massDOT Massachusetts Department of Transportation Highway Division

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	1	154
PROJECT FILE NO. 604989			

TITLE SHEET & INDEX

PLAN AND PROFILE OF

MAIN STREET (ROUTE 30)

IN THE TOWN OF

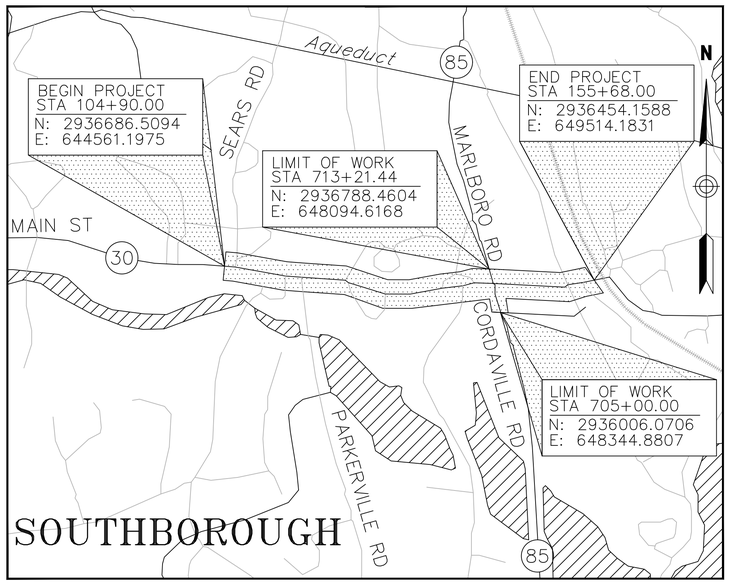
SOUTHBOROUGH

WORCESTER COUNTY

FEDERAL AID PROJECT NO:

INDEX

SHEET NO.	DESCRIPTION
1.	TITLE SHEET & INDEX
2.	LEGEND & GENERAL NOTES
3.	KEY PLAN
4.–7.	TYPICAL SECTIONS
8.–17.	CONSTRUCTION PLANS
18.–31.	PROFILES
32.–41.	ALIGNMENT & GRADING PLANS
42.–52.	TRAFFIC PLANS
53.–55.	SIGN SUMMARY
56.–58.	TRAFFIC DETAILS
59.–68.	UTILITY PLANS
69.–72.	TRAFFIC MANAGEMENT PLANS
73.–82.	LANDSCAPING PLANS
83.–92.	CONSTRUCTION DETAILS
93.–95.	WHEELCHAIR RAMP DETAILS
96.–154.	CROSS SECTIONS



LENGTH OF PROJECT: 6572.2 FEET = 1.24 MILES

100% SUBMISSION

REFERENCE MANUALS

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE INTERIM SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 16, 2016, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, 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, WILL GOVERN.

DESIGN DESIGNATION

	MAIN STREET (WEST OF SCHOOL STREET)	CORDAVILLE ROAD
DESIGN SPEED	35 MPH (WEST OF SCHOOL ST) 25 MPH (EAST OF SCHOOL ST)	35 MPH
ADT (2009)	8,215 VPD	11,157 VPD
ADT (2021)	8,986 VPD	12,204 VPD
K	10%	9%
D	72.8% EB	57.0% SB
T (PEAK HOUR)	4.3%	1.7%
T (AVERAGE DAY)	2.0%	2.0%
DHV	925 VPH	1,154 VPH
DDHV	674 VPH	657 VPH
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL	URBAN MINOR ARTERIAL

CONVENTIONAL SIGNS

COUNTY, CITY OR TOWN BOUNDARY

COUNTY, CITY OR TOWN SIDE LINE

FENCE LINE

BASE LINE OR SURVEY LINE — 75 — N00°–31'–37"W 132.57

RIGHT OF WAY LINE

CULVERT

RETAINING WALL

GUARD RAIL

STONE WALL

TREE LINE

POLE

PROPOSED SURFACE
EXISTING SURFACE
EXIST 90.7
PROP 90.91
10+20

ELEVATIONS

PROJECT ENGINEER
STRUCTURAL REVIEW
TRAFFIC SIGNAL REVIEW
HIGHWAY DEPT. AUTHORIZATION
HIGHWAY TECH. REVIEW
CONSTRUCTION REVIEW

DATE	DESCRIPTION	REV #
10/3/17	100% SUBMISSION	1
1/15/16	75% SUBMISSION	-

massDOT Massachusetts Department of Transportation Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER Date

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINSTRATION
APPROVED

DIVISION ADMINISTRATOR Date

APPROVED

HIGHWAY ADMINISTRATOR Date

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-COV.DWG

GENERAL SYMBOLS

EXISTING	PROPOSED	
□ CB (OR GI, LB)	■ CB	CATCH BASIN (OR GUTTER INLET, OR LEACHING BASIN)
□□ CBCI (OR GICI)	■ CBCI (OR GICI)	CATCH BASIN (OR GUTTER INLET) WITH CURB INLET (GUTTERMOUTH)
		EDGESTONE–TYPE NOTED
		EDGE OF ROAD
○ EHH	● EHH	ELECTRIC HANDHOLE (NUMBER AS NOTED)
○ EMH	● EMH	ELECTRIC MANHOLE "
○ TMH	● TMH	TELEPHONE MANHOLE "
○ WMH	● WMH	WATER MANHOLE "
○ SMH	● SMH	SEWER MANHOLE "
○ DMH	● DMH	DRAINAGE MANHOLE "
○ GG	● GG	GAS GATE
○ WG	● WG	WATER GATE
○ CS	● CS	CURB STOP
Hyd	● HYD	HYDRANT
○ FA	● FA	FIRE ALARM BOX
○ PM	● PM	PARKING METER
LP	● LP	STREET LIGHT POLE
UP	● UP	UTILITY POLE
Guy	● GUY	GUY POLE
12" RCP D	D 21"–12"RCP	DRAIN PIPE (UNDER 24")
	D 21"–24"RCP	DRAIN PIPE (DOUBLE LINE 24" AND OVER)
8" VCP S	S 82'–8"VCP	SEWER MAIN " "
E	E	ELECTRIC DUCT " "
4" HP G	G 8"GAS	GAS MAIN " "
8" C.I. W	W 12"DI	WATER MAIN " "
T	T	TELEPHONE DUCT " "
□ MB	■ MB	MAIL BOX
		HIGHWAY GUARD (TYPE NOTED)
x x	x o	FENCE (SIZE AND TYPE NOTED)
□ MHB	■ MHB	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
LABEL/DATE	LABEL/DATE	CITY, TOWN, OR COUNTY LAYOUT
		STATE HIGHWAY LAYOUT (S.H.L.O.)
		EASEMENT LINE
℄	℄	PROPERTY LINE
NAME		CITY, TOWN, OR COUNTY BOUNDARY
NAME		STATE BOUNDARY
N00°00'00"E		BASE OR SURVEY LINE
+57.59 10 P.C. N00°00'00"E		CONSTRUCTION BASELINE
		TREE (SIZE AND TYPE NOTED)
		APPROXIMATE FULL DEPTH AREA
	B–1	BORINGS, PAVEMENT CORES
	TP–1	TEST PIT
		FILTER TUBES

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)
75		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
	SL	STOP LINE
	CW	CROSSWALK (WIDTHS AS NOTED)
	SWL	SOLID WHITE LINE (4" LINE WIDTH)
	SYL	SOLID YELLOW LINE (4" LINE WIDTH)
	BWL	BROKEN WHITE LINE (4" LINE WIDTH)
	BYL	BROKEN YELLOW LINE (4" LINE WIDTH)
	DWL	DOTTED WHITE LINE (4" LINE WIDTH)
	DYL	DOTTED YELLOW LINE (4" LINE WIDTH)
	DWLEx	DOTTED WHITE LINE EXTENSION (4" LINE WIDTH)
	DYLEx	DOTTED YELLOW LINE EXTENSION (4" LINE WIDTH)
	DBWL	DOUBLE WHITE LINE (4" LINE WIDTH)
	DBYL	DOUBLE YELLOW LINE (4" LINE WIDTH)
		BIKE LANE SYMBOL

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	––	2	154
PROJECT FILE NO. 604989			

LEGEND & GENERAL NOTES

GENERAL NOTES

1. SURVEY WAS PERFORMED BY VANASSE HANGEN BRUSTLIN, INC., WATERTOWN, MA. IN AUGUST, 2009 AND SUPPLEMENTAL SURVEY IN MARCH, 2011 AND OCTOBER 2015. UNDERGROUND UTILITIES WERE TAKEN FROM PLANS PREPARED BY TAJ ENGINEERING, CHELMSFORD, MA., DATED JANUARY 2004. TOPOGRAPHICAL INFORMATION IS PROVIDED IN NAVD88 VERTICAL DATUM AND MA MAINLAND NAD83 HORIZONTAL DATUM.
2. THE RIGHT–OF–WAY LINES SHOWN ON THIS PLAN ARE BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC. IN MARCH 2011 AND FROM PLANS OF RECORD. WHERE PLANS AND MONUMENTATION WERE NOT FOUND, EXISTING WALLS, FENCES AND PHYSICAL OCCUPATION WERE HELD AS THE LIMITS OF RIGHT–OF–WAY. IN INSTANCES WHERE NO WALLS, FENCES OR PHYSICAL OCCUPATION WERE FOUND THE RIGHT–OF–WAY WAS SET AT EITHER 2 OR 3 RODS IN WIDTH. PROPERTY LINES SHOWN ARE GRAPHICALLY TAKEN FROM CURRENT ASSESSOR MAPS.
3. 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.
4. 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.
5. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE 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 CONFORMING TO M4.05.2.
6. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
7. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS.
8. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.
9. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.
10. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE–USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
11. JOINTS BETWEEN HOT MIX ASPHALT ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH HOT MIX ASPHALT SEALER.
12. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
13. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF .01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. EXISTING GRANITE CURB & EDGING SUITABLE FOR RE–USE SHALL BE RE–USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
15. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.

ABBREVIATIONS

GENERAL

ABAN	ABANDON	MAX	MAXIMUM
ADJ	ADJUST	MIN	MINIMUM
APPROX	APPROXIMATE	NTS	NOT TO SCALE
BIT	BITUMINOUS	PGL	PROFILE GRADE LINE
BOS	BOTTOM OF SLOPE	PROP	PROPOSED
B.O.	BY OTHERS	PVM'T	PAVEMENT
CEM	CEMENT	REM	REMOVE
CLF	CHAINLINK FENCE	REMOD	REMODEL
CONC	CONCRETE	RET	RETAIN
ELEV	ELEVATION	R&D	REMOVE AND DISCARD
EOP	EDGE OF PAVEMENT	R&R	REMOVE AND RESET
EXIST	EXISTING	R&S	REMOVE AND STACK
FND	FOUNDATION	RT	RIGHT
GRAN	GRANITE	STA	STATION
HMA	HOT MIX ASPHALT	TEMP	TEMPORARY
LA	LANDSCAPED AREA	TOS	TOP OF SLOPE
LOAM	LOAM BORROW	TYP	TYPICAL
LT	LEFT		

UTILITIES

ACCMP	ASHPALT COATED CORRUGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
TSV&B	TAPPING SLEEVE VALVE AND BOX
UP	UTILITY POLE

ALIGNMENT/GRADING

CC	CENTER OF CURVE
HP	HIGH POINT
LP	LOW POINT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PNT	POINT
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
25.45	SPOT ELEVATION

PROFILES

AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
ELEV	ELEVATION
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVE
PVT	POINT OF VERTICAL TANGENT
PVRC	POINT OF VERTICAL REVERSE CURVE
PVCC	POINT OF VERTICAL COMPOUND CURVE
SSD	STOPPING SIGHT DISTANCE
VC	VERTICAL CURVE

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR YELLOW
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
–FR→	FLASHING RED ARROW
FY	FLASHING CIRCULAR YELLOW
–FY→	FLASHING YELLOW ARROW
↑G	STEADY VERTICAL GREEN ARROW
←X–	STEADY LEFT ARROW (RED, YELLOW OR GREEN PREFIX)
–X→	STEADY RIGHT ARROW (RED, YELLOW OR GREEN PREFIX)
W	STEADY WALK–WHITE
DW	STEADY DON'T WALK–PORTLAND ORANGE
FDW	FLASHING DON'T WALK–PORTLAND ORANGE

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	3	154
PROJECT FILE NO. 604989			

KEY PLAN

N

BEGIN PROJECT
STA 104+90.00
N: 2936686.5094
E: 644561.1975

LIMIT OF WORK
STA 104+73.96
N: 2936686.3213
E: 644651.8348

STA. 105+87.93 MAIN (ROUTE 30) ST CONST ℄ =
STA. 10+00.00 SEARS ROAD CONST ℄

STA. 114+62.17 MAIN (ROUTE 30) ST CONST ℄ =
STA. 40+00.00 PARKERVILLE ROAD CONST ℄

SEARS ROAD

LIMIT OF WORK
STA 204+95.66
N: 2936861.5502
E: 645065.7574

STA. 110+61.10 MAIN (ROUTE 30) ST CONST ℄ =
STA. 20+00.00 DEERFOOT ROAD CONST ℄

DEERFOOT ROAD

LIMIT OF WORK
STA 403+78.67
N: 2936449.6311
E: 645501.7988

PARKERVILLE ROAD

MAIN STREET

(ROUTE 30)

STA. 134+91.52 MAIN (ROUTE 30) ST CONST ℄ =
STA. 5+00.00 COMMON STREET CONST ℄

LIMIT OF WORK
STA 84+02.24
N: 2936560.1107
E: 645652.3098

STA. 142+34.64 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 709+84.96 MARLBORO (ROUTE 85) ROAD CONST ℄

STA. 7+66.36 COMMON STREET CONST ℄ =
STA. 30+00.00 COMMON STREET CONST ℄

COMMON STREET

STA. 139+99.88 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 33+70.52 COMMON STREET CONST ℄

MARLBORO (ROUTE 85) ROAD

LIMIT OF WORK
STA 713+21.44
N: 2936904.4804
E: 645944.4198

LIMIT OF WORK
STA 705+00.00
N: 2936908.6870
E: 645914.6870

CORDAVILLE (ROUTE 85) ROAD

STA. 153+05.44 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 51+84.86 SCHOOL STREET/LATISQUAMA ROAD CONST ℄

SCHOOL STREET

LIMIT OF WORK
STA 514+20.75
N: 2936538.7110
E: 645838.1109

LIMIT OF WORK
STA 512+78.24
N: 2936538.6502
E: 645838.5502

LATISQUAMA ROAD

STA. 154+16.52 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 60+00.00 PARK STREET CONST ℄

END PROJECT
STA 155+68.00
N: 2936454.1588
E: 646514.1831

LIMIT OF WORK
STA 611+35.18
N: 2936478.9779
E: 646490.2236

PARK STREET

BOSTON (ROUTE 30) ROAD

LEGEND

- (#) GENERAL PLANS
- (#) TRAFFIC PLANS
- [#] ALIGNMENT AND GRADING PLANS
- (#) UTILITY PLANS

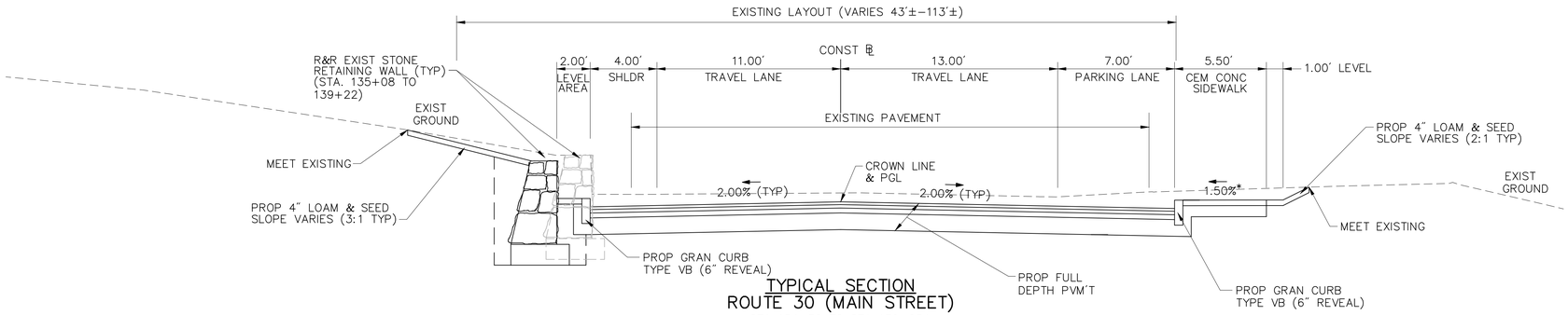
200 0 200 400
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-KEY.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

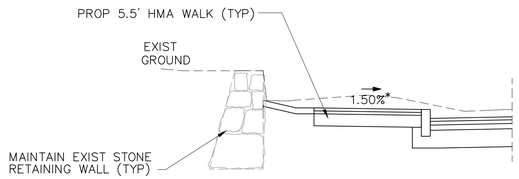
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	4	154
PROJECT FILE NO. 604989			

TYPICAL SECTIONS

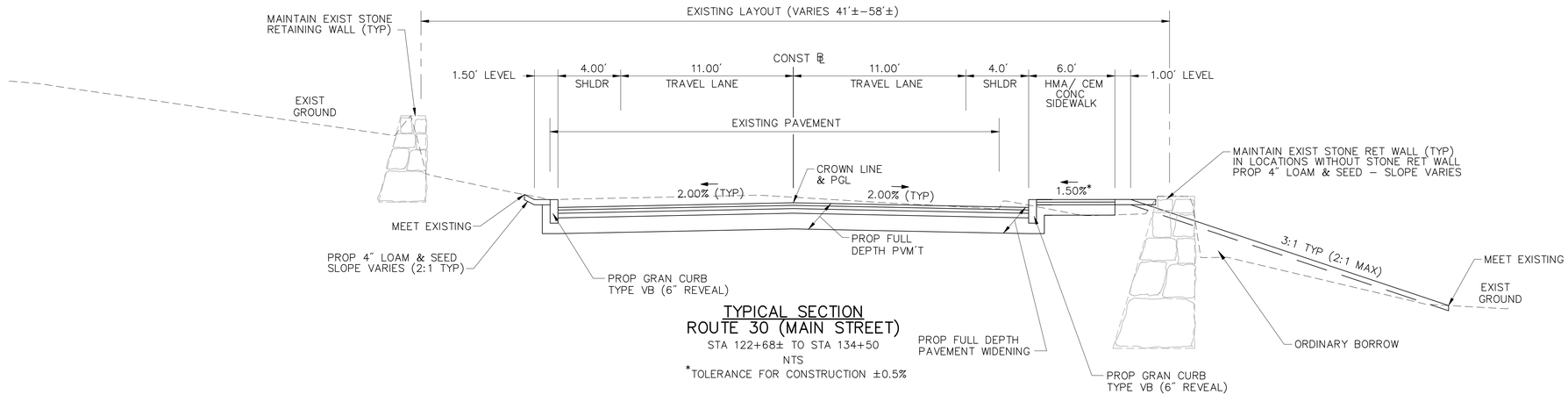


TYPICAL SECTION
ROUTE 30 (MAIN STREET)

STA 134+50 TO STA 139+25±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

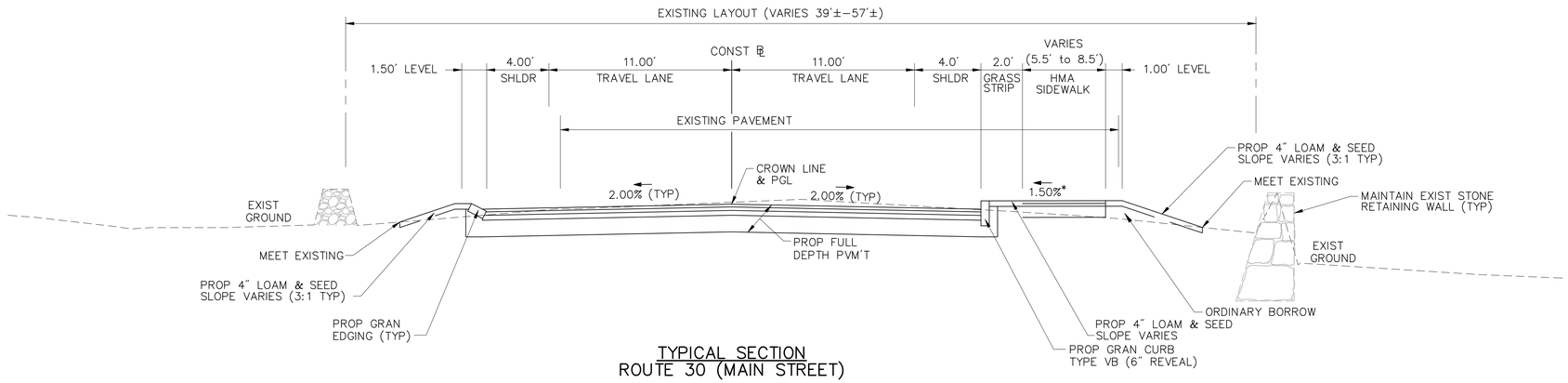


NOTE: PROP HMA WALK ON BOTH SIDES OF ROADWAY FROM STA 131+10± TO STA 134+50



TYPICAL SECTION
ROUTE 30 (MAIN STREET)

STA 122+68± TO STA 134+50
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
ROUTE 30 (MAIN STREET)

STA 105+00 TO STA 122+68±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT
SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER

BASE: 4.5" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW (TYPE b)

PROPOSED PAVEMENT MILLING & OVERLAY
SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1.75" PAVEMENT MICROMILLING

PROPOSED FULL DEPTH PAVEMENT LESS THAN 4'-0"
SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER

BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE

SUBBASE: 8" GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT WALK
SURFACE: 1.25" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
1.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED HOT MIX ASPHALT DRIVEWAY/WALK AT DRIVEWAY
SURFACE: 1.5" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

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

FOUNDATION: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE WALK/WHEELCHAIR RAMP
SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000PSI, 3/4", 610

FOUNDATION: 8" GRAVEL BORROW, TYPE b

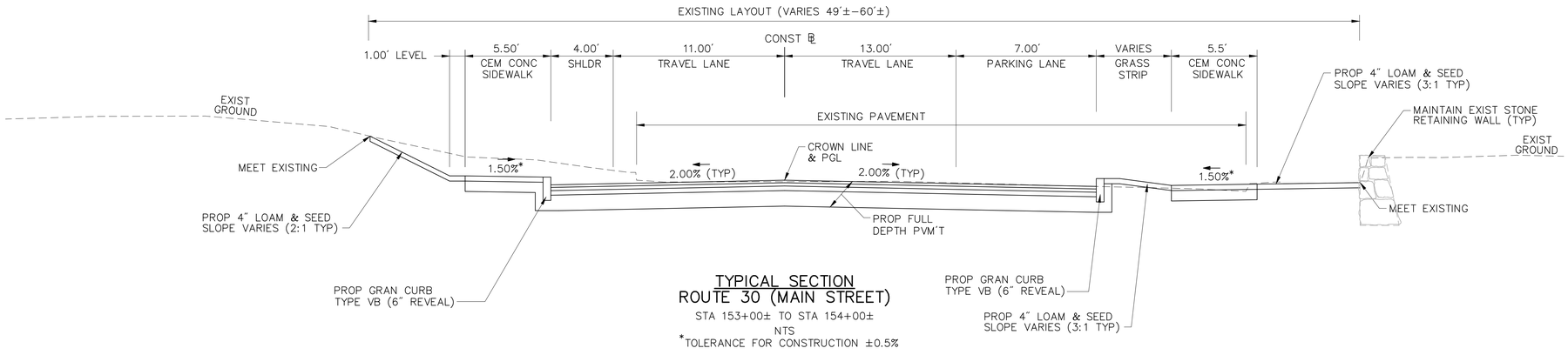
NOTE:
1) TACK COAT TO BE APPLIED AT 0.05 GAL/SY OVER SMOOTH PAVEMENT (BASE AND INTERMEDIATE COURSES) AND 0.07 GAL/SY OVER MILLED SURFACE.
2) ASPHALT EMULSION FOR TACK COAT SHALL BE IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE, TACK COAT SHALL BE (RS-1H) TO RESIST TRACKING BY HAUL VEHICLES AND BOND HMA LAYERS FOR FLEXURAL STRENGTH.
3) HMA WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 702. AND 703. AND SHALL BE 50 GYRATION MIXTURES

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	5	154
PROJECT FILE NO. 604989			

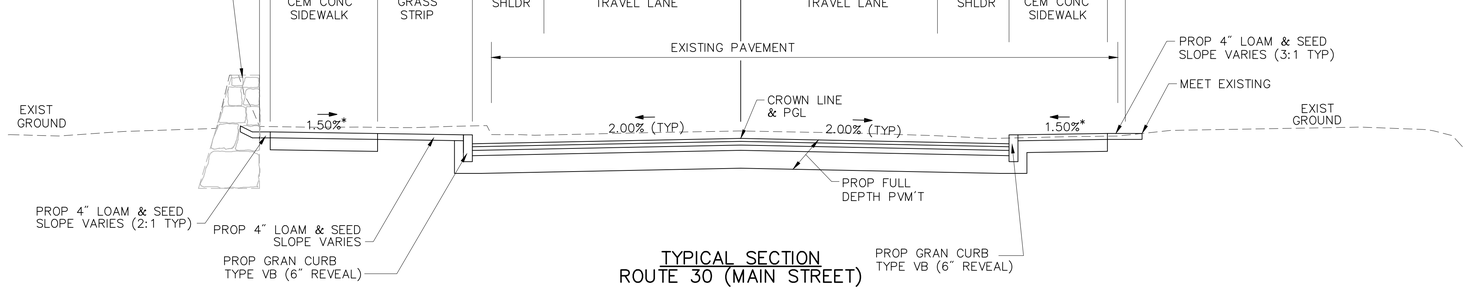
TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



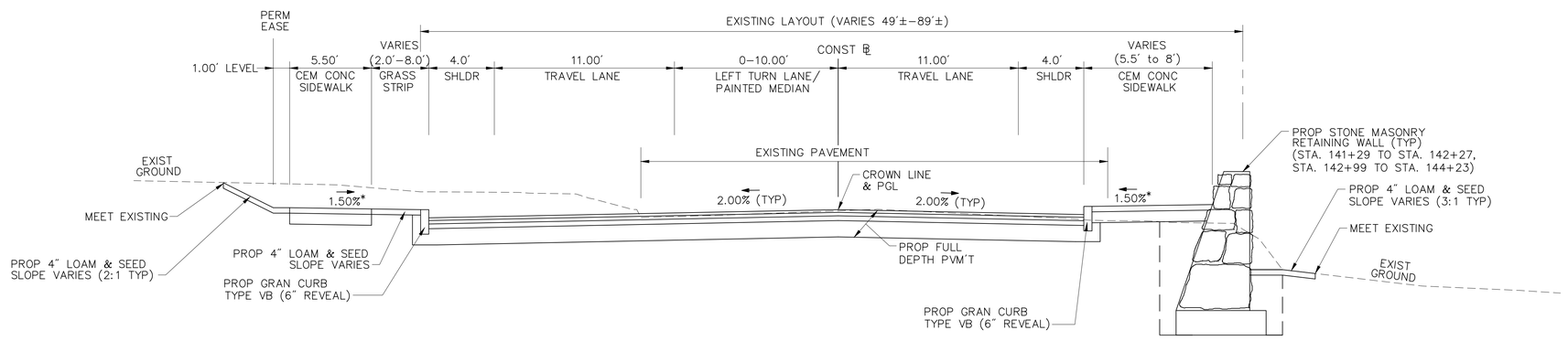
TYPICAL SECTION
ROUTE 30 (MAIN STREET)

STA 153+00± TO STA 154+00±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
ROUTE 30 (MAIN STREET)

STA 145+60± TO STA 153+00±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
ROUTE 30 (MAIN STREET)

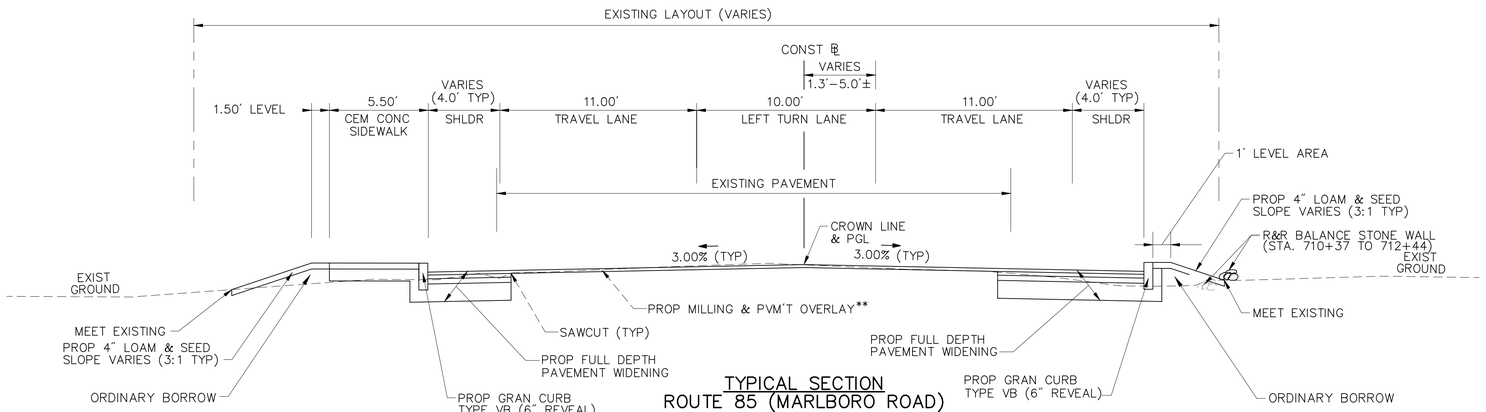
STA 139+75± TO STA 145+60±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	6	154
PROJECT FILE NO. 604989			

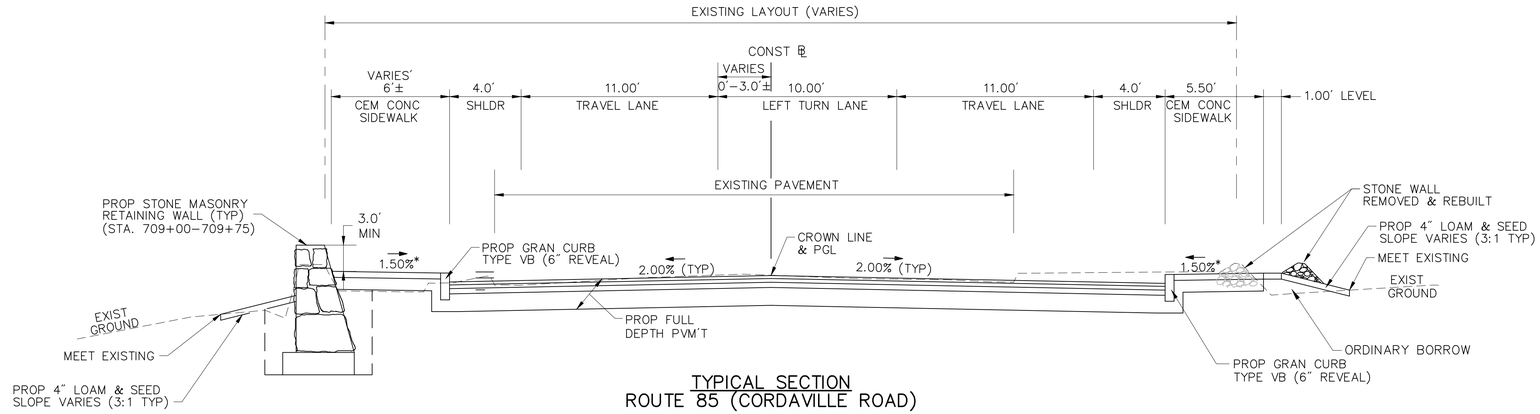
TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



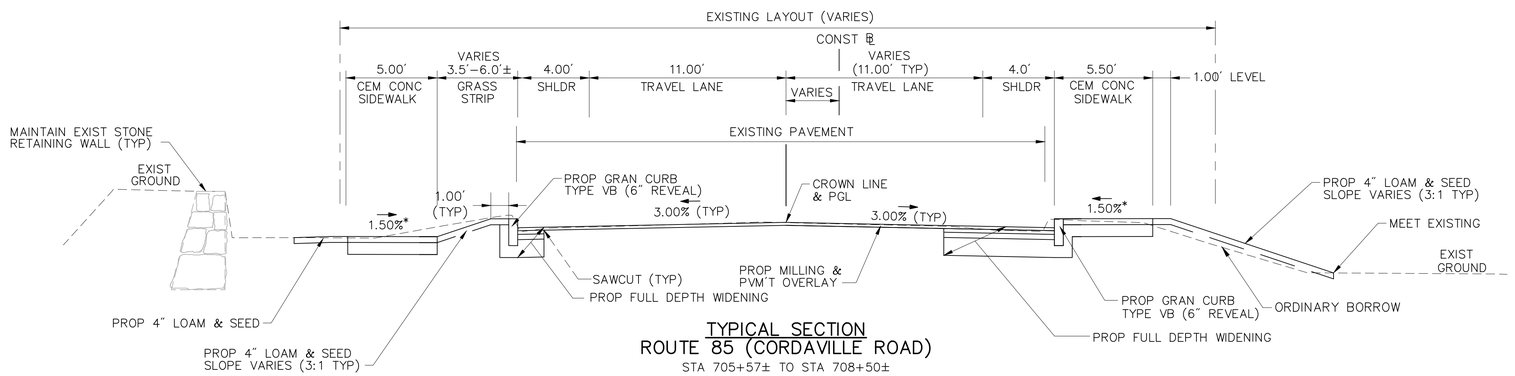
TYPICAL SECTION
ROUTE 85 (MARLBORO ROAD)

STA 709+75± TO STA 713+00±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%
**PROPOSED FULL DEPTH PAVEMENT FROM STA 708+50± TO STA 710+50±



TYPICAL SECTION
ROUTE 85 (CORDAVILLE ROAD)

STA 708+50± TO STA 709+75±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
ROUTE 85 (CORDAVILLE ROAD)

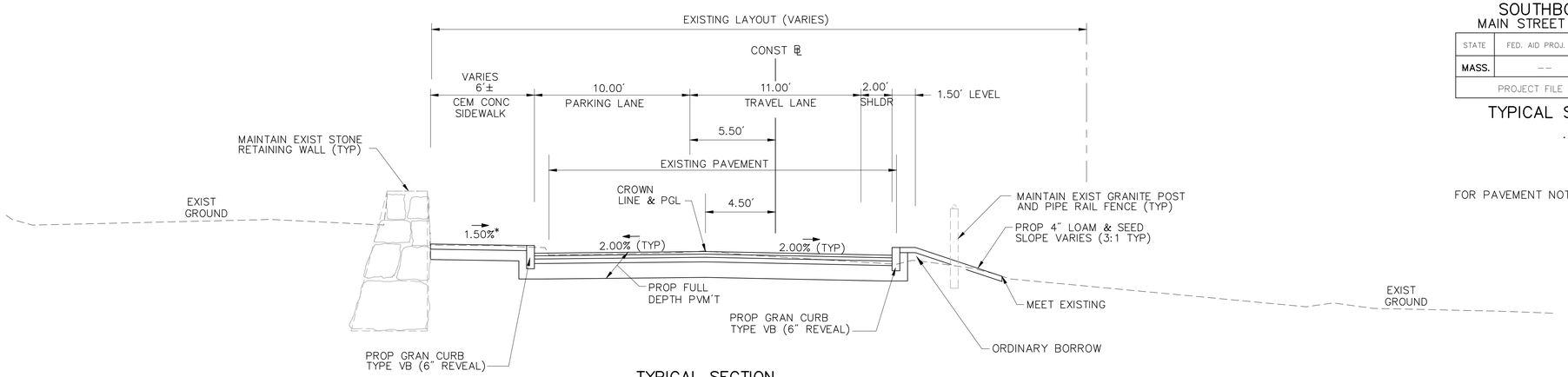
STA 705+57± TO STA 708+50±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	7	154
PROJECT FILE NO. 604989			

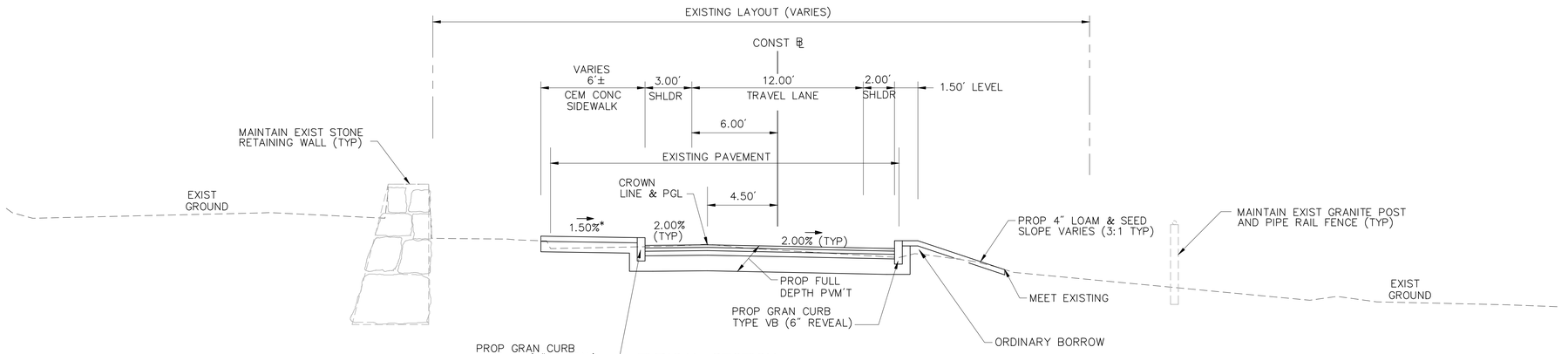
TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



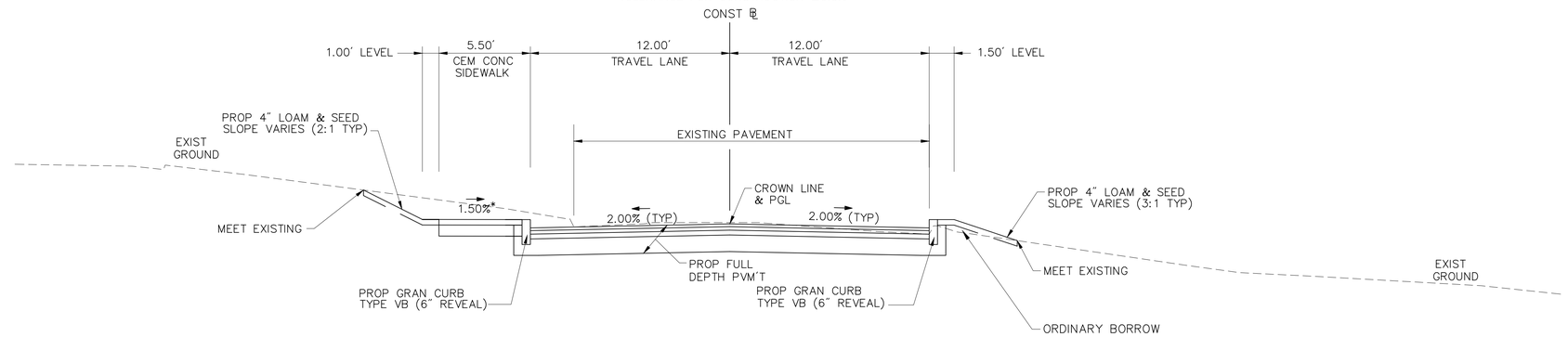
TYPICAL SECTION
COMMON STREET (NORTH SIDE)

STA 31+19 TO STA 33+11
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
COMMON STREET (NORTH SIDE)

STA 30+35 TO STA 31+01
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



TYPICAL SECTION
COMMON STREET (WEST SIDE)

STA 5+66 TO STA 7+30
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
SEE SHEET 59

DRAINAGE DETAILS
SEE SHEET 59

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	8	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS

N

BEGIN PROJECT
STA 104+60.00
N: 2936691.9042
E: 644531.6862

LIMIT OF WORK
STA 10+73.96
N: 2936739.2713
E: 644651.8348

SEARS ROAD
S03°52'12"E L=130.00'
CONST ℄

STA. 105+87.93 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 10+00.00 SEARS ROAD CONST ℄

MAIN (ROUTE 30) STREET

MAIN STREET
R=5000.00 L=314.66'
CONST ℄
PT +62.37

DEERFOOT ROAD
S73°29'51"E L=192.05'
CONST ℄
N39°26'50"E L=15
PT +62.37

LIMIT OF WORK
STA. 20+95.66
N: 2936464.5032
E: 645051.7574

DEERFOOT ROAD 21

100' BUFFER ZONE

PROP 20' PVM'T TRANSITION
PROP 6" GRANITE STEP
PROP LOAM & SEED
LIMIT OF GRADING
EXIST SHLO
PROP GRAN EDGING
PROP GRAN CURB
PCC
PROP 5.0' HMA WALK
R&R BRICK WALK
R&R MB
PROP FULL DEPTH PVM'T
PROP TEMP EASEMENT
PROP TREE (TYP)
EXIST TOWN LAYOUT
LIMIT OF GRADING
PROP FILTER TUBES
PROP CLEARING AND GRUBBING
PROP UTILITY EASEMENT
R&R RUBBLE BLOCK DRIVE
PROP HMA DRIVE
MEET EXIST
PROTECTION (TYP)
PROP TEMP EASEMENT
PROP LOAM & SEED
R&R FENCE
PROP GRAN CURB
R&R PROP 5.0' HMA WALK
LIMIT OF GRADING
PROP LOAM & SEED
PROP PERM EASEMENT
SAWCUT - MEET EXIST
END GRAN EDGING
PROP PERM EASEMENT
PROP TEMP EASEMENT
BEGIN GRAN EDGING
PROP 20' PVM'T TRANSITION
SAWCUT MEET EXIST
R=1642.00 L=147.71'
EXIST TOWN LAYOUT REM
SAWCUT MEET EXIST STA. 20+95.66
PROP 20' PVM'T TRANSITION

CONT. ON SHEET 9

FOR PROFILES SEE SHEET NO. 18

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-GEN.DWG

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

WATER SUPPLY ALTERATIONS
SEE SHEET 60

DRAINAGE DETAILS
SEE SHEET 60

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	9	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS

MAIN STREET (ROUTE 30)

DEERFOOT ROAD

PARKERVILLE ROAD

STA. 110+61.10 MAIN (ROUTE 30) STREET CONST ℄ = STA. 20+00.00 DEERFOOT ROAD CONST ℄

STA. 114+62.17 MAIN (ROUTE 30) STREET CONST ℄ = STA. 40+00.00 PARKERVILLE ROAD CONST ℄

LIMIT OF GRADING

LIMIT OF PAVING STA 40+78.67 N:2396229.7059 E:645520.7888

LIMIT OF WORK STA 43+06.68 N:2396222.7329 E:645548.6215

CONT. ON SHEET 8

CONT. ON SHEET 10

FOR PROFILES SEE SHEET NOS. 19-20

SCALE IN FEET: 20 0 20 40

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-GEN.DWG

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

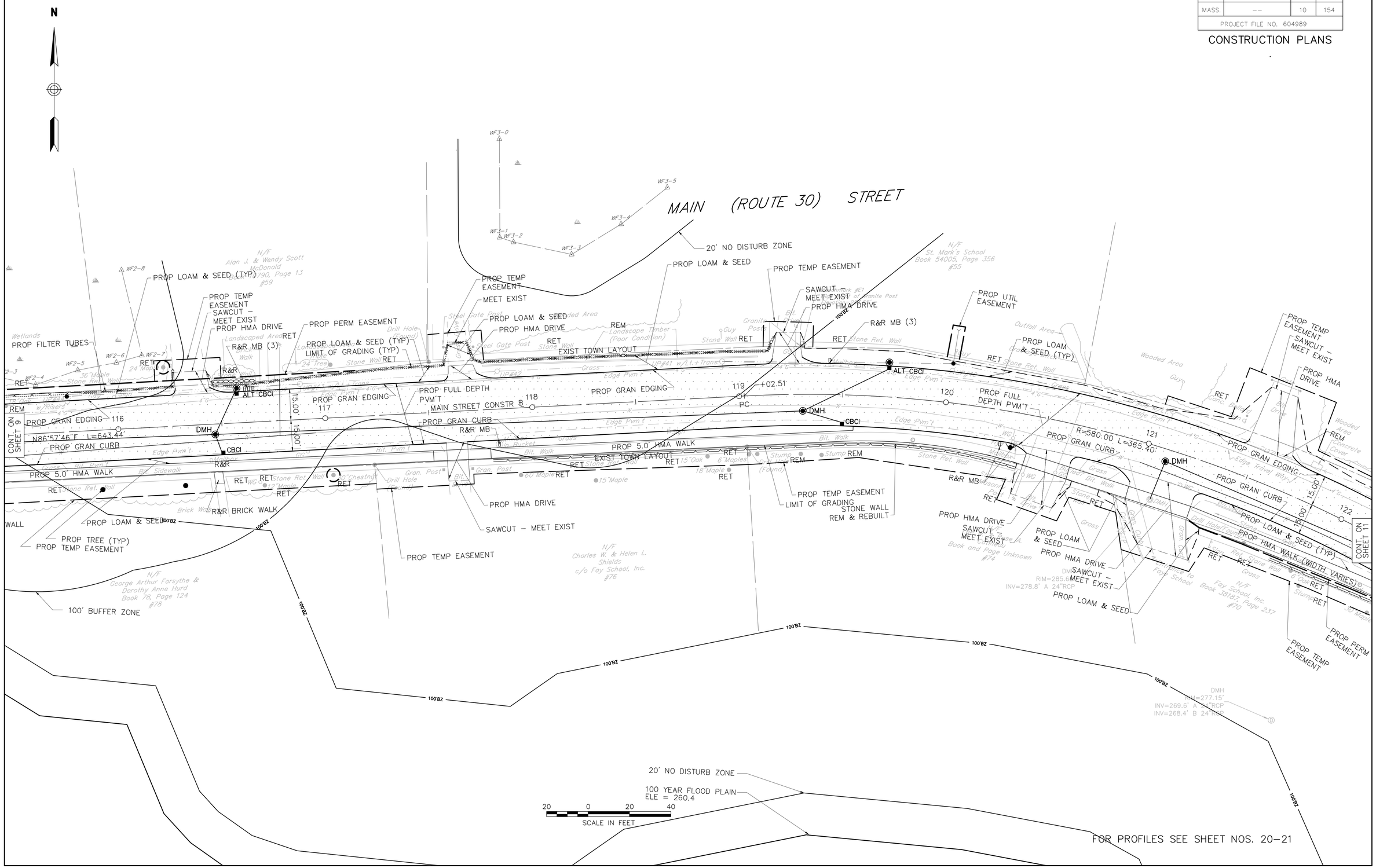
WATER SUPPLY ALTERATIONS
SEE SHEET 61

DRAINAGE DETAILS
SEE SHEET 61

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	10	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 20–21

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

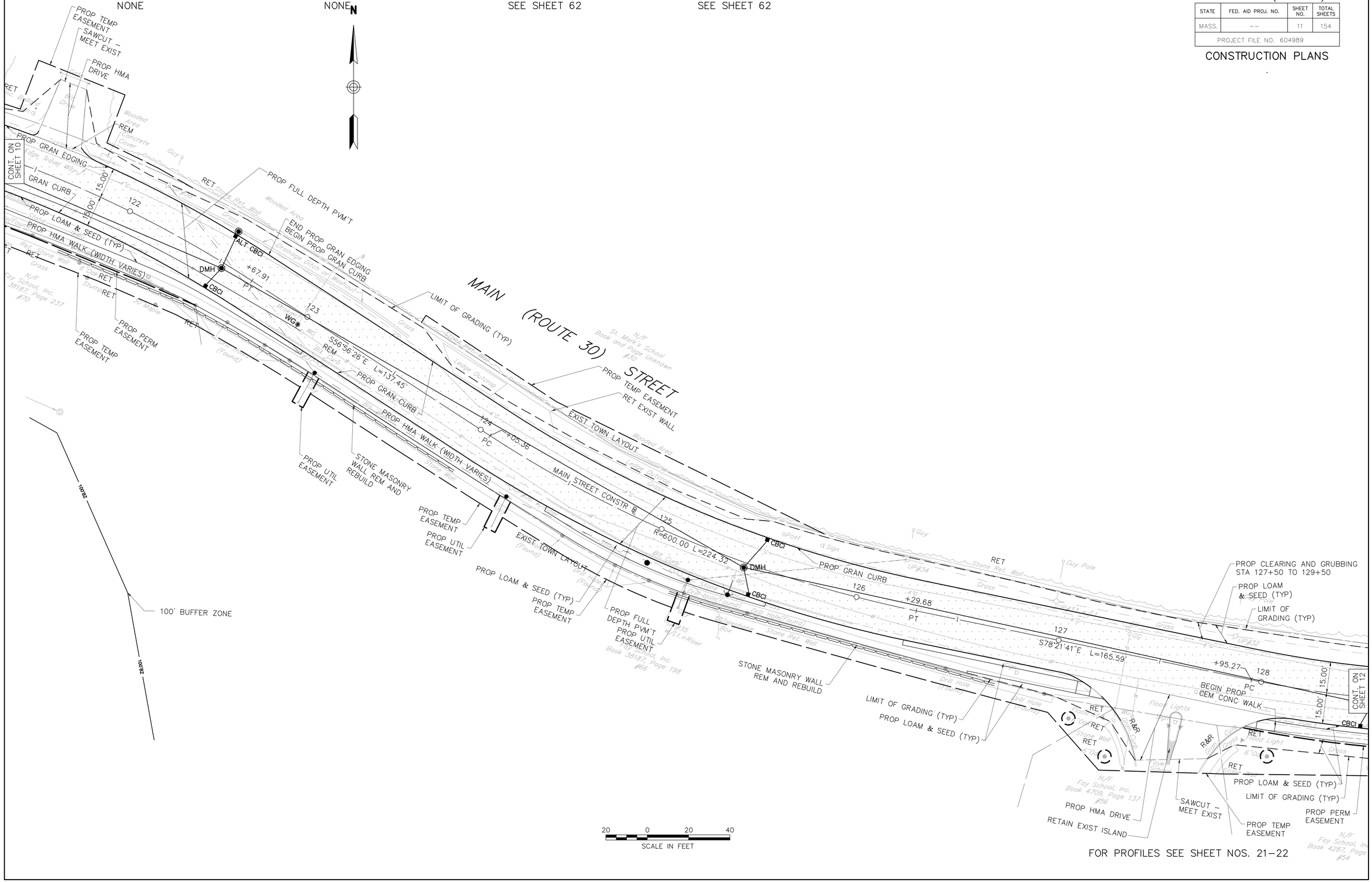
WATER SUPPLY ALTERATIONS
SEE SHEET 62

DRAINAGE DETAILS
SEE SHEET 62

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	11	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-GEN.DWG

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

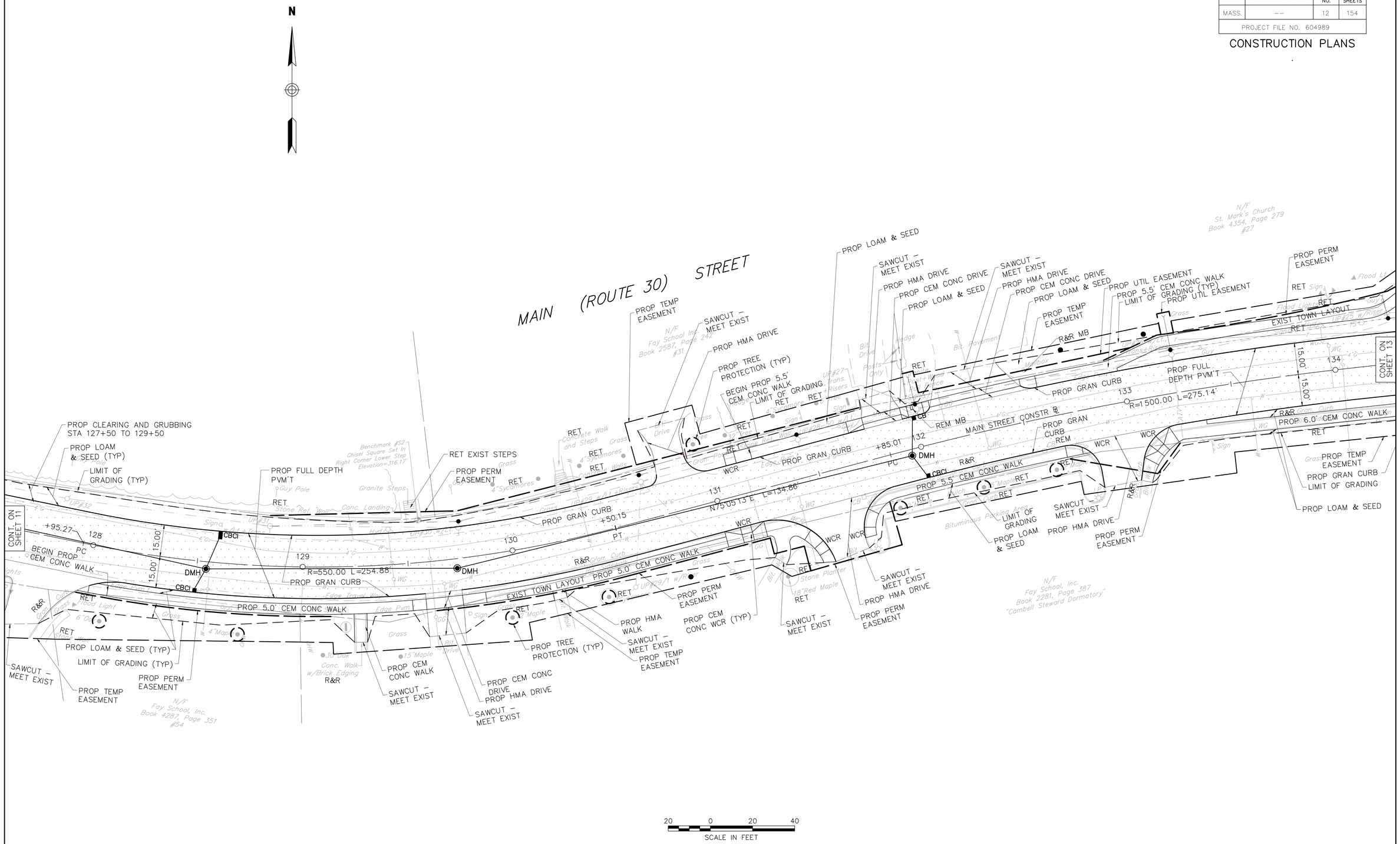
WATER SUPPLY ALTERATIONS
SEE SHEET 63

DRAINAGE DETAILS
SEE SHEET 63

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	12	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 22–23

HIGHWAY GUARD

NONE

TRAFFIC SIGNAL CONDUIT

NONE

WATER SUPPLY ALTERATIONS

SEE SHEET 64

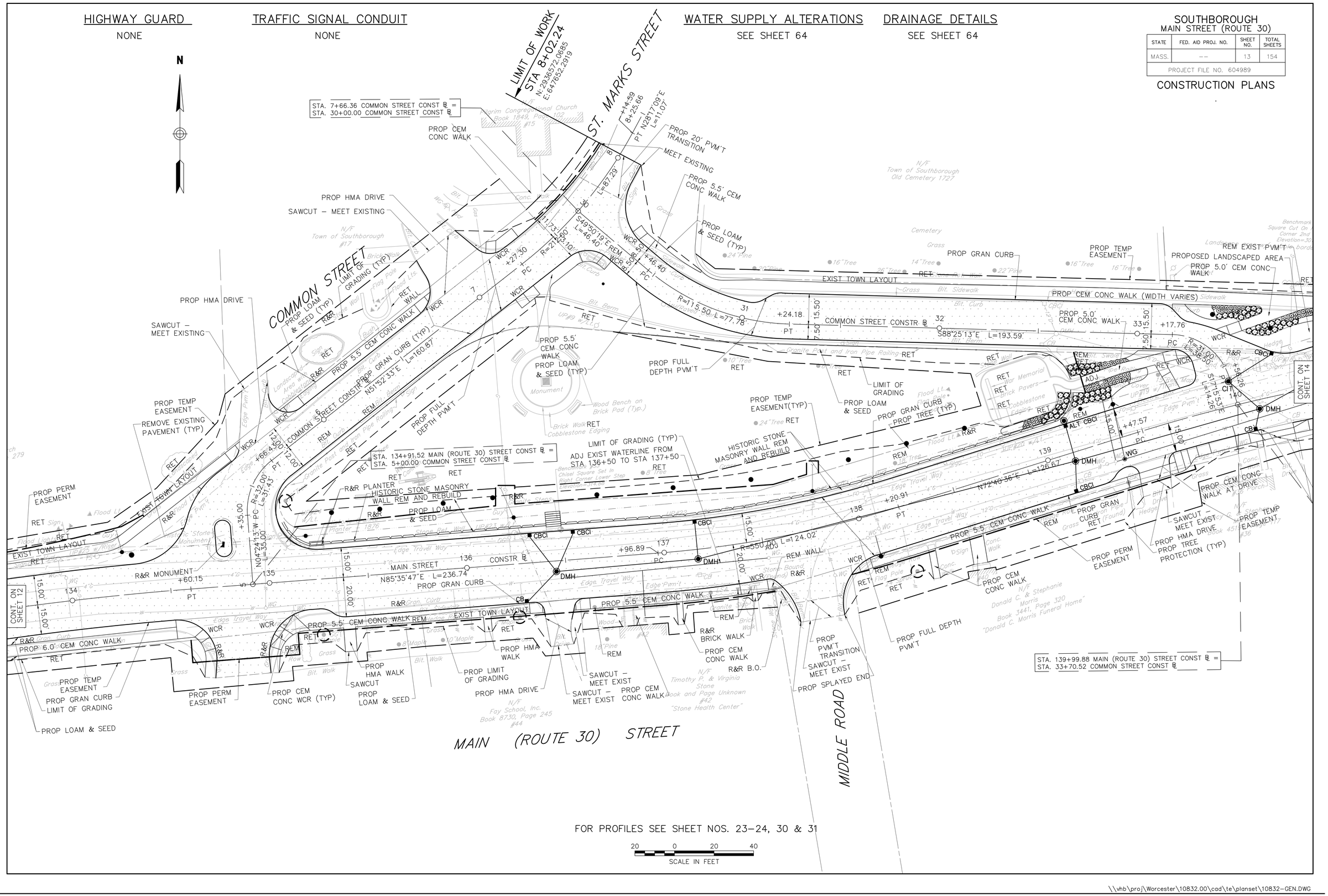
DRAINAGE DETAILS

SEE SHEET 64

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	13	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 23–24, 30 & 31

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-GEN.DWG

HIGHWAY GUARD

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 65

WATER SUPPLY ALTERATIONS

SEE SHEET 65

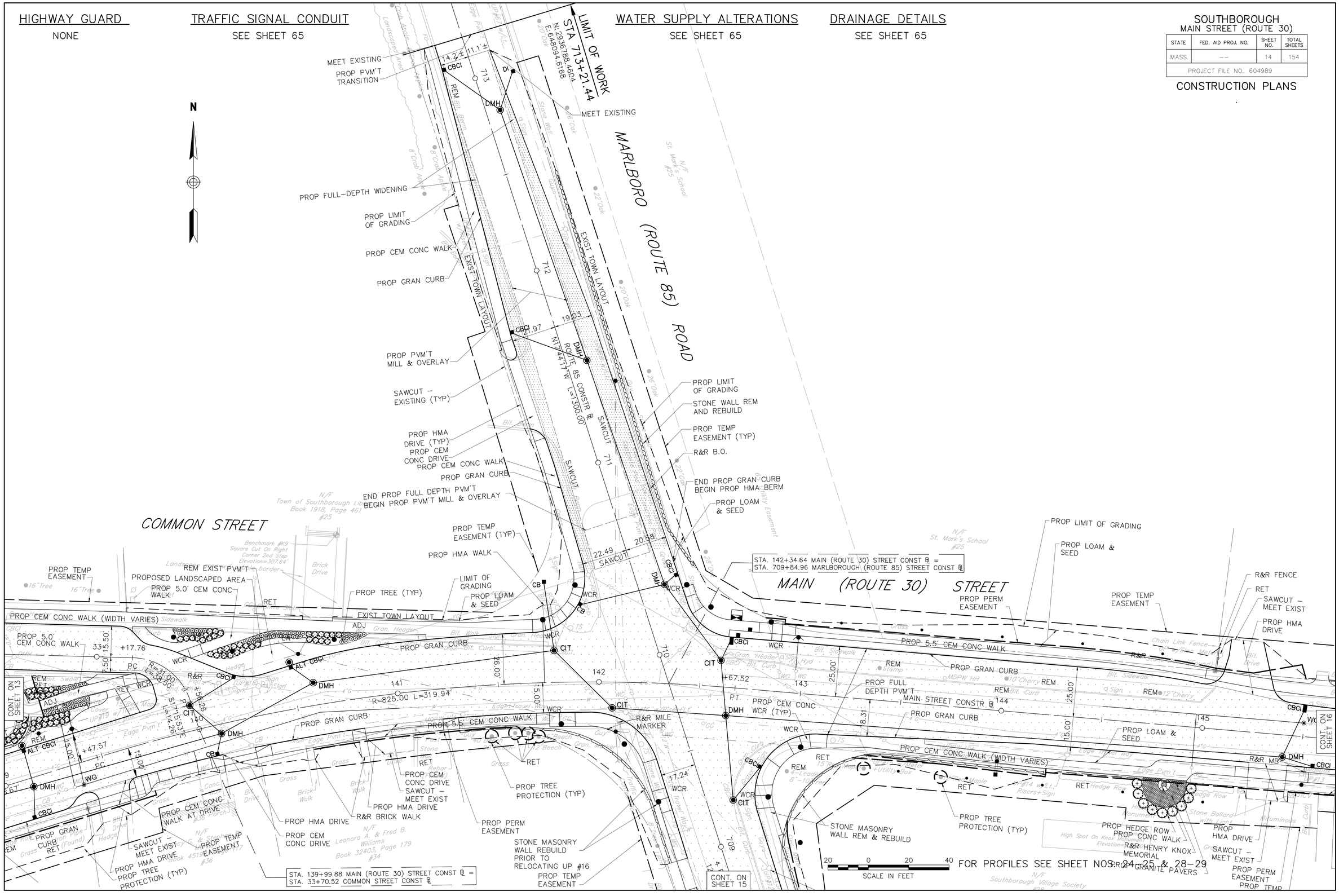
DRAINAGE DETAILS

SEE SHEET 65

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	14	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-GEN.DWG

HIGHWAY GUARD

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 66

WATER SUPPLY ALTERATIONS

SEE SHEET 66

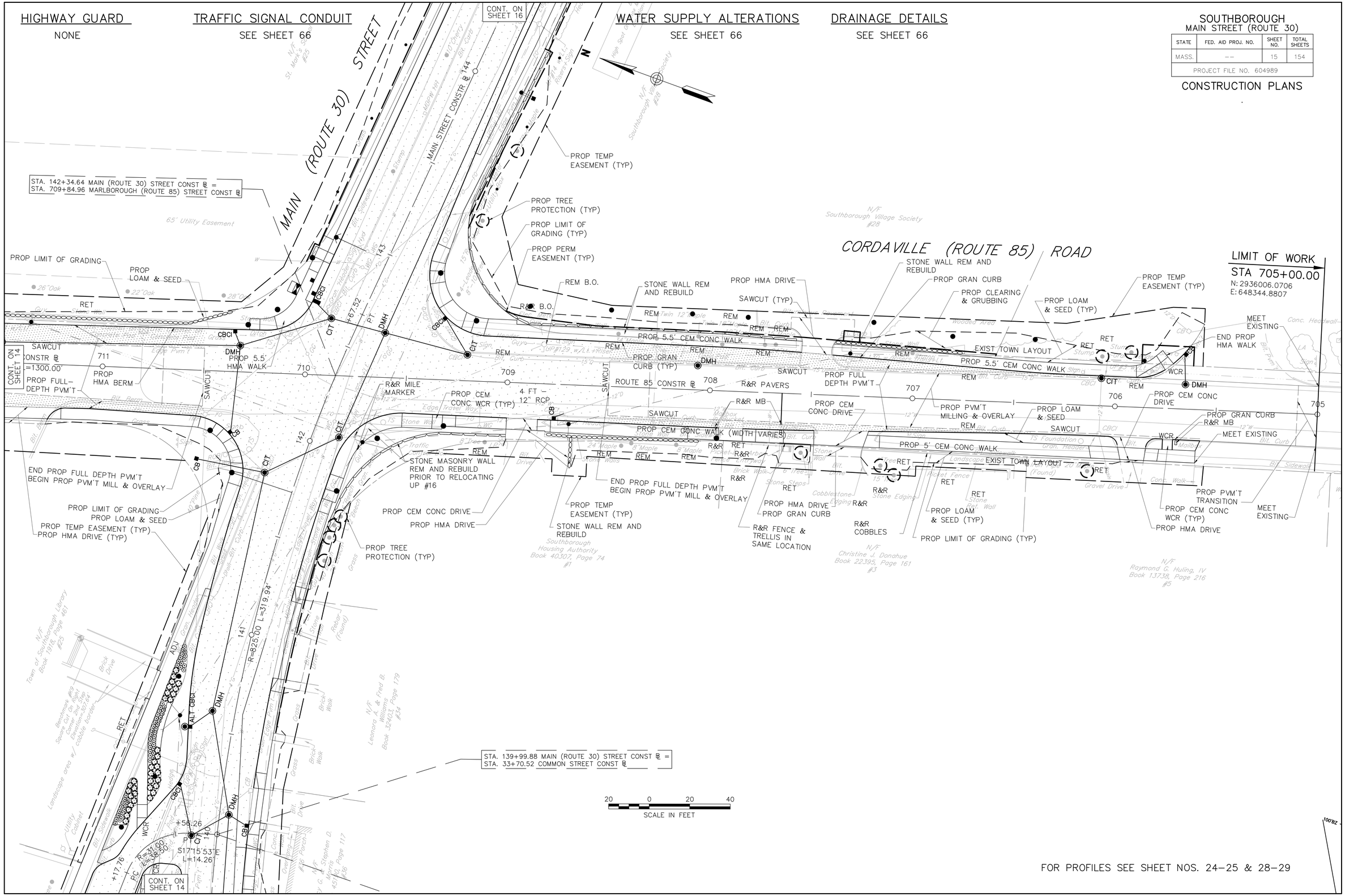
DRAINAGE DETAILS

SEE SHEET 66

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	15	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 24-25 & 28-29

HIGHWAY GUARD

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 67

WATER SUPPLY ALTERATIONS

SEE SHEET 67

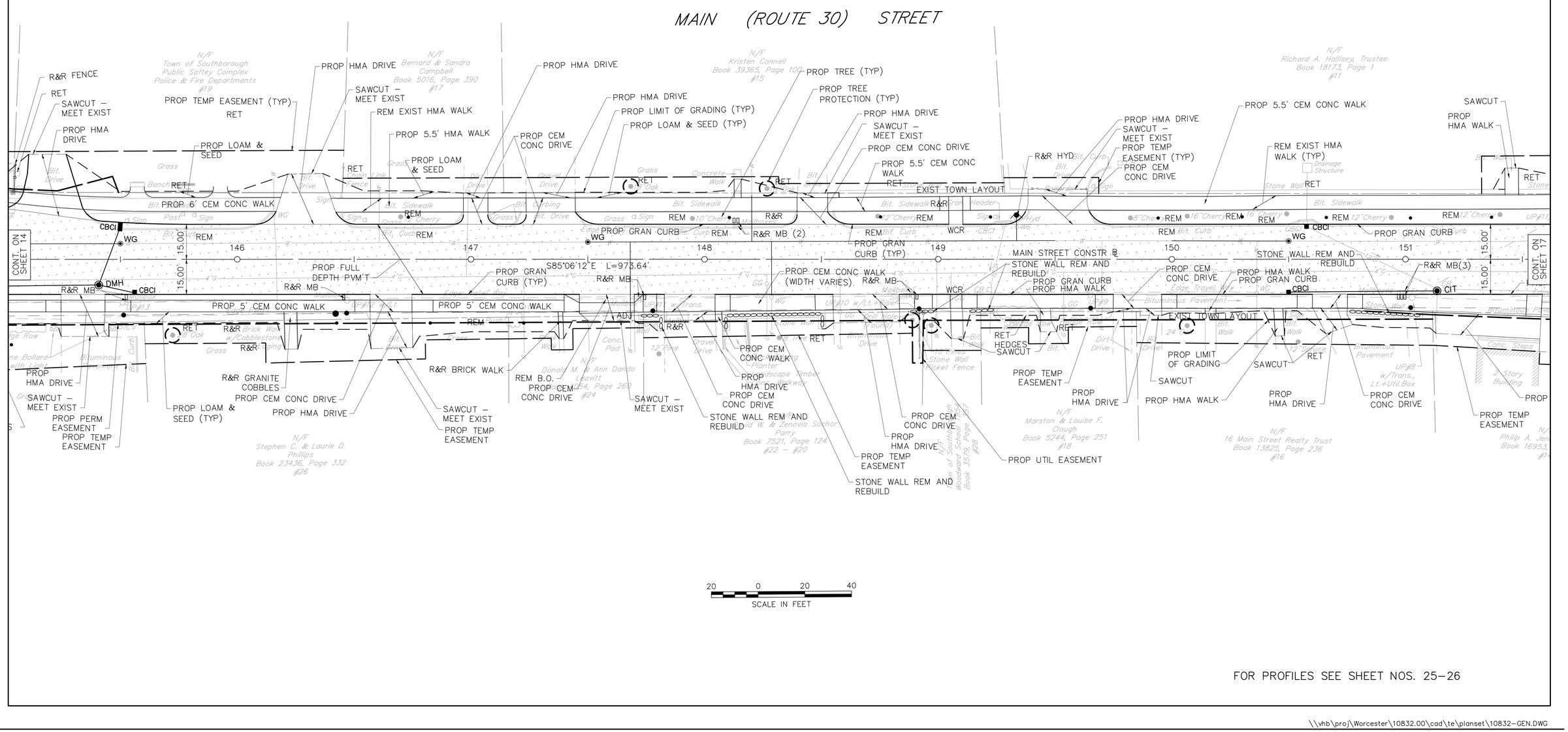
DRAINAGE DETAILS

SEE SHEET 67

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	16	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 25–26

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

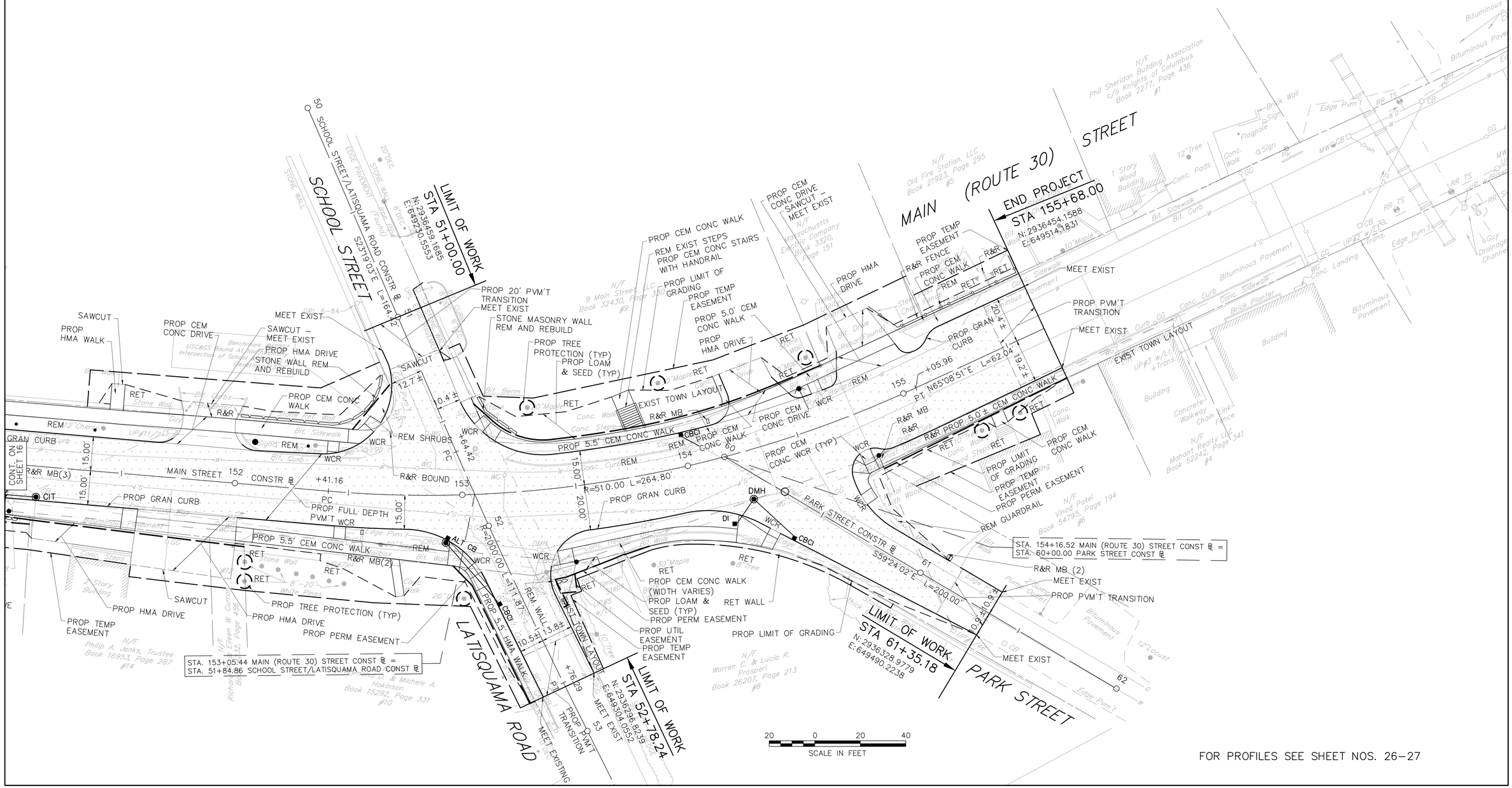
WATER SUPPLY ALTERATIONS
SEE SHEET 68

DRAINAGE DETAILS
SEE SHEET 68

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	17	154
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 26–27

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	18	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

320

300

280

260

MAIN (ROUTE 30) STREET

LIMIT OF WORK
STA 104+90.00

HIGH POINT ELEV = 278.06
HIGH POINT STA = 105+57.19
PVI STA = 105+90
PVI ELEV = 278.26
A.D. = -2.29
K = 48.04
110.00' VC

STA. 105+87.93 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 10+00.00 SEARS ROAD CONST ℄

PVC STA: 105+35
PVC ELEV: 278.01

SSD=526.26'
PSD=730.28'

PVT STA: 106+45
PVT ELEV: 277.25

PVI STA = 109+20
PVI ELEV = 272.23
A.D. = -1.22
K = 90.40
110.00' VC

PVC STA: 108+65
PVC ELEV: 273.23

SSD=938.06'
PSD=1320.38'

PVT STA: 109+75
PVT ELEV: 270.55

CONT. ON SHEET 19

EXISTING GROUND

0.46%

PROPOSED FINISH GRADE

-1.83%

-3.04%

SEARS ROAD

BENCHMARK #S1
TOP RIGHT CORNER CONCRETE STEPS AT BACK OF STONE WALL
ELEVATION= 276.68'
STA 104+91.80, 27.59' RT

BENCHMARK #L1
CHISEL SQUARE SET IN LEDGE OUTCROP 5.5' FROM LEDGE
ELEVATION= 273.42'
STA 108+87.09, 22.07' RT

DATUM ELEV
255.00

BASE ELEV = 255.00

277.8	277.7	277.8 277.84	278.0 278.05	277.9 277.87	277.2 277.16	276.3 276.25	275.4 275.34	274.5 274.42	273.5 273.51	272.6 272.53	271.3 271.28	269.6 269.79

104+00 105+00 106+00 107+00 108+00 109+00 110+00

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 8

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	19	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

320

300

280

260

DATUM ELEV
255.00

MAIN (ROUTE 30) STREET

CONT. ON SHEET 18

CONT. ON SHEET 20

STA. 110+61.10 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 20+00.00 DEERFOOT ROAD CONST ℄

PVI STA = 111+10
PVI ELEV = 266.44
A.D. = 2.54
K = 58.96
150.00' VC
489.3' HSD

LOW POINT ELEV = 265.33
LOW POINT STA = 113+45.11
PVI STA = 114+30
PVI ELEV = 264.84
A.D. = 4.39
K = 50.17
220.00' VC
258.5' HSD

STA. 114+62.17 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 40+00.00 PARKERVILLE ROAD CONST ℄

PVT STA: 109+75
PVT ELEV: 270.55

PVC STA: 110+35
PVC ELEV: 268.73

PVT STA: 111+85
PVT ELEV: 266.07

PVC STA: 113+20
PVC ELEV: 265.39

PVT STA: 115+40
PVT ELEV: 269.11

-3.04%

-0.50%

PROPOSED FINISH GRADE

EXISTING GROUND

DEERFOOT ROAD

PARKERVILLE ROAD

BENCHMARK #L2
CHISEL SQUARE SET ON TOP
CENTER STONE RETAINING WALL
ELEVATION= 266.66'
STA 114+06.21, 26.46' RT

EXISTING 30" PIPE

BASE ELEV = 255.00

110+00	111+00	112+00	113+00	114+00	115+00
271.3 / 271.28	269.6 / 269.79	268.1 / 268.29	267.0 / 267.11	266.5 / 266.35	266.1 / 265.99
265.8 / 265.74	265.6 / 265.49	265.5 / 265.33	265.7 / 265.63	266.3 / 266.43	268.0 / 267.72
269.9 / 269.50					

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 9

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-PROF.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	20	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

320
300
280
260

MAIN (ROUTE 30) STREET

CONT. ON SHEET 19

PVI STA = 117+50
PVI ELEV = 277.27
A.D. = -1.88
K = 106.11
200.00' VC

SSD=672.53'
PSD=920.40'

PVI STA = 120+45
PVI ELEV = 283.17
A.D. = 3.63
K = 49.64
180.00' VC
279.9' HSD

CONT. ON SHEET 21

PVT STA: 115+40
PVT ELEV: 269.11

PVC STA: 116+50
PVC ELEV: 273.39

PVT STA: 118+50
PVT ELEV: 279.27

PVC STA: 119+55
PVC ELEV: 281.37

EXISTING GROUND
PROPOSED FINISH GRADE

3.88%
2.00%

BENCHMARK #E1
HIGH POINT OF GRANITE POST
ELEVATION= 283.55'
STA 119+30.99, 24.25' LT

DATUM ELEV 255.00

BASE ELEV = 255.00

115+00	116+00	117+00	118+00	119+00	120+00	121+00
268.0 / 267.72	269.9 / 269.50	271.9 / 271.45	273.8 / 273.39	275.4 / 275.21	276.8 / 276.80	278.2 / 278.15
279.4 / 279.27	280.5 / 280.27	281.3 / 281.27	282.6 / 282.48	284.2 / 284.18	286.5 / 286.39	

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 10

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-PROF.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	21	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

MAIN (ROUTE 30) STREET

320
300
280
260

A = 120+45
EV = 283.17
= 3.63
= 49.64
0.00' VC
9.9' HSD

PVT STA: 121+35
PVT ELEV: 288.24

EXISTING GROUND

-5.63%

PVC STA: 122+45
PVC ELEV: 294.43

PVI STA = 123+00
PVI ELEV = 297.52
A.D. = -0.89
K = 123.60
110.00' VC

SSD=1267.54'
PSD=1792.50'

PVT STA: 123+55
PVT ELEV: 300.12

4.74%

PVC STA: 124+65
PVC ELEV: 305.33

PVI STA = 125+20
PVI ELEV = 307.94
A.D. = -3.19
K = 34.52
110.00' VC

SSD=393.68'
PSD=540.31'

PVT STA: 125+75
PVT ELEV: 308.79

EXISTING GROUND

PROPOSED FINISH GRADE

CONT. ON SHEET 20

CONT. ON SHEET 22

DATUM ELEV
255.00

BASE ELEV = 255.00

121+00	122+00	123+00	124+00	125+00	126+00
284.2 / 284.18	286.5 / 286.39	289.6 / 289.08	292.4 / 291.89	295.1 / 294.71	297.6 / 297.40
299.9 / 299.89	302.3 / 302.26	304.7 / 304.62	307.0 / 306.82	308.7 / 308.31	309.7 / 309.18
310.3 / 309.95					

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

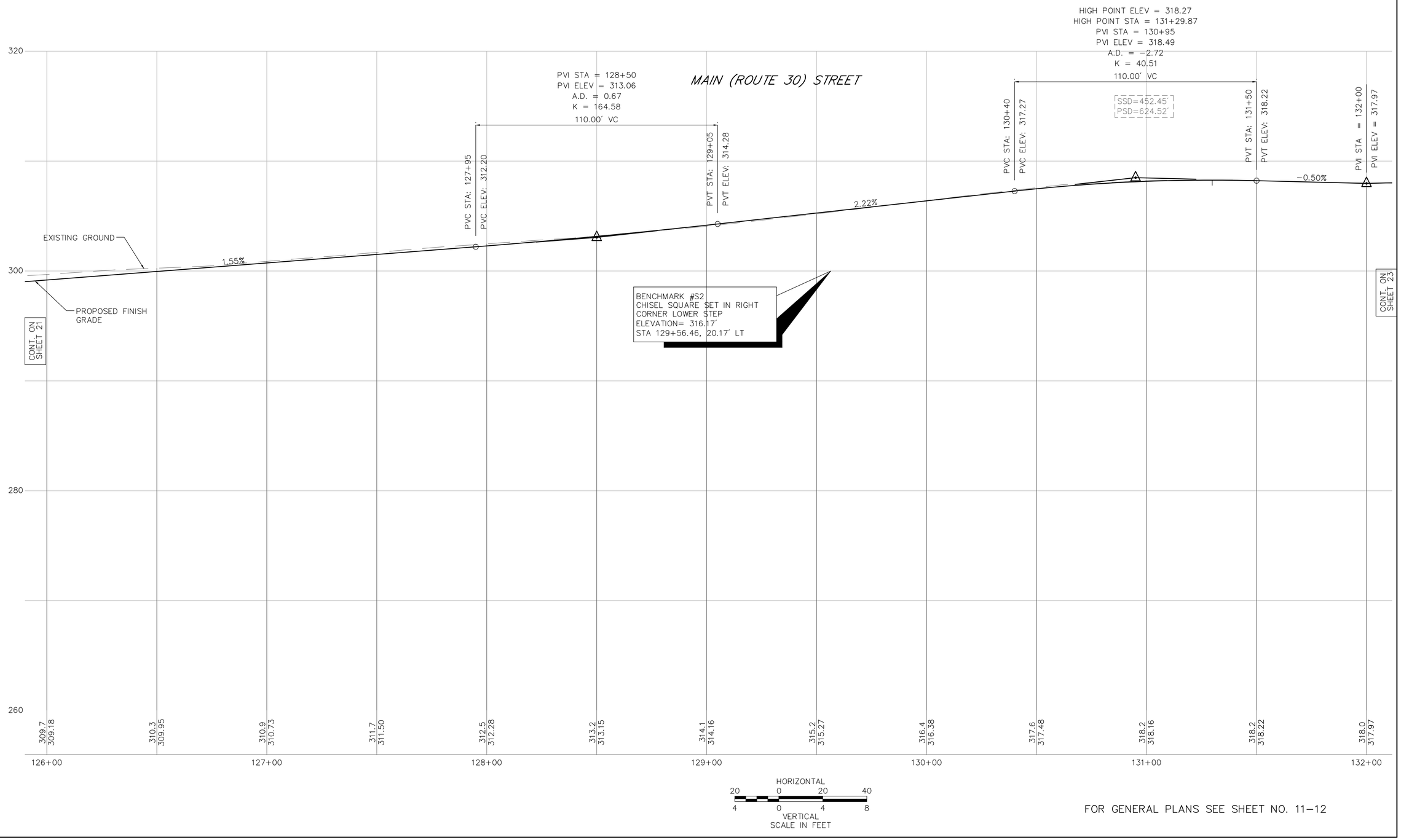
FOR GENERAL PLANS SEE SHEET NO. 11

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-PROF.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	22	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

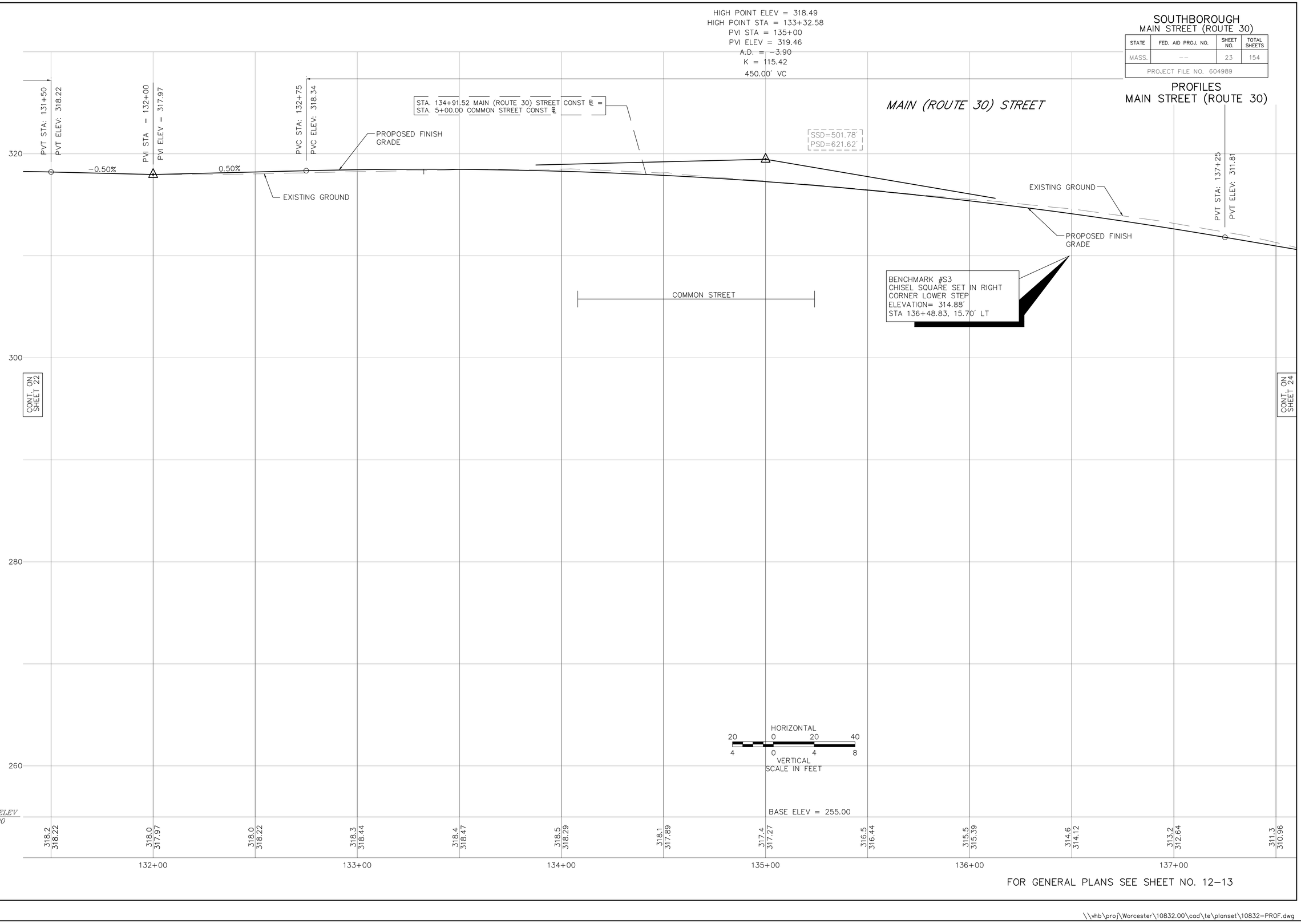


FOR GENERAL PLANS SEE SHEET NO. 11-12

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	23	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

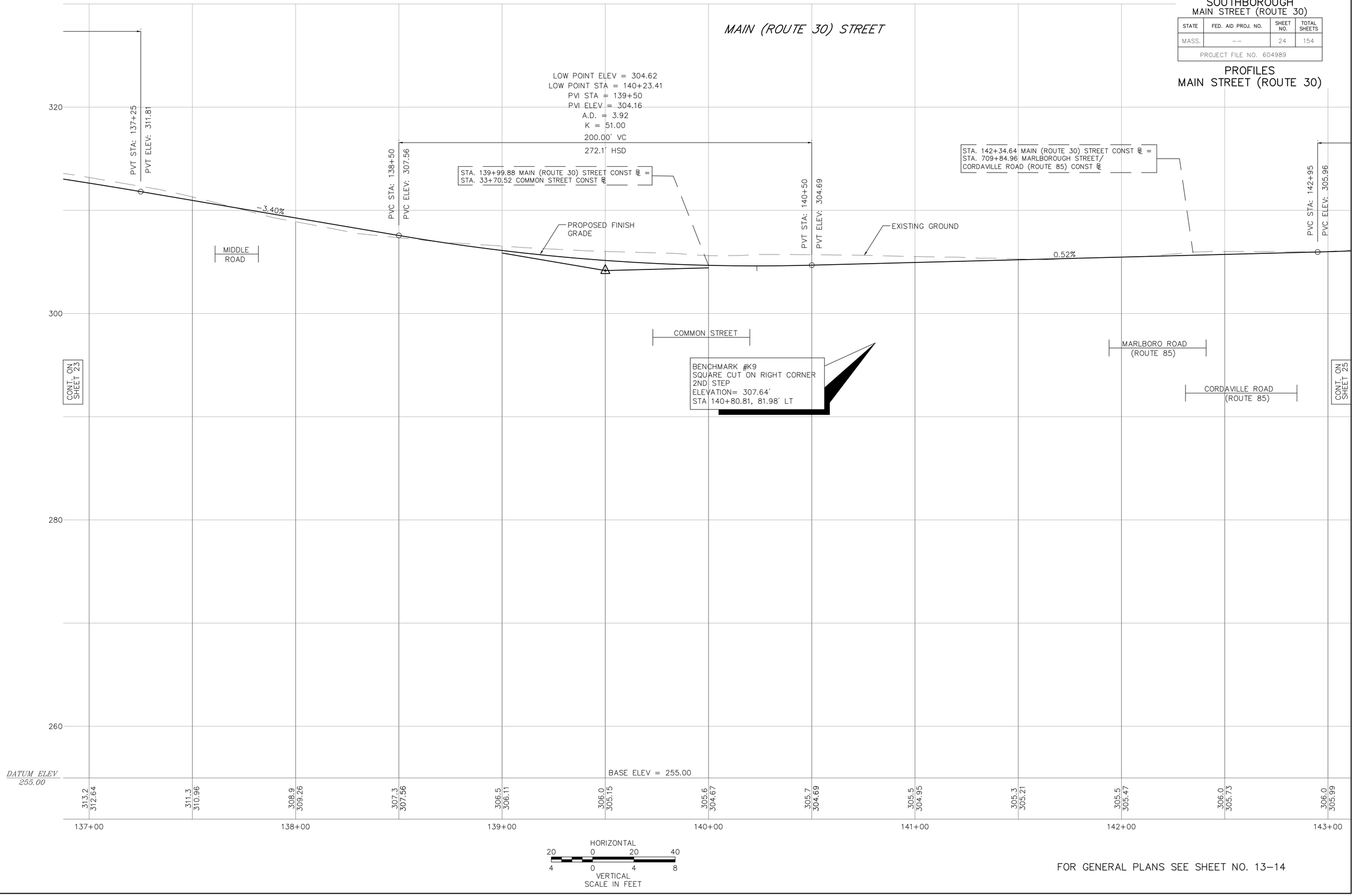


FOR GENERAL PLANS SEE SHEET NO. 12-13

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	24	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

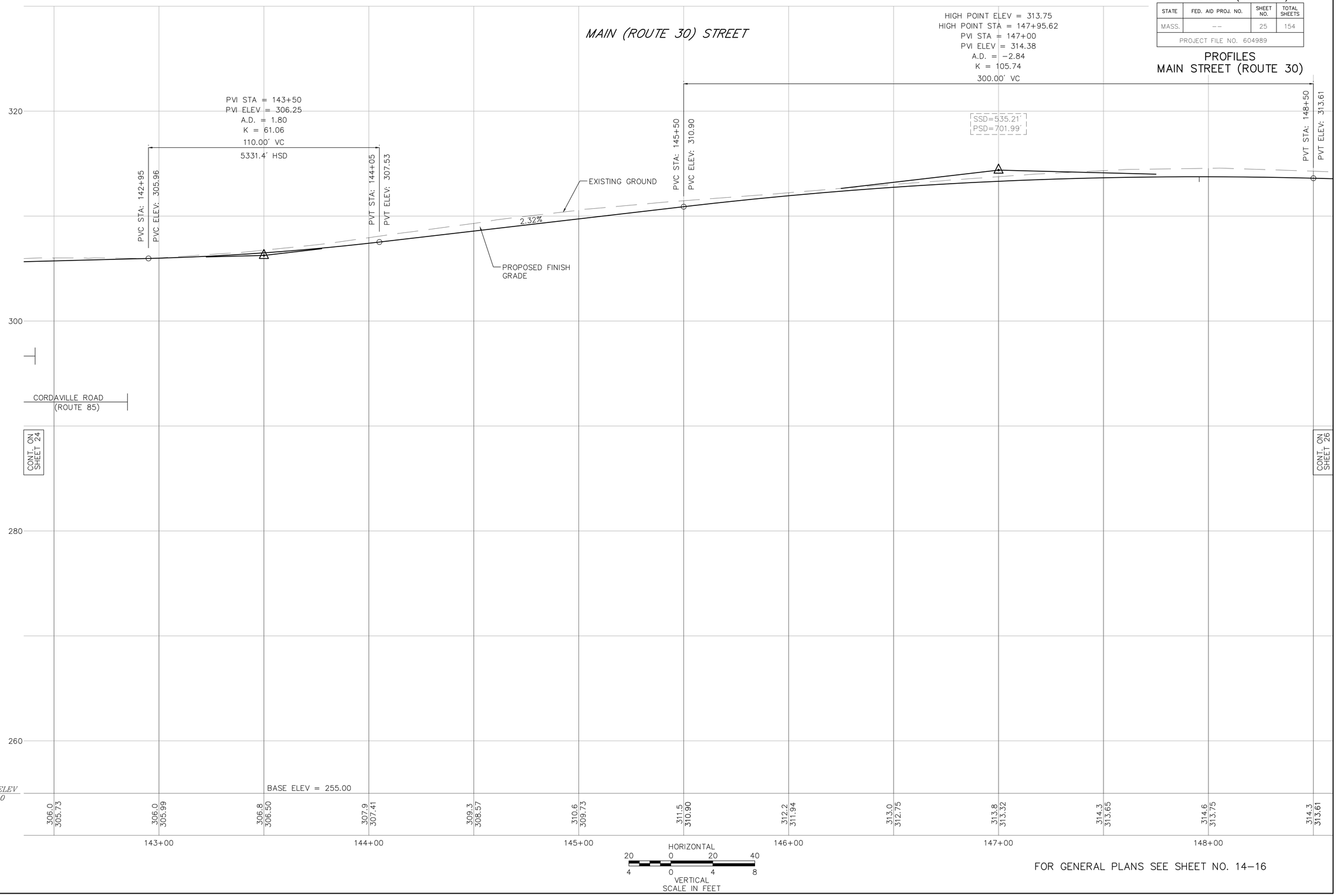


FOR GENERAL PLANS SEE SHEET NO. 13-14

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	25	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)



FOR GENERAL PLANS SEE SHEET NO. 14-16

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	26	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

MAIN (ROUTE 30) STREET

LOW POINT ELEV = 312.70
LOW POINT STA = 150+56.88
PVI STA = 150+50
PVI ELEV = 312.58
A.D. = 0.91
K = 120.31
110.00' VC

HIGH POINT ELEV = 313.15
HIGH POINT STA = 151+97.79
PVI STA = 152+80
PVI ELEV = 313.50
A.D. = -5.94
K = 31.97
190.00' VC

PVT STA: 148+50
PVT ELEV: 313.61

EXISTING GROUND

-0.51%

PVC STA: 149+95
PVC ELEV: 312.86

PVT STA: 151+05
PVT ELEV: 312.80

PROPOSED FINISH GRADE

0.40%

PVC STA: 151+85
PVC ELEV: 313.12

SSD=269.25'
PSD=344.69'

STA. 153+05.44 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 51+84.86 SCHOOL STREET/LATISQUAMA ROAD CONST ℄

PVT STA: 153+75
PVT ELEV: 308.23

-5.54%

PVC STA: 154+11
PVC ELEV: 306.24

SCHOOL STREET

LATISQUAMA ROAD

CONT. ON SHEET 25

CONT. ON SHEET 27

320
300
280
260

DATUM ELEV 255.00

BASE ELEV = 255.00

BASE ELEV = 255.00

148+00	149+00	150+00	151+00	152+00	153+00	154+00
314.6 / 313.75	314.3 / 313.61	313.9 / 313.35	313.7 / 313.09	313.6 / 312.84	313.4 / 312.71	313.2 / 312.78
						313.3 / 312.98
						313.4 / 313.14
						313.1 / 312.72
						312.2 / 311.51
						310.0 / 309.52
						307.1 / 306.85

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

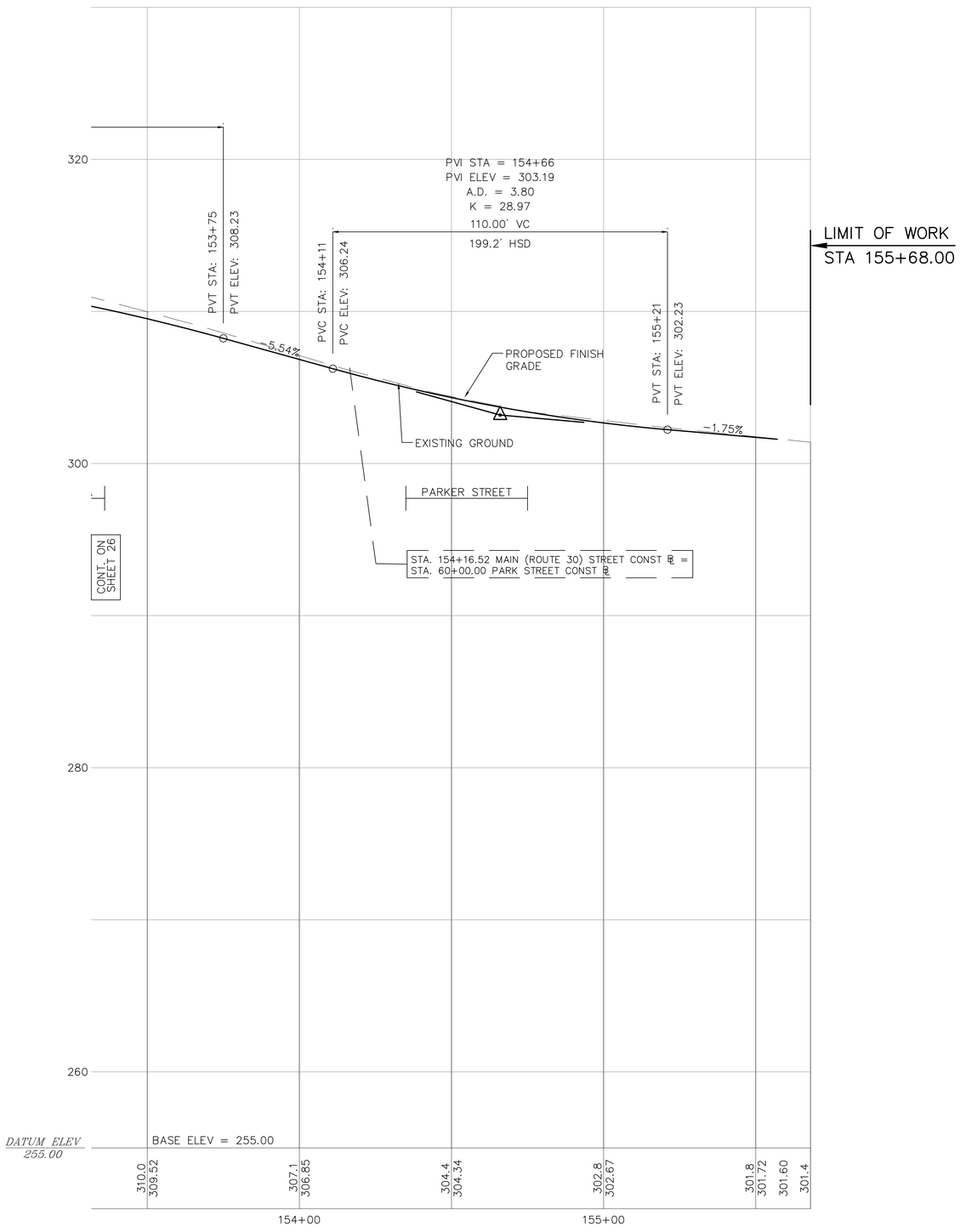
FOR GENERAL PLANS SEE SHEET NO. 16-17

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-PROF.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	27	154
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)



BENCHMARK #W1
CHISEL SQUARE SET ON TOP
CONCRETE RETAINING WALL
ELEVATION= 303.42'
STA 159+20.10, 25.90' LT

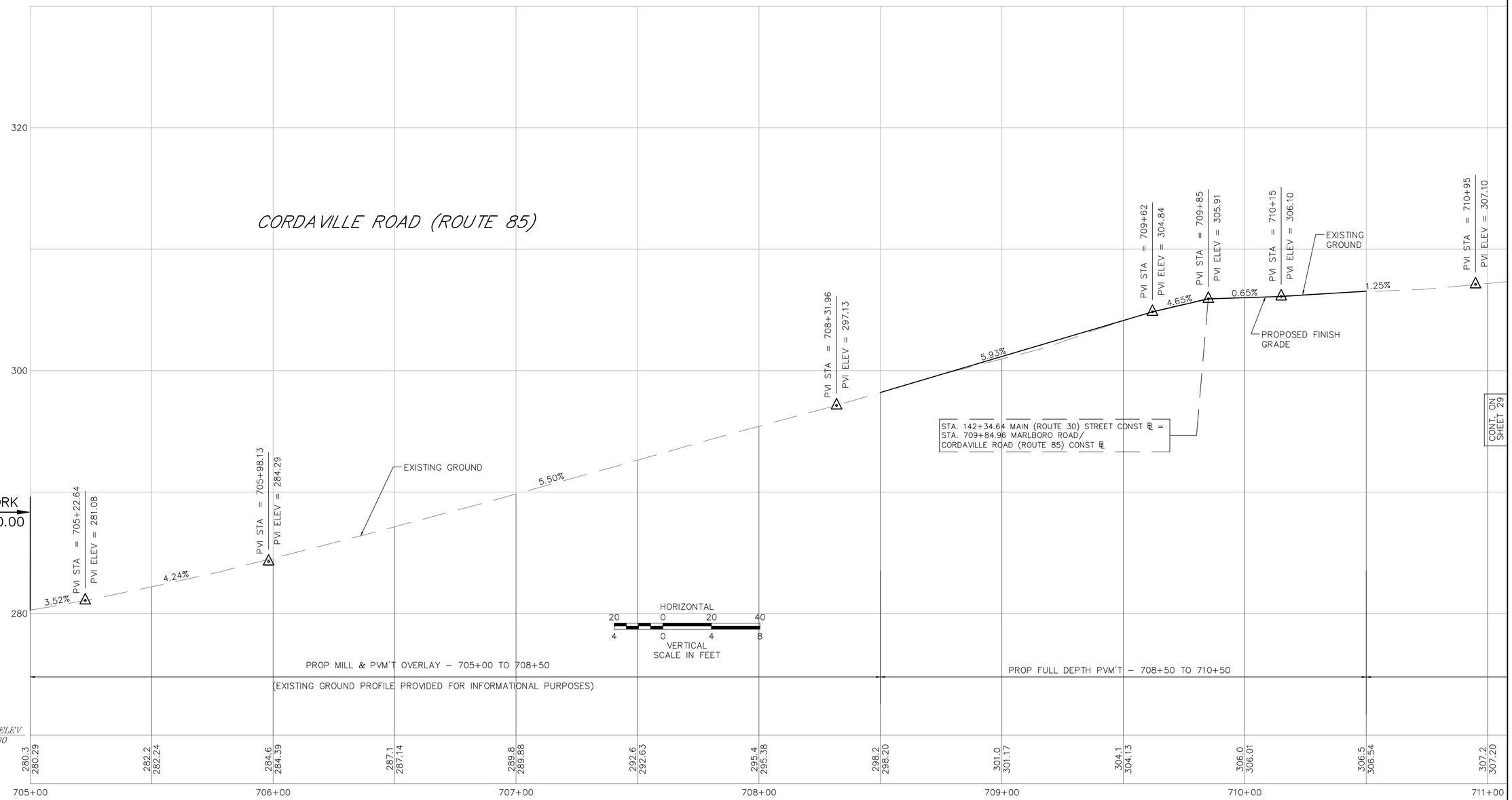
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 17

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	28	154
PROJECT FILE NO. 604989			

PROFILES
CORDAVILLE ROAD (ROUTE 85)

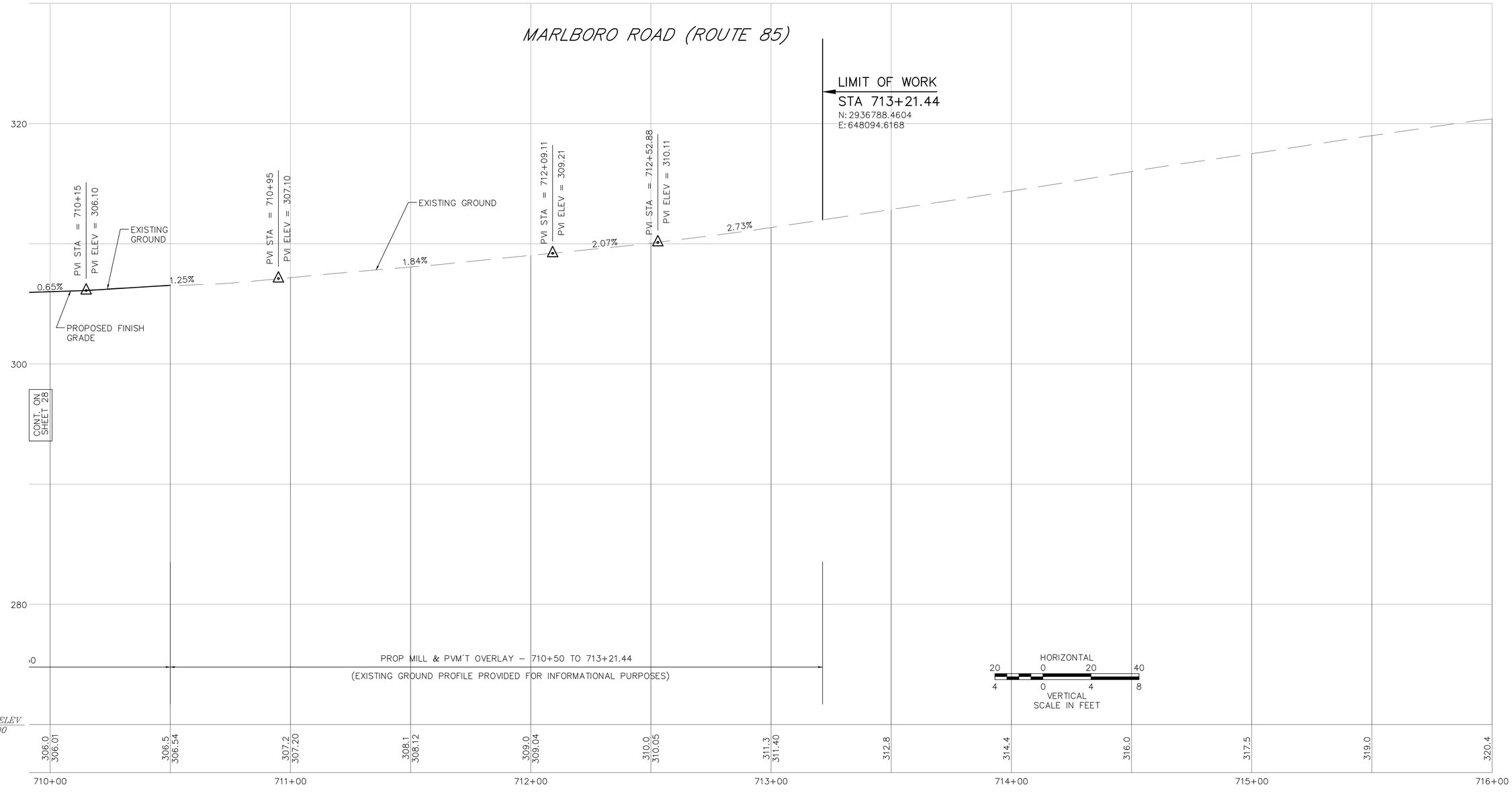


FOR GENERAL PLANS SEE SHEET NO. 14–15

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	29	154
PROJECT FILE NO. 604989			

PROFILES
MARLBORO ROAD (ROUTE 85)

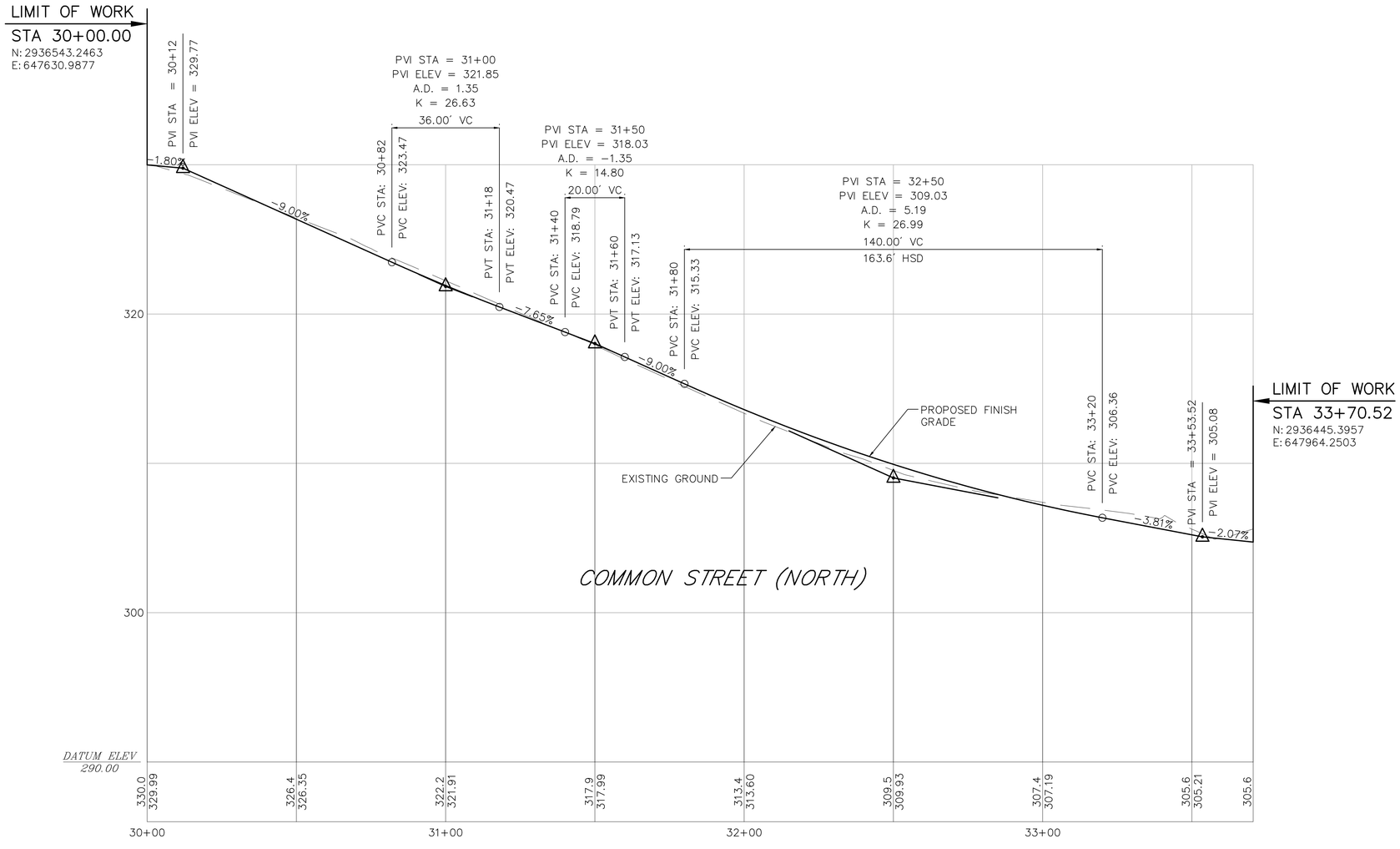


FOR GENERAL PLANS SEE SHEET NO. 14–15

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	30	154
PROJECT FILE NO. 604989			

PROFILES
COMMON STREET (NORTH)



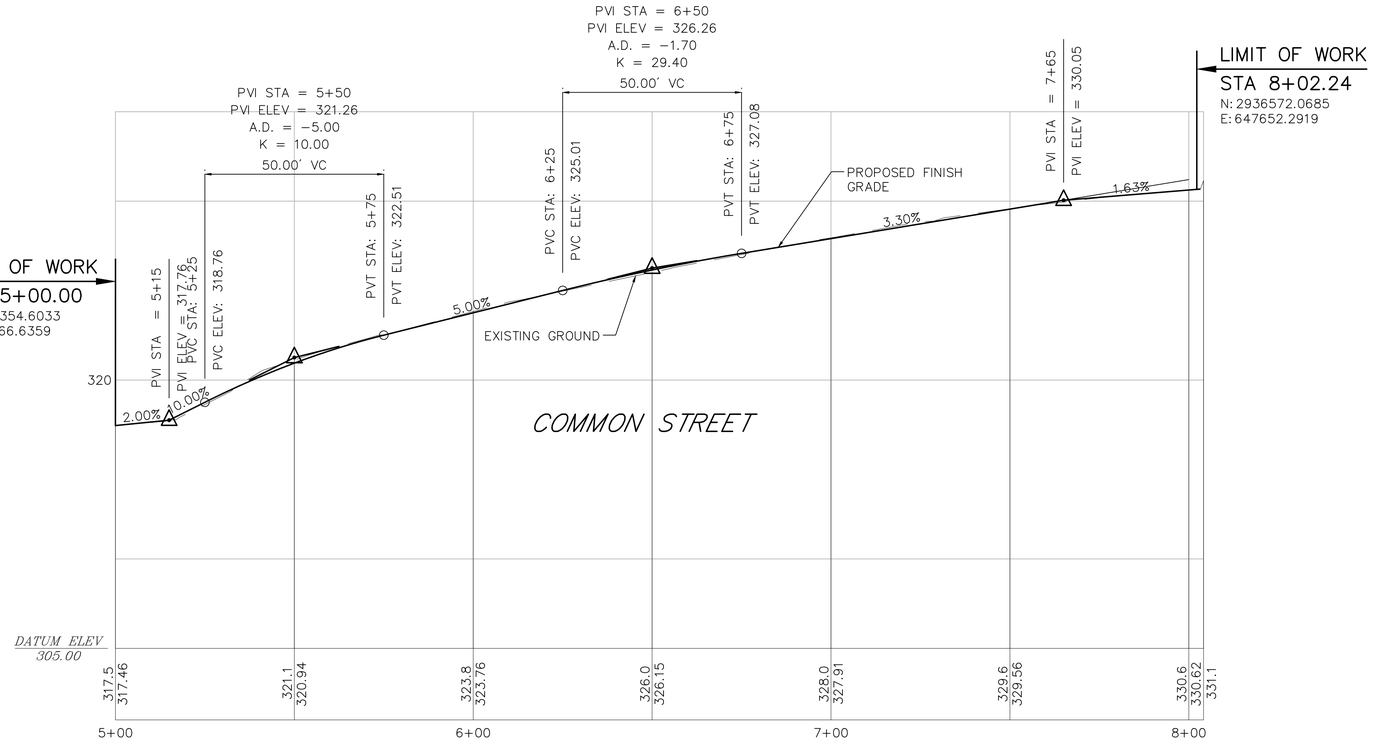
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 13

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	31	154
PROJECT FILE NO. 604989			

PROFILES
COMMON STREET (WEST)



HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

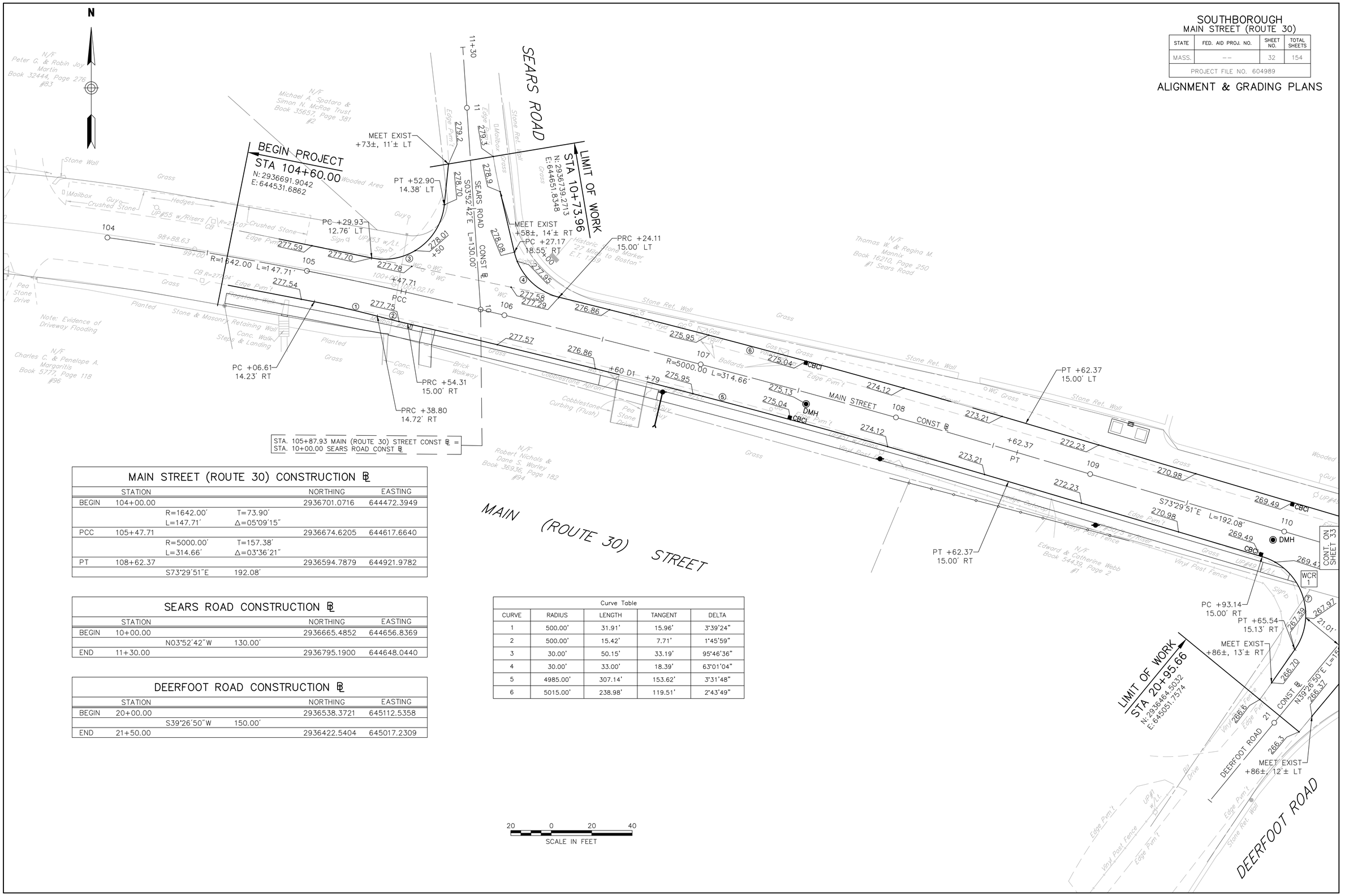
FOR GENERAL PLANS SEE SHEET NO. 13

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-PROF-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	32	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS



MAIN STREET (ROUTE 30) CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	104+00.00			2936701.0716	644472.3949
		R=1642.00'	T=73.90'		
		L=147.71'	Δ=05°09'15"		
PCC	105+47.71			2936674.6205	644617.6640
		R=5000.00'	T=157.38'		
		L=314.66'	Δ=03°36'21"		
PT	108+62.37			2936594.7879	644921.9782
		S73°29'51"E	192.08'		

SEARS ROAD CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	10+00.00			2936665.4852	644656.8369
		N03°52'42"W	130.00'		
END	11+30.00			2936795.1900	644648.0440

DEERFOOT ROAD CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	20+00.00			2936538.3721	645112.5358
		S39°26'50"W	150.00'		
END	21+50.00			2936422.5404	645017.2309

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
1	500.00'	31.91'	15.96'	3°39'24"
2	500.00'	15.42'	7.71'	1°45'59"
3	30.00'	50.15'	33.19'	95°46'36"
4	30.00'	33.00'	18.39'	63°01'04"
5	4985.00'	307.14'	153.62'	3°31'48"
6	5015.00'	238.98'	119.51'	2°43'49"

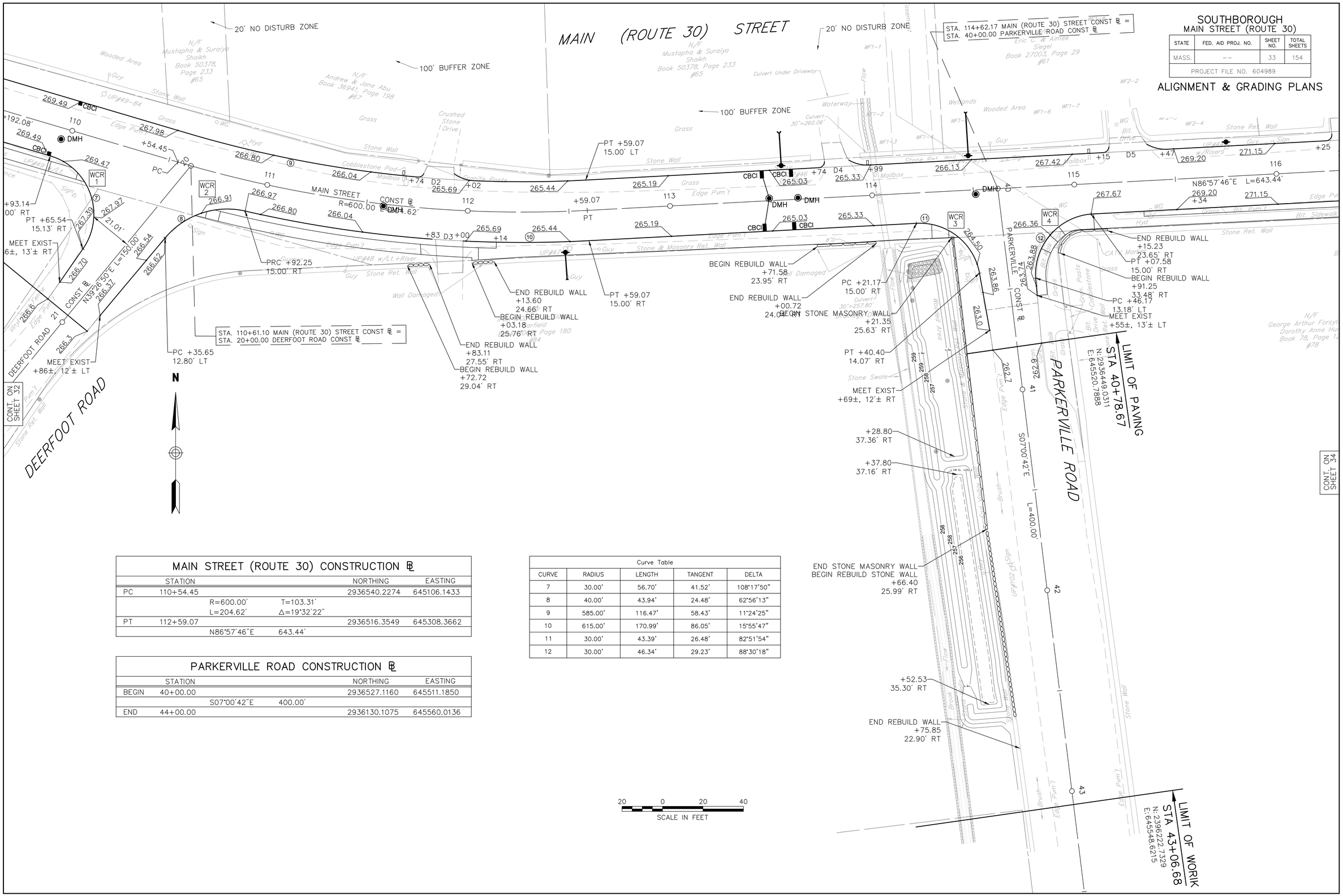
20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	33	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS



MAIN STREET (ROUTE 30) CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PC	110+54.45			2936540.2274	645106.1433
		R=600.00'	T=103.31'		
		L=204.62'	Δ=19°32'22"		
PT	112+59.07			2936516.3549	645308.3662
		N86°57'46"E	643.44'		

PARKERVILLE ROAD CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	40+00.00			2936527.1160	645511.1850
		S07°00'42"E	400.00'		
END	44+00.00			2936130.1075	645560.0136

Curve Table

CURVE	RADIUS	LENGTH	TANGENT	DELTA
7	30.00'	56.70'	41.52'	108°17'50"
8	40.00'	43.94'	24.48'	62°56'13"
9	585.00'	116.47'	58.43'	11°24'25"
10	615.00'	170.99'	86.05'	15°55'47"
11	30.00'	43.39'	26.48'	82°51'54"
12	30.00'	46.34'	29.23'	88°30'18"

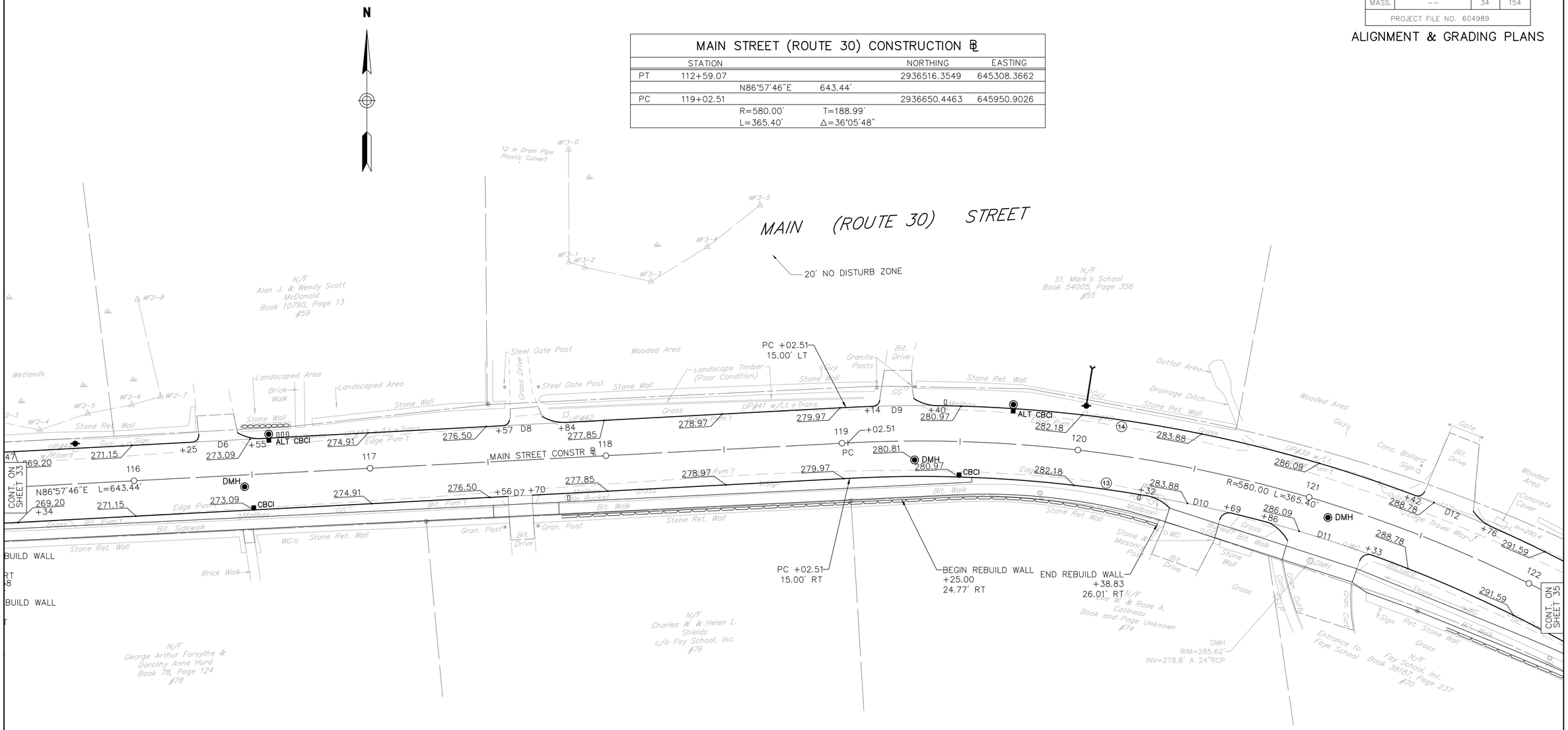
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	34	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

MAIN STREET (ROUTE 30) CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
PT	112+59.07		2936516.3549	645308.3662
	N86°57'46"E	643.44'		
PC	119+02.51		2936650.4463	645950.9026
	R=580.00'	T=188.99'		
	L=365.40'	Δ=36°05'48"		



Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
13	565.00'	355.95'	184.11'	36°05'48"
14	595.00'	374.85'	193.88'	36°05'48"

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

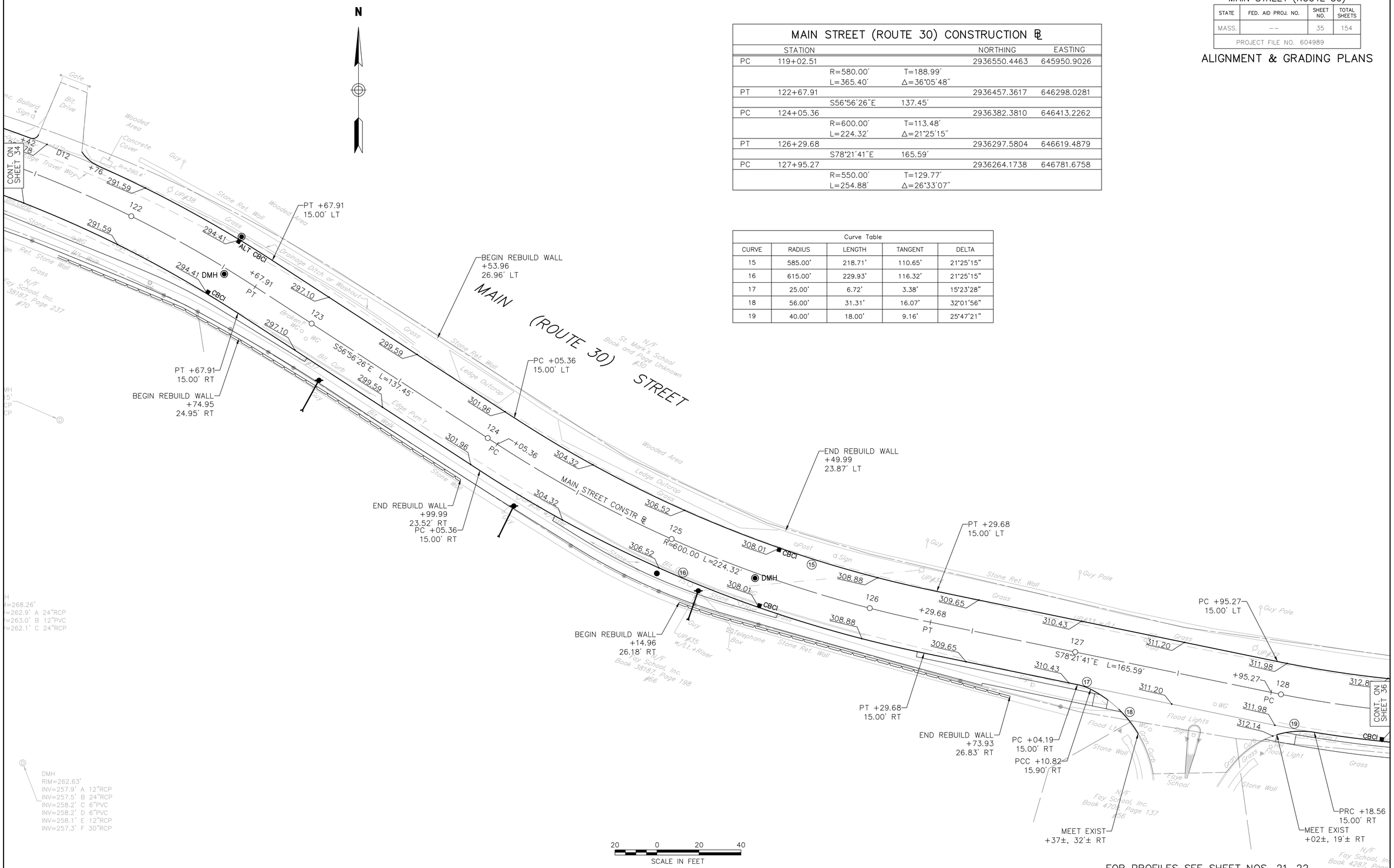
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	35	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

MAIN STREET (ROUTE 30) CONSTRUCTION ℄					
	STATION			NORTHING	EASTING
PC	119+02.51			2936550.4463	645950.9026
		R=580.00′	T=188.99′		
		L=365.40′	Δ=36°05′48″		
PT	122+67.91			2936457.3617	646298.0281
		S56°56′26″E	137.45′		
PC	124+05.36			2936382.3810	646413.2262
		R=600.00′	T=113.48′		
		L=224.32′	Δ=21°25′15″		
PT	126+29.68			2936297.5804	646619.4879
		S78°21′41″E	165.59′		
PC	127+95.27			2936264.1738	646781.6758
		R=550.00′	T=129.77′		
		L=254.88′	Δ=26°33′07″		

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
15	585.00'	218.71'	110.65'	21°25'15"
16	615.00'	229.93'	116.32'	21°25'15"
17	25.00'	6.72'	3.38'	15°23'28"
18	56.00'	31.31'	16.07'	32°01'56"
19	40.00'	18.00'	9.16'	25°47'21"



FOR PROFILES SEE SHEET NOS. 21–22

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

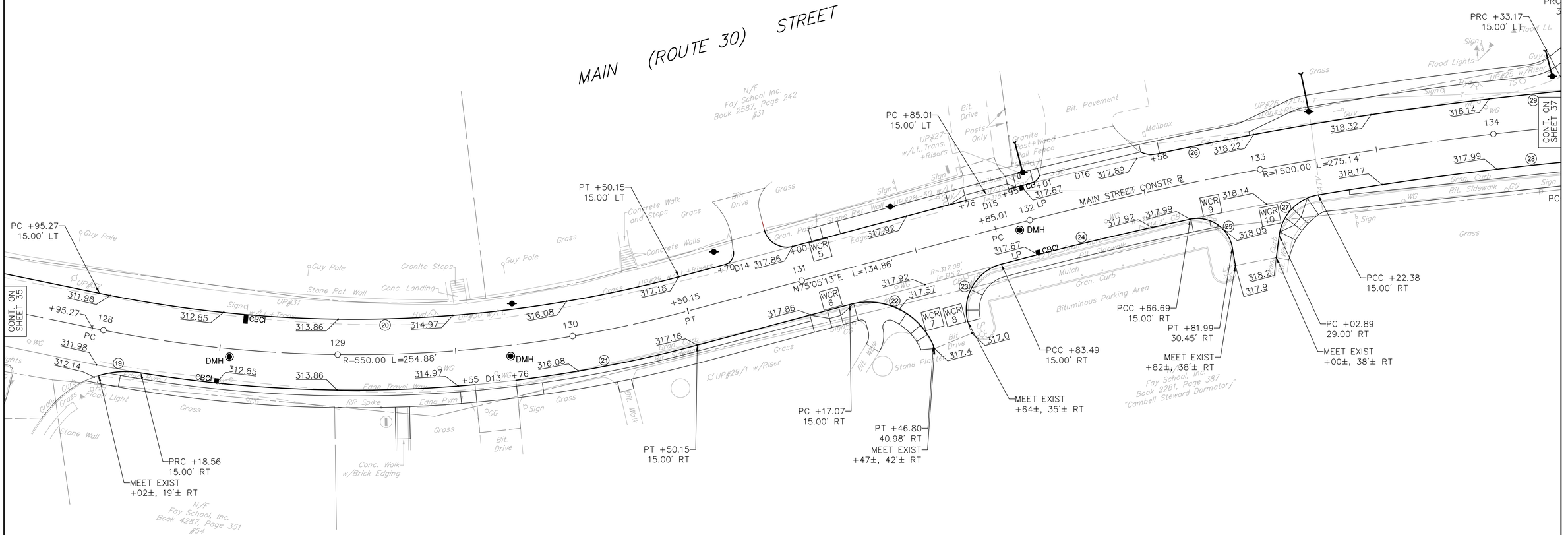
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	36	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

N

MAIN STREET (ROUTE 30) CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
PC	127+95.27		2936264.1738	646781.6758
	R=550.00'	T=129.77'		
	L=254.88'	Δ=26°33'07"		
PT	130+50.15		2936271.3909	647034.1777
	N75°05'13"E	134.86'		
PC	131+85.01		2936306.0981	647164.4968
	R=1500.00'	T=137.96'		
	L=275.14'	Δ=10°30'34"		

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
19	40.00'	18.00'	9.16'	25°47'21"
20	535.00'	247.93'	126.23'	26°33'07"
21	565.00'	261.83'	133.31'	26°33'07"
22	30.00'	43.09'	26.21'	82°17'32"
23	20.00'	31.39'	19.97'	89°54'41"
24	1485.00'	82.38'	41.20'	3°10'43"
25	15.00'	24.08'	15.53'	91°59'47"
26	1515.00'	250.64'	125.61'	9°28'44"
27	20.00'	25.45'	14.78'	72°54'39"
28	1485.00'	126.69'	63.38'	4°53'17"
29	1515.00'	250.64'	125.61'	9°28'44"



20 0 20 40
SCALE IN FEET

FOR PROFILES SEE SHEET NOS. 22-23

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	37	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
30	30.00'	36.75'	21.08'	70°10'42"
31	20.00'	34.38'	23.21'	98°29'09"
32	23.00'	36.71'	23.59'	91°26'47"
33	10.00'	7.23'	3.78'	41°24'35"
34	10.00'	7.23'	3.78'	41°24'35"
35	21.00'	53.61'	69.29'	146°16'46"
36	5.00'	3.93'	2.07'	45°00'00"
37	5.00'	3.93'	2.07'	45°00'00"
38	565.00'	43.11'	21.56'	4°22'18"
39	20.00'	14.95'	7.85'	42°50'31"
40	32.79'	26.54'	14.04'	46°22'05"
41	25.00'	35.35'	21.36'	81°01'21"
42	10.00'	8.63'	4.61'	49°27'30"
43	10.00'	8.63'	4.61'	49°27'30"
44	535.00'	120.64'	60.58'	12°55'11"
45	10.00'	7.23'	3.78'	41°24'35"
46	10.00'	7.23'	3.78'	41°24'35"
48	44.00'	28.79'	14.93'	37°29'18"
49	15.00'	22.34'	13.83'	85°20'16"
50	10.00'	21.61'	18.74'	123°49'23"
51	10.00'	13.20'	7.76'	75°39'16"
52	200.00'	73.82'	37.33'	21°08'51"
53	25.00'	34.09'	20.29'	78°07'28"
54	15.00'	20.50'	12.21'	78°17'08"
55	123.00'	82.83'	43.05'	38°34'54"
56	107.00'	51.07'	26.03'	27°20'51"
57	10.00'	7.19'	3.76'	41°12'43"

COMMON STREET CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	30+00.00			2936543.2463	647630.9877
		S49°50'19"E	46.40'		
PC	30+46.40			2936513.3209	647666.4481
		R=115.50'	T=40.43'		
		L=77.78'	Δ=38°34'54"		
PT	31+24.18			2936486.1335	647737.7552
		S88°25'13"E	193.59'		
PC	33+17.76			2936480.7971	647931.2706
		R=31.00'	T=22.18'		
		L=38.50'	Δ=71°09'21"		
PT	33+56.26			2936459.0092	647960.0194
		S17°15'53"E	14.26'		
END	33+70.52			2936445.3957	647964.2503

ST. MARKS STREET CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	5+00.00			2936354.6033	647466.6359
		N04°24'13"W	35.00'		
PC	5+35.00			2936389.5000	647463.9485
		R=32.00'	T=17.11'		
		L=31.43'	Δ=56°16'46"		
PT	5+66.43			2963417.1306	647476.0983
		N51°52'33"E	160.87'		
PC	7+27.30			2936516.4458	647602.6493
		R=212.00'	T=44.27'		
		L=87.29'	Δ=23°35'24"		
PT	8+14.59			2936582.7602	647658.4532
		N28°17'09"E	11.07'		
END	8+25.66			2936592.5099	647663.6998

MAIN STREET (ROUTE 30) CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PC	131+85.01			2936306.0981	647164.4968
		R=1500.00'	T=137.96'		
		L=275.14'	Δ=10°30'34"		
PT	134+60.15			2936352.1943	647435.3544
		N85°35'47"E	236.74'		
PC	136+96.89			2936370.3717	647671.3932
		R=550.00'	T=62.27'		
		L=124.02'	Δ=12°55'11"		
PT	138+20.91			2936393.6961	647792.9325
		N72°40'36"E	126.67'		
PC	139+47.57			2936431.4134	647913.8553
		R=825.00'	T=162.01'		
		L=319.94'	Δ=22°13'11"		

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
58	10.00'	5.64'	2.90'	32°18'27"
90	4.00'	12.57'	INFINITY'	180°00'00"
91	4.00'	12.57'	INFINITY'	180°00'00"

FOR PROFILES SEE SHEET NOS. 23-24, 30 & 31

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	38	154
PROJECT FILE NO. 604989			

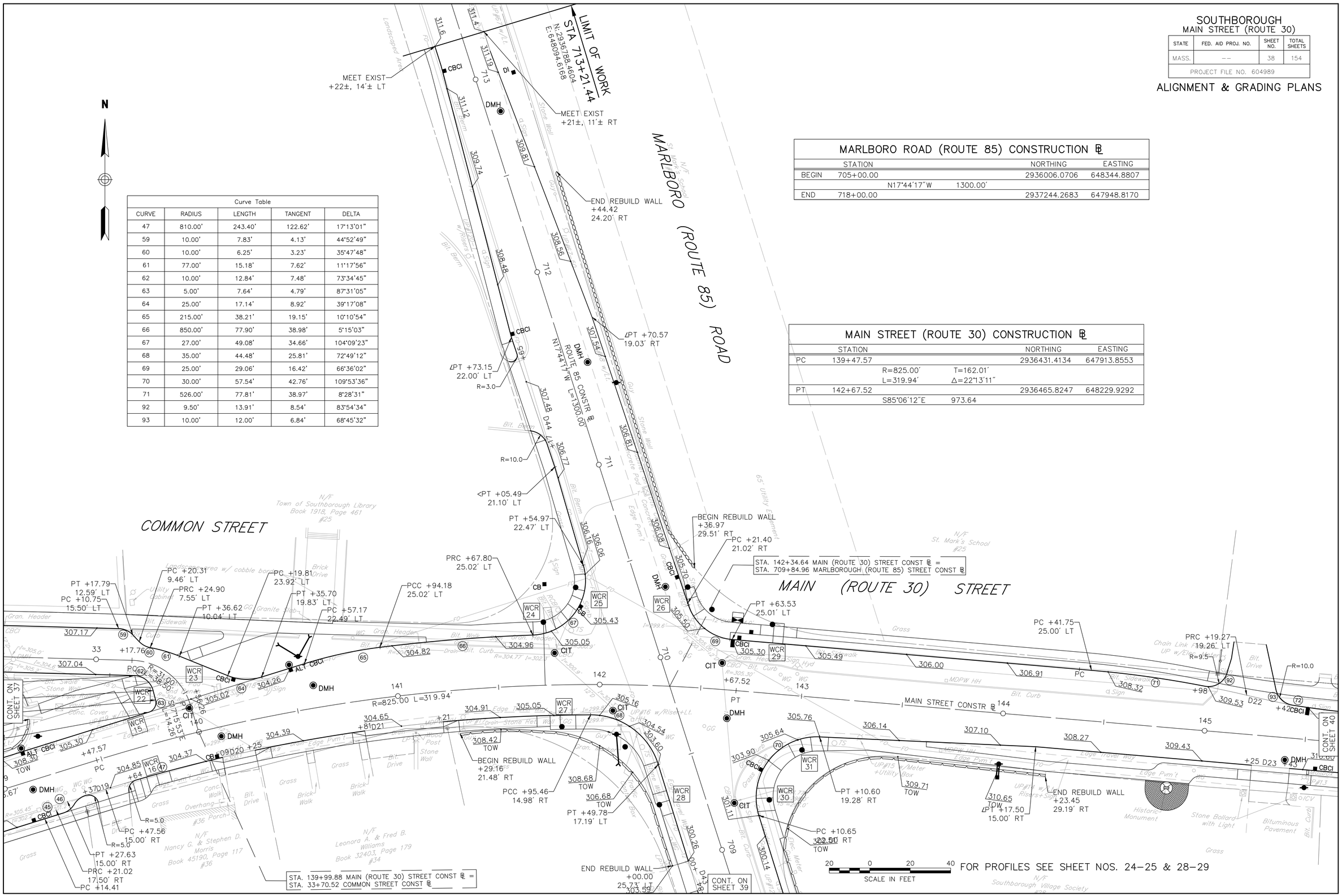
ALIGNMENT & GRADING PLANS

N

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
47	810.00'	243.40'	122.62'	17°13'01"
59	10.00'	7.83'	4.13'	44°52'49"
60	10.00'	6.25'	3.23'	35°47'48"
61	77.00'	15.18'	7.62'	11°17'56"
62	10.00'	12.84'	7.48'	73°34'45"
63	5.00'	7.64'	4.79'	87°31'05"
64	25.00'	17.14'	8.92'	39°17'08"
65	215.00'	38.21'	19.15'	10°10'54"
66	850.00'	77.90'	38.98'	5°15'03"
67	27.00'	49.08'	34.66'	104°09'23"
68	35.00'	44.48'	25.81'	72°49'12"
69	25.00'	29.06'	16.42'	66°36'02"
70	30.00'	57.54'	42.76'	109°53'36"
71	526.00'	77.81'	38.97'	8°28'31"
92	9.50'	13.91'	8.54'	83°54'34"
93	10.00'	12.00'	6.84'	68°45'32"

MARLBORO ROAD (ROUTE 85) CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
BEGIN	705+00.00		2936006.0706	648344.8807
	N17°44'17"W	1300.00'		
END	718+00.00		2937244.2683	647948.8170

MAIN STREET (ROUTE 30) CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
PC	139+47.57		2936431.4134	647913.8553
	R=825.00'	T=162.01'		
	L=319.94'	Δ=22°13'11"		
PT	142+67.52		2936465.8247	648229.9292
	S85°06'12"E	973.64		



FOR PROFILES SEE SHEET NOS. 24–25 & 28–29

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	39	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

CORDAVILLE ROAD (ROUTE 85) CONSTRUCTION ℄				
	STATION		NORTHING	EASTING
BEGIN	705+00.00		2936006.0706	648344.8807
	N17°44'17"W	1300.00'		
END	718+00.00		2937244.2683	647948.8170

LIMIT OF WORK
STA 705+00.00
N: 2936006.0706
E: 648344.8807

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
73	2000.14'	68.08'	34.04'	1°57'01"
74	1021.26'	39.88'	19.94'	2°14'15"
75	2000.00'	41.57'	20.79'	1°11'27"
76	535.00'	23.11'	11.56'	2°28'30"

FOR PROFILES SEE SHEET NOS. 24–25 & 28–29

CONT. ON SHEET 40
CONT. ON SHEET 38
CONT. ON SHEET 37

STA. 142+34.64 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 709+84.96 MARLBOROUGH (ROUTE 85) STREET CONST ℄

STA. 139+99.88 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 33+70.52 COMMON STREET CONST ℄

20 0 20 40
SCALE IN FEET

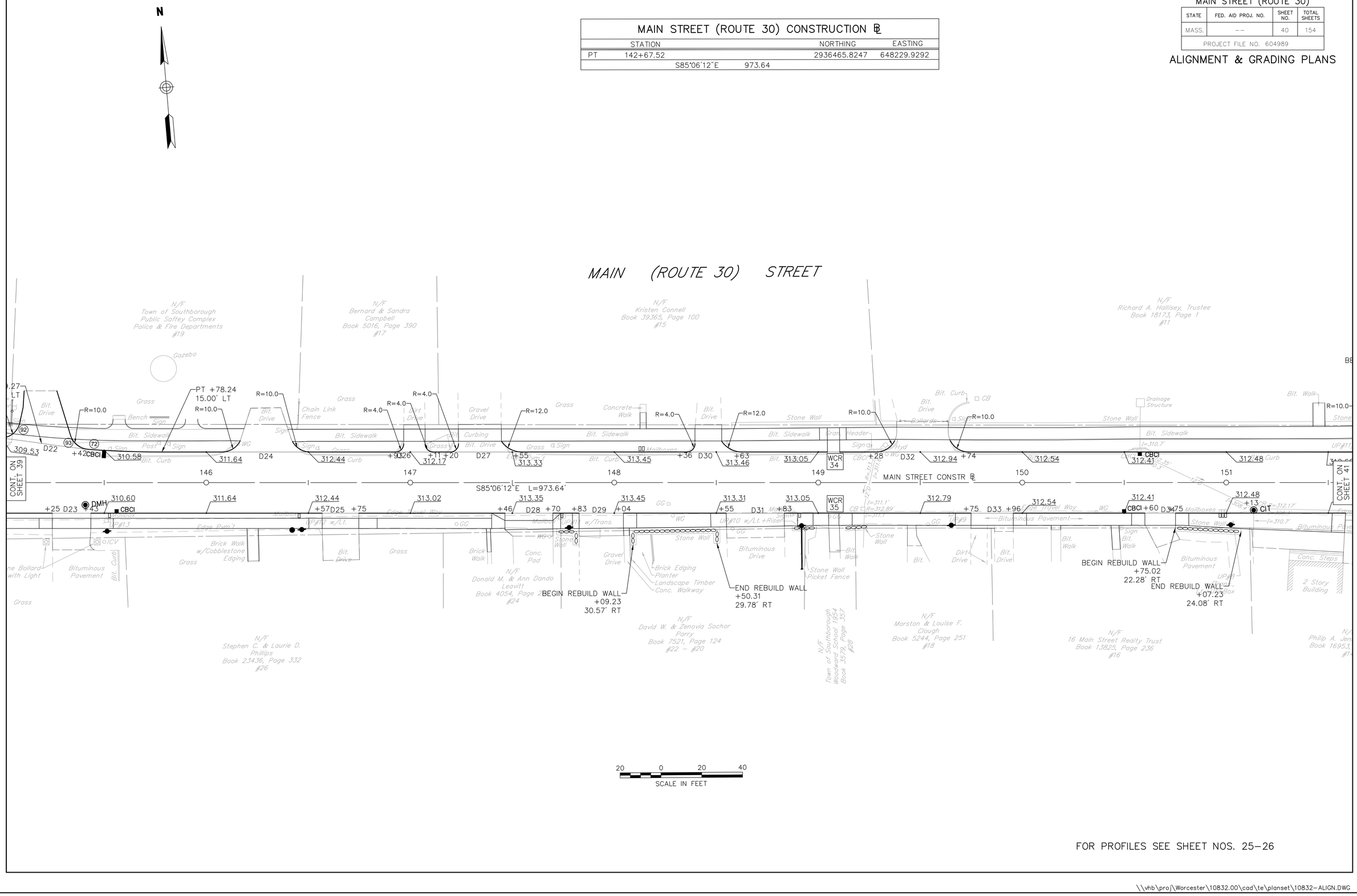
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	40	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

MAIN STREET (ROUTE 30) CONSTRUCTION ℄			
STATION		NORTHING	EASTING
PT 142+67.52		2936465.8247	648229.9292
	S85°06'12"E 973.64		



FOR PROFILES SEE SHEET NOS. 25-26

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	41	154
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

N

MAIN STREET (ROUTE 30) CONSTRUCTION ℄

	STATION			NORTHING	EASTING
PT	142+67.52			2936465.8247	648229.9292
		S85°06'12"E	973.64'		
PC	152+41.16			2936382.7180	649200.0162
		R=510.00'	T=135.46'		
		L=264.80'	Δ=29°44'56"		
PT	155+05.96			29.3428.0862	649457.8924
		N65°08'51"E	62.04'		
END	155+68.00			2936454.1588	649514.1831

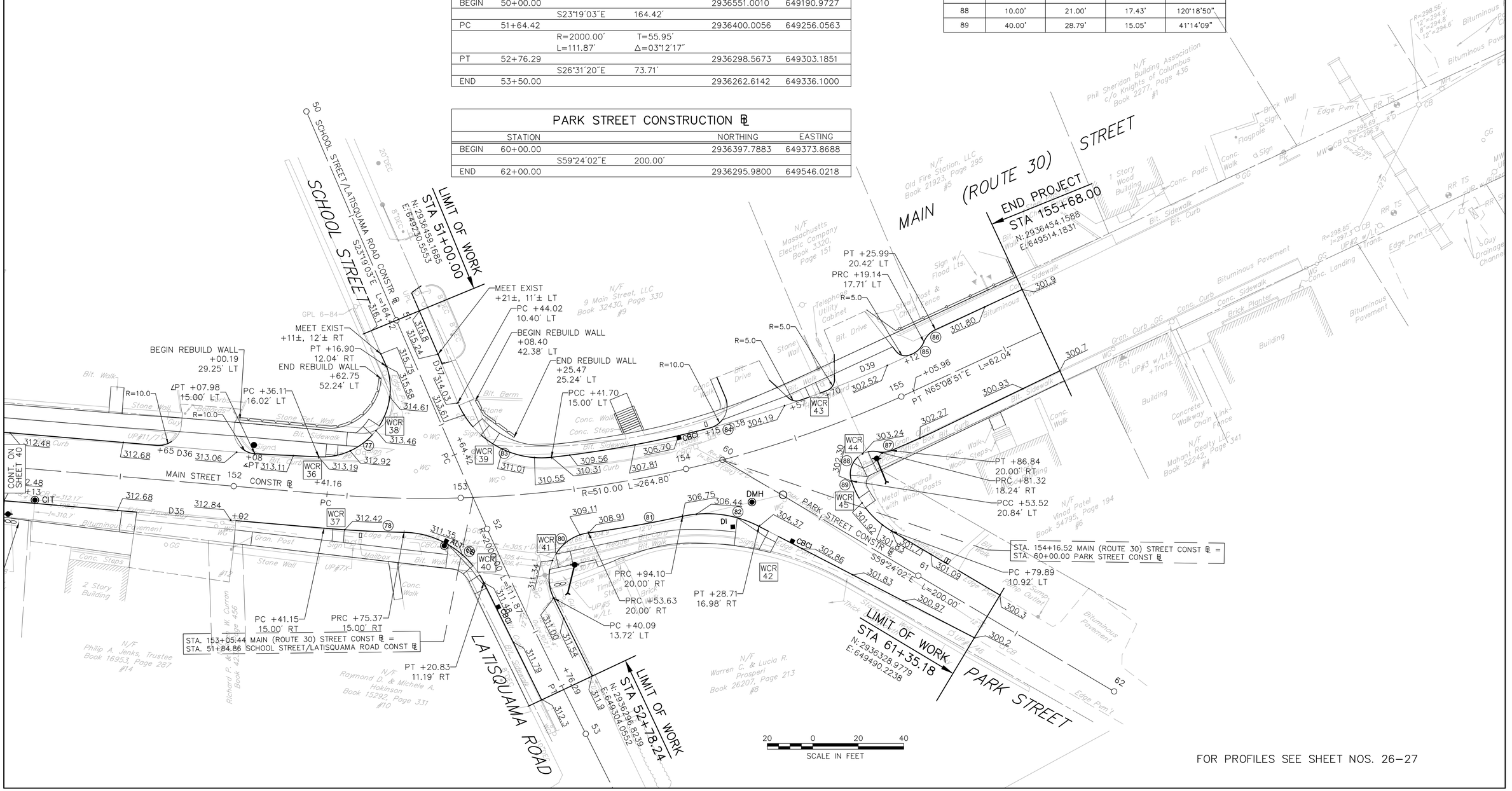
SCHOOL STREET & LATISQUAMA ROAD CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	50+00.00			2936551.0010	649190.9727
		S23°19'03"E	164.42'		
PC	51+64.42			2936400.0056	649256.0563
		R=2000.00'	T=55.95'		
		L=111.87'	Δ=03°12'17"		
PT	52+76.29			2936298.5673	649303.1851
		S26°31'20"E	73.71'		
END	53+50.00			2936262.6142	649336.1000

PARK STREET CONSTRUCTION ℄

	STATION			NORTHING	EASTING
BEGIN	60+00.00			2936397.7883	649373.8688
		S59°24'02"E	200.00'		
END	62+00.00			2936295.9800	649546.0218

Curve Table				
CURVE	RADIUS	LENGTH	TANGENT	DELTA
77	30.00'	58.59'	44.39'	111°53'27"
78	525.00'	35.23'	17.62'	3°50'40"
79	40.00'	43.58'	24.24'	62°25'33"
80	20.00'	37.90'	27.82'	108°34'15"
81	530.00'	42.06'	21.04'	4°32'47"
82	50.00'	34.58'	18.02'	39°37'44"
83	40.00'	14.57'	7.36'	20°51'48"
84	495.00'	164.97'	83.26'	19°05'43"
85	10.00'	9.78'	5.32'	56°00'42"
86	10.00'	7.54'	3.96'	43°12'56"
87	10.00'	6.08'	3.14'	34°51'14"
88	10.00'	21.00'	17.43'	120°18'50"
89	40.00'	28.79'	15.05'	41°14'09"



FOR PROFILES SEE SHEET NOS. 26-27

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	42	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

BEGIN PROJECT
STA 104+60.00
MEET EXIST MARKINGS

LIMIT OF WORK
STA 10+73.96

LIMIT OF WORK
STA 20+95.66

SEARS ROAD

DEERFOOT ROAD

MAIN (ROUTE 30) STREET

MA-I-13
MA-I-14
R2-1(35)a
I-6B
R1-1
R2-1(30)
R&S
R2-1(30)b
R&S
"Left Turn"
R4-8
MA-D3-1
MA-D3-2
W11-1
W16-1P
R2-1(29)a
RET

EXIST SHLO
EXIST TOWN LAYOUT
DBYL
SWL
SL
Edge Pvmt
Stone Wall
Grass
Wooded Area
Mailbox
Guy
Crushed Stone
Hedges
UP#55 w/Risers
CB
Stone Bound (Found-Leaning)
Historic Stone Marker "27 Miles to Boston" E.T. 1769
Pea Stone Drive
Note: Evidence of Driveway Flooding
Planted
Stone & Masonry Retaining Wall
Conc. Walk, Steps & Landing
Asphalt Walk
Conc.
Brick Walkway
Cobblestone Curbing (Flush)
Pea Stone Drive
Stone Ret. Wall
Bollards
Granite Curb
Asphalt Apron
Vinyl Post Fence
Drill Hole (Found)
Utility Pole
Drive
104
105
106
107
108
109
110
+58
+10
11+30
15'
55'
4'
11'
11'
4'
8' CW
33.3
13'
12'
65'
21'

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.

20 0 20 40
SCALE IN FEET

CONT. ON SHEET 43

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	43	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

MAIN (ROUTE 30) STREET

CONT. ON SHEET 42

CONT. ON SHEET 44

DEERFOOT ROAD

PARKERVILLE ROAD

EXIST TOWN LAYOUT

W11-1
W16-1P

R1-1

MA-D3-1
MA-D3-3

MA-D3-1
MA-D3-4

D3-4
R1-1

R3-3

W1-7

R2-1(30)

R7-12(L)
R7-1(d)

SEE DETAIL (TYP)

8' CW

DBYL - 65'

DBYL - 50'

13'

12'

21'

LIMIT OF PAVING
STA 40+78.67

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	44	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

MAIN (ROUTE 30) STREET

CONT. ON SHEET 43

CONT. ON SHEET 45

W11-1
W16-1P

R2-1(30)

R2-1(25)

EXIST TOWN LAYOUT

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.

DMH
RIM=285.62'
INV=278.8' A 24"RCP

DMH
RIM=277.15'
INV=269.6' A 24"RCP
INV=268.4' B 24"RCP

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

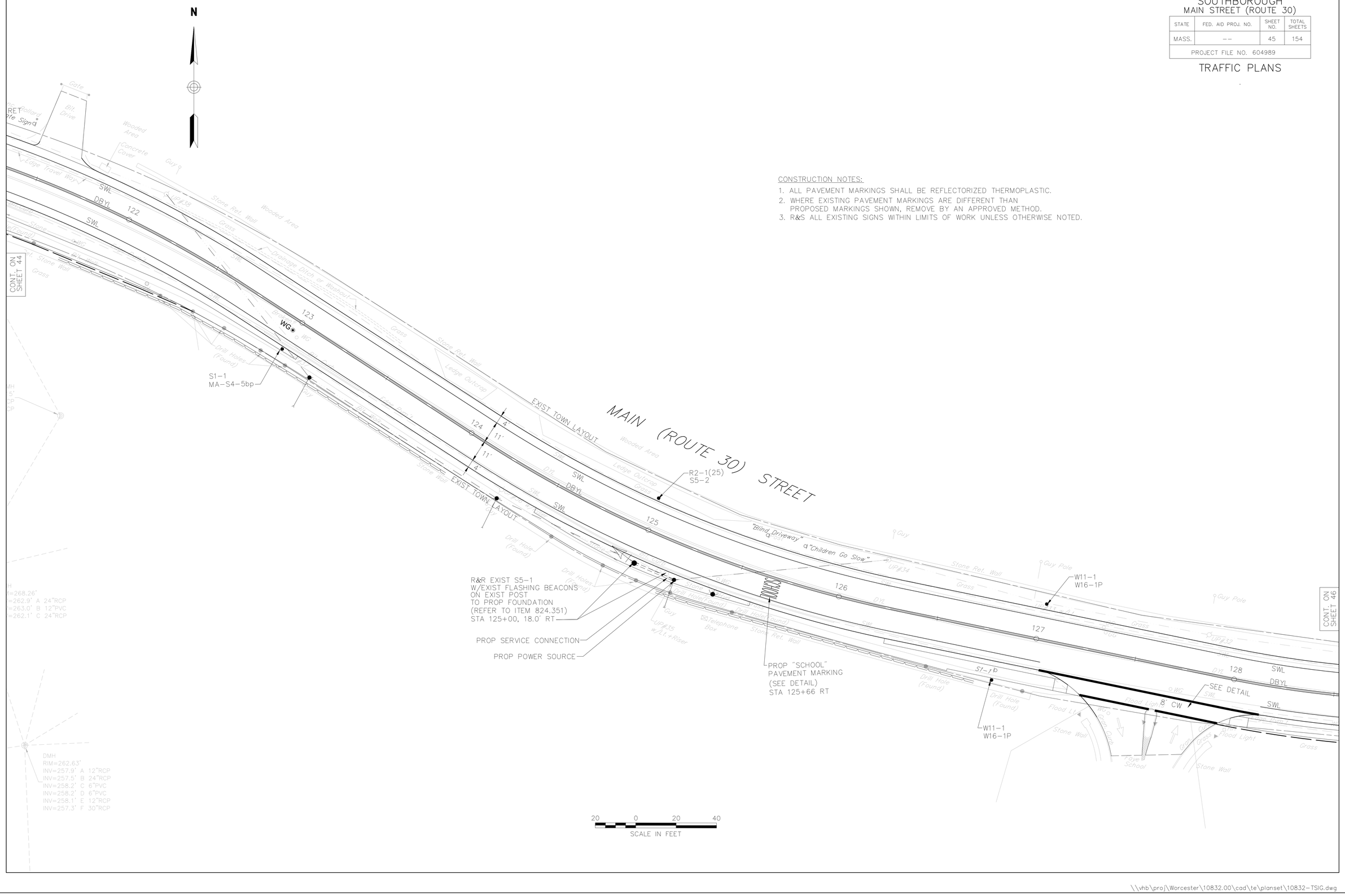
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	45	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.



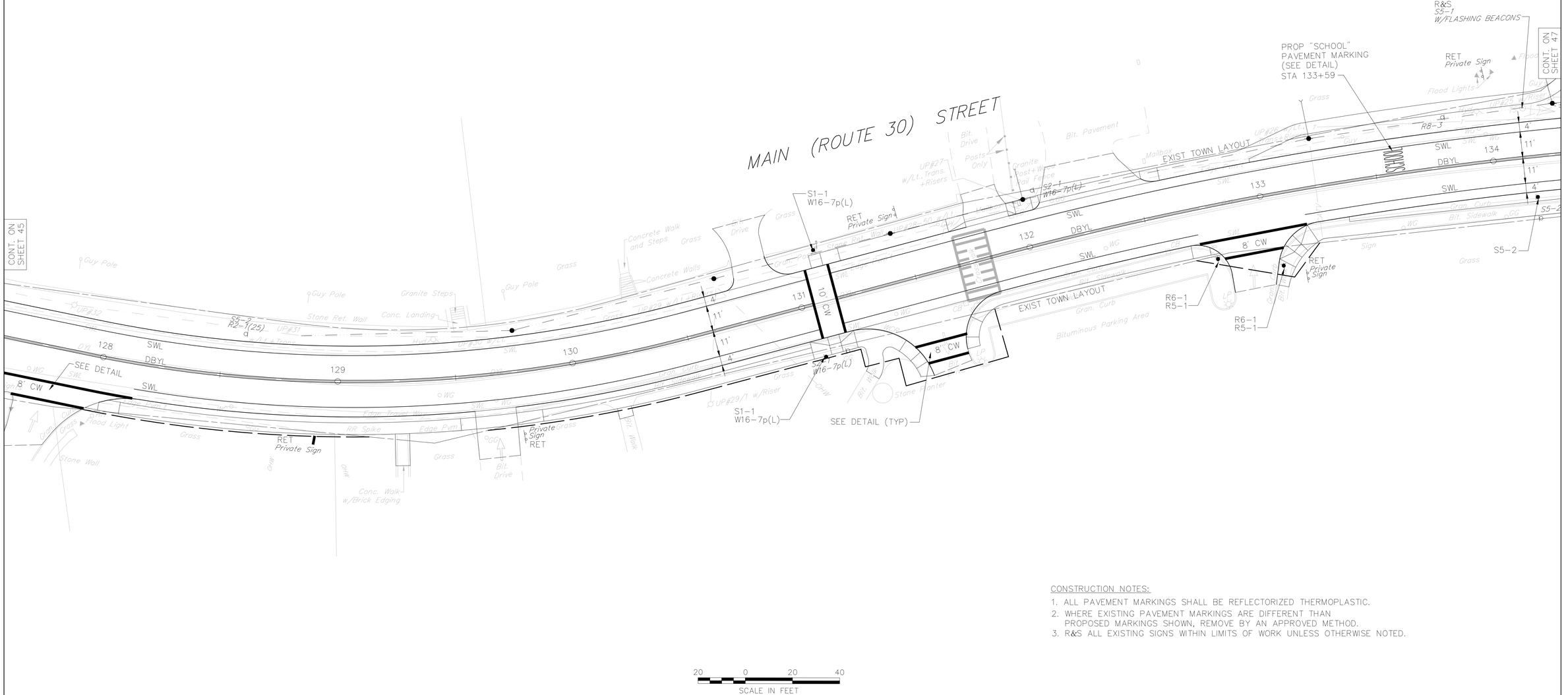
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	46	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N



CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	47	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

LIMIT OF WORK
STA 8+02.24

SAINT MARK'S STREET

COMMON STREET

MAIN STREET (ROUTE 30)

MIDDLE ROAD

CONT. ON SHEET 48

CONT. ON SHEET 46

RESTORE AND RESET
(SEE ITEM 106.35)

PROP TS POST
W/ S5-1
W/FLASHING BEACONS
(REFER TO ITEM 824.351)
STA 134+32, 19.7' LT

PROP SERVICE CONNECTION

PROP POWER SOURCE

R&S
S5-1
W/FLASHING BEACONS
(REFER TO ITEM 824.351)

RET
Private Sign

EXIST TOWN LAYOUT

ONE WAY

R&R "Burke Sq."
MA-D3-5 +17

R&R
Private Sign

12" SWCHL (TYP)
(SEE DETAIL)

SEE DETAIL (TYP)

PROP SHARROW
(SEE DETAIL)

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

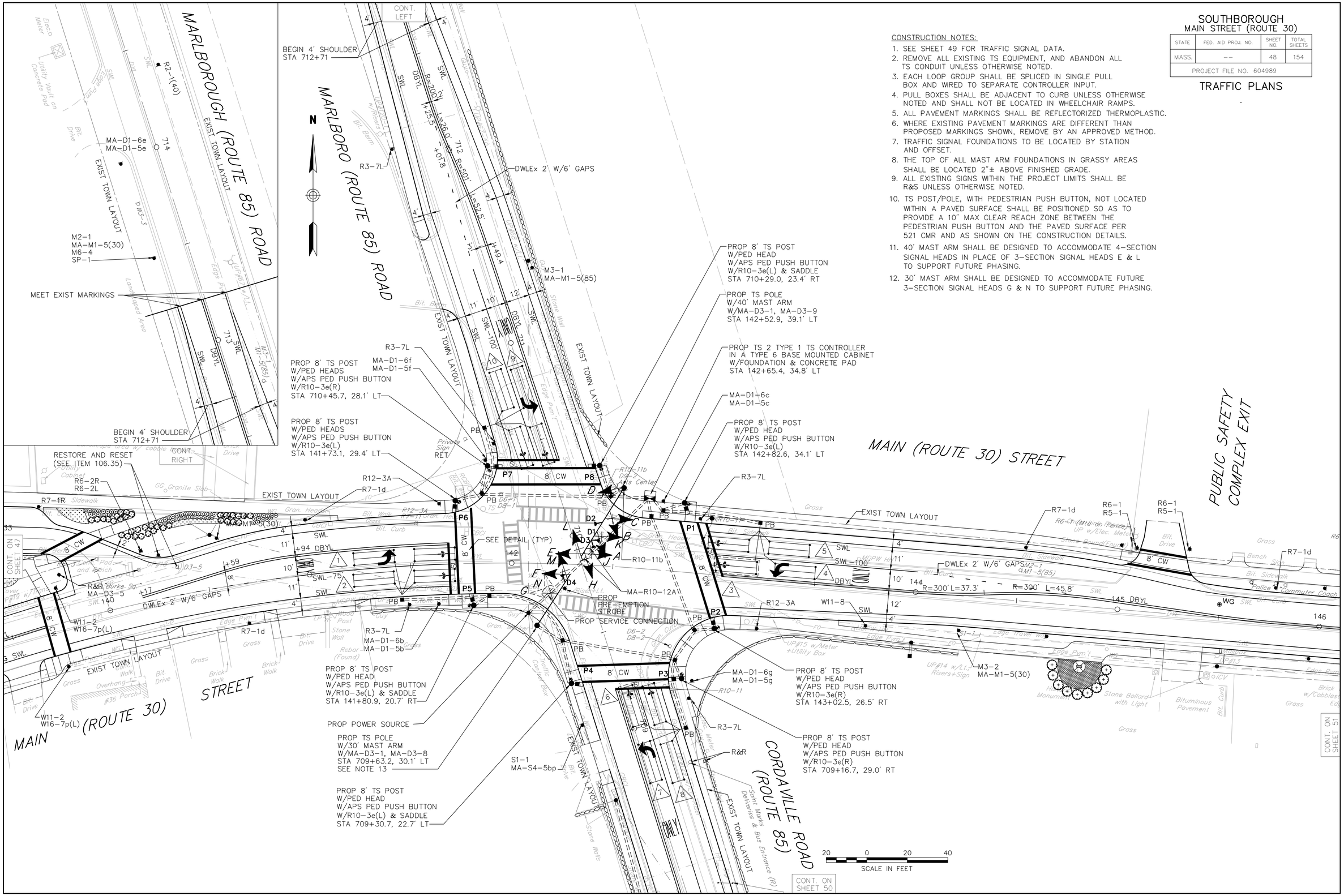
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	48	154
PROJECT FILE NO. 604989			

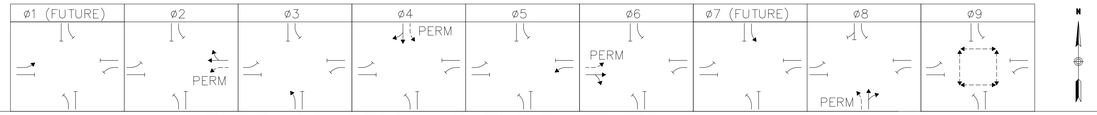
TRAFFIC PLANS

CONSTRUCTION NOTES:

1. SEE SHEET 49 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. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
6. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
7. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
8. THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 2"± ABOVE FINISHED GRADE.
9. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.
10. 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 ON THE CONSTRUCTION DETAILS.
11. 40' MAST ARM SHALL BE DESIGNED TO ACCOMMODATE 4-SECTION SIGNAL HEADS IN PLACE OF 3-SECTION SIGNAL HEADS E & L TO SUPPORT FUTURE PHASING.
12. 30' MAST ARM SHALL BE DESIGNED TO ACCOMMODATE FUTURE 3-SECTION SIGNAL HEADS G & N TO SUPPORT FUTURE PHASING.



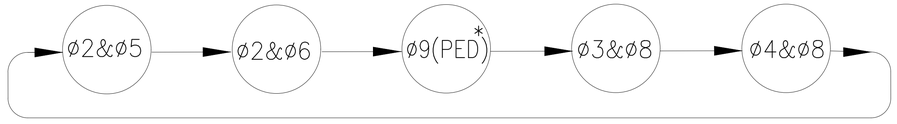
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg



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	WB	A				~~FY~~	~~Y~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~R~~	~~R~~	~~R~~	~~R~~				~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~FY~~
MAIN STREET	WB	B,C				G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	FY
MAIN STREET	EB	D,E,F				R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	FY
CORDAVILLE ROAD	NB	H				~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~				~~FY~~	~~Y~~	~~R~~	~~R~~	~~R~~	~~R~~	~~FR~~
CORDAVILLE ROAD	NB	J,K				R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				G	Y	R	R	R	R	FR
MARLBOROUGH ROAD	SB	L,M				R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R				R	R	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	DW	OUT
TIMING IN SECONDS																														
MINIMUM INTERVAL						10			6			10			6			10						10						CONFLICT FLASH OPERATION ONLY
VEHICLE EXTENSION						2			2			2			2			2						2						
MAXIMUM 1						55			10			25			10			45						35						
MAXIMUM 2						35			10			40			10			25						30						
YELLOW CLEARANCE							3.5			3			4			3			3.5						4			3		
RED CLEARANCE								2			3.5			3			2.5			2					3			0	
PEDESTRIAN INTERVAL																											7			
PEDESTRIAN INTERVAL																											11			
DETECTOR						NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK						NON-LOCK			–			
RECALL						MIN			OFF			OFF			OFF			MIN						OFF			–			

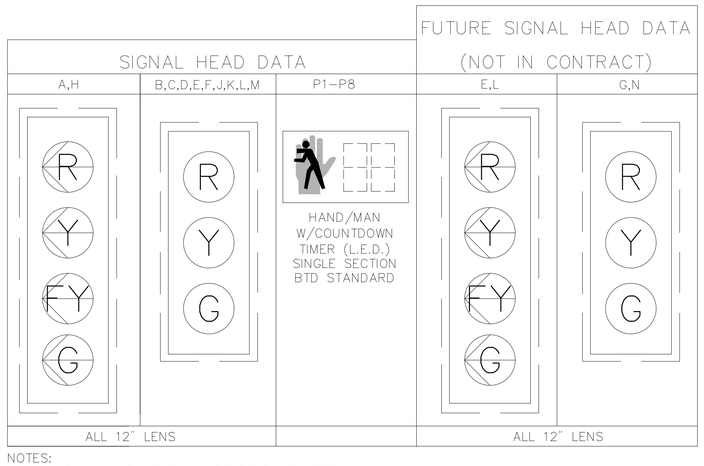
NOTES:
1. AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D.,
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. PERM = PERMISSIVE
4. ø4 & ø8 DUAL ENTRY
5. MAXIMUM 1 = NORMAL OPERATION
6. MAXIMUM 2 = 3PM TO 7PM MON-FRI
7. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.
8. DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL NOT BE IN EFFECT.

PREFERENTIAL PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION

PRE-EMPTION PHASING & PRIORITY			
DETECTOR & PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		ø2 & ø5
D2	2		ø6
D3	3		ø3 & ø8
D4	4		ø4



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.

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	ø6	SERIES
2	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø6	SERIES
3	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø5	SINGLE
4	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø2	SINGLE
5	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø2	SERIES
6	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø3	SINGLE
7	1-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø8	SINGLE
8	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø8	SERIES
9	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø4	SERIES
10	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø4	SERIES

NOTES:
1. DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	49	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

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.

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 THE 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. NORMAL VEHICLE 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.

ITEM 816.01
TRAFFIC SIGNAL RECONSTRUCTION
MAIN STREET (ROUTE 30) AT MARLBORO ROAD/CORDAVILLE ROAD (ROUTE 85)
LIST OF MAJOR ITEMS REQUIRED

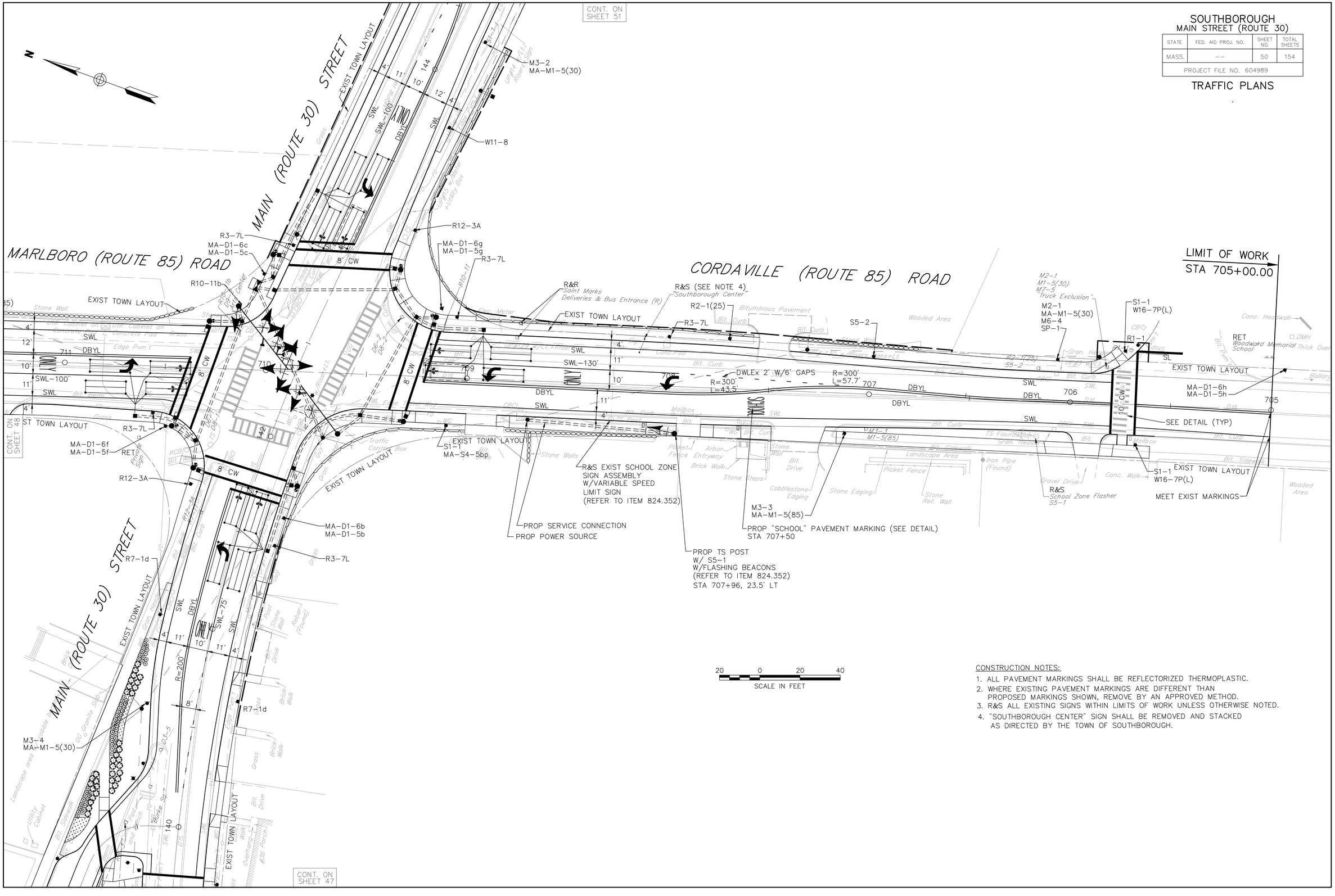
QUANTITY	DESCRIPTION
1	8ø TS 2 TYPE 1 CONTROLLER IN A TYPE 6 BASE MOUNTED CABINET INCL. FOUNDATION AND CONCRETE PAD
1	TS 30' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
1	TS 40' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
8	TS POST 8' STANDARD INCL. FOUNDATION
9	SIGNAL HEAD, 3-SECTION, 12" LENSES
2	SIGNAL HEAD, 4-SECTION, 12" LENSES, WITH FLASHING YELLOW ARROW
8	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
5	PEDESTRIAN PUSH BUTTON W/R10-3f(L) AND SIGN SADDLE
3	PEDESTRIAN PUSH BUTTON W/R10-3f(R) AND SIGN SADDLE
12	PULL BOX-12"x12"
5	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)

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	50	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS



20 0 20 40
SCALE IN FEET

CONSTRUCTION NOTES:

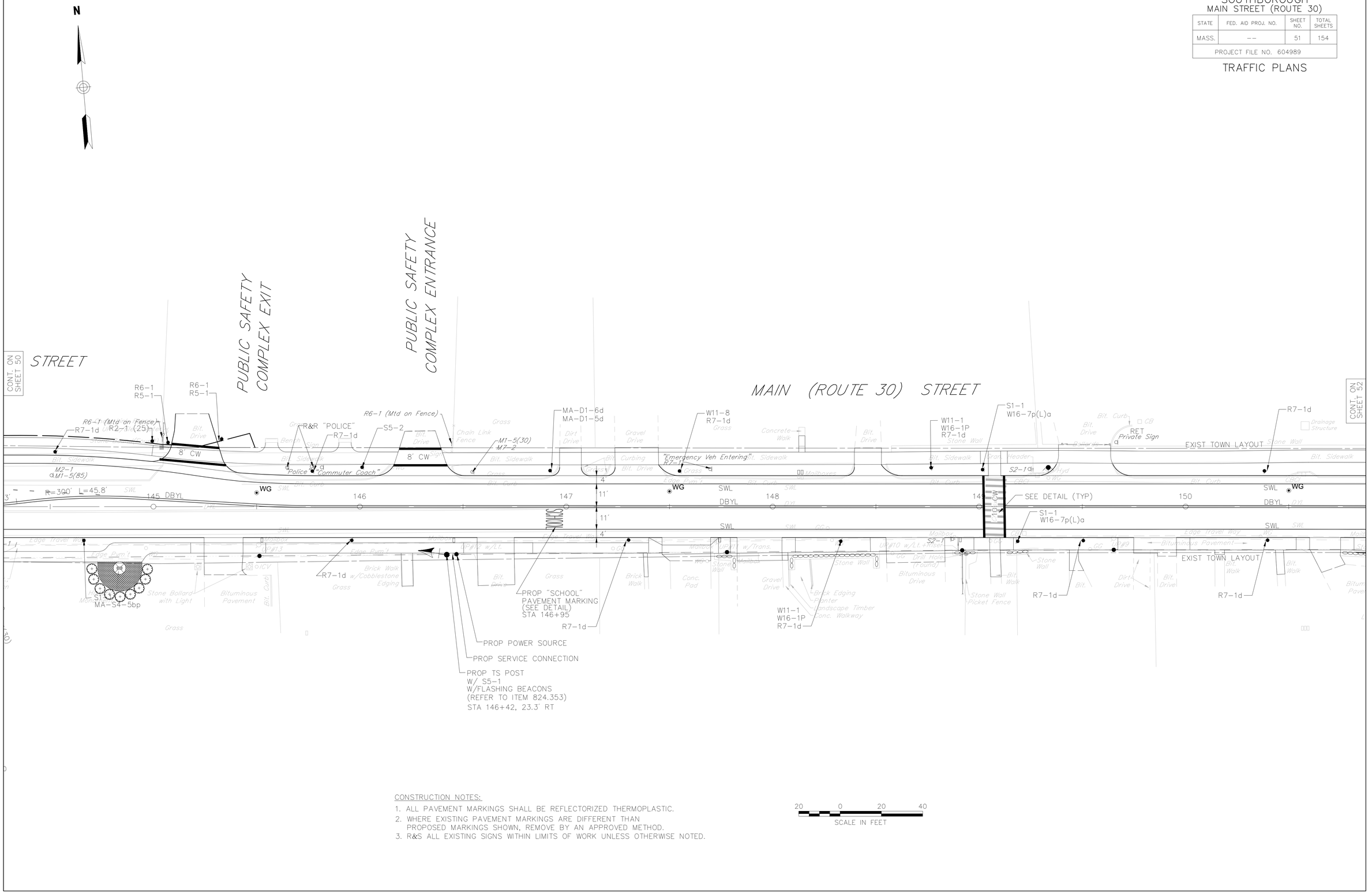
1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.
4. "SOUTHBOROUGH CENTER" SIGN SHALL BE REMOVED AND STACKED AS DIRECTED BY THE TOWN OF SOUTHBOROUGH.

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	51	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS


N
CONT. ON SHEET 50
STREET
PUBLIC SAFETY COMPLEX EXIT
PUBLIC SAFETY COMPLEX ENTRANCE
MAIN (ROUTE 30) STREET
CONT. ON SHEET 52
R6-1
R5-1
R6-1 (Mtd on Fence)
R7-1d
R2-1 (25)
8' CW
R&R "POLICE"
S5-2
"Police" "Commuter Coach"
M1-5(30)
M7-2
MA-D1-6d
MA-D1-5d
W11-8
"Emergency Veh Entering"
W11-1
W16-1P
S1-1
W16-7p(L)a
RET
Private Sign
EXIST TOWN LAYOUT
S2-1d
SEE DETAIL (TYP)
M2-1
M1-5(85)
R=300' L=45.8'
145 DBYL
146
147
148
149
150
DBYL
SWL
WG
SCHOOL
4'
11'
11'
4'
S1-1
MA-S4-5bp
Stone Bollard with Light
PROP "SCHOOL" PAVEMENT MARKING (SEE DETAIL) STA 146+95
PROP POWER SOURCE
PROP SERVICE CONNECTION
PROP TS POST W/ S5-1 W/FLASHING BEACONS (REFER TO ITEM 824.353) STA 146+42, 23.3' RT
W11-1 W16-1P R7-1d
Brick Edging
Planter
Landscape Timber
Conc. Walkway
Stone Wall Picket Fence
Bituminous Pavement
Bituminous Drive
Brick Walk
Concrete Walk
Gravel Drive
Dirt Drive
Chain Link Fence
Stone Wall
Bit. Curb
Bit. Sidewalk
Bit. Drive
Grass
Edge Pvmt
Edge Travel Way
Mailboxes
Drainage Structure
CB
UP #10 w/Lt.+Meter
UP #13
UP #12 w/Lt.
UP #9
UP (Triple)
UP w/Trans.
GICV
SIGN
Bench
Sign
Trash Receptacle
Flagpole
Shrubs
Hydrant
Gate
Fence
Guard Rail
Guard Post
Guard Header
Bit. Curbing
Conc. Pad
Brick Walk
Stone Wall
Picket Fence
Bituminous Drive
Bituminous Pavement
Dirt Drive
Bit. Walk
Bit. Drive
Bit. Curb
Bit. Sidewalk
Edge Travel Way
Edge Pvmt
Mailboxes
Grass
Brick Walk
Bit. Drive
Gravel Drive
Concrete Walk
Stone Wall
Bit. Curb
Bit. Sidewalk
Bit. Drive
Grass
Edge Pvmt
Edge Travel Way
Mailboxes
Grass
Brick Walk
Conc. Pad
Gravel Drive
Brick Edging
Planter
Landscape Timber
Conc. Walkway
Stone Wall

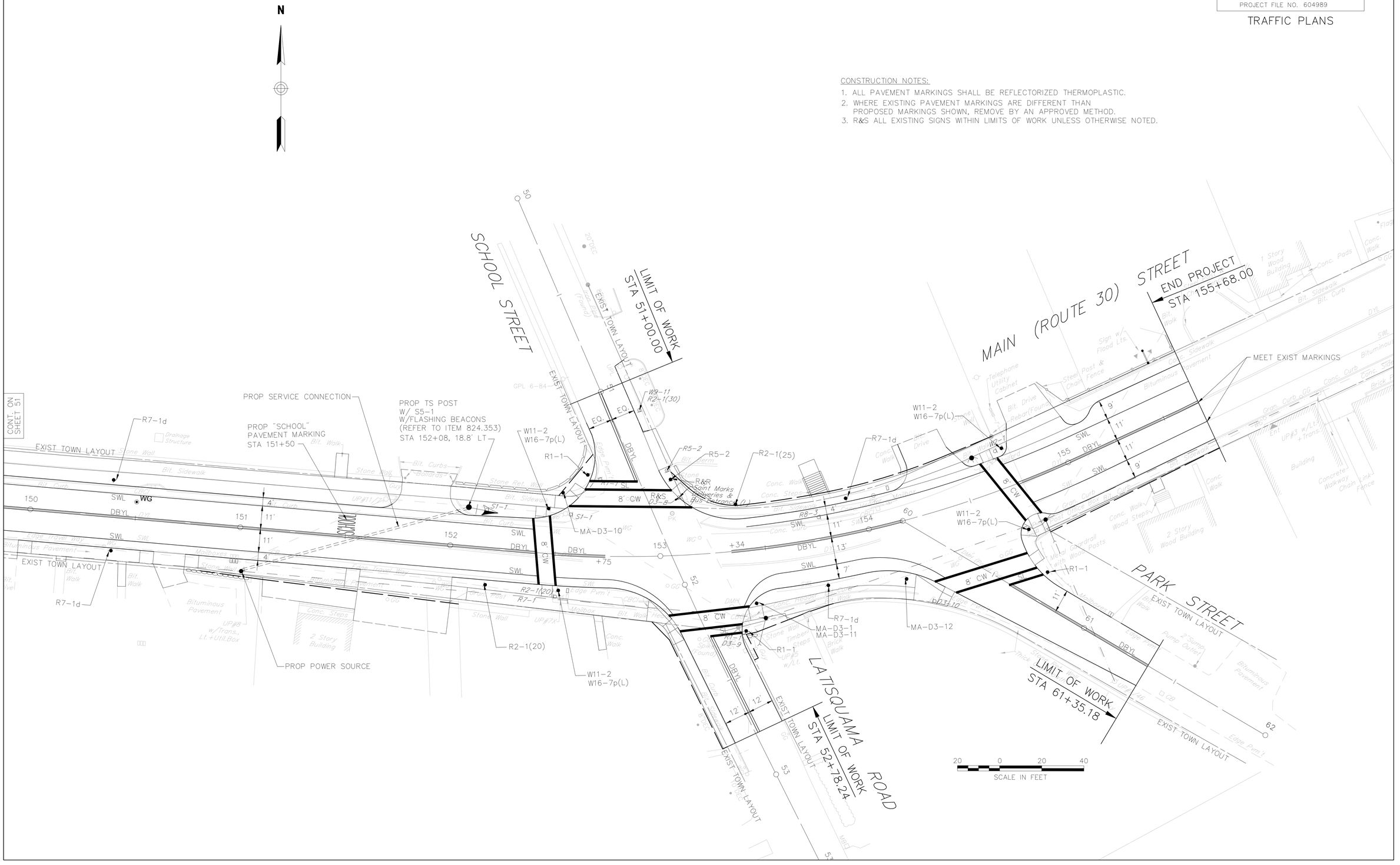
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	52	154
PROJECT FILE NO. 604989			

TRAFFIC PLANS

CONSTRUCTION NOTES:

1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. R&S ALL EXISTING SIGNS WITHIN LIMITS OF WORK UNLESS OTHERWISE NOTED.



\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	53	154
PROJECT FILE NO. 604989			

SIGN SUMMARY

PROPOSED 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			10	RED	WHITE	WHITE	P5-9	5.18	51.80
R2-1(20)	24"	30"	SPEED LIMIT 20				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R2-1(25)	24"	30"	SPEED LIMIT 25				6	WHITE	BLACK	BLACK	P5-6	5.00	30.00
R2-1(30)	24"	30"	SPEED LIMIT 30				2	WHITE	BLACK	BLACK	P5-2	5.00	10.00
R2-1(35)	24"	30"	SPEED LIMIT 35				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R2-1(40)	24"	30"	SPEED LIMIT 40				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				6	WHITE	BLACK	BLACK	P5-6	6.25	37.50
R4-7	24"	30"					2	WHITE	BLACK	BLACK	P5-2	5.00	10.00
R5-1	30"	30"	DO NOT ENTER				8	WHITE	RED/ WHITE	–	1 MTD W/OTHER	6.25	50.00
R5-2	24"	24"					1	WHITE	RED/ BLACK	BLACK	P5-1	4.00	4.00
R6-1	36"	12"	ONE WAY				8	BLACK	WHITE/ BLACK	WHITE	P5-8	3.00	24.00
R6-2L	24"	30"	ONE WAY				1	WHITE	BLACK	BLACK	1 MTD W/OTHER	5.00	5.00
R6-2R	24"	30"	ONE WAY				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R7-1d	12"	18"	NO PARKING ANY TIME				23	WHITE	RED	RED	P5-23	1.50	34.50
R7-1L	12"	18"	NO PARKING ANY TIME				2	WHITE	RED	RED	P5-2	1.50	3.00
R7-1R	12"	18"	NO PARKING ANY TIME				2	WHITE	RED	RED	P5-2	1.50	3.0

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
R10-3e(L)	9"	15"	START CROSSING Watch For Vehicles; DON'T START Finish Crossing If Started TIME REMAINING To Finish Crossing; DON'T CROSS; PUSH BUTTON TO CROSS	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			5	WHITE	WHITE/ BLACK/ ORANGE	BLACK	5 MTD ON TS POST	PAID UNDER ITEM 816.01	
R10-3e(R)	9"	15"	START CROSSING Watch For Vehicles; DON'T START Finish Crossing If Started TIME REMAINING To Finish Crossing; DON'T CROSS; PUSH BUTTON TO CROSS				3	WHITE	WHITE/ BLACK/ ORANGE	BLACK	3 MTD ON TS POST	PAID UNDER ITEM 816.01	
R10-11b	36"	36"	NO TURN ON RED				1	WHITE	BLACK	BLACK	1 MTD ON TS POLE	9.00	9.00
MA-R10-12A	30"	36"	LEFT TURN YIELD ON FLASHING	AS PER MASSDOT STANDARD			2	WHITE	BLACK/ YELLOW	BLACK	2 MTD ON TS MAST ARM	7.50	15.00
R12-3A	24"	30"	COMMERCIAL VEHICLES OVER 2 ½ TONS EXCLUDED	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			2	WHITE	BLACK	BLACK	P5-2	5.00	10.00
W1-7	48"	24"					1	YELLOW	BLACK	BLACK	P5-2	8.00	8.00
W11-1	30"	30"					10	YELLOW	BLACK	BLACK	P5-10	6.25	62.50
W11-2	30"	30"					8	YELLOW	BLACK	BLACK	P5-8	6.25	50.00
W11-8	30"	30"					2	YELLOW	BLACK	BLACK	P5-2	6.25	12.50
W16-1p	18"	24"	SHARE THE ROAD				10	YELLOW	BLACK	BLACK	10 MTD W/OTHER	3.00	30.00
W16-7p(L)	24"	12"					12	FLORESCENT YELLOW-GREEN	BLACK	BLACK	12 MTD W/OTHER	2.00	24.00
W16-7p(L)a	24"	12"					2	YELLOW	BLACK	BLACK	2 MTD W/OTHER	2.00	4.00
SP-1	24"	18"	TRUCK EXCLUSION	4B 4B	3 3 4	N/A	2	WHITE	BLACK	BLACK	2 MTD W/OTHER	3.00	6.00
MA-M1-5(30)	24"	24"	30	AS PER MASSDOT STANDARD			4	WHITE	BLACK	BLACK	4 MTD W/OTHERS	4.00	16.00

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	54	154
PROJECT FILE NO. 604989			

SIGN SUMMARY

PROPOSED TRAFFIC SIGN SUMMARY

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
MA-M1-5(85)	24"	24"	85	AS PER MASSDOT STANDARD			2	WHITE	BLACK	BLACK	2 MTD W/OTHERS	4.00	8.00
M2-1	21"	15"	JCT	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			2	WHITE	BLACK	BLACK	P5-2	2.19	4.38
M3-1	24"	12"	NORTH				1	WHITE	BLACK	BLACK	P5-1	2.00	2.00
M3-2	24"	12"	EAST				1	WHITE	BLACK	BLACK	P5-1	2.00	2.00
M3-3	24"	12"	SOUTH				1	WHITE	BLACK	BLACK	P5-1	2.00	2.00
M3-4	24"	12"	WEST				1	WHITE	BLACK	BLACK	P5-1	2.00	2.00
M6-1	21"	15"	→				1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	2.19	2.19
M6-4	21"	15"	↔				1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	2.19	2.19
S1-1	36"	36"					10	FLORESCENT YELLOW-GREEN	BLACK	BLACK	P5-10	9.00	90.00
MA-S4-5bp	30"	30"	SCHOOL ZONE AHEAD	AS PER MASSDOT STANDARD			4	FLORESCENT YELLOW-GREEN	BLACK	BLACK	4 MTD W/OTHERS	6.25	25.00
S5-1	24"	60"	SCHOOL SPEED LIMIT 20 WHEN FLASHING				4	FLORESCENT YELLOW-GREEN / WHITE	BLACK / BLACK	BLACK / BLACK	4 MTD ON TS POST	PAID UNDER ITEMS 824.351, 824.352 & 824.353	
S5-2	24"	30"	END SCHOOL ZONE				4	WHITE	BLACK	BLACK	P5-3 1 MTD W/OTHERS	5.00	20.00
MA-I-13	24"	30"	STATE HIGHWAY BEGINS				1	GREEN	WHITE	WHITE	1 MTD W/OTHERS	5.00	5.00
MA-I-14	24"	30"	STATE HIGHWAY ENDS				1	GREEN	WHITE	WHITE	P5-1	5.00	5.00

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
MA-D3-1 (SEE NOTE 3)	30"	12"	Main St	6/4.5	3 3	N/A	7	GREEN	WHITE	WHITE	P5-5 2 MTD ON TS POLE (SEE NOTE 3)	PAID UNDER ITEM 874	
MA-D3-2	36"	12"	Sears Rd	6/4.5	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
MA-D3-3	42"	12"	Deerfoot Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
MA-D3-4	48"	12"	Parkerville Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
MA-D3-5	42"	12"	Common St	6/4	3 3	N/A	2	GREEN	WHITE	WHITE	P5-2	PAID UNDER ITEM 874	
MA-D3-6	48"	12"	St Mark's St	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874	
MA-D3-7	36"	12"	Middle Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
MA-D3-8 (SEE NOTE 3)	48"	12"	Cordaville Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD ON TS POLE (SEE NOTE 3)	PAID UNDER ITEM 874	
MA-D3-9 (SEE NOTE 3)	42"	12"	Marlboro Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD ON TS POLE (SEE NOTE 3)	PAID UNDER ITEM 874	
MA-D3-10	36"	12"	School St	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874	
MA-D3-11	48"	12"	Latisquama Rd	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
MA-D3-12	30"	12"	Park St	6/4	3 3	N/A	1	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874	

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 STREET NAME SIGNS SHALL HAVE AN INITAL 6" LETTER HEIGHT FOR PRIMARY TEXT, FOLLOWED BY 4" LETTER HEIGHT FOR SECONDARY TEXT.
3. FOR STREET NAME SIGNS MOUNTED ON TS POLE: MOUNTING SYSTEM FOR STREET NAME SIGNS 48" OR LESS IN LENGTH SHALL CONSIST OF TWO ALUMINUM BRACKETS AND TWO ALUMINUM DOUBLE-TEE EXTENSIONS. MOUNTING SYSTEM FOR SIGNS OVER 48" IN LENGTH SHALL CONSIST OF 4 BRACKETS (2 EACH ON TOP AND BOTTOM) AND TWO ALUMINUM DOUBLE-TEE EXTENSIONS. THE DOUBLE-TEE EXTENSIONS SHALL RUN THE LENGTH OF THE SIGN PANELS FOR PANEL STIFFING.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	55	154
PROJECT FILE NO. 604989			

PROPOSED TRAFFIC SIGN SUMMARY

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 BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-D1-6a	60"	66"	85 NORTH Marlboro Hudson SECOND LEFT	18/7C/6C 8C 8C 6C	6 4.5 4.5 4.5 6.5	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6b	60"	66"	85 NORTH Marlboro Hudson ←	18/7C/6C 8C 8C	5.4 4 4 4 6.5	8"HEIGHT 36" LENGTH @ 180°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6c	60"	66"	85 NORTH Marlboro Hudson →	18/7C/6C 8C 8C	5.4 4 4 4 6.5	8"HEIGHT 36" LENGTH @ 0°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6d	60"	66"	85 NORTH Marlboro Hudson NEXT RIGHT	18/7C/6C 8C 8C 6C	6 4.5 4.5 4.5 6.5	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6e	60"	66"	30 EAST Framingham Cochituate NEXT LEFT	18/7C/6C 8C 8C 6C	6 4.5 4.5 4.5 6.5	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6f	60"	66"	30 EAST Framingham Cochituate ←	18/7C/6C 8C 8C	5.4 4 4 4 6.5	8"HEIGHT 36" LENGTH @ 180°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6g	60"	66"	30 EAST Framingham Cochituate →	18/7C/6C 8C 8C	5.4 4 4 4 6.5	8"HEIGHT 36" LENGTH @ 0°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50
MA-D1-6h	60"	66"	30 EAST Framingham Cochituate NEXT RIGHT	18/7C/6C 8C 8C 6C	6 4.5 4.5 4.5 6.5	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1-5" O.D. STEEL PIPE POST	27.50	27.50

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 BACK-GROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
MA-D1-5a	54"	48"	85 SOUTH Hopkinton NEXT RIGHT	18/7C/6C 8C 6C	4 4 4 4	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-1	18.00	18.00
MA-D1-5b	54"	54"	85 SOUTH Hopkinton →	18/7C/6C 8C	6.3 4 4 5.6	8"HEIGHT 18" LENGTH @ 0°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-2	20.25	20.25
MA-D1-5c	54"	54"	85 SOUTH Hopkinton ←	18/7C/6C 8C	6.3 4 4 5.6	8"HEIGHT 18" LENGTH @ 180°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-3	20.25	20.25
MA-D1-5d	54"	48"	85 SOUTH Hopkinton NEXT LEFT	18/7C/6C 8C 6C	4 4 4 4	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-4	18.00	18.00
MA-D1-5e	54"	48"	30 WEST Westboro NEXT RIGHT	18/7C/6C 8C 6C	4 4 4 4	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-5	18.00	18.00
MA-D1-5f	54"	54"	30 WEST Westboro →	18/7C/6C 8C	6.3 4 4 5.6	8"HEIGHT 18" LENGTH @ 0°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-6	20.25	20.25
MA-D1-5g	54"	54"	30 WEST Westboro ←	18/7C/6C 8C	6.3 4 4 5.6	8"HEIGHT 18" LENGTH @ 180°	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-7	20.25	20.25
MA-D1-5h	54"	48"	30 WEST Westboro NEXT LEFT	18/7C/6C 8C 6C	4 4 4 4	N/A	1	REFL. GREEN H/I M9.30.0	REFL. WHITE H/I M9.30.0	REFL. WHITE SILVER H/I M9.30.0	1 MTD W/D6-8	18.00	18.00

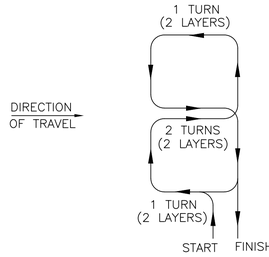
NOTE: HIGH INTENSITY REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" FOR TEXT DIMENSIONS, AS AMENDED; THE 1977 MASSDOT DEPARTMENT CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED, FOR SIGNS AND SUPPORTS; AND THE MASSDOT DEPARTMENT SIGN LISTINGS 1993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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

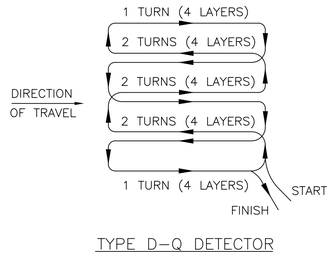
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	56	154
PROJECT FILE NO. 604989			

BICYCLE LOOP DETECTOR DETAILS

WINDING DETAILS

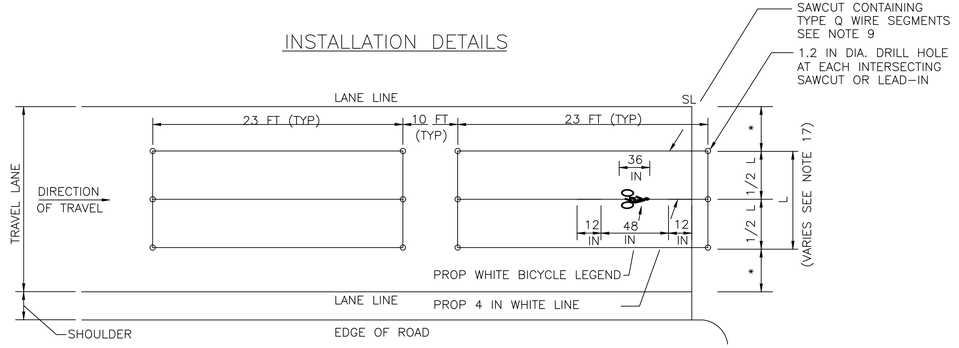


TYPE Q DETECTOR

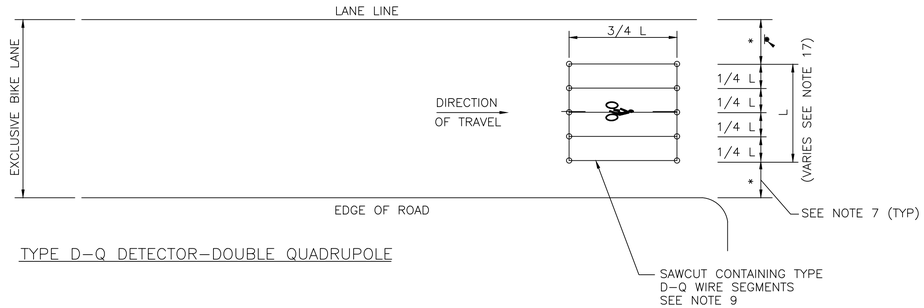


TYPE D-Q DETECTOR

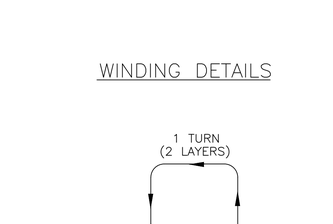
INSTALLATION DETAILS



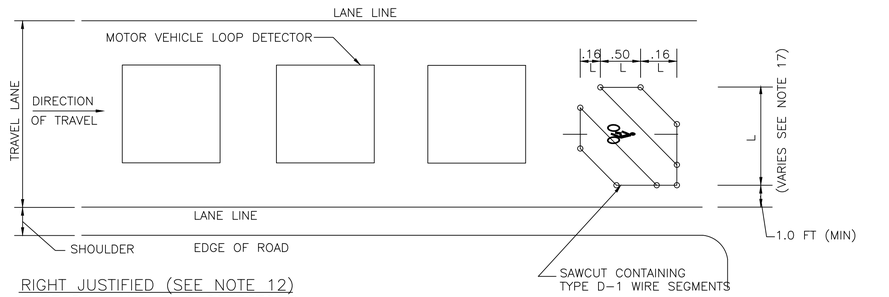
TYPE Q DETECTOR-STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING



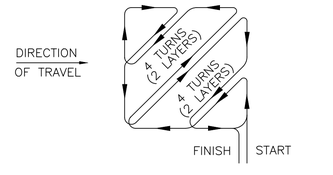
TYPE D-Q DETECTOR-DOUBLE QUADRUPOLE



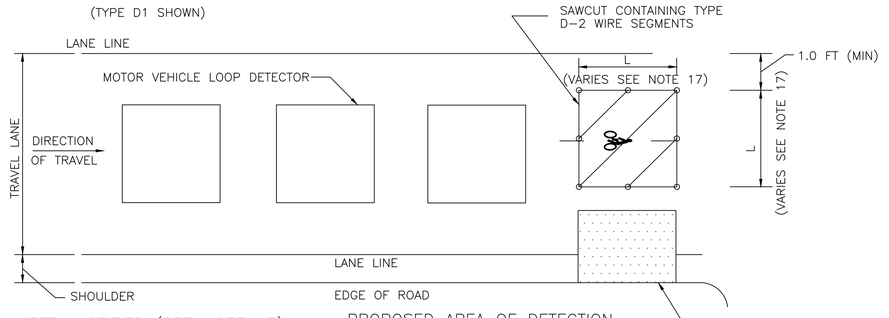
TYPE D-1 DETECTOR



RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D-1 AND D-2 DETECTORS
(TYPE D1 SHOWN)

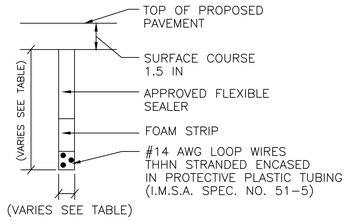


TYPE D-2 DETECTOR



LEFT JUSTIFIED (SEE NOTE 13)
TYPE D-1 AND D-2 DETECTORS
(TYPE D2 SHOWN)

PROPOSED AREA OF DETECTION
A LARGER AREA OF DETECTION MAY BE REQUIRED BASED ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE DESIGNER.



SECTION THRU LOOP DETECTOR

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (IN)	WIDTH (IN)
1	1.5	0.5
2	1.5	0.5
3	1.5	0.5
4	2.0	0.5
5	2.0	0.5
6	2.0	0.5
7	2.0	0.5
8	2.0	0.5

BICYCLE LOOP DETECTOR DETAILS

NOTES:

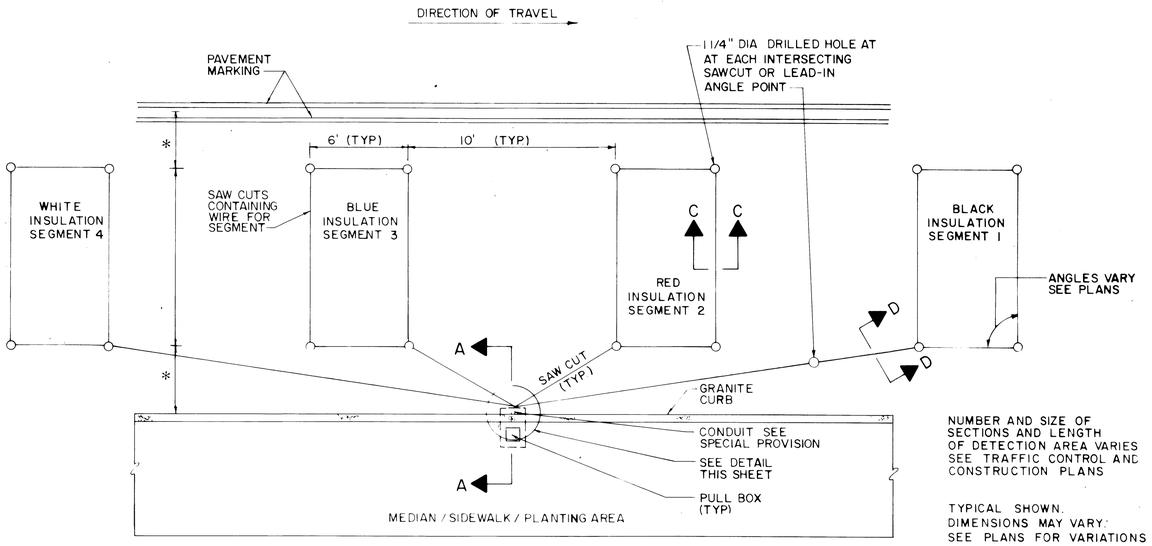
1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
3. THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA VARIES AND SHALL BE DETERMINED BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN.
4. BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
5. BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
7. * OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN ("2-4-2") WITH 2 TURNS IN THE PERIMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D-Q DETECTORS.
10. PROVIDE 3 TURNS FOR TYPE D-1 DETECTORS.
11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D-2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
    b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE.
    b) BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO-LANE ROADWAY.
14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO-LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D-Q, D-1 & D-2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

THIS PLAN NOT DESIGNED BY
VANASSE HANGEN BRUSTLIN, INC.
IT WAS PROVIDED BY THE MASSACHUSETTS
HIGHWAY DEPARTMENT AND ALL INFORMATION
CONTAINED HEREIN IS ASSUMED TO BE CORRECT.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

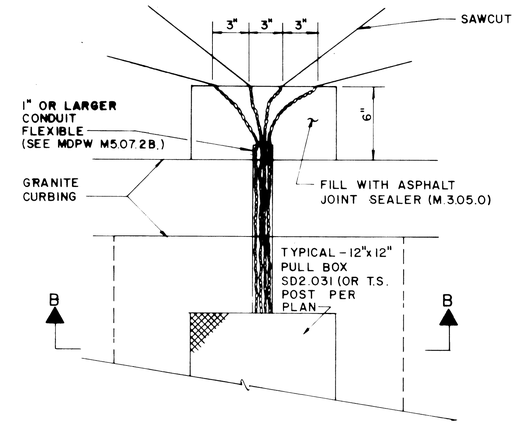
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	57	154
PROJECT FILE NO. 604989			

LOOP DETECTOR DETAILS



* OFFSETS FROM CURB TO LOOP AND EDGE OF LANE TO LOOP EQUAL IF NOT SHOWN.

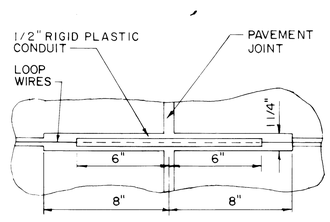
PLAN OF SEGMENTED DETECTOR DETAIL
NOT TO SCALE



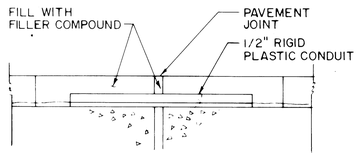
DETAIL - PLAN VIEW
NOT TO SCALE

1. IN BASE OR HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE. SEGMENTS SHALL BE SPLICED IN IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. NUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. SEE NOTE 12.
2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER.
3. LEAD-IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE. FIVE TURNS PER FOOT. LEAD-IN SHALL BE TYPE II (M8.16.11).
4. BEFORE STARTING ANY SPLICING THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENTS STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS. SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.
5. THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROAD WAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD, SHALL BE FIRMLY BONDED TO THE EARTH GROUNDING BUS IN THE CONTROLLER. HOWEVER, THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL OTHER POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.
6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL.
7. AFTER SAW CUTS ARE COMPLETE, BLOW OUT OIL AND WATER WITH FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND EDGED TOOL OF WOOD OR PLASTIC SUCH AS A PAINT STIRRER, DO NOT USE A SCREWDRIVER. THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM 5B. STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET. THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.
8. THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHALL HAVE A RESISTANCE TO GROUND OF AT LEAST 100 MEGOHMS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR. DETAIL IS THE SAME.
10. CUT LOOPS IN BINDER AND FILL WITH APPROVED FLEXIBLE SEALER.
11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL.
12. SPLICING PATTERN P= SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GROUPS IN PARALLEL. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

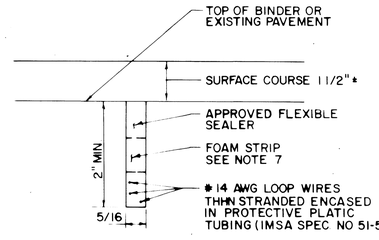
   SPLICING PATTERN S=SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.



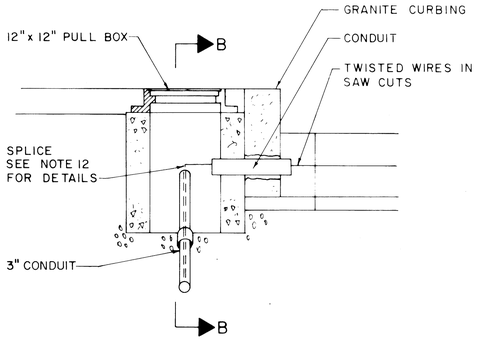
PLAN
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



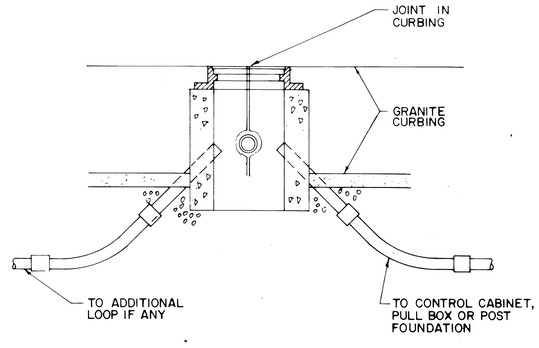
VERTICAL SECTION
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



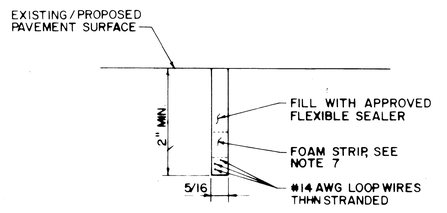
SECTION C-C & D-D
LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO BE RESURFACE
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE



SECTION C-C & D-D
LOOPS IN SURFACE COURSE
NOT TO SCALE

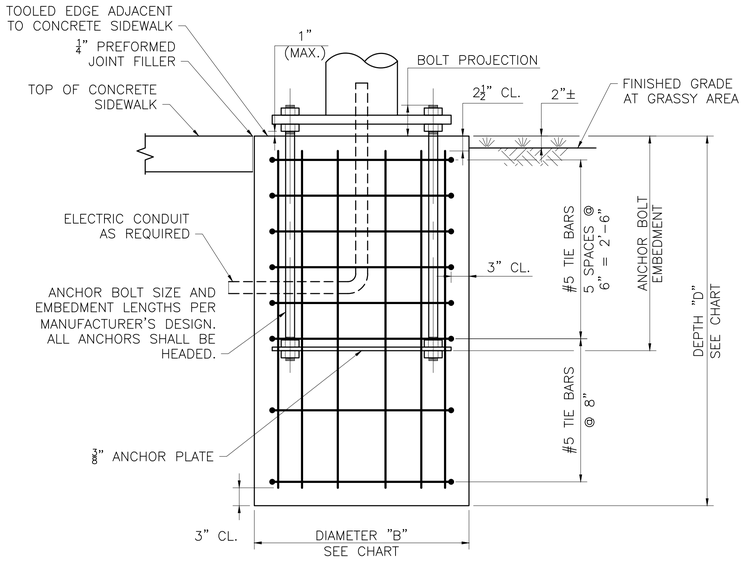
THIS PLAN NOT DESIGNED BY VANASSE HANGEN BRUSTLIN, INC. IT WAS PROVIDED BY THE MASSACHUSETTS HIGHWAY DEPARTMENT AND ALL INFORMATION CONTAINED HEREIN IS ASSUMED TO BE CORRECT.

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-bdtl.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	58	154
PROJECT FILE NO. 604989			

TRAFFIC DETAILS



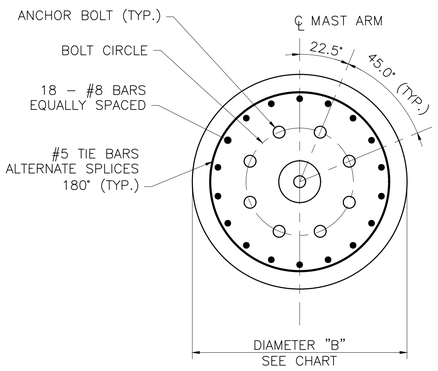
ELEVATION
NOT TO SCALE

NOTES:

1. POLE, BASE PLATE AND ANCHOR BOLTS SHALL BE DESIGNED BY THE POLE MANUFACTURER.
2. SEE MASSDOT STANDARD DRAWINGS TYPE II MAST ARM DETAILS FOR ADDITIONAL INFORMATION

GENERAL NOTES:

1. FOUNDATIONS SHALL BE 4000 PSI, 1½ IN., 565 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 30".
4. PROVIDE FOR ELECTRICAL CONDUIT AS REQUIRED.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM.
6. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION AS SPECIFIED, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
7. VERTICAL REINFORCEMENT BARS ARE TO BE EVENLY SPACED IN THE FOUNDATION AS SHOWN.
8. 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.
9. ALL SIGNALS SHALL BE ATTACHED TO THE MAST ARM WITH FIXED LOUVERED BACKPLATES.



PLAN
NOT TO SCALE

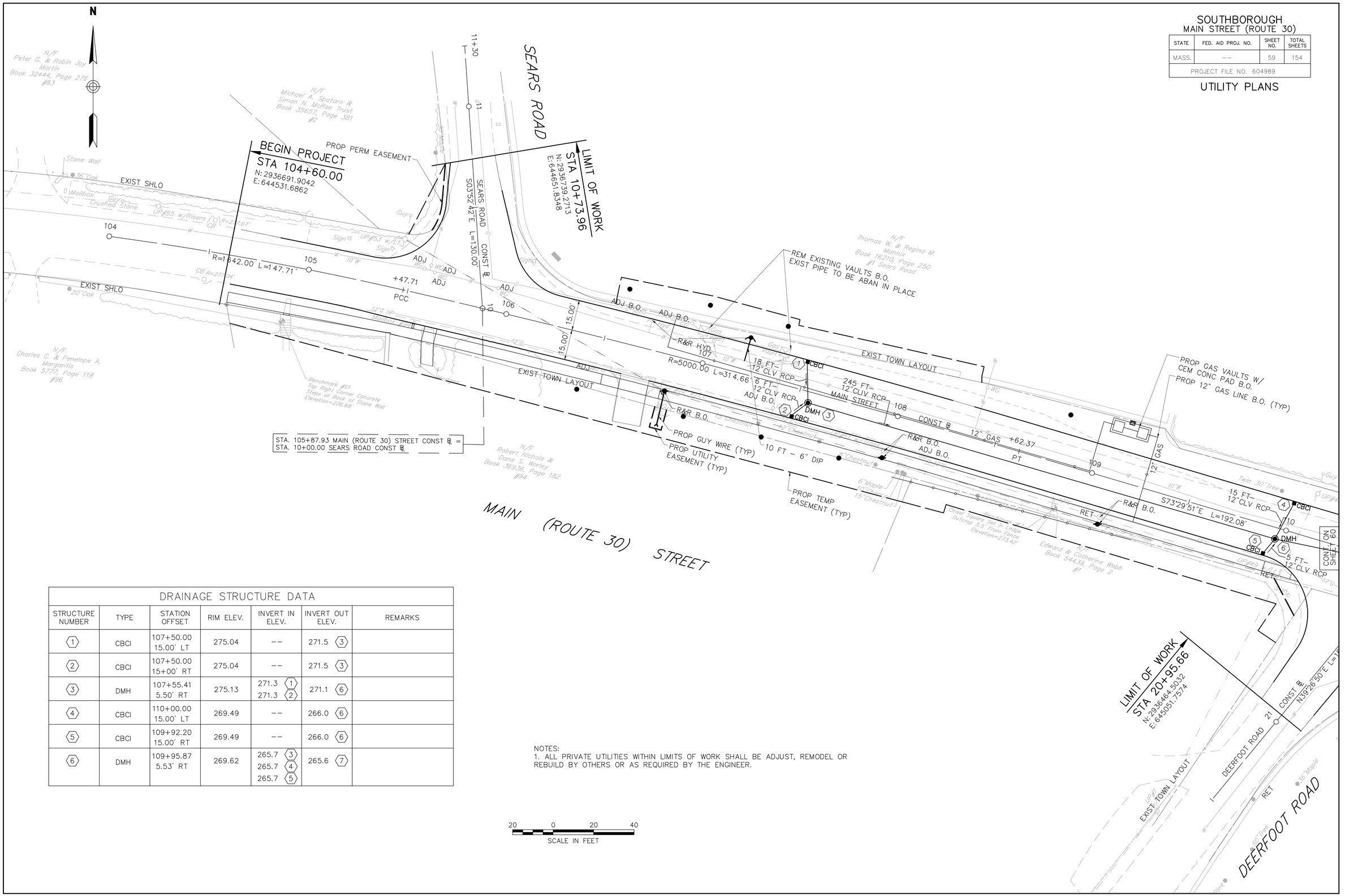
STRUCTURE	APPROX. LOCATION	SHAFT DIAMETER (B)	SHAFT DEPTH (D)					
			DRY SAND (LOOSE)	DRY SAND (DENSE)	WET SAND (LOOSE)	WET SAND (DENSE)	CLAY (SOFT TO MEDIUM STIFF)	CLAY (STIFF)
40' MAST ARM	STA. 142+52.9, 39.1' LT	3'-6"	16'-0"	12'-0"	20'-6"	15'-0"	17'-0"	11'-6"
ALL OTHER SIGNAL STRUCTURES		SEE STANDARD DRAWINGS, PREVIOUS SHEETS						

FOUNDATION DESIGN CHART
NOT TO SCALE

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	59	154
PROJECT FILE NO. 604989			

UTILITY PLANS



DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
1	CBCI	107+50.00 15.00' LT	275.04	--	271.5 (3)	
2	CBCI	107+50.00 15+00' RT	275.04	--	271.5 (3)	
3	DMH	107+55.41 5.50' RT	275.13	271.3 (1) 271.3 (2)	271.1 (6)	
4	CBCI	110+00.00 15.00' LT	269.49	--	266.0 (6)	
5	CBCI	109+92.20 15.00' RT	269.49	--	266.0 (6)	
6	DMH	109+95.87 5.53' RT	269.62	265.7 (3) 265.7 (4) 265.7 (5)	265.6 (7)	

NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

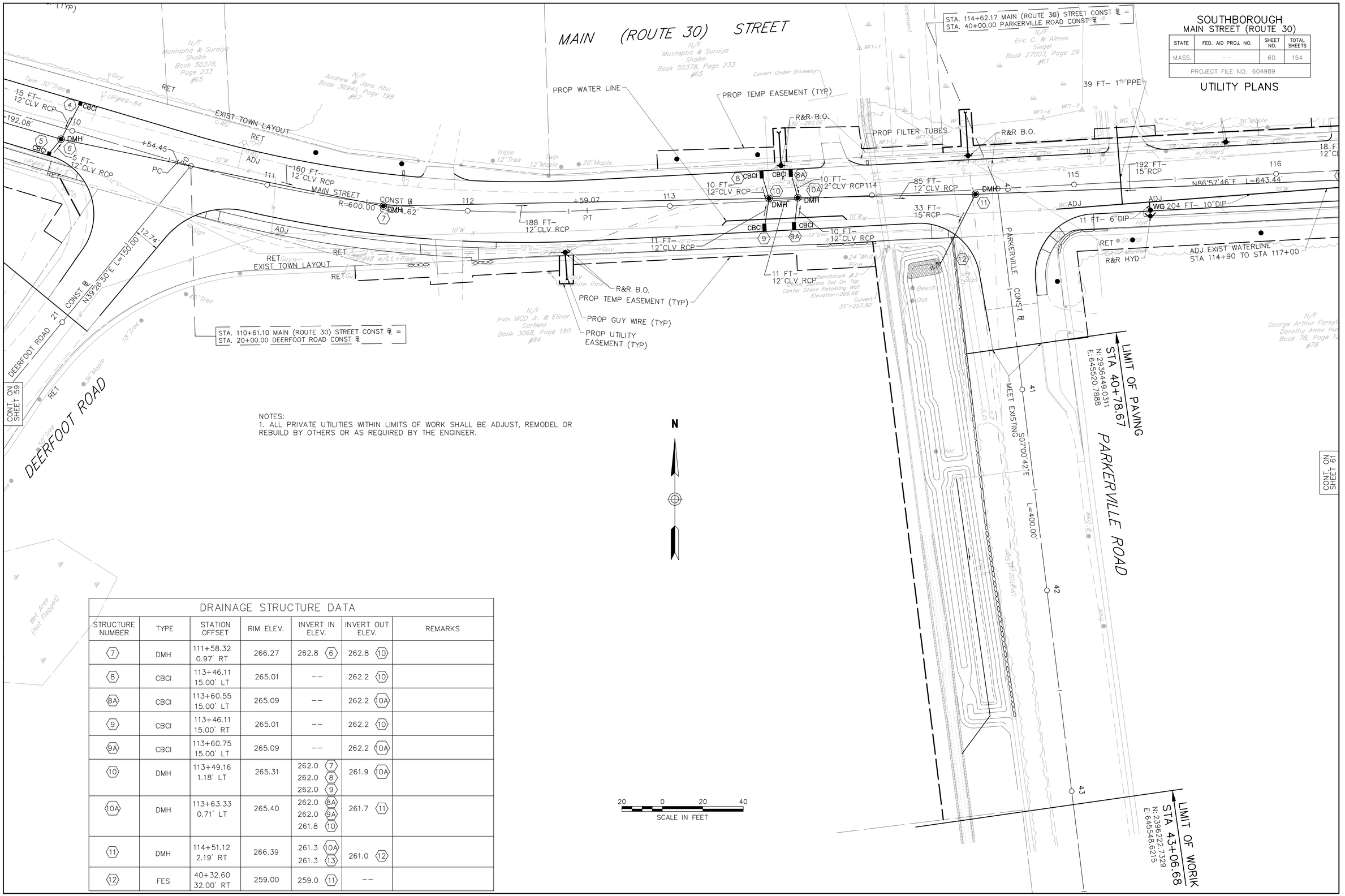
20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	60	154
PROJECT FILE NO. 604989			

UTILITY PLANS



NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

N

20 0 20 40
SCALE IN FEET

DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
⟨7⟩	DMH	111+58.32 0.97' RT	266.27	262.8 ⟨6⟩	262.8 ⟨10⟩	
⟨8⟩	CBCI	113+46.11 15.00' LT	265.01	--	262.2 ⟨10⟩	
⟨8A⟩	CBCI	113+60.55 15.00' LT	265.09	--	262.2 ⟨10A⟩	
⟨9⟩	CBCI	113+46.11 15.00' RT	265.01	--	262.2 ⟨10⟩	
⟨9A⟩	CBCI	113+60.75 15.00' LT	265.09	--	262.2 ⟨10A⟩	
⟨10⟩	DMH	113+49.16 1.18' LT	265.31	262.0 ⟨7⟩ 262.0 ⟨8⟩ 262.0 ⟨9⟩	261.9 ⟨10A⟩	
⟨10A⟩	DMH	113+63.33 0.71' LT	265.40	262.0 ⟨8A⟩ 262.0 ⟨9A⟩ 261.8 ⟨10⟩	261.7 ⟨11⟩	
⟨11⟩	DMH	114+51.12 2.19' RT	266.39	261.3 ⟨10A⟩ 261.3 ⟨13⟩	261.0 ⟨12⟩	
⟨12⟩	FES	40+32.60 32.00' RT	259.00	259.0 ⟨11⟩	--	

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

DRAINAGE STRUCTURE DATA

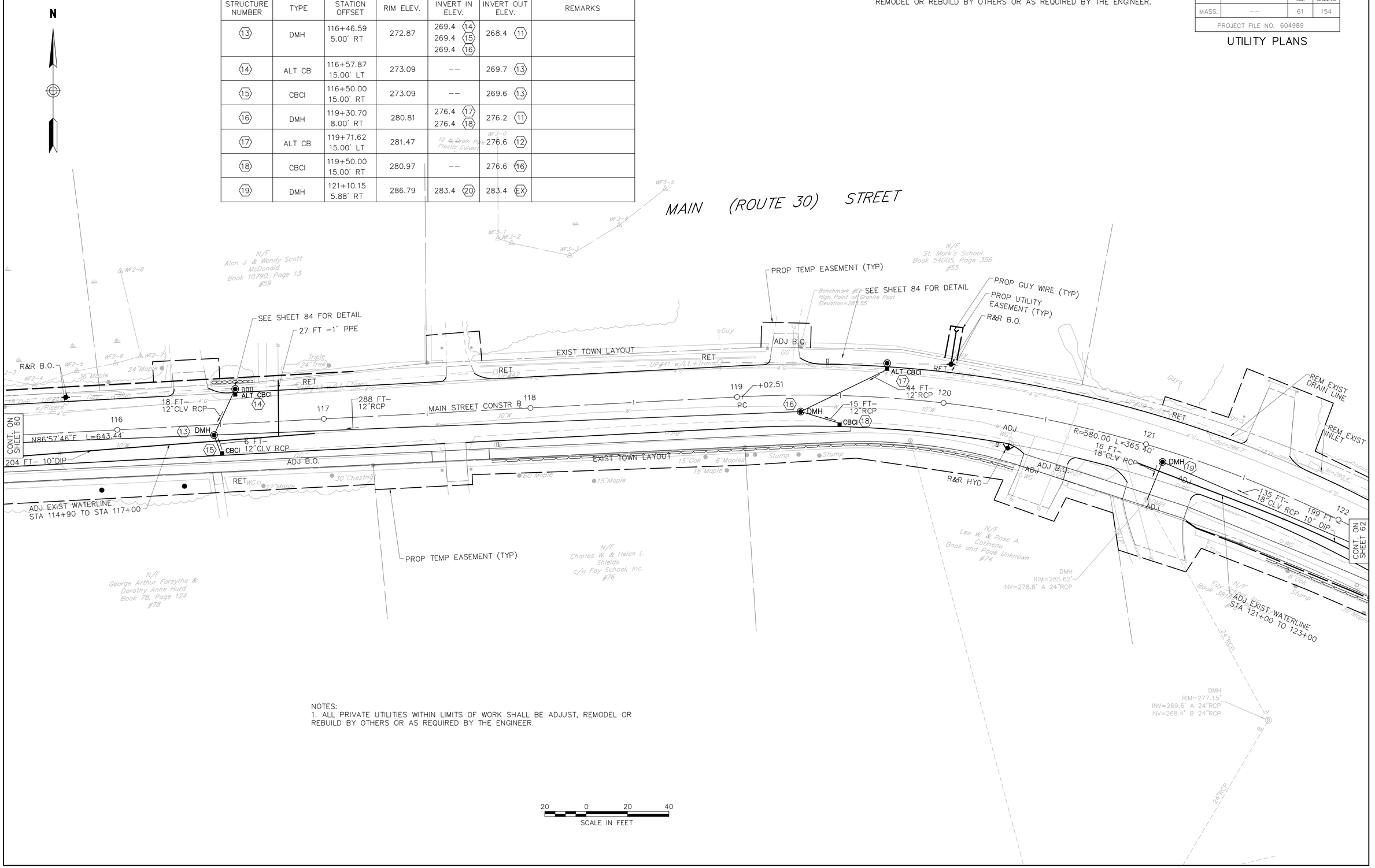
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
⟨13⟩	DMH	116+46.59 5.00' RT	272.87	269.4 ⟨14⟩ 269.4 ⟨15⟩ 269.4 ⟨16⟩	268.4 ⟨11⟩	
⟨14⟩	ALT CB	116+57.87 15.00' LT	273.09	--	269.7 ⟨13⟩	
⟨15⟩	CBCI	116+50.00 15.00' RT	273.09	--	269.6 ⟨13⟩	
⟨16⟩	DMH	119+30.70 8.00' RT	280.81	276.4 ⟨17⟩ 276.4 ⟨18⟩	276.2 ⟨11⟩	
⟨17⟩	ALT CB	119+71.62 15.00' LT	281.47	12 in Drain Pipe Plastic Culvert	276.6 ⟨12⟩	
⟨18⟩	CBCI	119+50.00 15.00' RT	280.97	--	276.6 ⟨16⟩	
⟨19⟩	DMH	121+10.15 5.88' RT	286.79	283.4 ⟨20⟩	283.4 ⟨EX⟩	

CONSTRUCTION NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	61	154
PROJECT FILE NO. 604989			

UTILITY PLANS



NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

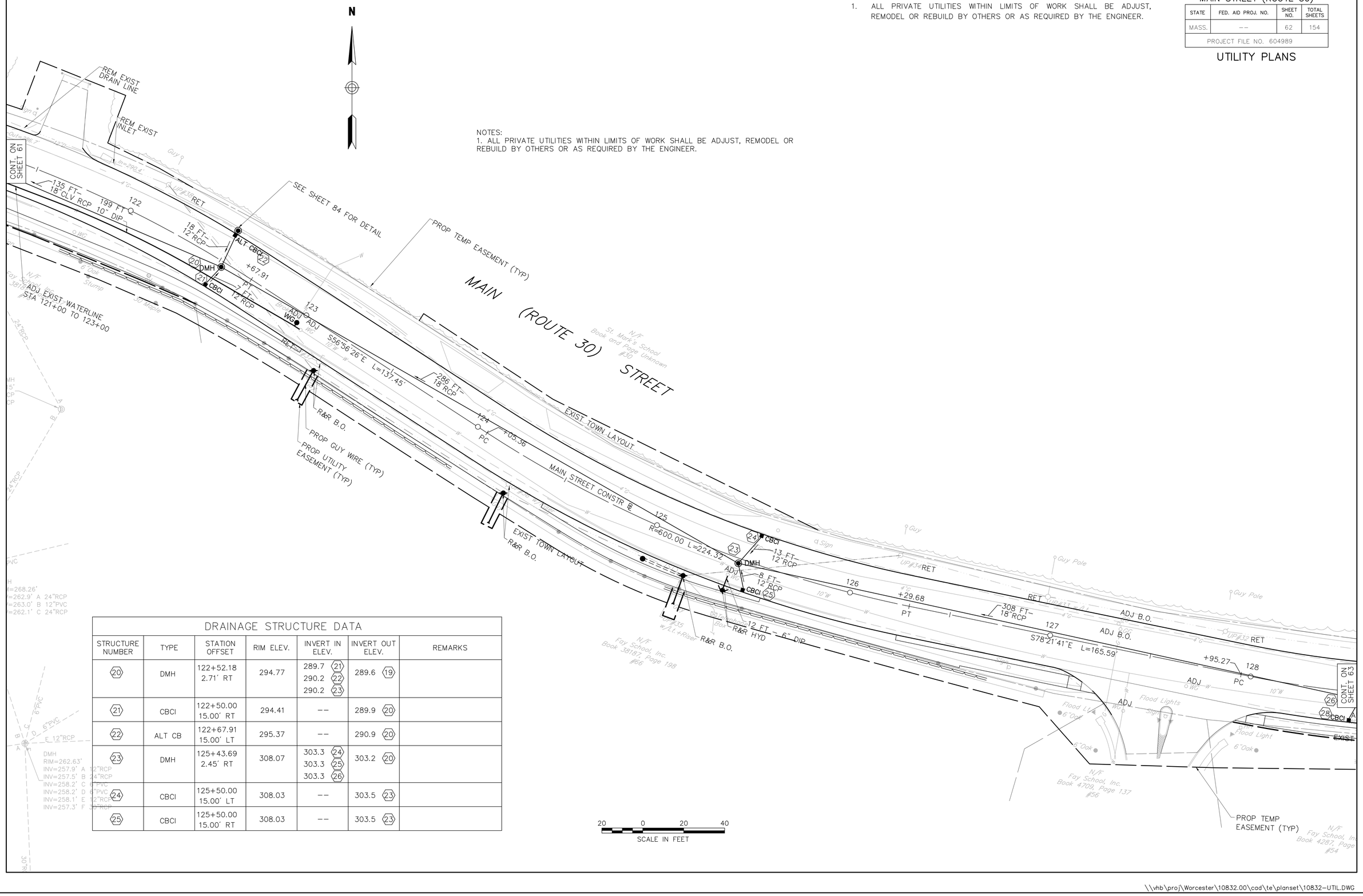
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	62	154
PROJECT FILE NO. 604989			

UTILITY PLANS

CONSTRUCTION NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.



DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
20	DMH	122+52.18 2.71' RT	294.77	289.7 (21) 290.2 (22) 290.2 (23)	289.6 (19)	
21	CBCI	122+50.00 15.00' RT	294.41	--	289.9 (20)	
22	ALT CB	122+67.91 15.00' LT	295.37	--	290.9 (20)	
23	DMH	125+43.69 2.45' RT	308.07	303.3 (24) 303.3 (25) 303.3 (26)	303.2 (20)	
24	CBCI	125+50.00 15.00' LT	308.03	--	303.5 (23)	
25	CBCI	125+50.00 15.00' RT	308.03	--	303.5 (23)	

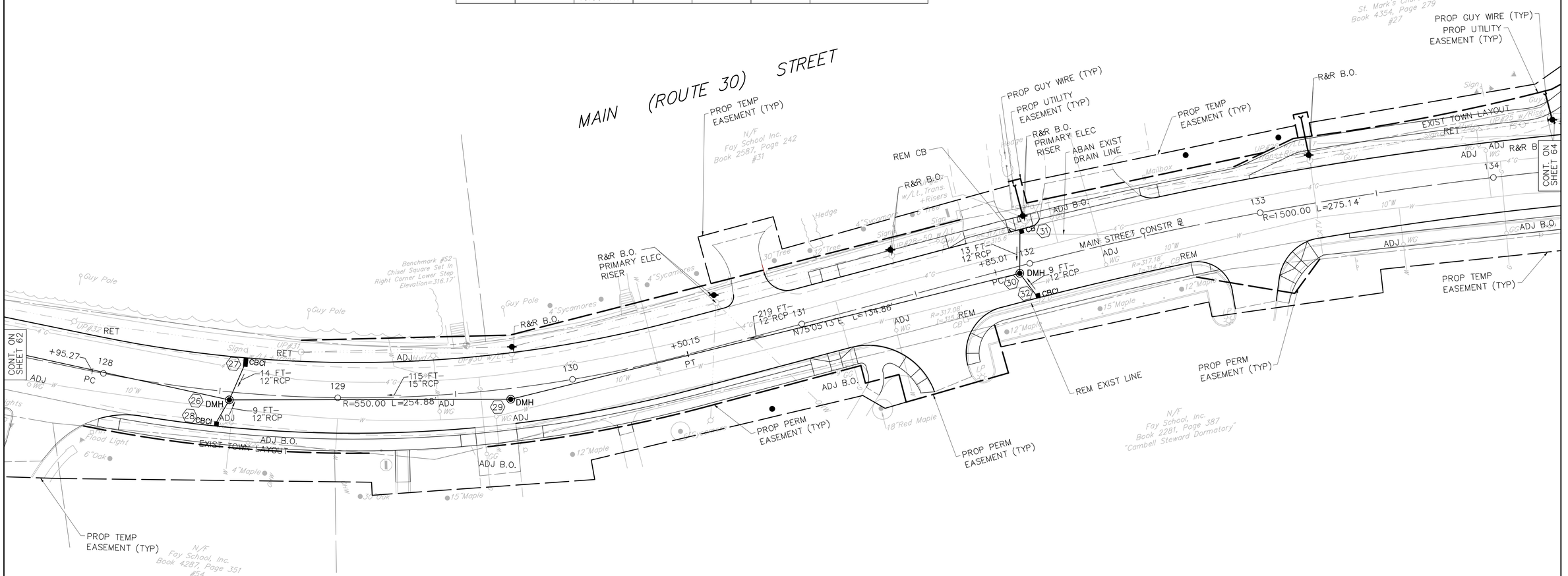
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	63	154
PROJECT FILE NO. 604989			

UTILITY PLANS

N

DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
26	DMH	128+42.64 3.50' RT	312.97	308.1 (27) 308.1 (28) 308.1 (29)	308.0 (23)	
27	CBCI	128+59.85 15.00' LT	312.85	--	308.3 (26)	
28	CBCI	128+50.00 15.00' RT	312.85	--	308.3 (26)	
29	DMH	129+72.95 4.58' RT	315.54	311.0 (30)	311.0 (26)	
30	DMH	131+94.85 3.00' RT	317.97	313.0 (31) 313.0 (32)	312.9 (29)	
31	CB	132+00.00 15.00' LT	317.67	--	313.1 (30)	
32	CBCI	132+00.00 15.00' RT	317.67	--	313.1 (30)	



NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	64	154
PROJECT FILE NO. 604989			

UTILITY PLANS

DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
33	CB	136+28.89 20.00' RT	314.56	--	311.1 (35)	
34	CBCI	136+32.82 15.00' LT	314.32	--	310.8 (35)	
34A	CBCI	136+54.73 15.00' LT	313.68	--	310.8 (35)	
35	DMH	136+44.68 5.35' RT	314.02	310.5 (33) 310.5 (34) 310.5 (34A)	310.3 (36)	
36	DMH	137+16.61 11.36' RT	311.85	308.6 (35) 308.6 (36A)	308.5 (39)	
36A	CBCI	137+17.02 15.00' LT	311.78	--	308.7 (36)	

DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
37	CBCI	139+09.03 20.01' RT	305.51	--	302.2 (39)	
38	CBCI	139+13.67 15.00' LT	305.74	--	302.4 (39)	
39	DMH	139+13.17 4.50' RT	305.60	302.1 (36) 302.1 (37) 302.1 (38)	301.9 (40A)	

STA. 7+66.36 COMMON STREET CONST ℄ =
STA. 30+00.00 COMMON STREET CONST ℄

STA. 134+91.52 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 5+00.00 COMMON STREET CONST ℄

STA. 139+99.88 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 33+70.52 COMMON STREET CONST ℄

NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

CONSTRUCTION NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

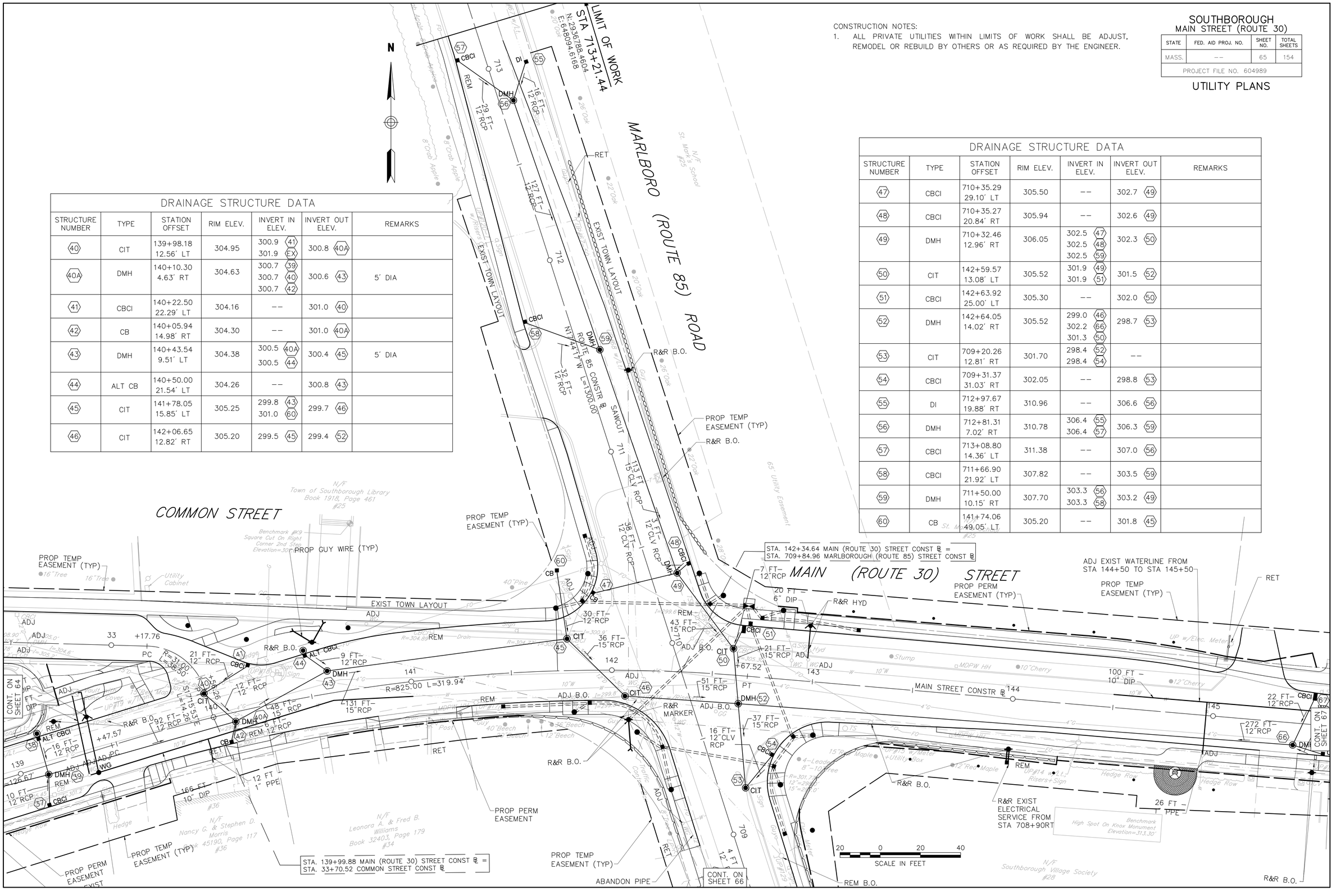
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	65	154
PROJECT FILE NO. 604989			

UTILITY PLANS

DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
40	CIT	139+98.18 12.56' LT	304.95	300.9 (41) 301.9 (EX)	300.8 (40A)	
40A	DMH	140+10.30 4.63' RT	304.63	300.7 (39) 300.7 (40) 300.7 (42)	300.6 (43)	5' DIA
41	CBCI	140+22.50 22.29' LT	304.16	--	301.0 (40)	
42	CB	140+05.94 14.98' RT	304.30	--	301.0 (40A)	
43	DMH	140+43.54 9.51' LT	304.38	300.5 (40A) 300.5 (44)	300.4 (45)	5' DIA
44	ALT CB	140+50.00 21.54' LT	304.26	--	300.8 (43)	
45	CIT	141+78.05 15.85' LT	305.25	299.8 (43) 301.0 (60)	299.7 (46)	
46	CIT	142+06.65 12.82' RT	305.20	299.5 (45)	299.4 (52)	

DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
47	CBCI	710+35.29 29.10' LT	305.50	--	302.7 (49)	
48	CBCI	710+35.27 20.84' RT	305.94	--	302.6 (49)	
49	DMH	710+32.46 12.96' RT	306.05	302.5 (47) 302.5 (48) 302.5 (59)	302.3 (50)	
50	CIT	142+59.57 13.08' LT	305.52	301.9 (49) 301.9 (51)	301.5 (52)	
51	CBCI	142+63.92 25.00' LT	305.30	--	302.0 (50)	
52	DMH	142+64.05 14.02' RT	305.52	299.0 (46) 302.2 (66) 301.3 (50)	298.7 (53)	
53	CIT	709+20.26 12.81' RT	301.70	298.4 (52) 298.4 (54)	--	
54	CBCI	709+31.37 31.03' RT	302.05	--	298.8 (53)	
55	DI	712+97.67 19.88' RT	310.96	--	306.6 (56)	
56	DMH	712+81.31 7.02' RT	310.78	306.4 (55) 306.4 (57)	306.3 (59)	
57	CBCI	713+08.80 14.36' LT	311.38	--	307.0 (56)	
58	CBCI	711+66.90 21.92' LT	307.82	--	303.5 (59)	
59	DMH	711+50.00 10.15' RT	307.70	303.3 (56) 303.3 (58)	303.2 (49)	
60	CB	141+74.06 49.05' LT	305.20	--	301.8 (45)	



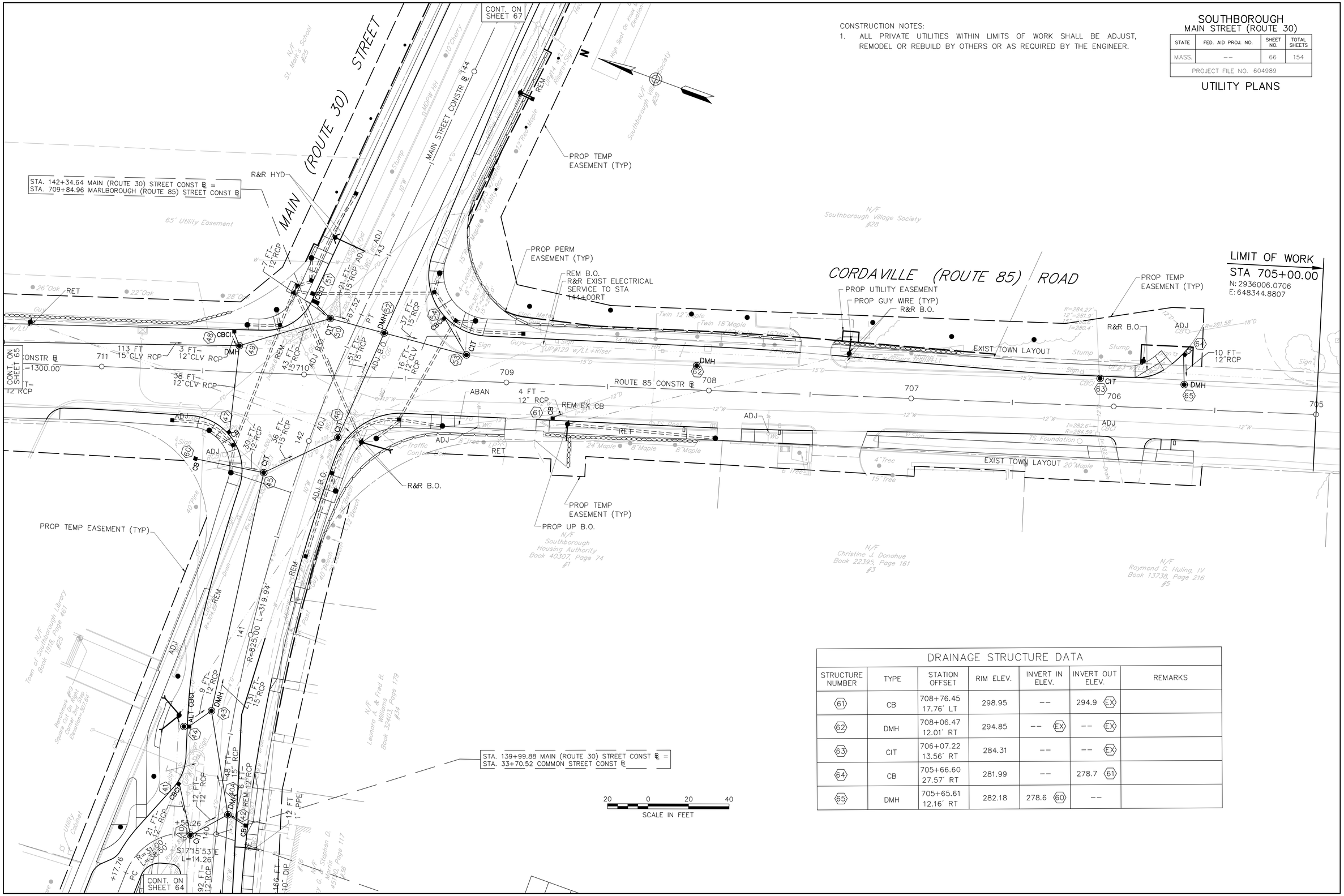
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

CONSTRUCTION NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	66	154
PROJECT FILE NO. 604989			

UTILITY PLANS



DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
(61)	CB	708+76.45 17.76' LT	298.95	--	294.9 (EX)	
(62)	DMH	708+06.47 12.01' RT	294.85	-- (EX)	-- (EX)	
(63)	CIT	706+07.22 13.56' RT	284.31	--	-- (EX)	
(64)	CB	705+66.60 27.57' RT	281.99	--	278.7 (61)	
(65)	DMH	705+65.61 12.16' RT	282.18	278.6 (60)	--	

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

N

DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
(66)	DMH	145+40.72 10.97' RT	310.46	307.1 (67) 307.1 (68)	307.0 (52)	
(67)	CBCI	145+49.99 15.81' LT	310.58	--	307.3 (66)	
(68)	CBCI	145+56.05 14.98' RT	310.64	--	307.3 (66)	
(69)	CBCI	150+49.99 15.00' RT	312.41	--	308.9 (71)	
(70)	CBCI	150+57.64 15.00' LT	312.42	--	310.3 (EX)	REMODEL
(71)	CIT	151+13.44 13.54' RT	312.56	308.4 (69) 308.4 (70)	308.3 (EX)	

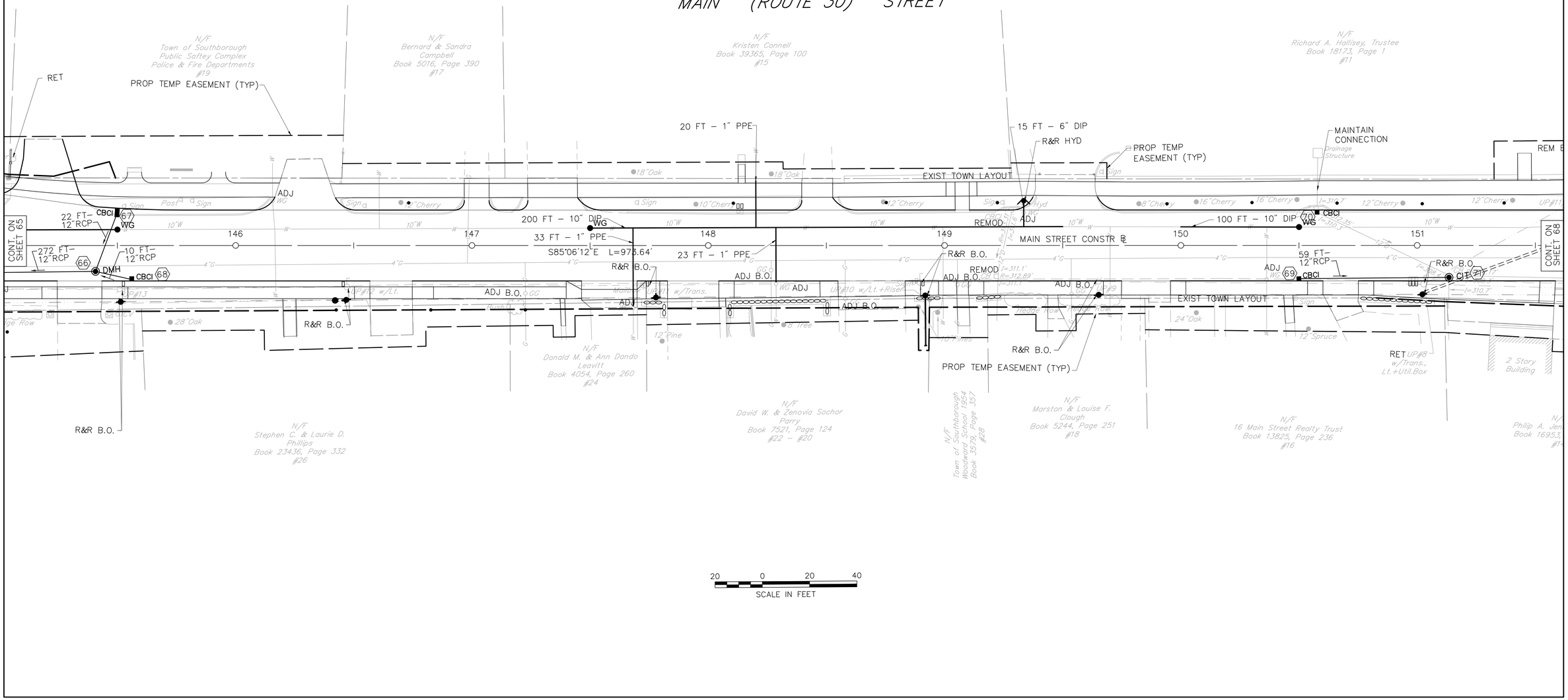
CONSTRUCTION NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	67	154
PROJECT FILE NO. 604989			

UTILITY PLANS

MAIN (ROUTE 30) STREET



\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	68	154
PROJECT FILE NO. 604989			

UTILITY PLANS

DRAINAGE STRUCTURE DATA						
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
72	ALT CB	152+92.45 20.85' RT	311.24	306.9 EX 307.4 77	306.3 EX	
73	CBCI	154+00.00 15.00' LT	306.70	--	303.4 EX	
74	DI	154+16.48 31.83' RT	305.26	--	302.0 75	
75	DMH	154+23.97 21.31' RT	305.16	300.0 74 300.0 76	-- EX	
76	CBCI	154+34.91 43.49' RT	303.63	--	300.3 75	
77	CBCI	153+12.93 48.99' RT	311.60	--	308.1 72	

N

LIMIT OF WORK
STA 51+00.00
N: 2936459.1685
E: 649230.5553

50 SCHOOL STREET/LATISQUAMA ROAD CONSTR ℄
S23°19'03"E L=164.42'

SCHOOL STREET

EDGE PAVEMENT

STONE WALL

20"DEC

8"DEC

GPL 6-84

Benchmark #M200Z
USC&GS Bound At Northwesterly
Intersection of School & Main Sts.
Elevation=313.95'

REM B.O.

12"Cherry

UP#11

Sign

30"Tree

10"W

CONT. ON SHEET 67

R&R B.O.

CB (21)

MAIN STREET 152 CONSTR ℄ +41.16 PC

153

R=510.00 L=264.80'

REM EXIST CB

ADJ B.O.

ALT CB (72)

52

R=2000.00 L=311.87'

CBCI (77)

ADJ

ADJ PC +64.42

WG

SEE SHEET 84 FOR DETAIL

30 FT- 12"RCP

STA. 153+05.44 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 51+84.86 SCHOOL STREET/LATISQUAMA ROAD CONST ℄

LATISQUAMA ROAD

PROP TEMP EASEMENT (TYP)

EXIST TOWN LAYOUT

R&R MB

R&R HYD

CBCI (73)

154

60

7 FT- 12"RCP

9 FT- 12"RCP

DMH (75)

20 FT- 12"RCP

DI (74)

CBCI (76)

PROP PERM EASEMENT
R&R B.O.
PROP GUY WIRE (TYP)
PROP UTILITY EASEMENT

PARK STREET CONSTR ℄
S59°24'02"E L=200.00'

61

STA. 154+16.52 MAIN (ROUTE 30) STREET CONST ℄ =
STA. 60+00.00 PARK STREET CONST ℄

LIMIT OF WORK
STA 61+35.18
N: 2936328.9779
E: 649490.2238

PARK STREET

62

LIMIT OF WORK
STA 52+78.24
N: 2936296.8239
E: 649304.0552

+76.29 PT

53

EXIST TOWN LAYOUT

+05.96 PT N65°08'51"E L=62.04'

16 FT- 6" DI

155

R&R B.O.

PROP TEMP EASEMENT (TYP)
PROP GUY WIRE (TYP)

STONE WALL

Old Fire Station, LLC
Book 21923, Page 295
#5

Phil Sheridan Building Association
c/o Knights of Columbus
Book 2277, Page 436
#1

N/F
Massachusetts Electric Company
Book 3320, Page 151

N/F
9 Main Street, LLC
Book 32430, Page 330
#9

N/F
Philip A. Jenks, Trustee
Book 16953, Page 287
#14

N/F
Richard P. & W. Curran
Book 42, Page 456

N/F
Raymond D. & Michele A. Hakinson
Book 15292, Page 331
#10

N/F
Warren C. & Lucia R. Prosperi
Book 26207, Page 213
#8

N/F
Mahant Realty LLC
Book 52242, Page 341
#4

N/F
Vinod Patel
Book 54795, Page 194
#6

1 Story Wood Building

2 Story Building

Building

Flagpole

Sign

12"Tree

10"Maple

30"Maple

8"Tree

10"Locust

Telephone Utility Cabinet

Conc. Walk

Wood Steps

Pump Outlet

6 Guy

R=298.56'
12"=294.9'
8"=294.6'
12"=294.6'

R=298.69'
8"=296.9'
12"=297.1'

R=298.85'
12"=297.3'

UP#3 w/Lt.
+Trans.

RR TS

CB

MH

W

WG

GG

4"G

RET

ADJ B.O.

NOTES:
1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

TEMPORARY TRAFFIC CONTROL PLAN 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 HARDWIRE (MASH).
2. WORK HOURS SHALL BE 7:00AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER. WORK IMPACTING THE TRAVEL WAY WILL NOT BE ALLOWED DURING PEAK TRAFFIC PERIODS. PEAK TRAFFIC PERIODS ARE DEFINED AS MONDAY THRU FRIDAY 7:00AM-9:00AM AND 3:00PM-6:00PM.
3. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY ON STATE RECOGNIZED HOLIDAYS UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. 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.
5. ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
6. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS. 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 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.
8. FOR DROP-OFFS 4" 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 4" BUT NO MORE THAN 12", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH TEMPORARY CHANNELIZATION DEVICES AND A 1V:4H (MIN) TO 1V:6H (DESIRED) WEDGE OR REMOVE THE HAZARD.
9. CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 12" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF IS MITIGATED PER NOTE 8.
10. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
    4' IF POSTED SPEED IS LESS THAN 35 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 P5 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.
17. TEMPORARY MARKINGS SHALL BE WATER-BORNE PAINT OR SURFACE-APPLIED REMOVABLE TAPE, AS APPROVED BY THE ENGINEER.
18. ALL TEMPORARY CROSSWALKS AND STOP LINES SHALL BE 12 INCHES WIDE.
19. ALL TEMPORARY DOUBLE YELLOW CENTER LINES (DBYL) SHALL BE 6 INCHES WIDE.
20. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS.
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. CONTRACTOR SHALL SECURE WORK AREAS TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
24. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
25. 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.
26. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
27. W20-1c OR MA-R2-10a SIGNS SHOWN ON ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF THOSE SIGNS SHOWN ON TYPICAL DETAILS IF MINIMUM SIGN SPACING IS MET.
28. MA-W20-7b SIGNS SHALL BE REPLACED BY W20-7 SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
29. CONTRACTOR SHALL NOT PERMIT PUBLIC ACCESS ON PORTIONS OF NEWLY CONSTRUCTED SIDEWALK UNTIL ALL SIDEWALKS WITHIN THE PROJECT LIMITS ARE FULLY CONSTRUCTED AND ADAAG COMPLIANT OR AS DIRECTED BY THE ENGINEER.
30. CONTRACTOR SHALL SETUP DAILY WORK ZONES AS NECESSARY FOR FULL DEPTH PAVEMENT CONSTRUCTION. AT THE END OF EACH WORK SHIFT, UNTIL INTERMEDIATE PAVING COURSE IS INSTALLED, CONTRACTOR TO FOLLOW THE BELOW GUIDELINES OR AS DIRECTED BY THE ENGINEER.
    1. GRAVEL PAVEMENT COURSE SHALL REMAIN OPEN TO TRAVEL FOR A MAXIMUM OF 10 CALENDAR DAYS PRIOR TO PAVING.
    2. BASE AND BINDER PAVING COURSES SHALL BE INSTALLED AS SHOWN ON THE PLANS AND PAVEMENT NOTES. IN LOCATIONS WHERE THE ROADWAY IS NARROWED, PAVED ACCESS SHALL BE PROVIDED AT ALL ABUTTING DRIVEWAYS AND PARKING AREAS.
    3. MAINTAIN ADEQUATE ROADWAY DRAINAGE AT ALL TIMES.

STAGING NOTES

THE FOLLOWING ACTIVITY DESCRIPTION HAS BEEN PROVIDED AS A GUIDE TO CONVEY INTENDED CONSTRUCTION STAGING TO COMPLETE THE WORK. THIS LIST IS IN NO WAY COMPLETE AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COMPLETE ALL WORK AS SHOWN ON THE PROJECT PLANS AND DETAILED IN THE PROJECT SPECIFICATIONS. CONTRACTOR SHALL MAINTAIN TRAFFIC AND PEDESTRIAN ACCESS AT ALL TIMES IN EACH STAGE OF CONSTRUCTION.

1. UTILITY WORK INCLUDING DRAINAGE AND WATER LINE.
2. ROADWAY WORK (FULL DEPTH PAVEMENT CONSTRUCTION TO THE INTERMEDIATE COURSE, CURB, WHEELCHAIR RAMPS, SIDEWALK, TRAFFIC SIGNAL, SCHOOL ZONE, FLASHERS, STONE WALL) ON THE SOUTH SIDE OF MAIN STREET (ROUTE 30).
3. ROADWAY WORK (FULL DEPTH PAVEMENT CONSTRUCTION TO THE INTERMEDIATE COURSE, CURB, WHEELCHAIR RAMPS, SIDEWALK, TRAFFIC SIGNAL, SCHOOL ZONE, FLASHERS, STONE WALL) ON THE NORTH SIDE OF MAIN STREET (ROUTE 30).
4. LANDSCAPE WORK WITHIN PROJECT LIMITS.
5. FINAL PAVING AND FINAL SIGNING & STRIPING WORK.

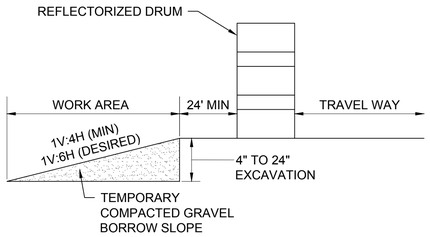
BUFFER SPACING	
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

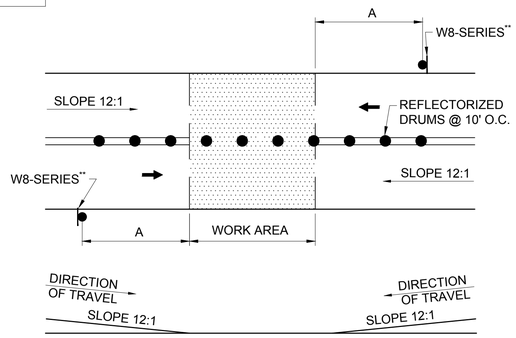
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	69	154
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS
GENERAL NOTES & LEGEND

LEGEND	
	POLICE OFFICER
	FLAGGER
	REFLECTORIZED DRUM
	REFLECTORIZED DRUM WITH SEQUENTIAL FLASHING WARNING LIGHTS (SEE GENERAL NOTE 20)
	TEMPORARY CONSTRUCTION SIGN
	TRAFFIC CONE
	TYPE III BARRICADE
	WORK AREA (PUBLIC ACCESS RESTRICTED)
	TRAFFIC FLOW
	PEDESTRIAN ROUTE
	TEMP PORTABLE PEDESTRIAN BARRICADE
NTS	NOT TO SCALE
TTCP	TEMPORARY TRAFFIC CONTROL PLAN



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



NOTES:
1. SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY
2. ** CONTRACTOR SHALL INSTALL W8-1, W8-3, OR W8-8 SIGN, AS APPROPRIATE, ON ALL ROADWAYS IN ADVANCE OF THE TRANSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

ADVANCE SIGN SPACING				
	DISTANCE BETWEEN SIGNS (FEET)			
ROADWAY	A	B	C	D
ROUTE 30 ROUTE 85	350	150	350	350
ALL OTHER ROADWAYS	100	50	100	100

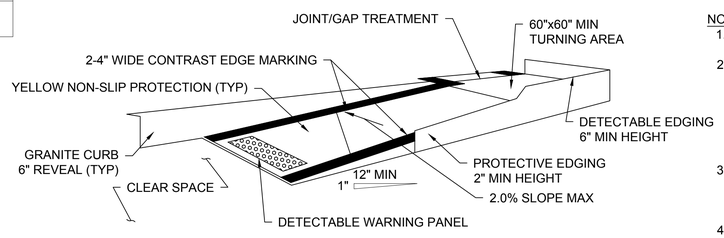
LANE TAPER LENGTH FORMULAS
L= TAPER LENGTH IN FEET
W= WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED IN FEET
S= POSTED SPEED LIMIT IN MPH
POSTED SPEED
40 MPH OR LESS
$L=\frac{WS^2}{60}$

TYPICAL ROADWAY DROP-OFF PROTECTION

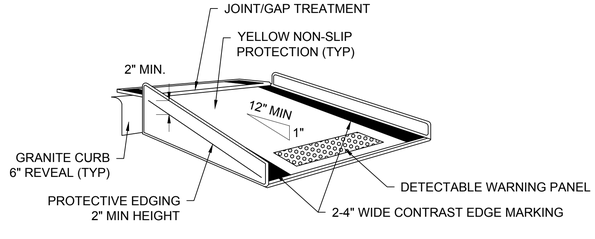
SCALE: NTS

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB

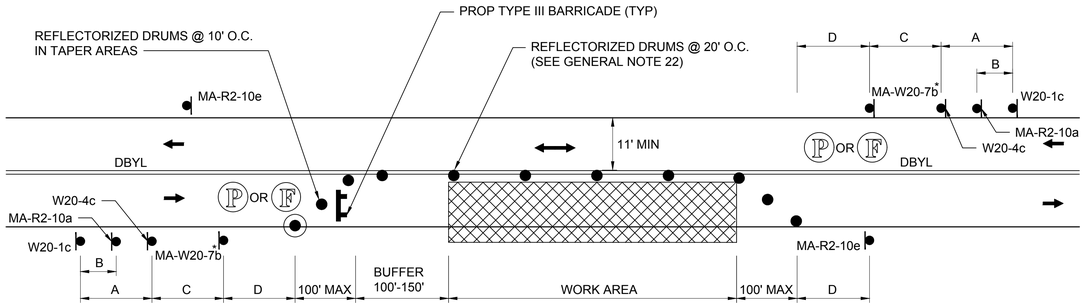


TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

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.
11. TEMPORARY CURB RAMP SHALL BE PAID FOR UNDER ITEM 852.1 TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM.

TEMPORARY CURB RAMPS

SCALE: NTS

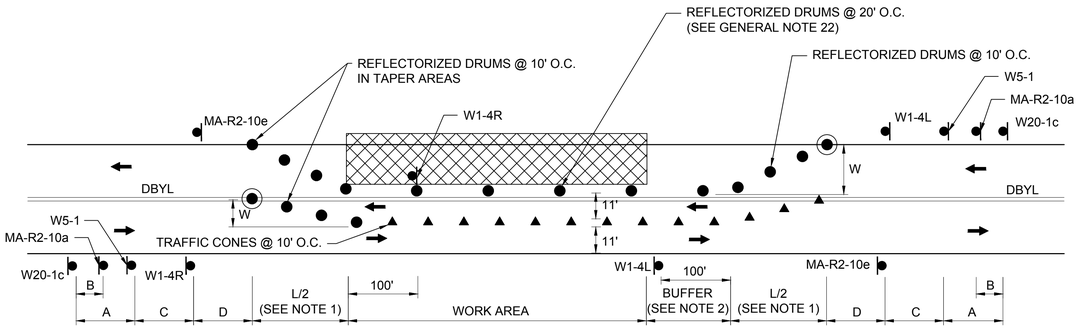


NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 69.
2. * SEE GENERAL NOTE 28 ON SHEET 69.

TYPICAL TWO-WAY STREET LANE CLOSURE - ALTERNATING TRAFFIC

SCALE: NTS



NOTES:

1. SEE TAPER LENGTH FORMULA ON SHEET 69.
2. SEE BUFFER SPACING CHART ON SHEET 69.
3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 69.

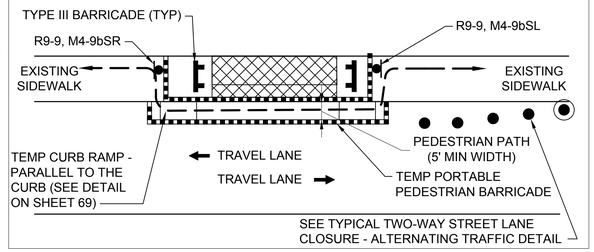
TYPICAL TWO-WAY STREET LANE SHIFT

SCALE: NTS

NOTES:

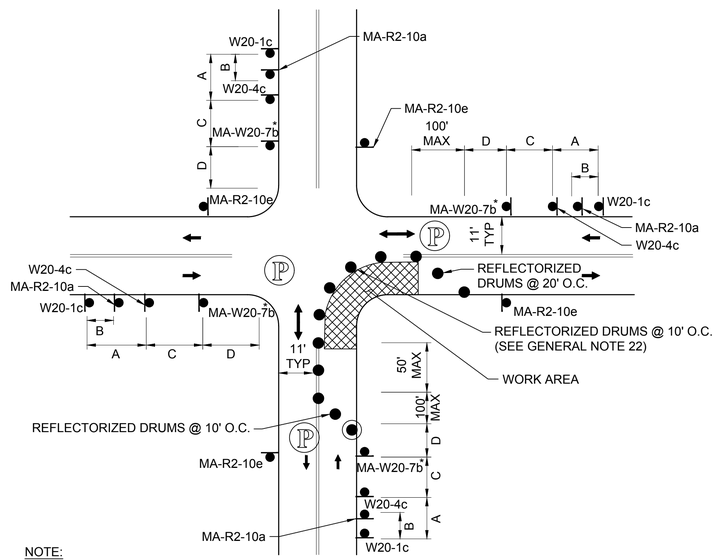
1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ⟵ — ⟵ INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
6. 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 A COMPLIANT TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM AT ALL TIMES.
7. 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.
8. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
9. TEMPORARY PORTABLE PEDESTRIAN BARRICADE SHALL BE PAID FOR UNDER ITEM 852.1 TEMPORARY PEDESTRIAN MANAGEMENT GUIDANCE SYSTEM.

PEDESTRIAN BYPASS TYPE I



PEDESTRIAN BYPASS DETAIL

SCALE: NTS



NOTE:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. * SEE GENERAL NOTE 28 ON SHEET 69.

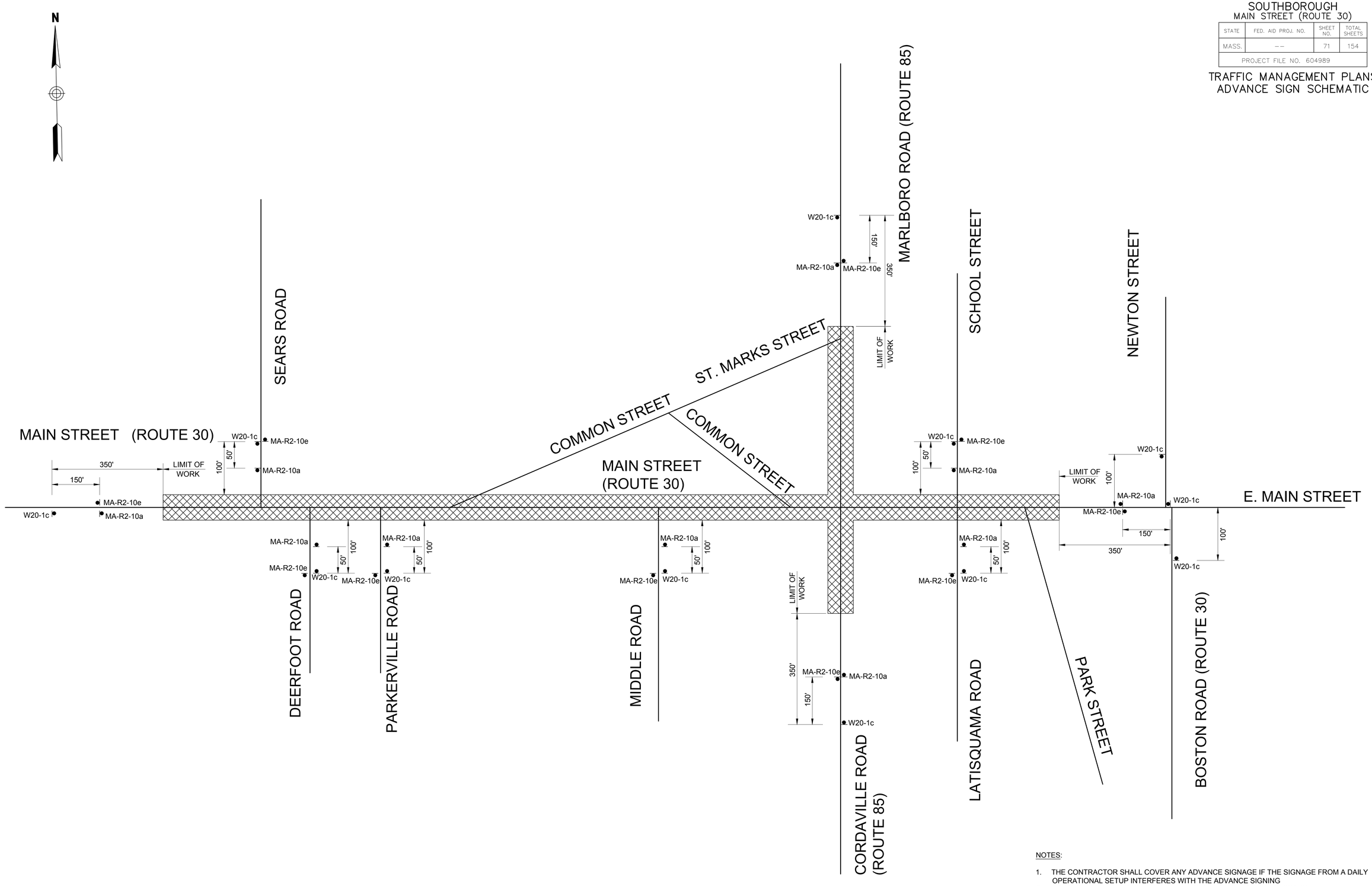
ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

SCALE: NTS

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	71	154
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS
ADVANCE SIGN SCHEMATIC



NOTES:

1. THE CONTRACTOR SHALL COVER ANY ADVANCE SIGNAGE IF THE SIGNAGE FROM A DAILY OPERATIONAL SETUP INTERFERES WITH THE ADVANCE SIGNING
2. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
3. SIGNS TO BE INSTALLED AT THE PROJECT LIMITS AS SHOWN.
4. ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.

NOT TO SCALE

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	72	154
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS
SIGN SUMMARY

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			COLOR		
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	BACK-GROUND	LEGEND	BORDER
MA-R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	AS PER MASSDOT STANDARD			FLUOR-ESCENT ORANGE / WHITE	BLACK	BLACK
MA-R2-10e	36"	48"	END ROAD WORK / DOUBLE FINES END				FLUOR-ESCENT ORANGE / WHITE	BLACK	BLACK
R9-9	24"	12"	SIDEWALK CLOSED	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			WHITE	BLACK	BLACK
W1-4L	36"	36"					FLUOR-ESCENT ORANGE	BLACK	BLACK
W1-4R	36"	36"					FLUOR-ESCENT ORANGE	BLACK	BLACK
W5-1	36"	36"	ROAD NARROWS				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-1	36"	36"	BUMP				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-3	36"	36"	PAVEMENT ENDS				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-8	36"	36"	ROUGH ROAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-9	36"	36"	LOW SHOULDER				FLUOR-ESCENT ORANGE	BLACK	BLACK
W8-15	36"	36"	GROOVED PAVEMENT				FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-1c	36"	36"	ROAD WORK AHEAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-4c	36"	36"	ONE LANE ROAD AHEAD				FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-7	36"	36"					FLUOR-ESCENT ORANGE	BLACK	BLACK
MA-W20-7b	36"	36"	POLICE OFFICER AHEAD	AS PER MASSDOT STANDARD			FLUOR-ESCENT ORANGE	BLACK	BLACK
W21-7	36"	36"	UTILITY WORK AHEAD	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9bSL	30"	24"	DETOUR				FLUOR-ESCENT ORANGE	BLACK	BLACK
M4-9bSR	30"	24"	DETOUR				FLUOR-ESCENT ORANGE	BLACK	BLACK

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; THE MASSHIGHWAY DEPARTMENT SIGN LISTINGS 1993 EDITION, AS AMENDED; THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE 2017 MASSDOT STANDARD SIGNS BOOK, AS AMENDED.
2. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	73	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

SEARS ROAD

MAIN (ROUTE 30) STREET

BEGIN PROJECT
STA 104+60.00
N: 2936691.9042
E: 644531.6862

LIMIT OF WORK
STA 10+73.96
N: 2936739.2713
E: 644651.8348

LIMIT OF WORK
STA 20+95.66
N: 2936484.5032
E: 645051.7574

PROP TEXTURIZED CROSSWALK (TYP)

CONT. ON SHEET 74

FOR PROFILES SEE SHEET NO. 18

PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
3	AG	Paperbark Maple	Acer griseum	2 - 2 1/2" Cal.	
4	AM	Green Mountain Sugar Maple	Acer saccharum 'Green Mountain'	2 - 2 1/2" Cal.	
1	LE	Emerald City Tulip Tree	Liriodendron tulipiferia 'Emerald City'	2 - 2 1/2" Cal.	

20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	74	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

PROP TEXTURIZED CROSSWALK (TYP)

MAIN (ROUTE 30) STREET

2 LE

2 LR

2 LR

WATER QUALITY TREATMENT AREA SEE SHEET 85 FOR DETAIL

LIMIT OF PAVING
STA 40+78.67
N: 2936449.0311
E: 645520.7888

LIMIT OF WORK
STA 43+06.68
N: 2936222.7329
E: 645548.6215

PARKERVILLE ROAD

DEERFOOT ROAD

CONT. ON SHEET 75

CONT. ON SHEET 73

Wet Area (Not Flagged)

N

20 0 20 40
SCALE IN FEET

PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
2	LE	Emerald City Tulip Tree	Liriodendron tulipiferia 'Emerald City'	2 - 2 1/2" Cal.	
4	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba'	2 - 2 1/2" Cal.	

FOR PROFILES SEE SHEET NOS. 19-20

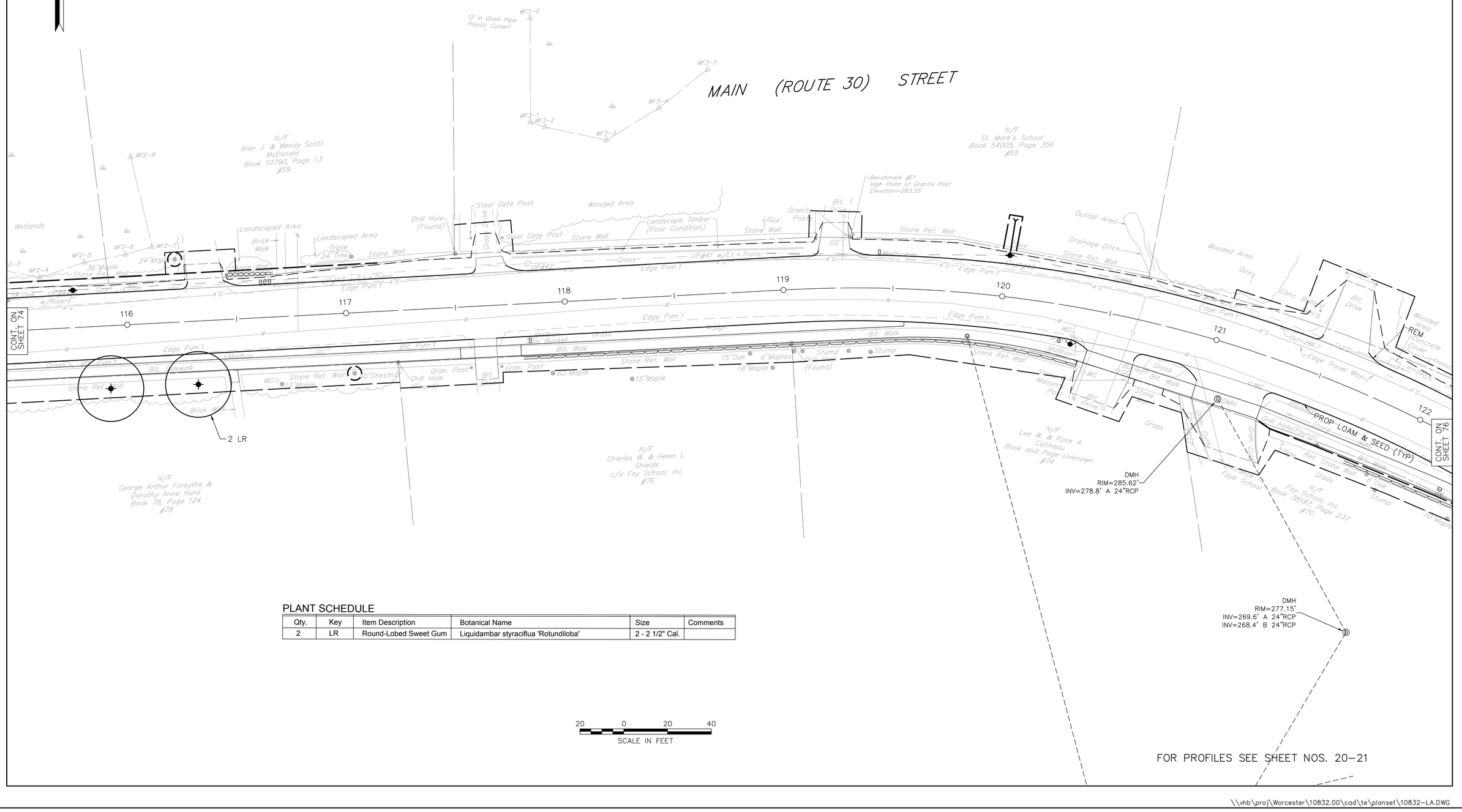
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	75	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

MAIN (ROUTE 30) STREET



PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
2	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba'	2 - 2 1/2" Cal.	

20 0 20 40
SCALE IN FEET

FOR PROFILES SEE SHEET NOS. 20-21

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	76	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

MAIN STREET (ROUTE 30)

CONT. ON SHEET 75

CONT. ON SHEET 77

PROP LOAM & SEED (TYP)

PROP TEXTURIZED CROSSWALK (TYP)

FOR PROFILES SEE SHEET NOS. 21-22

MH
=268.26'
=262.9' A 24"RCP
=263.0' B 12"PVC
=262.1' C 24"RCP

DMH
RIM=262.63'
INV=257.9' A 12"RCP
INV=257.5' B 24"RCP
INV=258.2' C 6"PVC
INV=258.2' D 6"PVC
INV=258.1' E 12"RCP
INV=257.3' F 30"RCP

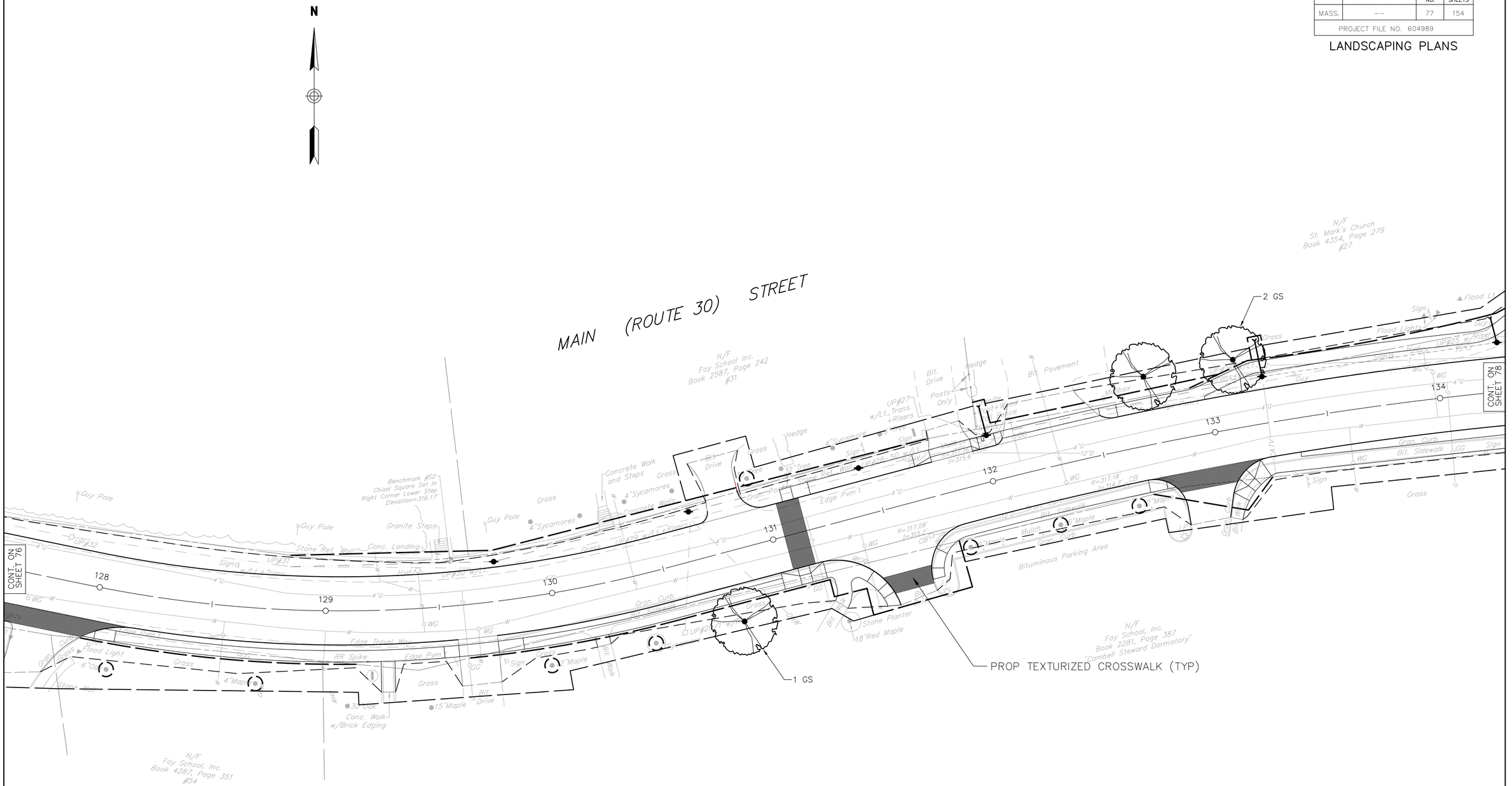
20 0 20 40
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	77	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
3	GS	Shademaster Locus	Gleditsia triacanthos inermis 'Shademaster'	2 - 2 1/2" Cal.	

20 0 20 40
SCALE IN FEET

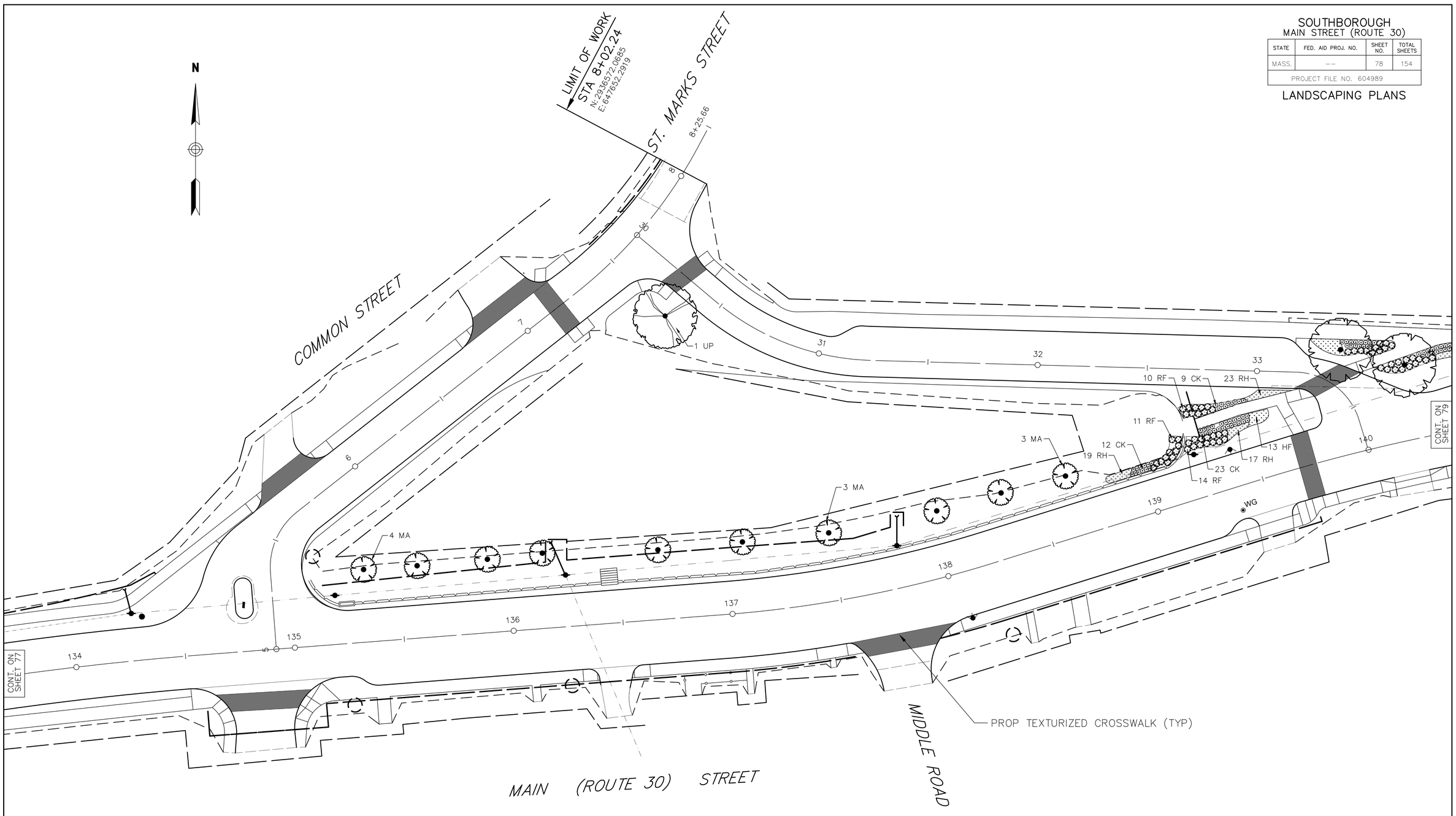
FOR PROFILES SEE SHEET NOS. 22-23

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	78	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
10	MA	Adirondack Crabapple	Malus x Adirondack	1 1/2 - 2" Cal.	
1	UP	American Elm	Ulmus americana 'Princeton'	2 - 2 1/2" Cal.	
35	RF	Rosa shrub 'The Fairy'	The Fairy Rose	2 Gal.	
44	CK	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	2 Gal.	
13	HF	Flava Daylily	Hemerocallis flava	1 Gal.	
69	RH	Black-eyed Susan	Rudbeckia hirta	2 Gal.	

FOR PROFILES SEE SHEET NOS. 23–24, 30 & 31

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	79	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

LIMIT OF WORK
STA 713+21.44
N: 2956788.4604
E: 648094.6168

MARLBORO (ROUTE 85) ROAD

COMMON STREET

MAIN (ROUTE 30) STREET

PROP TEXTURIZED CROSSWALK (TYP)

CONT. ON SHEET 78

CONT. ON SHEET 80

CONT. ON SHEET 81

FOR PROFILES SEE SHEET NOS. 24-25 & 28-29

SCALE IN FEET 20 0 20 40

PLANT SCHEDULE

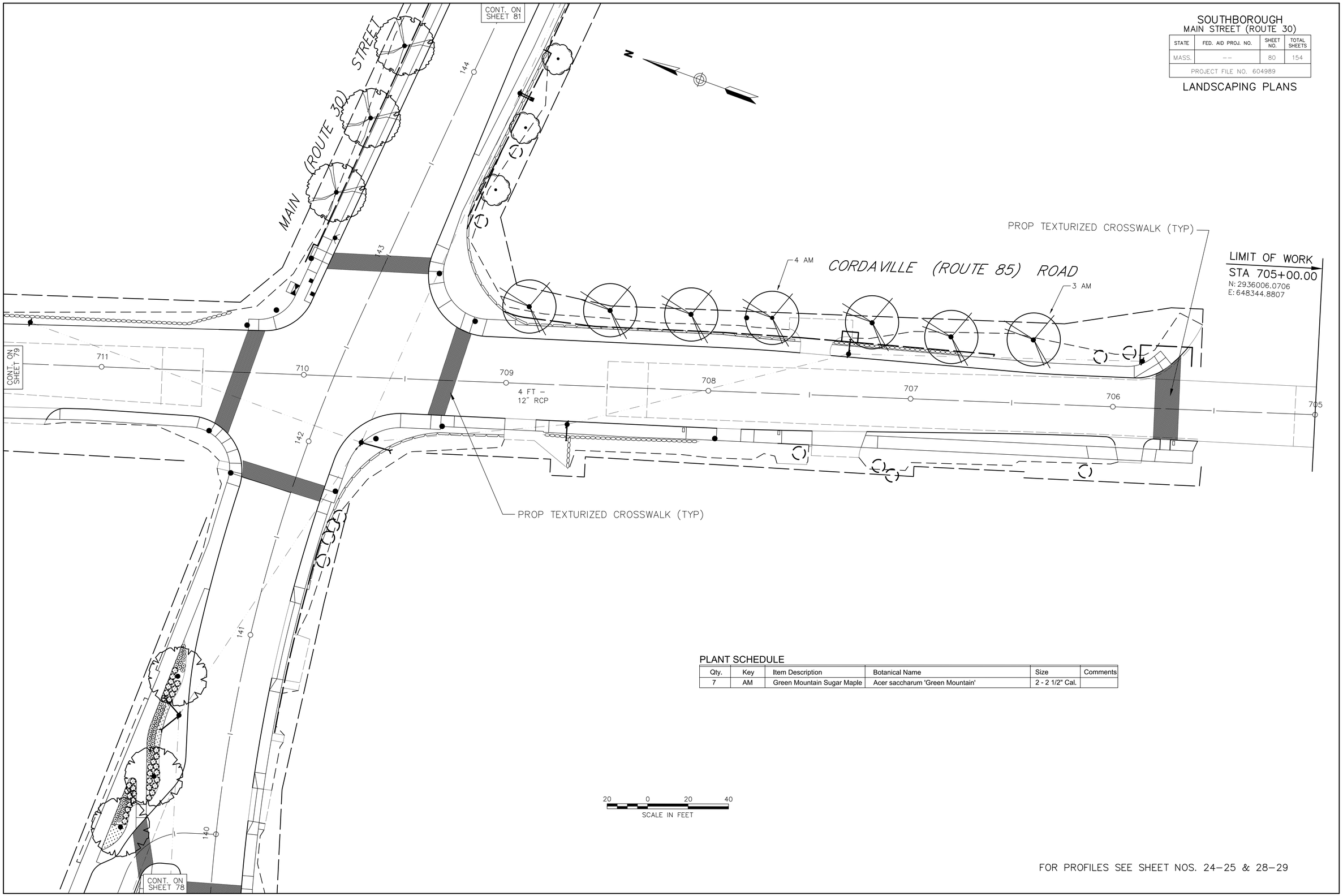
Qty.	Key	Item Description	Botanical Name	Size	Comments
3	LE	Emerald City Tulip Tree	Liriodendron tulipiferia 'Emerald City'	2 - 2 1/2" Cal.	
5	UP	American Elm	Ulmus americana 'Princeton'	2 - 2 1/2" Cal.	
5	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'	2 - 2 1/2" Cal.	
32	RF	Rosa shrub 'The Fairy'	The Fairy Rose	2 Gal.	
9	TD	Yew - Spreading Dense	Taxus x media 'densiformis'	24 - 30" Spd./Ht.	
57	CK	Karl Foerster Feather Reed Grass	Calamagrostis x acutiflora 'Karl Foerster'	2 Gal.	
21	HF	Flava Daylily	Hemerocallis flava	1 Gal.	
27	RH	Black-eyed Susan	Rudbeckia hirta	2 Gal.	

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	80	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
7	AM	Green Mountain Sugar Maple	Acer saccharum 'Green Mountain'	2 - 2 1/2" Cal.	

FOR PROFILES SEE SHEET NOS. 24–25 & 28–29

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

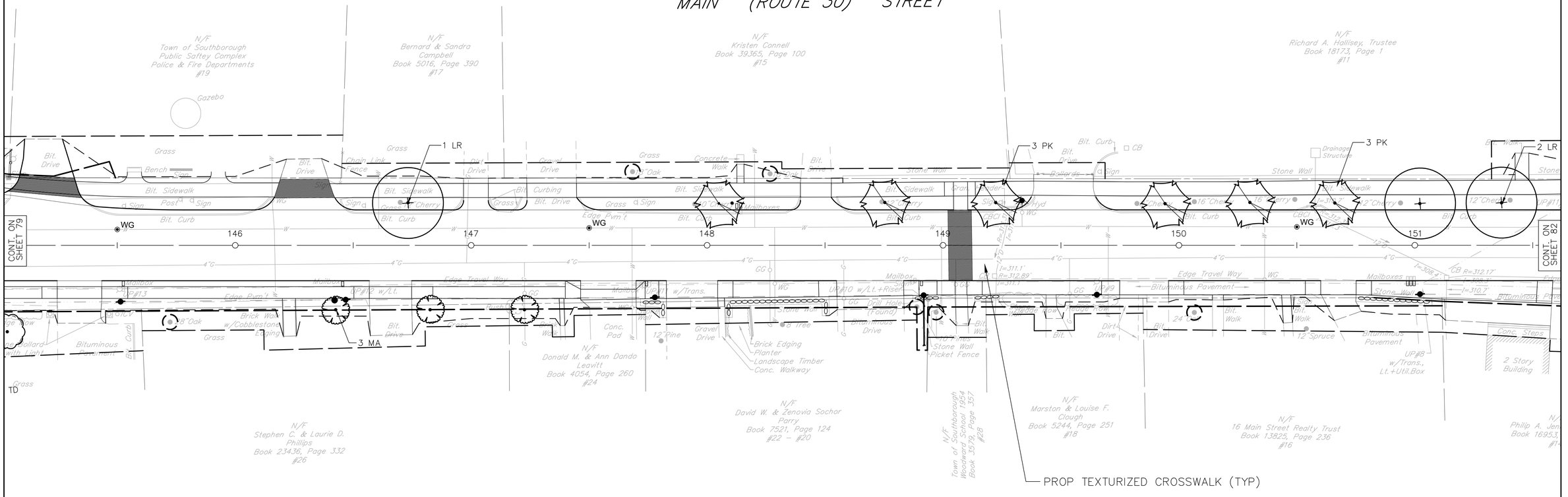
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	81	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
3	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba'	2 - 2 1/2" Cal.	
3	MA	Adirondack Crabapple	Malus x Adirondack	1 1/2 - 2" Cal.	
6	PK	Flowering Cherry	Prunus serrulata 'Kwanzan'	1 1/2 - 2" Cal.	



FOR PROFILES SEE SHEET NOS. 25-26

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

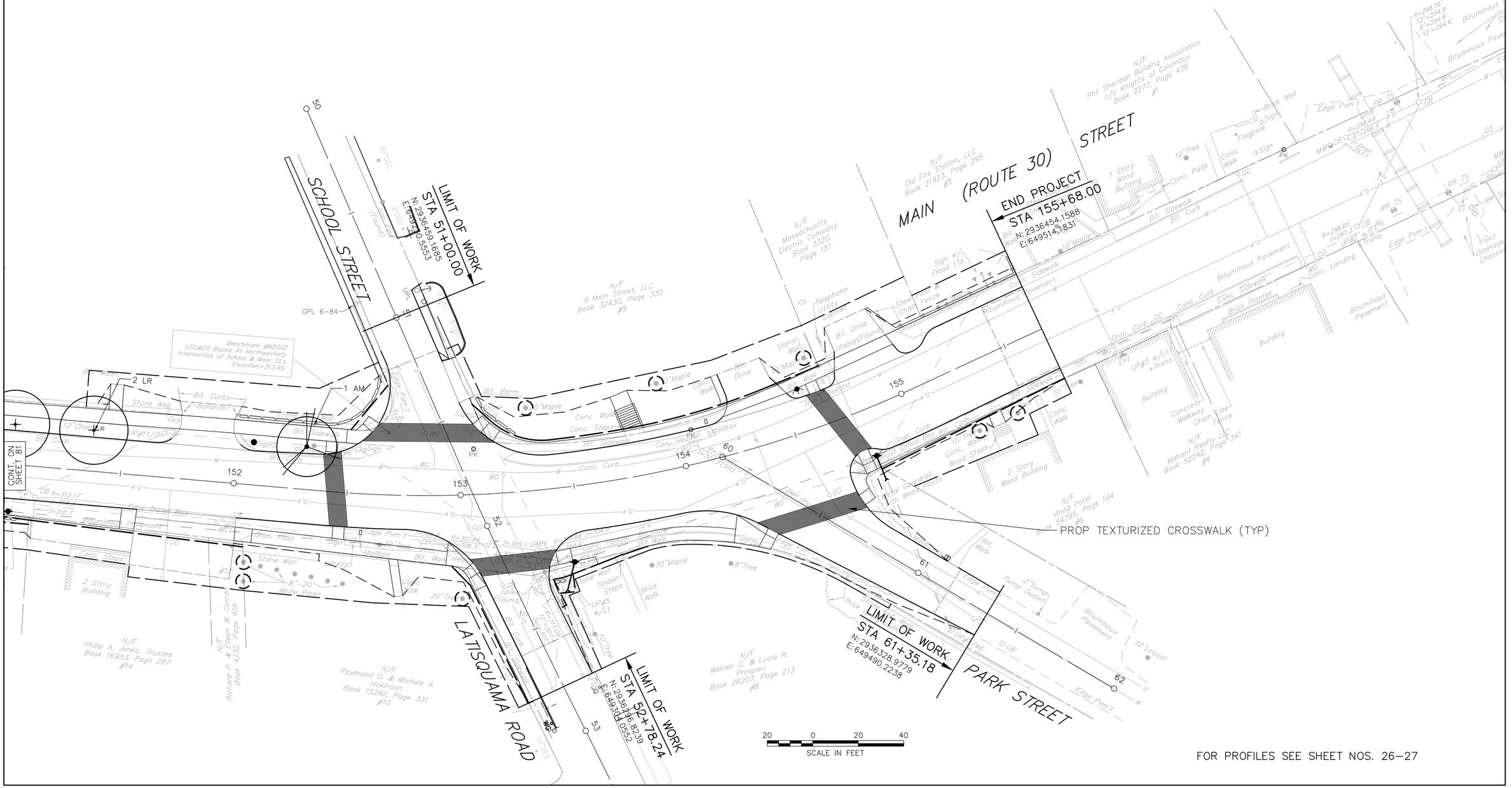
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	82	154
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

PLANT SCHEDULE

Qty.	Key	Item Description	Botanical Name	Size	Comments
1	AM	Green Mountain Sugar Maple	Acer saccharum 'Green Mountain'	2 - 2 1/2" Cal.	

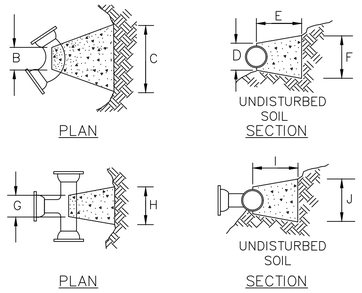

SCHOOL STREET
LIMIT OF WORK
STA 51+00.00
N: 2936459.1685
E: 649720.5553
MAIN STREET (ROUTE 30)
END PROJECT
STA 155+68.00
N: 2936454.1588
E: 649514.1831
LATISQUAMA ROAD
LIMIT OF WORK
STA 52+78.24
N: 2936196.8239
E: 649301.0952
LIMIT OF WORK
STA 61+35.18
N: 2936328.9779
E: 649490.2238
PARK STREET
PROP TEXTURIZED CROSSWALK (TYP)
CONT. ON SHEET 81
Benchmark #M2007
USC&GS Bound At Northwesterly Intersection of School & Main St.s
Elevation=313.95'
N/F 9 Main Street, LLC Book 32430, Page 330 #9
N/F Old Fire Station, LLC Book 21923, Page 295 #5
N/F Phil Sheridan Building Association c/o Knights of Columbus Book 2277, Page 436 #1
N/F Massachusetts Electric Company Book 3320, Page 151
N/F Philip A. Jenks, Trustee Book 16953, Page 287 #14
N/F Richard P. & Eileen W. Curran Book 4232, Page 456
N/F Raymond D. & Michele A. Hokinson Book 15292, Page 331 #10
N/F Warren C. & Lucia R. Prosperi Book 26207, Page 213 #8
N/F Vinod Patel Book 54795, Page 194 #6
N/F Mahant Realty LLC Book 52242, Page 341 #4
2 LR
1 AM
Bit. Curbs
Ballards
Stone Wall
Bit. Sidewalk
Bit. Drive
Bit. Berm
Conc. Walk
Conc. Steps
Conc. Curb
Conc. Header
Edge Pvm't
Bituminous Pavement
Brick Walk
Timber Steps
Brick Planter
Chain Link Fence
Steel Post & Chain Fence
Sign w/ Flood Lts.
Telephone Utility Joints
Flagpole
Sign
Mailbox
Bollard
Granite Post
Wood Steps
Wood Guardrail with Wood Posts
Concrete Walkway
1 Story Wood Building
2 Story Wood Building
2 Story Building
Building
Old Post Office Box
Pump Outlet
Sump
Conc. Pads
Conc. Landing
Brick Walk
Bit. Walk
Bit. Curb
Bit. Sidewalk
Gran. Curb
Gran. Post
Stone Wall
Timber Steps
Brick Walk
Bituminous Pavement
Bituminous Pavement
Bituminous Pavement

BENDS		B	C	D	E	F
6"	11-1/4°	8"	15"	12"	24"	12"
6"	22-1/2°	"	19"	"	"	13"
8"	11-1/4°	"	20"	"	"	12"
8"	22-1/2°	"	22"	"	"	17"
12"	11-1/4°	"	30"	"	"	15"
12"	22-1/2°	"	35"	"	"	25"

BENDS		B	C	D	E	F
6"	45°	8"	30"	12"	24"	14"
6"	90°	"	30"	"	"	27"
8"	45°	"	30"	"	"	24"
8"	90°	"	38"	"	"	36"
12"	45°	"	40"	"	"	40"
12"	90°	"	60"	"	"	52"

TEES	G	H	I	J
6"x 6"x 6"	12"	24"	24"	18"
8"x 8"x 6"	"	"	"	"
8"x 8"x 8"	"	"	"	24"

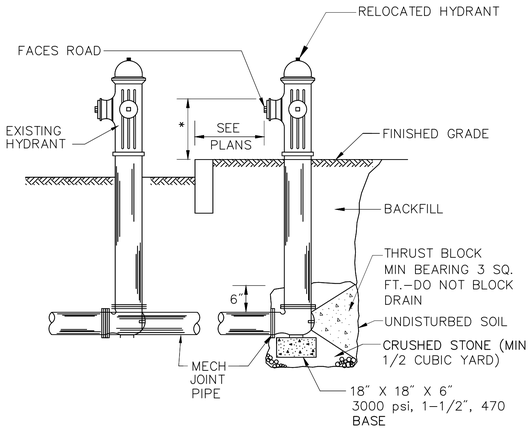
TEES	G	H	I	J
12"x12"x6"	12"	24"	24"	12"
12"x12"x8"	"	"	"	24"
12"x12"x12"	"	36"	"	36"



NOTES:
1. PROVIDE BLOCKS FOR TAPPING SLEEVES, DEAD ENDS, GATE VALVES AND VERTICAL BENDS, SAME SIZE AS REQUIRED FOR TEES.
2. PROVIDE ANCHOR RODS AT VERTICAL BENDS AND GATE VALVES
3. CONCRETE SHALL NOT BE PLACED AGAINST PIPE BEYOND FITTING.

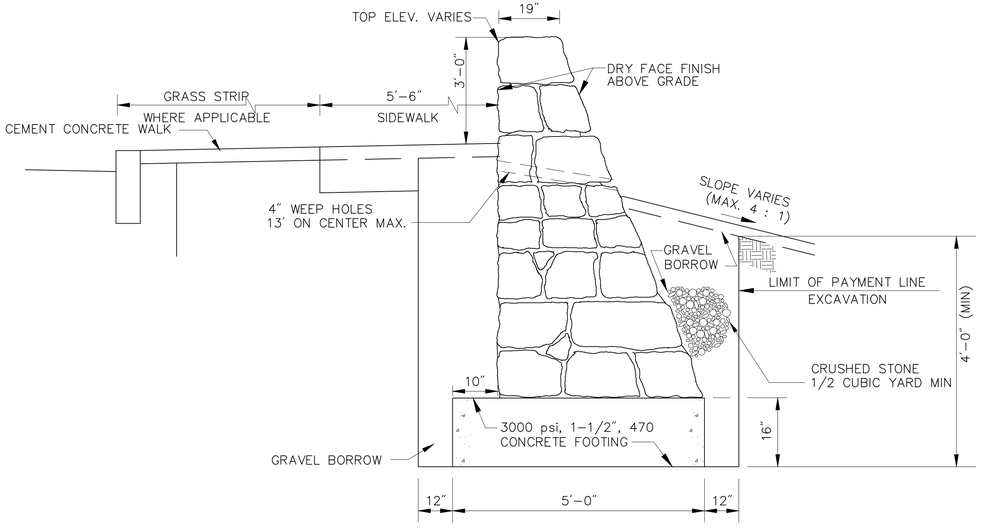
CONCRETE THRUST BLOCK

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: WS-02



HYDRANT RELOCATION DETAIL

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: WS-03

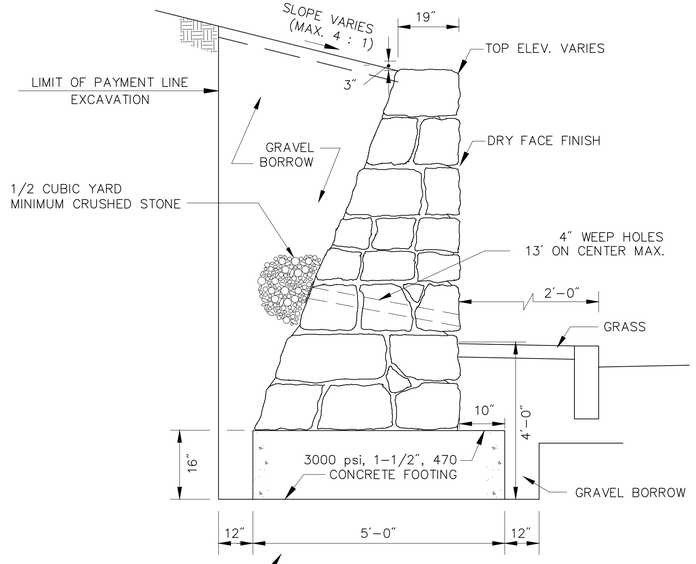


NOTE:
SEE CONSTRUCTION STANDARDS PLATE 302.2.0 FOR ADDITIONAL DETAILS.

UNDISTURBED SUITABLE BEARING MATERIAL OR COMPACTED GRAVEL BORROW AS REQUIRED.

CEMENT STONE MASONRY WALL WITH SIDEWALK - SECTION

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: SP-01



NOTE:
SEE CONSTRUCTION STANDARDS PLATE 302.2.0 FOR ADDITIONAL DETAILS.

UNDISTURBED SUITABLE BEARING MATERIAL OR COMPACTED GRAVEL BORROW AS REQUIRED.

CEMENT STONE MASONRY WALL AT COMMON - SECTION

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: SP-01

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

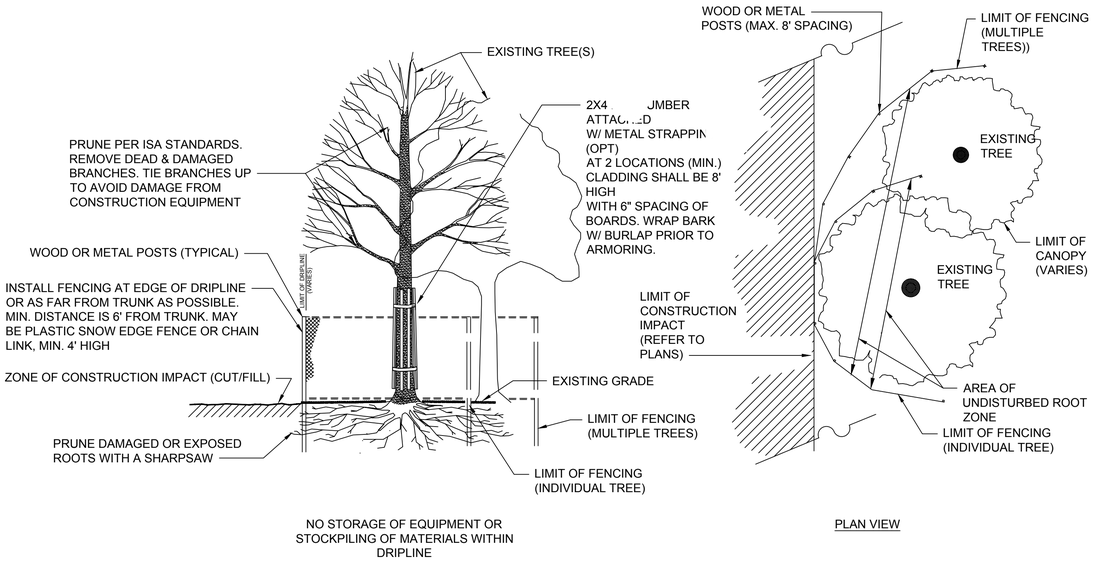
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	83	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

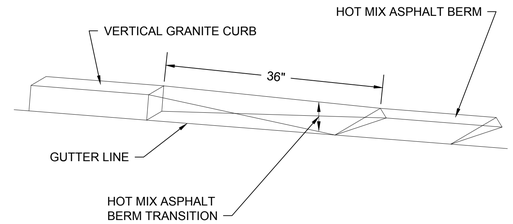
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	84	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



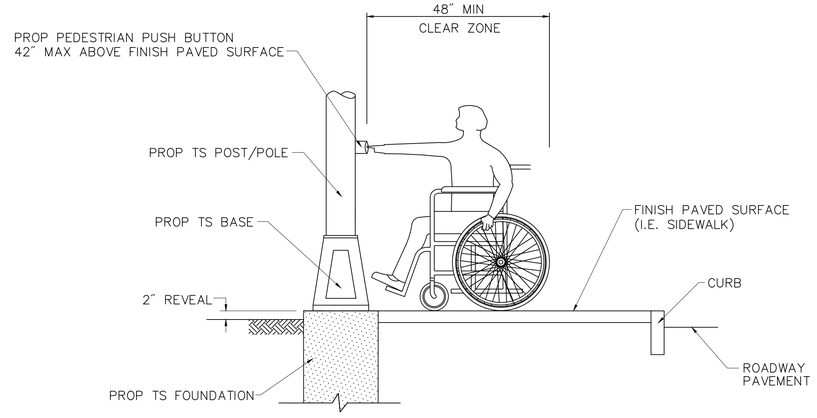
TREE PROTECTION OF EXISTING TREE(S)

SCALE: N.T.S.

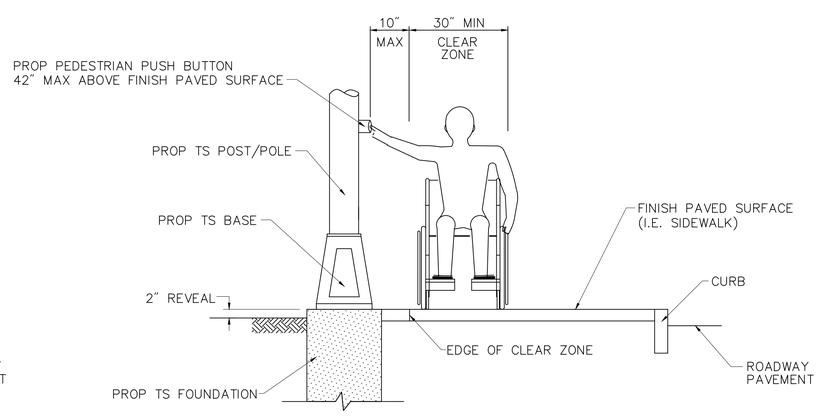


HOT MIX ASPHALT BERM TRANSITION TO GRANITE

SCALE: N.T.S.



FORWARD APPROACH (FORWARD REACH)

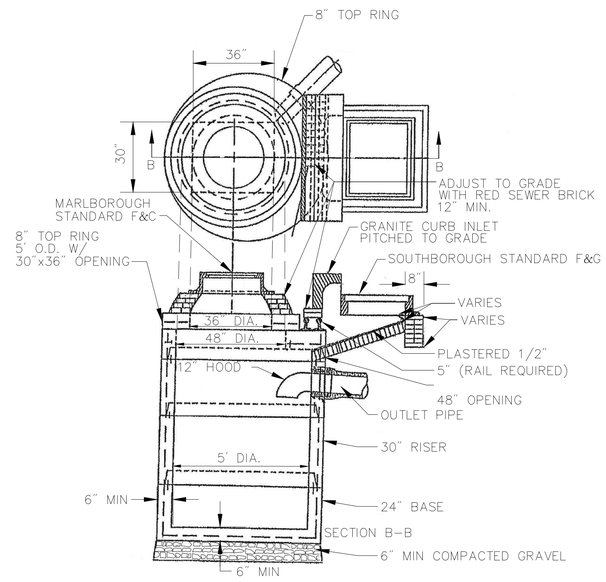


PARALLEL APPROACH (SIDE REACH)

NOTE 1: 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: NOT TO SCALE
DATE:
DWG:



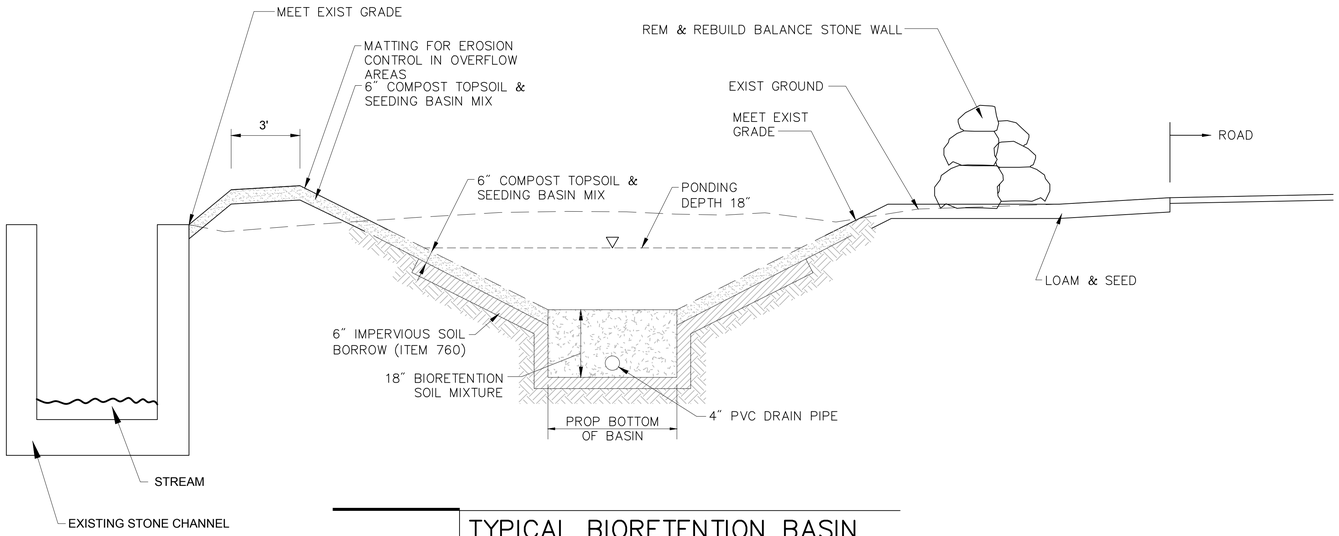
ALTERNATE CATCH BASIN

SCALE: N.T.S. DWG: DRIVE-03 DATE: JUNE 2013

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

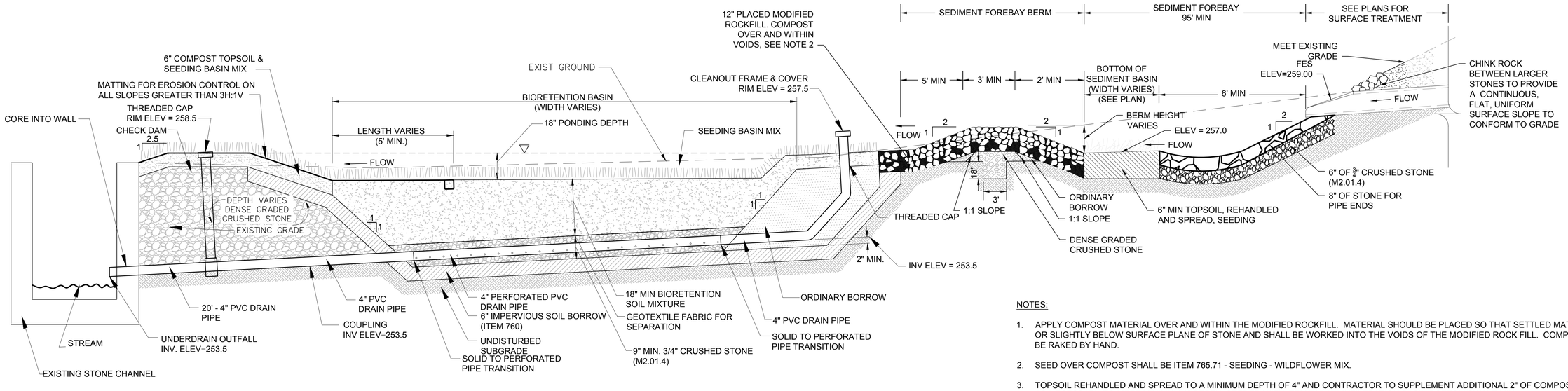
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	85	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



TYPICAL BIORETENTION BASIN CROSS SECTION

SCALE: NOT TO SCALE
DATE: JAN 2016
DWG: LADET-02



NOTES:

1. APPLY COMPOST MATERIAL OVER AND WITHIN THE MODIFIED ROCKFILL. MATERIAL SHOULD BE PLACED SO THAT SETTLED MATERIAL IS AT OR SLIGHTLY BELOW SURFACE PLANE OF STONE AND SHALL BE WORKED INTO THE VOIDS OF THE MODIFIED ROCK FILL. COMPOST SHALL BE RAKED BY HAND.
2. SEED OVER COMPOST SHALL BE ITEM 765.71 - SEEDING - WILDFLOWER MIX.
3. TOPSOIL REHANDLED AND SPREAD TO A MINIMUM DEPTH OF 4" AND CONTRACTOR TO SUPPLEMENT ADDITIONAL 2" OF COMPOST TOPSOIL AS NECESSARY TO MEET MINIMUM 6" DEPTH. SEEDED WITH ITEM 765.457 INFILTRATION BASIN BOTTOM/SWALE MIX.

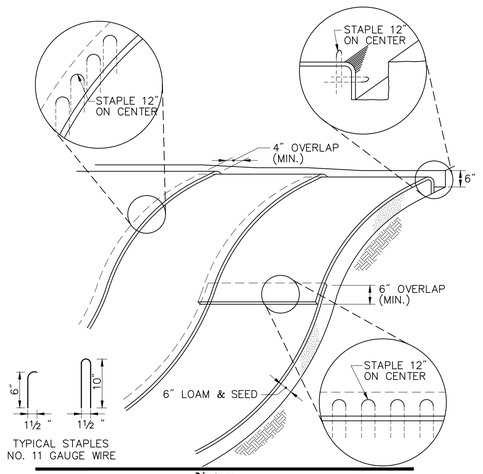
WATER QUALITY TREATMENT AREA

SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 7 2015

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	86	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



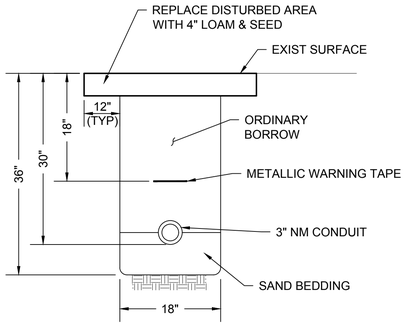
Notes:

1. BEGIN AT THE TOP OF THE MATTING INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE MATTING DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF MATTING MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN MATTING MUST BE SPLICED DOWN THE SWALE, PLACE UPPER MATTING END OVER LOWER END WITH 6 INCH (MIN.) OVERLAP AND STAPLE BOTH TOGETHER.
5. METHOD OF INSTALLATION SHALL BE AS PER MANUFACTURER'S RECOMMENDATIONS.
6. MATTING FOR EROSION CONTROL SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.
7. MATTING FOR EROSION CONTROL SHALL BE REMOVED FROM SITE AFTER STABILIZATION IS COMPLETE.

Matting for Erosion Control Installation

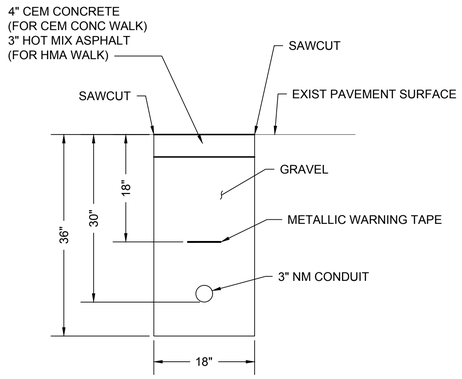
1/10

N.T.S. Source: VHB REV LD_680



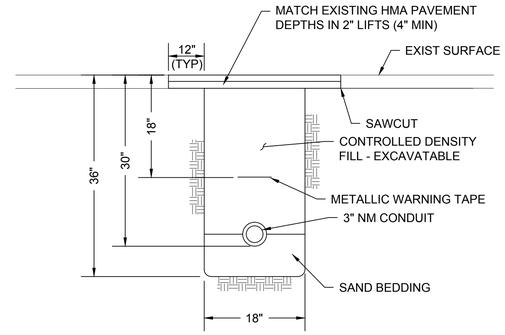
CONDUIT IN GRASS

SCALE: N.T.S.



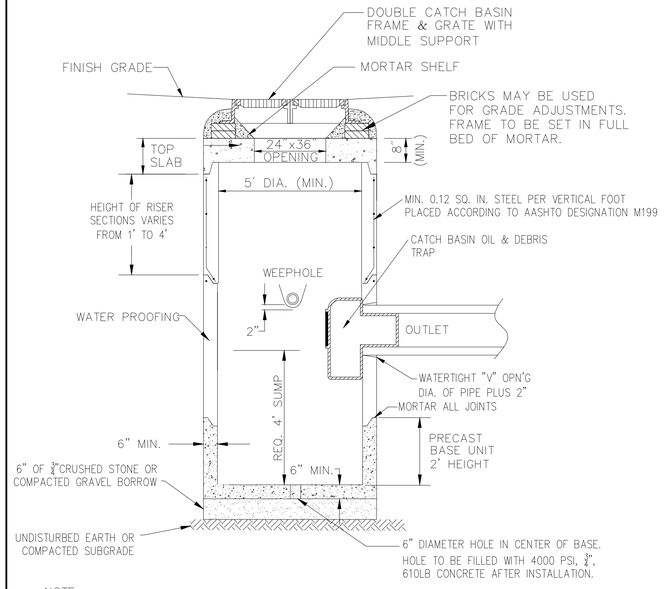
CONDUIT IN SIDEWALK

SCALE: N.T.S.



CONDUIT CROSSING ROADWAY/DRIVEWAY

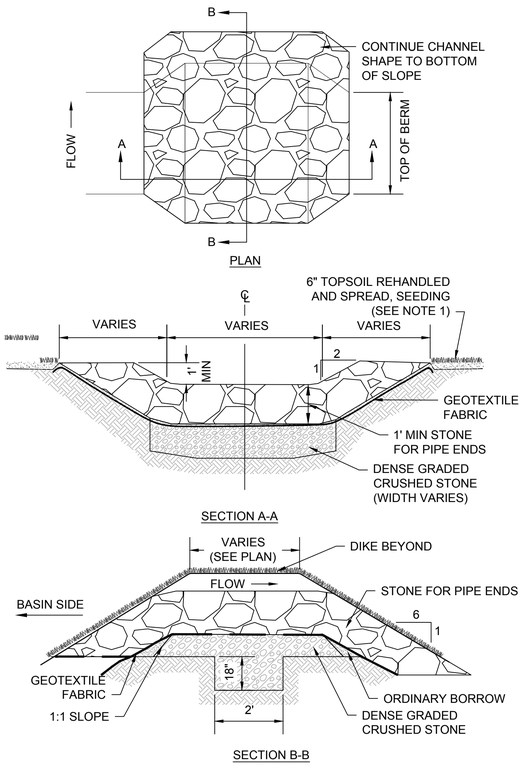
SCALE: N.T.S.



NOTE:
ALL CONCRETE STRUCTURES SHALL BE CAPABLE OF WITHSTANDING H20 LOADING

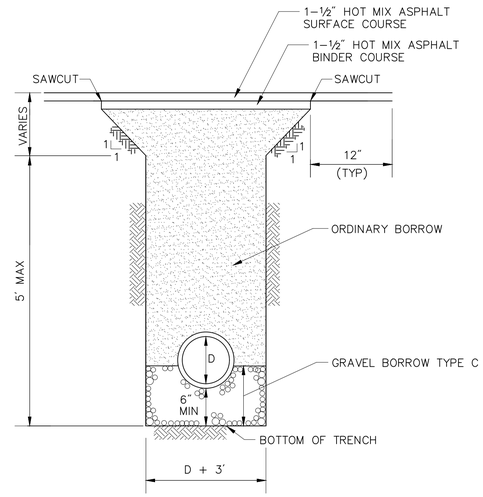
SPECIAL CATCH BASIN DETAIL – DCBCI

NTS



OVERFLOW STONE SPILLWAY

SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 5 2015



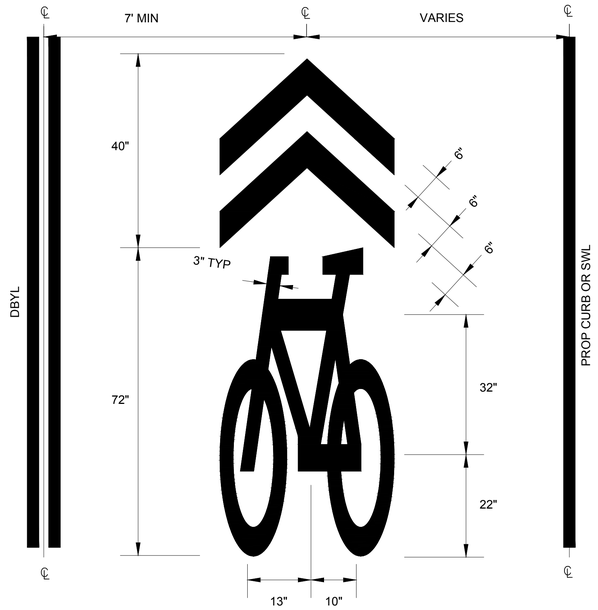
TRENCH DETAIL IN EXISTING HOT MIX ASPHALT

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: TRENCH-04

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

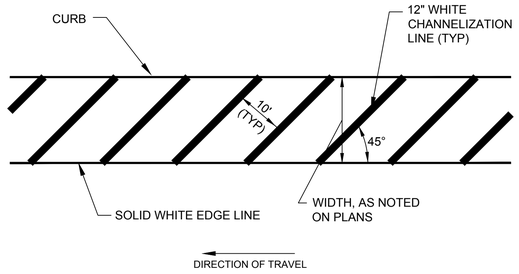
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	87	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



NOTES:
1. SEE MUTCD FIGURE 9C-9 FOR MORE INFORMATION.
2. SHARED LANE MARKINGS SHALL BE PREFORMED THERMOPLASTIC.

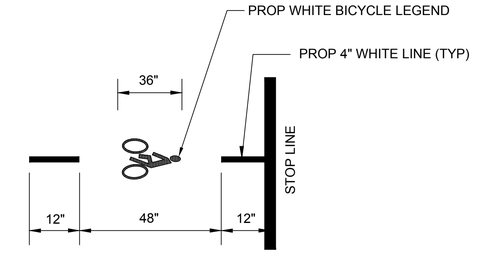
SHARROW PAVEMENT MARKING LAYOUT



NOTES:
1. ALL 12" LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (e.g. TWO - 6" LINES) WILL BE ACCEPTED.
2. MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC

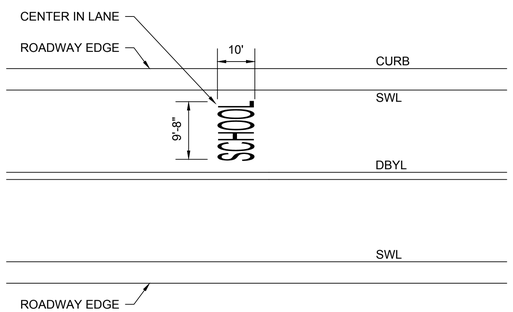
CHANNELIZED MARKINGS - EDGE OF ROADWAY FOR ROADWAYS 40MPH OR LESS

SCALE: NTS DWG: PM-15 DATE: OCT 2015



NOTE:
BICYCLE LEGEND SHALL CONFORM TO THE 2004 EDITION OF STANDARD HIGHWAY SIGNS AND SCALED APPROPRIATELY TO OBTAIN REQUIRED HEIGHT OF MARKINGS.

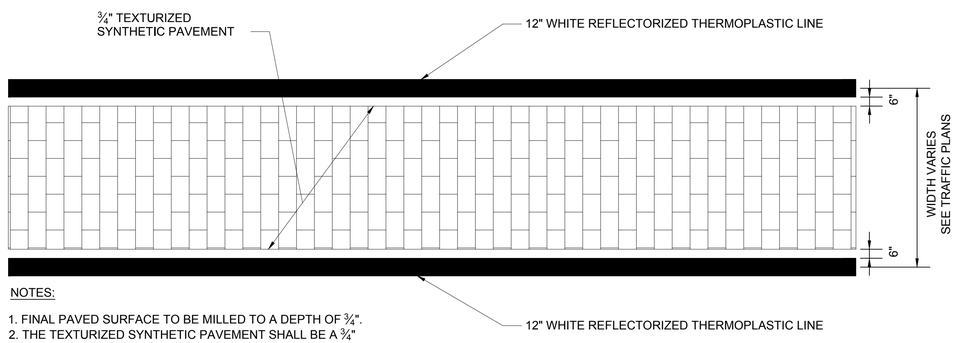
BICYCLE LEGEND DETAIL



NOTES:
1. PROP MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC

SCHOOL ZONE PAVEMENT MARKING DETAIL

SCALE: N.T.S. DWG: PM-08 DATE: APRIL 2013

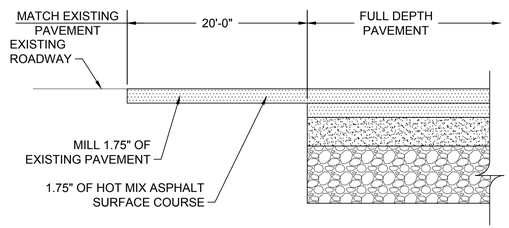


NOTES:

1. FINAL PAVED SURFACE TO BE MILLED TO A DEPTH OF ¾".
2. THE TEXTURIZED SYNTHETIC PAVEMENT SHALL BE A ¾" HOT-APPLIED RESIN BASED COMPOUND WITH BRICK RED COLOR THROUGHOUT.

TEXTURIZED SYNTHETIC PAVEMENT AT CROSSWALKS

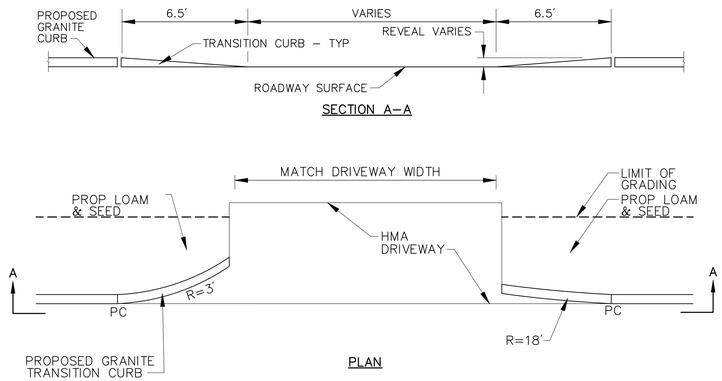
SCALE: N.T.S.



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

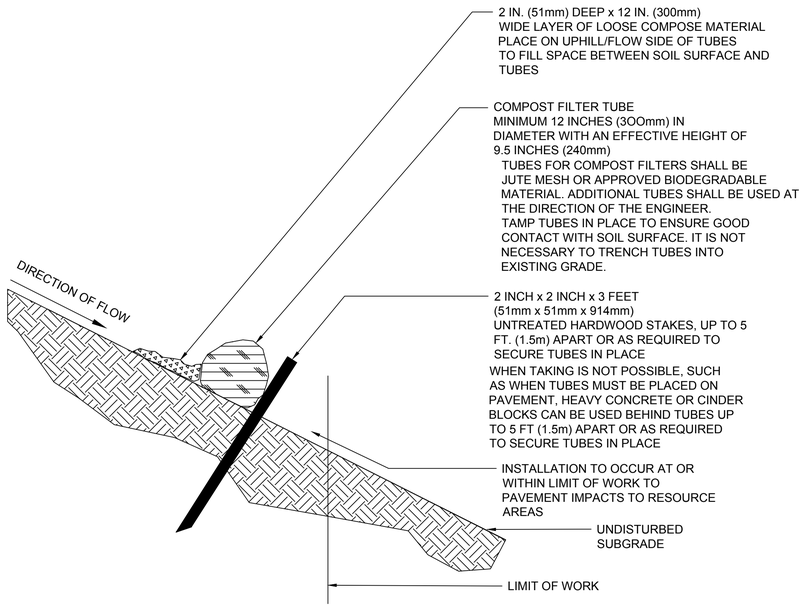
SCALE: N.T.S.

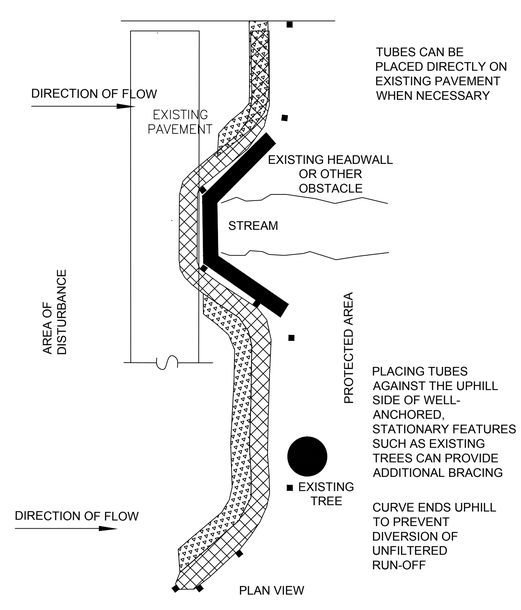


TRANSITION CURB FOR DRIVEWAYS							
NO	BASELINE / STATION	ROADWAY GUTTER	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D2	MAIN STREET 111+88.07 LT	–0.7%	4"	4'7"	4"	10'7"	265.77
D4	MAIN STREET 113+84.11 LT	0.6%	4"	4'7"	4"	10'7"	265.23
D5	MAIN STREET 115+28.28 LT	3.6%	4"	4'7"	4"	10'7"	268.42
D6	MAIN STREET 116+36.93 LT	3.9%	4"	4'7"	4"	10'7"	272.59
D8	MAIN STREET 117+70.50 LT	2.7%	4"	4'7"	4"	10'7"	277.07
D9	MAIN STREET 119+23.46 LT	2.0%	4"	4'7"	4"	10'7"	280.43
D12	MAIN STREET 121+56.03 LT	5.6%	4"	4'7"	4"	10'7"	289.12
D14	MAIN STREET 130+85.00 LT	1.4%	6"	5'10"	6"	15'11"	317.66

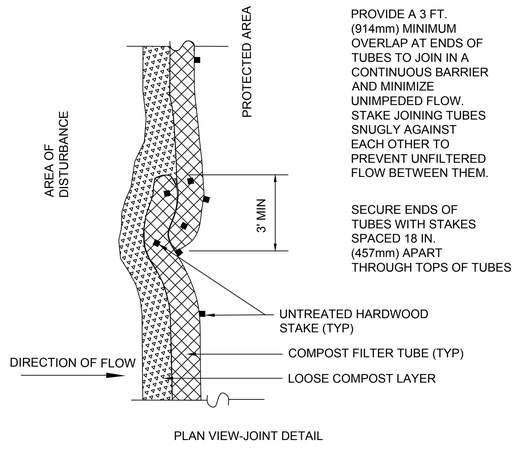
TYPICAL HMA DRIVEWAY WITH CURVED TRANSITION CURB AND NO SIDEWALK

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE–09



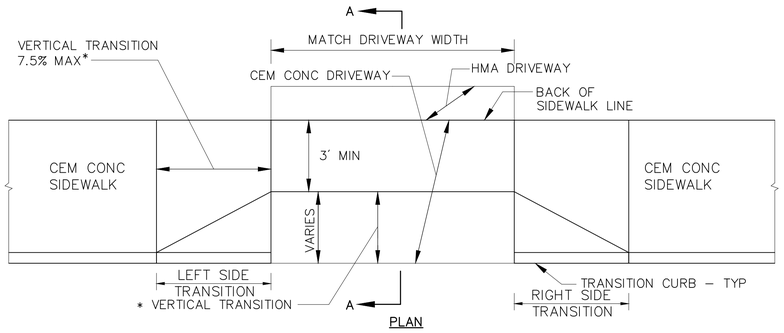


GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL, OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.

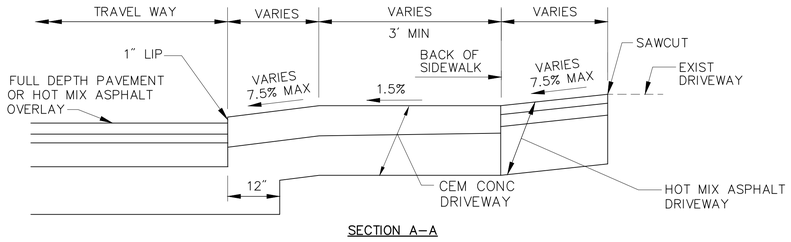


SINGLE COMPOST FILTER TUBE DETAIL

SCALE: N.T.S.



PLAN



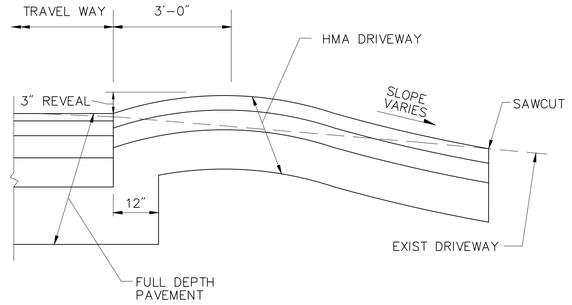
SECTION A-A

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO.	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D15	MAIN STREET 131+85.01 LT	0.5%	5.5'	6"	7'8"	3"	3'3"	317.75
D16	MAIN STREET 132+29.71 LT	0.5%	5.5'	3"	3'3"	6"	7'8"	317.80
D20	MAIN STREET 140+16.90 RT	0.2%	5.5'	6"	7'8"	6"	6'6"	304.30
D21	MAIN STREET 140+93.51 RT	0.5%	5.5'	6"	7'8"	6"	6'6"	304.62
D28	MAIN STREET 147+57.27 RT	0.2%	7.5'	3"	3'10"	6"	6'6"	313.36

* TOLERANCE FOR CONSTRUCTION ±0.5%

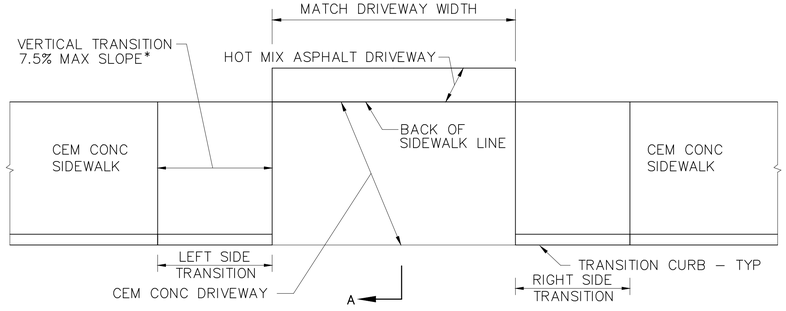
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND GRANITE TRANSITION CURB -TYPE I

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-04

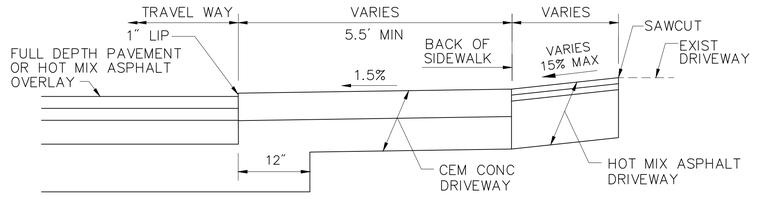


TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK TYPE I

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-02



PLAN



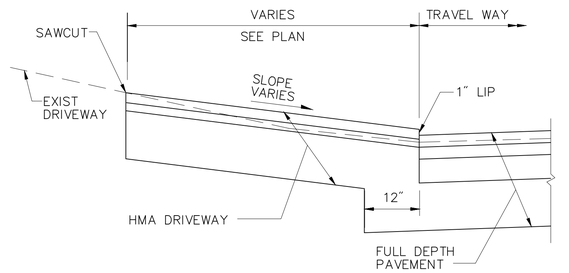
SECTION A-A

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO.	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D29	MAIN STREET 147+93.62 RT	0.2%	7.2'	6"	6'6"	3"	3'3"	313.44
D31	MAIN STREET 148+69.19 RT	-0.5%	6'	6"	6'6"	6"	7'8"	313.21
D33	MAIN STREET 149+85.25 RT	-0.5%	6'	6"	6'6"	6"	7'8"	312.62
D34	MAIN STREET 150+67.61 RT	0.1%	6'	6"	7'8"	6"	6'6"	312.43
D43	CORDAVILLE ROAD 708+92.13 LT	5.6%	5.5'	6"	6'6"	6"	15'0"	299.82
D45	CORDAVILLE ROAD 707+89.06 LT	5.5%	5.5'	6"	6'6"	6"	15'0"	294.13

* TOLERANCE FOR CONSTRUCTION ±0.5%

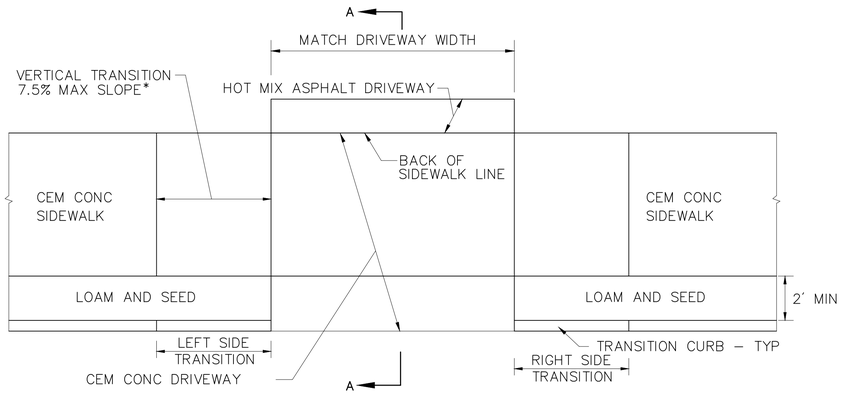
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND GRANITE TRANSITION CURB -TYPE II

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-05

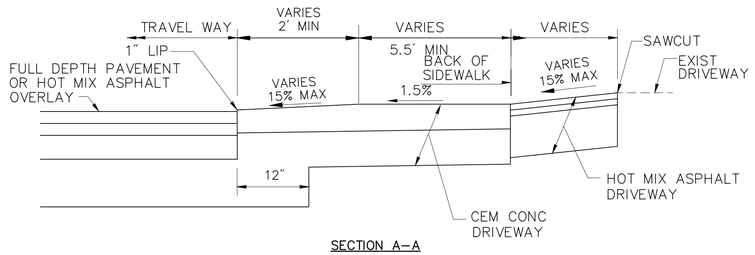


TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK TYPE II

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-03



PLAN



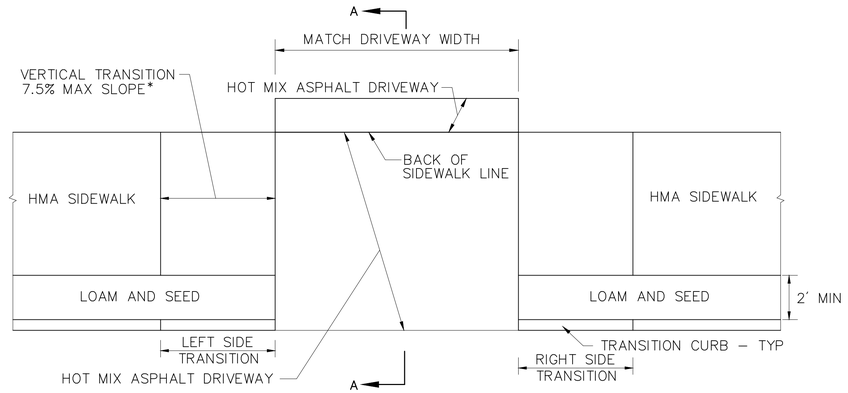
SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

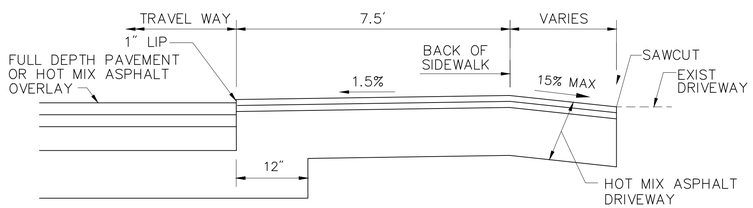
TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO.	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D13	MAIN STREET 129+65.43 RT	2.2%	5'	6"	11'0"	6"	6'6"	315.31
D23	MAIN STREET 145+33.98 RT	2.3%	5'	6"	11'0"	6"	6'6"	310.23
D25	MAIN STREET 146+65.79 RT	1.2%	5'	6"	9'0"	6"	6'6"	312.63
D35	MAIN STREET 151+57.43 RT	0.3%	6'	6"	7'8"	6"	6'6"	312.70
D40	CORDAVILLE ROAD 705+91.02 LT	3.9%	6'	6"	6'6"	6"	14'0"	283.55
D41	CORDAVILLE ROAD 707+31.53 LT	5.4%	6'	6"	6'6"	6"	15'0"	290.98

TYPICAL CONCRETE DRIVEWAY WITH GRASS BUFFER AND GRANITE TRANSITION CURB -TYPE II

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-05



PLAN



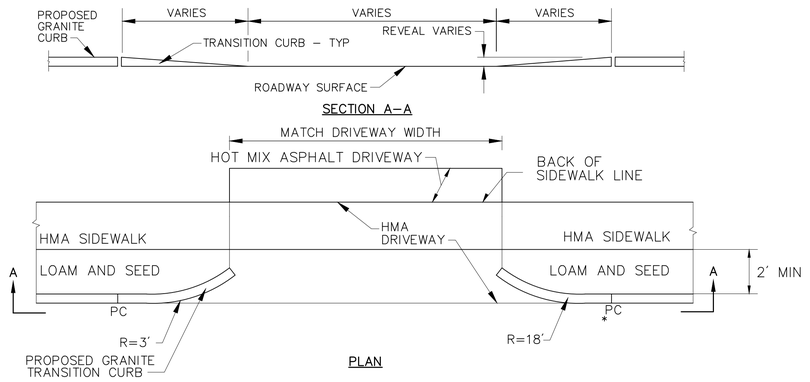
SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO.	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D1	MAIN STREET 106+69.44 RT	-1.8%	5'	6"	6'6"	6"	9'0"	276.50
D3	MAIN STREET 111+91.92 RT	-0.7%	5'	6"	6'6"	6"	7'8"	265.75
D7	MAIN STREET 117+62.85 RT	2.7%	5'	6"	11'0"	6"	6'6"	276.85

TYPICAL HMA DRIVEWAY WITH GRASS BUFFER AND GRANITE TRANSITION CURB -TYPE II

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE-05

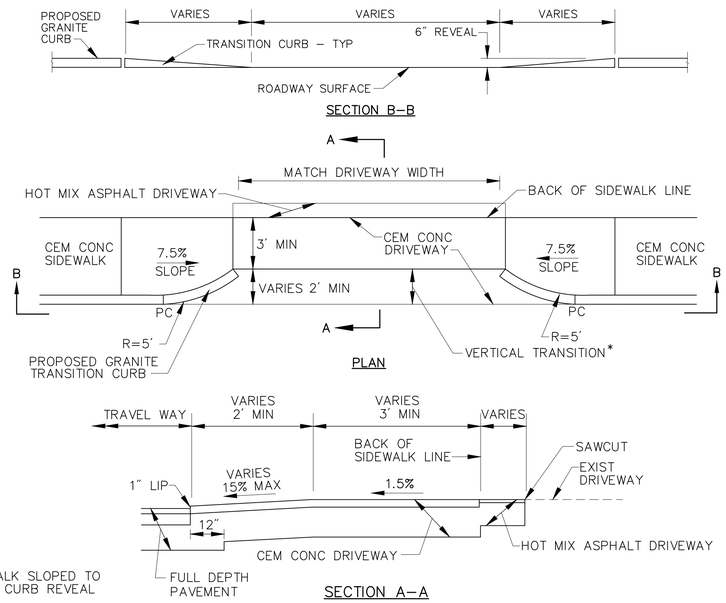


* DRIVEWAY AND SIDEWALK SLOPED TO MEET AT 1/2 OF THE CURB REVEAL

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D10	MAIN STREET 120+50.56 RT	4.4%	6'	6"	6'1"	6"	11'6"	283.90
D11	MAIN STREET 121+09.71 RT	5.4%	6'	6"	6'4"	6"	11'8"	286.61

TYPICAL HMA DRIVEWAY WITH GRASS BUFFER AND CURVED TRANSITION CURB

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE–09



* DRIVEWAY AND SIDEWALK SLOPED TO MEET AT 1/2 OF THE CURB REVEAL

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK								
NO	BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE REVEAL	RIGHT SIDE TRANSITION	℄ OPENING ELEVATION
D18	MAIN STREET 136+44.98 RT	–2.5%	5.5'	6"	6'6"	11'0"	6"	313.84
D19	MAIN STREET 139+55.54 RT	–1.0%	5.5'	6"	7'9"	7'11"	6"	304.80
D22	MAIN STREET 145+19.27 LT	2.3%	5'	6"	7'5"	9'11"	6"	309.89
D24	MAIN STREET 146+29.35 LT	1.6%	6'	6"	11'0"	10'7"	6"	312.11
D26	MAIN STREET 147+02.02 LT	2.3%	6'	6"	6'4"	6'4"	6"	312.22
D27	MAIN STREET 147+37.00 LT	2.3%	6'	6"	6'4"	11'9"	6"	313.03
D30	MAIN STREET 148+48.15 LT	0.0%	6'	6"	6'4"	11'9"	6"	313.46
D32	MAIN STREET 149+51.09 LT	–0.8%	6'	6"	11'0"	11'0"	6"	312.93
D36	MAIN STREET 151+86.38 LT	0.8%	6'	6"	6'9"	6'9"	6"	312.96
D38	MAIN STREET 154+36.10 LT	–5.0%	5'	6"	6'6"	6'8"	6"	304.84
D39	MAIN STREET 154+91.08 LT	3.6%	5'	6"	8'1"	8'2"	6"	302.91
D42	CORDAVILLE ROAD 707+47.37 RT	5.4%	5.5'	6"	7'4"	6'8"	6"	291.79
D44	CORDAVILLE ROAD 711+40.90 LT	1.4%	5.5'	6"	6'6"	9'0"	6"	299.82

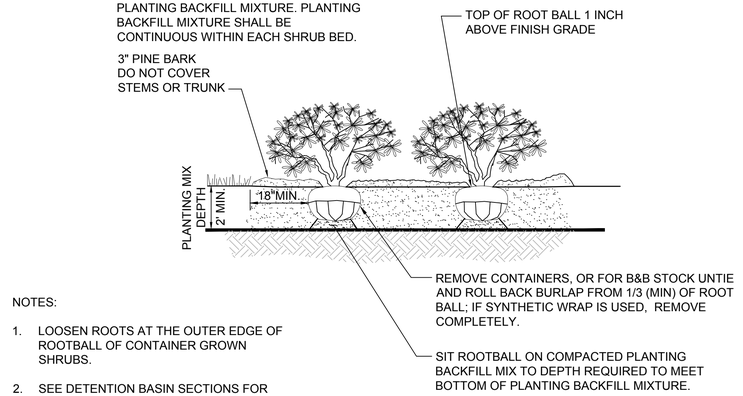
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND CURVED TRANSITION CURB

SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: DRIVE–09

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	92	154
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



NOTES:

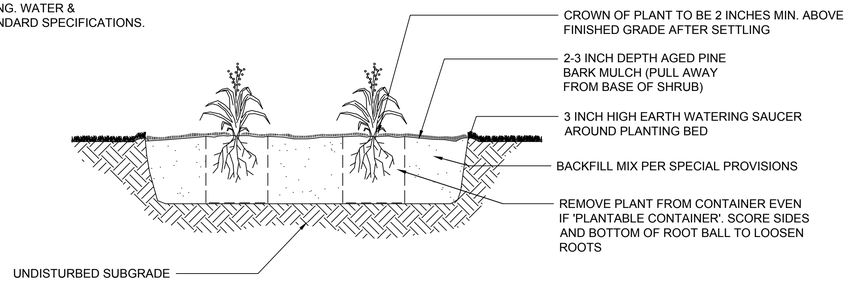
1. LOOSEN ROOTS AT THE OUTER EDGE OF ROOTBALL OF CONTAINER GROWN SHRUBS.
2. SEE DETENTION BASIN SECTIONS FOR TOPSOIL BACKFILL MIXTURE TYPE FOR SHRUB PLANTING IN DETENTION BASINS.

SHRUB PLANTING

SCALE: N.T.S.

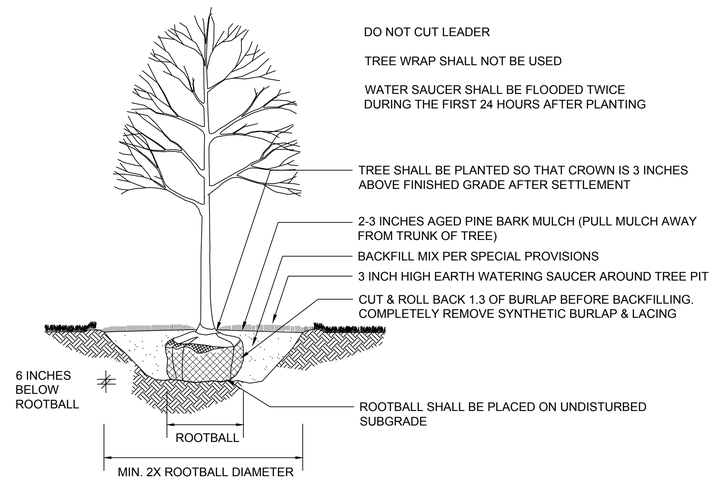
NOTES:

1. EXCAVATE TO REQUIRED DEPTH AND BACKFILL WITH PLANTING MIX.
2. RAISE AND REPLANT PLANTS THAT SETTLE MORE THAN 3 INCHES AFTER PLANTING AND WATERING IN.
3. WATER BY FLOODING TWICE IN FIRST TWO HOURS AFTER PLANTING. WATER & MAINTAIN AS PER STANDARD SPECIFICATIONS.



PERENNIAL PLANTING

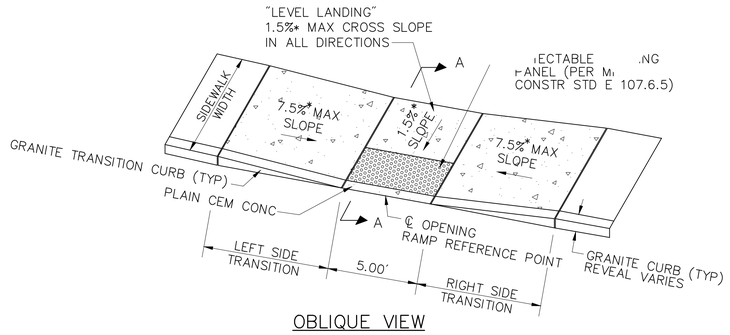
SCALE: N.T.S.



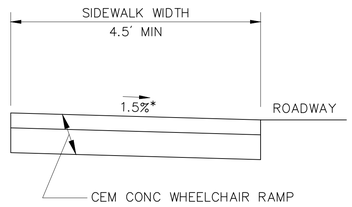
DECIDUOUS TREE PLANTING

SCALE: N.T.S.

WHEELCHAIR RAMP DETAILS



OBLIQUE VIEW



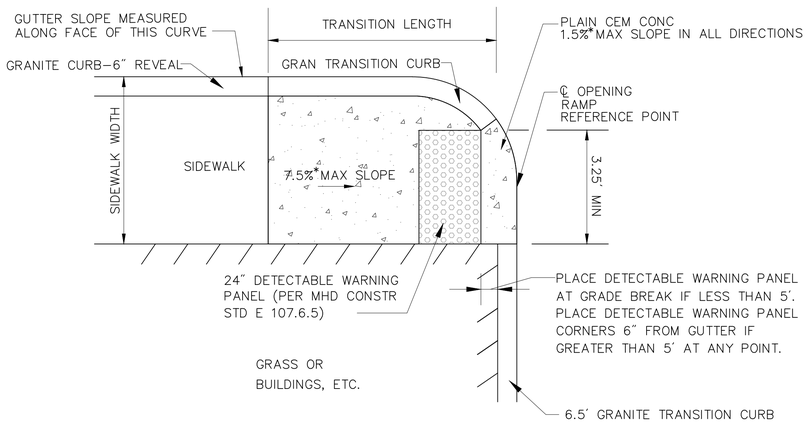
SECTION A–A

WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
4	MAIN STREET 114+87.03, 23.14' RT	5.8'	−7.5%	4"	15'0"	6"	6'6"	266.36
7	MAIN STREET 131+44.75, 33.43' RT	5.5'	0.7%	6"	6'6"	6"	7'8"	317.47
11	MAIN STREET 134+66.37, 22.75' RT	5.5'	−6.3%	6"	6'6"	6"	15'0"	316.55
16	MAIN STREET 139+30.13, 15.00' RT	5.5'	−0.9%	6"	6'6"	3"	3'10"	304.64
24	MAIN STREET 141+76.94, 25.49' LT	5.5'	0.4%	6"	6'6"	6"	7'8"	305.05
25	CORDAVILLE ROAD 710+38.96, 24.36' LT	5.5'	1.4%	6"	6'6"	6"	9'0"	305.69
27	MAIN STREET 141+77.59, 14.98' RT	7.0'	0.5%	6"	7'8"	6"	6'6"	305.05
28	CORDAVILLE ROAD 709+33.81, 17.31' LT	7.0'	6.7%	6"	6'6"	6"	15'0"	302.52
30	CORDAVILLE ROAD 709+21.47, 24.61' RT	7.0'	9.8%	6"	15'0"	6"	6'6"	302.22
31	MAIN STREET 143+03.63, 20.40' RT	7.0'	1.0%	6"	7'8"	6"	6'6"	305.68
35	MAIN STREET 149+07.64, 15.00' RT	6.0'	−0.5%	6"	6'6"	6"	7'6"	313.01

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
WIDTH LESS THAN 6.5 FT

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR–03



* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
SINGLE DIRECTION

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR–04

WHEELCHAIR RAMP DATA						
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	REVEAL	TRANSITION	℄ OPENING ELEVATION
1	MAIN STREET 110+10.83, 20.77' RT	5.0'	4.5%	6"	15'0"	268.32
2	MAIN STREET 110+72.08, 21.23' RT	5.0'	0.6%	6"	6'6"	266.91
3	MAIN STREET 114+39.26, 21.07' RT	7.7'	1.4%	6"	6'6"	265.35
9	MAIN STREET 132+76.75, 18.72' RT	5.5'	0.4%	6"	6'6"	318.05
13	MAIN STREET 137+50.76, 19.39' RT	6.0'	−3.2%	6"	14'0"	310.59
14	MAIN STREET 137+89.80, 19.90' RT	8.0'	−3.2%	6"	6'6"	309.38
17	ST. MARKS STREET 6+80.27, 15.72' LT	5.5'	3.5%	6"	6'6"	327.01

DETECTABLE WARNING PANELS

NOTES:

1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED WHEELCHAIR RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MHD CONSTRUCTION STANDARD E 107.6.5.
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THERE MUST BE A MINIMUM 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE.
3. NO SEPARATE PAYMENT SHALL BE MADE FOR DETECTABLE WARNING PANELS, BUT ALL COSTS IN CONNECTION THERE WITH SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.

LEGEND

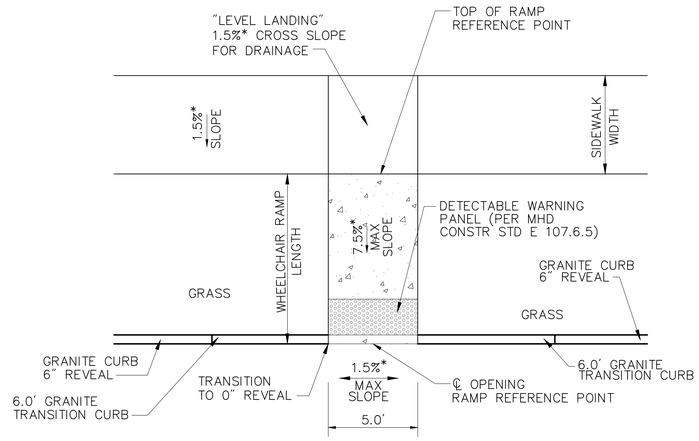
LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	94	154
PROJECT FILE NO. 604989			

WHEELCHAIR RAMP DETAILS

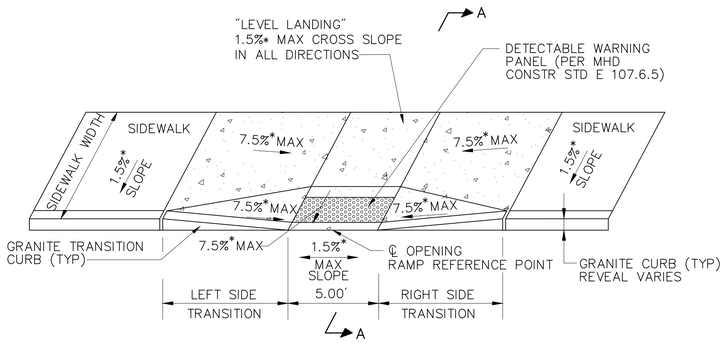


* TOLERANCE FOR CONSTRUCTION ±0.5%

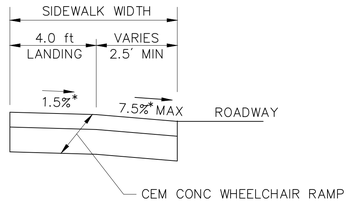
WHEELCHAIR RAMP WITH GRASS ADJACENT ON BOTH SIDES

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR-

WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION	TOP OF RAMP ELEVATION
15	MAIN STREET 139+71.42, 15.35' LT	5.0'	6"	--	6"	--	305.18	305.56
22	COMMON STREET 33+25.02, 7.77' RT	5.0'	6"	--	6"	--	306.08	306.46
23	COMMON STREET 33+38.14, 10.61' LT	5.0'	6"	--	6"	--	305.71	306.09
29	MAIN STREET 142+86.01, 25.00' LT	5.0'	6"	--	6"	--	305.86	306.12
33	CORDAVILLE ROAD 705+73.43, 15.19' LT	5.0'	6"	--	6"	--	282.85	283.23
34	MAIN STREET 149+07.51, 15.00' LT	6.0'	6"	--	6"	--	313.02	313.47
36	MAIN STREET 152+41.68, 16.74' LT	6.0'	6"	--	6"	--	313.01	313.40
37	MAIN STREET 152+47.39, 15.00' RT	6.0'	6"	--	6"	--	312.44	312.85
41	MAIN STREET 153+37.13, 30.58' RT	6.0'	6"	--	6"	--	310.18	310.63
43	MAIN STREET 154+64.30, 15.00' LT	5.0'	6"	--	6"	--	303.63	303.99



OBLIQUE VIEW



SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP WITH SIDEWALK WIDTH GREATER THAN 6.5 FT AND LESS THAN 12.0 FT

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR-02

WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
6	MAIN STREET 131+09.75, 15.00' RT	7.5'	-0.9%	6"	6'6"	6"	7'8"	317.78
10	MAIN STREET 133+08.60, 20.27' RT	9.2'	0.1%	6"	7'8"	6"	6'6"	318.14
12	MAIN STREET 135+01.84, 23.95' RT	7.2'	-1.3%	6"	9'0"	6"	6'6"	316.47
40	MAIN STREET 153+05.59, 32.08' RT	5.5'	3.3%	6"	6'6"	6"	14'0"	311.44
44	MAIN STREET 154+74.96, 16.59' RT	9.7'	-3.6%	6"	6'6"	3"	3'3"	303.24

DETECTABLE WARNING PANELS

NOTES:

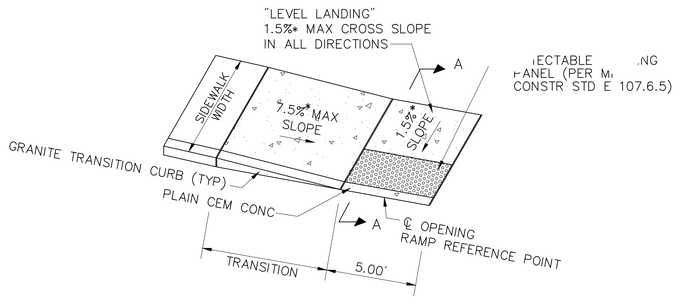
1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED WHEELCHAIR RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MHD CONSTRUCTION STANDARD E 107.6.5.
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THERE MUST BE A MINIMUM 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE.
3. NO SEPARATE PAYMENT SHALL BE MADE FOR DETECTABLE WARNING PANELS, BUT ALL COSTS IN CONNECTION THERE WITH SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.

LEGEND

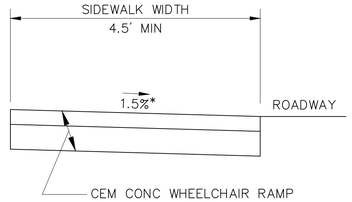
LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

WHEELCHAIR RAMP DETAILS



OBLIQUE VIEW



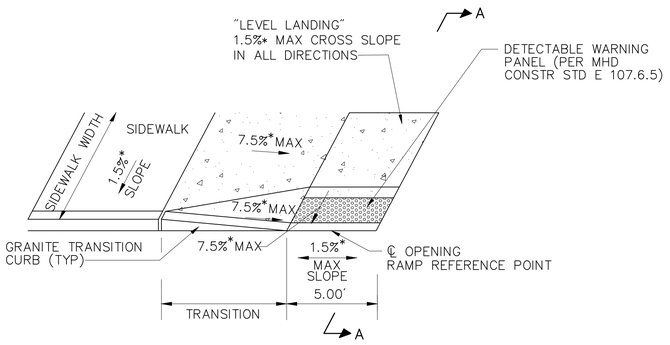
SECTION A–A

* TOLERANCE FOR CONSTRUCTION ±0.5%

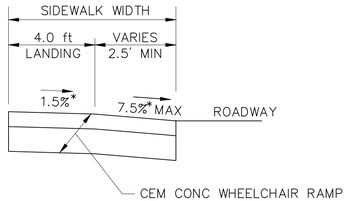
WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
5	MAIN STREET 131+10.81, 15.00' LT	5.5'	-0.9%	6"	--	6"	6'6"	317.89
8	MAIN STREET 131+63.67, 32.47' RT	5.5'	1.8%	6"	9'0"	6"	--	317.11
18	ST. MARKS STREET 7+18.17, 13.98' LT	5.5'	3.3%	6"	14'0"	6"	--	328.29
19	ST. MARKS STREET 7+16.07, 12.00' RT	5.5'	3.3%	6"	14'0"	6"	--	328.21
20	COMMON STREET 30+26.57, 7.50' RT	5.5'	7.4%	6"	--	6"	15'0"	327.95
21	COMMON STREET 30+30.36, 9.10' LT	5.5'	7.4%	6"	--	6"	6'6"	327.79
26	CORDAVILLE ROAD 710+25.69, 19.97' RT	5.5'	1.3%	6"	--	6"	9'0"	305.73
38	MAIN STREET 152+61.39, 29.35' LT	5.5'	5.0%	6"	15'0"	6"	--	313.46
39	MAIN STREET 153+08.43, 29.13' LT	5.5'	8.0%	6"	--	6"	6'6"	312.89
45	PARK STREET 60+62.44, 14.93' LT	5.5'	3.5%	3"	7'0"	6"	--	301.92

WHEELCHAIR RAMP WIDTH LESS THAN 6.5 FT

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR-03



OBLIQUE VIEW



SECTION A–A

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
32	CORDAVILLE ROAD 705+73.86, 20.57' RT	8.2'	4.8%	6"	15'0"	6"	--	282.57
42	PARK STREET 60+35.86, 16.58' RT	7.9'	7.2%	6"	--	6"	15'0"	303.90

WHEELCHAIR RAMP WITH SIDEWALK WIDTH GREATER THAN 6.5 FT AND LESS THAN 12.0 FT

SCALE: NOT TO SCALE
DATE: OCT 2008
DWG: WCR-02

DETECTABLE WARNING PANELS

NOTES:

1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED WHEELCHAIR RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MHD CONSTRUCTION STANDARD E 107.6.5.
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THERE MUST BE A MINIMUM 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE.
3. NO SEPARATE PAYMENT SHALL BE MADE FOR DETECTABLE WARNING PANELS, BUT ALL COSTS IN CONNECTION THERE WITH SHALL BE INCLUDED IN THE VARIOUS ITEMS BID.

LEGEND

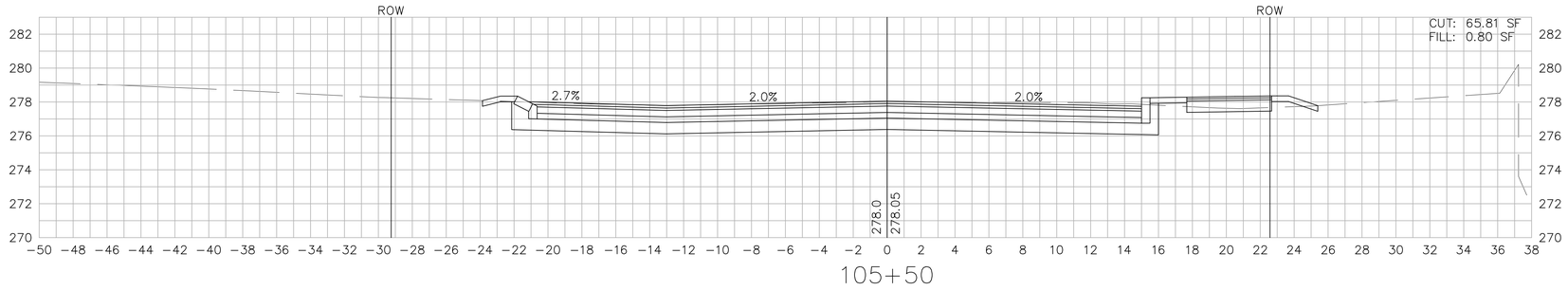
LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

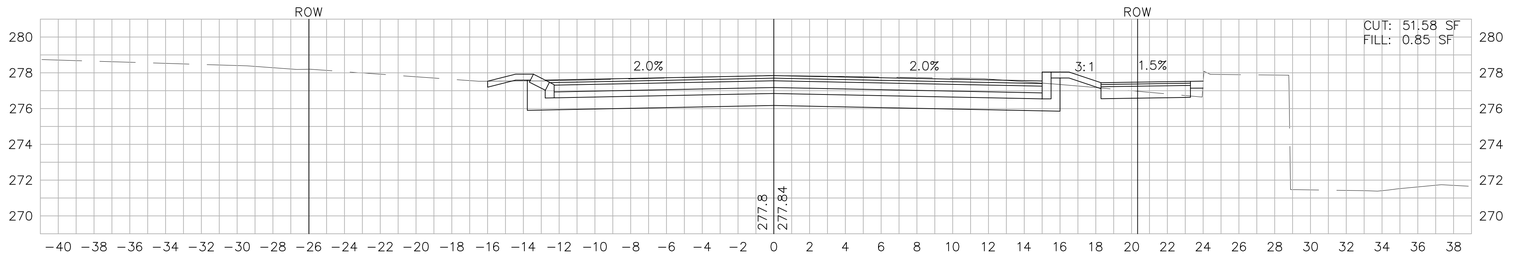
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	96	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

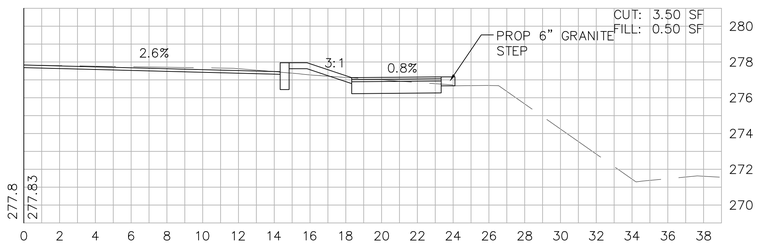


105+50

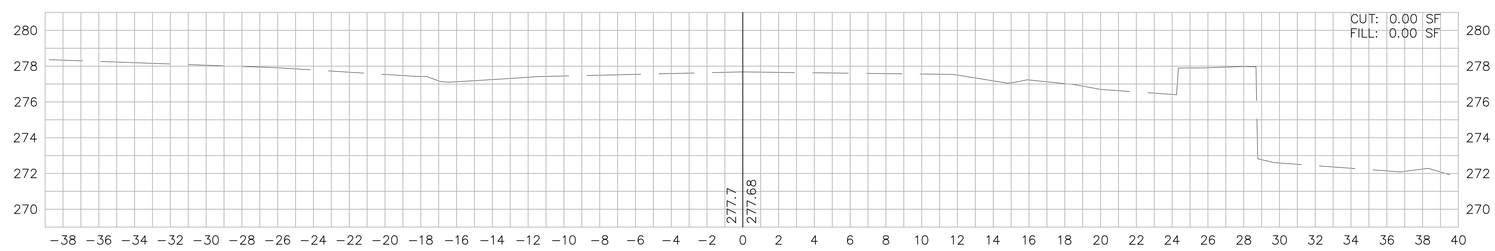
UP #53
105+43
24.6' LT



105+00



104+94



104+50

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

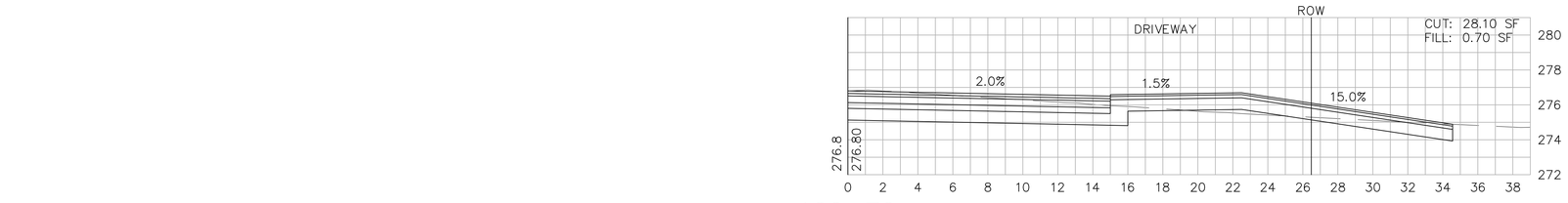
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	97	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

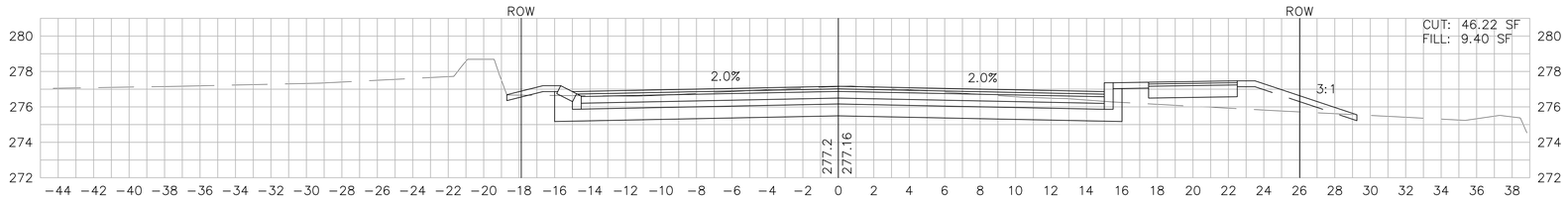
EX HYD
110+71
14.4' LT

UP #52
106+83
17.8' RT

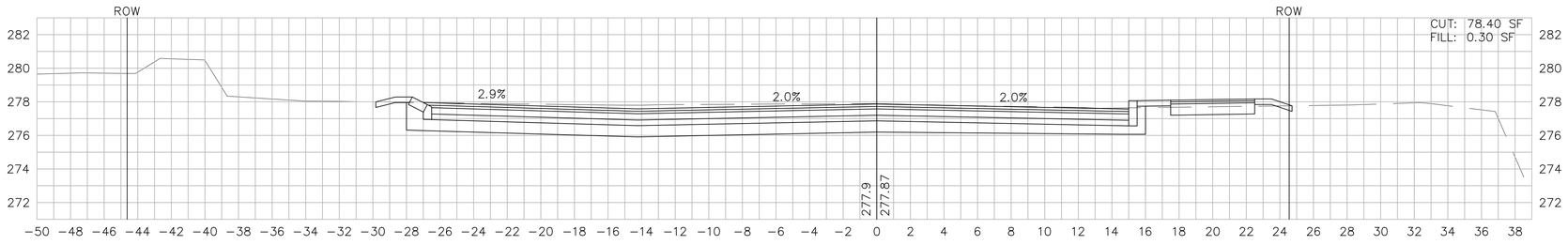
UP
106+85
18.0' RT



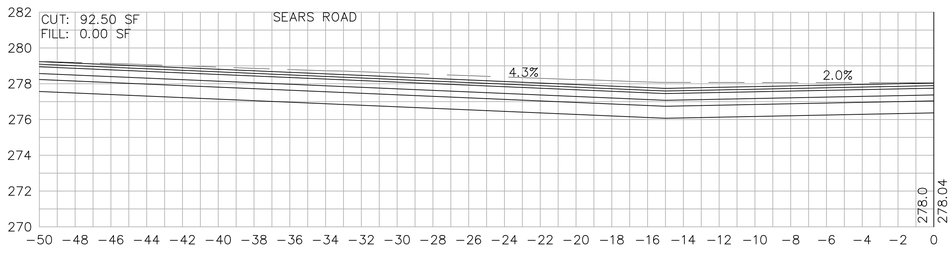
106+70



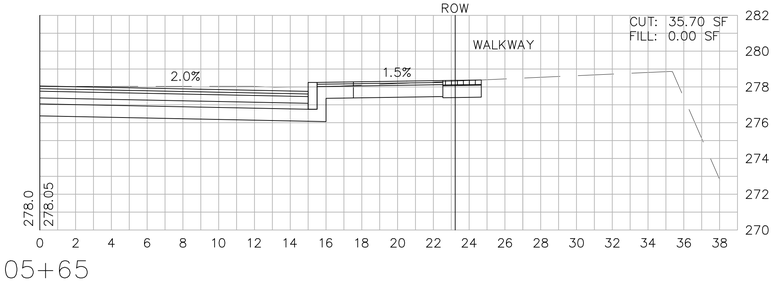
106+50



106+00



105+70



105+65

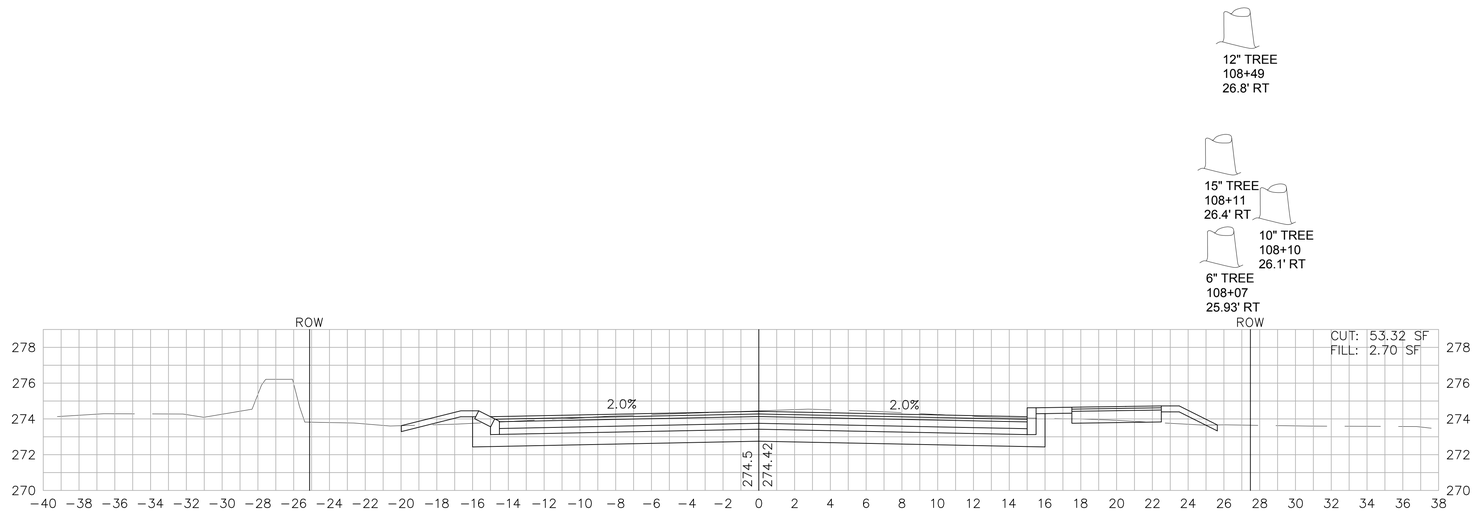
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

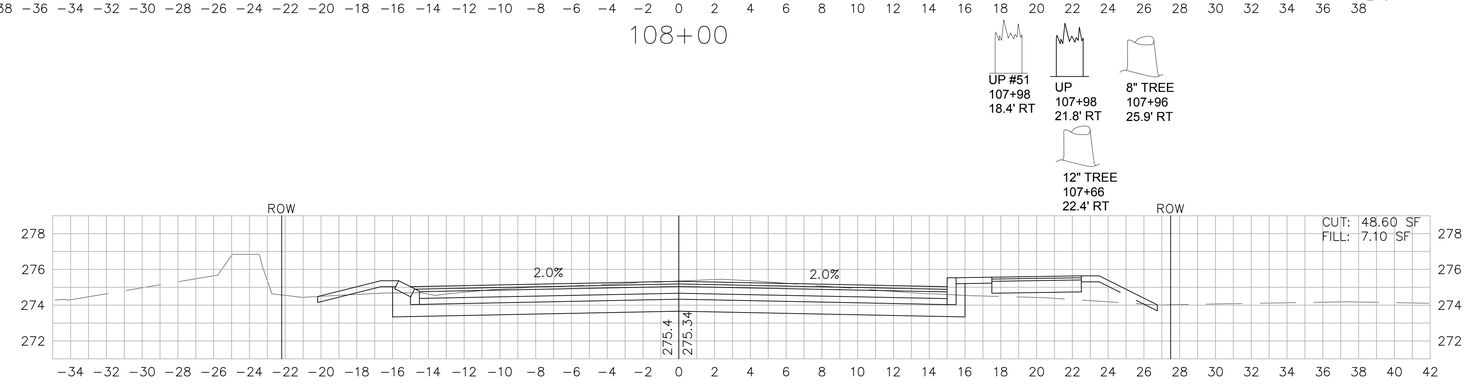
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	98	154
PROJECT FILE NO. 604989			

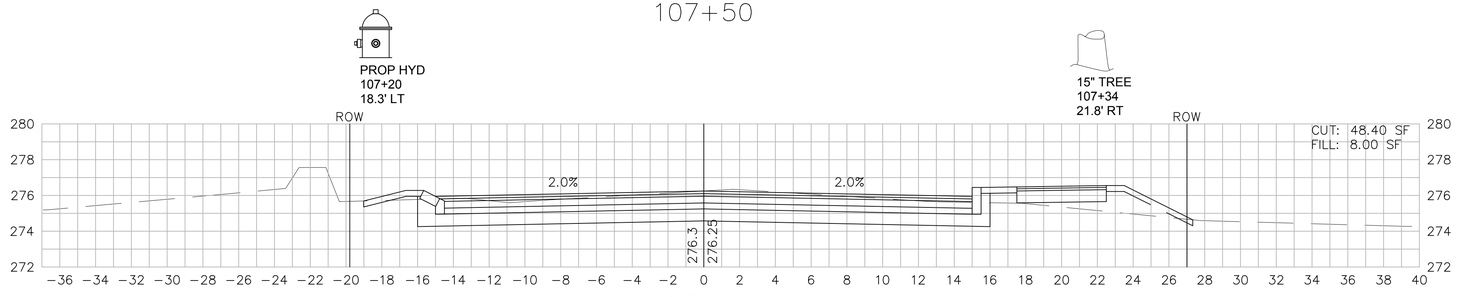
CROSS SECTIONS
MAIN STREET



108+00



107+50



107+00

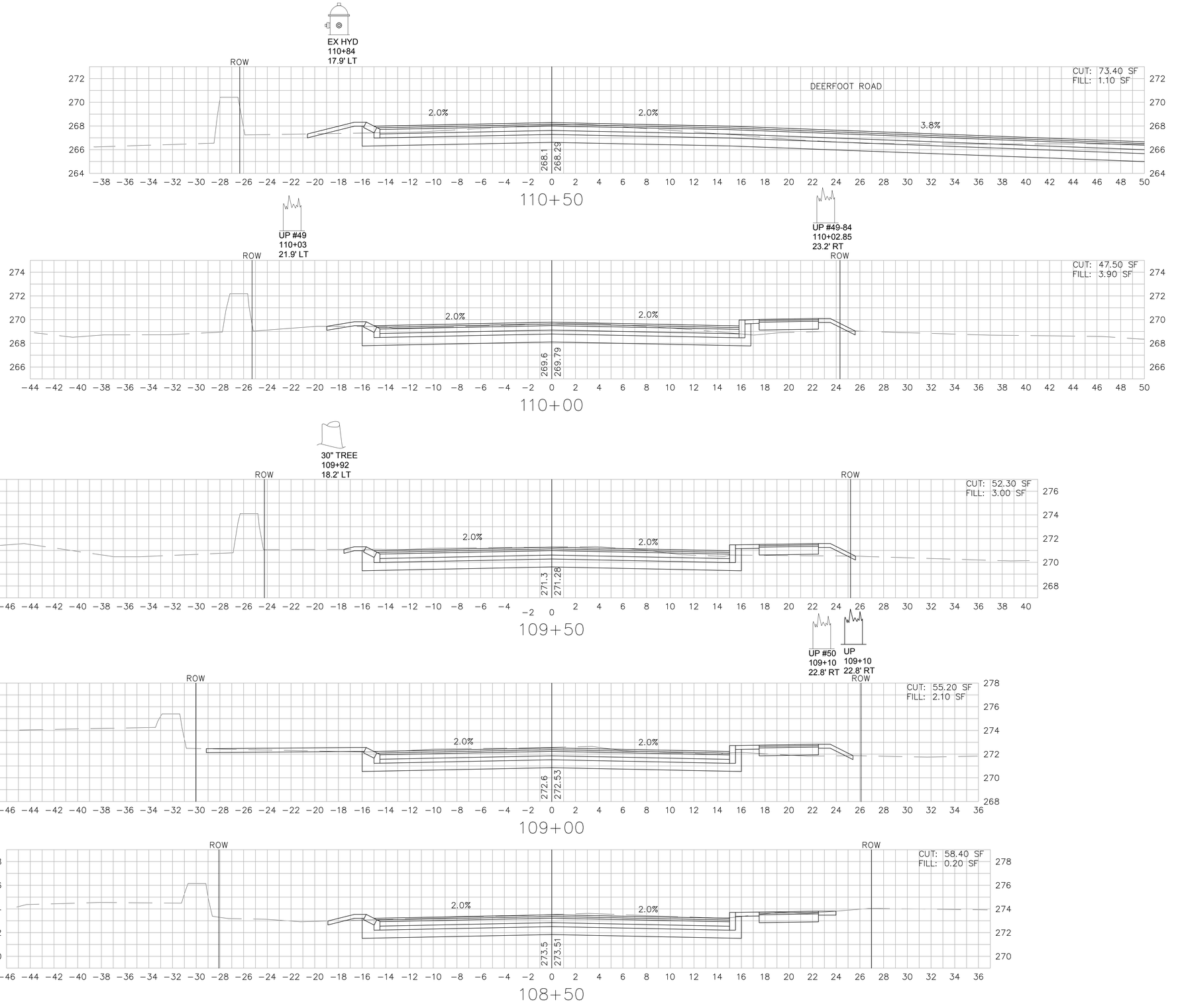
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	99	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

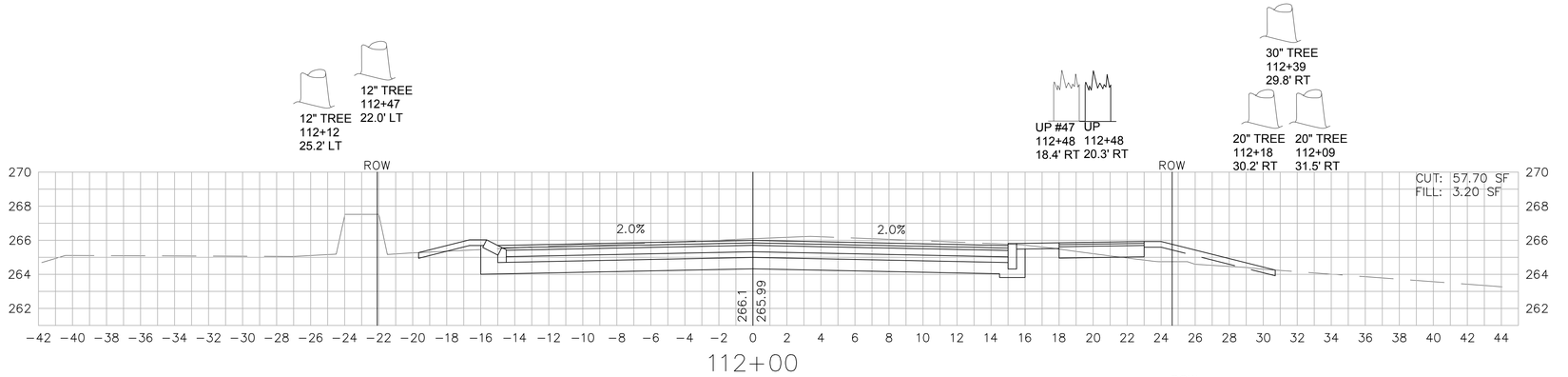


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	100	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



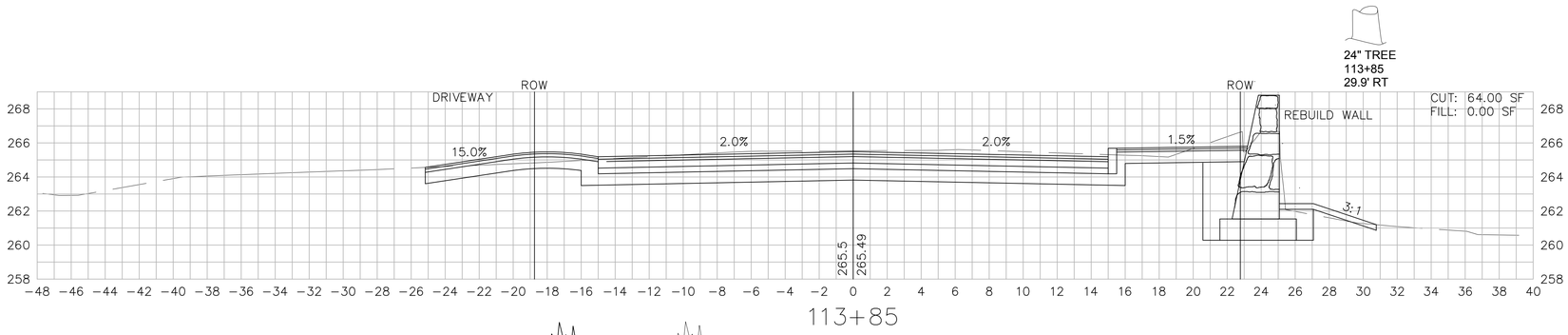
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

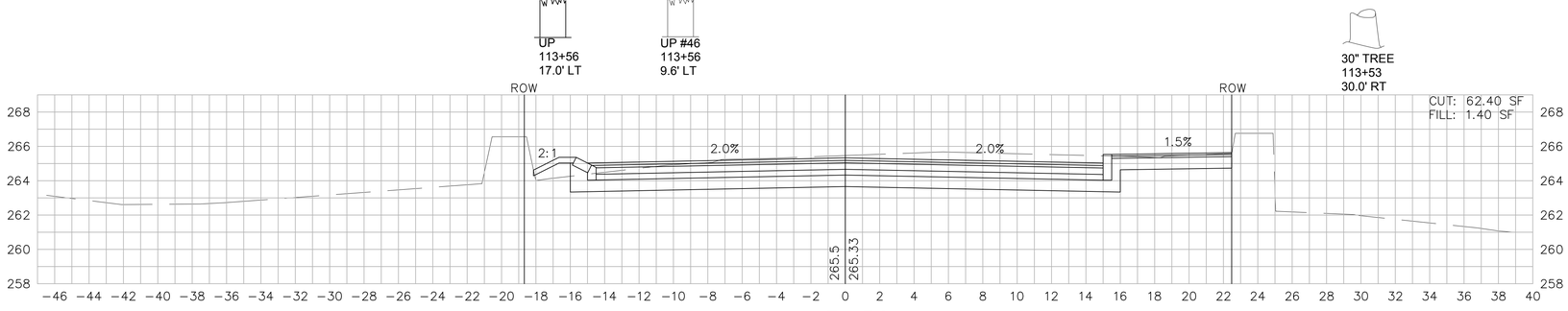
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	101	154
PROJECT FILE NO. 604989			

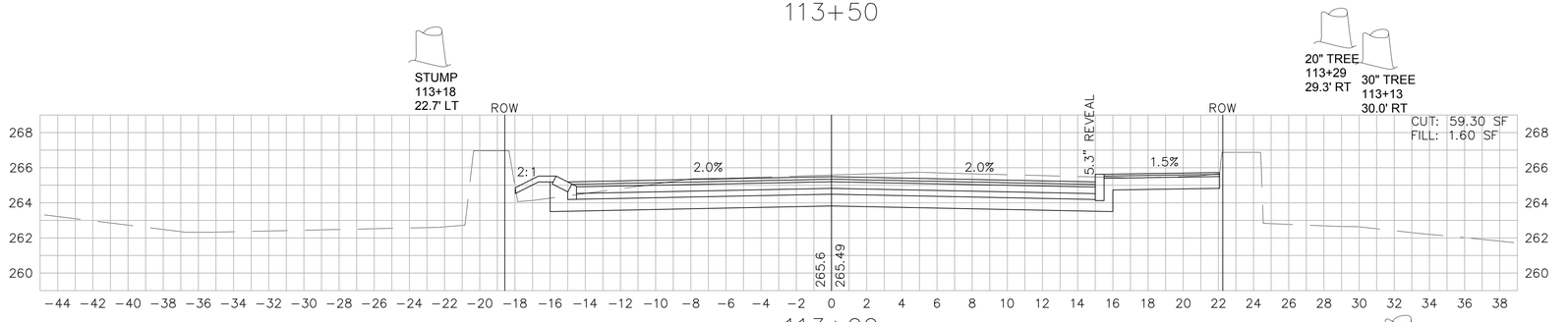
CROSS SECTIONS
MAIN STREET



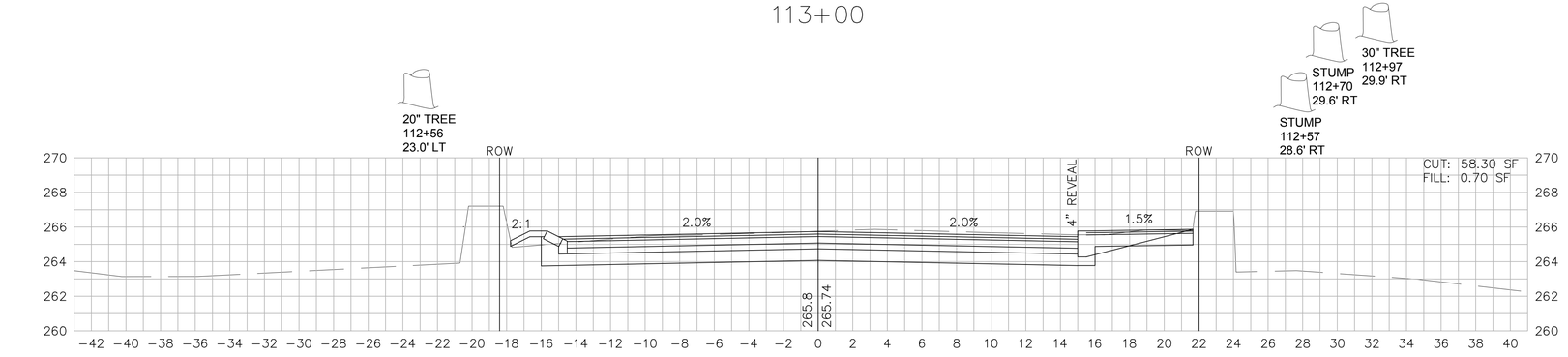
113+85



113+50



113+00



112+50

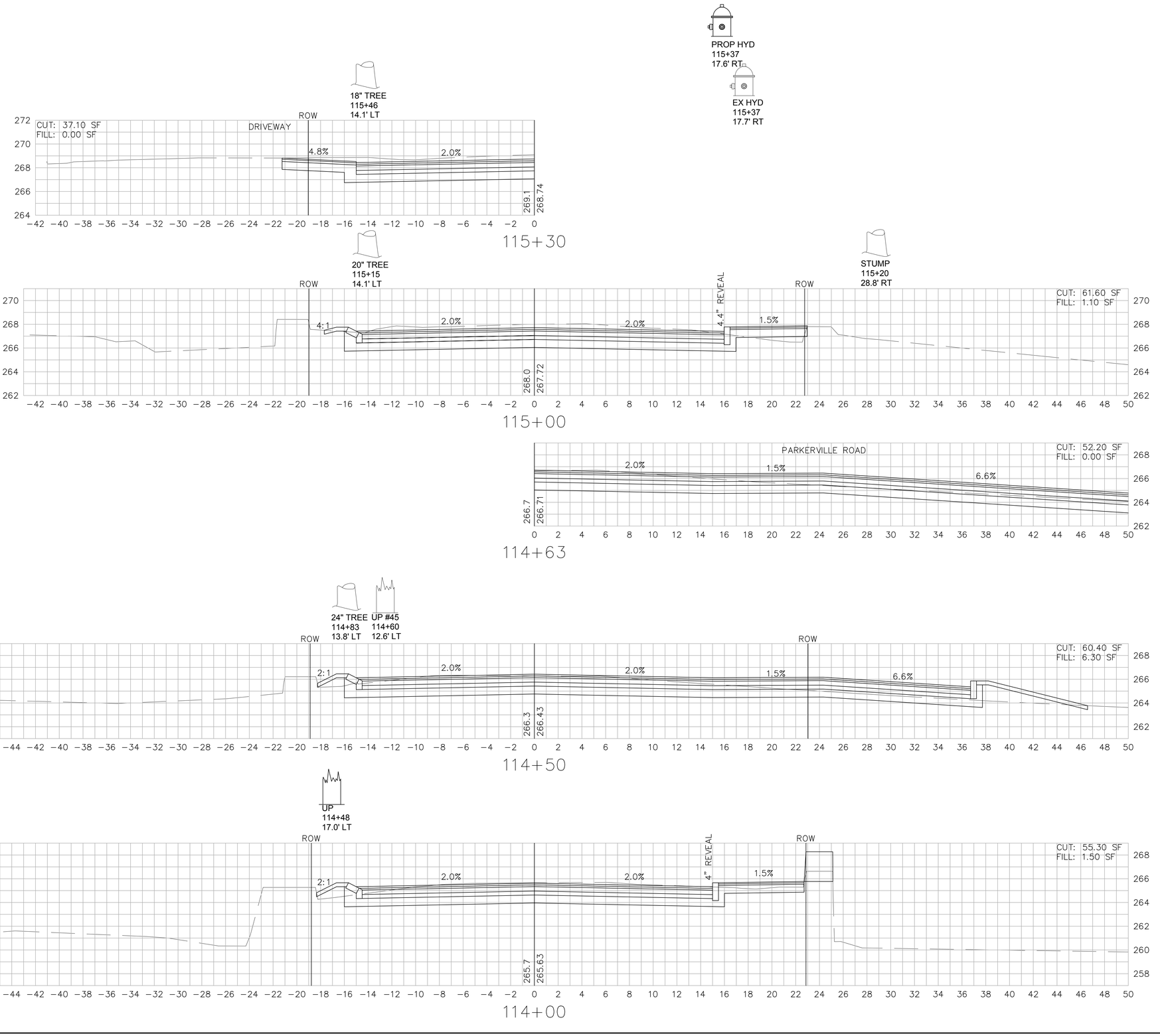
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	102	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

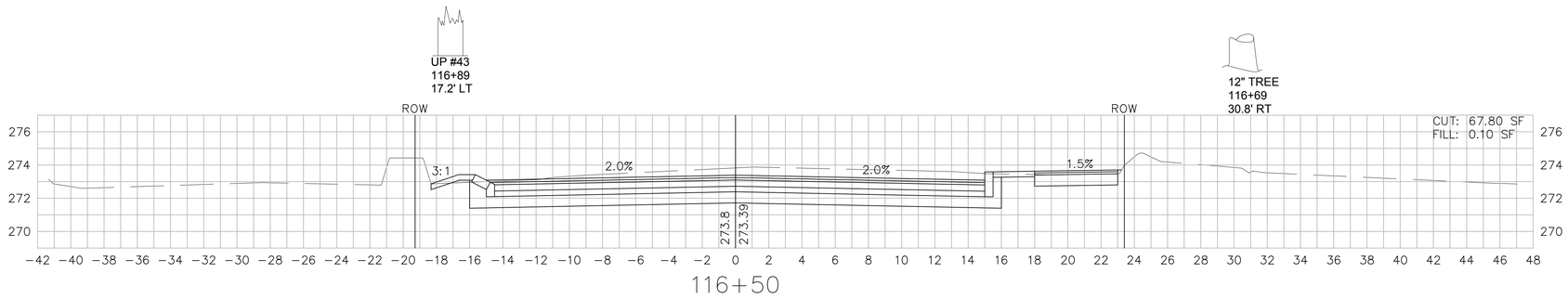


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

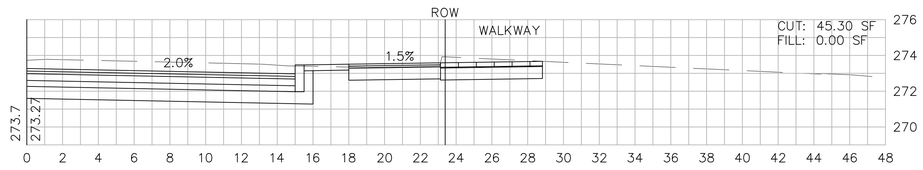
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	103	154
PROJECT FILE NO. 604989			

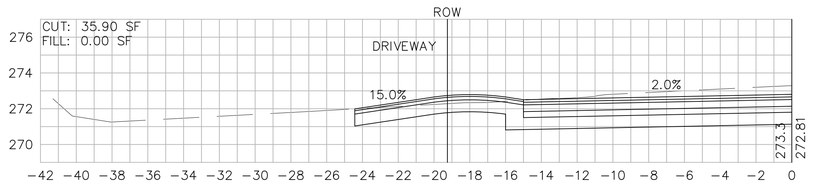
CROSS SECTIONS
MAIN STREET



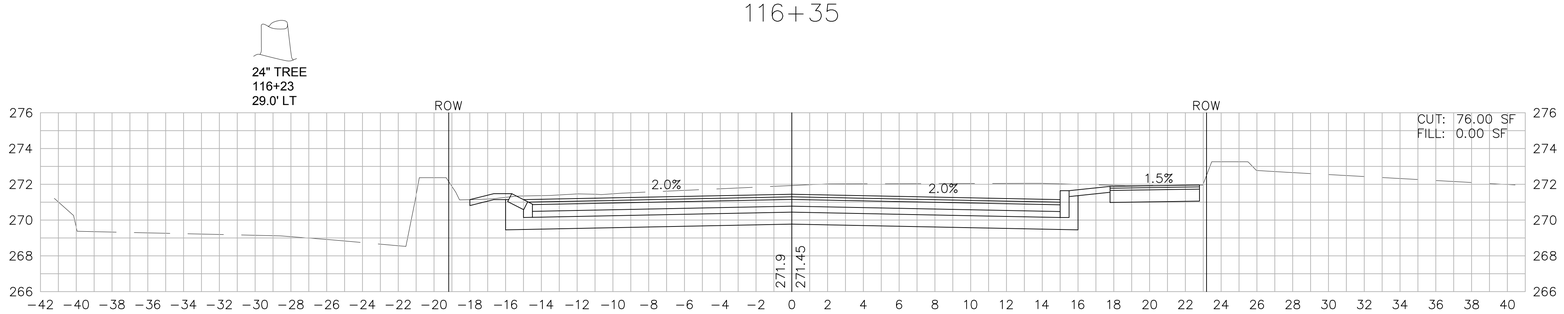
116+50



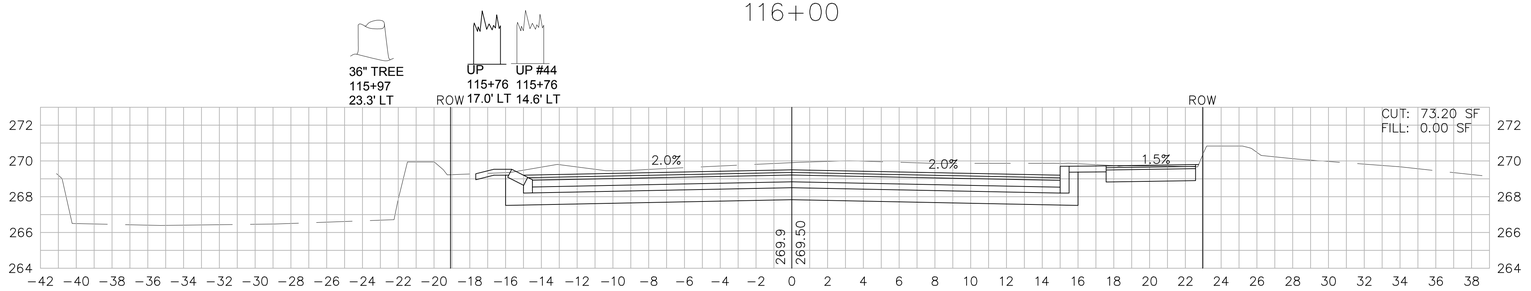
116+47



116+35



116+00



115+50

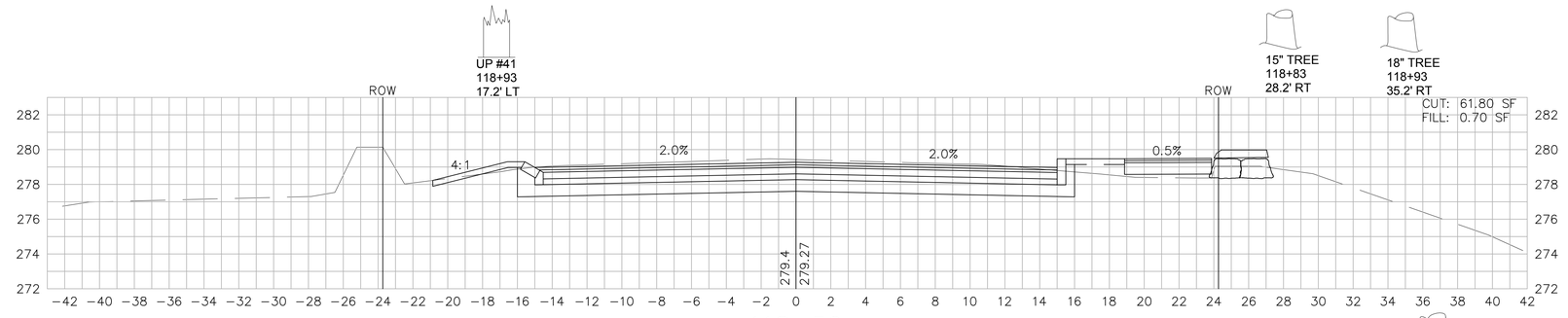
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	104	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

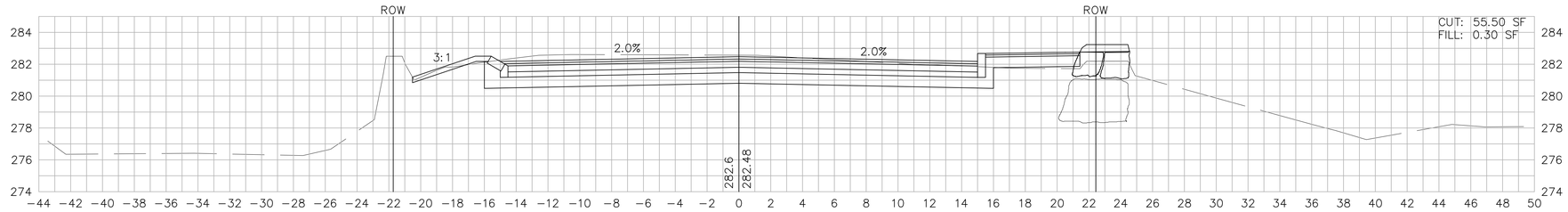
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	105	154
PROJECT FILE NO. 604989			

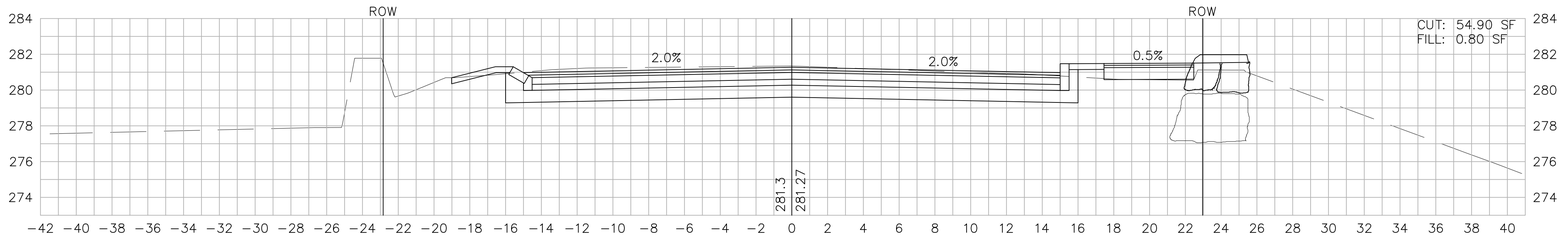
CROSS SECTIONS MAIN STREET

UP 120+01 19.0' LT
UP #40 120+01 15.5' LT

EX HYD 120+34 17.2' RT
PROP HYD 120+34 17.2' RT

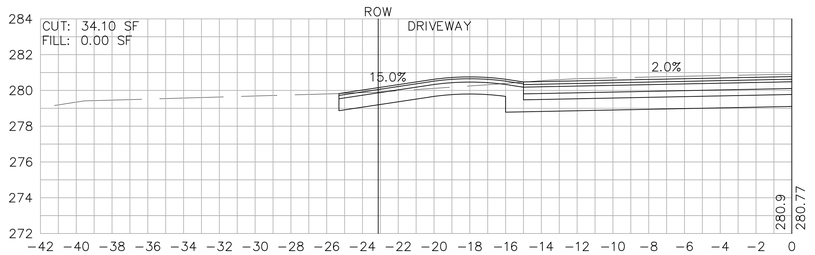


120+00



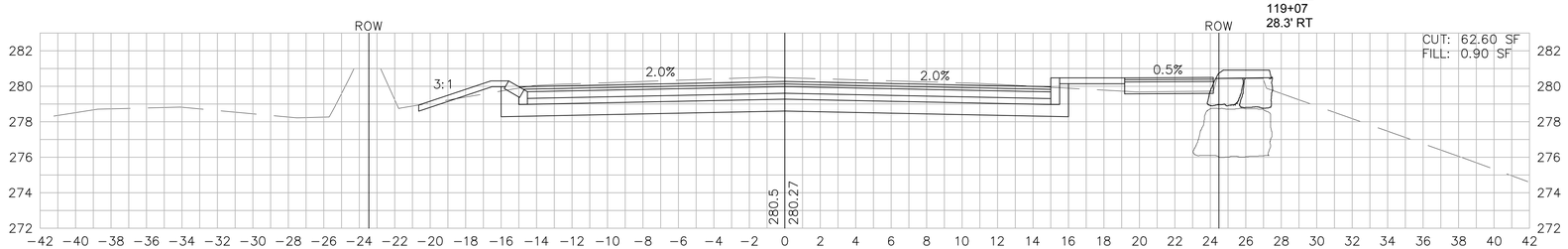
119+50

STUMP 119+30 28.8' RT
STUMP 119+40 29.2' RT



119+25

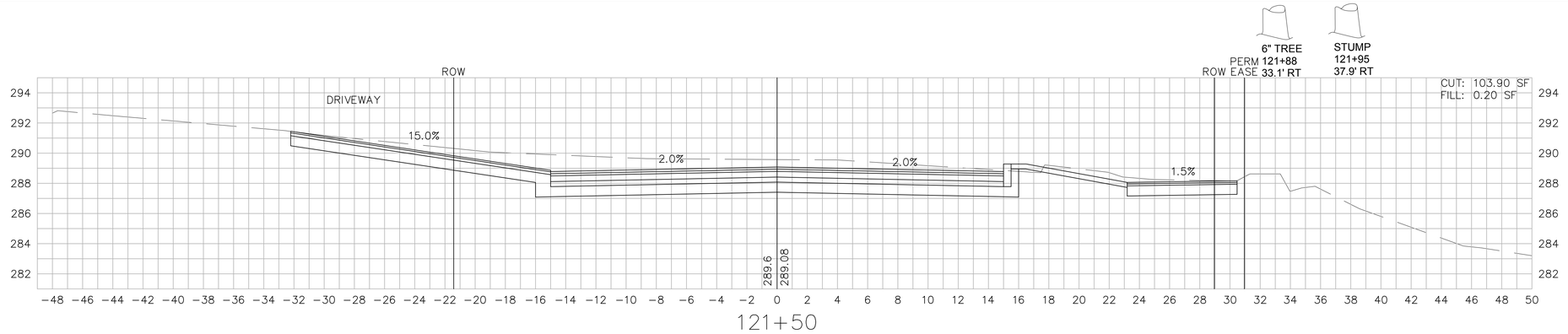
6" TREE 119+07 28.3' RT



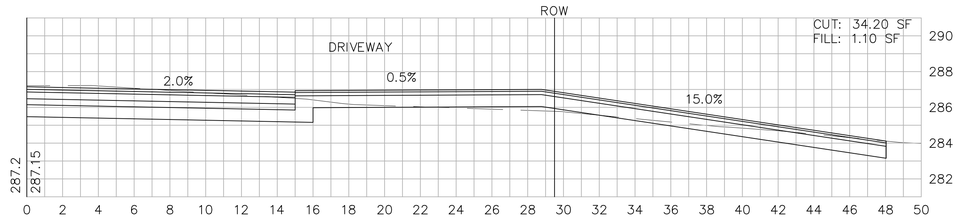
119+00

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

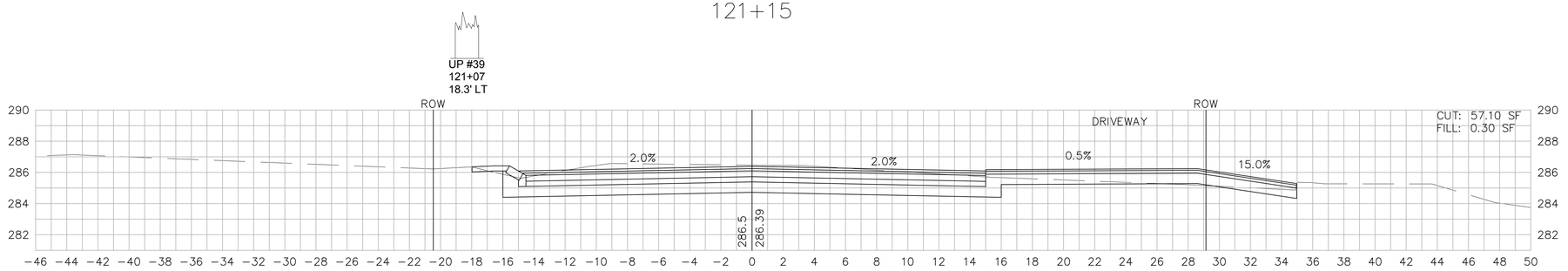
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg



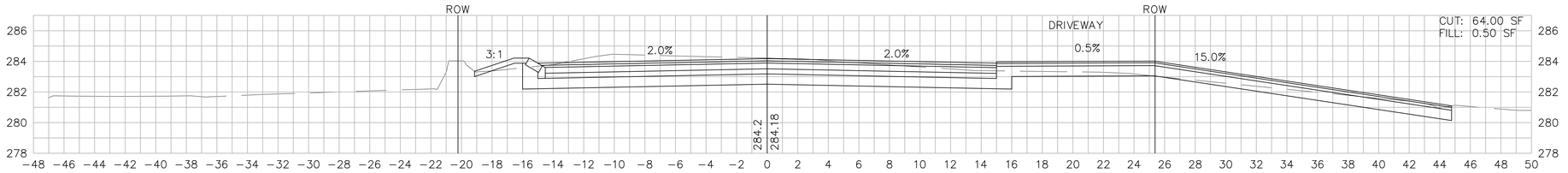
121+50



121+15



121+00



120+50

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	106	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

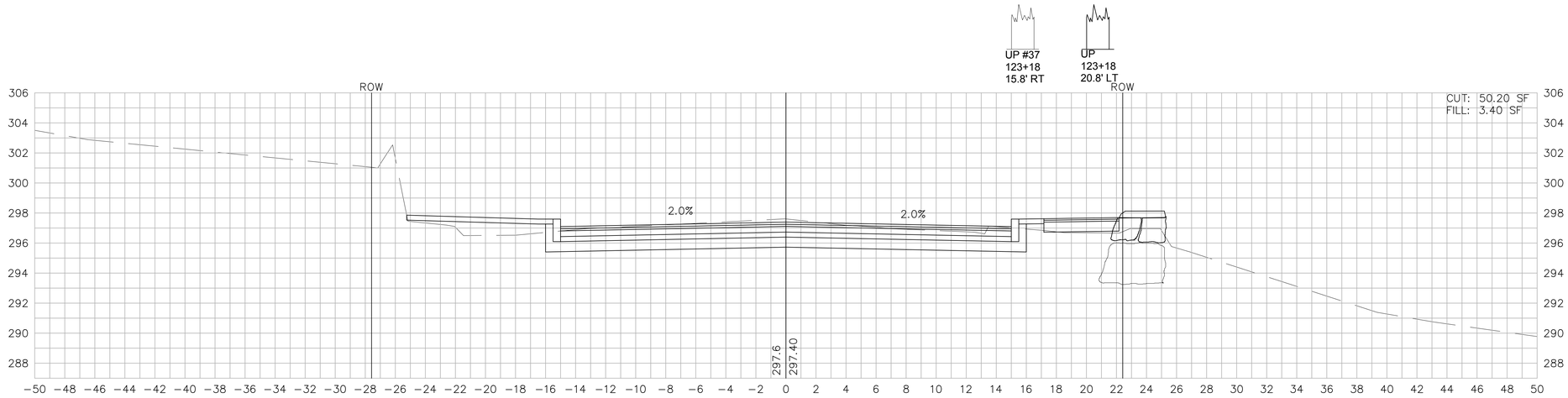
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

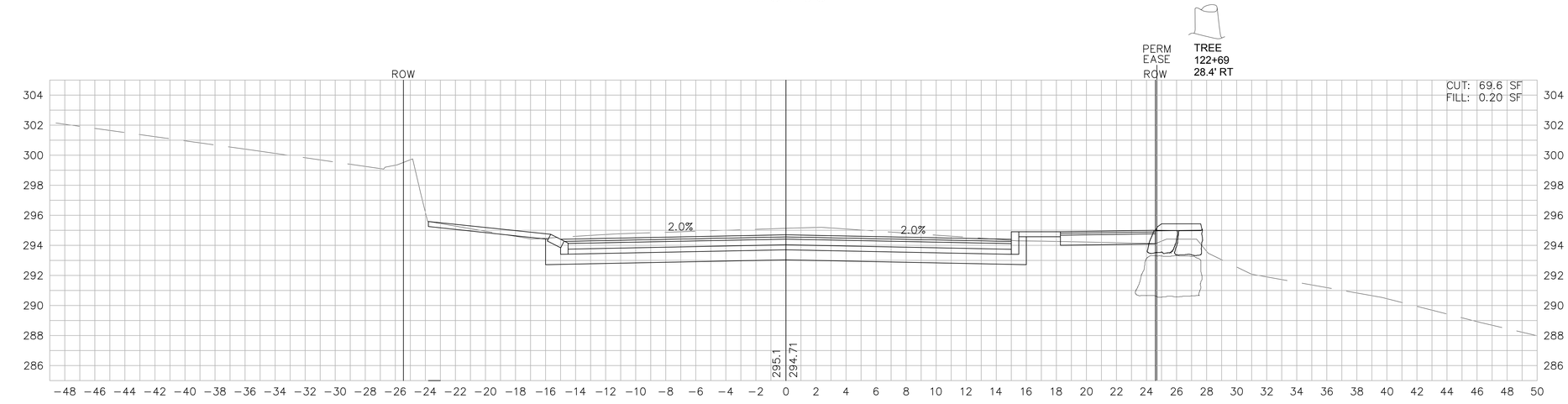
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

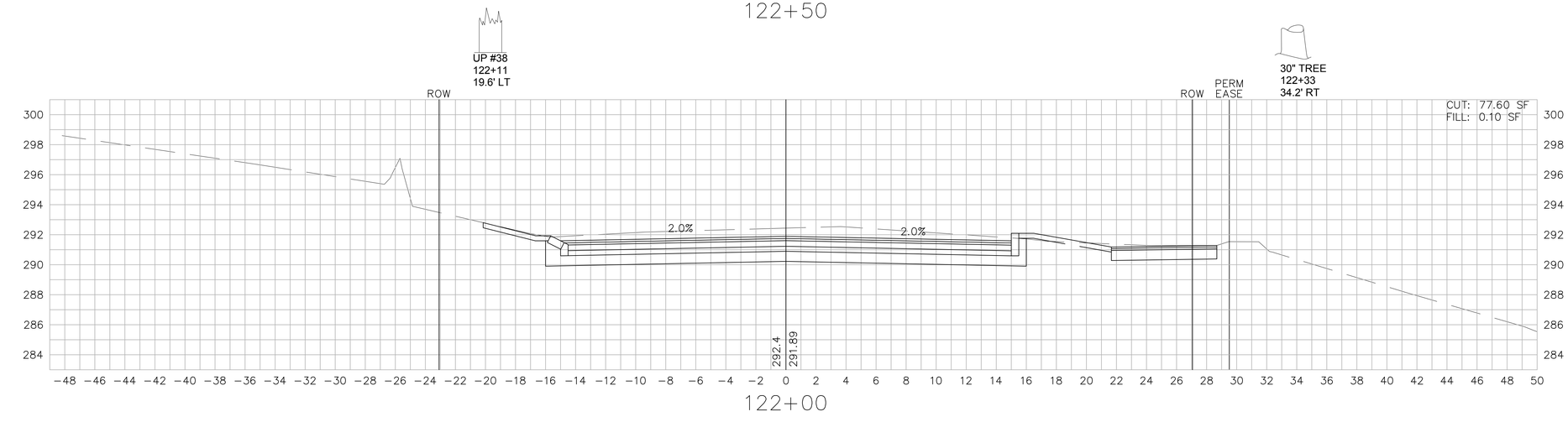
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	107	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET







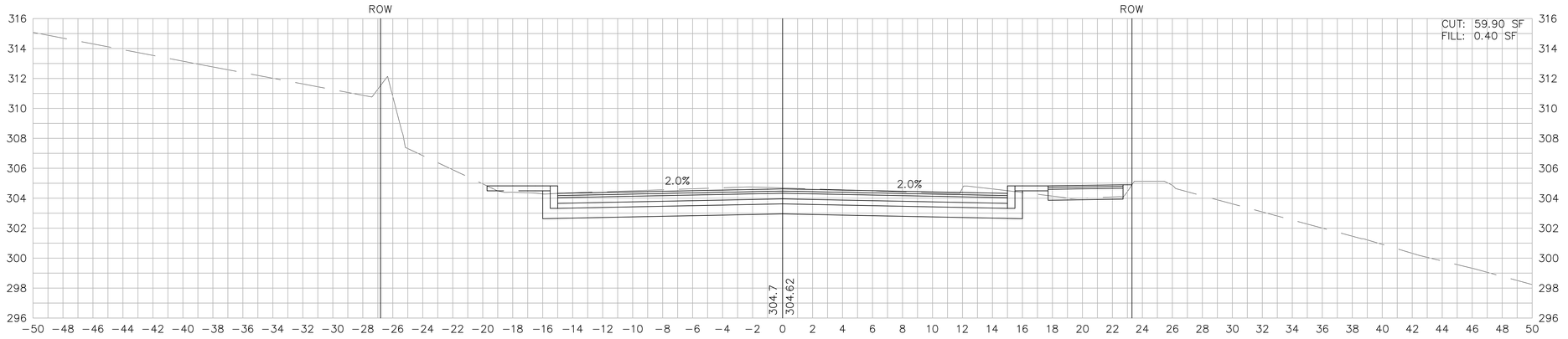
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	108	154
PROJECT FILE NO. 604989			

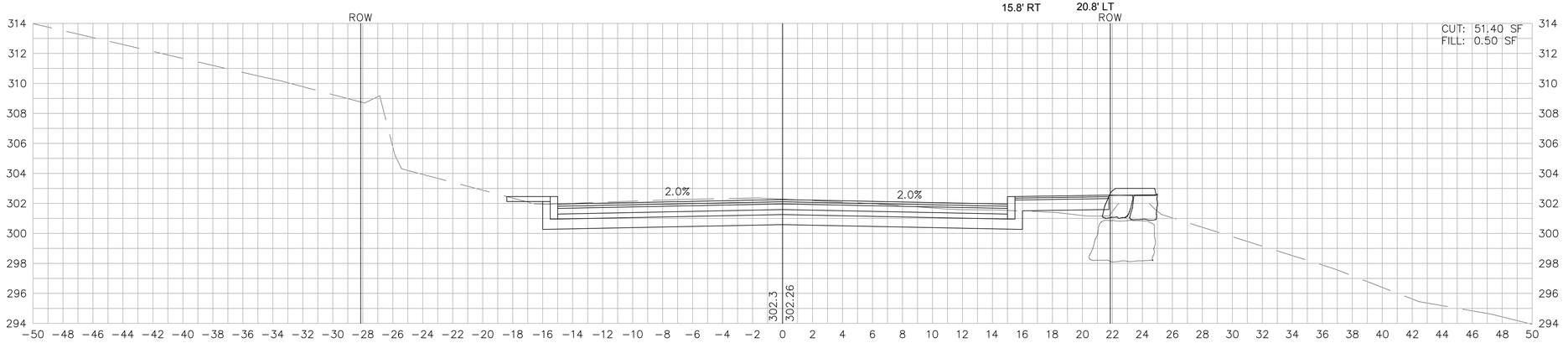
CROSS SECTIONS
MAIN STREET



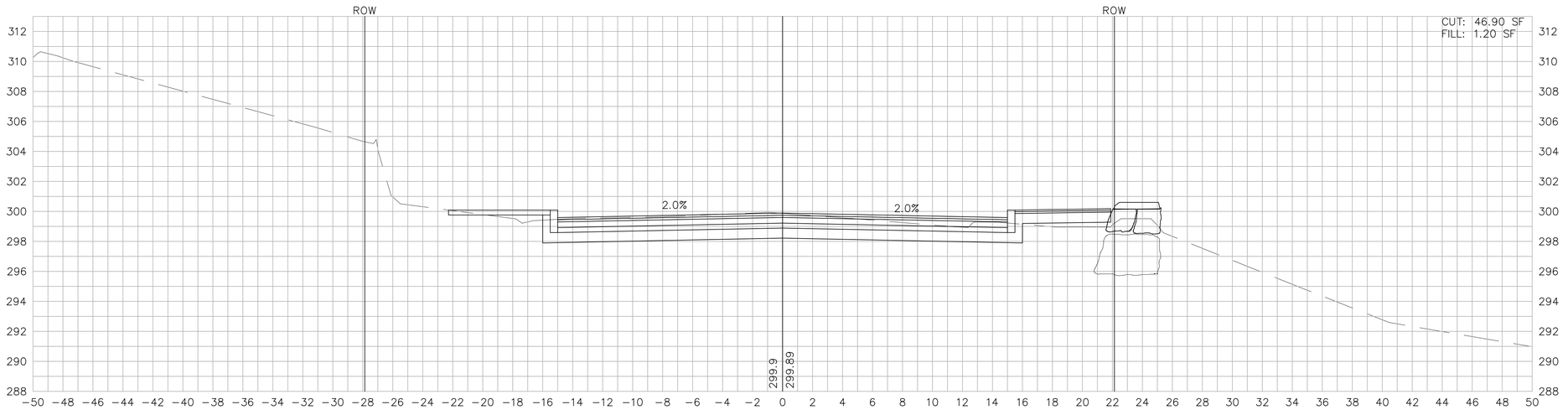
124+50

UP #36
124+27
15.8' RT

UP
124+27
20.8' LT



124+00



123+50

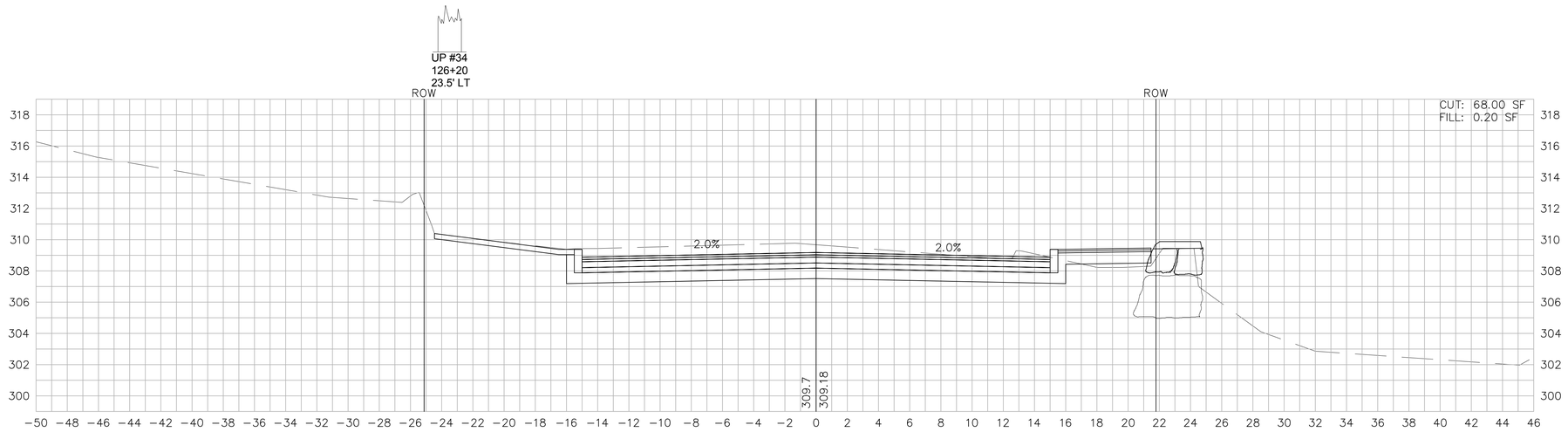
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

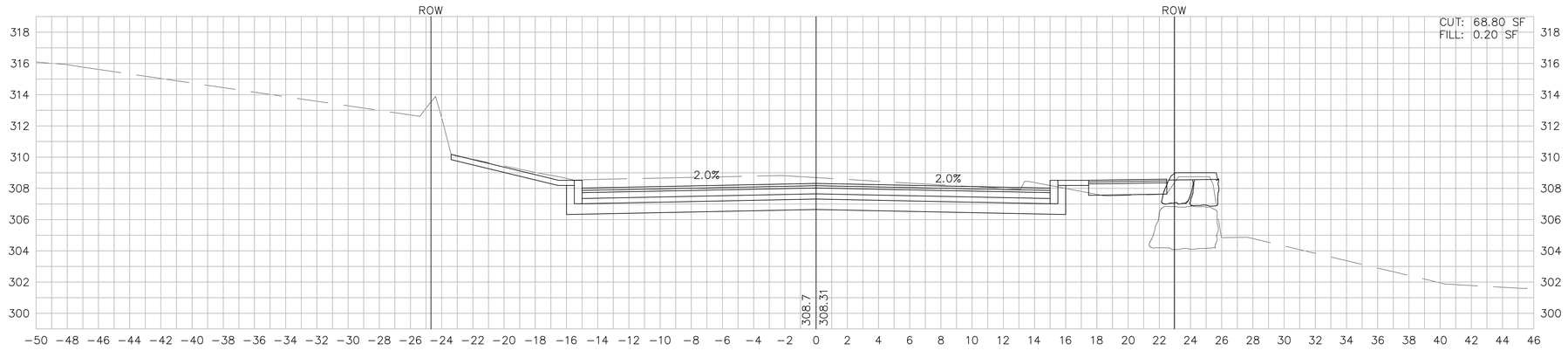
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

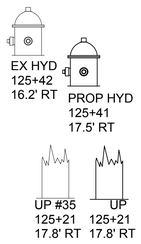
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

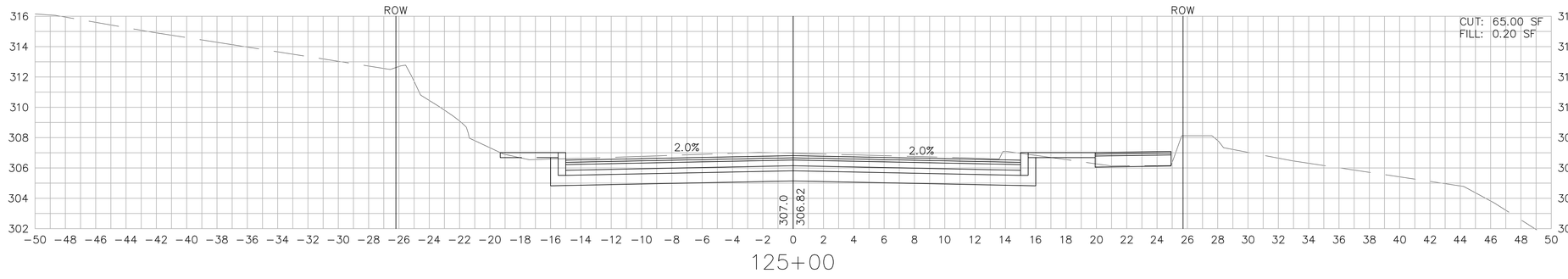
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	109	154
PROJECT FILE NO. 604989			

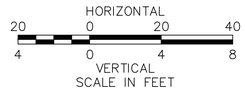
CROSS SECTIONS
MAIN STREET









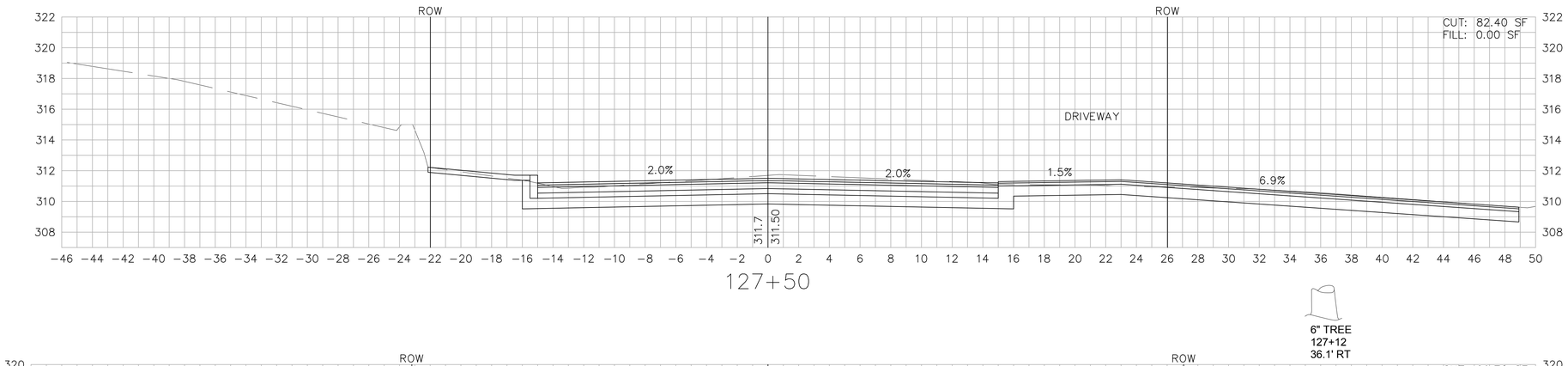


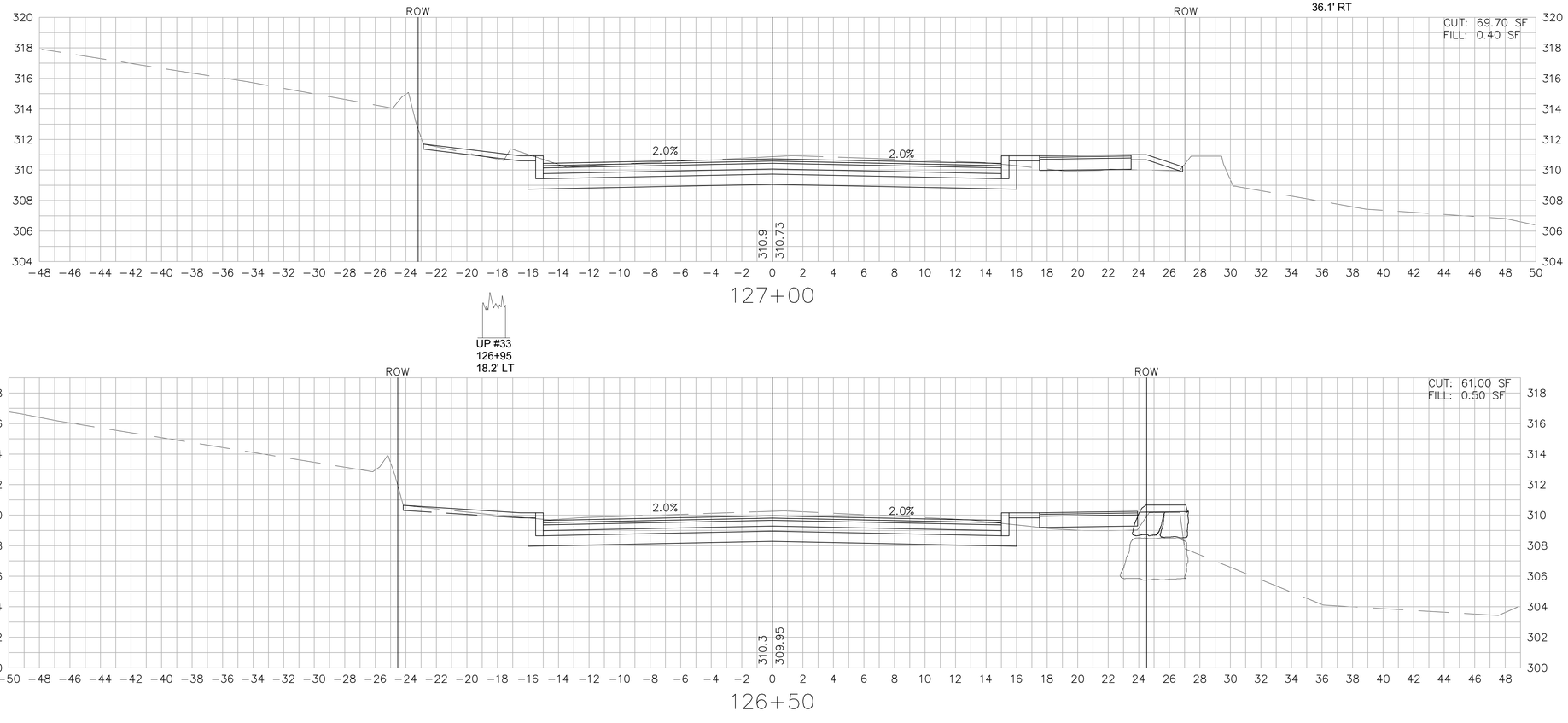
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

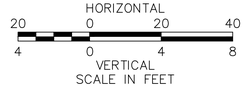
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	110	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



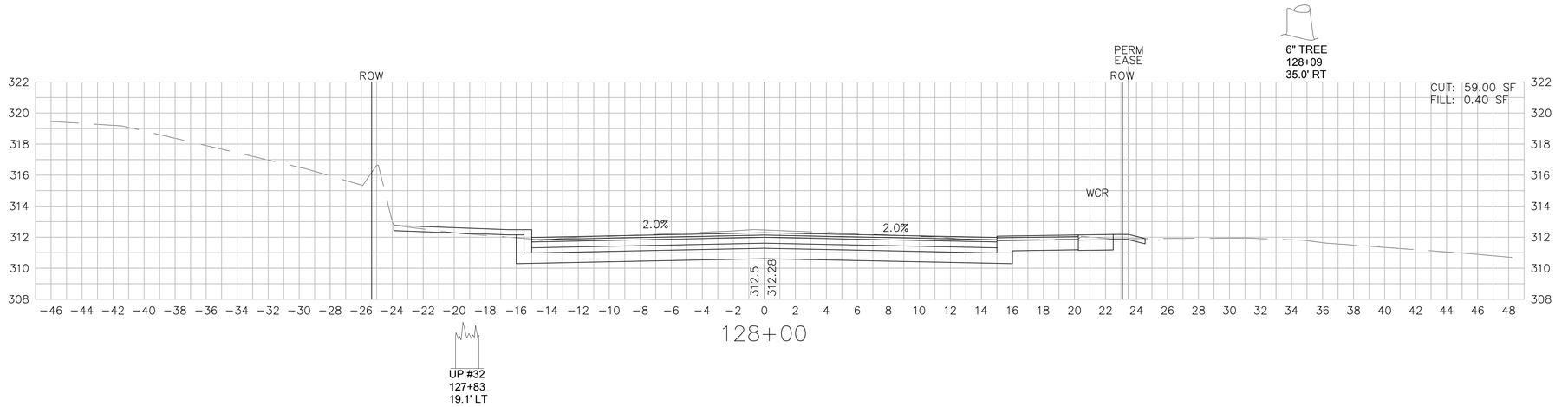




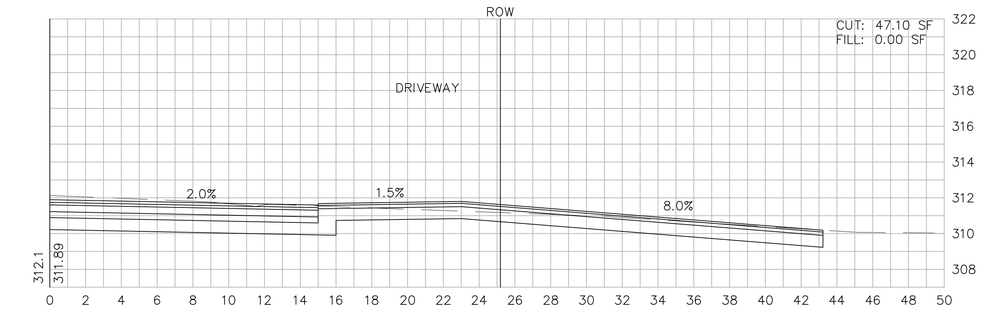
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	111	154
PROJECT FILE NO. 604989			

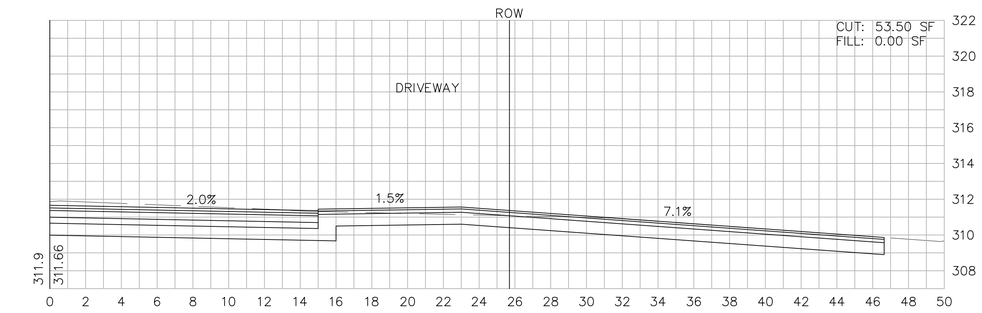
CROSS SECTIONS
MAIN STREET



128+00



127+75



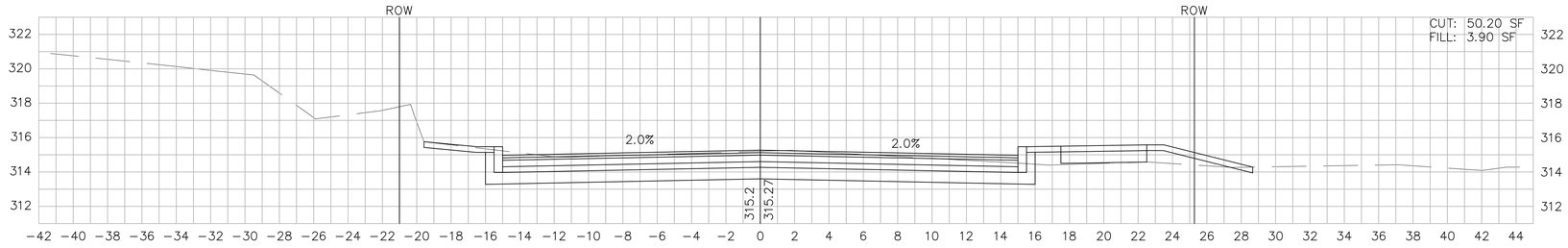
127+60

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	112	154
PROJECT FILE NO. 604989			

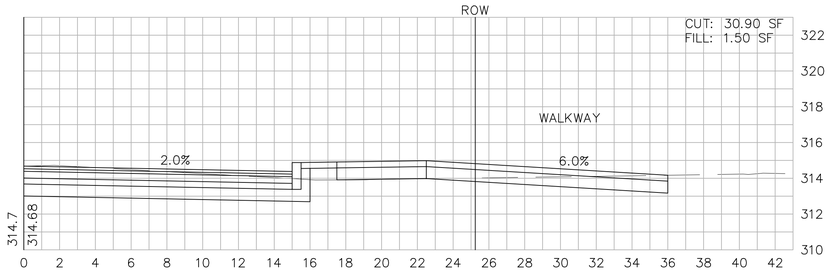
CROSS SECTIONS
MAIN STREET



129+50

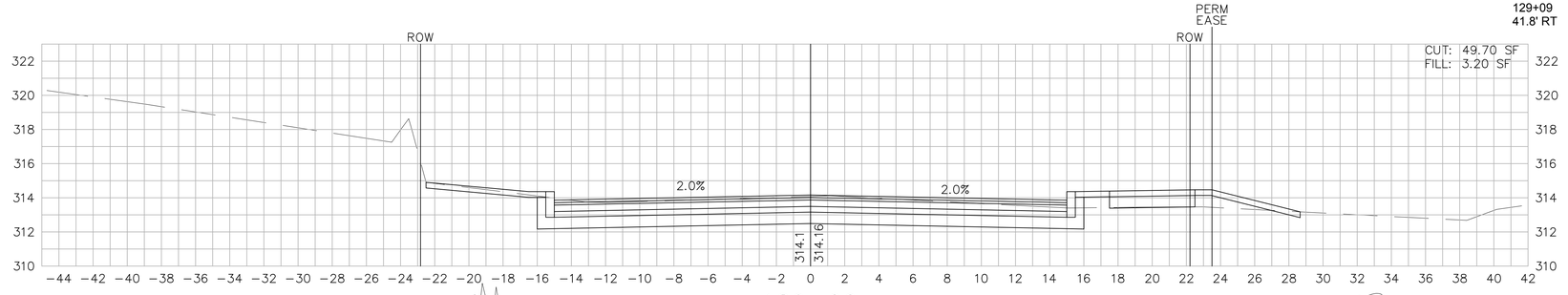
EX HYD
129+42
16.8' LT

15" TREE
129+44
44.8' RT



129+27

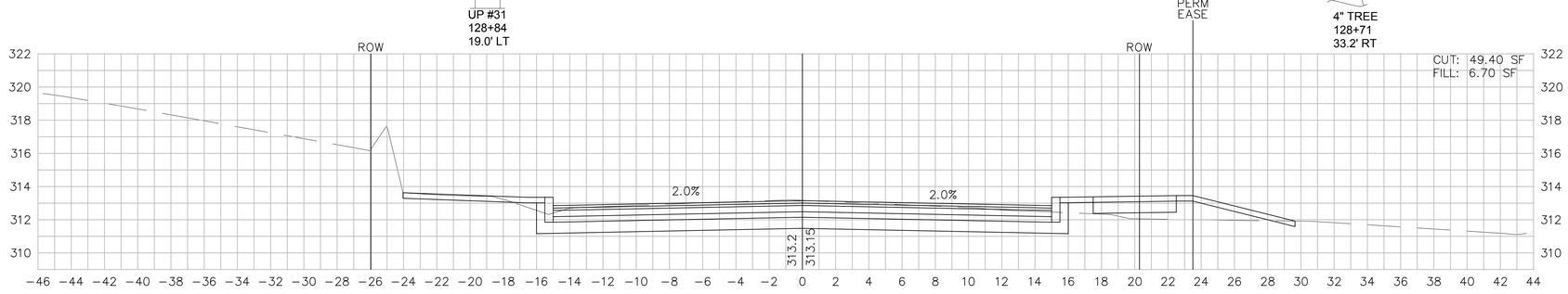
30" TREE
129+09
41.8' RT



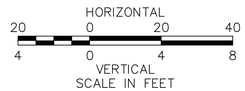
129+00

UP #31
128+84
19.0' LT

4" TREE
128+71
33.2' RT



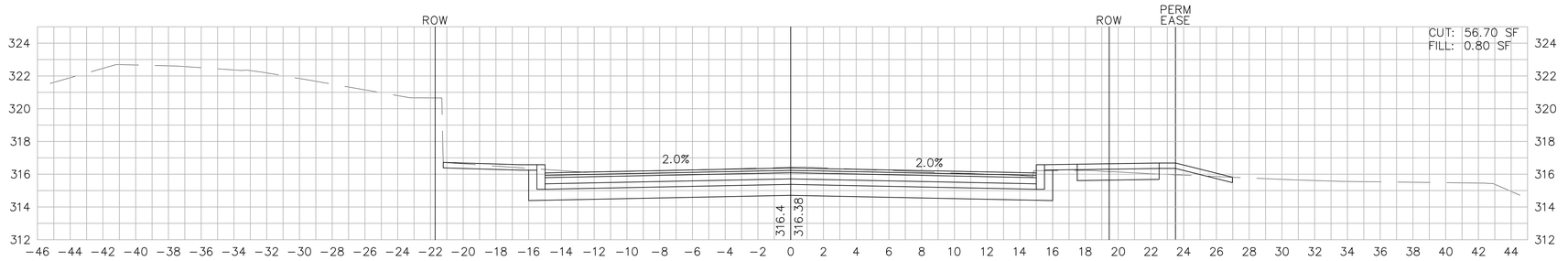
128+50



SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	113	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET



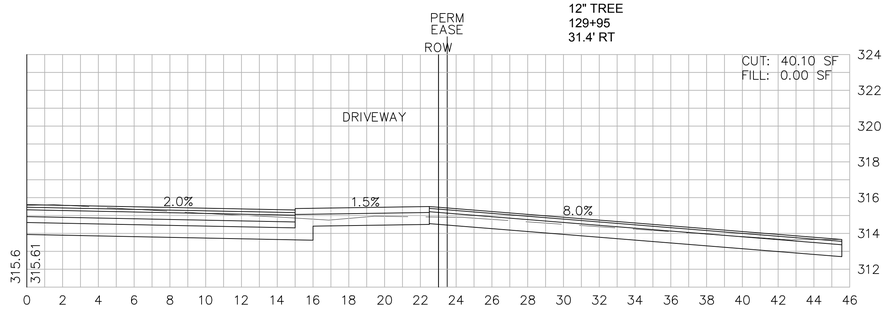
130+00

4" TREE
129+96
32.5' LT

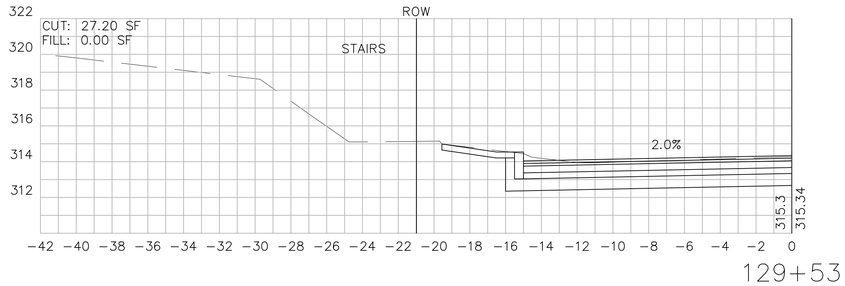
UP
129+76
17.8' LT

UP #30
129+76
14.6' LT

12" TREE
129+95
31.4' RT



129+65



129+53

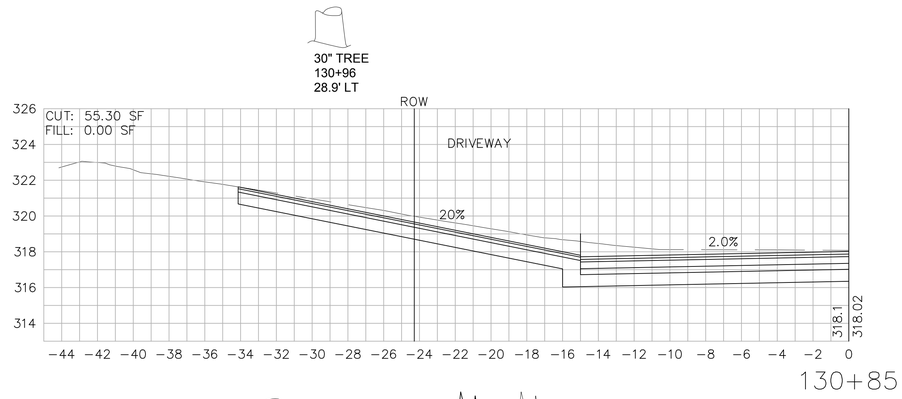
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

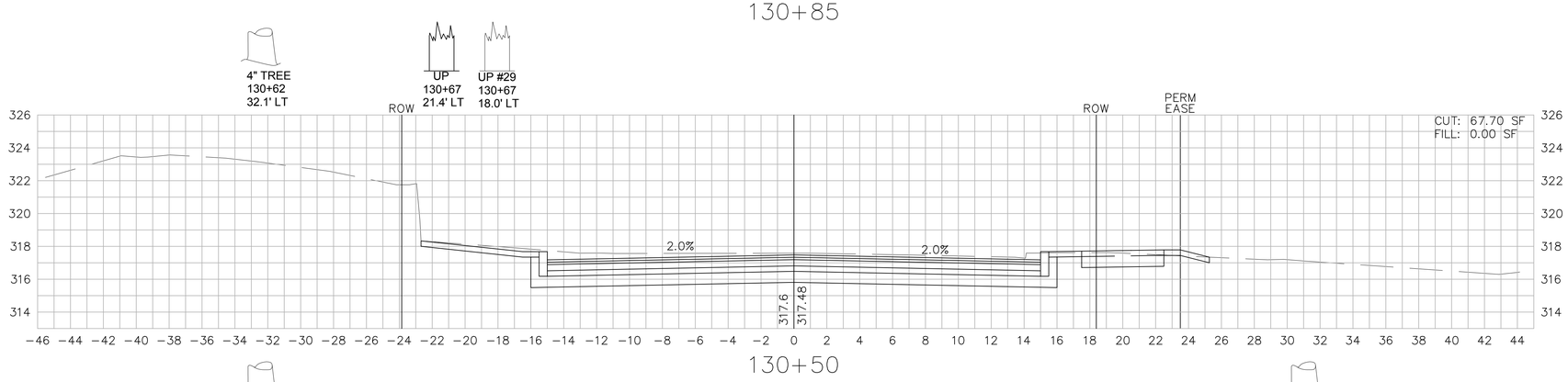
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	114	154
PROJECT FILE NO. 604989			

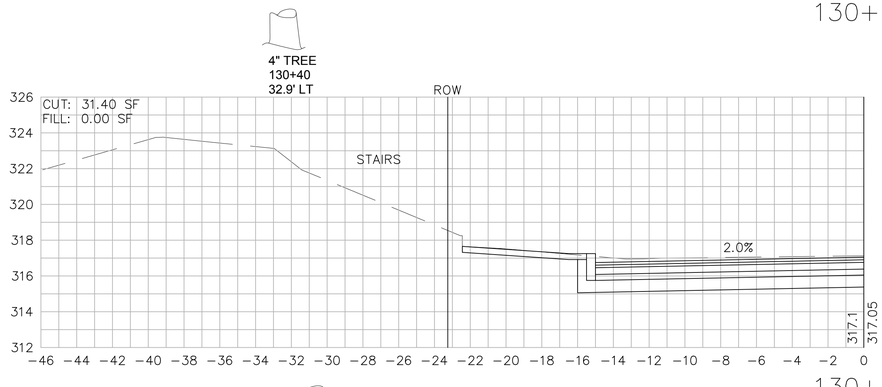
CROSS SECTIONS MAIN STREET



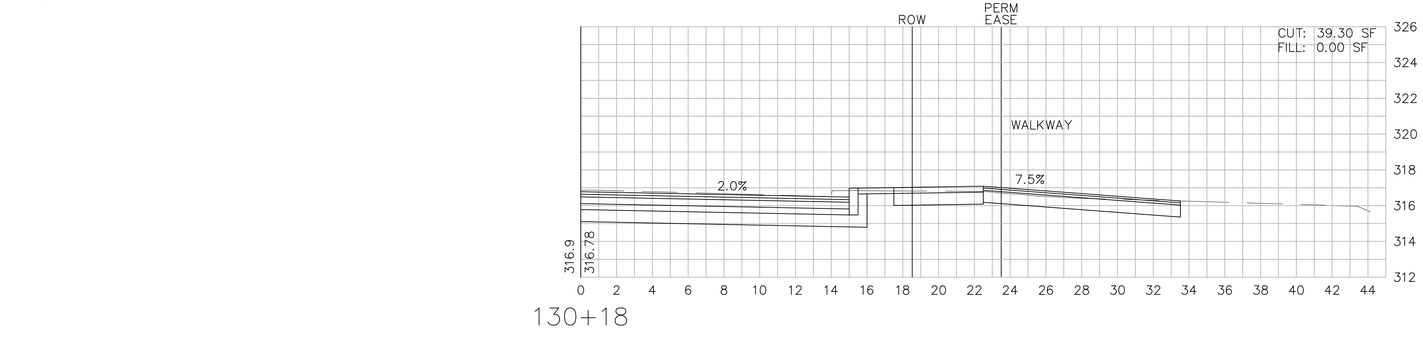
130+85



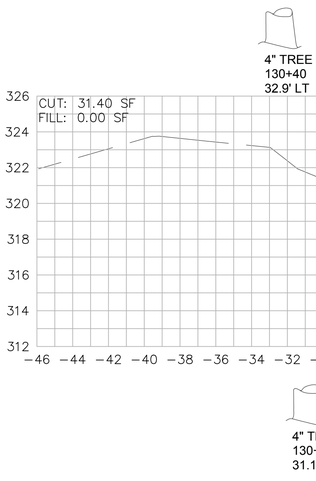
130+50

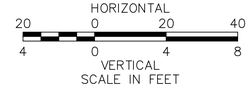


130+30



130+18



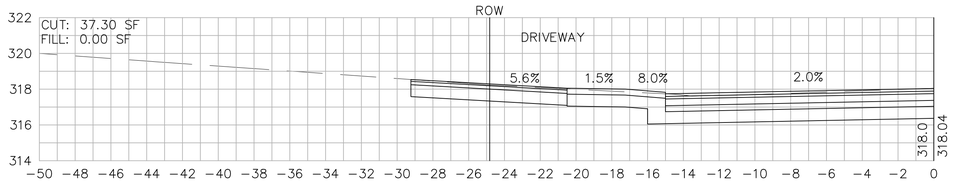


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

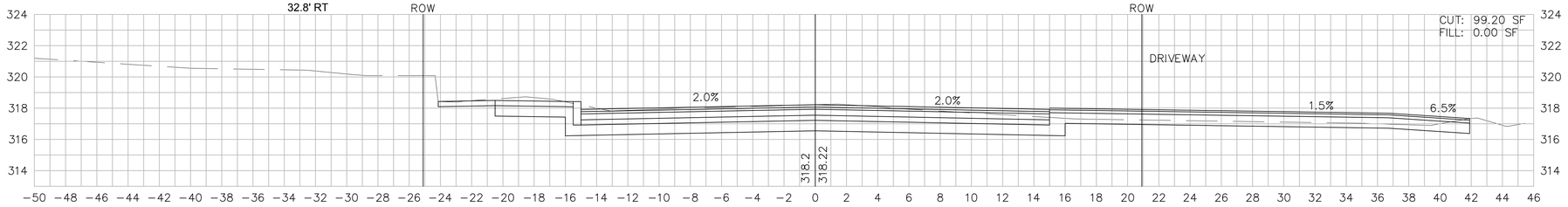
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	115	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



131+85

6" TREE
131+57
32.8' RT



131+50

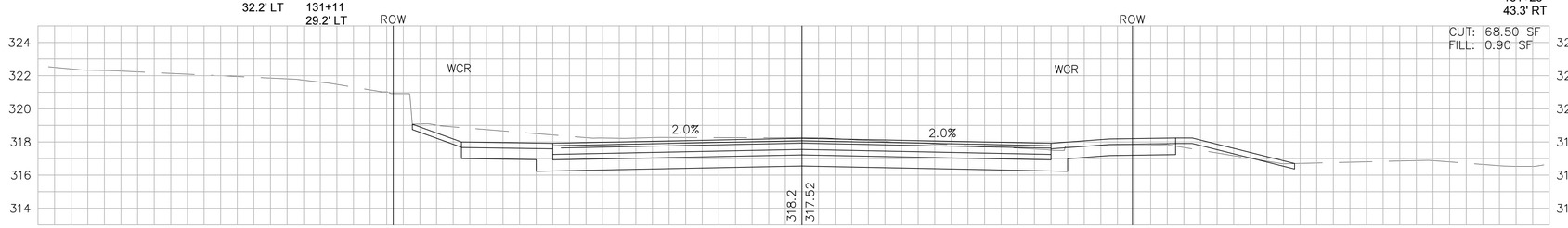
4" TREE
131+35
32.2' LT

32" TREE
131+11
29.2' LT

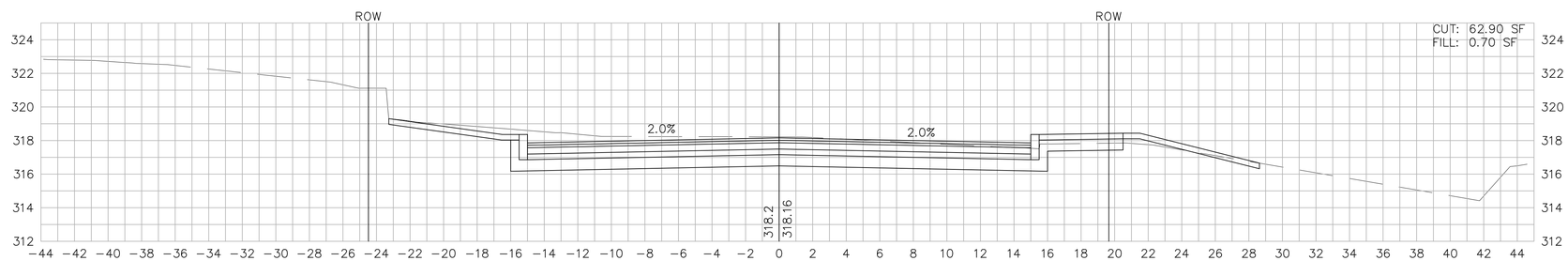
UP
131+44
20.7' LT

UP #28-50
131+44
18.2' LT

18" TREE
131+23
43.3' RT



131+10



131+00

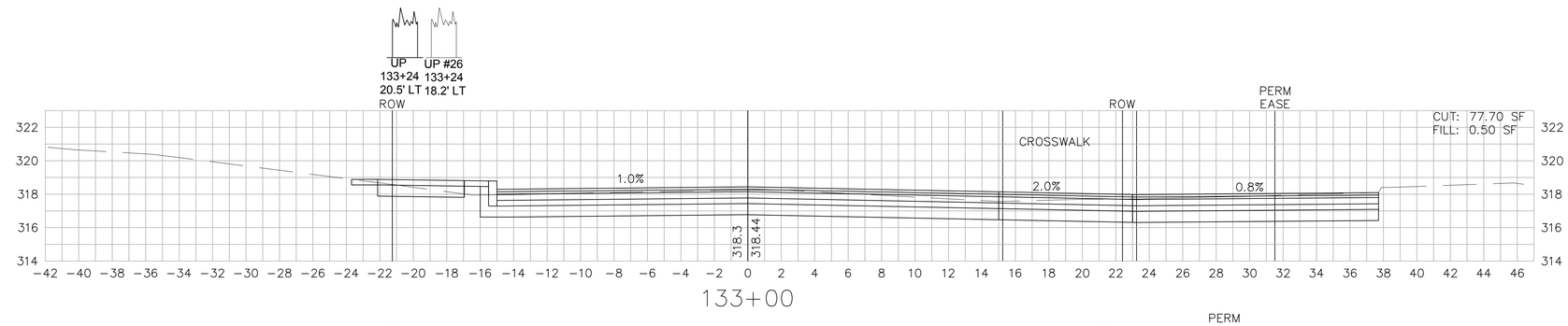
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

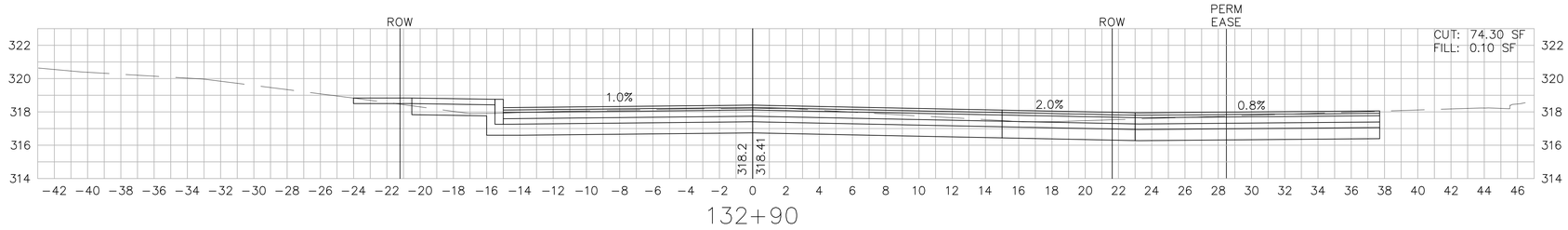
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

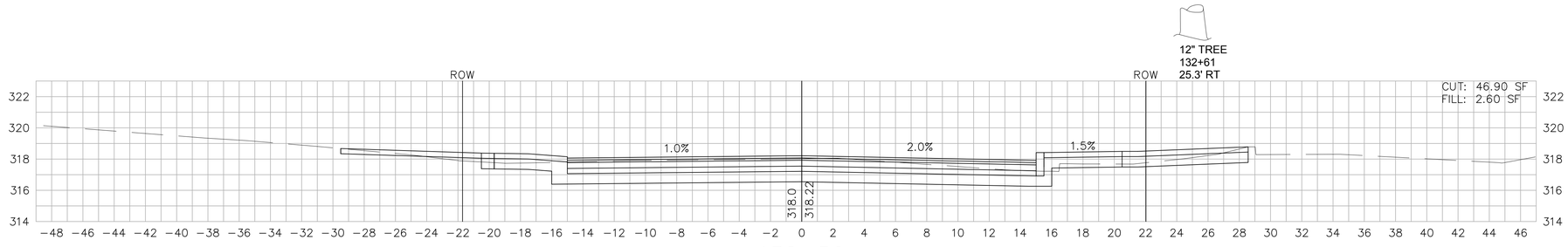
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

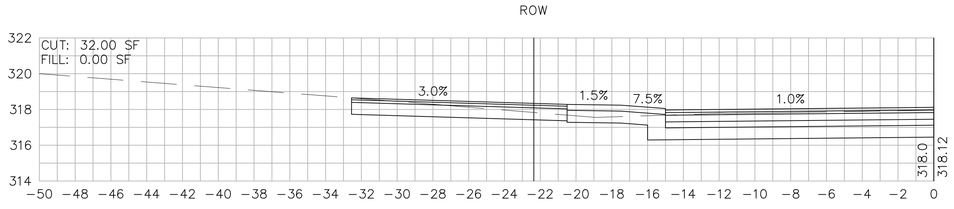
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	116	154
PROJECT FILE NO. 604989			

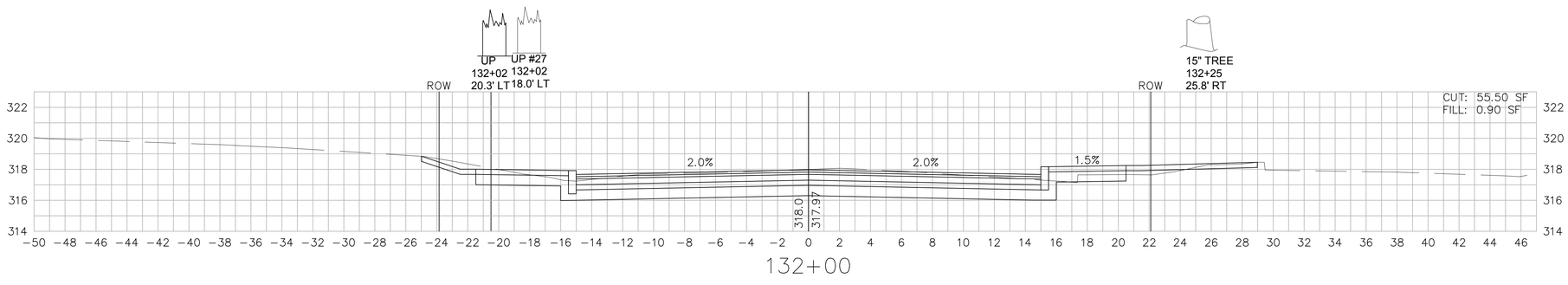
CROSS SECTIONS
MAIN STREET











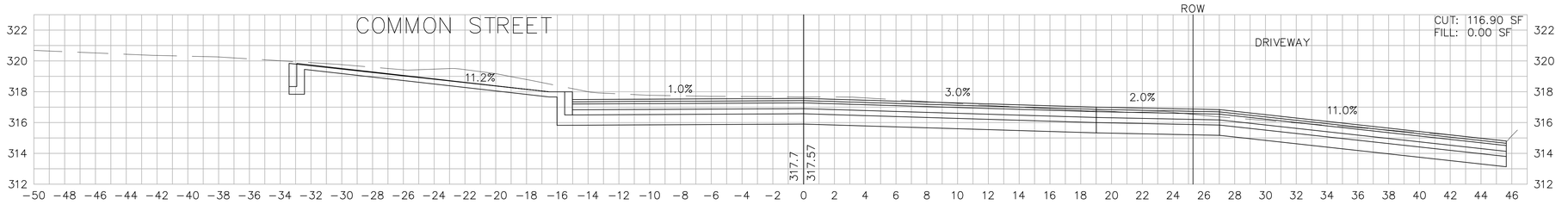
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

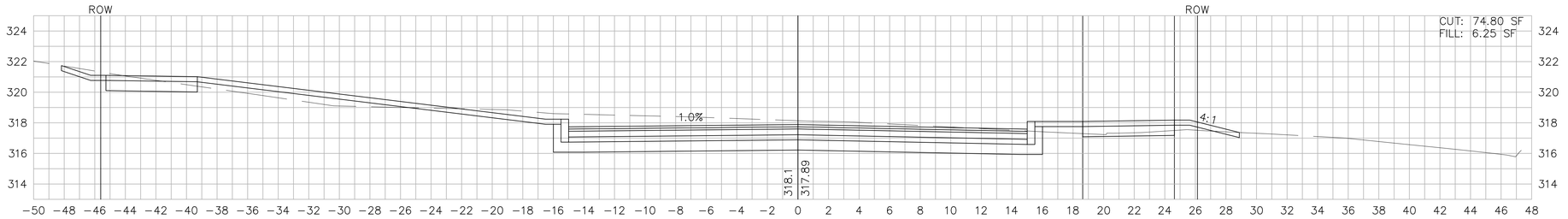
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	117	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



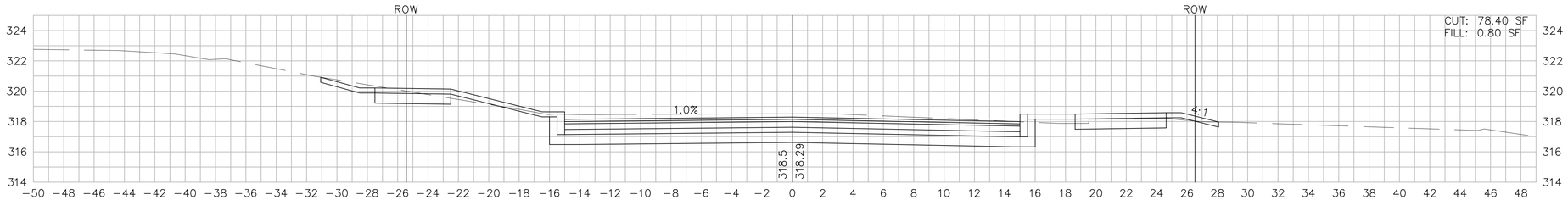
134+78



134+50

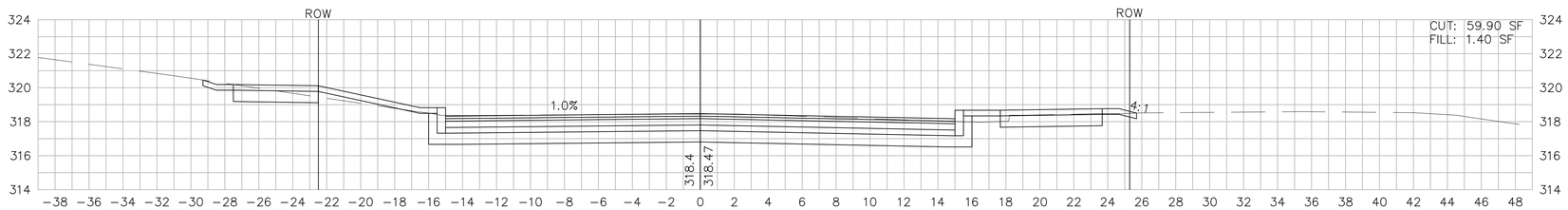
UP #25
134+27
24.2' LT

UP
134+27
21.7' LT

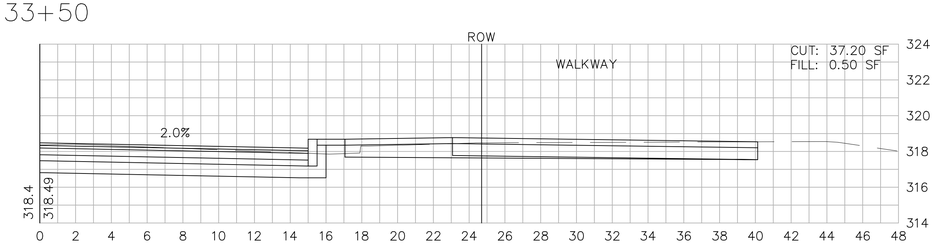


134+00

EX HYD
133+95
21.9' LT



133+50



133+37

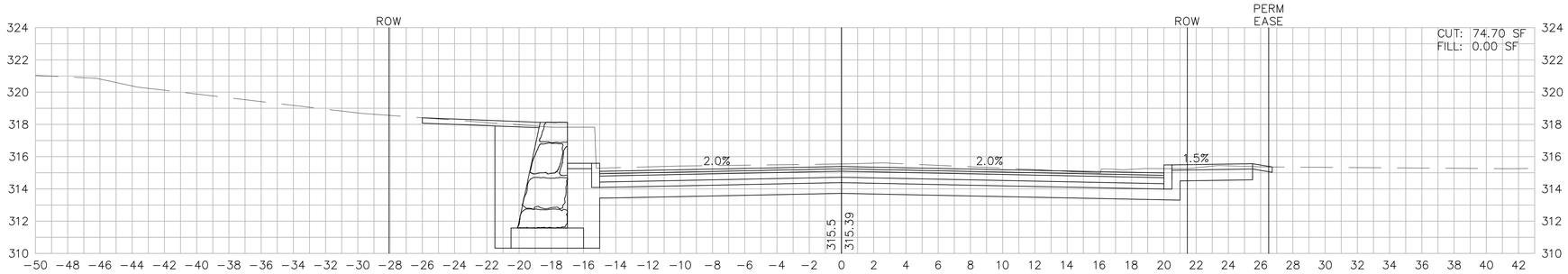
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	118	154
PROJECT FILE NO. 604989			

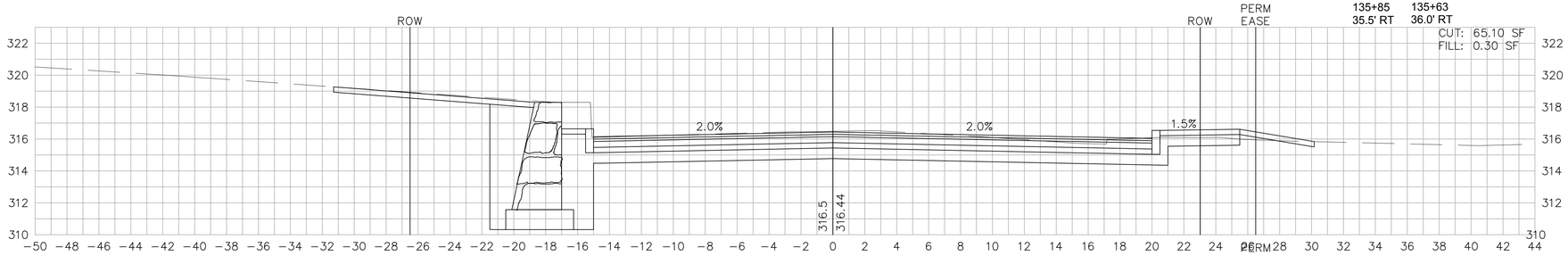
CROSS SECTIONS
MAIN STREET



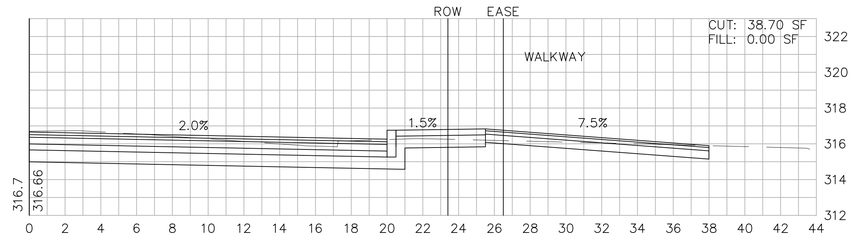
136+00

10" TREE 135+85 35.5' RT

8" TREE 135+63 36.0' RT



135+50

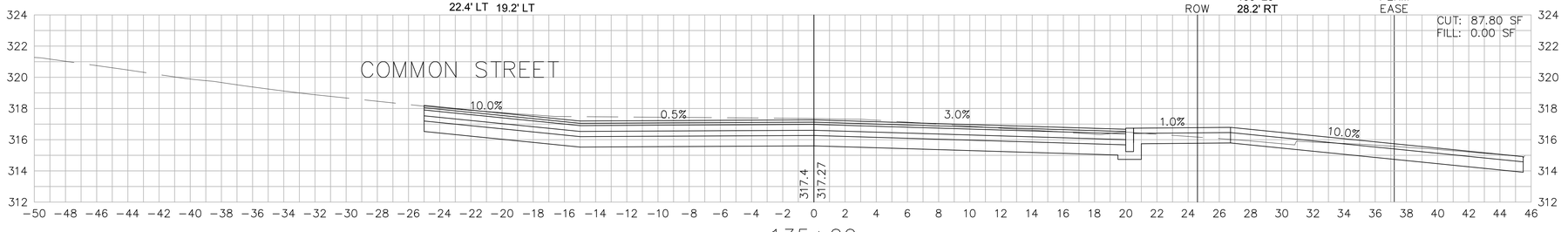


135+38

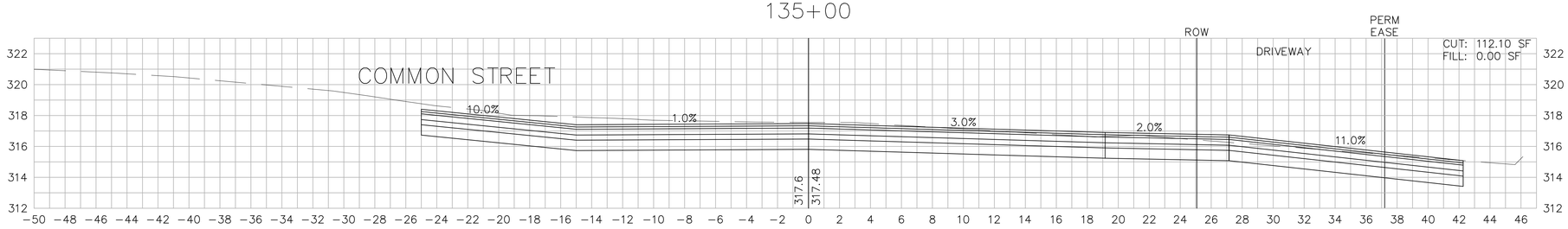
UP 135+20 22.4' LT

UP #24 135+11 19.2' LT

33" TREE 135+25 28.2' RT



135+00



134+85

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

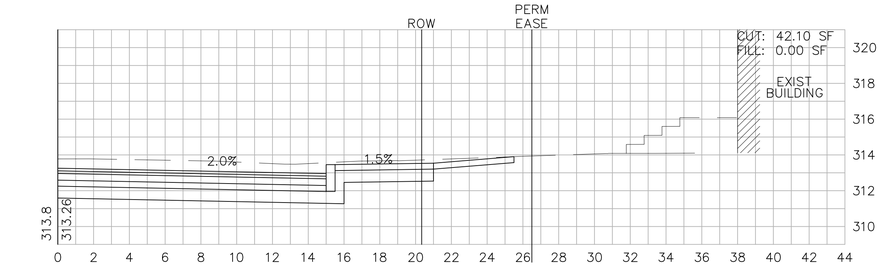
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	119	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

8" TREE
136+92
41.1' LT

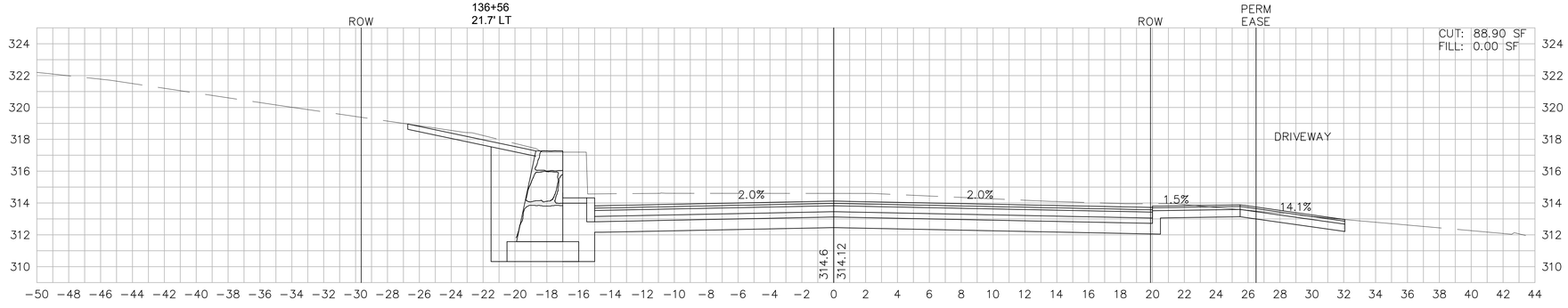


136+80

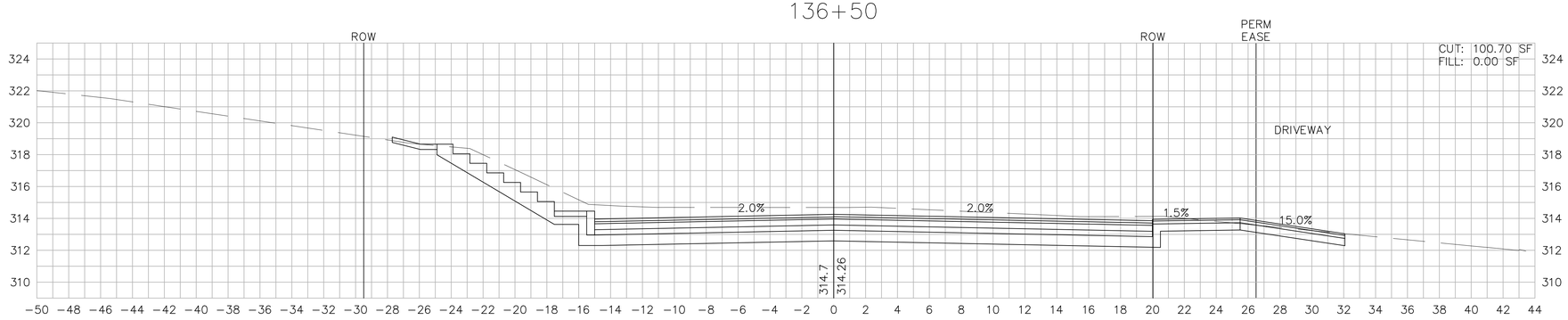
24" TREE
136+63
24.8' RT

18" TREE
136+68
41.4' RT

STUMP
136+56
21.7' LT



136+50

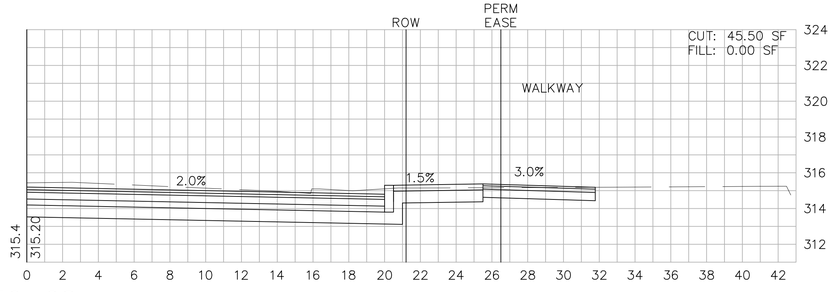


136+45

UP
136+26
23.6' LT

UP #23
136+25
15.7' LT

4" TREE
136+25
26.9' RT



136+08

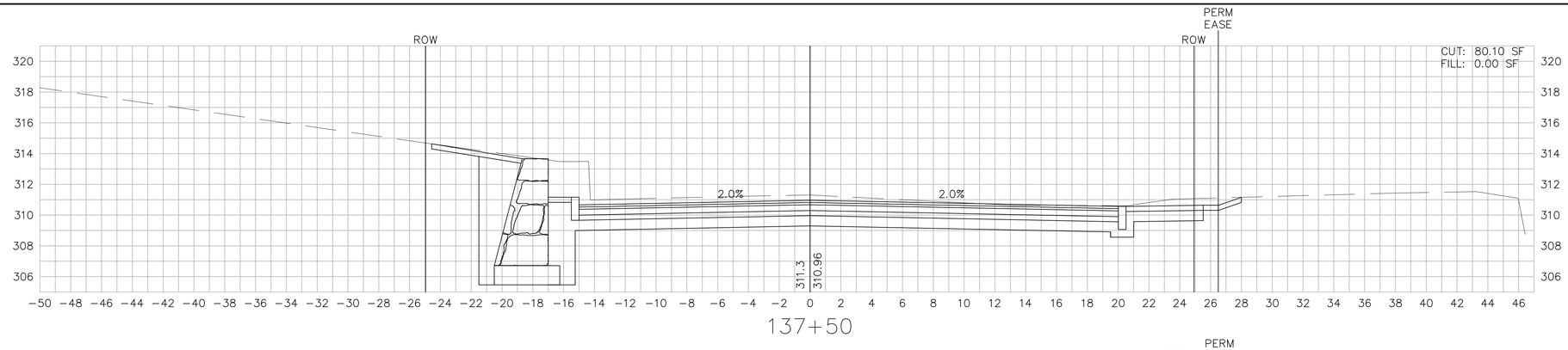
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

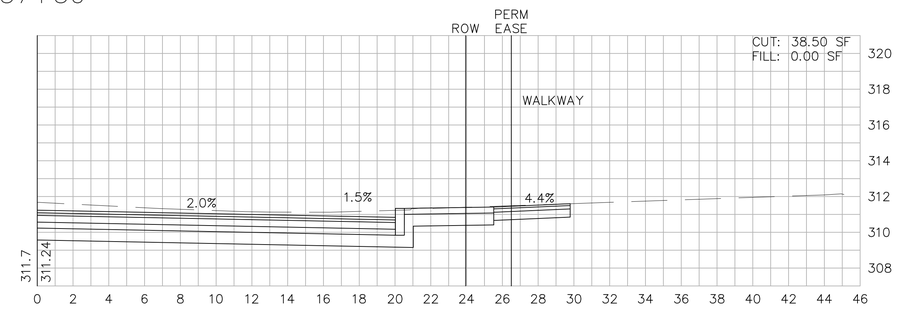
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	120	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

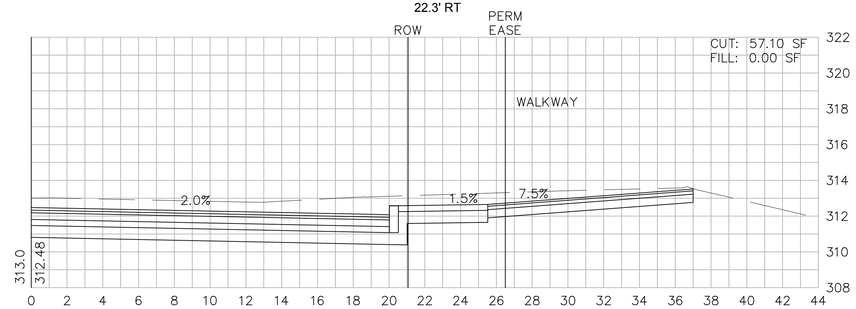


137+50



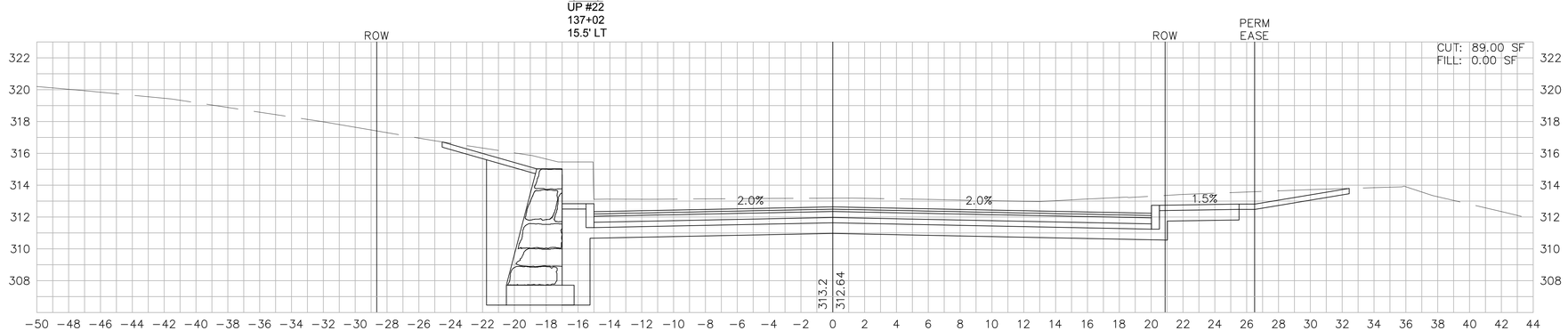
137+42

6" TREE
137+21
22.3' RT



137+05

UP #22
137+02
15.5' LT



137+00

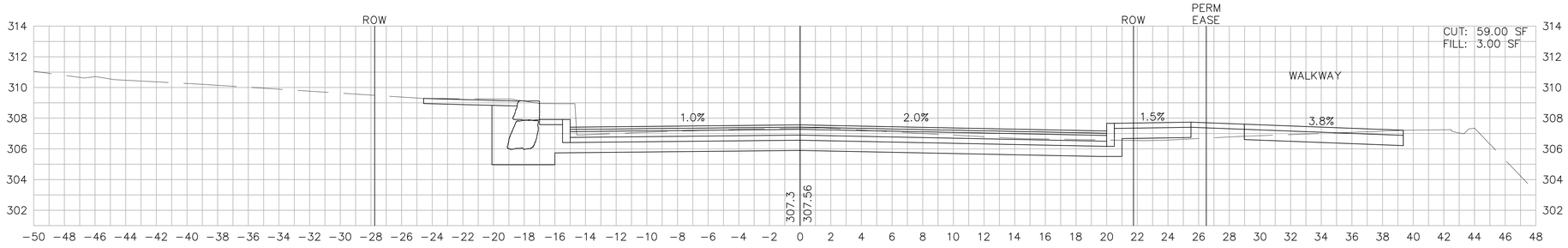
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

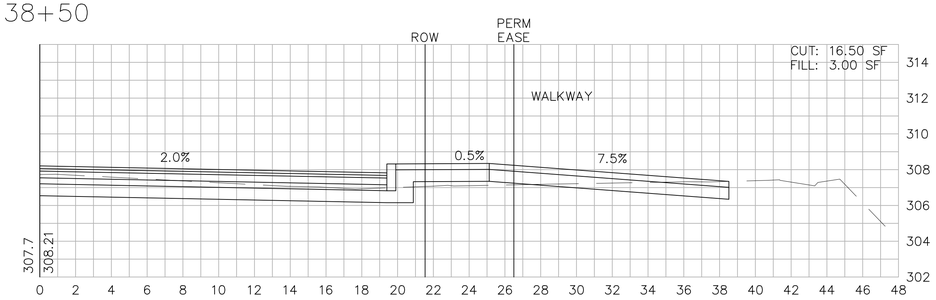
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	121	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



138+50



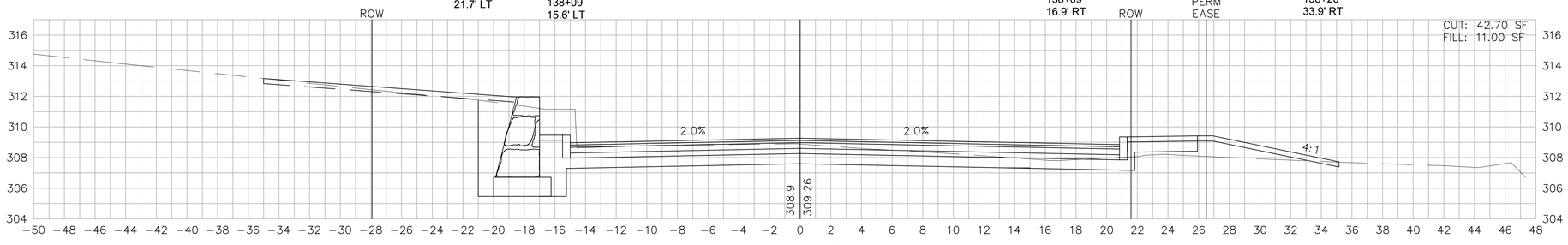
138+31

18" TREE
138+25
21.7' LT

EX HYD
138+09
15.6' LT

PROP HYD
138+09
16.9' RT

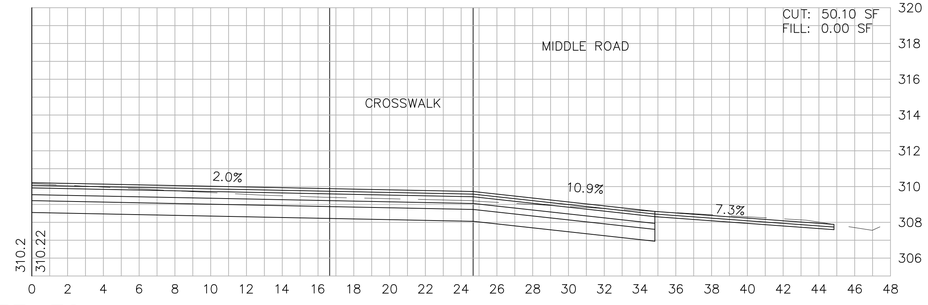
24" TREE
138+20
33.9' RT



138+00

UP
137+80
19.2' LT

UP #21
137+79
14.9' LT



137+72

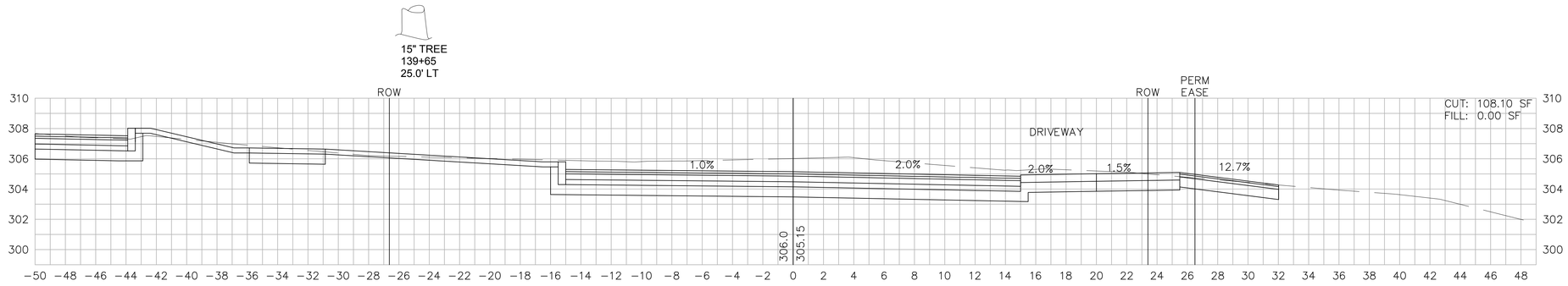
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	122	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



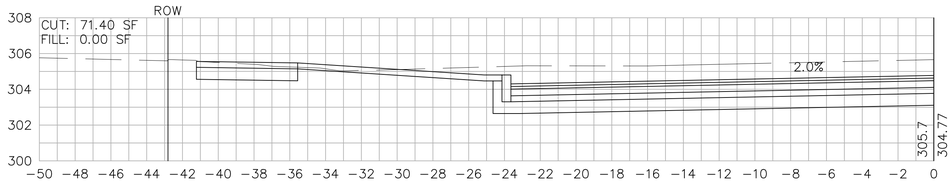
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

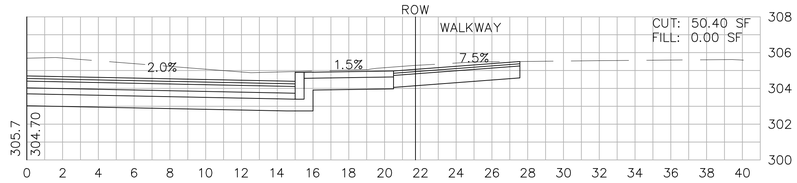
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	123	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

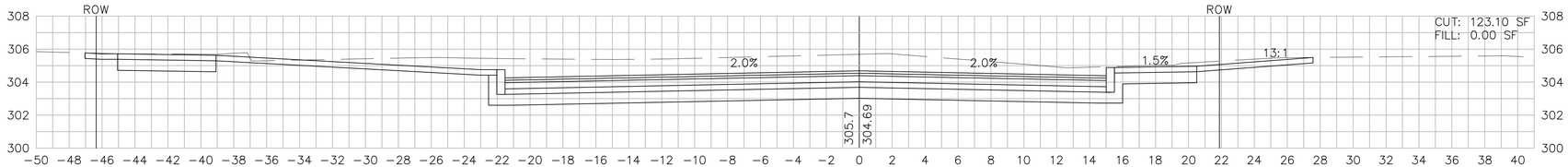


140+67

UP
140+55
26.6' LT

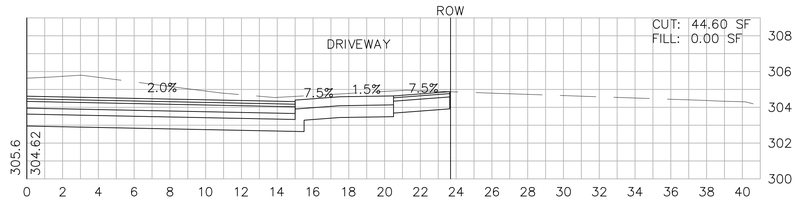


140+52

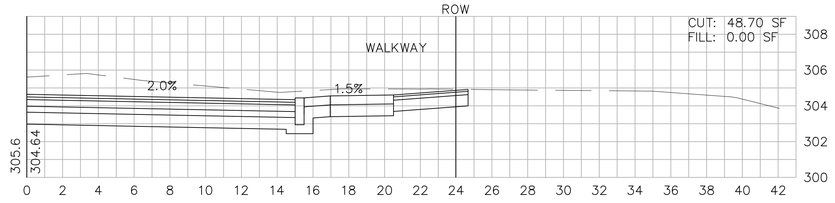


140+50

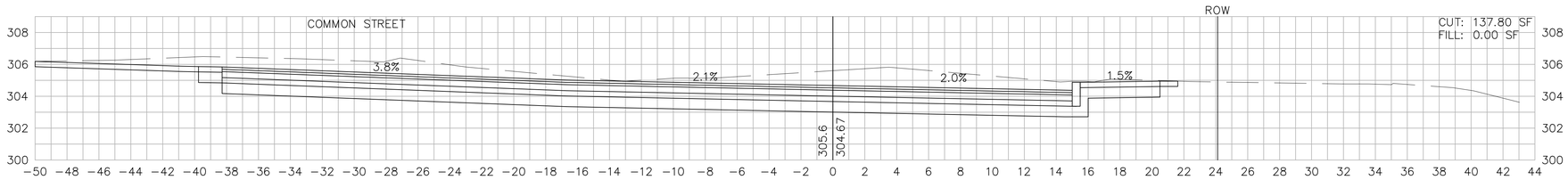
UP #18
140+33
14.4' LT



140+17



140+07



140+00

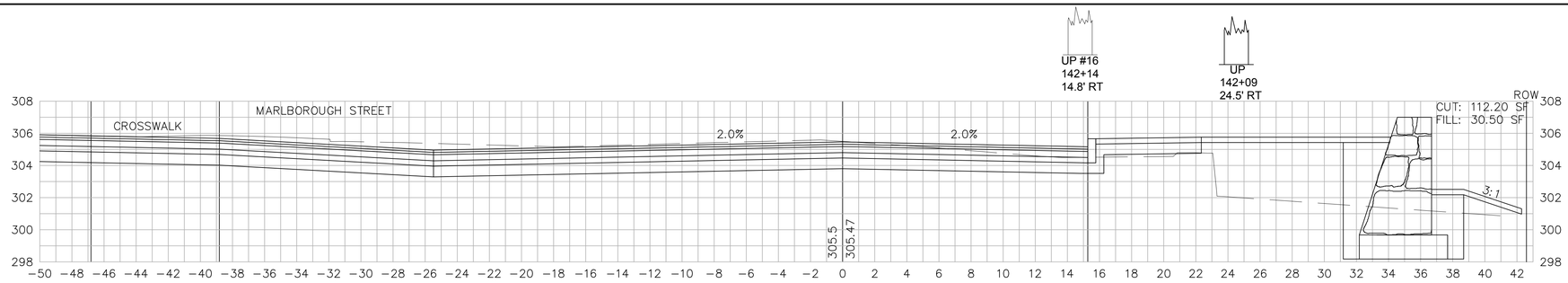
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

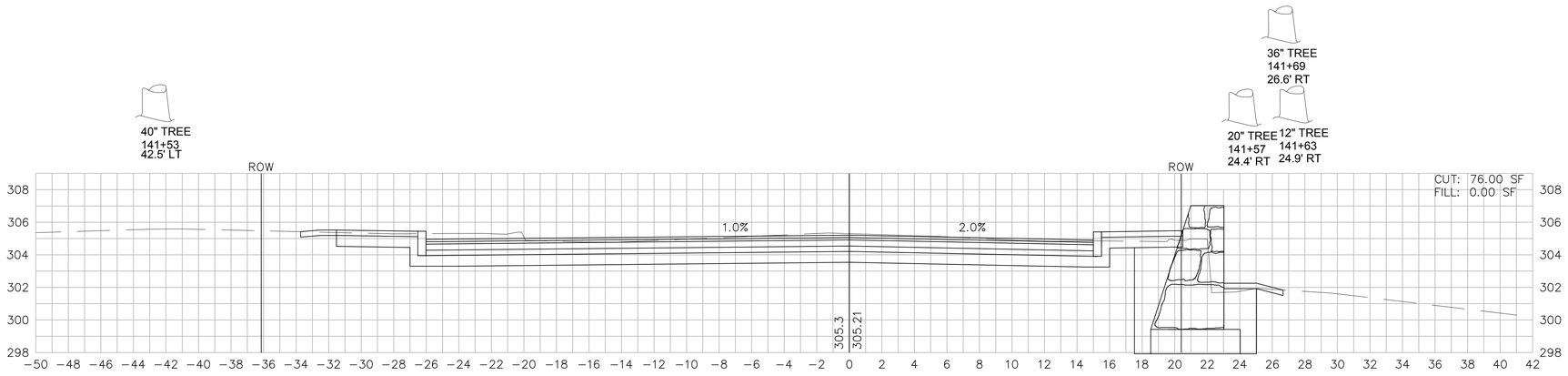
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	124	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET





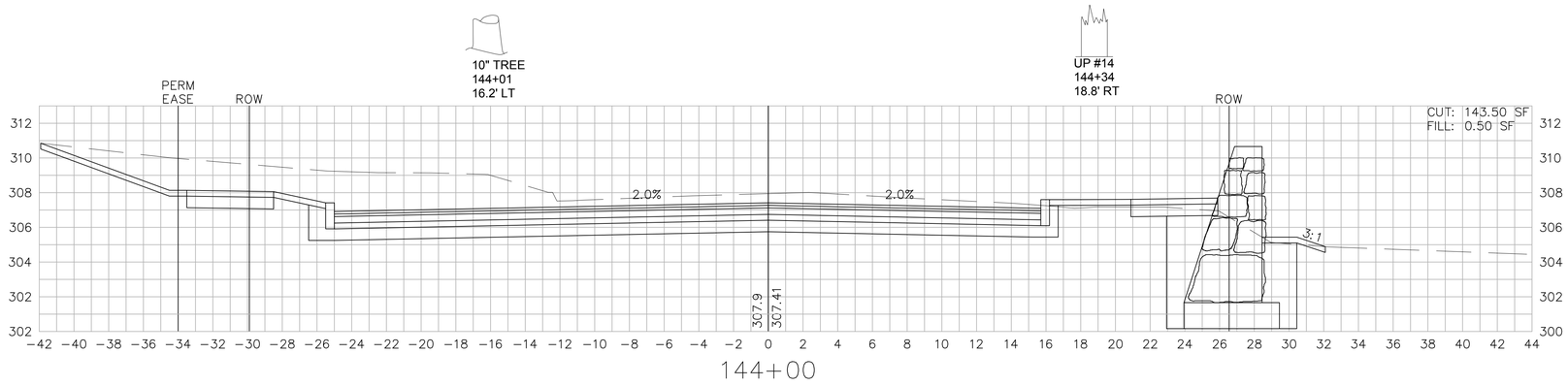
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

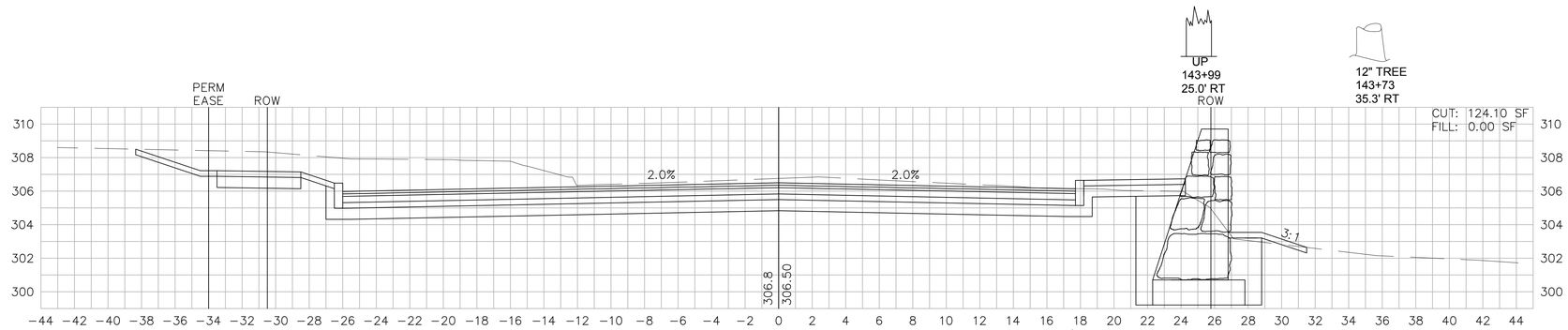
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

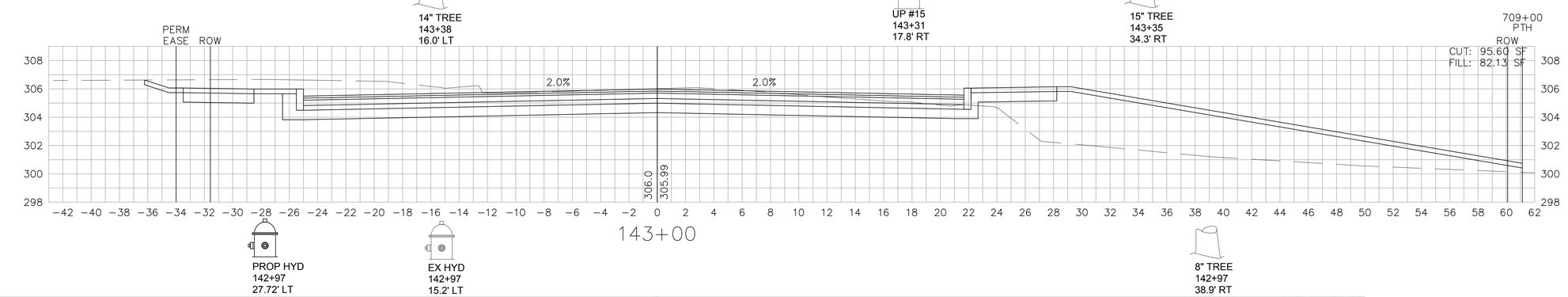
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

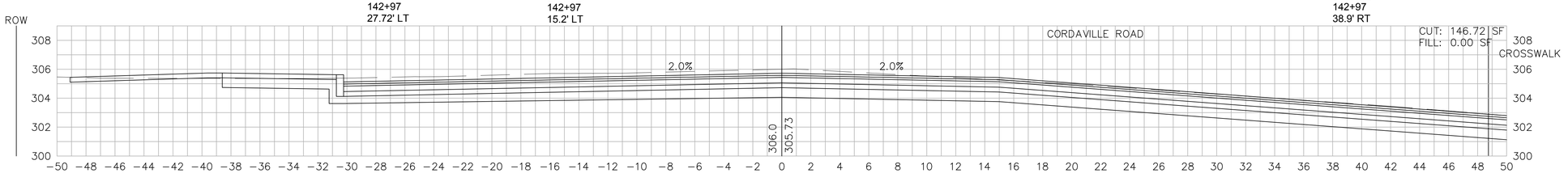
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	125	154
PROJECT FILE NO. 604989			

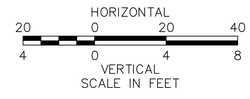
CROSS SECTIONS
MAIN STREET









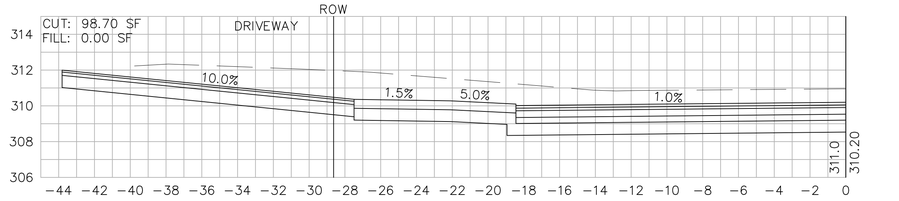


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

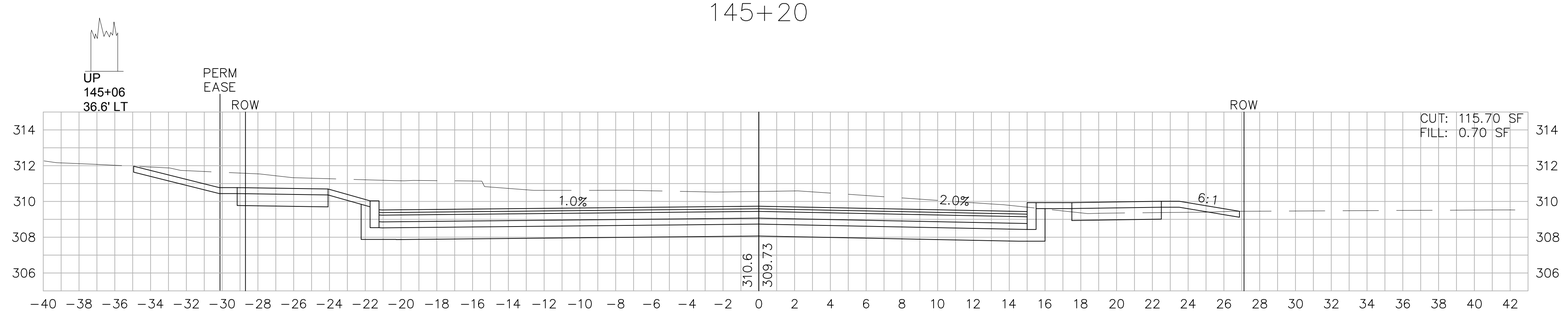
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	126	154
PROJECT FILE NO. 604989			

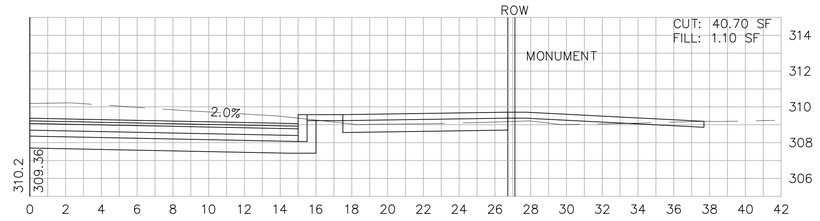
CROSS SECTIONS
MAIN STREET



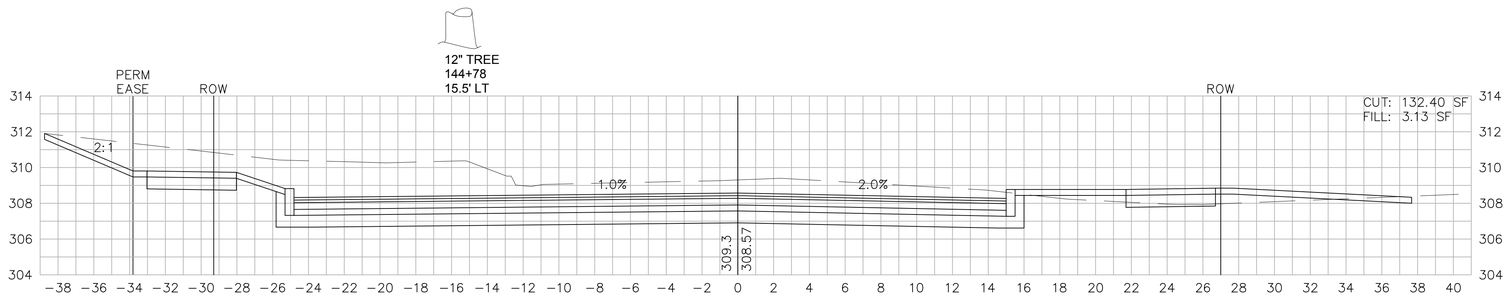
145+20



145+00



144+84



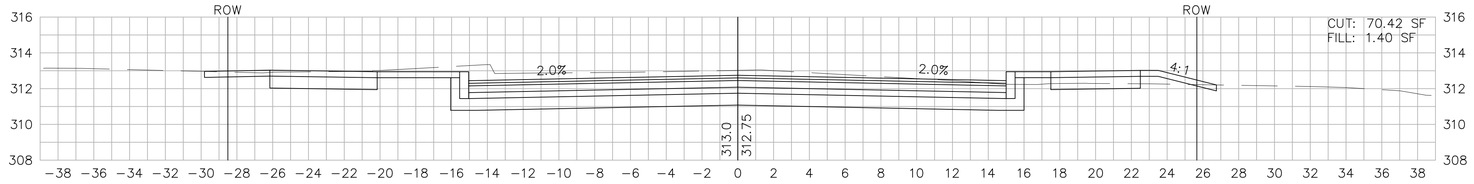
144+50

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

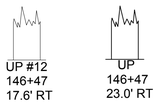
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

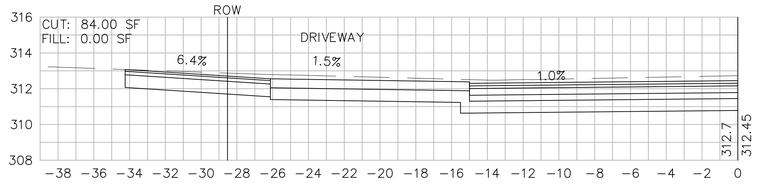
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	127	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

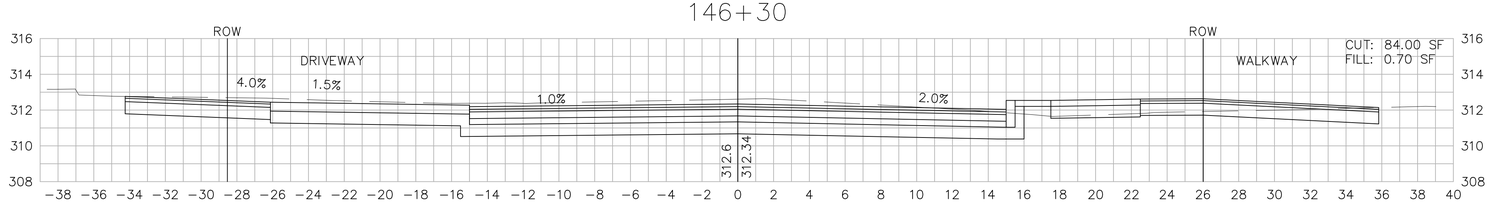


146+50

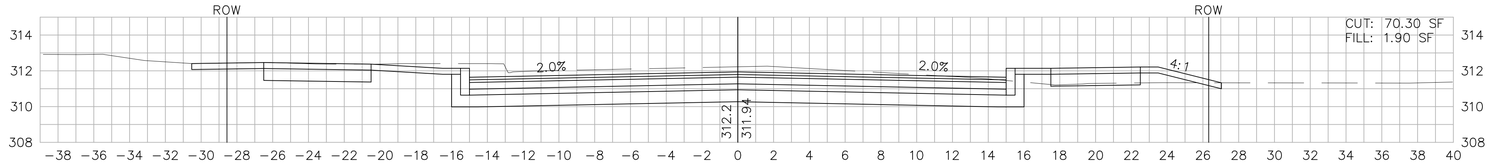




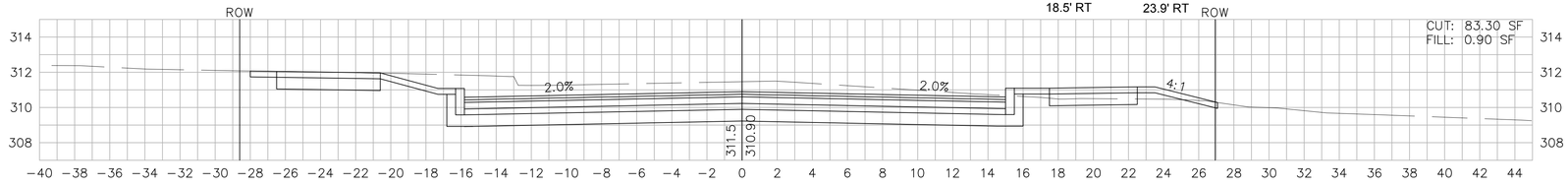
146+30



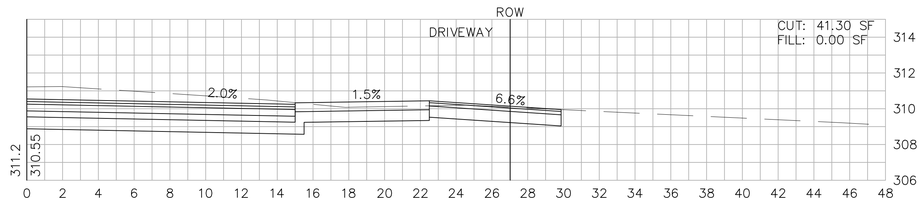
146+23



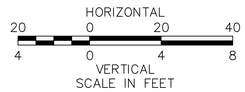
146+00



145+50



145+35

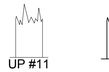


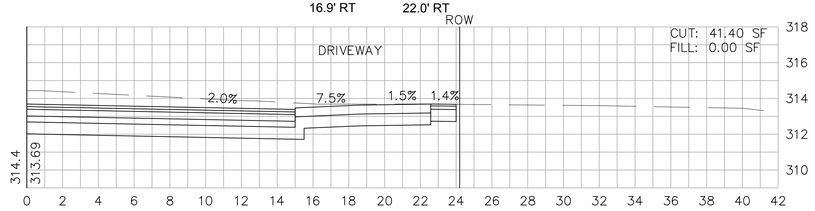
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

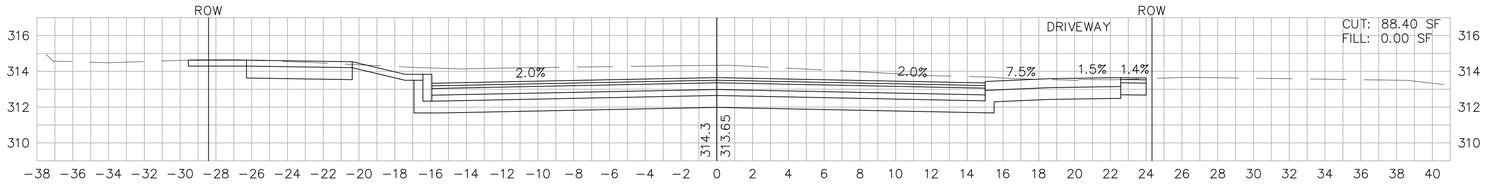
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	128	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

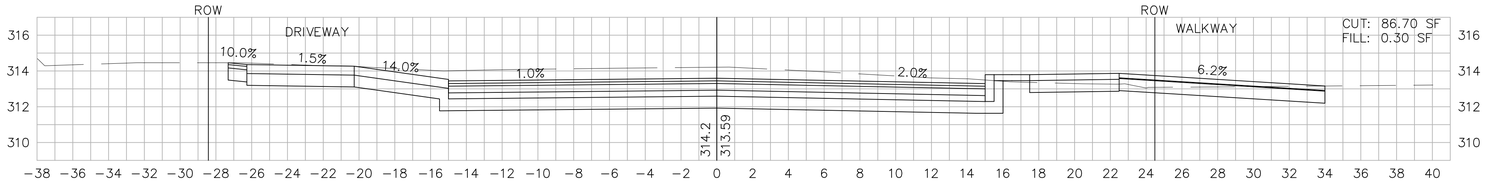




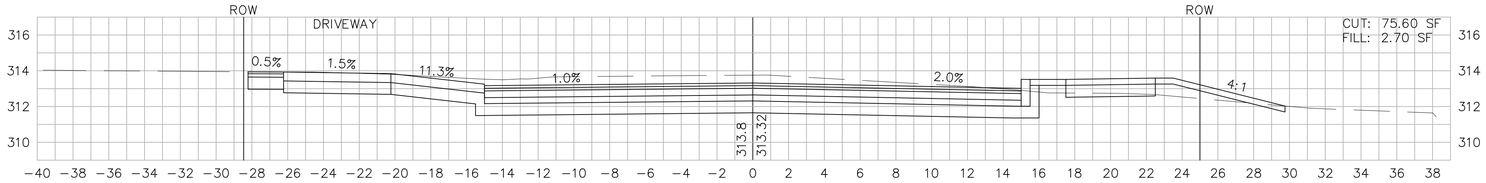
147+60



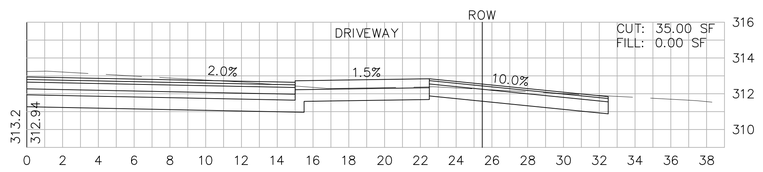
147+50



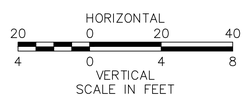
147+38



147+00



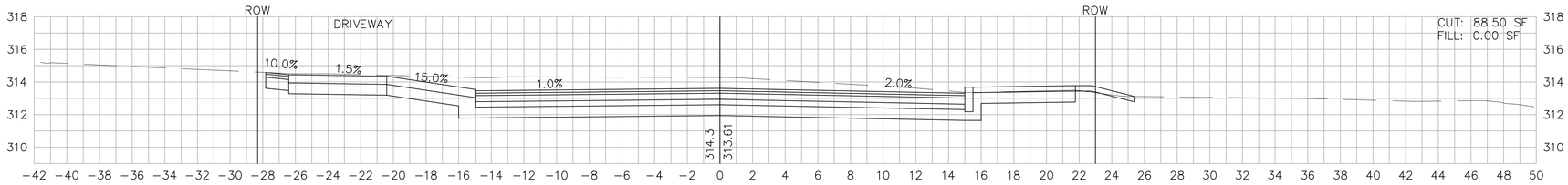
146+65



SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	129	154
PROJECT FILE NO. 604989			

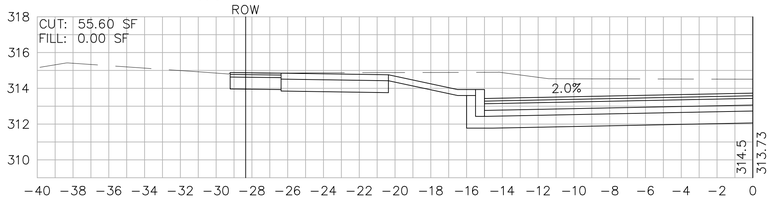
CROSS SECTIONS
MAIN STREET



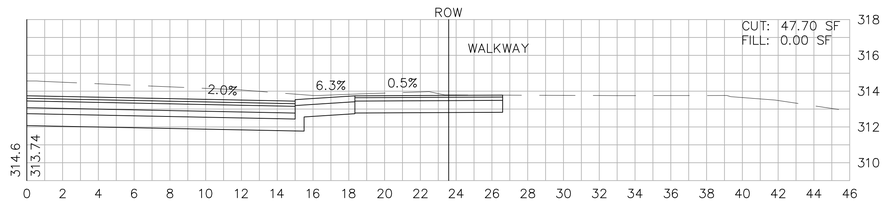
148+50

18" TREE
148+27
30.3' LT

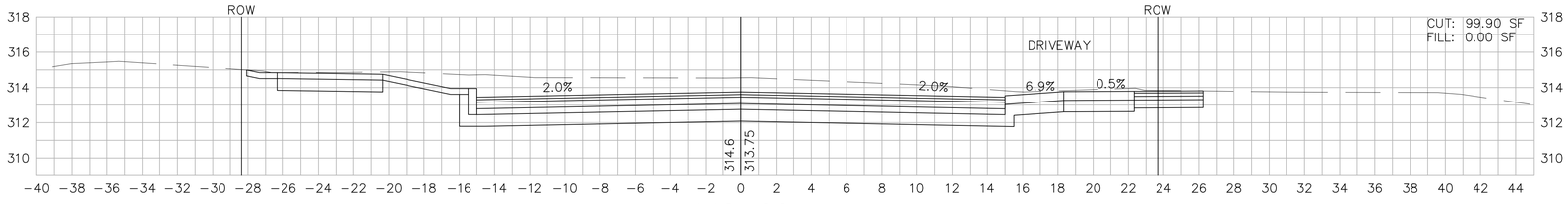
8" TREE
148+32
32.6' RT



148+15

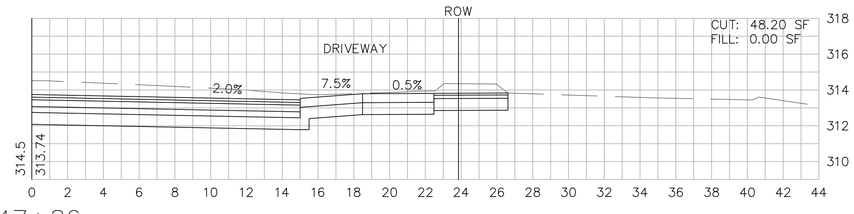


148+06



148+00

40" TREE
147+95
17.5' LT



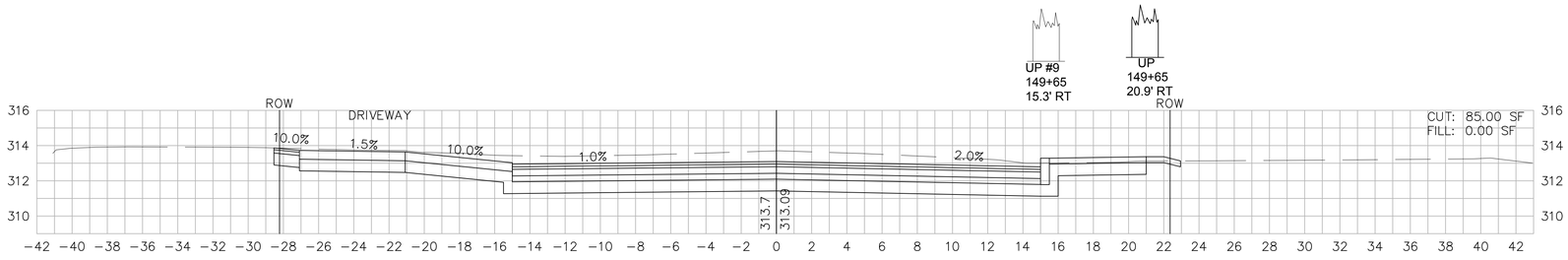
147+86

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

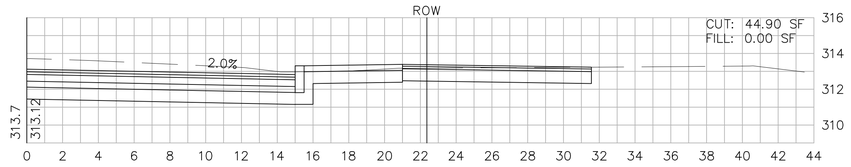
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	130	154
PROJECT FILE NO. 604989			

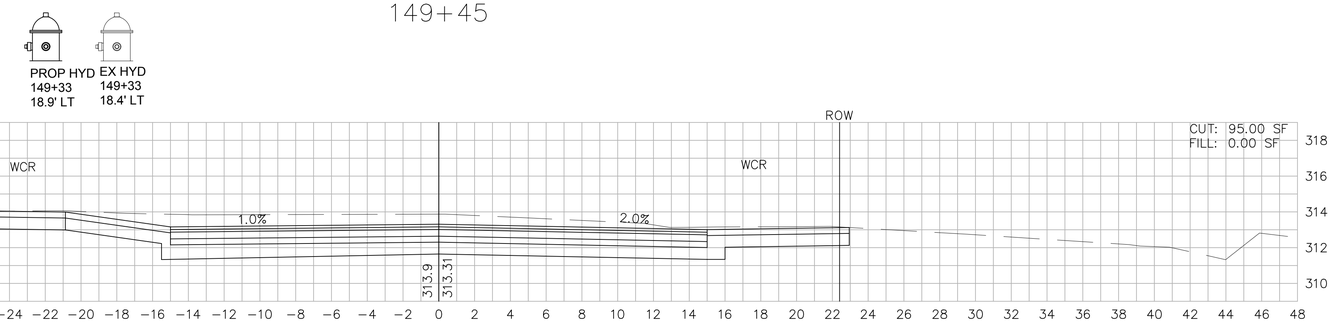
CROSS SECTIONS MAIN STREET



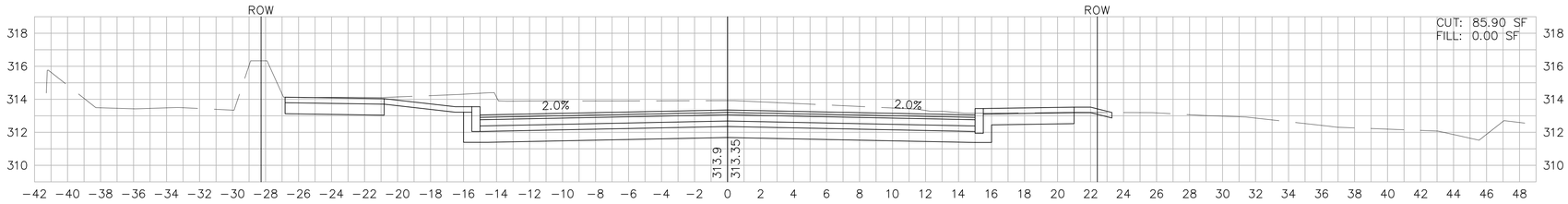
149+50



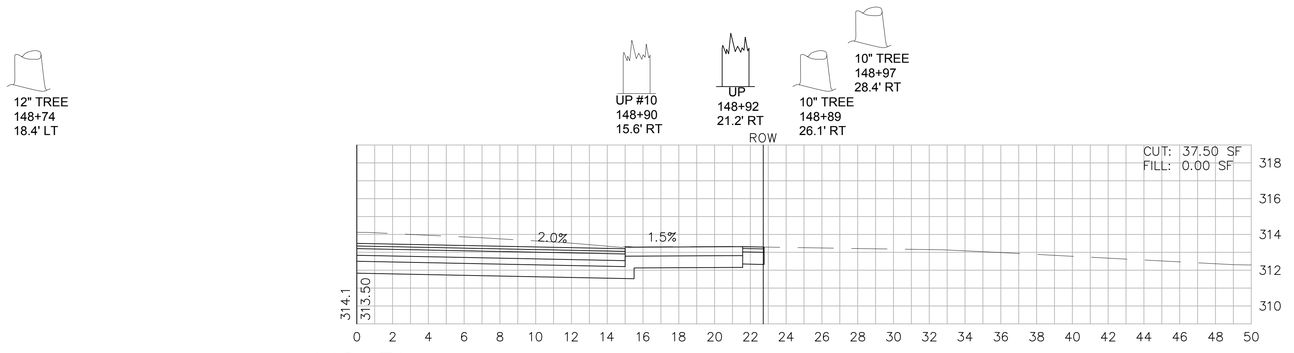
149+45



149+08



149+00



148+71

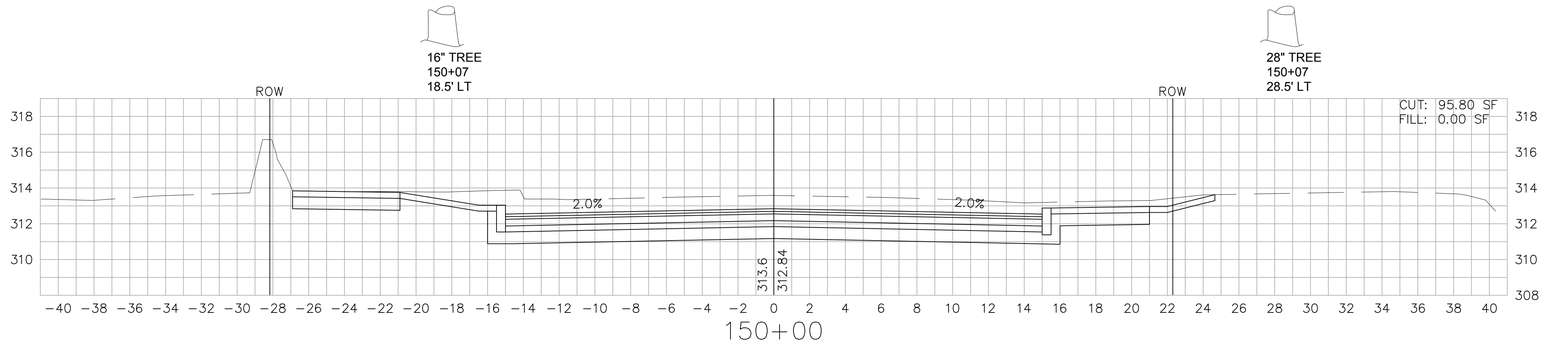
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

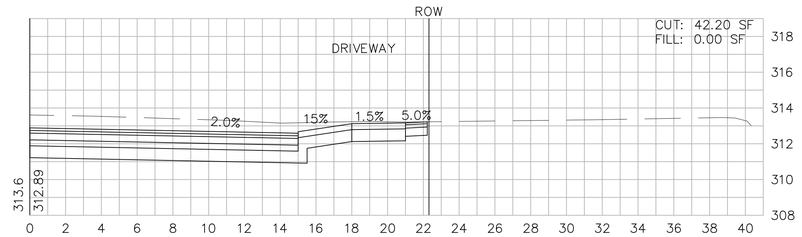
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	131	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

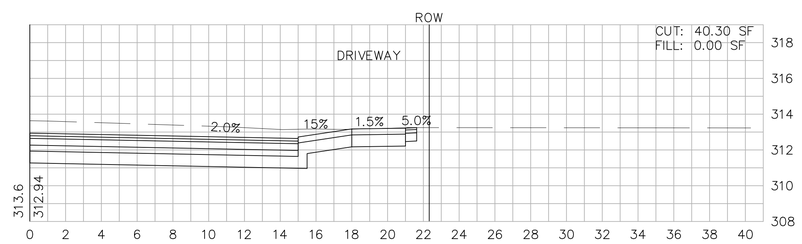


150+00



149+90

8" TREE
149+82
17.7' LT



149+80

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

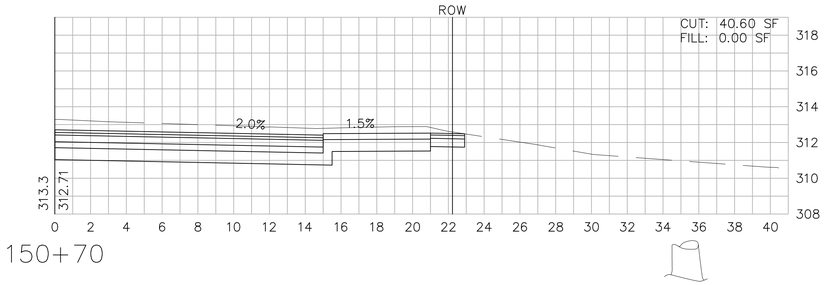
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	132	154
PROJECT FILE NO. 604989			

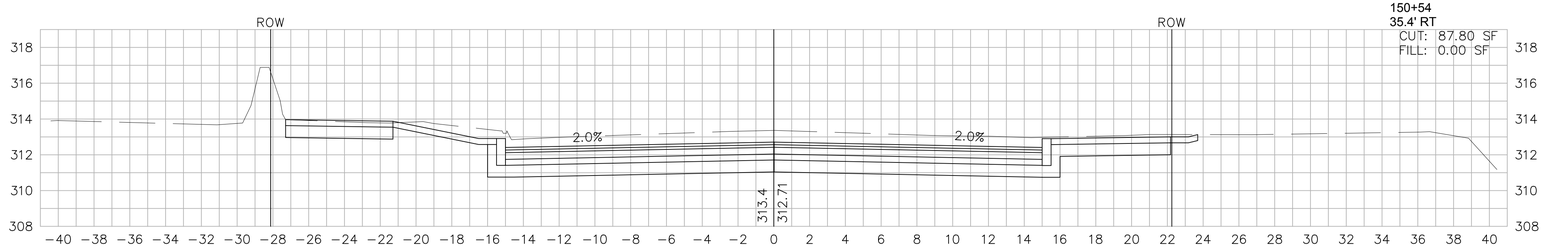
CROSS SECTIONS
MAIN STREET

12" TREE
150+94
17.9' LT



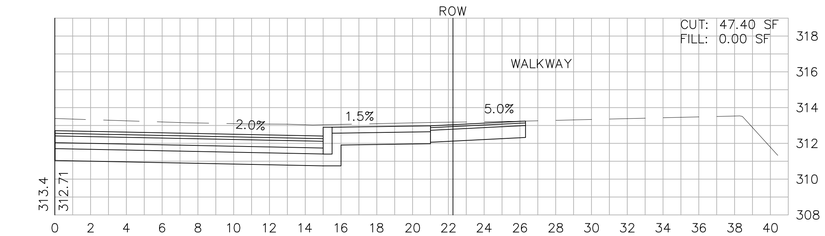
150+70

12" TREE
150+54
35.4' RT

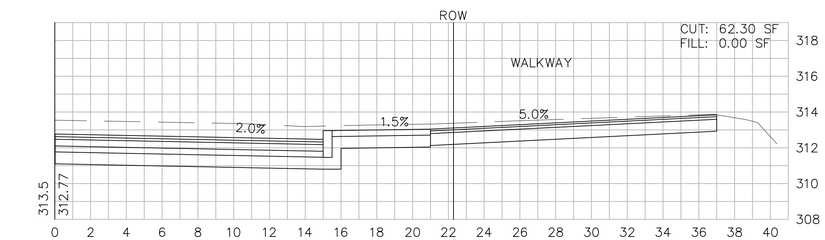


150+50

16" TREE
150+49
19.4' LT



150+45



150+16

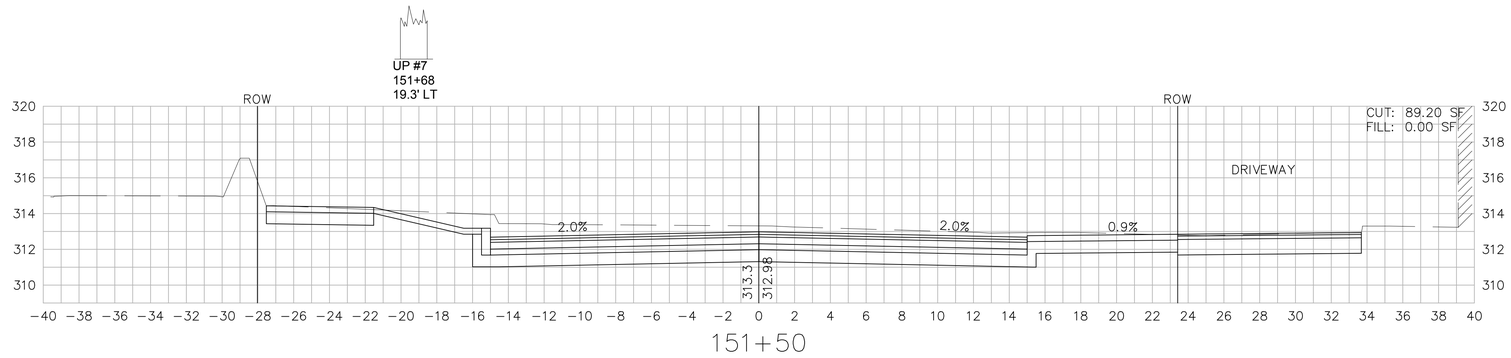
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

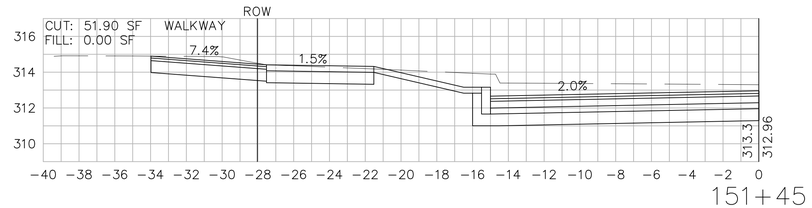
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	133	154
PROJECT FILE NO. 604989			

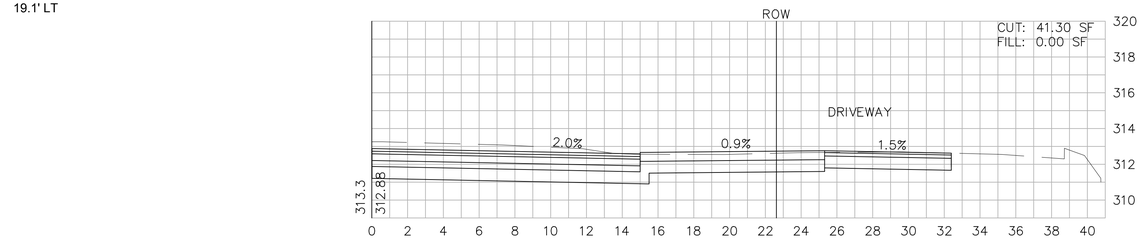
CROSS SECTIONS
MAIN STREET



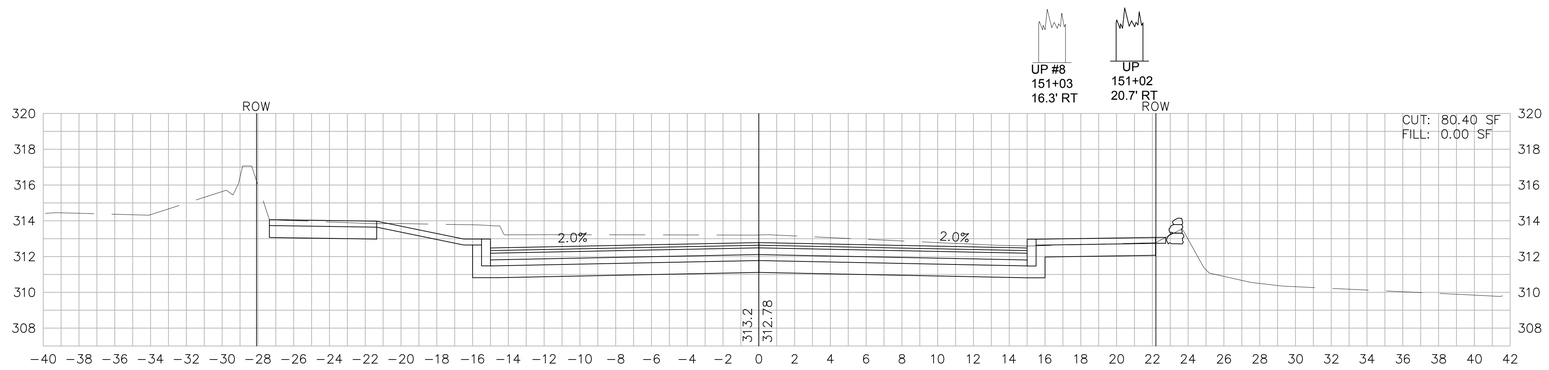
151+50



151+45



151+25



151+00

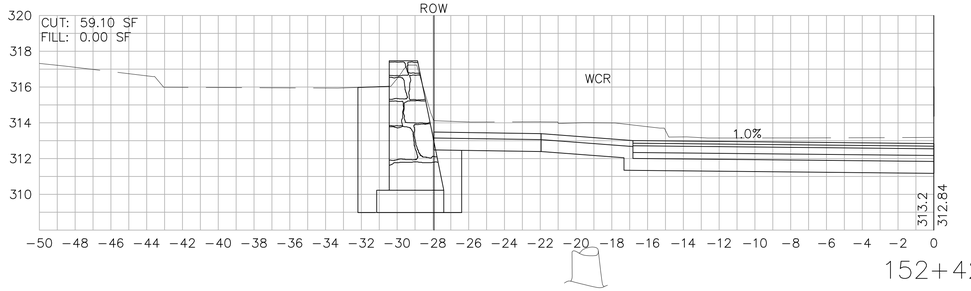
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	134	154
PROJECT FILE NO. 604989			

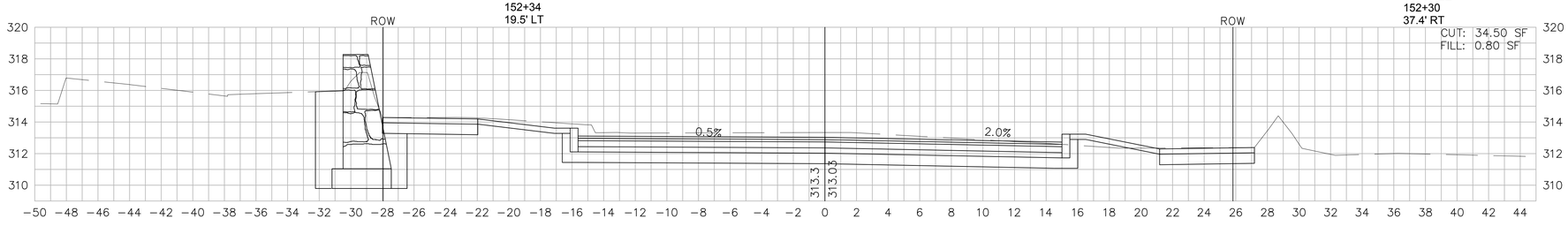
CROSS SECTIONS
MAIN STREET



152+42

20" TREE
152+45
39.3' RT

30" TREE
152+34
19.5' LT



152+25

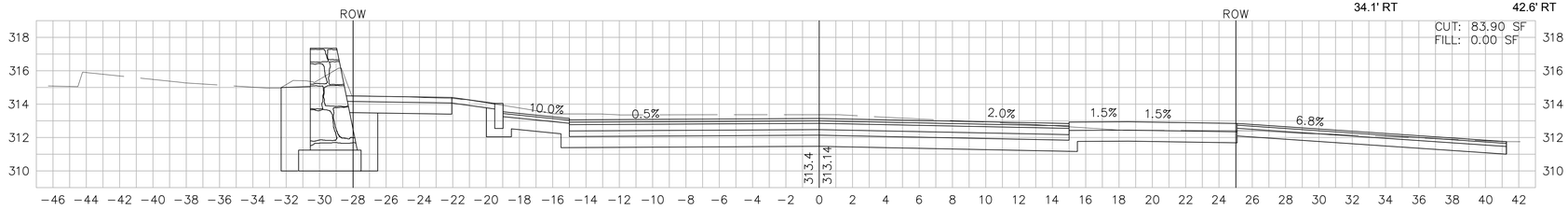
14" TREE
152+30
37.4' RT

12" TREE
152+22
36.3' RT

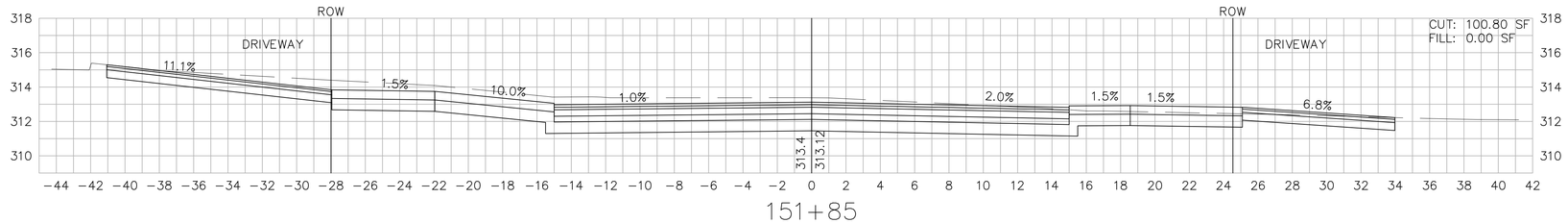
10" TREE
152+15
35.3' RT

8" TREE
152+07
34.1' RT

10" TREE
152+07
42.6' RT



152+00



151+85

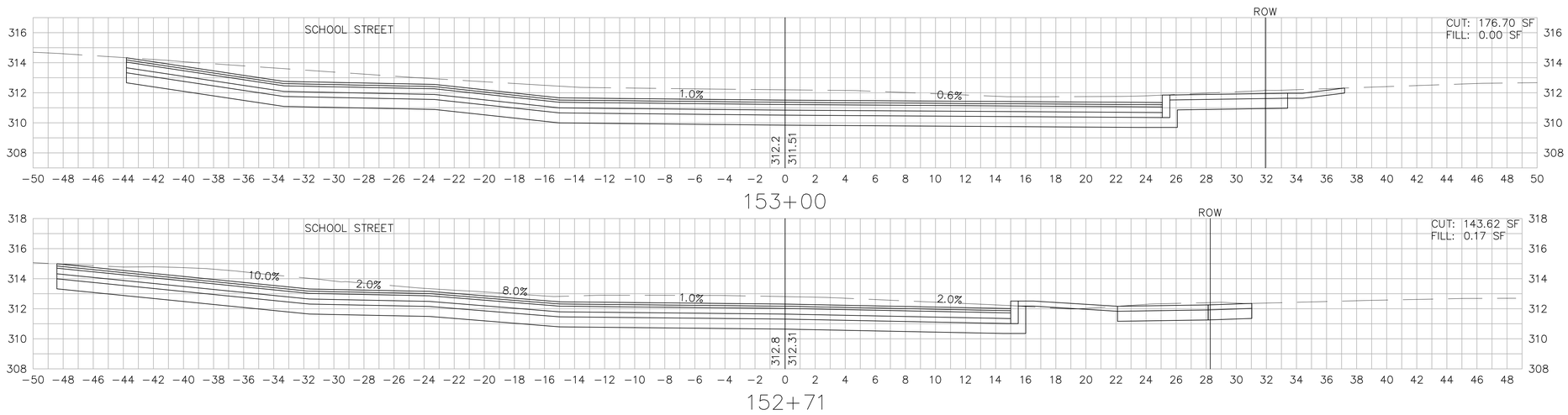
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

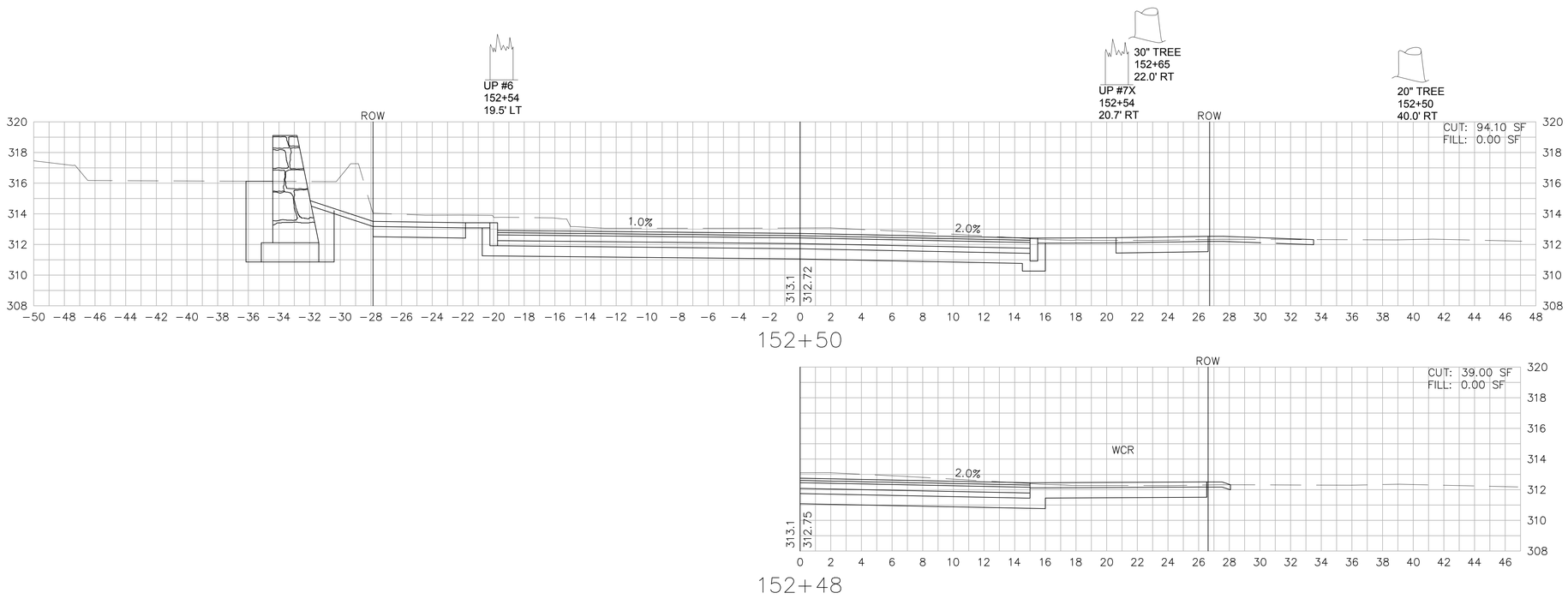
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	135	154
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET





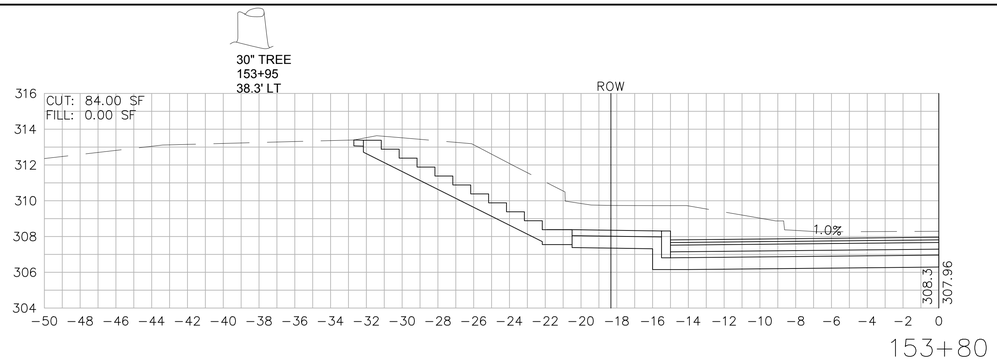
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

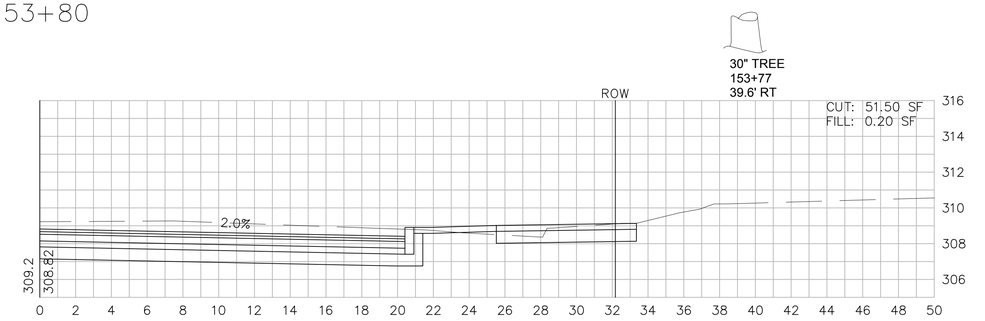
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	136	154
PROJECT FILE NO. 604989			

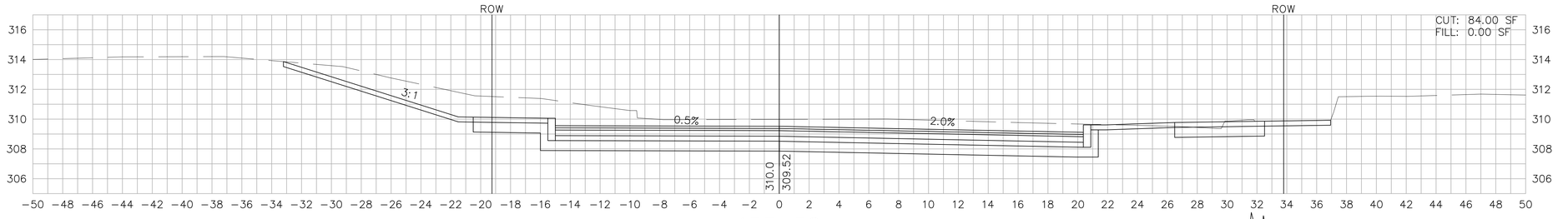
CROSS SECTIONS
MAIN STREET



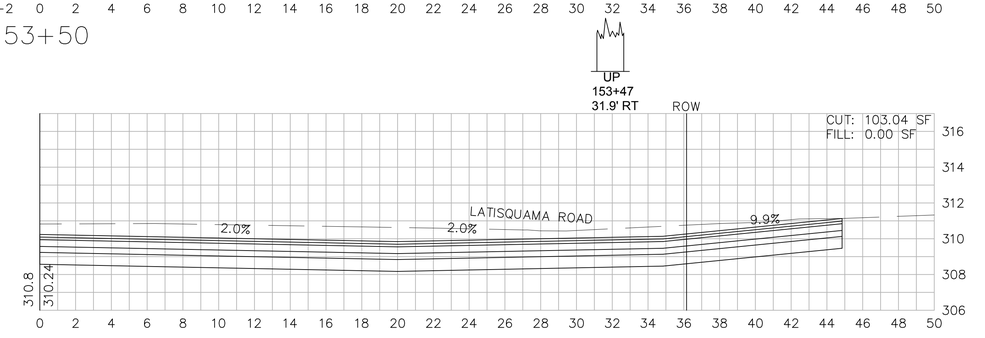
153+80



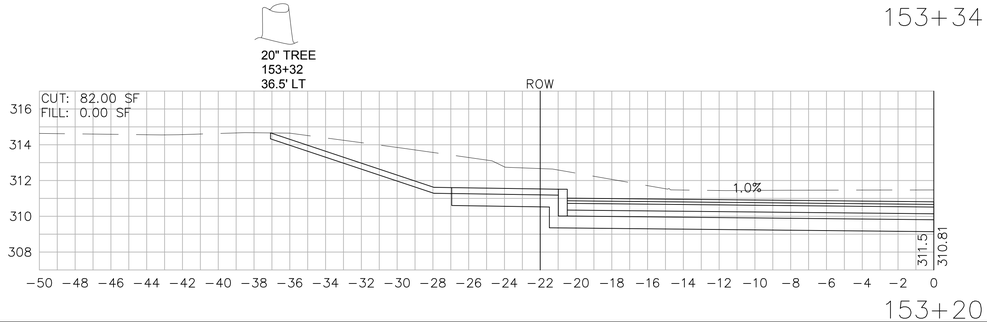
153+64



153+50



153+34



153+20

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

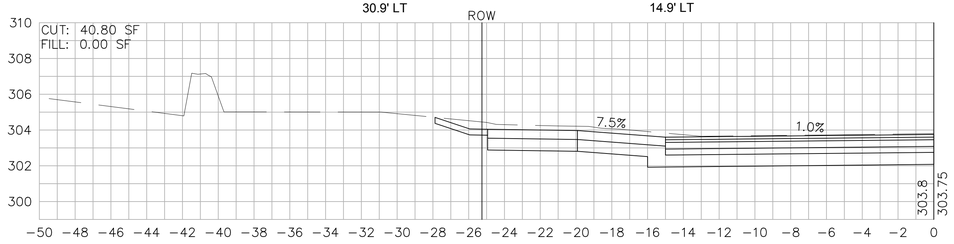
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	137	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

UP 154+80 20.8' RT
UP # 154+77 22.8' RT

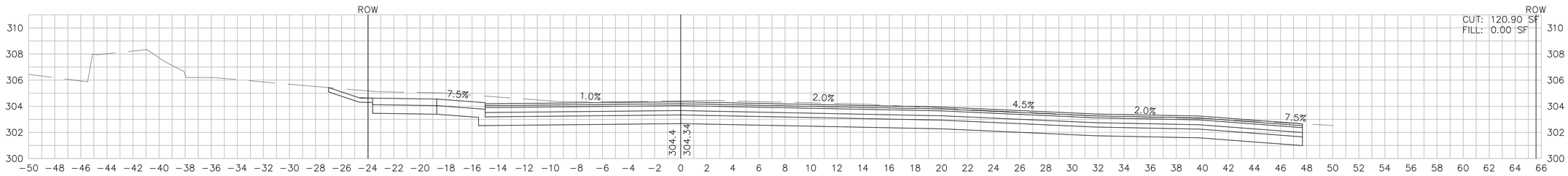
10" TREE
154+65
30.9' LT

EX HYD
154+66
14.9' LT

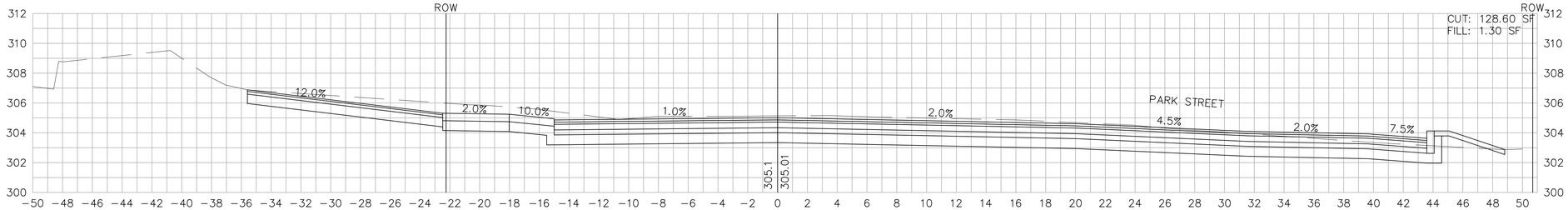


154+65

PROP HYD
154+57
24.0' LT

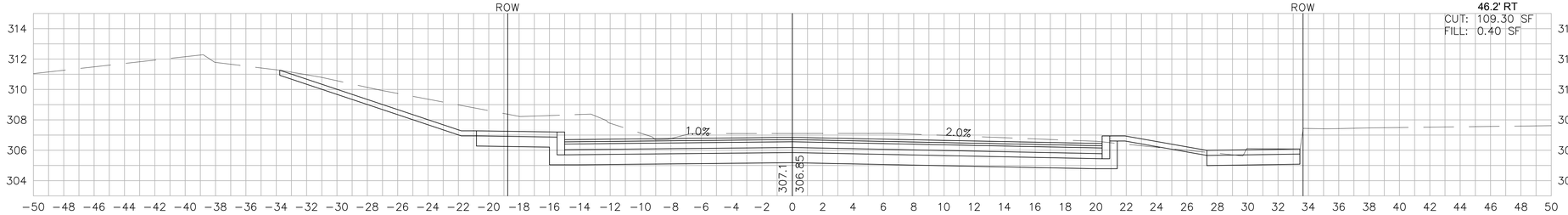


154+50



154+35

8" TREE
154+09
46.2' RT



154+00

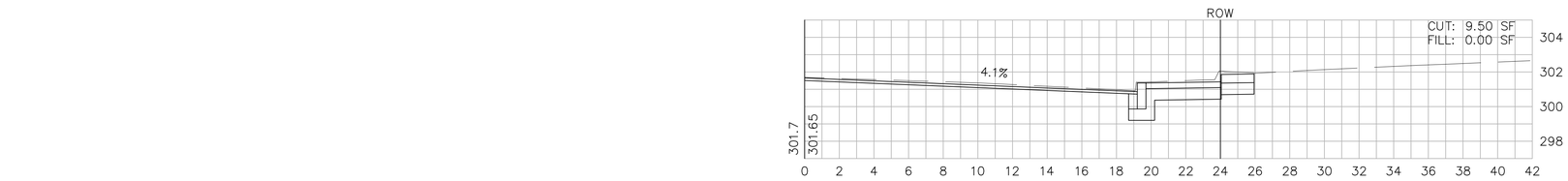
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

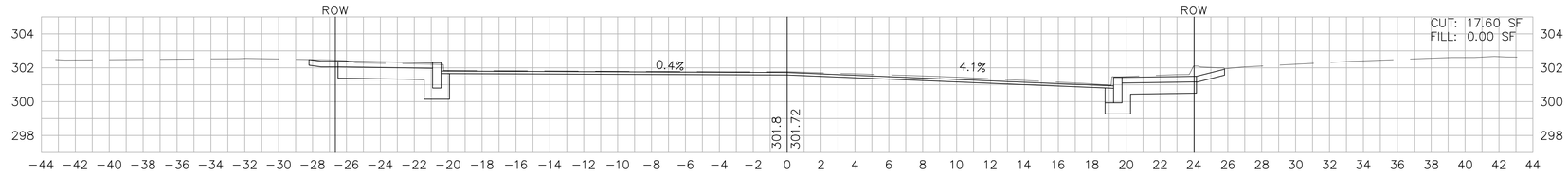
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	138	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

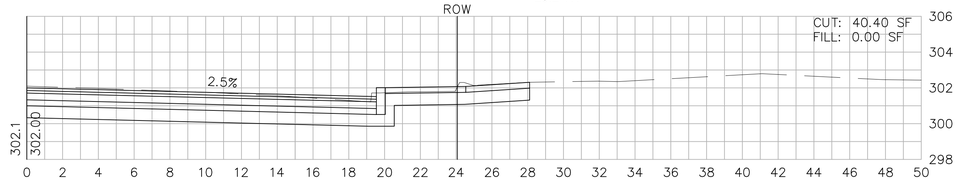


155+54



155+50

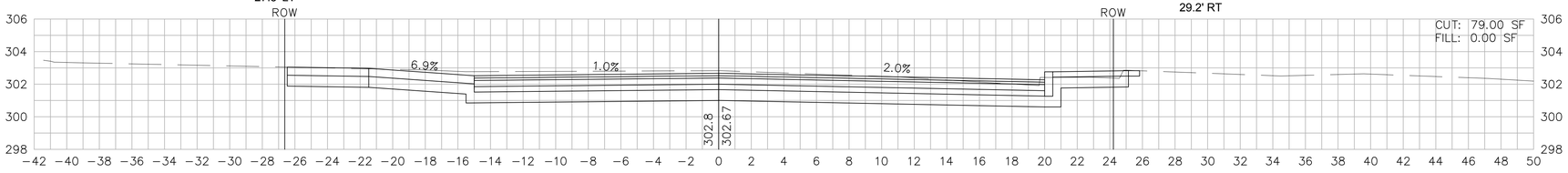
10" TREE
155+43
29.2' RT



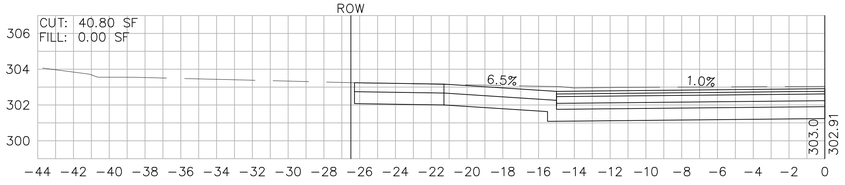
155+34

12" TREE
155+31
27.5' LT

10" TREE
155+24
29.2' RT



155+00



154+91

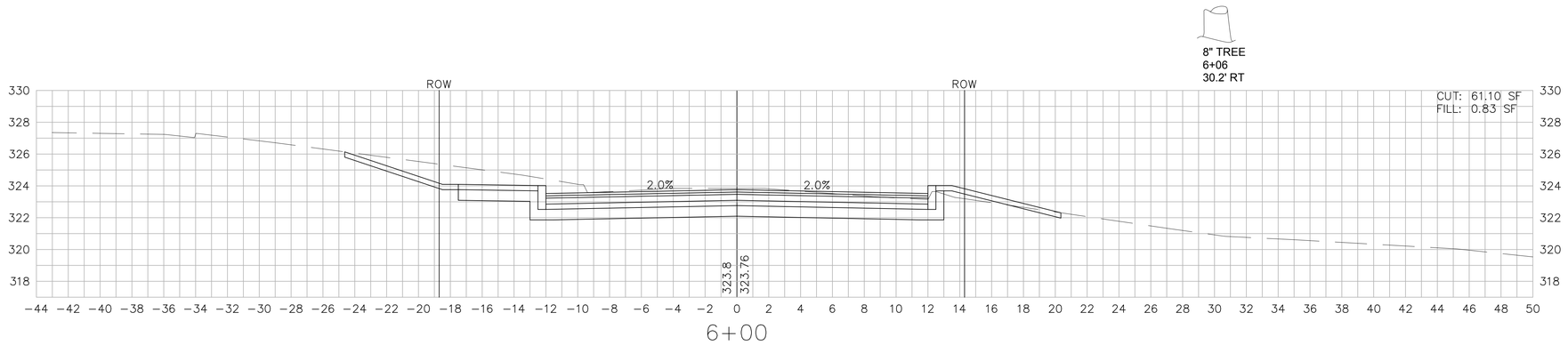
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	139	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
COMMON STREET

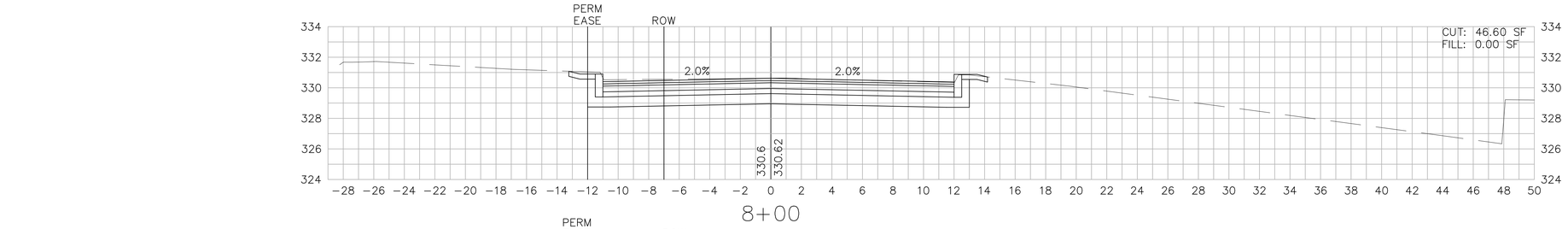


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

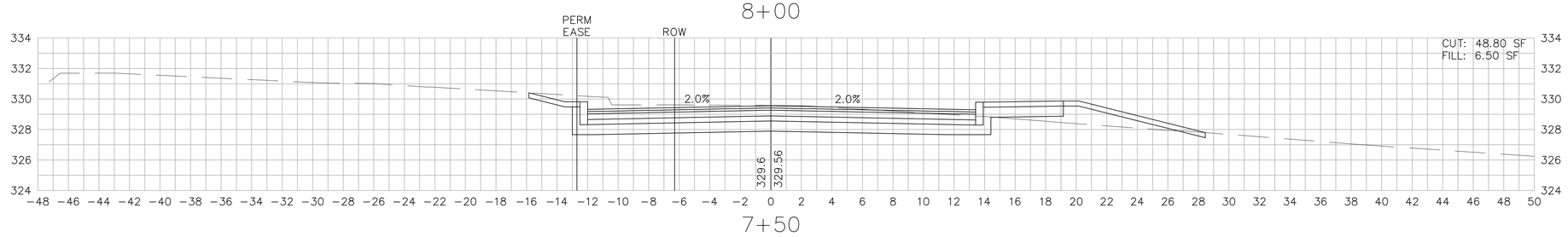
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	140	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
ST. MARKS STREET



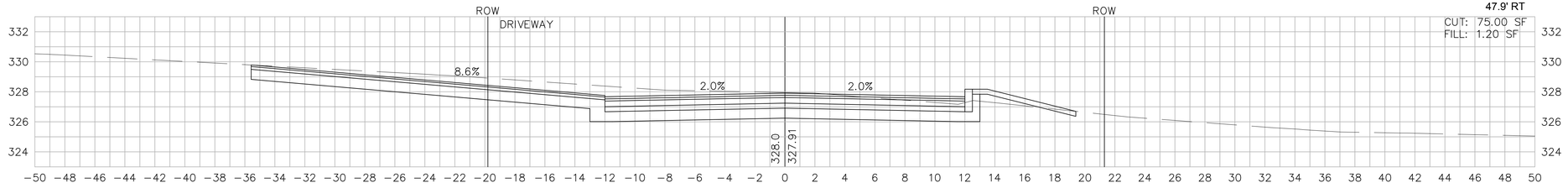
8+00



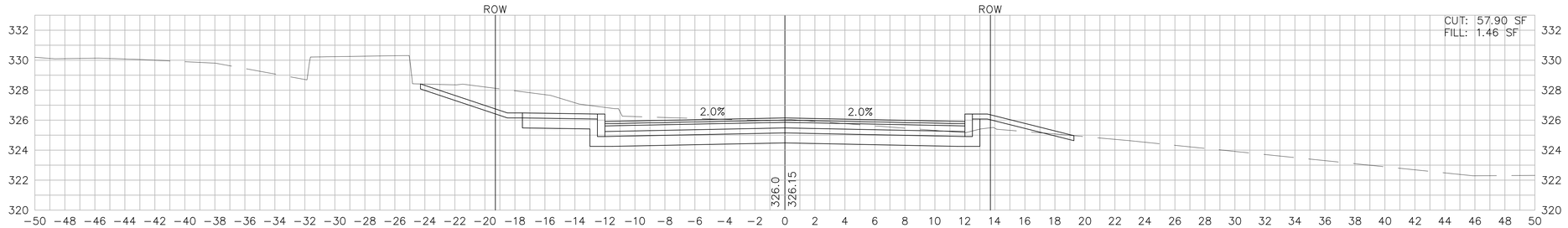
7+50

EX HYD
7+16
46.5' LT

UP #9
7+36
47.9' RT



7+00



6+50

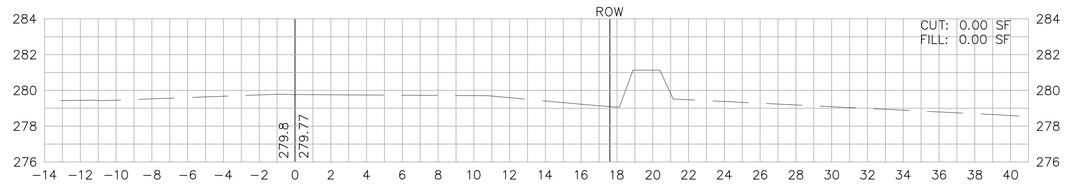
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

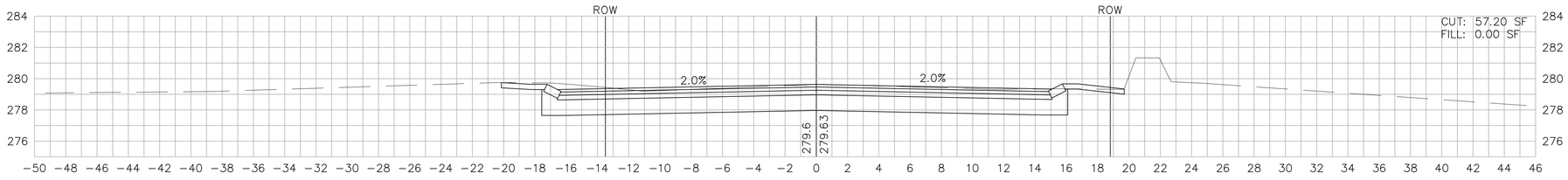
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	141	154
PROJECT FILE NO. 604989			

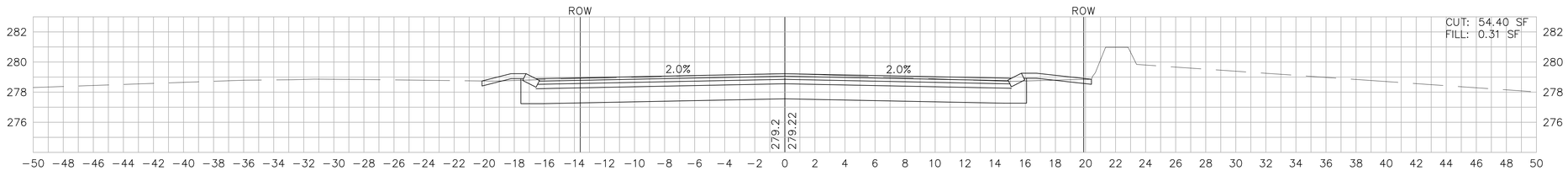
CROSS SECTIONS
SEARS ROAD



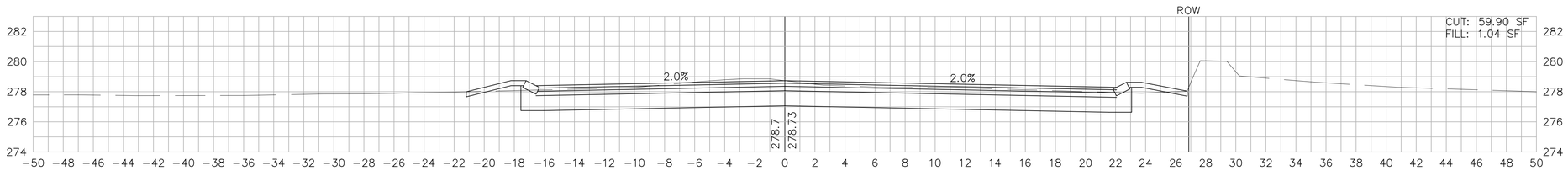
11+00



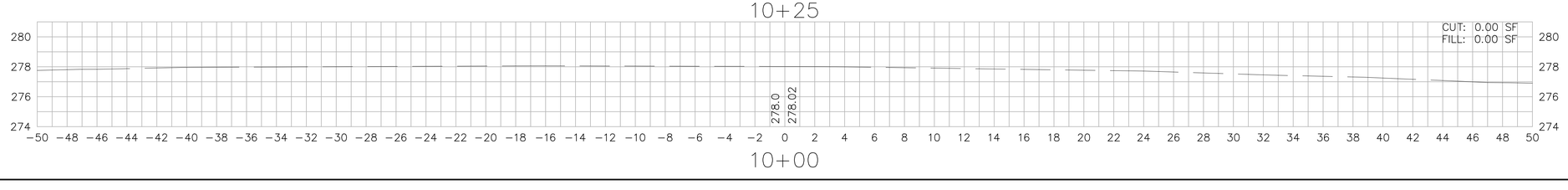
10+73



10+50



10+25



10+00

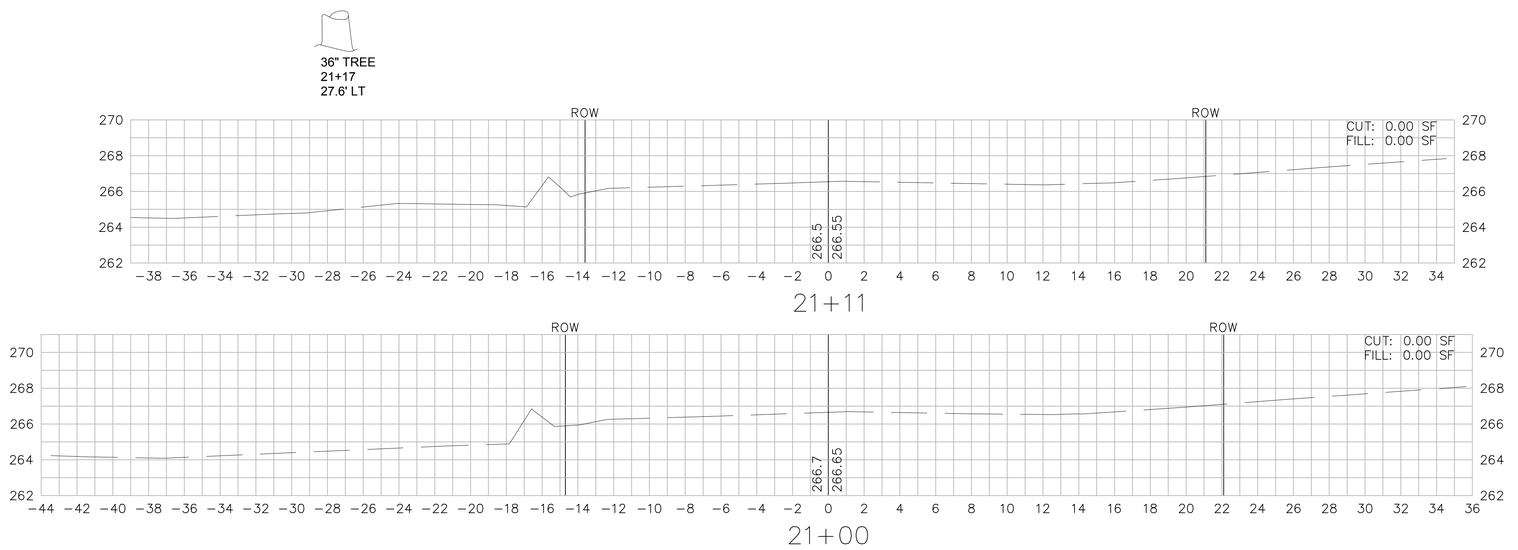
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

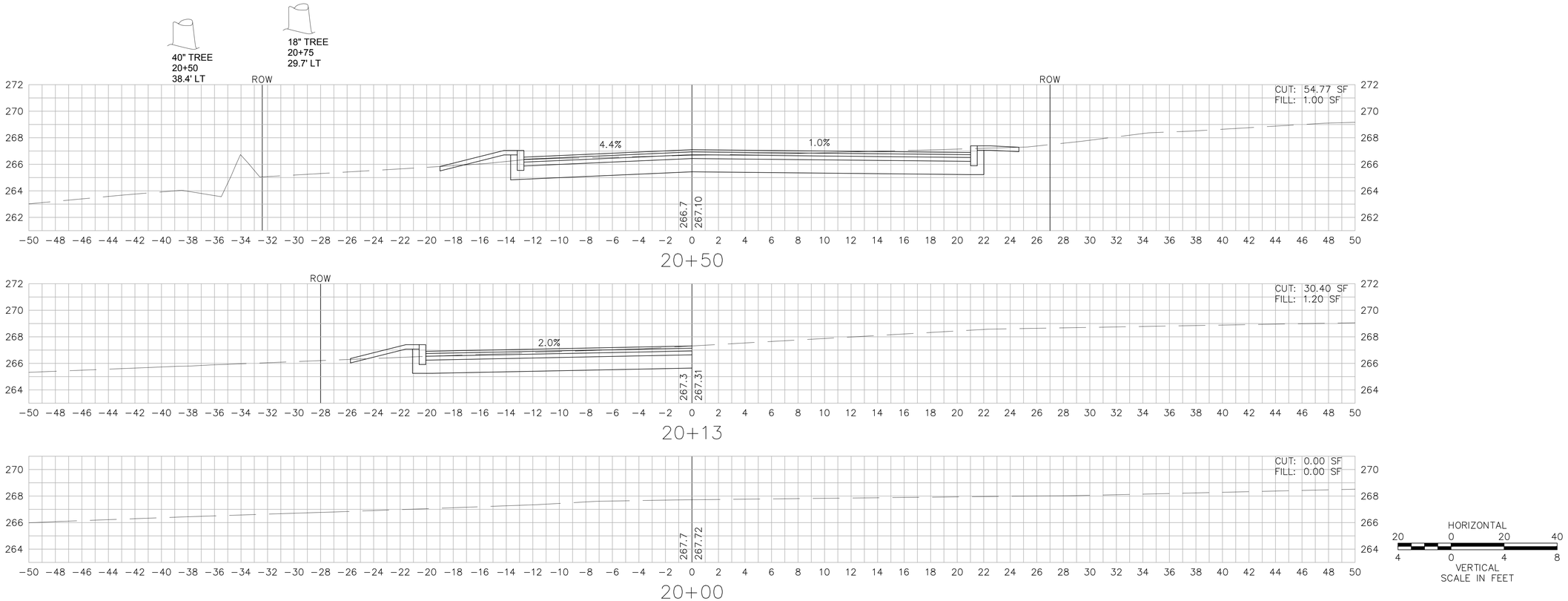
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	142	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
DEERFOOT ROAD



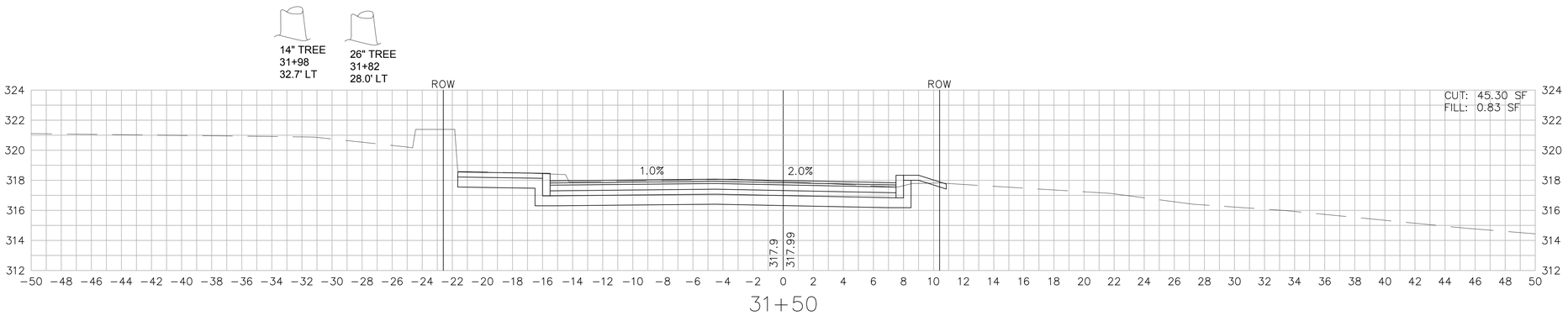


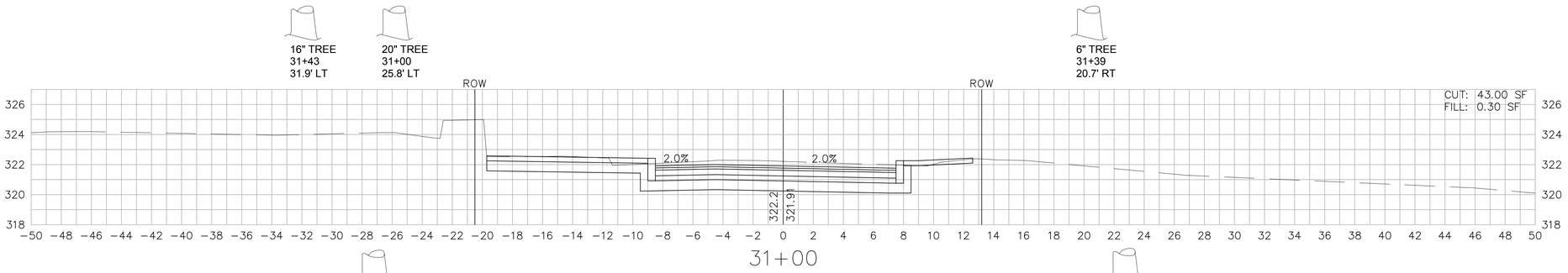
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	143	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
COMMON STREET



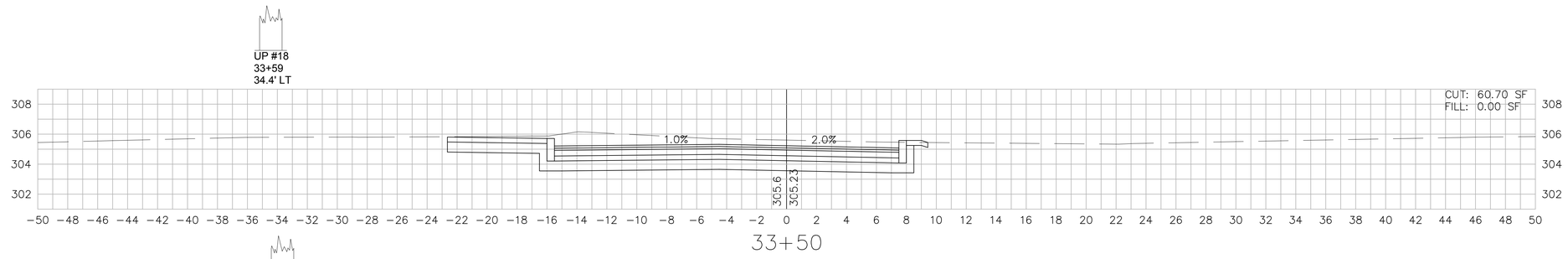


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

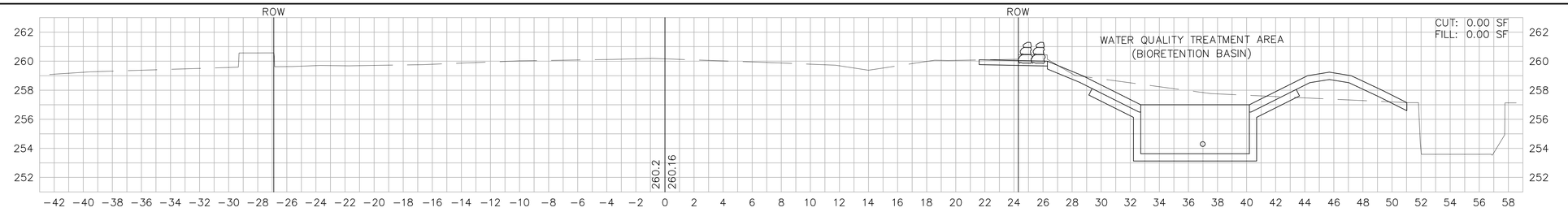
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	144	154
PROJECT FILE NO. 604989			

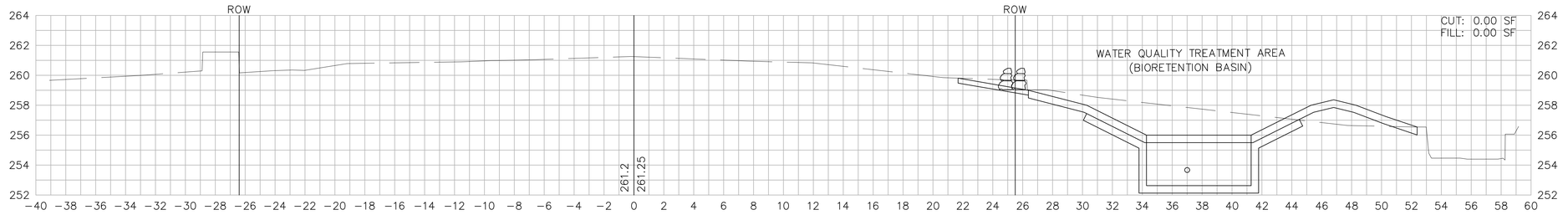
CROSS SECTIONS
COMMON STREET



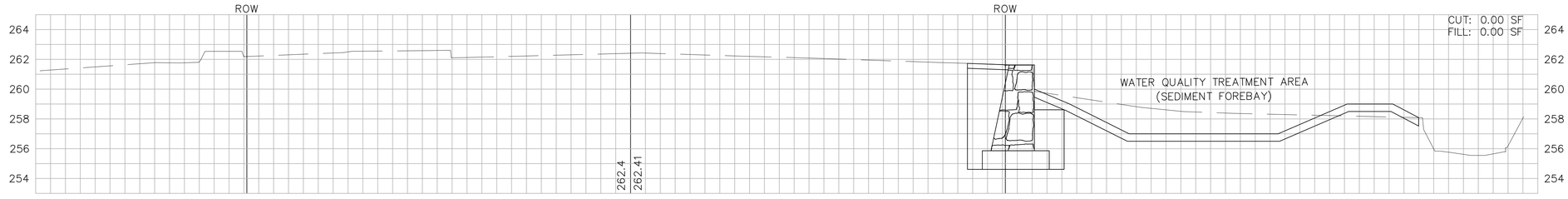
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg



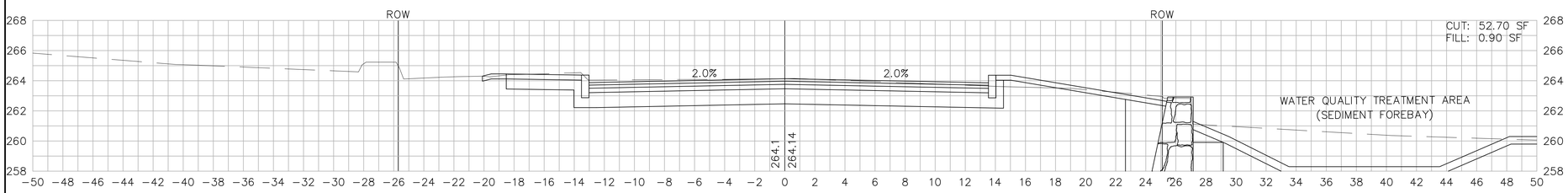
42+00



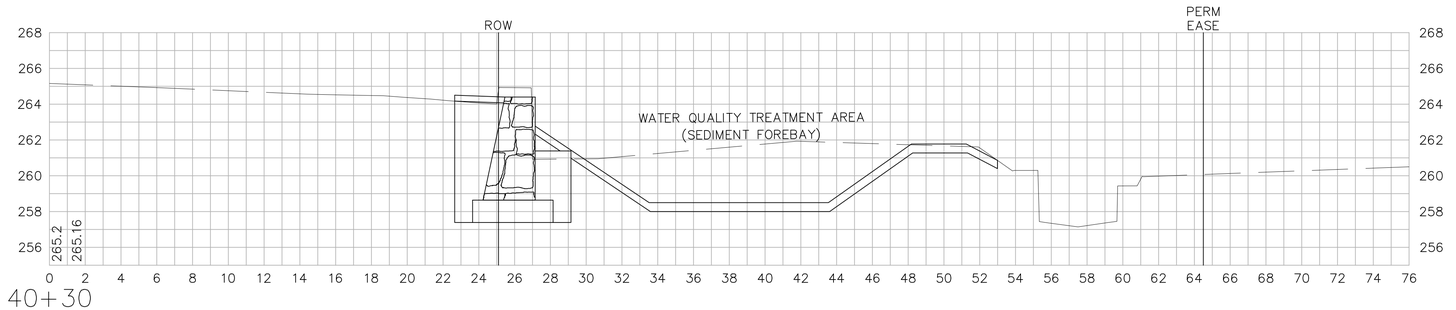
41+50



41+00



40+50



40+30

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	145	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
PARKERVILLE ROAD

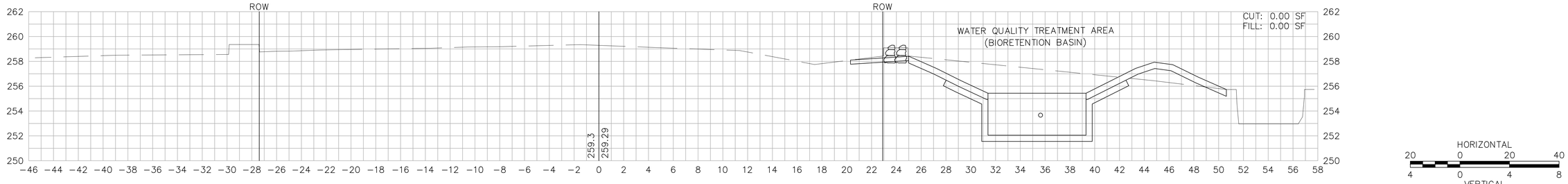
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	146	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
PARKERVILLE ROAD



42+50

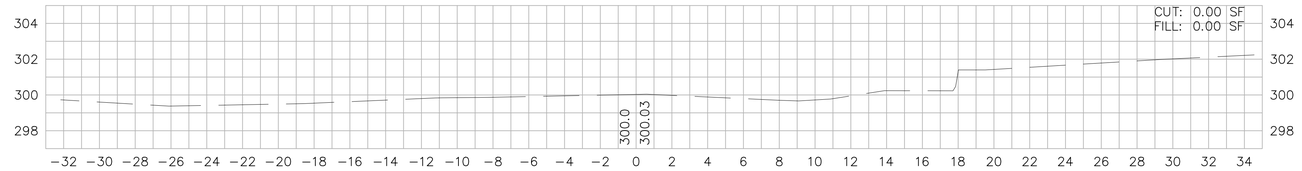
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

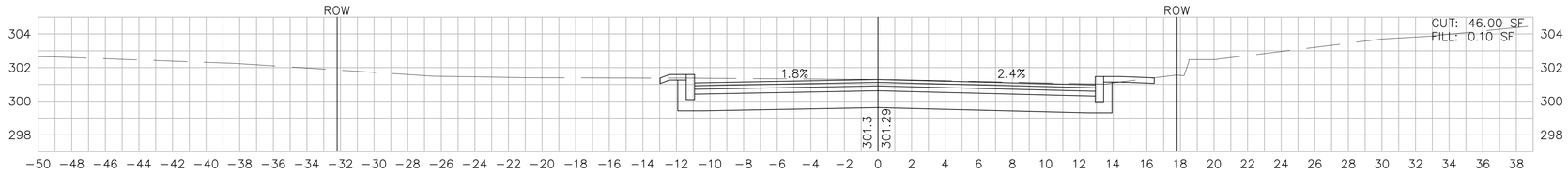
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	147	154
PROJECT FILE NO. 604989			

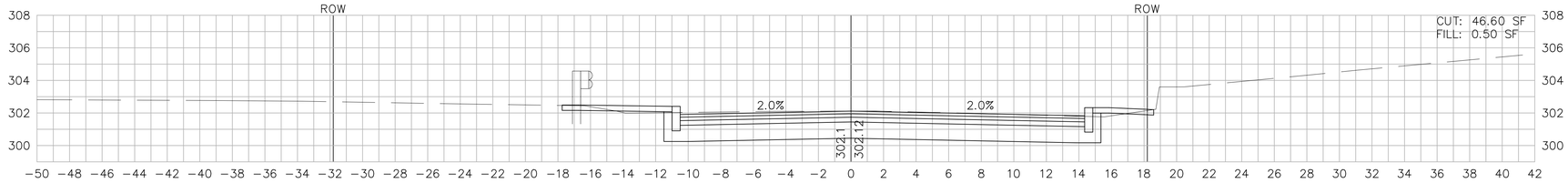
CROSS SECTIONS
PARK STREET



61+50



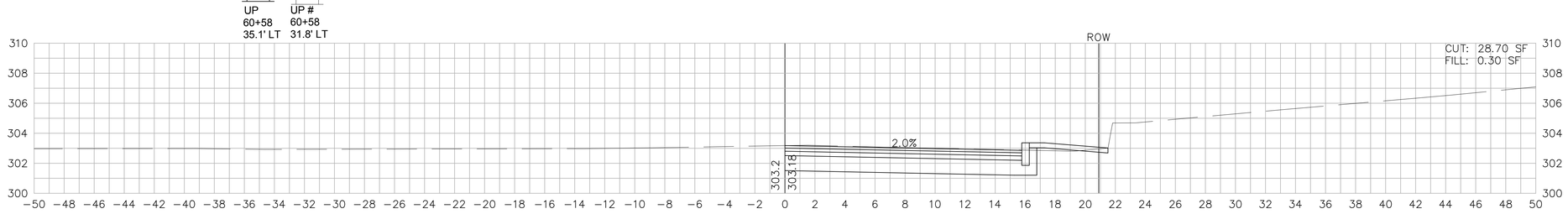
61+00



60+75

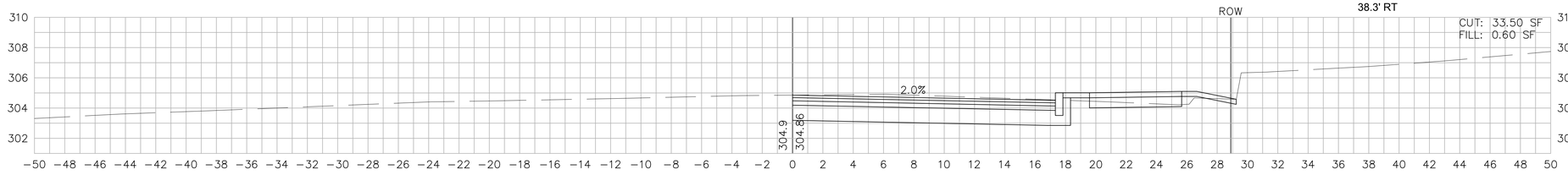
UP
60+58
35.1' LT

UP #
60+58
31.8' LT

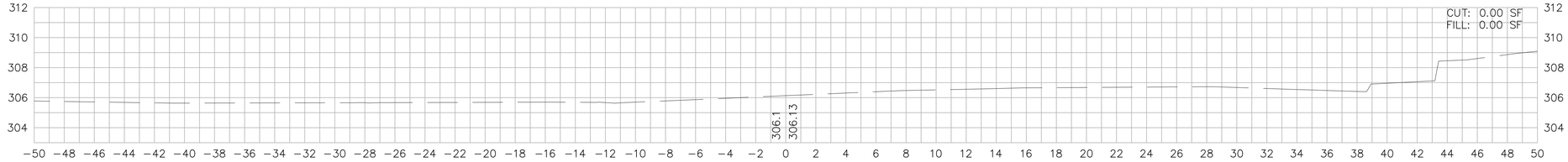


60+50

8" TREE
60+27
38.3' RT



60+25



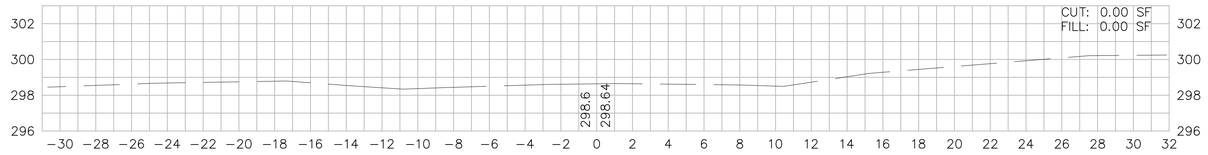
60+00

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	148	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
PARK STREET



62+00

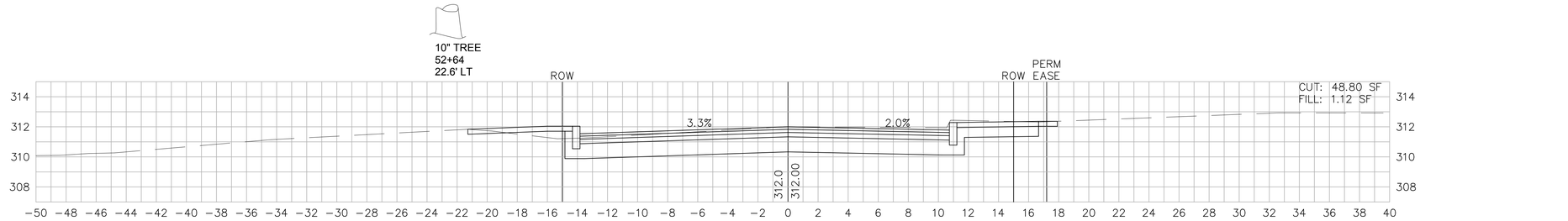
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

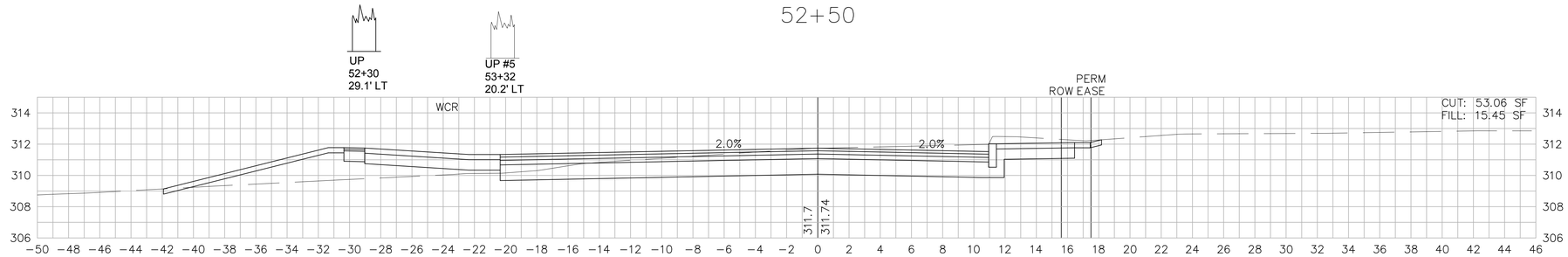
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	149	154
PROJECT FILE NO. 604989			

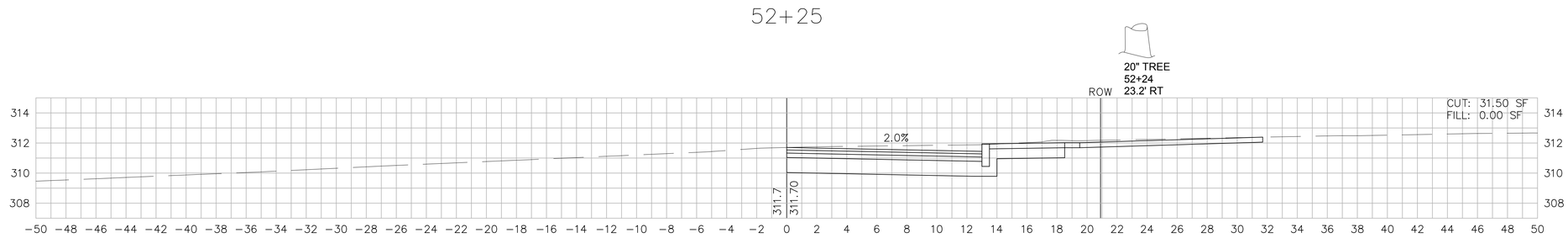
CROSS SECTIONS
SCHOOL STREET



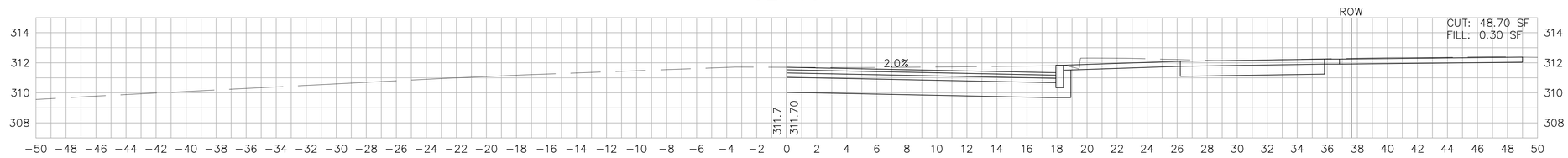
52+50



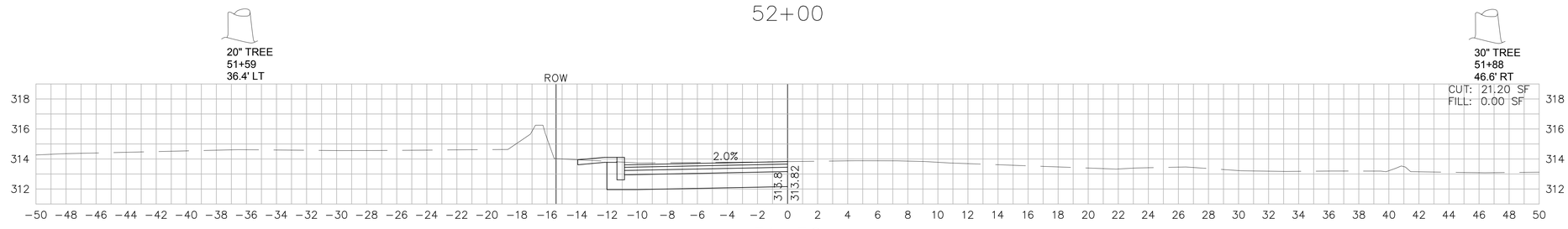
52+25



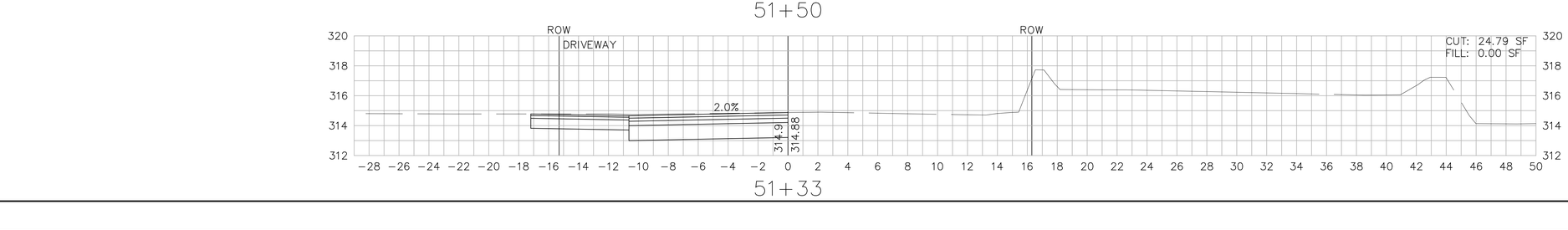
52+10



52+00



51+50



51+33

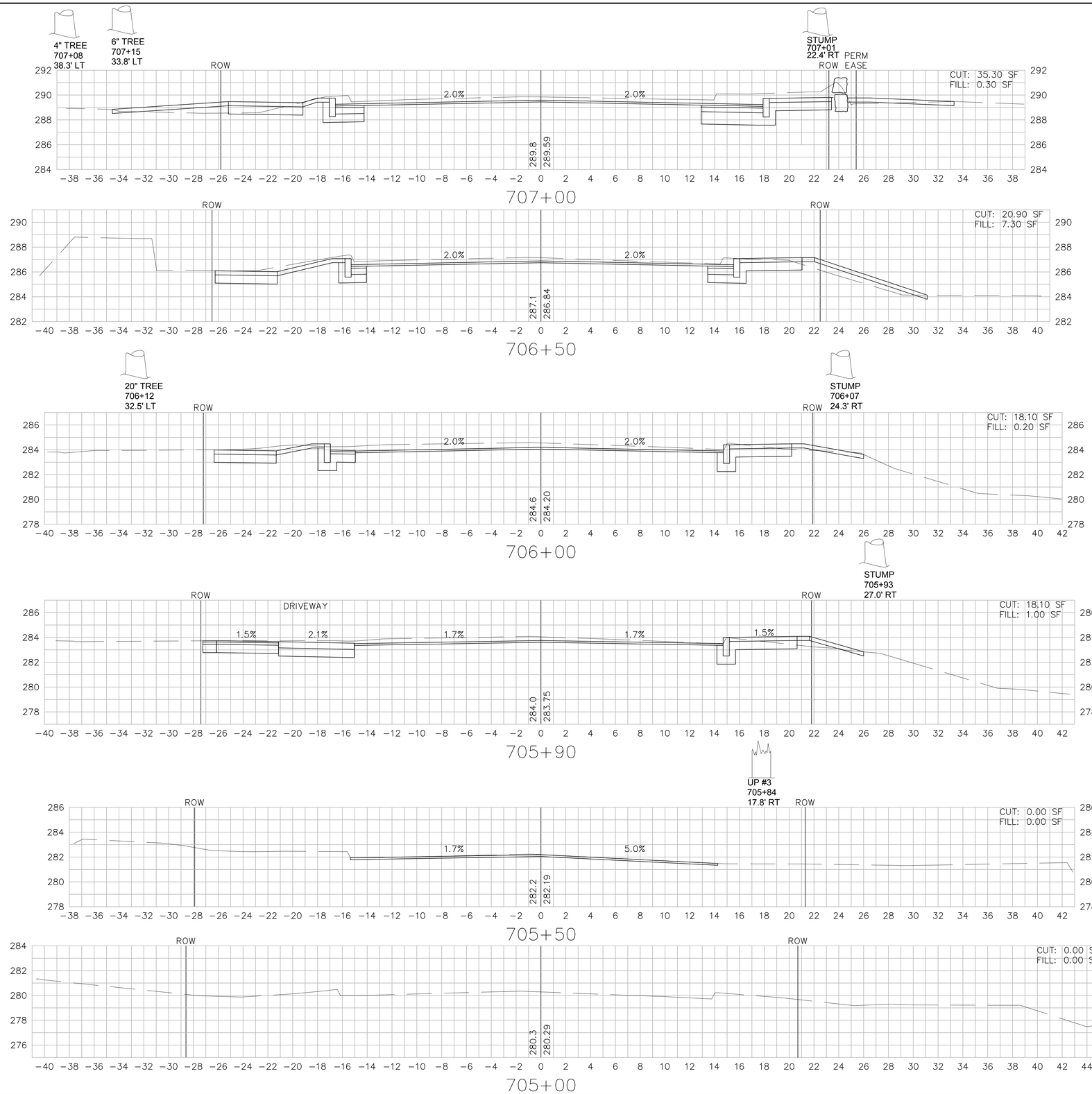
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	150	154
PROJECT FILE NO. 604989			

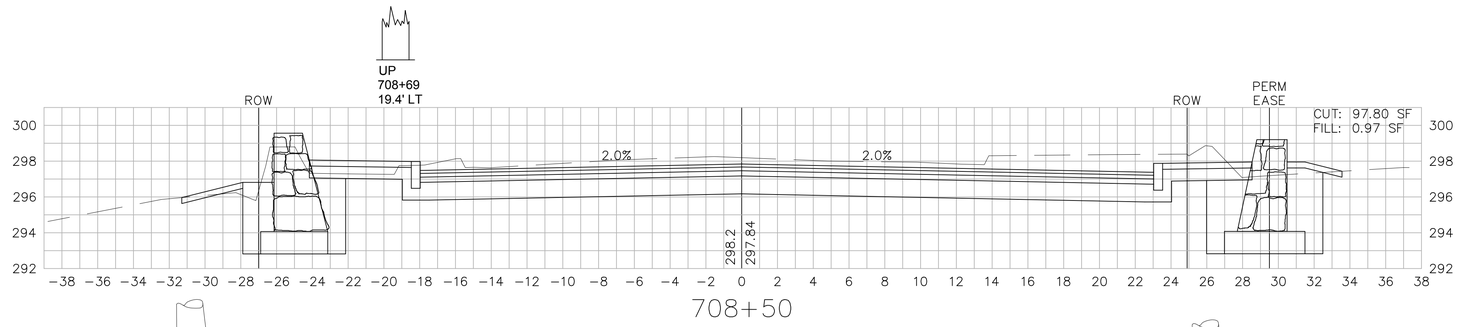
CROSS SECTIONS
ROUTE 85

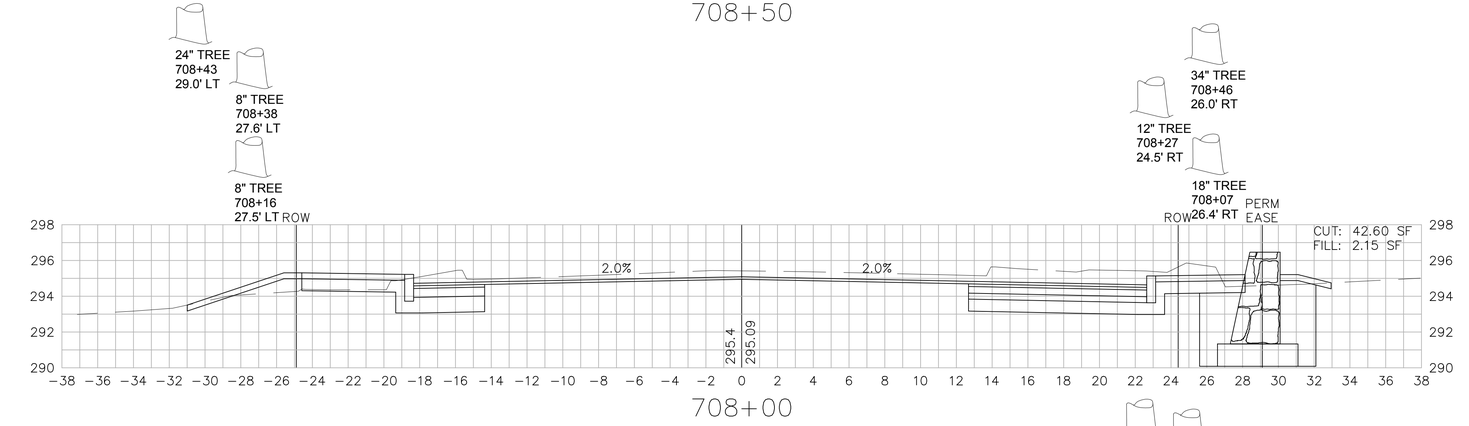


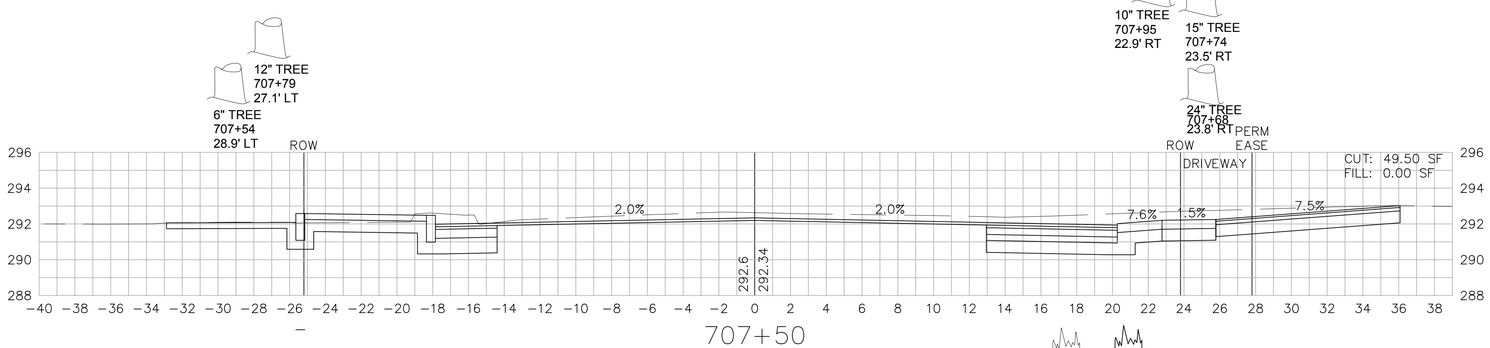
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

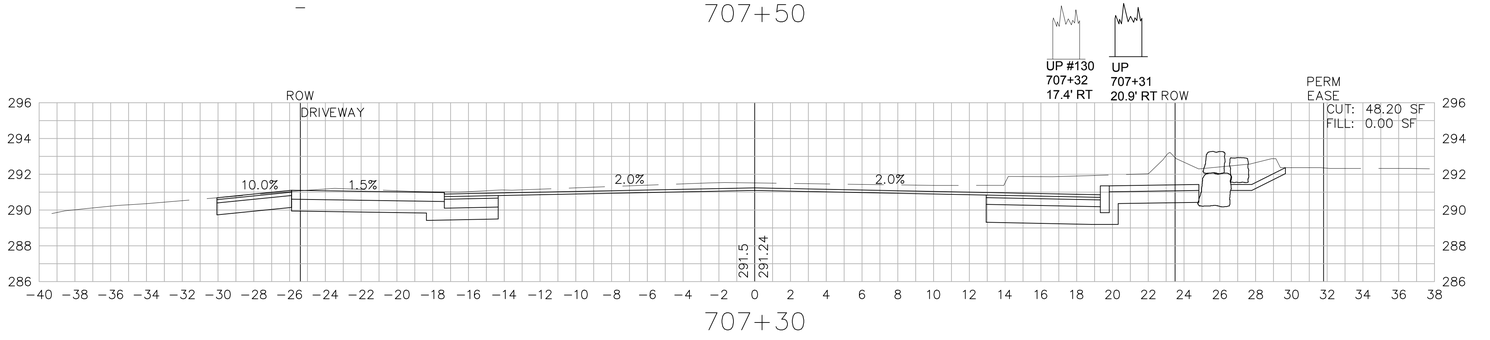
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	151	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85







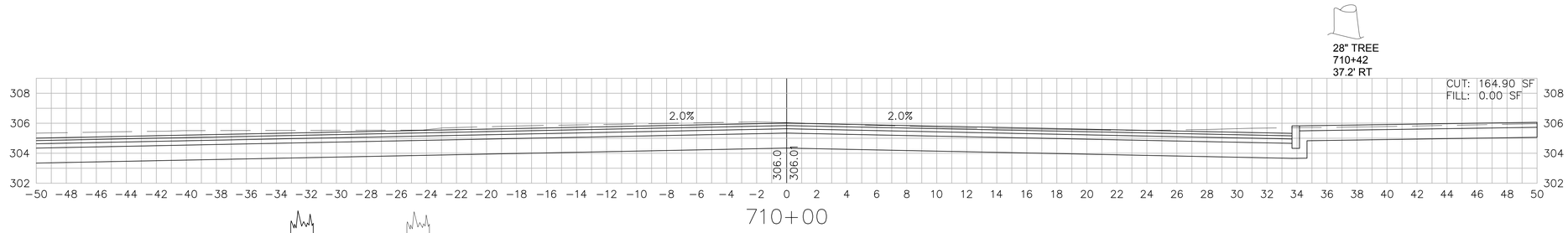


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	152	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

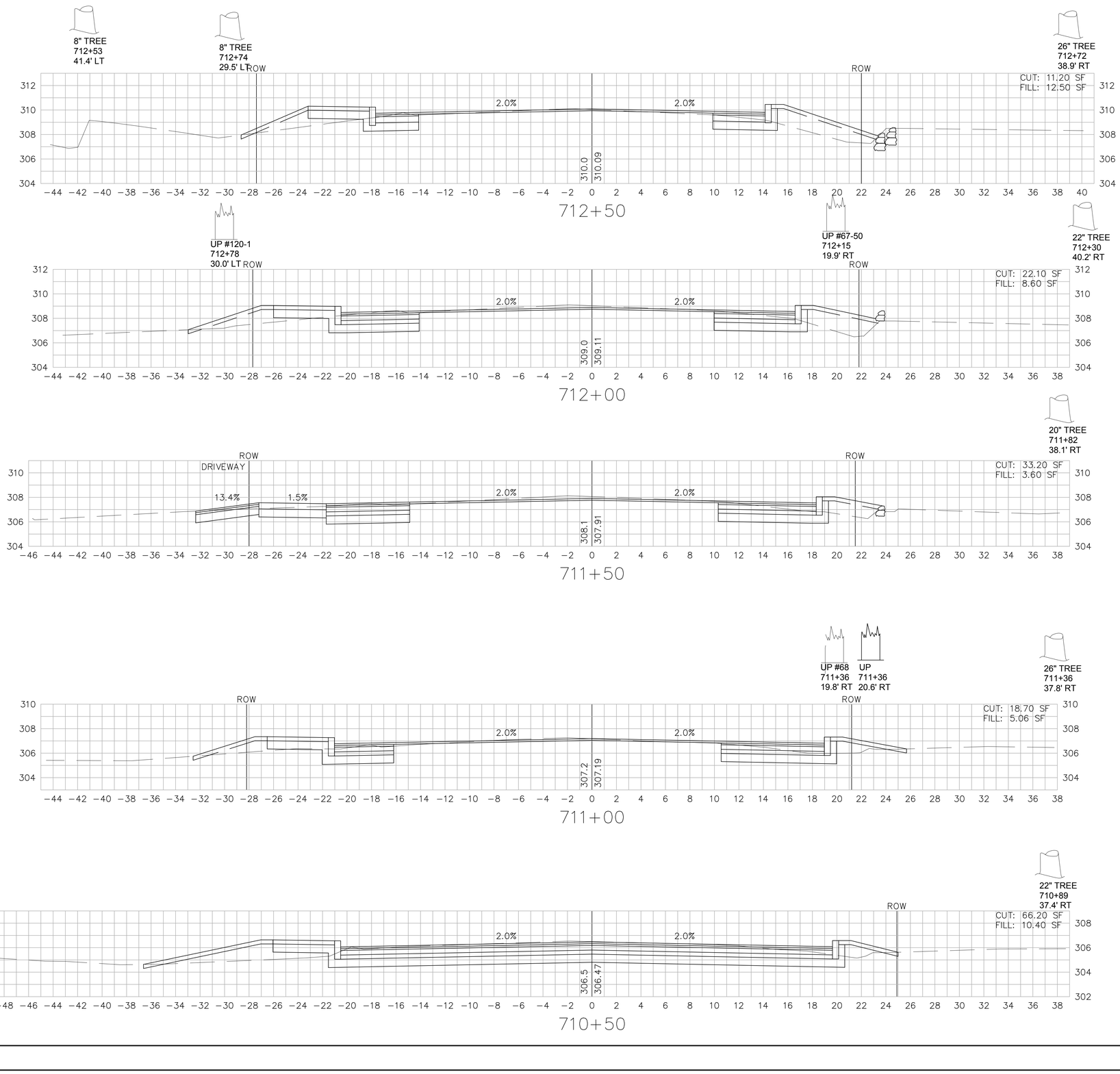


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	153	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85



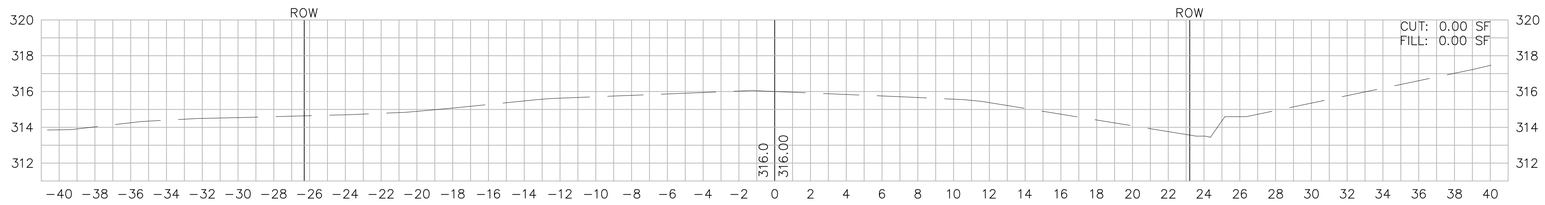
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

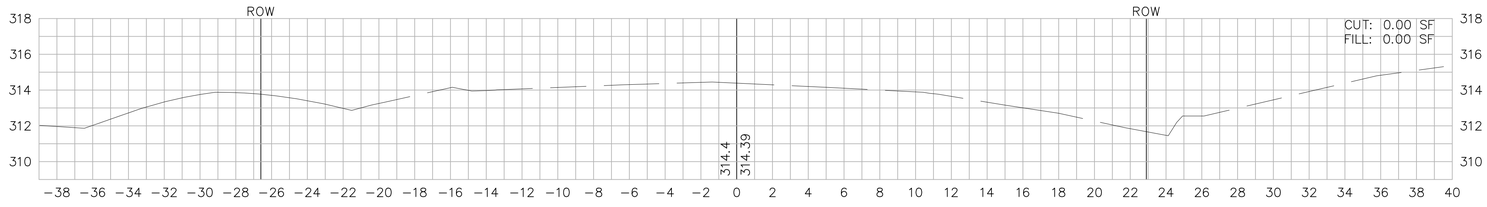
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	154	154
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85



714+50

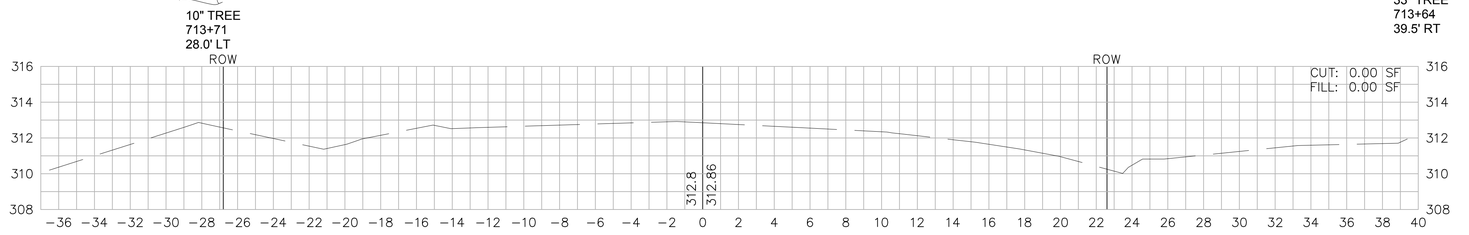


714+00

10" TREE
713+94
28.4' LT

10" TREE
713+71
28.0' LT

33" TREE
713+64
39.5' RT



713+50

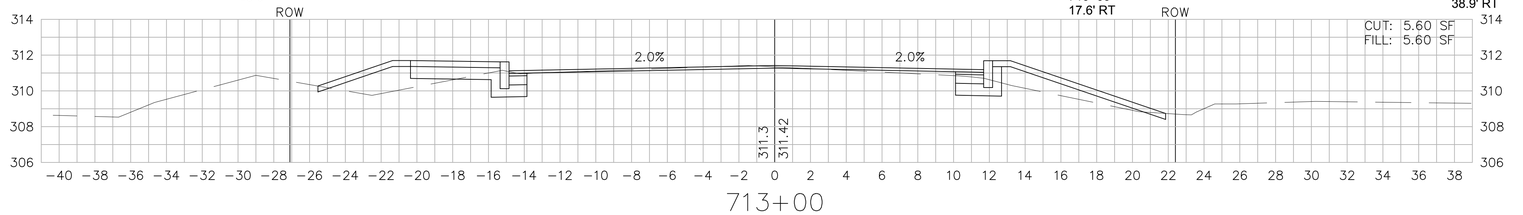
10" TREE
713+47
28.2' LT

8" TREE
713+23
29.6' LT

8" TREE
713+00
29.0' LT

UP #67
713+35
17.6' RT

20" TREE
713+17
38.9' RT



713+00

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET