TRANSPORTATION IMPROVEMENT PROJECT

BOSTON POST ROAD (ROUTE 20), COCHITUATE ROAD (ROUTES 27/126), & OLD SUDBURY ROAD (ROUTE 27)

IN THE TOWN OF

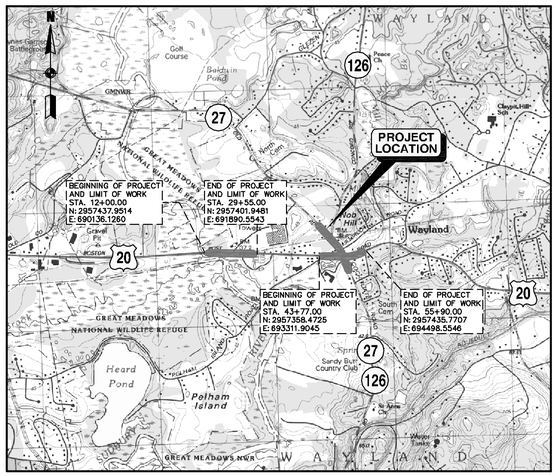
WAYLAND

MIDDLESEX COUNTY

THE COMMONWEALTH OF MASSACHUSETTS

INDEX

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LOCATION MAP

0 2000 4000 FEET

0 1000 2000 METERS

THE 1988 MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES; THE JUNE 6, 2006 SUPPLEMENTAL SPECIFICATIONS; THE 1977 CONSTRUCTION STANDARDS; THE APRIL 2003 METRIC/ENGLISH SUPPLEMENTAL DRAWINGS; THE 2003 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS"; THE 1990 "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS"; AND THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1–1990) WILL GOVERN, ALL AS AMENDED.

DESIGN DESIGNATION DATA

	RTE 20	RTE 27
DESIGN SPEED	= 40 MPH (SITE DR) = 25 MPH (RTE 27)	25 MPH
ADT (2006)	= 19,500	12,300
ADT (2011)	= 22,700	15,000
K	= 9.3%	8.9%
D	= 51.6% WB	64.2% NB
T (PEAK HOUR)	= 2%	1%
T (AVERAGE DAY)	= 2%	1%
DHV	= 2,106	1,345
DDHV	= 1,086	863
FUNCTIONAL CLASSIFICATION	RURAL MINOR ARTERIAL	RURAL MINOR ARTERIAL

CONVENTIONAL SIGNS

COUNTY, CITY OR TOWN BOUNDARY

COUNTY, CITY, OR TOWN SIDE LINE

FENCE LINE

BASE LINE OR SURVEY LINE — 74 — S 69°20'30" W 58.57'

RIGHT OF WAY LINE

CULVERT

ELEVATIONS — PROPOSED SURFACE / PRESENT SURFACE — PRESENT 98.2 — 102.67 PROPOSED — 74

UTILITY POLE

SCALES - AS NOTED

LENGTH OF PROJECT = 1,755 FT. = 0.332 MILES (AT SITE DR)
= 1,213 FT. = 0.230 MILES (AT RTE 27)

FINAL PS&E SUBMISSION

DECEMBER 2008

(A PRIVATELY FUNDED CONSTRUCTION PROJECT)

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PROJECT TITLE

Wayland Town Center Off–Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	SCALES AS NOTED

STAMP

COMMONWEALTH OF MASSACHUSETTS
FRED L. DOUGLAS
CIVIL
No. 29616
REGISTERED PROFESSIONAL ENGINEER

Fred Douglas
12/29/08

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Title & Index Sheet

SHEET 1 OF 81	DRAWING NUMBER 1
JOB NO. 5139	
CAD 5139COVv3	

GENERAL SYMBOLS

EXISTING	PROPOSED	
□	■CB (OR GI, LB)	CATCH BASIN (OR GUTTER INLET, OR LEACHING BASIN)
	■CBCI (OR GICI)	CATCH BASIN (OR GUTTER INLET) WITH CURB INLET
		CURB (OR BERM) – TYPE NOTED
		EDGE OF ROAD
○ EHH	● EHH	ELECTRIC HAND HOLE (NUMBER AS NOTED)
○ EMH	● EMH	ELECTRIC MANHOLE "
○ TMH	● TMH	TELEPHONE MANHOLE "
○ WMH	● WMH	WATER MANHOLE "
○ SMH	● SMH	SEWER MANHOLE "
○ DMH	● DMH	DRAINAGE MANHOLE "
○ GG	● GG	GAS GATE
○ WG	● WG	WATER GATE
○ CS	● CS	CURB STOP
Hyd	Hyd	HYDRANT
○ FA	● FA	FIRE ALARM BOX
○ PM	● PM	PARKING METER
LP	LP	STREET LIGHT
UP	UP	UTILITY POLE
GUY	GUY	GUY POLE
D		DRAIN PIPE (SIZE & TYPE NOTED)
S	S	SEWER MAIN (SIZE & TYPE NOTED)
E	E	ELECTRIC DUCT (SIZE & TYPE NOTED)
G	G	GAS MAIN (SIZE & TYPE NOTED)
W	W	WATER MAIN (SIZE & TYPE NOTED)
T	T	TELEPHONE DUCT
MB	■MB	MAIL BOX
		HIGHWAY GUARD (TYPE NOTED)
x x	x x	FENCE (SIZE AND TYPE NOTED)
MHB, SB, CB	■MHB, SB, CB	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
		CITY, TOWN, OR COUNTY LAYOUT
		STATE HIGHWAY LAYOUT (S.H.L.O.)
		EASEMENT LINE
℄	℄	PROPERTY LINE
		CITY, TOWN, COUNTY BOUNDARY
		STATE BOUNDARY
		EDGE OF WETLAND
		HAYBALES
		LIMIT OF GRADING
8 N00°00'00"E +12.34	PC 8 N00°00'00"E +12.34	BASE OR SURVEY LINE
		CONSTRUCTION BASELINE
		WHEELCHAIR RAMP (WCR)
		TREE (SIZE AND TYPE NOTED)
		APPROXIMATE COLD PLANING AREA
		APPROXIMATE AREA OF FULL DEPTH PAVEMENT
B–1	B–1	BORINGS, PAVEMENT CORES
TP–1	TP–1	TEST PIT
		GRANITE RUBBLE BLOCK PAVEMENT

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
	CW	CROSSWALK, 2 – 12" WHITE LINES (WIDTH NOTED)
	SL	STOP LINE, 12" WHITE LINE 4' BEHIND CROSSWALK (TYP.)
	SWL	SOLID WHITE LINE – 6"
	SYL	SOLID YELLOW LINE – 6"
	DWL	DOTTED WHITE LINE – 6" (2' STRIPE W/4' GAP)
	WLDL	WHITE LANE DELINEATION LINE – 6" (3' STRIPE W/9' GAP)
	SDYL	SINGLE DOTTED YELLOW LINE – 6" (2' STRIPE W/4' GAP)
	BWLL	BROKEN WHITE LANE LINE – 6" (10' STRIPE W/30' GAP)
	SWLL	SOLID WHITE LANE LINE – 6"
	SWEL	SOLID WHITE EDGE LINE – 6"
	SWGL	SOLID WHITE GORE LINE – 12"
	SYEL	SOLID YELLOW EDGE LINE – 6"
	SYGL	SOLID YELLOW GORE LINE – 12"
	DYL	DOUBLE YELLOW LINE – 2–6" LINES
	DYCL	DOUBLE YELLOW CENTER LINE – 2–6" LINES
		SIGN AND POST
		DELINEATOR
		PAVEMENT ARROW AND LEGEND

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED (WITH & WITHOUT CONCRETE PAD)
		CONTROL CABINET POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
TS	TS	SIGNAL POST & BASE
20' MA	20' MA	MAST ARM, SHAFT, & BASE (ARM LENGTH AS NOTED)
A	A	VEHICULAR SIGNAL HEAD (ALPHA–NUMERIC DESIGNATION NOTED)
A	A	VEHICULAR SIGNAL HEAD OPTICALLY PROGRAMMED
		LIMIT OF VISIBILITY OF OPTICALLY PROGRAMMED SIGNAL HEAD
A	A	FLASHING BEACON
P1	P1	PEDESTRIAN SIGNAL HEAD
		STROBE
1	1	OPTICOM RECEIVER
PB	■PB, HH	PULLBOX 12" X 12" OR HANDHOLE
PB	■PB	PULLBOX 8" X 23"
ØA	ØA	CONTROLLER PHASE
		INDUCTIVE LOOP DETECTOR
PB	PB	PEDESTRIAN PUSH BUTTON
AOD		AREA OF DETECTION
		CONDUIT
		CONDUIT CROSSING ROADWAY WITH CEMENT CONCRETE CAP
x x	x x	"X" DUCT (CONCRETE ENCASED)
		OVERHEAD CABLE
		DIRECT BURIED CABLE

GENERAL NOTES

1. TOPOGRAPHICAL INFORMATION OBTAINED FROM SURVEY CONDUCTED BY HANCOCK ASSOCIATES. COORDINATES ARE MASSACHUSETTS STATE PLANE (NAD '83). VERTICAL DATUM IS NAVD '88.
2. 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 AGREES TO 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.
3. WHERE AN EXISTING UNDERGROUND 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.
4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.
5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
6. 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).
7. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS NOTED OTHERWISE.
8. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
9. SERVICE CONNECTION CONSISTS OF INSTALLING A NEW SERVICE DISCONNECT, RISER, METER, AND CABLE IN CONFORMANCE WITH SECTION 813.63 OF THE STANDARD SPECIFICATIONS.
10. ALL EXISTING STATE, COUNTY, CITY, AND TOWN LOCATION LINES AND PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
11. A MINIMUM 3 FOOT WIDE CLEAR PATH OF TRAVEL SHALL BE MAINTAINED ON ALL SIDEWALKS PAST ALL SIGNAL EQUIPMENT, UTILITIES, OR OTHER OBSTRUCTIONS.
12. DIMENSIONS RELATIVE TO EXISTING CURB LINES SHALL CONTROL. THE EXACT LOCATION OF TRAFFIC SIGNAL POLES, POSTS, CONTROLLERS, PULL BOXES, SIGNS, AND PAVEMENT MARKINGS SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
13. JOINTS BETWEEN NEW HOT MIX ASPHALT ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE SEALED WITH BITUMEN AND BACKSANDED.
14. ALL EXISTING GRANITE CURB AND EDGING DETERMINED BY THE ENGINEER TO BE IN SUITABLE CONDITION SHALL BE RE–USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.
15. EXISTING UTILITIES WILL BE RELOCATED BY THE RESPECTIVE UTILITY OWNERS.
16. ALL EXISTING SEWER, DRAINAGE, ELECTRIC MANHOLE COVERS, GAS GATES, WATER GATES, ETC. SHALL BE ADJUSTED TO FINISHED GRADE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION STAKING AT NO ADDITIONAL COST.
18. ALL VERTICAL GRANITE CURB (VGC) SHALL TRANSITION AT THE LIMITS OF WORK WITH A 6' TRANSITION PIECE.
19. ALL TRENCH CUTS WITHIN THE PAVED SURFACE HAVING A DEPTH OF 4' OR LESS SHALL BE BACKFILLED WITH CONTROLLED DENSITY FILL.
20. ALL CATCH BASIN GRATES WITHIN THE PROJECT LIMITS SHALL BE BICYCLE SAFE. THE CONTRACTOR SHALL REPLACE EXISTING GRATES WHICH ARE NOT BICYCLE SAFE.
21. ALL PEDESTRIAN ACCOMMODATIONS (I.E. SIDEWALKS, WHEELCHAIR RAMPS, ETC.) SHALL COMPLY WITH CURRENT ADA & AAB RULES AND REGULATIONS AND MASSHIGHWAY STANDARDS.
22. STATE HIGHWAY WORK HOURS SHALL BE IN ACCORDANCE WITH THE STATE HIGHWAY ACCESS PERMIT. TOWN ROADWAY WORK HOURS SHALL BE FROM 7:00 AM TO 6:00 PM UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF HIGHWAY OPERATIONS. NO WORK THAT REQUIRES LANE CLOSURES SHALL OCCUR FROM 7:00 AM TO 9:00 AM OR FROM 4:00 PM TO 6:00 PM UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF HIGHWAY OPERATIONS.

ABBREVIATIONS

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
FR	FLASHING RED – ARROW
FY	FLASHING AMBER – ARROW
	STEADY VERTICAL ARROW (GREEN PREFIX)
R Y G	STEADY LEFT ARROW (RED, AMBER, OR GREEN PREFIX)
R Y G	STEADY RIGHT ARROW (RED, AMBER, OR GREEN PREFIX)
W	STEADY WALK – LUNAR WHITE
DW	STEADY DON'T WALK – PORTLAND ORANGE
FDW	FLASHING DON'T WALK – PORTLAND ORANGE
L	DETECTOR – LOCK
NL	DETECTOR – NON–LOCK

UTILITIES

CIT	CHANGE IN TYPE
F & G	FRAME AND GRATE
F & C	FRAME AND COVER
RCP	REINFORCED CONCRETE PIPE
VCP	VITRIFIED CLAY PIPE
PVC	POLYVINYLCHLORIDE PIPE
ACCMP	ASPHALT COATED CORRUGATED METAL PIPE
CIP	CAST IRON PIPE
DIP	DUCTILE IRON PIPE
HYD	HYDRANT
CAP	CORRUGATED ALUMINUM PIPE
INV	INVERT ELEVATION
PWW	PAVED WATER WAY
UP	UTILITY POLE
TSV & B	TAPPING SLEEVE, VALVE AND BOX
COND	CONDUIT

GENERAL

PROP	PROPOSED	BOS	BOTTOM OF SLOPE
MIN	MINIMUM	TOS	TOP OF SLOPE
MAX	MAXIMUM	EOP	EDGE OF PAVEMENT
RET	RETAIN	ROW	RIGHT OF WAY
REM	REMOVE	VGC	VERTICAL GRANITE CURB
REMOD	REMODEL	GC	GRANITE CURB
ABAN	ABANDON	SGC	SLOPED GRANITE CURB
ADJ	ADJUST	CC	CONCRETE CURB
EXIST	EXISTING	BB	BITUMINOUS BERM
R & R	REMOVE AND RESET	BC	BITUMINOUS CURB
R & S	REMOVE AND STACK	NIC	NOT IN CONTRACT
FND	FOUNDATION	NTS	NOT TO SCALE
ELEV	ELEVATION	TYP	TYPICAL
CIT	CHANGE IN TYPE	APPROX	APPROXIMATE
H.M.A.	HOT MIX ASPHALT	SHLDR	SHOULDER

EDGE OF PAVEMENT/CURB LAYOUT

AP	ANGLE POINT
CC	CENTER OF CURVE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY

PROJECT TITLE

Wayland Town Center Off–Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
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DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
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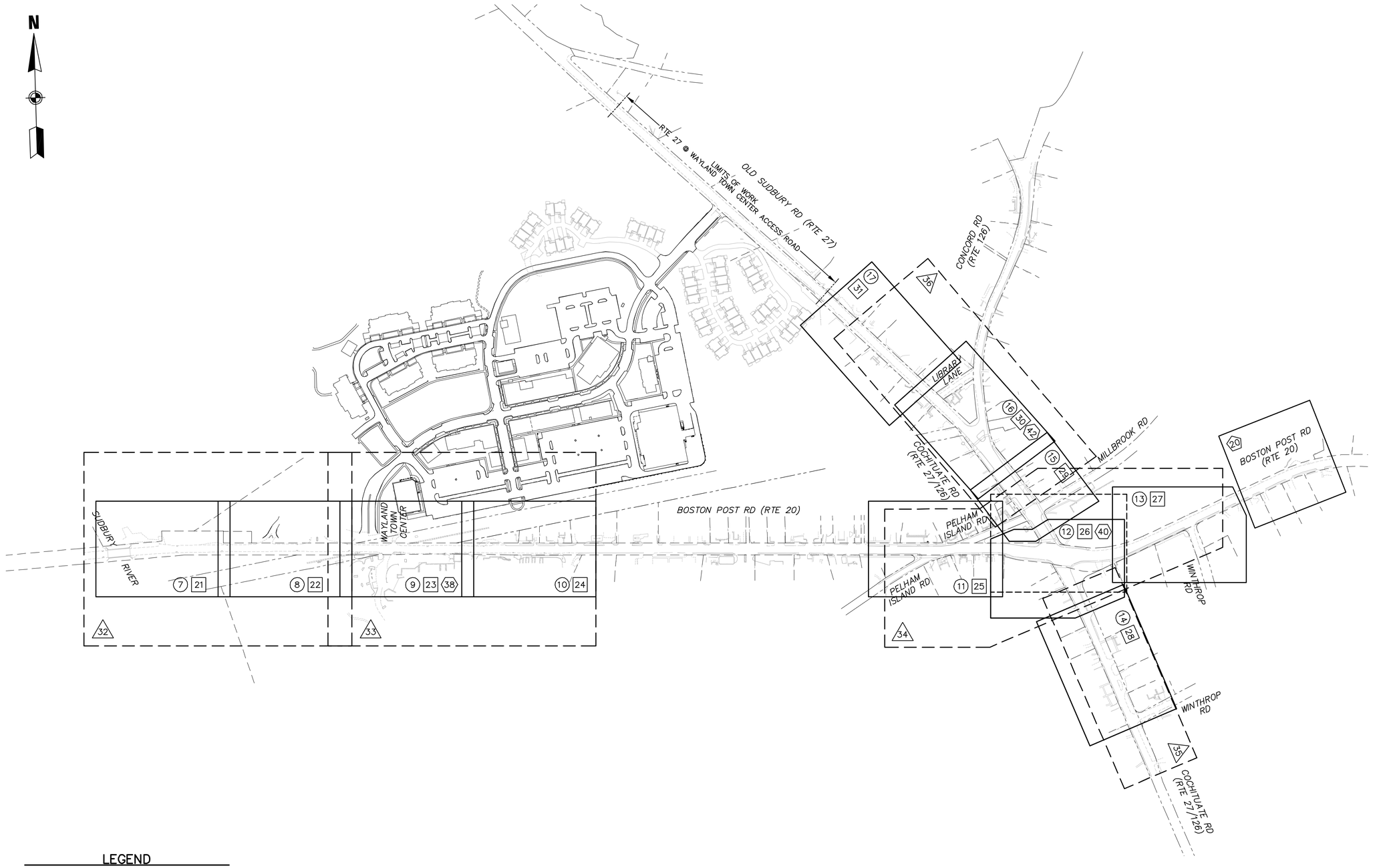
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Legend & General Notes

SHEET 2 OF 81	DRAWING NUMBER 2
JOB NO. 5139	
CAD 5139LEGv3	

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LEGEND

- (#) CONSTRUCTION PLANS
- [#] CURB TIE & GRADING PLANS
- △# PAVEMENT MARKING & SIGNING PLANS
- ⬡# TRAFFIC SIGNAL PLANS
- ⬠# WETLAND REPLICATION & FLOOD STORAGE COMPENSATION PLAN

200 0 200 400
SCALE IN FEET

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Boston, Massachusetts

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Transportation Engineers & Planners

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DATE	DECEMBER 2008
SCALE	1" = 200'
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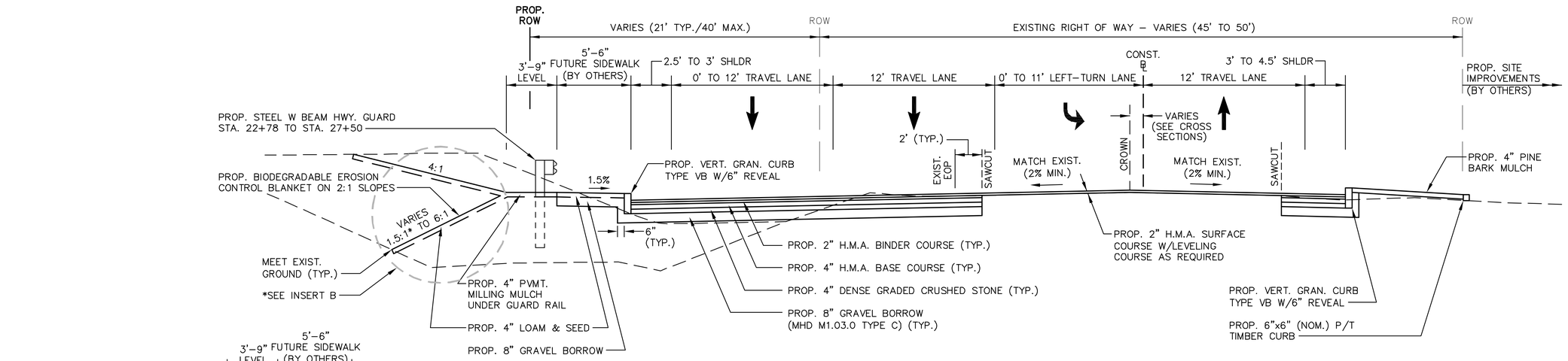
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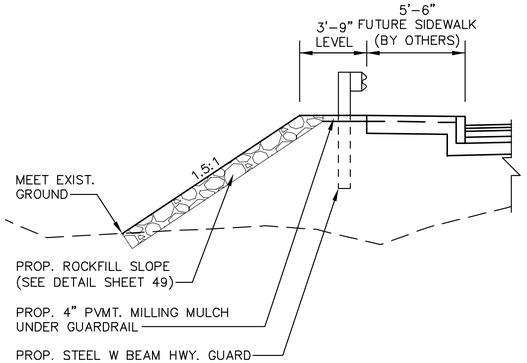
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SHEET 3 OF 81	DRAWING NUMBER 3
JOB NO. 5139	
CAD 5139KEYv3	



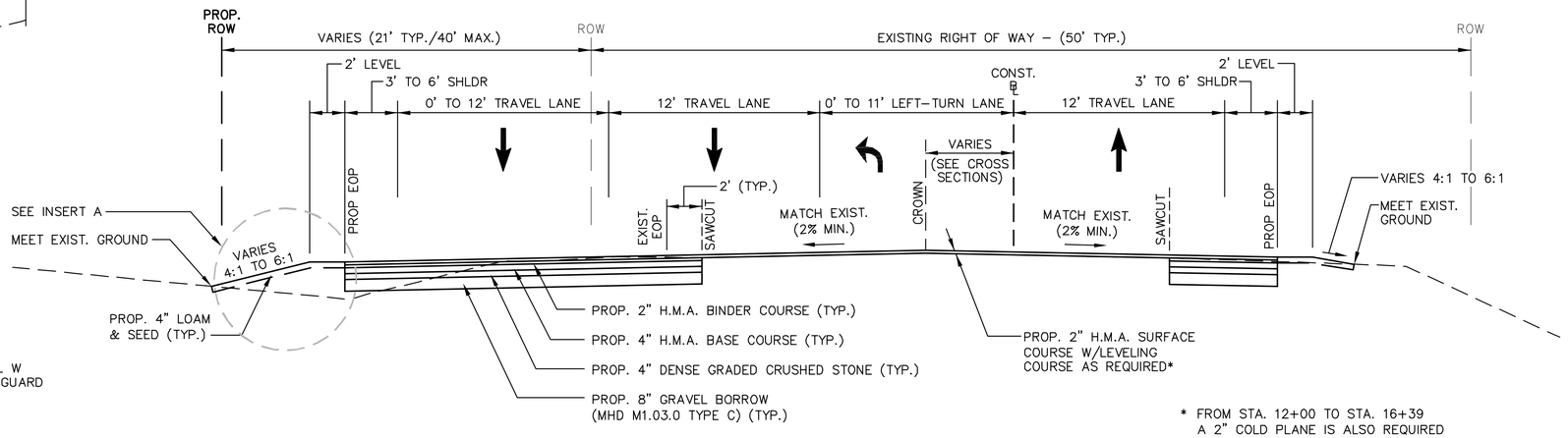
BOSTON POST ROAD (ROUTE 20)

STA 21+99 TO STA 29+55
NOT TO SCALE



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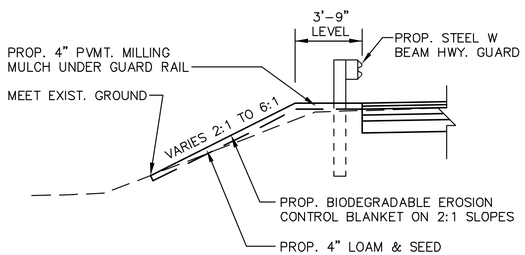
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NOT TO SCALE



* FROM STA. 12+00 TO STA. 16+39
A 2" COLD PLANE IS ALSO REQUIRED

BOSTON POST ROAD (ROUTE 20)

STA 12+00 TO STA 21+99
NOT TO SCALE



INSERT A

STA 12+18 TO STA 14+11
NOT TO SCALE

PAVEMENT NOTES

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 2" HOT MIX ASPHALT TOP COURSE OVER
2" HOT MIX ASPHALT BINDER COURSE

BASE: 4" HOT MIX ASPHALT BASE COURSE

SUBBASE: 4" DENSE GRADED CRUSHED STONE
8" GRAVEL BORROW

*NOTE: IN FULL DEPTH AREAS < 4' WIDTH USE 6" HIGH EARLY STRENGTH CEMENT CONCRETE IN LIEU OF 2" BINDER COURSE AND 4" BASE COURSE.

PROPOSED PAVEMENT OVERLAY

SURFACE: 2" HOT MIX ASPHALT SURFACE COURSE

LEVELING COURSE: VARIABLE DEPTH HOT MIX ASPHALT (SURFACE COURSE MATERIAL) 3" MAX. PER LAYER (LEVELING REQUIRED TO MAINTAIN PROP. CROSS SLOPE)

BITUMEN FOR TACK COAT (RS-1) AT:
0.05 GAL/SY OVER EXISTING PAVEMENT
0.07 GAL/SY OVER COLD-PLANED PAVEMENT

PROPOSED SIDEWALKS

SURFACE: 4" CEMENT CONCRETE W/ WIRE MESH

SUBBASE: 8" GRAVEL BORROW (MINIMUM)

FULL DEPTH DRIVEWAYS

SURFACE: 3-1/2" HOT MIX ASPHALT (NOMINAL):
1-1/2" TOP COURSE
2" BOTTOM COURSE

SUBBASE: 8" GRAVEL BORROW (MINIMUM)

PROPOSED WHEELCHAIR RAMPS

(SEE CONSTRUCTION STANDARD DWGS M/E 107.1.0 THROUGH M/E 107.9.0 DATED DEC. 2001 AND M/E 107.2.1R & M/E 107.6.5R DATED DEC. 2004)

SURFACE: 4" CEMENT CONCRETE W/ WIRE MESH

SUBBASE: 8" GRAVEL BORROW

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PREPARED FOR

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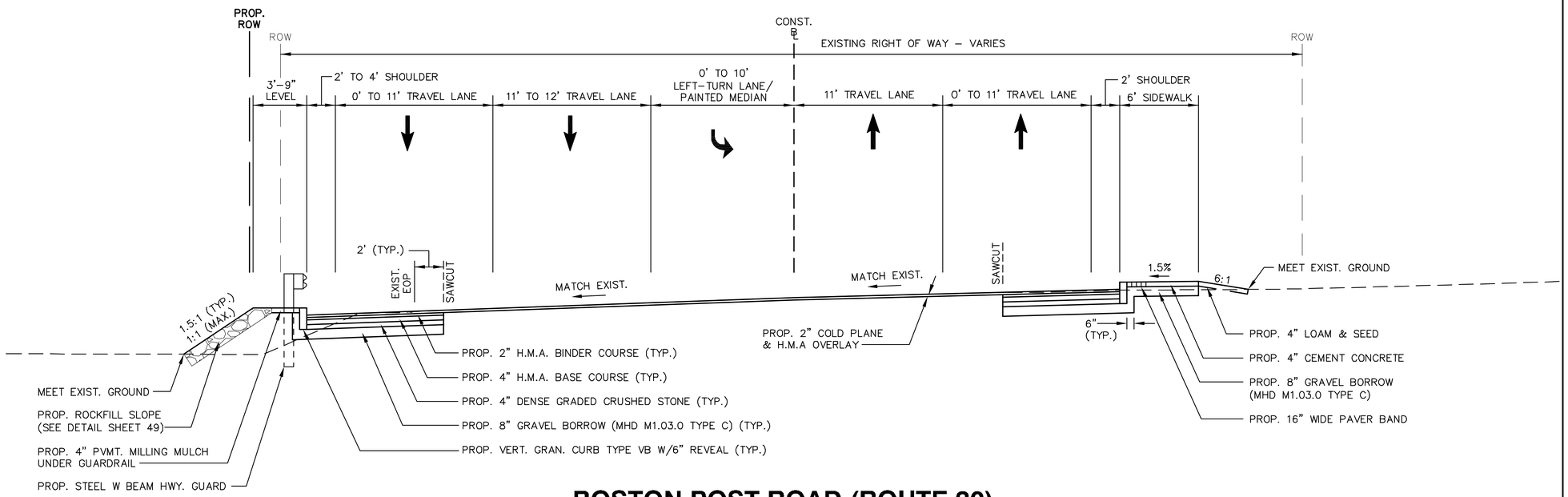
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NO.	DESCRIPTION	DATE

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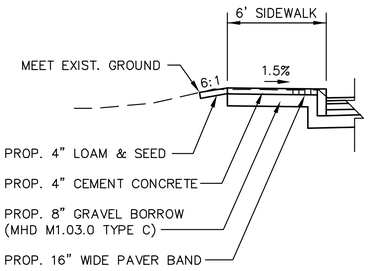
Typical Sections

SHEET 4 OF 81	DRAWING NUMBER 4
JOB NO. 5139	
CAD 5139TRSv3	



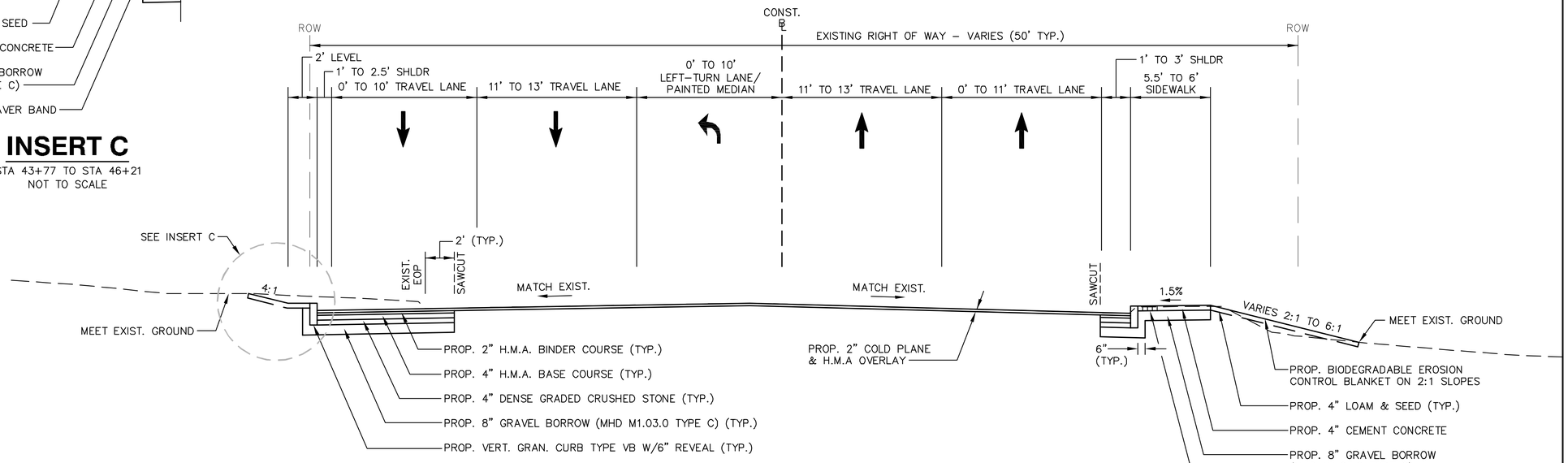
BOSTON POST ROAD (ROUTE 20)

STA 50+39 TO STA 55+90
NOT TO SCALE



INSERT C

STA 43+77 TO STA 46+21
NOT TO SCALE



BOSTON POST ROAD (ROUTE 20)

STA 43+77 TO STA 50+39
NOT TO SCALE

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ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
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FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437–4601
FAX: (239) 437–4636

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DRAWN BY	MGF
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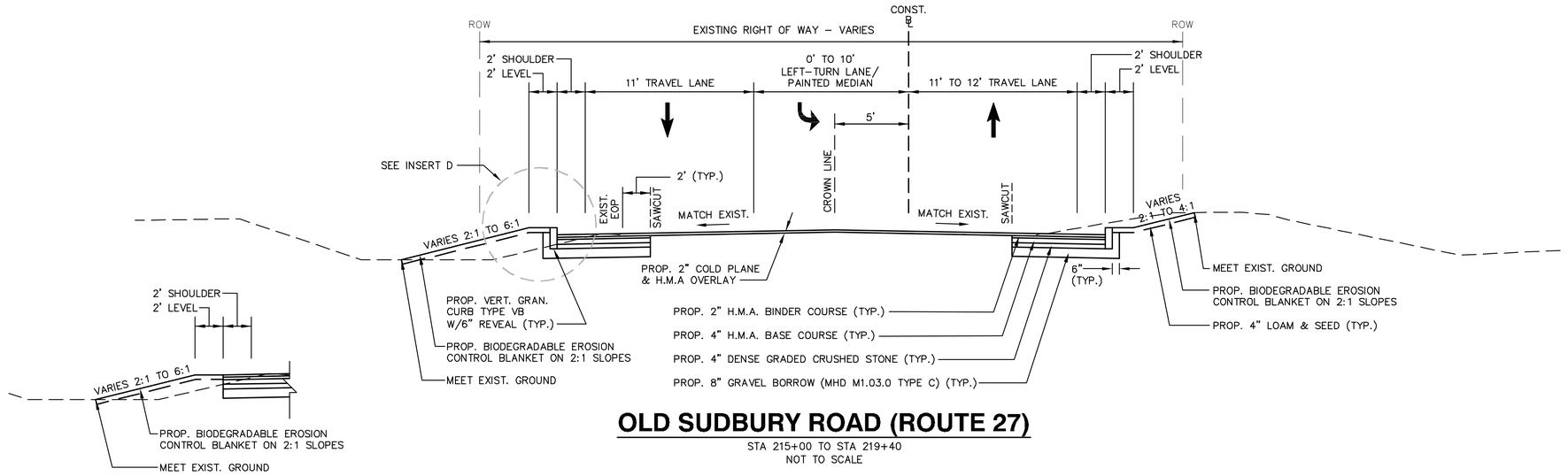
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Typical Sections

SHEET 5 OF 81	DRAWING NUMBER 5
JOB NO. 5139	
CAD 5139TRSv3	

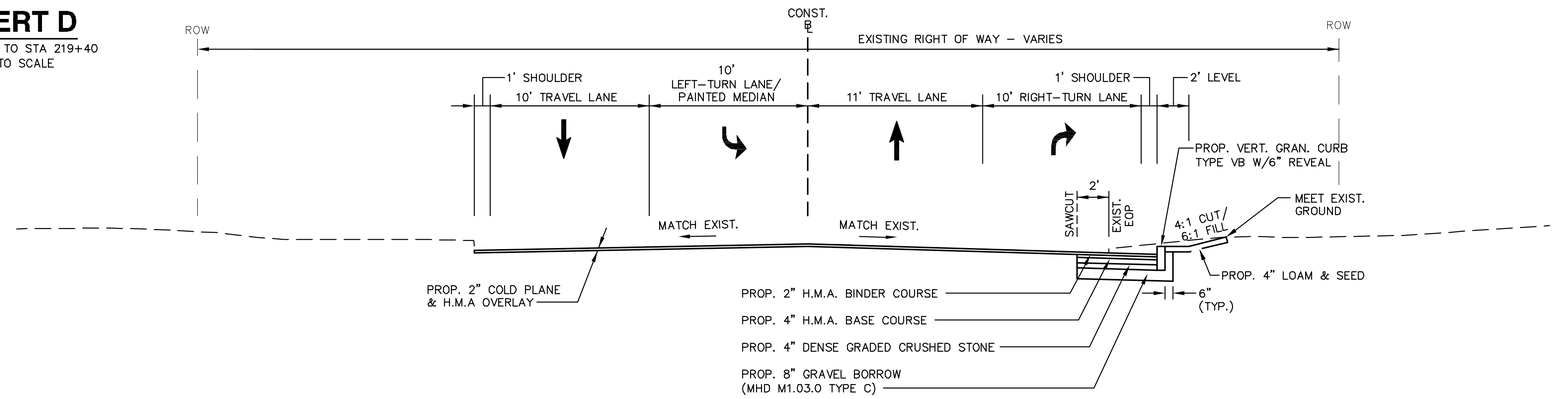


OLD SUDBURY ROAD (ROUTE 27)

STA 215+00 TO STA 219+40
NOT TO SCALE

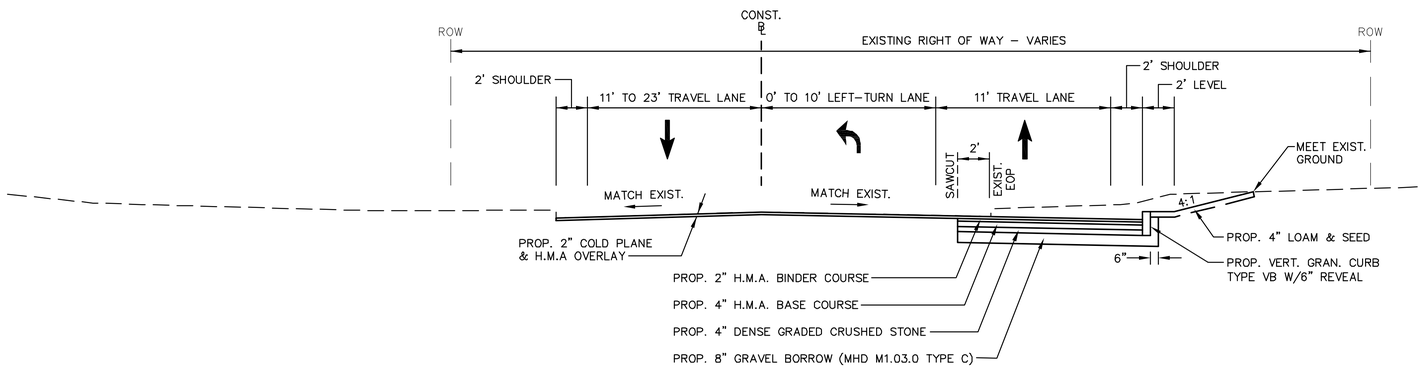
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STA 218+02 TO STA 219+40
NOT TO SCALE



COCHITUATE ROAD (ROUTE 27/126)

STA 210+70 TO STA 214+50
NOT TO SCALE



COCHITUATE ROAD (ROUTE 27/126)

STA 202+00 TO STA 207+75
NOT TO SCALE

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PROJECT TITLE

Wayland Town Center
Off–Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
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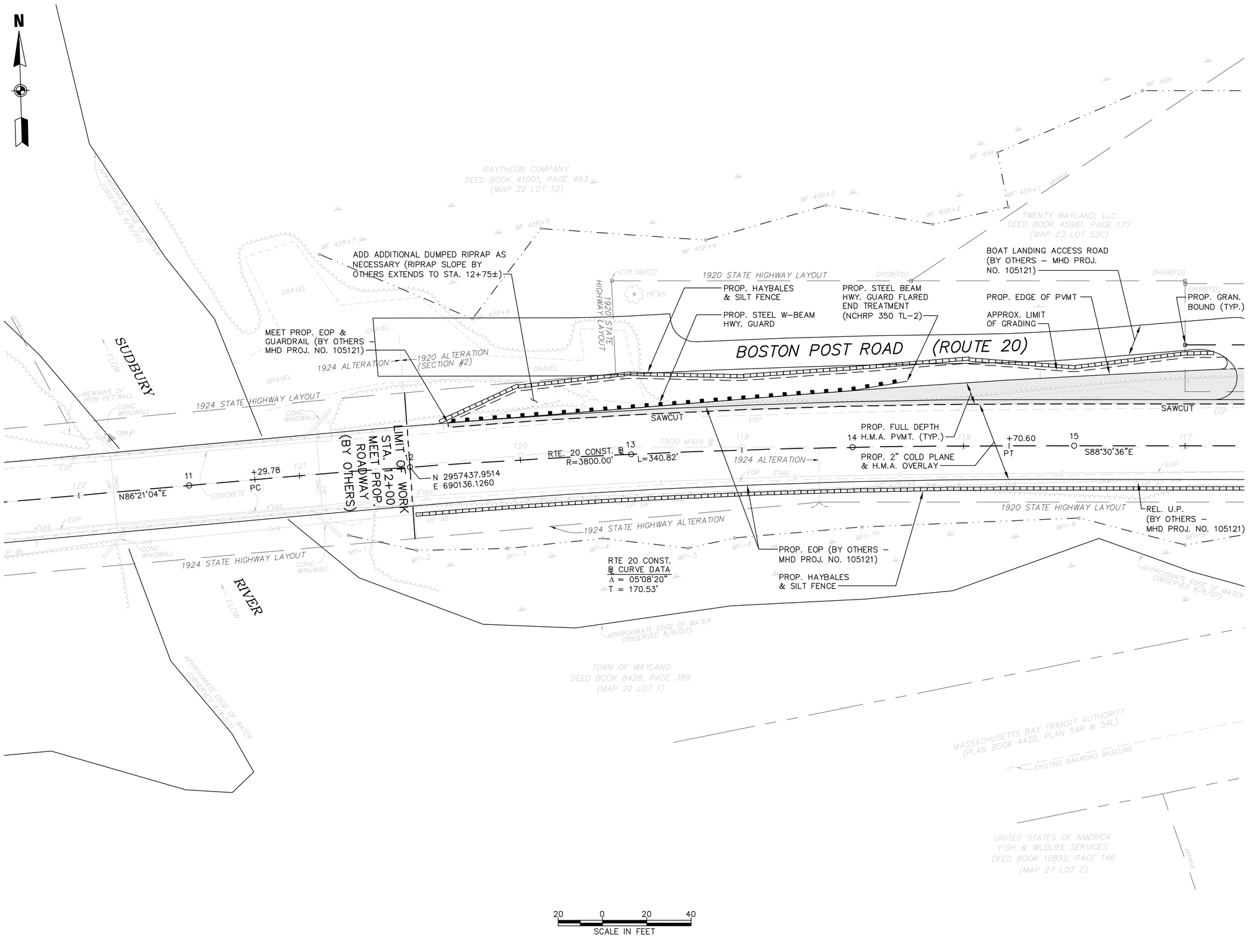
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Typical Sections

SHEET 6 OF 81	DRAWING NUMBER
JOB NO. 5139	6
CAD 5139TRSv3	



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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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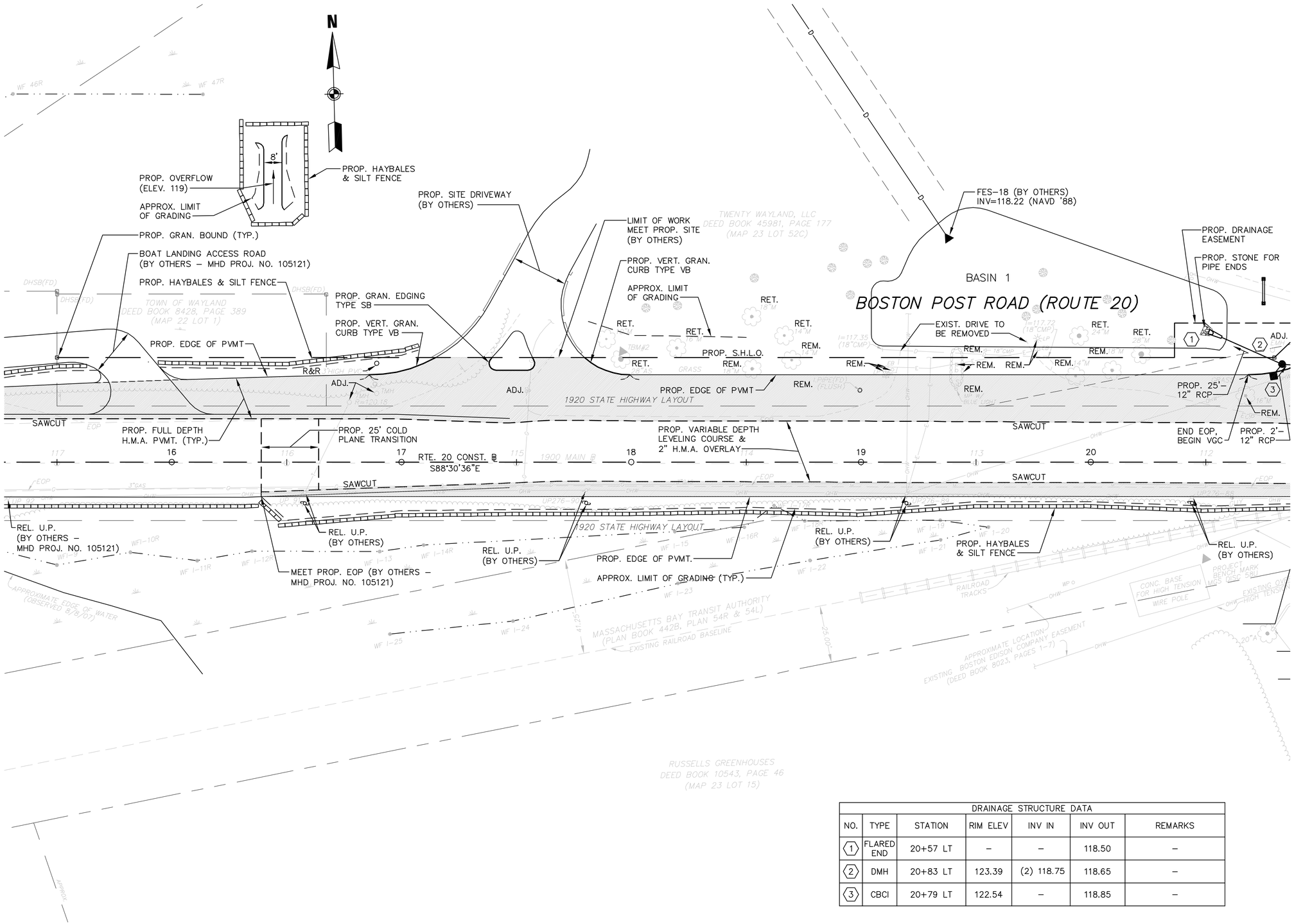
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DRAWING TITLE

Construction Plan

SHEET 7 OF 81	DRAWING NUMBER
JOB NO. 5139	7
CAD 5139GNv3	



DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
1	FLARED END	20+57 LT	–	–	118.50	–
2	DMH	20+83 LT	123.39	(2) 118.75	118.65	–
3	CBCI	20+79 LT	122.54	–	118.85	–

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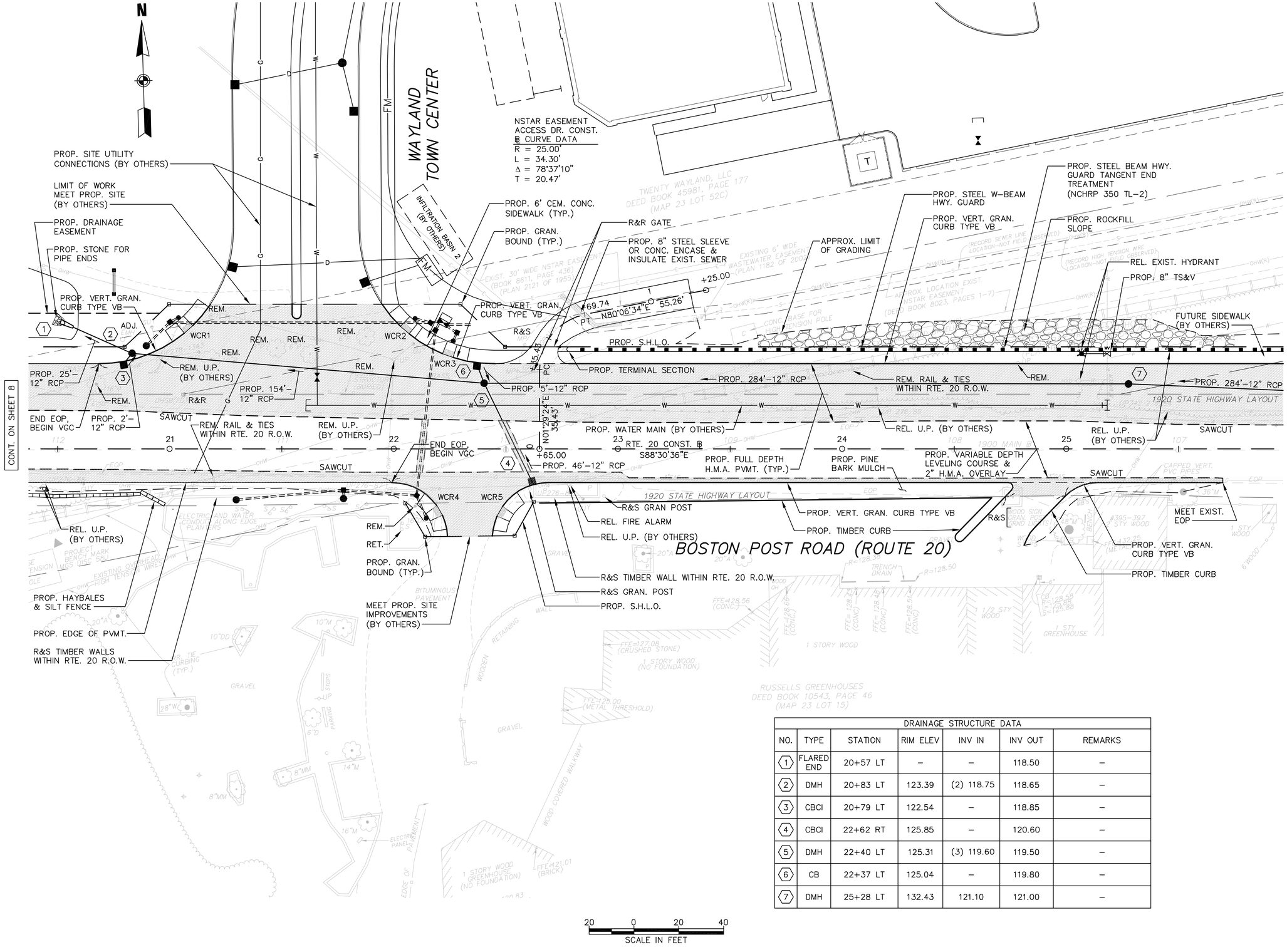
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Construction Plan

SHEET 8 OF 81	DRAWING NUMBER 8
JOB NO. 5139	
CAD 5139GNv3	



DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
1	FLARED END	20+57 LT	–	–	118.50	–
2	DMH	20+83 LT	123.39	(2) 118.75	118.65	–
3	CBCI	20+79 LT	122.54	–	118.85	–
4	CBCI	22+62 RT	125.85	–	120.60	–
5	DMH	22+40 LT	125.31	(3) 119.60	119.50	–
6	CB	22+37 LT	125.04	–	119.80	–
7	DMH	25+28 LT	132.43	121.10	121.00	–

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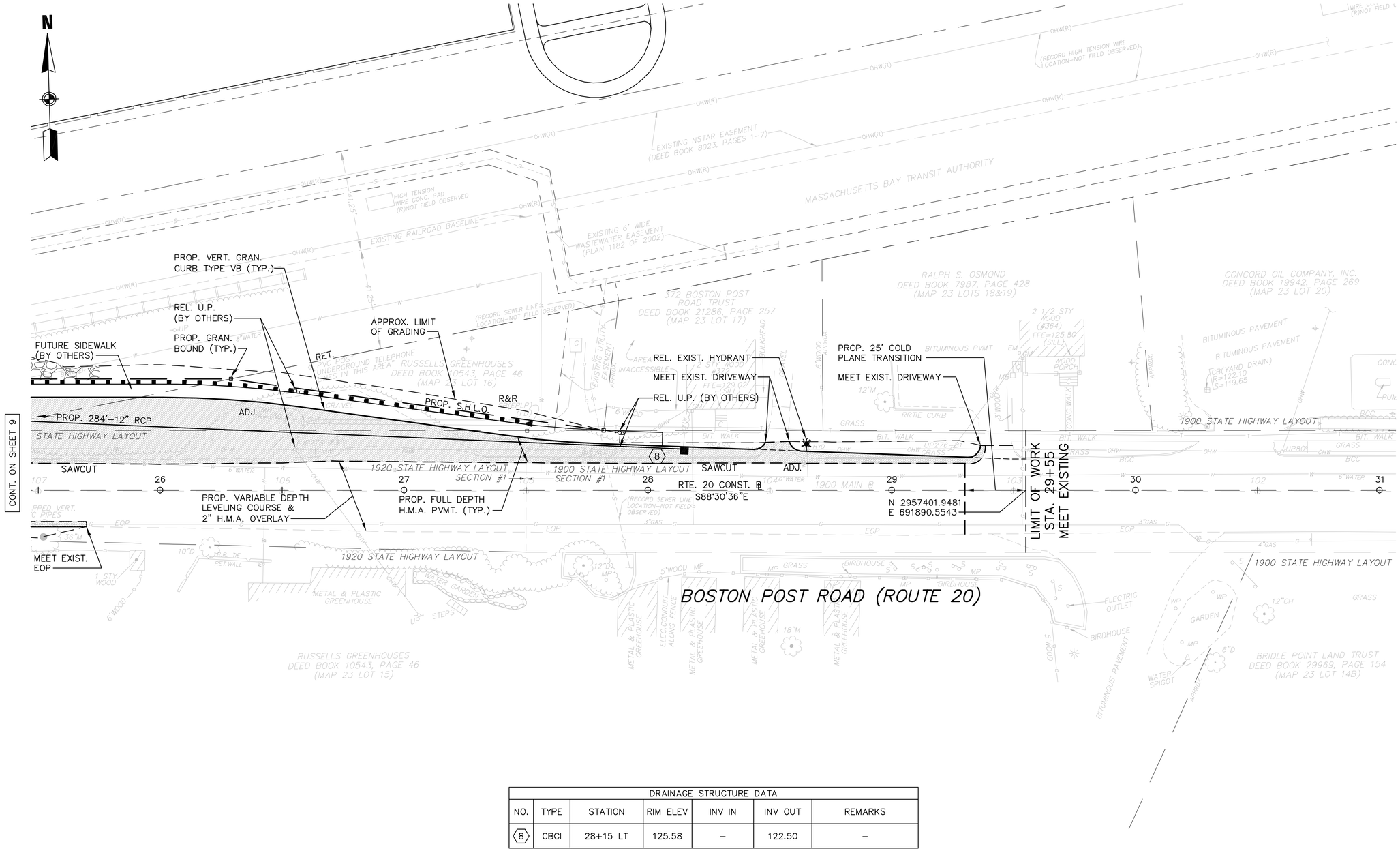
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Construction Plan

SHEET 9 OF 81	DRAWING NUMBER
JOB NO. 5139	9
CAD 5139GNv3	

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DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
⟨8⟩	CBCI	28+15 LT	125.58	–	122.50	–

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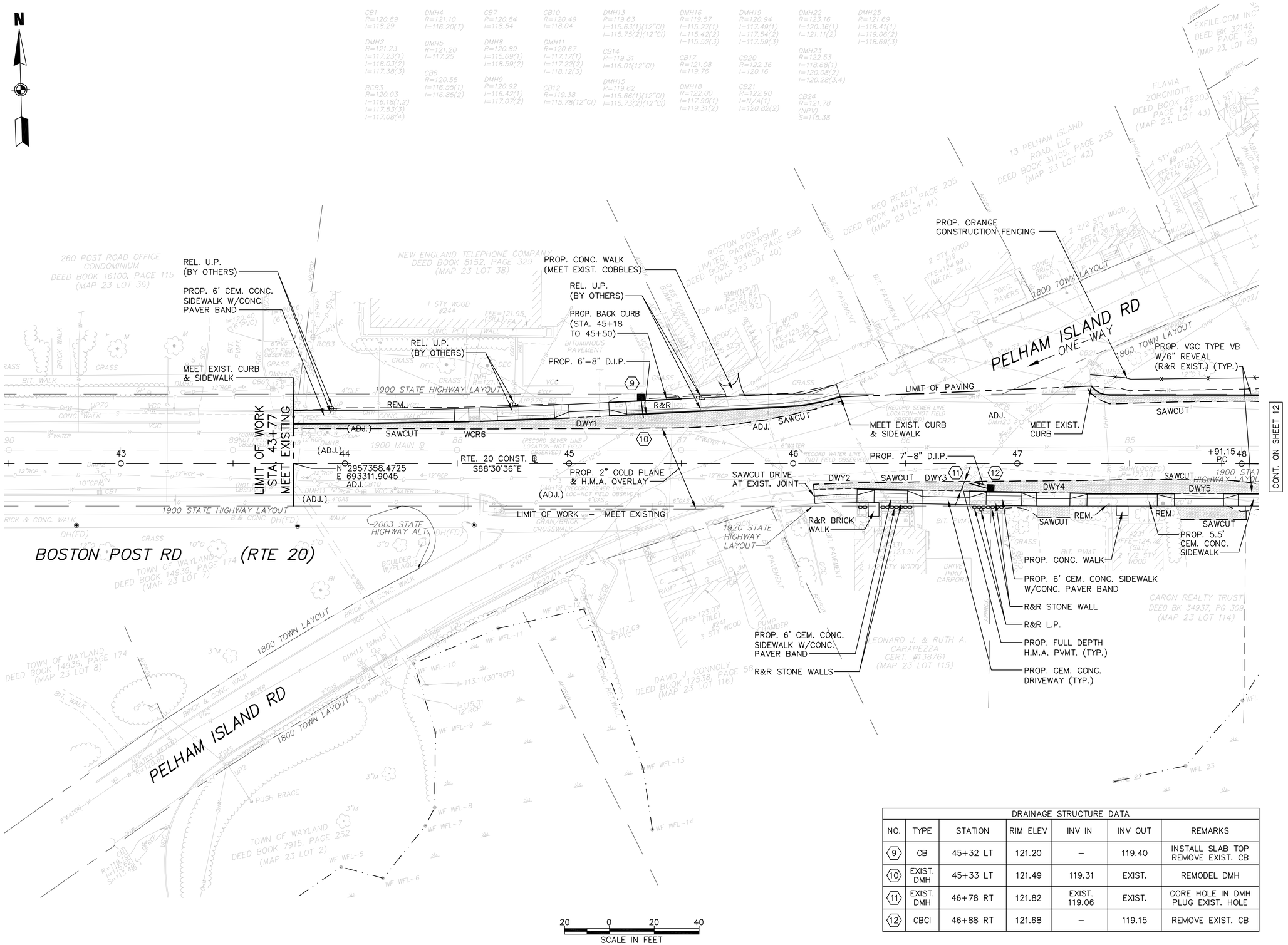
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Construction Plan

SHEET 10 OF 81	DRAWING NUMBER 10
JOB NO. 5139	
CAD 5139GNv3	



DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
⟨9⟩	CB	45+32 LT	121.20	–	119.40	INSTALL SLAB TOP REMOVE EXIST. CB
⟨10⟩	EXIST. DMH	45+33 LT	121.49	119.31	EXIST.	REMODEL DMH
⟨11⟩	EXIST. DMH	46+78 RT	121.82	EXIST. 119.06	EXIST.	CORE HOLE IN DMH PLUG EXIST. HOLE
⟨12⟩	CBCI	46+88 RT	121.68	–	119.15	REMOVE EXIST. CB

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DRAWING TITLE

Construction Plan

SHEET 11 OF 81	DRAWING NUMBER 11
JOB NO. 5139	
CAD 5139GNv3	

N

CONT. ON SHEET 15

CONT. ON SHEET 11

CONT. ON SHEET 13

TREE TRIMMING MAY BE REQUIRED BY NSTAR TO ACCOMMODATE RELOCATED UTILITY LINES. EXTENT SHALL BE COORDINATED WITH TREE WARDEN AND HIGHWAY DEPT. PRIOR TO UTILITY POLE RELOCATION.

PROP. VGC TYPE VB W/6" REVEAL (R&R EXIST.) (TYP.)

PROP. ORANGE CONSTRUCTION FENCING

APPROX. LIMIT OF GRADING (TYP.)

REL. U.P. (BY OTHERS)

1900 STATE HIGHWAY LAYOUT

SAWCUT

MEET EXIST. CURB

PC +78.18

ADJ.

WCR8

WCR7

(ADJ.) 209 RTE. 27 CONST. ℄ N30°29'05"W 138.34'

EXTEND CONC. PAVER CROSSWALK W/VGC EDGING

PROP. 8'-10" D.I.P.

PROP. 21'-8" D.I.P.

PROP. 2" COLD PLANE & H.M.A. OVERLAY

+91.15 PC

R=789.00' L=67.37' PT

+58.51

RTE. 20 CONST. ℄ S83°37'05"E 269.62'

2003 STATE HIGHWAY ALTERATION

DWY5

REM.

PROP. 5.5' CEM. CONC. SIDEWALK

RET.

MEET EXIST. CURB & SIDEWALK

PROP. HAYBALES & SILT FENCE

BOSTON POST RD (RTE 20)

2003 STATE HIGHWAY LAYOUT

RTE 20 CONST. ℄ CURVE DATA
Δ = 04°53'31"
T = 33.70'

STA. 50+33.88 RTE. 20 CONST. ℄ = STA. 208+39.84 RTE. 27 SOUTH CONST. ℄

STA. 50+45.47 RTE. 20 CONST. ℄ = STA. 208+39.84 RTE. 27 NORTH CONST. ℄

COCHITUATE RD (RTE 27/126)

1906 COUNTY LAYOUT

MEET EXIST. CURB & SIDEWALK

PROP. H.M.A. WALK TO MATCH EXIST.

PROP. VGC TYPE VB W/6" REVEAL (R&R EXIST.) (TYP.)

EXTEND BOX CULVERT, NEW HEADWALL

PROP. DRAINAGE EASEMENT

PROP. 17'-10" PVC

WCR9

PROP. TERMINAL SECTION

RTE 20 CONST. ℄ CURVE DATA
Δ = 32°53'36"
T = 147.60'

PROP. ROCKFILL SLOPE

PROP. SILT FENCE

PROP. STONE FOR PIPE ENDS

REL. U.P. (BY OTHERS)

PROP. HAYBALES & SILT FENCE

PROP. GRAN. BOUND (TYP.)

PROP. S.H.L.O.

R&R EXIST. GUARDRAIL

REL. U.P. (BY OTHERS)

REM (2) 10" TREES

PROP. 16'-8" D.I.P.

PROP. 3'-12" RCP (EXTEND EXIST.)

PROP. 141'-12" RCP

+28.13 PC

R=500.00' L=287.05'

EXTEND CONC. PAVER CROSSWALK W/VGC EDGING

PROP. FULL DEPTH H.M.A. PVMT. (TYP.)

WCR10

WCR11

R&R GRAN. POST

PROP. 6' CEM. CONC. SIDEWALK W/CONC. PAVER BAND

PROP. 4'-12" RCP (RET.)

APPROX. LIMIT OF GRADING (TYP.)

PROP. ORANGE CONSTRUCTION FENCING

PROP. CEM. CONC. DRIVEWAY (TYP.)

PROP. FULL DEPTH H.M.A. DRIVEWAY (TYP.)

PROP. 5'x5' PASSING ZONE (EXCLUSIVE OF CONC. PAVER BAND)

RTE 27 CONST. ℄ N23°56'58"W 215.97'

PROP. 2" COLD PLANE & H.M.A. OVERLAY

1906 COUNTY LAYOUT

207 ℄

SAWCUT

R&R FENCE

COCHITUATE RD (RTE 27/126)

REL. U.P. (BY OTHERS)

TREE TRIMMING REQUIRED BY NSTAR TO ACCOMMODATE RELOCATED UTILITY LINES. EXTENT SHALL BE COORDINATED WITH TREE WARDEN AND HIGHWAY DEPT. PRIOR TO WORK.

PT 223.87

206 ℄

R=3750.00' L=108.03'

RET.

REL. U.P. (BY OTHERS)

TREE TRIMMING REQUIRED BY NSTAR TO ACCOMMODATE RELOCATED UTILITY LINES. EXTENT SHALL BE COORDINATED WITH TREE WARDEN AND HIGHWAY DEPT. PRIOR TO UTILITY POLE RELOCATION.

RTE 27 CONST. ℄ CURVE DATA
Δ = 01°58'39"
T = 54.02'

CONT. ON SHEET 14

NOTE:
NO TREES WITHIN THE ROUTE 27/126 RIGHT OF WAY WITH A TRUNK 1-½" DIAMETER OR GREATER MEASURED AT 4' ABOVE THE GROUND SHALL BE REMOVED UNLESS SPECIFICALLY NOTED ON THE PLANS, AND THEN ONLY UPON DIRECTION BY THE ENGINEER.

20 0 20 40
SCALE IN FEET

DRAINAGE STRUCTURE DATA

NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
13	GICI	49+25 LT	121.31	–	119.01	REMOVE EXIST. CB
14	CBCI	49+49 LT	121.21	118.10	117.90	REMOVE EXIST. CB
15	EXIST. DMH	49+61 LT	121.19	117.14	EXIST.	CORE HOLE IN DMH PLUG EXIST. HOLE
16	CBCI	207+61 RT	119.95	EXIST.	115.95	REMOVE EXIST. CB
17	DMH	51+59 LT	119.38	EXIST.	115.29	CONST. OVER EXIST. PIPE
18	HDWALL	51+78 LT	119.75 (TOP OF WALL)	114.33 (BOX)	115.19 (10")	–
19	CBCI	51+75 LT	118.73	–	116.93	REMOVE EXIST. CB & PIPES
20	EXIST. DMH	51+95 LT	119.02	116.78 (W) 116.00 (E)	EXIST.	CORE HOLE IN DMH PLUG EXIST. HOLES

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Wayland, Massachusetts

PREPARED FOR

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Boston, Massachusetts

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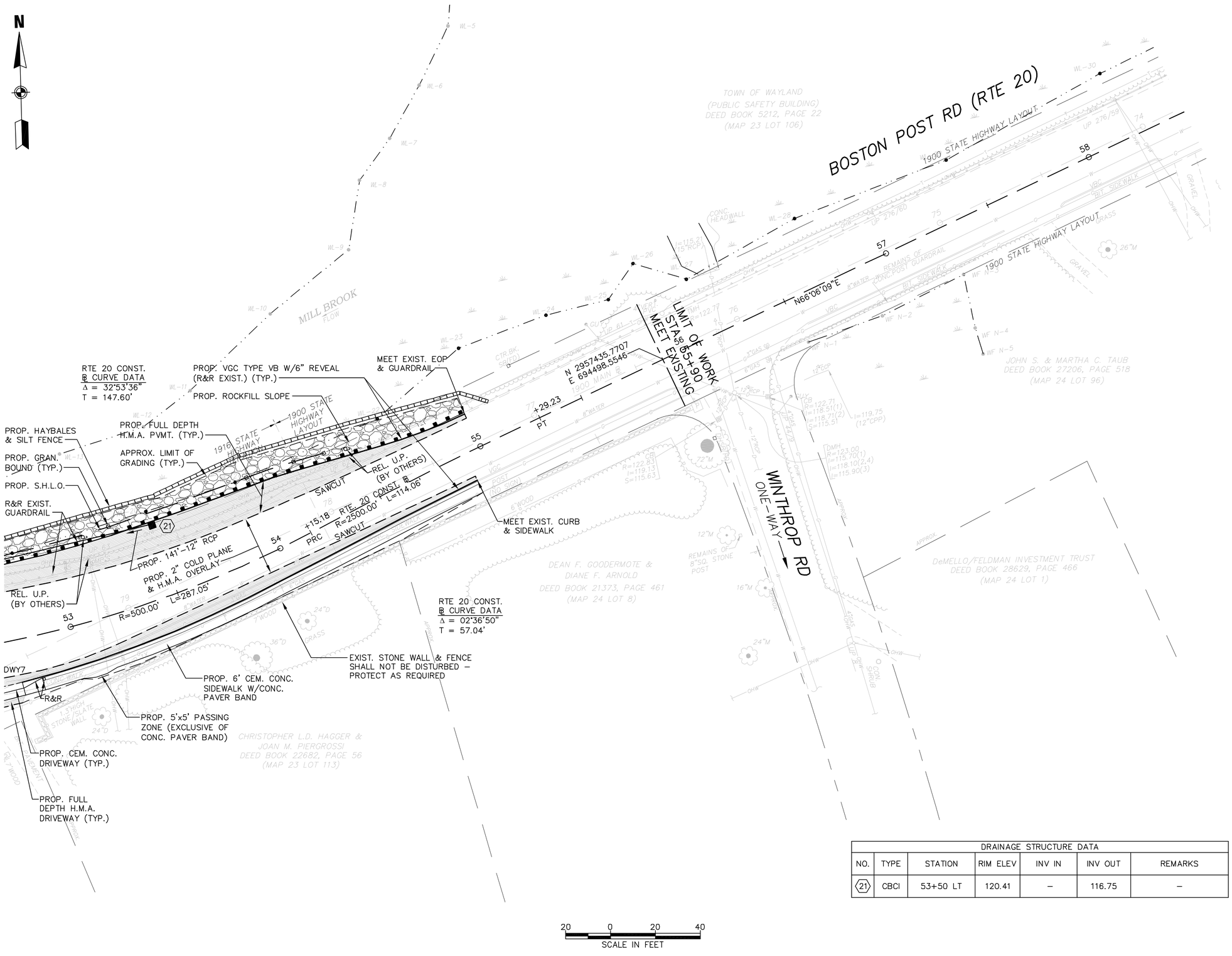
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DRAWING TITLE

Construction Plan

SHEET 12 OF 81	DRAWING NUMBER
JOB NO. 5139	12
CAD 5139GNv3	



DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
21	CBCI	53+50 LT	120.41	–	116.75	–

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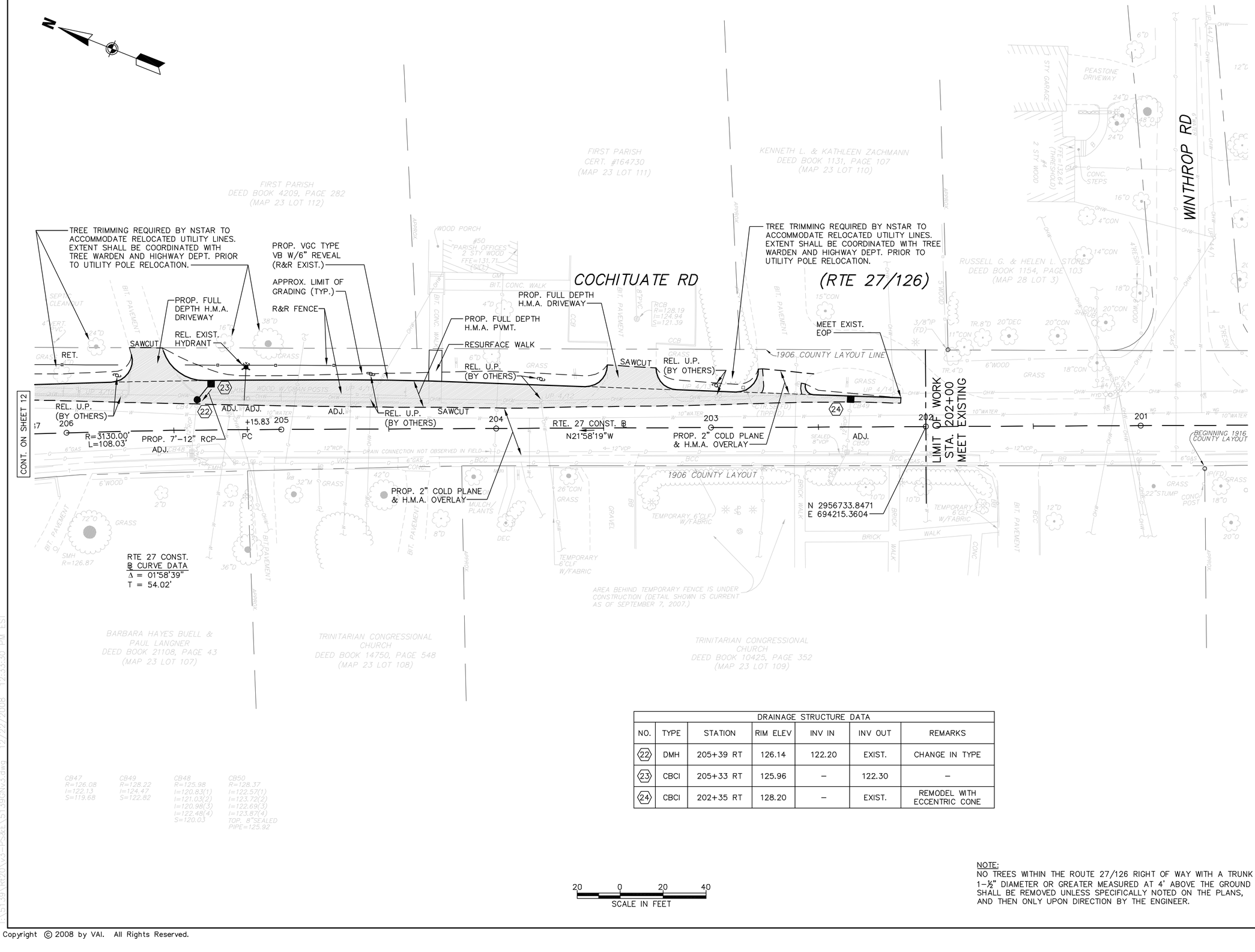
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Construction Plan

SHEET 13 OF 81	DRAWING NUMBER
JOB NO. 5139	13
CAD 5139GNv3	

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DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
22	DMH	205+39 RT	126.14	122.20	EXIST.	CHANGE IN TYPE
23	CBCI	205+33 RT	125.96	–	122.30	–
24	CBCI	202+35 RT	128.20	–	EXIST.	REMODEL WITH ECCENTRIC CONE

NOTE:
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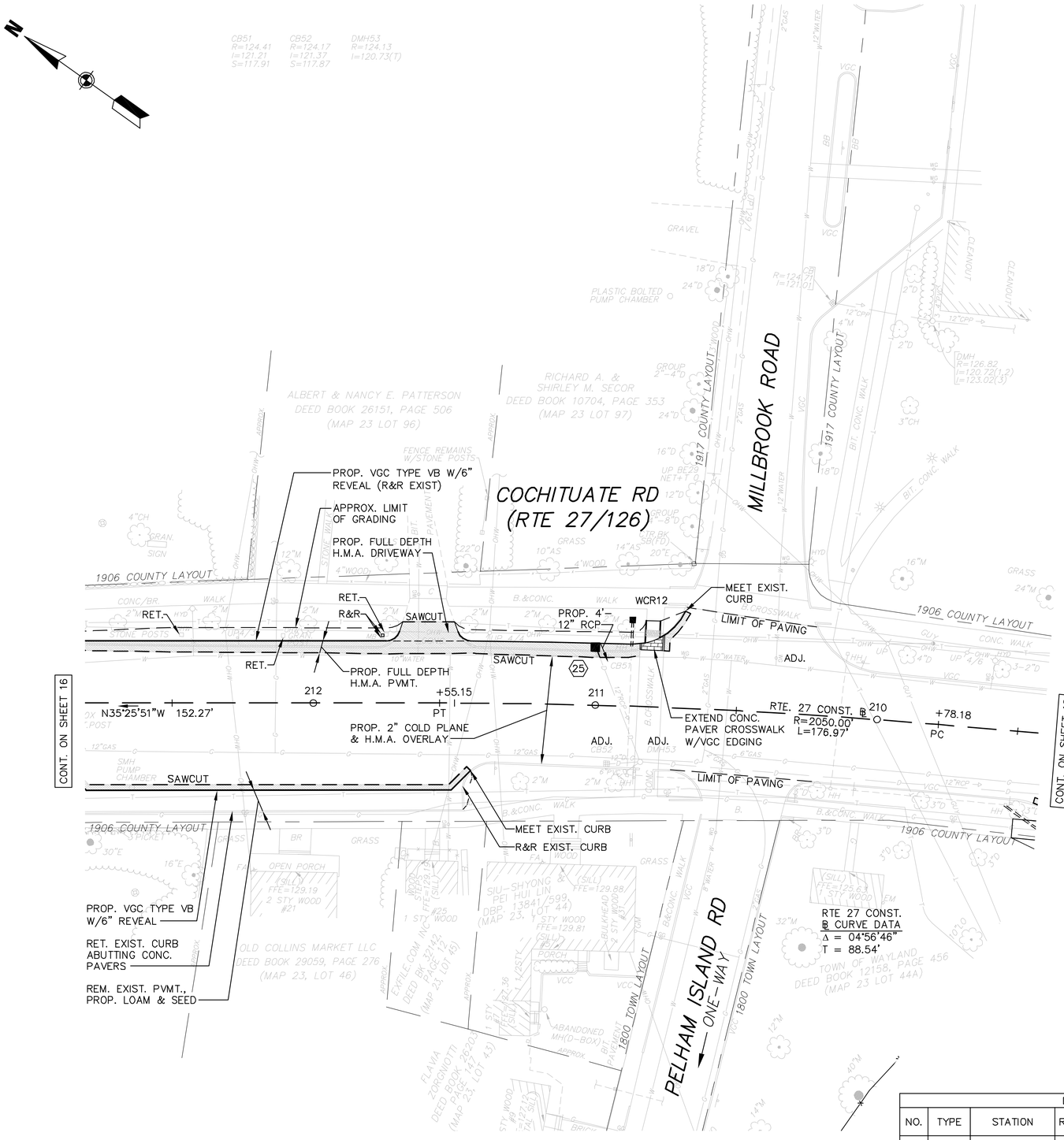
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SHEET 14 OF 81	DRAWING NUMBER
JOB NO. 5139	14
CAD 5139GNv3	

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DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
(25)	CBCI	211+01 RT	124.29	–	121.25	REMOVE EXIST. CB

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DRAWING TITLE

Construction Plan

SHEET 15 OF 81	DRAWING NUMBER
JOB NO. 5139	15
CAD 5139GNv3	

DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV	INV IN	INV OUT	REMARKS
26	CBCI	214+86 RT	126.39	–	122.98	REMOVE EXIST. CB
27	CBCI	215+64 LT	125.86	–	122.60	–
28	DMH	215+91 LT	126.07	122.50	EXIST.	CHANGE IN TYPE CORE HOLE IN CB
29	DMH	215+89 RT	126.18	122.20 EXIST.	EXIST.	CHANGE IN TYPE CORE HOLE IN CB
30	CBCI	215+94 RT	126.02	–	122.30	REMOVE EXIST. CB

TREE REMOVAL SCHEDULE					
TAG NO.	SIZE & SPECIES	APPROXIMATE STATION	TAG NO.	SIZE & SPECIES	APPROXIMATE STATION
0857	10" MAPLE	216+89 LT	0864	8" ASH	217+21 LT
0858	4–LEADER MAPLE 4.5"/5.5"/5.5"/12"	216+99 LT	0865	2–LEADER ELM 2.5"/2.5"	217+51 LT
0859	8.5" MAPLE	217+05 LT	0866	8" MAPLE	217+84 LT
0860	3" MAPLE	217+01 LT	0867	20" LOCUST	218+01 LT
0861	6" MAPLE	217+08 LT	0868	4.5" MAPLE	218+20 LT
0862	1.5" ASH	217+14 LT	0869	5" SPRUCE	215+40 RT
0863	2" MAPLE	217+15 LT			

CONCORD RD (RTE 126)

LIBRARY LN ONE–WAY

1881 TOWN LAYOUT

1929 COUNTY LAYOUT

1906 COUNTY LAYOUT

OLD SUDBURY RD (RTE 27)

COCHITUATE RD (RTE 27/126)

HARRY A. HANSON, III DEED BOOK 20665, PAGE 283 (MAP 23 LOT 64)

TOWN OF WAYLAND DEED BOOK 8412, PAGE 490 (MAP 23 LOT 94)

TOWN OF WAYLAND DEED BK 18853, PG 379 (MAP 23 LOT 94A)

CHRISTOPHER LAFARGE DEED BOOK 19680, PAGE 580 (MAP 23 LOT 63)

JOSEF B. VOLMAN DEED BK 31523, PG 528 (MAP 23 LOT 62)

WAYLAND HISTORICAL SOCIETY DEED BOOK 11135, PAGE 489 (MAP 23 LOT 95)

TOWN OF WAYLAND DEED BOOK 11879, PAGE 272 (MAP 23 LOT 48)

MARGERY T. & PRESCOTT W. BASTON, JR. DEED BOOK 12713, PAGE 702 (MAP 23 LOT 47)

JENNIFER C. & GEORGE L. RICE, JR DEED BOOK 34259, PAGE 90 (MAP 23 LOT 49)

COURTNEY PURRINGTON & MICHELLE PURRINGTON DEED BK 27601, PG 327 (MAP 23 LOT 50)

MASSACHUSETTS BAY TRANSIT AUTHORITY (PLAN BOOK 442B, PLAN 54R & 54L)

EXISTING BOSTON EDISON COMPANY EASEMENT (DEED BOOK 8021 PAGES 1–7)

EXISTING HIGH TENSION OVERHEAD WIRES

N 2957932.5527
E 693670.8162

MEET EXIST. CURB

+77.42 ℄ LIMIT OF WORK STA. 301+40 MEET EXISTING

N06°58'52"W 65.05'

+12.37 301 RTE. 126 CONST. ℄

RET.

RTE 126 CONST. ℄ CURVE DATA
Δ = 57°14'21"
T = 27.28'
R=50.00'
L=49.95'

PROP. 2" COLD PLANE & H.M.A. OVERLAY

PROP. (7) 5'–6' 'EMERALD' ARBORVITAE (A.K.A. WHITE CEDAR) SPACED 3' O.C.

REM. EXIST. WCR & CURB RETURNS; PROP. CEM. CONC. SIDEWALK W/CONC. PAVER BAND

PROP. FULL DEPTH H.M.A. DRIVEWAY

APPROX. LIMIT OF GRADING

PROP. 2'–12" RCP

TRIM BRANCHES OVERHANGING ROADWAY

MEET EXIST. CURB

PROP. 8'–12" RCP

REL. U.P. (BY OTHERS)

SAWCUT

R&R

REM.

+62.42 PC

N5015'28"E 37.42'

300+25

WCR13

MEET EXIST. EOP

APPROX. LIMIT OF GRADING

ADJ.

216+96.66 PT

217

N45°37'44"W

215 (ADJ.)

214

RTE. 27 CONST. ℄
R=1625.00' L=289.23'

207.42 213 PC

N35°25'51"W 152.27'

PROP. VGC TYPE VB W/6" REVEAL (TYP.)

PROP. FULL DEPTH H.M.A. PVMT. (TYP.)

REM. EXIST. PVMT., PROP. LOAM & SEED

EXTEND CONC. PAVER CROSSWALK W/VGC EDGING

PROP. 2" COLD PLANE & H.M.A. OVERLAY

MEET EXIST. CURB

DWY8

DWY9

PROP. FULL DEPTH H.M.A. DRIVEWAY

PROP. 23'–12" RCP

APPROX. LIMIT OF GRADING

PROP. CEM. CONC. SIDEWALK W/CONC. PAVER BAND

PROP. 2" COLD PLANE & H.M.A. OVERLAY

RESURFACE WALK

RTE 27 CONST. ℄ CURVE DATA
Δ = 10°11'53"
T = 145.00'

R&R EXIST. CURB

REM. EXIST. PVMT., PROP. LOAM & SEED

PROP. VGC TYPE VB W/6" REVEAL

RET. EXIST. CURB ABUTTING CONC. PAVERS

CONT. ON SHEET 17

CONT. ON SHEET 15

STA. 214+63.51 RTE. 27 CONST. ℄ = STA. 300+25.00 RTE. 126 CONST. ℄

CB54 R=125.71 I=121.51 S=120.81

CB55 R=125.78 I=120.48(1,2) S=118.48

CB56 R=125.42 I=120.12(1) I=120.22(2) S=118.82

CB57 R=126.03 I=122.33 S=119.73

CB58 R=126.11 I=122.16(1) I=122.41(2) S=119.31

CB59 R=123.31 I=120.56 S=117.81

DMH60 R=123.77 I=119.07(1) I=119.57(2) I=119.17(3) I=119.97(4)

CB61 R=123.71 I=120.21 S=117.81

CB62 R=121.34 R=124.84

CB63 R=126.21 I=122.11 S=119.11

CB64 R=125.02 I=118.82(1) I=119.07(2) I=120.47(3) I=119.82(4) S=118.35 (FILLED W/WATER)

CB65 R=126.33 I=122.68 S=117.93

DMH66 R=126.64 NPV(1) I=122.04(2) I=122.29(3) I=121.84(4) S=120.09

CB67 R=126.05 I=125.05 S=120.85

CB68 R=126.69 I=123.64 S=120.59

DMH69 R=127.05 I=122.70(1) I=123.10(2) I=123.25(3)

DMH70 R=126.79 I=122.79(T)

NOTES:

1. NO TREES WITHIN THE ROUTE 27/126 RIGHT OF WAY WITH A TRUNK 1–½" DIAMETER OR GREATER MEASURED AT 4' ABOVE THE GROUND SHALL BE REMOVED UNLESS SPECIFICALLY NOTED ON THE PLANS, AND THEN ONLY UPON DIRECTION BY THE ENGINEER.
2. TREES WITH TOWN OF WAYLAND TAG NUMBERS 0857 THROUGH 0869 (INCLUSIVE) MAY BE REMOVED SUBSEQUENT TO PRECONSTRUCTION MEETING WITH WAYLAND PARK AND RECREATION DEPARTMENT.
3. TREE TRIMMING REQUIRED BY NSTAR (STA. 215+00 RT TO 215+50 RT) TO ACCOMMODATE RELOCATED UTILITY LINES. EXTENT SHALL BE COORDINATED WITH TREE WARDEN AND HIGHWAY DEPT. PRIOR TO UTILITY POLE RELOCATION.

20 0 20 40
SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off–Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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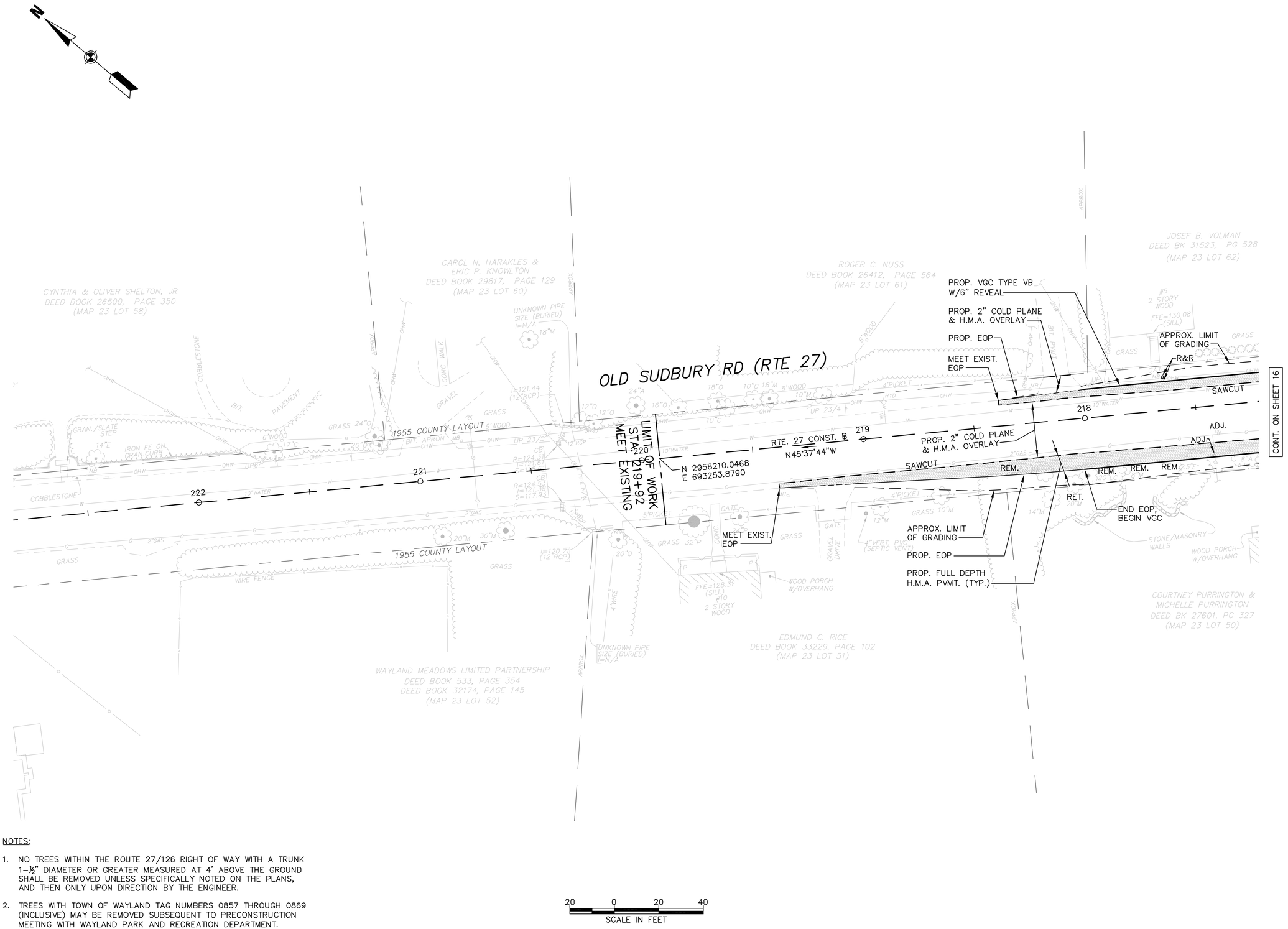
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Construction Plan

SHEET 16 OF 81	DRAWING NUMBER
JOB NO. 5139	16
CAD 5139GNv3	



NOTES:

1. NO TREES WITHIN THE ROUTE 27/126 RIGHT OF WAY WITH A TRUNK 1-½" DIAMETER OR GREATER MEASURED AT 4' ABOVE THE GROUND SHALL BE REMOVED UNLESS SPECIFICALLY NOTED ON THE PLANS, AND THEN ONLY UPON DIRECTION BY THE ENGINEER.
2. TREES WITH TOWN OF WAYLAND TAG NUMBERS 0857 THROUGH 0869 (INCLUSIVE) MAY BE REMOVED SUBSEQUENT TO PRECONSTRUCTION MEETING WITH WAYLAND PARK AND RECREATION DEPARTMENT.

20 0 20 40
SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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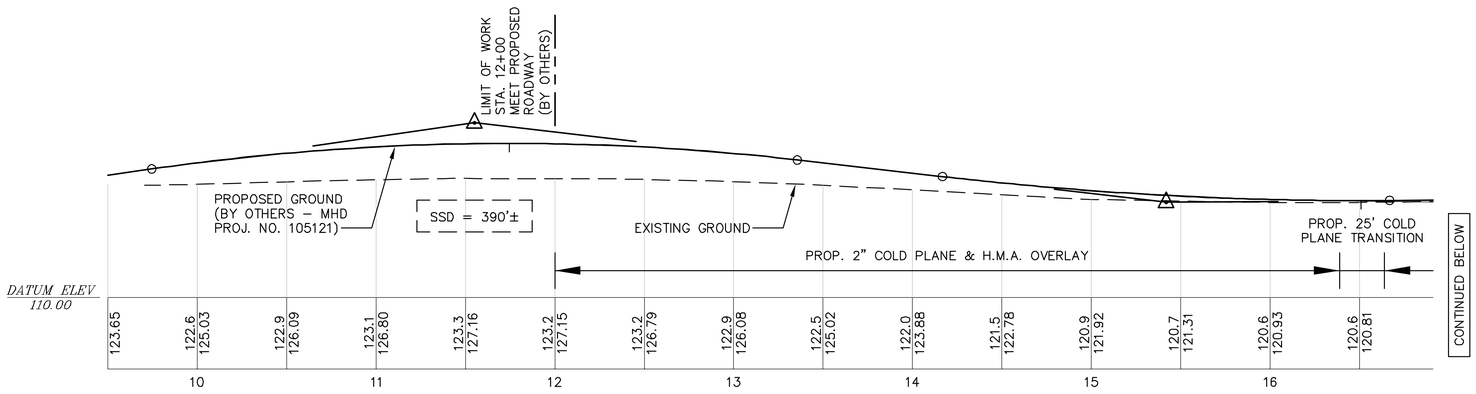
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NO.	DESCRIPTION	DATE

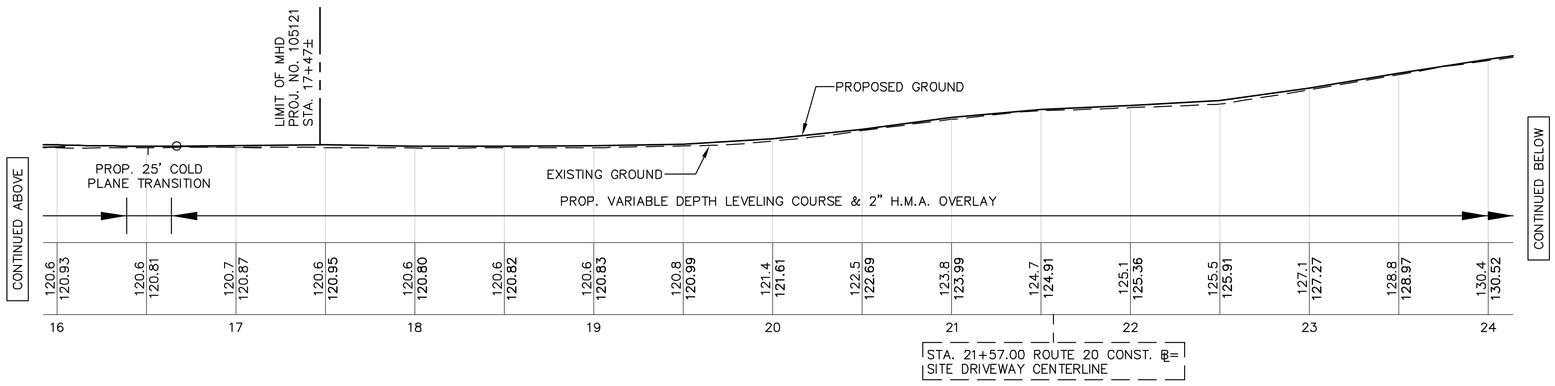
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Construction Plan

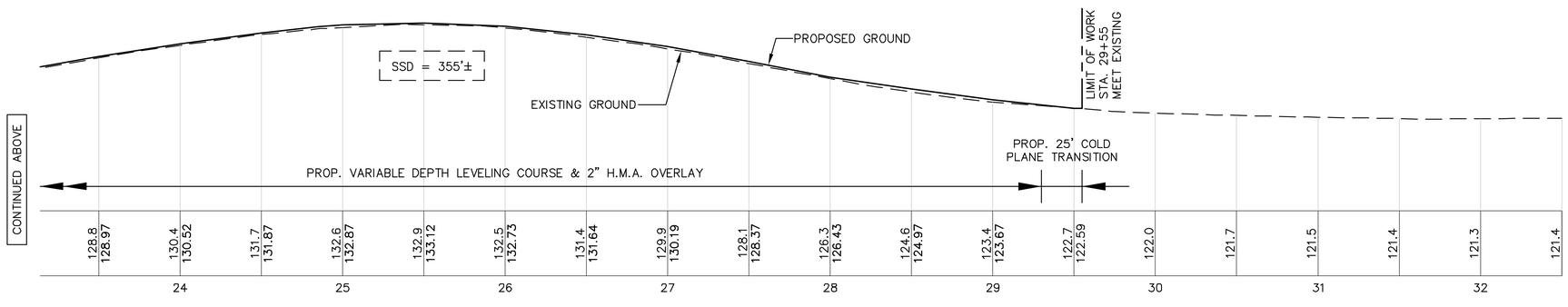
SHEET 17 OF 81	DRAWING NUMBER 17
JOB NO. 5139	
CAD 5139GNv3	



BOSTON POST ROAD (ROUTE 20)



BOSTON POST ROAD (ROUTE 20)



BOSTON POST ROAD (ROUTE 20)

NOTE:
THIS PROFILE IS FOR INFORMATIONAL PURPOSES ONLY. THE INTENT IS TO FOLLOW THE EXISTING ROADWAY PROFILE WITH A PAVEMENT OVERLAY OR COLD PLANE AND OVERLAY AS NOTED.

SCALE IN FEET
HOR. 1"=40'
40 0 40 80
8 0 8 16
VERT. 1"=8'

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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
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DATE	DECEMBER 2008
SCALE	HOR: 1"=40'/VERT: 1"=8'
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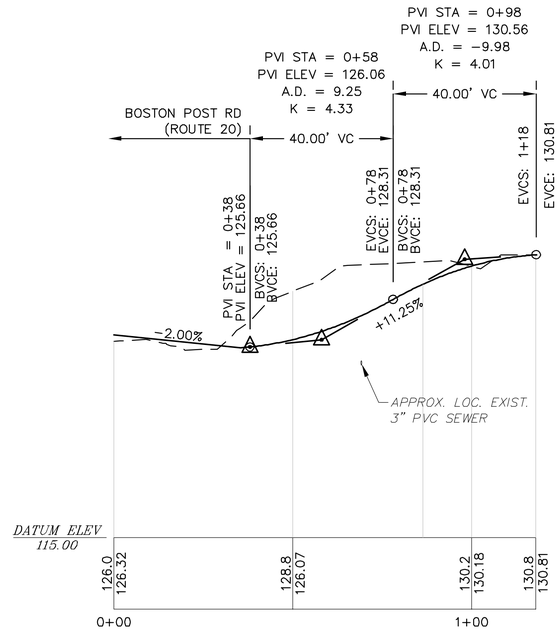
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Profile
Route 20 at Site Drive

SHEET 18 OF 81	DRAWING NUMBER 18
JOB NO. 5139	
CAD 5139CSv2	



NSTAR ACCESS DRIVE

SCALE IN FEET
HOR. 1"=20'

20 0 20 40

4 0 4 8

VERT. 1"=4'

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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DATE	DECEMBER 2008
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STAMP	

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Profile

NSTAR Easement Access Drive

SHEET 19 OF 81	DRAWING NUMBER
JOB NO. 5139	19
CAD 5139CSv2	

Table 1 Wetland Compensation Site Shrub Plantings Below Elevation 119

Common Name	Botanical Name	Wetland Indicator Status	Estimated Quantity
Sweet Pepperbush	*Clethra alnifolia*	FAC+	10
Silky Dogwood	*Cornus amomum*	FACW	10
Winterberry	*Ilex verticillata*	FACW+	10
Spicebush	*Lindera benzoin*	FACW-	10
Pussy Willow	*Salix discolor*	FACW	10
Elderberry	*Sambucus canadensis*	FACW-	10
Highbush Blueberry	*Vaccinium corymbosum*	FACW	10
Arrowwood	*Viburnum dentatum*	FACW-	10
TOTAL			**80**

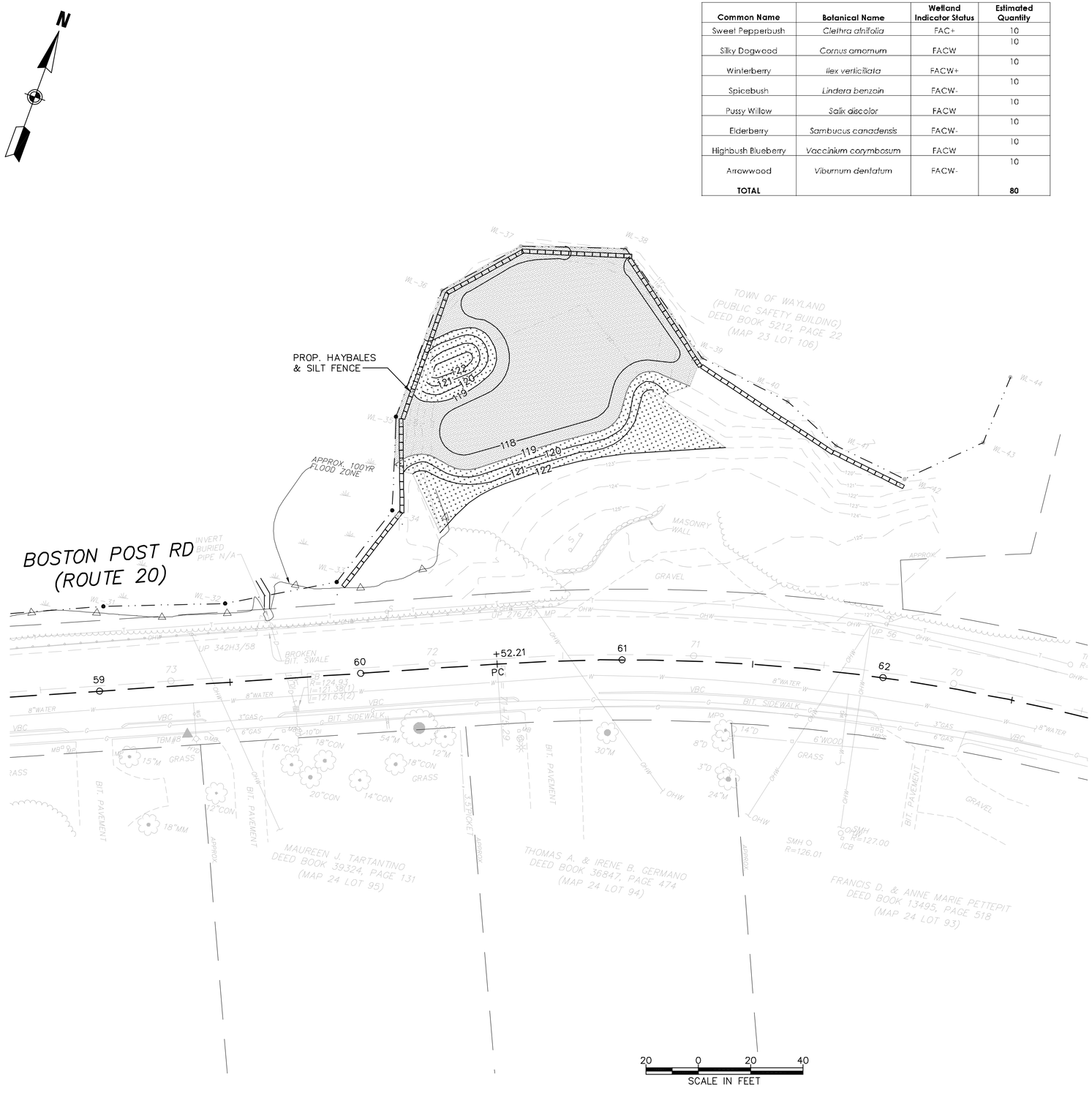


Table 2 New England Wetmix (or equivalent) Below Elevation 119

The 2007 Wetland Seed Mix contains a wide variety of native species that are suitable for most wetland restoration sites that are not permanently inundated. All species are best suited to moist disturbed ground as found in most wet meadow, scrub shrub, or forested wetland restoration areas. This mix is well suited for detention basin borders, and the bottom of detention basins not generally under standing water. The seeds will not germinate under inundated conditions. If planted during the fall months, the seed mix will germinate the following spring. During the first season of growth, several species will produce seeds, while other species will produce seeds after the second growing season. Not all species will grow in all wetland situations. This mix is composed of the wetland species most likely to grow in created/restored wetlands, and should produce more than 75% ground cover in two full growing seasons.

The wetland seeds in this mix can be hand sown, used with a hand-held spreader, or hydro-seeded on large or hard to reach sites, as long as there is no permanent snow cover. Lightly rake to ensure proper soil-seed contact. Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual, watering may be required. If planting during the summer months, watering may be required for at least 2-3 weeks after planting to ensure germination. A non-invasive annual such as winter rye or oats may be added to the mix to obtain soil stabilization cover in the fall. Do not add annual ryegrass, Kentucky Bluegrass or perennial ryegrass as these species are very aggressive and they will inhibit the growth of the wetland seeds. A light mulch of clean, weed-free straw is recommended.

Application Rate: 1 lb/2,500 sf -18 lbs/acre
Cost: $125.00/lb.

Species: Bearded Sedge (*Carex comosa*), Hop Sedge (*Carex lupulina*), Lurid Sedge (*Carex lurida*), Blunt Broom Sedge (*Carex scoparia*), Fox Sedge (*Carex vulpinoidea*), Soft Rush (*Juncus effusus*), Green Bulrush (*Scirpus atrovirens*), Woolgrass (*Scirpus cyperinus*), Soft-stemmed Bulrush (*Scirpus validus*), Sensitive Fern (*Onoclea sensibilis*), Swamp Milkweed (*Asclepias incarnata*), Flat-top Aster (*Aster umbellatus*), Nodding Bur-marigold (*Bidens cernua*), Spotted Joe-pye Weed (*Eupatorium maculatum*), Blue Flag Iris (*Iris versicolor*), Cardinal Flower (*Lobelia cardinalis*), Monkey Flower (*Mimulus ringens*) and Blue Vervain (*Verbana hastata*).

Source: New England Wetlands Plants, Inc. (2007/2008)

Table 3 Wetland Compensation Site Shrub Plantings Above Elevation 119

Common Name	Botanical Name	Wetland Indicator Status	Estimated Quantity
Gray Dogwood	*Cornus racemosa*	FAC	6
Hazlenut	*Corylus Americana*	FACU-	6
Bayberry	*Myrica pensylvanica*	FAC	6
Staghorn Sumac	*Rhus typhina*	UPL	6
Meadowsweet	*Spiraea alba*	FAC+	6
Nannyberry	*Viburnum lentago*	FAC	6
TOTAL			**36**

Table 4 New England Conservation/Wildlife Mix (or equivalent) Above Elevation 119

The New England Conservation/Wildlife Mix provides a permanent cover of grasses, wildflowers and legumes to provide both erosion control and wildlife habitat value. This mix is designed to produce a low-maintenance cover, and is an appropriate application for cut and fill slopes, detention basins, and disturbed areas adjacent to commercial and residential projects.

Application Rate: 1lb/1,743 sf - 25 lbs/acre
Cost: $125.00/lb.

Species: Big Bluestem (*Andropogon gerardii*), Fringed Brome Grass (*Bromus ciliatus*), Creeping Red Fescue (*Festuca rubra*), Canada Wild Rye (*Elymus canadensis*), Virginia Wild Rye (*Elymus virginicus*), Switchgrass (*Panicum virgatum*), Deer Tongue (*Panicum clandestinum*), Little Bluestem (*Schizachyrium scoparium*), Indian Grass (*Sorghastrum nutans*), Common Milkweed (*Asclepias syriaca*), New England Aster (*Aster novae-angilae*), Partridge Pea (*Chamaecrista fasciculata*), Showy Tick-Trefoil (*Desmodium canadense*), Grass Leaved Goldenrod (*Euthamia graminifolia*) and Gray Goldenrod (*Solidago nemoralis*).

Source: New England Wetlands Plants, Inc. (2007/2008)

LEGEND

SHRUBS/NEW ENGLAND WETMIX (OR EQUIVALENT)

SHRUBS/NEW ENGLAND CONSERVATION/WILDLIFE MIX (OR EQUIVALENT)

PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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Transportation Engineers & Planners

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DESIGNED BY	LSA
DRAWN BY	LSA
CHECKED BY	FLD
DATE	DECEMBER 2008
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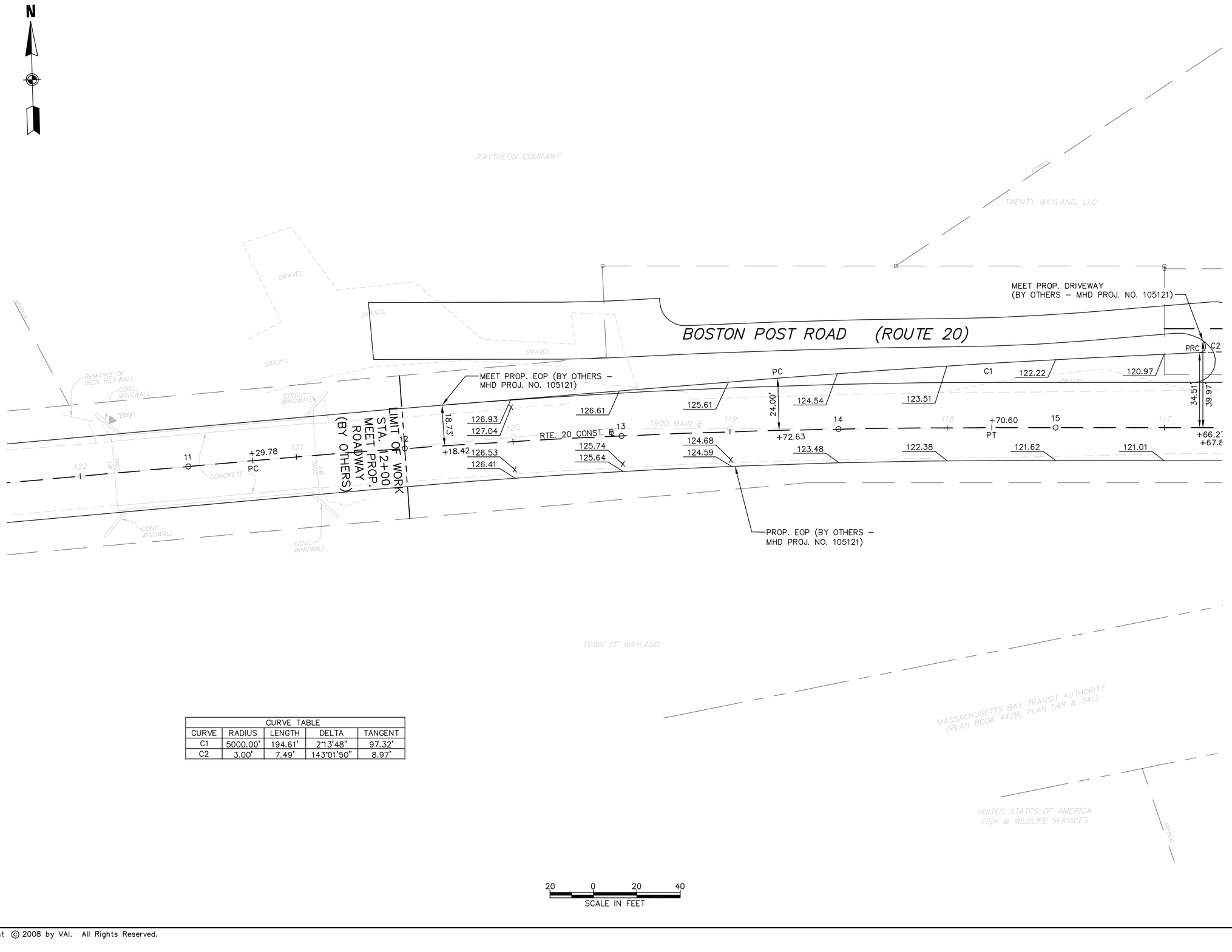
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Wetland Replication & Flood Storage Compensation Plan

SHEET 20 OF 81	DRAWING NUMBER
JOB NO. 5139	**20**
CAD 5139REPLv3	

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CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C1	5000.00'	194.61'	2°13'48"	97.32'
C2	3.00'	7.49'	143°01'50"	8.97'

PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

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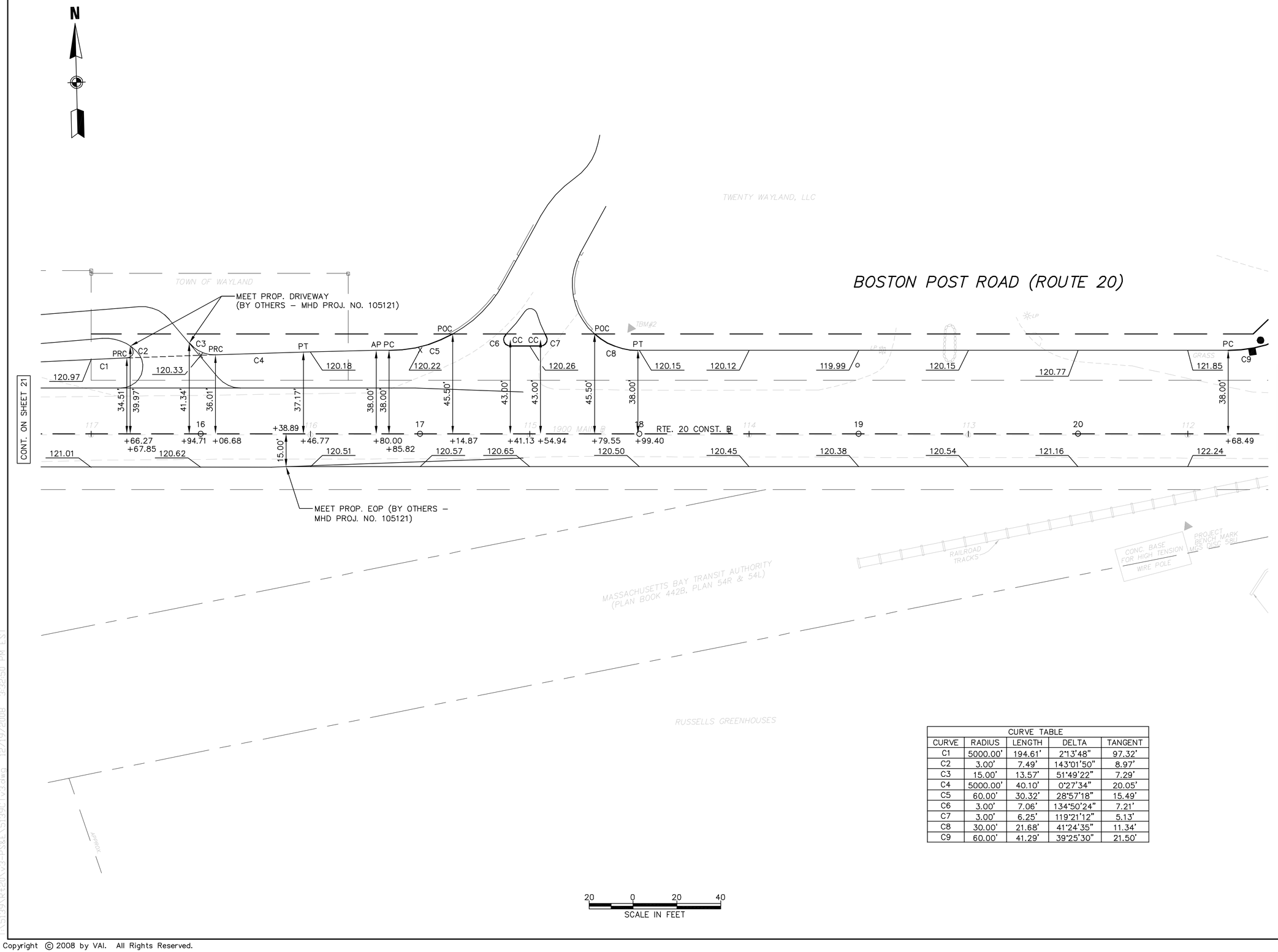
DRAWING TITLE

Curb Tie & Grading Plan

SHEET 21 OF 81	DRAWING NUMBER **21**
JOB NO. 5139	
CAD 5139CTv3	

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CURVE TABLE				
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C2	3.00'	7.49'	143°01'50"	8.97'
C3	15.00'	13.57'	51°49'22"	7.29'
C4	5000.00'	40.10'	0°27'34"	20.05'
C5	60.00'	30.32'	28°57'18"	15.49'
C6	3.00'	7.06'	134°50'24"	7.21'
C7	3.00'	6.25'	119°21'12"	5.13'
C8	30.00'	21.68'	41°24'35"	11.34'
C9	60.00'	41.29'	39°25'30"	21.50'

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

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Transportation Engineers & Planners

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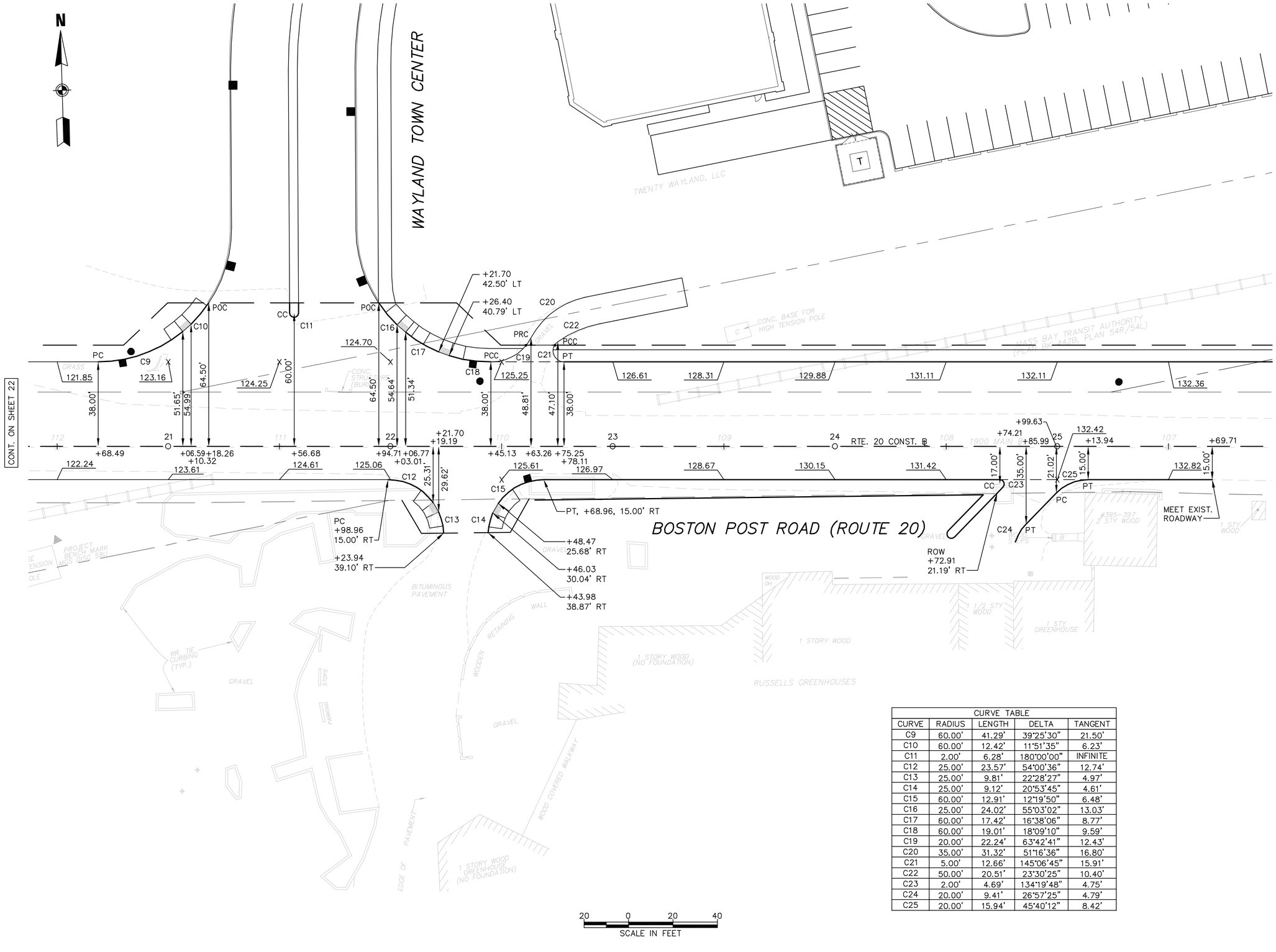
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 22 OF 81	DRAWING NUMBER 22
JOB NO. 5139	
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C9	60.00'	41.29'	39°25'30"	21.50'
C10	60.00'	12.42'	11°51'35"	6.23'
C11	2.00'	6.28'	180°00'00"	INFINITE
C12	25.00'	23.57'	54°00'36"	12.74'
C13	25.00'	9.81'	22°28'27"	4.97'
C14	25.00'	9.12'	20°53'45"	4.61'
C15	60.00'	12.91'	12°19'50"	6.48'
C16	25.00'	24.02'	55°03'02"	13.03'
C17	60.00'	17.42'	16°38'06"	8.77'
C18	60.00'	19.01'	18°09'10"	9.59'
C19	20.00'	22.24'	63°42'41"	12.43'
C20	35.00'	31.32'	51°16'36"	16.80'
C21	5.00'	12.66'	145°06'45"	15.91'
C22	50.00'	20.51'	23°30'25"	10.40'
C23	2.00'	4.69'	134°19'48"	4.75'
C24	20.00'	9.41'	26°57'25"	4.79'
C25	20.00'	15.94'	45°40'12"	8.42'

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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810-1066
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FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437-4601
FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 20'
STAMP	

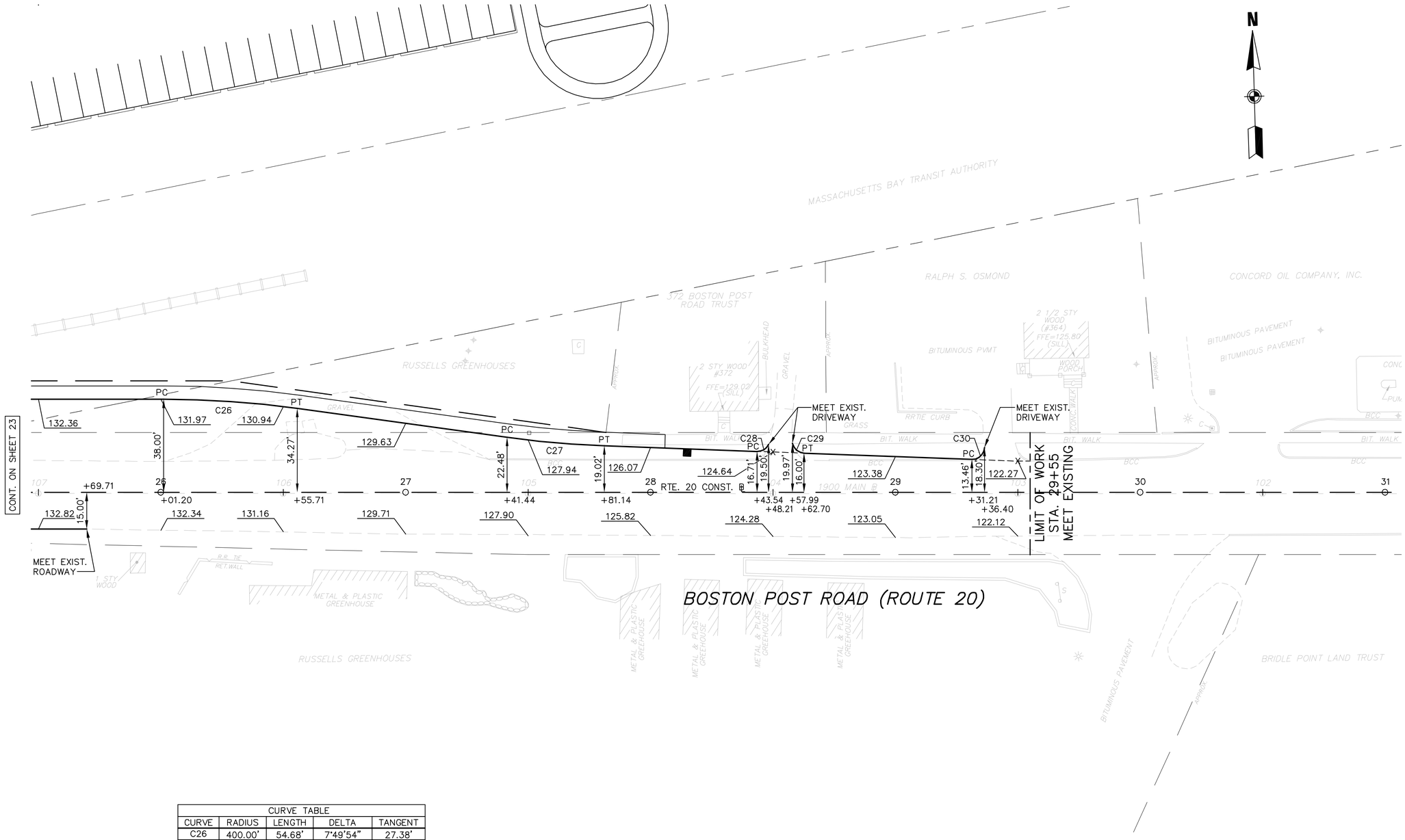
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 23 OF 81	DRAWING NUMBER
JOB NO. 5139	23
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C26	400.00'	54.68'	7°49'54"	27.38'
C27	400.00'	39.87'	5°42'38"	19.95'
C28	5.00'	5.76'	65°58'51"	3.25'
C29	5.00'	6.63'	75°59'11"	3.91'
C30	5.00'	7.88'	90°19'14"	5.03'

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SCALE IN FEET

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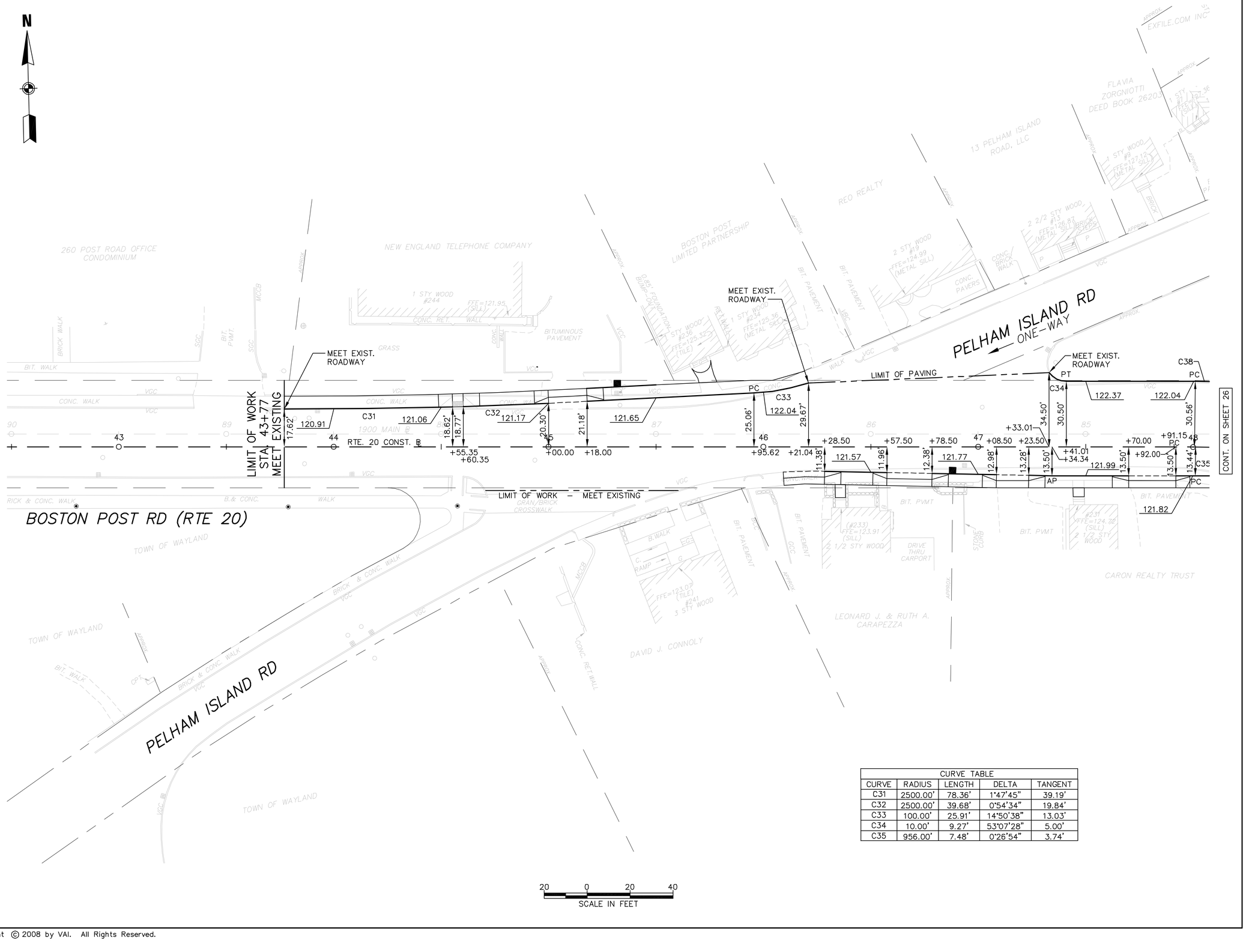
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 24 OF 81	DRAWING NUMBER 24
JOB NO. 5139	
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C31	2500.00'	78.36'	1°47'45"	39.19'
C32	2500.00'	39.68'	0°54'34"	19.84'
C33	100.00'	25.91'	14°50'38"	13.03'
C34	10.00'	9.27'	53°07'28"	5.00'
C35	956.00'	7.48'	0°26'54"	3.74'

PROJECT TITLE

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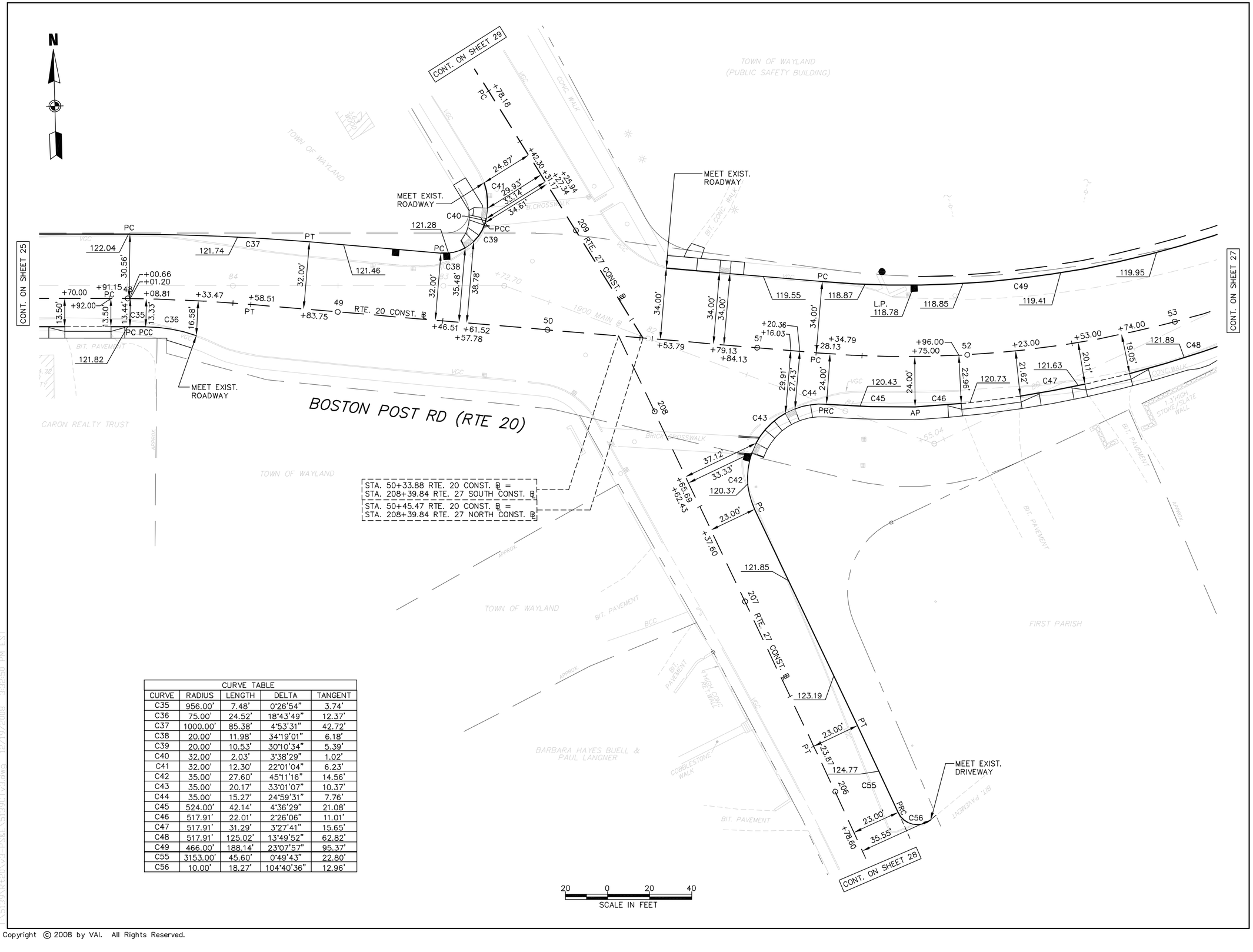
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Curb Tie & Grading Plan

SHEET 25 OF 81	DRAWING NUMBER 25
JOB NO. 5139	
CAD 5139CTv3	

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CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C35	956.00'	7.48'	0°26'54"	3.74'
C36	75.00'	24.52'	18°43'49"	12.37'
C37	1000.00'	85.38'	4°53'31"	42.72'
C38	20.00'	11.98'	34°19'01"	6.18'
C39	20.00'	10.53'	30°10'34"	5.39'
C40	32.00'	2.03'	3°38'29"	1.02'
C41	32.00'	12.30'	22°01'04"	6.23'
C42	35.00'	27.60'	45°11'16"	14.56'
C43	35.00'	20.17'	33°01'07"	10.37'
C44	35.00'	15.27'	24°59'31"	7.76'
C45	524.00'	42.14'	4°36'29"	21.08'
C46	517.91'	22.01'	2°26'06"	11.01'
C47	517.91'	31.29'	3°27'41"	15.65'
C48	517.91'	125.02'	13°49'52"	62.82'
C49	466.00'	188.14'	23°07'57"	95.37'
C55	3153.00'	45.60'	0°49'43"	22.80'
C56	10.00'	18.27'	104°40'36"	12.96'

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PROJECT TITLE

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Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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Transportation Engineers & Planners

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DESIGNED BY	JAR
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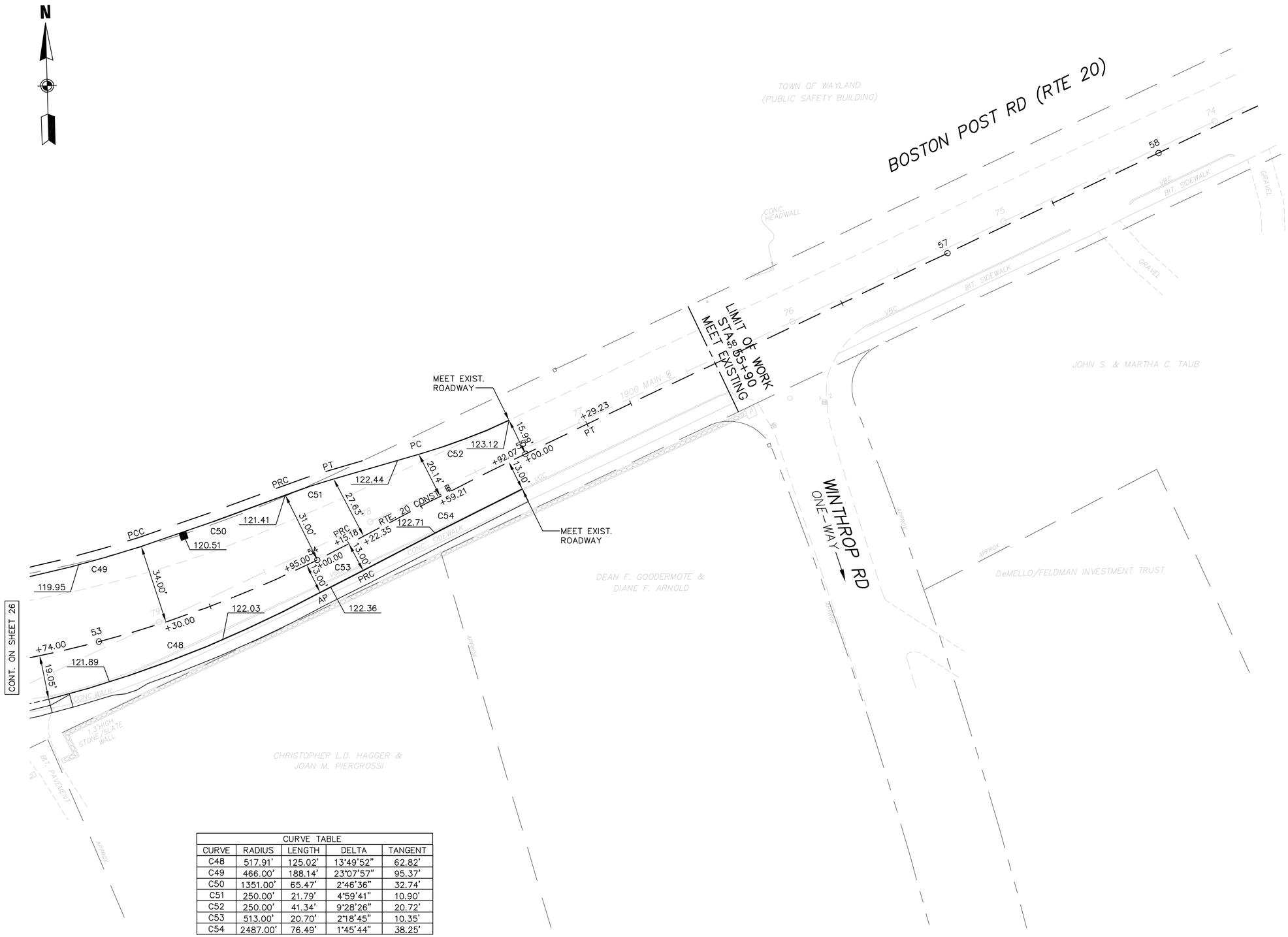
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 26 OF 81	DRAWING NUMBER 26
JOB NO. 5139	
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C48	517.91'	125.02'	13°49'52"	62.82'
C49	466.00'	188.14'	23°07'57"	95.37'
C50	1351.00'	65.47'	2°46'36"	32.74'
C51	250.00'	21.79'	4°59'41"	10.90'
C52	250.00'	41.34'	9°28'26"	20.72'
C53	513.00'	20.70'	2°18'45"	10.35'
C54	2487.00'	76.49'	1°45'44"	38.25'

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PROJECT TITLE

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Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

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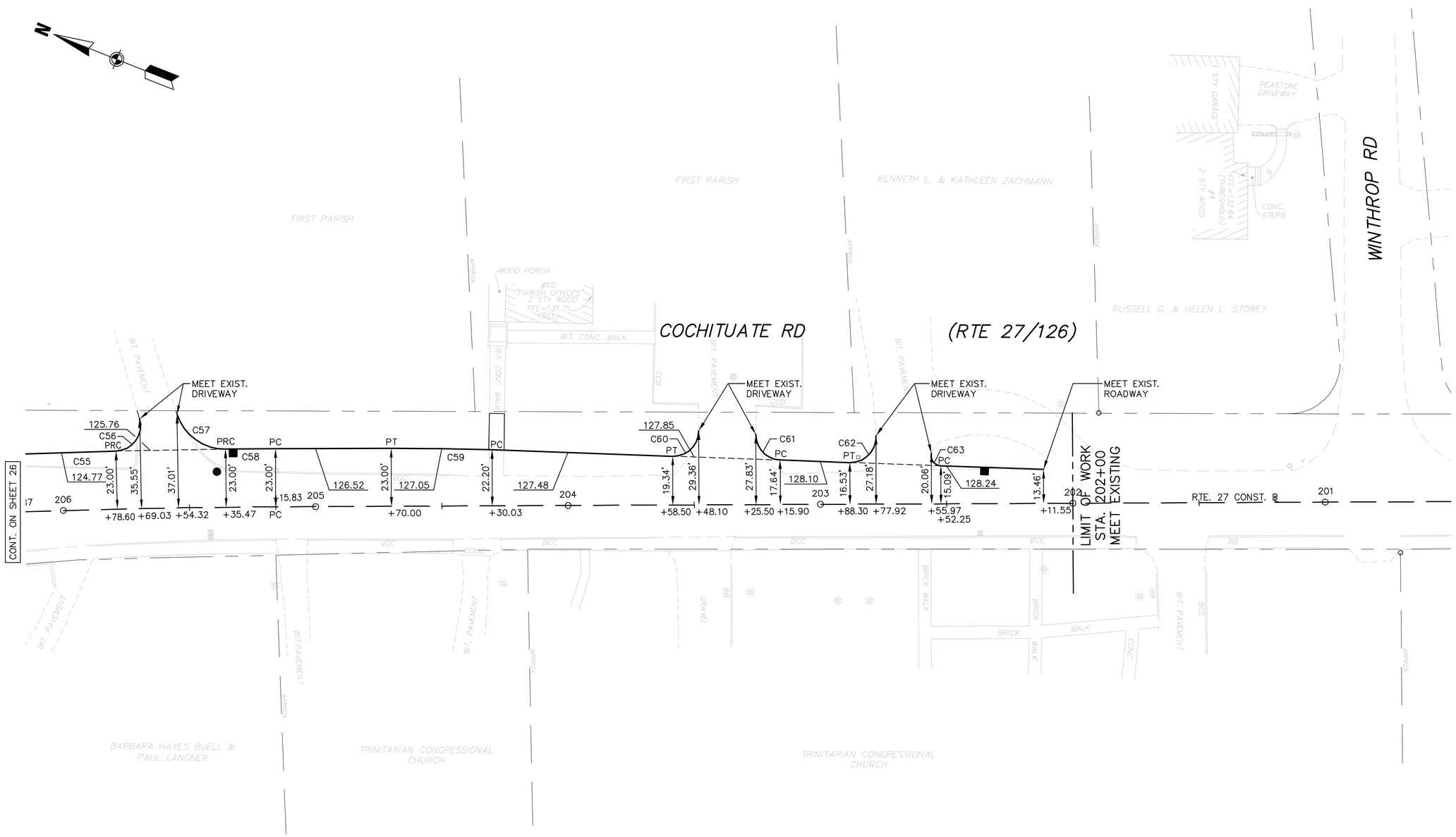
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 27 OF 81	DRAWING NUMBER
JOB NO. 5139	27
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C55	3153.00'	45.60'	0°49'43"	22.80'
C56	10.00'	18.27'	104°40'36"	12.96'
C57	20.00'	25.27'	72°23'29"	14.64'
C58	3153.00'	19.78'	0°21'34"	9.89'
C59	1000.00'	39.98'	2°17'26"	19.99'
C60	10.00'	16.14'	92°28'44"	10.44'
C61	10.00'	15.51'	88°52'43"	9.81'
C62	10.00'	16.76'	96°02'27"	11.11'
C63	4.00'	7.11'	101°48'51"	4.92'

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

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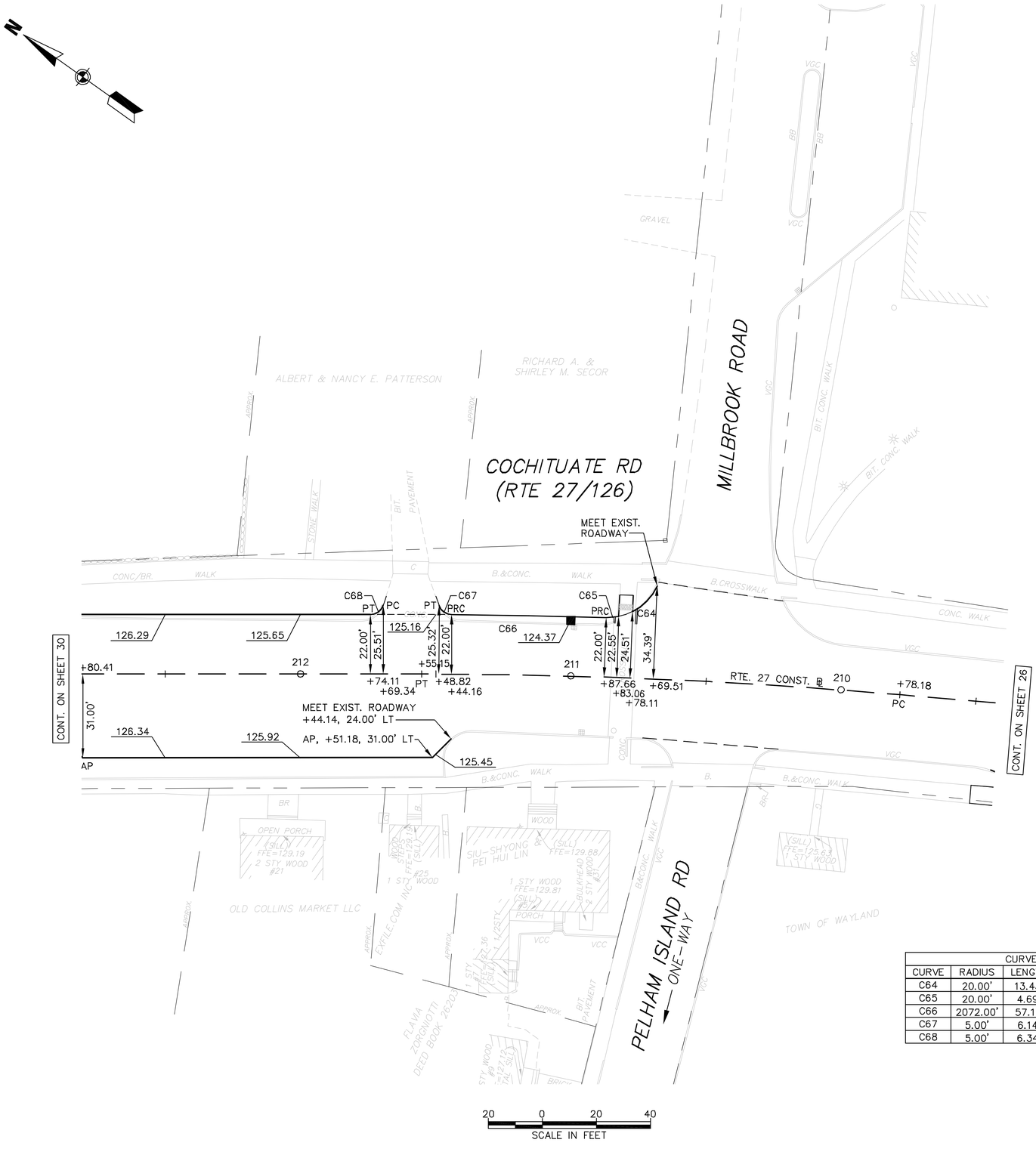
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Curb Tie & Grading Plan

SHEET 28 OF 81	DRAWING NUMBER 28
JOB NO. 5139	
CAD 5139CTv3	



CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C64	20.00'	13.43'	38°28'05"	6.98'
C65	20.00'	4.69'	13°26'43"	2.36'
C66	2072.00'	57.11'	1°34'45"	28.56'
C67	5.00'	6.14'	70°19'56"	3.52'
C68	5.00'	6.34'	72°36'48"	3.67'

PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DATE	DECEMBER 2008
SCALE	1" = 20'
STAMP	

REVISIONS

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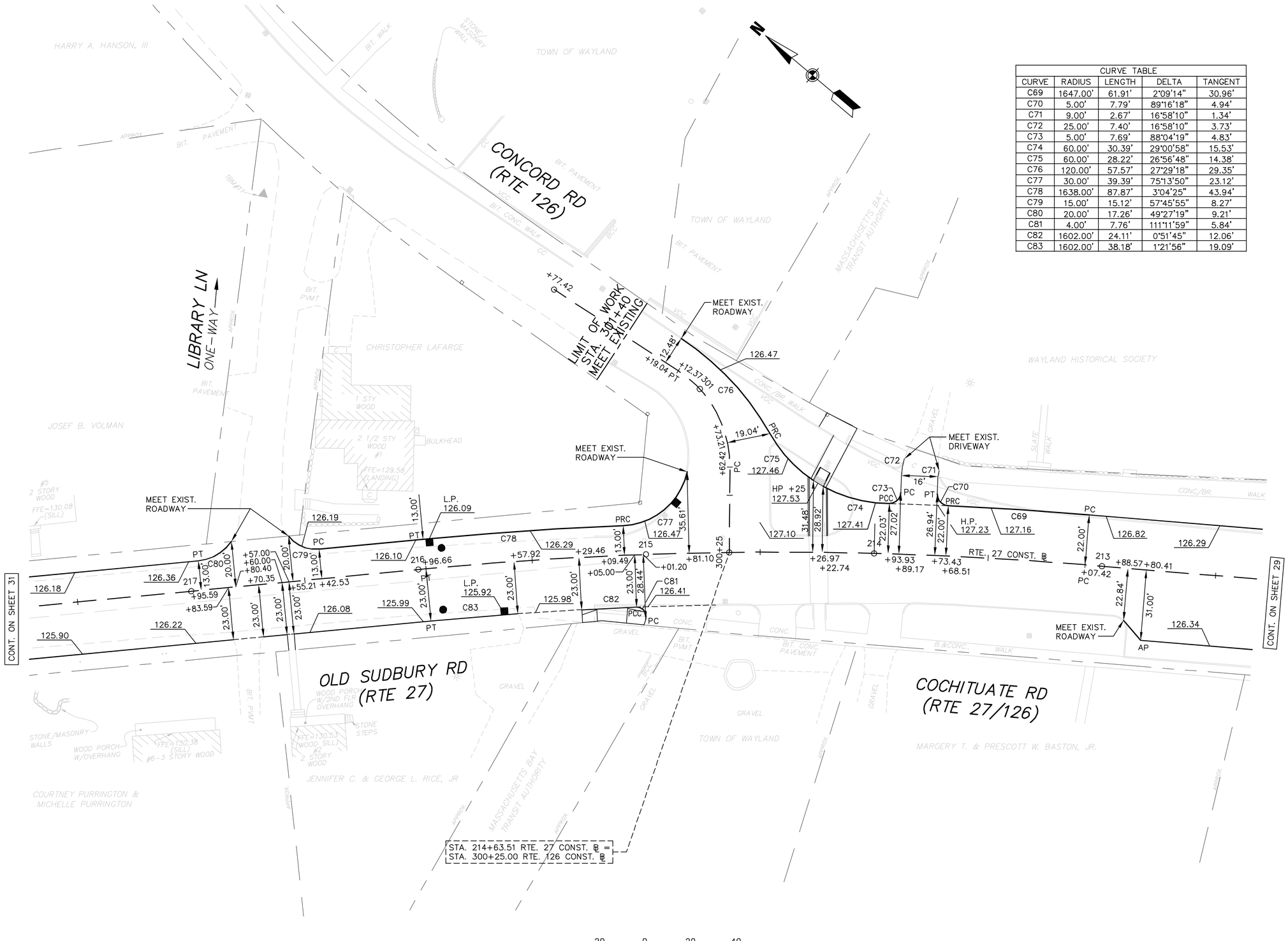
DRAWING TITLE

Curb Tie & Grading Plan

SHEET 29 OF 81	DRAWING NUMBER 29
JOB NO. 5139	
CAD 5139CTv3	

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CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C69	1647.00'	61.91'	2°09'14"	30.96'
C70	5.00'	7.79'	89°16'18"	4.94'
C71	9.00'	2.67'	16°58'10"	1.34'
C72	25.00'	7.40'	16°58'10"	3.73'
C73	5.00'	7.69'	88°04'19"	4.83'
C74	60.00'	30.39'	29°00'58"	15.53'
C75	60.00'	28.22'	26°56'48"	14.38'
C76	120.00'	57.57'	27°29'18"	29.35'
C77	30.00'	39.39'	75°13'50"	23.12'
C78	1638.00'	87.87'	3°04'25"	43.94'
C79	15.00'	15.12'	57°45'55"	8.27'
C80	20.00'	17.26'	49°27'19"	9.21'
C81	4.00'	7.76'	111°11'59"	5.84'
C82	1602.00'	24.11'	0°51'45"	12.06'
C83	1602.00'	38.18'	1°21'56"	19.09'

PROJECT TITLE

Wayland Town Center Off-Site Improvements

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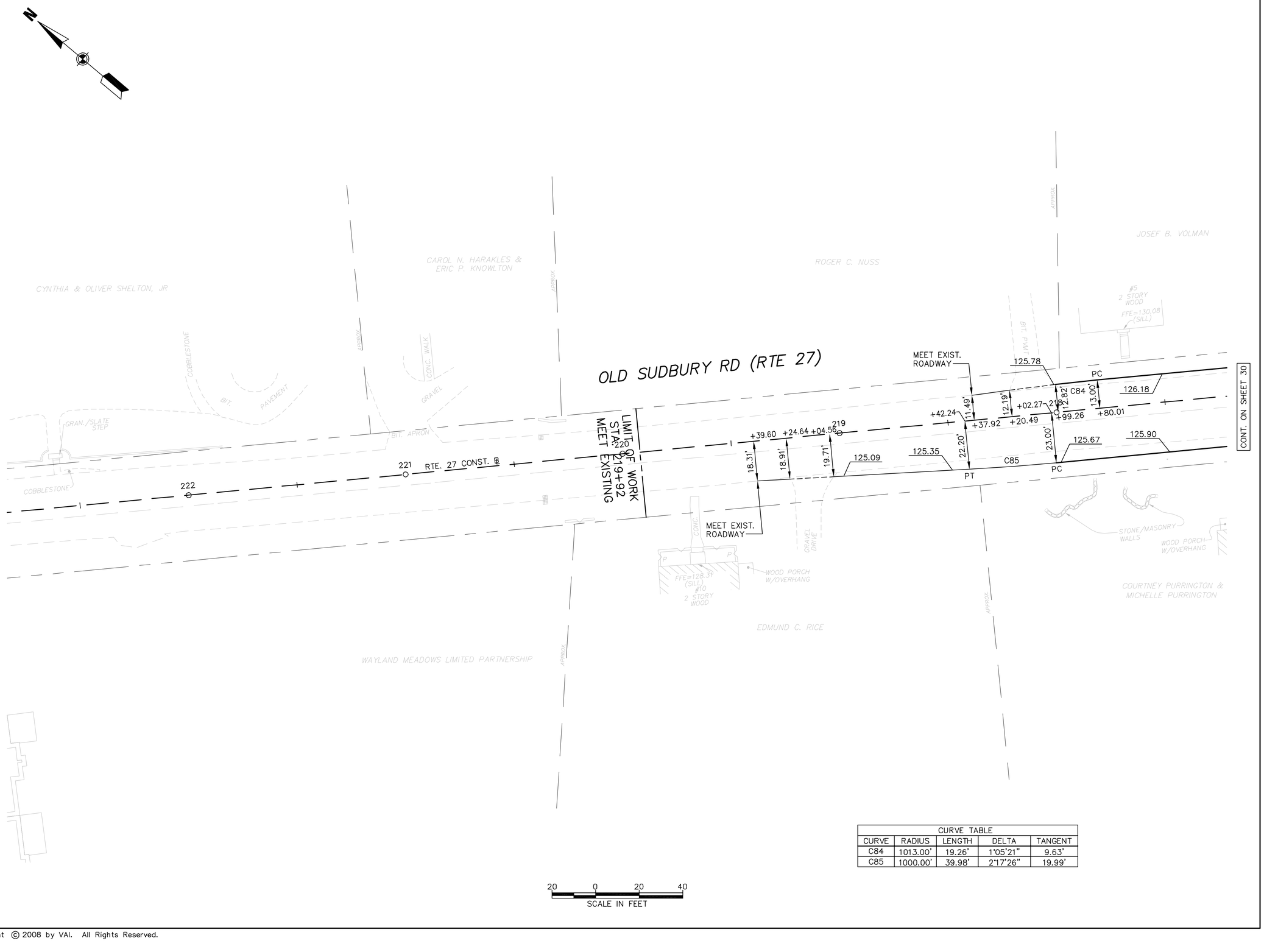
DRAWING TITLE

Curb Tie & Grading Plan

SHEET 30 OF 81	DRAWING NUMBER
JOB NO. 5139	30
CAD 5139CTv3	

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CURVE TABLE				
CURVE	RADIUS	LENGTH	DELTA	TANGENT
C84	1013.00'	19.26'	1°05'21"	9.63'
C85	1000.00'	39.98'	2°17'26"	19.99'

PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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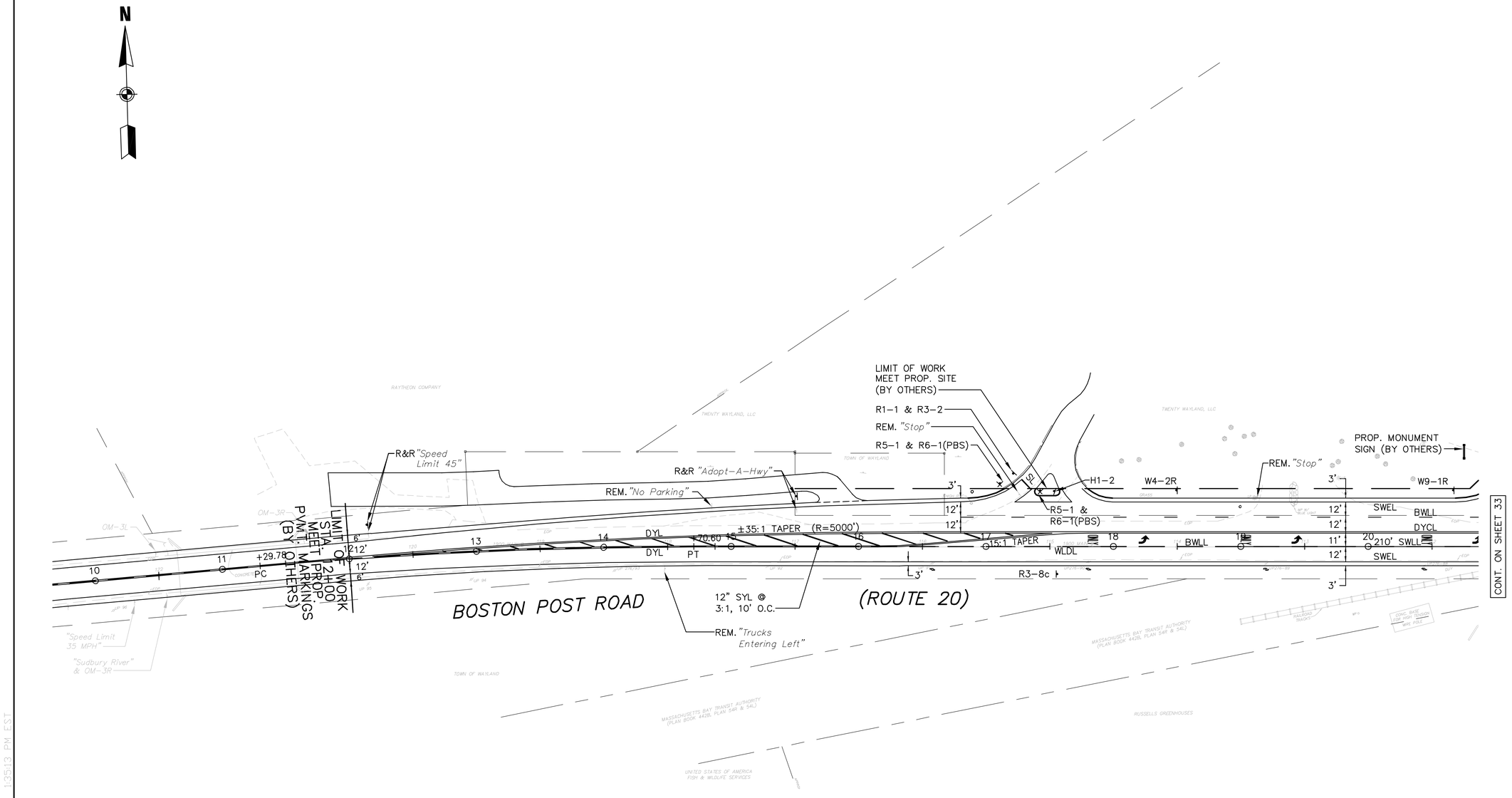
DRAWING TITLE

Curb Tie & Grading Plan

SHEET 31 OF 81	DRAWING NUMBER 31
JOB NO. 5139	
CAD 5139CTv3	

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PROJECT TITLE

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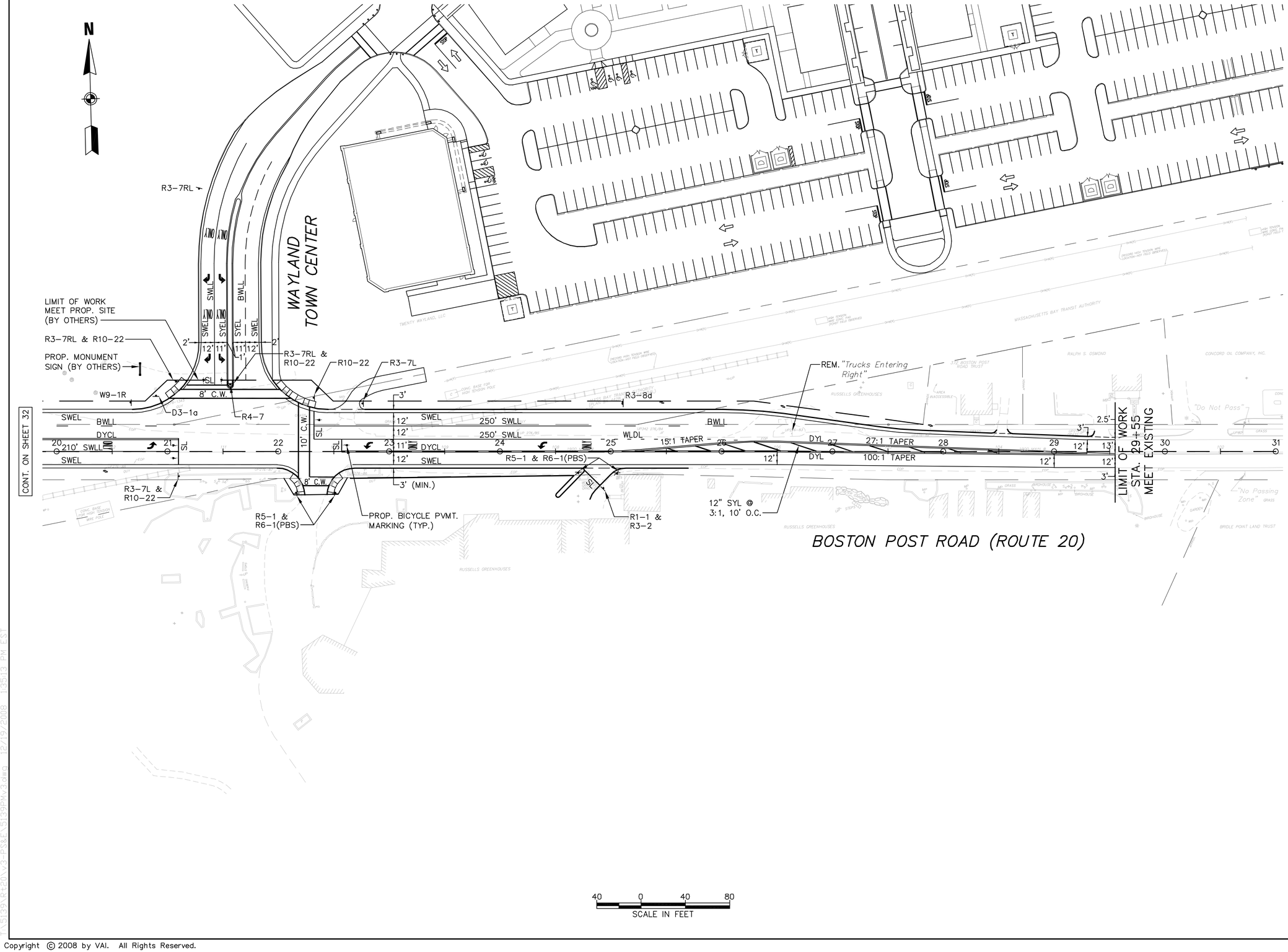
DRAWING TITLE

Pavement Marking & Signing Plan

SHEET 32 OF 81	DRAWING NUMBER 32
JOB NO. 5139	
CAD 5139PMv3	

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PROJECT TITLE

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DATE	DECEMBER 2008
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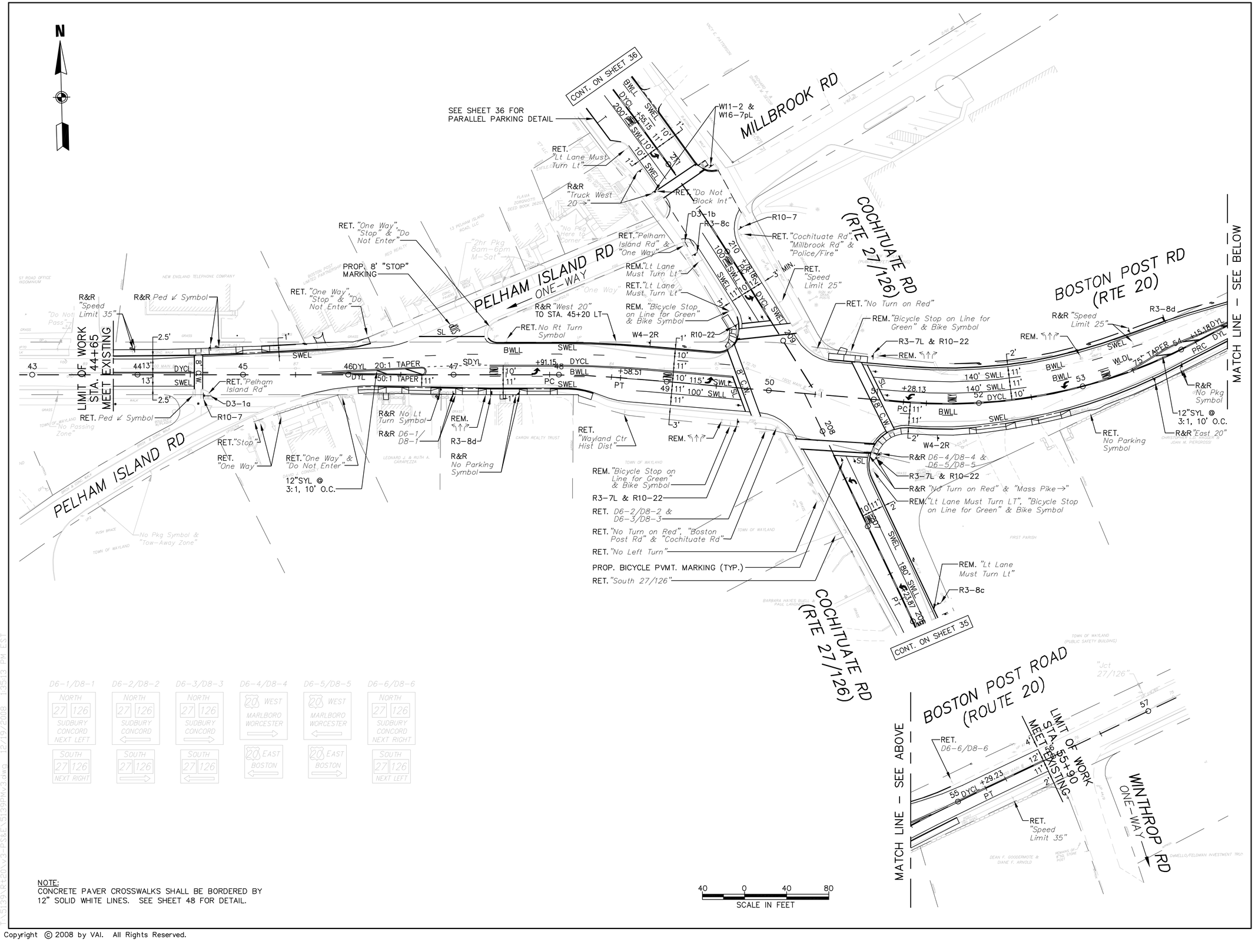
DRAWING TITLE

Pavement Marking & Signing Plan

SHEET 33 OF 81	DRAWING NUMBER 33
JOB NO. 5139	
CAD 5139PMv3	

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NOTE:
CONCRETE PAVER CROSSWALKS SHALL BE BORDERED BY 12" SOLID WHITE LINES. SEE SHEET 48 FOR DETAIL.

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STAMP	

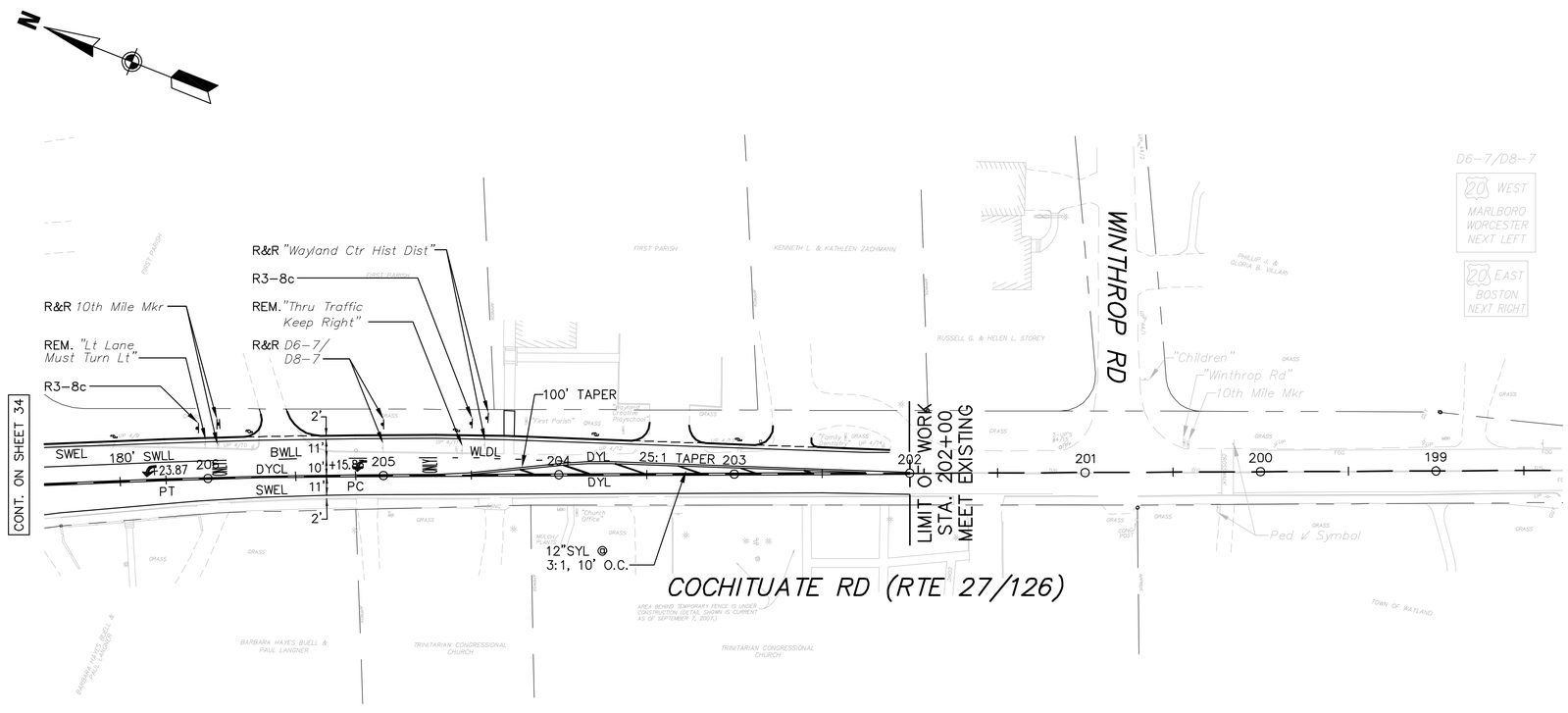
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Pavement Marking & Signing Plan

SHEET 34 OF 81	DRAWING NUMBER 34
JOB NO. 5139	
CAD 5139PMv3	



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PROJECT TITLE

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Wayland, Massachusetts

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Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810-1066
TEL: (978) 474-8800
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FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
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TEL: (239) 437-4601
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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 40'
STAMP	

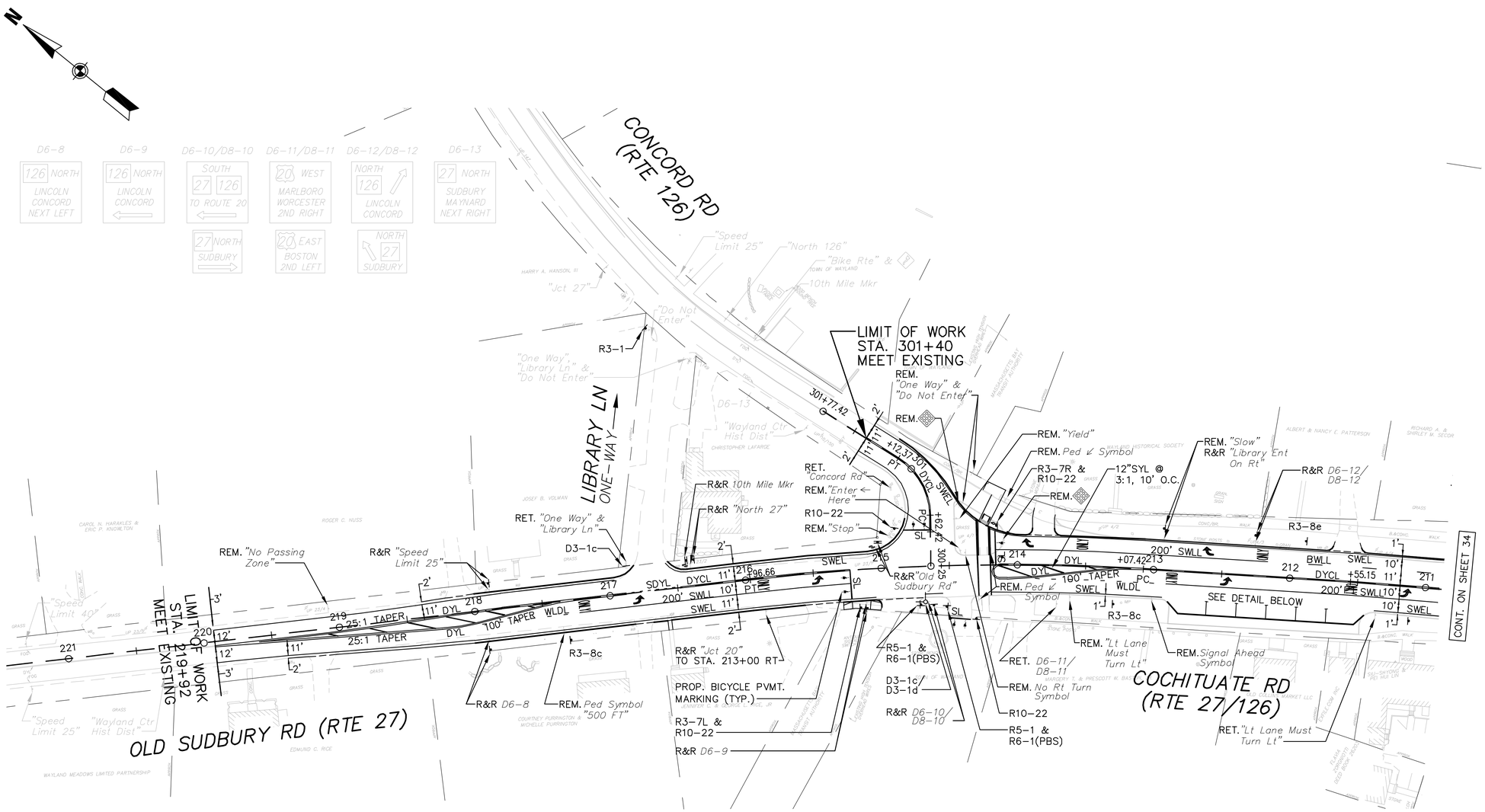
REVISIONS

NO.	DESCRIPTION	DATE

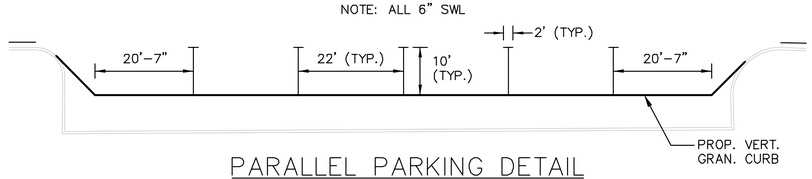
DRAWING TITLE

Pavement Marking & Signing Plan

SHEET 35 OF 81	DRAWING NUMBER
JOB NO. 5139	35
CAD 5139PMv3	



NOTE: ALL 6" SWL



PARALLEL PARKING DETAIL

SCALE 1" = 15'

NOTE:
CONCRETE PAVER CROSSWALKS SHALL BE BORDERED BY 12" SOLID WHITE LINES. SEE SHEET 48 FOR DETAIL.

40 0 40 80
SCALE IN FEET

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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

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DRAWING TITLE

Pavement Marking &
Signing Plan

SHEET 36 OF 81	DRAWING NUMBER
JOB NO. 5139	36
CAD 5139PMv3	

PROPOSED SIGN SUMMARY – ROUTE 20 @ SITE DRIVE

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCH) LETTER HEIGHT	TEXT DIMENSIONS (INCH) VERTICAL SPACING	TEXT DIMENSIONS (INCH) RTE. MKR. ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST TYPE AND NUMBER REQUIRED	AREA PER SIGN	TOTAL AREA IN SQUARE FEET
D3–1a	54"	12"	BOSTON POST RD PRINTED BOTH SIDES	6"B/4"B	3" 3"		1	GREEN	WHITE	WHITE	P–5 1	4.50	4.50
H1–2	24"	24"		MHD STANDARD			1	YELLOW	9 AMBER REFL.		P–5 1	4.00	4.00
R1–1	30"	30"	STOP	SEE FHWA STANDARD HIGHWAY SIGNS 2004 EDITION			2	RED	WHITE	WHITE	P–5 2	5.18	10.36
R3–2	24"	24"					2	WHITE	RED/ BLACK	BLACK	MOUNT W/ R1–1	4.00	8.00
R3–7L	30"	30"	LEFT LANE MUST TURN LEFT				2	WHITE	BLACK	BLACK	P–5 2	6.25	12.50
R3–7RL	30"	30"	ONLY ONLY	MHD STANDARD			3	WHITE	BLACK	BLACK	P–5 3	6.25	18.75
R3–8c	36"	30"	ONLY	SEE FHWA STANDARD HIGHWAY SIGNS 2004 EDITION			1	WHITE	BLACK	BLACK	P–5 1	7.50	7.50
R3–8d	48"	30"	ONLY				1	WHITE	BLACK	BLACK	P–5 2	10.00	10.00
R4–7	24"	30"					1	WHITE	BLACK	BLACK	P–5 1	5.00	5.00
R5–1	30"	30"	DO NOT ENTER				6	WHITE	RED/ WHITE	–	P–5 6	6.25	37.50
R6–1 (PBS)	36"	12"	ONE WAY ONE WAY				6	BLACK	BLACK/ WHITE	WHITE	MOUNT ABOVE R5–1	3.00	18.00
R10–12	30"	36"	LEFT TURN YIELD ON GREEN				1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50
R10–22	18"	24"	TO REQUEST GREEN WAIT ON	MHD STANDARD			5	WHITE	BLACK	BLACK	MOUNT W/ OTHER SIGNS	3.00	15.00
W4–2R	36"	36"		SEE FHWA STANDARD HIGHWAY SIGNS 2004 EDITION			1	YELLOW	BLACK	BLACK	P–5 1	9.00	9.00
W9–1R	36"	36"	RIGHT LANE ENDS				1	YELLOW	BLACK	BLACK	P–5 1	9.00	9.00

PROPOSED SIGN SUMMARY – ROUTE 20 @ ROUTE 27/126

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS (INCH) LETTER HEIGHT	TEXT DIMENSIONS (INCH) VERTICAL SPACING	TEXT DIMENSIONS (INCH) RTE. MKR. ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST TYPE AND NUMBER REQUIRED	AREA PER SIGN	TOTAL AREA IN SQUARE FEET
D3–1a	54"	12"	BOSTON POST RD PRINTED BOTH SIDES	6"B/4"B	3" 3"		1	GREEN	WHITE	WHITE	MOUNT W/ EXIST. D3	4.50	4.50
D3–1b	54"	12"	COCHITUATE RD PRINTED BOTH SIDES	6"C/4"C	3" 3"		1	GREEN	WHITE	WHITE	MOUNT W/ EXIST. D3	4.50	4.50
D3–1c	54"	12"	OLD SUDBURY RD PRINTED BOTH SIDES	6"B/4"B	3" 3"		2	GREEN	WHITE	WHITE	MOUNT 1 W/ EXIST. D3 MOUNT 1 ON MAST ARM POLE	4.50	9.00
D3–1d	48"	12"	CONCORD RD PRINTED BOTH SIDES	6"C/4"C	3" 3"		1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM POLE	4.00	4.00
R3–1	24"	24"		SEE FHWA STANDARD HIGHWAY SIGNS 2004 EDITION			1	WHITE	RED/ BLACK	BLACK	P–5 1	4.00	4.00
R3–7L	30"	30"	LEFT LANE MUST TURN LEFT				4	WHITE	BLACK	BLACK	P–5 4	6.25	25.00
R3–7R	30"	30"	RIGHT LANE MUST TURN RIGHT				1	WHITE	BLACK	BLACK	P–5 1	6.25	6.25
R3–8c	36"	30"	ONLY				5	WHITE	BLACK	BLACK	P–5 5	7.50	37.50
R3–8d	48"	30"	ONLY				2	WHITE	BLACK	BLACK	P–5 4	10.00	20.00
R3–8e	36"	30"	ONLY				1	WHITE	BLACK	BLACK	P–5 1	7.50	7.50
R5–1	30"	30"	DO NOT ENTER				2	WHITE	RED/ WHITE	–	P–5 2	6.25	12.50
R6–1 (PBS)	36"	12"	ONE WAY ONE WAY				2	BLACK	BLACK/ WHITE	WHITE	MOUNT ABOVE R5–1	3.00	6.00
R10–7	24"	30"	DO NOT BLOCK INTERSECTION				2	WHITE	BLACK	BLACK	P–5 2	5.00	10.00
R10–12	30"	36"	LEFT TURN YIELD ON GREEN				1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50
R10–22	18"	24"	TO REQUEST GREEN WAIT ON	MHD STANDARD			8	WHITE	BLACK	BLACK	P–5 3 MOUNT 5 W/ OTHER SIGNS	3.00	24.00
W4–2R	36"	36"		SEE FHWA STANDARD HIGHWAY SIGNS 2004 EDITION			2	YELLOW	BLACK	BLACK	P–5 2	9.00	18.00
W11–2	30"	30"					2	YELLOW	BLACK	BLACK	P–5 2	6.25	12.50
W16–7pL	24"	12"					2	YELLOW	BLACK	BLACK	MOUNT W/ W11–2	2.00	4.00

PROJECT TITLE

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Wayland, Massachusetts

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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	N.T.S.
STAMP	

REVISIONS

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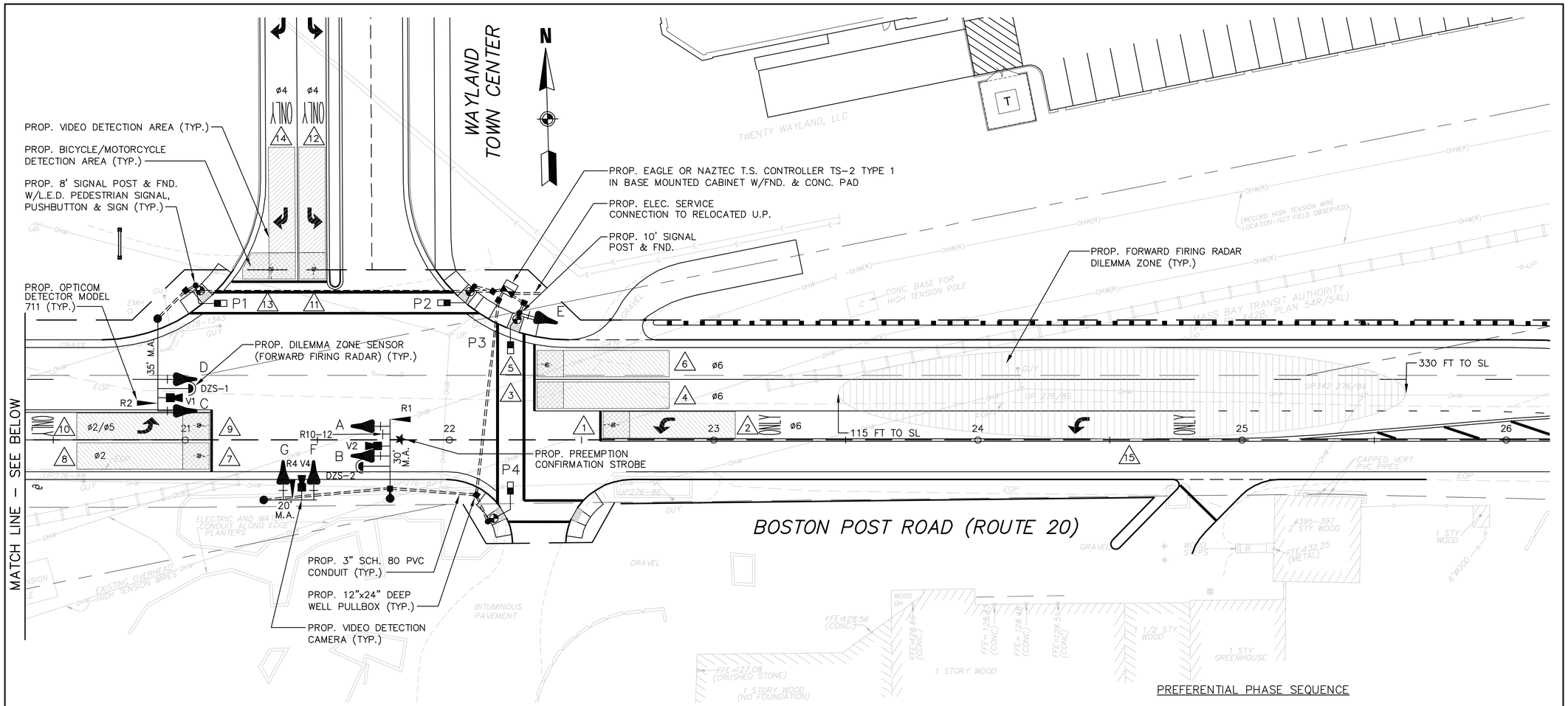
DRAWING TITLE

Sign Summary Sheet

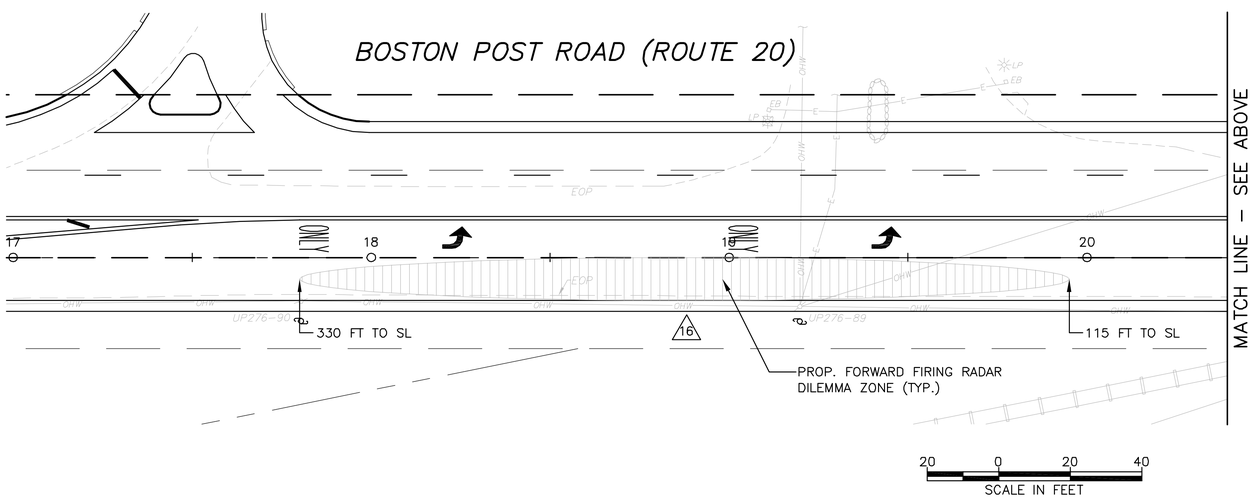
SHEET 37 OF 81	DRAWING NUMBER 37
JOB NO. 5139	
CAD 5139PMv3	

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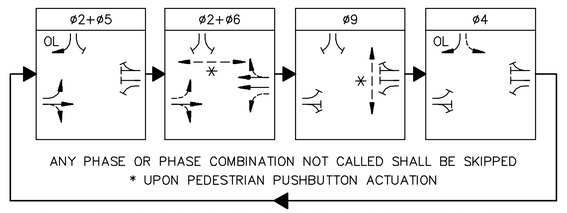
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NOTE: AN ADDITIONAL 3-SECTION SIGNAL HEAD WITH BACKPLATE, POST-MOUNTED ON THE SOUTHEAST (30') MAST ARM, SHALL BE INCLUDED IN STRUCTURAL DESIGN CALCULATIONS FOR POSSIBLE FUTURE INSTALLATION.

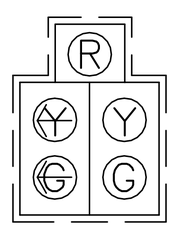
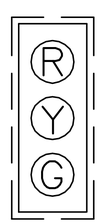
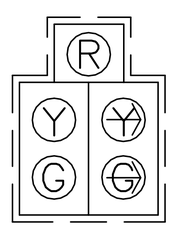


PREFERENTIAL PHASE SEQUENCE



PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

PROPOSED SIGNAL HEAD DATA

A	B,C,D,E,F	G	P1-P4
			
12" L.E.D. W/ 5" LOUVERED BACKPLATE			16" HOUSING L.E.D.

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Wayland, Massachusetts

PREPARED FOR

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Boston, Massachusetts

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DRAWN BY	JAR
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DATE	DECEMBER 2008
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REVISIONS

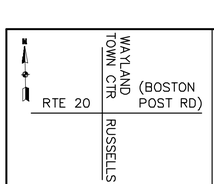
NO.	DESCRIPTION	DATE

DRAWING TITLE

Traffic Signal Plan

Rte. 20 at Wayland Town Center & Russells Drive

SHEET 38 OF 81	DRAWING NUMBER 38
JOB NO. 5139	
CAD 5139TSv3	



ROUTE 20
(BOSTON POST RD)
AT WAYLAND TOWN CENTER &
RUSSELLS DRIVE

WAYLAND, MA

SEQUENCE AND TIMING CHART

	EB			SB		EBLT	WB			N/S PED	
	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	EMERGENCY FLASH OPERATION
	NOT USED		NOT USED	OL	OL	*	NOT USED	NOT USED	*	

SEQUENCE AND TIMING

APPROACH	DIRECTION	FACE	ø/ø	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	
RTE 20 (BOSTON POST RD)	EBLT	A	2/5				G	Y	R				R	R	R	~~G~~/R	~~Y~~/R	R	R	R	R							R	R	R	FY
RTE 20 (BOSTON POST RD)	EB	B	2				G	Y	R				R	R	R	R	R	R	R	R	R							R	R	R	FY
RTE 20 (BOSTON POST RD)	WB	C,D,E	6				R	R	R				R	R	R	R	R	R	G	Y	R							R	R	R	FY
WAYLAND TOWN CENTER	SB	F	4				R	R	R				G	Y	R	R	R	R	R	R	R							R	R	R	FR
WAYLAND TOWN CENTER	SBRT	G	4/5				R	R	R				G/~~G~~	Y/~~Y~~	R	R/~~G~~	R/~~Y~~	R	R	R	R							R	R	R	FR
PEDESTRIAN	E/W	P1–P2	6				DW	DW	DW				DW	DW	DW	DW	DW	DW	W	FDW	DW							DW	DW	DW	OUT
PEDESTRIAN	N/S	P3–P4	9				DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW							W	FDW	DW	OUT

TIMING IN SECONDS

MINIMUM GREEN				20						6			6			20												
VEHICLE INTERVAL				3						3			3			3												
MAXIMUM GREEN I (FREE OPERATION)				40						30			20			40												
MAXIMUM GREEN II (DURING TIMING PLANS) (SEE NOTE 2)																													
YELLOW CLEAR					4.0						3.0			4.0			4.0												
ALL RED CLEAR						2.0						2.0			2.0			2.0											1
WALK INTERVAL										6						6											6		
PED. CLEARANCE											15						25											17	
DETECTOR				NON–LOCK						NON–LOCK			NON–LOCK			NON–LOCK											LOCK		
RECALL				SOFT						OFF			OFF			SOFT											OFF		

TIMING PLAN		MAX. GREEN TIMING																	
DAY	TIME OF DAY	SEC.	SEC.		SEC.		SEC.		SEC.		SEC.		SEC.		SEC.		SEC.		
MON–FRI	6AM–9AM		68				11		20		42								
MON–FRI	3PM–7PM		62				17		18		38								
SAT	10AM–6PM		70				19		22		42								
SUN	10AM–6PM		43				21		10		27								

NOTES: 1. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
2. MAX. GREEN TIMES WITH NO FIXED CYCLE LENGTH OR OFFSET.

DETECTOR DATA

ZONE NUMBER	QTY/SIZE	CAMERA	PHASE	DIRECTION
1	1–10'X10'	V1	6	WBLT
2	1–10'X40'	V1	6	WBLT
3	1–10'X10'	V1	6	WB
4	1–10'X40'	V1	6	WB
5	1–10'X10'	V1	6	WB
6	1–10'X40'	V1	6	WB
7	1–10'X10'	V2	2	EB
8	1–10'X40'	V2	2	EB
9	1–10'X10'	V2	2/5	EBLT
10	1–10'X40'	V2	2/5	EBLT
11	1–10'X10'	V4	4	SBLT
12	1–10'X40'	V4	4	SBLT
13	1–10'X20'	V4	4	SBRT
14	1–10'X40'	V4	4	SBRT
15	1–30'X215'	DZS–1	6	WB
16	1–10'X215'	DZS–2	2	EB

NOTE: ALL DETECTORS SHALL CALL AND EXTEND PHASE(S) SHOWN.

PREEMPTION SEQUENCE

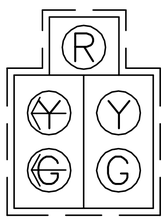
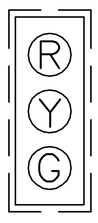
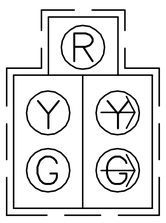
RECEIVER R1 PREEMPT 1	RECEIVER R2 PREEMPT 2	RECEIVER R4 PREEMPT 4
*	*	*
ø6	ø2+ø5	ø4

* HOLD ON INPUT PLUS 6 SECONDS MINIMUM

CONSTRUCTION NOTES:

1. CONTROLLER PROGRAMMING SHALL BE ACCOMPLISHED BY QUALIFIED FACTORY REPRESENTATIVES.
2. MAST ARM MOUNTED SIGNS SHALL BE INSTALLED ON ASTRO BRACS.
3. AN ADDITIONAL 3–SECTION SIGNAL HEAD WITH BACKPLATE, POST–MOUNTED ON THE SOUTHEAST (30') MAST ARM, SHALL BE INCLUDED IN STRUCTURAL DESIGN CALCULATIONS FOR POSSIBLE FUTURE INSTALLATION.
4. OPTICAL DETECTORS SHALL BE FIELD LOCATED FOR BEST RECEPTION WITH CONCURRENCE OF ENGINEER.
5. ALL SIGNAL EQUIPMENT SHALL BE PAINTED BLACK

PROPOSED SIGNAL HEAD DATA

A	B,C,D,E,F	G	P1–P4
			
12" L.E.D. W/ 5" LOUVERED BACKPLATE			16" HOUSING L.E.D.

ITEM 815.1
TRAFFIC SIGNAL CONSTRUCTION
LIST OF MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	EAGLE OR NAZTEC T.S. CABINET (PAINTED BLACK) & CONTROLLER: 8 PHASE TS2–TYPE 1, VIDEO DETECTION, OPTICOM PREEMPTION, GRAPHICS, CLOSED LOOP SYSTEM READY, FULL INPUT & OUTPUT SUPPRESSION PACKAGE W/FOUNDATION & CONC. PAD
1	OVERHEAD ELECTRIC SERVICE CONNECTION
1	20 FT TYPE II STEEL MAST ARM W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
1	30 FT TYPE II STEEL MAST ARM W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.) SEE CONSTRUCTION NOTE 3 REGARDING STRUCTURAL CALCS.
1	35 FT TYPE II STEEL MAST ARM W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
3	VIDEO DETECTION CAMERA
5	SIGNAL HEAD (ALL BLACK) 1–WAY 3–SECTION 12" L.E.D. W/LOUVERED BACKPLATE
2	SIGNAL HEAD (ALL BLACK) 1–WAY 5–SECTION 12" L.E.D. W/LOUVERED BACKPLATE
4	PEDESTRIAN SIGNAL HEAD (ALL BLACK) 16" HOUSING L.E.D. W/COUNTDOWN TIMER, SOLID HAND/MAN, (4) PUSHBUTTONS & SIGNS
1	PREEMPTION CONFIRMATION HIGH INTENSITY CLEAR STROBE
3	OPTICOM DETECTOR (MODEL 711)
2	2–CHANNEL PHASE SELECTOR AND RACK (700 SERIES)
3	8 FT STEEL PEDESTAL POLE W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
1	10 FT STEEL PEDESTAL POLE W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
2	WAVETRONIX MODEL 200 FORWARD FIRING RADAR W/ZONE PROGRAMMING
1	R10–12 (NO TURN ON GREEN BALL) SIGN, 30"X36"

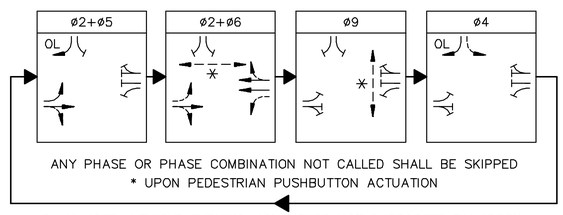
PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL SYSTEM.

400 FT	3" SCHEDULE 80 PVC CONDUIT
6	PULLBOX 12"x24" DEEP WELL

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT THE INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR. THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAN THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

PREFERENTIAL PHASE SEQUENCE



ANY PHASE OR PHASE COMBINATION NOT CALLED SHALL BE SKIPPED
* UPON PEDESTRIAN PUSHBUTTON ACTUATION

PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

PROJECT TITLE

Wayland Town Center Off–Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810–1066
TEL: (978) 474–8800
FAX: (978) 688–6508

FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437–4601
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DESIGNED BY	AJD
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	N.T.S.
STAMP	

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

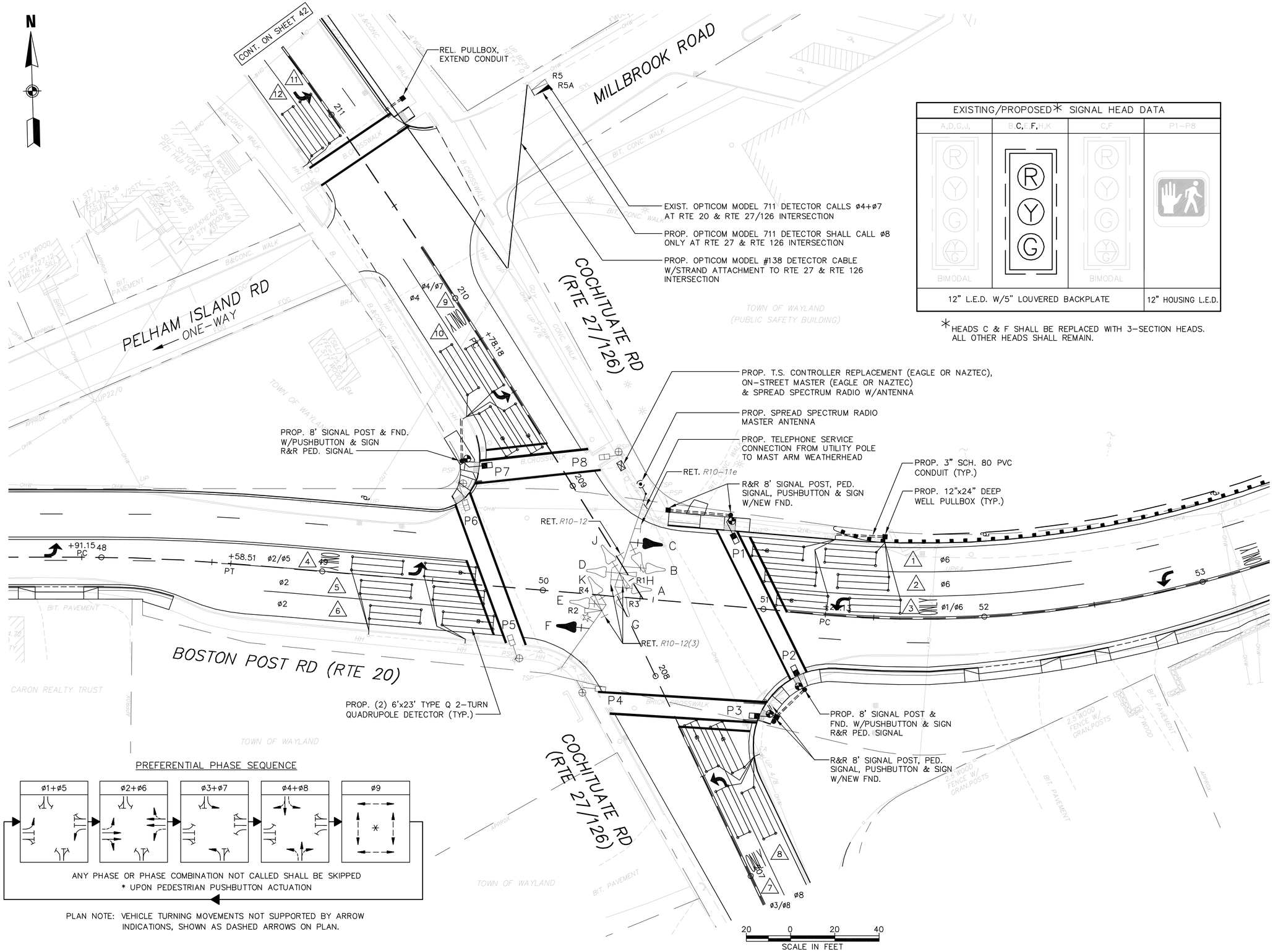
Traffic Signal Data

Rte. 20 at Wayland Town Center & Russells Drive

SHEET 39 OF 81	DRAWING NUMBER 39
JOB NO. 5139	
CAD 5139TSv3	

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EXISTING/PROPOSED* SIGNAL HEAD DATA

A,D,G,J,	B,C, E, F, H,K	C,F	P1–P8
BIMODAL		BIMODAL	
12" L.E.D. W/5" LOUVERED BACKPLATE			12" HOUSING L.E.D.

*HEADS C & F SHALL BE REPLACED WITH 3-SECTION HEADS. ALL OTHER HEADS SHALL REMAIN.

PREFERENTIAL PHASE SEQUENCE

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PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

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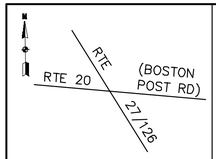
NO.	DESCRIPTION	DATE

DRAWING TITLE

Traffic Signal Plan

Rte. 20 at Rte. 27/126

SHEET 40 OF 81	DRAWING NUMBER 40
JOB NO. 5139	
CAD 5139TSv3	



ROUTE 20
(BOSTON POST RD)
AT ROUTE 27/126
(COCHITUATE RD)

WAYLAND, MA

SEQUENCE AND TIMING CHART

	WBLT	EB	NBLT	SB	EBLT	WB	SBLT	NB	
	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9
									

EMERGENCY FLASH OPERATION

SEQUENCE AND TIMING

APPROACH	DIRECTION	FACE	ø/ø	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	
RTE 20 (BOSTON POST RD)	WBLT	A	1/6	~~G~~/R	~~Y~~/R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	FY
RTE 20 (BOSTON POST RD)	WB	B,C	6	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	FY
RTE 20 (BOSTON POST RD)	EBLT	D	2/5	R	R	R	G	Y	R	R	R	R	R	R	R	~~G~~/R	~~Y~~/R	R	R	R	R	R	R	R	R	R	R	R	R	FY
RTE 20 (BOSTON POST RD)	EB	E,F	2	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
RTE 27/126 (COCHITUATE RD)	NBLT	G	8	R	R	R	R	R	R	~~G~~/R	~~Y~~/R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	FR
RTE 27/126 (COCHITUATE RD)	NB	H	8	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	FR
RTE 27/126 (COCHITUATE RD)	SBLT	J	4	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	~~G~~/R	~~Y~~/R	R	R	R	R	R	R	FR
RTE 27/126 (COCHITUATE RD)	SB	K	4	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
PEDESTRIAN	ALL	P1–P8	9	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT

TIMING IN SECONDS

MINIMUM GREEN	6			10			6			10			6			10			6			10					
VEHICLE INTERVAL	3			3			3			3			3			3			3			3					
MAXIMUM GREEN I (FREE OPERATION)	20			40			20			40			20			40			20			40					
MAXIMUM GREEN II (DURING COORDINATION)	13			23			18			42			13			23			14			42					
YELLOW CLEAR		4.0			4.0			4.0			4.0			4.0			4.0			4.0			4.0					
ALL RED CLEAR			2.0			2.0			2.0			2.0			2.0			2.0			2.0			2.0				
WALK INTERVAL																											6		1
PED. CLEARANCE																												18	
DETECTOR	NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK			NON–LOCK				LOCK		
RECALL	OFF			OFF			OFF			OFF			OFF			OFF			OFF			OFF				OFF		

COORDINATION DATA			COORDINATION PHASE TIMING															
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.							
M–F (6AM–9AM)	80	ø4/ø8 EOG/ 0	13	24	13	30	13	24	13	30								
M–F (3PM–7PM)	100	ø4/ø8 EOG/ 0	13	32	13	42	13	32	13	42								
SAT (10AM–6PM)	90	ø4/ø8 EOG/ 0	13	33	18	26	13	33	13	31								
SUN (10AM–6PM)	70	ø4/ø8 EOG/ 0	13	22	13	22	13	22	14	21								

NOTES: 1. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
2. COORDINATION LOST DURING PEDESTRIAN SERVICE.

DETECTOR DATA

DETECTOR NUMBER	NUMBER SECTION/ SIZE	NUMBER OF TURNS	OPERATIONS	CALL DELAY	CALL PHASE	EXT. PHASE	LOOP CONN.
1	2–6'x23'	2 QUADRPL	PRESENCE	–	6	6	SERIES
2	2–6'x23'	2 QUADRPL	PRESENCE	–	6	6	SERIES
3	2–6'x23'	2 QUADRPL	PRESENCE	–	1	1/6	SERIES
4	2–6'x23'	2 QUADRPL	PRESENCE	–	5	2/5	SERIES
5	2–6'x23'	2 QUADRPL	PRESENCE	–	2	2	SERIES
6	2–6'x23'	2 QUADRPL	PRESENCE	–	2	2	SERIES
7	2–6'x23'	2 QUADRPL	PRESENCE	–	3	3/8	SERIES
8	2–6'x23'	2 QUADRPL	PRESENCE	–	8	8	SERIES
9	2–6'x23'	2 QUADRPL	PRESENCE	–	7	4/7	SERIES
10	2–6'x23'	2 QUADRPL	PRESENCE	–	4	4	SERIES
11	1–6'x23'	2 QUADRPL	PRESENCE	–	4	4	DIRECT
12	1–6'x23'	2 QUADRPL	PRESENCE	–	4	4	DIRECT

CONSTRUCTION NOTES:

1. CONTROLLER PROGRAMMING SHALL BE ACCOMPLISHED BY QUALIFIED FACTORY REPRESENTATIVES.
2. MAST ARM MOUNTED SIGNS SHALL BE INSTALLED ON ASTRO BRACS.
3. SIGNAL CONTROLLER SHALL REPLACE EXISTING PEEK 3000E CONTROLLER WITH ONE MANUFACTURED BY "EAGLE OR NAZTEC". A GPS–TBC RECEIVER SHALL BE INSTALLED ALONG WITH AN ON–STREET MASTER AND SPREAD SPECTRUM RADIO.

PREEMPTION SEQUENCE

RECEIVER R1 PREEMPT 1	RECEIVER R2 PREEMPT 2	RECEIVER R3 PREEMPT 3	RECEIVER R4 PREEMPT 4
*	*	*	*
ø1+ø6	ø2+ø5	ø3+ø8	ø4+ø7

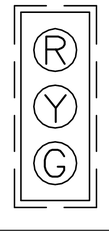
* HOLD ON INPUT PLUS SIX SECONDS MINIMUM

FIRE STATION OPTICOM PREEMPTION

1. LOCK INPUT
2. ZERO DELAY
3. MINIMUM DWELL 60 SECONDS

ø4+ø7 — RECEIVER R5 PREEMPT 5

EXISTING/PROPOSED* SIGNAL HEAD DATA

A,D,G,J,	B,C,E,F,H,K	C,F	P1–P8
 BIMODAL		BIMODAL	
12" L.E.D. W/5" LOUVERED BACKPLATE			12" HOUSING L.E.D.

*HEADS C & F SHALL BE REPLACED WITH 3–SECTION HEADS. ALL OTHER HEADS SHALL REMAIN.

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT THE INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR. THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAN THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

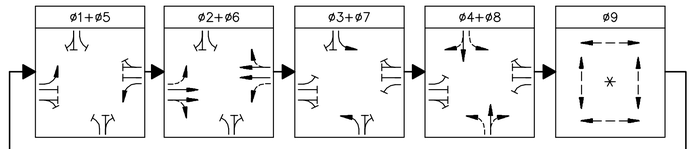
ITEM 816.01
TRAFFIC SIGNAL RECONSTRUCTION
LIST OF MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	EAGLE OR NAZTEC CONTROLLER 8 PHASE TS2–TYPE 1 W/EAGLE OR NAZTEC ON–STREET MASTER CLOSED LOOP SYSTEM, GPS–TBC IN EXISTING PEEK 3000E CABINET
1	SPREAD SPECTRUM RADIO
1	OMNI DIRECTIONAL ANTENNA W/CABLE & MOUNT
1	N.E.M.A. CERTIFIED MODEM
1	TELEPHONE SERVICE CONNECTION WITH (1) ONE YEAR OF TELEPHONE SERVICE, PREPAID BY SIGNAL CONTRACTOR. TELEPHONE SERVICE SHALL BE ACTIVE AT TIME OF TRAFFIC CABINET INSTALLATION.
2	SIGNAL HEAD (ALL BLACK) 1–WAY 3–SECTION 12" L.E.D. W/LOUVERED BACKPLATE
2	8 FT STEEL PEDESTAL POLE W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
2	RELOCATE 8 FT STEEL PEDESTAL POLE W/NEW FND.
2	PEDESTRIAN PUSHBUTTON & SIGN
4	RELOCATE PEDESTRIAN SIGNAL HEAD
22	QUADRUPOLE VEHICLE DETECTION LOOP 6'x23' (2 TURNS)

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL SYSTEM.

130 FT	3" SCHEDULE 80 PVC CONDUIT
3	PULLBOX 12"x24" DEEP WELL

PREFERENTIAL PHASE SEQUENCE



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* UPON PEDESTRIAN PUSHBUTTON ACTUATION

PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

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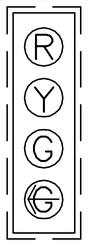
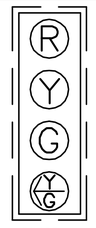
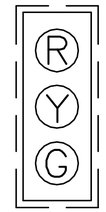
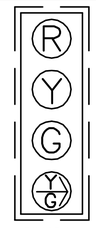
DRAWING TITLE

Traffic Signal Data
Rte. 20 at
Rte. 27/126

SHEET 41 OF 81	DRAWING NUMBER 41
JOB NO. 5139	
CAD 5139TSv3	

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PROPOSED SIGNAL HEAD DATA				
A,G	C	B,D,E,F,H	J	P1–P2
	 BIMODAL		 BIMODAL	
12" L.E.D. W/ 5" LOUVERED BACKPLATE				16" HOUSING L.E.D.

PROP. EAGLE OR NAZTEC T.S. CONTROLLER TS–2 TYPE 1 IN BASE MOUNTED CABINET W/FND. & CONC. PAD

PROP. 10' SIGNAL POST & FND. W/PEDESTRIAN SIGNAL, PUSHBUTTON & SIGN

PROP. FIRE STATION PREEMPT INTERCONNECT RISER
PROP. ELECTRIC SERVICE (TO RELOC. U.P.)

PROP. (2) 6'x23' TYPE Q 2–TURN QUADRUPOLE DETECTOR (TYP.)

PROP. OPTICOM MODEL #138 DETECTOR CABLE W/STRAND ATTACHMENT TO RTE 27 & RTE 126 INTERSECTION

PROP. 12"x24" DEEP WELL PULLBOX (TYP.)

PROP. (2) 5'x15' 2–TURN QUADRUPOLE DETECTOR

PROP. 3" SCH. 80 PVC CONDUIT (TYP.)

PROP. 10' SIGNAL POST & FND. W/VEHICLE SIGNAL

PROP. OPTICOM DETECTOR MODEL 711 (TYP.)

PROP. 35 FT GALV./STEEL MAST ARM W/FND.

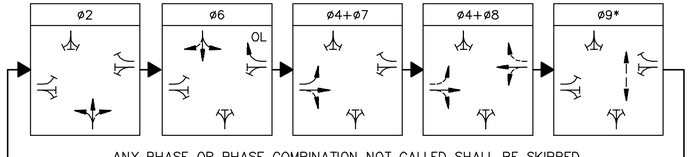
PROP. PREEMPTION CONFIRMATION STROBE

PROP. SPREAD SPECTRUM ANTENNA

PROP. (2) 5'x10' 2–TURN QUADRUPOLE DETECTOR

PROP. 8' SIGNAL POST & FND. W/PEDESTRIAN SIGNAL, PUSHBUTTON & SIGN

PREFERENTIAL PHASE SEQUENCE



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PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

20 0 20 40
SCALE IN FEET

CONT. ON SHEET 40

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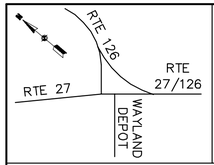
DRAWING TITLE

Traffic Signal Plan
Rte. 27 at Rte. 126

SHEET 42 OF 81	DRAWING NUMBER 42
JOB NO. 5139	
CAD 5139TSv3	

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ROUTE 27
AT ROUTE 126

WAYLAND, MA

SEQUENCE AND TIMING CHART

	EB	SEB	WB	SEBLT	NWB	PED	
	PHASE 1	PHASE 2	PHASE 3	PHASE 4	PHASE 5	PHASE 6	PHASE 7	PHASE 8	PHASE 9	EMERGENCY FLASH OPERATION
	NOT USED		NOT USED		NOT USED	OL				

SEQUENCE AND TIMING

APPROACH	DIRECTION	FACE	ø/ø	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	R/W	CL1	CL2	
WAYLAND DEPOT DRIVEWAY	EB	A	2				~~G~~/G	Y	R				R	R	R				R	R	R	R	R	R	R	R	R	R	R	FR
WAYLAND DEPOT DRIVEWAY	EB	B	2				G	Y	R				R	R	R				R	R	R	~~G~~/R	~~Y~~/R	R	R	R	R	R	R	FR
RTE 27 (OLD SUDBURY RD)	SBLT/SB	C	4/7				R	R	R				G	Y	R				R	R	R	R	R	R	R	R	R	R	R	FY
RTE 27 (OLD SUDBURY RD)	SB	D	4				R	R	R				G	Y	R				R	R	R	R	R	R	R	R	R	R	R	FY
RTE 126 (CONCORD RD)	WB	E,F	6				R	R	R				R	R	R				G	Y	R	R	R	R	R	R	R	R	R	FR
RTE 126 (CONCORD RD)	WB	G	6				R	R	R				R	R	R				~~G~~/G	Y	R	R	R	R	R	R	R	R	R	FR
RTE 27/126 (COCHITUATE RD)	NB	H	8				R	R	R				R	R	R				R	R	R	R	R	R	G	Y	R	R	R	FY
RTE 27/126 (COCHITUATE RD)	NBRT	J	6/8				R	R	R				R	R	R				~~R~~/G	~~R~~/Y	R	R	R	R	G	Y	R	R	R	FY
PEDESTRIAN	E/W	P1–P2	9				DW	DW	DW				DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT

TIMING IN SECONDS

MINIMUM GREEN				6						10						6			6			10						
VEHICLE INTERVAL				2						2						2			2			2						
MAXIMUM GREEN I (FREE OPERATION)				9						30						30			12			30						
MAXIMUM GREEN II (DURING COORDINATION)				21						49						32			13			36						
YELLOW CLEAR					3.0						3.5						3.5			3.0			3.5					
ALL RED CLEAR						2.0						2.0						2.0			2.0			2.0				1
WALK INTERVAL																									6			
PED. CLEARANCE																										13		
DETECTOR				NON–LOCK						NON–LOCK						NON–LOCK			NON–LOCK			NON–LOCK				LOCK		
RECALL				OFF						MIN/NA						OFF			OFF			MIN/NA				OFF		

COORDINATION DATA			COORDINATION PHASE TIMING																										
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.			SEC.		
M–F (6AM–9AM)	80	ø4/ø8 EOG/5				21						39						20			13			26					
M–F (3PM–7PM)	100	ø4/ø8 EOG/9				21						49						30			13			36					
SAT (10AM–6PM)	90	ø4/ø8 EOG/4				21						37						32			13			24					
SUN (10AM–6PM)	70	ø4/ø8 EOG/6				21						32						17			13			19					

NOTES: 1. FLASHING OPERATION PER M.U.T.C.D. SECTION 4D.12
2. COORDINATION LOST DURING PEDESTRIAN SERVICE.

CONSTRUCTION NOTES:

1. CONTROLLER PROGRAMMING SHALL BE ACCOMPLISHED BY QUALIFIED FACTORY REPRESENTATIVES.
2. MAST ARM MOUNTED SIGNS SHALL BE INSTALLED ON ASTRO BRACS.
3. AN OPTICOM MODEL 711 DETECTOR SHALL BE MOUNTED ON UTILITY POLE BE29 ON MILLBROOK ROAD AIMED AT THE SAFETY COMPLEX APRON. OPTICOM MODEL 128 CABLE SHALL BE RUN IN THE FIRE ALARM GAIN ON UTILITY POLES TO RTE 27 & RTE 126 INTERSECTION. "R5A" SHALL CALL PREEMPTION SEQUENCE #5.
4. VEHICLE SIGNALS "A" & "B" SHALL UTILIZE "PELCO" GEOMETRICALLY PROGRAMMED LOUVERS WITH A SETTING OF 23.5 DEGREES ON ALL INDICATIONS.

PREEMPTION SEQUENCE		
RECEIVER R1 PREEMPT 1	RECEIVER R3 PREEMPT 3	RECEIVER R4 PREEMPT 4
*	*	*
ø6	ø8	ø4+ø7

* HOLD ON INPUT PLUS 6 SECONDS MINIMUM

FIRE STATION OPTICOM PREEMPTION
1. LOCK INPUT 2. ZERO DELAY 3. MINIMUM DWELL 60 SECONDS RECEIVER R5A PREEMPT 5 ø8

PROPOSED SIGNAL HEAD DATA				
A,G	C	B,D,E,F,H	J	P1–P2
	BIMODAL		BIMODAL	
12" L.E.D. W/ 5" LOUVERED BACKPLATE				16" HOUSING L.E.D.

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT THE INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR. THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAN THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.

DETECTOR DATA							
DETECTOR NUMBER	NUMBER SECTION/ SIZE	NUMBER OF TURNS	OPERATIONS	CALL DELAY	CALL PHASE	EXT. PHASE	LOOP CONN.
1	2–6'x23'	2 QUADRPL	PRESENCE	–	8	6/8	SEREIS
2	2–6'x23'	2 QUADRPL	PRESENCE	–	8	8	SEREIS
3	2–5'x10'	2 QUADRPL	PRESENCE	–	2	2	SEREIS
4	2–6'x23'	2 QUADRPL	PRESENCE	–	4	4	SEREIS
5	2–6'x23'	2 QUADRPL	PRESENCE	–	7	4/7	SEREIS
6	2–5'x15'	2 QUADRPL	PRESENCE	–	6	6	SEREIS
7	2–6'x23'	2 QUADRPL	PRESENCE	–	6	6	SEREIS

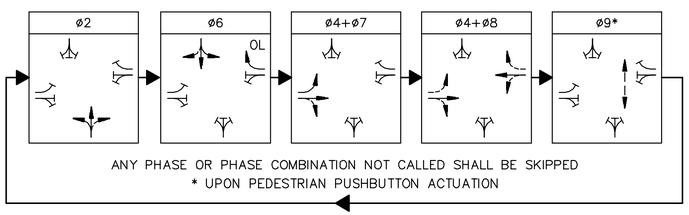
ITEM 815.2
TRAFFIC SIGNAL CONSTRUCTION
LIST OF MAJOR ITEMS REQUIRED

QUANTITY	DESCRIPTION
1	EAGLE OR NAZTEC CABINET (PAINTED BLACK) AND CONTROLLER: 8 PHASE TS2–TYPE 1, OPTICOM PREEMPTION, CLOSED LOOP SYSTEM READY, FULL INPUT AND OUTPUT SUPPRESSION PACKAGE W/FOUNDATION AND CONC. PAD
1	OVERHEAD ELECTRIC SERVICE CONNECTION
1	35 FT TYPE II STEEL MAST ARM W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
5	SIGNAL HEAD (ALL BLACK) 1–WAY 3–SECTION 12" L.E.D. W/LOUVERED BACKPLATE (2 HEADS W/GEOMETRICALLY PROGRAMMED LOUVERS
2	SIGNAL HEAD (ALL BLACK) 1–WAY 4–SECTION 12" L.E.D. W/LOUVERED BACKPLATE
2	SIGNAL HEAD (ALL BLACK) 1–WAY 4–SECTION 12" L.E.D. & BIMODAL ARROW W/LOUVERED BACKPLATE
2	PEDESTRIAN SIGNAL HEAD (ALL BLACK) 12" HOUSING L.E.D. W/COUNTDOWN TIMER, SOLID HAND/MAN, (2) PUSHBUTTONS & SIGNS
1	8 FT STEEL PEDESTAL POLE W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
2	10 FT STEEL PEDESTAL POLE W/FND. (UNION METAL #230 OR #260 COLUMBIAN STYLE PAINTED BLACK PER WAYLAND SPEC.)
2	QUADRUPOLE VEHICLE DETECTION LOOP 5'x10' (2 TURNS)
2	QUADRUPOLE VEHICLE DETECTION LOOP 5'x15' (2 TURNS)
10	QUADRUPOLE VEHICLE DETECTION LOOP 6'x23' (2 TURNS)
4	2 CHANNEL LOOP DETECTOR AMPLIFIER – RACK MOUNTED
1	PREEMPTION CONFIRMATION HIGH INTENSITY CLEAR STROBE
4	OPTICOM DETECTOR (MODEL 711)
2	2–CHANNEL PHASE SELECTOR AND RACK (700 SERIES)
1	SPREAD SPECTRUM RADIO
1	YAGI ANTENNA
1	R10–12 (NO TURN ON GREEN BALL) SIGN, 30"X36"
600 FT	OPTICOM MODEL #138 DETECTOR CABLE W/STRAND ATTACHMENT

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL SYSTEM.

410 FT	3" SCHEDULE 80 PVC CONDUIT
8	PULLBOX 12"x24" DEEP WELL

PREFERENTIAL PHASE SEQUENCE



ANY PHASE OR PHASE COMBINATION NOT CALLED SHALL BE SKIPPED
* UPON PEDESTRIAN PUSHBUTTON ACTUATION

PLAN NOTE: VEHICLE TURNING MOVEMENTS NOT SUPPORTED BY ARROW INDICATIONS, SHOWN AS DASHED ARROWS ON PLAN.

PROJECT TITLE

Wayland Town Center Off–Site Improvements

Wayland, Massachusetts

PREPARED FOR

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Boston, Massachusetts

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DESIGNED BY	AJD
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	N.T.S.
STAMP	

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Traffic Signal Data
Rte. 27 at Rte. 126

SHEET 43 OF 81	DRAWING NUMBER 43
JOB NO. 5139	
CAD 5139TSv3	

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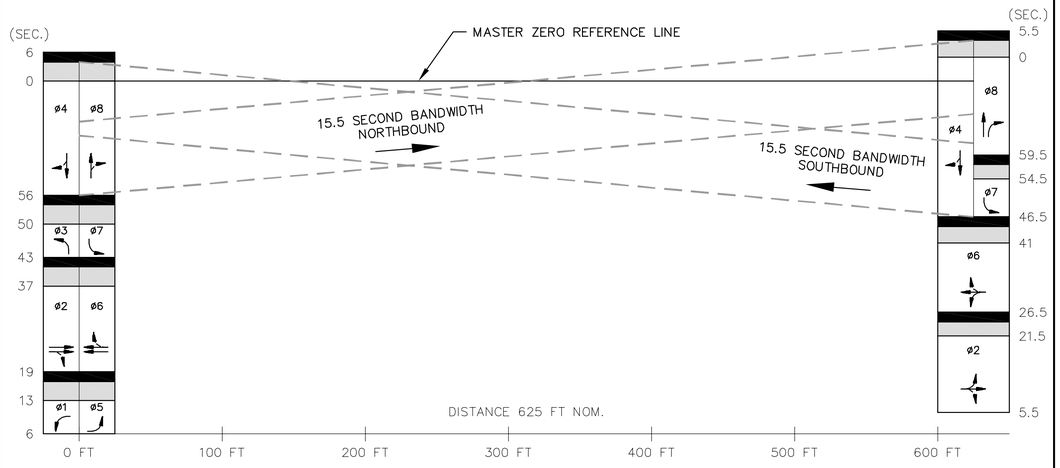
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RTE 20 @ RTE 27/126

MASTER
(OFFSET = 0 SEC.)

RTE 27 @ RTE 126

LOCAL
(OFFSET = 5 SEC.)



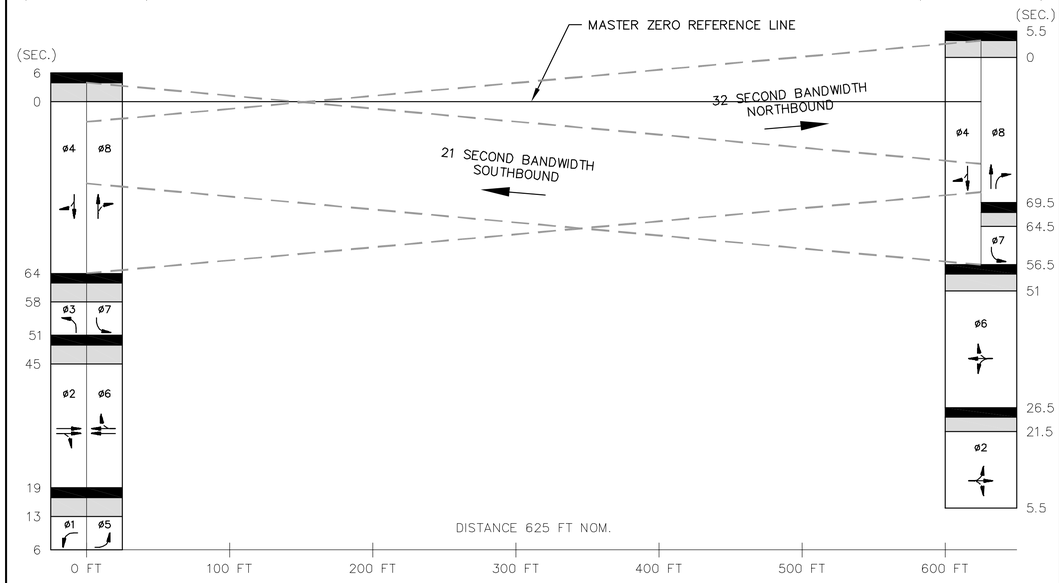
TIMING PLAN 1 - WEEKDAY AM
80 SECOND CYCLE

RTE 20 @ RTE 27/126

MASTER
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RTE 27 @ RTE 126

LOCAL
(OFFSET = 9 SEC.)



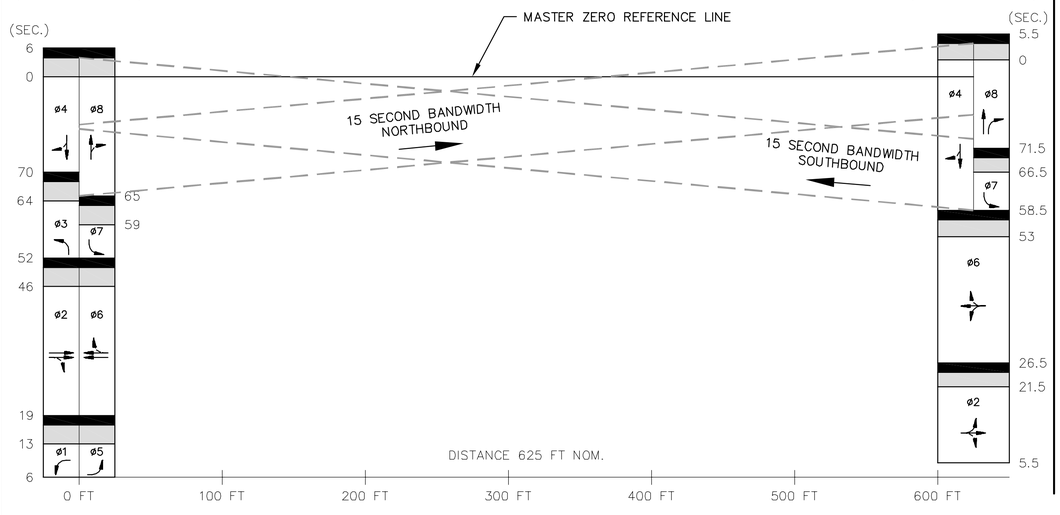
TIMING PLAN 2 - WEEKDAY PM
100 SECOND CYCLE

RTE 20 @ RTE 27/126

MASTER
(OFFSET = 0 SEC.)

RTE 27 @ RTE 126

LOCAL
(OFFSET = 4 SEC.)



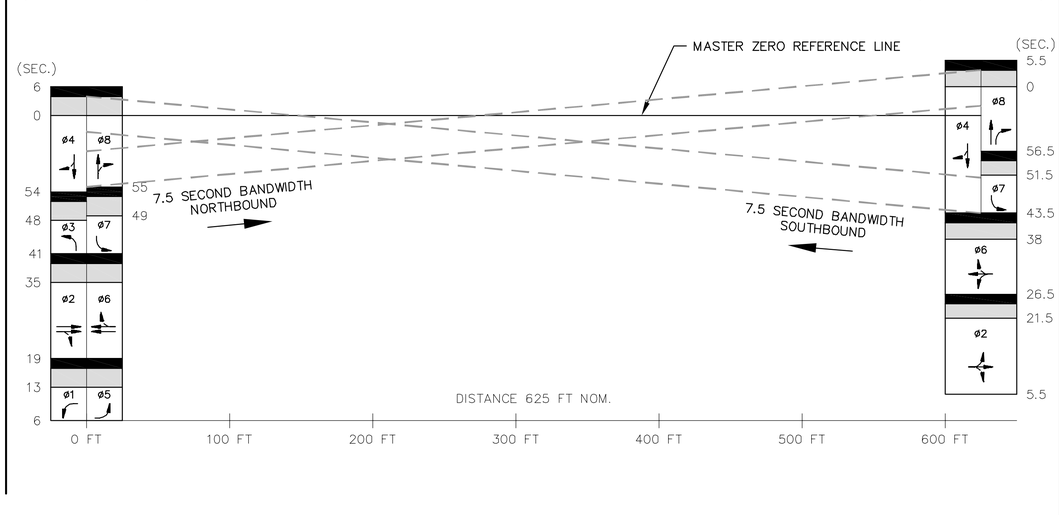
TIMING PLAN 3 - SATURDAY MIDDAY
90 SECOND CYCLE

RTE 20 @ RTE 27/126

MASTER
(OFFSET = 0 SEC.)

RTE 27 @ RTE 126

LOCAL
(OFFSET = 6 SEC.)



TIMING PLAN 4 - SUNDAY MIDDAY
70 SECOND CYCLE

HOR. SCALE IN FEET
SCALE: 1"=50'
0 50 125 500

VERT. SCALE IN SECONDS
SCALE: 1"=15 SECS
0 15 37.5 75

NOTES: 1. ALL TIMING PLANS 25 MPH COORDINATED FLOW
2. ALL TIMING PLANS ø4/ø8 COORDINATED PHASES

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PROJECT TITLE

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Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	HOR: 1"=50'/VERT: 1"=15 SECS
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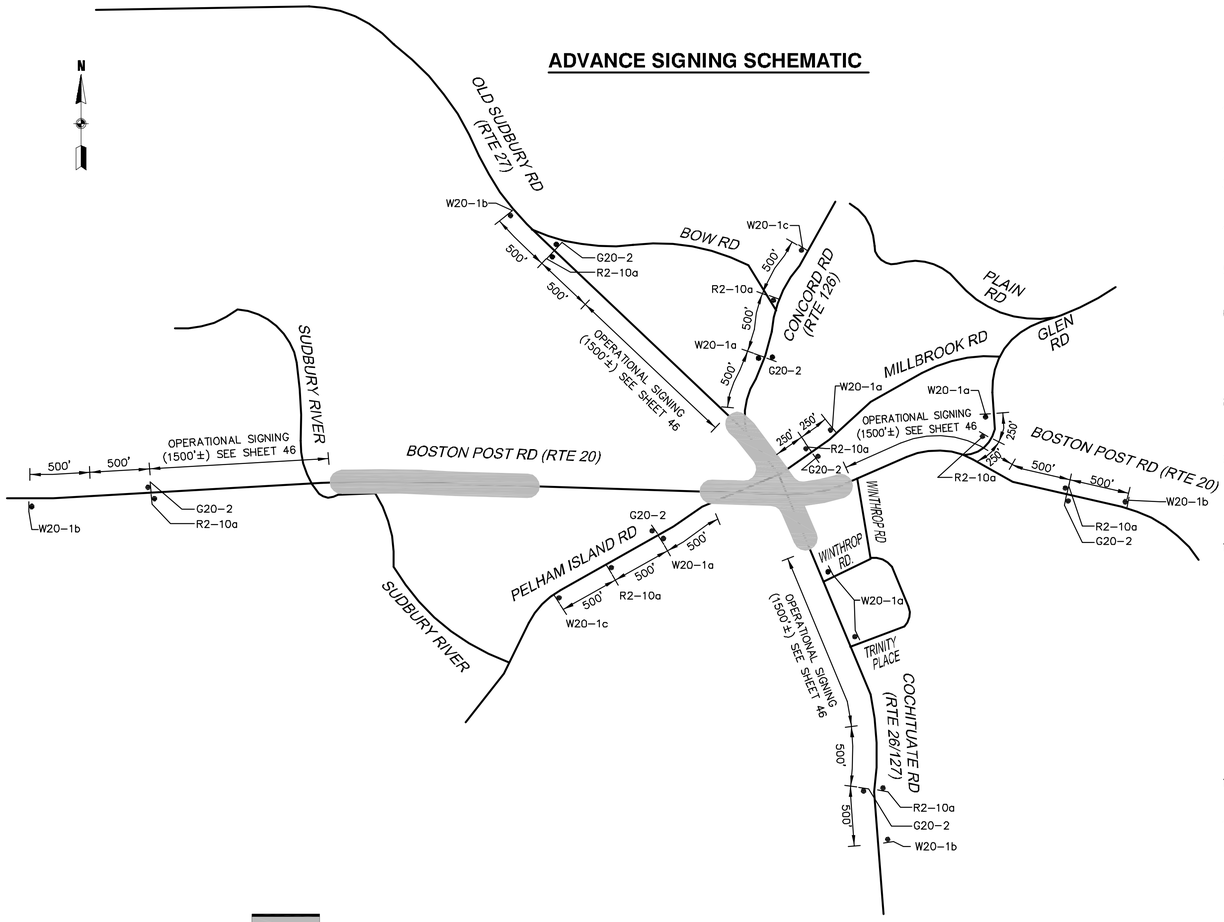
NO.	DESCRIPTION	DATE

DRAWING TITLE

Time-Space Diagrams

SHEET 44 OF 81	DRAWING NUMBER 44
JOB NO. 5139	
CAD 5139TSv3	

ADVANCE SIGNING SCHEMATIC



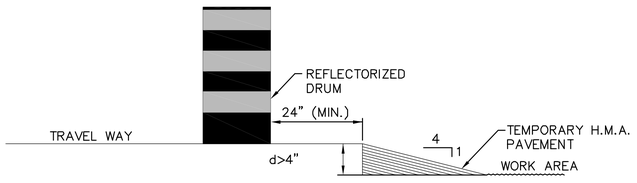
TRAFFIC MANAGEMENT NOTES

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. USE W20-8 SIGNS ONLY WHILE POLICE ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY.
6. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
7. ALL DRUMS SHALL CONFORM TO SPECIAL PROVISION ITEM NUMBER 859, REFLECTORIZED DRUM.
8. CONTRACTORS SHALL NOTIFY EACH ABUTTER 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 PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
9. THE FIRST THREE PLASTIC DRUMS OF A TAPER MAY BE MOUNTED WITH TYPE A LIGHTS AS APPROVED OR DIRECTED BY THE ENGINEER.
10. ADVISORY SPEED PLATES (W13-1) SHALL BE USED WHERE APPROPRIATE. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
11. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
12. MAXIMUM SPACING OF CHANNELIZING DEVICES IN FEET IS EQUAL TO THE SPEED LIMIT IN MPH WHEN USED FOR TAPER CHANNELIZATION, AND A DISTANCE IN FEET OF TWICE THE SPEED LIMIT IN MPH WHEN USED FOR TANGENT CHANNELIZATION.
13. TAPER FORMULA: $L = WS^2$ FOR SPEED $\geq$ 45 MPH
    $L = WS/60$ FOR SPEED $\leq$ 40 MPH

    L=MIN. LENGTH OF TAPER S=SPEED W=OFFSET WIDTH

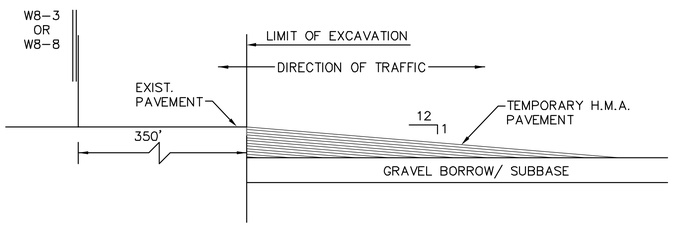
TAPER TYPE	TAPER LENGTH
MERGING TAPER	L MINIMUM
SHIFTING TAPER	1/2 L MINIMUM
SHOULDER TAPER	1/3 L MINIMUM
TWO-WAY TRAFFIC TAPER	100' MAXIMUM

14. MINIMUM LANE WIDTH IS TO BE 10 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
15. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
16. WORK WITHIN THE TRAVEL WAY, INCLUDING ANY LANE CLOSURE, SHALL BE LIMITED TO OFF-PEAK HOURS (9AM-3PM MON-FRI).



LATERAL DROP-OFF DETAIL

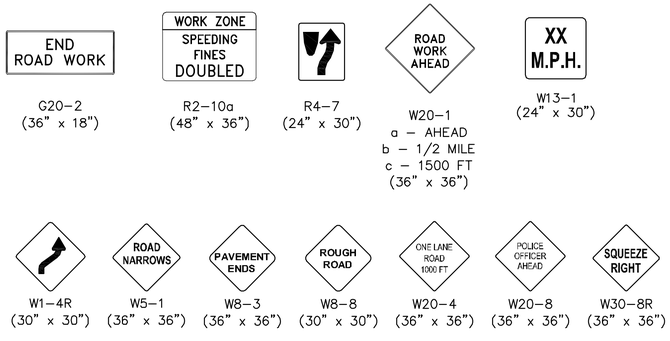
NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE

SIGN LEGEND



TRAFFIC MANAGEMENT LEGEND

- REFLECTORIZED PLASTIC DRUM
- P POLICE DETAIL
- TYPE III BARRICADE
- FLASHING ARROW PANEL
- FLASHING ARROW PANEL
- WORK ZONE
- DIRECTION OF TRAFFIC
- SIGN
- VMS VARIABLE MESSAGE SIGN

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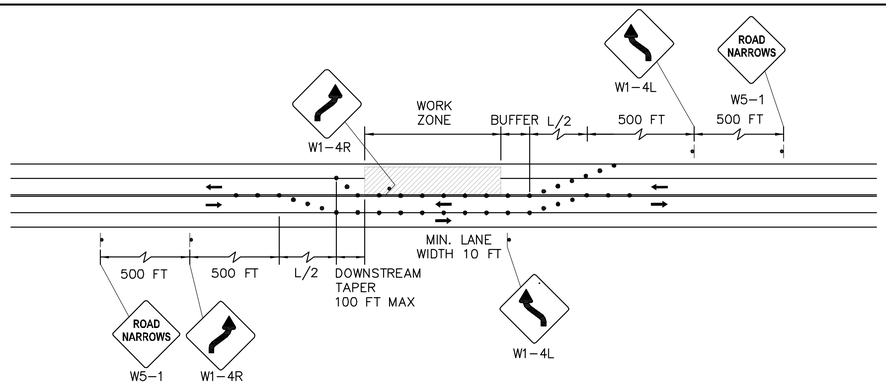
DRAWING TITLE

Traffic Management Plan

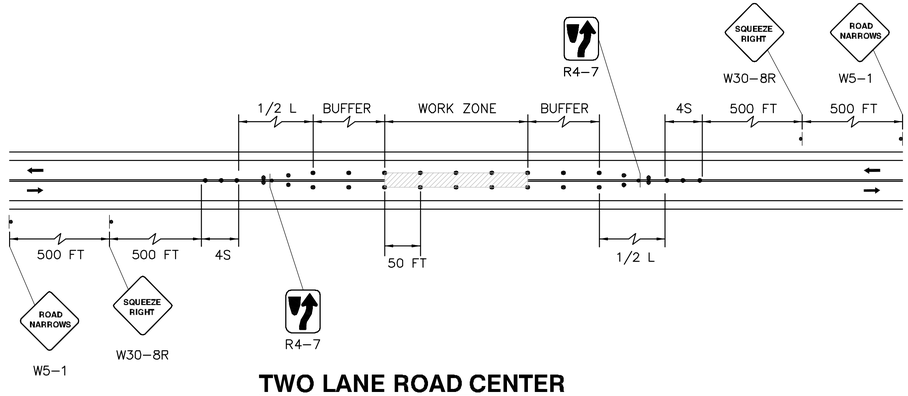
SHEET 45 OF 81	DRAWING NUMBER 45
JOB NO. 5139	
CAD 5139TMPv3	

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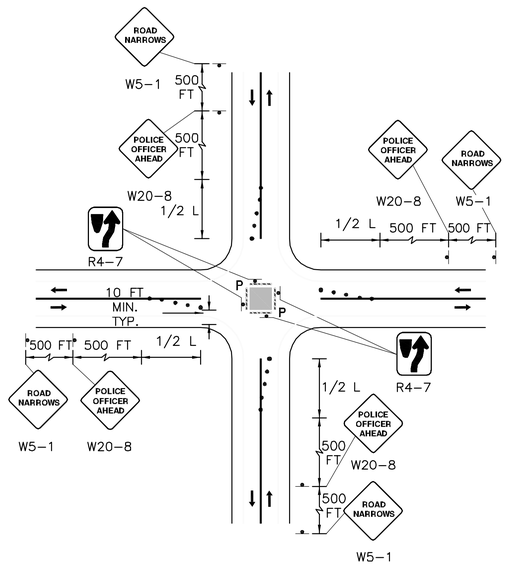
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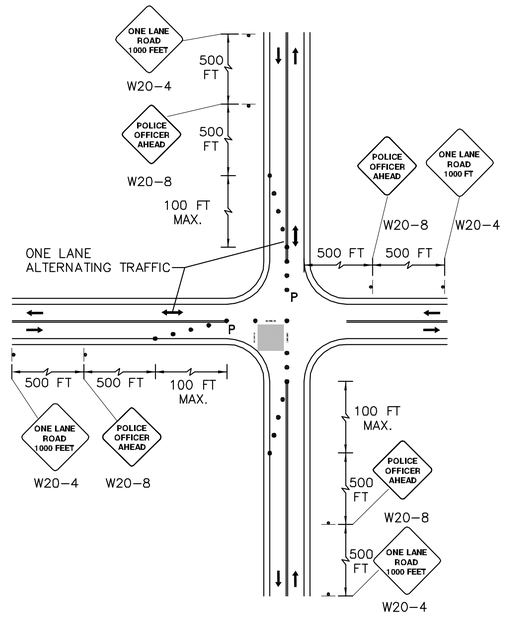
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED



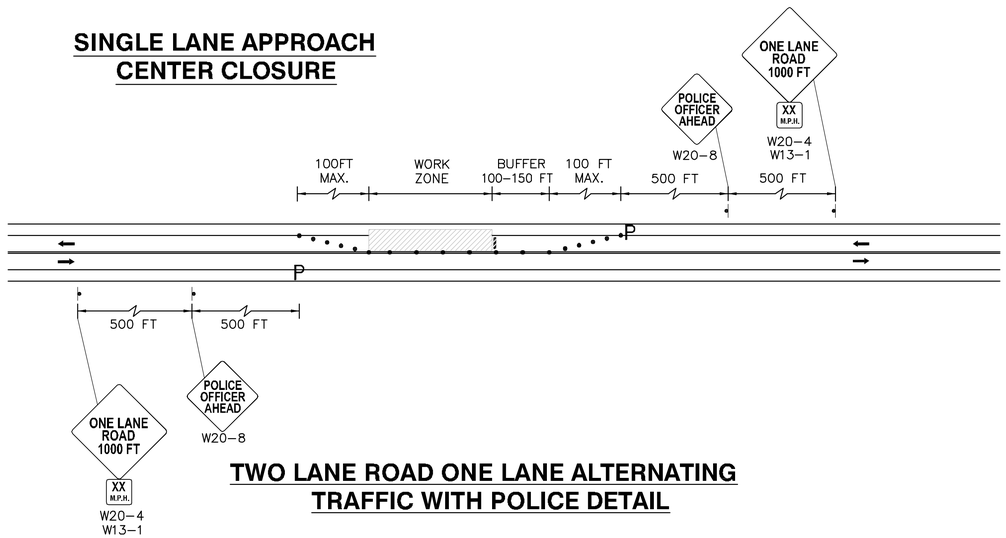
TWO LANE ROAD CENTER OF ROAD CLOSURE



SINGLE LANE APPROACH CENTER CLOSURE



SINGLE LANE APPROACH ONE QUADRANT CLOSURE



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH POLICE DETAIL

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STAMP	

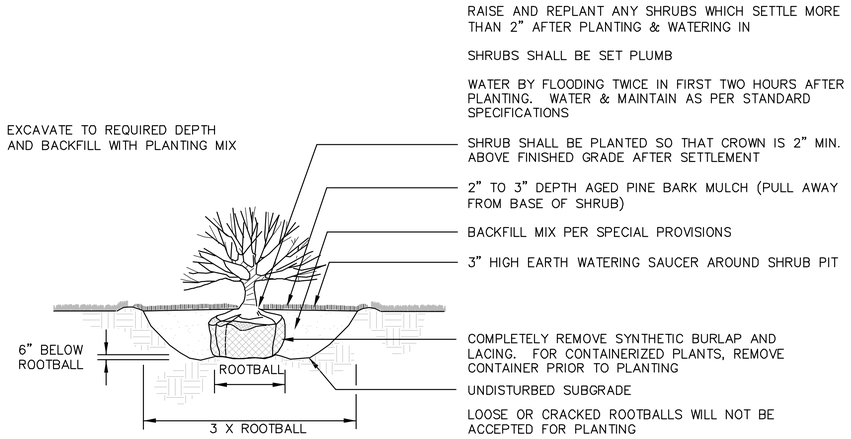
REVISIONS

NO.	DESCRIPTION	DATE

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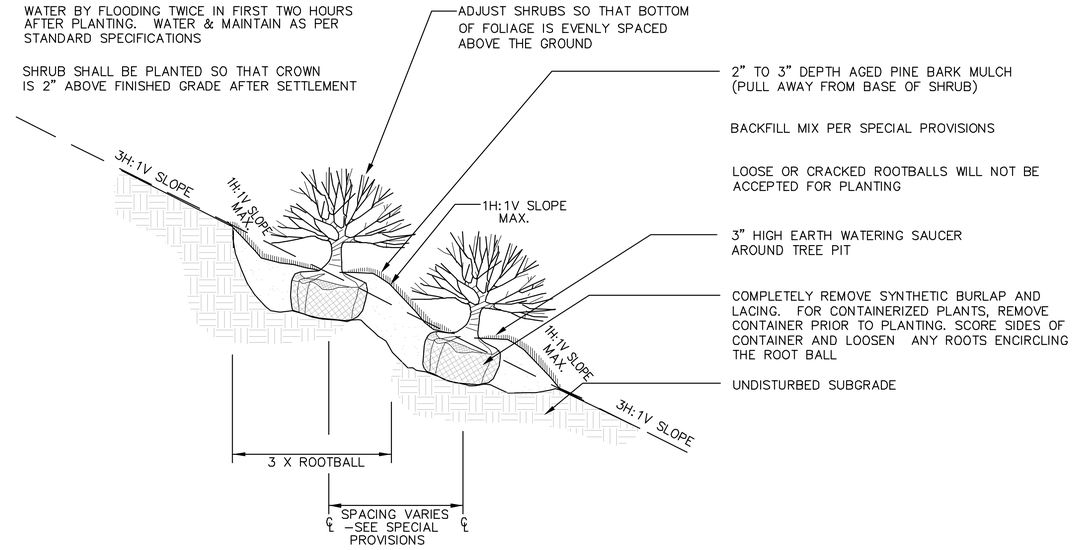
Traffic Management Plan

SHEET 46 OF 81	DRAWING NUMBER 46
JOB NO. 5139	
CAD 5139TMPv3	



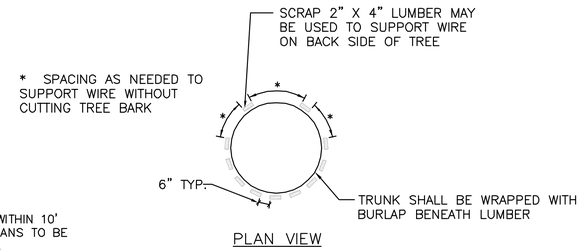
SHRUB PLANTING

NOT TO SCALE



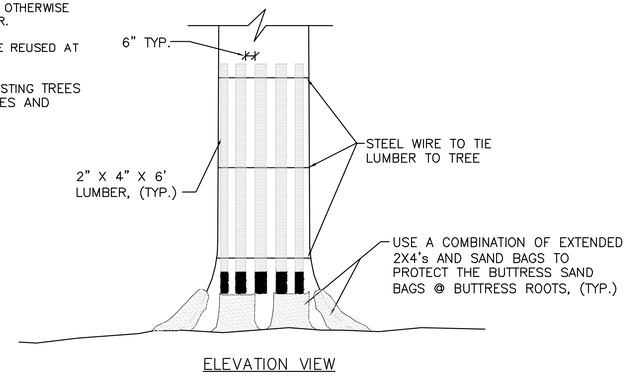
SHRUB PLANTING ON SLOPE

NOT TO SCALE



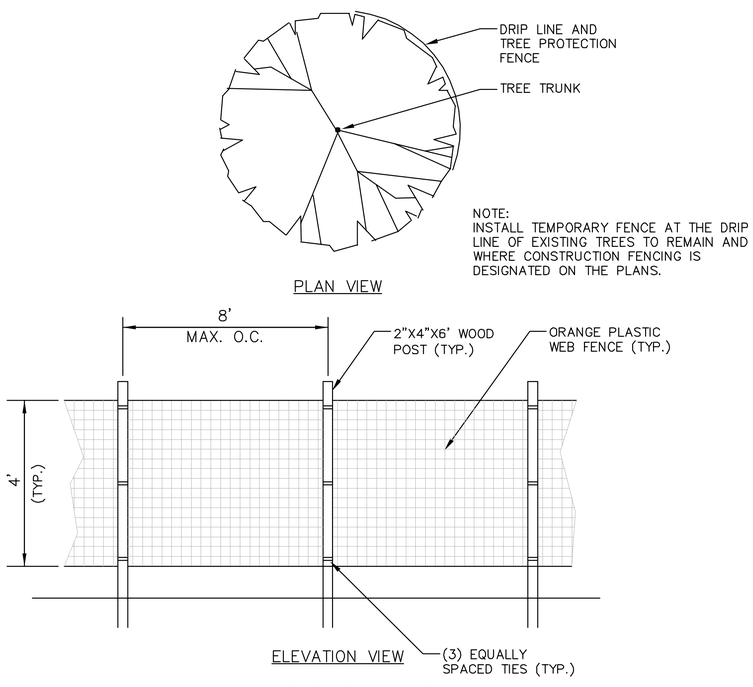
NOTES:

1. THIS DETAIL SHALL BE USED WHEN WORKING WITHIN 10' OF AN EXISTING TREE DESIGNATED ON THE PLANS TO BE RETAINED, OR AS DIRECTED BY THE ENGINEER.
2. ALL TREES SHALL BE RETAINED UNLESS NOTED OTHERWISE ON THE PLANS OR DIRECTED BY THE ENGINEER.
3. LUMBER, WIRE, BURLAP AND SANDBAGS MAY BE REUSED AT OTHER TREES.
4. THE INTENT OF THIS DETAIL IS TO PROTECT EXISTING TREES FROM DAMAGE FROM CONSTRUCTION VEHICLES AND EQUIPMENT.



TREE ARMOR

NOT TO SCALE



TEMPORARY FENCE

NOT TO SCALE

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SCALE	N.T.S.
STAMP	

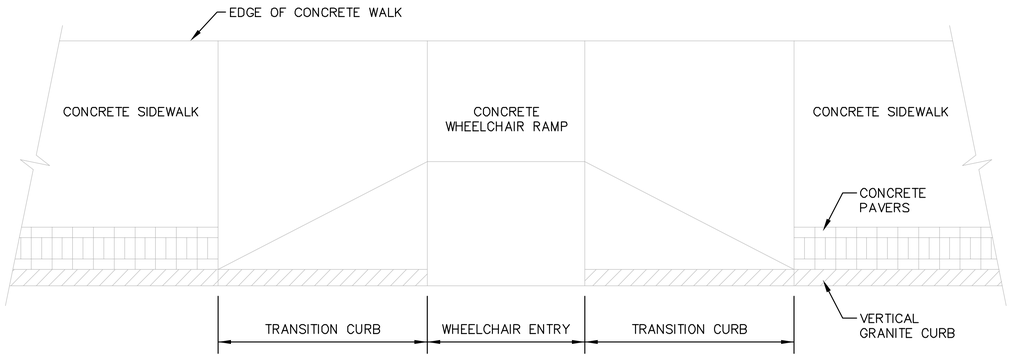
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

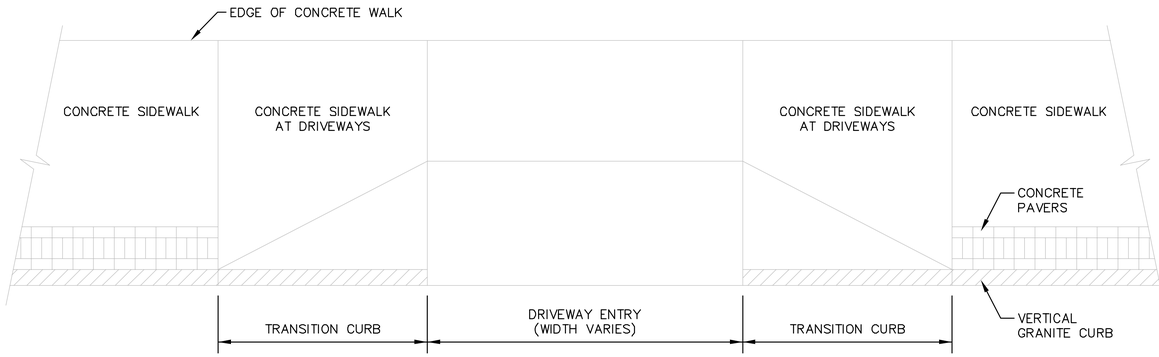
Landscape Details

SHEET 47 OF 81	DRAWING NUMBER 47
JOB NO. 5139	
CAD 5139TDv3	



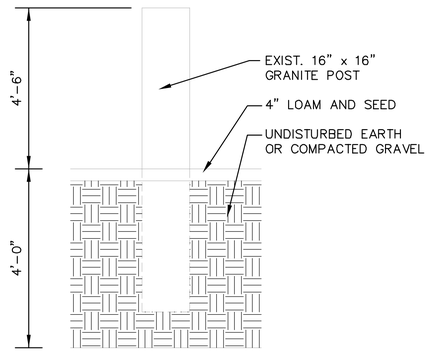
TYPICAL PAVER BANDING AT WHEELCHAIR RAMP - PLAN

NOT TO SCALE



TYPICAL PAVER BANDING AT DRIVEWAY - PLAN

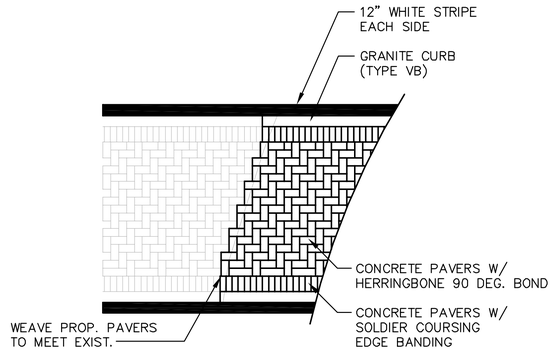
NOT TO SCALE



NOTE: THIS DETAIL SHALL APPLY ONLY TO THE GRANITE POSTS AT THE NORTH CORNER OF THE INTERSECTION OF CONCORD RD (RTE 126) & OLD SUDBURY RD (RTE 27).

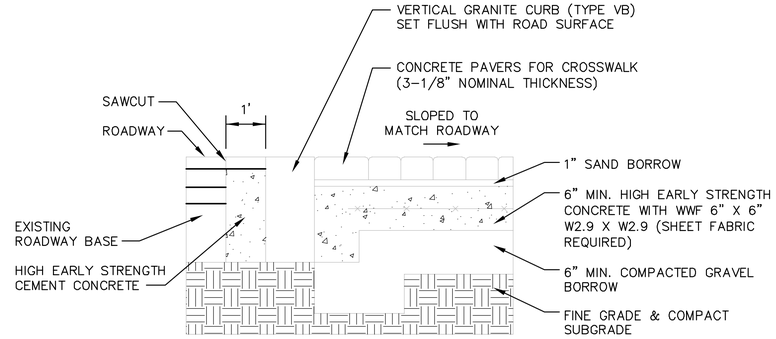
GRANITE POST RESETTING DETAIL

NOT TO SCALE



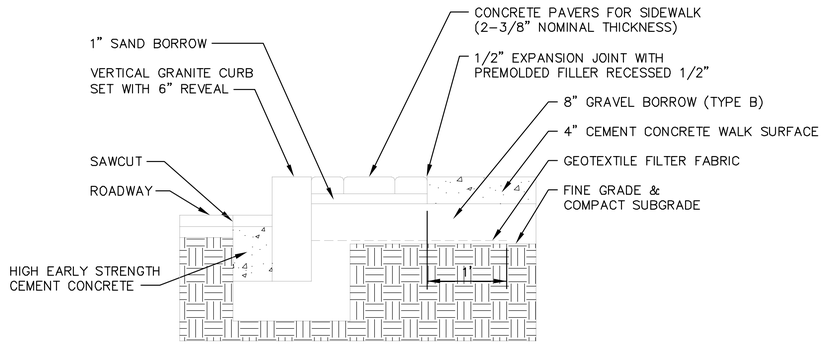
CONCRETE PAVER CROSSWALK EXTENSION - PLAN

NOT TO SCALE



CONCRETE PAVER CROSSWALK - SECTION

NOT TO SCALE



PAVER BAND AT GRANITE CURB - SECTION

NOT TO SCALE

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
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DESIGNED BY	JAR
DRAWN BY	PJO
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	N.T.S.
STAMP	

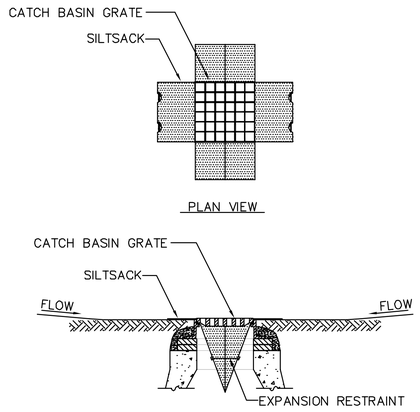
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Landscape Details

SHEET 48 OF 81	DRAWING NUMBER 48
JOB NO. 5139	
CAD 5139TDv3	

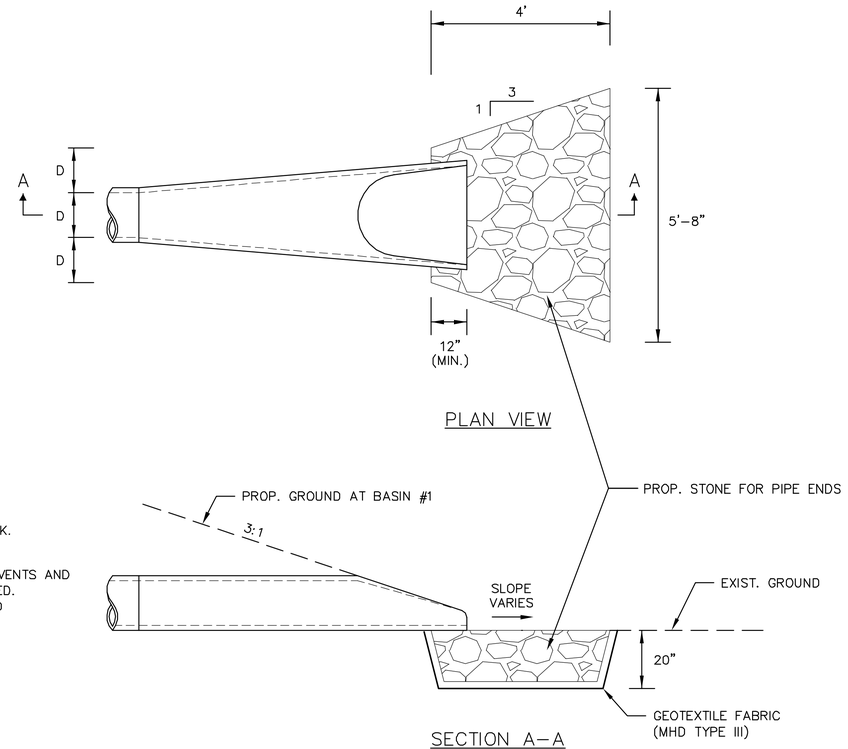


NOTES:

1. INSTALL SILTSACK IN ALL CATCH BASINS WITHIN THE LIMITS OF WORK AND AS DIRECTED BY THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.
2. GRATE TO BE PLACED OVER SILTSACK.
3. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED

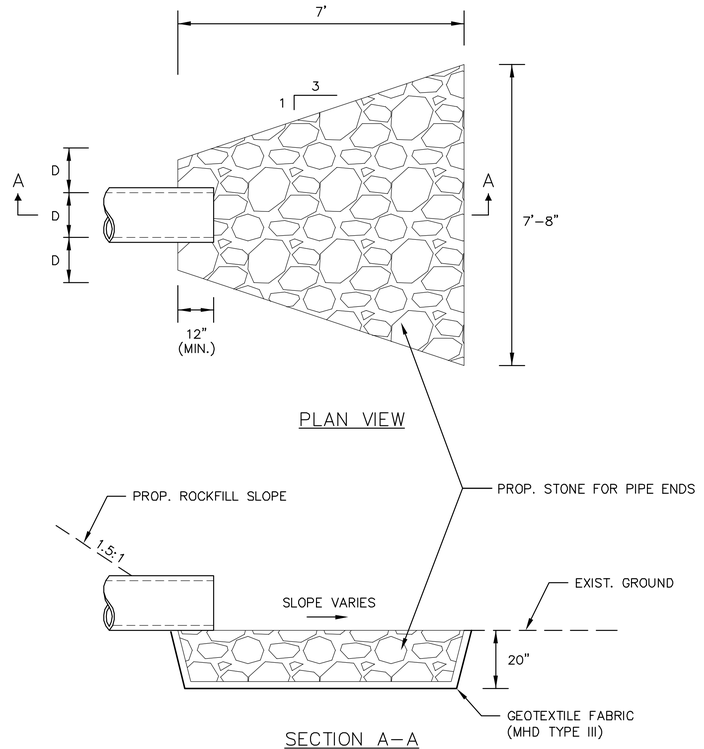
SILT SACK

NOT TO SCALE



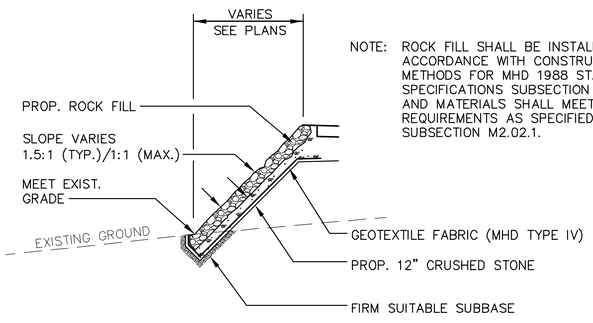
STONE APRON (STA. 20+52 LT)

NOT TO SCALE



STONE APRON (STA. 51+96 LT)

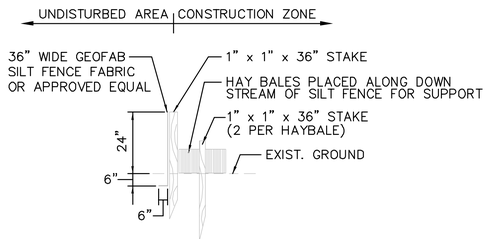
NOT TO SCALE



NOTE: ROCK FILL SHALL BE INSTALLED IN ACCORDANCE WITH CONSTRUCTION METHODS FOR MHD 1988 STANDARD SPECIFICATIONS SUBSECTION 983.66 AND MATERIALS SHALL MEET THE REQUIREMENTS AS SPECIFIED IN SUBSECTION M2.02.1.

ROCK FILL SLOPE

NOT OT SCALE



HAY BALE/SILT FENCE DETAIL

NOT TO SCALE

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Off-Site Improvements

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DRAWN BY	JAR
CHECKED BY	FLD
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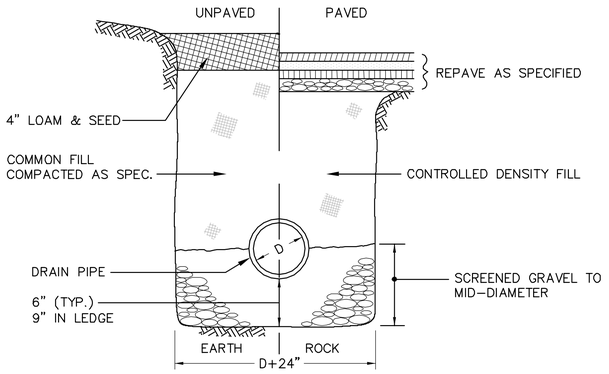
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

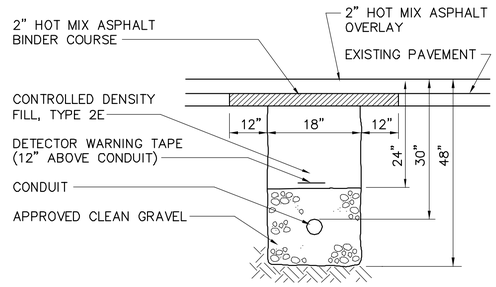
Erosion Control
Details

SHEET 49 OF 81	DRAWING NUMBER
JOB NO. 5139	49
CAD 5139TDv3	



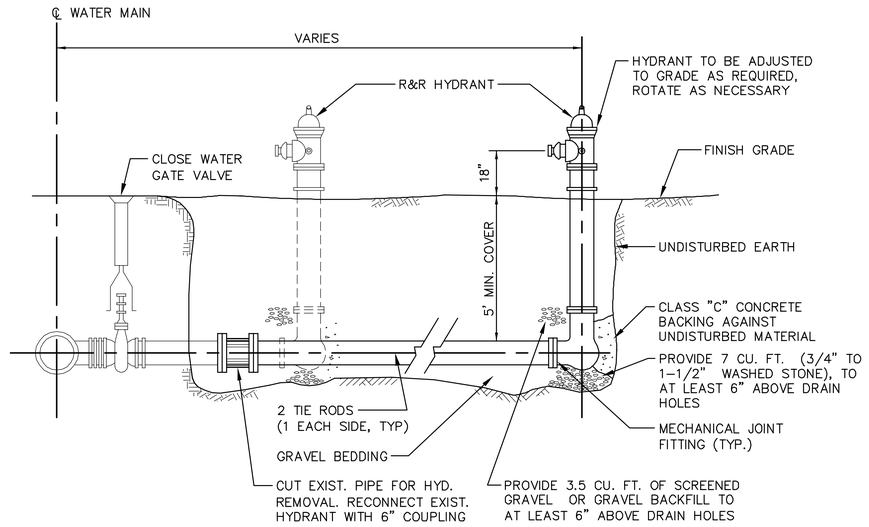
DRAINAGE TRENCH DETAIL

NOT TO SCALE



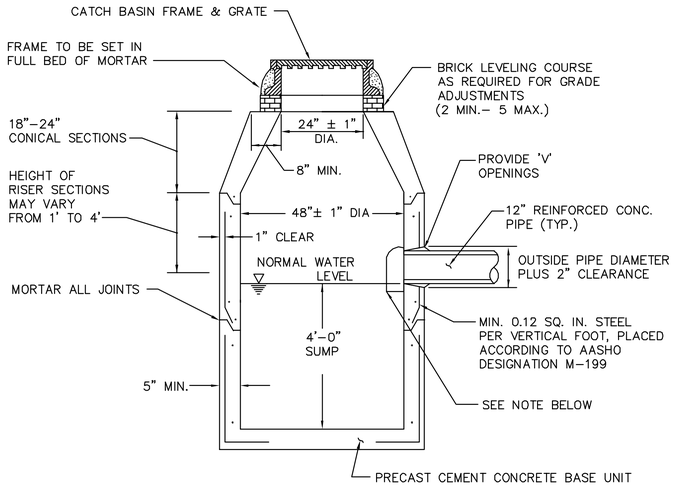
CONDUIT TRENCH DETAIL

NOT TO SCALE



TYPICAL HYDRANT RELOCATION

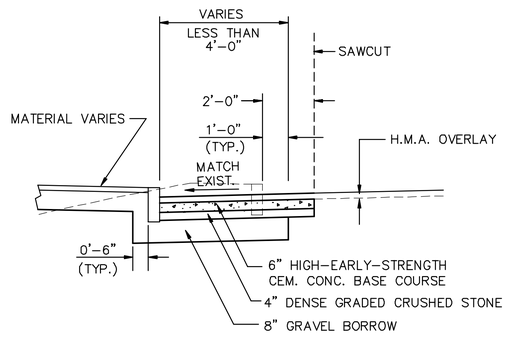
NOT TO SCALE
NOTE: ALL WATER GATES & HYDRANTS TO OPEN LEFT



NOTE: ALL CATCH BASINS SHALL BE CONSTRUCTED WITH HOODED OUTLET COVERS OR "SNOUTS" AS MANUFACTURED BY LE BARON FOUNDRY, INC. OR APPROVED EQUAL.

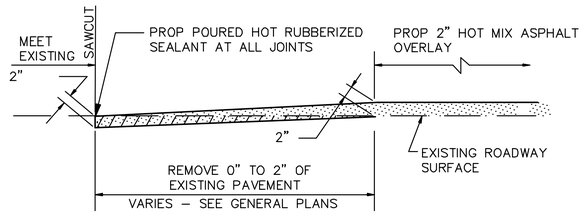
PRECAST CONCRETE CATCH BASIN

NOT TO SCALE



TYPICAL SECTION: ROADWAY WIDENING 4'-0" OR LESS

NOT TO SCALE



PAVEMENT TRANSITION DETAIL

NOT TO SCALE

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Wayland Town Center
Off-Site Improvements

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PREPARED FOR

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STAMP	

REVISIONS

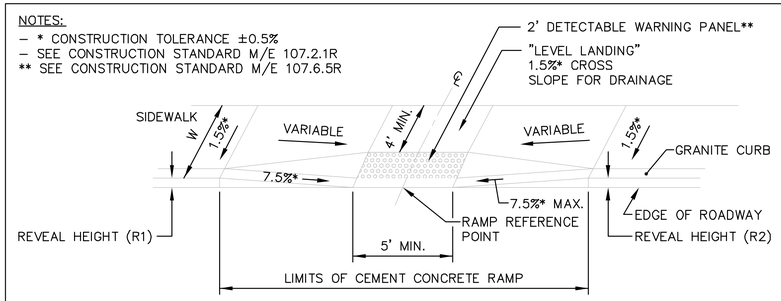
NO.	DESCRIPTION	DATE

DRAWING TITLE

Construction Details

SHEET 50 OF 81	DRAWING NUMBER
JOB NO. 5139	50
CAD 5139TDv3	

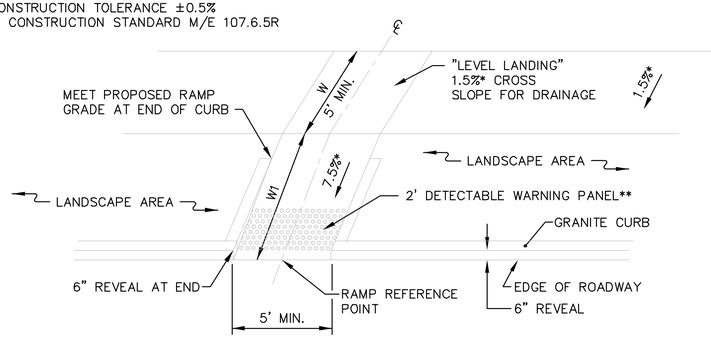
NOTES:
– * CONSTRUCTION TOLERANCE ±0.5%
– SEE CONSTRUCTION STANDARD M/E 107.2.1R
** SEE CONSTRUCTION STANDARD M/E 107.6.5R



WCR #	RAMP REFERENCE POINT		REVEAL HEIGHT (R1)/(R2)	ROADWAY GUTTER SLOPE	WIDTH OF SIDEWALK (W)	TRANSITION LENGTH	
	STATION	OFFSET				LEFT SIDE	RIGHT SIDE
1	21+08.49	53.28' LT	6"	2.6%	6.00'	6.50'	11.00'
2	22+04.86	52.95' LT	6" LT/ 3" RT	0.4%	6.00'	7.67'	3.25'
3	22+24.03	41.59' LT	3" LT/ 6" RT	0.5%	6.00'	7.67'	6.50'
4	22+20.55	27.40' RT	6"	0.7%	6.00'	6.50'	7.67'
5	22+47.14	27.80' RT	6"	2.2%	6.00'	9.00'	6.50'
6	44+57.85	18.70' LT	6"	0.02%	6.00'	6.50'	7.67'
8	290+29.20	31.46' LT	3" LT	0.8%	7.63'–8.21'	3.25'	–
9	50+81.63	34.00' LT	6"	2.4%	6.00'	11.00'	6.50'
10	51+18.15	28.59' RT	6"	0.7%	6.00'	7.67'	6.50'

WHEELCHAIR RAMP PARALLEL PERPENDICULAR

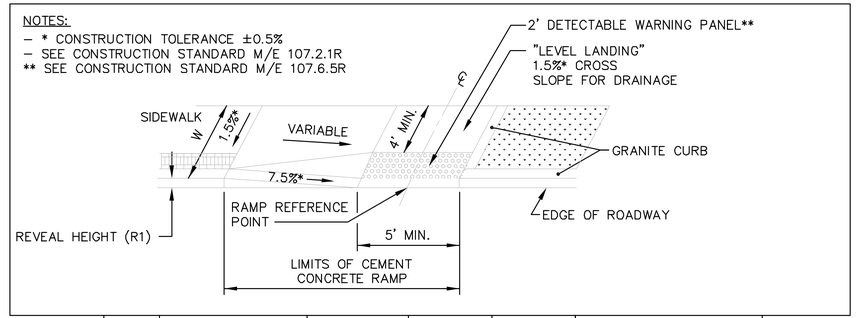
NOTES:
– * CONSTRUCTION TOLERANCE ±0.5%
** SEE CONSTRUCTION STANDARD M/E 107.6.5R



WCR #	RAMP REFERENCE POINT		LENGTH OF PRIMARY RAMP (W1)	WIDTH OF SIDEWALK (W)	WIDTH OF RAMP MIN. 5.00'	TRANSITION LENGTH	
	STATION	OFFSET				LEFT SIDE	RIGHT SIDE
12	210+80.45	23.39' RT	7.13'	7'±	5.00'	8.00'	6.00'
13	214+24.88	30.15' RT	6.50'	7.8'±	5.00'	6.50'	6.50

WHEELCHAIR RAMP RETURN CURBS AT LANDSCAPE AREA, LEVEL LANDING IN SIDEWALK

NOTES:
– * CONSTRUCTION TOLERANCE ±0.5%
– SEE CONSTRUCTION STANDARD M/E 107.2.1R
** SEE CONSTRUCTION STANDARD M/E 107.6.5R

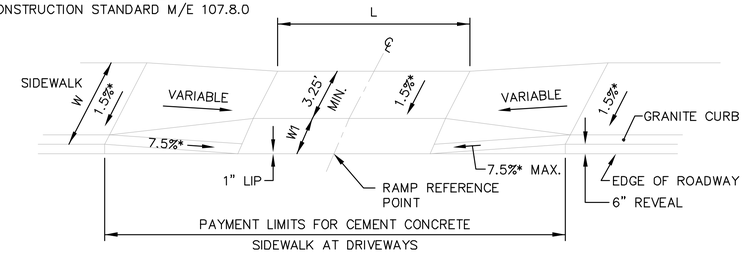


WCR #	RAMP REFERENCE POINT		REVEAL HEIGHT (R1)	ROADWAY GUTTER SLOPE	WIDTH OF SIDEWALK (W)	TRANSITION LENGTH	
	STATION	OFFSET				LEFT SIDE	RIGHT SIDE
7	49+59.75	37.02' LT	3" RT	0.8%	6.50' RT	–	3.83'
11	207+64.13	35.17' RT	6"	0.7%	6.00' LT	7.67'	–

NOTE: AT WCR6, TOTAL RAMP WIDTH (EDGE OF ROADWAY TO BACK OF WALK) SHALL BE 4' MIN. AT CURB RETURN TO AVOID ADDITIONAL IMPACTS TO 60" MAPLE TREE)

WHEELCHAIR RAMP PARALLEL PERPENDICULAR WITH CURB RETURN

NOTES:
– * CONSTRUCTION TOLERANCE ±0.5%
– SEE CONSTRUCTION STANDARD M/E 107.8.0



DWY #	RAMP REFERENCE POINT		LENGTH OF PRIMARY RAMP (W1)	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY (L)	DEPTH OF TRAVEL PATH MIN. 3.25'	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STATION	OFFSET						LEFT SIDE	RIGHT SIDE
1	45+09.00	20.74 LT	2.75'	6.00'	18.02'	3.25'	0.2%/0.96%	6.50'	7.67'
2	46+18.84	11.34 RT	2.91'–2.75'	6.16'–6.00'	19'±	3.25'	0.38%	–	7.67'
3	46+68.00	12.17 RT	2.75'	6.00'	21.00'	3.25'	0.40%	6.50'	7.67'
4	47+16.00	13.13 RT	2.75'	6.00'	15.00'	3.25'	.44%	7.67'	6.50'
5	47+80.99	13.50 RT	2.25'	5.50'	21.99'	3.25'	0.34%	6.50'	7.67'
6	52+09.49	22.29 RT	2.75'	6.00'	28.24'	3.25'	1.80%	9.00'	6.50'
7	52+63.49	19.58 RT	2.75'	6.00'	21.85'	3.25'	0.52%	9.00'	6.50'
8	215+15.89	23.00 LT	–	5.37'–6.85'	–	5.37'–6.85'	0.86%	7.67'	6.50'
9	215+43.69	23.06 LT	5.50'–5.63'	5.5'	28'±	–	0.86%	6.50'	–

THROUGH SIDEWALK DRIVEWAYS

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DESIGNED BY	JAR
DRAWN BY	LSA
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SCALE	N.T.S.
STAMP	

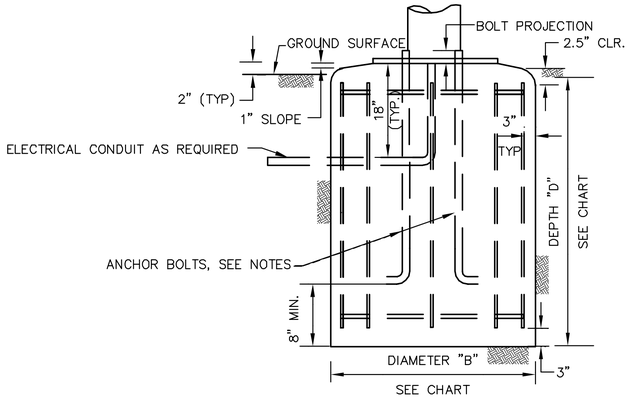
REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Wheelchair Ramp Details

SHEET 51 OF 81	DRAWING NUMBER 51
JOB NO. 5139	
CAD 5139TDv3	

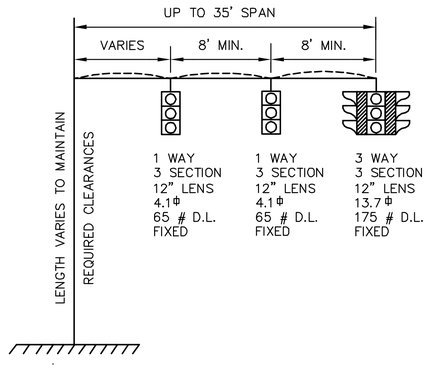


ELEVATION

NOT TO SCALE

NOTES:

1. POLE, BASE PLATE AND ANCHOR BOLTS SHALL BE DESIGNED BY THE POLE MANUFACTURER.
2. MINIMUM FOUNDATION DEPTH SHALL BE CHECKED TO INSURE ADEQUATE ANCHOR BOLT EMBEDMENT CLEARANCE, AND PROJECTION.
3. OPTIONAL END ANCHORAGE FOR ANCHOR BOLTS CAN BE A STEEL PLATE WITH THREADED HOLES DESIGNED BY THE POLE MANUFACTURER.



PLAN

NOT TO SCALE

SOIL TYPE (SEE GENERAL NOTE NO. 7)	DIA. (B)=2'-6"		DIA. (B)=3'-0"		DIA. (B)=3'-6"	
	DEPTH(D)	VERTICAL BARS	DEPTH(D)	VERTICAL BARS	DEPTH(D)	VERTICAL BARS
DRY SANDY SOIL	5'-9"	10#5	5'-0"	10#6	4'-9"	10#7
WET SANDY SOIL	6'-9"	10#5	6'-0"	10#6	5'-6"	10#7
CLAYEY SOIL (MEDIUM STIFF)	9'-9"	10#5	8'-9"	10#6	8'-0"	10#7
ALLUVIAL SOIL	14'-3"	10#5	12'-9"	10#6	11'-9"	10#7

FOUNDATION DESIGN CHART

GENERAL NOTES

1. FOUNDATIONS SHALL BE CLASS "A" CEMENT CONCRETE MASONRY.
2. REINFORCEMENT SHALL BE A.S.T.M. A615-GR. 60.
3. BOLT CIRCLE AND ANCHOR BOLTS TO BE PROVIDED BY THE CONTRACTOR. THE ANCHOR BOLTS SHALL BE SUPPLIED WITH A TEMPLATE FOR SETTING THE BOLTS AND NECESSARY BOLT PROJECTIONS.
4. PROVIDE FOR ELECTRICAL CONDUIT AS REQUIRED.
5. EXCAVATION SHALL BE BY THE AUGER METHOD TO THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION WITHOUT DISTURBING THE SOIL AROUND AND BELOW THE PROPOSED FOUNDATION BOTTOM.
   ALTERNATE METHODS OF EXCAVATION MAY BE SUBMITTED FOR APPROVAL IF THEY MEET THE REQUIREMENTS LISTED IN THE GENERAL NOTES OF SHEETS 3 & 4 OF THE SPAN WIRE ASSEMBLY FOUNDATION DETAILS & DESIGN CHARTS.
6. IF THE SOIL IS DISTURBED OR REMOVED BEYOND THE NEAT LINES OF THE OUTSIDE DIMENSION OF THE FOUNDATION AS SPECIFIED, IT SHALL BE REPLACED WITH CONCRETE. ANY ADDITIONAL COST FOR THE CONCRETE SHALL BE PAID FOR BY THE CONTRACTOR.
7. DETERMINATION OF EXISTING SOIL CONDITIONS SHALL BE MADE BY THE DESIGN ENGINEER.
8. VERTICAL REINFORCEMENT BARS ARE TO BE EVENLY SPACED IN THE FOUNDATION AS SHOWN.
9. THE SMALLEST DIAMETER FOUNDATION SHALL BE USED THAT WILL MEET THE MOMENT REQUIREMENT AND BE AT LEAST 16" GREATER IN DIAMETER THAN THE BOLT CIRCLE DIAMETER.
10. IF A POOR SOIL OR LEDGE IS ENCOUNTERED, (I.E., ONE WHICH DOES NOT APPLY TO THE DESIGN CHARTS SHOWN ON THIS SHEET), AN ALTERNATIVE DESIGN SHALL BE DEVELOPED BY THE DESIGN ENGINEER. DECISIONS MADE IN NOTES #7 & #10, SHALL BE SUBMITTED TO MASSHIGHWAY FOR APPROVAL. IF UTILITIES OR OTHER UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL BACKFILL THE AREA TO ITS ORIGINAL CONDITION UNTIL AN ALTERNATE DESIGN HAS BEEN PROVIDED BY THE DESIGN ENGINEER.
11. THE FOUNDATIONS SHOWN ON THIS DRAWING ARE FOR UP TO A 35-FOOT CANTILEVERED TYPE II MAST ARM CARRYING A THREE WAY, THREE SECTION, TWELVE INCH (12") LENS TRAFFIC SIGNAL HOUSING FIXED AT THE END OF THE ARM, AND A ONE-WAY, THREE-SECTION, TWELVE INCH (12") LENS TRAFFIC SIGNAL FIXED TWELVE FEET (12') AWAY, AND ANOTHER ONE-WAY, THREE SECTION TWELVE INCH (12") LENS TRAFFIC SIGNAL FIXED TWELVE FEET (12') AWAY FROM THAT.

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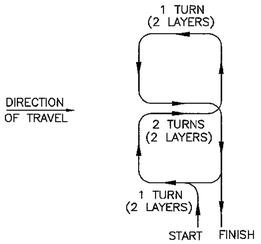
Mast Arm Details – Type II Mast Arm Cored Pier Foundations

SHEET 52 OF 81	DRAWING NUMBER
JOB NO. 5139	52
CAD 5139TSDv3	

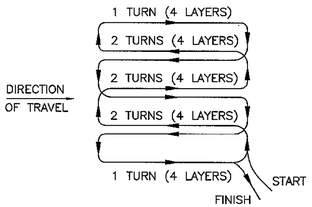
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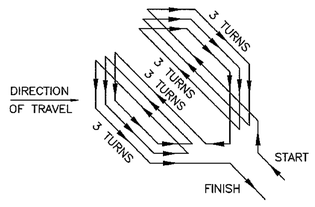
WINDING DETAILS



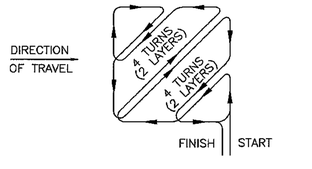
TYPE Q DETECTOR



TYPE D-Q DETECTOR

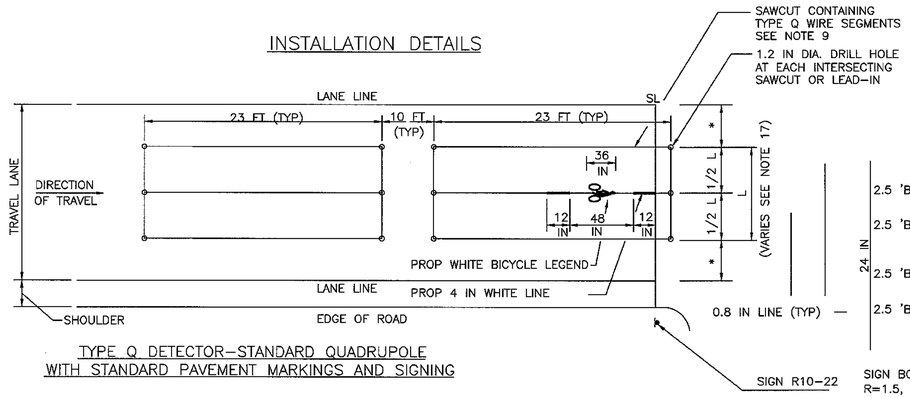


TYPE D-1 DETECTOR



TYPE D-2 DETECTOR

INSTALLATION DETAILS



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

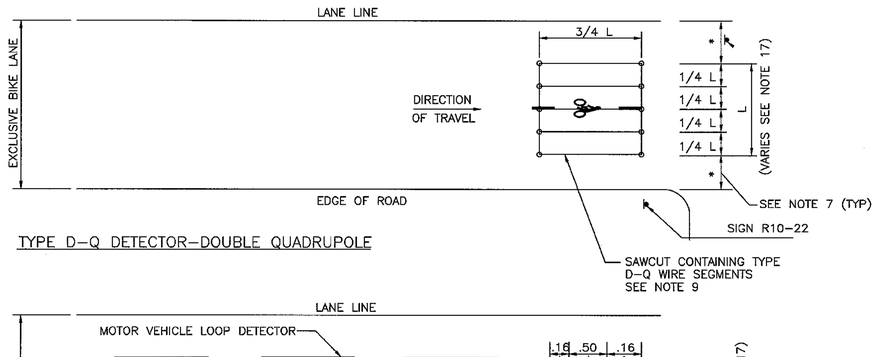
SIGN R10-22

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

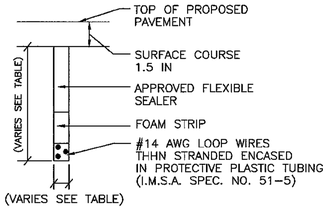
WHITE BACKGROUND
BLACK LEGEND AND LINES

NOTE: ALL SIGN DIMENSIONS IN INCHES

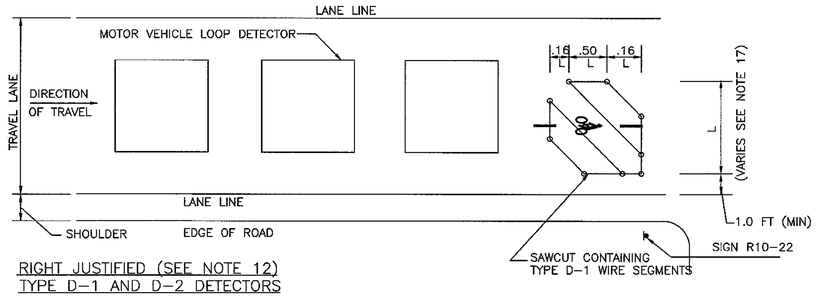
NOTE: SIGN PANEL NOT SHOWN TO SCALE



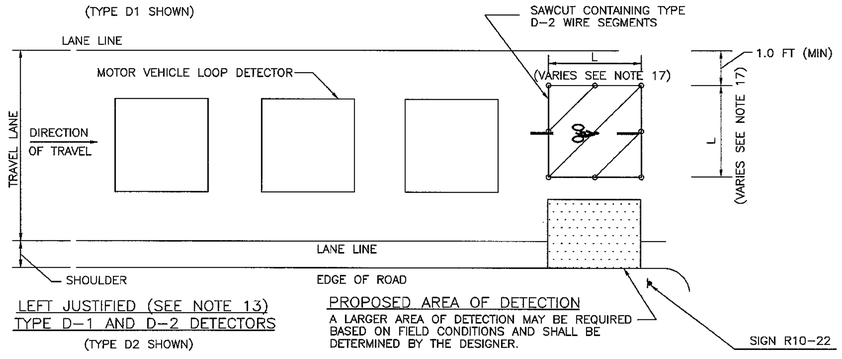
TYPE D-Q DETECTOR-DOUBLE QUADRUPOLE



SECTION THRU LOOP DETECTOR



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



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

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

SAWCUT SLOT DEPTH GUIDE

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

STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MASS				
PROJECT FILE NO.				

BICYCLE LOOP DETECTOR DETAILS

NOTES:

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

NOTE: REVISED FEBRUARY 22, 2006

MASSHIGHWAY

MASSACHUSETTS HIGHWAY DEPARTMENT
TRAFFIC ENGINEERING
REVISED FEBRUARY 22, 2006

PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
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DRAWN BY	–
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SCALE	N.T.S.
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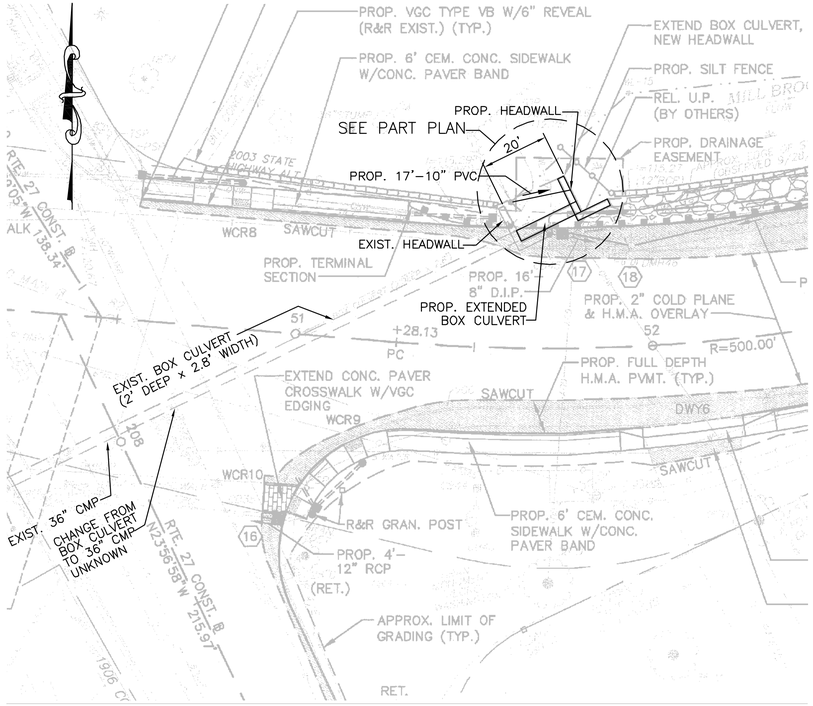
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MHD Bicycle Loop
Detector Details

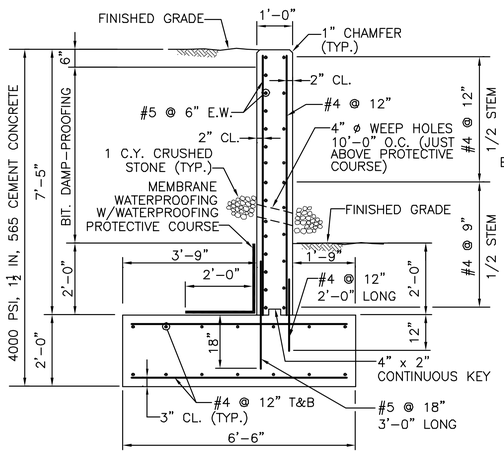
SHEET 53 OF 81	DRAWING NUMBER
JOB NO. 5139	53
CAD 5139TSDv3	

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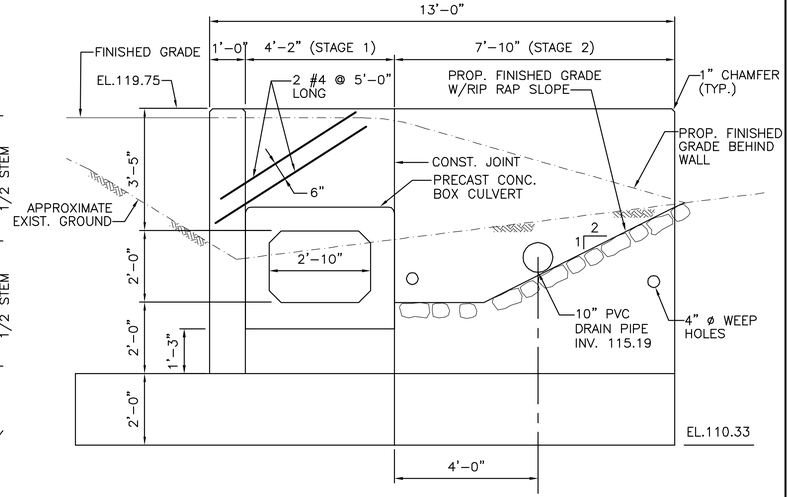
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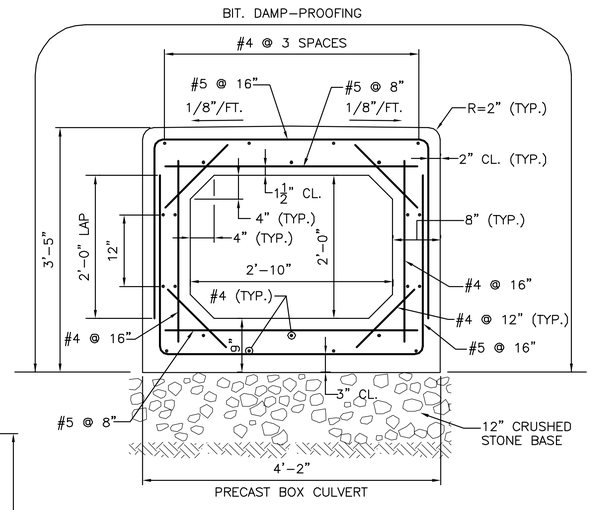
LOCATION PLAN
SCALE: 1" = 20'



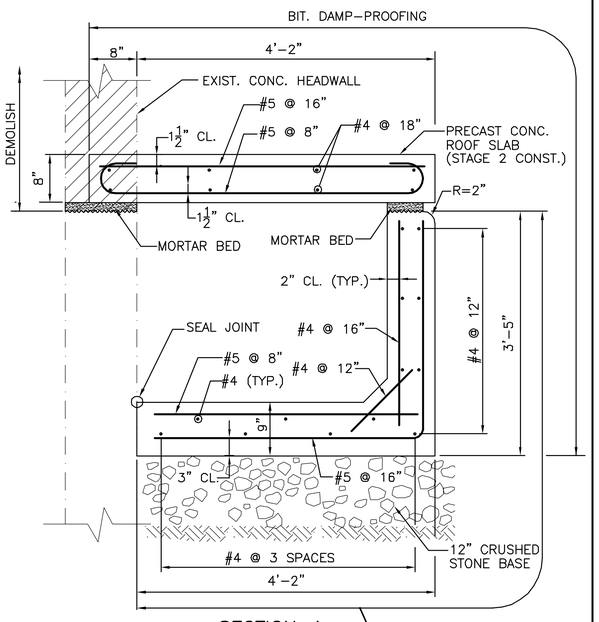
SECTION 1
SCALE: 1/2" = 1'-0"



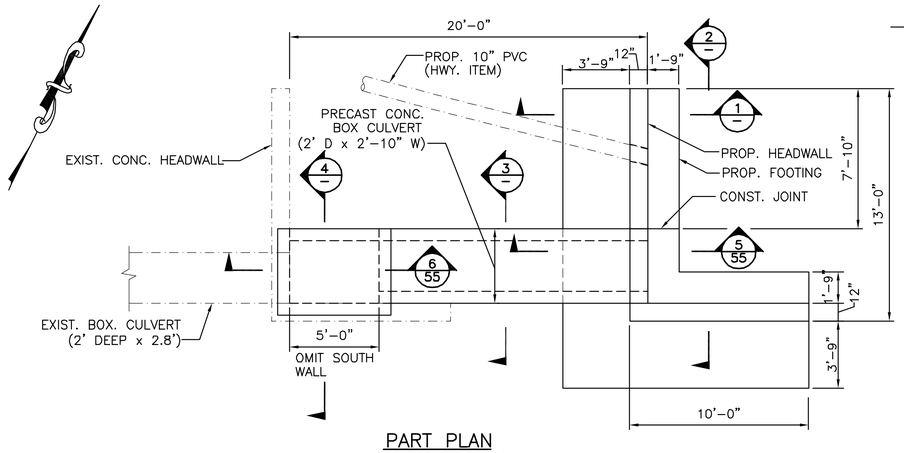
SECTION 2
SCALE: 1/2" = 1'-0"



SECTION 3
SCALE: 1" = 1'-0"



SECTION 4
SCALE: 1" = 1'-0"



PART PLAN
SCALE: 1/4" = 1'-0"

NOTE:
ALL REINFORCING STEEL SHALL BE EPOXY COATED AND SHALL CONFORM TO THE REQUIREMENTS OF AASHTO 31 GRADE 60.

LEGEND

= PORTION OF EXISTING WALL TO BE DEMOLISHED

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Boston, Massachusetts

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CONSULTING ENGINEERS
BOSTON, MA (617)566-4218

DESIGNED BY	LIN ASSOC.
DRAWN BY	LIN ASSOC.
CHECKED BY	LIN ASSOC.
DATE	DECEMBER 2008
SCALE	N.T.S.
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REVISIONS

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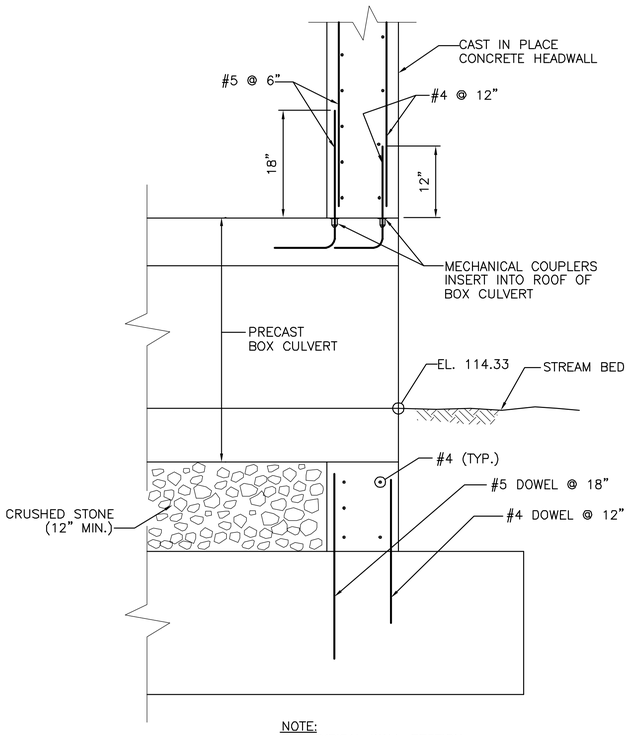
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Structural Details

SHEET 54 OF 81	DRAWING NUMBER 54
JOB NO. 5139	
CAD 5139TDv3	

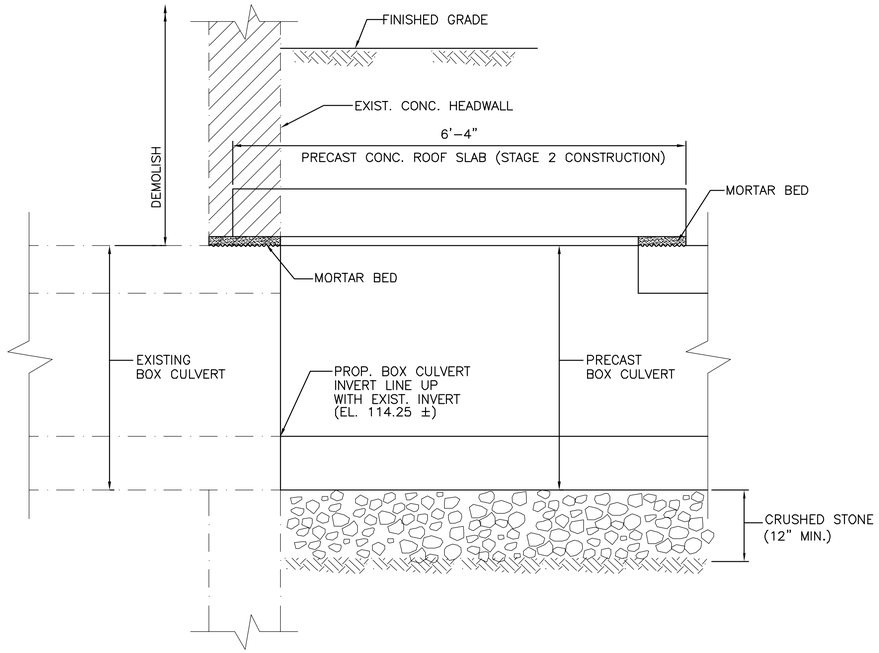
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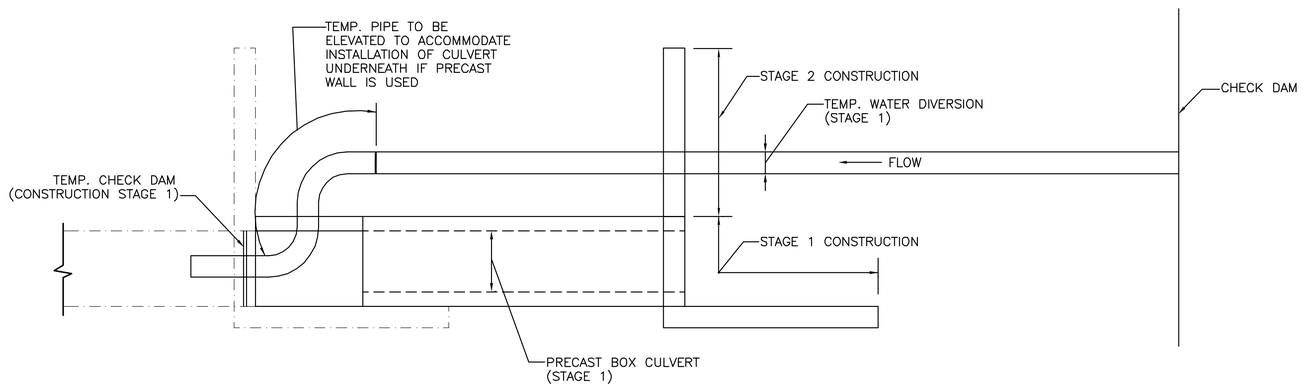


NOTE:
SEE TYPICAL WALL SECTION
ON SHT. 53 FOR REINF.
REBARS NOT SHOWN.

SECTION 5/54
SCALE: 1" = 1'-0"



SECTION 6/54
SCALE: 1" = 1'-0"



STAGE CONSTRUCTION SCHEMATIC
NOT TO SCALE

SUGGESTED CONSTRUCTION SEQUENCE

STAGE 1

A. CONSTRUCT TEMPORARY STREAM DIVERSION, INCLUDING:
a. CHECK DAMS UPSTREAM AND DOWN STREAM OF CONSTRUCTION.
b. INSTALL TEMPORARY PIPING FLOW DIVERT STREAM FLOW INTO PIPE(S).
c. CONSTRUCT NEW WALL AND INSTALL PRECAST BOX CULVERT.

STAGE 2

A. RELOCATE STREAM TO NEW CULVERT, CONSTRUCT DIVERSION PIPING AND DAMS TO ENSURE STAGE 2 CONCRETE CONSTRUCTION IS ACCOMPLISHED IN DRY.
B. COMPLETE CONSTRUCTION.
C. REMOVE ALL TEMPORARY CONSTRUCTION.

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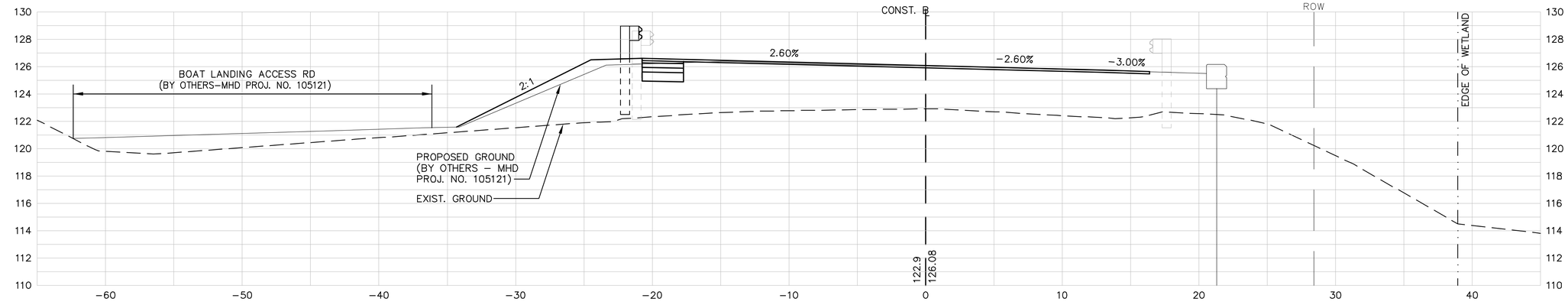
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Structural Details

SHEET 55 OF 81	DRAWING NUMBER
JOB NO. 5139	55
CAD 5139TDv3	

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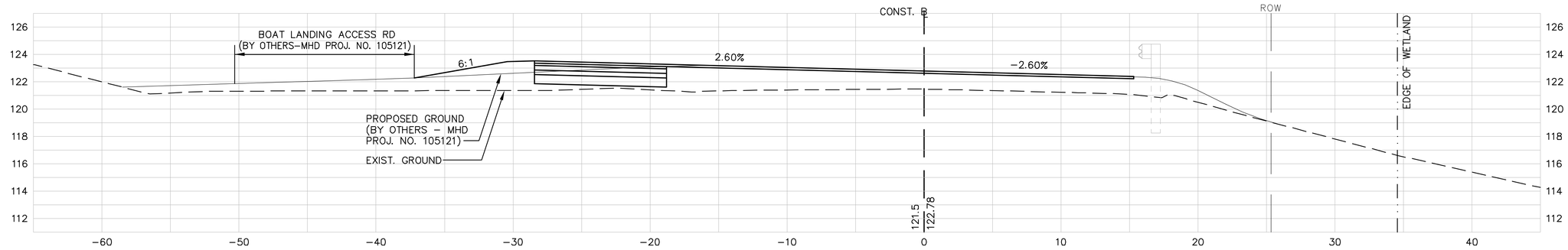
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Cross Sections
Route 20 at Site Drive

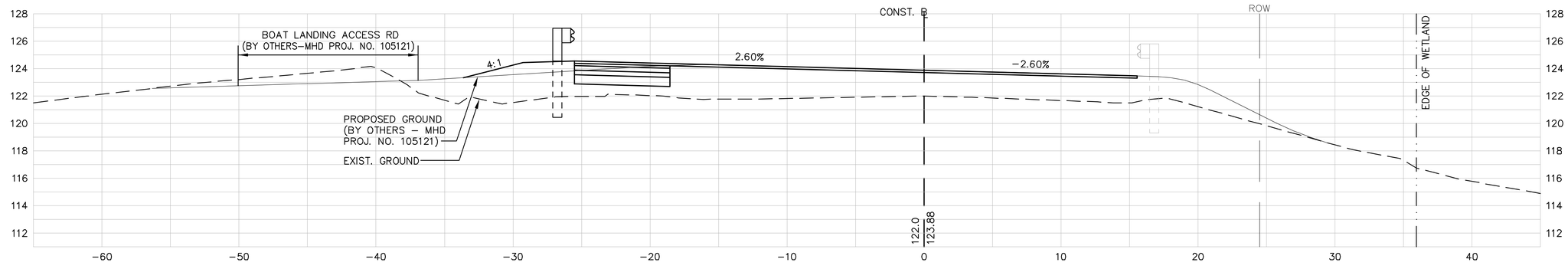
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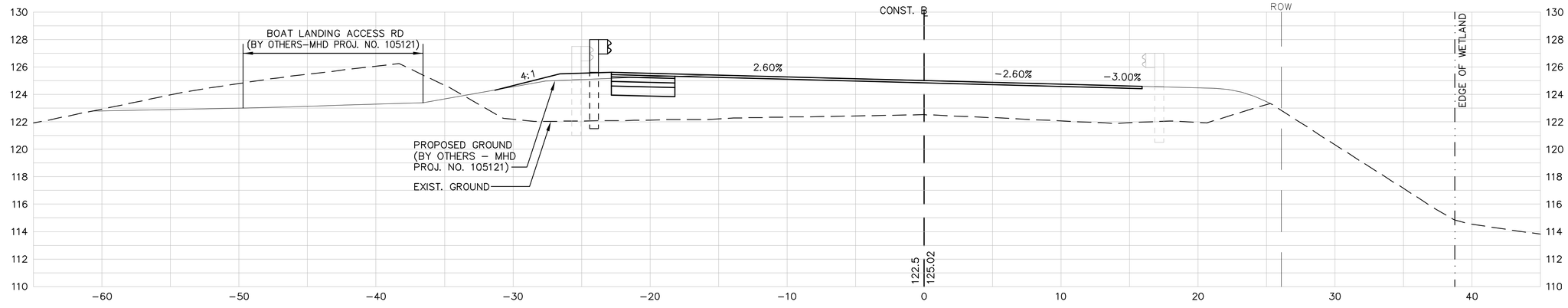
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14+50



14+00



13+50

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SCALE IN FEET

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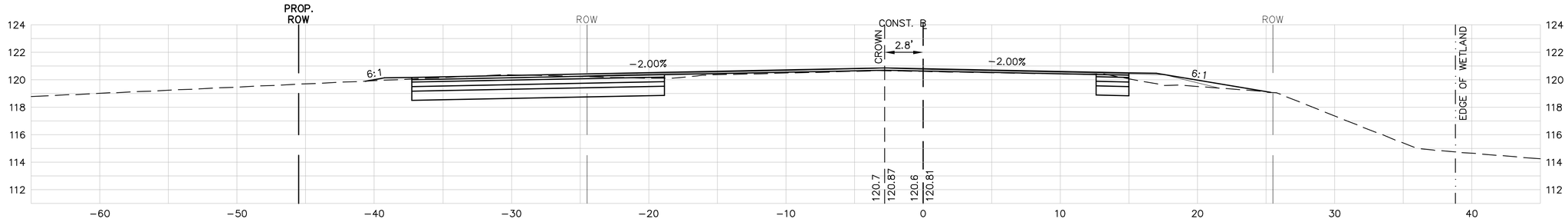
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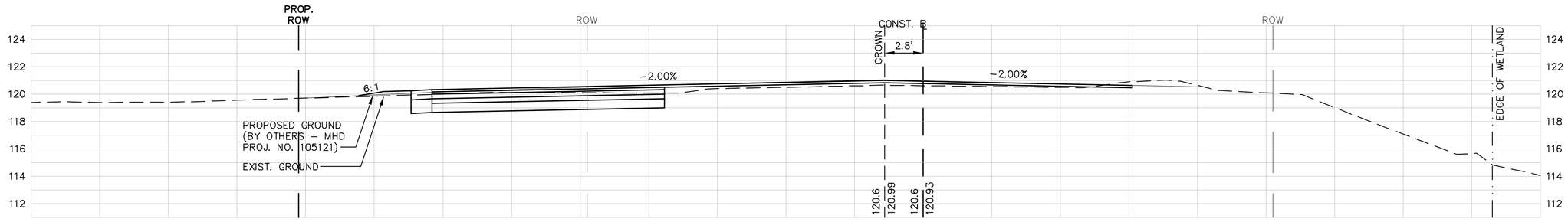
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Cross Sections
Route 20 at Site Drive

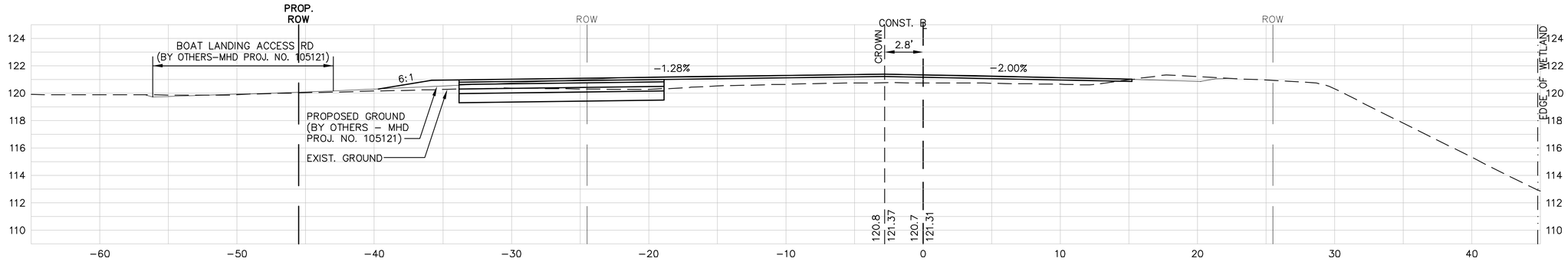
SHEET 57 OF 81	DRAWING NUMBER 57
JOB NO. 5139	
CAD 5139CSv3	



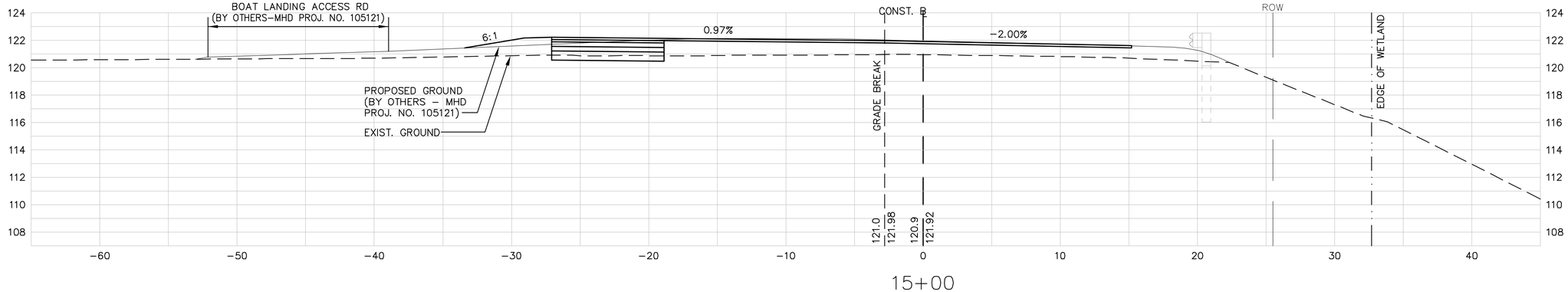
16+50



16+00



15+50



15+00

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SCALE IN FEET

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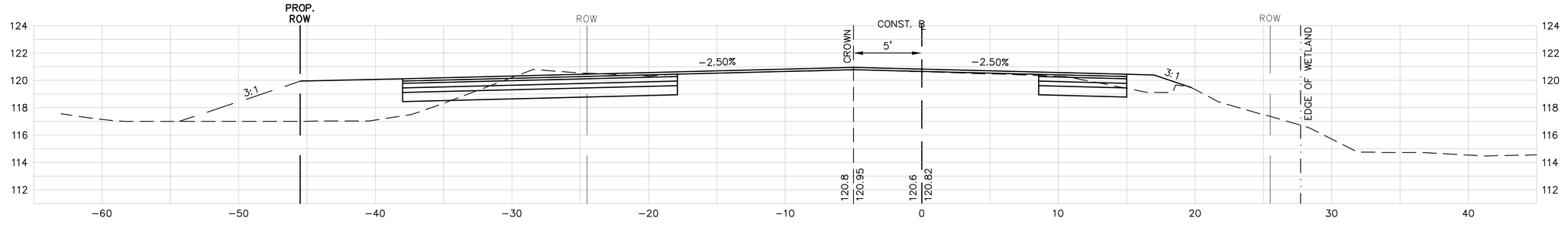
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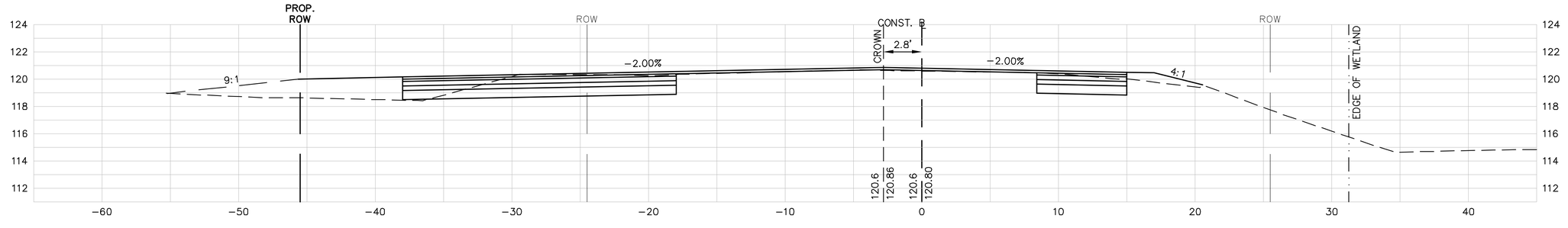
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Cross Sections
Route 20 at Site Drive

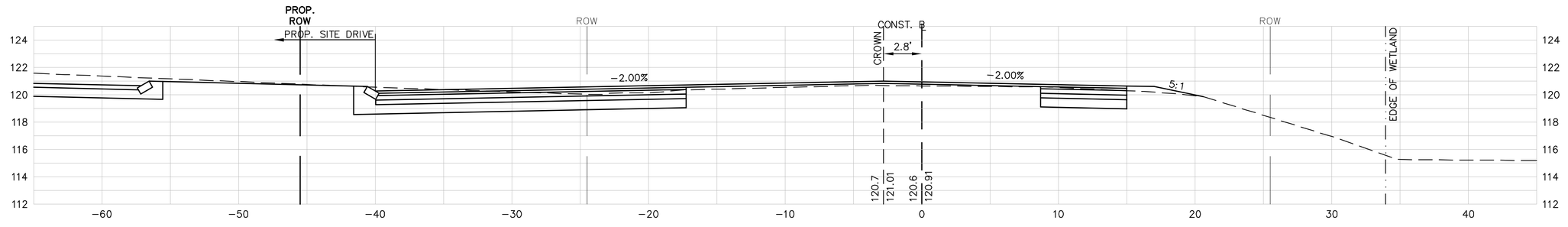
SHEET 58 OF 81	DRAWING NUMBER
JOB NO. 5139	**58**
CAD 5139CSv3	



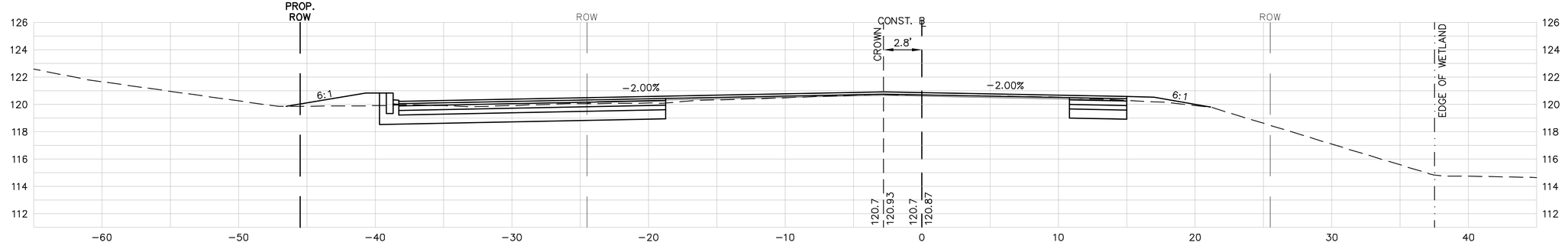
18+50



18+00



17+50



17+00

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810-1066
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FAX: (978) 688-6508

FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437-4601
FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

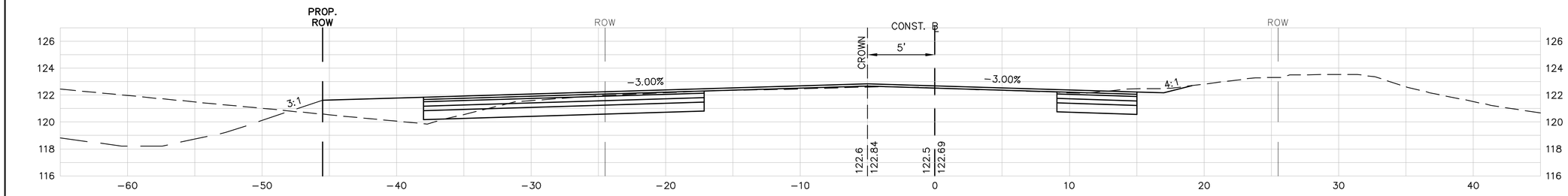
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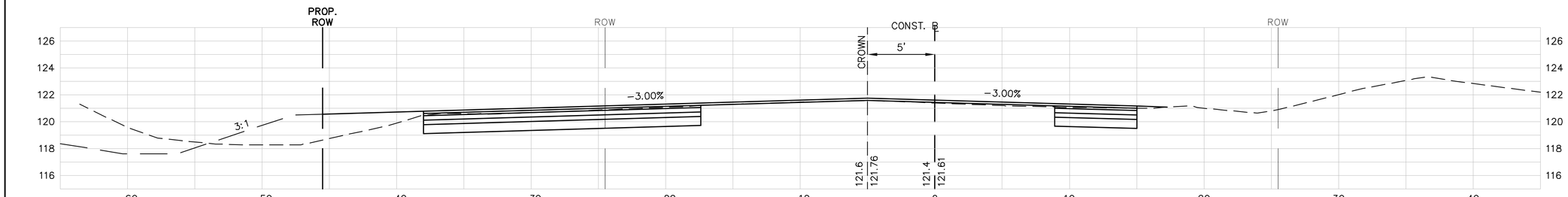
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Cross Sections
Route 20 at Site Drive

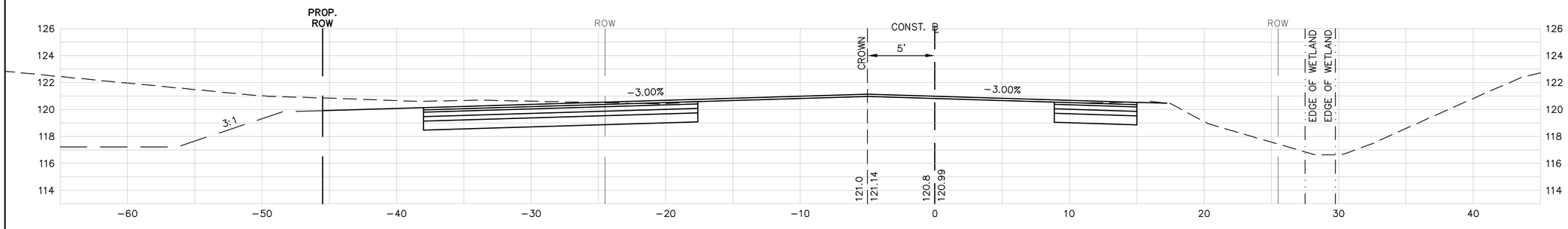
SHEET 59 OF 81	DRAWING NUMBER
JOB NO. 5139	59
CAD 5139CSv3	



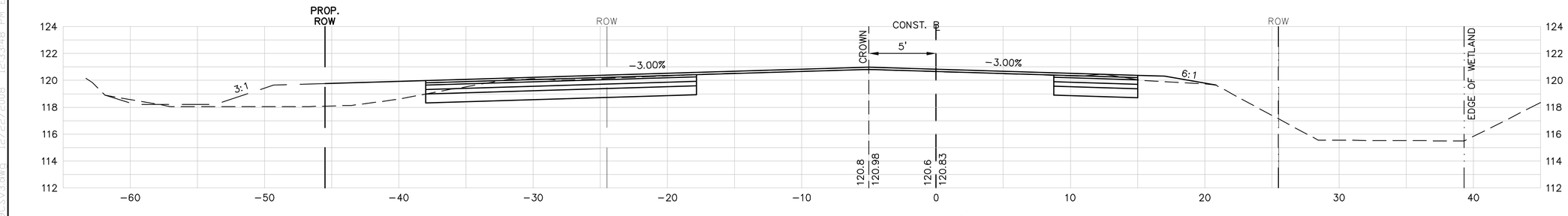
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20+00



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19+00

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SCALE IN FEET

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PROJECT TITLE

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Wayland,
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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

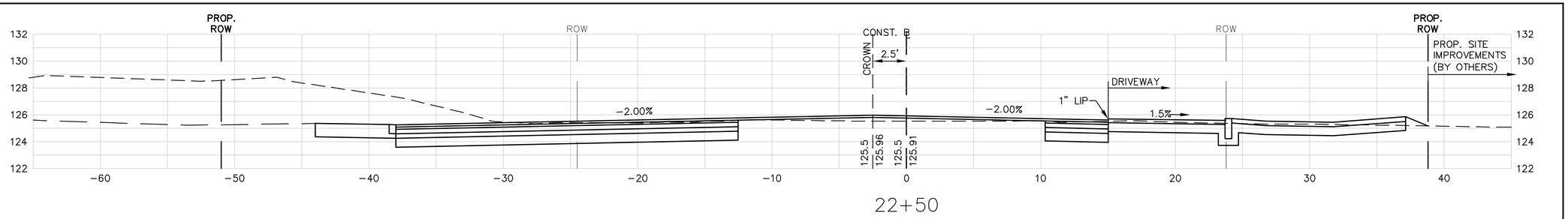
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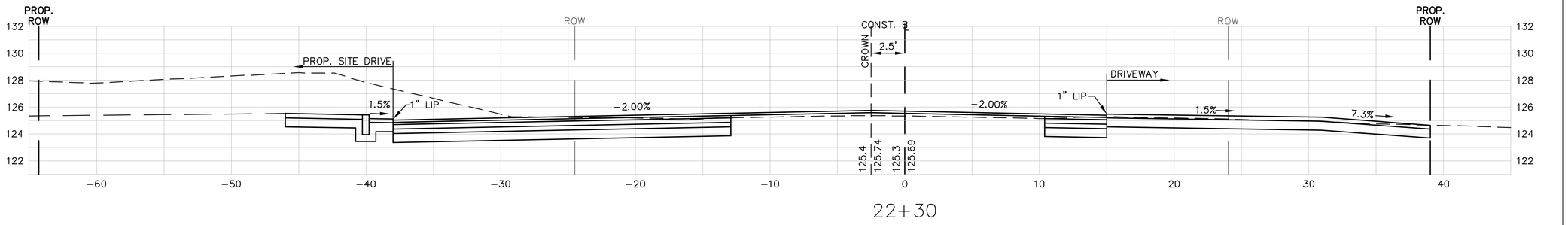
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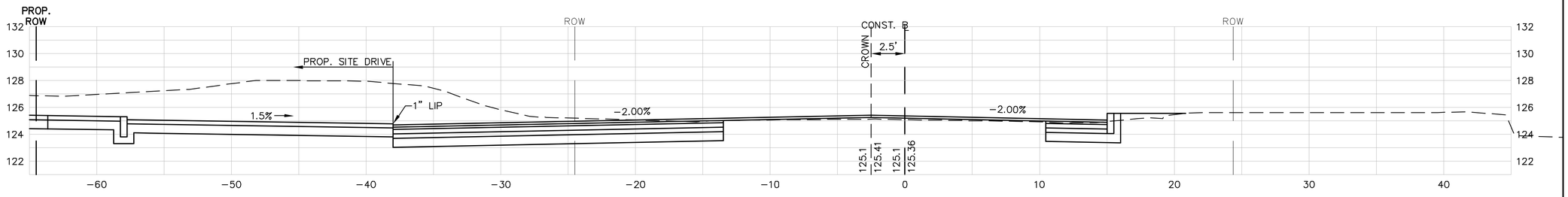
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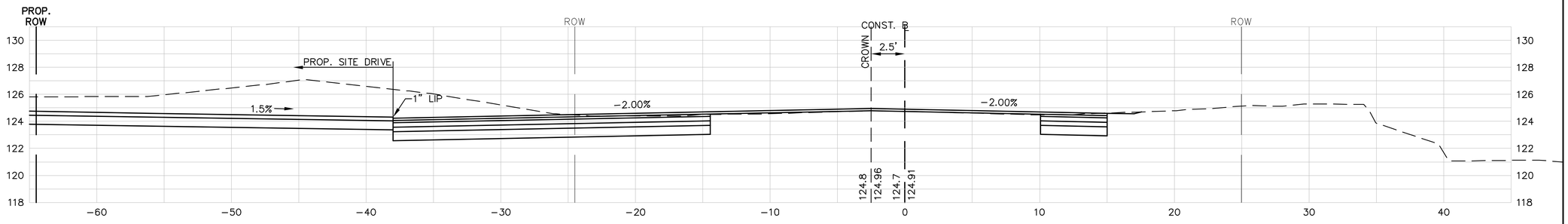
Cross Sections
Route 20 at Site Drive

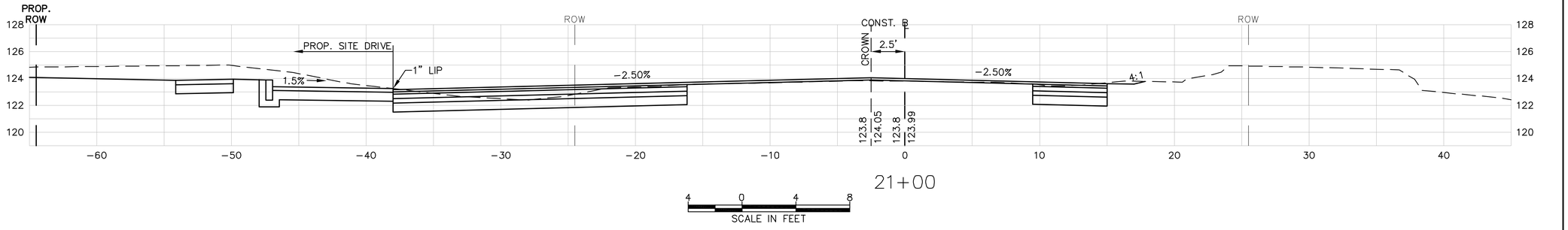
SHEET 60 OF 81	DRAWING NUMBER 60
JOB NO. 5139	
CAD 5139CSv3	











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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

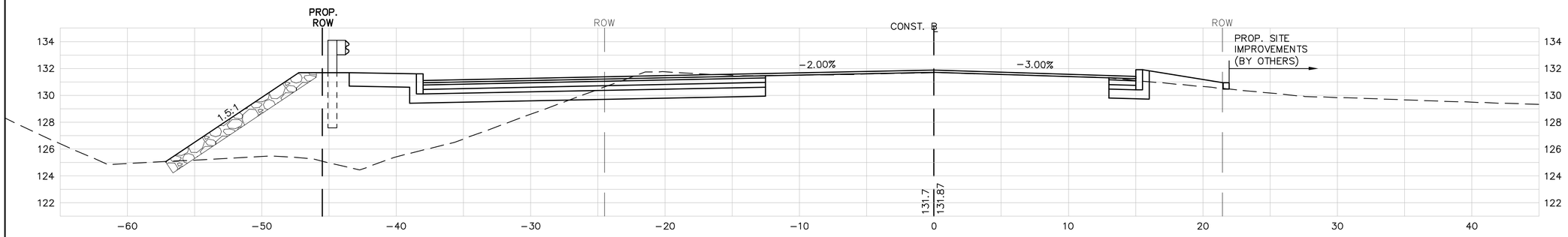
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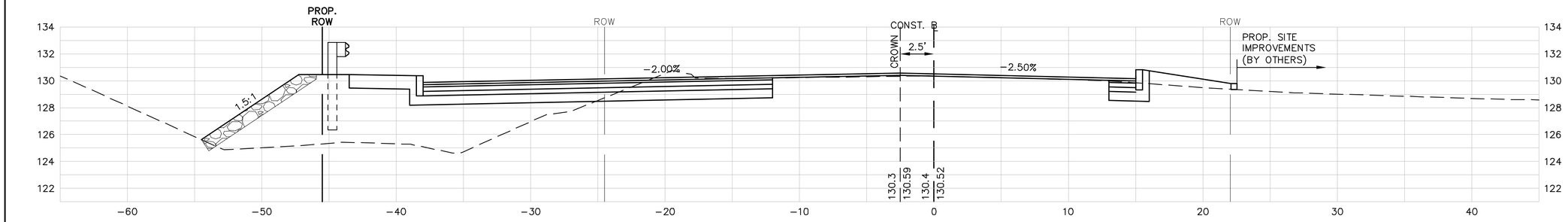
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Cross Sections
Route 20 at Site Drive

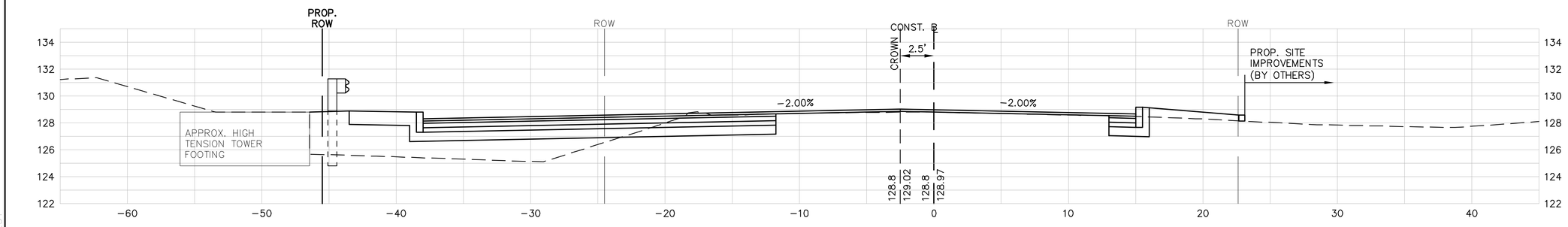
SHEET 61 OF 81	DRAWING NUMBER
JOB NO. 5139	**61**
CAD 5139CSv3	



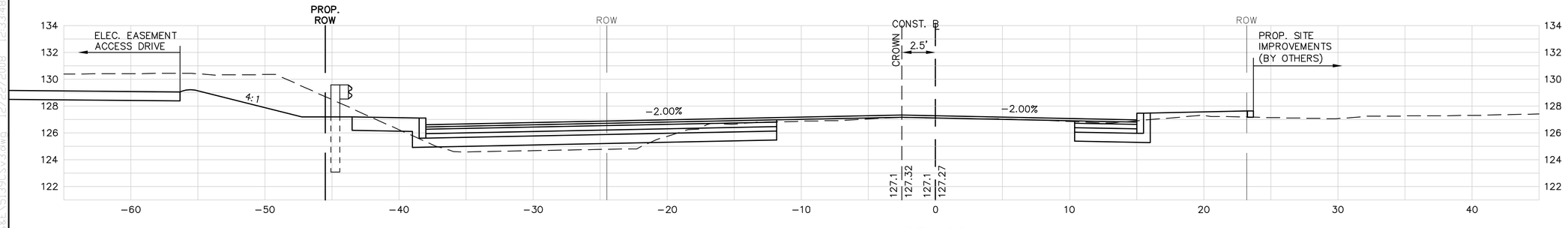
24+50



24+00



23+50



23+00

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SCALE IN FEET

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PROJECT TITLE

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Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

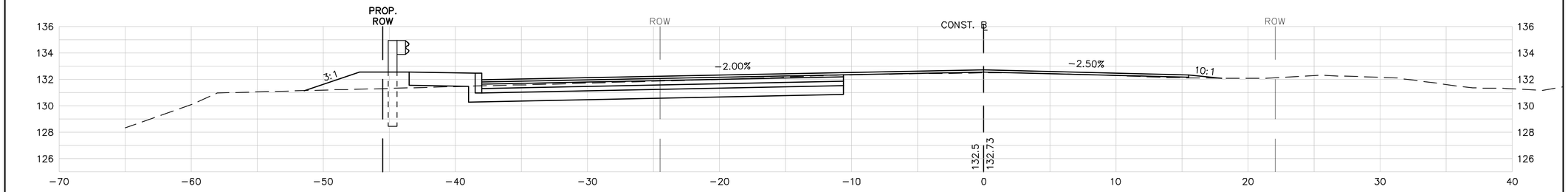
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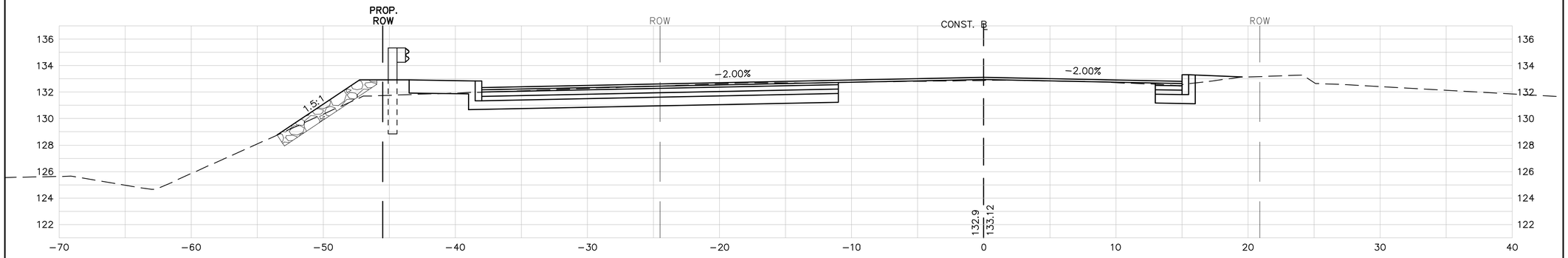
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Cross Sections Route 20 at Site Drive

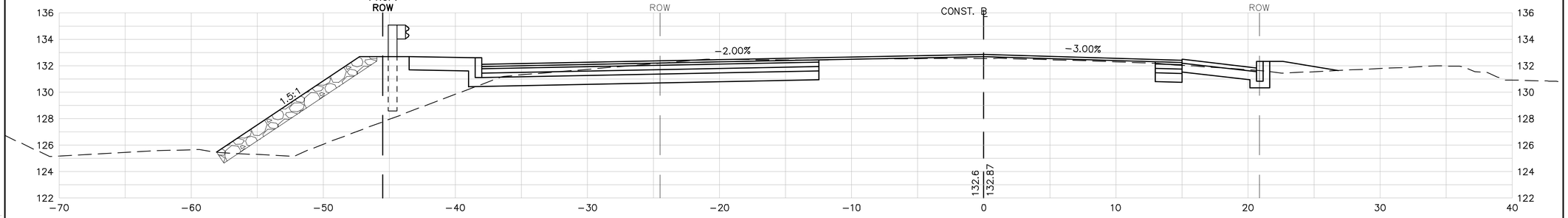
SHEET 62 OF 81	DRAWING NUMBER 62
JOB NO. 5139	
CAD 5139CSv3	



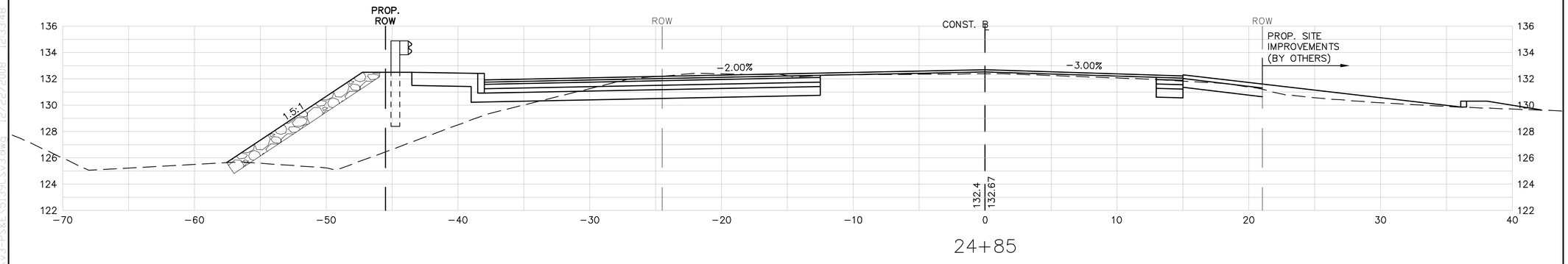
26+00



25+50



25+00



24+85

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

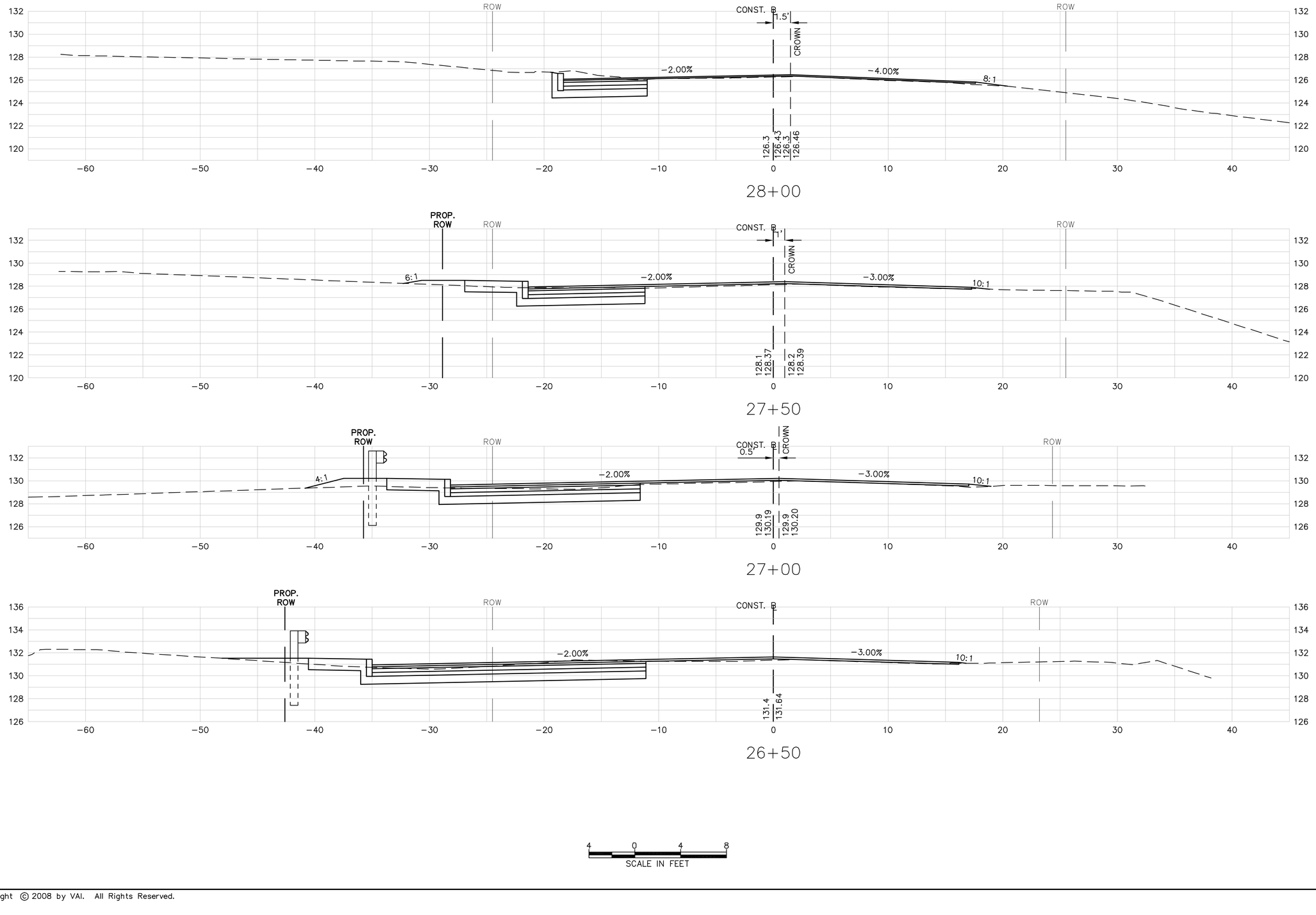
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Cross Sections
Route 20 at Site Drive

SHEET 63 OF 81	DRAWING NUMBER
JOB NO. 5139	63
CAD 5139CSv3	



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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

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FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

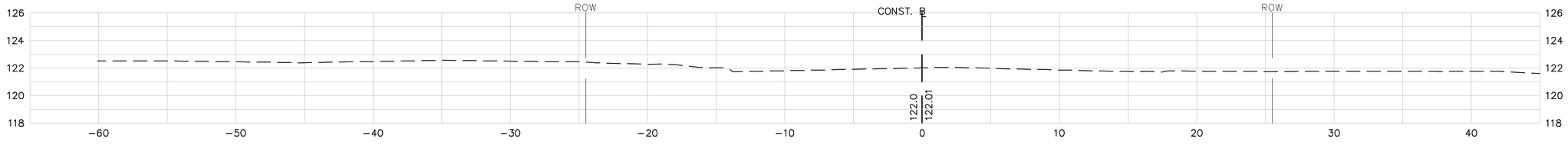
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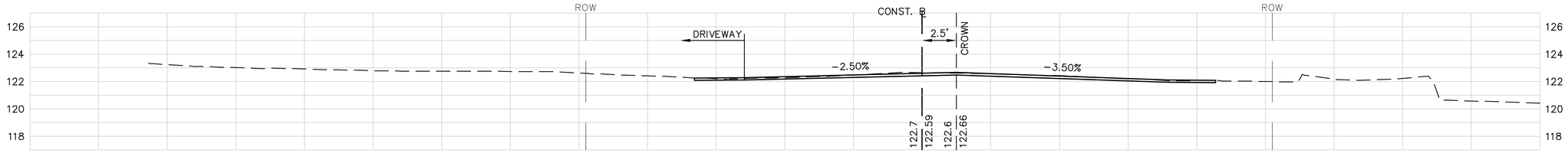
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Route 20 at Site Drive

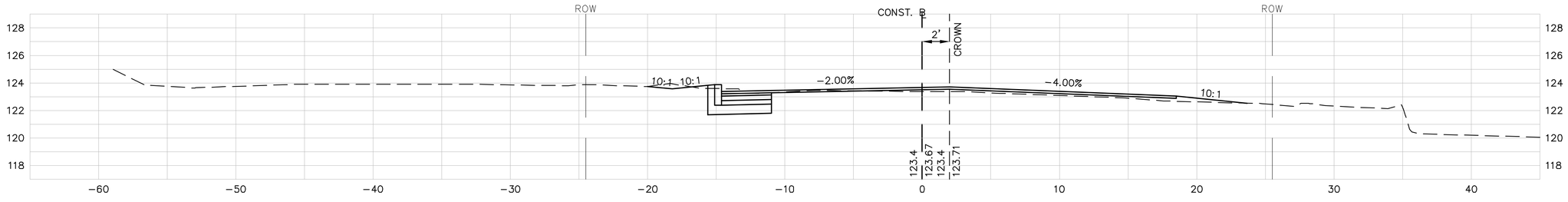
SHEET 64 OF 81	DRAWING NUMBER
JOB NO. 5139	64
CAD 5139CSv3	



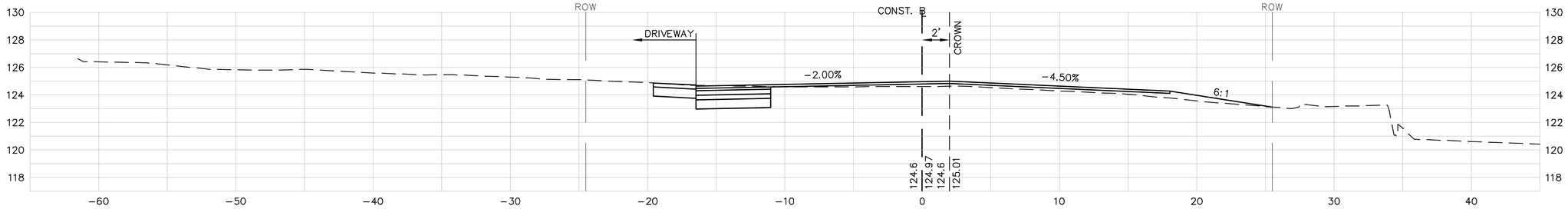
30+00



29+50



29+00



28+50



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Off-Site Improvements

Wayland,
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DESIGNED BY	JAR
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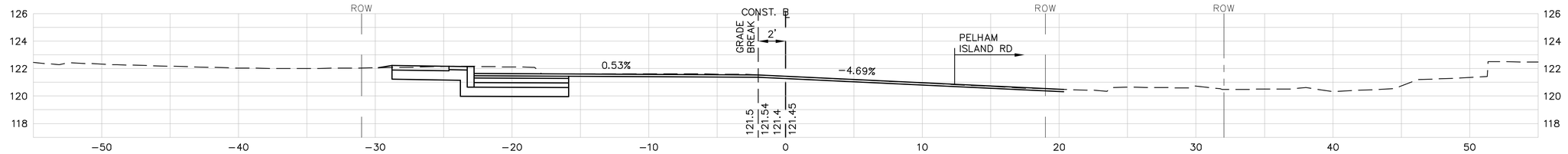
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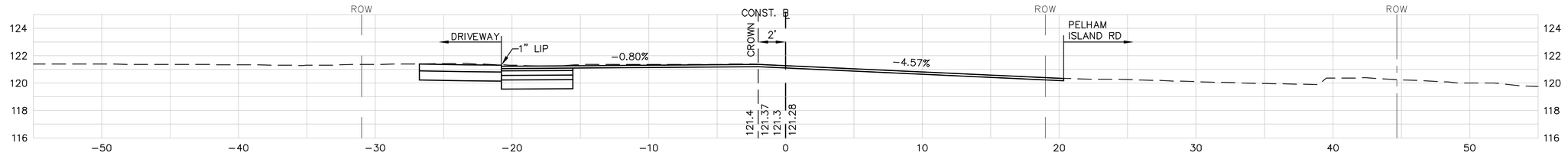
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Cross Sections
Route 20 at Site Drive

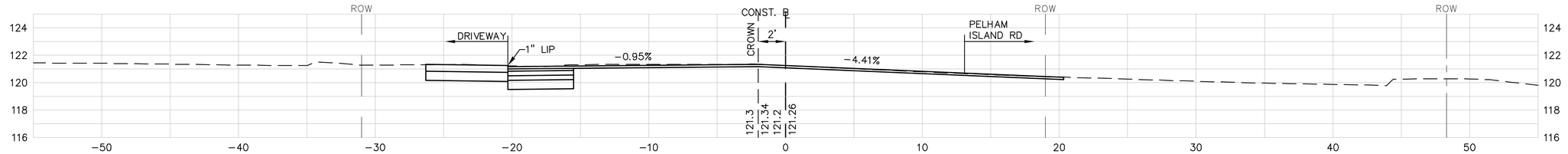
SHEET 65 OF 81	DRAWING NUMBER
JOB NO. 5139	65
CAD 5139CSv3	



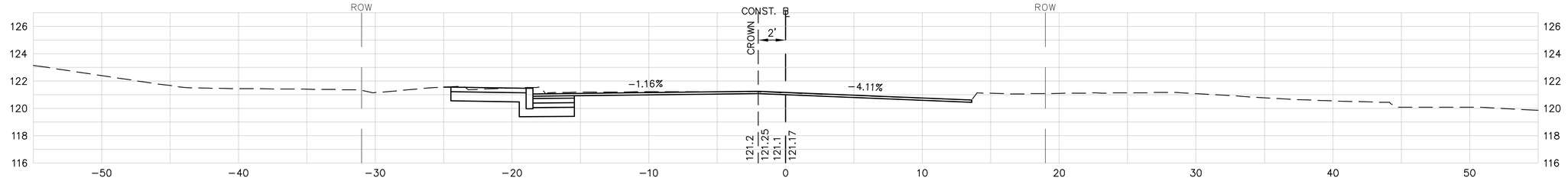
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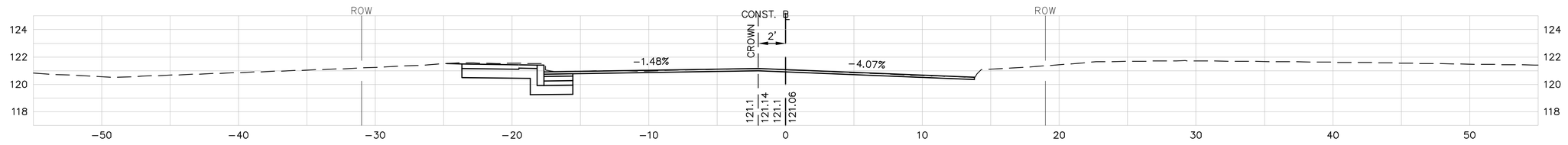
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45+00



44+50



44+00

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SCALE IN FEET

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Wayland, Massachusetts

PREPARED FOR

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DESIGNED BY	JAR
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SCALE	1" = 4'
STAMP	

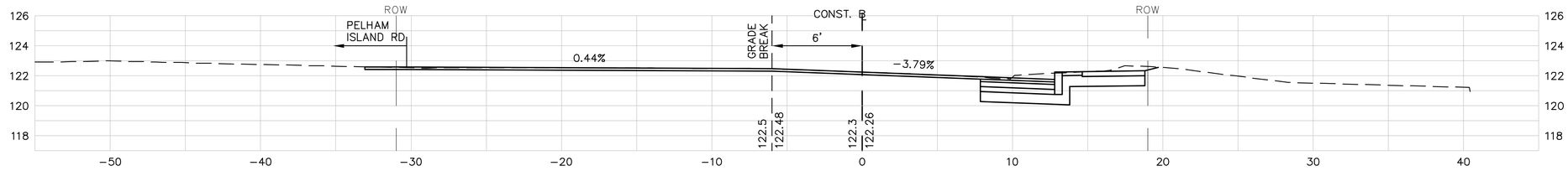
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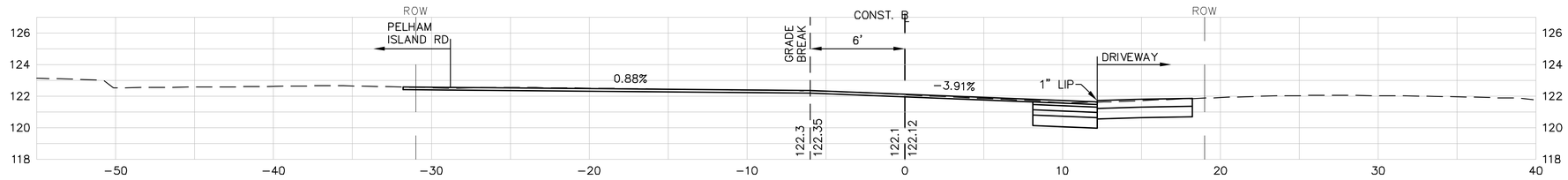
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Cross Sections
Route 20 at Route 27

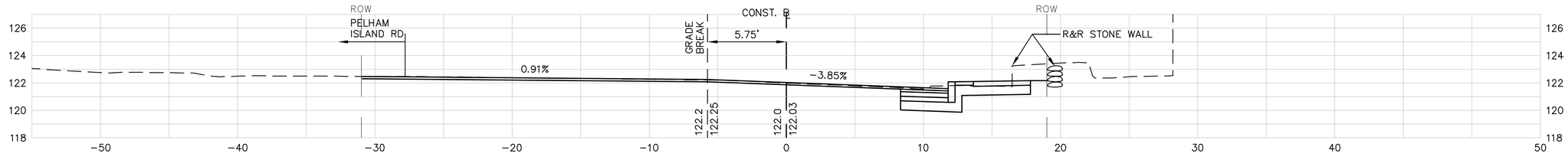
SHEET 66 OF 81	DRAWING NUMBER 66
JOB NO. 5139	
CAD 5139CSv3	



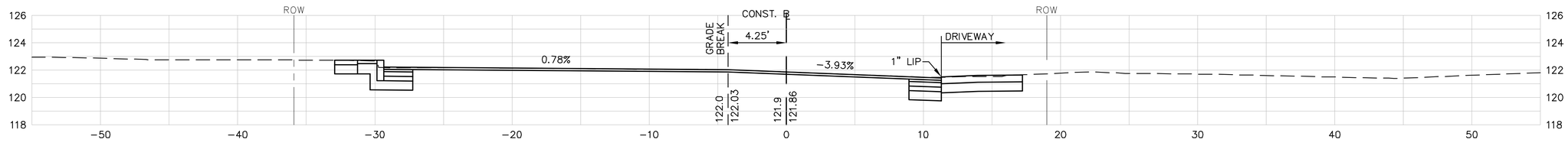
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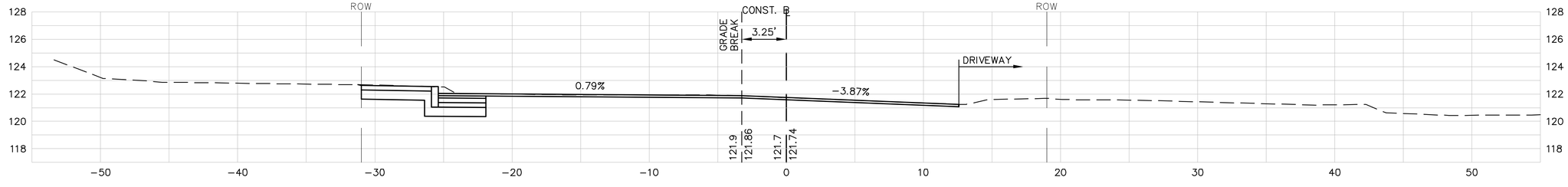
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46+50



46+20



46+00

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SCALE IN FEET

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STAMP	

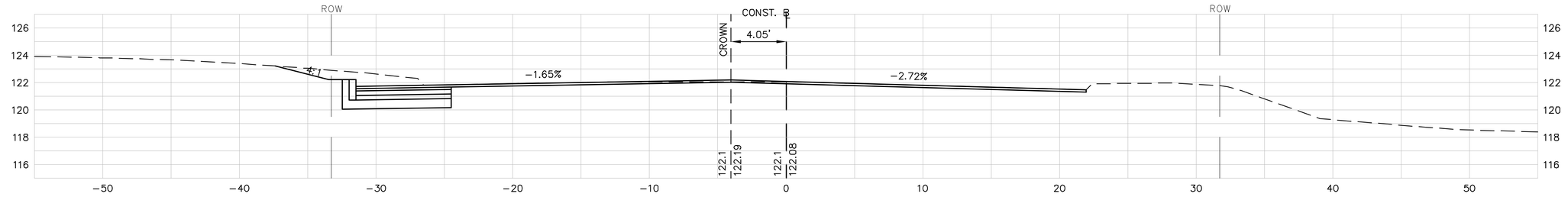
REVISIONS

NO.	DESCRIPTION	DATE

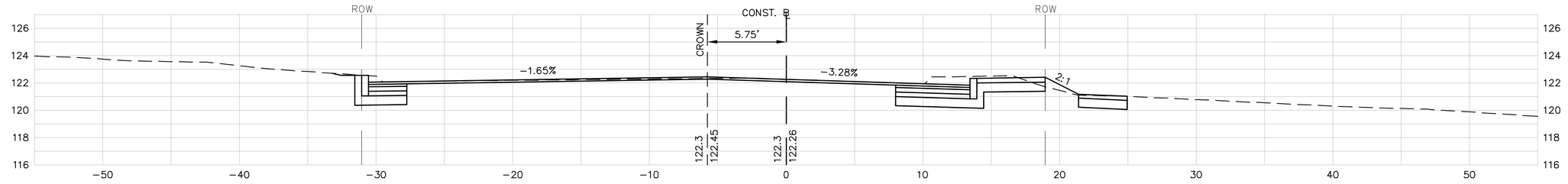
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Cross Sections
Route 20 at Route 27

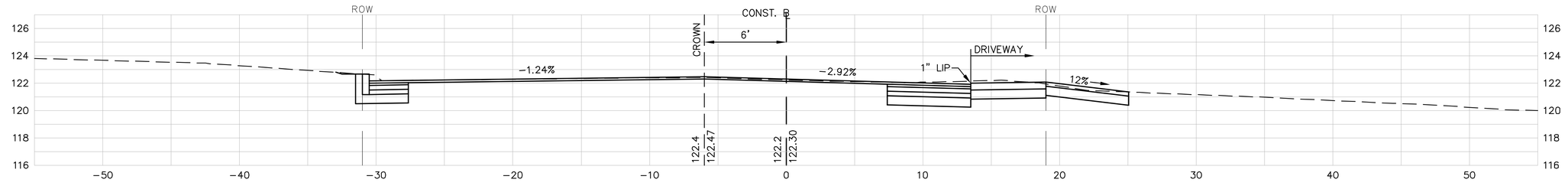
SHEET 67 OF 81	DRAWING NUMBER 67
JOB NO. 5139	
CAD 5139CSv3	



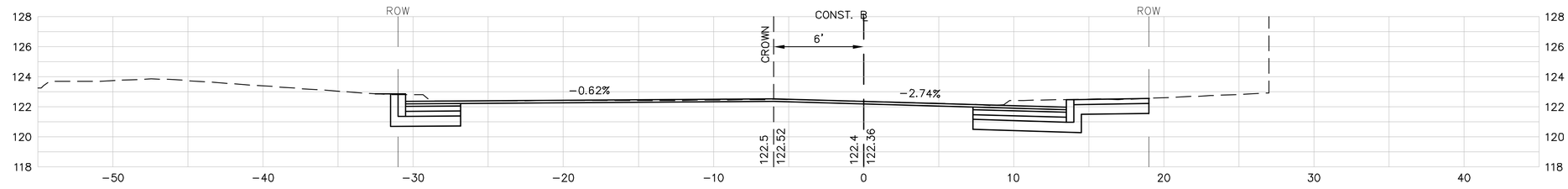
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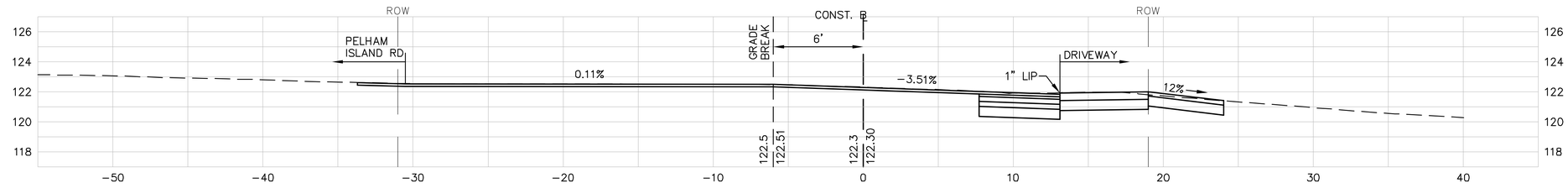
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47+85



47+50



47+15

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SCALE IN FEET

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T:\5139\Rt20\v3-PS&E\5139CSv3.dwg 12/22/2008 12:33:48 PM EST

PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810-1066
TEL: (978) 474-8800
FAX: (978) 688-6508

FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437-4601
FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

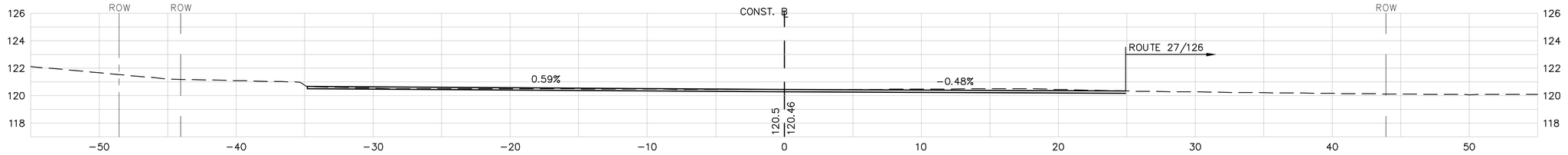
REVISIONS

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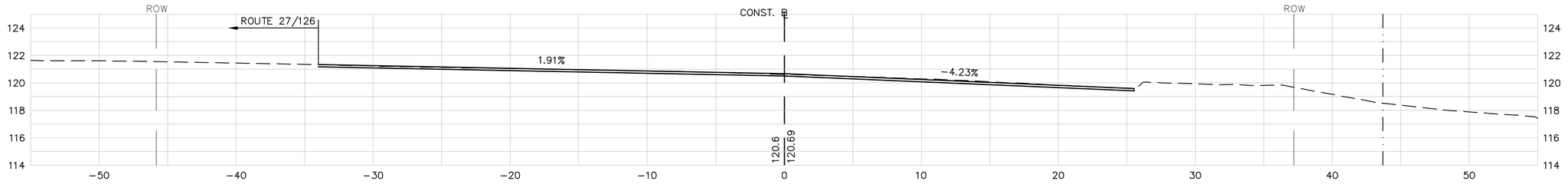
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Cross Sections
Route 20 at Route 27

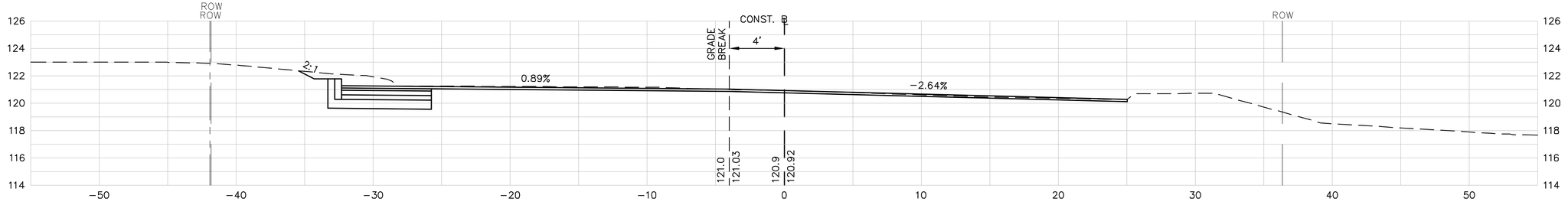
SHEET 68 OF 81	DRAWING NUMBER 68
JOB NO. 5139	
CAD 5139CSv3	



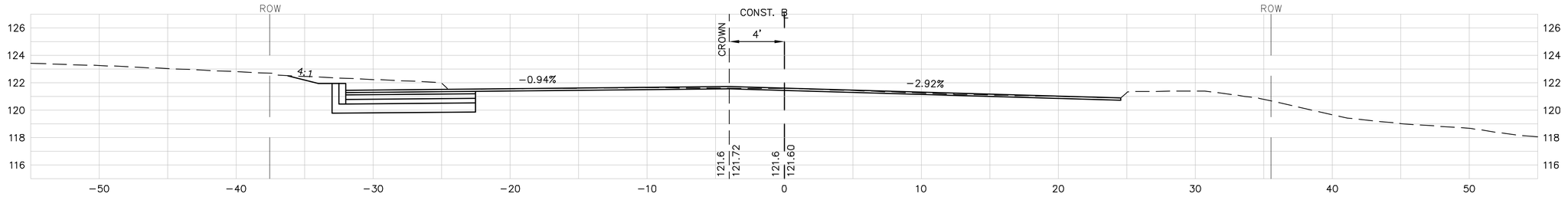
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50+00



49+50



49+00

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
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FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
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TEL: (239) 437-4601
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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

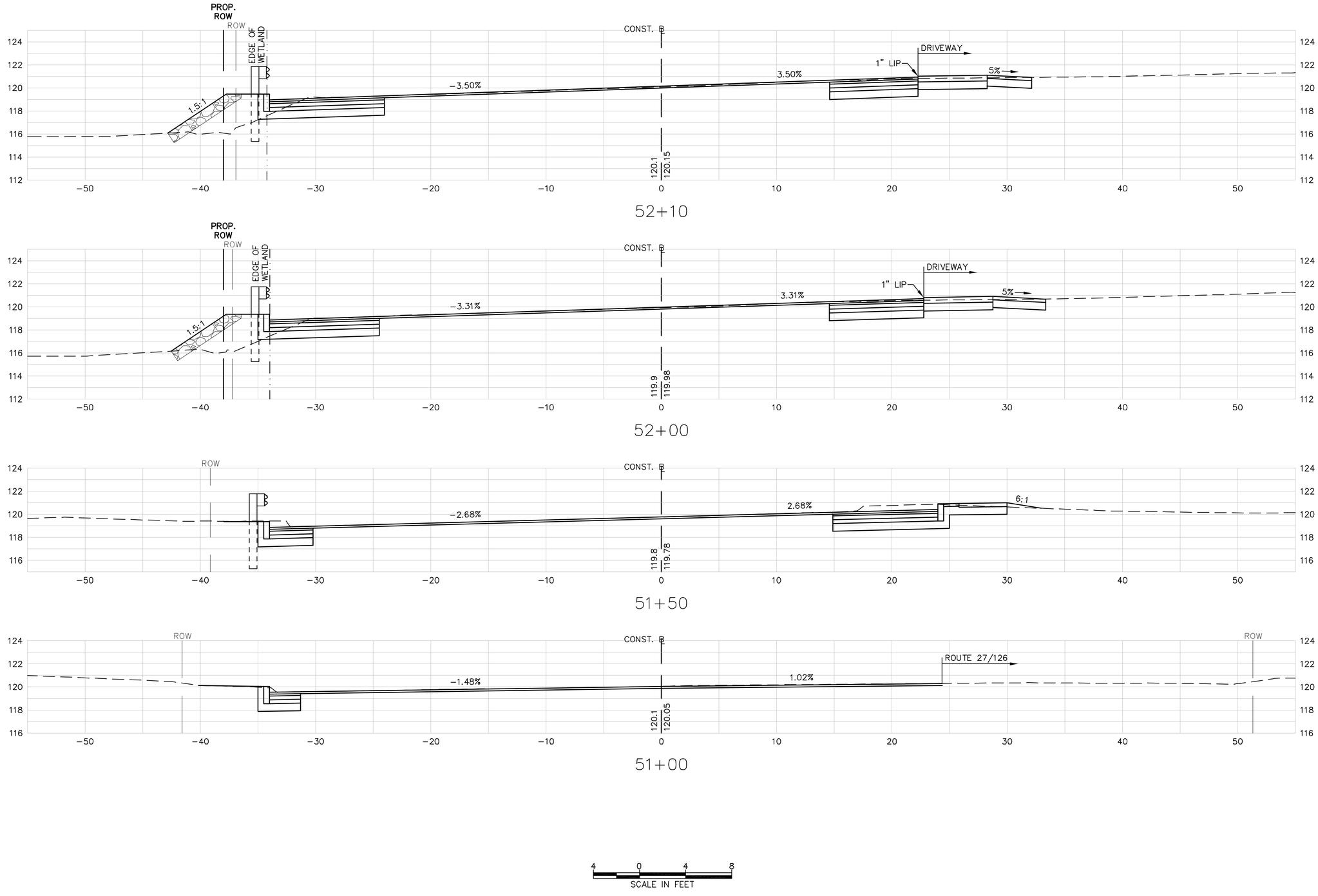
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Cross Sections
Route 20 at Route 27

SHEET 69 OF 81	DRAWING NUMBER 69
JOB NO. 5139	
CAD 5139CSv3	



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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DATE	DECEMBER 2008
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STAMP	

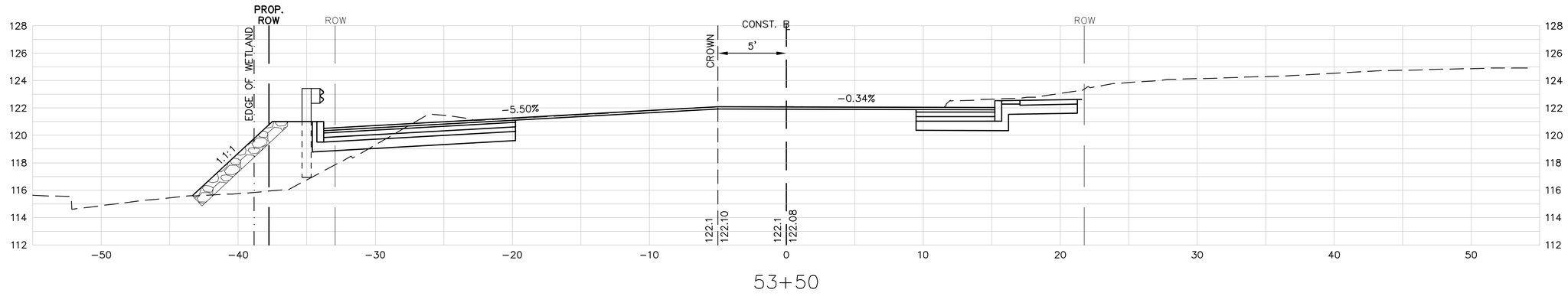
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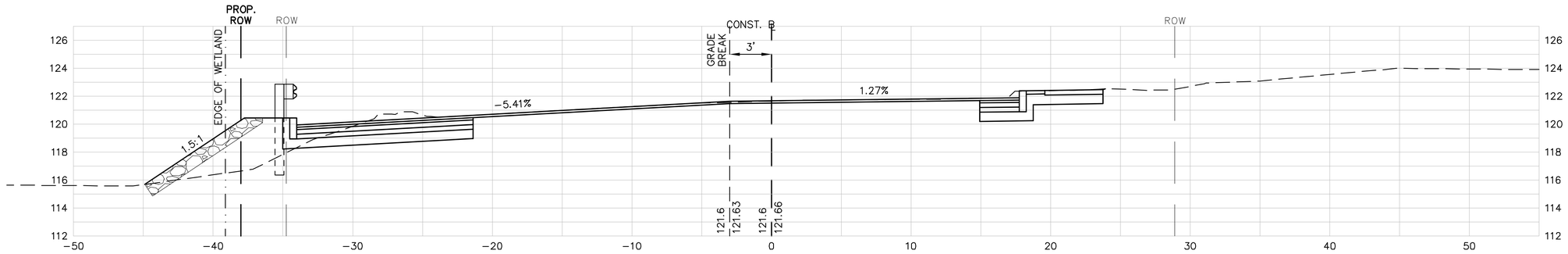
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Cross Sections
Route 20 at Route 27

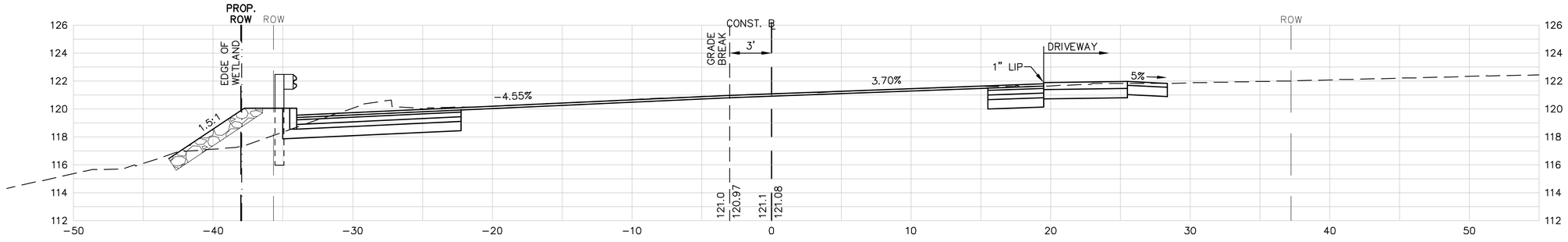
SHEET 70 OF 81	DRAWING NUMBER 70
JOB NO. 5139	
CAD 5139CSv3	



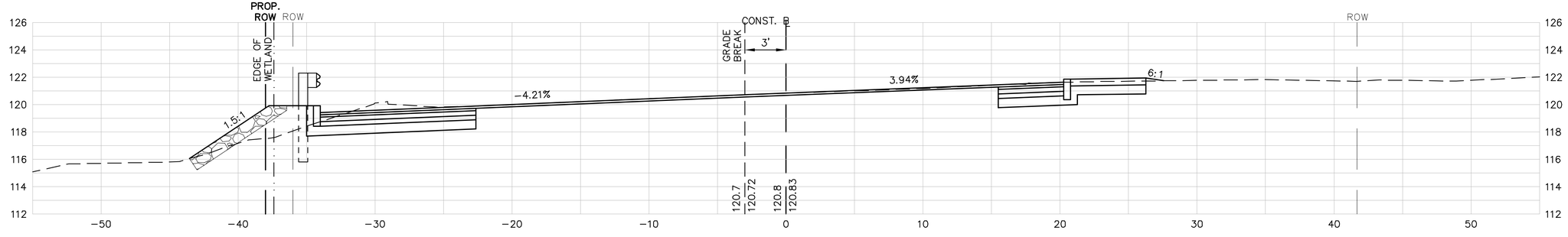
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53+00



52+65



52+50

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SCALE IN FEET

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PROJECT TITLE

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Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

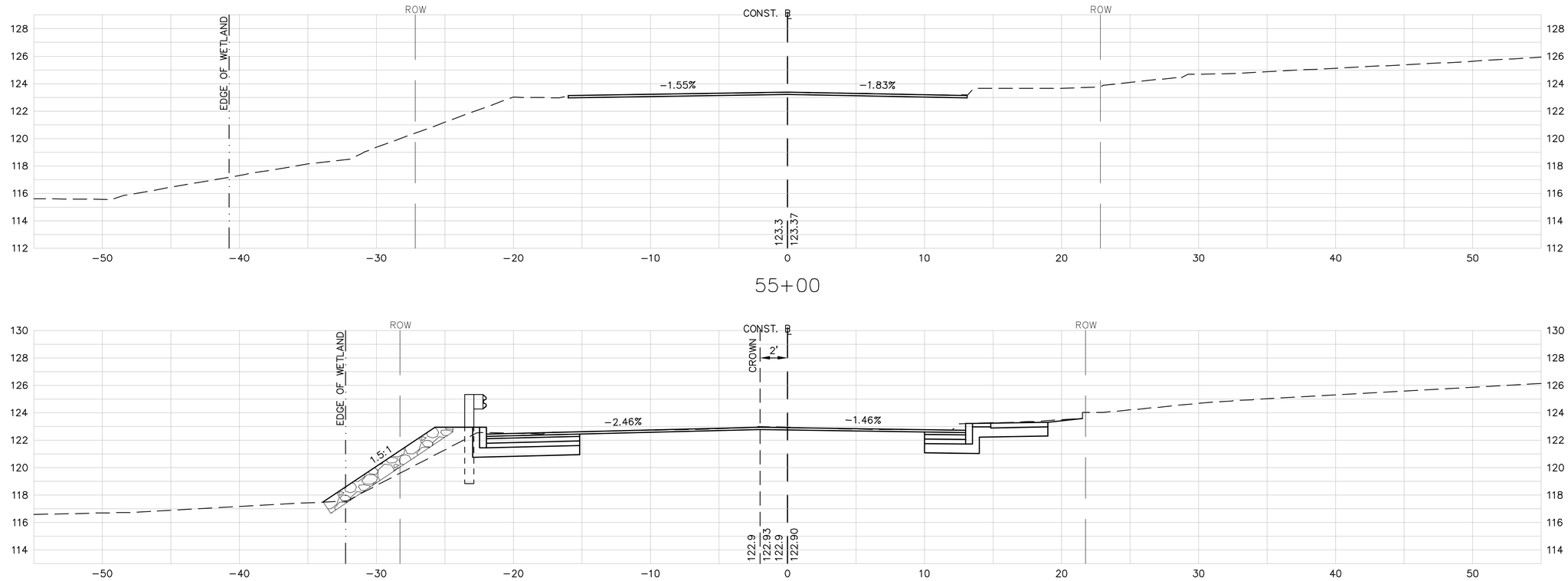
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NO.	DESCRIPTION	DATE

DRAWING TITLE

Cross Sections
Route 20 at Route 27

SHEET 71 OF 81	DRAWING NUMBER 71
JOB NO. 5139	
CAD 5139CSv3	



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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
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DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'

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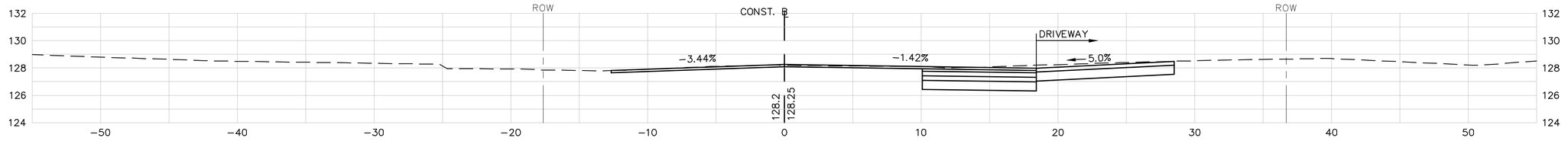
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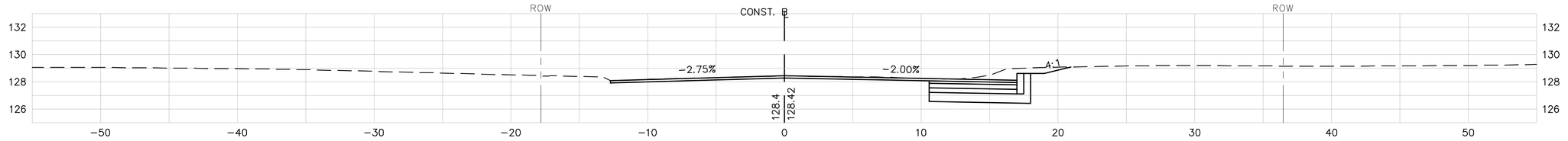
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Cross Sections
Route 20 at Route 27

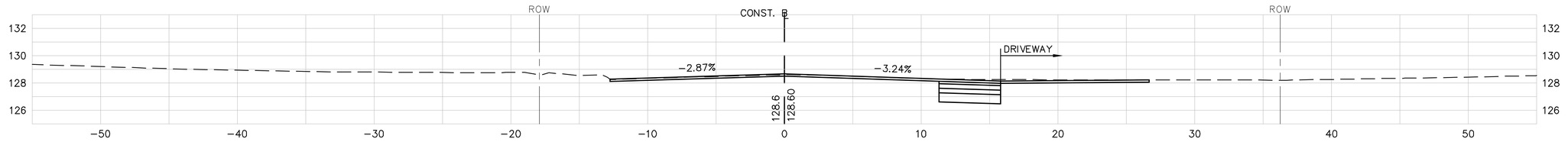
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JOB NO. 5139	
CAD 5139CSv3	



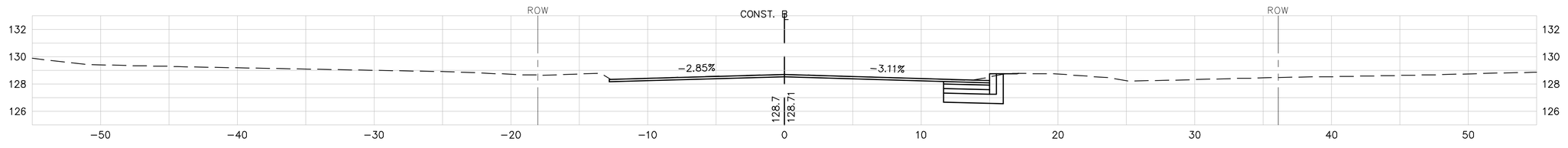
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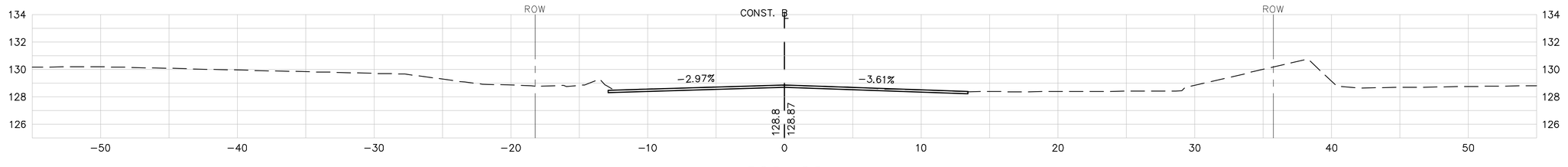
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202+70



202+50



202+00

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
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FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

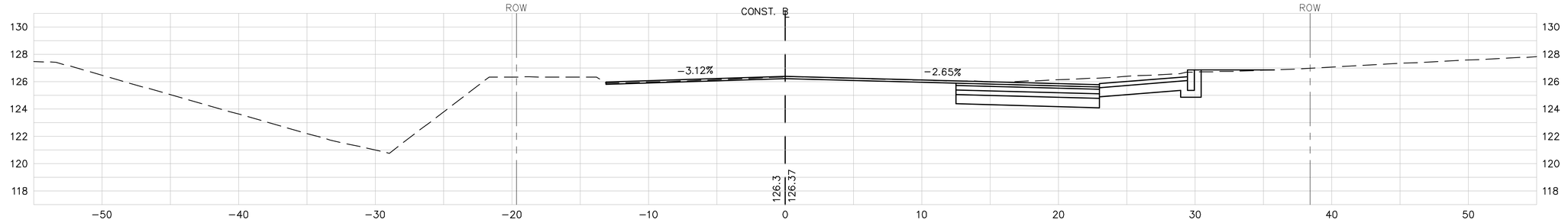
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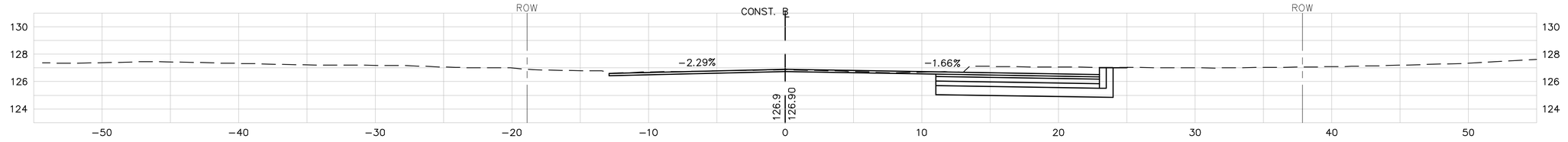
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Cross Sections Route 27/126

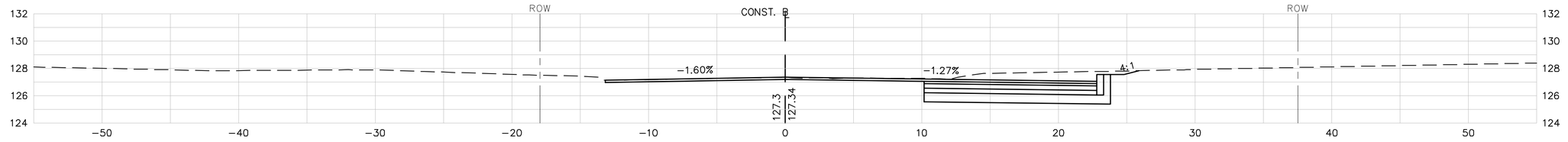
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JOB NO. 5139	
CAD 5139CSv3	



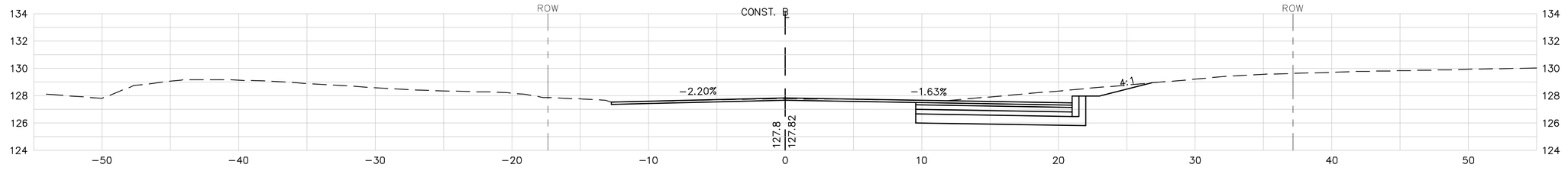
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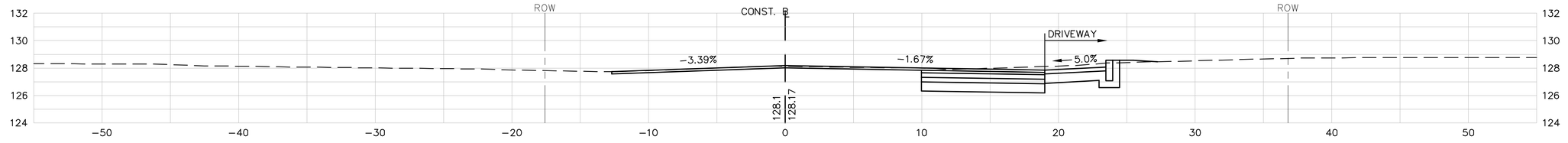
205+00



204+50



204+00



203+50

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SCALE IN FEET

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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
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FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
FORT MYERS, FL 33907
TEL: (239) 437-4601
FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

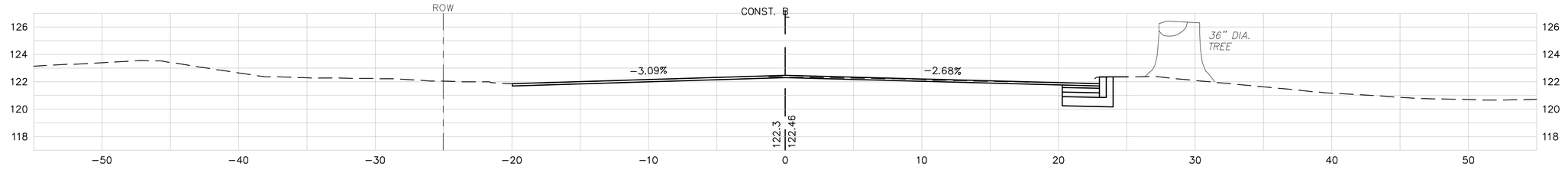
REVISIONS

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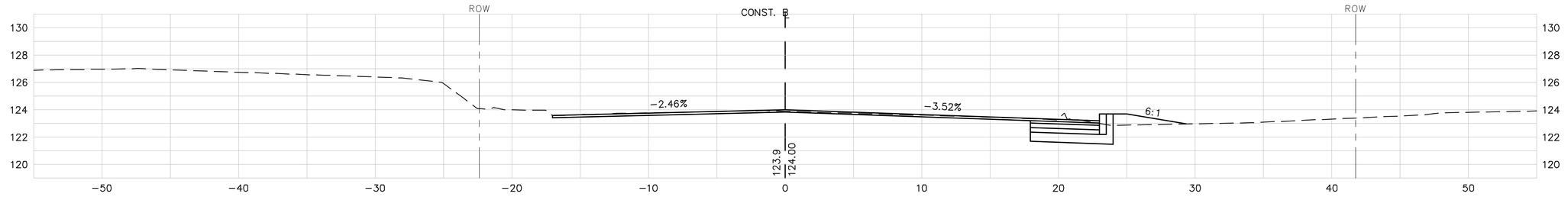
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Cross Sections
Route 27/126

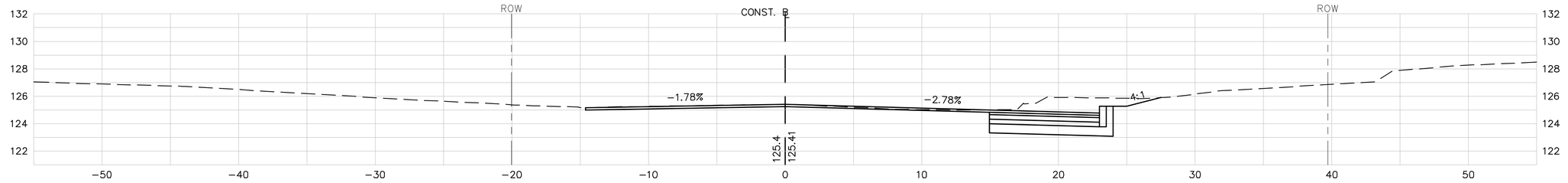
SHEET 74 OF 81	DRAWING NUMBER
JOB NO. 5139	74
CAD 5139CSv3	



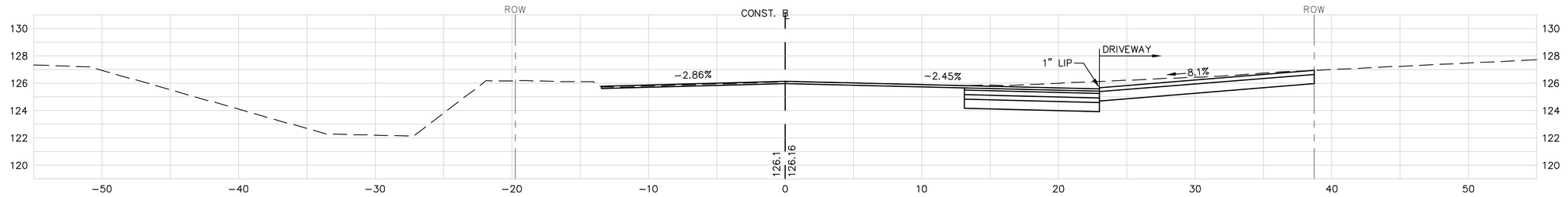
207+00



206+50



206+00



205+65

4 0 4 8
SCALE IN FEET

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

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DESIGNED BY	JAR
DRAWN BY	JAR
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DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

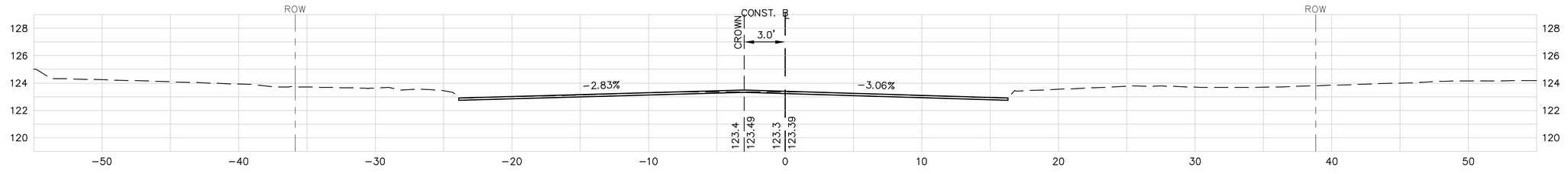
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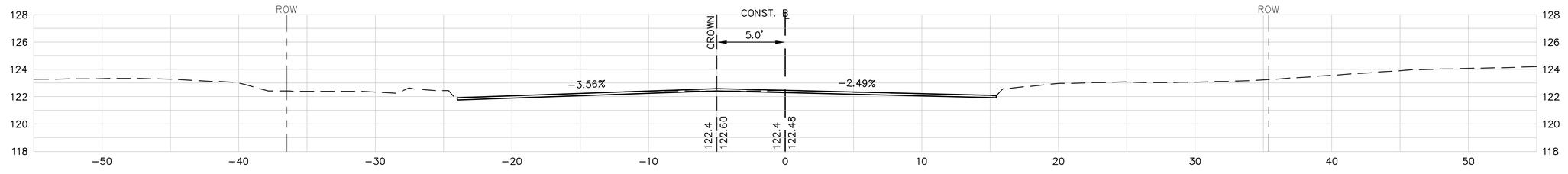
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Cross Sections
Route 27/126

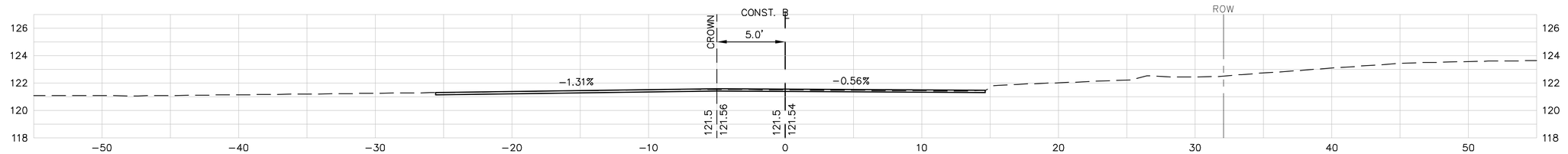
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JOB NO. 5139	75
CAD 5139CSv3	



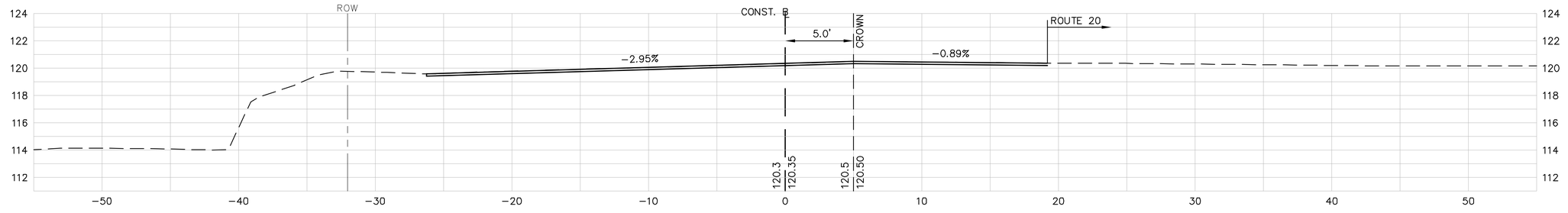
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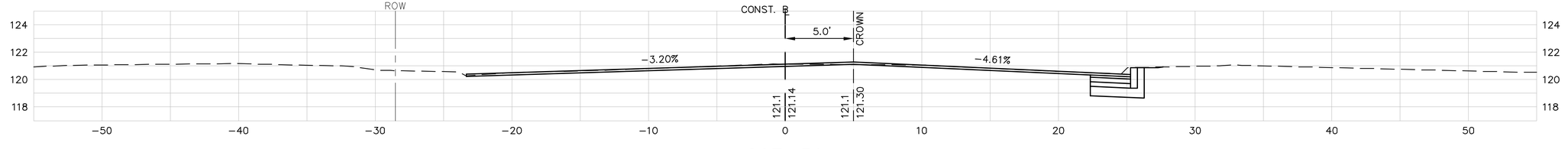
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209+00



208+00



207+50

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SCALE IN FEET

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Wayland, Massachusetts

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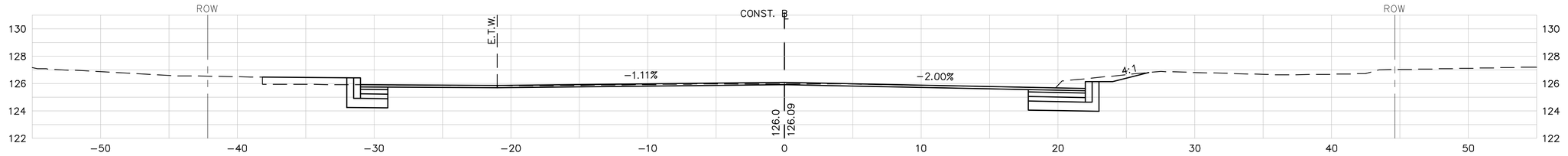
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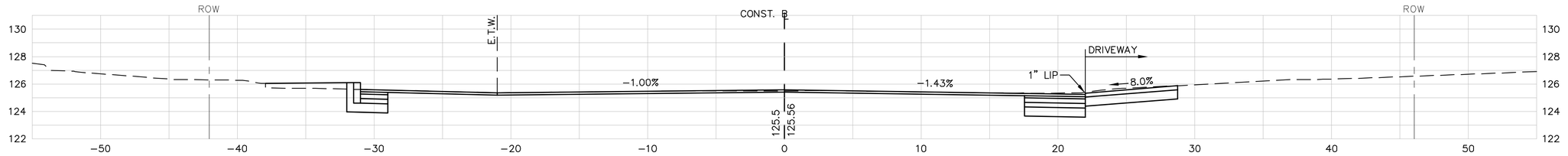
DRAWING TITLE

Cross Sections
Route 27/126

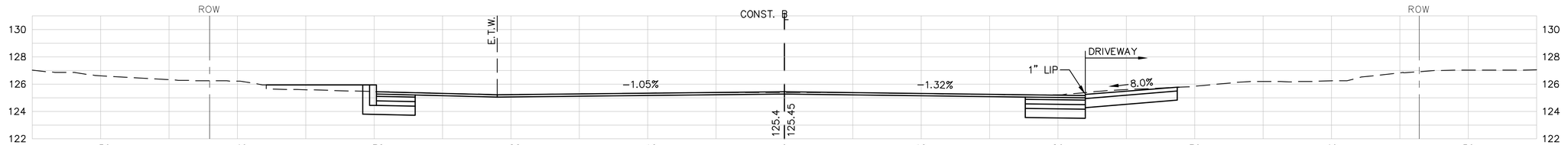
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JOB NO. 5139	
CAD 5139CSv3	



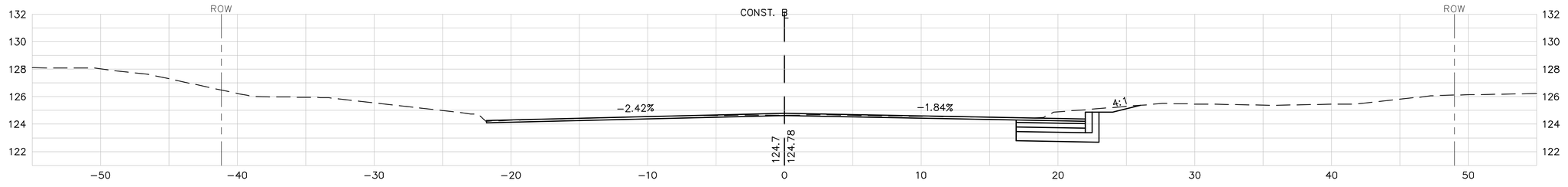
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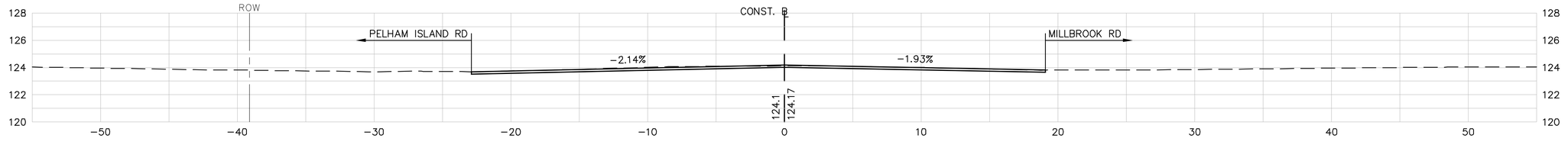
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211+50



211+00



210+50



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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
Transportation Engineers & Planners

ANDOVER, MASSACHUSETTS
10 N.E. BUSINESS CENTER DRIVE
ANDOVER, MA 01810-1066
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FAX: (978) 688-6508

FORT MYERS, FLORIDA
12730 NEW BRITTANY BLVD., SUITE 600
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TEL: (239) 437-4601
FAX: (239) 437-4636

DESIGNED BY	JAR
DRAWN BY	JAR
CHECKED BY	FLD
DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

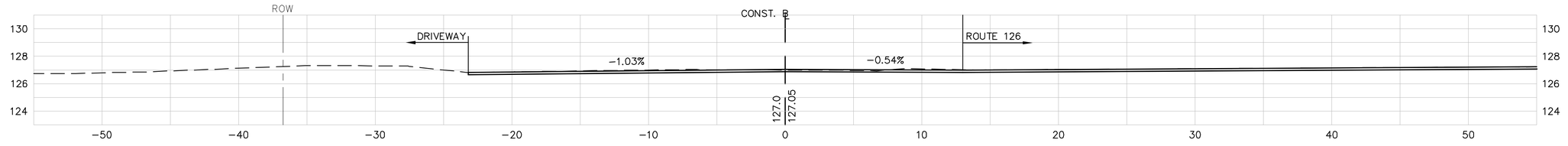
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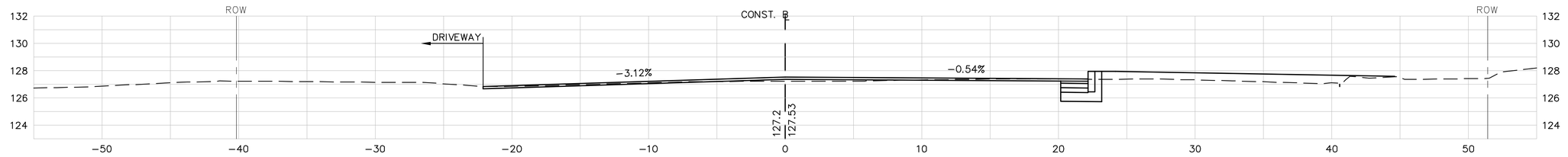
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Cross Sections Route 27/126

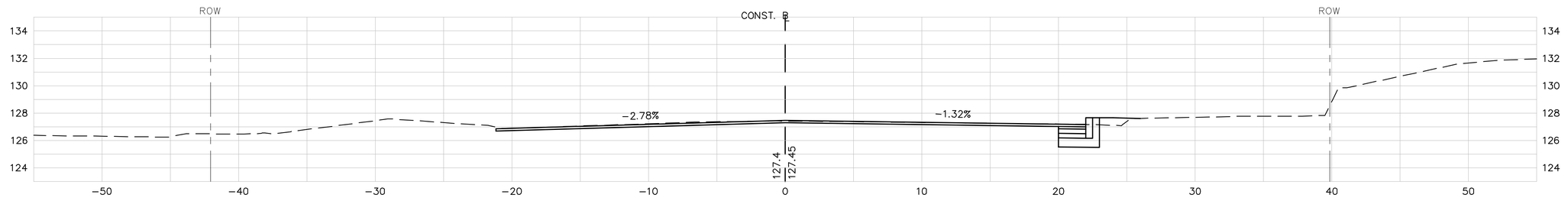
SHEET 77 OF 81	DRAWING NUMBER 77
JOB NO. 5139	
CAD 5139CSv3	



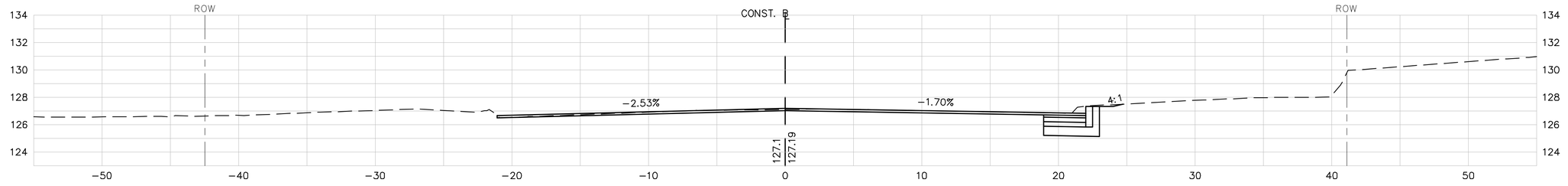
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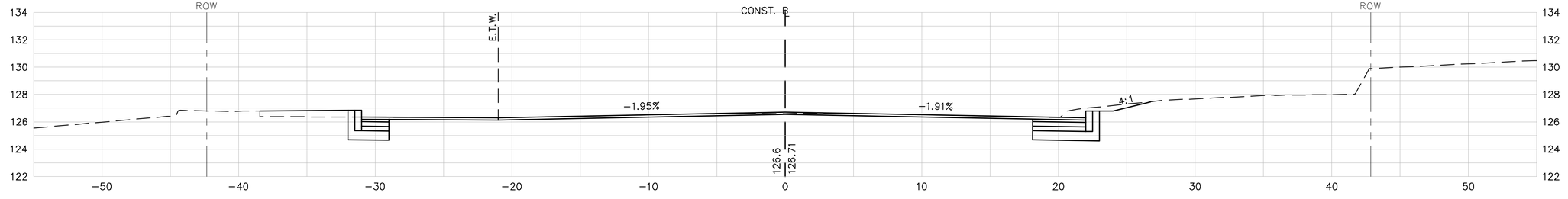
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213+50



213+00



212+50

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PROJECT TITLE

Wayland Town Center Off-Site Improvements

Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

Vanasse & Associates, Inc.
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DRAWN BY	JAR
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DATE	DECEMBER 2008
SCALE	1" = 4'
STAMP	

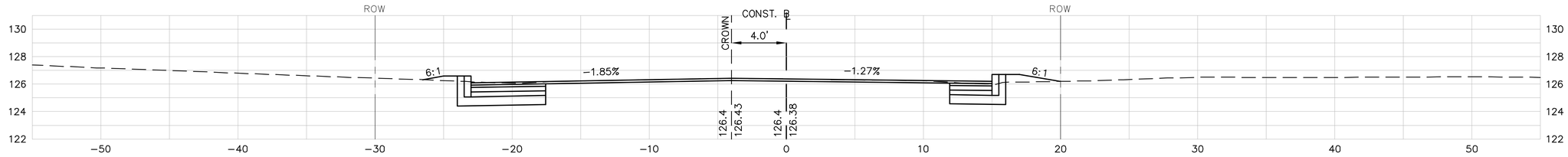
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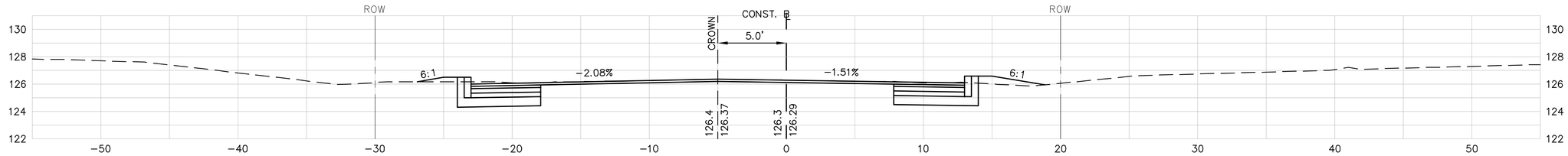
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Cross Sections
Route 27/126

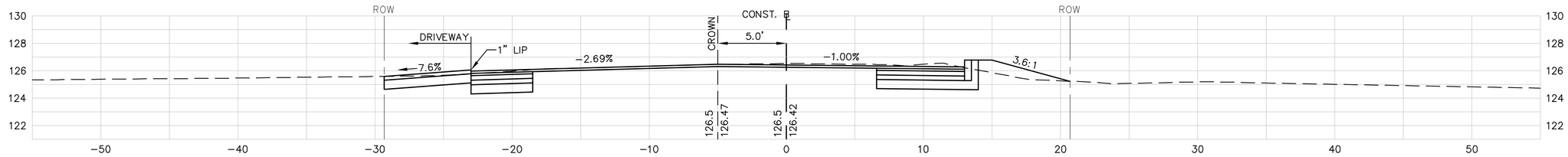
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JOB NO. 5139	
CAD 5139CSv3	



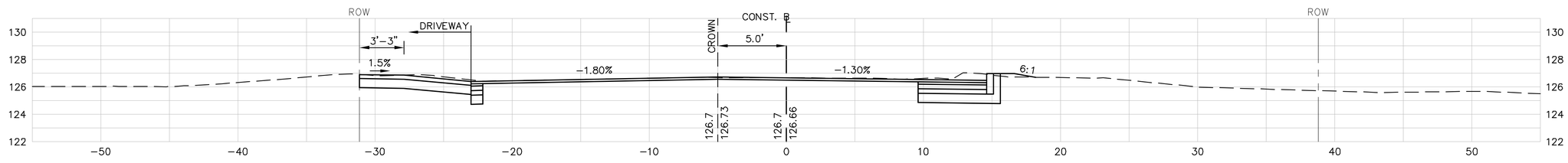
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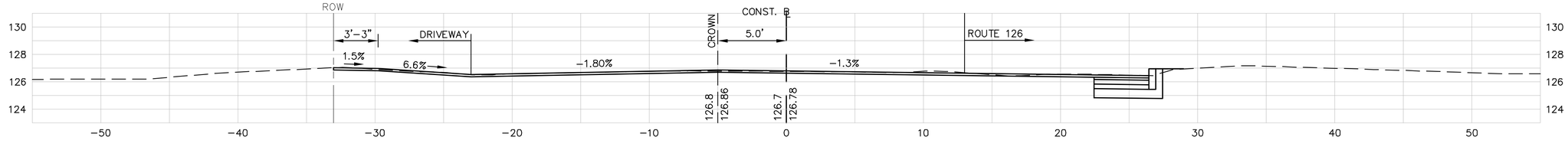
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215+50



215+00



214+85

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PROJECT TITLE

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Wayland, Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston, Massachusetts

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Transportation Engineers & Planners

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DATE	DECEMBER 2008
SCALE	1" = 4'
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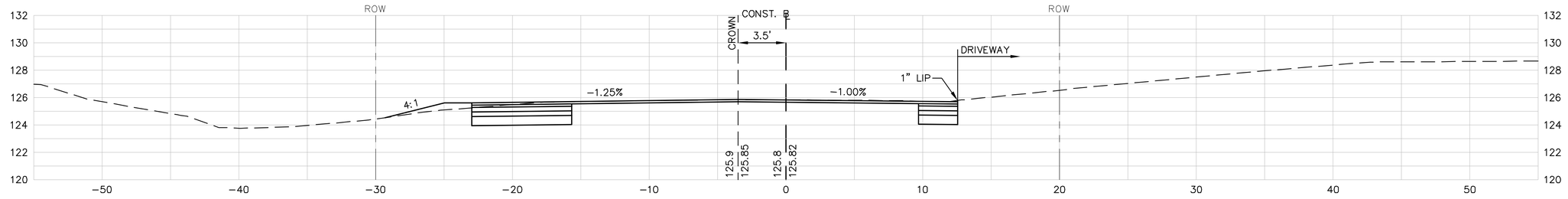
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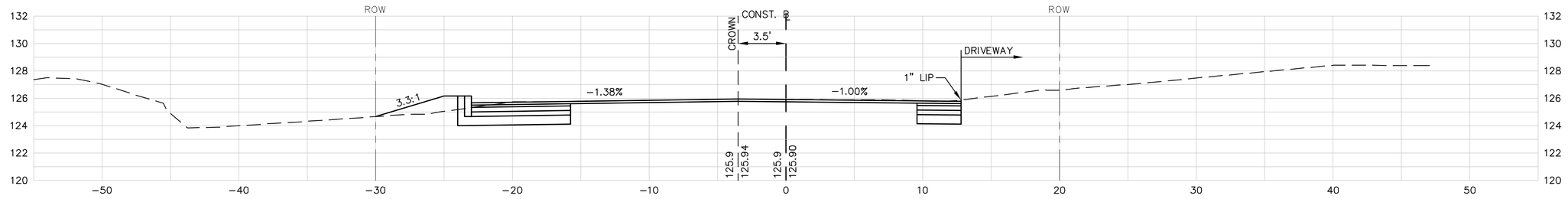
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Cross Sections Route 27/126

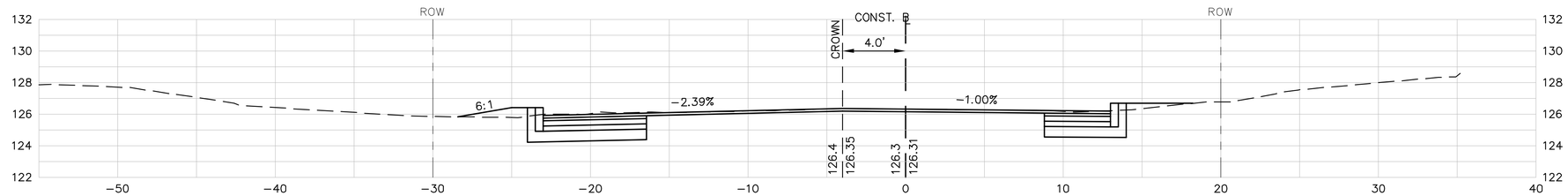
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CAD 5139CSv3	



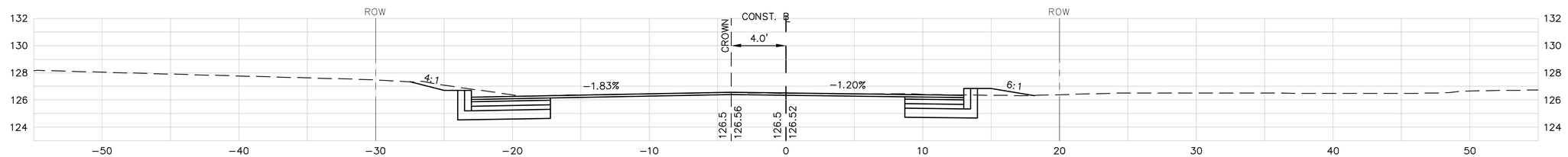
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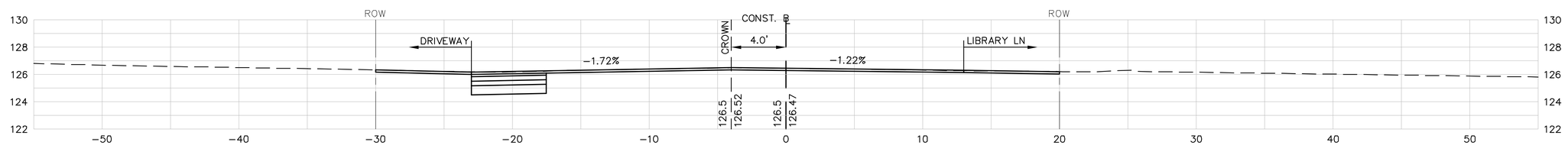
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217+50



217+00



216+80



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PROJECT TITLE

Wayland Town Center
Off-Site Improvements

Wayland,
Massachusetts

PREPARED FOR

Twenty Wayland, LLC

Boston,
Massachusetts

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Transportation Engineers & Planners

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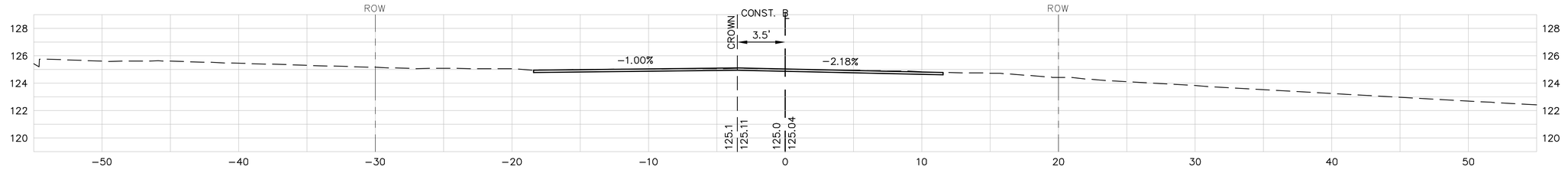
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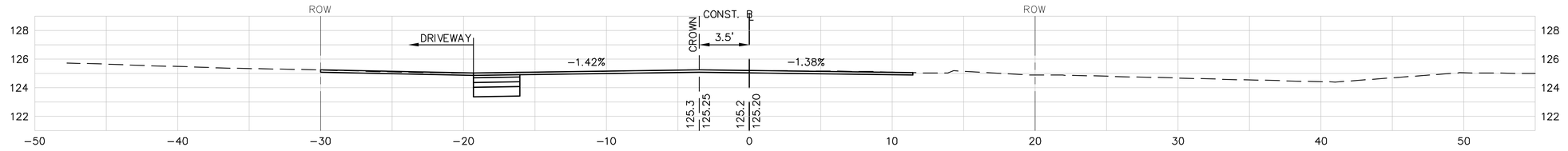
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Cross Sections
Route 27/126

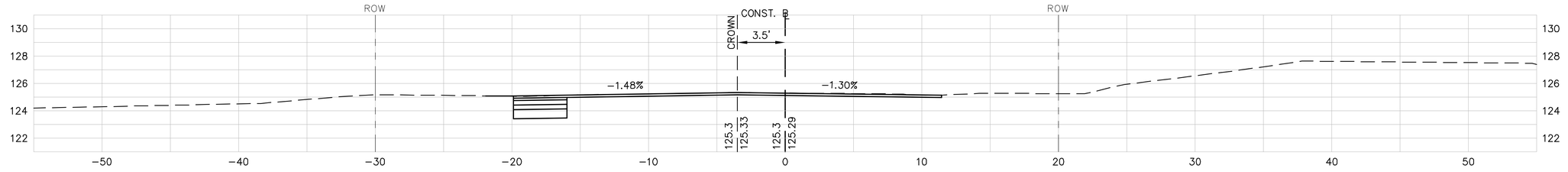
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CAD 5139CSv3	



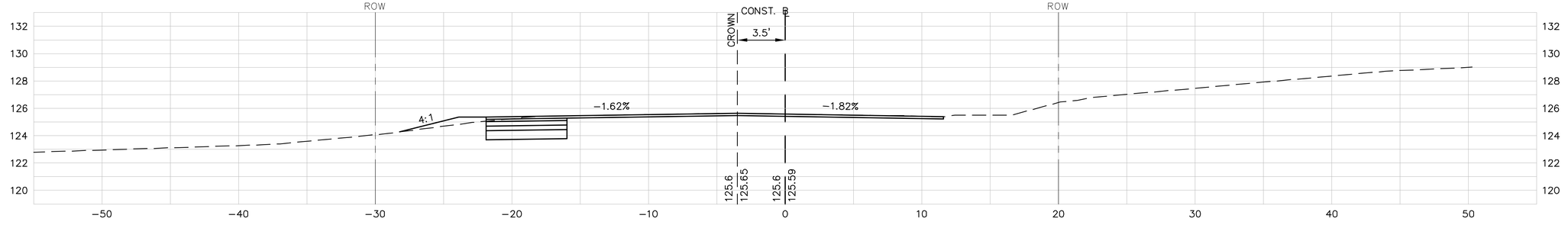
219+50



219+15



219+00



218+50

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REVISIONS

NO.	DESCRIPTION	DATE

DRAWING TITLE

Cross Sections Route 27/126

SHEET 81 OF 81	DRAWING NUMBER
JOB NO. 5139	81
CAD 5139CSv3	