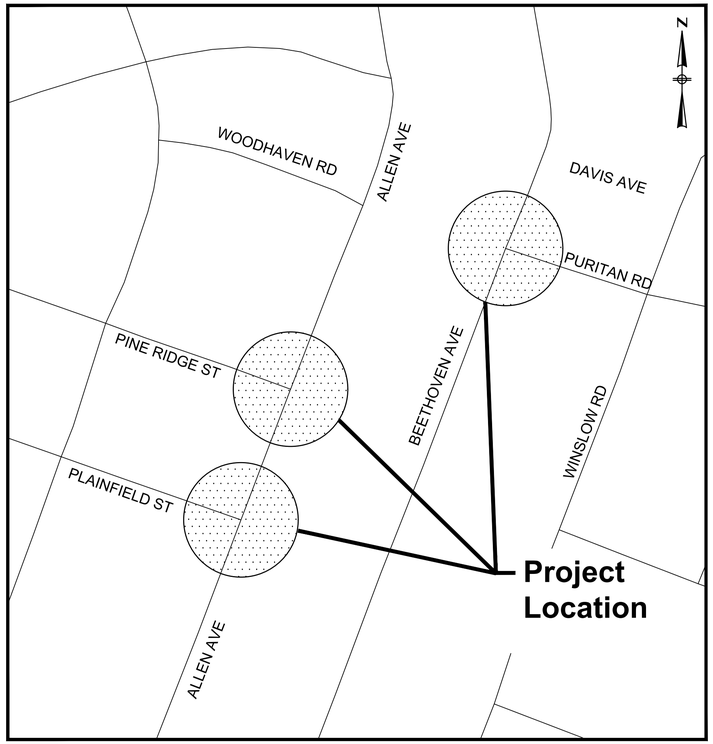
CITY OF NEWTON, MA
DEPARTMENT OF PUBLIC WORKS

TRAFFIC CALMING AT ALLEN AVE / PLAINFIELD ST
ALLEN AVE / PINE RIDGE RD
AND BEETHOVEN AVE / PURITAN RD

MAYOR

RUTHANE FULLER

OCTOBER 2020



PROJECT LOCATION

LOCATION MAP
NOT TO SCALE

PLAN INDEX

PREPARED BY:

BETA
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ISSUE DATE: 10/09/2020

COMMONWEALTH OF MASSACHUSETTS
CHRISTOPHER M. ROY
CIVIL ENGINEER
No. 41348
REGISTERED PROFESSIONAL ENGINEER

10/9/20

SHEETS 1 TO 16

REGISTERED PROFESSIONAL DATE

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
		CURB OR BERM (TYPE AS NOTED)
		EDGE OF PAVEMENT
CB	CB	CATCH BASIN (OR GUTTER INLET, LEACHING BASIN, DROP INLET, CATCH BASIN CURB INLET)
EHH	EHH	ELECTRIC HANDHOLE (NUMBER AS NOTED)
E	EMH	ELECTRIC MANHOLE
T	TMH	TELEPHONE MANHOLE
W	WMH	WATER MANHOLE
S	SMH	SEWER MANHOLE
D	DMH	DRAINAGE MANHOLE
GG	GG	GAS GATE
WG	WG	WATER GATE
CS	CS	CURB STOP
HYD.	HYD	HYDRANT
FA	FAB	FIRE ALARM BOX
PM		PARKING METER
LP		STREET LIGHT POLE
UP	UP	UTILITY POLE
UPL	UPL	UTILITY POLE w/ LIGHT
		SIGN
GUY	GUY	GUY POLE
12" RCP	10'-12" RCP	DRAIN PIPE (SIZE AS NOTED)
8" VCP	10'-8" PVC	SEWER MAIN (SIZE AS NOTED)
	10'-8" PVC	ELECTRIC DUCT
4" HP	10'-4" HP	GAS MAIN (SIZE AS NOTED)
8" CI	10'-8" DI	WATER MAIN (SIZE AS NOTED)
	10'-8" PVC	TELEPHONE DUCT (SIZE AS NOTED)
EOH	OHW	OVERHEAD WIRE
MB	MB	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)
BND	BND	HIGHWAY/PROPERTY BOUND (TYPE AS NOTED)
SHLO (Date of Layout)		STATE HIGHWAY LAYOUT LINE (SHLO)
		CITY, TOWN OR COUNTY LAYOUT LINE (R.O.W.)
Boundary Name		CITY, TOWN, COUNTY OR STATE BOUNDARY LINE
		PROPERTY LINE
		EASEMENT LINE (TYPE NOTED)
	2+00	CONSTRUCTION BASELINE
N00°00'00"E 000.00'		SURVEY LINE
		RAILROAD OR STREET RAILWAY TRACKS WITH SIDELINES
		WHEELCHAIR RAMP
24" PINE		TREE (SIZE AND TYPE AS NOTED)
		HEDGE/SHRUBS
WF-1		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
x 00.0	x 00.00	SPOT GRADE
		SAW CUT LINE
	TP-1	TEST PIT
	B-1	BORING
ECB	ECB	EROSION CONTROL BARRIER/COMPOST FILTER TUBES

ABBREVIATIONS

GENERAL

ABAN	ABANDON
ADJ	ADJUST
ALT	ALTERATION
APPROX	APPROXIMATE
℄	BASELINE
BB	BITUMINOUS BERM
BC	BITUMINOUS CURB
BD OR BND	BOUND
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
RV	CURB REVEAL
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

ACCMP	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	
		CONTROL CABINET GROUND MOUNTED WITH FOUNDATION
		CONTROL CABINET POLE MOUNTED
	Ø2	CONTROLLER PHASE
	MA-1	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
HH		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
M	M	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
	ACCESSIBLE SYMBOL - WHITE
	PAVEMENT ARROW - WHITE
ONLY	LEGEND "ONLY" - WHITE

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

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE: **Traffic Calming**

LEGEND

Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **2 of 16**

10/9/2020 4:26 PM O:\5400\05\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\LEGEND.DWG (MADOT-E.STB)

GENERAL NOTES

1. 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.

2. 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.

3. 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.

4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ABUTTING PROPERTIES AT ALL TIMES AND NOTIFY ALL ABUTTERS IN ADVANCE OF ANY INTERRUPTIONS TO ACCESS.

5. 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.

6. 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.

7. 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.

8. 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).

9. ALL EXISTING STRUCTURE SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE NOTED ON THE PLANS.

10. CATCH BASIN AND MANHOLE FRAMES AND GRATES/COVERS SHALL CLEARLY ALIGN WITH THE OPENINGS IN THE PRECAST STRUCTURES AND THE GRADE OF THE ROADWAY.

11. 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.

12. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB (GUTTER LINE) OR EDGE OF TRAVEL WAY.

13. CONSTRUCTION BASELINE TIES ARE SHOWN ON CURB TIE & GRADING PLANS.

14. 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.

15. IN ALL LOCATIONS WHERE PROPOSED SIDEWALK TRANSITIONS DOWN TO MEET EXISTING GRADE, EXISTING SIDEWALK OR PAVED AREA, SLOPE SHALL NOT EXCEED 1:12.

16. 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.

17. SIGNS, POLES AND OTHER FEATURES LOCATED IN PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.

18. 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.

19. 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.

20. 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.

21. ALL NEW GRANITE CURB SHALL BE MASSDOT TYPE VA4, UNLESS OTHERWISE NOTED ON THE PLANS.

22. ALL EXISTING GRANITE CURB CONFLICTING WITH PROPOSED CONSTRUCTION SHALL BE REMOVED AND DISCARDED BY THE CONTRACTOR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

23. ALL PROPOSED PAVEMENT MARKINGS ON ROADWAYS SHALL BE REFLECTORIZED WHITE AND YELLOW THERMOPLASTIC.

24. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.

25. 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.

26. NO TREE SHALL BE REMOVED PRIOR TO APPROVAL OF THE CITY OF NEWTON.

27. 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.

28. 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

1. 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.

2. 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.

3. 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.

4. 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.

5. 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

1. ALL UNDERGROUND UTILITIES AS SHOWN FOR THE BEETHOVEN AVE AND PURITAN ROAD INTERSECTION WERE COMPILED UTILIZING SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION PROVIDED BY ALPHA SURVEY GROUP ON THE PLAN OF TOPOGRAPHIC SURVEY OF NEWTON, DATED 02/14/2020. ALL UNDERGROUND UTILITIES AS SHOWN FOR THE ALLEN AVE INTERSECTIONS WERE COMPILED UTILIZING SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION PROVIDED BY THE CITY OF NEWTON ON THE PLAN OF TOPOGRAPHIC SURVEY OF NEWTON, DATED 11/19/2019.

2. THE UNDERGROUND UTILITIES, AS SHOWN ON THE PLANS, HAVE BEEN COMPLIED 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.

3. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.

4. ALL EXISTING PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATIONS ARE NOT GUARANTEED.

5. 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.

6. BENCHMARK INFORMATION:
SEE CONSTRUCTION BASELINE TIES ON SHEETS 9 - 11 FOR BENCHMARK INFORMATION AND LOCATIONS.

PAVEMENT NOTES

PROPOSED PAVEMENT MILLING AND OVERLAY

SURFACE: 1.75" SUPERPAVE SURFACE COURSE- 12.5MM

MILLING: 1.75" PAVEMENT MILLING
ASPHALT EMULSION FOR TACK COAT (RS-1) AT 0.07 GAL/SY
OVER MILLED SURFACES.

PROPOSED CEMENT CONCRETE SIDEWALK

SURFACE: 4" CEMENT CONCRETE WITH LAMPBLACK 2LB/CF EMULSIFIED
7% AIR ENTRAINED 4000 PSI, 3/4", 610 (PER MASSDOT STD SPEC M4.02.00)

++SUBBASE: 6" GRAVEL BORROW, TYPE b.
2" DENSE GRADED CRUSHED STONE TO LEVEL

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMPS

SURFACE: 8" CEMENT CONCRETE WITH LAMPBLACK 2LB/CF EMULSIFIED
7% AIR ENTRAINED 4000 PSI, 3/4", 610 (PER MASSDOT STD SPEC M4.02.00)

++SUBBASE: 6" GRAVEL BORROW, TYPE b.
2" DENSE GRADED CRUSHED STONE TO LEVEL

PROPOSED CEMENT CONCRETE DRIVEWAY APRON

SURFACE: 6" CEMENT CONCRETE WITH LAMPBLACK 2LB/CF EMULSIFIED
7% AIR ENTRAINED 4000 PSI, 3/4", 610 (PER MASSDOT STD SPEC M4.02.00)

++SUBBASE: 8" GRAVEL BORROW, TYPE b.
2" DENSE GRADED CRUSHED STONE TO LEVEL

PROPOSED HMA DRIVEWAY

SURFACE: 1.5" SUPERPAVE SURFACE COURSE- 9.5 MM OVER
2.5" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)

++SUBBASE: 8"GRAVEL BORROW, TYPE b.

PROPOSED GRASS STRIP / LOAM AND SEED

SURFACE: 6" LOAM AND SEED

FULL DEPTH PAVEMENT

SURFACE: 1.75" SUPERPAVE SURFACE COURSE- 12.5MM
3" SUPERPAVE INTERMEDIATE COURSE- 19.0 (SIC-19.0)

SUBBASE: 6" GRAVEL BORROW, TYPE B (FOR RAISED INTERSECTION AT PURITAN ROAD & BEETHOVEN AVE)
++12" GRAVEL BORROW, TYPE B

++ WHERE EXISTING GRAVEL IS FOUND TO BE SUITABLE, THE EXISTING GRAVEL MAY BE USED IN PROPOSED SUBBASE, AFTER APPROVAL BY THE ENGINEER.

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL

PREPARED BY
BETA
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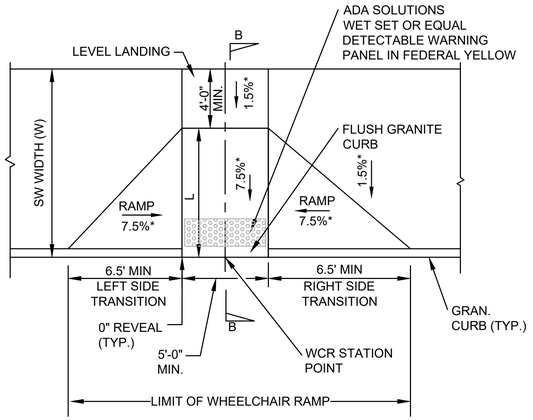
SUBCONSULTANT

SCALE
NONE
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

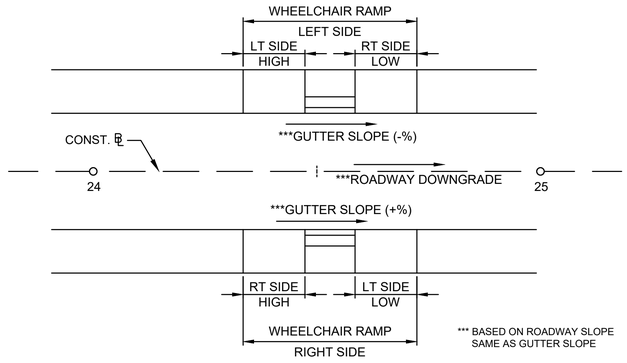
TITLE
Traffic Calming
GENERAL NOTES
Newton, MA

BETA JOB NO. 5472_11
ISSUE DATE 10/09/2020
SHEET NO. **3 of 16**

10/9/2020 4:26 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\CONST DETAILS.DWG (MADOT-E.STB)



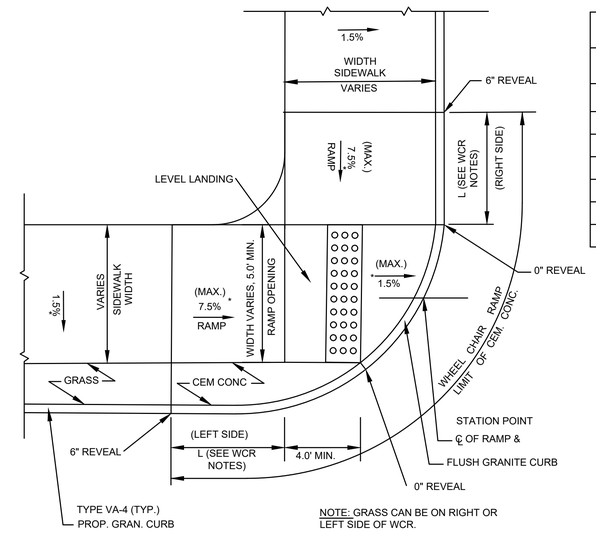
WHEELCHAIR RAMP DETAIL TYPE "A"
NOT TO SCALE



GUTTER SLOPE DIAGRAM
NOT TO SCALE

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	PLAINFIELD ST	0+23.58'	14.8' LT	6.10%	-	6.1'	4.0'	6.5'	15.0'	VARIES	B
2	PLAINFIELD ST	0+21.92'	11.8' RT	-2.0%	6.2'	5.0'	5.0'	6.5'	5.5' 3" R	VARIES	A
3	ALLEN AVE	11+10.87'	10.7' LT	HP	8.3' - 9.2'	5.0'	5.0'	3.25' 3" R	6.5' 4" R	VARIES	A
4	ALLEN AVE	11+10.53'	11.4' RT	0.4%	7.9' - 8.0'	5.0'	5.1'	6.5'	7.67'	13.0'	A
5	PINE RIDGE RD	0+22.38'	15.5' LT	5.1%	-	5.0'	4.0'	6.5'	15.0'	VARIES	B
6	PINE RIDGE RD	0+21+72'	11.9' RT	-7.2%	5.2'	5.0'	4.0'	15.0'	3.25' 3" R	VARIES	A
7	ALLEN AVE	21+07.87'	10.6' LT	-2.0%	7.5' - 8.0'	5.0'	4.0'	5.5' 3" R	6.5'	VARIES	A
8	ALLEN AVE	21+08.04'	11.4' RT	0.5%	8.3'	5.0'	5.0'	6.5'	7.67'	13.2'	A
9	BEETHOVEN AVE	01+24.59'	12.0' LT	2.0%	2.5'	5.0'	5.0'	6.5'	11.0'	5.0'	C
10	BEETHOVEN AVE	01+24.50'	12.4' RT	-2.0%	2.5' - 3.1'	5.0'	4.0'	-	-	VARIES	D
11	PURITAN RD	01+74.31'	17.2' LT	1.5%	2.5' - 6.4'	5.0'	4.0'	-	-	VARIES	D
12	PURITAN RD	01+74.31'	17.7' RT	HP	3.2' - 7.4'	5.0'	5.0'	-	-	VARIES	D
13	BEETHOVEN AVE	31+82.76'	14.6' RT	-1.6%	2.5' - 5.0'	5.0'	5.0'	-	-	VARIES	D
14	BEETHOVEN AVE	31+82.51'	11.9' LT	-2.0%	3.1'	5.0'	5.0'	11.0'	6.5'	5.0'	C

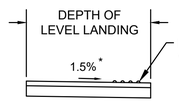
**** GUTTER PROFILE SLOPE SIGN (+ OR -) DESIGNATION IS BASED ON THE GUTTER SLOPE DIAGRAM.



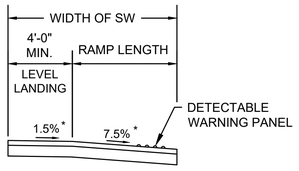
WHEELCHAIR RAMP DETAIL TYPE "B"
NOT TO SCALE

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.

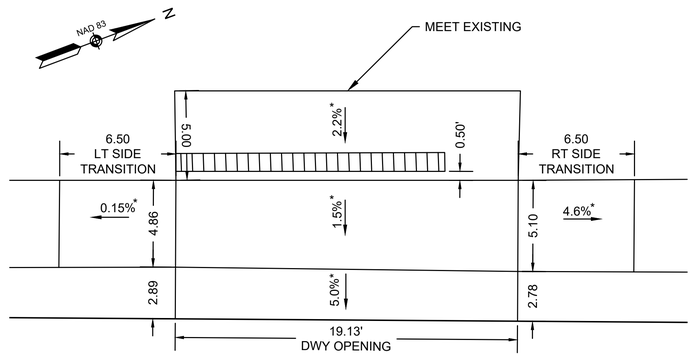
CURB TRANSITION LENGTH FOR WHEELCHAIR RAMPS
MASSDOT CONST. STD. DWG. NO. E107.9.0
**BASED ON A DESIGN SLOPE OF 7.5% AND A REVEAL OF 6".



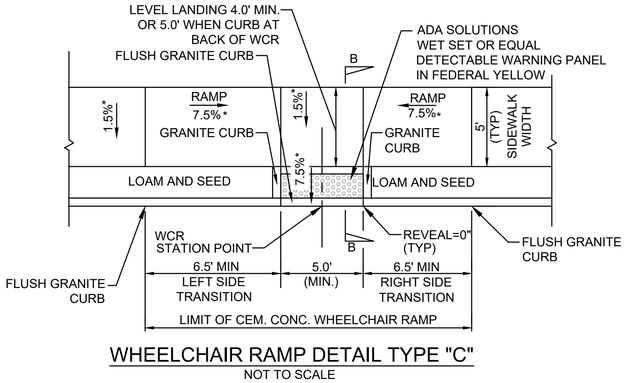
SECTION A-A
NOT TO SCALE



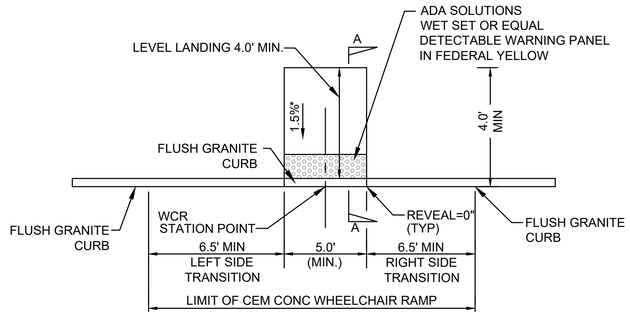
SECTION B-B
NOT TO SCALE



DETAIL FOR DWY-1
STA 1+59.38' 11.9' LT
NOT TO SCALE



WHEELCHAIR RAMP DETAIL TYPE "C"
NOT TO SCALE



WHEELCHAIR RAMP DETAIL TYPE "D"
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

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SCALE: NONE

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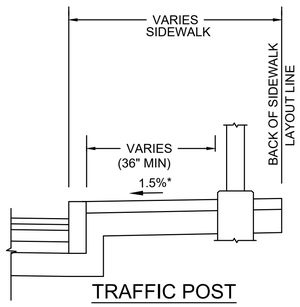
TITLE: **Traffic Calming**
CONSTRUCTION DETAILS
Newton, MA

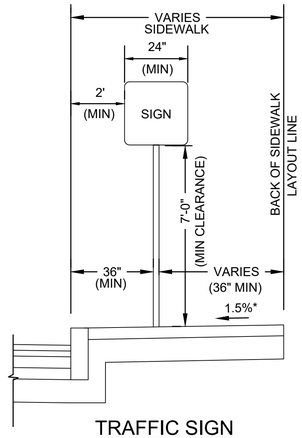
BETA JOB NO. 5472_11
ISSUE DATE 10/09/2020
SHEET NO. **4 of 16**

10/9/2020 4:26 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\CONST DETAILS.DWG (MADOT-E.STB)



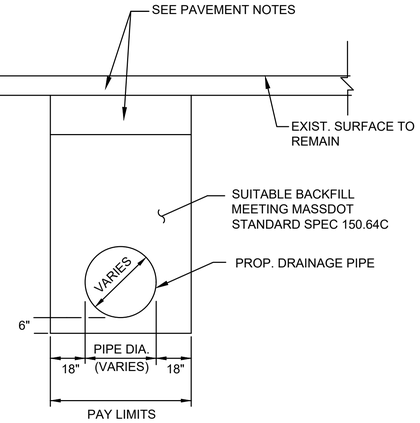
TRAFFIC POST
NOT TO SCALE

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.

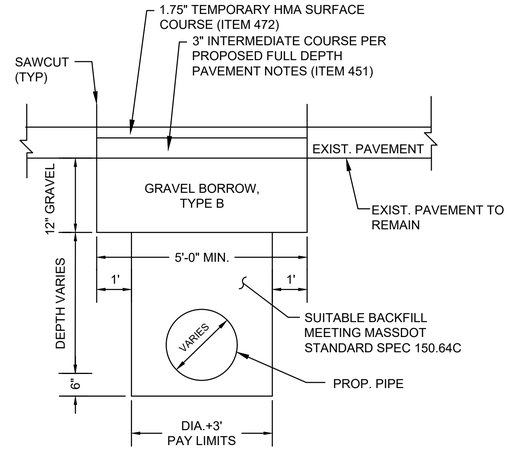


TRAFFIC SIGN
NOT TO SCALE

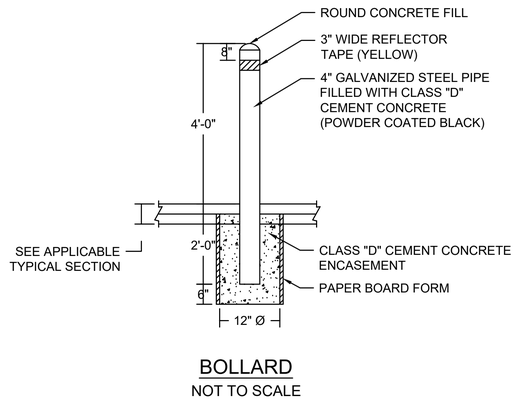
NOTES:
1. MINIMUM CLEAR PATH ON ALL SIDEWALKS SHALL 36 INCHES, EXCLUDING THE CURB.
2. CONTRACTOR SHALL VERIFY LOCATION OF ALL OBJECTS (SIGNS, POLES ETC.) TO BE SET WITHIN SIDEWALK PRIOR TO FINAL PLACEMENT TO PROVIDE A MINIMUM CLEAR PATH OF 36 INCHES NOT INCLUDING CURB. CONTRACTOR SHALL NOTIFY THE ENGINEER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



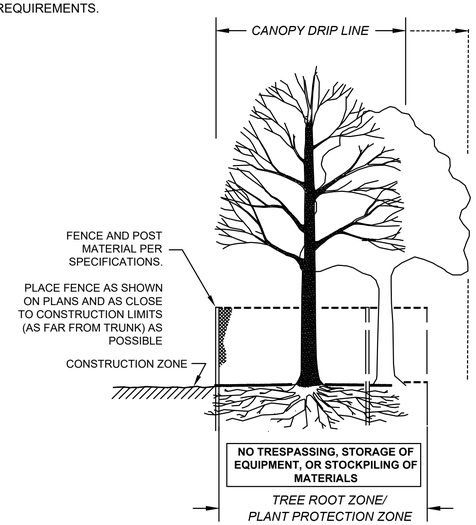
DETAIL FOR PERMANENT TRENCH FOR DRAINAGE PIPE IN SIDEWALK/ GRASS AREAS
NOT TO SCALE



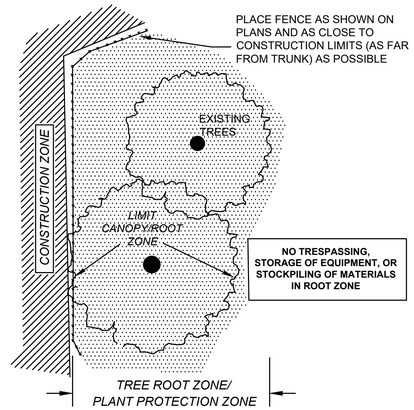
PERMANENT TRENCH PATCH DETAIL IN MILLED AREAS
NOT TO SCALE



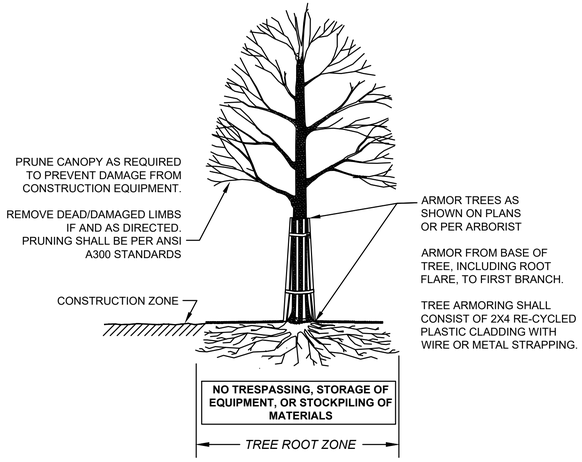
BOLLARD
NOT TO SCALE



SECTION - FENCE PROTECTION OF ROOT ZONE



PLAN VIEW - FENCE PROTECTION OF ROOT ZONE



SECTION - TRUNK ARMORING & PRUNING

TREE PROTECTION DETAILS
NOT TO SCALE

* TOLERANCE FOR CONSTRUCTION ±0.5%

NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS

DRAWN BY:
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PREPARED BY: BETA www.BETA-Inc.com

SUBCONSULTANT

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TITLE: **Traffic Calming**

CONSTRUCTION DETAILS

Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **5 of 16**

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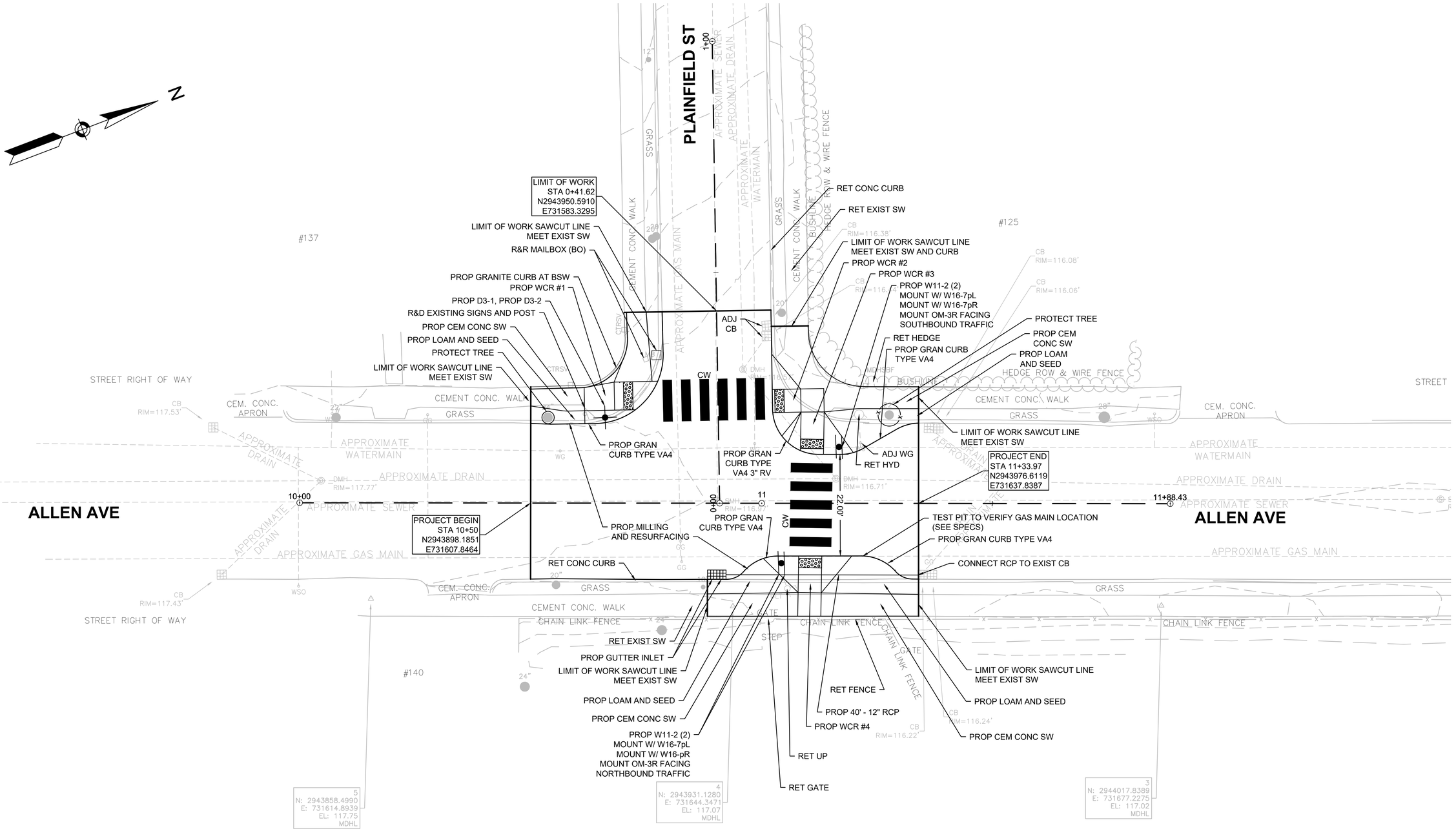

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PREPARED BY

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SCALE

10 0 10 20
SCALE IN FEET: 1"=10'

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TITLE

Traffic Calming

at Allen Ave at Plainfield St
CONSTRUCTION PLAN

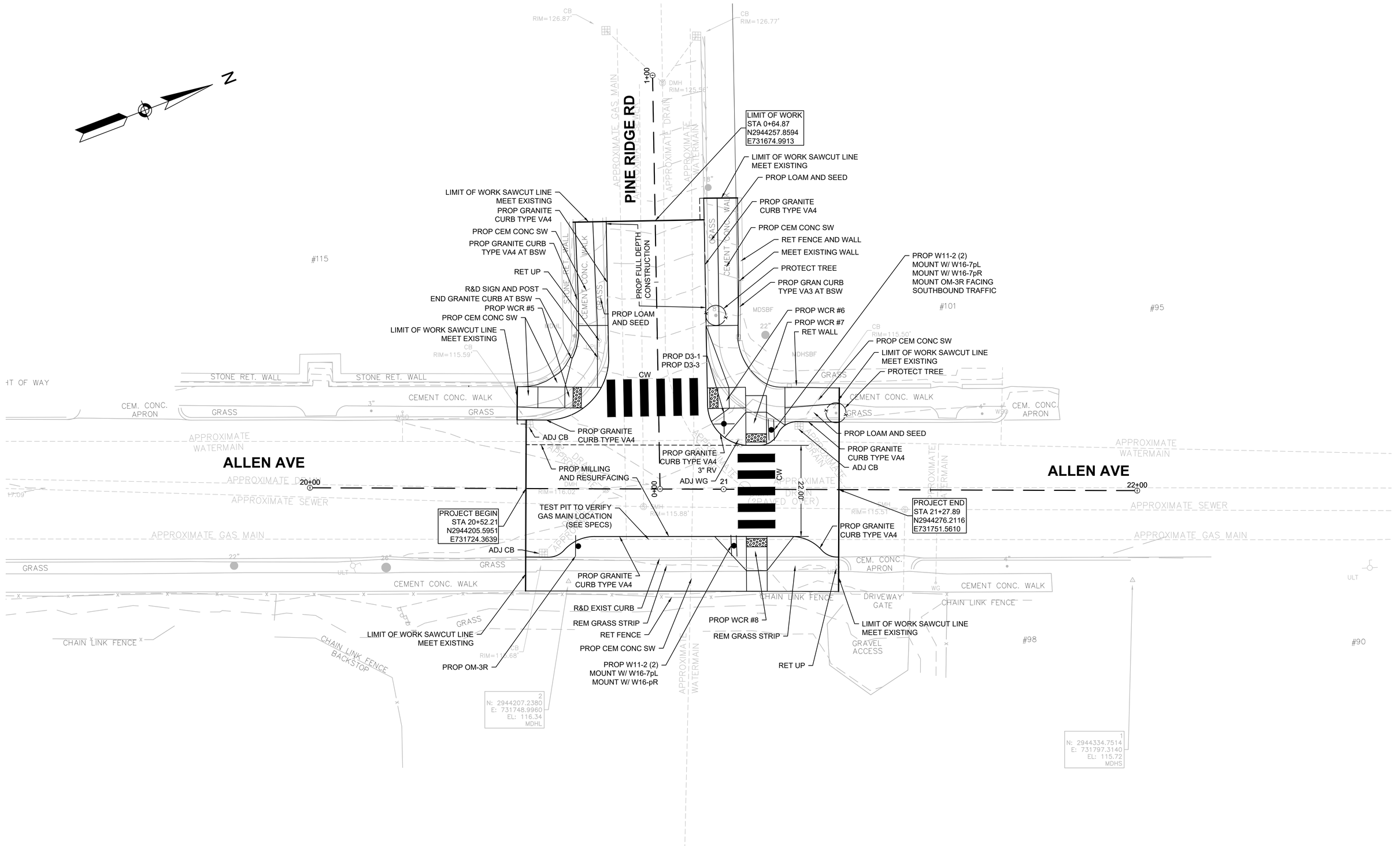
Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **6 of 16**

10/9/2020 4:27 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\CONST.DWG (MADOT-D.STB)



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SCALE

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SCALE IN FEET: 1"=10'

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TITLE

Traffic Calming

at Allen Ave at Pine Ridge Rd
CONSTRUCTION PLAN

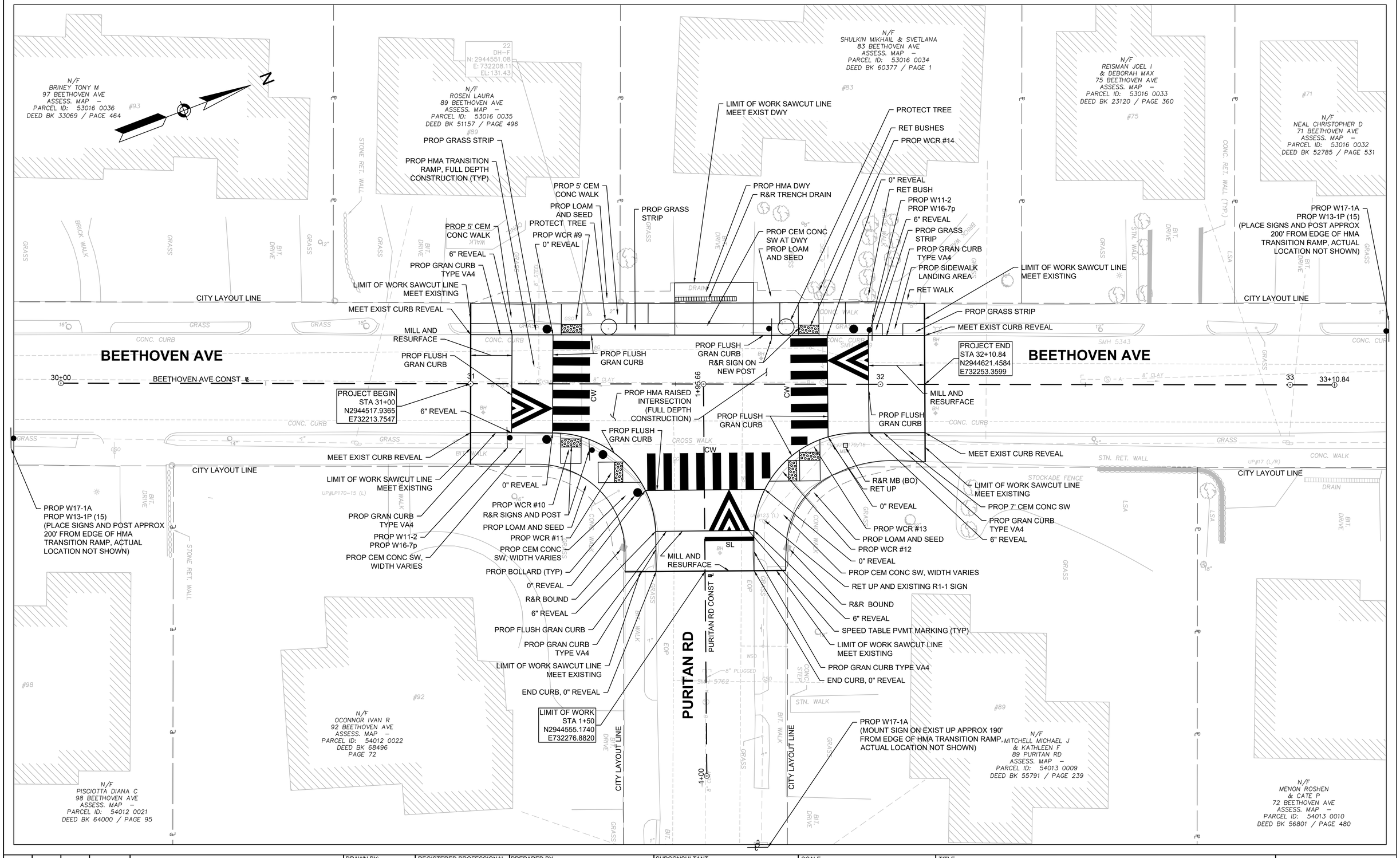
Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **7 of 16**

10/9/2020 4:27 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\CONST.DWG (MADOT-D.STB)



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10 0 10 20
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TITLE

Traffic Calming

at BEETHOVEN AVE AT PURITAN RD
CONSTRUCTION PLAN

Newton, MA

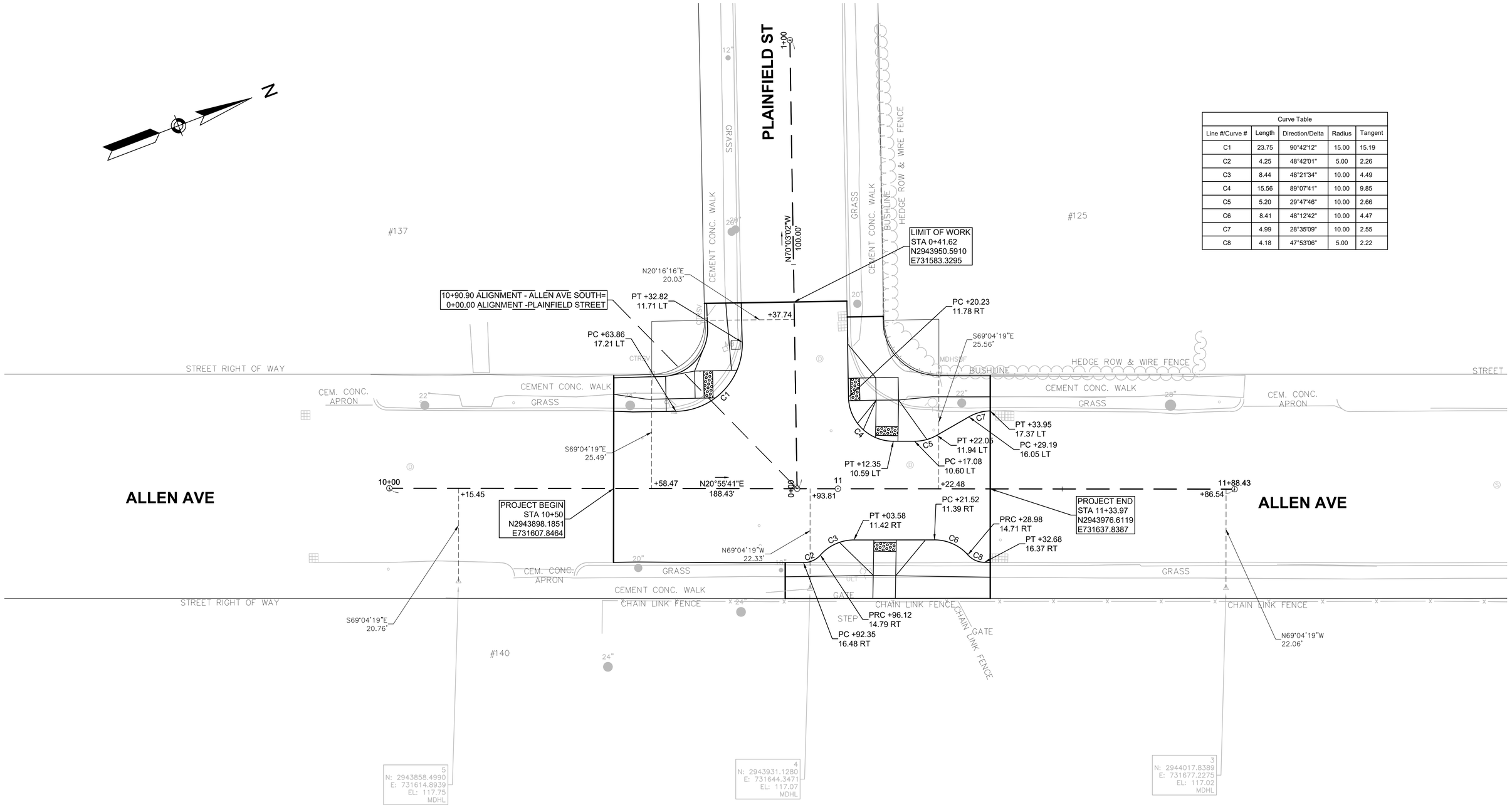
BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **8 of 16**

10/9/2020 4:27 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\CONST - BEETHOVEN AT PURITAN DWG (MADOT-D STB)

Curve Table				
Line #/Curve #	Length	Direction/Delta	Radius	Tangent
C1	23.75	90°42'12"	15.00	15.19
C2	4.25	48°42'01"	5.00	2.26
C3	8.44	48°21'34"	10.00	4.49
C4	15.56	89°07'41"	10.00	9.85
C5	5.20	29°47'46"	10.00	2.66
C6	8.41	48°12'42"	10.00	4.47
C7	4.99	28°35'09"	10.00	2.55
C8	4.18	47°53'06"	5.00	2.22



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SCALE

10 0 10 20
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TITLE

Traffic Calming

at Allen Ave at Plainfield St
BASELINE AND CURB TIE PLAN

Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **9 of 16**

10/9/2020 4:28 PM O:\5400\5\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\BASELINE AND CURB TIE PLAN.DWG (MADOT-D.STB)

Curve Table				
Line #/Curve #	Length	Direction/Delta	Radius	Tangent
C15	4.24	48°38'06"	5.00	2.26
C16	23.91	91°18'38"	15.00	15.35
C17	8.41	48°11'39"	10.00	4.47
C18	15.53	88°57'14"	10.00	9.82
C19	5.65	64°42'48"	5.00	3.17
C20	8.41	48°10'54"	10.00	4.47
C21	5.70	65°18'59"	5.00	3.20
C22	4.21	48°16'49"	5.00	2.24

PINE RIDGE RD

ALLEN AVE

ALLEN AVE

LIMIT OF WORK
STA 0+64.87
N2944257.8594
E731674.9913

PROJECT BEGIN
STA 20+52.21
N2944205.5951
E731724.3639

PROJECT END
STA 21+27.89
N2944276.2116
E731751.5610

20+84.64 ALIGNMENT - ALLEN AVE NORTH=
0+00.00 ALIGNMENT - PINE RIDGE ROAD

N19°49'44"E
19.94'

N70°10'16"W
100.00'

S19°49'44"W
19.64'

N21°03'49"E
200.00'

N68°56'11"W
22.40'

S68°56'11"E
25.01'

PT +32.16
11.85 LT

PC +20.13
11.86 RT

PRC +13.10
13.50 LT

PT +17.67
16.38 LT

PC +57.08
16.57 LT

PT +06.10
10.61 LT

PC +08.59
10.61 LT

PC +57.72
16.58 RT

PT +68.92
11.54 RT

PC +16.32
11.36 RT

PT +27.53
16.31 RT

PRC +61.48
14.90 RT

PRC +23.78
14.66 RT

C15 C16 C17 C18 C19 C20 C21 C22

+37.38
+36.42
+62.60
+15.81

20+00
0+00
21
22+00

#115 #101 #95 #98 #90

STONE RET. WALL
CEMENT CONC. WALK
GRASS
MDHL
MDSBF
MDHSBF
UPL
ULT
CEM. CONC. APRON
CHAIN LINK FENCE
CHAIN LINK FENCE BACKSTOP
DRIVEWAY GATE
GRAVEL ACCESS
RIGHT OF WAY

2
N: 2944207.2380
E: 731748.9960
EL: 116.34
MDHL

1
N: 2944334.7514
E: 731797.3140
EL: 115.72
MDHS

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TITLE

Traffic Calming

at Allen Ave / Pine Ridge Rd
BASELINE AND CURB TIE PLAN

Newton, MA

BETA JOB NO. 5472_11

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SHEET NO. **10 of 16**

10/9/2020 4:28 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\BASELINE AND CURB TIE PLAN.DWG (MADOT-D.STB)

N/F
BRINEY TONY M
97 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0036
DEED BK 33069 / PAGE 464
#93

N

22
DH–F
N: 2944551.08
E: 732208.11
EL: 131.43

N/F
ROSEN LAURA
89 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0035
DEED BK 51157 / PAGE 496
#89

N/F
SHULKIN MIKHAIL & SVETLANA
83 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0034
DEED BK 60377 / PAGE 1
#83

N/F
REISMAN JOEL I
& DEBORAH MAX
75 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0033
DEED BK 23120 / PAGE 360
#75

N/F
NEAL CHRISTOPHER D
71 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0032
DEED BK 52785 / PAGE 531
#71

STONE RET. WALL
CONC. RET. WALL (TYP.)
BRICK WALK
CONC. WALK
STN. WALK
DRAIN
GRASS
BIT. DRIVE
LSA

S69°03'51"E
20.00'
S69°03'51"E
17.12'

BEETHOVEN AVE

PROJECT BEGIN
STA 31+00
N2944517.9365
E732213.7547

PROJECT END
STA 32+10.84
N2944621.4584
E732253.3599

30+00 | 31 | +28.94 | +36.63 | 1+95.66 | N20°56'09"E 310.84' | 32 | 33 | 33+10.84

PC +20.35
12.00 RT

PT +94.03
11.89 RT

CONC. CURB
CROSS WALK
BIT. WALK
UP#LP170–15 (L)
UP#170/16 MBX
UP#123 (L)
UP#17 (L/R)
STOCKADE FENCE

C25
C26
N69°38'14"W
95.66'

31+56.82 ALIGNMENT - BEETHOVEN AVE=
1+95.66 ALIGNMENT - PURITAN RD

PC +58.54
11.99 RT

PT +59.02
11.95 LT

+55.89 | +55.54

S20°21'46"W
19.87'

S20°21'46"W
20.12'

LIMIT OF WORK
STA 1+50
N2944555.1183
E732276.8613

PURITAN RD

1+00

EOP
CONC. STEP
SMH 5762

Curve Table				
Line #/Curve #	Length	Direction/Delta	Radius	Tangent
C25	38.91	89°10'33"	25.00	24.64
C26	39.22	89°53'20"	25.00	24.95

N/F
PISCIOTTA DIANA C
98 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54012 0021
DEED BK 64000 / PAGE 95
#98

N/F
OCONNOR IVAN R
92 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54012 0022
DEED BK 68496
PAGE 72
#92

N/F
MITCHELL MICHAEL J
& KATHLEEN F
89 PURITAN RD
ASSESS. MAP –
PARCEL ID: 54013 0009
DEED BK 55791 / PAGE 239
#89

N/F
MENON ROSHEN
& CATE P
72 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54013 0010
DEED BK 56801 / PAGE 480

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DESIGNED BY:
CHECKED BY:

REGISTERED PROFESSIONAL

PREPARED BY
BETA
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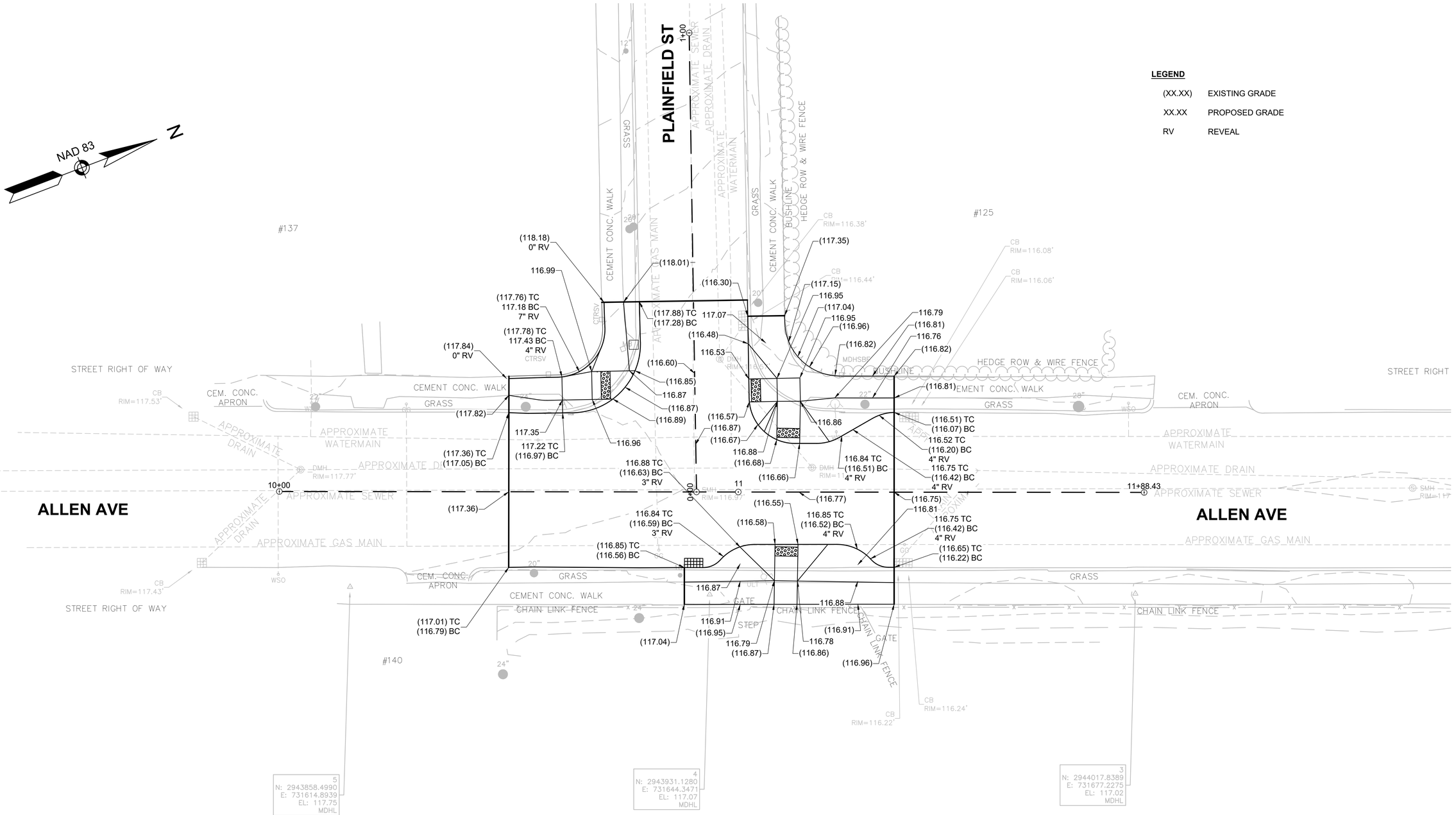
SUBCONSULTANT

SCALE
10 0 10 20
SCALE IN FEET: 1"=10'
UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TITLE
Traffic Calming
at Beethoven Ave / Puritan Rd
BASELINE AND CURB TIE PLAN
Newton, MA

BETA JOB NO. 5472_11
ISSUE DATE 10/09/2020
SHEET NO. **11 of 16**

10/9/2020 4:28 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\BASELINE AND CURB TIE PLAN - BEETHOVEN AT PURITAN.DWG (MADOT-D.STB)



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TITLE

Traffic Calming

at Allen Ave / Plainfield St
GRADING PLAN

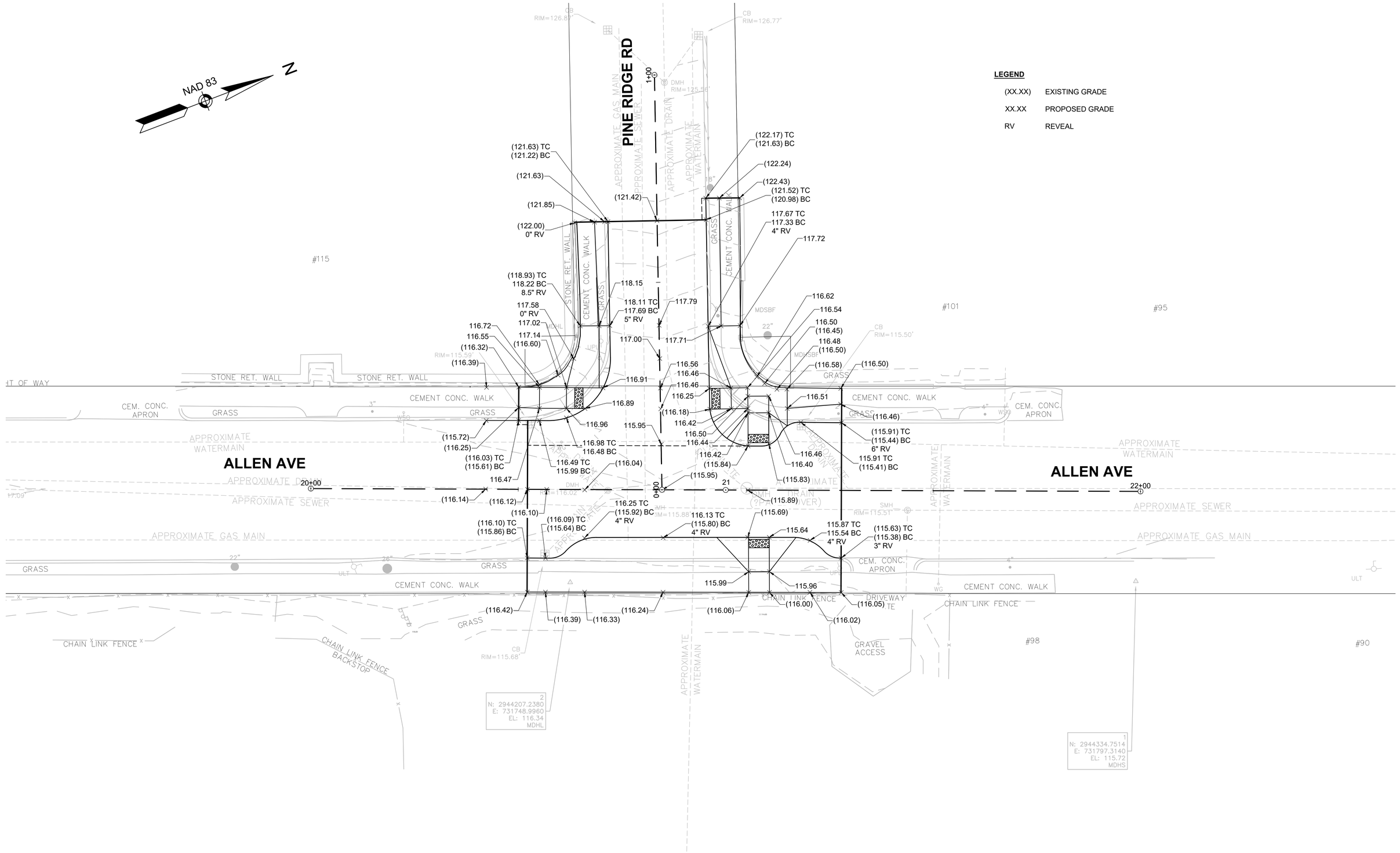
Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **12 of 16**

10/9/2020 4:28 PM O:\5400\5\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\GRADING.DWG (MADOT-D.STB)



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10 0 10 20
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TITLE

Traffic Calming

at Allen Ave / Pine Ridge Road
GRADING PLAN

Newton, MA

BETA JOB NO. 5472_11

ISSUE DATE 10/09/2020

SHEET NO. **13 of 16**

10/9/2020 4:28 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\GRADING.DWG (MADOT-D.STB)

N/F
BRINEY TONY M
97 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0036
DEED BK 33069 / PAGE 464
#93

N/F
ROSEN LAURA
89 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0035
DEED BK 51157 / PAGE 496
#89

22
DH-F
N: 2944551.08
E: 732208.11
EL: 131.43

N/F
SHULKIN MIKHAIL & SVETLANA
83 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0034
DEED BK 60377 / PAGE 1
#83

N/F
REISMAN JOEL I
& DEBORAH MAX
75 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0033
DEED BK 23120 / PAGE 360
#75

#71

N/F
NEAL CHRISTOPHER D
71 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 53016 0032
DEED BK 52785 / PAGE 531

LEGEND

(XX.XX)	EXISTING GRADE
XX.XX	PROPOSED GRADE
R	REVEAL

BEETHOVEN AVE

BEETHOVEN AVE

PURITAN RD

30+00 | 31 | 32 | 33 | 33+10.84 | 1+55.66 | 1+00

(130.48) (130.91) 131.22 131.18 131.16 131.29 131.27 131.26 131.56 131.42 131.50 (131.79) (132.05) 131.63 DRAIN 131.68 (131.84) 131.28 131.21 131.38 (130.79) (130.60) 130.71 130.84 131.12 (129.97) TC (129.58) BC

(130.13) TC (129.83) BC
130.80 TC 130.30 BC
(130.51) 131.38
131.30 131.18 131.20 131.07 130.97 130.93 130.57 TC (130.07) BC (130.38) (129.97)

(129.97) 130.85 TC (130.35) BC (130.04) TC (129.84) BC
131.21 131.31 131.33 131.13 131.12 131.07 130.99 131.06 130.89 130.86 131.64 131.74 131.47 131.43 131.18 130.96 131.00 131.08 131.11 131.09 131.15 131.00 130.95 130.76 TC (130.26) BC (129.99) TC (129.69) BC

(130.40) 130.89 131.17 131.26 131.30 131.34 (131.10) 131.21 (130.71) 131.14 (130.69) 131.13 (130.62) 130.78 (130.45) 131.11 130.66 TC (130.16) BC (130.28) (129.63) (129.93) (129.69) 130.75 130.61 TC (130.11) BC (130.46) (131.26) (131.16) (131.43) 131.22 (131.31) 131.05 131.14 130.87 (130.42)

CONC. CURB · GRASS · BRICK WALK · BIT. DRIVE · STONE RET. WALL · CONC. WALK · STN. WALK · STN. RET. WALL · CONC. RET. WALL (TYP.) · STOCKADE FENCE · DRAIN · LSA · GROSS WALK · BIT. WALK · CONC. STEP · EOP · 8" CLAY · 8" PLUGGED · SMH 5629 · SMH 5762 · SMH 5439 · SMH 5343 · DH · WG · WSO · BH · UP#LP170-15 (L) · UP#LP170-16 (L) · UP#17 (L/R) · UP#123 (L)

#98

N/F
PISCIOTTA DIANA C
98 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54012 0021
DEED BK 64000 / PAGE 95

#92

N/F
OCONNOR IVAN R
92 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54012 0022
DEED BK 68496
PAGE 72

#89

N/F
MITCHELL MICHAEL J
& KATHLEEN F
89 PURITAN RD
ASSESS. MAP –
PARCEL ID: 54013 0009
DEED BK 55791 / PAGE 239

N/F
MENON ROSHEN
& CATE P
72 BEETHOVEN AVE
ASSESS. MAP –
PARCEL ID: 54013 0010
DEED BK 56801 / PAGE 480

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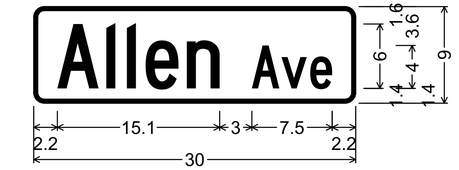
TITLE
Traffic Calming
at Beethoven Ave / Puritan Rd
GRADING PLAN
Newton, MA

BETA JOB NO. 5472_11
ISSUE DATE 10/09/2020
SHEET NO. **14 of 16**

10/9/2020 4:28 PM O:\5400\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\GRADING - BEETHOVEN AT PURITAN.DWG (MADOT-D.STB)

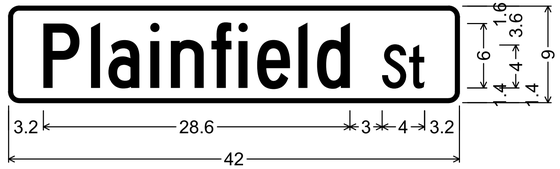
IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	DIMENSIONS (in) LETTER HEIGHT	DIMENSIONS (in) VERTICAL SPACING	DIMENSIONS (in) ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
W11-2	30 in	30 in		SEE 2009 MUTCD STANDARDS			10	FYG	BLACK	BLACK	P-5 6	6.25	62.5
W13-1P (15)	18 in	18 in					2	YELLOW	BLACK	BLACK	MOUNT W/ W17-1A	2.25	4.5
W16-7pL	24 in	12 in					6	FYG	BLACK	BLACK	MOUNT W/ W11-2	2.0	12.0
W16-7pR	24 in	12 in					4	FYG	BLACK	BLACK	MOUNT W/ W11-2	2.0	8.0
W17-1A	30 in	30 in		3C 3C 3C	2 2		3	YELLOW	BLACK	BLACK	P-5 2 MOUNT 1 ON UP	4.0	12.0
D3-1	30 in	9 in	SEE D3-1 SIGN DETAIL				2	SEE D3-1 SIGN DETAIL			P5 2	1.9	2.8
D3-2	42 in	9 in	SEE D3-2 SIGN DETAIL				1	SEE D3-2 SIGN DETAIL			MOUNT W/ D3-1	2.7	5.4
D3-3	48 in	9 in	SEE D3-3 SIGN DETAIL				1	SEE D3-3 SIGN DETAIL			MOUNT W/ D3-1	3.0	3.0
OM-3R	12 in	36 in		SEE 2009 MUTCD STANDARDS			4	YELLOW	BLACK	-	MOUNT W/ W11-2 P5 1	3	12.0

D3-1 - SIGN DETAIL



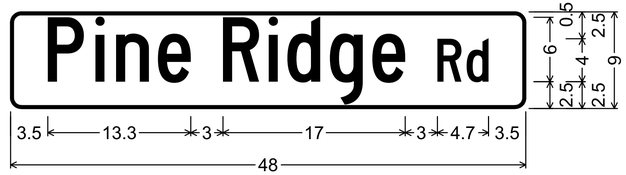
Identifier : D3-1(2)_VARx8 ;
1.0" Radius, 0.4" Border, White on Green;
[Allen] C 2K; [Ave] C 2K;

D3-2 - SIGN DETAIL



Identifier : D3-1(2)_VARx8 ;
1.0" Radius, 0.4" Border, White on Green;
[Plainfield] C 2K; [St] C 2K;

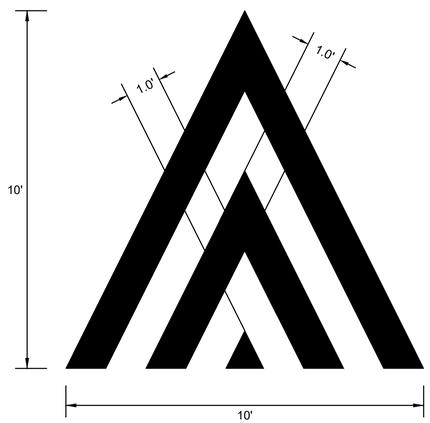
D3-3 - SIGN DETAIL



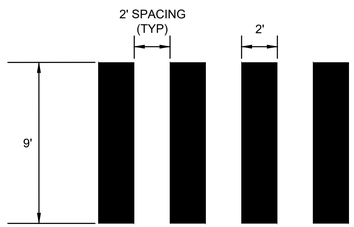
Identifier : D3-1(2)_VARx8;
1.0" Radius, 0.3" Border, White on Green;
[Pine] C 2K; [Ridge] C 2K; [Rd] C 2K;

PAVEMENT MARKING & SIGN NOTES

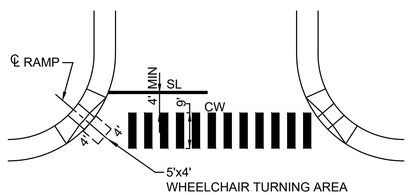
1. ALL EXISTING SIGNS AND SIGN POSTS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS OTHERWISE NOTED ON PLANS.
2. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING CONFORMING TO SECTION M9:30.0, TYPE III OR IV, OF THE MASSDOT STANDARD SPECIFICATIONS SHALL BE USED FOR ALL SIGNS.
3. ALL PROPOSED 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). SIGN POSTS SHALL BE PAINTED SEMI-GLOSS BLACK.
4. 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).
5. UNLESS OTHERWISE PROVIDED FOR IN THE MUTCD, ALL SIGNS SHOULD BE 90° TO THE CURB AND FACING THE FLOW OF TRAFFIC.
6. STREET NAME SIGNS SHALL BE MOUNTED PARALLEL WITH THE STREET.
7. 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.
8. ALL SIGNS SHALL BE MOUNTED TO PROVIDE A 7' MINIMUM CLEARANCE BETWEEN THE BOTTOM OF THE SIGN AND FINISHED GRADE.
9. FYG: FLUORESCENT YELLOW GREEN
10. 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.
11. PROPOSED PAVEMENT MARKINGS (LEGENDS & ARROWS) SHALL BE INSTALLED IN ACCORDANCE WITH THE MUTCD & MASSDOT - 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, AS AMENDED.



RAISED INTERSECTION PAVEMENT MARKING
NOT TO SCALE



CROSSWALK DETAIL
NOT TO SCALE



CROSSWALK LOCATION DETAIL
NOT TO SCALE

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TITLE: **Traffic Calming**

SIGN AND PAVEMENT MARKING DETAILS

Newton, MA

BETA JOB NO. 5472_11
ISSUE DATE 10/09/2020
SHEET NO. **15 of 16**

10/9/2020 4:29 PM O:\5400\5\5472 - NEWTON ON-CALL\TASK 11 - 5 PROJECT BID PACKAGE\DRAWING FILES\PLANSET\SIGN AND PAVEMENT MARKING DETAILS.DWG (MADOT-E.STB)

NOTES:

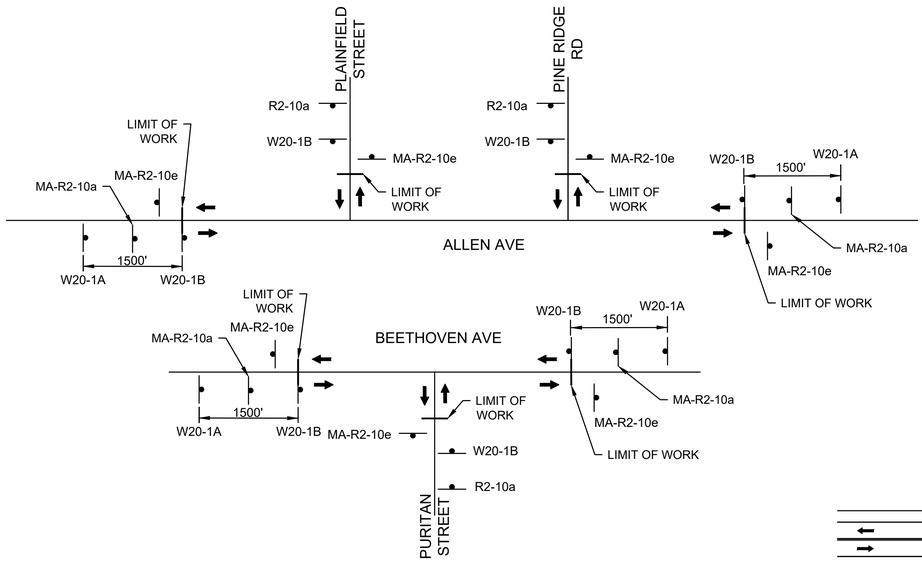
1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE 2009 EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS.
2. ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD, EXCEPT THAT BACKGROUND COLOR SHALL BE FLUORESCENT ORANGE, IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. 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).
6. 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.
7. THE FIRST TEN PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
8. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
9. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
10. MAXIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
11. 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.
12. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
13. 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".

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
P	POLICE DETAIL
F	FLAGGER

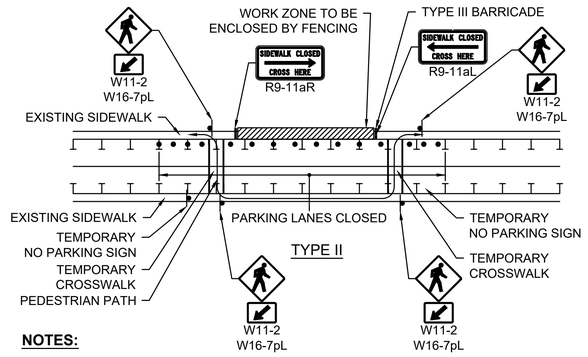
TAPER LENGTH

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



INTERSECTION PROJECT LIMIT SIGNING
NOT TO SCALE

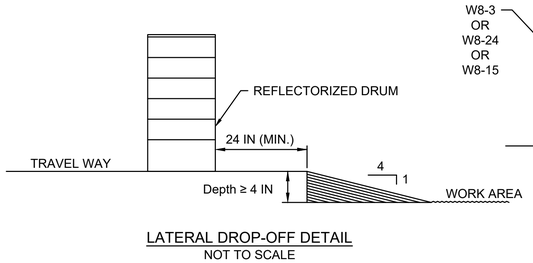


TYPE II

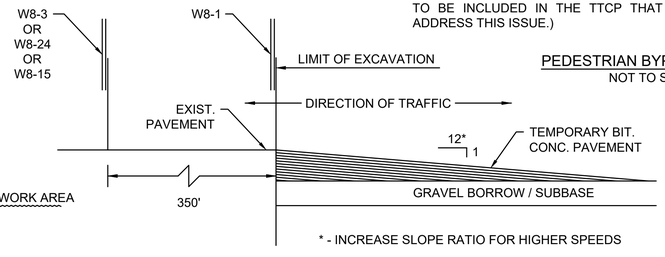
NOTES:

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. STREET LIGHTING SHOULD BE CONSIDERED WHEN LOCATING CONTROL DEVICES.
4. 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.
5. BYPASS IS TO BE USED IN CONJUCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
6. 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.)

PEDESTRIAN BYPASS DETAILS
NOT TO SCALE

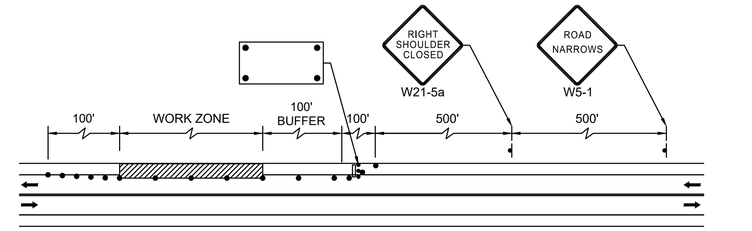


LATERAL DROP-OFF DETAIL
NOT TO SCALE

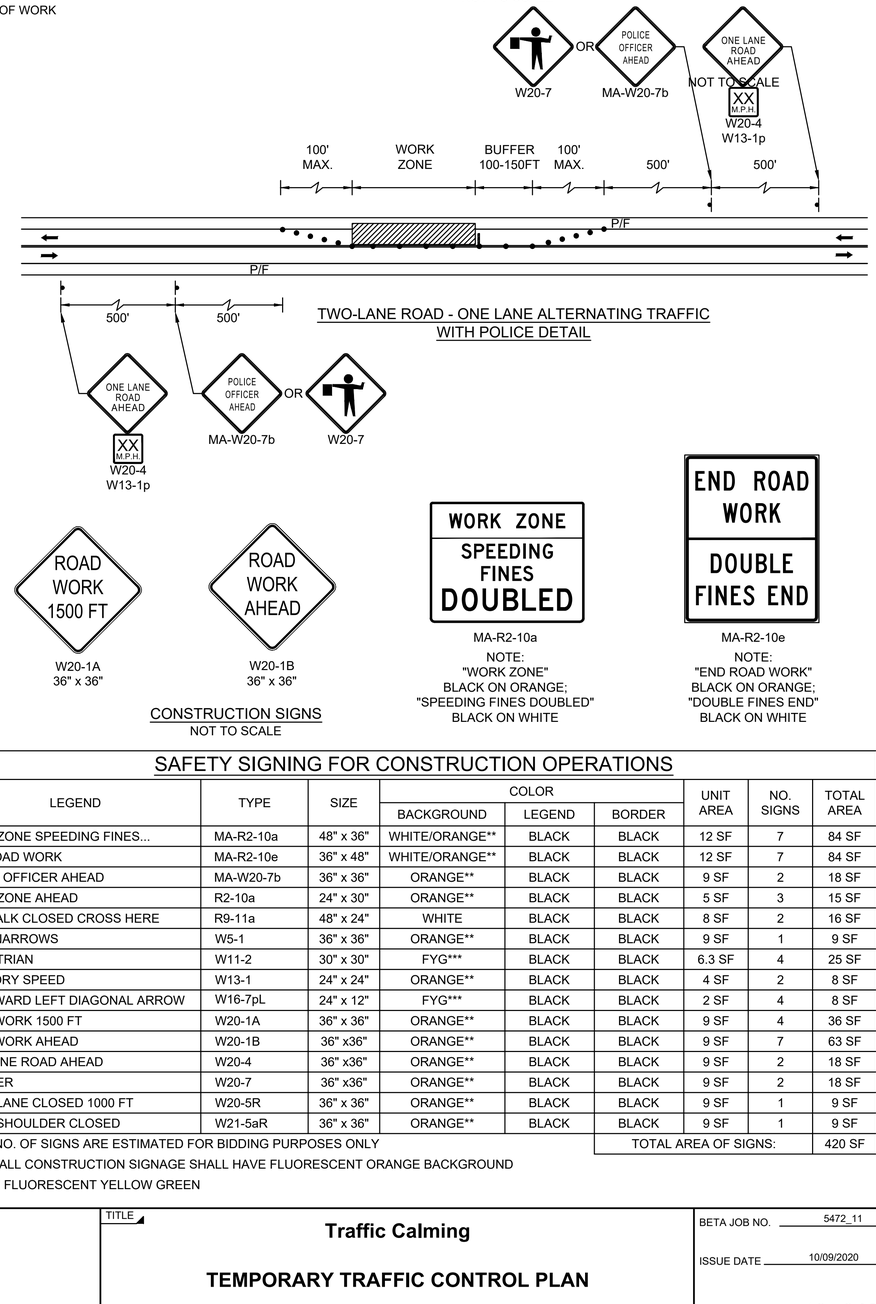


* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

LONGITUDINAL DROP-OFF DETAIL
NOT TO SCALE



TWO-LANE ROAD - SHOULDER CLOSED
NOT TO SCALE



TWO-LANE ROAD - ONE LANE ALTERNATING TRAFFIC WITH POLICE DETAIL

W20-1A
36" x 36"

W20-1B
36" x 36"

MA-R2-10a
NOTE:
"WORK ZONE"
BLACK ON ORANGE;
"SPEEDING FINES DOUBLED"
BLACK ON WHITE

MA-R2-10e
NOTE:
"END ROAD WORK"
BLACK ON ORANGE;
"DOUBLE FINES END"
BLACK ON WHITE

CONSTRUCTION SIGNS
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	7	84 SF
END ROAD WORK	MA-R2-10e	36" x 48"	WHITE/ORANGE**	BLACK	BLACK	12 SF	7	84 SF
POLICE OFFICER AHEAD	MA-W20-7b	36" x 36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF
WORK ZONE AHEAD	R2-10a	24" x 30"	ORANGE**	BLACK	BLACK	5 SF	3	15 SF
SIDEWALK CLOSED CROSS HERE	R9-11a	48" x 24"	WHITE	BLACK	BLACK	8 SF	2	16 SF
ROAD NARROWS	W5-1	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	4	36 SF
ROAD WORK AHEAD	W20-1B	36" x36"	ORANGE**	BLACK	BLACK	9 SF	7	63 SF
ONE LANE ROAD AHEAD	W20-4	36" x36"	ORANGE**	BLACK	BLACK	9 SF	2	18 SF
FLAGGER	W20-7	36" x36"	ORANGE**	BLACK	BLACK	9 SF	2	18 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:			420 SF

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

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TITLE
Traffic Calming
TEMPORARY TRAFFIC CONTROL PLAN
Newton, MA

BETA JOB NO. 5472_11
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