13153-HD(COV).DWG 20-Dec-2019

TRANSPORTATION IMPROVEMENT PROJECT

PLAN AND PROFILE OF

CORDAVILLE ROAD

IN THE TOWN OF

SOUTHBOROUGH

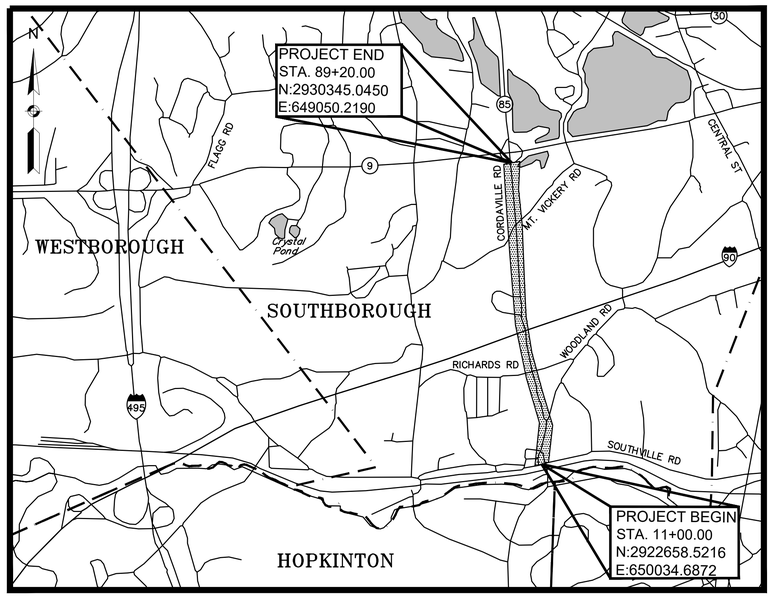
WORCESTER COUNTY

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED APRIL 1, 2019, THE INTERIM SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 30, 2019, THE 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

25% SUBMITTAL

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2-3	LEGEND & ABBREVIATIONS
4-5	KEY PLAN
6-7	TYPICAL SECTIONS
8-22	CONSTRUCTION PLANS
23-38	PROFILES
39-53	ALIGNMENT & GRADING PLANS
54-68	TRAFFIC PLANS
69-71	TEMPORARY TRAFFIC CONTROL PLANS
72-74	CONSTRUCTION DETAILS
75-76	DRIVEWAY & WHEELCHAIR RAMP DETAILS



2000 0 2000 4000

SCALE 1" = 2000'

LENGTH OF PROJECT = 7803.55 FEET = 1.477 MILES

DECEMBER 2019

DESIGN DESIGNATION (CORDAVILLE ROAD)

	SOUTHVILLE ROAD TO 150' NORTH OF WOODLAND ROAD	150' NORTH OF WOODLAND ROAD TO ROUTE 9
DESIGN SPEED	35 MPH	45 MPH
ADT (2019)	12,674 VPD	12,674 VPD
ADT (2029)	13,322 VPD	13,322 VPD
K	11%	11%
D	60% NB	60% NB
T (PEAK HOUR)	7%	7%
T (AVERAGE DAY)	7% ASSUMED	7% ASSUMED
DHV	1,525 VPH	1,525 VPH
DDHV	914 VPH	914 VPH
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL	URBAN MINOR ARTERIAL

DATE	DESCRIPTION	REV #

ENGINEER DATE

Vanasse Hangen Brustlin, Inc.
2 Washington Square Suite 219
Worcester, MA 01604
508.752.1001 FAX 508.752.1276

DESIGNED BY JLS	APPROVED BY XXX	SHEET 1 OF 76
DRAWN BY JLS	DFTG CHECKED BY MES	VHB CAD FILE NAME 12377_HD(COV).DWG
CHECKED BY MES	DATE DECEMBER 2019	JOB NO. 13153.00

SOUTHBOROUGH
CORDAVILLE ROAD
LEGEND & ABBREVIATIONS
SHEET 2 OF 76

13153-HDLEG.DWG 20-Dec-2019

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
C	C	CABLE MANHOLE
D	D	DRAINAGE MANHOLE
E	E	ELECTRIC MANHOLE
G	G	GAS MANHOLE
M	M	MISC MANHOLE
S	S	SEWER MANHOLE
T	T	TELEPHONE MANHOLE
W	W	WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS (ON-THE-GROUND SURVEY DATA)
100 99		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
S S S S	S S S S	GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
x	x	CHAIN LINK OR METAL FENCE
		WOOD FENCE
		EROSION CONTROL BARRIER
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

TRAFFIC SYMBOLS

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

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWEL	SOLID WHITE EDGE LINE
	SWLL	SOLID WHITE LANE LINE
	SYEL	SOLID YELLOW EDGE LINE
	BWL	BROKEN WHITE LINE, 10' LINE W/30' SPACING
	BYL	BROKEN YELLOW LINE, 10' LINE W/30' SPACING
	DWL	DOTTED WHITE LINE, 2' LINE W/6' SPACING
	DYL	DOTTED YELLOW LINE, 2' LINE W/6' SPACING
	LDWLEx	LONG DASHED WHITE LINE EXTENSION, 3' LINE W/9' SPACING
	DYCL	DOUBLE YELLOW CENTER LINE
	SWCHL	SOLID WHITE CHANNELIZATION LINE
	SYCHL	SOLID YELLOW CHANNELIZATION LINE

SOUTHBOROUGH
CORDAVILLE ROAD
LEGEND & ABBREVIATIONS
SHEET 3 OF 76

13153-HD(LEG).DWG 20-Dec-2019

ABBREVIATIONS

GENERAL

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

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL

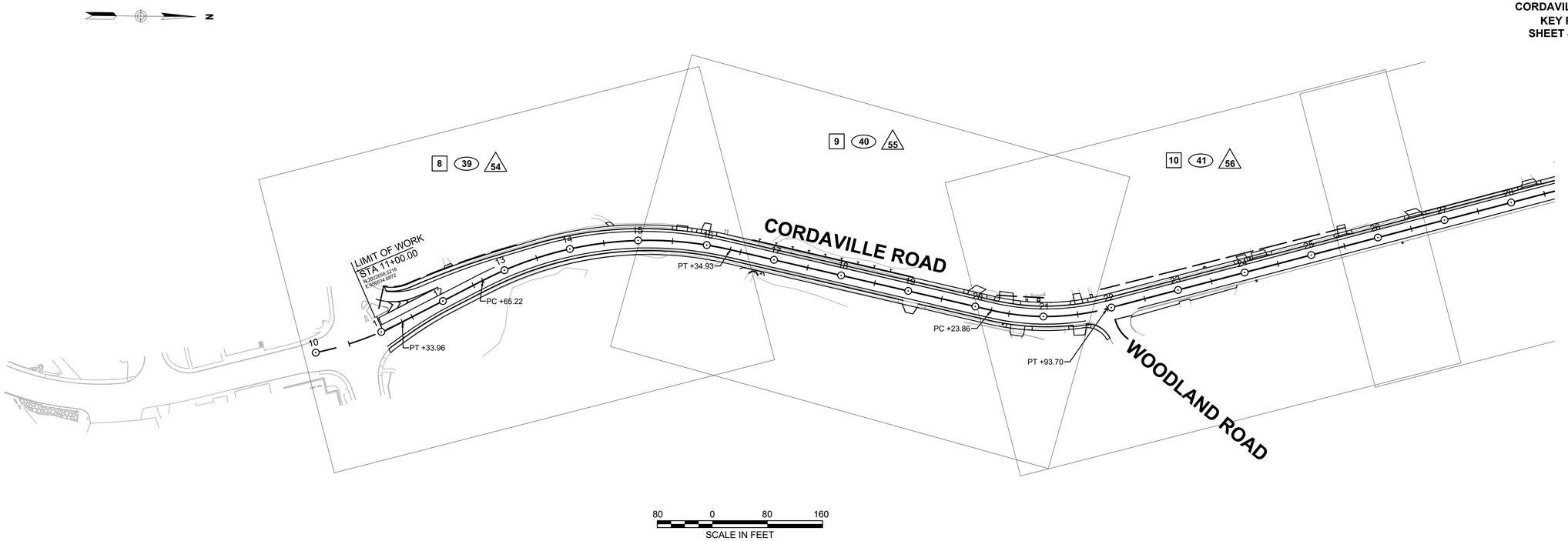
CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
←FR–	FLASHING RED LEFT ARROW
–FR→	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
←FY–	FLASHING YELLOW LEFT ARROW
–FY→	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
←G–	STEADY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

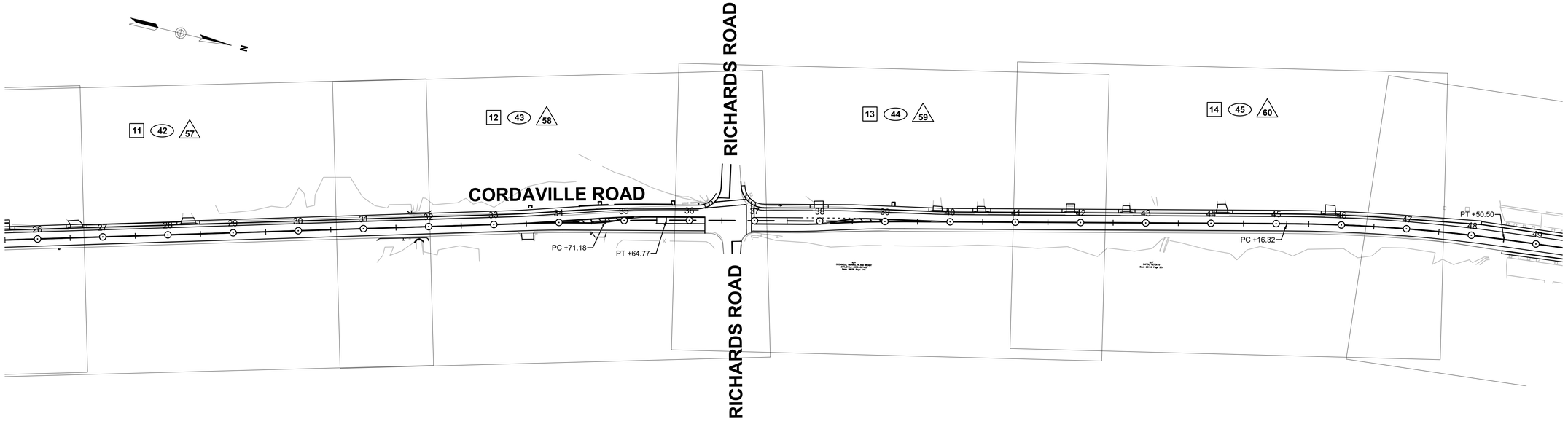
GENERAL NOTES:

1. TOPOGRAPHICAL INFORMATION FROM A SURVEY BY VANASSE HANGEN BRUSTLIN, INC., WATERTOWN, MASSACHUSETTS BETWEEN THE DATES OF JUNE 19, 2015 AND AUGUST 24, 2015
2. HORIZONTAL DATUM IS BASED ON MASS GRID SYSTEM, NAD 1983. ELEVATIONS SHOWN REFER TO NAVD OF 1988.
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. THE CONTRACTOR SHALL CONTACT DIGSAFE TO REQUEST EXISTING UTILITY MARKOUT IN THE FIELD.
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 NEW HOT MIX ASPHALT ROADWAY PAVEMENT TOP COURSE AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH HOT POURED RUBBERIZED ASPHALT SEALER.
12. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
13. ALL LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE DRAWINGS.
14. ALL EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
15. 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.

SOUTHBOROUGH
CORDAVILLE ROAD
KEY PLAN
SHEET 4 OF 76

13153-HD(KEY).DWG 20-Dec-2019





LEGEND

- XX CONSTRUCTION PLANS
- XX ALIGNMENT & GRADING PLANS
- XX TRAFFIC PLANS

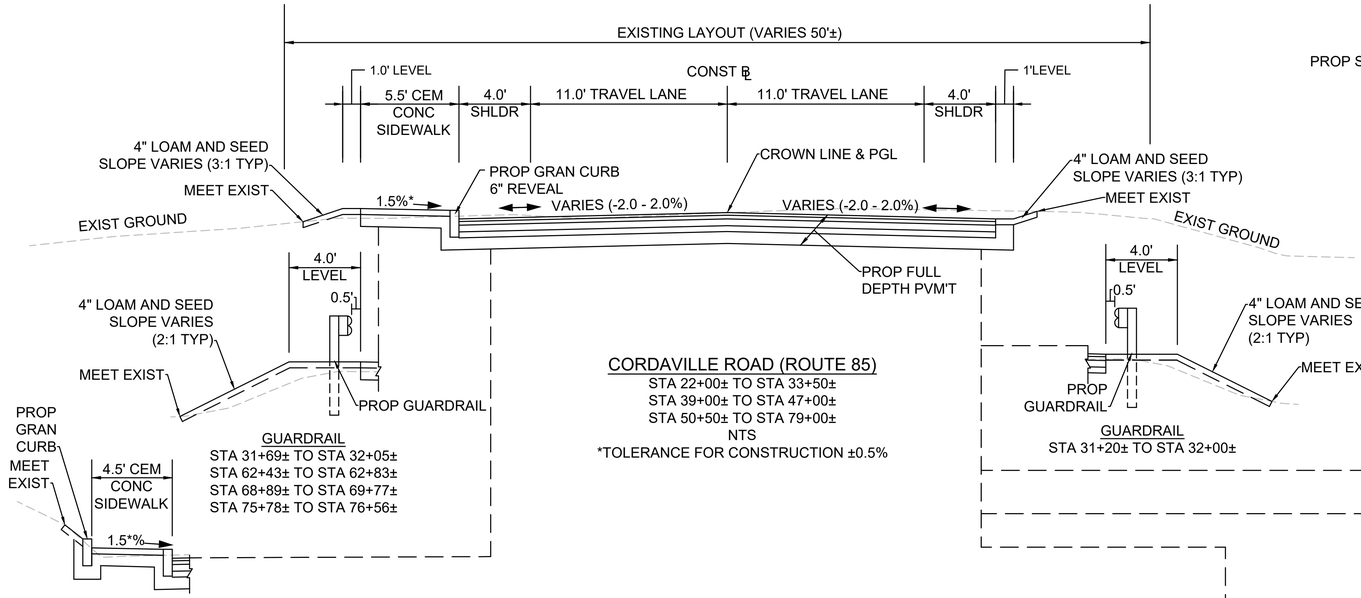
SOUTHBOROUGH
CORDAVILLE ROAD
KEY PLAN
SHEET 5 OF 76

13153-HD(KEY).DWG 20-Dec-2019

LEGEND

- XX CONSTRUCTION PLANS
- XX ALIGNMENT & GRADING PLANS
- XX TRAFFIC PLANS

13153-HD(TYP).DWG Plotted on 20-Dec-2019 5:40 PM

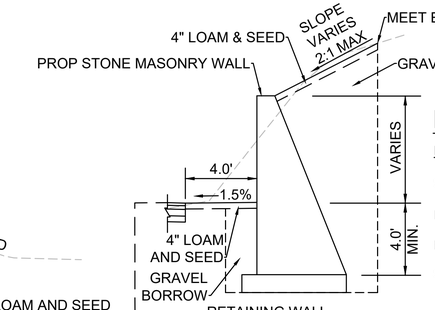


GUARDRAIL
STA 31+69± TO STA 32+05±
STA 62+43± TO STA 62+83±
STA 68+89± TO STA 69+77±
STA 75+78± TO STA 76+56±

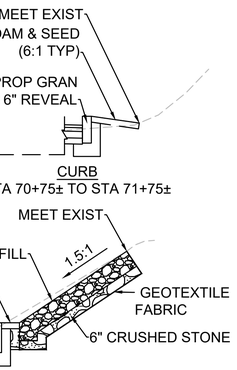
CURB AT BACK OF WALK
STA 26+70± TO STA 28+21±

GUARDRAIL
STA 31+20± TO STA 32+00±

CORDAVILLE ROAD (ROUTE 85)
STA 22+00± TO STA 33+50±
STA 39+00± TO STA 47+00±
STA 50+50± TO STA 79+00±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

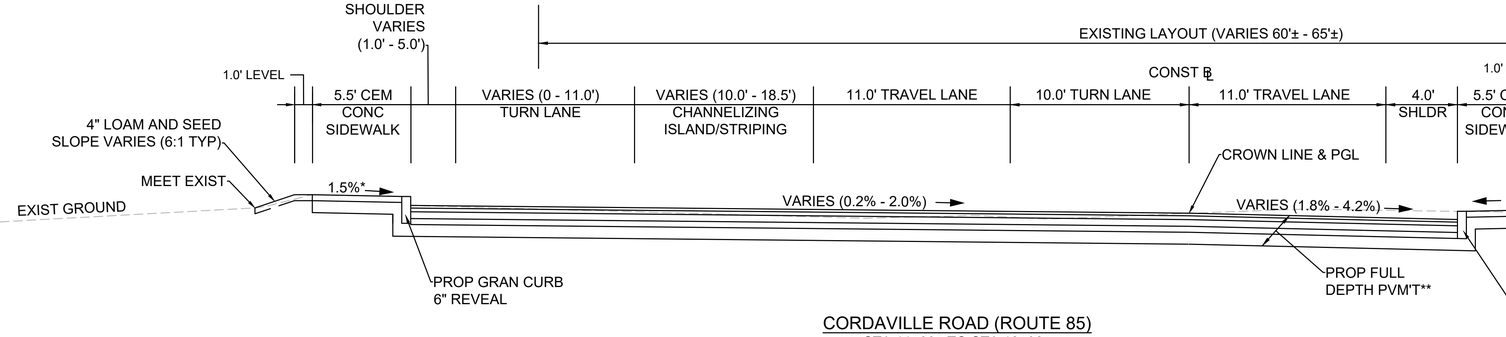


RETAINING WALL
STA 54+75± TO STA 55+50±



CURB
STA 70+75± TO STA 71+75±

CURB W/ MODIFIED ROCKFILL SLOPE
STA 72+75± TO STA 75+25±



GUARDRAIL
STA 16+63± TO STA 19+02±

CORDAVILLE ROAD (ROUTE 85)
STA 12+92± TO STA 22+00±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%

GUARDRAIL
STA 16+55± TO STA 16+91±

CORDAVILLE ROAD (ROUTE 85)
STA 11+00± TO STA 12+92±
NTS
*TOLERANCE FOR CONSTRUCTION ±0.5%
**MILL & OVERLAY STA 11+00 TO 11+50

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT

SURFACE:	1 ¾"	SUPERPAVE SURFACE COURSE - (SSC-12.5-P) OVER
INTERMEDIATE:	2 ½"	SUPERPAVE INTERMEDIATE COURSE - (SIC-19.0) OVER
BASE:	4 ½"	SUPERPAVE BASE COURSE - (SBC-37.5) OVER
SUBBASE:	4"	DENSE GRADED CRUSHED STONE OVER
	8"	GRAVEL BORROW (TYPE B)

TACK COAT
FOR FULL DEPTH CONSTRUCTION APPLY 0.05 GALLON ASPHALT EMULSION PER SQUARE YARD FOR TACK COAT OVER BASE COURSE AND INTERMEDIATE COURSE PRIOR TO PLACEMENT OF SURFACE COURSE.

PROPOSED PAVEMENT MICROMILLING AND PAVEMENT OVERLAY

SURFACE:	1 ¾"	SUPERPAVE SURFACE COURSE - (SSC-12.5)
MICROMILL:	1 ¾"	PAVEMENT MICROMILLING

TACK COAT
FOR PAVEMENT MICROMILLING APPLY 0.07 GALLON ASPHALT MULSION PER SQUARE YARD FOR TACK COAT OVER MILLED ROADWAY PRIOR TO PLACEMENT OF SURFACE COURSE.

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP / SIDEWALK

SURFACE:	4"	CEMENT CONCRETE AIR ENTRAINED (4000 PSI, ¾", 610 LB)
SUBBASE:	8"	GRAVEL BORROW (TYPE B)

**RETAIN EXIST. BASE AS DIRECTED BY ENGINEER

PROPOSED CEMENT CONCRETE DRIVEWAY/SIDEWALK AT DRIVE

SURFACE:	8"	CEMENT CONCRETE AIR ENTRAINED (4000 PSI, ¾", 610 LB)
SUBBASE:	8"	GRAVEL BORROW (TYPE B)

PROPOSED HOT MIX ASPHALT DRIVEWAY/ BIKEPATH/ PAVEMENT AREA

SURFACE:	1 ½"	SUPERPAVE SURFACE COURSE (SSC-9.5) OVER
INTERMEDIATE:	2"	SUPERPAVE INTERMEDIATE COURSE (SIC-12.5) OVER
SUBBASE:	8"	GRAVEL BORROW (TYPE B)

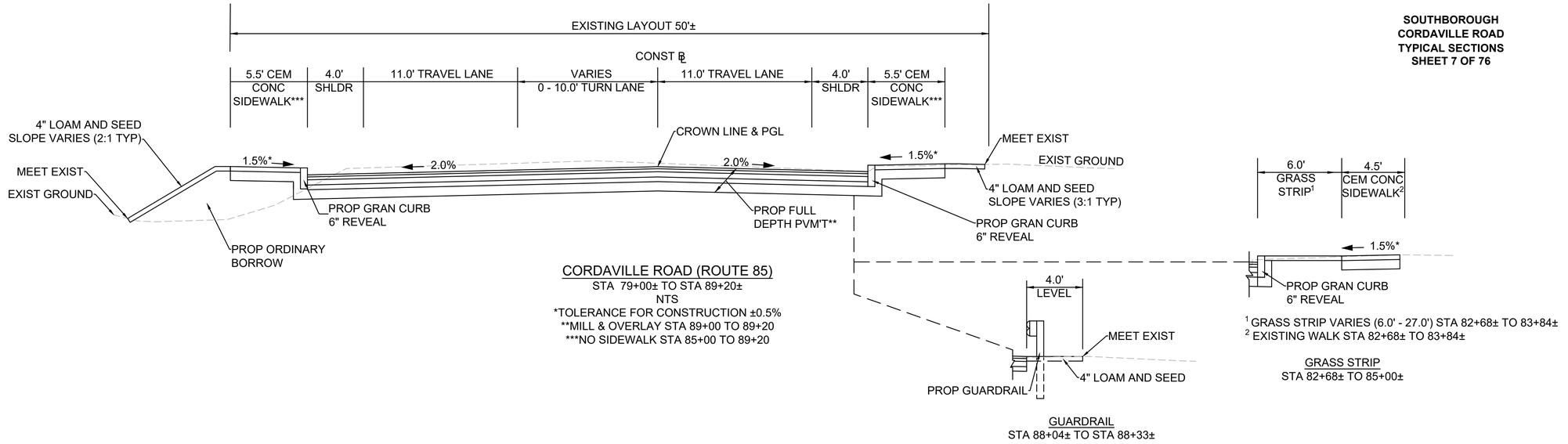
PROPOSED HOT MIX ASPHALT WALK

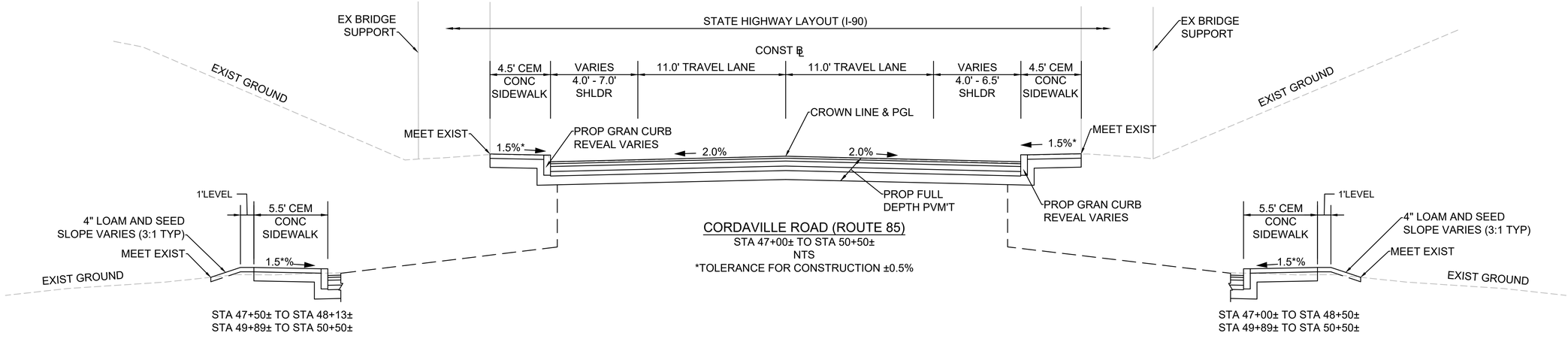
SURFACE:	1"	SUPERPAVE SURFACE COURSE (SSC-9.5) OVER
	1 ½"	SUPERPAVE INTERMEDIATE COURSE (SIC-12.5) OVER
SUBBASE:	8"	GRAVEL BORROW (TYPE B)

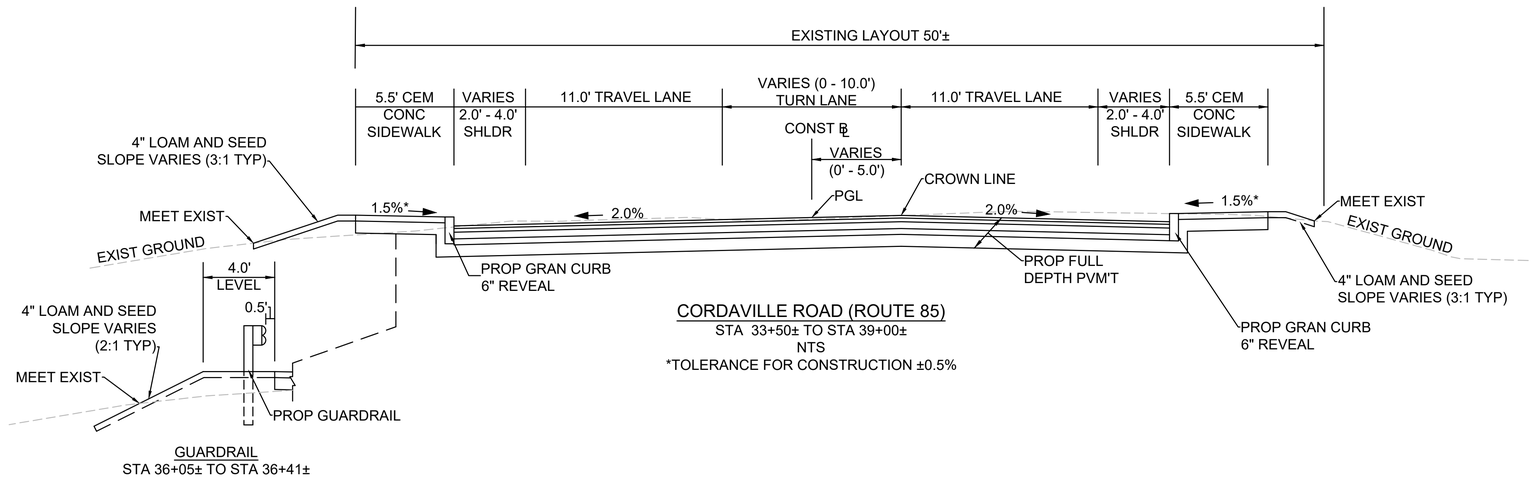
NOTES:

1. ALL HOT MIX ASPHALT PAVEMENTS SHALL PER SECTION 450 HOT MIX ASPHALT AND SECTION M3 ASPHALTIC MATERIALS.

Plotted on 20-Dec-2019 5:40 PM
13153-HD(TYP).DWG







13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

CORDAVILLE RD
(ROUTE 85)

SOUTHVILLE RD

SOUTHVILLE RD

LIMIT OF WORK
STA 11+00.00
N:2922658.5216
E:650034.6872

APPROX. LIMIT OF GRADING (TYP)
PROP 5.5' CEM CONC WALK
PROP LINE OF EASEMENT
MEET EXIST
PROP BIT CONC WALK
SAWCUT
MEET EXIST
PROP GRAN CURB
RET GRAN CURB
PROP FULL DEPTH PVMT
PROP CB
ADJ DMH
PROP LOAM & SEED (TYP)
PROP TRANSITION
PROP GRAVEL WALK
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP REASTONE DRIVE
RET UP

PC +65.22
PT +33.96
PT +34.95

N/F
SOUTHBOROUGH TOWN OF
277/004.0-0000-0001.0
Book 36274 Page 219

N/F
COSTELLO, ROBERT F AND KIM
277/003.0-0000-0022.0
Book 18439 Page 120

N/F
COMMONWEALTH OF MASS
277/004.0-0000-0002.0
Book Page

BENCHMARK:
EL=250.98'

CB
RIM=239.09'
(N.P.V.)

DMH
RIM=241.29'

CB
RIM=241.35'
I=238.6' 15"RCP

CB
RIM=240.22'
I=237.6' 6"PVC

DMH
RIM=241.03'
I=237.8' 15"RCP
I=238.0' 15"RCP
I=237.5' 12"RCP
I=237.5' 8"CMP

DMH
RIM=240.02'
I=237.5' 6"PVC
I=237.1' 12"RCP
I=236.9' 12"RCP

CB
RIM=239.69'
I=237.1' 12"RCP

CB
RIM=238.68'
I=234.7'
237.0' 4"PVC
34.4' 12"RCP

DMH
RIM=239.90'
(C.N.O.)

CB
RIM=246.37'
I=244.3' 6"PV

DMH
RIM=246.74'

INV 42" RCP
EL=247.10'

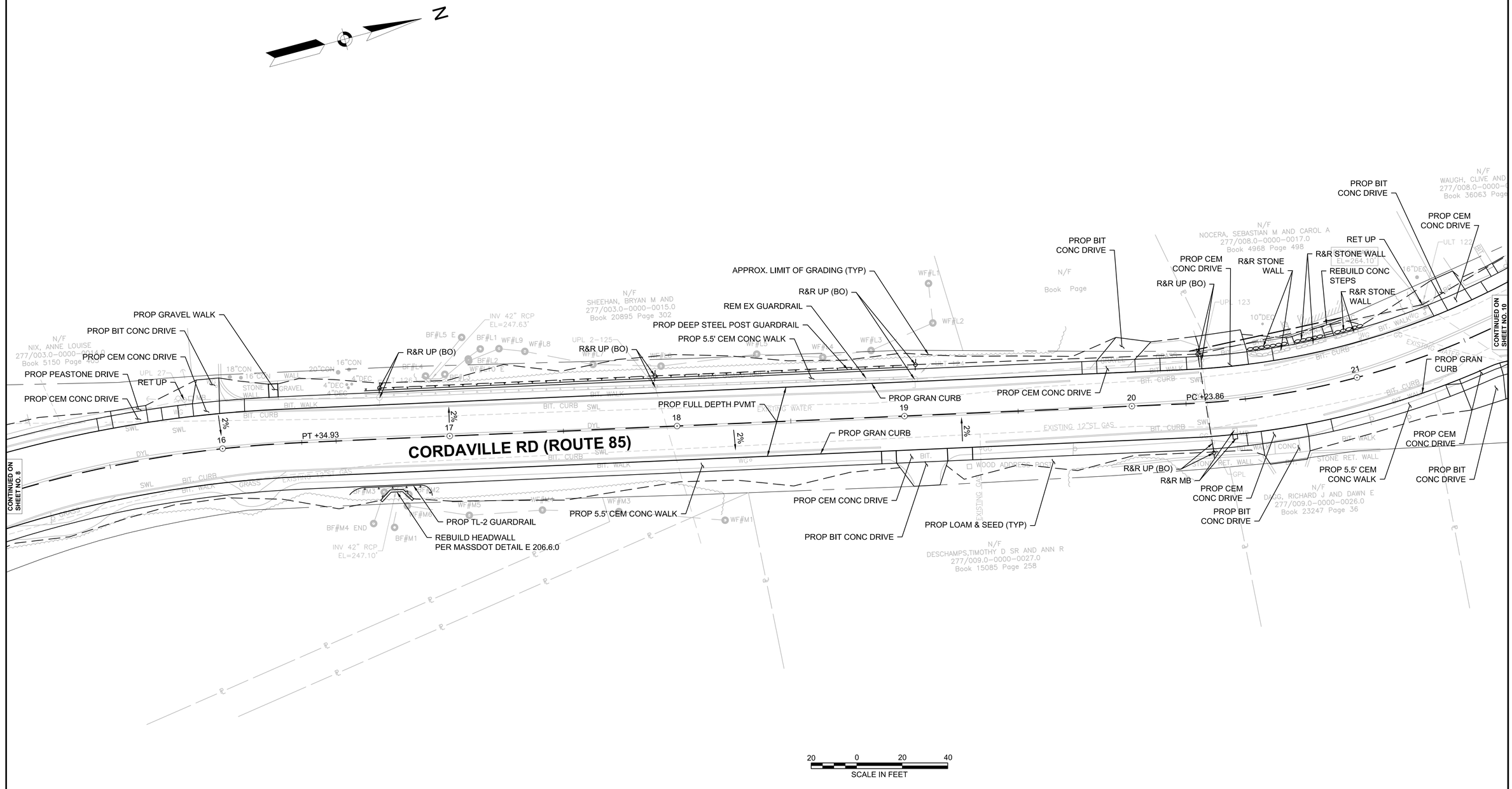
BF#M4 END
BF#M1

WF#N1
WF#N2
WF#N3
WF#N4
WF#N5
WF#N6
WF#N7
WF#N8
WF#N9
WF#N10

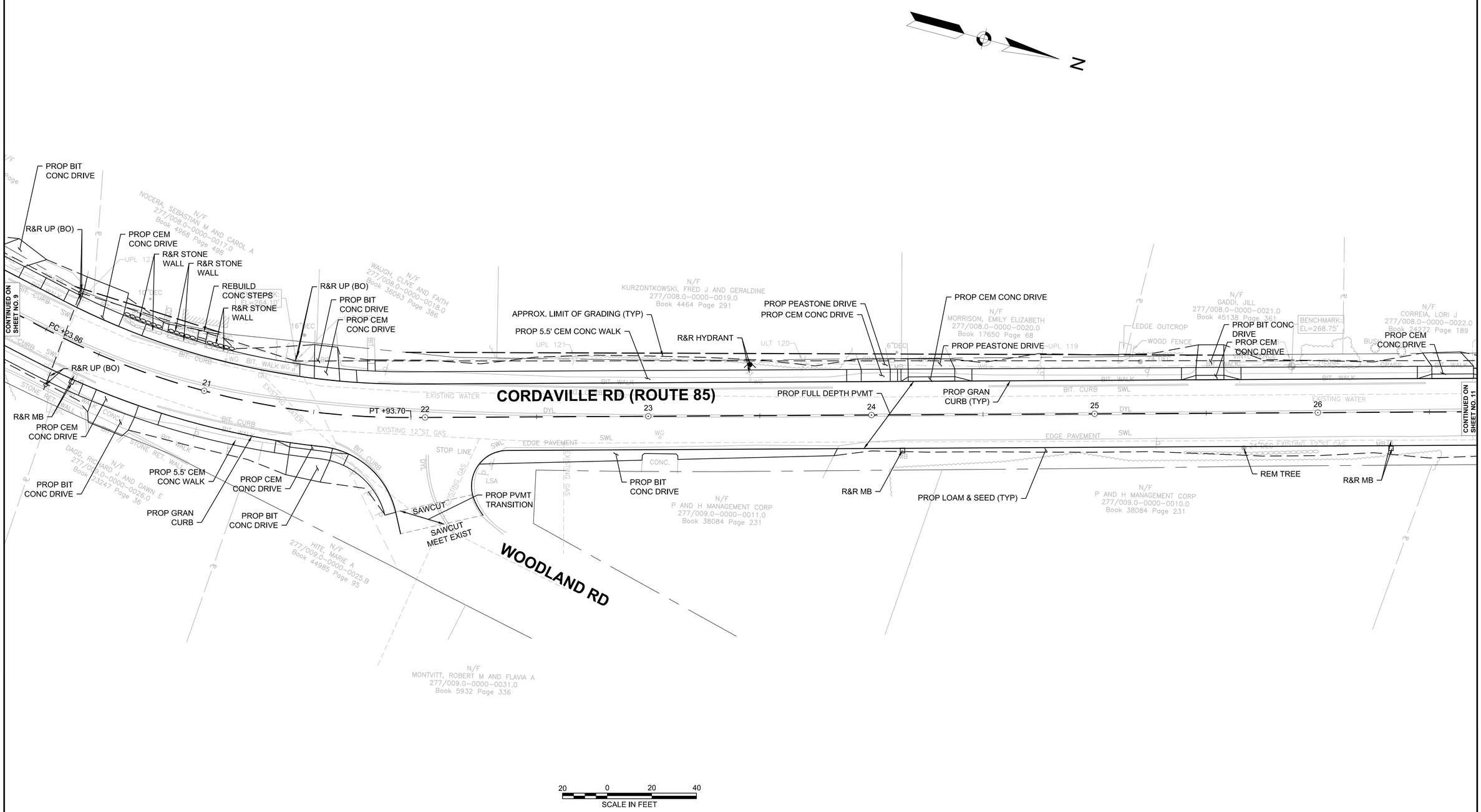
CONTINUED ON
SHEET NO. 9

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 9 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM



13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM



SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 11 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12

CORDAVILLE RD (ROUTE 85)

N/F
GADDI, JILL
277/008.0-0000-0021.0
Book 45139 Page 164

BENCHMARK: EL=268.75'

N/F
CORREIA, LORI J
277/008.0-0000-0022.0
Book 24972 Page 189

N/F
CAMPBELL, RONALD H AND JANET H
277/008.0-0000-0023.0
Book 4999 Page 62

N/F
LEWIS, DARRYL D AND SUSAN E
277/008.0-0000-0115.0
Book 14128 Page 5

N/F
HUNDLEY, KIRK G AND JANICE C
277/008.0-0000-0116.0
Book 38161 Page 195

N/F
MARTIN, PETER J AND CAMERON C
277/008.0-0000-0117.0
Book 13851 Page 296

BENCHMARK: EL=266.93'

PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP CEM CONC DRIVE
REM TREE
R&R UP (BO)
PROP 5.5' CEM CONC WALK
PROP CEM CONC DRIVE
R&R UP (BO)
APPROX. LIMIT OF GRADING (TYP)
R&R UP (BO)
R&R UP (BO)
R&R GUARDRAIL
(NEW GUARDRAIL MAY BE REQ'D
TO MEET CURRENT STANDARDS)
PROP GRAN CURB (TYP)
PROP FULL DEPTH PVMT
REM TREE
R&R MB
PROP LOAM & SEED (TYP)
R&R GUARDRAIL
(NEW GUARDRAIL MAY BE REQ'D
TO MEET CURRENT STANDARDS)
REBUILD HEADWALL
PER MASSDOT DETAIL E 206.6.0

N/F
TOMASETTI, RAYMOND J
277/009.0-0000-0014.0
Book 3520 Page 465

N/F
WONG, FELICES E AND
277/009.0-0000-0118.0
Book 36119 Page 106

N/F
NOP, PHANNA R
277/009.0-0000-0119.0
Book 35422 Page 122

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 12 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

CONTINUED ON SHEET NO. 11

CONTINUED ON SHEET NO. 13

CORDAVILLE RD (ROUTE 85)

RICHARDS RD

RICHARDS RD

WF#J21 END

N/F
MARTIN, PETER J AND CAMERON C
277/008.0-0000-0117.0
Book 13851 Page 296

N/F
KIRK G AND JANICE C
8.0-0000-0116.0
38161 Page 195

BENCHMARK:
EL=266.93'

R&R GUARDRAIL
(NEW GUARDRAIL MAY BE REQ'D
TO MEET CURRENT STANDARDS)

R&R UP (BO)

POTENTIAL WETLAND
REPLICATION AREA

R&R UP (BO)

PROP WETLAND IMPACT

N/F
LYONS, JOHN F AND MARY J
277/008.0-0000-0118.0
Book 18870 Page 387

R&R STONE WALL

R&R UP (BO)

APPROX. LIMIT OF GRADING (TYP)

PROP 5.5' CEM
CONC WALK

BF#J8 END

N/F
SOUTHBOROUGH OPEN LAND FOUNDATION
277/008.0-0000-0024.0
Book 14312 Page 202

BF#J7

BF#J6

BF#J5

R&R UP (BO)

REM TREE

RET STONE WALL

R&R UP (BO)

RET MAST ARM

PROP GUARDRAIL

RET HEADWALL

SAWCUT
MEET EXIST

PROP PVMT
TRANSITION

SAWCUT
MEET EXIST

SAWCUT

R&R UP
(BO)

PROP CB
PROP CB

PROP WCR

PROP WCR

PROP FULL DEPTH PVMT

PROP GRAN
CURB (TYP)

PC +71.18

PT +64.77

PROP CB

PROP CB

SAWCUT

RET
HEADWALL

RET
GUARDRAIL

PROP PVMT
TRANSITION

RET
MAST ARM

SAWCUT
MEET EXIST

R&R GUARDRAIL
(NEW GUARDRAIL MAY BE REQ'D
TO MEET CURRENT STANDARDS)

REBUILD HEADWALL
PER MASSDOT DETAIL E 206.6.0

PROP LOAM & SEED (TYP)

PROP BIT
CONC DRIVE

PROP BIT
CONC DRIVE

N/F
WICKMAN, CHARLES M AND ROSEMARY
277/009.0-0000-0015.0
Book 13861 Page 1

N/F
FEDERAL HOME LOAN MORTGAGE
277/009.0-0000-0009.0
Book 48276 Page 215

N/F
NELSON, ROBERT R AND BARBARA P
277/008.0-0000-0016.0
Book 32458 Page 298

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 13 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

RICHARDS RD

BENCHMARK: EL=271.07'

INV 12" CMP EL=265.37'

24" RCP I=264.69'

CB RIM=270.45' I=266.4' 10"CPP

RET MAST ARM

PROP GUARDRAIL

RET HEADWALL

SAWCUT MEET EXIST

SAWCUT

PROP PVMT TRANSITION

SAWCUT MEET EXIST

R&R UP (BO)

PROP CB

PROP CB

PROP WCR

PROP WCR

CROSS WALK

EXISTING WATER

STOP LINE

CONTINUED ON SHEET NO. 12

N/F HACOHEN, SAMUEL I 277/008.0-0000-0109.0 Book 44644 Page 265

PROP BIT CONC DRIVE

PROP CEM CONC DRIVE

R&R HYDRANT

PROP 5.5' CEM CONC WALK

APPROX. LIMIT OF GRADING (TYP)

R&R UP (BO)

REM TREE

PROP GRAN CURB (TYP)

PROP FULL DEPTH PVMT

N/F LOVELAND, BRIAN S 277/008.0-0000-0110.0 Book 47347 Page 274

PROP BIT CONC DRIVE

PROP CEM CONC DRIVE

PROP BIT CONC DRIVE

PROP CEM CONC DRIVE

R&R UP (BO)

R&R UP (BO)

N/F BENACK, EDWARD J 277/014.0-0000-0027.0 Book 40371 Page 37

PROP PEASTONE DRIVE

PROP CEM CONC DRIVE

BENCHMARK: EL=275.25'

N/F LUPFER, CHRISTOPHER R AN 277/014.0-0000 Book 27312 P

36 37 38 39 40 41 42

CORDAVILLE RD (ROUTE 85)

EDGE PAVEMENT

METAL GUARD RAIL

PROP LOAM & SEED (TYP)

PROP CB

PROP CB

SAWCUT

PROP PVMT TRANSITION

SAWCUT MEET EXIST

RET HEADWALL

RET GUARDRAIL

RET MAST ARM

CONC. HEADWALL

INV 36" RCP EL=265.86'

RET EL=266.40'

CB RIM=270.61' I=268.2' 10"CPP

CB RIM=271.15' I=268.1' 10"CPP I=267.7' 12"CMP

RICHARDS RD

N/F BARRY, BRENNAN R AND KATHLEEN A 277/008.0-0000-0015.0 Book 44925 Page 106

N/F OCONNELL, MICHAEL R AND WENDY 277/014.0-0000-0014.0 Book 38638 Page 146

N/F MORIN, JEFFREY E AND KRISTEN B TRUSTEES 277/014.0-0000-0050.0 Book 29475 Page 102

N/F LY, DIEU AND NHA HUU VO 277/014.0-0000-0051.0 Book 28664 Page 265

N/F O'BRIEN, DANIEL R AND MARY C 277/014.0-0000-0052.0 Book 29720 Page 233

CONTINUED ON SHEET NO. 14

20 0 20 40
SCALE IN FEET

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

PROP PEASTONE DRIVE
PROP CEM CONC DRIVE
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
APPROX. LIMIT OF GRADING (TYP)
PROP BIT CONC DRIVE
R&R STONE WALL
PROP 5.5' CEM CONC WALK
PROP CEM CONC DRIVE
R&R UP (BO)
PROP CEM CONC DRIVE
PROP BIT CONC DRIVE
R&R UP (BO)
R&R UP (BO)
R&R UP (BO)
R&R UP (BO)
R&R UP (BO)
R&R UP (BO)
PROP FULL DEPTH PVMT
PROP GRAN CURB (TYP)
PROP LOAM & SEED (TYP)

BENCHMARK: EL=275.25'
BENCHMARK: EL=279.74'

N/F
LUPFER, CHRISTOPHER R AND MATTHEW D CYR
277/014.0-0000-0001.0
Book 27312 Page 58

N/F
JIN, PING AND YUANZIN XU
277/014.0-0000-0029.0
Book 45140 Page 384

N/F
JACKSON, JOANNE F
277/014.0-0000-0028.0
Book 35859 Page 228

N/F
CHEN, CHE CHING AND LING HSIEH CHEN
277/014.0-0000-0030.0
Book 12305 Page 184

N/F
GRANT, JUSTIN AND JULIE ANN
277/014.0-0000-0031.0
Book 45144 Page 42

N/F
O'BRIEN, DANIEL R AND MARY C
277/014.0-0000-0052.0
Book 29720 Page 233

N/F
SAFIOL, PETER G
Book 28116 Page 301

N/F
DAVIS, EDWARD C AND JOSEPH W HORAN TRS
277/014.0-0000-0013.0
Book 7456 Page 338

N/F
DAVIS, EDWARD C AND JOSEPH W HORAN TRS
277/014.0-0000-0033.0
Book 7456 Page 338

N/F
DAVIS, EDWARD C AND JOSEPH W HORAN TRS
277/014.0-0000-0032.0
Book 7456 Page 338

CORDAVILLE RD (ROUTE 85)

PC +16.32

42 43 44 45 46 47

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 15 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

CONTINUED ON SHEET NO. 14

CONTINUED ON SHEET NO. 16

CORDAVILLE RD (ROUTE 85)

PROP 5.5' CEM CONC WALK
PROP CEM CONC WALK MATCH EXIST WIDTH
PROP GRAN CURB (TYP)
PROP FULL DEPTH PVMT
PROP GRAN CURB
PROP CEM CONC WALK MATCH EXIST WIDTH
APPROX. LIMIT OF GRADING (TYP)
PROP 5.5' CEM CONC WALK
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP LOAM & SEED (TYP)
REM STUMP
R&R UP (BO)
R&R UP (BO)
R&R UP (BO)

PT +50.50

47 48 49 50 51 52

N/F
GRANT, JUSTIN AND JULIE ANN
277/014.0-0000-0031.0
Book 45144 Page 42

N/F
DAVIS, EDWARD C AND JOSEPH W HORAN TRS
277/014.0-0000-0032.0
Book 7456 Page 338

N/F
YEP, CRAIG M AND JENNIE M TAN
277/014.0-0000-0003.0
Book 35512 Page 310

CONC. PAD w/CAB.
CONC. PAD w/CAB.
POST
BRIDGE ABUTMENT
BRIDGE ABUTMENT
STONE SLOPE
STONE SLOPE
COLUMNS
COLUMNS
CONC.
GRAN. CURB
BIT. WALK
BIT. CURB
EDGE PAVEMENT
EXISTING WATER
EXISTING 12" ST GAS
SWL
DYL
DTL
UPL 95
UPL 94
CONC. POST
BUSH
INV. 30" RCP
EL=273.34'
INV. 36" RCP
EL=275.36'
INV. 12" RCP
EL=276.28'
CB
RIM=280.58'
BENCHMARK
EL=283.09'
RIM=286.
6"DEC
12"DEC
14"DEC
4"DEC
4"CON

WF#H5 WF#H4 WF#H3 WF#H2
WF#I13 WF#I12 WF#I14 WF#I11 WF#I10 WF#I9 WF#I8 WF#I6 WF#I5 WF#I4 WF#I7
WF#G16 WF#G15 WF#G14 WF#G10 WF#G9 WF#G8 WF#G7 WF#G6 WF#G5 WF#G4 WF#G3 WF#G2
BF#G3 WF#G17 BF#G1 WF#G13 WF#G12

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 16 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

CORDAVILLE RD (ROUTE 85)

ROCKPOINT RD

CONTINUED ON SHEET NO. 15

CONTINUED ON SHEET NO. 17

PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
SAWCUT MEET EXIST
SAWCUT
STOP LINE
PROP CIT
PROP WCR
PROP CB
PROP PVMT TRANSITION
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP WCR
R&R HYDRANT
APPROX. LIMIT OF GRADING (TYP)
PROP CEM CONC DRIVE
PROP BIT CONC DRIVE
PROP GRAN CURB (TYP)
REM TREES
R&R POST
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP BIT CONC DRIVE
12"DEC
PROP CEM CONC DRIVE
PROP CB
REM CB
32"DEC
PROP WCR
PROP CIT
PROP CB
PROP CB
PROP FULL DEPTH PVMT
R&R MB
REM TREE
R&R STONE WALL
PROP STONE MASONRY WALL
PROP BIT CONC DRIVE
REM TREE
REM TREE
RET UP
(PROTECT DURING
CONSTRUCTION)
PROP BIT
CONC DRIVE
PROP LOAM & SEED (TYP)

N/F
COLCORD, CHARLES F AND EMMA E
277/014.0-0000-0006.0
Book 4464 Page 139

N/F
SARNOSKY, VINCENT AND SHAWN
277/014.0-0000-0007.0
Book 44910 Page 216

N/F
RIBEIRO, FILIPE J
277/014.0-0000-0008.0
Book 41829 Page 233

N/F
DEMARCO, JOSEPH AND BARBARA A BRACCIO
277/014.0-0000-0009.0
Book 16230 Page 278

N/F
TEMPLEMAN, WILLIAM P
277/014.0-0000-0011.0
Book 27933 Page 289

N/F
WHYNOT, STEPHEN W AND VIRGINIA
277/014.0-0000-0034.0
Book 8136 Page 275

BENCHMARK:
EL=295.69'

20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 17 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:41 PM

N

ROCKPOINT RD

CORDAVILLE RD (ROUTE 85)

CONTINUED ON SHEET NO. 16

CONTINUED ON SHEET NO. 18

N/F
DEMARCO, JOSEPH AND BARBARA A BRACCIO
277/014.0-0000-0009.0
Book 16230 Page 278

N/F
HIPACO LIMITED PARTNERSHIP
277/020.0-0000-0002.0
Book 16875 Page 303

N/F
WHYNOT, VIRGINIA A TRUSTEE
277/020.0-0000-0003.0
Book 17233 Page 91

N/F
YUNG, MIMI
277/020.0-0000-0004.0
Book 16122 Page 122

N/F
MALONEY, RYAN W AND BLAIR W
277/014.0-0000-0010.0
Book 48186 Page 326

N/F
LYTLE, DIANE M
277/020.0-0000-0033.0
Book 15453 Page 246

N/F
MURPHY, BARBARA A
277/020.0-0000-0032.0
Book 7428 Page 329

N/F
DAVIS, ROBERT V AND ELIZABETH J
277/020.0-0000-0031.B
Book 16859 Page 191

PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP CB
REM CB
PROP WCR
PROP CIT
PROP PVMT TRANSITION
SAWCUT MEET EXIST
SAWCUT
ADJ DMH
REM TREES
APPROX. LIMIT OF GRADING (TYP)
REM TREE
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
RET TREE
REM TREE
LINE OF EASEMENT
REBUILD HEADWALL PER MASSDOT DETAIL E 206.6.0
R&R GUARDRAIL (NEW GUARDRAIL MAY BE REQ'D TO MEET CURRENT STANDARDS)
PROP 5.5' CEM CONC WALK
PROP BIT CONC DRIVE
PROP CEM CONC DRIVE
PROP FULL DEPTH PVMT
PROP GRAN CURB (TYP)
PROP BIT CONC DRIVE
PROP PEASTONE DRIVE
PROP CEM CONC DRIVE
PROP CEM CONC DRIVE
R&R UP (BO)
PROP CB
PROP CIT
PROP CB
PROP BIT CONC DRIVE
PROP BIT CONC DRIVE
PROP LOAM & SEED (TYP)
PROP BIT CONC DRIVE
PROP BIT CONC DRIVE
PROP CB

BENCHMARK:
EL=295.69'

BENCHMARK:
EL=292.81'

INV 24" RCP
EL=285.65'

INV 6" PVC
EL=290.97'

INV 24" RCP
EL=286.99'

CB
RIM=294.47'
I=291.6'

CB
RIM=293.85'
I=289.9'

CB
RIM=293.94'
I=288.2'

DMH
RIM=293.
CMP

CB
RIM=291.29'

CB
RIM=291.25'

58 59 60 61 62 63 64

WF#F1 WF#F2 WF#F3 WF#F4 WF#F5 WF#F6 WF#F7

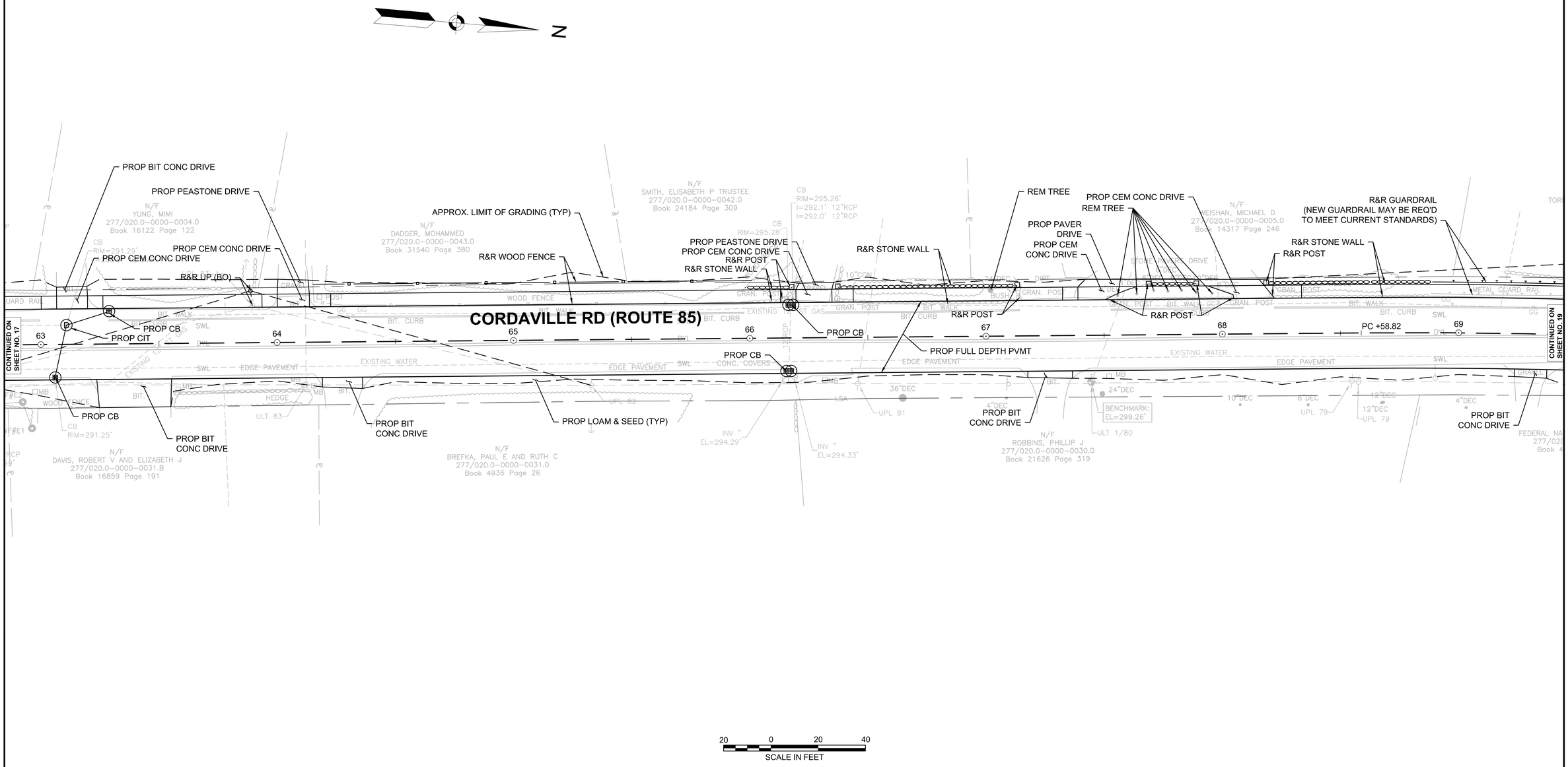
WF#E1 WF#E2 WF#E3 WF#E4 WF#E6 WF#E7 END

BF#B1 BF#B2 BF#B3 BF#B4

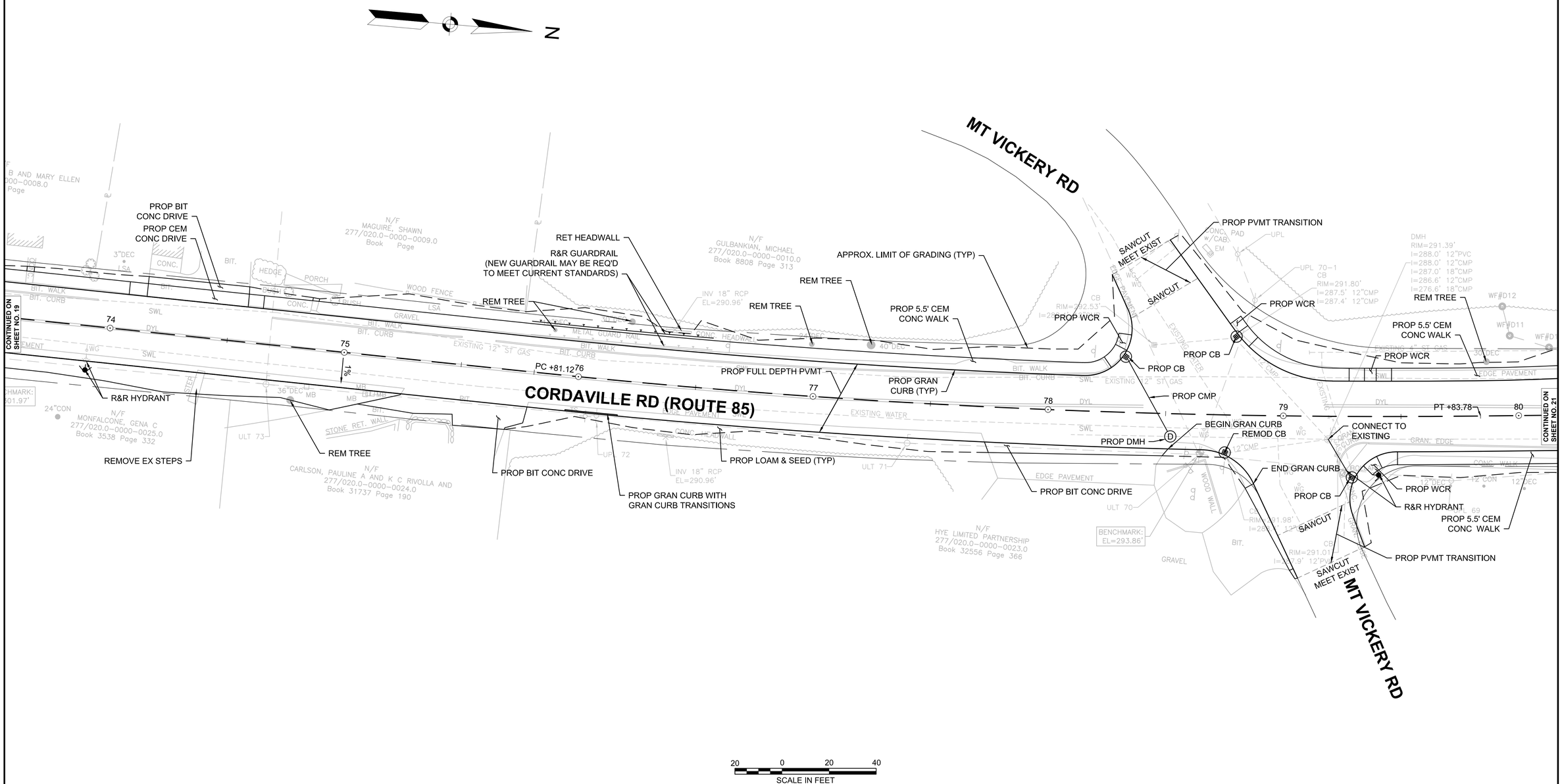
ULT 83 ULT 84 UPL 84 ULT 86 UPL 87 ULT 88 ULT 89

20 0 20 40
SCALE IN FEET

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:42 PM



13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:42 PM



SOUTHBOROUGH
CORDAVILLE ROAD
CONSTRUCTION PLANS
SHEET 21 OF 76

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:42 PM

N

CONTINUED ON SHEET NO. 20

CONNECT TO EXISTING

PT +83.78

CORDAVILLE RD (ROUTE 85)

MT VICKERY RD

CUT EXIST

PROP WCR

R&R HYDRANT

PROP 5.5' CEM CONC WALK

PROP PVMT TRANSITION

REM TREE

PROP 5.5' CEM CONC WALK

PROP WCR

PROP GRAN CURB (TYP)

PROP LOAM & SEED (TYP)

R&R UP (BO)

RET SIGN

R&R UP (BO)

PROP WCR

MEET EXIST

PROP PVMT TRANSITION

REMOD CB

ADJ DMH

SAWCUT

MEET EXIST

APPROX. LIMIT OF GRADING (TYP)

LINE OF EASEMENT

PROP FULL DEPTH PVMT

MEET EXIST

RET WALK

RET SIGN

R&R UP (BO)

PROP PAVED WATERWAY

REMOD CB

PROP 5' CEM CONC WALK

PROP PVMT TRANSITION

R&R LP

PROP WCR

SAWCUT

MEET EXIST

RET HYDRANT

R&R UP (BO)

LINE OF EASEMENT

MEET EXIST

PROP WCR

PROP CB

PROP CIT

PROP CB

PROP PAVED WATERWAY

CONTINUED ON SHEET NO. 22

N/F
COMMONWEALTH GAS COMPANY
277/028.0-0000-0021.0
Book 5040 Page 563

N/F
CORDAVILLE ASSOCIATES LLC
277/028.0-0000-0017.0
Book 22149 Page 325

N/F
153 CORDAVILLE ROA
277/028.0-0000-0
Book 22463 Page

DMH
RIM=291.39'
I=288.0' 12"PVC
I=288.0' 12"CMP
I=287.0' 18"CMP
I=286.6' 12"CMP
I=276.6' 18"CMP

DMH
RIM=284.07'
I=279.2' 18"CMP
I=279.0' 18"CMP

DMH
RIM=281.02'
I=277.1' 12"RCP
I=276.3' 18"CMP
I=276.0' 18"RCP
I=275.9' 18"CMP

CB
RIM=284.72'
I=281.4' 12"CPP
I=28

CB
RIM=285.58'
281.1' 12"CPP
279.7' 12"CPP

CB
RIM=280.88'

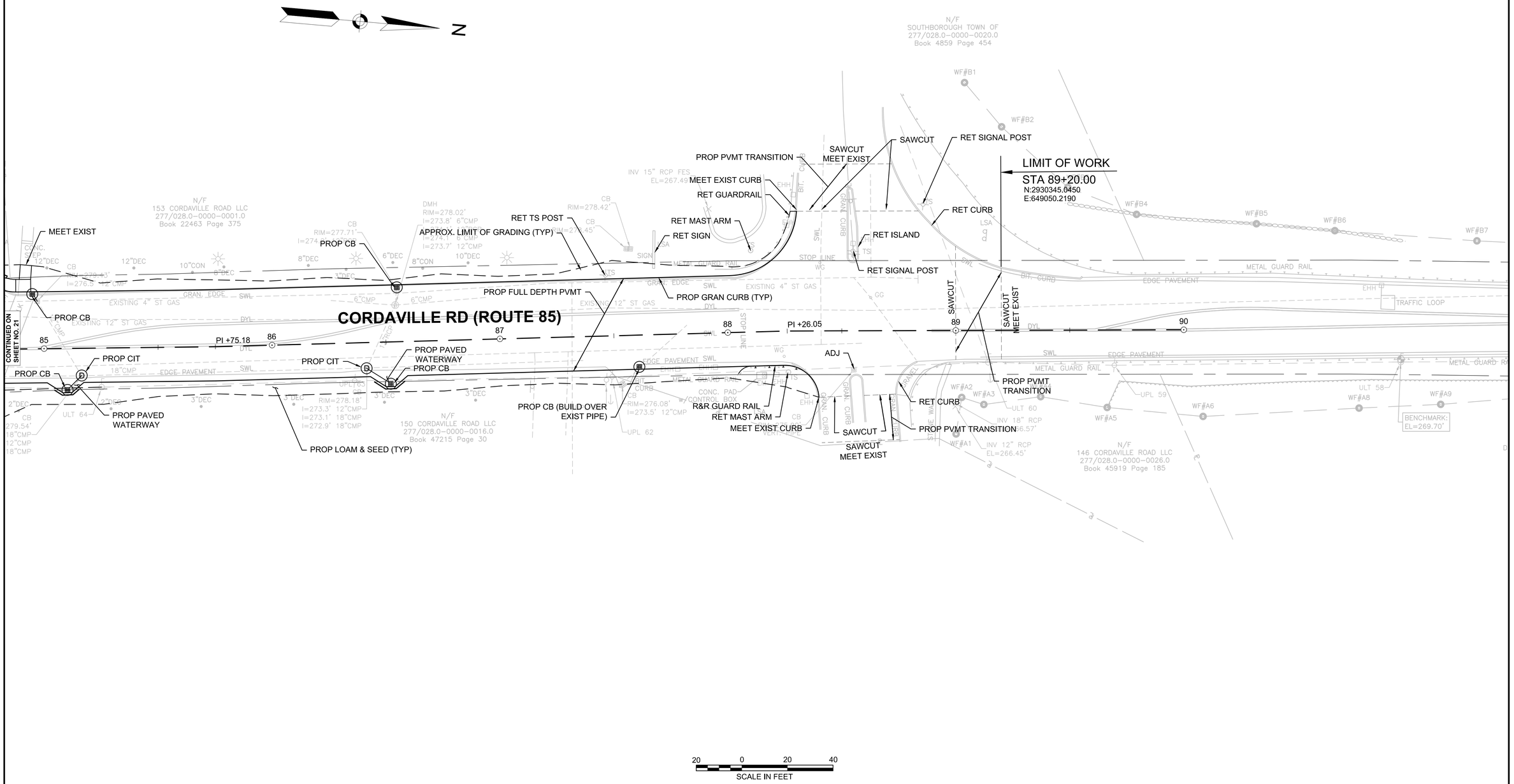
CB
RIM=279.54'
I=274.5' 18"CMP
I=275.1' 12"CMP
274.4' 18"CMP

INV 18" RCP
EL=278.29'

INV 24" CPP FES
EL=277.27'

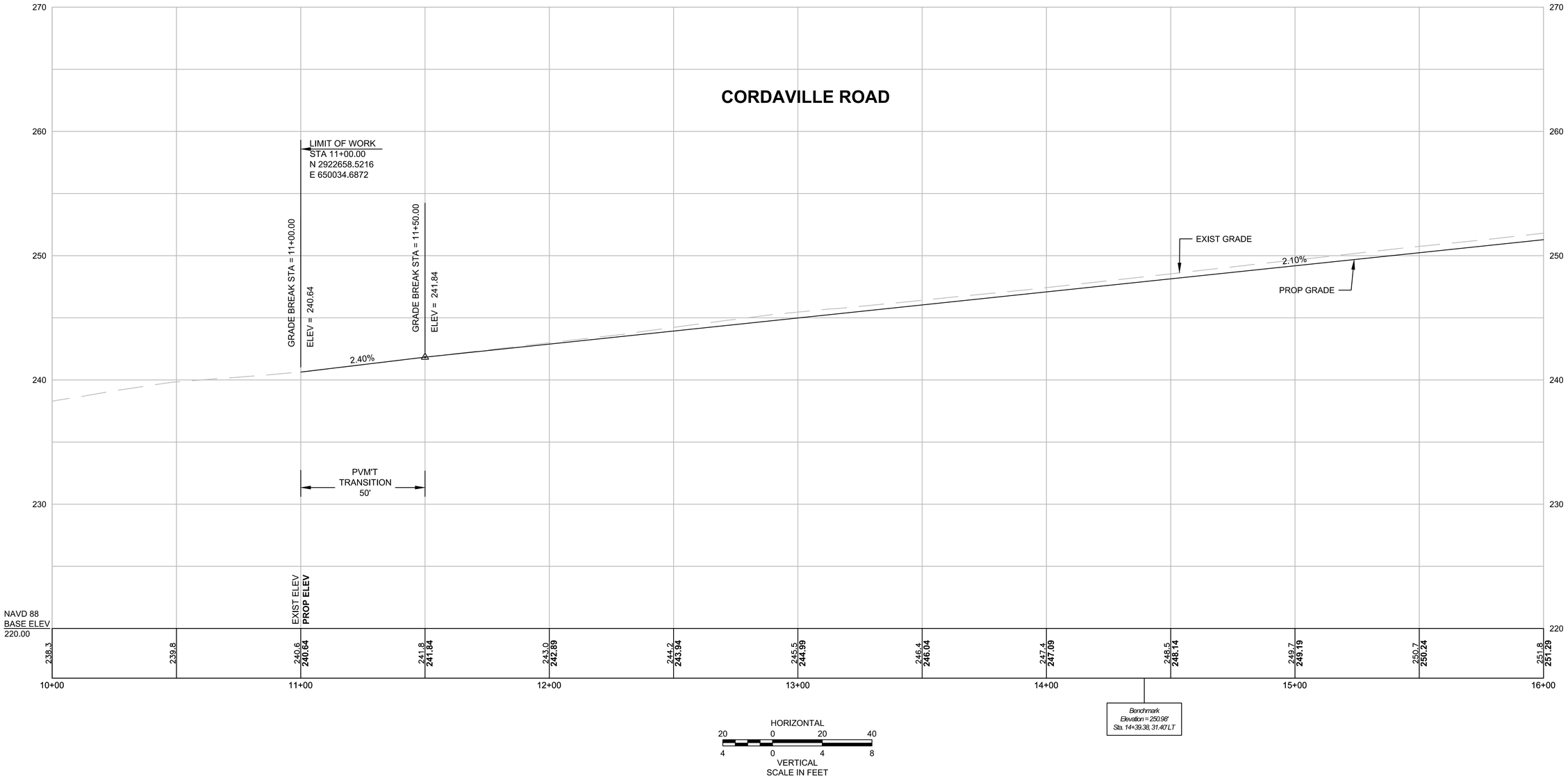
20 0 20 40
SCALE IN FEET

13153-HD(GEN).DWG Plotted on 20-Dec-2019 5:42 PM



13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD



CONTINUED ON SHEET NO. 24

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 8

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 23

CONTINUED ON SHEET NO. 25

290
280
270
260
250
240

PVI STA = 19+50.00
PVI ELEV = 258.64
A.D. = 0.40%
K = 500.00
200' VC

PVI STA = 22+00.00
PVI ELEV = 264.89
A.D. = -1.90%
K = 157.89
300' VC
718.0' SSD

PVC: 18+50
ELEV: 256.54

PRC: 20+50
ELEV: 261.14

EXIST GRADE

PROP GRADE

2.10%

2.50%

2.50%

2.10%

NAVD 88
BASE ELEV
240.00

	EXIST ELEV / PROP ELEV									
249.7 / **249.19**	250.7 / **250.24**	251.8 / **251.29**	252.7 / **252.34**	253.6 / **253.39**	254.7 / **254.44**	255.7 / **255.49**	256.7 / **256.54**	257.9 / **257.61**	259.0 / **258.74**	260.1 / **259.91**	261.3 / **261.14**	262.6 / **262.31**

15+00 16+00 17+00 18+00 19+00 20+00 21+00

Benchmark
Elevation = 264.10'
Sta. 21+39.06, 20.95' LT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 8-9

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD

PVI STA = 19+50.00
PVI ELEV = 258.64
A.D. = 0.40%
K = 500.00
200' VC

PVI STA = 22+00.00
PVI ELEV = 264.89
A.D. = -1.90%
K = 157.89
300' VC

718.0' SSD

PRC: 20+50
ELEV: 261.14

PVT: 23+50
ELEV: 265.79

PROP GRADE

EXIST GRADE

2.50%

0.60%

CONTINUED ON SHEET NO. 24

CONTINUED ON SHEET NO. 26

WOODLAND ROAD

290
280
270
260
250
240

NAVD 88
BASE ELEV
240.00

	20+00	21+00	22+00	23+00	24+00	25+00	26+00
EXIST ELEV	260.1	262.6	263.6	264.1	264.7	265.1	265.5	266.0	266.3	266.7	267.0	267.3
PROP ELEV	**259.91**	**262.31**	**263.32**	**264.17**	**264.87**	**265.41**	**265.79**	**266.09**	**266.39**	**266.69**	**266.99**	**267.29**

Benchmark
Elevation = 264.10'
Sta. 21+39.06, 20.95' LT

Benchmark
Elevation = 268.75'
Sta. 25+88.42, 20.82' LT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 9-10

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27

HIGH POINT ELEV = 267.71
HIGH POINT STA = 27+15
PVI STA = 27+00.00
PVI ELEV = 267.89
A.D. = -1.00%
K = 150.00
150' VC
1154.2' SSD

PVC: 26+25
ELEV: 267.44

PVT: 27+75
ELEV: 267.59

EXIST GRADE

PROP GRADE

PVC: 31+00
ELEV: 266.29

0.60%

-0.40%

300
290
280
270
260
250

NAVD 88
BASE ELEV
250.00

	EXIST ELEV	PROP ELEV
25+00	267.7	266.69
	267.0	266.99
26+00	267.3	267.29
	267.5	267.57
27+00	267.7	267.70
	267.6	267.67
28+00	267.6	267.49
	267.3	267.29
29+00	266.9	267.09
	266.8	266.89
30+00	266.6	266.69
	266.4	266.49
31+00	266.0	266.29

Benchmark
Elevation = 268.75'
Sta. 25+88.42, 20.82' LT

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

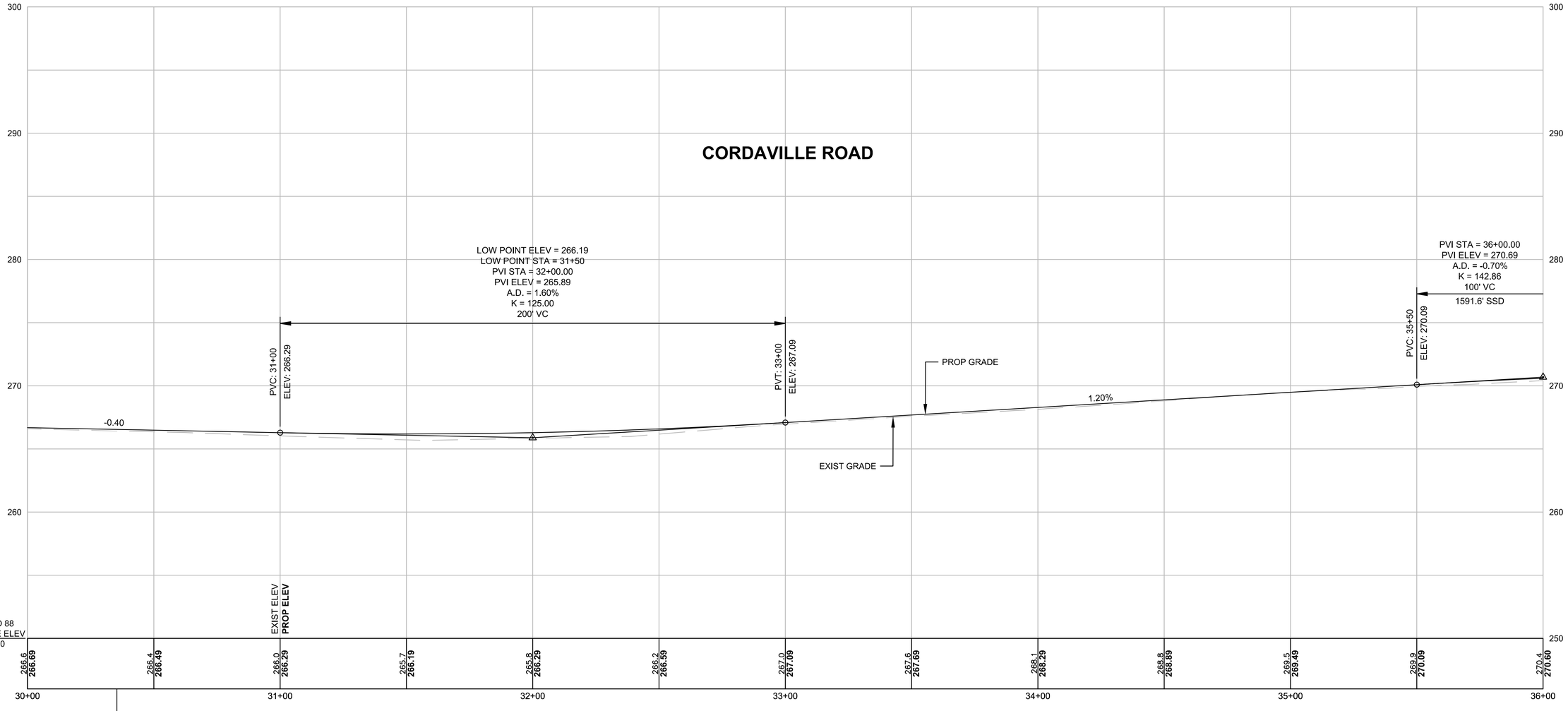
FOR CONSTRUCTION PLANS:
SEE SHEET NO. 10-11

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 26

CONTINUED ON SHEET NO. 28



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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 11-12

SOUTHBOROUGH
CORDAVILLE ROAD
PROFILES
SHEET 28 OF 76

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:43 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 27

CONTINUED ON SHEET NO. 29

PVI STA = 36+00.00
PVI ELEV = 270.69
A.D. = -0.70%
K = 142.86
100' VC
1591.6' SSD

PVI STA = 39+00.00
PVI ELEV = 272.19
A.D. = 0.40%
K = 250.00
100' VC

PVC: 35+50
ELEV: 270.09

PRC: 36+50
ELEV: 270.94

PVC: 38+50
ELEV: 271.94

PVT: 39+50
ELEV: 272.64

PROP GRADE

EXIST GRADE

1.20%

0.50%

0.90%

RICHARDS STREET

NAVD 88
BASE ELEV
250.00

	EXIST ELEV	PROP ELEV
35+00	269.5	269.49
	269.9	270.09
36+00	270.4	270.60
	270.9	270.94
37+00	271.1	271.19
38+00	271.2	271.44
	271.6	271.69
	272.0	271.94
39+00	272.4	272.24
	272.7	272.64
40+00	273.0	273.09
	273.3	273.54
41+00	273.7	273.99

Benchmark
Elevation = 271.07'
Sta. 36+35.74, 27.86' LT

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

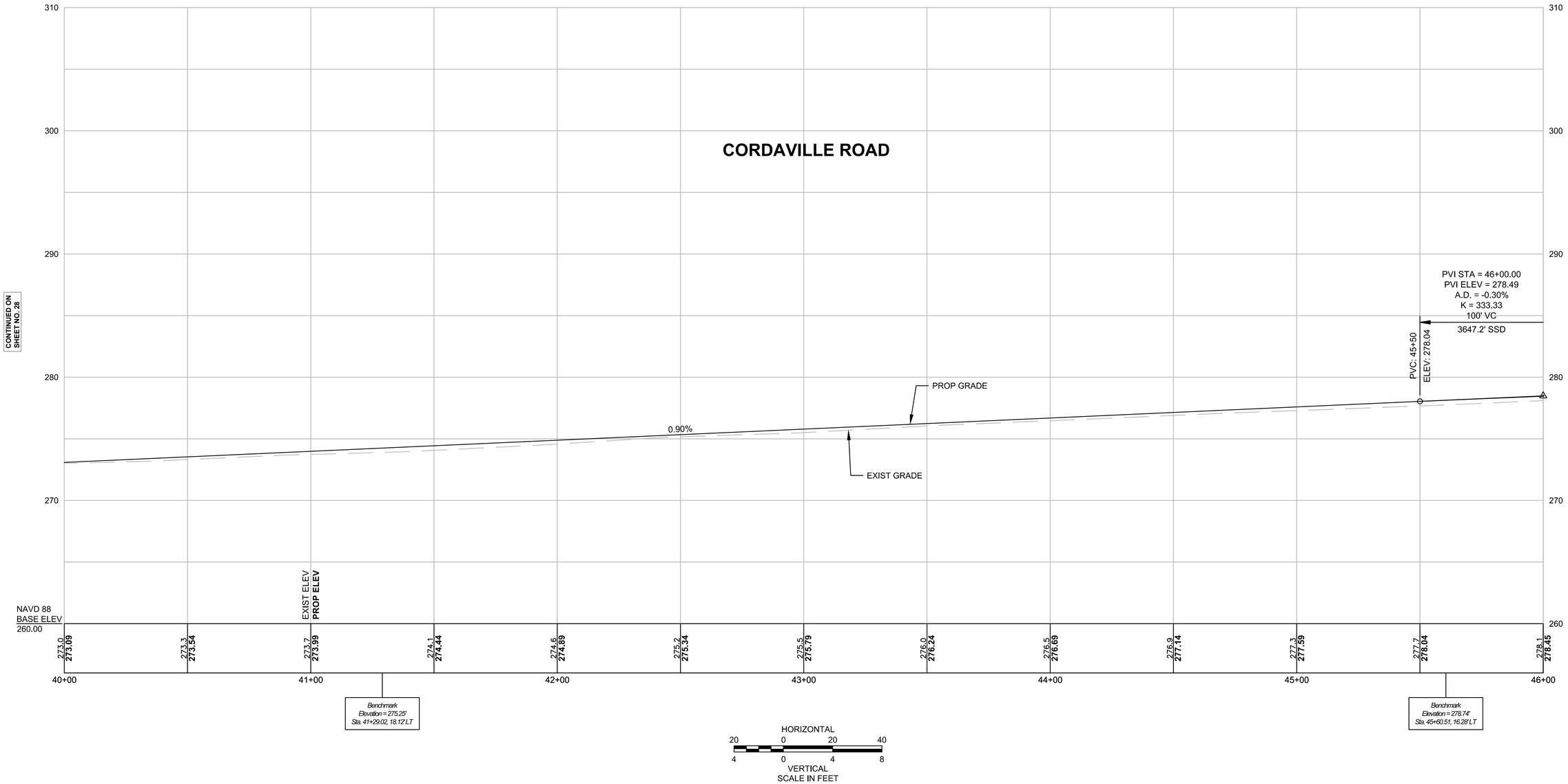
FOR CONSTRUCTION PLANS:
SEE SHEET NO. 12-13

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 28

CONTINUED ON SHEET NO. 30



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 13-14

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CONTINUED ON SHEET NO. 29

CONTINUED ON SHEET NO. 31

CORDAVILLE ROAD

PVI STA = 46+00.00
PVI ELEV = 278.49
A.D. = -0.30%
K = 333.33
100' VC
3647.2' SSD

PVI STA = 52+00.00
PVI ELEV = 282.09
A.D. = 3.00%
K = 83.33
250' VC
458.4' HSD

PVC: 45+50
ELEV: 278.04

PVT: 46+50
ELEV: 278.79

PVC: 50+75
ELEV: 281.34

PROP GRADE

EXIST GRADE

0.90%

0.60%

310
300
290
280
270
260

NAVD 88
BASE ELEV
260.00

	EXIST ELEV	PROP ELEV
45+00	277.3	277.59
	277.7	278.04
46+00	278.1	278.45
	278.5	278.79
47+00	278.9	279.09
	279.3	279.39
48+00	279.6	279.69
	280.0	279.99
49+00	280.4	280.29
	280.9	280.59
50+00	281.3	280.89
	281.3	281.19
51+00	281.7	281.52

Benchmark
Elevation = 278.74'
Sta. 45+60.51, 16.28' LT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 14-15

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 30

CONTINUED ON SHEET NO. 32

320
310
300
290
280
270

PVI STA = 52+00.00
PVI ELEV = 282.09
A.D. = 3.00%
K = 83.33
250' VC
458.4' HSD

HIGH POINT ELEV = 295.72
HIGH POINT STA = 57+07.14
PVI STA = 56+00.00
PVI ELEV = 296.49
A.D. = -4.20%
K = 71.43
300' VC
406.9' SSD

PVC: 50+75
ELEV: 281.34

PVT: 53+25
ELEV: 286.59

PVC: 54+50
ELEV: 291.09

PROP GRADE

EXIST GRADE

0.60%

3.60%

ROCKPOINT ROAD

NAVD 88
BASE ELEV
270.00

EXIST ELEV	PROP ELEV
281.3	280.89
281.3	281.19
281.7	281.52
282.4	282.12
283.4	283.02
284.7	284.22
286.2	285.72
287.7	287.49
289.4	289.29
291.2	291.09
292.5	292.71
293.6	293.99
294.4	294.91

50+00 51+00 52+00 53+00 54+00 55+00 56+00

Benchmark
Elevation = 283.09'
Sta. 51+13.84, 14.65' LT

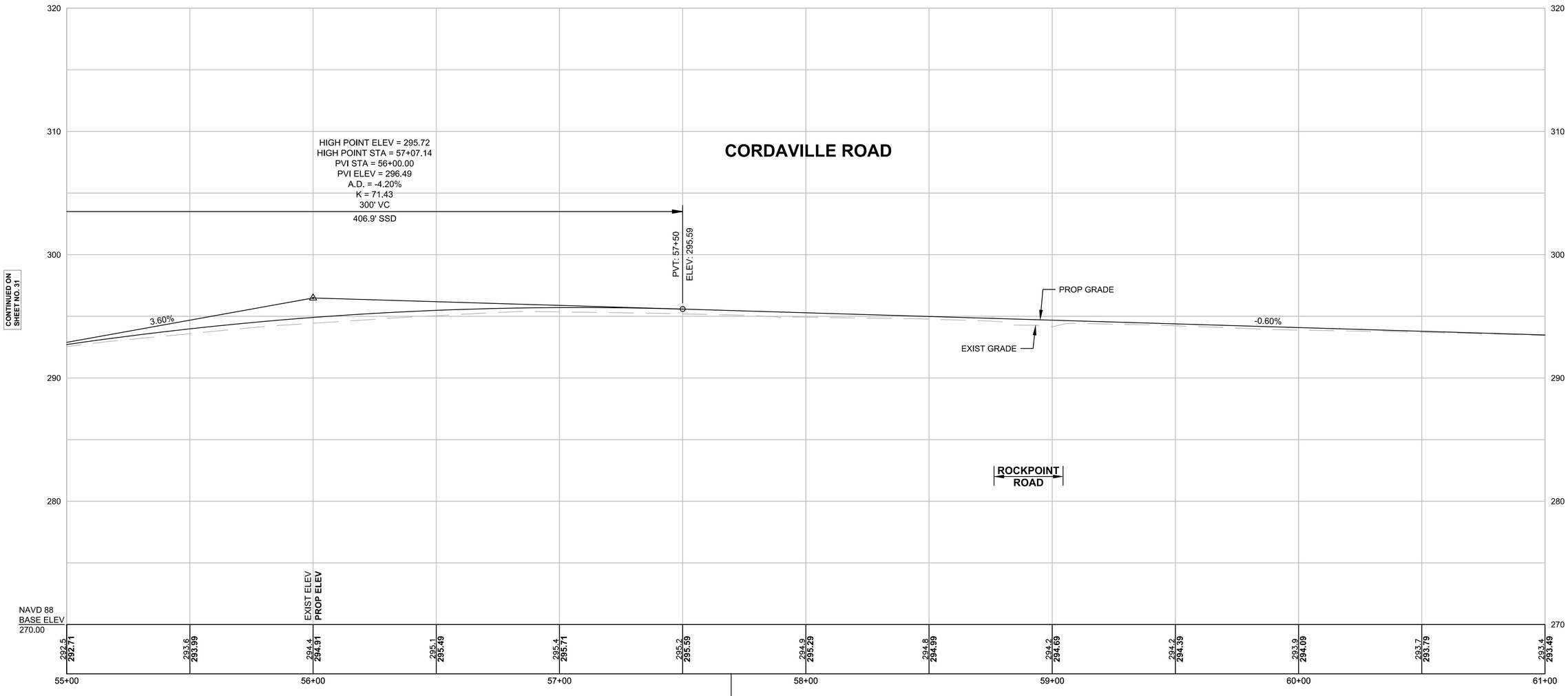
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 15-16

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CONTINUED ON SHEET NO. 31

CONTINUED ON SHEET NO. 33



FOR CONSTRUCTION PLANS:
SEE SHEET NO. 16-17

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

LOW POINT ELEV = 292.57
LOW POINT STA = 62+82.14
PVI STA = 63+25.00
PVI ELEV = 292.14
A.D. = 2.10%
K = 95.24
200' VC
1156.6' HSD

PVC: 62+25
ELEV: 292.74

PVT: 64+25
ELEV: 293.64

PROP GRADE

EXIST GRADE

-0.60%

1.50%

CONTINUED ON SHEET NO. 32

CONTINUED ON SHEET NO. 34

320
310
300
290
280
270

NAVD 88
BASE ELEV
270.00

	EXIST ELEV / PROP ELEV
60+00	293.9 / 294.09
	293.7 / 293.79
61+00	293.4 / 293.49
	293.2 / 293.19
62+00	293.0 / 292.89
	292.6 / 292.62
63+00	292.0 / 292.58
	292.4 / 292.81
64+00	293.1 / 293.29
	293.8 / 294.01
65+00	294.4 / 294.76
	295.1 / 295.51
66+00	295.8 / 296.26

Benchmark
Elevation = 292.81'
Sta. 62+56.59, 16.02' RT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 17-18

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 33

CONTINUED ON SHEET NO. 35

330
320
310
300
290
280

HIGH POINT ELEV = 302.35
HIGH POINT STA = 70+61.11
PVI STA = 70+50.00
PVI ELEV = 303.01
A.D. = -2.70%
K = 74.07
200' VC
499.7' SSD

PVC: 69+50
ELEV: 301.51

PROP GRADE

EXIST GRADE

1.50%

-1.20%

NAVD 88
BASE ELEV
280.00

	EXIST ELEV **PROP ELEV**
65+00	294.4 **294.76**
	295.1 **295.51**
66+00	295.8 **296.26**
	296.6 **297.01**
67+00	297.4 **297.76**
	298.1 **298.51**
68+00	298.9 **299.26**
	299.6 **300.01**
69+00	300.4 **300.76**
70+00	301.2 **301.51**
	301.6 **302.09**
	301.8 **302.34**
71+00	301.6 **302.24**

Benchmark
Elevation = 299.26'
Sta. 67+44.41, 19.52' RT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 18-19

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 34

CONTINUED ON SHEET NO. 36

HIGH POINT ELEV = 302.35
HIGH POINT STA = 70+61.11
PVI STA = 70+50.00
PVI ELEV = 303.01
A.D. = -2.70%
K = 74.07
200' VC
499.7' SSD

PVT: 71+50
ELEV: 301.81

1.40%

-1.20%

PROP GRADE

EXIST GRADE

330
320
310
300
290
280

NAVD 88
BASE ELEV
280.00

	EXIST ELEV / **PROP ELEV**
70+00	301.6 / **302.09**
	301.8 / **302.34**
71+00	301.6 / **302.24**
	301.2 / **301.81**
72+00	300.7 / **301.21**
	300.1 / **300.61**
73+00	299.6 / **300.01**
	299.1 / **299.41**
74+00	298.4 / **298.81**
	297.8 / **298.21**
75+00	297.2 / **297.61**
	296.7 / **297.01**
76+00	296.1 / **296.41**

Benchmark
Elevation = 301.97'
Sta. 73+44.24, 16.90' RT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 19-20

SOUTHBOROUGH
CORDAVILLE ROAD
PROFILES
SHEET 36 OF 76

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

CONTINUED ON SHEET NO. 35

CONTINUED ON SHEET NO. 37

320
310
300
290
280
270

PVI STA = 79+25.00
PVI ELEV = 292.51
A.D. = -1.30%
K = 153.85
200' VC
930.1' SSD

PVC: 78+25
ELEV: 293.71

PVT: 80+25
ELEV: 290.01

PROP GRADE

EXIST GRADE

-1.20%

-2.50%

MT. VICKERY ROAD

	75+00	76+00	77+00	78+00	79+00	80+00	81+00
NAVD 88 BASE ELEV 270.00							
EXIST ELEV	297.2	296.1	295.5	294.9	294.3	293.7	292.9	292.1	291.4	290.4	289.3	288.1
PROP ELEV	**297.61**	**296.41**	**295.81**	**295.21**	**294.61**	**294.01**	**293.39**	**292.63**	**291.70**	**290.62**	**289.39**	**288.14**

Benchmark
Elevation = 293.86'
Sta. 78+64.94, 16.28' RT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 20-21

SOUTHBOROUGH
CORDAVILLE ROAD
PROFILES
SHEET 37 OF 76

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CORDAVILLE ROAD

PVI STA = 79+25.00
PVI ELEV = 292.51
A.D. = -1.30%
K = 153.85
200' VC
930.1' SSD

PVT: 80+25
ELEV: 290.01

-2.50%

PVC: 82+50
ELEV: 284.39

PVI STA = 83+50.00
PVI ELEV = 281.89
A.D. = 1.40%
K = 142.86
200' VC

PROP GRADE

EXIST GRADE

PVT: 84+50
ELEV: 280.79

-1.10%

TOWN CENTER PLAZA

CONTINUED ON SHEET NO. 36

CONTINUED ON SHEET NO. 38

310
300
290
280
270
260

NAVD 88
BASE ELEV
260.00

	EXIST ELEV									
	PROP ELEV									
80+00	81+00	82+00	83+00	84+00	85+00	86+00				
290.4	289.3	288.1	286.9	285.7	284.4	283.2	282.0	281.2	280.7	280.2	279.6	279.0
290.62	**289.39**	**288.14**	**286.89**	**285.64**	**284.39**	**283.22**	**282.24**	**281.42**	**280.79**	**280.24**	**279.69**	**279.14**

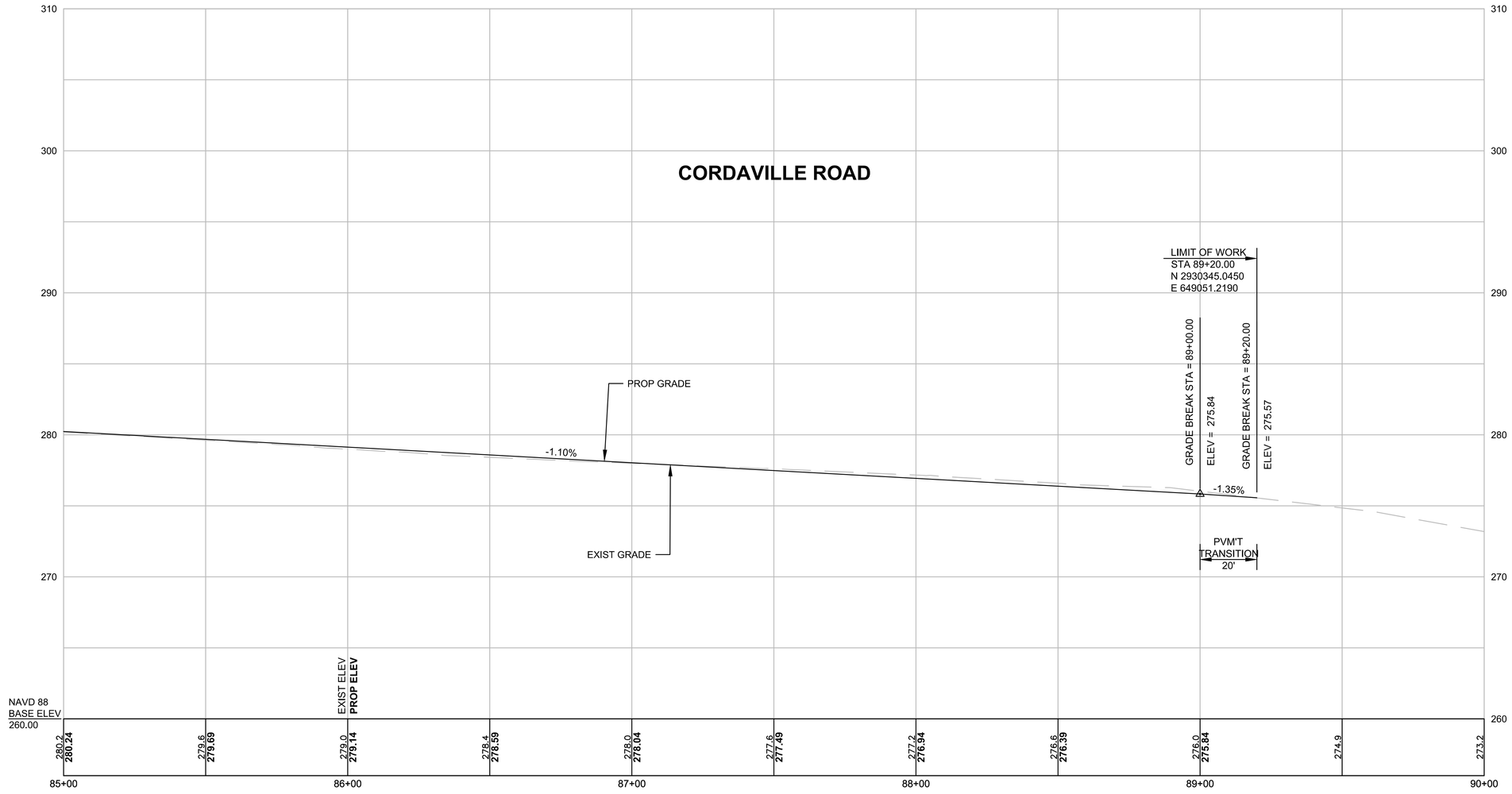
Benchmark
Elevation = 284.14'
Sta. 83+06.39, 17.26' RT

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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 21-22

13153-HD(PROF).DWG Plotted on 20-Dec-2019 5:44 PM

CONTINUED ON
SHEET NO. 37



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

FOR CONSTRUCTION PLANS:
SEE SHEET NO. 22

CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C100	10+00.00	2922563.7026	650065.9293	R=500.00' Δ=15°21'01" L=133.96' T=67.38'		11+33.96	2922689.0591	650019.8512
L100	11+33.96	2922689.0591	650019.8512		N27°51'27"W 131.26'	12+65.22	2922805.1111	649958.5151
C101	12+65.22	2922805.1111	649958.5151	R=525.00' Δ=40°20'54" L=369.71' T=192.89'		16+34.93	2923163.9783	649910.1009

Curve Table			
Curve #	Delta	Radius	Length
①	7°22'40"	60.00	7.73
②	30°52'43"	65.00	35.03
③	9°02'05"	500.00	78.84
④	7°25'01"	1110.00	143.69
⑤	40°20'54"	510.00	359.15
⑥	29°25'36"	547.00	280.93

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 39 OF 76

13153-HD(ALIN).DWG Plotted on 20-Dec-2019 5:45 PM

N

LIMIT OF WORK
STA 11+00.00
N:2922658.5216
E:650034.6872

MEET EXIST
+34±, 57'± LT

MEET EXIST
+34±, 51'± LT

MEET EXIST
+00±, 28'± RT

MEET EXIST
+01±, 33'± RT

CORDAVILLE ROAD (ROUTE 85)

SOUTHVILLE RD

SOUTHVILLE RD

PCC+66.3
39.6' L

PC +65.22

PC+65.22
15.00' R

PT+05.71
15.00' R

PT +33.96

PC+27.47
21.25' R

PT+07.13
25.37' R

PT+06.93
23.34' L

PC+55.1
20.1' L

PT+26.92
15.06' L

PT +34.93

PT+34.93
15.00' R

L100

C100

C101

BENCHMARK:
EL=250.98'

N/F
COSTELLO, ROBERT F AND KIM
277/003.0-0000-0022.0
Book 18439 Page 120

N/F
SOUTHBOROUGH TOWN OF
277/004.0-0000-0001.0
Book 36274 Page 219

N/F
NIX, ANNE LOUISE
277/003.0-0000-0014.0
Book 5150 Page 405

N/F
COMMONWEALTH OF MASS
277/004.0-0000-0002.0
Book Page

CB
RIM=241.35'
I=238.6' 15"RCP

CB
RIM=239.09'
(N.P.V.)

CB
RIM=238.68'
I=234.7'
237.0' 4"PVC
34.4' 12"RCP

CB
RIM=239.69'
I=237.1' 12"RCP

DMH
RIM=241.29'

DMH
RIM=240.02'
I=237.5' 6"PVC
I=237.1' 12"RCP
I=236.9' 12"RCP

DMH
RIM=241.03'
I=237.8' 15"RCP
I=238.0' 15"RCP
I=237.5' 12"RCP
I=237.5' 8"CMP

DMH
RIM=239.90'
(C.N.O.)

DMH
RIM=246.74'

SB
RIM=246.37'
I=244.3' 6"PVC

INV 42" RCP
EL=247.10'

BF#M4 END

BF#M1

WF#N1
WF#N2
WF#N3
WF#N4
WF#N5
WF#N6
WF#N7
WF#N8
WF#N9
WF#N10

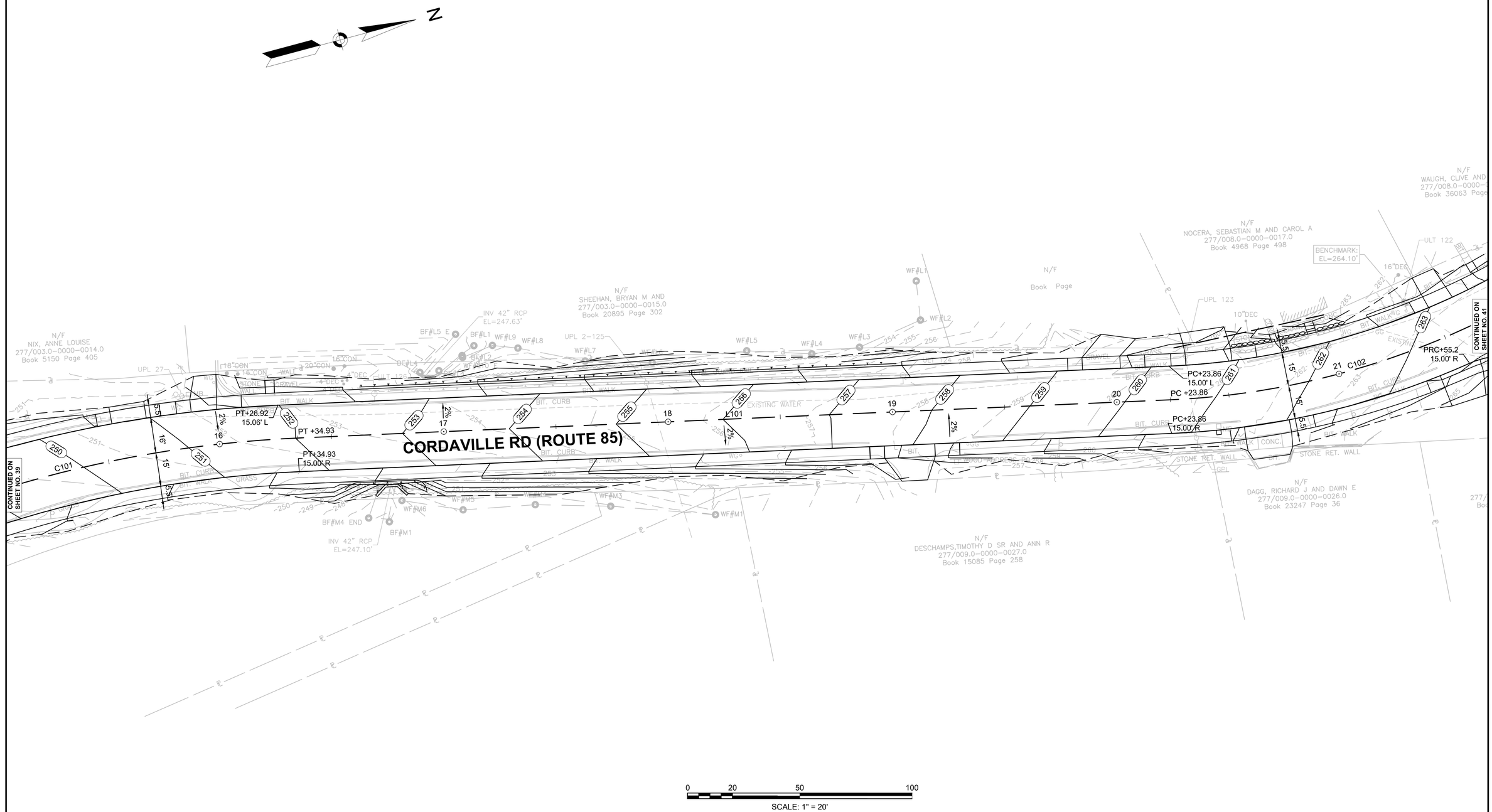
CONTINUED ON SHEET NO. 40

0 20 50 100
SCALE: 1" = 20'

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 40 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:46 PM

CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C101	12+65.22	2922805.1111	649958.5151	R=525.00' Δ=40°20'54" L=369.71' T=192.89'		16+34.93	2923163.9783	649910.1009
L101	16+34.93	2923163.9783	649910.1009		N12°29'27"E 388.93'	20+23.86	2923543.6993	649994.2192
C102	20+23.86	2923543.6993	649994.2192	R=350.00' Δ=27°48'10" L=169.84' T=86.63'		21+93.70	2923711.8243	649990.0794

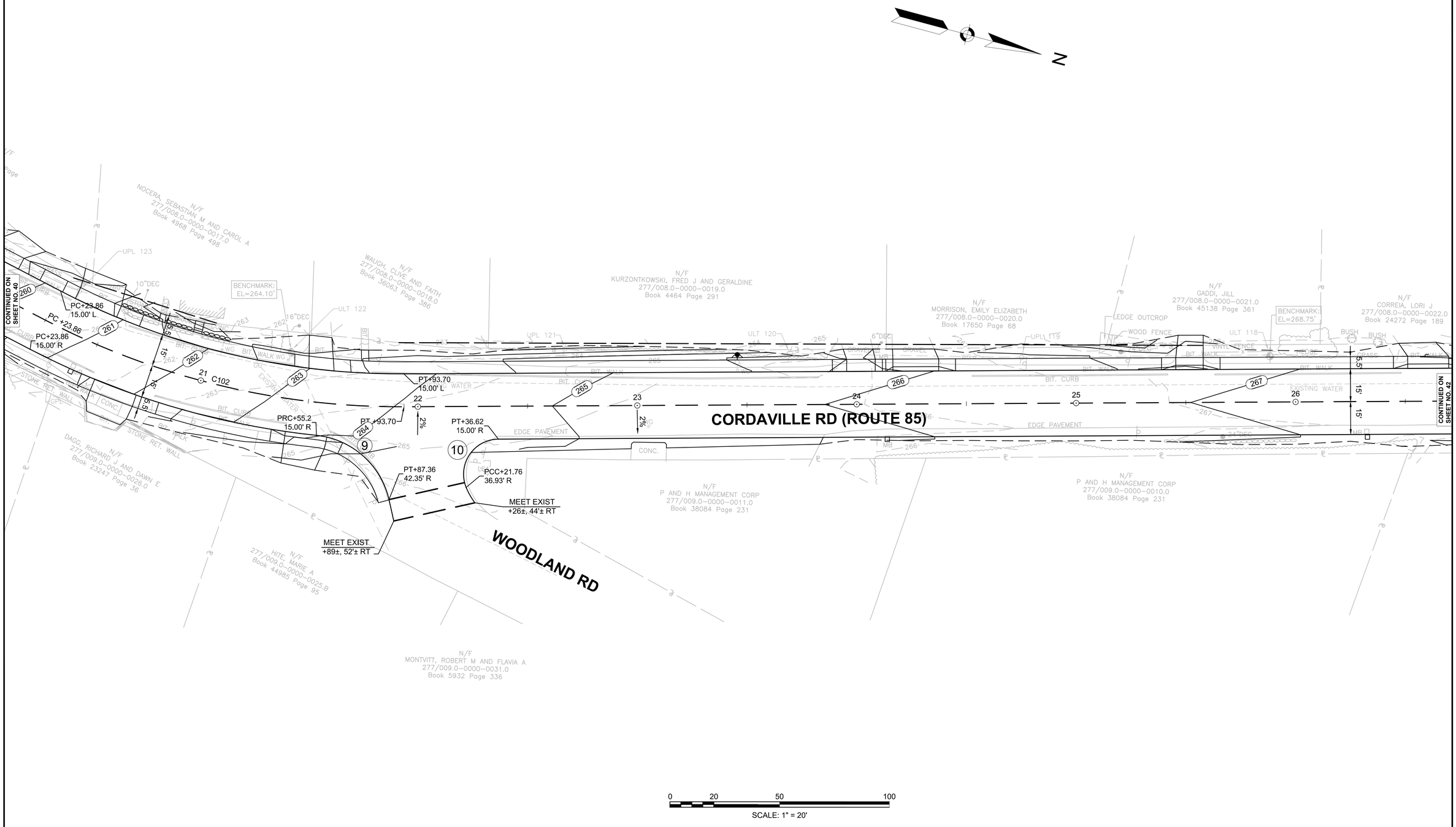


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C102	20+23.86	2923543.6993	649994.2192	R=350.00' Δ=27°48'10" L=169.84' T=86.63'		21+93.70	2923711.8243	649990.0794
L102	21+93.70	2923711.8243	649990.0794		N15°18'43"W 1277.48'	34+71.18	2924943.9586	649652.7300

Curve Table			
Curve #	Delta	Radius	Length
9	71°06'29"	38.00	47.16
10	103°28'15"	16.00	28.89

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 41 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:46 PM



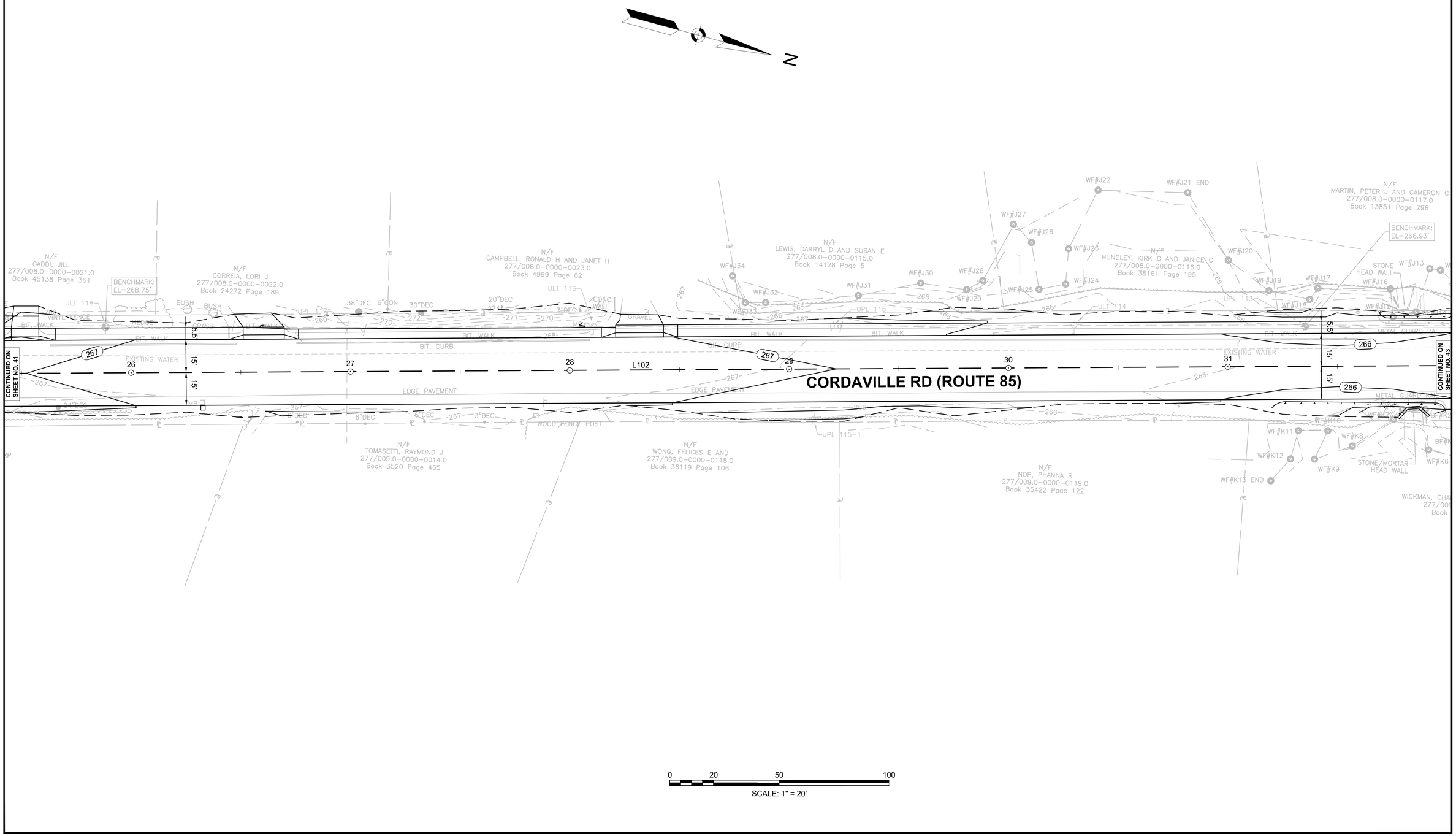
0 20 50 100

SCALE: 1" = 20'

CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L102	21+93.70	2923711.8243	649990.0794		N15°18'43"W 1277.48'	34+71.18	2924943.9586	649652.7300

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 42 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:46 PM

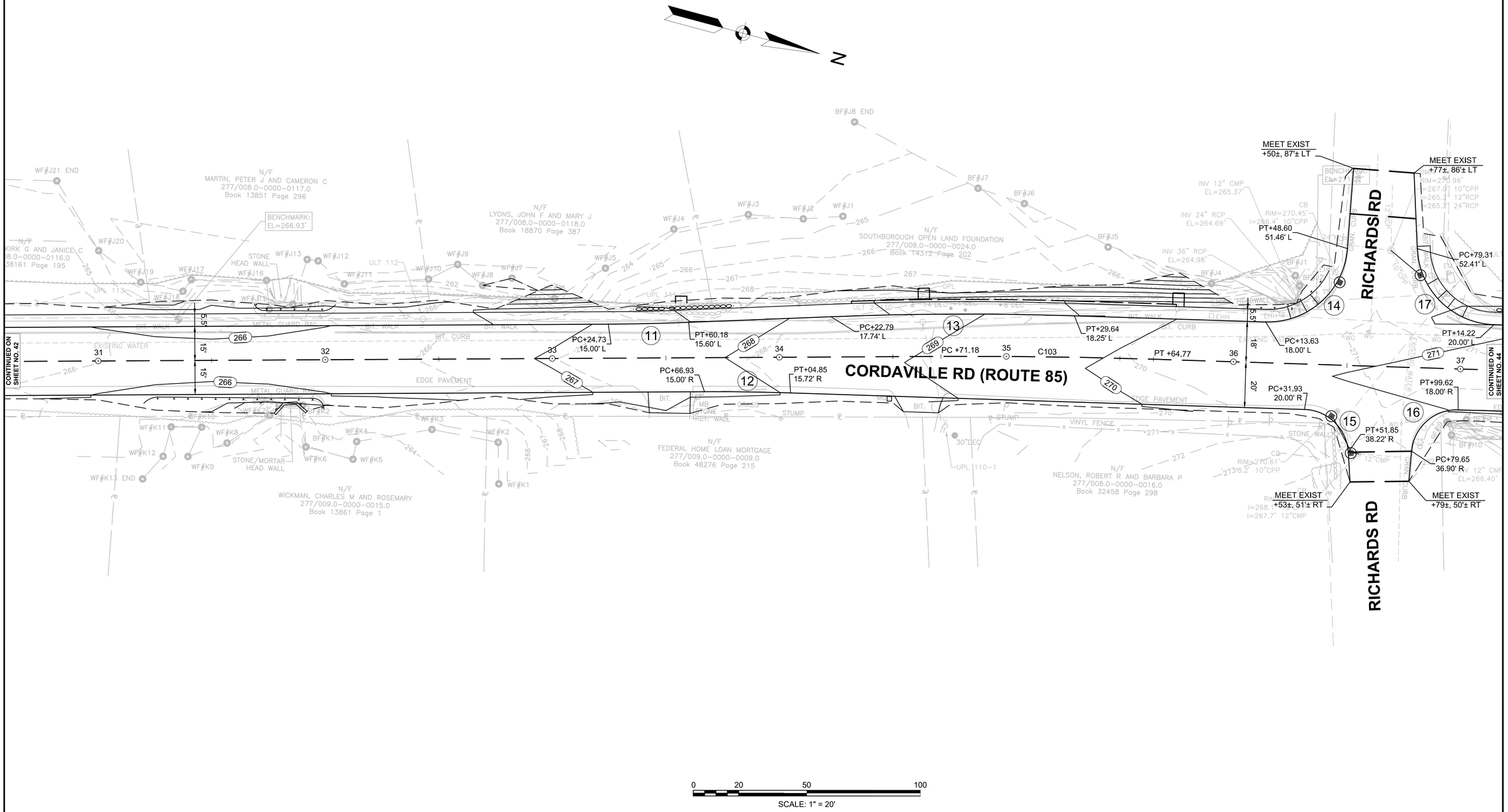


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L102	21+93.70	2923711.8243	649990.0794		N15°18'43"W 1277.48'	34+71.18	2924943.9586	649652.7300
C103	34+71.18	2924943.9586	649652.7300	R=2500.00' Δ=2°08'42" L=93.59' T=46.80'		35+64.77	2925034.6718	649629.7096
L103	35+64.77	2925034.6718	649629.7096		N13°10'01"W 951.54'	45+16.32	2925961.2009	649412.9588

Curve Table			
Curve #	Delta	Radius	Length
⑪	1°57'12"	1040.00	35.45
⑫	2°10'17"	1001.00	37.94
⑬	4°05'54"	1500.00	107.29
⑭	87°28'21"	35.00	53.43
⑮	84°52'28"	20.00	29.63
⑯	86°50'12"	20.00	30.31
⑰	85°45'25"	35.00	52.39

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 43 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:47 PM

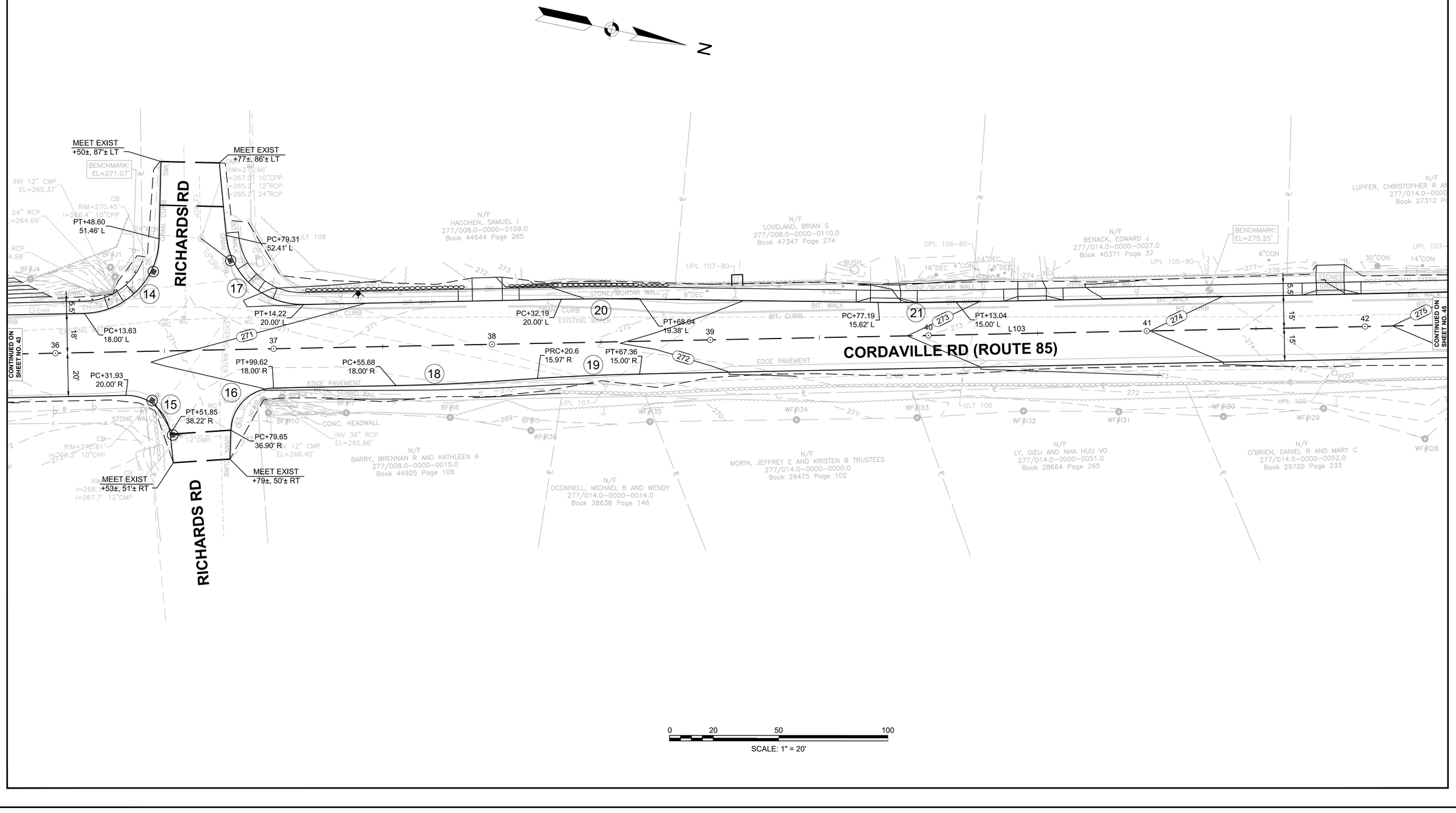


SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 44 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:47 PM

CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L103	35+64.77	2925034.6718	649629.7096		N13°10'01"W 951.54'	45+16.32	2925961.2009	649412.9588

Curve Table			
Curve #	Delta	Radius	Length
14	87°28'21"	35.00	53.43
15	84°52'28"	20.00	29.63
16	86°50'12"	20.00	30.31
17	85°45'25"	35.00	52.39
18	3°04'40"	1040.00	55.86
19	3°04'40"	1040.00	55.86
20	1°58'30"	1040.00	35.85
21	1°58'30"	1040.00	35.85

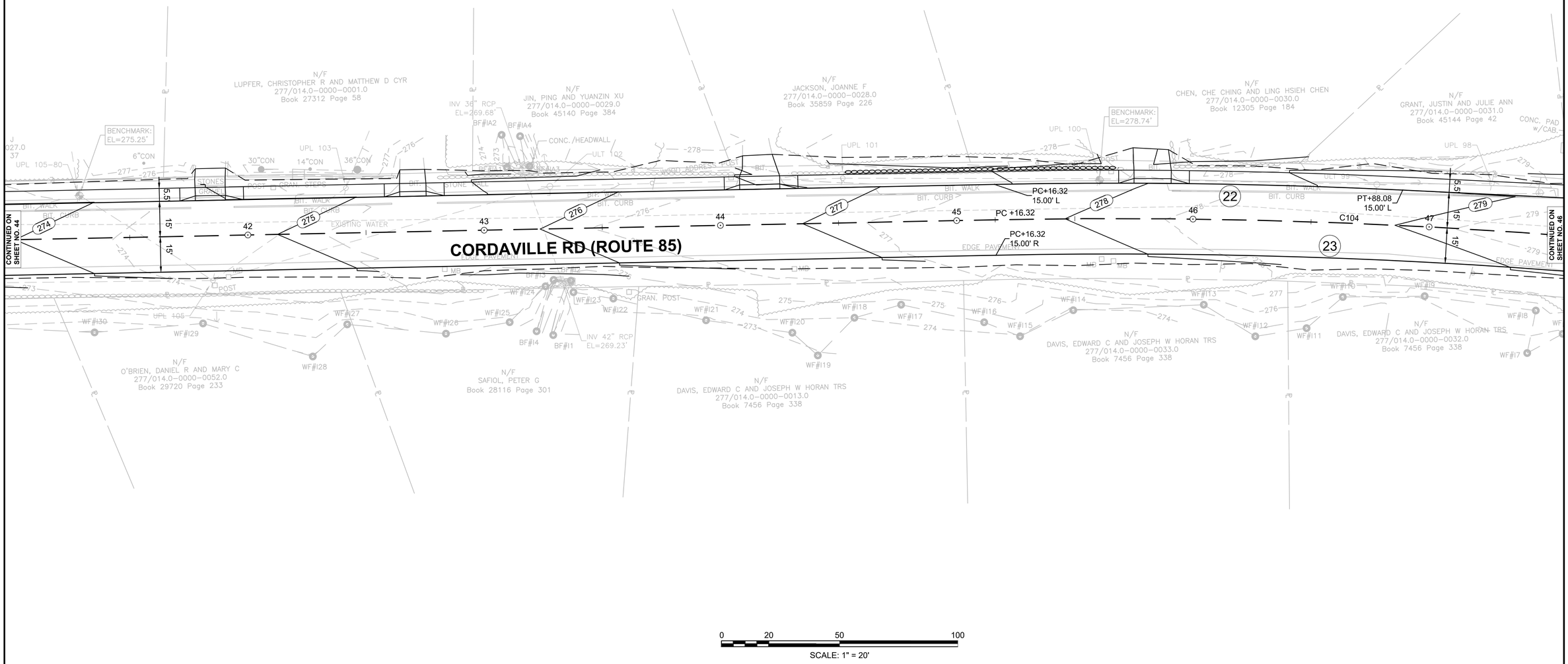


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L103	35+64.77	2925034.6718	649629.7096		N13°10'01"W 951.54'	45+16.32	2925961.2009	649412.9588
C104	45+16.32	2925961.2009	649412.9588	R=2500.00' Δ=7°39'32" L=334.18' T=167.34'		48+50.50	2926290.7078	649358.7786

Curve Table			
Curve #	Delta	Radius	Length
22	3°56'12"	2515.00	172.80
23	5°55'43"	2485.00	257.13

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 45 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:47 PM

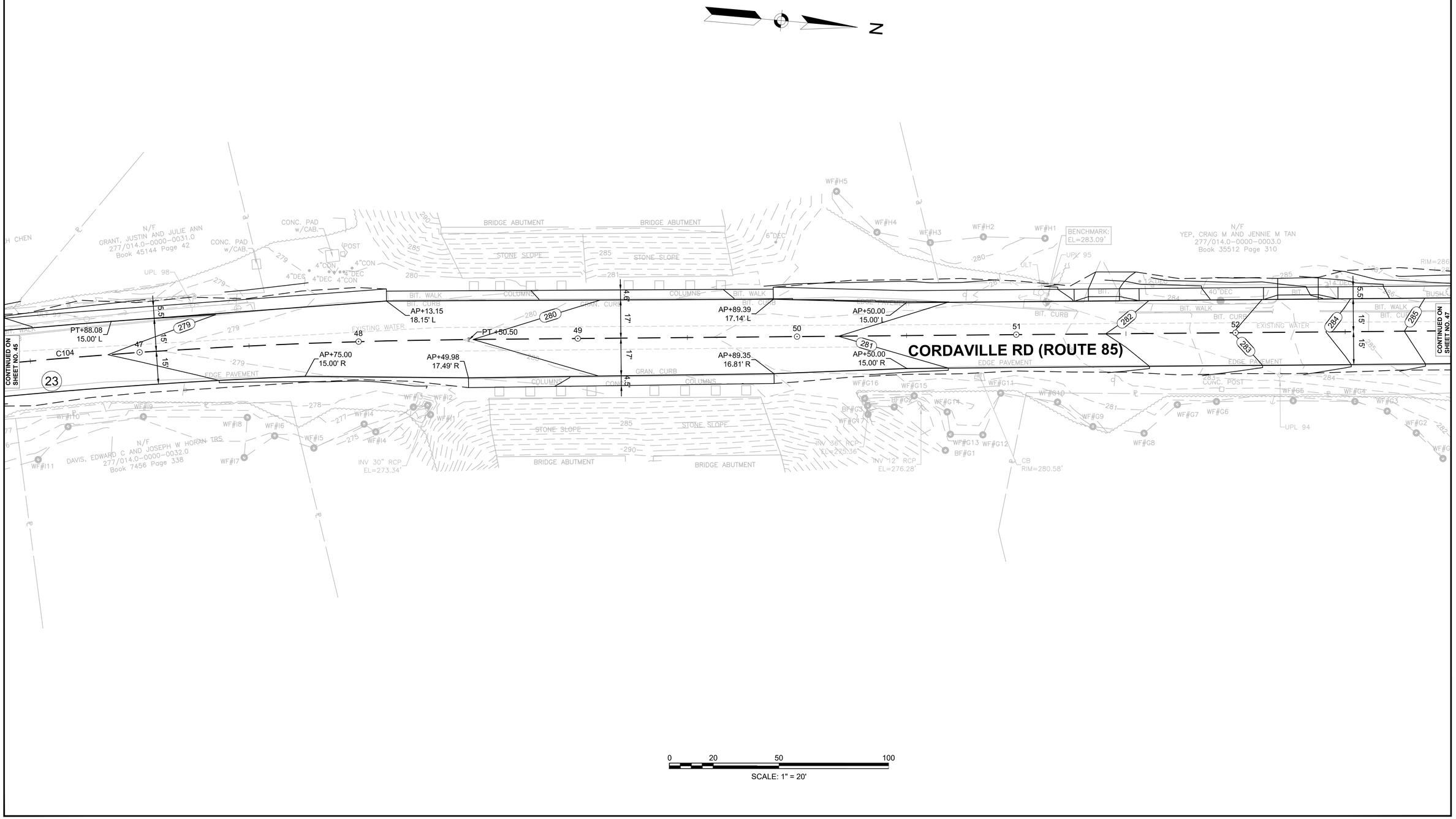


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C104	45+16.32	2925961.2009	649412.9588	R=2500.00' Δ=7°39'32" L=334.18' T=167.34'		48+50.50	2926290.7078	649358.7786
C105	68+58.82	2928289.7606	649166.0080	R=2500.00' Δ=6°27'19" L=281.66' T=140.98'		71+40.48	2928571.0495	649154.8064

Curve Table			
Curve #	Delta	Radius	Length
23	5°55'43"	2485.00	257.13

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 46 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:48 PM

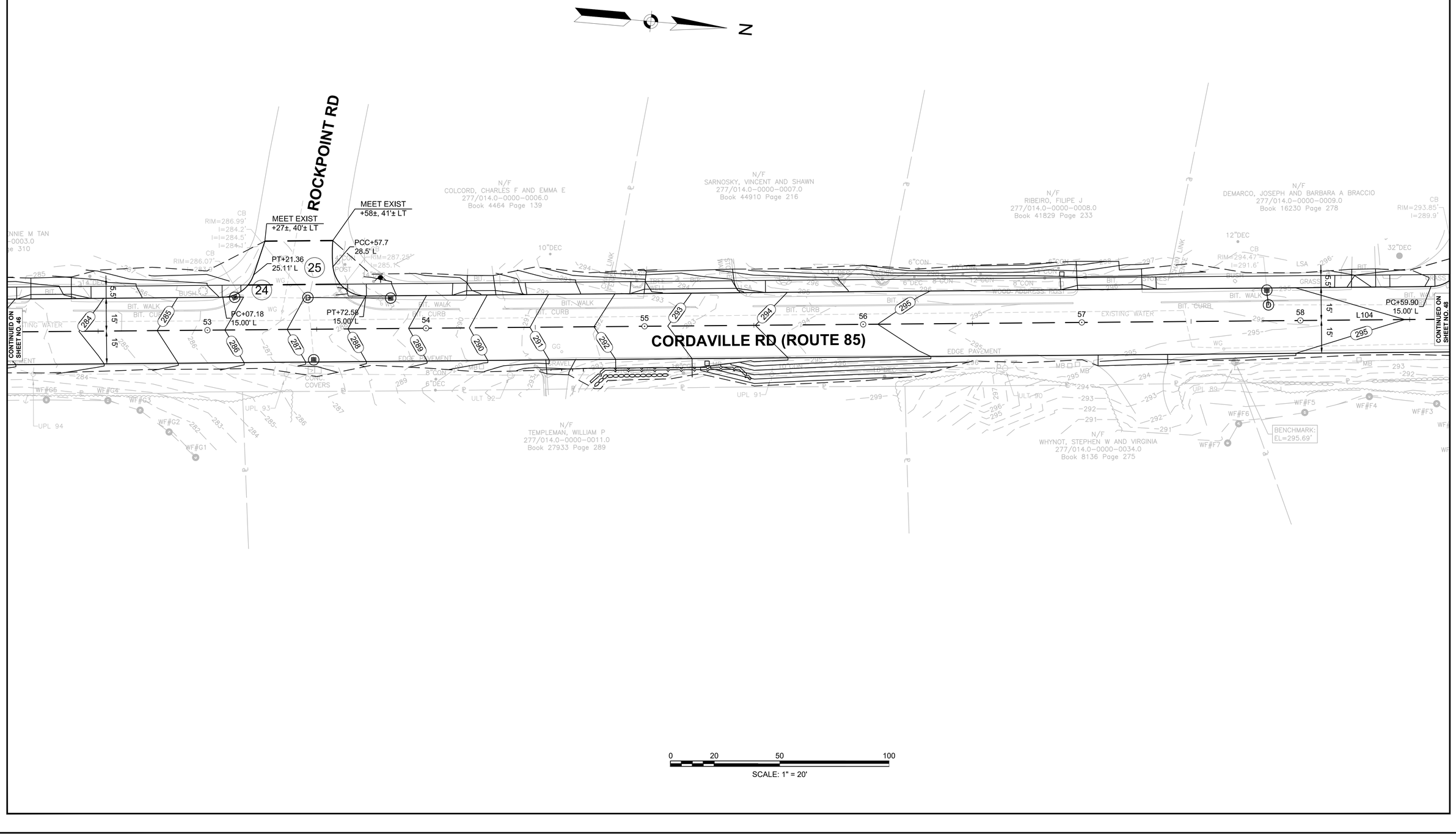


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L104	48+50.50	2926290.7078	649358.7786		N5°30'29"W 2008.33'	68+58.82	2928289.7606	649166.0080

Curve Table			
Curve #	Delta	Radius	Length
(24)	70°57'53"	15.00	18.58
(25)	84°22'44"	15.00	22.09

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 47 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:48 PM



0 20 50 100

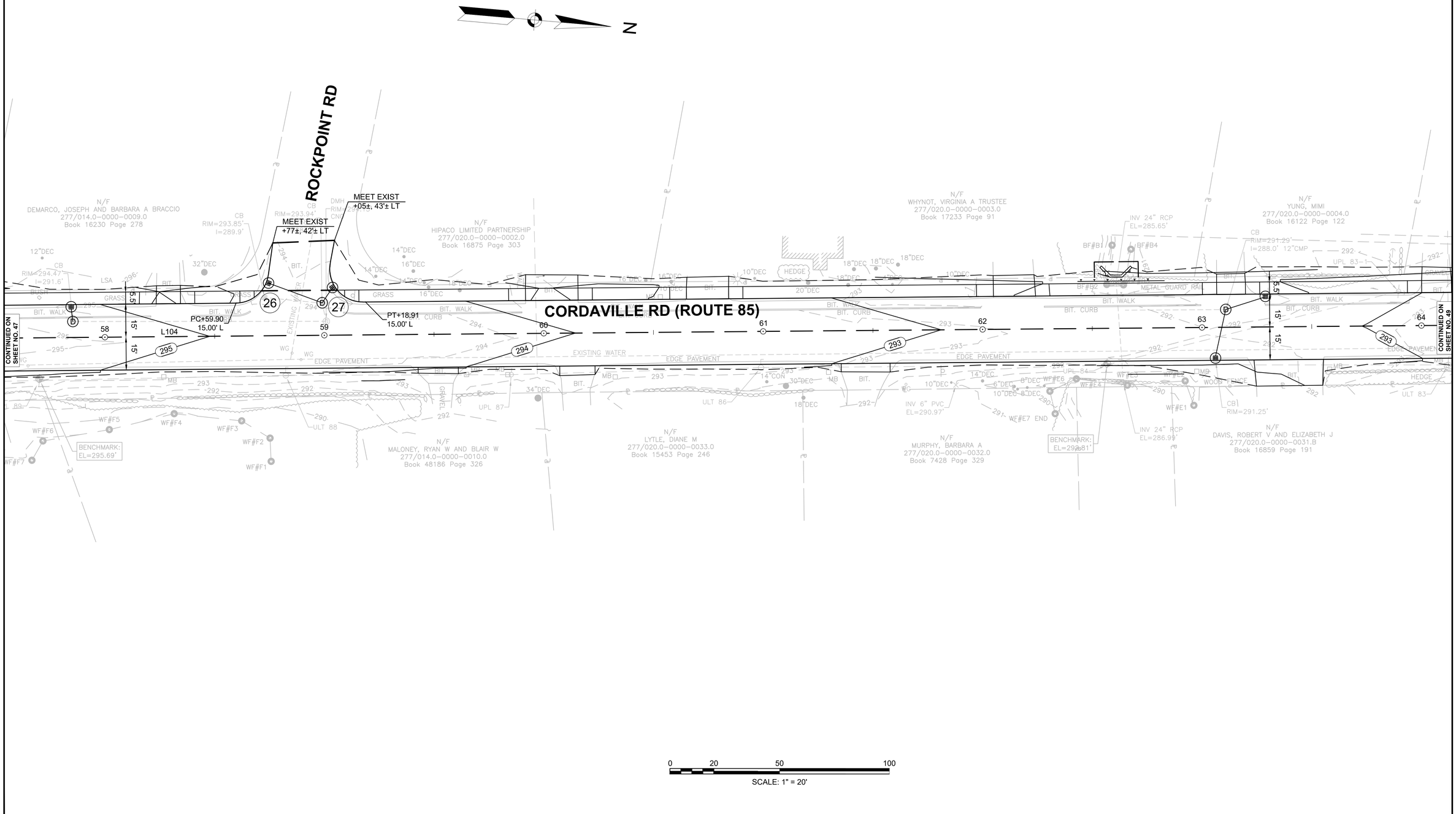
SCALE: 1" = 20'

CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L104	48+50.50	2926290.7078	649358.7786		N5°30'29"W 2008.33'	68+58.82	2928289.7606	649166.0080

Curve Table			
Curve #	Delta	Radius	Length
26	81°29'04"	15.00	21.33
27	101°06'08"	15.00	26.47

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 48 OF 76

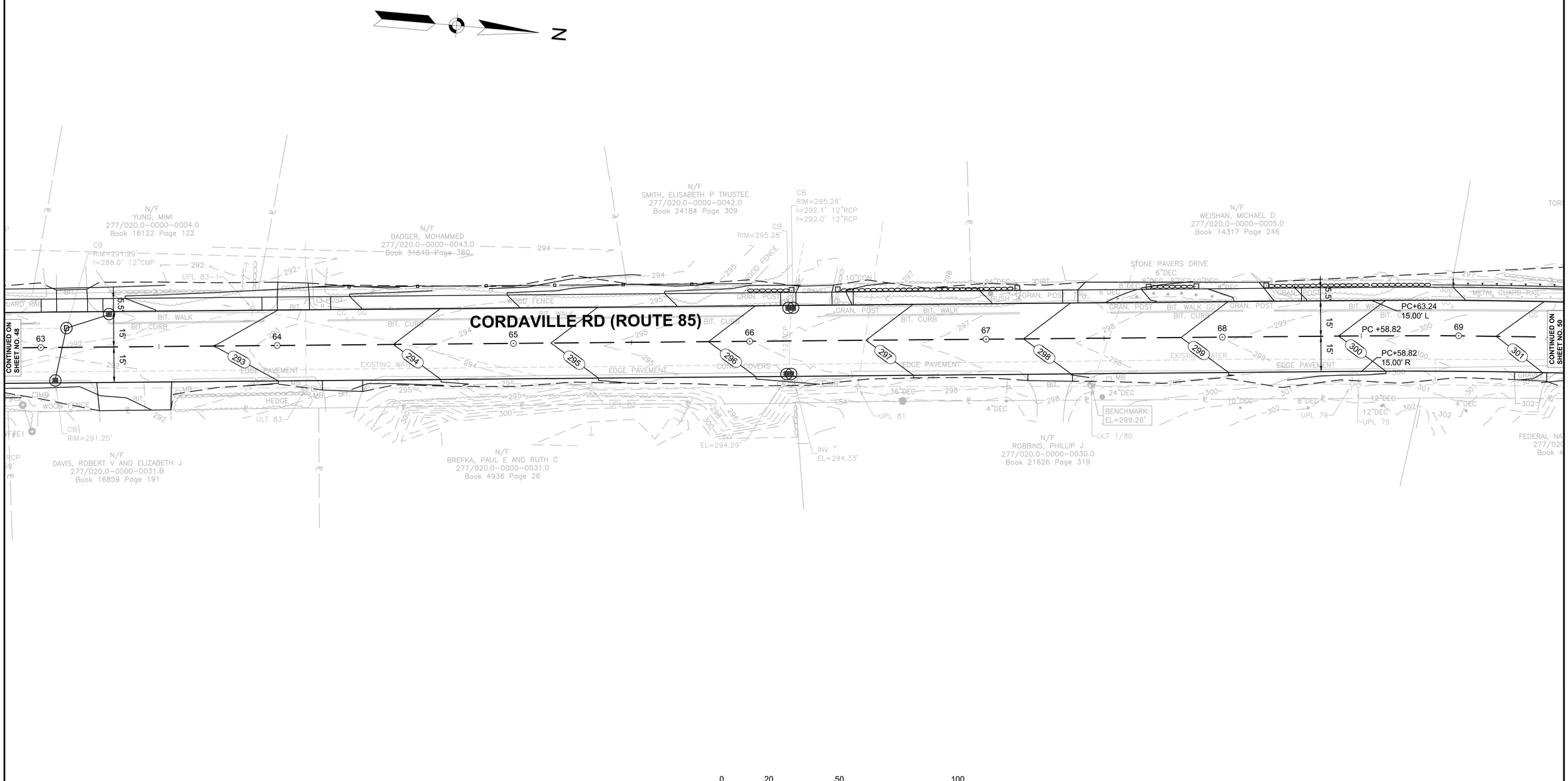
13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:49 PM



CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L104	48+50.50	2926290.7078	649358.7786		N5°30'29"W 2008.33'	68+58.82	2928289.7606	649166.0080

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 49 OF 76

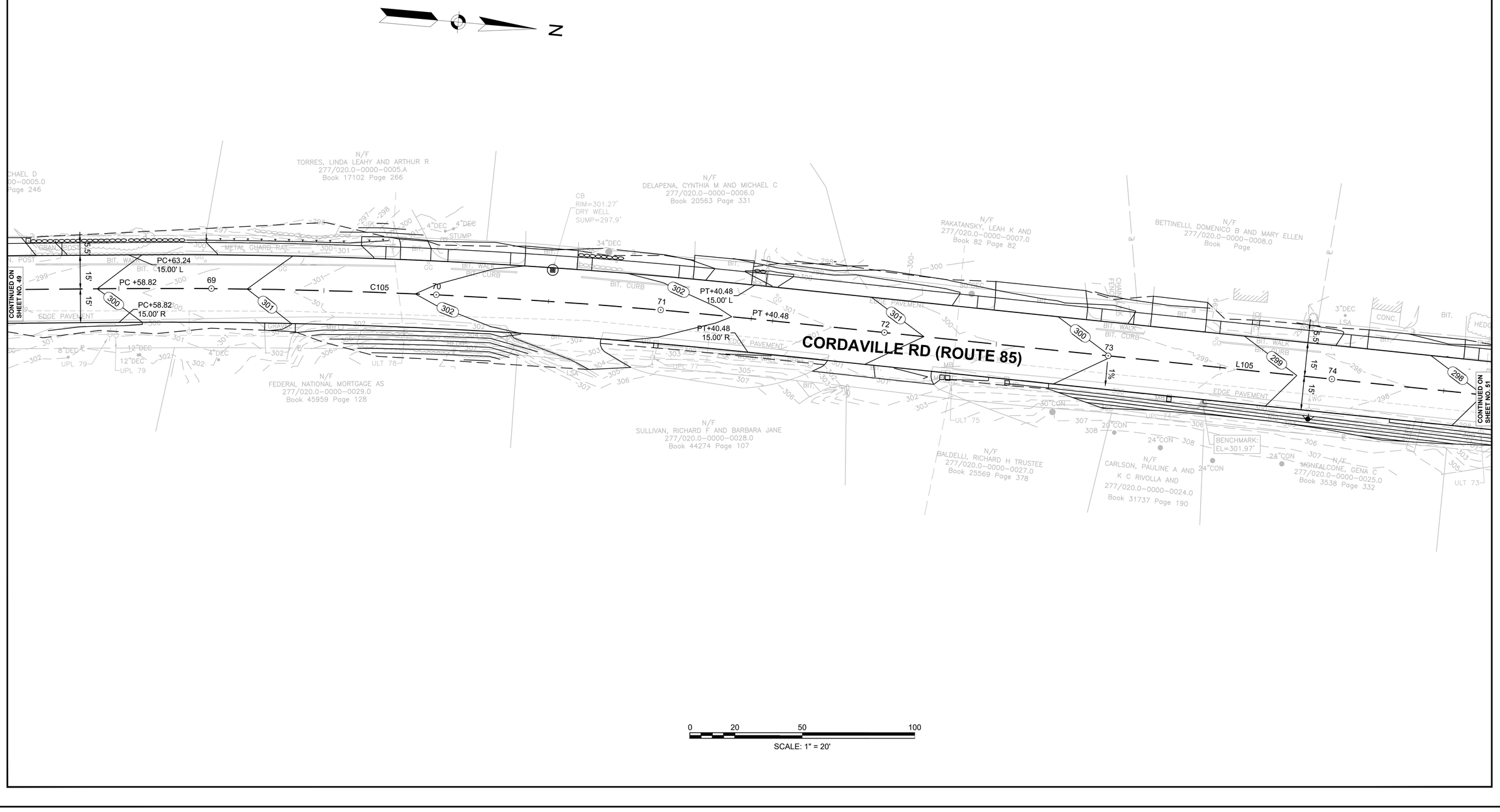
13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:49 PM



CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C105	68+58.82	2928289.7606	649166.0080	R=2500.00' Δ=6°27'19" L=281.66' T=140.98'		71+40.48	2928571.0495	649154.8064
L105	71+40.48	2928571.0495	649154.8064		N0°56'50"E 440.64'	75+81.12	2929011.6262	649162.0901

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 50 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:49 PM

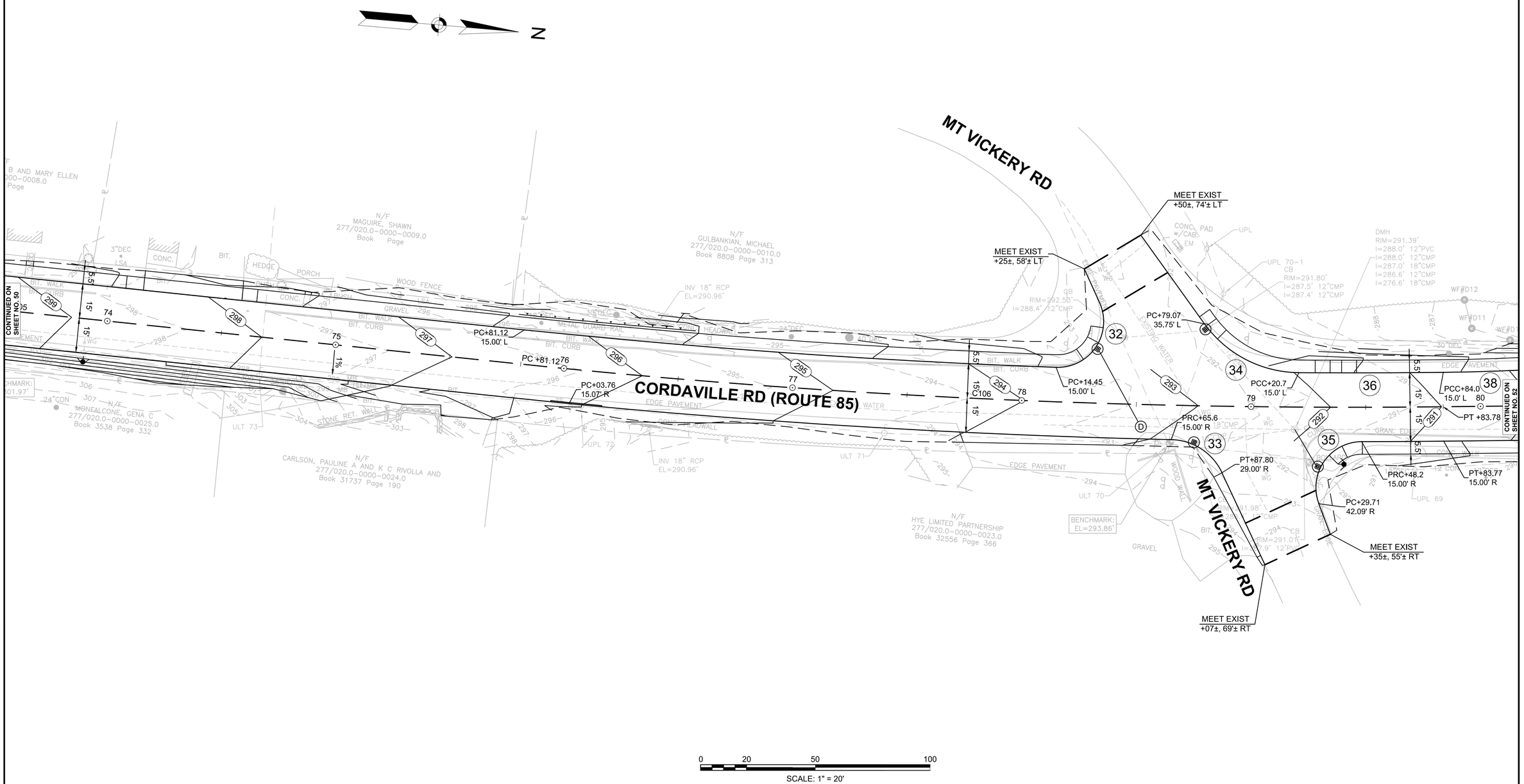


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L105	71+40.48	2928571.0495	649154.8064		N0°56'50"E 440.64'	75+81.12	2929011.6262	649162.0901
C106	75+81.12	2929011.6262	649162.0901	R=3500.00' Δ=6°35'30" L=402.66' T=201.55'		79+83.78	2929413.7221	649145.5983

Curve Table			
Curve #	Delta	Radius	Length
32	104°52'52"	20.00	36.61
33	63°42'06"	25.00	27.80
34	53°57'32"	51.00	48.03
35	93°28'38"	20.00	32.63
36	1°00'28"	3485.00	61.29
38	2°49'01"	1040.00	51.13

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 51 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:49 PM

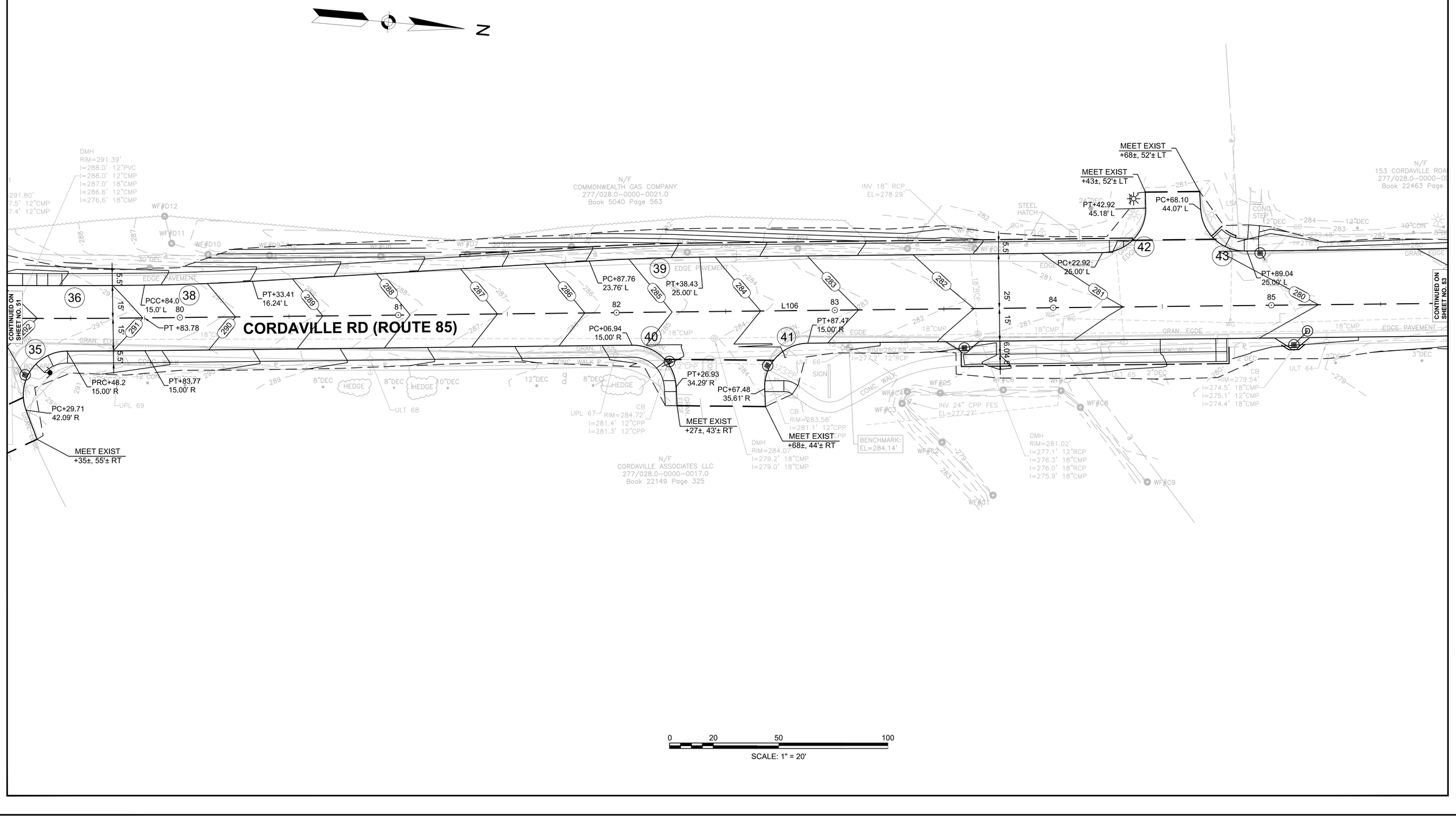


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L106	79+83.78	2929413.7221	649145.5983		N5°38'40"W 591.40'	85+75.18	2930002.2543	649087.4313

Curve Table			
Curve #	Delta	Radius	Length
55	93°28'38"	20.00	32.63
56	1°00'28"	3485.00	61.29
58	2°49'01"	1040.00	51.13
59	2°47'34"	1040.00	50.69
40	48°06'41"	20.00	16.79
41	51°56'04"	20.00	18.13
42	90°30'27"	20.00	31.59
43	42°25'50"	21.00	15.55

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 52 OF 76

13153-HD(ALIN).DWG Plotted on 20-Dec-2019 5:50 PM

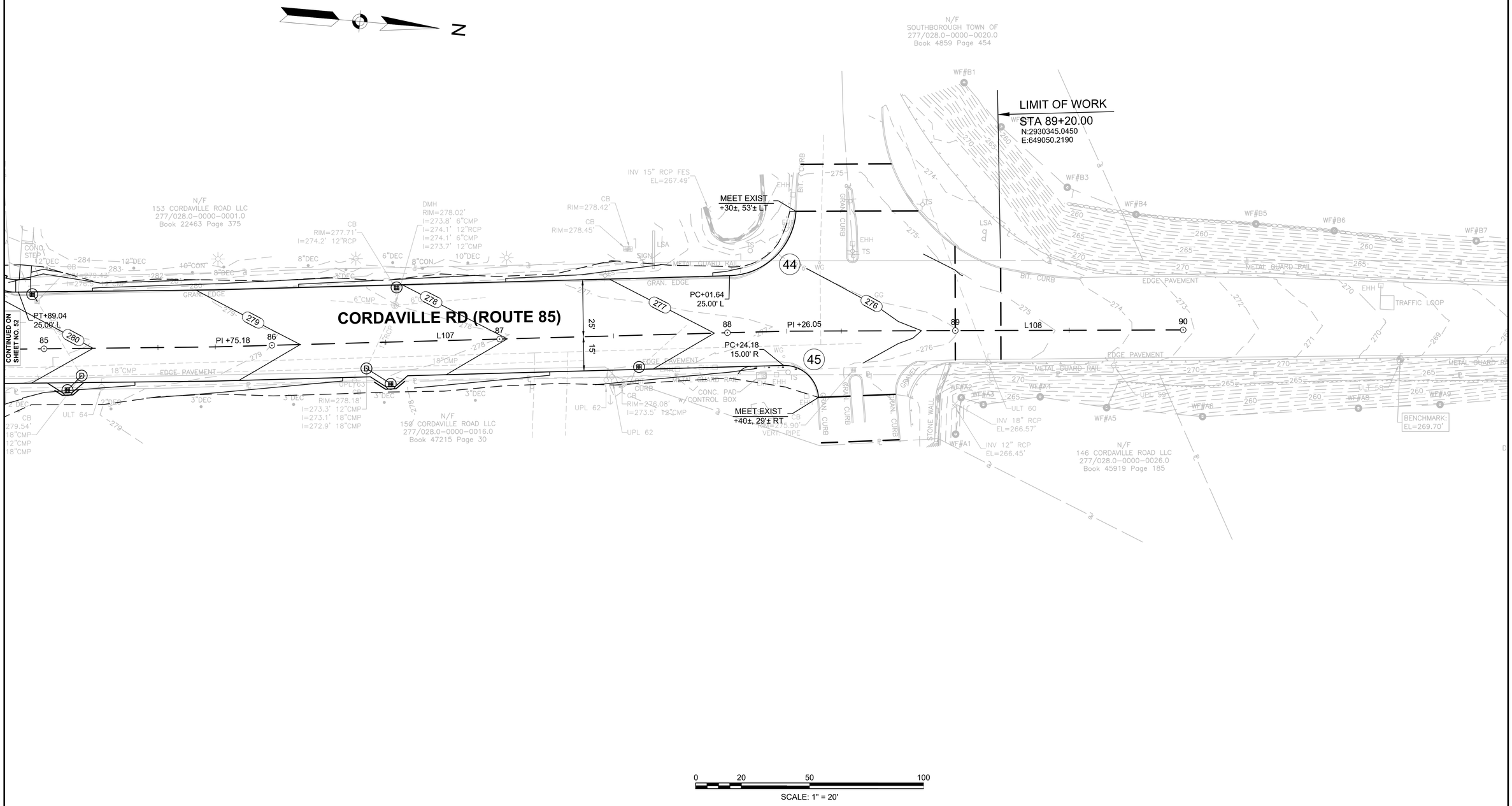


CORDAVILLE ROAD ALIGNMENT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L107	85+75.18	2930002.2543	649087.4313		N6°34'36"W 250.88'	88+26.05	2930251.4802	649058.6980
L108	88+26.05	2930251.4802	649058.6980		N5°10'41"W 173.95'	90+00.00	2930424.7203	649042.9988

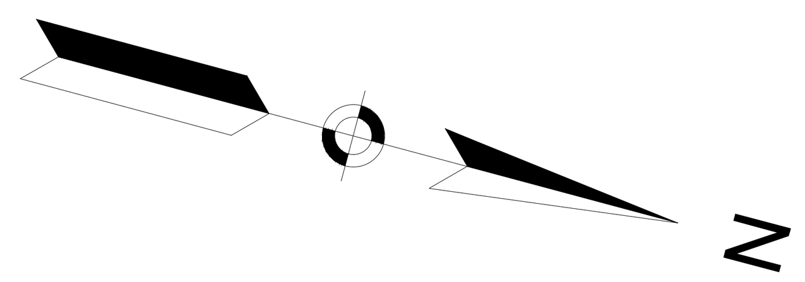
Curve Table			
Curve #	Delta	Radius	Length
44	85°06'15"	30.00	44.56
45	87°48'34"	15.00	22.99

SOUTHBOROUGH
CORDAVILLE ROAD
ALIGNMENT & GRADING PLANS
SHEET 53 OF 76

13153-HD(ALN).DWG Plotted on 20-Dec-2019 5:50 PM



13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:51 PM



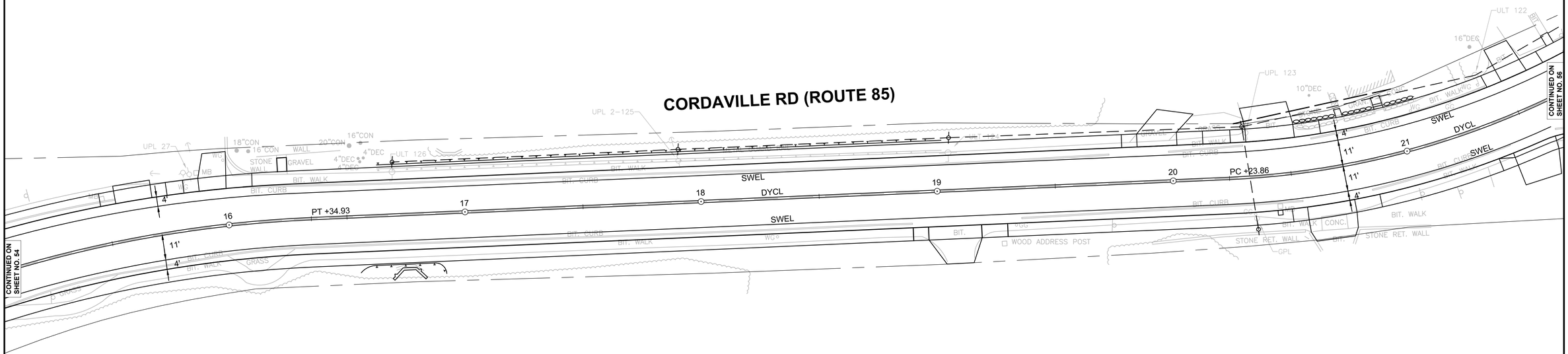
CONSTRUCTION NOTES

1. RETAIN ALL EXISTING TS EQUIPMENT AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
2. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:51 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

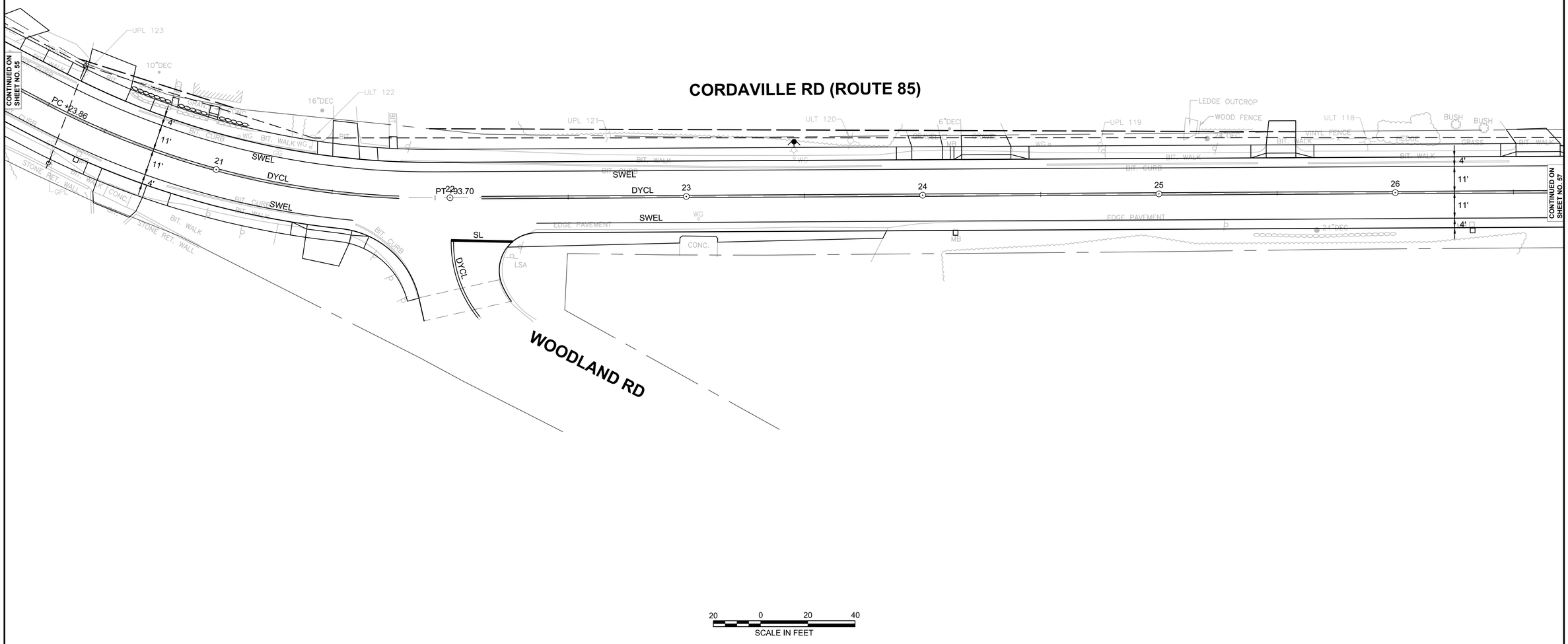


20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 56 OF 76

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



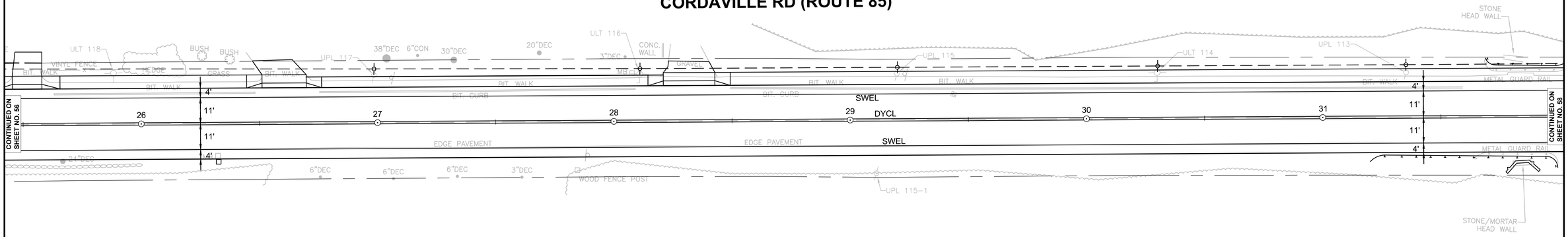
13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:51 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

CORDAVILLE RD (ROUTE 85)



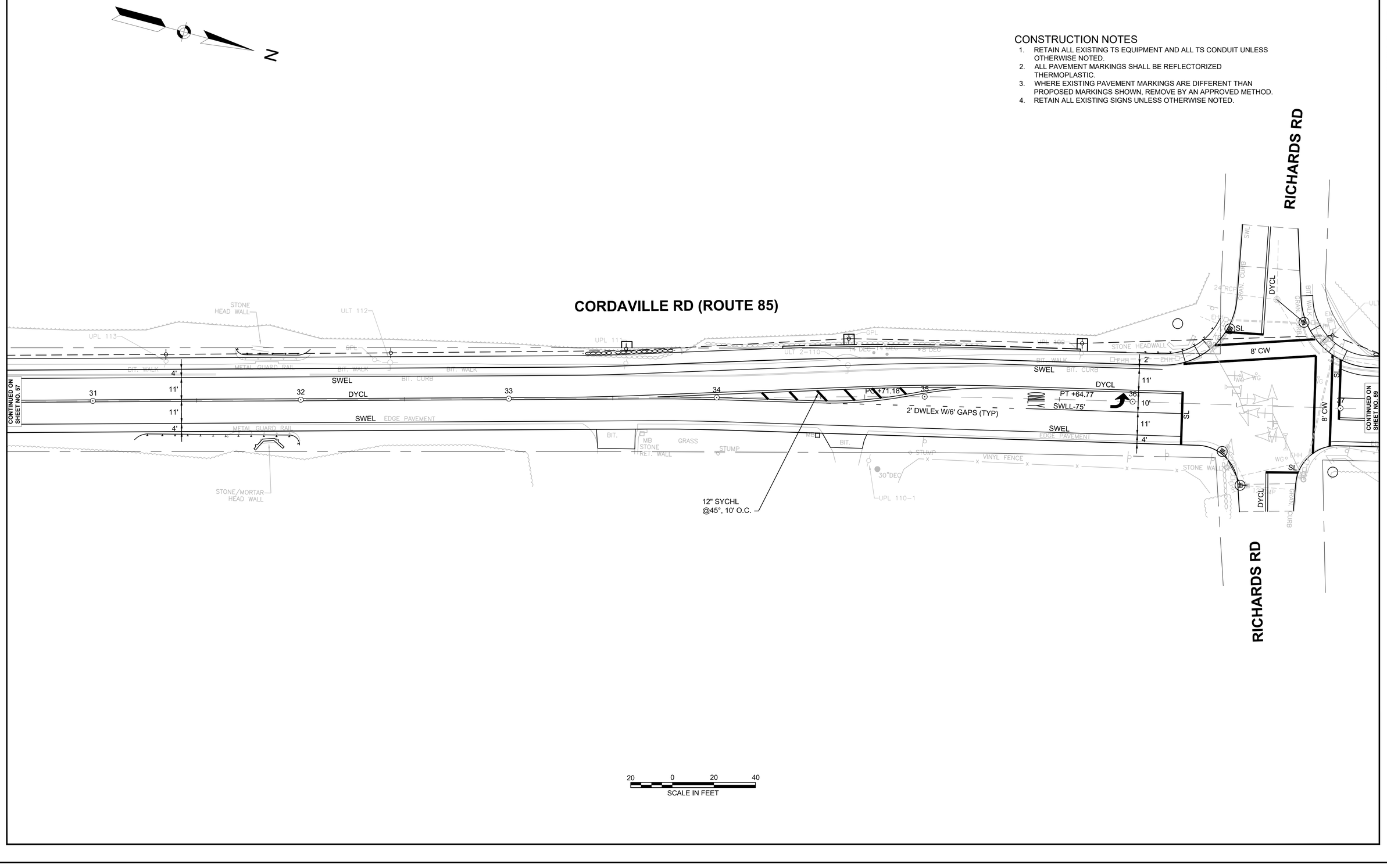
20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 58 OF 76

13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:52 PM

CONSTRUCTION NOTES

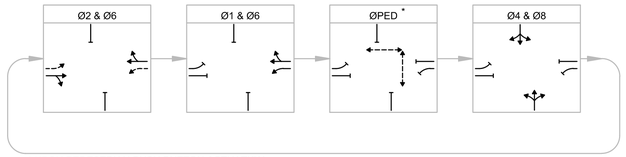
1. RETAIN ALL EXISTING TS EQUIPMENT AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
2. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 59 OF 76

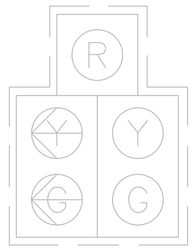
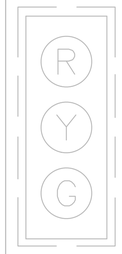
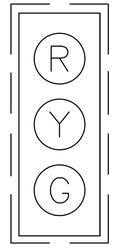
N

EXISTING PREFERENTIAL PHASE SEQUENCE



* UPON PEDESTRIAN PUSH BUTTON ACTUATION

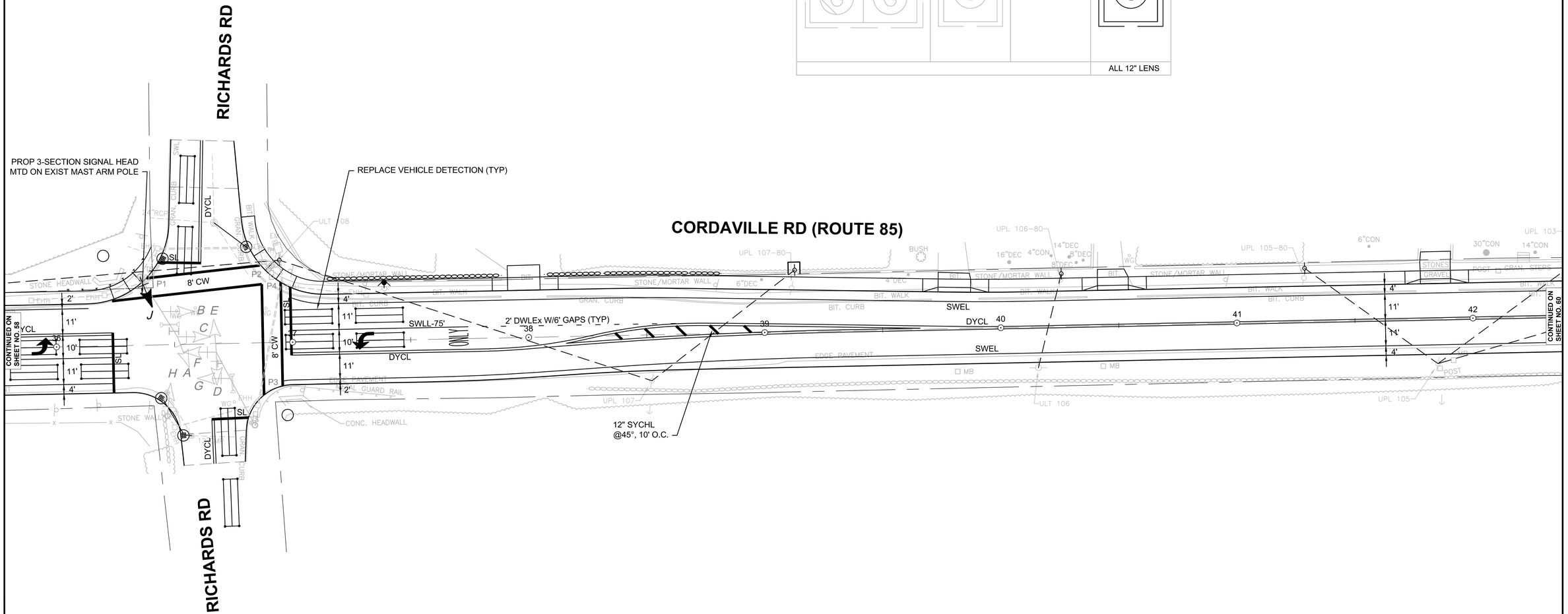
EXISTING /PROPOSED SIGNAL HEAD DATA

C	A,B,D,E,F,G,H	P1-P4	J
		 (L.E.D.)	
			ALL 12" LENS

CONSTRUCTION NOTES

1. RETAIN ALL EXISTING TS EQUIPMENT AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
2. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

CORDAVILLE RD (ROUTE 85)



20 0 20 40
SCALE IN FEET

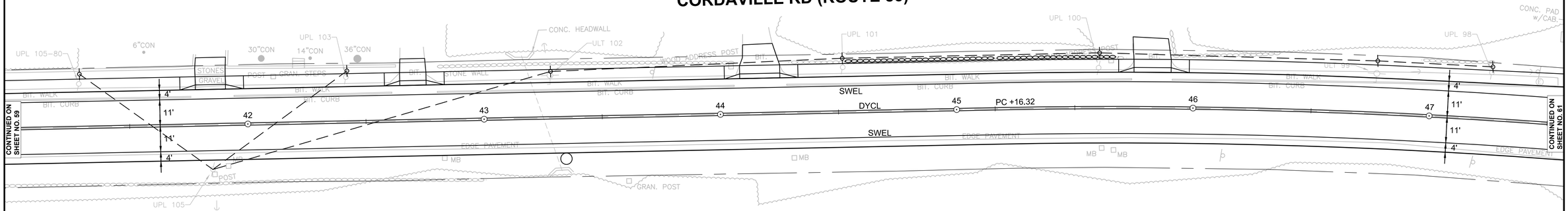
13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:52 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

CORDAVILLE RD (ROUTE 85)



20 0 20 40
SCALE IN FEET

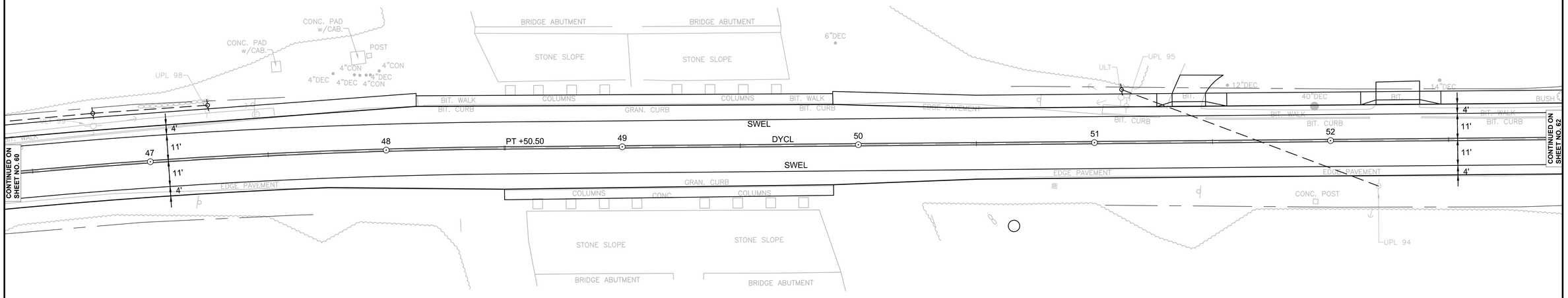
SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 61 OF 76

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

CORDAVILLE RD (ROUTE 85)



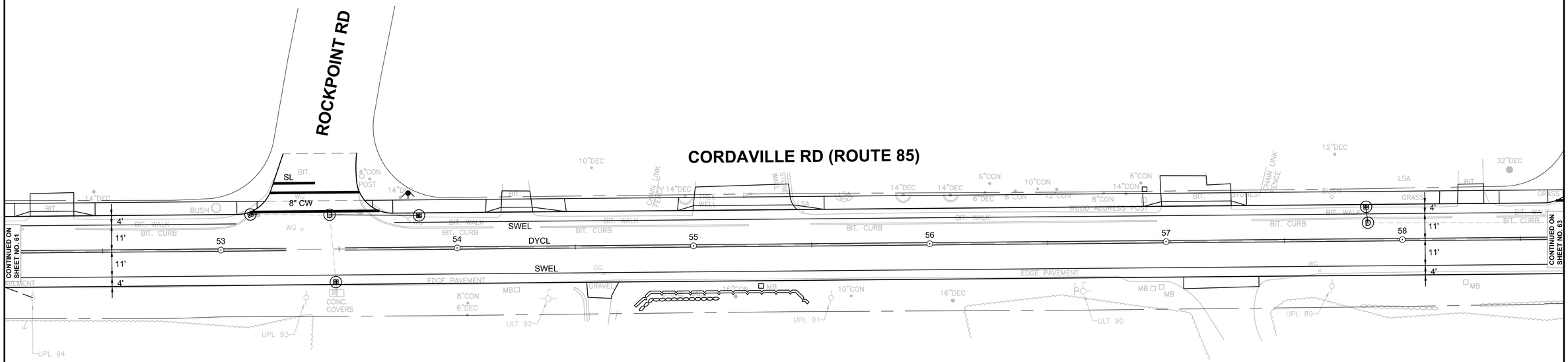
20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 62 OF 76

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 63 OF 76

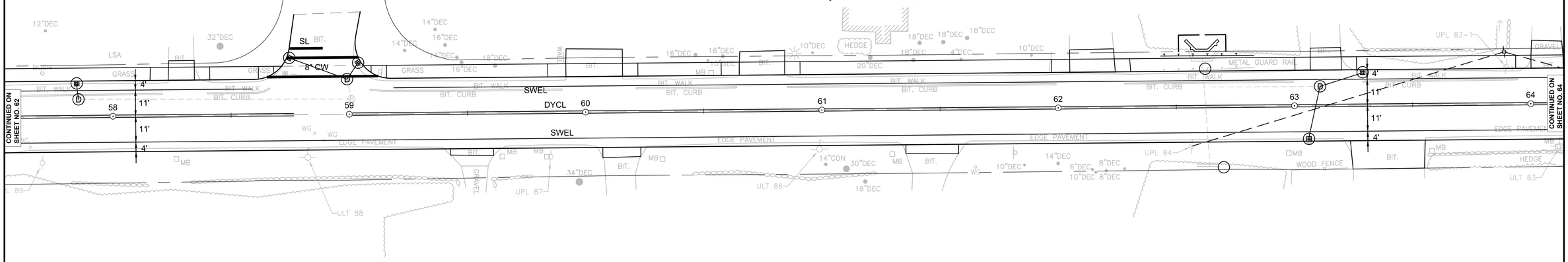
CONSTRUCTION NOTES

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

N

ROCKPOINT RD

CORDAVILLE RD (ROUTE 85)



20 0 20 40
SCALE IN FEET

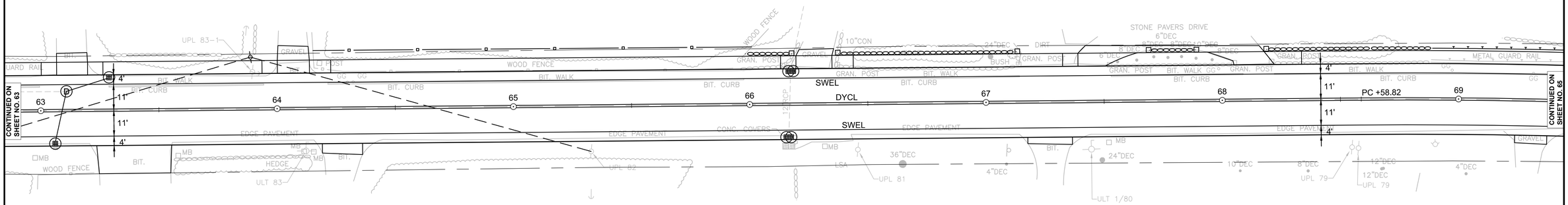
13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:52 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

CORDAVILLE RD (ROUTE 85)



20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 65 OF 76

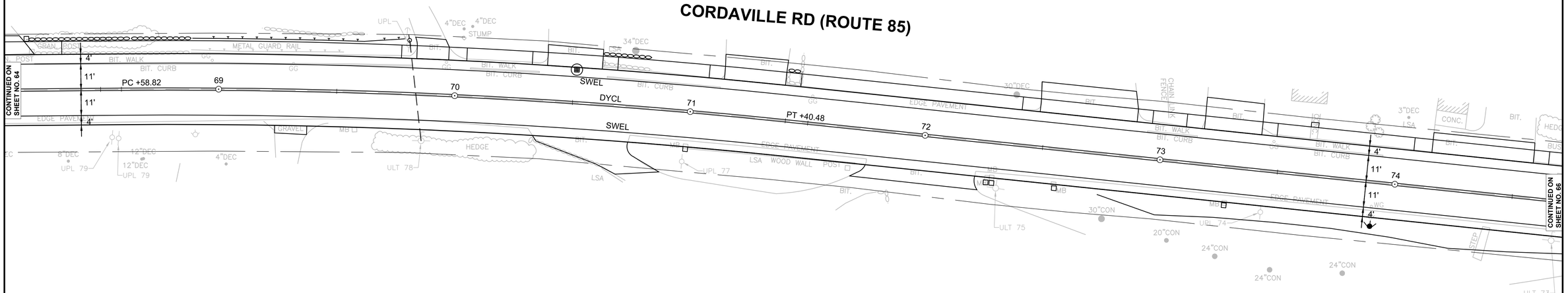
13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:53 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

N

CORDAVILLE RD (ROUTE 85)



20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 66 OF 76

13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:53 PM

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

N

CORDAVILLE RD (ROUTE 85)

MT VICKERY RD

MT VICKERY RD

CONTINUED ON SHEET NO. 65

CONTINUED ON SHEET NO. 67

3"DEC
LSA
CONC.
BIT.
HEDGE
PORCH
BUSH
WOOD FENCE
GRAVEL
BIT. WALK
BIT. CURB
4'
11'
11'
4'
74
75
76
77
78
79
80
PC +81.12
PT +83.78
SWEL
DYCL
EDGE PAVEMENT
METAL GUARD RAIL
CONC. HEADWALL
24"DEC
40"DEC
30"DEC
24"CON
36"DEC
MB
STONE RET. WALL
ULT 73
UPL 72
ULT 71
ULT 70
CONC. PAD w/CAB.
EM
UPL
UPL 70-1
WG
EDGE PAVEMENT
SL
8" CW
18"CMP
12"CMP
GRAN. CURB
CONC. WALK
12"DEC
12"CON
UPL 69
WOOD WALL
GRAVEL
BIT.

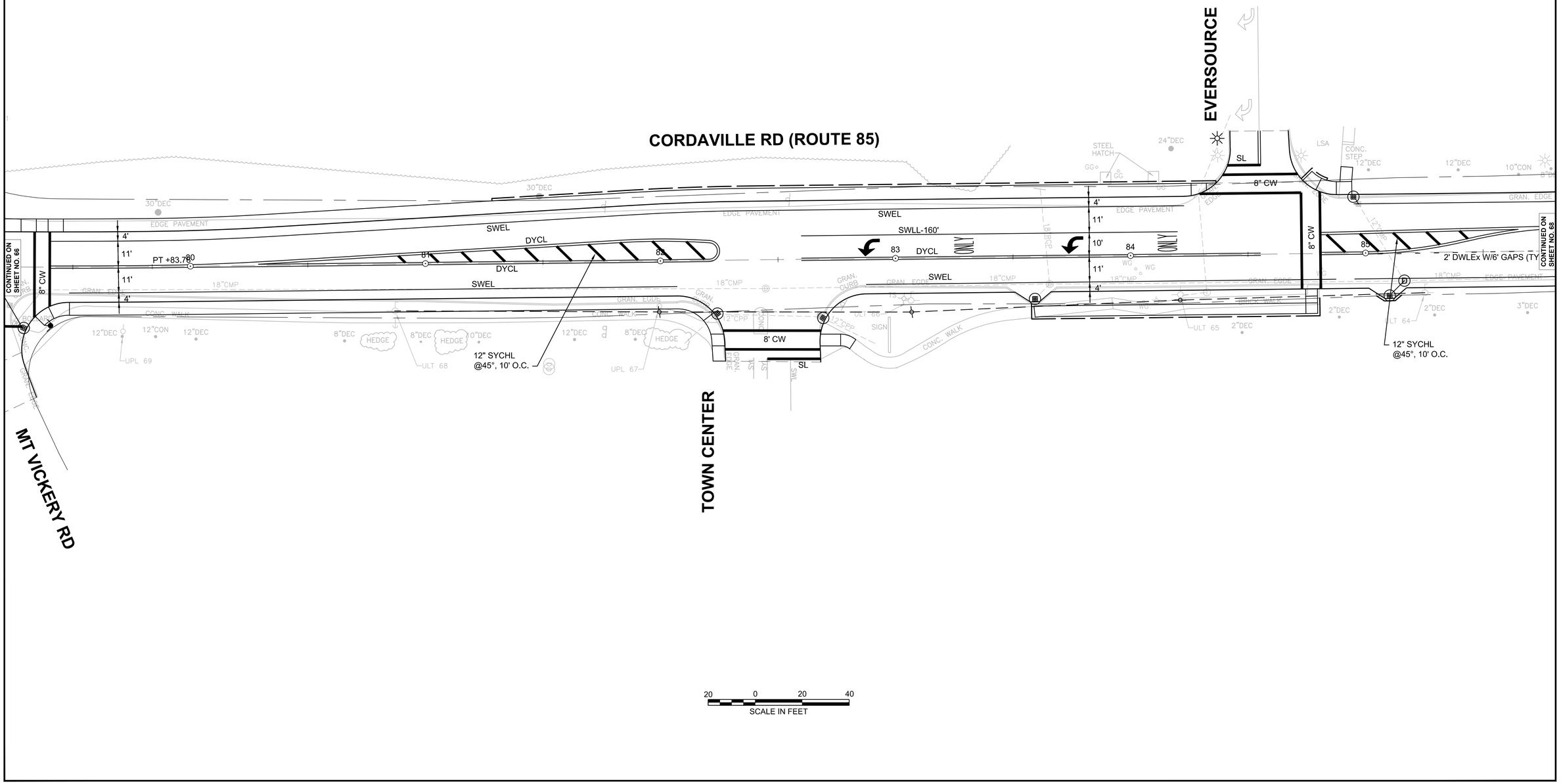
20 0 20 40
SCALE IN FEET

SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS
SHEET 67 OF 76

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. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.



SOUTHBOROUGH
CORDAVILLE ROAD
TRAFFIC PLANS

CONSTRUCTION NOTES

1. RETAIN ALL EXISTING TS EQUIPMENT AND ALL TS CONDUIT UNLESS OTHERWISE NOTED.
2. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED.

13153-HD(TSIG).DWG Plotted on 20-Dec-2019 5:53 PM

TEMPORARY TRAFFIC CONTROL PLAN GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE 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.
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. THE CONTRACTOR SHALL PROVIDE TEMPORARY IMPACT ATTENUATORS TO PROTECT ALL BLUNT-ENDS OF TEMPORARY CONCRETE BARRIER OR AS REQUIRED ON THE TRAFFIC MANAGEMENT PLANS. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO THE START OF WORK. ALL TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 2 (TL-2) ON ALL ROADWAYS HAVING A POSTED SPEED LESS THAN 45MPH AND TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 45MPH.
10. 10' 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 (W13-1) SHALL BE USED IF APPROPRIATE AND AS DIRECTED BY THE ENGINEER.
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. W20-7b SIGNS SHALL BE REPLACED BY W20-7 SIGNS WHEN FLAGGERS ARE USED IN LIEU OF POLICE OFFICER DETAILS.
17. TEMPORARY MARKINGS SHALL BE WATER-BORNE PAINT.
18. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
19. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
20. PROVIDE CLEAR ZONES AROUND MOVEABLE IMPACT ATTENUATOR DEVICES AS REQUIRED BY THE THE MANUFACTURER.
21. W20-8a SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
22. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
23. ALL TEMPORARY CROSSWALKS AND STOPLINES SHALL BE 12 INCH PAINT.
24. ALL TEMPORARY DOUBLE YELLOW CENTER LINES (DYCL) SHALL BE 6 INCH PAINT.
25. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
26. CONTRACTOR SHALL SECURE ALL WORK AREAS AT ALL TIMES TO PREVENT UNAUTHORIZED ACCESS.
27. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

TEMPORARY TRAFFIC CONTROL SIGNS

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR		
	WIDTH	HEIGHT		BACKGROUND	LEGEND	BORDER
M4-9b(L)	24"	30"	DETOUR ←	FLUORESCENT ORANGE	BLACK	BLACK
M4-9b(R)	24"	30"	DETOUR →	FLUORESCENT ORANGE	BLACK	BLACK
R2-10a	48"	36"	WORK ZONE / SPEEDING FINES DOUBLED	WHITE	BLACK	BLACK
R2-10e	48"	36"	END ROAD WORK / DOUBLE FINES END	FLUORESCENT ORANGE / WHITE	BLACK / BLACK	BLACK / BLACK
R3-1	30"	30"		WHITE	RED/ BLACK	BLACK
R3-2	30"	30"		WHITE	RED/ BLACK	BLACK
R9-9	24"	12"	SIDEWALK CLOSED	WHITE	BLACK	BLACK
R9-11L	24"	18"	SIDEWALK CLOSED AHEAD ← CROSS HERE	WHITE	BLACK	BLACK
R9-11R	24"	18"	SIDEWALK CLOSED AHEAD → CROSS HERE	WHITE	BLACK	BLACK
W1-4R	30"	30"		FLUORESCENT ORANGE	BLACK	BLACK
W1-4L	30"	30"		FLUORESCENT ORANGE	BLACK	BLACK
W3-4	36"	36"	BE PREPARED TO STOP	FLUORESCENT ORANGE	BLACK	BLACK
W5-1	36"	36"	ROAD NARROWS	FLUORESCENT ORANGE	BLACK	BLACK
W8-15	36"	36"	GROOVED PAVEMENT	FLUORESCENT ORANGE	BLACK	BLACK

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR		
	WIDTH	HEIGHT		BACKGROUND	LEGEND	BORDER
W11-2	30"	30"		FLUORESCENT ORANGE	BLACK	BLACK
W13-1p	24"	24"	XX M.P.H.	FLUORESCENT ORANGE	BLACK	BLACK
W16-7pL	12"	24"		FLUORESCENT ORANGE	BLACK	BLACK
W16-7pR	12"	24"		FLUORESCENT ORANGE	BLACK	BLACK
W16-9p	12"	24"	AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-1(500)	36"	36"	ROAD WORK 500 FT	FLUORESCENT ORANGE	BLACK	BLACK
W20-1c	36"	36"	ROAD WORK AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-2c	36"	36"	DETOUR AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-3c	36"	36"	ROAD CLOSED AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-4	36"	36"	ONE LANE ROAD AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-7	36"	36"		FLUORESCENT ORANGE	BLACK	BLACK
W20-7b	36"	36"	POLICE OFFICER AHEAD	FLUORESCENT ORANGE	BLACK	BLACK
W20-8a	36"	36"	CAUTION RAISED CASTINGS	FLUORESCENT ORANGE	BLACK	BLACK

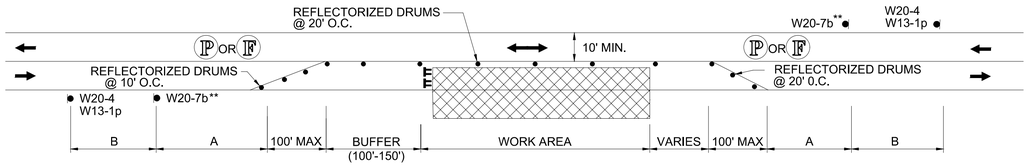
LEGEND

- REFLECTORIZED DRUM
- REFLECTORIZED CONE
- POLICE OFFICER/FLAGGER
- TEMPORARY TRAFFIC CONTROL SIGN
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY CONCRETE BARRIER
- TYPE III BARRICADES
- WORK ZONE
- PROPOSED TRAFFIC FLOW
- ARROW BOARD (MODE)
- NTS — NOT TO SCALE

13153-HD(TTCP).DWG Plotted on 20-Dec-2019 5:53 PM

OPERATIONAL SIGNING

LANE CLOSURES SHOWN ARE FOR TEMPORARY CONSTRUCTION.
ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR
DURING THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE.

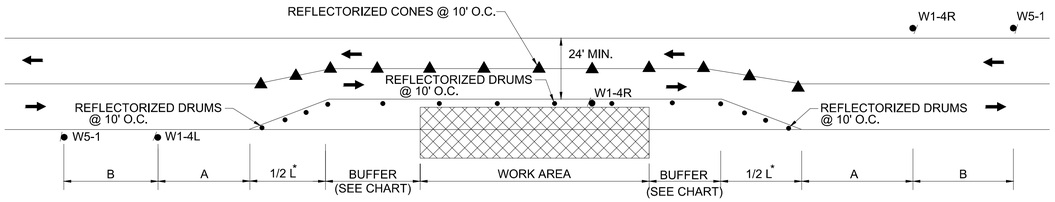


** SEE TTCP GENERAL NOTE 16 ON SHEET 31 .

TYPICAL TWO WAY STREET LANE CLOSURE

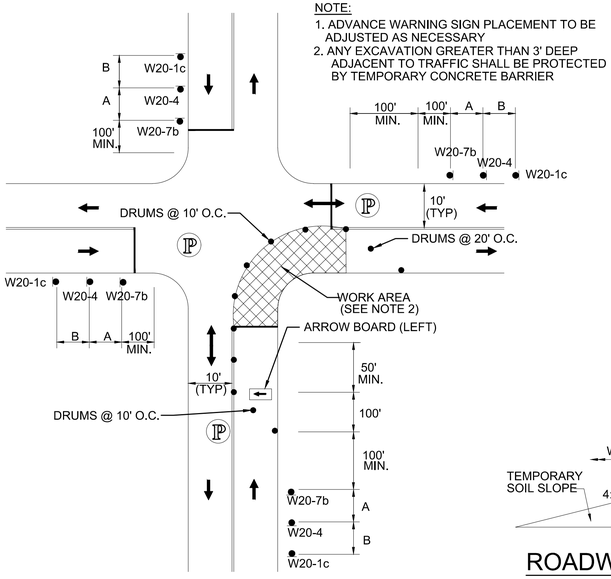
NOT TO SCALE

NOTE: THIS DETAIL SHOWS A RIGHT LANE CLOSURE DETAIL. THIS DETAIL CAN ALSO BE USED FOR LEFT LANE CLOSURES, WITH THE SIGN AND DEVICE PLACEMENT REVERSED AS APPROPRIATE.



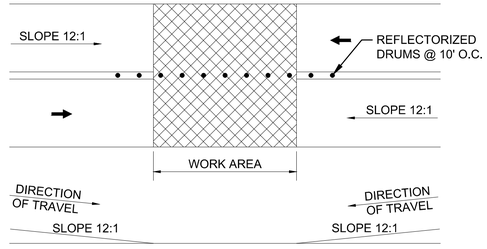
TYPICAL TWO WAY STREET LANE SHIFT

NOT TO SCALE



ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS

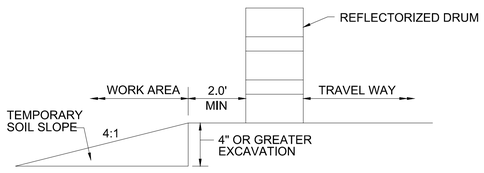
NOT TO SCALE



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

TEMPORARY PAVEMENT TRANSITION DETAIL

NOT TO SCALE



ROADWAY SLOPE PROTECTION

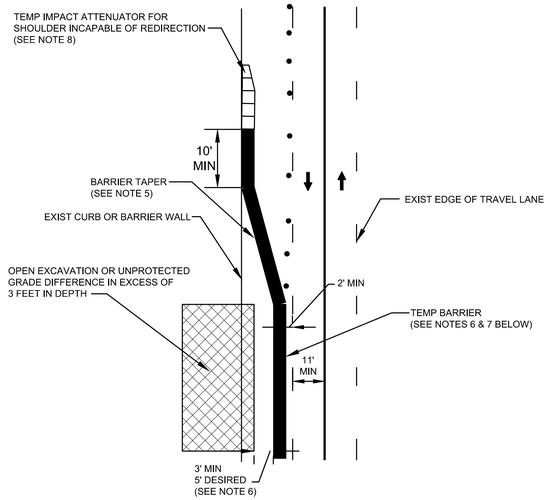
NOT TO SCALE

TAPER LENGTH CALCULATION FORMULA
FOR POSTED SPEEDS OF 40 MPH OR LESS

* $L = \frac{WS^2}{60}$ L=TAPER LENGTH
W=WIDTH OF ROADWAY TO BE SHIFTED OR REDIRECTED
S=POSTED SPEED LIMIT

BUFFER SPACING

SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645



BARRIER ADJACENT TO LIVE TRAVEL LANE DETAIL

NOT TO SCALE

NOTES:

1. ANY EXCAVATION GREATER THAN 3' DEEP ADJACENT TO TRAFFIC SHALL BE PROTECTED BY TEMPORARY BARRIER.
2. ALL BLUNT ENDS OF BARRIER SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH THE LATEST EDITION OF THE AASHTO ROADSIDE DESIGN GUIDE.
3. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 2 (TL-2) ON ROADWAYS HAVING A POSTED SPEED LESS THAN OR EQUAL TO 35 MPH.
4. TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 35 MPH.
5. BARRIER TAPER RATES SHALL BE:
   5:1 IF POSTED SPEED IS LESS THAN 40 MPH
   13:1 IF POSTED SPEED IS GREATER THAN OR EQUAL TO 55 MPH
6. CLEAR SLIDE SPACE FOR BARRIER SHALL BE FREE FROM OBSTRUCTIONS AT ALL TIMES. 3 FEET CLEAR SHALL BE PROVIDED FOR SPEEDS LESS THAN OR EQUAL TO 45 MPH. 5 FEET CLEAR SHALL BE PROVIDED FOR SPEEDS IN EXCESS OF 45 MPH.
7. IF MINIMUM CLEAR SLIDE SPACE CANNOT BE PROVIDED TEMP BARRIER SHALL BE ANCHORED OR RESTRAINED BY A MASSDOT APPROVED METHOD.
8. TEMP IMPACT ATTENUATOR SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

LEGEND

- REFLECTORIZED DRUM
- REFLECTORIZED CONE
- P F — POLICE OFFICER/FLAGGER
- TEMPORARY TRAFFIC CONTROL SIGN
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY CONCRETE BARRIER
- TYPE III BARRICADES
- WORK ZONE
- PROPOSED TRAFFIC FLOW
- ARROW BOARD (MODE)

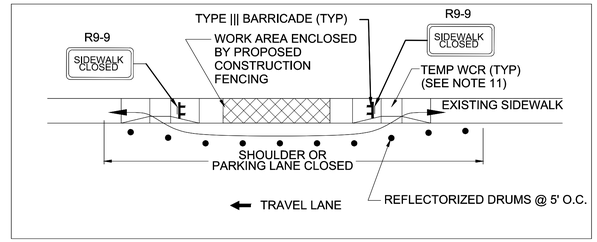
NTS NOT TO SCALE

ADVANCE SIGN SPACING

	DISTANCE [FT]
A	500
B	500

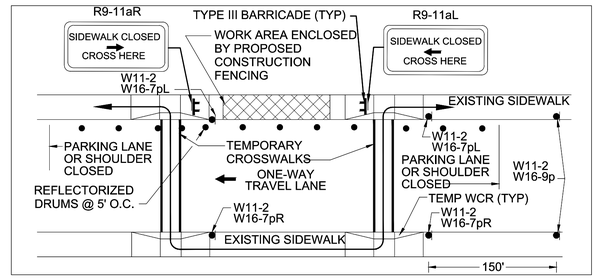
PEDESTRIAN BYPASS

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



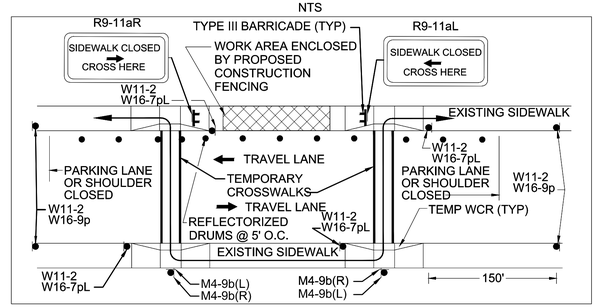
TYPE I

NTS



TYPE II

NTS



TYPE III

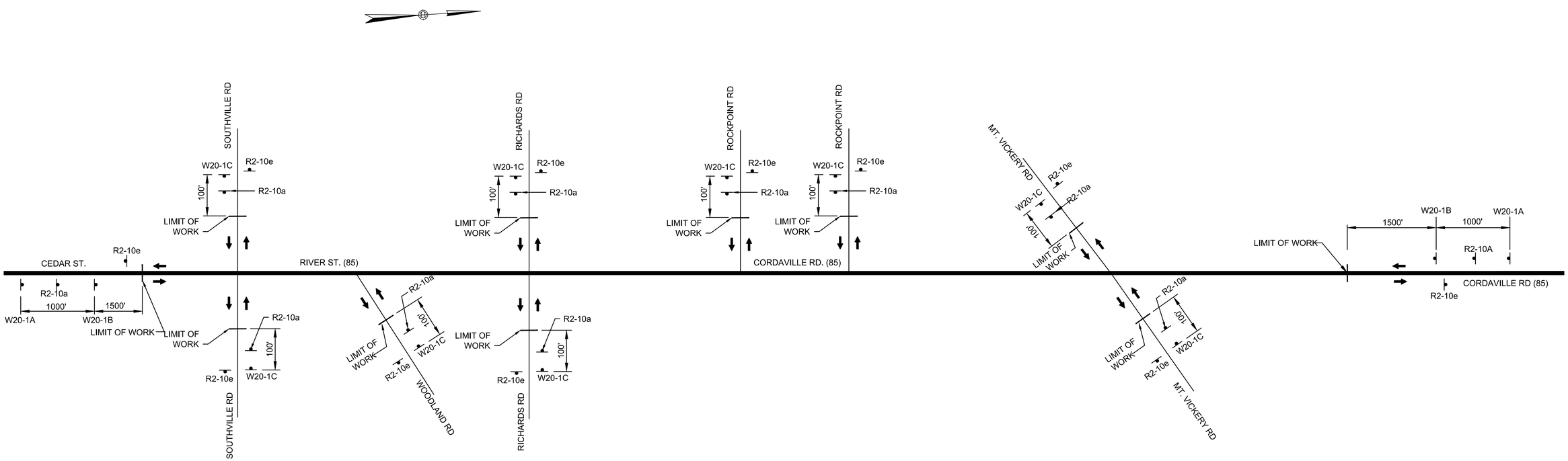
NTS

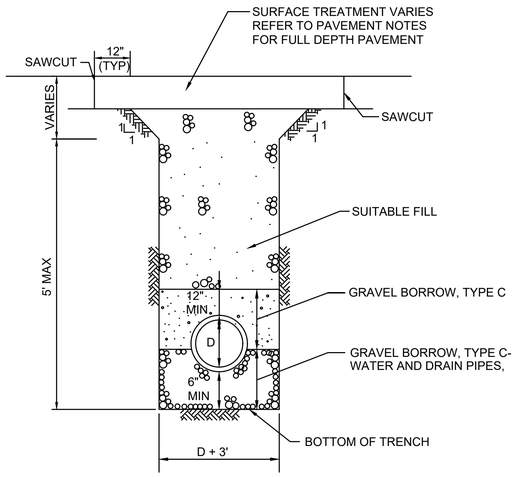
NOTES:

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. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHALL BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS TYPE II AND TYPE III, AND AS DIRECTED BY THE ENGINEER.
6. PROPOSED TEMPORARY CROSSWALKS SHALL BE 12" WIDE SURFACE APPLIED TAPE OR REFLECTORIZED PAINT AS DIRECTED BY THE ENGINEER.
7. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS.
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.
10. W16-7pR OR W16-7pL SIGNS SHALL BE USED IN COMBINATION WITH W11-2 SIGNS AS DIRECTED BY THE ENGINEER.
11. EXISTING WHEELCHAIR RAMPS (WCR) MAY BE USED IN LIEU OF TEMPORARY WHEELCHAIR RAMPS FOR TEMPORARY DETOURS UNLESS OTHERWISE DRIECTED BY THE ENGINEER.

SOUTHBOROUGH
CORDAVILLE ROAD
TEMPORARY TRAFFIC CONTROL PLANS
SHEET 71 OF 76

13153-HD(TTCP).DWG Plotted on 20-Dec-2019 5:53 PM

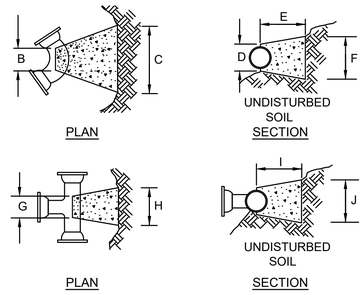




TRENCH DETAIL - FULL DEPTH PAVEMENT

SCALE: N.T.S.

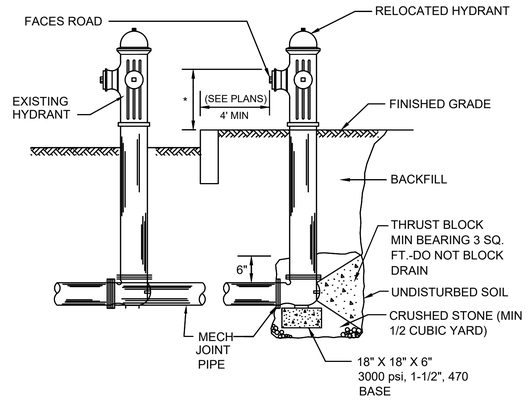
BENDS		B	C	D	E	F	BENDS		B	C	D	E	F
6"	11-1/4°	8"	15"	12"	24"	12"	6"	45°	8"	30"	12"	24"	14"
6"	22-1/2°	"	19"	"	"	13"	6"	90°	"	30"	"	"	27"
8"	11-1/4°	"	20"	"	"	12"	8"	45°	"	30"	"	"	24"
8"	22-1/2°	"	22"	"	"	17"	8"	90°	"	38"	"	"	36"
12"	11-1/4°	"	30"	"	"	15"	12"	45°	"	40"	"	"	40"
12"	22-1/2°	"	35"	"	"	25"	12"	90°	"	60"	"	"	52"
TEES		G	H	I	J		TEES		G	H	I	J	
6"x 6"x 6"		12"	24"	24"	18"		12"x12"x6"		12"	24"	24"	12"	
8"x 8"x 6"		"	"	"	"		12"x12"x8"		"	"	"	24"	
8"x 8"x 8"		"	"	"	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.

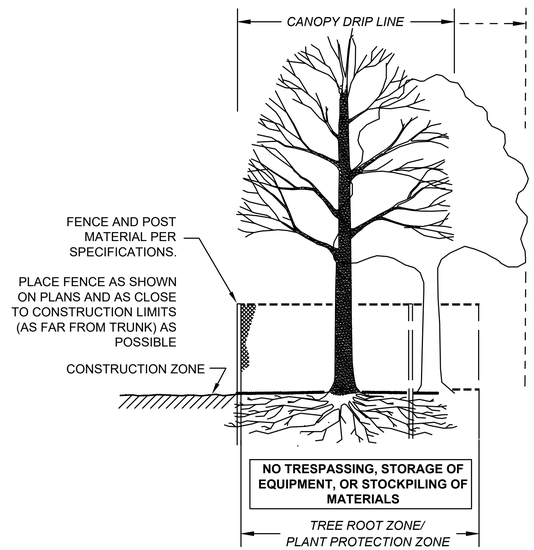
CONCRETE THRUST BLOCK

SCALE: N.T.S.

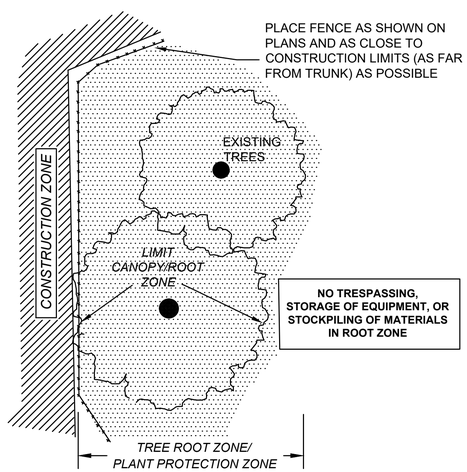


HYDRANT RELOCATION DETAIL

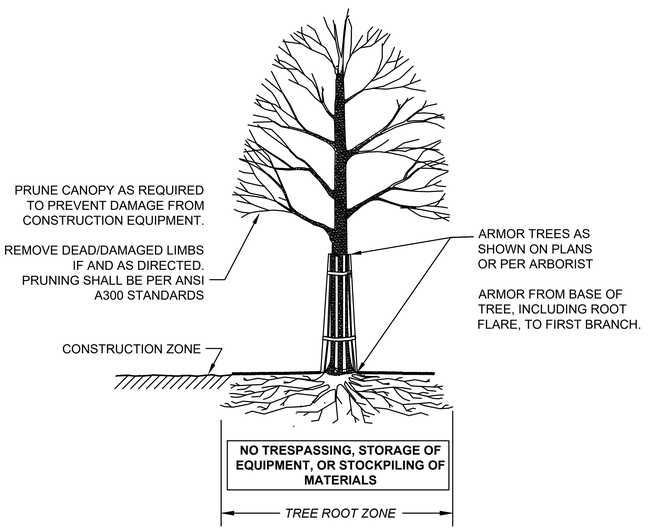
SCALE: N.T.S.



SECTION - FENCE PROTECTION OF ROOT ZONE



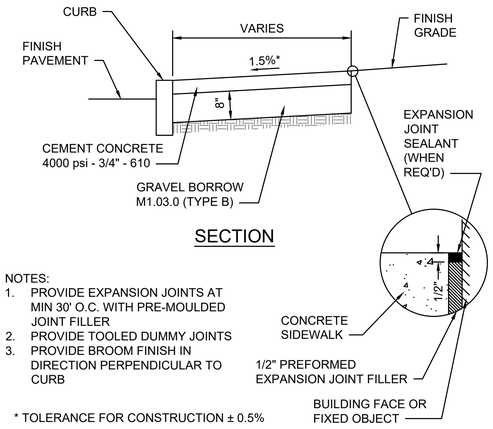
PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION

SCALE: N.T.S.

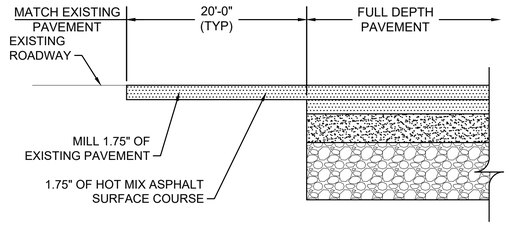


NOTES:
1. PROVIDE EXPANSION JOINTS AT MIN 30' O.C. WITH PRE-MOULDED JOINT FILLER
2. PROVIDE TOOLED DUMMY JOINTS
3. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB

* TOLERANCE FOR CONSTRUCTION ± 0.5%

CEMENT CONCRETE SIDEWALK

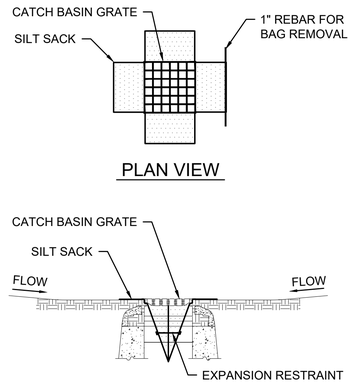
SCALE: N.T.S. DWG: WALK-01 DATE: MARCH 2013



LONGITUDINAL SECTION

FULL DEPTH PAVEMENT TRANSITION

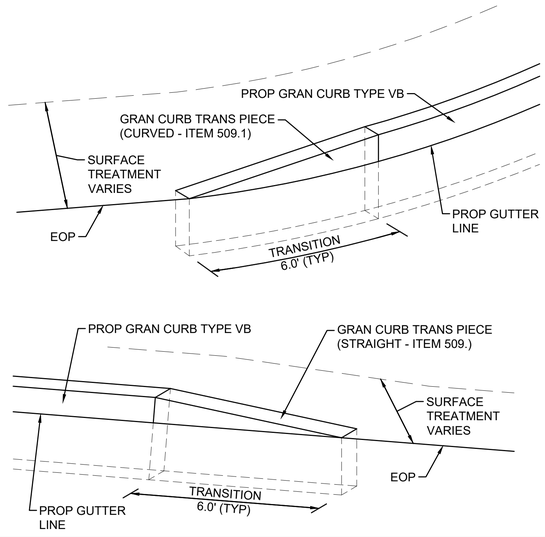
SCALE: N.T.S.



NOTES:
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED

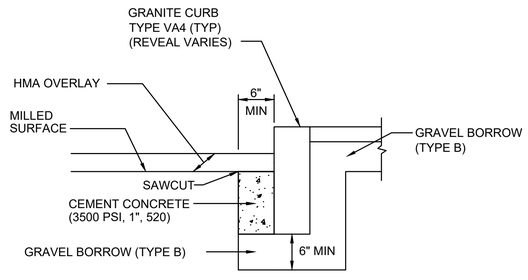
INLET PROTECTION - SILT SACK IN CATCH BASIN

SCALE: N.T.S.



GRANITE CURB TRANSITION PIECE

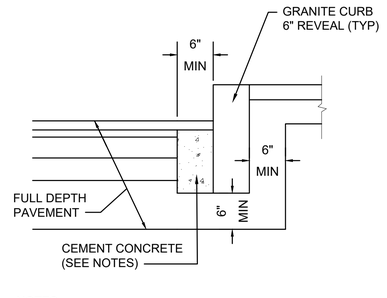
SCALE: NTS



NOTES:
1. SAWCUT 6" FROM CURB LINE AND REMOVE EXISTING PAVEMENT AND GRAVEL. REPLACE WITH CEMENT CONCRETE.
2. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

GRANITE CURB IN PAVEMENT MILLING AND OVERLAY

SCALE: N.T.S.

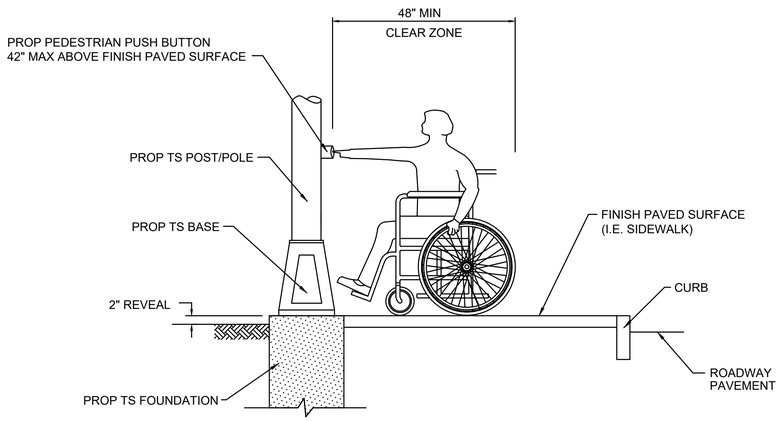


NOTES:
1. TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE USED AS A SUBSTITUTE.

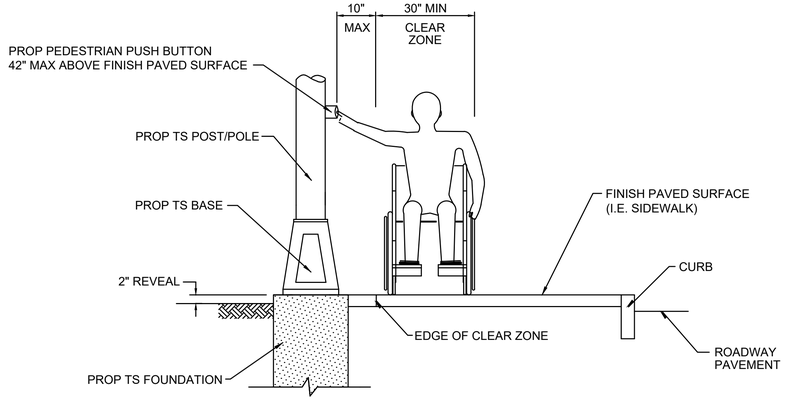
GRANITE CURB IN FULL DEPTH PAVEMENT

SCALE: N.T.S.

13153-HD(DET).DWG Plotted on 20-Dec-2019 5:54 PM



FORWARD APPROACH (FORWARD REACH)

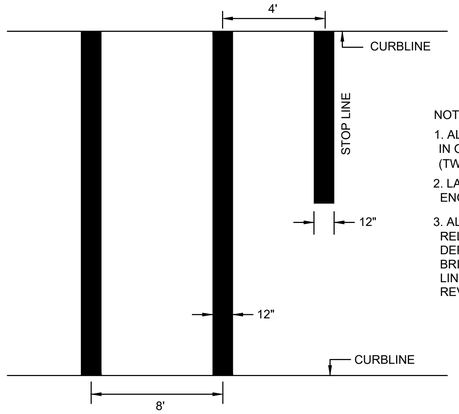


PARALLEL APPROACH (SIDE REACH)

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: N.T.S.

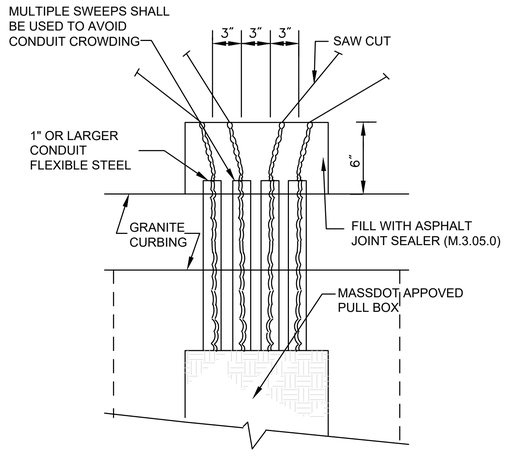


NOTES:

1. ALL 12" THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY THE ENGINEER PRIOR TO APPLICATION OF THERMOPLASTIC.
3. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 1988, SECTION 860 FOR REFLECTORIZED LINE (THERMO-PLASTIC) & MATERIAL M7.01.20, LATEST REVISIONS.

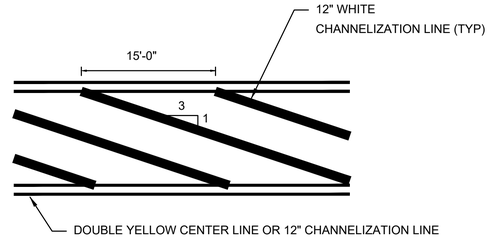
STANDARD CROSSWALK

SCALE: N.T.S.



MULTIPLE LOOP DETECTOR LEAD-IN

SCALE: N.T.S.



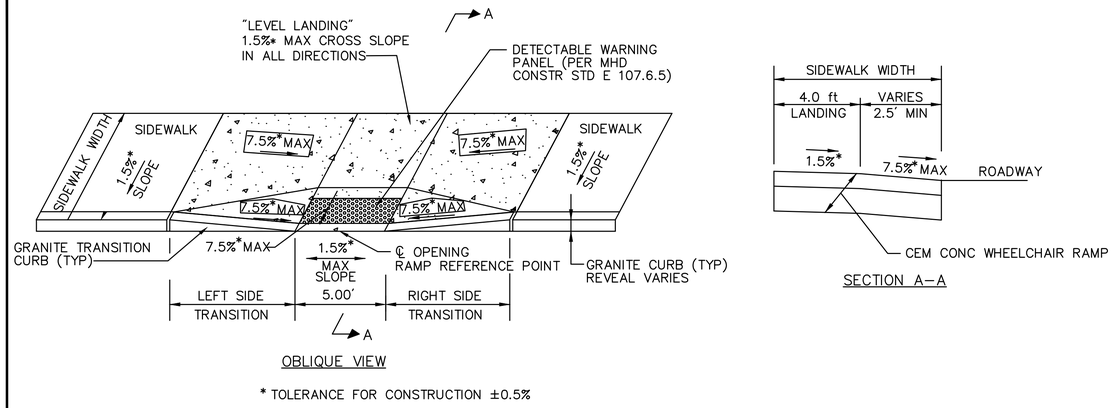
NOTES:

1. ALL 12" THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF GORE LINES SHALL BE APPROVED BY A MASSDOT ENGINEER PRIOR TO APPLICATION OF THERMOPLASTIC.
3. ALL GORE LINES INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS DOT - HIGHWAY DIVISION "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 1988, SECTION 860 FOR REFLECTORIZED LINE (THERMO-PLASTIC) & MATERIAL M7.01.20, LATEST REVISIONS.

GORE AREA PAVEMENT MARKINGS

SCALE: N.T.S.

SOUTHBOROUGH
CORDAVILLE ROAD
DRIVEWAY & WHEELCHAIR RAMP DETAILS
SHEET 75 OF 76



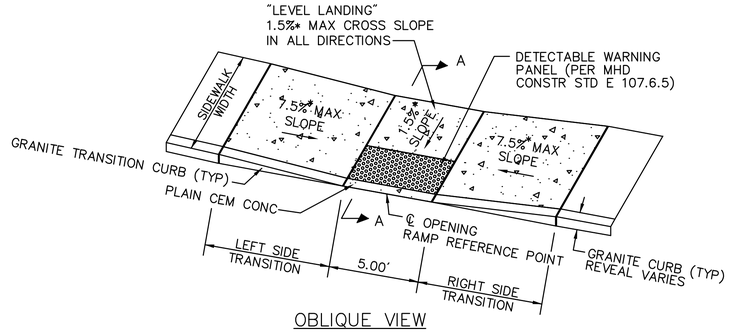
OBLIQUE VIEW

SECTION A–A

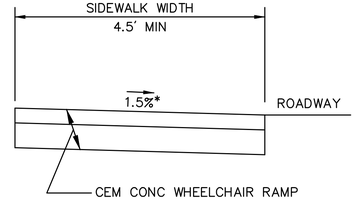
* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
SIDEWALK WIDTH GREATER THAN 6.5' AND LESS THAN 12'

SCALE: N.T.S.



OBLIQUE VIEW

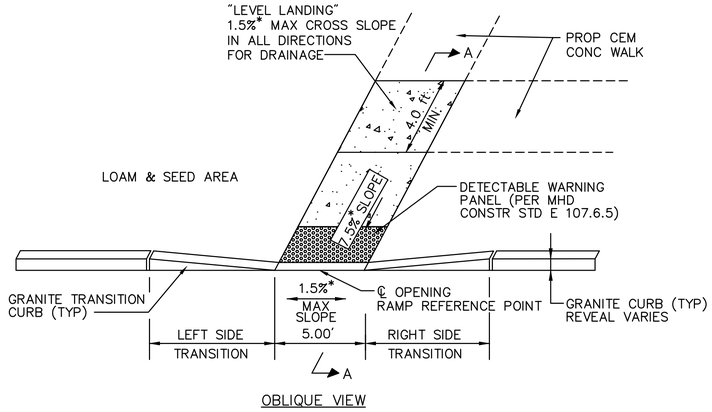


SECTION A–A

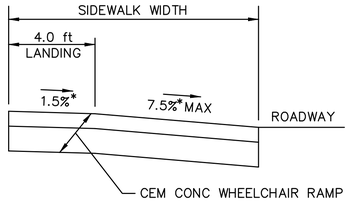
* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
SIDEWALK WIDTH LESS THAN 6.5'

SCALE: N.T.S.



OBLIQUE VIEW

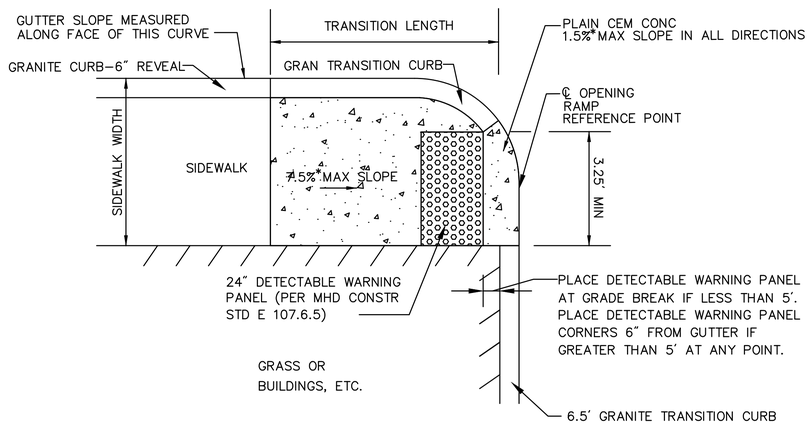


SECTION A–A

* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
WITH GRASS STRIP

SCALE: N.T.S.

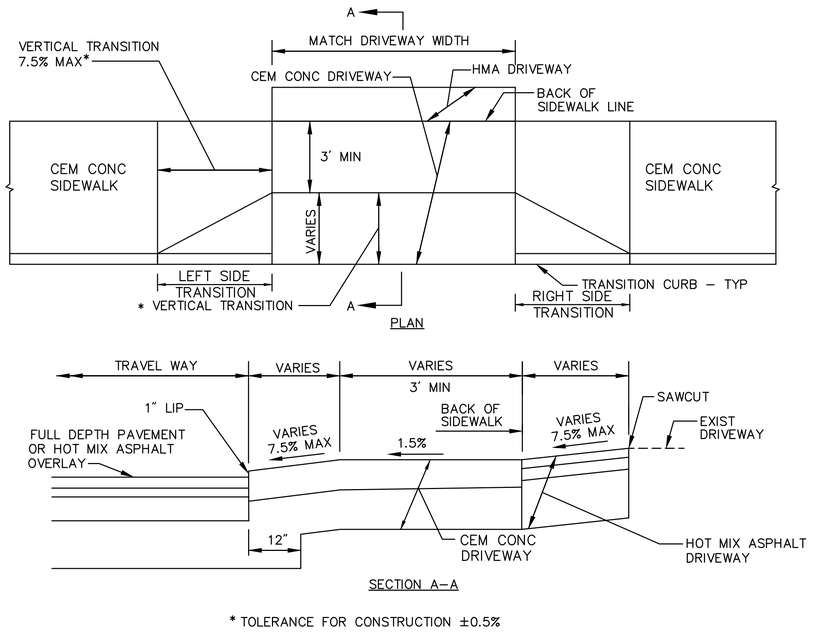


* TOLERANCE FOR CONSTRUCTION ±0.5%

WHEELCHAIR RAMP
SINGLE DIRECTION

SCALE: N.T.S.

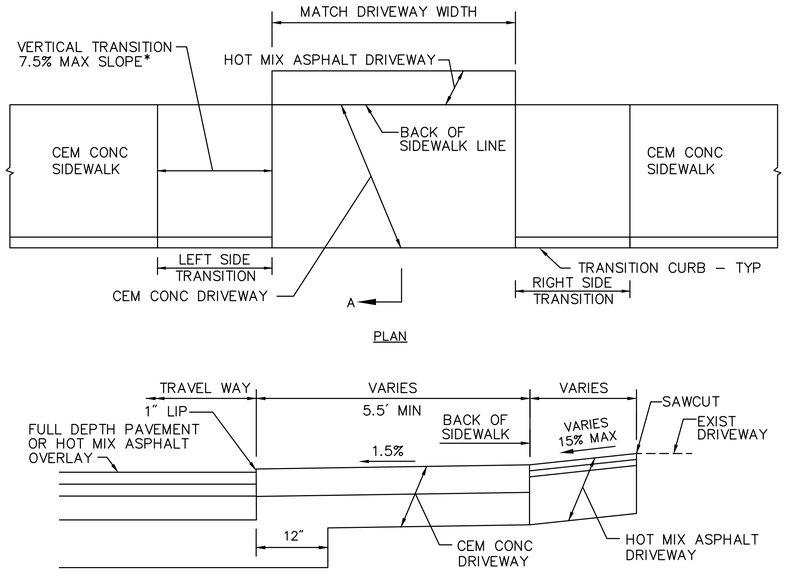
13153-HD(DET-WCR).DWG Plotted on 20-Dec-2019 5:54 PM



* TOLERANCE FOR CONSTRUCTION ±0.5%

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

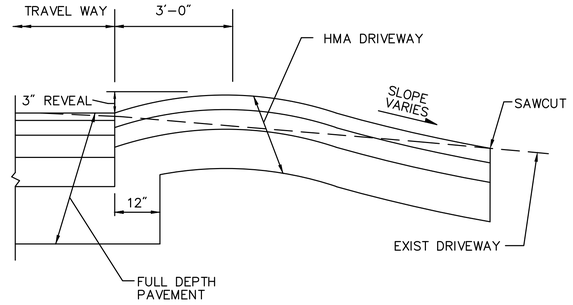
SCALE: N.T.S.



* TOLERANCE FOR CONSTRUCTION ±0.5%

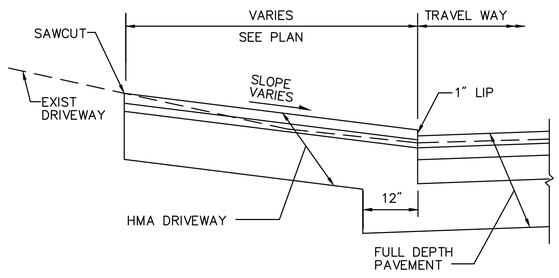
TYPICAL CONCRETE DRIVEWAY WITH SIDEWALK AND GRANITE TRANSITION CURB - TYPE II

SCALE: N.T.S.



TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK - TYPE I

SCALE: N.T.S.



TYPICAL DRIVEWAY SECTION WITHOUT SIDEWALK - TYPE II

SCALE: N.T.S.