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TRANSPORTATION AND SAFETY IMPROVEMENTS
GROVE STREET

IN THE TOWN OF

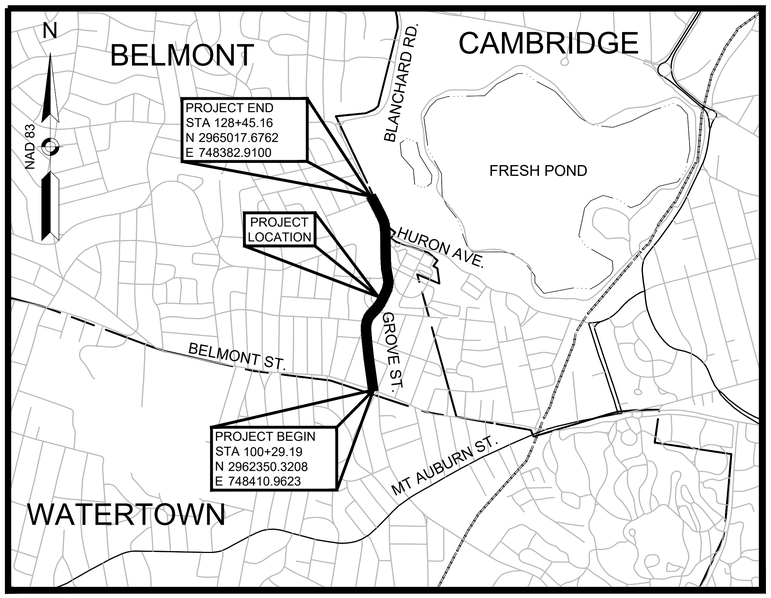
BELMONT

MIDDLESEX COUNTY

THESE PLANS ARE SUPPLEMENTED BY THE JANUARY 2025 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

75% - 100% DESIGN SUBMISSION

INDEX



0 1000 2000 3000 4000

SCALE: 1" = 1000'

LENGTH OF PROJECT = 2,820 FEET = 0.534 MILES

OCTOBER 17, 2025

NOT FOR CONSTRUCTION

DESIGN DESIGNATION (GROVE STREET)	
DESIGN SPEED	**25 MPH**
ADT (2023)	13,145 VPD
ADT (2043)	13,820 VPD
K	8%
D	52% NB
T (PEAK HOUR)	0.8%
T (AVERAGE DAY)	2.1%
DHV	1,105 VPD
DDHV	575 VPD
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

10/15/2025	75% - 100% DESIGN SUBMISSION	---
3/31/2025	25% DESIGN SUBMISSION	---
DATE	DESCRIPTION	REV #

ENGINEER DATE

Vanasse Hangen Brustlin, Inc.
260 Arsenal PL #2, PO Box 9151
Watertown, MA 02472
617.924.1770 FAX 617.924.2286

DESIGNED BY KJL	APPROVED BY	SHEET 1 OF 69
DRAWN BY JHH	DFTG CHECKED BY KJL	VHB CAD FILE NAME 16044.00_HD(COV)
CHECKED BY TBM	DATE OCT 17, 2025	JOB NO. 16044.00

BELMONT
GROVE STREET
LEGEND
SHEET 2 OF 69

GENERAL SYMBOLS

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

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
	*	EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE - WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
	CW	CROSSWALK - WHITE, 24" WIDTH UNLESS OTHERWISE NOTED
	CW	BICYCLE CROSSWALK - WHITE, 12" WIDTH UNLESS OTHERWISE NOTED
	SWL	SOLID WHITE LINE, 4" WIDTH, UNLESS OTHERWISE NOTED IN DETAILS
	SYL	SOLID YELLOW LINE, 4" WIDTH
	DWLEx	DOTTED WHITE LINE EXTENSION, 2' LINE W/4' SPACING, 4" WIDTH
	DBYL	DOUBLE YELLOW LINE, 4" WIDTH
		BIKE LANE SYMBOL
		SEPARATED BIKE LANE MARKING (<3' WIDE) (SEE DETAIL ON SHEET 63 FOR LINE WIDTHS)
		SEPARATED BIKE LANE MARKING (SEE DETAIL ON SHEET 63 FOR LINE WIDTHS)
		BIKE LEGEND AT STOP LINE
		BICYCLE CROSSING
		SPEED HUMP
		BICYCLE YIELD

LEGEND

- X = PROPOSED PEDESTRIAN CURB RAMP
- X = PROPOSED DRIVEWAY
- X = DRAINAGE STRUCTURE

PAVEMENT MARKINGS

TYPE	MATERIAL
BIKE LANE SYMBOL (RIDER & ARROW)	REFLECTORIZED PREFORMED THERMOPLASTIC
BIKE AT STOP LINE	
SEPARATED BICYCLE LANE YIELD LINE TRIANGLES	
RAISED CROSSWALK MARKING (SEED HUMP)	
STOP LINES	REFLECTORIZED THERMOPLASTIC
CROSSWALK	
DBYL	
SYL	
SWL	
DWLEx	
ARROWS & ONLYS	
BICYCLE CROSSING (EDGES)	
SWCHL	
CROSSWALK ACROSS SEPARATED BIKE LANE	REFLECTORIZED PAINT
STOP LINE ACROSS SEPARATED BIKE LANE	
SYL	
BIKE CROSSING	GREEN COLORED PAVEMENT MARKINGS

NOTE: SEE PAVEMENT MARKING SYMBOLS CHART ON LEGEND & ABBREVIATIONS SHEET FOR WIDTH, COLOR, AND SPACING.

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GENERAL ABBREVIATIONS

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

GENERAL ABBREVIATIONS (cont.)

POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE OR POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT
PWW	PAVED WATER WAY
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISPOSE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
ROW	RIGHT OF WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT	RIGHT
SB	STONE BOUND
SHLD	SHOULDER
SMH	SEWER MANHOLE
ST	STREET
STA	STATION
SSD	STOPPING SIGHT DISTANCE
SHLO	STATE HIGHWAY LAYOUT LINE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/TRUCK %
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
WG	WATER GATE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

TRAFFIC SIGNAL ABBREVIATIONS

CAB	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY UPRAISED HAND
FDW	FLASHING UPRAISED HAND
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR YELLOW
FYL	FLASHING YELLOW LEFT ARROW
FYR	FLASHING YELLOW RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILT, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TS OR TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALKING PERSON
Y	STEADY CIRCULAR YELLOW
YL	STEADY YELLOW LEFT ARROW

GENERAL NOTES:

1. THE EXISTING CONDITIONS SHOWN ON THIS PLAN WERE COMPILED BASED UPON AN ACTUAL FIELD SURVEY CONDUCTED BY VANASSE HANGEN BRUSTLIN, INC.. BETWEEN AUGUST, 2023; SEPTEMBER, 2023; AND AUGUST, 2025.

2. THE HORIZONTAL CONTROL IS BASED ON THE MASSACHUSETTS MAINLAND STATE PLANE COORDINATE SYSTEM AND THE NATIONAL GEODETIC SURVEY (NAD83). ALL ELEVATION IS US FEET, REFERENCED TO THE NORTH AMERICA VERTICAL DATUM OF 1988 (NAVD88).

3. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND GRADES IN THE FIELD BEFORE COMMENCING WORK AND PROMPTLY NOTIFY THE ENGINEER OF ANY DISCREPANCIES.

4. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

5. PROTECTION OF UNDERGROUND FACILITIES. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NECESSITY OF MAKING HIS OWN INVESTIGATION IN ORDER TO ASSURE THAT NO DAMAGE TO EXISTING STRUCTURES, DRAINAGE LINES, TRAFFIC SIGNAL CONDUITS, ETCETRA, WILL OCCUR.

6. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

7. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH PROPOSED CONDUIT AND SIGNAL EQUIPMENT. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER.

8. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR RESOLUTION OF THE CONFLICT.

9. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SEWER STRUCTURES AS NECESSARY FOR CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK.

10. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES.

11. EXISTING UTILITY POLES WILL BE RELOCATED BY OTHERS IF REQUIRED.

12. TREES AND SHRUBS WITHIN THE LIMITS OF GRADING SHALL BE REMOVED ONLY UPON APPROVAL OF THE ENGINEER.

13. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER.

14. 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).

15. JOINTS BETWEEN NEW ASPHALT CONCRETE ROADWAY PAVEMENT AND SAWCUT EXISTING PAVEMENT SHALL BE THOROUGHLY COATED WITH A HOT APPLIED PAVEMENT JOINT ADHESIVE MEETING THE REQUIREMENTS OF SUBSECTION 450 OF 2025 STANDARD SPECIFICATIONS.

16. AFTER MILLING OPERATIONS AND PRIOR TO PAVING THE SUPERPAVE INTERMEDIATE OR SURFACES COURSES THE ENGINEER SHALL EVALUATE THE MILLED SURFACE AND SHALL APPLY THE APPROPRIATE REPAIR METHOD IF REQUIRED.

17. EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.

18. IF SUITABLE, EXISTING GRANITE CURB & EDGING SHALL BE RE-USED IN THE PROPOSED WORK, EXCEPT CURVED STONES OF A DIFFERENT RADIUS THAN PROPOSED CURB.

19. THE MONUMENTS FOUND ON THIS PLAN WERE FIELD LOCATED AND USED TO ESTABLISH THE RIGHT-OF-WAY LINES. THE PROPERTY LINES OF INDIVIDUAL OWNERS ALONG THE RIGHT-OF-WAY SHOWN ON THIS PLAN ARE FROM RECORD DEEDS AND PLANS, INDIVIDUAL ABUTTERS PROPERTIES WERE NOT SURVEYED.

20. THE CONTRACTOR SHALL EXERCISE DUE CARE WHEN WORKING AROUND ALL PROPERTY BOUNDS WHICH ARE TO REMAIN. SHOULD ANY DAMAGE TO A BOUND RESULT FROM THE ACTIONS OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE THE BOUND REPLACED AND/OR REALIGNED BY A LICENSED PROFESSIONAL SURVEYOR AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST.

21. DISPOSAL OF ALL SURPLUS MATERIAL SHALL BE AS APPROVED BY THE ENGINEER AND OWNER.

22. LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 0.01 FOOT PER FOOT (MINIMUM) UNLESS NOTED OTHERWISE ON THE PLANS.

23. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.

GROVE STREET
GROVE STREET
KEY PLAN
SHEET 4 OF 69

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NAD 83

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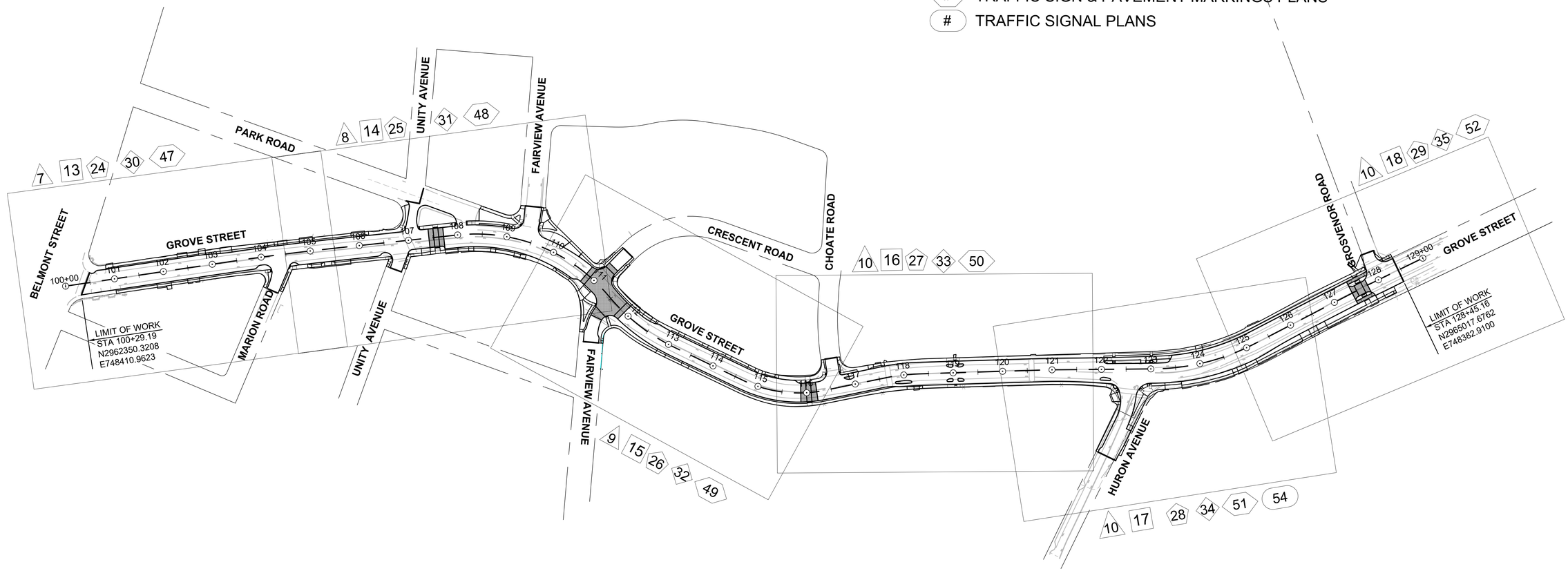
LEGEND:

- # BASELINE CONTROL PLANS
- # CONSTRUCTION PLANS
- # CURB TIE PLANS
- # GRADING PLANS
- # TRAFFIC SIGN & PAVEMENT MARKINGS PLANS
- # TRAFFIC SIGNAL PLANS



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SCALE: 1" = 100'

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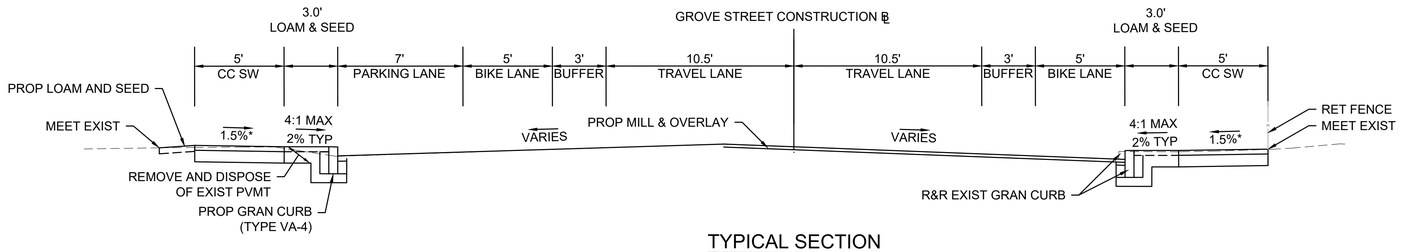
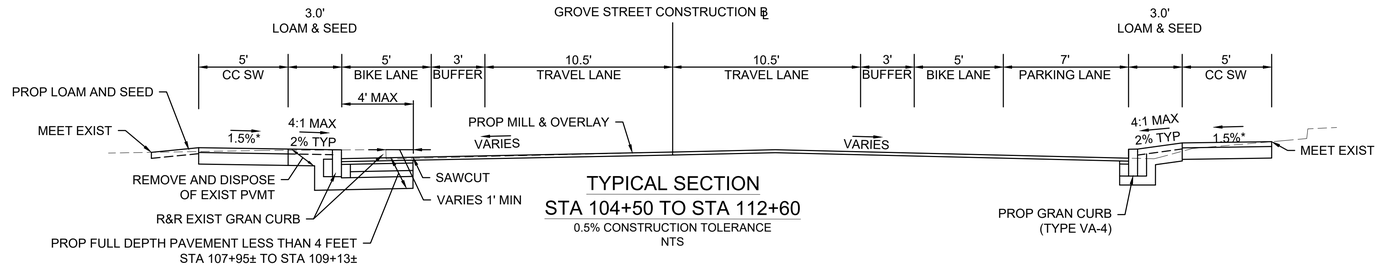
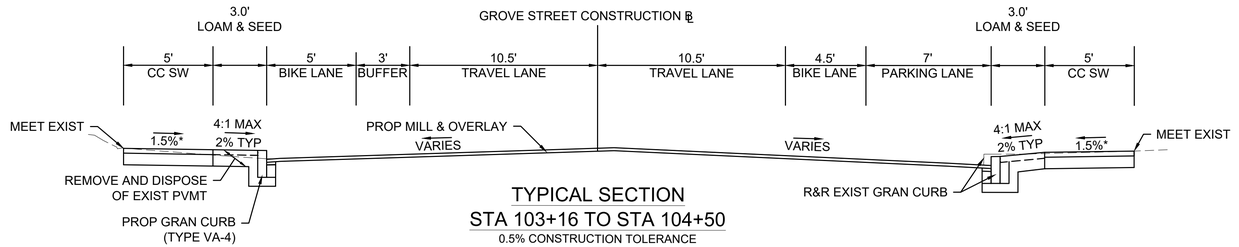


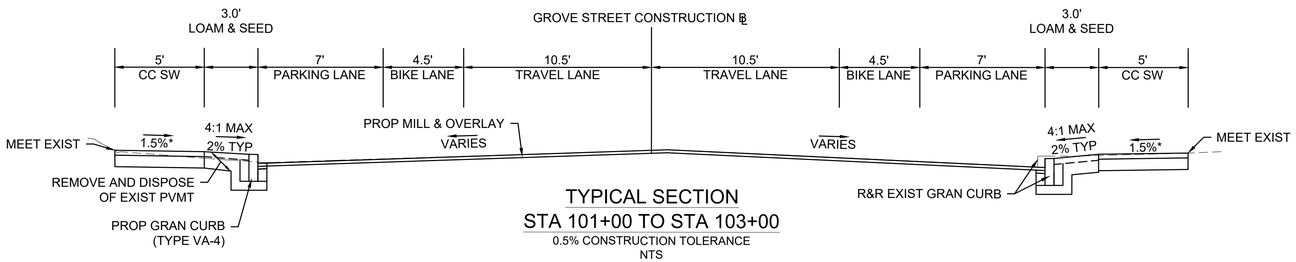
TYPICAL SECTION
STA 112+60 TO STA 117+00
0.5% CONSTRUCTION TOLERANCE
NTS



TYPICAL SECTION
STA 104+50 TO STA 112+60
0.5% CONSTRUCTION TOLERANCE
NTS



TYPICAL SECTION
STA 103+16 TO STA 104+50
0.5% CONSTRUCTION TOLERANCE
NTS



TYPICAL SECTION
STA 101+00 TO STA 103+00
0.5% CONSTRUCTION TOLERANCE
NTS

PAVEMENT NOTES

PROPOSED MILL AND OVERLAY

SURFACE COURSE:	2.0" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
MILLING:	VARIABLE (2.0" TYP) PAVEMENT STANDARD MILLING

PROPOSED FULL DEPTH PAVEMENT - MARION ROAD, PARK ROAD, FAIRVIEW AVE

SURFACE COURSE:	2.0" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
INTERMEDIATE COURSE:	2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)
SUB BASE:	4" DENSE GRADED CRUSHED STONE 8" GRAVEL BORROW, TYPE B

PROPOSED FULL DEPTH PAVEMENT LESS THAN 4 FEET

SURFACE COURSE:	2.0" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
INTERMEDIATE COURSE:	2.5" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0)
BASE COURSE:	6.0" HIGH EARLY STRENGTH CEMENT CONCRETE
SUB BASE:	8" GRAVEL BORROW, TYPE B

CEMENT CONCRETE SIDEWALK/ISLAND:

SURFACE:	4" CEMENT CONCRETE, AIR ENTRAINED 4000 PSI, 3/4", 610
SUBBASE:	8" GRAVEL BORROW, TYPE B

CEMENT CONCRETE PEDESTRIAN CURB RAMP/ DRIVEWAY:

SURFACE:	6" CEMENT CONCRETE, AIR ENTRAINED 4000 PSI, 3/4", 610
SUBBASE:	8" GRAVEL BORROW, TYPE B

HOT MIX ASPHALT DRIVEWAY:

SURFACE:	1.5" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
INTERMEDIATE:	2.5" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
SUBBASE:	8" GRAVEL BORROW, TYPE B

HOT MIX ASPHALT SIDEWALK/SEPARATED BIKE LANE/SHARE-USE-PATH:

SURFACE:	1.25" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5)
INTERMEDIATE:	1.75" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
SUBBASE:	8" GRAVEL BORROW, TYPE B

PROPOSED RAISED CROSSING

SURFACE COURSE:	2.0" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5)
LEVELING COURSE:	VARIABLE SUPERPAVE LEVELING COURSE - 9.5 (9.5-SLC)
MILLING:	VARIABLE (2.0" TYP) PAVEMENT STANDARD MILLING

GENERAL NOTES

1. ALL HOT MIX ASPHALT PAVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 450 QUALITY ASSURANCE FOR HMA.
2. ASPHALT EMULSION FOR TACK COAT (ITEM 452.) SHALL BE SPRAY APPLIED FOR TRIPLE OVERLAP COVERAGE AT 0.08 GAL/SY OVER MILLED SURFACES AND 0.07 GAL/SY OVER SMOOTH SURFACES.
3. HMA JOINT ADHESIVE (ITEM 453.) SHALL BE APPLIED IN SURFACE COURSE AT ALL VERTICAL COLD JOINTS PRIOR TO HMA PAVING.
4. ALL HOT MIX ASPHALT WALKS AND DRIVEWAYS SHALL BE ESTIMATED AND PAID FOR UNDER ITEM 702. OF THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
5. WHERE EXISTING GRAVEL IS FOUND TO BE SUITABLE, THE EXISTING GRAVEL MAY BE USED IN PROPOSED SUBBASE, AFTER APPROVAL BY THE ENGINEER.

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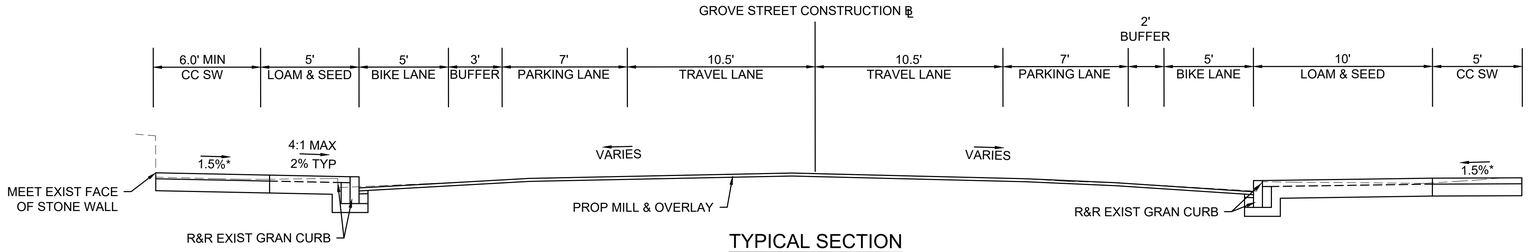
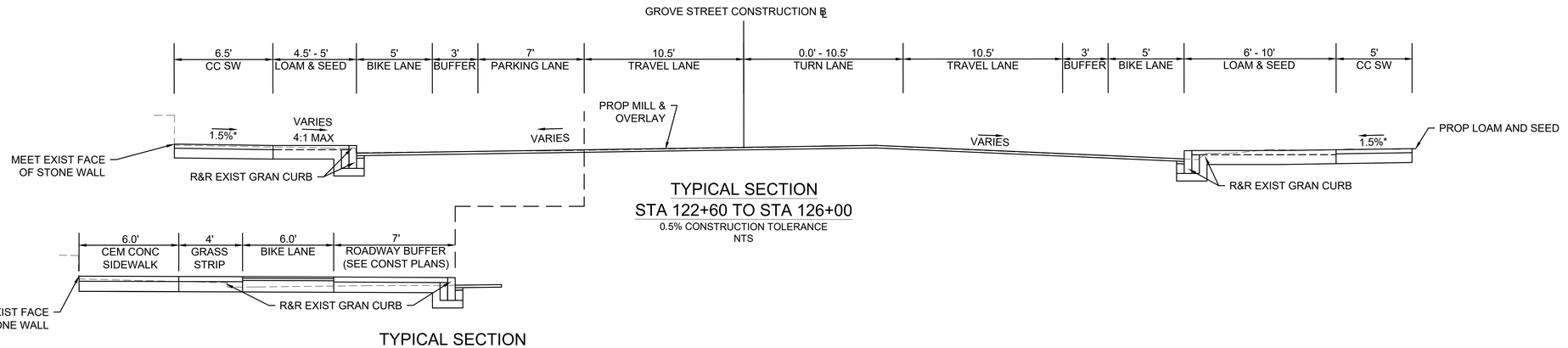
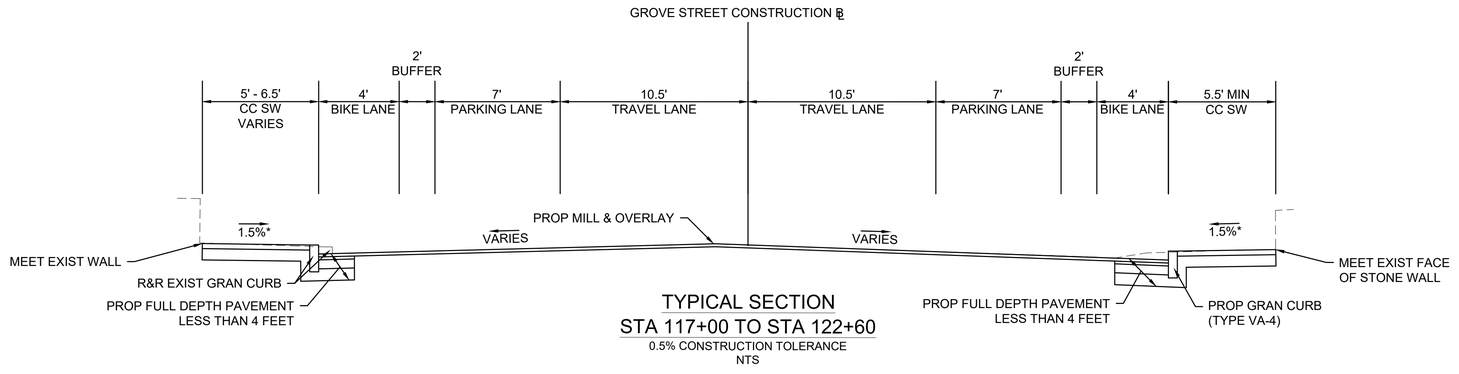


TYPICAL SECTION
STA 126+00 TO STA 127+50
0.5% CONSTRUCTION TOLERANCE
NTS



TYPICAL SECTION
STA 122+60 TO STA 126+00
0.5% CONSTRUCTION TOLERANCE
NTS

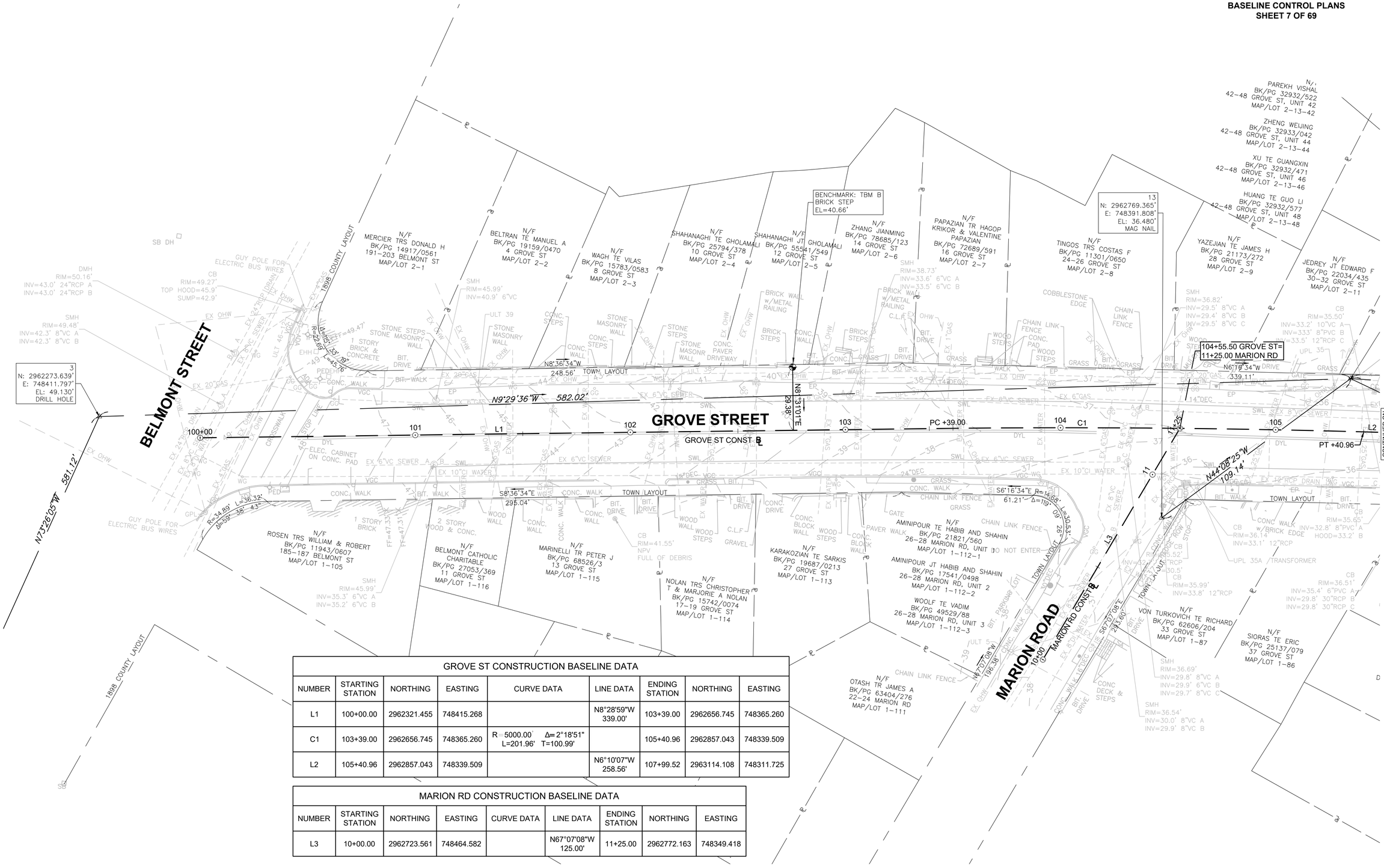
TYPICAL SECTION
STA 122+05 TO STA 123+40
0.5% CONSTRUCTION TOLERANCE
NTS



TYPICAL SECTION
STA 117+00 TO STA 122+60
0.5% CONSTRUCTION TOLERANCE
NTS

BELMONT
GROVE STREET
BASELINE CONTROL PLANS
SHEET 7 OF 69

16044.00_HD(BL-CNTRL).DWG Plotted on 17-Oct-2025 12:36 PM



GROVE ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	100+00.00	2962321.455	748415.268		N8°28'59"W 339.00'	103+39.00	2962656.745	748365.260
C1	103+39.00	2962656.745	748365.260	R=5000.00' Δ=2°18'51" L=201.96' T=100.99'		105+40.96	2962857.043	748339.509
L2	105+40.96	2962857.043	748339.509		N6°10'07"W 258.56'	107+99.52	2963114.108	748311.725

MARION RD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	10+00.00	2962723.561	748464.582		N67°07'08"W 125.00'	11+25.00	2962772.163	748349.418

BELMONT
GROVE STREET
BASELINE CONTROL PLANS
SHEET 8 OF 69

16044.00_HD(BL-CNTRL).DWG Plotted on 17-Oct-2025 12:36 PM

GROVE ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L2	105+40.96	2962857.043	748339.509		N6°10'07"W 258.56'	107+99.52	2963114.108	748311.725
L4	105+40.96	2962857.043	748339.509		N6°10'07"W 258.56'	107+99.52	2963114.108	748311.725
C3	107+99.52	2963114.108	748311.725	R=350.00' Δ=56°19'47" L=344.10' T=187.39'		111+43.62	2963420.465	748435.478
C5	111+43.62	2963420.465	748435.478	R=400.00' Δ=24°29'45" L=171.01' T=86.83'		113+14.63	2963554.358	748539.761

UNITY AVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	20+00.00	2962974.655	748424.195		N70°12'34"W 100.00'	21+00.00	2963008.515	748330.097
C2	21+00.00	2963008.515	748330.097	R=335.00' Δ=15°03'31" L=88.05' T=44.28'		21+88.05	2963027.159	748244.308
L6	21+88.05	2963027.159	748244.308		N85°16'05"W 111.95'	23+00.00	2963036.395	748132.742

PARK RD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L7	30+66.17	2963036.837	748234.546		N20°03'37"E 133.83'	32+00.00	2963162.544	748280.449

FAIRVIEW AVE WEST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	40+00.00	2963253.258	748324.751		N73°08'06"W 20.21'	40+20.21	2963259.122	748305.410
C4	40+20.21	2963259.122	748305.410	R=200.00' Δ=12°07'58" L=42.35' T=21.26'		40+62.56	2963267.042	748263.886
L9	40+62.56	2963267.042	748263.886		N85°16'05"W 37.44'	41+00.00	2963270.130	748226.576

PARK ROAD
UNITY AVENUE
FAIRVIEW AVENUE
GROVE STREET
UNITY AVENUE

104+55.50 GROVE ST=
11+25.00 MARION RD

22+00.91 UNITY AVE=
30+57.03 PARK RD

106+95.84 GROVE ST=
21+07.66 UNITY AVE

109+40.23 GROVE ST=
40+00.00 FAIRVIEW AVE WEST

111+09.20 GROVE ST=
50+00.00 CRESCENT RD

BENCHMARK: TBM C
EL=40.39'

4
N: 2962847.685'
E: 748315.804'
EL: 36.440'
MAG NAIL

5
N: 2963245.533'
E: 748286.701'
EL: 42.810'
DRILL HOLE

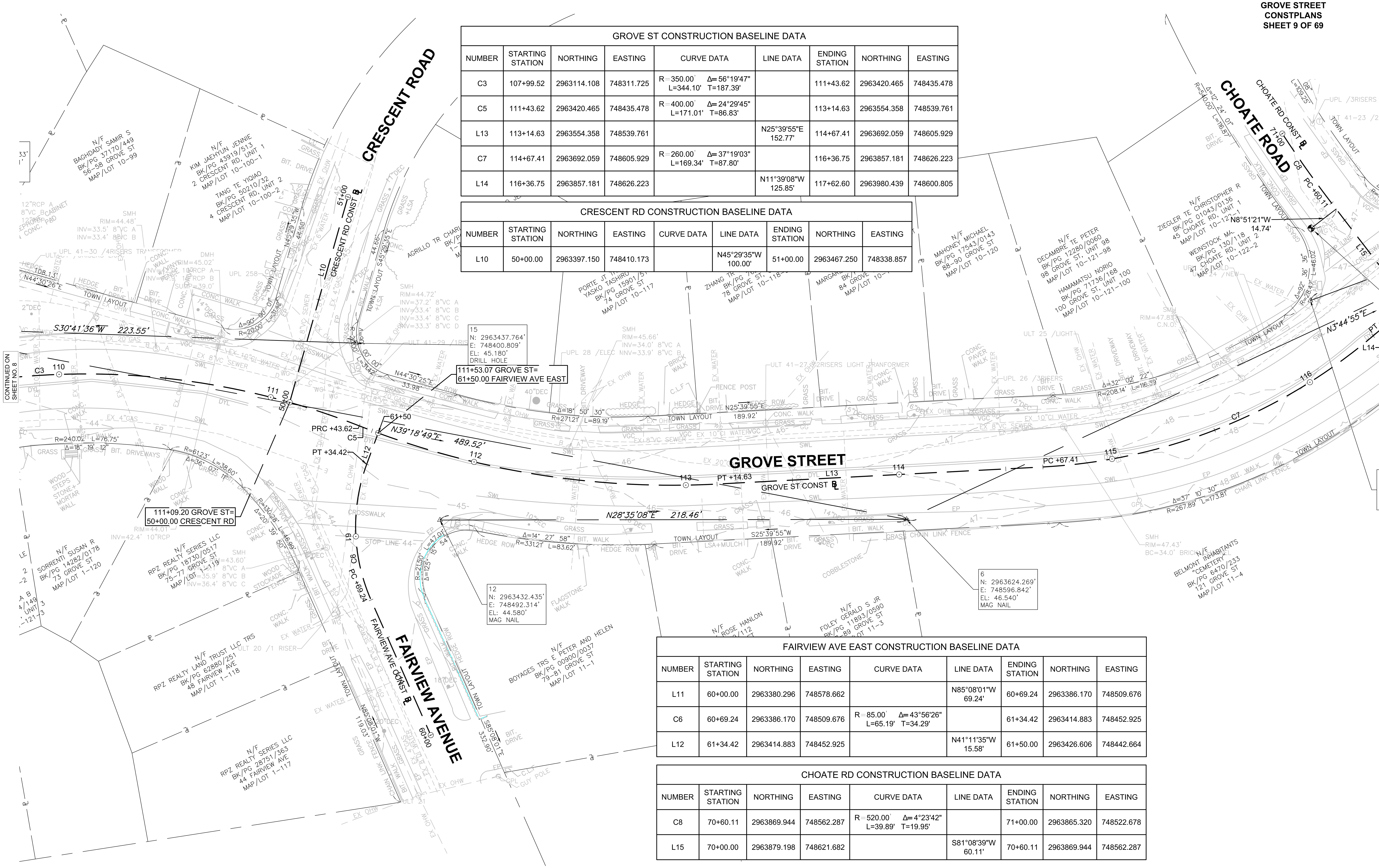
14
N: 2962969.976'
E: 748354.694'
EL: 36.720'
MAG NAIL

CONTINUED ON SHEET NO. 7

CONTINUED ON SHEET NO. 9

0 20 50 100
SCALE: 1" = 20'

Plotted on 17-Oct-2025 12:36 PM
16044.00_HD(BL-CNTRL).DWG



GROVE ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	107+99.52	2963114.108	748311.725	R=350.00' Δ=56°19'47" L=344.10' T=187.39'		111+43.62	2963420.465	748435.478
C5	111+43.62	2963420.465	748435.478	R=400.00' Δ=24°29'45" L=171.01' T=86.83'		113+14.63	2963554.358	748539.761
L13	113+14.63	2963554.358	748539.761		N25°39'55"E 152.77'	114+67.41	2963692.059	748605.929
C7	114+67.41	2963692.059	748605.929	R=260.00' Δ=37°19'03" L=169.34' T=87.80'		116+36.75	2963857.181	748626.223
L14	116+36.75	2963857.181	748626.223		N11°39'08"W 125.85'	117+62.60	2963980.439	748600.805

CRESCENT RD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	50+00.00	2963397.150	748410.173		N45°29'35"W 100.00'	51+00.00	2963467.250	748338.857

FAIRVIEW AVE EAST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L11	60+00.00	2963380.296	748578.662		N85°08'01"W 69.24'	60+69.24	2963386.170	748509.676
C6	60+69.24	2963386.170	748509.676	R=85.00' Δ=43°56'26" L=65.19' T=34.29'		61+34.42	2963414.883	748452.925
L12	61+34.42	2963414.883	748452.925		N41°11'35"W 15.58'	61+50.00	2963426.606	748442.664

CHOATE RD CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C8	70+60.11	2963869.944	748562.287	R=520.00' Δ=4°23'42" L=39.89' T=19.95'		71+00.00	2963865.320	748522.678
L15	70+00.00	2963879.198	748621.682		S81°08'39"W 60.11'	70+60.11	2963869.944	748562.287

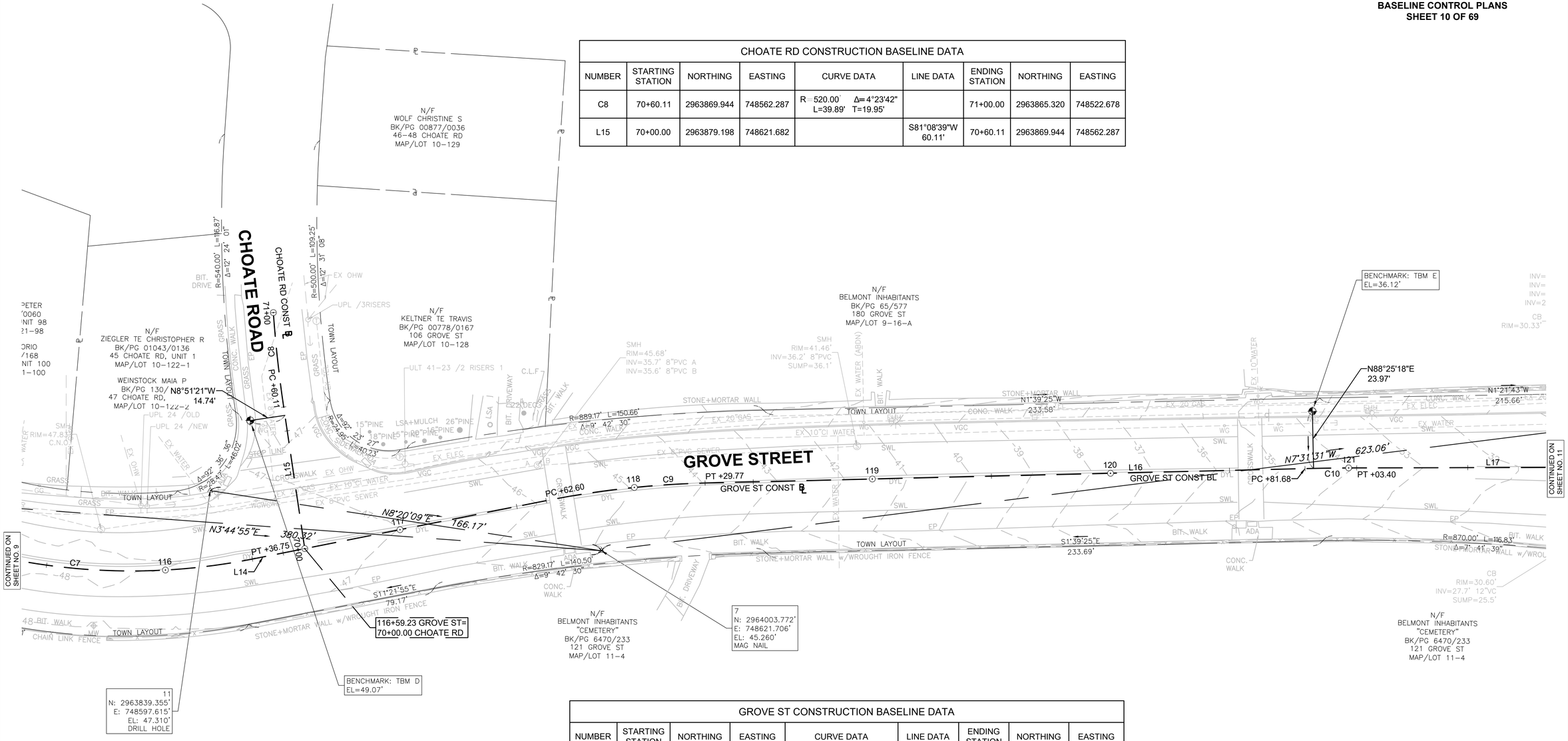
0 20 50 100

SCALE: 1" = 20'

BELMONT
GROVE STREET
BASELINE CONTROL PLANS
SHEET 10 OF 69

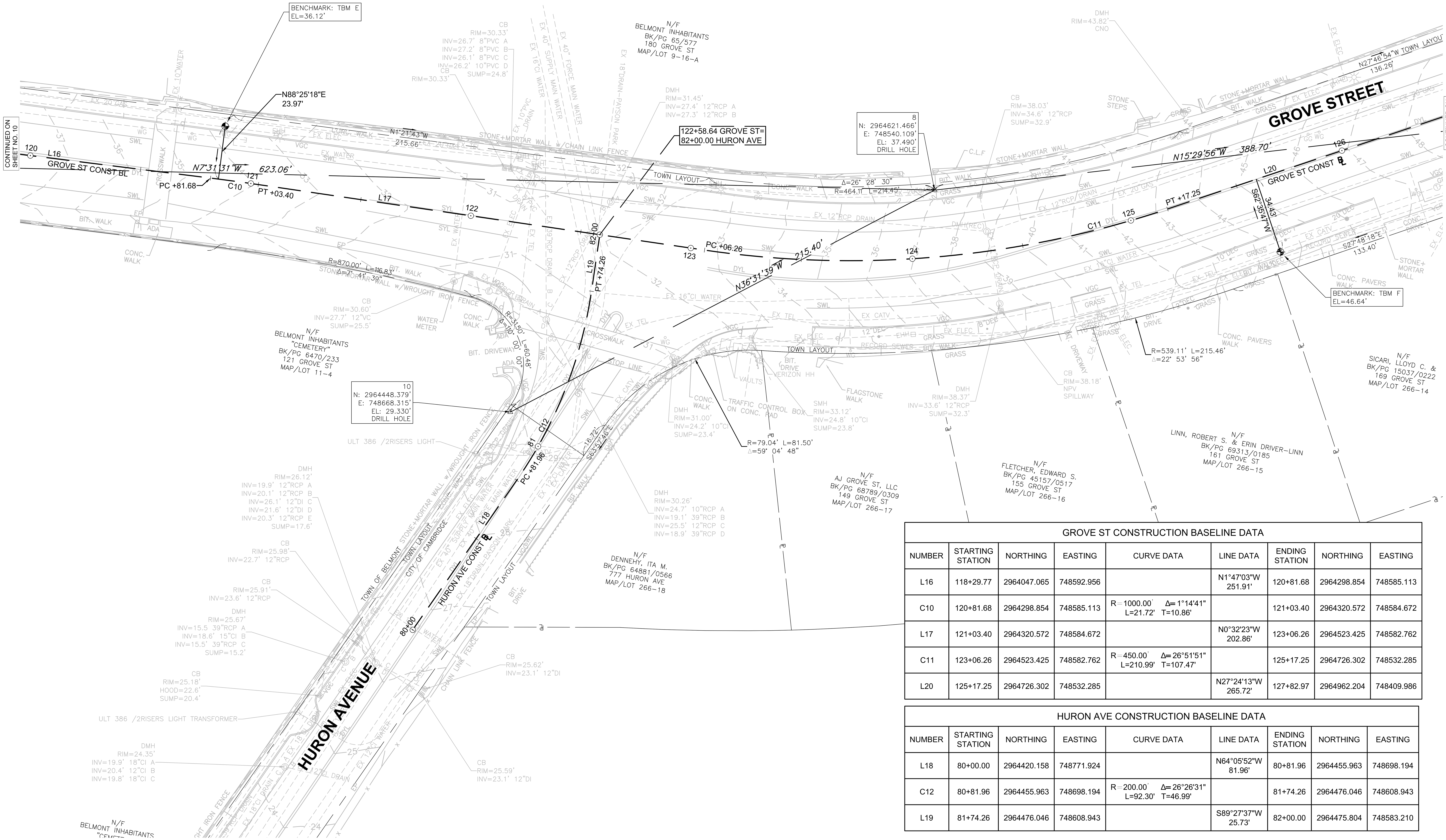
16044.00_HD(BL-CNTRL).DWG Plotted on 17-Oct-2025 12:36 PM

CHOATE RD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C8	70+60.11	2963869.944	748562.287	R=520.00' Δ=4°23'42" L=39.89' T=19.95'		71+00.00	2963865.320	748522.678
L15	70+00.00	2963879.198	748621.682		S81°08'39"W 60.11'	70+60.11	2963869.944	748562.287



GROVE ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C7	114+67.41	2963692.059	748605.929	R=260.00' Δ=37°19'03" L=169.34' T=87.80'		116+36.75	2963857.181	748626.223
L14	116+36.75	2963857.181	748626.223		N11°39'08"W 125.85'	117+62.60	2963980.439	748600.805
C9	117+62.60	2963980.439	748600.805	R=390.00' Δ=9°52'05" L=67.17' T=33.67'		118+29.77	2964047.065	748592.956
L16	118+29.77	2964047.065	748592.956		N1°47'03"W 251.91'	120+81.68	2964298.854	748585.113
C10	120+81.68	2964298.854	748585.113	R=1000.00' Δ=1°14'41" L=21.72' T=10.86'		121+03.40	2964320.572	748584.672
L17	121+03.40	2964320.572	748584.672		N0°32'23"W 202.86'	123+06.26	2964523.425	748582.762

0 20 50 100
SCALE: 1" = 20'



GROVE ST CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L16	118+29.77	2964047.065	748592.956		N1°47'03"W 251.91'	120+81.68	2964298.854	748585.113
C10	120+81.68	2964298.854	748585.113	R=1000.00' Δ=1°14'41" L=21.72' T=10.86'		121+03.40	2964320.572	748584.672
L17	121+03.40	2964320.572	748584.672		N0°32'23"W 202.86'	123+06.26	2964523.425	748582.762
C11	123+06.26	2964523.425	748582.762	R=450.00' Δ=26°51'51" L=210.99' T=107.47'		125+17.25	2964726.302	748532.285
L20	125+17.25	2964726.302	748532.285		N27°24'13"W 265.72'	127+82.97	2964962.204	748409.986

HURON AVE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L18	80+00.00	2964420.158	748771.924		N64°05'52"W 81.96'	80+81.96	2964455.963	748698.194
C12	80+81.96	2964455.963	748698.194	R=200.00' Δ=26°26'31" L=92.30' T=46.99'		81+74.26	2964476.046	748608.943
L19	81+74.26	2964476.046	748608.943		S89°27'37"W 25.73'	82+00.00	2964475.804	748583.210

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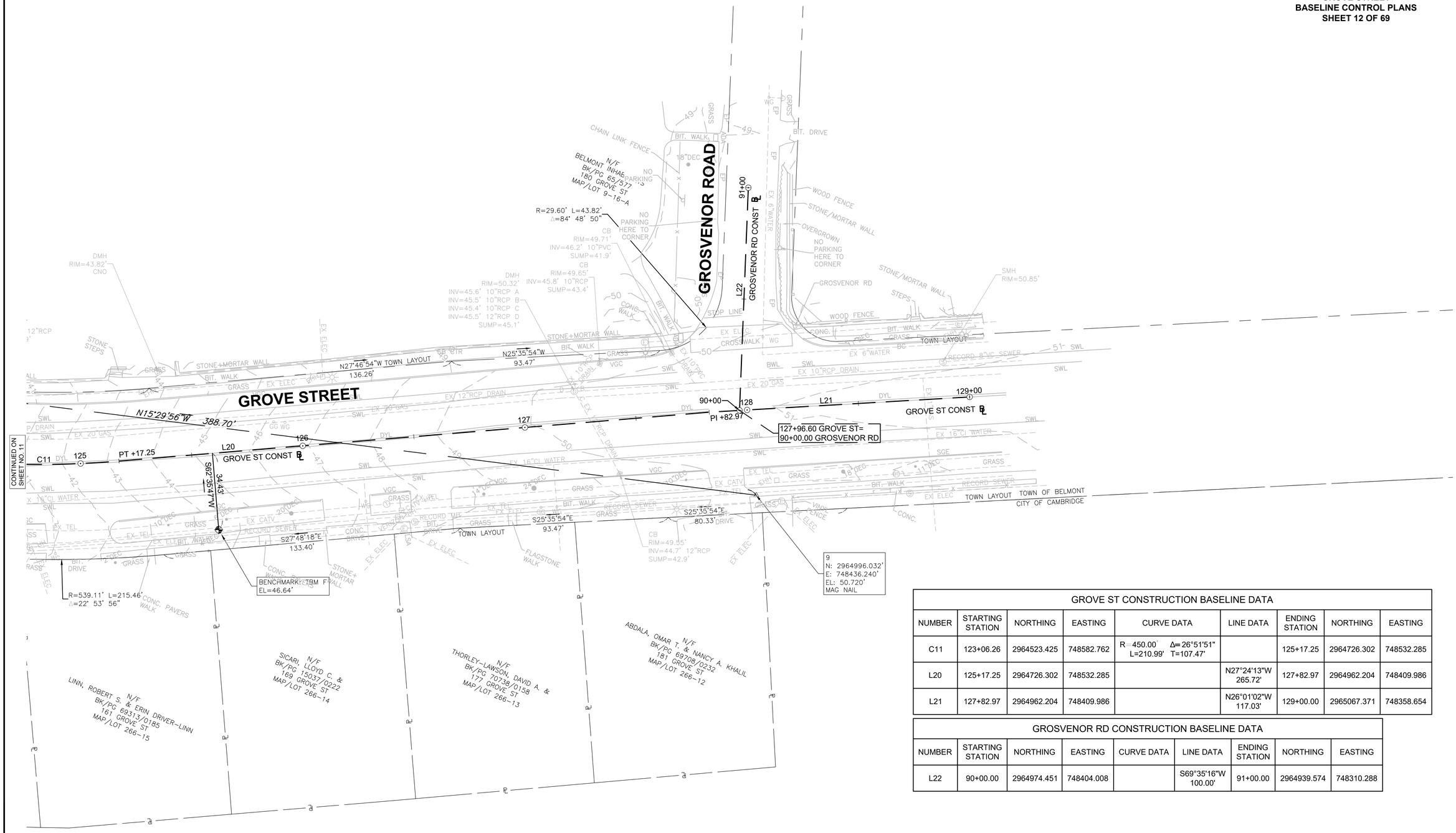
BELMONT
GROVE STREET
BASELINE CONTROL PLANS
SHEET 12 OF 69

16044.00_HD(BL-CNTRL).DWG Plotted on 17-Oct-2025 12:36 PM



GROVE ST CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C11	123+06.26	2964523.425	748582.762	R=450.00' Δ=26°51'51" L=210.99' T=107.47'		125+17.25	2964726.302	748532.285
L20	125+17.25	2964726.302	748532.285		N27°24'13"W 265.72'	127+82.97	2964962.204	748409.986
L21	127+82.97	2964962.204	748409.986		N26°01'02"W 117.03'	129+00.00	2965067.371	748358.654

GROSVENOR RD CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L22	90+00.00	2964974.451	748404.008		S69°35'16"W 100.00'	91+00.00	2964939.574	748310.288

16044.00_HD(CONST-UTIL).DWG Plotted on 17-Oct-2025 12:37 PM

NAD 83

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DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	PROP CBCI	104+46.6 37.4' RT	36.01		I=32.50' (3)	
2	PROP CB	104+49.2 -16.8' LT	36.43		I=32.10' (3)	
3	PROP DMH	104+68.6 11.5' RT	36.37	I=32.10' (1) I=31.80' (2) I=31.80' (4A)	I=31.70' (4B)	60" DIA MH
4A	PROP CB	104+79.2 23.8' RT	36.00		I=31.90' (3)	
4B	PROP DMH	105+45.1 12.6' RT	36.02	I=31.80' (6) I=31.80' (5) I=31.20' (3)	I=31.10' (7)	
5	PROP CB	105+42.6 25.1' RT	35.54		I=32.00' (4B)	
6	PROP CBCI	105+45.3 -16.9' LT	35.60		I=32.10' (4B)	

LEGEND

- X = PROPOSED PEDESTRIAN CURB RAMP
- X = PROPOSED DRIVEWAY
- X = DRAINAGE STRUCTURE

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 14

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HDI(CONST-UTIL).DWG Plotted on 17-Oct-2025 12:37 PM

DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
2	PROP CB	104+49.2 -16.8' LT	36.43		I=32.10' (3)	
3	PROP DMH	104+68.6 11.5' RT	36.37	I=32.10' (1) I=31.80' (2) I=31.80' (4A)	I=31.70' (4B)	60" DIA MH
4A	PROP CB	104+79.2 23.8' RT	36.00		I=31.90' (3)	
4B	PROP DMH	105+45.1 12.6' RT	36.02	I=31.80' (6) I=31.80' (5) I=31.20' (3)	I=31.10' (7)	
5	PROP CB	105+42.6 25.1' RT	35.54		I=32.00' (4B)	
6	PROP CBCI	105+45.3 -16.9' LT	35.60		I=32.10' (4B)	
7	EX CB	105+64.7 17.2' RT	35.95	I=31.60' (9) I=30.90' (4B) I=32.00' (8)		REBUILD; R&S F/G; PROP F/C

DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
8	PROP CB	105+78.4 -16.9' LT	35.87		I=32.40' (7)	
9	PROP CB	105+80.3 25.2' RT	35.81		I=31.80' (7)	
10	EX DMH	106+82.4 -19.2' LT	37.22	I=32.90' (11)		REBUILD
11	EX DMH	106+95.9 -37.7' LT	37.48		I=33.00' (10)	REBUILD
12	EX CBCI	107+01 -37.7' LT	36.59			REBUILD
13	EX CB	106+90.8 35.8' RT	36.61			REBUILD
14	EX CB	107+19.3 -36.1' LT	36.90	I=31.80' (15)		ADJ; R&S F/G; PROP F/C
15	PROP DMH	107+63.8 -29.6' LT	38.35	I=32.20' (16) I=34.70' (17)	I=32.10' (14)	

DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
16	PROP DMH	107+64.9 25.1' RT	35.41	I=35.10' (18)	I=35.00' (15)	PROP SUMP MH; PROP F/C
17	PROP CBCI	107+72.7 -16.9' LT	37.78		I=34.80' (15)	
18	PROP GI	107+72.7 24.5' RT	38.14		I=35.20' (16)	
19	EX DMH	109+18.9 -41.1' LT	43.00	I=38.70' (20)		ADJ
20	PROP DMH	109+34 -4.6' LT	43.16	I=39.00' (21)	I=38.90' (19)	
21	PROP DMH	110+87 0.6' RT	45.18	I=39.90' (27) I=39.90' (25) I=40.10' (22) I=41.70' (49)	I=39.80' (20)	60" DIA. MH

DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
22	PROP CB	110+87.2 30.3' RT	44.25	I=40.40' (23)	I=40.30' (21)	
23	PROP AD	111+13.5 36.3' RT	44.00	I=40.50' (24)	I=40.50' (22)	
24	PROP AD	111+36.3 57.1' RT	43.75		I=40.70' (23)	
25	PROP DMH	110+99.2 -25.2' LT	44.95	I=41.20' (26)	I=40.10' (21)	PROP SUMP MH; PROP F/C
27	PROP DMH	111+20.3 -0.1' LT	45.48	I=40.20' (30) I=41.00' (28)	I=40.10' (21)	
48	EX CB	110+71.7 -17.5' LT	44.09			REBUILD
49	EX DMH	110+72.4 -23.9' LT	45.44		I=41.90' (21)	ADJ

NAD 83

N

0 20 50 100

SCALE: 1" = 20'

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 15

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

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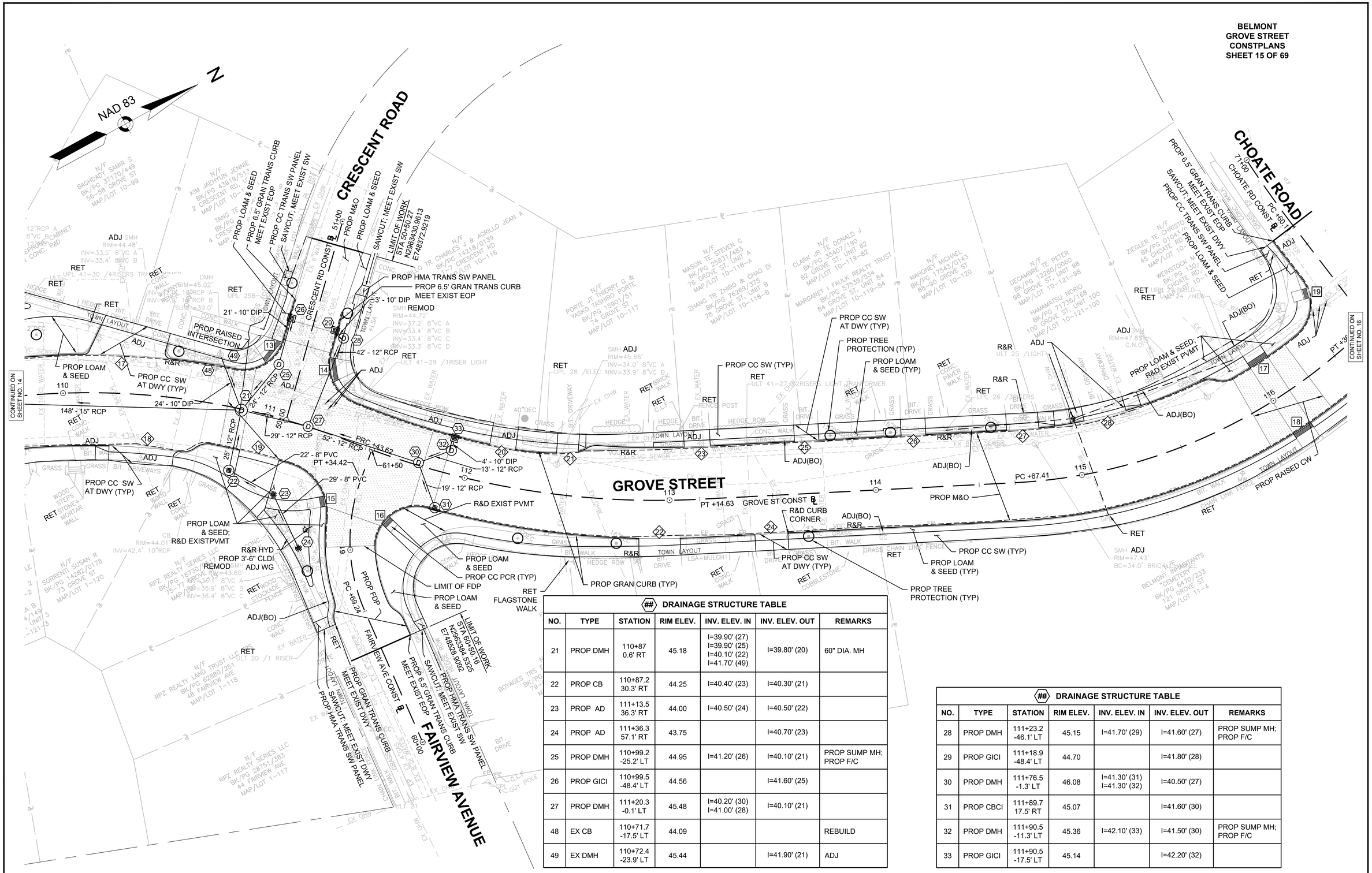


DRAINAGE STRUCTURE TABLE

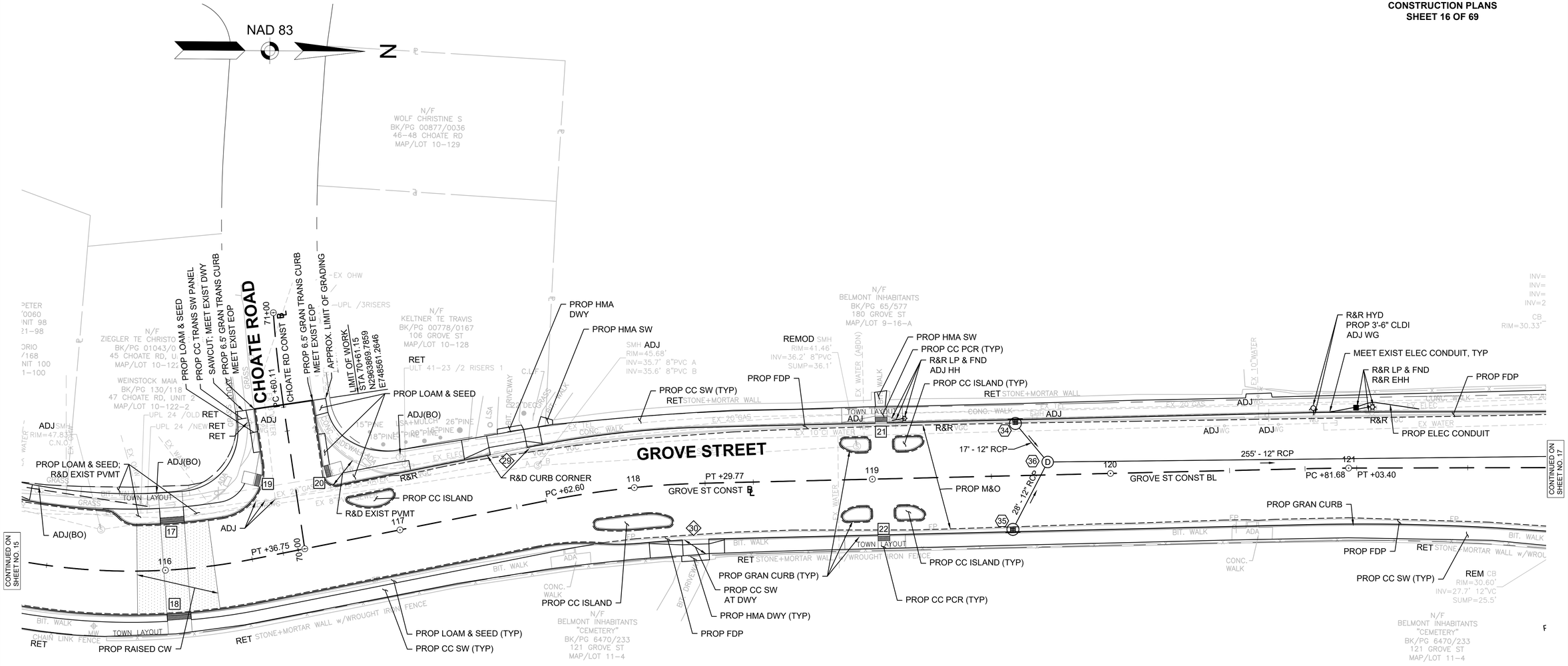
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
21	PROP DMH	110+87 0.6' RT	45.18	I=39.90' (27) I=39.90' (25) I=40.10' (22) I=41.70' (49)	I=39.80' (20)	60" DIA. MH
22	PROP CB	110+87.2 30.3' RT	44.25	I=40.40' (23)	I=40.30' (21)	
23	PROP AD	111+13.5 36.3' RT	44.00	I=40.50' (24)	I=40.50' (22)	
24	PROP AD	111+36.3 57.1' RT	43.75		I=40.70' (23)	
25	PROP DMH	110+99.2 -25.2' LT	44.95	I=41.20' (26)	I=40.10' (21)	PROP SUMP MH; PROP F/C
26	PROP GICI	110+99.5 -48.4' LT	44.56		I=41.60' (25)	
27	PROP DMH	111+20.3 -0.1' LT	45.48	I=40.20' (30) I=41.00' (28)	I=40.10' (21)	
48	EX CB	110+71.7 -17.5' LT	44.09			REBUILD
49	EX DMH	110+72.4 -23.9' LT	45.44		I=41.90' (21)	ADJ

DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
28	PROP DMH	111+23.2 -46.1' LT	45.15	I=41.70' (29)	I=41.60' (27)	PROP SUMP MH; PROP F/C
29	PROP GICI	111+18.9 -48.4' LT	44.70		I=41.80' (28)	
30	PROP DMH	111+76.5 -1.3' LT	46.08	I=41.30' (31) I=41.30' (32)	I=40.50' (27)	
31	PROP CBCI	111+89.7 17.5' RT	45.07		I=41.60' (30)	
32	PROP DMH	111+90.5 -11.3' LT	45.36	I=42.10' (33)	I=41.50' (30)	PROP SUMP MH; PROP F/C
33	PROP GICI	111+90.5 -17.5' LT	45.14		I=42.20' (32)	

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(CONST-UTIL).DWG Plotted on 17-Oct-2025 12:37 PM

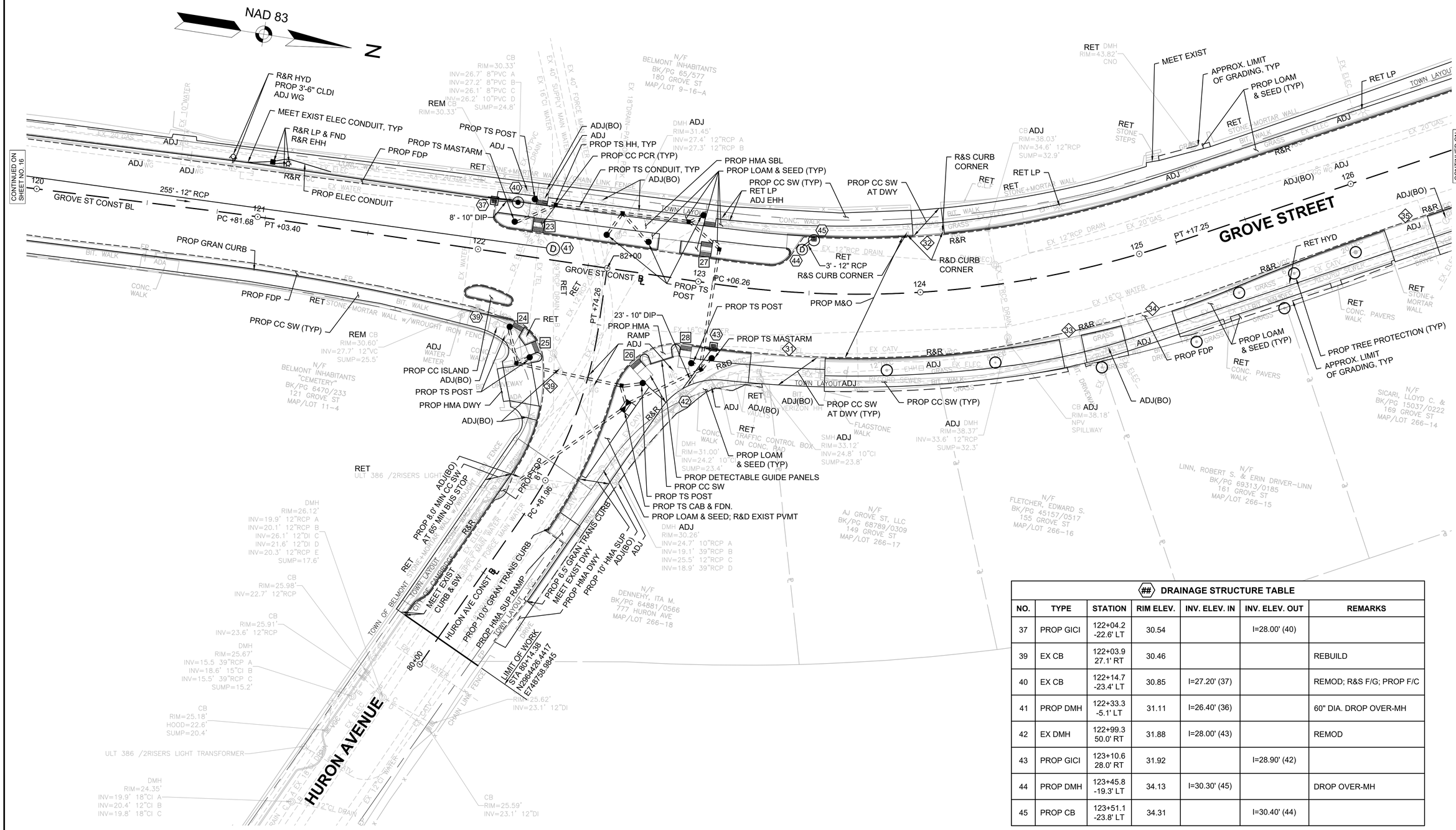


## DRAINAGE STRUCTURE TABLE						
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
34	PROP CBCI	119+60.6 -21.9' LT	38.67		I=35.10' (36)	
35	PROP CBCI	119+58.5 22.5' RT	38.65		I=35.10' (36)	
36	PROP DMH	119+73.8 -5.4' LT	38.54	I=34.80' (34) I=34.80' (35)	I=34.70' (41)	

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(CONST-UTIL).DWG Plotted on 17-Oct-2025 12:37 PM



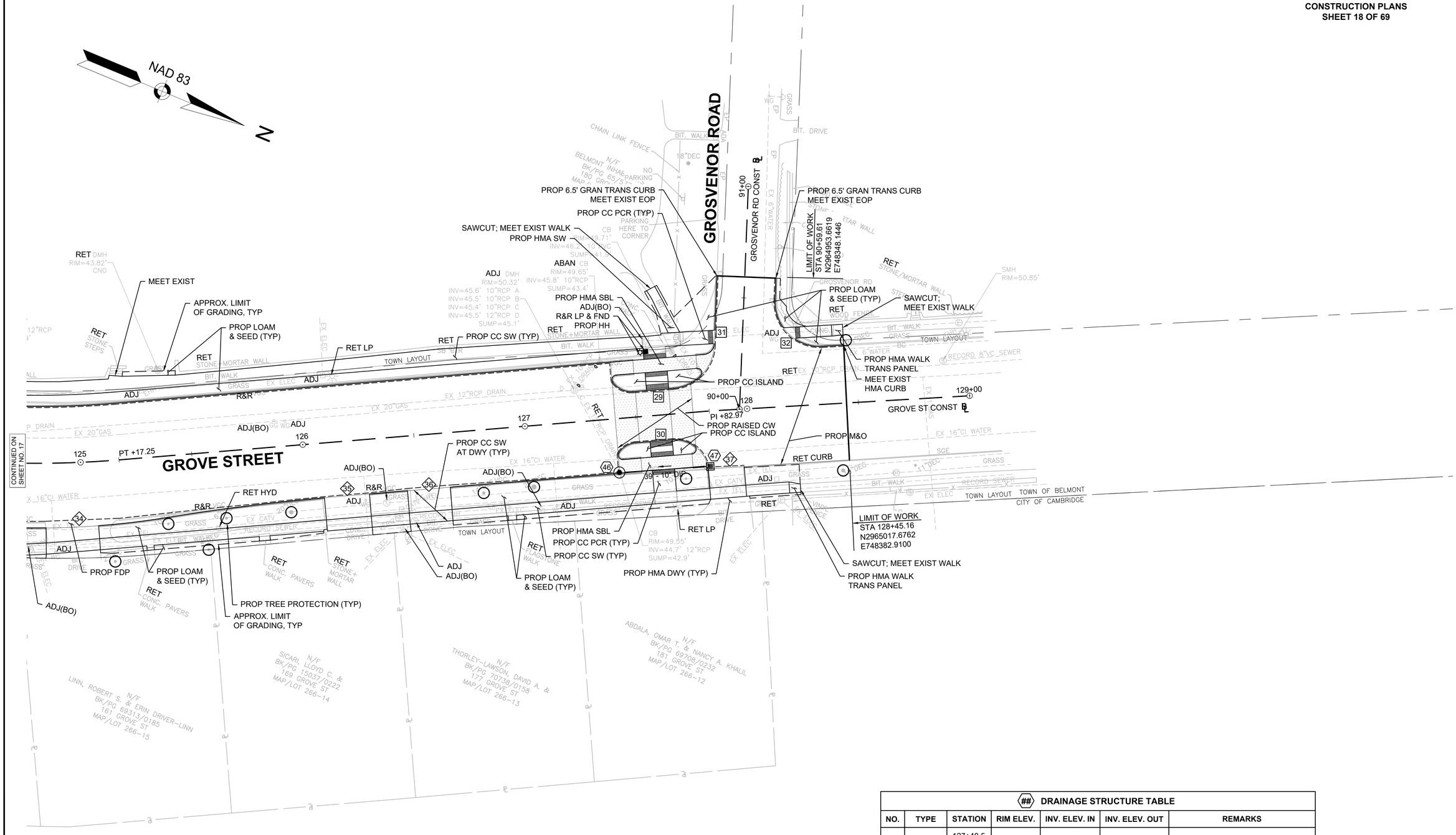
DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
37	PROP GICI	122+04.2 -22.6' LT	30.54		I=28.00' (40)	
39	EX CB	122+03.9 27.1' RT	30.46			REBUILD
40	EX CB	122+14.7 -23.4' LT	30.85	I=27.20' (37)		REMOD; R&S F/G; PROP F/C
41	PROP DMH	122+33.3 -5.1' LT	31.11	I=26.40' (36)		60" DIA. DROP OVER-MH
42	EX DMH	122+99.3 50.0' RT	31.88	I=28.00' (43)		REMOD
43	PROP GICI	123+10.6 28.0' RT	31.92		I=28.90' (42)	
44	PROP DMH	123+45.8 -19.3' LT	34.13	I=30.30' (45)		DROP OVER-MH
45	PROP CB	123+51.1 -23.8' LT	34.31		I=30.40' (44)	

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

BELMONT
GROVE STREET
CONSTRUCTION PLANS
SHEET 18 OF 69

16044.00_HD(CONST-UTIL).DWG Plotted on 17-Oct-2025 12:38 PM



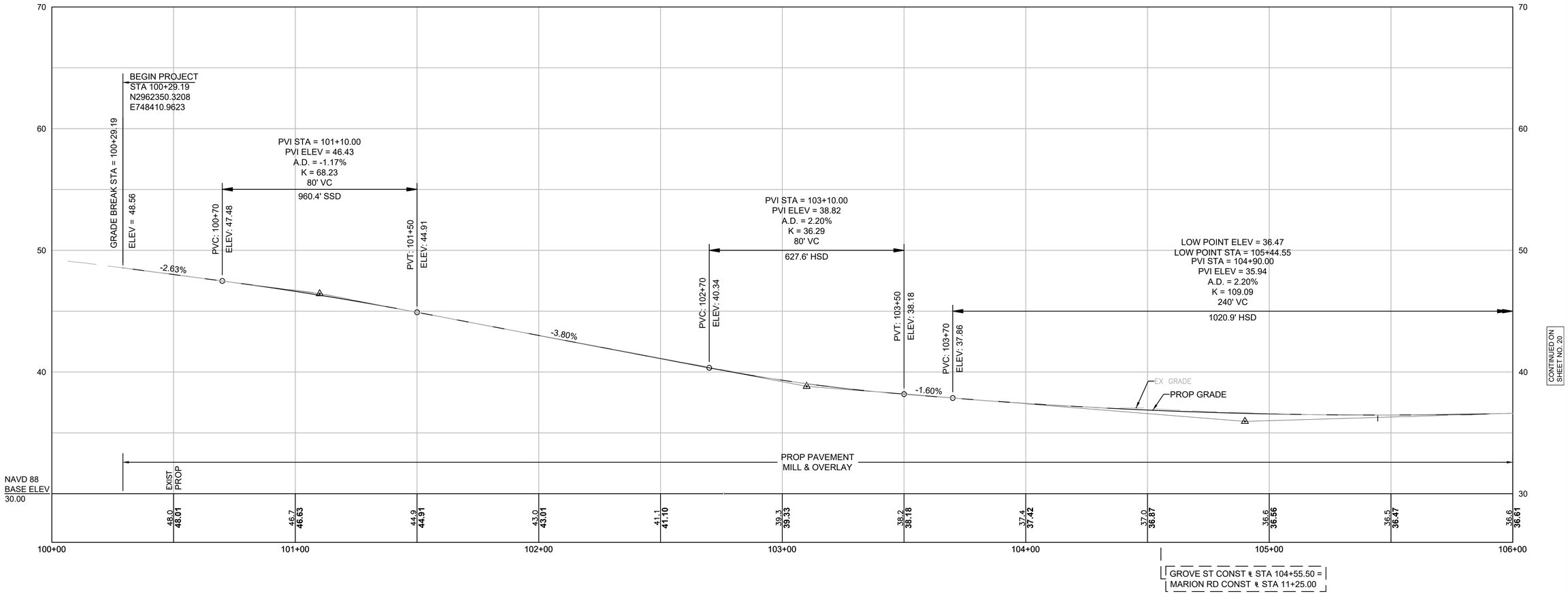
DRAINAGE STRUCTURE TABLE

NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
46	EX CB	127+40.5 24.2' RT	49.62	I=44.80' (47)		ADJ; RET SUMP; PROP F/C; R&S F/G
47	PROP GI	127+81.4 24.8' RT	49.99		I=47.10' (46)	

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

GROVE ST



CONTINUED ON
SHEET NO. 20

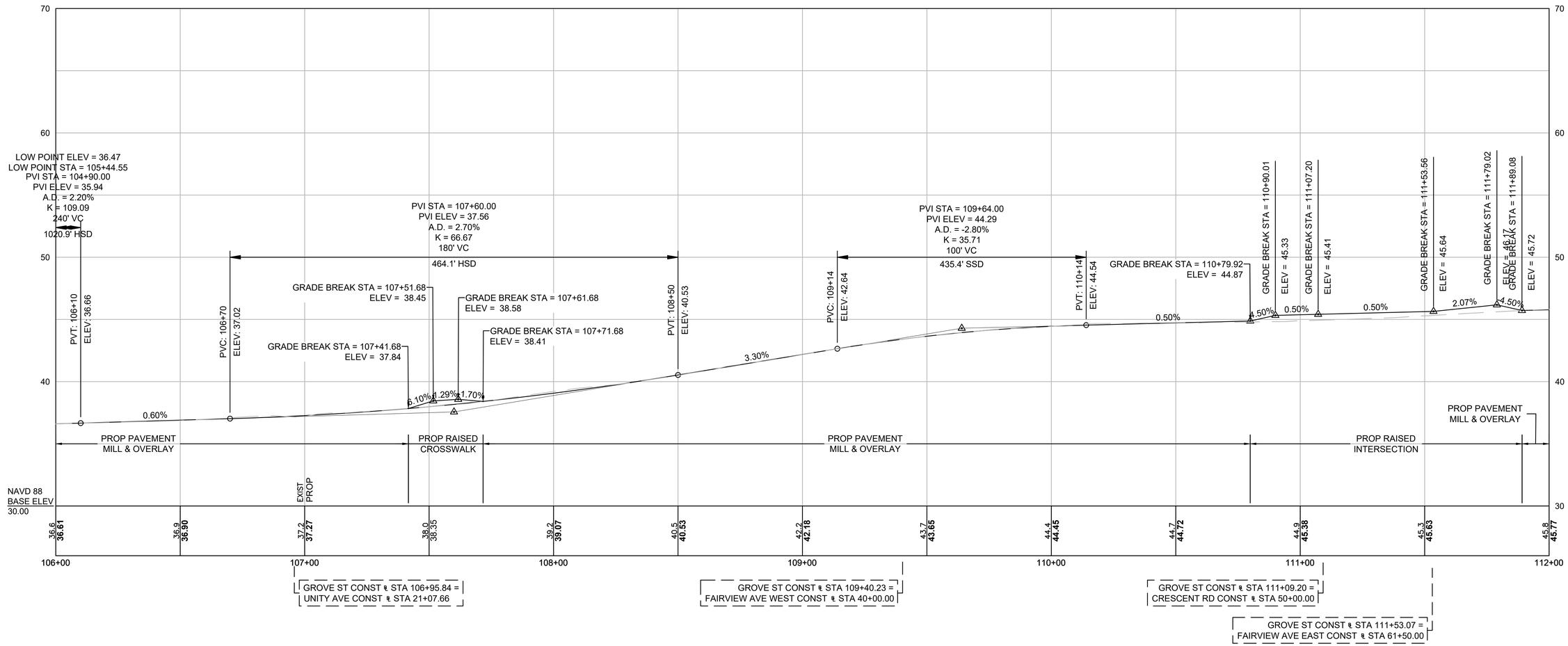
16044.00_HD(PROF).DWG Plotted on 17-Oct-2025 12:38 PM

**PROPOSED GRADE SHOWN
FOR REVIEW PURPOSES ONLY.**

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

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 13 - 18

GROVE ST



CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21

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

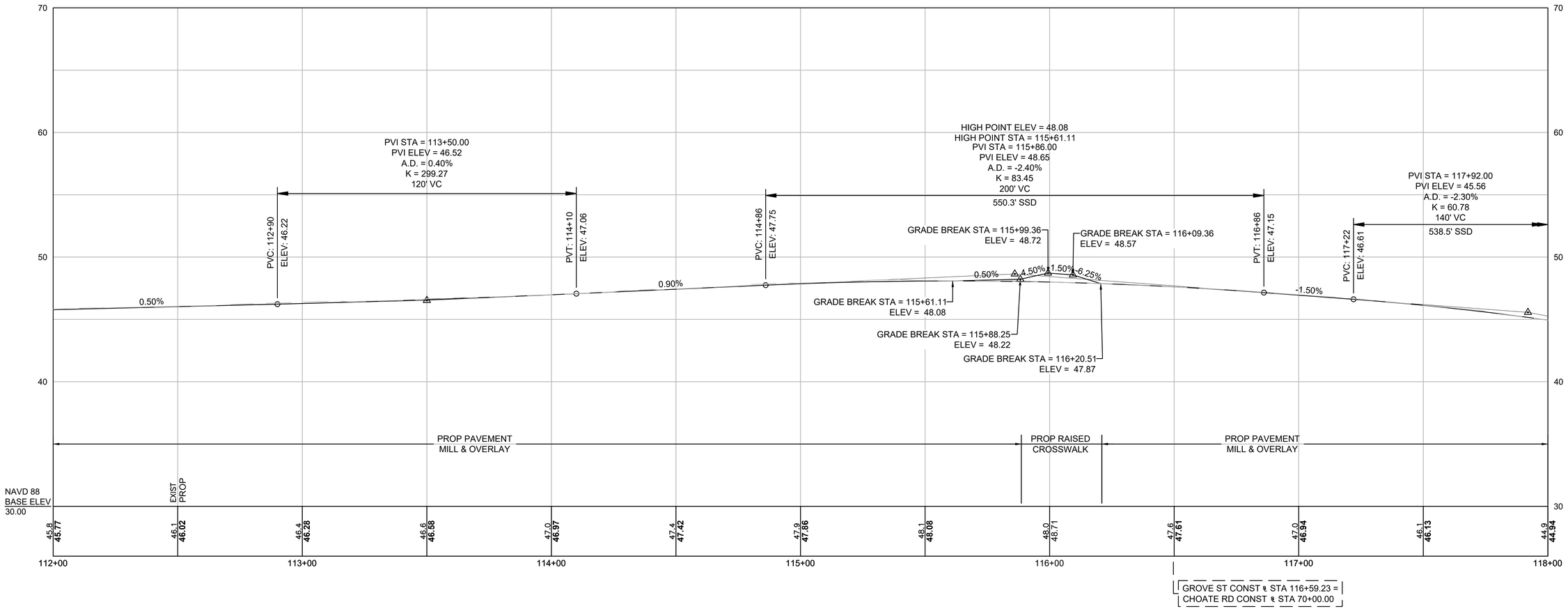
PROPOSED GRADE SHOWN FOR REVIEW PURPOSES ONLY.

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 13 - 18

16044.00_HD(PROF).DWG Plotted on 17-Oct-2025 12:38 PM

16044.00_HD(PROF).DWG Plotted on 17-Oct-2025 12:39 PM

GROVE ST

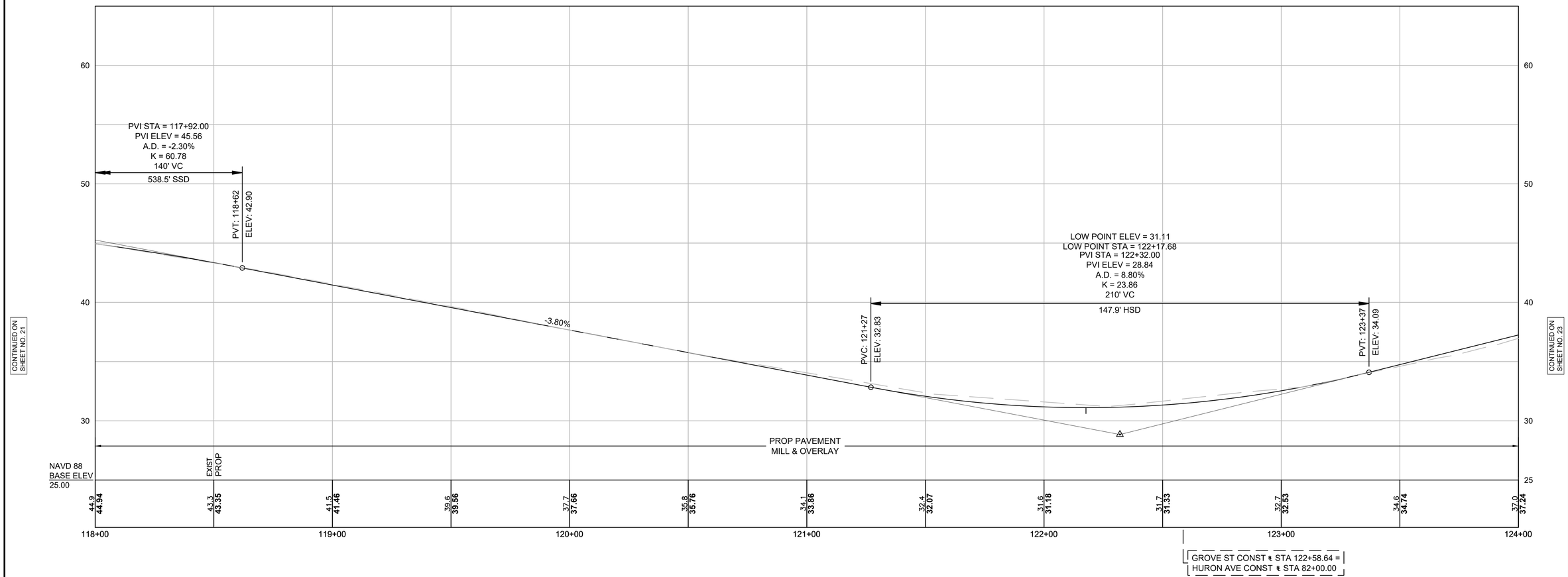


PROPOSED GRADE SHOWN FOR REVIEW PURPOSES ONLY.

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

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 13 - 18

GROVE ST



PROPOSED GRADE SHOWN FOR REVIEW PURPOSES ONLY.

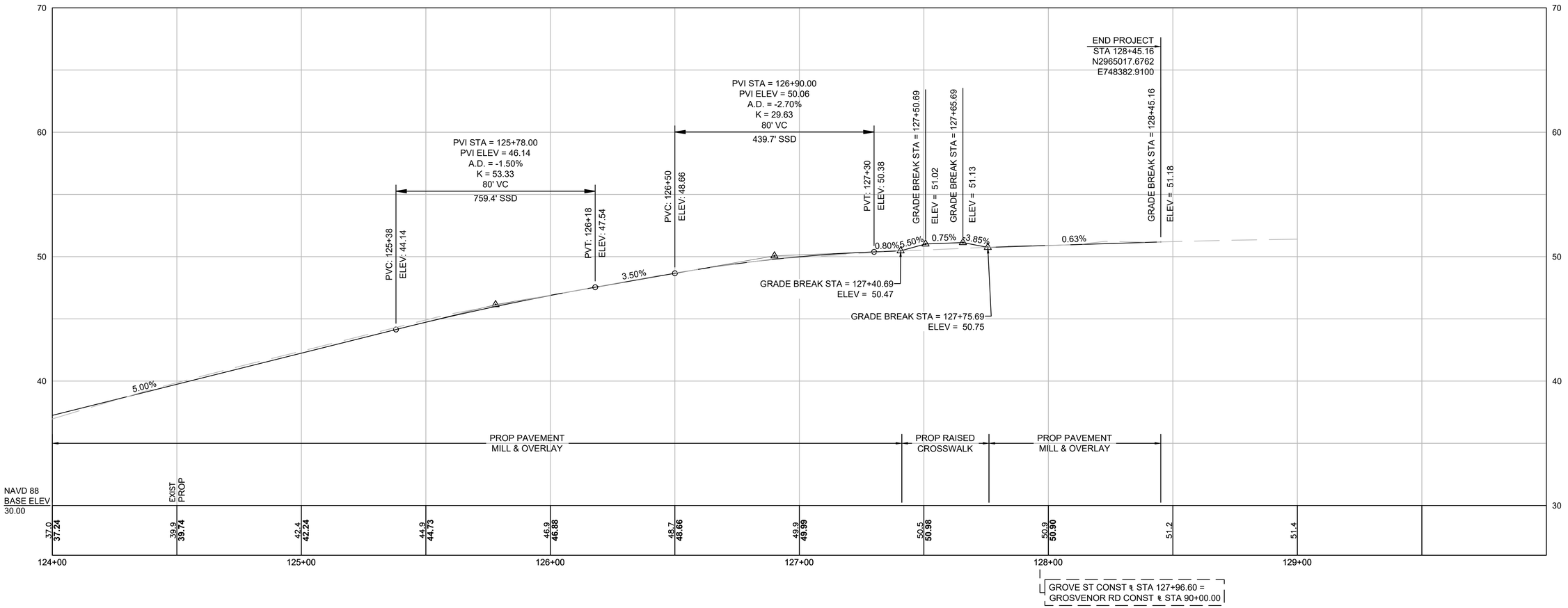
HOR. SCALE IN FEET
20 0 20 40
4 0 4 8
VER. SCALE IN FEET

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 13 - 18

16044.00_HD(PROF).DWG Plotted on 17-Oct-2025 12:39 PM

16044.00_HD(PROF).DWG Plotted on 17-Oct-2025 12:39 PM

GROVE ST



CONTINUED ON
SHEET NO. 22

**PROPOSED GRADE SHOWN
FOR REVIEW PURPOSES ONLY.**

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

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 13 - 18

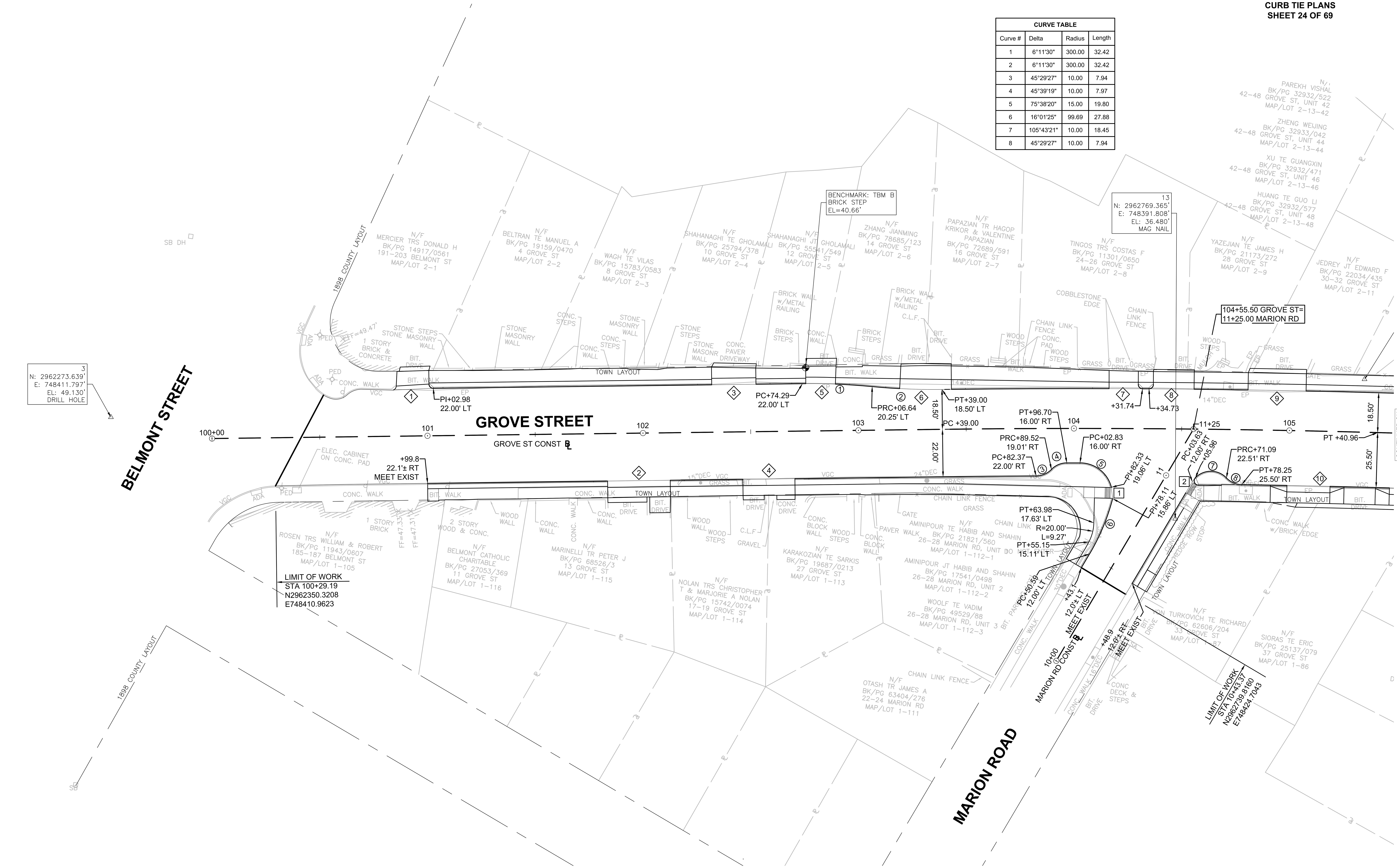
BELMONT
GROVE STREET
CURB TIE PLANS
SHEET 24 OF 69

Plotted on 17-Oct-2025 12:39 PM

16044.00_HD(ALGN).DWG

CURVE TABLE

Curve #	Delta	Radius	Length
1	6°11'30"	300.00	32.42
2	6°11'30"	300.00	32.42
3	45°29'27"	10.00	7.94
4	45°39'19"	10.00	7.97
5	75°38'20"	15.00	19.80
6	16°01'25"	99.69	27.88
7	105°43'21"	10.00	18.45
8	45°29'27"	10.00	7.94



GROVE STREET
BELMONT STREET
MARION ROAD
GROVE ST CONST ℄
MARION RD CONST ℄
1898 COUNTY LAYOUT
TOWN LAYOUT
3
N: 2962273.639'
E: 748411.797'
EL: 49.130'
DRILL HOLE
13
N: 2962769.365'
E: 748391.808'
EL: 36.480'
MAG NAIL
BENCHMARK: TBM B
BRICK STEP
EL=40.66'
LIMIT OF WORK
STA 100+29.19
N2962350.3208
E748410.9623
LIMIT OF WORK
STA 10+43.37
N2962739.8160
E748424.7043
104+55.50 GROVE ST=
11+25.00 MARION RD
PI+02.98
22.00' LT
PC+74.29
22.00' LT
PRC+06.64
20.25' LT
PT+39.00
18.50' LT
PC +39.00
PT+96.70
16.00' RT
PRC+89.52
19.01' RT
PC+82.37
22.00' RT
PC+02.83
16.00' RT
PI+82.33
19.06' LT
PI+78.11
15.86' LT
PT+63.98
17.63' LT
R=20.00'
L=9.27'
PT+55.15
15.11' LT
PC+50.59
12.00' LT
+43.1
12.0'± LT
MEET EXIST
+48.9
12.0'± RT
MEET EXIST
PC+03.63
12.00' RT
+05.96
PRC+71.09
22.51' RT
PT+78.25
25.50' RT
PT +40.96
+99.8
22.1'± RT
MEET EXIST
+31.74
+34.73
100+00
101
102
103
104
105
10+00
11
11+25
18.50'
22.00'
25.50'
CONTINUED ON SHEET NO. 25
N/F
MERCIER TRS DONALD H
BK/PG 14917/0561
191-203 BELMONT ST
MAP/LOT 2-1
N/F
BELTRAN TE MANUEL A
BK/PG 19159/0470
4 GROVE ST
MAP/LOT 2-2
N/F
WAGH TE VILAS
BK/PG 15783/0583
8 GROVE ST
MAP/LOT 2-3
N/F
SHAHANAGHI TE GHOLAMALI
BK/PG 25794/378
10 GROVE ST
MAP/LOT 2-4
N/F
SHAHANAGHI JT GHOLAMALI
BK/PG 55541/549
12 GROVE ST
MAP/LOT 2-5
N/F
ZHANG JIANMING
BK/PG 78685/123
14 GROVE ST
MAP/LOT 2-6
N/F
PAPAZIAN TR HAGOP
KRIKOR & VALENTINE
PAPAZIAN
BK/PG 72689/591
16 GROVE ST
MAP/LOT 2-7
N/F
TINGOS TRS COSTAS F
BK/PG 11301/0650
24-26 GROVE ST
MAP/LOT 2-8
N/F
YAZEJIAN TE JAMES H
BK/PG 21173/272
28 GROVE ST
MAP/LOT 2-9
N/F
JEDREY JT EDWARD F
BK/PG 22034/435
30-32 GROVE ST
MAP/LOT 2-11
N/F
PAREKH VISHAL
BK/PG 32932/522
42-48 GROVE ST, UNIT 42
MAP/LOT 2-13-42
ZHENG WEIJING
BK/PG 32933/042
42-48 GROVE ST, UNIT 44
MAP/LOT 2-13-44
XU TE GUANGXIN
BK/PG 32932/471
42-48 GROVE ST, UNIT 46
MAP/LOT 2-13-46
HUANG TE GUO LI
BK/PG 32932/577
42-48 GROVE ST, UNIT 48
MAP/LOT 2-13-48
N/F
ROSEN TRS WILLIAM & ROBERT
BK/PG 11943/0607
185-187 BELMONT ST
MAP/LOT 1-105
N/F
BELMONT CATHOLIC
CHARITABLE
BK/PG 27053/369
11 GROVE ST
MAP/LOT 1-116
N/F
MARINELLI TR PETER J
BK/PG 68526/3
13 GROVE ST
MAP/LOT 1-115
N/F
NOLAN TRS CHRISTOPHER
T & MARJORIE A NOLAN
BK/PG 15742/0074
17-19 GROVE ST
MAP/LOT 1-114
N/F
KARAKOZIAN TE SARKIS
BK/PG 19687/0213
27 GROVE ST
MAP/LOT 1-113
N/F
AMINIPOUR TE HABIB AND SHAHIN
BK/PG 21821/560
26-28 MARION RD, UNIT 1
MAP/LOT 1-112-1
AMINIPOUR JT HABIB AND SHAHIN
BK/PG 17541/0498
26-28 MARION RD, UNIT 2
MAP/LOT 1-112-2
WOOLF TE VADIM
BK/PG 49529/88
26-28 MARION RD, UNIT 3
MAP/LOT 1-112-3
N/F
OTASH TR JAMES A
BK/PG 63404/276
22-24 MARION RD
MAP/LOT 1-111
N/F
TURKOVICH TE RICHARD
BK/PG 62606/204
33 GROVE ST
MAP/LOT 1-87
N/F
SIORAS TE ERIC
BK/PG 25137/079
37 GROVE ST
MAP/LOT 1-86

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

BELMONT
GROVE STREET
CURB TIE PLANS
SHEET 25 OF 69

16044.00_HD(ALGN).DWG Plotted on 17-Oct-2025 12:40 PM

UNITY AVENUE
UNITY AVE CONST ℄
PARK ROAD
PARK RD CONST ℄
GROVE STREET
GROVE ST CONST ℄
FAIRVIEW AVENUE
FAIRVIEW AVE CONST ℄
TOWN LAYOUT

LIMIT OF WORK STA 21+88.06 N2963027.1602 E748244.2993

107+22.78 GROVE ST= 22+01.06 UNITY AVE

BENCHMARK: TBM C EL=40.39'

104+55.50 GROVE ST= 11+25.00 MARION RD

106+95.84 GROVE ST= 21+07.66 UNITY AVE

109+40.23 GROVE ST= 40+00.00 FAIRVIEW AVE WEST

111+09.20 GROVE ST= 50+00.00 CRESCENT RD

4
N: 2962847.685'
E: 748315.804'
EL: 36.440'
MAG NAIL

5
N: 2963245.533'
E: 748286.701'
EL: 42.810'
DRILL HOLE

14
N: 2962969.976'
E: 748354.694'
EL: 36.720'
MAG NAIL

LIMIT OF WORK STA 20+44.49 N2963089.7200 E748382.3295

LIMIT OF WORK STA 40+72.14 N2963267.8319 E748254.3402

CONTINUED ON SHEET NO. 24

CONTINUED ON SHEET NO. 26

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

CURVE TABLE			
Curve #	Delta	Radius	Length
7	105°43'21"	10.00	18.45
8	45°29'27"	10.00	7.94
9	45°34'23"	10.00	7.95
10	45°34'23"	10.00	7.95
11	115°57'33"	15.00	30.36
12	69°23'33"	10.00	12.11
13	64°02'27"	10.00	11.18
14	77°34'46"	5.00	6.77
15	28°12'22"	40.00	19.69
16	102°03'58"	15.00	26.72
17	65°15'59"	20.00	22.78

CURVE TABLE			
Curve #	Delta	Radius	Length
18	88°30'17"	5.00	7.72
19	90°00'00"	5.00	7.85
20	90°20'50"	20.00	31.54
21	111°12'17"	20.00	38.82
22	44°20'12"	10.00	7.74
23	46°50'10"	10.00	8.17
24	79°08'50"	25.00	34.53
27	85°17'34"	20.00	29.77

0 20 50 100
SCALE: 1" = 20'

16044.00_HD(ALGN).DWG Plotted on 17-Oct-2025 12:40 PM

GROVE STREET

CRESCENT ROAD

CHOATE ROAD

FAIRVIEW AVENUE

CC+86.35
43.02' LT
R=1.00'
L=2.70'

L=51.43'
R=67.50'

+10.06

+50.16

PC+80.33
18.50' LT

+79.92

PC+17.30
18.50' RT

PC+60.30
25.50' RT

PRC+67.77
22.58' RT

PT+75.57
19.50' RT

PRC+89.89
34.62' RT

R=47.50'
L=40.18'

PT+33.00
32.66' RT

PRC+13.94
12.00' LT

PRC+79.00
12.00' LT

PRC+74.53
13.59' LT

PT+69.24
15.50' LT

PC +69.24

+01.70

61

+16.72

61+50

PRC +43.62

PT +34.42

PCC+38.05
18.50' LT

PCC+21.82
18.50' LT

PRC+53.57
21.91' LT

PRC+63.69
25.50' LT

PRC+57.55
23.62' LT

+89.10

PRC+86.42
18.50' RT

PCC+99.10
12.00' RT

PT+69.24
12.00' RT

PRC+63.58
13.75' RT

PC+57.93
15.50' RT

+49.9
15.5'± RT
MEET EXIST

PT +14.63

PC +67.41

PC +60.11

PT+38.11
12.30' LT

PC+27.41
19.50' LT

PRC+80.09
22.61' LT

PC+72.49
25.50' LT

PT +36.75

PT+88.14
19.50' LT

+88.14

+61.2
12.4'± RT
MEET EXIST

+61.1
12.3'± LT
MEET EXIST

+57.7
12.0'± LT
MEET EXIST

+57.7
12.0'± RT
MEET EXIST

PT+37.19
12.00' LT

PC+37.21
12.00' RT

+47.21

111+09.20 GROVE ST=
50+00.00 CRESCENT RD

15
N: 2963437.764'
E: 748400.809'
EL: 45.180'
DRILL HOLE

111+53.07 GROVE ST=
61+50.00 FAIRVIEW AVE EAST

51+00
CRESCENT RD CONST ℄

LIMIT OF WORK
STA 50+50.27
N2963430.9613
E748372.9219

CHOATE RD CONST ℄
71+00

LIMIT OF WORK
STA 70+61.19
N2963689.7659
E748561.2646

FAIRVIEW AVE CONST ℄
60+00

GROVE ST CONST ℄

12
N: 2963432.435'
E: 748492.314'
EL: 44.580'
MAG NAIL

LIMIT OF WORK
STA R0+50.16
N2963384.5325
E748528.9092

6
N: 2963624.269'
E: 748596.842'
EL: 46.540'
MAG NAIL

11
N:
E:
EL
DR

CONTINUED ON SHEET NO. 25

CONTINUED ON SHEET NO. 27

CURVE TABLE			
Curve #	Delta	Radius	Length
22	44°20'12"	10.00	7.74
23	46°50'10"	10.00	8.17
24	79°08'50"	25.00	34.53
25	31°15'25"	10.00	5.46
26	37°50'30"	10.00	6.60
27	85°17'34"	20.00	29.77
28	85°15'29"	20.00	29.76
29	34°24'41"	10.00	6.01
30	34°24'41"	10.00	6.01
31	109°02'08"	20.00	38.06
32	17°26'42"	100.00	30.45

CURVE TABLE			
Curve #	Delta	Radius	Length
33	23°48'39"	10.00	4.16
34	35°15'33"	10.00	6.15
35	43°52'28"	10.00	7.66
36	47°19'20"	10.00	8.26
37	89°15'45"	20.00	31.16

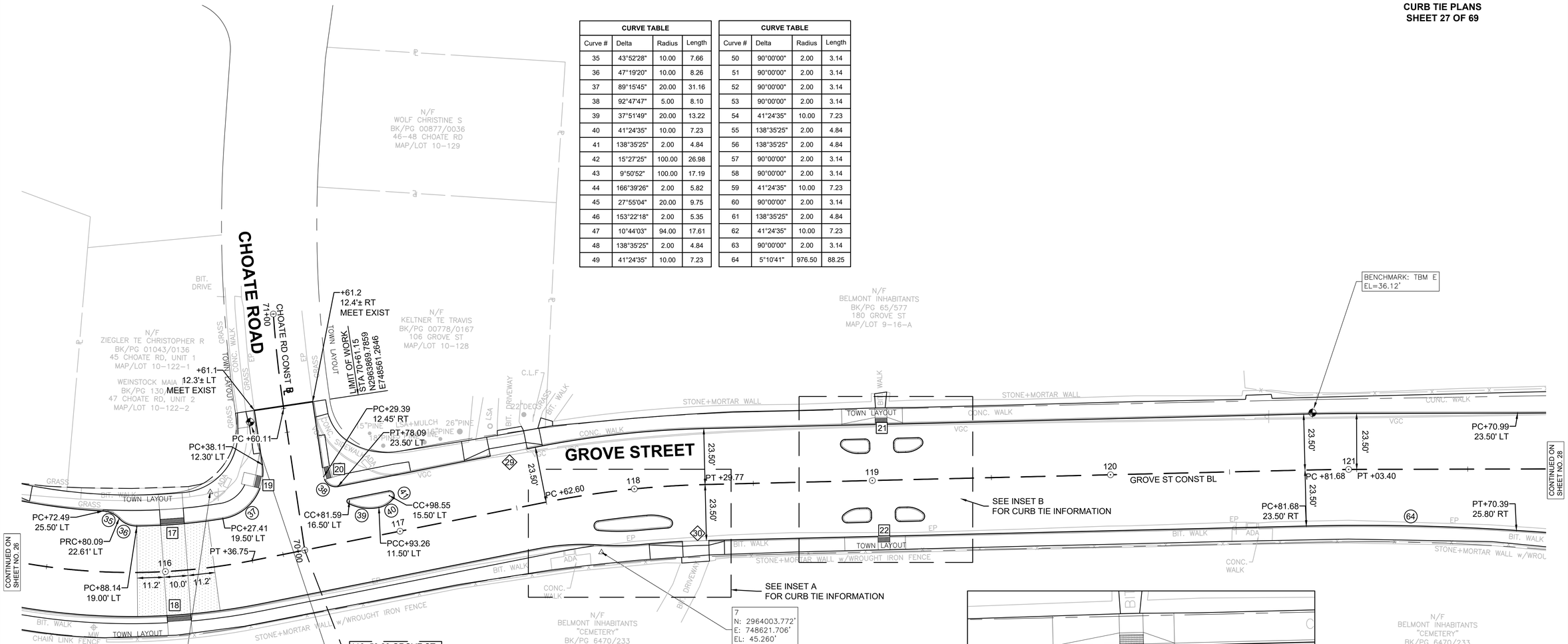
0 20 50 100
SCALE: 1" = 20'

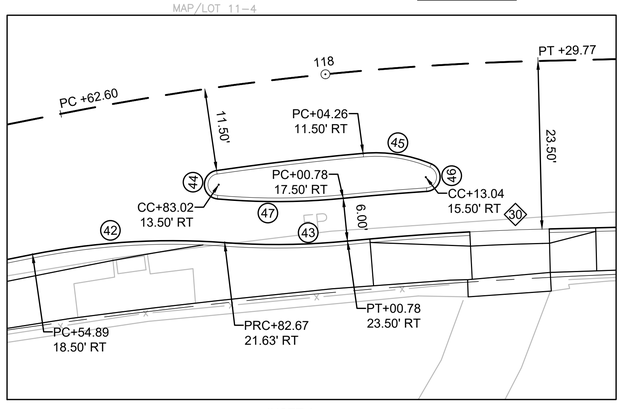
FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

BELMONT
GROVE STREET
CURB TIE PLANS
SHEET 27 OF 69

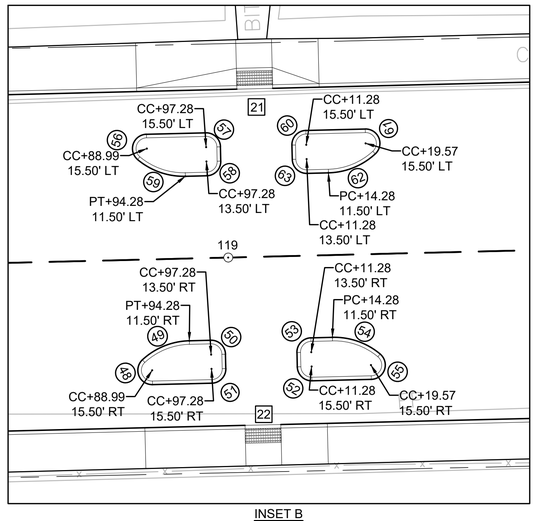
CURVE TABLE			
Curve #	Delta	Radius	Length
35	43°52'28"	10.00	7.66
36	47°19'20"	10.00	8.26
37	89°15'45"	20.00	31.16
38	92°47'47"	5.00	8.10
39	37°51'49"	20.00	13.22
40	41°24'35"	10.00	7.23
41	138°35'25"	2.00	4.84
42	15°27'25"	100.00	26.98
43	9°50'52"	100.00	17.19
44	166°39'26"	2.00	5.82
45	27°55'04"	20.00	9.75
46	153°22'18"	2.00	5.35
47	10°44'03"	94.00	17.61
48	138°35'25"	2.00	4.84
49	41°24'35"	10.00	7.23

CURVE TABLE			
Curve #	Delta	Radius	Length
50	90°00'00"	2.00	3.14
51	90°00'00"	2.00	3.14
52	90°00'00"	2.00	3.14
53	90°00'00"	2.00	3.14
54	41°24'35"	10.00	7.23
55	138°35'25"	2.00	4.84
56	138°35'25"	2.00	4.84
57	90°00'00"	2.00	3.14
58	90°00'00"	2.00	3.14
59	41°24'35"	10.00	7.23
60	90°00'00"	2.00	3.14
61	138°35'25"	2.00	4.84
62	41°24'35"	10.00	7.23
63	90°00'00"	2.00	3.14
64	5°10'41"	976.50	88.25





INSET A
SCALE: 1" = 10'



INSET B
SCALE: 1" = 10'

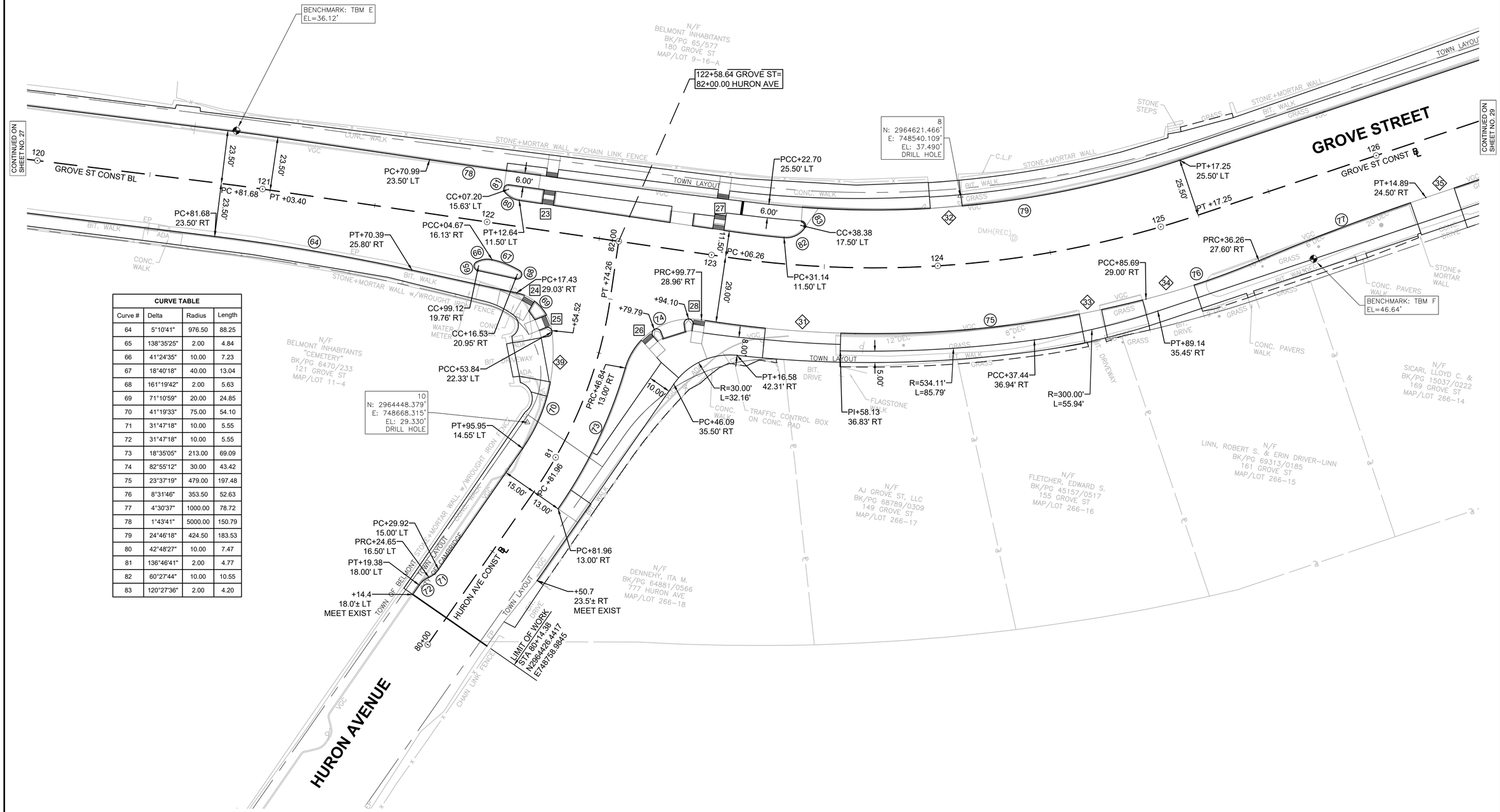
0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(ALGN).DWG Plotted on 17-Oct-2025 12:40 PM

BELMONT
GROVE STREET
CURB TIE PLANS
SHEET 28 OF 69

CURVE TABLE			
Curve #	Delta	Radius	Length
64	5°10'41"	976.50	88.25
65	138°35'25"	2.00	4.84
66	41°24'35"	10.00	7.23
67	18°40'18"	40.00	13.04
68	161°19'42"	2.00	5.63
69	71°10'59"	20.00	24.85
70	41°19'33"	75.00	54.10
71	31°47'18"	10.00	5.55
72	31°47'18"	10.00	5.55
73	18°35'05"	213.00	69.09
74	82°55'12"	30.00	43.42
75	23°37'19"	479.00	197.48
76	8°31'46"	353.50	52.63
77	4°30'37"	1000.00	78.72
78	1°43'41"	5000.00	150.79
79	24°46'18"	424.50	183.53
80	42°48'27"	10.00	7.47
81	136°46'41"	2.00	4.77
82	60°27'44"	10.00	10.55
83	120°27'36"	2.00	4.20

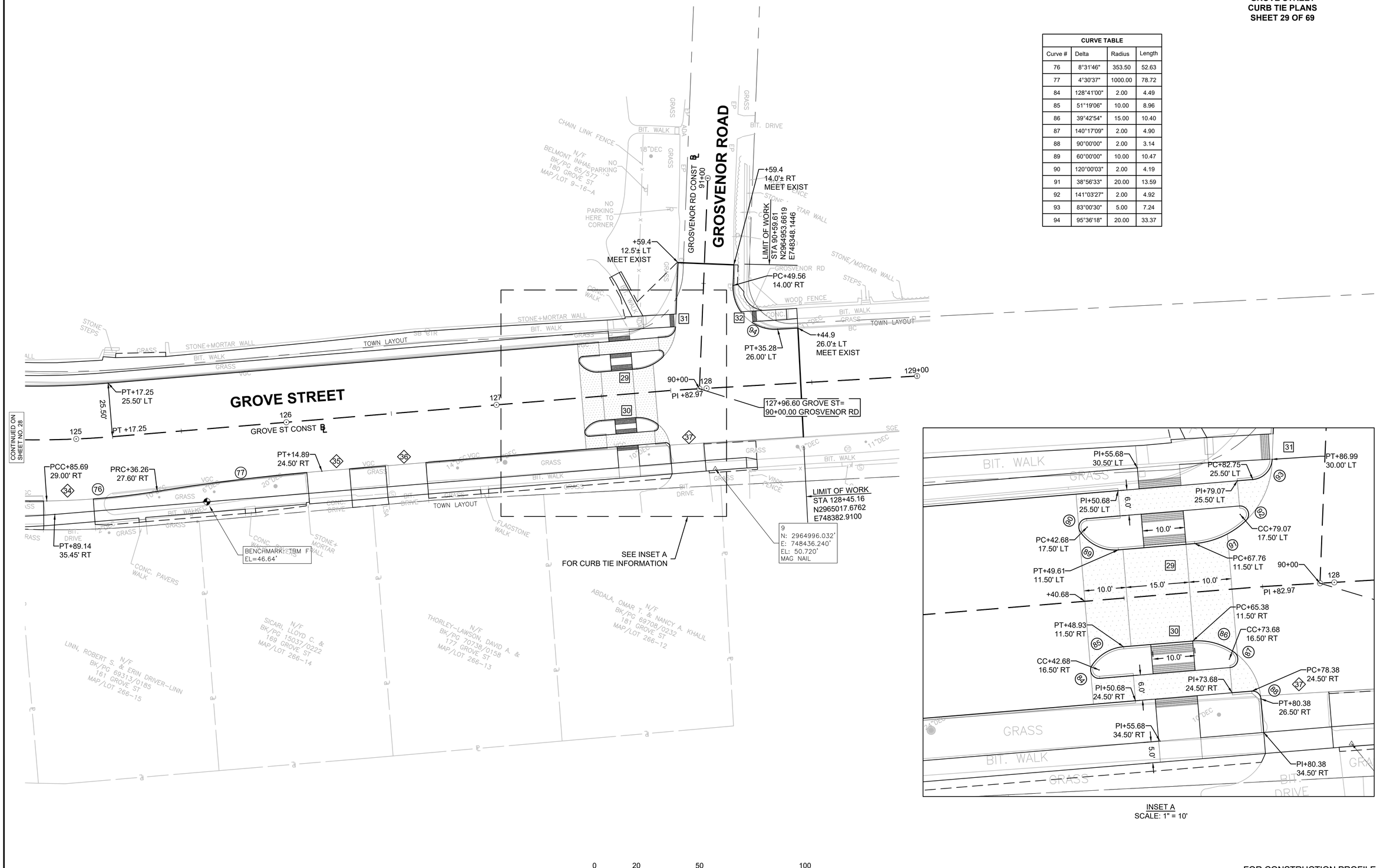


0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

BELMONT
GROVE STREET
CURB TIE PLANS
SHEET 29 OF 69

CURVE TABLE			
Curve #	Delta	Radius	Length
76	8°31'46"	353.50	52.63
77	4°30'37"	1000.00	78.72
84	128°41'00"	2.00	4.49
85	51°19'06"	10.00	8.96
86	39°42'54"	15.00	10.40
87	140°17'09"	2.00	4.90
88	90°00'00"	2.00	3.14
89	60°00'00"	10.00	10.47
90	120°00'03"	2.00	4.19
91	38°56'33"	20.00	13.59
92	141°03'27"	2.00	4.92
93	83°00'30"	5.00	7.24
94	95°36'18"	20.00	33.37



INSET A
SCALE: 1" = 10'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(ALGN).DWG Plotted on 17-Oct-2025 12:41 PM

BELMONT
GROVE STREET
GRADING PLANS
SHEET 30 OF 69

NAD 83

N

BELMONT STREET

GROVE STREET

MARION ROAD

GROVE ST CONST B

MARION RD CONST B

100+00

101

102

103

PC +39.00

104

105

10+00

11+25

104+55.50 GROVE ST=
11+25.00 MARION RD

LIMIT OF WORK
STA 100+29.19
N2962350.3208
E748410.9623

LIMIT OF WORK
STA 10+43.57
N2962739.8160
E748424.7043

SEE DETAIL SHEET 36
FOR PCR GRADING
INFORMATION

BENCHMARK: TBM B
BRICK STEP
EL=40.66'

13
N: 2962769.365'
E: 748391.808'
EL: 36.480'
MAG NAIL

3
N: 2962273.639'
E: 748411.797'
EL: 49.130'
DRILL HOLE

MEET EXIST

7" REVEAL
TC 44.71
BC 44.12

7" REVEAL
TC 42.59
BC 42.01

TC 39.16
BC 38.66

TC 38.17
BC 37.67

TC 37.39
BC 36.89

TC 37.25
BC 36.75

7" REVEAL
TC 46.53
BC 45.95

7" REVEAL
TC 44.63
BC 44.05

7" REVEAL
TC 39.01
BC 38.42

TC 37.91
BC 37.41

TOWN LAYOUT

CONTINUED ON
SHEET NO. 31

0 20 50 100
SCALE: 1" = 20'

16044.00_HD(GRAD).DWG Plotted on 17-Oct-2025 12:42 PM

BELMONT
GROVE STREET
GRADING PLANS
SHEET 31 OF 69

16044.00_HDI(GRAD).DWG Plotted on 17-Oct-2025 12:42 PM

NAD 83

N

PAREKH VISHAL
BK/PG 32932/522
42-48 GROVE ST, UNIT 42
MAP/LOT 2-13-42

ZHENG WEIJING
BK/PG 32933/042
42-48 GROVE ST, UNIT 44
MAP/LOT 2-13-44

XU TE GUANGXIN
BK/PG 32932/471
42-48 GROVE ST, UNIT 46
MAP/LOT 2-13-46

HUANG TE GUO LI
BK/PG 32932/577
42-48 GROVE ST, UNIT 48
MAP/LOT 2-13-48

YAZEJIAN TE JAMES H
BK/PG 21173/272
28 GROVE ST
MAP/LOT 2-9

JEDREY JT EDWARD F
BK/PG 22034/435
30-32 GROVE ST
MAP/LOT 2-11

VETRANO JT NICHOLAS W & DANIEL J VETRANO
BK/PG 80151/6
34-40 GROVE ST
MAP/LOT 2-12

JAMES WILLIAM JR
BK/PG 44173/199
68 UNITY AVE, UNIT 1
MAP/LOT 2-36-1

MORIGUCHI TE TAKAKO
BK/PG 44202/404
68 UNITY AVE, UNIT 2
MAP/LOT 2-36-2

POWER CHRISTINE A
BK/PG 31612/152
51 UNITY AVE, UNIT 51
MAP/LOT 2-47-51

DONOHUE WILLIAM J
BK/PG 31857/357
49 UNITY AVE, UNIT 49
MAP/LOT 2-47-49

LUNDGREN TE PATRICK E
BK/PG 11657/0109
45-47 UNITY AVE
MAP/LOT 2-46

PANTAZELOS NEVART
BK/PG 60041/83
52 PARK RD
MAP/LOT 2-38

ODOHERTY-HOUTMEYERS D L
BK/PG 25692/233
54 PARK RD
MAP/LOT 2-39

WRIGHT TE DAVID J
BK/PG 51656/186
63-65 FAIRVIEW AVE
MAP/LOT 10-98

MAKREDES JT GARY G
BK/PG 50093/219
80 FOSTER RD
MAP/LOT 10-97

BAGHDADY SAMIR S
BK/PG 37170/449
56-58 GROVE ST
MAP/LOT 10-99

SORRENTI MARIO C
BK/PG 18922/0290
61 GROVE ST
MAP/LOT 1-123

57 GROVE STREET LLC
BK/PG 16485/0098
57 GROVE ST
MAP/LOT 1-124

BROWN TR JAMES G
BK/PG 79126/357
65 GROVE ST
MAP/LOT 1-122

SCIANDRA TE JOHN M
BK/PG 29155/543
69 GROVE ST, UNIT 1
MAP/LOT 1-121-1

MCLAUGHLIN IRENE CASTLE
BK/PG 61356/584
69 GROVE ST, UNIT 2
MAP/LOT 1-121-2

REED REBECCA B
BK/PG 74284/149
69 GROVE ST, UNIT 3
MAP/LOT 1-121-3

SORRENTI SUSAN R
BK/PG 14282/0178
73 GROVE ST
MAP/LOT 1-120

RPZ REALTY SERIES LLC
BK/PG 18730/0517
75-77 GROVE ST
MAP/LOT 1-119

FOLEY TE THOMAS
BK/PG 60108/465
41 UNITY AVE
MAP/LOT 1-126

DEFABRITIIS FAMILY LLC
BK/PG 00976/0037
62-64 UNITY AVE
MAP/LOT 1-84

DEFABRITIIS FAMILY LLC
BK/PG 00976/0037
58 UNITY AVE
MAP/LOT 1-83

SAVVIDIS TE LARRY J
BK/PG 53667/527
51 GROVE ST
MAP/LOT 1-125

PARK ROAD

UNITY AVENUE

UNITY AVE CONST ℄

23+00

30+00

PARK RD CONST ℄

PI +47.64

22°

PI +66.17

30+56.99 PARK RD=
22+01.06 UNITY AVE

LIMIT OF WORK
STA 21+88.06
N2963027.1602
E748244.2993

106+95.84 GROVE ST=
21+07.66 UNITY AVE

PT +88.05

104+55.50 GROVE ST=
11+25.00 MARION RD

SEE DETAIL SHEET 38
FOR GRADING
INFORMATION

SEE DETAIL SHEET 39
FOR GRADING
INFORMATION

BENCHMARK: TBM C
EL=40.39'

FAIRVIEW AVENUE

41+00

FAIRVIEW AVE CONST ℄

PT +82.56

LIMIT OF WORK
STA 40+72.14
N2963267.8319
E748254.3402

GROVE STREET

GROVE ST CONST ℄

PC +00.00

PC +20.21

PC +99.52

109+40.23 GROVE ST=
40+00.00 FAIRVIEW AVE WEST

UNITY AVENUE

UNITY AVE CONST ℄

20+00

LIMIT OF WORK
STA 20+44.49
N2962989.7200
E748382.3295

SEE DETAIL SHEET 37
FOR PCR GRADING
INFORMATION

SEE SHEETS 41
FOR GRADING
INFORMATION

CONTINUED ON SHEET NO. 30

CONTINUED ON SHEET NO. 32

MEET EXIST

7" REVEAL
TC 36.22
BC 35.64

TC 36.95
BC 36.45

TC 38.08
BC 37.58

TC 38.61
BC 38.11

TC 38.83
BC 38.33

TC 40.25
BC 39.75

TC 40.51
BC 40.01

TC 42.41
BC 41.91

7" REVEAL
TC 36.53
BC 35.95

4" REVEAL
TC 39.18
BC 38.85

7" REVEAL
TC 42.26
BC 41.68

7" REVEAL
TC 40.77
BC 40.19

TC 43.43
BC 42.93

TC 44.56
BC 44.06

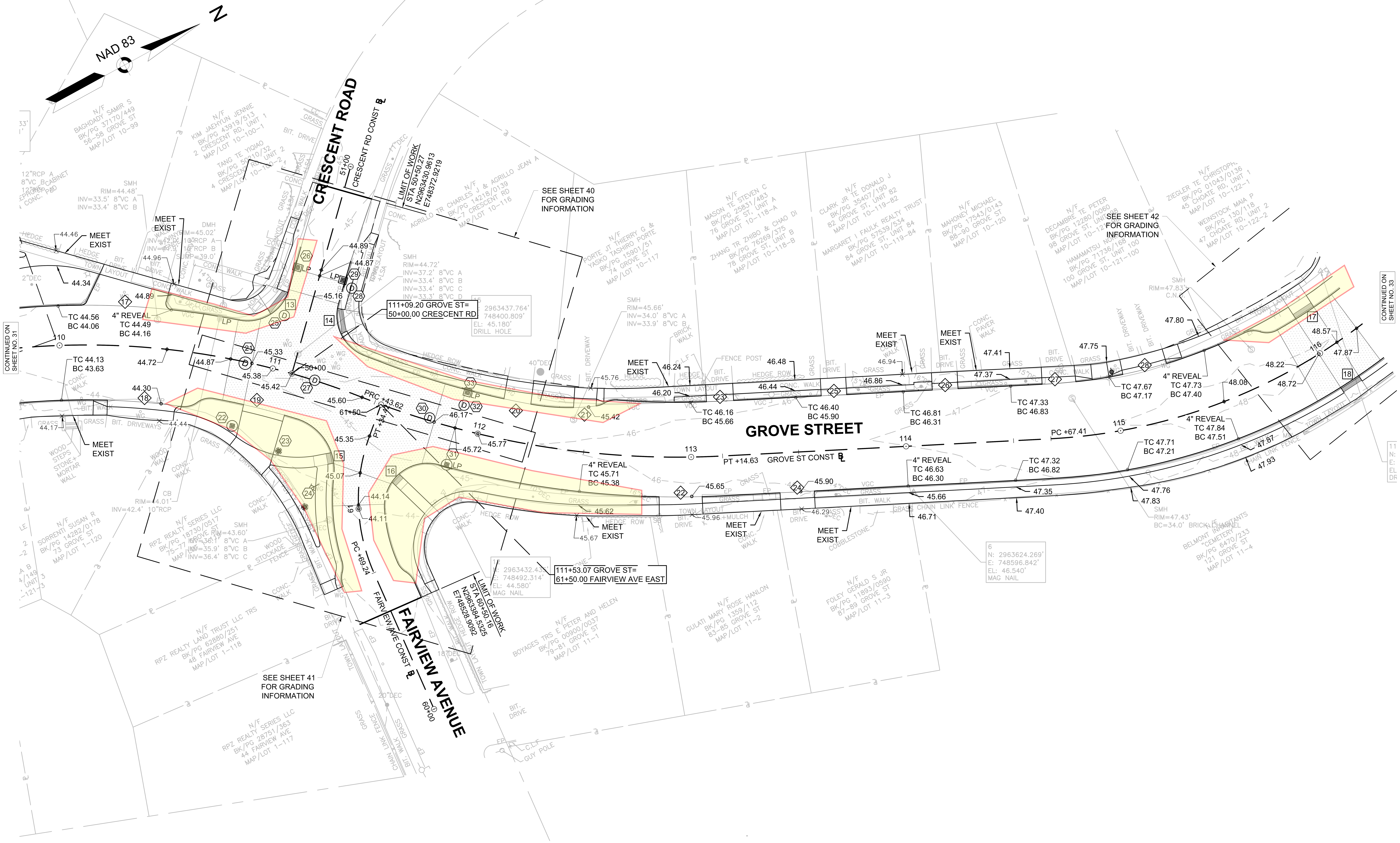
TC 44.13
BC 43.63

4" REVEAL
TC 44.49
BC 44.16

0 20 50 100

SCALE: 1" = 20'

16044.00_HD(GRAD).DWG   Plotted on 17-Oct-2025 12:42 PM



0 20 50 100

SCALE: 1" = 20'

INSET C
SCALE: 1" = 10'

BELMONT
GROVE STREET
GRADING PLANS
SHEET 33 OF 69

16044.00_HD(GRAD).DWG Plotted on 17-Oct-2025 12:43 PM

NAD 83

N

CHOATE ROAD

CHOATE RD CONST ℄

71+00

LIMIT OF WORK
STA 70+61.15
N2963869.7859
E748561.2646

SEE DETAIL SHEET 42
FOR PCR GRADING
INFORMATION

MEET EXIST

GROVE STREET

GROVE ST CONST ℄

N/F
WOLF CHRISTINE S
BK/PG 00877/0036
46–48 CHOATE RD
MAP/LOT 10–129

N/F
ZIEGLER TE CHRISTOPHER R
BK/PG 01043/0136
45 CHOATE RD, UNIT 1
MAP/LOT 10–122–1

WEINSTOCK MAIA P
BK/PG 130/118
47 CHOATE RD, UNIT 2
MAP/LOT 10–122–2

N/F
KELTNER TE TRAVIS
BK/PG 105
MAP/LOT

N/F
BELMONT INHABITANTS
BK/PG 65/577
180 GROVE ST
MAP/LOT 9–16–A

BENCHMARK: TBM E
EL=36.12'

BENCHMARK: TBM D
EL=49.07'

SMH
RIM=47.83'
CI NO.

SMH
RIM=45.68'
INV=35.7' 8"PVC A
INV=35.6' 8"PVC B

SMH
RIM=41.46'
INV=36.2' 8"PVC
SUMP=36.1'

CB
RIM=30.33'

CB
RIM=30.60'
INV=27.7' 12"VC
SUMP=25.5'

4" REVEAL
TC 47.73
BC 47.40

4" REVEAL
TC 47.84
BC 47.51

TC 44.79
BC 44.29

TC 45.14
BC 44.64

TC 46.11
BC 45.61

TC 44.97
BC 44.47

TC 44.82
BC 44.32

TC 37.60
BC 37.10

TC 35.62
BC 35.12

TC 33.62
BC 33.12

TC 32.21
BC 31.71

TC 37.45
BC 36.95

TC 35.52
BC 35.02

TC 33.60
BC 33.10

TC 32.31
BC 31.81

PC +62.60

PT +29.77

PC +81.68

PT +03.40

PT +36.75

70+00

116+59.23 GROVE ST=
70+00.00 CHOATE RD

7
N: 2964003.772'
E: 748621.706'
EL: 45.260'
MAG NAIL

11
N: 2963839.355'
E: 748597.615'
EL: 47.310'
DRILL HOLE

N/F
BELMONT INHABITANTS
"CEMETERY"
BK/PG 6470/233
121 GROVE ST
MAP/LOT 11–4

SEE DETAIL SHEET 43
FOR PCR GRADING
INFORMATION

CONTINUED ON SHEET NO. 32

CONTINUED ON SHEET NO. 34

0 20 50 100

SCALE: 1" = 20'

BELMONT
GROVE STREET
GRADING PLANS
SHEET 34 OF 69

16044.00_HD(GRAD).DWG Plotted on 17-Oct-2025 12:43 PM

NAD 83

N

GROVE STREET

HURON AVENUE

122+58.64 GROVE ST=
82+00.00 HURON AVE

SEE SHEET 44
FOR GRADING
INFORMATION

SEE SHEET 45
FOR GRADING
INFORMATION

CONTINUED ON
SHEET NO. 33

CONTINUED ON
SHEET NO. 35

GROVE ST CONST ℄
PC +06.26
PT +74.26

HURON AVE CONST ℄
PC +81.68
PT +03.40

PT +17.25

LIMIT OF WORK
STA. 80+14.38
N:2964426.4417
E:748758.9845

BENCHMARK: TBM F
EL=46.64'

BENCHMARK: TBM E
EL=36.12'

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(GRAD).DWG Plotted on 17-Oct-2025 12:43 PM

NAD 83

N

GROVE STREET

GROSVENOR ROAD

GROSVENOR RD CONST ℄ 91+00

GROVE ST CONST ℄ 128 90+00

129+00

PI +82.97

PT +17.25

LP

LIMIT OF WORK
STA 90+59.61
N2964953.6619
E748348.1446

LIMIT OF WORK
STA 128+45.16
N2965017.6762
E748382.9100

127+96.60 GROVE ST=
90+00.00 GROSVENOR RD

SEE SHEET 46 FOR
GRADING INFORMATION

CONTINUED ON
SHEET NO. 34

BELMONT N/F INHAE BK/PG 65/577 180 GROVE ST MAP/LOT 9-16-A

SICARI, LLOYD C. & N/F BK/PG 15037/0222 169 GROVE ST MAP/LOT 266-14

LINN, ROBERT S. & ERIN DRIVER-LINN N/F BK/PG 69313/0185 161 GROVE ST MAP/LOT 266-15

THORLEY-LAWSON, DAVID A. & N/F BK/PG 70738/0158 177 GROVE ST MAP/LOT 266-13

ABDALA, OMAR T & NANCY A. KHALIL N/F BK/PG 69708/0232 181 GROVE ST MAP/LOT 266-12

CB RIM=49.71' INV=46.2' 10"PVC SUMP=41.9'

CB RIM=49.65' INV=45.8' 10"RCP SUMP=43.4'

DMH RIM=50.32' INV=45.6' 10"RCP A INV=45.5' 10"RCP B INV=45.4' 10"RCP C INV=45.5' 12"RCP D SUMP=45.1'

DMH RIM=43.82' CNO

CB RIM=49.55' INV=44.7' 12"RCP SUMP=42.9'

SMH RIM=50.85'

BENCHMARK=TBM
EL=46.64'

9
N: 2964996.032'
E: 748436.240'
EL: 50.720'
MAG NAIL

TC 42.31 BC 41.81
TC 43.15 BC 42.65
TC 44.66 BC 44.16
TC 46.70 BC 46.20
TC 48.52 BC 48.02
TC 49.74 BC 49.24
TC 49.65 BC 49.15
TC 46.61 BC 46.11
TC 44.37 BC 43.87

MEET EXIST
MEET EXIST
MEET EXIST
MEET EXIST

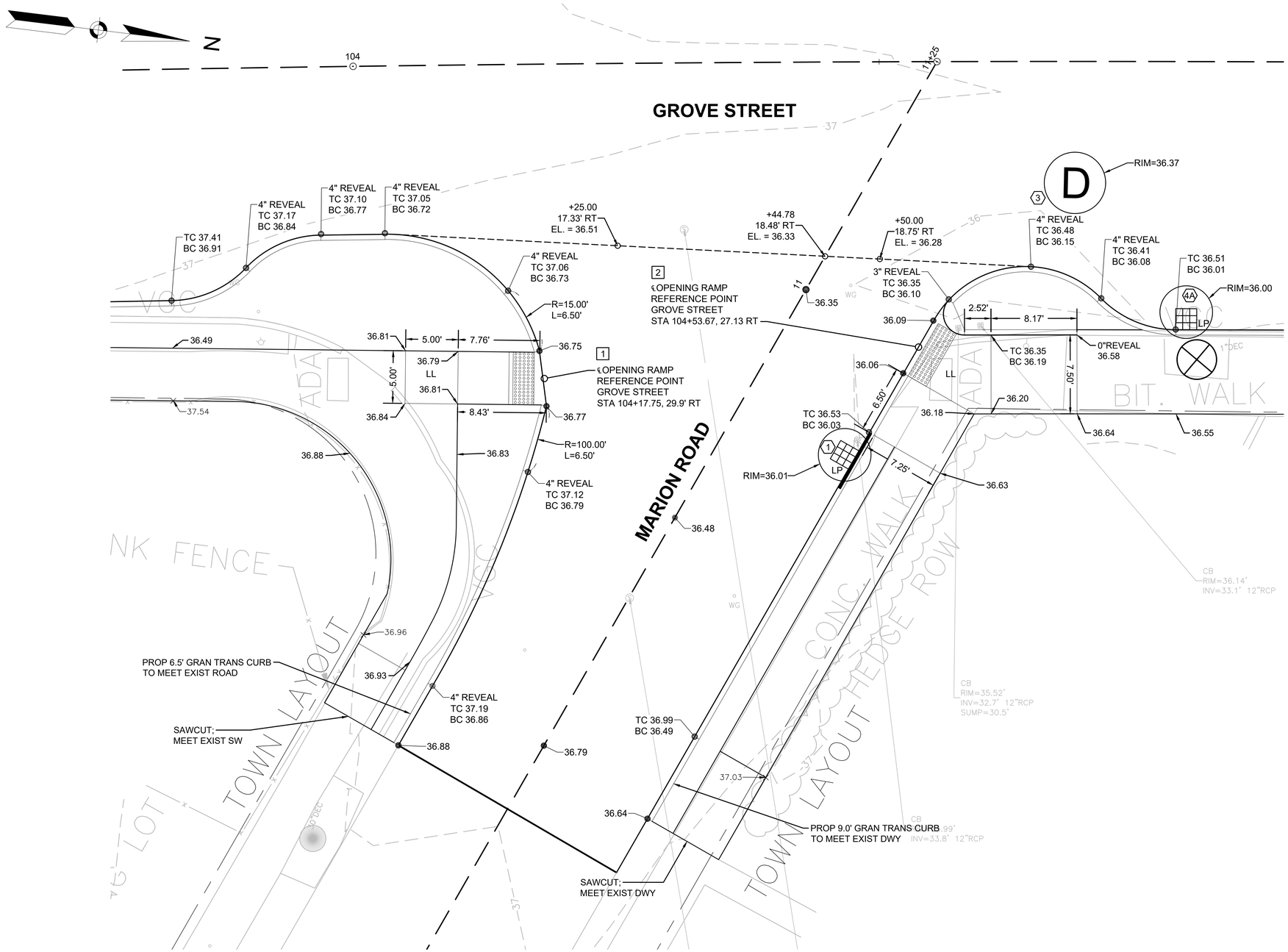
42.48
43.20
44.81
46.86
48.70
49.91
48.08
48.53
49.80
46.76
44.56
41.47
41.73
50.47
51.13
51.02
50.75
50.79
49.99

RECORD 8"VC SEWER
RECORD SEWER
TOWN LAYOUT TOWN OF BELMONT
CITY OF CAMBRIDGE

0 20 50 100
SCALE: 1" = 20'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23

16044.00_HD(GRAD-DET-02).DWG Plotted on 17-Oct-2025 12:44 PM



PEDESTRIAN CURB RAMPS #1 & #2

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

16044.00_HD(GRAD-DET-02).DWG Plotted on 17-Oct-2025 12:44 PM

N

GROVE STREET

106+95.84 GROVE ST=
21+07.66 UNITY AVE
107
37.27

21
℄ PC +00.00

UNITY AVENUE

+75.00
19.50' RT
EL. = 36.70

+86.44
19.50' RT
EL. = 36.82

+00.00
19.50' RT
EL. = 36.96

5
℄ OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 106+95.07, 29.18 RT

7
℄ OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 107+56.68, 19.50 RT

3
℄ OPENING RAMP
REFERENCE POINT
MARION STREET
STA 106+63.79, 31.43 RT

4" REVEAL
TC 36.69
BC 36.36

4" REVEAL
TC 36.77
BC 36.44

4" REVEAL
TC 36.91
BC 36.58

TC 36.77
BC 36.27

R=15.00'
L=6.50'

4" REVEAL
TC 37.35
BC 37.02

4" REVEAL
TC 37.47
BC 37.14

4" REVEAL
TC 37.16
BC 36.83

TC 37.20
BC 36.80

3" REVEAL
TC 37.81
BC 37.56

1" REVEAL
TC 38.24
BC 38.18

RIM=38.14

3" REVEAL
TC 38.39
BC 38.14

RIM=35.41

LP

PROP 6.5' GRAN TRANS CURB
TO MEET EXIST ROAD

SAWCUT;
MEET EXIST SW

4" REVEAL
TC 37.17
BC 36.84

4" REVEAL
TC 37.24
BC 36.91

R=15.00'
L=7.37'

RIM=36.61
TC 37.11
BC 36.61

TC 37.13
BC 36.63

PROP 6.5' GRAN TRANS CURB
TO MEET EXIST ROAD

SAWCUT;
MEET EXIST DWY

SAWCUT;
MEET EXIST DWY

SAWCUT;
MEET EXIST DWY

37.84
38.45
38.58
38.41
10.00'
10.00'
10.00'
19.50'
37.43
38.07
38.21
37.21
9.00
8.00'
8.00'
37.45
37.65
38.11
38.35
38.45
5.35'
38.17
38.42
38.50
37.52
37.71
36.78
7.00'
6.21
37.22
5.60'
5.23'
36.82
36.81
37.29
36.70
7.35
6.50'
36.80
37.75
36.71
6.50'
6.00'
LL
5.00'
36.71
7.15'
36.74
37.77
4.04'
37.00
5.00'
36.97
5.00'
37.32
36.99
36.93
36.67
4.00'
5.00'
37.23
37.23
36.74

D

16
18
40
13

WG
WG
WG

GRASS
BIT.
WALK
EP
12"DEC
BOUND
CB
RIM=36.16'
SMH
RIM=37.22'

PEDESTRIAN CURB RAMPS #3, #5 AND #7

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

BELMONT
GROVE STREET
DETAILED GRADING PLANS
SHEET 38 OF 69

N

SAWCUT;
MEET EXIST SW

MEET EXIST CURB

UNITY AVENUE

PARK STREET

GROVE STREET

GRASS

TC 37.91
BC 37.41

TC 38.08
BC 37.58

TC 38.61
BC 38.11

TC 37.63
BC 37.13

TC 37.52
BC 37.02

TC 37.43
BC 36.93

RIM=36.90

CB
RIM=36.92'
INV=31.7' 36"RCP A
INV=31.6' 36"RCP B

12"DEC

10"DEC

2"DEC

37.62

37.55

RIM=37.48
37.55

37.28

5.00'

5.00'

6.67'

L=6.50'

37.15
LL

37.25

37.18

36.65

36.68

R=10.00'
L=11.14'

RIM=37.22

TC 37.26
BC 36.76

+00.00
18.50' LT
EL. = 36.87

+03.66
18.50' LT
EL. = 36.90

TC 37.19
BC 36.69

36.79

LP
RIM=36.59

TC 37.10
BC 36.60

4
℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 106+97.04, 26.41 LT

R=40.00'
L=6.50'

37.00

37.72

9.00'

36.97

37.00

5.65'

6
℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 107+21.98, 22.99 LT

R=5.00'
L=4.21'

+25.00
18.50' LT
EL. = 37.01

TC 37.62
BC 37.12

TC 37.79
BC 37.29

37.89

8
℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 107+56.68, 19.50 LT

37.98

38.06

D

RIM=38.35

7.00'

18.50'

LL

38.04

17

LP

RIM=37.78

TC 38.28
BC 37.78

37.84

38.45

38.58

38.41

10.00'

10.00'

10.00'

106+95.84 GROVE ST=
21+07.66 UNITY AVE

107

37.27

108
PC +99.52
39.06

4" REVEAL
TC 38.68
BC 38.35

R=18.94'
L=6.50'

38.46

6.50'

HP
38.44

38.76

TC 38.74
BC 38.24

3.15'

4" REVEAL
TC 38.64
BC 38.31

38.37

+00.00
18.50' LT
EL. = 38.41

R=5.00'
L=4.21'

10
℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 108+19.00, 22.50 LT

9
℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 108+00.22, 23.37 LT

39.05

5" REVEAL
TC 39.74
BC 39.33

8.00'

38.88

L=11.00'

TC 39.71
BC 39.21

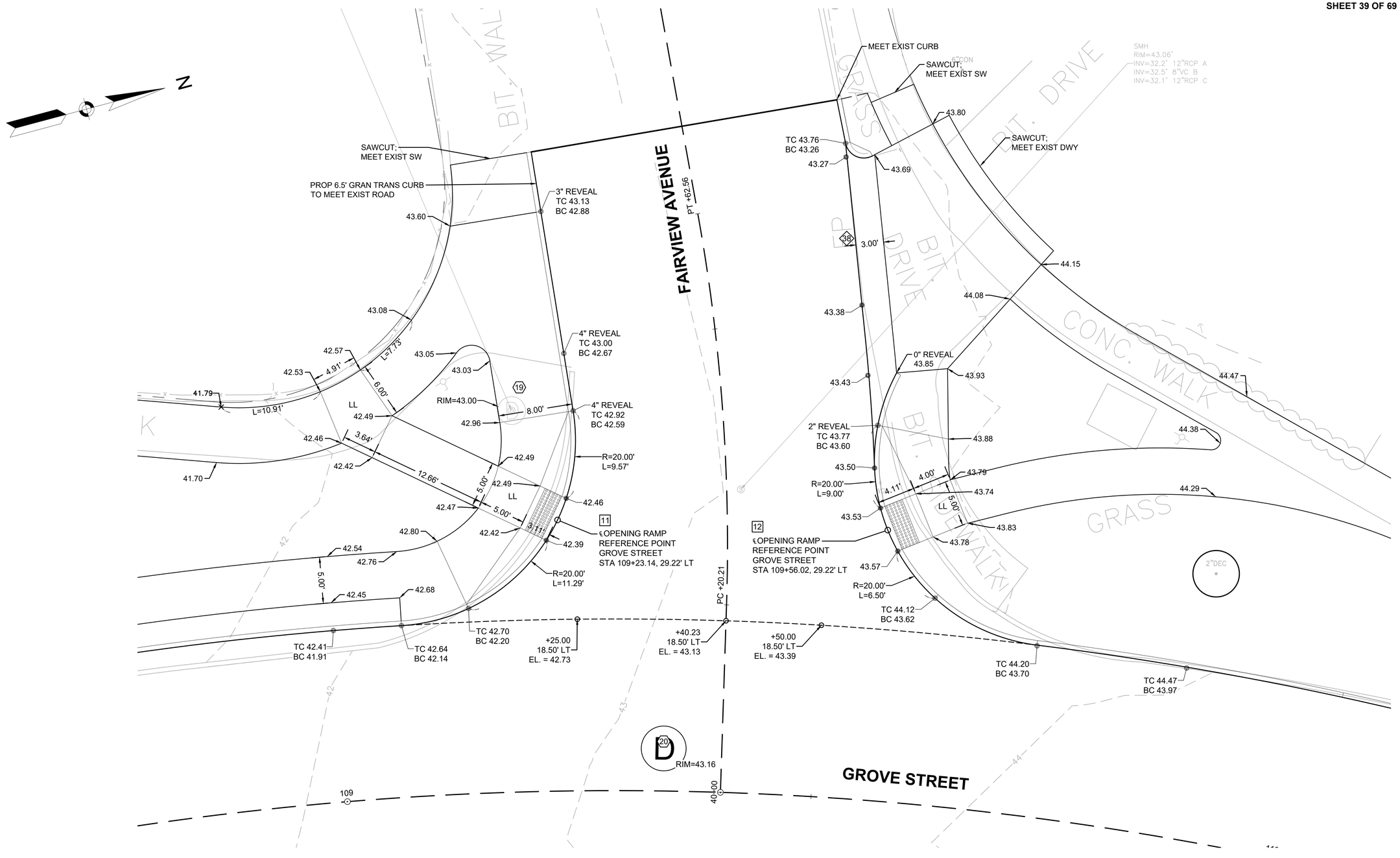
PEDESTRIAN CURB RAMPS #4, #6, #8, #9 AND #10

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

16044.00_HD\GRAD-DET-02).DWG Plotted on 17-Oct-2025 12:44 PM



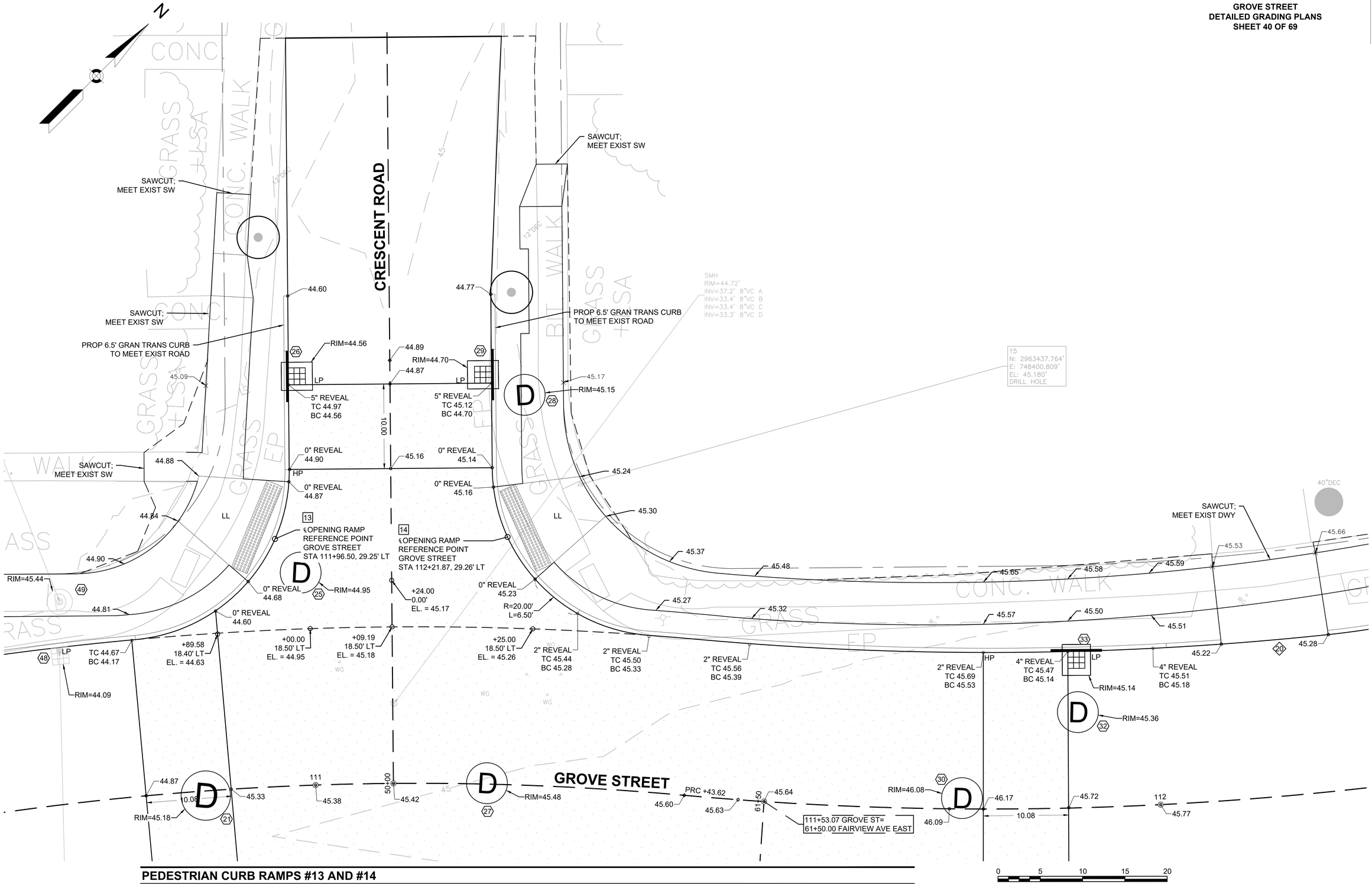
PEDESTRIAN CURB RAMPS #11 AND #12

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

16044.00_HD\GRAD-DET-01\).DWG Plotted on 17-Oct-2025 12:45 PM



PEDESTRIAN CURB RAMPS #13 AND #14

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

BELMONT
GROVE STREET
DETAILED GRADING PLANS
SHEET 41 OF 69

16044.00_HD(GRAD-DET-01).DWG Plotted on 17-Oct-2025 12:45 PM

GROVE STREET

111+53.07 GROVE ST=
61+50.00 FAIRVIEW AVE EAST

FAIRVIEW AVENUE

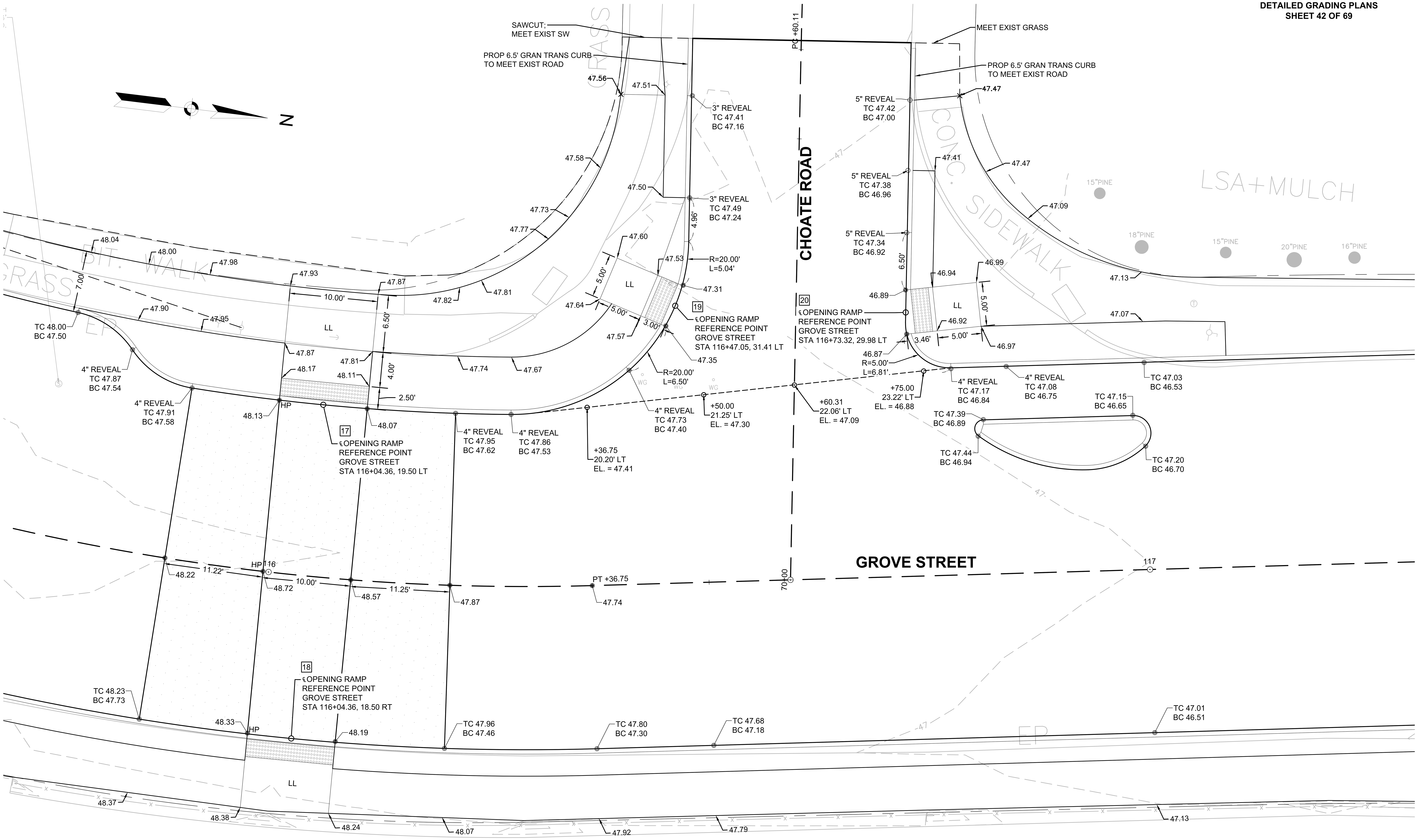
PEDESTRIAN CURB RAMPS #15 AND #16

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

Plotted on 17-Oct-2025 12:46 PM
16044.00_HD(GRAD-DET-02).DWG

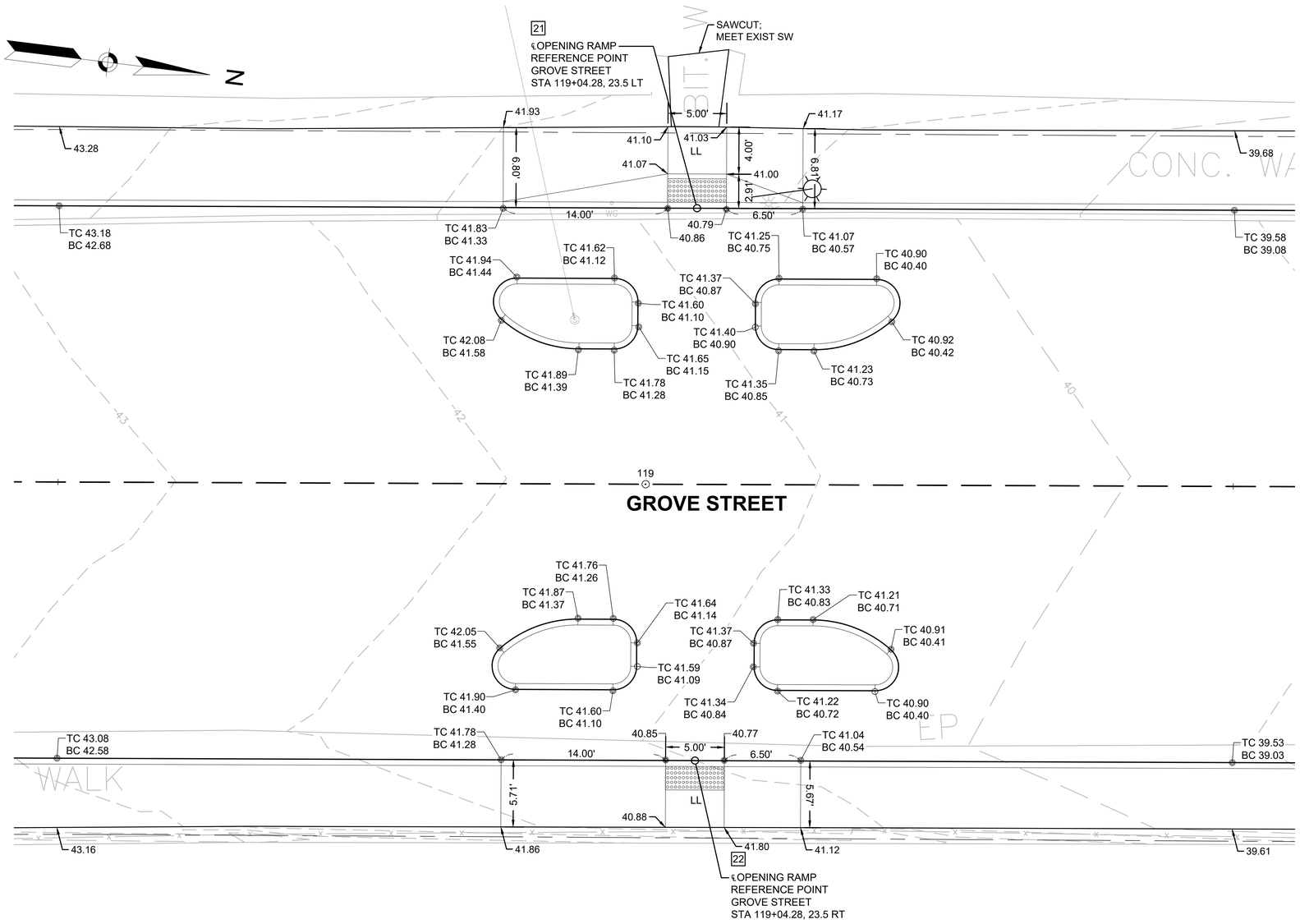


PEDESTRIAN CURB RAMPS #17, #18, #19, AND #20

SCALE: 1" = 5'

0 5 10 15 20
SCALE: 1" = 5'

16044.00_HD(GRAD-DET-02).DWG Plotted on 17-Oct-2025 12:46 PM



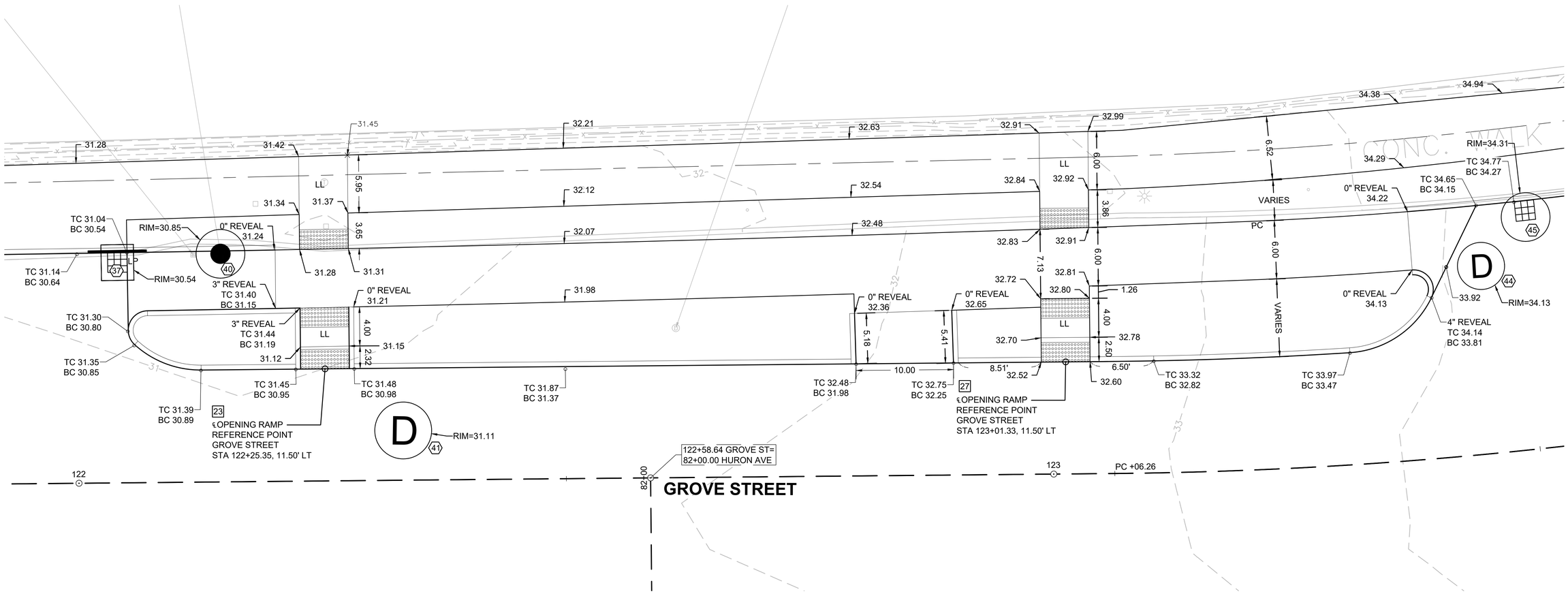
PEDESTRIAN CURB RAMPS #21, AND #22

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

16044.00_HD(GRAD-DET-01).DWG Plotted on 17-Oct-2025 12:47 PM



PEDESTRIAN CURB RAMPS #23 AND #27

SCALE: 1" = 5'

16044.00_HD(GRAD-DET-01).DWG Plotted on 17-Oct-2025 12:47 PM

N

GROVE STREET

HURON AVENUE

PT +74.26

+50.00
29.00' RT
EL. = 30.75

+58.61
28.99' RT
EL. = 31.03

24 ℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 122+23.47, 30.41' RT

25 ℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 122+33.31, 38.88' RT

26 ℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 122+76.37, 39.67' RT

28 ℄OPENING RAMP
REFERENCE POINT
GROVE STREET
STA 122+98.88, 28.96' RT

TC 31.31
BC 30.81

TC 31.25
BC 30.75

TC 31.03
BC 30.53

TC 30.92
BC 30.42

TC 31.21
BC 30.71

TC 31.06
BC 30.56

RIM=30.46

5" REVEAL
TC 30.74
BC 30.32

7.29'

PC

R=20.00'
L=3.71'

30.17

TC 30.60
BC 30.10

2.50

30.16

30.23

R=20.00'
L=8.21'

TC 30.48
BC 29.98

TC 30.53
BC 30.15

30.80

31.15

7.46

LL
5.00

30.17

30.10

TC 30.53
BC 30.06

30.08

30.06

30.00

5.00

LL
5.00

5.51

PCC

29.90

3" REVEAL
TC 30.12
BC 29.87

29.80

29.75

0" REVEAL
29.98

0" REVEAL
29.93

SAWCUT;
MEET EXIST DWY

29.41

29.22

R=75.00'
L=6.50'

29.61

TC 29.54
BC 29.04

29.18

29.14

TC 29.06
BC 28.56

PT

TC 29.02
BC 28.52

4" REVEAL
TC 29.55
BC 29.22

29.58

29.73

29.75

4" REVEAL
TC 29.28
BC 28.95

29.45

29.48

3" REVEAL
TC 31.89
BC 31.64

31.68

PT

31.76

L=6.50'

3" REVEAL
TC 32.12
BC 31.87

RIM=31.92

3" REVEAL
TC 32.50
BC 32.25

L=6.50'

32.53

31.60

3" REVEAL
TC 31.62
BC 31.37

31.41

0" REVEAL
31.76

0" REVEAL
31.66

10.00

0" REVEAL
31.79

0" REVEAL
31.63

5.43

5.00

32.17

32.68

31.84

LL
5.00

31.85

31.89

31.33

31.25

R=30.00'
L=6.50'

5.26

LL
5.00

31.73

TC 31.51
BC 31.01

31.63

5.00

31.67

2.93

31.70

TC 31.33
BC 30.83

TC 31.20
BC 30.70

PC

10.00

31.80

30.99

RIM=31.88

31.96

32.26

32.68

32.87

32.61

31.67

31.30

SAWCUT;
MEET EXIST DWY

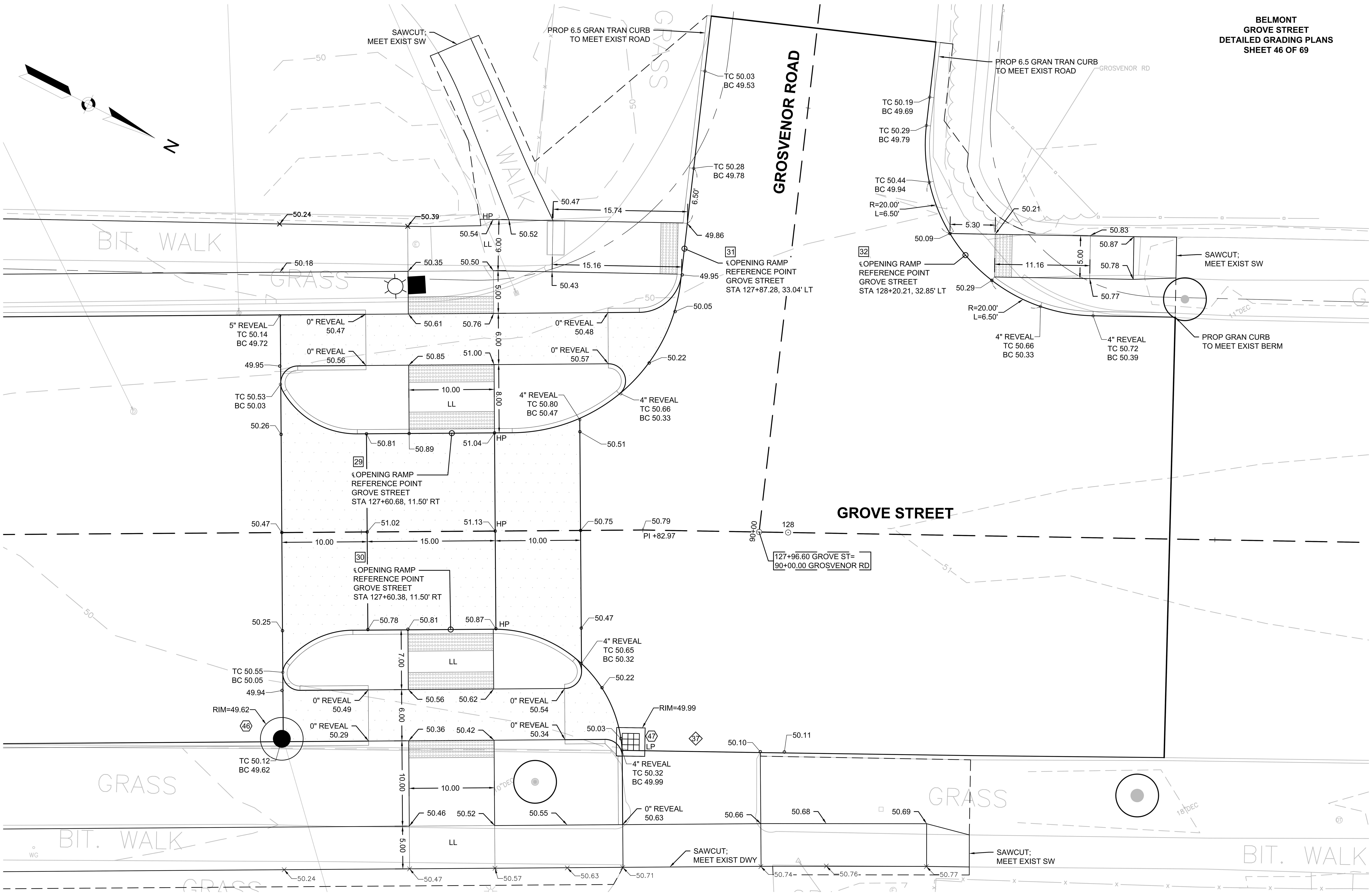
DMH
RIM=31.00'
INV=24.2" 10"CI
SUMP=23.4'

PEDESTRIAN CURB RAMPS #24, #25, #26, AND #28

SCALE: 1" = 5'

0 5 10 15 20
SCALE: 1" = 5'

FOR CONSTRUCTION PROFILE:
SEE SHEET NO. 19 - 23



PEDESTRIAN CURB RAMPS #29, #30, #31, AND #32

SCALE: 1" = 5'

0 5 10 15 20

SCALE: 1" = 5'

16044.00_HD(STRP).DWG Plotted on 17-Oct-2025 12:49 PM

NAD 83

N

GROVE STREET

BELMONT STREET

MARION ROAD

PROP BIKE LANE MARKINGS (TYP)
(SEE DETAIL ON SHEET 64)

6" SWCHL

DWLEx 2' LINE
W/ 4' SPACING (TYP)

PROP BUFFERED BIKE LANE
MARKINGS (TYP) (SEE DETAIL ON SHEET 63)

RET EXIST VIDEO
DETECTION ZONE

MEET EXISTING MARKINGS

RET
R10-22
R7-1

RET
R7-108

R&R
R7-108

PROP BIKE CROSSING (TYP)
(SEE DETAIL ON SHEET 64)

R6-1L
R6-1R
R5-1

PROP CROSSWALK (TYP)
(SEE DETAIL ON SHEET 64)

R5-1
R6-1L
R6-1R

R1-1
MA-D3-3

LIMIT OF WORK
STA 100+29.19
N2962350.3208
E748410.9623

LIMIT OF WORK
STA 10+43.37
N2962739.8166
E748424.7043

100+00

101

102

103

PC +39.00

104

+22

+51

105

PT +

10' CW

11

10+00

7'

4.5'

10.5'

5'

3'

SWL

DBYL

DYL

VGC

BIT. WALK

BIT. DRIVE

CONC. WALK

TOWN LAYOUT

CONTINUED ON
SHEET NO. 48

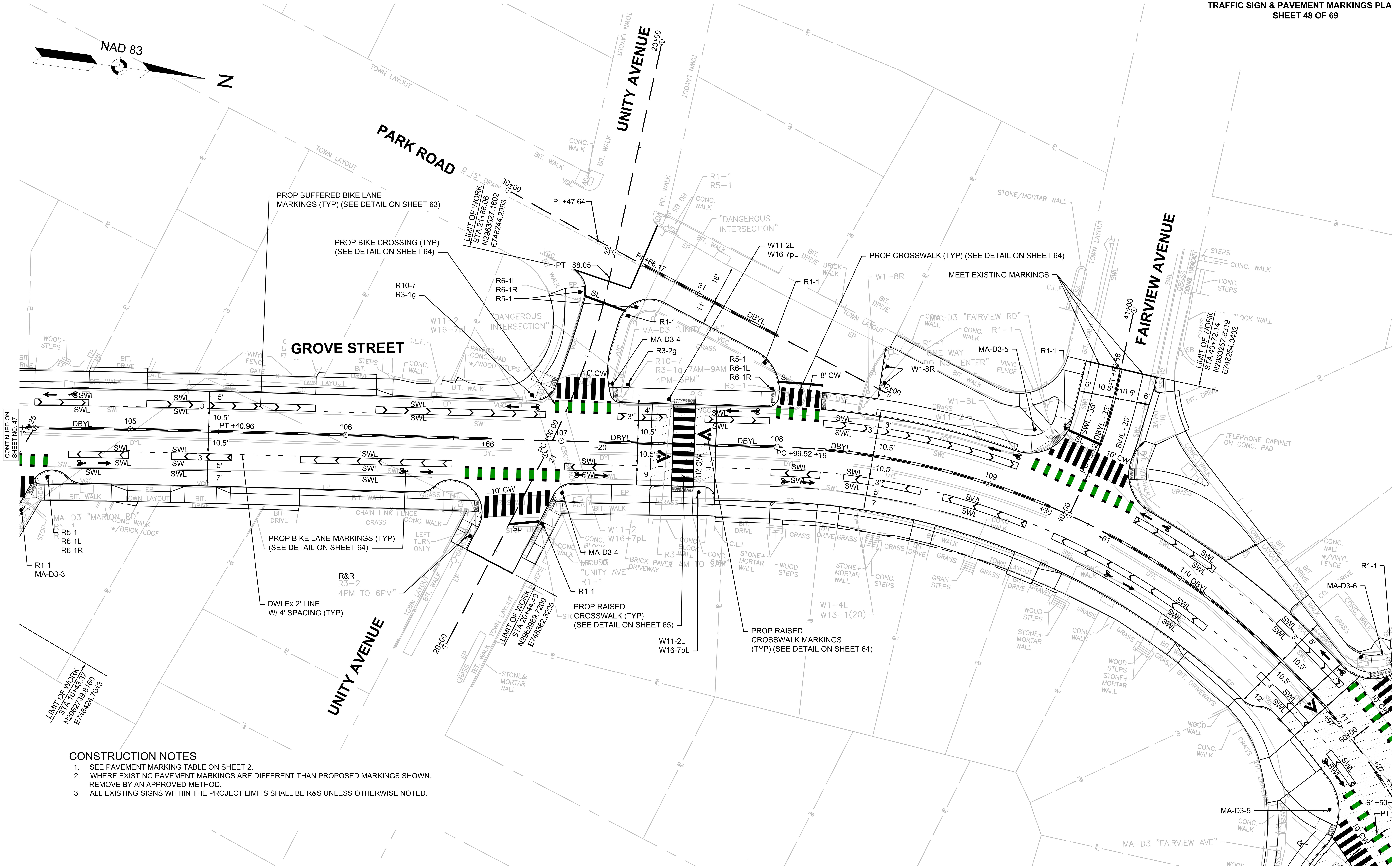
CONSTRUCTION NOTES

1. SEE PAVEMENT MARKING TABLE ON SHEET 2.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

0 20 50 100

SCALE: 1" = 20'

16044.00_HD(STRP).DWG Plotted on 17-Oct-2025 12:49 PM



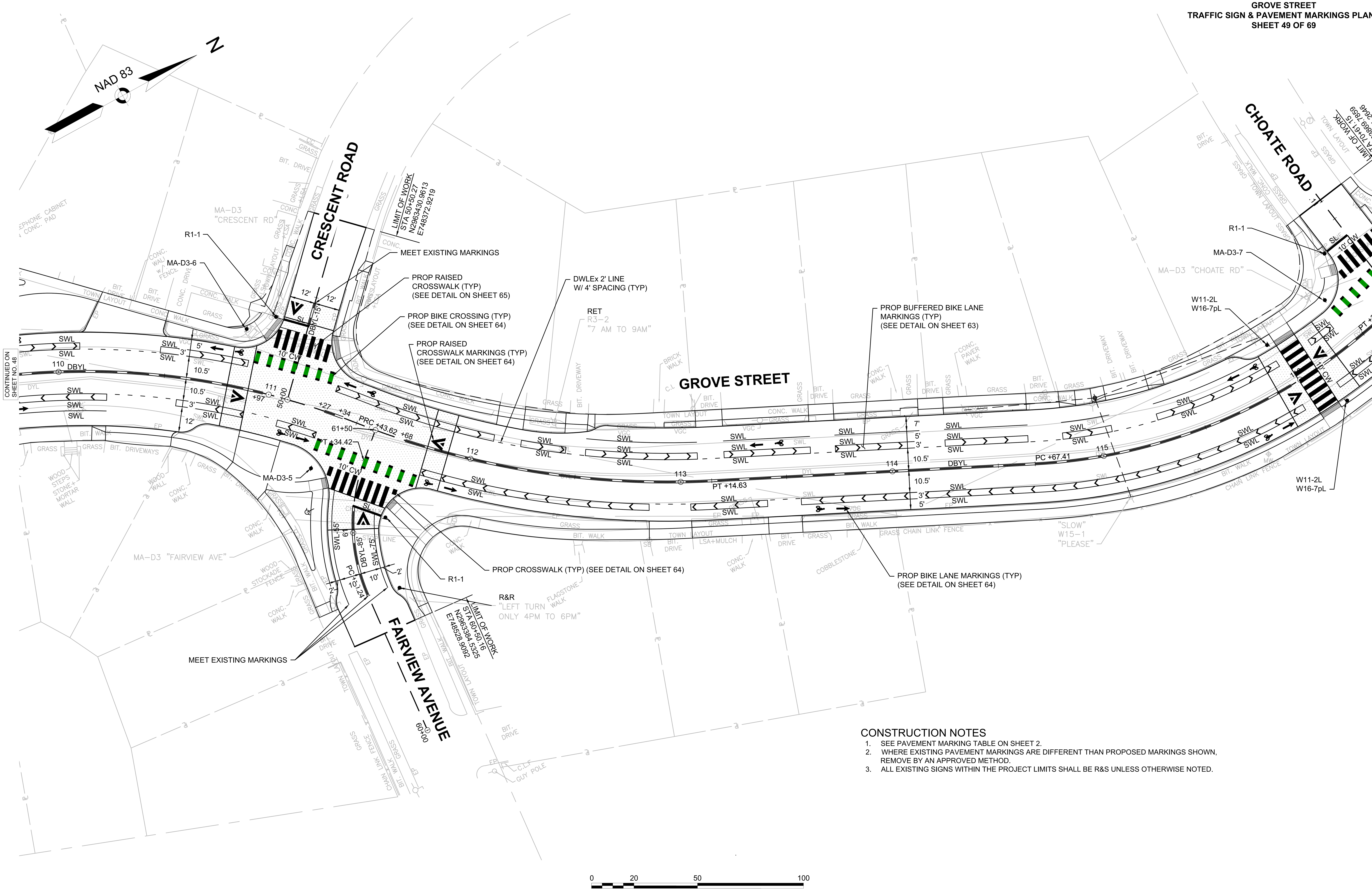
CONSTRUCTION NOTES

1. SEE PAVEMENT MARKING TABLE ON SHEET 2.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

0 20 50 100

SCALE: 1" = 20'

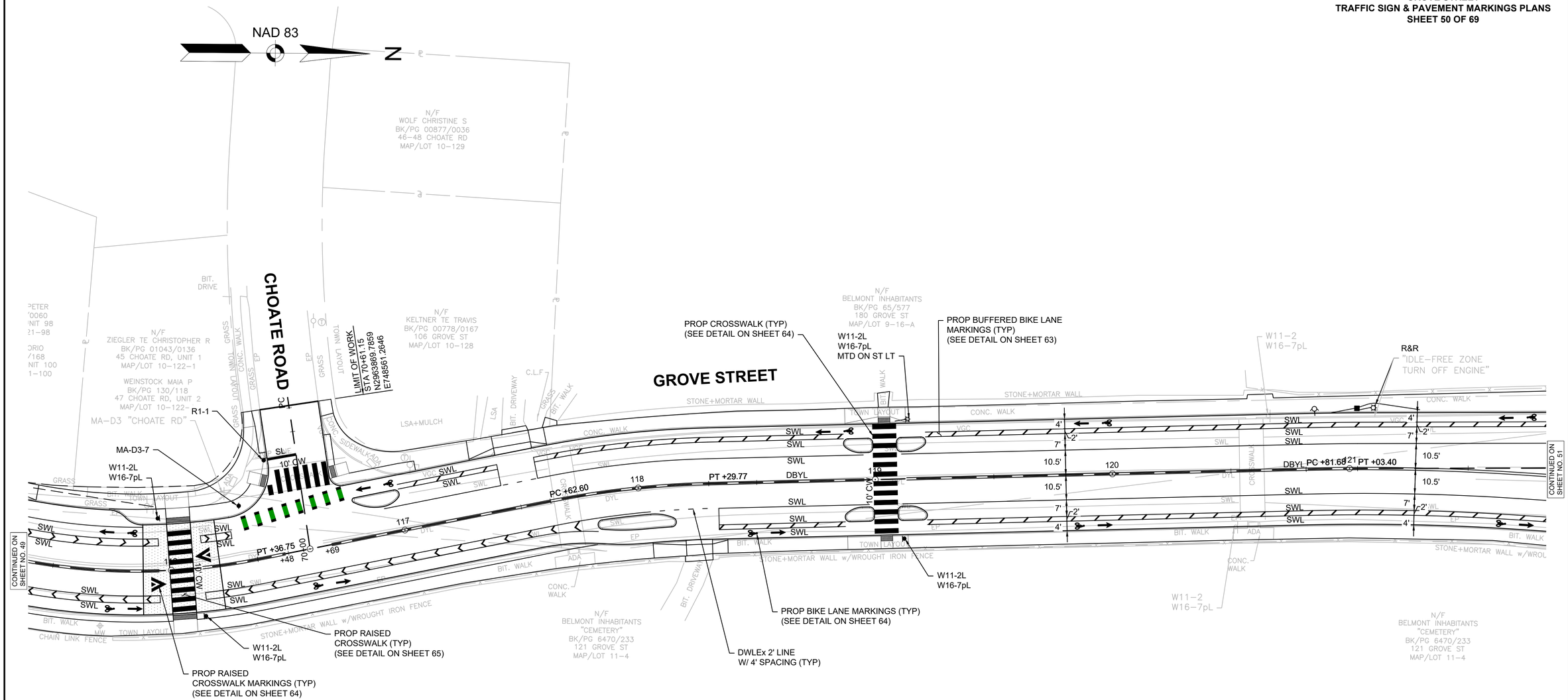
16044.00_HD(STRP).DWG Plotted on 17-Oct-2025 12:49 PM



CONSTRUCTION NOTES

1. SEE PAVEMENT MARKING TABLE ON SHEET 2.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

BELMONT
GROVE STREET
TRAFFIC SIGN & PAVEMENT MARKINGS PLANS
SHEET 50 OF 69



CONSTRUCTION NOTES

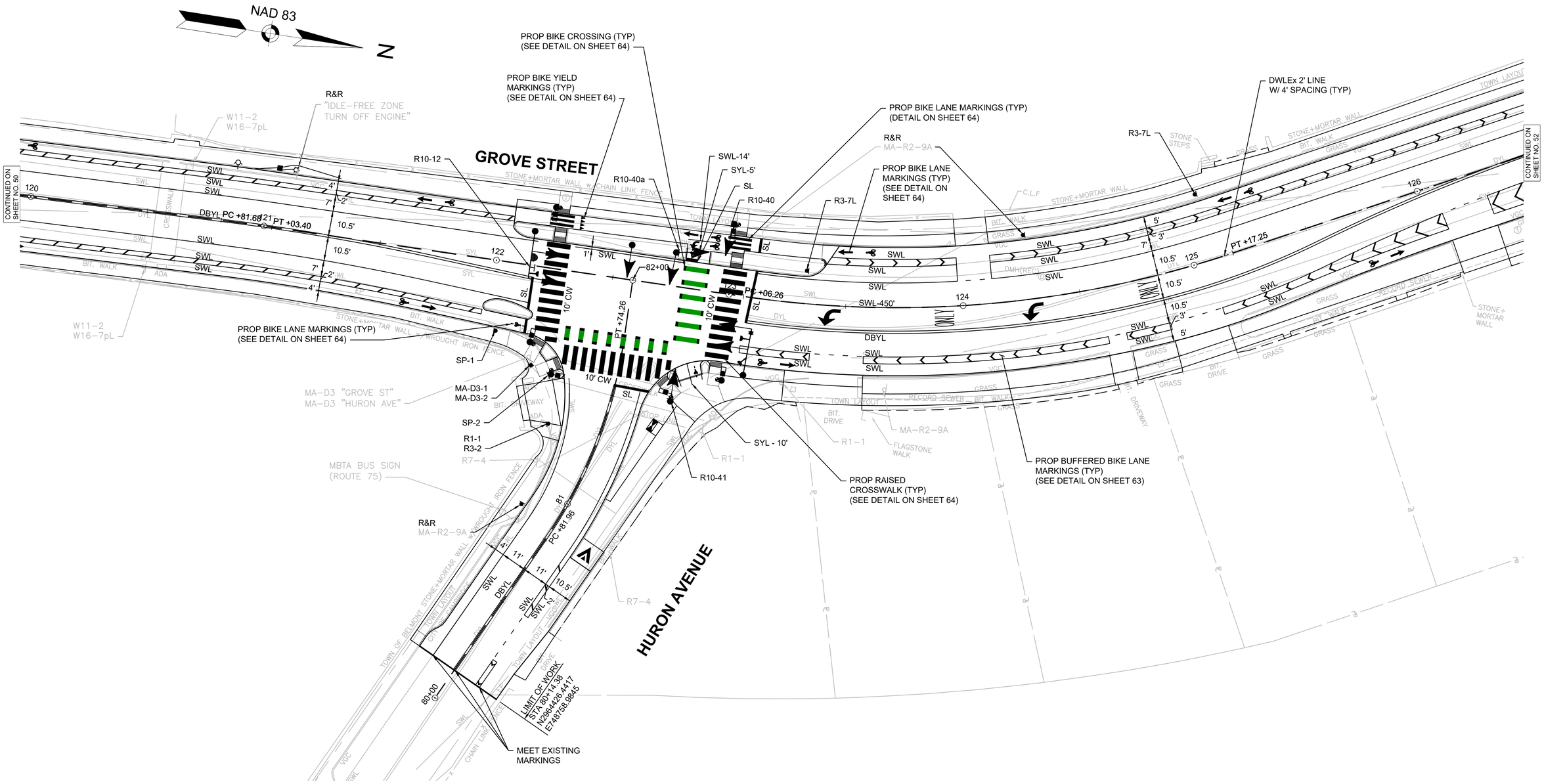
1. SEE PAVEMENT MARKING TABLE ON SHEET 2.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

0 20 50 100

SCALE: 1" = 20'

BELMONT
GROVE STREET
TRAFFIC SIGN & PAVEMENT MARKINGS PLANS
SHEET 51 OF 69

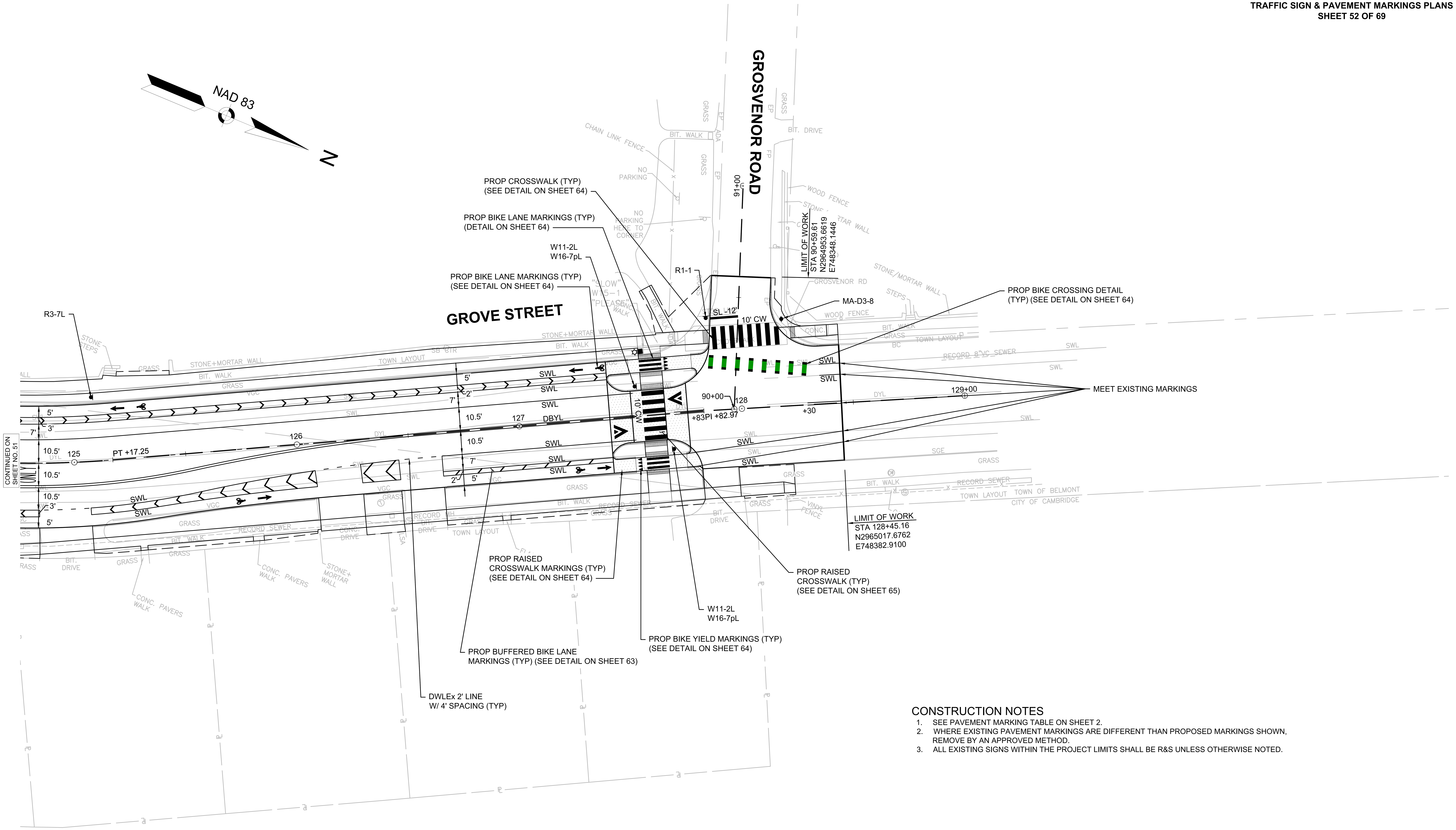
16044.00_HD(STRP).DWG Plotted on 17-Oct-2025 12:50 PM



CONSTRUCTION NOTES

1. SEE SHEET 54 FOR TRAFFIC SIGNAL PLANS.
2. SEE PAVEMENT MARKING TABLE ON SHEET 2.
3. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
4. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

0 20 50 100
SCALE: 1" = 20'



CONSTRUCTION NOTES

1. SEE PAVEMENT MARKING TABLE ON SHEET 2.
2. WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN, REMOVE BY AN APPROVED METHOD.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE R&S UNLESS OTHERWISE NOTED.

0 20 50 100
SCALE: 1" = 20'

TRAFFIC SIGN SUMMARY

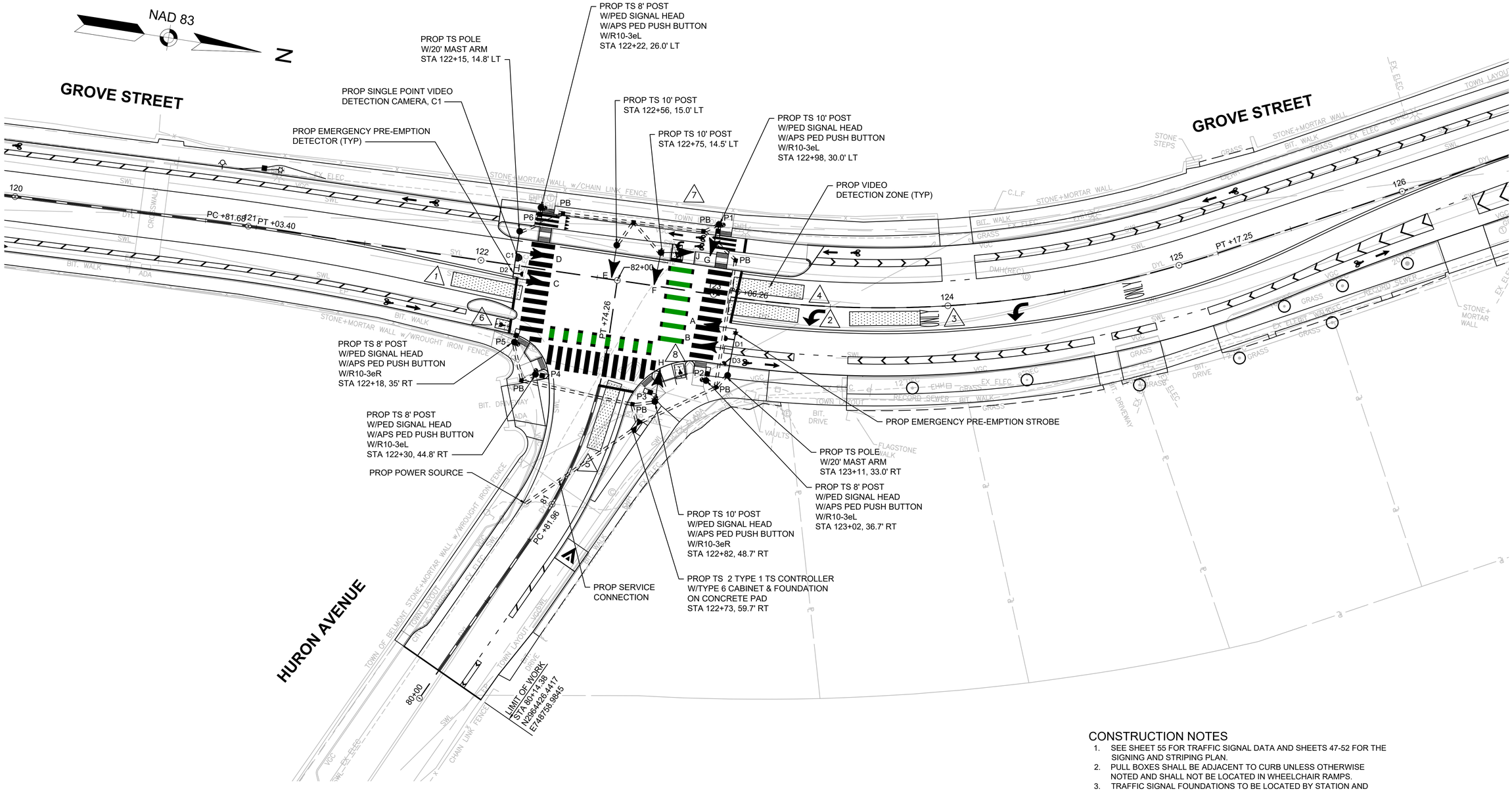
IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	30"	30"	STOP	SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION"; AS AMENDED			10	RED	WHITE	WHITE	P5-10	5.18	51.80
R3-1g	30"	36"	7 AM to 9 AM 4 PM to 6 PM				1	WHITE	RED/ BLACK	BLACK	1 MTD W/OTHERS	7.50	7.50
R3-2	24"	24"					1	WHITE	RED/ BLACK	BLACK	1 MTD W/OTHERS	4.00	4.00
R3-2g	30"	36"	7 AM to 9 AM				1	WHITE	RED/ BLACK	BLACK	P5-1	7.50	7.50
R3-7L	30"	30"	LEFT LANE MUST TURN LEFT				2	WHITE	BLACK	BLACK	P5-2	6.25	12.50
R5-1	30"	30"	DO NOT ENTER				5	WHITE	RED/ WHITE	-	P5-5	6.25	31.25
R6-1L	36"	12"	ONE WAY				5	BLACK	WHITE	WHITE	5 MTD W/OTHERS	3.00	15.00
R6-1R	36"	12"	ONE WAY				5	BLACK	WHITE	WHITE	5 MTD W/OTHERS	3.00	15.00
R10-3e(L)	9"	15"					4	WHITE	WHITE/ BLACK/ ORANGE	BLACK	4 MTD ON TS POST	0.94	PAID UNDER ITEM 815.1
R10-3e(R)	9"	15"					2	WHITE	WHITE/ BLACK ORANGE	BLACK	2 MTD ON TS POST	0.94	PAID UNDER ITEM 815.1
R10-7	24"	30"	DO NOT BLOCK INTERSECTION				1	WHITE	BLACK	BLACK	P5-1	5.00	5.00
R10-12	24"	30"	LEFT TURN YIELD ON GREEN				1	WHITE	BLACK/ GREEN	BLACK	1 MTD ON MAST ARM	5.00	5.00
R10-40	12"	21"	SIGNAL				1	WHITE	BLACK	BLACK	1 MTD ON TS POST	1.75	1.75
R10-40a	12"	21"	SIGNAL				1	WHITE	BLACK	BLACK	1 MTD ON TS POST	1.75	1.75
R10-41	12"	21"	SIGNAL				1	WHITE	BLACK	BLACK	1 MTD ON TS POST	1.75	1.75

TRAFFIC SIGN SUMMARY (CONTINUED)

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
SP-1	24"	24"	BLIND DRIVEWAY RIGHT				1	YELLOW	BLACK	BLACK	P5-1	4.00	4.00
SP-2	24"	24"	WATCH FOR TURNING VEHICLES				1	YELLOW	BLACK	BLACK	1 MTD ON TS POST	4.00	4.00
W1-8(R)	18"	24"					2	YELLOW	BLACK	-	P5-2	3.00	6.00
W11-2(L)	30"	30"					8	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	P5-7 1 MTD ON ST LT	6.25	50.00
W16-7p(L)	24"	12"					8	FLUOR-ESCENT YELLOW GREEN	BLACK	BLACK	7 MTD W/ OTHERS 1 MTD ON ST LT	2.00	16.00
MA-D3-1 (POS)	35"	9"	GROVE ST	6"C/4.5"C	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874.	
MA-D3-2 (POS)	40"	9"	HURON AVE	6"C/4.5"C	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	1 MTD W/ OTHERS	PAID UNDER ITEM 874.	
MA-D3-3 (POS)	40"	9"	MARION RD	6"C/4.5"C	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	1 MTD W/ OTHERS	PAID UNDER ITEM 874.	
MA-D3-4 (POS)	36"	9"	UNITY AVE	6"C/4.5"C	1.5" 1.5"	N/A	4	GREEN	WHITE	WHITE	P5-2	PAID UNDER ITEM 874.	
MA-D3-5 (POS)	44"	9"	FAIRVIEW RD	6"C/4.5"C	1.5" 1.5"	N/A	4	GREEN	WHITE	WHITE	P5-2	PAID UNDER ITEM 874.	
MA-D3-6 (POS)	48"	9"	CRESCENT RD	6"C/4.5"C	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874.	
MA-D3-7 (POS)	40"	9"	CHOATE RD	6"C/4.5"C	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874.	
MA-D3-8 (POS)	45"	9"	GROSVENOR RD	6"B/4.5"B	1.5" 1.5"	N/A	2	GREEN	WHITE	WHITE	P5-1	PAID UNDER ITEM 874.	

NOTES:
1. RETROREFLECTIVE SHEETING CONFORMING TO SECTION M9.30.0 OF THE LATEST MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES SHALL BE USED FOR ALL SIGNS.
2. SEE FHWA "STANDARD HIGHWAY SIGNS, 2004 EDITION" ,2012 SUPPLEMENT; AND 2024 PHASED RELEASE THE 1990 MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS; THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR MOUNTING REQUIREMENTS; AND THE MASSDOT STANDARD SIGNS, LATEST EDITION.
3. ALL SIGNS SHOWN GRAPHICALLY FOR INFORMATION ONLY. SIGN VENDOR SHALL FABRICATE ALL SIGNS IN ACCORDANCE WITH THE APPLICABLE STANDARDS.
4. POS = PRINTED ONE SIDE

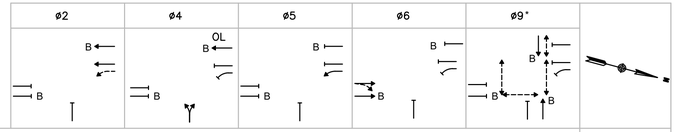
16044.00_HD(TSIG).DWG Plotted on 17-Oct-2025 12:52 PM



CONSTRUCTION NOTES

1. SEE SHEET 55 FOR TRAFFIC SIGNAL DATA AND SHEETS 47-52 FOR THE SIGNING AND STRIPING PLAN.
2. PULL BOXES SHALL BE ADJACENT TO CURB UNLESS OTHERWISE NOTED AND SHALL NOT BE LOCATED IN WHEELCHAIR RAMPS.
3. TRAFFIC SIGNAL FOUNDATIONS TO BE LOCATED BY STATION AND OFFSET.
4. THE TOP OF ALL MAST ARM FOUNDATIONS IN GRASSY AREAS SHALL BE LOCATED 3"± ABOVE FINISHED GRADE.
5. TS POST/POLE, WITH PEDESTRIAN PUSH BUTTON, NOT LOCATED WITHIN A PAVED SURFACE SHALL BE POSITIONED SO AS TO PROVIDE A 10" MAX CLEAR REACH ZONE BETWEEN THE PEDESTRIAN PUSH BUTTON AND THE PAVED SURFACE PER 521 CMR AND AS SHOWN IN THE CONSTRUCTION DETAILS.
6. THE PROPOSED LOCATION OF THE DETECTION CAMERA IS FOR ILLUSTRATIVE PURPOSES ONLY. THE CONTRACTOR SHALL INSTALL THE DEVICE IN THE OPTIMAL LOCATION PER MANUFACTURER'S RECOMMENDATIONS AND SITE-SPECIFIC CONSTRAINTS.

BELMONT
GROVE STREET
TRAFFIC SIGNAL PLANS
SHEET 55 OF 69



SEQUENCE AND TIMING FOR FULLY ACTUATED CONTROL (ISOLATED)

APPROACH	DIRECTION	HOUSING	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	FLASH
GROVE ST	NB	A,B	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FY
GROVE ST	SB	C	G	Y	R	R	R	R	(G R)	(Y R)	R	R	R	R	R	R	R	FY
GROVE ST	SB	D	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
HURON AVE	WB	E,F	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
GROVE ST (BIKE)	SB	J	G	Y	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
HURON AVE (BIKE)	WB	G	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	FR
HURON AVE (BIKE)	EB	H	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	FR
PEDESTRIAN X-ING	ALL	P1-P6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FDW	DW	OUT
															TIMING IN SECONDS			
MINIMUM GREEN (INITIAL)			10			6			6			10			10			CONFLICT FLASH OPERATION ONLY
PASSAGE TIME (VEHICLE)			3			3			3			3			2			
MAXIMUM 1			55			30			15			35			15			
MAXIMUM 2			65			20			25			40			15			
DYNAMIC MAX LIMIT			80			40			40			50						
YELLOW CLEARANCE				4			3			3			4			3.5		
RED CLEARANCE					1			1.5			2			1			2.5	
PEDESTRIAN WALK															7			
PEDESTRIAN CLEARANCE																12		
DETECTOR MEMORY			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			
RECALL			MIN			OFF			OFF			MIN			OFF			

NOTES:
1. AUTOMATIC FLASHING OPERATION PER 2023 M.U.T.C.D., AS AMENDED.
2. * UPON PEDESTRIAN PUSH BUTTON ACTUATION
3. B = BICYCLE MOVEMENT
4. OL = OVERLAP
5. MAXIMUM 1 = NORMAL OPERATION
6. MAXIMUM 2 = 7 AM TO 10 AM MON-FRI
7. DYNAMIC (MAX) STEP SHALL BE 5 SECONDS.
8. DYNAMIC (MAX) SHALL BE USED FOR ALL TIMES OF THE DAY.
9. STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.

SEQUENCE & TIMING NOTES:

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

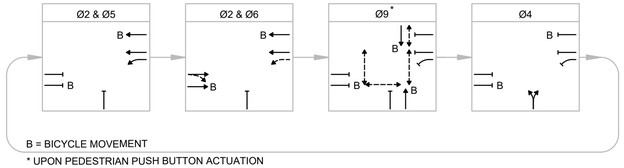
EMERGENCY VEHICLE PRE-EMPTION OPERATION

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

PRE-EMPTION PHASING & PRIORITY

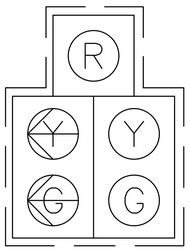
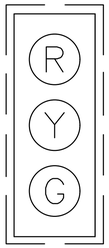
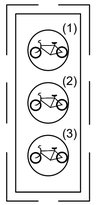
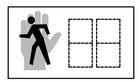
DETECTOR & PRIORITY	PRE-EMPT PHASE ASSIGNMENT	MOVEMENT	VEHICLE PHASE ASSIGNMENT
D1	1		Ø6
D2	2		Ø2&Ø5
D3	3		Ø4

PREFERENTIAL PHASE SEQUENCE



B = BICYCLE MOVEMENT
* UPON PEDESTRIAN PUSH BUTTON ACTUATION

SIGNAL HEAD DATA

C	A,B,D,E,F	G,H,J	P1-P6
		 (1) RED (2) YELLOW (3) GREEN	 W/COUNTDOWN TIMER
ALL 12" LENS		ALL 8" LENS	

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

VIDEO DETECTION DATA

DETECTION ZONE	APPROACH/LANE	CAMERA	DELAY /EXT	CALL PHASE
1	GROVE NB	C1	0	Ø6
2	GROVE SB LEFT TURN LANE	C1	0	Ø5
3	GROVE SB LEFT TURN LANE	C1	0	Ø2
4	GROVE SB THRU LANE	C1	0	Ø2
5	HURON WB LEFT-RIGHT LANE	C1	0	Ø4
6	GROVE NB BIKE ZONE	C1	0	Ø6
7	HURON WB BIKE ZONE	C1	0	Ø9
8	HURON EB BIKE ZONE	C1	0	Ø9

NOTES:
1. DELAY AND EXTENSION TIMINGS SHALL BE PROGRAMMED IN THE CONTROLLER ONLY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SETTING PROPOSED DETECTION ZONES AS SHOWN ON THE PLANS, AND ADJUSTING/RE-ADJUSTING DETECTION ZONES IN THE PRESENCE OF THE ENGINEER.

LIST OF MAJOR ITEMS REQUIRED

GROVE STREET AT HURON AVENUE

PAY ITEM	QUANTITY	DESCRIPTION
815.1	1	8Ø TS 2 TYPE 1 CONTROLLER IN A TYPE 6 BASE MOUNTED CABINET INCLUDING FOUNDATION AND CONCRETE PAD
	2	TS 20' MAST ARM TYPE 2, STEEL, INCL. FOUNDATION
	4	TS POST 8' STANDARD INCL. FOUNDATION
	4	TS POST 10' STANDARD INCL. FOUNDATION
	5	SIGNAL HEAD, 3-SECTION, 12" LENSES
	1	SIGNAL HEAD, 5-SECTION, 12" LENSES
	3	SIGNAL HEAD, 3-SECTION, 8" LENSES (BIKE)
	6	PEDESTRIAN SIGNAL HEAD W/COUNTDOWN TIMER
	4	APS PEDESTRIAN PUSH BUTTON W/R10-3e(L) AND SIGN SADDLE
	2	APS PEDESTRIAN PUSH BUTTON W/R10-3e(R) AND SIGN SADDLE
	1	VIDEO DETECTION SYSTEM (1 CAMERA. VDP & CABLES)
	3	EMERGENCY PRE-EMPTION OPTICAL DETECTORS & DETECTOR CABLE
	1	EMERGENCY PRE-EMPTION 4 CHANNEL PHASE SELECTOR
	1	EMERGENCY PRE-EMPTION SYSTEM CHASSIS
	1	EMERGENCY PRE-EMPTION STROBE (WHITE LENS)
	1	SERVICE CONNECTION (UNDERGROUND)
804.3	400'±	3" CONDUIT, SCHEDULE 80, TYPE NM
811.31	7	PULL BOX-12"x12"

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

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED, THE MASSDOT STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TEMPORARY TRAFFIC CONTROL PLANS, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, (AASHTO) ROADSIDE DESIGN GUIDE, AASHTO POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM (NCHRP) REPORT 350 OR THE AASHTO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
2. WORK HOURS SHALL BE 7:00AM TO 3:00PM MONDAY THRU FRIDAY UNLESS OTHERWISE APPROVED BY THE TOWN OF BELMONT. NO WORK IMPACTING THE TRAVEL WAY WILL BE ALLOWED DURING PEAK TRAFFIC PERIODS. PEAK PERIODS ARE DEFINED AS MONDAY THRU FRIDAY, 6:00AM TO 9:00AM AND 3:00PM TO 7:00PM.
3. NO WORK SHALL OCCUR WITHIN THE PUBLIC WAY THE DAY BEFORE, AFTER OR ON A STATE RECOGNIZED HOLIDAY UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) REQUIREMENTS AND PUBLIC RIGHTS-OF WAY ACCESSIBILITY GUIDELINES (PROWAG).
5. ALL DRUMS OUTSIDE TAPERS SHALL BE SET AT 20' ON CENTER MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
6. ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN SAFE AND REASONABLE ABUTTER ACCESS. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
7. THE FIRST 10 DRUMS ON TAPERS SHALL BE REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS AND SHALL BE OPERATING, AT A MINIMUM, BETWEEN DUSK AND DAWN, WHEN TAPER IS DEPLOYED.
8. REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
9. CONES MAY BE USED IN LIEU OF DRUMS OUTSIDE OF TAPER AREAS.
10. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OR RESTRICTION OF ACCESS.
11. FOR DROP-OFFS 3" OR LESS WITHIN THE CLEAR ZONE, CONDITION MAY BE MITIGATED WITH W8-9 (LOW SHOULDER) SIGN OR TEMPORARY CHANNELIZATION DEVICES. FOR DROP-OFFS GREATER THAN 3" BUT NO MORE THAN 36", DETERMINE WHETHER IT IS MORE COST EFFECTIVE TO INSTALL BOTH W8-9 SIGN AND TEMPORARY CHANNELIZATION DEVICES IN ACCORDANCE WITH MASSDOT WORK ZONE SAFETY GUIDE OR W8-9 SIGN WITH A 2H:1V (MIN) WEDGE OR TO REMOVE THE HAZARD.
12. CONTRACTOR SHALL STAGE WORK SUCH THAT A DROP-OFF OF NO MORE THAN 3" AT THE END OF EACH WORK DAY EXISTS WITHIN THE CLEAR ZONE AT ANY TIME AND ENSURE DROP-OFF IS MITIGATED WITHOUT BARRIER PER NOTE 11.
13. CONSTRUCTION CLEAR ZONE SHALL BE IN ACCORDANCE WITH MASSDOT BOSTON TRAFFIC GUIDELINES AS FOLLOWS:
    4' IF POSTED SPEED IS LESS THAN 35 MPH
14. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED.
15. TEMPORARY TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS WHEN NOT IN USE.
16. SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
17. SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
18. SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN. CONTRACTOR SHALL MAINTAIN A MINIMUM SIDEWALK HORIZONTAL CLEAR WIDTH OF 36" AT ALL TIMES.
19. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN NCHRP 350 AND/OR MASH CRASH TESTED SIGN SUPPORTS AND INSTALLED IN ACCORDANCE WITH THE MUTCD. SIGNS SHALL NOT BE MOUNTED OR LEANED ON DRUMS OR CONES.
20. W21-7 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
21. W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
22. W20-1c, MA-R2-10a OR MA-R2-10e SIGNS SHOWN ON ADVANCE SIGN SCHEMATIC MAY BE USED IN LIEU OF THOSE SIGNS SHOWN ON TYPICAL DETAILS ON THE TEMPORARY TRAFFIC CONTROL PLANS IF MINIMUM SIGN SPACING IS MET.
23. CONTRACTOR SHALL SECURE WORK AREAS BY APPROPRIATE MEANS, TO PREVENT UNAUTHORIZED ACCESS AT ALL TIMES.
24. THERE IS NO DESIGNATED BICYCLE LANE ON THE ROADWAY WITHIN THE PROJECT LIMITS. BICYCLES ARE EXPECTED TO SHARE THE ROAD WITH GENERAL VEHICULAR TRAFFIC.
25. TEMPORARY PORTABLE RUMBLE STRIP ARRAY CONSISTS OF THREE TRANSVERSELY PLACED RUMBLE STRIPS EVENLY SPACED. SPACING SHALL BE 10 FT ON CENTER OR AS DIRECTED BY THE ENGINEER.
26. CONTRACTOR SHALL COORDINATE WITH THE MBTA WITH REGARDS TO IMPACTS TO BUSING OPERATIONS AND BUS STOPS WITHIN PROJECT LIMITS.
27. CONTRACTOR TO COORDINATE WITH THE TOWN WITH REGARDS TO EXISTING PARKING IMPACTS IN ADVANCE OF START OF WORK.

SUGGESTED STAGING NOTES

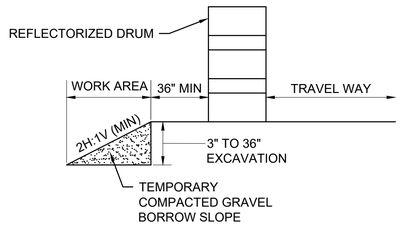
GENERAL NOTES:

1. MAINTAIN ONE LANE OF TRAFFIC IN EACH DIRECTION AT ALL TIMES AND RESTORE TRAFFIC BACK TO ORIGINAL CONDITION AT THE END OF WORK SHIFT
2. MAINTAIN SIDEWALK ON ONE SIDE AND CORRESPONDING CROSSWALKS ON EITHER SIDE TO ALLOW PEDESTRIAN ACCESS AT ALL TIMES. RESTORE SIDEWALK UPON COMPLETION OF WORK ON EACH SEGMENT
3. MAINTAIN ROADWAY DRAINAGE AT ALL TIMES
4. MAINTAIN EXIST ROADWAY LIGHTING AT ALL TIMES
5. MAINTAIN ABUTTER ACCESS AT ALL TIMES
6. COORDINATE EXISTING BUSING OPERATION OR BUS STOP IMPACTS IN ADVANCE OF WORK
7. COORDINATE EXISTING PARKING IMPACTS IN ADVANCE OF WORK
8. MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES

CONSTRUCTION ACTIVITIES:

BELOW IS A LIST OF MAJOR WORK ACTIVITIES IN NO PARTICULAR ORDER:

1. RELOCATE OVERHEAD UTILITIES (BY OTHERS)
2. CONSTRUCT UNDERGROUND UTILITIES AND DRAINAGE INFRASTRUCTURE AS POSSIBLE
3. CONSTRUCT FULL DEPTH PAVEMENT
4. CONSTRUCT FINAL CURB, BIKE LANE AND SIDEWALK
5. CONSTRUCT FINAL TRAFFIC SIGNAL
6. IMPLEMENT POPE & PROCTOR STREET REVERSAL WHEN POSSIBLE
7. CONSTRUCT FINAL PAVING AND LANDSCAPING
8. INSTALL FINAL SIGNAGE AND PAVEMENT MARKINGS

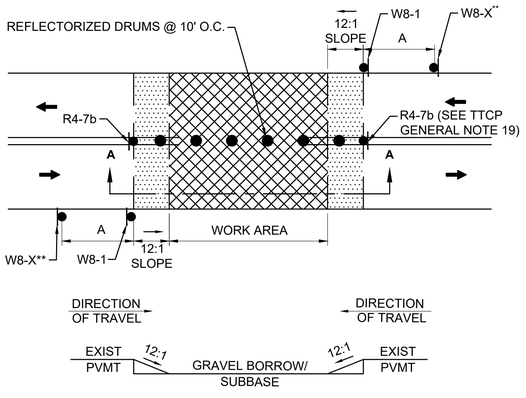


NOTE:

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

TYPICAL ROADWAY DROP-OFF PROTECTION

SCALE: NTS



SECTION A-A

NOTES:

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

TEMPORARY PAVEMENT TRANSITION

SCALE: NTS

BELMONT
GROVE STREET
TEMPORARY TRAFFIC CONTROL PLANS
SHEET 56 OF 69

GENERAL NOTES & LEGEND

LEGEND	
P	POLICE OFFICER
S	TRAFFIC SIGNAL
●	REFLECTORIZED DRUM
◉	REFLECTORIZED DRUMS WITH SEQUENTIAL FLASHING WARNING LIGHTS (SEE NOTE 7)
	TEMPORARY CONSTRUCTION SIGN
▲	TRAFFIC CONE
	TYPE III BARRICADE
	ARROW BOARD (AB) (RIGHT OR LEFT)
	TEMPORARY PORTABLE RUMBLE STRIPS
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)
	WORK AREA (PUBLIC ACCESS RESTRICTED)
	TRANSITION/BUFFER AREAS
	TRAFFIC FLOW
	PEDESTRIAN ROUTE
	CONSTRUCTION FENCE
	TEMPORARY PEDESTRIAN BARRICADE
NTS	NOT TO SCALE

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

BUFFER SPACING	
SPEED (MPH)	DISTANCE (FEET)
15	80
20	115
25	155

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

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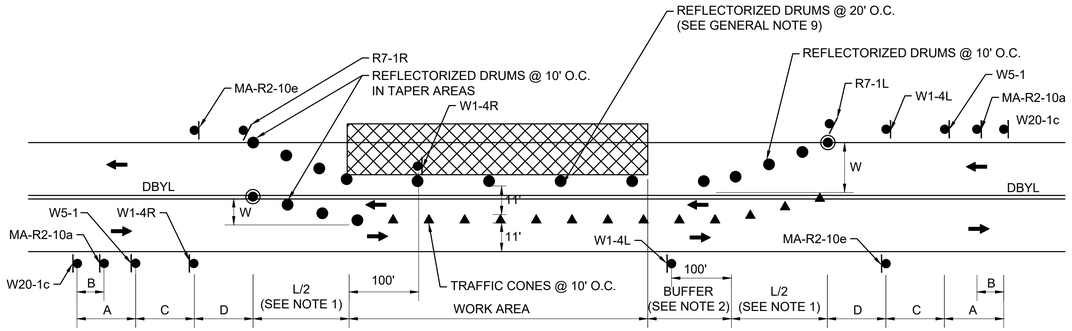
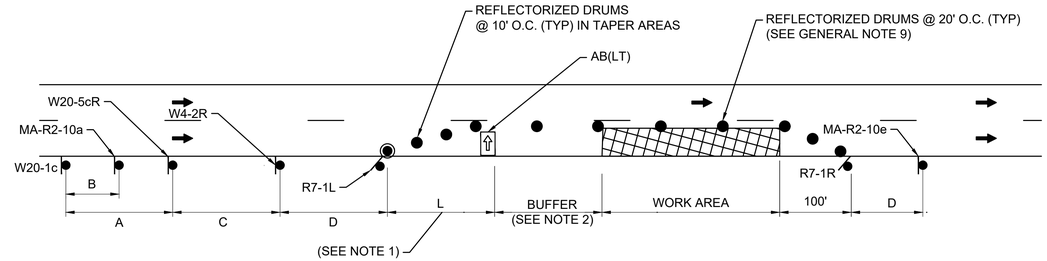


NOTES:

1. SEE TAPER LENGTH FORMULA ON SHEET 106.
2. SEE BUFFER SPACING CHART ON SHEET 106.
3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
4. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
5. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL TWO-WAY STREET LANE SHIFT

SCALE: NTS

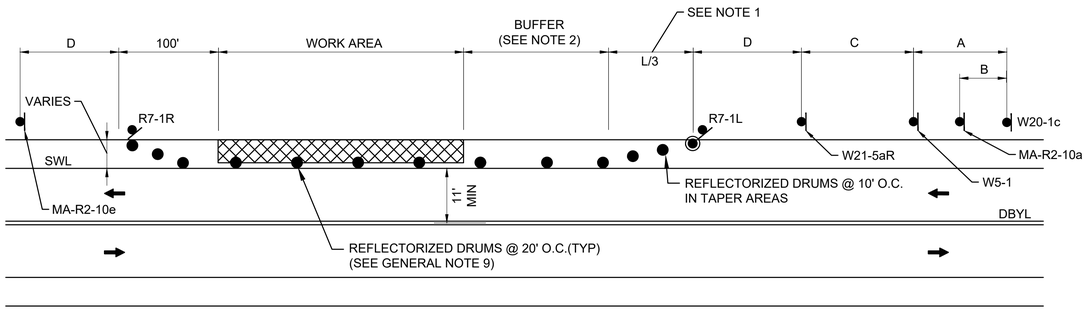


NOTES:

1. SEE TAPER LENGTH FORMULA ON SHEET 106.
2. SEE BUFFER SPACING CHART ON SHEET 106.
3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
4. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
5. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE CLOSURE - RIGHT

SCALE: NTS

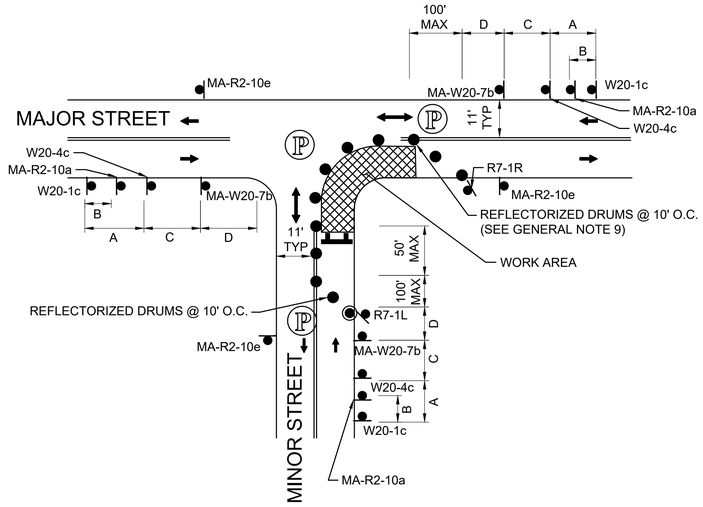


NOTES:

1. SEE TAPER LENGTH FORMULA ON SHEET 106.
2. SEE BUFFER SPACING CHART ON SHEET 106.
3. SEE ADVANCE SIGN SPACING CHART ON SHEET 106.
4. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
5. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL PARKING LANE CLOSURE - RIGHT

SCALE: NTS

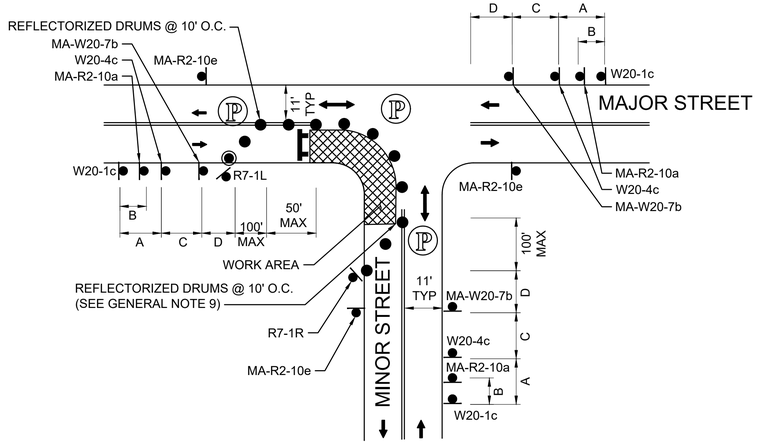


NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
3. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS (TWO WAY MINOR STREET) - FAR SIDE

SCALE: NTS



NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
3. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS (TWO WAY MINOR STREET) - NEAR SIDE

SCALE: NTS

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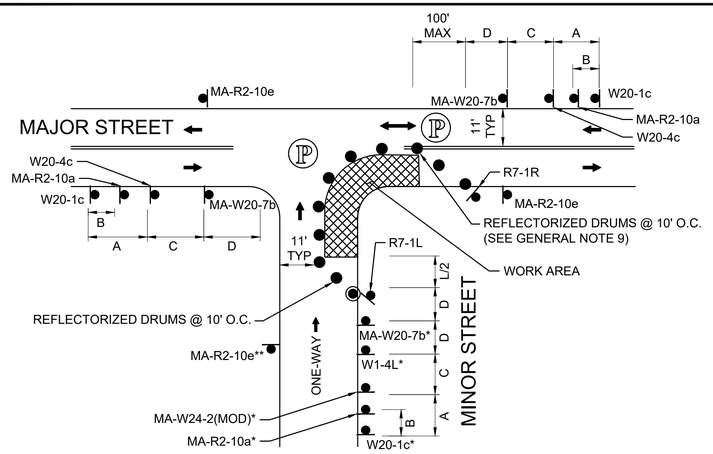
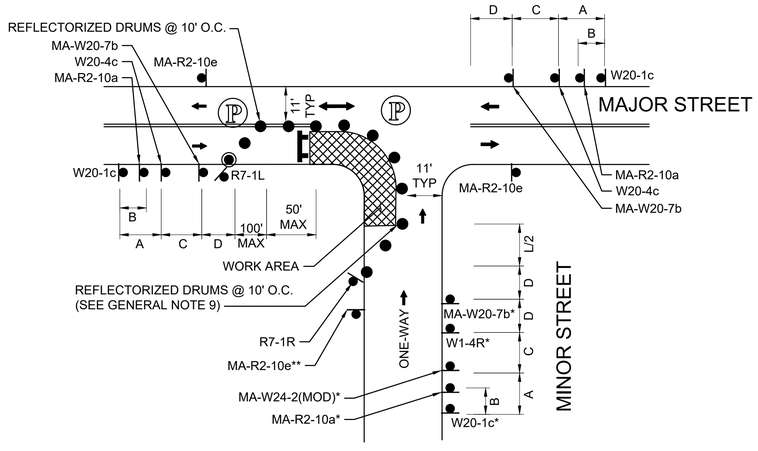


NOTES:

1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
3. * IF ONE-WAY TRAFFIC ON THE MINOR STREET IS TRAVELING AWAY FROM THE MAJOR STREET, W20-1c, MA-R2-10a, MA-W24-2(MOD), W1-4L AND MA-W20-7b SIGNS ON THE MINOR STREET SHALL BE OMITTED.
4. ** IF ONE-WAY TRAFFIC ON THE MINOR STREET IS TRAVELING TOWARDS THE MAJOR STREET, MA-R2-10e SIGN ON THE MINOR STREET SHALL BE OMITTED.
5. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
6. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS (ONE-WAY MINOR STREET) - FAR SIDE

SCALE: NTS



NOTES:

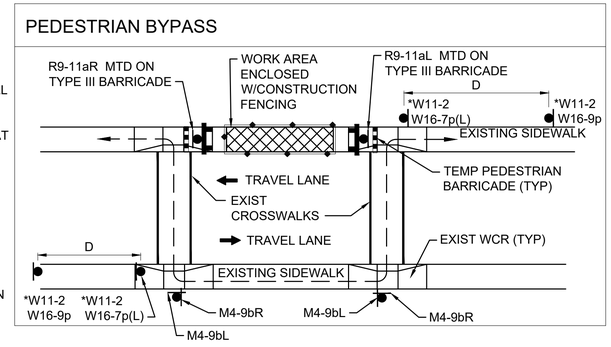
1. ADVANCE WARNING SIGN PLACEMENT TO BE ADJUSTED AS NECESSARY.
2. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
3. * IF ONE-WAY TRAFFIC ON THE MINOR STREET IS TRAVELING AWAY FROM THE MAJOR STREET, W20-1c, MA-R2-10a, MA-W24-2(MOD), W1-4L AND MA-W20-7b SIGNS ON THE MINOR STREET SHALL BE OMITTED.
4. ** IF ONE-WAY TRAFFIC ON THE MINOR STREET IS TRAVELING TOWARDS THE MAJOR STREET, MA-R2-10e SIGN ON THE MINOR STREET SHALL BE OMITTED.
5. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
6. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

ONE LANE BI-DIRECTIONAL TRAFFIC AT INTERSECTIONS (ONE-WAY MINOR STREET) - NEAR SIDE

SCALE: NTS

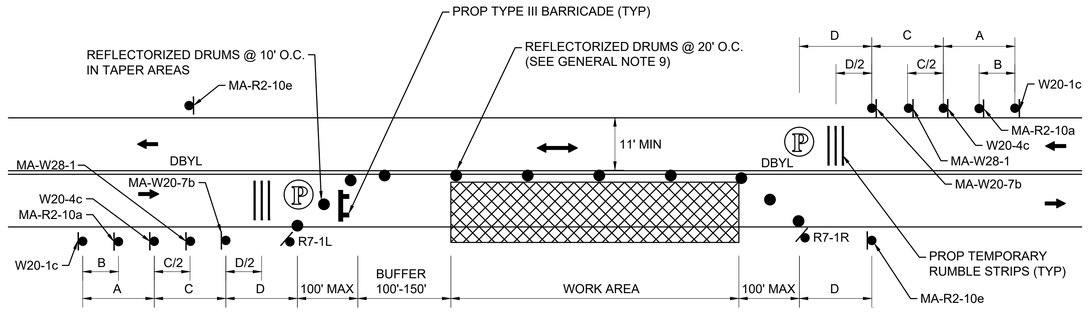
NOTES:

1. ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY AS DETERMINED BY THE ENGINEER.
2. CONTROLS FOR PEDESTRIAN TRAFFIC ONLY, ARE SHOWN. VEHICULAR TRAFFIC SHALL BE MAINTAINED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. ← — → INDICATES DIRECTION OF PEDESTRIAN TRAVEL.
5. ALL TEMPORARY PEDESTRIAN PATHWAYS SHALL COMPLY FULLY WITH ALL REQUIREMENTS OF THE MUTCD AND ALL APPLICABLE MAAB AND ADAAG REQUIREMENTS AND INCLUDE THE USE OF COMPLIANT TEMPORARY PEDESTRIAN BARRICADES AND TEMPORARY PEDESTRIAN CURB RAMPS AT ALL TIMES.
6. TEMPORARY WHEELCHAIR RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MASSDOT, MAAB, AND ADAAG REQUIREMENTS.
7. TEMPORARY PEDESTRIAN BARRICADES SHALL BE PAID FOR UNDER ITEM 852.11 TEMPORARY PEDESTRIAN BARRICADE.
8. TEMPORARY PEDESTRIAN CURB RAMPS, IF NECESSARY, SHALL BE PROVIDED IN ACCORDANCE TO TEMPORARY CURB RAMPS DETAIL SHOWN ON SHEET 110 AND SHALL BE PAID FOR UNDER ITEM 852.12 TEMPORARY PEDESTRIAN CURB RAMP.
9. * INDICATES SIGNS ARE NOT REQUIRED IF EXISTING CROSSWALKS ARE USED.



PEDESTRIAN BYPASS DETAIL

SCALE: NTS

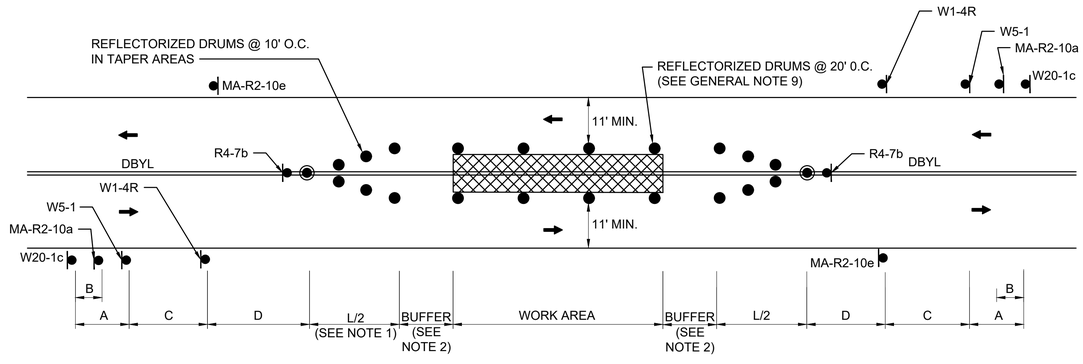


NOTES:

1. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
2. SEE ADVANCE SIGN SPACING CHART ON SHEET 106.
3. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
4. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL TWO-WAY STREET LANE CLOSURE ALTERNATING TRAFFIC

SCALE: NTS

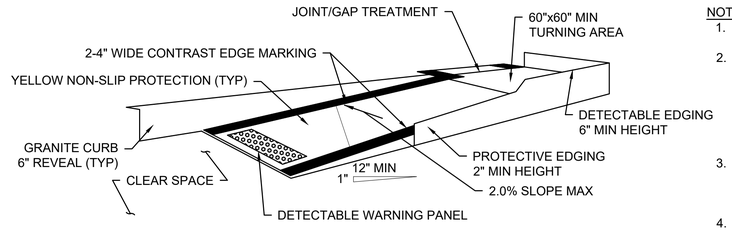


NOTES:

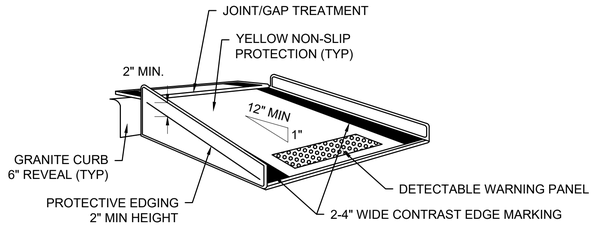
1. SEE TAPER LENGTH FORMULA ON SHEET 106.
2. SEE BUFFER SPACING CHART ON SHEET 106.
3. REFER TO ADVANCE SIGN SPACING TABLE ON SHEET 106.
4. SEE TTCP GENERAL NOTE 22 ON SHEET 106 REGARDING ADVANCE SIGNAGE.
5. AT THE END OF WORK SHIFT, CONTRACTOR TO RESTORE TRAFFIC BACK TO ORIGINAL CONDITION.

TYPICAL TWO-WAY STREET CENTER WORK AREA

SCALE: NTS



TEMPORARY CURB RAMP-PARALLEL TO CURB



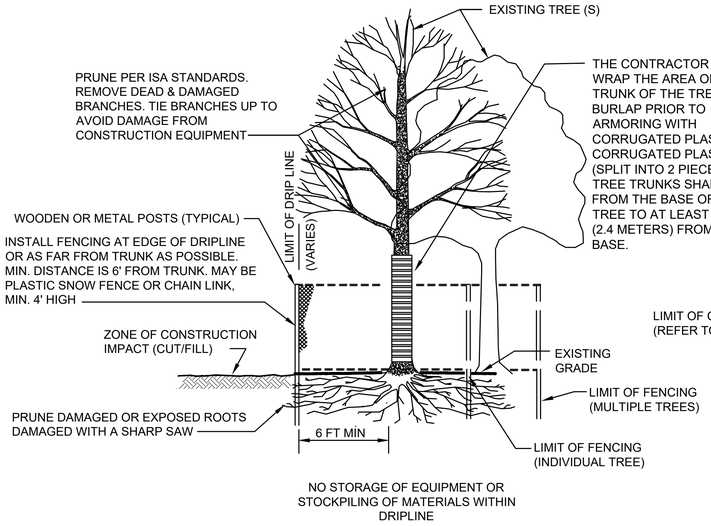
TEMPORARY CURB RAMP-PERPENDICULAR TO CURB

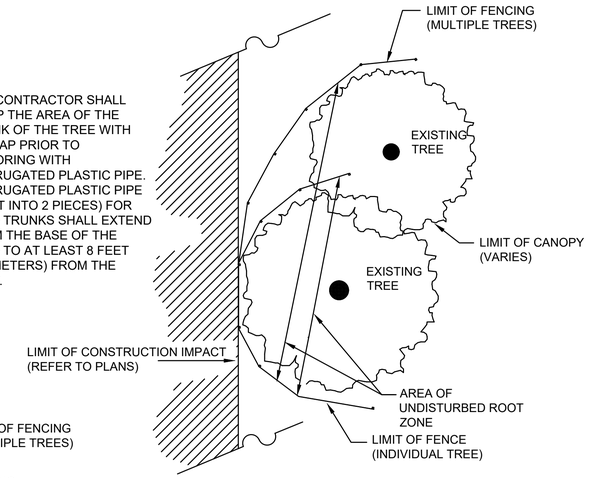
NOTES:

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

TEMPORARY CURB RAMPS

SCALE: NTS

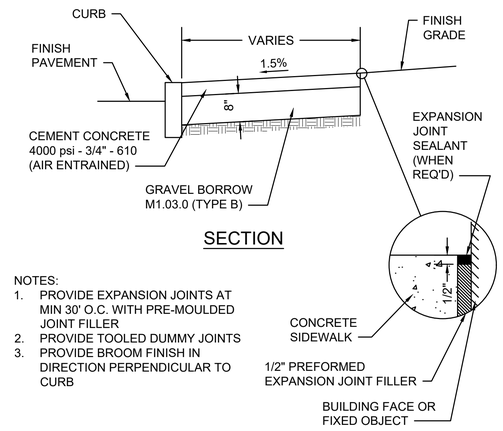




PLAN VIEW

TREE PROTECTION

SCALE: N.T.S.

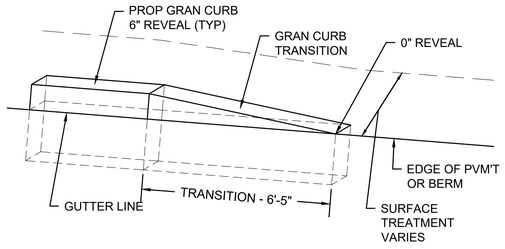


SECTION

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

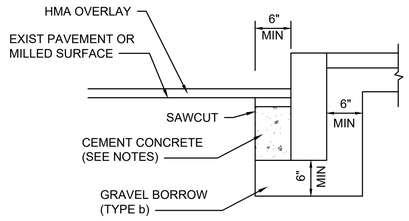
CEMENT CONCRETE SIDEWALK

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



GRANITE CURB TRANSITION PIECE

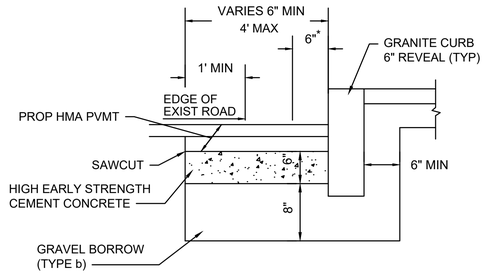
SCALE: N.T.S.



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

GRANITE CURB IN EXISTING PAVEMENT - WITH OVERLAY

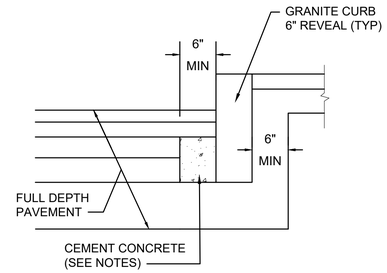
SCALE: N.T.S.



* 6" OF HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB.

GRANITE CURB IN FULL DEPTH PAVEMENT LESS THAN 4' WIDE

SCALE: N.T.S.

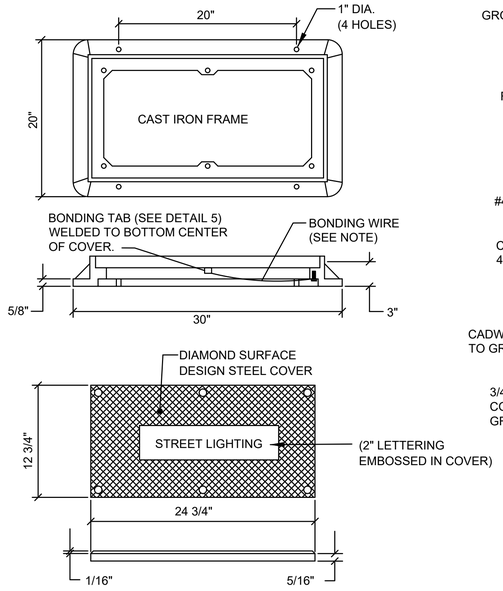


NOTES:
1. TO BE PLACED IF CURB IS INSTALLED AFTER HOT MIX ASPHALT
2. CONCRETE SHALL BE INCLUDED IN PRICE BID FOR GRANITE CURB
3. ANY DESIGNATED CEMENT CONCRETE THAT IS ACCEPTABLE UNDER SECTION M4 OF THE STANDARD SPECIFICATIONS MAY BE USED. ALL TEST REQUIREMENTS ARE WAIVED. HOT MIX ASPHALT SHALL NOT BE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

GRANITE CURB IN FULL DEPTH PAVEMENT

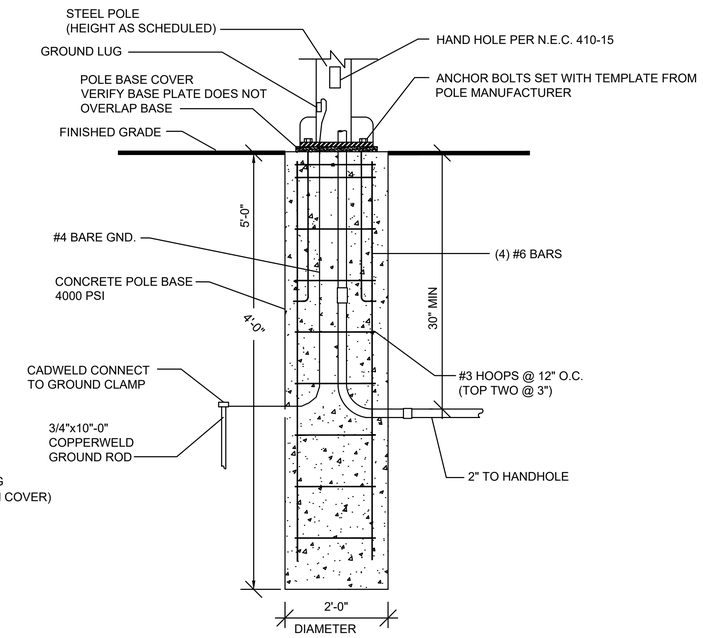
SCALE: N.T.S.

16044.00_HD(DET).DWG Plotted on 17-Oct-2025 12:54 PM



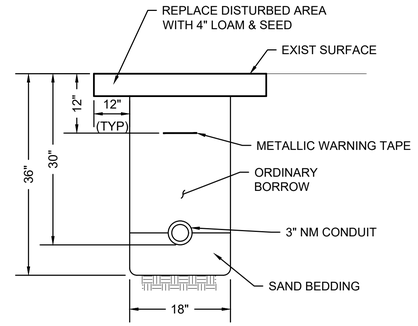
HEAVY DUTY HANDHOLE COVER

SCALE: N.T.S.



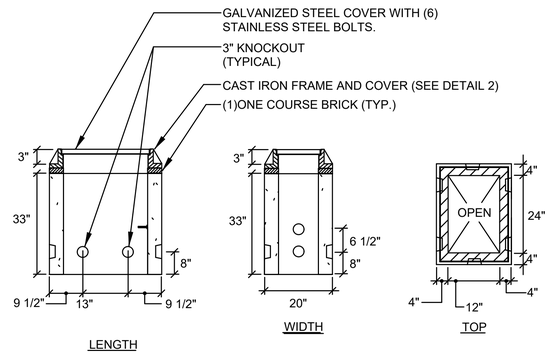
NEW POLE BASE

SCALE: N.T.S.



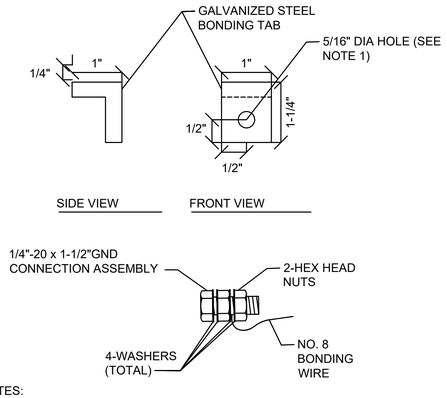
CONDUIT IN GRASS

SCALE: N.T.S.



HEAVY DUTY HANDHOLE

SCALE: N.T.S.

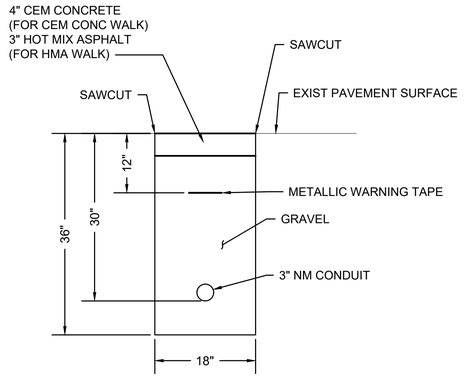


NOTES:
1. ATTACH 3 FOOT LENGTH OF NO. 8 BONDING WIRE TO GALVANIZED STEEL BONDING TAB WITH 1/4"-20 x 1-1/2" LONG STAINLESS STEEL HEX HEAD BOLT, STAINLESS STEEL FLAT WASHERS AND 2 HEX NUTS. ATTACH FREE END OF BONDING WIRE TO BONDING WIRE ROUTED THROUGH PULL BOX.

2. BONDING TAB WELDED TO BOTTOM CENTER OF COVER.

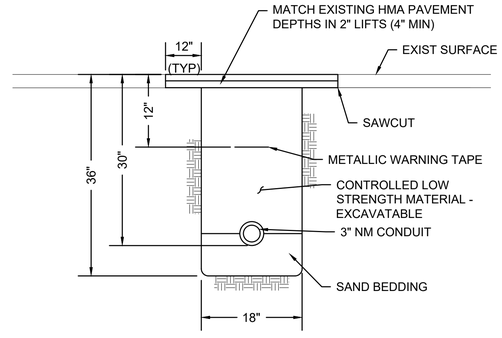
GALVANIZED STEEL BONDING TAB

SCALE: N.T.S.



CONDUIT IN SIDEWALK

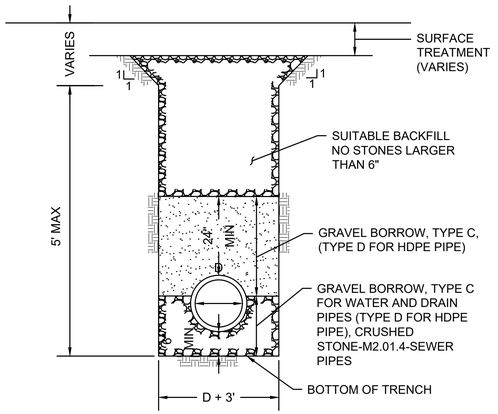
SCALE: N.T.S.



CONDUIT CROSSING ROADWAY/DRIVEWAY

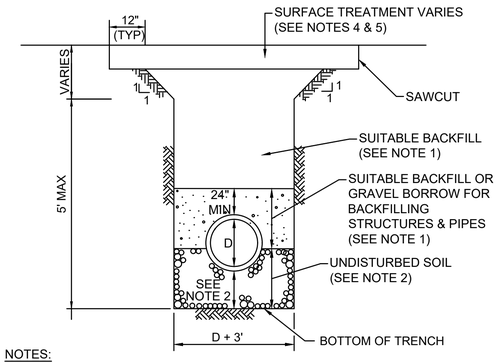
SCALE: N.T.S.

16044.00_HD(DET).DWG Plotted on 17-Oct-2025 12:54 PM



TRENCH DETAIL (OFF-ROADWAY)

SCALE: N.T.S. DWG: TRENCH-05 DATE: AUGUST 2018

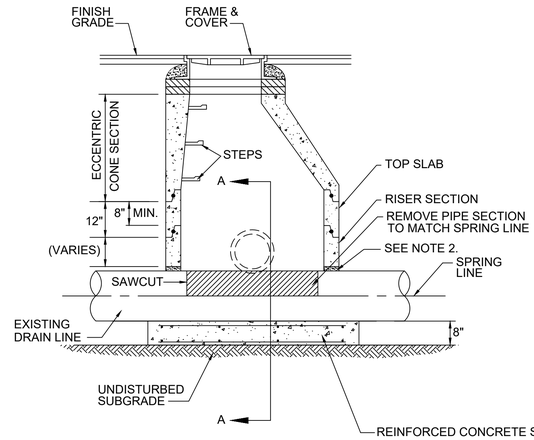


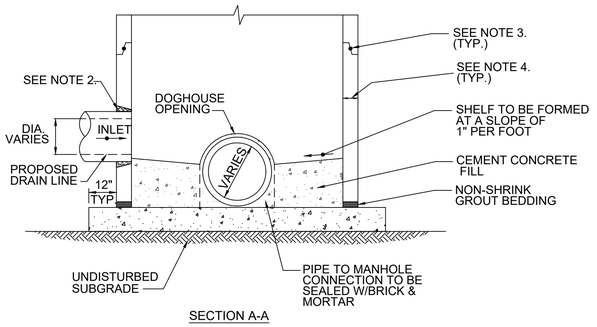
NOTES:

1. EXISTING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE AND APPROVED BY THE ENGINEER SHALL BE USED. STONES LARGER THAN 6" SHALL NOT BE USED. BACKFILL SHALL BE PLACED IN 6" MAX LIFTS AND COMPACTED. BACKFILL PLACED WITH 24" ABOVE THE PIPE SHALL CONTAIN NO STONES LARGER THAN 3". IN AREAS OF MILL & OVERLAY, CONTROLLED LOW STRENGTH MATERIAL (EXCAVATABLE) CAN BE USED IF APPROVED BY THE RESIDENT ENGINEER.
2. SOFT OR UNSUITABLE MATERIAL EXISTING BELOW THE BEDDING GRADE SHALL BE REMOVED A MINIMUM OF 6" AND AS DIRECTED. REPLACEMENT GRAVEL BORROW FOR BACKFILLING STRUCTURES AND PIPES OR CRUSHED STONE (M2.01.4) SHALL BE COMPACTED.
3. CRUSHED STONE TO BE USED DURING WET CONDITIONS AS DIRECTED BY THE ENGINEER.
4. IN AREAS OF FULL DEPTH PAVEMENT, CONTINUE SUITABLE BACKFILL. IF OPEN TO VEHICLE TRAFFIC, USE TEMPORARY ASHPALT PATCHING (ITEM 472) PLACED IN 2.5" LIFTS (5" MIN).
5. IN AREAS OF STANDARD MILL & OVERLAY, HMA FOR PATCHING (ITEM 451) SHALL BE PLACED IN 3 LIFTS TO MATCH EXISTING PAVEMENT THICKNESS.

TRENCH DETAIL

SCALE: NTS





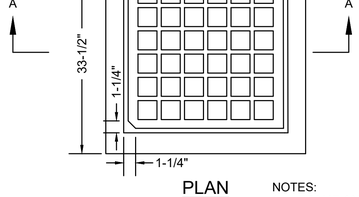
SECTION A-A

NOTES:

1. STRUCTURE SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE OPENINGS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. FOR MANHOLES OVER 9' IN DEPTH, WALL THICKNESS SHALL BE 6" MIN. FOR MANHOLES 9' OR LESS IN DEPTH, WALL THICKNESS SHALL BE 5" MIN.

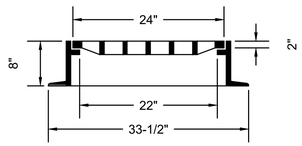
DRAIN MANHOLE OVER EXISTING PIPE

SCALE: N.T.S.



PLAN

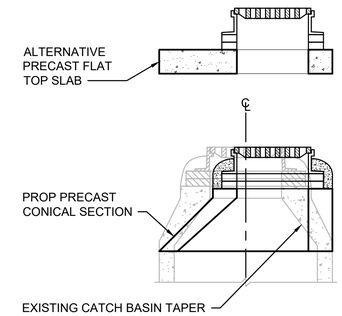
NOTES:
1. FRAME AND GRATE SHALL BE RATED FOR HS-20 LOADING.
2. MIN FRAME WEIGHT:
   4 FLANGE 295 LBS.
   3 FLANGE 265 LBS.
3. USE 3 FLANGE FRAMES AT CURB INLETS.



SECTION

MUNICIPAL STANDARD CATCH BASIN FRAME & GRATE

SCALE: N.T.S.

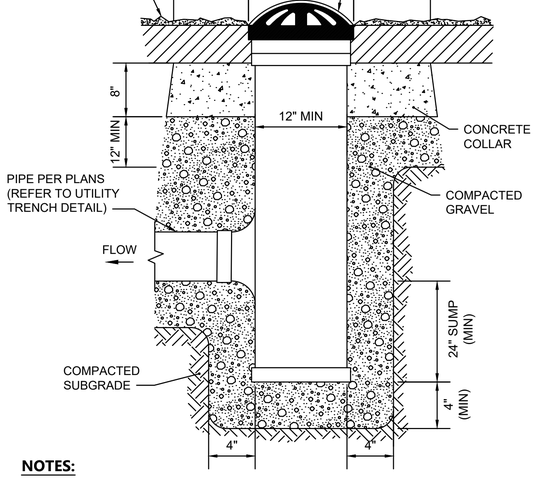


CB TREATMENT NOTES

1. BASED ON ACTUAL FIELD CONDITIONS; THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.
2. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM).

CATCH BASIN REMODELED

SCALE: N.T.S.

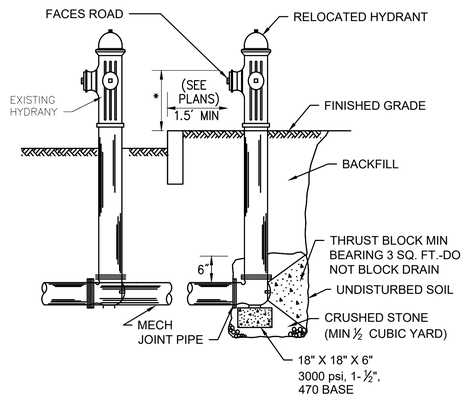


NOTES:

1. AREA DRAINS SHALL BE 12" DIAMETER DRAIN BASIN, OR APPROVED EQUAL.
2. GRATES SHALL BE 12" DOME GRATE OR APPROVED EQUAL.

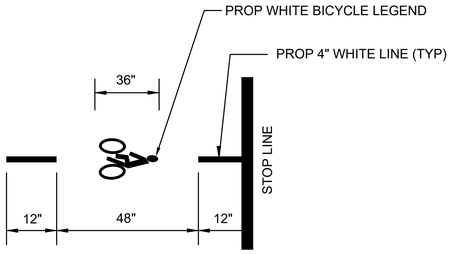
AREA DRAIN (AD) TYPE 1

SCALE: N.T.S.



HYDRANT RELOCATION

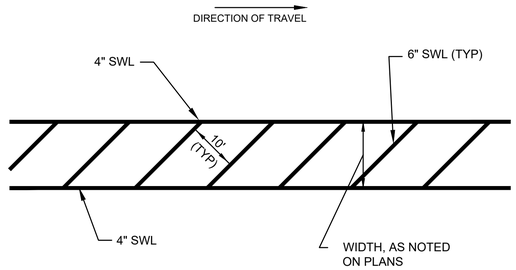
SCALE: NTS



NOTES:
1. BICYCLE LEGEND SHALL CONFORM TO THE 2004 EDITION OF STANDARD HIGHWAY SIGNS AND SCALED APPROPRIATELY TO OBTAIN REQUIRED HEIGHT OF MARKINGS.
2. MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

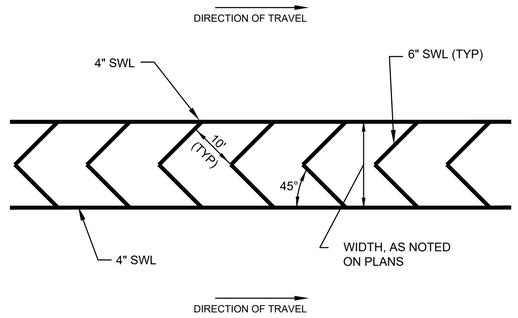
BICYCLE LEGEND DETAIL

SCALE: N.T.S.



NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.

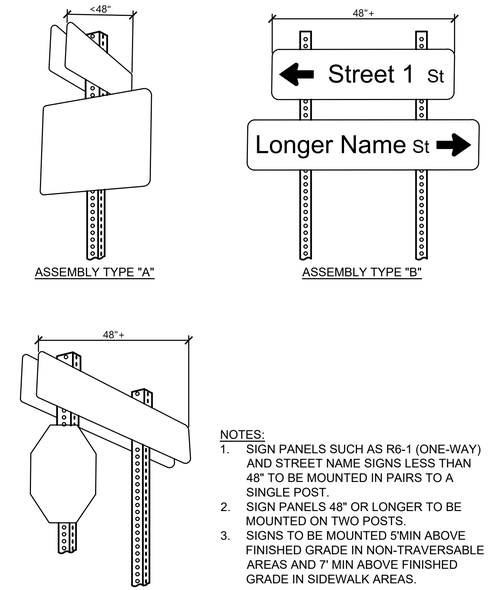
CHANNELIZED MARKINGS - SHOULDER FOR ROADWAYS 40MPH OR LESS



NOTES:
1. ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED THERMOPLASTIC.

CHANNELIZED MARKINGS - SHOULDER FOR ROADWAYS 40MPH OR LESS

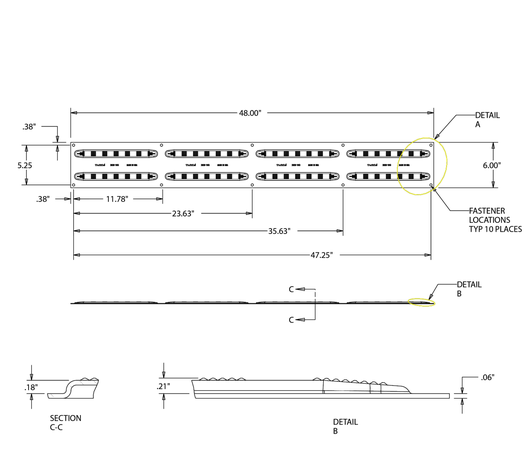
DATE: OCT 2015



NOTES:
1. SIGN PANELS SUCH AS R6-1 (ONE-WAY) AND STREET NAME SIGNS LESS THAN 48" TO BE MOUNTED IN PAIRS TO A SINGLE POST.
2. SIGN PANELS 48" OR LONGER TO BE MOUNTED ON TWO POSTS.
3. SIGNS TO BE MOUNTED 5'MIN ABOVE FINISHED GRADE IN NON-TRAVERSABLE AREAS AND 7' MIN ABOVE FINISHED GRADE IN SIDEWALK AREAS.

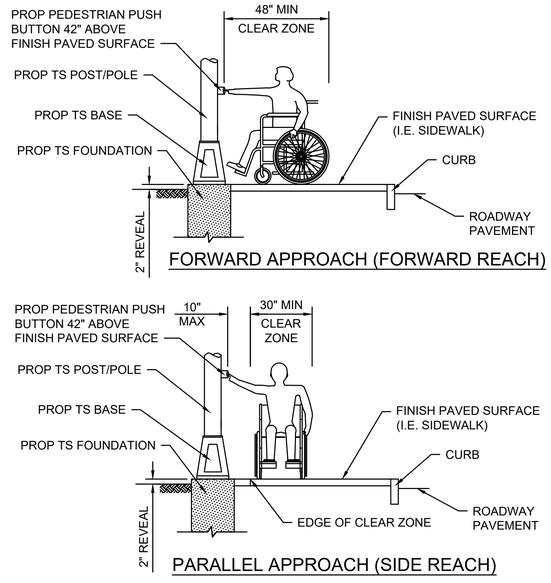
MULTIPLE D3-1 SIGN MOUNTING DETAIL

SCALE: N.T.S.



DETECTABLE GUIDE PANELS

SCALE: N.T.S.



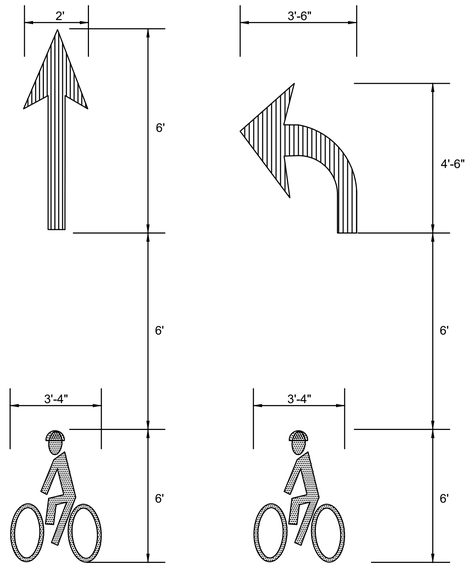
NOTE:
A CLEAR GROUND SPACE SHALL CONSIST OF A STABLE AND FIRM AREA, COMPLYING WITH 521 CMR 6.5 (FORWARD REACH) OR 521 CMR 6.6 (SIDE REACH) AND SHALL BE PROVIDED AT EACH OF THE PEDESTRIAN PUSH BUTTONS.

a) WHERE A FORWARD APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL ABUT AND BE CENTERED ON THE CLEAR GROUND SPACE.

b) WHERE A PARALLEL APPROACH IS PROVIDED, PEDESTRIAN PUSH BUTTONS SHALL BE WITHIN TEN INCHES (10") HORIZONTALLY OF AND CENTERED ON THE CLEAR GROUND SPACE.

PEDESTRIAN PUSH BUTTON CLEAR ZONE

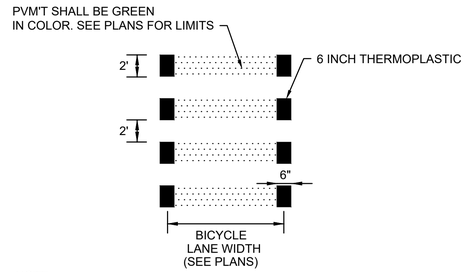
SCALE: N.T.S. DWG: PM-10 DATE: APRIL 2013



NOTES:
1. SEE MUTCD FIGURE 9C-6 FOR MORE INFORMATION.
2. BIKE LANE MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

BIKE LANE PAVEMENT MARKINGS

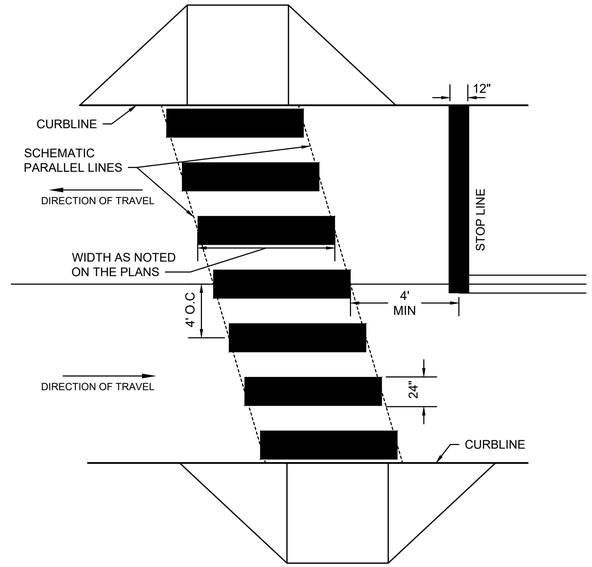
SCALE: N.T.S.



NOTE:
1. SEE ITEM 864.41 FOR COLORED BICYCLE LANES.

BICYCLE CROSSING

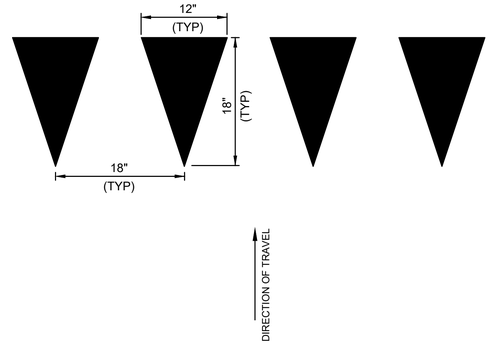
SCALE: N.T.S.



NOTES:
1. ALL EXISTING CROSSWALK MARKINGS SHALL BE FULLY ERADICATED BY APPROVED METHOD PRIOR TO THE APPLICATION OF PROPOSED MARKINGS.
2. ALL 12" THERMOPLASTIC LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (e.g., TWO - 6" LINES) WILL BE ACCEPTED.
3. LAYOUT OF CROSSWALKS SHALL BE ORIENTATED IN THE DIRECTION OF TRAVEL AND LOCATED OUTSIDE OF THE WHEEL PATH OF VEHICLES. LAYOUT SHALL BE APPROVED BY BELMONT DPW PRIOR TO APPLICATION OF THERMOPLASTIC.
4. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 2025, SECTION 860 FOR REFLECTORIZED LINE (THERMO-PLASTIC) & MATERIAL M7.01.03, LATEST REVISIONS.

CONTINENTAL-STYLE CROSSWALK - 12" WIDE LINES

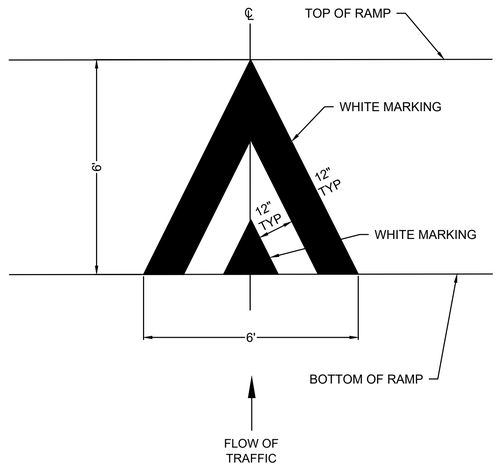
SCALE: N.T.S. DWG: PM-27 DATE: NOVEMBER 2022



NOTES:
1. YIELD LINES SHALL CONSIST OF A ROW OF SOLID WHITE TRIANGLES.
2. IF APPLICABLE, YIELD LINES SHALL BE PLACED 4-FEET IN ADVANCE OF THE NEAREST CROSSWALK LINE.
3. MARKINGS SHALL BE REFLECTORIZED PREFORMED THERMOPLASTIC.

YIELD LINE TRIANGLES FOR BIKE LANES

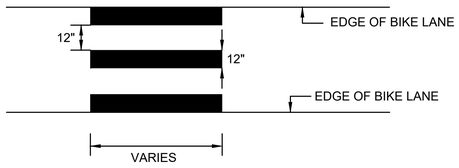
SCALE: NTS



NOTES:
1. SEE MUTCD FIGURE 3B-26 FOR MORE INFORMATION.
2. RAISED CROSSWALK MARKING SHALL BE REFLECTIVE PREFORMED THERMOPLASTIC.
3. MARKINGS TO BE LOCATED IN CENTER OF TRAVEL LANE. SEE SIGNAGE AND MARKING PLANS FOR LOCATIONS.

RAISED CROSSWALK MARKINGS

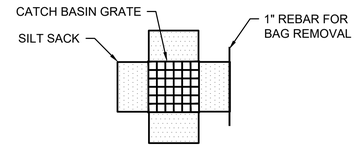
SCALE: N.T.S. DWG: PM-37 DATE: JUNE 2019



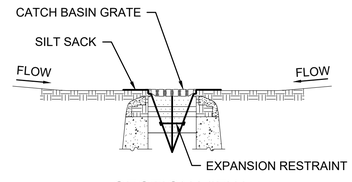
NOTES:
1. ALL 12" REFLECTORIZED PAINT LINES SHALL BE APPLIED IN ONE APPLICATION, NO COMBINATION OF LINES (TWO - 6" LINES) WILL BE ACCEPTED.
2. LAYOUT OF CROSSWALKS SHALL BE APPROVED BY BELMONT DPW PRIOR TO APPLICATION OF PAINT.
3. ALL CROSSWALKS INSTALLED SHALL CONFORM TO THE RELEVANT PROVISIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT "STANDARD SPECIFICATION FOR HIGHWAY AND BRIDGES" DATED 2025, SECTION 860 FOR REFLECTORIZED LINE (PAINT) & MATERIAL M7.01.04, LATEST REVISIONS.

CROSSWALK ACROSS SEPARATED BIKE LANE

SCALE: NTS DWG: PM-07 DATE: APR 2003



PLAN VIEW

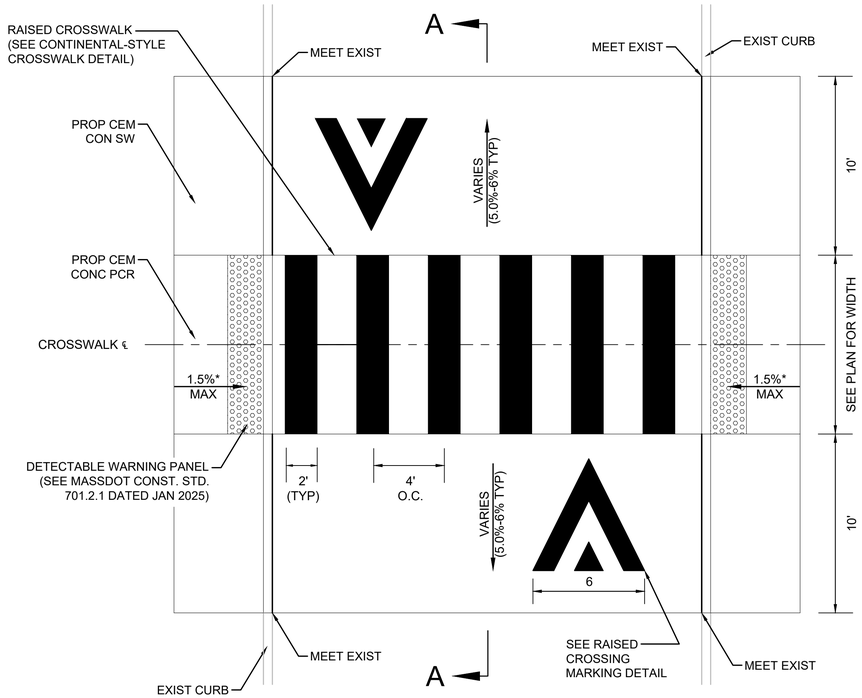


SECTION VIEW

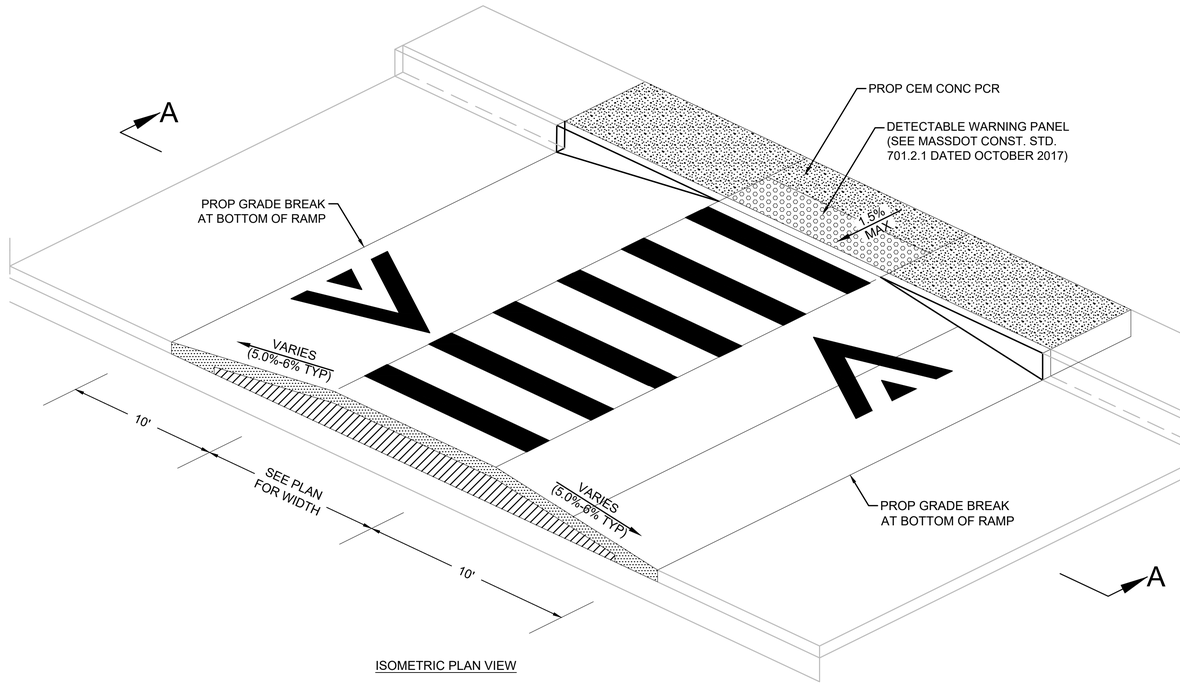
NOTES:
1. INSTALL SILT SACK IN EXISTING CATCH BASINS, BEFORE COMMENCING WORK, AND IN NEW CATCH BASINS IMMEDIATELY AFTER INSTALLATION OF STRUCTURE. MAINTAIN UNTIL BINDER COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.
2. GRATE TO BE PLACED OVER SILT SACK.
3. SILT SACK SHALL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

INLET PROTECTION - SILT SACK IN CATCH BASIN

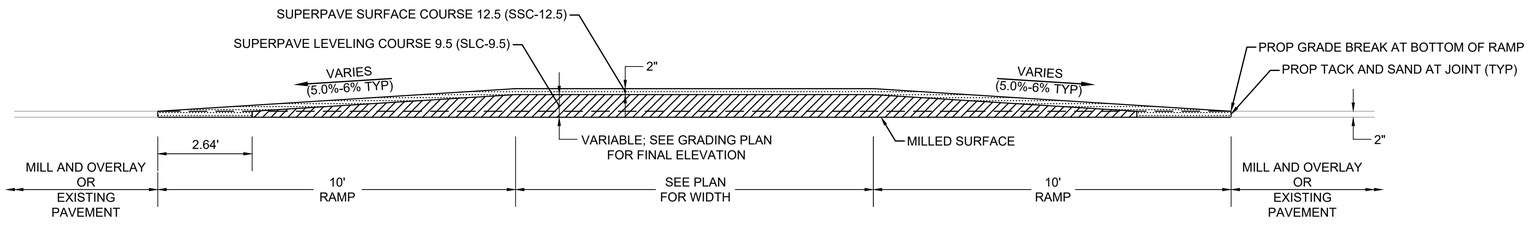
SCALE: N.T.S.



PLAN VIEW



ISOMETRIC PLAN VIEW



SECTION A-A

NOTE:

1. RAISED CROSSING SHOULD BE PAVED IN 2" MAXIMUM LIFTS.
2. THE CONTRACTOR SHALL CONSTRUCT THE RAISED CROSSWALK PAVEMENT TO THE LINES AND GRADES SHOWN ON THE PLANS AND DETAILS TO ACHIEVE THE DESIRED VERTICAL DEFLECTION.
3. CONSTRUCTION OF RAMPS MAY NEED TO BE A SEPARATE OPERATION TO ENSURE THE RAISED CROSSING HAS THE PROPER SHAPE TO ACHIEVE THE DESIRED VERTICAL DEFLECTION.
4. FOR DETAILED GRADING INFORMATION SEE SHEETS 36-46

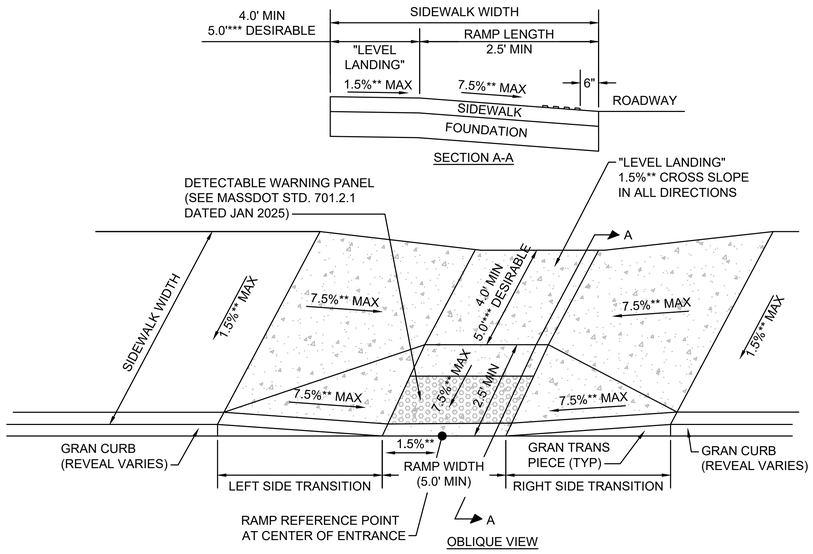
RAISED CROSSWALK DETAIL

SCALE: N.T.S.

16044.00_HD(DET-PCR).DWG Plotted on 17-Oct-2025 12:56 PM

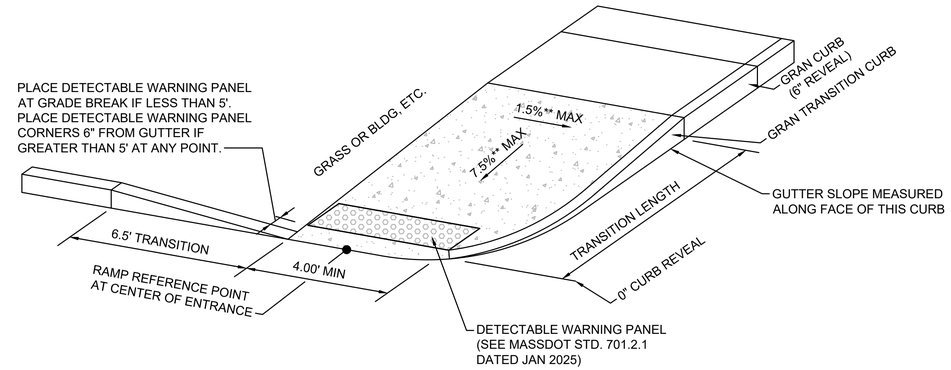
NOTE:

FOR GRADING INFORMATION SEE GRADING DETAIL SHEETS 36-46



PEDESTRIAN CURB RAMP - 6.50' TO 12.50' WIDTH

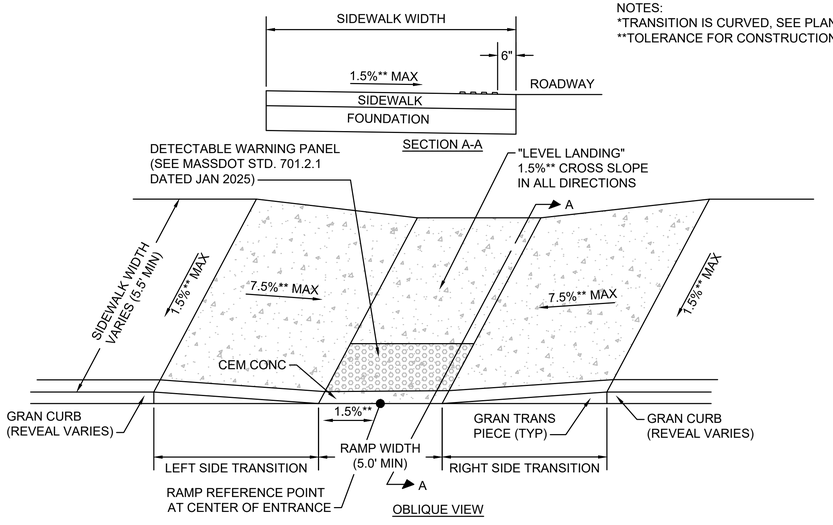
SCALE: N.T.S.



PEDESTRIAN CURB RAMP - SINGLE DIRECTION

SCALE: N.T.S.

NOTES:
*TRANSITION IS CURVED, SEE PLANS FOR ADDITIONAL INFORMATION.
**TOLERANCE FOR CONSTRUCTION ±0.5%



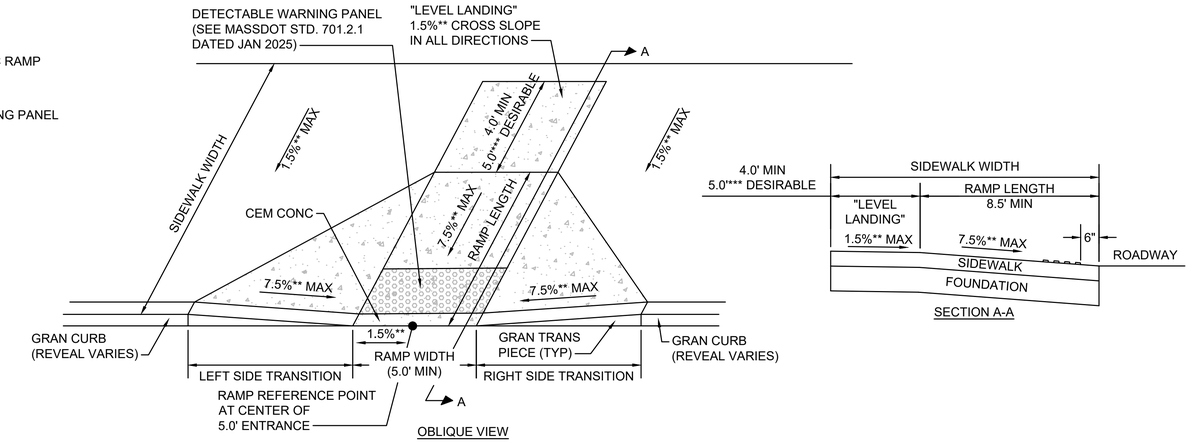
PEDESTRIAN CURB RAMP - LESS THAN 6.50' WIDTH

SCALE: N.T.S.

LEGEND

= LIMITS OF CEM CONC RAMP

= DETECTABLE WARNING PANEL



PEDESTRIAN CURB RAMP - 12.50' OR GREATER

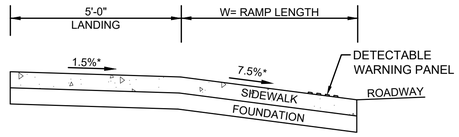
SCALE: N.T.S.

NOTE:

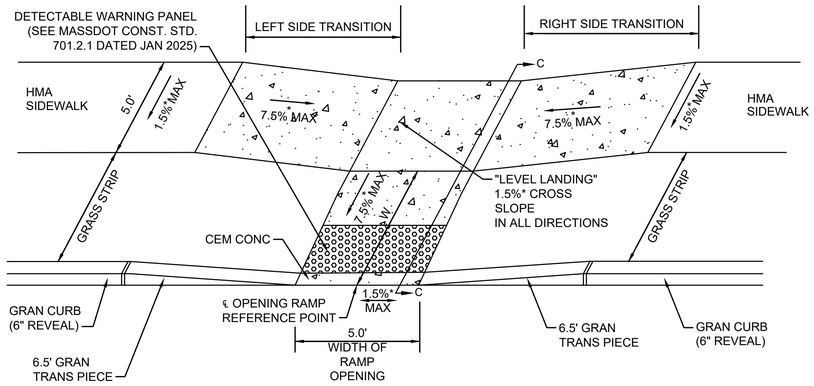
FOR GRADING INFORMATION SEE GRADING DETAIL SHEETS 36-46

NOTE:

1. ROADWAY GUTTER SLOPE TAKEN FROM PROFILE.
2. TOLERANCE FOR CONSTRUCTION ± 0.5%



SECTION C-C

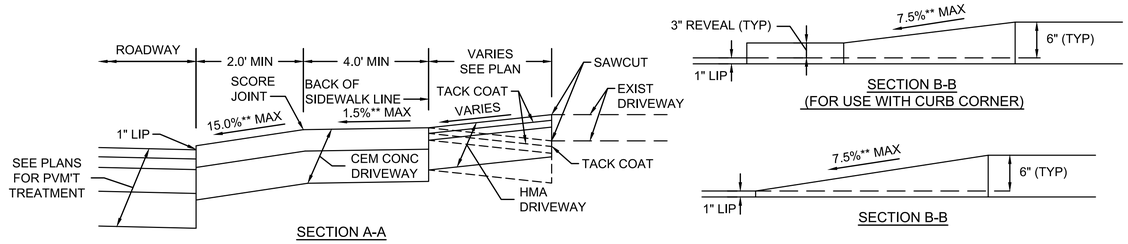


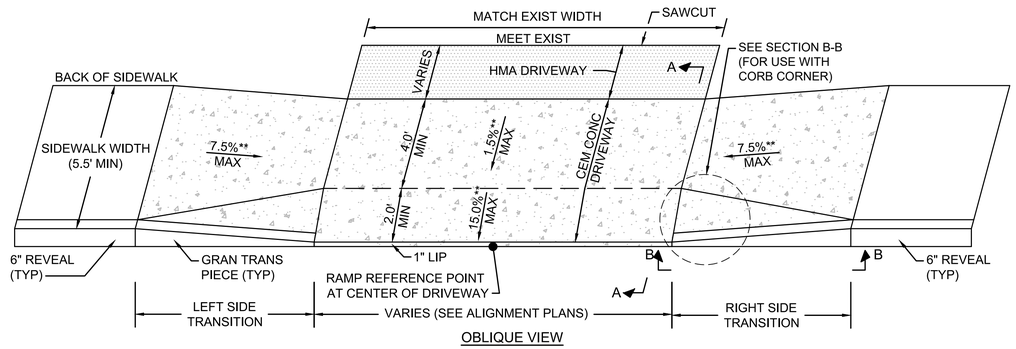
OBLIQUE VIEW

*TOLERANCE FOR CONSTRUCTION ±0.5%

PEDESTRIAN CURB RAMP WITH LANDSCAPING STRIP

SCALE: NTS MassDOT STANDARD DETAIL REFERENCE: E 107.6.9

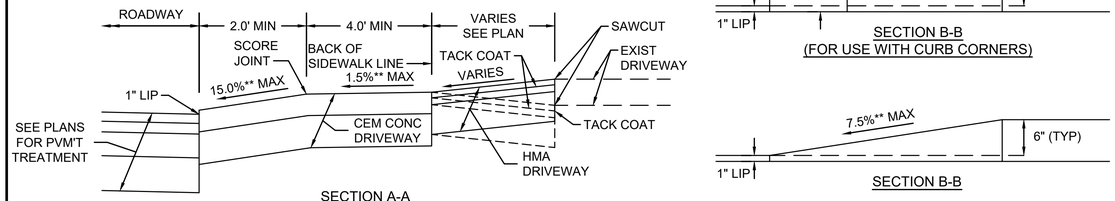




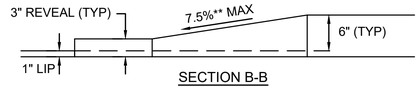
DRIVEWAYS THROUGH SIDEWALK

SCALE: N.T.S.

DRIVEWAYS THORUGH SIDEWALK										
NO.	LOCATION (REF POINT)	ROADWAY GUTTER	SIDEWALK WIDTH	DRIVEWAY WIDTH	APRON SLOPE	LEFT SIDE		RIGHT SIDE		REMARKS
						REVEAL	TRANS	REVEAL	TRANS	
10	GROVE ST 105+09.40, 25.50 RT	0.73%	8.0'	20.0'	14.5%	6"	6'-6"	6"	7'-8"	
11	GROVE ST 105+63.23, 25.50 RT	0.64%	8.0'	32.2'	14.5%	6"	6'-6"	6"	7'-8"	GRASS STRIP ON LT WING
12	GROVE ST 105+99.54, 18.50 LT	0.92%	5.0'	28.0'	14.5%	6"	6'-6"	6"	7'-8"	GRASS STRIP ON RT WING
16	GROVE ST 109+30.13, 25.50 RT	2.55%	8.0'	13.0'	14.5%	6"	11'-0"	6"	6'-6"	GRASS STRIP ON RT WING
18	GROVE ST 110+41.68, 25.50 RT	1.12%	5.00'	34.5'	4.1%	6"	6'-6"	6"	6'-6"	CURB CORNER AND GRASS STRIP ON LT WING
27	GROVE ST 114+70.93, 25.49 LT	0.82%	7.0'	15.7'	5.5%	6"	6'-6"	6"	7'-8"	GRASS STRIP ON LT WING
28	GROVE ST 115+17.84, 25.50 LT	0.54%	7.0'	21.0'	3.2%	6"	6'-6"	6"	7'-8"	
29	GROVE ST 117+51.12, 23.50 LT	2.21%	8.0'	15.8'	14.5%	6"	11'-0"	6"	6'-6"	
30	GROVE ST 118+24.39, 23.50 RT	3.70%	6.5'	11.1'	14.5%	6"	6'-6"	6"	14'-0"	
39	GROVE ST 122+37.38, 54.24 RT	2.81%	VARIES	22.8'	-	6"	6'-6"	6"	N/A	CURB CORNER ON RT SIDE. SEE GRADING SHEET 45

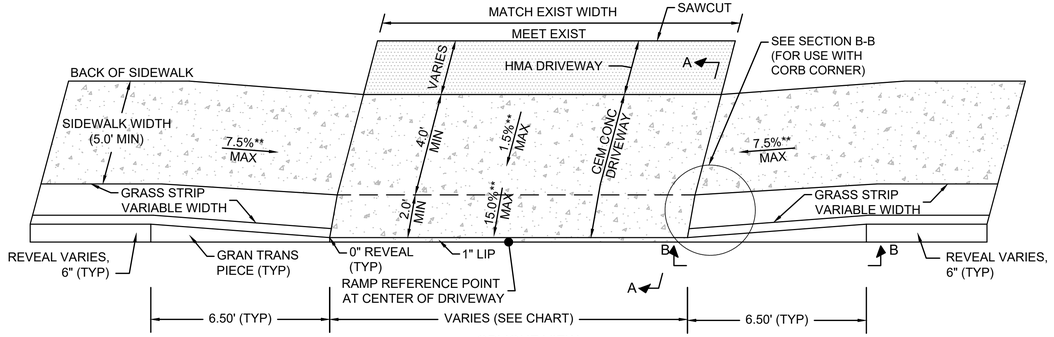


SECTION A-A



SECTION B-B
(FOR USE WITH CURB CORNERS)

SECTION B-B



OBLIQUE VIEW

DRIVEWAYS THROUGH SIDEWALK WITH GRASS STRIP

SCALE: N.T.S

BELMONT GROVE STREET DRIVEWAY DETAILS SHEET 69 OF 69

DRIVEWAYS THORUGH SIDEWALK - WITH LANDSCAPE STRIP

NO.	LOCATION (REF POINT)	ROADWAY GUTTER	SIDEWALK WIDTH	DRIVEWAY WIDTH	APRON SLOPE	LEFT SIDE		RIGHT SIDE		REMARKS
						REVEAL	TRANS	REVEAL	TRANS	
1	GROVE ST 100+92.61, 22.00 LT	3.79%	8.25'	19.5'	14.5%	6"	N/A	6"	-	CURB CORNER RT. NO GRASS STRIP ON LT WING
2	GROVE ST 101+97.84, 22.04 RT	3.79%	7.80'	29.1'	14.5%	6"	-	6"	-	
3	GROVE ST 102+42.45, 22.00 LT	3.62%	8.0'	20.5'	14.5%	6"	-	6"	-	
4	GROVE ST 102+58.15, 22.02 RT	3.85%	7.6'	24.2'	14.5%	6"	-	6"	-	
5	GROVE ST 102+82.70, 21.88 LT	2.25%	8.0'	13.8'	14.5%	6"	-	6"	-	
6	GROVE ST 103+31.15, 16.67 LT	1.37%	6.3'	24.0'	14.5%	6"	-	6"	-	
7	GROVE ST 104+22.69, 18.50 LT	0.87%	5.0'	15.5'	13.5%	6"	-	6"	-	CURB CORNER RT
8	GROVE ST 104+45.14, 18.50 LT	0.86%	5.0'	20.9'	14.5%	6"	-	6"	-	CURB CORNER LT
9	GROVE ST 104+93.94, 18.50 LT	0.72%	5.0'	26.9'	14.5%	6"	-	6"	-	
13	GROVE ST 107+85.60, 25.50 RT	2.73%	5.0'	27.8'	14.5%	4"	-	6"	-	SEE GRADING PLAN ON SHEET 38 FOR MORE DETAIL
14	GROVE ST 108+26.79, 25.50 RT	3.25%	8.0'	10.5'	14.5%	6"	-	6"	-	
15	GROVE ST 108+75.60, 25.50 RT	3.25%	8.0'	10.2'	14.5%	6"	-	6"	-	
17	GROVE ST 110+29.55, 18.50 LT	0.21%	5.0'	42.2'	3.8%	6"	-	4"	-	CURB CORNER ON BOTH SIDES; SEE PLAN SHEET 14
19	GROVE ST 110+99.33, 19.50 RT	0.50%	VARIES	19.5'	-	0"	-	0"	-	RAISED INTERSECTION SEE SHEET 41 FOR DETAIL
20	GROVE ST 112+15.17, 18.50 LT	0.51%	5.0'	12.7'	3.6%	6"	-	6"	-	
21	GROVE ST 112+49, 20.99 LT	0.43%	5.0	10.5'	7.3%	6"	-	6"	-	NO GRASS STRIP ON RT WING
22	GROVE ST 112+95.06, 18.50 RT	0.82%	5.0	20.0'	7.3%	6"	-	6"	-	
23	GROVE ST 113+14.77, 25.50 LT	0.54%	5.0	12.6'	7.7%	6"	-	6"	-	
24	GROVE ST 113+48.37, 18.50 RT	0.62%	5.0	16.0'	10.5%	6"	-	6"	-	
25	GROVE ST 113+67.76, 25.50 LT	0.67%	5.0	11.8'	10.1%	6"	-	6"	-	
26	GROVE ST 114+19.53, 25.50 LT	0.97%	5.0	12.0'	14.5%	6"	-	6"	-	
31	GROVE ST 123+47.18, 29.00 RT	4.46%	5.0'	33.3'	9.0%	6"	-	6"	-	
32	GROVE ST 124+05.67, 25.50 LT	4.87%	6.3'	14.1'	7.6%	6"	-	6"	-	
33	GROVE ST 124+62.10, 29.00 RT	5.22%	5.0'	10.1'	3.8%	5"	-	6"	-	
34	GROVE ST 124+96.06, 28.95 RT	4.47%	5.0'	23.6'	3.1%	6"	-	6"	-	
35	GROVE ST 126+21.45, 24.50 RT	3.83%	5.0'	20.3'	0.6%	3"	-	6"	-	
36	GROVE ST 126+54.74, 24.50 RT	3.07%	5.0'	19.3'	3.7%	6"	-	3"	-	
37	GROVE ST 127+89.09, 25.83 RT	0.76%	5.0'	19.2'	-	6"	-	6"	-	CURB CORNER ON RT WING. SEE SHEET 46
38	FAIRVIEW AVE WEST 40+56.89, 16.27 RT	0.60%	8.00'	35.1'	14.5%	6"	-	6"	-	CURB CORNER ON LT WING. NO GRASS STRIP ON RT WING. SEE SHEET 39
40	GROVE ST 107+32.78, 19.50 RT	1.53%	5.0'	19.8'	2.0%	4"	-	6"	-	LT WING MEETS RAISED CROSSING SEE GRADING PLAN ON SHEET 38

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