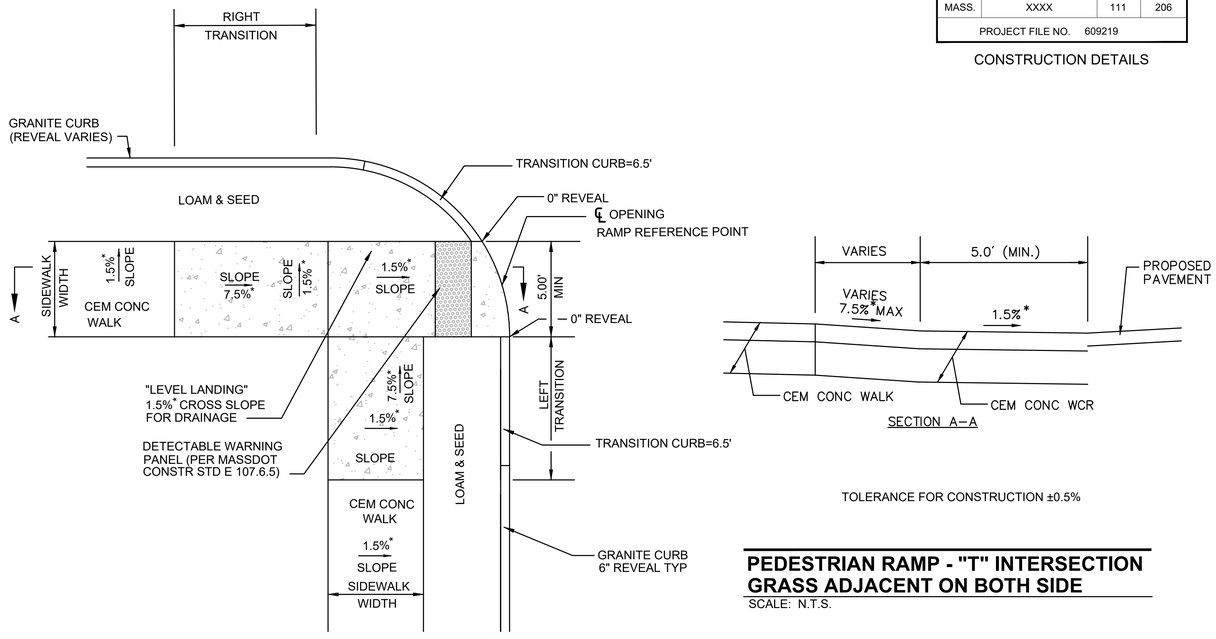
609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM



PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
41	360+03.03 20.91' LT DOYLE RD	5'	-1.50%	6"	6'-6"	821.40

SCALE: N.T.S.

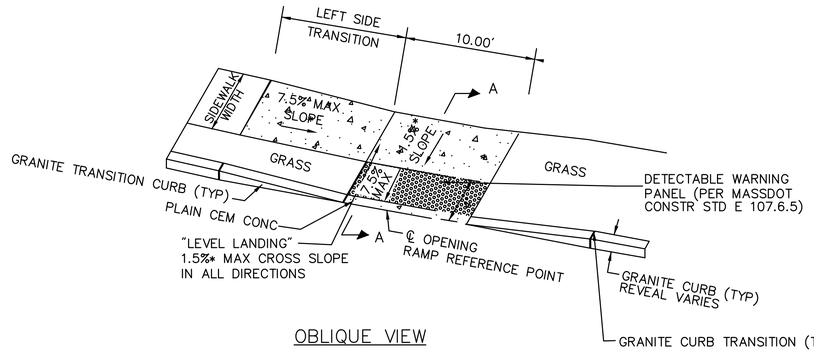
PEDESTRIAN CURB RAMP - GRASS ADJACENT BOTH SIDES - LEVEL LANDING ≤ 5'



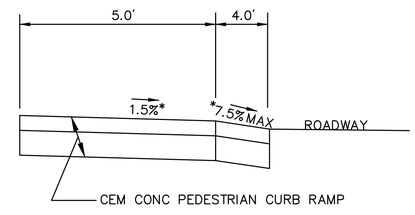
PEDESTRIAN RAMP - "T" INTERSECTION GRASS ADJACENT ON BOTH SIDE

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA										
NO.	LOCATION (REF. POINT)	SIDEWALK WIDTH	RAMP OPENING WIDTH	LEFT SIDE			RIGHT SIDE			OPENING ELEV
				ROADWAY GUTTER	REVEAL	TRANS	ROADWAY GUTTER	REVEAL	TRANS	
15	22+06.17 21.24' LT SHREWSBURY ST	5.0'-11.5'	13.0'	5.50%	6"	6'-6"	5.50%	6"	15'-0"	738.96
30	51+05.54 23.33' LT SHREWSBURY ST	5.0'-11.5'	15.8'	-0.60%	6"	7'-8"	-0.60%	6"	7'-8"	810.02



OBLIQUE VIEW

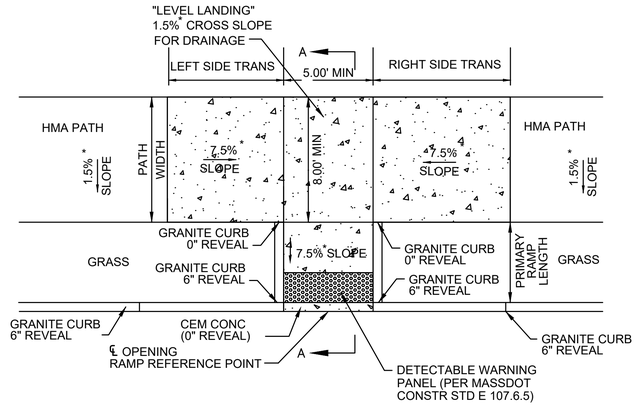


SECTION A–A

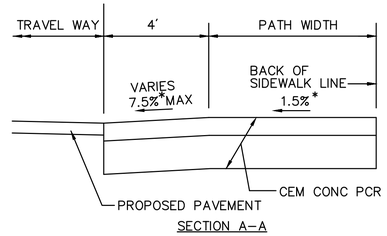
PEDESTRIAN CURB RAMP - LEFT SIDE TRANSITION WITH GRASS STRIP

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANS	℄ OPENING ELEVATION
42	360+73.08 14.00' LT DOYLE RD	5'	-1.11%	6"	6'-6"	820.93



*TOLERANCE FOR CONSTRUCTION ±0.5%

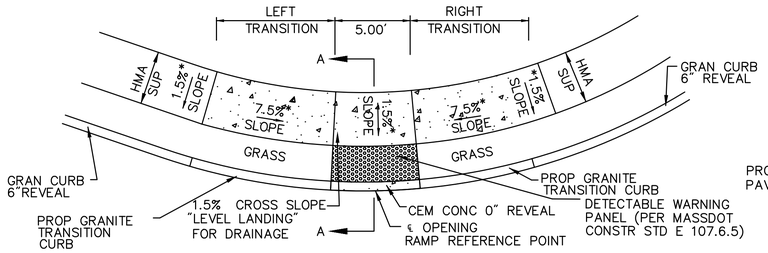


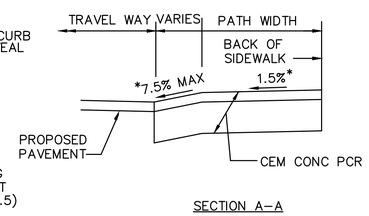
SECTION A–A

PEDESTRIAN CURB RAMP - WITH GRASS STRIP

SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA									
NO.	LOCATION	SIDEWALK WIDTH	PRIMARY RAMP LENGTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
16	23+52.57 14.00' LT SHREWSBURY ST	8'	3'-6"	5.50%	6"	6'-6"	6"	15'-0"	747.45
28	50+65.31 14.00' LT SHREWSBURY ST	10'	3'-6"	0.50%	6"	7'-8"	6"	6'-6"	809.93





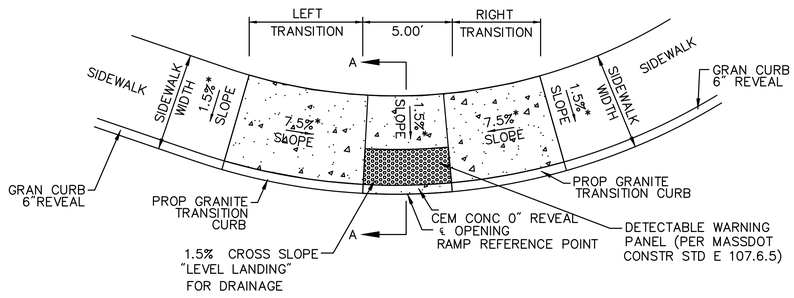
SECTION A–A

*TOLERANCE FOR CONSTRUCTION ±0.5%

PEDESTRIAN CURB RAMP - TWO WING SIDEWALK WITH GRASS STRIP BOTH SIDES

SCALE: N.T.S. DWG: PCR-02

PEDESTRIAN CURB RAMP DATA									
NO.	LOCATION	SIDEWALK WIDTH	PRIMARY RAMP LENGTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
					REVEAL	TRANS	REVEAL	TRANS	
22	33+63.82 58.46' LT SHREWSBURY ST	8'	9.2'	0.50%	6"	6'-6"	6"	7'-8"	750.86
24	34+46.03 16.04' LT SHREWSBURY ST	8'	6.7'	-1.00%	6"	7'-8"	6"	6'-6"	750.40
32	53+41.38 21.62' LT SHREWSBURY ST	10'	5.0'	1.38%	6"	6'-6"	6"	6'-6"	808.52
33	53+44.80 24.09' RT SHREWSBURY ST	10'	8.6'	0.60%	6"	6'-6"	6"	6'-6"	808.26
36	55+20.29 18.47' LT SHREWSBURY ST	10'	5.0'	0.50%	3"	3'-3"	6"	9'-0"	809.24
38	350+93.61 19.50' LT DOYLE RD	10'	5.0'	1.80%	6"	6'-6"	6"	9'-0"	808.14
39	350+94.17 22.78' RT DOYLE RD	10'	3.3'	1.11%	6"	9'-0"	6"	6'-6"	807.97

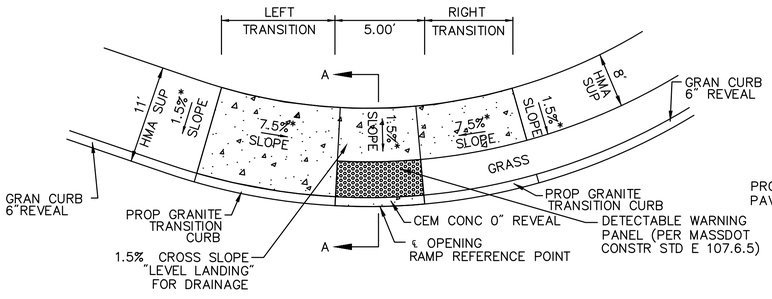


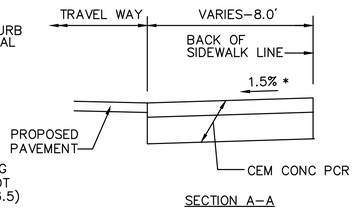
*TOLERANCE FOR CONSTRUCTION ±0.5%

PEDESTRIAN CURB RAMP - TWO WING SIDEWALK

SCALE: N.T.S. DWG: PCR-02

PEDESTRIAN CURB RAMP DATA									
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
7	103+32.10 34.47' LT MAIN ST	8.5'	-5.15%	6"	6'-6"	6"	15'-0"	723.85
2	10+12.61 55.06' LT SHREWSBURY ST	8'	-2.85%	6"	9'-0"	6"	6'-6"	726.83
5	10+37.46 31.88' RT SHREWSBURY ST	8.5'	3.80%	6"	6'-6"	6"	9'-0"	725.10
17	23+52.57 14.00' RT SHREWSBURY ST	5.5'	5.50%	3"	7'-6"	6"	6'-6"	747.44
21	33+12.29 25.00' RT SHREWSBURY ST	5.5'	-1.40%	6"	6'-6"	6"	9'-0"	752.09
23	34+01.33 60.29' RT SHREWSBURY ST	5.5'	0.13%	6"	9'-0"	6"	6'-6"	752.17
25	34+88.33 46.62' RT SHREWSBURY ST	5.5'	-2.06%	6"	6'-6"	6"	11'-0"	750.86
26	47+98.94 19.82' RT SHREWSBURY ST	5.5'	1.79%	6"	6'-6"	6"	6-6"	810.85
27	48+37.90 19.65' RT SHREWSBURY ST	5.5'	0.42%	6"	6'-6"	6"	9'-0"	811.17
29	50+65.31 14.00' RT SHREWSBURY ST	8'	-0.60%	6"	6'-6"	6"	7'-8"	809.98
37	55+24.04 23.23' RT SHREWSBURY ST	8'	1.30%	6"	9'-0"	6"	6'-6"	809.05
44	360+93.66 23.71' RT DOYLE RD	10'	-0.48%	6"	6'-6"	3"	3'-10"	820.82
45	361+41.53 23.36' RT DOYLE RD	5.5'	-1.30%	6"	6'-6"	6"	9'-0"	820.58





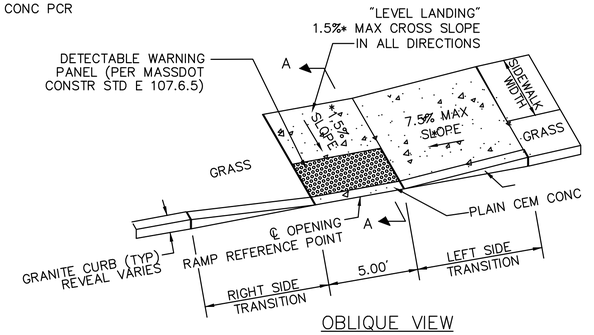
SECTION A–A

*TOLERANCE FOR CONSTRUCTION ±0.5%

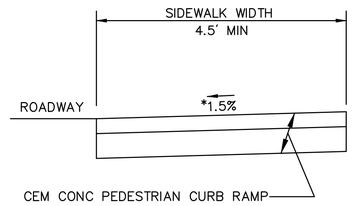
PEDESTRIAN CURB RAMP - TWO WING SIDEWALK WITH GRASS STRIP ONE SIDE

SCALE: N.T.S. DWG: PCR-02

PEDESTRIAN CURB RAMP DATA							
NO.	LOCATION	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
			REVEAL	TRANS	REVEAL	TRANS	
43	360+73.10 14.39' RT DOYLE RD	-0.66%	3"	3'-8"	6"	7'-8"	820.96



OBLIQUE VIEW



SECTION A–A

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENIN ELEVATIO
				REVEAL	TRANS	REVEAL	TRANS	
6	103+26.66 16.00' RT MAIN ST	8'	-5.80%	6"	6'-6"	6"	15'-0"	723.42

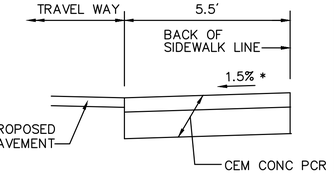
PEDESTRIAN CURB RAMP - RIGHT SIDE TRANSITION WITH GRASS STRIP

SCALE: N.T.S.

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	112	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS



SECTION A–A

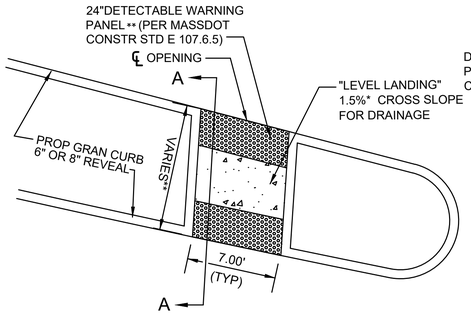
609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM

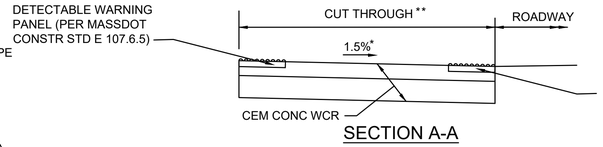
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	113	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM



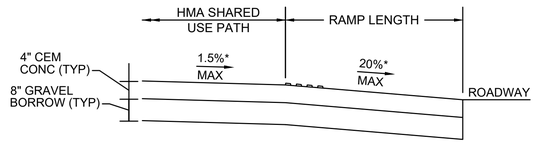


SECTION A-A

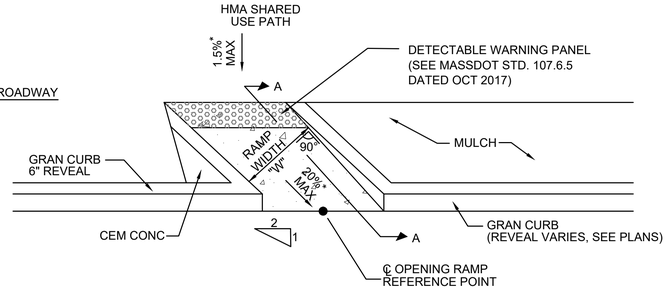
* TOLERANCE FOR CONSTRUCTION ±0.5%
** DETECTABLE WARNING PANEL SHALL BE PROVIDED ONLY WHEN WIDTH IS 6.0' OR GREATER

WALK WAY THRU ISLAND (CUT THROUGH)

SCALE: N.T.S.



SECTION A-A

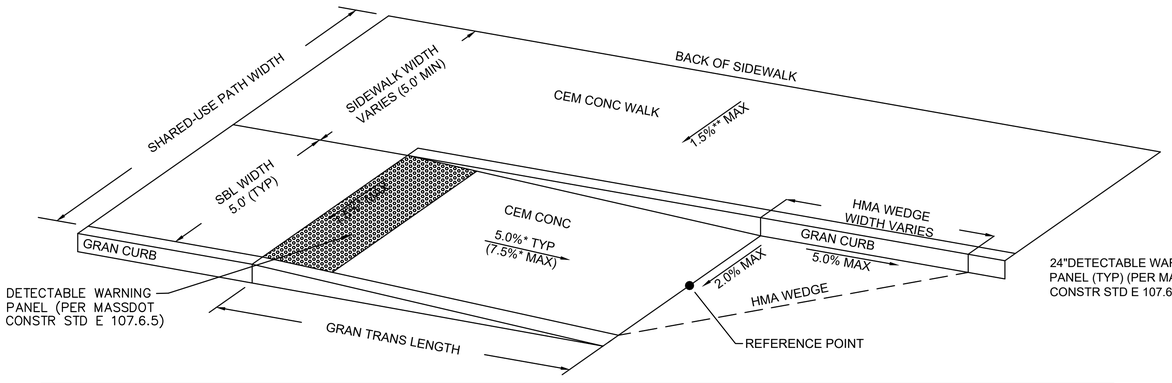


BICYCLE RAMP DATA			
NO.	LOCATION (REF POINT)	OPENING ELEV	RAMP WIDTH "W"
48	STA 97+85.07, 19.14' RT MAIN STREET	743.49	13'-0"

*TOLERANCE FOR CONSTRUCTION ±0.5%

LANDSCAPED BUFFER BICYCLE RAMP

SCALE: NTS

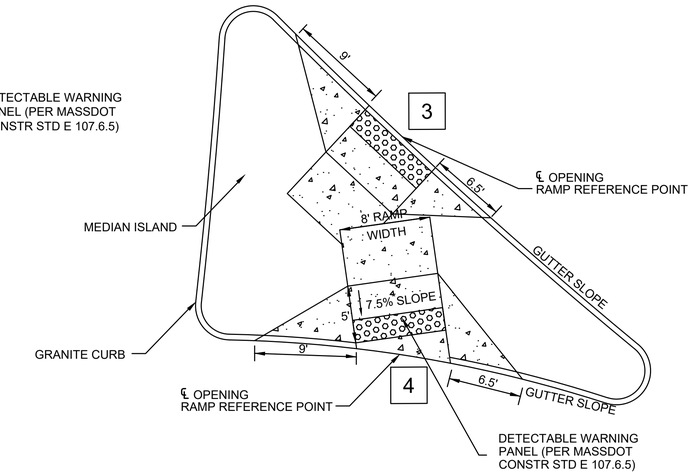


SEPARATED BIKE LANE TRANSITION

SCALE: N.T.S.

*TOLERANCE FOR CONSTRUCTION ±0.5%

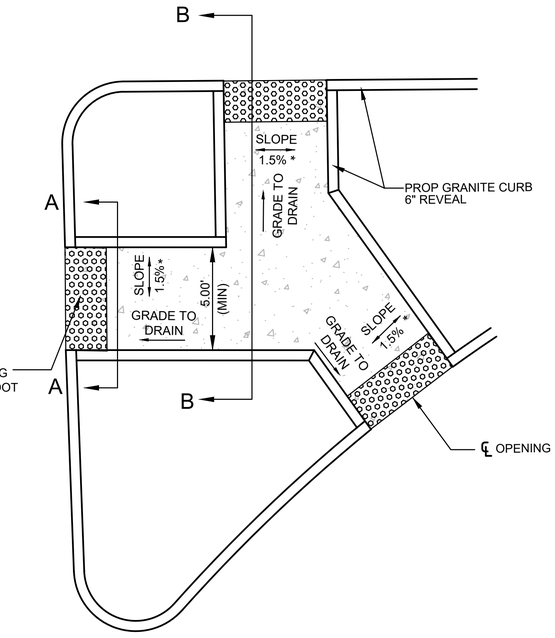
BICYCLE CURB RAMP DATA					
NO.	LOCATION	SIDEWALK WIDTH	TRANSITION LENGTH	ROADWAY GUTTER	℄ OPENING ELEVATION
1	102+11.82 32.22' LT MAIN ST	5'	5'	-3.16%	728.37



PEDESTRIAN CURB RAMP NO'S 3 & 4 IN MEDIAN ISLAND

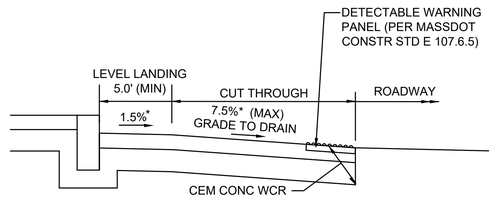
SCALE: N.T.S.

PEDESTRIAN CURB RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT SIDE		RIGHT SIDE		℄ OPENING ELEVATION
				REVEAL	TRANS	REVEAL	TRANS	
3	10+04.79 39.50' LT SHREWSBURY ST	8'	-1.97%	6"	6'-6"	6"	9'-0"	726.96
4	10+10.96 21.29' LT SHREWSBURY ST	8'	-1.23%	6"	9'-0"	6"	6'-6"	726.78

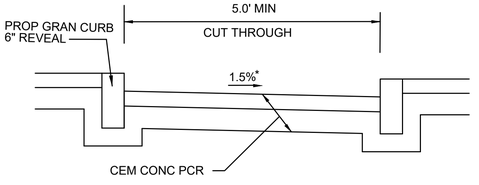


PROP CUT THROUGH WITH DETECTABLE WARNING PANEL

SCALE: N.T.S.



SECTION B-B



SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

DETECTABLE WARNING PANELS

NTS

NOTES:

1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUC ON ALL PROPOSED PEDESTRIAN CURB RAMPS AND ARE TO BE INSTA IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD E 10
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTH SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THER MUST BE A MINIMUM 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFA
3. NO SEPARATE PAYMENT SHALL BE MADE FOR DETECTABLE WARNING PANELS, BUT ALL COSTS IN CONNECTION THERE WITH S BE INCLUDED WITH ITEM 701.2.

LEGEND

LIMITS OF CEMENT CONCRETE PEDESTRIAN CURB RAMP

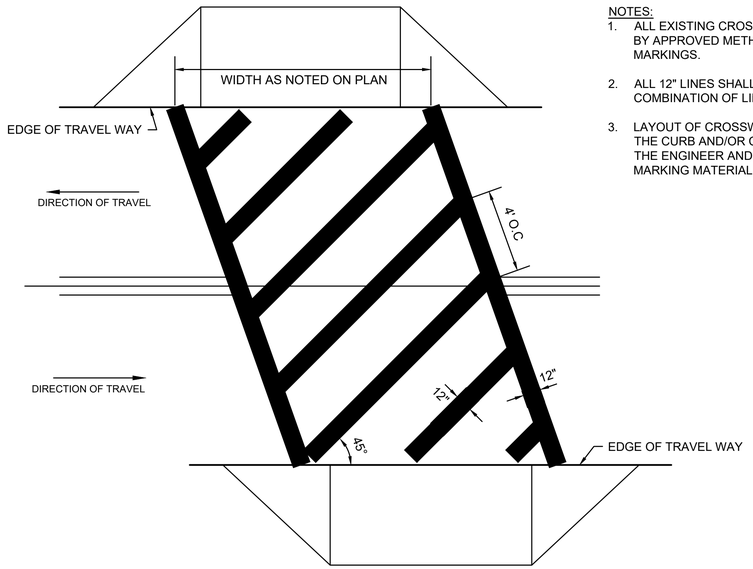
LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	114	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

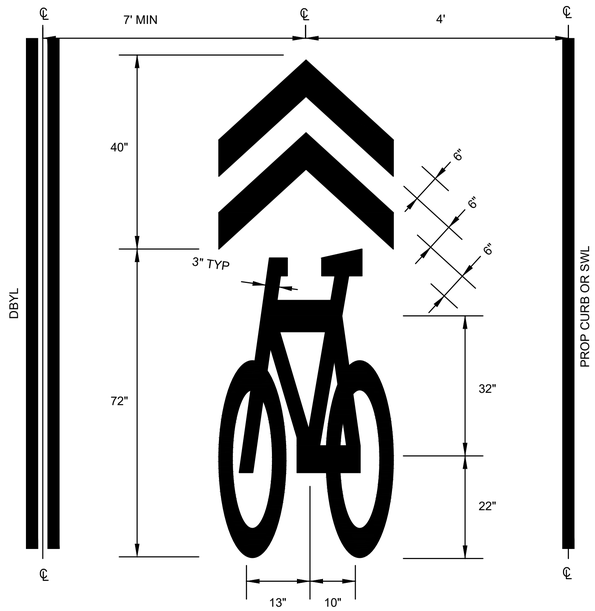
609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM



NOTES:
1. ALL EXISTING CROSSWALK MARKINGS SHALL BE FULLY ERADICATED BY APPROVED METHOD PRIOR TO THE APPLICATION OF PROPOSED MARKINGS.
2. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (i.e., TWO - 6" LINES) WILL BE ACCEPTED.
3. LAYOUT OF CROSSWALKS SHALL BE ORIENTATED 45 DEGREES TO THE CURB AND/OR CENTERLINE. LAYOUT SHALL BE APPROVED BY THE ENGINEER AND HOLDEN DPW PRIOR TO APPLICATION OF MARKING MATERIAL.

HIGH-VISIBILITY CROSSWALK - 12" WIDE LINES

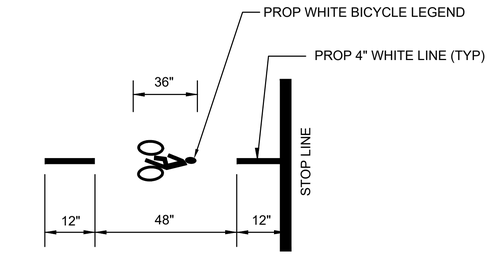
SCALE: N.T.S. DWG: PM-27



NOTES:
1. SEE MUTCD FIGURE 9C-9 FOR MORE INFORMATION.
2. SHARED LANE MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

SHARED LANE ("SHARROW") PAVEMENT MARKING LAYOUT

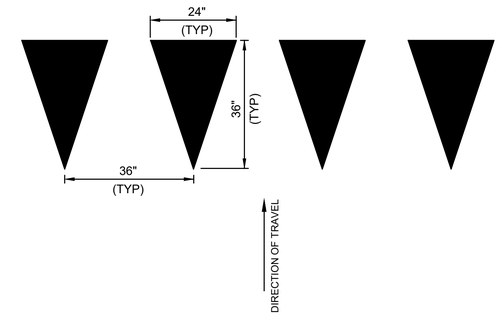
SCALE: N.T.S. DWG: PM-14 DATE: MARCH 2015



NOTE:
1. BICYCLE LEGEND SHALL CONFORM TO THE 2004 EDITION OF STANDARD HIGHWAY SIGNS AND SCALED APPROPRIATELY TO OBTAIN REQUIRED HEIGHT OF MARKINGS.
2. BICYCLE LEGEND MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC

BICYCLE LEGEND DETAIL

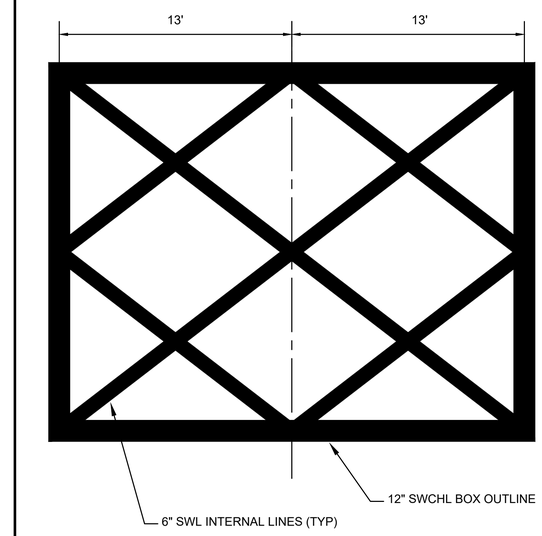
SCALE: N.T.S.



NOTES:
1. YIELD LINES SHALL CONSIST OF A ROW OF SOLID WHITE TRIANGLES.
2. IF APPLICABLE, YIELD LINES SHALL BE PLACED 4-FEET IN ADVANCE OF THE NEAREST CROSSWALK LINE.
3. IN THE ABSENCE OF A MARKED CROSSWALK, YIELD LINES SHALL BE PLACED AS SHOWN ON THE PLANS.

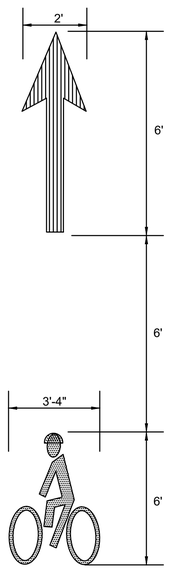
YIELD LINE TRIANGLES

SCALE: NTS



DO NOT BLOCK INTERSECTION MARKINGS

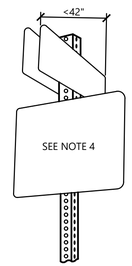
SCALE: N.T.S.



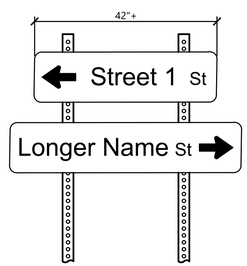
NOTES:
1. SEE MUTCD FIGURE 9C-6 FOR MORE INFORMATION.
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

BIKE LANE PAVEMENT MARKINGS

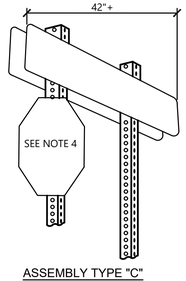
SCALE: N.T.S. DWG: PM-11 DATE: NOV 2015



ASSEMBLY TYPE "A"



ASSEMBLY TYPE "B"

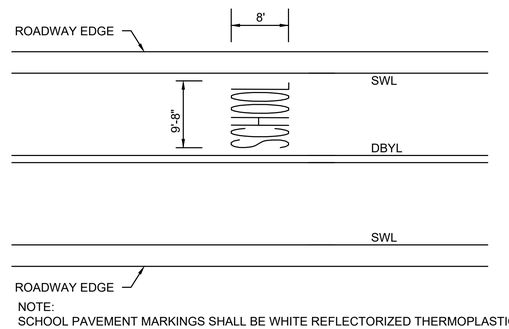


ASSEMBLY TYPE "C"

NOTES:
1. SIGN PANELS SUCH AS R6-1 (ONE-WAY) AND STREET NAME SIGNS LESS THAN 42" TO BE MOUNTED IN PAIRS TO A SINGLE POST.
2. SIGN PANELS 42" OR LONGER TO BE MOUNTED ON TWO POSTS.
3. SIGNS TO BE MOUNTED 5'MIN ABOVE FINISHED GRADE IN NON-TRAVERSABLE AREAS AND 7' MIN ABOVE FINISHED GRADE IN SIDEWALK AREAS.
4. SHAPE OF SECONDARY SIGN NOT INDICATIVE OF TYPE OF SIGN TO BE PAIRED WITH ASSEMBLY. SEE PLANS FOR ADDITIONAL SIGNS REQUIRED.

MULTIPLE SIGN MOUNTING DETAIL

SCALE: N.T.S. DWG: PM-36 DATE: OCTOBER 2021



NOTE:
SCHOOL PAVEMENT MARKINGS SHALL BE WHITE REFLECTORIZED THERMOPLASTIC.

SCHOOL ZONE PAVEMENT MARKING DETAIL

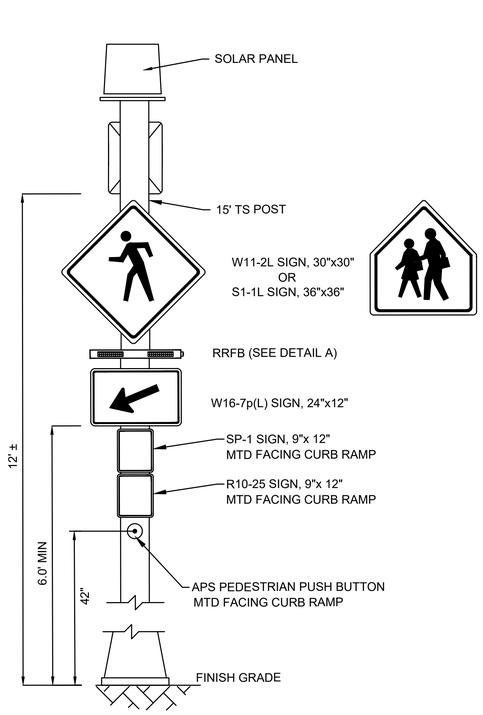
SCALE: N.T.S.

HOLDEN
SHREWSBURY STREET

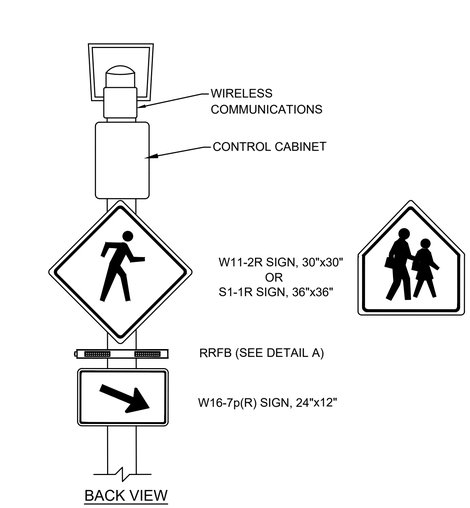
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	115	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

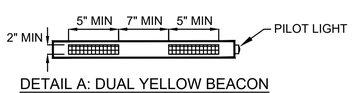
609219_HD\DET\.DWG Plotted on 4-Jan-2023 1:45 PM



FRONT VIEW (FACING ON-COMING TRAFFIC)



BACK VIEW

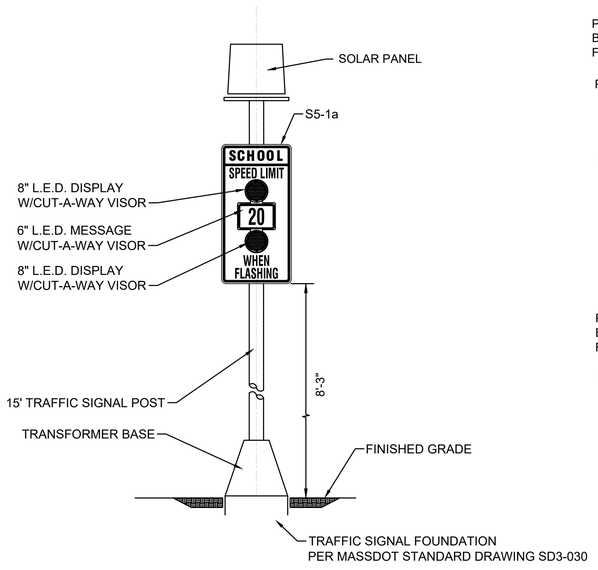


DETAIL A: DUAL YELLOW BEACON

NOTES:
1. DURATION OF FLASHING UPON RECEIPT OF VALID PEDESTRIAN PUSHBUTTON ACTUATION SHALL BE INITIALLY SET FOR 15 SECONDS.
2. SEE SPECIAL PROVISIONS ITEMS 824.211 & 824.212 FOR MORE DETAILS.

RECTANGULAR RAPID FLASHING BEACON (SOLAR)

SCALE: NTS

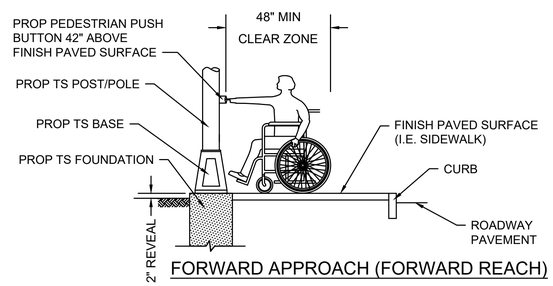


FACING ON-COMING TRAFFIC

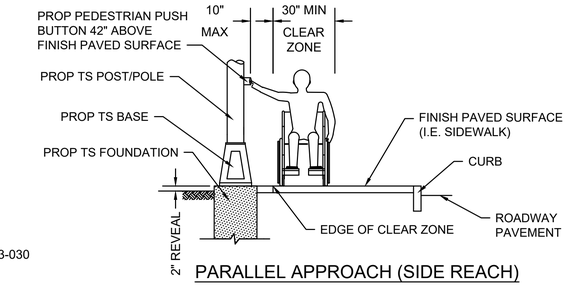
NOTES:
1. SEE SIGN SUMMARY FOR DETAILS ON S5-1a SIGN.
2. REFER TO SPECIAL PROVISION ITEM 824.351 FOR ADDITIONAL INFO ON SPEED LIMIT BEACON W/VARIABLE SPEED DISPLAY ASSEMBLIES.
3. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF HOLDEN SCHOOL DEPARTMENT AS TO THE HOURS/DATES OF OPERATION FOR THE SPEED LIMIT BEACONS AND PROGRAM THEM ACCORDINGLY.

SCHOOL ZONE BEACON ASSEMBLY

SCALE: N.T.S.



FORWARD APPROACH (FORWARD REACH)



PARALLEL APPROACH (SIDE REACH)

NOTE:
A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.
a) WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.
b) WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

PEDESTRIAN PUSH BUTTON CLEAR ZONE

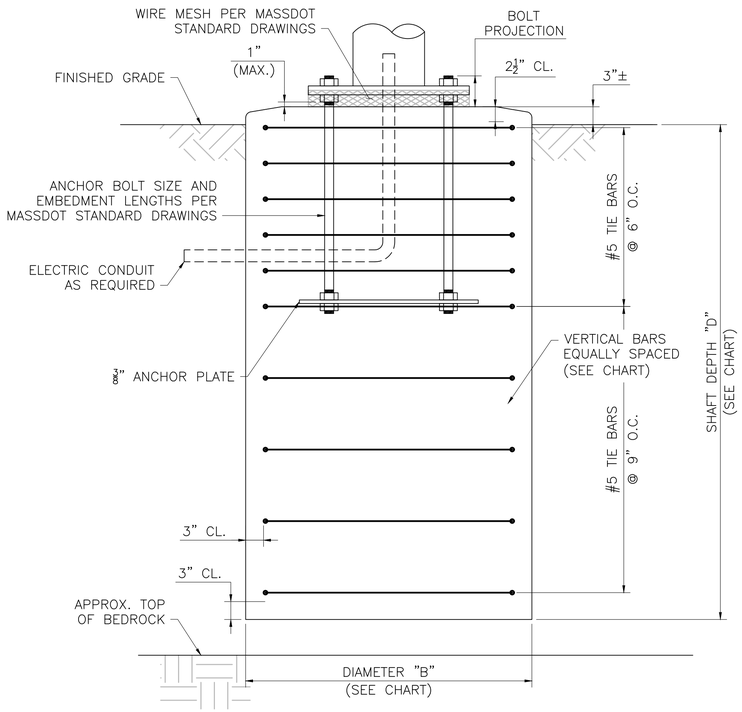
SCALE: N.T.S. DWG: PM-10 DATE: APRIL 2013

HOLDEN
SHREWSBURY STREET

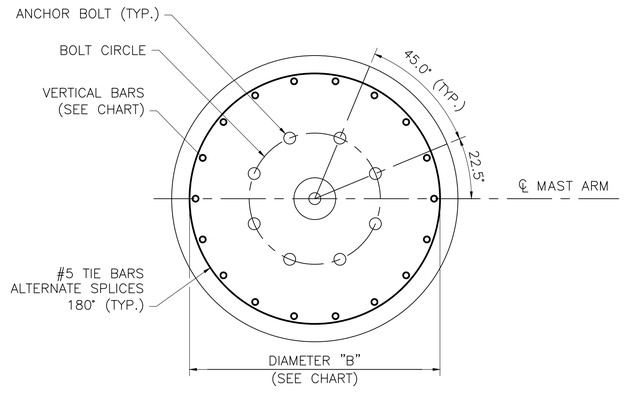
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	116	206
PROJECT FILE NO. 609219			

CONSTRUCTION DETAILS

609219_HD(DET-MA).DWG Plotted on 4-Jan-2023 1:45 PM



ELEVATION



PLAN

GENERAL NOTES:

1. FOUNDATIONS SHALL BE 4000 PSI, ¾ IN., 610 CEMENT CONCRETE MASONRY.
2. REINFORCEMENT SHALL BE A.S.T.M. A615 GR. 60.
3. BOLT CIRCLE AND ANCHOR BOLTS TO BE PROVIDED BY THE CONTRACTOR. THE ANCHOR BOLTS SHALL BE SUPPLIED WITH A TEMPLATE FOR SETTING THE BOLTS AND NECESSARY BOLT PROJECTIONS. FOUNDATIONS CAN ACCOMMODATE A MAXIMUM BOLT CIRCLE DIAMETER OF 24".
4. PROVIDE FOR ELECTRICAL CONDUIT AS REQUIRED.
5. VERTICAL REINFORCEMENT BARS ARE TO BE EVENLY SPACED IN THE FOUNDATION AS SHOWN.
6. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE DESIGN ENGINEER.
7. ALL SIGNALS SHALL BE ATTACHED TO THE MAST ARM WITH FIXED LOUVERED BACKPLATES.
8. SEE MASSDOT OVERHEAD SIGNAL STRUCTURE & FOUNDATION STANDARD DRAWINGS.

MAST ARM FOUNDATION DATA

BORING #	ARM LENGTH	MAST ARM LOCATION	FOUNDATION DIAMETER	FOUNDATION DEPTH	VERTICAL BARS
B-2	45	33+67.5, 43.5' RT	4'-6"	10'-0"	18 - #10
B-3	45'	34+01.5, 37.5' LT	4'-6"	12'-0"	18 - #10

FOUNDATION DESIGN CHART

MAST ARM FOUNDATION

SCALE: 1" = 1'-0"

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	117	206
PROJECT FILE NO. 609219			

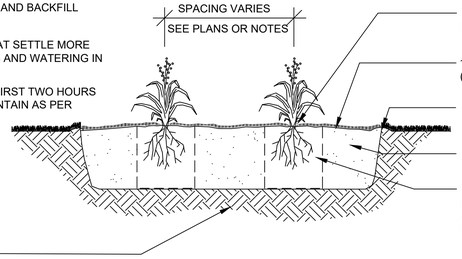
CONSTRUCTION DETAILS

609219_HD(DET).DWG Plotted on 4-Jan-2023 1:45 PM

EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX

RAISE AND REPLANT PLANTS THAT SETTLE MORE THAN 3 INCHES AFTER PLANTING AND WATERING IN

WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS



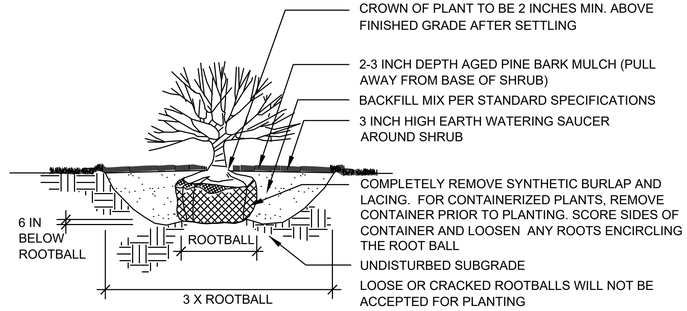
PERENNIAL PLANTING

NOT TO SCALE

EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX

SHRUBS SHALL BE SET PLUMB

WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS



SHRUB PLANTING

NOT TO SCALE

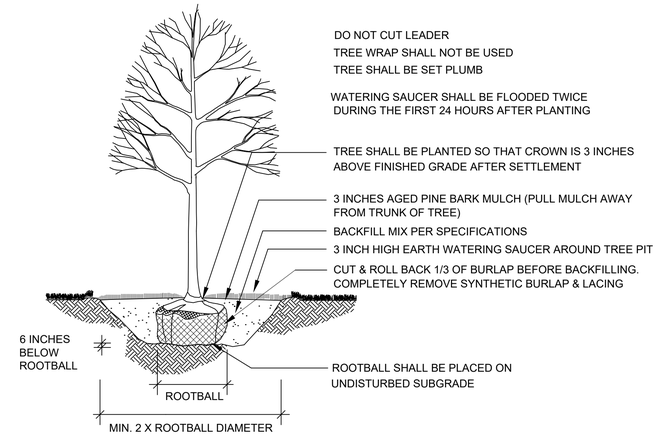
FEB 28, 2013

DO NOT CUT LEADER

TREE WRAP SHALL NOT BE USED

TREE SHALL BE SET PLUMB

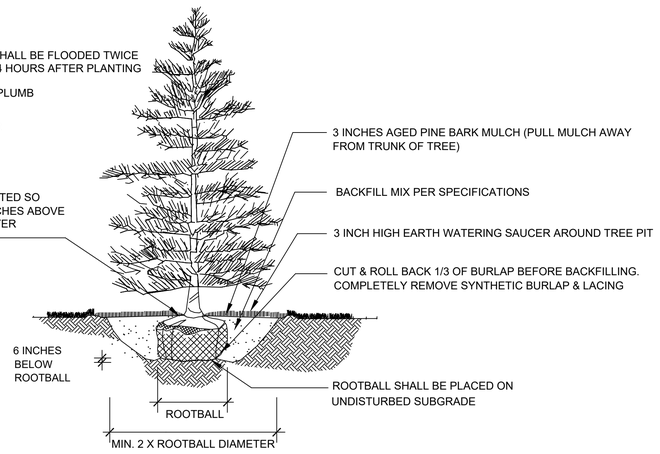
WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING



WATERING SAUCER SHALL BE FLOODED TWICE DURING THE FIRST 24 HOURS AFTER PLANTING

TREE SHALL BE SET PLUMB

DO NOT CUT LEADER

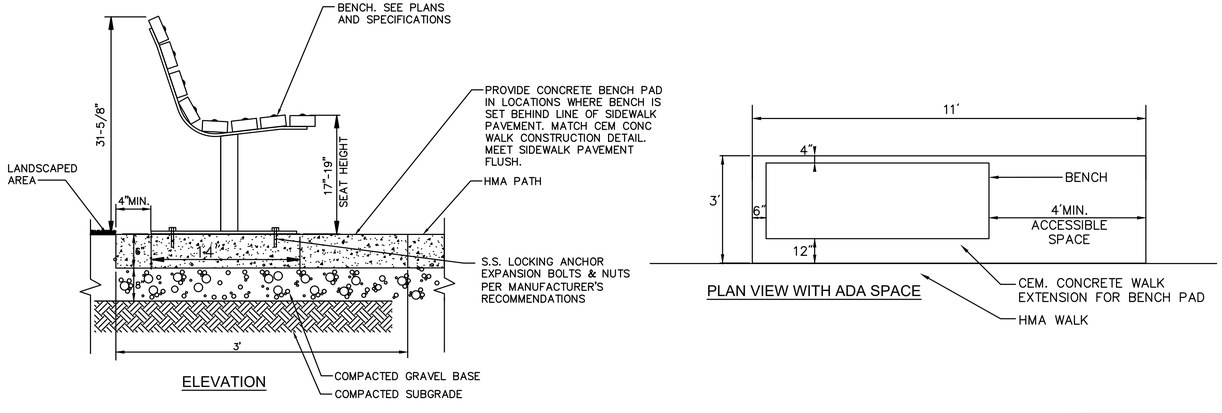


DECIDUOUS TREE PLANTING

NOT TO SCALE

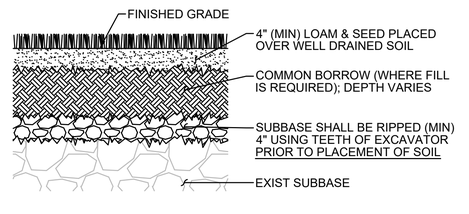
EVERGREEN TREE PLANTING

NOT TO SCALE



PARK BENCH

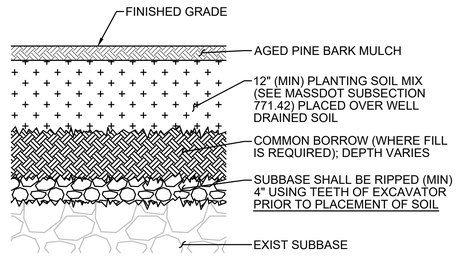
SCALE: N.T.S.



NOTE
ALL EXISTING ASPHALT SHALL BE STRIPPED AND REMOVED PROPT TO TILLING. ASPHALT SHALL NOT BE MIXED WITH THE SUBBASE.

LAWN IN FORMER PAVED AREAS

SCALE: NTS



NOTE
ALL EXISTING ASPHALT SHALL BE STRIPPED AND REMOVED PROPT TO TILLING. ASPHALT SHALL NOT BE MIXED WITH THE SUBBASE.

PLANTING BED IN FORMER PAVED AREAS

SCALE: NTS

HOLDEN
SHREWSBURY STREET

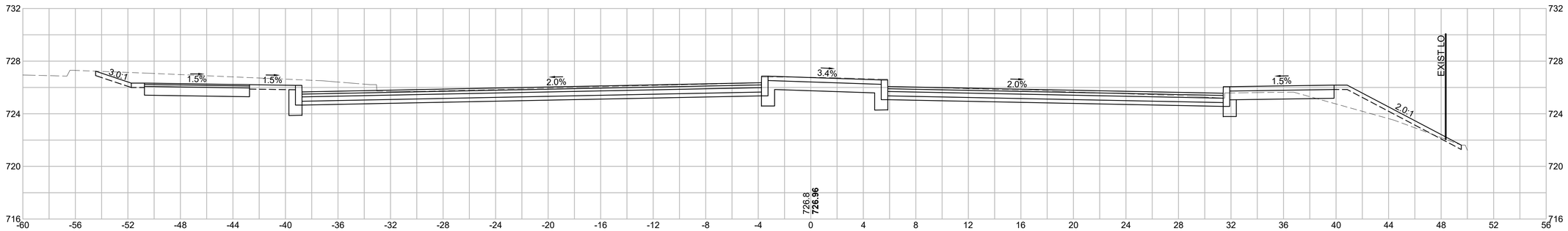
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	118	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

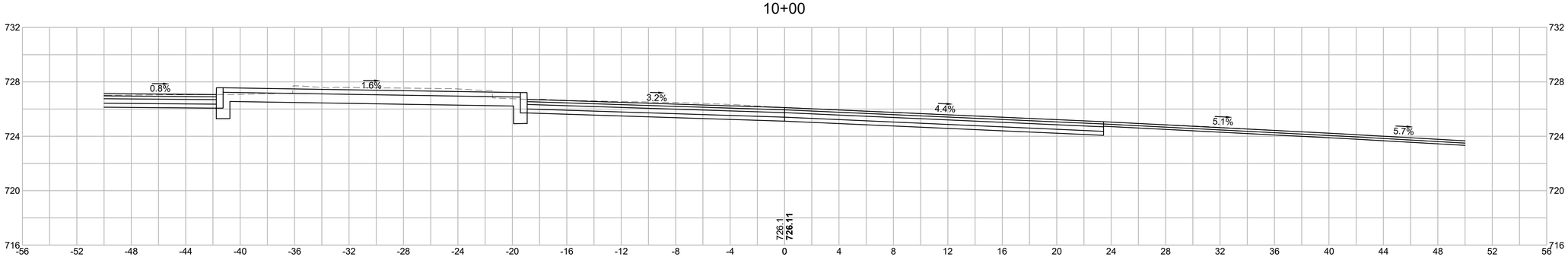
609219_HDIXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:47 PM

CUT 41.02 SF
FILL 12.43 SF

10+50



10+00



CUT: 91.02 SF
FILL: 0.00 SF

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

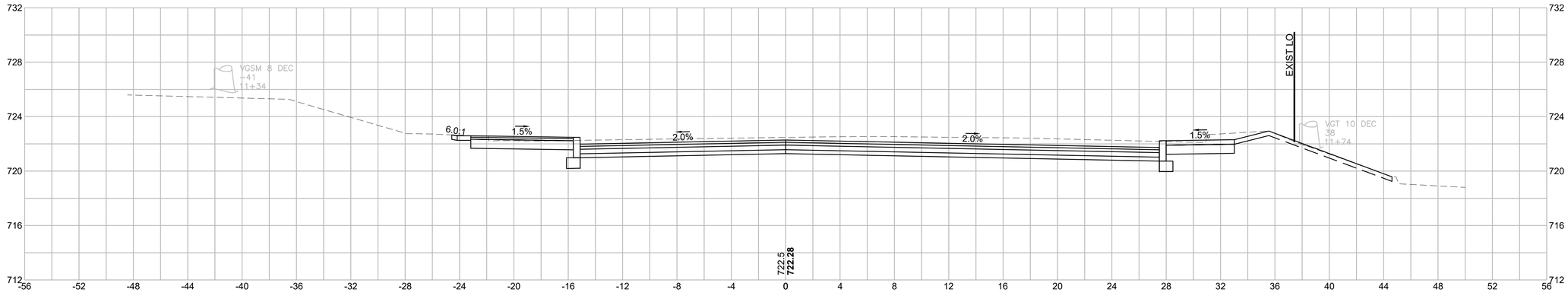
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	119	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:48 PM

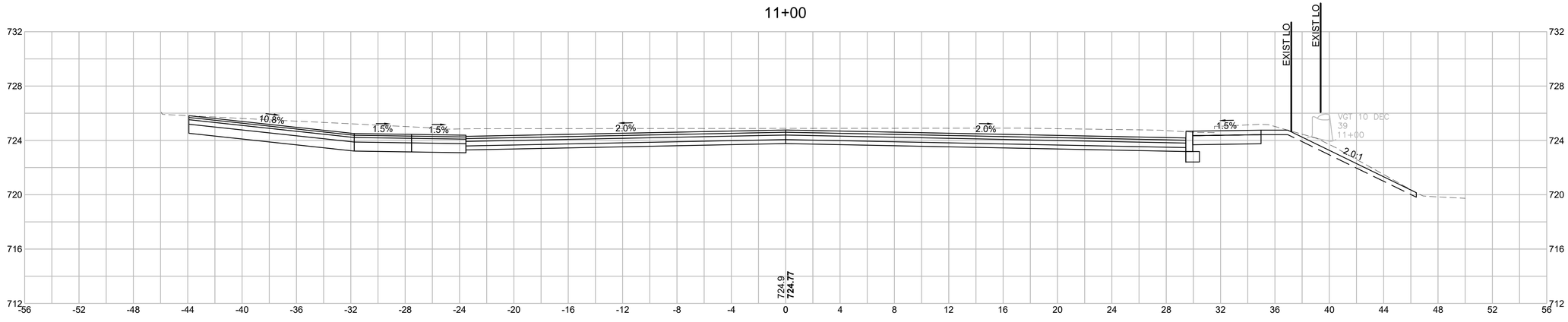
11+50



CUT: 83.57 SF

FILL: 0.00 SF

11+00



CUT: 126.35 SF

FILL: 0.00 SF

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

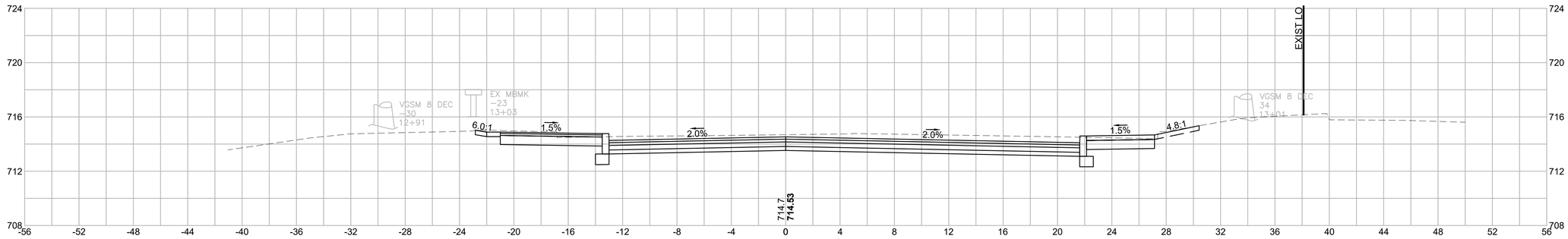
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	120	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

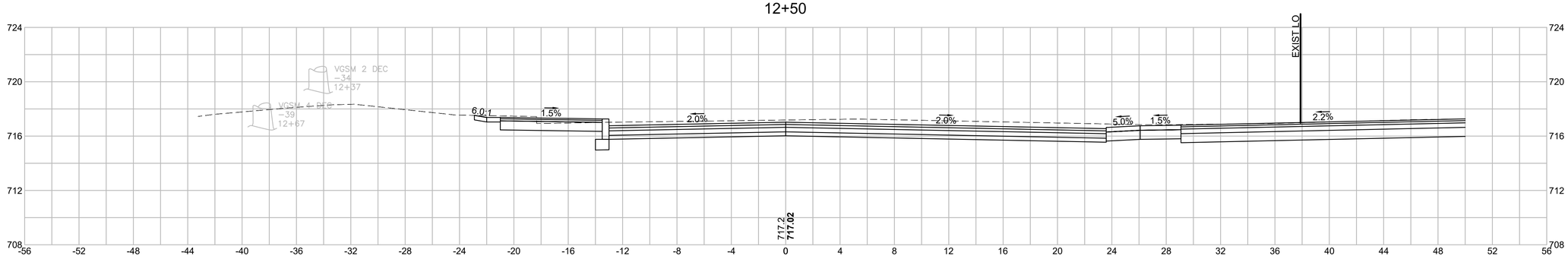
609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:48 PM

13+00



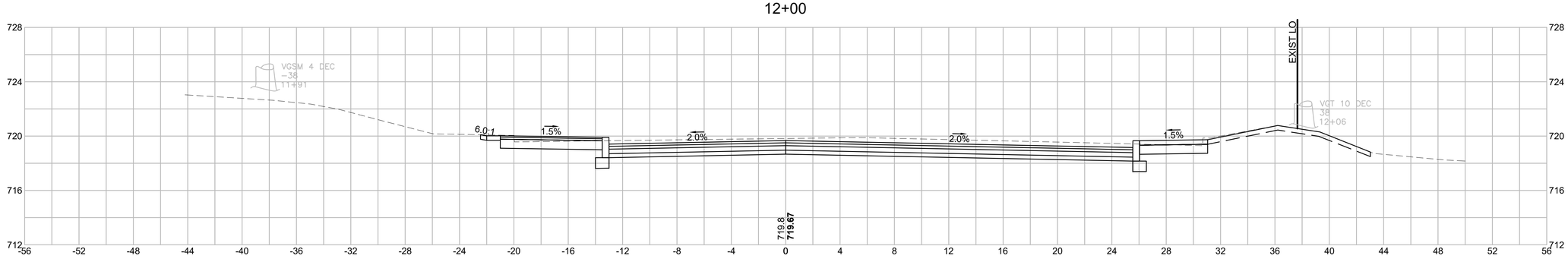
CUT: 60.81 SF
FILL: 0.00 SF

12+50



CUT: 88.14 SF
FILL: 0.00 SF

12+00



CUT: 74.81 SF
FILL: 0.00 SF

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

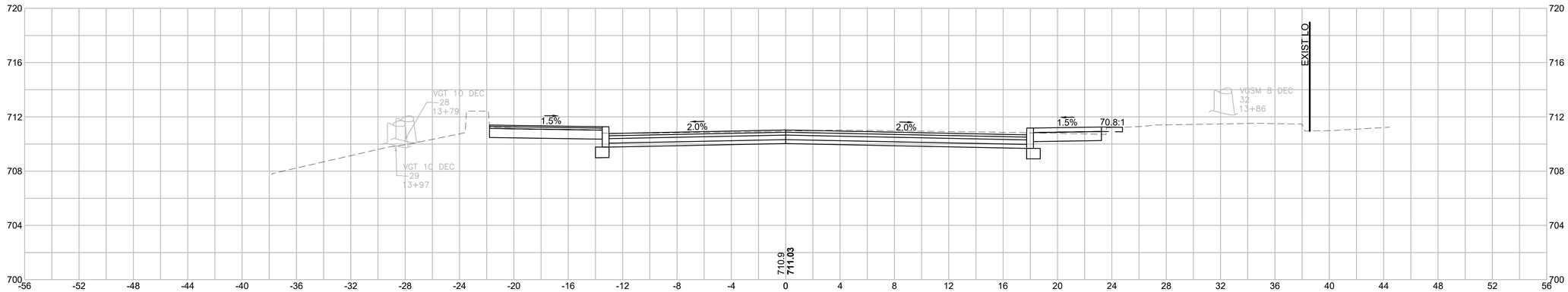
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	121	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:48 PM

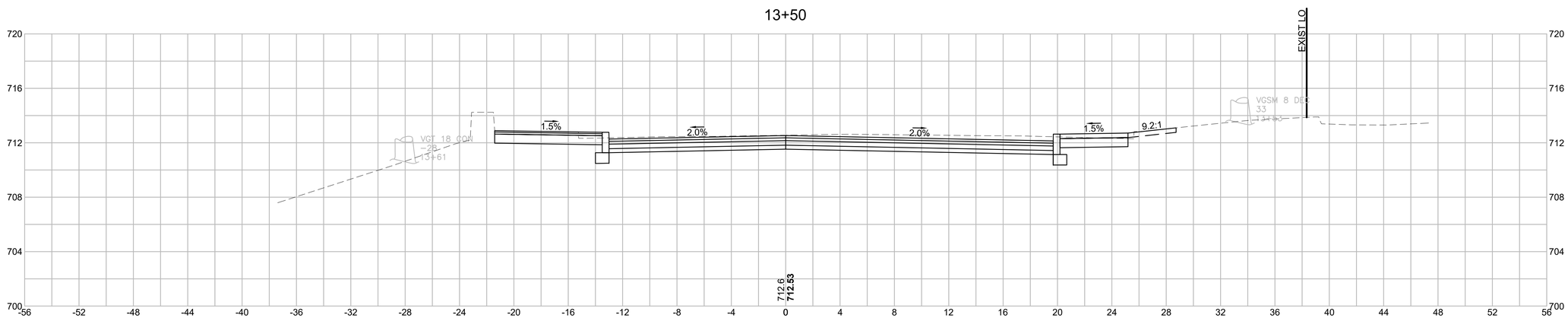
14+00



CUT: 46.23 SF

FILL: 0.07 SF

13+50



CUT: 54.71 SF

FILL: 0.05 SF

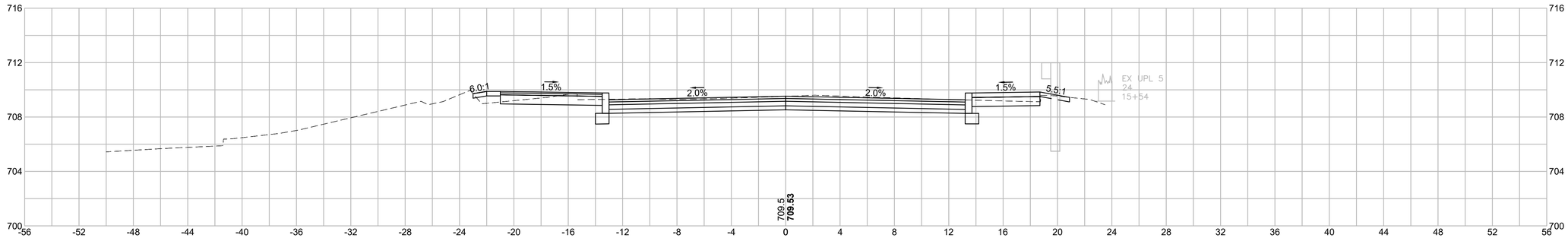
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	122	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

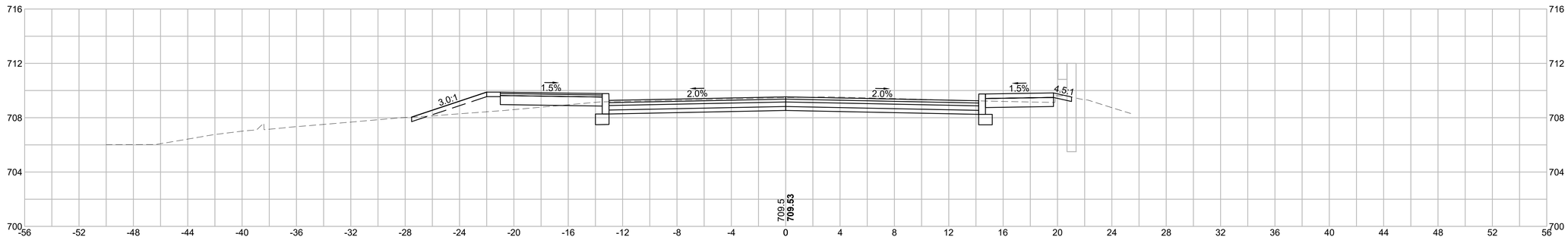
15+50



CUT: 35.35 SF

FILL: 0.81 SF

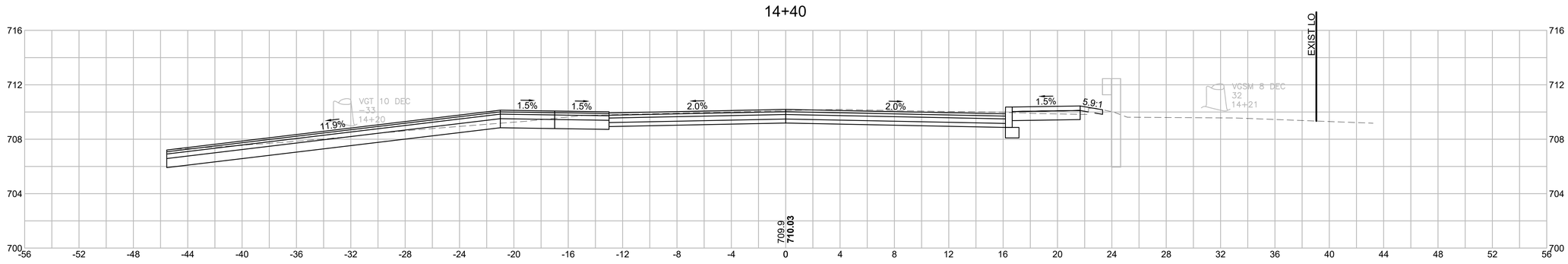
15+00



CUT: 32.55 SF

FILL: 4.55 SF

14+40



CUT: 55.92 SF

FILL: 0.14 SF

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

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:48 PM

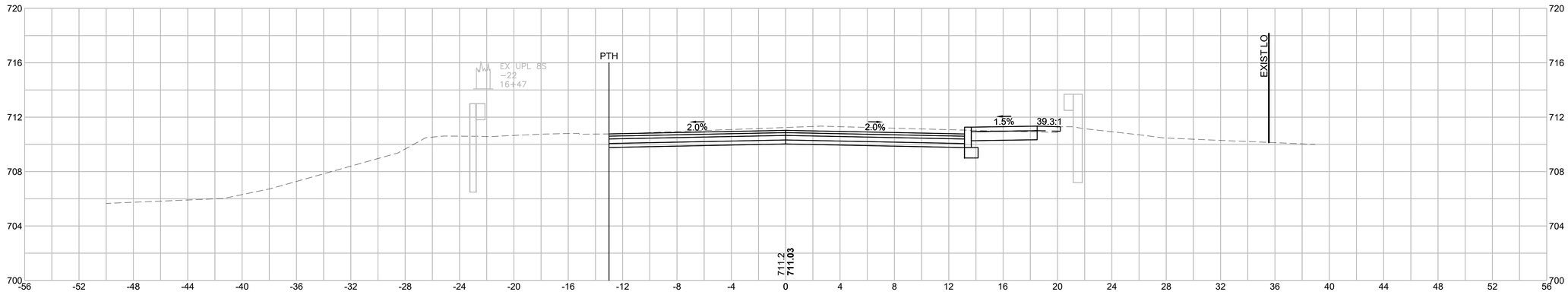
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	123	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDIXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:49 PM

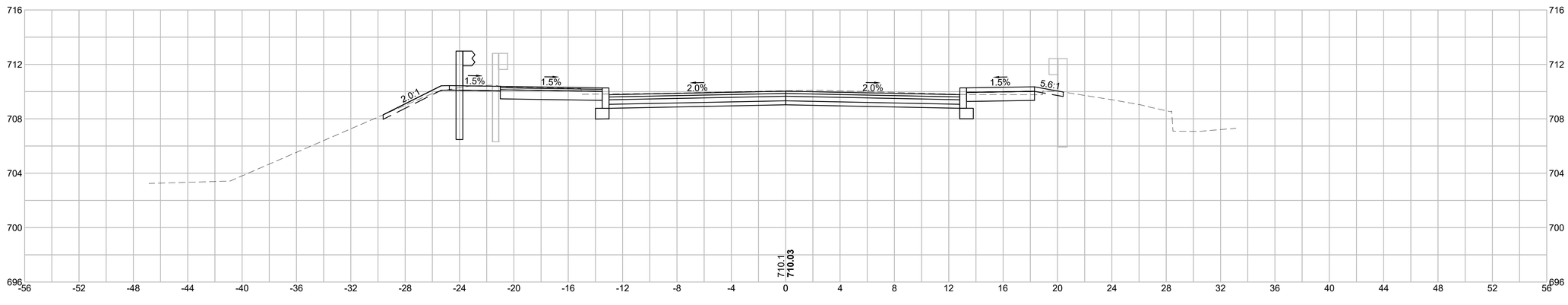
16+50



CUT: 47.54 SF

FILL: 0.14 SF

16+00



CUT: 40.00 SF

FILL: 0.95 SF

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

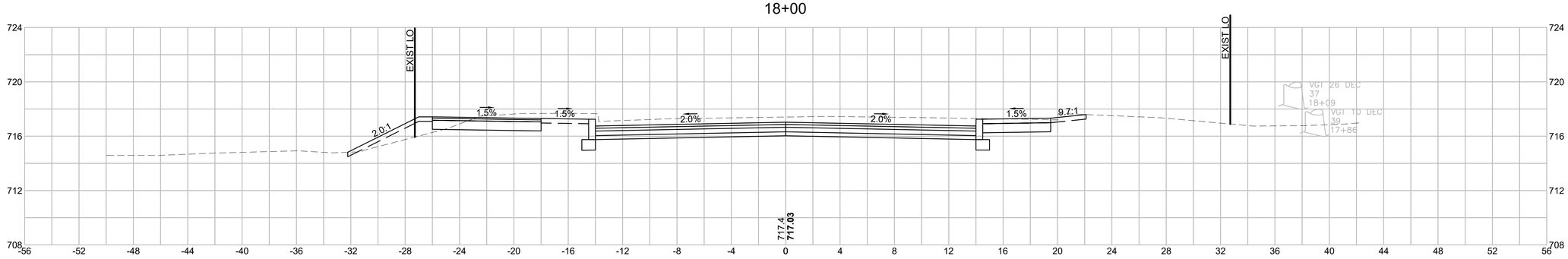
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	124	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:49 PM

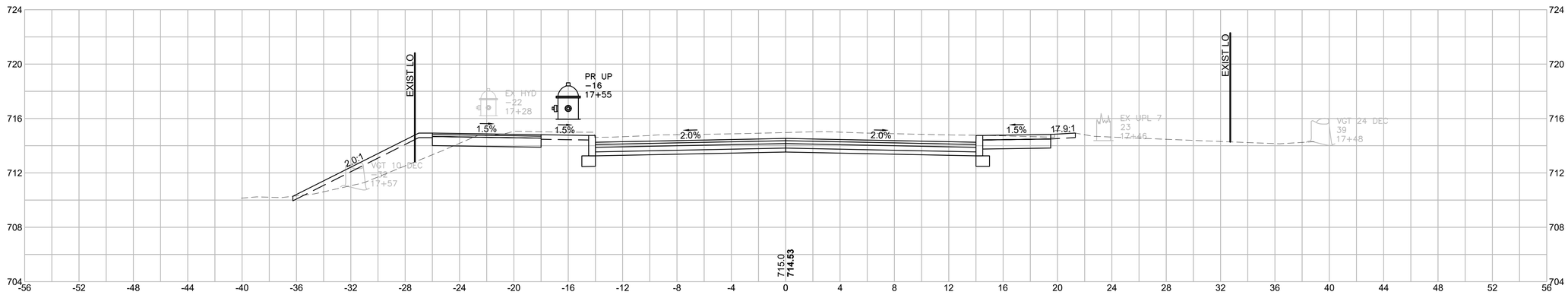
18+00



CUT: 60.01 SF

FILL: 3.49 SF

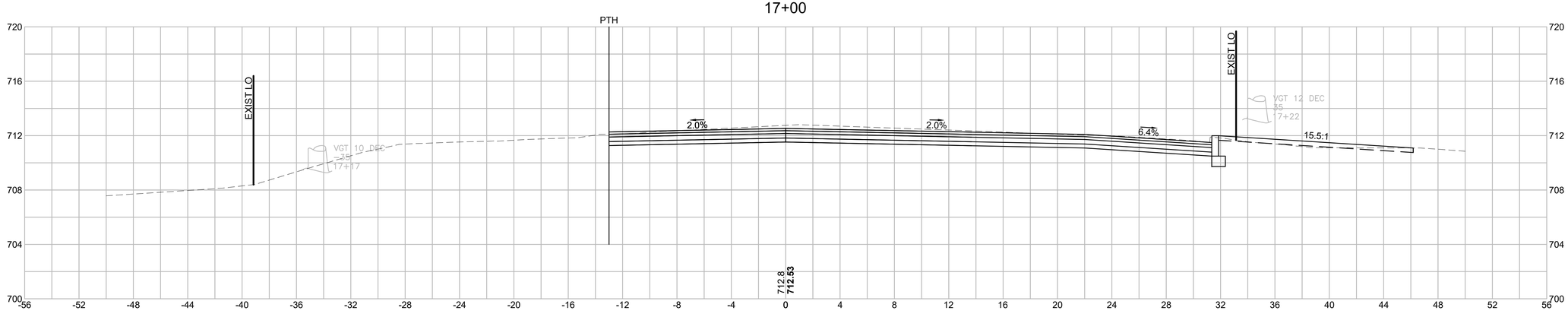
17+50



CUT: 57.74 SF

FILL: 10.95 SF

17+00



CUT: 42.26 SF

FILL: 0.90 SF

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

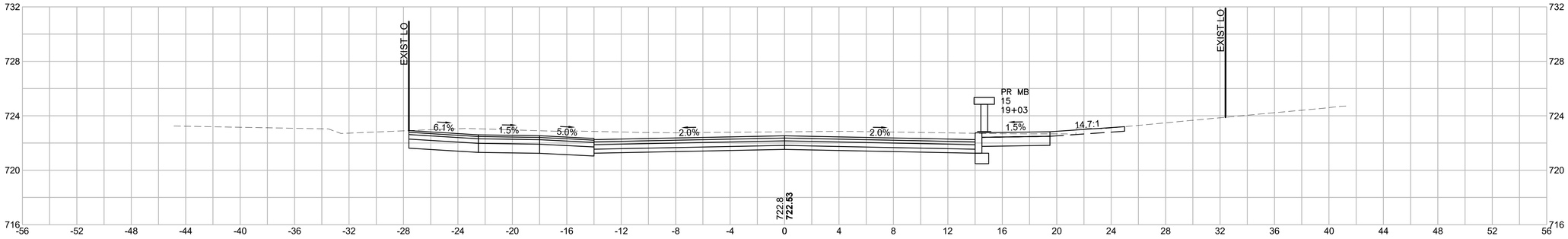
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	125	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:49 PM

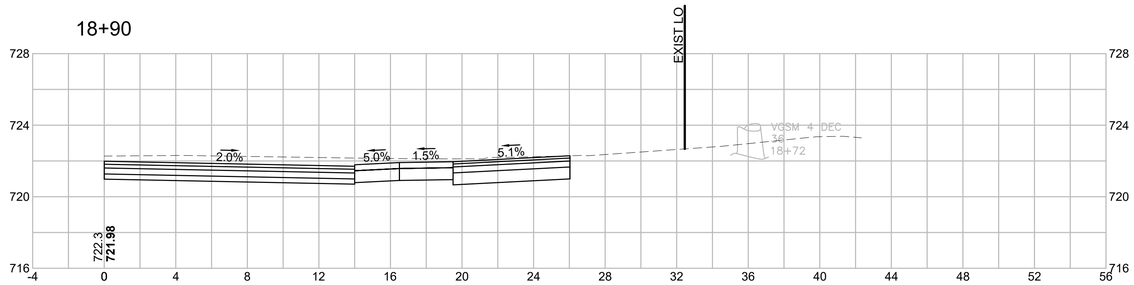
19+00



CUT: 70.09 SF

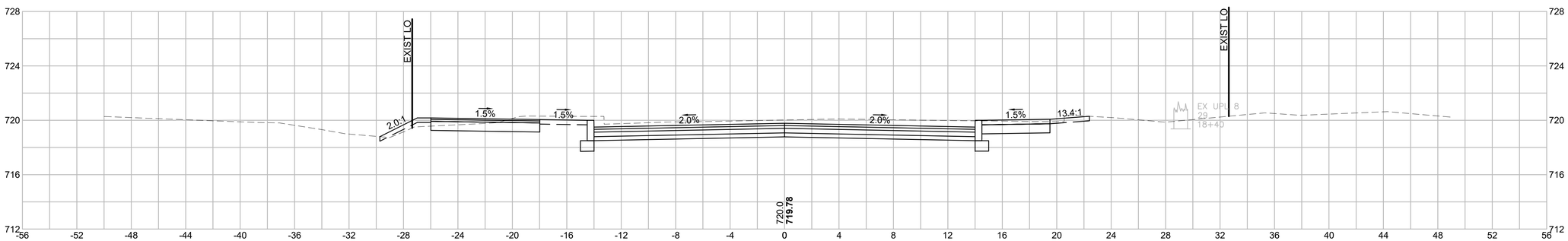
FILL: 0.00 SF

18+90



VGSM 4 DEC
36
18+72

18+50



EX UPL 8
29
18+40

CUT: 54.33 SF

FILL: 0.71 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

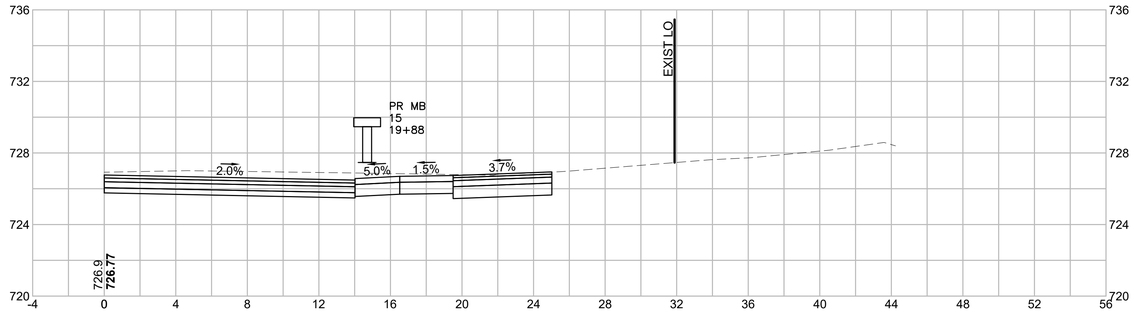
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	126	206
PROJECT FILE NO. 609219			

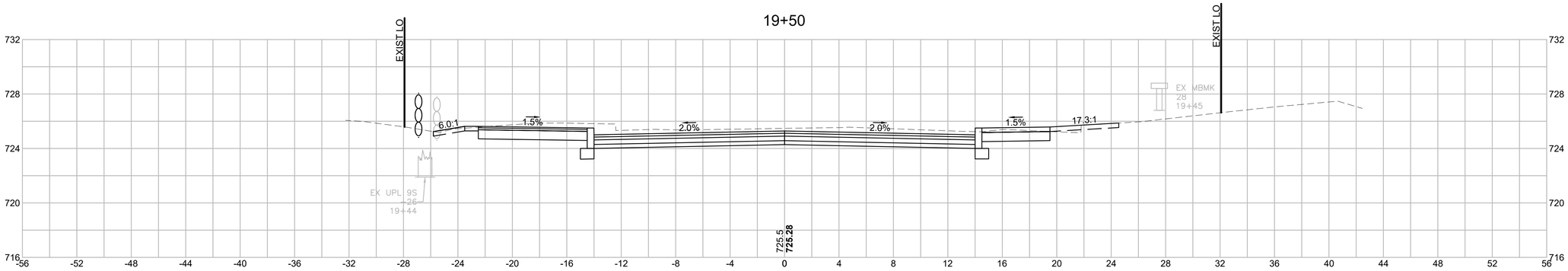
CROSS SECTIONS

609219_HDXSEC_19+77)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:49 PM

19+77



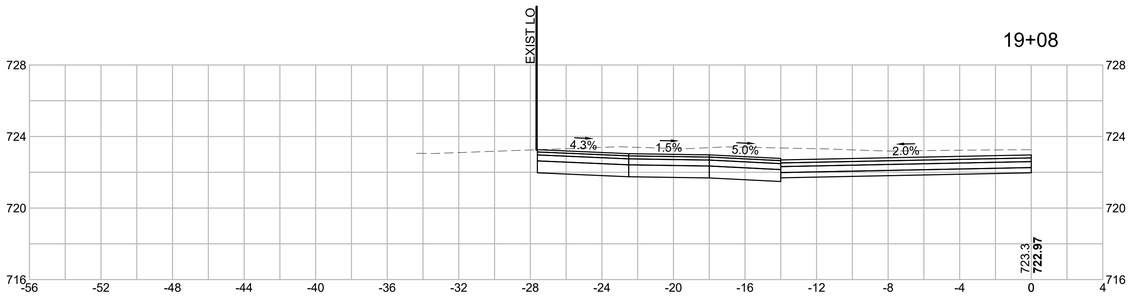
19+50



CUT: 54.64 SF

FILL: 0.26 SF

19+08



CUT: 42.10 SF

FILL: 0.00 SF

HOR. SCALE IN FEET

4 0 4 8

VER. SCALE IN FEET

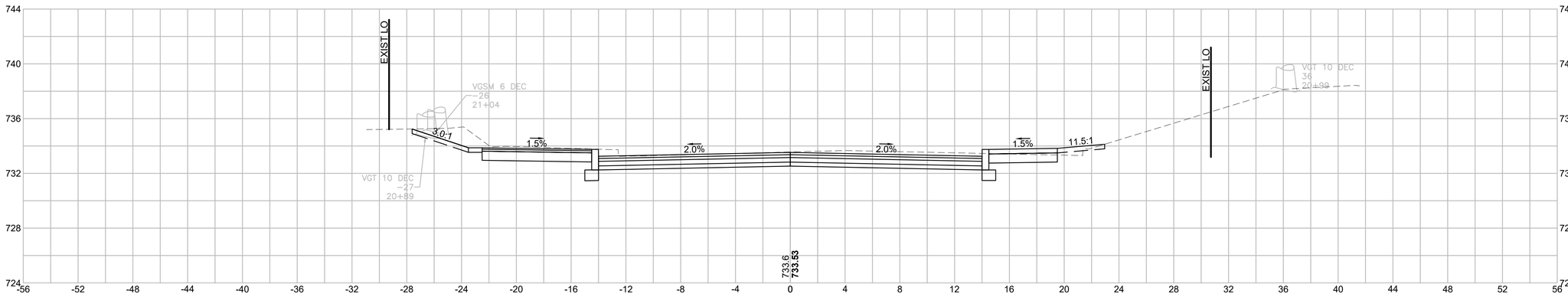
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	127	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

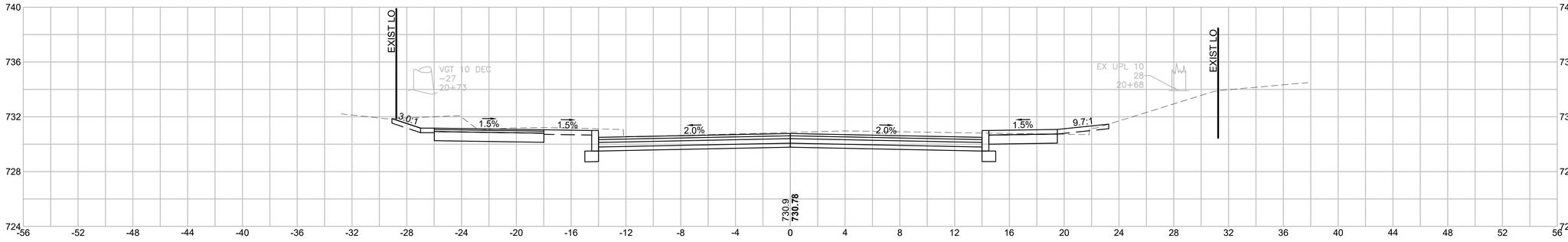
21+00



CUT: 51.75 SF

FILL: 0.47 SF

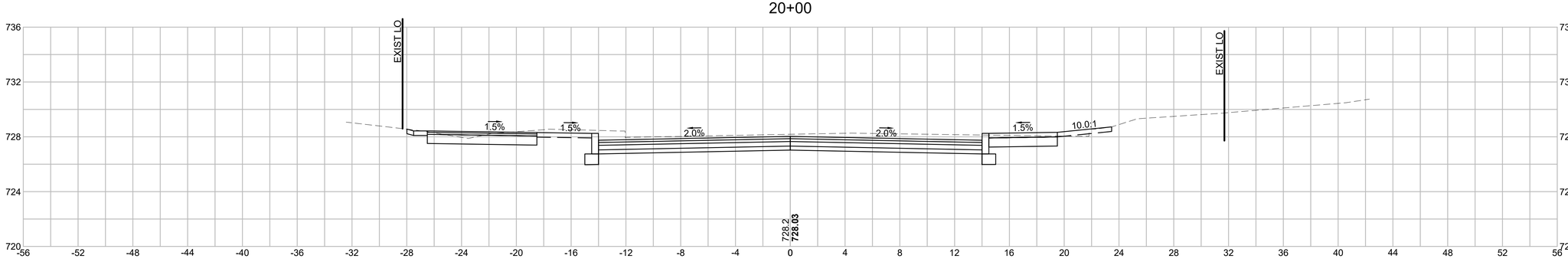
20+50



CUT: 55.16 SF

FILL: 0.34 SF

20+00



CUT: 52.49 SF

FILL: 0.17 SF

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

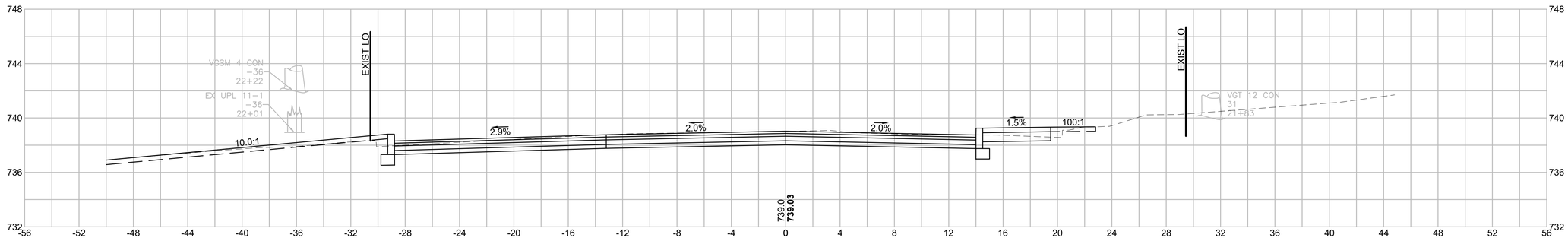
609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:51 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	128	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

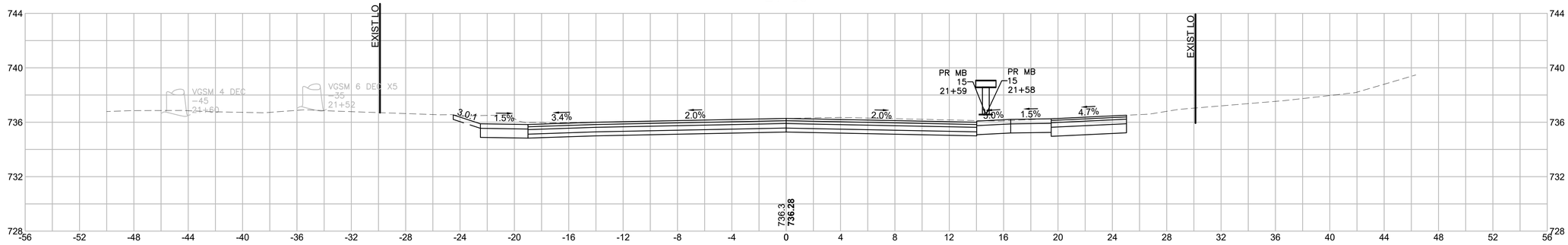
22+00



CUT: 34.35 SF

FILL: 4.62 SF

21+50



CUT: 47.56 SF

FILL: 0.00 SF

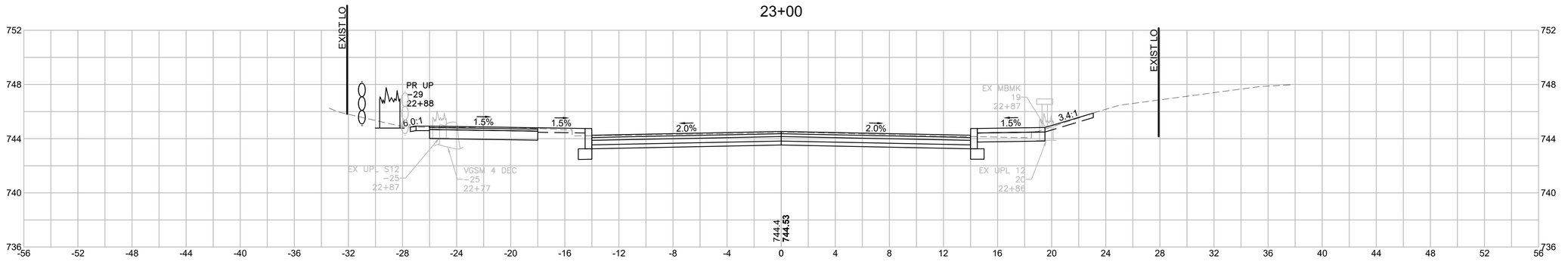
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:52 PM

HOLDEN
SHREWSBURY STREET

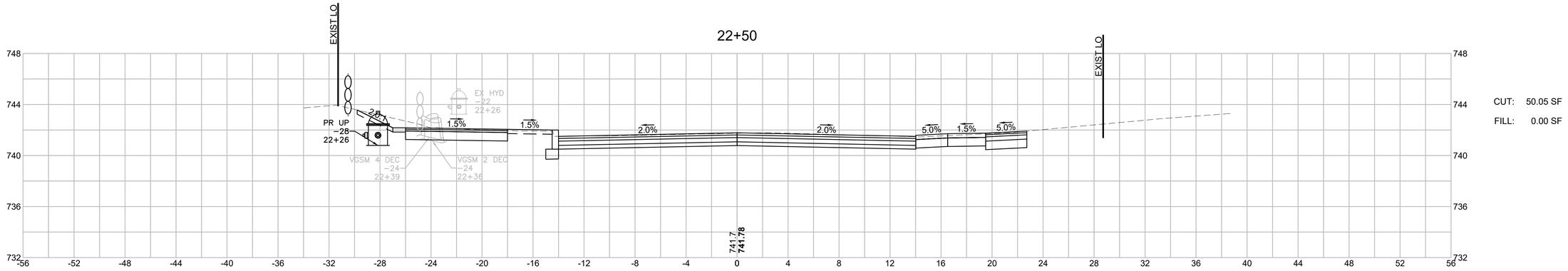
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	129	206
PROJECT FILE NO. 609219			

CROSS SECTIONS



CUT: 40.27 SF

FILL: 0.10 SF



CUT: 50.05 SF

FILL: 0.00 SF

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

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:52 PM

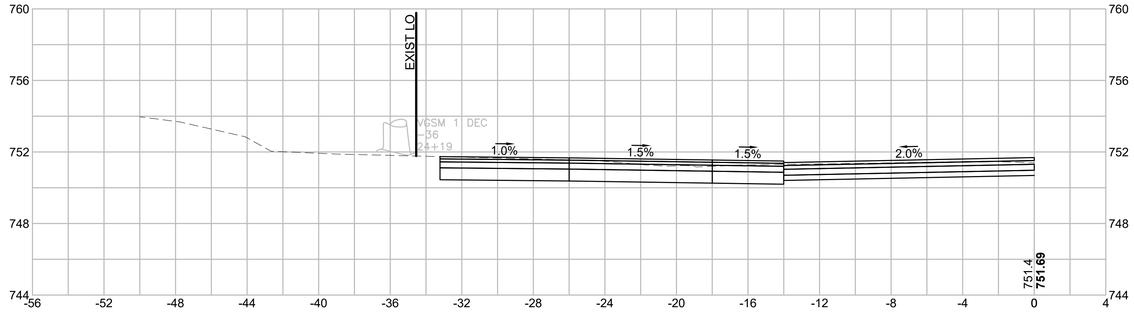
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	130	206
PROJECT FILE NO. 609219			

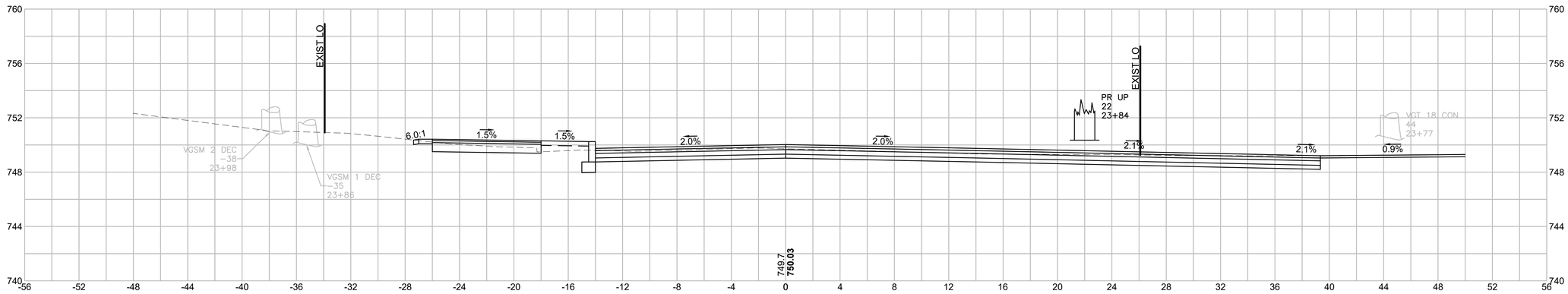
CROSS SECTIONS

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:52 PM

24+32



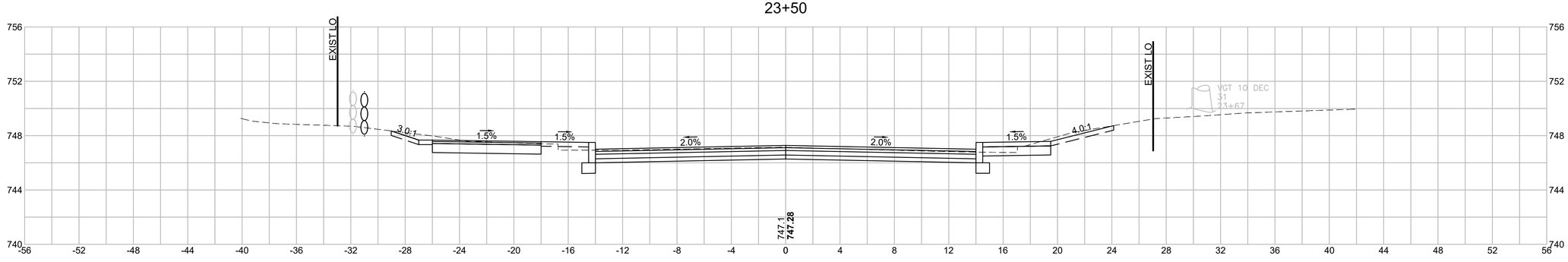
24+00



CUT: 34.52 SF

FILL: 1.16 SF

23+50



CUT: 41.20 SF

FILL: 0.44 SF

HOR. SCALE IN FEET

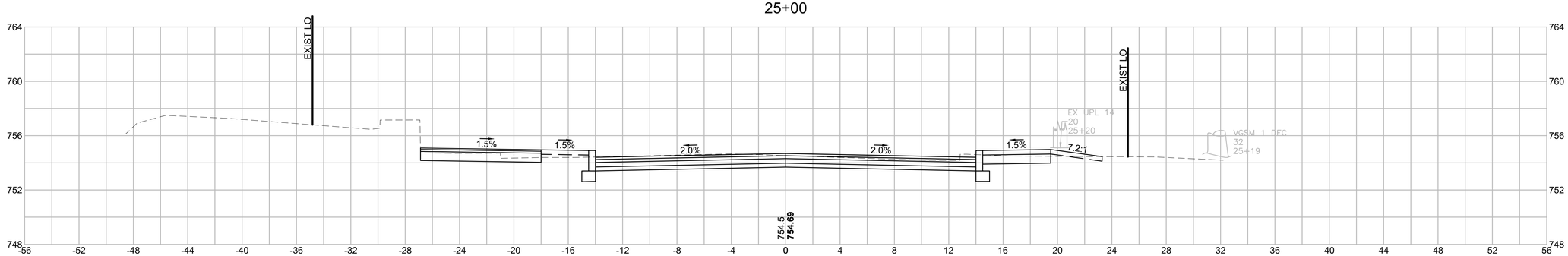
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	131	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

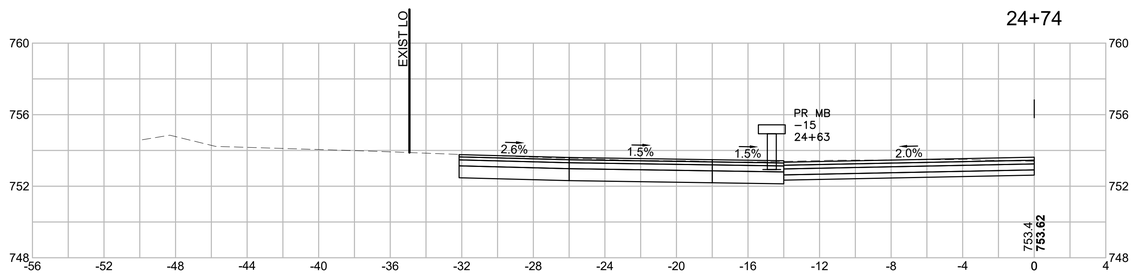
25+00



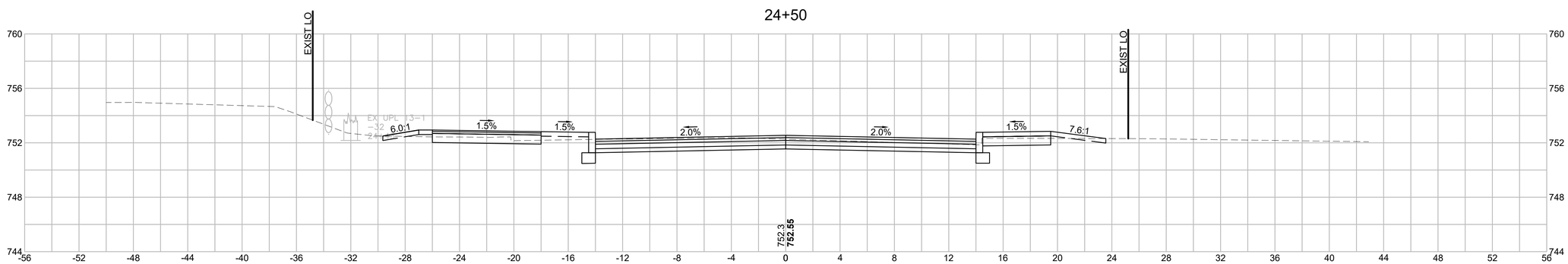
CUT: 42.55 SF

FILL: 0.74 SF

24+74



24+50



CUT: 31.41 SF

FILL: 1.13 SF

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

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:53 PM

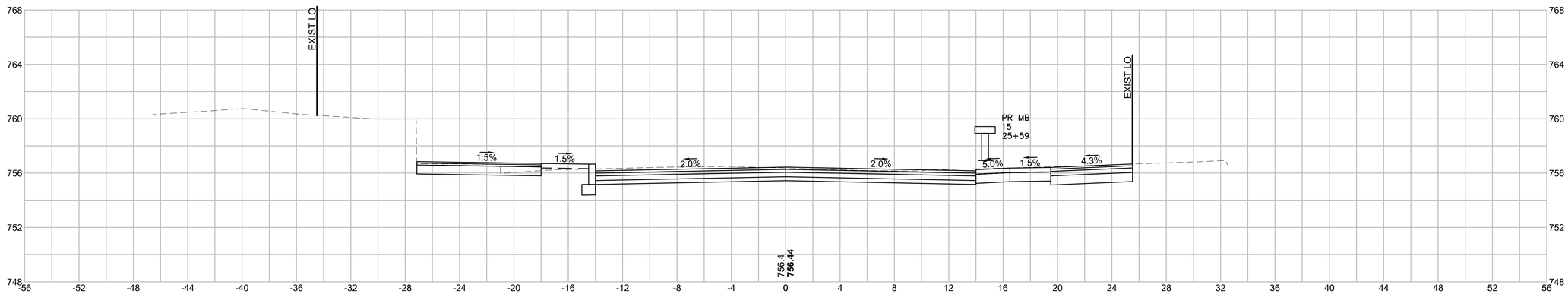
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	132	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:53 PM

25+50



CUT: 49.39 SF

FILL: 0.34 SF

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

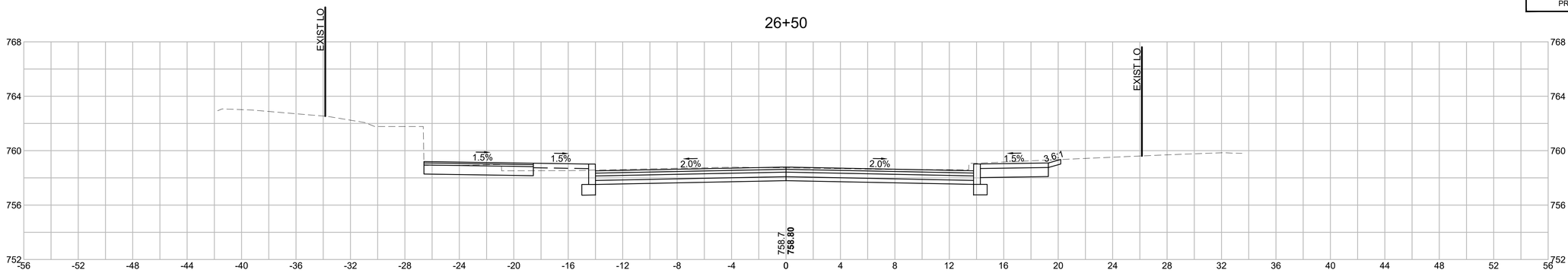
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	133	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:54 PM

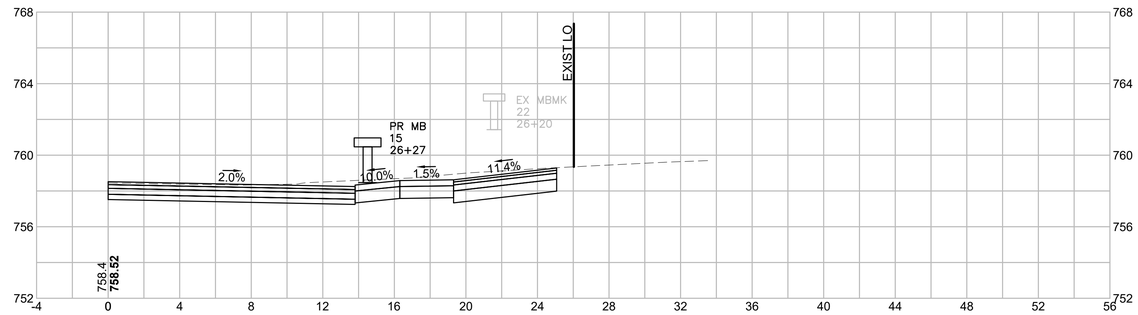
26+50



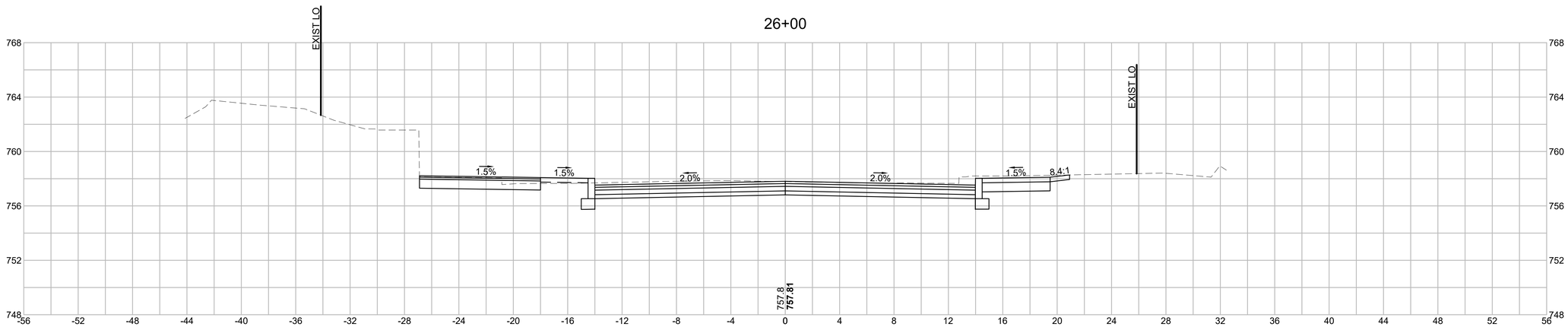
CUT: 53.59 SF

FILL: 0.66 SF

26+34



26+00



CUT: 65.18 SF

FILL: 0.22 SF

HOR. SCALE IN FEET
4 0 4 8

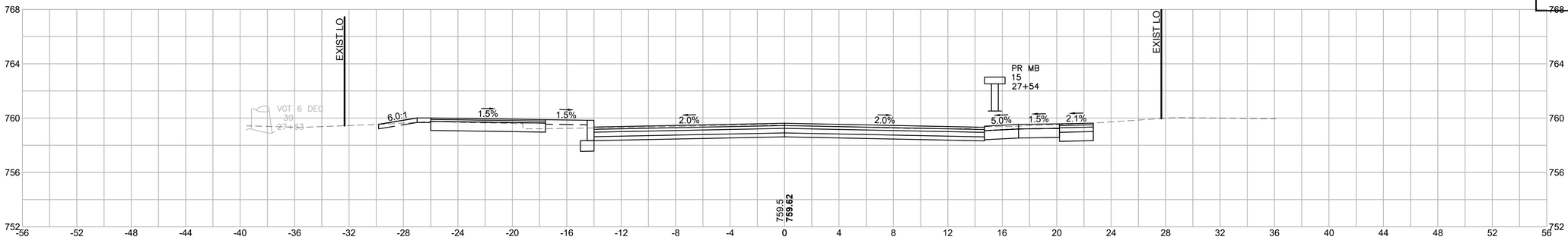
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	134	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

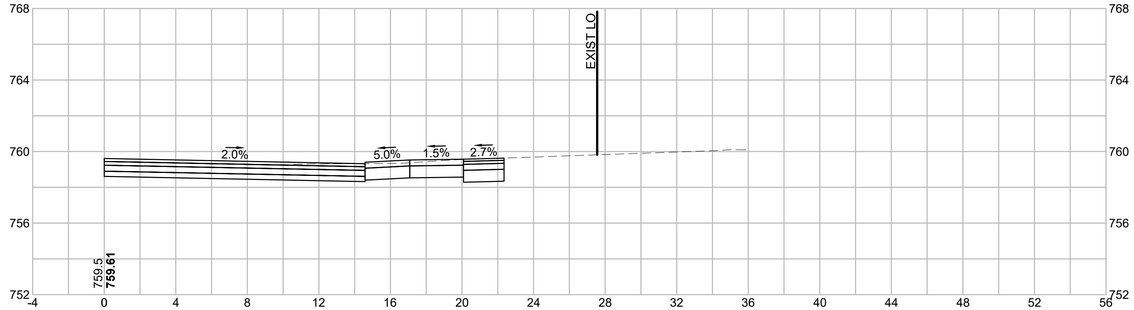
27+50



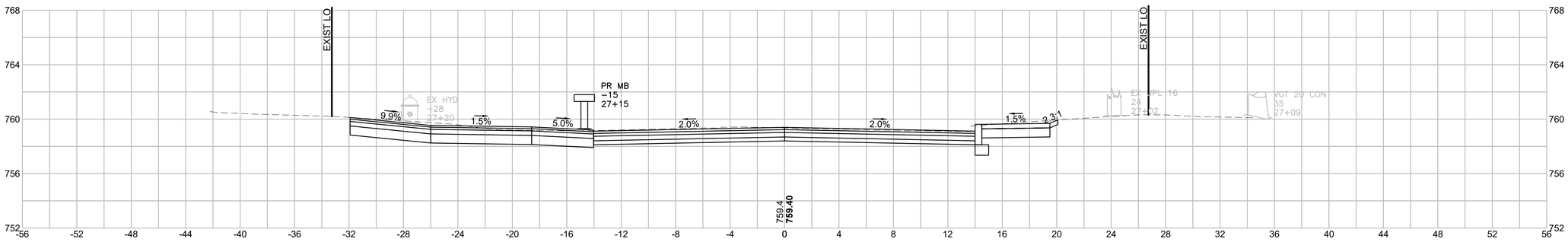
CUT: 40.14 SF

FILL: 0.75 SF

27+44



27+00



CUT: 57.94 SF

FILL: 0.00 SF

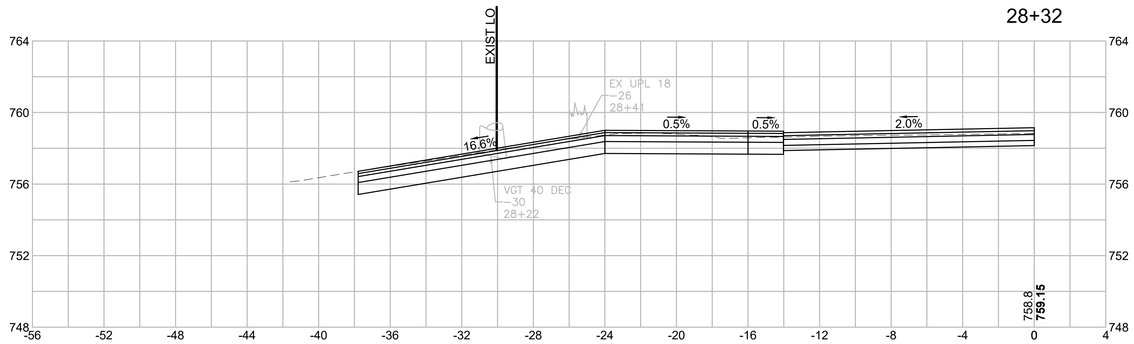
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

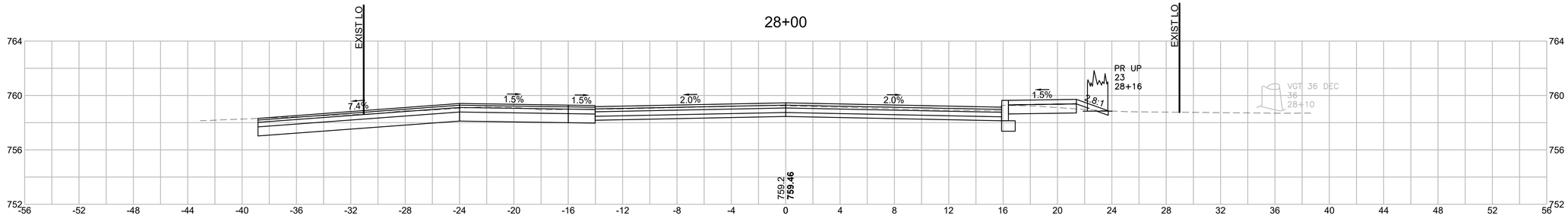
609219_HDIXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:54 PM

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	135	206
PROJECT FILE NO. 609219			

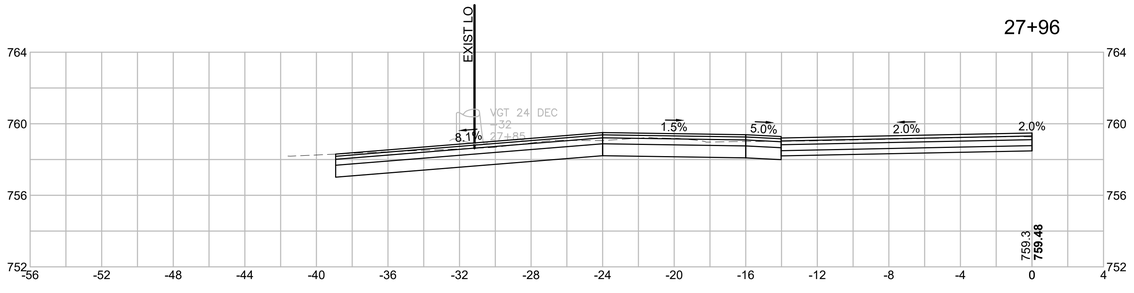
CROSS SECTIONS





CUT: 53.35 SF

FILL: 0.22 SF



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

609219_HDIXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:55 PM

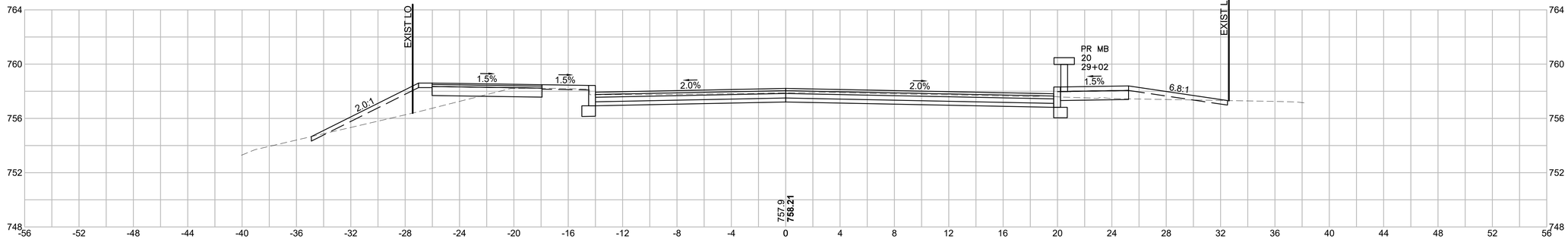
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	136	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_29+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:55 PM

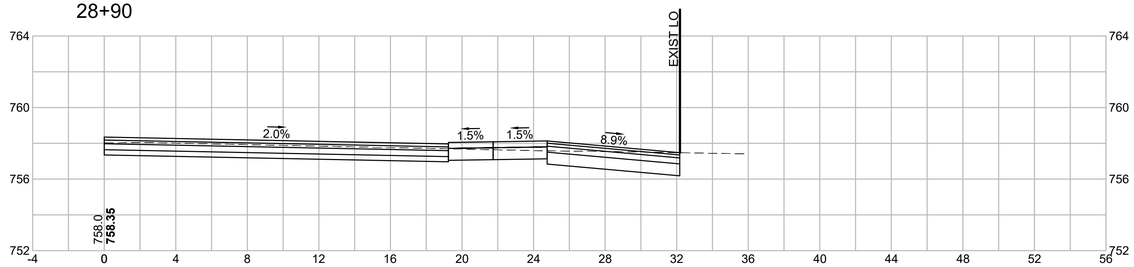
29+00



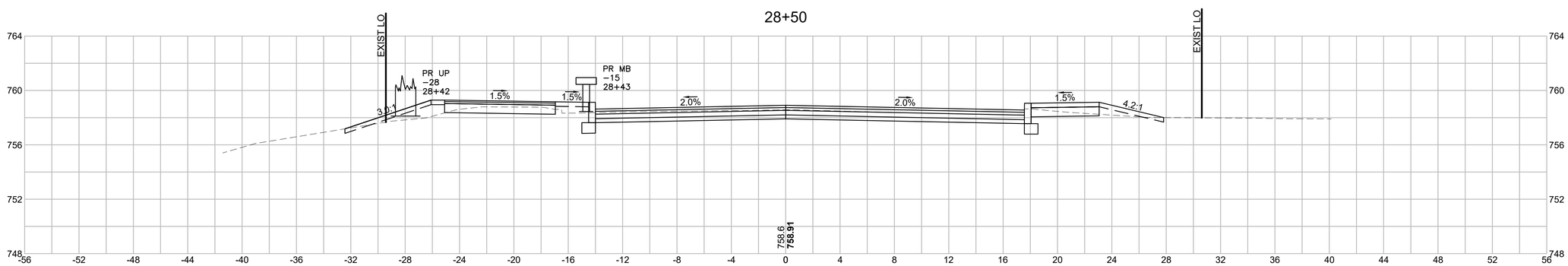
CUT: 32.49 SF

FILL: 4.76 SF

28+90



28+50



CUT: 29.82 SF

FILL: 4.34 SF

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

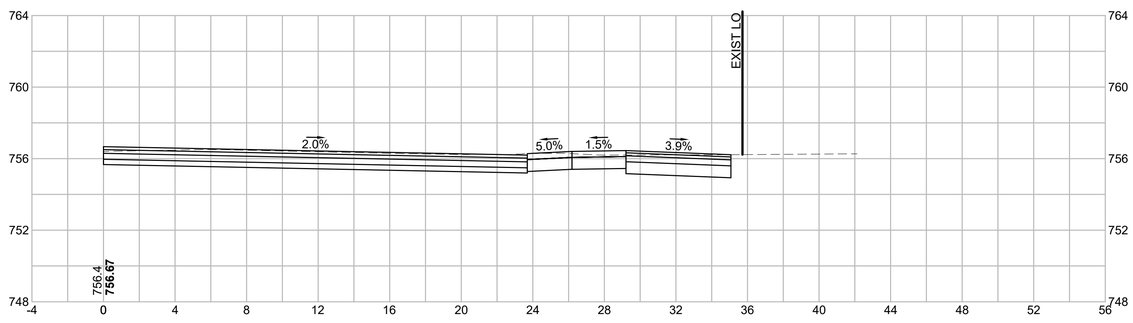
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	137	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

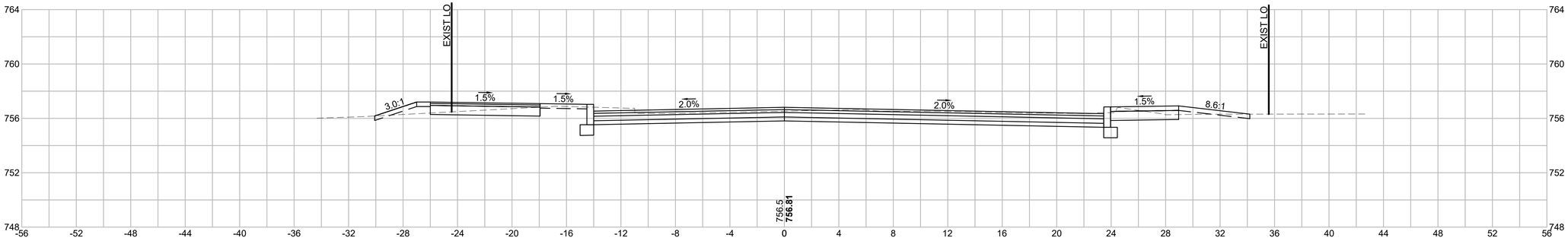
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:57 PM

30+10



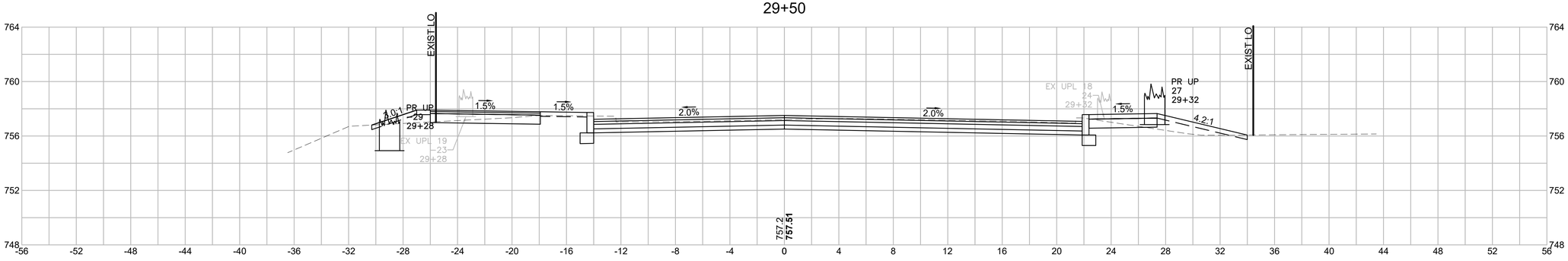
CUT: 33.75 SF
FILL: 0.00 SF

30+00



CUT: 44.32 SF
FILL: 1.47 SF

29+50



CUT: 38.16 SF
FILL: 3.89 SF

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

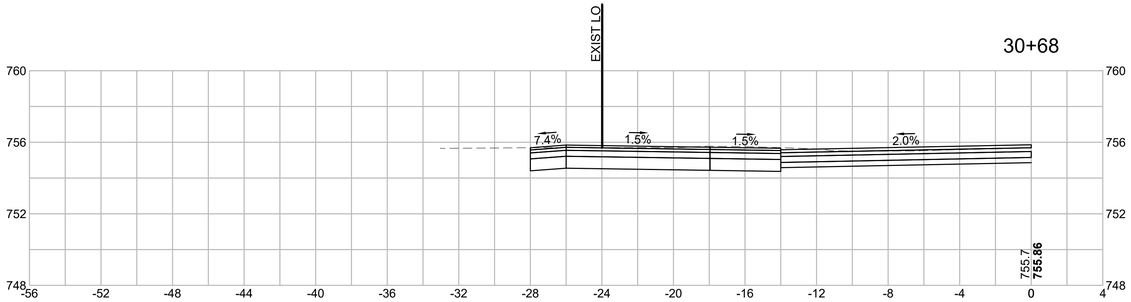
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	138	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

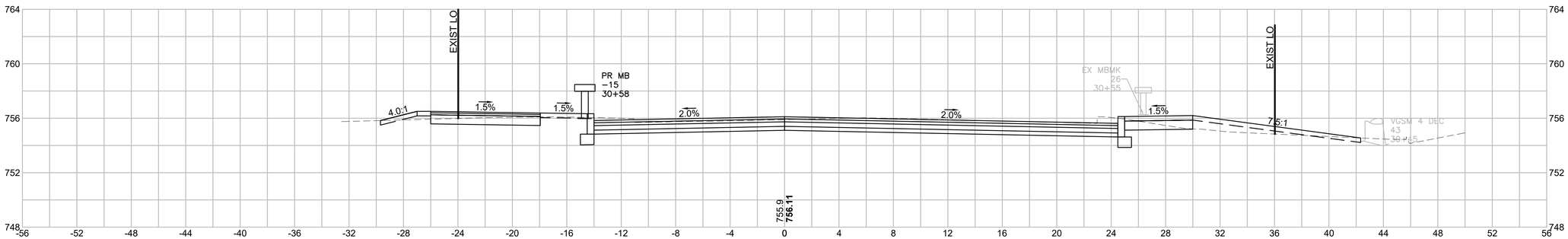
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:57 PM

30+68



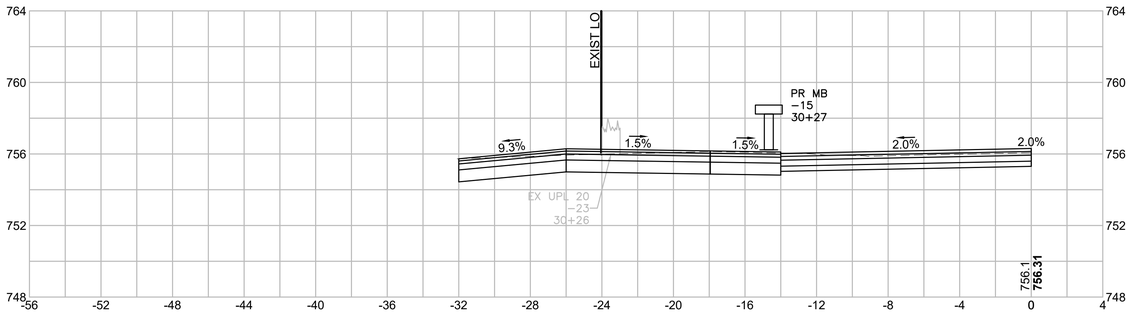
CUT: 29.68 SF
FILL: 0.00 SF

30+50



CUT: 50.31 SF
FILL: 1.85 SF

30+36



CUT: 31.66 SF
FILL: 0.00 SF

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

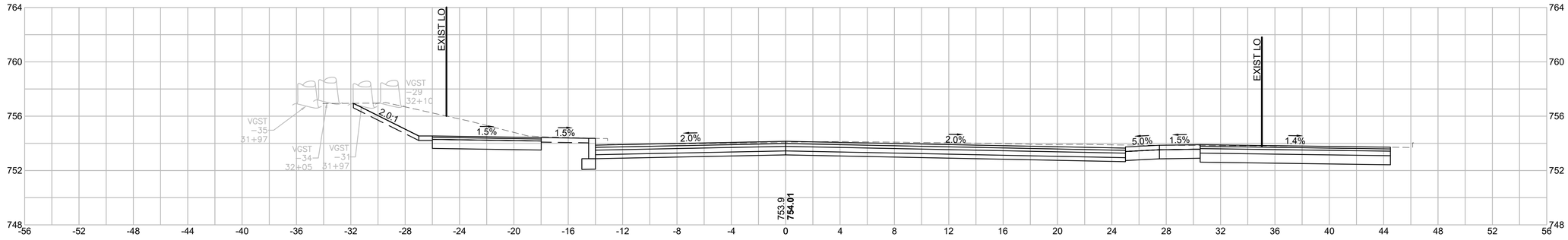
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	139	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

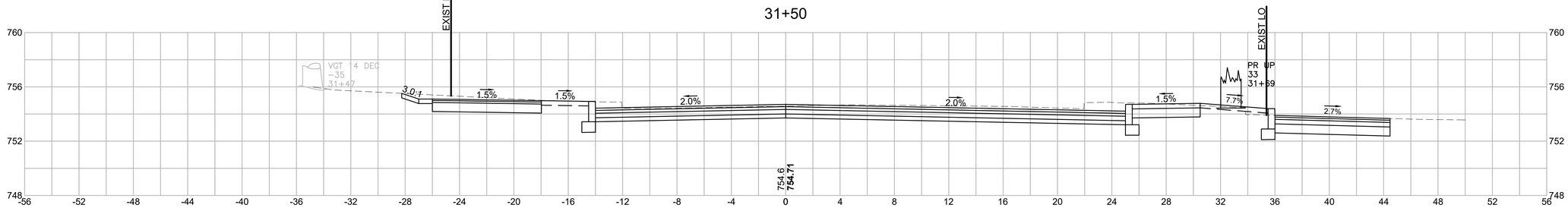
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:58 PM

31+90



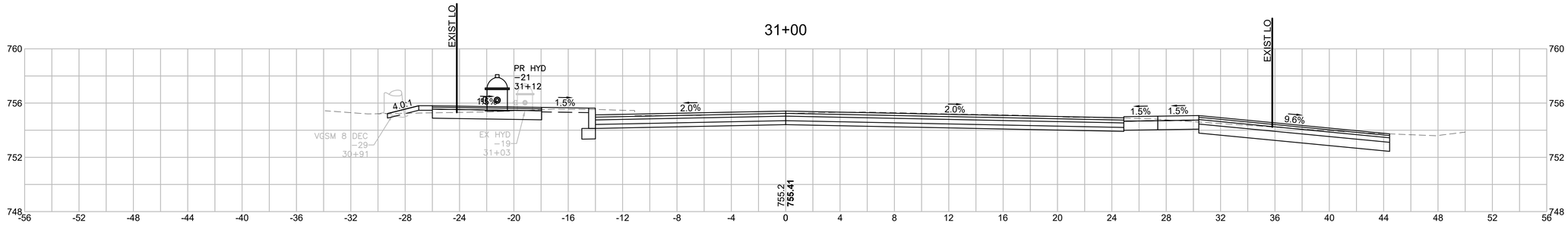
CUT: 91.71 SF
FILL: 0.00 SF

31+50



CUT: 62.91 SF
FILL: 0.00 SF

31+00



CUT: 64.06 SF
FILL: 0.29 SF

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

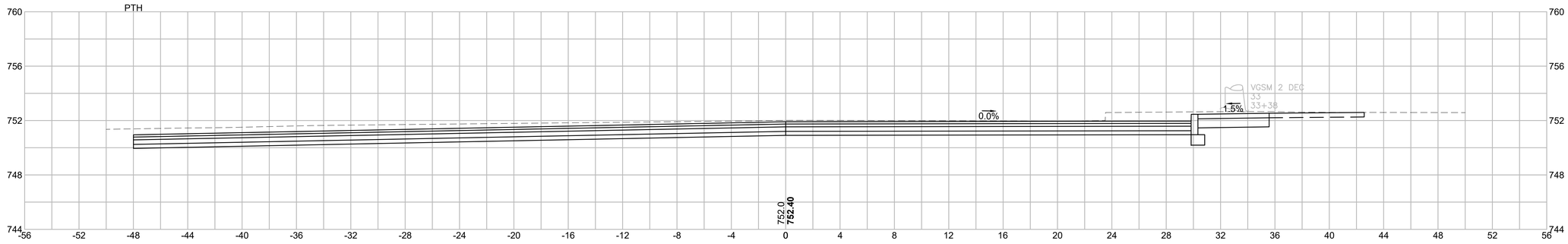
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	140	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

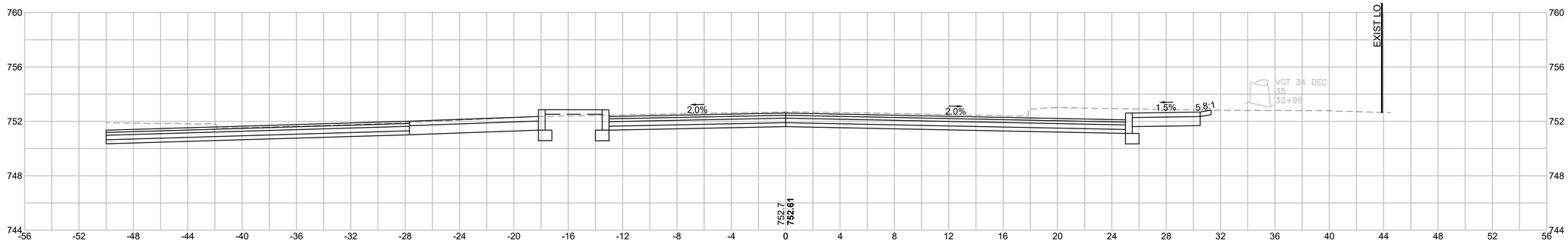
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:58 PM

33+50



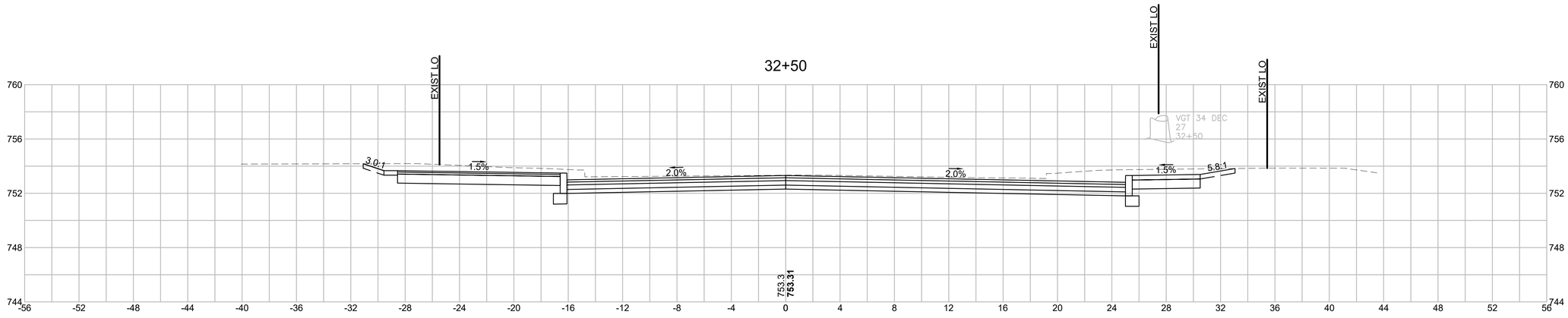
CUT: 126.06 SF
FILL: 0.00 SF

33+00



CUT: 78.74 SF
FILL: 0.00 SF

32+50



CUT: 80.17 SF
FILL: 0.00 SF

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

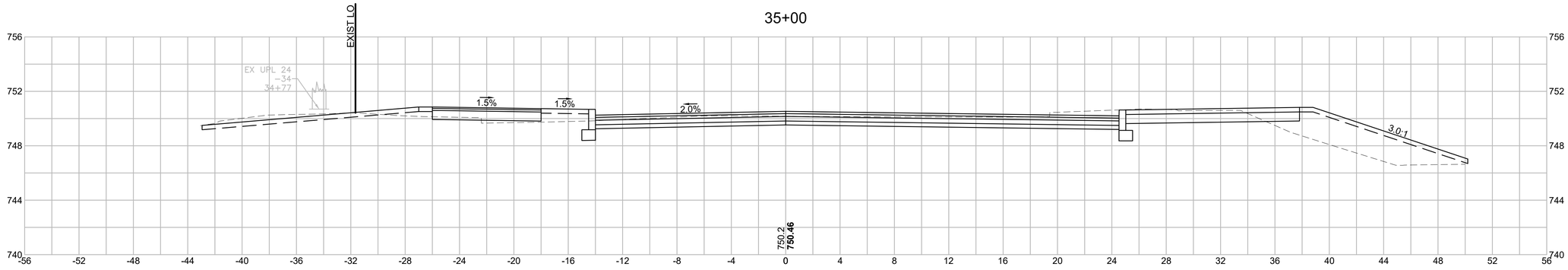
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	141	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

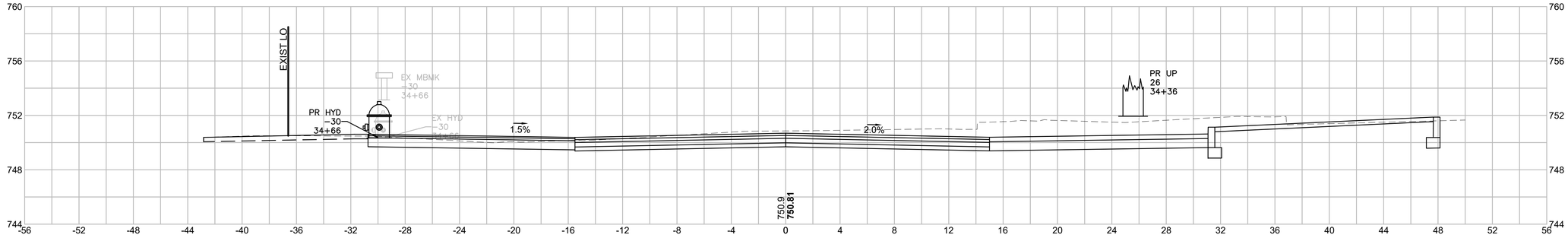
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:59 PM

35+00



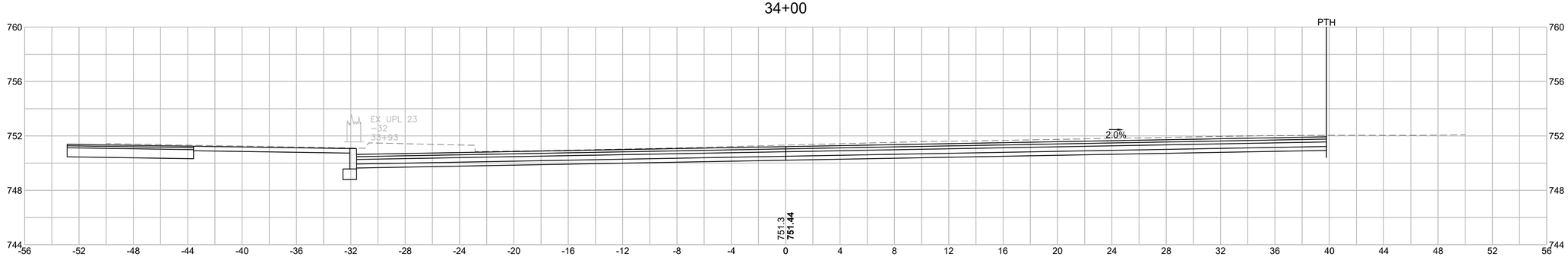
CUT: 53.94 SF
FILL: 13.10 SF

34+50



CUT: 63.46 SF
FILL: 4.38 SF

34+00



CUT: 143.33 SF
FILL: 0.00 SF

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

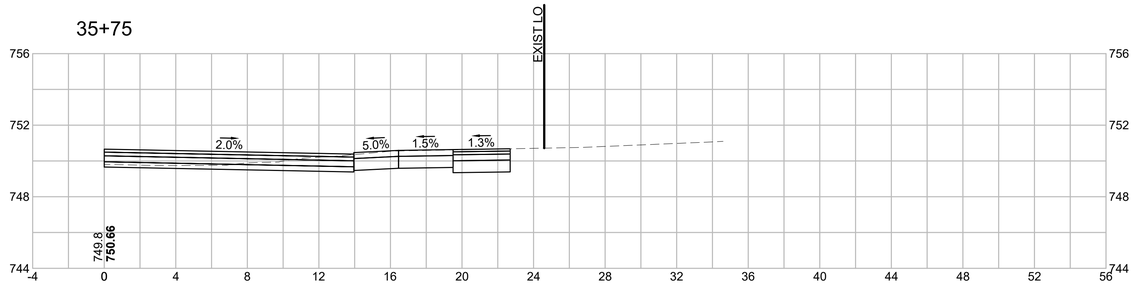
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	142	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

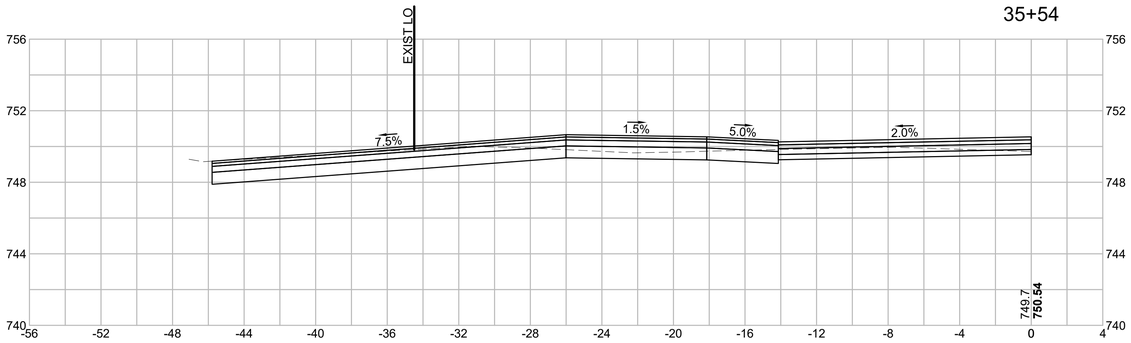
609219_HDIXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:59 PM

35+75



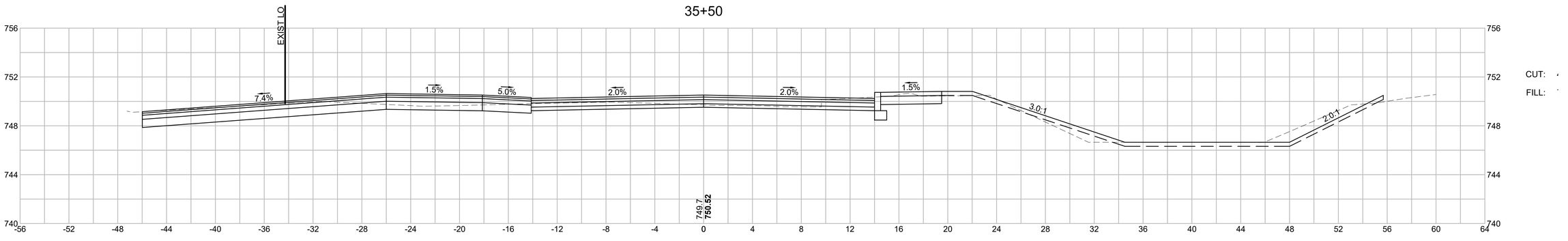
CUT: 14.88 SF
FILL: 0.00 SF

35+54



CUT: 33.23 SF
FILL: 0.00 SF

35+50



CUT: [illegible]
FILL: [illegible]

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

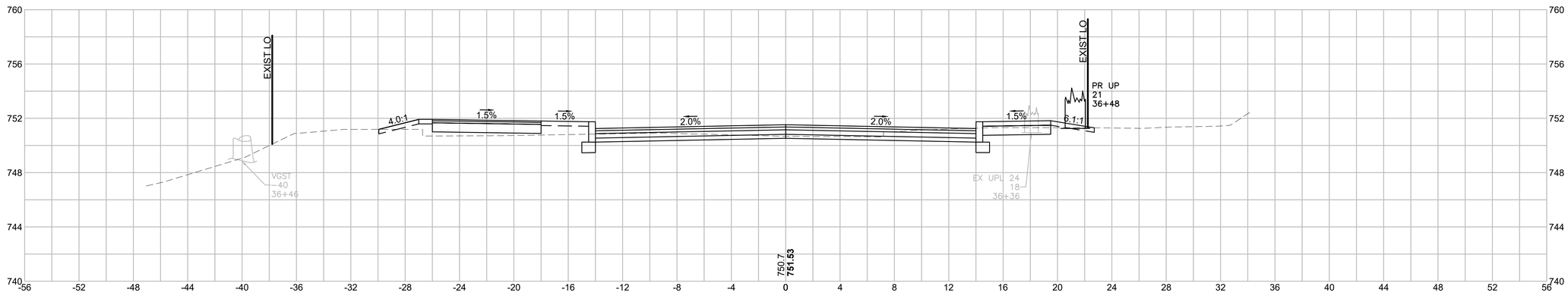
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	143	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 1:59 PM

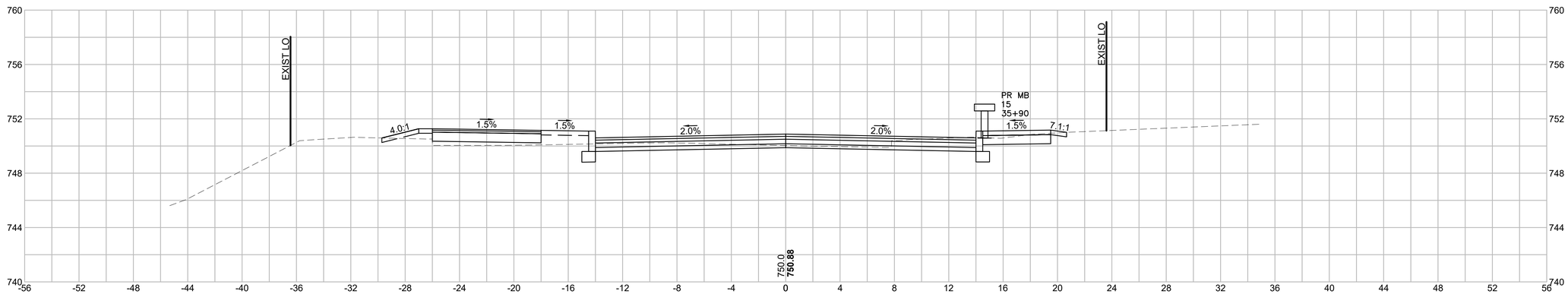
36+50



CUT: 19.31 SF

FILL: 4.91 SF

36+00



CUT: 18.97 SF

FILL: 4.70 SF

HOR. SCALE IN FEET
4 0 4 8

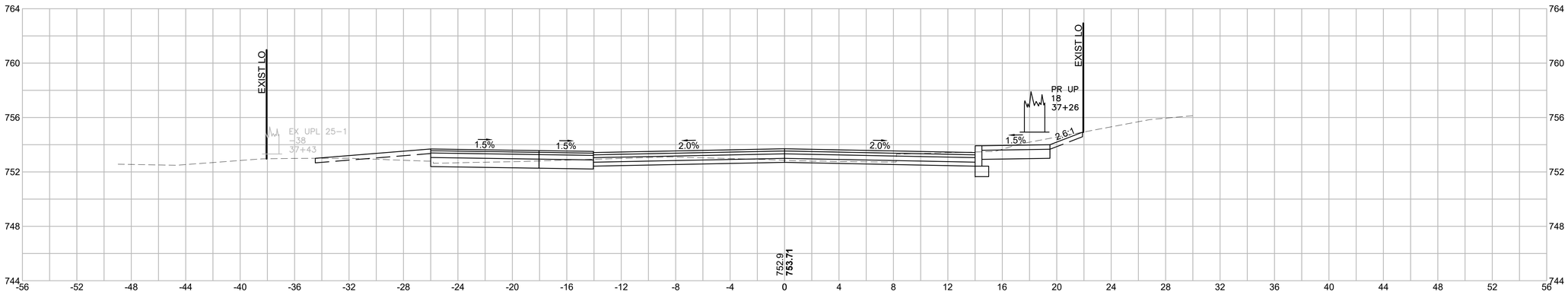
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	144	206
PROJECT FILE NO. 609219			

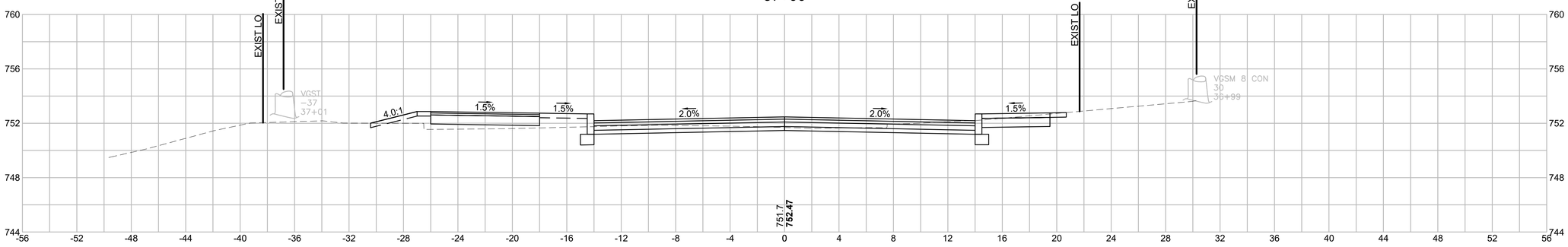
CROSS SECTIONS

37+50



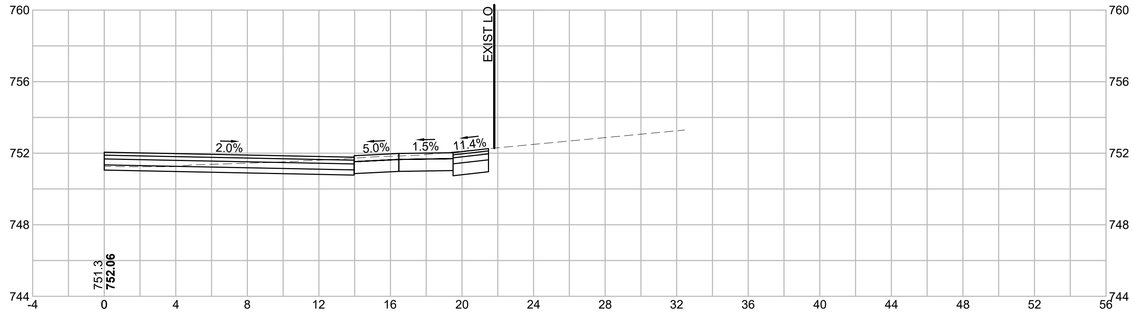
CUT: 28.45 SF
FILL: 1.96 SF

37+00



CUT: 20.80 SF
FILL: 5.76 SF

36+80



CUT: 14.63 SF
FILL: 0.00 SF

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

609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:00 PM

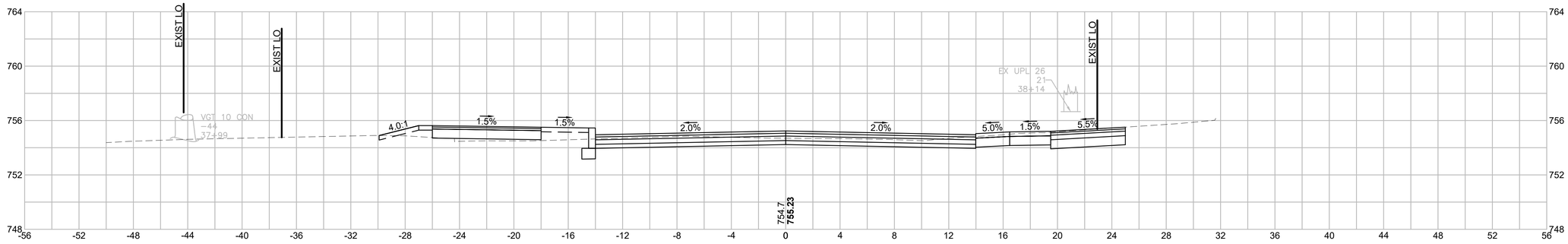
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	145	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

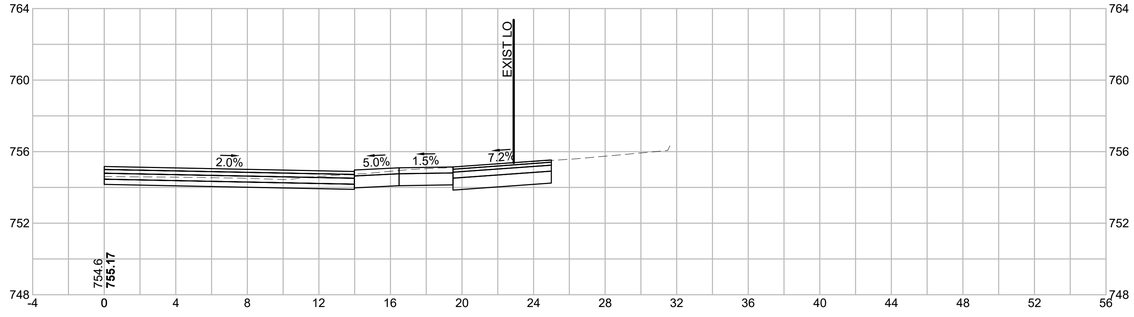
609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:00 PM

38+00



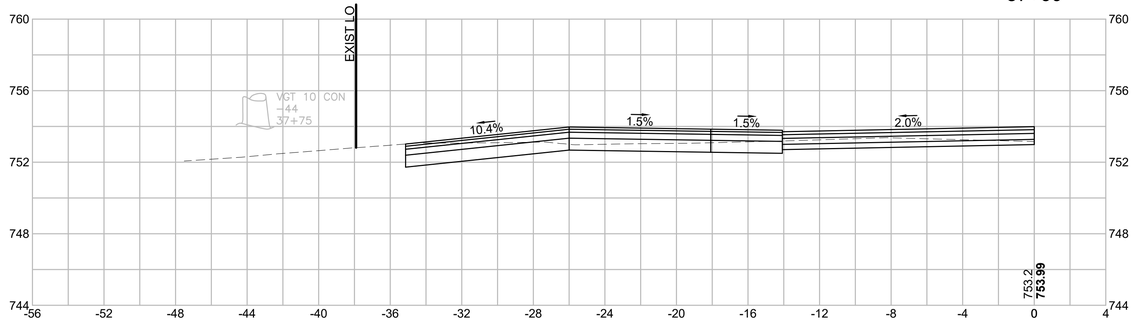
CUT: 30.36 SF
FILL: 3.50 SF

37+98



CUT: 17.68 SF
FILL: 0.00 SF

37+60



CUT: 19.71 SF
FILL: 0.00 SF

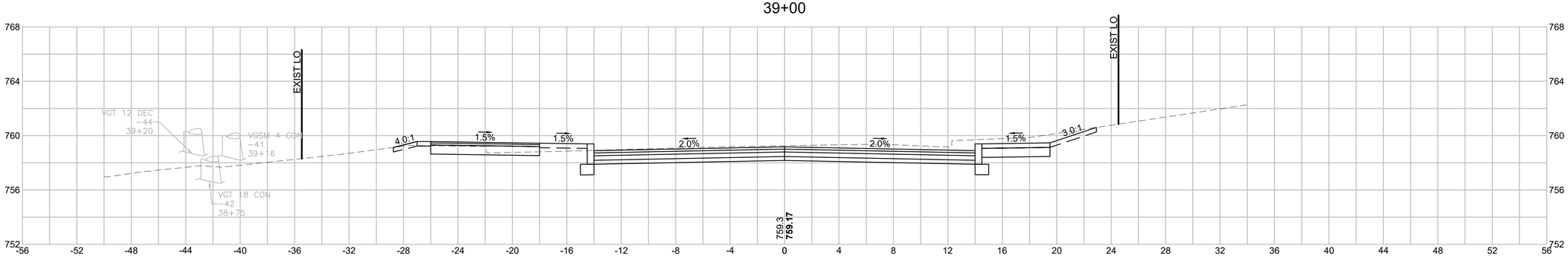
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	146	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

39+00



CUT: 49.96 SF

FILL: 0.74 SF

38+50

CUT: 54.32 SF

FILL: 0.00 SF

38+33

CUT: 26.92 SF

FILL: 0.00 SF

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

609219_HDXSEC_39+00)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:01 PM

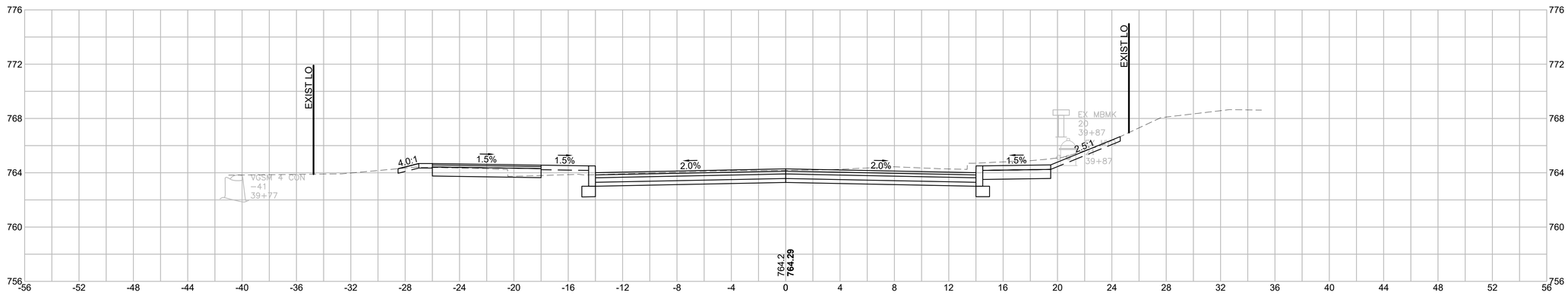
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	147	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:03 PM

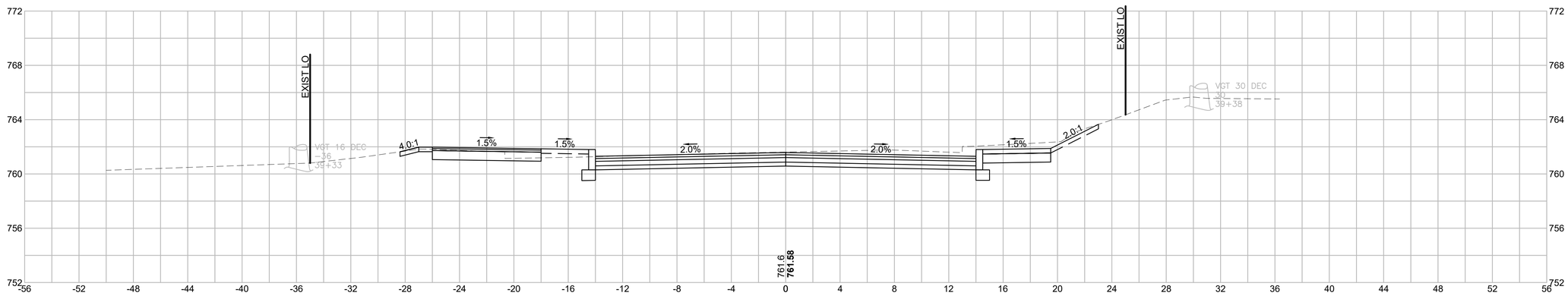
40+00



CUT: 45.22 SF

FILL: 1.08 SF

39+50



CUT: 49.00 SF

FILL: 0.85 SF

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

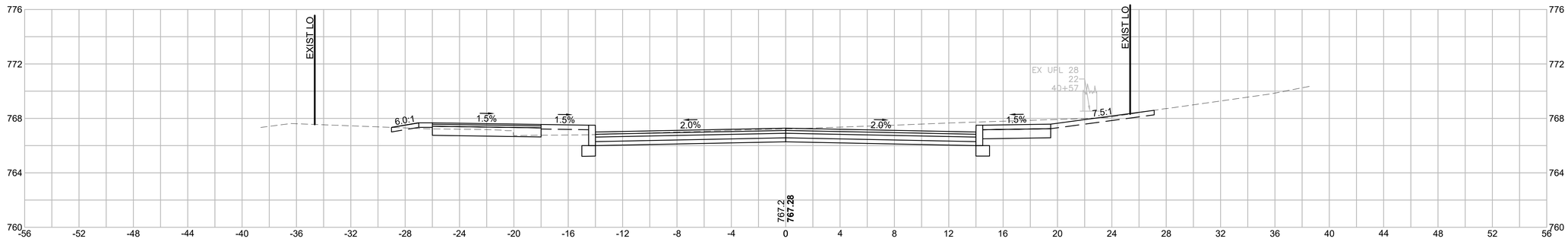
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	148	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

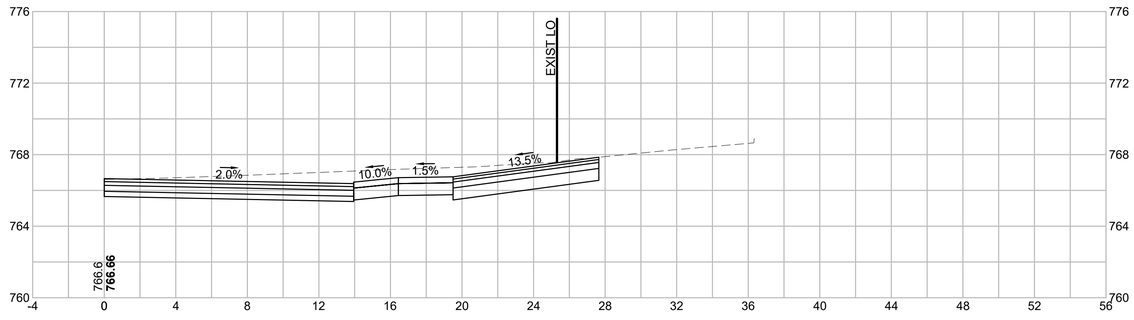
609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:03 PM

40+50



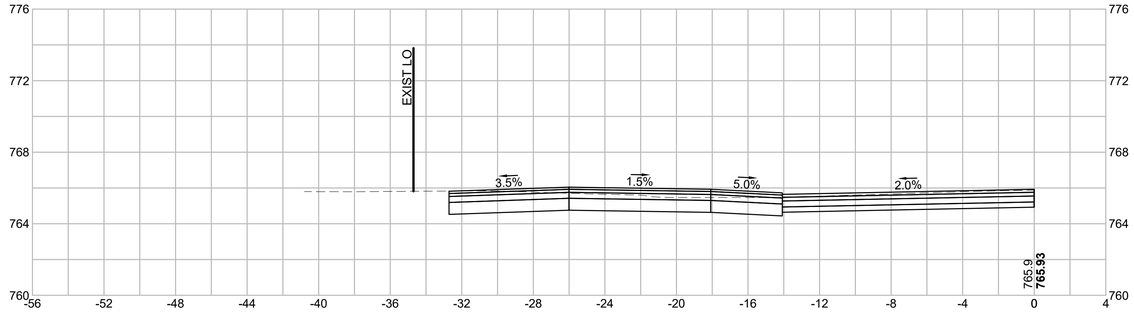
CUT: 47.10 SF
FILL: 1.37 SF

40+40



CUT: 38.82 SF
FILL: 0.00 SF

40+28



CUT: 30.26 SF
FILL: 0.00 SF

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

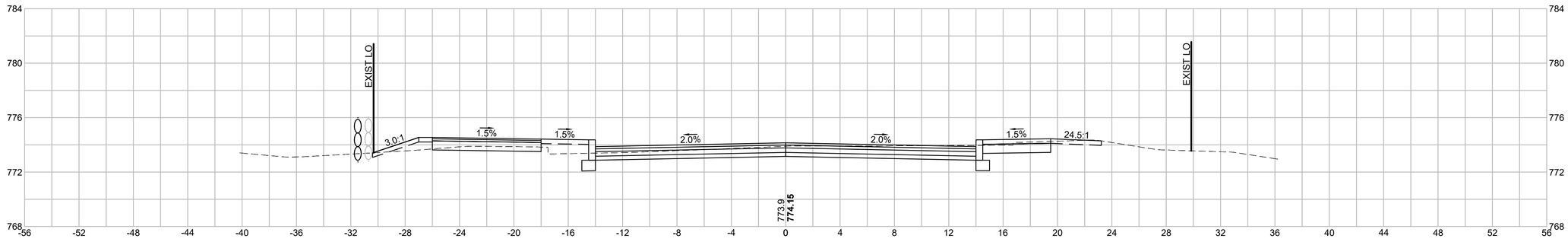
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	149	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

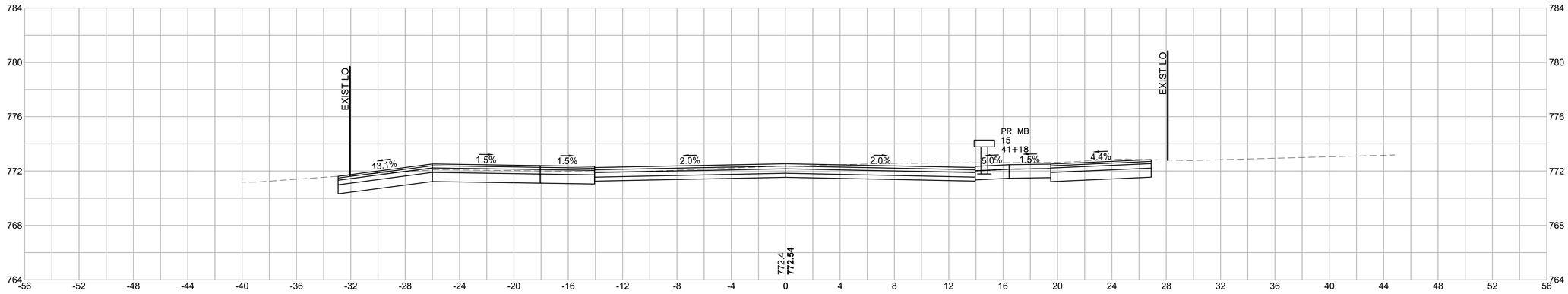
609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:03 PM

41+50



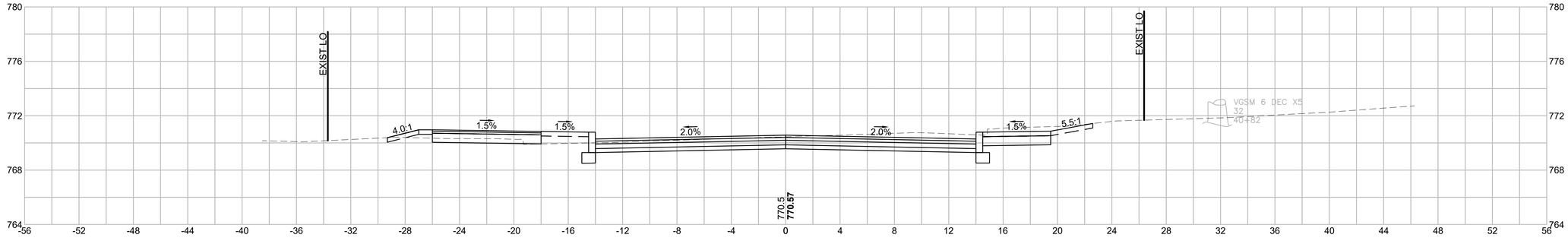
CUT: 31.18 SF
FILL: 3.10 SF

41+28



CUT: 60.46 SF
FILL: 0.00 SF

41+00



CUT: 41.15 SF
FILL: 2.02 SF

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

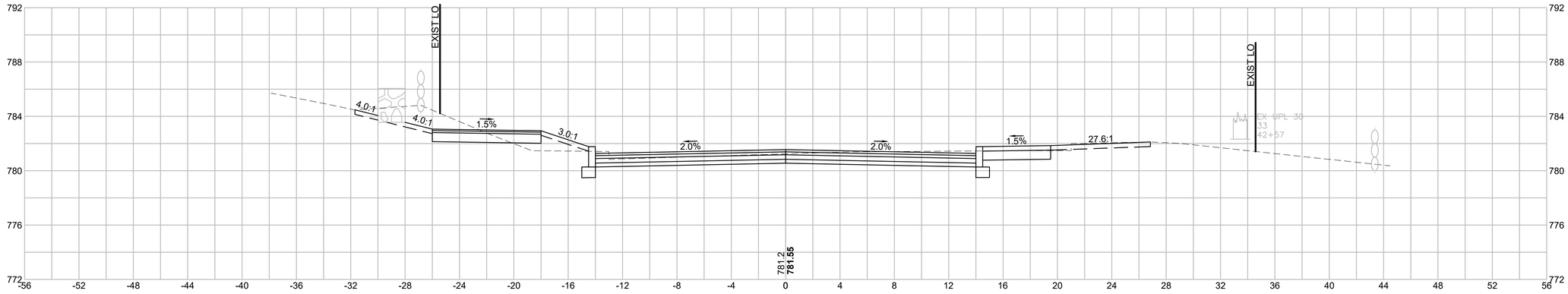
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	150	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_47+50)_EXPLODED.DWG Plotted on 9-Jan-2023 12:11 AM

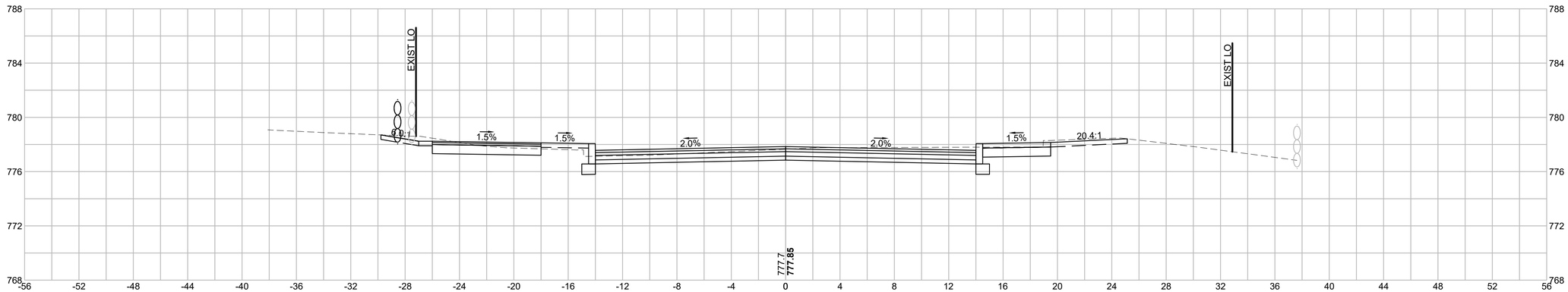
42+50



CUT: 58.67 SF

FILL: 0.14 SF

42+00



CUT: 40.75 SF

FILL: 0.39 SF

HOR. SCALE IN FEET

4 0 4 8

4 0 4 8

VER. SCALE IN FEET

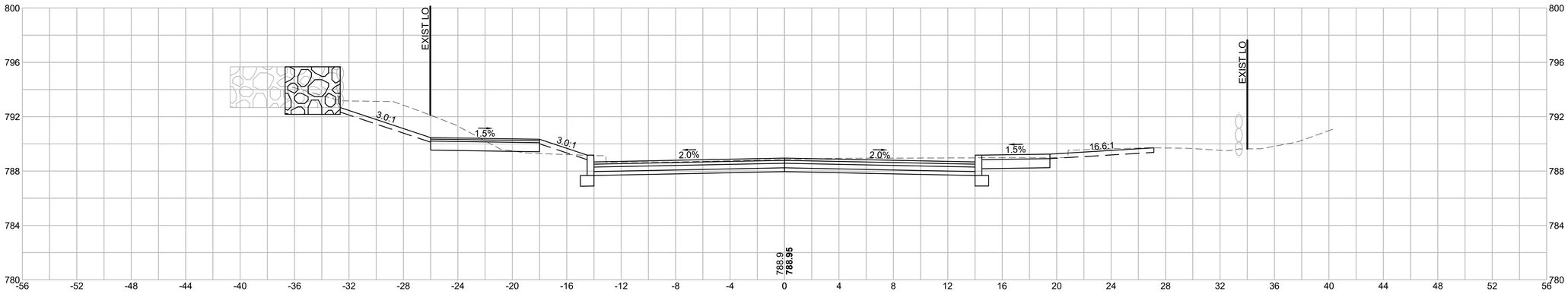
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	151	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

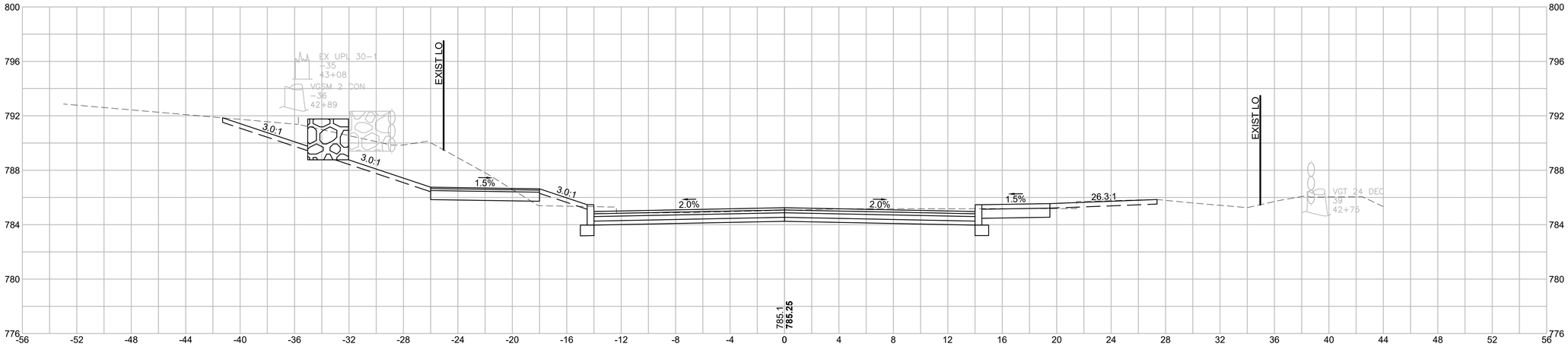
609219_HDXSEC_47+50)_EXPLODED.DWG Plotted on 9-Jan-2023 12:12 AM

43+50



CUT: 60.21 SF
FILL: 0.00 SF

43+00



CUT: 66.08 SF
FILL: 0.13 SF

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

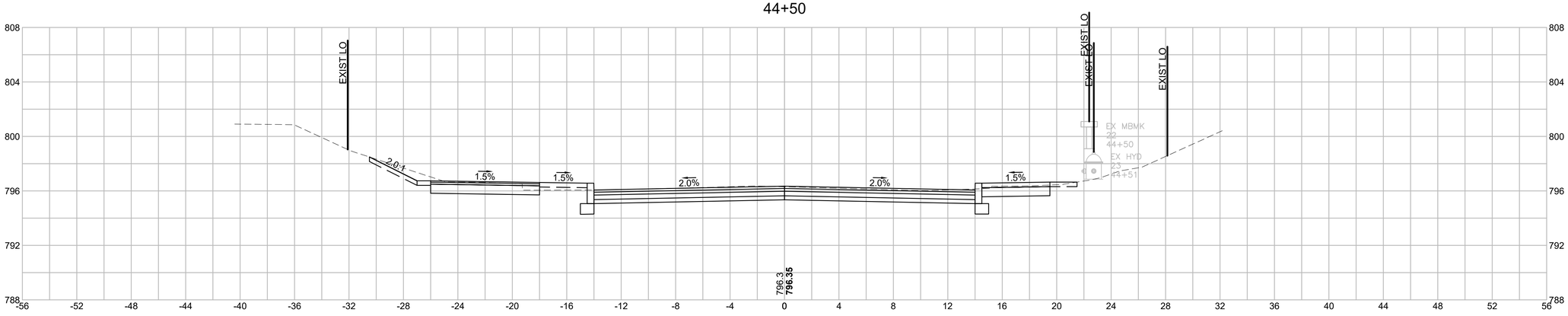
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	152	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_47+50)_EXPLODED.DWG Plotted on 9-Jan-2023 12:13 AM

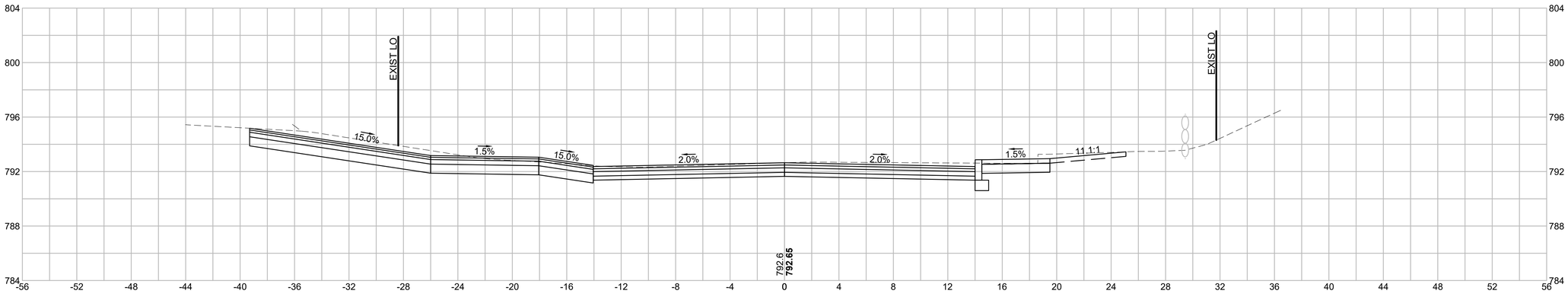
44+50



CUT: 43.95 SF

FILL: 0.62 SF

44+00



CUT: 66.15 SF

FILL: 0.00 SF

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

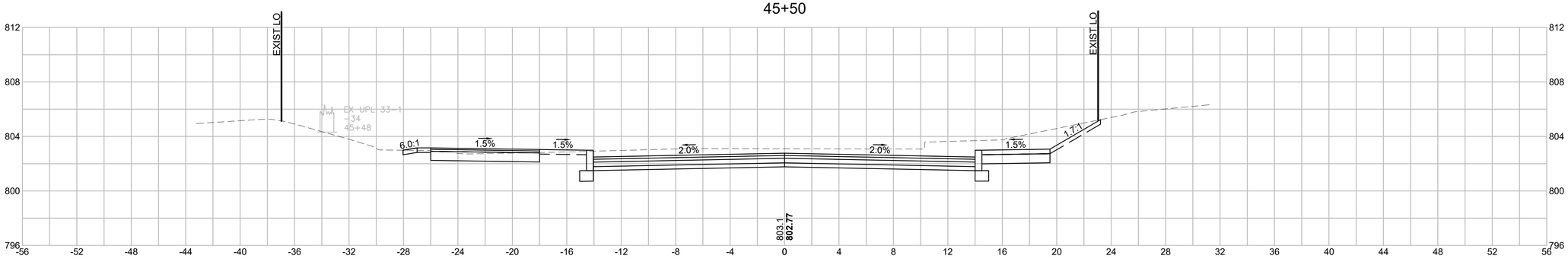
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	153	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:05 PM

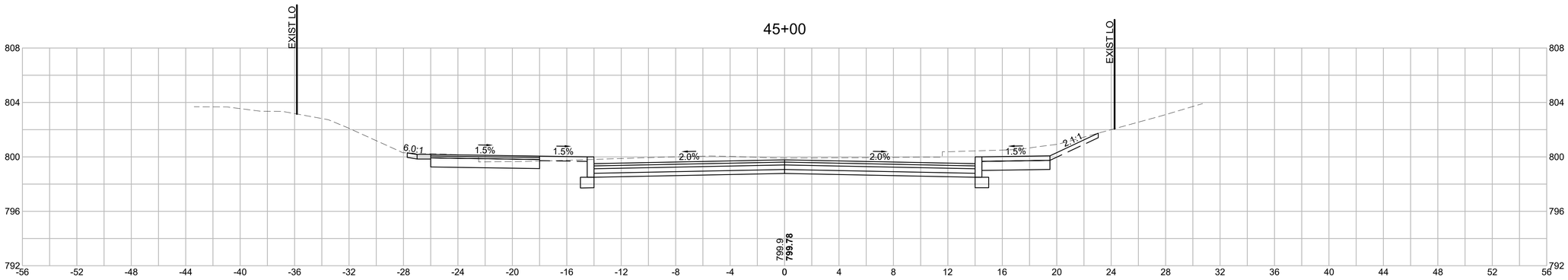
45+50



CUT: 66.25 SF

FILL: 0.00 SF

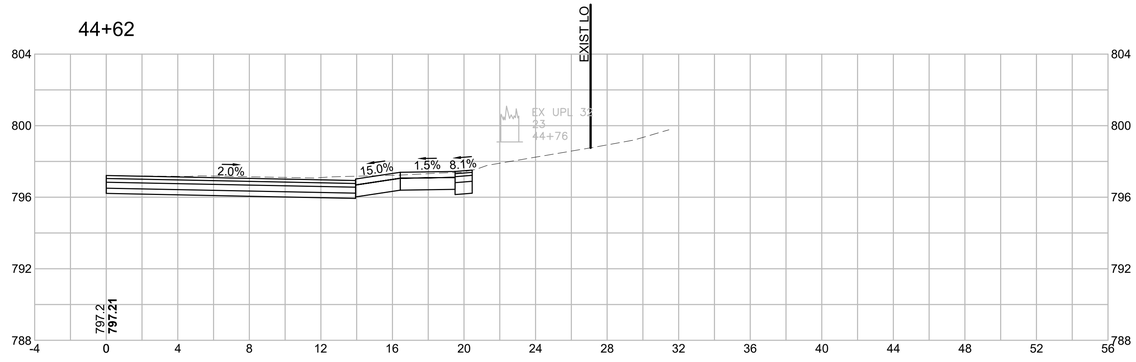
45+00



CUT: 58.43 SF

FILL: 0.01 SF

44+62



CUT: 21.50 SF

FILL: 0.00 SF

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

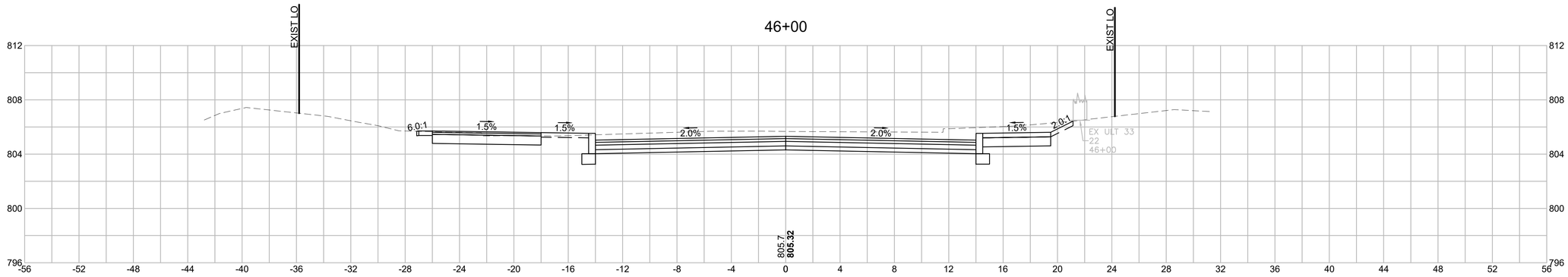
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	153	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

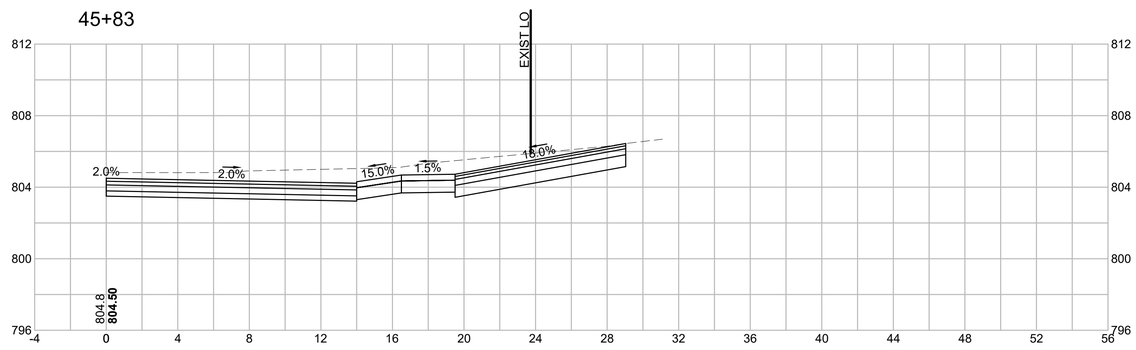
609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:05 PM

46+00



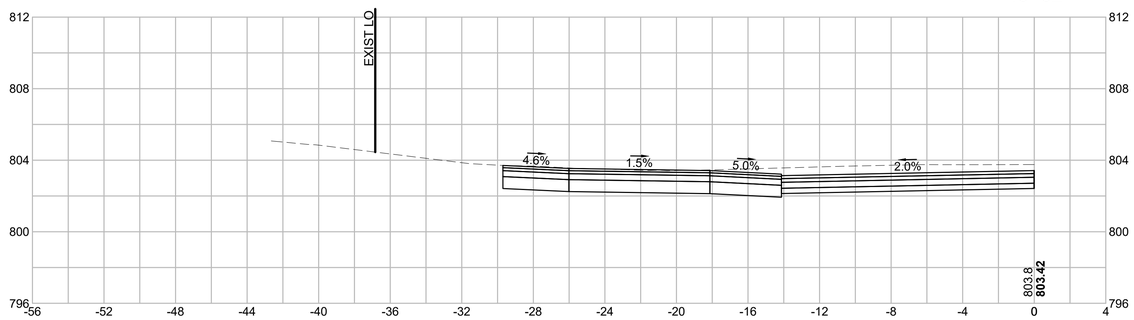
CUT: 61.75 SF
FILL: 0.00 SF

45+83



CUT: 45.90 SF
FILL: 0.00 SF

45+62



CUT: 40.98 SF
FILL: 0.00 SF

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

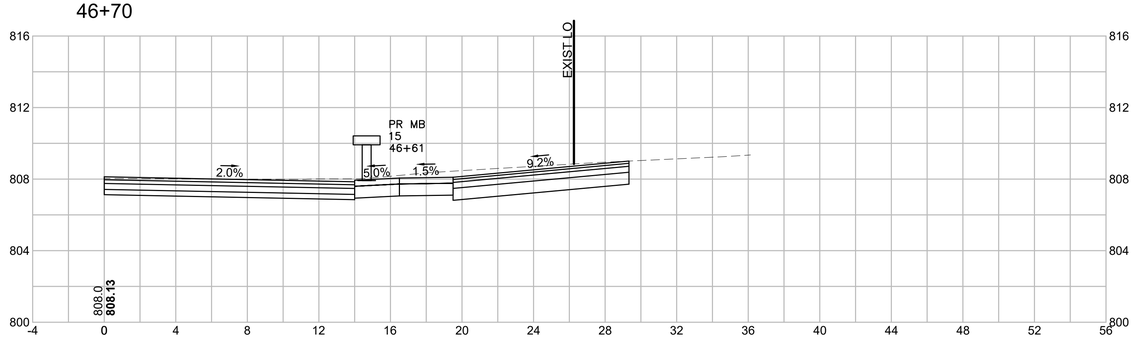
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	155	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

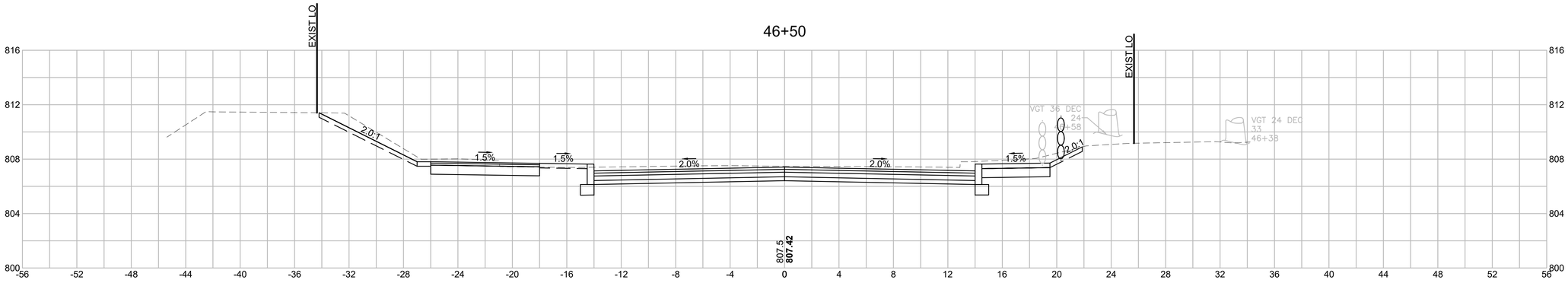
609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:06 PM

46+70



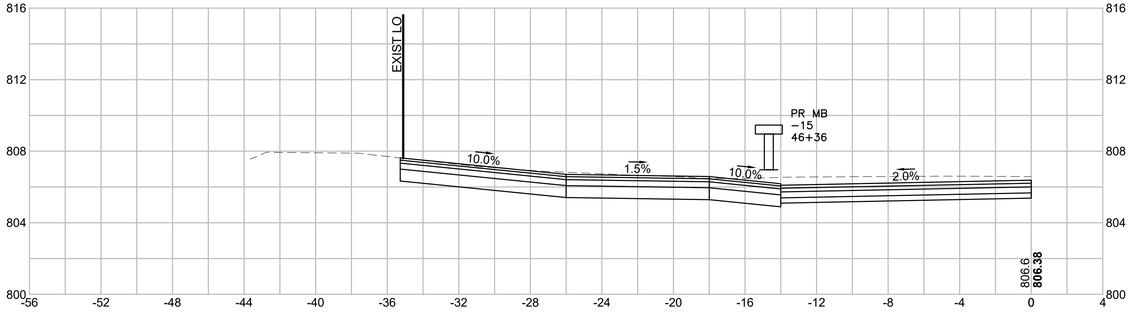
CUT: 35.24 SF
FILL: 0.00 SF

46+50



CUT: 61.97 SF
FILL: 0.00 SF

46+24



CUT: 46.82 SF
FILL: 0.00 SF

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

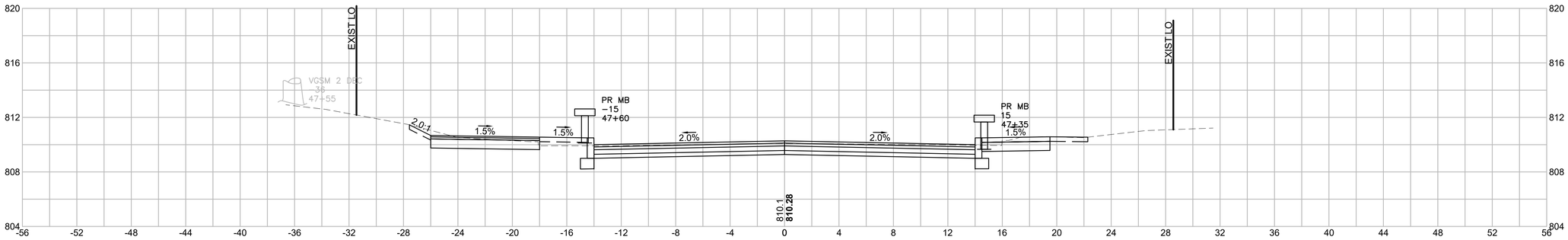
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	156	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_47+50)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:06 PM

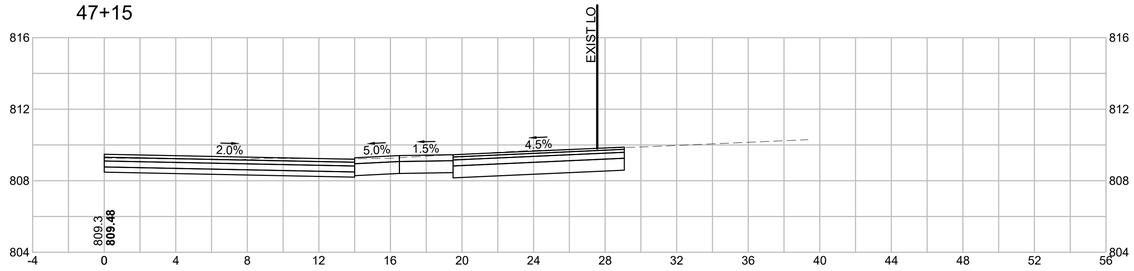
47+50



CUT: 40.75 SF

FILL: 0.84 SF

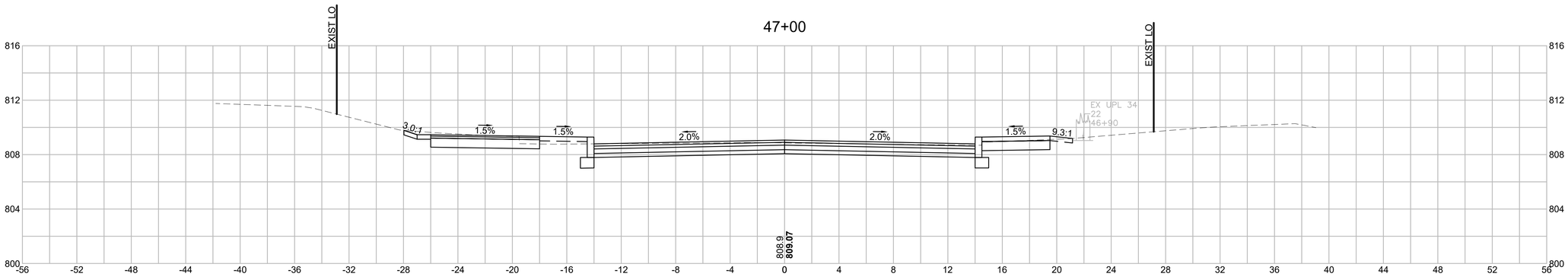
47+15



CUT: 30.00 SF

FILL: 0.00 SF

47+00



CUT: 39.31 SF

FILL: 0.64 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

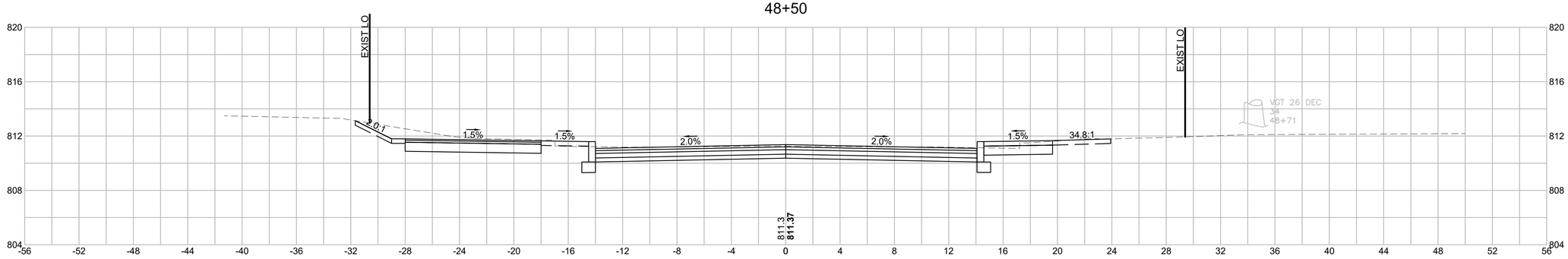
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	157	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

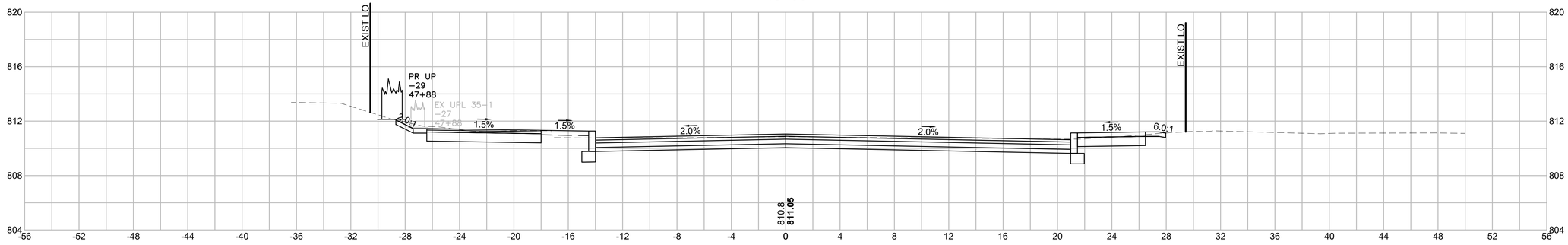
609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:08 PM

48+50



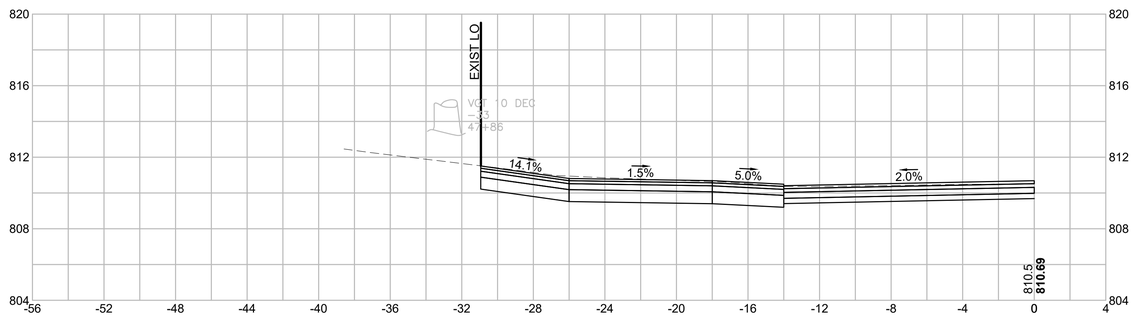
CUT: 51.14 SF
FILL: 0.07 SF

48+00



CUT: 47.48 SF
FILL: 0.41 SF

47+73



CUT: 34.67 SF
FILL: 0.00 SF

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

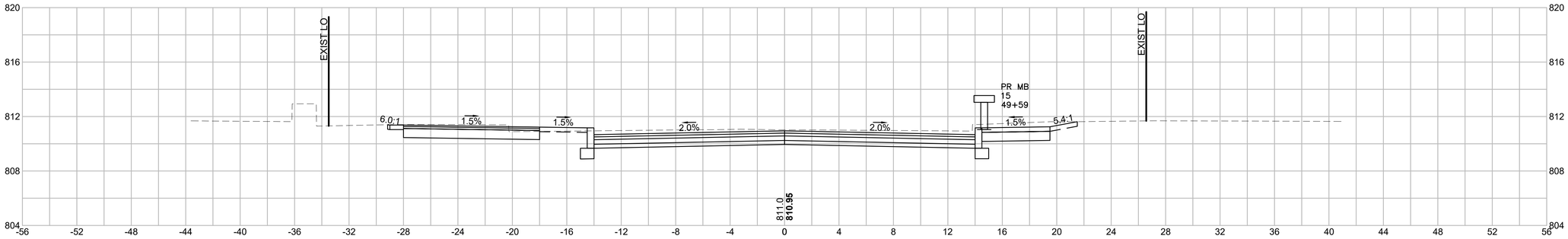
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	158	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:09 PM

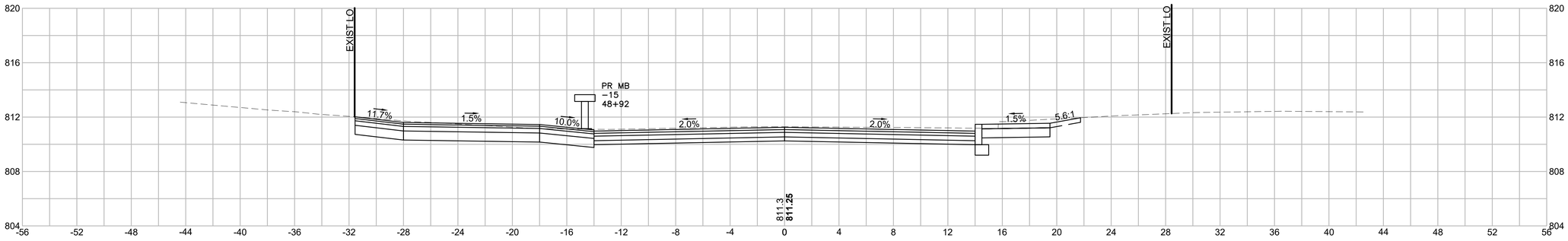
49+50



CUT: 54.61 SF

FILL: 0.00 SF

49+00



CUT: 60.66 SF

FILL: 0.00 SF

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

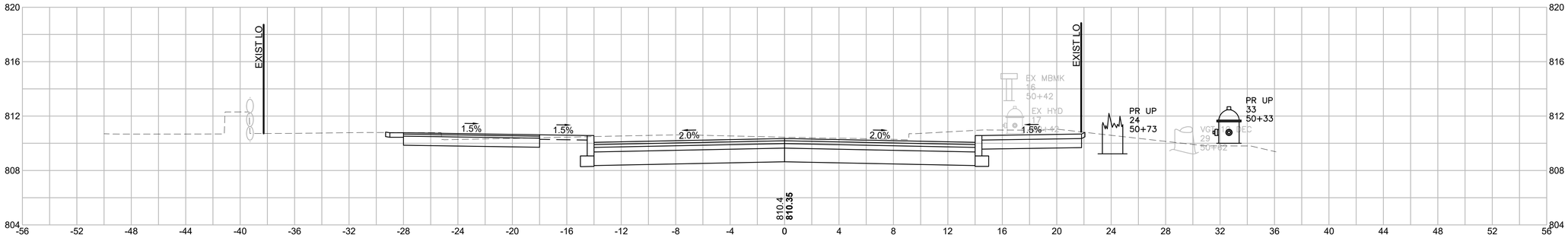
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	159	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:09 PM

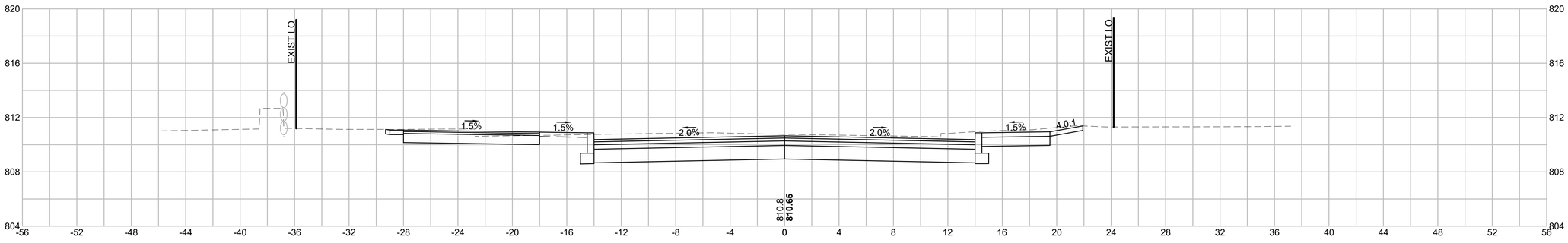
50+50



CUT: 58.71 SF

FILL: 0.00 SF

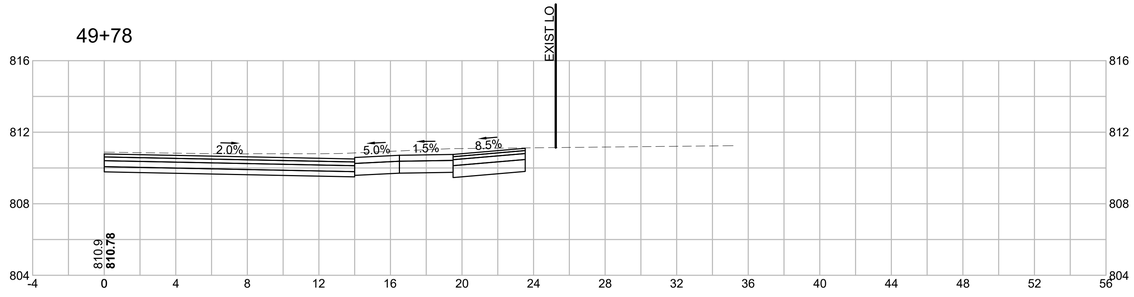
50+00



CUT: 55.13 SF

FILL: 0.00 SF

49+78



CUT: 29.35 SF

FILL: 0.00 SF

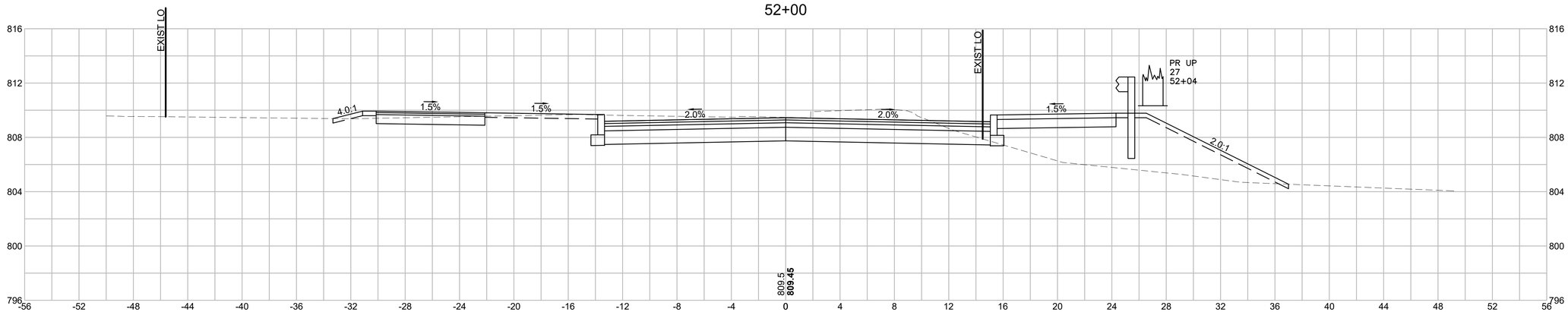
HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

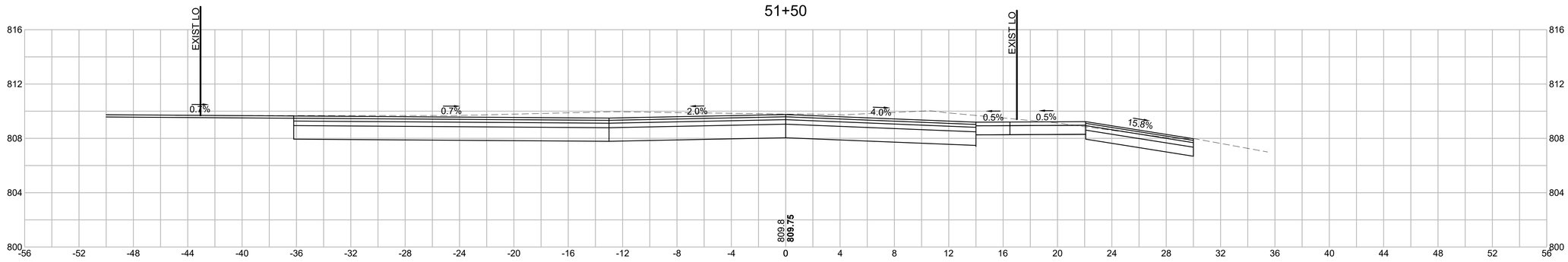
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	160	206
PROJECT FILE NO. 609219			

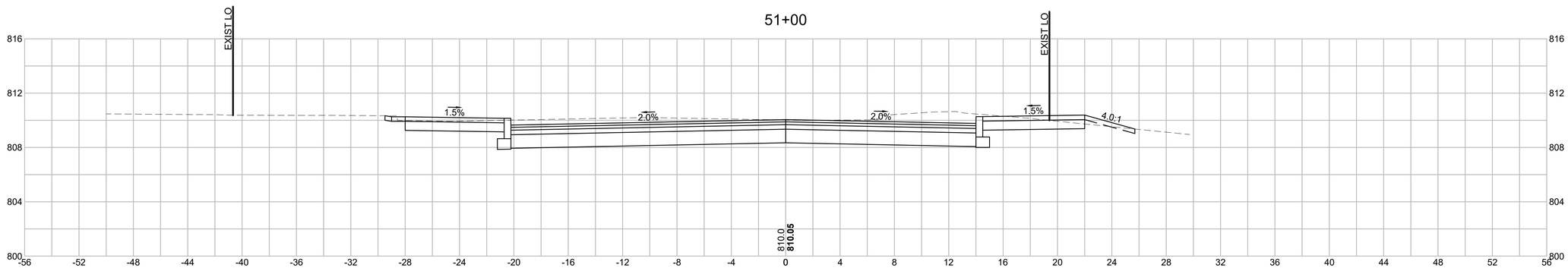
CROSS SECTIONS



CUT: 42.49 SF
FILL: 32.07 SF



CUT: 79.26 SF
FILL: 0.00 SF



CUT: 59.63 SF
FILL: 0.29 SF

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

609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:09 PM

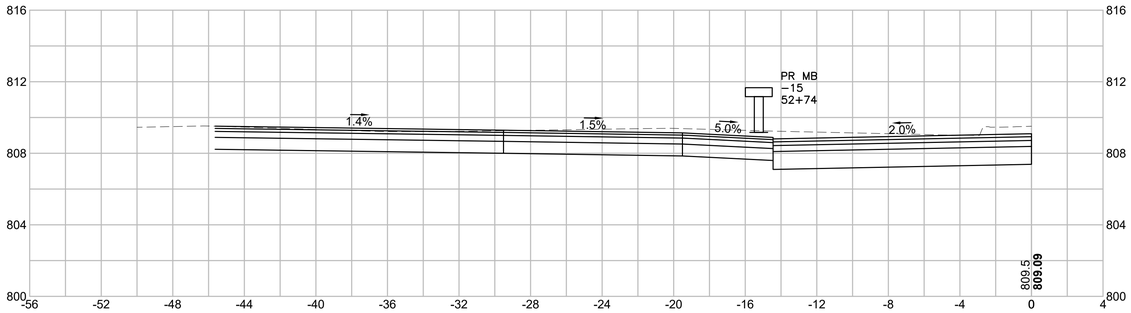
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	161	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_58+25]_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:10 PM

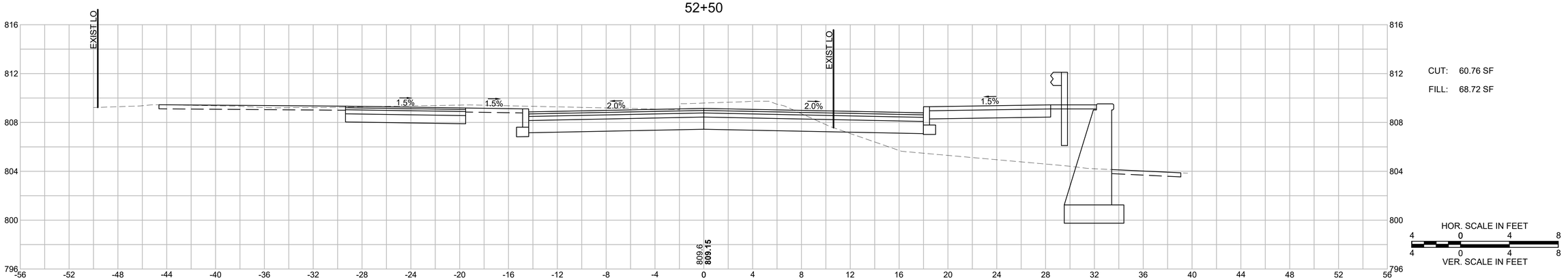
52+60



CUT: 59.20 SF

FILL: 0.00 SF

52+50



CUT: 60.76 SF

FILL: 68.72 SF

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

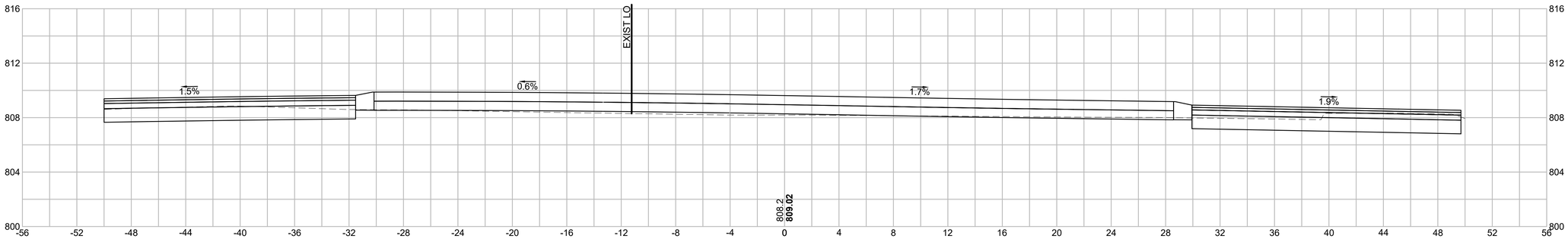
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	162	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

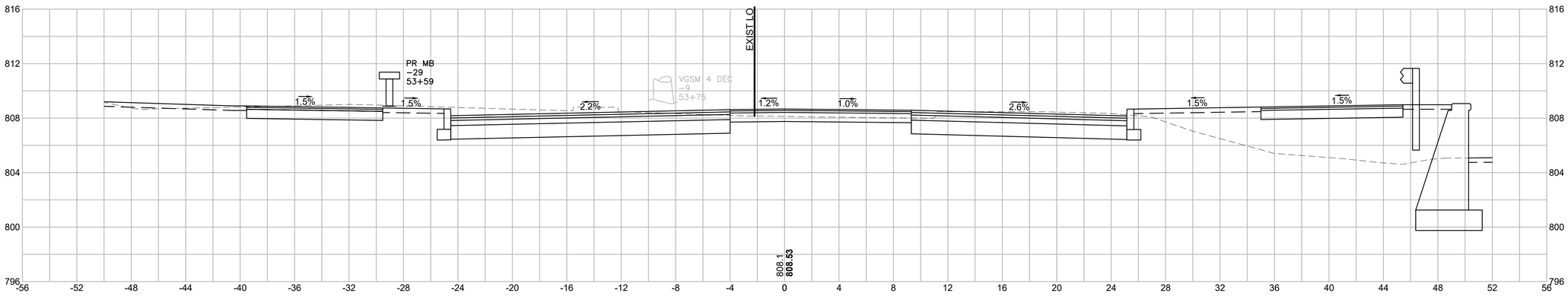
609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:10 PM

54+00



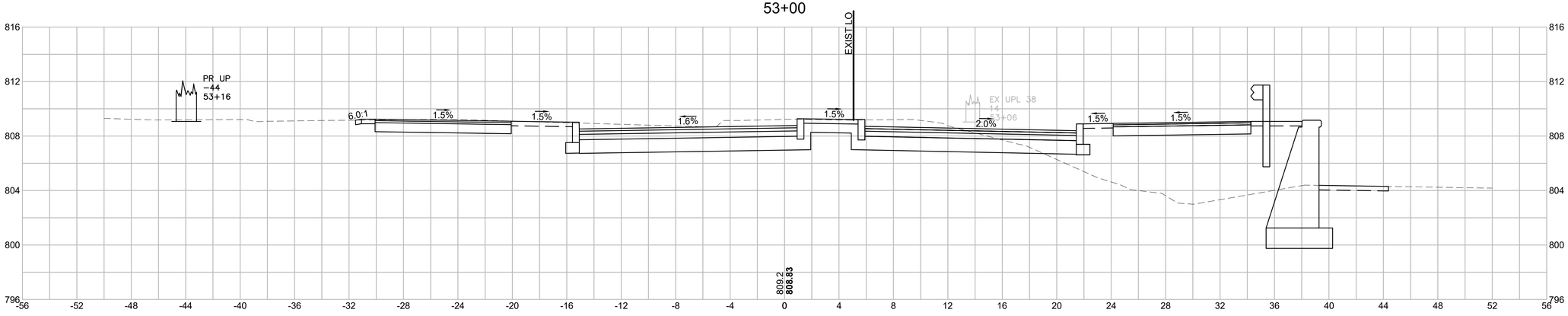
CUT: 0.00 SF
FILL: 0.00 SF

53+50



CUT: 65.66 SF
FILL: 48.70 SF

53+00



CUT: 52.57 SF
FILL: 73.37 SF

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

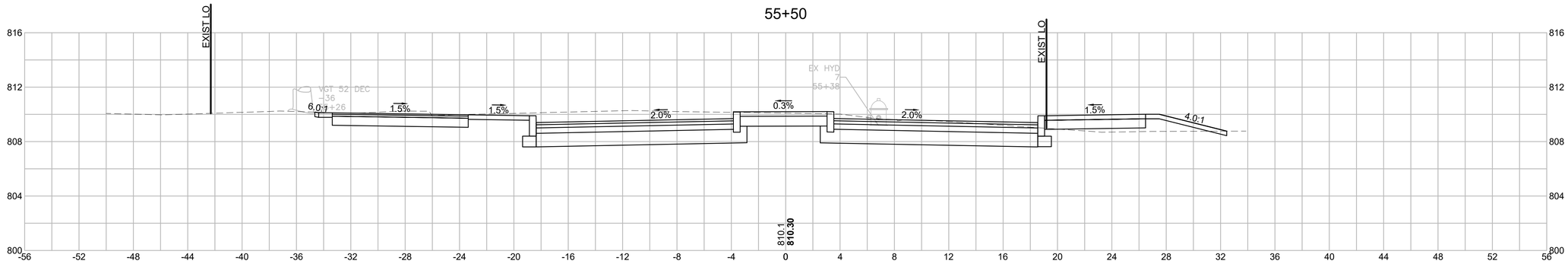
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	163	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

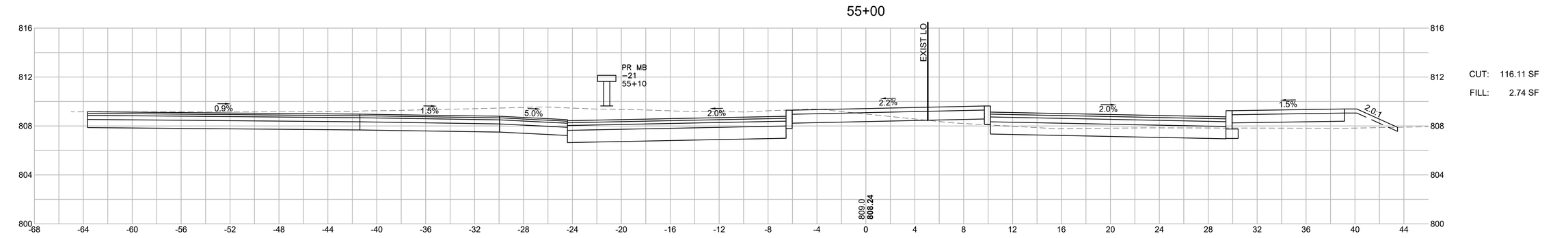
609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:11 PM

55+50



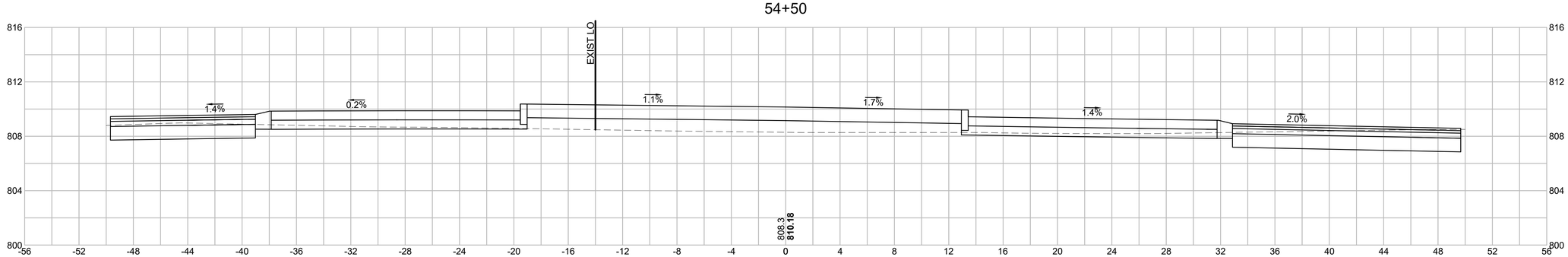
CUT: 64.50 SF
FILL: 3.91 SF

55+00



CUT: 116.11 SF
FILL: 2.74 SF

54+50



CUT: 0.00 SF
FILL: 0.00 SF

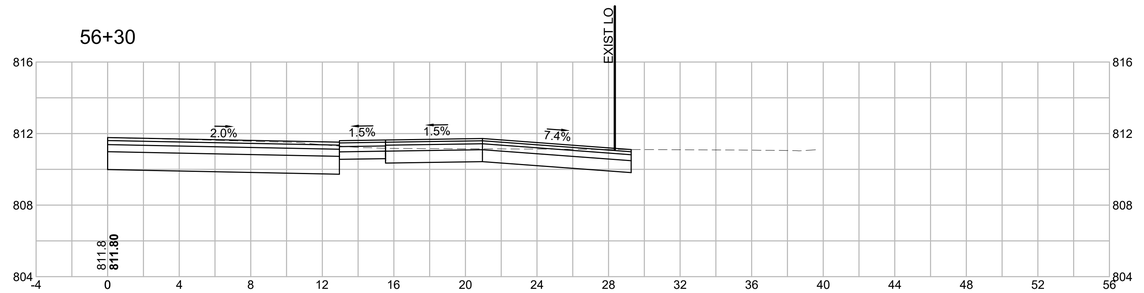
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

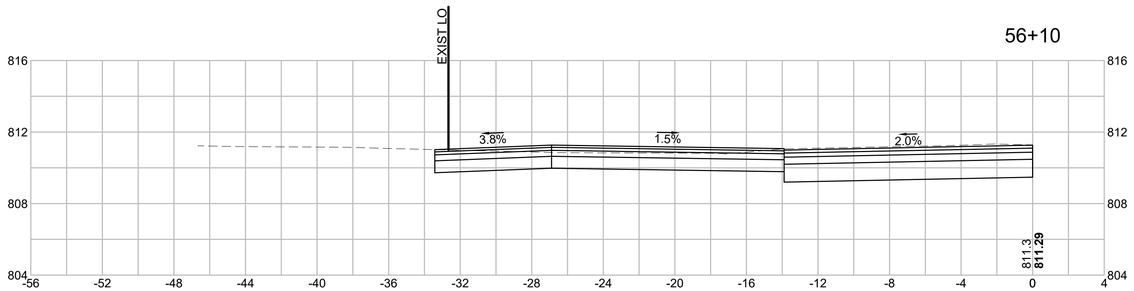
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	164	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

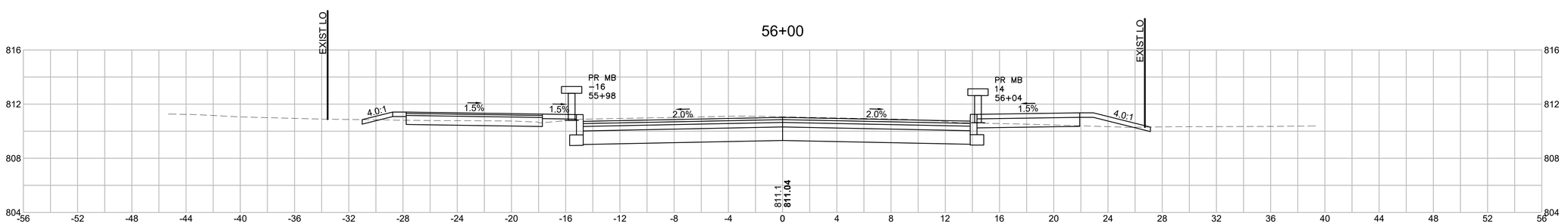
609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:11 PM



CUT: 27.60 SF
FILL: 0.00 SF



CUT: 32.86 SF
FILL: 0.00 SF



CUT: 42.71 SF
FILL: 2.42 SF

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

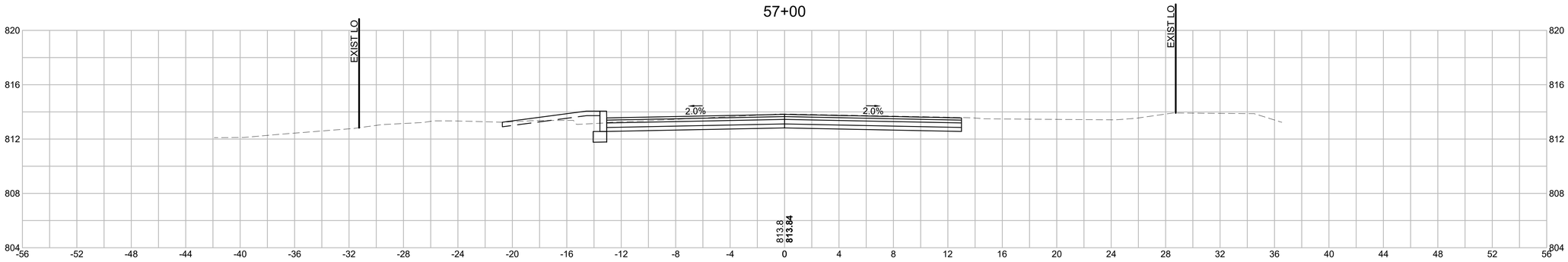
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	165	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

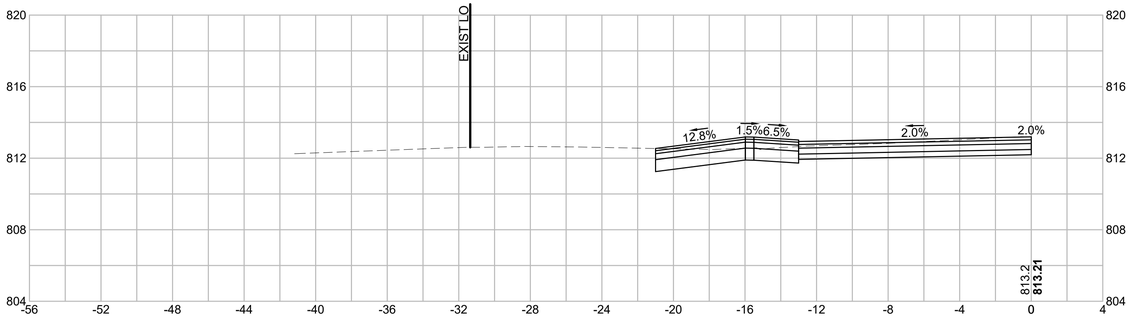
609219_HDXSEC_58+25)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:11 PM

57+00



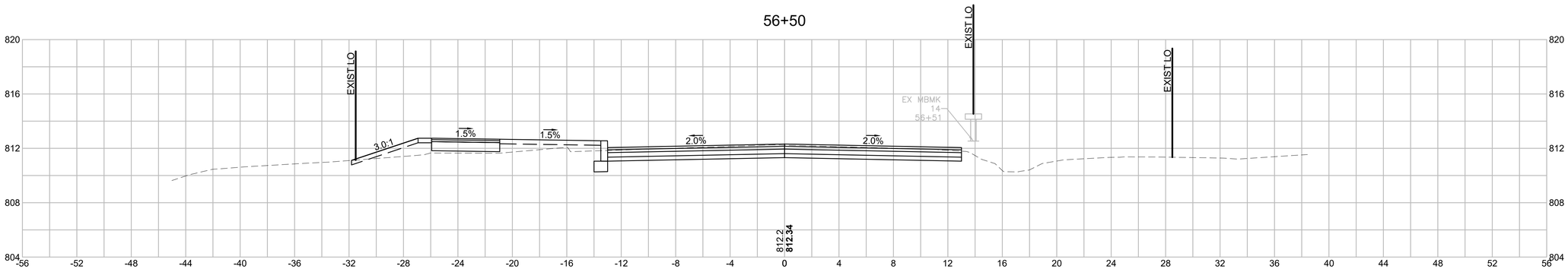
CUT: 26.80 SF
FILL: 1.19 SF

56+80



CUT: 18.10 SF
FILL: 0.00 SF

56+50



CUT: 24.27 SF
FILL: 6.27 SF

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

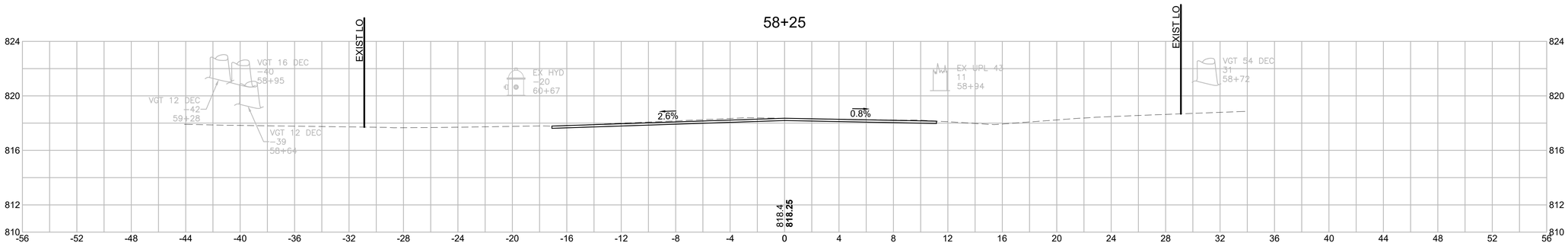
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	166	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

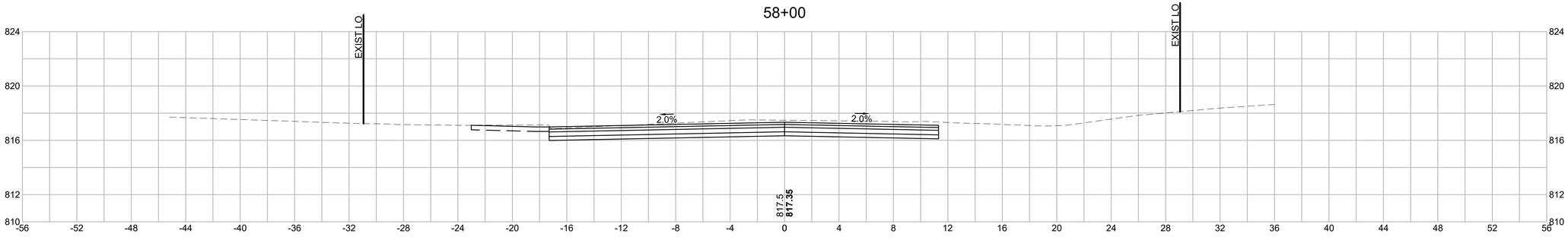
609219_HDXSEC_58+25]_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:12 PM

58+25



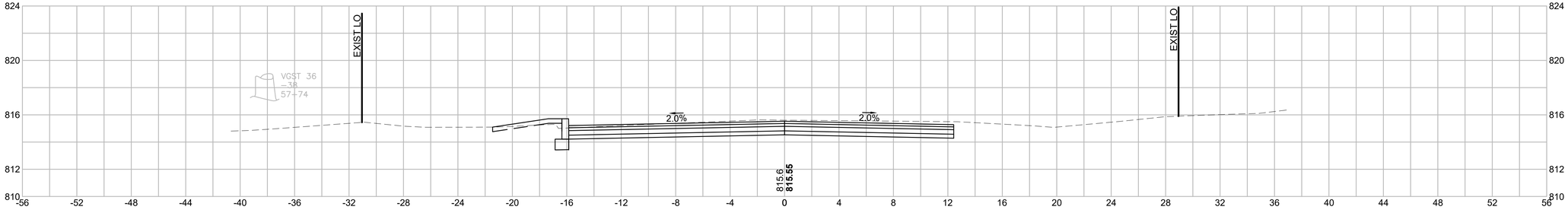
CUT: 43.84 SF
FILL: 0.00 SF

58+00



CUT: 49.97 SF
FILL: 0.00 SF

57+50



CUT: 34.18 SF
FILL: 0.74 SF

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

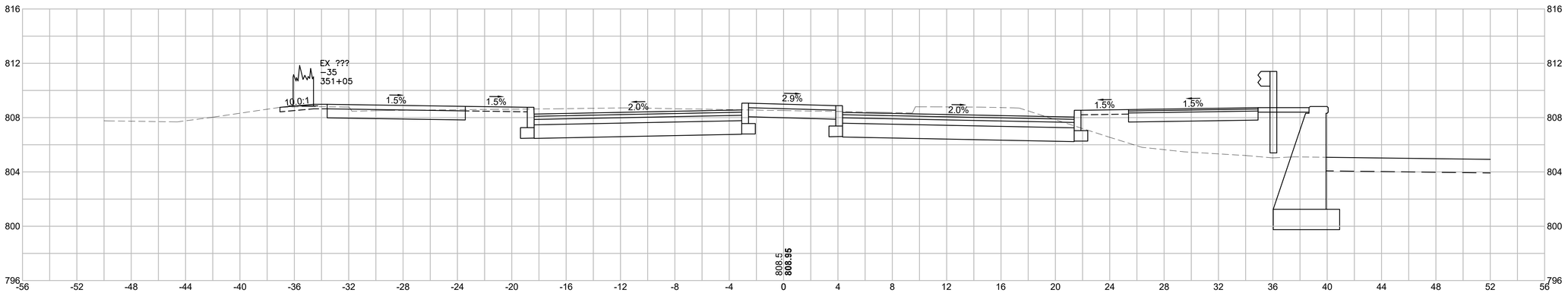
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	167	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:15 PM

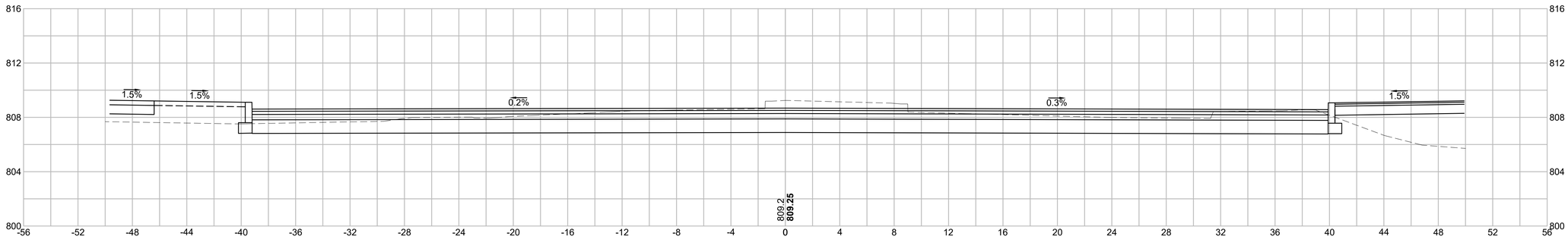
351+00



CUT:

FILL:

350+50



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

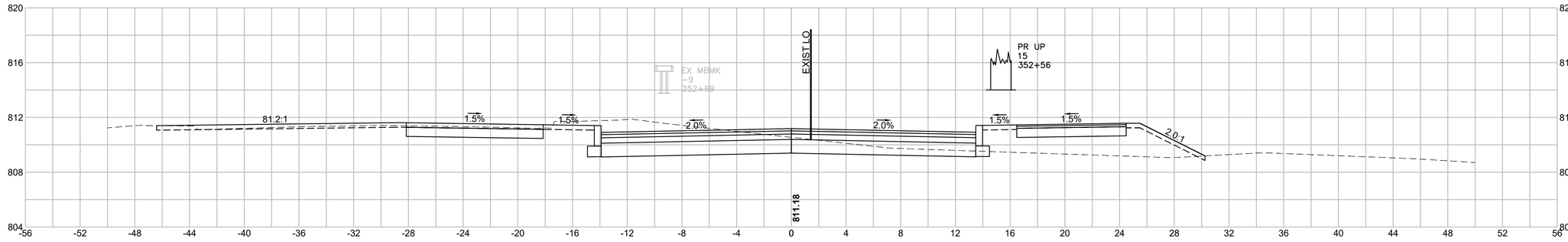
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	168	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

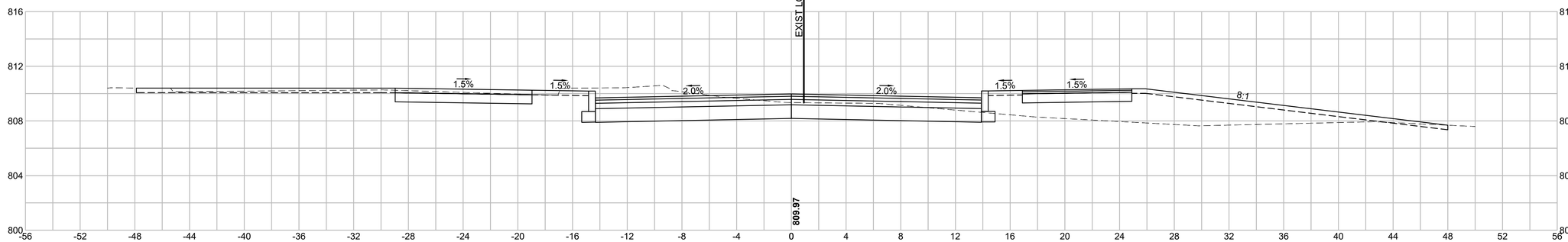
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:15 PM

352+50



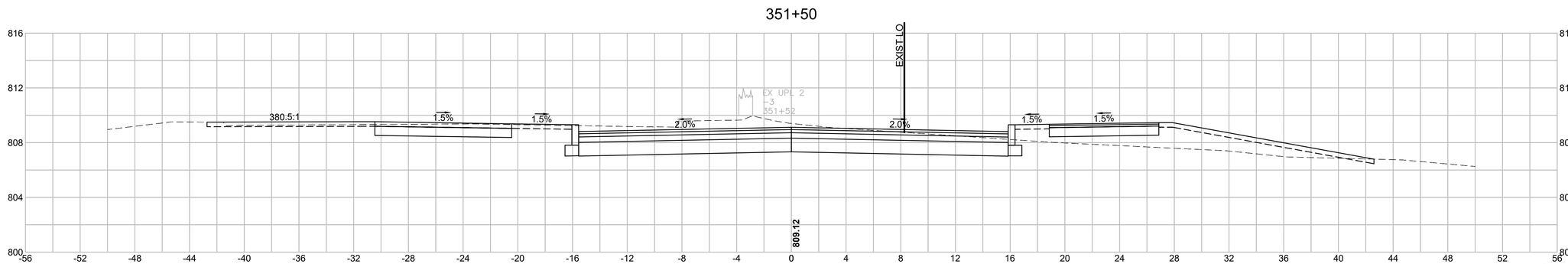
CUT: 51.95 SF
FILL: 20.19 SF

352+00



CUT: 58.25 SF
FILL: 20.23 SF

351+50



CUT: 75.66 SF
FILL: 11.09 SF

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

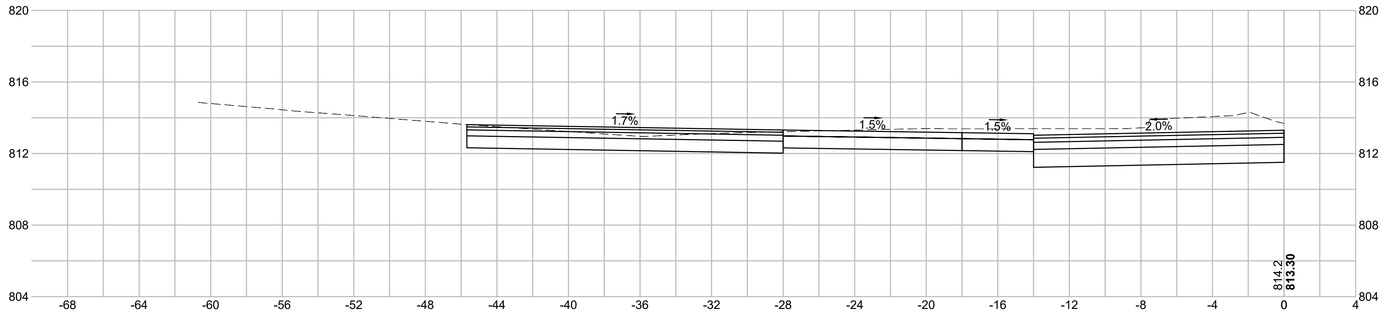
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	169	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:16 PM

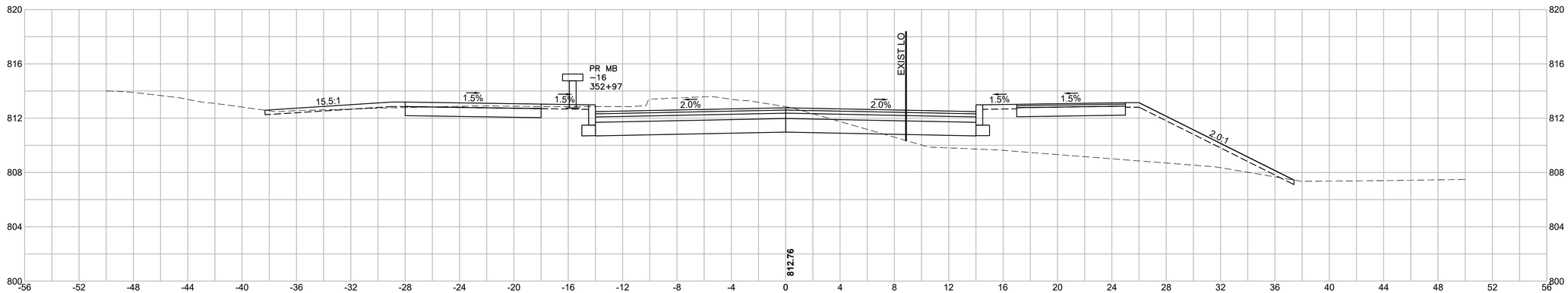
353+15



CUT: 67.21 SF

FILL: 0.00 SF

353+00



CUT: 55.66 SF

FILL: 58.57 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

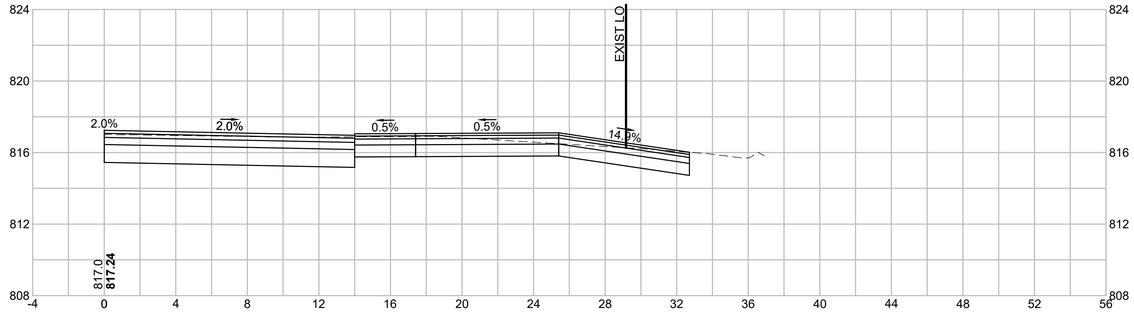
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	170	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

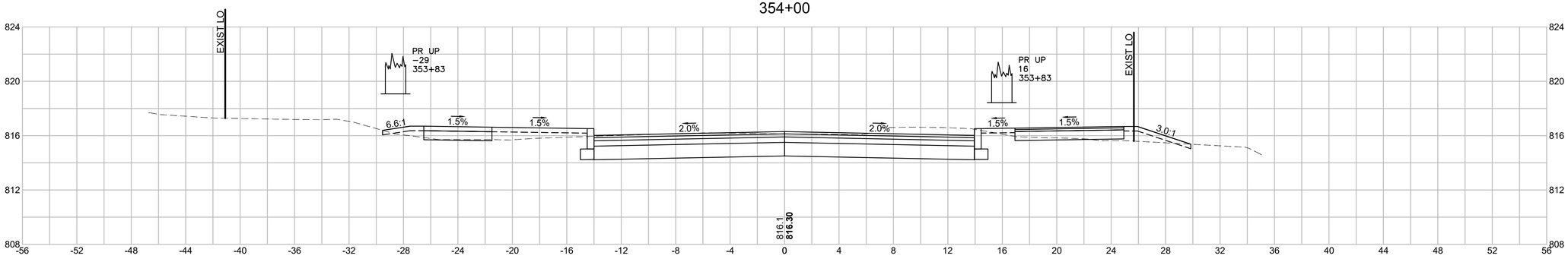
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:16 PM

354+30



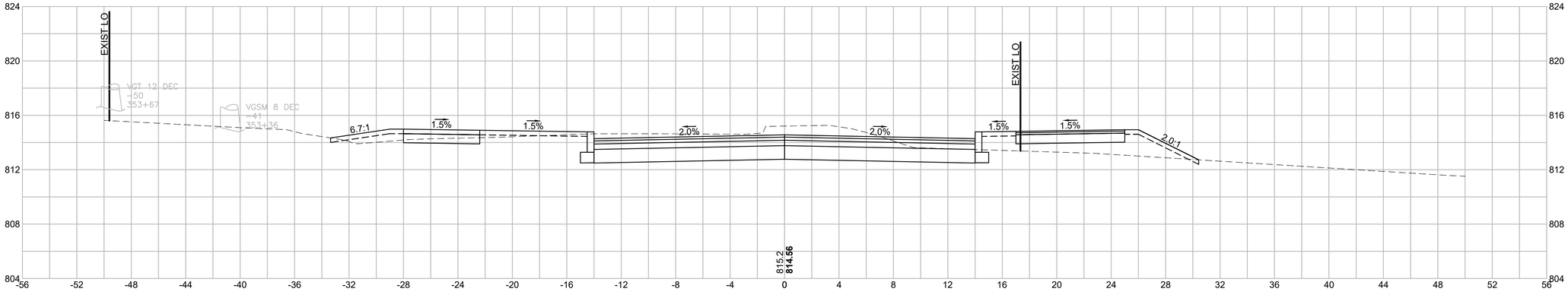
CUT: 40.92 SF
FILL: 0.00 SF

354+00



CUT: 57.67 SF
FILL: 5.80 SF

353+50



CUT: 59.11 SF
FILL: 14.64 SF

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

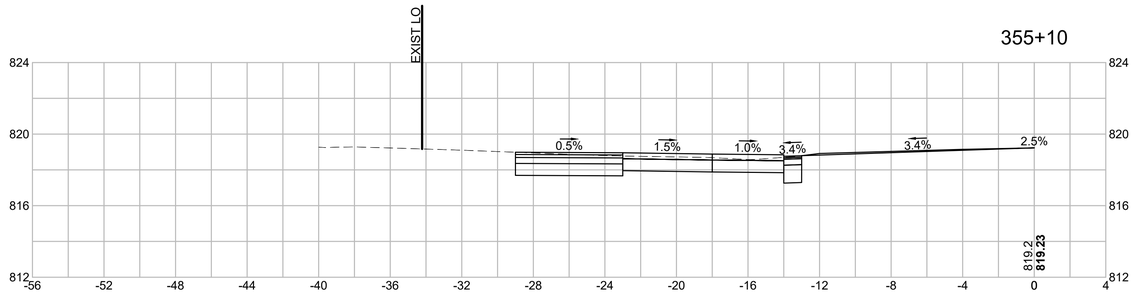
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	171	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

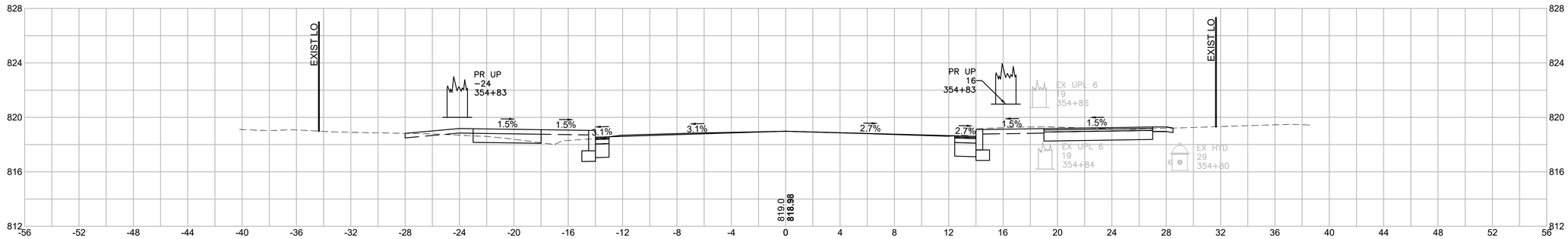
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:17 PM

355+10



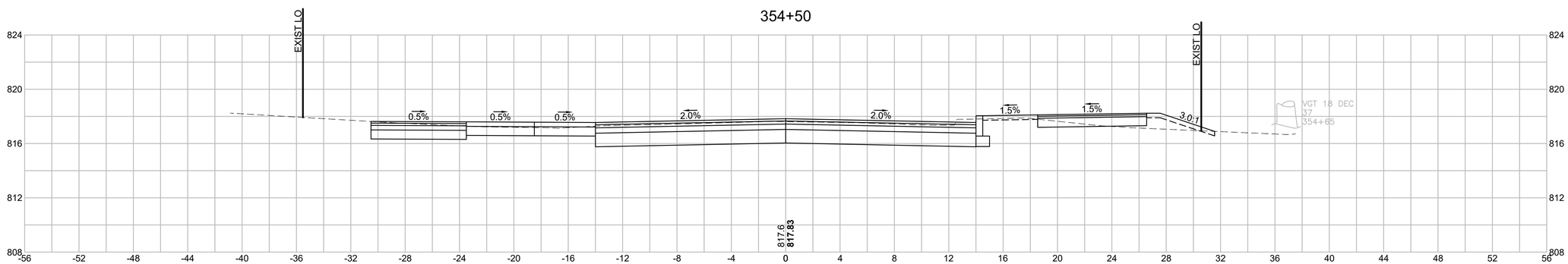
CUT: 18.88 SF
FILL: 0.00 SF

355+00



CUT: 34.41 SF
FILL: 0.03 SF

354+50



CUT: 61.47 SF
FILL: 2.28 SF

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

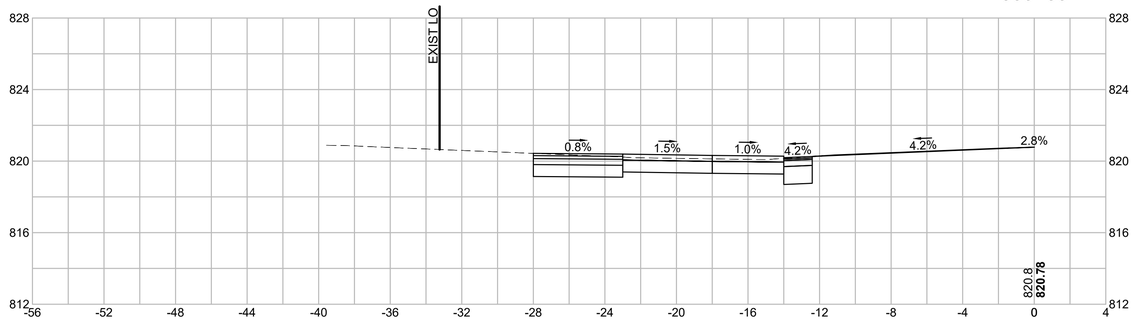
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	172	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

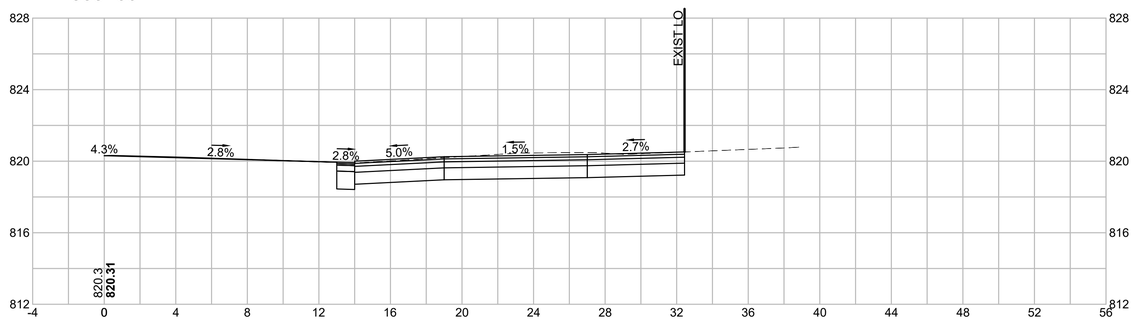
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:17 PM

355+85



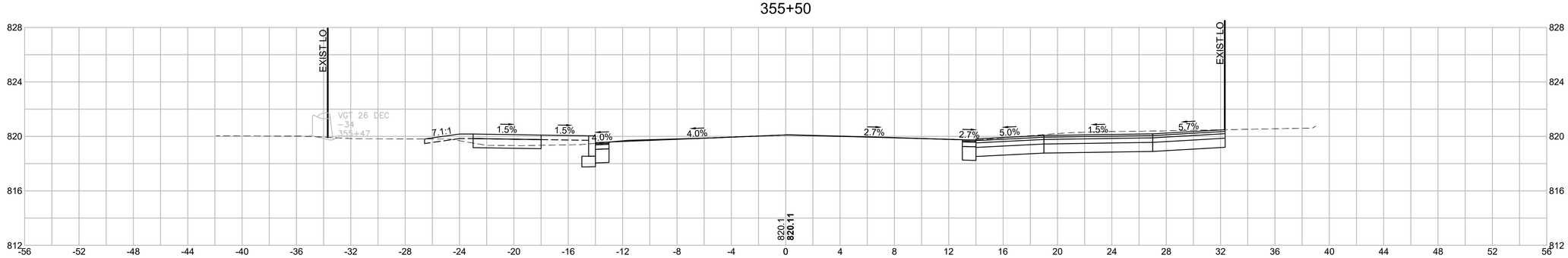
CUT: 18.68 SF
FILL: 0.00 SF

355+60



CUT: 28.85 SF
FILL: 0.00 SF

355+50



CUT: 37.90 SF
FILL: 1.39 SF

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

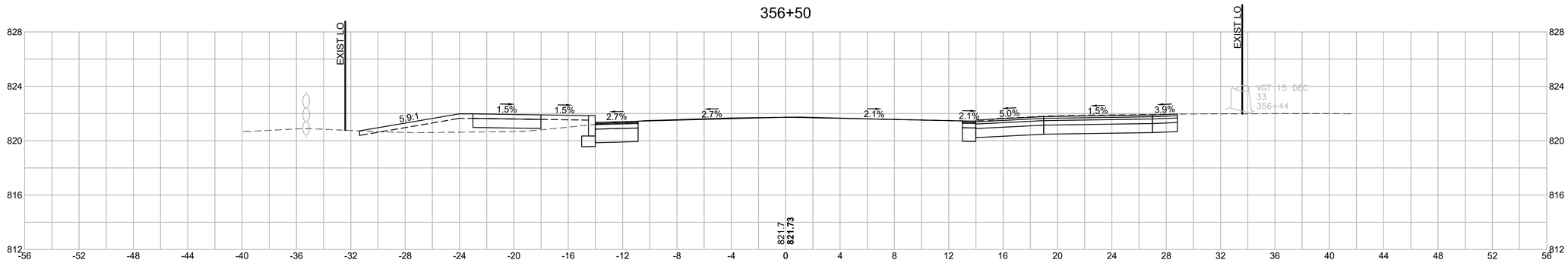
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	173	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:18 PM

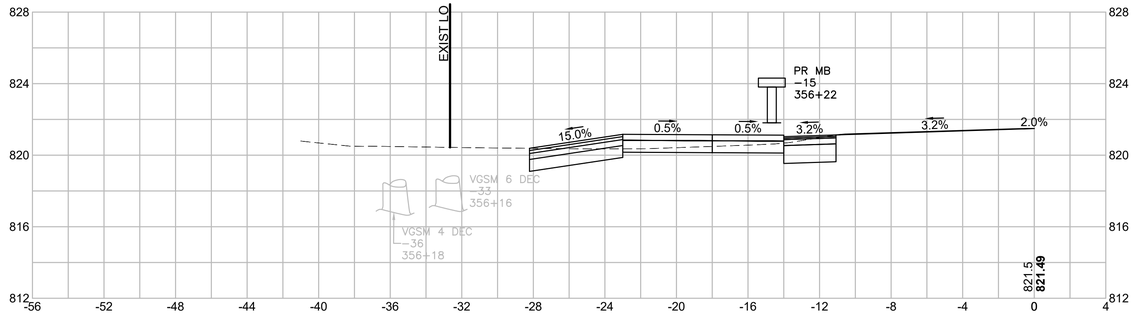
356+50



CUT: 29.65 SF

FILL: 7.09 SF

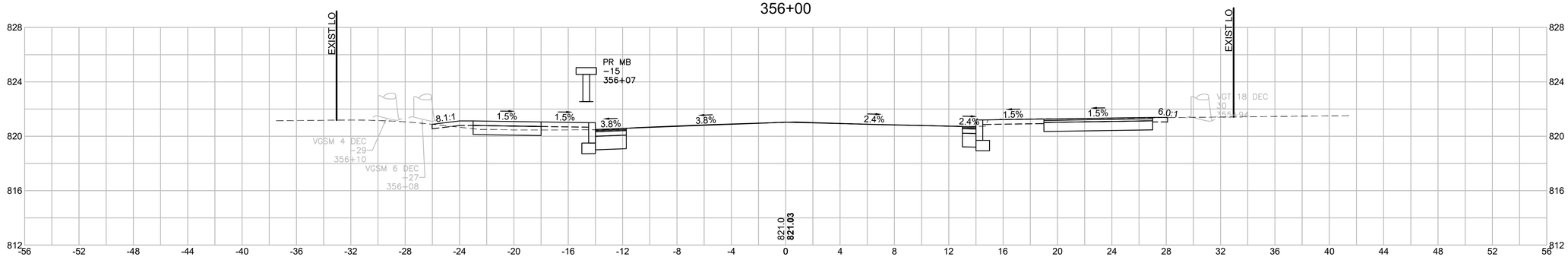
356+30



CUT: 13.39 SF

FILL: 0.00 SF

356+00



CUT: 24.69 SF

FILL: 0.91 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

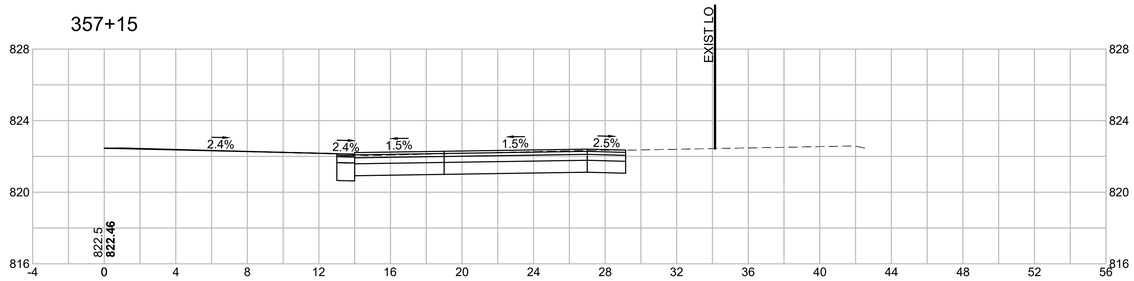
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	174	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

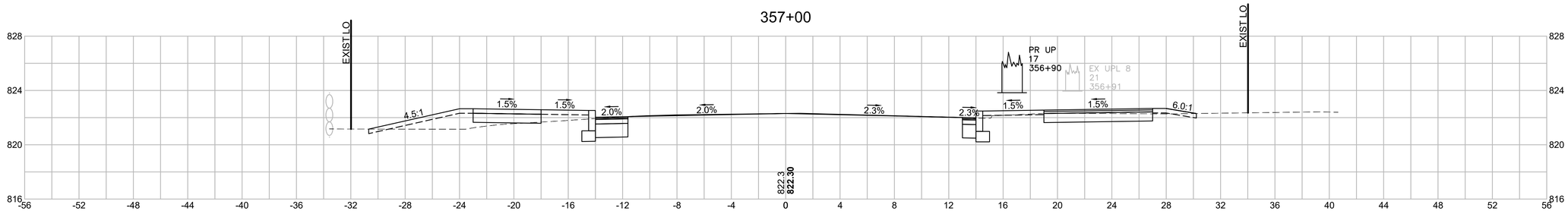
609219_HD\XSEC_DOYLE]_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:19 PM

357+15



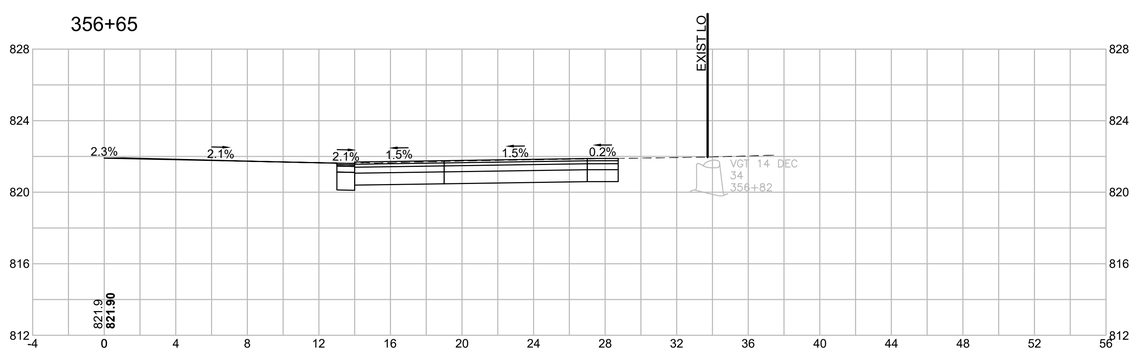
CUT: 21.43 SF
FILL: 0.00 SF

357+00



CUT: 17.84 SF
FILL: 5.94 SF

356+65



CUT: 21.91 SF
FILL: 0.00 SF

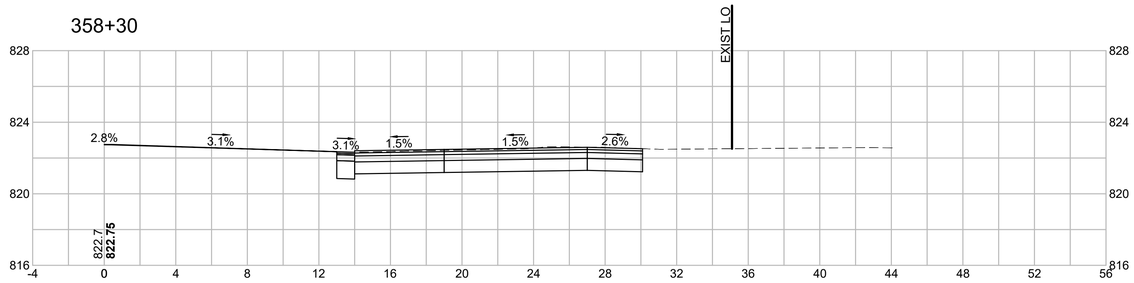
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

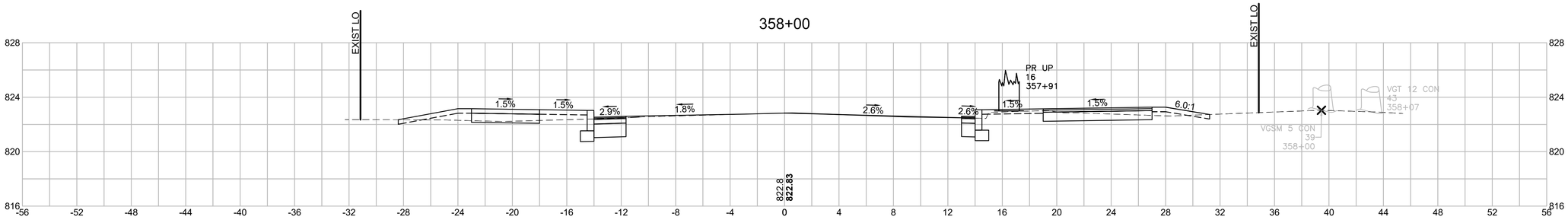
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	175	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

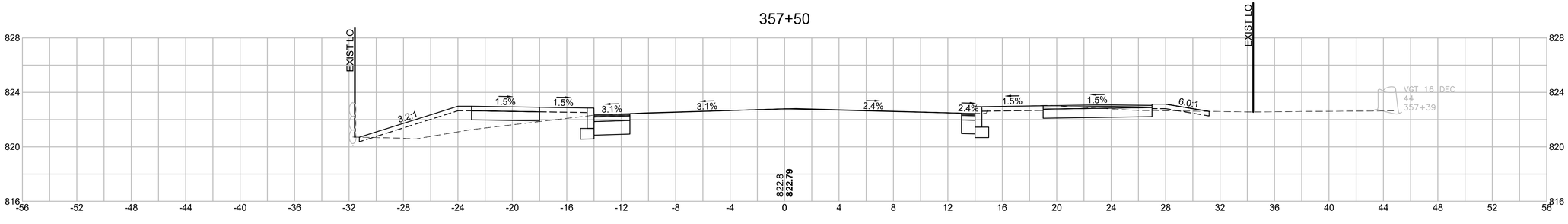
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:19 PM



CUT: 24.38 SF
FILL: 0.00 SF



CUT: 20.64 SF
FILL: 2.00 SF



CUT: 20.74 SF
FILL: 10.96 SF

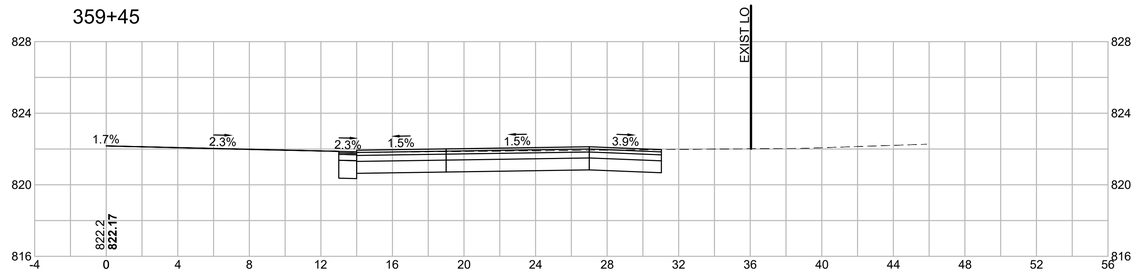
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

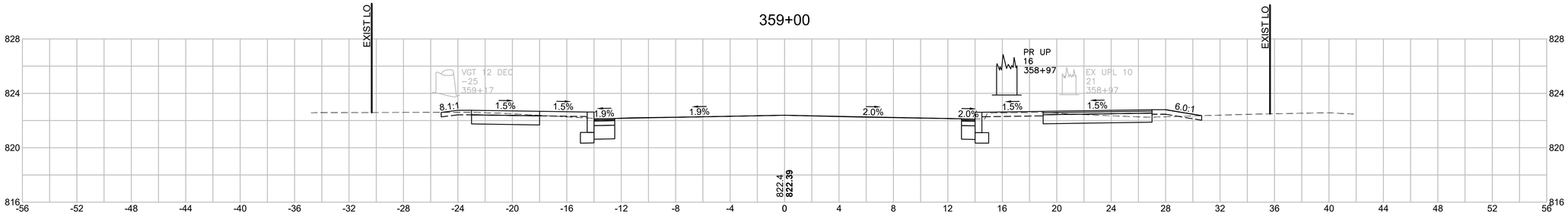
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	176	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

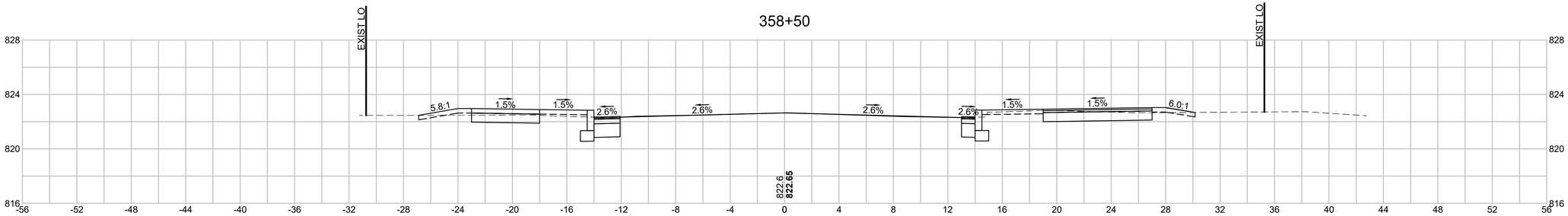
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:20 PM



CUT: 22.59 SF
FILL: 0.00 SF



CUT: 21.02 SF
FILL: 0.37 SF



CUT: 22.99 SF
FILL: 0.32 SF

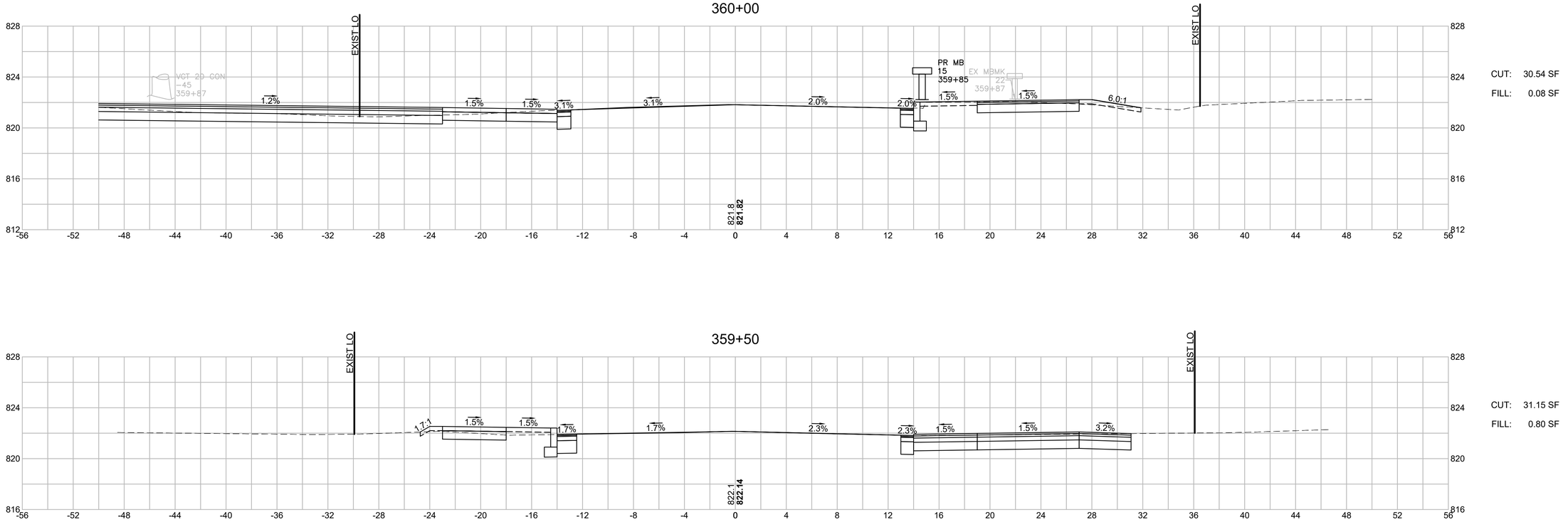
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	177	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE]_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:20 PM



CUT: 30.54 SF
FILL: 0.08 SF

CUT: 31.15 SF
FILL: 0.80 SF

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

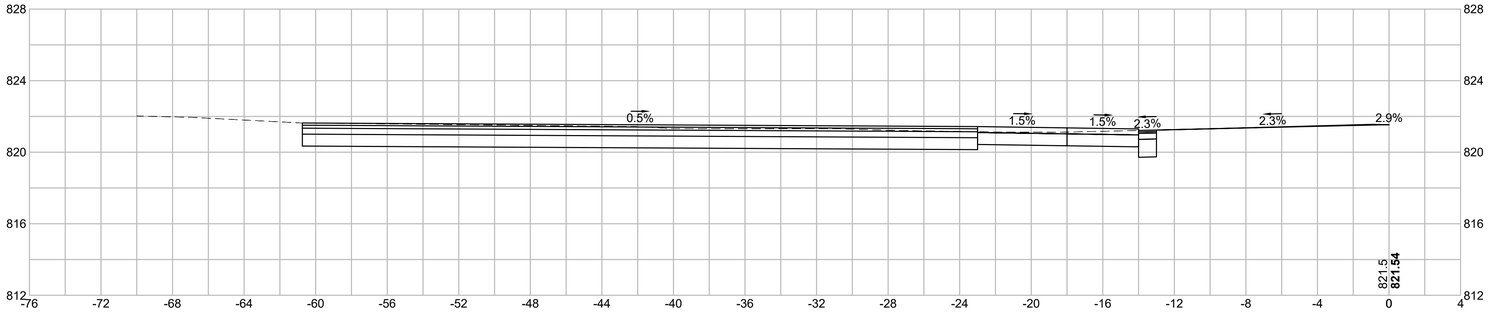
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	178	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:21 PM

360+35



CUT: 41.59 SF

FILL: 0.00 SF

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

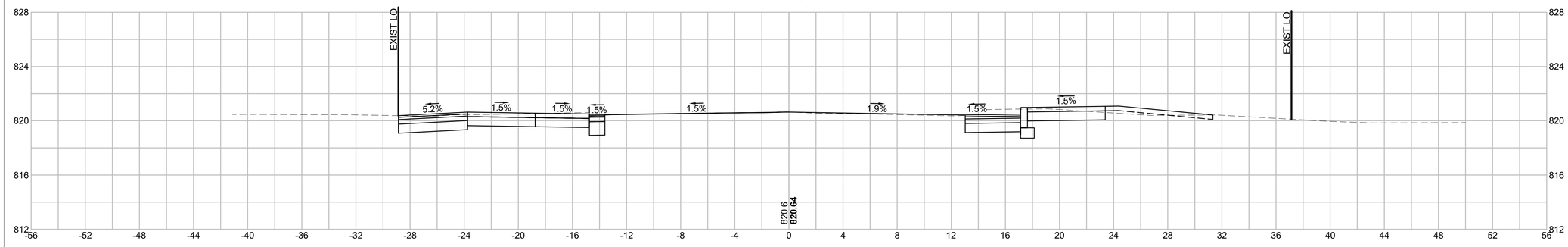
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	179	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

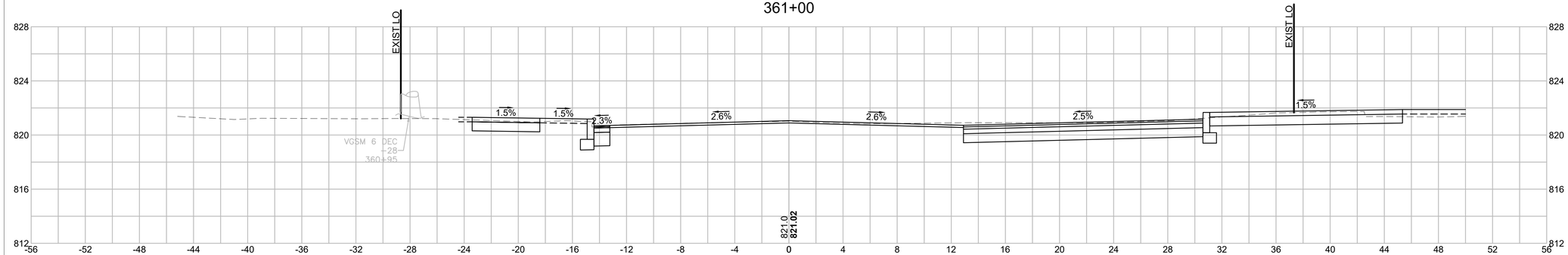
609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:22 PM

361+50



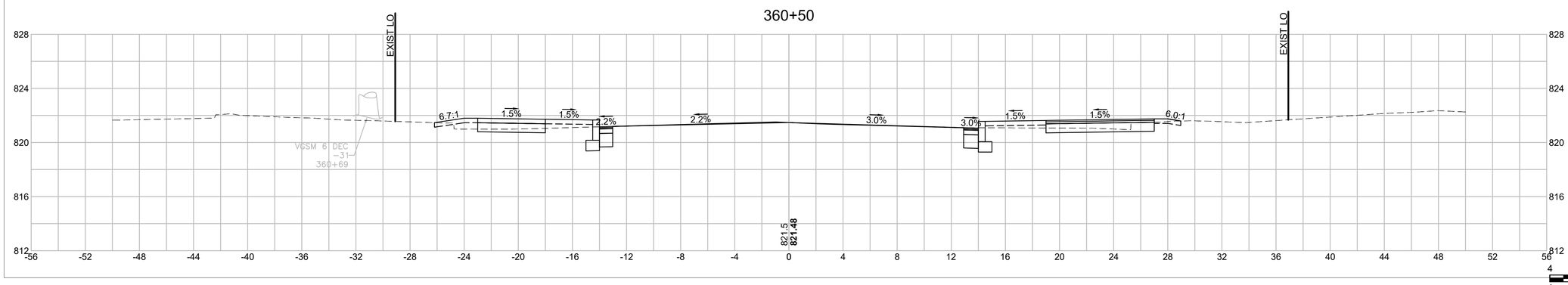
CUT: 15.54 SF
FILL: 0.41 SF

361+00



CUT: 13.17 SF
FILL: 0.11 SF

360+50



CUT: 15.94 SF
FILL: 2.35 SF

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

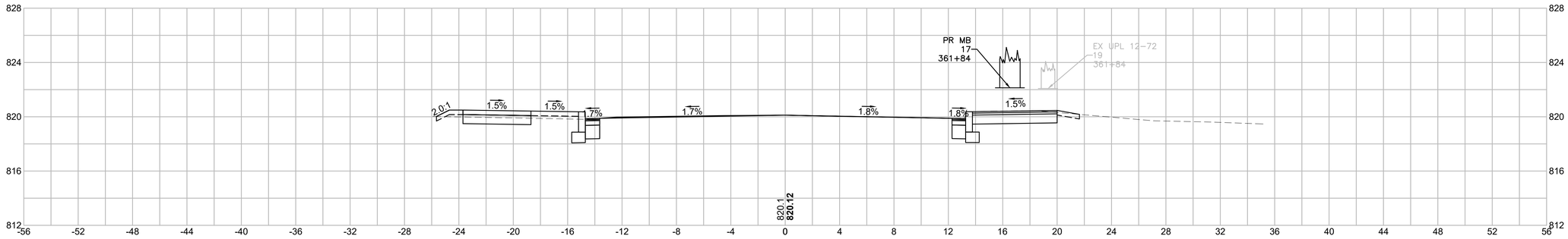
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	180	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HD\XSEC_DOYLE_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:22 PM

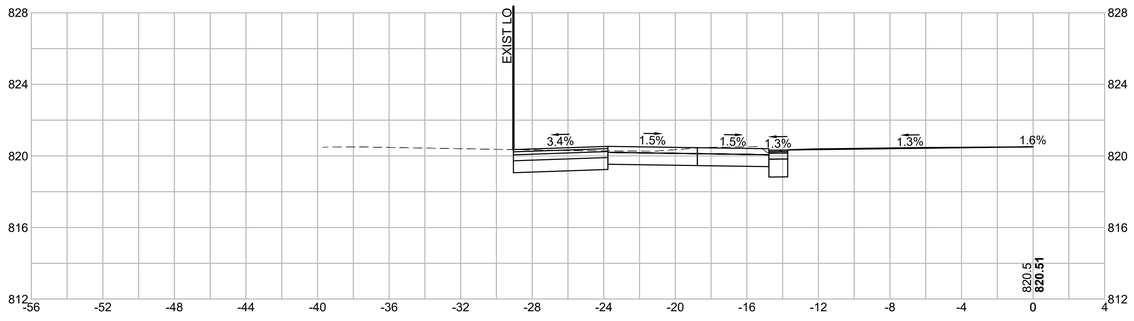
362+00



CUT: 19.59 SF

FILL: 2.02 SF

361+65



CUT: 17.61 SF

FILL: 0.00 SF

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

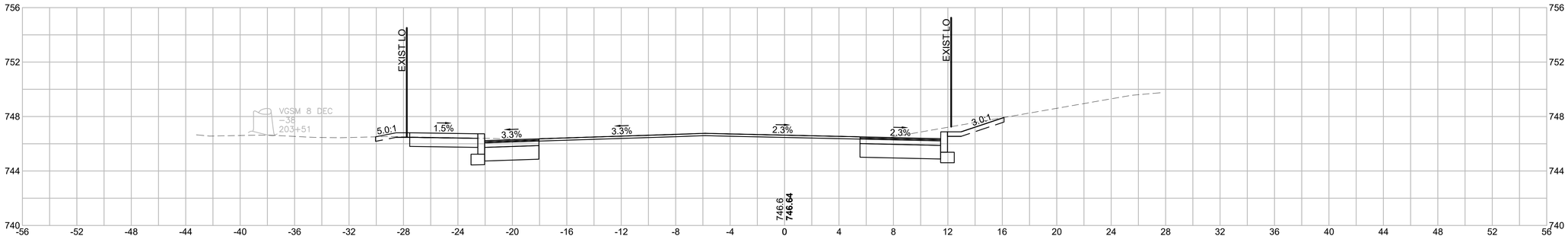
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	181	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:25 PM

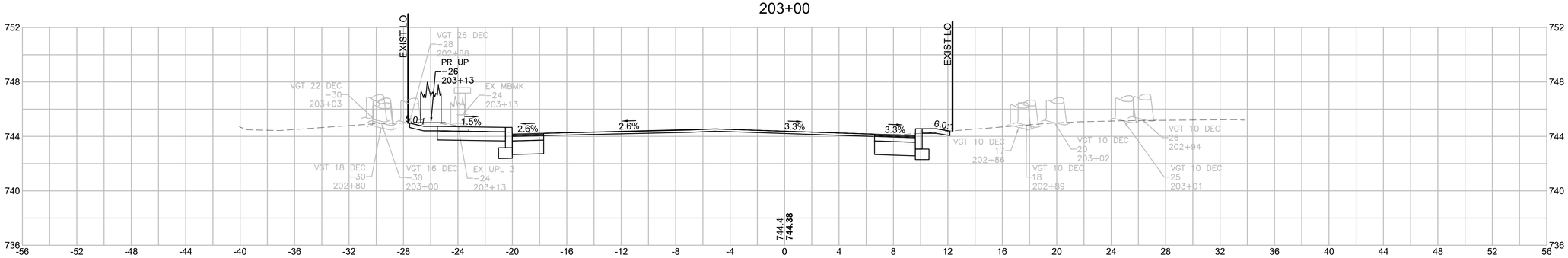
203+50



CUT: 21.61 SF

FILL: 0.00 SF

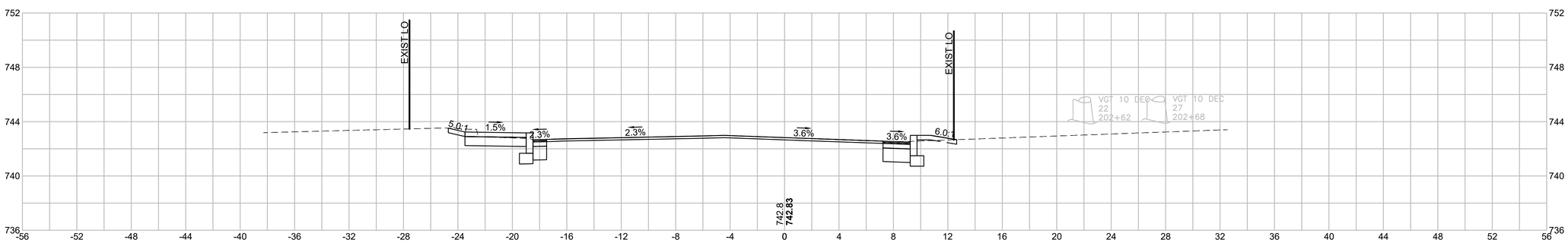
203+00



CUT: 15.35 SF

FILL: 0.03 SF

202+50



CUT: 13.97 SF

FILL: 0.25 SF

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

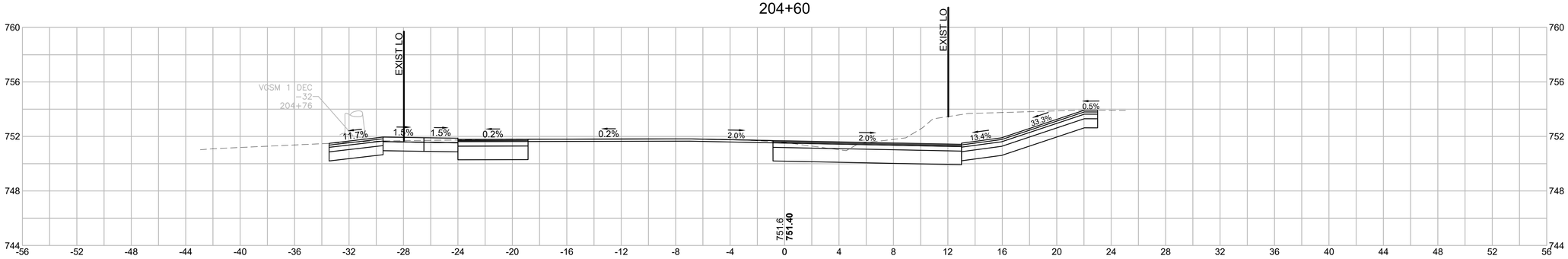
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	182	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:26 PM

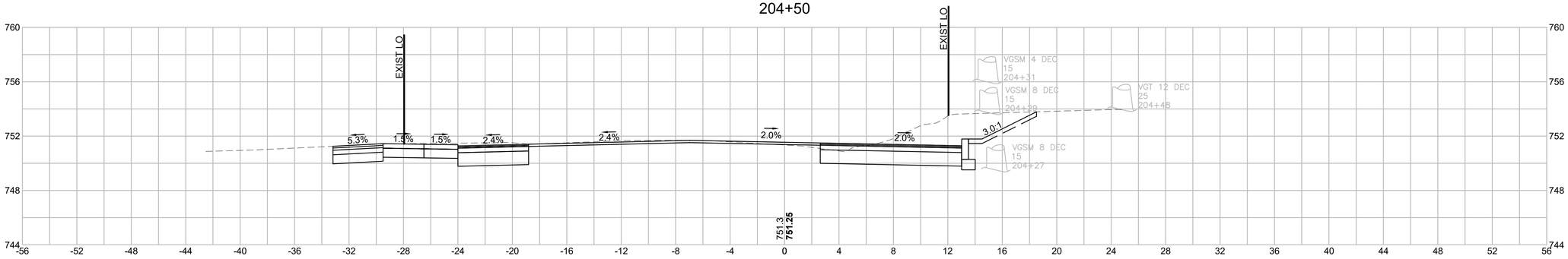
204+60



CUT: 65.99 SF

FILL: 0.88 SF

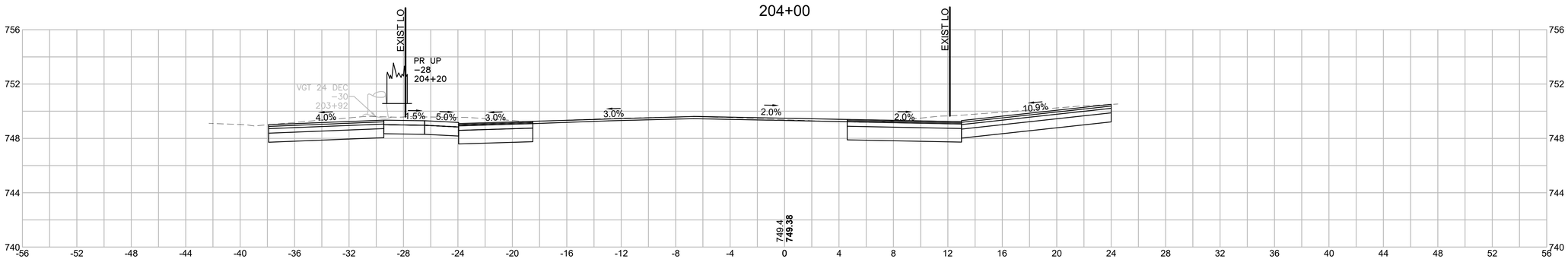
204+50



CUT: 56.45 SF

FILL: 0.56 SF

204+00



CUT: 42.43 SF

FILL: 0.02 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

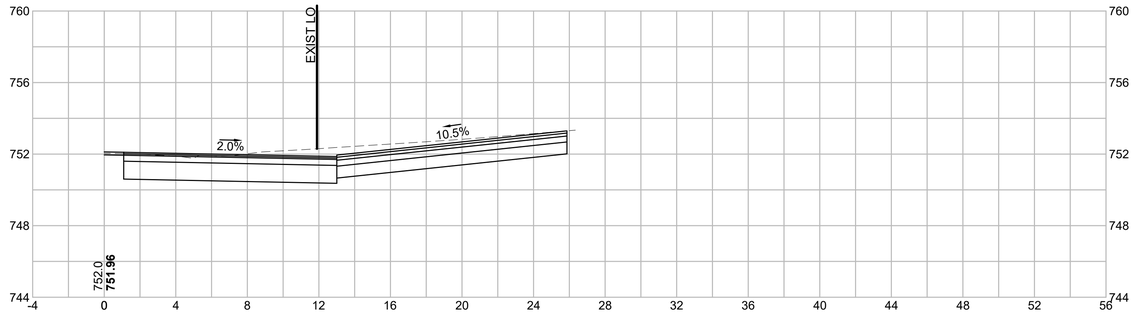
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	183	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

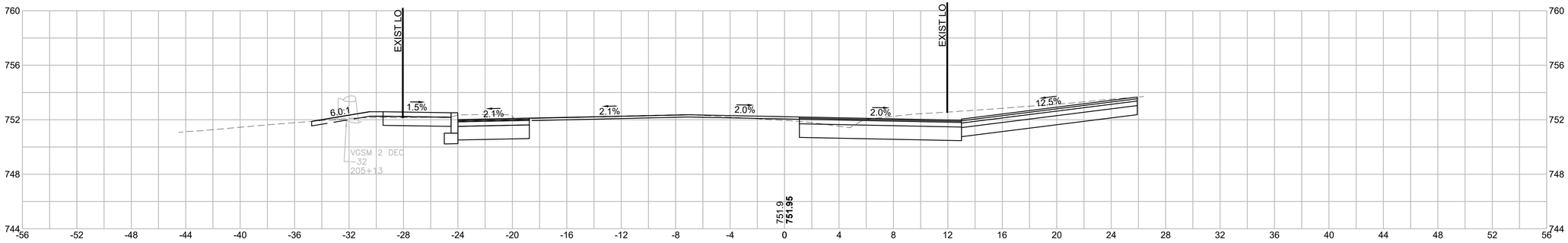
609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:26 PM

205+30



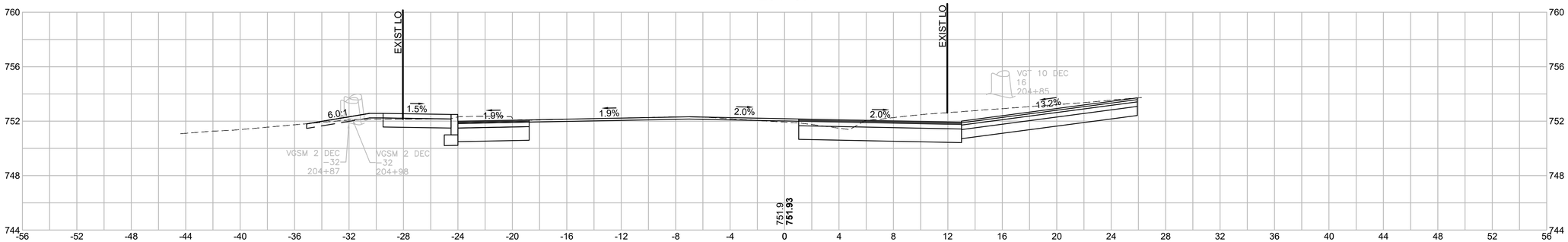
CUT: 19.88 SF
FILL: 0.04 SF

205+00



CUT: 43.74 SF
FILL: 0.81 SF

204+97



CUT: 47.24 SF
FILL: 0.78 SF

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

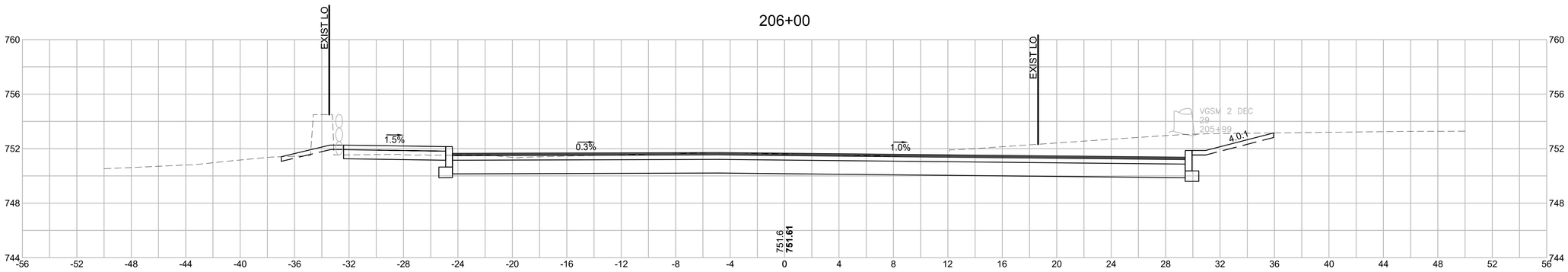
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	184	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:27 PM

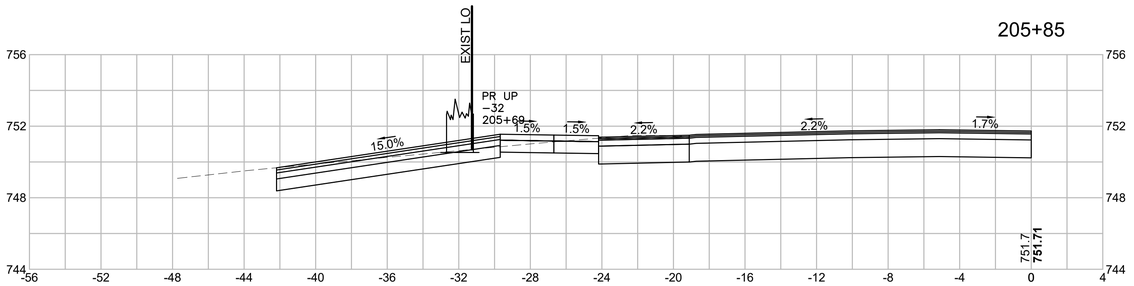
206+00



CUT: 39.03 SF

FILL: 0.23 SF

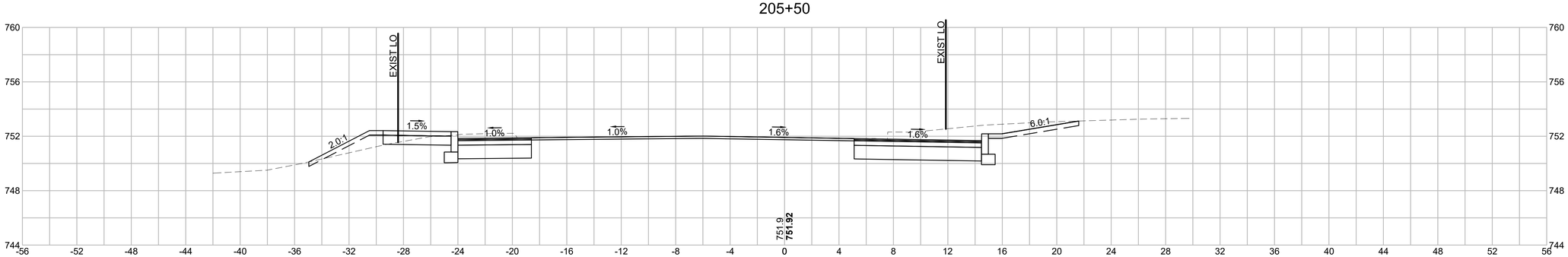
205+85



CUT: 31.79 SF

FILL: 0.00 SF

205+50



CUT: 19.99 SF

FILL: 2.98 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

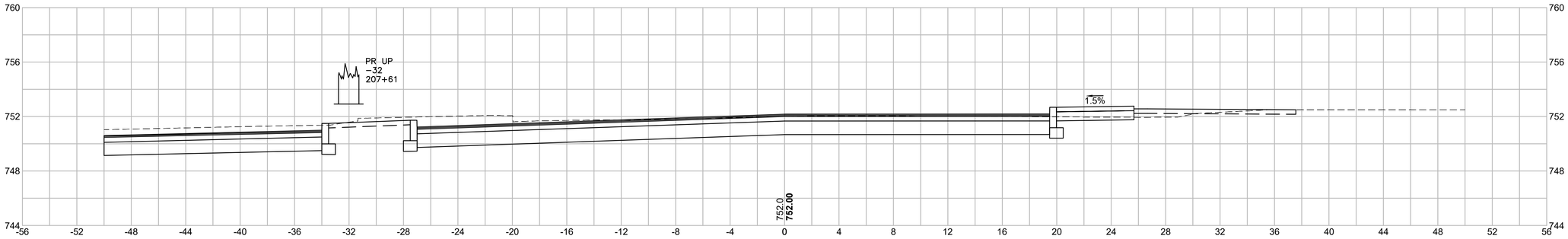
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	185	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

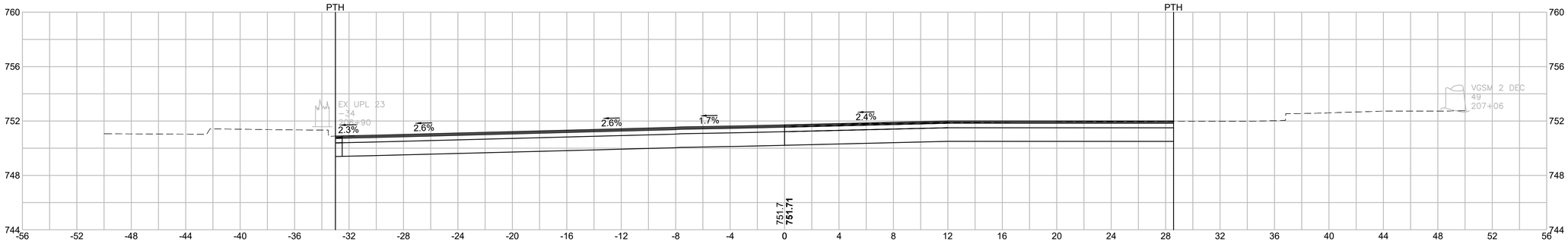
609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:27 PM

207+50



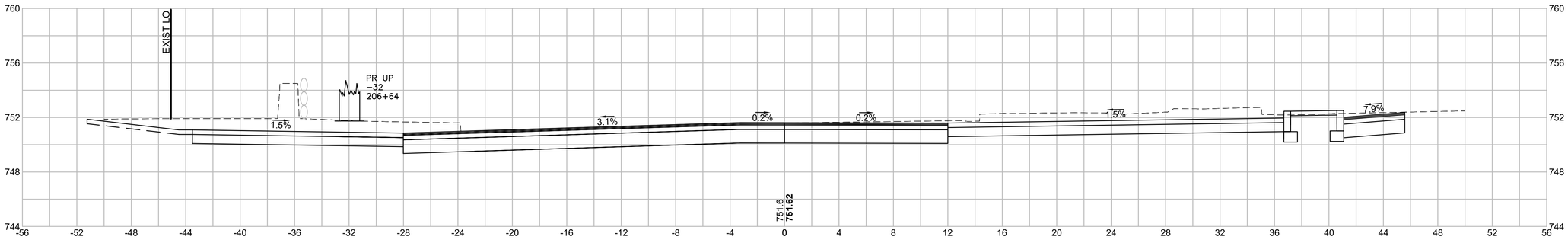
CUT: 42.79 SF
FILL: 0.00 SF

207+00



CUT: 0.00 SF
FILL: 0.00 SF

206+50



CUT: 90.51 SF
FILL: 0.00 SF

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

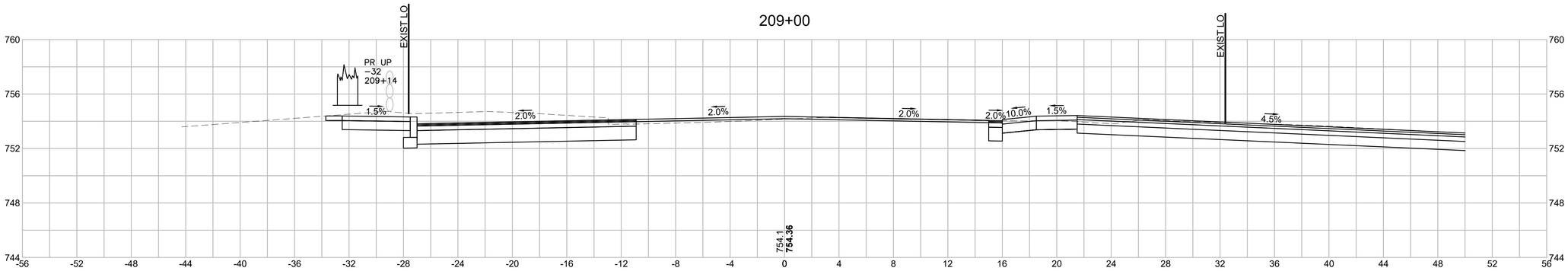
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	186	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

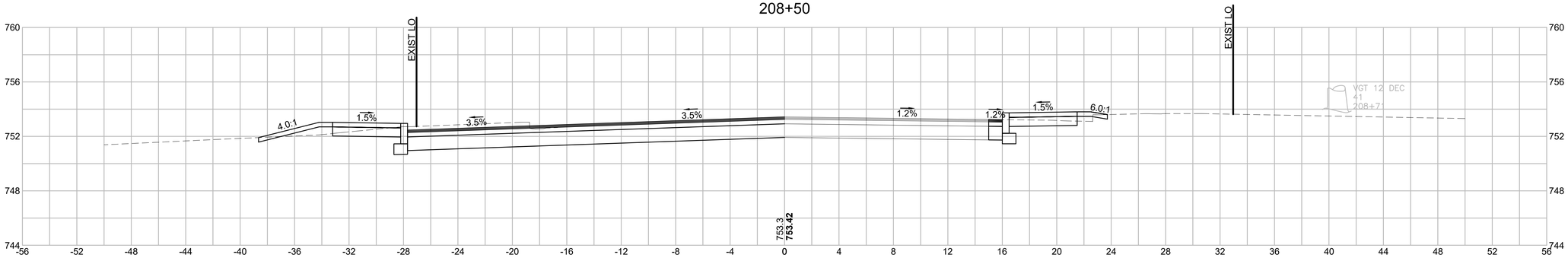
609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:28 PM

209+00



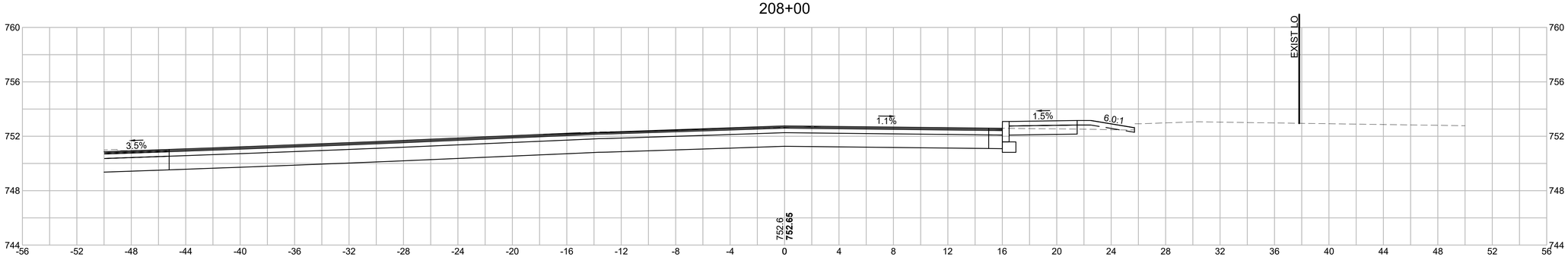
CUT: 33.15 SF
FILL: 1.16 SF

208+50



CUT: 0.00 SF
FILL: 0.00 SF

208+00



CUT: 0.00 SF
FILL: 0.00 SF

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

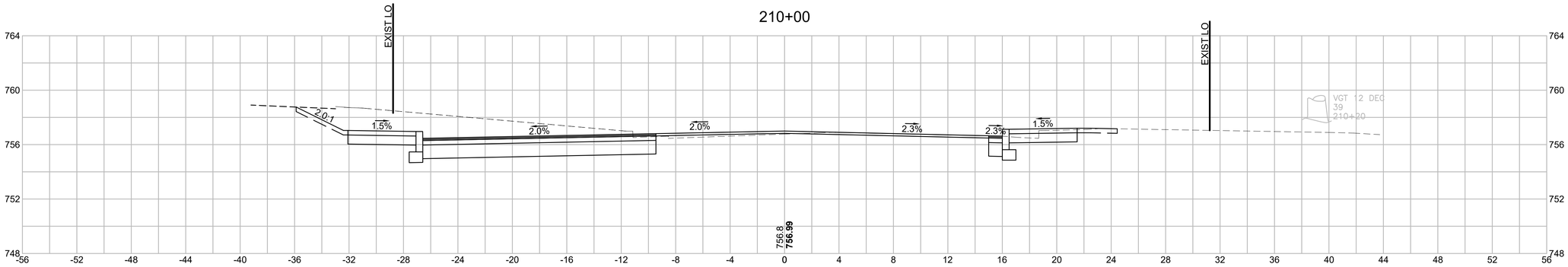
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	187	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:29 PM

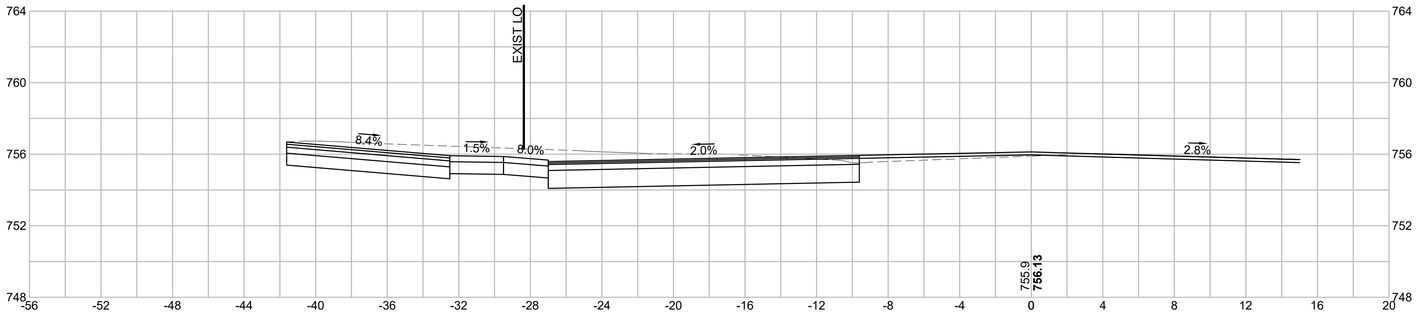
210+00



CUT: 0.00 SF

FILL: 0.00 SF

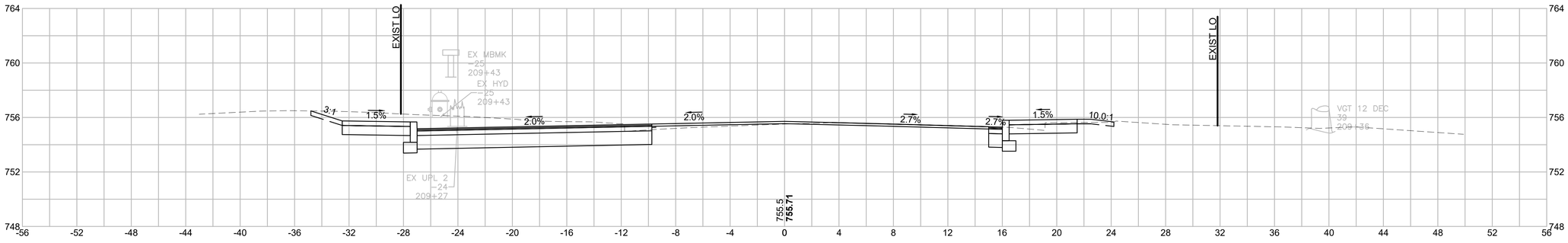
209+65



CUT: 0.00 SF

FILL: 0.00 SF

209+50



CUT: 35.59 SF

FILL: 0.28 SF

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

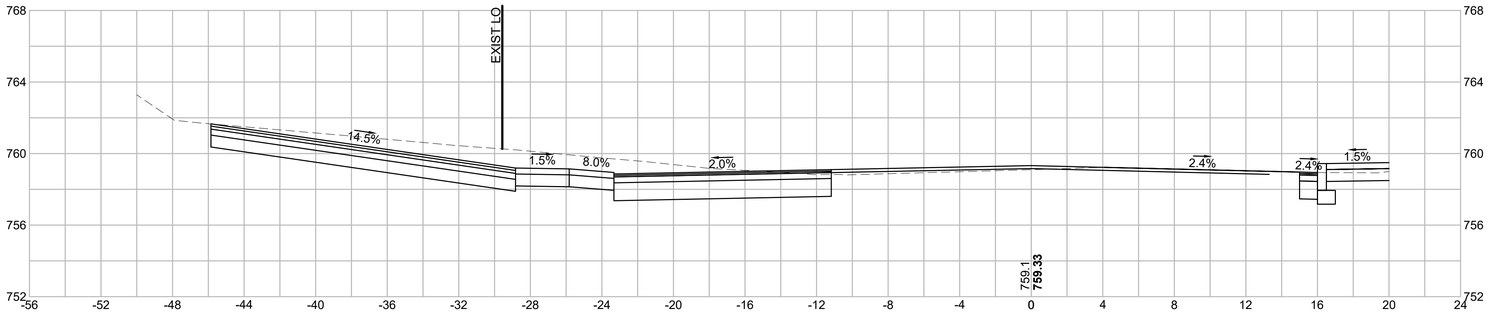
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	188	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

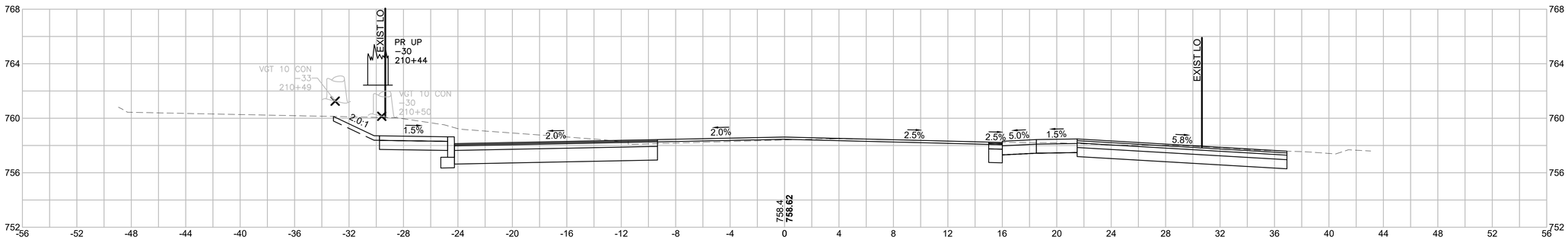
609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:29 PM

210+70



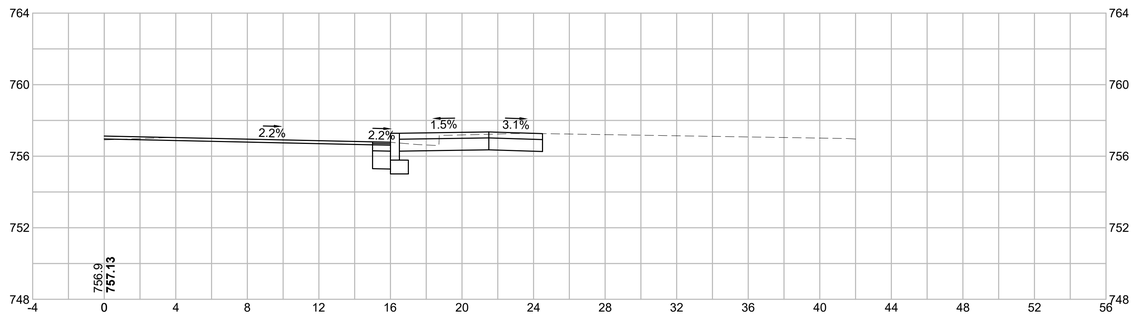
CUT: 58.63 SF
FILL: 0.00 SF

210+50



CUT: 49.24 SF
FILL: 0.00 SF

210+05



CUT: 8.66 SF
FILL: 0.04 SF

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

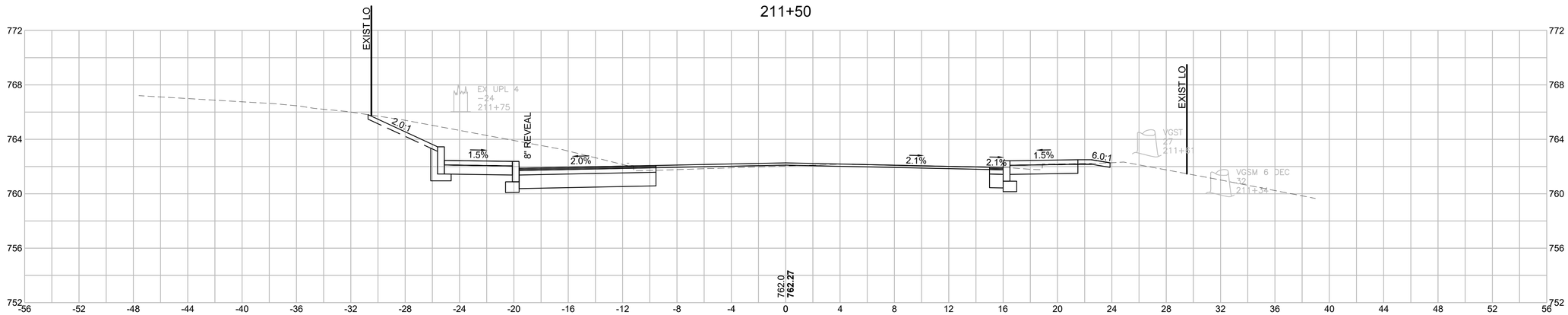
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	189	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:30 PM

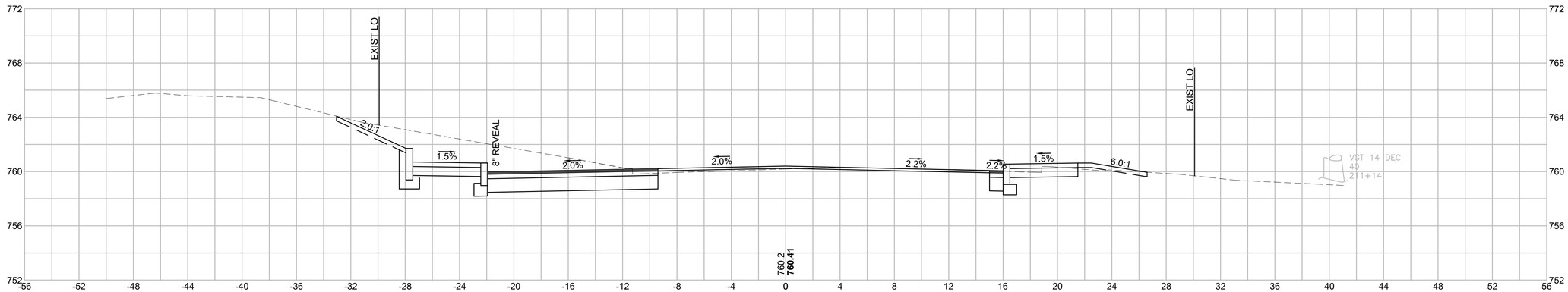
211+50



CUT: 50.47 SF

FILL: 0.01 SF

211+00



CUT: 89.06 SF

FILL: 0.27 SF

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

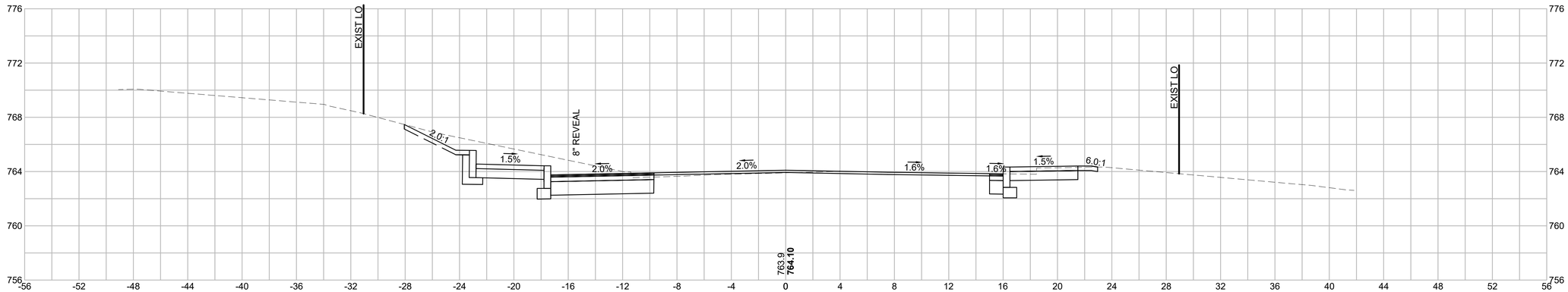
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	190	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

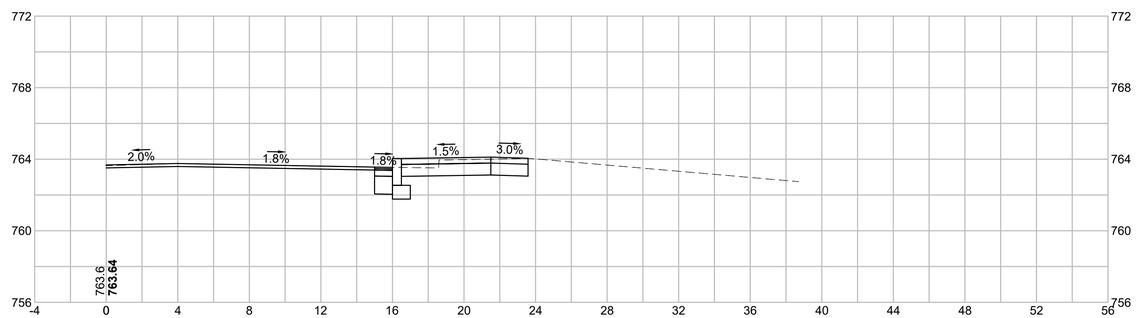
609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:30 PM

212+00



CUT: 50.58 SF
FILL: 0.00 SF

211+93



CUT: 8.79 SF
FILL: 0.04 SF

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

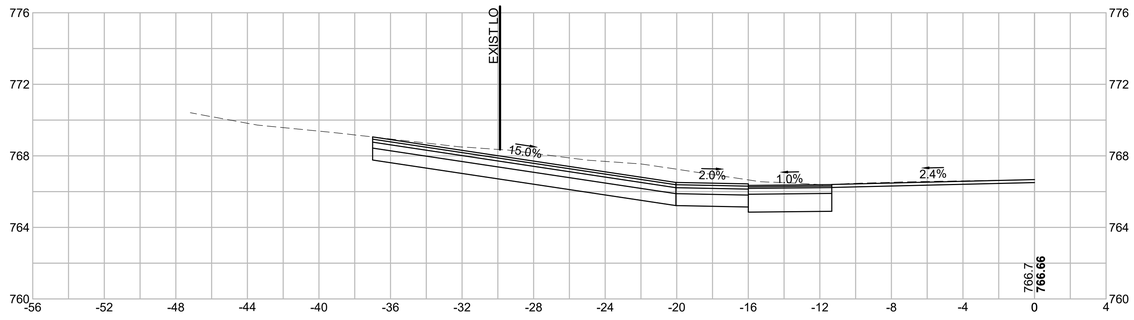
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	191	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:31 PM

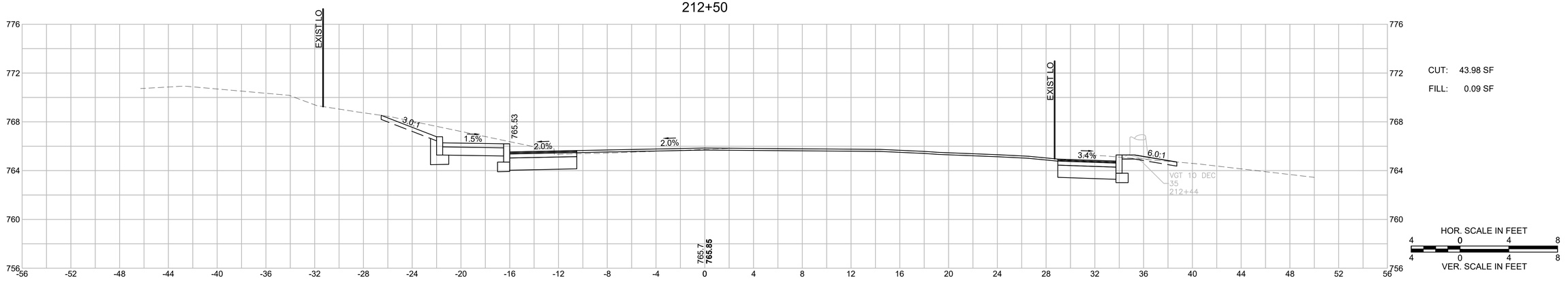
212+86



CUT: 34.63 SF

FILL: 0.00 SF

212+50



CUT: 43.98 SF

FILL: 0.09 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

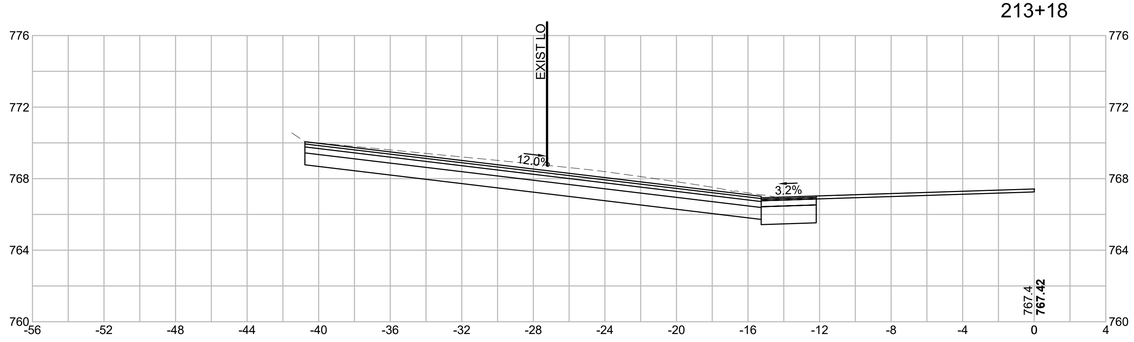
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	192	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_CHAPEL)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:31 PM

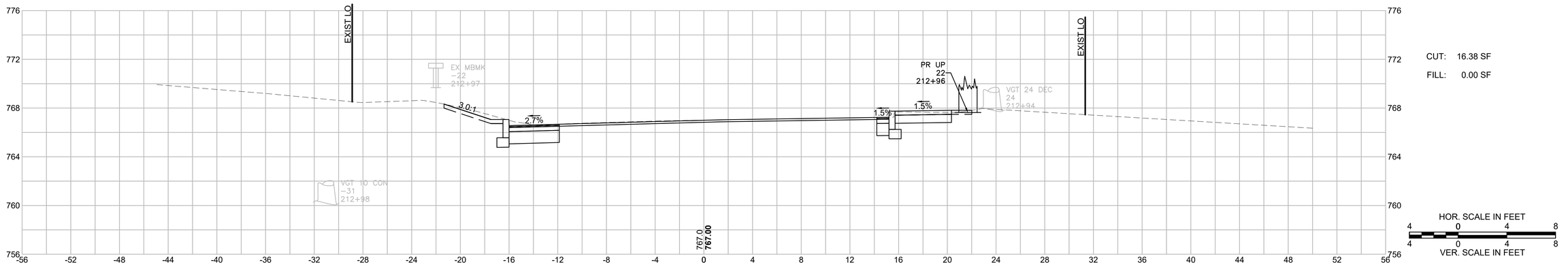
213+18



CUT: 51.32 SF

FILL: 0.00 SF

213+00



CUT: 16.38 SF

FILL: 0.00 SF

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

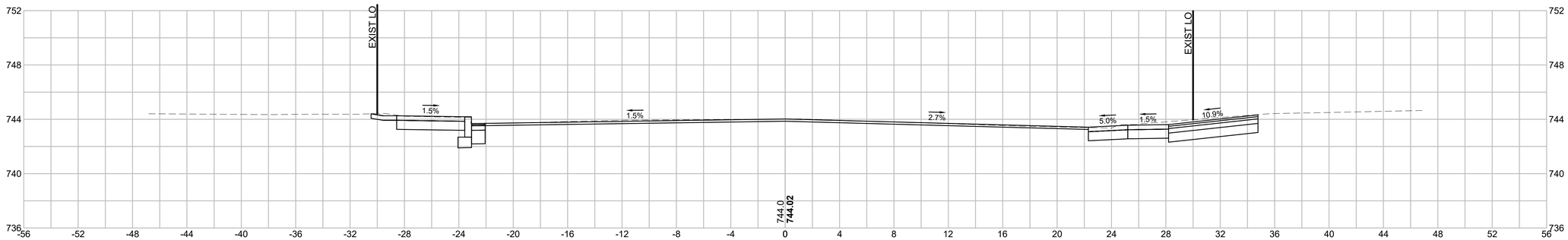
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	193	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

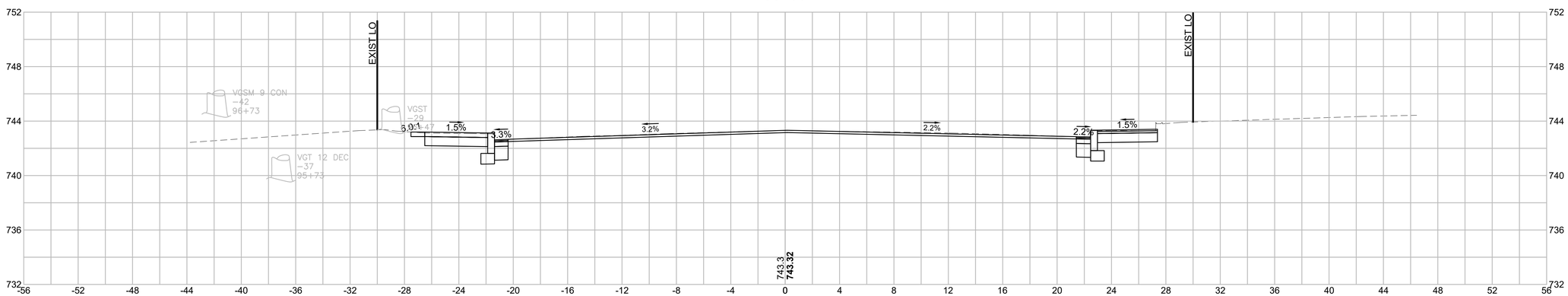
609219_HDXSEC_MAIN(_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:33 PM

97+00



CUT: 24.40 SF
FILL: 0.00 SF

96+50



CUT: 30.12 SF
FILL: 0.00 SF

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

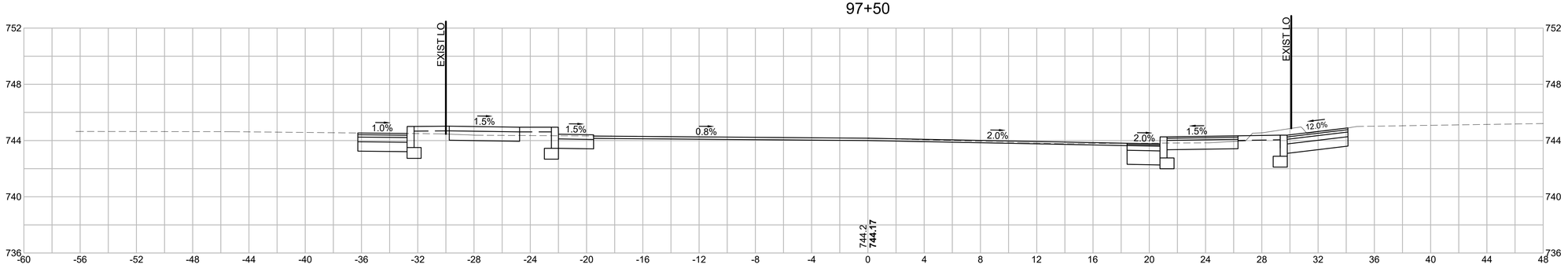
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	194	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_MAIN(_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:33 PM

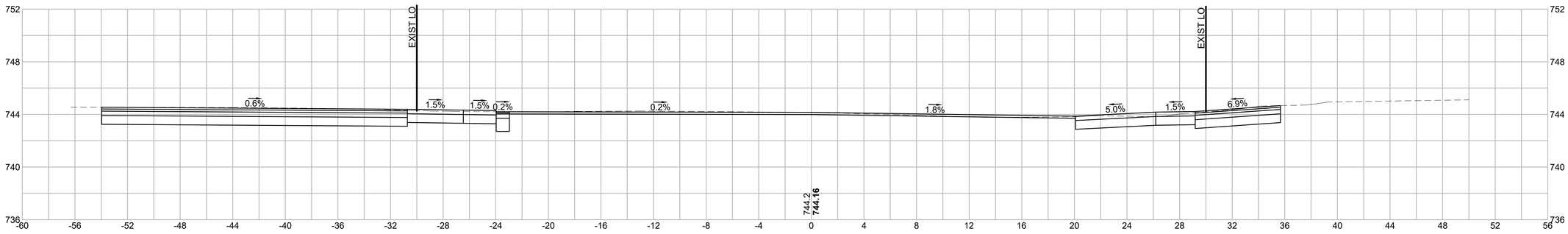
97+50



CUT: 39.85 SF

FILL: 0.47 SF

97+40



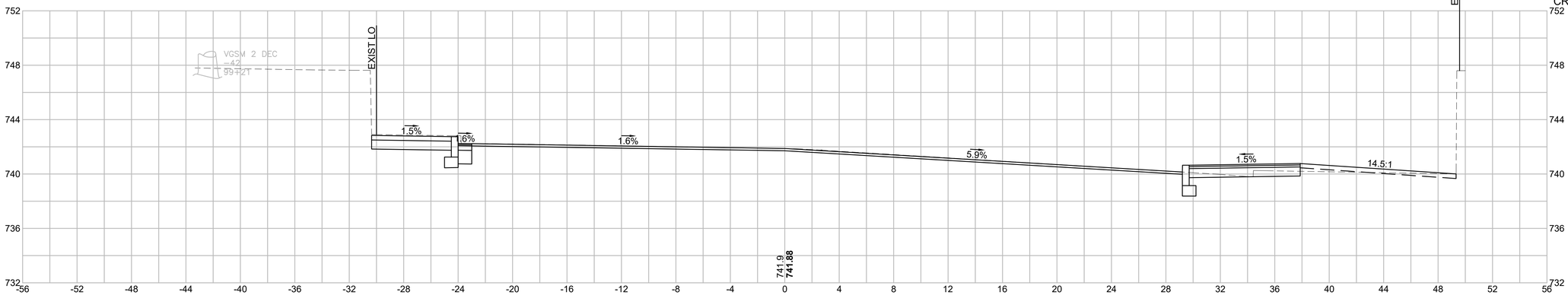
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	195	206
PROJECT FILE NO. 609219			

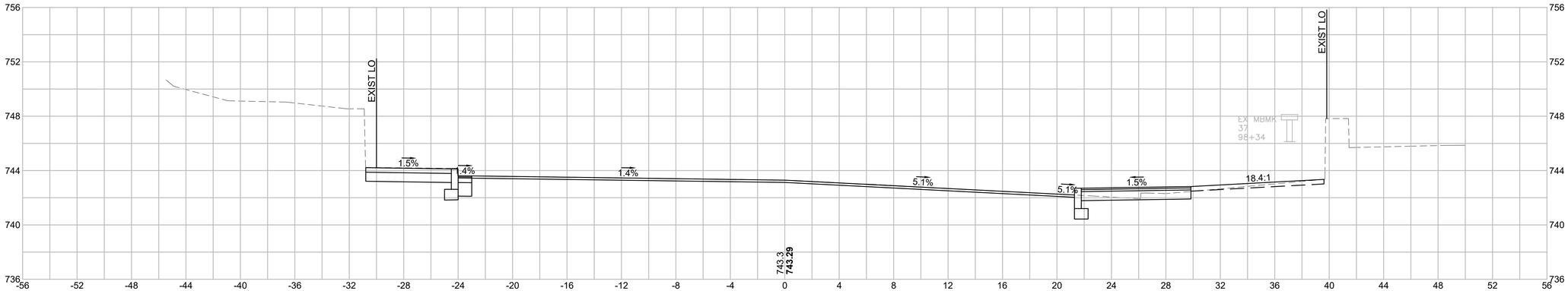
CROSS SECTIONS

99+00



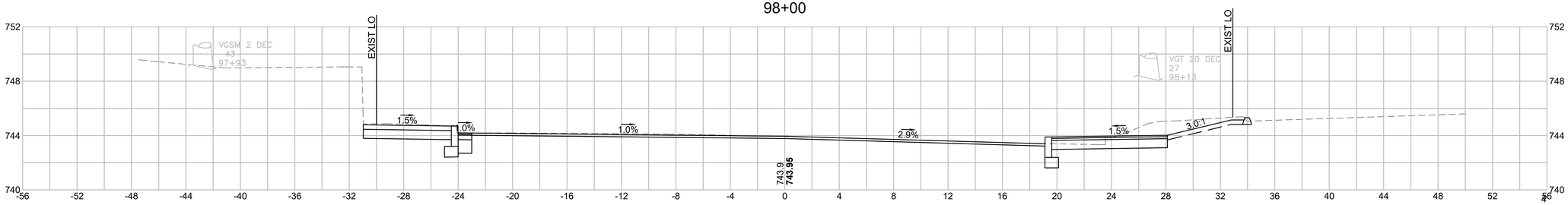
CUT: 13.86 SF
FILL: 0.57 SF

98+50



CUT: 15.93 SF
FILL: 0.01 SF

98+00



CUT: 24.54 SF
FILL: 0.00 SF

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

609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:33 PM

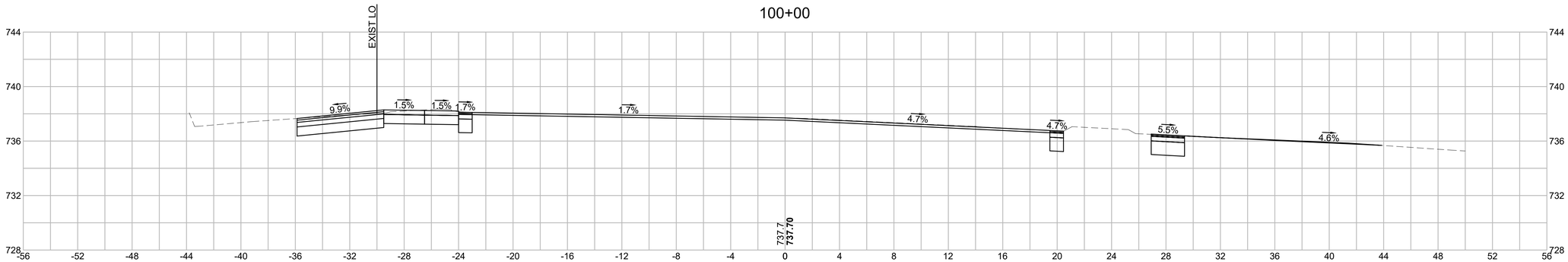
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	196	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

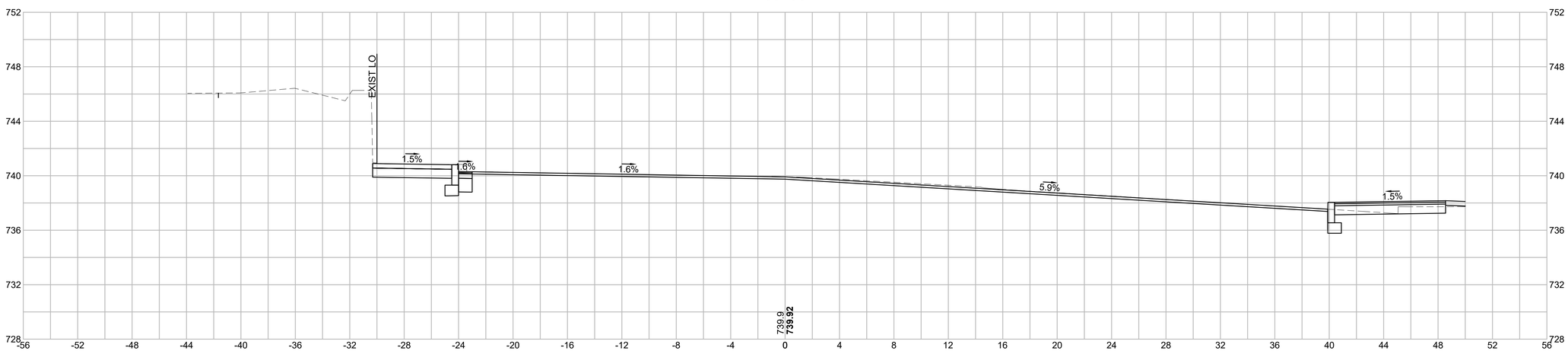
609219_HDXSEC_MAIN_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:33 PM

100+00



CUT: 16.05 SF
FILL: 0.00 SF

99+50



CUT: 13.73 SF
FILL: 0.09 SF

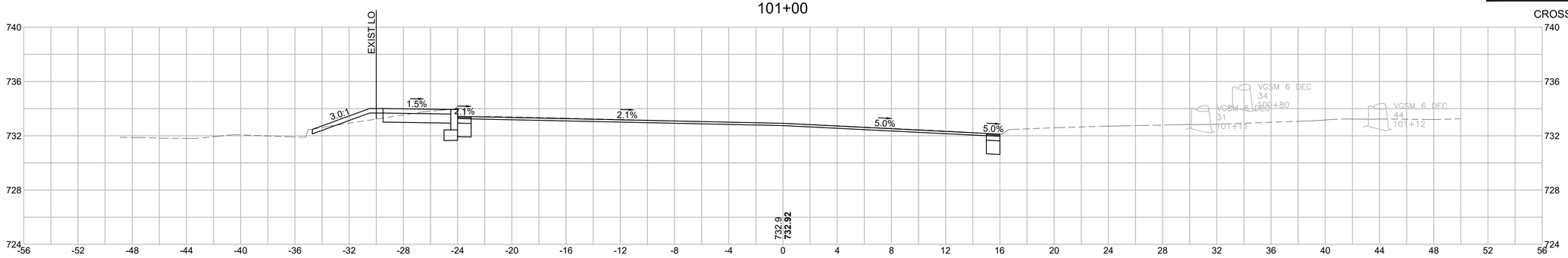
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	197	206
PROJECT FILE NO. 609219			

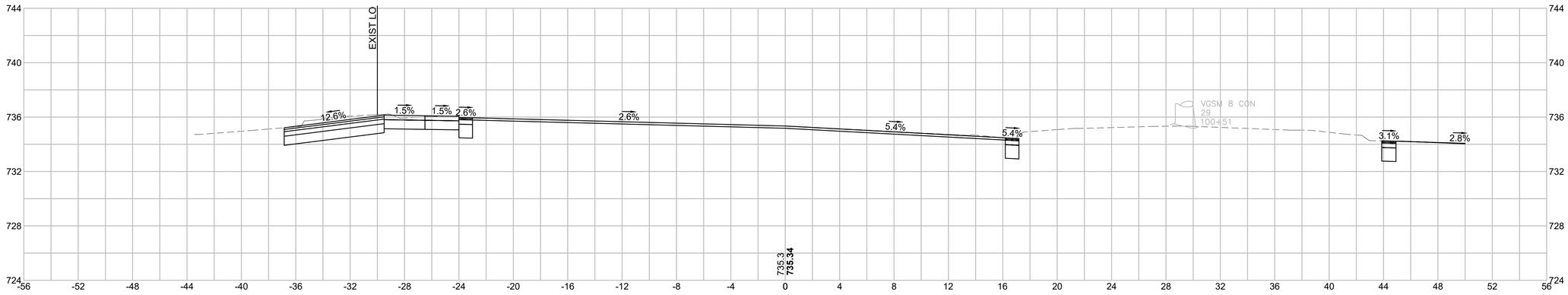
CROSS SECTIONS

101+00



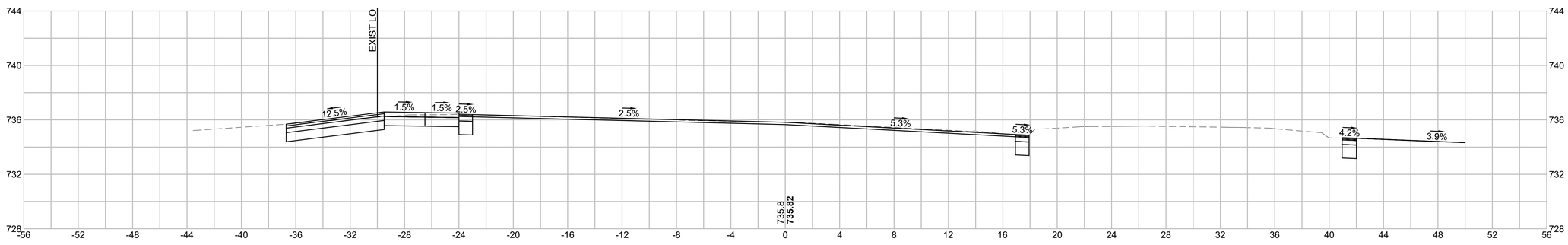
CUT: 7.00 SF
FILL: 1.26 SF

100+50



CUT: 17.10 SF
FILL: 0.05 SF

100+40



CUT: 15.58 SF
FILL: 0.01 SF

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

609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:34 PM

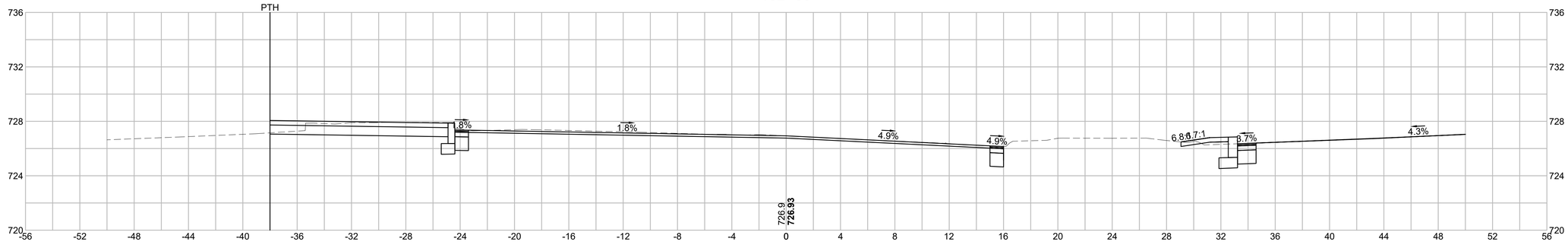
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	198	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

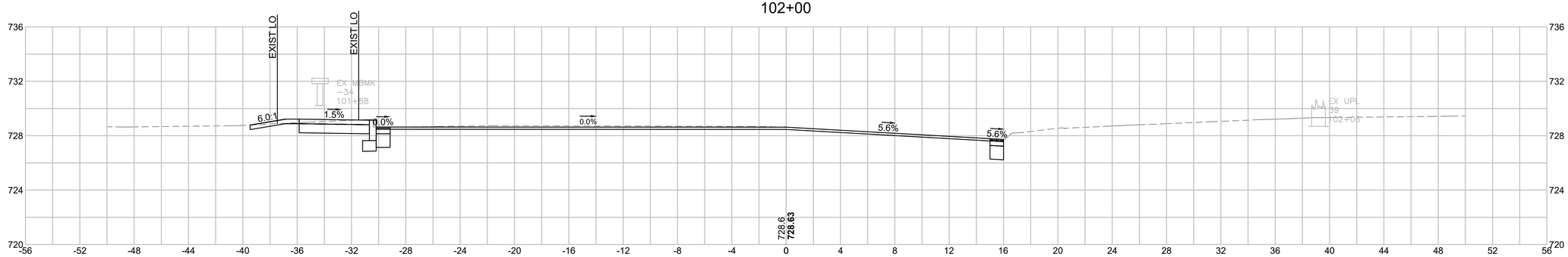
609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:34 PM

102+50



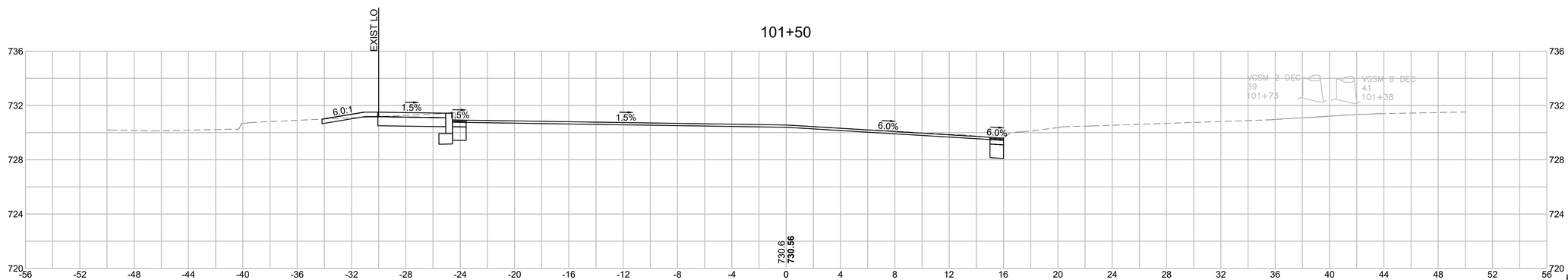
CUT: 13.82 SF
FILL: 0.23 SF

102+00



CUT: 8.39 SF
FILL: 0.00 SF

101+50



CUT: 7.53 SF
FILL: 0.03 SF

HOR. SCALE IN FEET
4 0 4 8

VER. SCALE IN FEET
4 0 4 8

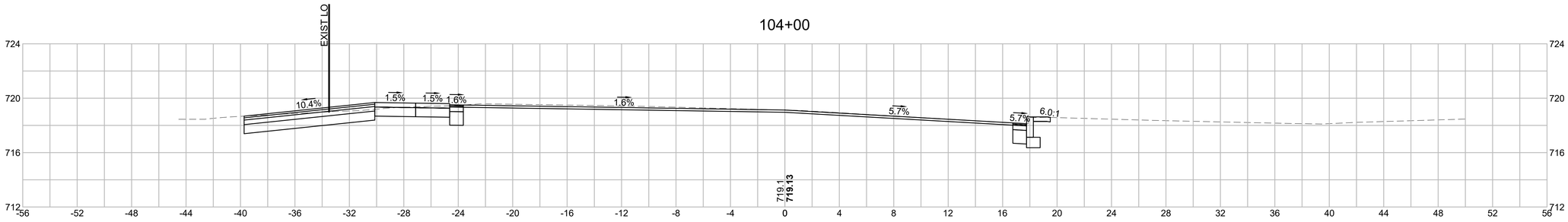
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	199	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

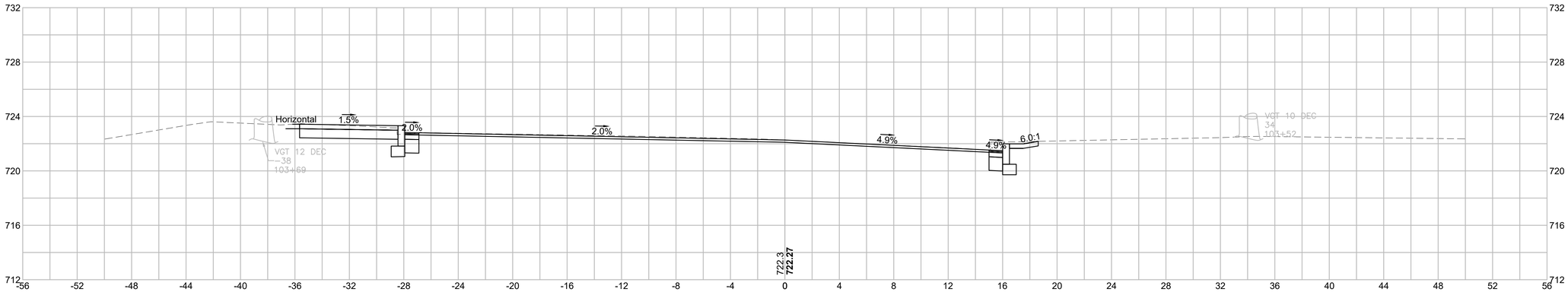
609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:34 PM

104+00



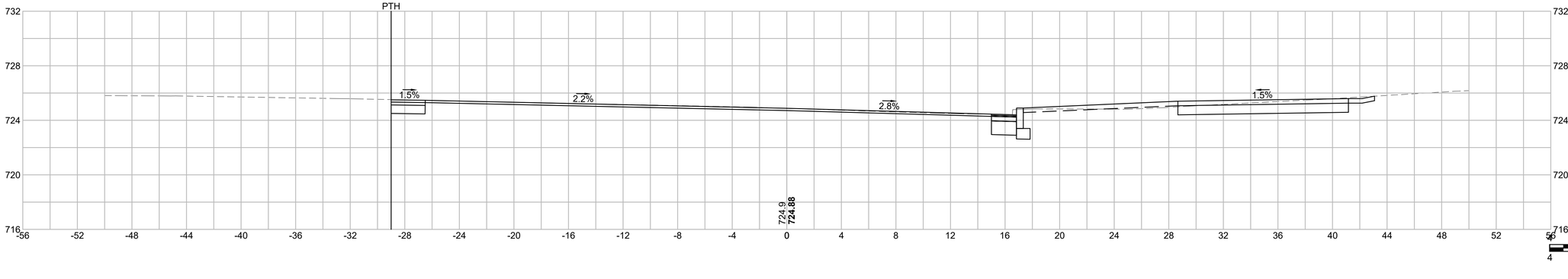
CUT: 15.13 SF
FILL: 0.00 SF

103+50



CUT: 9.95 SF
FILL: 0.00 SF

103+00



CUT: 14.36 SF
FILL: 0.29 SF

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

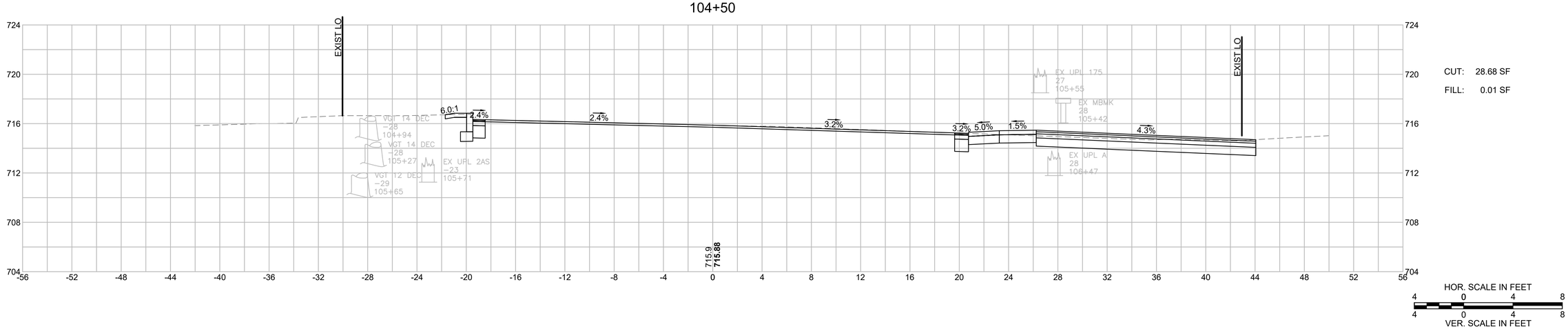
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	200	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:34 PM

104+50



CUT: 28.68 SF

FILL: 0.01 SF

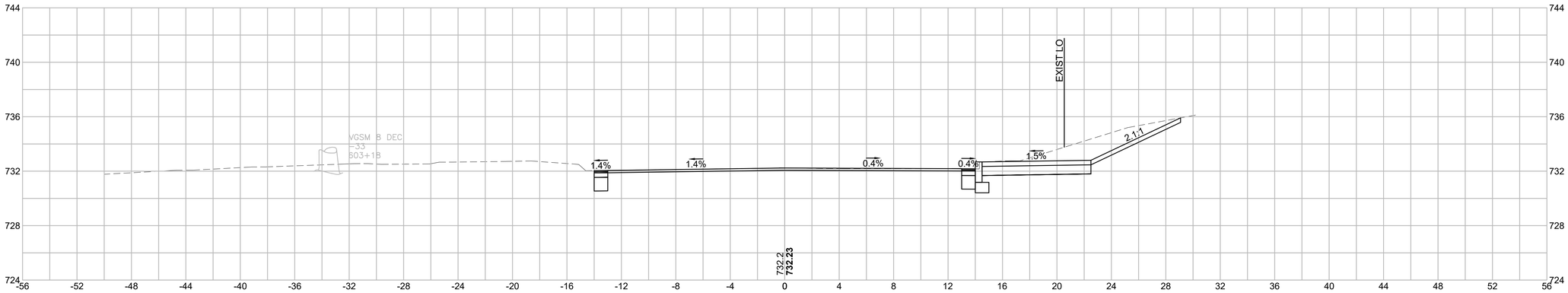
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	201	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

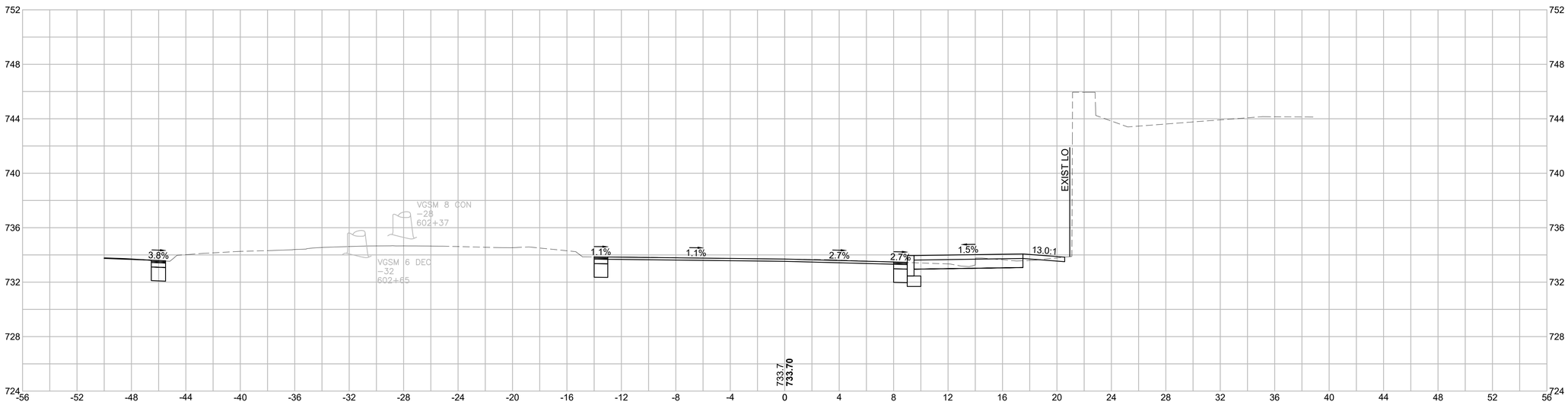
603+00



CUT: 28.29 SF

FILL: 0.00 SF

602+50



CUT: 15.67 SF

FILL: 0.11 SF

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

609219_HDXSEC_MAIN)_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:35 PM

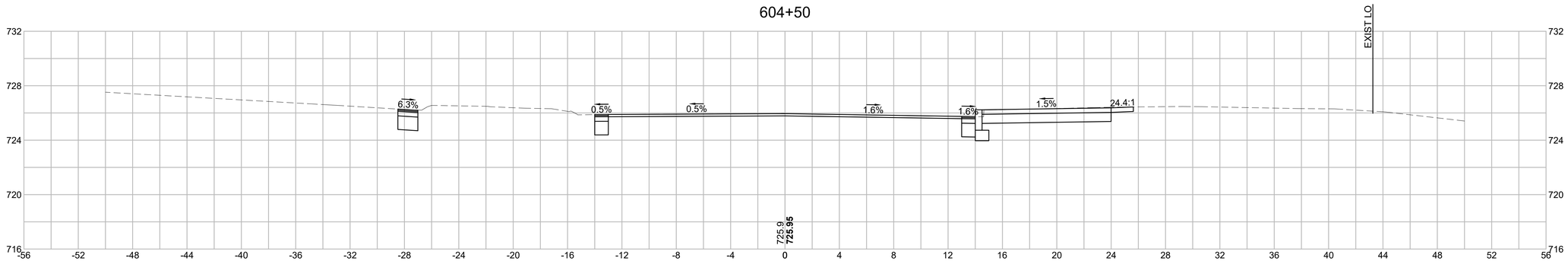
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	202	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

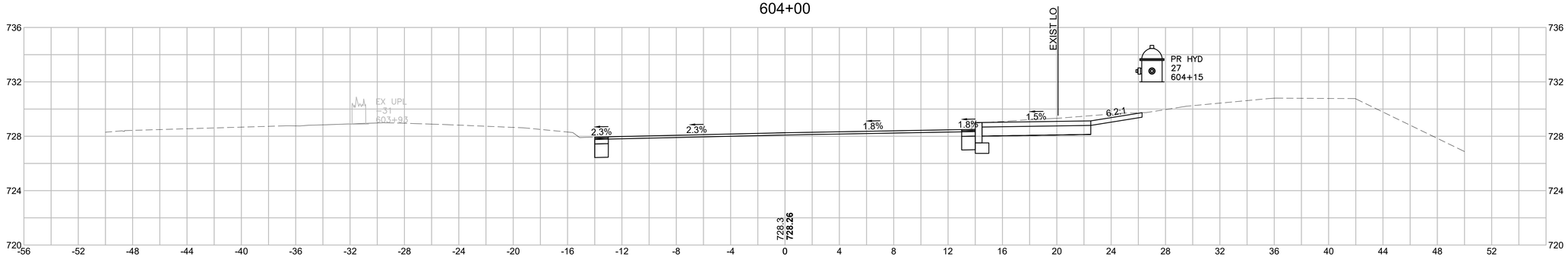
609219_HDXSEC_MAIN(_UNEXPLODED.DWG Plotted on 4-Jan-2023 2:35 PM

604+50



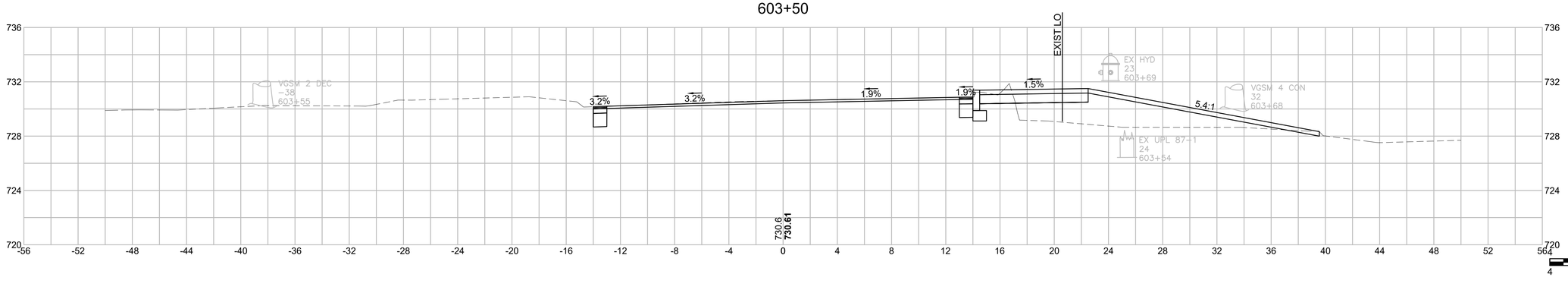
CUT: 67.35 SF
FILL: 0.07 SF

604+00



CUT: 19.02 SF
FILL: 0.05 SF

603+50



CUT: 10.74 SF
FILL: 24.39 SF

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

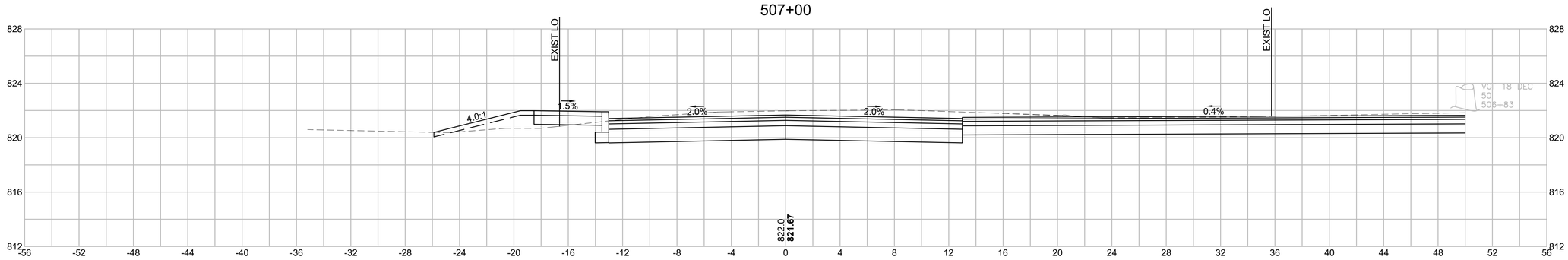
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	203	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_BRATTLE).DWG Plotted on 4-Jan-2023 2:37 PM

507+00

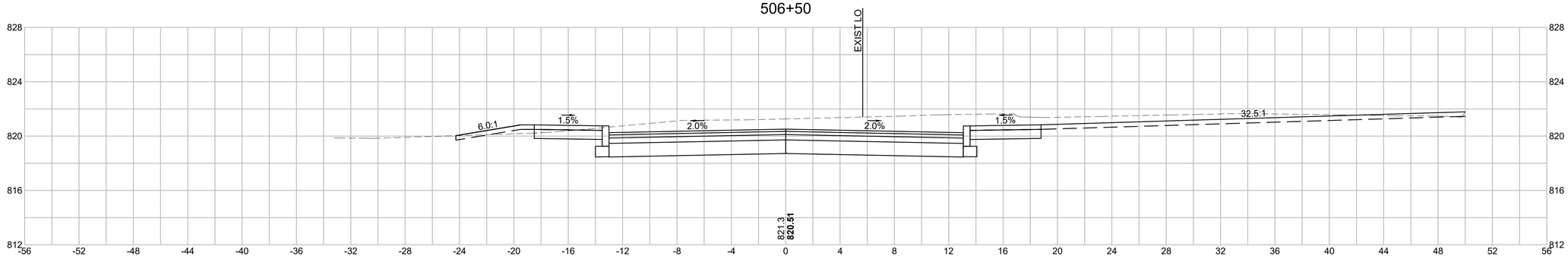


VGI 18 DEC 50 506+83

CUT: 81.87 SF

FILL: 3.72 SF

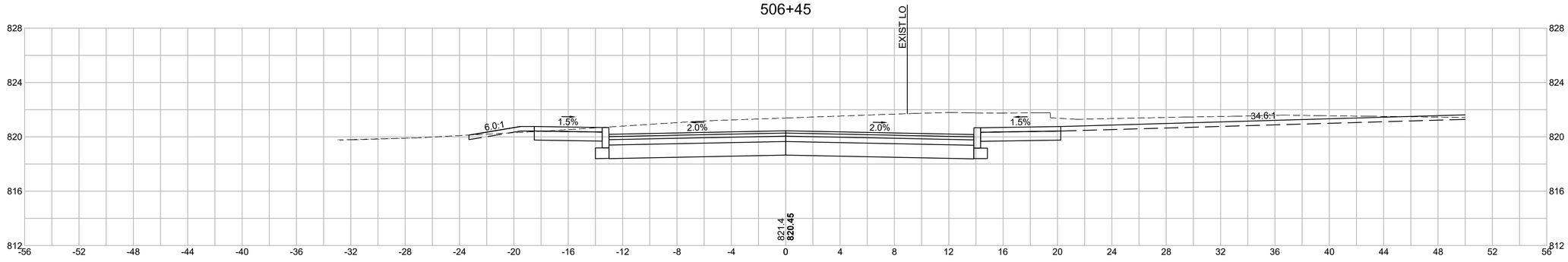
506+50



CUT: 102.94 SF

FILL: 0.66 SF

506+45



CUT: 115.10 SF

FILL: 0.11 SF

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

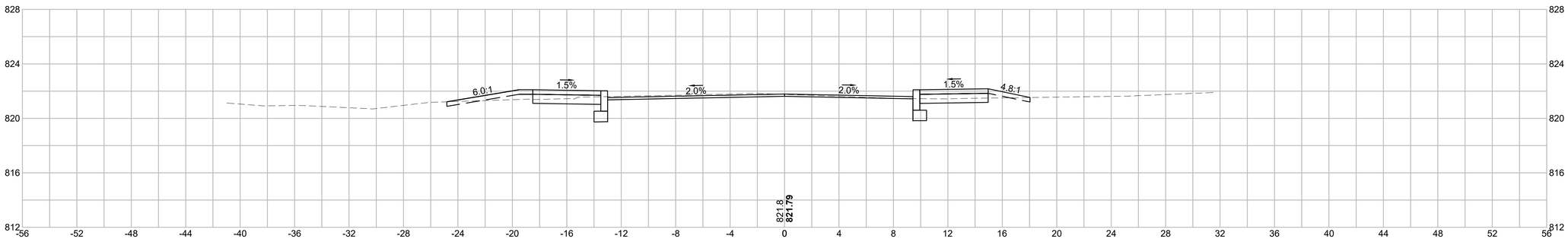
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	204	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

609219_HDXSEC_BRATTLE).DWG Plotted on 4-Jan-2023 2:38 PM

507+50



CUT: 47.43 SF

FILL: 1.19 SF

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

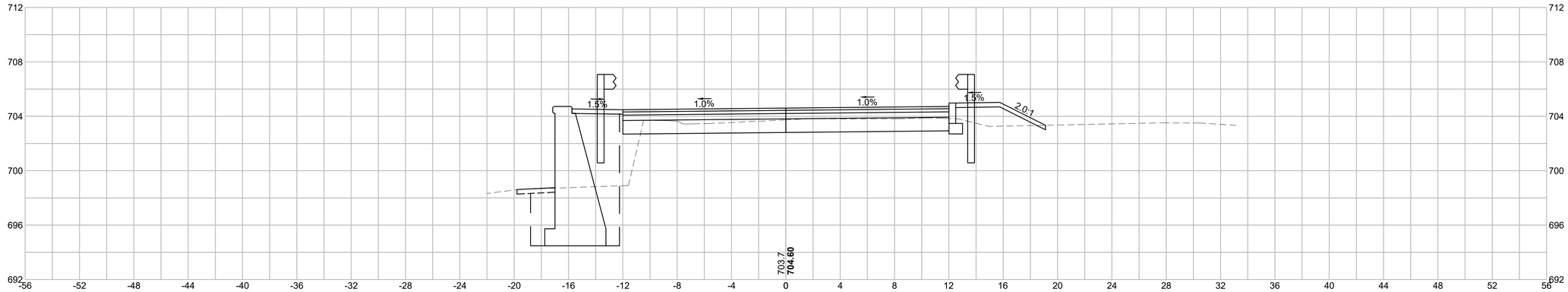
HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	205	206
PROJECT FILE NO. 609219			

CROSS SECTIONS

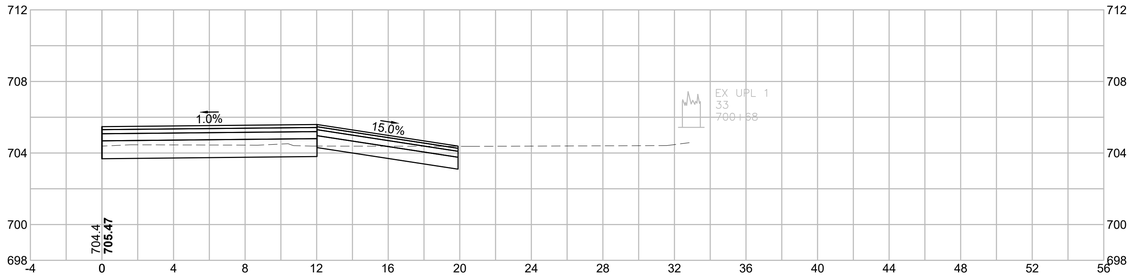
609219_HD\XSEC_WACHUSETT).DWG Plotted on 4-Jan-2023 2:40 PM

701+00



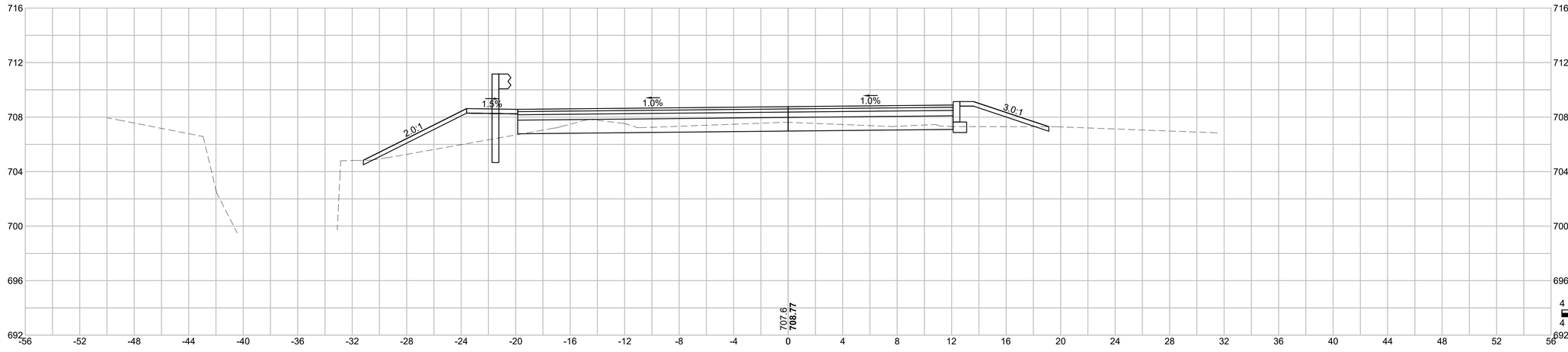
FILL: 3.03 SF
CUT: 21.37 SF

700+88



FILL: 0.00 SF
CUT: 13.68 SF

700+50



FILL: 20.40 SF
CUT: 15.95 SF

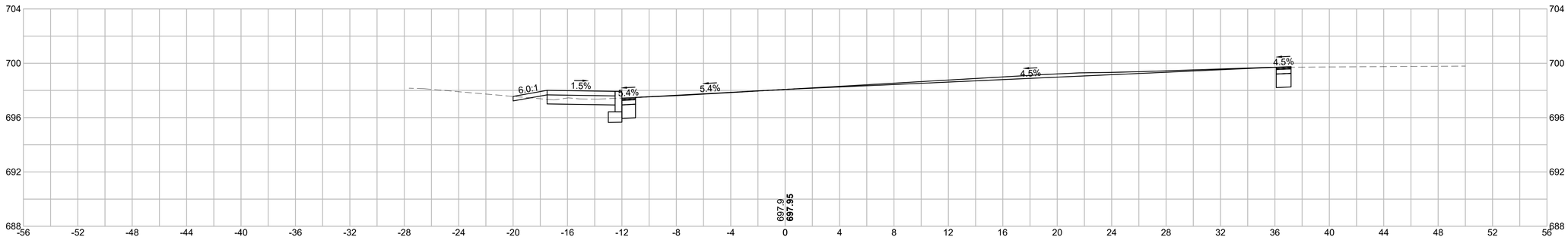
HOR. SCALE IN FEET
4 0 4 8
VER. SCALE IN FEET
4 0 4 8

HOLDEN
SHREWSBURY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	XXXX	206	206
PROJECT FILE NO. 609219			

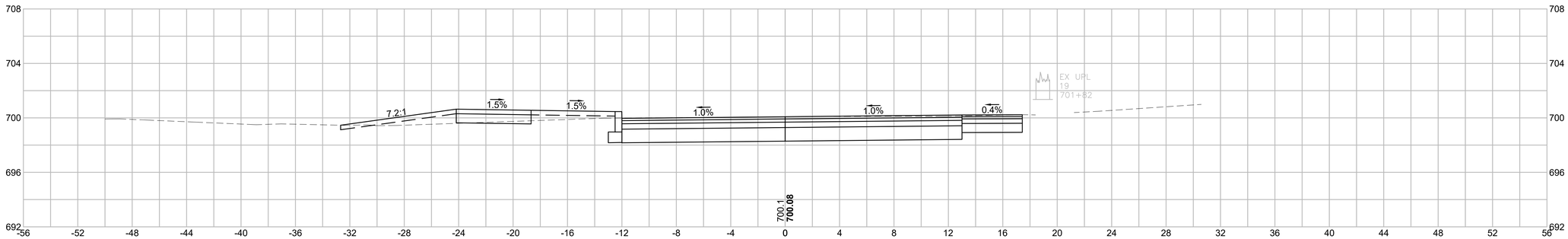
CROSS SECTIONS

702+50



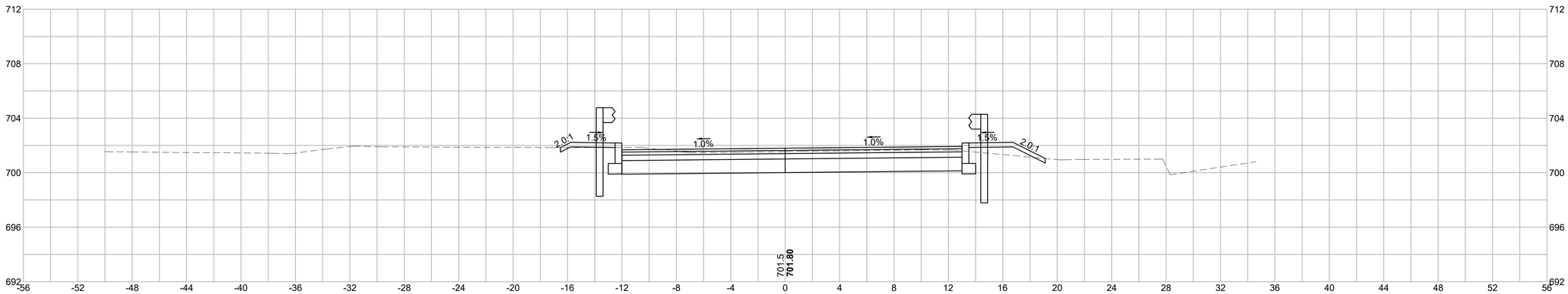
FILL: 0.27 SF
CUT: 13.56 SF

702+00



FILL: 0.08 SF
CUT: 41.18 SF

701+50



FILL: 0.00 SF
CUT: 42.81 SF

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

609219_HD\XSEC_WACHUSETT).DWG Plotted on 4-Jan-2023 2:41 PM