



Transportation Advisory Committee

TOWN OF BELMONT

19 Moore Street
Homer Municipal Building
Belmont, Massachusetts 02478-0900
Telephone: (617) 993-2650 Fax: (617) 993-2651

Dana Miller - Chair
Laurence MacDonald - Vice Chair
Annis Sengupta - Clerk

Jessica Bennett
David Coleman
Clifford Gaysunas
Charles Hamad
Jeremy Romanul
Jeffrey Roth

Date: August 29, 2019

To: Members – Transportation Advisory Committee

From: Glenn R. Clancy, Committee Liaison

Subject: Agenda for Meeting on **September 5, 2019 at 7:00 PM in Town Hall Select Board Meeting Room, 455 Concord Avenue.** If you cannot attend the meeting, please contact me via e-mail.

7:00 – 8:00 Lexington Street / Sycamore Street Traffic Signal Design Presentation

8:00 – 8:15 Update to TAC on other Traffic Related Work in Belmont (Glenn)

- The Skating Rink Traffic Study
- The Complete Streets Project List and Next Steps
- The Transportation Plan for the Upcoming School Year
- Any Other relevant projects

8:15 – 9:00 Review of Draft Traffic Calming Policy

9:00 – 9:15 Repaving and NATCO Design Guidelines

9:15 – 9:20 Approval of Minutes (August 15, 2019)

9:20 – 9:25 Old Business

- No Known Items

9:25 – 9:30 New Business

- No Known Items

9:30 Adjourn

Note: Times are tentative depending on the flow of the meeting, the time of any particular item may deviate ten to fifteen minutes from the schedule.

Cc: Patrice Garvin, Town Administrator
Sgt Marc Pugliese, Belmont Police Department
Jay Marcotte, Director, Department of Public Works
Richard McLaughlin, Belmont Police Chief

TOWN OF BELMONT

BELMONT
LEXINGTON STREET AT SYCAMORE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	1	11

PROJECT FILE NO. BSC-28374.20
TITLE SHEET & INDEX

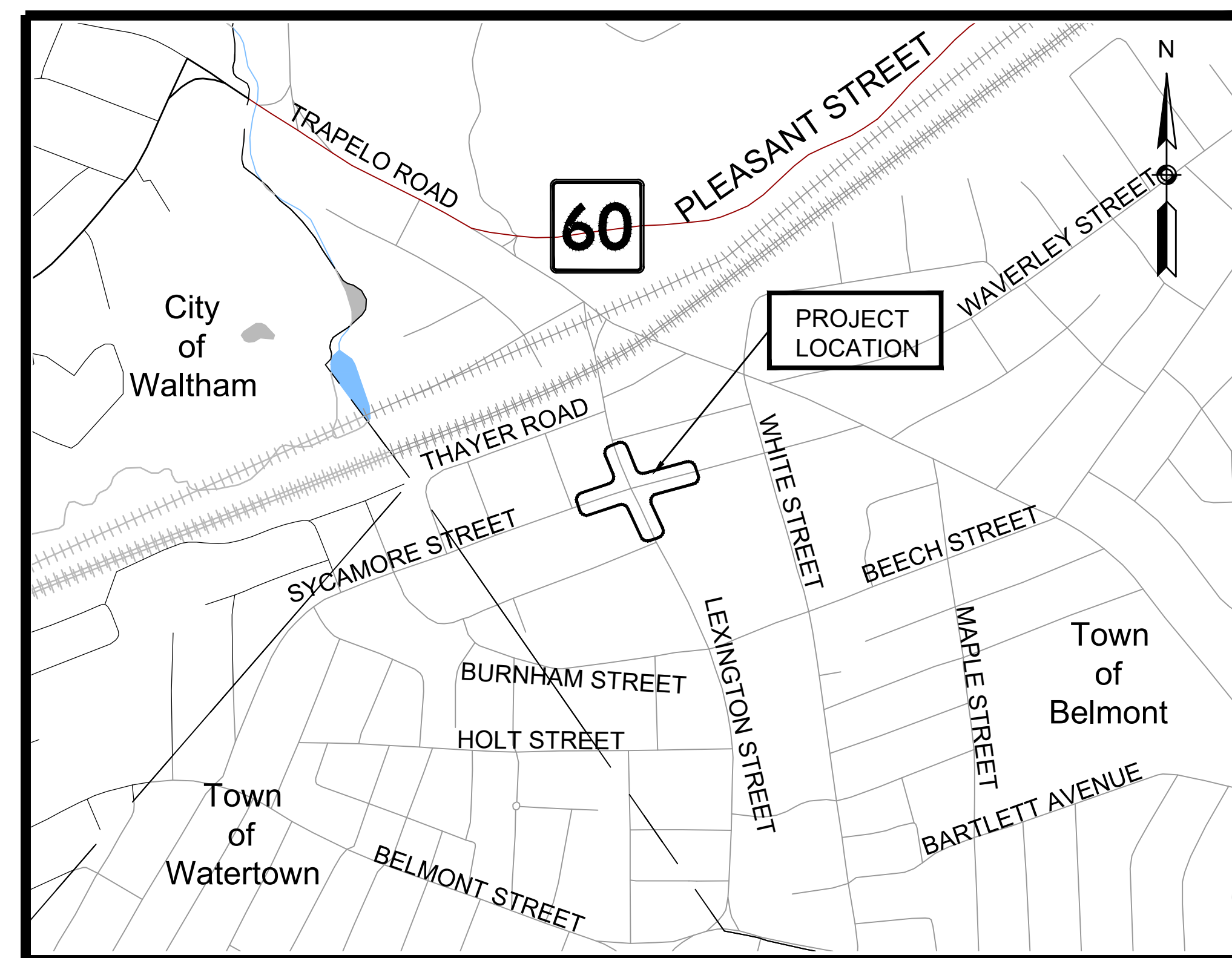
LEXINGTON STREET AT SYCAMORE STREET

IN THE CITY OF
BELMONT
 MIDDLESEX COUNTY

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

PRELIMINARY SUBMITTAL

INDEX	
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	SURVEY & GENERAL NOTES
4	CONSTRUCTION PLAN
5 - 6	GRADING PLANS
7	PAVEMENT MARKING & SIGN PLAN
8	TRAFFIC SIGN SUMMARY
9	TRAFFIC SIGNAL PLAN
10	TRAFFIC SIGNAL SEQUENCE PLAN
11	TEMPORARY TRAFFIC CONTROL PLAN



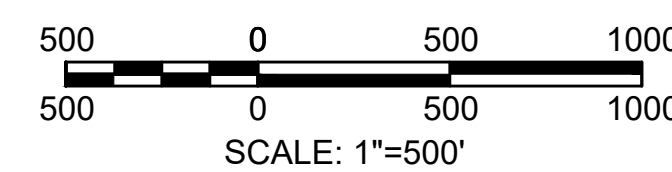
LEXINGTON STREET

DESIGN SPEED	25 MPH
ADT (2018)	11,810
ADT (2028)	12,410
K	9%
FUNCTIONAL CLASSIFICATION	COLLECTOR

SYCAMORE STREET

DESIGN SPEED	25 MPH
ADT (2018)	4,460
ADT (2028)	4,680
K	9%
FUNCTIONAL CLASSIFICATION	COLLECTOR

AUGUST 2019



LENGTH OF PROJECT - SYCAMORE STREET = 275.00 FEET = 0.052 MILES

LENGTH OF PROJECT - LEXINGTON STREET = 270.00 FEET = 0.051 MILES

PREPARED BY:

BSC GROUP
 803 Summer Street
 Boston, Massachusetts 02127
 www.bscgroup.com 617 896 4300

DATE	DESCRIPTION	REV #

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		MASONRY PLUG
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W/ 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		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
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		COMPOST FILTER TUBES
		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
		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)
		RAILROAD SIGNAL
		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
		MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
		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)

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE - 12" WHITE LINE LOCATED 4' BEHIND CW (TYP)
		CROSSWALK - 12" WHITE LINES (WIDTH - 10', LADDERING - 3' O.C. (2' SPACING))
		SOLID WHITE LINE - 6"
		SOLID YELLOW LINE - 6"
		BROKEN WHITE LINE - 6" (10' LINE, 30' SPACE)
		BROKEN YELLOW LINE - 6" (10' LINE, 30' SPACE)
		DOTTED WHITE LINE - 6" (3' LINE, 9' SPACE)
		DOTTED YELLOW LINE - 6" (3' LINE, 9' SPACE)
		DOTTED WHITE LINE EXTENSION - 6" (2' LINE, 6' SPACE)
		DOTTED YELLOW LINE EXTENSION - 6" (2' LINE, 6' SPACE)
		DOUBLE WHITE LINE - 6"
		DOUBLE YELLOW LINE - 6"

ABBREVIATIONS

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

**BELMONT
LEXINGTON STREET AT SYCAMORE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	2	11
PROJECT FILE NO. BSC-28374.20			

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

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

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER 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, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

**BELMONT
LEXINGTON STREET AT SYCAMORE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	3	11
PROJECT FILE NO. BSC-28374.20			

GENERAL NOTES

SURVEY NOTES

1. THIS PLAN IS THE RESULT OF AN ON-THE-GROUND INSTRUMENT SURVEY BY BSC GROUP INC. IN FEBRUARY AND MARCH 2019.
2. THE HORIZONTAL DATUM SHOWN HEREON REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM, MAINLAND ZONE, US SURVEY FEET, NAD83 (2011-EPOCH 2010.00) AND IS BASED ON A GPS SURVEY BY BSC GROUP INC. IN FEBRUARY 2019.
3. THE VERTICAL DATUM SHOWN HEREON REFERENCES NAVD88 AND IS BASED ON A GPS SURVEY BY BSC GROUP INC. IN FEBRUARY 2019
4. COMBINED SCALE FACTOR = 1.0000000000000000.
5. THE PROJECT AREA LIES WITHIN FEMA ZONE AS PER FIRM 25017C0414E, WITH AN EFFECTIVE DATE OF JUNE 4, 2010.
6. BUILDINGS SHOWN ARE FROM MASSGIS DATA AND CONSIDERED APPROXIMATE.

GENERAL NOTES

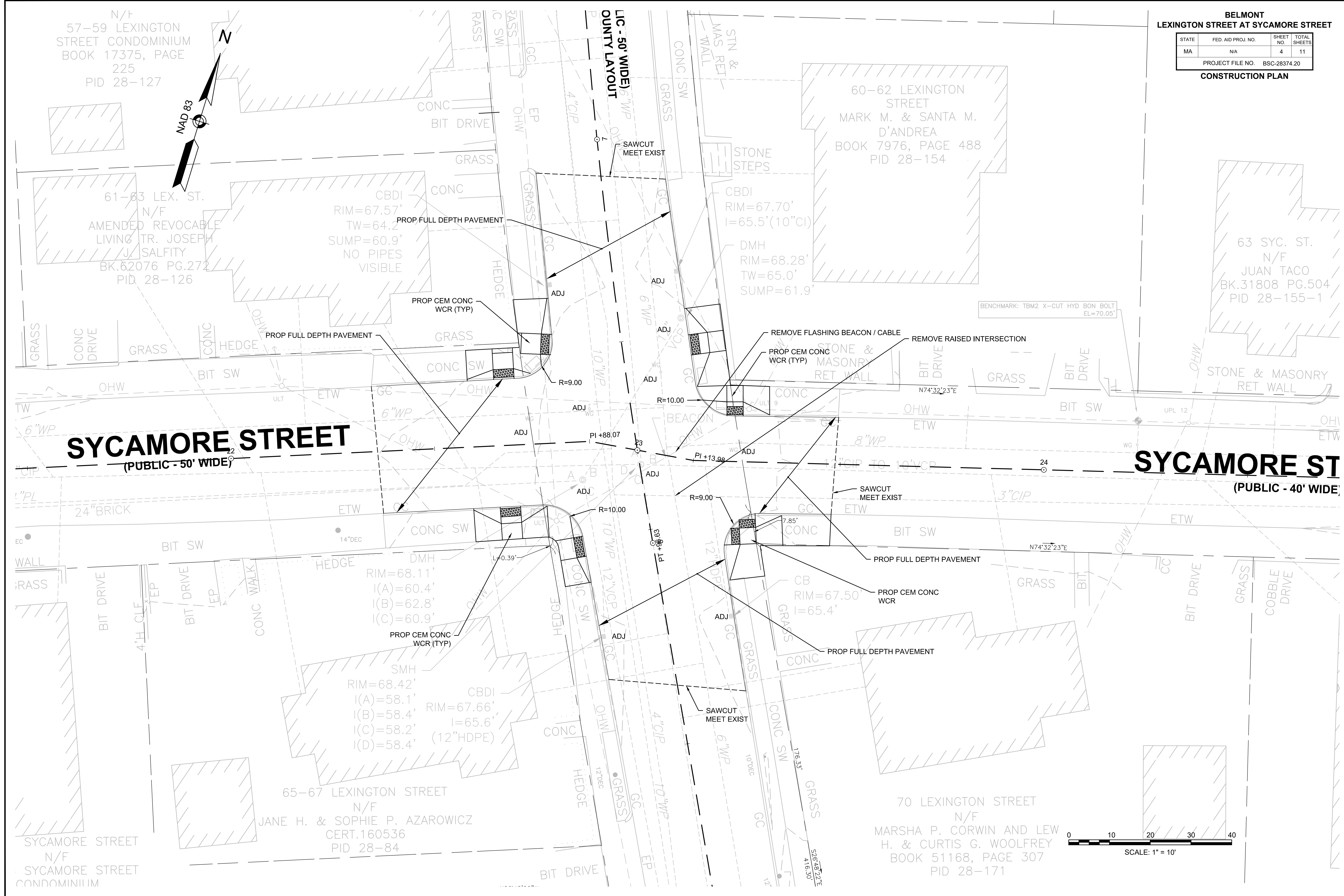
1. EXISTING GROUND SURFACES SHOWN ON PLANS, PROFILES AND CROSS SECTIONS ARE BASED UPON DATA OBTAINED BY FIELD SURVEYS.
2. THE LOCATIONS OF EXISTING SUBSURFACE STRUCTURES, SUCH AS SEWERS, WATER MAINS, DRAINS AND OTHER UTILITIES ARE APPROXIMATE ONLY AND THE ENGINEER DOES NOT GUARANTEE THEIR NUMBER OR LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES BEFORE EXCAVATING.
3. THE CONTRACTOR SHALL DIG TEST PITS AT EXISTING DRAINAGE STRUCTURES TO DETERMINE EXISTING INVERT ELEVATIONS INDICATED ON THE PLANS AS N/A (NOT AVAILABLE). PROPOSED 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 OR UTILITY DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR REQUIRED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED.
4. EXISTING WATER BOXES AND CURB STOPS, FIRE ALARM, SEWER AND SURFACE DRAIN MANHOLE FRAMES AND COVERS, CATCH BASIN FRAMES AND GRATES AND OTHER CASTINGS SHALL BE ADJUSTED TO LINE AND/OR GRADE AS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
5. ALL EXISTING BROKEN OR DAMAGED SERVICE BOXES AND GATE BOXES WITHIN THE PROJECT SITE SHALL BE REPLACED WITH NEW STRUCTURES IN ACCORDANCE WITH THE TOWN OF BELMONT WATER DEPARTMENT STANDARDS AND AS REQUIRED BY THE ENGINEER.
6. ALL GAS GATES, ELECTRIC MANHOLES AND TELEPHONE MANHOLES WITHIN THE LIMITS OF WORK SHALL BE ADJUSTED BY THE OWNING AGENCY, UNLESS OTHERWISE INDICATED ON THE PLANS. ALL GAS, ELECTRIC, TELEPHONE AND CATV WORK SHALL BE DONE BY THE OWNING AGENCY. THE CONTRACTOR SHALL NOTIFY THE OWNING AGENCIES TO ADJUST AND/OR RELOCATE THESE STRUCTURES TO AVOID IMPACTING THE CONTRACTOR'S SCHEDULE OF OPERATIONS.
7. ALL PROPOSED DRAINAGE CONNECTIONS TO EXISTING STRUCTURES WILL BE INCLUDED IN THE COST OF THE NEW PIPE.
8. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY COMPANIES DOING WORK IN THE SAME AREA. THE CONTRACTOR SHALL ALLOW THE UTILITY COMPANIES AND THEIR REPRESENTATIVES TO ADJUST AND/OR INSTALL THEIR SYSTEMS WITHIN TOWN/STATE OWNED STREETS AND EASEMENTS.
9. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.
10. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANIES WHEN THE INSTALLATION OF DRAINAGE LINES AND STRUCTURES ARE IN CLOSE PROXIMITY TO EXISTING UTILITY POLES.
11. THE CONTRACTOR SHALL COORDINATE WORK WITH THE OWNERS OF UTILITY POLES AND SHALL BE RESPONSIBLE FOR TRIMMING TREES AS NECESSARY TO ACCOMMODATE NEW UTILITY POLE LOCATIONS.
12. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR TEMPORARY SUPPORT WHILE EXCAVATING IN CLOSE PROXIMITY OF UTILITY POLES, IF REQUIRED BY THE UTILITY, AT NO ADDITIONAL COST.
13. CURB SHALL BE FURNISHED AND SET AT LOCATIONS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE ENGINEER.
14. CONSTRUCT DRIVEWAYS AND WALKS AS SHOWN ON THE PLANS AN/OR AS REQUIRED BY THE ENGINEER.
15. EXISTING GRANITE CURB SUITABLE FOR REUSE WITHIN THE PROJECT SITE SHALL BE REMOVED AND RESET IN ACCORDANCE WITH THE PLANS AND/OR AS REQUIRED BY THE ENGINEER. EXISTING CURB CORNERS IN THE PROJECT SHOULD BE REMOVED AND DISCARDED.
16. SAW CUT EXISTING BITUMINOUS CONCRETE ROADWAYS, CEMENT CONCRETE SIDEWALKS AND BITUMINOUS CONCRETE DRIVEWAYS AS SHOWN ON THE PLANS AND AT THE PROPOSED MATCH LINE.
17. WHERE THE NEW CONSTRUCTION COINCIDES WITH PRESENT TRAVELED WAYS.
 - 17.1. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE TEMPORARY TRAFFIC CONTROL PLANS AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR WORK ZONES.
 - 17.2. THE CONTRACTOR SHALL PERFORM HIS WORK IN A MANNER ACCEPTABLE TO THE ENGINEER SO THAT INTERFERENCE WITH AND INCONVENIENCE TO BUSINESS CONCERNS AND ABUTTERS, ON ACCOUNT OF THE CONSTRUCTION WORK, IS KEPT TO A MINIMUM.
 - 17.3. THE CONTRACTOR SHALL NOT BE ALLOWED TO PARK EQUIPMENT OR STOCKPILE EQUIPMENT OR MATERIAL ON THE TRAVELED WAYS OVERNIGHT OR WHEN NOT IN USE.
 - 17.4. THE CONTRACTOR SHALL MAINTAIN SAFE AND RESPONSIBLE ACCESS TO AND FROM ABUTTING PROPERTY PRIVATE WAYS, DRIVEWAYS AND ALL ALLEYS AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
18. 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.
19. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED TO LOCATE EXISTING UTILITIES PRIOR TO TREE/SHRUB PLANTING. ROOT BALLS SHALL BE PLANTED A MINIMUM OF THREE (3) LATERAL FEET AWAY FROM GAS PIPES.
20. THE CONTRACTOR SHALL REPORT ANY CONFLICTS BETWEEN TREE PITS AND EXISTING UNDERGROUND UTILITIES TO THE ENGINEER AND THE MUNICIPAL TREE WARDEN FOR RESOLUTION.
21. THE CONTRACTOR SHALL DIG TEST PITS TO LOCATE EXISTING UTILITIES PRIOR TO INSTALLING LIGHT POLE FOUNDATIONS. LIGHT POLE FOUNDATIONS SHALL BE INSTALLED A MINIMUM OF THREE (3) LATERAL FEET AWAY FROM GAS PIPES.

**BELMONT
LEXINGTON STREET AT SYCAMORE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	4	11

PROJECT FILE NO. BSC-28374.20

CONSTRUCTION PLAN



N/F
57-59 LEXINGTON
STREET CONDOMINIUM
BOOK 17375, PAGE
225
PID 28-127

61-63 LEX. ST.
N/F
AMENDED REVOCABLE
LIVING TR. JOSEPH
J. SALFITY
BK. 62076 PG. 272
PID 28-126

CBDI
RIM=67.57'
TW=64.2'
SUMP=60.9'
NO PIPES
VISIBLE

60-62 LEXINGTON
STREET
MARK M. & SANTA M.
D'ANDREA
BOOK 7976, PAGE 488
PID 28-154

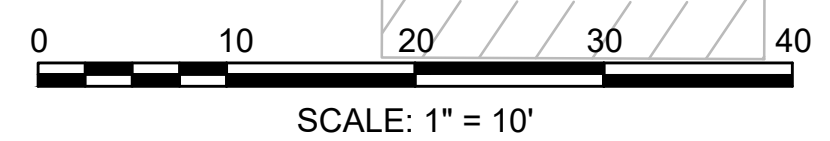
63 SYC. ST.
N/F
JUAN TACO
BK. 31808 PG. 504
PID 28-155-1

65-67 LEXINGTON STREET
N/F
JANE H. & SOPHIE P. AZAROWICZ
CERT. 160536
PID 28-84

70 LEXINGTON STREET
N/F
MARSHA P. CORWIN AND LEW
H. & CURTIS G. WOOLFREY
BOOK 51168, PAGE 307
PID 28-171

SYCAMORE STREET
(PUBLIC - 50' WIDE)

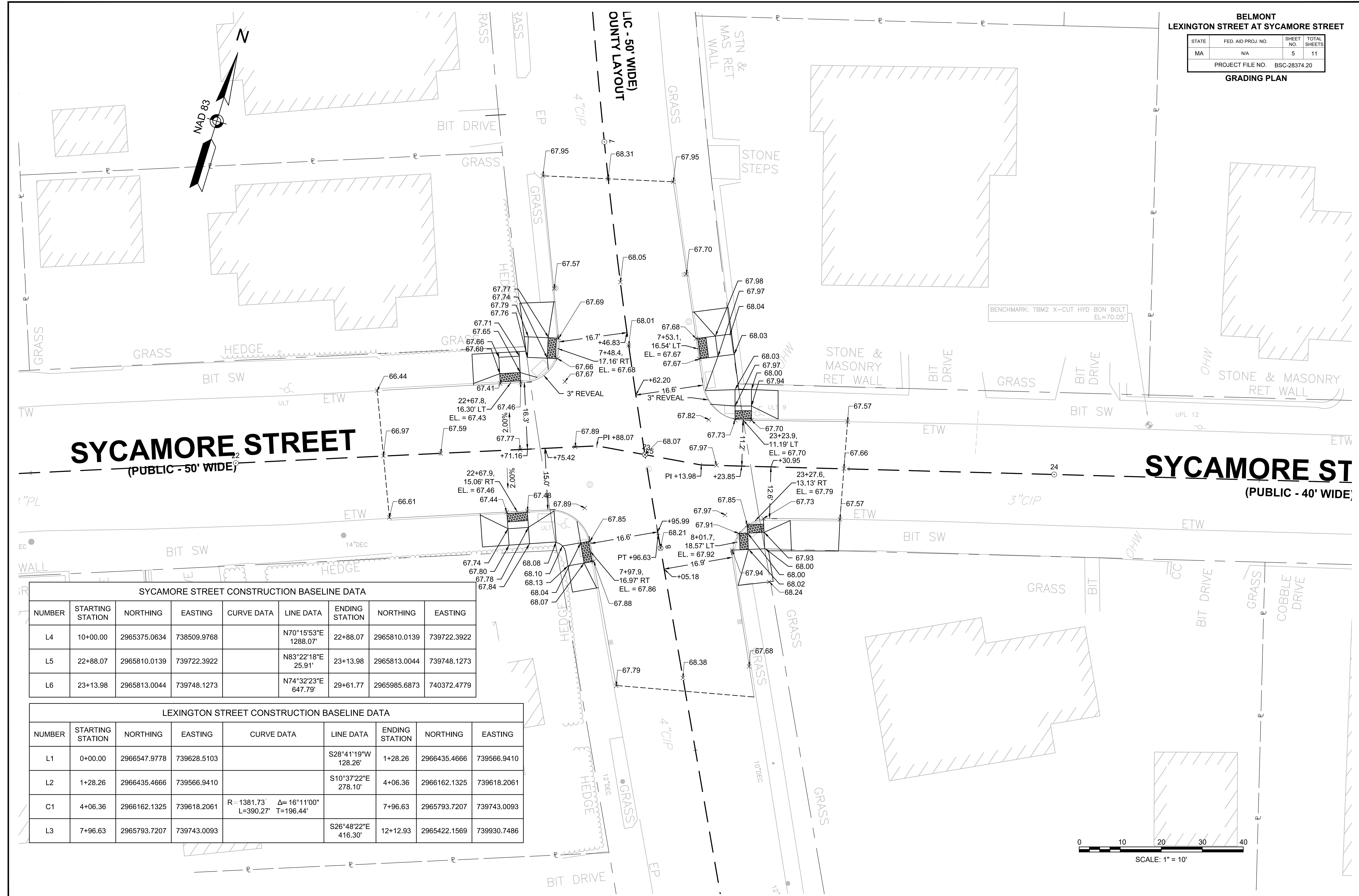
SYCAMORE ST
(PUBLIC - 40' WIDE)



STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	5	11

PROJECT FILE NO. BSC-28374.20

GRADING PLAN



SYCAMORE STREET
(PUBLIC - 50' WIDE)

SYCAMORE ST
(PUBLIC - 40' WIDE)

SYCAMORE STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	10+00.00	2965375.0634	738509.9768		N70°15'53"E 1288.07'	22+88.07	2965810.0139	739722.3922
L5	22+88.07	2965810.0139	739722.3922		N83°22'18"E 25.91'	23+13.98	2965813.0044	739748.1273
L6	23+13.98	2965813.0044	739748.1273		N74°32'23"E 647.79'	29+61.77	2965985.6873	740372.4779

LEXINGTON STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	0+00.00	2966547.9778	739628.5103		S28°41'19"W 128.26'	1+28.26	2966435.4666	739566.9410
L2	1+28.26	2966435.4666	739566.9410		S10°37'22"E 278.10'	4+06.36	2966162.1325	739618.2061
C1	4+06.36	2966162.1325	739618.2061	R=1381.73 L=390.27' Δ=16°11'00" T=196.44'		7+96.63	2965793.7207	739743.0093
L3	7+96.63	2965793.7207	739743.0093		S26°48'22"E 416.30'	12+12.93	2965422.1569	739930.7486

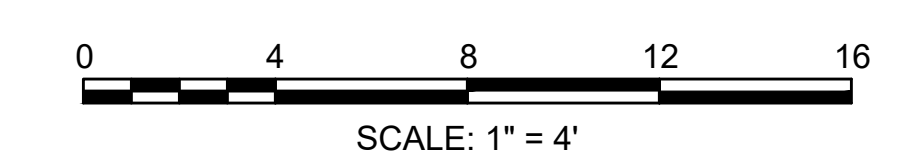
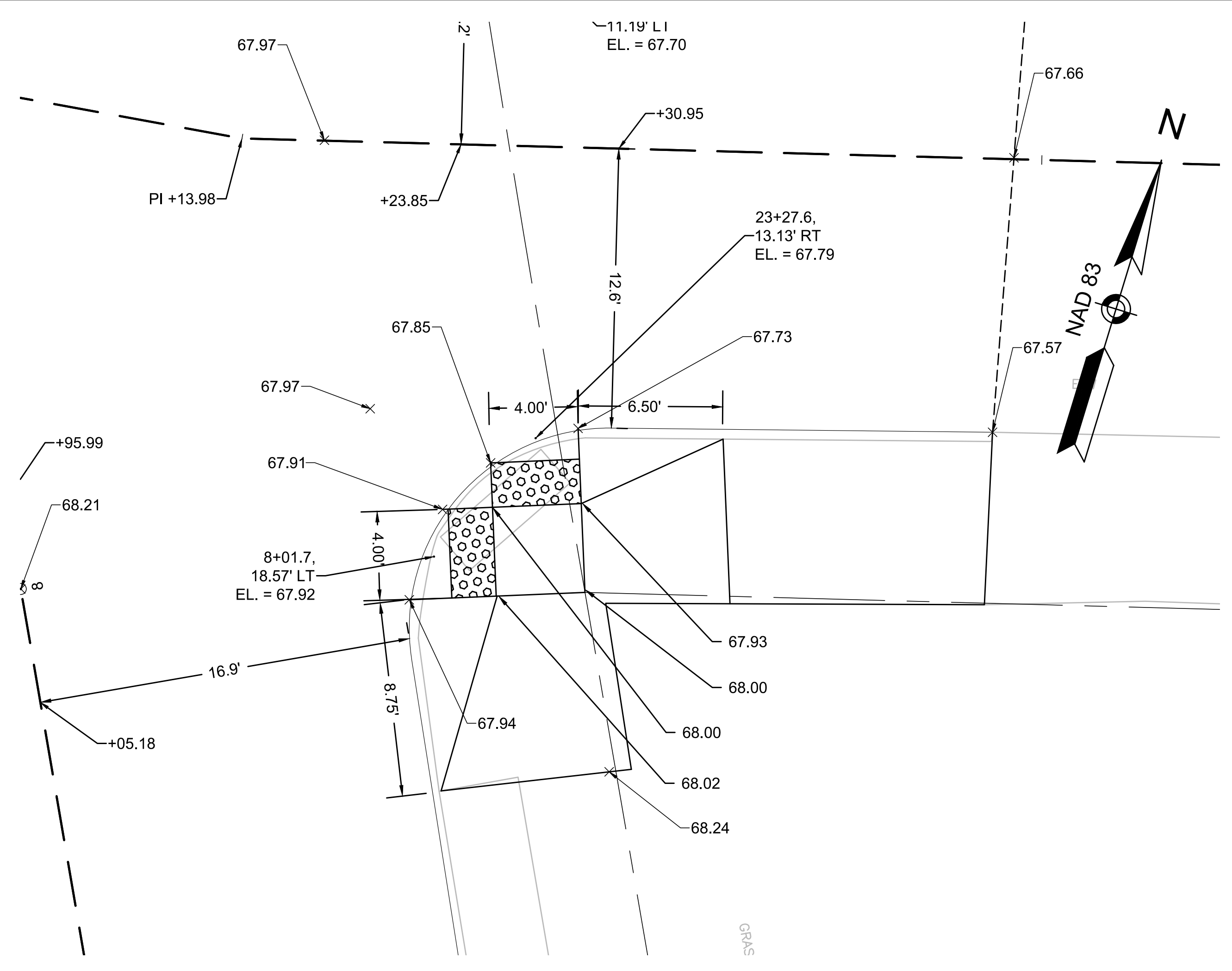
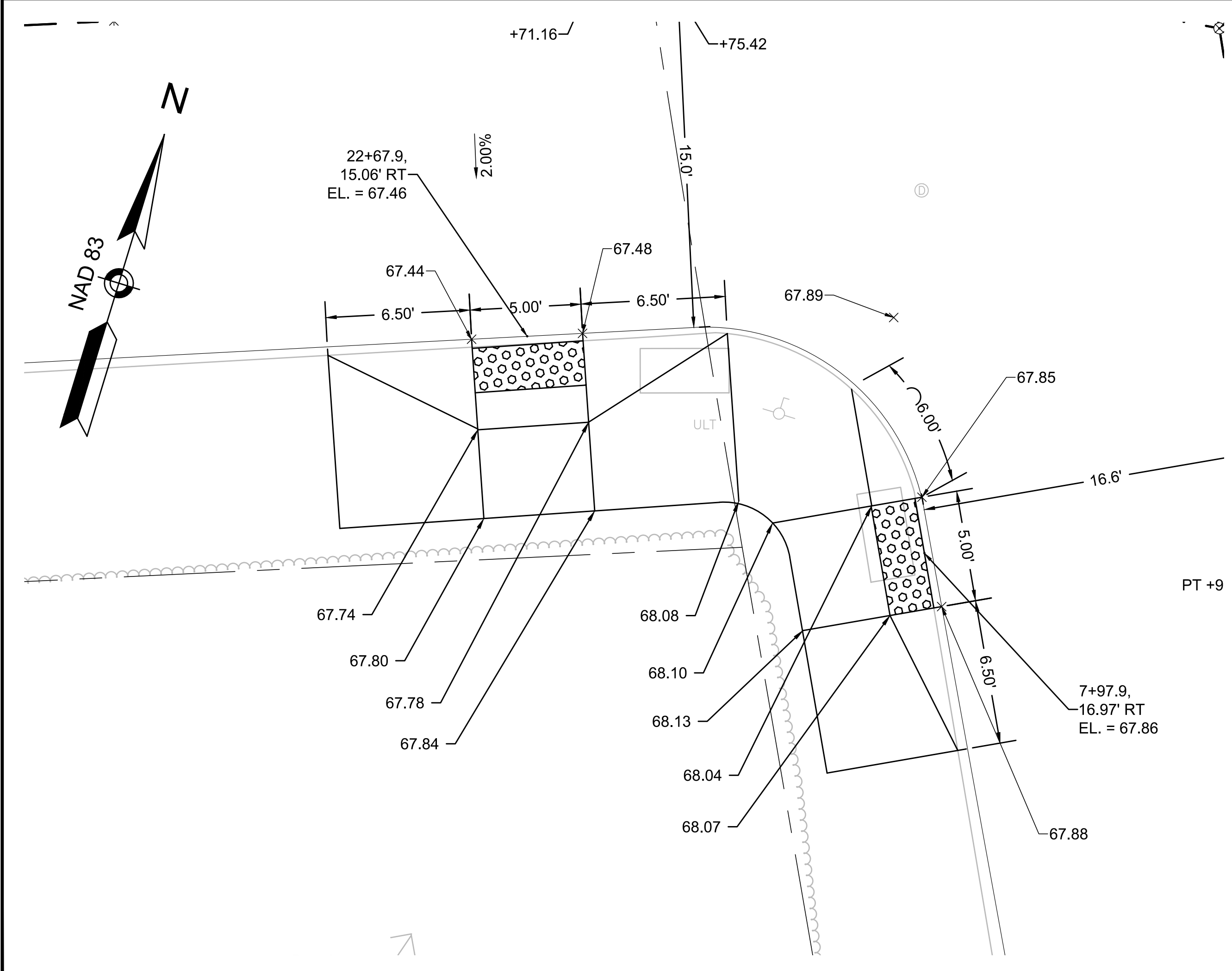
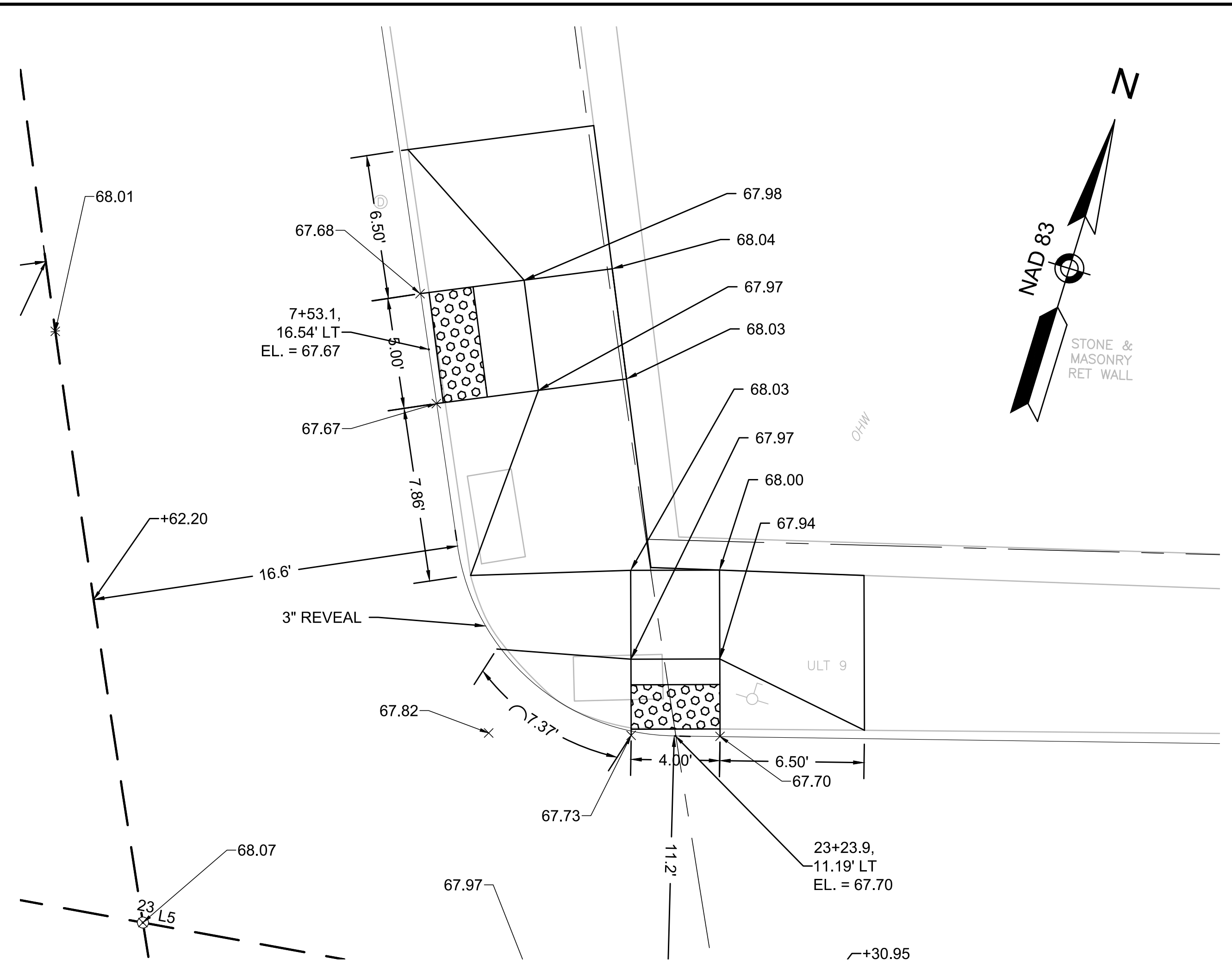
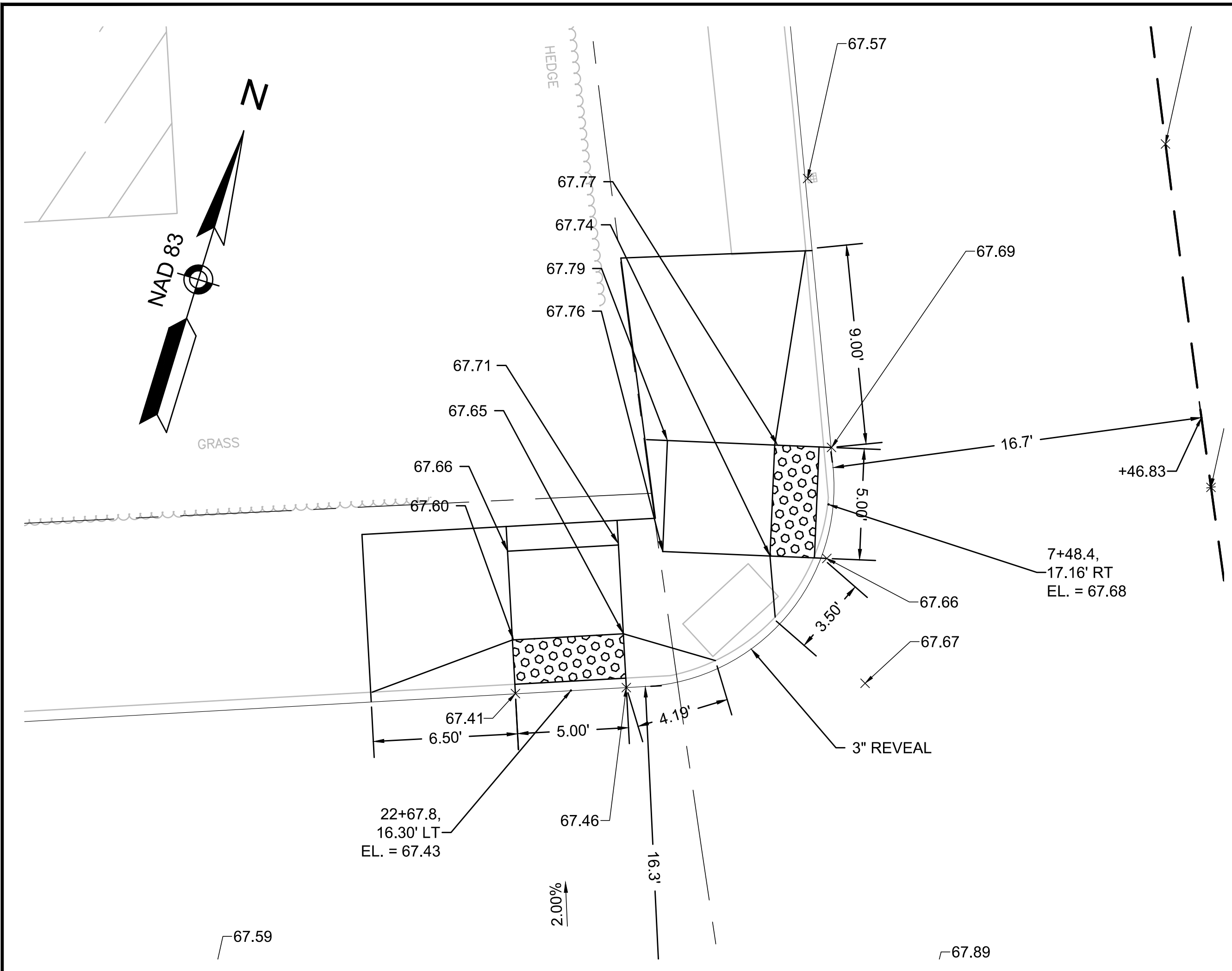


BELMONT
LEXINGTON STREET AT SYCAMORE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	6	11

PROJECT FILE NO. BSC-28374.20

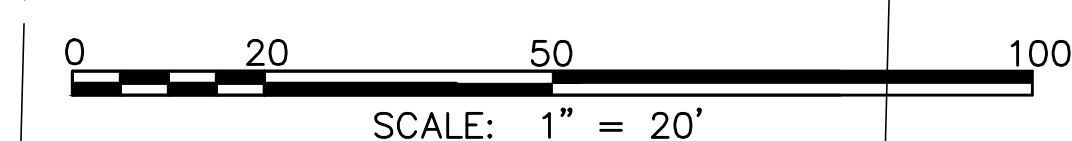
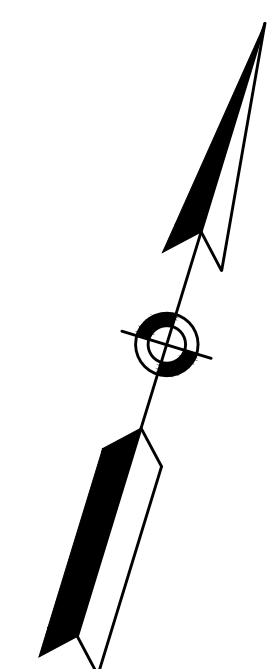
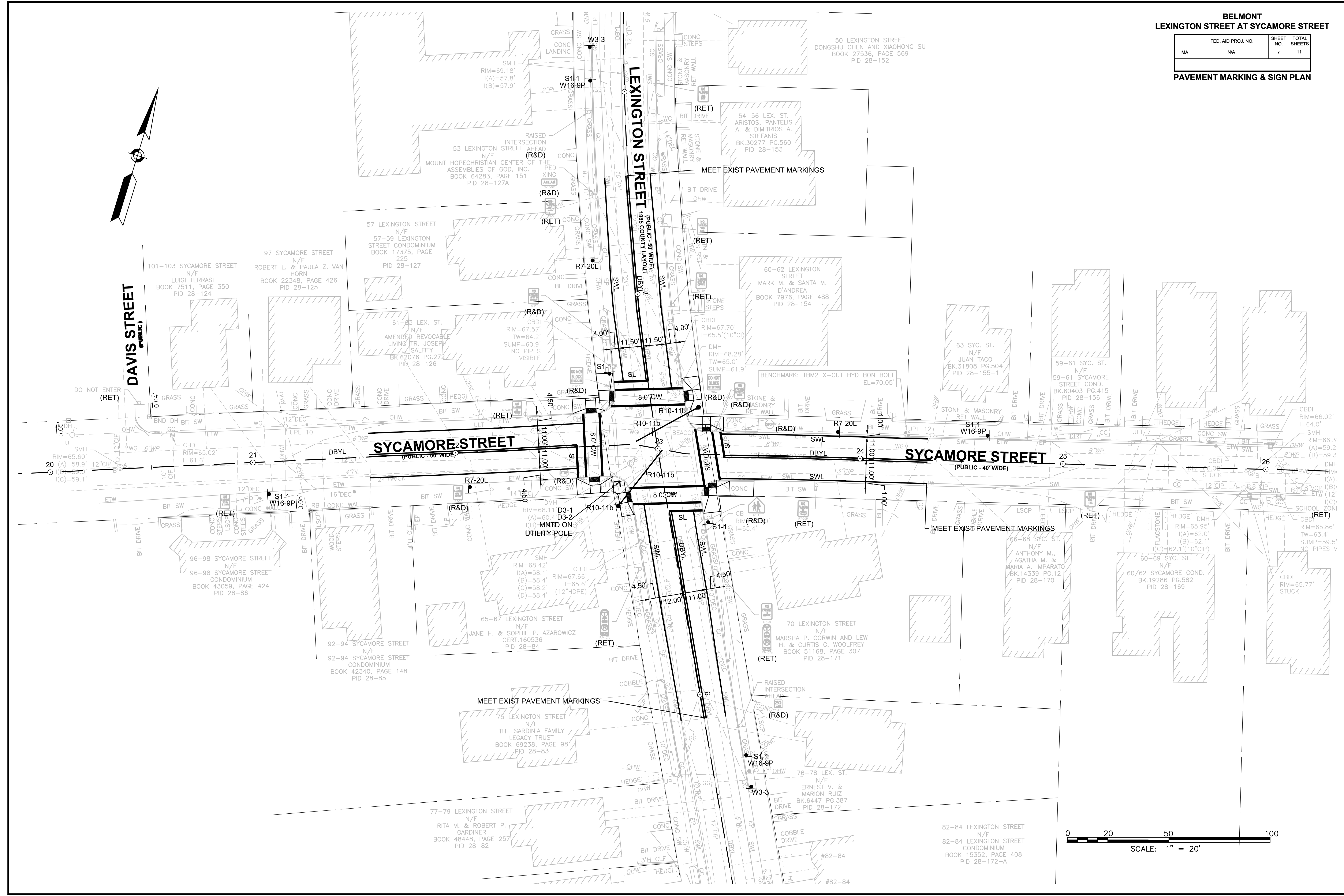
GRADING PLAN



BELMONT
LEXINGTON STREET AT SYCAMORE STREET

MA	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
	N/A	7	11

PAVEMENT MARKING & SIGN PLAN




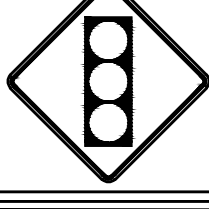





**BELMONT
LEXINGTON STREET AT SYCAMORE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	8	11

PROJECT FILE NO. BSC-28374.20

TRAFFIC SIGN SUMMARY

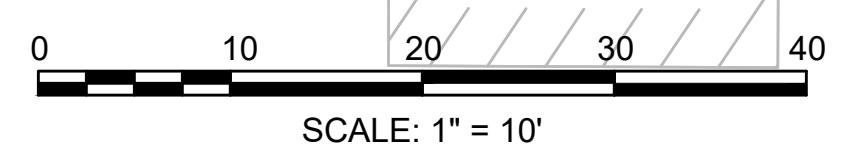
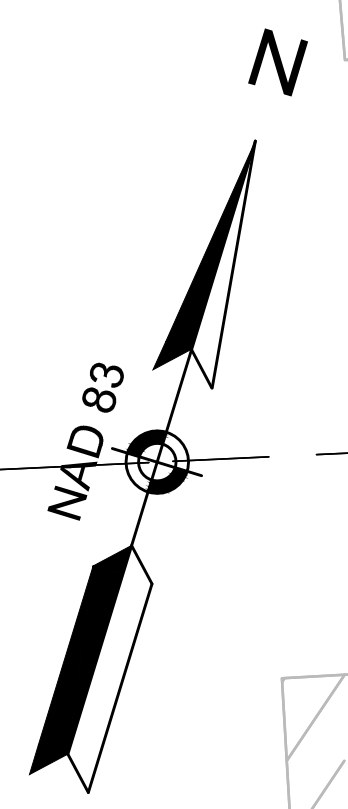
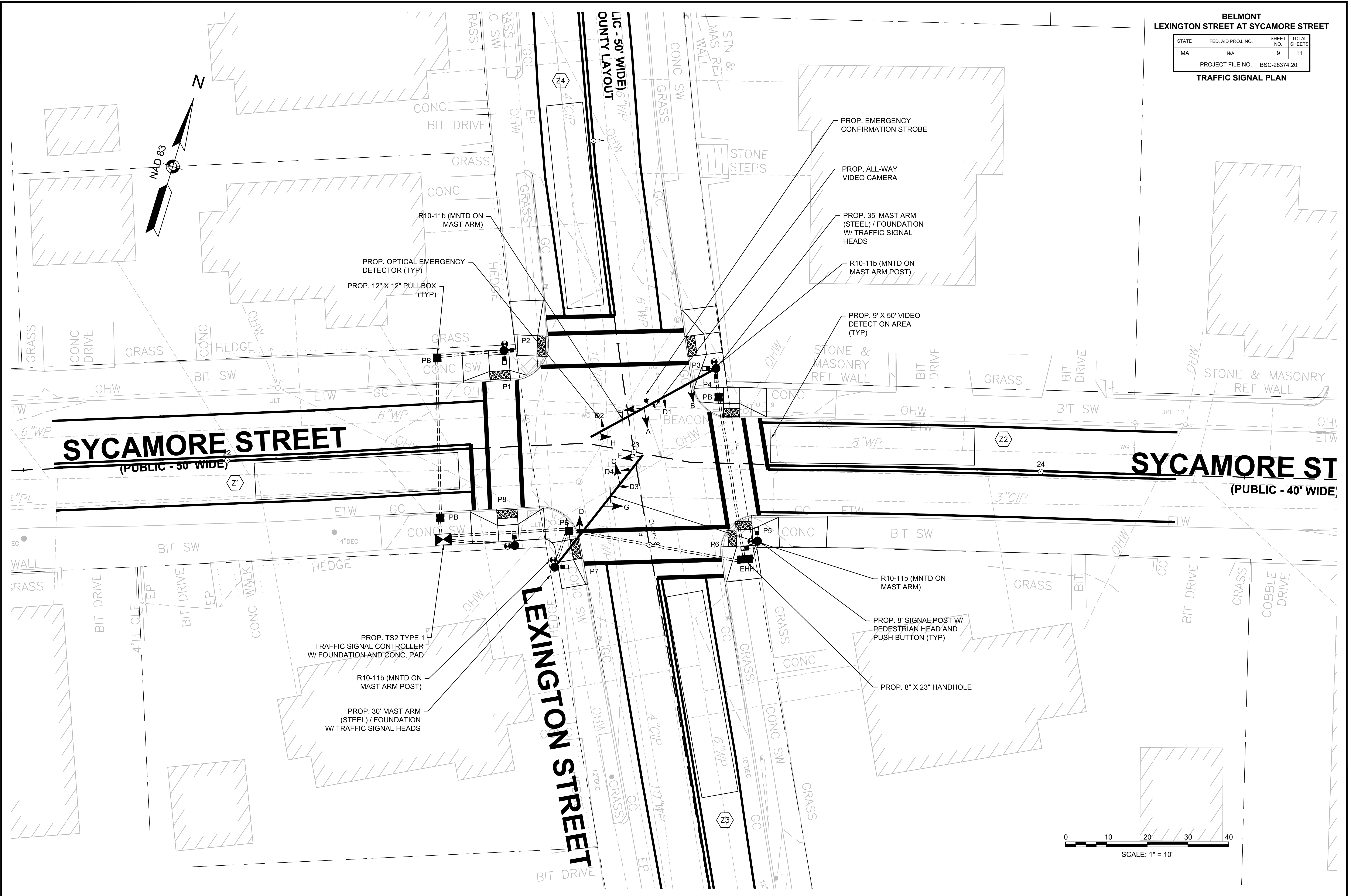
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (IN.)			NUMBER OF SIGNS REQ.	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA (S.F.)
	WIDTH (IN.)	HEIGHT (IN.)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R7-20L	12	18		SEE 2009 M.U.T.C.D.			3	WHITE	RED	RED	P-5 (3)	1.50	4.50
R10-11B	24	24		SEE 2009 M.U.T.C.D.			4	WHITE	BLACK	BLACK	(2) MNTD ON MAST ARM (2) MNTD ON UTILITY POLE	4.00	16.00
S1-1	36	36		SEE 2009 M.U.T.C.D.			6	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	P-5 (6)	9.00	54.00
W3-3	36	36		SEE 2009 M.U.T.C.D.			2	YELLOW	BLACK/RED/GREEN	BLACK	P-5 (2)	9.00	18.00
W16-9P	24	12		SEE 2009 M.U.T.C.D.			4	FLUORESCENT YELLOW-GREEN	BLACK	BLACK	(4) MNTD. W/ S1-1	2.00	8.00
D3-1	62	12		8D/6D	3" 3"	N/A	1	GREEN	WHITE	WHITE	(1) MNTD ON UTILITY POLE	5.17	5.17
D3-2	63	12		8D/6D	3" 3"	N/A	1	GREEN	WHITE	WHITE	(1) MNTD ON UTILITY POLE	5.25	5.25

BELMONT
LEXINGTON STREET AT SYCAMORE STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	9	11

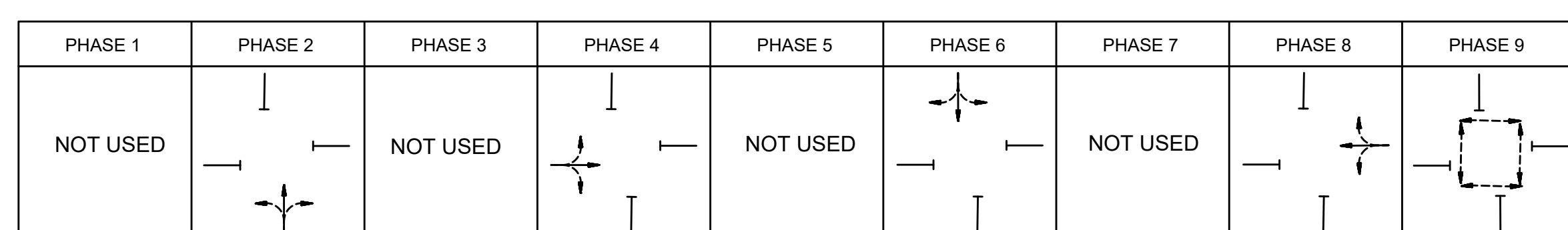
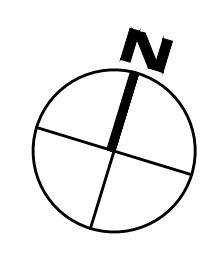
PROJECT FILE NO. BSC-28374.20

TRAFFIC SIGNAL PLAN



**BELMONT
LEXINGTON STREET AT SYCAMORE STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	N/A	10	11
PROJECT FILE NO. BSC-28374.20		TRAFFIC SIGNAL SEQUENCE PLAN	



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL

STREET	DIRECTION	HOUSINGS	SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL																											FLASH OPER.	
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27		
LEXINGTON STREET	NB	A, B				G	Y	R				R	R	R				R	R	R				R	R	R	R	R	R	R	FY
LEXINGTON STREET	SB	C, D				R	R	R				R	R	R				G	Y	R				R	R	R	R	R	R	R	FY
SYCAMORE STREET	EB	E, F				R	R	R				G	Y	R				R	R	R				R	R	R	R	R	R	R	FR
SYCAMORE STREET	WB	G, H				R	R	R				R	R	R				R	R	R				G	Y	R	R	R	R	R	FR
PEDESTRIAN CROSSING		P1 - P8**				DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW		
PEDESTRIAN CROSSING		P2 - P3**				DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW		
PEDESTRIAN CROSSING		P4 - P5**				DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW		
PEDESTRIAN CROSSING		P6 - P7**				DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW		

TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
MINIMUM GREEN (INITIAL)				10						6						10						6						
PASSAGE TIME (VEHICLE)				2						2						2						2						
MAXIMUM GREEN 1				30						20						30						20						
MAXIMUM GREEN 2 (COORD)				40						22						40						22						
YELLOW CLEARANCE					4						4						4						4					
RED CLEARANCE						1						1						1						1				
WALK (W)																									7			
PEDESTRIAN CLEARANCE																										12	2	

EMERGENCY ONLY

RECALL	SOFT	OFF	OFF
MEMORY	NON-LOCK	PED	NON-LOCK

COORDINATION TIMING (SECONDS)

CYCLE		OFFSET		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
DIAL	SEC.	%	SEC.																											
AM			75				37	4	1				22	4	1				37	4	1				22	4	1	7	12	2
PM			76				40	4	1				19	4	1				40	4	1				19	4	1	7	12	2

- NOTES:**
- ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL IDENTIFICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT OF WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED
 - ** NORMALLY DON'T WALK. UPON PEDESTRIAN PUSH BUTTON ACTIVATION WALK/FDW
 - MAX 1 - WEEKDAY AM
MAX 2 - WEEKDAY PM, ALL OTHER TIMES

EMERGENCY PREEMPTION SCHEDULE

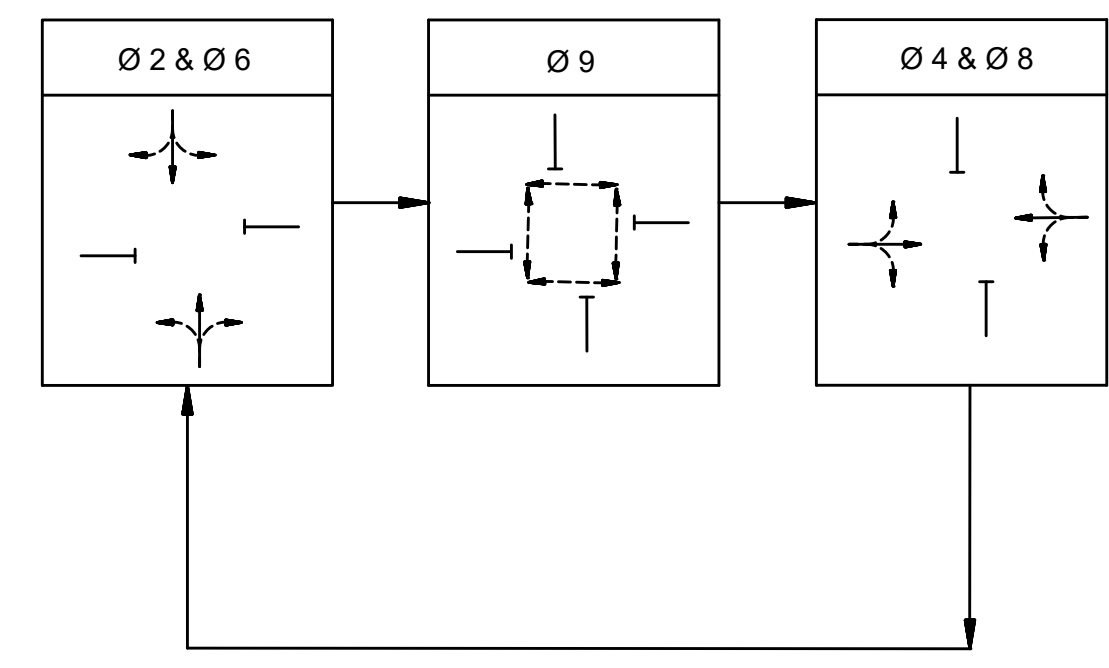
DETECTOR	APPROACH	MOVEMENT	PREEMPTION PHASE
D1	LEXINGTON NB		2
D2	LEXINGTON SB		6
D3	SYCAMORE WB		8
D4	SYCAMORE EB		4

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

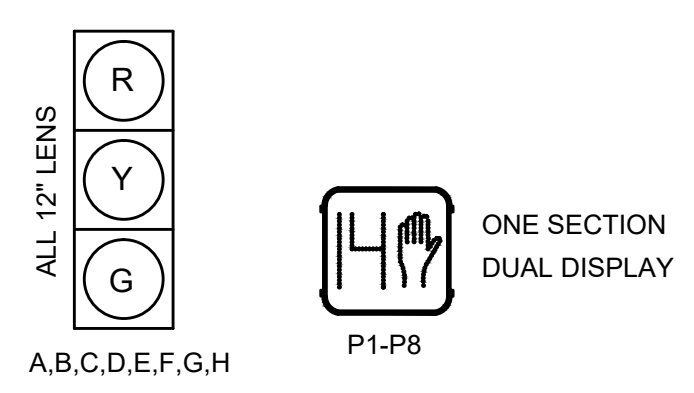
DETECTOR OPERATION

DETECTOR NUMBER	PROCESSOR NUMBER	CHANNEL NUMBER	NO. OF SECTIONS	DETECTION AREA	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
Z1	1	1	1	9'x 50'	Ø4	Ø4	B	0	0
Z2	1	2	1	9'x 50'	Ø8	Ø8	B	0	0
Z3	1	3	1	9' x 50'	Ø2	Ø2	B	0	0
Z4	1	4	1	9' x 50'	Ø6	Ø6	B	0	0

PREFERENTIAL PHASING SEQUENCE

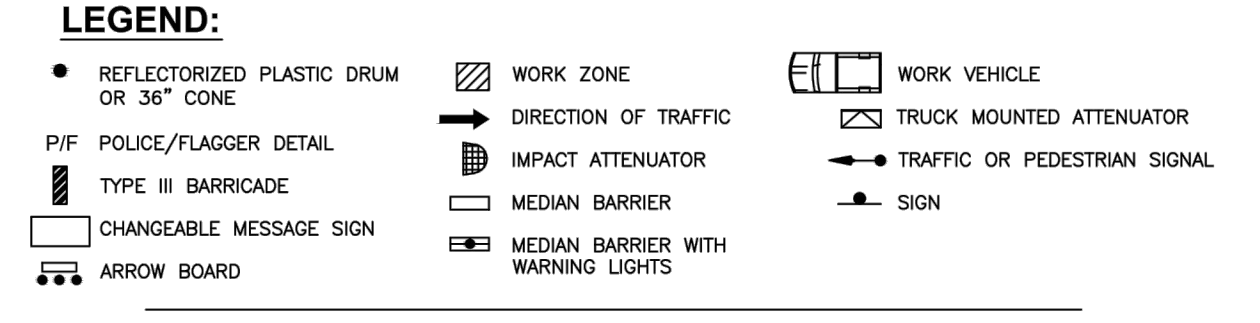


SIGNAL IDENTIFICATION



- NOTES:**
- ALL SIGNALS SHALL HAVE FULL TUNNEL VISORS.
 - ALL PROP. SIGNALS SHALL HAVE 5" NON-LOUVERED BACKPLATES W/ 3" REFLECTIVE BORDER.
 - ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH 12" LED MODULES.
 - ALL PEDESTRIAN SIGNAL HEADS SHALL HAVE PEDESTRIAN COUNTDOWN TIMER.

- NOTES:**
- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
 - ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
 - TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
 - TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
 - SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
 - CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EDUCATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT, AND SIMILAR OPERATIONS.
 - THE FIRST FIVE PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
 - THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
 - DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
 - MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
 - MINIMUM LANE WIDTH IS TO BE 11 FEET (3.3m) UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
 - ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.



THE IDEAL CAPACITY OF A MAJOR HIGHWAY IS GENERALLY CONSIDERED TO BE 1900 PASSENGER CARS PER HOUR PER LANE (PCPHPL) IN WORK ZONES ON A MULTI-LANE DIVIDED HIGHWAY, THE FOLLOWING VOLUME GUIDELINES HAVE BEEN SUGGESTED:

MEASURED AVERAGE WORK ZONE CAPACITIES

NUMBER OF LANES (EXISTING)	NUMBER OF OPEN (TO TRAFFIC)	NUMBER OF STUDIES	AVERAGE CAPACITY	
			VPH	VPHPL
3	1	7	1,170	1,170
2	1	8	1,340	1,340
5	2	8	2,740	1,370
4	2	4	2,960	1,480
4	2	9	2,980	1,490
4	3	4	4,560	1,520

Source: Dudek, C., *Notes on Work Zone Capacity and Level of Service*, Texas Transportation Institute, Texas A&M University, College Station, Texas (1984)

BY OBTAINING HOURLY TRAFFIC COUNTS FOR A PARTICULAR ROADWAY (WITH A MINIMUM OF A 48-HOUR AUTOMATIC TRAFFIC RECORDER (ATR) COUNT), THIS WILL HELP TO DETERMINE AT WHAT TIMES OF THE DAY OR NIGHT A CERTAIN NUMBER OF LANES MAY BE CLOSED.

SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS **		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350 (100)	350 (100)	350 (100)
MOST OTHER ROADWAYS*	500 (150)	500 (150)	500 (150)
FREWAYS AND EXPRESSWAYS*	1,000 (300)	1,500 (450)	2,640 (800)

* ROAD TYPE TO BE DETERMINED BY MASSDOT OFFICE OF TRANSPORTATION PLANNING.

** DISTANCES ARE SHOWN IN FEET (METERS). THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS SHOWN IN THE DETAIL/TYPICAL SETUP FIGURES. THE A DIMENSION IS THE DISTANCE FROM THE TRANSITION OR POINT OF RESTRICTION TO THE FIRST SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGNS. THE C DIMENSION IS THE DISTANCE BETWEEN THE SECOND AND THIRD SIGNS. (THE "THIRD" SIGN IS THE FIRST ONE TYPICALLY ENCOUNTERED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.)

THE "THIRD" SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTC SETUPS. THESE ADVANCE WARNING SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (I.E. THE W20-1 SERIES (ROAD WORK XX FT) SIGNS), AND USUALLY REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL SIGNS (I.E. "RIGHT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCEMENT SIGN PLACEMENT BUT ARE USED IN RARE OCCASIONS.

THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE MOVED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

R2-10a SIGNS SHALL BE PLACED BETWEEN THE SECOND AND THIRD SIGNS AS DESCRIBED ABOVE.

R2-10a, R2-10a, AND W20-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/TYPICAL SETUPS.

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED (km/h)	DISTANCE (m)	SPEED (mph)	DISTANCE (ft)
30	35	20	115
40	50	25	155
50	65	30	200
60	85	35	250
70	105	40	305
80	130	45	360
90	160	50	425
100	185	55	495
110	220	60	570
120	250	65	645
		70	730
		75	820

*POSTED SPEED, OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED.

THESE VALUES MAY BE USED TO DETERMINE THE LENGTH OF LONGITUDINAL BUFFER SPACES.

THE DISTANCES IN THE ABOVE CHART REPRESENT THE MINIMAL VALUES FOR BUFFER SPACING.

Source: Table 6C-2 MUTCD LATEST EDITION

CONVENTIONAL ROADWAY— A STREET OR HIGHWAY OTHER THAN A LOW-VOLUME ROAD, EXPRESSWAY, OR FREEWAY.

EXPRESSWAY— A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY— A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

LOW-VOLUME ROAD— A FACILITY LYING OUTSIDE OF BUILT-UP AREAS OF CITIES, TOWNS, AND COMMUNITIES, AND IT SHALL HAVE A TRAFFIC VOLUME OF LESS THAN 400 AADT. IT SHALL NOT BE A FREEWAY, EXPRESSWAY, INTERCHANGE RAMP, FREEWAY SERVICE ROAD OR A ROAD ON A DESIGNATED STATE HIGHWAY SYSTEM.

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

TYPE OF TAPER	TAPER LENGTH (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN.(15 m) 100 FT.(30 m) MAX.
DOWNSTREAM TAPER	50 FT MIN.(15 m) 100 FT MAX.(30 m) PER LANE

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

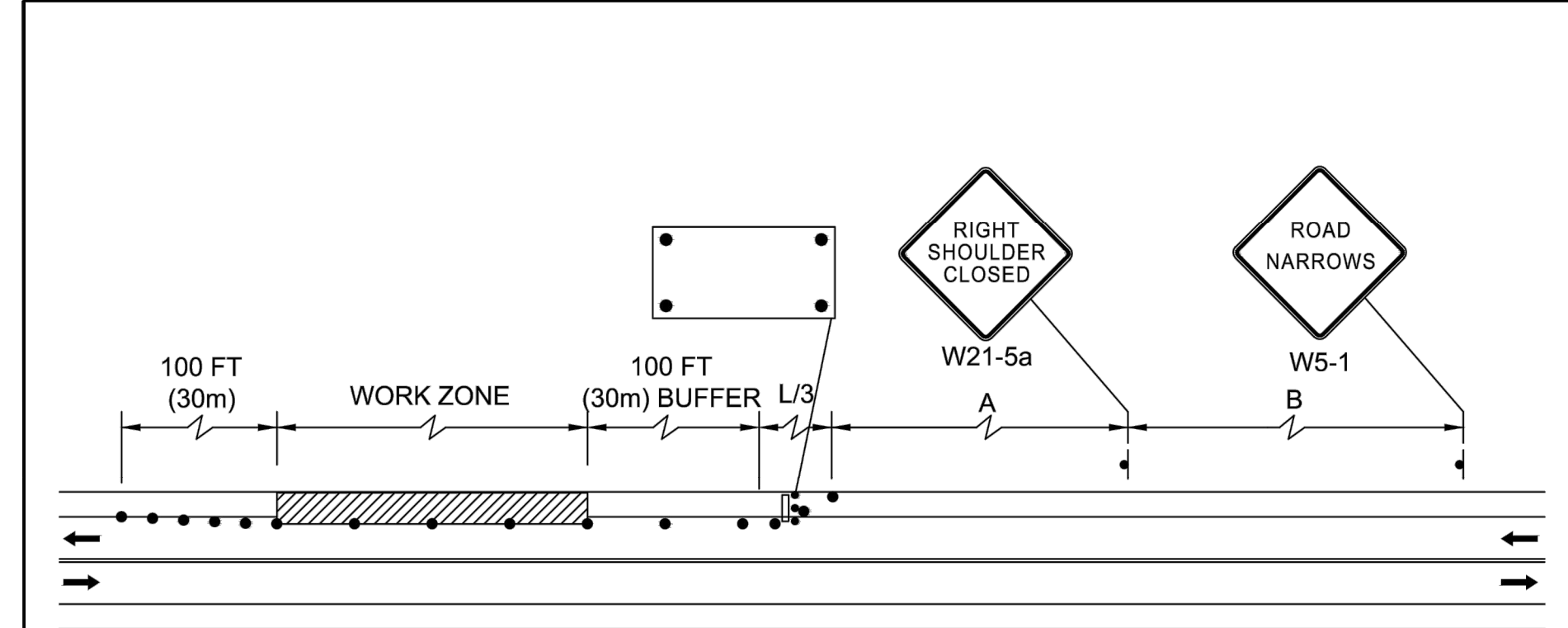
SPEED LIMIT (S)	TAPER LENGTH (L) FEET	SPEED LIMIT (S)	TAPER LENGTH (L) METERS
40 MPH OR LESS	$L = \frac{WS^2}{60}$	60 KM/H OR LESS	$L = \frac{WS^2}{155}$
45 MPH OR MORE	$L = WS$	70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

S = POSTED SPEED LIMIT, OR OFF-PEAK 85TH-PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH (KM/H)

Source: Table 6C-4 MUTCD LATEST EDITION



massDOT Massachusetts Department of Transportation Highway Division

Notes for Traffic Management

FIGURE GEN-1
GENERAL GUIDELINES

massDOT Massachusetts Department of Transportation Highway Division

Notes for Traffic Management

FIGURE GEN-2
NOTES ON WORK ZONE DISTANCES

massDOT Massachusetts Department of Transportation Highway Division

Notes for Traffic Management

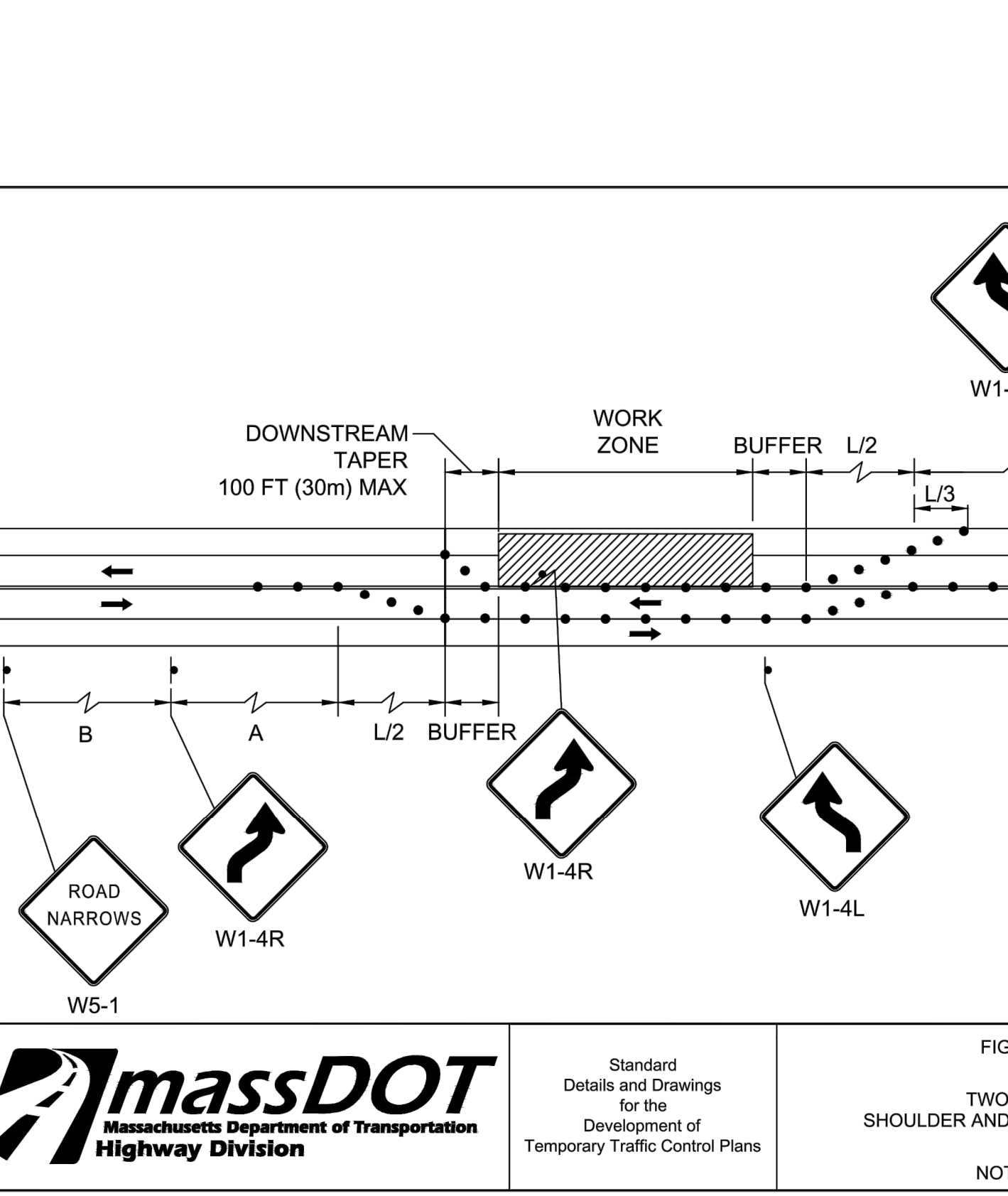
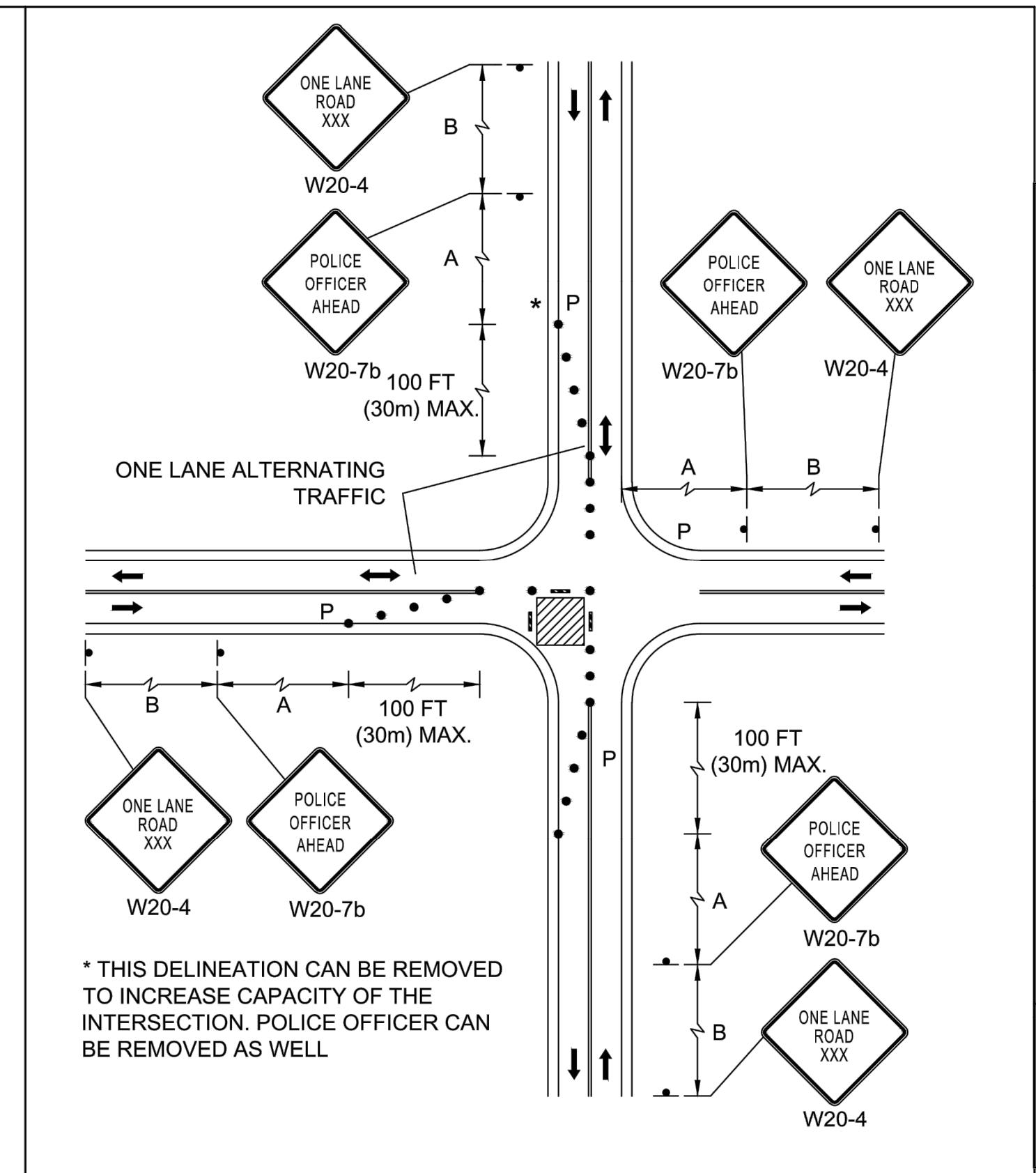
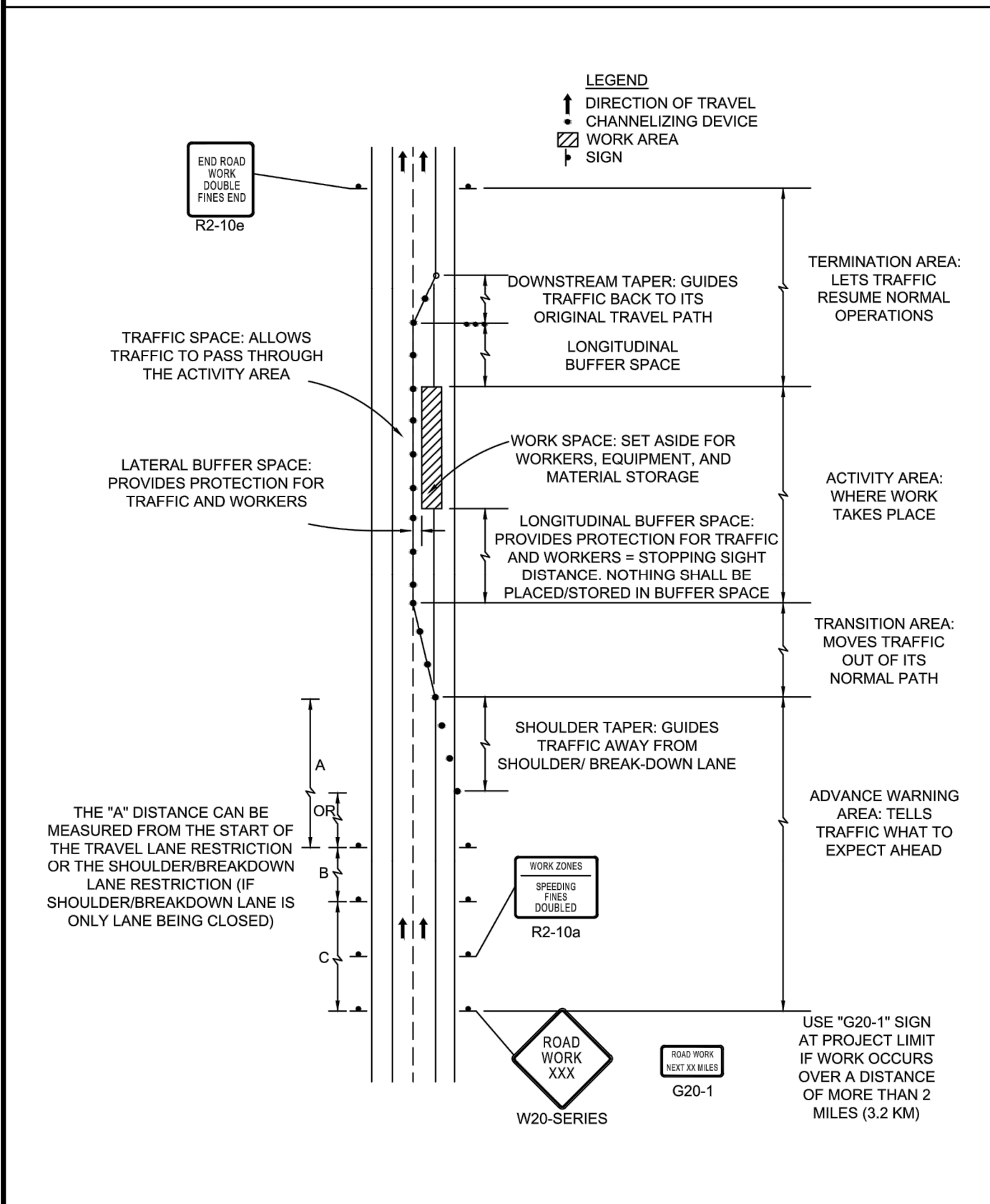
FIGURE GEN-3
NOTES ON WORK ZONE DISTANCES

massDOT Massachusetts Department of Transportation Highway Division

Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE TLR-1
TWO LANE ROAD SHOULDER CLOSED

NOT TO SCALE



massDOT Massachusetts Department of Transportation Highway Division

Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE GEN-4
COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE

NOT TO SCALE

massDOT Massachusetts Department of Transportation Highway Division

Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE INT-2
SINGLE LANE APPROACH ONE QUADRANT CLOSURE

NOT TO SCALE

massDOT Massachusetts Department of Transportation Highway Division

Standard Details and Drawings for the Development of Temporary Traffic Control Plans

FIGURE TLR-2
TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED

NOT TO SCALE

TRAFFIC CALMING POLICY
DRAFT FOR DISCUSSION, updated post 8/15/19 Meeting

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- II. Objectives Of the Belmont Traffic Calming Program
- III. Traffic Calming Process Overview
- IV. Traffic Calming Methods
- V. Regulatory Traffic Controls as Distinct from Traffic Calming
- VI. Individuals And Organizations That May Submit Traffic Calming Requests
- VII. Roads That Are Eligible For Traffic Calming Projects
- VIII. Preliminary Evaluation Of Traffic Calming Requests
- IX. Traffic Calming Needs Assessment
- X. Review Of Needs Assessment And Final Recommendation
- XI. Priority List Of Traffic Calming Projects**
- XII. Reference Standards
- XIII. Traffic Calming Request Form

I. INTRODUCTION

Belmont is committed to protecting its pedestrians, bicyclists, and those travelling in motor vehicles. While urgent concerns about pedestrian, bicyclist, and car safety should be reported to the Belmont Police Department, non-urgent concerns should be reported in writing to the Town Engineer and the Transportation Advisory Committee (TAC), who will work together with the Belmont Police Department, the Department of Public Works, and other Town staff to document, assess, and address these concerns.

Speeding and cut-through traffic reduce the safety of Belmont streets and the quality of life for those who live on and use these streets. Speeding creates unsafe conditions for pedestrians, bicyclists, those who use public transit, and drivers. Speeding also produces unnecessary noise and air pollution. Many communities in Massachusetts and throughout the United States have turned to engineering solutions, commonly known as “traffic calming,” to address problems with automobile traffic.

The Institute of Traffic Engineers (ITE) defines traffic calming as, “the combination of mostly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior, and improve conditions for non-motorized users.” Traffic calming involves building or retrofitting roadways with certain features and characteristics that induce drivers to slow down and pay more attention to their surroundings.

The TAC has adopted this comprehensive Traffic Calming Policy to guide the implementation of traffic calming in the Town of Belmont.

II. OBJECTIVES OF THE BELMONT TRAFFIC CALMING POLICY

This Traffic Calming Policy is intended to bring to Belmont the demonstrated benefits of traffic calming, which include:

- Reduced vehicle speeds and increased driver attentiveness;
- Improved safety for pedestrians, bicyclists, users of public transit, and motorists through the reduction of dangerous driving behaviors and the reduction of the probability and severity of crashes;
- Increased mobility for individuals through the use of non-automotive modes of transportation;
- Improved quality of life for residents and visitors by making streets and neighborhoods safer and more appealing.

III. TRAFFIC CALMING PROCESS OVERVIEW

The Belmont Traffic Calming Policy provides a process for managing requests to develop, design, and implement traffic calming on Belmont roadways. This process is designed to:

- encourage resident involvement in all phases of the program;
- provide a clear and transparent process for addressing concerns about the safety of pedestrians, bicyclists, public transit users, and motorists;
- maintain a procedure for traffic calming project selection that is guided by objective, needs-driven criteria; and
- implement traffic calming methods that mitigate the detrimental effects of automobile traffic while maintaining access for emergency vehicles, public transit, and commercial trucks, and minimizing hazard or nuisance conditions.

This process includes the following steps:

1. submission of written requests (using the attached form) for traffic calming by those who live and/or work on Belmont streets to the TAC;
2. preliminary evaluation by Town staff of each request to determine
 - a. whether the request is eligible for consideration under the Traffic Calming Policy; and
 - b. whether traffic calming methods are likely to successfully address the identified problem;
3. traffic calming needs assessments conducted by Town staff for all eligible requests for which the preliminary evaluation indicates that traffic calming is likely to address the identified problem;
4. convening public meetings to discuss traffic calming requests, assessment findings, and any proposed improvements to the roadways;

5. gauging support for any proposed improvements by neighbors at the hearing and through a two-week written open-comment period before a TAC decision.
6. recommendation by TAC to Town Staff about whether traffic calming should be implemented in response to request;
7. prioritization of recommended **traffic calming** measures within the context of a list of approved Town traffic calming projects;
8. final approval **for action in response to** each request rendered by the Board of Selectmen.
9. **recommended traffic calming projects that cannot be funded through the annual operating budget will be reviewed as part of the Town's annual capital budgeting process and will be subject to final approval and appropriation by Town Meeting.**

The process outlined above does not apply to:

- traffic calming measures that may be required on Town streets to comply with State and Federal standards or warrants;
- **traffic calming requests from the Belmont Police Department;**
- temporary changes in traffic patterns needed to stage special events or accommodate construction;
- experimental traffic calming measures installed temporarily for research and evaluation by the Town and/or a partner agency or consultant;
- installation of traffic control devices (e.g. signals, Stop signs, etc.);
- the installation of traffic calming devices that may be required for the development of new commercial, residential, mixed-use, or other projects.

Sections IV - XI provide greater detail about the steps in the process and a Traffic Calming Request Form is included in Section XIII of this document.

IV. TRAFFIC CALMING METHODS

Traffic calming uses the physical characteristics of the roadway, instead of artificially imposed speed limits or Stop signs, to slow drivers. Traffic calming methods help reduce the speed that feels comfortable for motorists and brings driving behavior in better compliance with existing town-wide speed limits. While traffic calming is not intended to reduce the volume of traffic, it may have that effect when installed on local streets subject to speeding or cut-through traffic.

The Massachusetts Highway Department divides traffic calming into three major design categories:

1. Narrowing the real or apparent width of the street.
 - a. pavement cross-section features including on-street parking, spot narrowing, bike lanes, travel lane width reduction, medians, islands, and road diets;
 - b. placement along the street of buildings, trees, signage, and street furniture (e.g. lights, benches, bike racks, bus shelters, etc.);

- c. pavement edge treatments including raised curbs, neckdowns, chokers, and bumpouts.
2. Deflecting (introducing curvature to) the vehicle path.
 - a. mid-block deflection measures including chicanes, lane offsets, short medians, crossing islands and mini-traffic circles;
 - b. intersection measures including roundabouts, traffic circles, curb bumpouts, lane offsets, crossing islands, and neckdowns.
 3. Altering the vertical profile of the vehicle path.
 - a. speed humps and speed tables;
 - b. raised crosswalks and intersections;
 - c. textured pavement (e.g. pavers, stamped concrete, etc.)

V. REGULATORY TRAFFIC CONTROLS AS DISTINCT FROM TRAFFIC CALMING

Complaints about speeding traffic and requests for speed-limit enforcement will be referred to the Belmont Police Department. Concerns about speeding traffic are often accompanied by requests for new Stop signs, traffic signals, turn restrictions, and speed-limit signs--and these are not traffic-calming devices, but regulatory traffic controls. Implementation of most regulatory traffic controls is governed by national engineering guidelines, State laws, or both. Regulatory traffic controls require police enforcement, while traffic calming measures are designed to be self-enforcing.

- Stop Signs

The Town frequently receives requests for new Stop signs to reduce traffic speed and improve safety on local streets. According to the Federal Highway Administration, Stop signs are used to determine vehicular right-of-way at an intersection and should not be used to control vehicle speeds. Research shows that installing unnecessary Stop signs often results in an increased number of collisions and more speeding.

- Posted Speed Limits

Another common traffic-related request is that posted speed limits be lowered on Belmont roadways. Posted speed limits are regulatory controls governed by the Massachusetts Department of Transportation (Mass DOT) through a state approval process that requires documented speed and engineering studies. In the Spring of 2017, Belmont Town Meeting voted to opt into **MGL c. 90 § 17C**, which sets the speed limit at 25 mph on all city and town-owned streets within thickly settled or business districts that do not have existing special speed regulations. Further adjustments to posted speed-limits on Belmont's streets will be subject to Mass DOT Procedures for Speed Zoning.

Enforcing speed limits on roads designed to accommodate higher-speed traffic is challenging. In addition, most research demonstrates that driver speed is less often a function of posted speed limits and more often a function of real or perceived driving conditions.

- Other Regulatory Traffic Controls

Other regulatory traffic controls that require engineering studies, and generally require review and approval by State or Federal entities include truck exclusions, and signalized intersections.

- Procedures for Requesting Regulatory Traffic Controls
 - Requests are submitted to the TAC.
 - The Town Engineer and Belmont Police Department complete required engineering and traffic studies.
 - In the event that a request for regulatory traffic controls is made with the goal of increasing pedestrian safety and reducing vehicle speed, the TAC may recommend initiation of a Traffic Calming Request as an alternative to a request for regulatory traffic Controls.

VI. INDIVIDUALS AND ORGANIZATIONS THAT MAY SUBMIT TRAFFIC CALMING REQUESTS

Town residents and abutters of Town-owned streets, those who own or work in Town businesses, Town boards, and Town departments may submit traffic calming requests to the TAC. **For each request, a completed Belmont Traffic Calming Request form must be submitted with signatures on the form representing either at least five different street addresses for each .1 miles of road or fifty percent of the residences in the directly affected area (whichever is less).** Additional signature space is provided and the signature of additional residents may be submitted to demonstrate broader support for the request.

A copy of the Traffic Calming Request Form appears at the end of this document and is available online at the Town of Belmont website.

VII. ROADS THAT ARE ELIGIBLE FOR TRAFFIC CALMING PROJECTS

Only roads under the jurisdiction of the Town of Belmont are eligible for traffic-calming interventions. Roads outside of the town jurisdiction, including private ways, are not eligible. Traffic-calming will be considered for all eligible roads, but options for arterial roads, truck routes, emergency-response routes, and public bus routes may be limited by Federal and State law or other functional considerations.

VIII. PRELIMINARY EVALUATION OF TRAFFIC CALMING REQUESTS

Town staff will conduct a preliminary evaluation based upon the criteria shown below in Table One.

TABLE ONE

Criteria	Evaluation
Speed	If the 85th percentile of recorded automobile speed documented by the Belmont Police Department is at least 30 miles per hour, then speeding has been documented on the roadway.
Cut-Through Traffic Volume	If the traffic volume during the peak traffic hour is more than 10% greater than average daily traffic (ADT) volume, as documented by the Belmont Police Department, then cut-through traffic has been established on the roadway.
Traffic Collisions	Any documented crash involving an automobile and a pedestrian and/or a bicyclist establishes that crashes are a problem on the road. Any crash resulting in a fatality or serious bodily harm establishes that traffic crashes are a problem on the road. If there have been at least 3 documented car crashes over the past three years, then crashes are established as a problem on the road.

If the preliminary evaluation documents speeding, cut-through traffic, or crashes as described in Table One, then the TAC will forward the traffic-calming request to the Belmont Town Engineer, who will conduct a full traffic-calming needs assessment.

If the preliminary evaluation does not document speeding, cut-through traffic, or crashes, then the TAC will not forward the request to the Town Engineer for a traffic-calming needs assessment and no further action will be pursued under the Belmont Traffic Calming Program. The Town may consider the extent to which the reported concerns can be addressed with regulatory controls, low-cost engineering improvements, increased enforcement, and/or improvements to public sidewalks.

IX. TRAFFIC CALMING NEEDS ASSESSMENT

When supported by findings in the preliminary evaluation, the TAC will request that the Town Engineer prepare a "Traffic Calming Needs Assessment" report for presentation at a regularly scheduled TAC meeting.

The Town Engineer, working in coordination with other Town staff (e.g. Police, Fire, DPW, etc.), will compile the following data in a standardized report for the geographic area of the traffic calming request:

Roadway Attributes

- Physical Description (roadway width, grade and alignment, number and width of lanes, pavement condition, parking, sidewalks, crosswalks, school crossings, bike lanes, and other relevant descriptors)
- Street classification (e.g. local street, major collector, etc.)
- Whether the roadway is a designated route for emergency vehicles
- Posted speed limits and other regulatory signage or traffic controls
- 85th percentile Traffic Speed
- Average Traffic Speed

Evaluation Scoring

- 85th percentile Traffic Speed: 10 points for each 5 MPH above the 85th percentile speed
- Traffic Volume: 10 points for each 100 **motorized vehicles that make up the** average daily traffic (ADT)
- Cut-through traffic volume: 10 points for each 5% increment of peak-hour volume above the 10% of ADT threshold
- Crash Data **(for each incident)**:
 - Single vehicle or vehicle to vehicle, no injury: 10 points
 - Single vehicle or vehicle to vehicle, injury: 20 points
 - Vehicle and pedestrian or bike: 30 points
 - Fatality or serious bodily injury: 50 points
- Status of roadway as a designated route for:
 - Walking access to a public school: 20 points
 - Transit buses: 10 points
 - Bicyclists: 20 points
- Presence of community facilities, schools, parks or playgrounds, and commercial areas: 20 points each

Engineering recommendations will answer the following questions:

- Is the problem area a candidate for traffic calming installation?
- Which traffic calming measure(s) may be appropriate?
- Could the measures be designed and implemented by the Community Development or DPW or would outside engineering services be required?
- What would be the approximate design and installation costs based on local experience or state and national averages?
- Does the problem merit experimental installation of temporary traffic calming measures before a final determination is made?

- What might be trade-offs of the proposed traffic calming on the area that is the subject of the proposed traffic calming measures--for example, will parking or travel lanes be removed?
- What other areas of Belmont might be affected by the proposed traffic calming measures--for example, is it anticipated that traffic might seek alternative routes to avoid the traffic calming and, if so, what is the anticipated consequence of the traffic flowing onto these alternative routes?

X. REVIEW OF NEEDS ASSESSMENT AND FINAL RECOMMENDATION

The Town Engineer will present the findings of the Traffic Calming Needs Assessment and the engineering recommendations to the TAC at a public meeting and the Committee may hear additional public comment during this meeting.

The TAC will work with the Town Engineer to determine the appropriate catchment area for notification for this presentation and the Town will send advance notification for this presentation to those in the catchment area. The presentation date, time, and place will also be posted on the Town website.

After review and discussion of the Needs Assessment and the presentation of engineering recommendations, the TAC will allow two weeks for written public comment and will then vote to “Recommend” or “Not Recommend” that the requested traffic calming project be placed on the Town of Belmont’s “Priority List of Traffic Calming Projects”. In the event that the Committee does not have sufficient information to make a final recommendation, or a traffic problem first merits an initial test of experimental traffic calming measures, a vote on the matter may be tabled for a period not to exceed ninety (90) days.

Traffic calming requests that receive a “Not Recommend” vote may be resubmitted for future consideration after a one-year deferral.

XI. PRIORITY LIST OF TRAFFIC CALMING PROJECTS

The Town of Belmont may approve more traffic calming projects than it can implement in a given year. The TAC will use the Needs Assessment scoring outlined in Section IX of the Traffic Calming Policy to create and maintain a priority ranking of traffic calming projects. The Town Engineer will review the list of priority projects in the context of multiple factors, including budgetary constraints, and the timing of utility maintenance and pavement management projects, and make a final recommendation for projects to be completed within each budget cycle. Recommended traffic calming projects that cannot be funded through the annual operating budget will be reviewed as part of the Town's annual capital budgeting process and will be subject to final approval and appropriation by Town Meeting.

XII. Reference Standards

- Federal Highway Administration Course, Lesson 11: Traffic Calming:
https://safety.fhwa.dot.gov/ped_bike/univcourse/pdf/swless11.pdf



XIII. Traffic Calming Request Form

Please complete both sides of this form and return it to:
Traffic Calming Program, Belmont Department of Community Development
The Homer Municipal Building, 19 Moore Street, 2nd Floor
Belmont, MA 02478

1. Today's Date: _____
2. Your Name: _____
3. Your Home and/or Belmont Business Address: _____
4. Your Email Address: _____
5. Your Telephone Numbers
Day: _____
Night: _____

6. Please circle the best way to reach you during the day: Phone or Email

7. About which street(s)/intersection/location are you making this request for traffic calming?

8. Are there particular times of day, days of the week, or circumstances that are related to the problems that you have observed at the street(s)/intersection/location?

9. Please circle each problem that applies to the street(s)/intersection/location listed above:

Speeding Cars Parked Too Close to Corner Difficult to Bike

Difficult to Cross Street Drivers Not Yielding to Pedestrians

Other (please describe):

Please Complete Both Sides Of This Form

10. Please use the space below or an attached document to describe your concerns about the street(s)/ intersection/ location. It may be useful to draw a picture to more clearly identify the concerns that have prompted your traffic calming request.

11. Please use the formatted space below to provide the name and address for each traffic calming request signatory. A sheet may be appended with additional signatory information.

	<u>Name</u>	<u>Address</u>	<u>Signature</u>
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____
11.	_____	_____	_____
12.	_____	_____	_____
13.	_____	_____	_____
14.	_____	_____	_____
15.	_____	_____	_____
16.	_____	_____	_____
17.	_____	_____	_____
18.	_____	_____	_____
19.	_____	_____	_____
20.	_____	_____	_____



Transportation Advisory Committee

August 15, 2019

Minutes

Committee Members Present: Dana Miller (Chair), Larry MacDonald (Vice Chair), Annis Sengupta (Clerk) (arr 7:03), Jessie Bennett, Clifford Gaysunas, Jeffrey Roth (arr 7:03), Charles Hamad

Ex Officio Committee Members Present: Jay Marcotte (Director, Department of Public Works); James MacIsaac (Assistant Chief, Belmont Police Department); Marc Pugliese (Belmont Police Department)

7:01 pm Meeting Opened

7:08 pm Approval of Meeting Minutes

August 8th minutes: last line of page two change collision to crash.

Approved with a vote of 6 in favor and 1 abstention.

7:10 pm Review of Draft Traffic Calming Policy

The TAC revisited Section III, Section VIII and approved changes to increase language consistency throughout the document. The TAC agreed to change references to the Department of Community Development to instead reference the Town Engineer. The TAC agreed to change references to collisions to instead reference crashes throughout the document. Specific changes to previously approved policy sections (III and VIII) include:

- **Section III. Traffic Calming Process Overview:** Add language to indicate that the Belmont Police Department can bring any problem intersection or road before the TAC to request a traffic calming needs assessment and it will be accepted for review without a preliminary assessment. As the Town Department responsible to responding to and tracking speed, volume, and crashes, this language would recognize the Department's unique ability to identify problematic sections of town roadways.
- **Section VIII. Preliminary Evaluation Of Traffic Calming Requests:** Table provides definition of qualifying conditions for crashes to be a documented

problem. Suggested wording change would indicate that 3 documented car crashes over the past three years would be qualifying. If there is any crash involving serious bodily injury or fatality in the past one year, it would be a qualifying event.

Section IX Discussion and Approval

TAC discussed at length Section IX, Traffic Calming Needs Assessment. Some of the discussion focused on increasing clarity and consistency of the language and ensuring transparency in the process. Changes suggested for the entire document are applied to this section including use of the term Town Engineer in place of Office of Community Development and use of the term crash instead of collision.

TAC suggested the following wording to be included at the beginning of Section IX: “When supported by findings of preliminary evaluation, the TAC will request that the Town Engineer prepare a traffic calming needs assessment report for presentation at a regularly scheduled meeting of the TAC following the completion of the assessment.”

Roadway Attributes

Suggested Changes to Roadway Attributes include the following:

- Move reference to emergency vehicles routes to Roadway Attributes from Evaluation Scoring. Change name to “Emergency Response Route.” The status of a road as an emergency response route might limit the type of traffic calming that can be offered. The scoring is meant to highlight where traffic calming is most needed.

Evaluation Scoring

TAC engaged in a long discussion about the evaluation scoring criteria and how they are presented in the table. TAC shared Glenn’s previous advice on measuring cut-through traffic volume. The formula was derived from articles defining cut-through volume as the peak volume that exceeds 10% of Average Daily Traffic (ADT). This means that during the peak hour of traffic on a road, traffic volume is expected to be higher than at other times of day. Peak volume, however, is not expected to exceed ten percent of the total volume of daily traffic on the street. Peak volume that exceeds the ten-percent threshold is interpreted as representing traffic that is generated by vehicles avoiding issues in other parts of the roadway network where they would be expected to travel (i.e. cut-through traffic).

Questions raised by the TAC on Evaluation Scoring include the following:

- Do we need to take into account the proximity to an arterial or is it accounted for in the volumes?
 - Glenn believes that the volume will capture it sufficiently.
- Do the crash categories adequately represent the types of crashes measured by the Belmont Police Department?
 - The scoring table can also include single vehicle crashes.
 - TAC recommended addition of Single Vehicle crashes to the rows of the table where Vehicle-to-Vehicle crashes are listed.
- Does the evaluation adequately capture areas where other issues might be the culprit? For example a crash at Cross Street was blamed on speeding, but the Belmont Police Department has observed that poor lighting was a contributing factor.
 - How can TAC access those findings to incorporate into the evaluation? To what extent is that necessary for each crash?
- In measuring speed, how do you account for the difference by time of day? The traffic conditions of rush-hour in terms of speeding are very different from the traffic conditions of off-peak periods.
 - Some of this is captured in the speed study reports and the 85th percentile accounts for the variation in conditions.
- How holistic a view are we taking as to physical changes to the street?

Suggested Changes to Evaluation Scoring include the following:

- Reorganize table to mirror the order of the table in Section VIII. Preliminary Evaluation of Traffic Calming Requests: 1. Speed; 2. Volume and Cut Through Volume; 3. Crash Data; 4. Other considerations.
- Move Traffic Volume into its own category.
- Spell out ADT as Average Daily Traffic.
- Under “Status of the roadway as a designated route for,” change “Bicycles” to “Bicyclists.”

7:46 pm Motion to approve Section IX with proposed changes.

- Motion passed unanimously. Changes to Section IX. Traffic Calming Needs Assessment accepted and section approved.

7:47 pm Review of Draft Traffic Calming Policy, Section X - XIII.

TAC reviewed the remaining sections of the Draft Traffic Calming Policy and suggested changes to Sections X, XI, and XIII. Because changes to Section XI need review and approval from the Town Engineer, who was absent from the meeting, the TAC will revisit those for final approval at its next meeting.

Discussion of Section X. Review Of Needs Assessment And Final Recommendation

TAC Discussion of Section X. focused on editing the language to accurately reflect the TAC's understanding of the process and to ensure that the process is transparent and easy to understand. Previously approved changes to the document were applied to this section including replacing Office of Community Development with Town Engineer.

Notifications for Public Meetings

TAC discussed its concern that some projects will impact only the abutting residents while others will impact large sections of the town, if not the entire town. The TAC agreed that the process would be for the TAC to work with the Town Engineer to determine the appropriate catchment area for notification of the presentation in addition to the Town-wide public notice given on the Town's website. This process will be reflected in the document through the following wording:

"The TAC will work with the Town Engineer to determine the appropriate catchment area for notification for this presentation and the Town will send advance notification for this presentation to those in the catchment area. The presentation date, time, and place will also be posted on the Town website."

The TAC recognized that it would need to work to ensure more effective outreach town-wide. Jamie MacIsaac suggested that the TAC might assign a Public Information Officer, who would be responsible for getting information out to interested residents. Duties of such an officer might include:

- setting up a list-serve
- sharing information via social media channels, or
- creating a Google Group to help keep informed of the TAC's work and public meetings.

Discussion of Section XI. Priority List of Traffic Calming Projects

TAC members raised the question as to whether there is an existing budget for any of the projects we might recommend. TAC can expect the Town Engineer to present to the TAC on the budget for this work and the budget process. In addition, the TAC will be able to review the Complete Streets prioritization plan after it is approved..

TAC discussed whether priority list should be aligned with existing budgets and

determined that it would be valuable to keep the prioritization separate from the budget review. It is important to document the need and desire for improvements so that the need can be incorporated into town-wide conversations about budgeting over time. The TAC suggested the following wording for the first paragraph:

“The Town Engineer will review the list of priority projects in the context of multiple factors, including budgetary constraints, and the timing of utility maintenance and pavement management projects, and make a final recommendation for projects to be completed within each budget cycle.”

The TAC then suggested that the wording in the second paragraph be simplified to make clear when projects will be subject to the annual budget cycle process.

Traffic Calming Impact Evaluation

The TAC discussed whether to include information about conducting a regular review of completed projects to assess the impact of traffic calming. The committee agreed that it would be good practice to do so. However, the TAC determined that inclusion of language in the policy would be premature. Methods to capture impact might include conversations with residents or tracking data on speed, volume, and crashes over time.

8:20 pm David Coleman departed.

Communication to Town Meeting

TAC discussed whether it would be appropriate to report out to Town Meeting on the Traffic Calming Policy and work of the TAC and Town staff explained that the usual procedure would be for the TAC to schedule a public meeting to which all townspeople could come to comment on the draft TCP.

Discussion of Section XII.

No revisions.

Discussion of Section XIII.

TAC suggested the following changes to Section XIII. Traffic Calming Request Form:

- Under item 10, change wording to read “Please use the space below or attach a separate document to describe your concerns...”
- Under item 11. It was suggested that line spacing be increased and the number of signatures be limited to 20 on the sheet such that additional signatures would be appended separately.

8:45 pm Motion to approve Sections X, XII, and XIII with proposed changes

Motion passed unanimously. Changes to Section X. Traffic Calming Needs Assessment and Section XIII. Traffic Calming Request Form accepted. Sections X, XII. Reference Standards, and XIII approved.

8:46 pm Discussion of Sections I and III

Suggested Changes to Section I. Introduction:

- Replace Office of Community Development to “Town Engineer”. Change approved.
- Remove “In plain English,” and replace with “Traffic Calming induces drivers to slow down and pay more attention to their surroundings through altering the features and characteristics of roadways.”
- Change “initial” to “preliminary” in reference to the Preliminary Evaluation of Traffic Calming Requests throughout document.

Suggested Changes to Section III. Traffic Calming Process Overview

- Add step to the process to reflect the review of the other factors including budgetary constraints, public utility scheduling and maintenance, and the town’s pavement management program schedule;
- Ensure consistency with Sections IX, X, and XI.

8:48 pm Discussion of Section VIII

Suggested Changes to Section VIII. Preliminary Evaluation Of Traffic Calming Requests

- Move sentence above the table.
- Change initial evaluation to preliminary evaluation.
- Use crash instead of collision.
- Change paragraph for consistent phrasing:

“If the preliminary evaluation documents speeding, cut-through traffic volume or crashes, then the TAC will direct the Town Engineer to conduct a full traffic calming needs assessment. If the preliminary evaluation does not document speeding, cut-through traffic volume or crashes, the TAC will not request that the Town Engineer conduct a full traffic calming needs assessment.”

8:59 pm Motion to approve Section VIII with proposed changes.

Motion passed unanimously. Changes to Section VIII. Preliminary Evaluation of Traffic Calming Requests accepted and section approved.

Next Steps

- Section XI: Priority List of Traffic Calming Projects will undergo final review and approval at subsequent TAC meeting.

9:00 pm Discussion of Bike Lane Striping on Leonard Street

Jay Marcotte reported that bicycle lane striping will be completed in coordination with the parking lane striping, as evening work, in the next few weeks.

9:02 pm Discussion of Request for Traffic Calming for Wellington Lane

Letter presented by: Sue Bass, Kathy Allen, Sue Pew, Jared Curhan, Lia Meisinger, Elle Bozoyan, Johanne Gibeau & Victor Sandor. Concerns raised about vehicles skidding around the curb at Concord Ave in wet, slippery weather. Residents want traffic calming on Concord Avenue. Complaints about cut through traffic on Wellington Lane and Somerset Street with suggested remedies.

Motion passed unanimously to request Police Department provide data on crashes on Somerset, Wellington and Concord Avenue in the vicinity.

TAC discussed the possibility of looking into whether a school zone would be appropriate near Belmont Day and whether more could be done to alert drivers to slow down as they approach the downhill curve.

9:23 pm Discussion of September Meeting Dates

TAC discussed possible meeting dates on Sept. 12 and October 3rd for a public hearing. Two TAC members indicated that they would be unavailable on the 12th; another TAC member urged the Committee to limit its meetings to the already agreed-upon first and third Thursdays of the month. TAC will meet on September 5th for a hearing on installing a remedy for the intersection at Lexington and Sycamore. TAC will postpone parking restriction and handicap hearings that were scheduled for the 5th. Glenn to make sure we have a quorum for that hearing.

9:24 pm Discussion of Village Hill and Rutledge Road

The Town of Lexington installed wide fog lines and approximately 10 speed bumps on Shade Street in Lexington. We can discuss the pros and cons of those interventions. That road, which is a straightaway next to Route 2, used to be much too fast.

9:25 pm Old Business

Common Street Sharrows

Ask Glenn about whether the travel lanes with sharrows on Common Street will be painted at 10.5 foot widths to allow for a larger shoulder that bicyclists could use if needed.

9:27 pm New Business

Jessie Bennett shared great examples of traffic calming she witnessed in Europe including signs alerting drivers to “Traffic Calming Ahead”, the use of a choke point with speed feedback sign. Speeding gets a red frowning face, reaching the appropriate speed gets a green smiley face. It provided a sense of well-being and alerted people to not fly through the towns as they traveled along highways. Speed-feedback signs are something we should try to get funding for every way we can. They have an immediate impact on drivers.

9:29 pm Meeting Adjourned