MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	---	1	156
PROJECT FILE NO. 604989			

TITLE SHEET & INDEX

PLAN AND PROFILE OF

MAIN STREET (ROUTE 30)

IN THE TOWN OF

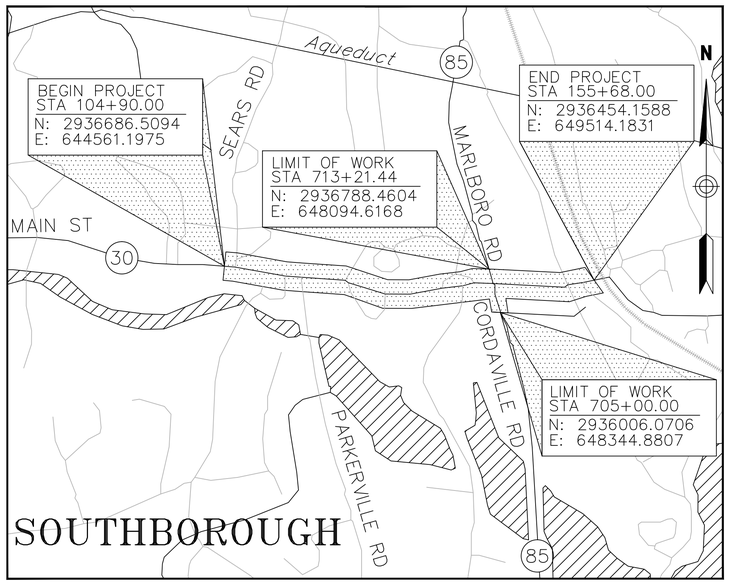
SOUTHBOROUGH

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.–53.	TRAFFIC PLANS
54.–56.	SIGN SUMMARY
57.–63.	TRAFFIC DETAILS
64.–73.	UTILITY PLANS
74.–76.	TRAFFIC MANAGEMENT PLANS
77.–86.	LANDSCAPING PLANS
87.–92.	CONSTRUCTION DETAILS
96.–98.	WHEELCHAIR RAMP DETAILS
99.–156.	CROSS SECTIONS



LENGTH OF PROJECT: 6572.2 FEET = 1.24 MILES

75% 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 18, 2015, THE 2014 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST 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

ELEVATIONS — PROPOSED SURFACE / EXISTING SURFACE — EXIST 90.7 PROP 90.91 — 10+20

PROJECT ENGINEER
STRUCTURAL REVIEW
TRAFFIC SIGNAL REVIEW

HIGHWAY DEPT. AUTHORIZATION
HIGHWAY TECH. REVIEW
CONSTRUCTION REVIEW

DATE	DESCRIPTION	REV #
1/15/16	75% SUBMISSION	-

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 SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED (WITHOUT & WITH CONCRETE PAD)
		CONTROL CABINET POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
○ TS	●	SIGNAL POST & BASE
		MAST ARM, SHAFT, & BASE (ARM LENGTH AS NOTED)
	A	VEHICULAR SIGNAL HEAD (ALPHA–NUMERIC DESIGNATION NOTED)
	A	VEHICULAR SIGNAL HEAD OPTICALLY PROGRAMMED "
		LIMIT OF VISIBILITY OF OPTICALLY PROGRAMMED SIGNAL HEAD
	A	FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
□ PB	■ PB	PULL BOX 12" x 12"
		PEDESTRIAN PUSH BUTTON
		PRE–EMPTION DETECTOR
		PRE–EMPTION STROBE
		VIDEO DETECTION CAMERA
⌀	Ø	CONTROLLER PHASE
		INDUCTIVE LOOP DETECTOR
m		MAGNETIC DETECTOR (LANE, MULTI–LANE, DIRECTIONAL AS NOTED)
T T		MAGNETOMETER
		CONDUIT (COND.)
		CONDUIT CROSSING ROADWAY WITH CONTROLLED DENSITY FILL
x x	x x	"x" DUCT (CONCRETE ENCASED)
		OVERHEAD CABLE
		DIRECT BURIED CABLE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW AND LEGEND
CW	CW	CROSSWALK, 2–12" WHITE LINES (WIDTH NOTED)
SL	SL	STOP LINE, 12" WHITE LINE 4.0' BEHIND CW (TYP)
		YIELD LINE, 24" x 36" WHITE TRIANGLE, 36" O.C.
SWCHL		SOLID WHITE CHANNELIZING LINE–SIZE AS NOTED
SYCHL		SOLID YELLOW CHANNELIZING LINE–SIZE AS NOTED
BWLL		BROKEN WHITE LANE LINE – 6"
SWLL		SOLID WHITE LANE LINE – 6"
DYCL		DOUBLE YELLOW CENTERLINE – 4"
SYEL		SOLID YELLOW EDGE LINE – 6"
SWEL		SOLID WHITE EDGE LINE – 6"
BYLL		BROKEN YELLOW LANE LINE – 6"
		BICYCLE LANE
		BICYCLE DETECTION LEGEND
Sign		SIGN AND POST
		DELINEATOR

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	––	2	156
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	156
PROJECT FILE NO. 604989			

KEY PLAN

N

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 ℄

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

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

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 ℄

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

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

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

BEGIN PROJECT STA 104+90.00 N: 2936686.5094 E: 644581.1975

LIMIT OF WORK STA 101+73.96 N: 2936686.4135 E: 644651.8348

LIMIT OF WORK STA 204+85.66 N: 2936464.5502 E: 645001.7974

LIMIT OF WORK STA 402+78.67 N: 2936443.5311 E: 645001.7888

LIMIT OF WORK STA 84+02.24 N: 2936560.0000 E: 645052.5999

LIMIT OF WORK STA 713+21.44 N: 2936564.4624 E: 645044.4098

LIMIT OF WORK STA 705+00.00 N: 2936564.4624 E: 645044.4098

LIMIT OF WORK STA 514+20.75 N: 2936538.7190 E: 645038.1190

LIMIT OF WORK STA 527+78.24 N: 2936538.8628 E: 645036.8628

END PROJECT STA 155+68.00 N: 2936454.1588 E: 644914.1837

LIMIT OF WORK STA 61+35.18 N: 2936363.8579 E: 644980.5258

SEARS ROAD
DEERFOOT ROAD
PARKERVILLE ROAD
MAIN STREET
(ROUTE 30)
COMMON STREET
MARLBORO (ROUTE 85) ROAD
CORDAVILLE (ROUTE 85) ROAD
SCHOOL STREET
LATISQUAMA ROAD
PARK STREET
BOSTON (ROUTE 30) ROAD

LEGEND

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

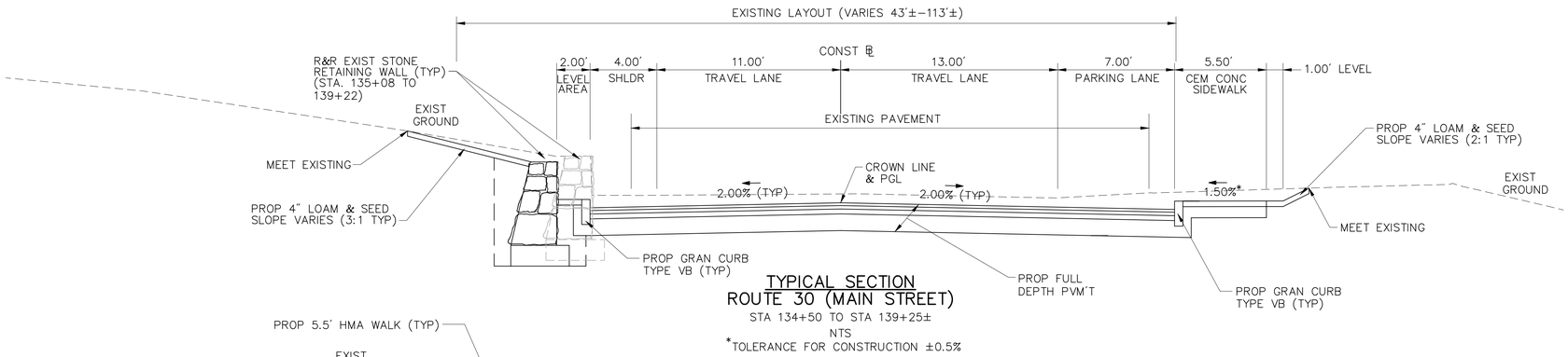
200 0 200 400
SCALE IN FEET

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

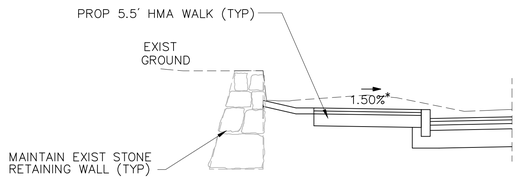
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	4	156
PROJECT FILE NO. 604989			

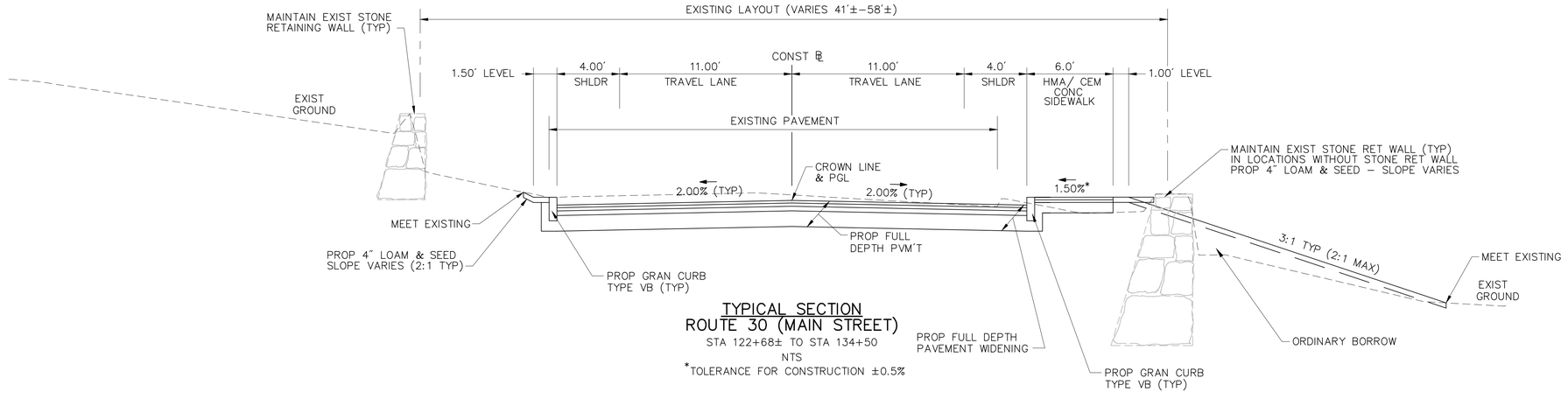
TYPICAL SECTIONS



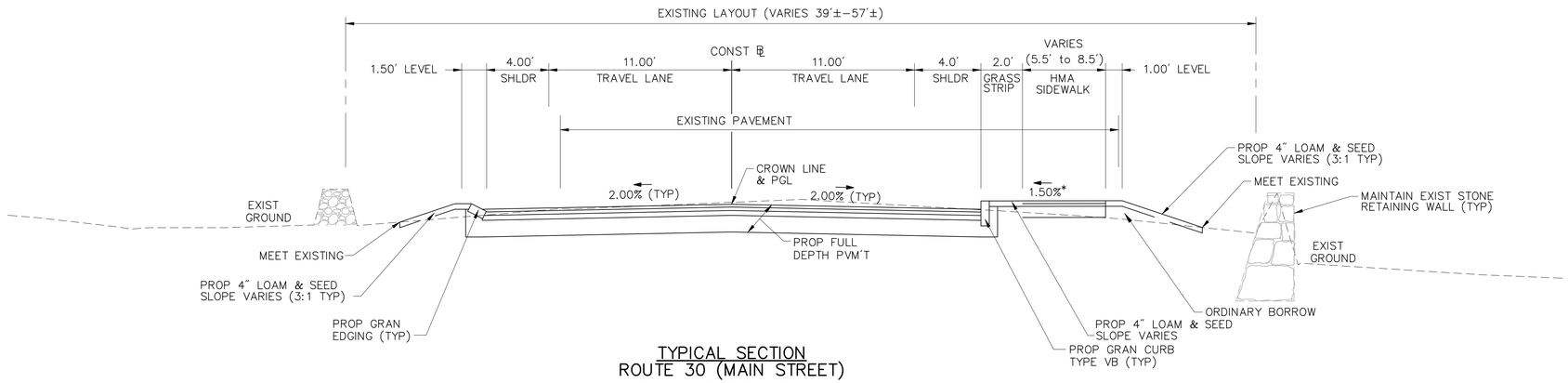
TYPICAL SECTION
ROUTE 30 (MAIN STREET)
STA 134+50 TO STA 139+25±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%



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 12.5 (SSC-12.5) 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: 1.25" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
2.25" 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

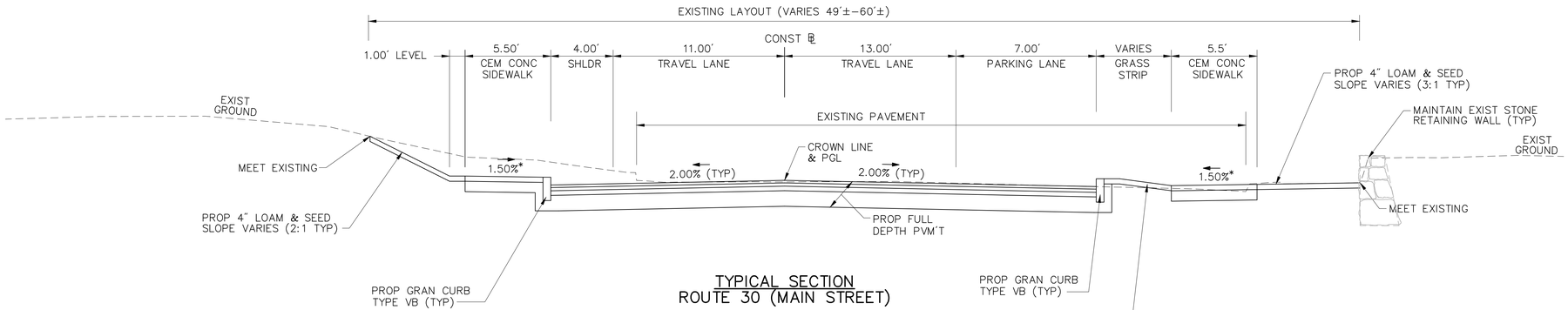
NOTE:
1) TACK COAT TO BE APPLIED AT 0.05 GAL/SY OVER SMOOTH PAVEMENT (BASE AND INTERMEDIATE COURSES) AND 0.07 GAL/SY OVER MILLED SURFACE.
2) HMA WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 702.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	5	156
PROJECT FILE NO. 604989			

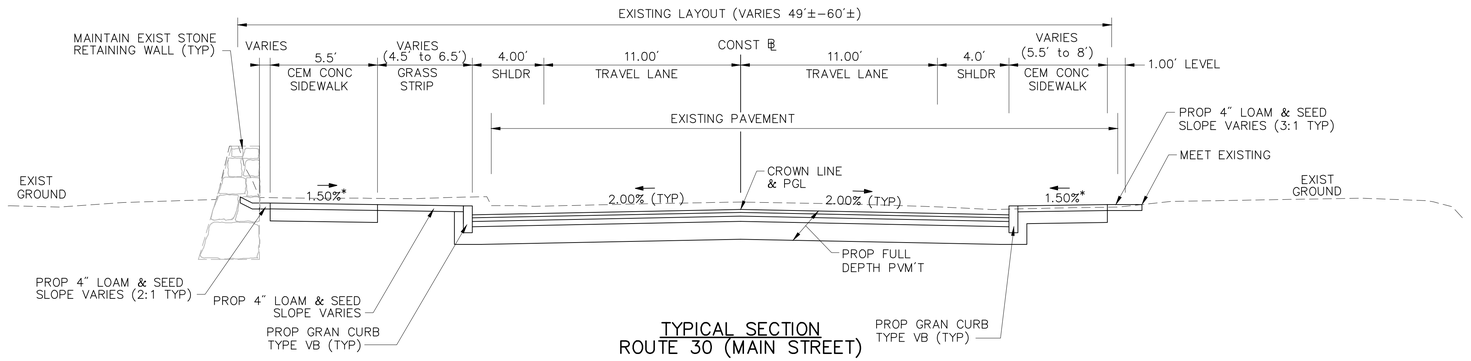
TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



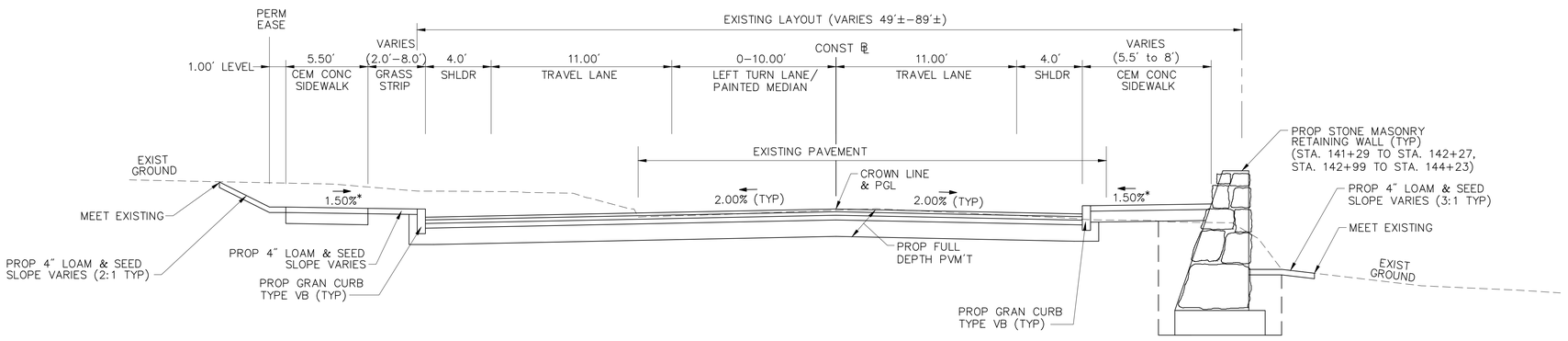
TYPICAL SECTION
ROUTE 30 (MAIN STREET)

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)

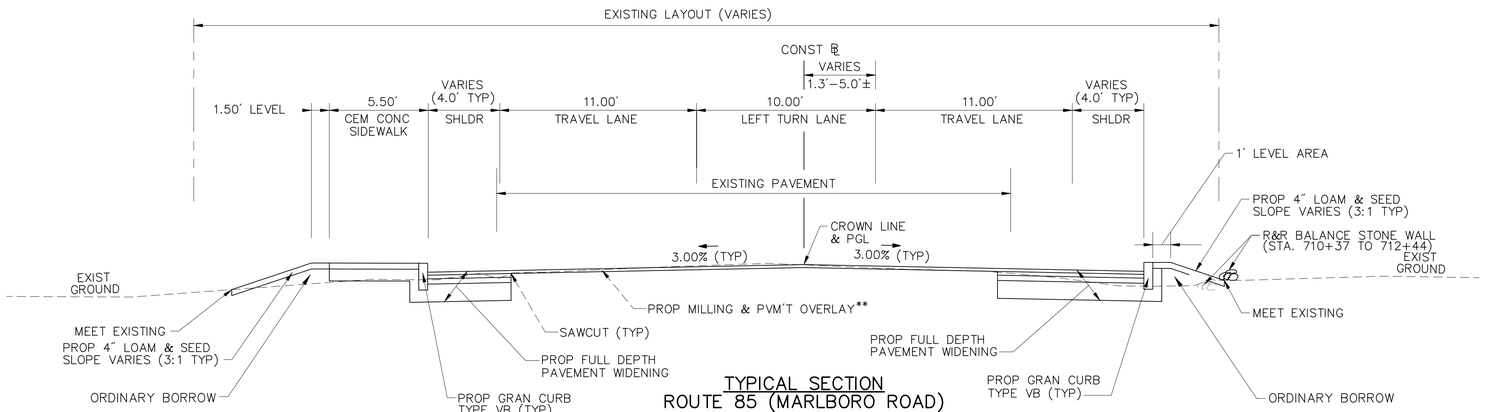
STA 139+75± TO STA 145+60±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	6	156
PROJECT FILE NO. 604989			

TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



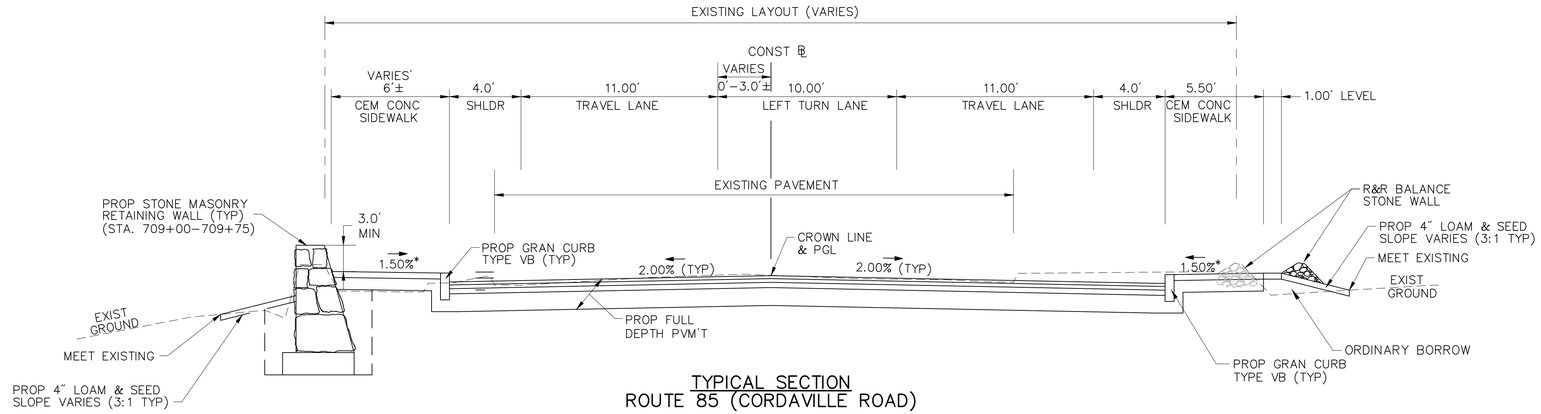
TYPICAL SECTION
ROUTE 85 (MARLBORO ROAD)

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±

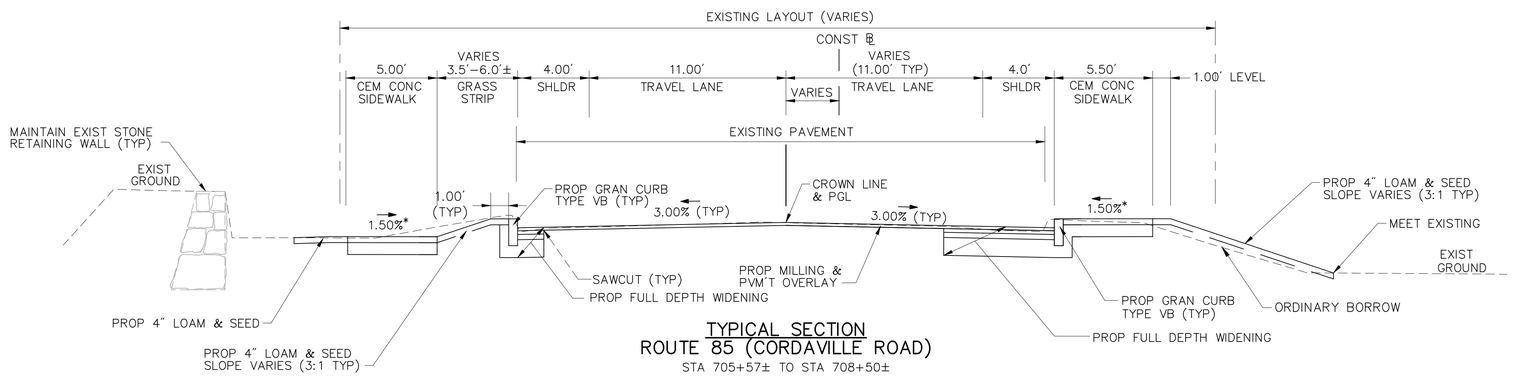


TYPICAL SECTION
ROUTE 85 (CORDAVILLE ROAD)

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

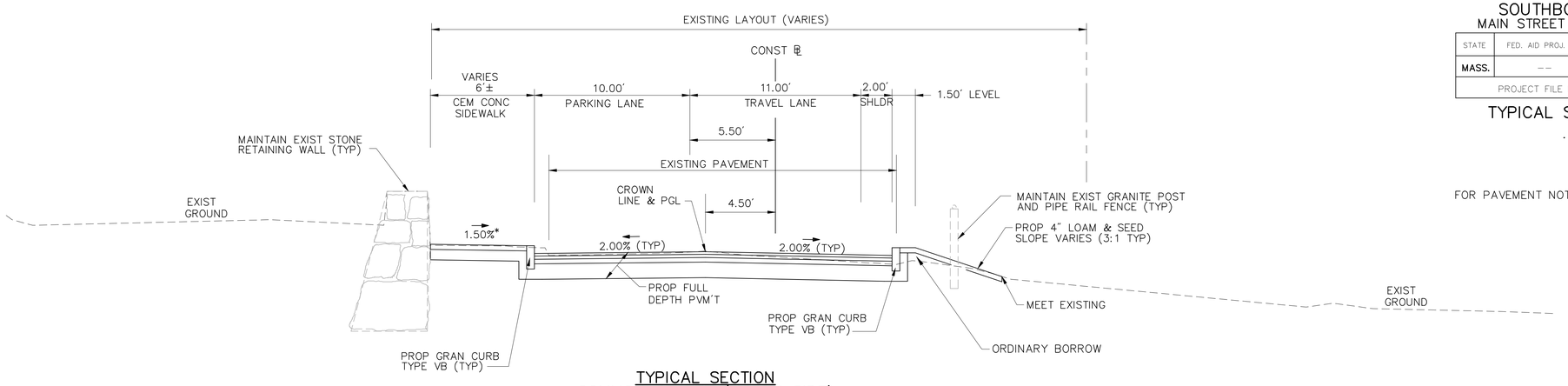
*TOLERANCE FOR CONSTRUCTION ±0.5%

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	7	156
PROJECT FILE NO. 604989			

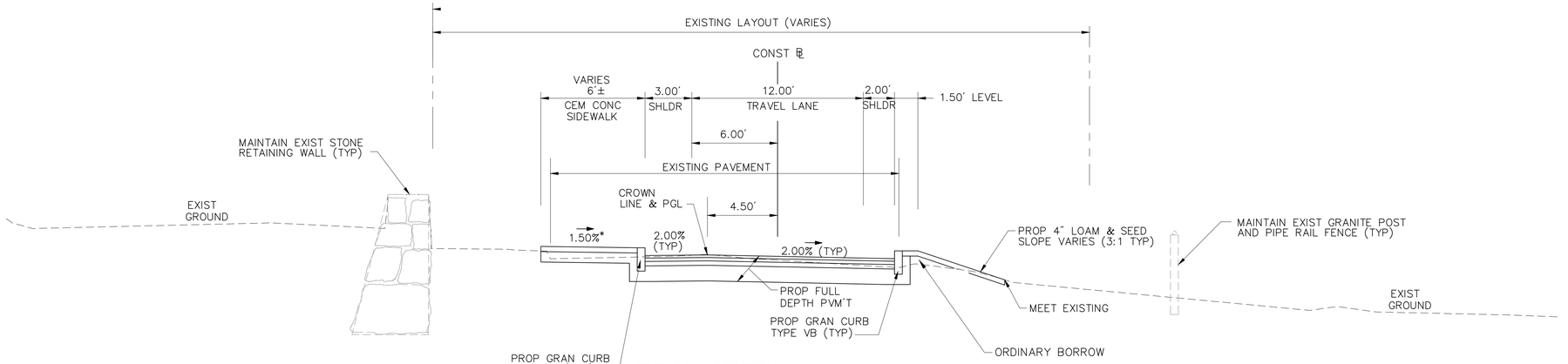
TYPICAL SECTIONS

FOR PAVEMENT NOTES SEE SHEET 4



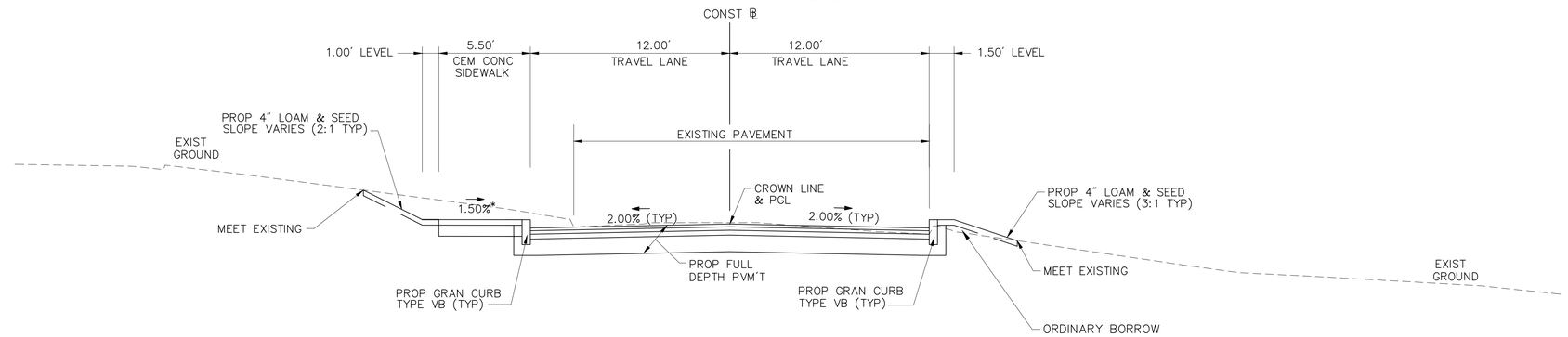
TYPICAL SECTION
COMMON STREET (NORTH SIDE)

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 64

DRAINAGE DETAILS
SEE SHEET 64

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	8	156
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

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

SEARS ROAD

MAIN (ROUTE 30) STREET

DEERFOOT ROAD

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

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 65

DRAINAGE DETAILS
SEE SHEET 65

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	9	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS

MAIN (ROUTE 30) STREET

DEERFOOT ROAD

PARKERVILLE ROAD

CONT. ON SHEET 8

CONT. ON SHEET 10

LIMIT OF PAVING
STA 40+78.67
N: 2396449.0311
E: 645520.7888

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

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

N
SCALE IN FEET
20 0 20 40

FOR PROFILES SEE SHEET NOS. 19–20

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

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

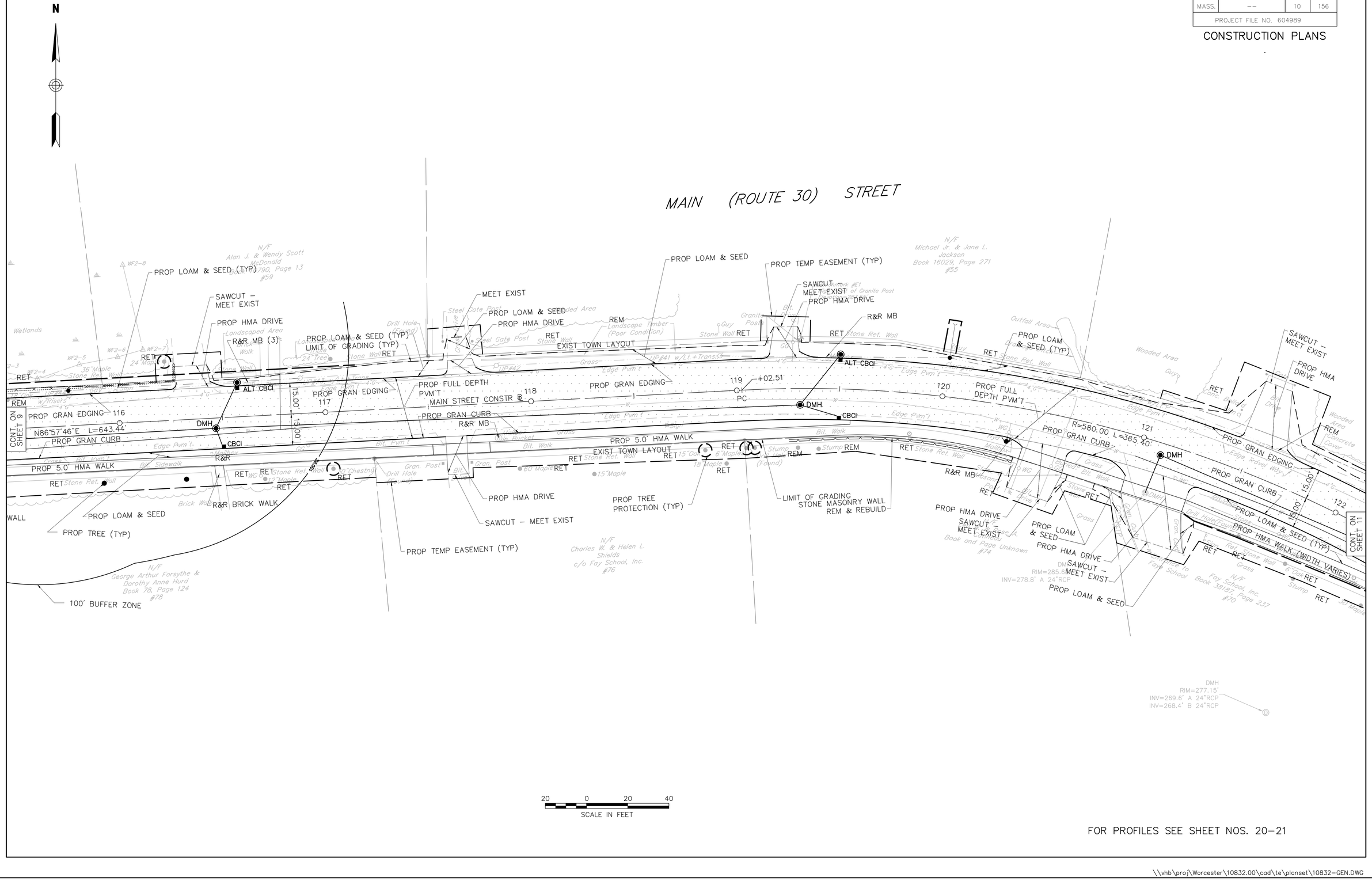
WATER SUPPLY ALTERATIONS
SEE SHEET 66

DRAINAGE DETAILS
SEE SHEET 66

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	10	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 20–21

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

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

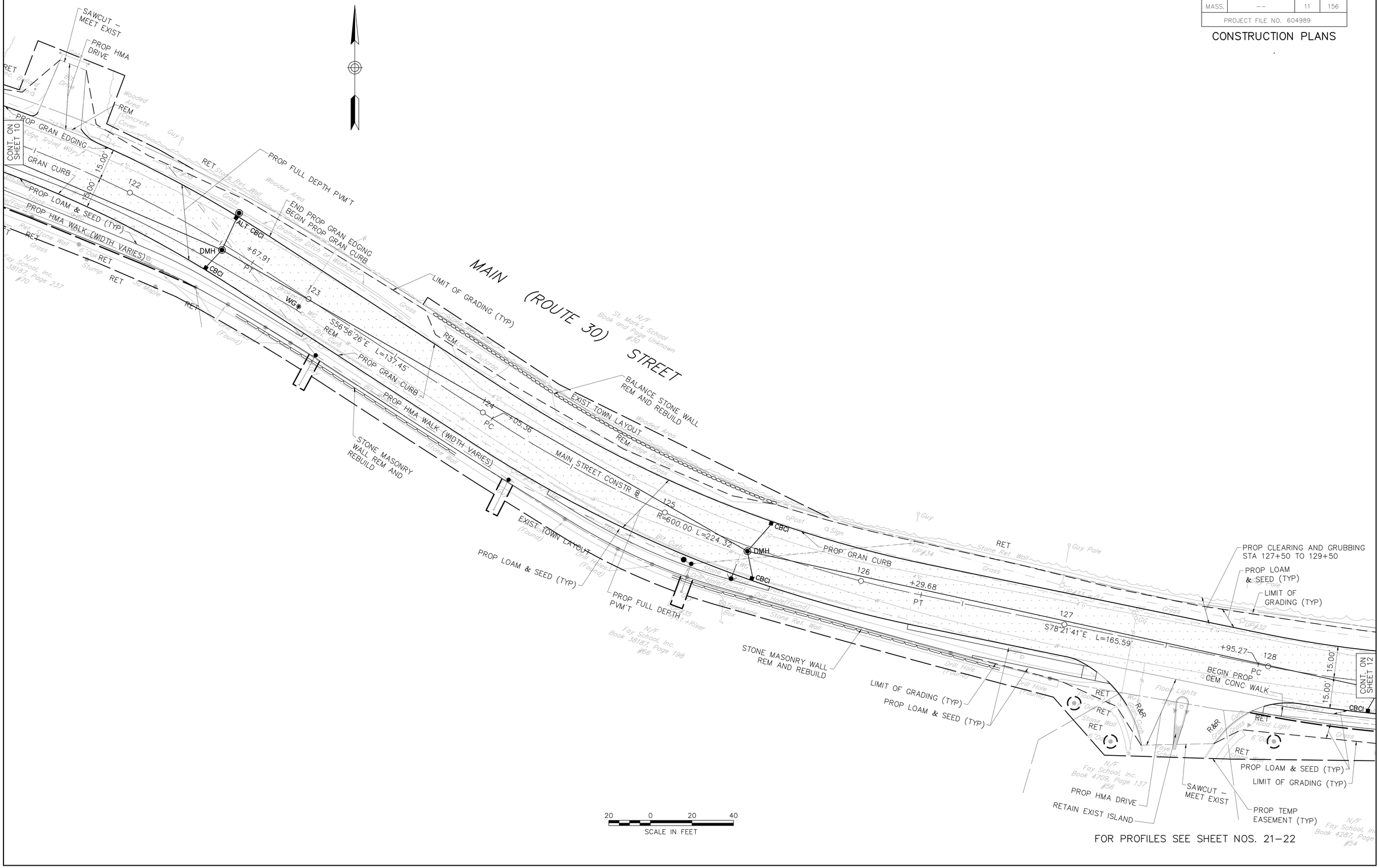
WATER SUPPLY ALTERATIONS
SEE SHEET 67

DRAINAGE DETAILS
SEE SHEET 67

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	11	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 21–22

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

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

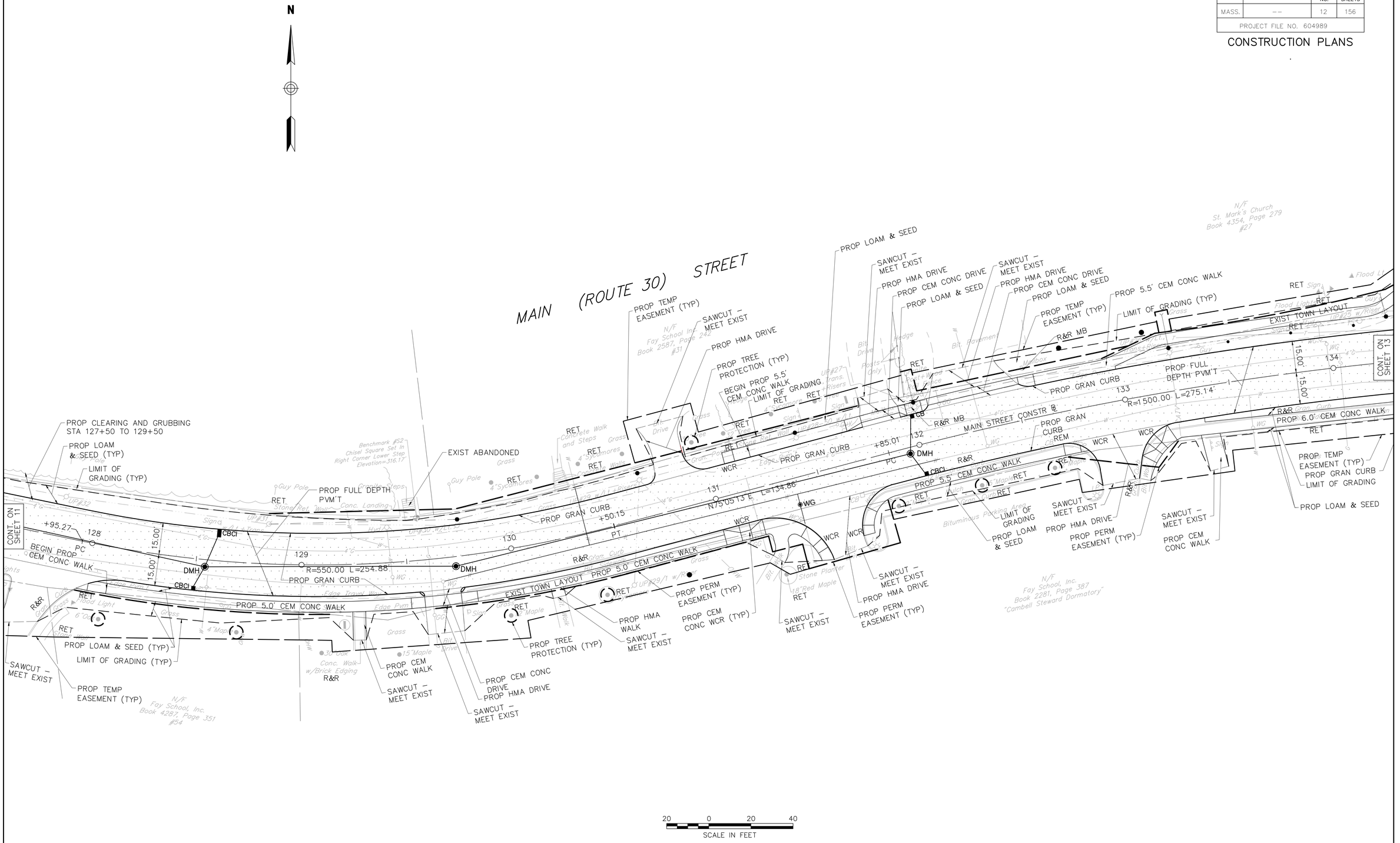
WATER SUPPLY ALTERATIONS
SEE SHEET 68

DRAINAGE DETAILS
SEE SHEET 68

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	12	156
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 69

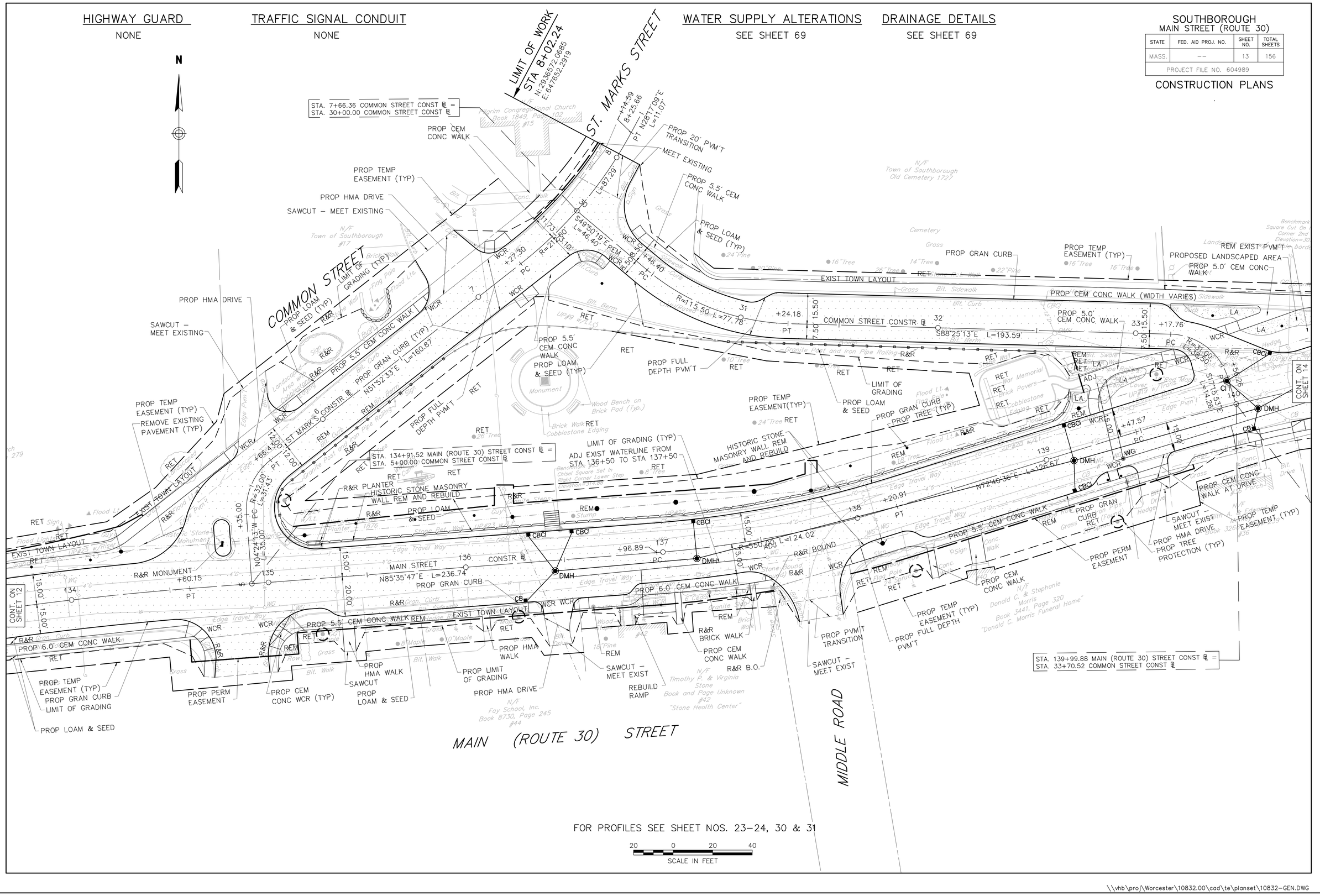
DRAINAGE DETAILS

SEE SHEET 69

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	13	156
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 70

WATER SUPPLY ALTERATIONS

SEE SHEET 70

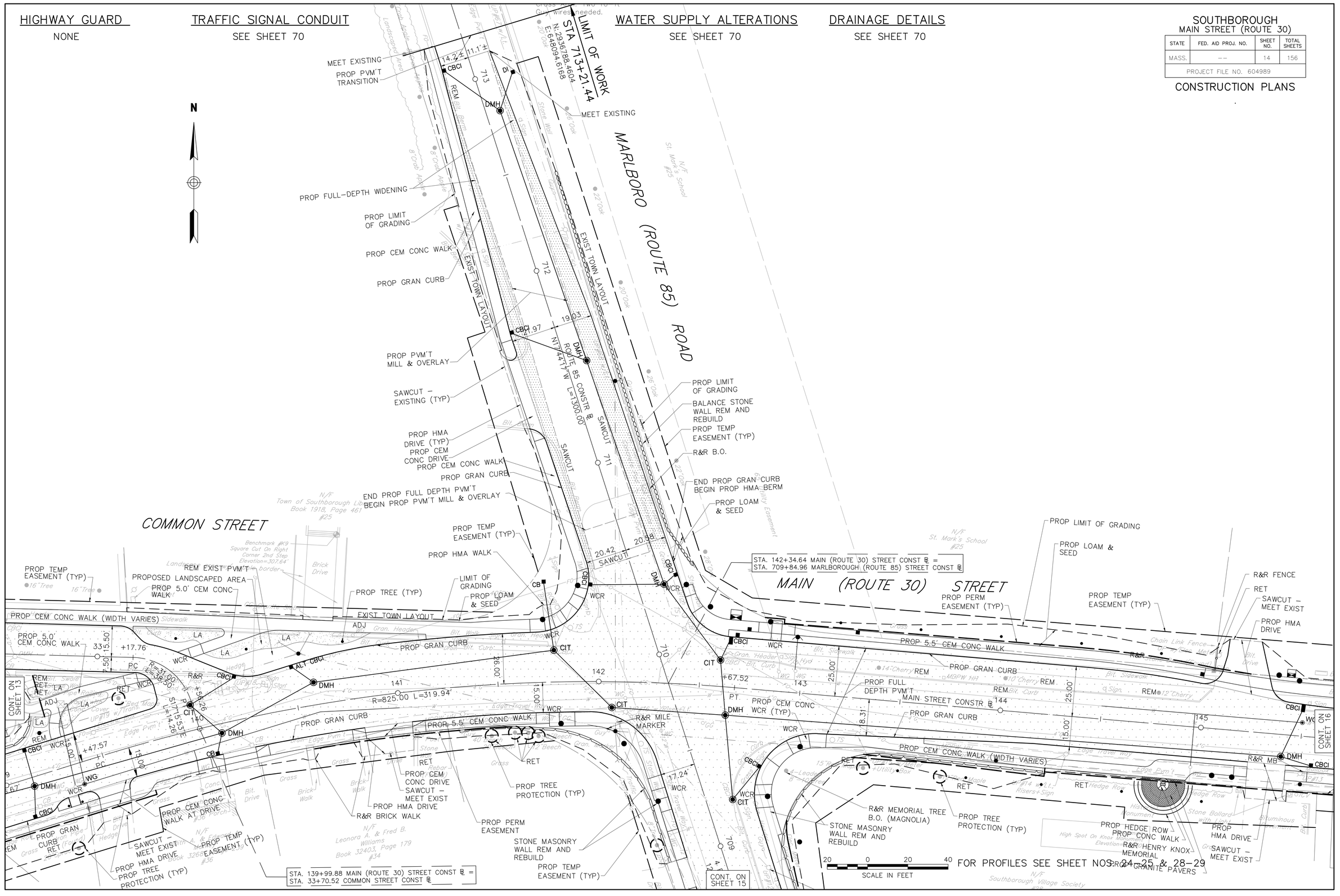
DRAINAGE DETAILS

SEE SHEET 70

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	14	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



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

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

HIGHWAY GUARD

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 71

WATER SUPPLY ALTERATIONS

SEE SHEET 71

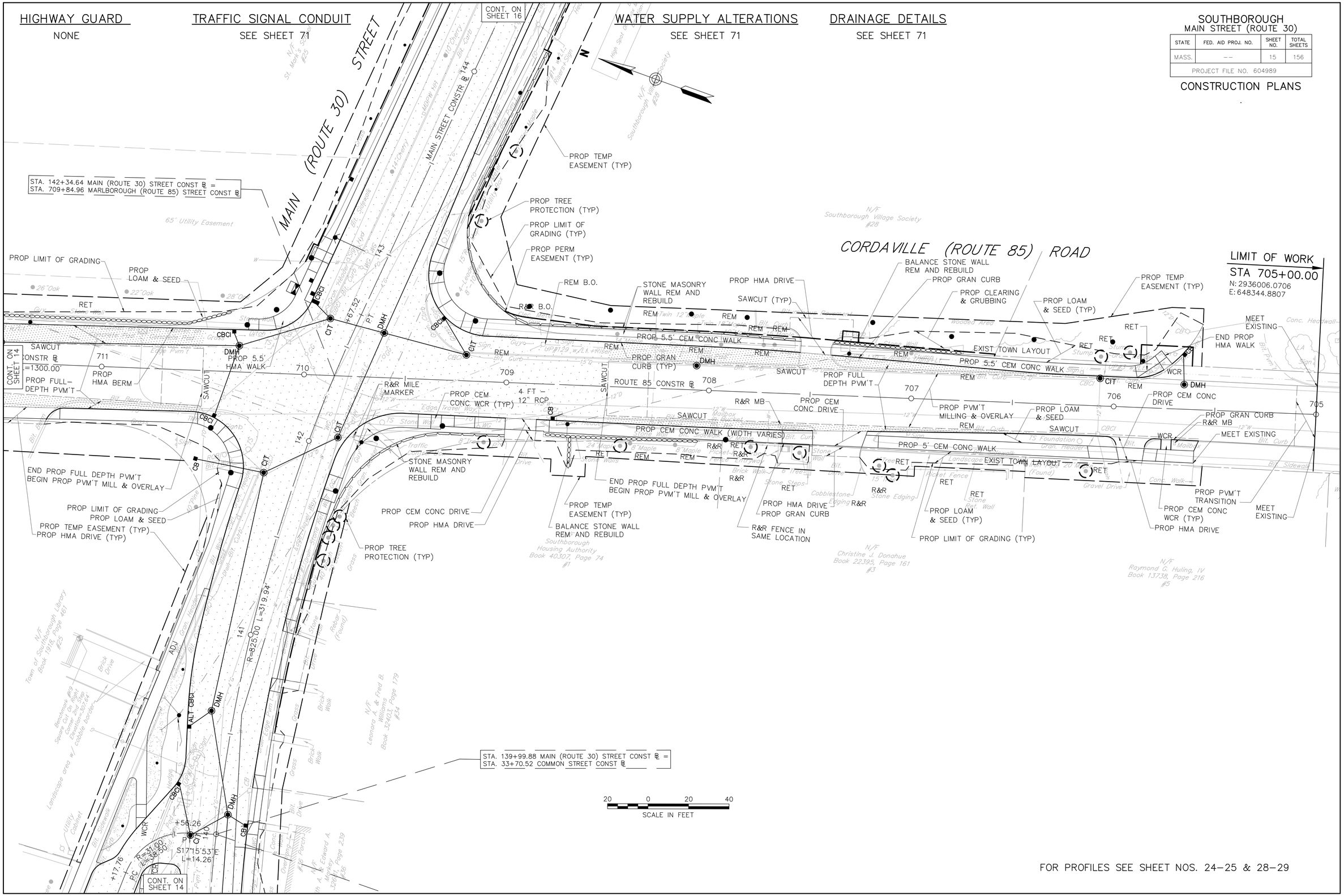
DRAINAGE DETAILS

SEE SHEET 71

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	15	156
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 72

WATER SUPPLY ALTERATIONS

SEE SHEET 72

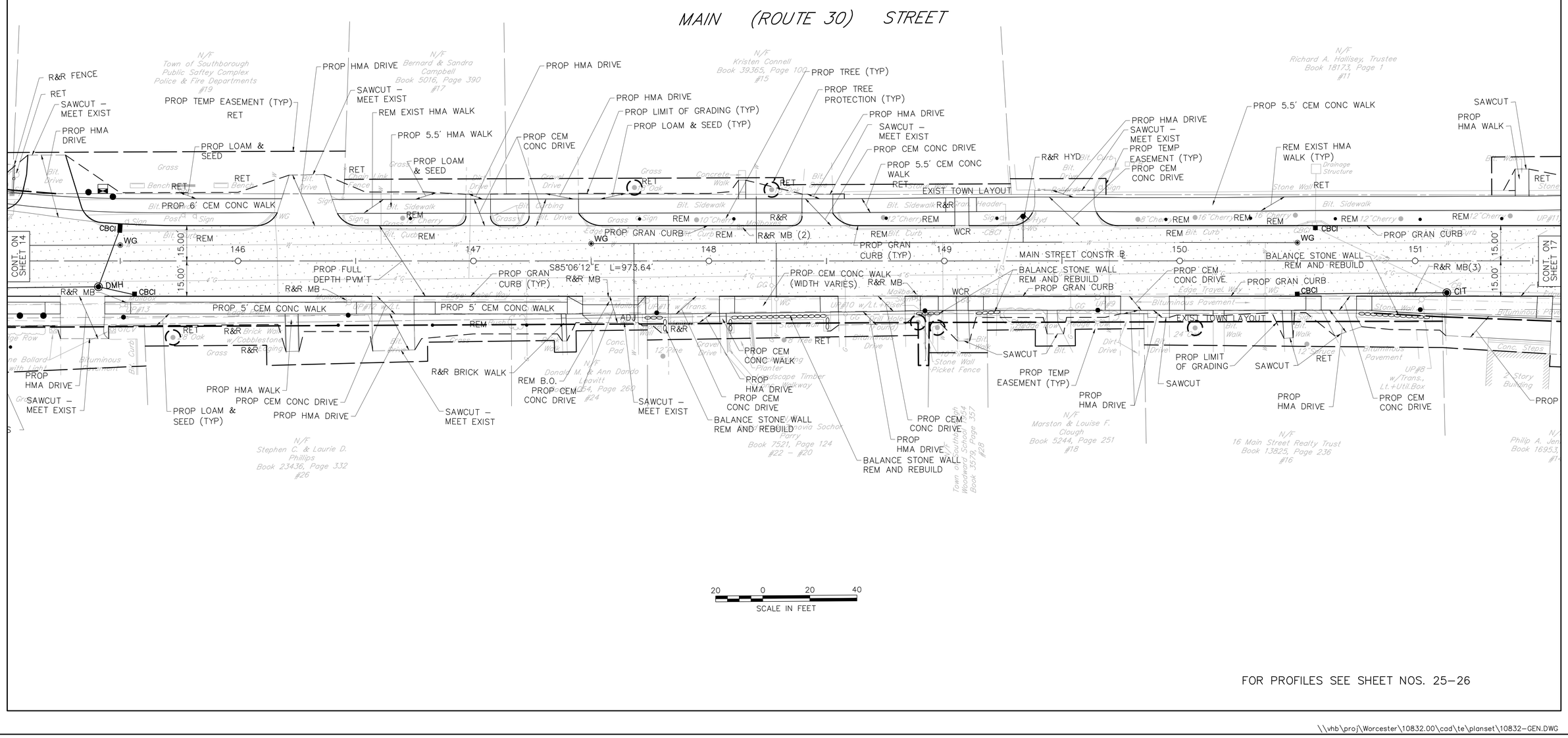
DRAINAGE DETAILS

SEE SHEET 72

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	16	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS



FOR PROFILES SEE SHEET NOS. 25–26

HIGHWAY GUARD
NONE

TRAFFIC SIGNAL CONDUIT
NONE

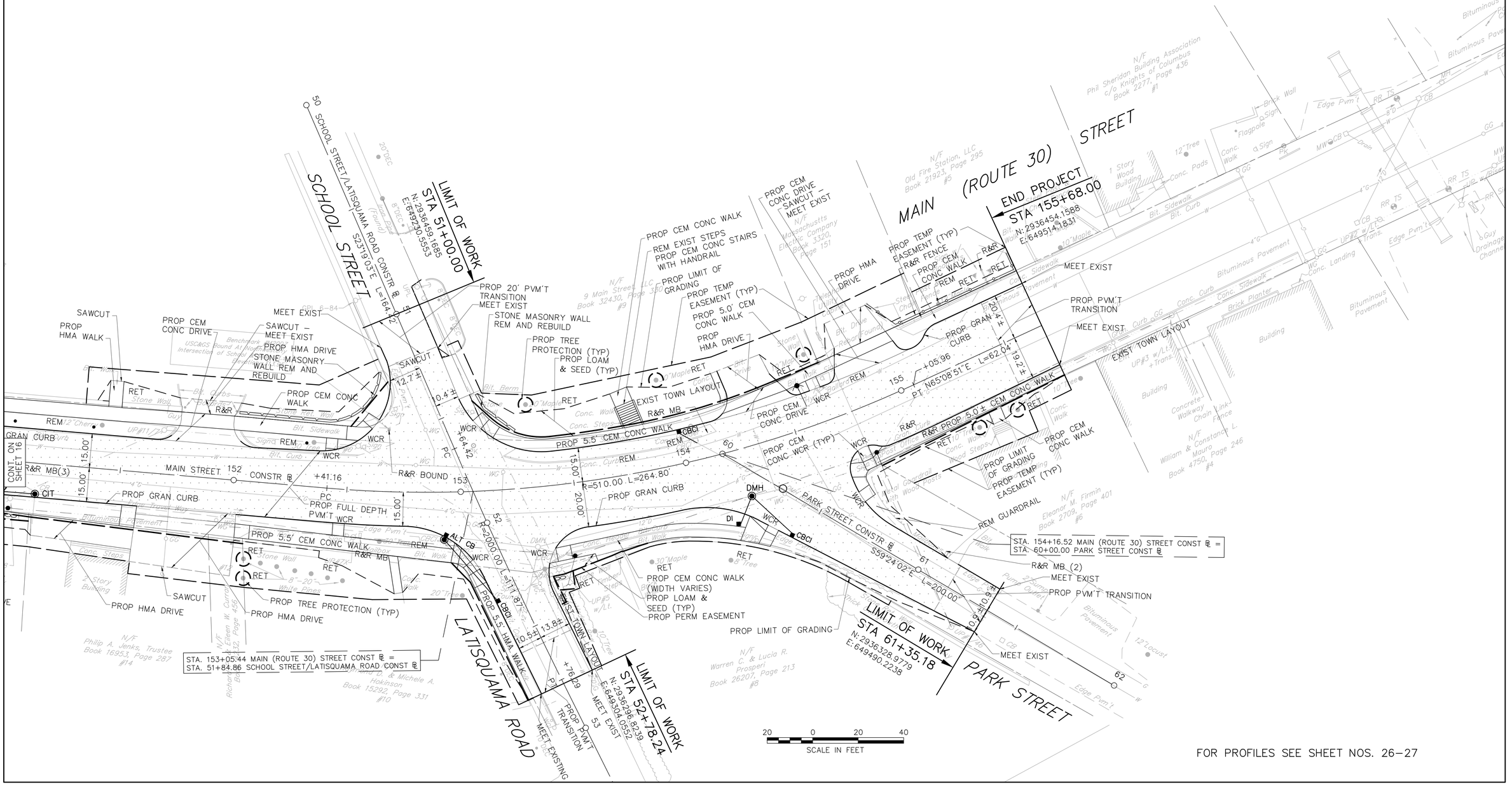
WATER SUPPLY ALTERATIONS
SEE SHEET 73

DRAINAGE DETAILS
SEE SHEET 73

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	17	156
PROJECT FILE NO. 604989			

CONSTRUCTION PLANS


N
SCHOOL STREET
LATISQUAMA ROAD
MAIN (ROUTE 30) STREET
PARK STREET
LIMIT OF WORK STA 51+00.00 N: 2936459.1685 E: 649730.5553
LIMIT OF WORK STA 52+78.24 N: 2936296.8239 E: 649304.0552
LIMIT OF WORK STA 61+35.18 N: 2936328.9779 E: 649490.2238
END PROJECT STA 155+68.00 N: 2936454.1588 E: 649514.1831
PROP 20' PVM'T TRANSITION MEET EXIST
STONE MASONRY WALL REM AND REBUILD
PROP TREE PROTECTION (TYP)
PROP LOAM & SEED (TYP)
PROP LIMIT OF GRADING
PROP TEMP EASEMENT (TYP)
PROP 5.0' CEM CONC WALK
PROP HMA DRIVE
PROP CEM CONC DRIVE
SAWCUT - MEET EXIST
PROP CEM CONC WALK
REM EXIST STEPS
PROP CEM CONC STAIRS WITH HANDRAIL
R&R EXIST FENCE
PROP HMA WALK
PROP CEM CONC DRIVE
SAWCUT
MEET EXIST
SAWCUT - MEET EXIST
PROP HMA DRIVE
STONE MASONRY WALL REM AND REBUILD
PROP CEM CONC WALK
PROP GRAN CURB
PROP FULL DEPTH PVM'T WCR
PROP 5.5' CEM CONC WALK
R&R MB
PROP 5.5' HMA WALK
PROP HMA DRIVE
PROP TREE PROTECTION (TYP)
SAWCUT
EXIST TOWN LAYOUT
R&R MB
PROP 5.5' CEM CONC WALK
PROP CEM CONC WCR (TYP)
PROP GRAN CURB
PROP CEM CONC WALK (WIDTH VARIES)
PROP LOAM & SEED (TYP)
PROP PERM EASEMENT
PROP LIMIT OF GRADING
PROP PVM'T TRANSITION MEET EXISTING
MEET EXIST
PROP PVM'T TRANSITION
MEET EXIST
EXIST TOWN LAYOUT
PROP GRAN CURB
PROP 5.0' ± CEM CONC WALK
PROP LIMIT OF GRADING
PROP TEMP EASEMENT (TYP)
REM GUARDRAIL
R&R MB (2)
MEET EXIST
PROP PVM'T TRANSITION
MEET EXIST
MAIN STREET CONSTR ℄ +41.16 PC
R=510.00 L=264.80
SCHOOL STREET/LATISQUAMA ROAD CONSTR ℄ S23°19'03"E L=164.42
R=2000.00 L=111.87
PARK STREET CONSTR ℄ S59°24'02"E L=200.00
P.T. +76.29
P.T. N65°08'51"E L=62.04
STA. 153+05.44 MAIN (ROUTE 30) STREET CONST ℄ = STA. 51+84.86 SCHOOL STREET/LATISQUAMA ROAD CONST ℄
STA. 154+16.52 MAIN (ROUTE 30) STREET CONST ℄ = STA. 60+00.00 PARK STREET CONST ℄
Phil Sheridan Building Association c/o Knights of Columbus Book 2277, Page 436 #1
Old Fire Station, LLC Book 21923, Page 295 #5
9 Main Street, LLC Book 32430, Page 350 #9
Massachusetts Electric Company Book 3320, Page 151
Philip A. Jenks, Trustee Book 16953, Page 287 #14
Eileen W. Curro Book 32, Page 456
Richard & Michele A. Hakinson Book 15292, Page 331 #10
Warren C. & Lucia R. Prosperi Book 26207, Page 213 #8
Eleanor M. Firmin Book 2709, Page 401 #6
William & Constance L. Mauro Book 4750, Page 246 #4
Bituminous Pavement
Brick Wall
Edge Pvm't
Conc. Walk
Conc. Pads
Conc. Curb
Conc. Sidewalk
Brick Planter
Concrete Walkway
Chain Link Fence
Building
1 Story Wood Building
2 Story Building
Flagpole
Sign
Drain
Guy
Utility Pole
Trans.
Bit. Sidewalk
Bit. Curb
Bit. Drive
Bit. Berm
Bit. Walk
Stone Wall
Stone Steps
Wood Steps
Wood Guardrail With Wood Posts
Chain Link Fence
Bituminous Pavement
Conc. Landing
Conc. Steps
Conc. Curb
Conc. Walk
Conc. Sidewalk
Brick Planter
Bituminous Pavement
Building
Concrete Walkway
Chain Link Fence
Bituminous Pavement
Edge Pvm't
Bituminous Pavement
Bituminous Pavement
Edge Pvm't
Bituminous Pavement
Edge Pvm't
Bituminous Pavement
Edge Pvm't

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	18	156
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	156
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

PVT STA: 109+75
PVT ELEV: 270.55

PVC STA: 110+35
PVC ELEV: 268.73

PVT STA: 111+85
PVT ELEV: 266.07

-3.04%

PROPOSED FINISH GRADE

EXISTING GROUND

DEERFOOT ROAD

-0.50%

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

PVC STA: 113+20
PVC ELEV: 265.39

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

PVT STA: 115+40
PVT ELEV: 269.11

PARKERVILLE ROAD

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

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	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

MAIN (ROUTE 30) STREET

320
300
280
260

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

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	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

MAIN (ROUTE 30) STREET

320

300

280

260

DATUM ELEV
255.00

BASE ELEV = 255.00

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

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

284.2	286.5	289.6	292.4	295.1	297.6	299.9	302.3	304.7	307.0	308.7	309.7	310.3
284.18	286.39	289.08	291.89	294.71	297.40	299.89	302.26	304.62	306.82	308.31	309.18	309.95

121+00 122+00 123+00 124+00 125+00 126+00

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

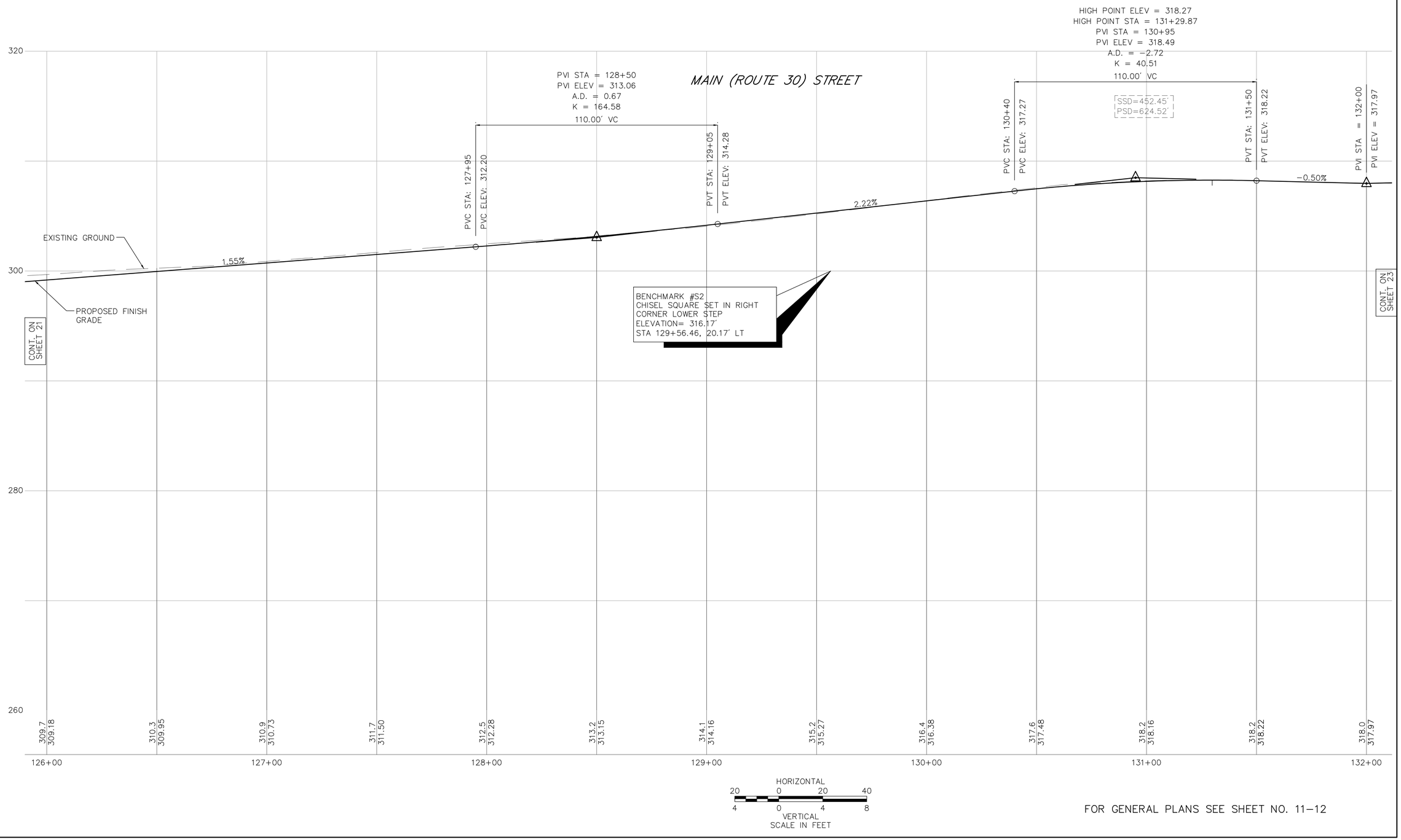
FOR GENERAL PLANS SEE SHEET NO. 11

\\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	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)



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

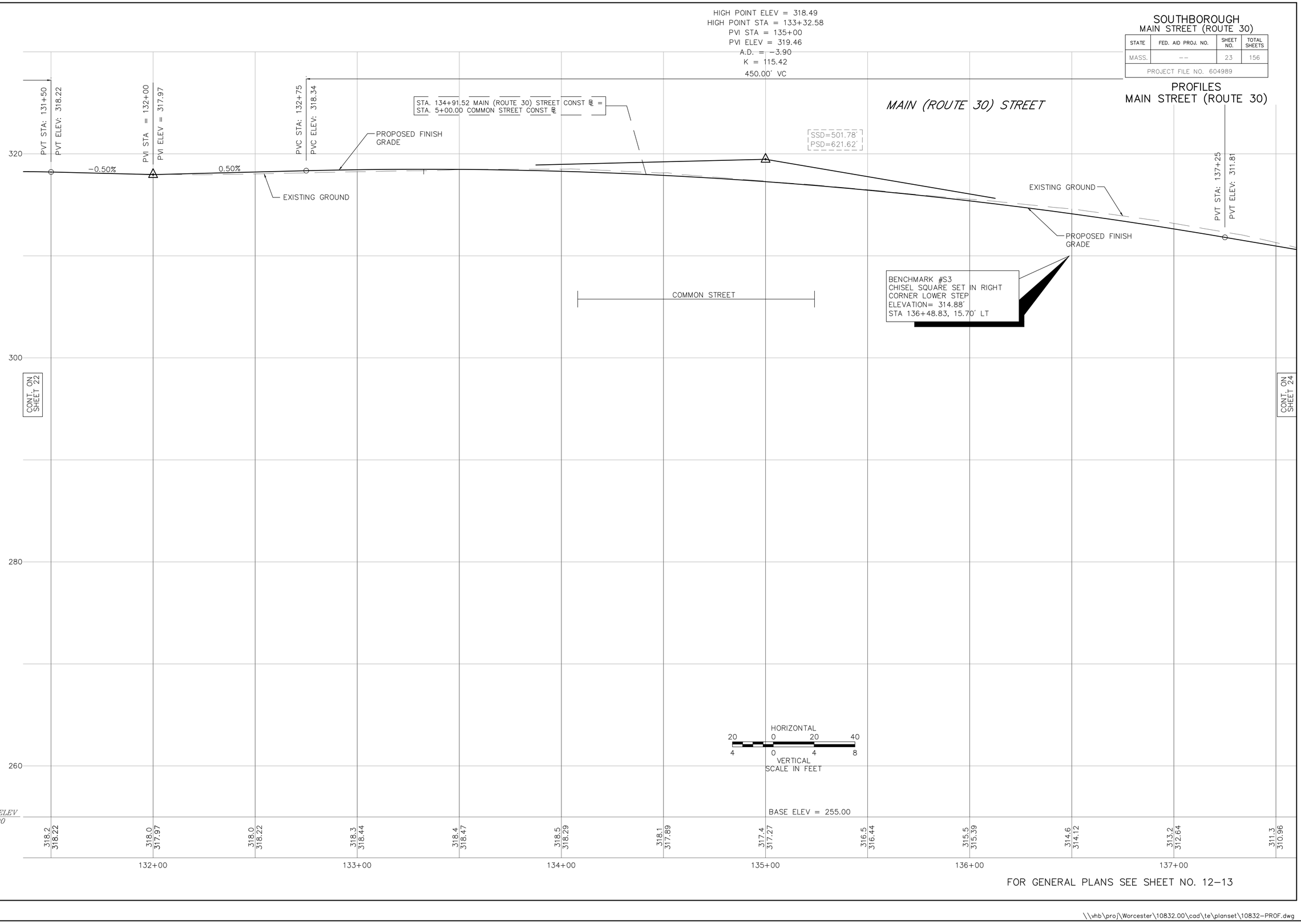
FOR GENERAL PLANS SEE SHEET NO. 11-12

\\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.	--	23	156
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	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

MAIN (ROUTE 30) STREET

LOW POINT ELEV = 304.62
LOW POINT STA = 140+23.41
PVI STA = 139+50
PVI ELEV = 304.16
A.D. = 3.92
K = 51.00
200.00' VC

PVT STA: 137+25
PVT ELEV: 311.81

-3.40%

PVC STA: 138+50
PVC ELEV: 307.56

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

PROPOSED FINISH GRADE

EXISTING GROUND

PVT STA: 140+50
PVT ELEV: 304.69

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

0.52%

PVC STA: 142+95
PVC ELEV: 305.96

MIDDLE ROAD

COMMON STREET

MARLBORO ROAD (ROUTE 85)

CORDAVILLE ROAD (ROUTE 85)

BENCHMARK #K9
SQUARE CUT ON RIGHT CORNER
2ND STEP
ELEVATION= 307.64'
STA 140+80.81, 81.98' LT

CONT. ON SHEET 23

CONT. ON SHEET 25

320
300
280
260

DATUM ELEV
255.00

BASE ELEV = 255.00

137+00	138+00	139+00	140+00	141+00	142+00	143+00
313.2 / 312.64	311.3 / 310.96	308.9 / 309.26	307.3 / 307.56	306.5 / 306.11	306.0 / 305.15	305.6 / 304.67
305.7 / 304.69	305.5 / 304.95	305.3 / 305.21	305.5 / 305.47	306.0 / 305.73	306.0 / 305.99	

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

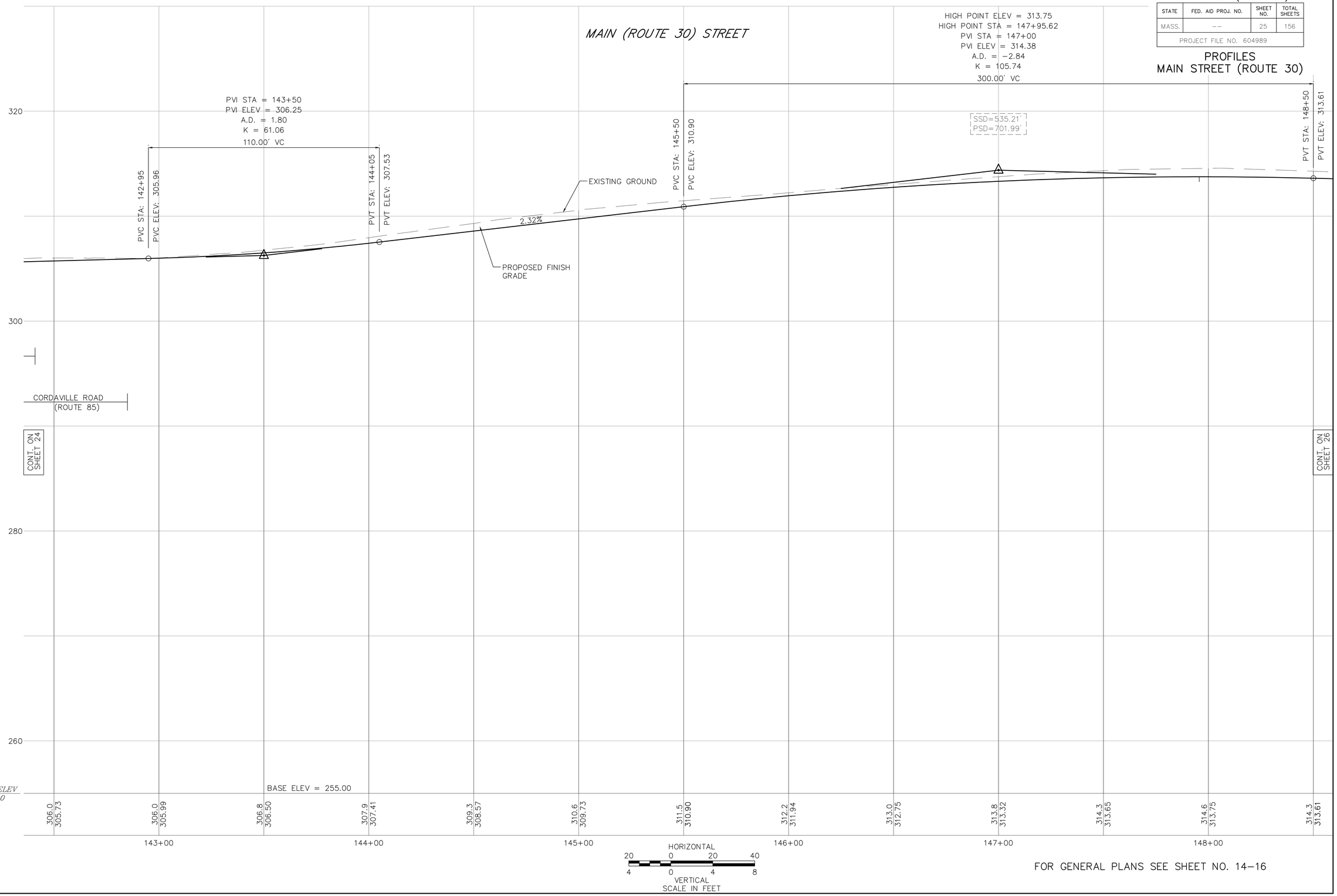
FOR GENERAL PLANS SEE SHEET NO. 13-14

\\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.	--	25	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)

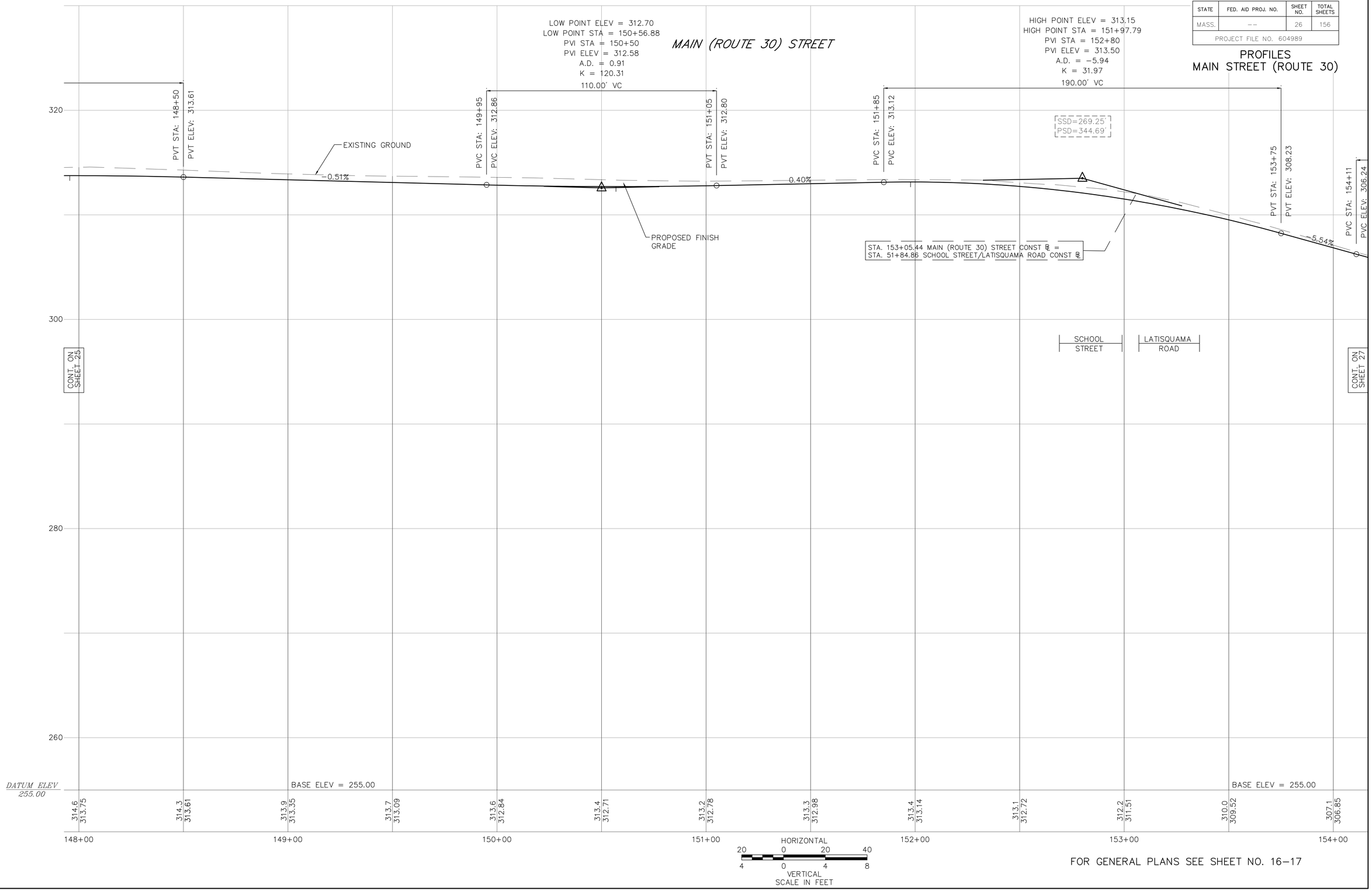


FOR GENERAL PLANS SEE SHEET NO. 14-16

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	26	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)



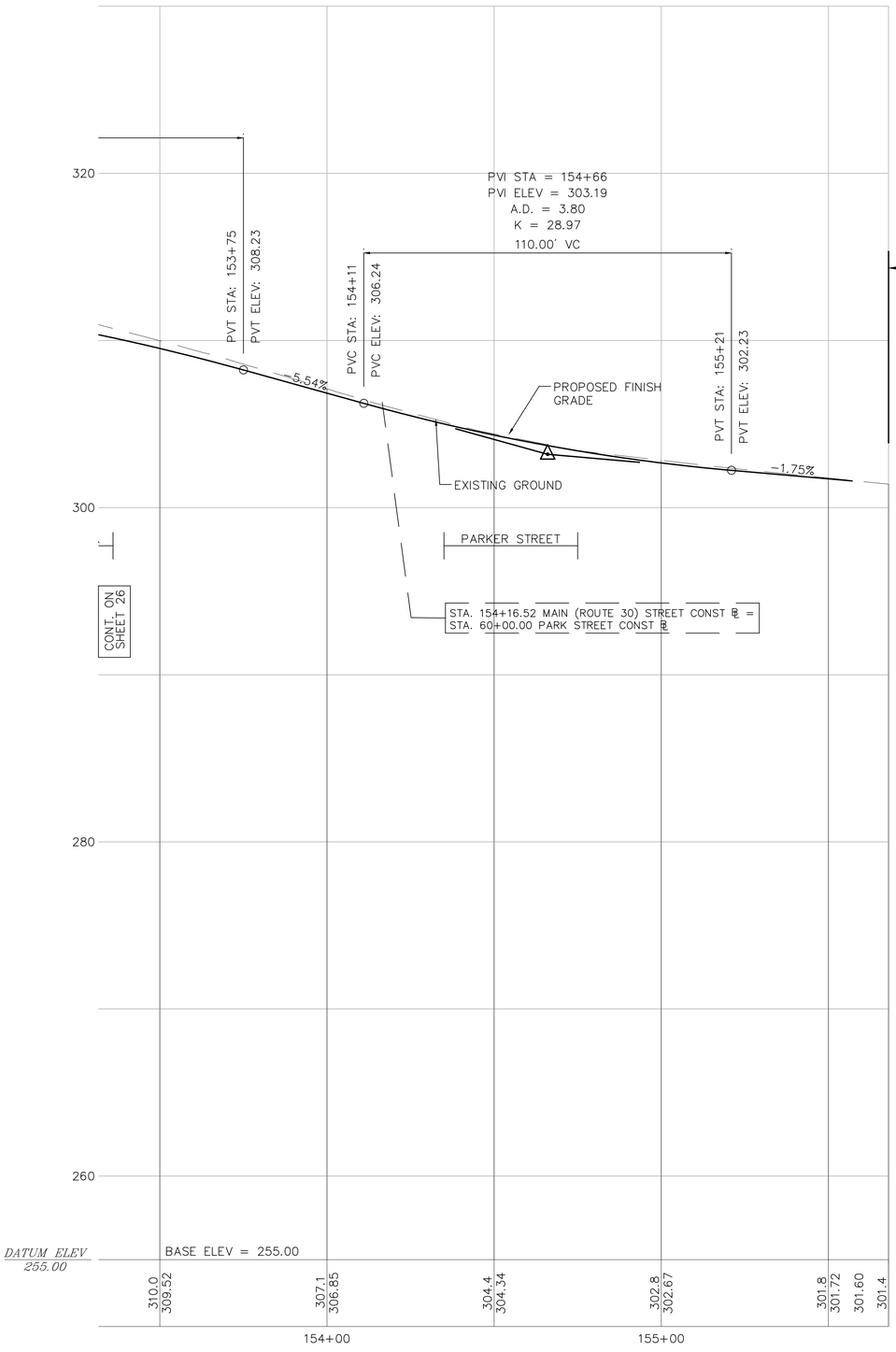
FOR GENERAL PLANS SEE SHEET NO. 16-17

\\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	156
PROJECT FILE NO. 604989			

PROFILES
MAIN STREET (ROUTE 30)



LIMIT OF WORK
STA 155+68.00

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

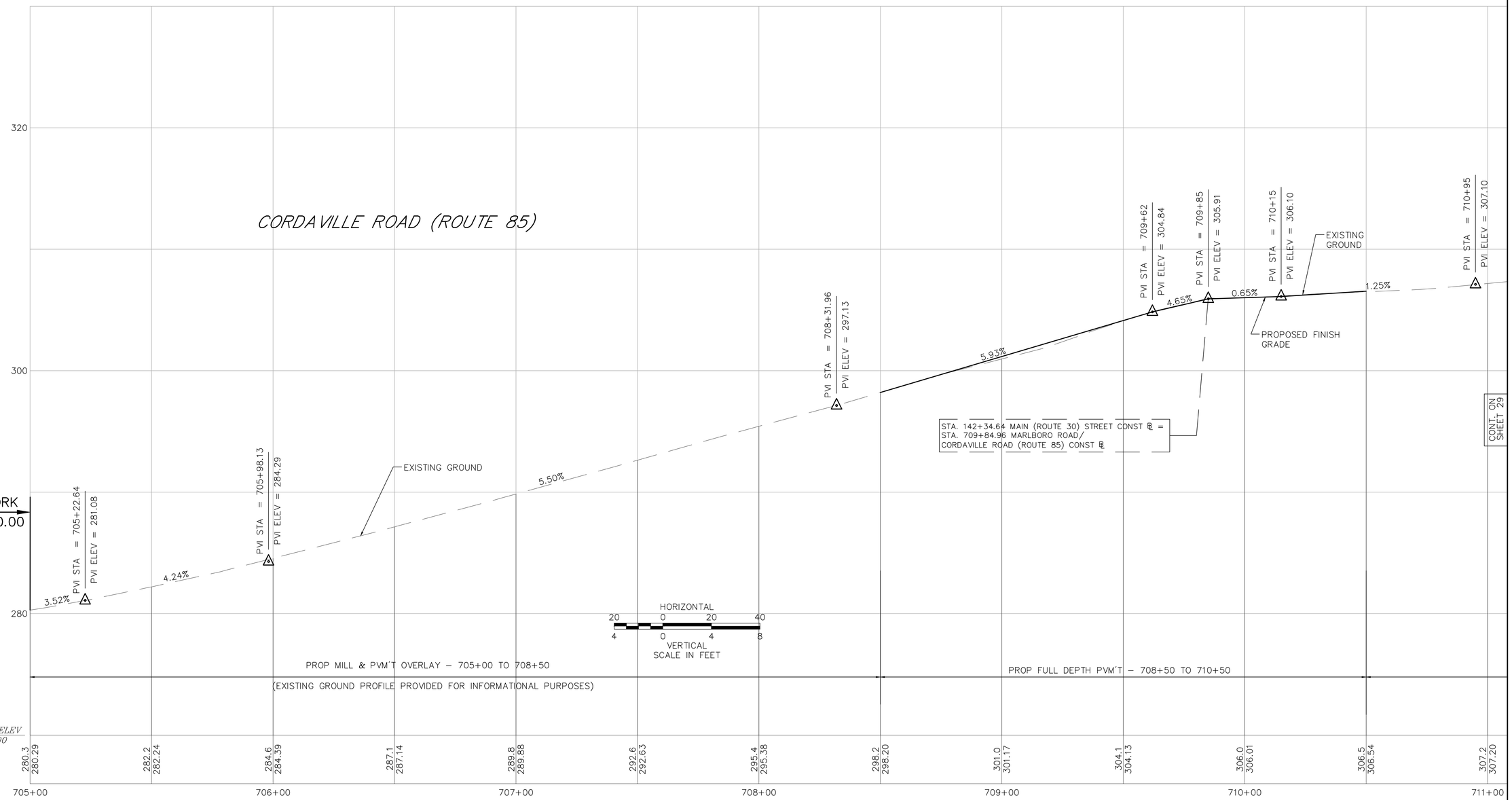
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 17

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	28	156
PROJECT FILE NO. 604989			

PROFILES
CORDAVILLE ROAD (ROUTE 85)

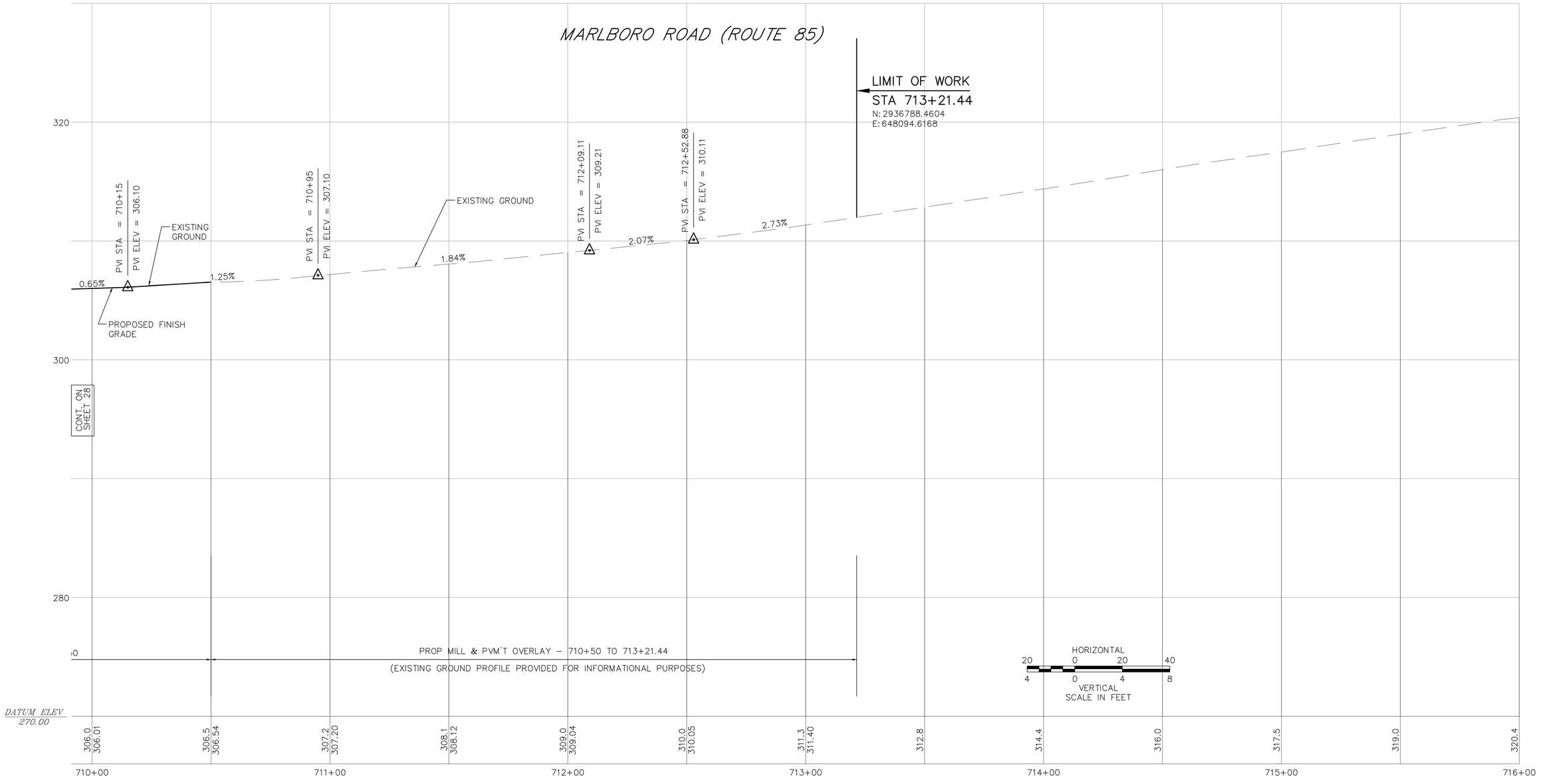


FOR GENERAL PLANS SEE SHEET NO. 14–15

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	29	156
PROJECT FILE NO. 604989			

PROFILES
MARLBORO ROAD (ROUTE 85)

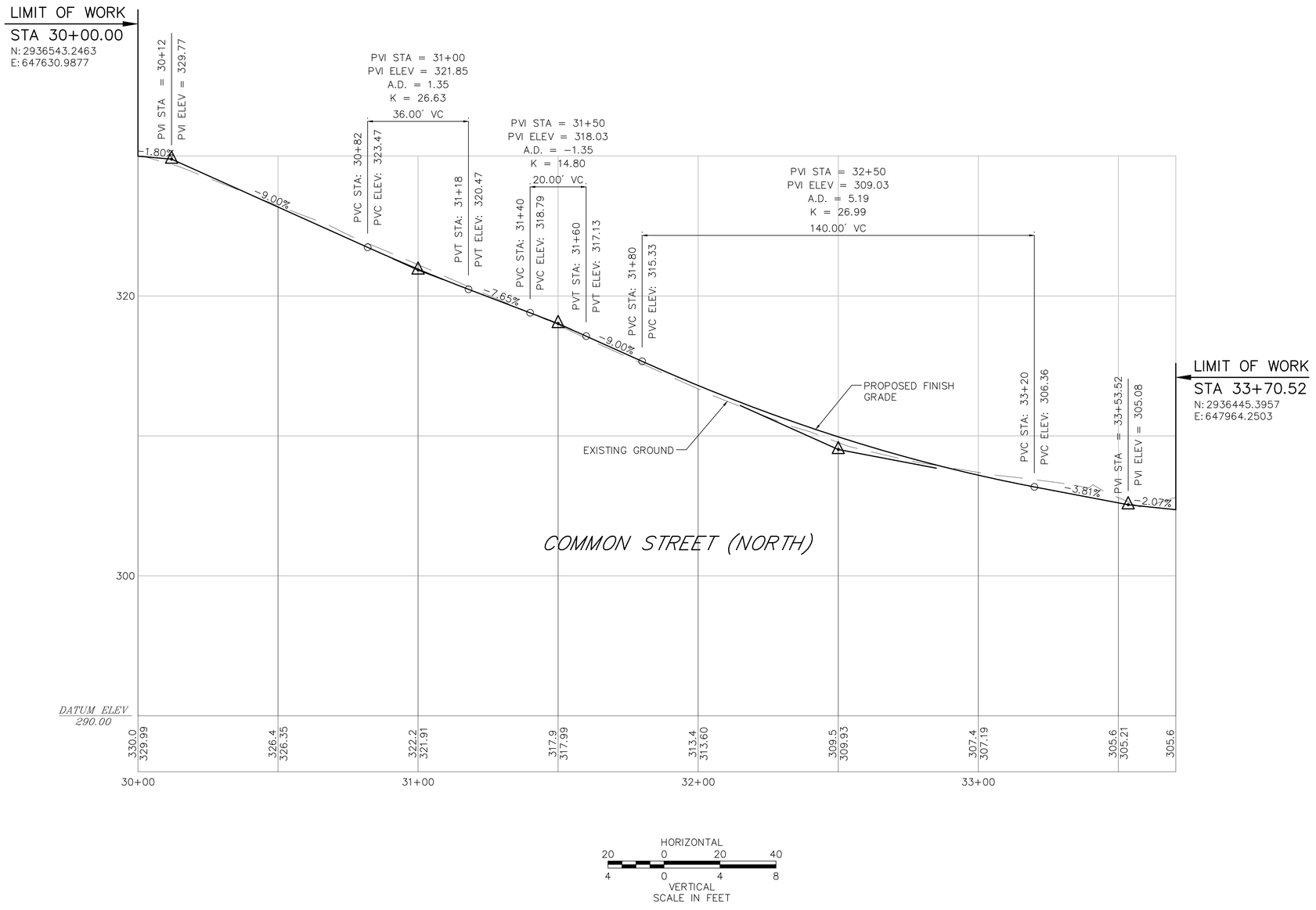


FOR GENERAL PLANS SEE SHEET NO. 14–15

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	30	156
PROJECT FILE NO. 604989			

PROFILES
COMMON STREET (NORTH)



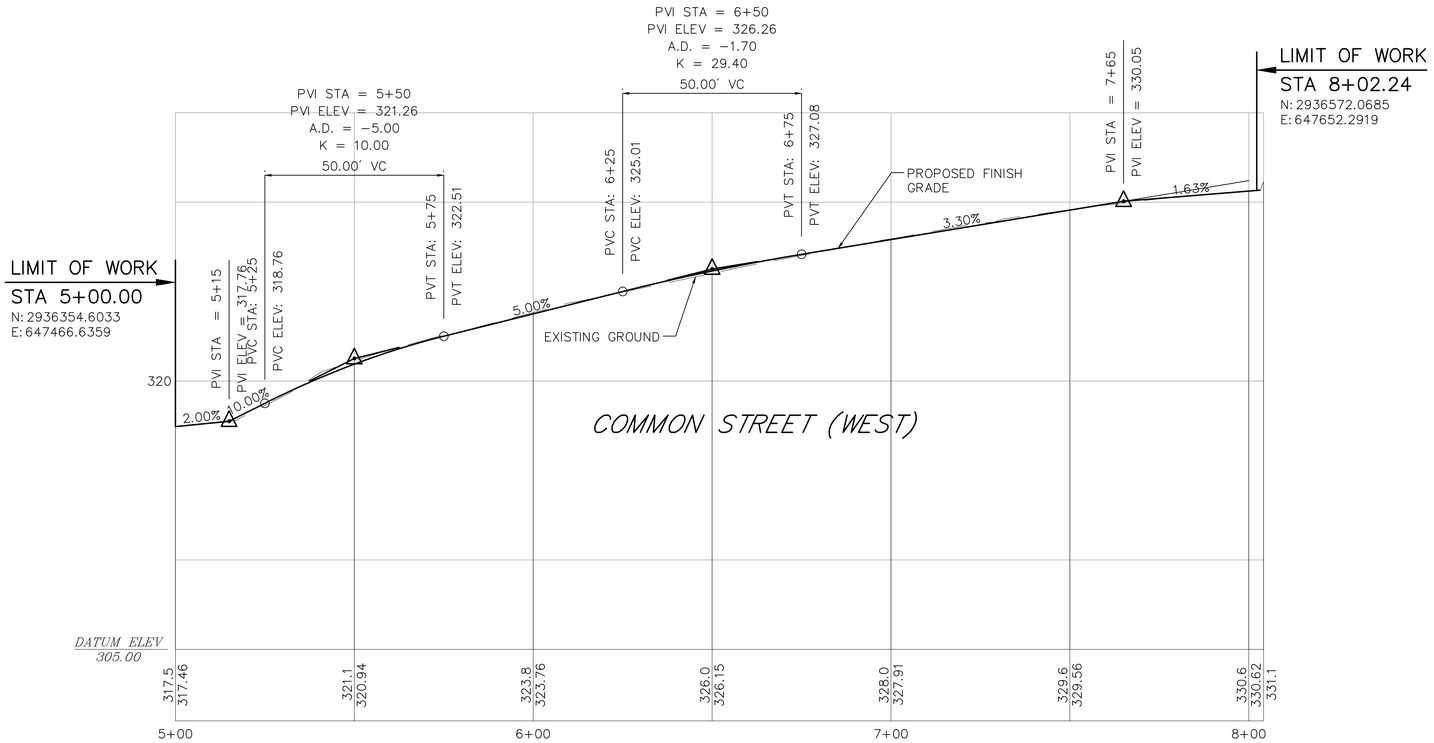
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR GENERAL PLANS SEE SHEET NO. 13

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	31	156
PROJECT FILE NO. 604989			

PROFILES
COMMON STREET (WEST)



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

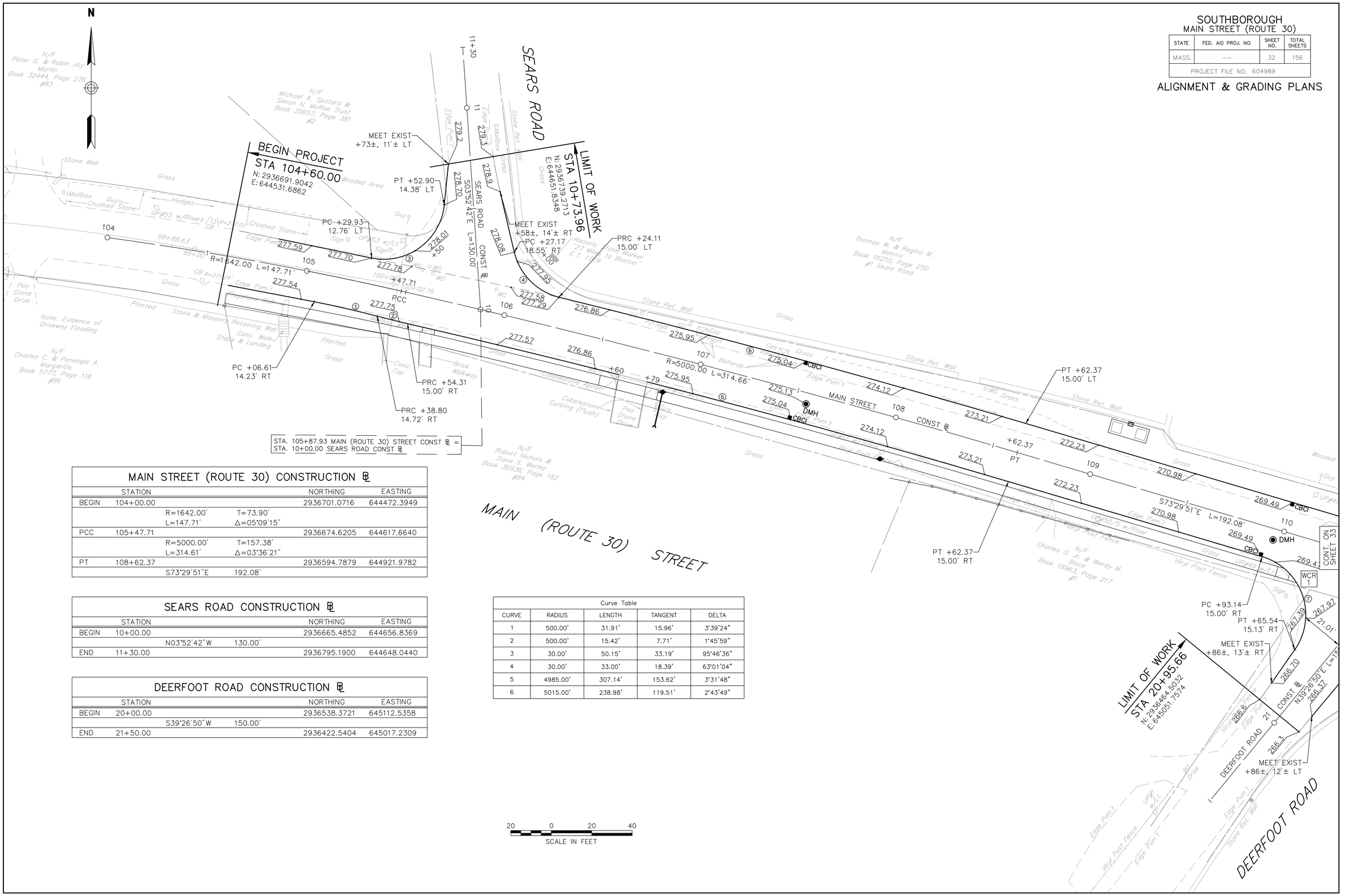
FOR GENERAL PLANS SEE SHEET NO. 13

\\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	156
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=314.61'	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"

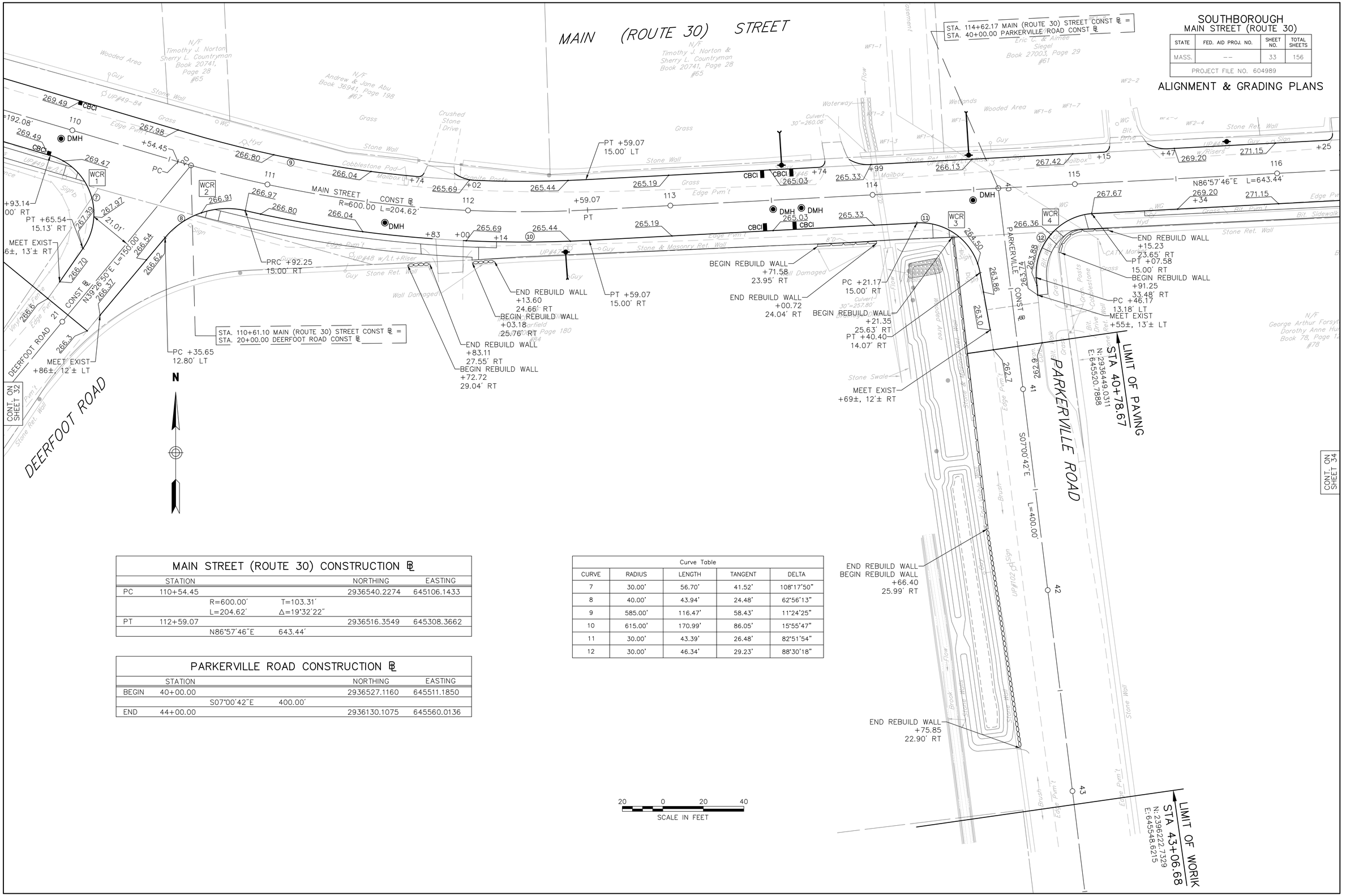
20 0 20 40
SCALE IN FEET

\\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	156
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

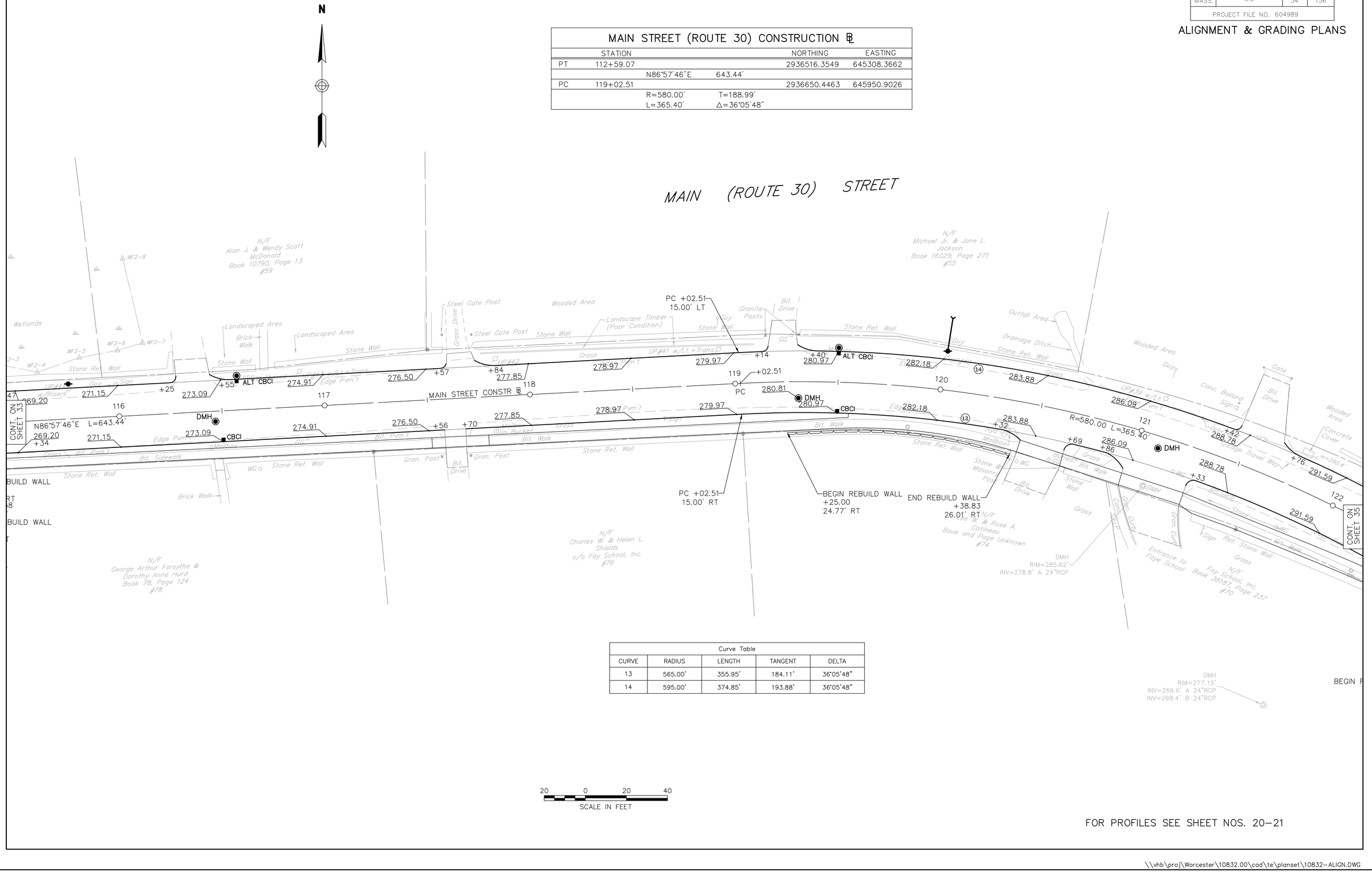
CURVE	RADIUS	LENGTH	TANGENT	DELTA
7	30.00'	56.70'	41.52'	108°17'50"
8	40.00'	43.94'	24.48'	62°56'13"
9	585.00'	116.47'	58.43'	11°24'25"
10	615.00'	170.99'	86.05'	15°55'47"
11	30.00'	43.39'	26.48'	82°51'54"
12	30.00'	46.34'	29.23'	88°30'18"

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	34	156
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"

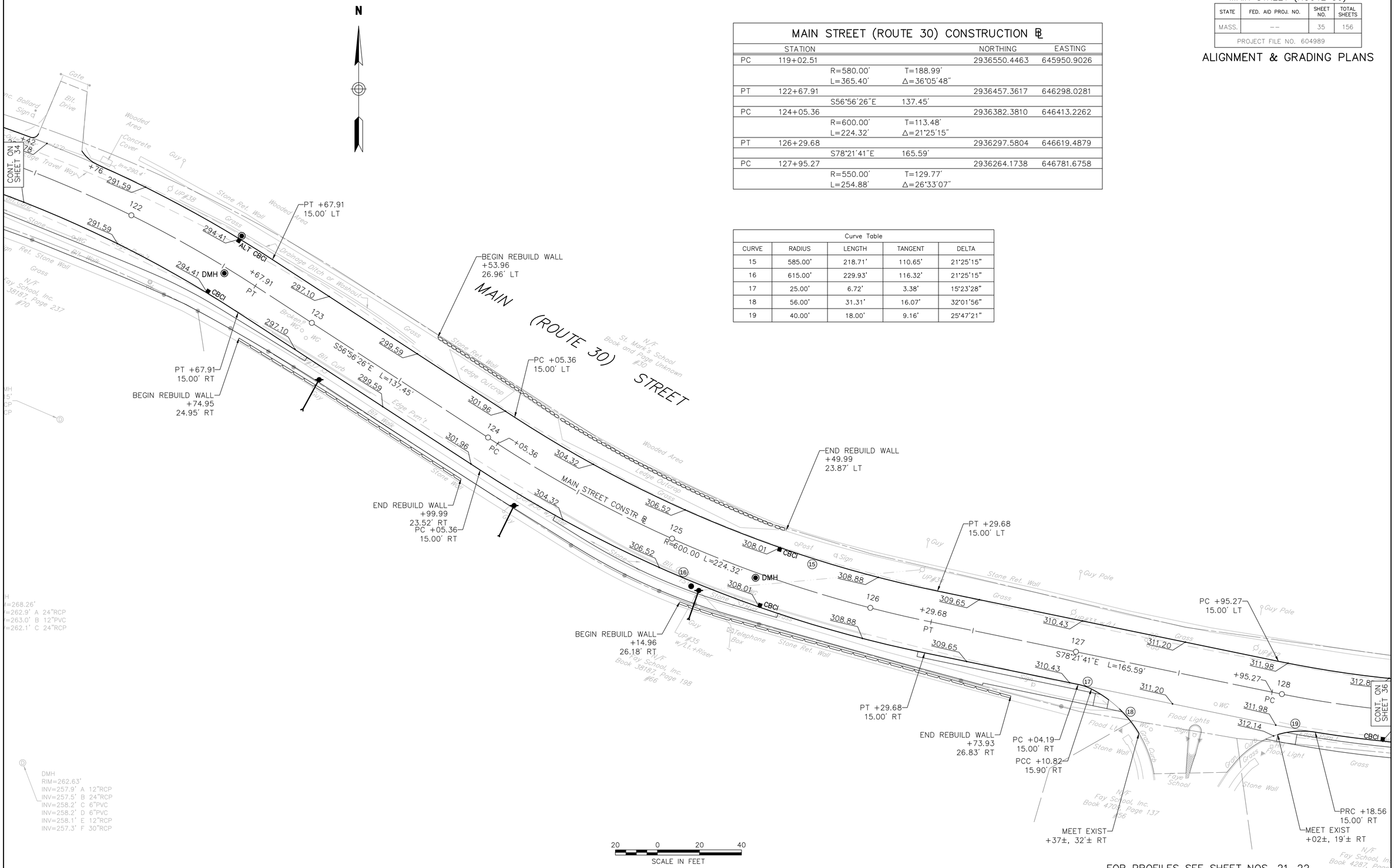
FOR PROFILES SEE SHEET NOS. 20–21

\\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	156
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS



FOR PROFILES SEE SHEET NOS. 21-22

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"

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

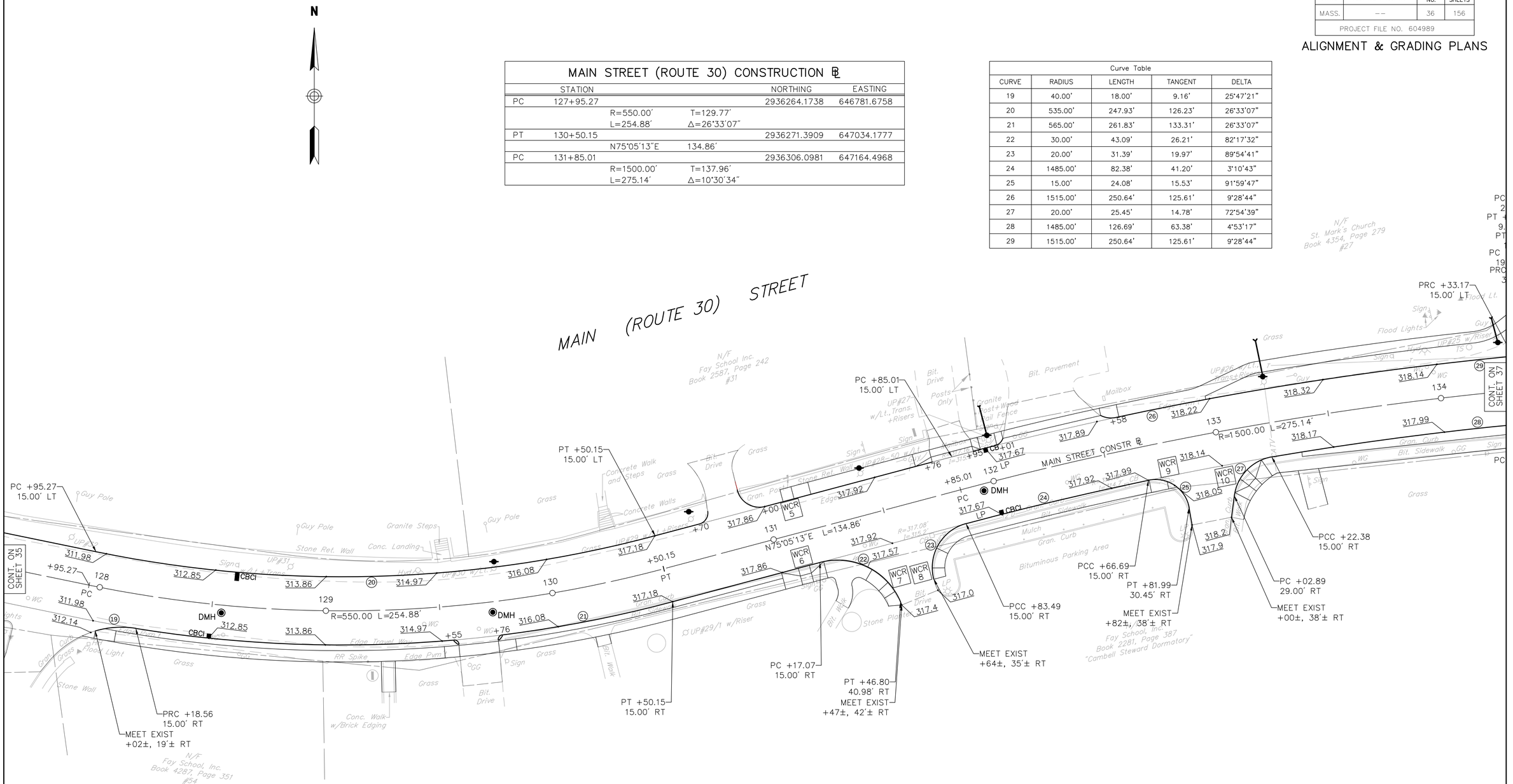
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	36	156
PROJECT FILE NO. 604989			

ALIGNMENT & GRADING PLANS

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"



FOR PROFILES SEE SHEET NOS. 22–23

\\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.	--	37	156
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	156
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'	50.24'	36.23'	106°36'44"
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		

MARLBORO (ROUTE 85) ROAD

COMMON STREET

MAIN (ROUTE 30) STREET

LIMIT OF WORK
STA 713+21.44
N:2935788.4604
E:648094.6168

MEET EXIST
+22±, 14'± LT

MEET EXIST
+21±, 11'± RT

END REBUILD WALL
+44.42
24.20' RT

PT +70.57
19.03' RT

PT +73.15
22.00' LT
R=3.0

ROUTE 85 CONSTR ℄
N17°44'17"W L=1300.00

BEGIN REBUILD WALL
+29.16
21.48' RT

PT +56.53
20.45' LT

PRC +69.79
25.02' LT

PCC +94.18
25.02' LT

PCC +95.46
14.98' RT

PT +49.78
17.19' LT

END REBUILD WALL
+00.00
25.73' LT

BEGIN REBUILD WALL
+36.97
29.51' RT

PC +21.40
21.02' RT

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

PT +63.53
25.01' LT

PC +41.75
25.00' LT

PRC +19.27
19.26' LT
R=9.5

PT +10.60
19.28' RT

PC +10.65
32.50' RT

PT +17.50
15.00' RT

END REBUILD WALL
+23.45
29.19' RT

PT +17.79
12.59' LT
PC +10.75
15.50' LT

PC +20.31
9.46' LT

PRC +24.90
7.55' LT

PC +19.81
23.92' LT

PT +35.70
19.83' LT

PT +36.62
10.04' LT

PC +57.17
22.49' LT

PC +47.56
15.00' RT

PT +27.63
15.00' RT

PRC +21.02
17.50' RT

PC +14.41

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

MAIN STREET CONSTR ℄

CONT. ON SHEET 37

CONT. ON SHEET 39

CONT. ON SHEET 40

20 0 20 40
SCALE IN FEET

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	156
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"

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

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

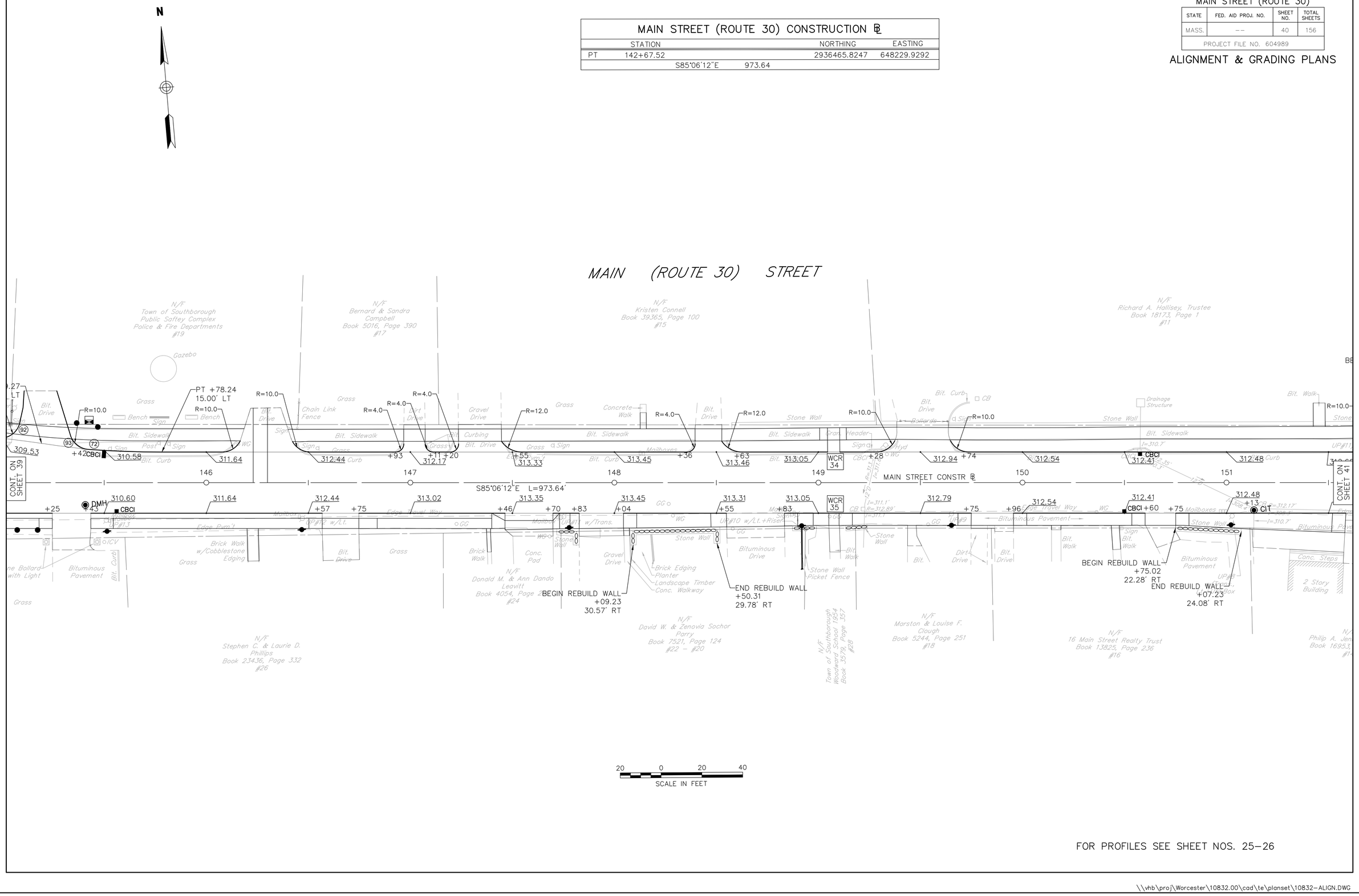
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-ALIGN.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	40	156
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	156
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+57.10			29.3428.0862	649457.8924
		N65°08'51"E	62.04'		
END	155+68.00			2936454.1588	649514.1831

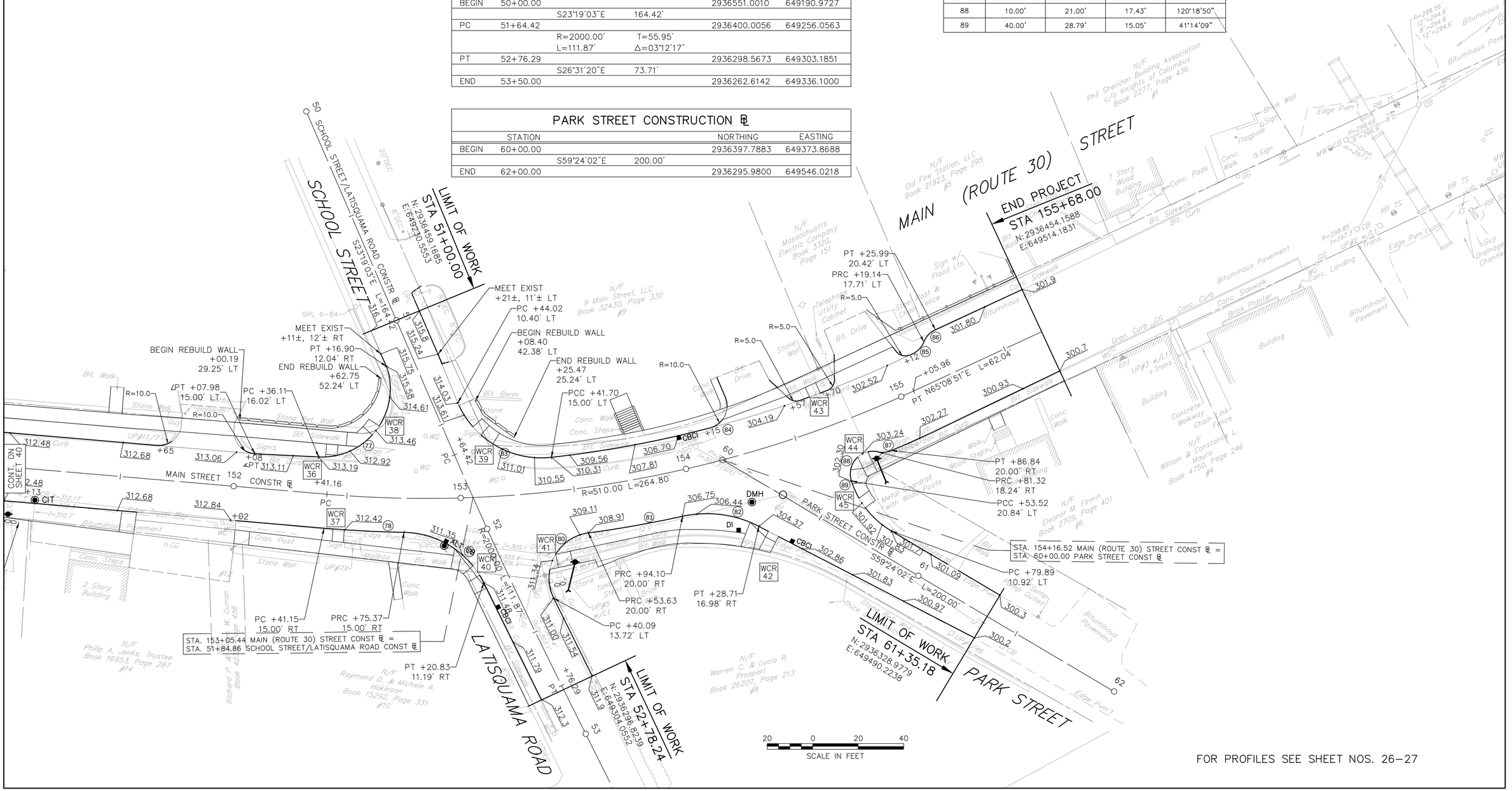
SCHOOL STREET & LATISQUAMA ROAD CONSTRUCTION ℄

	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"

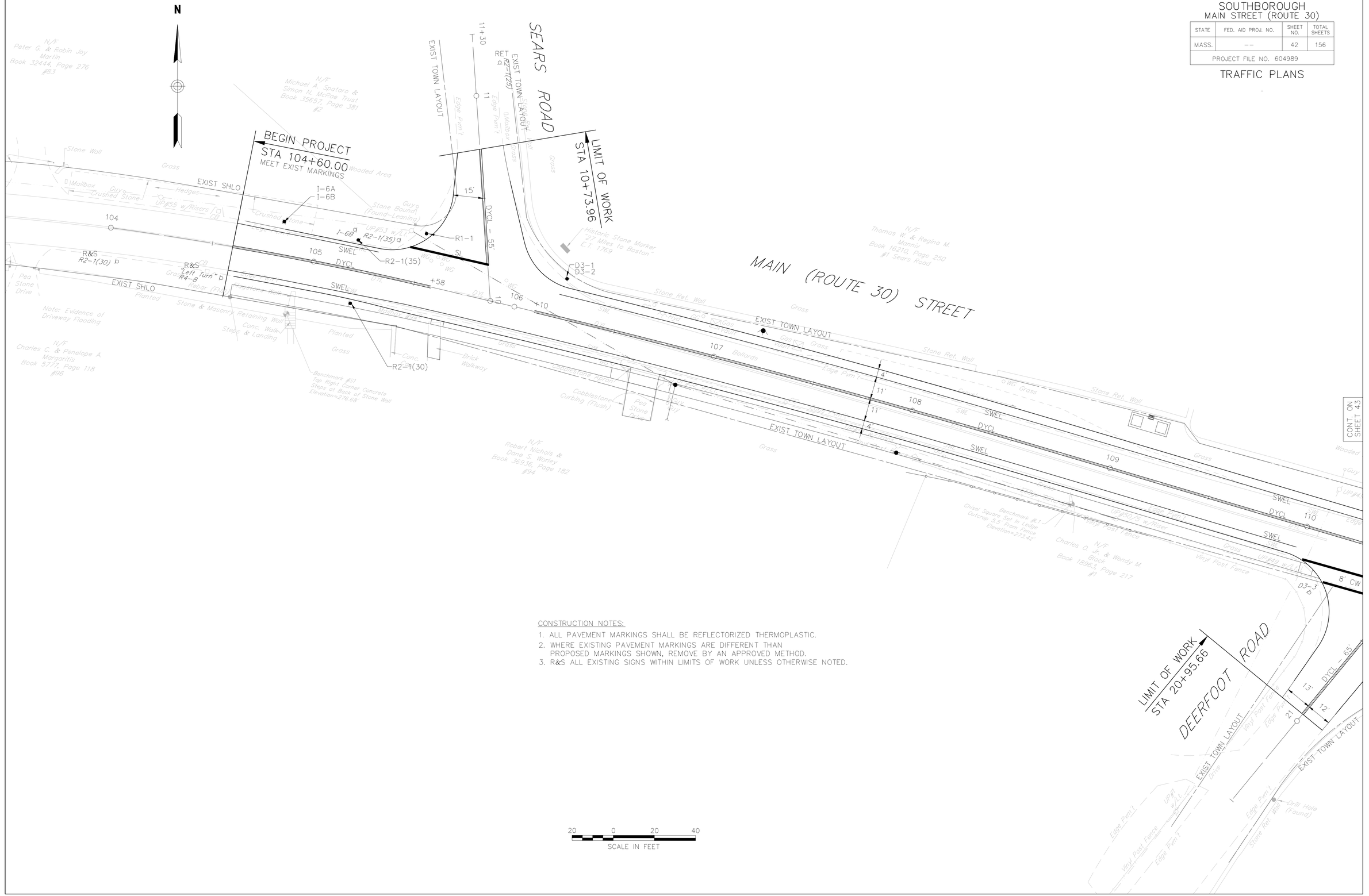


FOR PROFILES SEE SHEET NOS. 26-27

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	42	156
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.

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.	--	43	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

MAIN (ROUTE 30) STREET

CONT. ON SHEET 42

CONT. ON SHEET 44

EXIST TOWN LAYOUT

DEERFOOT ROAD

PARKERVILLE ROAD

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.

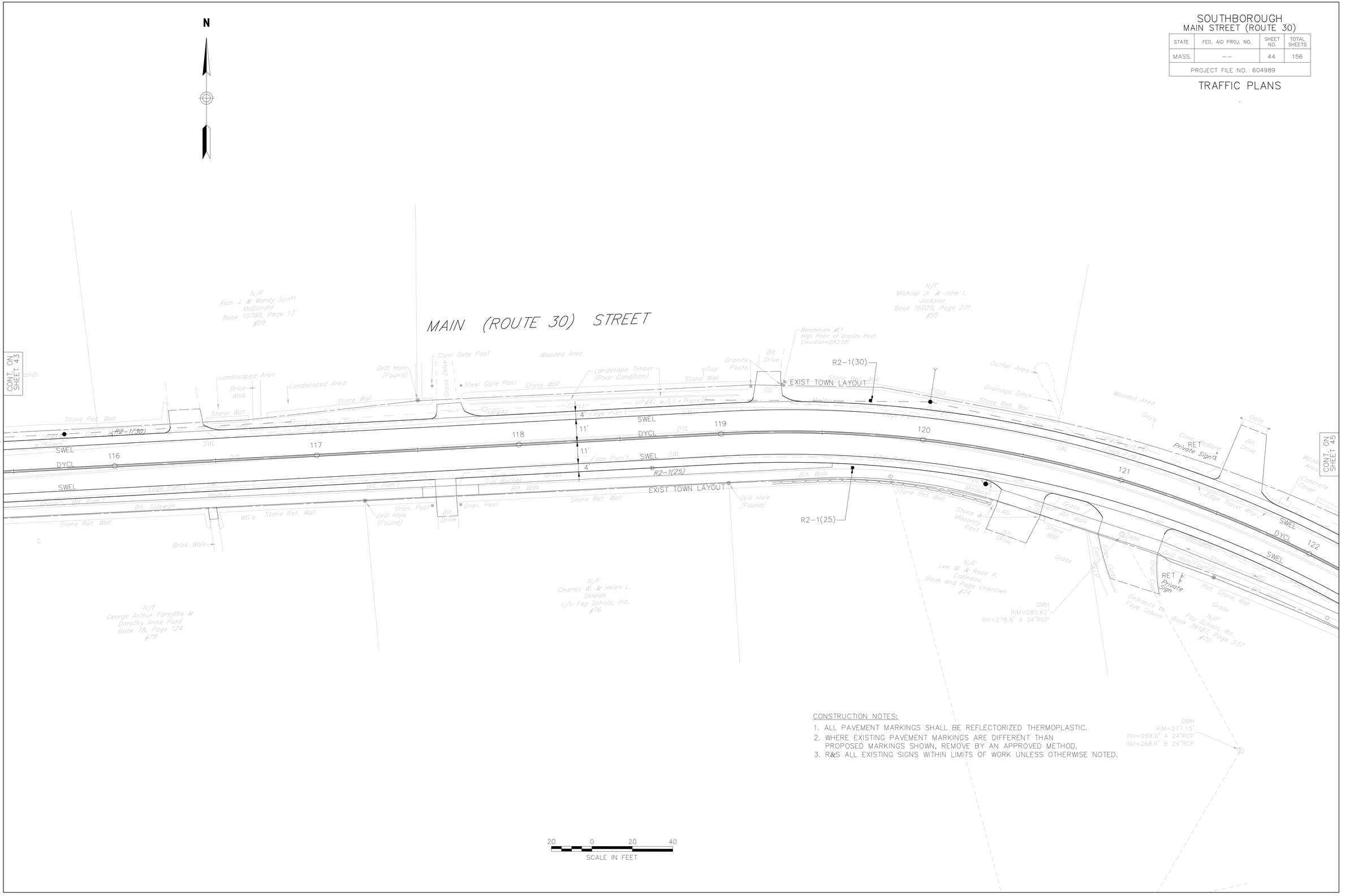
20 0 20 40
SCALE IN FEET

\\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	156
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

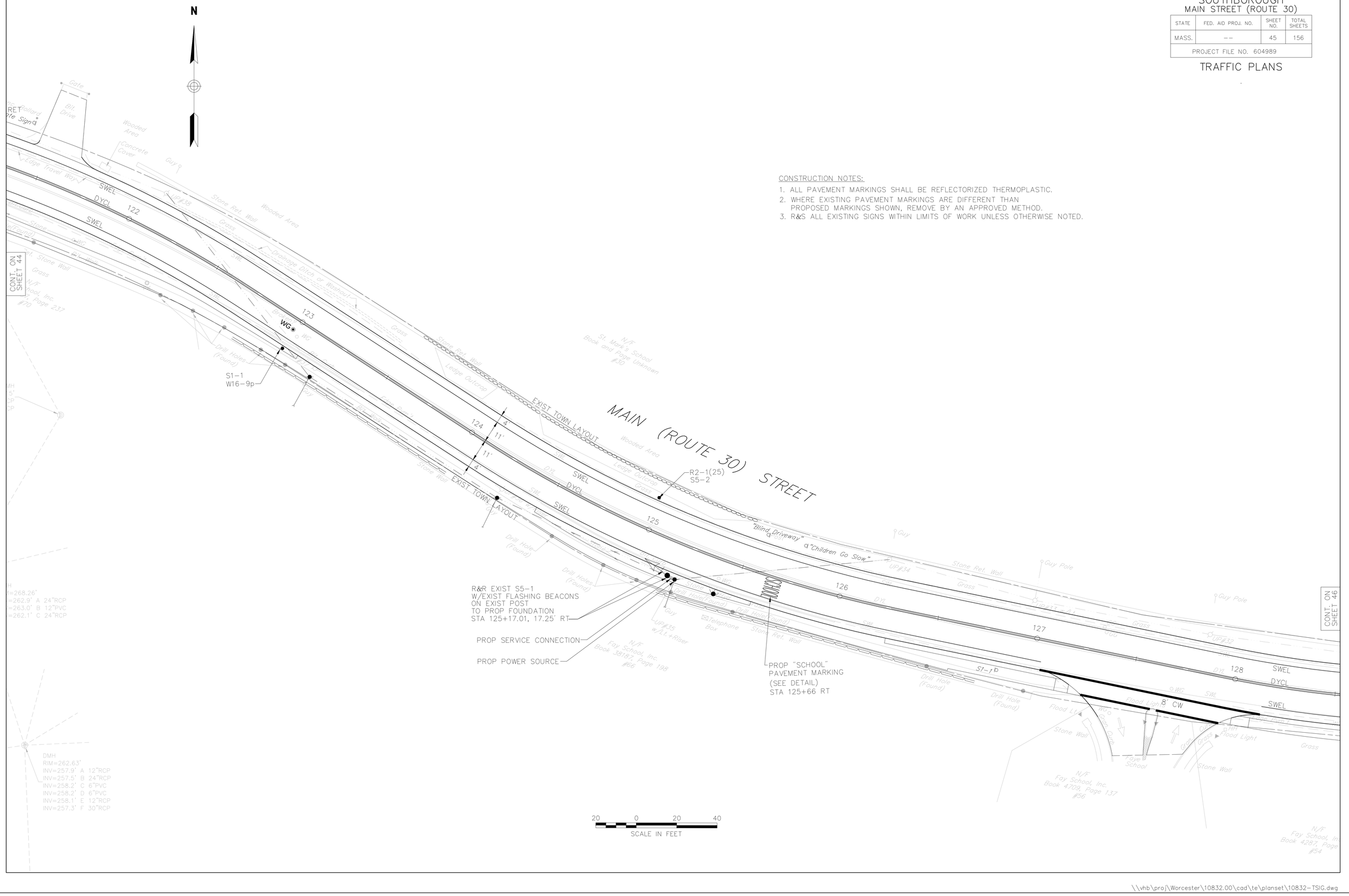
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	45	156
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.

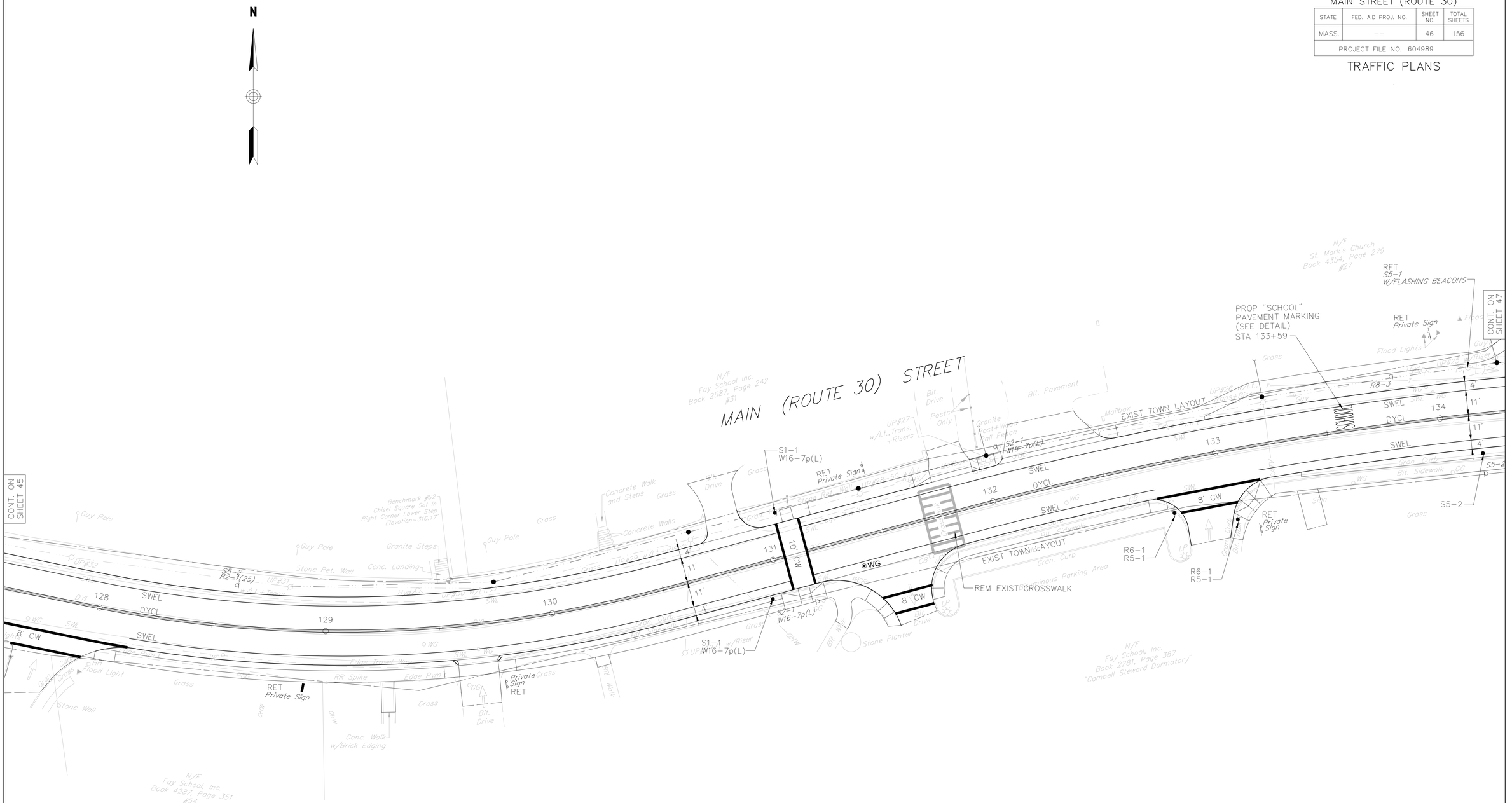


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	46	156
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.	--	47	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

N

LIMIT OF WORK
STA 8+02.24

SAINT MARK'S STREET

8+25.66

COMMON STREET

MAIN (ROUTE 30) STREET

MIDDLE ROAD

CONT. ON SHEET 48

CONT. ON SHEET 46

PROP SHARROW
(SEE DETAIL ON SHEET 90)

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

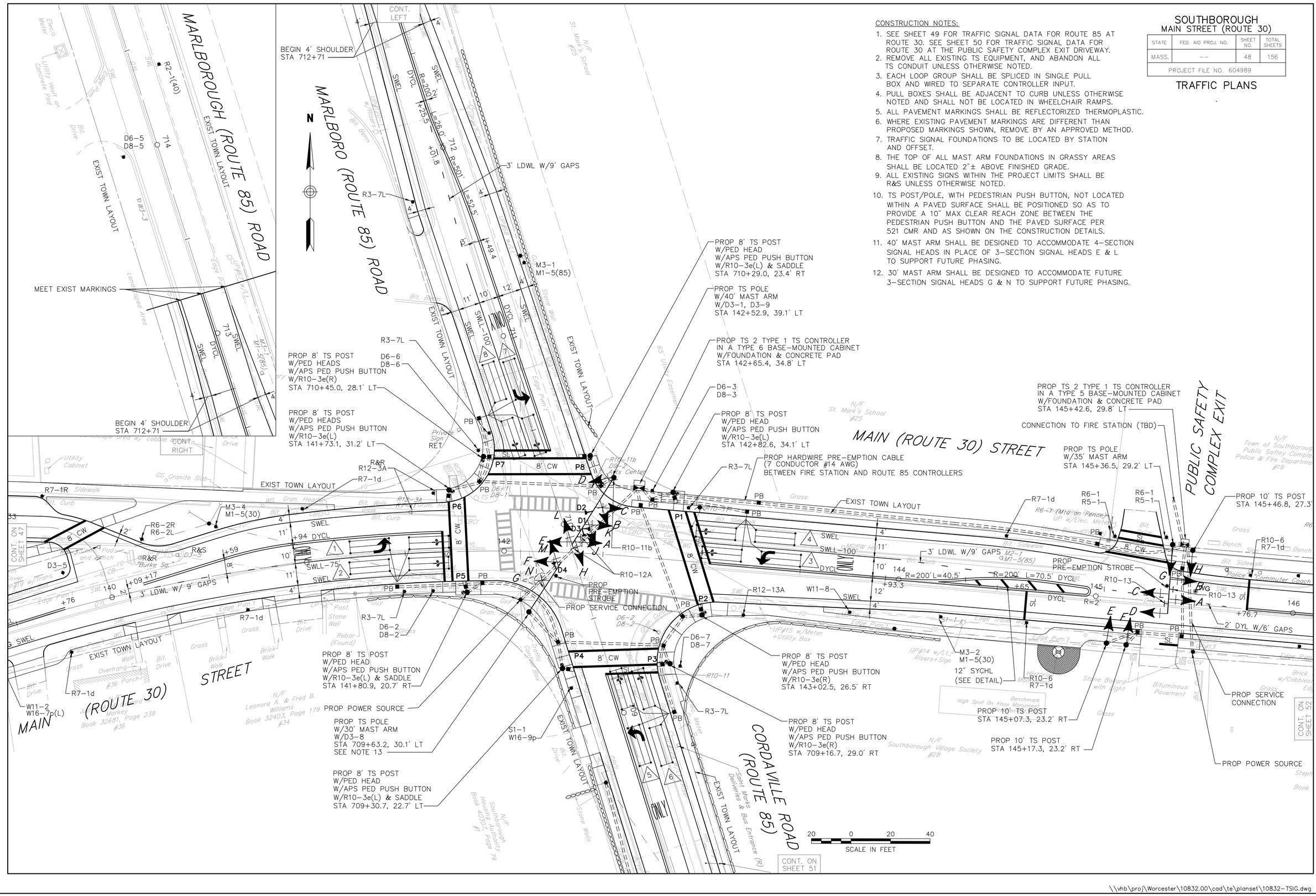
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	48	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

CONSTRUCTION NOTES:

1. SEE SHEET 49 FOR TRAFFIC SIGNAL DATA FOR ROUTE 85 AT ROUTE 30. SEE SHEET 50 FOR TRAFFIC SIGNAL DATA FOR ROUTE 30 AT THE PUBLIC SAFETY COMPLEX EXIT DRIVEWAY.
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

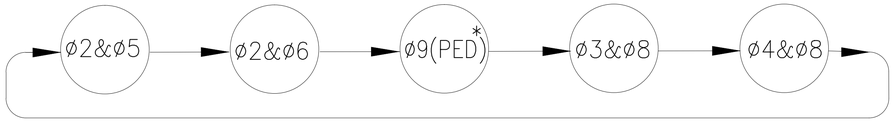
ø1 (FUTURE)	ø2	ø3	ø4	ø5	ø6	ø7 (FUTURE)	ø8	ø9	PRE-EMPTION
	PERM		PERM		PERM		PERM		

SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL (ISOLATED)																												HOLD	CLEAR	ALL RED
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~~	~~G~~	~~Y~~	~~R~~
MAIN STREET	WB	B,C				G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	FY	G	Y	R
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	R	R	R
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~~	R	R	R
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	R	R	R
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	R	R	R
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	DW	DW	DW
TIMING IN SECONDS																														CONFLICT FLASH OPERATION ONLY	HARDWIRE FIRE PRE-EMPTION		
MINIMUM INTERVAL						10			6			10			6			10						10									
VEHICLE EXTENSION						2			2			2			2			2						2									
MAXIMUM 1						55			5			25			5			45						35									
MAXIMUM 2						35			5			40			5			25						30									
YELLOW CLEARANCE							3.5			3			4			3			3.5					4				3					
RED CLEARANCE								2			3.5			3			2.5			2					3								
PEDESTRIAN INTERVAL																											7						
PEDESTRIAN INTERVAL																											11						
																															●	3	2
DETECTOR						NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK						NON-LOCK			–					–	
RECALL						MIN			OFF			OFF			OFF			MIN						OFF			–					–	

WHERE:
● = AS DETERMINED BY THE FIRE CHIEF

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
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
HARDWIRE	1		ø2 & ø5
D1	2		ø2 & ø5
D2	3		ø6
D3	4		ø3 & ø8
D4	5		ø4

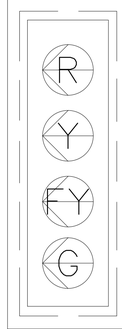
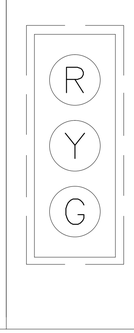
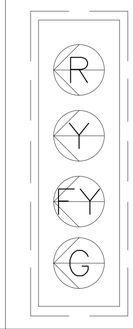
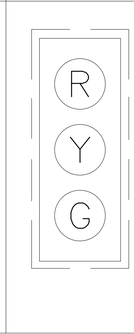
SEQUENCE & TIMING NOTES:

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 EACH INTERSECTION.
2. PRE-EMPTION SIGNALS SHALL BE SERVICED ON A PRIORITY BASIS WITH DETECTORS D1, D2, D3 OR D4 ASSIGNED DESCENDING PRIORITIES AS FOLLOWS: (D1 HIGHEST AND D4 LOWEST)
3. IN RESPONSE TO A PRE-EMPTION SIGNAL RECEIVED AT AN INTERSECTION BY OPTICAL DETECTOR D1 (OR D2, D3, D4) THE CONTROLLER SHALL HOLD OR ADVANCE TO AND HOLD IN EMERGENCY VEHICLE PRE-EMPTION PHASE #1 (OR #2, #3, #4) GREEN FOR A MINIMUM OF TEN (10) SECONDS OR UNTIL PRE-EMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME PRE-EMPTION PHASE CLEARANCES FOR THE ASSOCIATED PHASE(S) AS SHOWN IN THE SEQUENCE AND TIMING CHART AND SERVICE SUBSEQUENT EMERGENCY VEHICLE PRE-EMPTION PHASES AS NECESSARY.
4. 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 ON.
6. HARDWIRE BASED FIRE PRE-EMPT SHALL OVERRIDE OPTICAL BASED PRE-EMPTION.

SIGNAL HEAD DATA

A,H	B,C,D,E,F,J,K,L,M	P1-P8	FUTURE SIGNAL HEAD DATA (NOT IN CONTRACT) E,L	FUTURE SIGNAL HEAD DATA (NOT IN CONTRACT) G,N
				
ALL 12" LENS		HAND/MAN W/COUNTDOWN TIMER (L.E.D.) SINGLE SECTION BTD STANDARD	ALL 12" LENS	

NOTES:
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 2" 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	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø5 (SEE NOTE 2)	SERIES
4	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø2	SERIES
5	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø3 (SEE NOTE 3)	SERIES
6	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø8	SERIES
7	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø4	SERIES
8	2-6'X20' QUADRUPOLE	2-4-2	PRESENCE	0	ø4	SERIES

NOTES:
1. DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY
2. LOOP GROUP 3 SHALL CALL/EXTEND ø5 THEN SWITCH TO CALL ø2.
3. LOOP GROUP 5 SHALL CALL/EXTEND ø3 THEN SWITCH TO CALL ø8.

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, HEAVY LOADING, INCL. FOUNDATION
1	TS 40' MAST ARM TYPE 2, STEEL, HEAVY LOADING, 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 (L.E.D.)
5	PEDESTRIAN PUSH BUTTON W/R10-3f(L) AND SIGN SADDLE
3	PEDESTRIAN PUSH BUTTON W/R10-3f(R) AND SIGN SADDLE
21	PULL BOX-12"x12"
4	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.	--	49	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

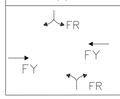
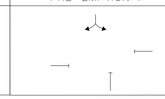
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	50	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

SEQUENCE AND TIMING							
APPROACH	DIRECTION	HOUSING	NORMAL OPERATION	FIRE PRE-EMPTION			
				PRE-CLEAR	HOLD	CLEAR	ALL RED
PRE-EMPTION INTERVAL				4	●	4	1
MAIN STREET	EB	A,B	FY(8")	Y(12")	R(12")	R(12")	R(12")
MAIN STREET	WB	C,D	FY(8")	Y(12")	R(12")	R(12")	R(12")
COMMUNITY HOUSE DRIVE	NB	G,H	FR(8")	Y(12")	R(12")	R(12")	R(12")
FIRE STATION DRIVE	SB	E,F	FR(12")	R(12")	G(12")	Y(12")	R(12")
DETECTOR			-	-			
RECALL			-	-			

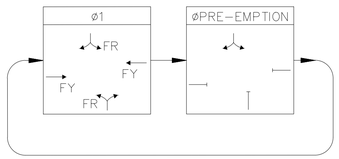
NOTES:
1. AUTOMATIC FLASHING OPERATION PER M.U.T.C.D.
2. ● = HOLD PERIOD TO BE DETERMINED BY FIRE CHIEF.
3. FY = FLASHING YELLOW
4. FR = FLASHING RED

ø1	PRE-EMPTION ø
	

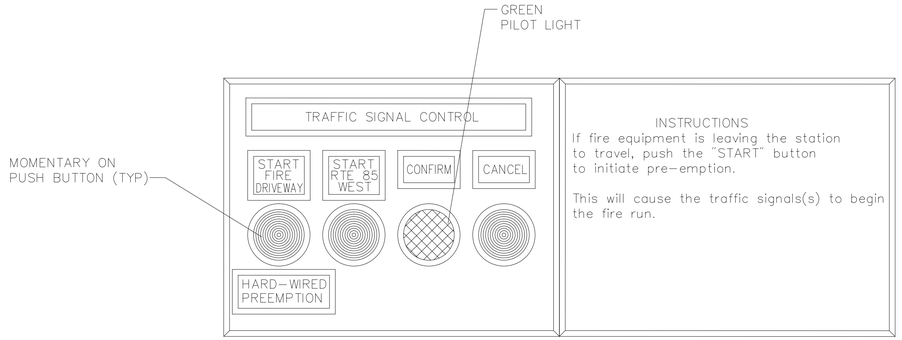
SEQUENCE & TIMING NOTES:

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 PREFERENTIAL PHASE SEQUENCE



ø1 = NORMAL OPERATION
FY = FLASHING YELLOW; FR = FLASHING RED

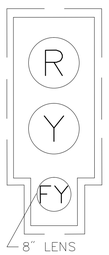
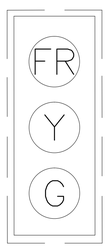
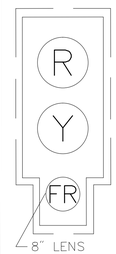


FIRE STATION PRE-EMPTION PANEL (SAMPLE) DETAIL (AT FIRE STATION)

(NEMA ENCLOSURE)
NTS

NOTES:
1. FIRE STATION PANELS WITH START/CANCEL BUTTONS SHALL BE LOCATED ADJACENT TO THE MAIN OVERHEAD DOORS. FINAL LOCATIONS AND HEIGHTS TO BE DETERMINED BY THE SOUTHBOROUGH FIRE DEPARTMENT.
2. ALL NEW CONDUIT AND WIRING WITHIN THE FIRE STATION SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE, AND ALL LOCAL CODES.

FIRE STATION SIGNAL
SIGNAL HEAD DATA

A,B,C,D	E,F	G,H
		

12" LENS UNLESS OTHERWISE NOTED

NOTES:
1. ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
2. ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 2" 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.

ITEM 815.00
EMERGENCY TRAFFIC SIGNAL
MAIN STREET @ FIRE STATION DRIVEWAY/COMMUNITY HOUSE DRIVEWAY
LIST OF MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	TS 2 TYPE 1 CONTROLLER IN A TYPE 5 BASE MOUNTED CABINET, INCL. FOUNDATION
1	TS 35' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
3	TS POST 10' STANDARD INCL. FOUNDATION
2	SIGNAL HEAD, 3-SECTION, 12" LENSES
6	SIGNAL HEAD, 3-SECTION, 12" & 8" LENSES
1	SERVICE CONNECTION (OVERHEAD)
1	PRE-EMPTION CONNECTION (UNDERGROUND) TO FIRE STATION
1	FIRE STATION PRE-EMPTION PANEL (WITHIN FIRE STATION)
5	PULL BOX-12"x12"

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	51	156
PROJECT FILE NO. 604989			

TRAFFIC PLANS

MAIN (ROUTE 30) STREET

MARLBORO (ROUTE 85) ROAD

CORDAVILLE (ROUTE 85) ROAD

LIMIT OF WORK
STA 705+00.00

CONT. ON SHEET 52

CONT. ON SHEET 48

CONT. ON SHEET 57

EXIST TOWN LAYOUT

PROP POWER SOURCE
PROP SERVICE CONNECTION

PROP 12' TS POST
W/ S5-1
W/FLASHING BEACONS
(REFER TO ITEM 824.35)
STA 707+90.8, 23.9' LT

PROP "SCHOOL" PAVEMENT MARKING (SEE DETAIL)
STA 707+50

MEET EXIST MARKINGS

SCALE IN FEET
20 0 20 40

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.

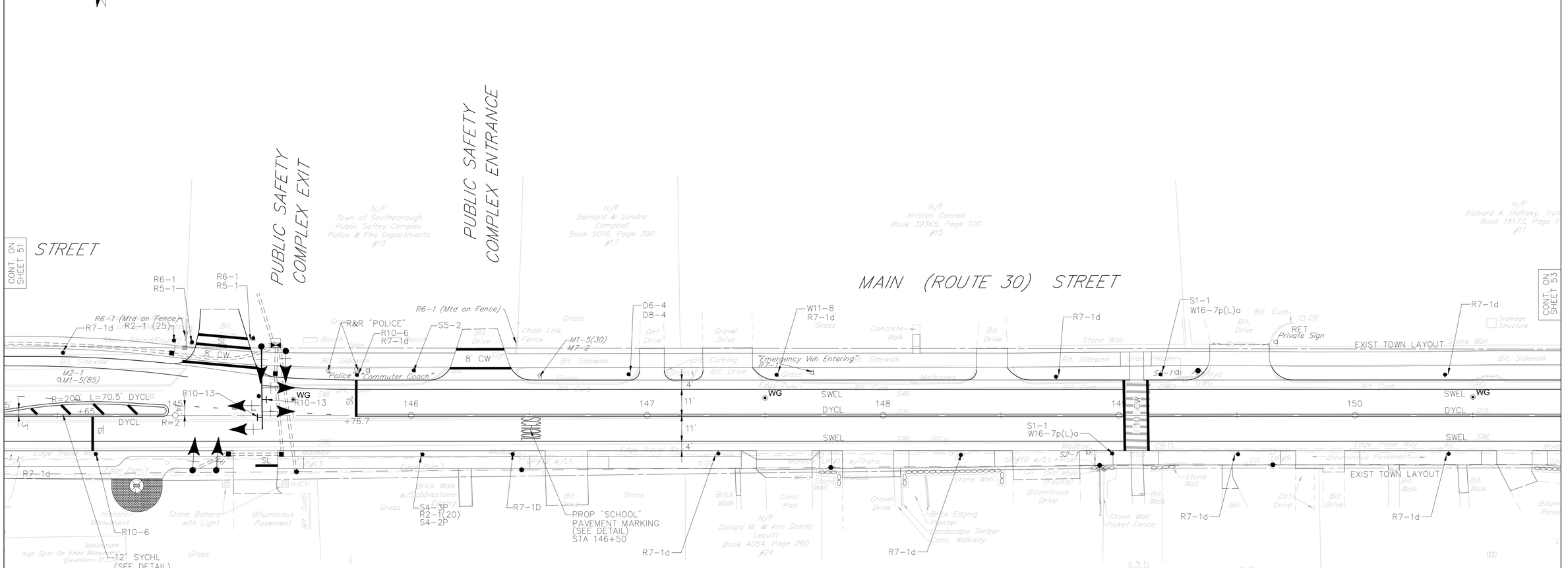
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-TSIG.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	52	156
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.

20 0 20 40
SCALE IN FEET

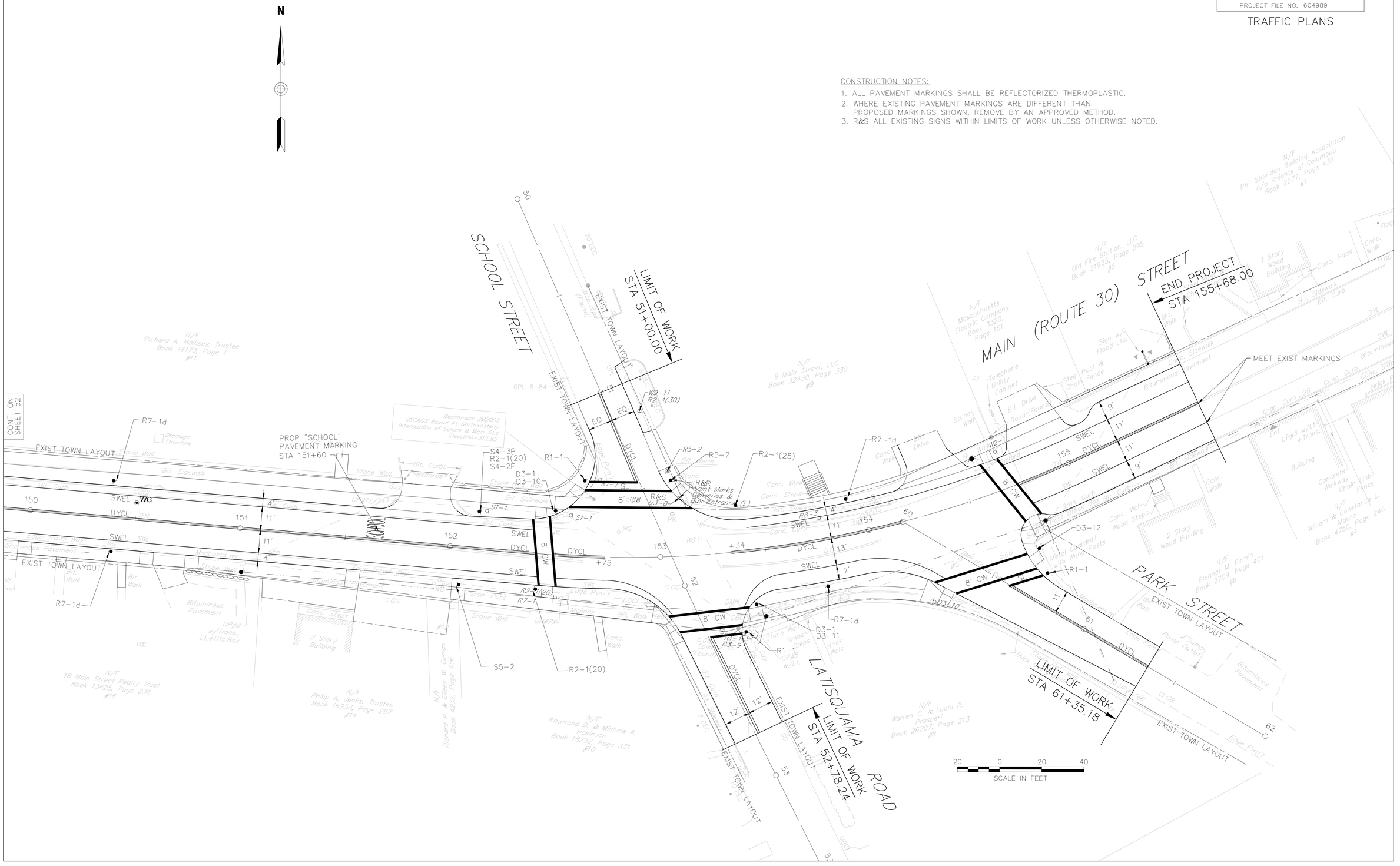
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	53	156
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.


N
SCHOOL STREET
LIMIT OF WORK
STA 51+00.00
MAIN (ROUTE 30) STREET
END PROJECT
STA 155+68.00
MEET EXIST MARKINGS
PROP "SCHOOL" PAVEMENT MARKING
STA 151+60
EXIST TOWN LAYOUT
CONT. ON SHEET 52
PARK STREET
LATISQUAMA ROAD
LIMIT OF WORK
STA 52+78.24
LIMIT OF WORK
STA 61+35.18
Benchmark #M200Z
USC&GS Bound At Northwesterly Intersection of School & Main Sts.
Elevation=313.95
N/F Richard A. Hallisey, Trustee Book 18173, Page 1 #11
N/F 9 Main Street, LLC Book 32430, Page 330 #9
N/F Old Fire Station, LLC Book 21923, Page 295 #5
N/F Massachusetts Electric Company Book 3320, Page 151
N/F Phil Sheridan Building Association c/o Knights of Columbus Book 2277, Page 436 #1
N/F 16 Main Street Realty Trust Book 13825, Page 236 #16
N/F Philip A. Jenks, Trustee Book 16953, Page 287 #14
N/F Richard P. & Eileen W. Curran Book 12332, Page 456
N/F Raymond D. & Michele A. Hokinson Book 15292, Page 331 #10
N/F Warren C. & Lucia R. Prosperi Book 26201, Page 213 #8
N/F William & Constance L. Mauro Book 4750, Page 246 #4
N/F Eleanor M. Firmin Book 2709, Page 401 #6
R7-1d
R1-1
R2-1(20)
R2-1(25)
R2-1(30)
R5-2
R&R Saint Marks Cemeteries & Gas Entrance (L)
R&S
R8-3
W2-1
W9-11
S4-3P
S4-2P
S1-1
S5-2
D3-1
D3-10
D3-11
D3-12
D3-8
D3-9
8' CW
9' CW
SWEL
DYCL
WG
Bit. Sidewalk
Bit. Curb
Stone Wall
Conc. Walk
Conc. Steps
Conc. Pads
Bituminous Pavement
Edge Pvmt.
Drainage Structure
Mailboxes
Sign w/ Flood Lts.
Steel Post & Chain Fence
Chain Link Fence
Telephone Utility Cabinet
Bit. Drive
Rebar/Found
Bit. Walk
1 Story Wood Building
2 Story Wood Building
Concrete Walkway
Wood Steps
Guardrail with Wood Posts
Flagpole
Conc. Curb
Gran. Curb
Brick Edge
Brick Walk
Timber Steps
Pump Outlet
2 Sumps
Bituminous Pavement
UP#8 w/Trans., Lt.+Util.Box
UP#3 w/Lt.+Trans.
UP#5 w/Lt.
UP#7x3
20"DEC
EXIST TOWN LAYOUT (Found)
Bit. Curbs
Buildings
Edge Trover Way
Conc. Steps
2 Story Building
Building
Concrete Walkway
Chain Link Fence
Conc. Walk-Wood Steps
Guardrail with Wood Posts
Bituminous Pavement
Edge Pvmt.
Pump Outlet
2 Sumps
Bituminous Pavement
Conc. Curb
Gran. Curb
Brick Edge
Brick Walk
Timber Steps

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	54	156
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 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				5	WHITE	BLACK	BLACK	P5-5	5.00	25.00
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				7	WHITE	BLACK	BLACK	P5-7	6.25	43.75
R5-1	30"	30"	DO NOT ENTER				6	WHITE	RED/ WHITE	–	P5-6	6.25	37.50
R5-2	24"	24"					1	WHITE	RED/ BLACK	BLACK	P5-1	4.00	4.00
R6-1	36"	12"	ONE WAY				7	BLACK	WHITE/ BLACK	WHITE	P5-1 6 MTD W/OTHER	3.00	21.00
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				5	WHITE	RED	RED	P5-5	1.50	7.50
R7-1R	12"	18"	NO PARKING ANY TIME				3	WHITE	RED	RED	P5-3	1.50	4.50
R7-12L	12"	18"	NO PARKING BETWEEN SIGNS				1	WHITE	RED	RED	P5-1	1.50	1.50
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				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	
R10-6	24"	36"	STOP HERE ON RED	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			2	WHITE	BLACK	BLACK	P5-2	6.00	12.00
R10-12A	30"	36"	LEFT TURN YIELD ON FLASHING				2	WHITE	BLACK/ YELLOW	BLACK	2 MTD ON TS MAST ARM	7.50	15.00
R10-13	42"	30"	EMERGENCY SIGNAL	AS PER MASSDOT STANDARD			4	WHITE	BLACK	BLACK	P5-4	8.75	12.00
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
W11-2	30"	30"					2	YELLOW	BLACK	BLACK	P5-2	6.25	12.50
W11-8	30"	30"					2	YELLOW	BLACK	BLACK	P5-2	6.25	12.50
W16-7p(L)	24"	12"					6	FLORESCENT YELLOW-GREEN	BLACK	BLACK	8 MTD W/OTHER	2.00	16.00
W16-7p(L)a	24"	12"					2	YELLOW	BLACK	BLACK	8 MTD W/OTHER	2.00	16.00
W16-9p	24"	12"	AHEAD				2	FLORESCENT YELLOW-GREEN	BLACK	BLACK	2 MTD W/OTHER	2.00	8.00
M1-5(30)	24"	24"	30	AS PER MASSDOT STANDARD			2	WHITE	BLACK	BLACK	P5-2	4.00	16.00
M1-5(85)	24"	24"	85				2	WHITE	BLACK	BLACK	P5-2	4.00	16.00
M3-1	24"	12"	NORTH	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			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

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.	--	55	156
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			
D6-1	60"	66"	85 NORTH Marlboro Hudson NEXT LEFT	18/7C/6C 8C/6C 8C/6C 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
D6-2	60"	66"	85 NORTH Marlboro Hudson ←	18/7C/6C 8C/6C 8C/6C	4.5 4.5 4.5 4.5 6	8" @ 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
D6-3	60"	66"	85 NORTH Marlboro Hudson →	18/7C/6C 8C/6C 8C/6C	4.5 4.5 4.5 4.5 6	8" @ 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
D6-4	60"	66"	85 NORTH Marlboro Hudson NEXT RIGHT	18/7C/6C 8C/6C 8C/6C 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
D6-5	60"	66"	30 EAST Framingham Cochituate NEXT LEFT	18/7C/6C 8C/6C 8C/6C 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
D6-6	60"	66"	30 EAST Framingham Cochituate ←	18/7C/6C 8C/6C 8C/6C	4.5 4.5 4.5 4.5 6	8" @ 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
D6-7	60"	66"	30 EAST Framingham Cochituate →	18/7C/6C 8C/6C 8C/6C	4.5 4.5 4.5 4.5 6	8" @ 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
D6-8	60"	66"	30 EAST Framingham Cochituate NEXT RIGHT	18/7C/6C 8C/6C 8C/6C 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

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			
D8-1	54"	48"	85 SOUTH Hopkinton NEXT RIGHT	18/7C/6C 8C/6C 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
D8-2	54"	48"	85 SOUTH Hopkinton →	18/7C/6C 8C/6C	3.5 3.5 3.5 3.5	8" @ 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	18.00	18.00
D8-3	54"	48"	85 SOUTH Hopkinton ←	18/7C/6C 8C/6C	3.5 3.5 3.5 3.5	8" @ 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	18.00	18.00
D8-4	54"	48"	85 SOUTH Hopkinton NEXT LEFT	18/7C/6C 8C/6C 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
D8-5	54"	48"	30 WEST Westboro NEXT RIGHT	18/7C/6C 8C/6C 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
D8-6	54"	48"	30 WEST Westboro →	18/7C/6C 8C/6C	3.5 3.5 3.5 3.5	8" @ 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	18.00	18.00
D8-7	54"	48"	30 WEST Westboro ←	18/7C/6C 8C/6C	3.5 3.5 3.5 3.5	8" @ 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	18.00	18.00
D8-8	54"	48"	30 WEST Westboro NEXT LEFT	18/7C/6C 8C/6C 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	156
PROJECT FILE NO. 604989			

SIGN SUMMARY

PROPOSED TRAFFIC SIGN SUMMARY

IDENTIFI-CATION 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
S1-1	36"	36"		SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			12	FLORESCENT YELLOW-GREEN	BLACK	BLACK	P5-12	9.00	108.00
S4-2p	24"	10"					2	WHITE	BLACK	BLACK	2 MTD W/OTHERS	1.67	3.34
S4-3p	24"	8"					2	FLORESCENT YELLOW-GREEN	BLACK	BLACK	2 MTD W/OTHERS	1.34	2.68
S5-1	30"	54"					2	FLORESCENT YELLOW-GREEN WHITE	BLACK BLACK	BLACK BLACK	2 MTD ON TS POST	PAID UNDER ITEM 824.35	
S5-2	24"	30"					5	WHITE	BLACK	BLACK	P5-5	5.00	15.00
I-6A	24"	30"					1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
I-6B	24"	30"					1	WHITE	BLACK	BLACK	1 MTD W/OTHERS	5.00	5.00

IDENTIFI-CATION 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
D3-1	VARIES	12"	MAIN ST	6	3 3	N/A	11	GREEN	WHITE	WHITE	P5-9 2 MTD ON TS POLE	PAID UNDER ITEM 874	
D3-2	VARIES	12"	SEARS RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-3	VARIES	12"	DEERFOOT RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-4	VARIES	12"	PARKERVILLE RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-5	VARIES	12"	COMMON ST	6	3 3	N/A	2	GREEN	WHITE	WHITE	P5-1 1 MTD W/D3-6	PAID UNDER ITEM 874	
D3-6	VARIES	12"	ST MARK'S ST	6	3 3	N/A	2	GREEN	WHITE	WHITE	P5-1 1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-7	VARIES	12"	MIDDLE ST	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-8	VARIES	12"	CORDAVILLE RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD ON TS POLE	PAID UNDER ITEM 874	
D3-9	VARIES	12"	MARLBORO RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD ON TS POLE	PAID UNDER ITEM 874	
D3-10	VARIES	12"	SCHOOL ST	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-11	VARIES	12"	LATISQUAMA RD	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	
D3-12	VARIES	12"	PARK ST	6	3 3	N/A	1	GREEN	WHITE	WHITE	1 MTD W/D3-1	PAID UNDER ITEM 874	

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.

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	57	156
PROJECT FILE NO. 604989			

TRAFFIC DETAILS

INDEX

SHEET NO.	DESCRIPTION
1	Title Sheet
2	Light, Medium & Short Span Load Diagrams
3	Heavy Load Diagrams
4	Details
5	Cored Pier Foundations

THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, THE ENGLISH EDITION OF SUPPLEMENTAL SPECIFICATIONS DATED JUNE 6, 2006, THE AMENDMENTS TO THE STANDARD AND SUPPLEMENTAL SPECIFICATIONS, THE 1977 CONSTRUCTION STANDARDS, THE ENGLISH EDITION OF SUPPLEMENTAL DRAWINGS DATED APRIL 2003, THE 2001 "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS" WITH LATEST REVISIONS, THE 2003 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" WITH LATEST REVISIONS, THE 1990 "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS," AND THE 2004 EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

MAST ARM & FOUNDATION

Details Standard Drawings

NOTES

1. For these standard drawings the Design Wind Speed for all Mast Arm Structures shall be **130 MPH**.
2. For these standard drawings the Design Wind Speed for mast arm foundations located in the following counties: Plymouth, Bristol, Barnstable, Dukes, and Nantucket counties in District 5 and Berkshire county in District 1 shall be **130 MPH**. The design wind speed for mast arm foundations for the remainder of the state shall be **110 MPH.**
3. For these standard drawings the mast arm structure design life shall be 25 years.
4. For these standard drawings the Fatigue Category no. 2 was used and truck induced gusts were excluded in the design.
5. These standard drawings do not apply for mast arm structures at intersections with an ADT greater than 40,000 vehicles and a truck percentage of greater than 10%. The responsibility for the design of mast structures and foundations will rest with the design engineer. The structure design life will be 50 years and the fatigue category shall be no. 1. The design wind speed criteria shall be as shown in Notes Nos. 1 & 2. The design will be submitted to MassDOT for review and comment.
6. For strain pole, dual mast arm designs, or mast arms longer than 45 feet, notes 1, 2, 3 and 4 will apply, if ADT (>40,000 vehicles) and truck percentage (10%) criterion is met, note 5 design criteria (50 year design life, fatigue category no. 1, wind design speed notes 1 and 2) will apply. The responsibility for the design of these structures and foundations will rest with the design engineer. The design will be submitted to MassDOT for review and comment.

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

NO.	REVISION	DATE

Moving Massachusetts Forward. massDOT Highway

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISON

RECOMMENDED FOR APPROVAL

Neil E. Boudreau — 2/11/11
TRAFFIC ENGINEER — DATE

[signature] — 2/17/11
BRIDGE ENGINEER — DATE

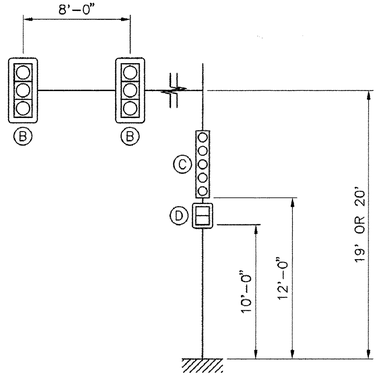
Frank A. Tramontozzi — 2/24/2011
CHIEF ENGINEER — DATE

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

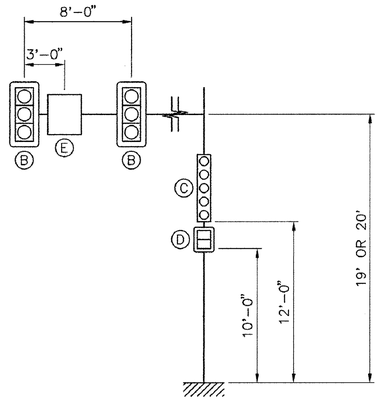
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	58	156
PROJECT FILE NO. 604989			

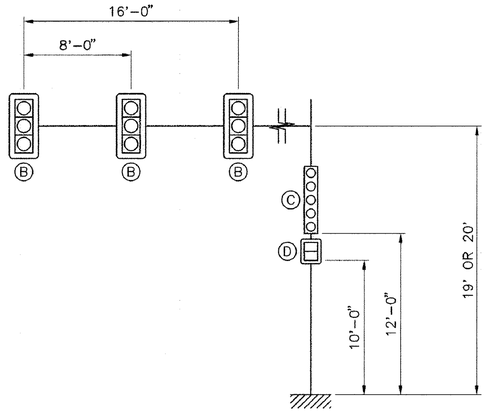
TRAFFIC DETAILS



20', 25', 40' & 45' SPANS

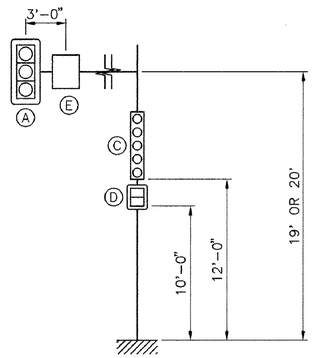


30' SPAN



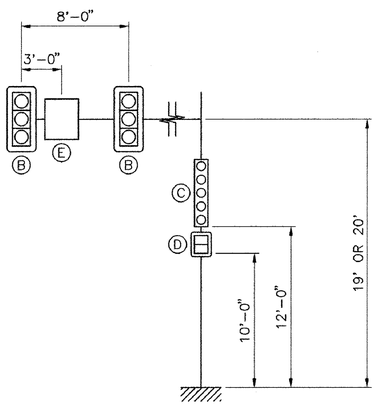
35' SPAN

LOAD DEFINITIONS - LIGHT LOADS

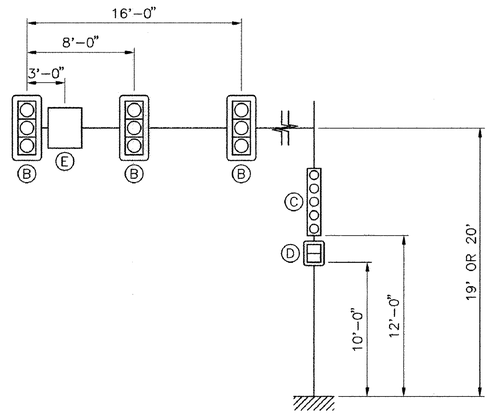


15' SPAN

SHORT SPAN LOADING



20' & 25' SPANS



30', 35', 40' & 45' SPANS

LOAD DEFINITIONS - MEDIUM LOADS

DEVICE	DESCRIPTION	PROJ. AREA (FT~2)	WEIGHT (LBS)
(A)	3 SECTION, 3 WAY SIGNAL	13.50	202
(B)	3 SECTION, 1 WAY SIGNAL	8.67	74
(C)	5 SECTION, 1 WAY SIGNAL	13.33	110
(D)	DUAL PEDESTRIAN SIGNAL	8.00	80
(E)	30" X 36" REGULATORY SIGN	7.50	23

NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES

MONTH_DD,_YYYY	ISSUED FOR CONSTRUCTION

Moving Massachusetts Forward
massDOT Highway

STANDARD DRAWINGS

TYPE II MAST ARMS
LIGHT, MEDIUM & SHORT SPAN
LOAD DIAGRAMS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Frank A. Tramontozzi 2/24/2011
CHIEF ENGINEER

BRIDGE ENGINEER

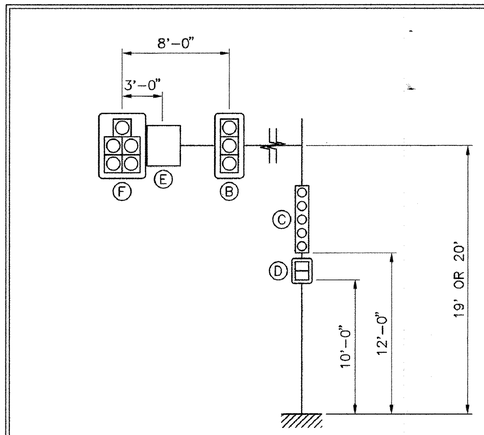
Neil E. Boudreau
TRAFFIC ENGINEER

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

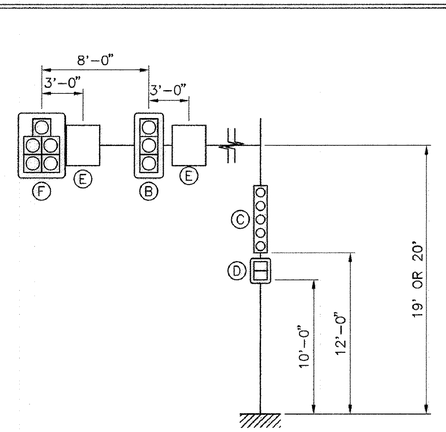
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	59	156
PROJECT FILE NO. 604989			

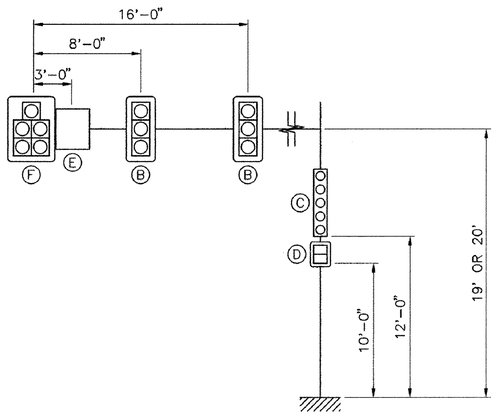
TRAFFIC DETAILS



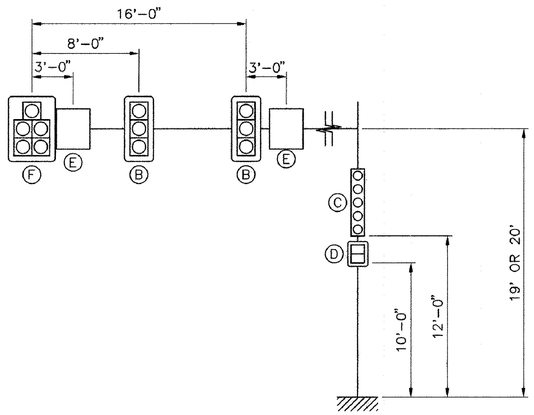
20' SPAN



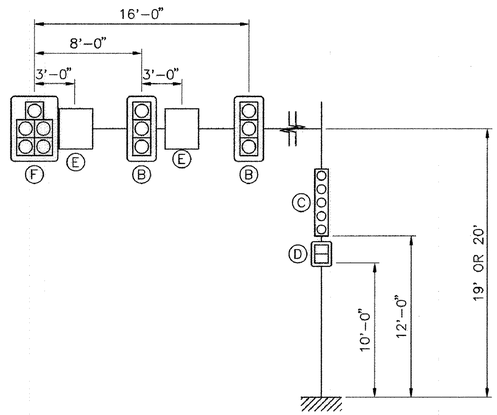
25' SPAN



30' SPAN



35' SPAN



40' & 45' SPANS

LOAD DEFINITIONS – HEAVY LOADS

DEVICE	DESCRIPTION	PROJ. AREA (FT~2)	WEIGHT (LBS)
(A)	3 SECTION, 3 WAY SIGNAL	18.29	202
(B)	3 SECTION, 1 WAY SIGNAL	8.67	74
(C)	5 SECTION, 1 WAY SIGNAL	13.33	110
(D)	DUAL PEDESTRIAN SIGNAL	8.00	80
(E)	30" X 36" REGULATORY SIGN	7.50	23
(F)	5 SECTION, 2 WAY SIGNAL	21.95	215

NOTE: ALL SIGNALS HAVE 5.0" BACKPLATES

MONTH_DD,_YYYY	ISSUED FOR CONSTRUCTION

Moving Massachusetts Forward
massDOT Highway

STANDARD DRAWINGS

TYPE II MAST ARMS
HEAVY LOAD DIAGRAMS

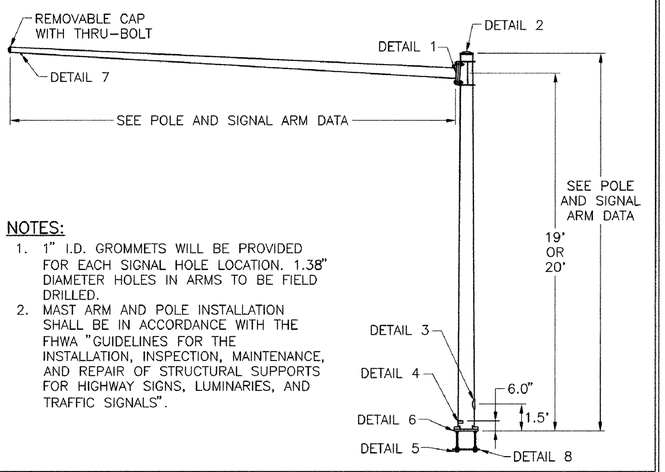
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Frank A. Tramontozzi 2/24/2011
CHIEF ENGINEER

Richard V. Forbes
BRIDGE ENGINEER

Neil E. Boudreau
TRAFFIC ENGINEER

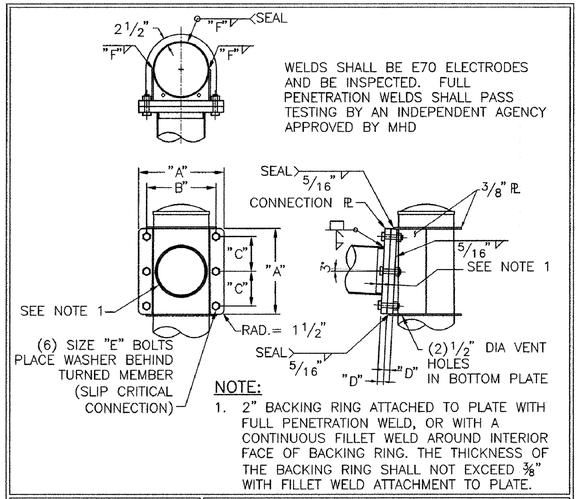
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-madtl.DWG



NOTES:

1. 1" I.D. GROMMETS WILL BE PROVIDED FOR EACH SIGNAL HOLE LOCATION. 1.38" DIAMETER HOLES IN ARMS TO BE FIELD DRILLED.
2. MAST ARM AND POLE INSTALLATION SHALL BE IN ACCORDANCE WITH THE FHWA "GUIDELINES FOR THE INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS".

MAST ARM ELEVATION

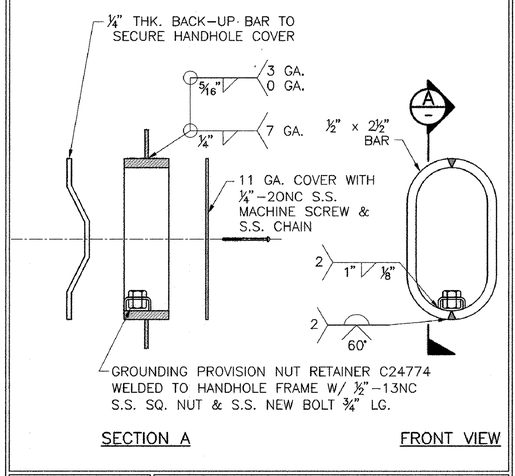


WELDS SHALL BE E70 ELECTRODES AND BE INSPECTED. FULL PENETRATION WELDS SHALL PASS TESTING BY AN INDEPENDENT AGENCY APPROVED BY MHD

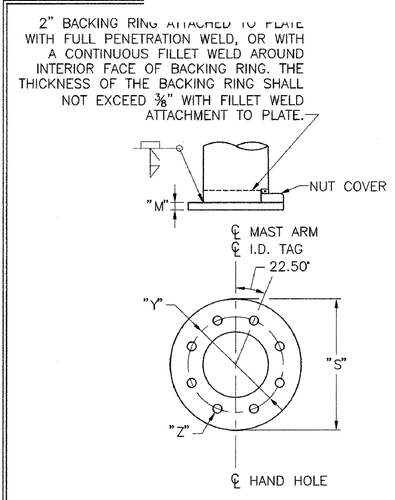
NOTE:

1. 2" BACKING RING ATTACHED TO PLATE WITH FULL PENETRATION WELD, OR WITH A CONTINUOUS FILLET WELD AROUND INTERIOR FACE OF BACKING RING. THE THICKNESS OF THE BACKING RING SHALL NOT EXCEED 3/8" WITH FILLET WELD ATTACHMENT TO PLATE.

DETAIL 1 | SIGNAL ARM ATTACHMENT



DETAIL 3 | 4"x8" HANDHOLE

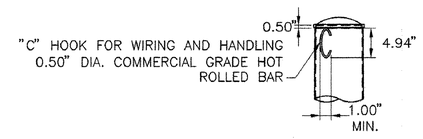


DETAIL 6 | POLE BASE

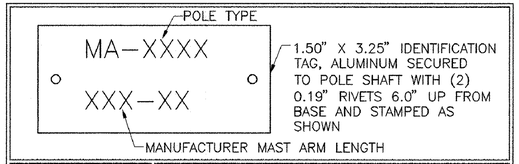
MATERIAL DATA

COMPONENT	DESIGNATION	YIELD (KSI)	COMPONENT	DESIGNATION	YIELD (KSI)
POLE TUBE	ASTM A595 GR. A	55	ARM TUBE	ASTM A595 GR. A	55
POLE BASE PLATE	AASHTO M270	50	ARM CONNECTION PLATE	AASHTO M270	50
ANCHOR BOLTS	AASHTO M314	55	ARM CONNECTING BOLTS	AASHTO M164 **	
GALVANIZING	AASHTO M111 OR M232				

** BOLTS WHICH ACCUMULATE RUST OR DIRT SHALL BE DISCARDED.



DETAIL 2 | POLE TOP



DETAIL 4 | I.D. TAG

POLE AND SIGNAL ARM DATA – LIGHT LOADS

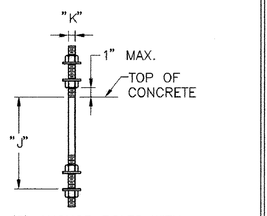
LOCATIONS	SIGNAL ARM TUBE SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	POLE TUBE BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	POLE BASE PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	ANCHOR BOLT DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	SIGNAL ARM ATTACHMENT DATA "A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	9.00	6.20	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	25.00	10.00	6.50	7 GA.	13.00	10.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.188
	30.00	12.50	8.30	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	13.00	8.10	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	40.00	13.00	7.40	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.50	20.00	10.00	1.25	1.25	0.250
	45.00	13.50	7.20	3 GA.	16.50	13.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.313

POLE AND SIGNAL ARM DATA – MEDIUM LOADS

LOCATIONS	SIGNAL ARM TUBE SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	POLE TUBE BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	POLE BASE PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	ANCHOR BOLT DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	SIGNAL ARM ATTACHMENT DATA "A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	10.00	7.20	3 GA.	13.00	10.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	20.00	16.00	8.00	1.00	1.00	0.250
	25.00	11.00	7.50	3 GA.	14.00	11.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	30.00	13.00	8.80	3 GA.	16.00	13.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	23.50	19.00	9.50	1.25	1.25	0.250
	35.00	14.00	9.10	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	40.00	15.00	9.40	3 GA.	18.00	15.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	45.00	16.00	9.70	0 GA.	19.00	16.06	21.00	0 GA.	29.50	24.00	1.50	1.813	1.50	36.00	29.50	24.00	12.00	1.75	1.50	0.313

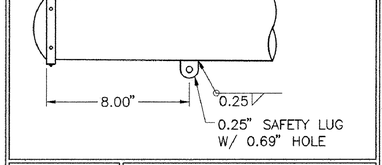
POLE AND SIGNAL ARM DATA – HEAVY LOADS

LOCATIONS	SIGNAL ARM TUBE SPAN (FT)	FIXED END DIA. (IN)	FREE END DIA. (IN)	WALL THK.	POLE TUBE BASE DIA. (IN)	TOP DIA. (IN)	LENGTH (FT)	WALL THK.	POLE BASE PLATE CIRCLE "S" (IN)	BOLT CIRCLE "Y" (IN)	THK. "M" (IN)	HOLE "Z" (IN)	ANCHOR BOLT DIA. "K" (IN)	EMBED. LENGTH "J" (IN)	SIGNAL ARM ATTACHMENT DATA "A" (IN)	"B" (IN)	"C" (IN)	"D" (IN)	"E" (IN)	"F" (IN)
	15.00	9.00	6.90	7 GA.	12.00	9.06	21.00	7 GA.	29.50	24.00	1.50	1.813	1.50	36.00	19.00	15.00	7.50	1.00	1.00	0.188
	20.00	12.50	9.70	3 GA.	15.50	12.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	24.00	19.00	9.50	1.25	1.25	0.250
	25.00	14.00	10.50	3 GA.	17.00	14.06	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	30.00	15.50	11.30	3 GA.	18.50	15.56	21.00	3 GA.	29.50	24.00	1.50	1.813	1.50	36.00	27.50	22.00	11.00	1.50	1.50	0.250
	35.00	16.50	11.60	0 GA.	19.50	16.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.313
	40.00	17.50	11.90	0 GA.	20.50	17.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	29.50	24.00	12.00	1.75	1.50	0.313
	45.00	18.50	12.20	0 GA.	21.50	18.56	21.00	0 GA.	34.50	28.00	1.75	2.063	1.75	36.00	31.50	26.00	13.00	2.00	1.50	0.313

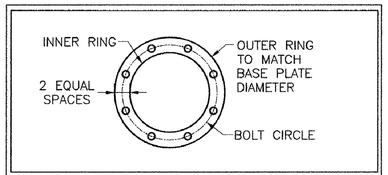


(8) ANCHOR BOLTS WITH (4) HEX NUTS, (4) FLAT WASHERS, AND (1) LOCK-WASHER PER BOLT.

DETAIL 5 | ANCHOR BOLT



DETAIL 7 | SAFETY HANGER LUG



DETAIL 8 | ANCHOR PLATE

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	60	156
PROJECT FILE NO. 604989			

TRAFFIC DETAILS

MONTH_DD,_YYYY	ISSUED FOR CONSTRUCTION

Moving Massachusetts Forward. massDOT Highway

STANDARD DRAWINGS

TYPE II MAST ARMS DETAILS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Frank A. Tramontozzi 2/24/2011
CHIEF ENGINEER

BRIDGE ENGINEER

Neil E. Boudreau
TRAFFIC ENGINEER

SHEET 4 OF 5 SHEETS

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

PIER FOUNDATIONS FOR 110 MPH WIND SPEED ZONE

LIGHT LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	6'–0"	18–#8	3'–6"	8'–0"	18–#8	3'–6"	8'–0"	18–#8	3'–6"	9'–0"	18–#8
WET SAND	3'–6"	7'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	9'–0"	18–#8
CLAY (MEDIUM STIFF)	3'–6"	11'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8
ALLUVIAL	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	11'–0"	18–#8

MEDIUM LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	7'–0"	18–#8	3'–6"	9–0"	18–#8	4'–0"	9–0"	18–#9	4'–6"	8'–0"	18–#10
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	9'–0"	18–#8	4'–0"	10'–0"	18–#9	4'–6"	9'–0"	18–#10
CLAY (MEDIUM STIFF)	3'–6"	11'–0"	18–#8	3'–6"	12'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	14'–0"	18–#10
ALLUVIAL	3'–6"	9'–0"	18–#8	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	10'–0"	18–#10

HEAVY LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	8'–0"	18–#8	4'–0"	9'–0"	18–#9	4'–6"	10'–0"	18–#10	5'–0"	9'–0"	23–#10
WET SAND	3'–6"	8'–0"	18–#8	4'–0"	10'–0"	18–#9	4'–6"	11'–0"	18–#10	5'–0"	10'–0"	23–#10
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	4'–0"	14'–0"	18–#9	4'–6"	15'–0"	18–#10	5'–0"	16'–0"	23–#10
ALLUVIAL	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	12'–0"	18–#10	5'–0"	12'–0"	23–#10

PIER FOUNDATIONS FOR 130 MPH WIND SPEED ZONE

LIGHT LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	7'–0"	18–#8	3'–6"	9'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	10'–0"	18–#8
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	3'–6"	11'–0"	18–#8	3'–6"	11'–0"	18–#8
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	3'–6"	13'–0"	18–#8	3'–6"	13'–0"	18–#8	3'–6"	13'–0"	18–#8
ALLUVIAL	3'–6"	9'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	12'–0"	18–#8	3'–6"	13'–0"	18–#8

MEDIUM LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	8'–0"	18–#8	3'–6"	10'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	10'–0"	18–#10
WET SAND	3'–6"	8'–0"	18–#8	3'–6"	11'–0"	18–#8	4'–0"	12'–0"	18–#9	4'–6"	11'–0"	18–#10
CLAY (MEDIUM STIFF)	3'–6"	12'–0"	18–#8	3'–6"	14'–0"	18–#8	4'–0"	15'–0"	18–#9	4'–6"	15'–0"	18–#10
ALLUVIAL	3'–6"	10'–0"	18–#8	3'–6"	13'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	12'–0"	18–#10

HEAVY LOADING CONDITIONS

SOIL TYPE	15' & 20' MAST ARMS			25' & 30' MAST ARMS			35' & 40' MAST ARMS			45' MAST ARMS		
	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS	DIAMETER	DEPTH	VERTICAL BARS
DRY SAND	3'–6"	9'–0"	18–#8	4'–0"	11'–0"	18–#9	4'–6"	12'–0"	18–#10	5'–0"	11'–0"	23–#10
WET SAND	3'–6"	10'–0"	18–#8	4'–0"	12'–0"	18–#9	4'–6"	13'–0"	18–#10	5'–0"	12'–0"	23–#10
CLAY (MEDIUM STIFF)	3'–6"	14'–0"	18–#8	4'–0"	15'–0"	18–#9	4'–6"	16'–0"	18–#10	5'–0"	17'–0"	23–#10
ALLUVIAL	3'–6"	11'–0"	18–#8	4'–0"	13'–0"	18–#9	4'–6"	15'–0"	18–#10	5'–0"	14'–0"	23–#10

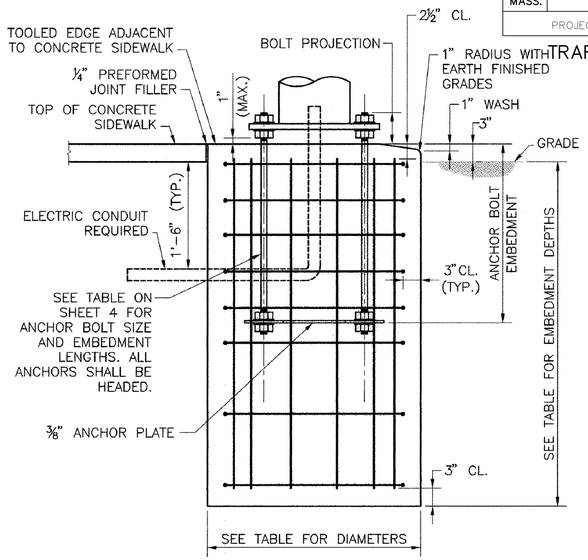
NOTES:

1. FOUNDATIONS SHALL BE 4000 PSI, 1½", 565 CEMENT CONCRETE.
2. REINFORCEMENT SHALL BE ASTM A615 GRADE 60.
3. ANCHOR BOLTS SHALL BE SET BY TEMPLATE.
4. PROVIDE FOR ELECTRICAL CONDUIT.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATIONS WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM. ALTERNATE METHODS OF EXCAVATION MAY BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL IF THEY MEET THE REQUIREMENTS LISTED IN NOTES 6, 7, AND 8.
6. THE EARTH WALLS OF THE FOUNDATION SHALL BE ADEQUATELY AND SECURELY PROTECTED AT ALL TIMES AGAINST CAVE–INS, DISPLACEMENT OF THE SURROUNDING EARTH AND FOR THE EXCLUSION OF GROUND WATER. THIS MAY BE DONE BY THE USE OF STEEL CYLINDER LINERS OR CASINGS THAT ARE APPROVED BY MASSHIGHWAY. IF LINERS ARE USED THEY MAY BE RECLAIMED PROVIDED THAT THEY ARE WITHDRAWN AS THE CONCRETE IS BEING PLACED, MAINTAINING A SUFFICIENT HEAD OF CONCRETE WITHIN THE LINER TO PREVENT REDUCTION IN THE FOUNDATION DIAMETER AND TO PREVENT EXTRANEOUS MATERIAL FROM FALLING IN FROM THE SIDES AND MIXING WITH THE CONCRETE.
7. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
8. SPECIAL CARE SHOULD BE GIVEN TO AREAS WHERE WET SOIL IS ENCOUNTERED, TO INSURE THAT THE PREAUGERED HOLE DOES NOT COLLAPSE. THIS MAY REQUIRE THE USE OF STEEL CYLINDER LINERS OR CASINGS TO HOLD THE SOIL IN PLACE UNTIL READY FOR CONCRETE PLACEMENT. THE STEEL CYLINDERS OR CASINGS SHALL BE WITHDRAWN AS THE FOUNDATION CONCRETE IS PLACED.
9. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE DESIGN ENGINEER.
10. IF LEDGE OR POOR SOIL IS ENCOUNTERED (i.e. ONE WHICH DOES NOT APPLY TO THE DESIGN TABLES SHOWN ON THIS SHEET), AN ALTERNATIVE DESIGN SHALL BE PROVIDED BY THE DESIGN ENGINEER. DECISIONS MADE IN NOTES 8 AND 9 SHALL BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL. 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 ENGINEER.

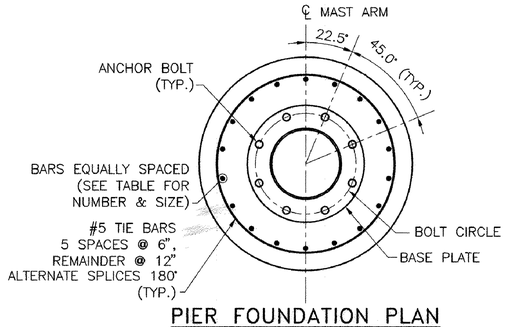
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	61	156
PROJECT FILE NO. 604989			

TRAFFIC DETAILS



PIER FOUNDATION DETAIL
NO SCALE



PIER FOUNDATION PLAN
NO SCALE

MONTH_DD,_YYYY	ISSUED FOR CONSTRUCTION

Moving Massachusetts Forward. massDOT Highway

STANDARD DRAWINGS

TYPE II MAST ARMS
CORED PIER FOUNDATIONS

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

Frank A. Tramontozzi Jr. 3/24/2011
CHIEF ENGINEER Neil E. Boudreau

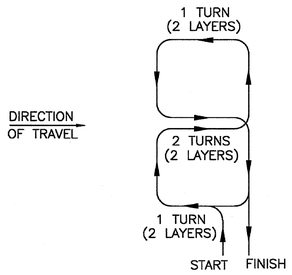
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832–madtl.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

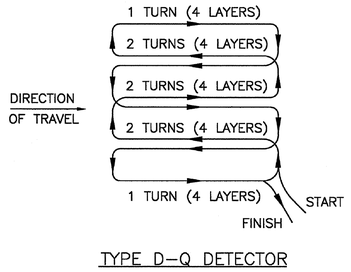
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	62	156
PROJECT FILE NO. 604989			

BICYCLE LOOP DETECTOR DETAILS

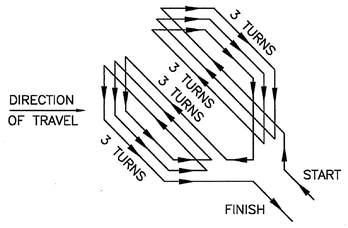
WINDING DETAILS



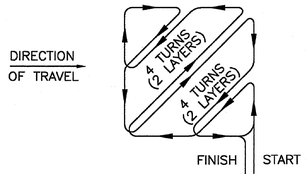
TYPE Q DETECTOR



TYPE D–Q DETECTOR

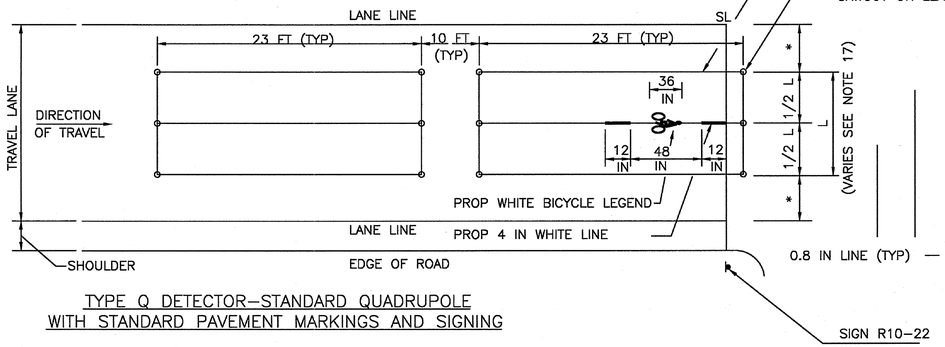


TYPE D–1 DETECTOR

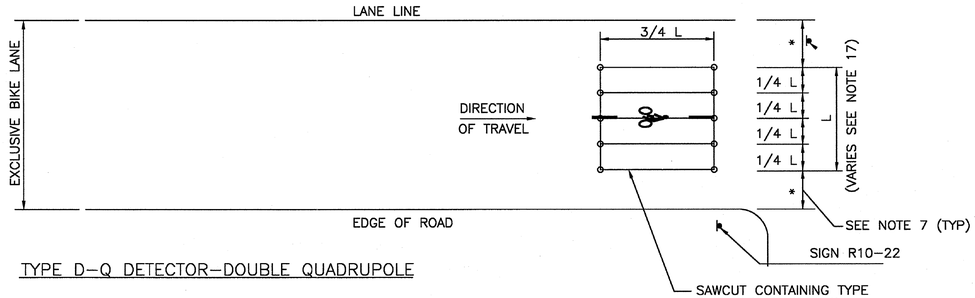


TYPE D–2 DETECTOR

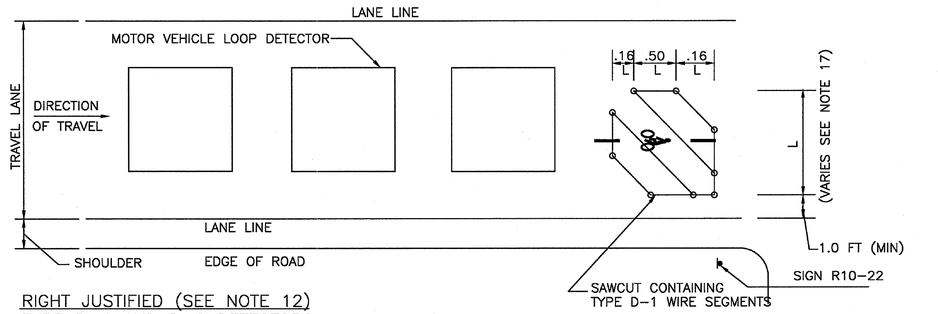
INSTALLATION DETAILS



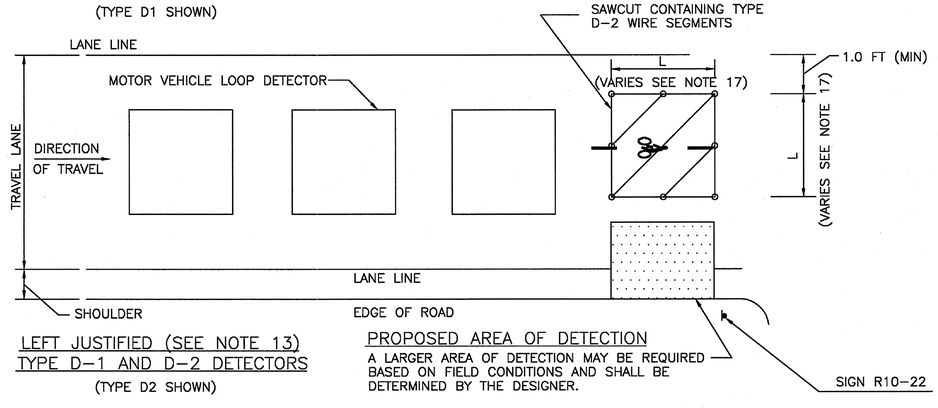
TYPE Q DETECTOR–STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING



TYPE D–Q DETECTOR–DOUBLE QUADRUPOLE



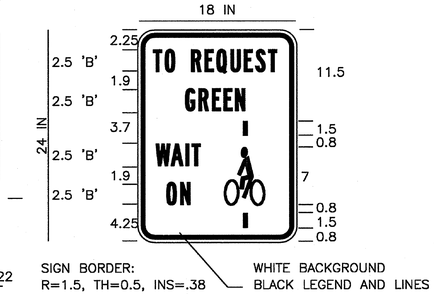
RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D–1 AND D–2 DETECTORS
(TYPE D1 SHOWN)



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.

SIGN R10–22

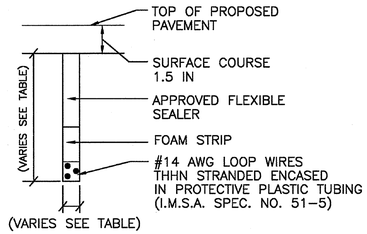


SIGN BORDER:
R=1.5, TH=0.5, INS=.38

WHITE BACKGROUND
BLACK LEGEND AND LINES

NOTE: ALL SIGN DIMENSIONS IN INCHES

NOTE: SIGN PANEL NOT SHOWN TO SCALE



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

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.

NOTE: REVISED FEBRUARY 22, 2006

MASS HIGHWAY

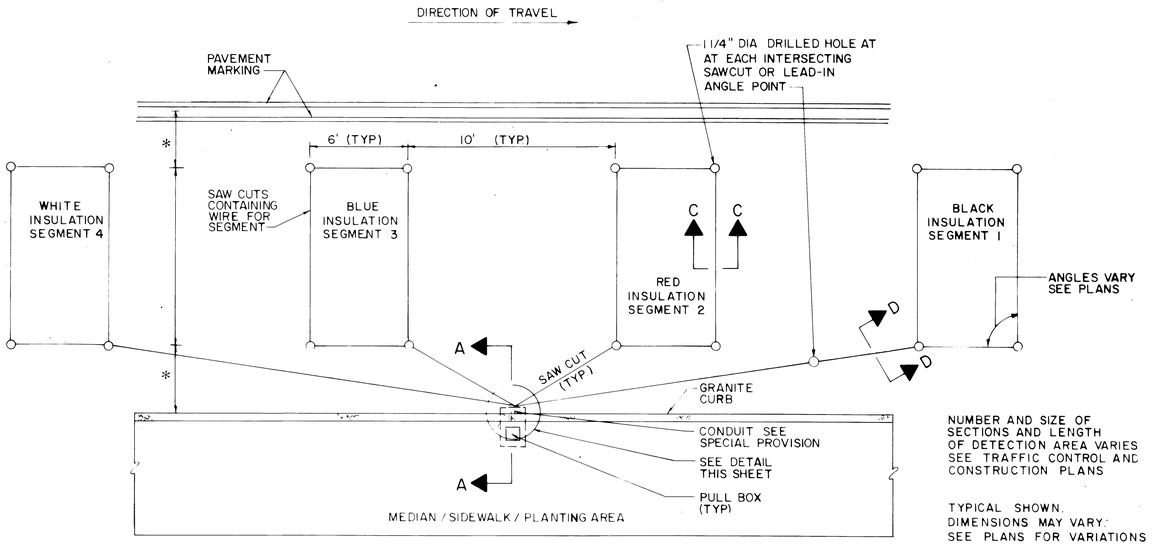
MASSACHUSETTS HIGHWAY DEPARTMENT
TRAFFIC ENGINEERING
REVISED FEBRUARY 22, 2006

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

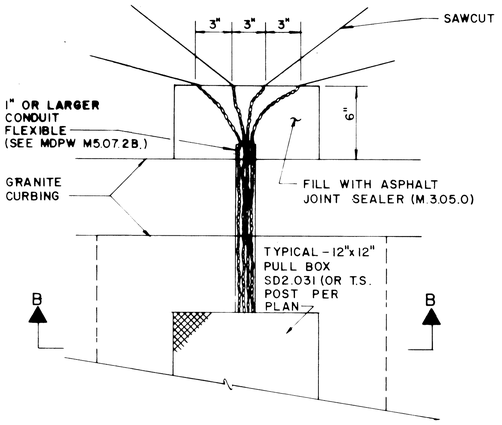
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	63	156
PROJECT FILE NO. 604989			

LOOP DETECTOR DETAILS



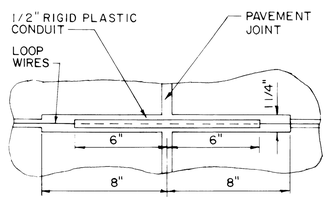
PLAN OF SEGMENTED DETECTOR DETAIL
NOT TO SCALE



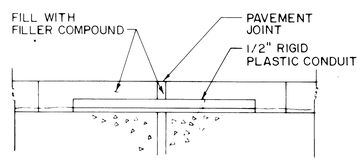
DETAIL - PLAN VIEW
NOT TO SCALE

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 SB. 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.

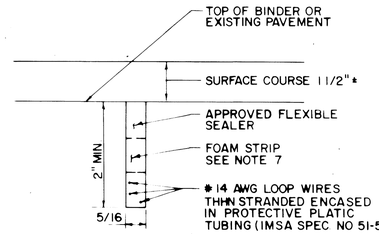
SPLICING PATTERN S=SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.



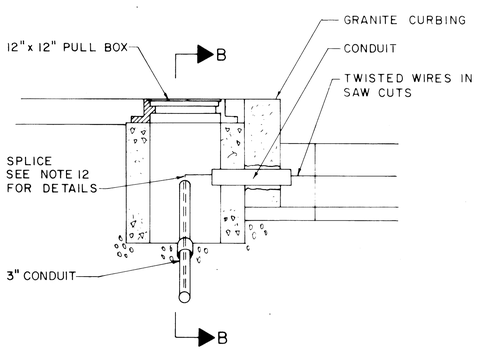
PLAN
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



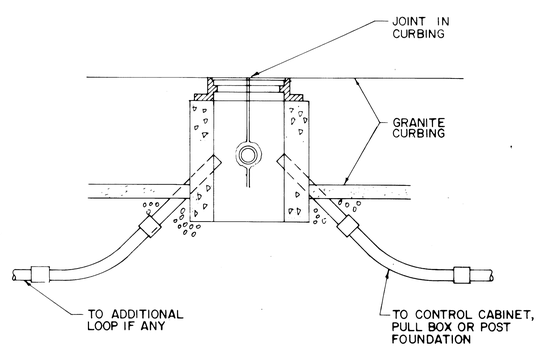
VERTICAL SECTION
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



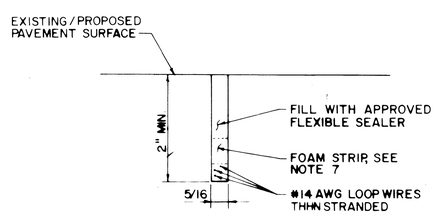
SECTION C-C & D-D
LOOPS IN BINDER COURSE OR EXISTING PAVEMENT TO BE RESURFACE
NOT TO SCALE



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.	--	64	156
PROJECT FILE NO. 604989			

UTILITY 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

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

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

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

MAIN (ROUTE 30) STREET

DEERFOOT ROAD

R=1642.00 L=147.71'
R=5000.00 L=314.66'
S73°29'51"E L=192.08'
N39°26'50"E L=TBD

PCC
+47.71
ADJ
PROP PERM EASEMENT
PROP TEMP EASEMENT (TYP)
PROP UTILITY EASEMENT (TYP)
PROP GUY WIRE (TYP)
REM EXISTING VAULTS B.O.
EXIST PIPE TO BE ABAN IN PLACE
R&R HYD
R&R B.O.
18 FT- 12"CLV RCP
6 FT- 12"CLV RCP ADJ
245 FT- 12"CLV RCP MAIN STREET
5 FT- 12"CLV RCP
15 FT- 12"CLV RCP
10 FT - 6" DIP
CONST ℄ 12" GAS +62.37
PROP GAS VAULTS W/ CEM CONC PAD B.O.
PROP 12" GAS LINE B.O. (TYP)
EXIST TOWN LAYOUT
RET
CONT. ON SHEET 65

N/F Peter G. & Robin Joy Martin Book 32444, Page 276 #83
N/F Michael A. Spataro & Simon N. McRae Trust Book 35657, Page 381 #2
N/F Charles C. & Penelope A. Margaritis Book 5777, Page 118 #96
N/F Robert N. Nichols & Dane S. Worley Book 36936, Page 182 #94
N/F Thomas W. & Regina M. Mannix Book 16210, Page 250 #1 Sears Road
N/F Charles O. Jr. & Wendy M. Block Book 15996, Page 217 #1

Benchmark #ST
Top Right Corner Concrete Steps at Back of Stone Wall
Elevation=276.68'

Stone Wall
36" Oak
20" Oak
Mailbox
Guy
Crushed Stone
UP#55 w/Risers
CB R=277.07'
CB R=277.04'
UP#53 w/Risers
Sign
12"C HP
Manhole #ST
Wood Fence
Chain Link Fence
Gas Gate
Gas Vault
Twin 30" Tree
6" Maple
15" Chestnut
8" Chestnut
42" Chestnut
Cheese Square Set In Ledge Outcrop 5.5' From Fence Elevation=273.42'
UP#49 w/Risers
UP#50/3 w/Riser
UP#1
Sign
Wood Fence
Wire Fence

104 105 106 107 108 109 10 11 11+30

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.

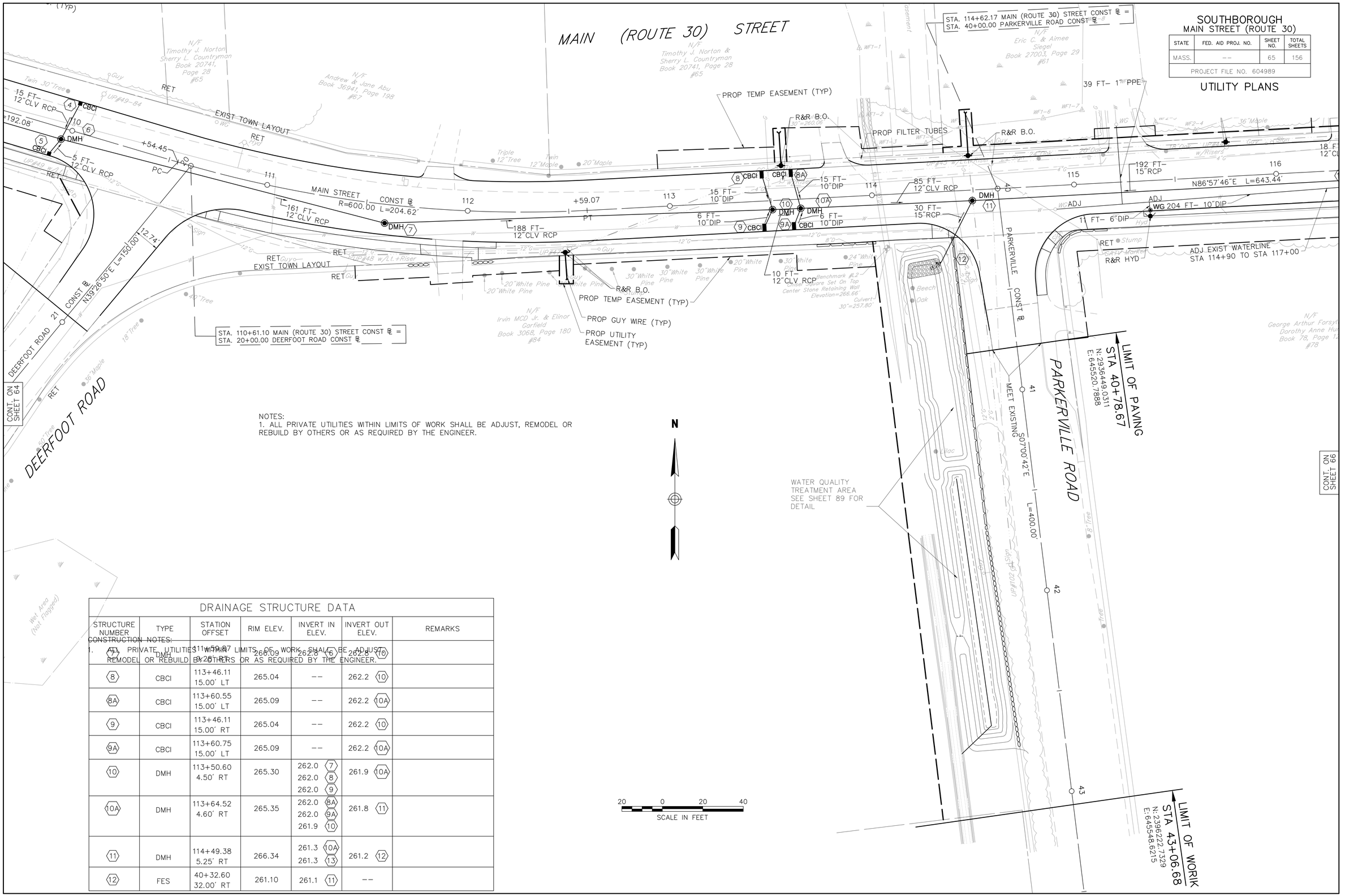
20 0 20 40
SCALE IN FEET

\\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.	--	65	156
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.

DRAINAGE STRUCTURE DATA

STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
CONSTRUCTION NOTES: 1. ALL PRIVATE UTILITIES WITHIN LIMITS OF WORK SHALL BE ADJUST, REMODEL OR REBUILD BY OTHERS OR AS REQUIRED BY THE ENGINEER.						
7	DMH	111+59.87 4.25' RT	266.09	262.8 5	262.8 10	
8	CBCI	113+46.11 15.00' LT	265.04	--	262.2 10	
8A	CBCI	113+60.55 15.00' LT	265.09	--	262.2 10A	
9	CBCI	113+46.11 15.00' RT	265.04	--	262.2 10	
9A	CBCI	113+60.75 15.00' LT	265.09	--	262.2 10A	
10	DMH	113+50.60 4.50' RT	265.30	262.0 7 262.0 8 262.0 9	261.9 10A	
10A	DMH	113+64.52 4.60' RT	265.35	262.0 8A 262.0 9A 261.9 10	261.8 11	
11	DMH	114+49.38 5.25' RT	266.34	261.3 10A 261.3 13	261.2 12	
12	FES	40+32.60 32.00' RT	261.10	261.1 11	--	

DRAINAGE STRUCTURE DATA

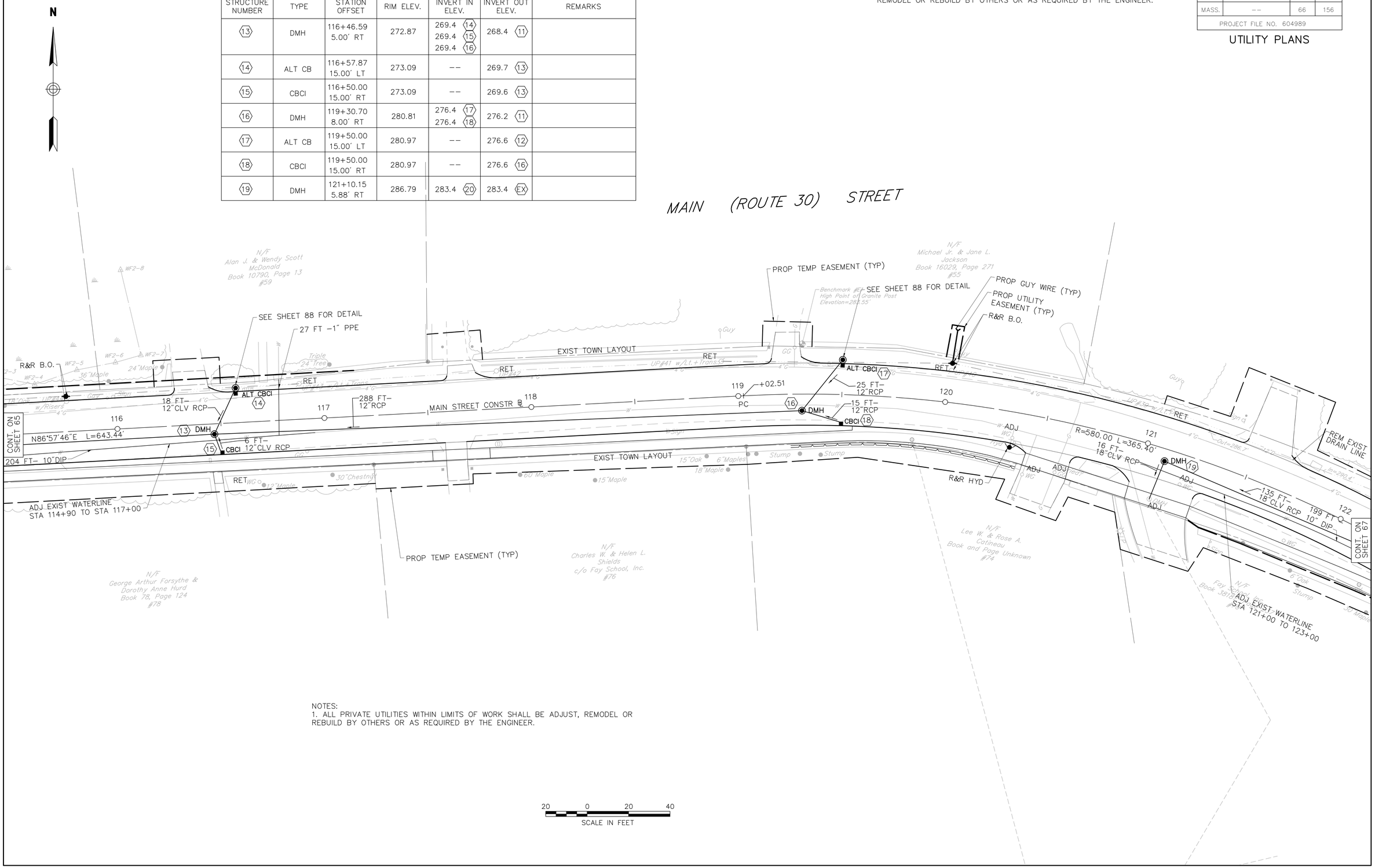
STRUCTURE NUMBER	TYPE	STATION OFFSET	RIM ELEV.	INVERT IN ELEV.	INVERT OUT ELEV.	REMARKS
⟨13⟩	DMH	116+46.59 5.00' RT	272.87	269.4 ⟨14⟩ 269.4 ⟨15⟩ 269.4 ⟨16⟩	268.4 ⟨11⟩	
⟨14⟩	ALT CB	116+57.87 15.00' LT	273.09	--	269.7 ⟨13⟩	
⟨15⟩	CBCI	116+50.00 15.00' RT	273.09	--	269.6 ⟨13⟩	
⟨16⟩	DMH	119+30.70 8.00' RT	280.81	276.4 ⟨17⟩ 276.4 ⟨18⟩	276.2 ⟨11⟩	
⟨17⟩	ALT CB	119+50.00 15.00' LT	280.97	--	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.	--	66	156
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

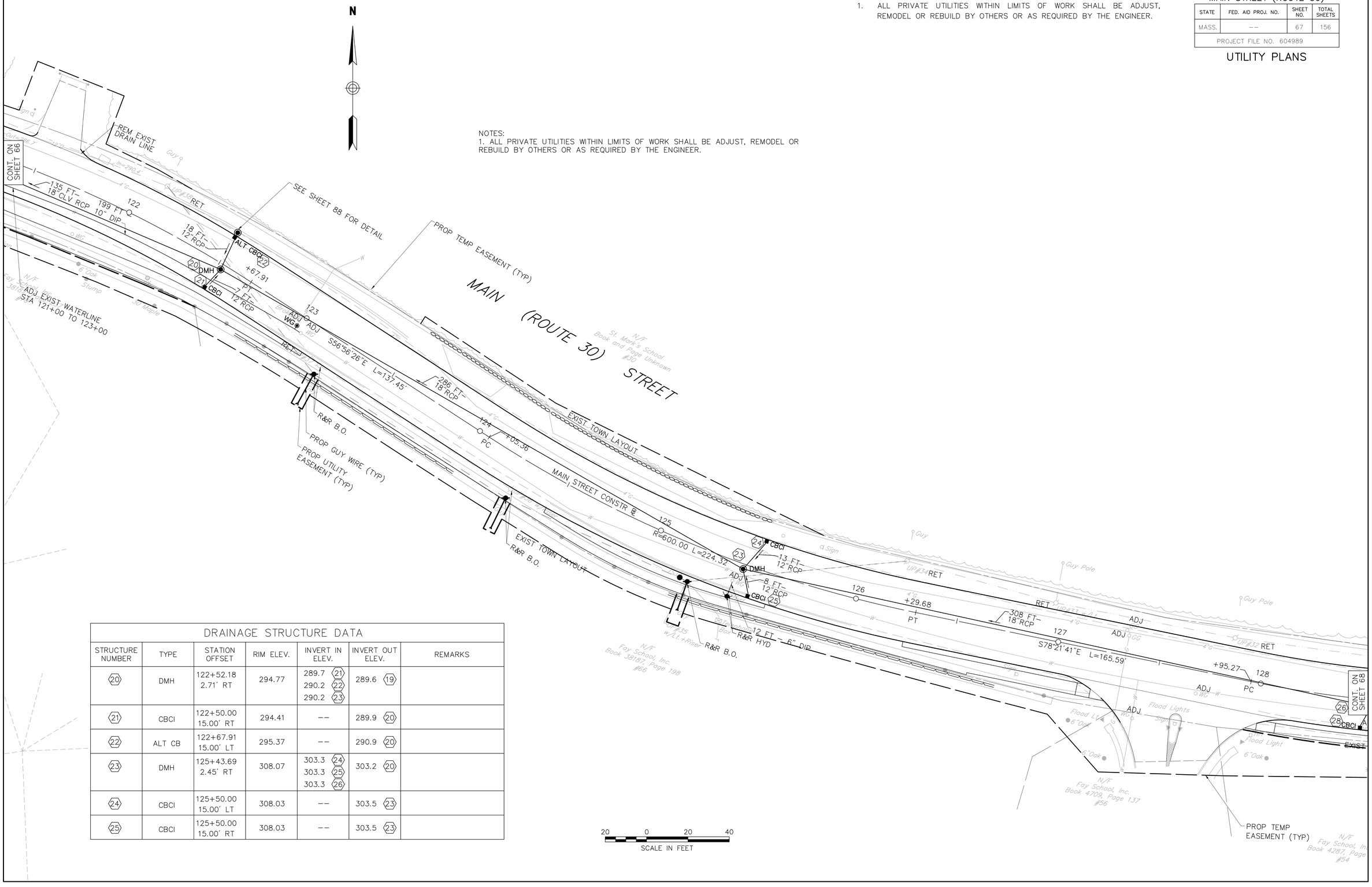
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	67	156
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)	

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	68	156
PROJECT FILE NO. 604989			

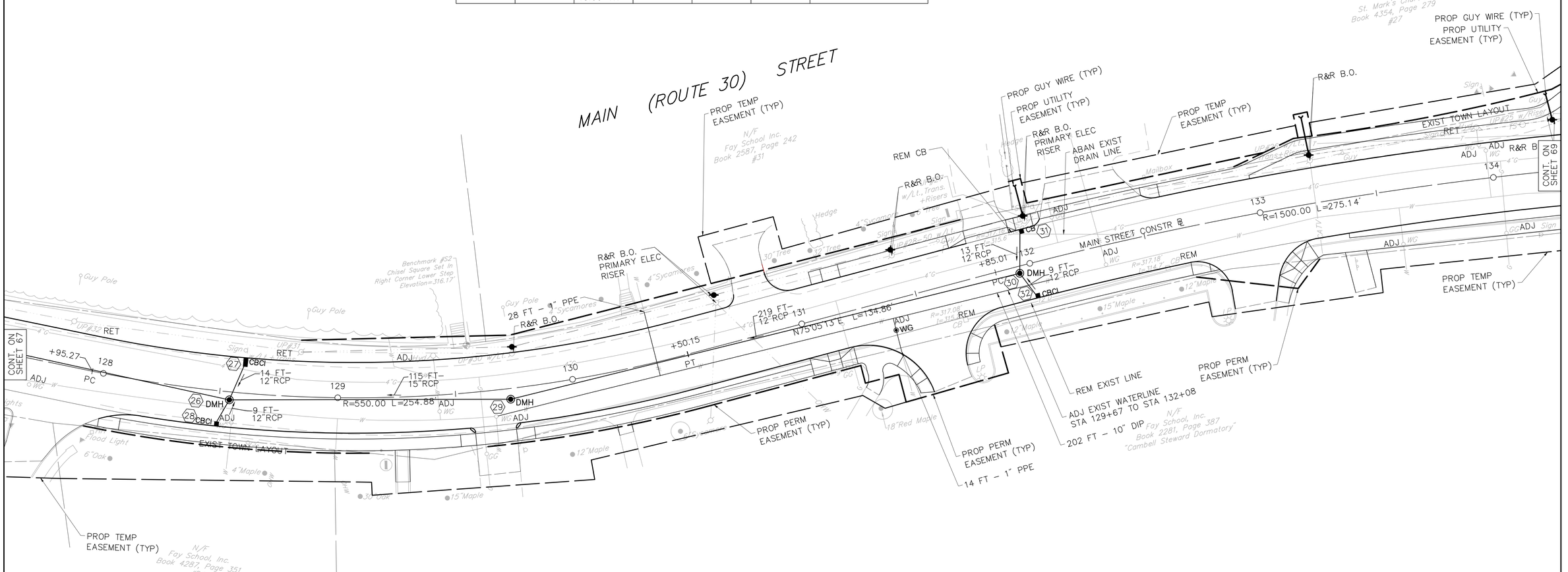
UTILITY PLANS

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

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	317.82	--	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.	--	69	156
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)	

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.	--	70	156
PROJECT FILE NO. 604989			

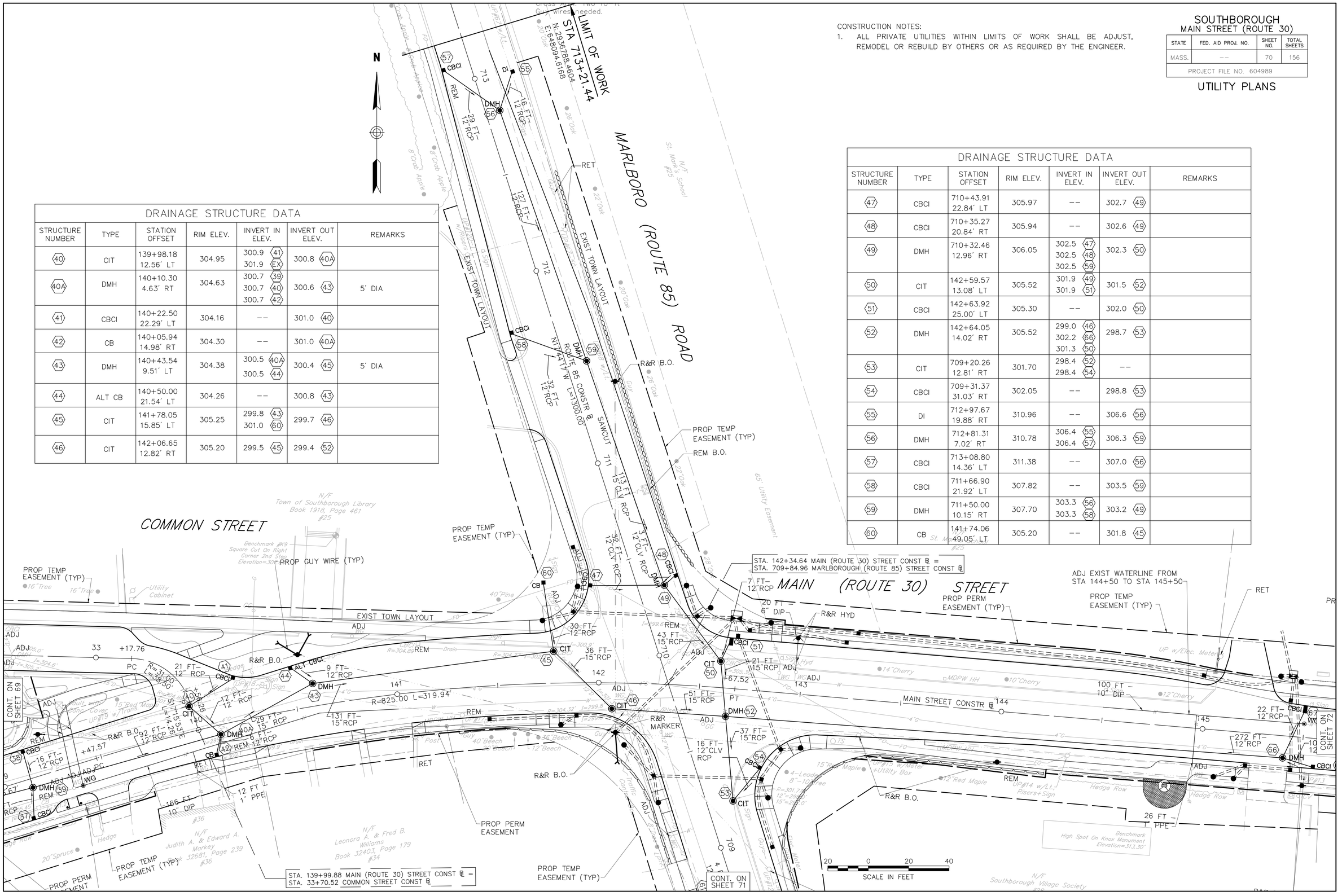
UTILITY PLANS

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+43.91 22.84' LT	305.97	--	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)	



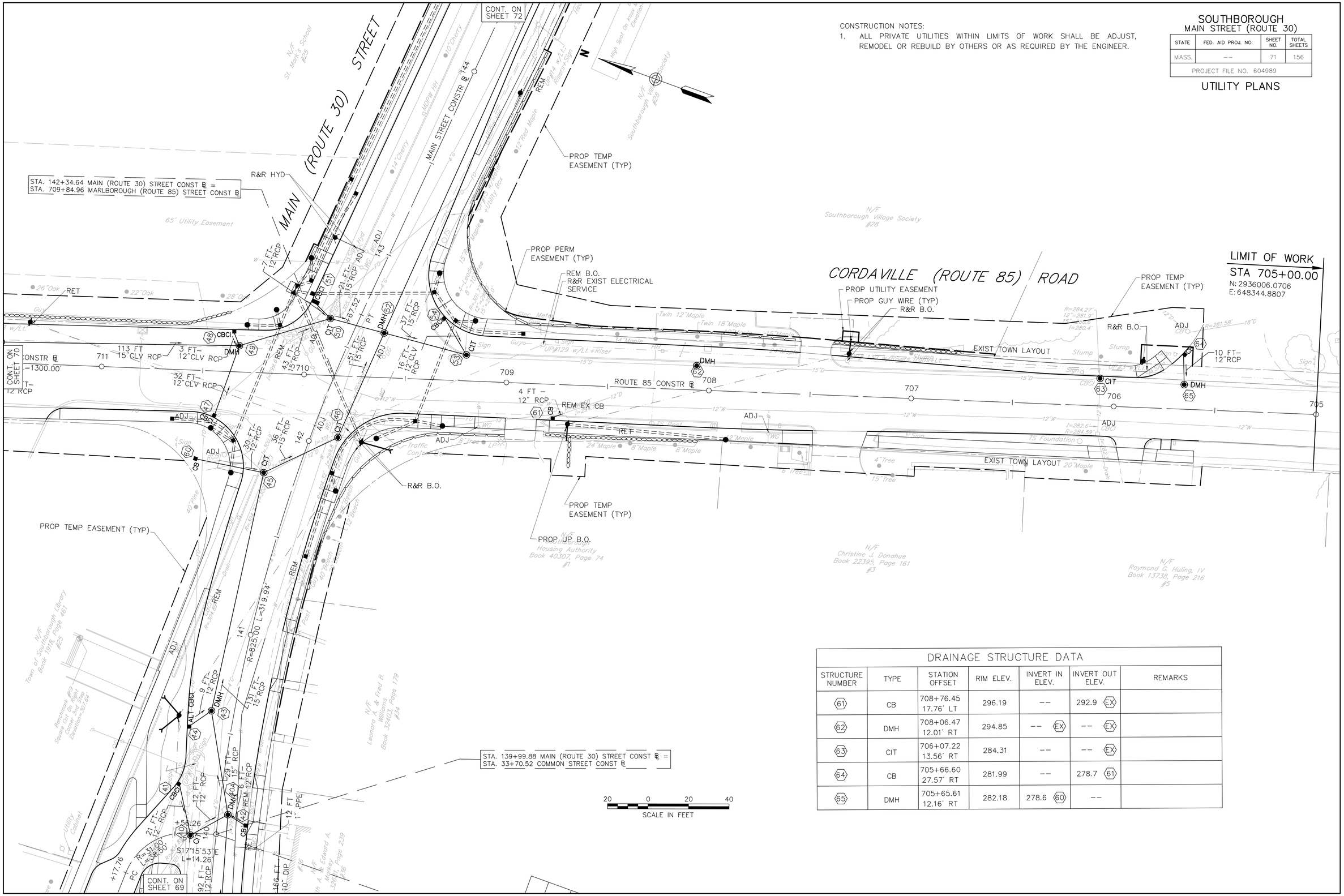
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-UTIL.DWG

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.	--	71	156
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	296.19	--	292.9 (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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

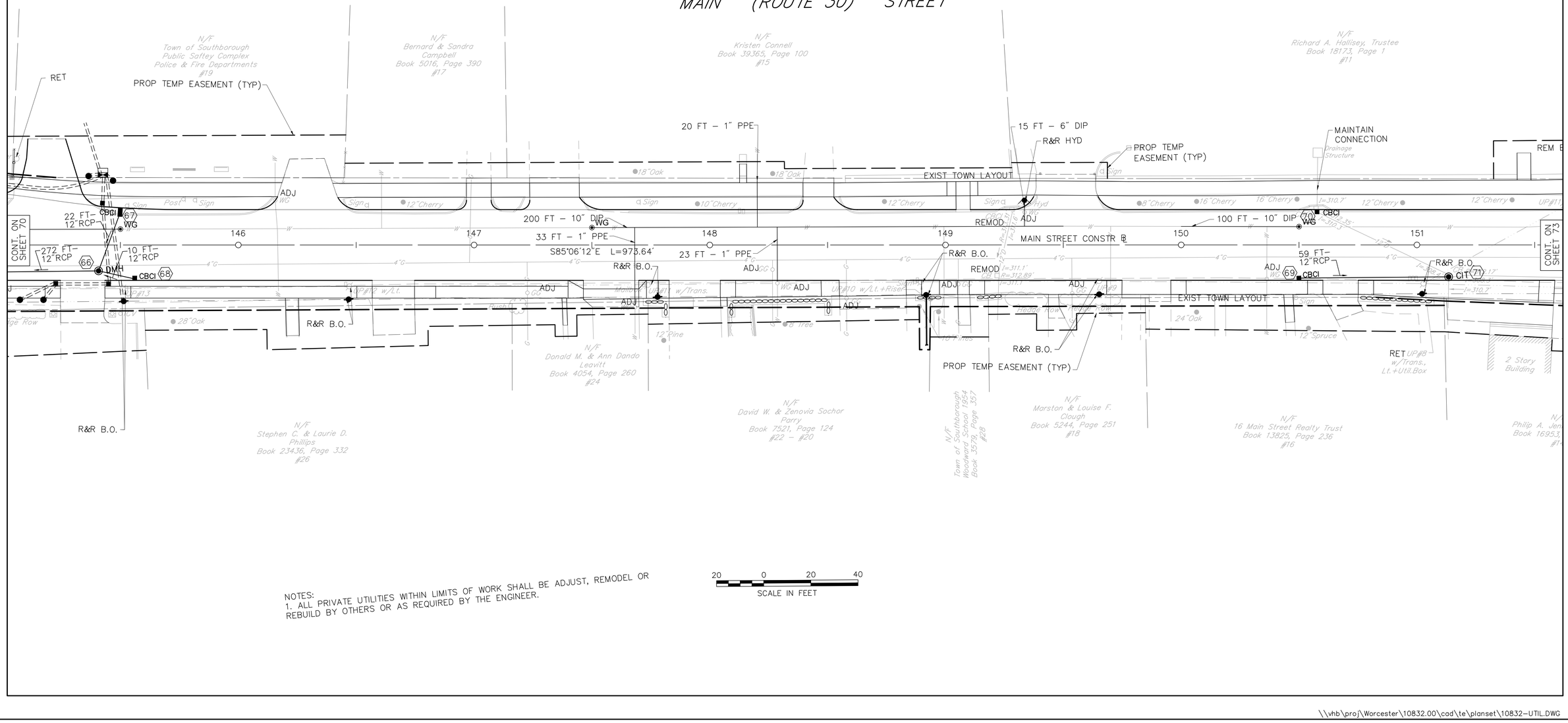
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	72	156
PROJECT FILE NO. 604989			

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.

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)	



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

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

N

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

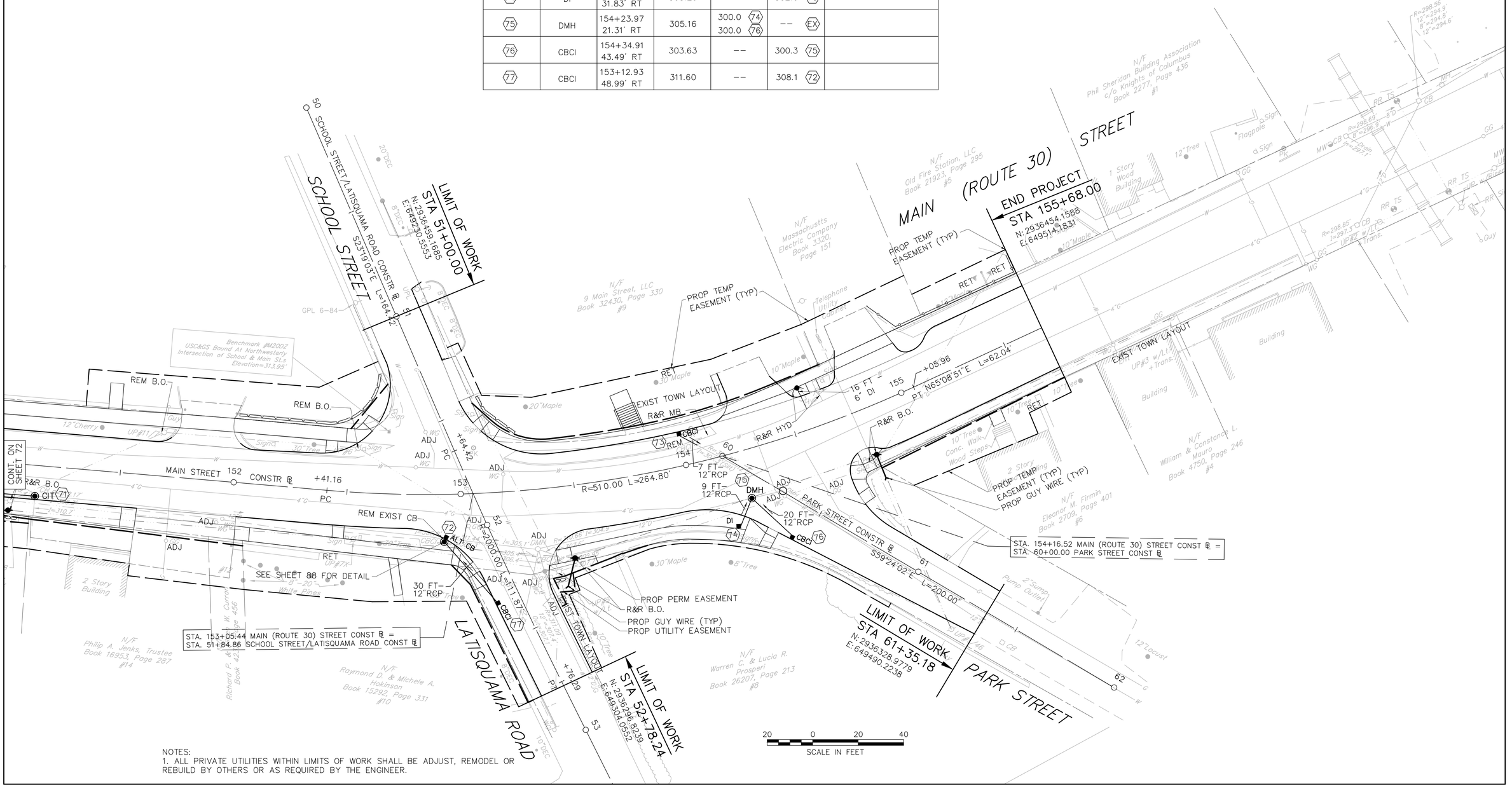
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	73	156
PROJECT FILE NO. 604989			

UTILITY PLANS

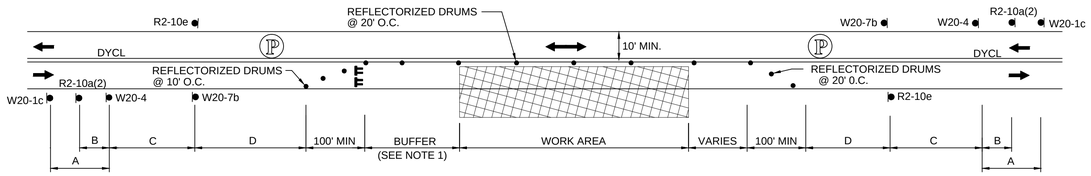
DRAINAGE STRUCTURE DATA

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	



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

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

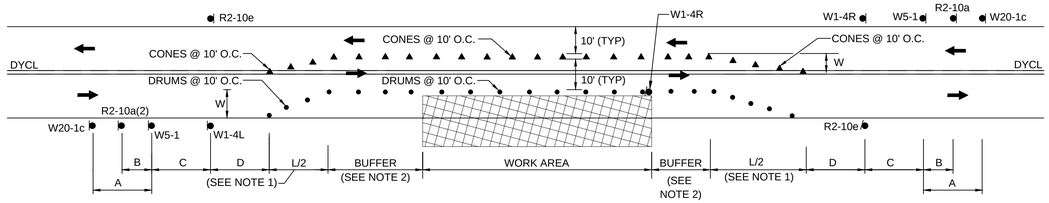


NOTES:

1. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES & LEGEND SHEET.
2. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES & LEGEND SHEET.

TYPICAL TWO WAY STREET LANE CLOSURE ALTERNATING TRAFFIC - LOCAL

NOT TO SCALE

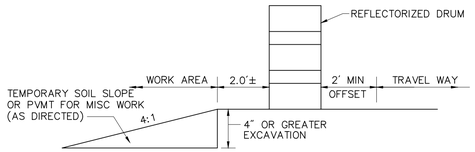


NOTES:

1. SEE TAPER LENGTH FORMULA ON TTCP GENERAL NOTES AND LEGEND SHEET.
2. SEE BUFFER SPACING CHART ON TTCP GENERAL NOTES AND LEGEND SHEET.
3. REFER TO ADVANCE SIGN SPACING TABLE ON TTCP GENERAL NOTES AND LEGEND SHEET.

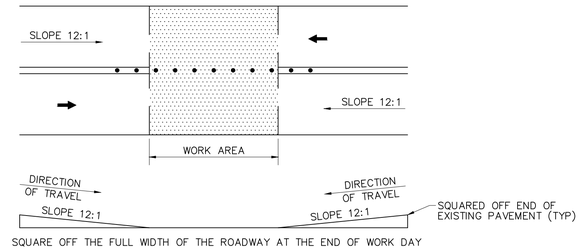
TYPICAL TWO WAY STREET LANE SHIFT - LOCAL

NOT TO SCALE



ROADWAY SLOPE PROTECTION

NOT TO SCALE



SQUARE OFF THE FULL WIDTH OF THE ROADWAY AT THE END OF WORK DAY

TEMPORARY PAVEMENT TRANSITION DETAIL

NOT TO SCALE

LEGEND

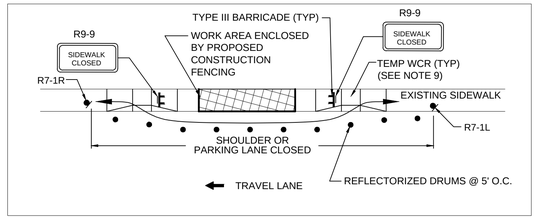
ADVANCE SIGN SPACING

	DISTANCE [FT]
A	100
B	50
C	100
D	100

- DRUM
- TRAFFIC CONE
- POLICE OFFICER
- FLAGGER
- CONSTRUCTION SIGN
- TYPE III BARRICADES
- WORK AREA PUBLIC ACCESS RESTRICTED
- PROPOSED TRAFFIC FLOW
- ARROW BOARD
- NTS — NOT TO SCALE

PEDESTRIAN BYPASS

TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING AND AS DIRECTED BY THE ENGINEER.

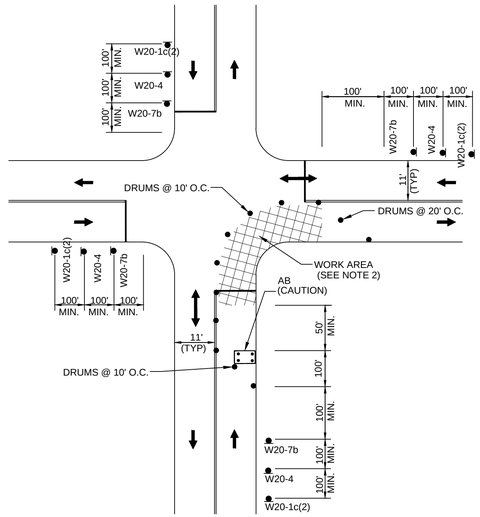


TYPE I

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. TEMPORARY CROSSWALKS SHALL BE ESTABLISHED AT ALL EXISTING CROSSWALK LOCATIONS WITHIN THE PROJECT LIMITS AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR 12" REFLECTORIZED PAINT OR TAPE AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS.
8. CONTRACTOR SHALL MAINTAIN AS WIDE OF A PEDESTRIAN ACCESS AS POSSIBLE AT ALL TIMES. EXCEPT WHERE NECESSARY, THE CONTRACTOR MAY TEMPORARILY REDUCE PEDESTRIAN PATHWAYS TO 4 FEET IN WIDTH (EXCLUDING CURB) FOR NO MORE THAN 200 LINEAR FEET AT A TIME IN ACCORDANCE WITH ALL STANDARDS.
9. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS. CONTRACTOR MAY UTILIZE EXISTING WCRS AS POSSIBLE OR AS APPROVED BY THE ENGINEER.
10. W16-7pR OR W16-7pL SIGNS SHALL BE USED IN COMBINATION WITH W11-2 SIGNS AS DIRECTED BY THE ENGINEER.



ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS - LOCAL

NOT TO SCALE

NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY
2. ANY EXCAVATION GREATER THAN 3' DEEP ADJACENT TO TRAFFIC SHALL BE PROTECTED BY TEMPORARY BARRIER

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	74	156
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS

TEMPORARY TRAFFIC CONTROL PLAN GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WITH MASSACHUSETTS STATE AMENDMENTS. TO MUTCD; 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. 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.
3. THE FIRST FIVE REFLECTORIZED DRUMS IN A TAPER SHALL HAVE TYPE A FLASHING LIGHTS.
4. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
5. THE CONTRACTOR SHALL NOTIFY EACH ABUTTOR AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PLACEMENT AND SIMILAR OPERATIONS.
6. ON LOCAL ROADWAYS A MINIMUM OF ONE LANE OF TRAVEL SHALL BE MAINTAINED AT ALL TIMES, AS SHOWN UNLESS OTHERWISE APPROVED BY THE ENGINEER. LANE REDUCTIONS SHALL ONLY BE ALLOWED DURING NON-PEAK TRAVEL HOURS AND SHALL BE RESTORED AT END OF DAYS WORK
7. GRADE SEPARATIONS IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
8. EXCAVATION EDGES IN EXCESS OF 4 INCHES DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF COMPACTED GRAVEL BORROW AT A 4:1 SLOPE PER THE DETAIL SHOWN. EXCAVATIONS IN EXCESS OF 3 FEET SHOULD BE PROTECTED BY A MASSDOT APPROVED TEMPORARY CONCRETE BARRIER WITH A MINIMUM LEVEL LATERAL OFFSET OF 3 FEET FROM THE EDGE OF EXCAVATION. BARRIER PLACED WITH LESS THAN THE RECOMMENDED LATERAL OFFSET TO THE EDGE OF EXCAVATION SHALL BE ANCHORED/RESTRAINED TO PREVENT LATERAL MOVEMENT WHEN STRUCK BY ERRANT VEHICLES TRAVELING AT THE POSTED SPEED. BLUNT ENDS OF BARRIER SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH AASHTO ROADSIDE DESIGN GUIDE AND MASSDOT STANDARDS.
9. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 2 (TL-2) ON ROADWAYS HAVING A POSTED SPEED LIMIT LESS THAN OR EQUAL TO 35 MPH. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 35MPH. TRUCK MOUNTED ATTENUATORS ON ROADWAYS WITH A POSTED SPEED OF 30 MPH OR LESS MAY BE USED AT CONTRACTOR'S OPTION OR AS DIRECTED BY ENGINEER. AT ALL OTHER LOCATIONS, TRUCK MOUNTED ATTENUATORS WILL BE REQUIRED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
10. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED ON THE PLANS.
11. NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
12. ADVISORY SPEED PLATES (W13-1P) SHALL BE USED IF APPROPRIATE AND AS REQUESTED BY THE ENGINEER. ADVISORY SPEED SHALL BE AS ESTABLISHED BY THE MASSDOT DISTRICT 3 OFFICE.
13. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
14. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
15. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
16. TEMPORARY MARKINGS SHALL BE WATER-BORNE PAINT. TEMPORARY MARKINGS SHALL BE REFRESHED EVERY YEAR OR AS DIRECTED BY MASSDOT.
17. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
18. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
19. PROVIDE CLEAR ZONES AROUND TRUCK IMPACT ATTENUATOR DEVICES AS REQUIRED BY THE THE MANUFACTURER.
20. W20-8a SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
21. ALL TEMPORARY CROSSWALKS AND STOPLINES SHALL BE 12 INCH PAINT.
22. ALL TEMPORARY DOUBLE YELLOW CENTER LINES (DYCL) SHALL BE 4 INCH PAINT.
23. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
24. CONTRACTOR SHALL SECURE ALL WORK AREAS AT ALL TIMES TO PREVENT UNAUTHORIZED ACCESS.
25. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.
26. ALL DRUMS SHALL BE SET AD 20' O.C. MAX UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

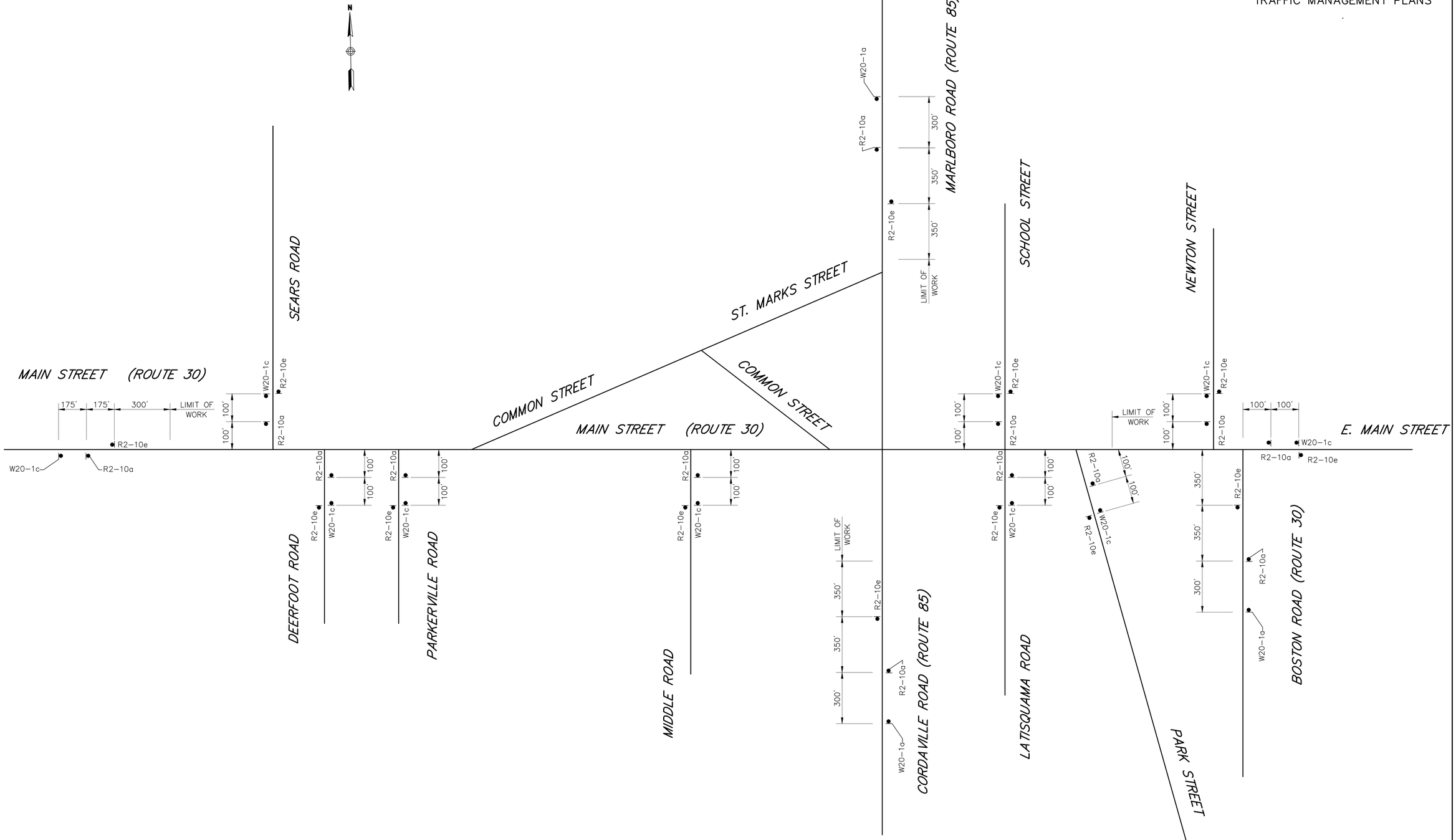
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	75	156
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS

ADVANCE SIGN SCHEMATIC

NOT TO SCALE

SIGNS TO BE INSTALLED AT THE PROJECT LIMITS AS SHOWN.
ALL ADVANCE SIGNS TO BE IN PLACE FOR THE DURATION OF THE PROJECT.



NOTE: THE CONTRACTOR SHALL COVER ANY ADVANCE SIGNAGE IF THE SIGNAGE FROM A DAILY OPERATIONAL SETUP INTERFERES WITH THE ADVANCE SIGNING.

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	76	156
PROJECT FILE NO. 604989			

TRAFFIC MANAGEMENT PLANS

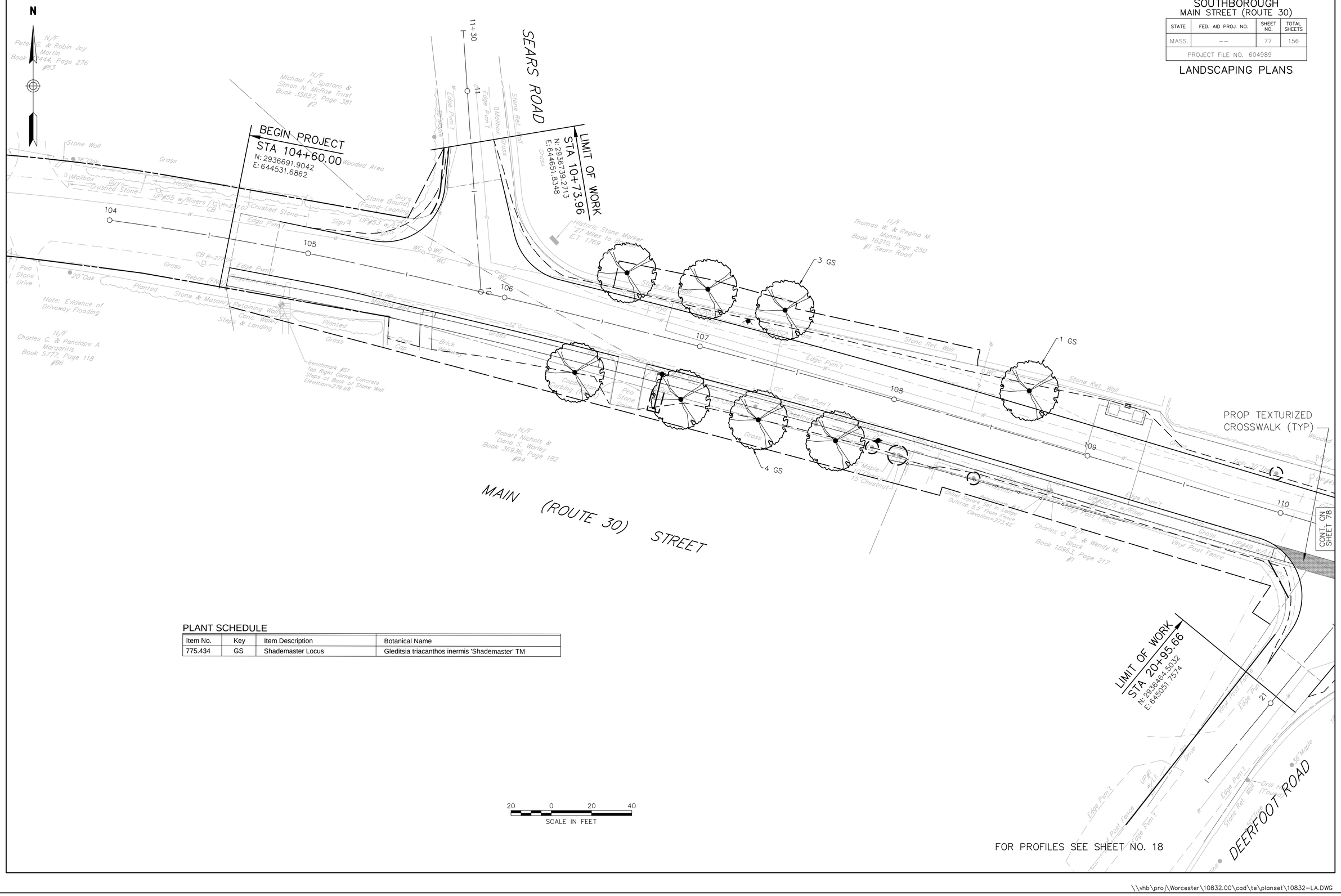
TEMPORARY TRAFFIC CONTROL SIGNS

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	COLOR		
	WIDTH	HEIGHT		BACK-GROUND	LEGEND	BORDER
R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	WHITE	BLACK	BLACK
R2-10e	48"	36"	END ROAD WORK / DOUBLE FINES END	FLUOR-ESCENT ORANGE / WHITE	BLACK / BLACK	BLACK / BLACK
R9-9	30"	18"	SIDEWALK CLOSED	WHITE	BLACK	BLACK
W1-4R	36"	36"		FLUOR-ESCENT ORANGE	BLACK	BLACK
W1-4L	36"	36"		FLUOR-ESCENT ORANGE	BLACK	BLACK
W5-1	36"	36"	ROAD NARROWS	FLUOR-ESCENT ORANGE	BLACK	BLACK
W13-1(XX)	36"	36"	XX MPH	YELLOW	BLACK	BLACK
W16-9p	12"	24"	AHEAD	YELLOW	BLACK	BLACK
W20-1a	36"	36"	ROAD WORK 1000'	FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-1c	36"	36"	ROAD WORK AHEAD	FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-4	36"	36"	ONE LANE ROAD AHEAD	FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-7b	36"	36"	POLICE OFFICER AHEAD	FLUOR-ESCENT ORANGE	BLACK	BLACK
W20-8a	36"	36"	CAUTION RAISED CASTINGS	FLUOR-ESCENT ORANGE	BLACK	BLACK

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	77	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
775.434	GS	Shademaster Locus	Gleditsia triacanthos inermis 'Shademaster' TM

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.	--	78	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

PROP TEXTURIZED CROSSWALK (TYP)

MAIN (ROUTE 30) STREET

DEERFOOT ROAD

PARKERVILLE ROAD

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

WATER QUALITY TREATMENT AREA SEE SHEET ## FOR DETAIL

CONT. ON SHEET 79

CONT. ON SHEET 77

PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM

N

20 0 20 40
SCALE IN FEET

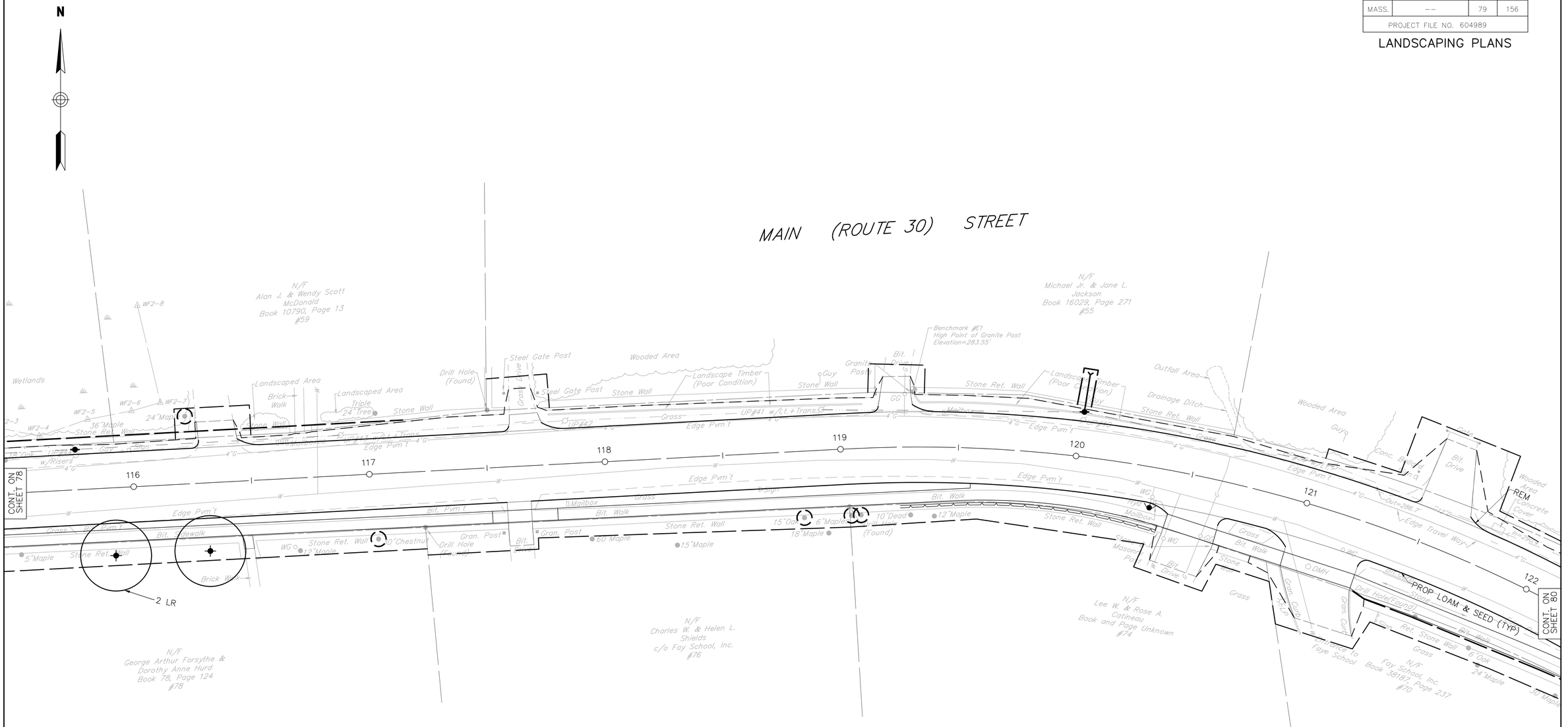
FOR PROFILES SEE SHEET NOS. 19-20

\\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.	--	79	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM

20 0 20 40
SCALE IN FEET

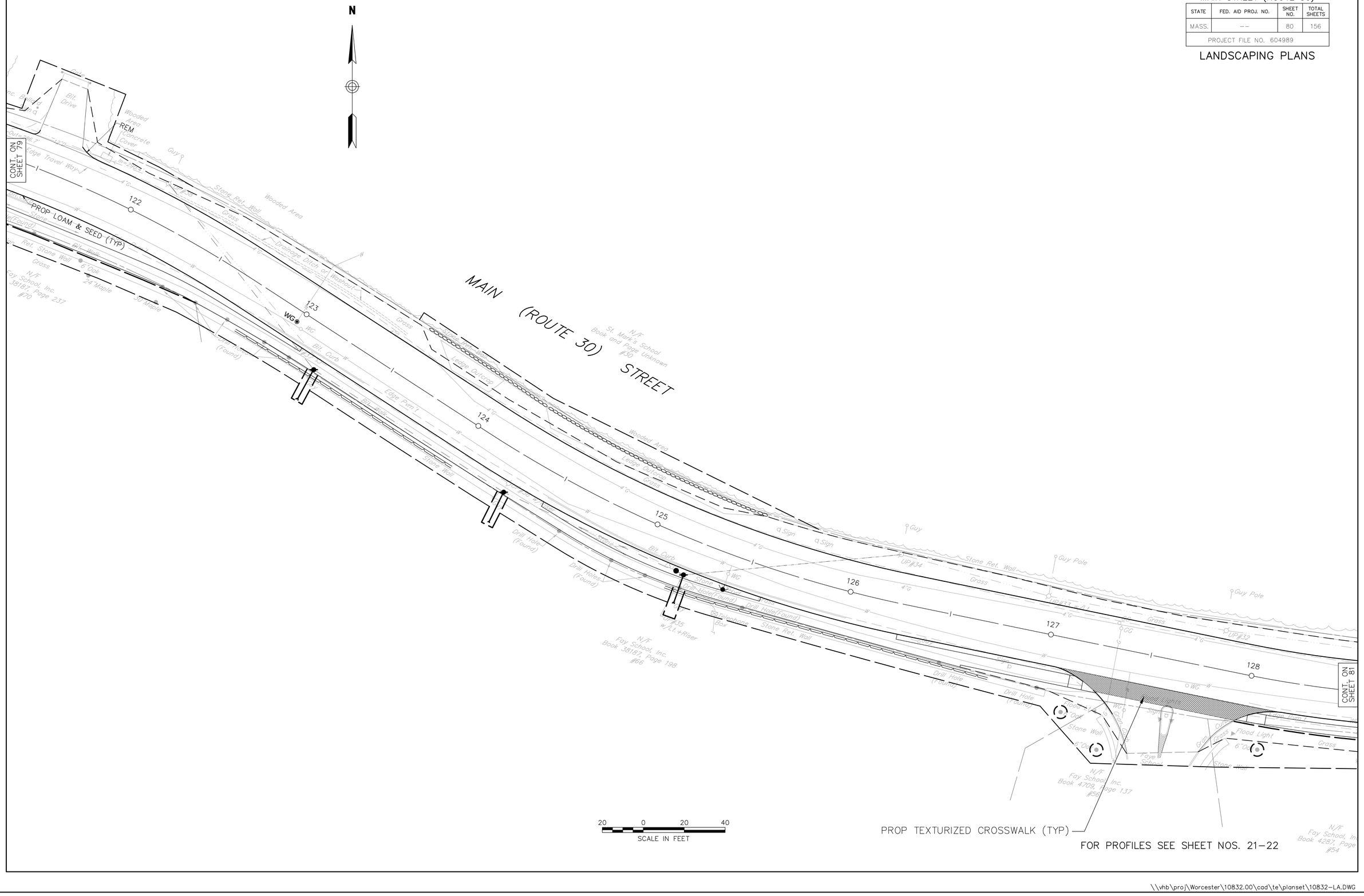
FOR PROFILES SEE SHEET NOS. 20–21

\\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.	--	80	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

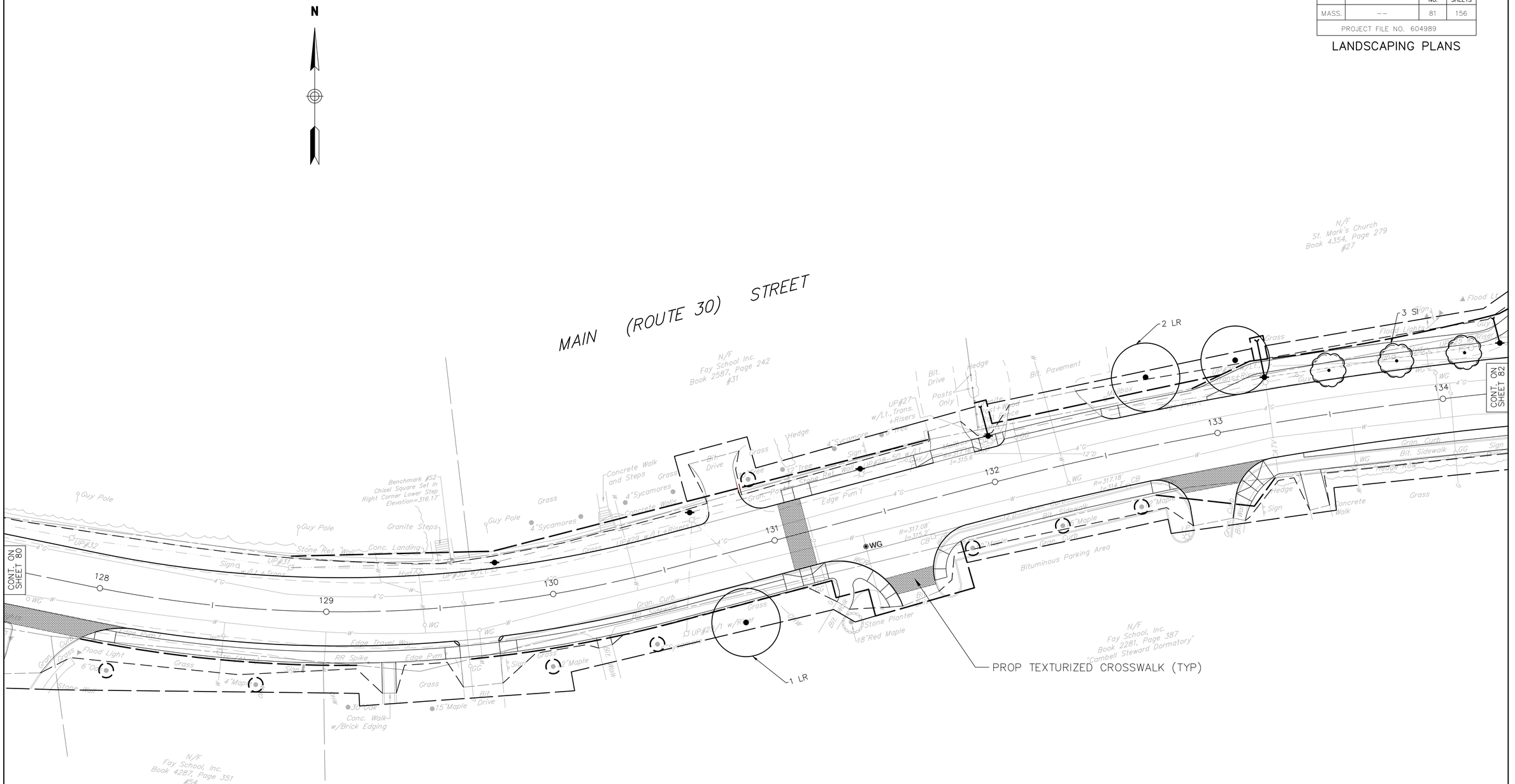


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	81	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'

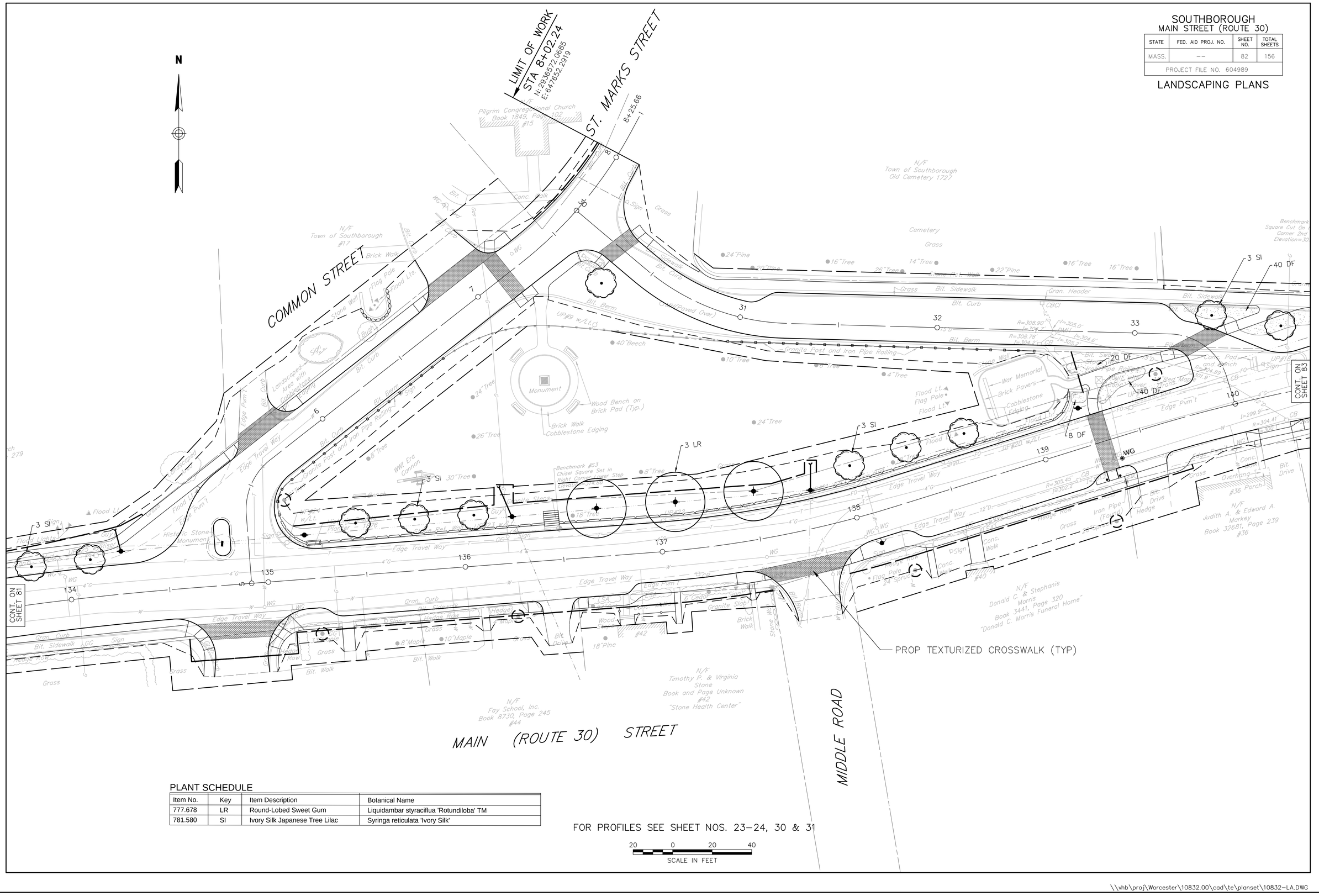
20 0 20 40
SCALE IN FEET

FOR PROFILES SEE SHEET NOS. 22–23

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	82	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'

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

20 0 20 40
SCALE IN FEET

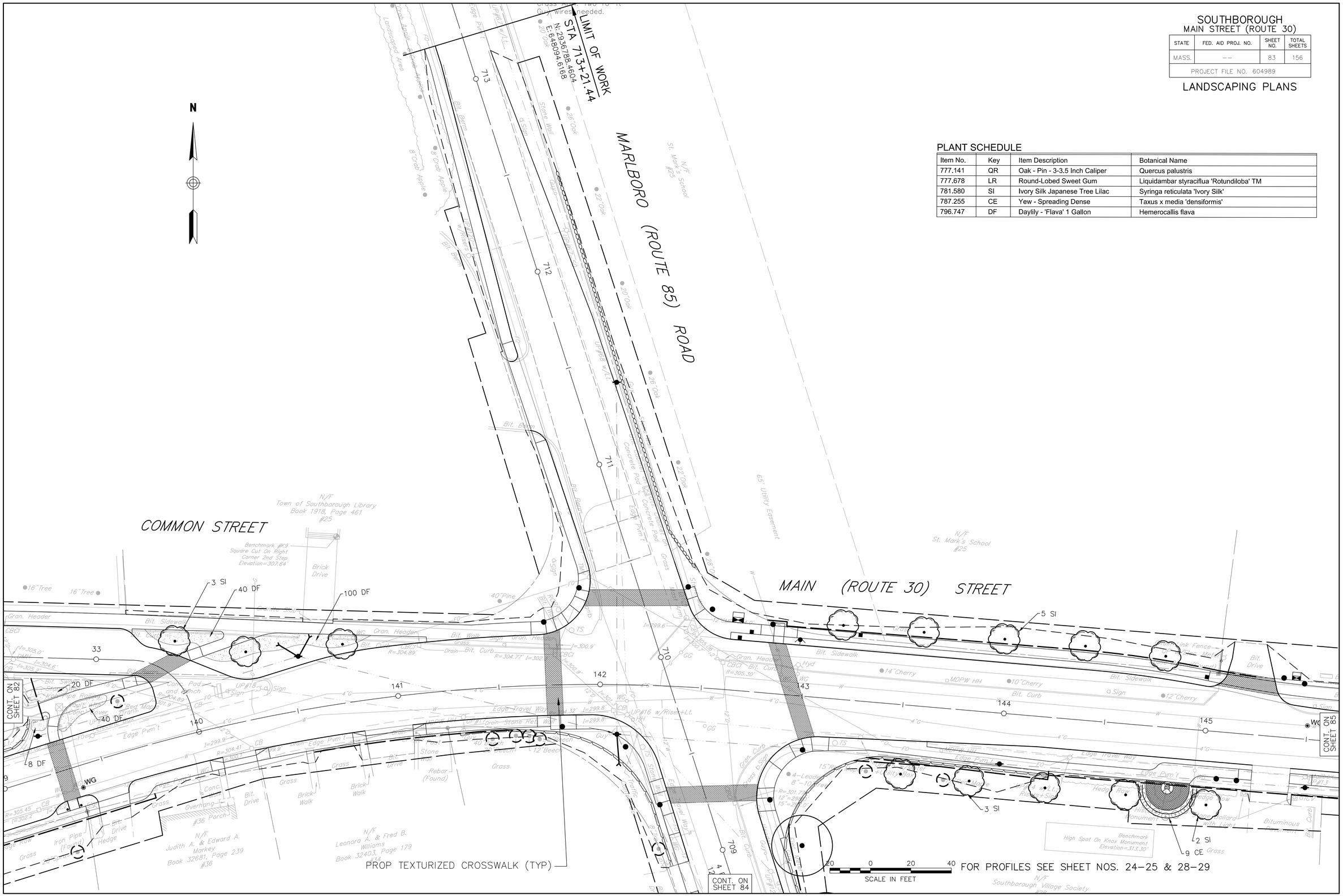
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	83	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.141	QR	Oak - Pin - 3-3.5 Inch Caliper	Quercus palustris
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'
787.255	CE	Yew - Spreading Dense	Taxus x media 'densiformis'
796.747	DF	Daylily - 'Flava' 1 Gallon	Hemerocallis flava

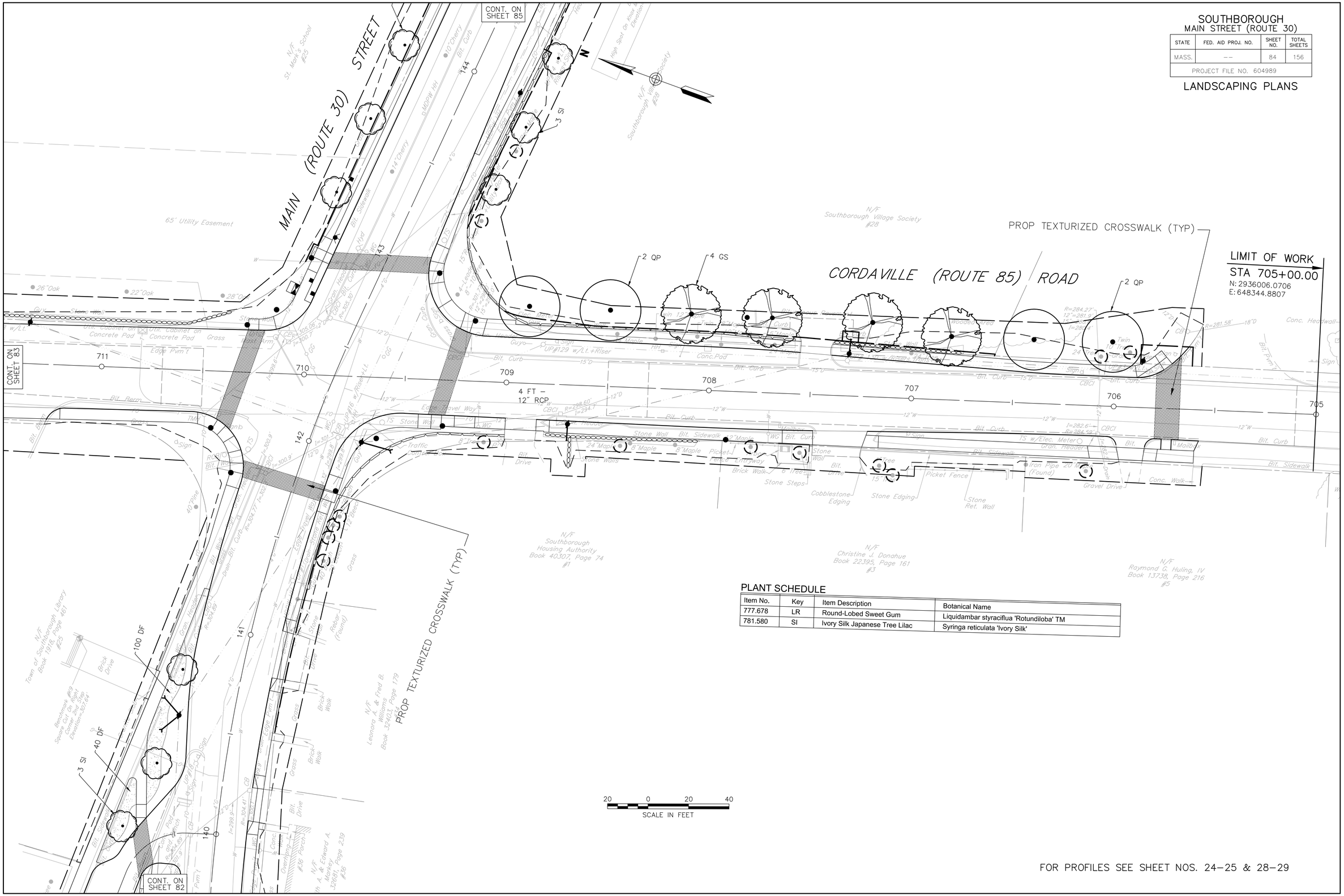


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	84	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
777.678	LR	Round-Lobed Sweet Gum	Liquidambar styraciflua 'Rotundiloba' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'

20 0 20 40
SCALE IN FEET

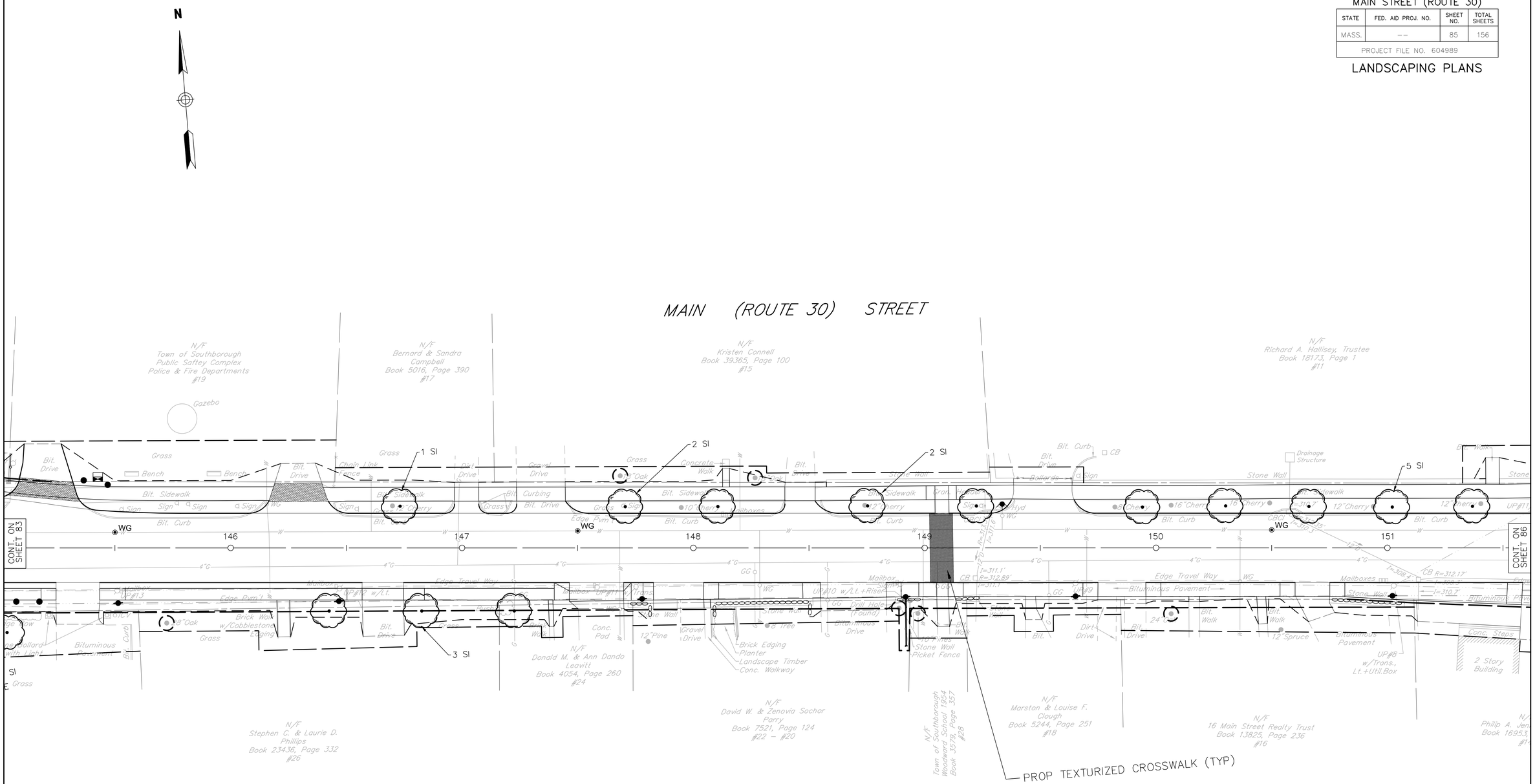
FOR PROFILES SEE SHEET NOS. 24–25 & 28–29

\\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.	--	85	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS



PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
796.233	GS	Shademaster Locus	Gleditsia triacanthos inermis 'Shademaster' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'

20 0 20 40
SCALE IN FEET

FOR PROFILES SEE SHEET NOS. 25-26

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

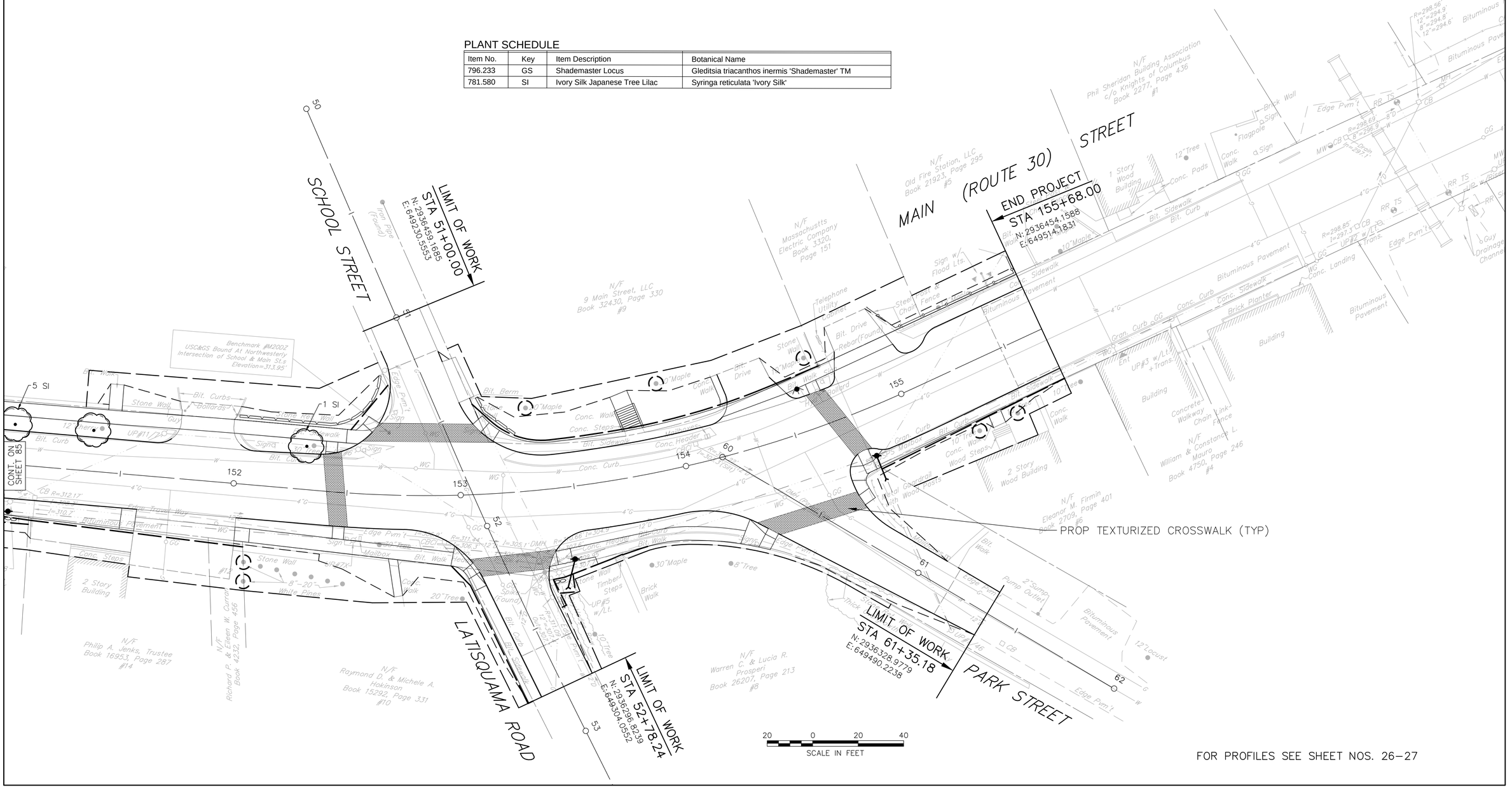
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	86	156
PROJECT FILE NO. 604989			

LANDSCAPING PLANS

N

PLANT SCHEDULE

Item No.	Key	Item Description	Botanical Name
796.233	GS	Shademaster Locus	Gleditsia triacanthos inermis 'Shademaster' TM
781.580	SI	Ivory Silk Japanese Tree Lilac	Syringa reticulata 'Ivory Silk'



FOR PROFILES SEE SHEET NOS. 26-27

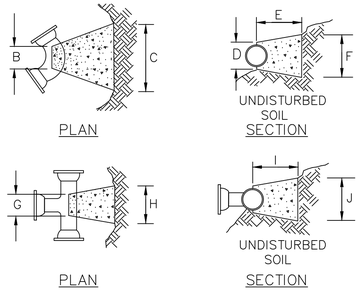
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832-LA.DWG

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.

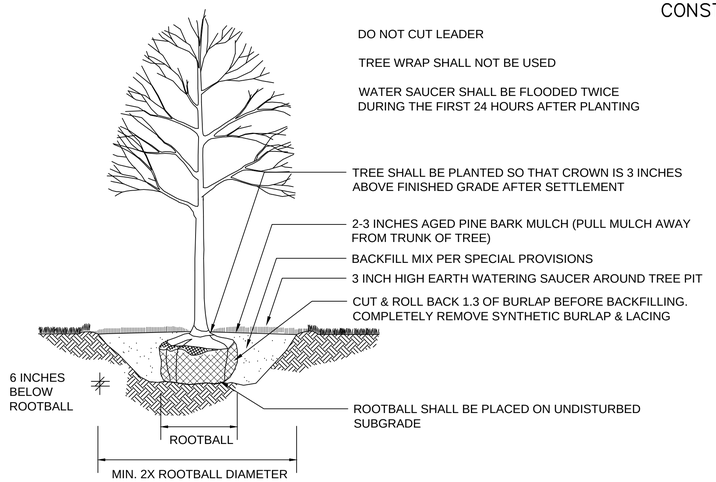
CONCRETE THRUST BLOCK

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

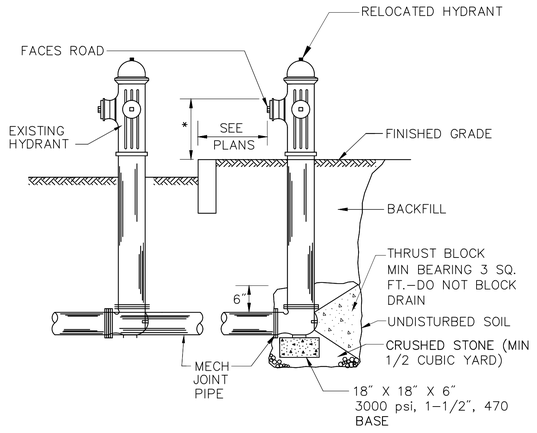
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	87	156
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



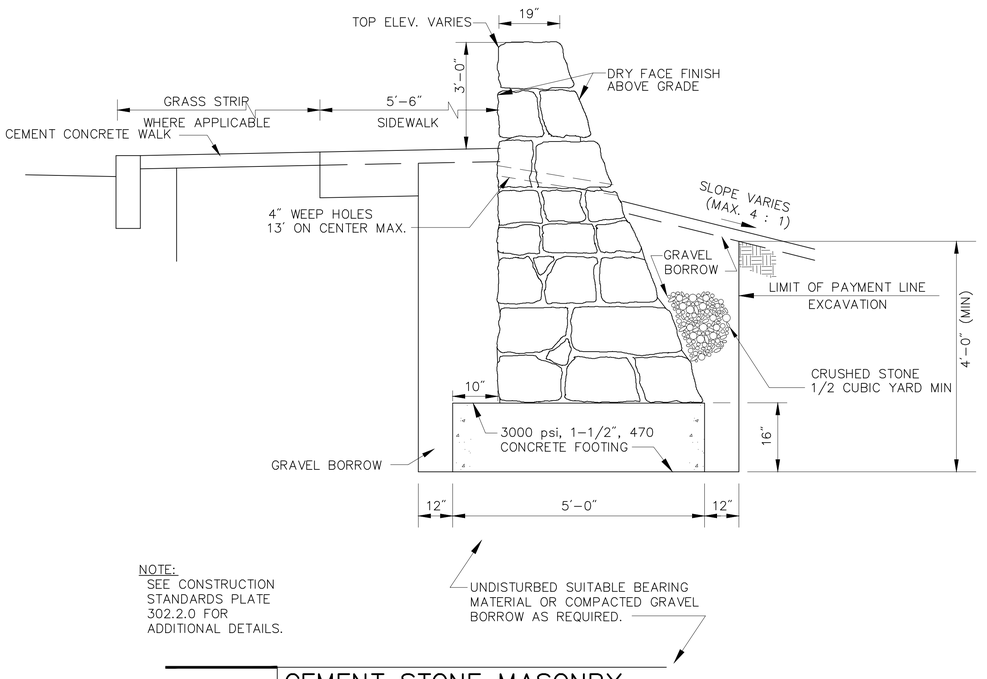
DECIDUOUS TREE PLANTING

SCALE: N.T.S.



HYDRANT RELOCATION DETAIL

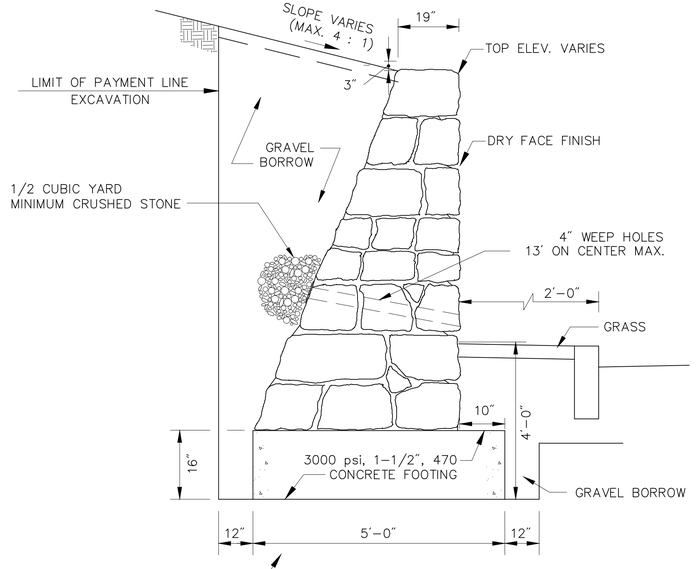
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: WS-03



NOTE:
SEE CONSTRUCTION STANDARDS PLATE 302.2.0 FOR ADDITIONAL DETAILS.

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.

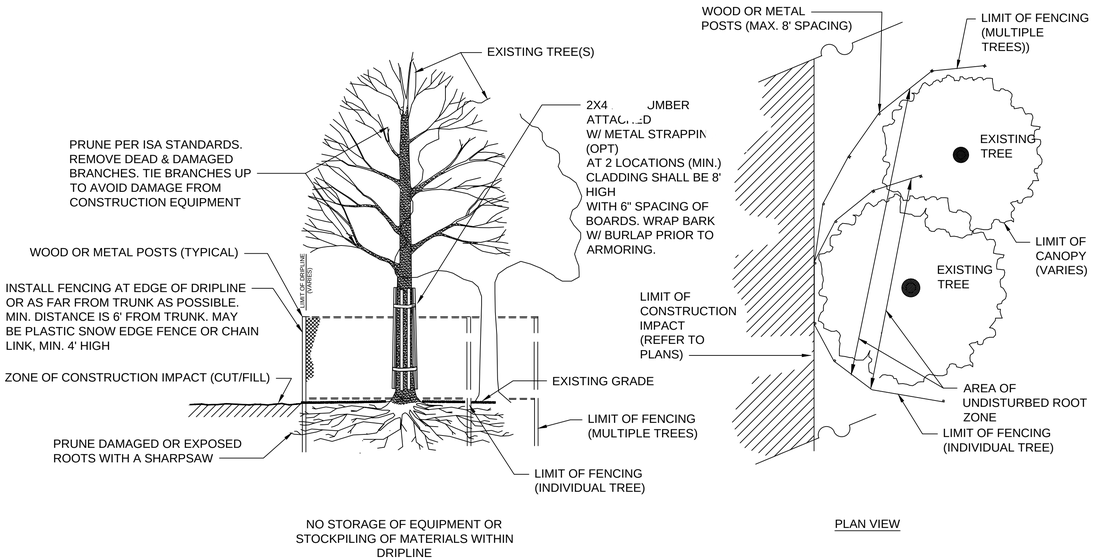
CEMENT STONE MASONRY WALL AT COMMON - SECTION

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

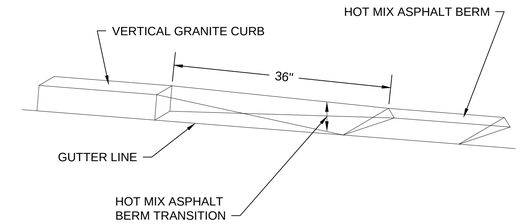
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	88	156
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



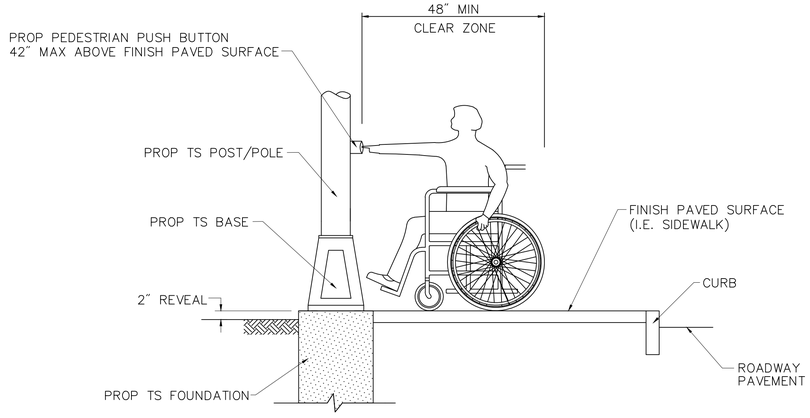
TREE PROTECTION OF EXISTING TREE(S)

SCALE: N.T.S.

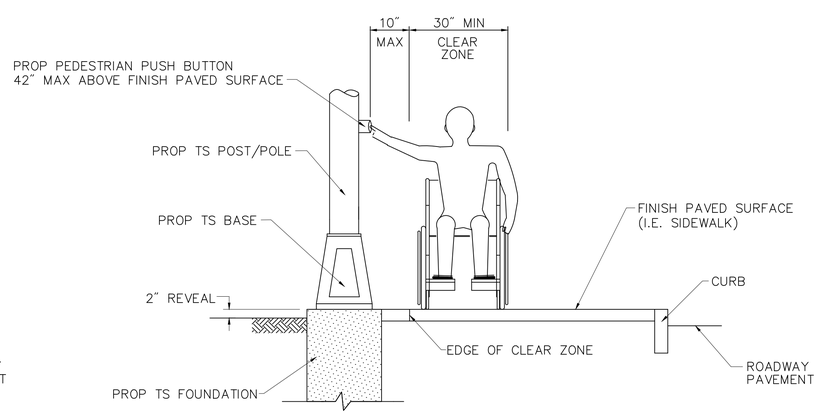


HOT MIX ASPHALT BERM TRANSITION TO GRANITE

SCALE: N.T.S.



FORWARD APPROACH (FORWARD REACH)

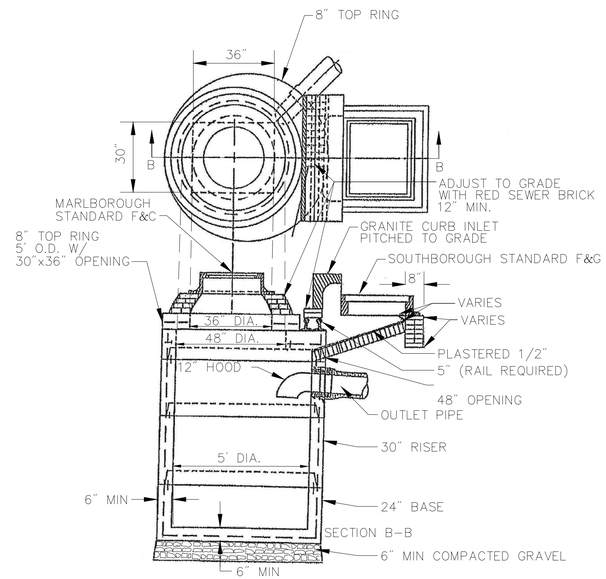


PARALLEL APPROACH (SIDE REACH)

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:



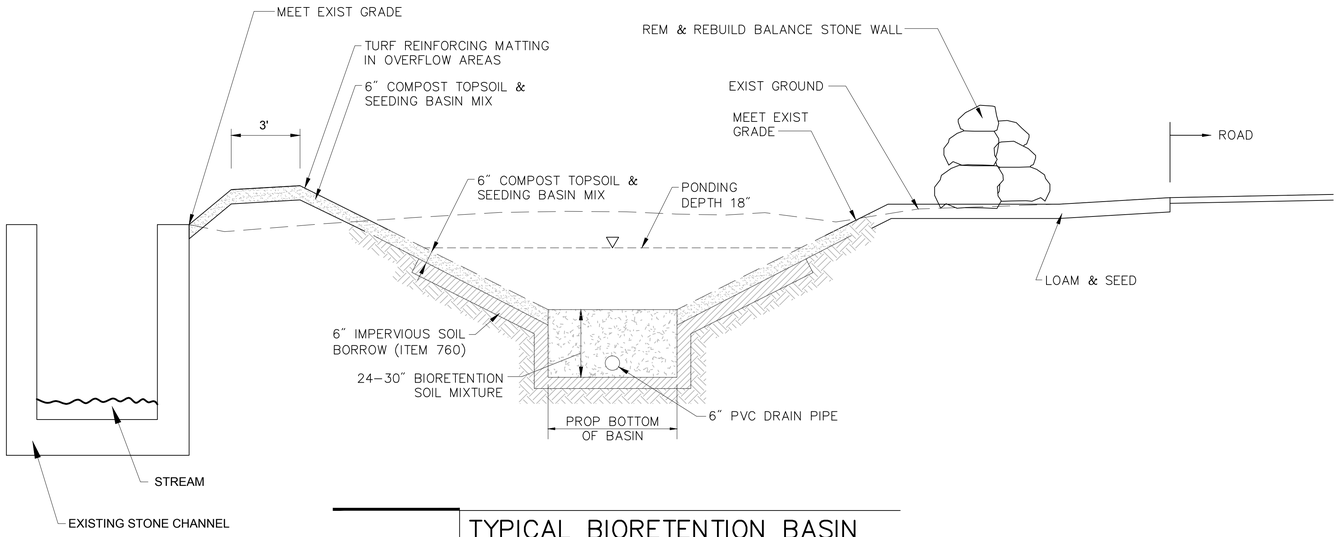
ALTERNATE CATCH BASIN

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

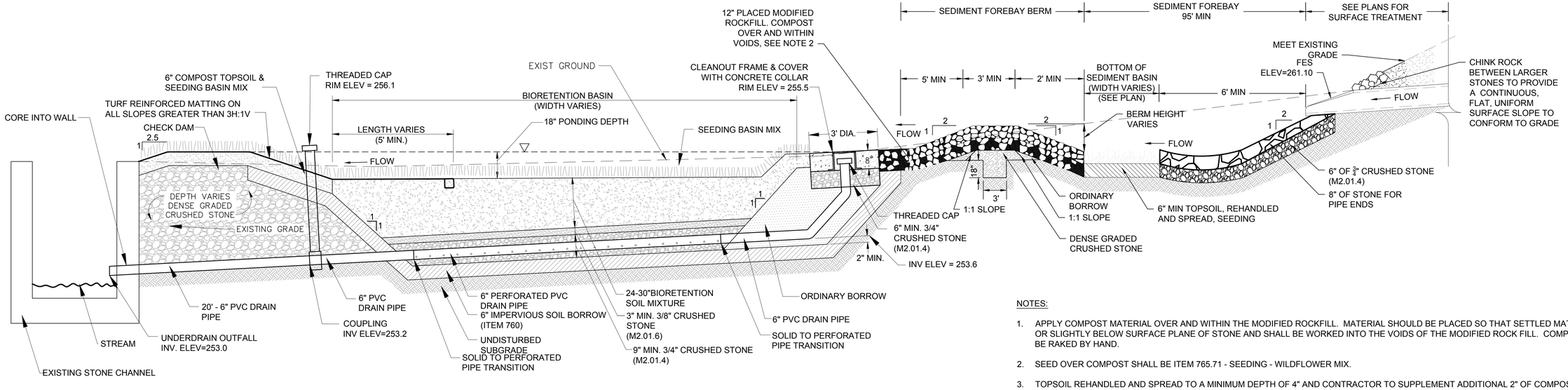
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	89	156
PROJECT FILE NO. 604989			

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.

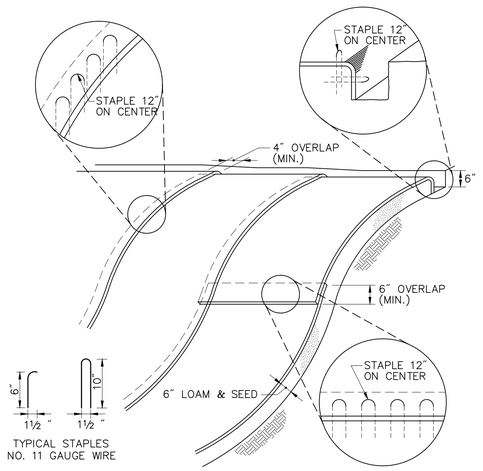
WATER QUALITY TREATMENT AREA

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.	--	90	156
PROJECT FILE NO. 604989			

CONSTRUCTION DETAILS



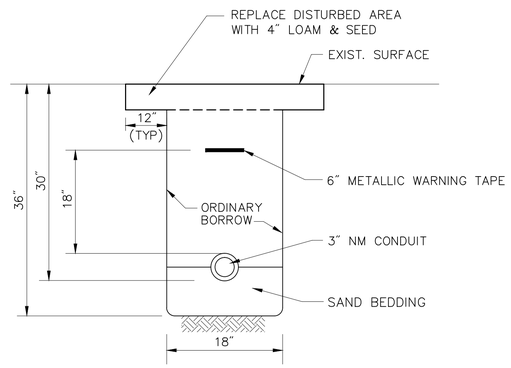
Notes:

1. BEGIN AT THE TOP OF BLANKET INSTALLATION AREA BY ANCHORING BLANKET IN A 6" DEEP TRENCH BACKFILL AND COMPACT TRENCH AFTER STAPLING.
2. ROLL THE BLANKET DOWN THE SWALE IN THE DIRECTION OF THE WATER FLOW.
3. THE EDGES OF BLANKETS MUST BE STAPLED WITH APPROX. 4 INCH OVERLAP WHERE 2 OR MORE STRIP WIDTHS ARE REQUIRED.
4. WHEN BLANKETS MUST BE SPLICED DOWN THE SWALE, PLACE UPPER BLANKET 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. EROSION CONTROL BLANKETS SHALL BE USED IN ALL AREAS WHERE SLOPES EXCEED 3:1.

Erosion Control Blanket Slope Installation

1/10

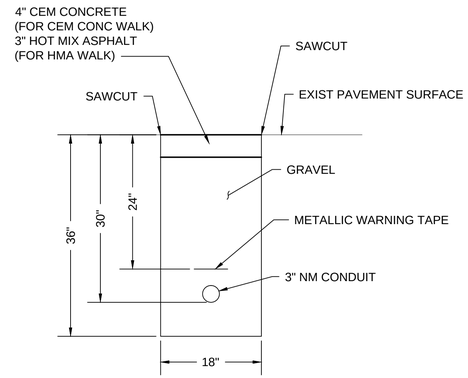
N.T.S. Source: VHB REV LD_680



NOTES:
1. SCHEDULE 80 ELECTRICAL CONDUIT NM-PLASTIC (UL) WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS

CONDUIT IN GRASS

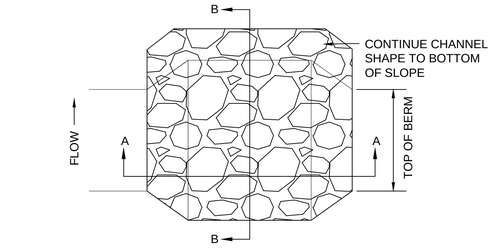
SCALE: NOT TO SCALE
DATE: APRIL 2003
DWG: TRENCH-02



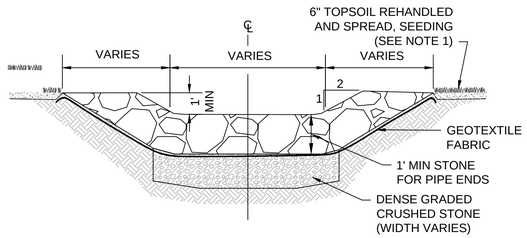
NOTES:
1. SCHEDULE 80 ELECTRICAL CONDUIT NM-PLASTIC (UL) WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS

CONDUIT IN SIDEWALK

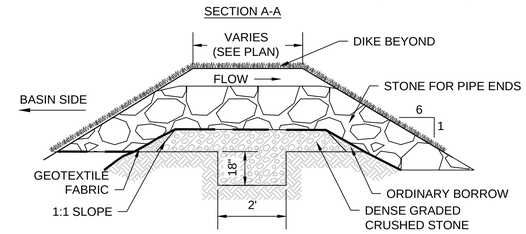
SCALE: N.T.S.



PLAN



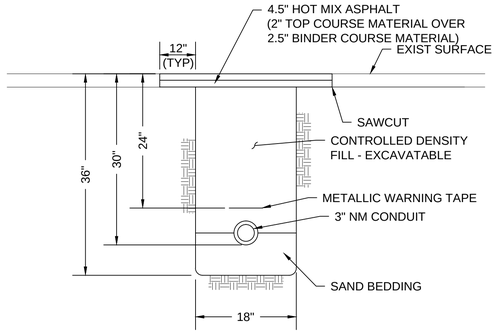
SECTION A-A



SECTION B-B

OVERFLOW STONE SPILLWAY

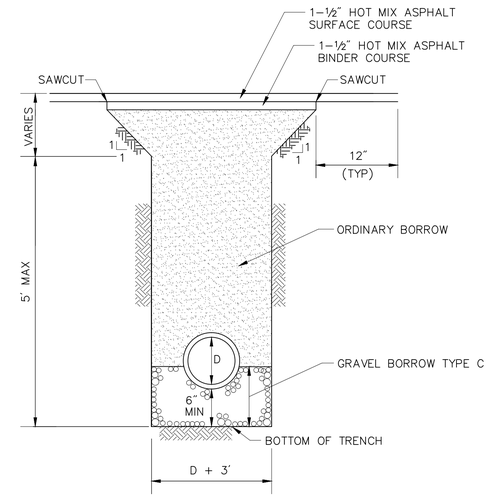
SCALE: N.T.S. SOURCE: VHB DATE: AUGUST 5 2015



NOTES:
1. SCHEDULE 80 ELECTRICAL CONDUIT NM-PLASTIC (UL) WITH PULL ROPE, UNLESS OTHERWISE APPROVED BY MASSDOT
2. WARNING TAPE SHALL BE PER CURRENT APWA STANDARDS

CONDUIT CROSSING ROADWAY/DRIVEWAY

SCALE: N.T.S.



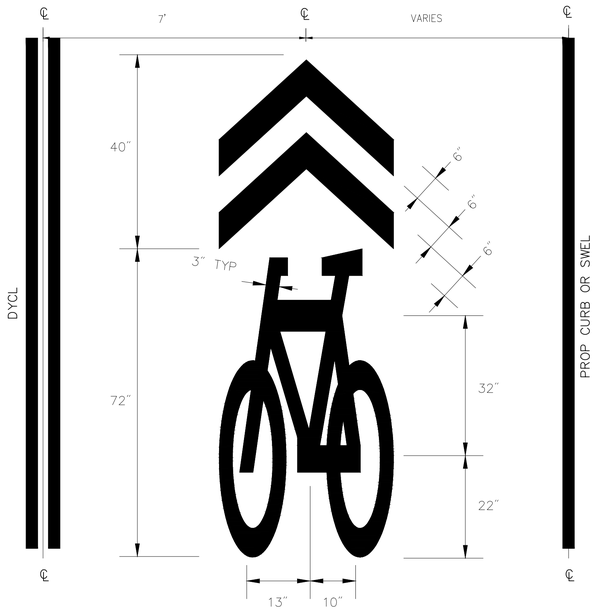
TRENCH DETAIL IN EXISTING HOT MIX ASPHALT

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.	--	91	156
PROJECT FILE NO. 604989			

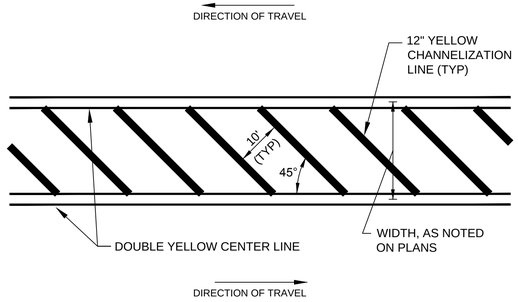
CONSTRUCTION DETAILS



NOTES:
1. SEE MUTCD FIGURE 9C-9 FOR MORE INFORMATION
2. PROP MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC

SHARED LANE PAVEMENT MARKING LAYOUT

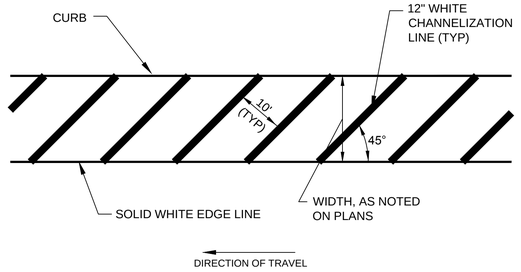
SCALE: NOT TO SCALE
DATE: JUNE 2010
DWG: PM-11



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 - MEDIAN FOR ROADWAYS 40MPH OR LESS

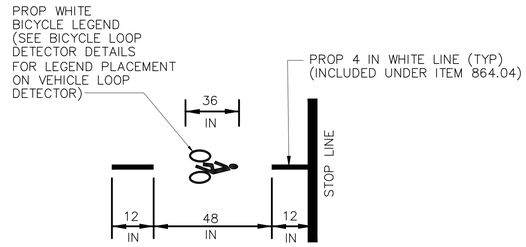
SCALE: NTS DWG: PM-13 DATE: OCT 2015



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

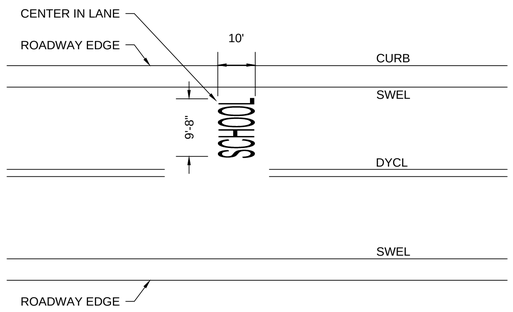
SCALE: NTS DWG: PM-15 DATE: OCT 2015



NOTES:
1. PROP MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC

BICYCLE LEGEND

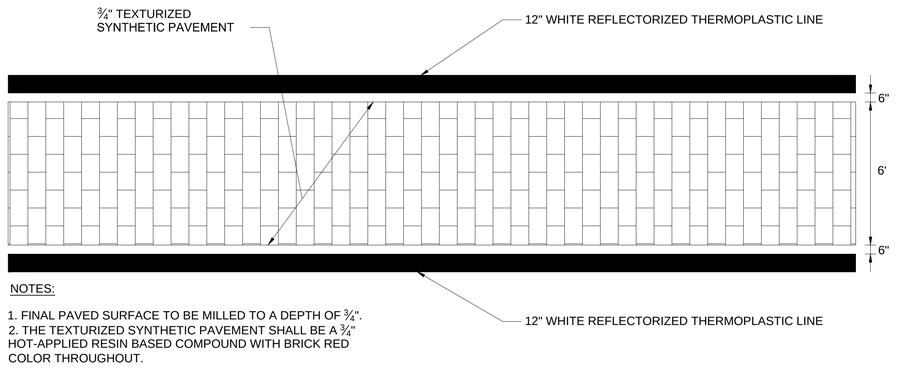
SCALE: NOT TO SCALE
DATE: DATE
DWG: DWG



NOTES:
1. PROP MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC

SCHOOL ZONE PAVEMENT MARKING DETAIL

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

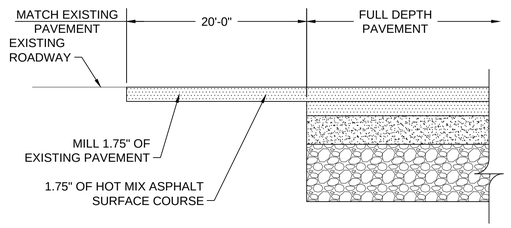


NOTES:

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

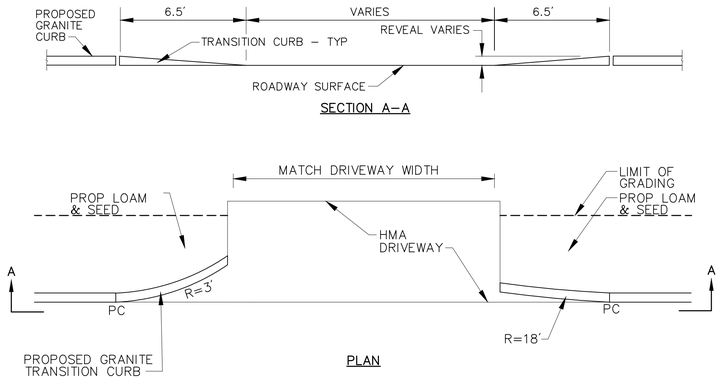
SCALE: N.T.S.



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

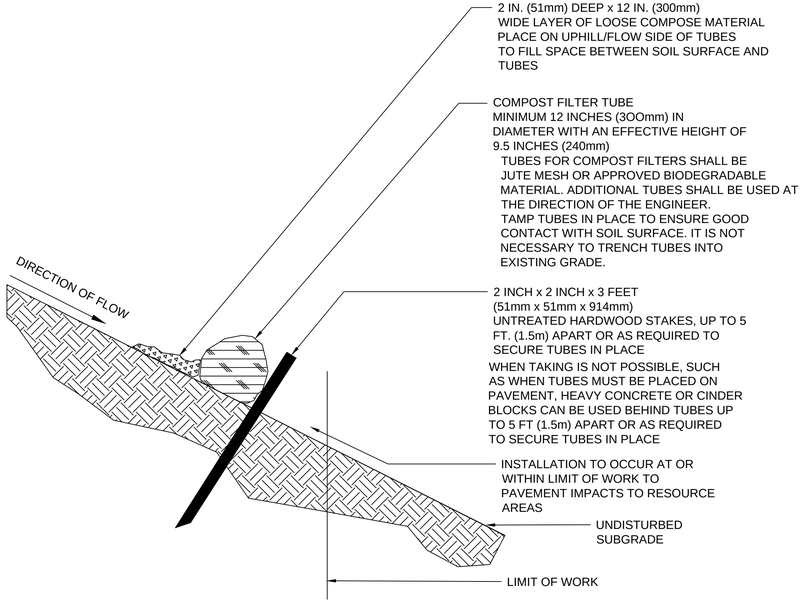
SCALE: N.T.S.

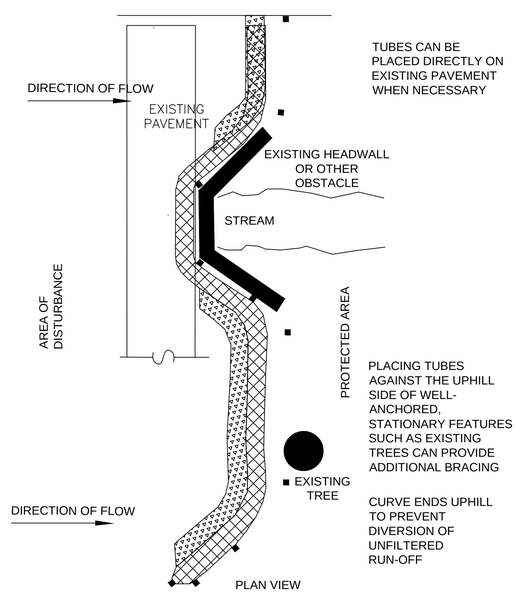


TRANSITION CURB FOR DRIVEWAYS						
BASELINE / STATION	ROADWAY GUTTER	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 111+88.07 LT	-0.7%	4"	4.6'	10.6'	4"	265.77
MAIN STREET 113+84.11 LT	0.6%	4"	4.6'	10.6'	4"	265.23
MAIN STREET 115+28.28 LT	3.6%	4"	4.6'	10.6'	4"	268.42
MAIN STREET 116+36.93 LT	3.9%	4"	4.6'	10.6'	4"	272.59
MAIN STREET 117+70.50 LT	2.7%	4"	4.6'	10.6'	4"	277.07
MAIN STREET 119+23.46 LT	2.0%	4"	4.6'	10.6'	4"	280.43
MAIN STREET 121+56.03 LT	5.6%	4"	4.6'	10.6'	4"	289.12
MAIN STREET 130+85.00 LT	1.4%	6"	5.8'	15.9'	6"	317.66

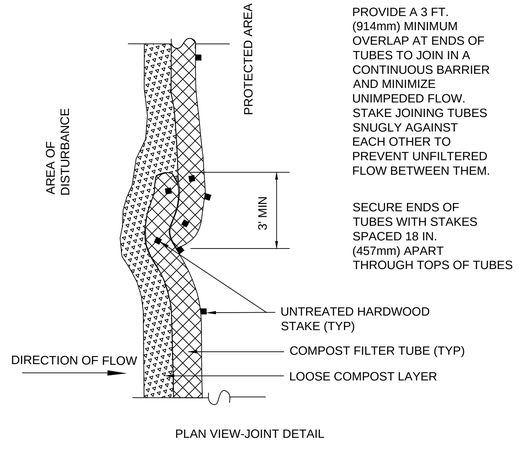
TYPICAL HMA DRIVEWAY WITH CURVED TRANSITION CURB AND NO SIDEWALK

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



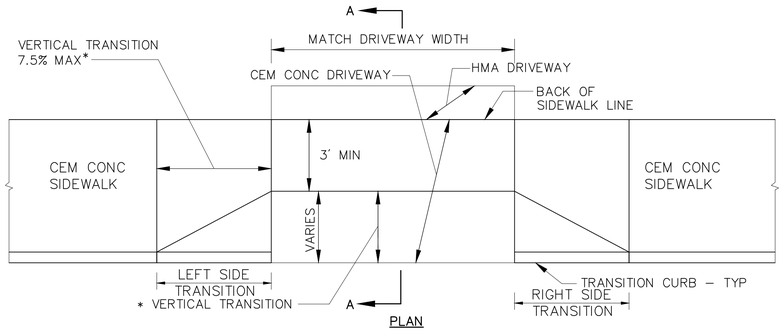


GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS 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.

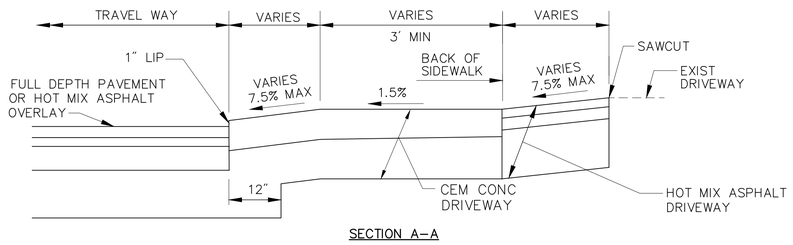


SINGLE COMPOST FILTER TUBE DETAIL

SCALE: N.T.S.



PLAN



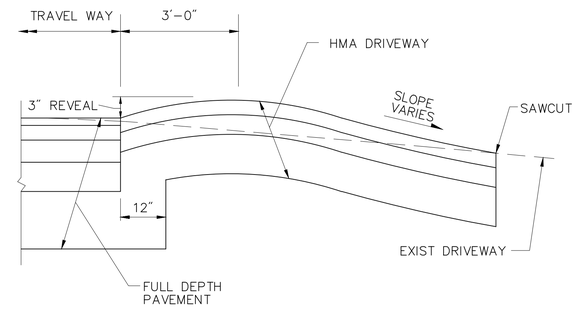
SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 131+85.01 LT	0.8%	5.5'	6"	7.7'	3.3'	3"	317.70
MAIN STREET 132+29.71 LT	0.5%	5.5'	3"	3.3'	7.7'	6"	317.97
MAIN STREET 140+16.90 RT	0.2%	5.5'	6"	6.5'	6.5'	6"	304.30
MAIN STREET 140+93.51 RT	0.5%	5.5'	6"	7.7'	6.5'	6"	304.62
MAIN STREET 147+57.27 RT	0.2%	7.5'	3"	3.3'	6.5'	6"	313.36

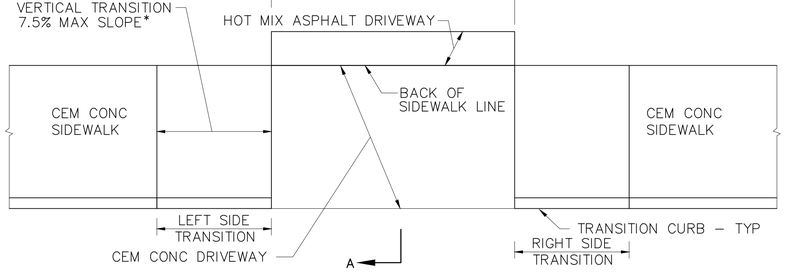
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND GRANITE TRANSITION CURB -TYPE I

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



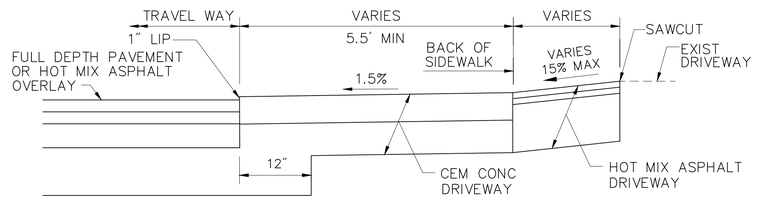
TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK TYPE I

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



PLAN

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 147+93.62 RT	0.2%	7.2'	6"	6.5'	4.5'	4"	313.44
MAIN STREET 148+69.19 RT	-0.5%	6'	6"	6.5'	7.7'	6"	313.21
MAIN STREET 149+85.25 RT	-0.5%	6'	6"	6.5'	7.7'	6"	312.62
MAIN STREET 150+67.61 RT	0.1%	6'	6"	7.7'	6.5'	6"	312.43
CORDAVILLE ROAD 708+92.13 LT	5.6%	5.5'	6"	6.5'	15'	6"	299.82

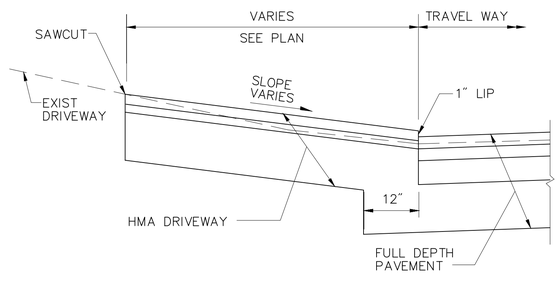


SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

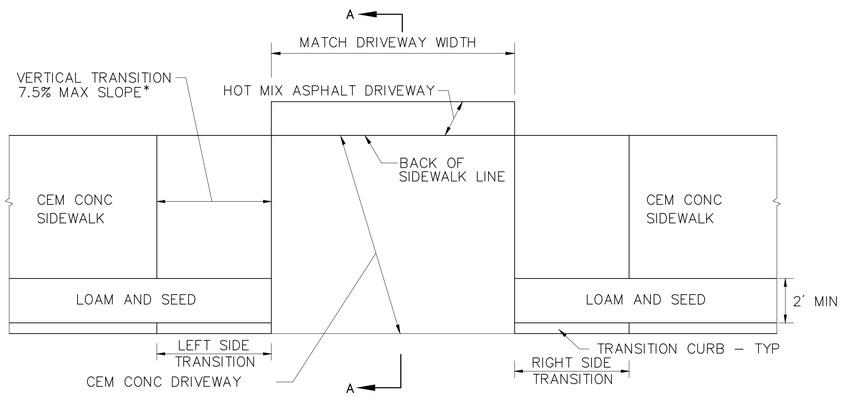
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND GRANITE TRANSITION CURB -TYPE II

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

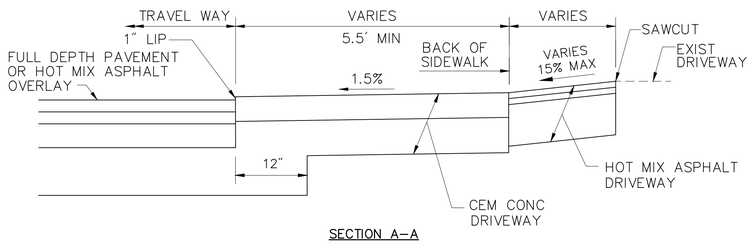


TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK TYPE II

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



PLAN



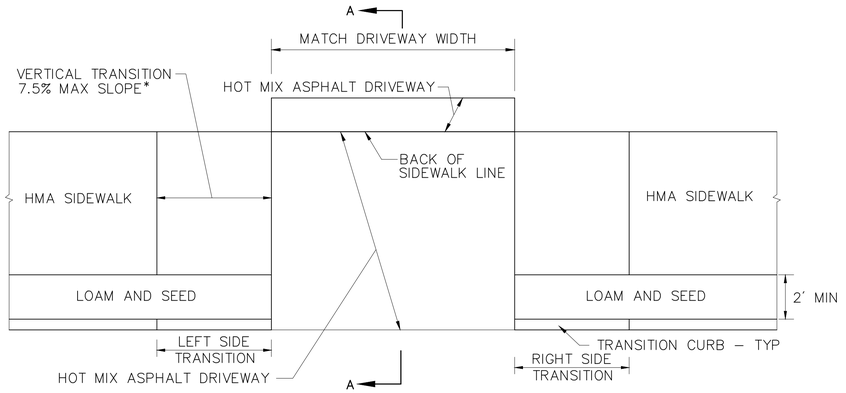
SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

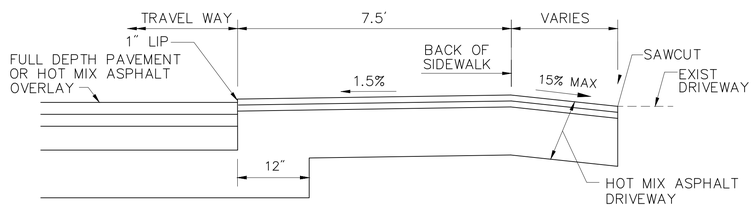
TYPICAL CONCRETE DRIVEWAY WITH GRASS BUFFER AND GRANITE TRANSITION CURB -TYPE II

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

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 129+65.43 RT	2.2%	5'	6"	7.7'	6.5'	6"	315.31
MAIN STREET 145+33.98 RT	2.3%	5'	6"	11'	6.5'	6"	310.23
MAIN STREET 146+65.79 RT	1.2%	5'	6"	9'	6.5'	6"	312.63
MAIN STREET 151+57.43 RT	0.3%	6'	6"	7.7'	6.5'	6"	312.70
CORDAVILLE ROAD 705+91.02 LT	3.9%	6'	6"	6.5'	14'	6"	283.55
CORDAVILLE ROAD 707+31.53 LT	5.4%	6'	6"	6.5'	15'	6"	290.98



PLAN



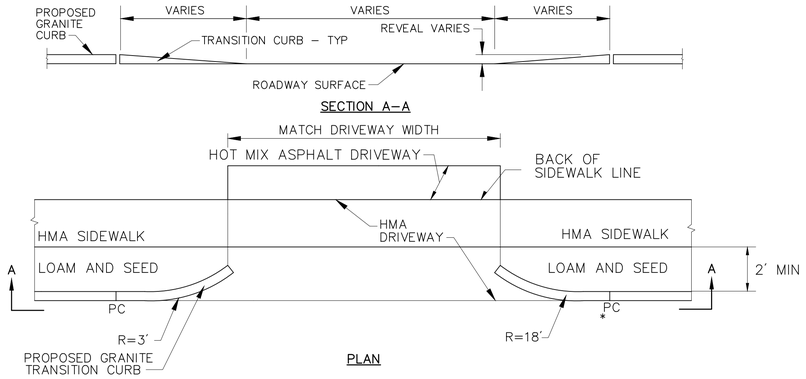
SECTION A-A

* TOLERANCE FOR CONSTRUCTION ±0.5%

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 106+69.44 RT	1.8%	5'	6"	6.5'	9'	6"	276.50
MAIN STREET 111+91.92 RT	-0.7%	5'	6"	6.5'	7.7'	6"	265.75
MAIN STREET 117+62.85 RT	2.7%	5'	6"	11'	6.5'	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

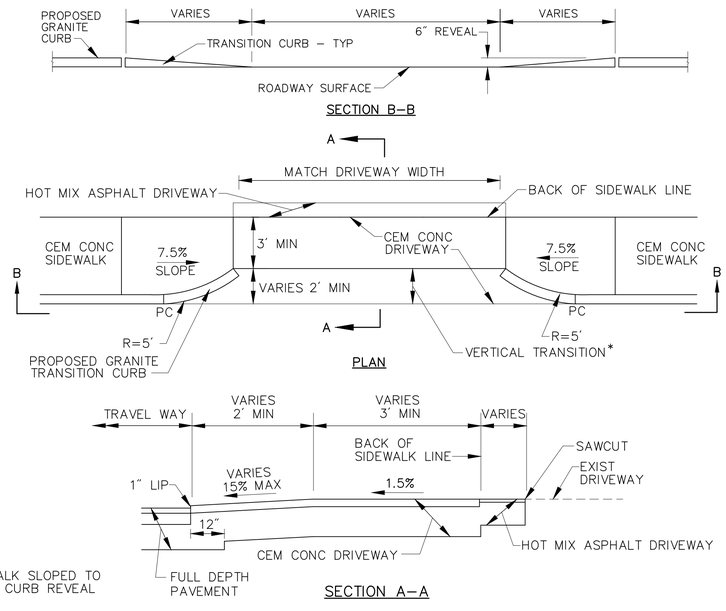


* DRIVEWAY AND SIDEWALK SLOPED TO MEET AT 1/2 OF THE CURB REVEAL

TRANSITION CURB FOR DRIVEWAYS WITH SIDEWALK							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 120+50.56 RT	4.4%	6'	6"	6.1'	11.5'	6"	283.90
MAIN STREET 121+09.71 RT	5.4%	6'	6"	6.3'	11.7'	6"	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							
BASELINE/ STATION	ROADWAY GUTTER	SIDEWALK WIDTH	LEFT SIDE REVEAL	LEFT SIDE TRANSITION	RIGHT SIDE TRANSITION	RIGHT SIDE REVEAL	℄ OPENING ELEVATION
MAIN STREET 136+44.98 RT	−2.5%	5.5'	6"	6.5'	11'	6"	313.84
MAIN STREET 139+55.54 RT	−1.0%	5.5'	6"	7.8'	7.9'	6"	304.80
MAIN STREET 145+19.27 LT	2.3%	5'	6"	7.4'	9.9'	6"	309.89
MAIN STREET 146+29.35 LT	1.6%	6'	6"	11.0'	10.6'	6"	312.11
MAIN STREET 147+02.02 LT	2.3%	6'	6"	6.3'	6.3'	6"	312.22
MAIN STREET 147+37.00 LT	2.3%	6'	6"	6.3'	11.8'	6"	313.03
MAIN STREET 148+48.15 LT	0.0%	6'	6"	6.3'	11.8'	6"	313.46
MAIN STREET 149+51.09 LT	−0.8%	6'	6"	11.0'	11.0'	6"	312.93
MAIN STREET 151+86.38 LT	0.8%	6'	6"	6.8'	6.8'	6"	312.96
MAIN STREET 154+36.10 LT	−5.0%	5'	6"	6.5'	6.7'	6"	304.84
MAIN STREET 154+91.08 LT	3.6%	5'	6"	8.1'	8.2'	6"	302.91
CORDAVILLE ROAD 707+47.37 RT	5.4%	5.5'	6"	7.3'	6.7'	6"	291.79
CORDAVILLE ROAD 711+40.90 LT	1.4%	5.5'	6"	6.5'	9'	6"	299.82

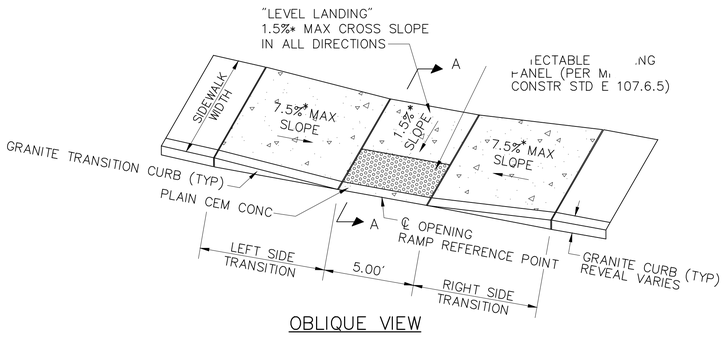
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND CURVED TRANSITION CURB

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

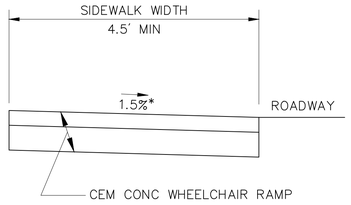
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	96	156
PROJECT FILE NO. 604989			

WHEELCHAIR RAMP DETAILS



OBLIQUE VIEW



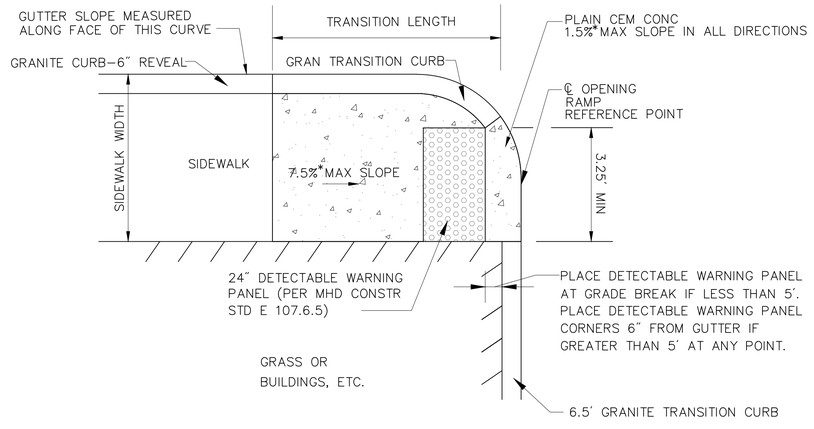
SECTION A–A

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
4	MAIN STREET 114+87.03, 23.14' RT	5.8'	−8.1%	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"	9'0"	317.47
11	MAIN STREET 134+66.37, 22.75' RT	5.5'	−1.8%	6"	6'6"	6"	9'0"	317.09
24	MAIN STREET 141+76.94, 25.49' LT	5.5'	0.4%	6"	7'8"	6"	6'6"	304.84
25	CORDAVILLE ROAD 710+38.96, 24.36' LT	5.5'	3.1%	6"	6'6"	6"	14'0"	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

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'	9.8%	6"	6'6"	268.32
2	MAIN STREET 110+72.08, 21.23' RT	5.0'	0.6%	6"	6'6"	266.61
3	MAIN STREET 114+39.26, 21.07' RT	7.7'	1.7%	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:

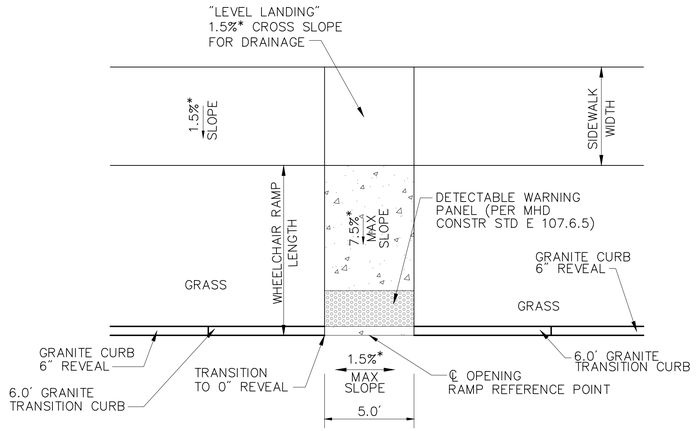
1. DETECTABLE WARNING PANELS ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED WHEELCHAIR RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MHD CONSTRUCTION STANDARD E 107.6.5.
2. PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. THERE MUST BE A MINIMUM 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)

WHEELCHAIR RAMP DETAILS

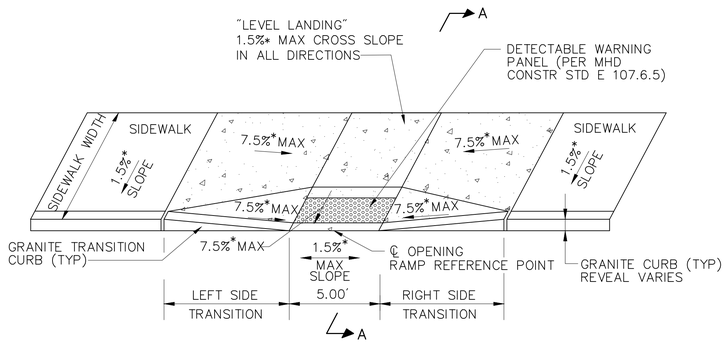


* TOLERANCE FOR CONSTRUCTION ±0.5%

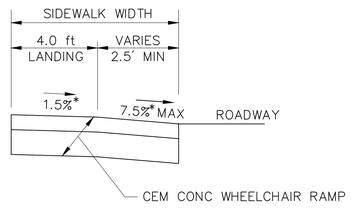
WHEELCHAIR RAMP WITH GRASS ADJACENT ON BOTH SIDES

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
15	MAIN STREET 139+30.57, 15.00' LT	5.0'	6"	--	6"	--	305.62
16	MAIN STREET 139+30.13, 15.00' RT	5.5'	3"	--	3"	--	305.19
22	COMMON STREET 33+25.02, 7.77' RT	5.0'	6"	--	6"	--	306.08
23	COMMON STREET 33+38.14, 10.61' LT	5.0'	6"	--	6"	--	305.71
29	MAIN STREET 142+86.01, 25.00' LT	5.0'	6"	--	6"	--	305.86
33	CORDAVILLE ROAD 705+73.43, 15.19' LT	5.0'	6"	--	6"	--	282.85
34	MAIN STREET 149+07.51, 15.00' LT	6.0'	6"	--	6"	--	313.02
36	MAIN STREET 152+41.68, 16.74' LT	6.0'	6"	--	6"	--	313.01
37	MAIN STREET 152+47.39, 15.00' RT	6.0'	6"	--	6"	--	312.44
41	MAIN STREET 153+37.13, 30.58' RT	6.0'	6"	--	6"	--	310.18
43	MAIN STREET 154+64.30, 15.00' LT	5.0'	6"	--	6"	--	303.63



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"	7'8"	6"	6'6"	316.47
40	MAIN STREET 153+05.59, 32.08' RT	5.5'	3.3%	6"	6'6"	6"	11'0"	311.44
44	MAIN STREET 154+74.96, 16.59' RT	9.7'	-3.6%	6"	6'6"	6"	6'6"	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

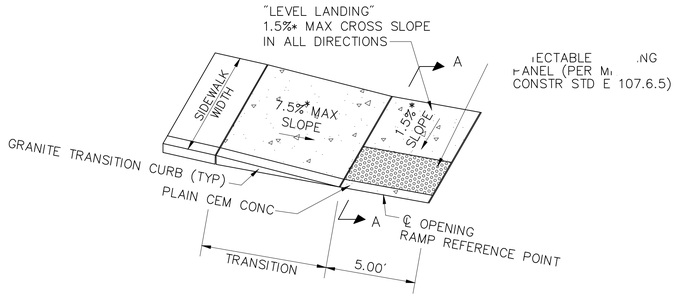
LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

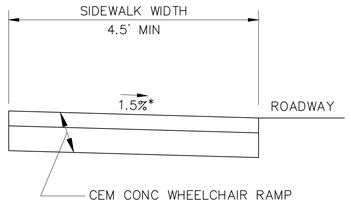
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	98	156
PROJECT FILE NO. 604989			

WHEELCHAIR RAMP DETAILS



OBLIQUE VIEW



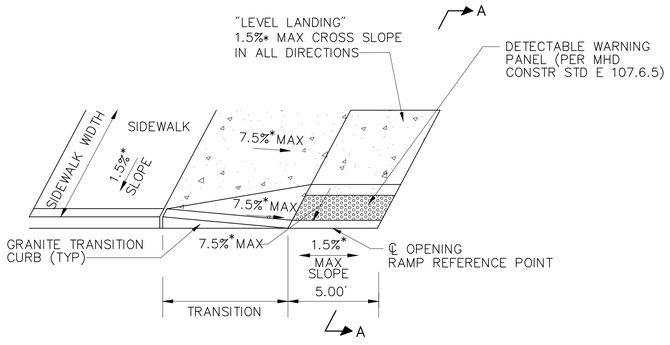
SECTION A–A

* TOLERANCE FOR CONSTRUCTION ±0.5%

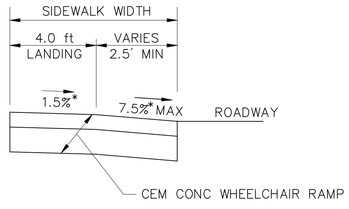
WHEELCHAIR RAMP DATA								
NO.	LOCATION	SIDEWALK WIDTH	ROADWAY GUTTER	LEFT REVEAL	LEFT TRANSITION	RIGHT REVEAL	RIGHT TRANSITION	℄ OPENING ELEVATION
5	MAIN STREET 131+10.81, 15.00' LT	5.5'	-0.9%	6"	--	6"	6'6"	317.76
8	MAIN STREET 131+63.67, 32.47' RT	5.5'	1.8%	6"	9'0"	6"	--	317.11
18	ST. MARKS STREET 7+18.17, 13.98' LT	5.5'	3.3%	6"	11'0"	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'	4.3%	6"	--	6"	9'0"	305.03
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'	2.5%	6"	7'8"	6"	--	302.15

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"	14'0"	6"	--	282.57
42	PARK STREET 60+35.86, 16.58' RT	7.9'	7.2%	6"	--	6"	9'0"	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

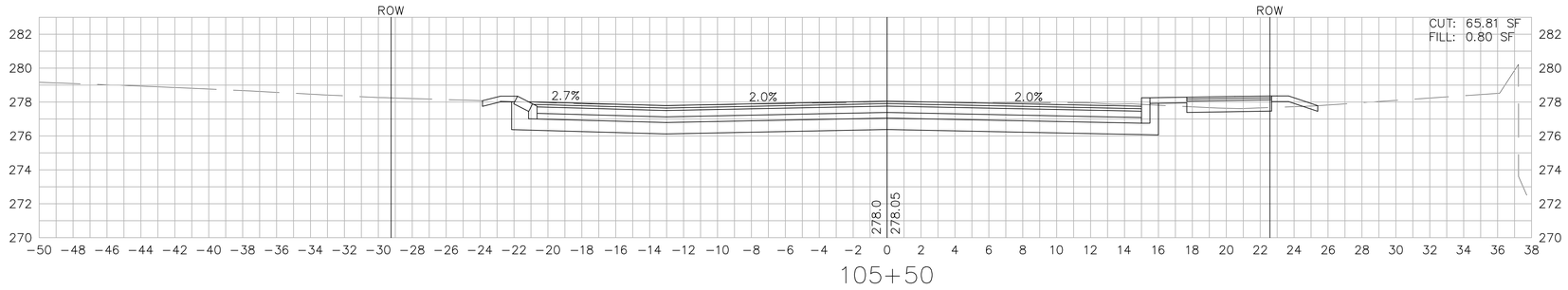
LIMITS OF CEMENT CONCRETE WHEELCHAIR RAMP

LIMITS OF DETECTABLE WARNING PANEL (SEE SPECIFICATIONS FOR COLOR)

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

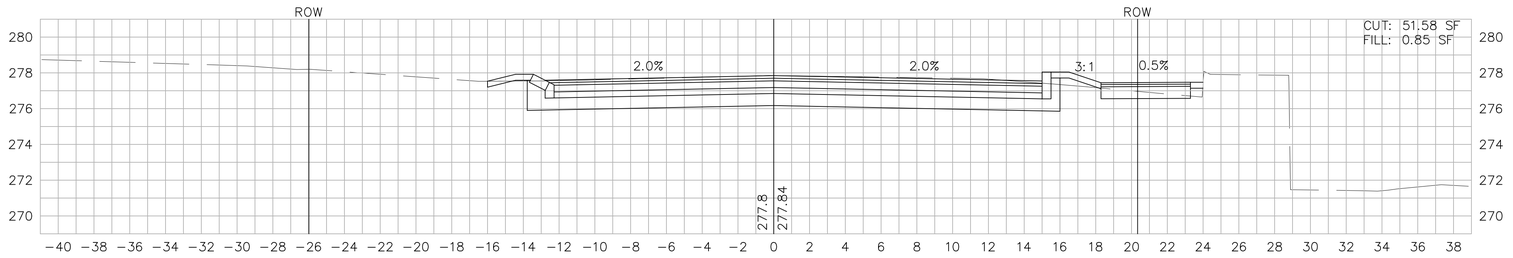
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	99	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

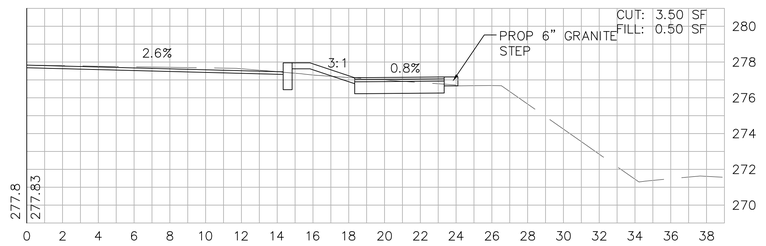


105+50

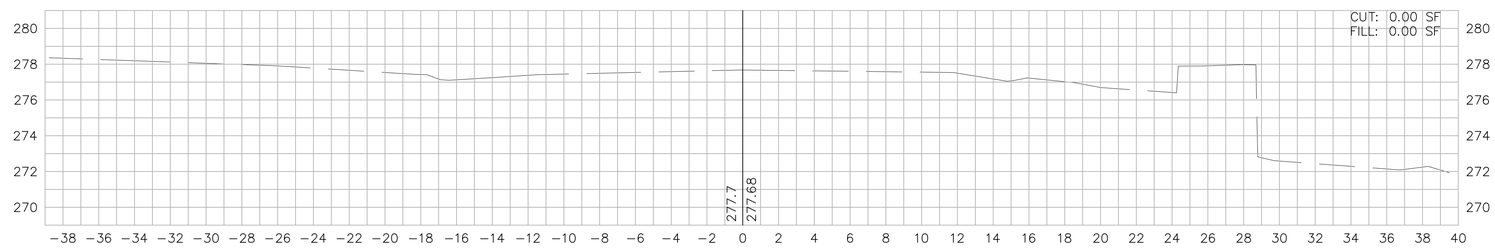
UP #53
105+43
24.6' LT



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)

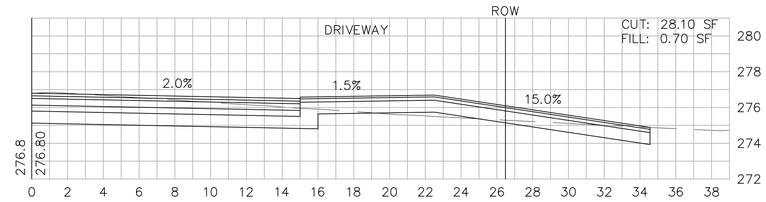
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	100	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

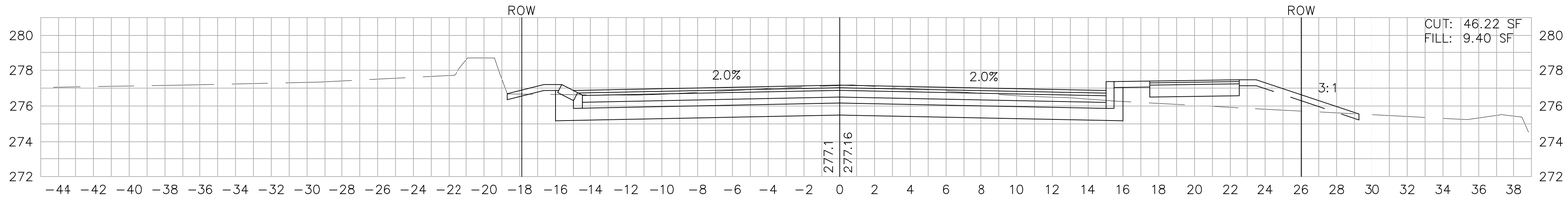
EX HYD
110+71
14.4' LT

UP #52
106+83
17.8' RT

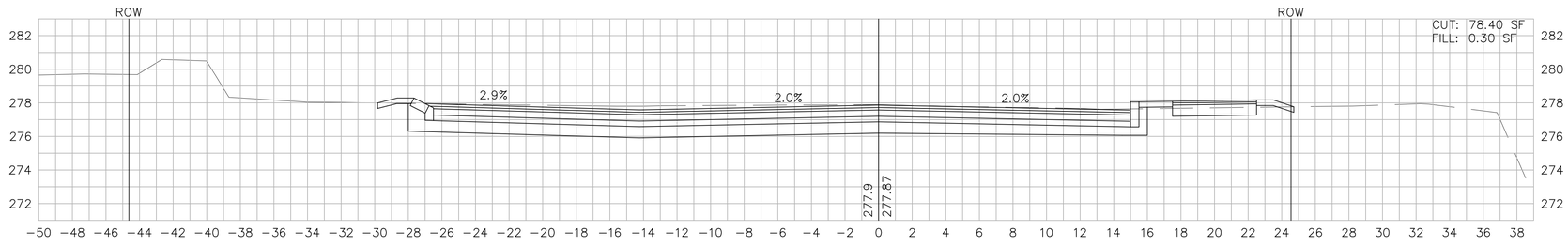
UP
106+85
18.0' RT



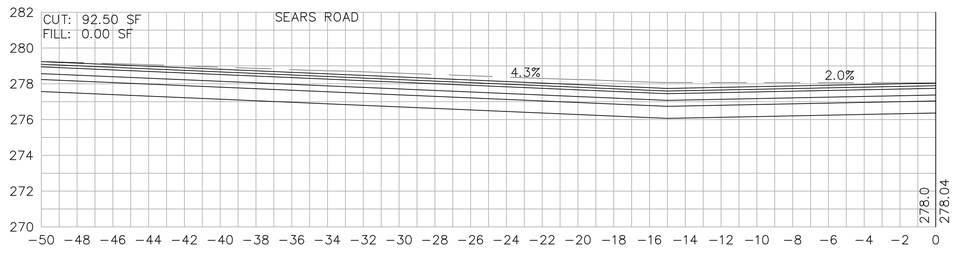
106+70



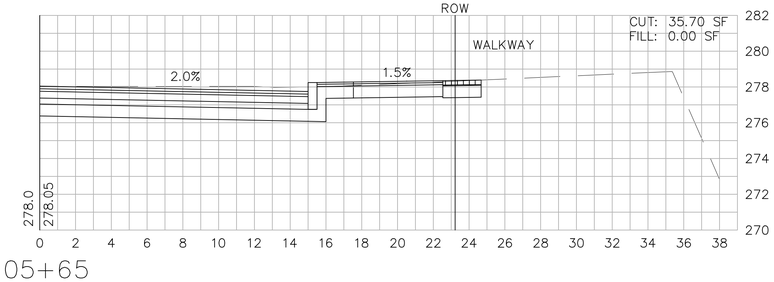
106+50



106+00



105+70



105+65

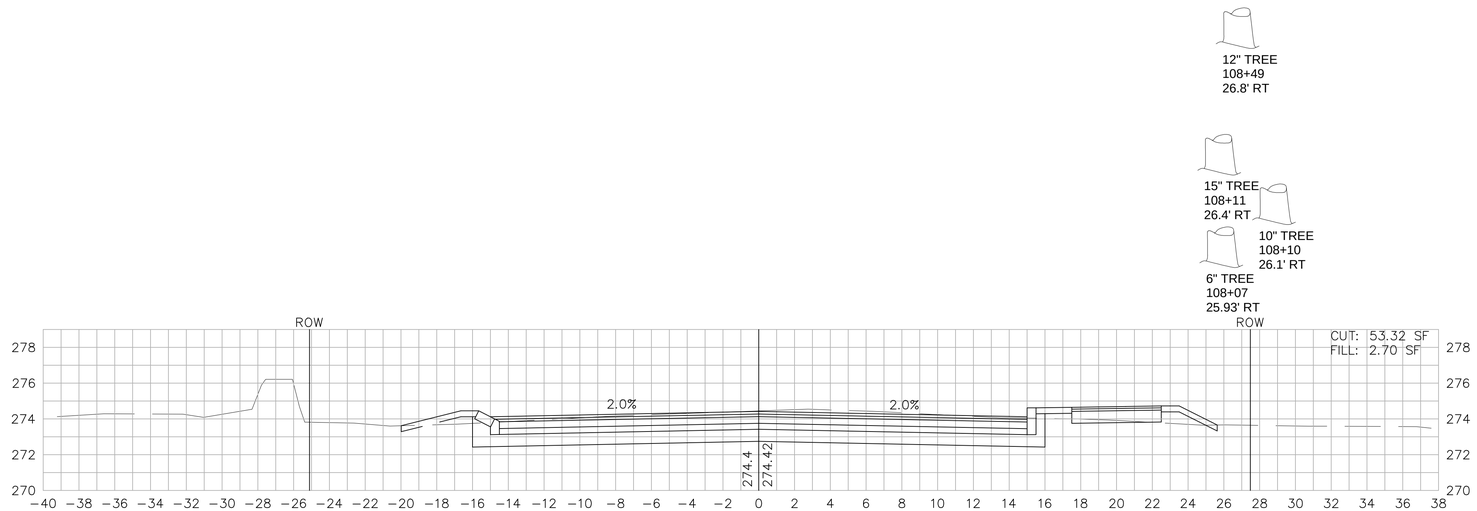
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

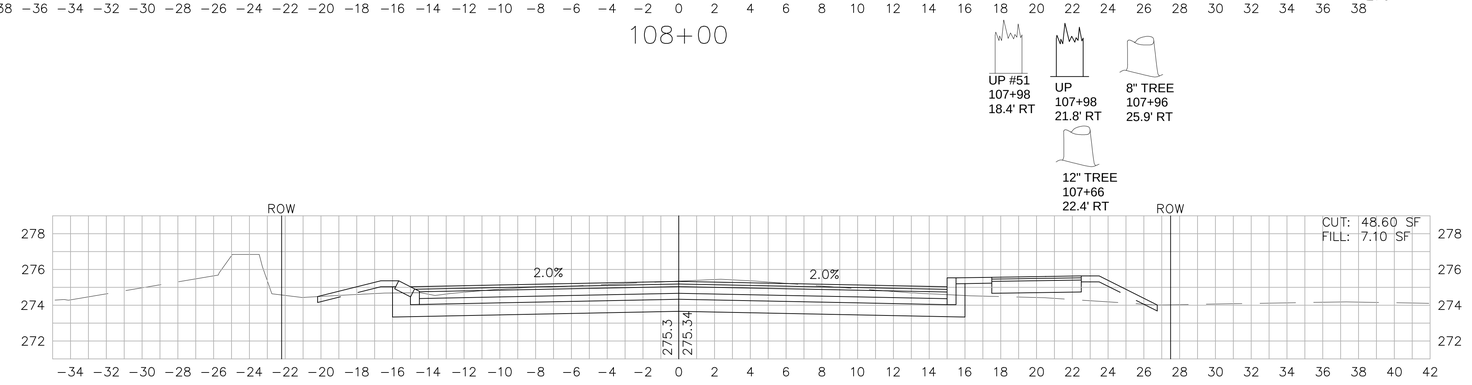
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

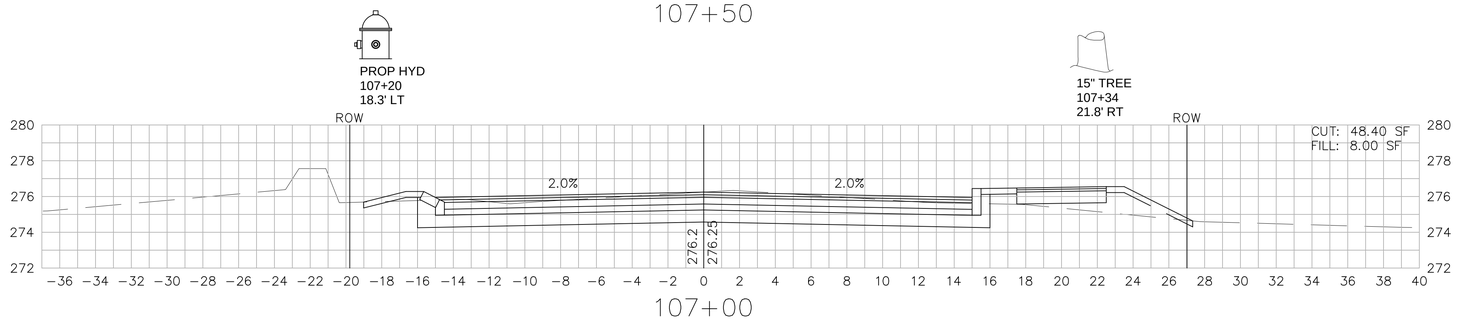
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

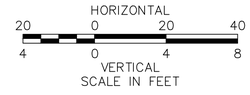
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	101	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET







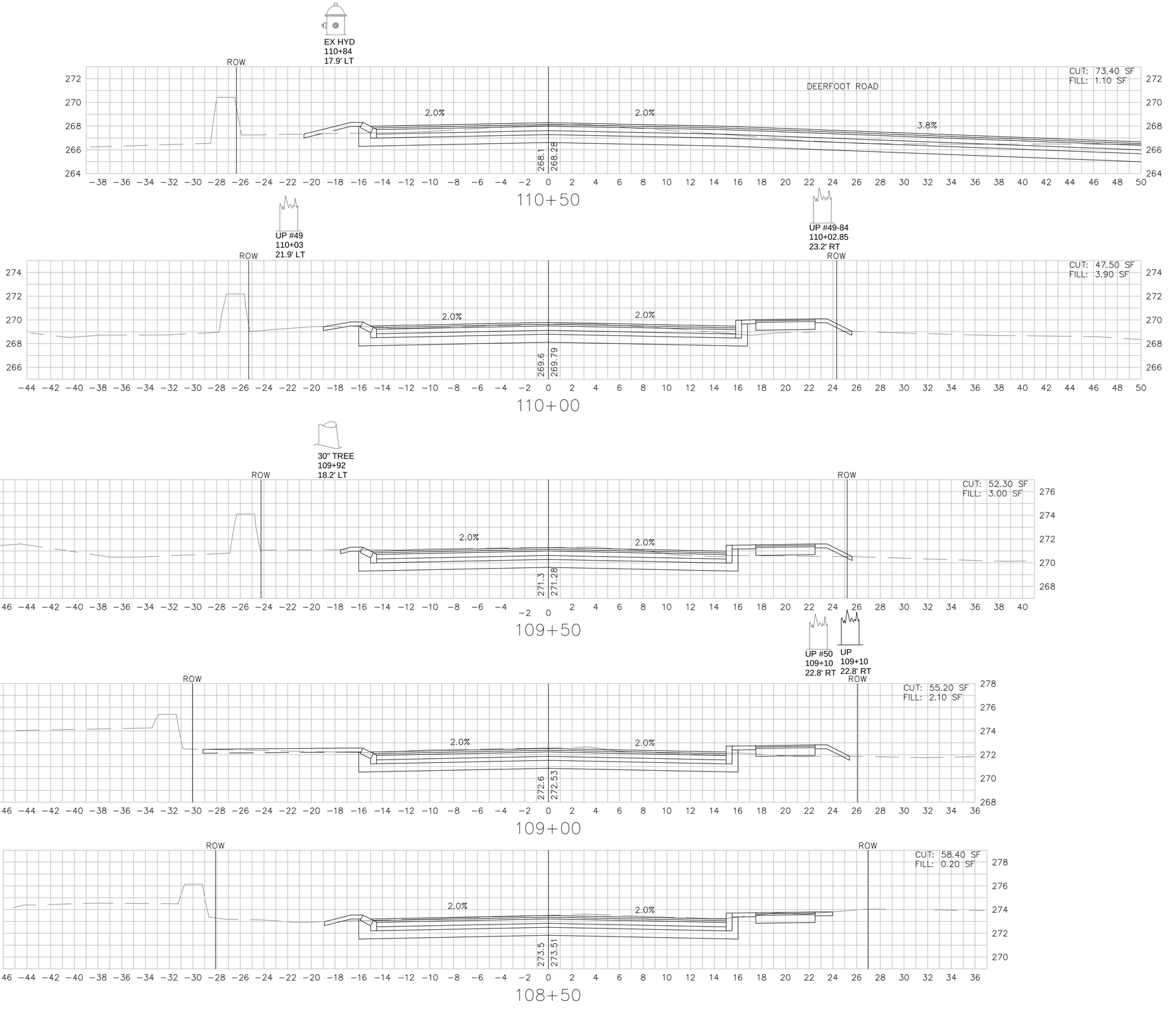


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	102	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET



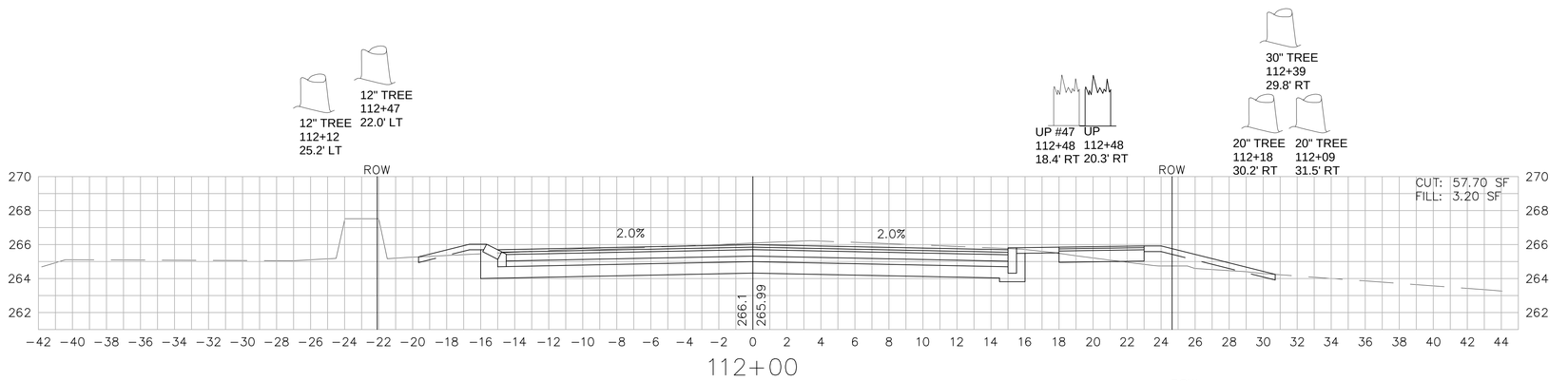
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

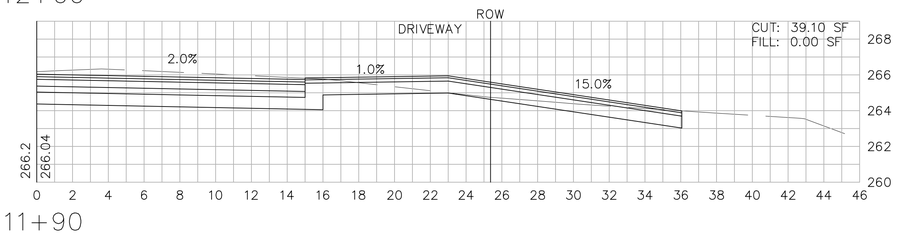
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

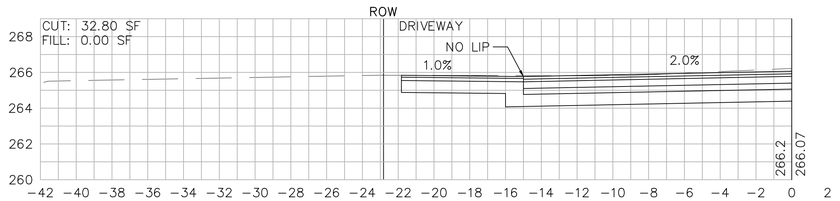
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

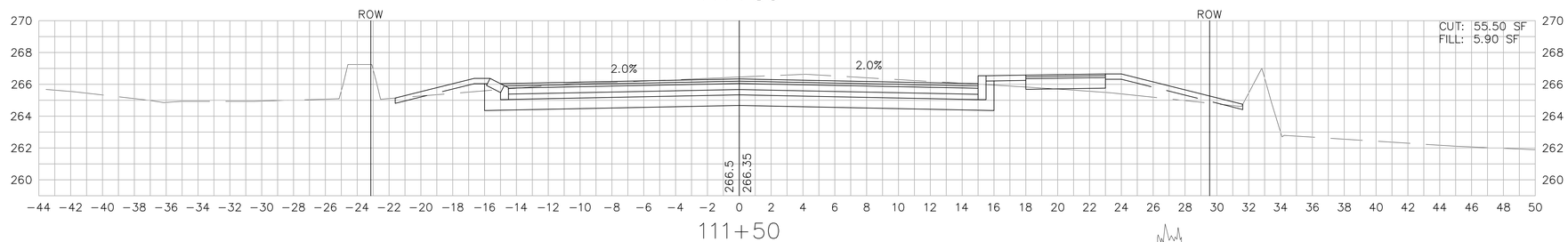
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	103	156
PROJECT FILE NO. 604989			

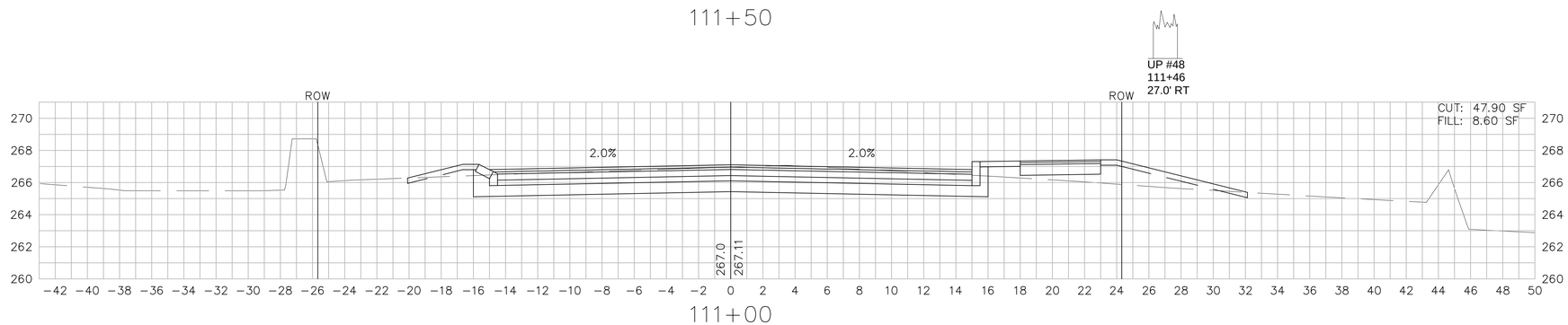
CROSS SECTIONS MAIN STREET











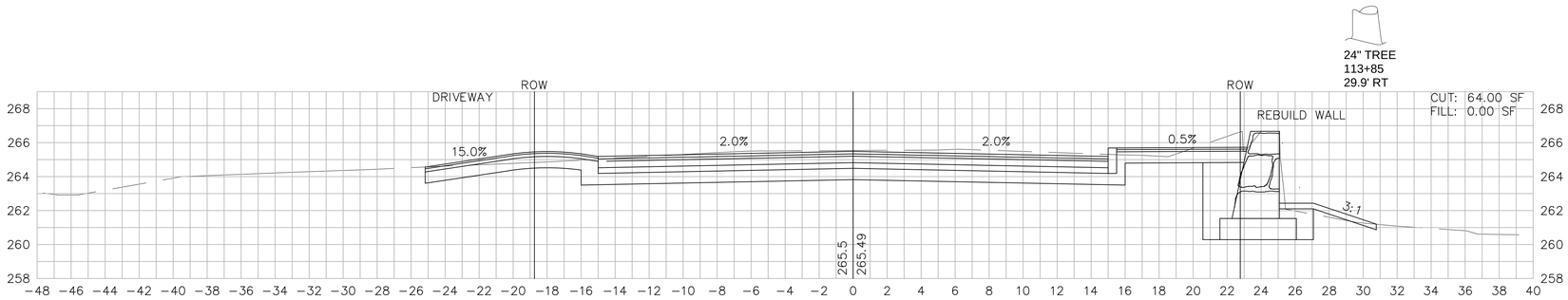
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

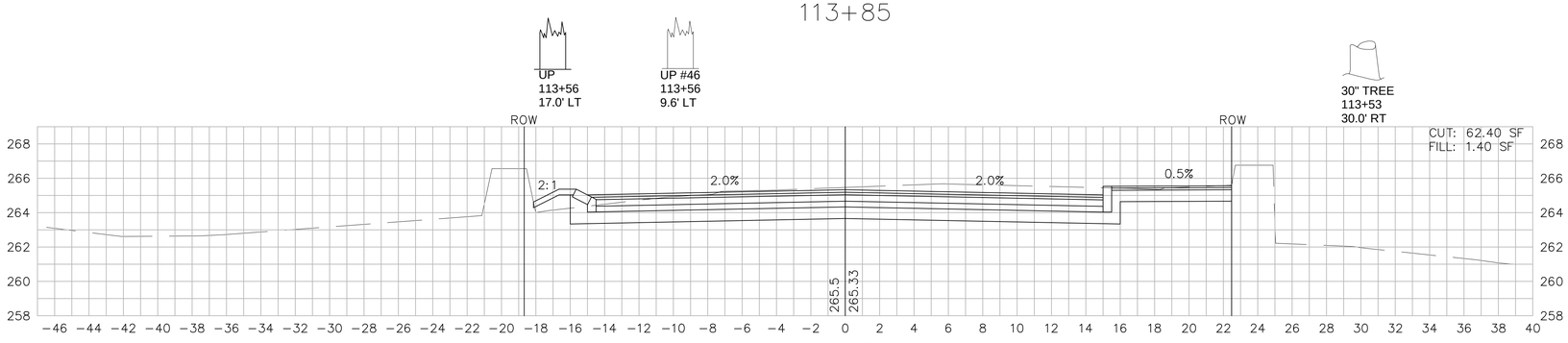
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	104	156
PROJECT FILE NO. 604989			

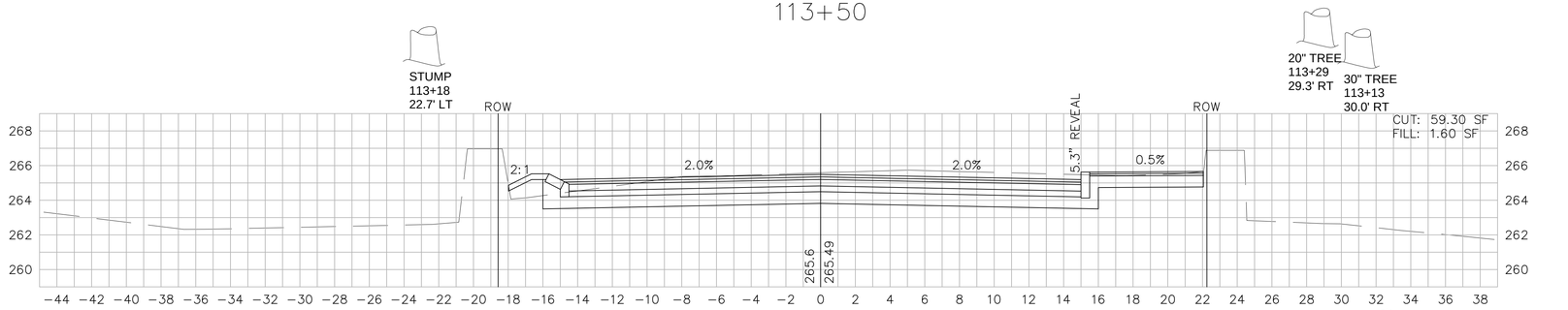
CROSS SECTIONS
MAIN STREET



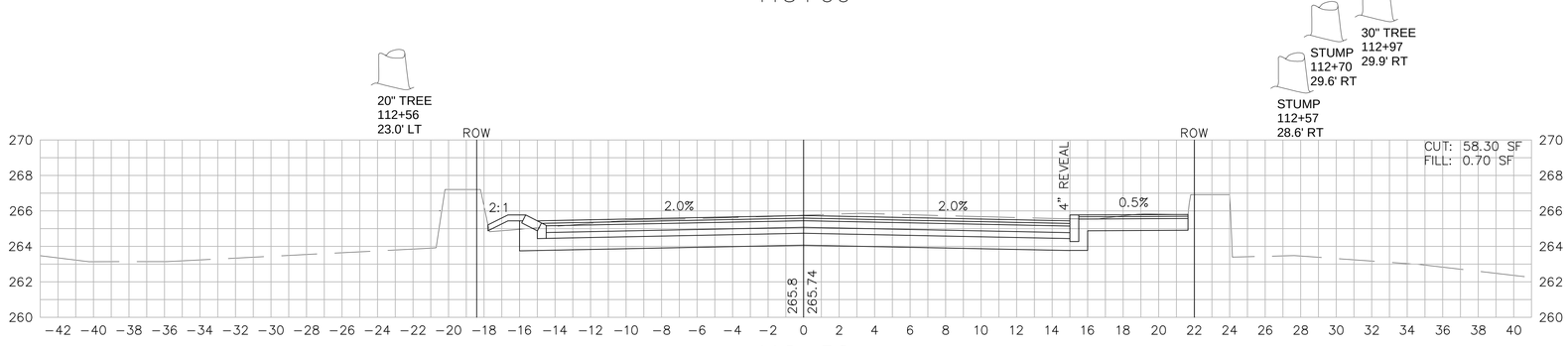
113+85



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)

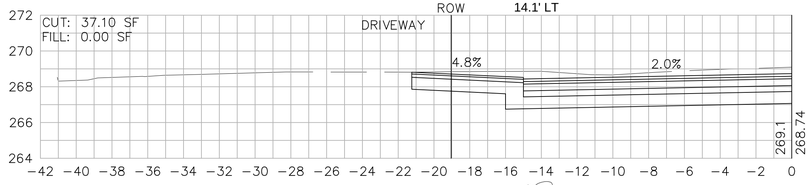
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	105	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

PROP HYD
115+37
17.6' RT

EX HYD
115+37
17.7' RT

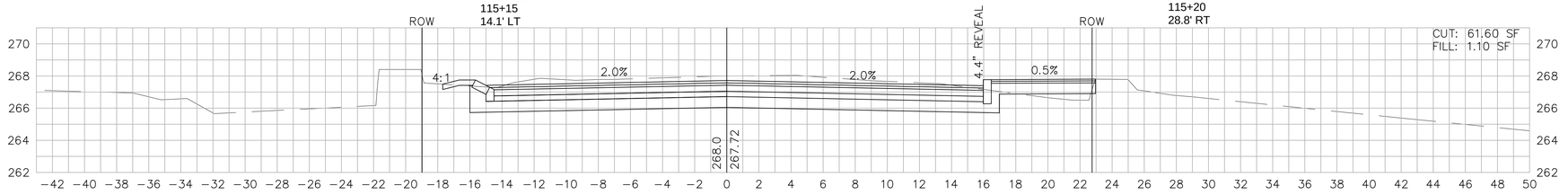
18" TREE
115+46
14.1' LT



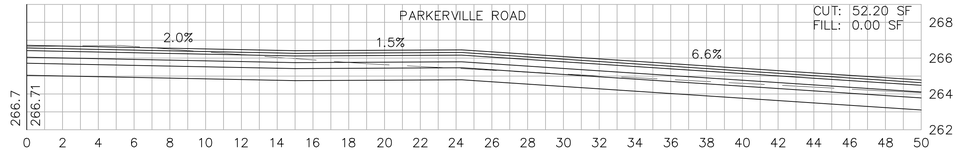
115+30

20" TREE
115+15
14.1' LT

STUMP
115+20
28.8' RT



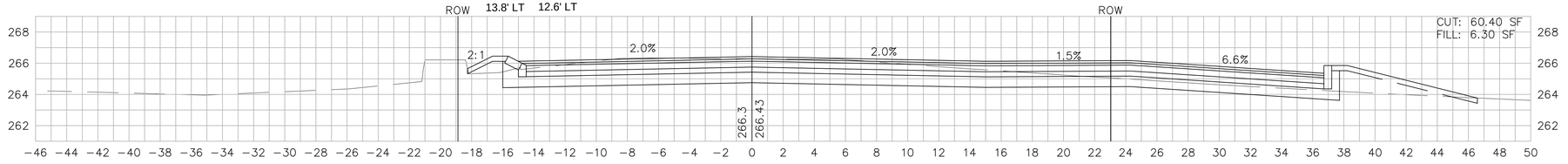
115+00



114+63

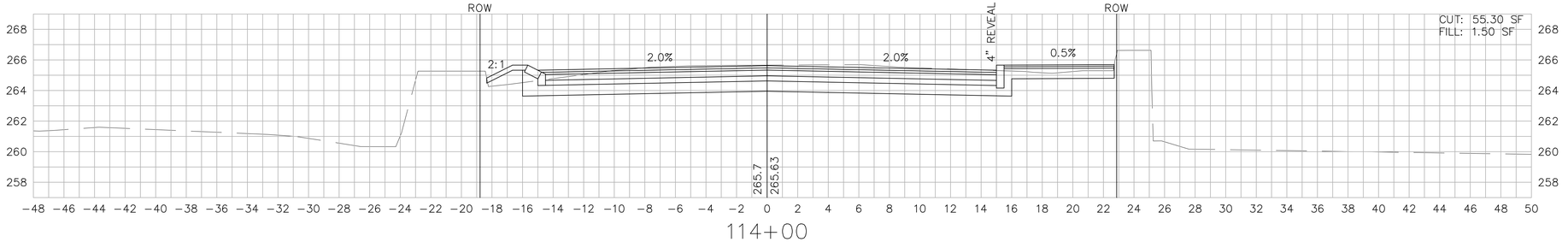
24" TREE
114+83
13.8' LT

UP #45
114+60
12.6' LT



114+50

UP
114+48
17.0' LT



114+00

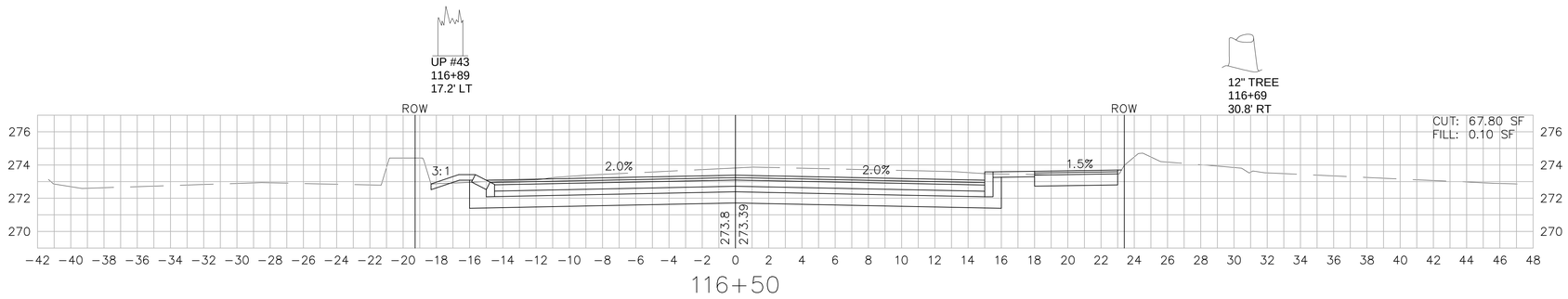
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

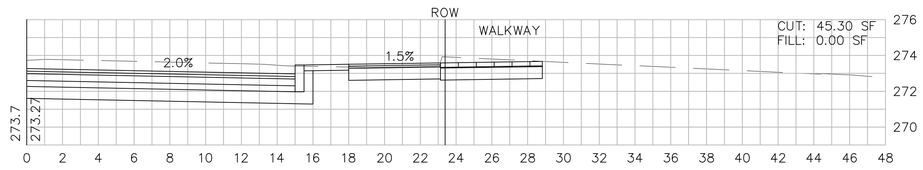
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	106	156
PROJECT FILE NO. 604989			

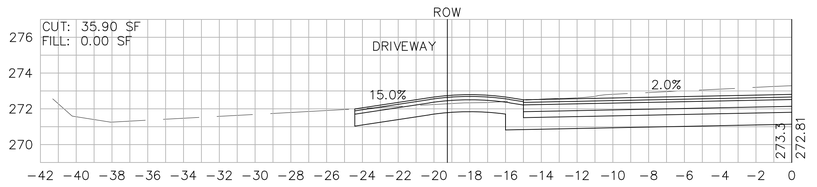
CROSS SECTIONS
MAIN STREET



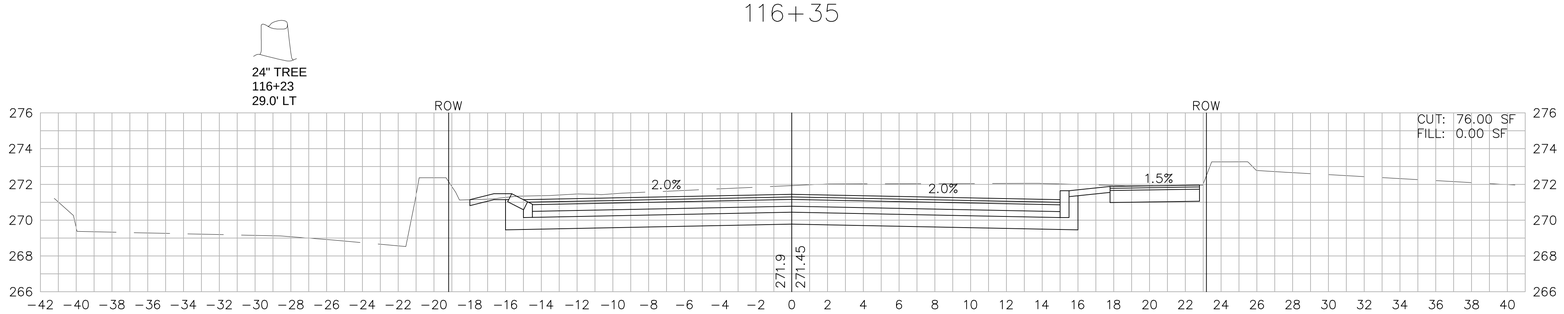
116+50



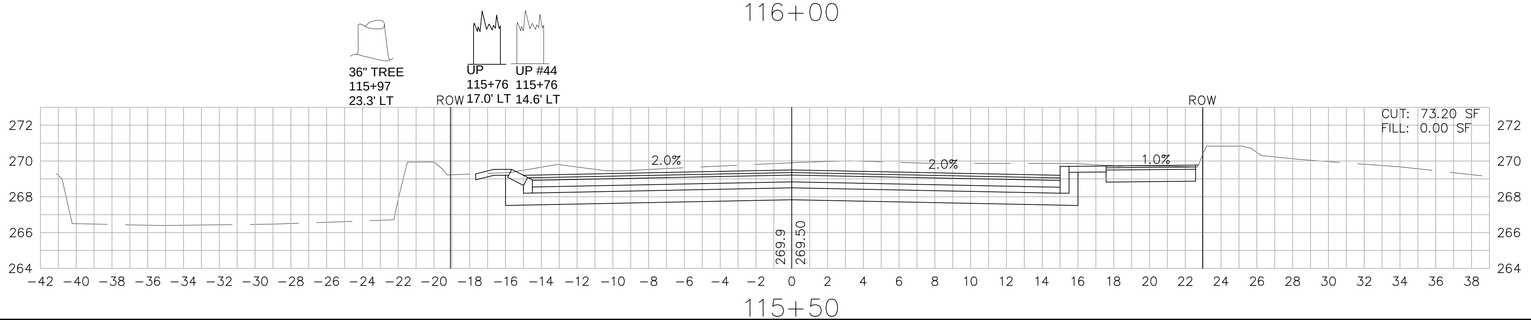
116+47



116+35



116+00



115+50

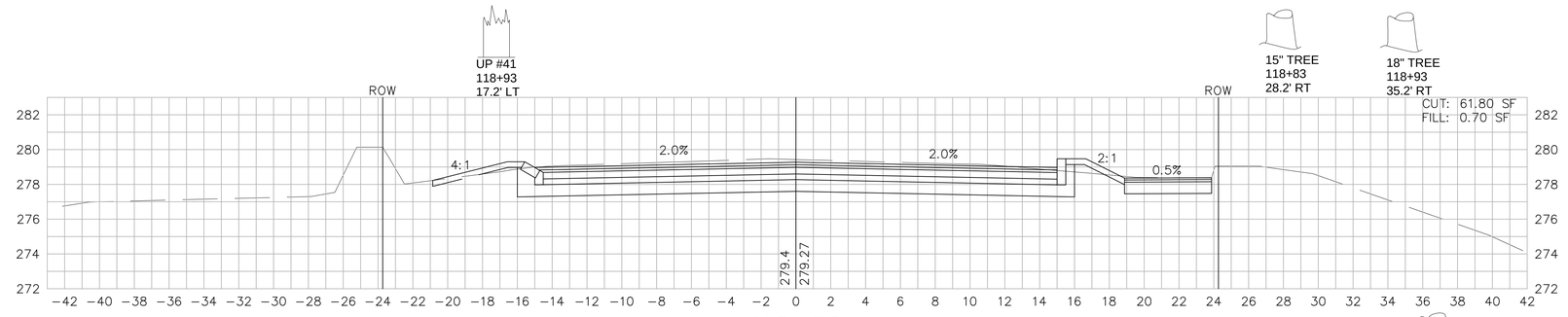
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

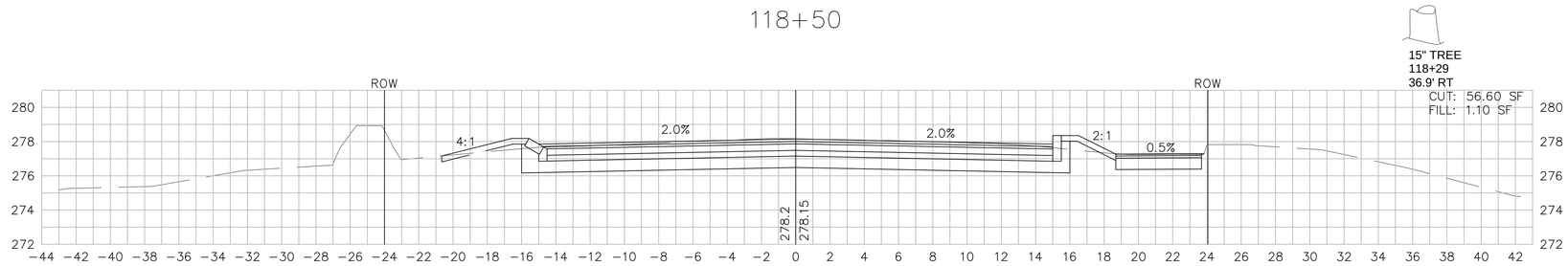
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	107	156
PROJECT FILE NO. 604989			

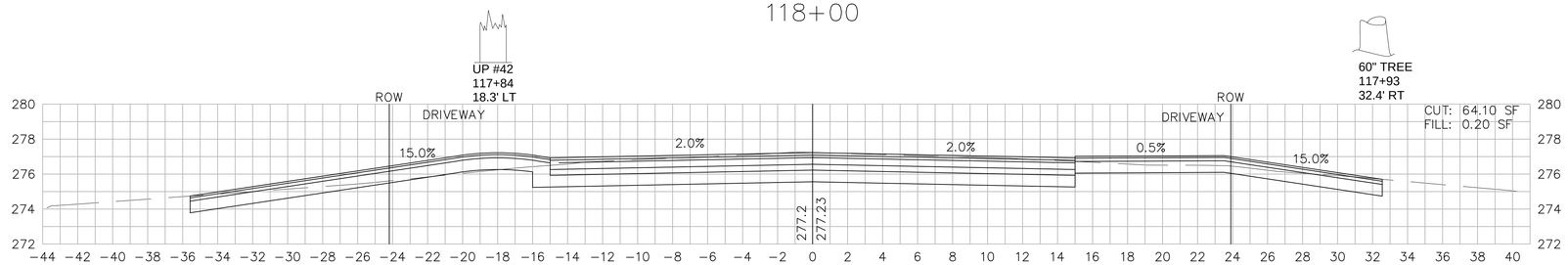
CROSS SECTIONS
MAIN STREET



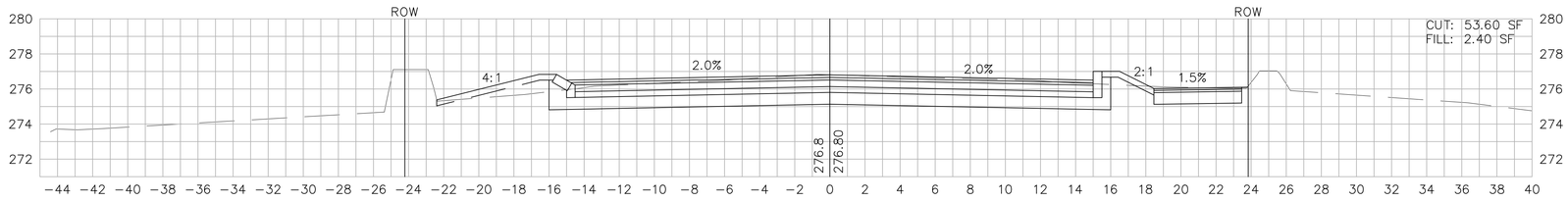
118+50



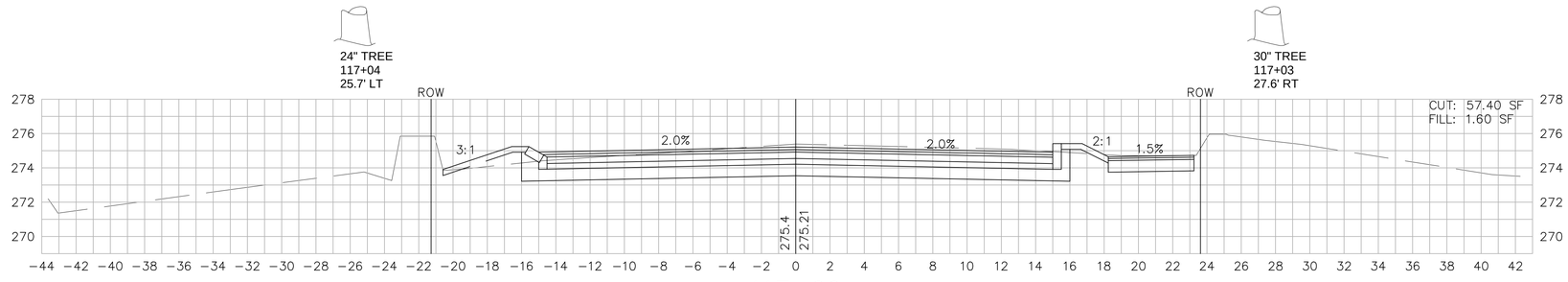
118+00



117+65



117+50



117+00

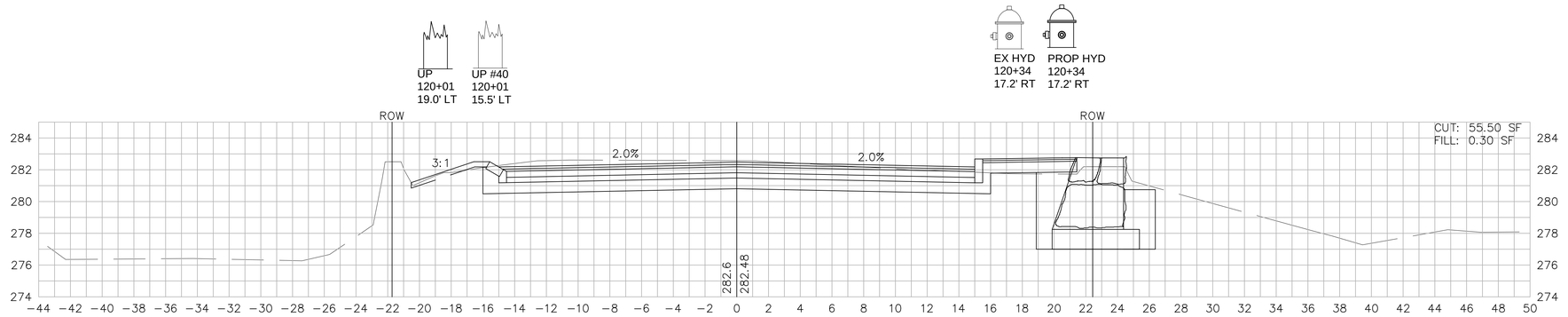
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

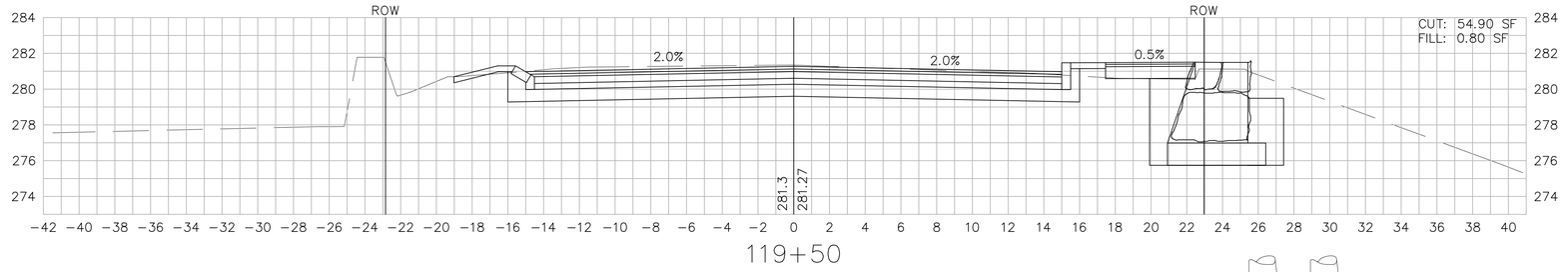
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

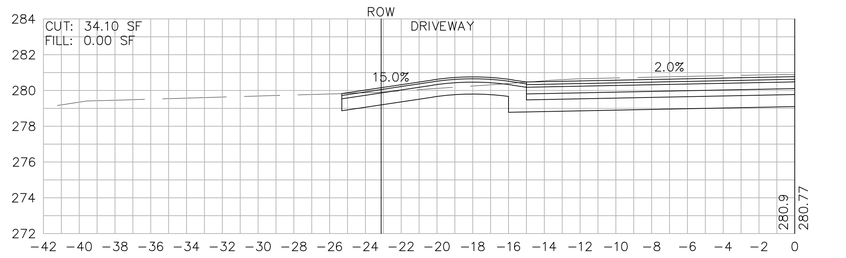
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

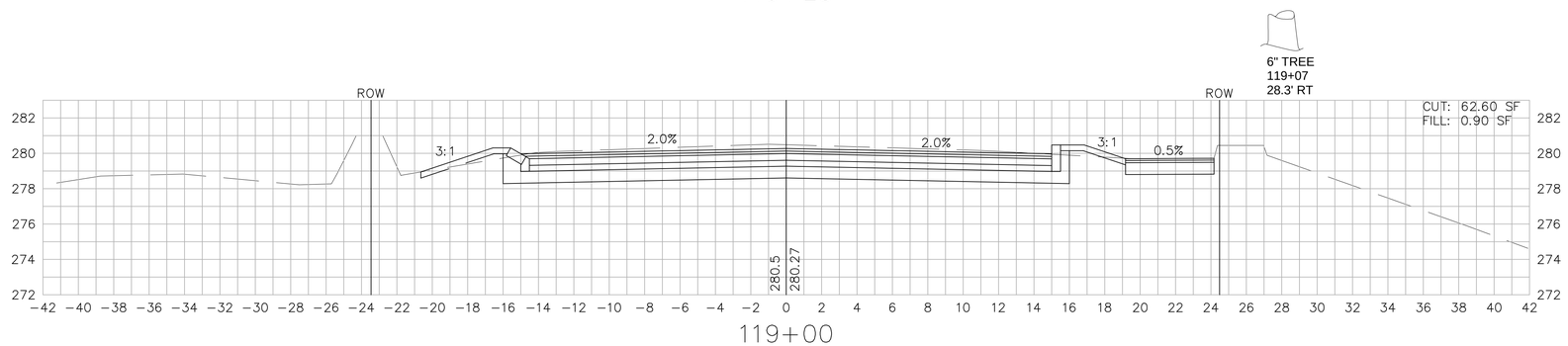
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	108	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET







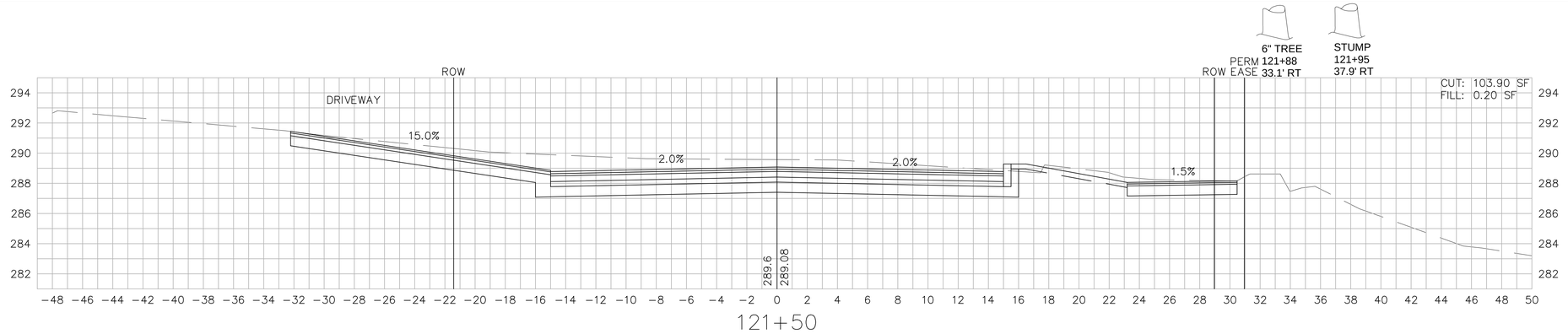


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

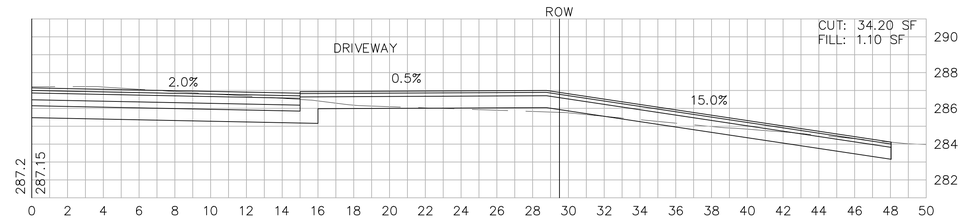
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	109	156
PROJECT FILE NO. 604989			

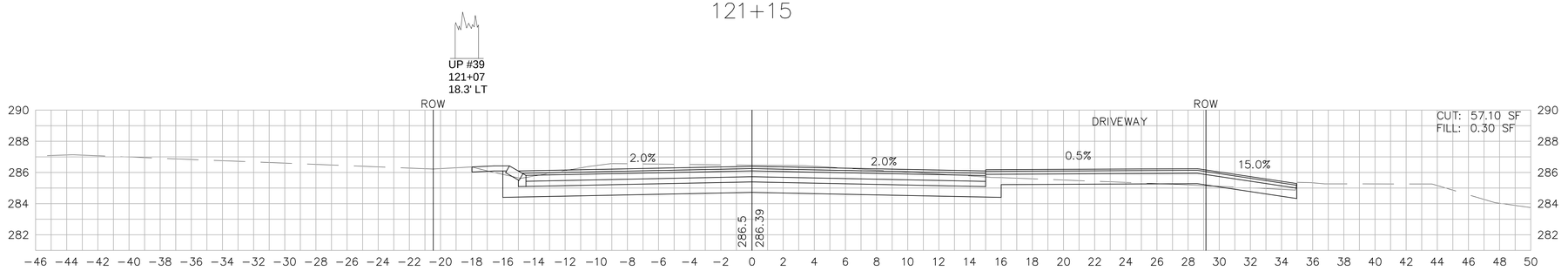
CROSS SECTIONS MAIN STREET



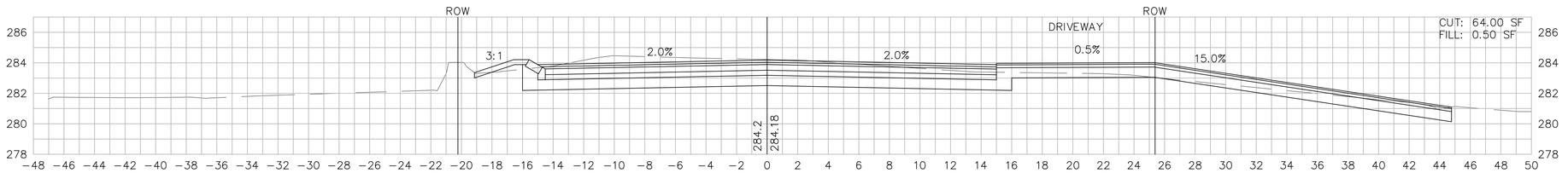
121+50



121+15



121+00



120+50

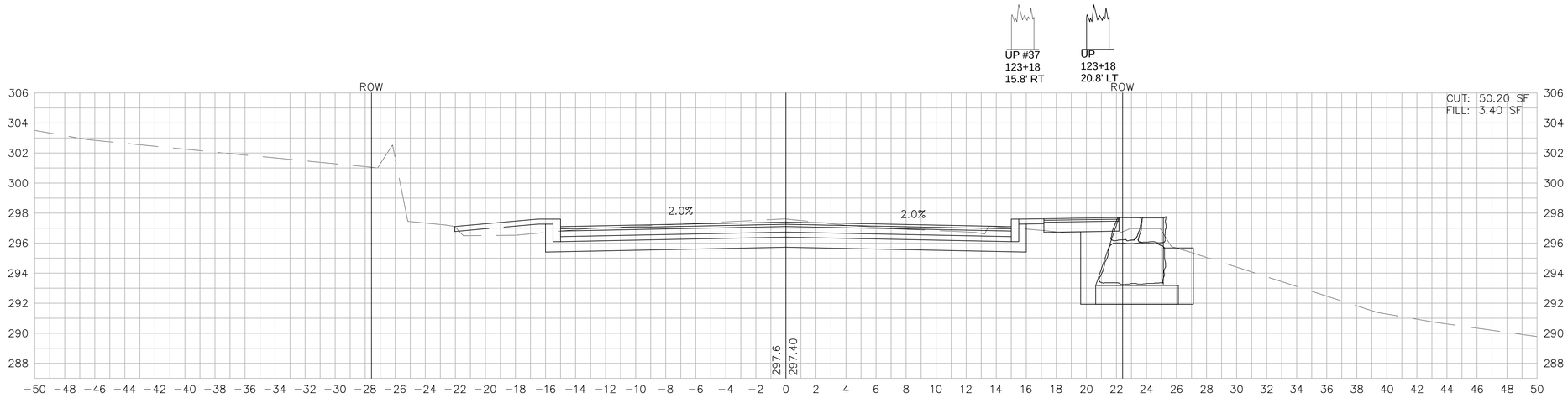
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

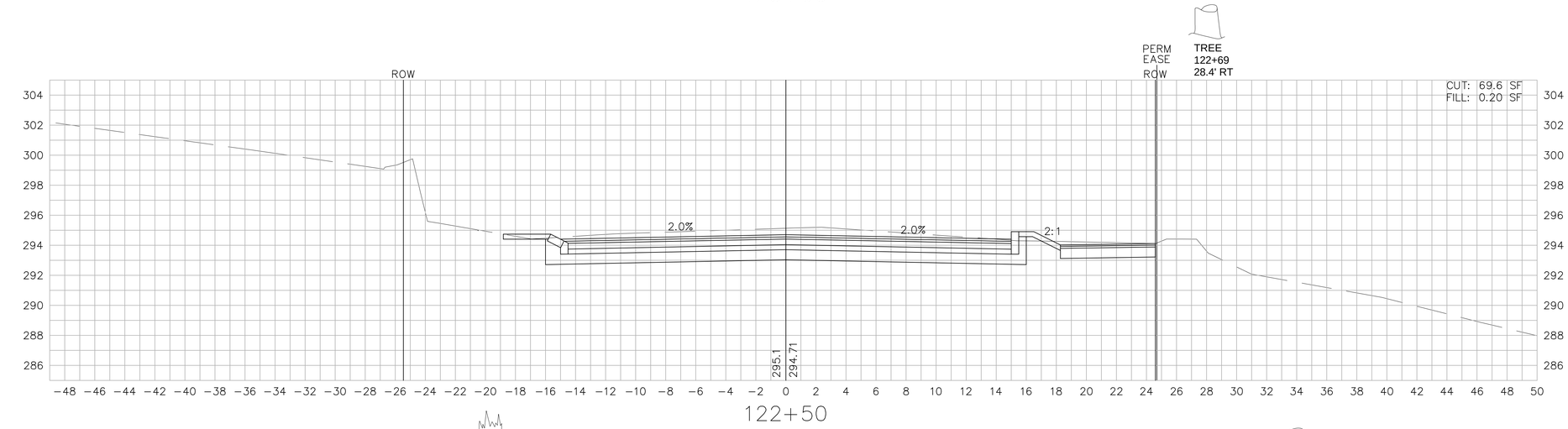
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

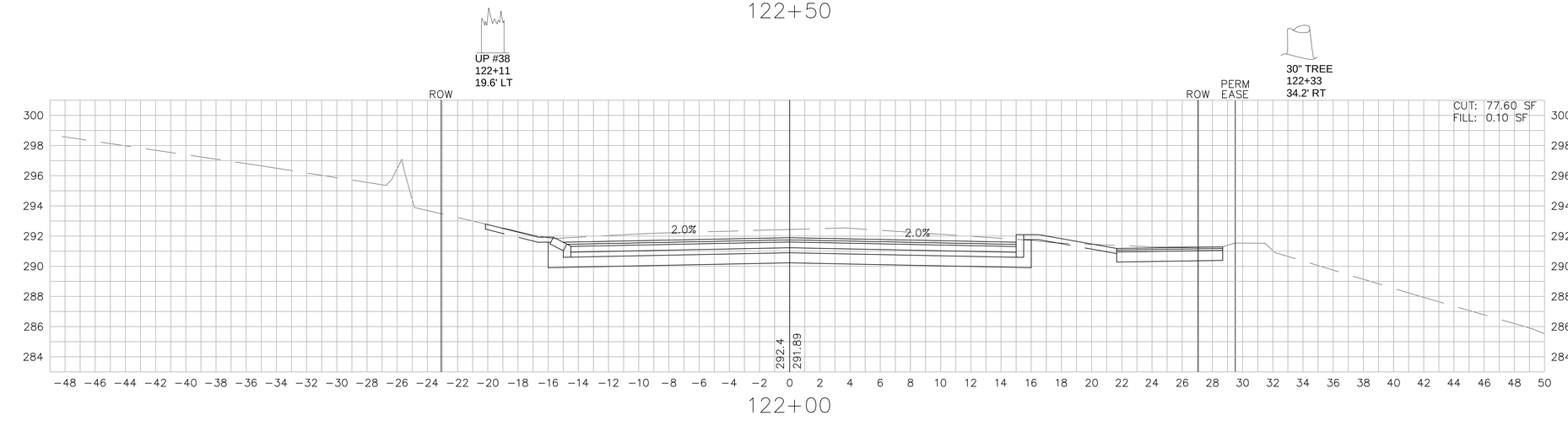
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	110	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET







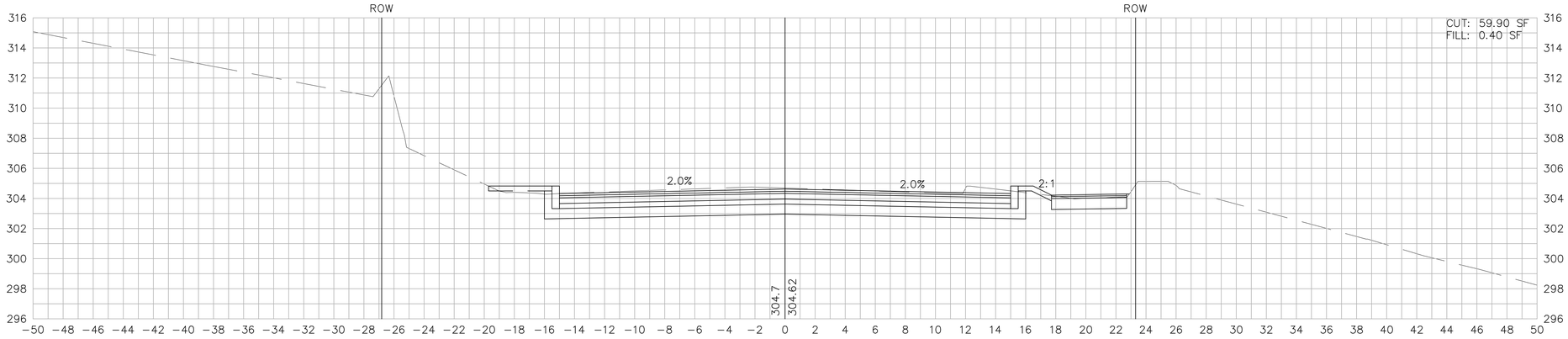
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	111	156
PROJECT FILE NO. 604989			

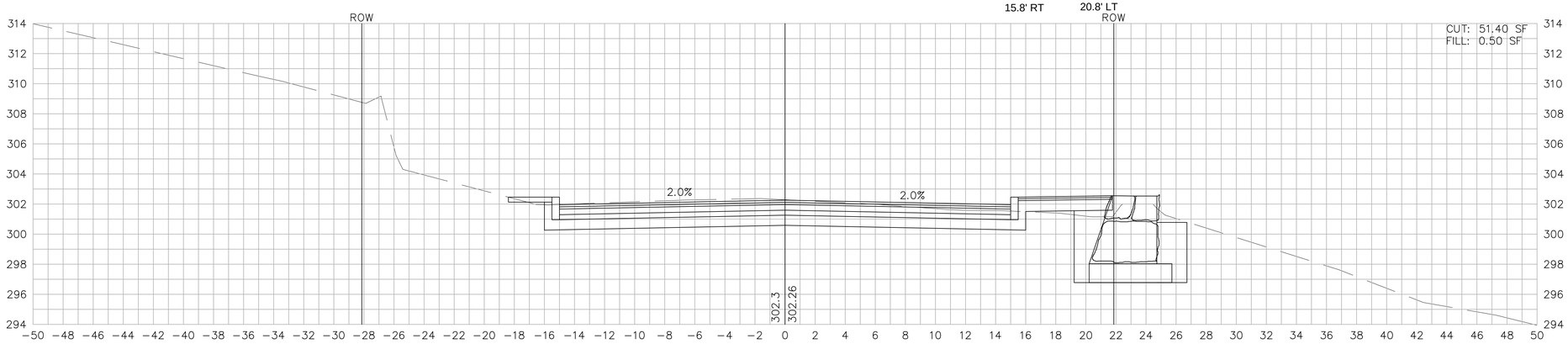
CROSS SECTIONS
MAIN STREET



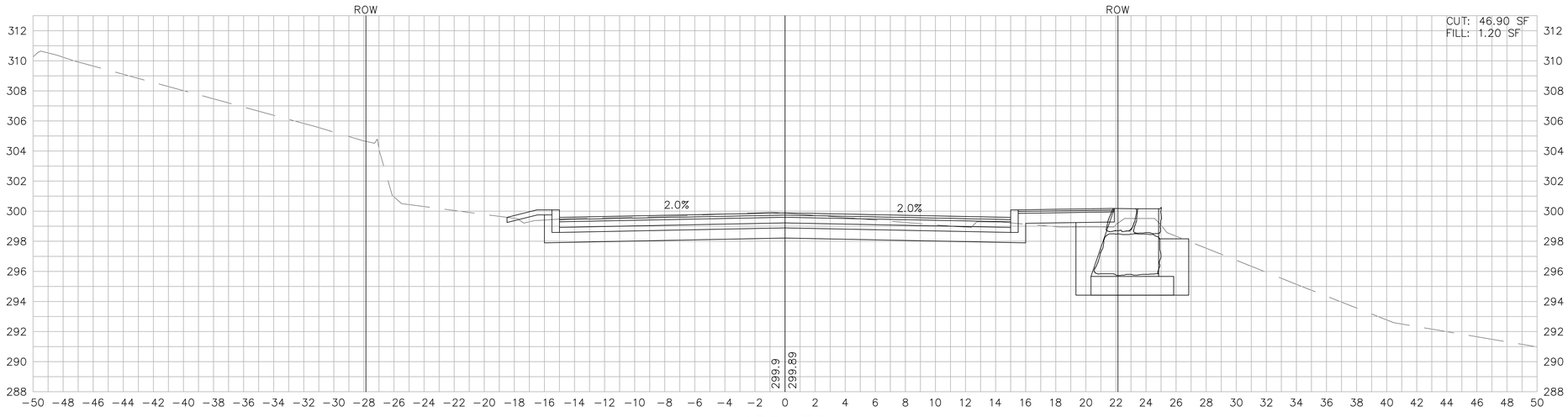
124+50

UP #36
124+27
15.8' RT

UP
124+27
20.8' LT



124+00



123+50

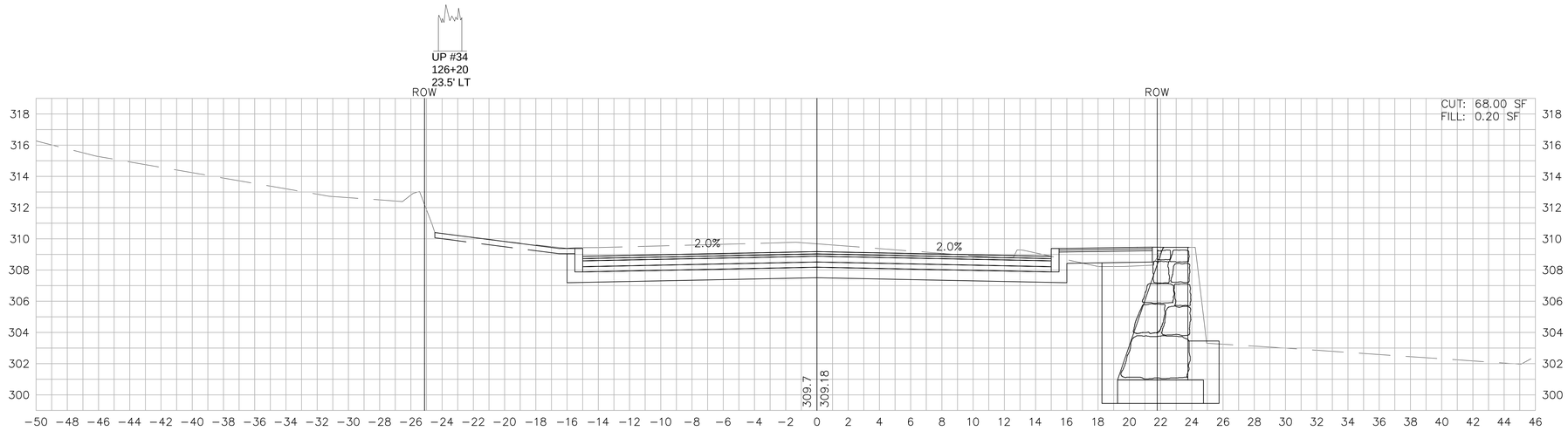
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

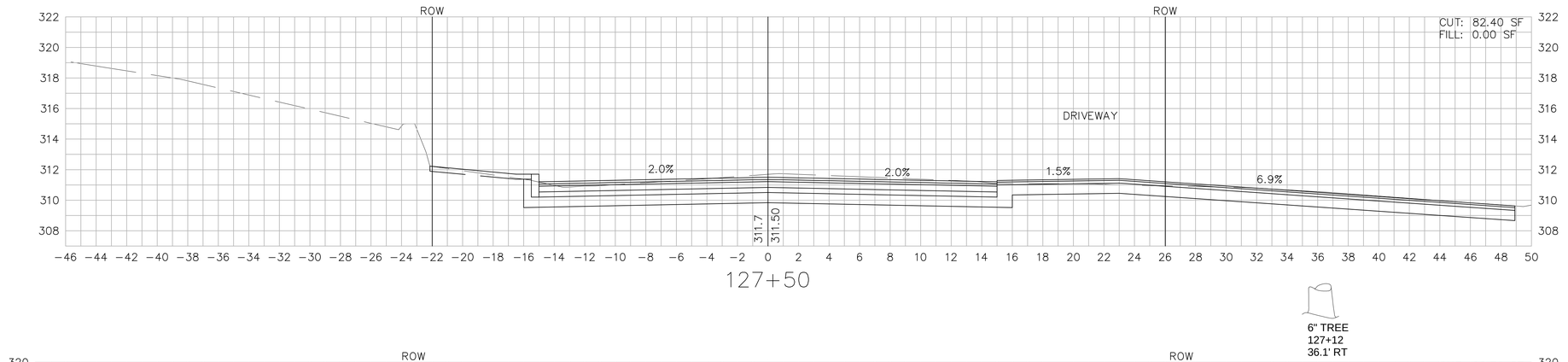
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	112	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

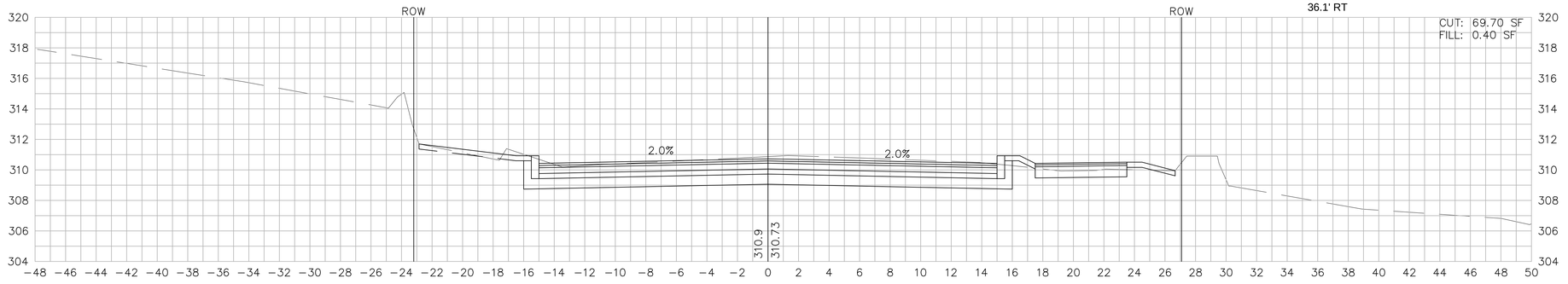


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET



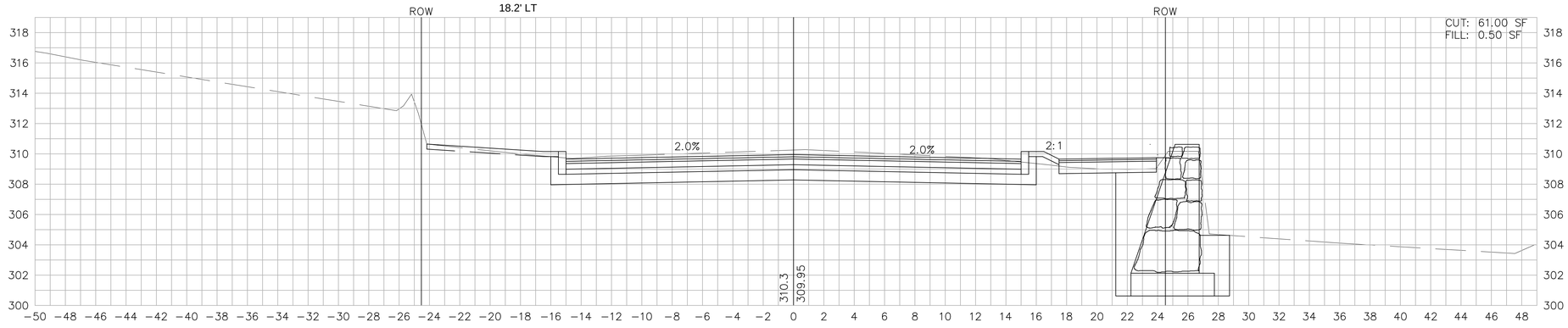
127+50

6" TREE
127+12
36.1' RT



127+00

UP #33
126+95
18.2' LT



126+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.	--	113	156
PROJECT FILE NO. 604989			

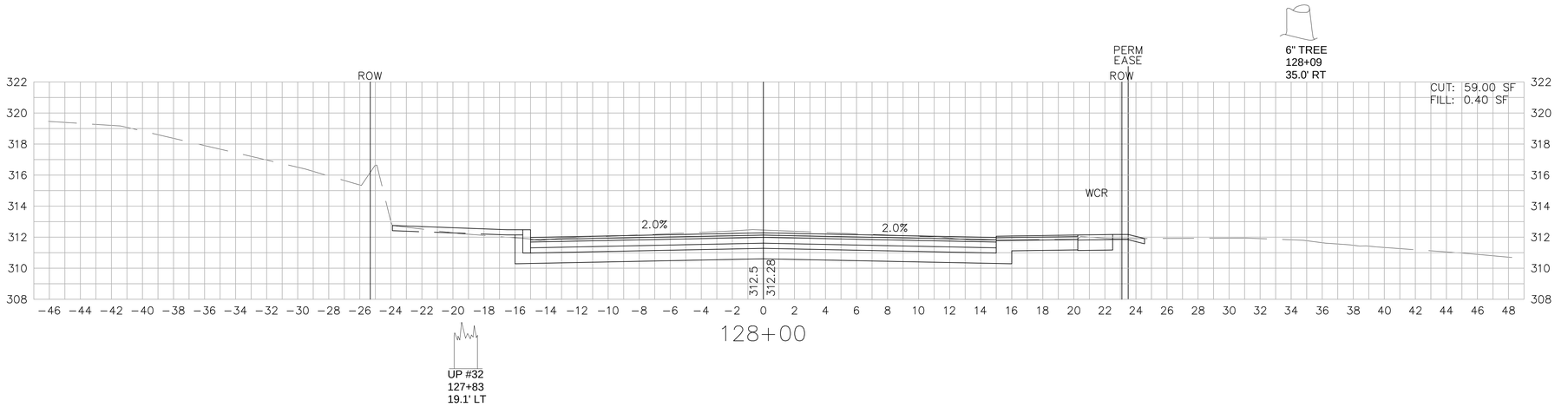
CROSS SECTIONS
MAIN STREET

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

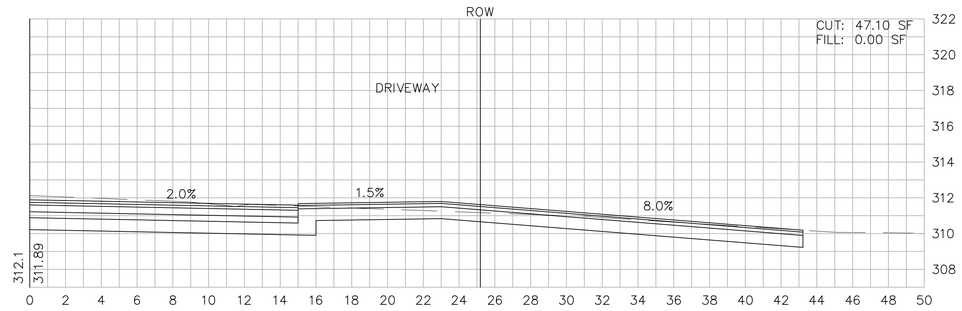
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	114	156
PROJECT FILE NO. 604989			

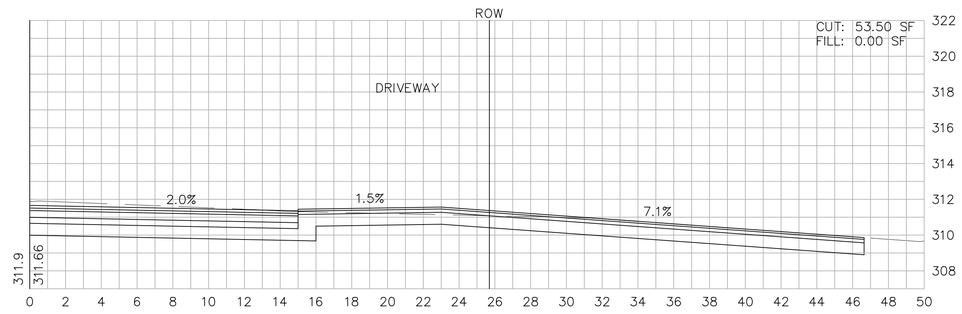
CROSS SECTIONS MAIN STREET



128+00



127+75



127+60

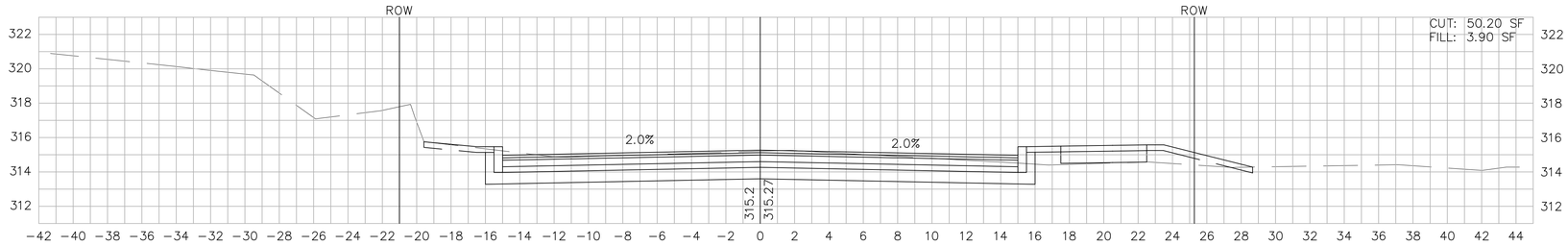
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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	156
PROJECT FILE NO. 604989			

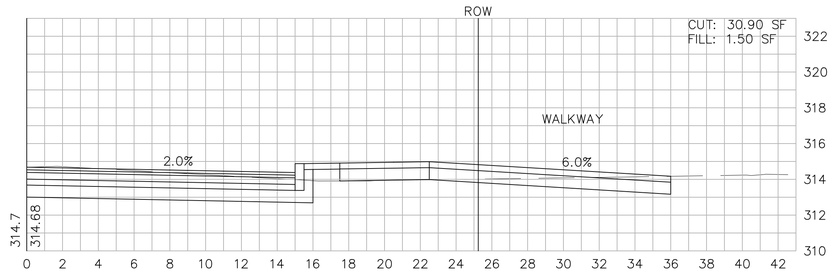
CROSS SECTIONS
MAIN STREET



129+50

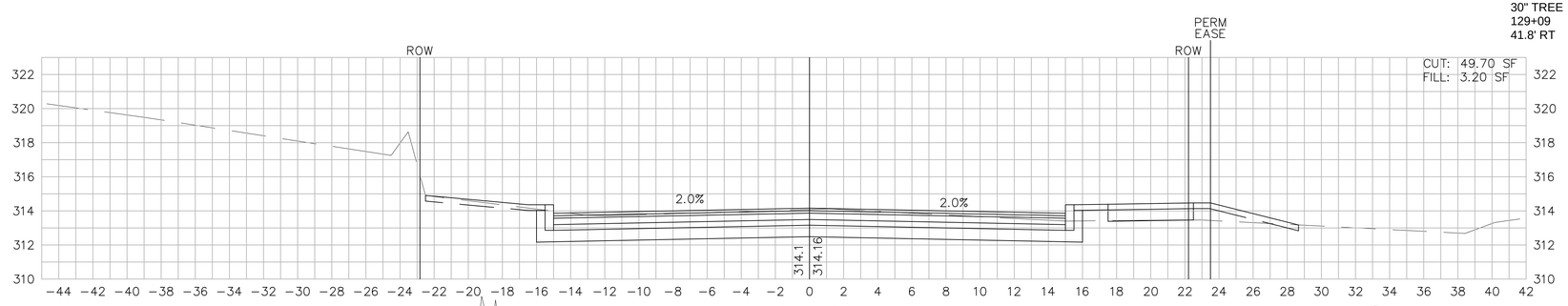
EX HYD
129+42
16.8' LT

15" TREE
129+44
44.8' RT



129+27

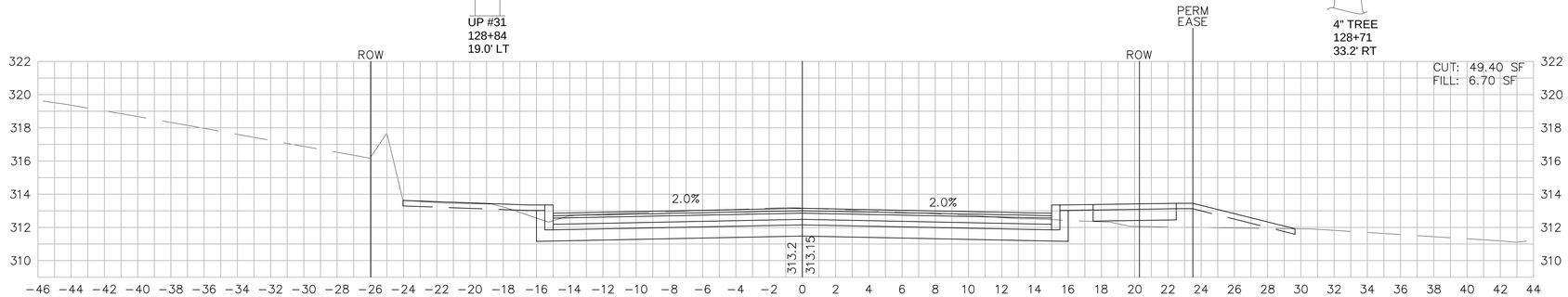
30" TREE
129+09
41.8' RT



129+00

UP #31
128+84
19.0' LT

4" TREE
128+71
33.2' RT



128+50

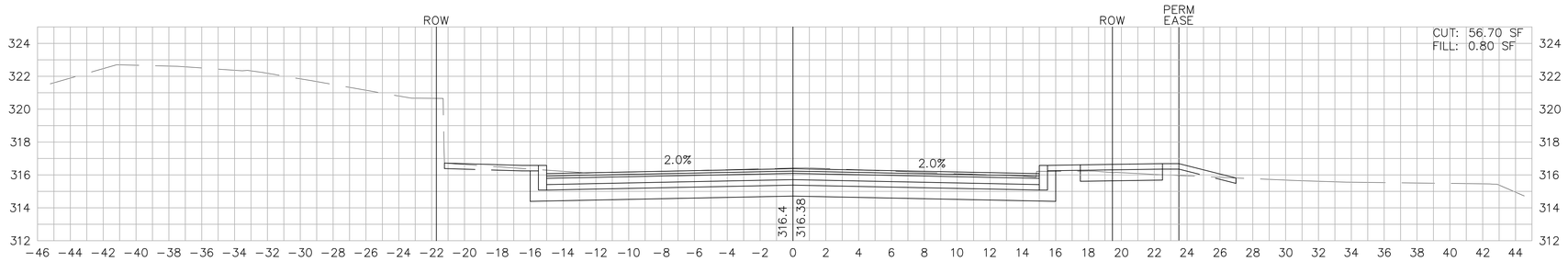
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET



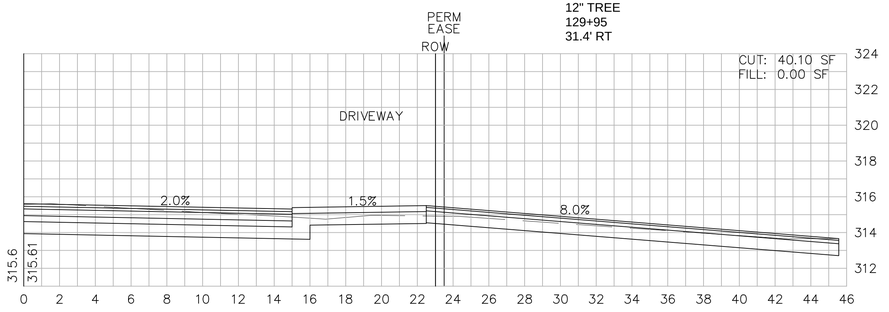
130+00

4" TREE
129+96
32.5' LT

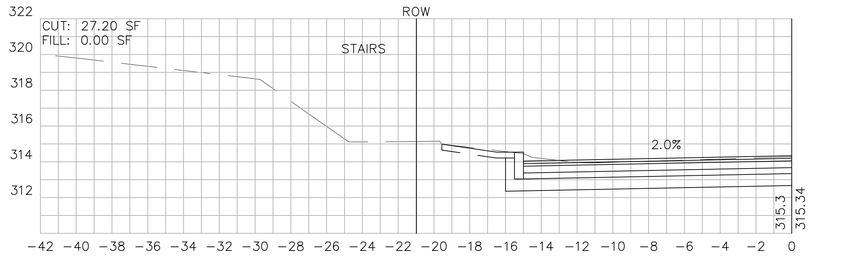
UP
129+76
17.8' LT

UP #30
129+76
14.6' LT

12" TREE
129+95
31.4' RT



129+65



129+53

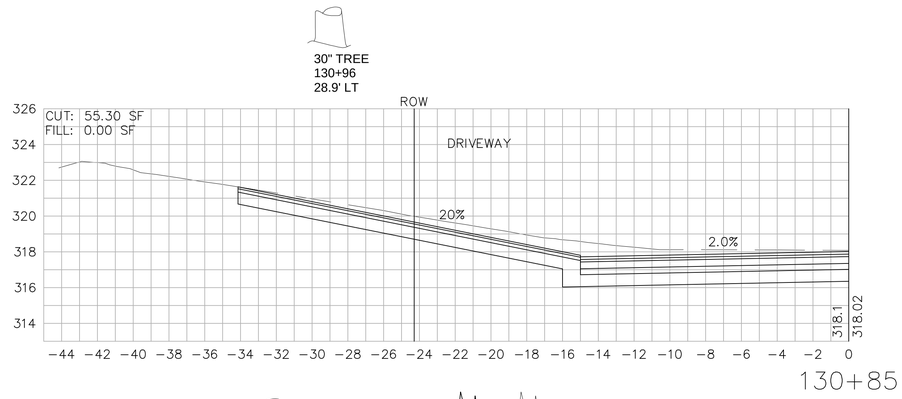
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

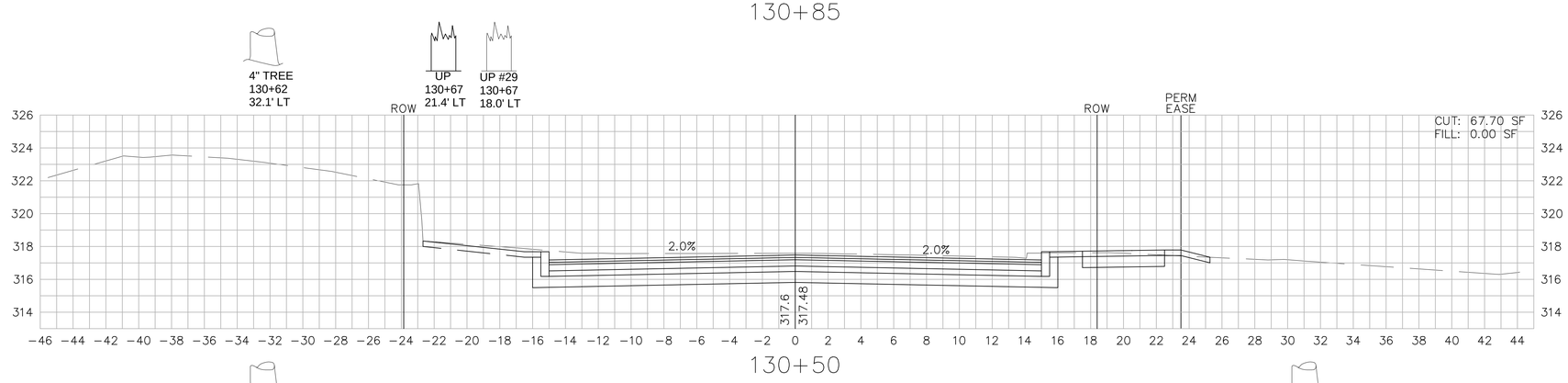
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	117	156
PROJECT FILE NO. 604989			

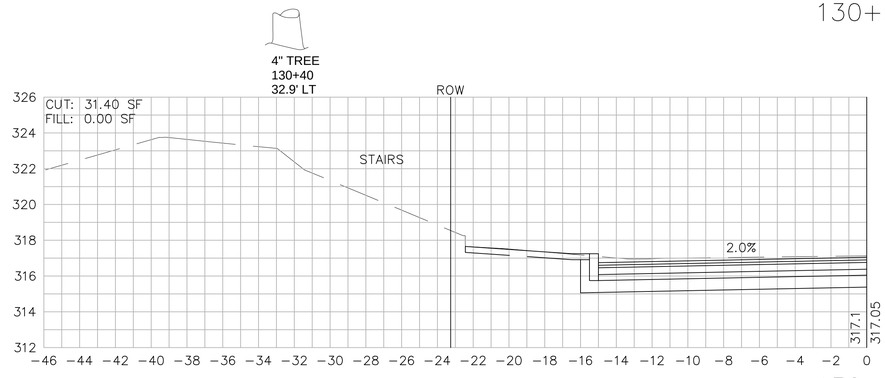
CROSS SECTIONS MAIN STREET



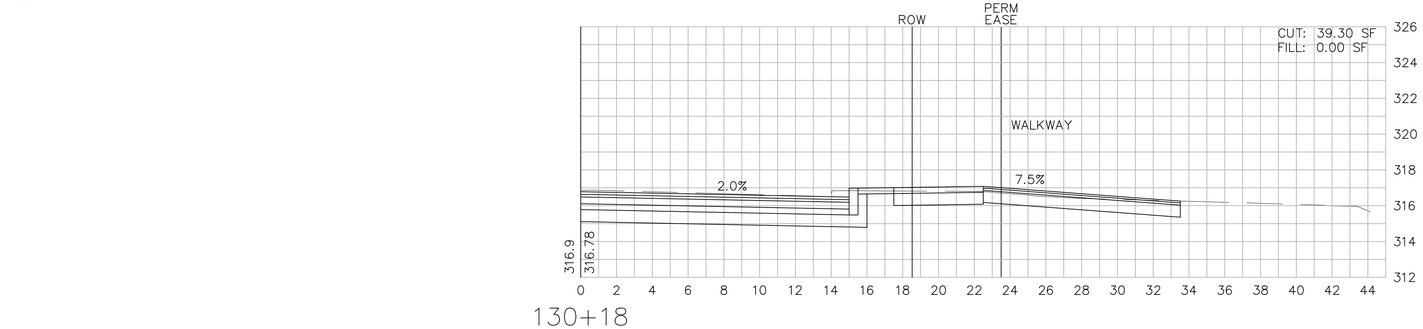
130+85



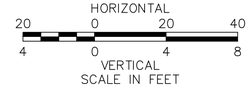
130+50



130+30



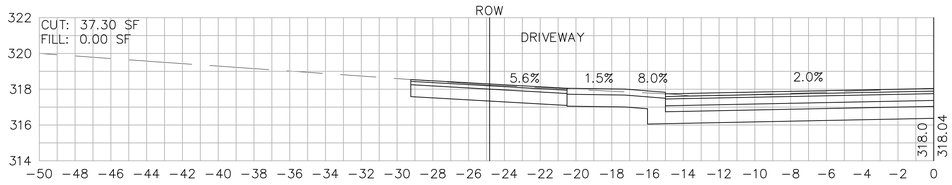
130+18



SOUTHBOROUGH
MAIN STREET (ROUTE 30)

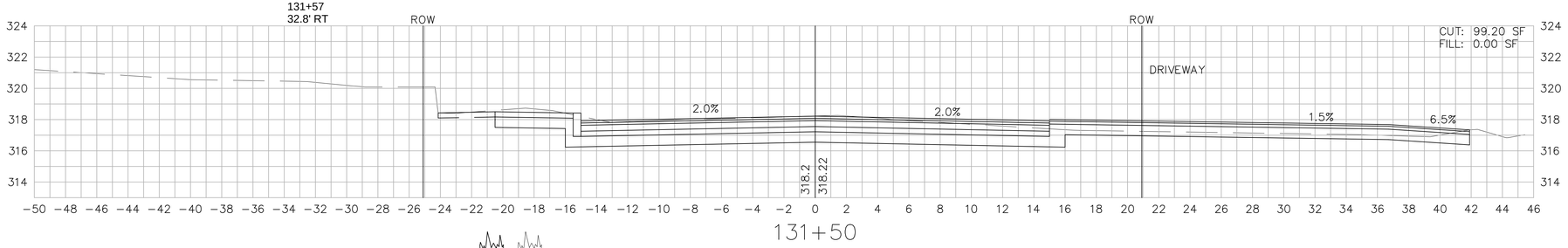
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	118	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



131+85

6" TREE
131+57
32.8' RT



131+50

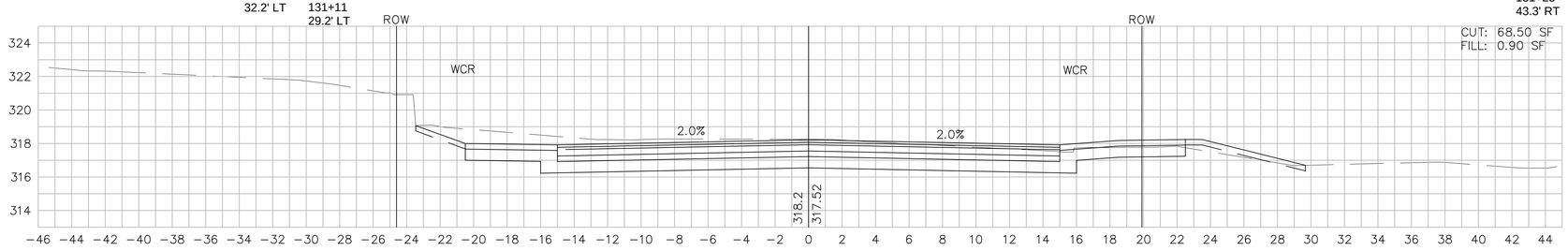
4" TREE
131+35
32.2' LT

32" TREE
131+11
29.2' LT

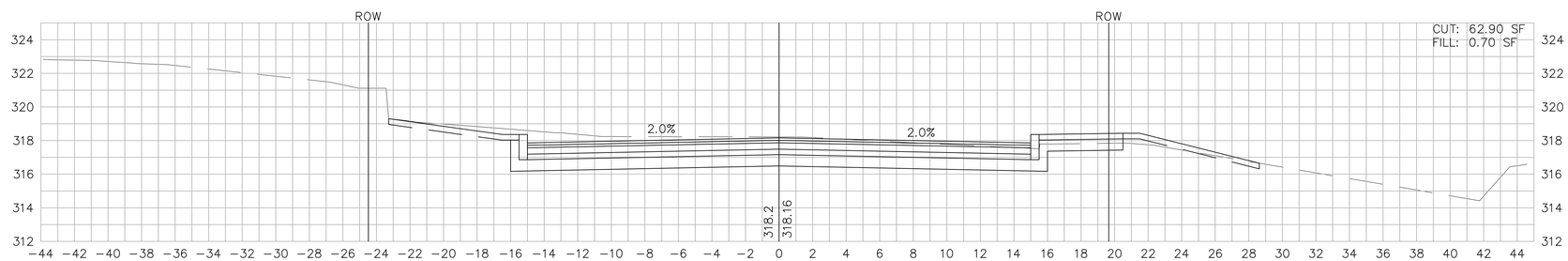
UP
131+44
20.7' LT

UP #28-50
131+44
18.2' LT

18" TREE
131+23
43.3' RT



131+10



131+00

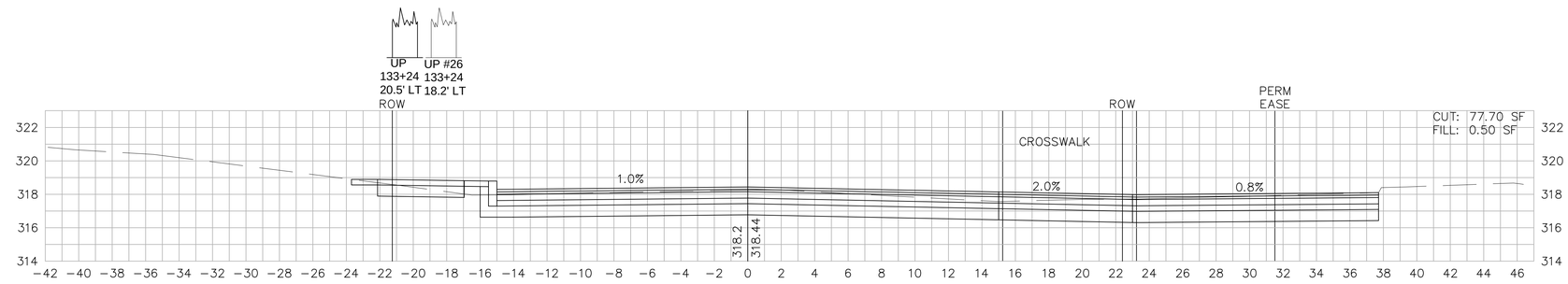
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

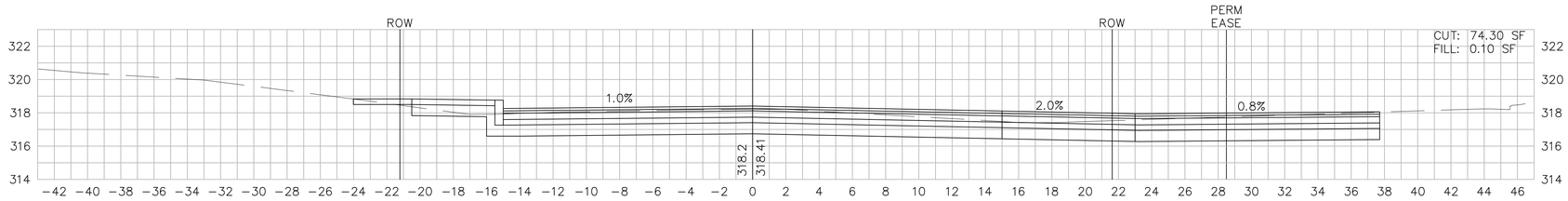
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	119	156
PROJECT FILE NO. 604989			

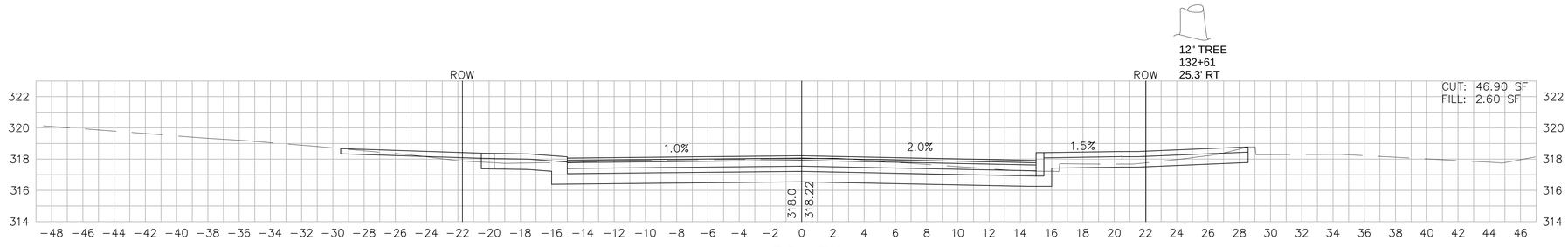
CROSS SECTIONS
MAIN STREET



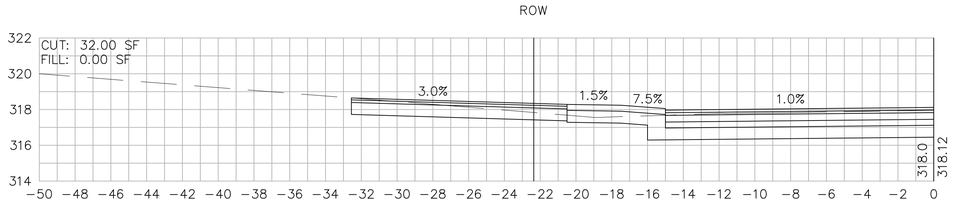
133+00



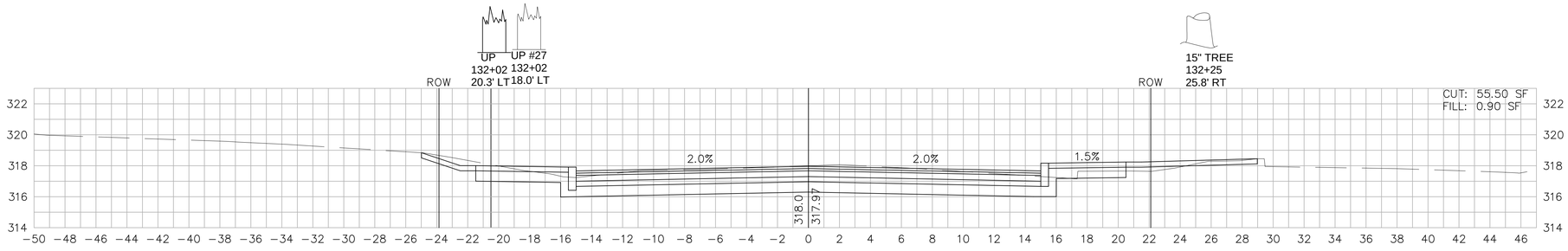
132+90



132+50



132+30



132+00

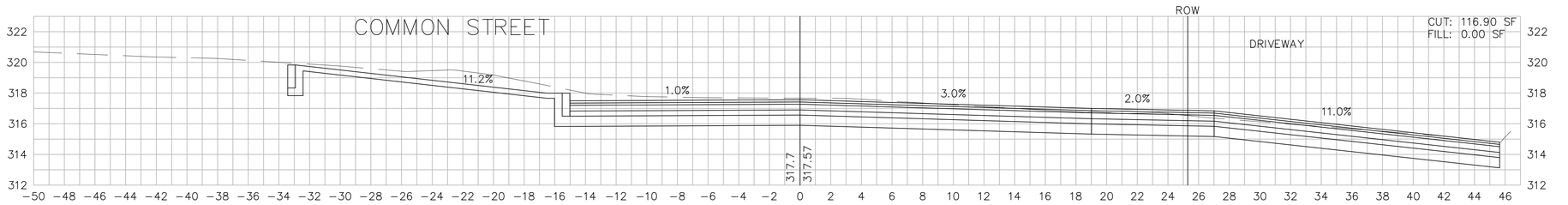
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

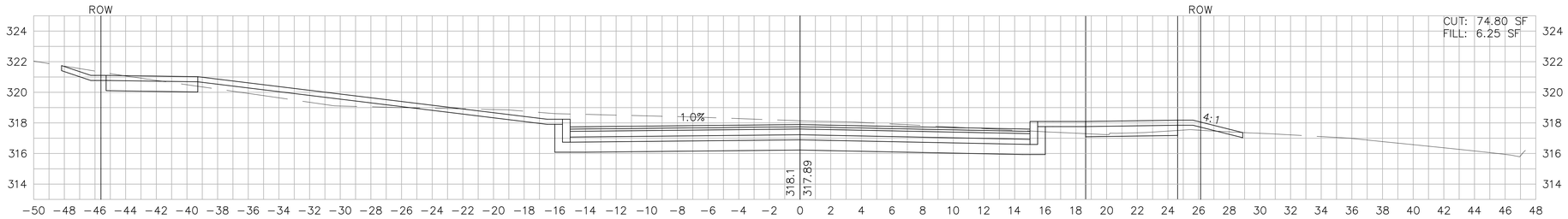
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	120	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



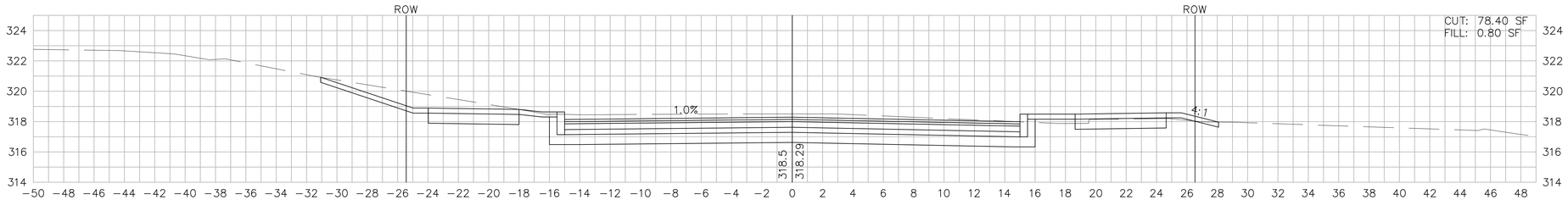
134+78



134+50

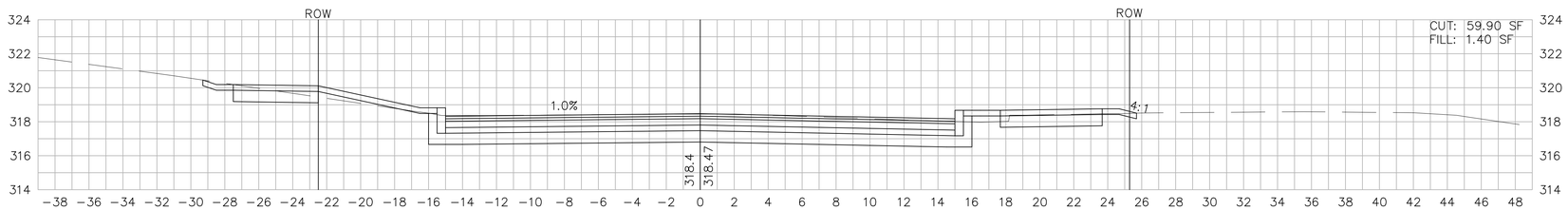
UP #25
134+27
24.2' LT

UP
134+27
21.7' LT

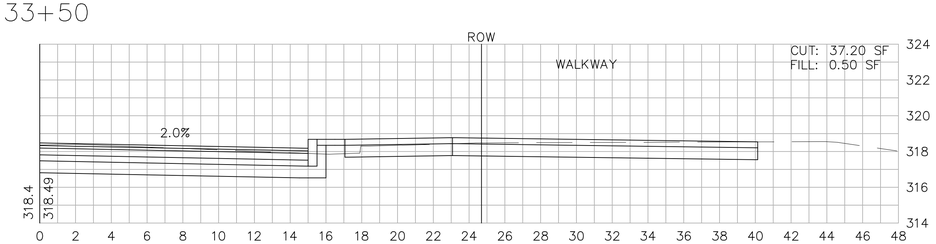


134+00

EX HYD
133+95
21.9' LT



133+50



133+37

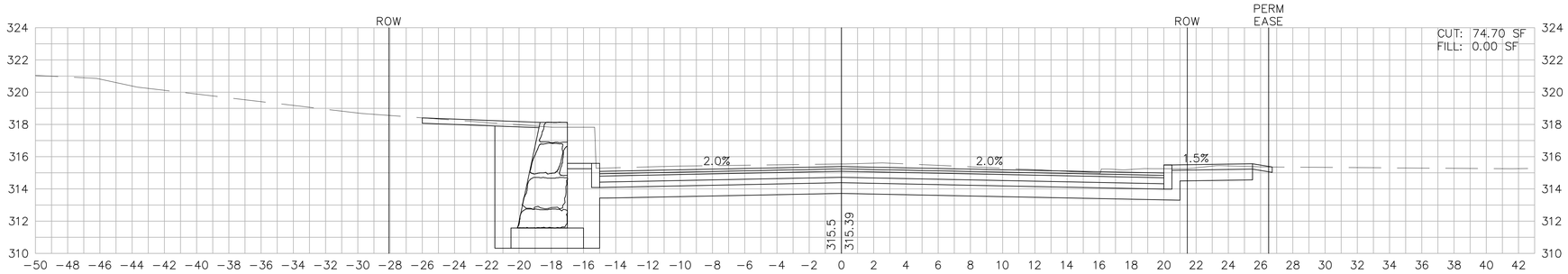
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

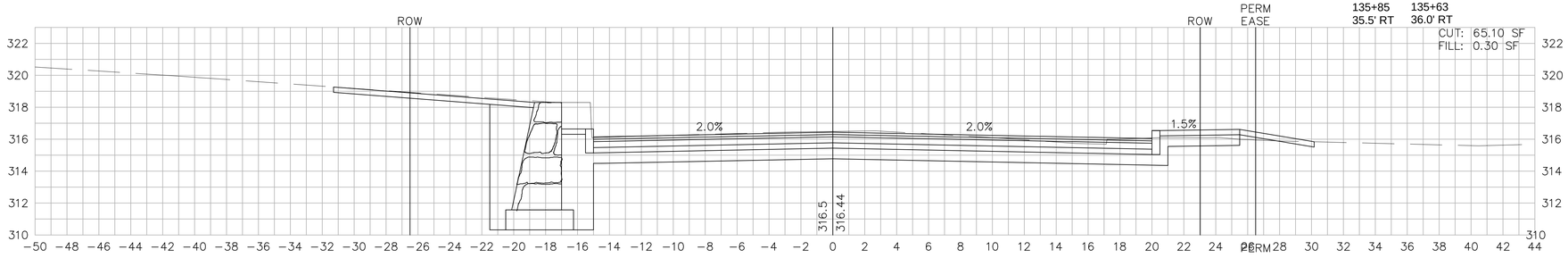
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	121	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

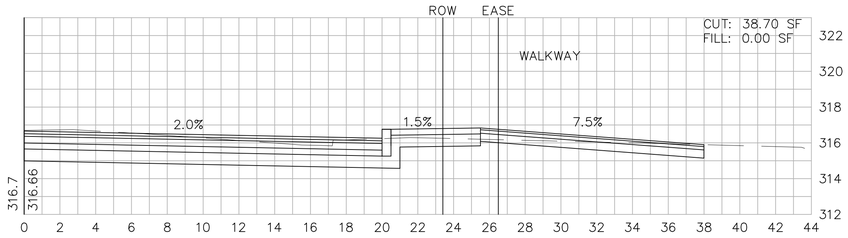


136+00

10" TREE 135+85 35.5' RT
8" TREE 135+63 36.0' RT

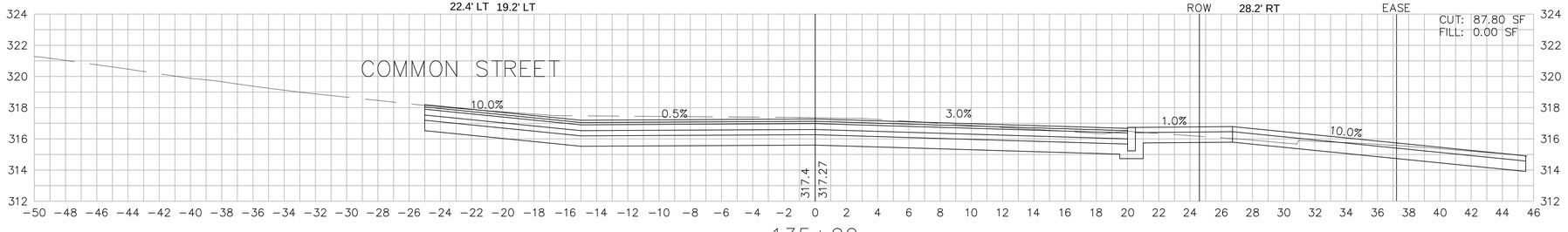


135+50

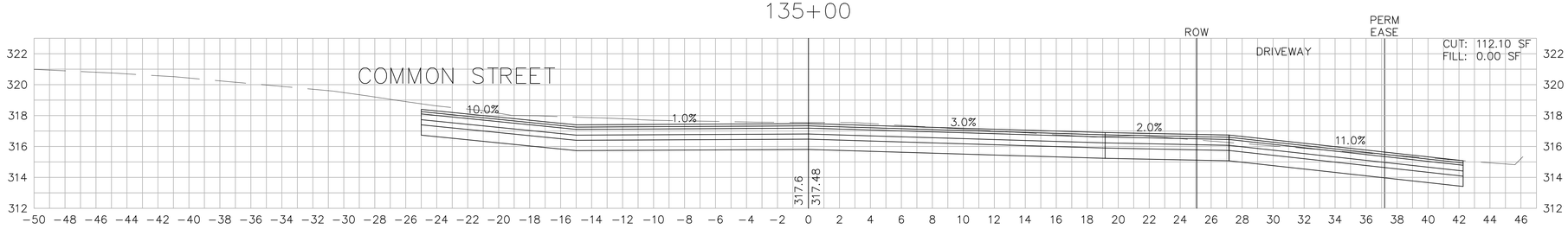


135+38

UP 135+20 22.4' LT
UP #24 135+11 19.2' LT
33" TREE 135+25 28.2' RT



135+00



134+85

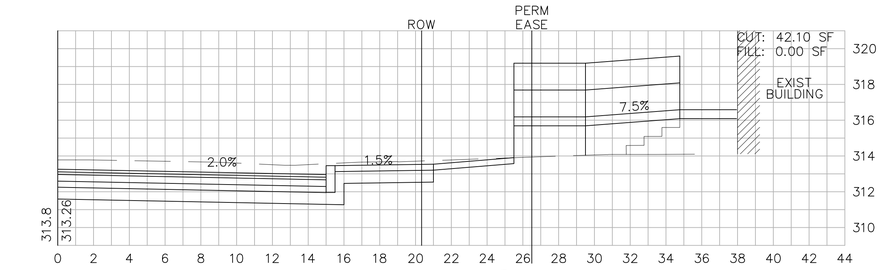
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	122	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

8" TREE
136+92
41.1' LT

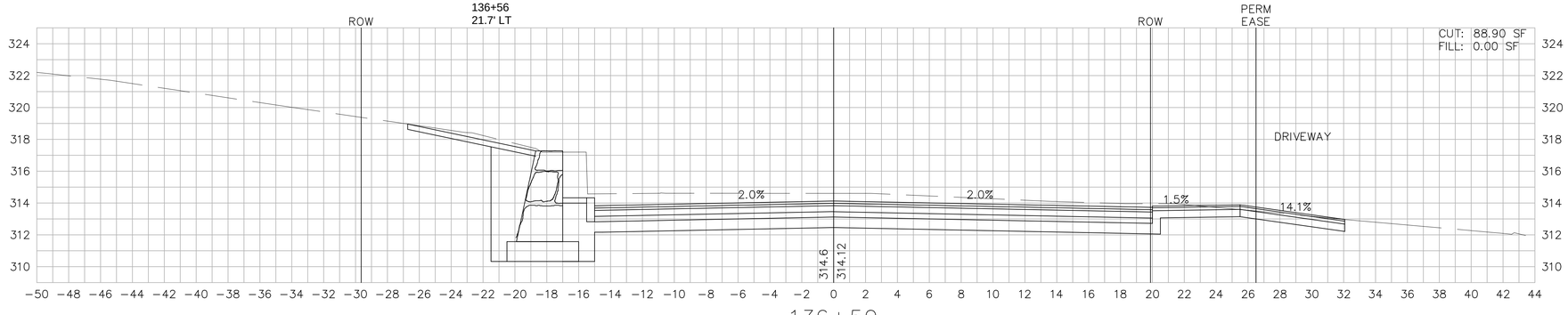


136+80

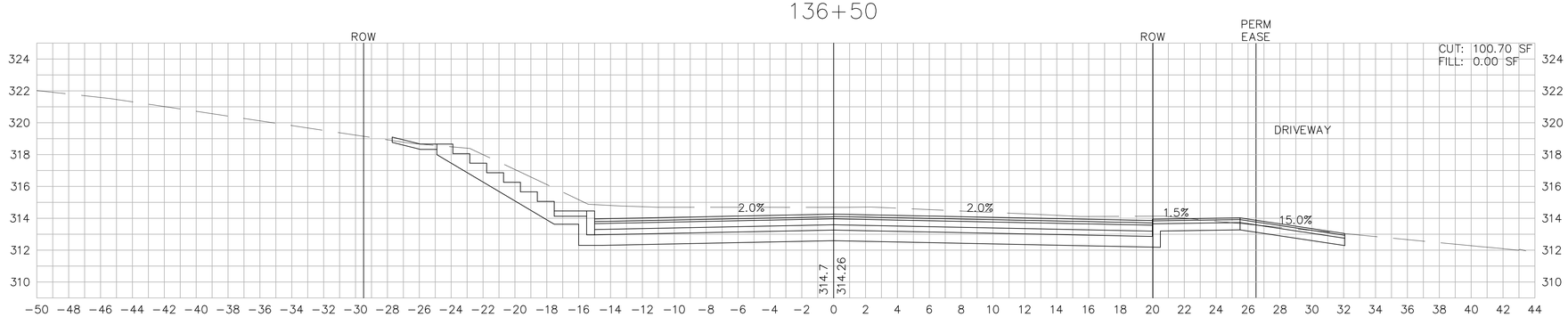
24" TREE
136+63
24.8' RT

18" TREE
136+68
41.4' RT

STUMP
136+56
21.7' LT



136+50

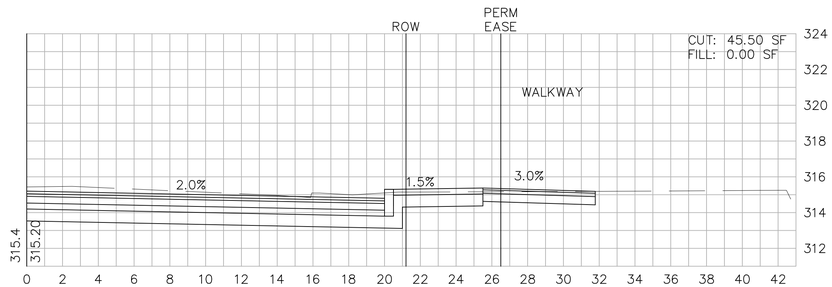


136+45

UP
136+26
23.6' LT

UP #23
136+25
15.7' LT

4" TREE
136+25
26.9' RT



136+08

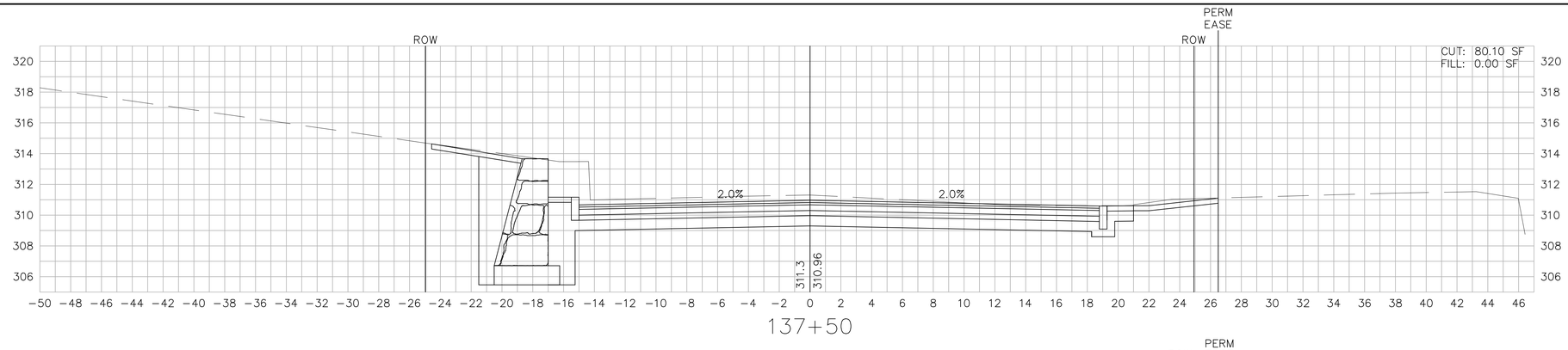
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	123	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

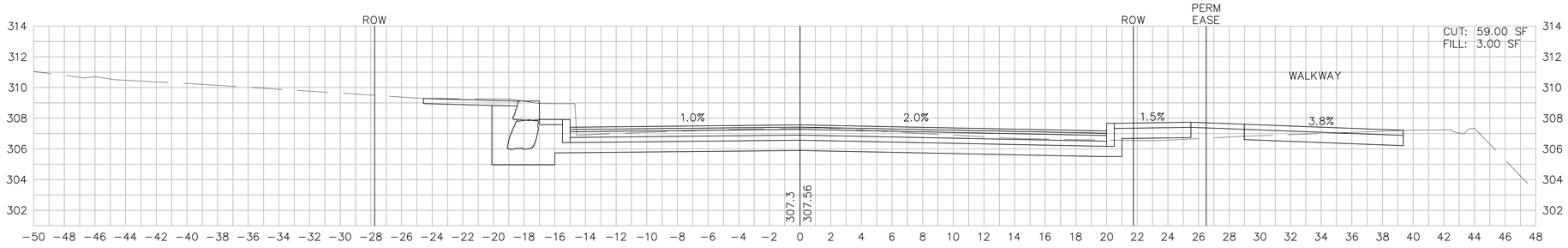


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

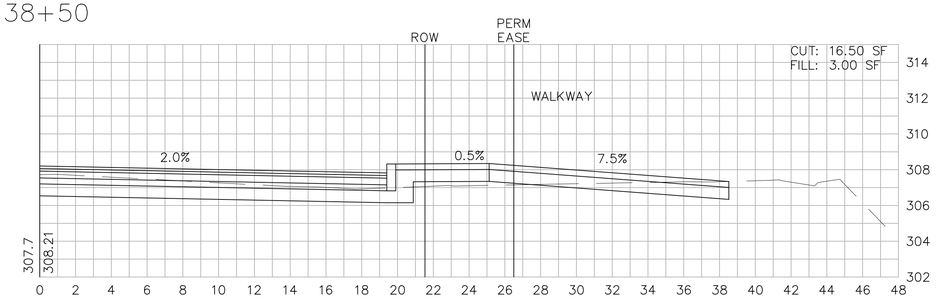
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	124	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



138+50



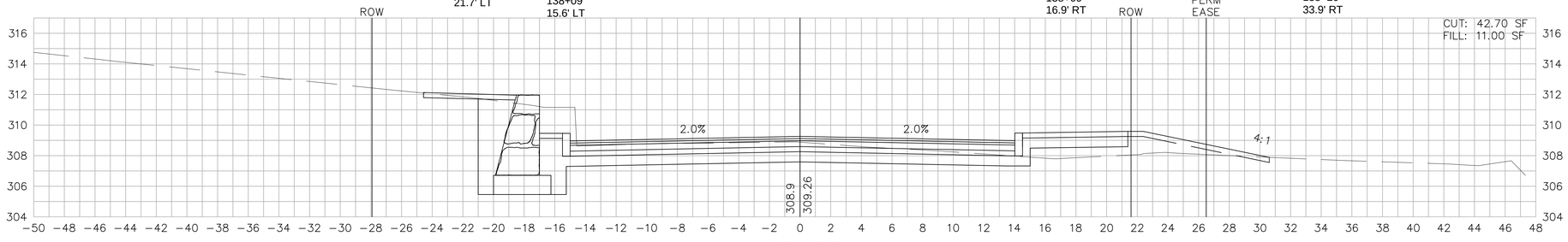
138+31

18" TREE
138+25
21.7' LT

EX HYD
138+09
15.6' LT

PROP HYD
138+09
16.9' RT

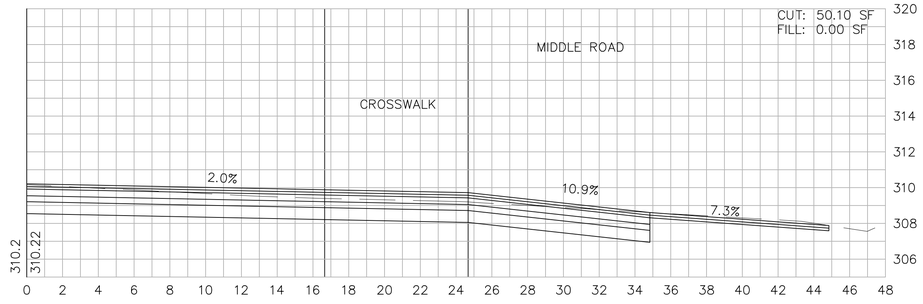
24" TREE
138+20
33.9' RT



138+00

UP
137+80
19.2' LT

UP #21
137+79
14.9' LT



137+72

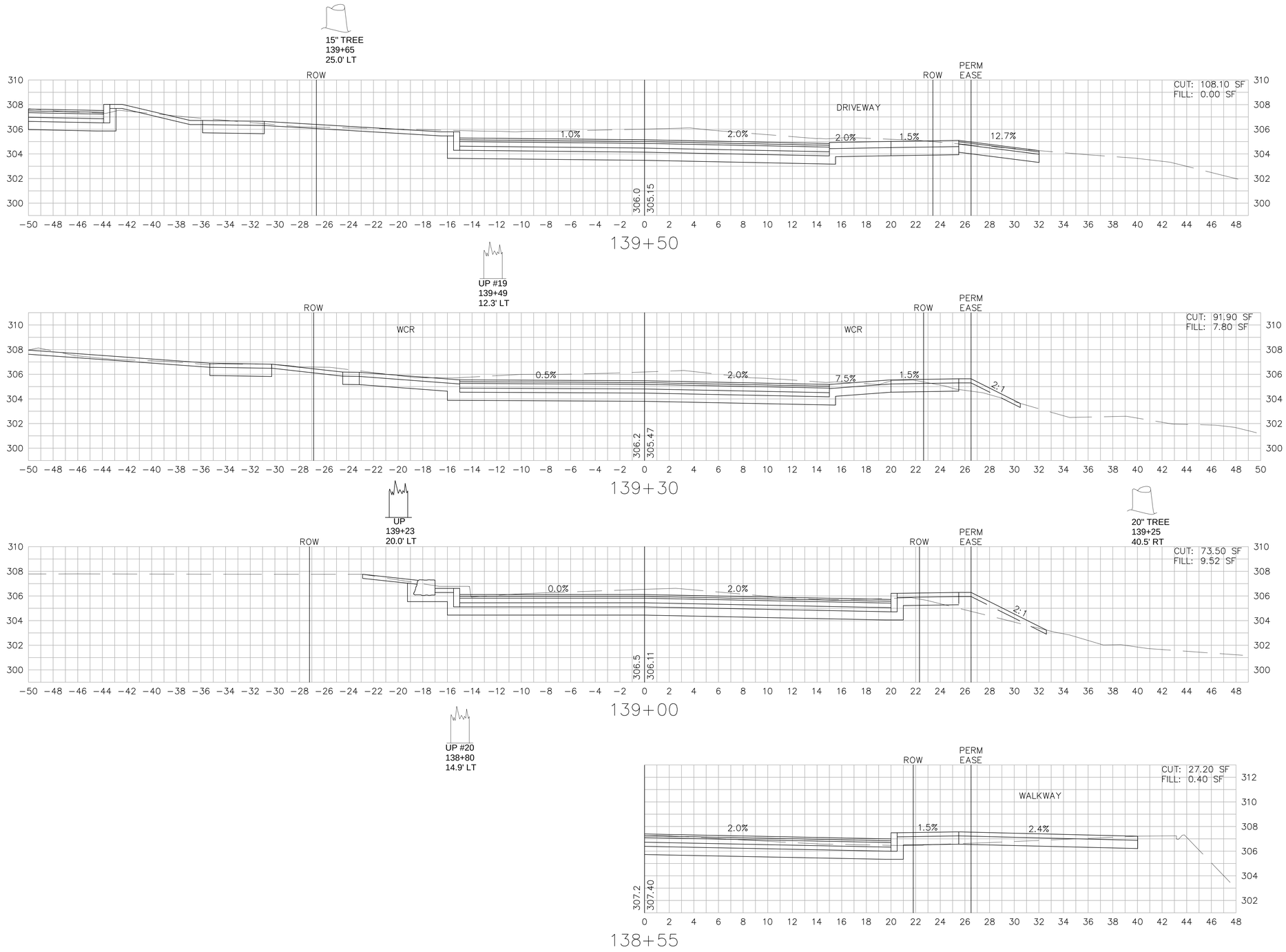
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	125	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET



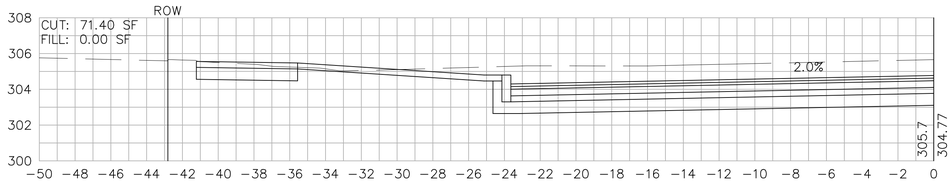
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

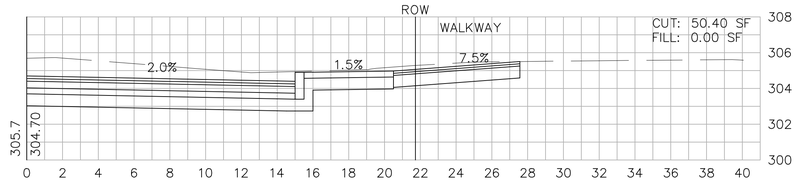
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	126	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

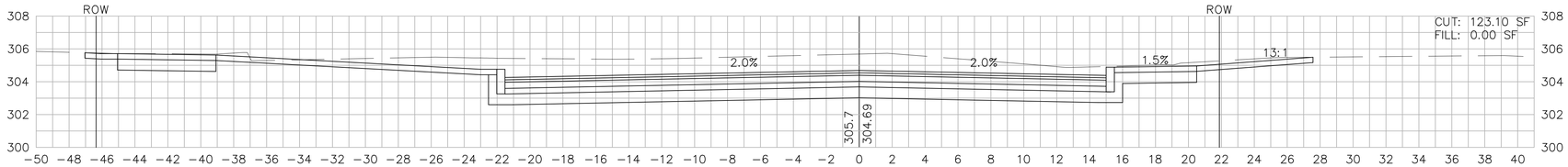


140+67

UP
140+55
26.6' LT

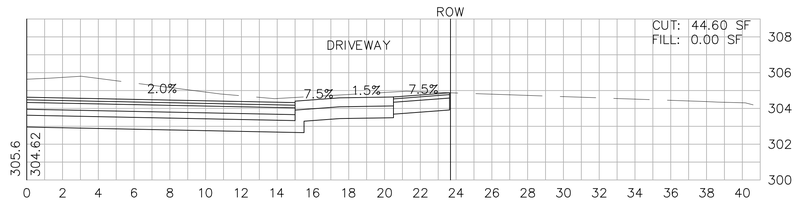


140+52

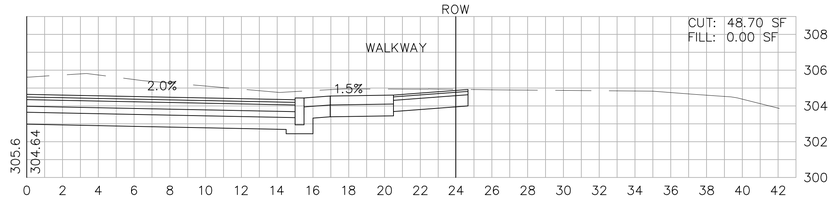


140+50

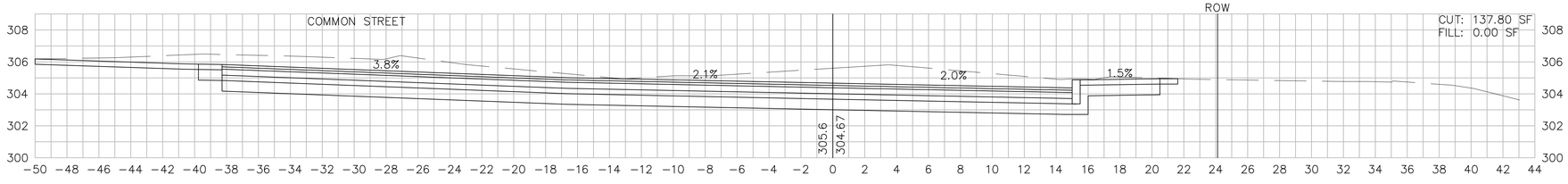
UP #18
140+33
14.4' LT



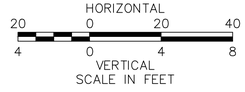
140+17



140+07



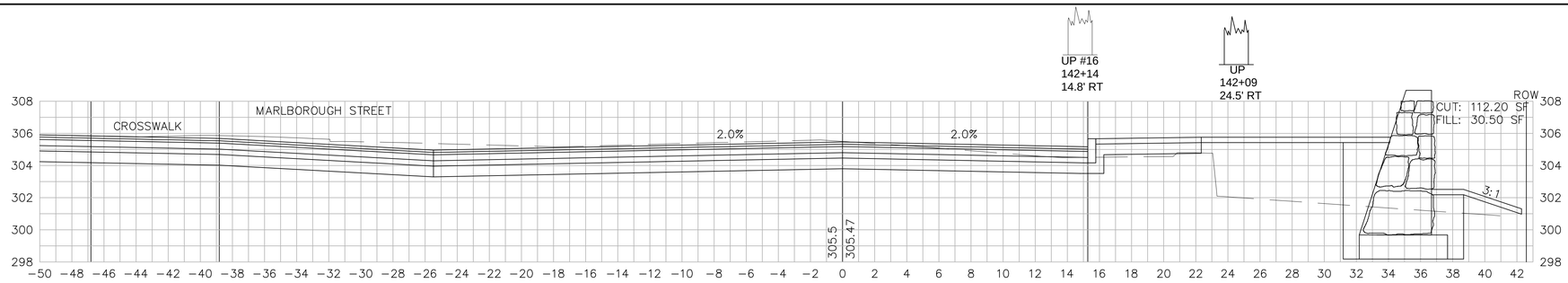
140+00



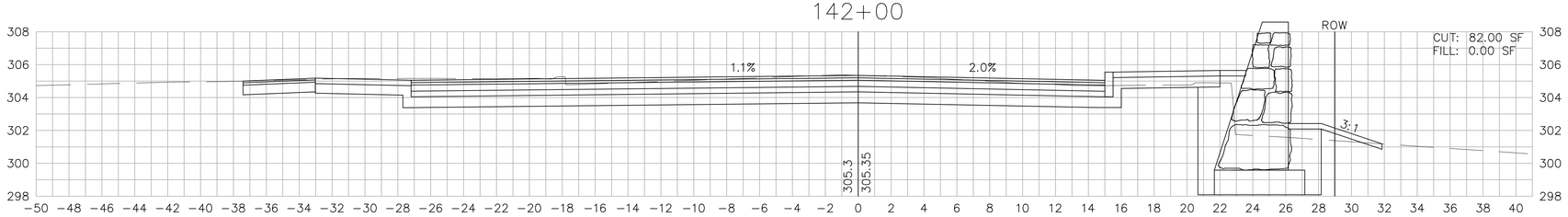
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	127	156
PROJECT FILE NO. 604989			

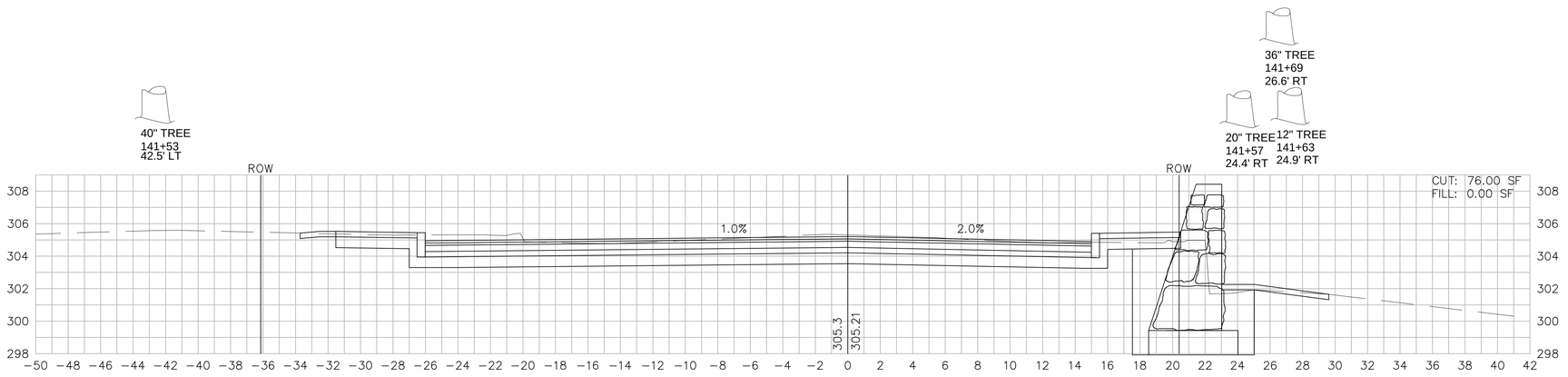
CROSS SECTIONS
MAIN STREET



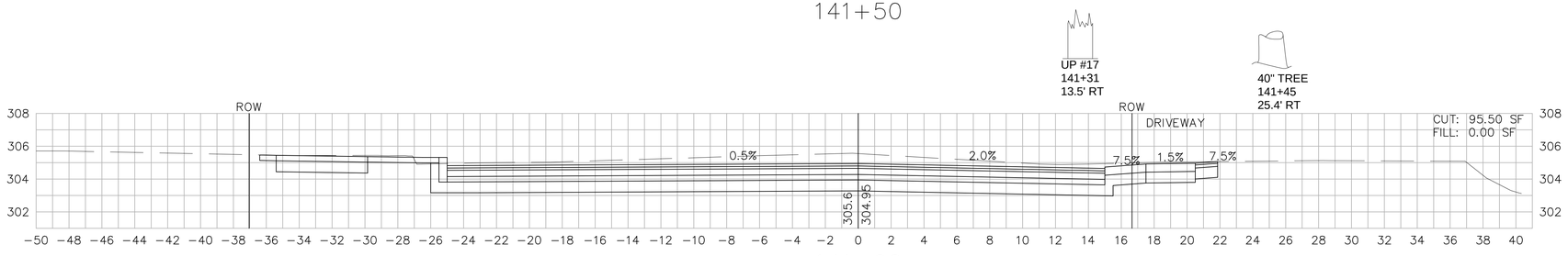
142+00



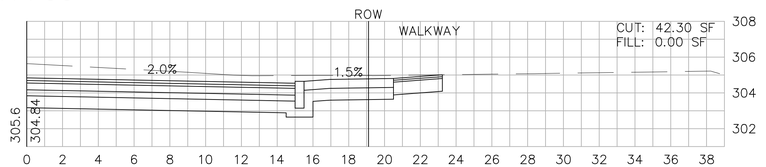
141+77



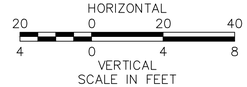
141+50



141+00



140+80

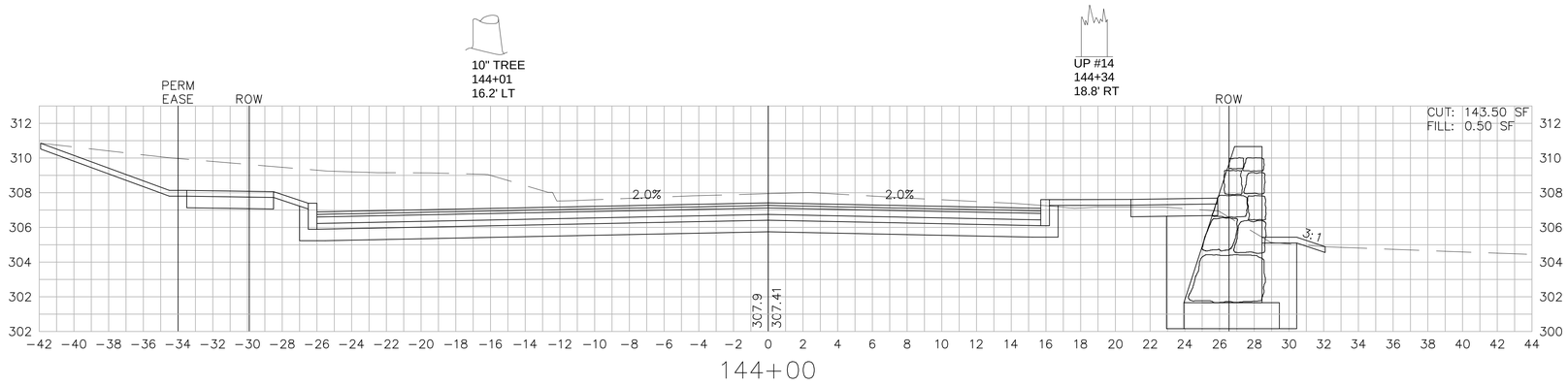


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

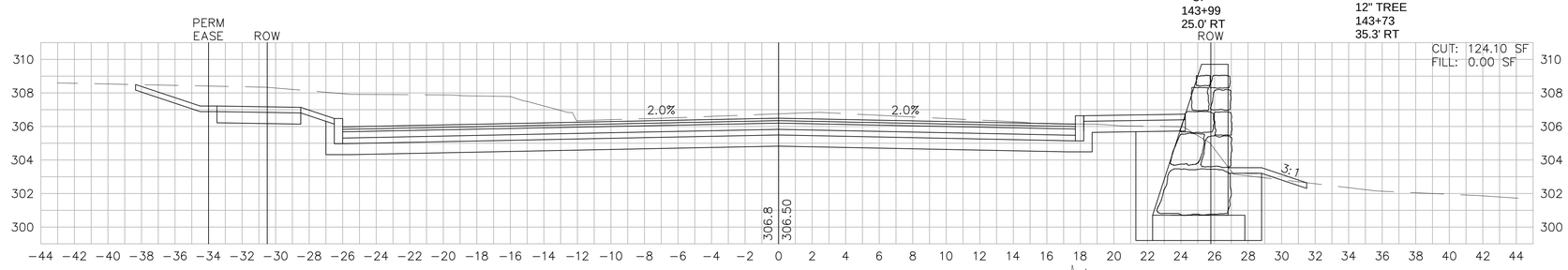
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	128	156
PROJECT FILE NO. 604989			

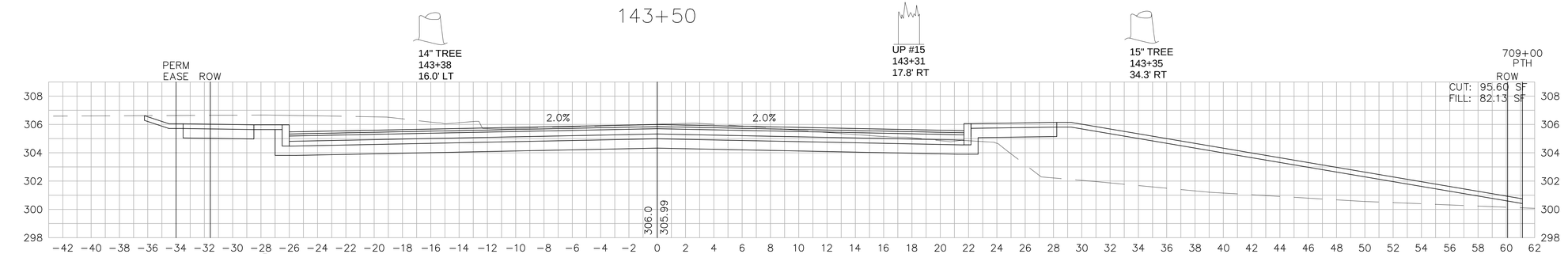
CROSS SECTIONS
MAIN STREET



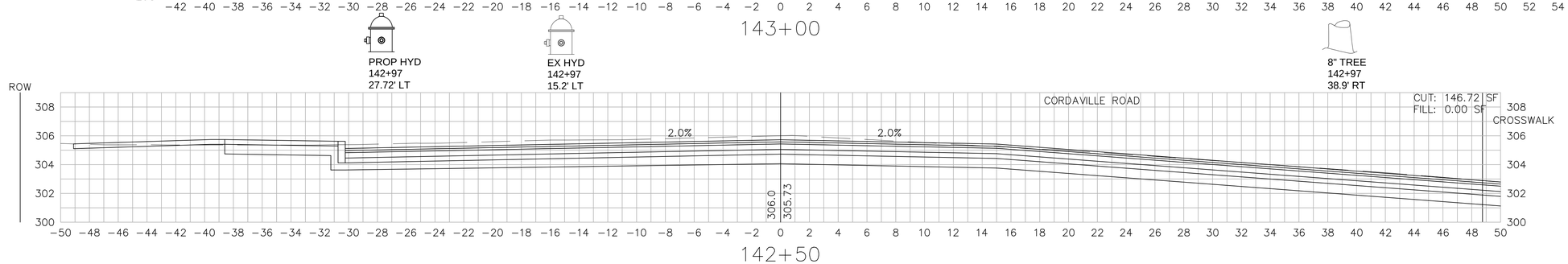
144+00



143+50



143+00



142+50

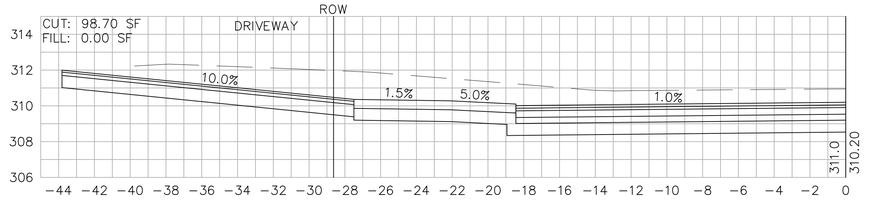
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

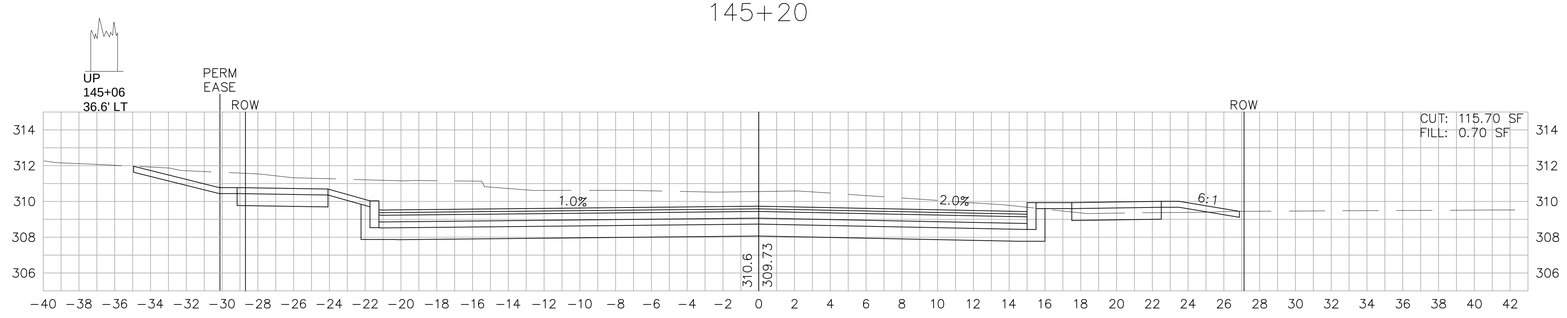
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	129	156
PROJECT FILE NO. 604989			

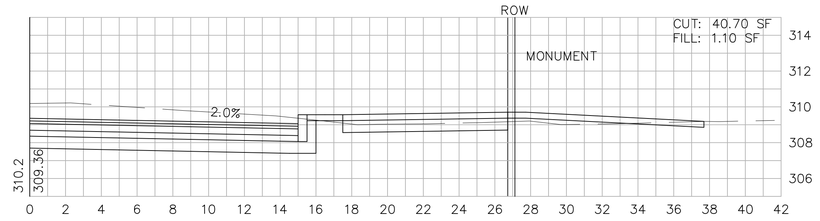
CROSS SECTIONS
MAIN STREET



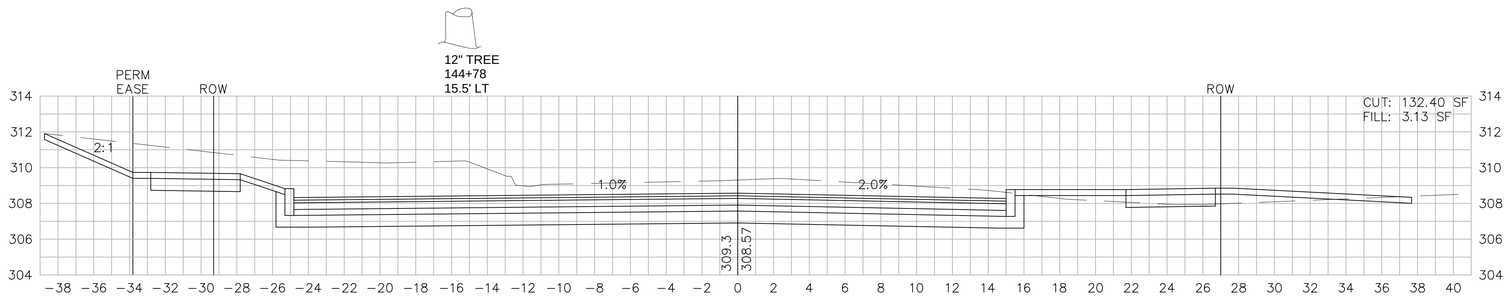
145+20



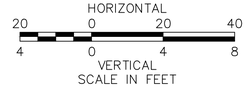
145+00



144+84



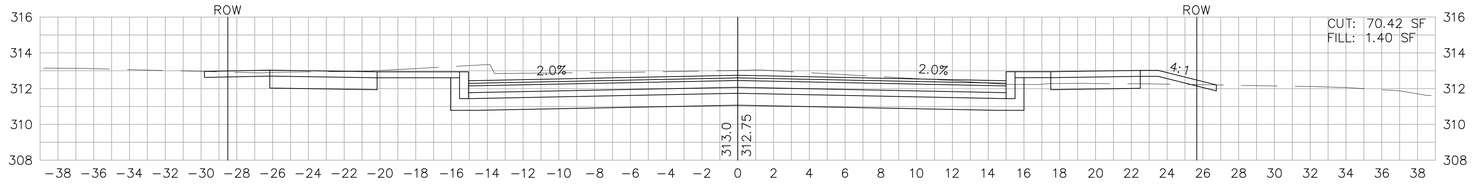
144+50



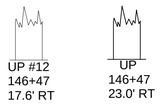
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

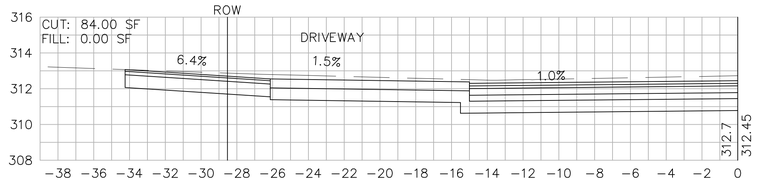
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	130	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

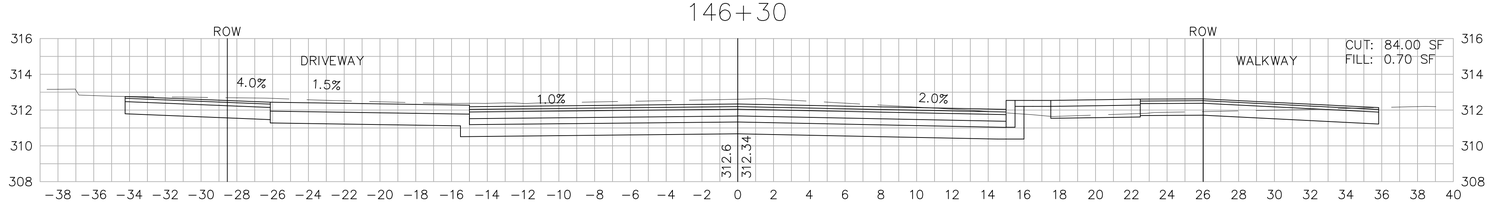


146+50

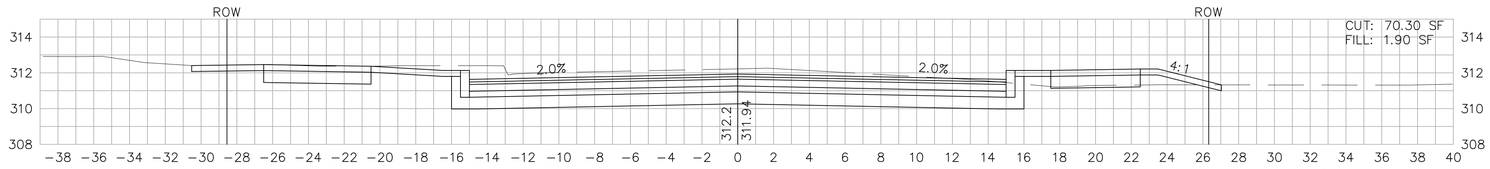




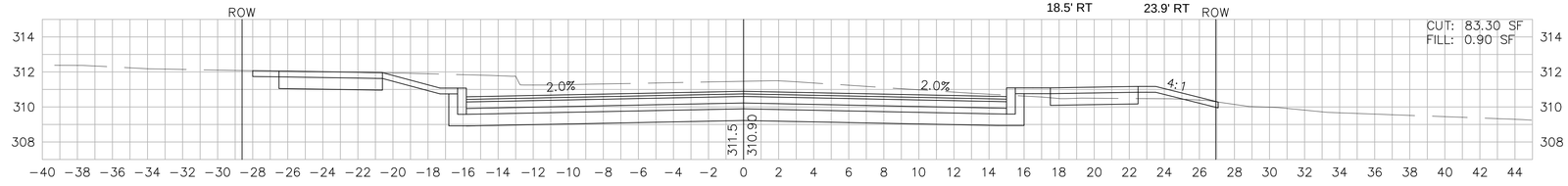
146+30



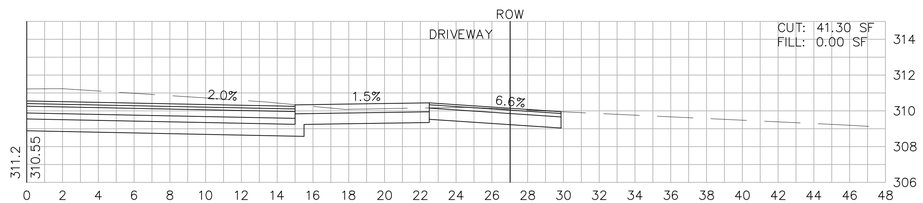
146+23



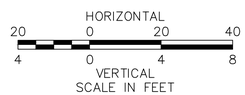
146+00



145+50



145+35



SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	131	156
PROJECT FILE NO. 604989			

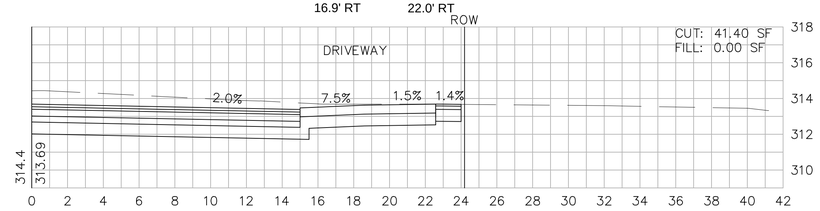
CROSS SECTIONS
MAIN STREET

18" TREE
147+68
31.2' LT

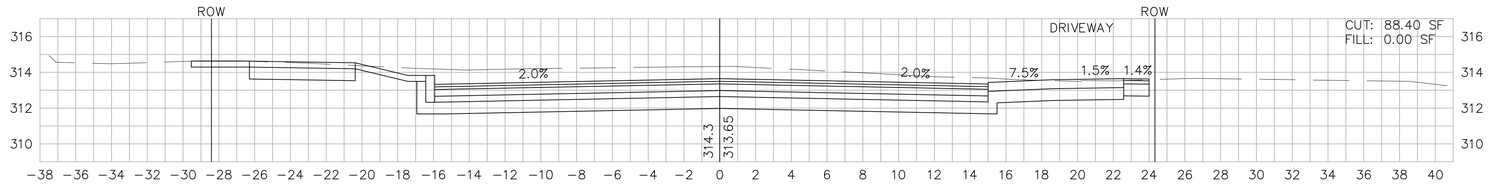
UP #11
147+74
16.9' RT

UP
147+78
22.0' RT

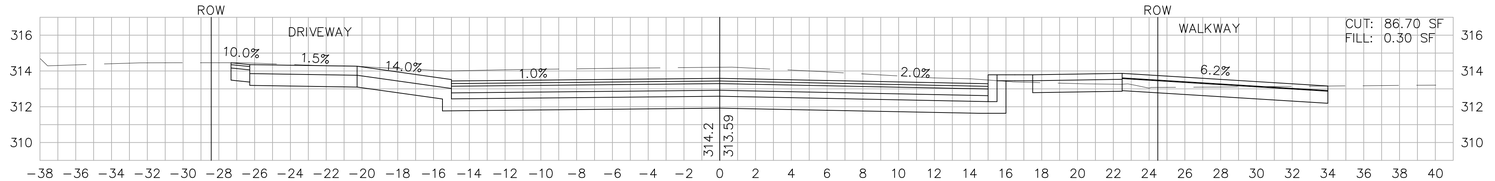
12" TREE
147+80
40.5' RT



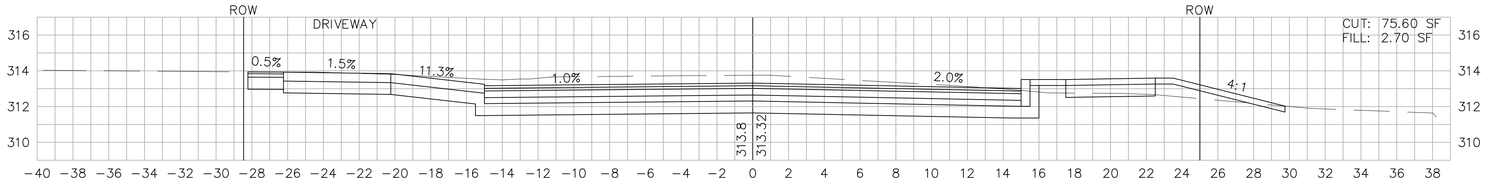
147+60



147+50

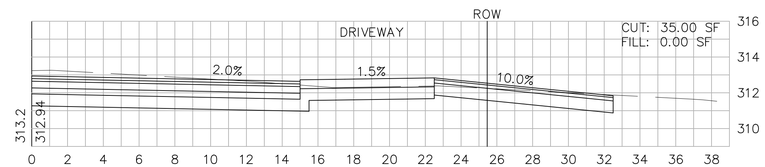


147+38



147+00

12" TREE
146+70
18.2' LT



146+65

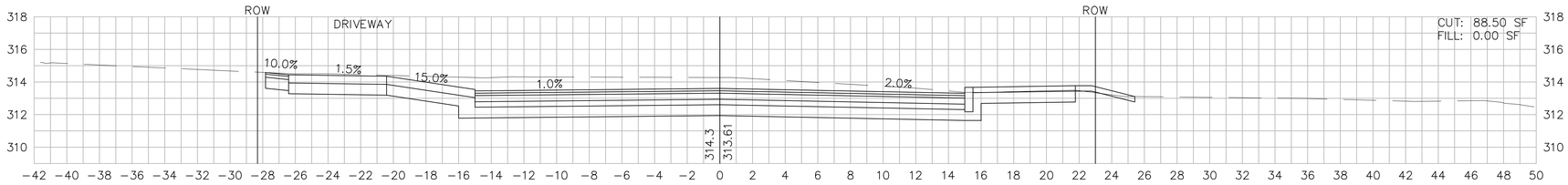
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	132	156
PROJECT FILE NO. 604989			

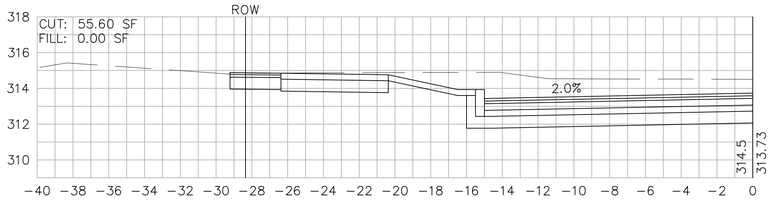
CROSS SECTIONS
MAIN STREET



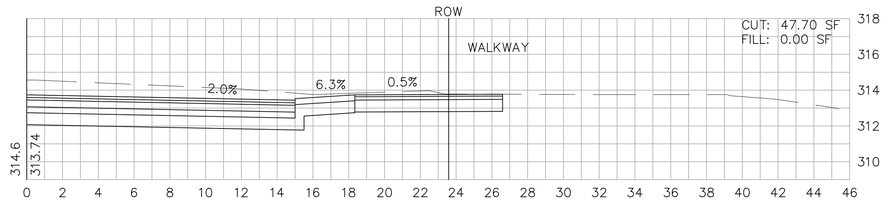
148+50

18" TREE
148+27
30.3' LT

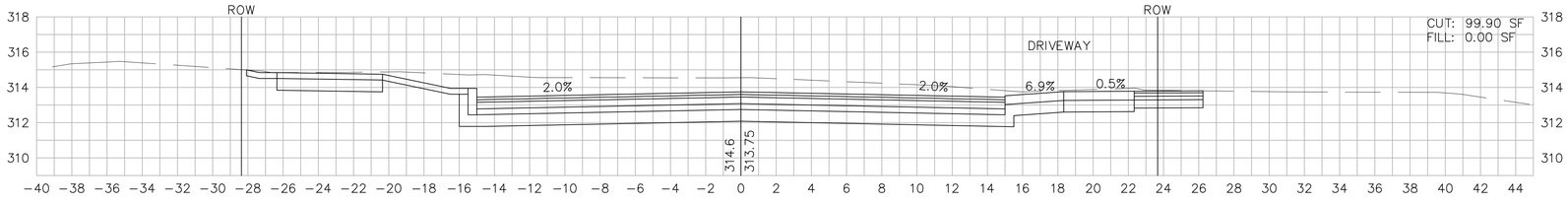
8" TREE
148+32
32.6' RT



148+15

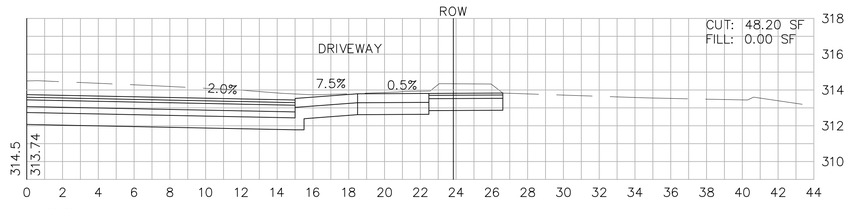


148+06



148+00

40" TREE
147+95
17.5' LT



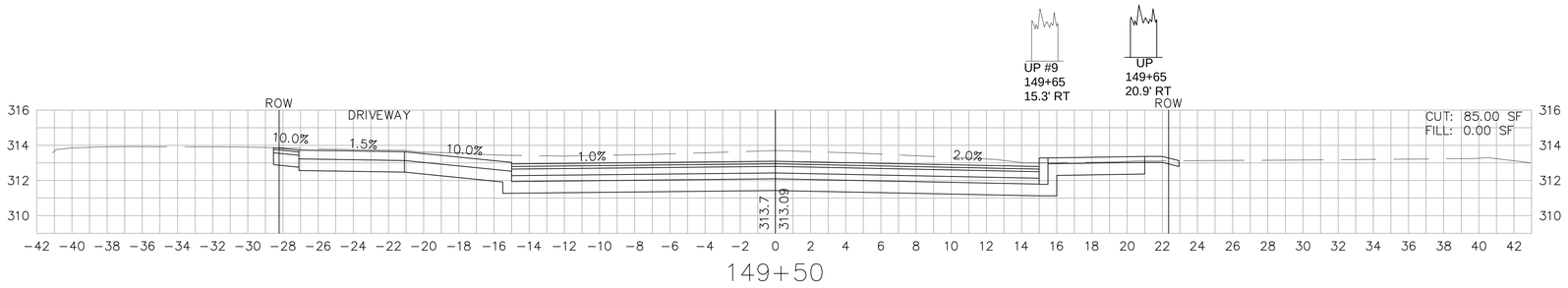
147+86

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

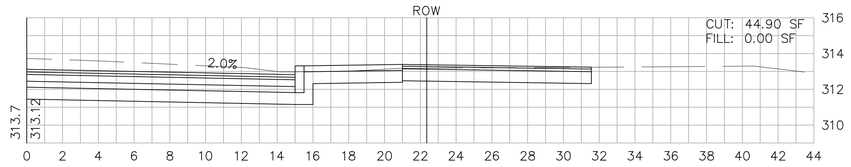
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	133	156
PROJECT FILE NO. 604989			

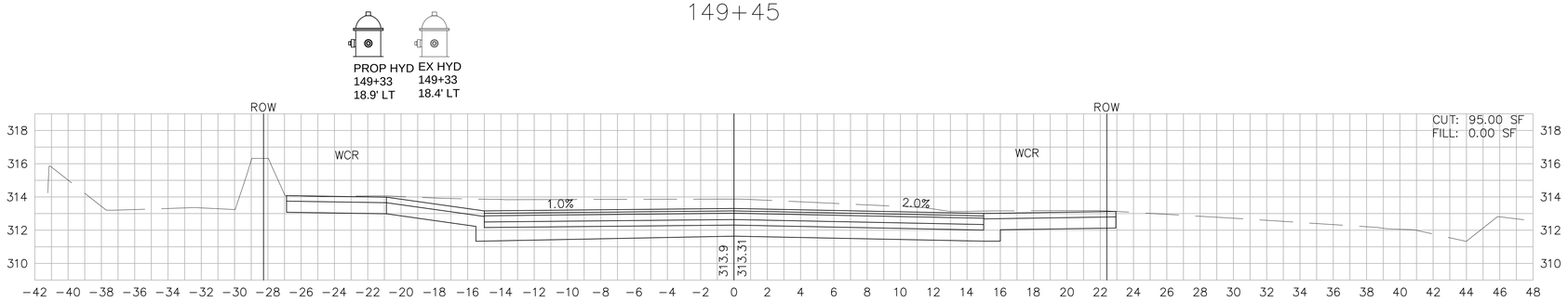
CROSS SECTIONS MAIN STREET



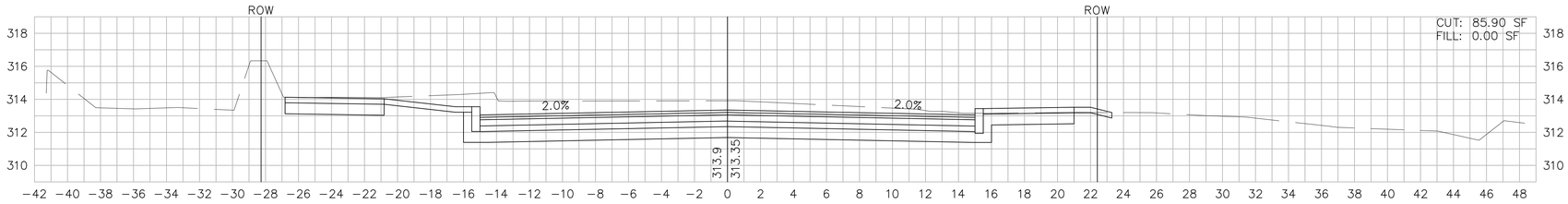
149+50



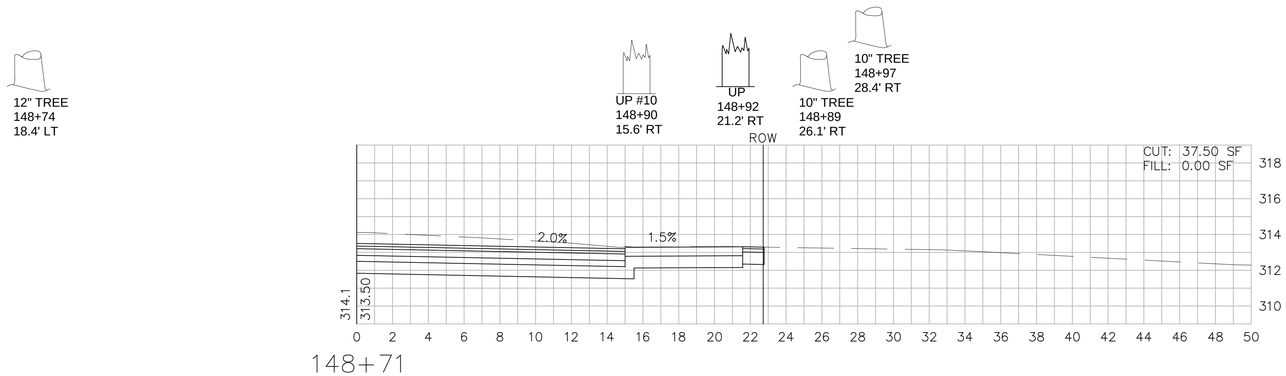
149+45



149+08



149+00



148+71

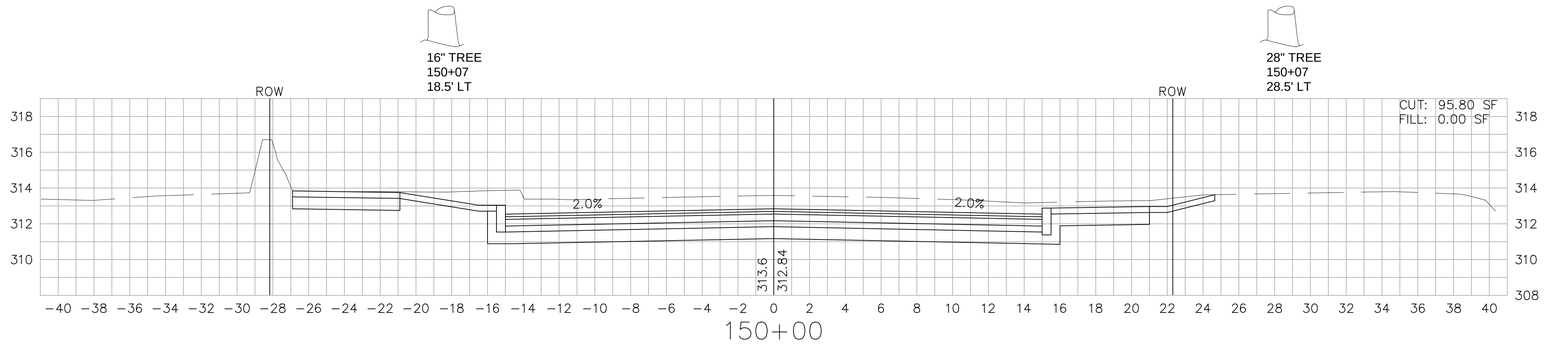
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

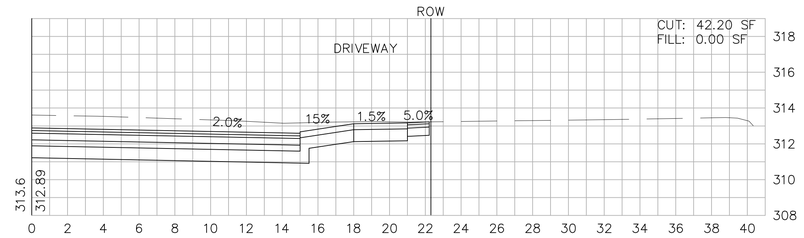
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	134	156
PROJECT FILE NO. 604989			

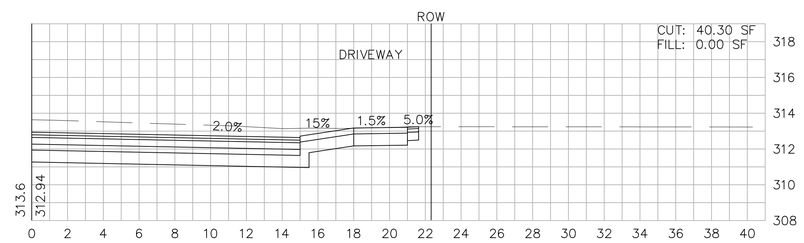
CROSS SECTIONS
MAIN STREET



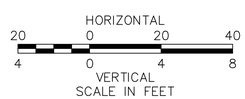
150+00



149+90



149+80

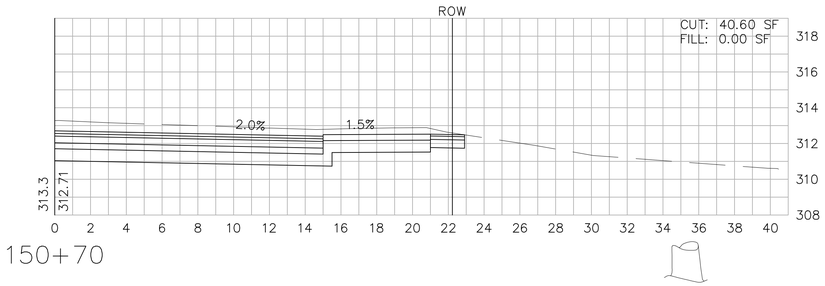


SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	135	156
PROJECT FILE NO. 604989			

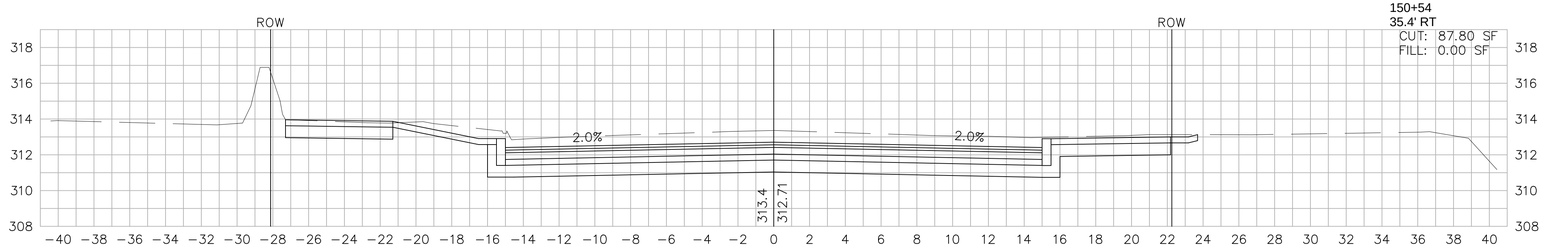
CROSS SECTIONS
MAIN STREET

12" TREE
150+94
17.9' LT



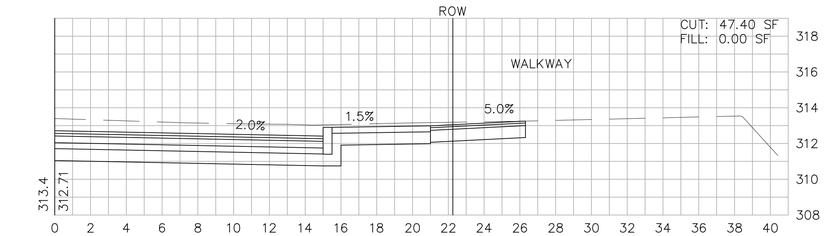
150+70

12" TREE
150+54
35.4' RT

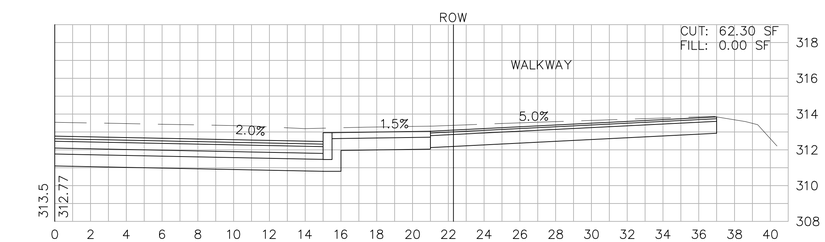


150+50

16" TREE
150+49
19.4' LT



150+45



150+16

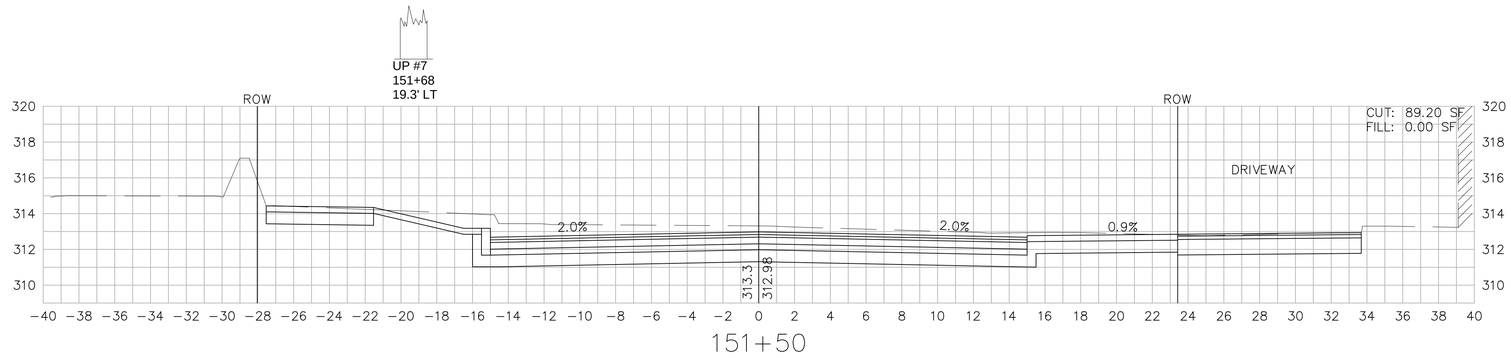
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

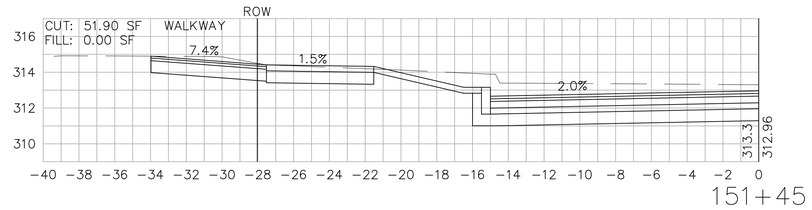
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	136	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

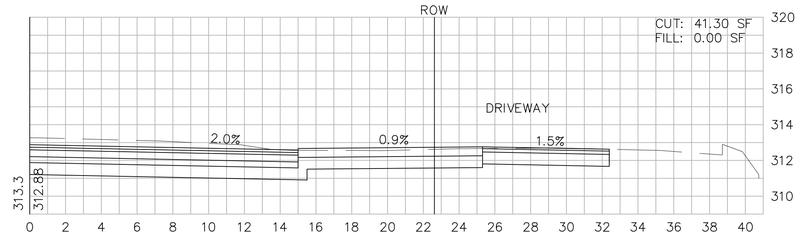


151+50

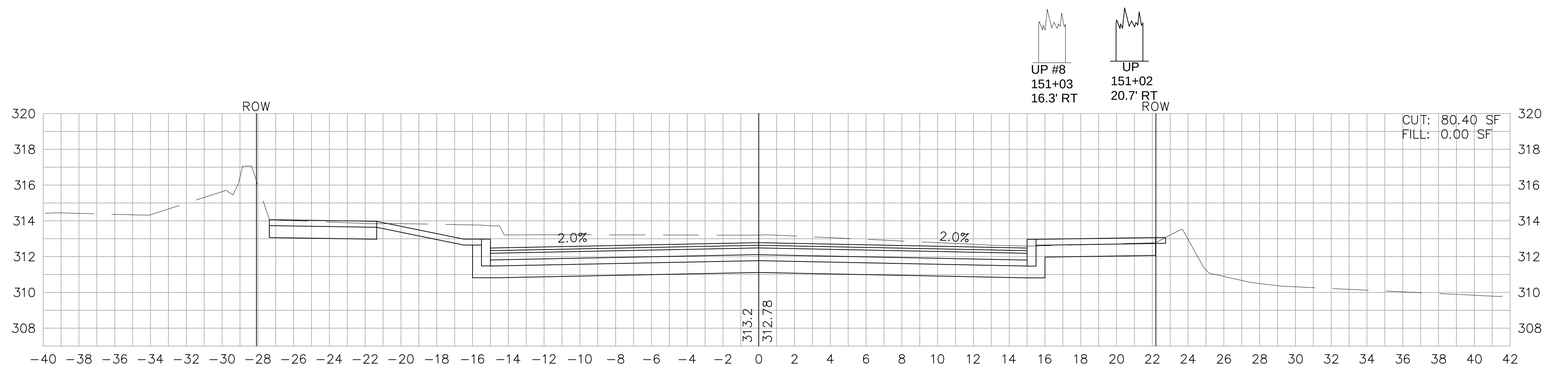


151+45

12" TREE
151+40
19.1' LT



151+25



151+00

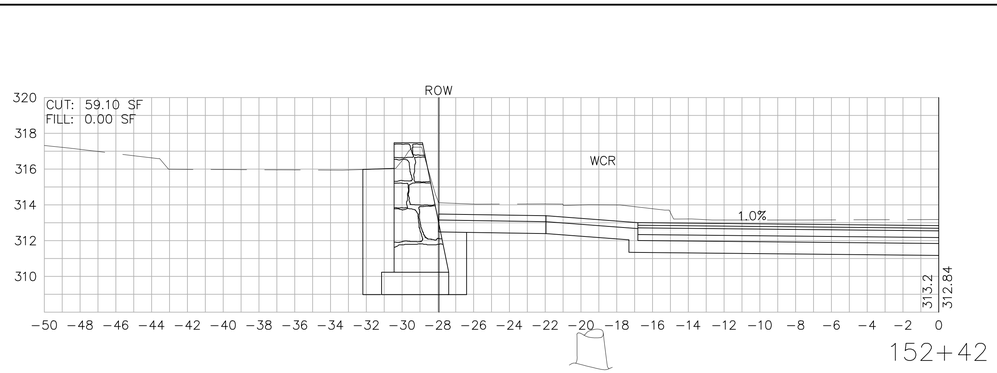
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	137	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

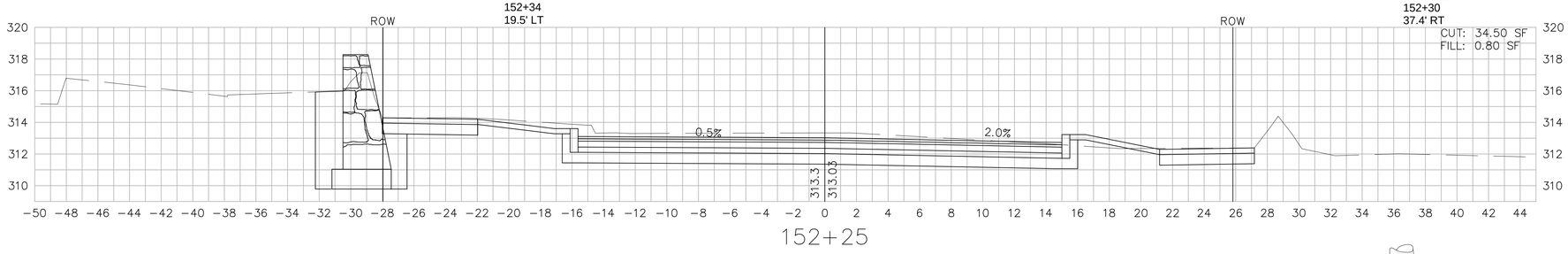


152+42

20" TREE
152+45
39.3' RT

30" TREE
152+34
19.5' LT

14" TREE
152+30
37.4' RT



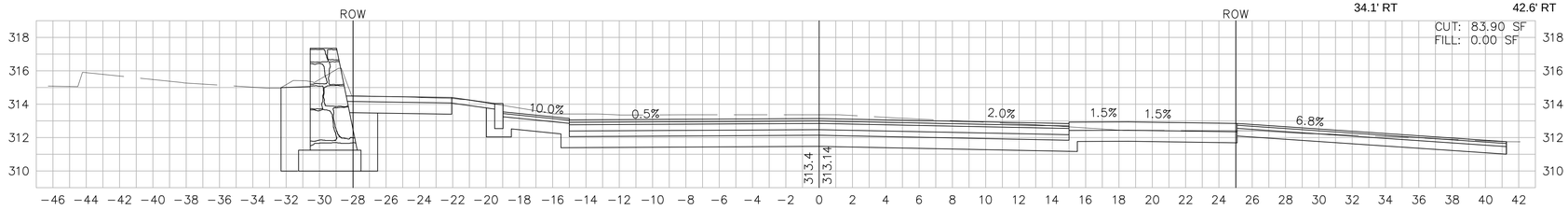
152+25

12" TREE
152+22
36.3' RT

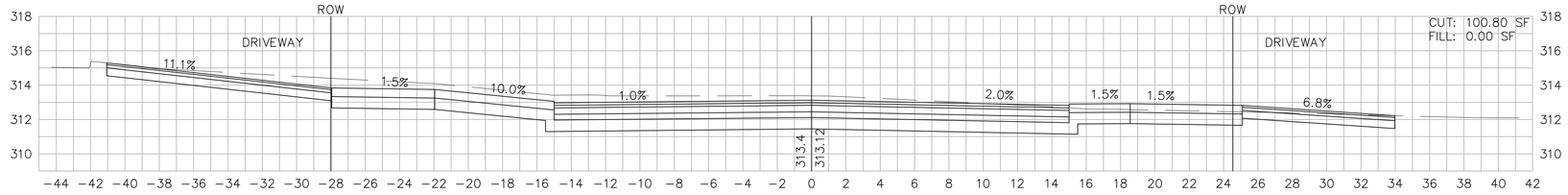
10" TREE
152+15
35.3' RT

8" TREE
152+07
34.1' RT

10" TREE
152+07
42.6' RT



152+00



151+85

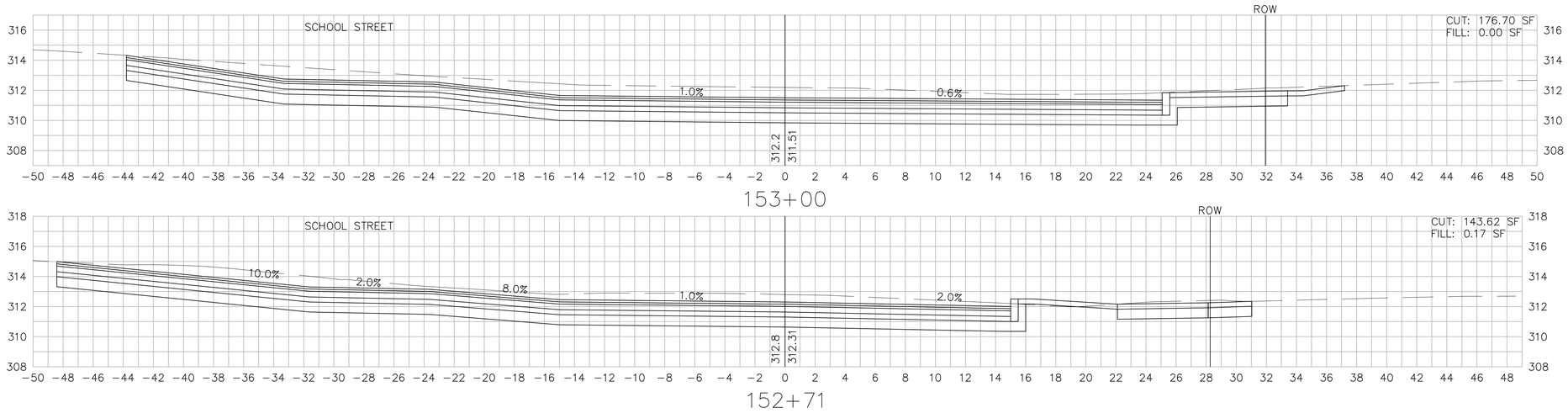
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

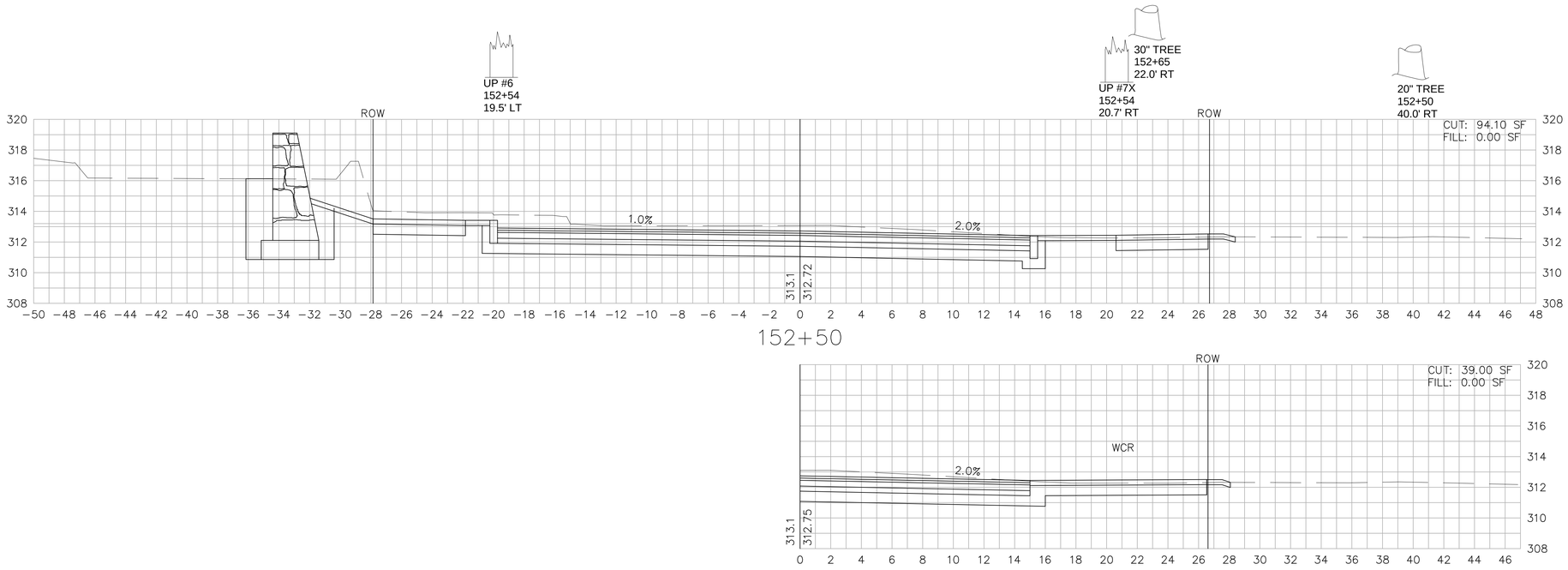
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	138	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET





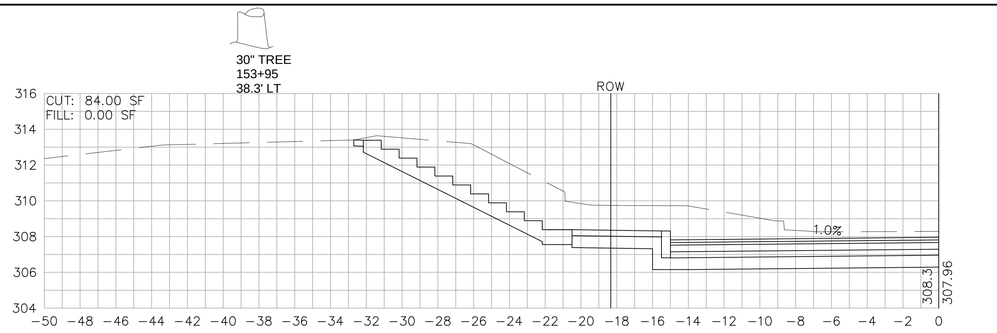
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

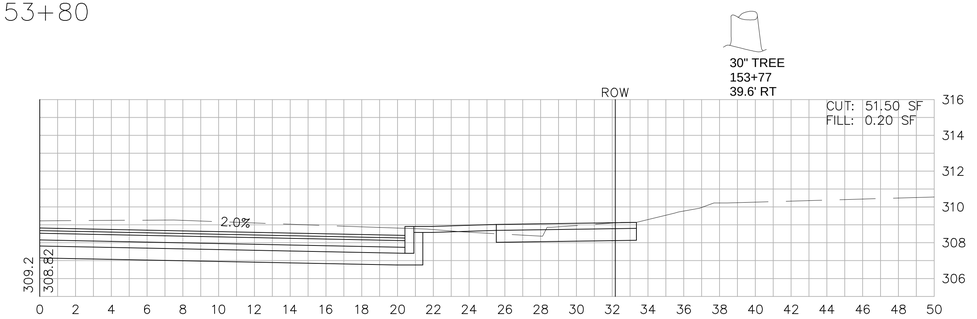
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	139	156
PROJECT FILE NO. 604989			

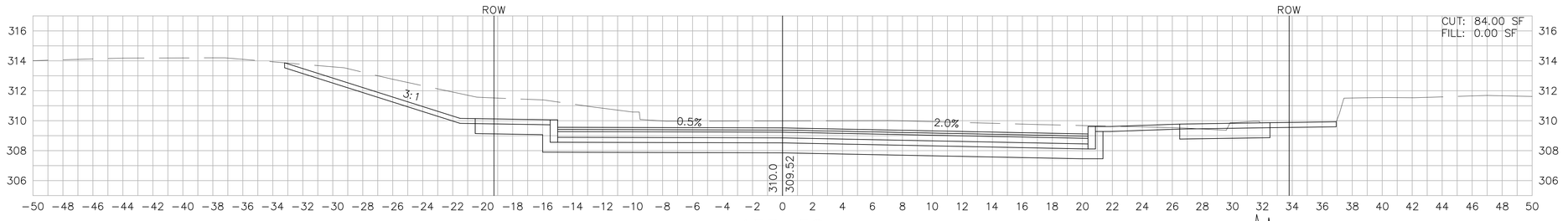
CROSS SECTIONS
MAIN STREET



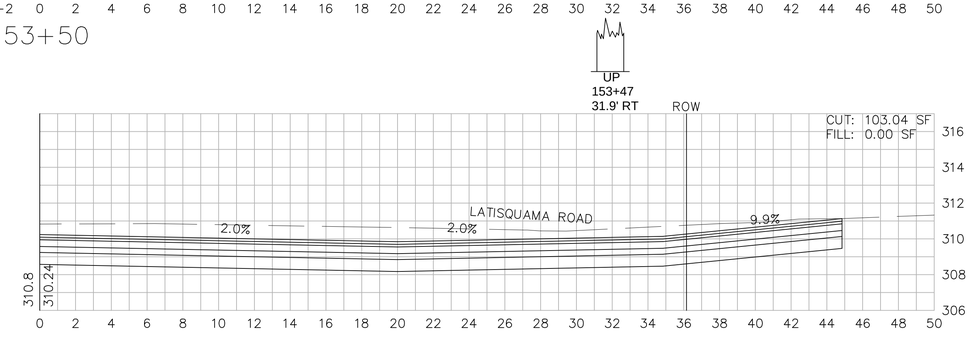
153+80



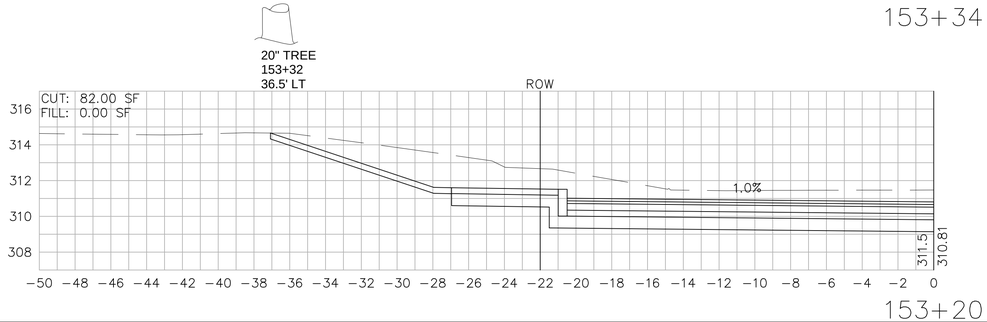
153+64



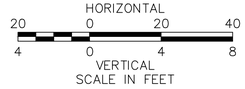
153+50



153+34



153+20



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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

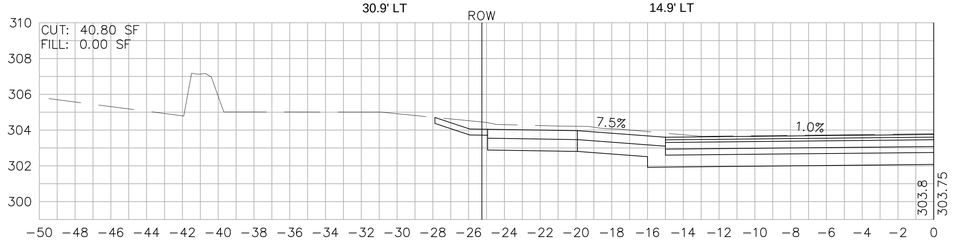
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	140	156
PROJECT FILE NO. 604989			

CROSS SECTIONS MAIN STREET

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

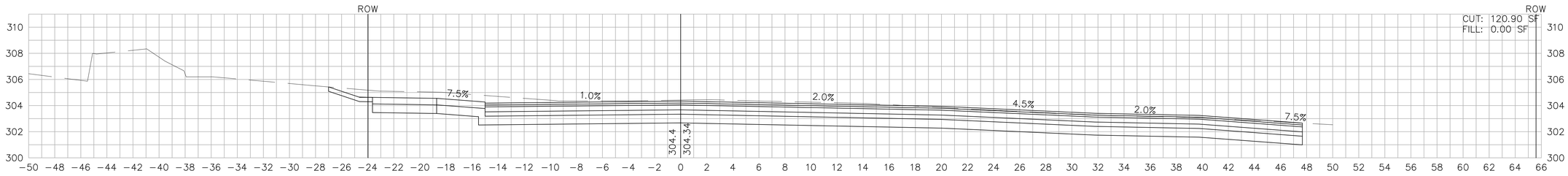
10" TREE
154+65
30.9' LT

EX HYD
154+66
14.9' LT

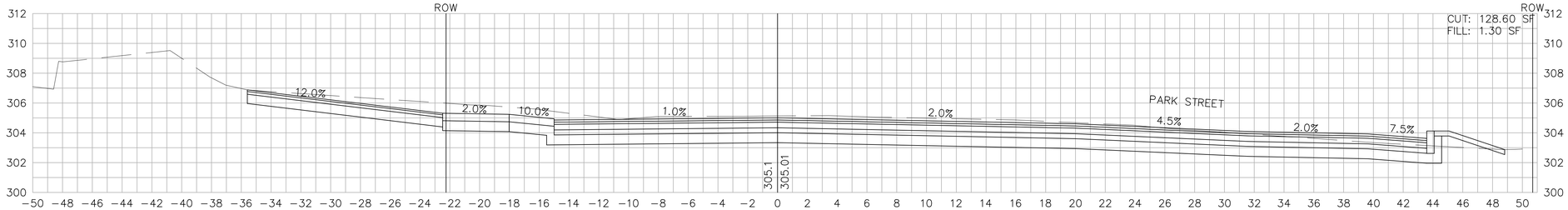


154+65

PROP HYD
154+57
24.0' LT

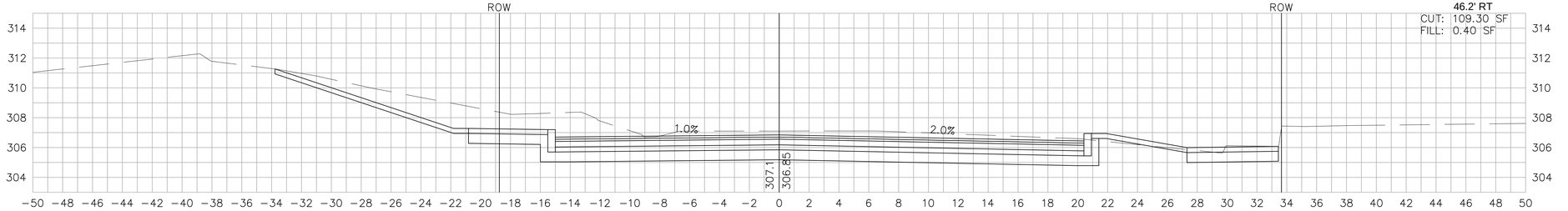


154+50



154+35

8" TREE
154+09
46.2' RT



154+00

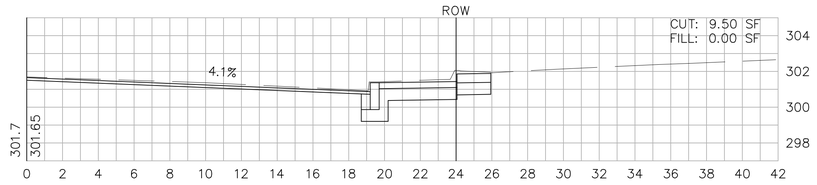
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

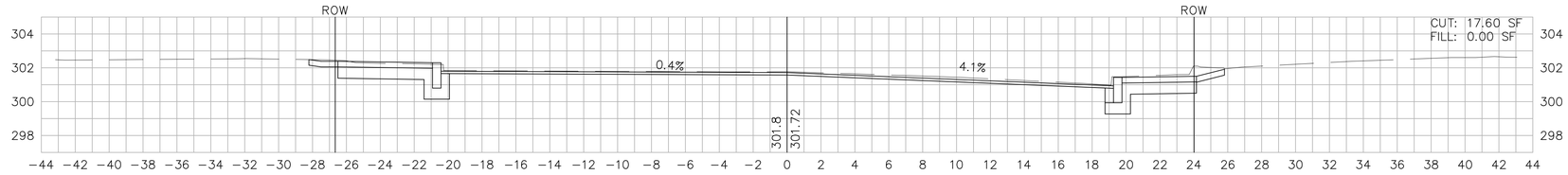
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	141	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
MAIN STREET

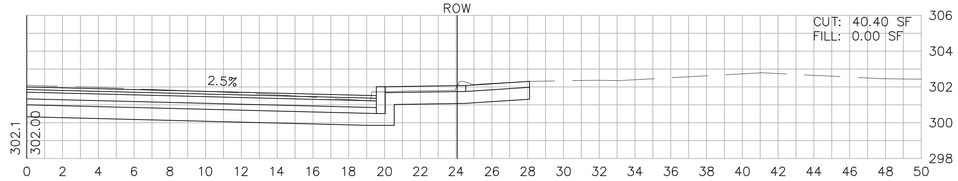


155+54



155+50

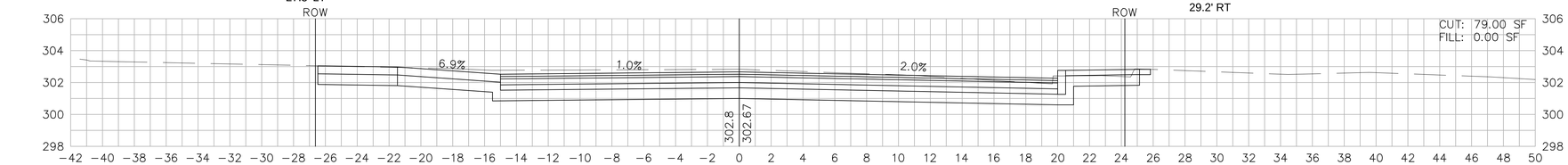
10" TREE
155+43
29.2' RT



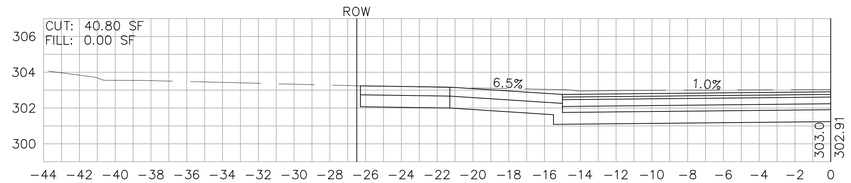
155+34

12" TREE
155+31
27.5' LT

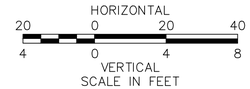
10" TREE
155+24
29.2' RT



155+00



154+91

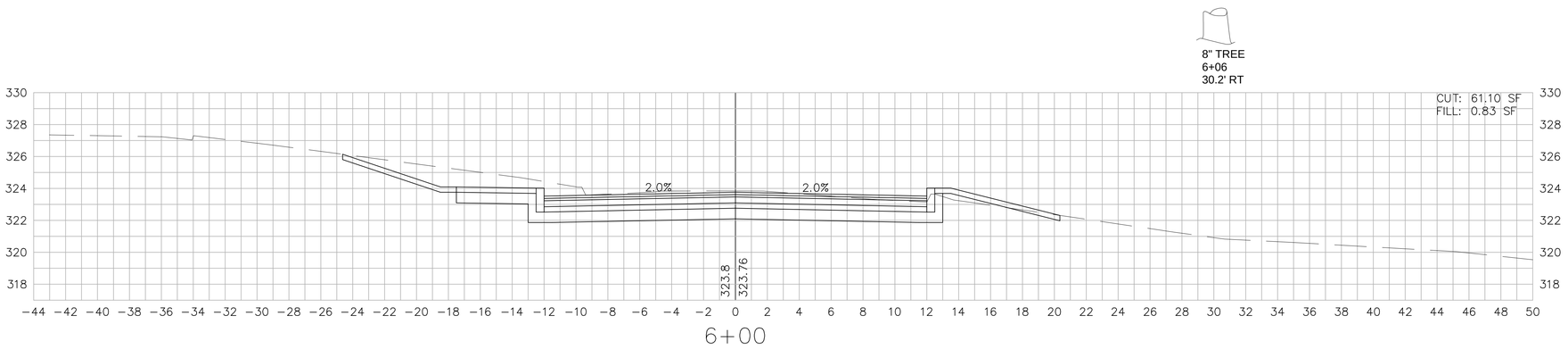


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	142	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ST. MARKS STREET

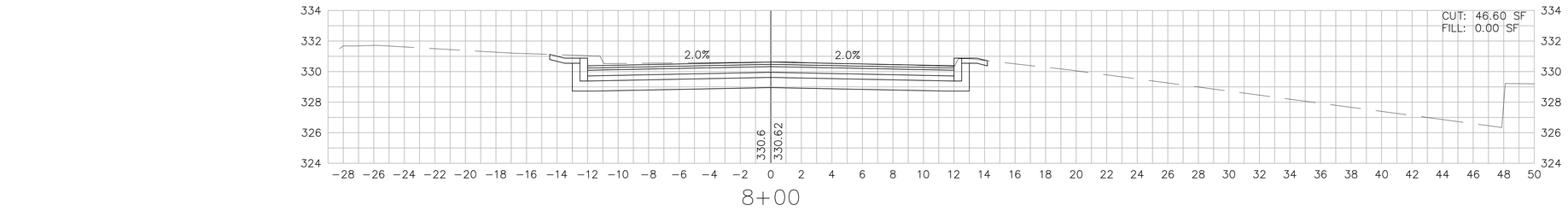


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

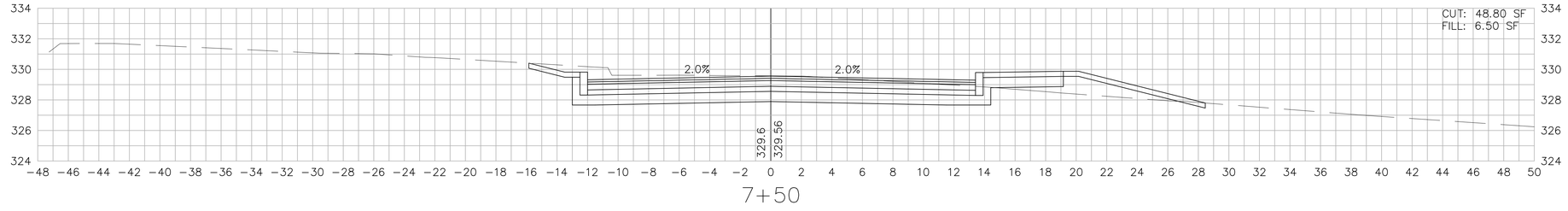
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	143	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ST. MARKS STREET



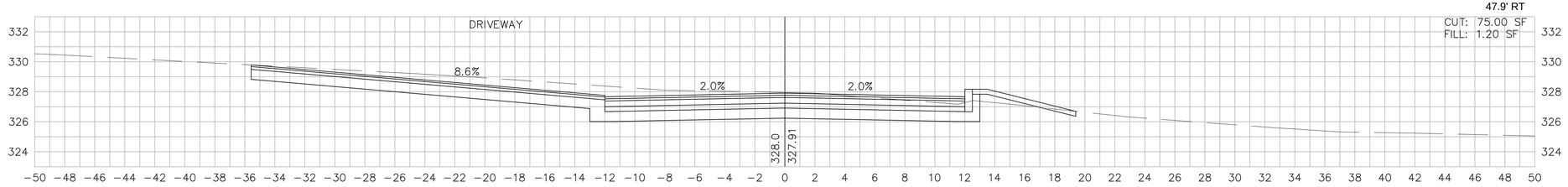
8+00



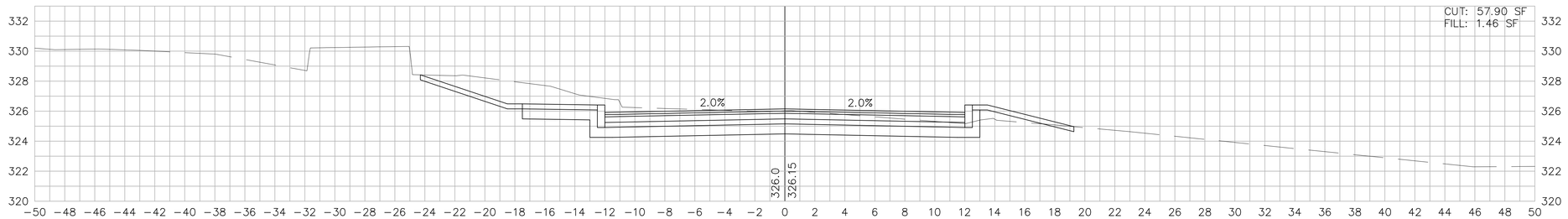
7+50

EX HYD
7+16
46.5' LT

UP #9
7+36
47.9' RT



7+00



6+50

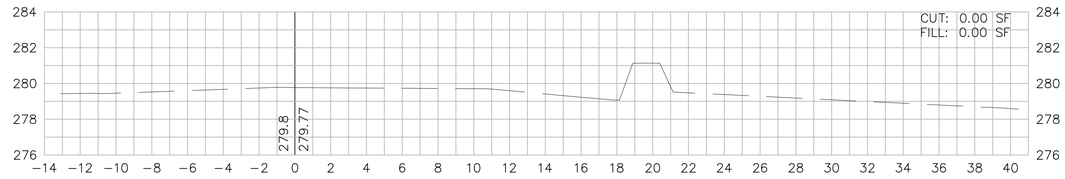
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

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

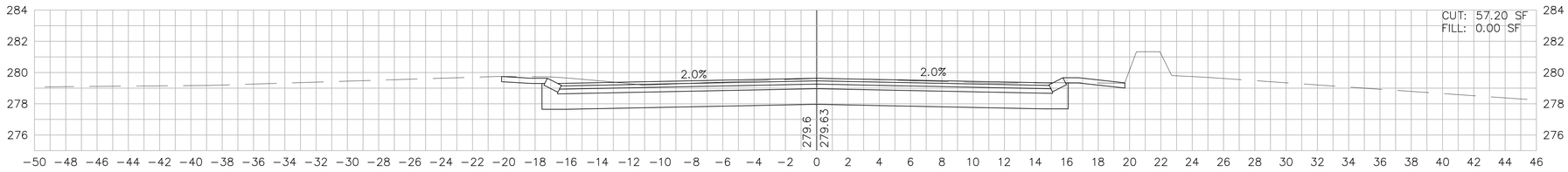
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	144	156
PROJECT FILE NO. 604989			

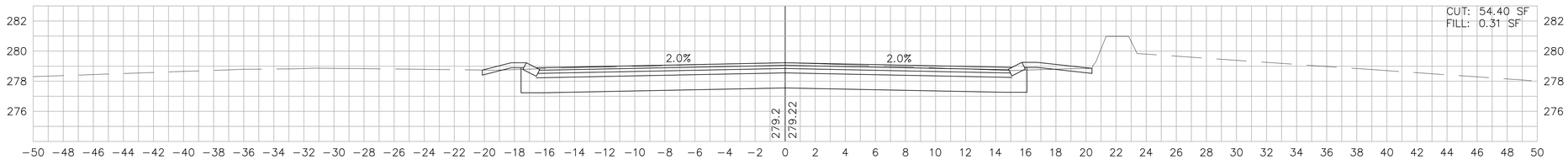
CROSS SECTIONS
SEARS ROAD



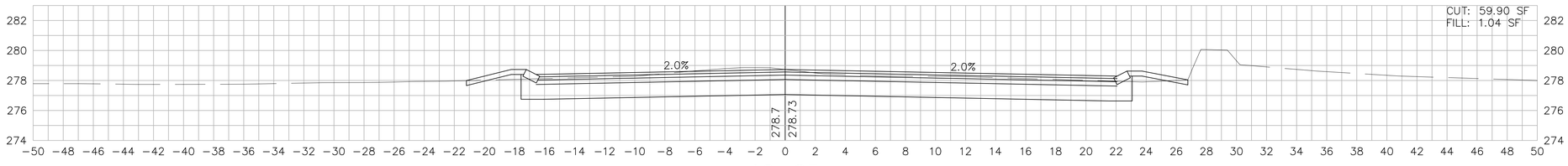
11+00



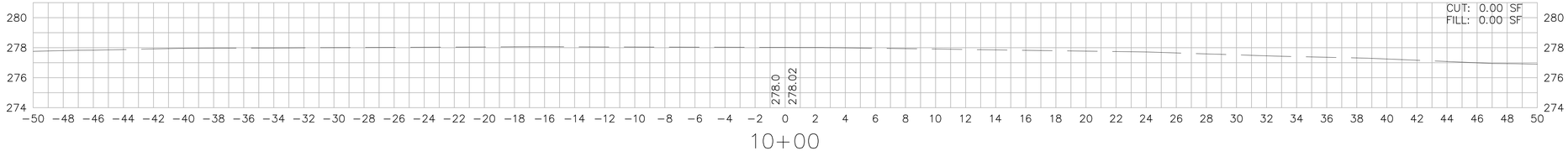
10+73



10+50



10+25



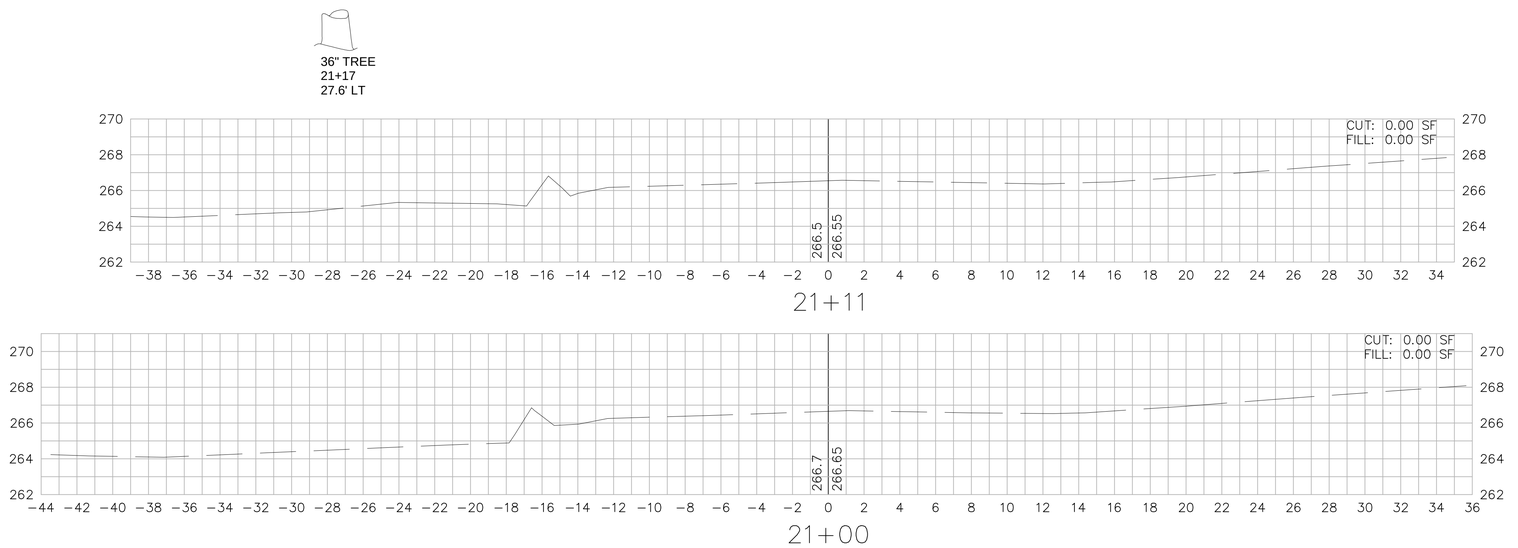
10+00

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

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	145	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
DEERFOOT ROAD

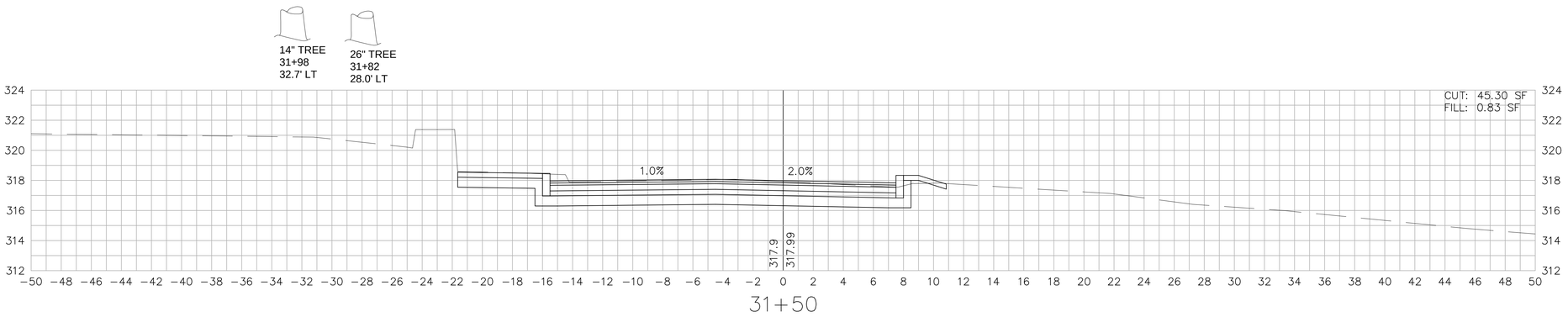


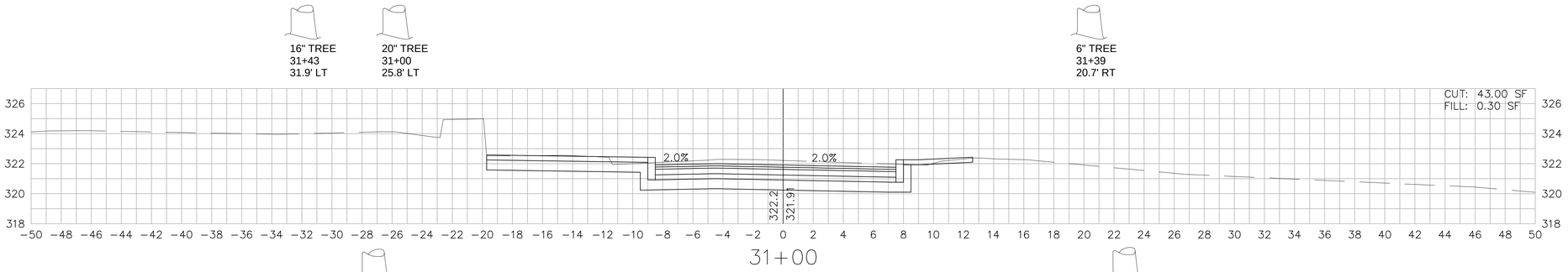
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

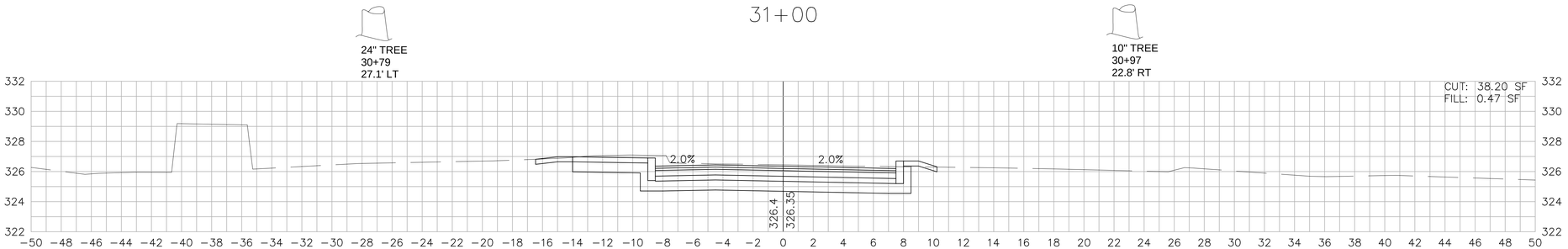
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

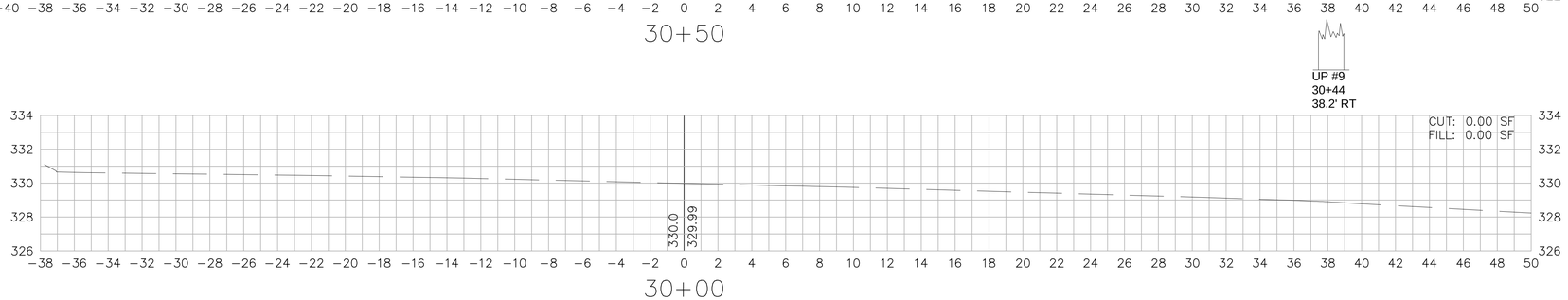
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	146	156
PROJECT FILE NO. 604989			

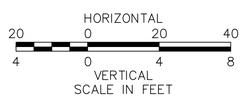
CROSS SECTIONS
COMMON STREET







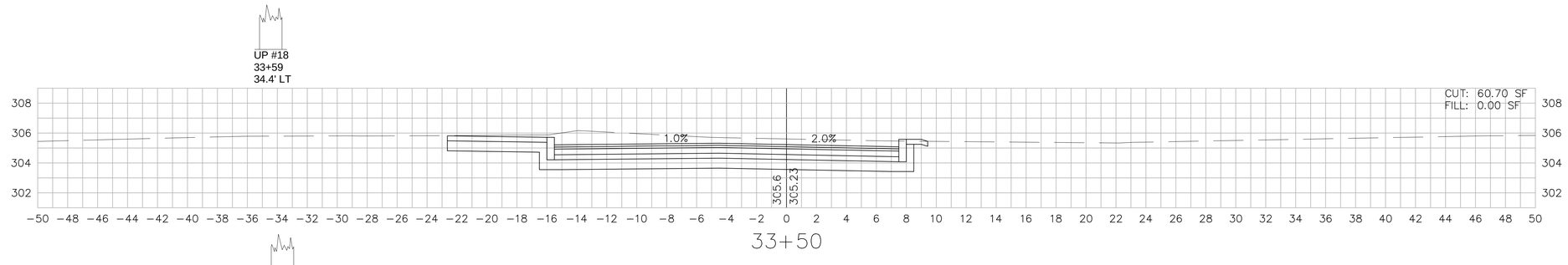




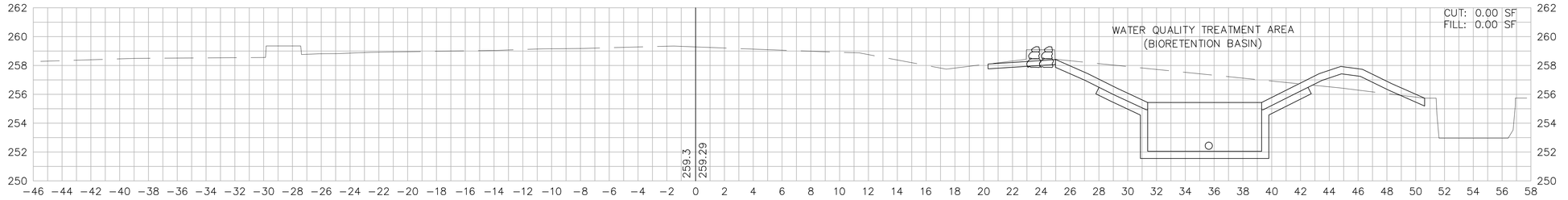
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	147	156
PROJECT FILE NO. 604989			

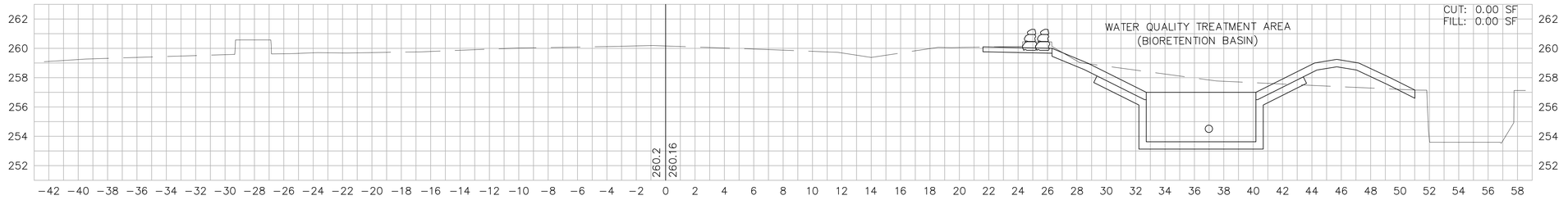
CROSS SECTIONS
COMMON STREET



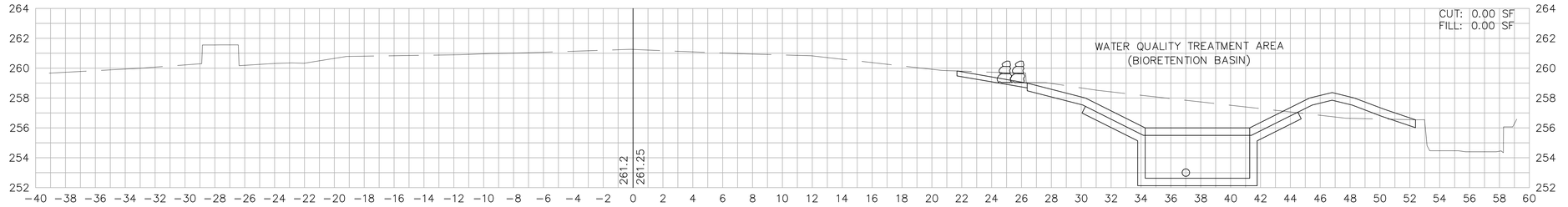
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg



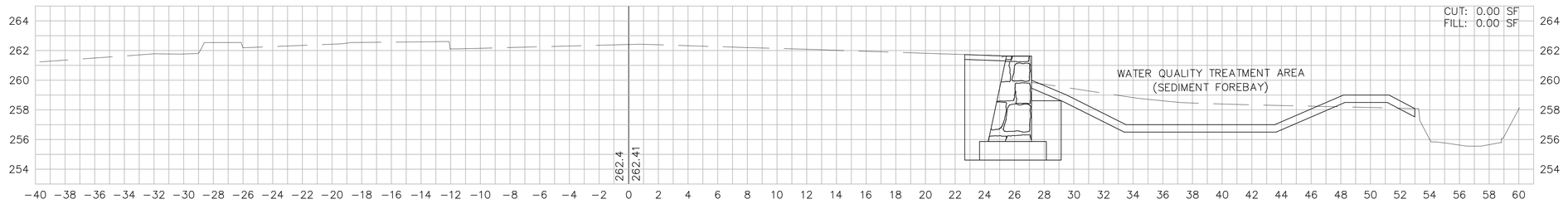
42+50



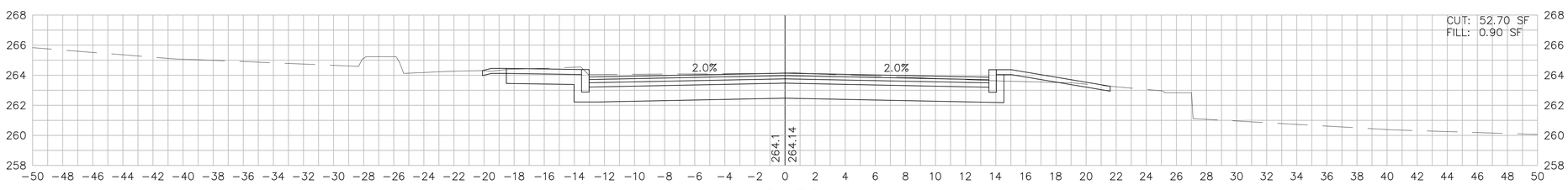
42+00



41+50



41+00



40+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.	--	148	156
PROJECT FILE NO. 604989			

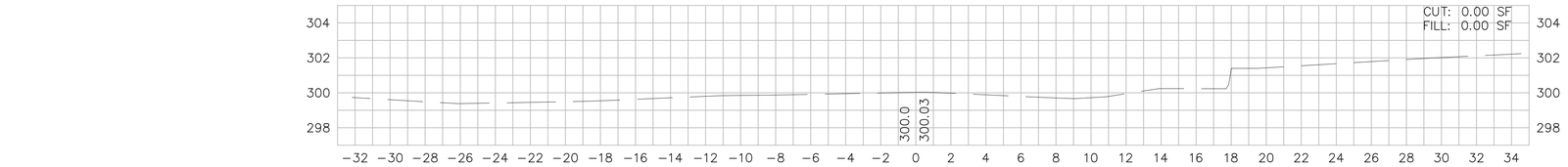
CROSS SECTIONS
PARKERVILLE ROAD

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

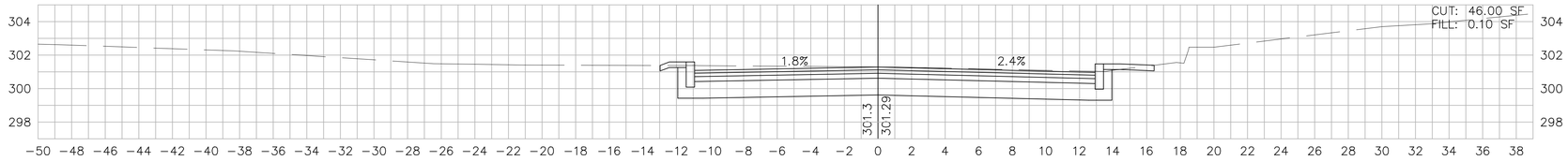
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	149	156
PROJECT FILE NO. 604989			

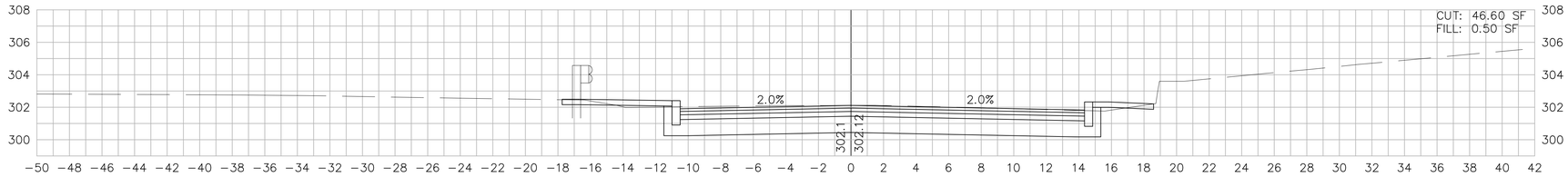
CROSS SECTIONS
PARK STREET



61+50



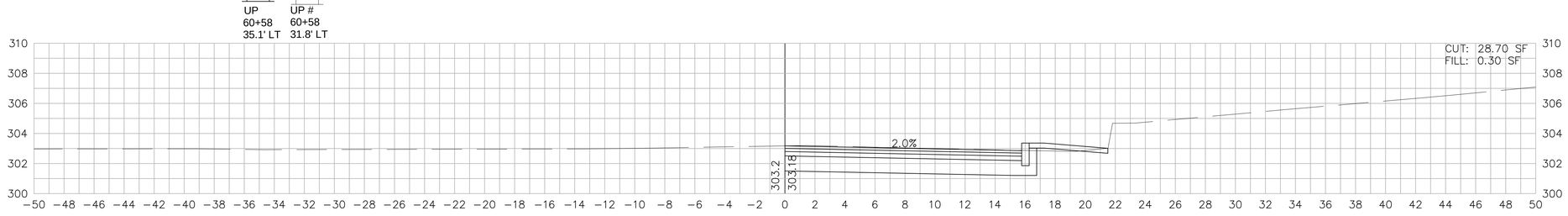
61+00



60+75

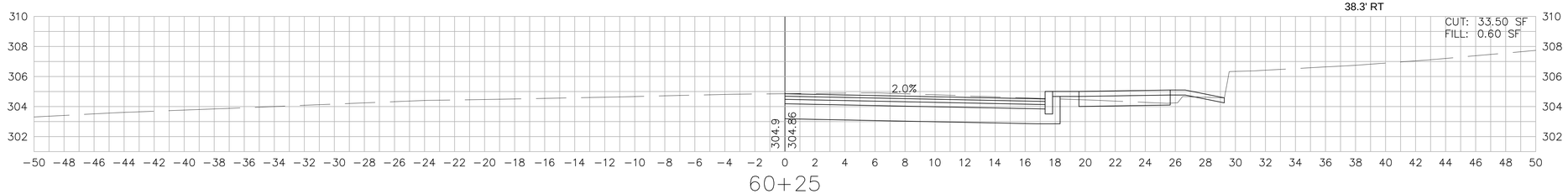
UP
60+58
35.1' LT

UP #
60+58
31.8' LT

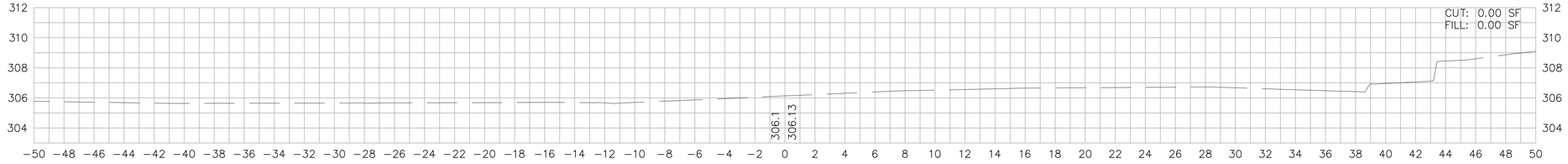


60+50

8" TREE
60+27
38.3' RT



60+25



60+00

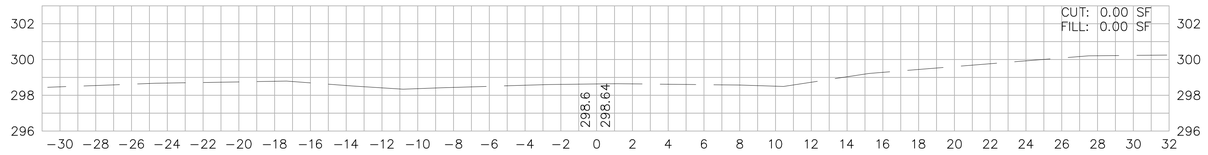
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
PARK STREET



62+00

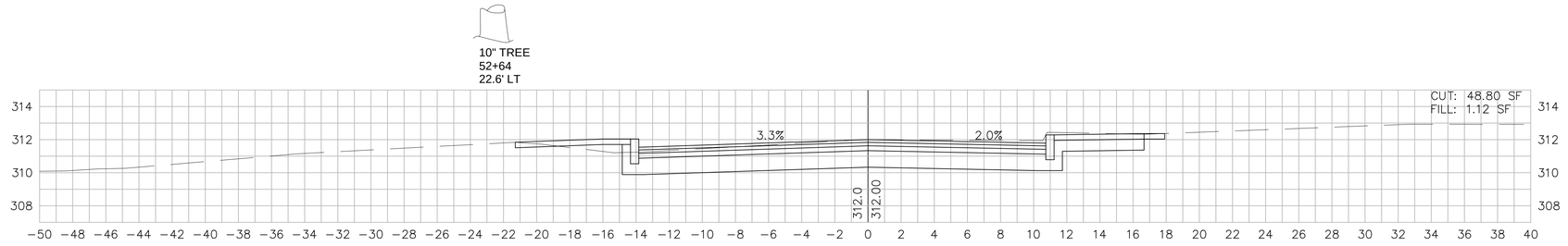
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

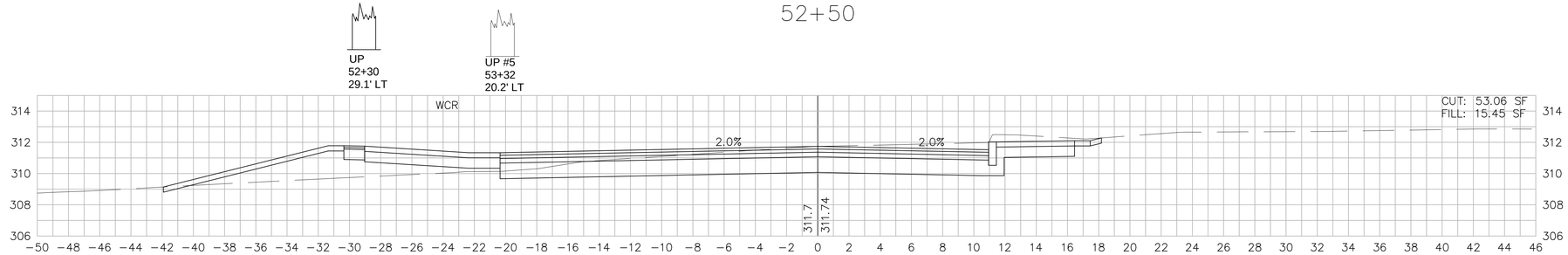
\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

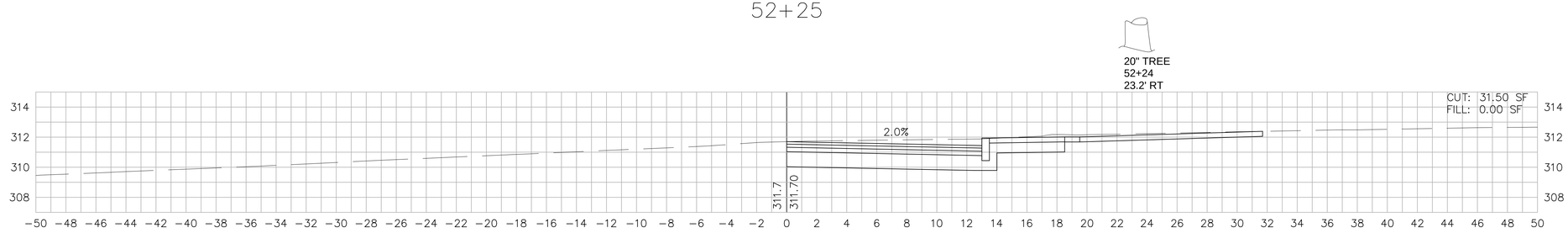
SOUTHBOROUGH
MAIN STREET (ROUTE 30)

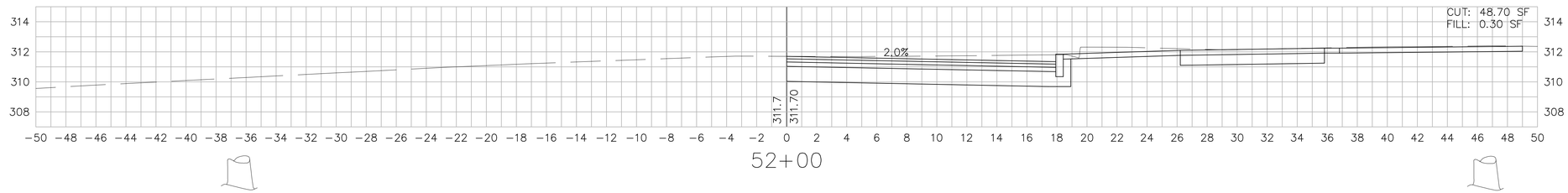
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	151	156
PROJECT FILE NO. 604989			

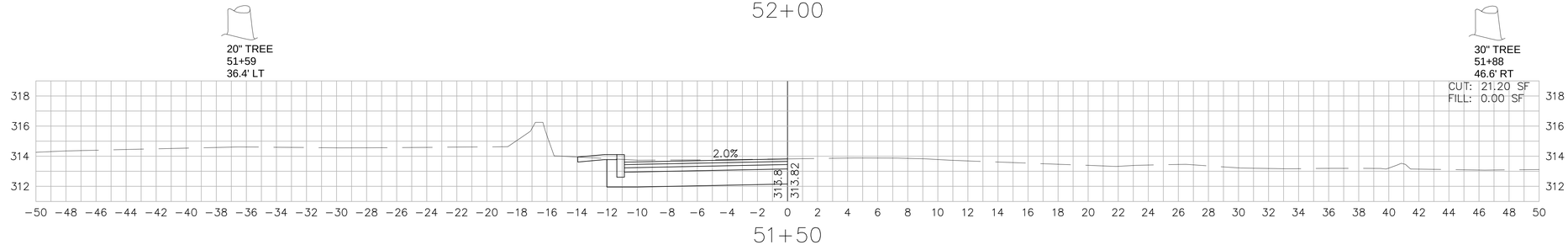
CROSS SECTIONS
SCHOOL STREET

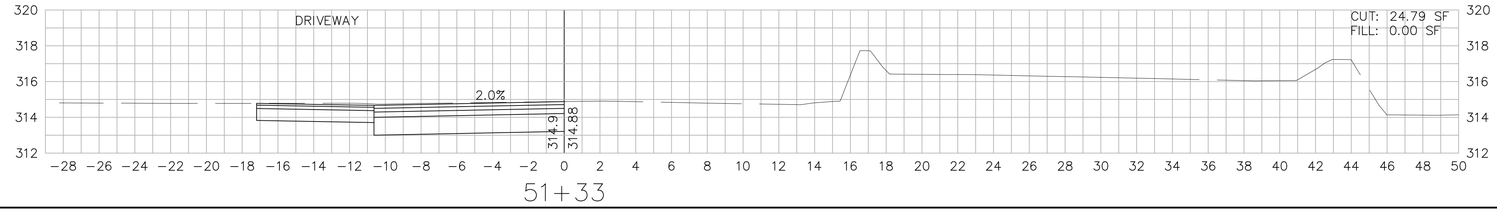












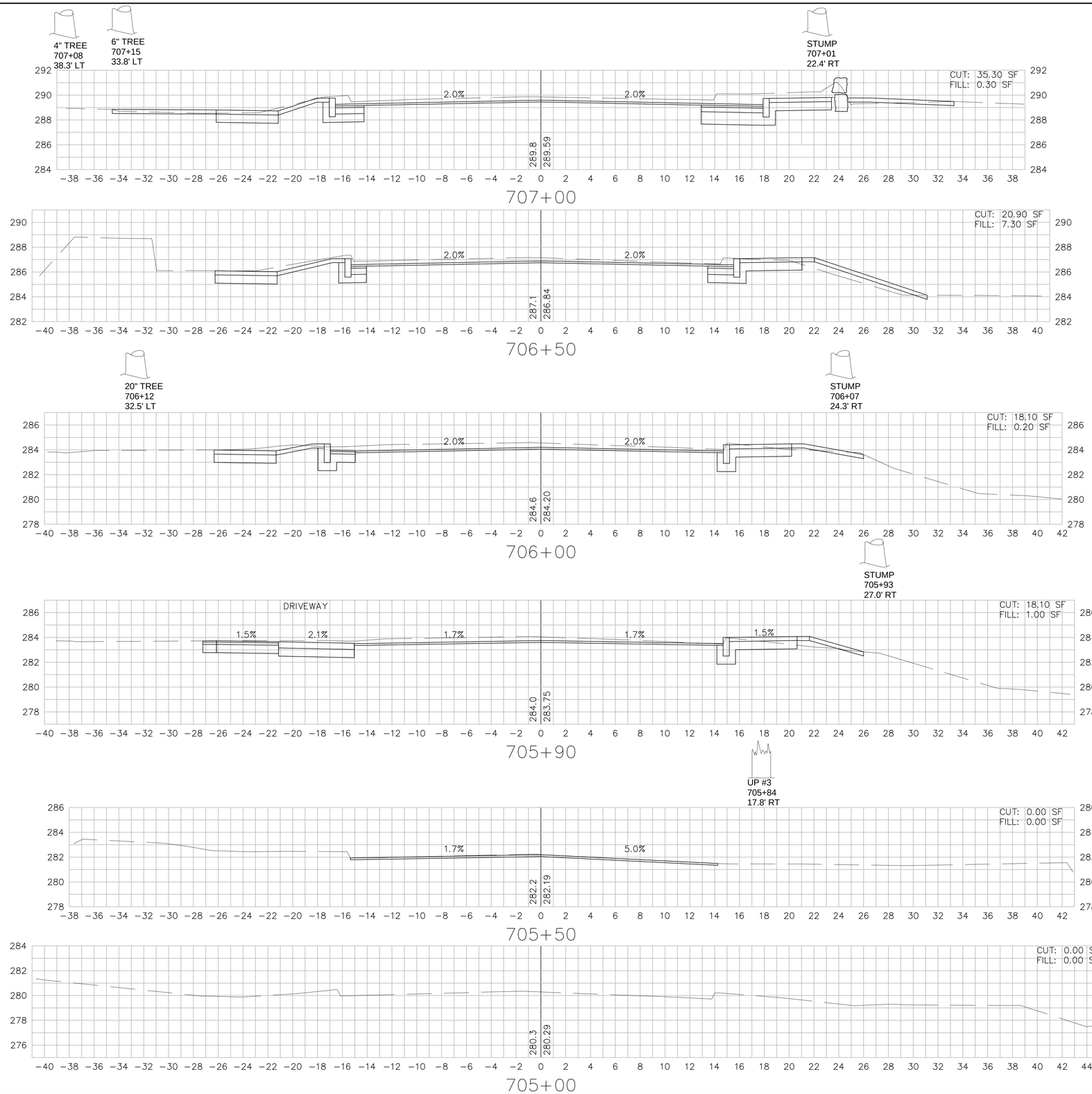
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

\\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.	--	152	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

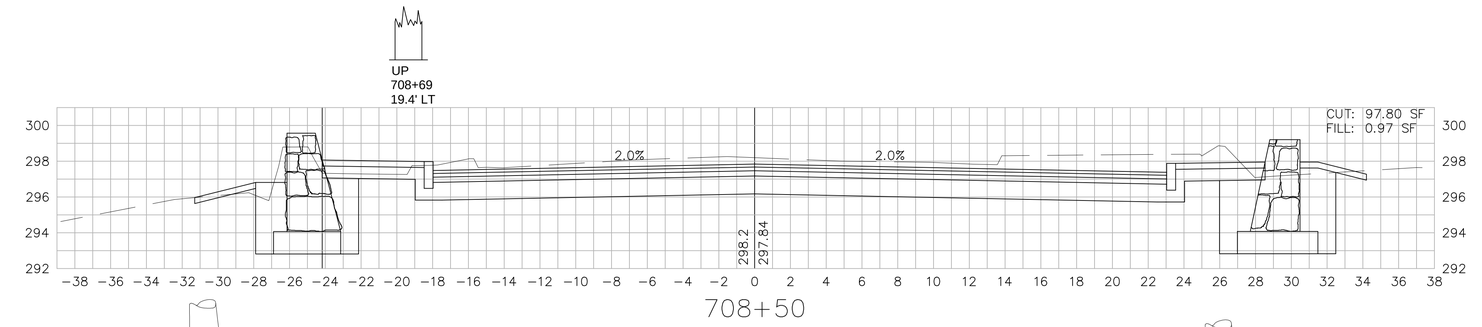


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	153	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

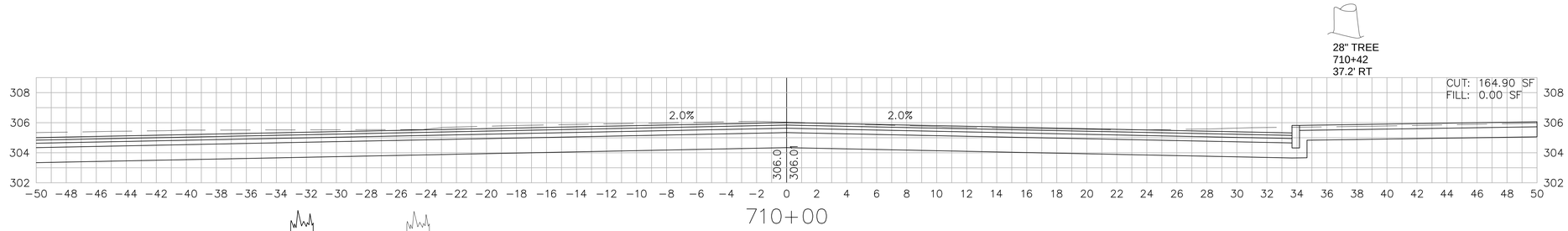


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	154	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

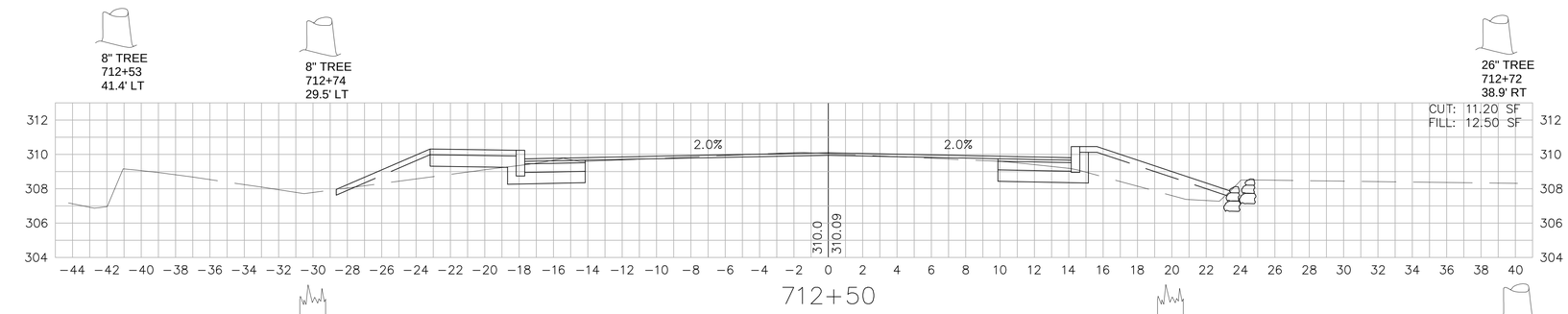


\\vhb\proj\Worcester\10832.00\cad\te\planset\10832XS-SIDES.dwg

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	155	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

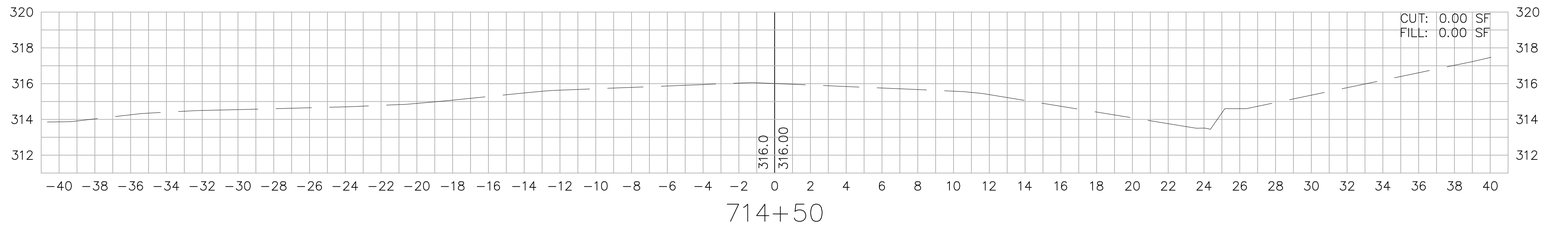


HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

SOUTHBOROUGH
MAIN STREET (ROUTE 30)

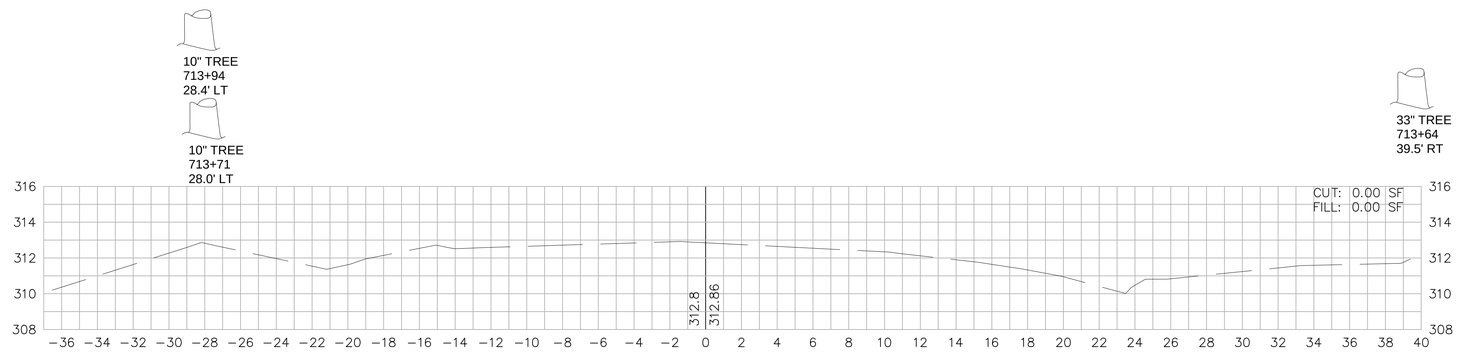
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	156	156
PROJECT FILE NO. 604989			

CROSS SECTIONS
ROUTE 85

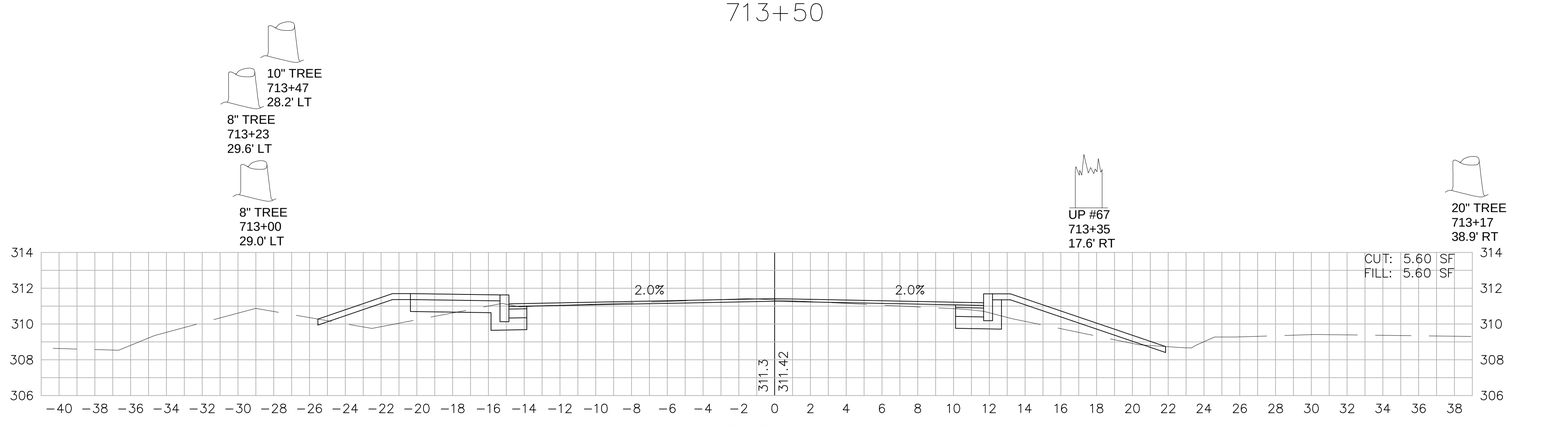


714+50

714+00



713+50



713+00

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