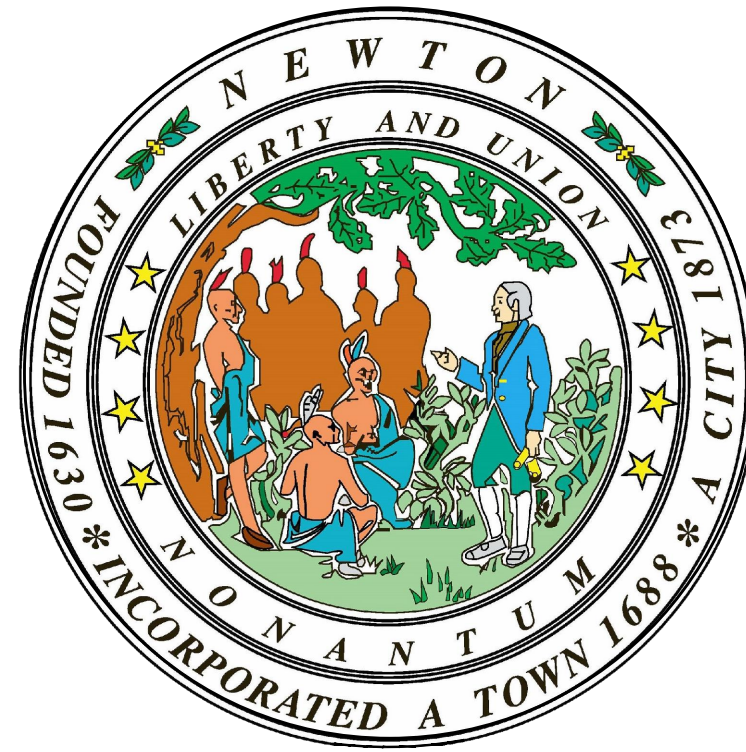


CITY OF NEWTON, MA DEPARTMENT OF PUBLIC WORKS

TRAFFIC CALMING AT WALTHAM STREET / DERBY STREET / FAIRWAY DRIVE INTERSECTION

AUGUST 2019



MAYOR

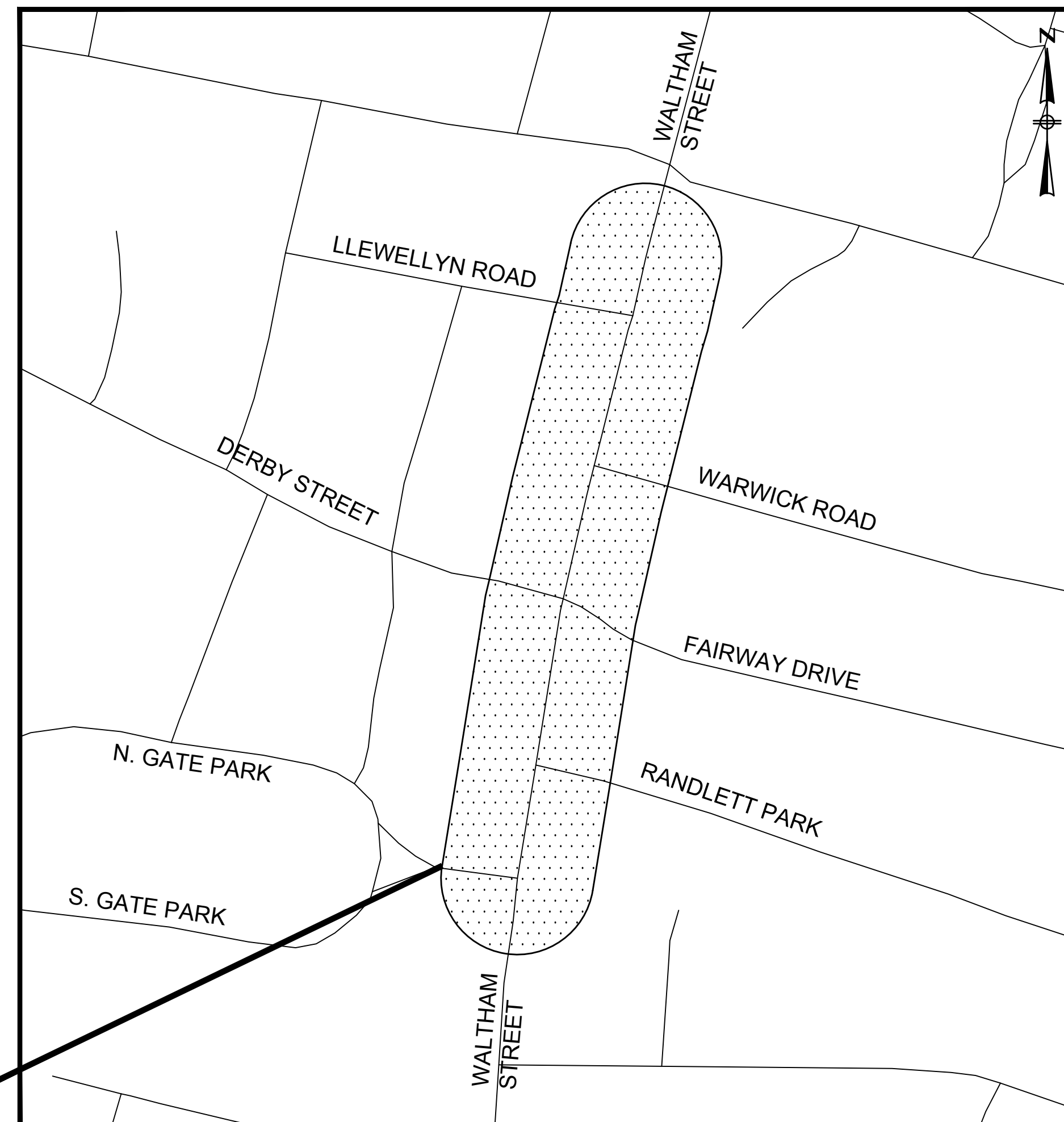
RUTHANE FULLER

CITY COUNCIL

MARC LAREDO, PRESIDENT
DAVID KALIS, VICE PRESIDENT
R. LISLE BAKER, PRESIDENT EMERITUS
DAVID A. OLSON, CLERK OF THE COUNCIL

DEPARTMENT OF PUBLIC WORKS

JAMES MCGONAGLE, COMMISSIONER
LOU TAVERNA, CITY ENGINEER
JASON SOBEL, DIRECTOR OF TRANSPORTATION



**Project
Location**



LOCATION MAP
NOT TO SCALE

PLAN INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	COVER SHEET
2	LEGEND & ABBREVIATIONS
3	GENERAL NOTES
4-5	CONSTRUCTION DETAILS
6-7	CONSTRUCTION & UTILITY PLAN
8	BASELINE AND CURB TIE PLAN
9	GRADING PLAN
10	SIGN & PAVEMENT MARKING PLAN
11	SIGN SUMMARY AND PAVEMENT MARKING DETAILS
12	TEMPORARY TRAFFIC CONTROL PLAN

PREPARED BY:



ISSUE DATE: AUGUST 15, 2019



Christopher M. Roy

REGISTERED PROFESSIONAL

9/6/19

DATE

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CURB OR BERM (TYPE AS NOTED)
		EDGE OF PAVEMENT
		CATCH BASIN (OR GUTTER INLET, LEACHING BASIN, DROP INLET, CATCH BASIN CURB INLET)
		ELECTRIC HANDHOLE (NUMBER AS NOTED)
		ELECTRIC MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		SEWER MANHOLE
		DRAINAGE MANHOLE
		GAS GATE
		WATER GATE
		CURB STOP
		HYDRANT
		FIRE ALARM BOX
		PARKING METER
		STREET LIGHT POLE
		UTILITY POLE
		UTILITY POLE w/ LIGHT
		SIGN
		GUY POLE
		DRAIN PIPE (SIZE AS NOTED)
		SEWER MAIN (SIZE AS NOTED)
		ELECTRIC DUCT
		GAS MAIN (SIZE AS NOTED)
		WATER MAIN (SIZE AS NOTED)
		TELEPHONE DUCT (SIZE AS NOTED)
		OVERHEAD WIRE
		MAIL BOX
		WOOD GUARD RAIL, STEEL BEAM GUARD, WOOD OR STEEL POSTS (TYPE AS NOTED)
		STEEL GUARD RAIL, STEEL POSTS (TYPE NOTED)
		STONE WALL
		RETAINING WALL (TYPE NOTED)
		HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)
		STATE HIGHWAY LAYOUT LINE (SHLO)
		CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.)
		CITY, TOWN, COUNTY OR STATE BOUNDARY LINE
		PROPERTY LINE
		EASEMENT LINE (TYPE NOTED)
		CONSTRUCTION BASELINE
		SURVEY LINE
		RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES
		WHEELCHAIR RAMP
		TREE (SIZE AND TYPE AS NOTED)
		HEDGE/SHRUBS
		FENCE (SIZE AND TYPE AS NOTED)
		EDGE OF WETLAND W/ FLAGGED NUMBER
		EDGE OF RIVER/STREAM LINE
		100-FT. WETLAND BUFFER LIMIT
		100-FT. RIVER FRONT LIMIT
		200-FT. RIVER FRONT LIMIT
		WOODED AREA / LIMIT OF CLEARING
		SPOT GRADE
		SAW CUT LINE
		TEST PIT
		BORING
		EROSION CONTROL BARRIER/COMPOST FILTER TUBES

ABBREVIATIONS

GENERAL

ABAN	ABANDON
ADJ	ADJUST
ALT	ALTERATION
APPROX	APPROXIMATE
BLDG	BUILDING
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
BOW	BOTTOM OF WALL
BSW	BACK OF SIDEWALK
CC	CONCRETE CURB
CEM	CEMENT
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
DWY	DRIVEWAY
EP, EOP	EDGE OF PAVEMENT
EL	ELEVATION
ELECT	ELECTRICAL
ESMT	EASEMENT
EXIST	EXISTING
FDN	FOUNDATION
GRAN	GRANITE
GC	GRANITE CURB
HOR	HORIZONTAL
IP	IRON PIPE
JCT	JUNCTION
LP	LOW POINT
MB	MAIL BOX
MHB	MASSACHUSETTS HIGHWAY BOUND
OC	ON CENTER
PCC	POINT OF COMPOUND CURVATURE
PC	POINT OF CURVATURE
PRC	POINT OF REVERSE CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PERM	PERMANENT
PGL	PROFILE GRADE LINE
PROP	PROPOSED
PVC	POINT OF VERTICAL CURVATURE
PVMT	PAVEMENT
R	RADIUS OF CURVATURE
R&D	REMOVE AND DISCARD
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
REM	REMOVE
REMOD	REMODEL
RET	RETAIN
RR	RAILROAD
RT	RIGHT
SB	SOUTH BOUND OR STONE BOUND
SW	SIDEWALK
SHT	SHEET
SHLD	SHOULDER
STA	STATION
TEMP	TEMPORARY
TOS	TOP OF SLOPE
TOW	TOP OF WALL
TYP	TYPICAL
VAR	VARIABLE
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
WCR	WHEELCHAIR RAMP

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
+FY	FLASHING YELLOW LEFT ARROW
R-	STEADY RED RIGHT ARROW
Y-	STEADY AMBER RIGHT ARROW
G-	STEADY GREEN RIGHT ARROW
+R	STEADY RED LEFT ARROW
+Y	STEADY AMBER LEFT ARROW
+G	STEADY GREEN LEFT ARROW
W	STEADY WALK (PERSON WALKING) - LUNAR WHITE
DW	STEADY DON'T WALK (HAND) - PORTLAND ORANGE
FDW	FLASHING DON'T WALK (FLASHING HAND) - PORTLAND ORANGE

UTILITIES

ACCOMP	ASPHALT COATED CORRUGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CI	CURB INLET
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
CMP	CORRUGATED METAL PIPE
C	CONDUIT
CPP	CORRUGATED PLASTIC PIPE
CSP	CORRUGATED STEEL PIPE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FM	FORCE MAIN
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GG	GAS GATE
HDW	HEADWALL
HYD	HYDRANT
INV	INVERT ELEVATION
LP	LIGHT POLE
MH	MANHOLE
PVC	POLY-VINYL-CHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE (CLASS III UNLESS NOTED)
SD	SUBDRAIN
SMH	SEWER MANHOLE
TS	TRAFFIC SIGNAL
TSV&B	TAPPING SLEEVE, VALVE AND BOX
UP	UTILITY POLE
UPL	UTILITY POLE w/ LIGHT
UPT	UTILITY POLE w/ TRANSFORMER
VCP	VITRIFIED CLAY PIPE
WIP	WROUGHT IRON PIPE
WG	WATER GATE
WM	WATER METER/WATER MAIN

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
		CONTROL CABINET POLE MOUNTED
		CONTROLLER PHASE
		MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
		VEHICULAR SIGNAL HEAD (ALPHA-NUMERIC DESIGNATION AS NOTED)
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		VEHICULAR SIGNAL HEAD (REMOVED & RESET)
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN SIGNAL HEAD, OPTICALLY PROGRAMMED
		PULL BOX 12"x12" OR HANDHOLE
		LOOP DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		PRE-EMPTION DETECTOR
		PRE-EMPTION CONFIRMATION STROBE
		SIGNAL CONDUIT (SINGLE RUN)
		SIGNAL CONDUIT (DOUBLE RUN)
		SIGNAL POST & BASE
		MAGNETIC DETECTOR
		SCHOOL ZONE SPEED LIMIT SIGN
		MICROWAVE OR ULTRASONIC DETECTOR
		VIDEO DETECTION CAMERA
		VIDEO DETECTION ZONE

PAVEMENT MARKINGS AND SIGNING SYMBOLS

PROPOSED

CW	CROSSWALK, 2 - 12" WHITE LINES (8" WIDTH)
SL	STOP LINE - 12" WHITE LINE 4' BEHIND CW (TYP.)
SWL	SOLID WHITE LINE - 4"
SWCHL	SOLID WHITE CHANNELIZING LINES - 12" (SPACING NOTED)
SWGL	SOLID WHITE GORE LINE 12" @ 33°, (SPACING NOTED)
SWPL	SOLID WHITE PARKING LINE - 4"
BWL	BROKEN WHITE LINE - 4"
DWLEx	DOTTED WHITE LANE EXTENSION LINE - 4" (2' LINE & 6' GAP)
DYLEx	DOTTED YELLOW LANE EXTENSION LINE - 4" (2' LINE & 6' GAP)
BYL	BROKEN YELLOW LINE - 4"
DBYL	DOUBLE YELLOW LINE - 2 - 4" LINES
SYL	SOLID YELLOW LINE - 4"
SYGL	SOLID YELLOW GORE LINE 12" @ 33°, (SPACING NOTED)
SCHOOL	SCHOOL ZONE - WHITE
	HANDICAP SYMBOL - WHITE
	PAVEMENT ARROW - WHITE
ONLY	LEGEND "ONLY" - WHITE

8/15/2019 8:37 AM O:\540056472 - NEWTON ON-CALL\TASK 9 - WALTHAM, DERBY, FAIRWAY\DRAWING FILES\PLANS\LEGEND.DWG (MADOT-E-STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY:	SUBCONSULTANT	SCALE	TITLE	BETA JOB NO.
									NONE	Traffic Calming at Intersection of Waltham Street / Derby Street / Fairway Drive LEGEND & ABBREVIATIONS Newton, MA	5472_09
											8/15/2019
							www.BETA-inc.com				2 of 12
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION											

GENERAL NOTES

- THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSIVE WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
- 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.
- 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 THE RESOLUTION OF THE CONFLICT.
- THE CONTRACTOR SHALL MAINTAIN ACCESS TO ABUTTING PROPERTIES AT ALL TIMES AND NOTIFY ALL ABUTTERS IN ADVANCE OF ANY INTERRUPTIONS TO ACCESS.
- THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 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).
- DRAINAGE STRUCTURES SHALL BE RETAINED UNLESS NOTED OTHERWISE.
- CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.
- WHERE DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE THE CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, DOWN SPOUT FROM BUILDING, INLETS AND OUTLETS ARE PLUGGED. ALL LIVE CONNECTIONS SHALL BE CONNECTED TO THE NEW SYSTEM.
- ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.
- CONSTRUCTION BASELINE TIES ARE SHOWN ON CURB TIE & GRADING PLANS.
- PROPOSED SIDEWALKS AND WHEELCHAIR RAMPS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSION JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
- IN ALL LOCATIONS WHERE PROPOSED SIDEWALK TRANSITIONS DOWN TO MEET EXISTING GRADE, EXISTING SIDEWALK OR PAVED AREA, SLOPE SHALL NOT EXCEED 1:12.
- CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, TREES, GRATE, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36" EXCLUDING THE CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.
- SIGNS, POLES AND OTHER FEATURES LOCATED IN PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.
- CONTRACTOR SHALL VERIFY EXISTING GRADES. IF ANY ADJUSTMENT IS REQUIRED DUE TO DIFFERENT EXISTING GRADES FOUND IN THE FIELD, THE CONTRACTOR SHALL NOTIFY AND SEEK THE APPROVAL OF THE ENGINEER PRIOR TO PERFORMING THE WORK.
- IN AREAS OF NEW SIDEWALK, NEW EDGE OF PAVEMENT OR CURB WITHOUT SIDEWALK OR ANY WORK ADJACENT TO EXISTING GRASS AREAS, EVEN WHEN NO SLOPE-MATCHING OR GRADING IS NECESSARY AND THE EXISTING GRADE IS MET, LOAM BORROW AND SEED SHALL BE PROVIDED AS NECESSARY TO REPAIR AND COMPLETE ANY DAMAGE TO THE GRADE CAUSED BY THE CONSTRUCTION PROCESS.
- IN FILL AREAS, TOP SOIL SHALL BE REMOVED FOR A DEPTH OF 12" (MIN.) OR AS DIRECTED BY THE ENGINEER. SUBGRADE AREAS WILL BE COMPACTED PRIOR TO THE PLACEMENT OF FILL MATERIAL.
- ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VA4, UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL EXISTING GRANITE CURB CONFLICTING WITH PROPOSED CONSTRUCTION SHALL BE REMOVED AND DISCARDED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- ALL PROPOSED PAVEMENT MARKINGS ON ROADWAYS SHALL BE REFLECTORIZED WHITE AND YELLOW THERMOPLASTIC.
- SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
- TREES TO BE RETAINED WHICH RESTRICT SIGHT DISTANCE OR RESTRICT HORIZONTAL OR VERTICAL CLEARANCES SHALL BE TRIMMED AS REQUIRED BY THE ENGINEER AT NO ADDITIONAL COST.
- NO TREE SHALL BE REMOVED PRIOR TO APPROVAL OF THE CITY OF NEWTON.
- WHEN WORKING NEXT TO EXISTING WALLS, BERMS, AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES

SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE. IF ALTERATION TO EXISTING WALLS, BERMS AND OTHER STRUCTURES BECOMES NECESSARY DUE TO THE PROPOSED DESIGN, THE CONTRACTOR SHOULD SEEK THE APPROVAL OF THE ENGINEER.

- ALL PAVEMENT MARKINGS AND/OR SIGN NOTES ARE SHOWN ON THE SIGNS AND PAVEMENT MARKING PLANS.
- THE EXPOSED EDGES OF ALL LONGITUDINAL AND TRANSVERSE SAW CUT JOINTS SHALL BE TREATED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALANT MEETING MASSDOT SPECIFICATIONS.

WHEELCHAIR RAMP NOTES

- ALL WHEELCHAIR RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B.) AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.) AND THE LATEST MASSDOT STANDARDS.
- THE LOCATION OF PROPOSED WHEELCHAIR RAMPS ARE SHOWN ON CONSTRUCTION PLANS AND THE WHEELCHAIR RAMP DETAILS. EXACT LOCATIONS MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
- ALL PROPOSED WHEELCHAIR RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH MASSDOT CONSTRUCTION STANDARD DRAWINGS (E 107.65). THE COLOR OF THE PANEL SHALL BE THE CITY STANDARD AND APPROVED BY THE ENGINEER.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL WHEELCHAIR RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW WHEELCHAIR RAMP AS DIRECTED BY THE ENGINEER.
- THE TRANSITION SLOPE OF ANY CURB RAMP, EXCEPT MAXIMUM LENGTH HIGH SIDE TRANSITIONS, SHALL NOT EXCEED 7.5%, +/-0.5% FOR TOLERANCE OF CONSTRUCTION. PER AAB 521 CMR, FINISHED SLOPE MAY NOT EXCEED 8.33%. PROPOSED WHEELCHAIR RAMP SLOPES, ESPECIALLY HIGH SIDE TRANSITIONS, SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO POURING OF CONCRETE AND ADJUSTED, IF NECESSARY, AT THE DIRECTION OF THE ENGINEER.

SURVEY NOTES

- ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED UTILIZING SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION PROVIDED BY LIGHTHOUSE LAND SURVEYING ON THE PLAN OF TOPOGRAPHIC SURVEY OF NEWTON, DATED XX/XX/XXXX
- THE UNDERGROUND UTILITIES, AS SHOWN ON THE PLANS, HAVE BEEN COMPILED FROM RECORD PLANS. THE ACCURACY AND COMPLETENESS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK. AT LEAST 72 HOURS BEFORE DIGGING BEGINS THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT (888)344-7233. ALL CITY OWNED UTILITY STRUCTURES WITHIN AREAS AFFECTED BY THE WORK SHALL BE ADJUSTED TO NEW LINE AND GRADE AS DIRECTED BY THE ENGINEER. ANY UTILITY POLES AND/OR GUY POLES WITHIN AREAS AFFECTED BY THE WORK SHALL BE REMOVED AND RESET BY THE RESPECTIVE UTILITY COMPANY. ALTERATIONS TO UTILITIES NOT OWNED BY THE CITY SHALL BE MADE BY THE RESPECTIVE UTILITY OWNERS.
- THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
- ALL EXISTING PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.
- ELEVATIONS SHOWN REFER TO NAVD 88 VERTICAL DATUM. THE COORDINATE INFORMATION INCLUDED ON THESE PLANS IS BASED UPON MASSACHUSETTS GRID SYSTEM, NAD 1983, AS DERIVED FROM GPS CONTROL COORDINATES PROVIDED BY THE MASSDOT HIGHWAY DEPARTMENT SURVEY SECTION.
- BENCHMARK INFORMATION:
SEE CONSTRUCTION BASELINE TIES SHEET 8 FOR BENCHMARK INFORMATION AND LOCATIONS.

PAVEMENT NOTES

FULL DEPTH PAVEMENT

SURFACE COURSE: 2" SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER

INTERMEDIATE COURSE: 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE COURSE: 4.5" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER

SUB-BASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW, TYPE b

BOX WIDENING 34' WIDE

SURFACE COURSE: 2" SUPERPAVE SURFACE COURSE 12.5 - POLYMER (SSC-12.5-P) OVER ASPHALT EMULSION FOR TACK COAT OVER

INTERMEDIATE COURSE: 2.5" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT OVER

BASE COURSE: 6" HES CEMENT CONCRETE BASE COURSE OVER


SUB-BASE: 8" GRAVEL BORROW, TYPE b

CEMENT CONCRETE SIDEWALKS AND WHEELCHAIR RAMPS

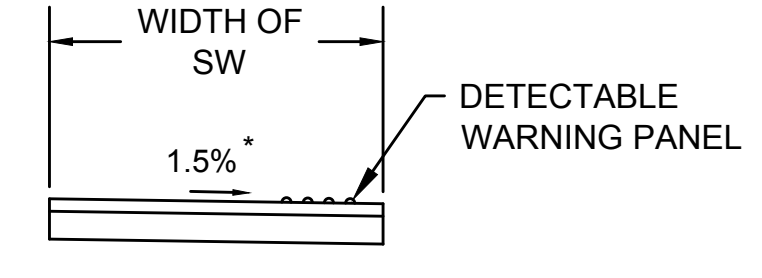
SURFACE: 4" CEMENT CONCRETE WALK SURFACE 4000 PSI, 3/4", 610 OVER

FOUNDATION: 8" GRAVEL BORROW, TYPE b

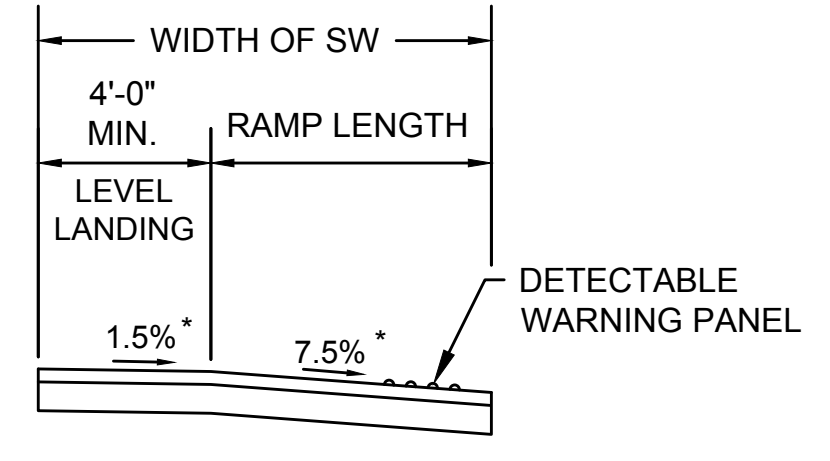
8/15/2019 8:37 AM O:\640056472 - NEWTON ON-CALL\TASK 9 - WALTHAM, DERBY - FAIRWAY\DRAWING FILES\PLANS\SET\CONST DETAILS.DWG (MADOT-E.STB)

				DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY	SUBCONSULTANT	SCALE	TITLE	BETA JOB NO. 5472_09
				DESIGNED BY:		 www.BETA-inc.com		NONE	Traffic Calming at Intersection of Waltham Street / Derby Street / Fairway Drive GENERAL NOTES Newton, MA	ISSUE DATE 8/15/2019
				CHECKED BY:						SHEET NO. 3 of 12
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS						

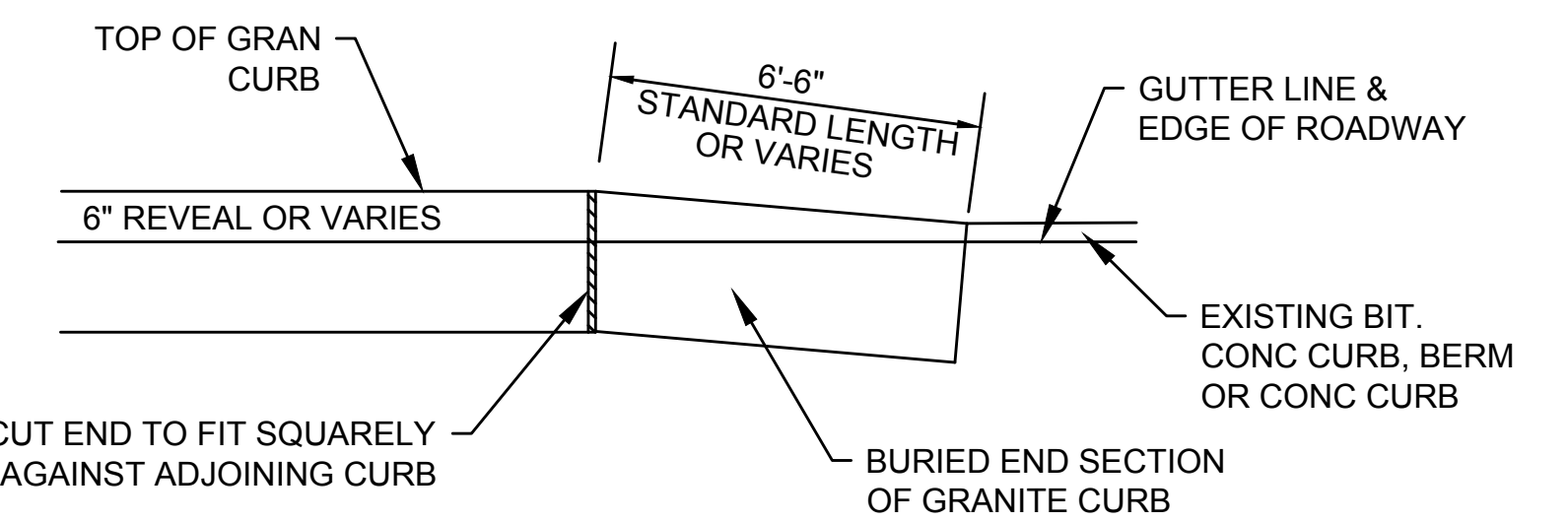
WHEEL CHAIR RAMP TYPE A DATA											
WCR NO.	LOCATION	RAMP REFERENCE POINT		GUTTER PROFILE SLOPE	LENGTH OF PRIMARY RAMP L	WIDTH OF RAMP OPENING W	DEPTH OF LEVEL LANDING (MIN. 4.0')	TRANSITION LENGTH		SIDEWALK WIDTH	WCR TYPE
		STATION	OFFSET					LEFT	RIGHT		
1	WALTHAM ST	05+97.6'	29.4' RT	-1.7%	6.5' TO 8.5'	5.0'	4.0'	9.0'	6.5'	12.5'	C
2	WALTHAM ST	06+25.20'	29.6' RT	-1.3%	6.4' TO 7.8'	5.0'	4.9' TO 6.4'	9.0'	6.5'	10' - 13.5'	C
3	WALTHAM ST	06+31.71'	25.7' LT	2.2%	2.5' TO 2.7'	5.0'	5.0' TO 6.0'	6.5'	11.0'	5.9' TO 9.0'	D
4	WALTHAM ST	06+56.58'	26.6' LT	2.1%	6.2' TO 7.3'	5.0'	6.2' TO 7.3'	11.0'	3.25' 3" R	4.9' TO 7.5'	B
5	WALTHAM ST	06+74.25'	15.05' RT	-2.6%	4.0'	5.0'	5.0'	11.0'	6.5'	4.7' TO 5.1'	A
6	WALTHAM ST	06+74.59'	16.1' LT	2.9%	3.3'	5.0'	5.0'	3.25' 3" R	11.0'	4.8' TO 8.2'	A



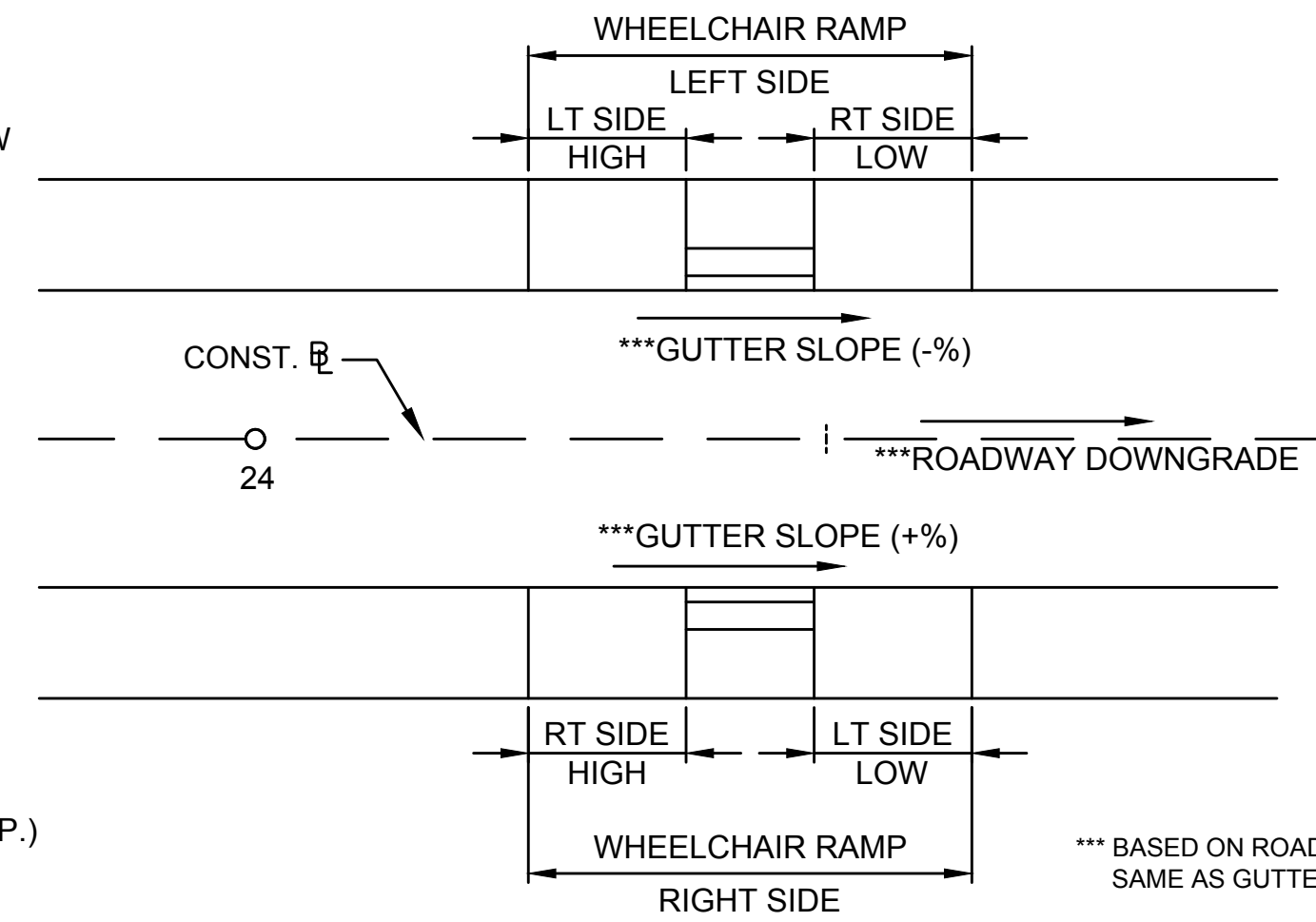
SECTION A-A
NOT TO SCALE



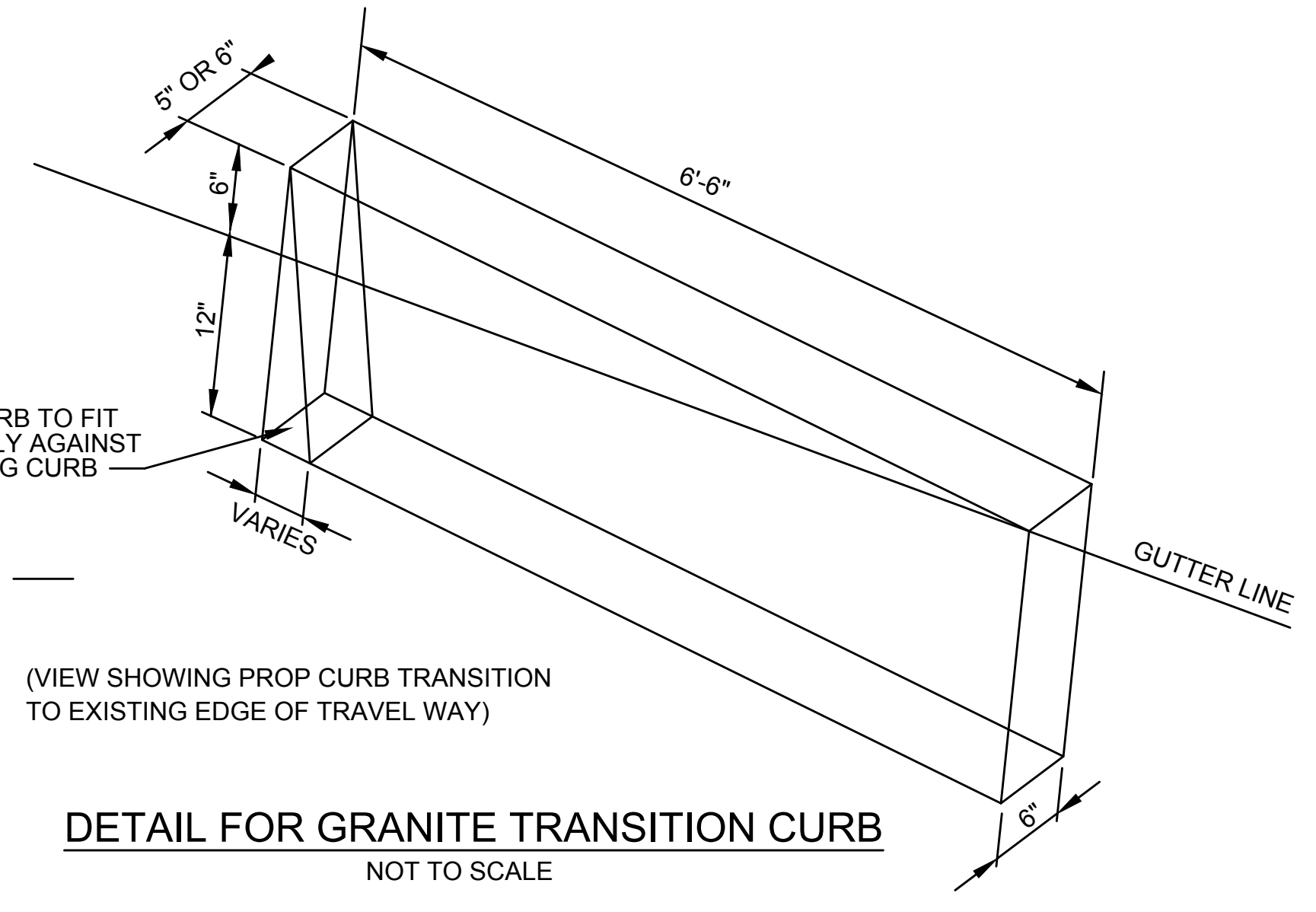
SECTION B-B
NOT TO SCALE



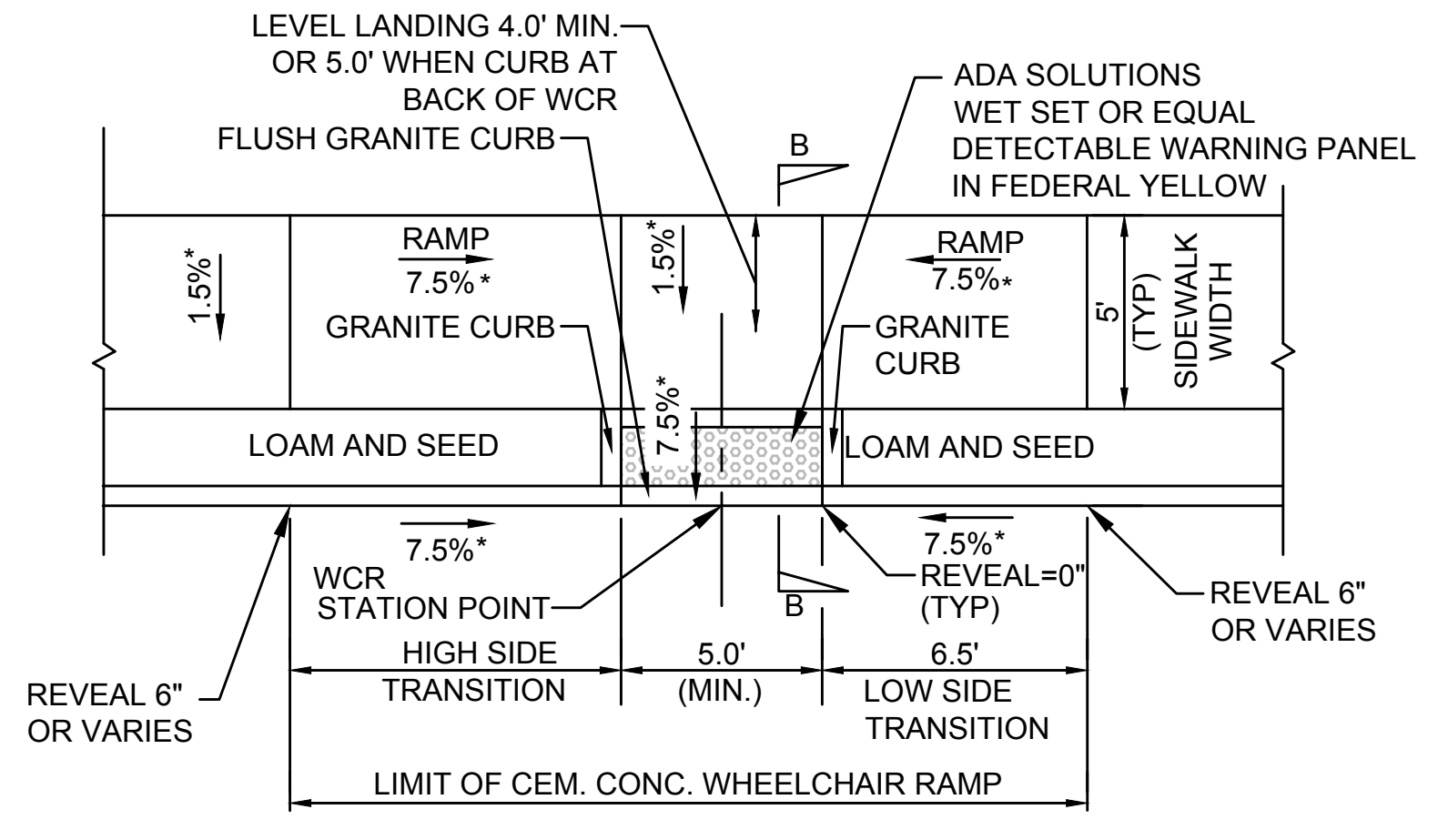
DETAIL FOR TRANSITION CURB
TRANSITION CURB - PROP CURB TO EXISTING CURB
NOT TO SCALE



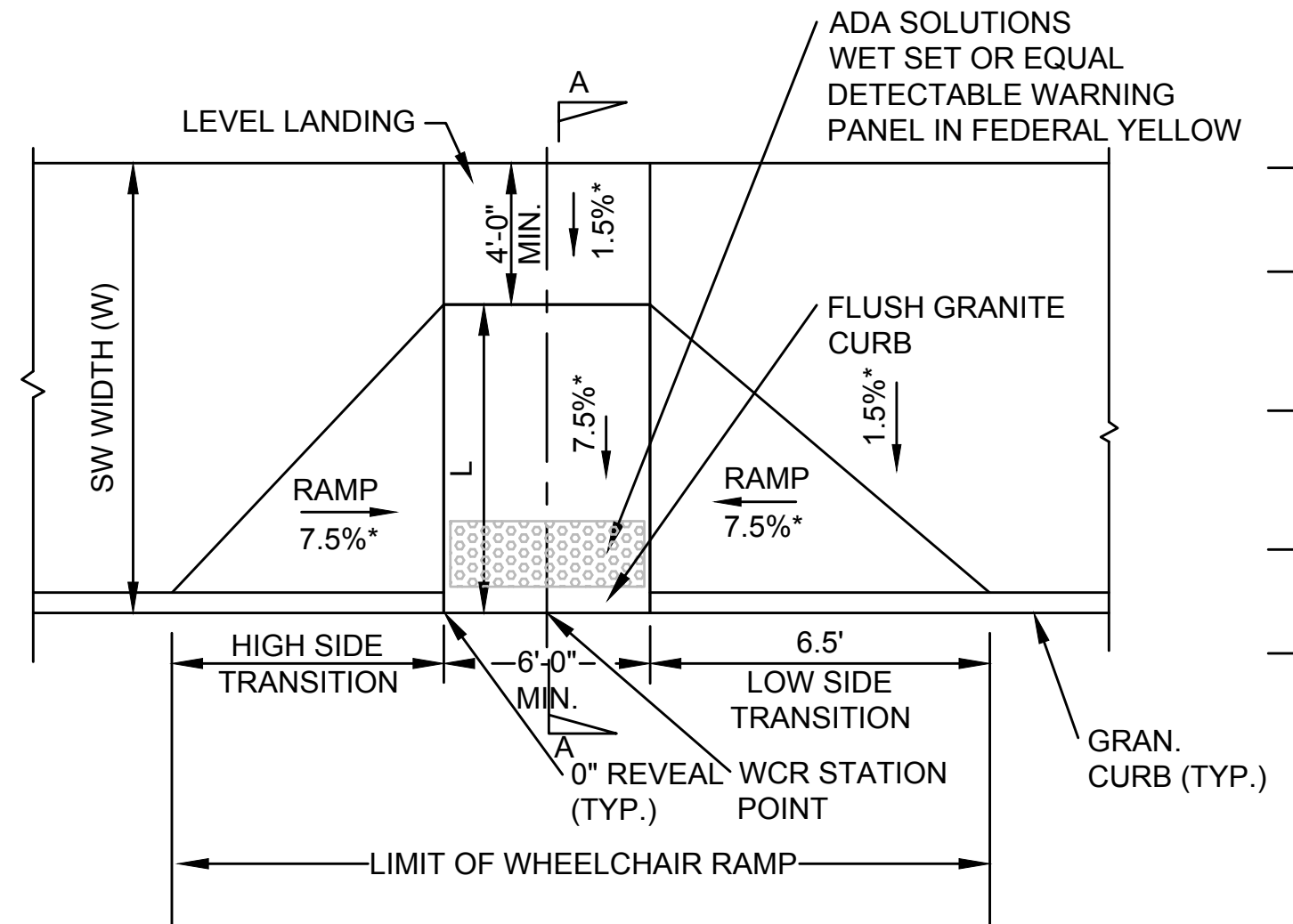
GUTTER SLOPE DIAGRAM
NOT TO SCALE



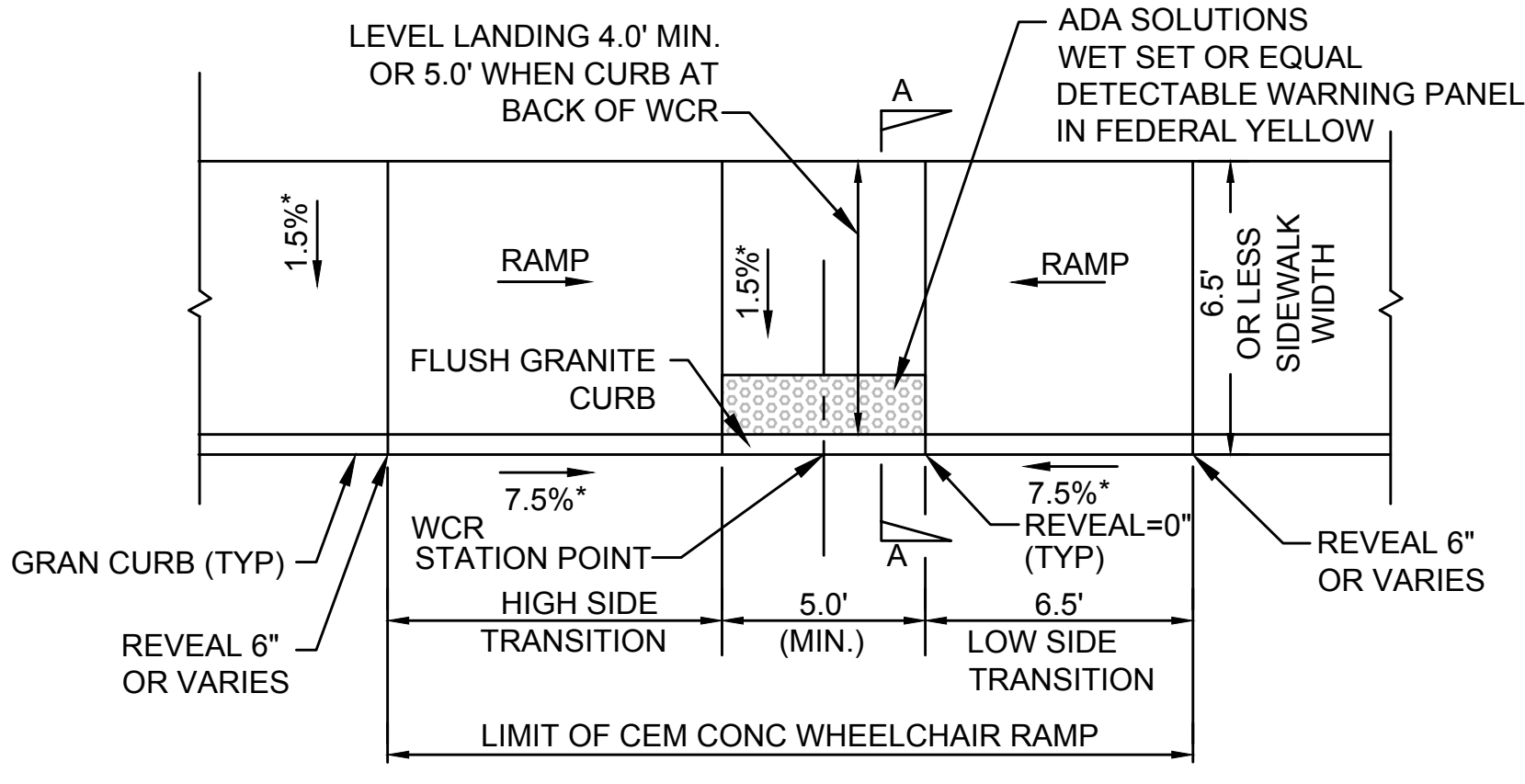
DETAIL FOR GRANITE TRANSITION CURB
NOT TO SCALE



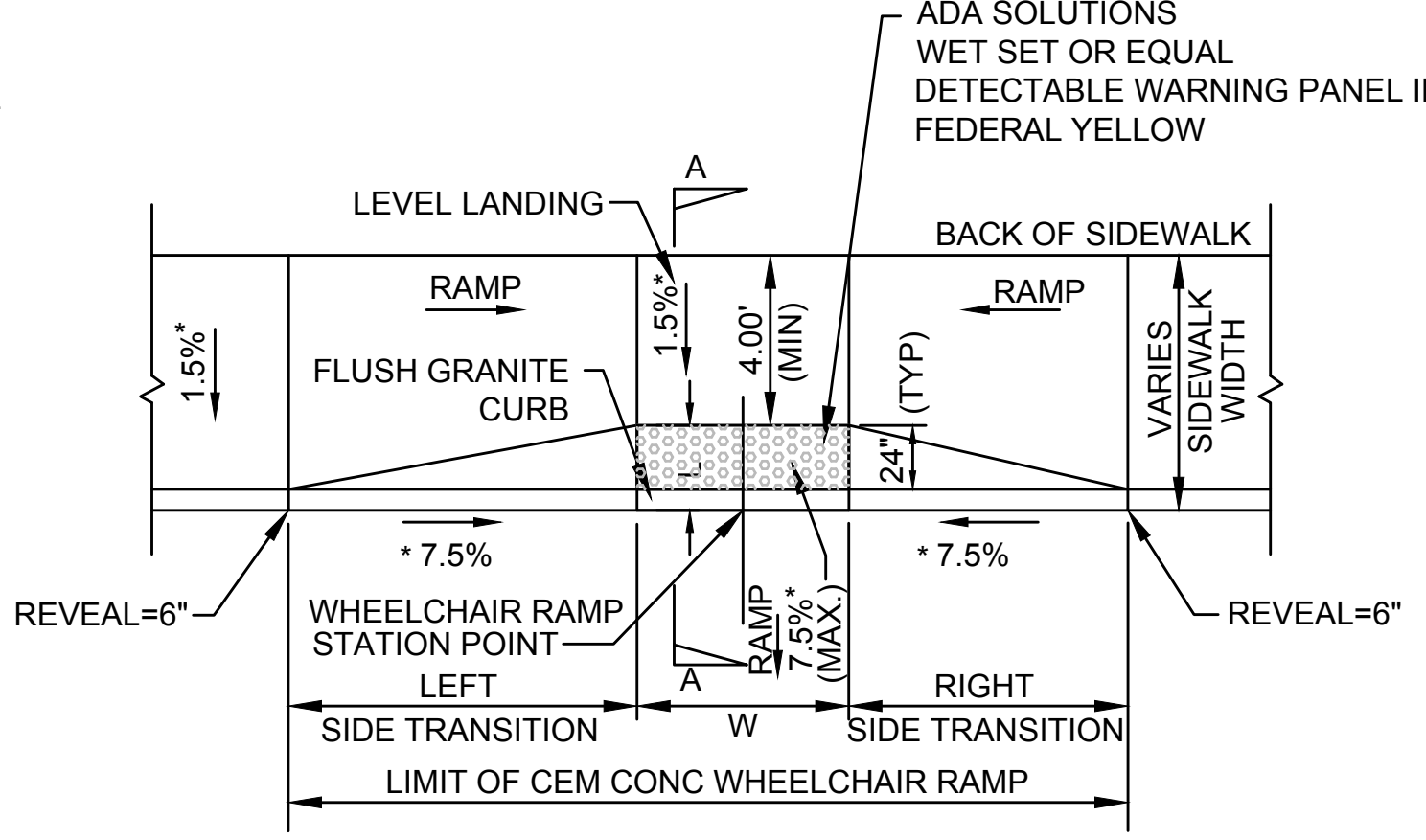
WHEELCHAIR RAMP DETAIL TYPE "A"
NOT TO SCALE



WHEELCHAIR RAMP DETAIL TYPE "C"
NOT TO SCALE



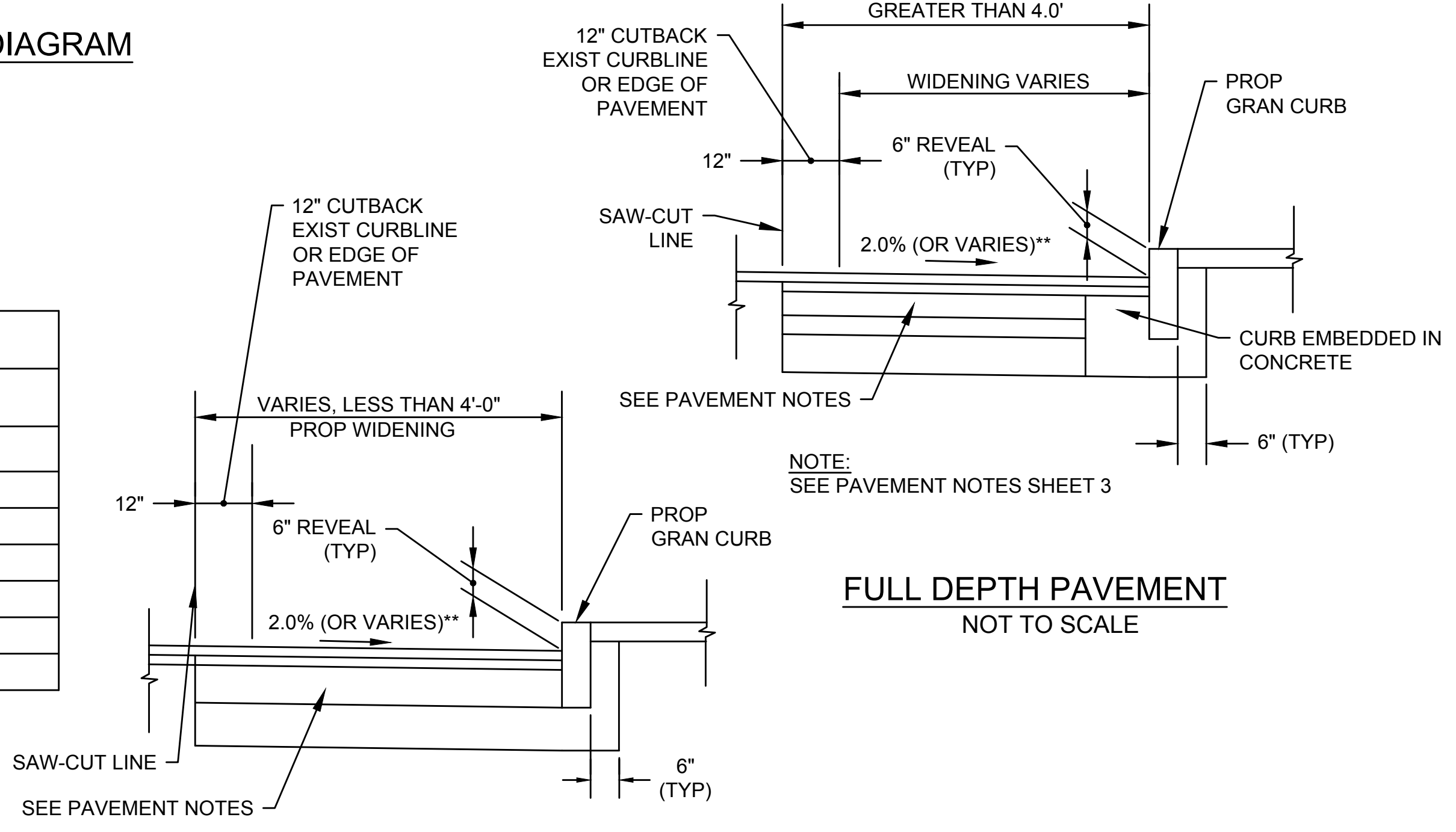
WHEELCHAIR RAMP DETAIL TYPE "B"
SEE MASSDOT S.D. E107.2.1
NOT TO SCALE



WHEELCHAIR RAMP DETAIL TYPE "D"
NOT TO SCALE

TABLE I	
ROADWAY PROFILE GRADE	* HIGH SIDE TRANSITION LENGTH
%	ENGLISH UNITS
=0%	6'-6"
>0% TO 1%	7'-8"
>1% TO 2%	9'-0"
>2% TO 3%	11'-0"
>3% TO 4%	14'-0"
>4% TO 5%	15'-0" MAX.

CURB TRANSITION LENGTH FOR WHEELCHAIR RAMPS
MASSDOT CONST. STD. DWG. NO. E107.9.0
*BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6".



DETAIL FOR BOX WIDENING 4.0' OR LESS
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

8/15/2019 8:37 AM O:\540055472 - NEWTON ON-CALL\TASK 9 - WALTHAM, DERBY, FAIRWAY\DRAWING FILES\PLANS\SET\CONST DETAILS.DWG (MADOTE-STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DESIGNED BY:
CHECKED BY:

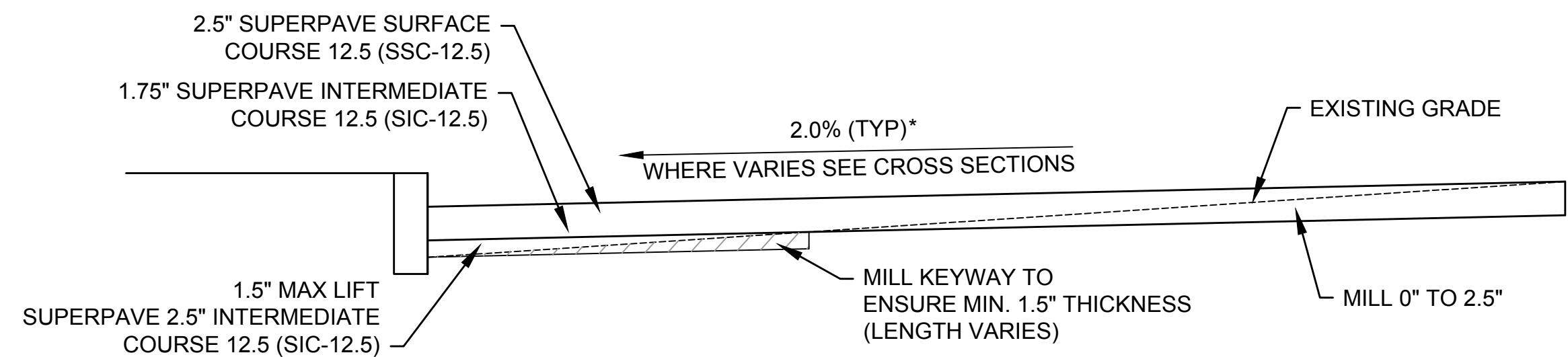
REGISTERED PROFESSIONAL
PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT
SCALE
NONE

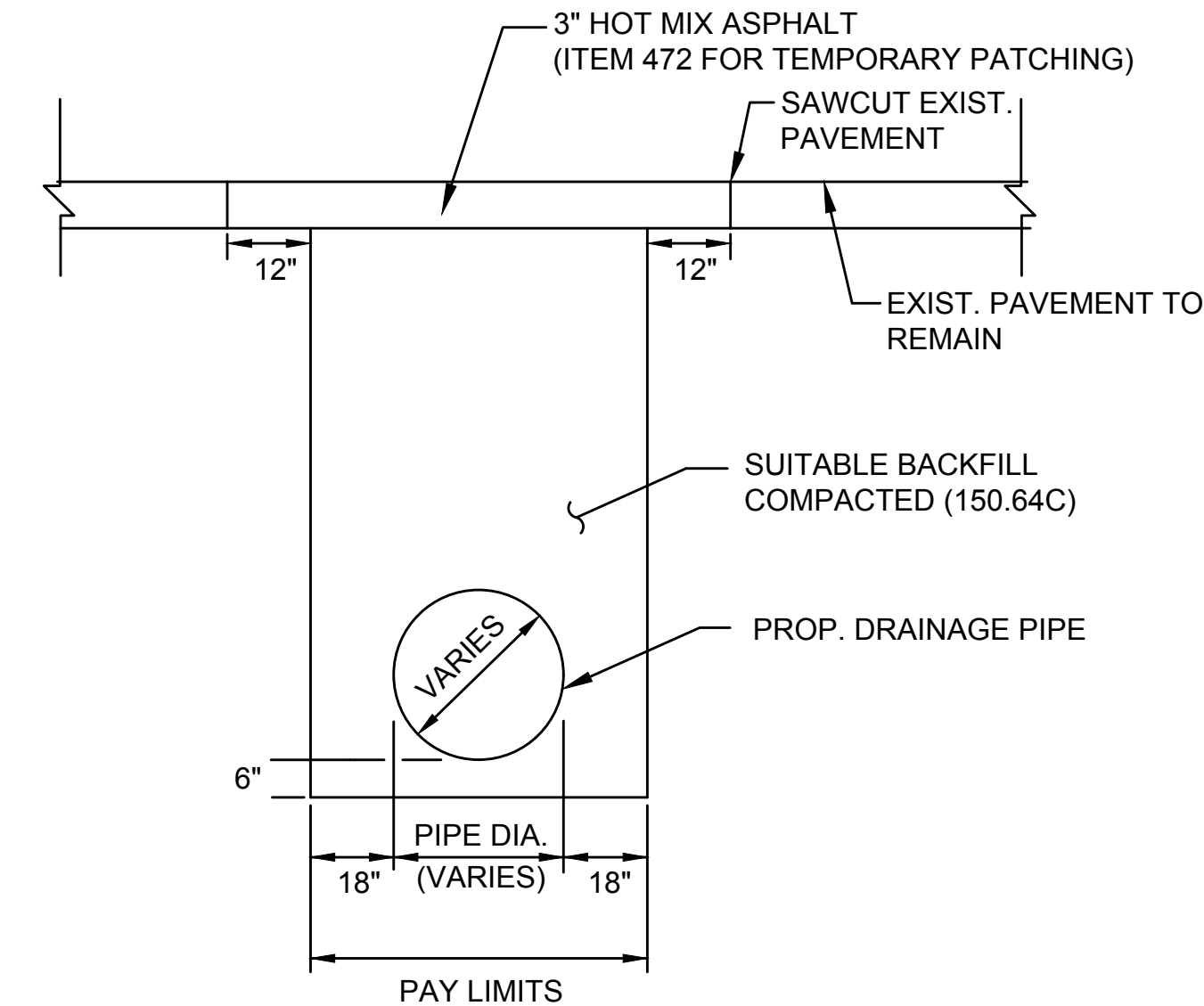
TITLE
Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive
CONSTRUCTION DETAILS
Newton, MA

BETA JOB NO. 5472_09
ISSUE DATE 8/15/2019
SHEET NO. 4 of 12

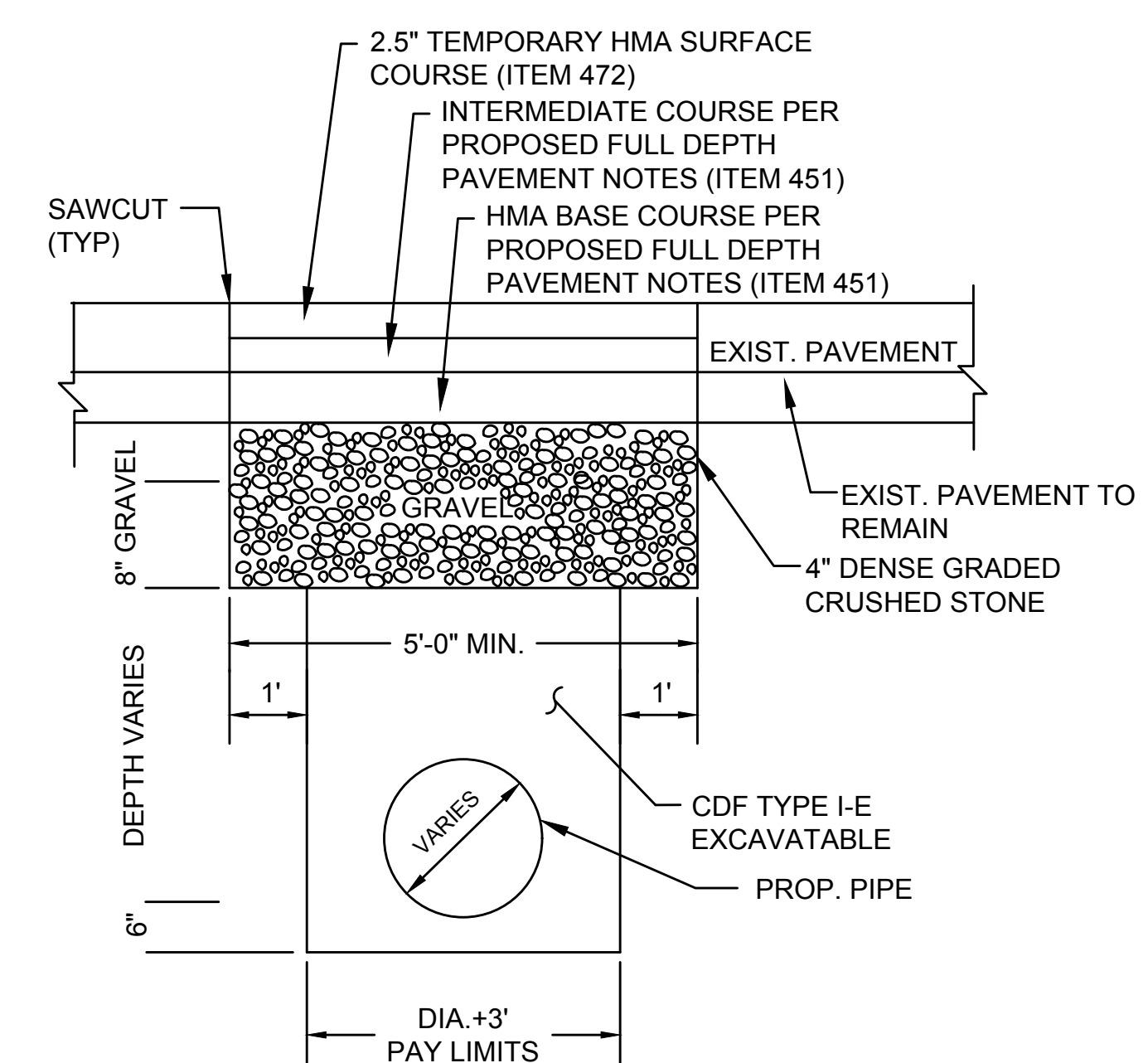
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



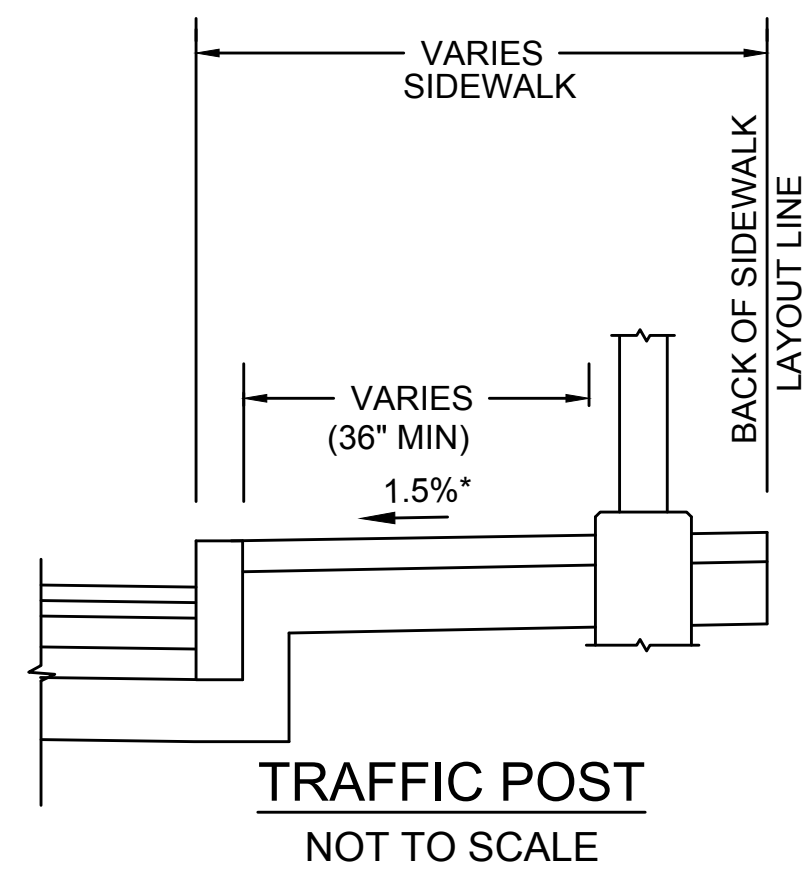
DETAIL FOR VARIABLE DEPTH LEVELING
NOT TO SCALE



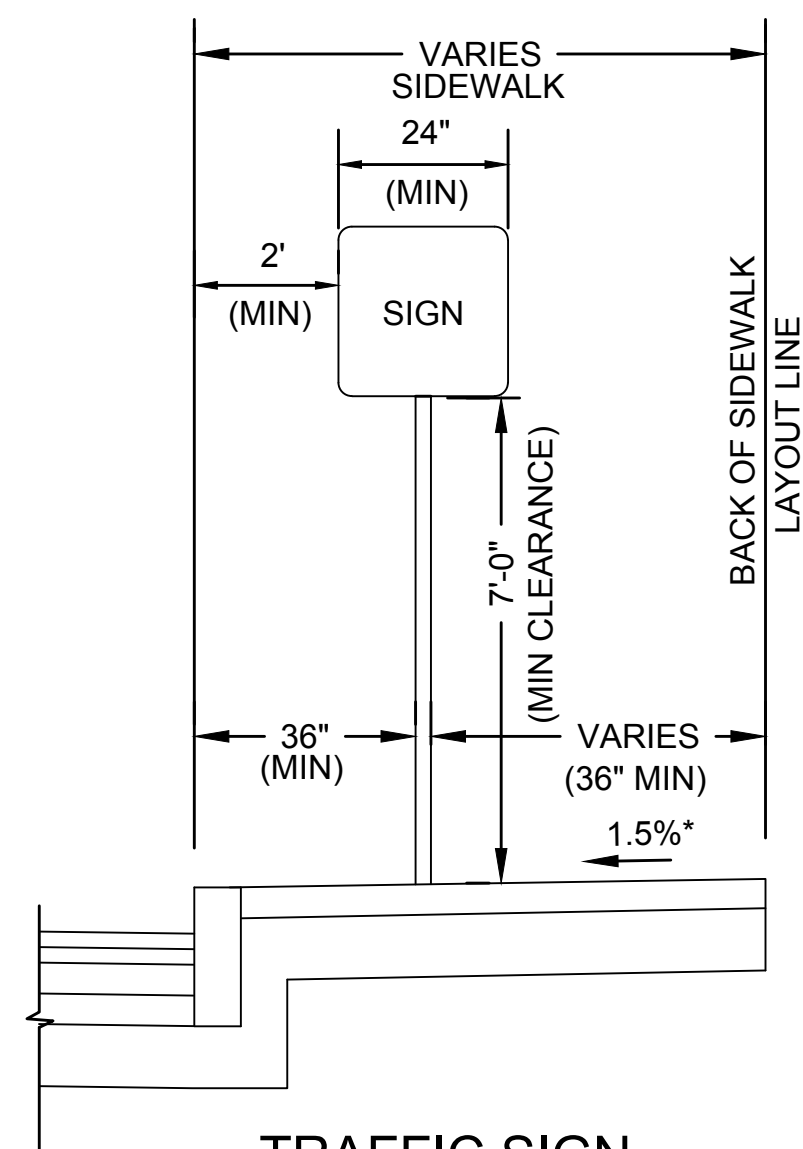
DETAIL FOR TEMPORARY TRENCH FOR DRAINAGE PIPE IN FULL DEPTH AREAS
NOT TO SCALE



PERMANENT TRENCH PATCH DETAIL IN MILLED AREAS
NOT TO SCALE



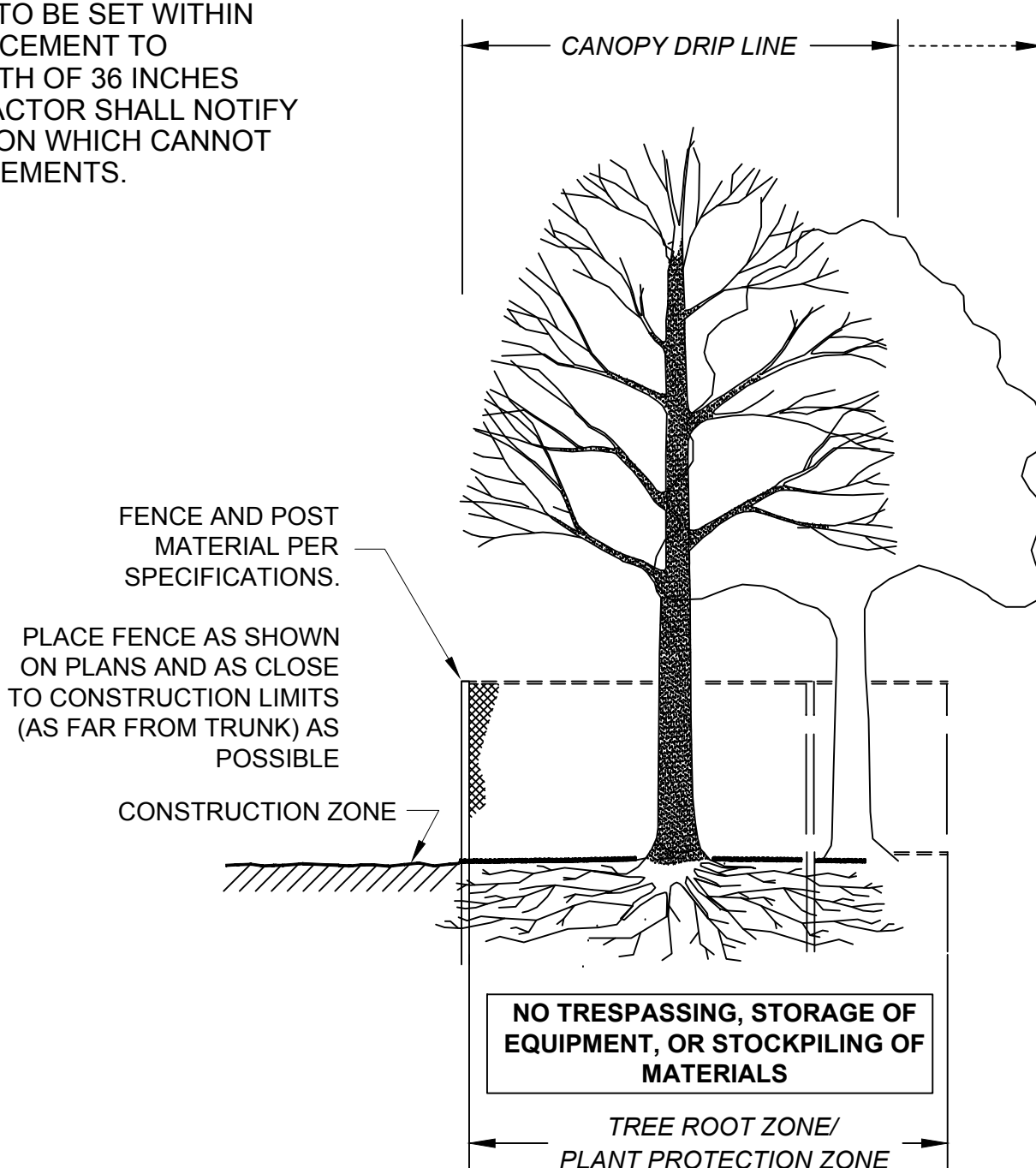
TRAFFIC POST
NOT TO SCALE



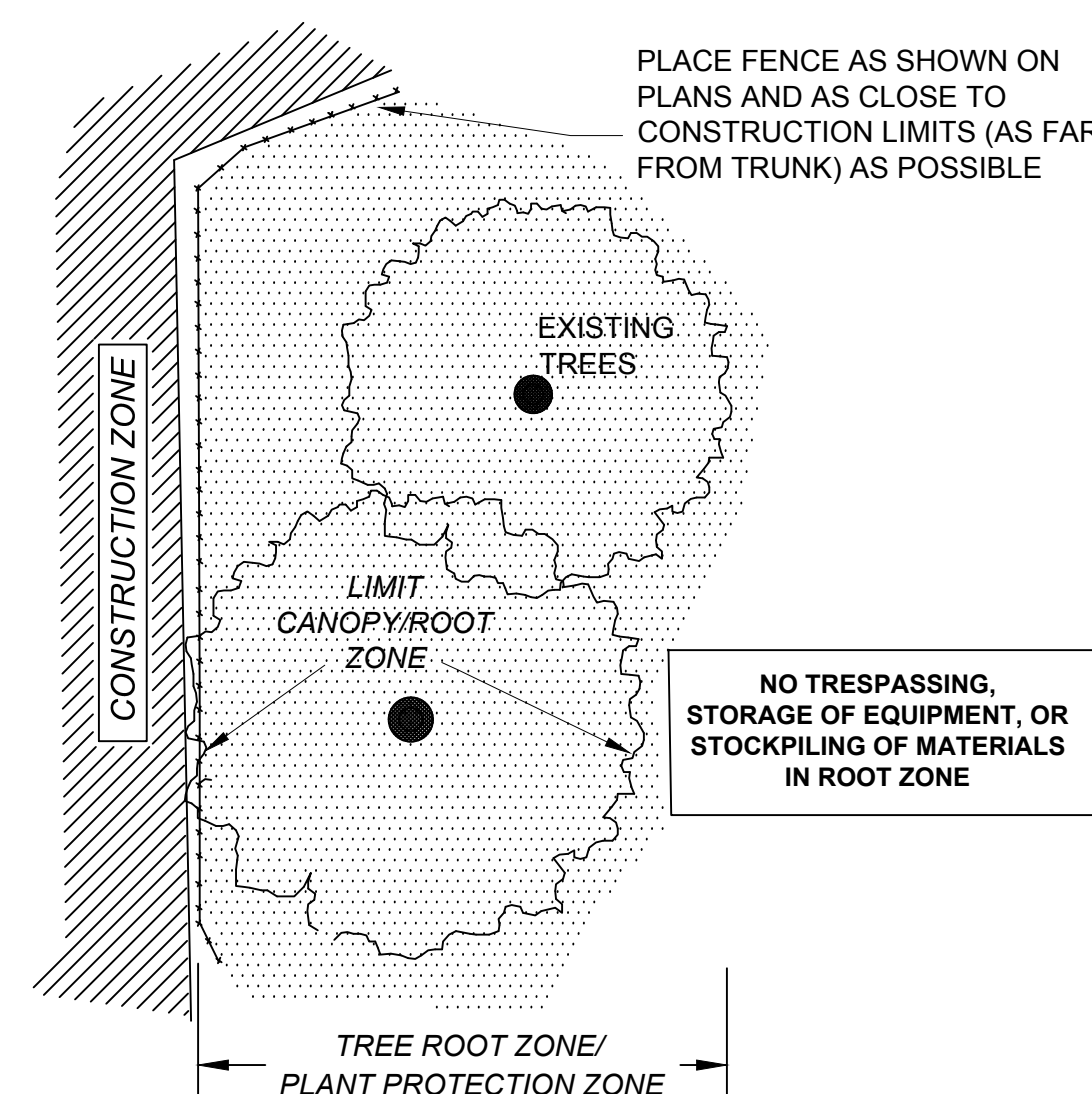
TRAFFIC SIGN
NOT TO SCALE

- NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALKS SHALL BE 36 INCHES, EXCLUDING THE CURB.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36 INCHES NOT INCLUDING CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.

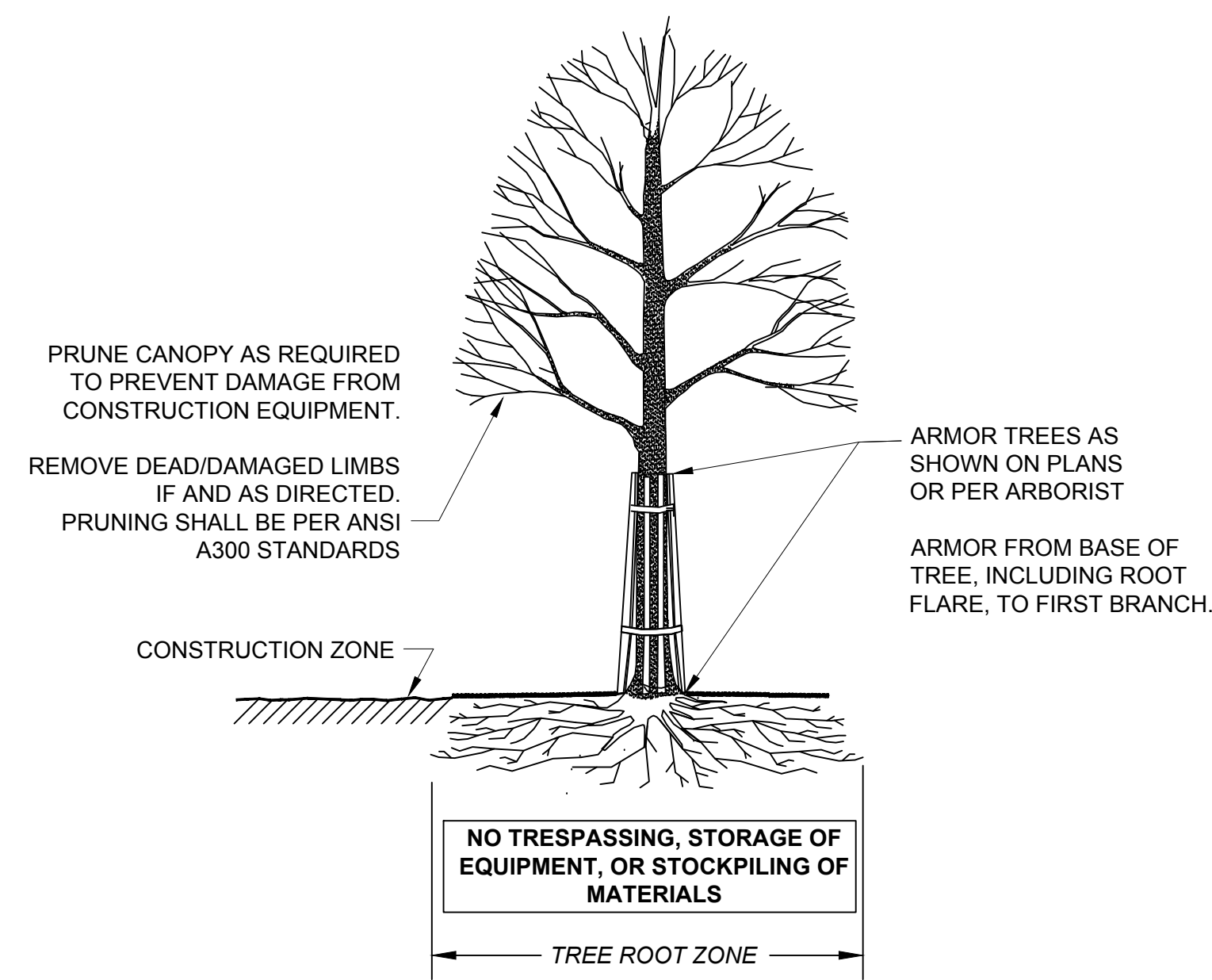
- NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALKS SHALL BE 36 INCHES, EXCLUDING THE CURB.
 2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36 INCHES NOT INCLUDING CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY LOCATION WHICH CANNOT MEET THE CLEARANCE REQUIREMENTS.



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



SECTION - TRUNK ARMORING & PRUNING


TREE PROTECTION DETAILS
NOT TO SCALE

8/15/2019 8:37 AM O:\640056472 - NEWTON ON-CALL\TASK 9 - WALTHAM, DERBY, FAIRWAY\DRAWING FILES\PLANS\CONST DETAILS.DWG (MADOT-E.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	REGISTERED PROFESSIONAL
DESIGNED BY:	
CHECKED BY:	

PREPARED BY:	
--------------	--


 www.BETA-Inc.com

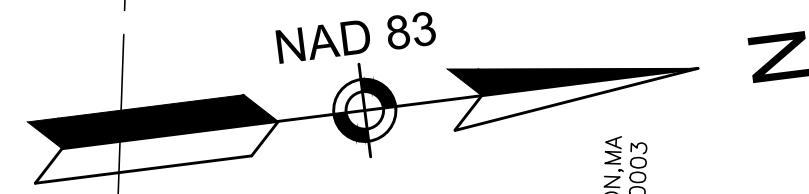
SUBCONSULTANT	
---------------	--

SCALE	NONE
-------	------

**Traffic Calming at Intersection of
 Waltham Street / Derby Street / Fairway Drive**
CONSTRUCTION DETAILS
Newton, MA

BETA JOB NO.	5472_09
ISSUE DATE	8/15/2019
SHEET NO.	5 of 12

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



N/F
BLANCHET, MARIE
329-331 WALTHAM ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34027 0003
DEED BK 57094 / PAGE 30
PL 382 OF 2011

N/F
SITU XIU LING
327 WALTHAM ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34027 0002
DEED BK 70844 / PAGE 471
PB 313, PG 16

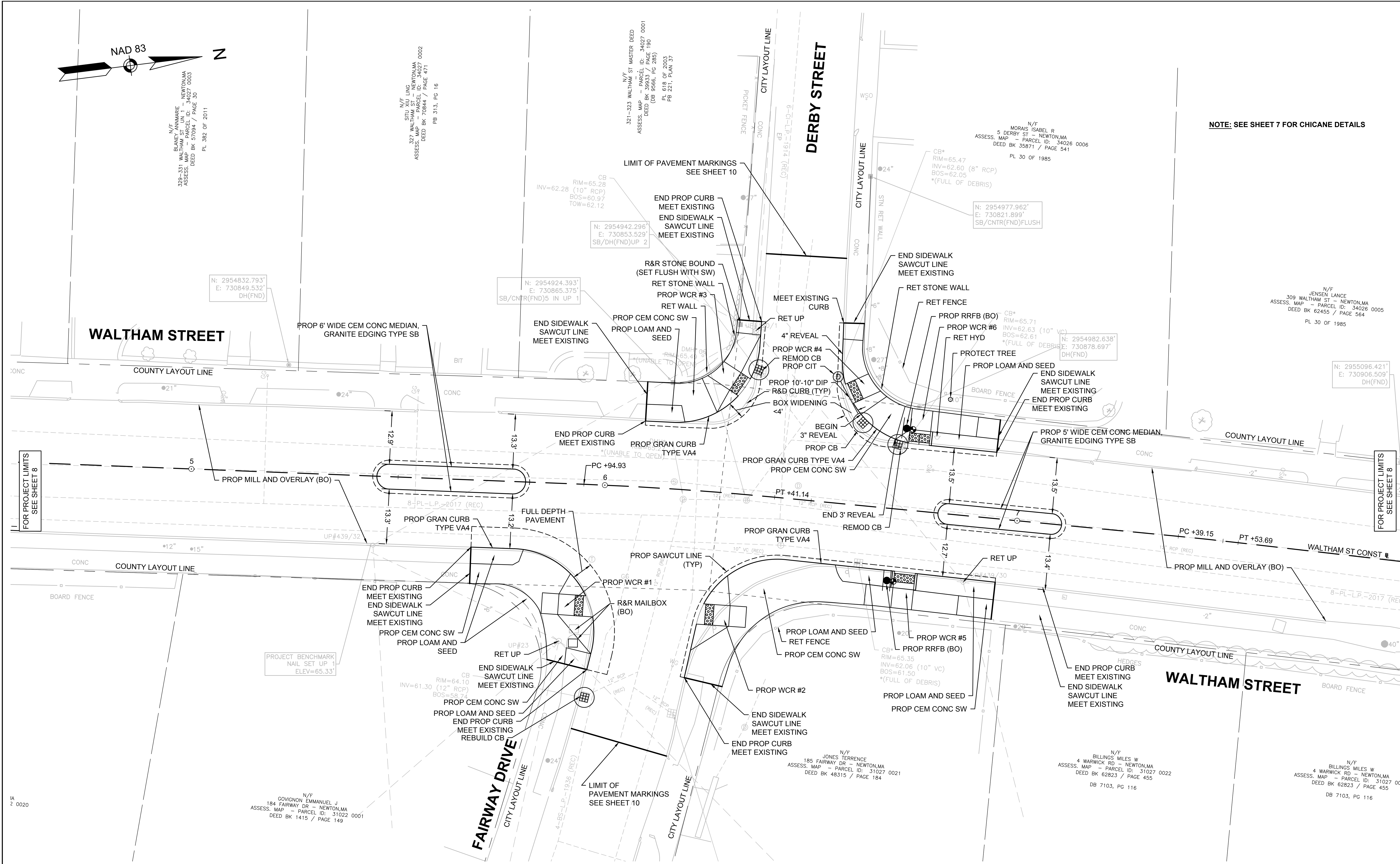
N/F
321-323 WALTHAM ST MASTER DEED
ASSESS. MAP - PARCEL ID: 34027 0001
DEED BK 59533 / PAGE 190
(PB 9566, PG 285)
PL 518 OF 2003
PB 221, PLAN 37

N/F
MORAN, ISABEL R
5 DERBY ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34026 0006
DEED BK 35871 / PAGE 541
PL 30 OF 1985

NOTE: SEE SHEET 7 FOR CHICANE DETAILS

N/F
JENSEN, LANCE
309 WALTHAM ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34026 0005
DEED BK 62455 / PAGE 564
PL 30 OF 1985

N: 2955096.421'
E: 730906.509'
DH(FND)



FOR PROJECT LIMITS
SEE SHEET 8

FOR PROJECT LIMITS
SEE SHEET 8

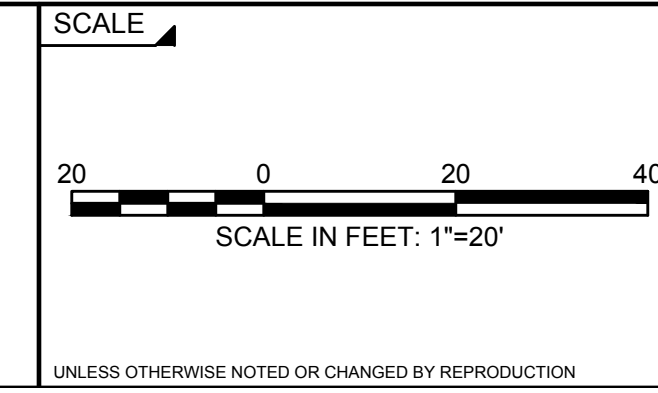
8/15/2019 8:37 AM C:\640055472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DERBY-FAIRWAY\DRAWING FILES\PLANS\SET\CONSTR PLANS.DWG (MADOT-D.STE)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL PREPARED BY

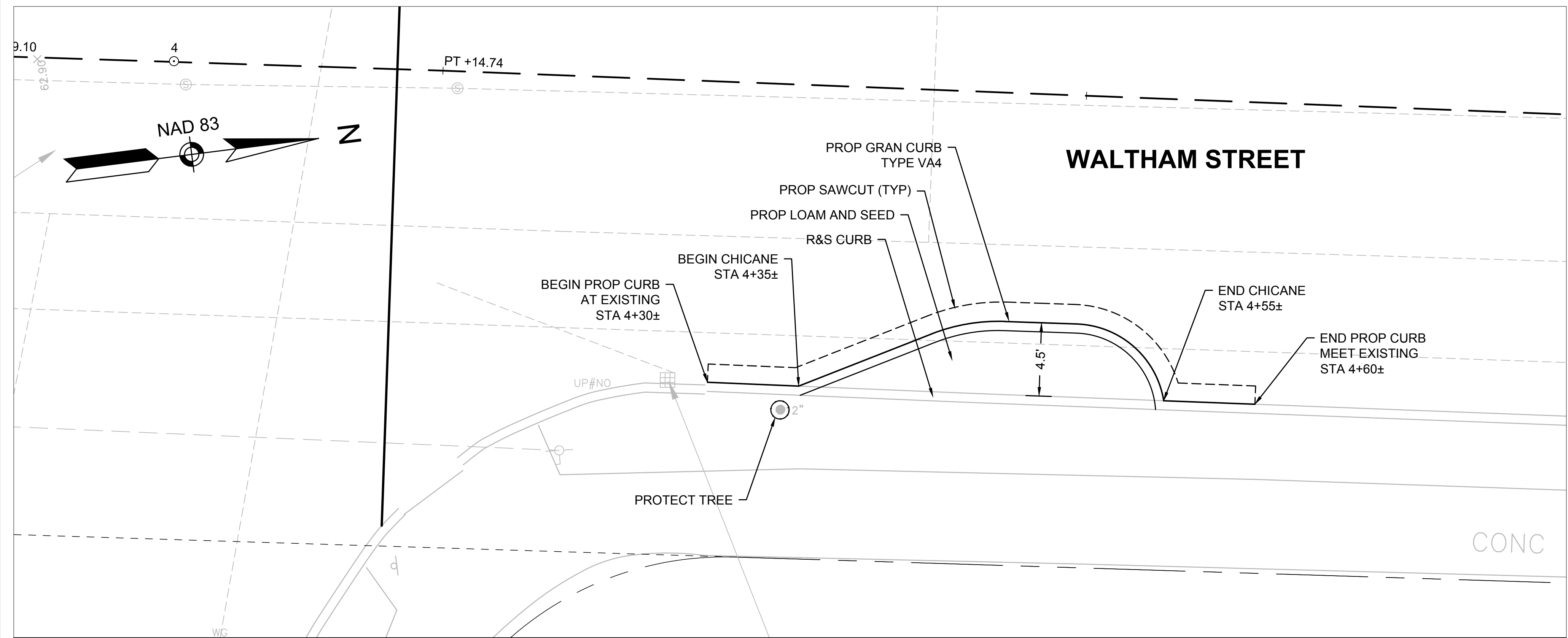
SUBCONSULTANT



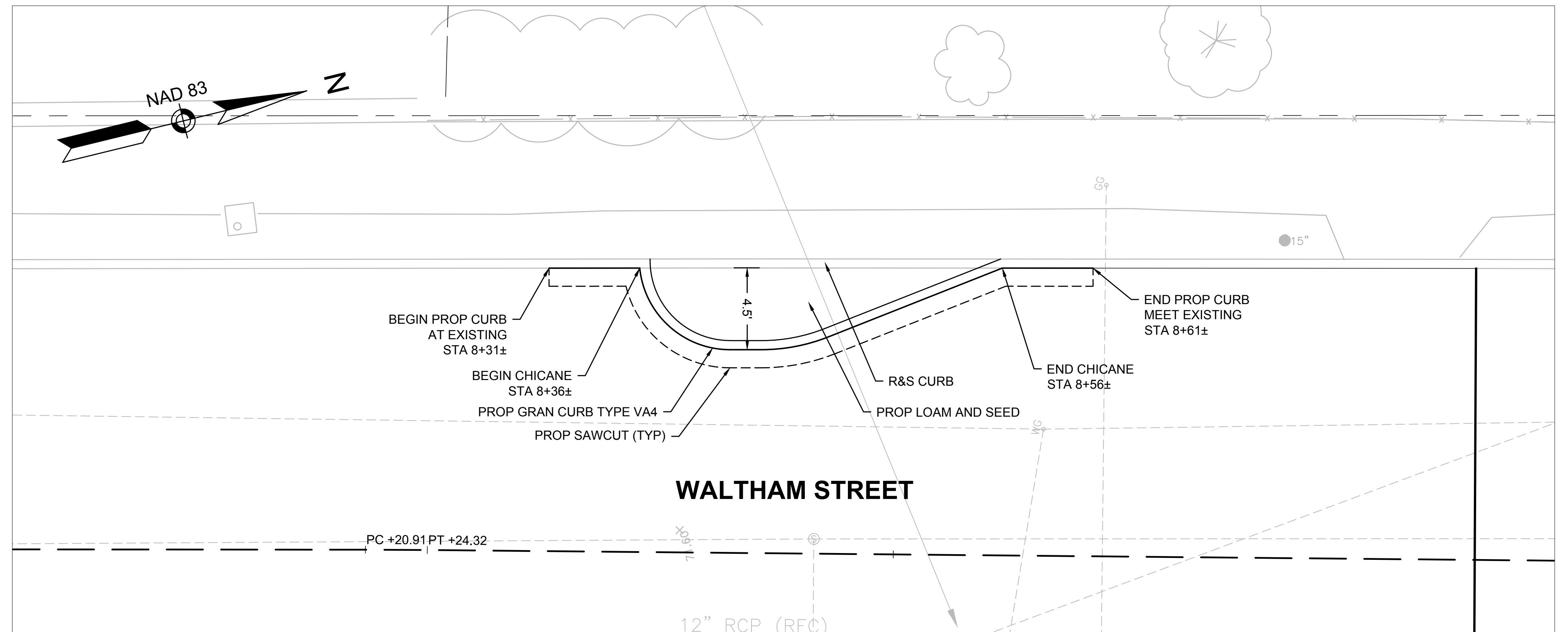
TITLE

**Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive
CONSTRUCTION & UTILITY PLAN
Newton, MA**

BETA JOB NO. 5472_09
ISSUE DATE 8/15/2019
SHEET NO. **6 of 12**



CHICANE LOCATION # 1 (STA 4+30± TO 4+60±)



CHICANE LOCATION # 2 (STA 8+31± TO 8+61±)



8/15/2019 8:37 AM C:\640055472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DERBY-FAIRWAY\DRAWING FILES\PLANS\CONST PLANS.DWG (MADOT-D.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____

REGISTERED PROFESSIONAL
 PREPARED BY

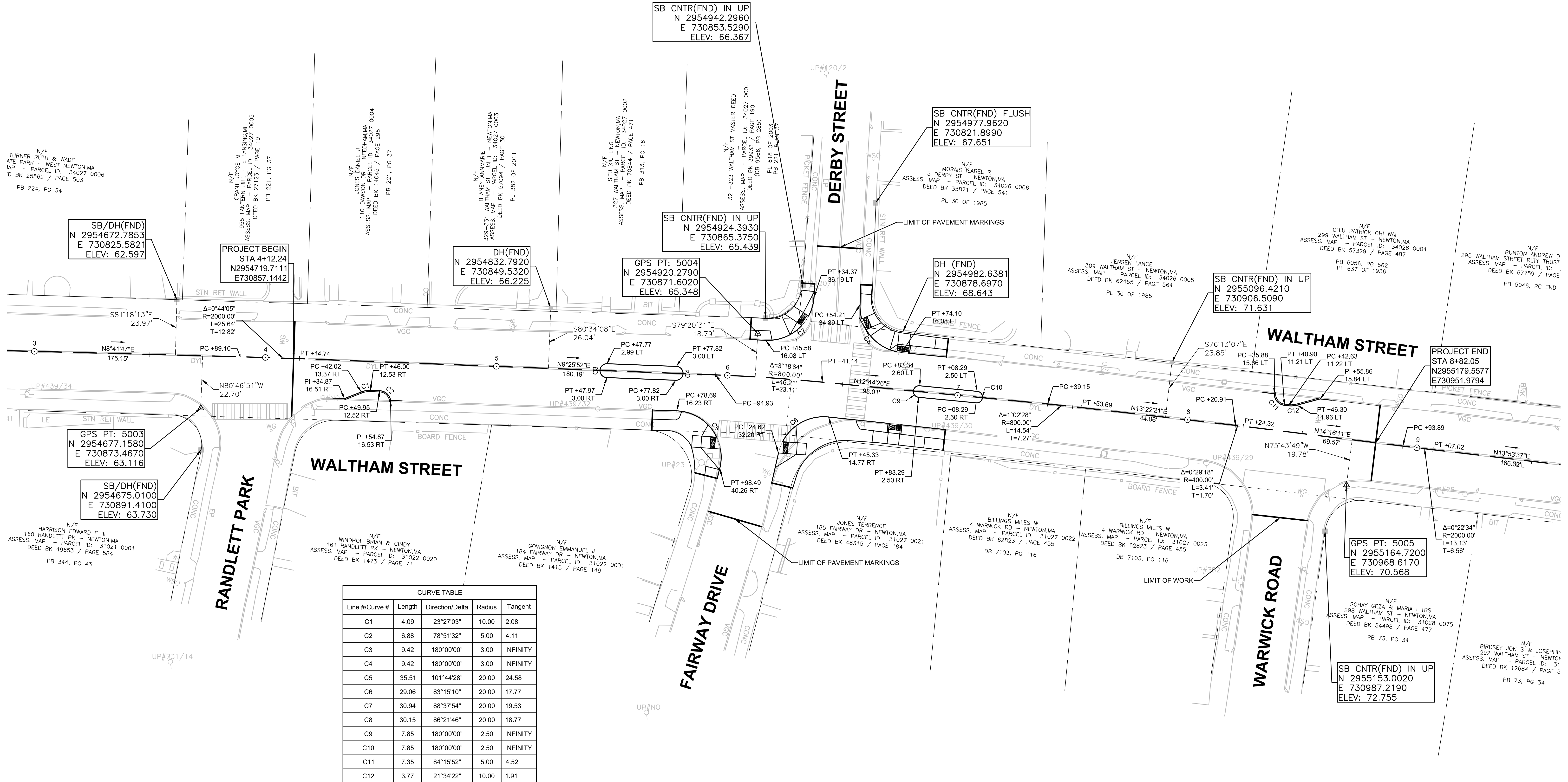
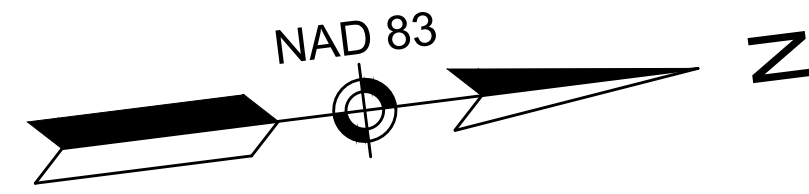
 www.BETA-Inc.com

SUBCONSULTANT

SCALE
 AS SHOWN
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
**Traffic Calming at Intersection of
 Waltham Street / Derby Street / Fairway Drive
 CONSTRUCTION & UTILITY PLAN
 Newton, MA**

BETA JOB NO. 5472_09
 ISSUE DATE 8/15/2019
 SHEET NO. **7 of 12**



Line #/Curve #	Length	Direction/Delta	Radius	Tangent
C1	4.09	23°27'03"	10.00	2.08
C2	6.88	78°51'32"	5.00	4.11
C3	9.42	180°00'00"	3.00	INFINITY
C4	9.42	180°00'00"	3.00	INFINITY
C5	35.51	101°44'28"	20.00	24.58
C6	29.06	83°15'10"	20.00	17.77
C7	30.94	88°37'54"	20.00	19.53
C8	30.15	86°21'46"	20.00	18.77
C9	7.85	180°00'00"	2.50	INFINITY
C10	7.85	180°00'00"	2.50	INFINITY
C11	7.35	84°15'52"	5.00	4.52
C12	3.77	21°34'22"	10.00	1.91

8/15/2019 8:37 AM C:\6400565472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DEBY-FAIRWAY\DRAWING FILES\PLANSET\CURB TIE AND BASELINE.DWG (MADOT-D.STB)

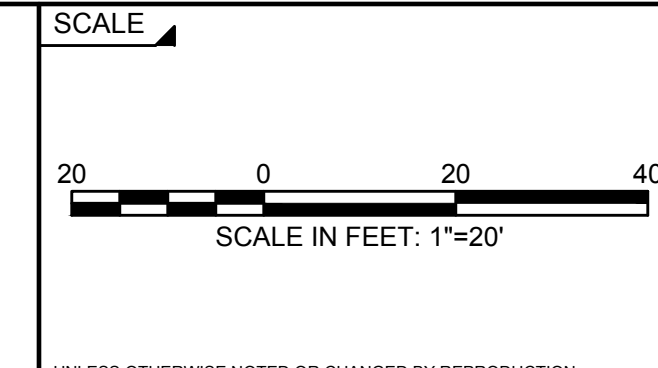
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY: _____
 DESIGNED BY: _____
 CHECKED BY: _____

REGISTERED PROFESSIONAL
 PREPARED BY

 www.BETA-inc.com

SUBCONSULTANT



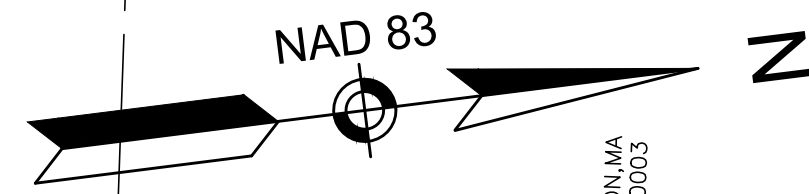
TITLE

**Traffic Calming at Intersection of
 Waltham Street / Derby Street / Fairway Drive**

BASELINE AND CURB TIE PLAN

Newton, MA

BETA JOB NO. 5472_09
 ISSUE DATE 8/15/2019
 SHEET NO. **8 of 12**



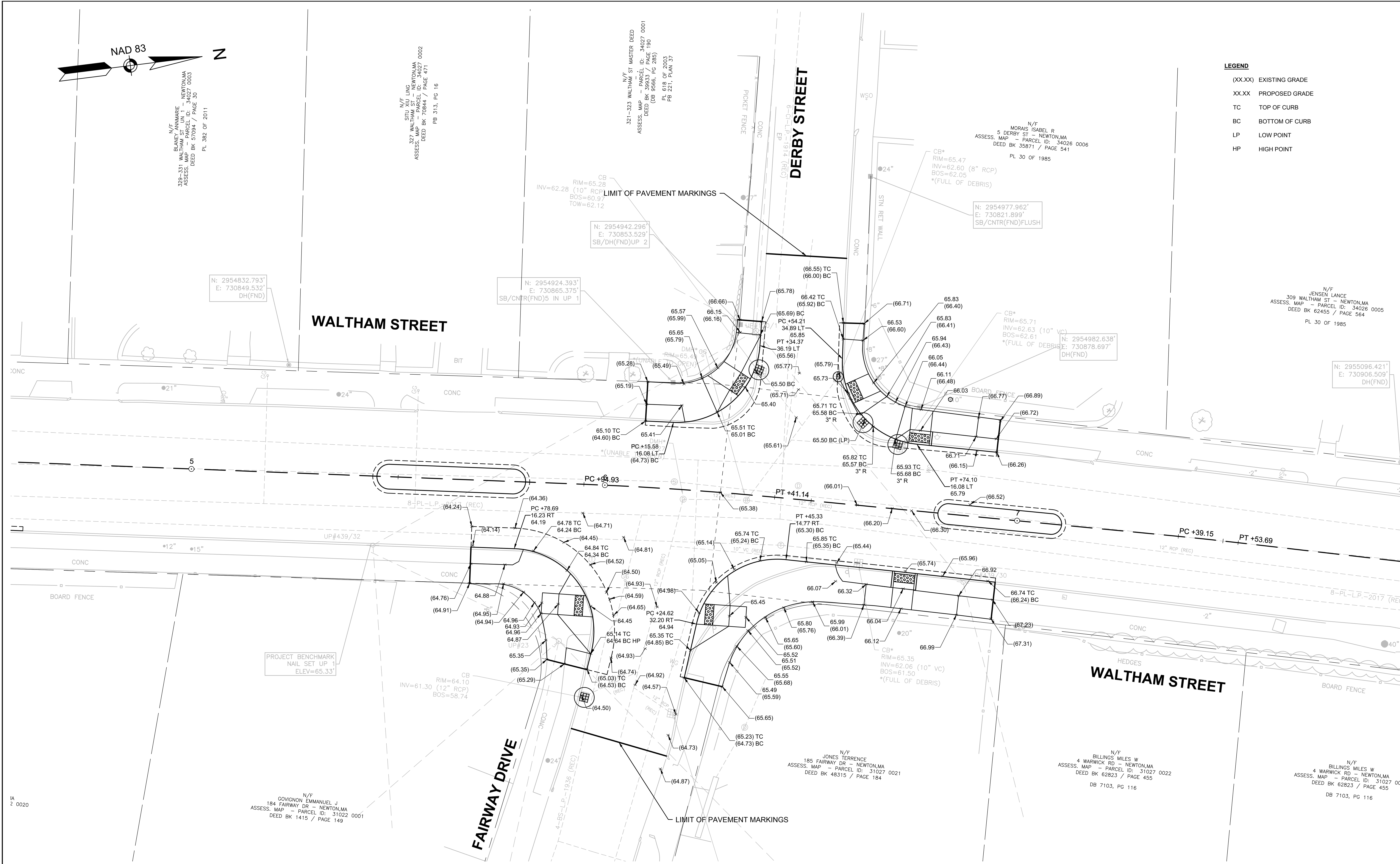
N/F
BLANCHET FARM
329-331 WALTHAM ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34027 0003
DEED BK 57094 / PAGE 30
PL 382 OF 2011

N/F
SITU XIU LING
327 WALTHAM ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34027 0002
DEED BK 70844 / PAGE 471
PB 313, PG 16

N/F
321-323 WALTHAM ST MASTER DEED
ASSESS. MAP - PARCEL ID: 34027 0001
DEED BK 59333 / PAGE 190
(PB 9566, PG 285)
PL 818 OF 2003
PB 221, PLAN 37

N/F
MORAIS ISABEL R
5 DERBY ST - NEWTON, MA
ASSESS. MAP - PARCEL ID: 34026 0006
DEED BK 35871 / PAGE 541
PL 30 OF 1985

- LEGEND**
- (XX.XX) EXISTING GRADE
 - XX.XX PROPOSED GRADE
 - TC TOP OF CURB
 - BC BOTTOM OF CURB
 - LP LOW POINT
 - HP HIGH POINT



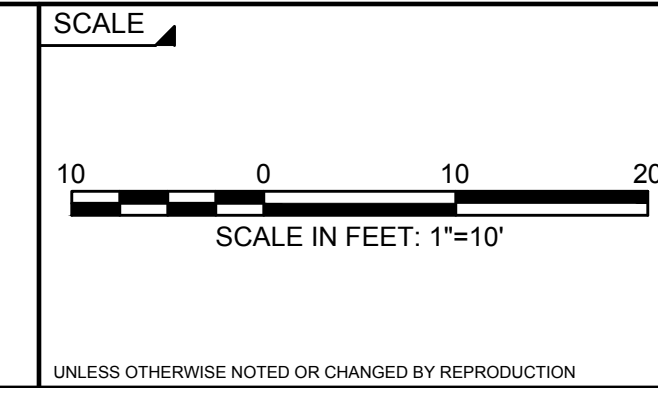
8/15/2019 8:37 AM C:\640056472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DERBY-FAIRWAY\DRAWING FILES\PLANS\SET\GRADING.DWG (MADOT.D.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DESIGNED BY:
CHECKED BY:

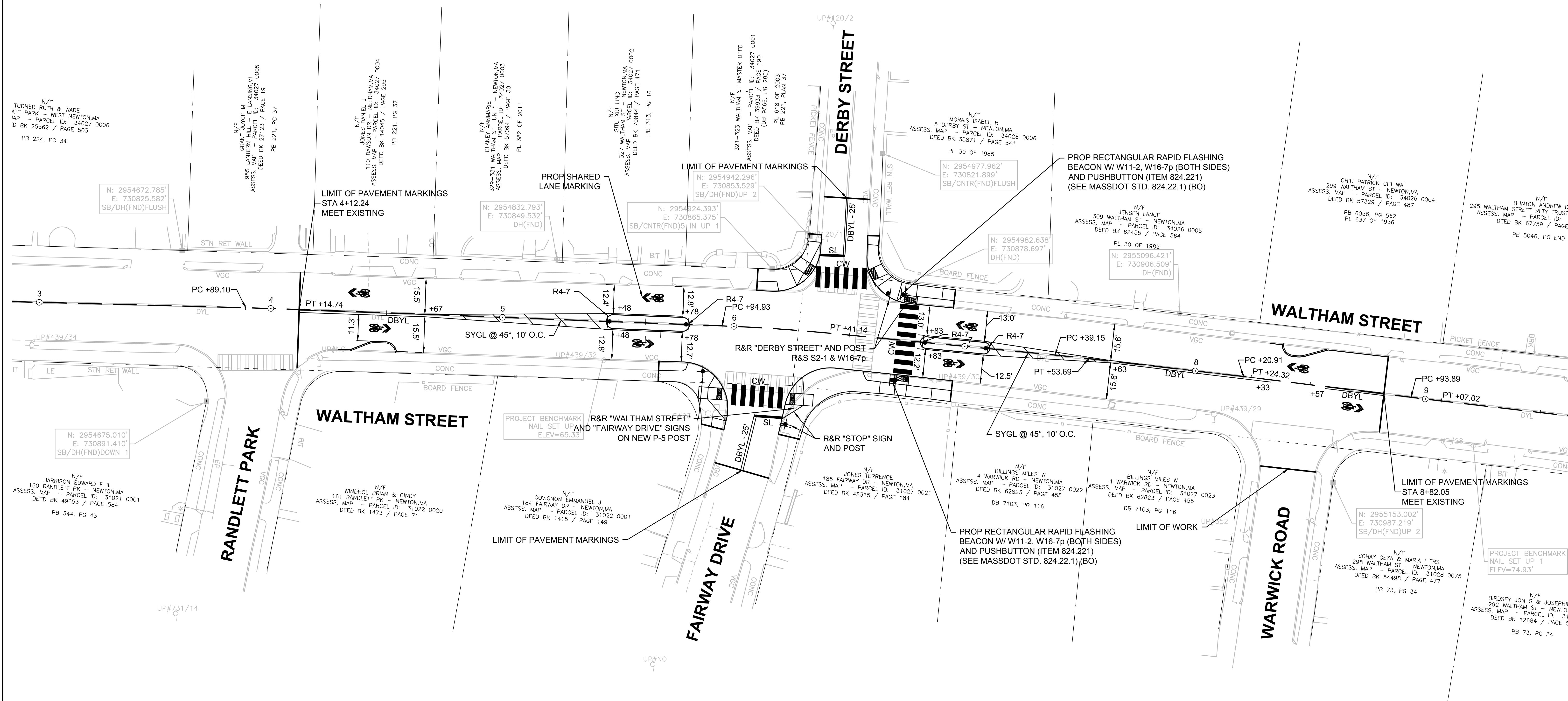
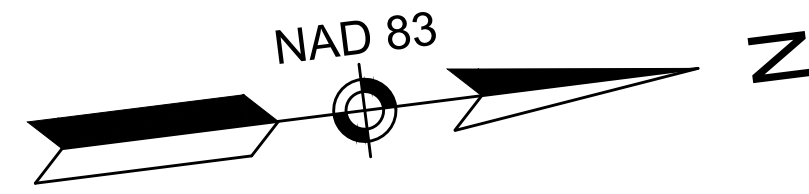
REGISTERED PROFESSIONAL
PREPARED BY
BETA
www.BETA-Inc.com

SUBCONSULTANT



TITLE
**Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive**
GRADING PLAN
Newton, MA

BETA JOB NO. 5472_09
ISSUE DATE 8/15/2019
SHEET NO. **9 of 12**



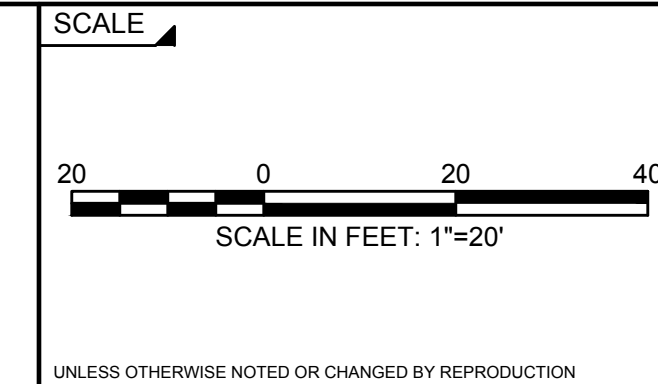
RRFB TIMING AND OPERATIONS TABLE		
LOCATION	FLASHING CYCLE TIME	MINIMUM TIME BETWEEN ACTUATIONS
STA 6+74±	30 SECONDS	60 SECONDS

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL
PREPARED BY
BETA
www.BETA-inc.com





SUBCONSULTANT

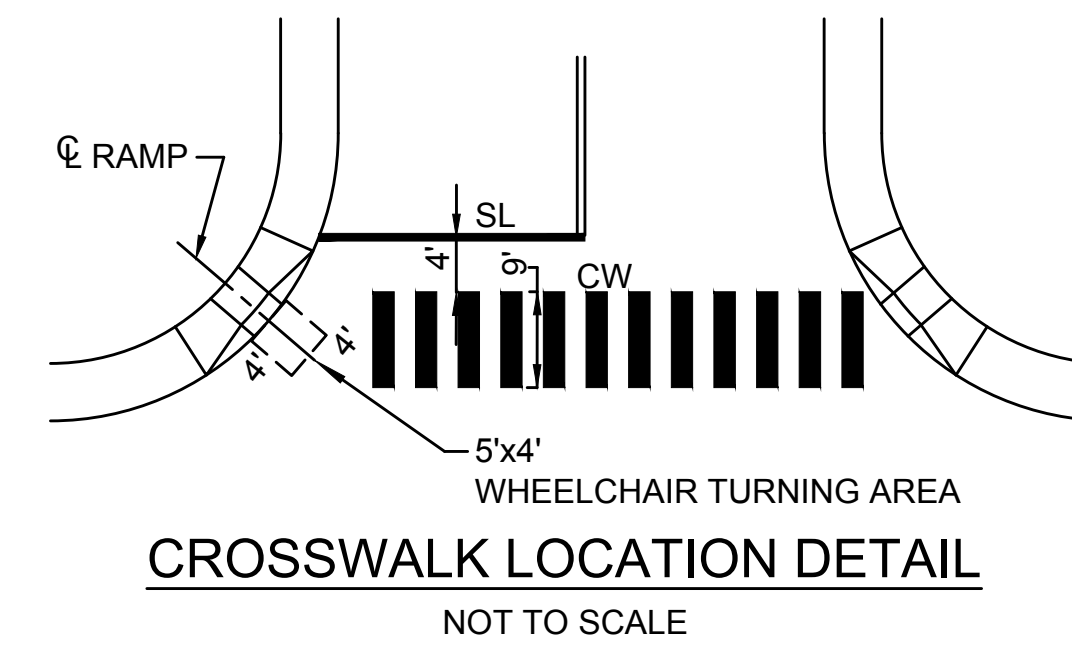


TITLE
**Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive
SIGN & PAVEMENT MARKING PLAN
Newton, MA**

BETA JOB NO. 5472_09
ISSUE DATE 8/15/2019
SHEET NO. **10 of 12**

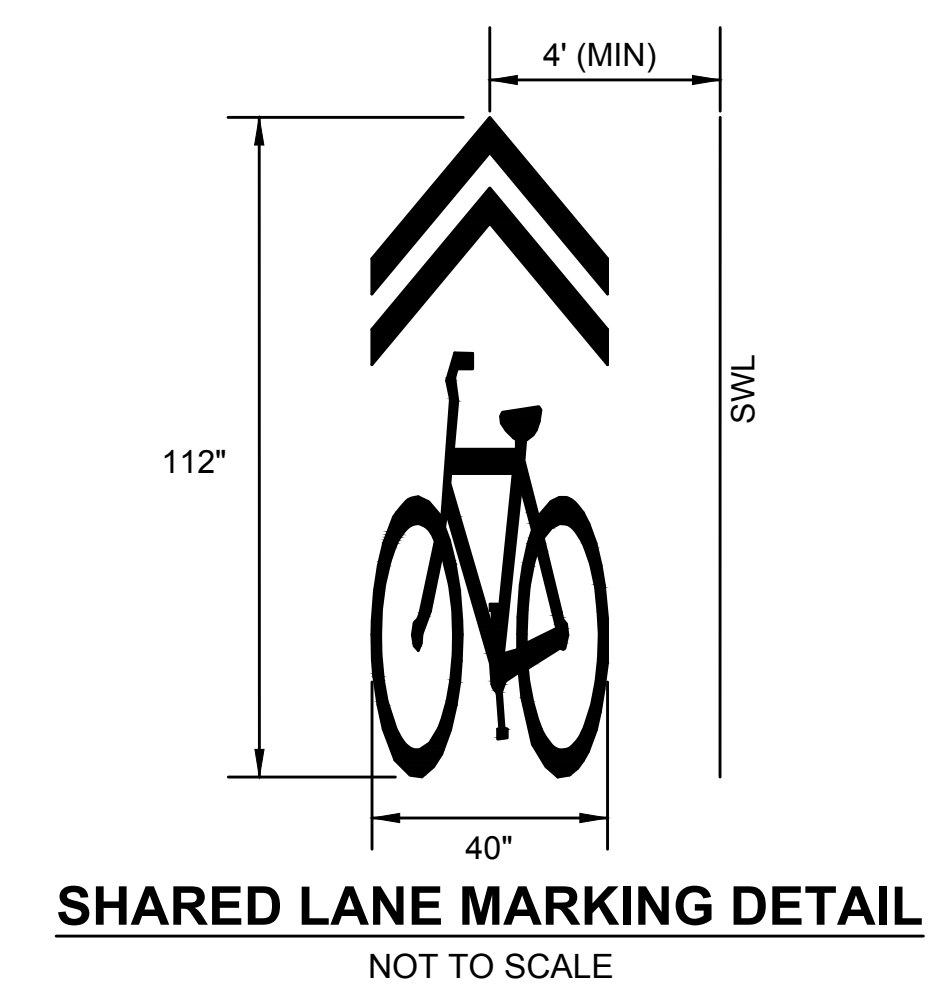
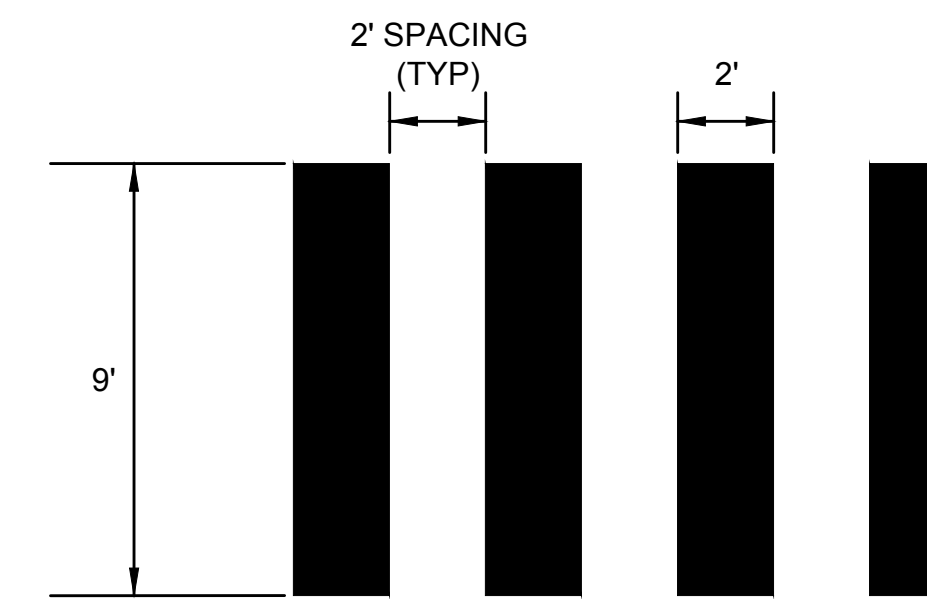
8/15/2019 8:37 AM C:\640055472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DEBY-FAIRWAY\DRAWING FILES\PLAN\SET\SIGN & PAVEMENT MARKING.DWG (MADDT-D.STB)

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW		BACK-GROUND	LEGEND	BORDER			
R4-7	24 in	30 in		SEE 2009 MUTCD STANDARDS	↑	↓	4	WHITE	BLACK	BLACK	P-5 4	5.0	20.0
R10-25	9 in	12 in					2	WHITE	BLACK	BLACK	MOUNT ON RRFB	0.75	1.5
W11-2	30 in	30 in					4	FYG	BLACK	BLACK	MOUNT ON RRFB	6.25	25.0
W16-7p	24 in	12 in					4	FYG	BLACK	BLACK	MOUNT ON RRFB	2.0	8.0



PAVEMENT MARKING & SIGN NOTES

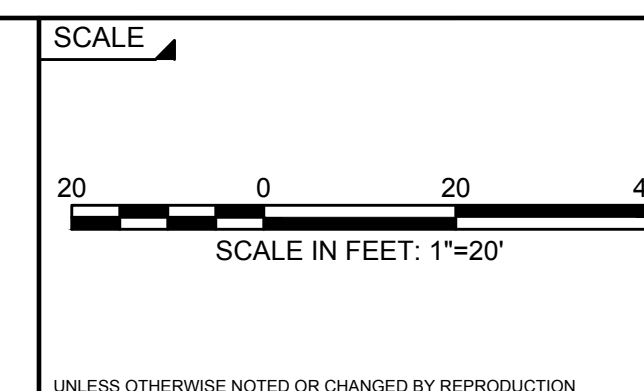
- ALL EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED ON PLANS.
- HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO SECTION M9.30.0, TYPE III OR IV, OF THE MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
- ALL PROPOSED POSTS SHALL BE P5 TYPE (TELESCOPIC POST). POSTS SHALL CONFORM TO THE DIMENSIONS AND REQUIREMENTS OF THE MASSDOT "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS" (LATEST EDITION).
- SEE THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AND "STANDARD HIGHWAY SIGNS" FOR THE LATEST SPECIFICATIONS ON TEXT DIMENSIONS AND COLOR. (ALSO SEE SECTION M9.30.0 TYPE III MASSDOT STANDARD SPECIFICATION, THE "MASSACHUSETTS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES," AND "GUIDE SIGN POLICY FOR SECONDARY STATE HIGHWAYS" (LATEST EDITIONS) BY THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION).
- UNLESS OTHERWISE PROVIDED FOR IN THE MUTCD, ALL SIGNS SHOULD BE 90° TO THE CURB AND FACING THE FLOW OF TRAFFIC.
- STREET NAME SIGNS SHALL BE MOUNTED PARALLEL WITH THE STREET.
- SIGNS TO BE MOUNTED NEAR THE CURB LINE IN AREAS WITHOUT SIDEWALK SHALL BE SET BACK 2' FROM THE EDGE OF THE SIGN PANEL TO THE CURB LINE. NO SIGN SHALL OVERHANG THE CURB LINE.
- ALL SIGNS SHALL BE MOUNTED TO PROVIDE A 7' MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND FINISHED GRADE.
- PBS: PAINTED BOTH SIDES.
- FYG: FLUORESCENT YELLOW GREEN
- ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY AN APPROVED METHOD.
- PROPOSED PAVEMENT MARKINGS (LEGENDS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MUTCD & MASSDOT - 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED.



8/15/2019 8:38 AM C:\640055472 - NEWTON ON-CALL\TASK 9 - WALTHAM-DEBY-FAIRWAY\DRAWING FILES\PLANS\SET\SIGN & PAVEMENT MARKING.DWG (MADOT-D-STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	REGISTERED PROFESSIONAL	PREPARED BY:	SUBCONSULTANT
DESIGNED BY:			
CHECKED BY:			

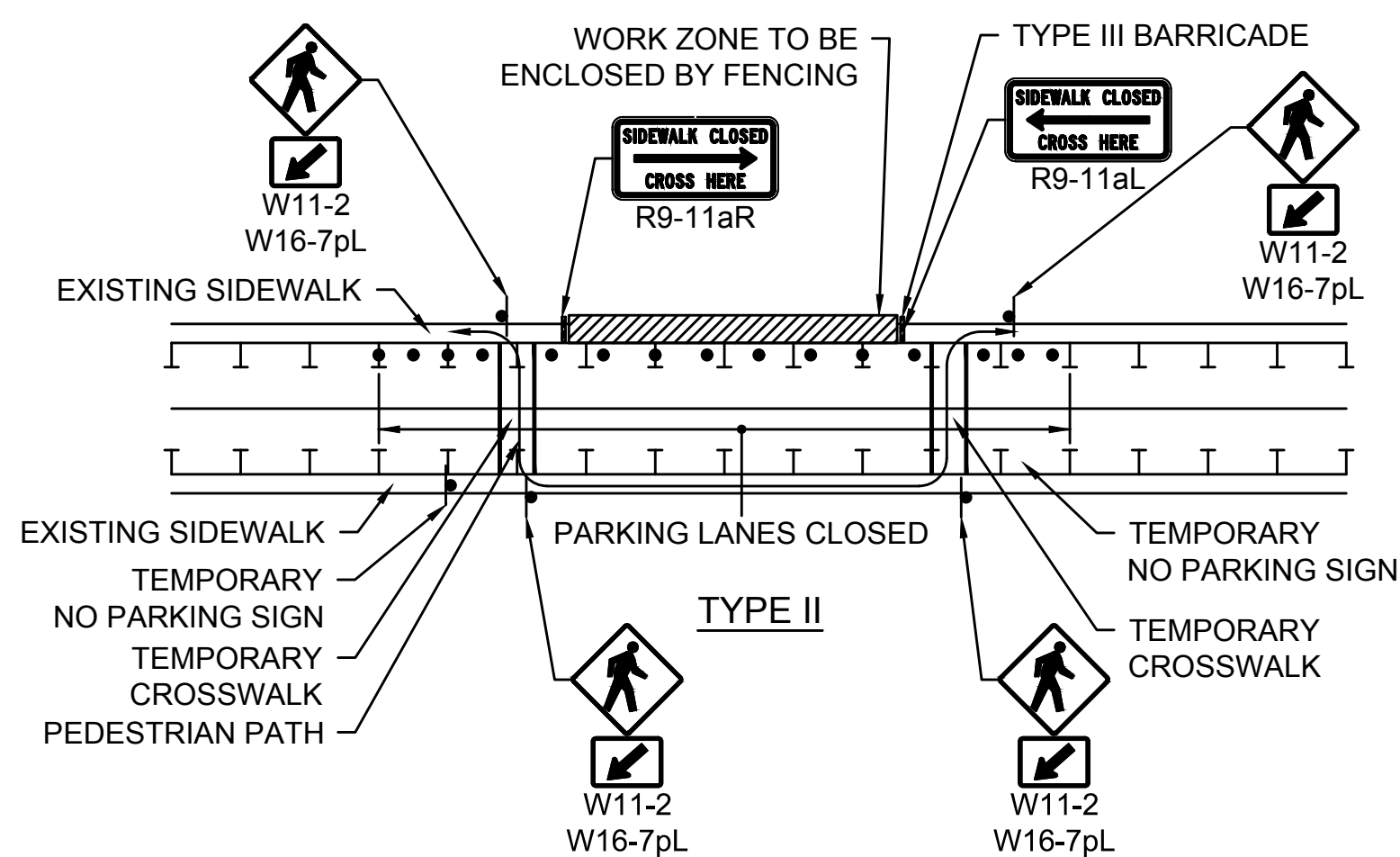
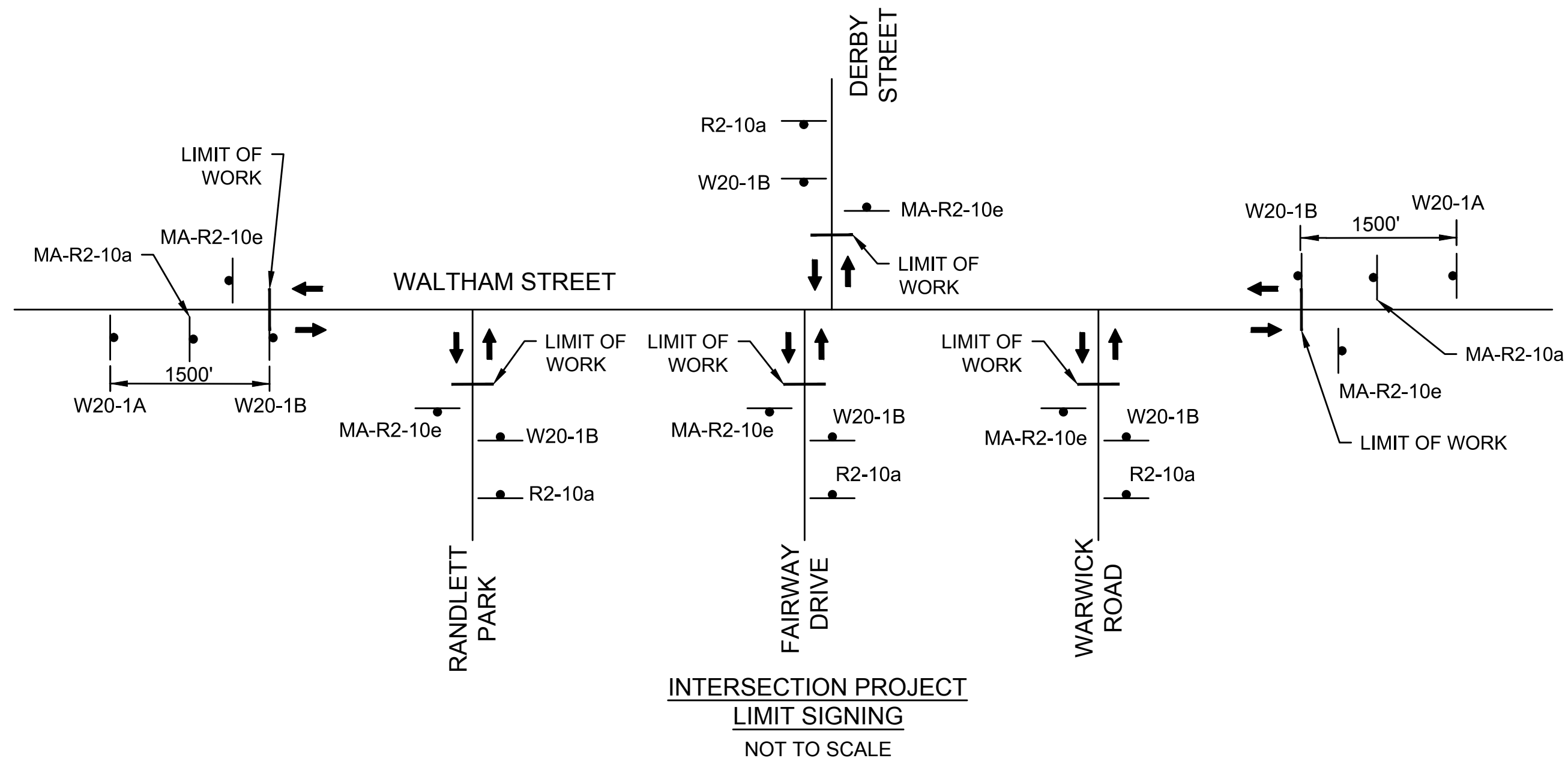


**Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive**
SIGN SUMMARY AND PAVEMENT MARKING DETAILS
Newton, MA

BETA JOB NO.	5472_09
ISSUE DATE	8/15/2019
SHEET NO.	11 of 12

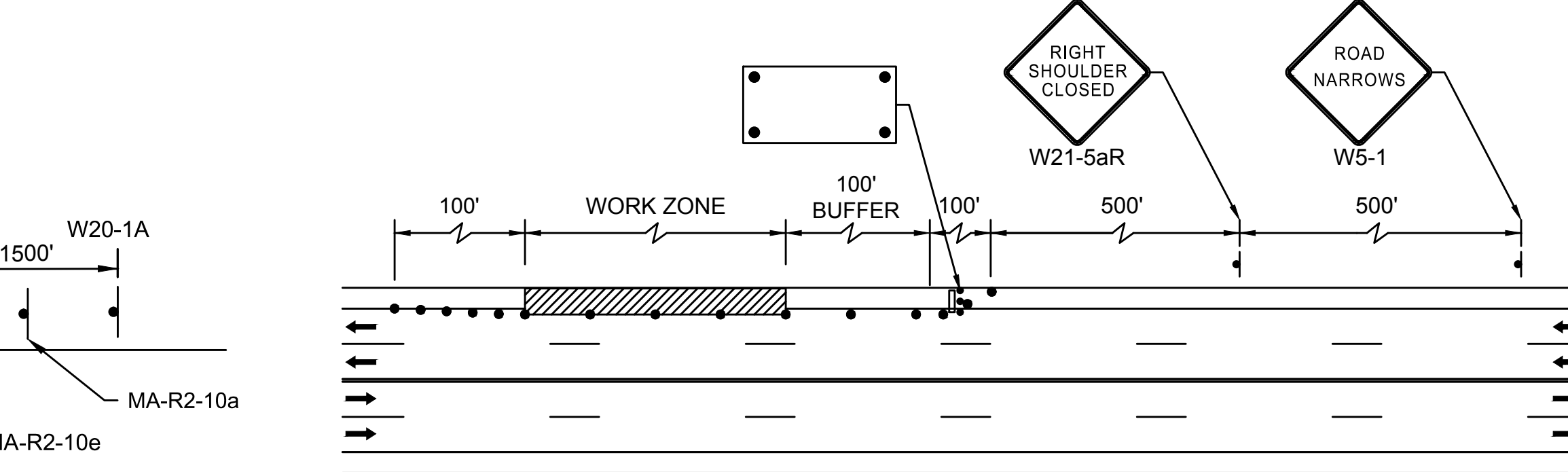
NOTES:

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
- ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD, EXCEPT THAT BACKGROUND COLOR SHALL BE FLUORESCENT ORANGE, IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.
- 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, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" 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 EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- THE FIRST TEN 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 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.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL NOT COVERED IN THE PLAN SHALL REFER TO MASSDOT "STANDARD DETAILS AND DRAWINGS FOR THE DEVELOPMENT OF TRAFFIC MANAGEMENT PLANS".

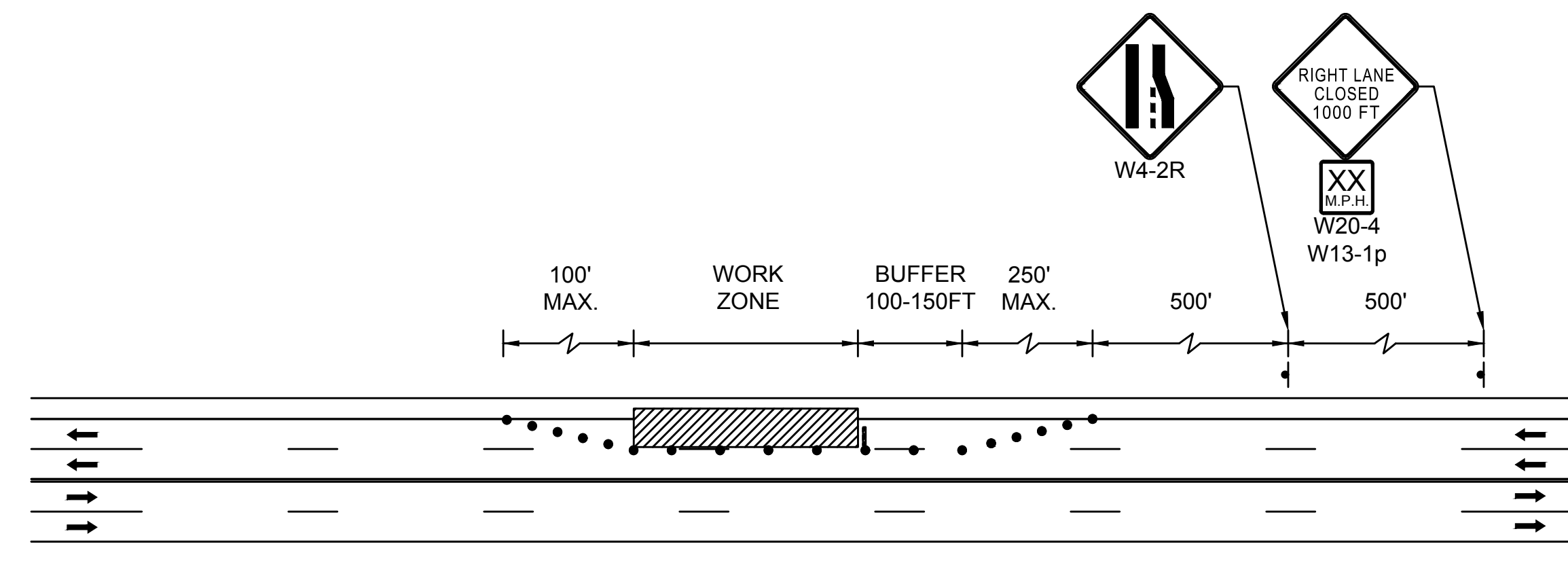


NOTES:

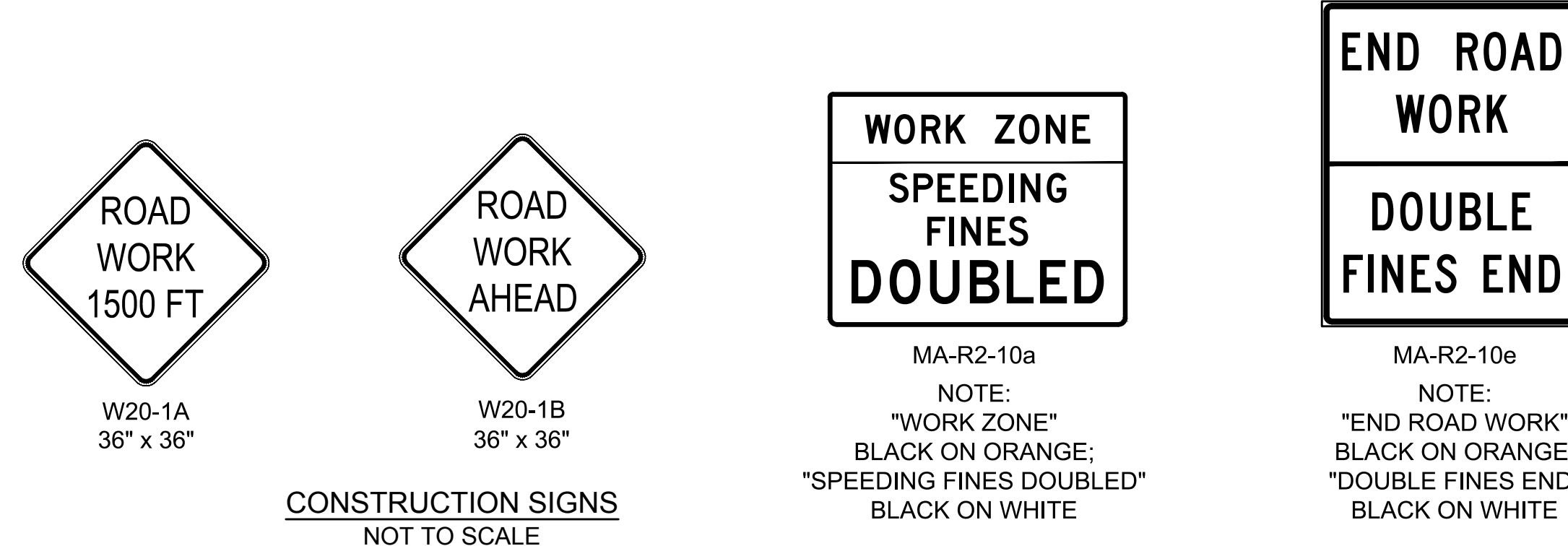
- ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
- CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
- STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
- IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT, TEMPORARY CROSSWALKS WITH APPROPRIATE SIGNS SHOULD BE INSTALLED TO CROSS PEDESTRIANS TO THE OPPOSITE SIDE OF THE STREET AS SHOWN IN PEDESTRIAN BYPASS, AND AS DIRECTED BY THE ENGINEER. TEMPORARY CURB RAMPS WILL BE REQUIRED AT ALL TEMPORARY CROSSWALK LOCATIONS.
- BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
- THE TEMPORARY SIDEWALK SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THIS WALKWAY EXCEEDS 200 FEET THEN A 5 FOOT X 5 FOOT PASSING ZONE. (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED. A NOTE WOULD NEED TO BE INCLUDED IN THE TTCP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE.)



MULTI-LANE ROAD - SHOULDER CLOSED
NOT TO SCALE



MULTI-LANE ROAD - OUTSIDE LANE CLOSED
NOT TO SCALE

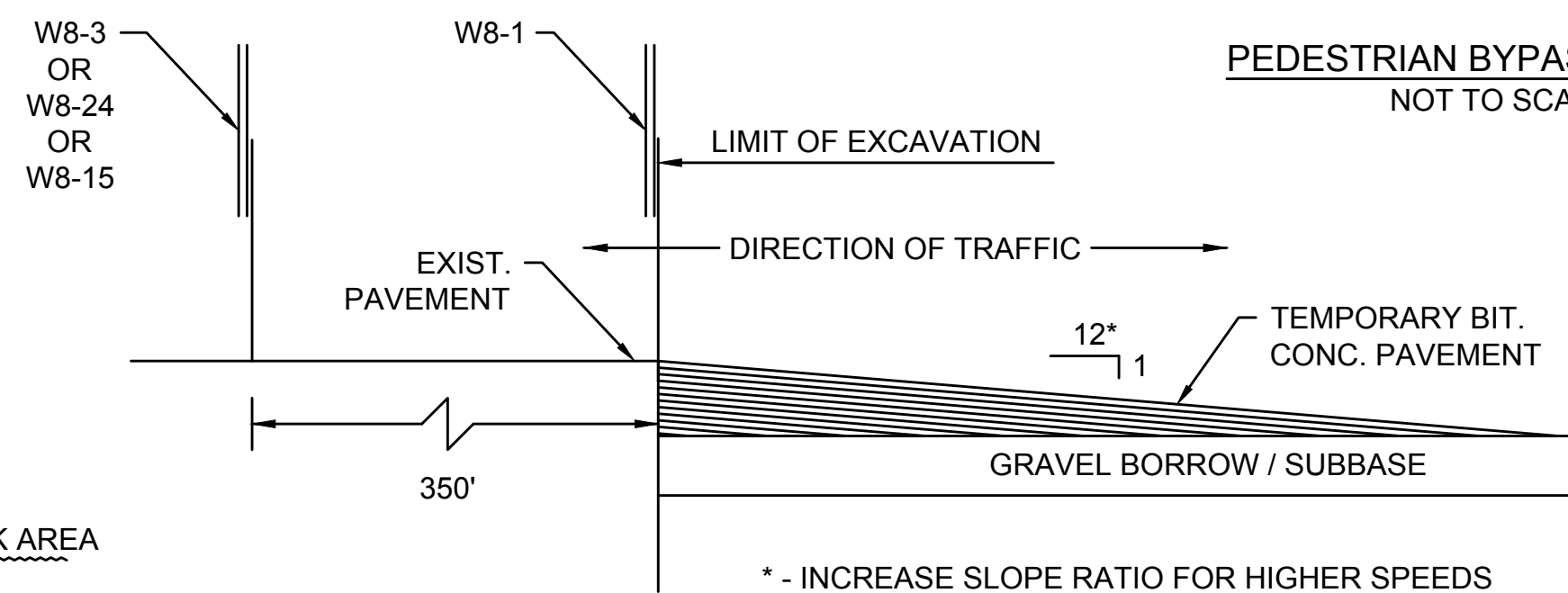


CONSTRUCTION SIGNS
NOT TO SCALE

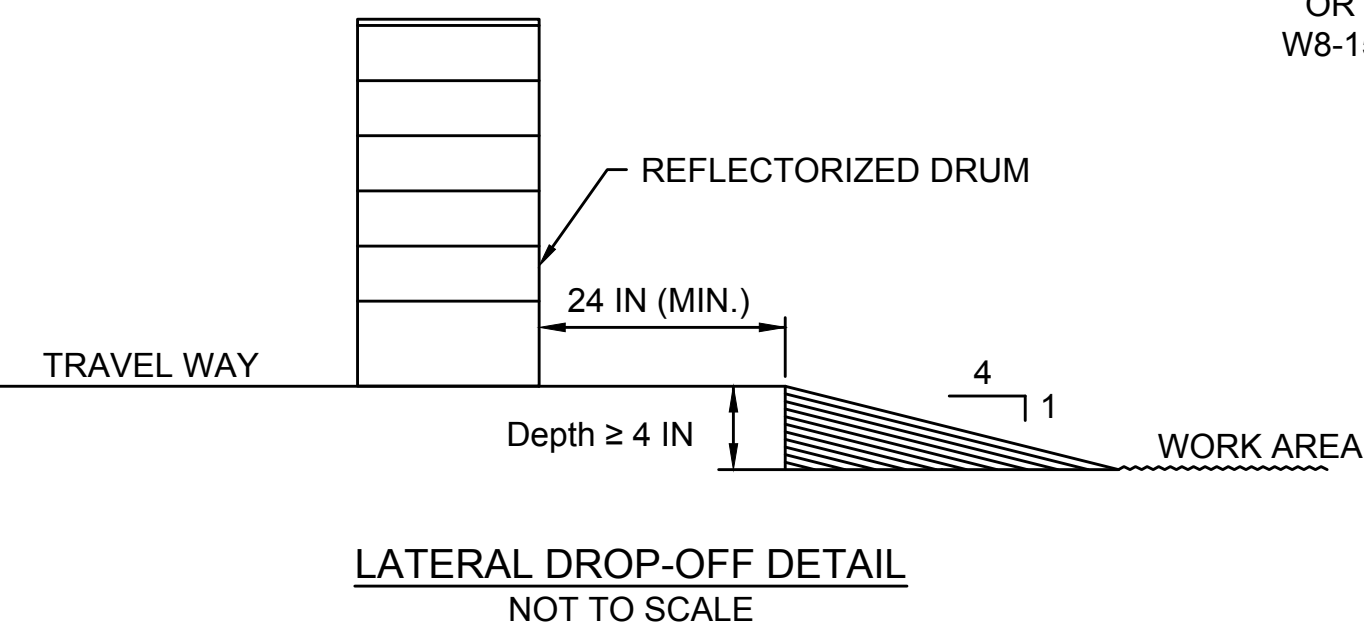
LEGEND:	
	REFLECTORIZED PLASTIC DRUM
	TYPE III BARRICADE
	FLASHING ARROW PANNEL
	FLASHING ARROW PANNEL
	WORK ZONE
	DIRECTION OF TRAFFIC
	IMPACT ATTENUATOR
	MEDIAN BARRIER
	MEDIAN BARRIER WITH WARNING LIGHTS
	WORK VEHICLE
	TRUCK MOUNTED ATTENUATOR
	TRAFFIC OR PEDESTRIAN SIGNAL
	SIGN
	POLICE DETAIL
	FLAGGER

TAPER LENGTH	
SPEED LIMIT	FORMULA
40 MPH or Less	$L = WS^2/60$
45 MPH or Greater	$L = W \times S$
L = TAPER LENGTH IN FEET W = WIDTH OF OFFSET IN FEET S = POSTED SPEED IN MPH	

PEDESTRIAN BYPASS DETAILS
NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL
NOT TO SCALE



LATERAL DROP-OFF DETAIL
NOT TO SCALE

SAFETY SIGNING FOR CONSTRUCTION OPERATIONS									
LEGEND	TYPE	SIZE	COLOR			UNIT AREA	NO. SIGNS	TOTAL AREA	
			BACKGROUND	LEGEND	BORDER				
WORK ZONE SPEEDING FINES...	MA-R2-10a	48" x 36"	WHITE/ORANGE**	BLACK	BLACK	12 SF	4	48 SF	
END ROAD WORK	MA-R2-10e	36" x 48"	WHITE/ORANGE**	BLACK	BLACK	12 SF	4	48 SF	
SIDEWALK CLOSED CROSS HERE	R9-11a	48" x 24"	WHITE	BLACK	BLACK	8 SF	2	16 SF	
RIGHT LANE ENDS	W4-2R	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
ROAD NARROWS	W5-1	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
BUMP	W8-1	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
PAVEMENT ENDS	W8-3	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
GROOVED PAVEMENT	W8-15	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
STEEL PLATE AHEAD	W8-24	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
PEDESTRIAN	W11-2	30" x 30"	FYG***	BLACK	BLACK	6.3 SF	4	25 SF	
ADVISORY SPEED	W13-1	24" x 24"	ORANGE**	BLACK	BLACK	4 SF	2	8 SF	
DOWNWARD LEFT DIAGONAL ARROW	W16-7pL	24" x 12"	FYG***	BLACK	BLACK	2 SF	4	8 SF	
ROAD WORK 1500 FT	W20-1A	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF	
ROAD WORK AHEAD	W20-1B	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	6	54 SF	
RIGHT LANE CLOSED 1000 FT	W20-5R	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
RIGHT SHOULDER CLOSED	W21-5aR	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	1	9 SF	
TOTAL AREA OF SIGNS:							297 SF		

* NO. OF SIGNS ARE ESTIMATED FOR BIDDING PURPOSES ONLY
** ALL CONSTRUCTION SIGNAGE SHALL HAVE FLUORESCENT ORANGE BACKGROUND
*** FLUORESCENT YELLOW GREEN

8/15/2019 8:38 AM O:\540055472 - NEWTON ON-CALL\TASK 9 - WALTHAM, DERBY - FAIRWAY\DRAWING FILES\PLANS\SETT\TEMP.DWG (MADOT.E.STB)

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:	REGISTERED PROFESSIONAL
DESIGNED BY:	
CHECKED BY:	

PREPARED BY

www.BETA-inc.com

SUBCONSULTANT	
---------------	--

SCALE	NONE
-------	------

TITLE

**Traffic Calming at Intersection of
Waltham Street / Derby Street / Fairway Drive**

TEMPORARY TRAFFIC CONTROL PLAN

Newton, MA

BETA JOB NO.	5472_09
ISSUE DATE	8/15/2019
SHEET NO.	12 of 12