THE CITY OF NEWTON
DEPARTMENT OF PUBLIC WORKS

INTERSECTION IMPROVEMENTS IN

WEST NEWTON SQUARE

IN THE CITY OF

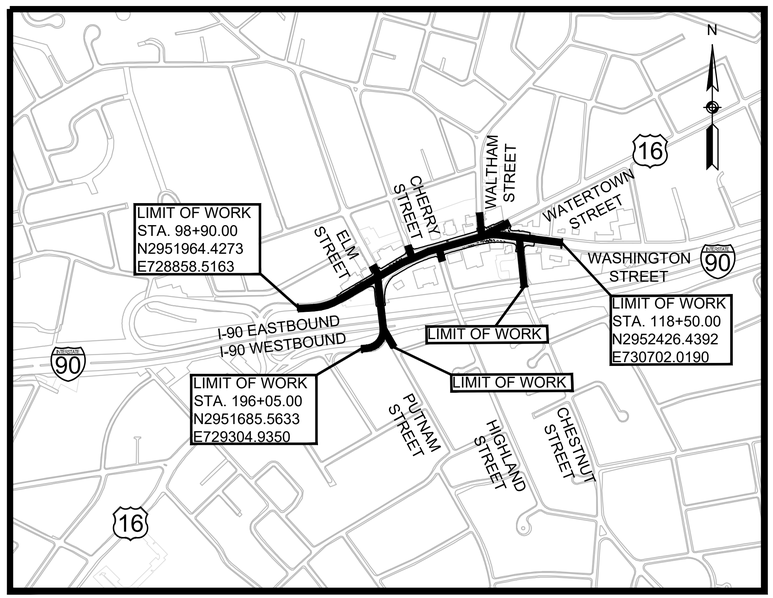
NEWTON

MIDDLESEX COUNTY

COMMONWEALTH OF MASSACHUSETTS

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

INDEX



LOCATION MAP

0 500 1000 1500 2000

SCALE: 1" = 500'

LENGTH OF PROJECT = 1415.490 FEET = 0.268 MILES

PREPARED BY:

HDR ENGINEERING, INC.
99 HIGH STREET, SUITE 2300
BOSTON, MA 02110
617-357-7700

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TITLE SHEET & INDEX

SCALE: AS NOTED DATE: 1/16/19 SHEET 1 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:06 PM

c:\pwworking\pitt\d2084567\00G-01.dwg

GENERAL SYMBOLS

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

TRAFFIC SYMBOLS

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

PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
	SL	STOP LINE
	CW	CROSSWALK
	SWL	SOLID WHITE LINE
	SYL	SOLID YELLOW LINE
	BWL	BROKEN WHITE LINE
	BYL	BROKEN YELLOW LINE
	DWL	DOTTED WHITE LINE
	DYL	DOTTED YELLOW LINE
	DWLEx	DOTTED WHITE LINE EXTENSION
	DYLEx	DOTTED YELLOW LINE EXTENSION
	DBWL	DOUBLE WHITE LINE
	DBYL	DOUBLE YELLOW LINE
	WGL	WHITE GORE LINE

ABBREVIATIONS

GENERAL

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

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL ABBREVIATIONS

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

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:06 PM
c:\pwworking\pitt\d20845567\00G-01.dwg

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LEGEND AND ABBREVIATIONS

SCALE: AS NOTED DATE: 1/16/19 SHEET 2 OF 73

GENERAL NOTES

SURVEY

1. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO COMMENCING WORK.

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

3. DIVISIONS OF PRIVATE OWNERSHIPS ARE COMPILED FROM DEEDS, RECORD PLANS, AND ASSESSOR'S MAPS.

4. THE CONTRACTOR SHALL RE-ESTABLISH SURVEY CONTROL PRIOR TO BEGINNING WORK ON THIS CONTRACT.

5. TOPOGRAPHICAL, LAYOUT AND UTILITY INFORMATION IS FROM AN ELECTRONIC CAD FILE TITLED "WASHINGTON STREET SURVEY.DWG" BASED ON A GROUND SURVEY PERFORMED BY WORLDTECH FOR THE CITY OF NEWTON. HDR RECEIVED THE FILE FROM THE CITY ON MAY 2, 2016. THE HORIZONTAL DATUM REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM NAD83. THE VERTICAL DATUM REFERENCES THE NAVD 88 VERTICAL DATUM. THE RIGHT-OF-WAY AND ABUTTER PROPERTY LINES SHOWN ARE TO BE CONSIDERED APPROXIMATE.

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

UTILITIES

7. 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 RESIDENT ENGINEER FOR RESOLUTION OF THE CONFLICT.

8. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF ELECTRIC, TELEPHONE, AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES AT NO ADDITIONAL COST TO THE CITY OF NEWTON. IF THE CONTRACTOR ADJUSTS PRIVATE UTILITY COVERS IT SHALL BE DEEMED PART OF THE WORK AND THERE WILL BE NO ADDITIONAL COST.

9. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE NECESSITY OF MAKING THEIR OWN INVESTIGATION IN ORDER TO ASSURE THAT NO DAMAGE TO EXISTING STRUCTURES, DRAINAGE LINES, ETC. WILL OCCUR.

10. THE CONTRACTOR SHALL NOTIFY MASSACHUSETTS DIG SAFE AND PROCURE A DIG SAFE NUMBER FOR EACH LOCATION PRIOR TO DISTURBING EXISTING GROUND IN ANY WAY. THE TELEPHONE NUMBER OF THE DIG SAFE CALL CENTER IS 1-888-DIG-SAFE (1-888-344-7233).

11. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE RESIDENT ENGINEER.

12. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSE 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 RESIDENT ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENT TO LINE AND GRADE UP TO A DEPTH OF 5 FEET SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FEET WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.

13. ALL CITY-OWNED UTILITY STRUCTURES INCLUDING MANHOLES, CATCH BASINS, AND GATE BOXES SHALL BE ADJUSTED OR REMODELED TO FINISHED GRADE BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF PRIVATE UTILITIES, WITH THE RESPECTIVE UTILITY OWNER.

14. CONTRACTOR SHALL FOLLOW ALL APPLICABLE PROVISIONS IN MWRA 8M PERMIT

CONSTRUCTION

15. AREAS OUTSIDE THE LIMITS OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR. TREES AND SHRUBS WITHIN THE LIMITS OF WORK SHALL BE PROTECTED BY THE CONTRACTOR AND SHALL BE REMOVED ONLY UPON THE APPROVAL OF THE RESIDENT ENGINEER OR AS NOTED ON THE PLANS.

16. THE CONTRACTOR IS HEREBY NOTIFIED THAT ADDITIONAL WORK WITHIN THE PROJECT LIMITS MAY BE PERFORMED BY OTHERS. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO COORDINATE WITH ANY SUCH WORK. NO ADDITIONAL COMPENSATION WILL BE MADE FOR EXTRA WORK DAYS, DELAYS, OR RESCHEDULING OF WORK TO ACCOMMODATE ANY OTHER CONSTRUCTION, PERMIT AND/OR MAINTENANCE OPERATIONS IN THE AREA.

17. THE CONTRACTOR SHALL FIELD CHECK ALL DIMENSIONS AND ELEVATIONS BEFORE PROCEEDING WITH WORK. THE CONTRACTOR SHALL EXCAVATE TO VERIFY PERTINENT DRAINAGE INVERTS AND POTENTIAL UTILITY CONFLICTS. ANY DISCREPANCIES OR CONFLICTS SHALL BE REPORTED TO THE RESIDENT ENGINEER IMMEDIATELY.

18. LIMITS OF WORK HAVE BEEN SET ON THE PLANS, HOWEVER, THESE MAY BE EXTENDED OR REDUCED AT THE DISCRETION OF THE RESIDENT ENGINEER TO MEET WITH FIELD CONDITIONS.

19. JOINTS BETWEEN NEW HOT MIX ASPHALT, ROADWAY PAVEMENT, AND THE LOCATIONS OF SAWCUT FOR EXISTING PAVEMENT SHALL BE SEALED WITH HMA JOINT SEALANT AND BACKSANDED.

20. ALL GRADING SHALL COMPLY WITH THE RULES AND REGULATIONS OF THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD (MAAB) AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG), LATEST EDITION. IN CASE OF CONFLICT BETWEEN REGULATIONS, THE GUIDELINE PROVIDING GREATER ACCESS SHALL APPLY. WHEELCHAIR RAMP INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE MASSDOT WHEELCHAIR RAMP STANDARDS-LATEST EDITION AND THE PLANS.

21. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AT THEIR OWN EXPENSE, OUTSIDE OF THE PROJECT LIMITS.

22. CONTRACTOR SHALL BE RESPONSIBLE FOR INVESTIGATING AND CONFIRMING THAT ALL ITEMS TO BE REUSED ARE IN SERVICEABLE CONDITION. IF IT IS DEEMED THAT ANY ITEM IS NOT ABLE TO BE REUSED BECAUSE IT DOES NOT MEET THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL NOTIFY THE CITY OF NEWTON IN WRITING AND INCLUDE ESTIMATED COSTS TO INSTALL NEW.

23. AREAS OUTSIDE THE LIMITS OF WORK DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE EXPENSE OF THE CONTRACTOR.

24. ALL PROPOSED FIRE HYDRANT RELOCATIONS SHALL BE A MINIMUM OF 5' FROM DRIVEWAY CURB CUTS.

25. ALL DUST CONTROL SHALL BE CALCIUM CHLORIDE AND WATER TRUCK WITH APPROVED SPRAY DISTRIBUTION BAR.

26. LOCATIONS OF PROPOSED WHEELCHAIR RAMPS, SIGNS, TREES, ETC. ARE APPROXIMATE ONLY; THE EXACT LOCATION SHALL BE DETERMINED BY THE RESIDENT ENGINEER IN THE FIELD.

27. ALL PROPOSED GRANITE CURB SHALL BE TYPE VA-4 OR EXISTING CURB, REMOVED AND RESET, UNLESS OTHERWISE NOTED.

28. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND STACKED (R&S) AT THE DIRECTION OF THE MUNICIPAL DPW UNLESS OTHERWISE NOTED ON THE DRAWINGS.

29. ALL EXISTING SURFACES, i.e. CEMENT CONCRETE, BITUMINOUS CONCRETE PAVEMENT, BRICK, ETC., WITHIN THE LIMIT OF PROPOSED WORK SHALL BE COMPLETELY REMOVED FROM AREAS OF PROPOSED WORK INCLUDING PROPOSED PLANTING AREAS UNLESS OTHERWISE INDICATED ON THE PLANS.

30. AT ALL POSTS, HYDRANTS, FOUNDATIONS, AND POLES, THE PROPOSED CEMENT CONCRETE SIDEWALK SHALL BE BOXED AND PROVIDED WITH EXPANSION JOINT FILLER. EXPANSION JOINT FILLER SHALL BE USED AT ALL BACK OF SIDEWALK LOCATIONS WHERE LOCATIONS MEET EXISTING BUILDINGS, WALLS OR OTHER STRUCTURES AND AS OTHERWISE DIRECTED BY THE RESIDENT ENGINEER.

31. GRANITE CURBING IS TO BE SET WITH A 6-INCH REVEAL AFTER FINAL PAVING UNLESS OTHERWISE INDICATED ON THE PLANS. IN SOME LOCATIONS CONTROL GRADES ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL BE REQUIRED TO MEET THESE GRADES WHILE PROVIDING A SMOOTH VERTICAL TRANSITION BETWEEN CONTROL ELEVATIONS.

32. EXISTING PAVEMENTS AND/OR SIDEWALKS SHALL BE SAWCUT WHERE THEY MEET PROPOSED SURFACE TREATMENTS. SAWCUTS SHALL BE SMOOTH AND STRAIGHT. WHERE NEW HOT MIX ASPHALT MEETS EXISTING BITUMINOUS CONCRETE SURFACES, SAW CUT EDGES ARE TO BE SEALED WITH HOT POURED RUBBERIZED ASPHALT SEALANT IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

33. ALL CURB TIES WHICH ARE NOTED BY A STATION ARE FROM THE CONSTRUCTION BASELINE TO FACE OF CURB. ALL BASELINE TIES FOR CURB CORNERS AND RADII ARE TO THE PC'S OR PT'S, UNLESS OTHERWISE NOTED. WHERE PROPOSED GRANITE CURB MEETS EXISTING CURB OR EXISTING ROADWAY AND DRIVEWAY PAVEMENT EDGES, MINOR FIELD ADJUSTMENTS TO EITHER THE DESIGNATED CURB RADIUS OR STATION OF THE PC OR PT FOR THE PROPOSED CURB MAY BE REQUIRED. THESE ADJUSTMENTS SHALL BE MADE IN THE FIELD BY THE CONTRACTOR AS DIRECTED BY THE RESIDENT ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

TRAFFIC

34. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK, OR TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED ON THE PLANS.

35. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BE RETAINED UNLESS OTHERWISE SHOWN ON THE PLANS.

TEMPORARY TRAFFIC

36. THE CONTRACTOR SHALL PROVIDE AND IMPLEMENT ALL NECESSARY TEMPORARY CONTROL ELEMENTS. THIS INCLUDES, BUT IS NOT LIMITED TO ALL SAFETY SIGNING, BARRIERS AND TEMPORARY PAVEMENT MARKINGS NECESSARY TO PROVIDE A SAFE, SMOOTH AND PROPER TRANSITION FOR VEHICULAR, PEDESTRIAN, AND BICYCLE TRAFFIC FLOW.

37. CONTRACTOR SHALL SUBMIT TO THE RESIDENT ENGINEER TRAFFIC MANAGEMENT PLANS FOR REVIEW AND APPROVAL BY THE RESIDENT ENGINEER. CONTRACTOR SHALL COORDINATE THE CONSTRUCTION EFFORT WITH OTHER PROJECTS IN THE VICINITY OF THE PROJECT AREA IN ORDER TO MINIMIZE POTENTIAL TRAFFIC AND PARKING IMPACTS.

38. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE TRAFFIC MANAGEMENT PLANS THAT COMPLY WITH CONDITIONS OUTLINED WITHIN THE SPECIFICATIONS AND MASSDOT HIGHWAY DIVISION STANDARD DETAILS AND TEMPORARY TRAFFIC CONTROL DETAILS CONTAINED IN THIS PLAN SET.

39. ALL TEMPORARY TRAFFIC AND PEDESTRIAN TRAFFIC CONTROL MEASURES, INCLUDING BUT NOT LIMITED TO, PLANNING, EXECUTING, AND MAINTAINING SHALL BE PAID UNDER ITEM NO. 999.6.

40. THE TEMPORARY TRAFFIC CONTROL DETAILS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE CURRENT M.U.T.C.D., MASSDOT STANDARDS, AND AS APPROVED OR DIRECTED BY RESIDENT ENGINEER.

41. THESE DETAILS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S RIGHT TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT MANNER IN COMPLIANCE WITH THE DRAWING AND SPECIFICATIONS AND THE REQUIREMENTS OF THE INDIVIDUAL AGENCIES AND ABUTTERS.

42. LANE RESTRICTIONS (OTHER THAN ACTIVE WORK ZONES) MAY NOT REMAIN OVERNIGHT OR DURING NON-WORKING HOURS AND MUST BE REMOVED BY THE END OF EACH WORKING TIME RESTRICTION. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO ROADWAY USERS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF CITY OF NEWTON, CAN LANE RESTRICTIONS REMAIN OVERNIGHT. REFLECTORIZED DRUMS MAY BE FITTED WITH STEADY BURN AND/OR FLASHING WARNING LIGHTS AT ONLY THE RESIDENT ENGINEER'S DIRECTION.

43. WORK ZONES INDICATED ON THE TEMPORARY TRAFFIC CONTROL DETAILS ARE INTENDED FOR THE DURATION OF THE WORK WITHIN THE ZONES ONLY AND SHALL BE RESTORED TO CONDITIONS ACCEPTABLE TO THE CITY AT COMPLETION OF THE WORK INDICATED.

44. PLACE ALL CONSTRUCTION SIGNING, TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

45. THE TEMPORARY TRAFFIC CONTROL DETAILS DEPICT IN SCHEMATIC FORM, THE ELEMENTS OF AN APPROACH TO THE LAYOUT AND PLANNING OF THE WORK AREAS DURING THE PROGRESS OF THE CONSTRUCTION OPERATIONS. THE PREPARER OF THESE PLANS HAS NO ROLE IN THEIR OVERSIGHT OR IMPLEMENTATION OF THESE DOCUMENTS.

46. EXISTING CONDITIONS ARE FOR CONTRACTOR INFORMATION ONLY AND ARE EXISTING CONDITIONS AT THE TIME OF DESIGN. THE CONTRACTOR SHALL VERIFY, AS NECESSARY, ACTUAL FIELD CONDITIONS AT TIME OF CONSTRUCTION.

47. TYPICAL DAYTIME WORK HOURS ARE FROM 7:00 AM TO 3:00 PM ON WEEKDAYS, UNLESS OTHERWISE PERMITTED BY THE CITY. WORK SHALL NOT BE PERFORMED THE DAY BEFORE, OR THE DAY AFTER, A HOLIDAY WEEKEND, UNLESS OTHERWISE PERMITTED BY THE CITY. REFER TO TEMPORARY TRAFFIC CONTROL PLANS, SPECIFICATIONS, AND PERMITS FOR MODIFICATION TO ALLOWABLE WORK PERIODS. ALL WORK SCHEDULES, HOWEVER, SHALL BE PRE-APPROVED BY THE CITY PRIOR TO BEGINNING WORK. WORK NECESSARY OUTSIDE OF THESE NORMAL WORK HOURS BECAUSE OF TRAFFIC CONDITIONS, AS NOTED IN THE PLANS OR SPECIFICATIONS, SHALL BE APPROVED BY THE RESIDENT ENGINEER.

48. CONTRACTOR SHALL COORDINATE WITH THE CITY OF NEWTON CONCERNING ALL SCHEDULED SPECIAL EVENTS WITHIN THE LIMITS OF WORK.

49. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN THE MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).

50. CONTRACTOR SHALL SECURE WORK AREAS ACCORDING TO CURRENT CONDITIONS TO ENSURE PUBLIC SAFETY AND CONVENIENCE. THIS SHALL INCLUDE ENSURING THAT ALL EXCAVATIONS ARE PROTECTED AT ALL TIMES AND WHEN WORK SHIFT IS COMPLETED.

51. ALL CONSTRUCTION AND WORK ACTIVITIES SHALL NOT INTERRUPT ACTIVITIES AT THE NEWTON CITY POLICE DEPARTMENT STATION AT 1321 WASHINGTON STREET.

CHANNELIZATION:

52. CHANNELIZATION SHALL BE ACCOMPLISHED THROUGH THE USE OF REFLECTORIZED PLASTIC DRUMS IN ACCORDANCE WITH THE CURRENT M.U.T.C.D. ALL LANE TAPERS SHALL BE IN ACCORDANCE WITH THE CURRENT M.U.T.C.D.

53. ALL DRUMS SHALL BE PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS, AND OTHER TRAFFIC CONTROL DEVICES.

54. METAL DRUMS ARE PROHIBITED AS CHANNELIZATION DEVICES.

GRADE DIFFERENCES:

55. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN EXISTING PAVEMENT AND COLD PLANED OR NEW PAVEMENT, THE CONTRACTOR SHALL PATCH A TEMPORARY HMA WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR A SMOOTH TRANSITION.

56. CROSS-SECTIONAL GRADE DIFFERENCED IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS, OR CONES AS DIRECTED BY THE RESIDENT ENGINEER.

57. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4" DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.

58. A MINIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVEL WAY. A MINIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES AND A MINIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

CONSTRUCTION SIGNING:

59. LOCATIONS OF SIGNS SHOWN ARE APPROXIMATE. EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL ENSURE THAT SIGNS ARE PLACED IN ACCORDANCE WITH THE CURRENT M.U.T.C.D.

60. EXISTING SIGNING WHICH CONFLICTS WITH PROPOSED CONSTRUCTION TRAFFIC MANAGEMENT SIGNING SHALL BE REMOVED AND STACKED OR COVERED AND RESTORED AT THE END OF THE WORK.

61. ALL SIGNS SHALL BE COVERED OR REMOVED WHEN CONDITION IS NOT IN EFFECT.

62. THE MINIMUM MOUNTING HEIGHT OF POST-MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK, OR TO THE ELEVATION OF THE NEAR EDGE OF THE TRAVELED WAY, SHALL BE 7 FEET UNLESS OTHERWISE SPECIFIED ON THE PLANS.

PAVEMENT MARKINGS:

62. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN ACCORDANCE WITH THE REQUIREMENTS OF THE M.U.T.C.D.

63. CONTRACTOR SHALL INSTALL, RENEW AND MAINTAIN ALL TRAFFIC CONTROL DEVICES INCLUDING PAVEMENT MARKINGS AS SHOWN ON THE DRAWINGS, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND AS REQUIRED BY THE RESIDENT ENGINEER.

64. CONTRACTOR SHALL REMOVE ALL PAVEMENT MARKINGS WHICH CONFLICT WITH PROPOSED PAVEMENT MARKINGS. THE METHOD OF REMOVAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF NEWTON.

65. ALL TEMPORARY PAVEMENT MARKINGS SHALL BE MAINTAINED THROUGHOUT THE ENTIRE SEQUENCE. ALL EXISTING MARKING WITHIN THE PROJECT LIMITS SHALL BE REMOVED AND REPLACED AS INDICATED ON THE PAVEMENT MARKING PLANS.

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:06 PM

c:\pwworking\pkt\d2084567\000-01.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

GENERAL NOTES

SCALE: AS NOTED DATE: 1/16/19 SHEET 3 OF 73

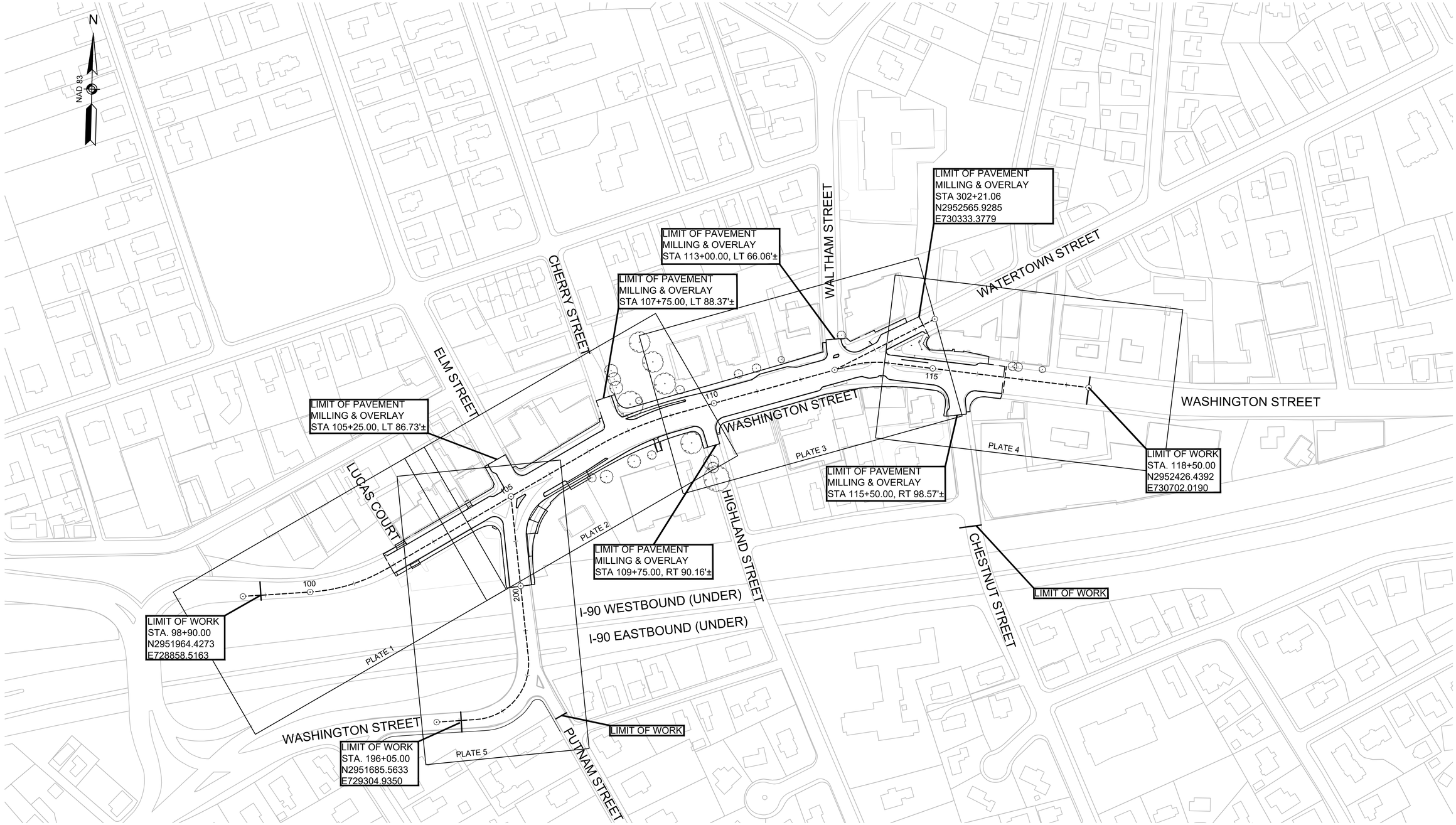


	PLATE 1	PLATE 2	PLATE 3	PLATE 4	PLATE 5
CONSTRUCTION PLANS	11	12	13	14	-
CURB TIE & ALIGNMENT PLANS	17	18	19	20	17
GRADING PLANS	21	22	23	24	-
DRAINAGE & UTILITY PLANS	-	30 - 31	32	32	-
TRAFFIC SIGN AND PAVEMENT MARKING PLANS	33	34	36	37	35
LIGHTING PLANS	48	49	50	51	-
LANDSCAPE PLANS	57	58	59	60	
LANDSCAPE SOIL PLACEMENT PLANS	61	62	63	64	

0 100 200 300 400

SCALE: 1" = 100'

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

KEY PLAN

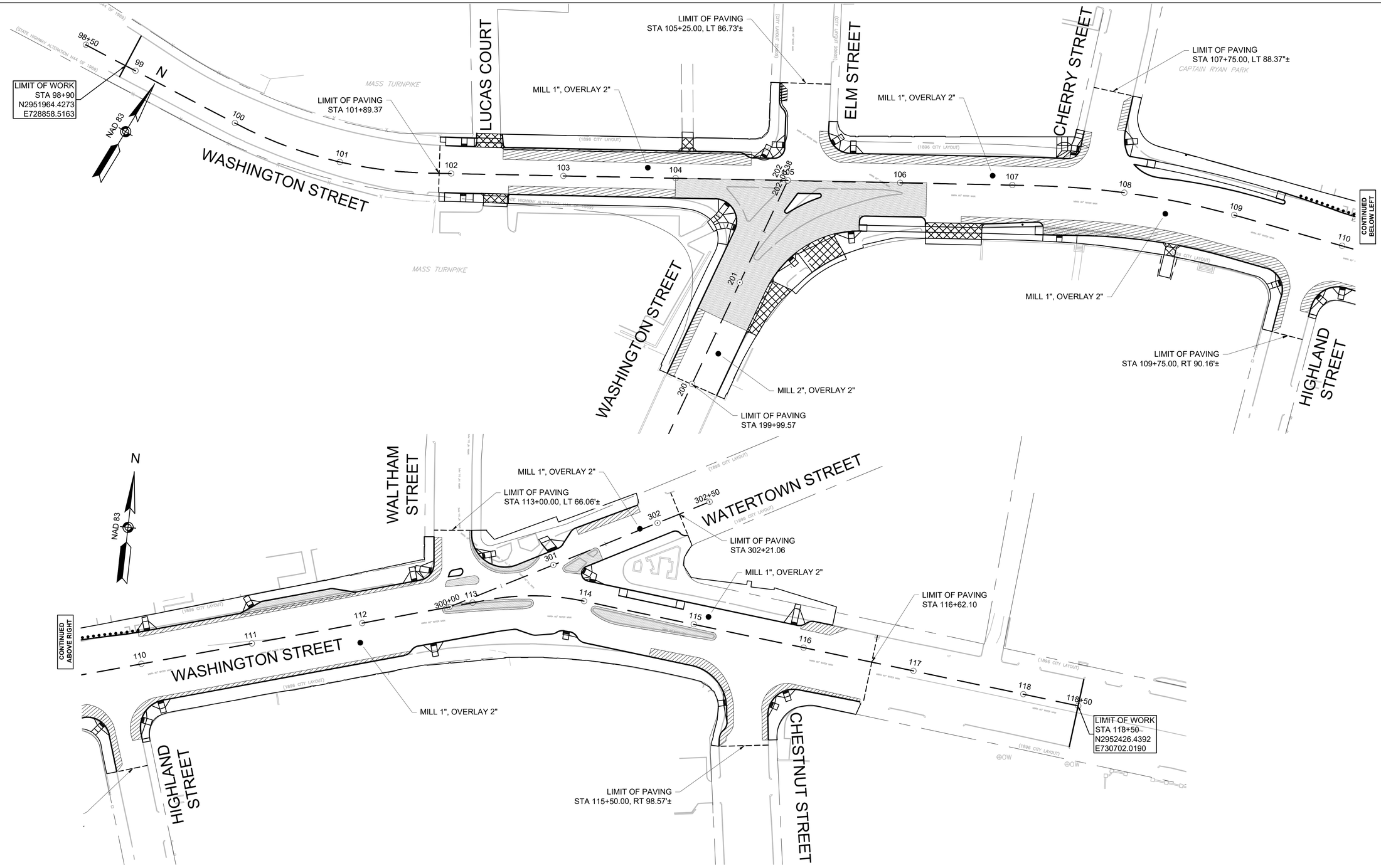
SCALE: AS NOTED DATE: 1/16/19 SHEET 4 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AST
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:06 PM

c:\pwworking\pitt\d2084567\00G-01.dwg



LEGEND	
VARIABLE DEPTH LEVELING COURSE AND OVERLAY	
MILL AND OVERLAY (AS NOTED)	
FULL DEPTH RECONSTRUCTION	
CEMENT CONCRETE DRIVEWAY	

NOTE:

1. SEE TYPICAL SECTIONS FOR PAVEMENT NOTES

0 40 100 160

SCALE: 1" = 40'

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

PAVING PLAN

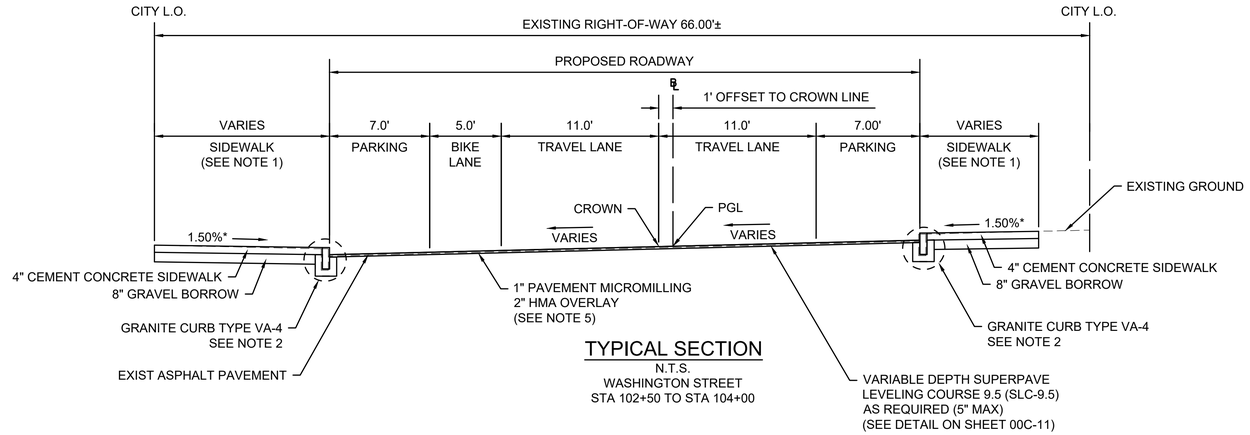
SCALE: AS NOTED DATE: 5/16/18 SHEET 5 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

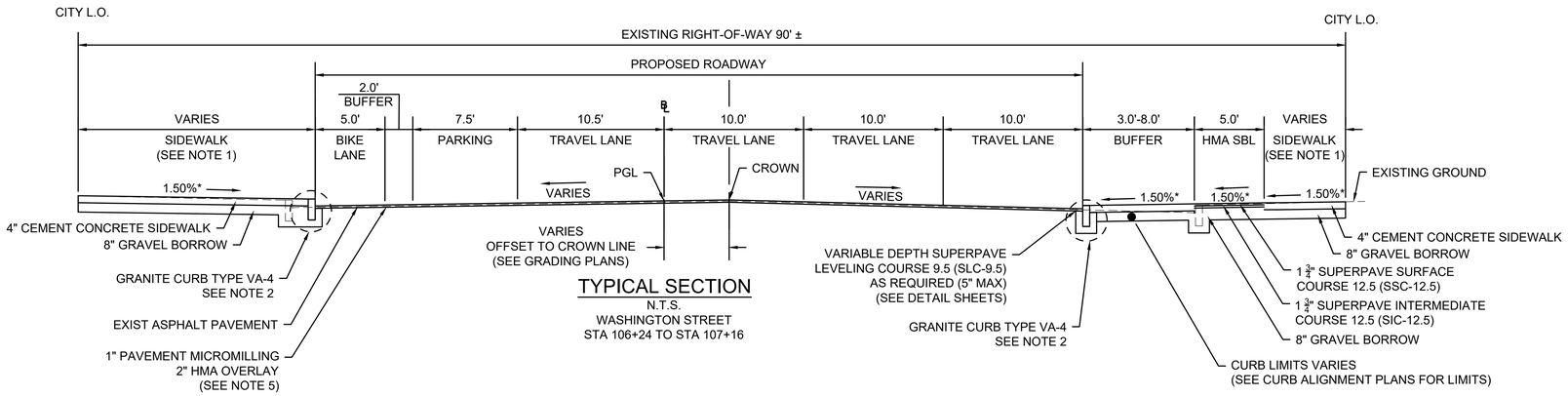
PLOTTED ON January 16, 2019 1:07 PM

c:\pwworking\pitt\d2084567\00G-01.5.dwg



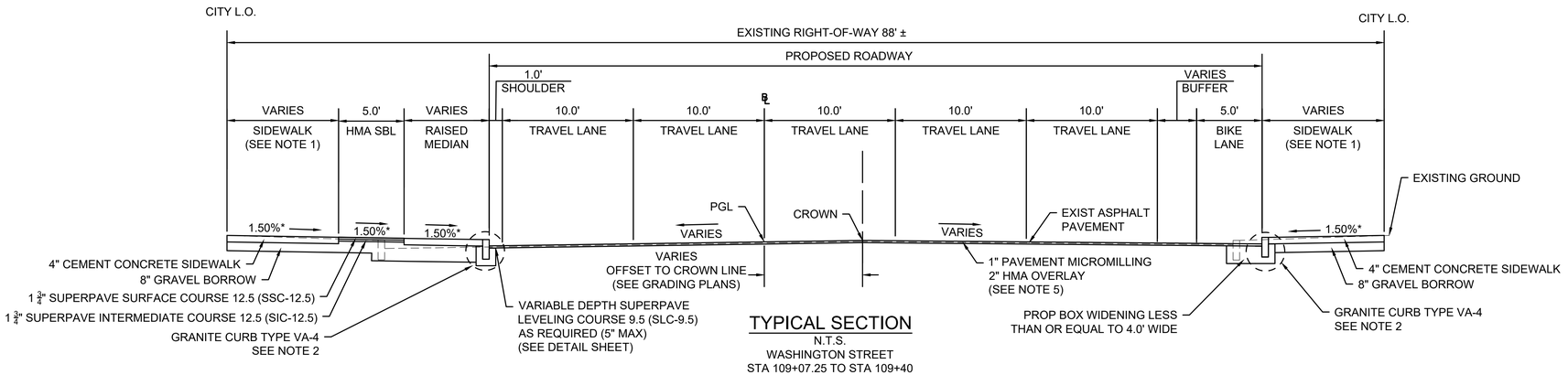
TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 102+50 TO STA 104+00



TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 106+24 TO STA 107+16



TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 109+07.25 TO STA 109+40

NOTES

1. FOR MATERIALS AND LAYOUT OF FURNITURE, PLANTING ZONE, LIMITS OF STRUCTURAL SOIL AND STREETSCAPE LAYOUT DETAILS SEE LANDSCAPE PLANS.
2. SEE GRADING PLANS FOR CURB REVEAL AND CONSTRUCTION DETAIL PLANS FOR CURB INSTALLATION DETAILS.
3. SEE CONSTRUCTION PLAN FOR SEPARATED BIKE LANE LIMITS AND LOCATIONS.
4. SEE CONSTRUCTION AND LAYOUT PLANS FOR LOCATIONS OF CURB EXTENSIONS, RAMPS AND DRIVEWAYS.
5. PAVEMENT MICROMILLING VARIABLE DEPTH (1"-4") TO MEET PROPOSED GRADING. MICROMILL (1" NOMINAL) OR SHIM (5" MAX) TO ESTABLISH PROPOSED GRADES. PAVEMENT MILLING DEPTHS MAY VARY (SEE GRADING PLANS).
6. CROWNLINE IS DEPICTED FROM THE START STATION OF EACH TYPICAL SECTION.

PAVEMENT NOTES

PAVEMENT MILLING AND RESURFACING

MILLING:	1" MICROMILLING
SURFACE COURSE:	2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
LEVELING COURSE:	VARIABLE DEPTH PAVEMENT, IN AREAS WHERE LEVELING COURSE IS REQUIRED USE SUPERPAVE LEVELING COURSE (SLC-9.5)

ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED DOUBLE OVERLAP FOR UNIFORM COVERAGE AT THE RATE OF 0.07 GALLONS PER SQUARE YARD OVER MILLED GROOVED SURFACES AND 0.05 GALLONS PER SQUARE YARD OVER SMOOTH PAVEMENT PRIOR TO PLACEMENT OF HMA OVERLAY.

HMA SEPARATED BIKE LANE (SBL) AND HMA DRIVEWAY

SURFACE COURSE:	1-3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
INTERMEDIATE COURSE:	1-3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
SUB BASE:	8" GRAVEL BORROW TYPE C

BOX WIDENING LESS THAN OR EQUAL TO 4' WIDE

SURFACE COURSE:	2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
BASE COURSE:	6" HES CEMENT CONCRETE BASE, 3000 PSI 1-1/2", 470 CEC. CONC.
SUB BASE:	8" GRAVEL BORROW TYPE C OR SUITABLE EXISTING MATERIAL

FULL DEPTH RECONSTRUCTION

SURFACE COURSE:	2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5)
INTERMEDIATE COURSE:	2" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5)
BASE COURSE:	4 ½" SUPERPAVE BASE COURSE 37.5 (SBC-37.5)
SUB BASE:	4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW TYPE C OR SUITABLE EXISTING MATERIAL

CEMENT CONCRETE SIDEWALK, WALKS, AND BUS STOPS

SURFACE COURSE:	4" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610)
SUB BASE	8" GRAVEL BORROW TYPE C

CEMENT CONCRETE DRIVEWAY, SIDEWALK AT DRIVEWAY AND WHEELCHAIR RAMPS

SURFACE COURSE:	6" CEMENT CONCRETE (AIR ENTRAINED 4000 PSI, 3/4", 610)
SUB BASE	8" GRAVEL BORROW TYPE C

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

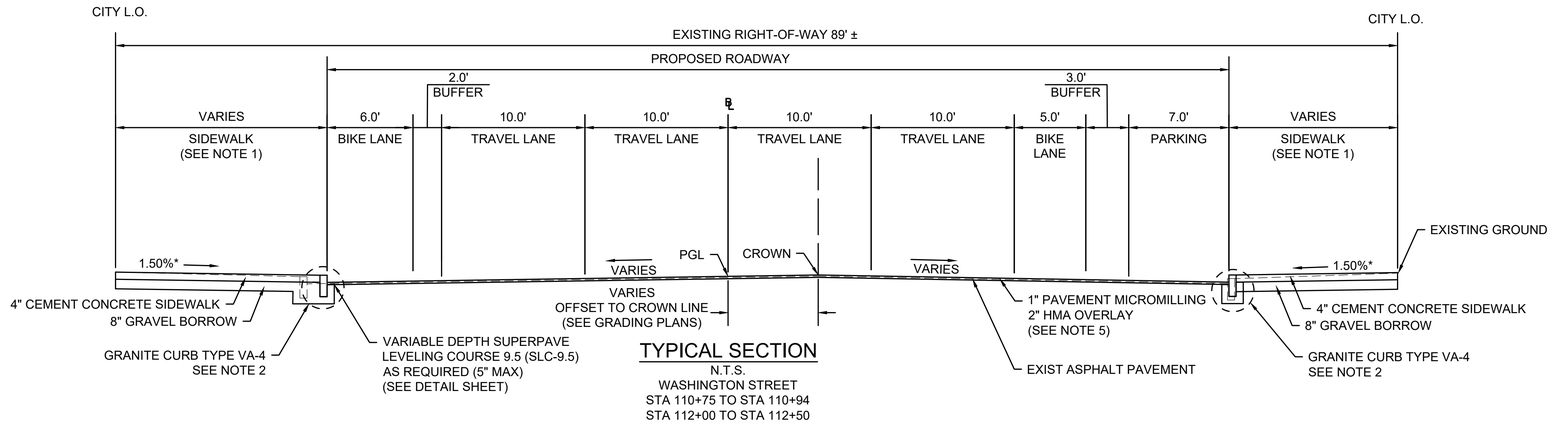
TYPICAL SECTIONS - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 6 OF 73

CITY OF NEWTON
MASSACHUSETTS

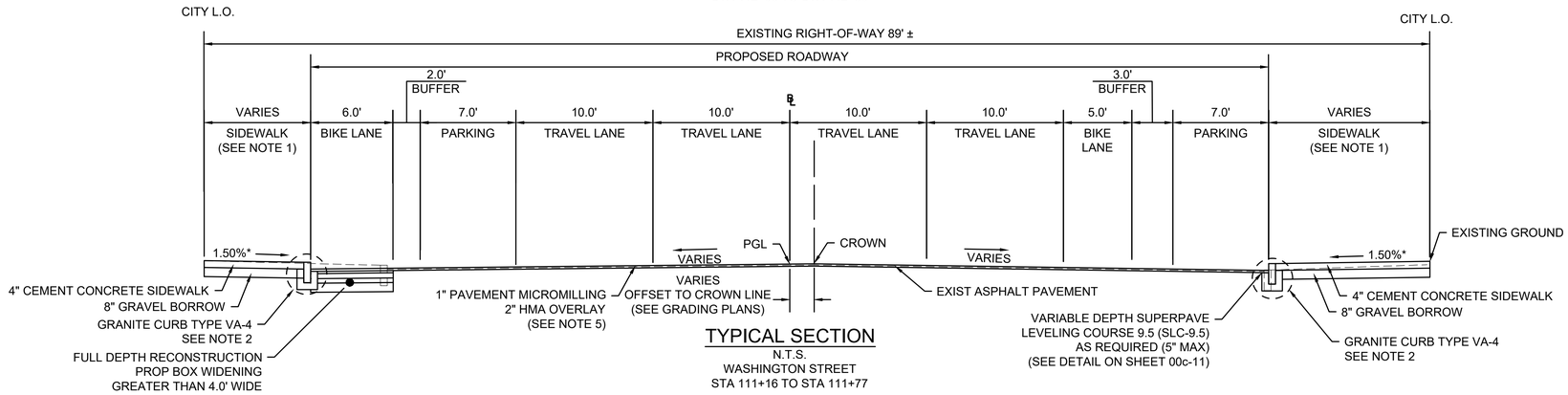
DESIGNED BY: MJG
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:07 PM
c:\pwworking\pitt\d2084567\00G-02.dwg



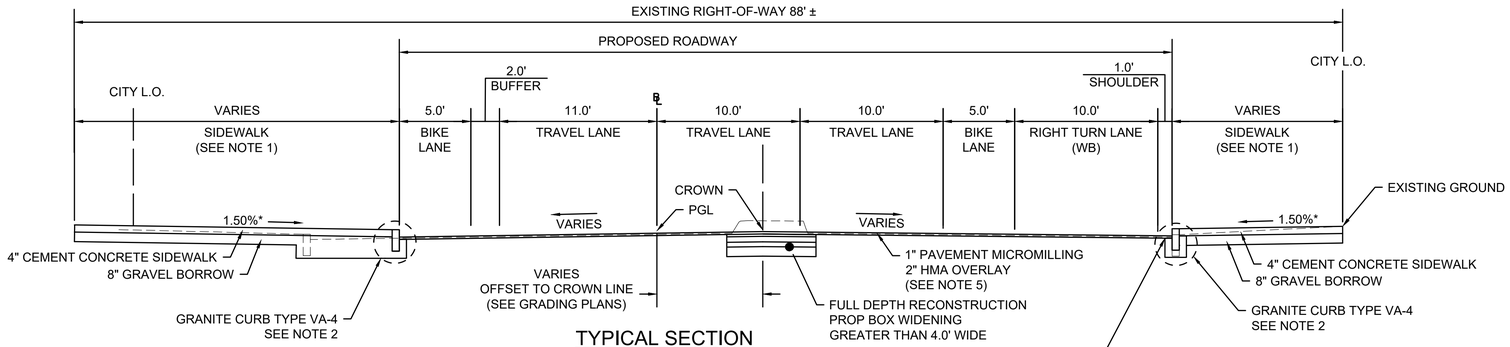
TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 110+75 TO STA 110+94
STA 112+00 TO STA 112+50



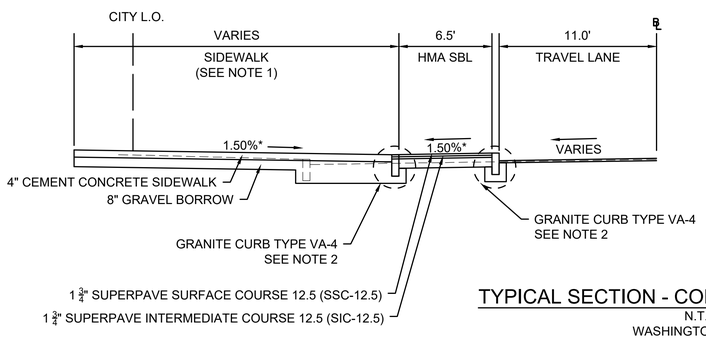
TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 111+16 TO STA 111+77



TYPICAL SECTION

N.T.S.
WASHINGTON STREET
STA 114+79 TO STA 115+05



TYPICAL SECTION - CONSTRAINED BUS STOP

N.T.S.
WASHINGTON STREET
STA 114+29 TO STA 114+88

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

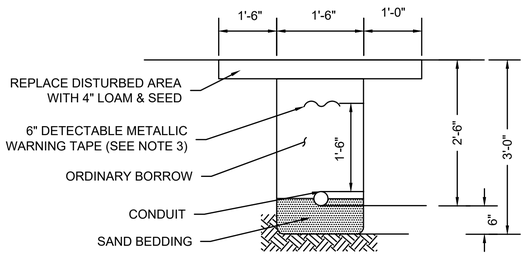
PLOTTED ON January 16, 2019 1:07 PM
c:\pwworking\pitt\d2084567\00G-02.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

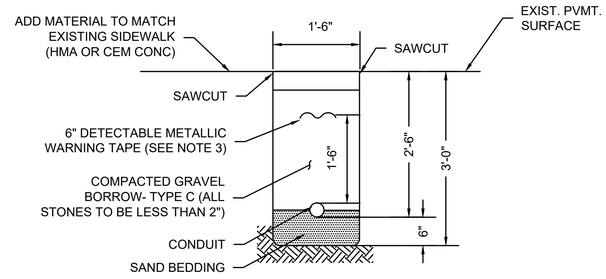
TYPICAL SECTIONS - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 7 OF 73



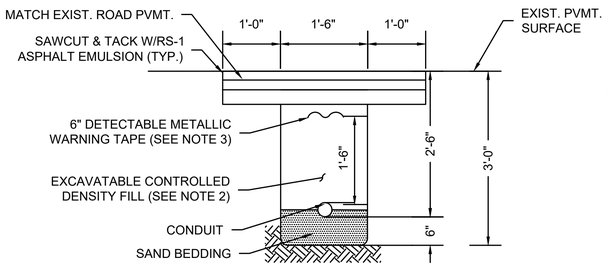
TRAFFIC SIGNAL & LIGHTING CONDUIT TRENCH GRASS AREAS

NOT TO SCALE



TRAFFIC SIGNAL & LIGHTING CONDUIT TRENCH SIDEWALK AREAS

NOT TO SCALE



TRAFFIC SIGNAL & LIGHTING CONDUIT TRENCH ROADWAY CROSSING

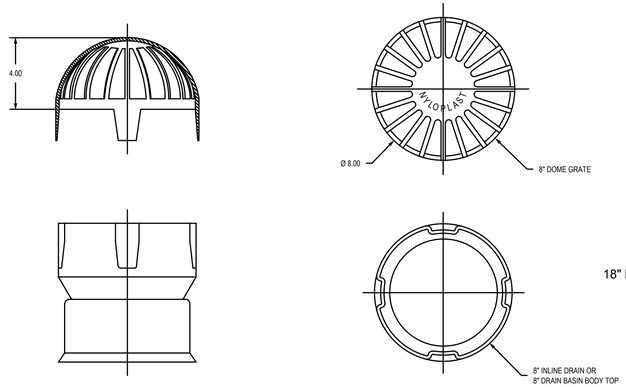
NOT TO SCALE

TRAFFIC SIGNAL & LIGHTING CONDUIT TRENCH NOTES:

1. SCHEDULE 80 ELECTRICAL CONDUIT TYPE NM-PLASTIC (UL), WITH PULL ROPE.
2. CONTROLLED DENSITY FILL SHALL MEET THE REQUIREMENTS OF SUBSECTION M4.08.0.
3. WARNING TAPE COLOR SHALL BE APWA STANDARDS.
4. FOR DOUBLE BANK CONDUIT, INCREASE TRENCH WIDTH TO 24 INCHES AND PLACE CONDUITS WITH 3 INCH CLEAR SPACING.

0899CGD

APPROX. DRAIN AREA = 30.00 SQ IN
APPROX. WEIGHT = 4.54 LBS

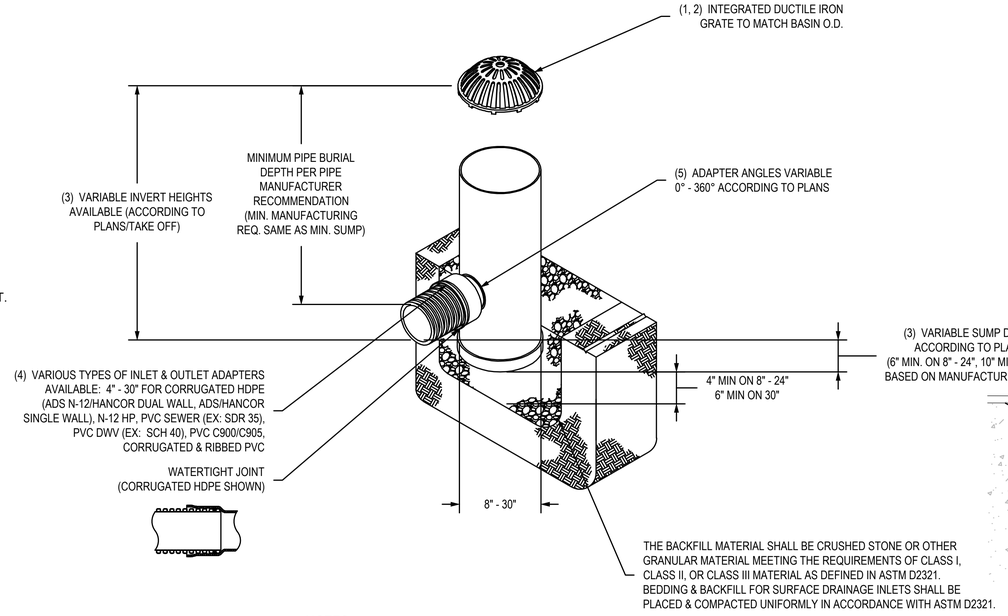


NOTE:

DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-228

8 IN. DOME GRATE ASSEMBLY

NOT TO SCALE

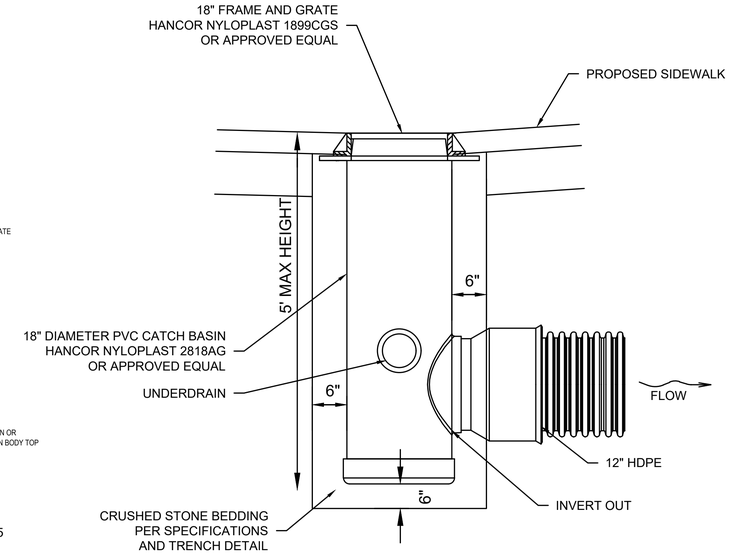


NOTES:

1. 8" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. 8" & 10" DOME GRATES FIT ONTO THE DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-045.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 24").
5. ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6. 8" - 30" DOME GRATES HAVE NO LOAD RATING.

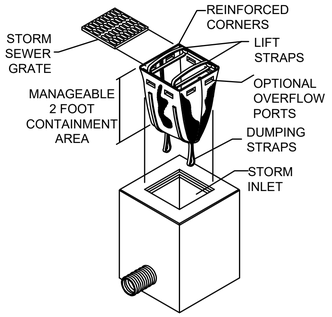
DRAIN BASIN WITH DOME GRATE QUICK SPEC INSTALLATION DETAIL

NOT TO SCALE



SPECIAL CATCH BASIN DETAIL

NOT TO SCALE

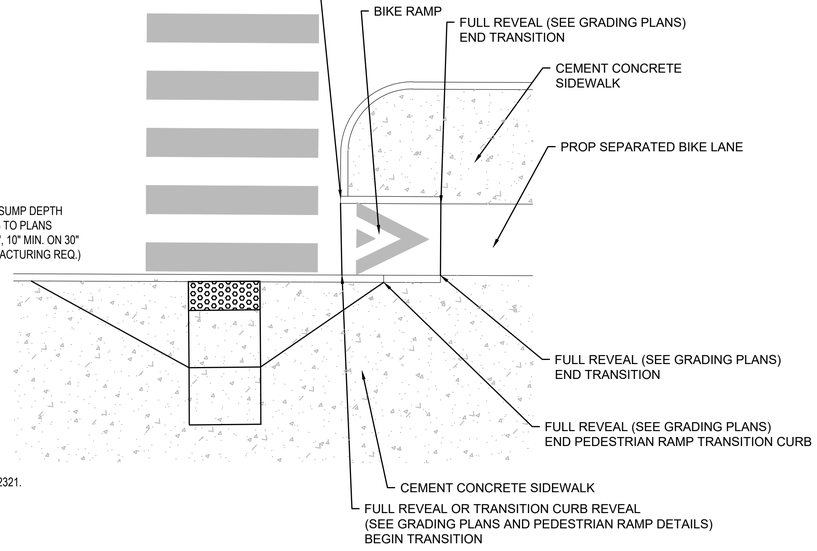


NOTES:

1. INSTALL CATCH BASIN FILTER IN ALL CATCH BASINS WHERE INDICATED ON THE PLAN BEFORE COMMENCING WORK OR IN PAVED AREAS AFTER BINDER COURSE IS PLACED AND HAY BALES HAVE BEEN REMOVED.
2. GRATE TO BE PLACED OVER FILTER.
3. FILTER SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED.

TEMPORARY CATCH BASIN FILTER

NOT TO SCALE



SEPARATED BIKE LANE (SBL) TRANSITION

NOT TO SCALE

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION DETAILS - 1

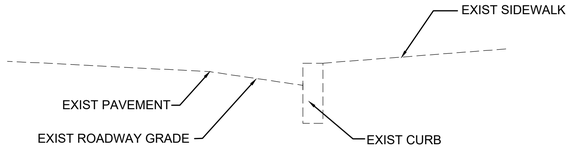
SCALE: AS NOTED DATE: 1/16/19 SHEET 8 OF 73

CITY OF NEWTON MASSACHUSETTS

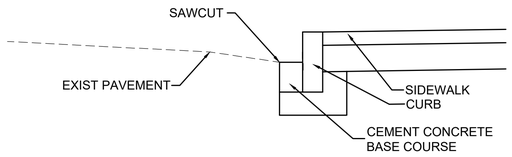
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:07 PM

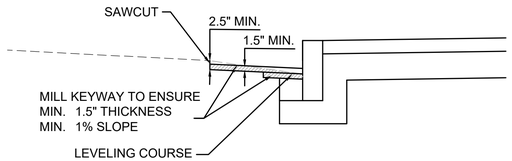
c:\pwworking\pitt\d2084567\00C-10.dwg



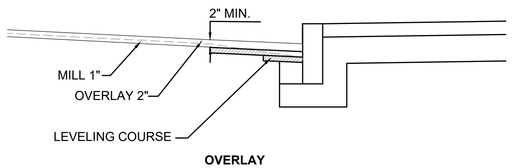
EXISTING CONDITIONS



PROP CURB AND SIDEWALK INSTALLATION



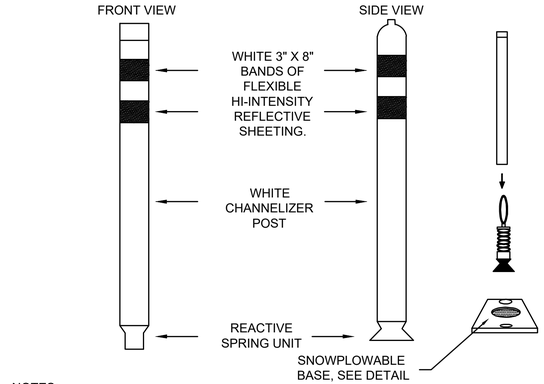
LEVELING COURSE



OVERLAY

VARIABLE DEPTH LEVELING COURSE INSTALLATION DETAIL

NOT TO SCALE

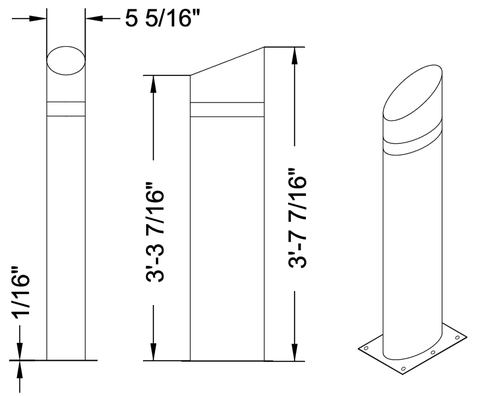


NOTES:

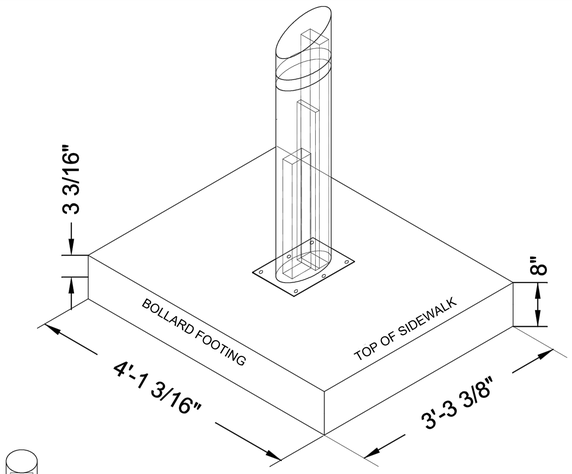
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.
2. POST SHALL HAVE A REACTIVE SPRING UNIT THAT ASSURES THE SIGN WILL RETURN TO ITS ORIGINAL POSITION AFTER IMPACT.
3. ALL POSTS PLACED ON BRIDGE DECK TO BE ADHESIVE MOUNTED.

REFLECTORIZED FLEXIBLE DELINEATOR POST

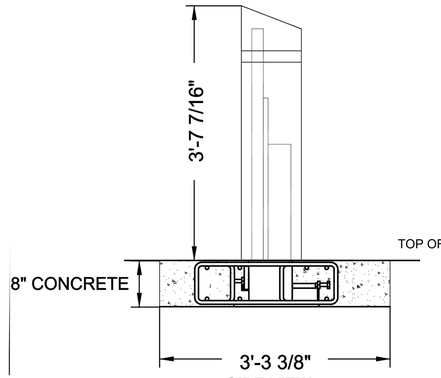
NOT TO SCALE



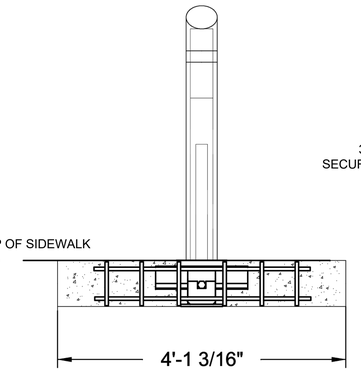
COVER DETAILS



ISOMETRIC VIEW



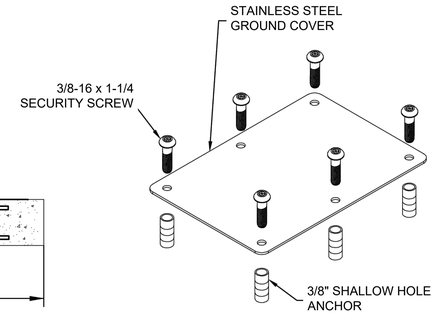
SIDE VIEW



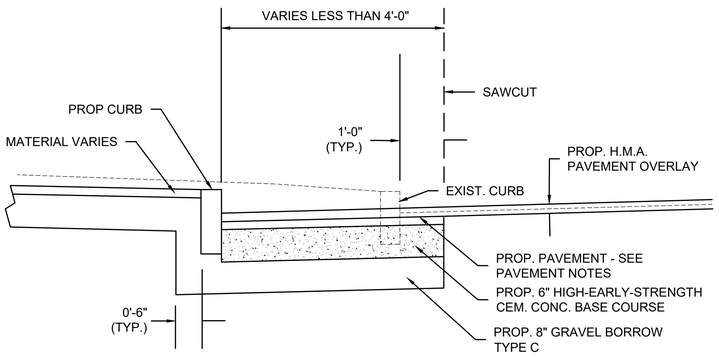
FRONT VIEW

"TRUCKSTOPPER" BOLLARD DETAIL

NOT TO SCALE

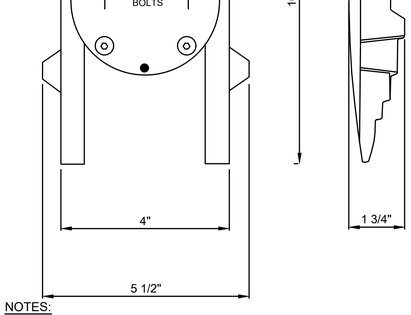


BOLLARD GROUND COVER



FULL DEPTH BOX WIDENING LESS THAN 4'-0"

NOT TO SCALE

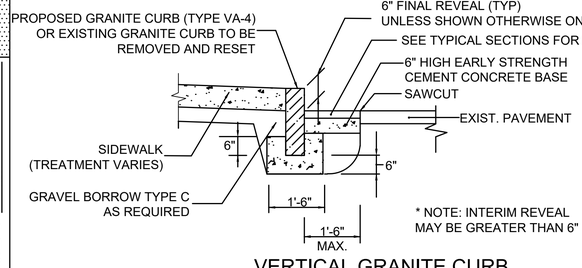


NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.

SNOWPLOWABLE BASE

NOT TO SCALE



* NOTE: INTERIM REVEAL MAY BE GREATER THAN 6"

NOTES:

1. REFER TO CONSTRUCTION PLANS AND LANDSCAPE MATERIALS PLANS FOR PROPOSED SIDEWALK TREATMENTS.
2. REFER TO TYPICAL SECTIONS FOR PAVEMENT NOTES DETAILING PROPOSED PAVEMENT SECTION.
3. USE 3,000 PSI HIGH EARLY STRENGTH (H.E.S) CONCRETE.

VERTICAL GRANITE CURB

NOT TO SCALE

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

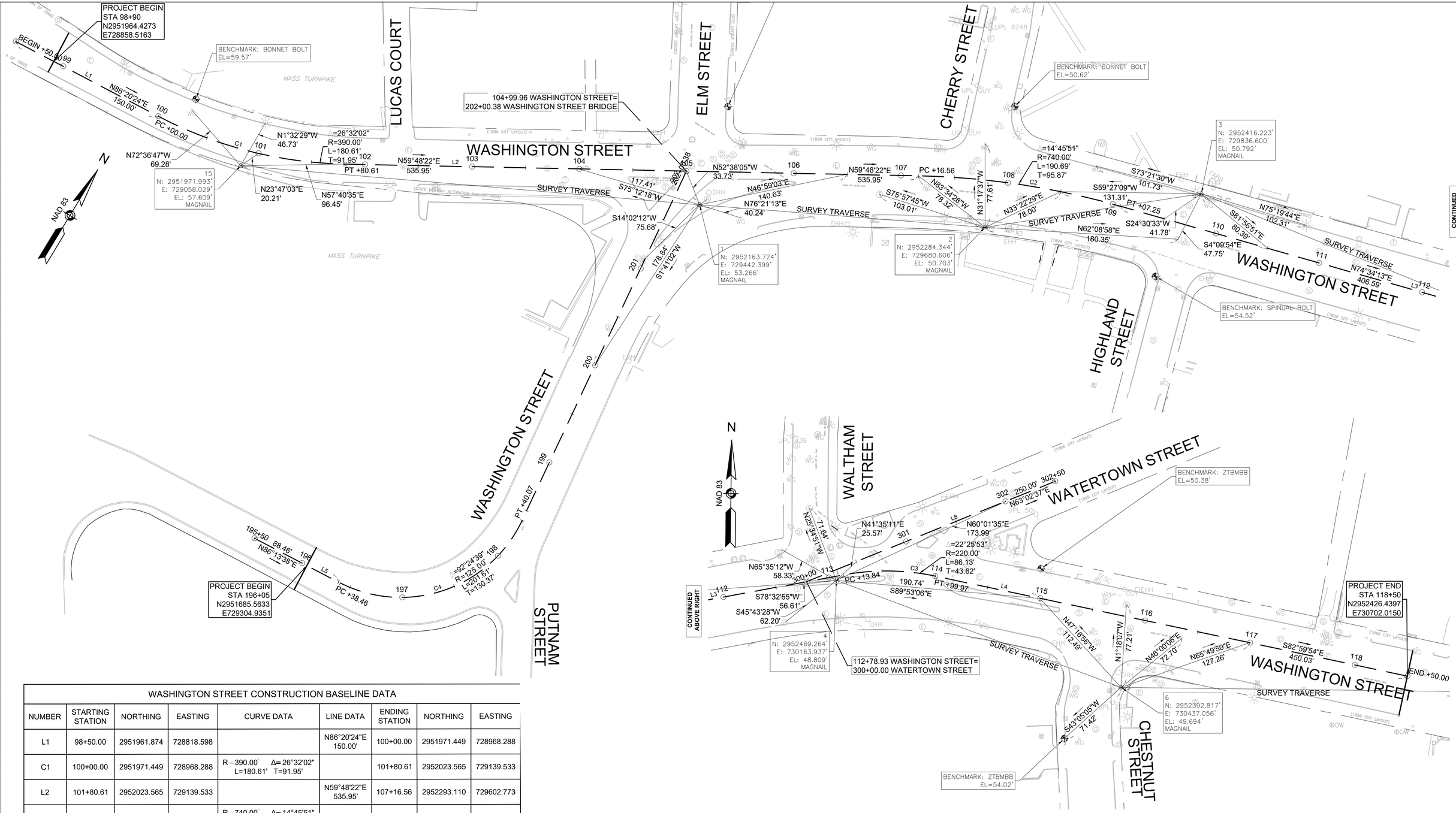
CONSTRUCTION DETAILS - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 9 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:07 PM
c:\pwworking\pitt\d2084567\00C-11.dwg



WASHINGTON STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	98+50.00	2951961.874	728818.598		N86°20'24"E 150.00'	100+00.00	2951971.449	728968.288
C1	100+00.00	2951971.449	728968.288	R=390.00' Δ=26°32'02" L=180.61' T=91.95'		101+80.61	2952023.565	729139.533
L2	101+80.61	2952023.565	729139.533		N59°48'22"E 535.95'	107+16.56	2952293.110	729602.773
C2	107+16.56	2952293.110	729602.773	R=740.00' Δ=14°45'51" L=190.69' T=95.87'		109+07.25	2952366.835	729778.058
L3	109+07.25	2952366.835	729778.058		N74°34'13"E 406.59'	113+13.84	2952475.009	730169.992
C3	113+13.84	2952475.009	730169.992	R=220.00' Δ=22°25'53" L=86.13' T=43.62'		113+99.97	2952481.298	730255.341
L4	113+99.97	2952481.298	730255.341		S82°59'54"E 450.03'	118+50.00	2952426.439	730702.019

WATERTOWN STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L8	300+00.00	2952465.721	730136.339		N63°02'37"E 250.00'	302+50.00	2952579.049	730359.177

WASHINGTON STREET BRIDGE CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L5	195+50.00	2951681.944	729250.058		N86°13'38"E 88.46'	196+38.46	2951687.765	729338.323
C4	196+38.46	2951687.765	729338.323	R=125.00' Δ=92°24'39" L=201.61' T=130.37'		198+40.07	2951825.959	729454.371

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: JCD
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:07 PM

c:\pwworking\pitt\d2084567\00C-02.5.dwg

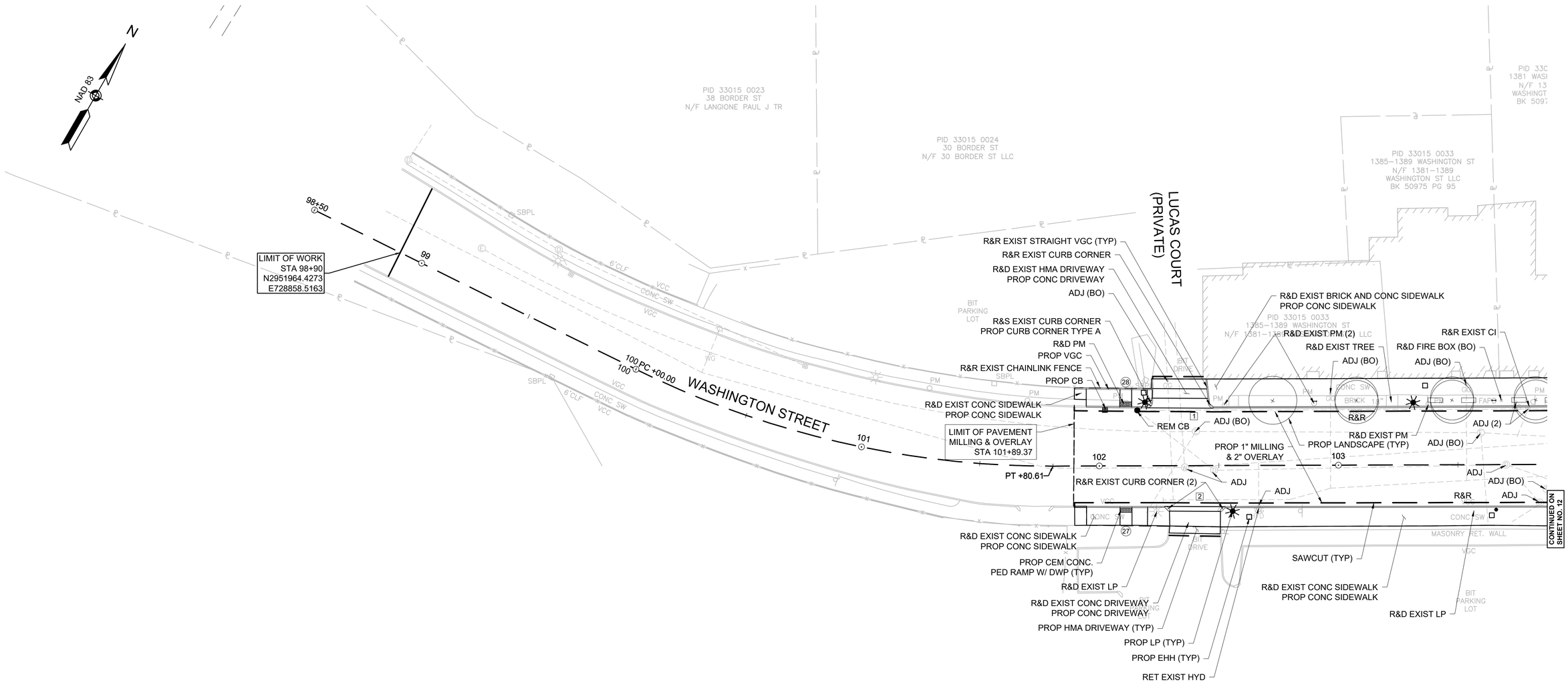
CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION BASELINE TIE PLAN

SCALE: AS NOTED DATE: 5/16/18 SHEET 10 OF 73



LEGEND:

(#) PEDESTRIAN RAMP ID NUMBER

[#] DRIVEWAY ID NUMBER

NOTES:

1. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 17
2. FOR GRADING PLAN, SEE SHEET 21
3. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 28
4. FOR DRIVEWAY DETAILS, SEE SHEET 29
5. FOR UTILITY DETAILS, SEE SHEET 30
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 33
7. FOR LIGHTING PLANS, SEE SHEET 48
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RJK

PLOTTED ON January 16, 2019 1:07 PM

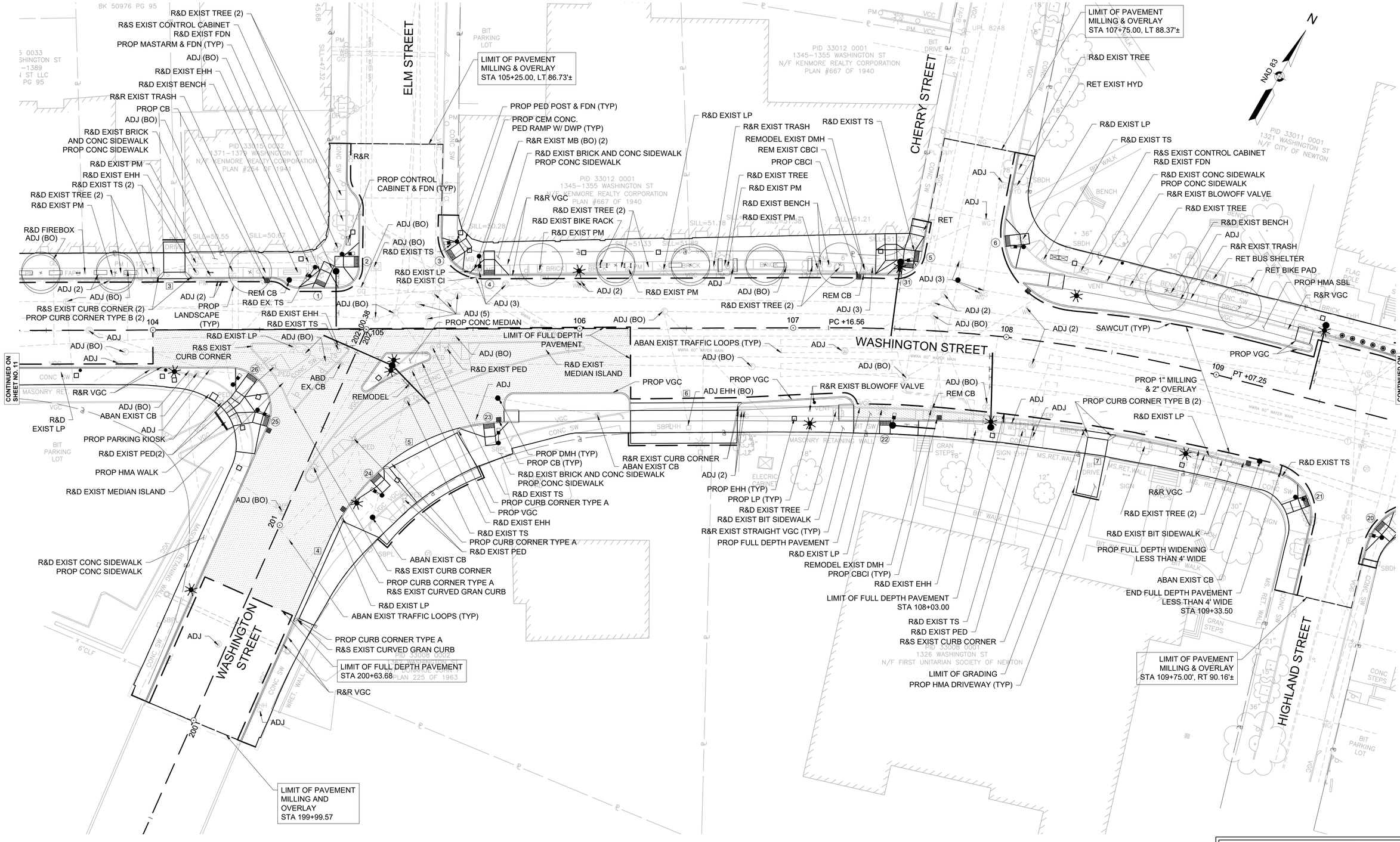
c:\pwworking\pitt\d2084567\00C-01.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 11 OF 73



LEGEND:

- (#) PEDESTRIAN RAMP ID NUMBER
- [#] DRIVEWAY ID NUMBER

NOTES:

1. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 18
2. FOR GRADING PLAN, SEE SHEET 22
3. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-27
4. FOR DRIVEWAY DETAILS, SEE SHEET 29
5. FOR UTILITY DETAILS, SEE SHEETS 30-31
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 34
7. FOR LIGHTING PLANS, SEE SHEET 49
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 58

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

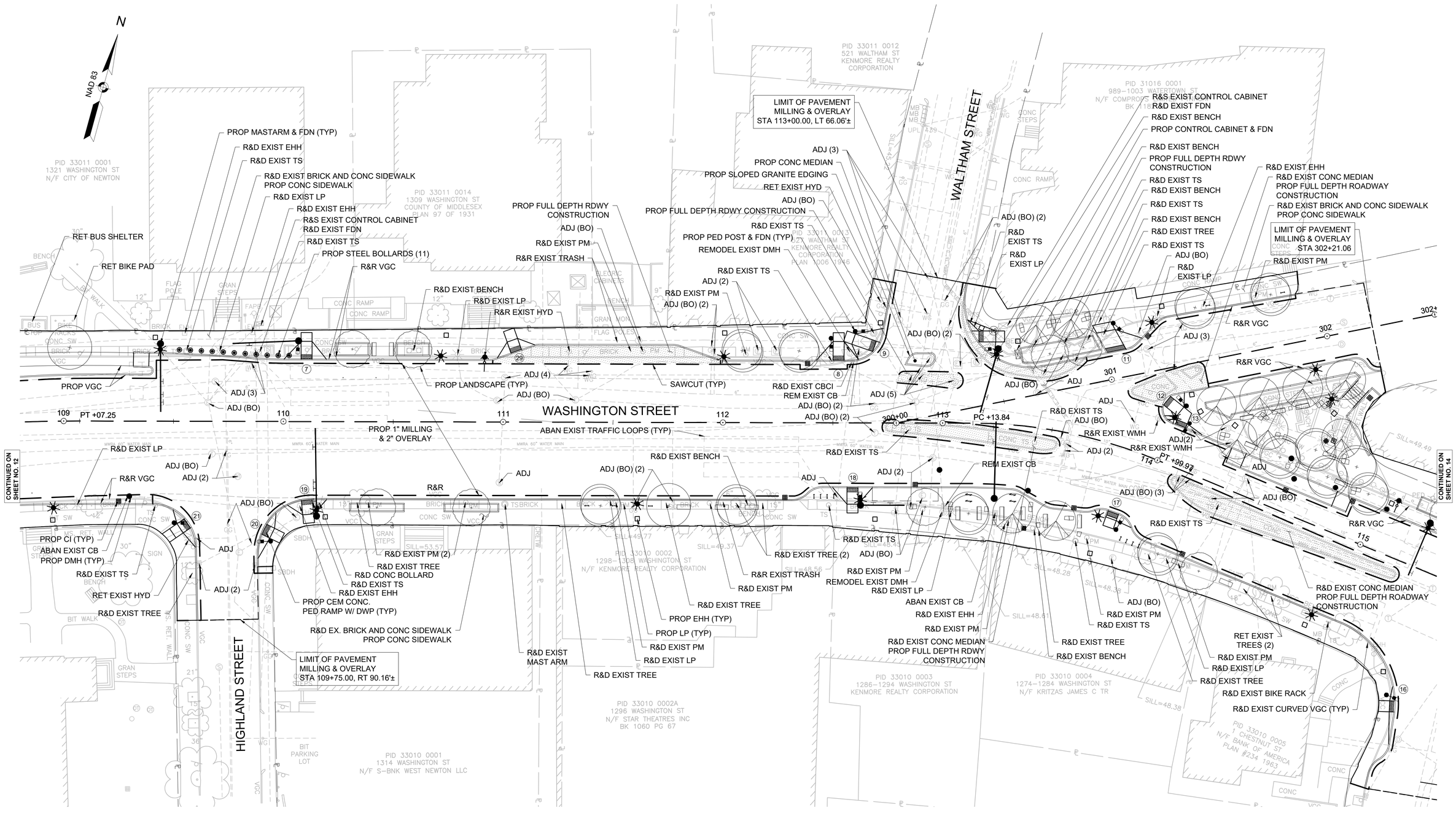
CONSTRUCTION PLAN - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 12 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:07 PM
c:\pwworking\pitt\d2084567\00C-01.dwg



LEGEND:

(#) PEDESTRIAN RAMP ID NUMBER

NOTES:

1. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 19
2. FOR GRADING PLAN, SEE SHEET 23
3. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-28
4. FOR DRIVEWAY DETAILS, SEE SHEET 29
5. FOR UTILITY DETAILS, SEE SHEETS 31-32
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEETS 36
7. FOR LIGHTING PLANS, SEE SHEET 50
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 59

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION PLAN - 3

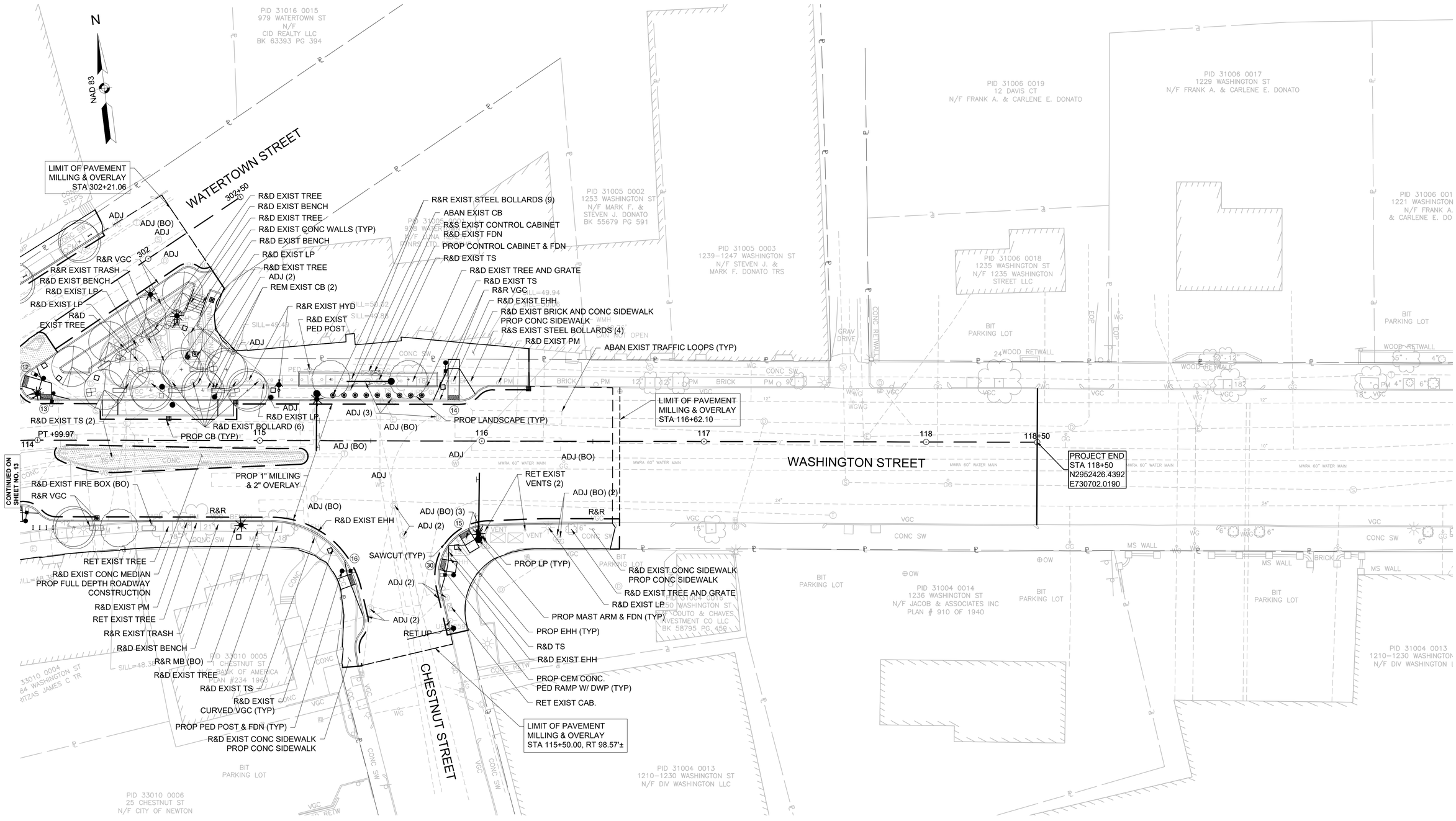
SCALE: AS NOTED DATE: 1/16/19 SHEET 13 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY:	TNU
DRAWN BY:	AST
CHECKED BY:	AKB
APPROVED BY:	RDK

PLOTTED ON January 16, 2019 1:07 PM

c:\pwworking\pitt\d2084567\00C-01.dwg



0 20 50 100

SCALE: 1" = 20'

LEGEND:

(#) PEDESTRIAN RAMP ID NUMBER

NOTES:

1. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 20
2. FOR GRADING PLAN, SEE SHEET 24
3. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 26
4. FOR DRIVEWAY DETAILS, SEE SHEET 29
5. FOR UTILITY DETAILS, SEE SHEET 32
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 37
7. FOR LIGHTING PLANS, SEE SHEET 51
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 60

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION PLAN - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 14 OF 73

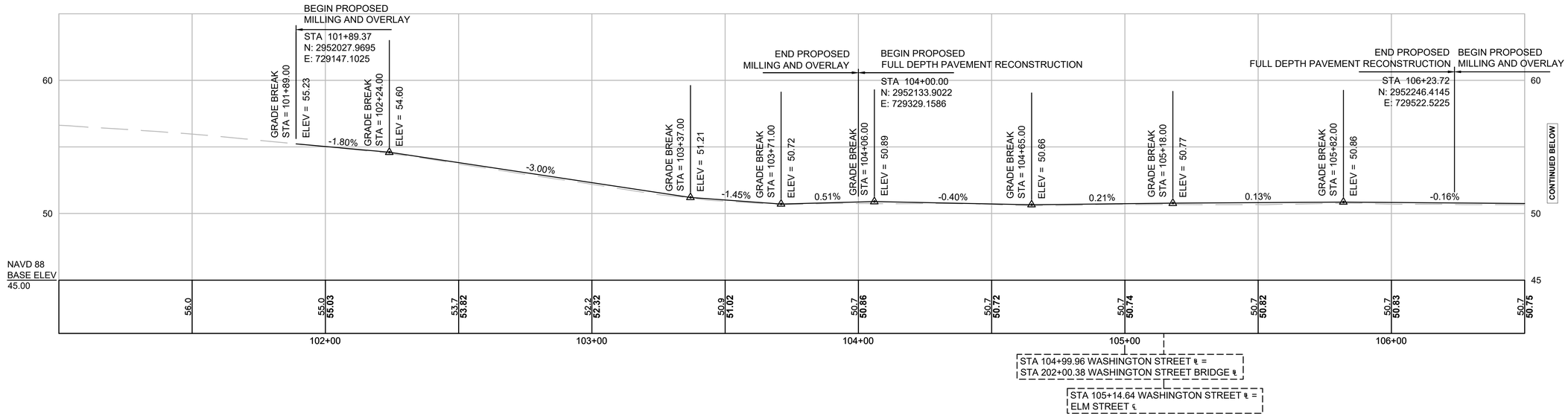
CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

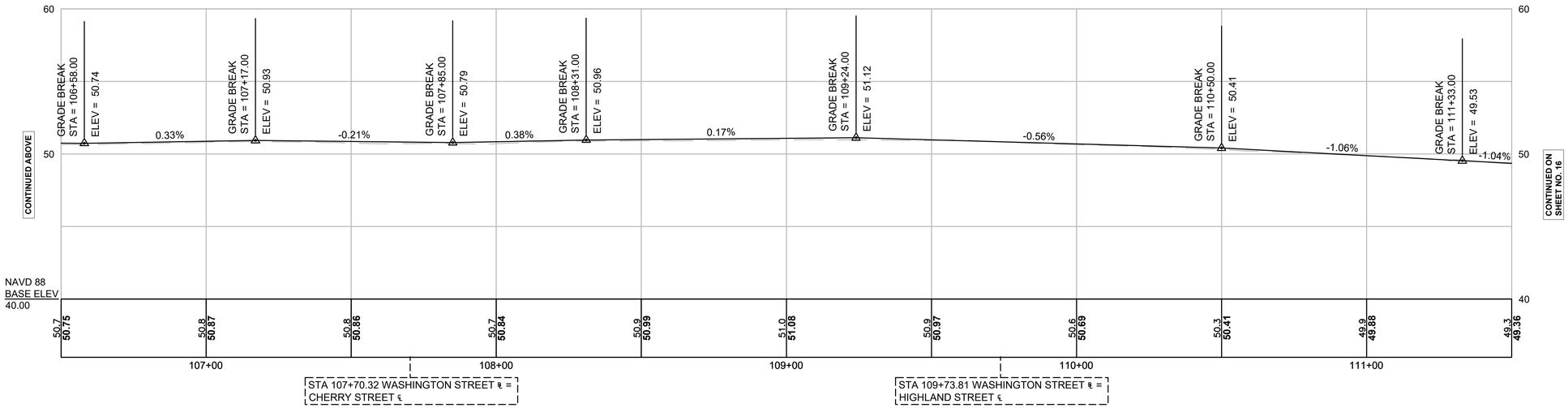
PLOTTED ON January 16, 2019 1:07 PM

c:\pwworking\pitt\d2084567\00C-01.dwg

WASHINGTON STREET



WASHINGTON STREET



FOR CONSTRUCTION PLANS:
SEE SHEETS 11 - 14

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

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

ROADWAY PROFILES

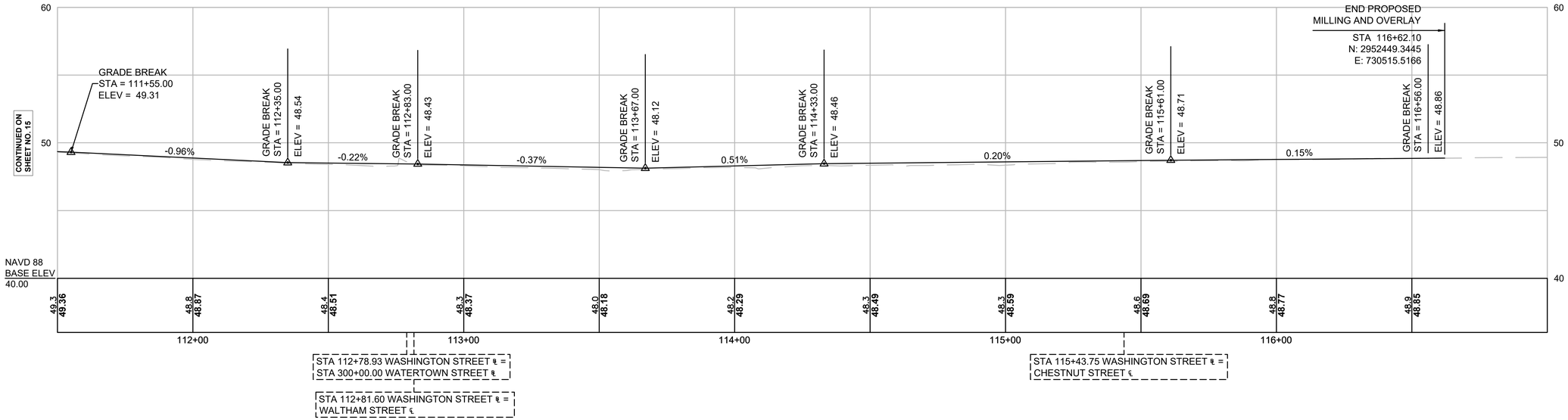
SCALE: AS NOTED DATE: 1/16/19 SHEET 15 OF 73

CITY OF NEWTON
MASSACHUSETTS

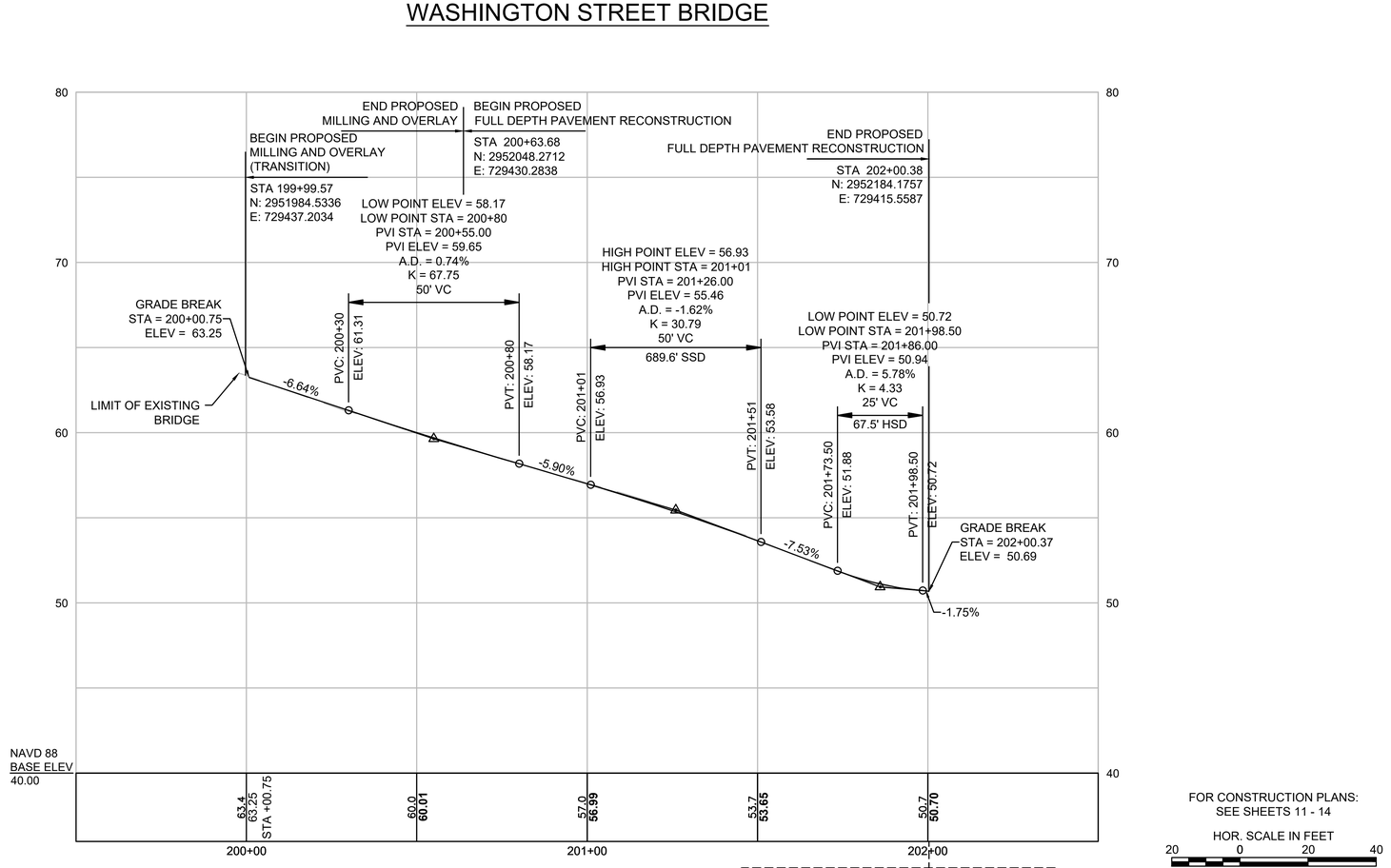
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM
c:\pwworking\pitt\d2084567\00C-08.dwg

WASHINGTON STREET



WASHINGTON STREET BRIDGE



FOR CONSTRUCTION PLANS:
SEE SHEETS 11 - 14

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

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

ROADWAY PROFILES

SCALE: AS NOTED DATE: 1/16/19 SHEET 16 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

c:\pwworking\pitt\d2084567\00C-08.dwg

N

NAD 83

(STATE HIGHWAY ALTERATION N44 OF 1969)

(STATE HIGHWAY ALTERATION N44 OF 1969)

LIMIT OF WORK
STA 98+90
N2951964.4273
E728858.5163

98+50

99

N86°20'24"E
150.00'

100

PC +00.00

Δ=26°32'02"
R=390.00'
L=180.61'
T=91.95'

101

SBPL

WG

PM

MASS TURNPIKE

WASHINGTON STREET

LUCAS COURT

+22.44
36.37' LT

+22.31
31.79' LT

+22.22
28.29' LT

+22.16
26.20' LT

+20.11
24.22' LT

+89.71
32.16' LT

+44.64
36.20' LT

+94.62
24.56' LT

28

R=2'
1

+45.70
25.80' LT

+47.69
24.00' LT
R=2'

(1896 CITY LAYOUT)

PT +80.61

102

103

41.20'

N59°48'22"E
535.95'

+52.63
17.18' RT

R=2'
2

27

(STATE HIGHWAY ALTERATION N44 OF 1969)

BEGIN MILL AND OVERLAY
STA 101+89.37
N2952027.9695
E729147.1025

+94.62
16.84' RT

+27.26
16.98' RT

+29.29
18.96' RT

+29.32
21.03' RT

+50.60
19.17' RT

+50.56
21.58' RT

CONTINUED ON SHEET NO. 18

PROJECT BEGIN
STA 196+05
N2951685.5633
E729304.9350

196

88.46'
N86°13'38"E

PC +38.46

197

Δ=92°24'39"
R=125.00'
L=201.61'
T=130.37'

198

PT +40.07

199

200

BEGIN MILL AND OVERLAY
STA 199+99.57
N2951984.5336
E729437.2034

SBPL

CONTINUED ON SHEET NO. 18

WASHINGTON STREET

PUTNAM STREET

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: SY
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

c:\pwworking\pitt\d2084567\00C-02.dwg

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CURB TIE & ALIGNMENT PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 17 OF 73

Curve Table			
Curve #	Delta	Radius	Length
C1	40°06'24"	10.00	7.00
C2	40°06'24"	10.00	7.00
C3	88°54'16"	10.04	15.58
C4	45°34'24"	10.00	7.95
C5	45°34'23"	10.00	7.95
C6	91°37'53"	20.00	31.99
C7	80°49'13"	12.00	16.93
C8	36°11'05"	35.00	22.10
C9	57°07'37"	3.00	2.99
C10	42°51'13"	35.00	26.18
C11	9°47'09"	521.00	88.98
C22	113°55'49"	20.00	39.77
C23	19°53'53"	92.00	31.95
C24	14°16'21"	92.00	22.92
C25	89°59'45"	5.00	7.85

Curve Table			
Curve #	Delta	Radius	Length
C26	89°59'41"	5.00	7.85
C27	85°06'45"	5.00	7.43
C28	14°46'57"	500.50	129.13
C29	88°45'30"	20.00	30.98
C48	159°29'58"	2.00	5.57
C49	54°12'04"	2.00	1.89
C50	159°59'41"	2.00	5.58
C51	13°41'43"	132.33	31.63
C57	178°27'18"	2.00	6.23

NAD 83

LIMIT OF PAVEMENT MILLING & OVERLAY STA 105+25.00, LT 86.73'±

ELM STREET

(CITY LAYOUT 20605)

(1896 CITY LAYOUT)

104+99.96 WASHINGTON STREET= 202+00.38 WASHINGTON STREET BRIDGE

CHERRY STREET

CAPTAIN RYAN PARK

LIMIT OF PAVEMENT MILLING & OVERLAY STA 107+75.00, LT 88.37'±

WASHINGTON STREET

N59°48'22"E 535.95'

△=14°45'51" R=740.00' L=190.69' T=95.87'

PC +16.56

N74°34'13"E 406.59'

PT +07.25

WASHINGTON STREET

47.82'

33.72'

HIGHLAND STREET

LIMIT OF PAVEMENT MILLING & OVERLAY STA 109+75.00', RT 90.16'±

CONTINUED ON SHEET NO. 17

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 17

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: SY
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

c:\pwworking\pitt\d2084567\00C-02.dwg

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CURB TIE & ALIGNMENT PLAN - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 18 OF 73

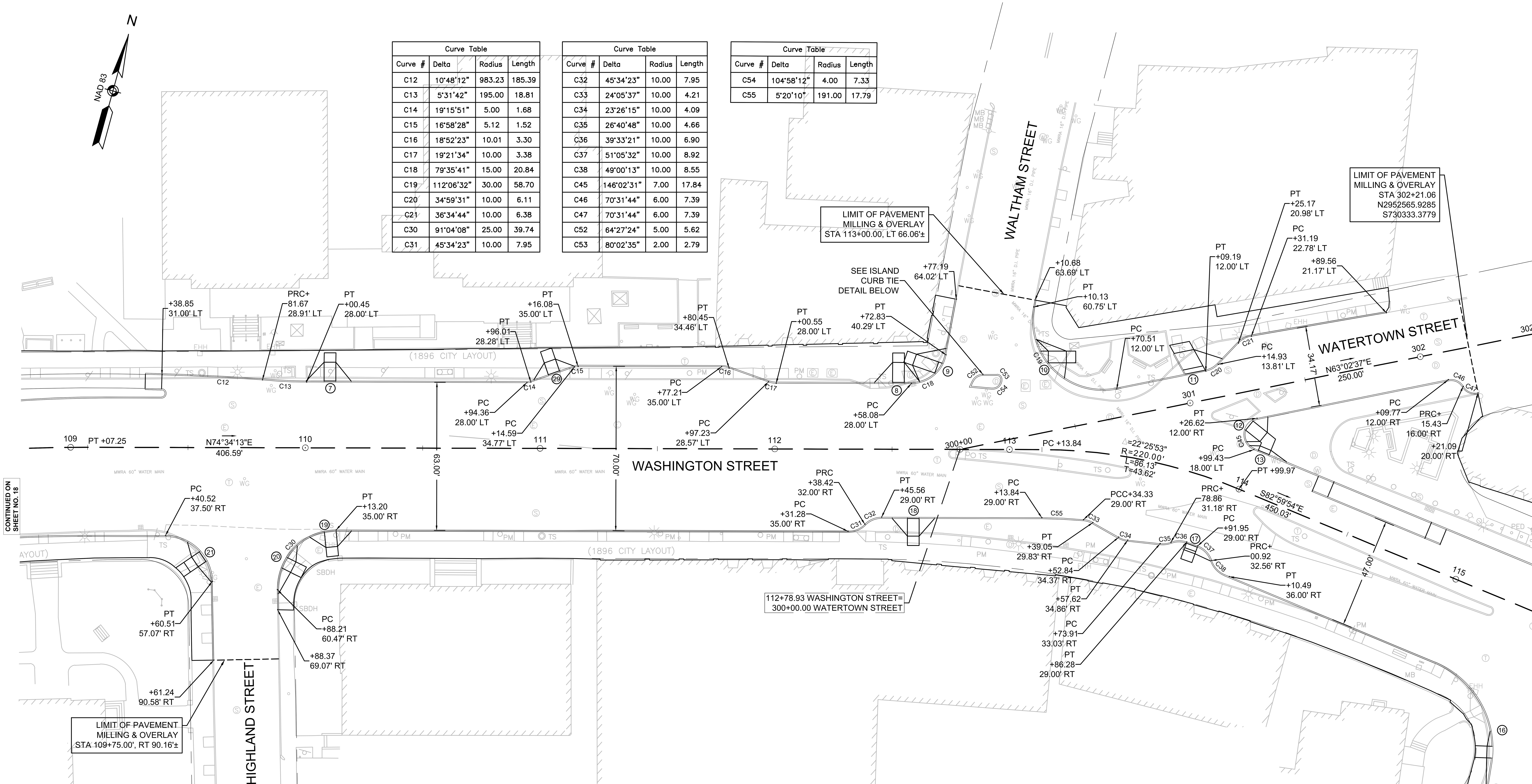
Curve #	Delta	Radius	Length
C12	10°48'12"	983.23	185.39
C13	5°31'42"	195.00	18.81
C14	19°15'51"	5.00	1.68
C15	16°58'28"	5.12	1.52
C16	18°52'23"	10.01	3.30
C17	19°21'34"	10.00	3.38
C18	79°35'41"	15.00	20.84
C19	112°06'32"	30.00	58.70
C20	34°59'31"	10.00	6.11
C21	36°34'44"	10.00	6.38
C30	91°04'08"	25.00	39.74
C31	45°34'23"	10.00	7.95

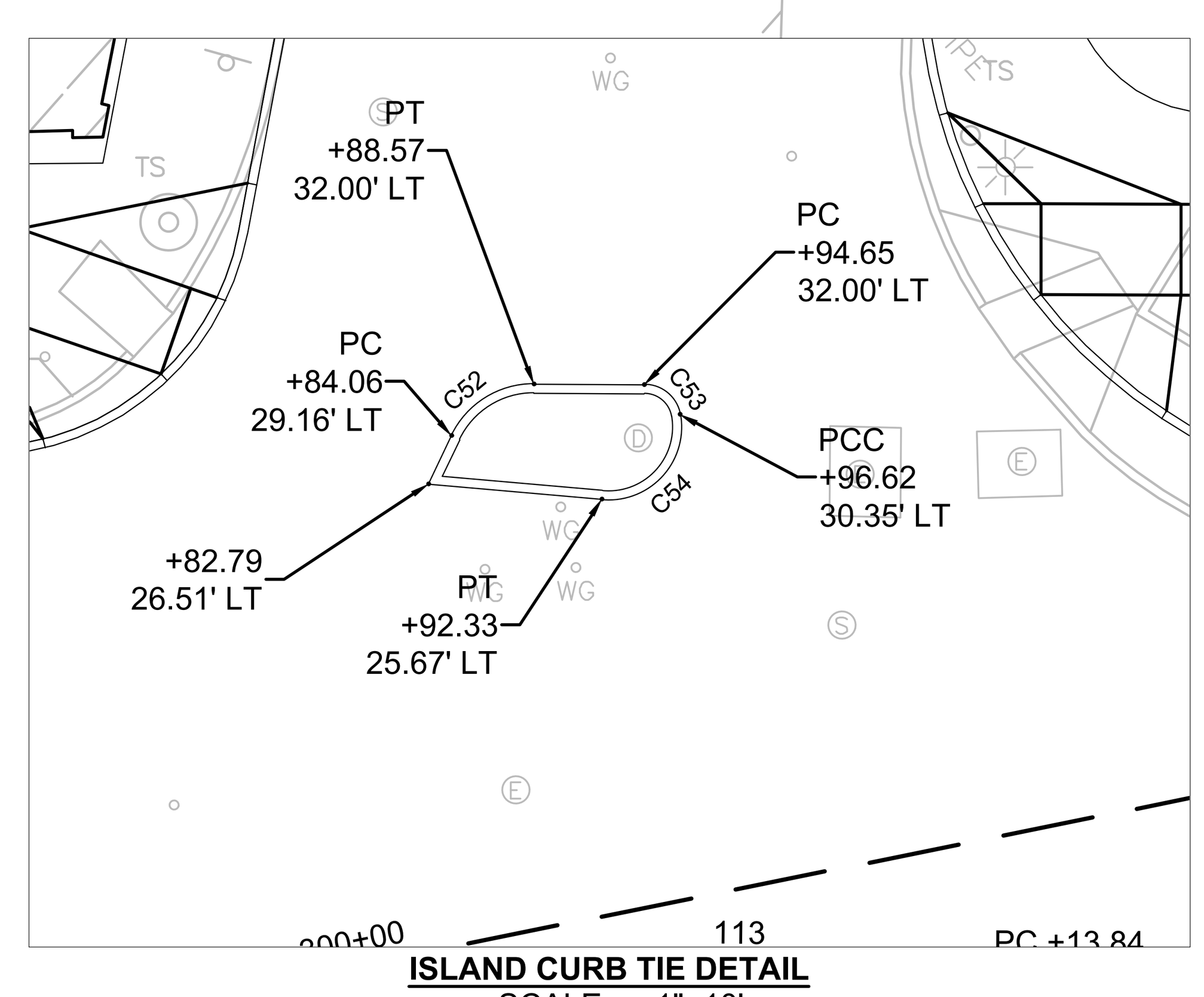
Curve Table

Curve #	Delta	Radius	Length
C32	45°34'23"	10.00	7.95
C33	24°05'37"	10.00	4.21
C34	23°26'15"	10.00	4.09
C35	26°40'48"	10.00	4.66
C36	39°33'21"	10.00	6.90
C37	51°05'32"	10.00	8.92
C38	49°00'13"	10.00	8.55
C45	146°02'31"	7.00	17.84
C46	70°31'44"	6.00	7.39
C47	70°31'44"	6.00	7.39
C52	64°27'24"	5.00	5.62
C53	80°02'35"	2.00	2.79

Curve Table

Curve #	Delta	Radius	Length
C54	104°58'12"	4.00	7.33
C55	5°20'10"	191.00	17.79





ISLAND CURB TIE DETAIL
SCALE: 1"=10'

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
CURB TIE & ALIGNMENT PLAN - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 19 OF 73

DESIGNED BY: TNU
DRAWN BY: SY
CHECKED BY: AKB
APPROVED BY: RDK

c:\pwworking\pitt\d2084567\00C-02.dwg
PLOTTED ON January 16, 2019 1:08 PM

N

NAD 83

(1896 CITY LAYOUT)

LIMIT OF PAVEMENT
MILLING & OVERLAY
STA 302+21.06
N2952565.9285
S730333.3779

Curve Table			
Curve #	Delta	Radius	Length
C39	76°36'09"	40.00	53.48
C40	50°17'40"	10.00	8.78
C41	46°26'54"	10.00	8.11
C42	102°17'00"	23.00	41.06
C43	47°47'19"	10.00	8.34
C44	47°47'19"	10.00	8.34

302+50

WATERTOWN STREET

302

N63°02'37"E
250.00'

+81.15
18.00' LT

+29.15
18.00' LT

+36.15
18.00' LT

+88.15
18.00' LT

PRC+
97.58
21.28' LT

PC
+04.99
24.56' LT

+21.20
24.65' LT

WMH
R=48.76'
CAN NOT OPEN

LIMIT OF PAVEMENT
MILLING & OVERLAY
STA 116+62.10
N2952449.3445
E730515.5166

PT +99.97

114

S82°59'54"E
450.03'

115

+88.15
11.00' LT

PT
+90.17
18.00' LT

C44 C43

14

116

117

118

118+50

61.81'

+36.15
11.00' LT

+29.15
11.00' LT

+81.15
11.00' LT

WASHINGTON STREET

LIMIT OF WORK
STA.118+50.00
N2952426.4392
E730702.0190

MWRA 60" WATER MAIN

PC
+05.43
36.00' RT

PT
+03.09
37.43' RT

+58.88
36.47' RT

15

C42

30

C39

16

PT
+44.34
66.73' RT

PC
+81.10
65.71' RT

+86.12
87.00' RT

C41 C40

PC
+47.22
78.80' RT

PRC+
45.49
87.13' RT

PT
+43.62
94.79' RT

+44.74
101.43' RT

LIMIT OF PAVEMENT
MILLING & OVERLAY
STA 115+50.00, RT 98.57'±

CHESTNUT STREET

CONTINUED ON SHEET NO. 19

(1896 CITY LAYOUT)

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: SY
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

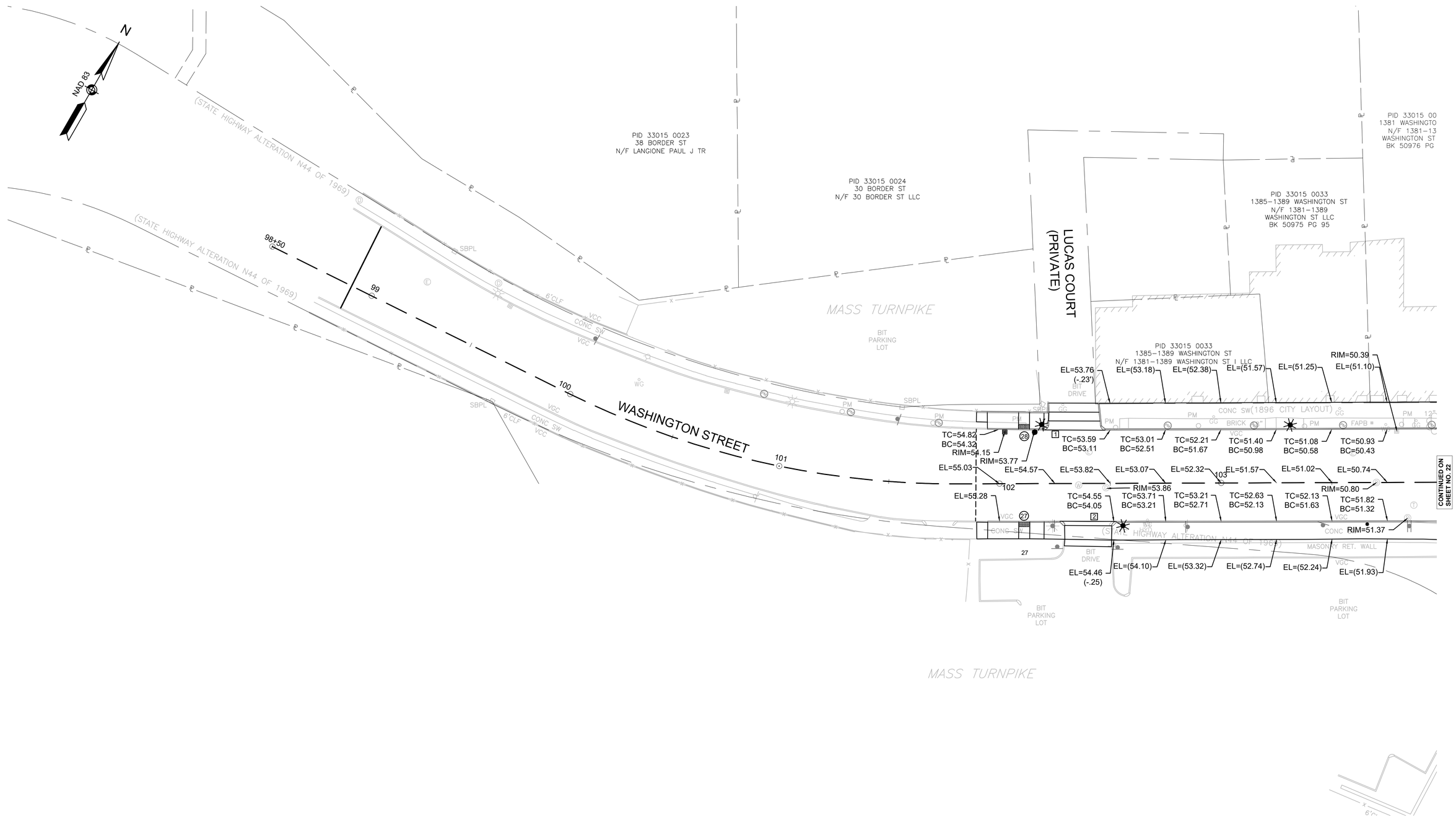
c:\pwworking\pitt\d2084567\00C-02.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CURB TIE & ALIGNMENT PLAN - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 20 OF 73



NOTES:

1) UNLESS OTHERWISE NOTED, CONTRACTOR SHALL MATCH EXISTING BACK OF SIDEWALK GRADE.

2) THE CONTRACTOR SHALL VERIFY THAT ALL GRADES ARE ADA/AAB COMPLIANT PRIOR TO INSTALLATION OF ANY CONCRETE STRUCTURES. FAILURE TO DO SO SHALL RESULT IN THE REPLACEMENT OF NON COMPLIANT CONCRETE STRUCTURES AT NO ADDITIONAL COST TO THE CITY OF NEWTON.

0 20 50 100

SCALE: 1" = 20'

LEGEND

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
(##)	PEDESTRIAN RAMP NUMBER
[#]	DRIVEWAY NUMBER

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

GRADING PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 21 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

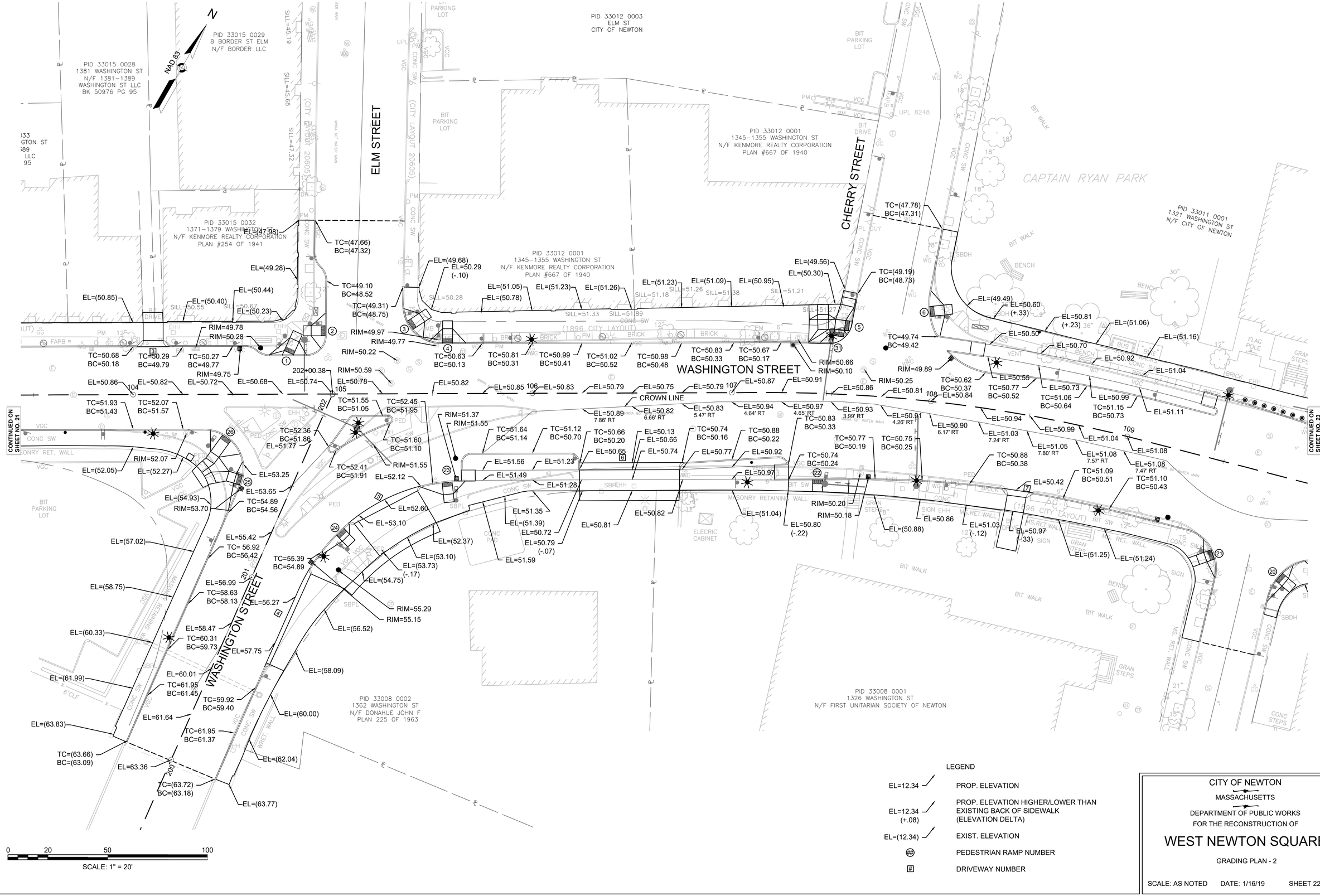
c:\pwworking\pitt\d2084567\00C-03.dwg

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

c:\pwworking\pitt\d2084567\00C-03.dwg



LEGEND

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
##	PEDESTRIAN RAMP NUMBER
#	DRIVEWAY NUMBER

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

GRADING PLAN - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 22 OF 73

N

NAD 83

PID 33011 0001
1321 WASHINGTON ST
N/F CITY OF NEWTON

PID 33011 0014
1309 WASHINGTON ST
COUNTY OF MIDDLESEX
PLAN 97 OF 1931

PID 33011 0012
521 WALTHAM ST
KENMORE REALTY CORPORATION

PID 33011 0013
527 WALTHAM ST
KENMORE REALTY CORPORATION
PLAN 1006 1946

PID 31016 0001
989–1003 WATERTOWN ST
N/F COMPROPS LIMITED PTNRSHP
BK 1182 PG 12

WALTHAM STREET

WATERTOWN STREET

WASHINGTON STREET

HIGHLAND STREET

(1896 CITY LAYOUT)

SEE BELOW FOR ISLAND GRADING DETAIL

SEE PLAZA GRADING DETAIL BELOW

PROP THALWEG

REMODEL RIM=48.08

PID 33010 0002
1298–1308 WASHINGTON ST
N/F KENMORE REALTY CORPORATION

PID 33010 0004
1274–1284 WASHINGTON ST
N/F KRITZAS JAMES C TR

PID 33010 0005
1 CHESTNUT ST
N/F BANK OF AMERICA
PLAN #234 1963

CHESTNUT

CONTINUED ON SHEET NO. 22

CONTINUED ON SHEET NO. 24

ISLAND GRADING DETAIL
SCALE: 1"=10'

PLAZA GRADING DETAIL
SCALE: 1"=20'

0 20 50 100
SCALE: 1" = 20'

LEGEND

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
##	PEDESTRIAN RAMP NUMBER
#	DRIVEWAY NUMBER

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

GRADING PLAN - 3

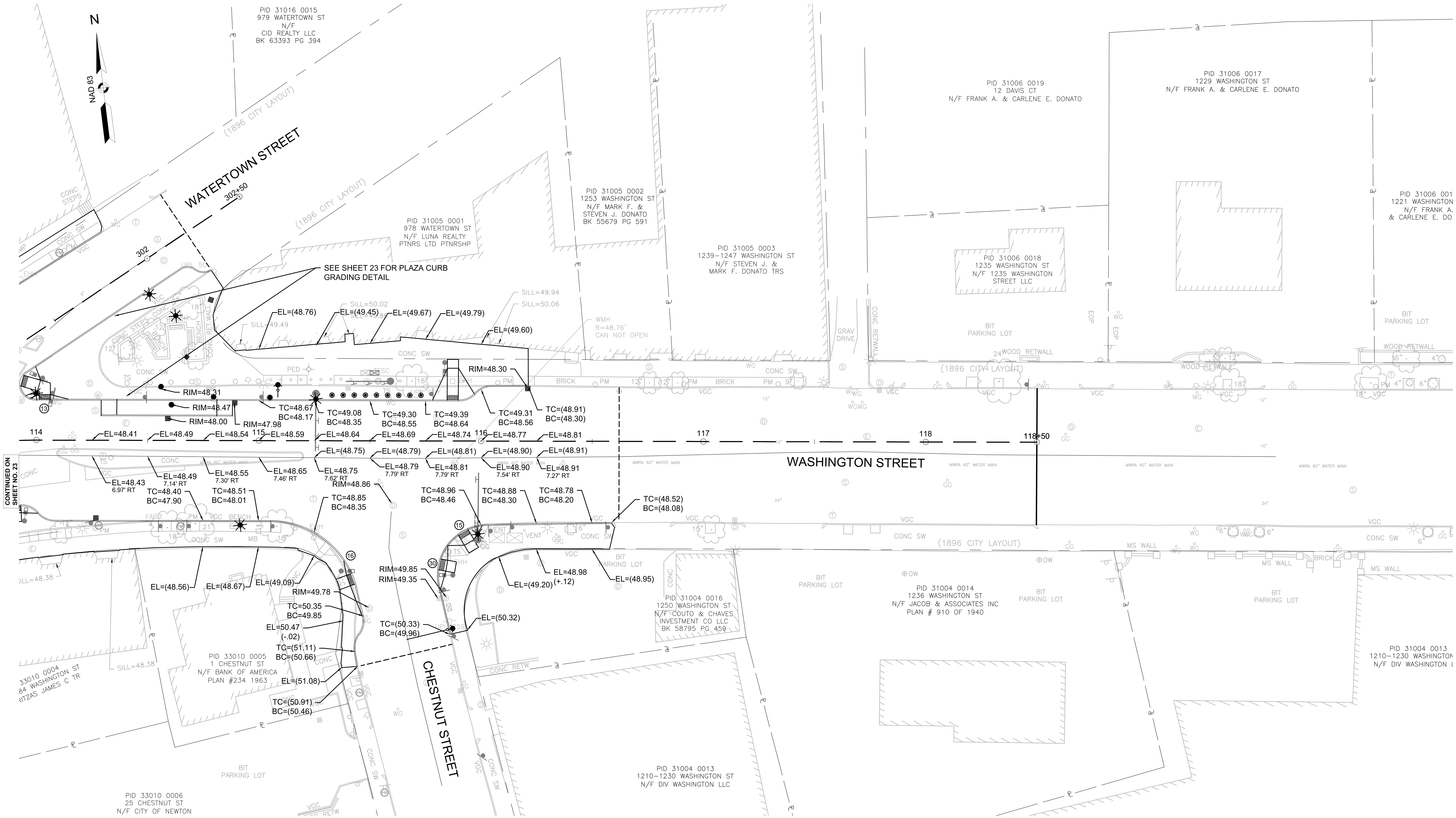
SCALE: AS NOTED DATE: 1/16/19 SHEET 23 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:08 PM

c:\pwworking\pitt\d2084567\00C-03.dwg



N
NAD 83
WATERTOWN STREET
302+50
302
(1896 CITY LAYOUT)
PID 31016 0015
979 WATERTOWN ST
N/F
CID REALTY LLC
BK 63393 PG 394
PID 31005 0001
978 WATERTOWN ST
N/F LUNA REALTY
PTNRS LTD PTNRSHP
PID 31005 0002
1253 WASHINGTON ST
N/F MARK F. &
STEVEN J. DONATO
BK 55679 PG 591
PID 31005 0003
1239–1247 WASHINGTON ST
N/F STEVEN J. &
MARK F. DONATO TRS
PID 31006 0019
12 DAVIS CT
N/F FRANK A. & CARLENE E. DONATO
PID 31006 0017
1229 WASHINGTON ST
N/F FRANK A. & CARLENE E. DONATO
PID 31006 0018
1235 WASHINGTON ST
N/F 1235 WASHINGTON
STREET LLC
SEE SHEET 23 FOR PLAZA CURB GRADING DETAIL
SILL=49.94
SILL=50.06
SILL=50.02
SILL=49.49
WMH
R=48.76'
CAN NOT OPEN
EL=(48.76)
EL=(49.45)
EL=(49.67)
EL=(49.79)
EL=(49.60)
RIM=48.30
RIM=48.31
RIM=48.47
RIM=48.00
RIM=47.98
TC=48.67
BC=48.17
TC=49.08
BC=48.35
TC=49.30
BC=48.55
TC=49.39
BC=48.64
TC=49.31
BC=48.56
TC=(48.91)
BC=(48.30)
114
115
116
117
118
118+50
EL=48.41
EL=48.49
EL=48.54
EL=48.59
EL=48.64
EL=48.69
EL=48.74
EL=48.77
EL=48.81
EL=(48.75)
EL=(48.79)
EL=(48.81)
EL=(48.90)
EL=(48.91)
EL=48.43
6.97' RT
EL=48.49
7.14' RT
EL=48.55
7.30' RT
EL=48.65
7.46' RT
EL=48.75
7.62' RT
EL=48.79
7.79' RT
EL=48.81
7.79' RT
EL=48.90
7.54' RT
EL=48.91
7.27' RT
WASHINGTON STREET
CONTINUED ON SHEET NO. 23
TC=48.40
BC=47.90
TC=48.51
BC=48.01
TC=48.85
BC=48.35
RIM=48.86
TC=48.96
BC=48.46
TC=48.88
BC=48.30
TC=48.78
BC=48.20
TC=(48.52)
BC=(48.08)
EL=(48.56)
EL=(48.67)
EL=(49.09)
RIM=49.78
TC=50.35
BC=49.85
EL=50.47
(-.02)
TC=(51.11)
BC=(50.66)
EL=(51.08)
TC=(50.91)
BC=(50.46)
RIM=49.85
RIM=49.35
TC=(50.33)
BC=(49.96)
EL=(50.32)
EL=(49.20)
EL=48.98
(+.12)
EL=(48.95)
CHESTNUT STREET
PID 33010 0005
1 CHESTNUT ST
N/F BANK OF AMERICA
PLAN #234 1963
PID 33010 0006
25 CHESTNUT ST
N/F CITY OF NEWTON
PID 31004 0016
1250 WASHINGTON ST
N/F COUTO & CHAVES
INVESTMENT CO LLC
BK 58795 PG 459
PID 31004 0014
1236 WASHINGTON ST
N/F JACOB & ASSOCIATES INC
PLAN # 910 OF 1940
PID 31004 0013
1210–1230 WASHINGTON ST
N/F DIV WASHINGTON LLC
BIT PARKING LOT
CONC SW
VGC

0 20 50 100

SCALE: 1" = 20'

LEGEND

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
##	PEDESTRIAN RAMP NUMBER
#	DRIVEWAY NUMBER

CITY OF NEWTON
MASSACHUSETTS

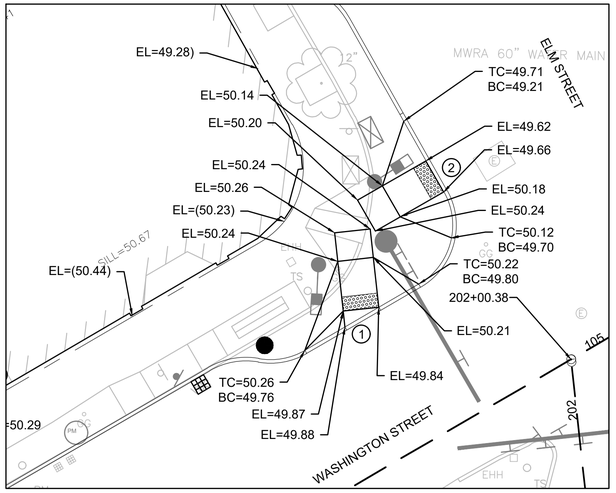
CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

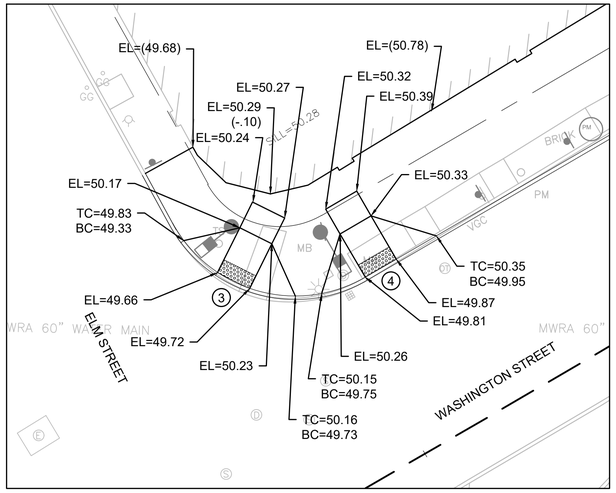
GRADING PLAN - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 24 OF 73

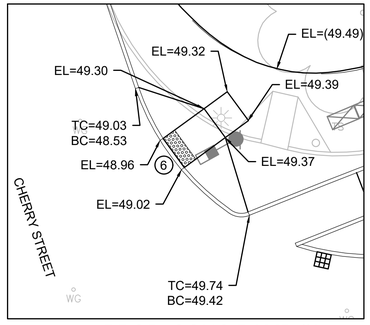
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK



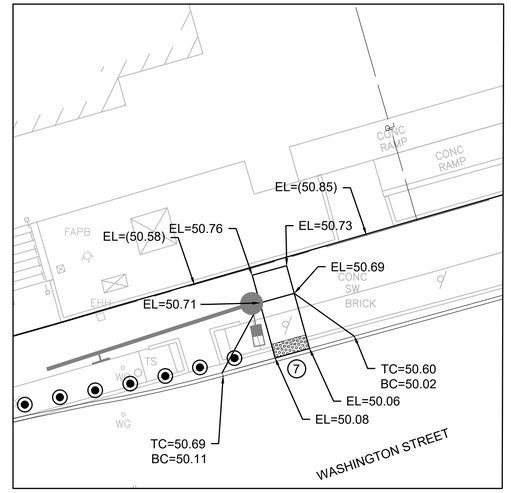
PROP. CONC RAMPS #1 & #2



PROP. CONC RAMPS #3 & #4



PROP. CONC RAMP #6



PROP. CONC RAMP #7

PROP. CONC RAMPS #8 & #9

PROP. CONC RAMP #10

PEDESTRIAN RAMP DETAIL
TYPE 2
NO SCALE

PROPOSED CONCRETE PEDESTRIAN RAMP
NOT TO SCALE
* = 0.5% TOLERANCE FOR CONSTRUCTION

NOTES:
CROSS SLOPES OF SIDEWALKS MAY VARY DUE TO EXISTING FEATURES WITHIN PROJECT LIMITS. IN NO CASE SHALL CROSS SLOPE EXCEED 1.5%, NOR SHALL THE RUNNING SLOPE OF RAMPS EXCEED 7.5%.
ALL PEDESTRIAN RAMPS SHALL BE 6" MINIMUM CEMENT CONCRETE
ALL PEDESTRIAN RAMPS SHALL HAVE A FLUSH CURB INSTALLED AT THRESHOLD

NOTES:

1. SEE GRADING PLANS FOR LOCATION OF PEDESTRIAN RAMPS.
2. FINAL RAMP ELEVATIONS SHALL GRADE TO DRAIN AND LAYOUT SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
3. ALL PEDESTRIAN RAMP GRADES SHALL CONFORM TO THE MASSDOT ENGINEERING DIRECTIVE E-12-005, WALKS AND WHEELCHAIR RAMPS, DATED 03/27/12.
4. TRUNCATED DOME DETECTABLE WARNING PANEL TYPICAL FOR ALL RAMP TYPES, COLOR "YELLOW" TO BE APPROVED BY ENGINEER AND DPW COMMISSIONER.

LEGEND:

* = TOLERANCE FOR CONSTRUCTION ±0.5%
LL = LEVEL LANDING - 1.5%* MAX SLOPE FOR DRAINAGE

0 10 20 30 40
SCALE: 1" = 10'

LEGEND

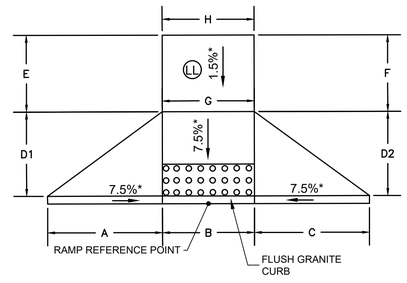
EL=12.34 — PROP. ELEVATION
EL=12.34 (+.08) — PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34) — EXIST. ELEVATION
(##) — PEDESTRIAN RAMP NUMBER
[#] — DRIVEWAY NUMBER

RAMP DETAILS (TYPE 2)

WCR#	WCR TYPE	REFERENCE POINT		LENGTH OF PRIMARY RAMP		WIDTH OF SIDEWALK		WIDTH OF RAMP ENTRANCE (B) 5'-0" MIN	WIDTH OF LEVEL LANDING (G/H) 5'-0" MIN	DEPTH OF RAMP ENTRANCE (J)	DEPTH OF LEVEL LANDING (E/F) 4'-0" MIN	ROADWAY GUTTER SLOPE (+ OR -)	TRANSITION LENGTH	
		STATION	OFFSET	LEFT SIDE (D1)	RIGHT SIDE (D2)	LEFT SIDE (W1)	RIGHT SIDE (W2)						LEFT SIDE (A)	RIGHT SIDE (C)
1	2	104+77.67	19.30' LT	9.2'	7.0'	13.2'	11.0'	5.0'	5.0'	2.2'	4.0'	+	6.5'	6.5'
9	2	112+70.23	34.21' LT	10.0'	11.5'	14.0'	15.5'	5.5'	5.0'	1.5'	4.0'	-	7.7'	6.6'
10	2	113+42.34	31.67' LT	10.9'	7.7'	16.7'	11.7'	6.0'	5.0'	3.2'	4.0'	-	5.5'	9.6'

RAMP DETAILS (TYPE R1)

RAMP NO.	TYPE	REFERENCE POINT		TRANS. L	WIDTH	TRANS. L	RAMP LENGTH		LANDING LENGTH		LANDING WIDTH	
				A	B	C	D1	D2	E	F	G	H
		STATION	OFFSET	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.
2	R1	104+96.87	31.66' LT	6.5	5.0	6.5	7.0	7.0	4.0	4.0	5.0	5.0
3	R1	105+38.50	34.00' LT	6.7	5.0	6.8	7.0	7.0	4.0	4.0	5.0	5.0
4	R1	105+57.70	25.00' LT	6.7	5.0	6.5	7.0	7.0	4.0	4.0	5.0	5.0
6	R1	107+94.50	44.60' LT	8.0	5.1	12.0	7.1	7.1	4.0	4.0	5.0	5.0
7	R1	110+10.45	28.00' LT	7.7	5.0	6.5	8.0	8.0	4.0	4.0	5.0	5.0
8	R1	112+52.62	28.00' LT	7.7	5.0	6.5	8.5	8.5	4.0	4.0	5.0	5.0



PEDESTRIAN RAMP
TYPE R1
NO SCALE

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

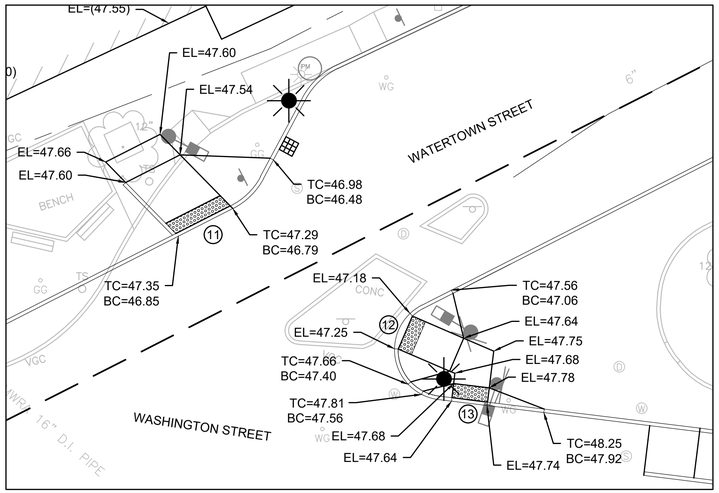
WEST NEWTON SQUARE

PEDESTRIAN RAMP DETAILS - 1

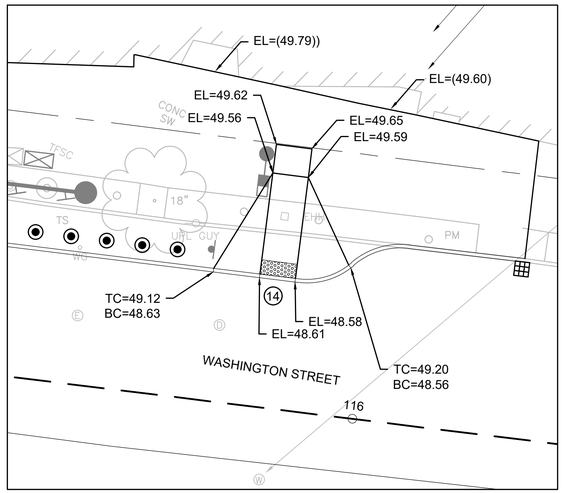
SCALE: AS NOTED DATE: 1/16/19 SHEET 25 OF 73

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

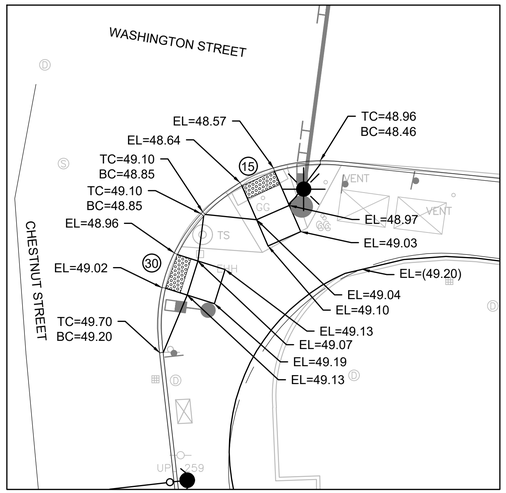
CITY OF NEWTON
MASSACHUSETTS



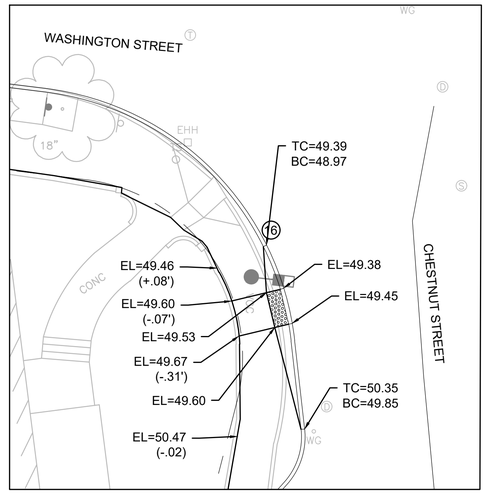
PROP. CONC RAMPS #11, #12 & #13



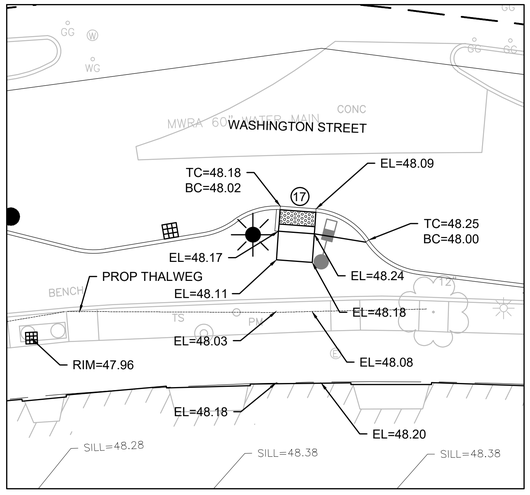
PROP. CONC RAMP #14



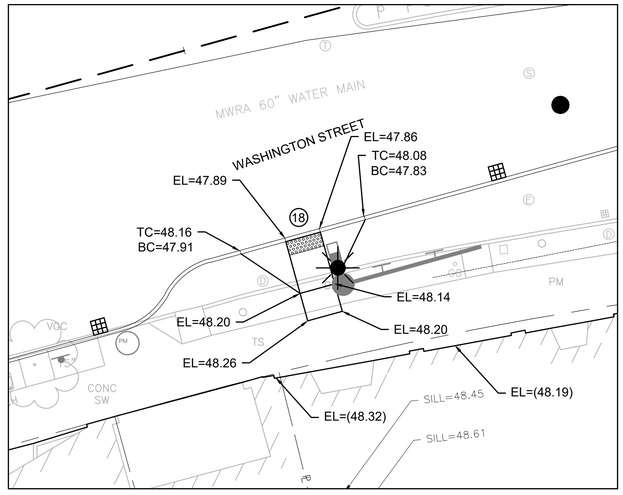
PROP. CONC RAMPS #15 & #30



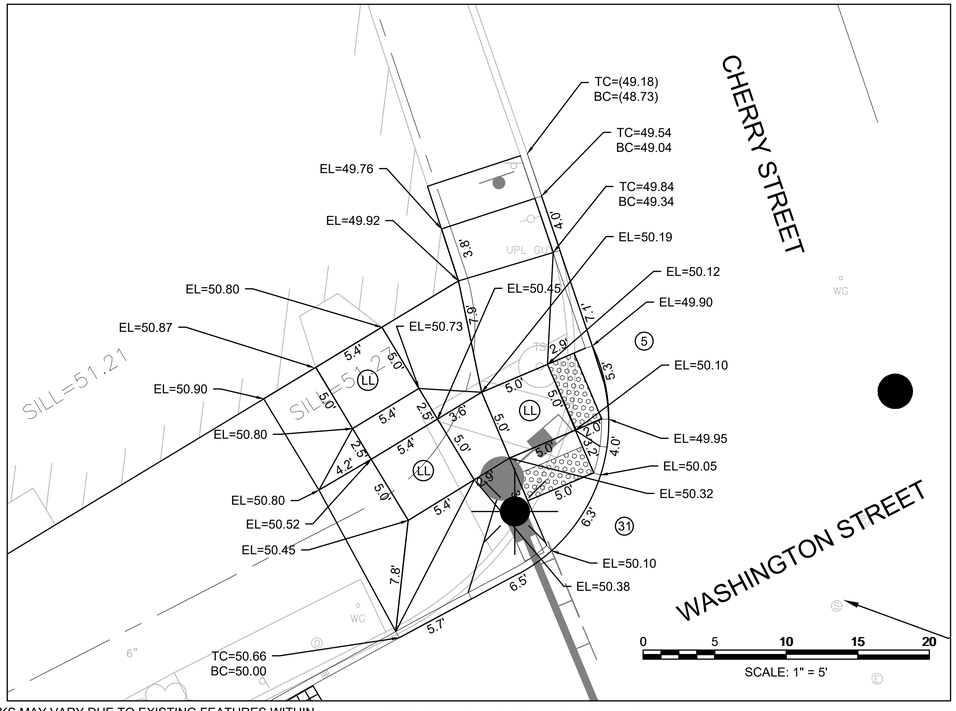
PROP. CONC RAMP #16



PROP. CONC RAMP #17



PROP. CONC RAMP #18



PROP. CONC RAMP #5 & #31

N

NAD 83

NOTES:

1. SEE GRADING PLANS FOR LOCATION OF PEDESTRIAN RAMPS.
2. FINAL RAMP ELEVATIONS SHALL GRADE TO DRAIN AND LAYOUT SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
3. ALL PEDESTRIAN RAMP GRADES SHALL CONFORM TO THE MASSDOT ENGINEERING DIRECTIVE E-12-005, WALKS AND WHEELCHAIR RAMPS, DATED 03/27/12.
4. TRUNCATED DOME DETECTABLE WARNING PANEL TYPICAL FOR ALL RAMP TYPES, COLOR "YELLOW" TO BE APPROVED BY ENGINEER AND DPW COMMISSIONER.

LEGEND:

* = TOLERANCE FOR CONSTRUCTION ±0.5%

LL = LEVEL LANDING - 1.5%* MAX SLOPE FOR DRAINAGE

0 10 20 30 40

SCALE: 1" = 10'

LEGEND

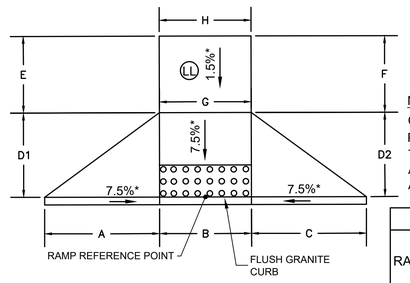
EL=12.34 — PROP. ELEVATION

EL=12.34 (+.08) — PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)

EL=(12.34) — EXIST. ELEVATION

(##) — PEDESTRIAN RAMP NUMBER

[#] — DRIVEWAY NUMBER



PEDESTRIAN RAMP
TYPE R1
NO SCALE

NOTES:

CROSS SLOPES OF SIDEWALKS MAY VARY DUE TO EXISTING FEATURES WITHIN PROJECT LIMITS. IN NO CASE SHALL CROSS SLOPE EXCEED 1.5%, NOR SHALL THE RUNNING SLOPE OF RAMPS EXCEED 7.5%.
ALL PEDESTRIAN RAMPS SHALL BE 6" MINIMUM CEMENT CONCRETE
ALL PEDESTRIAN RAMPS SHALL HAVE A FLUSH CURB INSTALLED AT THRESHOLD

RAMP DETAILS (TYPE 1)												
RAMP NO.	TYPE	REFERENCE POINT		TRANS. L	WIDTH	TRANS. L	RAMP LENGTH		LANDING LENGTH		LANDING WIDTH	
				A	B	C	D1	D2	E	F	G	H
		STATION	OFFSET	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.
11	R1	301+04.93	12.00' LT	0.0'	8.5'	9.1'	10.0'	10.0'	4.0'	4.0'	8.0'	8.0'
12	R1	301+22.19	13.57' LT	6.7'	5.5'	5.5'	7.8'	7.8'	4.6'	4.6'	5.0'	5.0'
13	R1	114+03.73	18.00' LT	4.3'	5.0'	8.0'	2.0'	2.0'	5.0'	5.0'	5.0'	5.0'
14	R1	115+87.22	18.00' LT	6.5'	5.0'	8.3'	14.2'	14.2'	4.0'	4.0'	5.0'	5.0'
15	R1	115+91.80	40.62' RT	6.7'	5.1'	6.7'	5.2'	5.2'	4.0'	4.0'	5.0'	5.0'
16	R1	115+38.14	52.98' RT	14.8'	5.1'	6.5'	2.0'	2.0'	5.2'	5.00'	5.0'	5.0'
17	R1	113+89.18	29.02' RT	8.8'	5.0'	0.0'	3.0'	3.0'	4.0'	4.0'	5.0'	5.0'
18	R1	112+59.08	29.00' RT	6.5'	5.0'	6.5'	7.5'	7.5'	4.0'	4.0'	5.0'	5.0'
30	R1	115+81.04	55.42' RT	6.7'	5.1'	9.2'	3.0'	3.2'	4.0'	4.0'	5.0'	5.0'

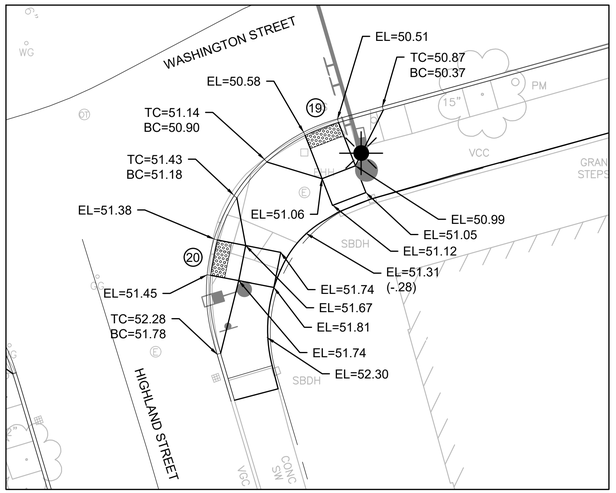
RAMP DETAILS (#5 & #31)		
RAMP NO.	REFERENCE POINT	
	STATION	OFFSET
5	107+58.11	34.26' LT
31	107+52.62	26.55' LT

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
PEDESTRIAN RAMP DETAILS - 2

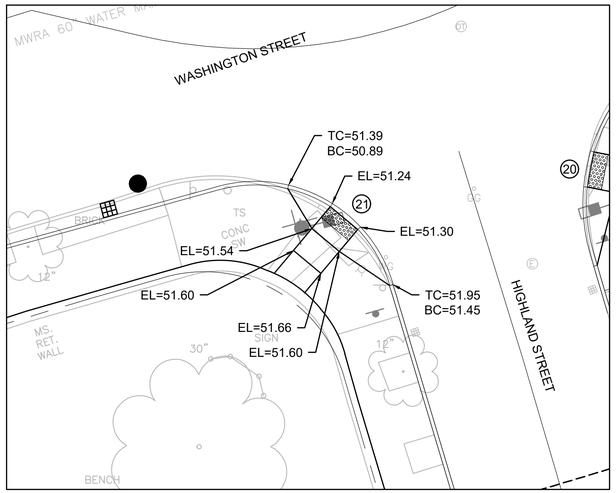
SCALE: AS NOTED DATE: 1/16/19 SHEET 26 OF 73

CITY OF NEWTON
MASSACHUSETTS

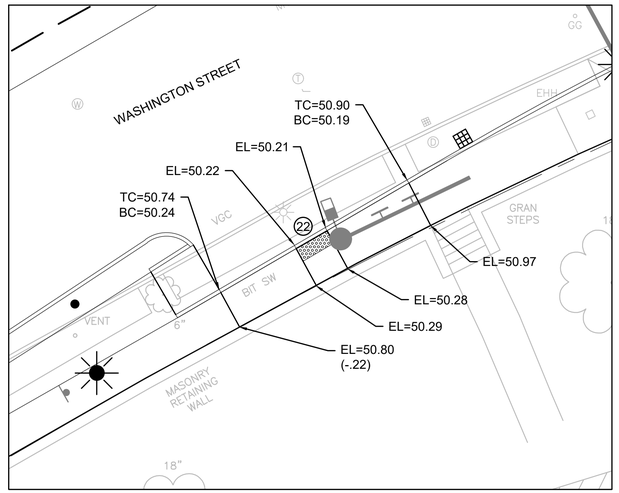
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK



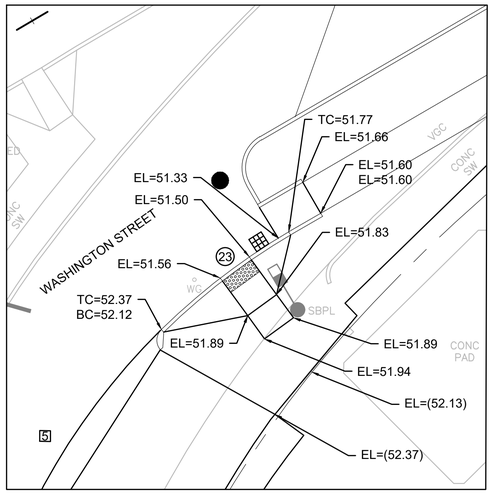
PROP. CONC RAMPS #19 & #20



PROP. CONC RAMP #21



PROP. CONC RAMP #22



PROP. CONC RAMP #23

NOTES:

1. SEE GRADING PLANS FOR LOCATION OF PEDESTRIAN RAMPS.
2. FINAL RAMP ELEVATIONS SHALL GRADE TO DRAIN AND LAYOUT SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
3. ALL PEDESTRIAN RAMP GRADES SHALL CONFORM TO THE MASSDOT ENGINEERING DIRECTIVE E-12-005, WALKS AND WHEELCHAIR RAMPS, DATED 03/27/12.
4. TRUNCATED DOME DETECTABLE WARNING PANEL TYPICAL FOR ALL RAMP TYPES, COLOR "YELLOW" TO BE APPROVED BY ENGINEER AND DPW COMMISSIONER.

LEGEND:

* = TOLERANCE FOR CONSTRUCTION ±0.5%

LL = LEVEL LANDING - 1.5%* MAX SLOPE FOR DRAINAGE

0 10 20 30 40

SCALE: 1" = 10'

LEGEND

EL=12.34 — PROP. ELEVATION

EL=12.34 (+.08) — PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)

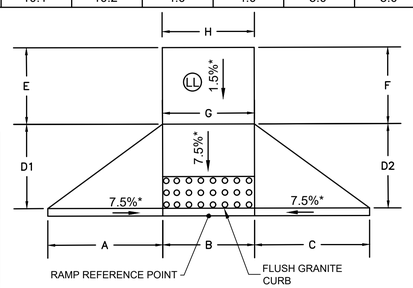
EL=(12.34) — EXIST. ELEVATION

(##) — PEDESTRIAN RAMP NUMBER

[#] — DRIVEWAY NUMBER

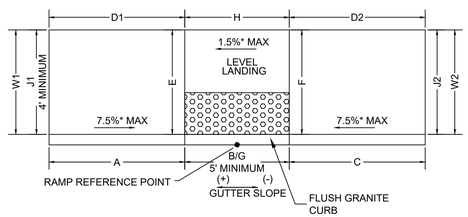
RAMP DETAILS (TYPE 3)													
RAMP NO.	TYPE	REFERENCE POINT		LENGTH OF PRIMARY RAMP*		WIDTH OF SIDEWALK		WIDTH OF RAMP ENTRANCE (B/G/H) 5-0" (MIN)	DEPTH OF LEVEL LANDING 4'-0" (MIN)		ROADWAY GUTTER SLOPE (+ OR -)	TRANSITION LENGTH	
		STATION	OFFSET	LEFT SIDE (D1)	RIGHT SIDE (D2)	LEFT SIDE (W1)	RIGHT SIDE (W2)		LEFT SIDE (E)	RIGHT SIDE (F)		LEFT SIDE (A)	RIGHT SIDE (C)
22	3	107+44.55	42.90' RT	13.0'	12.2'	6.3'	5.7'	5.0'	6.1'	5.9'	+	13.0'	12.2'

RAMP DETAILS (TYPE R1)													
RAMP NO.	TYPE	REFERENCE POINT		TRANS. L A	WIDTH B	TRANS. L C	RAMP LENGTH D1	RAMP LENGTH D2	LANDING LENGTH E	LANDING LENGTH F	LANDING WIDTH G	LANDING WIDTH H
		STATION	OFFSET	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.
19	R1	110+10.65	35.13' RT	6.5'	5.1'	6.6'	6.5'	6.5'	4.0'	4.0'	5.0'	5.0'
20	R1	109+90.85	48.80' RT	6.7'	5.1'	11.3'	4.0'	4.0'	5.0'	5.0'	5.0'	5.0'
21	R1	109+56.94	46.08' RT	9.3'	5.1'	6.6'	4.0'	4.0'	4.0'	4.0'	5.0'	5.0'
23	R1	105+57.13	43.99' RT	6.5'	5.0'	10.9'	6.0'	6.0'	4.0'	4.0'	5.0'	5.0'
24	R1	201+38.90	30.99' RT	3.5'	5.0'	15.1'	3.4'	3.4'	5.0'	5.0'	5.0'	5.0'
25	R1	104+42.46	23.95' LT	11.0'	5.1'	6.7'	3.0'	3.0'	4.0'	4.0'	5.0'	5.0'
26	R1	104+47.15	21.29' RT	8.3'	5.1'	6.7'	10.1'	10.2'	4.0'	4.0'	5.0'	5.0'



PEDESTRIAN RAMP TYPE R1

NO SCALE

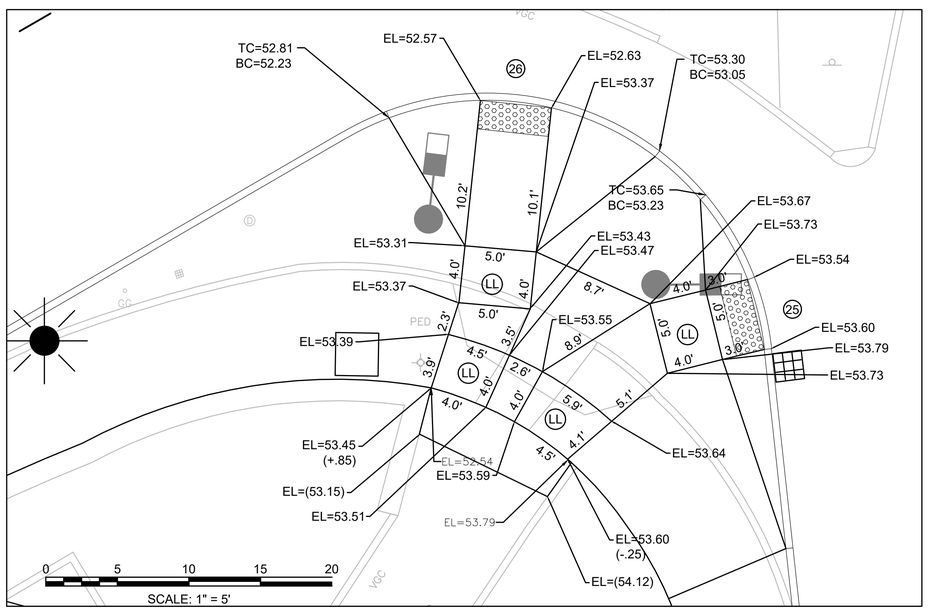


PEDESTRIAN RAMP DETAIL TYPE 3

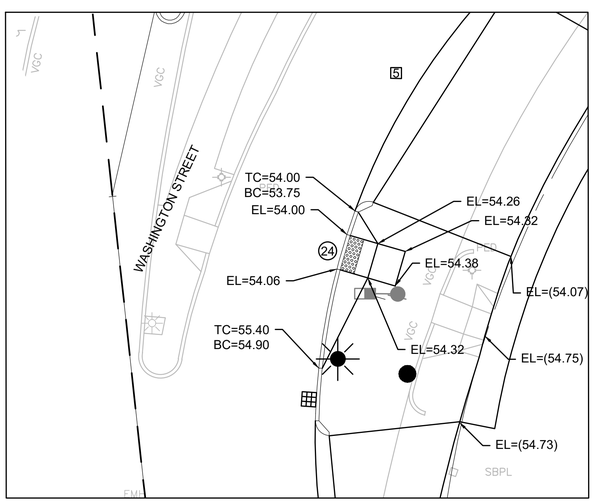
NO SCALE

NOTES:

CROSS SLOPES OF SIDEWALKS MAY VARY DUE TO EXISTING FEATURES WITHIN PROJECT LIMITS. IN NO CASE SHALL CROSS SLOPE EXCEED 1.5%, NOR SHALL THE RUNNING SLOPE OF RAMPS EXCEED 7.5%.
ALL PEDESTRIAN RAMPS SHALL BE 6" MINIMUM CEMENT CONCRETE
ALL PEDESTRIAN RAMPS SHALL HAVE A FLUSH CURB INSTALLED AT THRESHOLD



PROP. CONC RAMPS #26 & #25



PROP. CONC RAMP #24

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

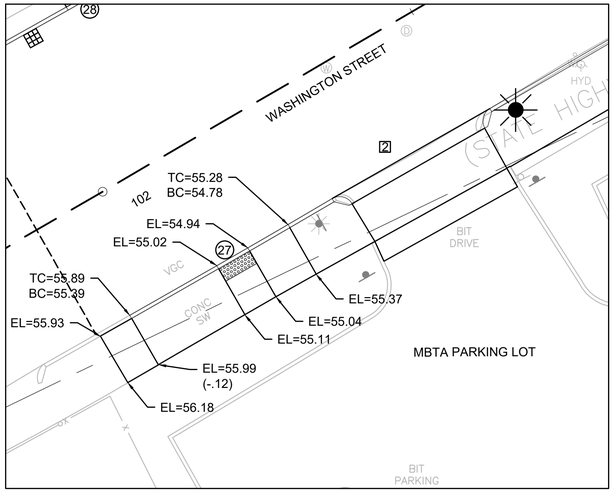
PEDESTRIAN RAMP DETAILS - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 27 OF 73

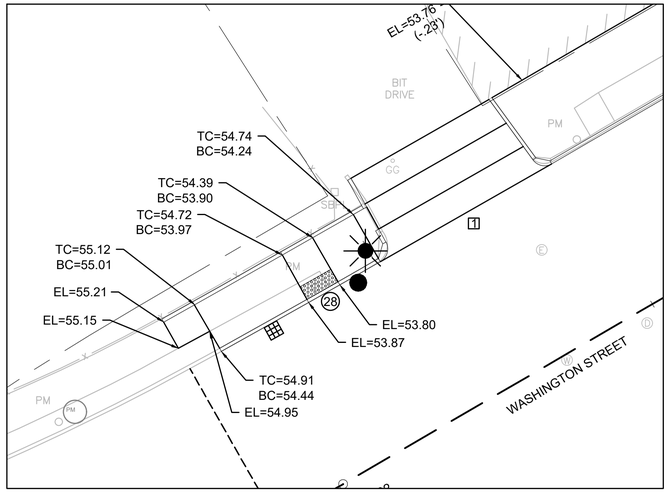
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

N

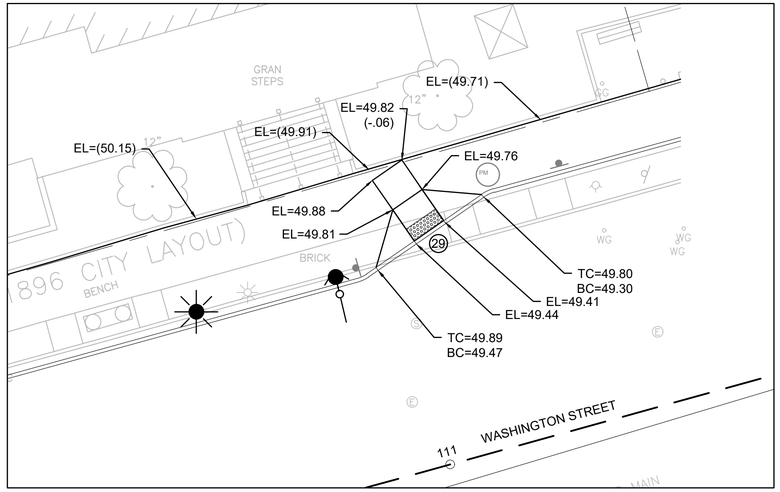
NAD 83



PROP. CONC RAMP #27



PROP. CONC RAMP #28



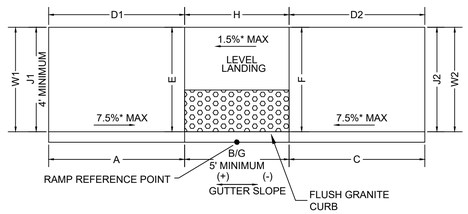
PROP. CONC RAMS #29

N

NAD 83

LEGEND

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
##	PEDESTRIAN RAMP NUMBER
#	DRIVEWAY NUMBER



PEDESTRIAN RAMP DETAIL
TYPE 3
NO SCALE

RAMP DETAILS (TYPE 3)

RAMP NO.	TYPE	REFERENCE POINT		LENGTH OF PRIMARY RAMP*		WIDTH OF SIDEWALK		WIDTH OF RAMP ENTRANCE (B/G/H) 5-0" (MIN)	DEPTH OF LEVEL LANDING 4'-0" (MIN)		ROADWAY GUTTER SLOPE (+ OR -)	TRANSITION LENGTH	
		STATION	OFFSET	LEFT SIDE (D1)	RIGHT SIDE (D2)	LEFT SIDE (W1)	RIGHT SIDE (W2)		LEFT SIDE (E)	RIGHT SIDE (F)		LEFT SIDE (A)	RIGHT SIDE (C)
27	3	102+11.12	16.97' RT	6.5'	14.0'	7.4'	7.4'	5.0'	7.4'	7.4'	+	6.5'	14.0'
28	3	102+11.11	24.33' LT	14.0'	6.5'	7.0'	7.0'	5.0'	7.0'	7.0'	-	14.0'	9.0'

NOTES:

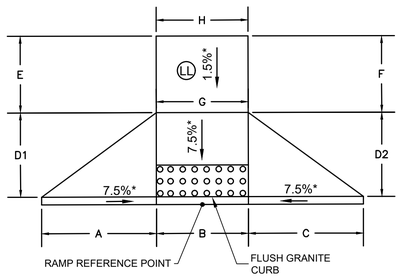
CROSS SLOPES OF SIDEWALKS MAY VARY DUE TO EXISTING FEATURES WITHIN PROJECT LIMITS. IN NO CASE SHALL CROSS SLOPE EXCEED 1.5%, NOR SHALL THE RUNNING SLOPE OF RAMPS EXCEED 7.5%.
ALL PEDESTRIAN RAMPS SHALL BE 6" MINIMUM CEMENT CONCRETE
ALL PEDESTRIAN RAMPS SHALL HAVE A FLUSH CURB INSTALLED AT THRESHOLD

NOTES:

1. SEE GRADING PLANS FOR LOCATION OF PEDESTRIAN RAMPS.
2. FINAL RAMP ELEVATIONS SHALL GRADE TO DRAIN AND LAYOUT SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
3. ALL PEDESTRIAN RAMP GRADES SHALL CONFORM TO THE MASSDOT ENGINEERING DIRECTIVE E-12-005, WALKS AND WHEELCHAIR RAMPS, DATED 03/27/12.
4. TRUNCATED DOME DETECTABLE WARNING PANEL TYPICAL FOR ALL RAMP TYPES, COLOR "YELLOW" TO BE APPROVED BY ENGINEER AND DPW COMMISSIONER.

LEGEND:

* = TOLERANCE FOR CONSTRUCTION ±0.5%
LL = LEVEL LANDING - 1.5%* MAX SLOPE FOR DRAINAGE



PEDESTRIAN RAMP
TYPE R1
NO SCALE

RAMP DETAILS (TYPE R1)

RAMP NO.	TYPE	REFERENCE POINT		TRANS. L	WIDTH	TRANS. L	RAMP LENGTH		LANDING LENGTH		LANDING WIDTH	
				A	B	C	D1	D2	E	F	G	H
		STATION	OFFSET	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.	FT.
29	R1	111+06.00	31.77' LT	6.5'	5.0'	6.5'	5.3'	5.3'	5.0'	5.0'	5.0'	5.0'

0 10 20 30 40
SCALE: 1" = 10'

CITY OF NEWTON
MASSACHUSETTS

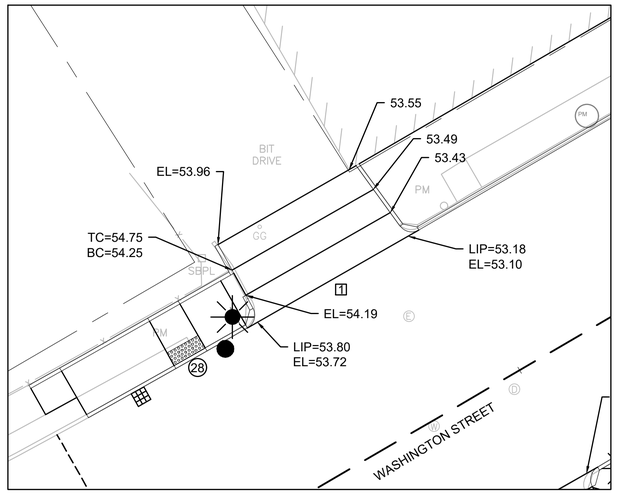
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

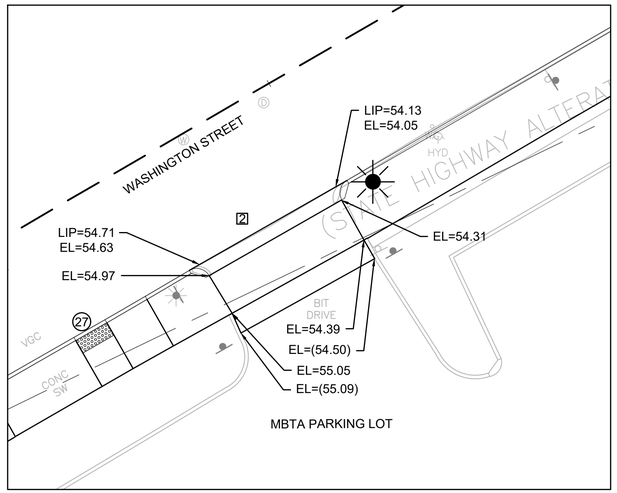
PEDESTRIAN RAMP DETAILS - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 28 OF 73

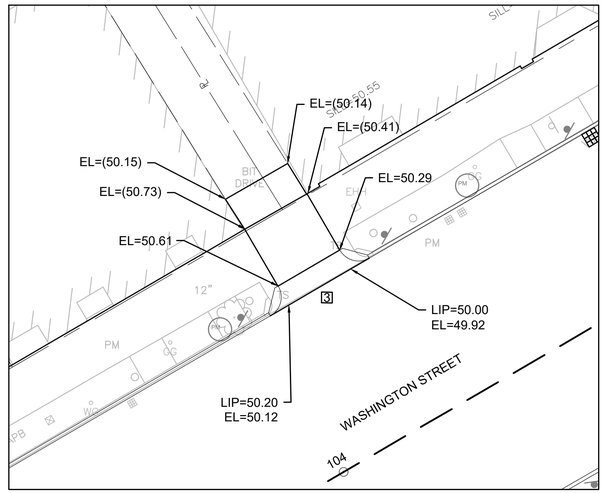
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK



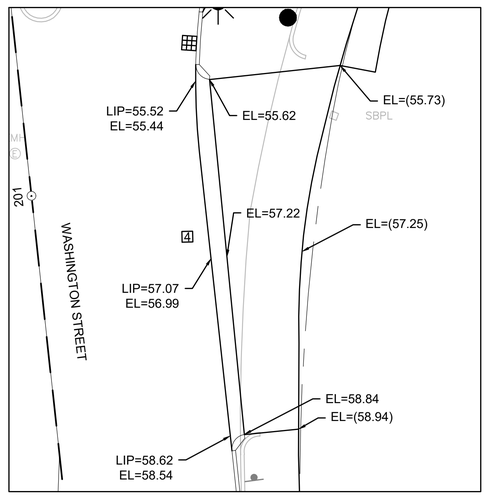
PROP. DRIVEWAY #1



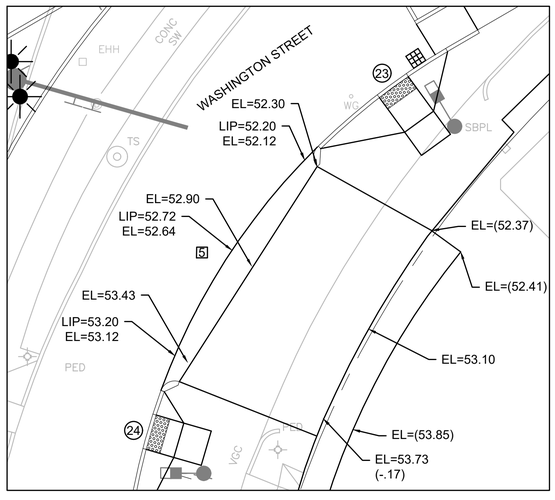
PROP. DRIVEWAY #2



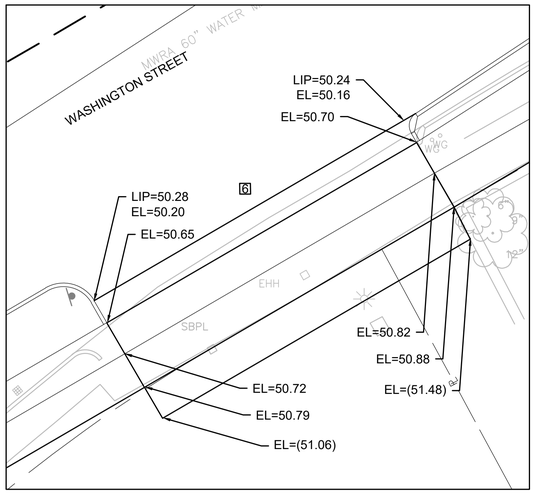
PROP. DRIVEWAY #3



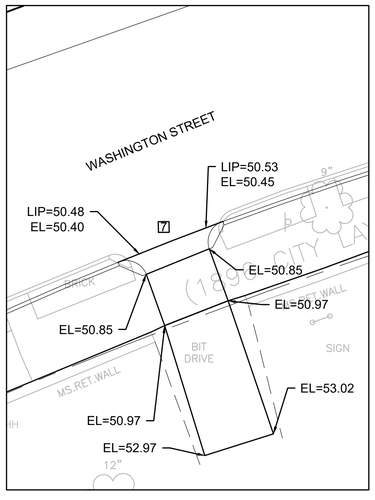
PROP. DRIVEWAY #4



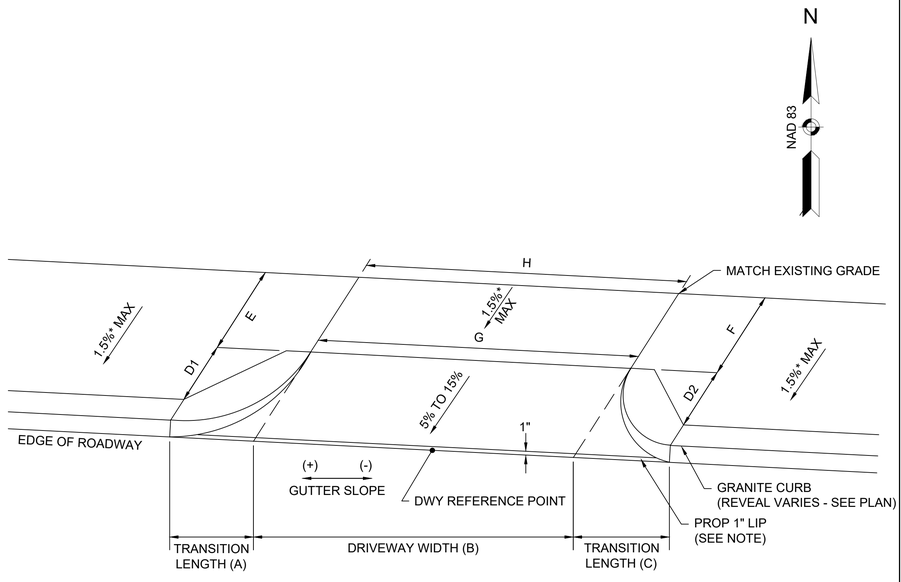
PROP. DRIVEWAY #5



PROP. DRIVEWAY #6



PROP. DRIVEWAY #7



SIDEWALK THROUGH DRIVEWAY WITH CURB RETURNS

NOT TO SCALE

* = 0.5% TOLERANCE FOR CONSTRUCTION

NOTES:

1. SEE GRADING PLANS FOR LOCATION OF PEDESTRIAN RAMPS.
2. FINAL RAMP ELEVATIONS SHALL GRADE TO DRAIN AND LAYOUT SHALL BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.
3. ALL PEDESTRIAN RAMP GRADES SHALL CONFORM TO THE MASSDOT ENGINEERING DIRECTIVE E-12-005, WALKS AND WHEELCHAIR RAMPS, DATED 03/27/12.
4. TRUNCATED DOME DETECTABLE WARNING PANEL TYPICAL FOR ALL RAMP TYPES, COLOR "YELLOW" TO BE APPROVED BY ENGINEER AND DPW COMMISSIONER.

LEGEND:

* = TOLERANCE FOR CONSTRUCTION ±0.5%

LL = LEVEL LANDING - 1.5%* MAX SLOPE FOR DRAINAGE

EL=12.34	PROP. ELEVATION
EL=12.34 (+.08)	PROP. ELEVATION HIGHER/LOWER THAN EXISTING BACK OF SIDEWALK (ELEVATION DELTA)
EL=(12.34)	EXIST. ELEVATION
##	PEDESTRIAN RAMP NUMBER
#	DRIVEWAY NUMBER

SCALE: 1" = 10'

DWY#	REFERENCE POINT		LENGTH OF PRIMARY RAMP		WIDTH OF SIDEWALK		WIDTH OF DRIVEWAY ENTRANCE (B) 5'-0" MIN	PATH OF TRAVEL (E/F) 3'-0" MIN	ROADWAY GUTTER SLOPE (+ OR -)	TRANSITION LENGTH	
	STATION	OFFSET	LEFT SIDE (D1)	RIGHT SIDE (D2)	LEFT SIDE (D1+E)	RIGHT SIDE (D2+F)				LEFT SIDE (A)	RIGHT SIDE (C)
1	102+33.90	24.11' LT	4.1'	4.1'	8.0'	8.0'	23'-3"	3'-6"	-	2.0'	2.0'
2	102+39.95	17.08' RT	2.0'	2.0'	8.4'	8.2'	21'-4"	6'-2"	+	2.0'	2.0'
3	104+10.15	24.00' LT	3.1'	3.1'	12.3'	12.2'	10'-0"	9'-1"	-	3.0'	3.0'
4	200+88.58	24.00' RT	2.0'	2.0'	20.3'	9.6'	49'-10"	7'-4"	+	2.0'	2.0'
5	201+62.71	45.40' RT	2.0'	2.0'	20.5'	22.7'	33'-0"	18'-5"	+	2.0'	2.0'
6	106+49.60	34.94' RT	3.6'	3.6'	14.0'	14.0'	50'-0"	10'-6"	+	2.0'	0.0'
7	108+50.72	38.06' RT	2.9'	3.0'	10.7'	10.7'	9'-6"	7'-7"	+	3.0'	3.0'

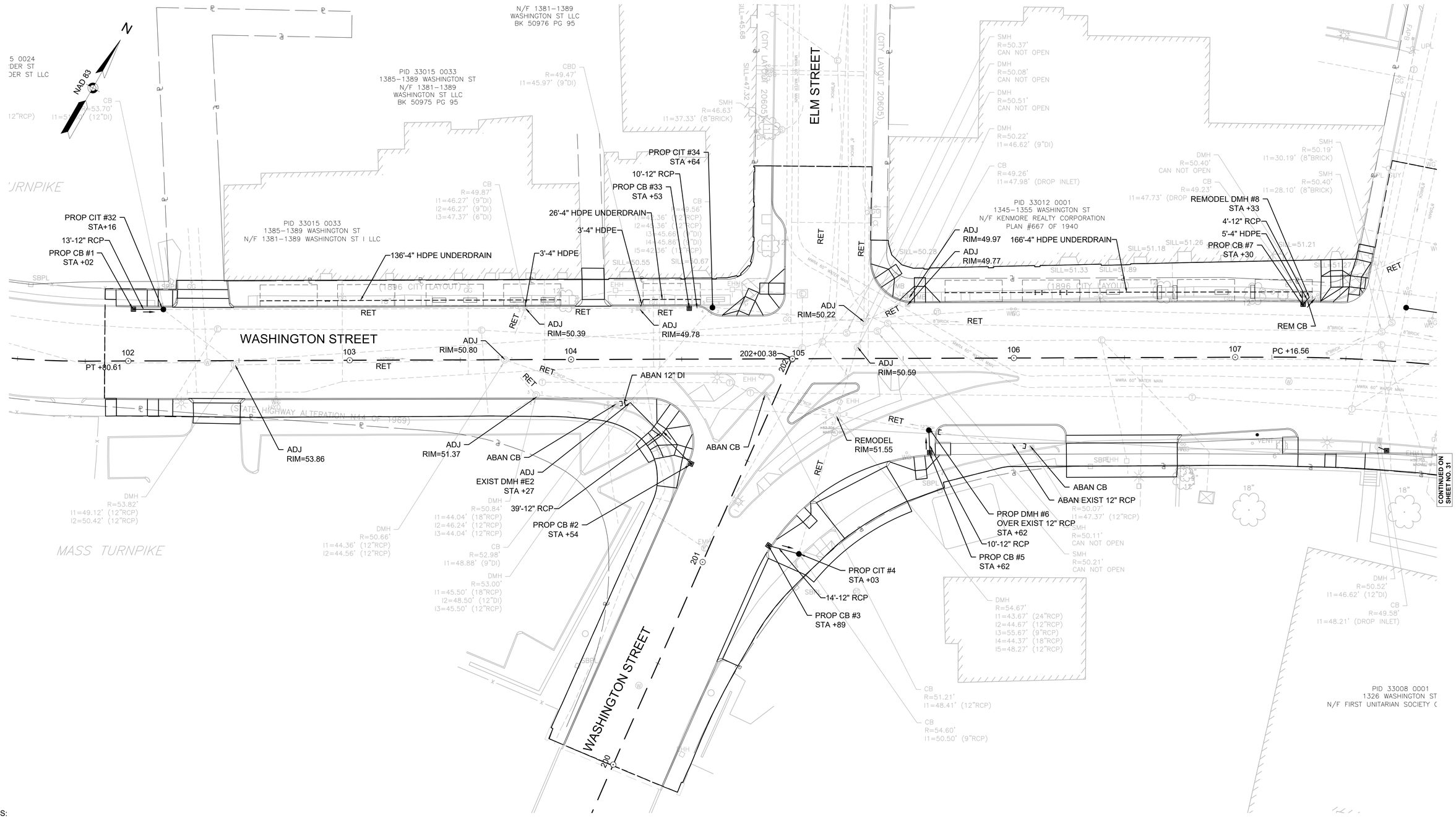
NOTE: PROPOSED ELEVATIONS SHOWN AT BASE OF PROPOSED DRIVEWAY CORRESPOND TO BOTTOM OF 1-INCH LIP.

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
DRIVEWAY DETAILS - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 29 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK



NOTES:

1. FOR CONSTRUCTION PLANS, SEE SHEETS 11-12
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEETS 17-18
3. FOR GRADING PLAN, SEE SHEETS 21-22
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25,27-28
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEETS 33-34
7. FOR LIGHTING PLANS, SEE SHEETS 48-49
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEETS 57,58
9. NO SEPARATE PAYMENT SHALL BE MADE FOR THE CONTRACTOR TO CORE INTO EXISTING DRAINAGE STRUCTURES. ALL COSTS ASSOCIATED WITH THIS EFFORT SHALL BE SUBSIDIARY TO THE RESPECTIVE PIPE ITEMS.

0 20 50 100

SCALE: 1" = 20'

DRAINAGE STRUCTURE DATA

STRUCT #	TYPE	STATION	PROF. GRADE	RIM ELEV	INV. (IN)	INV. (OUT)	REMARKS
1	CB	102+02.47 23.36 LT	54.99	54.15	-	(CIT #32) 51.84	DROP INLET
2	CB	201+38.69 22.67 LT	54.40	53.70	-	(DMH #E2) 49.96	
E2	DMH	104+26.69 19.55 RT	50.81	52.07	(CB #2) 48.01 (EXIST) 48.50 (EXIST) 45.50	(EXIST) 45.50	
3	CB	201+18.77 24.22 RT	55.74	55.15	-	(DMH #4) 51.54	
4	C.I.T. CB TO DMH	105+02.64 88.13 RT	50.74	55.29	(CB #3) 50.60	(EXIST) 50.50	
5	CB	105+61.92 42.65 RT	50.83	51.37	-	(DMH #6) 47.52	

DRAINAGE STRUCTURE DATA

STRUCT #	TYPE	STATION	PROF. GRADE	RIM ELEV	INV. (IN)	INV. (OUT)	REMARKS
6	DMH	105+61.52 32.38 RT	50.83	51.55	(CB #5) 45.96	(EXIST) 48.63	NEW DMH ON PIPE
7	CB	107+30.32 23.93 LT	50.90	50.10	-	(DMH #8) 46.74	
8	REMODEL DMH	107+32.97 27.31 LT	50.90	50.66	(CB #7) 46.70	(EXIST) 46.60	ASSUMED INV. OUT
32	C.I.T. CB TO DMH	102+16.02 23.25 LT	54.68	53.77	(CB #1) 51.70	(EXIST) 51.60	
33	CB	104+53.47 23.15 LT	50.71	49.75	(EXIST) 45.86	(CIT #34) 45.86	CB INSTALLED ON EXIST PIPE
34	C.I.T. CB TO DMH	104+63.97 23.22 LT	50.66	50.28	(EXIST) 45.36 (EXIST) 45.66 (CB #33) 45.86	(EXIST) 42.36 (EXIST) 42.36	ROADWAY TO SIDEWALK

NOTE:SEE CONSTRUCTION PLAN FOR DISPOSITION OF EXISTING GAS, ELECTRIC, TELEPHONE, WATER, SEWER, LIGHTING, AND TRAFFIC SIGNALS.

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

DRAINAGE & UTILITY PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 30 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

CITY OF NEWTON
MASSACHUSETTS

NOTES:

1. FOR CONSTRUCTION PLANS, SEE SHEETS 12-13
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEETS 18-19
3. FOR GRADING PLAN, SEE SHEETS 22-23
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-27
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEETS 34,36
7. FOR LIGHTING PLANS, SEE SHEETS 49-50
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEETS 58,59
9. NO SEPARATE PAYMENT SHALL BE MADE FOR THE CONTRACTOR TO CORE INTO EXISTING DRAINAGE STRUCTURES. ALL COSTS ASSOCIATED WITH THIS EFFORT SHALL BE SUBSIDIARY TO THE RESPECTIVE PIPE ITEMS.

0 20 50 100

SCALE: 1" = 20'

DRAINAGE STRUCTURE DATA

STRUCT #	TYPE	STATION/OFFSET (FT)	PROF. GRADE	RIM ELEV	INV. (IN)	INV. (OUT)	REMARKS
10	REMODEL DMH	107+67.23 39.04 RT	50.82	50.20	(CB #11) 46.72	(EXIST) 46.62	
11	CB	107+71.29 40.47 RT	50.82	50.18	-	(DMH #10) 46.76	
12	CB	108+07.56 22.61 LT	50.87	49.89	-	(DMH #6A) 45.32	
6A	DMH	107+75.37 24.55 LT	50.91	49.98	(CB#12) 44.99 (EXIST)	(EXIST)	PROP DMH OVER EXIST 8" DRAIN
13	CB	109+25.12 36.52 RT	51.11	50.31	-	(DMH #14) 47.85	
14	C.I.T. CB TO DMH	109+29.96 34.07 RT	51.09	50.35	(CB #13) 47.80	(EXIST) 47.78	

NOTE: SEE CONSTRUCTION PLAN FOR DISPOSITION OF EXISTING GAS, ELECTRIC, TELEPHONE, WATER, SEWER, LIGHTING, AND TRAFFIC SIGNALS.

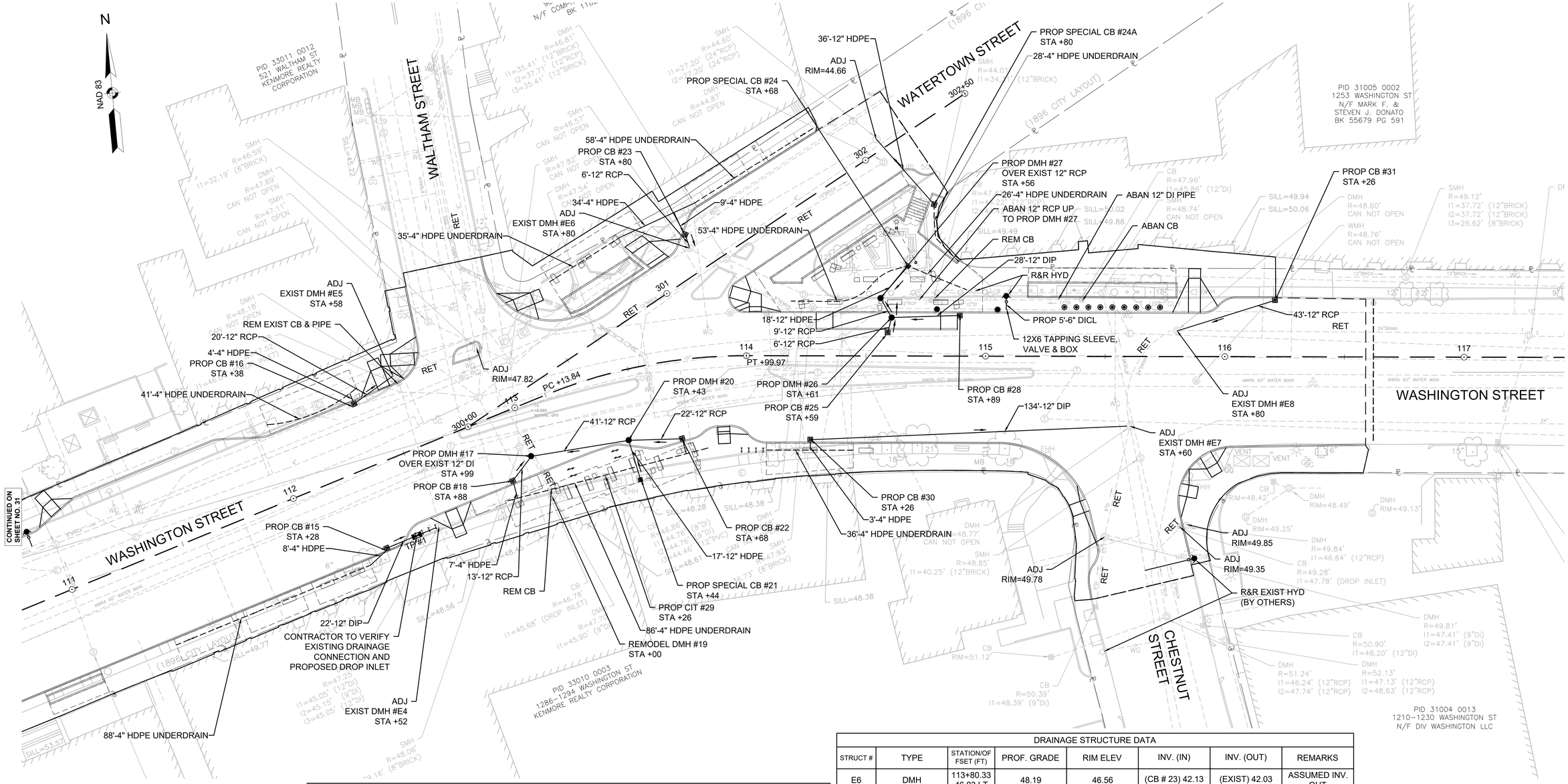
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

DRAINAGE & UTILITY PLAN - 2

SCALE: AS NOTED DATE: 1/16/19



NOTES:

1. FOR CONSTRUCTION PLANS, SEE SHEETS 13-14
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEETS 19-20
3. FOR GRADING PLAN, SEE SHEETS 23-24
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-26
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEETS 36-37
7. FOR LIGHTING PLANS, SEE SHEETS 50-51
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEETS 59,60
9. NO SEPARATE PAYMENT SHALL BE MADE FOR THE CONTRACTOR TO CORE INTO EXISTING DRAINAGE STRUCTURES. ALL COSTS ASSOCIATED WITH THIS EFFORT SHALL BE SUBSIDIARY TO THE RESPECTIVE PIPE ITEMS.

0 20 50 100

SCALE: 1" = 20'

DRAINAGE STRUCTURE DATA

STRUCT #	TYPE	STATION/OFF SET (FT)	PROF. GRADE	RIM ELEV	INV. (IN)	INV. (OUT)	REMARKS
15	CB	112+28.27 34.00 RT	48.60	47.80	-	(DMH #E4) 45.30	DROP INLET
E4	DMH	112+51.88 33.97 RT	48.50	48.18	(CB #15) 45.07	(EXIST) 45.05	
16	CB	112+38.49 26.97 LT	48.53	47.96	-	(DMH #E5) 43.96	
E5	DMH	112+57.97 31.56LT	48.49	48.17	(CB #16) 43.76	(EXIST) 43.65	ASSUMED INV. OUT
17	DMH	112+98.67 21.36 RT	48.37	47.95	(CB #18) 43.83	(EXIST) 43.73	PROP DMH OVER PIPE
18	CB	112+87.64 27.99 RT	48.37	47.85	-	(DMH #E5) 43.96	
19	REMODEL DMH	113+00.56 37.55 RT	48.37	48.09	(EXIST)	(EXIST)	
20	DMH	113+42.77 29.03 RT	48.21	47.95	(CB # 22) 44.34 (CB #21) 45.44	(DMH #17) 44.24	
21	SPECIAL CB	113+43.63 46.29 RT	48.21	47.96	-	(DMH #20) 45.46	W/ 18" GRATE
22	CB	113+68.41 32.42 RT	48.17	47.91	-	(DMH #20) 45.56	DROP INLET
23	CB	113+79.17 51.70 LT	48.18	46.38	-	(DMH #E6) 42.19	

DRAINAGE STRUCTURE DATA

STRUCT #	TYPE	STATION/OFF FSET (FT)	PROF. GRADE	RIM ELEV	INV. (IN)	INV. (OUT)	REMARKS
E6	DMH	113+80.33 46.03 LT	48.19	46.56	(CB # 23) 42.13	(EXIST) 42.03	ASSUMED INV. OUT
24	SPECIAL CB	114+67.56 37.57 LT	48.53	48.20	-	(DMH #27) 44.34	W/ 18" GRATE
24A	SPECIAL CB	114+79.25 65.48 LT	N/A	45.01	-	(EXIST) 41.01	W/ 8" DOME GRATE
25	CB	114+59.10 9.74 LT	48.51	48.00	-	(DMH #26) 44.39	
26	DMH	114+60.70 16.10 LT	48.51	48.47	(CB #25) 44.33 (CB #28) 44.33	(DMH #27) 44.23	
27	DMH	114+56.18 22.88 LT	48.50	48.31	(CB #24) 44.15 (DMH #26) 44.15	(EXIST) 44.05	
28	CB	114+89.20 16.99 LT	48.57	47.98	-	(DMH #26) 44.59	DROP INLET
29	C.I.T. CB TO DMH	113+26.47 40.43 RT	48.27	48.08	(EXIST) 44.76 (EXIST) 44.76	(EXIST) 44.46	
30	CB	114+26.69 35.07 RT	48.41	47.63	-	(DMH #E7) 44.95	
E7	DMH	115+60.53 29.06 RT	48.79	48.86	(EXIST) (EXIST) (CB #30) 43.61	(DMH #E8) 43.60±	SURVEY UNABLE TO OPEN
31	CB	116+21.03 23.58 LT	48.80	48.30	-	(DMH #E8) 44.30	
E8	DMH	115+80.06 10.71 LT	48.82	48.68	(DMH #E7) (CB #31) 43.86	(EXIST) 43.60±	SURVEY UNABLE TO OPEN

NOTE:SEE CONSTRUCTION PLAN FOR DISPOSITION OF EXISTING GAS, ELECTRIC, TELEPHONE, WATER, SEWER, LIGHTING, AND TRAFFIC SIGNALS.

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

DRAINAGE & UTILITY PLAN - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 32 OF 73

CITY OF NEWTON
MASSACHUSETTS

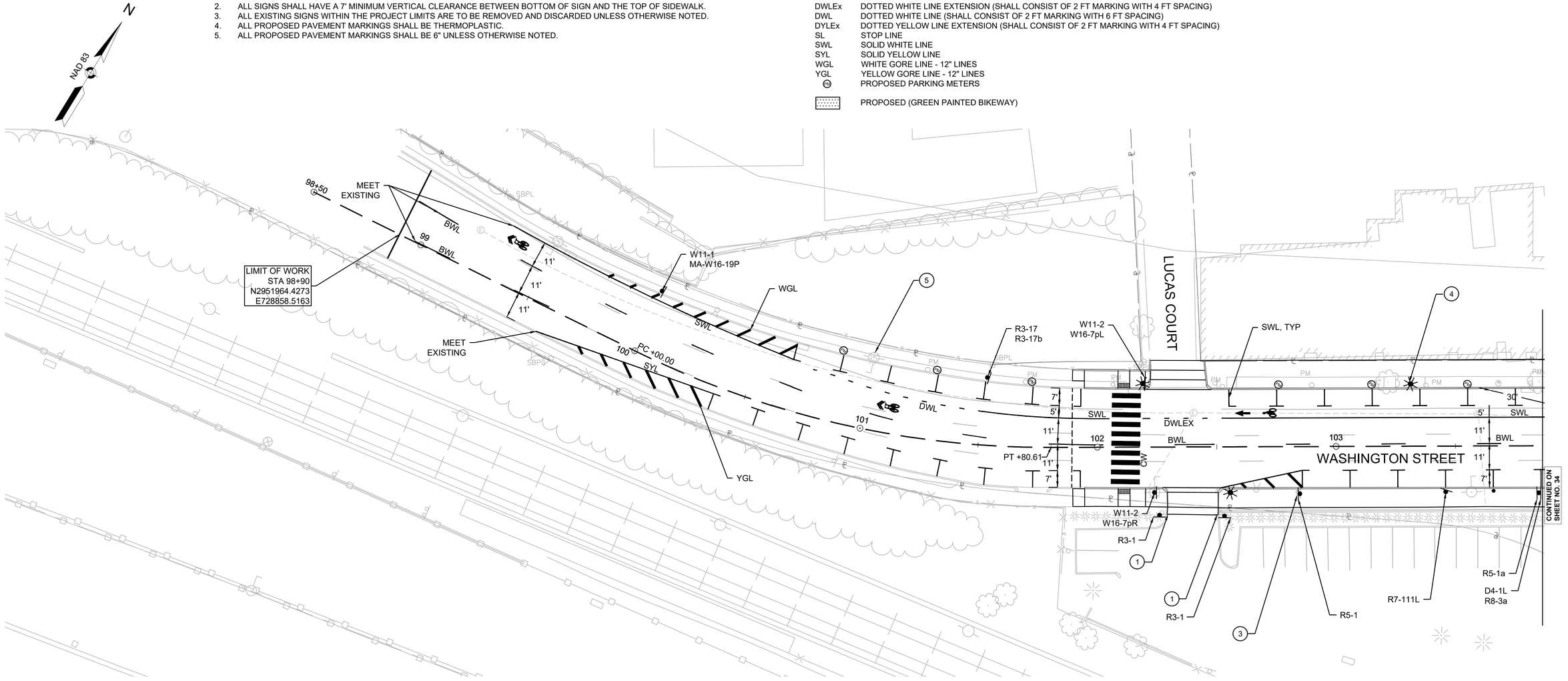
DESIGNED BY: AKB
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

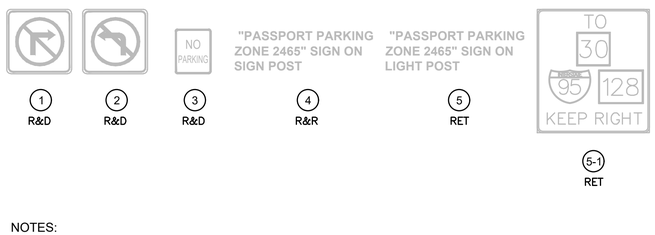
GENERAL NOTES

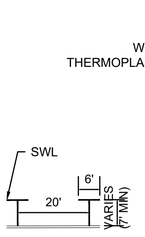
1. ALL SIGNS SHALL HAVE A 2' MINIMUM CLEARANCE BETWEEN EDGE OF SIGN AND FACE OF CURB.
2. ALL SIGNS SHALL HAVE A 7' MINIMUM VERTICAL CLEARANCE BETWEEN BOTTOM OF SIGN AND THE TOP OF SIDEWALK.
3. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS ARE TO BE REMOVED AND DISCARDED UNLESS OTHERWISE NOTED.
4. ALL PROPOSED PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
5. ALL PROPOSED PAVEMENT MARKINGS SHALL BE 6" UNLESS OTHERWISE NOTED.

PAVEMENT MARKING LEGEND

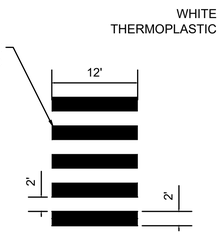
BWL	BROKEN WHITE LINE (SHALL CONSIST OF 10 FT MARKING WITH 30 FT SPACING)
CW	CROSSWALK
DBYL	DOUBLE YELLOW LINE
DWLEx	DOTTED WHITE LINE EXTENSION (SHALL CONSIST OF 2 FT MARKING WITH 4 FT SPACING)
DWL	DOTTED WHITE LINE (SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING)
DYLEx	DOTTED YELLOW LINE EXTENSION (SHALL CONSIST OF 2 FT MARKING WITH 4 FT SPACING)
SL	STOP LINE
SWL	SOLID WHITE LINE
SYL	SOLID YELLOW LINE
WGL	WHITE GORE LINE - 12" LINES
YGL	YELLOW GORE LINE - 12" LINES
PM	PROPOSED PARKING METERS
	PROPOSED (GREEN PAINTED BIKEWAY)



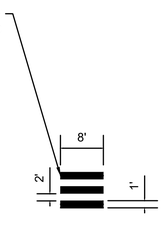




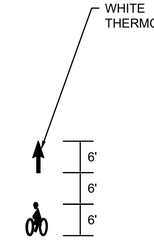
PARKING STALL



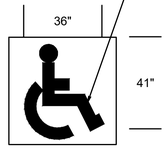
CROSSWALK MARKING



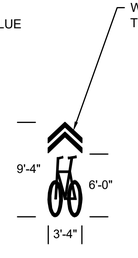
CROSSWALK MARKING IN BICYCLE LANE



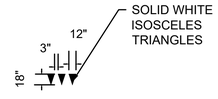
BIKE LANE MARKING



ACCESSIBLE PARKING SPACE MARKING



SHARED LANE MARKING



BICYCLE YIELD LINE

PAVEMENT MARKING DETAILS
N.T.S

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 11
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 17
3. FOR GRADING PLAN, SEE SHEET 21
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 28
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEET 30
7. FOR LIGHTING PLANS, SEE SHEET 48
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: RCP
DRAWN BY: AST
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-04.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGN AND PAVEMENT MARKING PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 33 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: RCP
DRAWN BY: AST
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-04.dwg

NAD 83

MEET EXISTING

ELM STREET

CHERRY STREET

WASHINGTON STREET

WASHINGTON STREET

HIGHLAND STREET

ONLY

FUTURE CHARGER LOCATIONS SEE SHEET 49

PARKING KIOSK

REFLECTORIZED FLEXIBLE DELINEATOR POST (WHITE) (BOLT-DOWN), TYP

REFLECTORIZED FLEXIBLE DELINEATOR POST (WHITE) (ADHESIVE)

BICYCLE YIELD LINE

35' MA & 25' MA

20' MA

WGL @ 45° 10' O.C, TYP

WGL, TYP

PC +16.56

PT +07.25

CONTINUED ON SHEET NO. 33

CONTINUED ON SHEET NO. 35

CONTINUED ON SHEET NO. 36

NONSTANDARD "RIGHT TURN ONLY" SIGN ON SIGN POST

"WEST 16 WELLESLEY" "ELM ST", SIGNS ON SIGN POST

"ELM ST", SIGN ON SIGN POST

"LEFT TURN FOR GAS STATION ONLY" SIGN ON SIGN POST

"ELM ST", "WASHINGTON ST" SIGNS ON SIGN POST

"CHERRY ST", "WASHINGTON ST" SIGNS ON SIGN POST

OVERHEAD "WEST 16 WELLESLEY ", "EAST 16 W.NEWTON WATERTOWN" SIGNS ON SIGN STRUCTURE (RETAIN SIGN STRUCTURE)

RET & MODIFY*

*NOTE: RIGHT MOST DOWN ARROW SHALL BE COVERED WITH MATCHING GREEN PANEL SUCH THAT EXISTING ARROW IS COMPLETELY COVERED. THE MATCHING GREEN PANEL SHALL BE AFFIXED BY METHOD APPROVED BY ENGINEER.

SCALE: 1" = 20'

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 12
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 18
3. FOR GRADING PLAN, SEE SHEET 22
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-27
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEETS 30-31
7. FOR LIGHTING PLANS, SEE SHEET 49
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

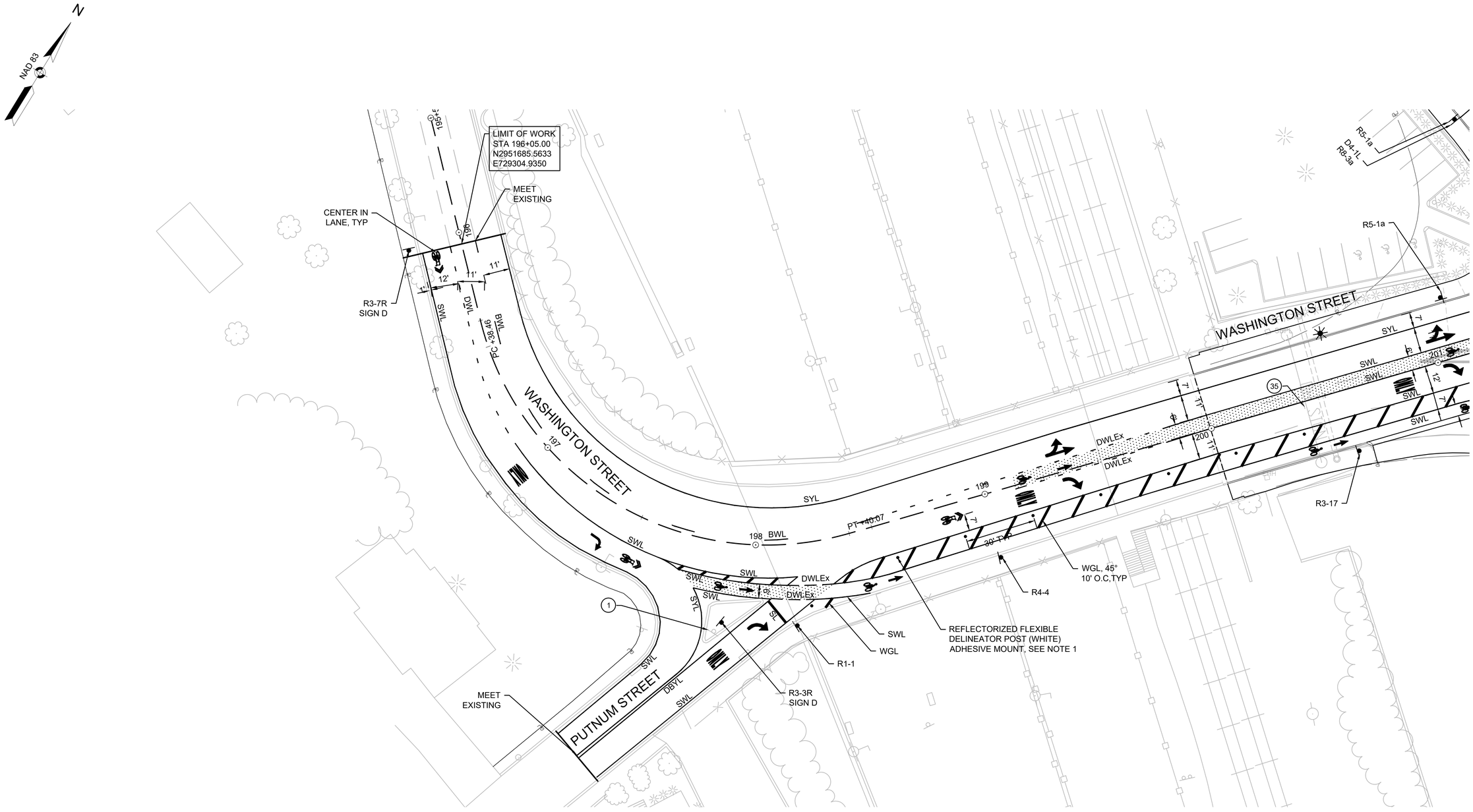
CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGN AND PAVEMENT MARKING PLAN - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 34 OF 73



NOTES:

1. REFLECTORIZED FLEXIBLE DELINEATOR POST (WHITE) PLACED ON THE EXISTING BRIDGE DECK SHALL BE ADHESIVE MOUNT ONLY. SEE CONSTRUCTION DETAILS AND SPECIAL PROVISIONS.

1
RET

0 20 50 100
SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: RCP
DRAWN BY: AST
CHECKED BY: RCP
APPROVED BY: RDK

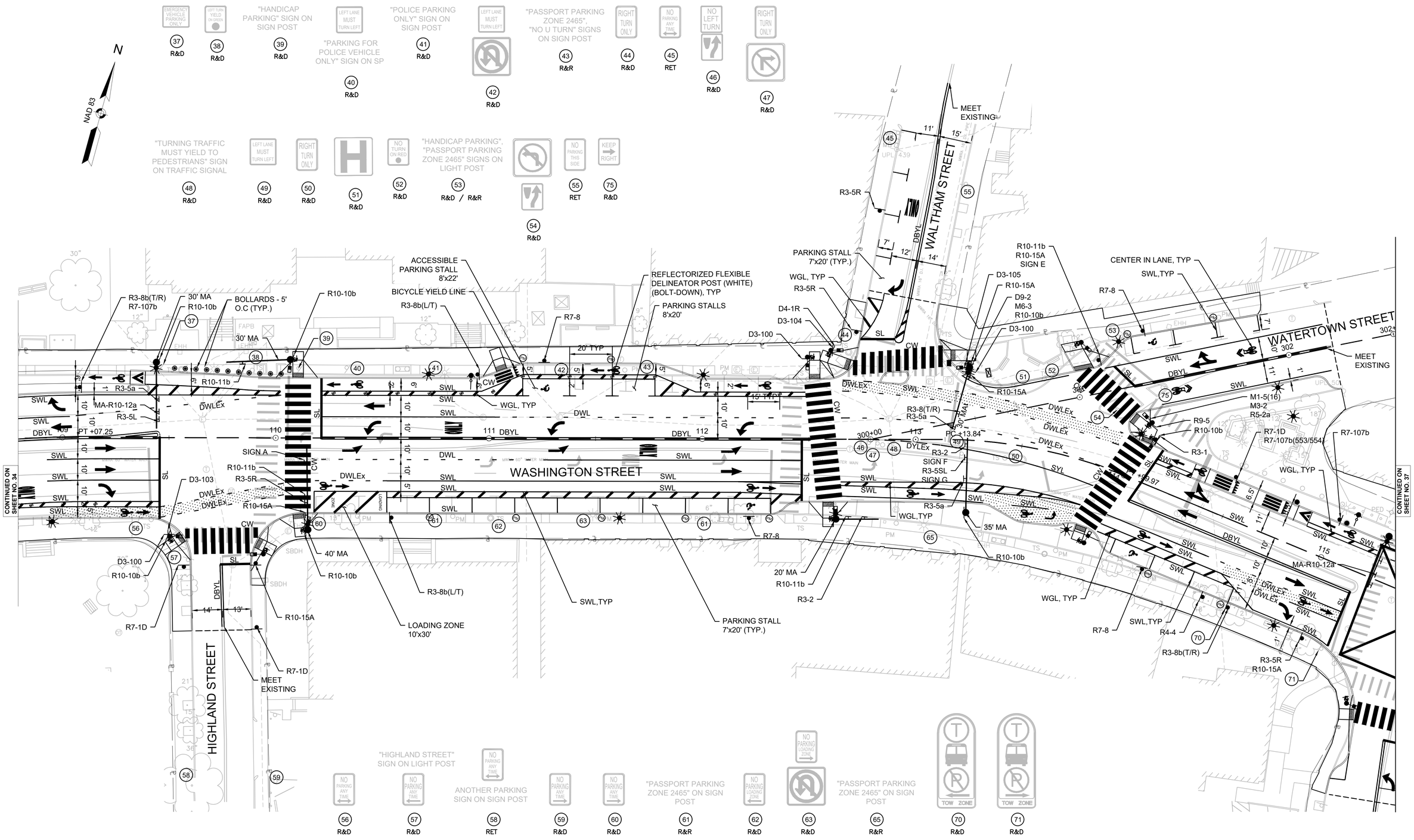
CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGN AND PAVEMENT MARKING PLAN - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 35 OF 73

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-04.dwg



0 20 50 100

SCALE: 1" = 20'

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 13
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 19
3. FOR GRADING PLAN, SEE SHEET 23
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-28
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEETS 31-32
7. FOR LIGHTING PLANS, SEE SHEET 50
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGN AND PAVEMENT MARKING PLAN - 4

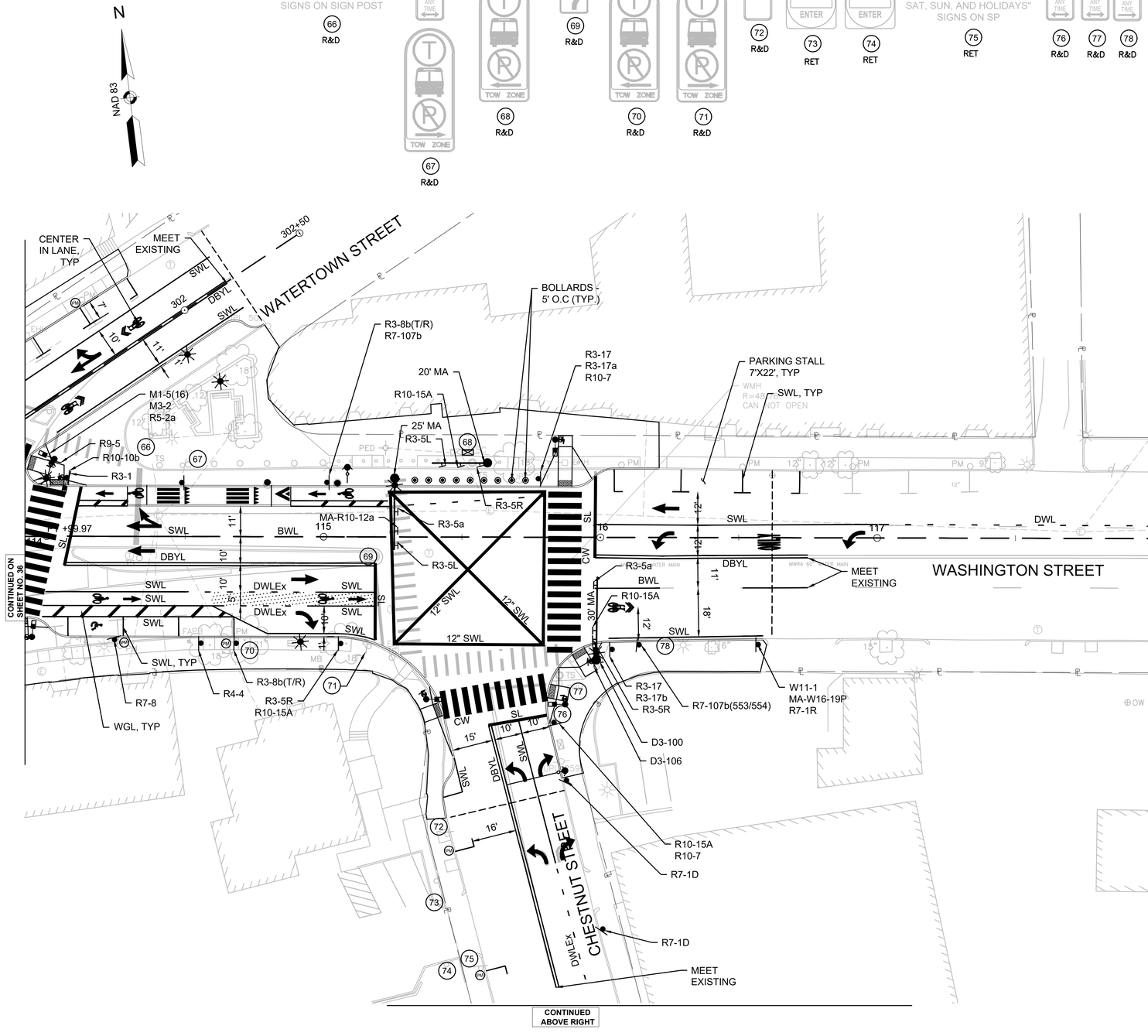
SCALE: AS NOTED DATE: 1/16/19 SHEET 36 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: RCP
DRAWN BY: AST
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C--04.dwg



NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 14
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 20
3. FOR GRADING PLAN, SEE SHEET 24
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 26
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEET 32
7. FOR LIGHTING PLANS, SEE SHEET 51
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100
SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGN AND PAVEMENT MARKING PLAN - 5

SCALE: AS NOTED DATE: 1/16/19 SHEET 37 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: RCP
DRAWN BY: AST
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-04.dwg

TRAFFIC SIGN SUMMARY

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS(IN)			NUMBER REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA(S.F.)	TOTAL AREA(S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
D3-100	50	12	Washington St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	6	GREEN	WHITE	WHITE	MOUNT ON SIGNAL POLE	4.20	25.20
D3-101	50	12	Elm St	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D3-102	50	12	Cherry St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D3-103	50	12	Highland St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D3-104	50	12	Waltham St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D3-105	50	12	Watertown St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D3-106	50	12	Chestnut St (*PBS)	4D/3D 3D/2.25D	3" 3"	N/A	1	GREEN	WHITE	WHITE	MOUNT W/ D3-100	4.20	4.20
D4-1L	30	24	P ARKING	(1)	(1)	(1)	1	WHITE	GREEN	GREEN	P5 1 REQ'D	5.00	5.00
D4-1R	30	24	P ARKING				1	WHITE	GREEN	GREEN	P5 1 REQ'D	5.00	5.00
D9-2	24	24	H				1	BLUE	WHITE	WHITE	P5 1 REQ'D	4.00	4.00
R1-1	36	36	STOP				1	RED	WHITE	WHITE	P5 1 REQ'D	9.00	9.00
R3-1	30	30					3	WHITE	RED BLACK	BLACK	P5 3 REQ'D	6.25	18.75
R3-2	30	30					2	WHITE	RED BLACK	BLACK	P5 2 REQ'D	6.25	12.50
R3-4	30	30					2	WHITE	RED BLACK	BLACK	P5 2 REQ'D	6.25	12.50
R3-5a	30	36	ONLY				4	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	30.00
R3-5L	30	36	ONLY				5	WHITE	BLACK	BLACK	P5 4 REQ'D	7.50	37.50
R3-5R	30	36	ONLY				10	WHITE	BLACK	BLACK	P5 4 REQ'D	7.50	75.00
R3-5SL	30	36	ONLY				1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50
R3-7L	30	30	LEFT LANE MUST TURN LEFT	↓	↓	↓	1	WHITE	BLACK	BLACK	P5 3 REQ'D	6.25	6.25
R3-7R	30	30	RIGHT LANE MUST TURN RIGHT	(1)	(1)	(1)	1	WHITE	BLACK	BLACK	P5 5 REQ'D	6.25	6.25
R3-6L	30	36					1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50
R3-6R	30	36					1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50
R3-8b (L/LR)	36	30	ONLY				3	WHITE	BLACK	BLACK	P5 3 REQ'D	7.50	22.5
R3-8b (L/T)	36	30	ONLY ONLY				3	WHITE	BLACK	BLACK	P5 3 REQ'D	7.50	22.50
R3-8b (T/T/R)	48	30	ONLY ONLY ONLY				1	WHITE	BLACK	BLACK	P5 2 REQ'D	10.00	10.00
R3-8b (T/R)	36	30	ONLY ONLY				3	WHITE	BLACK	BLACK	P5 3 REQ'D	7.50	22.50
R3-17	30	24	BIKE LANE				4	WHITE	BLACK	BLACK	P5 4 REQ'D	5.00	20.00
R3-17a	30	12	AHEAD				1	WHITE	BLACK	BLACK	MOUNT W/ R3-17	2.50	2.50
R3-17b	30	12	ENDS				2	WHITE	BLACK	BLACK	MOUNT W/ R3-17	2.50	5.00
R4-4	36	30	BEGIN RIGHT TURN LANE YIELD TO BIKES				2	WHITE	BLACK	BLACK	P5 2 REQ'D	7.50	15.00
R5-1	30	30	DO NOT ENTER				4	RED	WHITE	WHITE	P5 1 REQ'D	6.25	25.00
R5-1a	30	18	WRONG WAY				3	RED	WHITE	WHITE	P5 1 REQ'D	3.75	11.25
R5-2a	24	30	8PM TO 7AM				1	WHITE	BLACK RED	BLACK	P5 1 REQ'D	5.00	5.00
R6-1R	36	12	ONE WAY				2	WHITE	BLACK	WHITE	MOUNT W MAST ARM & MOUNT W R5-1a	3.00	6.00
R7-1D	12	18	NO PARKING ANY TIME				10	WHITE	RED	RED	P5 10 REQ'D	1.50	15.00
R7-1L	12	18	NO PARKING ANY TIME				4	WHITE	RED	RED	P5 1 REQ'D	1.50	6.00
R7-1R	12	18	NO PARKING ANY TIME	↓	↓	↓	4	WHITE	RED	RED	P5 4 REQ'D	1.50	6.00

* PRINT ON BOTH SIDES

NOTES

1. NUMERICAL LIMITS AND JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSDOT, BEFORE FABRICATION AND/OR ERECTION.
2. HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" 2009 EDITION, THE 1996 MASSDOT CONSTRUCTION AND TRAFFIC STANDARD DETAILS", AND ALL AMENDMENTS WILL GOVERN.
3. (1) SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION FOR TEXT DIMENSIONS AND COLOR.

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
TRAFFIC SIGN SUMMARY SHEET - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 38 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

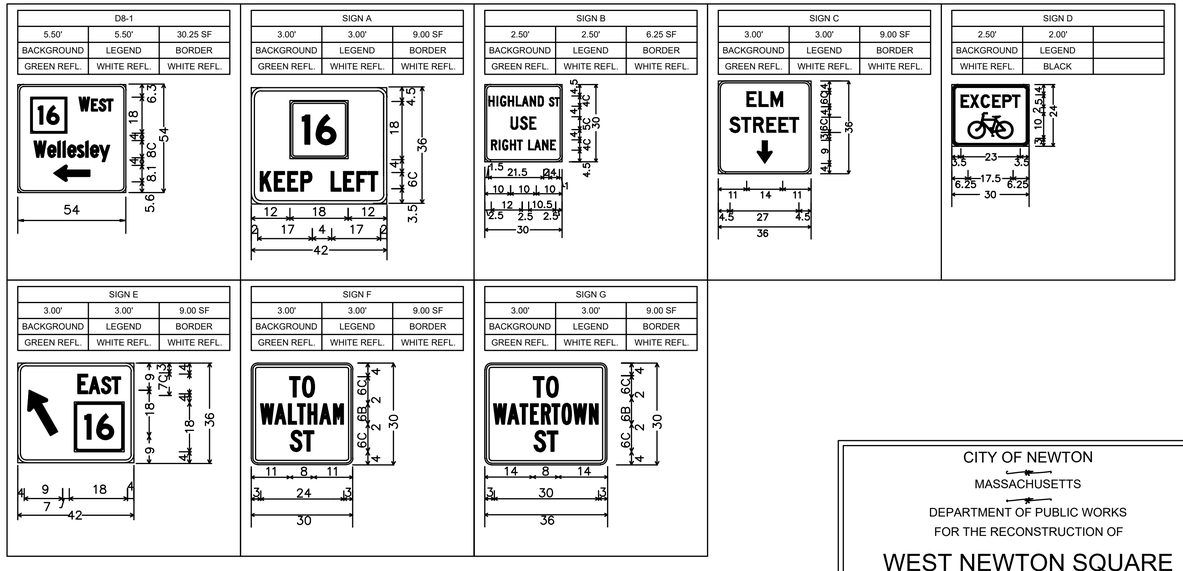
PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-04.dwg

TRAFFIC SIGN SUMMARY (CONT'D.)

SIGN ID NUMBER	SIZE		MESSAGE	DIMENSIONS(IN)			NUMBER REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA(S.F.)	TOTAL AREA(S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R7-107b (553/554)	12	40	ADD ROUTE INFORMATION BUS STOP FOR ROUTE 533/534	MBTA STANDARD			3	MBTA STANDARD			P5 3 REQ'D	3.33	9.99
R7-111L	12	18	NO PARKING EXCEPT ELECTRIC VEHICLES ←	(1)	(1)	(1)	1	WHITE	RED	RED	P5 4 REQ'D	1.50	1.50
R7-111R	12	18	NO PARKING EXCEPT ELECTRIC VEHICLES →				1	WHITE	RED	RED	P5 4 REQ'D	1.50	1.50
R7-8L	12	18	RESERVED PARKING ←				5	WHITE	BLUE GREEN	GREEN	P5 5 REQ'D	1.50	7.50
R7-8R	12	18	RESERVED PARKING →				X	WHITE	BLUE GREEN	GREEN	P5 5 REQ'D	1.50	7.50
R8-3a	24	30	NO PARKING				1	WHITE	RED	RED	P5 1 REQ'D	5.00	5.00
R9-5	12	18	USE PED SIGNAL				1	WHITE	BLACK	BLACK	MOUNT ON PED SIGNAL POST	1.50	1.50
R10-3e	15	9	COUNT-DOWN PEDESTRIAN SIGN				28	WHITE	RED BLACK	BLACK	MOUNT ON PED SIGNAL POST	0.94	26.32
R10-7	24	30	DO NOT BLOCK INTERSECTION				2	WHITE	BLACK	BLACK	MOUNT W/R3-17 R10-15A	4.50	9.00
R10-10b	12	18	SIGNAL				17	WHITE	BLACK	BLACK	MOUNT 10 ON MASTER ARM & MOUNT 7 ON PED SIGNAL POST	1.50	25.50
R10-11b	30	36	NO TURN ON RED				6	WHITE	RED BLACK	BLACK	P5 1 REQ'D & 5 MOUNT ON MASTER ARM	12.00	72.00
MA-R10-12a	30	36	LEFT TURN YIELD ON FLASHING				3	WHITE	GREEN BLACK	BLACK	MOUNT ON MASTER ARM	7.50	22.50
R10-15A	30	30	TURNING VEHICLES TO				16	WHITE	YELLOW RED BLACK	BLACK	MOUNT 12 ON SIGNAL POLE MOUNT 4 ON P5 1 REQ'D	6.25	100.00
R10-15B	30	30	TURNING VEHICLES TO				3	WHITE	YELLOW RED BLACK	BLACK	MOUNT 2 ON MASTER ARM MOUNT 1 W/R5-1	6.25	18.75
MA-M1-5(16)	24	24	16				1	WHITE	BLACK	BLACK	P5 1 REQ'D	4.00	4.00
MA-W16-19P	24	18	ON ROADWAY				3	YELLOW	BLACK	BLACK	MOUNT W/ W11-1	3.00	9.00
M3-2	24	12	EAST				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2.00	2.00
M6-3	21	15	↑				1	BLUE	WHITE	WHITE	MOUNT W/ D9-2	2.00	2.00
W11-1	24	24		↓	↓	↓	3	YELLOW	BLACK	BLACK	P5 2 REQ'D	4.00	12.00
W11-2	30	30		(1)	(1)	(1)	2	YELLOW	BLACK	BLACK	P5 1 REQ'D & MOUNT 1 ON LIGHT POLE	6.25	12.50
W16-7PL	30	18	↙				1	YELLOW	BLACK	BLACK	MOUNT W/ W11-2	3.75	3.75
W16-7pR	30	18	↘				1	YELLOW	BLACK	BLACK	MOUNT ON LIGHT POLE	3.75	3.75
MA-D1-5	54	54	16 WEST Wellesley ←	7C/6C 8C	6.3 11.0 4.0 4.0 5.6	8.1x18	1	GREEN	WHITE	WHITE	P5 1 REQ'D	20.25	20.25
SIGN A	42	36	16 KEEP LEFT	6C	4 4 4	N/A	1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM	10.50	10.50
SIGN B	30	30	HIGHLAND ST USE RIGHT LANE	4C 5C 4C	4.5 4 4 4.5	N/A	2	GREEN	WHITE	WHITE	P5 2 REQ'D	6.25	12.50
SIGN C	36	36	ELM STREET ↓	6D	4 4 3 4	6X9	1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM	9.00	9.00
SIGN D	30	24	EXCEPT	4C	3 1.25 2.25	N/A	2	WHITE	BLACK	BLACK	P5 2 REQ'D	5.00	10.00
SIGN E	42	36	EAST 16 ↖	7C/6C	4 3 4	8.1x18 @ 60° ANGLE	1	GREEN	WHITE	WHITE	MOUNT ON MAST ARM	10.50	10.50
SIGN F	30	30	TO WALTHAM ST	6C 6B 6C	4 2 2 4	N/A	1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	6.25	6.25
SIGN G	36	30	TO WATERTOWN ST	6C 6B 6C	4 2 2 4	N/A	1	WHITE	BLACK	BLACK	MOUNT ON MAST ARM	7.50	7.50

TRAFFIC SIGN DETAILS



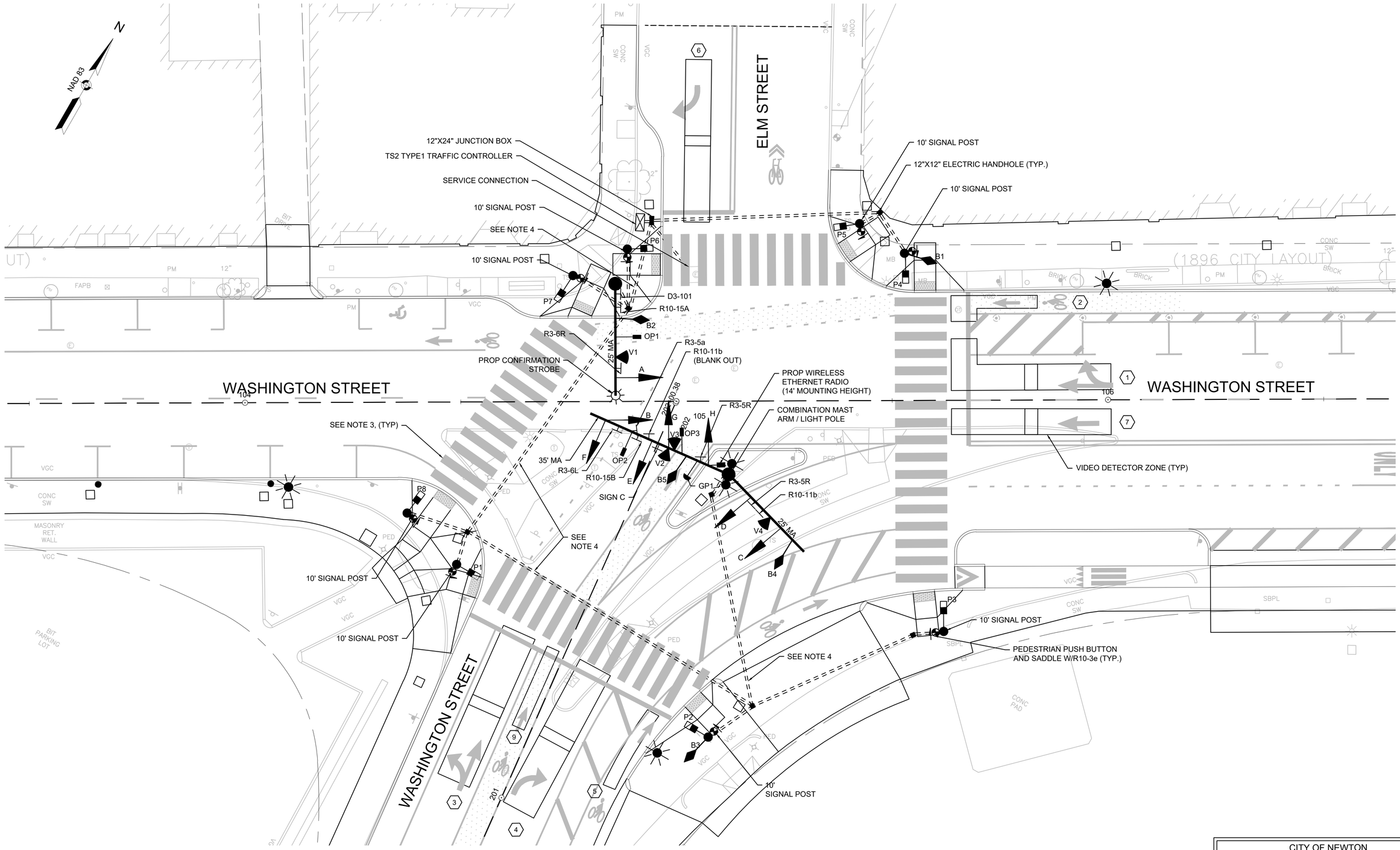
CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
TRAFFIC SIGN SUMMARY SHEET - 2

SCALE: AS NOTED DATE: 1/16/19 SHEET 39 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-04.dwg



CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\plitt\d2084567\00C-05.dwg

0 10 20 30 40
SCALE: 1" = 10'

NOTES

1. THE CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES TO COORDINATE NECESSARY RELOCATIONS AND ADJUSTMENTS.
2. UNLESS OTHERWISE NOTED, ALL EXISTING SIGNAL EQUIPMENT AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED.
3. PROPOSED PAVEMENT MARKINGS ARE SHOWN IN GRAY FOR CLARITY.
4. INSTALL FOUR TOTAL CONDUITS ACROSS WASHINGTON STREET AND ELM STREET.

LEGEND

- PEDESTRIAN SIGNAL HOUSING
- BICYCLE SIGNAL HOUSING
- OPTICAL PRE-EMPTION RECEIVER
- GPS PRE-EMPTION RECEIVER
- VEHICLE SIGNAL HOUSING
- VIDEO DETECTOR CAMERA
- (#) VIDEO DETECTOR NUMBER

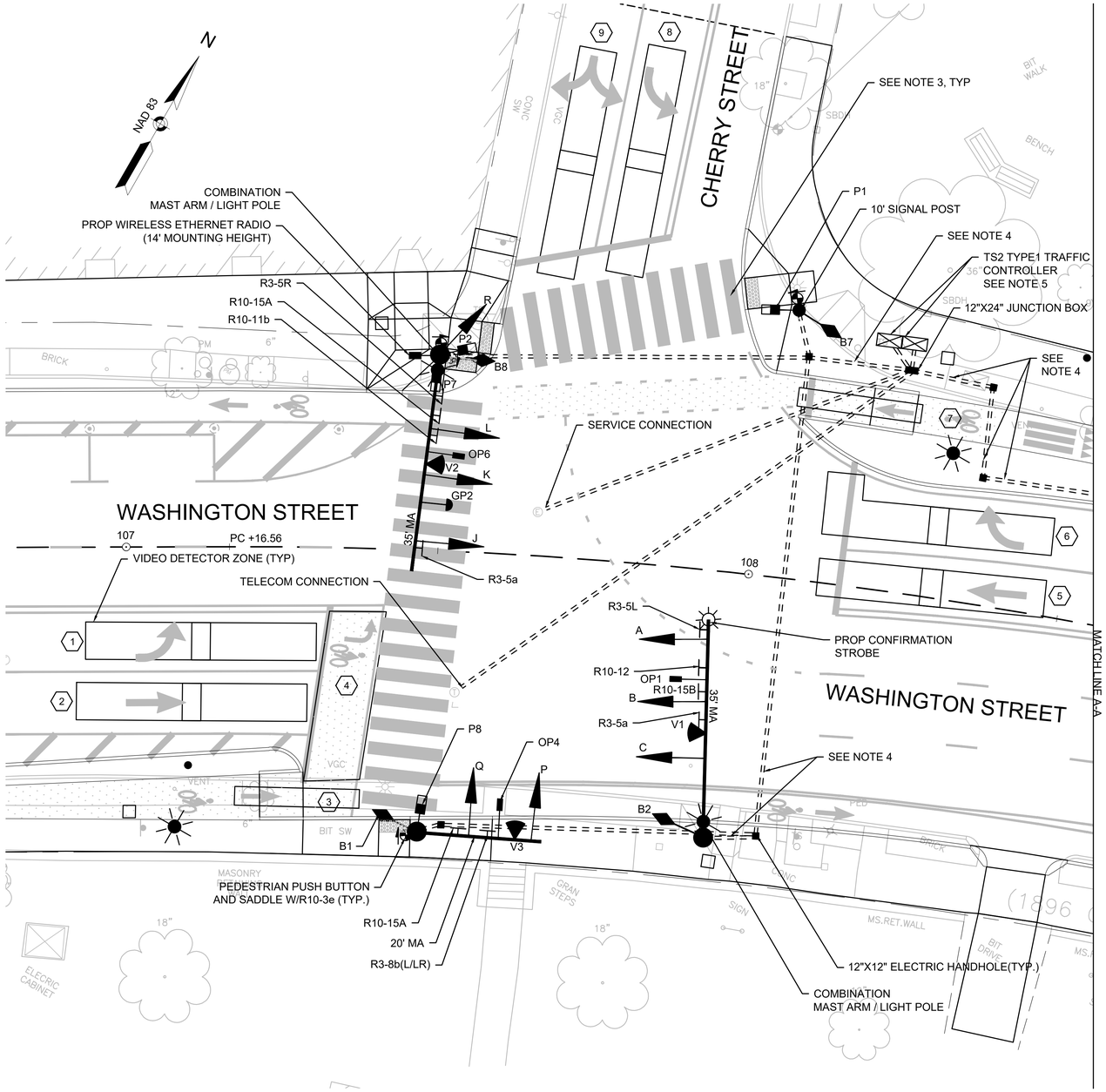
CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 40 OF 73



LEGEND

- PEDESTRIAN SIGNAL HOUSING
- BICYCLE SIGNAL HOUSING
- OPTICAL PRE-EMPTION RECEIVER
- GPS PRE-EMPTION RECEIVER
- VEHICLE SIGNAL HOUSING
- VIDEO DETECTOR CAMERA
- # VIDEO DETECTOR NUMBER

NOTES

1. THE CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES TO COORDINATE NECESSARY RELOCATIONS AND ADJUSTMENTS.
2. UNLESS OTHERWISE NOTED, ALL EXISTING SIGNAL EQUIPMENT AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED.
3. PROPOSED PAVEMENT MARKINGS ARE SHOWN IN GRAY FOR CLARITY.
4. INSTALL FOUR TOTAL CONDUITS ACROSS WASHINGTON STREET, CHERRY STREET AND HIGHLAND STREET, AS WELL AS THE NORTH SIDE OF WASHINGTON STREET BETWEEN CHERRY STREET AND HIGHLAND STREET.
5. THE CONTRACTOR SHALL CONNECT THE TWO TRAFFIC CONTROLLERS WITH PEER-TO-PEER COMMUNICATIONS, AND PROGRAM THE TWO CONTROLLERS SO THAT THEY OPERATE AS ONE.
6. CHERRY STREET CONTROLLER WILL BE MASTER CONTROLLER. BOTH CABINETS SHOULD HAVE ONE ETHERNET SWITCH, BUT ONLY CHERRY STREET CONTROLLER SHOULD HAVE WIRELESS LINK.

0 10 20 30 40

SCALE: 1" = 10'

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL PLAN - 2

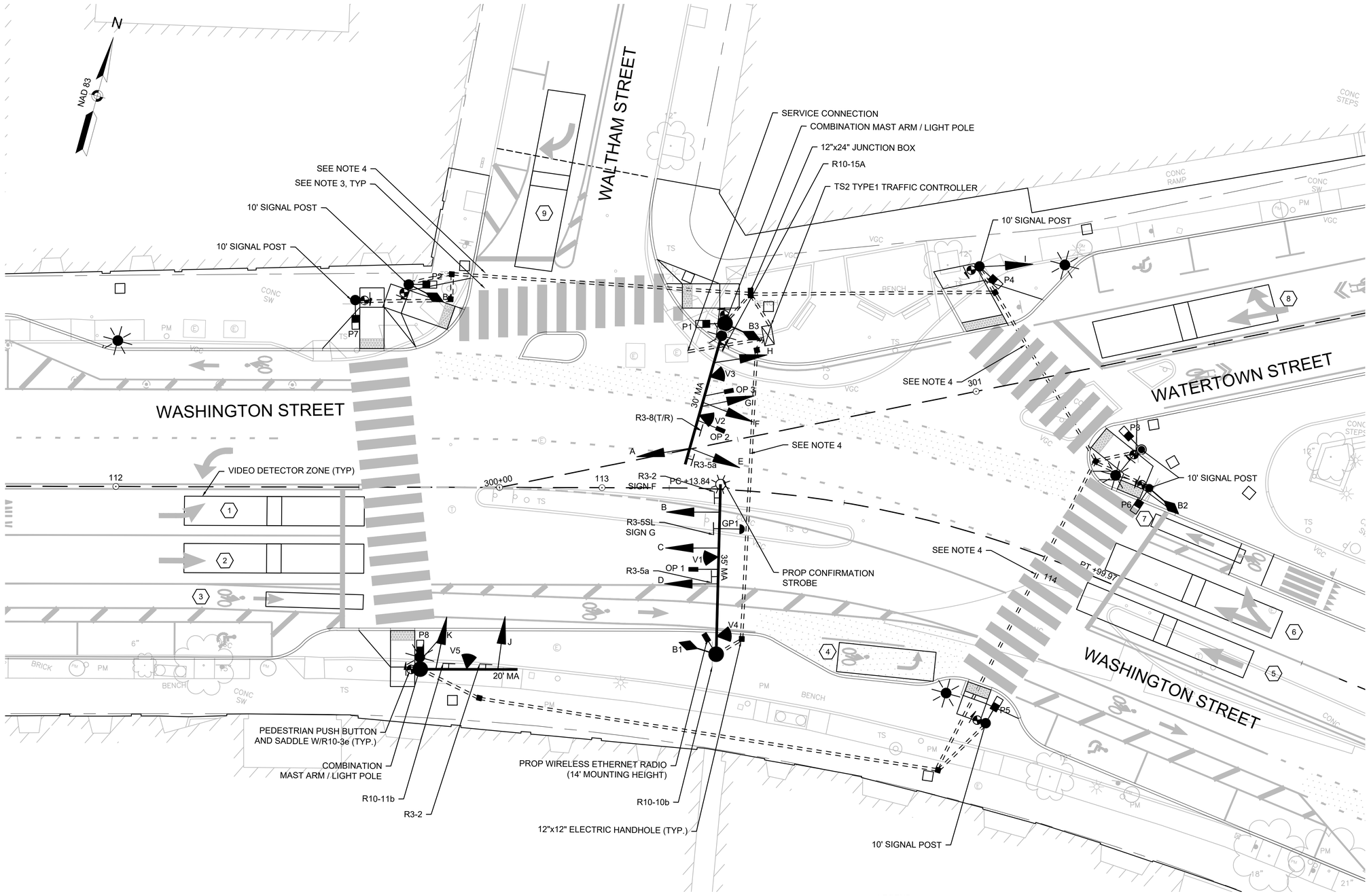
SCALE: AS NOTED DATE: 1/16/19 SHEET 41 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-05.dwg



LEGEND

- PEDESTRIAN SIGNAL HOUSING
- BICYCLE SIGNAL HOUSING
- OPTICAL PRE-EMPTION RECEIVER
- GPS PRE-EMPTION RECEIVER
- VEHICLE SIGNAL HOUSING
- VIDEO DETECTOR CAMERA
- (#) VIDEO DETECTOR NUMBER

0 10 20 30 40

SCALE: 1" = 10'

NOTES

1. THE CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES TO COORDINATE NECESSARY RELOCATIONS AND ADJUSTMENTS.
2. UNLESS OTHERWISE NOTED, ALL EXISTING SIGNAL EQUIPMENT AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED.
3. PROPOSED PAVEMENT MARKINGS ARE SHOWN IN GRAY FOR CLARITY.
4. INSTALL FOUR TOTAL CONDUITS ACROSS WASHINGTON STREET, WALTHAM STREET AND WATERTOWN STREET.

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\jtit\d2084567\00C-05.dwg

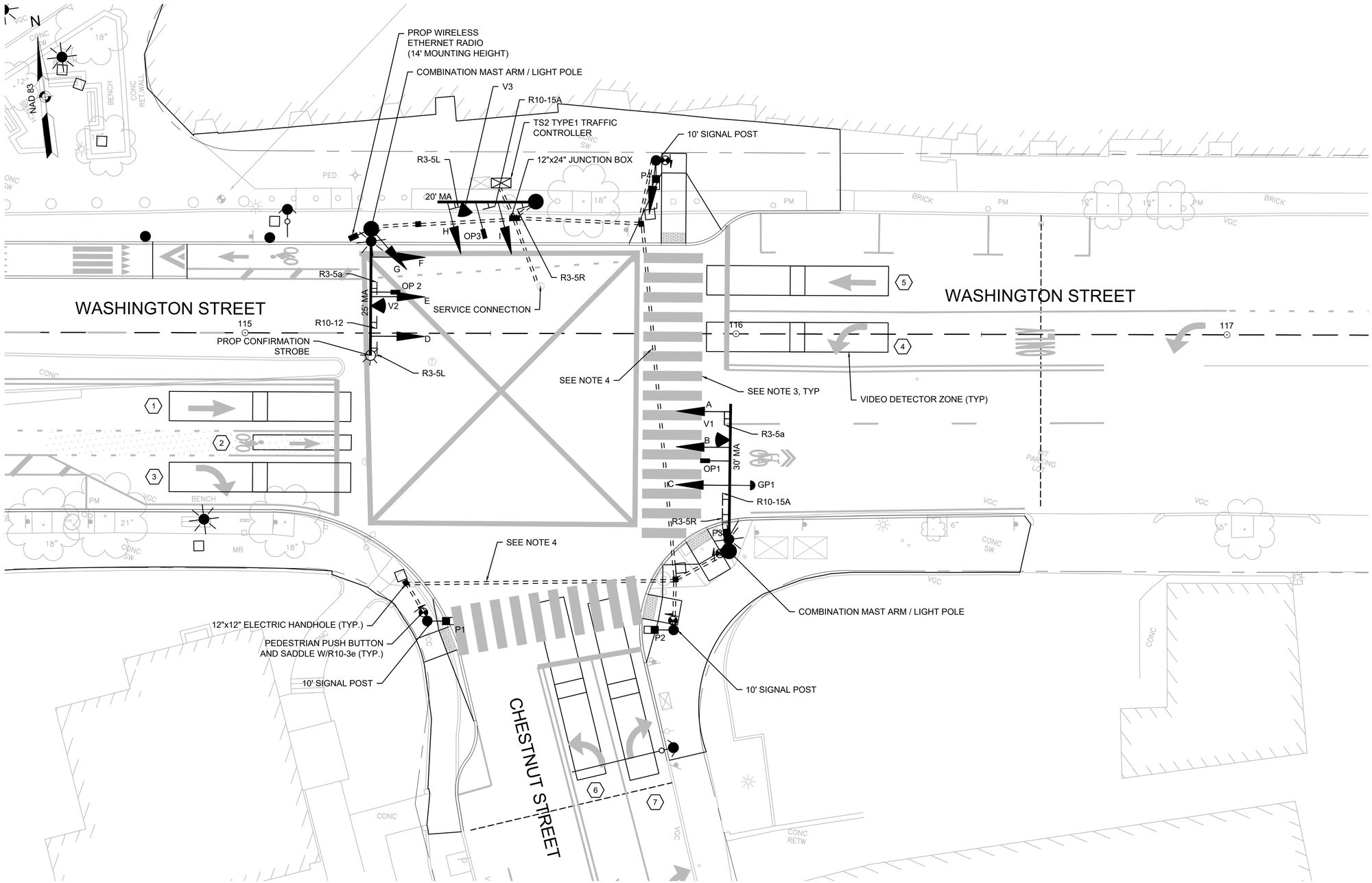
CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL PLAN - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 42 OF 73



NOTES

1. THE CONTRACTOR SHALL CONTACT APPROPRIATE UTILITY COMPANIES TO COORDINATE NECESSARY RELOCATIONS AND ADJUSTMENTS.
2. UNLESS OTHERWISE NOTED, ALL EXISTING SIGNAL EQUIPMENT AND FOUNDATIONS SHALL BE REMOVED AND DISPOSED.
3. PROPOSED PAVEMENT MARKINGS ARE SHOWN IN GRAY FOR CLARITY.
4. INSTALL FOUR TOTAL CONDUITS ACROSS WASHINGTON STREET AND CHESTNUT STREET.

LEGEND

- PEDESTRIAN SIGNAL HOUSING
- BICYCLE SIGNAL HOUSING
- OPTICAL PRE-EMPTION RECEIVER
- GPS PRE-EMPTION RECEIVER
- VEHICLE SIGNAL HOUSING
- VIDEO DETECTOR CAMERA
- (#) VIDEO DETECTOR NUMBER

0 10 20 30 40

SCALE: 1" = 10'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-05.dwg

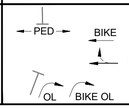
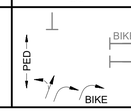
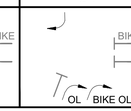
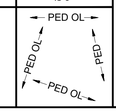
CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL PLAN - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 43 OF 73

TRAFFIC SIGNAL DATA - ELM STREET AT WASHINGTON STREET

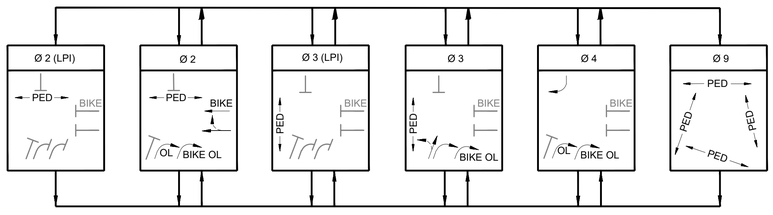
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø9
							

SEQUENCE AND TIMING																											
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
WASHINGTON STREET	WB	A,B				R	G	Y	R	R	R	R	R	R	R	R											R	R	R	FY
WASHINGTON STREET/ELM BRIDGE	NB (RIGHT)	C,D				RR	GR	YR	RR	RR	GR	YR	RR	GR	YR	RR											RR	RR	RR	FY
WASHINGTON STREET/ELM BRIDGE	NB (LEFT/THRU)	E,F				R	R	R	R	R	G	Y	R	R	R	R											R	R	R	FR
ELM STREET	SB	G,H				R	R	R	R	R	R	R	R	G	Y	R											R	R	R	FR
PEDESTRIANS	EB-WB	P1,P2				DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW											W	FDW	DW	OFF
PEDESTRIANS	EB-WB	P5,P6				W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW											W	FDW	DW	OFF
PEDESTRIANS	NB-SB	P7,P8				DW	DW	DW	DW	W	W	FDW	DW	DW	DW	DW											W	FDW	DW	OFF
PEDESTRIANS	NB-SB	P3,P4				DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW											W	FDW	DW	OFF
BIKES	WB	B1,B2				R	G	Y	R	R	R	R	R	R	R	R											R	R	R	OFF
BIKES	NEB	B3, B4				R	G	Y	R	R	G	Y	R	G	Y	R											R	R	R	OFF
BIKES	NB	B5				R	R	R	R	R	G	Y	R	R	R	R											R	R	R	OFF
TIMING IN SECONDS																													EMERGENCY ONLY
MINIMUM GREEN (INITIAL)							6				6			6															
PASSAGE TIME (VEHICLE)							3				3			3															
MAXIMUM 1							42				38			39															
MAXIMUM 2							45				38			36															
YELLOW CLEARANCE								3.5				3.5			3														
RED CLEARANCE									4.5				4.5			1													3
WALK (W)						4	3			4	3															7			
PEDESTRIAN CLEARANCE								10				12															17		
RECALL(VEHICLE)						SOFT				NONE				NONE												NONE			
MEMORY						NON-LOCKING				NON-LOCKING				NON-LOCKING												LOCK			

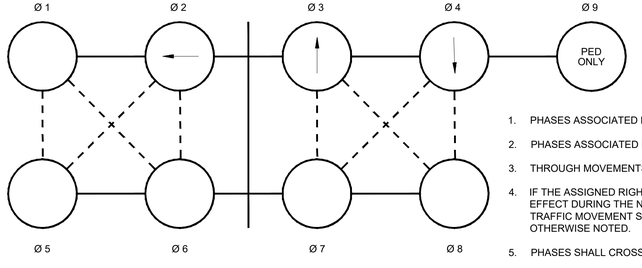
COORDINATION DATA			COORDINATION PHASE TIMING							
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
TP1(M-F 6AM-10AM)	120	9		33	30	29				28
TP2(M-F 2PM-7PM)	120	5		36	29	27				28

NOTES:
1. OFFSET REFERENCES Ø2 START OF YELLOW
2. OFFSET SEEKING SHALL BE SHORTWAY METHOD
3. COORDINATION MODE SHALL BE YIELD
4. COORDINATION AM, 6AM TO 10AM M-F
5. COORDINATION PM, 2PM TO 7PM M-F
6. FREE OPERATION ALL OTHER TIMES

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
5. PHASES SHALL CROSS THE RING BARRIER AT THE SAME TIME.

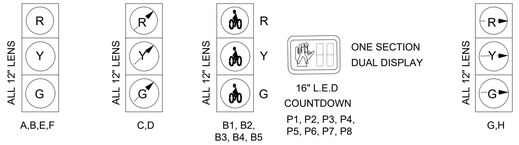
EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR	DETECTOR
WASHINGTON ST WESTBOUND	2	OP1	GP1
ELM STREET NORTHBOUND / WASHINGTON ST EASTBOUND	3	OP2	
ELM STREET SOUTHBOUND	4	OP3	

EMERGENCY VEHICLE PREEMPTION OPERATION:

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

SIGNAL IDENTIFICATION



NOTES:
1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
816.01	1	CONTROLLER NEMA 8 PHASE TS2-TYPE 1, CAB.& FDN.
	1	SERVICE CONNECTION, UNDERGROUND
	8	10' POLE, BASE, & FDN. - ORNAMENTAL
	2	25 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	35 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	8	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	8	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	5	1 WAY, 3 SECTION, BICYCLE HOUSING (12" L.E.D.)
	1	BLANK OUT SIGN
	8	APS PEDESTRIAN PUSH BUTTON
	5	VIDEO DETECTOR CAMERA (1 SPARE)
	1	9" VIDEO MONITOR
	2	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
	3	OPTICAL PRE-EMPTION RECEIVER-SINGLE CHANNEL
	1	OPTICAL PRE-EMPTION CARD RACK
	1	PRE-EMPTION COMFIRMATION STROBE (WHITE)
	1	GPS BASED EMERGENCY VEHICLE PRE-EMPTION SYSTEM
	11	REMOVE AND STACK EXISTING TRAFFIC SIGNALS
	1	WIRELESS ETHERNET RADIO - POLE MOUNTED
	1	ETHERNET SWITCH
804.3	1212 FT	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
811.22	6	ELECTRIC HANDHOLE - SD2.022
811.85	1	JUNCTION BOX 24 X 12 X 12 INCHES
		PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION.

VIDEO DETECTOR DATA

DELAY THE EFFECTIVE ONLY DURING CALLED Ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	2 @ 6' X 20' 1 @ 6' X 6'	2	2	B	-	-
7	V1	2	2 @ 6' X 20'	2	2	B	-	-
2	V1	3	1 @ 3' X 20' 1 @ 3' X 3'	2	2	B	-	-
3	V2	1	2 @ 8' X 20'	3	3	B	-	-
9	V2	2	1 @ 3' X 20'	3	3	B	-	-
6	V3	1	2 @ 6' X 20'	4	4	B	-	-
4	V4	1	2 @ 8' X 20'	3	3	B	-	-
5	V4	2	1 @ 3' X 20'	3	3	B	-	-

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL DETAILS - 1

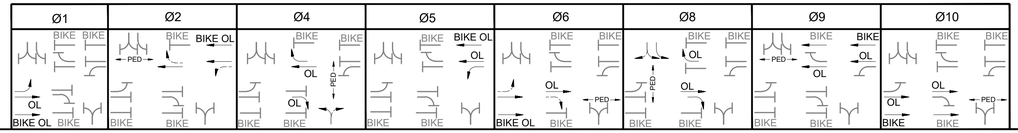
SCALE: AS NOTED DATE: 1/16/19 SHEET 44 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-05.dwg

TRAFFIC SIGNAL DATA - CHERRY STREET / HIGHLAND STREET AT WASHINGTON STREET

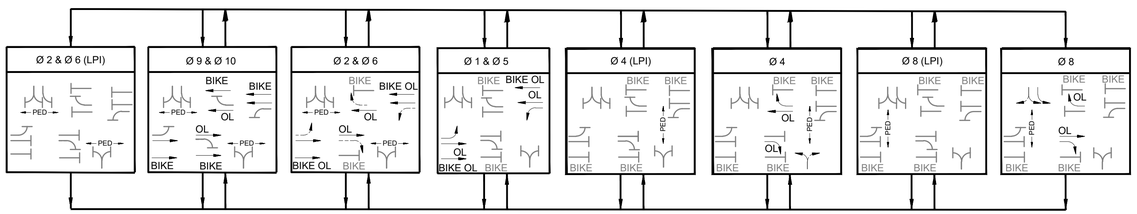


SEQUENCE AND TIMING																														
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	FLASH OPER.
WASHINGTON STREET	EB LEFT(CHERRY)	A	GL	YL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL		RL	FYL	YL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	FR
WASHINGTON STREET	EB(CHERRY)	B,C	G	Y	R	R	R	R	R	R	R	R	R	R	R	R		R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	FY
WASHINGTON STREET	WB LEFT(HIGHLAND)	D	RL	RL	RL	RL	FYL	YL	RL	RL	RL	RL	RL	GL	YL	RL		RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	RL	FR
WASHINGTON STREET	WB(HIGHLAND)	E,F	R	R	R	R	G	Y	R	R	R	R	R	G	Y	R		R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	FY
WASHINGTON STREET	EB(HIGHLAND)	G,H	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	G	Y	R	R	G	Y	R	R	R	R	R	R	G	Y	R	FY
WASHINGTON STREET	EB RIGHT(HIGHLAND)	I	RR	RR	RR	RR	RR	RR	RR	RR	GR	YR	RR	RR	RR	RR		RR	FYR	YR	RR	RR	GR	YR	RR	RR	RR	RR	RR	RR	RR	RR	RR	FYR
WASHINGTON STREET	WB(CHERRY)	J,K	R	R	R	R	G	Y	R	R	G	Y	R	R	R	R		R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	FY
WASHINGTON STREET	WB RIGHT(CHERRY)	L	RR	RR	RR	RR	FYR	YR	RR	RR	GR	YR	RR	RR	RR	RR		RR	RR	RR	RR	RR	GR	YR	RR	RR	RR	RR	RR	RR	RR	RR	RR	FYR
HIGHLAND STREET	NB	M,N,O	R	R	R	R	R	R	R	R	G	Y	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	FR
CHERRY STREET	SB	P,Q,R	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	R	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	FR
PEDESTRIANS	EB WB(CHERRY)	P1,P2	DW	DW	DW	W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW		DW	DW	DW	DW	DW	DW	DW	DW	W	W	FDW	DW	DW	DW	DW	DW	OFF
PEDESTRIANS	EB WB(HIGHLAND)	P3,P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW		W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	W	FDW	DW	OFF
PEDESTRIANS	NB SB(HIGHLAND)	P5,P6	DW	DW	DW	DW	DW	DW	DW	W	W	FDW	DW	DW	DW	DW		DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF
PEDESTRIANS	NB SB(CHERRY)	P7,P8	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW		DW	DW	DW	DW	W	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF
BIKES	EB(CHERRY)	B1,B2	G	Y	R	R	R	R	R	R	R	R	R	R	R	R		R	G	Y	R	R	R	R	R	R	R	R	R	R	G	Y	R	OFF
BIKES	EB(HIGHLAND)	B3,B4	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	OFF
BIKES	WB(HIGHLAND)	B5,B6	G	Y	R	R	G	Y	R	R	R	R	R	G	Y	R		R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R	OFF
BIKES	WB(CHERRY)	B7,B8	R	R	R	R	R	R	R	R	R	R	R	R	R	R		R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	OFF
TIMING IN SECONDS																																		
MINIMUM GREEN (INITIAL)			8				8				8			8					8				8				8				8			EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			3				3				3			3					3				3				3				3			
MAXIMUM 1			24				45				43			21					42				37				12				12			
MAXIMUM 2			27				45				39			25					42				38				12				12			
YELLOW CLEARANCE				3.5				3.5				3.5			3.5					3.5				3.5				3.5				3.5		
RED CLEARANCE					1				3				1			1					2.5				1				3				2.5	
WALK (W)						4	3			4	3							4	3			4	3			4	3			4	3			
PEDESTRIAN CLEARANCE								9				15								11				16				9				11		
BIKE MINIMUM GREEN (INITIAL)			8				8							8					8								8				8			
BIKE MAXIMUM 1			12				12							12					12								12				12			
BIKE MAXIMUM 2			12				12							12					12								12				12			
BIKE YELLOW CLEARANCE				3.5				3.5							3.5					3.5								3.5				3.5		
BIKE RED CLEARANCE					1				3							1					2.5								3				2.5	
RECALL(VEHICLE)			NONE			SOFT				NONE				NONE				SOFT				NONE				SOFT				SOFT			
MEMORY			NON-LOCKING			NON-LOCKING				NON-LOCKING				NON-LOCKING				NON-LOCKING				NON-LOCKING				NON-LOCKING				NON-LOCKING			

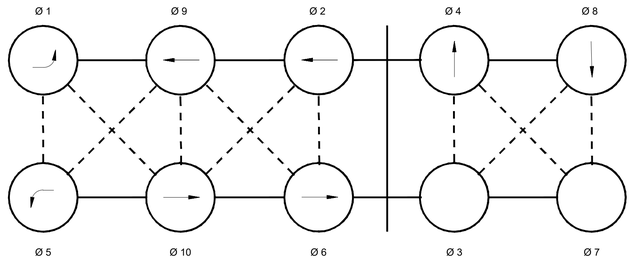
COORDINATION DATA (3)			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	
TP1(M-F 6AM-10AM)	120	0	12	35	39	14	33	34			
TP2(M-F 2PM-7PM)	120	0	16	35	35	18	33	34			

NOTES:
1. OFFSET REFERENCES Ø2 + Ø6 START OF YELLOW
2. OFFSET SEEKING SHALL BE SHORTWAY METHOD
3. COORDINATION MODE SHALL BE YIELD
4. COORDINATION AM, 6AM TO 10AM M-F
5. COORDINATION PM, 2PM TO 7PM M-F
6. FREE OPERATION ALL OTHER TIMES
7. PERMISSIVE FLASHING YELLOW LEFT AND RIGHT TURN ARROW INDICATIONS DURING PHASE 2 AND PHASE 6 SHALL ONLY OPERATE WHEN BICYCLISTS ARE NOT DETECTED AT STOP LINE OR UPSTREAM INTERSECTIONS AT CHERRY STREET OR HIGHLAND STREET. IF BICYCLISTS ARE DETECTED, LEFT AND RIGHT TURN INDICATIONS AT WESTBOUND CHERRY STREET AND EASTBOUND HIGHLAND STREET SHALL BE RED.

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
5. PHASES SHALL CROSS THE RING BARRIER AT THE SAME TIME.

EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR OPTICAL	DETECTOR GPS
WASHINGTON ST EASTBOUND	6	OP1	GP1
WASHINGTON ST WESTBOUND	2	OP2	
HIGHLAND ST NORTHBOUND	4	OP3	
CHERRY ST SOUTHBOUND	8	OP4	GP2
WASHINGTON ST EASTBOUND (INT. CLEARANCE)	6	OP5	
WASHINGTON ST WESTBOUND (INT. CLEARANCE)	2	OP6	

EMERGENCY VEHICLE PREEMPTION OPERATION:

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

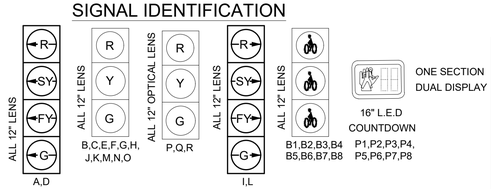
	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
816.02	2	CONTROLLER NEMA 8 PHASE TS2-TYPE 1, CAB.& FDN.
	1	SERVICE CONNECTION, UNDERGROUND
	3	10' POLE, BASE, & FDN. - ORNAMENTAL
	1	20 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	2	30 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	2	35 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	40 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	11	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	3	1 WAY, 3 SECTION, SIGNAL HOUSING (12" OPTICAL)
	4	1 WAY, 4 SECTION, SIGNAL HOUSING (12" L.E.D.)
	8	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	8	1 WAY, 3 SECTION, BICYCLE HOUSING (12" L.E.D.)
	8	APS PEDESTRIAN PUSH BUTTON
	7	VIDEO DETECTOR CAMERA (1 SPARE)
	2	9" VIDEO MONITOR
	3	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
	6	OPTICAL PRE-EMPTION RECEIVER-SINGLE CHANNEL
	2	OPTICAL PRE-EMPTION CARD RACK
	2	PRE-EMPTION COMFIRMATION STROBE (WHITE)
	2	GPS BASED EMERGENCY VEHICLE PRE-EMPTION SYSTEM
	7	REMOVE AND STACK EXISTING TRAFFIC SIGNALS
	1	WIRELESS ETHERNET RADIO - POLE MOUNTED
	2	ETHERNET SWITCH
804.3	1960 FT	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
811.22	8	ELECTRIC HANDHOLE - SD2.022
811.85	1	JUNCTION BOX 24 X 12 X 12 INCHES
		PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION.

VIDEO DETECTOR DATA

DELAY THE EFFECTIVE ONLY DURING CALLED Ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	2 @ 6' X 20'	1	1	B	-	-
2	V1	2	2 @ 6' X 20'	6	6	B	-	-
3	V1	3	1 @ 3 X 20'	10	10	B	-	7
4	V1	4	1 @ 9' X 30'	1	1	B	-	-
5	V2	1	2 @ 6' X 20'	2	2	B	-	-
6	V2	2	2 @ 6' X 20'	2	2	B	-	-
7	V2	3	1 @ 3' X 20'	9	9	B	-	-
8	V3	1	2 @ 6' X 20'	8	8	B	-	-
9	V3	2	2 @ 6' X 20'	8	8	B	-	-
10	V4	1	2 @ 6' X 20'	6	6	B	-	-
11	V4	2	2 @ 6' X 20'	6	6	B	-	-
12	V4	3	2 @ 6' X 20'	6	6	B	-	-
13	V4	4	1 @ 3 X 20'	10	10	B	-	-
14	V5	1	2 @ 6' X 20'	5	5	B	-	-
15	V5	2	2 @ 6' X 20'	2	2	B	-	-
16	V5	3	1 @ 3' X 20'	9	9	B	-	7
17	V6	1	2 @ 6' X 20'	4	4	B	-	-

SIGNAL IDENTIFICATION



NOTES:
1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF
WEST NEWTON SQUARE
TRAFFIC SIGNAL DETAILS - 2

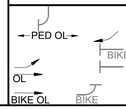
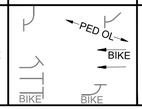
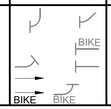
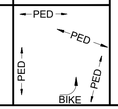
SCALE: AS NOTED DATE: 1/16/19 SHEET 45 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\plitt\d2084567\00C-05.dwg

TRAFFIC SIGNAL DATA - WALTHAM STREET / WATERTOWN STREET AT WASHINGTON STREET

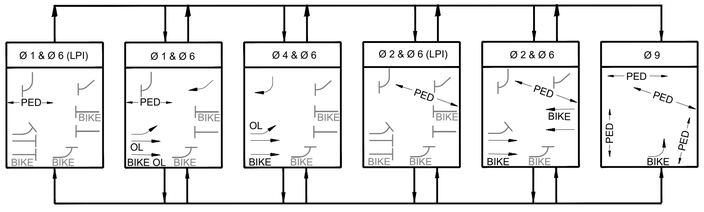
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø9
							

SEQUENCE AND TIMING																									
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
WASHINGTON STREET	EB LEFT	A,B	RL	GL	YL	RL	RL	RL	RL	RL				GL	YL	RL				RL	RL	RL					RL	RL	RL	FR
WASHINGTON STREET	EB	C,D	R	G	Y	R	R	R	R	R				R	R	R				G	Y	R					R	R	R	FY
WASHINGTON STREET	WB THRU	E	R	R	R	R	R	G	Y	R				R	R	R				R	R	R					R	R	R	FY
WASHINGTON STREET	WB RIGHT (WALTHAM ST)	F	R	R	R	R	R	R	R	R				R	R	R				G	Y	R					R	R	R	FY
WATERTOWN STREET	SWB	G,H,I	R	G	Y	R	R	R	R	R				R	R	R				R	R	R					R	R	R	FR
WALTHAM STREET	SB	J,K	RR	RR	RR	RR	RR	RR	RR	RR				GR	YR	RR				RR	RR	RR					RR	RR	RR	FR
PEDESTRIANS	EB-WB(WALTHAM ST)	P1,P2	W	W	FDW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW					W	FDW	DW	OFF
PEDESTRIANS	EB-WB(WATERTOWN ST)	P3,P4	DW	DW	DW	DW	W	W	FDW	DW				DW	DW	DW				DW	DW	DW					W	FDW	DW	OFF
PEDESTRIANS	NB-SB	P1,P2,P3,P4 P5,P6,P7,P8	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW					W	FDW	DW	OFF
BIKES	EB	B1	R	G	Y	R	R	R	R	R				R	R	R				G	Y	R					R	R	R	OFF
BIKES	WB	B2,B3,B4	R	R	R	R	R	G	Y	R				R	R	R				R	R	R					R	R	R	OFF
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)				6				6						6						6										EMERGENCY ONLY
PASSAGE TIME (VEHICLE)				3				3						3						3										
MAXIMUM 1				39				39						45						105										
MAXIMUM 2				44				44						35						105										
YELLOW CLEARANCE					3.5				3.5						3.5						3.5										
RED CLEARANCE						2.5				2.5						2.5						2.5								3	
WALK (W)			4	3			4	3																			7				
PEDESTRIAN CLEARANCE					10				7																			13			
RECALL(VEHICLE)				NONE				SOFT							NONE						SOFT							NONE			
MEMORY				NON-LOCKING				NON-LOCKING							NON-LOCKING						NON-LOCKING							LOCK			

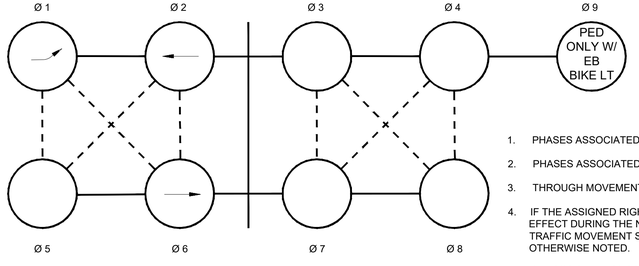
COORDINATION DATA (3)			COORDINATION PHASE TIMING															
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.		SEC.		SEC.		SEC.		SEC.		SEC.		SEC.		SEC.	
TP1(M-F 6AM-10AM)	120	117	30		30				36				96				24	
TP2(M-F 2PM-7PM)	120	113	35		36				25				96				24	

NOTES:
1. OFFSET REFERENCES Ø2 + Ø6 START OF YELLOW
2. OFFSET SEEKING SHALL BE SHORTWAY METHOD
3. COORDINATION MODE SHALL BE YIELD
4. COORDINATION AM, 6AM TO 10AM M-F
5. COORDINATION PM, 2PM TO 7PM M-F
6. FREE OPERATION ALL OTHER TIMES

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
5. PHASES SHALL CROSS THE RING BARRIER AT THE SAME TIME.

MAJOR ITEMS REQUIRED		
PAY ITEM	QUANTITY	ITEM
816.03	1	CONTROLLER NEMA 8 PHASE TS2-TYPE 1, CAB.& FDN.
	1	SERVICE CONNECTION, UNDERGROUND
	6	10' POLE, BASE, & FDN. - ORNAMENTAL
	1	20 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	30 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	35 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	11	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	8	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	5	1 WAY, 3 SECTION, BICYCLE HOUSING (12" L.E.D.)
	8	APS PEDESTRIAN PUSH BUTTON
	6	VIDEO DETECTOR CAMERA (1 SPARE)
	1	9" VIDEO MONITOR
	2	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
	3	OPTICAL PRE-EMPTION RECEIVER-SINGLE CHANNEL
	1	OPTICAL PRE-EMPTION CARD RACK
	1	PRE-EMPTION COMFIRMATION STROBE (WHITE)
	1	GPS BASED EMERGENCY VEHICLE PRE-EMPTION SYSTEM
	50	GPS BASED EMERGENCY VEHICLE PRE-EMPTION INSTALL KITS
	10	REMOVE AND DISPOSE EXISTING TRAFFIC SIGNALS
	1	WIRELESS ETHERNET RADIO - POLE MOUNTED
	1	ETHERNET SWITCH
804.3	1341 FT	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
811.22	7	ELECTRIC HANDHOLE - SD2.022
811.85	1	JUNCTION BOX 24 X 12 X 12 INCHES
		PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION.

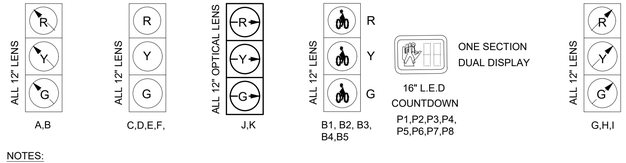
EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR OPTICAL	DETECTOR GPS
WASHINGTON ST EASTBOUND	6	OP1	GP1
WASHINGTON ST WESTBOUND	2	OP2	
WATERTOWN SOUTHWESTBOUND	1	OP3	

EMERGENCY VEHICLE PREEMPTION OPERATION:

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

SIGNAL IDENTIFICATION



NOTES:
1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

VIDEO DETECTOR DATA

DELAY THE EFFECTIVE ONLY DURING CALLED Ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	2 @ 6' X 20'	1	1	B	-	-
2	V1	2	2 @ 6' X 20'	6	6	B	-	-
3	V1	3	1 @ 3' X 20'	6	6	B	-	-
4	V4	1	1 @ 6' X 25'	9	9	B	-	-
5	V2	1	2 @ 6' X 20'	2	2	B	-	-
6	V2	2	2 @ 6' X 20'	2	2	B	-	-
7	V2	3	1 @ 3' X 20'	2	2	B	-	-
8	V3	1	2 @ 6' X 20'	1	1	B	-	-
9	V5	1	2 @ 6' X 20'	4	4	B	-	-

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TRAFFIC SIGNAL DETAILS - 3

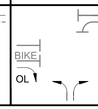
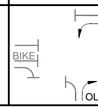
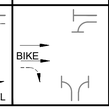
SCALE: AS NOTED DATE: 1/16/19 SHEET 46 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-05.dwg

TRAFFIC SIGNAL DATA - CHESTNUT STREET AT WASHINGTON STREET

Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9
								

SEQUENCE AND TIMING																											
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
WASHINGTON STREET	EB	A,B				R	R	R	R	R	R				R	R	R	G	Y	R							R	R	R	FY
WASHINGTON STREET	EB RIGHT	C				RR	RR	RR	GR	YR	RR				RR	RR	RR	FYR	YR	RR							RR	RR	RR	FY
WASHINGTON STREET	WB LEFT	D				FYL	YL	RL	RL	RL	RL				GL	YL	RL	RL	RL	RL							RL	RL	RL	FY
WASHINGTON STREET	WB	E,F				G	Y	R	R	R	R				R	R	R	R	R	R							R	R	R	FY
CHESTNUT STREET	NB LEFT	G,H				RL	RL	RL	GL	YL	RL				RL	RL	RL	RL	RL	RL							RL	RL	RL	FR
CHESTNUT STREET	NB RIGHT	I,J				RR	RR	RR	GR	YR	RR				GR	YR	RR	RR	RR	RR							RL	RL	RL	FR
PEDESTRIANS	EB-WB	P1,P2				DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW							W	FDW	DW	OFF
PEDESTRIANS	NB-SB	P3,P4				DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW							W	FDW	DW	OFF
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)						6			6						6			6												
PASSAGE TIME (VEHICLE)						3			3						3			3												
MAXIMUM 1						83			30						33			59												
MAXIMUM 2						81			32						31			59												
YELLOW CLEARANCE							3.5			3.5						3.5			3.5											
RED CLEARANCE								3			3						3			3										3
WALK (W)																											7			
PEDESTRIAN CLEARANCE																												14		
RECALL(VEHICLE)						SOFT			NONE						NONE			SOFT									NONE			
MEMORY						NON-LOCKING			NON-LOCKING						NON-LOCKING			NON-LOCKING									LOCK			

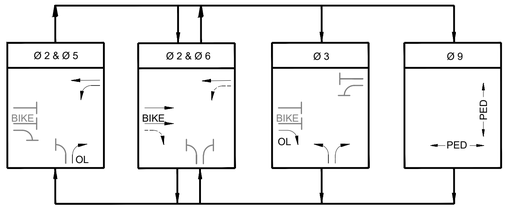
EMERGENCY ONLY

COORDINATION DATA (3)			COORDINATION PHASE TIMING											
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.		SEC.		SEC.		SEC.	
TP1(M-F 6AM-10AM)	120	10		74	21		24		50				25	
TP2(M-F 2PM-7PM)	120	7		72	23		22		50				25	

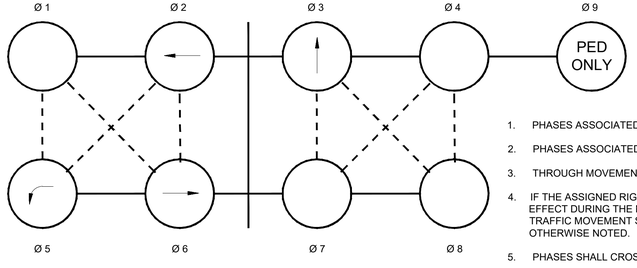
NOTES:

1. OFFSET REFERENCES Ø2 + Ø6 START OF YELLOW
2. OFFSET SEEKING SHALL BE SHORTWAY METHOD
3. COORDINATION MODE SHALL BE YIELD
4. COORDINATION AM, 6AM TO 10AM M-F
5. COORDINATION PM, 2PM TO 7PM M-F
6. FREE OPERATION ALL OTHER TIMES

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.
5. PHASES SHALL CROSS THE RING BARRIER AT THE SAME TIME.

MAJOR ITEMS REQUIRED		
PAY ITEM	QUANTITY	ITEM
816.04	1	CONTROLLER NEMA 8 PHASE TS2-TYPE 1, CAB.& FDN.
	1	SERVICE CONNECTION, UNDERGROUND
	3	10' POLE, BASE, & FDN. - ORNAMENTAL
	1	20 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	25 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	1	30 FT MAST ARM ASSEMBLY, BASE & FDN. - ORNAMENTAL
	6	1 WAY, 3 SECTION, SIGNAL HOUSING (12" L.E.D.)
	4	1 WAY, 4 SECTION, SIGNAL HOUSING (12" L.E.D.)
	4	PEDESTRIAN HOUSING (16" COUNTDOWN L.E.D.)
	4	APS PEDESTRIAN PUSH BUTTON
	4	VIDEO DETECTOR CAMERA (1 SPARE)
	1	9" VIDEO MONITOR
	2	4 CHANNEL VIDEO INPUT PROCESSOR (1 SPARE)
	3	OPTICAL PRE-EMPTION RECEIVER-SINGLE CHANNEL
	1	OPTICAL PRE-EMPTION CARD RACK
	1	PRE-EMPTION COMFIRMATION STROBE (WHITE)
	1	GPS BASED EMERGENCY VEHICLE PRE-EMPTION SYSTEM
	4	REMOVE AND DISPOSE EXISTING TRAFFIC SIGNALS
	1	WIRELESS ETHERNET RADIO - POLE MOUNTED
	1	ETHERNET SWITCH
804.3	737 FT	3 IN. ELECTRICAL CONDUIT TYPE NM - PLASTIC -(UL)
811.22	4	ELECTRIC HANDHOLE - SD2.022
811.85	1	JUNCTION BOX
		PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIAL AND EQUIPMENT TO COMPLETE THE INSTALLATION.

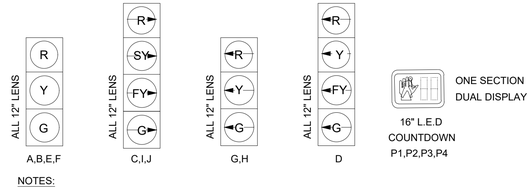
EMERGENCY PRE-EMPTION DATA

APPROACH	PREEMPTION PHASE	DETECTOR OPTICAL	DETECTOR GPS
WASHINGTON ST WESTBOUND	2	OP2	GP1
WASHINGTON ST EASTBOUND	6	OP1	
CHESTNUT ST NORTHBOUND	3	OP3	

EMERGENCY VEHICLE PREEMPTION OPERATION:

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

SIGNAL IDENTIFICATION



NOTES:

1. ALL SIGNALS SHALL HAVE CUT AWAY VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" LOUVERED BACK PLATES W/ 2" REFLECTIVE BORDER

VIDEO DETECTOR DATA

DELAY THE EFFECTIVE ONLY DURING CALLED Ø RED TIME IN SEC.

DETECTOR NUMBER	CAMERA NUMBER	CHANNEL NUMBER	DETECTION ZONE	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	V1	1	2@ 6'X20'	6	6	B	-	-
2	V1	2	1@ 3'X20'	6	6	B	-	-
3	V1	3	2@ 6'X20'	6	6	B	6	-
4	V2	1	2@ 6'X20'	5	5	B	-	-
5	V2	2	2@ 6'X20'	2	2	B	-	-
6	V3	1	2@ 6'X20'	3	3	B	-	-
7	V3	2	2@ 6'X20'	3	3	B	6	-

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

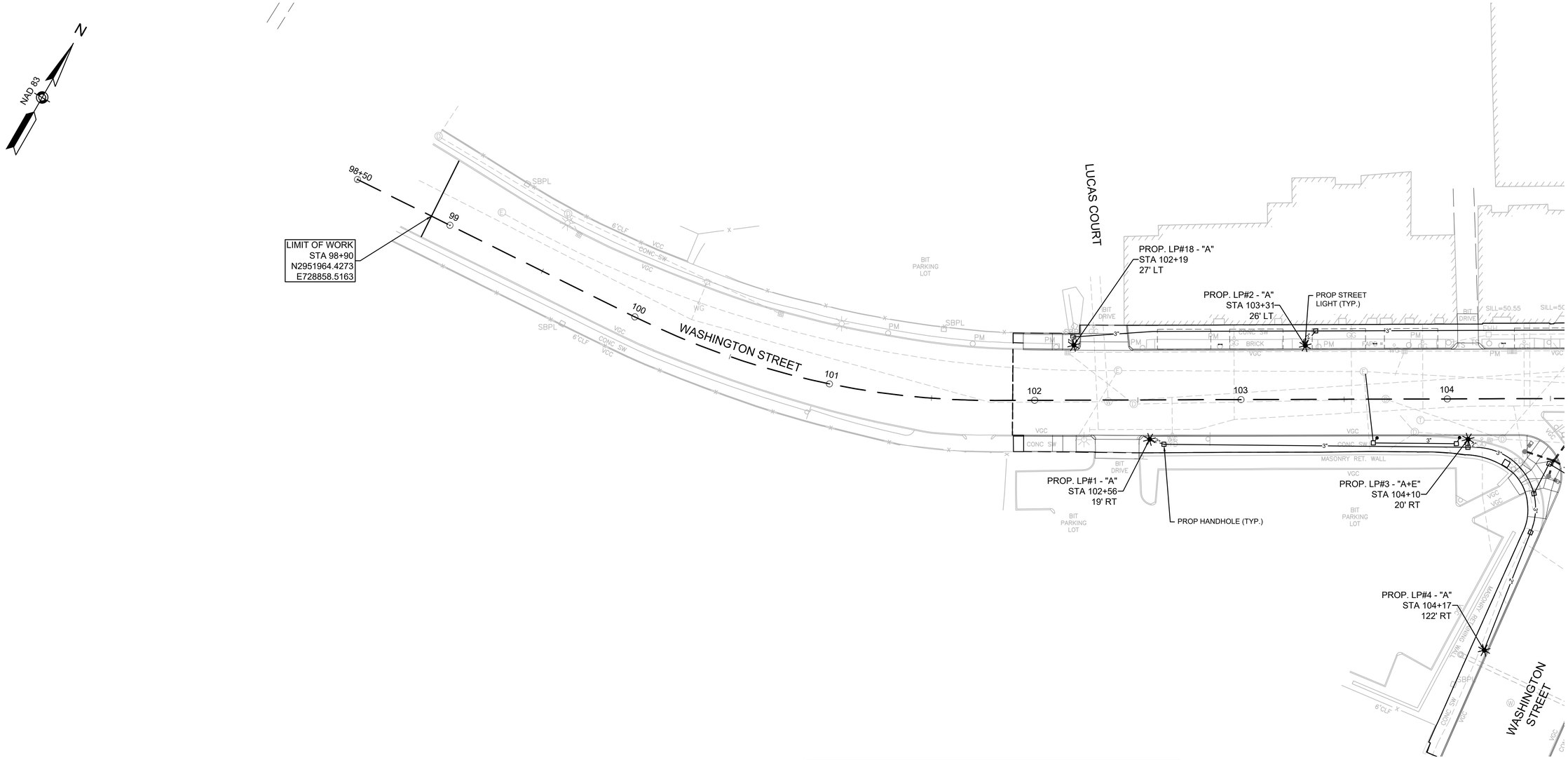
TRAFFIC SIGNAL DETAILS - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 47 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: RCP
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-05.dwg



CITY OF NEWTON
MASSACHUSETTS

LIGHTING NOTES:

1. EXISTING LIGHT POLES WITHIN PROPOSED LIMIT OF WORK SHALL BE REMOVED AND DISPOSED. EXISTING FIXTURES SHALL BE REMOVED AND TRANSPORTED TO CITY OF NEWTON DPW. EXISTING PULL BOXES TO BE ABANDONED AND FILLED WITH FLOWABLE FILL. EXISTING CONDUIT TO BE ABANDONED. BREAK DOWN EXISTING LIGHT POLE BASES & CUT BOLTS.
2. ALL PROPOSED STREET LIGHT FIXTURES WILL BE CONTROLLED BY INDIVIDUAL PHOTOELECTRIC CONTROLS FOR DUSK TO DAWN ACTIVATION.
3. ALL 3" CONDUITS SHALL CONTAIN 4-#4 WIRES, ALL 2" CONDUITS SHALL CONTAIN 3-#10 WIRES (UNLESS OTHERWISE INDICATED ON PLANS).

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 11
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 17
3. FOR GRADING PLAN, SEE SHEET 21
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 28
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEET 30
7. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 33
8. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100
SCALE: 1" = 20'

LEGEND

	EXISTING STREET LIGHT - TO BE REMOVED UNLESS OTHERWISE NOTED (SEE NOTE #1)
A	PROPOSED SINGLE 75 W LED PENDANT WITH 4.5' BRACKET ARM AND 25.6' STEEL LIGHT POLE AND CONCRETE BASE
B	PROPOSED BACK-BACK 200 W LED PENDANT WITH DOUBLE 4.5' BRACKET ARMS AND MOUNTED ON PROPOSED 28.25' STEEL TRAFFIC SIGNAL POLE
C	PROPOSED SINGLE 200 W LED PENDANT WITH 4.5' BRACKET ARM AND MOUNTED ON PROPOSED 28.25' STEEL TRAFFIC SIGNAL POLE
D	PROPOSED SINGLE 200 W LED PENDANT WITH 4.5' BRACKET ARM AND 28.25' STEEL LIGHT POLE AND CONCRETE BASE
E	PROPOSED PEDESTRIAN SINGLE 40 W LED PENDANT WITH 2.5' BRACKET ARM FIXED TO STEEL POLE AT 14'
F	PROPOSED PEDESTRIAN SINGLE 40 W LED PENDANT WITH 2.5' BRACKET ARM AND 14' STEEL LIGHT POLE AND CONCRETE BASE W/ ELECTRIC OUTLET
	PROPOSED STREET LIGHTING HAND HOLE/PULL BOX
—2"OR 3"—	PROPOSED 2" OR 3" CONDUIT
///3"///	PROPOSED 2" OR 3" CONCRETE ENCASED CONDUIT
LP	LIGHT POLE
TLP	TRAFFIC SIGNAL MAST ARM ON LIGHT POLE

LUMINAIRE SCHEDULE

Symbol	Label	Qty	Catalog Number	Lamp	LLF	Lum. Watts	Total Watts
	A	16	OSLO N4, 700mA, OPTIC TYPE 3-8060 (LIGHT POLE)	LED SINGLE	0.850	139	2085
	B	1	OSLO N4, 700mA, OPTIC TYPE 3-8084 (TRAFFIC POLE)	LED BACK-BACK	0.850	139	278
	C	8	OSLO N4, 700 mA, OPTIC TYPE 3-8084 (TRAFFIC POLE)	LED SINGLE	0.850	139	1112
	D	2	OSLO N4, 700mA, OPTIC TYPE 3-8084 (LIGHT POLE)	LED SINGLE	0.850	139	278
	E	18	JUN N1, 700mA, OPTIC TYPE 2	LED SINGLE	0.850	35	560
	F	1	JUN N1, 700mA, OPTIC TYPE 2	LED SINGLE	0.850	35	560

STATISTICS

Description	Avg	Max	Min	Max/Min	Avg/Min
Washington St. & Elm St.	3.5 fc	6.3 fc	1.1 fc	5.7:1	3.2:1
Washington St. & Cherry St.	3.4 fc	5.5 fc	1.3 fc	4.2:1	2.6:1
Washington St. & Highland St.	2.6 fc	4.9 fc	0.7 fc	7.0:1	3.7:1
Washington St. & Waltham St.	3.8 fc	6.6 fc	0.7 fc	9.4:1	5.4:1
Washington St. & Chestnut St.	2.8 fc	5.6 fc	0.8 fc	7.0:1	3.5:1

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

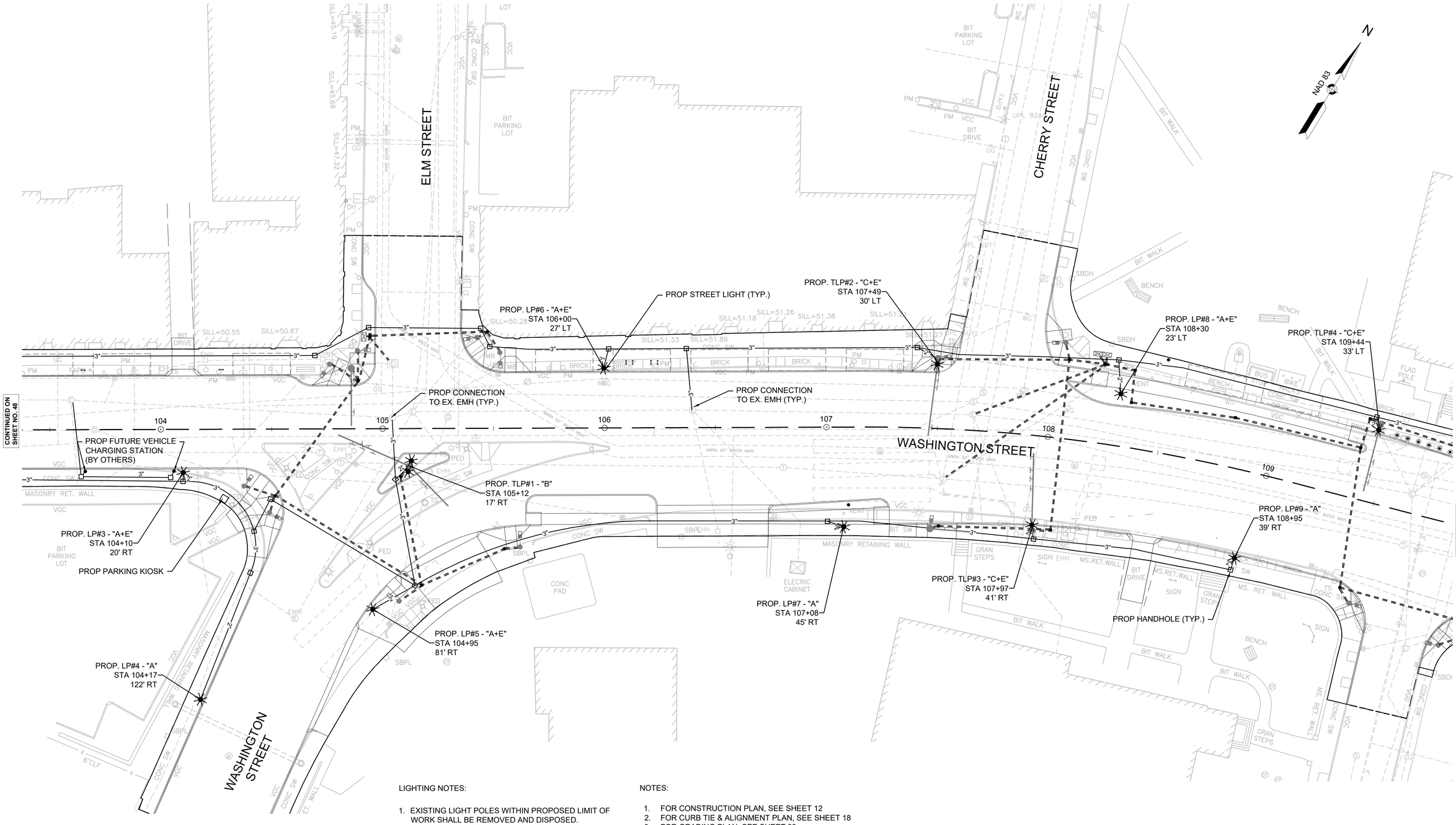
CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LIGHTING PLAN - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 48 OF 73

PLOTTED ON January 16, 2019 1:10 PM
c:\pwworking\pitt\d2084567\00C-09.dwg



LIGHTING NOTES:

1. EXISTING LIGHT POLES WITHIN PROPOSED LIMIT OF WORK SHALL BE REMOVED AND DISPOSED. EXISTING FIXTURES SHALL BE REMOVED AND TRANSPORTED TO CITY OF NEWTON DPW. EXISTING PULL BOXES TO BE ABANDONED AND FILLED WITH FLOWABLE FILL. EXISTING CONDUIT TO BE ABANDONED. BREAK DOWN EXISTING LIGHT POLE BASES & CUT BOLTS.
2. ALL PROPOSED STREET LIGHT FIXTURES WILL BE CONTROLLED BY INDIVIDUAL PHOTOELECTRIC CONTROLS FOR DUSK TO DAWN ACTIVATION.
3. ALL 3" CONDUITS SHALL CONTAIN 4-#4 WIRES, ALL 2" CONDUITS SHALL CONTAIN 3-#10 WIRES (UNLESS OTHERWISE INDICATED ON PLANS).

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 12
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 18
3. FOR GRADING PLAN, SEE SHEET 22
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-27
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEETS 30-31
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 34
7. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LIGHTING PLAN - 2

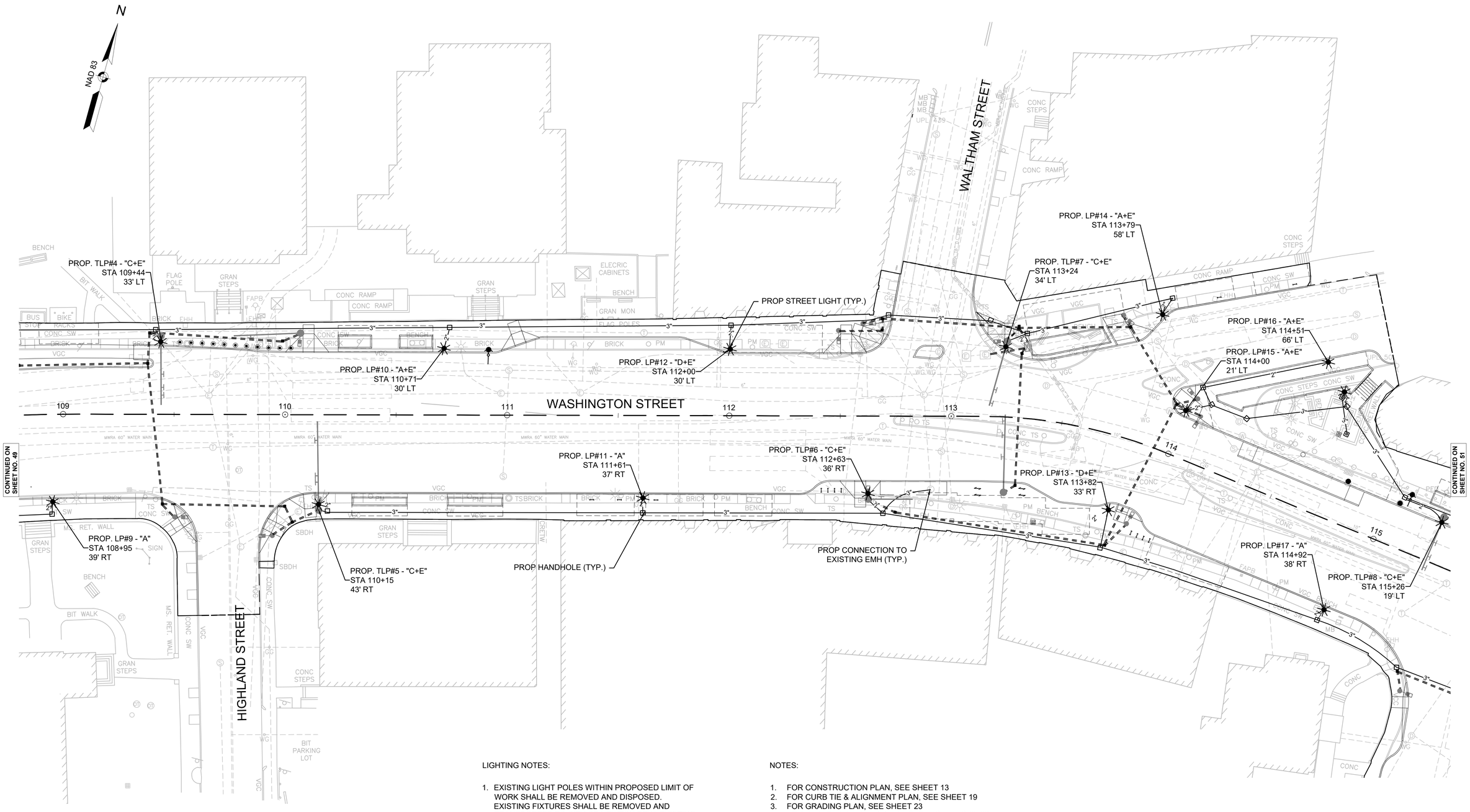
SCALE: AS NOTED DATE: 1/16/19 SHEET 49 OF 73

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

CITY OF NEWTON
MASSACHUSETTS

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-09.dwg



LIGHTING NOTES:

1. EXISTING LIGHT POLES WITHIN PROPOSED LIMIT OF WORK SHALL BE REMOVED AND DISPOSED. EXISTING FIXTURES SHALL BE REMOVED AND TRANSPORTED TO CITY OF NEWTON DPW. EXISTING PULL BOXES TO BE ABANDONED AND FILLED WITH FLOWABLE FILL. EXISTING CONDUIT TO BE ABANDONED. BREAK DOWN EXISTING LIGHT POLE BASES & CUT BOLTS.
2. ALL PROPOSED STREET LIGHT FIXTURES WILL BE CONTROLLED BY INDIVIDUAL PHOTOELECTRIC CONTROLS FOR DUSK TO DAWN ACTIVATION.
3. ALL 3" CONDUITS SHALL CONTAIN 4-#4 WIRES, ALL 2" CONDUITS SHALL CONTAIN 3-#10 WIRES (UNLESS OTHERWISE INDICATED ON PLANS).

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 13
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 19
3. FOR GRADING PLAN, SEE SHEET 23
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEETS 25-28
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEETS 31-32
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEETS 36
7. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LIGHTING PLAN - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 50 OF 73

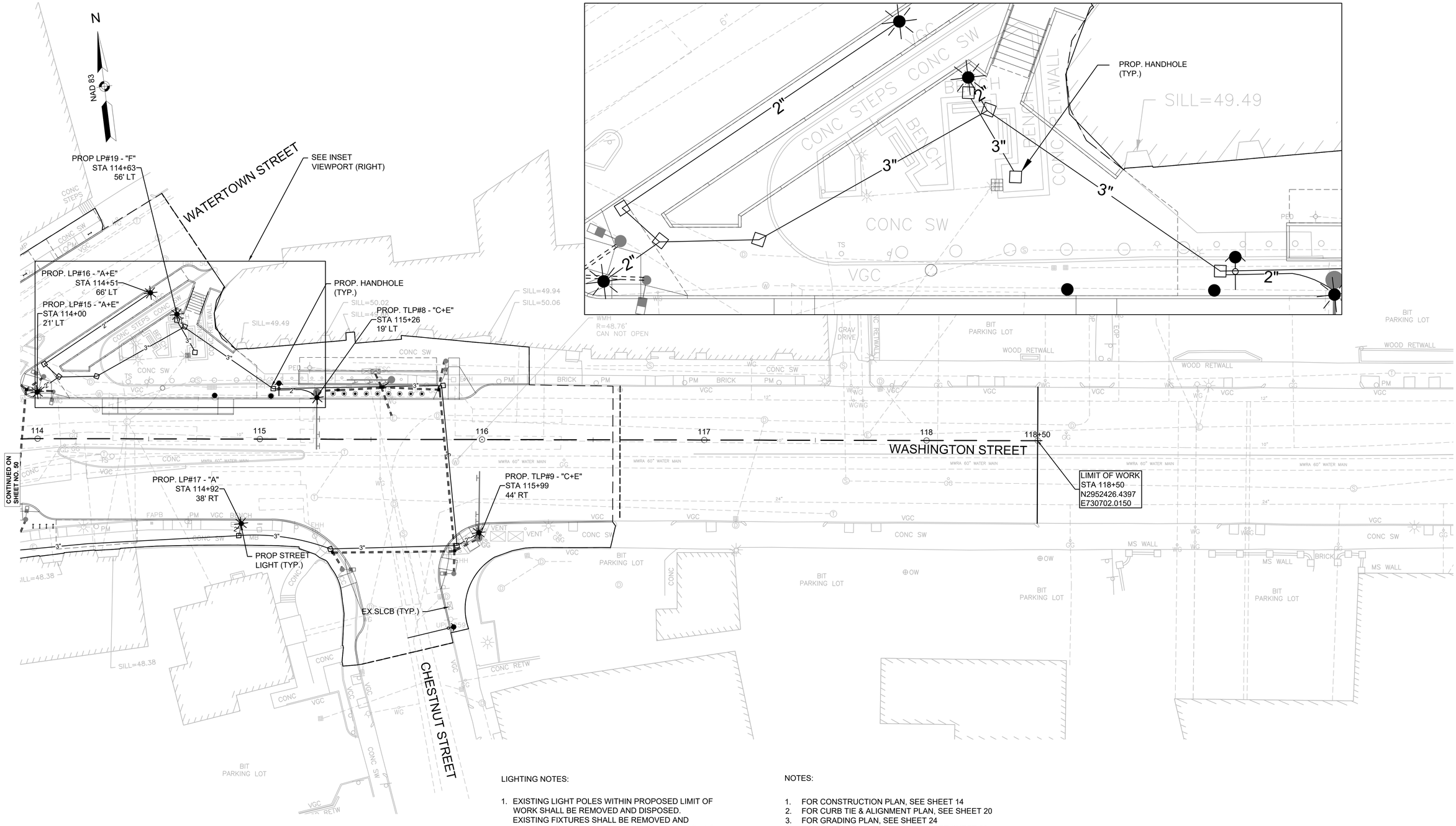
CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-09.dwg

INSET VIEWPORT



LIGHTING NOTES:

1. EXISTING LIGHT POLES WITHIN PROPOSED LIMIT OF WORK SHALL BE REMOVED AND DISPOSED. EXISTING FIXTURES SHALL BE REMOVED AND TRANSPORTED TO CITY OF NEWTON DPW. EXISTING PULL BOXES TO BE ABANDONED AND FILLED WITH FLOWABLE FILL. EXISTING CONDUIT TO BE ABANDONED. BREAK DOWN EXISTING LIGHT POLE BASES & CUT BOLTS.
2. ALL PROPOSED STREET LIGHT FIXTURES WILL BE CONTROLLED BY INDIVIDUAL PHOTOELECTRIC CONTROLS FOR DUSK TO DAWN ACTIVATION.
3. ALL 3" CONDUITS SHALL CONTAIN 4-#4 WIRES, ALL 2" CONDUITS SHALL CONTAIN 3-#10 WIRES (UNLESS OTHERWISE INDICATED ON PLANS).

NOTES:

1. FOR CONSTRUCTION PLAN, SEE SHEET 14
2. FOR CURB TIE & ALIGNMENT PLAN, SEE SHEET 20
3. FOR GRADING PLAN, SEE SHEET 24
4. FOR PEDESTRIAN RAMP DETAILS, SEE SHEET 26
5. FOR DRIVEWAY DETAILS, SEE SHEET 29
6. FOR UTILITY DETAILS, SEE SHEET 32
6. FOR TRAFFIC SIGN AND PAVEMENT MARKING PLAN, SEE SHEET 37
7. FOR LANDSCAPE MATERIALS PLANS, SEE SHEET 57

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LIGHTING PLAN - 4

SCALE: AS NOTED DATE: 1/16/19 SHEET 51 OF 73

DESIGNED BY: TNU
DRAWN BY: AST
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:10 PM

c:\pwworking\pitt\d2084567\00C-09.dwg

NOTES:

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
2. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
4. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
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 FIVE 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 (3.3m) 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.

LEGEND:

- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- P/F POLICE/FLAGGER DETAIL
- TYPE III BARRICADE
- CHANGEABLE MESSAGE SIGN
- ARROW BOARD
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN

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

MEASURED AVERAGE WORK ZONE CAPACITIES

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

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

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

SUGGESTED WORK ZONE WARNING SIGN SPACING

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

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

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

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

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

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

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

Based on: Table 6C-1 MUTCD LATEST EDITION

STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

SPEED* (km/h)	DISTANCE (m)
30	35
40	50
50	65
60	85
70	105
80	130
90	160
100	185
110	220
120	250

SPEED* (mph)	DISTANCE (ft)
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570
65	645
70	730
75	820

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

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

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

Source: Table 6C-2 MUTCD LATEST EDITION

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

EXPRESSWAY- A DIVIDED HIGHWAY WITH PARTIAL CONTROL OF ACCESS.

FREEWAY- A DIVIDED HIGHWAY WITH FULL CONTROL OF ACCESS.

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

Source: MUTCD LATEST EDITION

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

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

Source: Table 6C-3 MUTCD LATEST EDITION

FORMULAS FOR DETERMINING TAPER LENGTHS

SPEED LIMIT (S)	TAPER LENGTH (L) FEET
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$

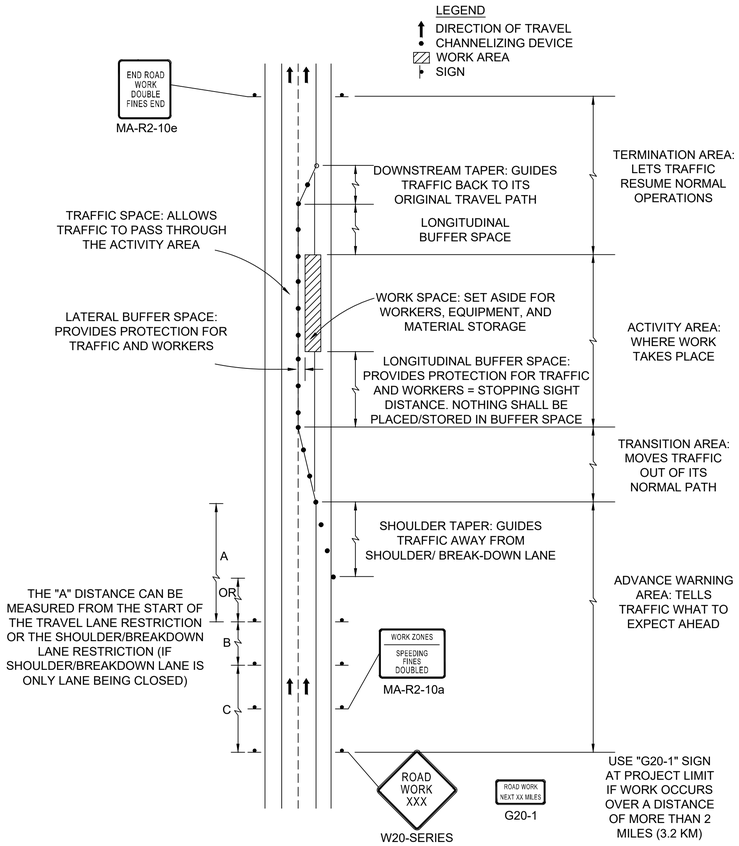
SPEED LIMIT (S)	TAPER LENGTH (L) Meters
60 KM/H OR LESS	$L = \frac{WS^2}{155}$
70 KM/H OR MORE	$L = \frac{WS}{1.6}$

WHERE: L = TAPER LENGTH IN FEET (METERS)

W = WIDTH OF OFFSET IN FEET (METERS)

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

Source: Table 6C-4 MUTCD LATEST EDITION



COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

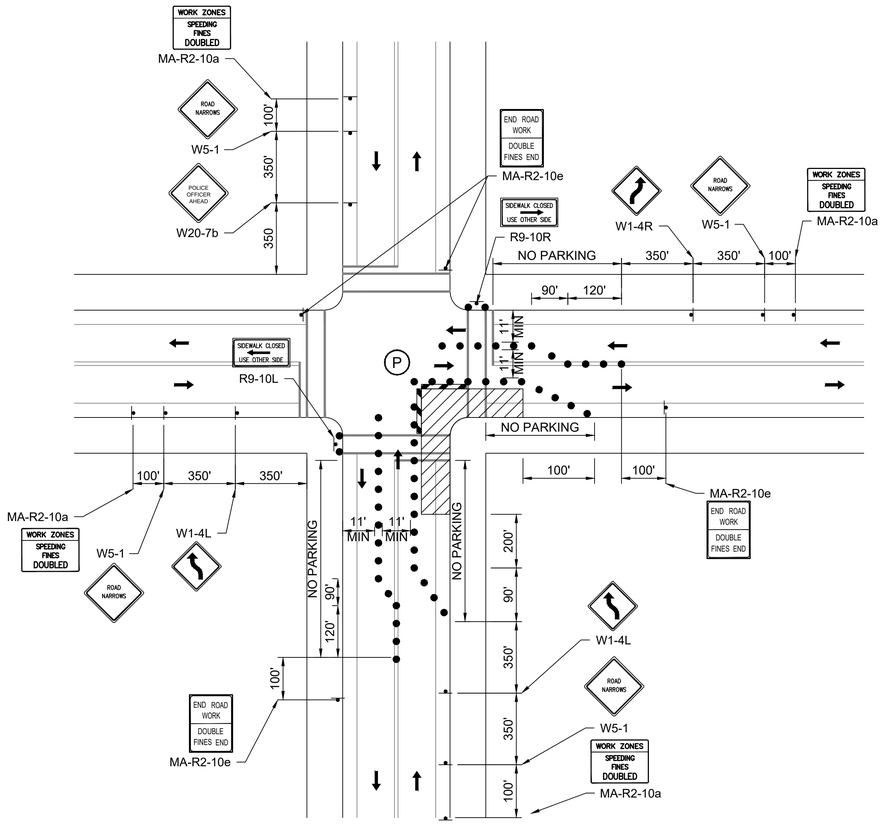
WEST NEWTON SQUARE

TEMPORARY TRAFFIC CONTROL DETAILS - 1

SCALE: AS NOTED DATE: 1/16/19 SHEET 52 OF 73

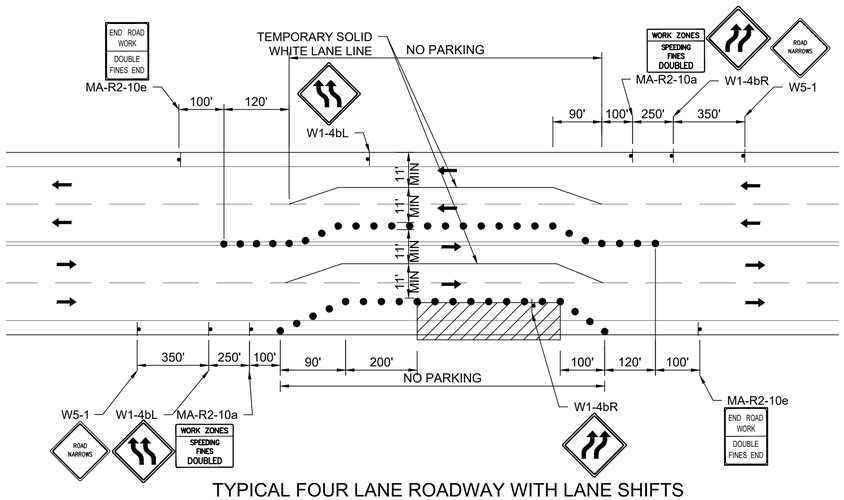
DESIGNED BY: MJG
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:11 PM
c:\pwworking\pitt\d2084567\00C-06.dwg



TYPICAL ROADWAY INTERSECTION WITH WORK ZONES AT CORNER

NOT TO SCALE



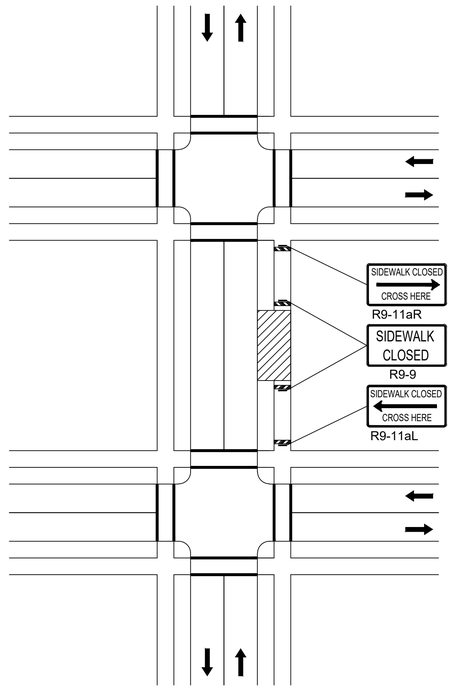
TYPICAL FOUR LANE ROADWAY WITH LANE SHIFTS

NOT TO SCALE

NOTE:
FOR LONG-TERM STATIONARY WORK, THE DOUBLE YELLOW CENTERLINE AND/OR LANE LINES SHOULD BE REMOVED BETWEEN THE CROSSWALK LINES.

TYPICAL PEDESTRIAN DETOUR

NOT TO SCALE



NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL STILL BE REQUIRED. All PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

TYPICAL SIDEWALK CLOSED WITH DETOUR

NOT TO SCALE

LEGEND

- DRUM OR CONE @ 20' O.C. (TYP)
- SIGN
- TYPE III BARRICADE
- (P) SUGGESTED POLICE DETAIL
- WORK ZONE
- TRAFFIC FLOW
- ARROW BOARD

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

TEMPORARY TRAFFIC CONTROL DETAILS - 2

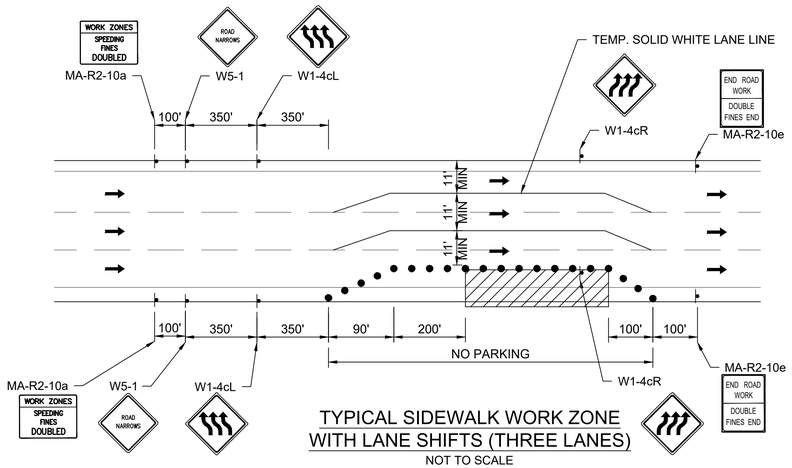
SCALE: AS NOTED DATE: 1/16/19 SHEET 53 OF 73

CITY OF NEWTON
MASSACHUSETTS

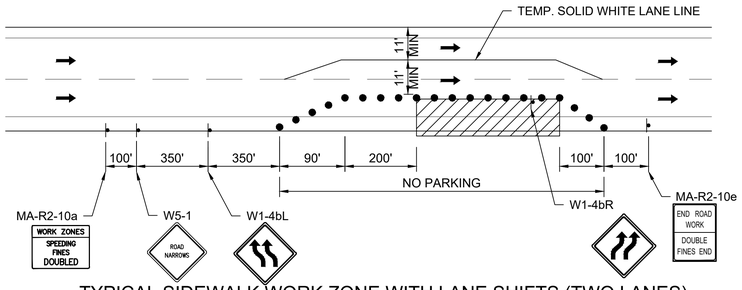
DESIGNED BY: MJG
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:11 PM

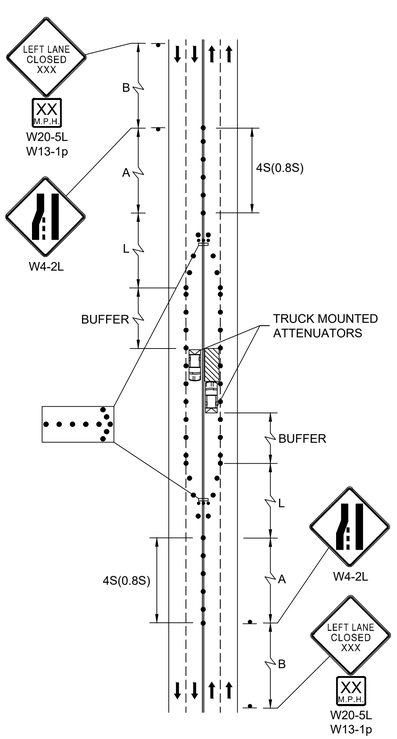
c:\pwworking\pitt\d2084567\00C-06.dwg



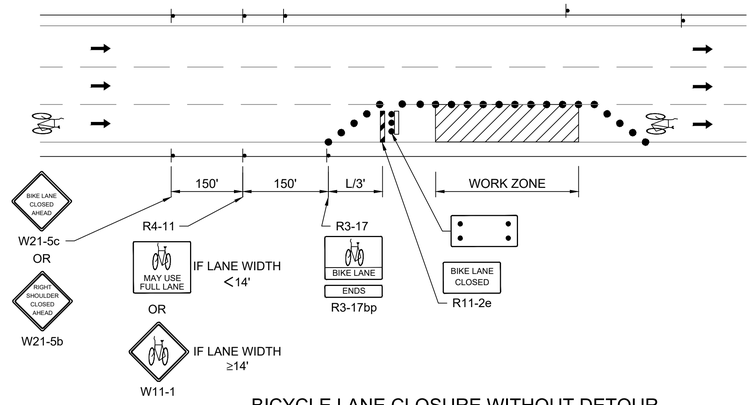
TYPICAL SIDEWALK WORK ZONE
WITH LANE SHIFTS (THREE LANES)
NOT TO SCALE



TYPICAL SIDEWALK WORK ZONE WITH LANE SHIFTS (TWO LANES)
NOT TO SCALE

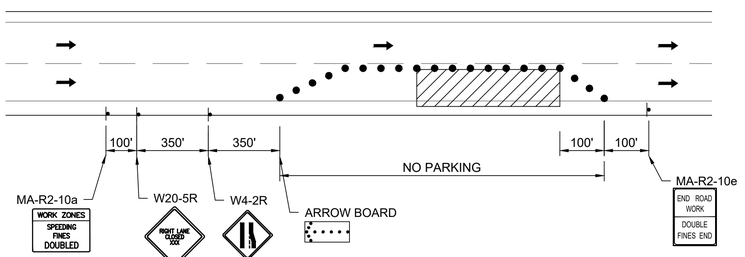


TYPICAL CENTER OF ROAD CLOSURE
NOT TO SCALE



BICYCLE LANE CLOSURE WITHOUT DETOUR
NOT TO SCALE

NOTES:
DETAIL IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER. ADJUSTMENTS TO SIGNING AND DELINEATION MAY BE REQUIRED.



TYPICAL LANE CLOSURE
NOT TO SCALE

LEGEND

- DRUM OR CONE @ 20' O.C. (TYP)
- SIGN
- TYPE III BARRICADE
- SUGGESTED POLICE DETAIL
- WORK ZONE
- TRAFFIC FLOW
- ARROW BOARD

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

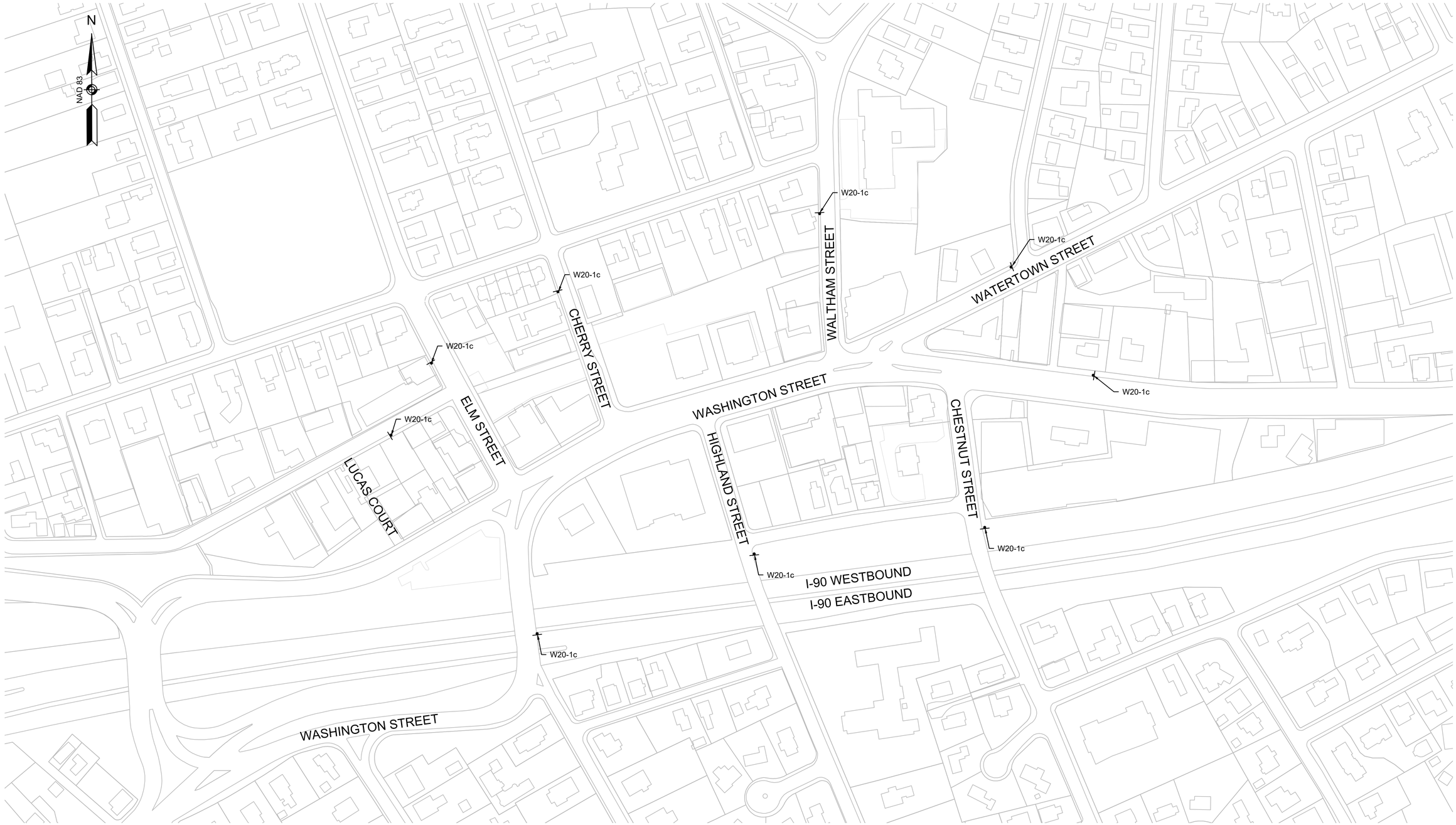
TEMPORARY TRAFFIC CONTROL DETAILS - 3

SCALE: AS NOTED DATE: 1/16/19 SHEET 54 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:11 PM
c:\pwworking\pitt\d2084567\00C-06.dwg



ADVANCED WARNING SIGN PLAN

SCALE: 1" = 100'

0 100 200 300 400

SCALE: 1" = 100'

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:11 PM

c:\pwworking\pitt\d2084567\00C-06.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

ADVANCED WARNING SIGN PLAN

SCALE: AS NOTED DATE: 1/16/19 SHEET 55 OF 73

TEMPORARY TRAFFIC CONTROL SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES) WIDTH	HEIGHT	TEXT	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.	NUMBER OF SIGNS REQ'D	COLOR BACK-GROUND	LEGEND	BORDER	POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
MA-R2-10a	48	36	WORK ZONES / SPEEDING FINES DOUBLED	(1)	(1)	(1)	11	ORANGE (TOP) / WHITE (BOTTOM)	BLACK	BLACK	P5 11 REQ'D	12	132.00
MA-R2-10e	36	48	END ROAD WORK / DOUBLE FINES END				11	ORANGE (TOP) / WHITE (BOTTOM)	BLACK	BLACK	P5 11 REQ'D	12	132.00
R9-9	24	12	SIDEWALK CLOSED				3	WHITE	BLACK	BLACK	P5 3 REQ'D	2	6.00
R9-10	24	12	SIDEWALK CLOSED ← → / USE OTHER SIDE				2	WHITE	BLACK	BLACK	P5 2 REQ'D	2	4.00
R9-10L	24	12	SIDEWALK CLOSED ← / USE OTHER SIDE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
R9-10R	24	12	SIDEWALK CLOSED → / USE OTHER SIDE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
R9-11L	24	12	SIDEWALK CLOSED AHEAD ← / CROSS HERE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
R9-11aL	24	12	SIDEWALK CLOSED ← / CROSS HERE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
R9-11R	24	12	SIDEWALK CLOSED AHEAD → / CROSS HERE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
R9-11aR	24	12	SIDEWALK CLOSED → / CROSS HERE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	2	2.00
W1-4L	36	36					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W1-4bL	36	36					3	ORANGE	BLACK	BLACK	P5 3 REQ'D	9	27.00
W1-4cL	36	36					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W1-4R	36	36					1	ORANGE	BLACK	BLACK	P5 1 REQ'D	9	9.00
W1-4bR	36	36					3	ORANGE	BLACK	BLACK	P5 3 REQ'D	9	27.00
W1-4cR	36	36					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W4-2L	36	36					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W4-2R	36	36					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W5-1	36	36	ROAD NARROWS				9	ORANGE	BLACK	BLACK	P5 9 REQ'D	9	81.00
W11-1	30	30					2	ORANGE	BLACK	BLACK	P5 2 REQ'D	6.25	12.50
W11-2	30	30		(1)	(1)	(1)	5	ORANGE	BLACK	BLACK	P5 5 REQ'D	6.25	31.25
MA-W16-19P	24	18	ON ROADWAY				3	ORANGE	BLACK	BLACK	P5 3 REQ'D	3	9.00
W16-7pL	24	12					2	ORANGE	BLACK	BLACK	MOUNT W/ W11-2	2	4.00
W16-7pR	24	12					2	ORANGE	BLACK	BLACK	MOUNT W/ W11-2	2	4.00
W16-9p	24	12	AHEAD				2	ORANGE	BLACK	BLACK	MOUNT W/ W11-2	2	4.00
W20-1c	36	36	ROAD WORK AHEAD				9	ORANGE	BLACK	BLACK	P5 9 REQ'D	9	81.00
W20-5L	36	36	LEFT LANE CLOSED XXX				2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W20-5R	36	36	RIGHT LANE CLOSED XXX				2	ORANGE	BLACK	BLACK	P5 2 REQ'D	9	18.00
W20-7b	36	36	POLICE OFFICER AHEAD				1	ORANGE	BLACK	BLACK	P5 1 REQ'D	9	9.00
R3-17	30	24	BIKE LANE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	5	5.00
R3-17bp	30	12	ENDS				1	WHITE	BLACK	BLACK	MOUNT W/ R3-17	2.5	2.50
R11-2e	30	24	BIKE LANE CLOSED				1	WHITE	BLACK	BLACK	P5 1 REQ'D	5	5.00
R4-11	30	30	MAY USE FULL LANE				1	WHITE	BLACK	BLACK	P5 1 REQ'D	6.25	6.25

TOTAL AREA OF SIGNS (SQUARE FEET) 729.50SF

NOTES:
1. (1) SEE MUTCD CURRENT EDITION, 2004 STANDARD HIGHWAY SIGNS AND SECTION M9.30.0 TYPE III OF THE MASSDOT STANDARD SPECIFICATION OR BTD SIGN CODE GUIDE, DATED AUGUST 2013, FOR TEXT DIMENSIONS.
2. SIGN SUMMARY PRESENTED ON THIS SHEET IS FOR INFORMATION ONLY. ALL TEMPORARY TRAFFIC SIGNS SHALL BE PAID UNDER ITEM 999.6.

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: MJG
DRAWN BY: DK
CHECKED BY: AKB
APPROVED BY: RDK

PLOTTED ON January 16, 2019 1:11 PM
c:\pwworking\pitt\d2084567\00C-06.dwg

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

CONSTRUCTION SIGN SUMMARY

SCALE: AS NOTED DATE: 1/16/19 SHEET 56 OF 73

NOTES

GENERAL NOTES

1. DO NOT SCALE DRAWINGS
2. VERIFY DIMENSIONS, GRADES, BOUNDARIES, AND CONSTRUCTION AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH THE WORK.
3. TO THE EXTENT PRACTICABLE, VERIFY DIMENSIONS AND FIELD CONDITIONS AT THE SITE PRIOR TO THE BID SUBMISSION. CONFLICTS, OMISSIONS AND DISCREPANCIES WITHIN THE CONTRACT DOCUMENTS SHALL BE REPORTED IN WRITING TO THE LANDSCAPE ARCHITECT, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, PRIOR TO THE BID SUBMISSION. THE CONTRACTOR WARRANTS, BY TENDERING HIS BID, THAT THE WORK IS BUILDABLE AS SHOWN.
4. DIMENSIONS, NOTES, FINISHES AND FIXTURES SHOWN ON TYPICAL PLANS, SECTION OR DETAILS SHALL APPLY TO SIMILAR, SYMMETRICAL OR OPPOSITE HAND PLANS SECTIONS OR DETAILS, UNLESS NOTED OTHERWISE.
5. TYPICAL OR "TYP" SHALL MEAN THAT THE CONDITION IS REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT, UNLESS NOTED OTHERWISE. DETAILS ARE USUALLY KEYED AND NOTED "TYP" ONLY ONE TIME, WHEN THEY FIRST OCCUR.
6. IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT IN WRITING OF ANY DISCREPANCIES BETWEEN PROJECT MANUAL, LARGE SCALE DRAWINGS, SMALL SCALE DRAWINGS AND DETAILS. THE CONTRACTOR SHALL NOT PROCEED WITH AFFECTED WORK UNTIL LANDSCAPE ARCHITECT PROVIDES CLARIFICATION
7. IF CONTRACT DRAWINGS AND SPECIFICATIONS ARE AT VARIANCE WITH ONE ANOTHER ON A PARTICULAR ITEM OR ITEMS, THE BID PROPOSAL SHALL BE BASED ON THE BETTER QUALITY OR MORE EXPENSIVE OF THE CONDITIONS INDICATED OR NOTED.
8. VERIFY THAT DRAWINGS ARE THE LATEST ISSUE PRIOR TO COMMENCING CONSTRUCTION.
9. WORK SHALL CONFORM TO THE REQUIREMENTS OF APPLICABLE STATE, FEDERAL AND CITY/COUNTY CODES. STATE AND FEDERAL CODES ARE TO TAKE PRECEDENCE OVER THE DRAWINGS AND SPECIFICATIONS. IF ANY DISCREPANCY IS NOTED, IMMEDIATELY INFORM THE LANDSCAPE ARCHITECT, PRIOR TO PROCEEDING WITH THE WORK.
10. ALL WORK IS NEW, UNLESS NOTED OTHERWISE.
11. PATCH, REPAIR AND FINISH ALL SURFACES IN AREAS OUTSIDE OF THE EXISTING SCOPE THAT ARE DISTURBED AS A RESULT OF THE WORK.
12. APPLY, INSTALL, CONNECT, CLEAN AND/OR CONDITION MANUFACTURED ARTICLES, MATERIALS AND/OR EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS. IN CASE OF CONFLICT BETWEEN MANUFACTURER'S INSTRUCTIONS AND THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL OBTAIN WRITTEN CLARIFICATION FROM THE LANDSCAPE ARCHITECT BEFORE PROCEEDING.
13. PROVIDE 1/2" PREMOLDED ISOLATION JOINTS BETWEEN CONCRETE SLAB EDGES AND WALLS, UNLESS OTHERWISE NOTED.
14. WHERE NEW PAVING MEETS EXISTING PAVING SMOOTHLY BLEND LINE AND GRADE OF EXISTING WITH NEW.
15. CONSULT ALL OF THE DRAWINGS AND SPECIFICATIONS FOR COORDINATION REQUIREMENTS BEFORE COMMENCING CONSTRUCTION.

SITE PREPARATION AND DEMOLITION NOTES:

1. THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE DIAGRAMMATIC ONLY, AND ALL UTILITIES MAY NOT BE SHOWN. THE CONTRACTOR SHALL CONTACT THE PROPER LOCAL AUTHORITIES OR RESPECTIVE UTILITY COMPANY TO CONFIRM THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. ANY DAMAGE DUE TO FAILURE OF THE CONTRACTOR TO CONTACT THE PROPER AUTHORITIES SHALL BE BORNE BY THE CONTRACTOR.
2. PRIOR TO COMMENCING ANY EXCAVATION WORK, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ACCORDANCE WITH THE "DIG SAFE" NOTIFICATION PROCEDURES. THE "DIG SAFE" TELEPHONE NUMBER FOR MASSACHUSETTS IS 1-888-DIG-SAFE (344-7233).
3. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO OWNER.
4. CARE SHOULD BE TAKEN IN ALL EXCAVATIONS DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES.
5. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK DUE TO THE CONTRACTOR'S OPERATIONS. ANY AREA OUTSIDE THE LIMIT OF WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO OWNER.
6. ALL REFUSE, DEBRIS AND MISCELLANEOUS ITEMS SCHEDULED TO BE REMOVED AND DISPOSED SHALL BE LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR. CONTRACTOR SHALL LEAVE WORK SITE FREE OF ANY DEBRIS AT THE END OF EACH DAY'S OPERATIONS.
7. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE, AND LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
8. AT ALL LOCATIONS WHERE EXISTING CURBING, CONCRETE PAVEMENT, PRECAST CONCRETE, OR BITUMINOUS CONCRETE ROADWAY ABUT NEW CONSTRUCTION, THE EDGE OF THE EXISTING CURB OR PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH EDGE.
9. ALL EXISTING GRADES BELOW PROPOSED FINISHED ELEVATIONS SHALL BE STRIPPED OF ALL ORGANIC TOPSOIL, CLEARED AND GRUBBED.
10. MEET REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND DETAILS OF THE CITY OF NEWTON FOR EROSION CONTROL, SILT FENCES AND INTAKE PROTECTION DURING CONSTRUCTION FOR ALL DRAINAGE STRUCTURES TO REMAIN.
11. ANY ITEMS SCHEDULED TO REMAIN OR TO BE STOCKPILED WHICH ARE DAMAGED BY CONTRACTORS' OPERATIONS SHALL BE AT CONTRACTORS' EXPENSE.

LAYOUT NOTES

1. ALL LINES AND DIMENSIONS ARE PARALLEL OR PERPENDICULAR TO THE LINES FROM WHICH THEY ARE MEASURED UNLESS OTHERWISE INDICATED.
2. ALL DIMENSIONS ARE GIVEN TO THE FRONT FACES OF TYP. WALL, BACK OF CURB, EDGE OF PAVING OR CENTERLINE UNLESS OTHERWISE STATED.
3. ALL ANGLES ARE ASSUMED TO BE 90 DEGREES UNLESS OTHERWISE STATED.
4. ANY CHANGES PROPOSED TO DIMENSIONS SHOWN ON THIS DRAWING SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
5. ALL PROPOSED LAYOUT, LINE, AND GRADE WORK PER DRAWINGS AND SPECIFICATIONS SHALL BE LAID OUT BY A REGISTERED CIVIL ENGINEER OR SURVEYOR OF THE COMMONWEALTH OF MASSACHUSETTS ENGAGED BY THE CONTRACTOR.

GRADING NOTES

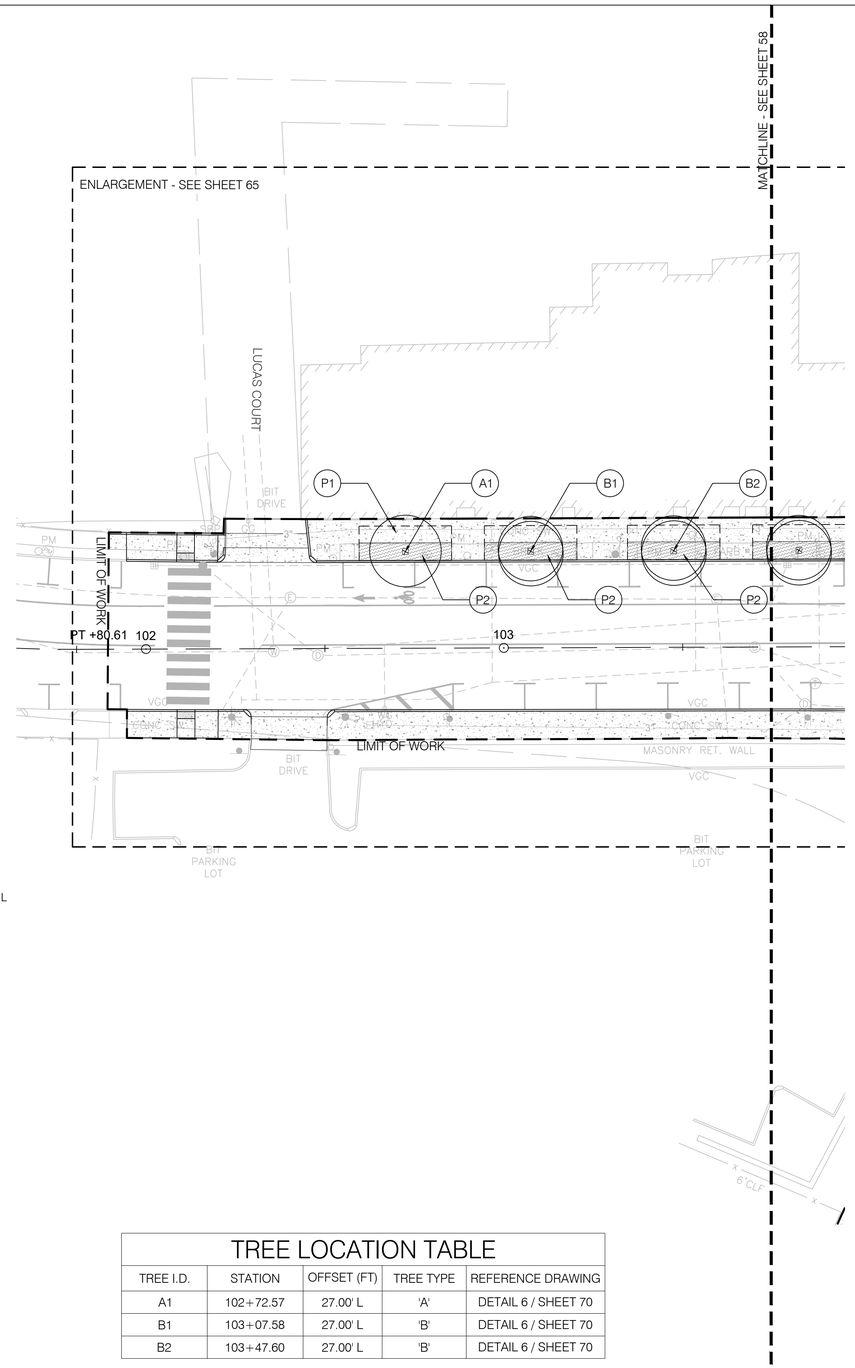
1. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING ALL IMPROVEMENTS IN FULL COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT AND WITH THE MASSACHUSETTS ARCHITECTURAL ACCESS BOARD REQUIREMENTS.
2. CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE LANDSCAPE ARCHITECT.
3. GRADE SURFACES TO SLOPE AWAY FROM ALL BUILDINGS & STRUCTURES. ASSURE POSITIVE DRAINAGE AND PREVENT PONDING OF SURFACE DRAINAGE.
4. CONTRACTOR SHALL SUPPLY AND MAINTAIN FOR THE DURATION OF CONSTRUCTION ALL NECESSARY DEVICES FOR EROSION, SEDIMENT AND DUST CONTROL, SUCH AS HAY BALES, GRAVEL, BOARDS, ETC., INCLUDING THOSE DEVICES NECESSARY FOR STOCKPILES AND PROTECTION OF ADJACENT PUBLIC WAYS, AND SHALL REMOVE THE DEVICES AFTER PROJECT COMPLETION.
5. CONTRACTOR SHALL VERIFY ALL EXISTING TOP AND BOTTOM OF CURB AND TOP AND BOTTOM OF WALL ELEVATIONS BEFORE PROCEEDING WITH ANY CONSTRUCTION.
6. CONTRACTOR SHALL MAINTAIN FUNCTION OF EXISTING DRAINAGE SYSTEM DURING THE COURSE OF WORK.
7. CONTRACTOR SHALL MEET EXISTING GRADE AT LIMIT OF WORK LINE WITHOUT DISTURBING ABUTTING DRAINAGE CONDITIONS.
8. UNLESS INDICATED OTHERWISE, FINISHED GRADE IS CONSIDERED TO BE TOP OF LOAM.
9. ALL FILL MATERIAL IS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT.
10. CONTRACTOR SHALL PITCH EVENLY BETWEEN SPOT GRADES. SET STRAIGHT LINE GRADES BETWEEN ELEVATIONS UNLESS OTHERWISE NOTED.
11. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM SLOPE OF ONE-EIGHTH INCH (1/8") PER FOOT. ANY DISCREPANCIES NOT ALLOWING THIS TO OCCUR SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT PRIOR TO CONTINUING WORK.
12. CROSS SLOPES OF ALL PATHS AND SIDEWALKS SHALL NOT EXCEED 2%
13. ANY AREA OUTSIDE THE LIMIT OF WORK LINE THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER.
14. NOTIFY LANDSCAPE ARCHITECT FOR REVIEW OF FINISH GRADING PRIOR TO PLANTING.
15. THE CONTRACTOR IS RESPONSIBLE FOR CORRECTING ANY PAVED AREAS WHERE PUDDLING OCCURS AT HIS EXPENSE IN A MANNER APPROVED BY THE LANDSCAPE ARCHITECT/OWNER.
16. CONTRACTOR SHALL MAKE TOP OF WALL PROFILES LEVEL UNLESS OTHERWISE NOTED.
17. CONTRACTOR SHALL HOLD DOWN FINISH GRADE OF SOIL OF ALL PLANTING AREAS THAT DO NOT RECEIVE MULCH 1 INCH BELOW FINISH SURFACE OF ADJACENT PAVING UNLESS OTHERWISE NOTED.
18. HOLD DOWN FINISH GRADE OF PLANTING AREAS TO RECEIVE MULCH SO THAT SPECIFIED MULCH LAYER FINISH SURFACE IS SAME ELEVATION AS ADJACENT PAVING FINISH SURFACES.
19. ELEVATION AT BUILDING ENTRIES NOT TO BE LOWER THAN 1/4" FFE.
20. EXISTING CONDITIONS AND TOPOGRAPHIC DATA ARE FROM A SURVEY PREPARED BY HDR ENGINEERING. SEE CIVIL DRAWINGS.

PLANTING NOTES

1. ALL NEW PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC. IN ADDITION, ALL NEW PLANT MATERIAL FOR THE PROJECT SHALL BE OF SPECIMEN QUALITY.
2. ALL NEW PLANTS TO BE BALLED AND BURLAPPED OR CONTAINER-GROWN, UNLESS OTHERWISE NOTED ON PLANT LIST.
3. ANY PROPOSED SUBSTITUTIONS OF PLANT SPECIES SHALL BE MADE WITH PLANTS OF EQUIVALENT OVERALL FORM, HEIGHT, BRANCHING HABIT, FLOWER, LEAF, COLOR, FRUIT AND CULTURE ONLY AS APPROVED BY THE LANDSCAPE ARCHITECT.
4. ALL NEW PLANTS SHALL BE TAGGED AND APPROVED BY THE LANDSCAPE ARCHITECT AT THE NURSERY PRIOR TO DIGGING OR DELIVERY TO SITE. CONTRACTOR TO NOTIFY THE LANDSCAPE ARCHITECT TWO WEEKS IN ADVANCE TO TREE TAGGING TO SCHEDULE.
5. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING UTILITY LINES PRIOR TO PLANTING AND SHALL REPORT ANY CONFLICTS TO THE LANDSCAPE ARCHITECT.
6. STAKE LOCATION OF ALL PROPOSED PLANTING FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO THE COMMENCEMENT OF PLANTING.
7. NEW PLANT MATERIAL SHALL BEAR SAME RELATIONSHIP TO GRADE AS IT BORE TO PREVIOUS GRADE AT NURSERY. PLANT MATERIAL SHALL ALSO BE IN THE SAME SOLAR ORIENTATION AS AT NURSERY. MATERIAL SHALL BE TAGGED ON THE NORTH SIDE OF THE PLANT TO FACILITATE PROPER ORIENTATION.
8. ALL PLANT BEDS TO RECEIVE TWO INCHES (2") OR THREE INCHES (3") OF BARK MULCH PER SPECIFICATIONS.
9. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIAL IN QUANTITIES SUFFICIENT TO COMPLETE THE PLANTING SHOWN ON ALL DRAWINGS.

ABBREVIATIONS LIST

AD	AREA DRAIN
ADJ	ADJACENT
AGG	AGGREGATE
BC	BOTTOM OF CURB
BETW	BETWEEN
BIT	BITUMINOUS
BS	BOTTOM OF STEP
BW	BOTTOM OF WALL
BWSC	BOSTON WATER & SEWER
CB	CATCH BASIN
CLF	CHAIN LINK FENCE
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CONC	CONCRETE
CO	CLEAN OUT
CP	CENTER POINT
DET'L	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DWG	DRAWING
EA	EACH
EHH	ELECTRIC HAND HOLE
EJ	EXPANSION JOINT
EQ	EQUAL
EX	EXISTING
EXP	EXPANSION
FFE	FINISH FLOOR ELEVATION
FIN	FINISH
FP	FLAG POLE
GA	GAUGE
GALV	GALVANIZED
GRAN	GRANITE
GSO	GAS SHUT OFF
HH	ELECTRIC HANDHOLE
HT	HEIGHT
HYD	HYDRANT
INACC	INACCESSIBLE
JT	JOINT
LA	LANDSCAPE ARCHITECT
LP	LIGHT POLE
MAT'L	MATERIAL
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
NTS	NOT TO SCALE
NVC	NO VISIBLE CONNECTION
OC	ON CENTER
OD	OUTSIDE DIAMETER
PC	POINT OF CURVATURE
PCS	PIECES
POB	POINT OF BEGINNING
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PRESSURE TREATED
PTD	PAINTED
PVMT	PAVEMENT
REC	RECORD
REINF	REINFORCED
REQ	REQUIRED
SBSS	SAND BASED STRUCTURAL SOIL
SF	SQUARE FEET
SHT	SHEET
SIM	SIMILAR
STA	STATION
STL	STEEL
TC	TOP OF CURB
TH	THRESHOLD
TS	TOP OF STEP
TW	TOP OF WALL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VGC	VERTICAL GRANITE CURB
VIF	VERIFY IN FIELD
WG	WATER GATE
WIF	WROUGHT IRON FENCE
WSO	WATER SHUT OFF
WWM	WELDED WIRE MESH



TREE LOCATION TABLE

TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
A1	102+72.57	27.00' L	'A'	DETAIL 6 / SHEET 70
B1	103+07.58	27.00' L	'B'	DETAIL 6 / SHEET 70
B2	103+47.60	27.00' L	'B'	DETAIL 6 / SHEET 70

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70, 4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70, 2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70, 9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100

SCALE: 1" = 20'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

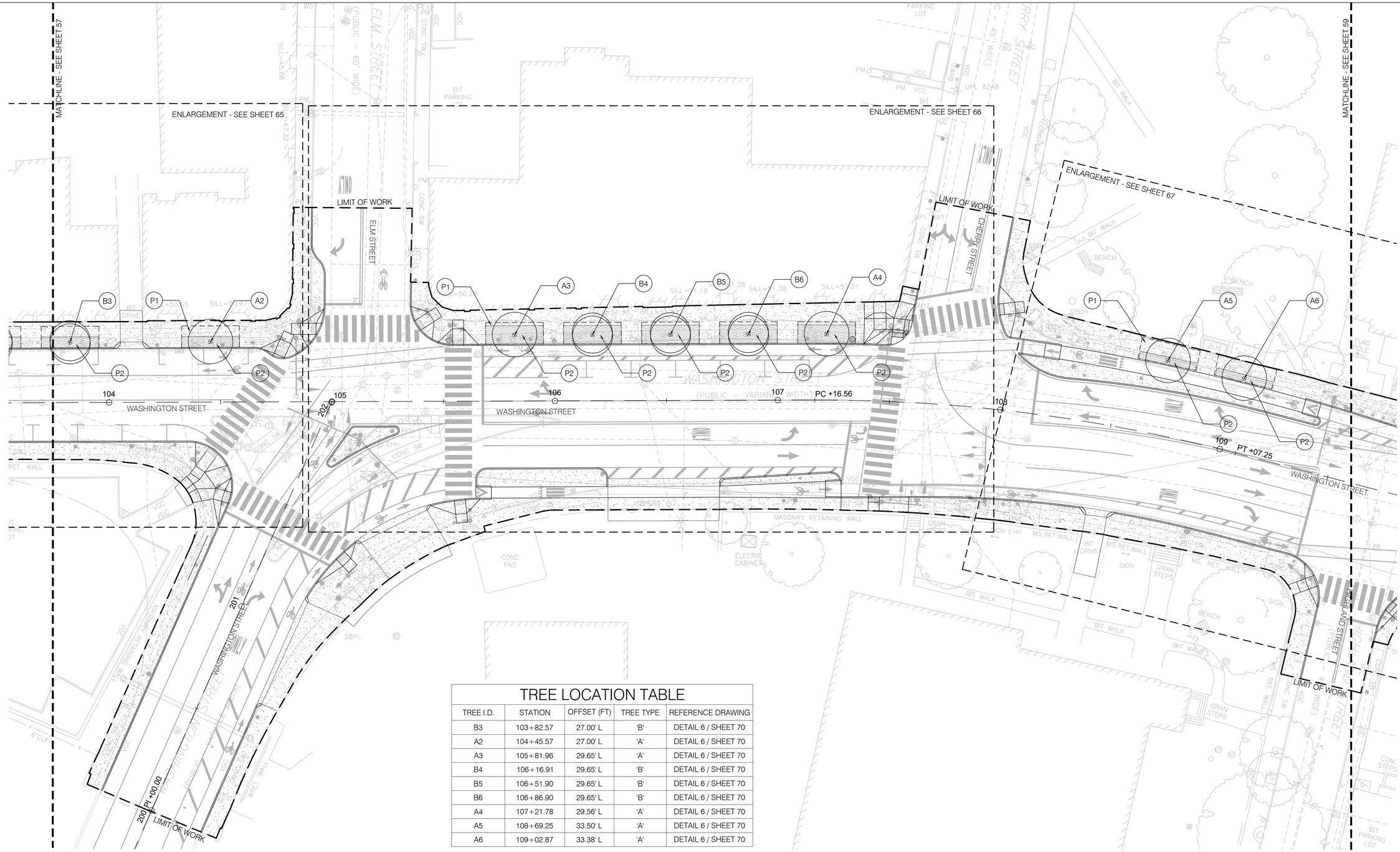
WEST NEWTON SQUARE

LANDSCAPE PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 57 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN



TREE LOCATION TABLE

TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
B3	103+82.57	27.00' L	'B'	DETAIL 6 / SHEET 70
A2	104+45.57	27.00' L	'A'	DETAIL 6 / SHEET 70
A3	105+81.96	29.65' L	'A'	DETAIL 6 / SHEET 70
B4	106+16.91	29.65' L	'B'	DETAIL 6 / SHEET 70
B5	106+51.90	29.65' L	'B'	DETAIL 6 / SHEET 70
B6	106+86.90	29.65' L	'B'	DETAIL 6 / SHEET 70
A4	107+21.78	29.56' L	'A'	DETAIL 6 / SHEET 70
A5	108+69.25	33.50' L	'A'	DETAIL 6 / SHEET 70
A6	109+02.87	33.38' L	'A'	DETAIL 6 / SHEET 70

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70, 4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 (2/71) BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70, 2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70, 9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100

SCALE: 1" = 20'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

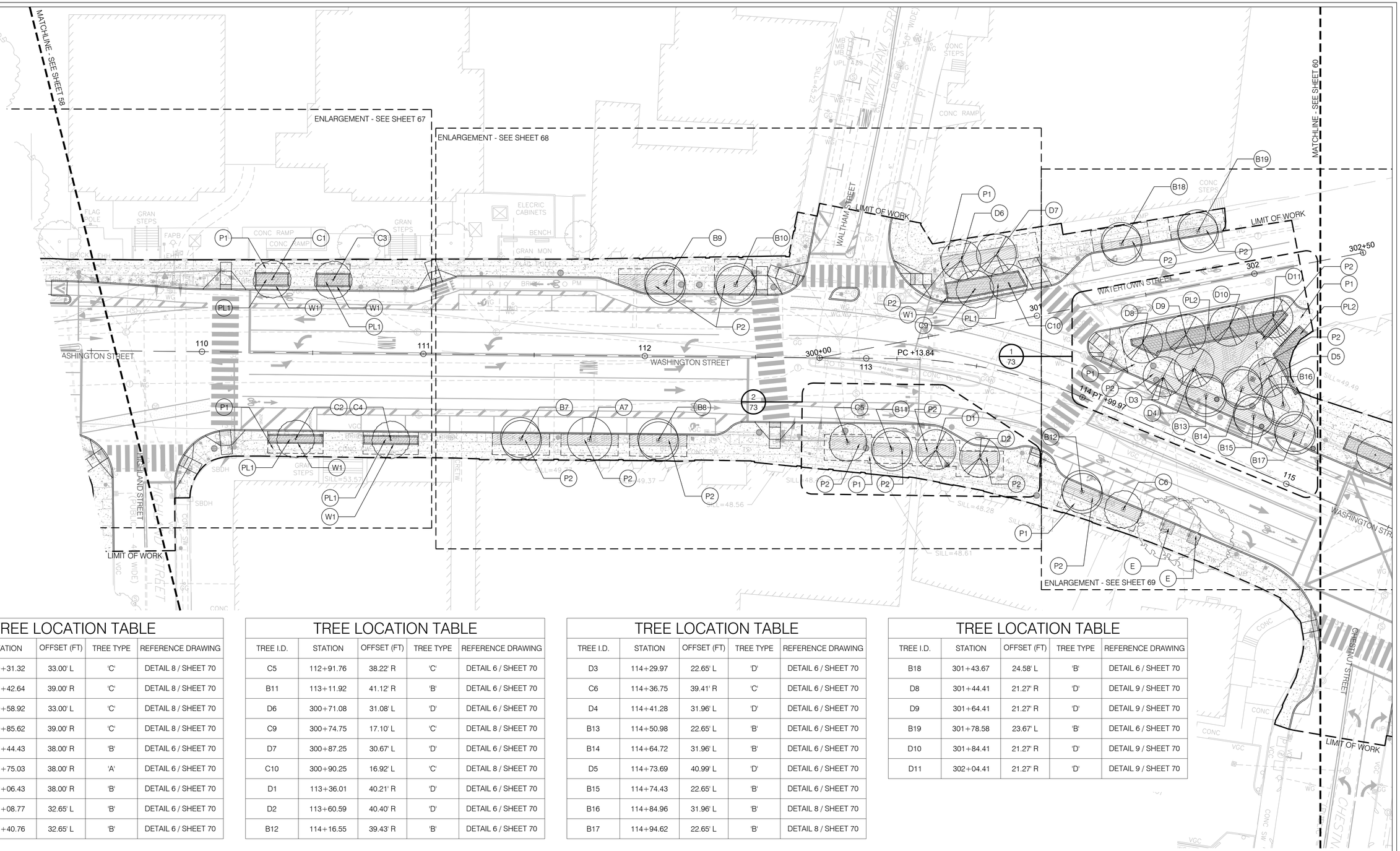
WEST NEWTON SQUARE

LANDSCAPE PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 58 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN



TREE LOCATION TABLE				
TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
C1	110+31.32	33.00' L	'C'	DETAIL 8 / SHEET 70
C2	110+42.64	39.00' R	'C'	DETAIL 8 / SHEET 70
C3	110+58.92	33.00' L	'C'	DETAIL 8 / SHEET 70
C4	110+85.62	39.00' R	'C'	DETAIL 8 / SHEET 70
B7	111+44.43	38.00' R	'B'	DETAIL 6 / SHEET 70
A7	111+75.03	38.00' R	'A'	DETAIL 6 / SHEET 70
B8	112+06.43	38.00' R	'B'	DETAIL 6 / SHEET 70
B9	112+08.77	32.65' L	'B'	DETAIL 6 / SHEET 70
B10	112+40.76	32.65' L	'B'	DETAIL 6 / SHEET 70

TREE LOCATION TABLE				
TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
C5	112+91.76	38.22' R	'C'	DETAIL 6 / SHEET 70
B11	113+11.92	41.12' R	'B'	DETAIL 6 / SHEET 70
D6	300+71.08	31.08' L	'D'	DETAIL 6 / SHEET 70
C9	300+74.75	17.10' L	'C'	DETAIL 8 / SHEET 70
D7	300+87.25	30.67' L	'D'	DETAIL 6 / SHEET 70
C10	300+90.25	16.92' L	'C'	DETAIL 8 / SHEET 70
D1	113+36.01	40.21' R	'D'	DETAIL 6 / SHEET 70
D2	113+60.59	40.40' R	'D'	DETAIL 6 / SHEET 70
B12	114+16.55	39.43' R	'B'	DETAIL 6 / SHEET 70

TREE LOCATION TABLE				
TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
D3	114+29.97	22.65' L	'D'	DETAIL 6 / SHEET 70
C6	114+36.75	39.41' R	'C'	DETAIL 6 / SHEET 70
D4	114+41.28	31.96' L	'D'	DETAIL 6 / SHEET 70
B13	114+50.98	22.65' L	'B'	DETAIL 6 / SHEET 70
B14	114+64.72	31.96' L	'B'	DETAIL 6 / SHEET 70
D5	114+73.69	40.99' L	'D'	DETAIL 6 / SHEET 70
B15	114+74.43	22.65' L	'B'	DETAIL 6 / SHEET 70
B16	114+84.96	31.96' L	'B'	DETAIL 8 / SHEET 70
B17	114+94.62	22.65' L	'B'	DETAIL 8 / SHEET 70

TREE LOCATION TABLE				
TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
B18	301+43.67	24.58' L	'B'	DETAIL 6 / SHEET 70
D8	301+44.41	21.27' R	'D'	DETAIL 9 / SHEET 70
D9	301+64.41	21.27' R	'D'	DETAIL 9 / SHEET 70
B19	301+78.58	23.67' L	'B'	DETAIL 6 / SHEET 70
D10	301+84.41	21.27' R	'D'	DETAIL 9 / SHEET 70
D11	302+04.41	21.27' R	'D'	DETAIL 9 / SHEET 70

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 (2/71) BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100

SCALE: 1" = 20'

TREE TYPES

- (+) A# TREE TYPE 'A', (TOTAL OF 7)
- (+) B# TREE TYPE 'B', (TOTAL OF 19)
- (+) C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

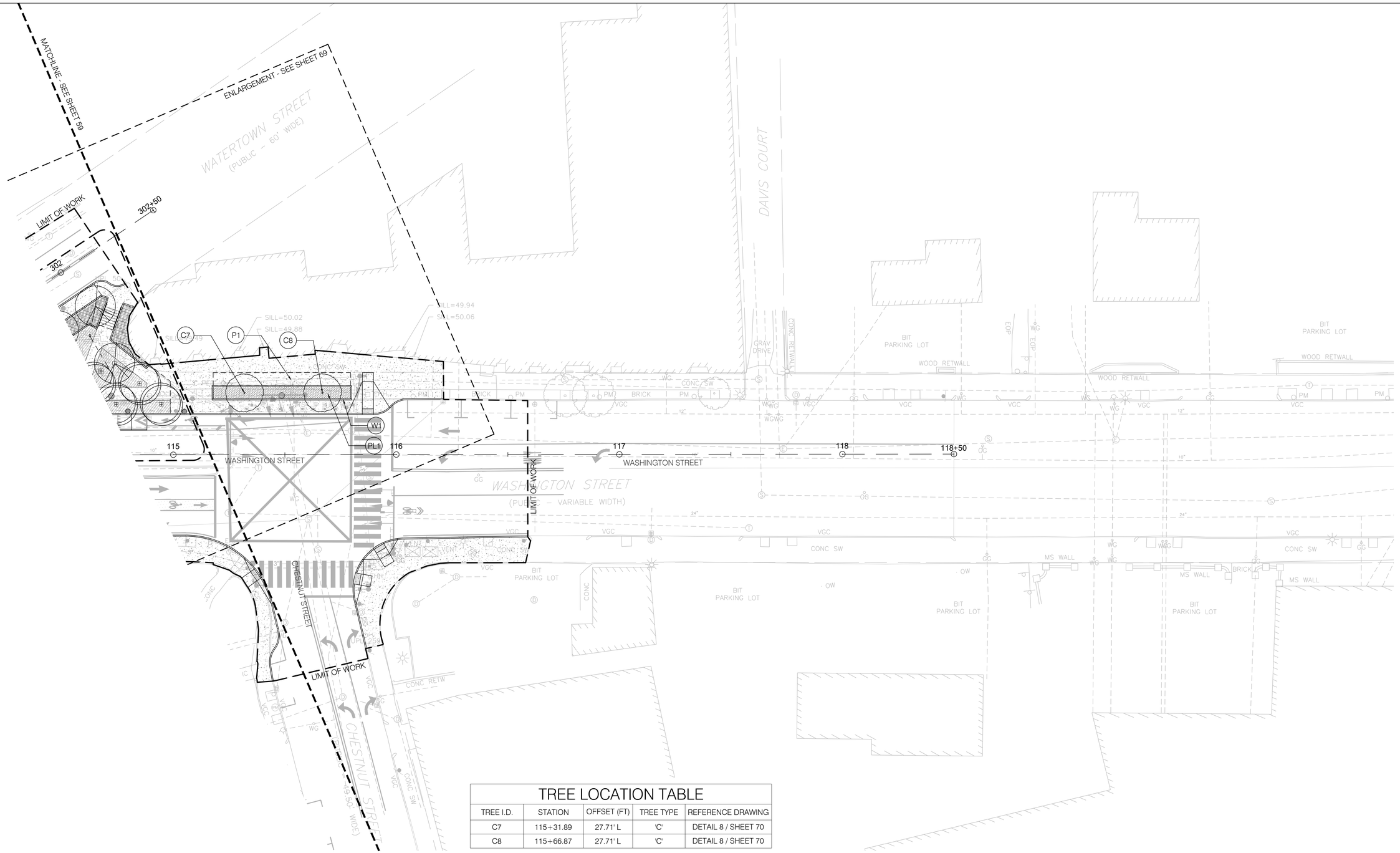
WEST NEWTON SQUARE

LANDSCAPE PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 59 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN



TREE LOCATION TABLE

TREE I.D.	STATION	OFFSET (FT)	TREE TYPE	REFERENCE DRAWING
C7	115+31.89	27.71' L	'C'	DETAIL 8 / SHEET 70
C8	115+66.87	27.71' L	'C'	DETAIL 8 / SHEET 70

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100

SCALE: 1" = 20'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

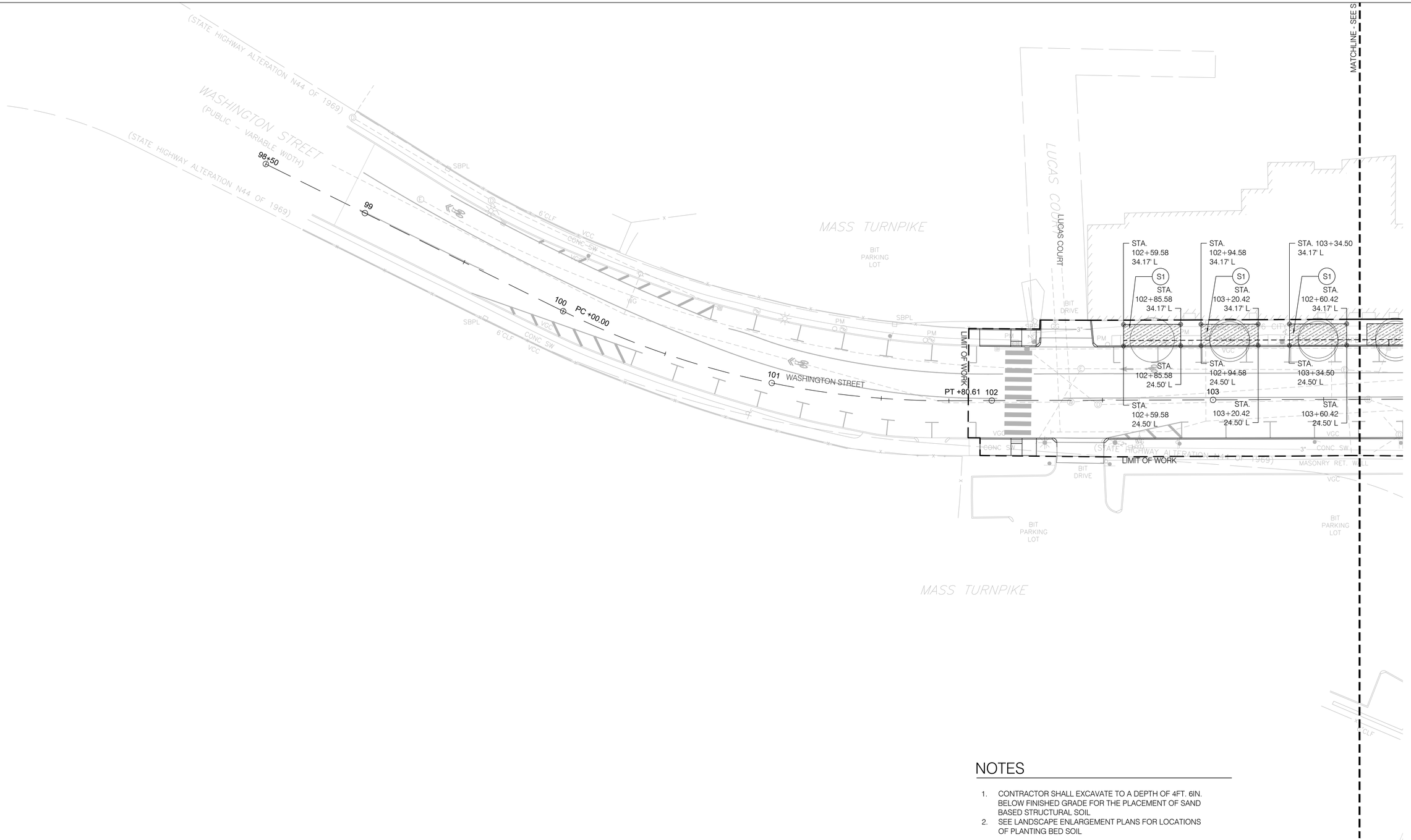
DESIGNED BY: KMDG
DRAWN BY: L PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 60 OF 72



NOTES

1. CONTRACTOR SHALL EXCAVATE TO A DEPTH OF 4FT. 6IN. BELOW FINISHED GRADE FOR THE PLACEMENT OF SAND BASED STRUCTURAL SOIL
2. SEE LANDSCAPE ENLARGEMENT PLANS FOR LOCATIONS OF PLANTING BED SOIL

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70, 4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70, 2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70, 9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100
SCALE: 1" = 20'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

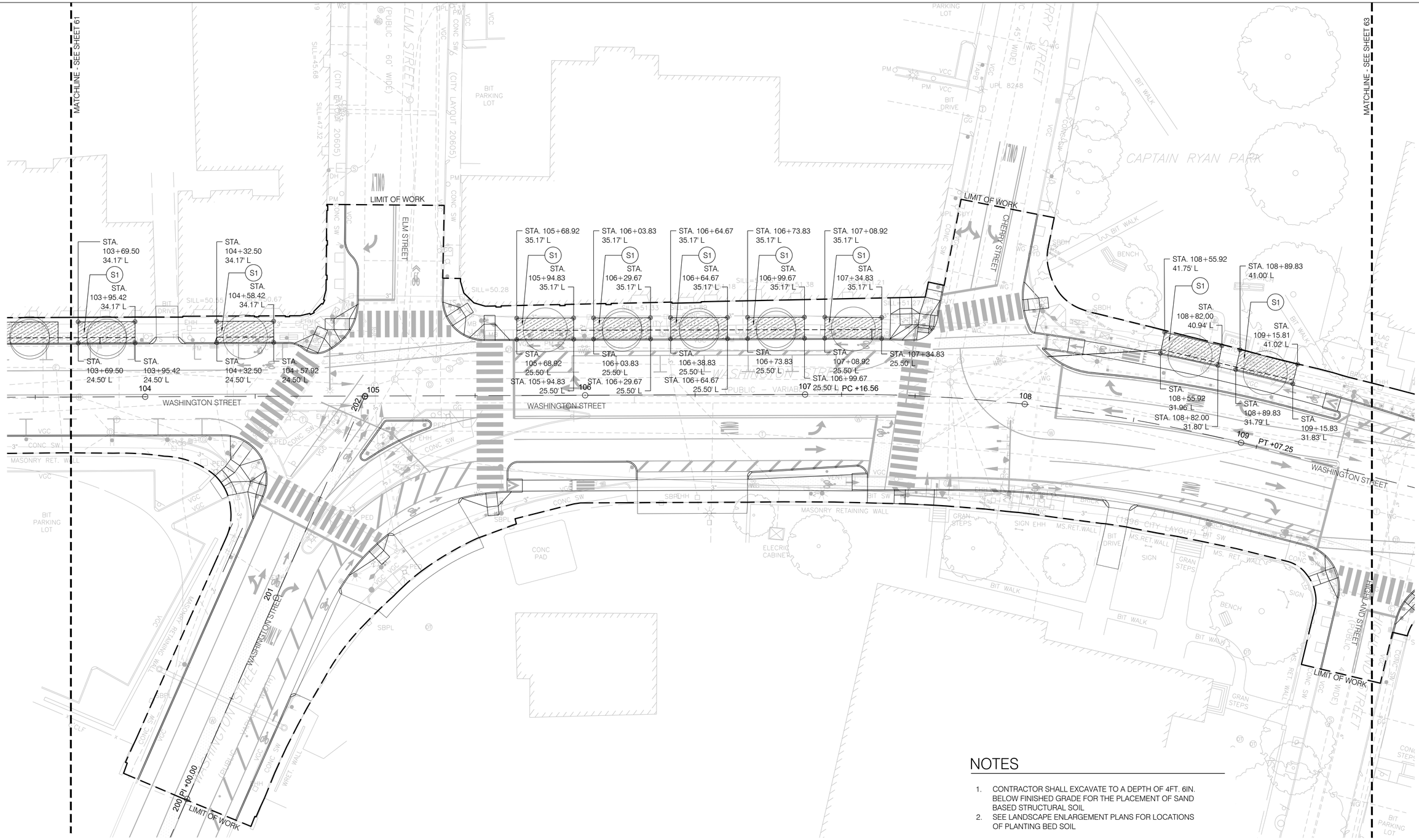
DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE SOIL PLACEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 61 OF 73



CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100
SCALE: 1" = 20'

NOTES

1. CONTRACTOR SHALL EXCAVATE TO A DEPTH OF 4FT. 6IN. BELOW FINISHED GRADE FOR THE PLACEMENT OF SAND BASED STRUCTURAL SOIL
2. SEE LANDSCAPE ENLARGEMENT PLANS FOR LOCATIONS OF PLANTING BED SOIL

TREE TYPES

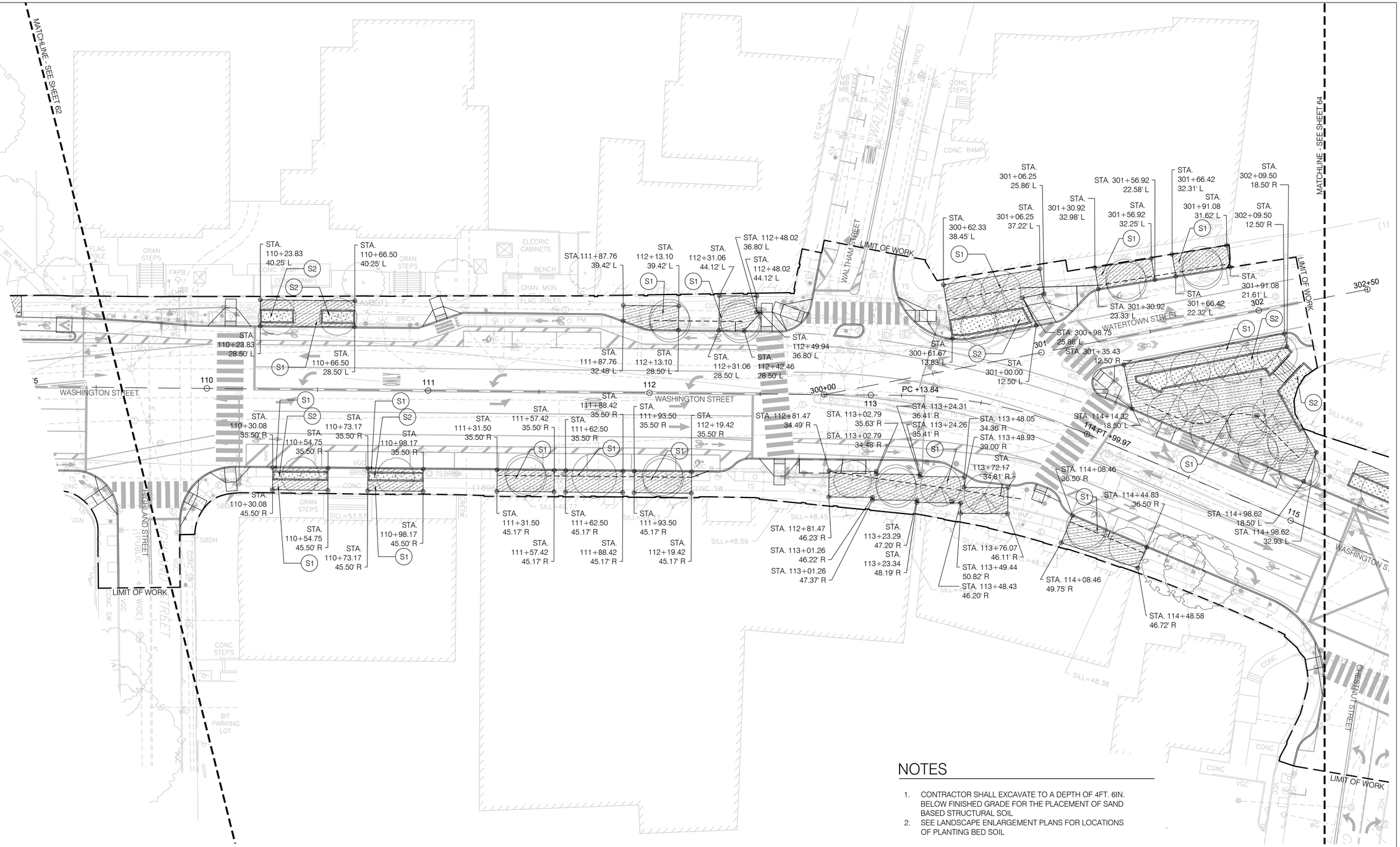
- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE SOIL PLACEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 62 OF 73



NOTES

1. CONTRACTOR SHALL EXCAVATE TO A DEPTH OF 4FT. 6IN. BELOW FINISHED GRADE FOR THE PLACEMENT OF SAND BASED STRUCTURAL SOIL
2. SEE LANDSCAPE ENLARGEMENT PLANS FOR LOCATIONS OF PLANTING BED SOIL

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 (2/71) BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

0 20 50 100

SCALE: 1" = 20'

CITY OF NEWTON
MASSACHUSETTS

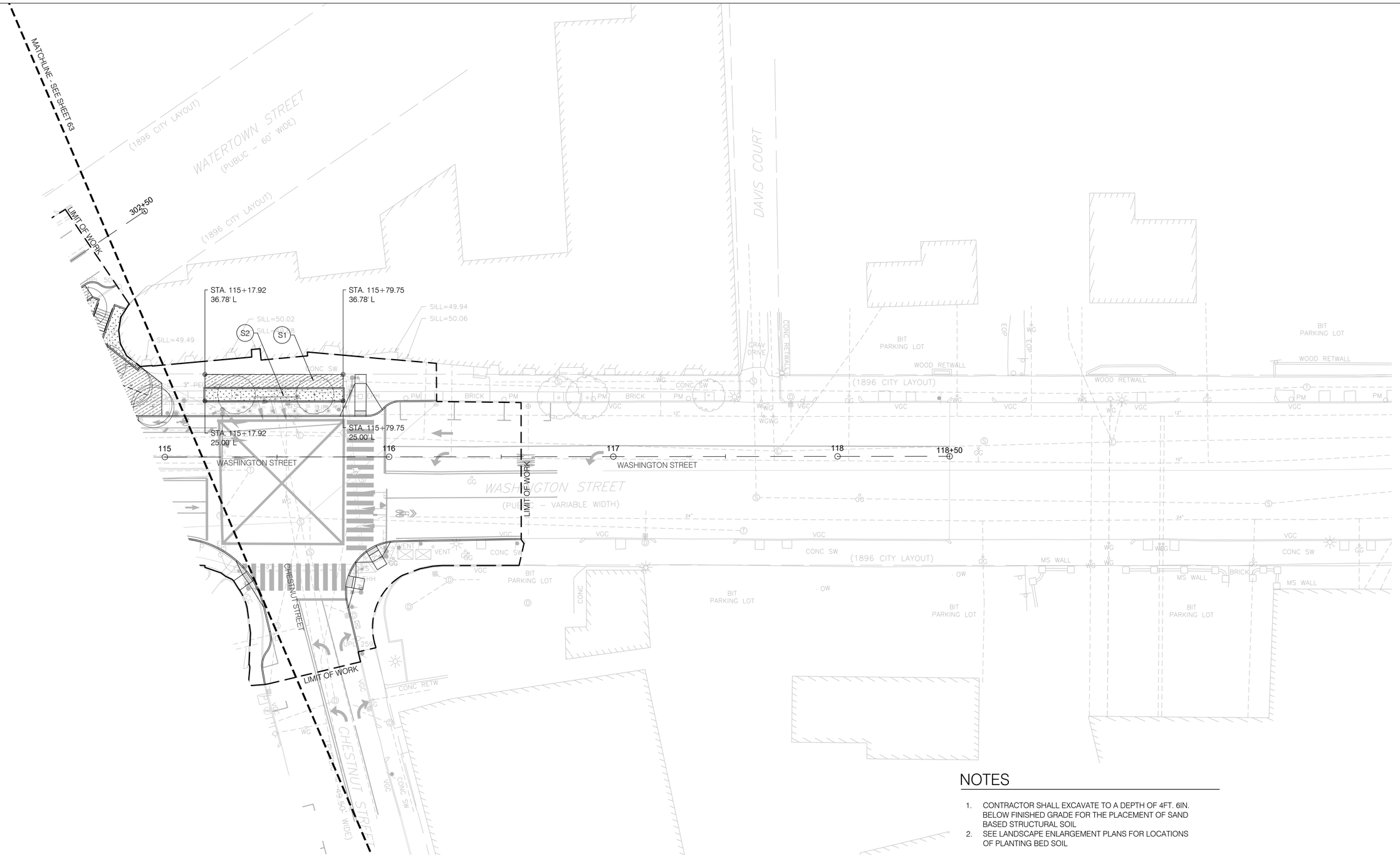
DESIGNED BY: KMDG
DRAWN BY: L PEREZ
CHECKED BY: K PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE SOIL PLACEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 63 OF 73



NOTES

1. CONTRACTOR SHALL EXCAVATE TO A DEPTH OF 4FT. 6IN. BELOW FINISHED GRADE FOR THE PLACEMENT OF SAND BASED STRUCTURAL SOIL
2. SEE LANDSCAPE ENLARGEMENT PLANS FOR LOCATIONS OF PLANTING BED SOIL

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 20 50 100

SCALE: 1" = 20'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

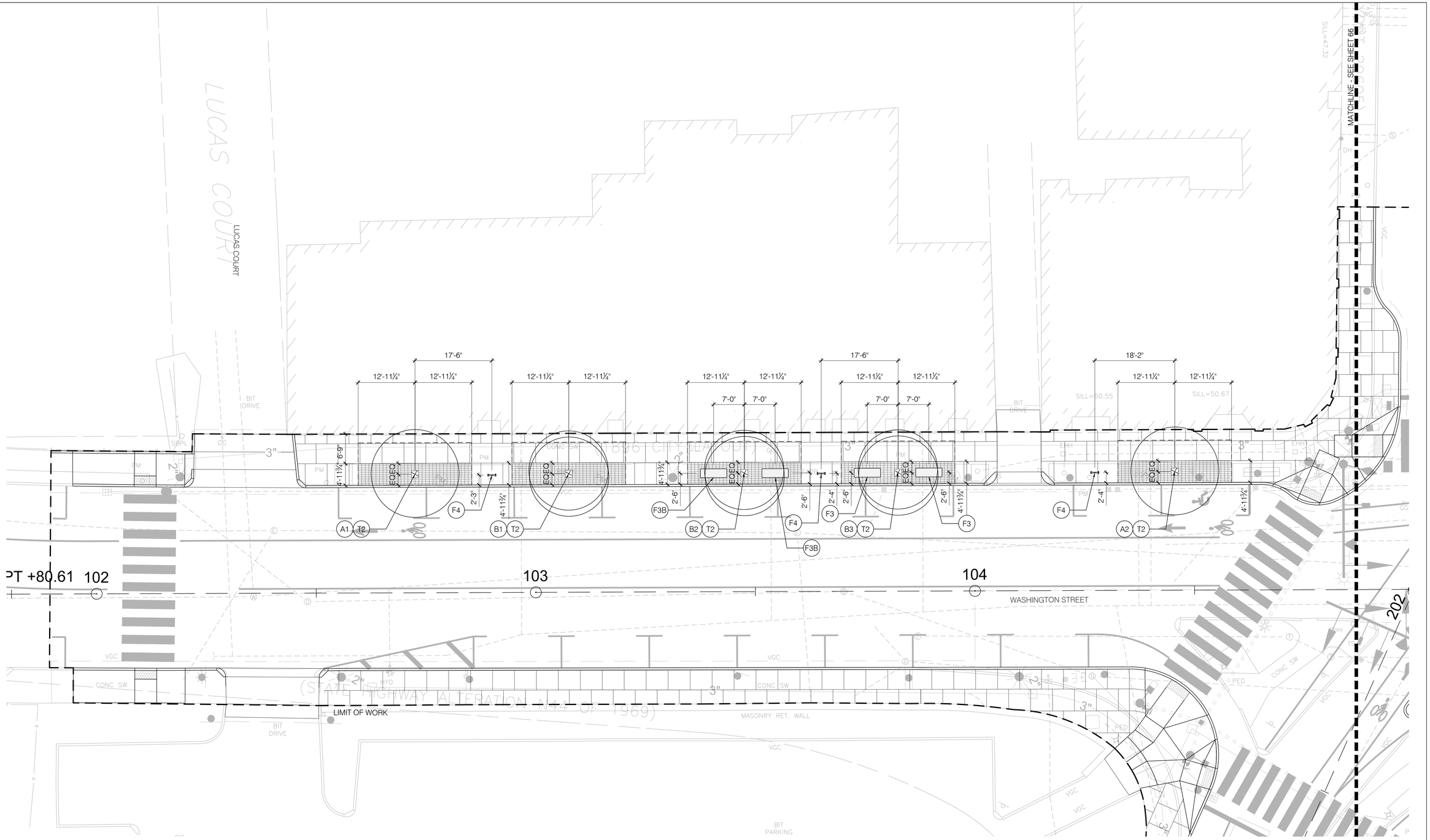
WEST NEWTON SQUARE

LANDSCAPE SOIL PLACEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 64 OF 73

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L.PEREZ
CHECKED BY: K.PETSCHKE
APPROVED BY: K.MARTIN



LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70, 4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70, 2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70, 9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 10 25 50
SCALE: 1" = 10'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

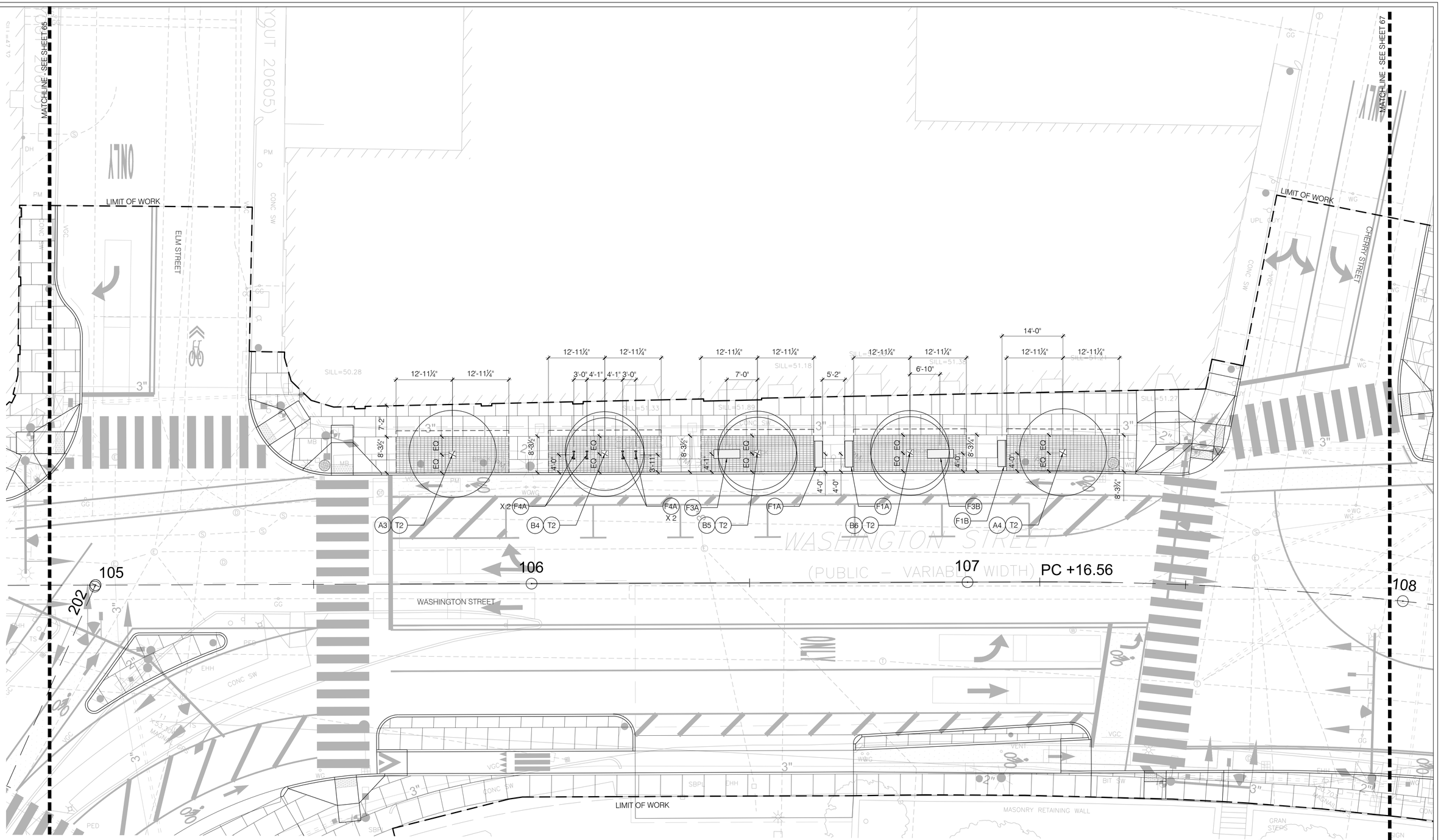
DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE ENLARGEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 65 OF 73



LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 10 25 50
SCALE: 1" = 10'

TREE TYPES

- (+) A# TREE TYPE 'A', (TOTAL OF 7)
- (+) B# TREE TYPE 'B', (TOTAL OF 19)
- (+) C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

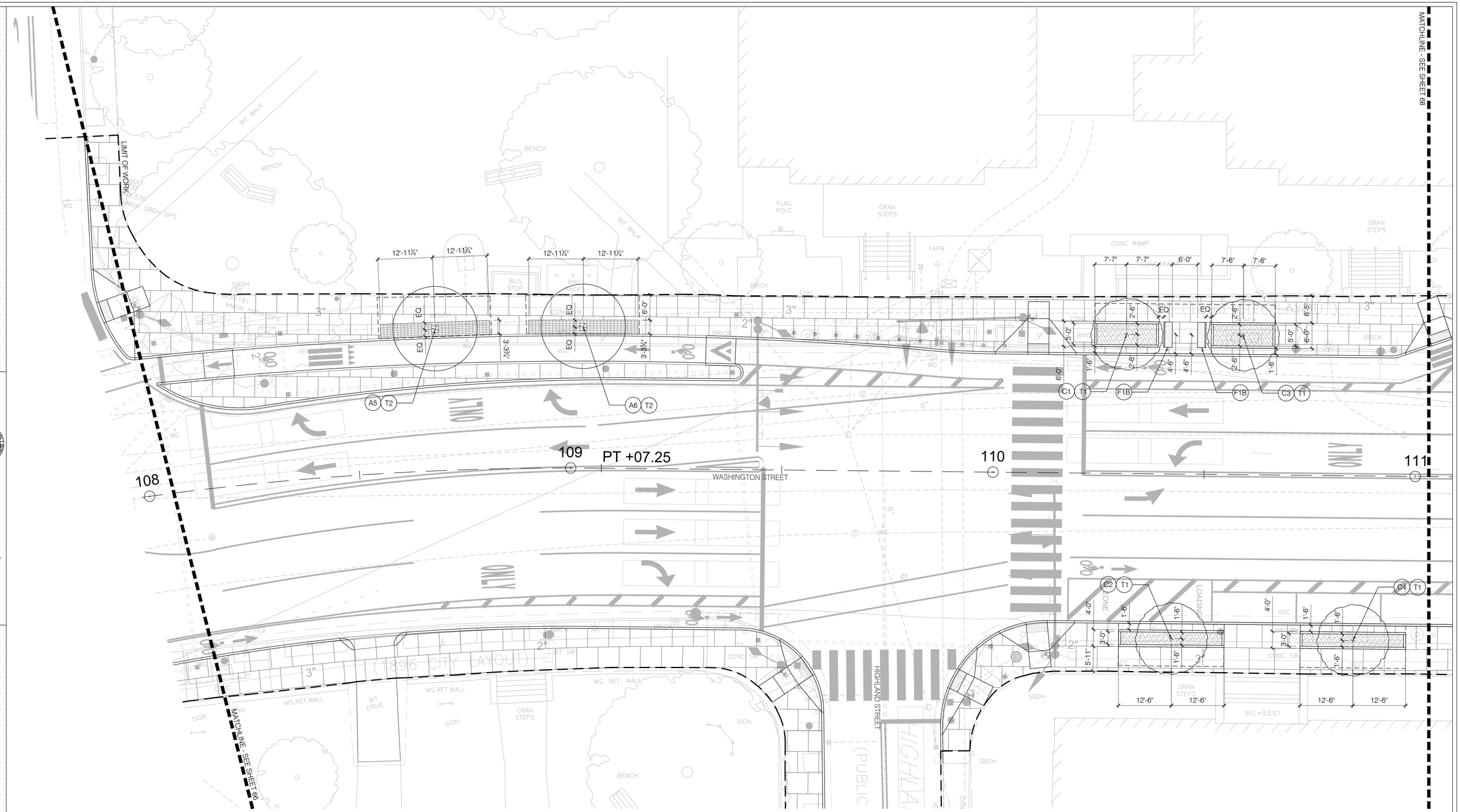
DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE ENLARGEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 66 OF 73



CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (6/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 (2/71) BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 10 25 50
SCALE: 1" = 10'

TREE TYPES

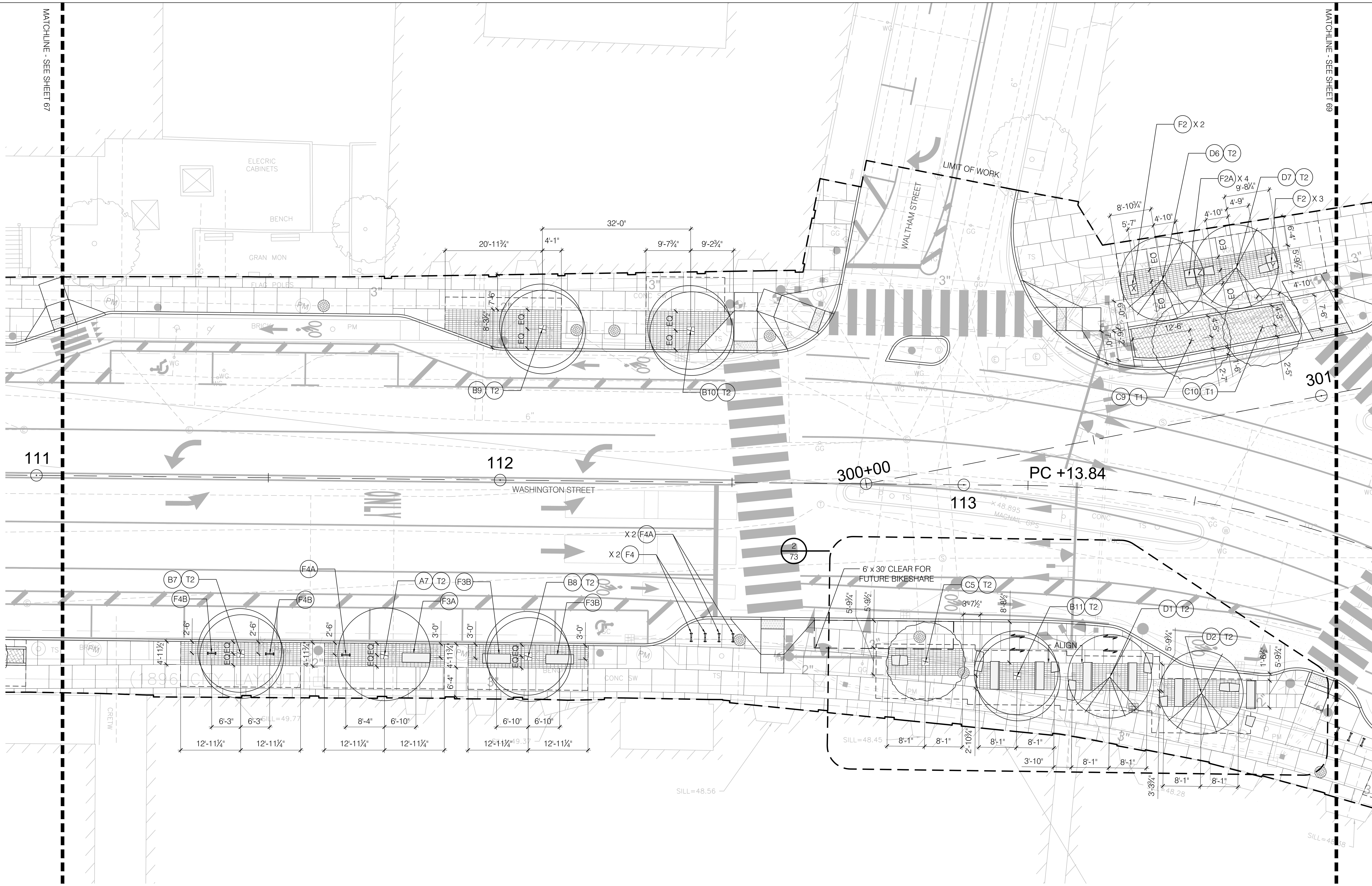
- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE ENLARGEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 67 OF 73



LEGEND

P1	2/70	C.I.P. CONCRETE PAVEMENT
P2	3/70, 4/70	PERMEABLE PRECAST CONCRETE UNIT PAVERS
W1	8/70	GRANITE LANDSCAPE CURB
F1	1/71	PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
F1A	1/71	BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
F1B	1/71	BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
F2	5/71	PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
F2A	5/71	BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
F3	3/71	PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
F3A	3/71	BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
F3B	3/71	BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
F4	2/71	BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
F4A	2/71	BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
F4B	2/71	BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
F5	4/71	BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
F5A	4/71	BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
F6		BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
S1	3/70, 2/70	SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
S2	1/70	PLANTING BED SOIL
PL1	7/70	BID ALT. 4 - PERENNIAL PLANTING
PL2	3/72	BID ALT. 4 - SHRUB PLANTING
T1	8/70, 9/70	TREE PLANTING IN RAISED PLANTER
T2	6/70	TREE PLANTING IN PERMEABLE PAVERS

TREE TYPES

A#		TREE TYPE 'A', (TOTAL OF 7)
B#		TREE TYPE 'B', (TOTAL OF 19)
C#		TREE TYPE 'C', (TOTAL OF 10)
D#		TREE TYPE 'D', (TOTAL OF 11)
E	1/69	EXISTING TREE TO REMAIN
		EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
		LIMIT OF WORK

0 10 25 50
SCALE: 1" = 10'

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

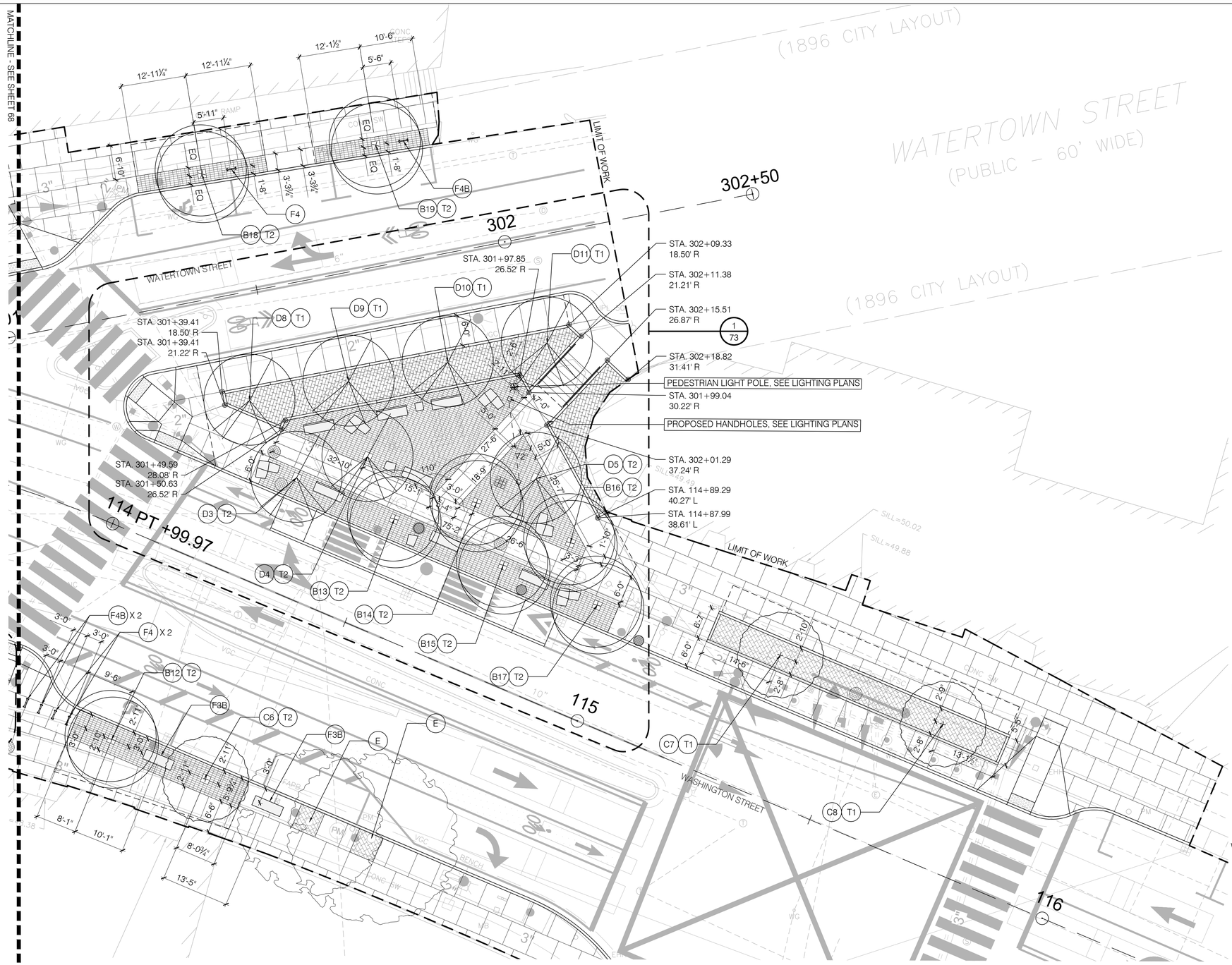
CITY OF NEWTON
MASSACHUSETTS

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

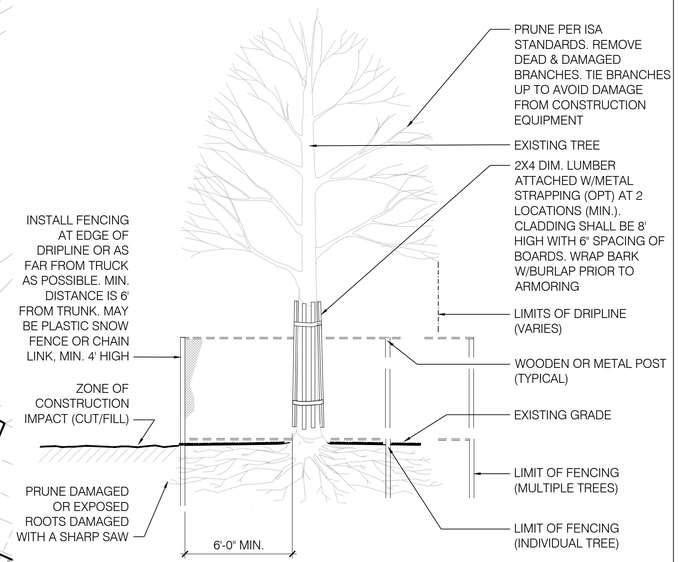
LANDSCAPE ENLARGEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 68 OF 73



TREE PROTECTION NOTES:

1. PROVIDE TREE PROTECTION AS DRAWN AT EX. TREES TO REMAIN. USE OF PLANTING BEDS FOR CONSTRUCTION ASSESSOR LAY DOWN SPACE IS EXPRESSLY FORBIDDEN.
2. SIGNAGE DESIGNATING THE FENCED AREA AS A TREE PROTECTION ZONE (TPZ) SHALL BE POSTED ON FENCING, RESTRICTING ACCESS, DESCRIBING PROHIBITED ACTIVITIES AND CONTACT INFORMATION.
3. PROTECTIVE BARRICADE TO BE PLACED A MINIMUM OF 6' FROM BASE OF TREE PLUS AN ADDITIONAL 1' FOR EACH ADDITIONAL INCH DBH FOR TREES GREATER THAN 8" DBH.
4. TREE PROTECTION SHALL BE INSPECTED AND APPROVED BY OWNER'S REPRESENTATIVE IN FIELD.
5. ALL WORK DONE WITHIN PROTECTIVE BARRICADES IS TO BE DONE BY HAND AND LIGHT EQUIPMENT. EXISTING SOIL VOLUME SHALL BE AERATED AND ORGANIC MATTER SHALL BE INTEGRATED INTO THE ROOT ZONE, USING THE AIR EXCAVATION TOOL (AIRSPADE), SEE SPECIFICATIONS.
6. PROVIDE TEMPORARY IRRIGATION FOR TREES THROUGHOUT CONSTRUCTION. PROVIDE SUPPLEMENTAL WATERING AS NEEDED TO PROVIDE AT LEAST 1" OF WATER PER WEEK - APRIL TO NOVEMBER.
7. SEVERING OF ROOTS LARGER THAN 1" DIAMETER SHALL BE CUT WITH SHARP PRUNING TOOLS.
8. NO PRUNING OR CUTTING OF TREES, INCLUDING FOR CONSTRUCTION ACCESS, WITHOUT PRIOR APPROVAL FROM THE LANDSCAPE ARCHITECT.
9. PROTECTED TREES SHALL BE MONITORED BY THE CITY ARBORIST FOR A MINIMUM OF 3 VISITS DURING THE GROWING SEASON. ARBORIST OBSERVATIONS AND RECOMMENDATIONS REGARDING TREE HEALTH OR INJURY SHALL BE ADDRESSED PROMPTLY BY THE CONTRACTOR IN CHARGE.
10. ALL TREES TO REMAIN SHALL BE PRUNED FOR DEAD WOOD AND STRUCTURE BY A CERTIFIED ARBORIST.



1 EXISTING TREE PROTECTION
SCALE: ############

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70) (4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70) (2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70) (9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 10 25 50
SCALE: 1" = 10'

TREE TYPES

- (A#) TREE TYPE 'A', (TOTAL OF 7)
- (B#) TREE TYPE 'B', (TOTAL OF 19)
- (C#) TREE TYPE 'C', (TOTAL OF 10)
- (D#) TREE TYPE 'D', (TOTAL OF 11)
- (E) (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

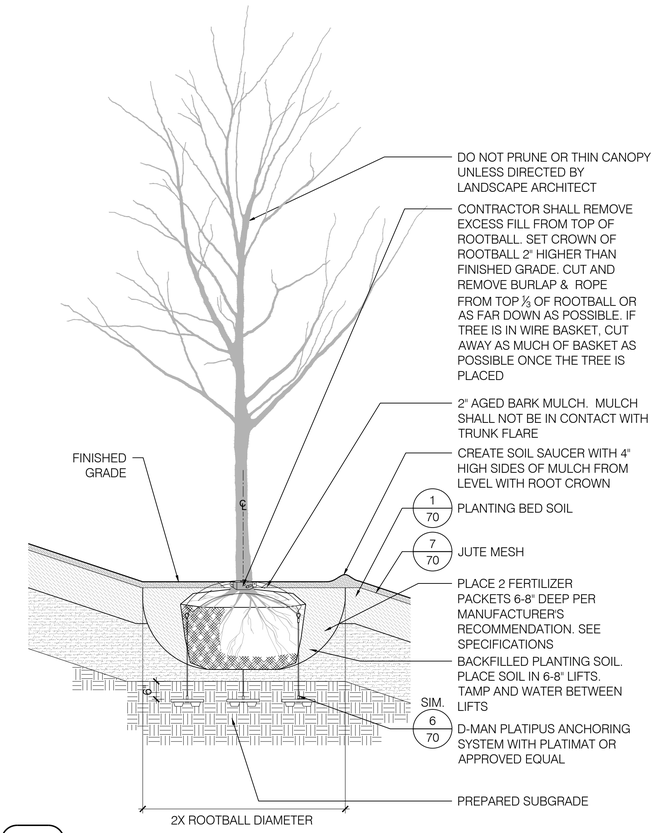
DESIGNED BY: KMDG
DRAWN BY: L PEREZ
CHECKED BY: K PETSCHKE
APPROVED BY: K MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

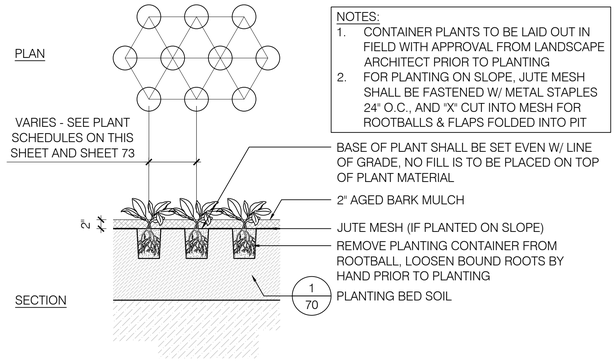
LANDSCAPE ENLARGEMENT PLAN

SCALE: AS NOTED DATE: 01/10/19 SHEET 69 OF 73



9 TREE PLANTING ON SLOPE

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



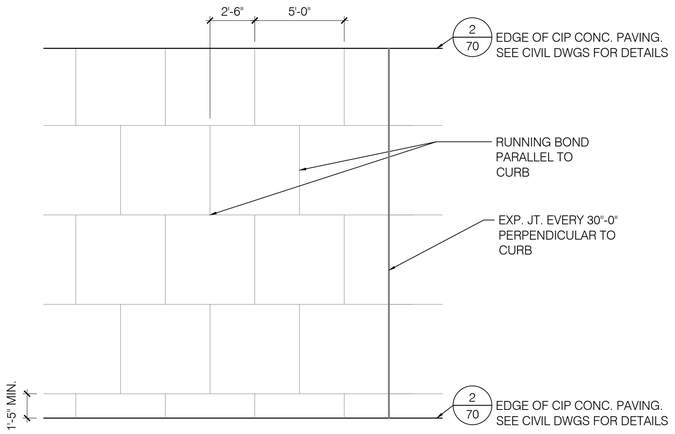
RAISED PLANTER PLANTING SCHEDULE

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
LC	871	Liriope spicata	Creeping Lily Turf	4" pot	9" O.C.
PP	871	Pachysandra procumbens	Allegheny Spurge	4" pot	9" O.C.

NOTES:
1. SCHEDULE FOR ALL RAISED PLANTERS EXCLUDING PLAZA RAISED PLANTER. SEE SHEET 73 FOR PLAZA PLANTING SCHEDULE.
2. PERENNIAL PLANTING AND SHRUB PLANTING ARE INCLUDED IN BID ALT 4.

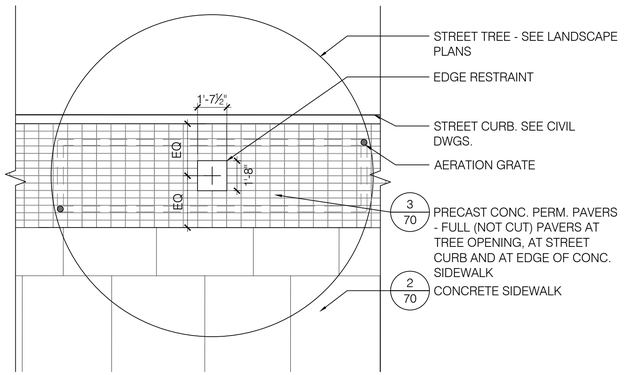
7 BID ALT. 4 - PERENNIAL PLANTING

SCALE: 1" = 1'-0"



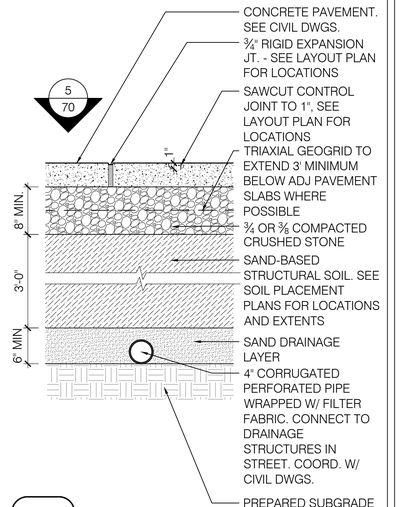
5 CONCRETE JOINT LAYOUT

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



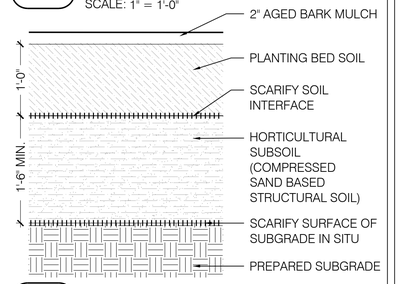
4 PRECAST CONC. PERM. UNIT PAVER LAYOUT

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



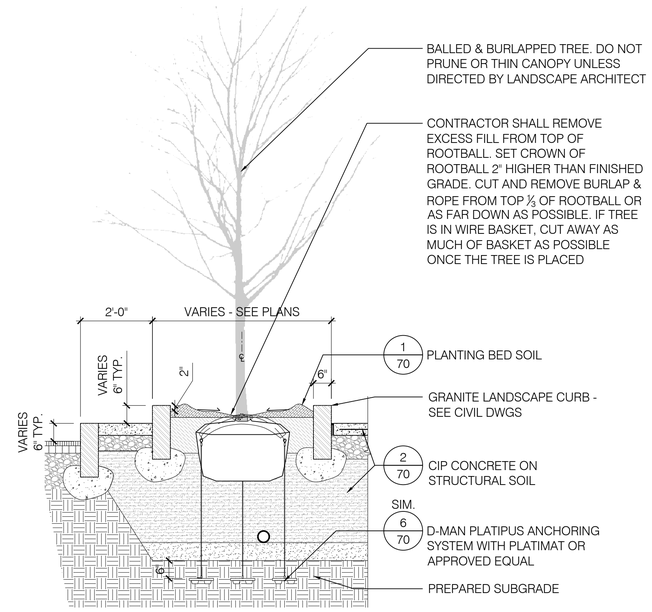
2 C.I.P. CONCRETE PAVING ON STRUC

SCALE: 1" = 1'-0"



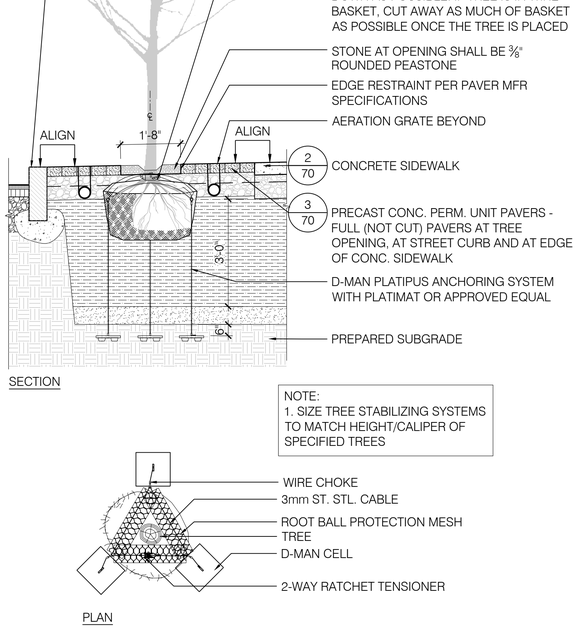
1 PLANTING BED SOIL

SCALE: 1" = 1'-0"



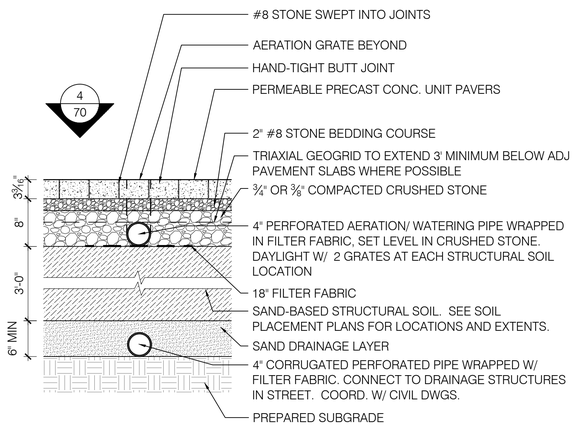
8 TREE PLANTING IN RAISED PLANTER

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



6 TREE PLANTING IN PRECAST CONC. PERM. UNIT PAVERS

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



3 PRECAST CONC. PERM. UNIT PAVERS OVER STRUCT. SOIL

SCALE: 1" = 1'-0"

CITY OF NEWTON
MASSACHUSETTS

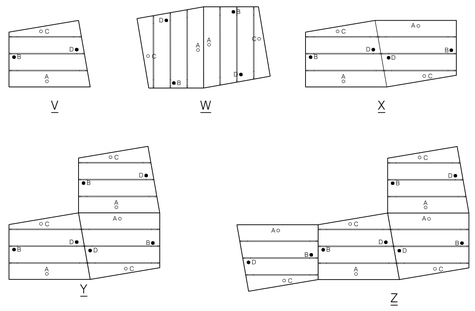
DESIGNED BY: KMDG
DRAWN BY: L PEREZ
CHECKED BY: K PETSCHKE
APPROVED BY: K MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

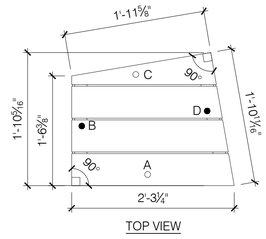
LANDSCAPE DETAILS

SCALE: AS NOTED DATE: 01/10/19 SHEET 70 OF 73

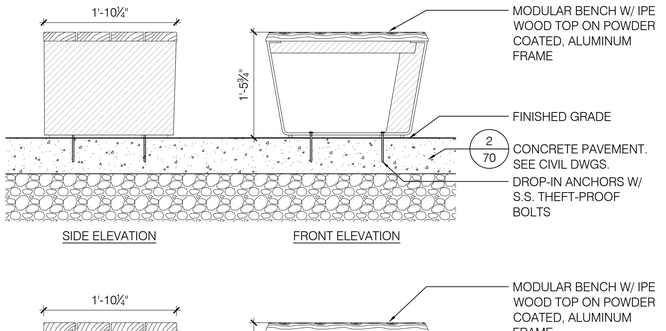


MODULAR ARRANGEMENTS:
TOP VIEW

SCALE: ½" = 1'-0"



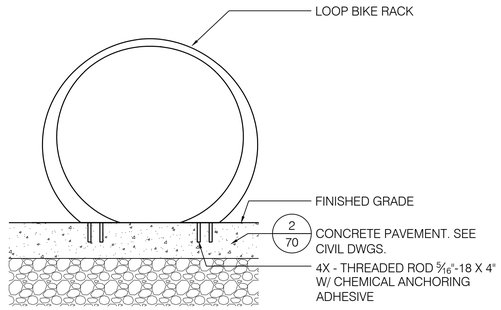
TOP VIEW



SCALE: 1" = 1'-0"

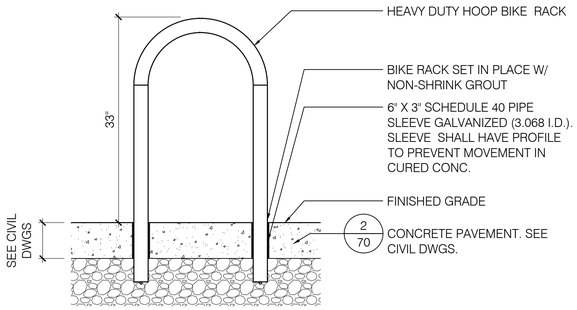
5 BIKE RACK TYPE 'B' - MODULAR

SCALE: AS NOTED



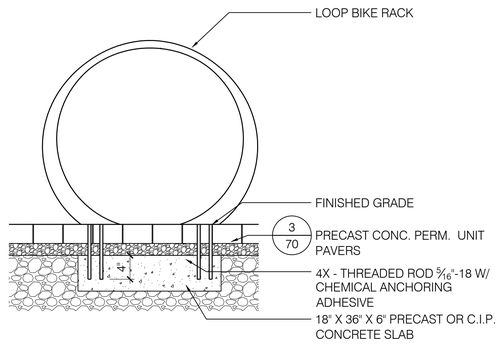
4 BIKE RACK TYPE 'B' - LOOP

SCALE: 1" = 1'-0"



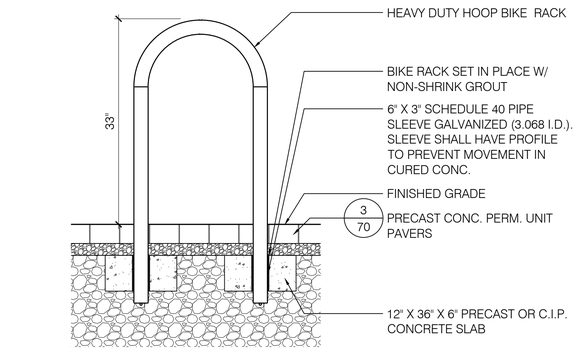
2 BIKE RACK TYPE 'A' - HEAVY DUTY HOOP

SCALE: 1" = 1'-0"



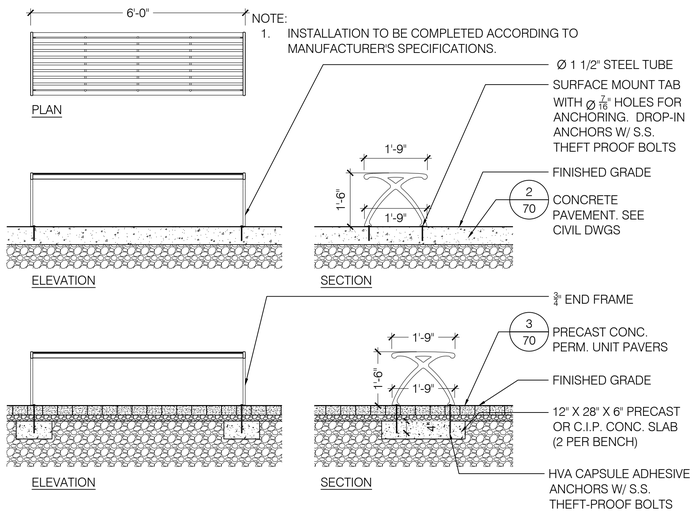
4 BIKE RACK TYPE 'B' - LOOP

SCALE: 1" = 1'-0"



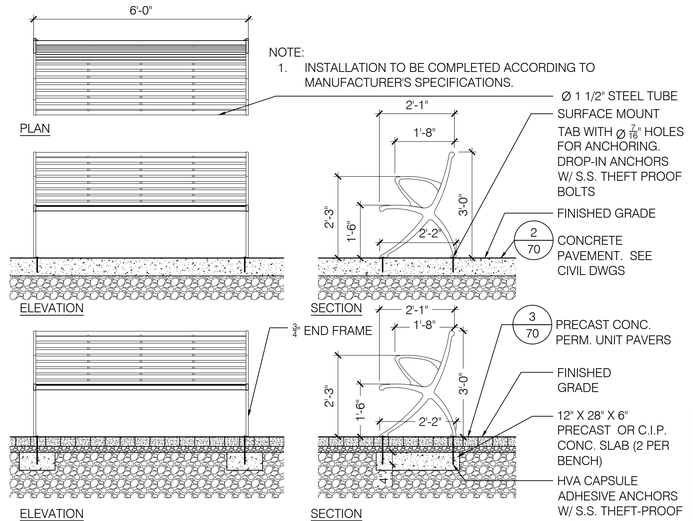
2 BIKE RACK TYPE 'A' - HEAVY DUTY HOOP

SCALE: 1" = 1'-0"



3 PARK BENCH TYPE 'C' - BACKLESS

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



1 PARK BENCH TYPE 'A' - WITH BACK

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

CITY OF NEWTON
MASSACHUSETTS

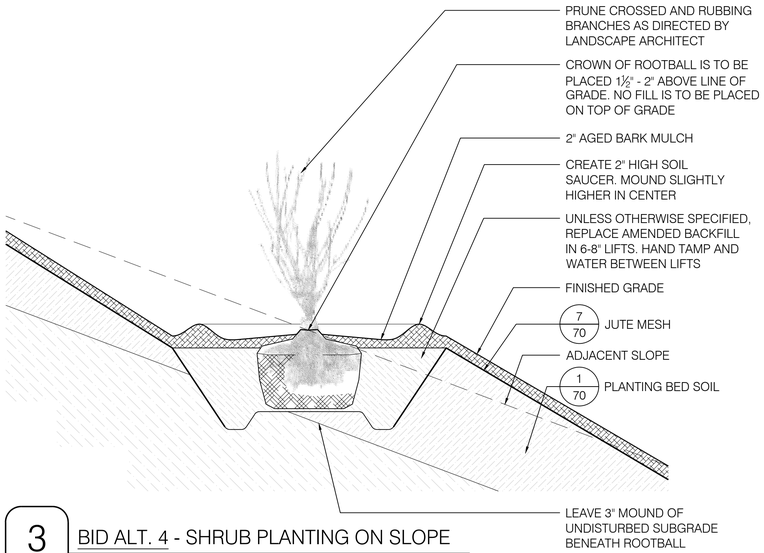
DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

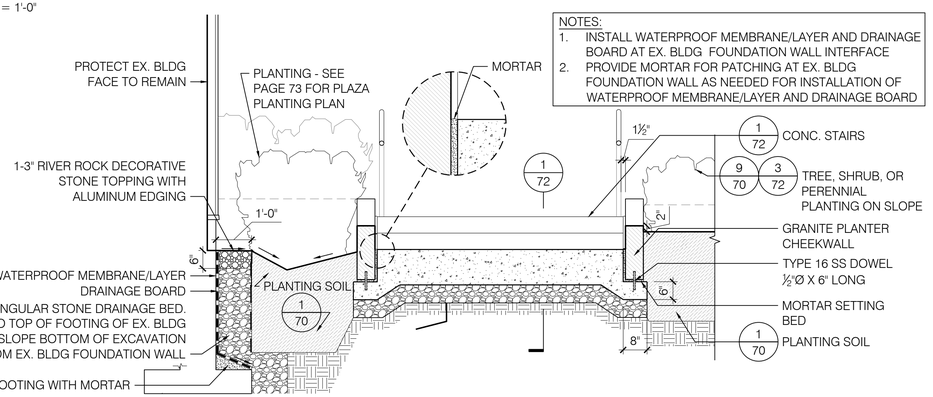
LANDSCAPE DETAILS

SCALE: AS NOTED DATE: 01/10/19 SHEET 71 OF 73



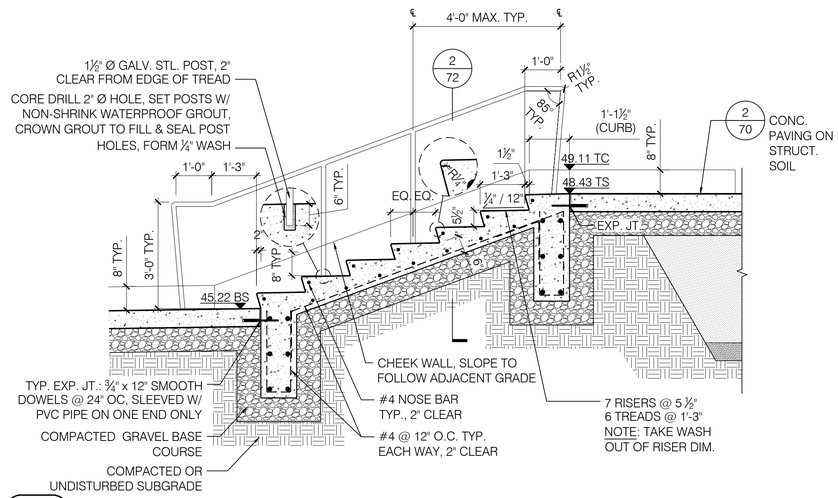
3 BID ALT. 4 - SHRUB PLANTING ON SLOPE

SCALE: 1" = 1'-0"



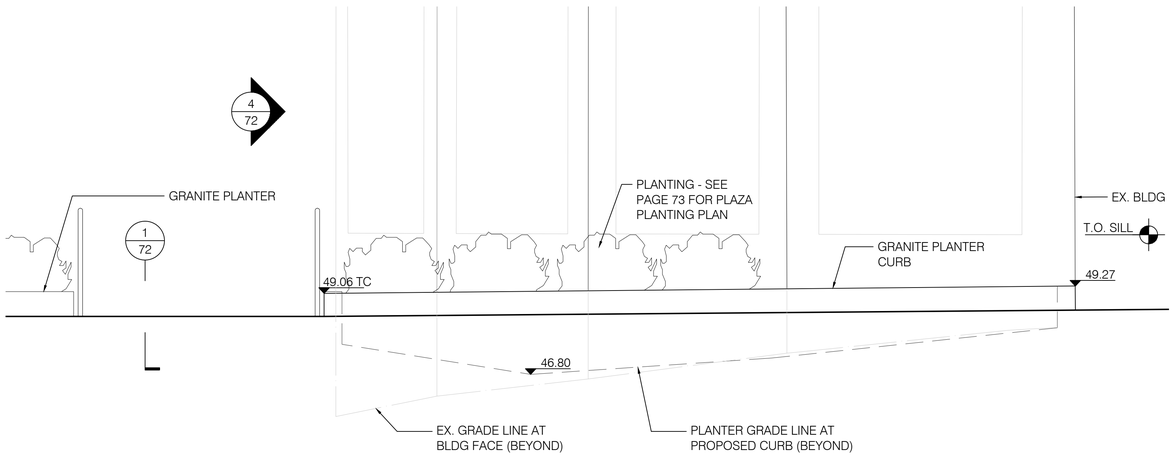
2 STAIR CHEEKWALL SECTION

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



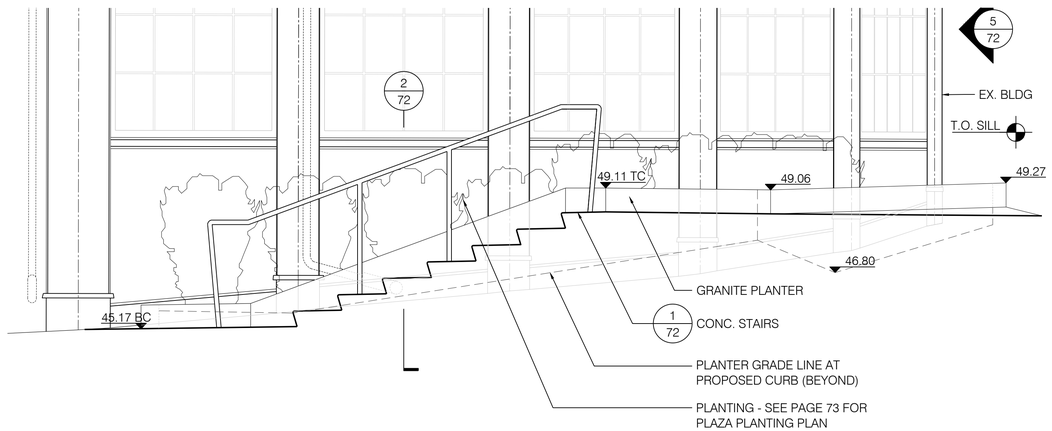
1 STAIR SECTION

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



5 PLANTER ELEVATION AT PLAZA

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



4 PLANTER ELEVATION AT STAIR

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

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L. PEREZ
CHECKED BY: K. PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

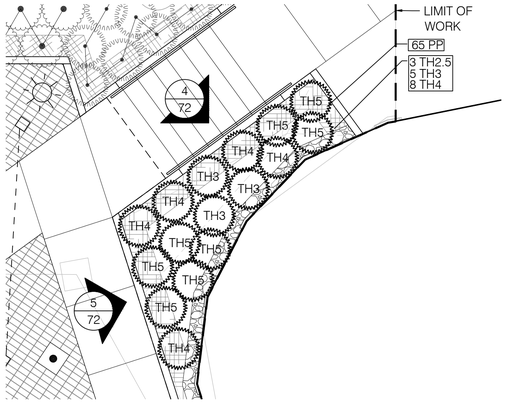
PLAZA DETAILS

SCALE: AS NOTED DATE: 01/10/19 SHEET 72 OF 73

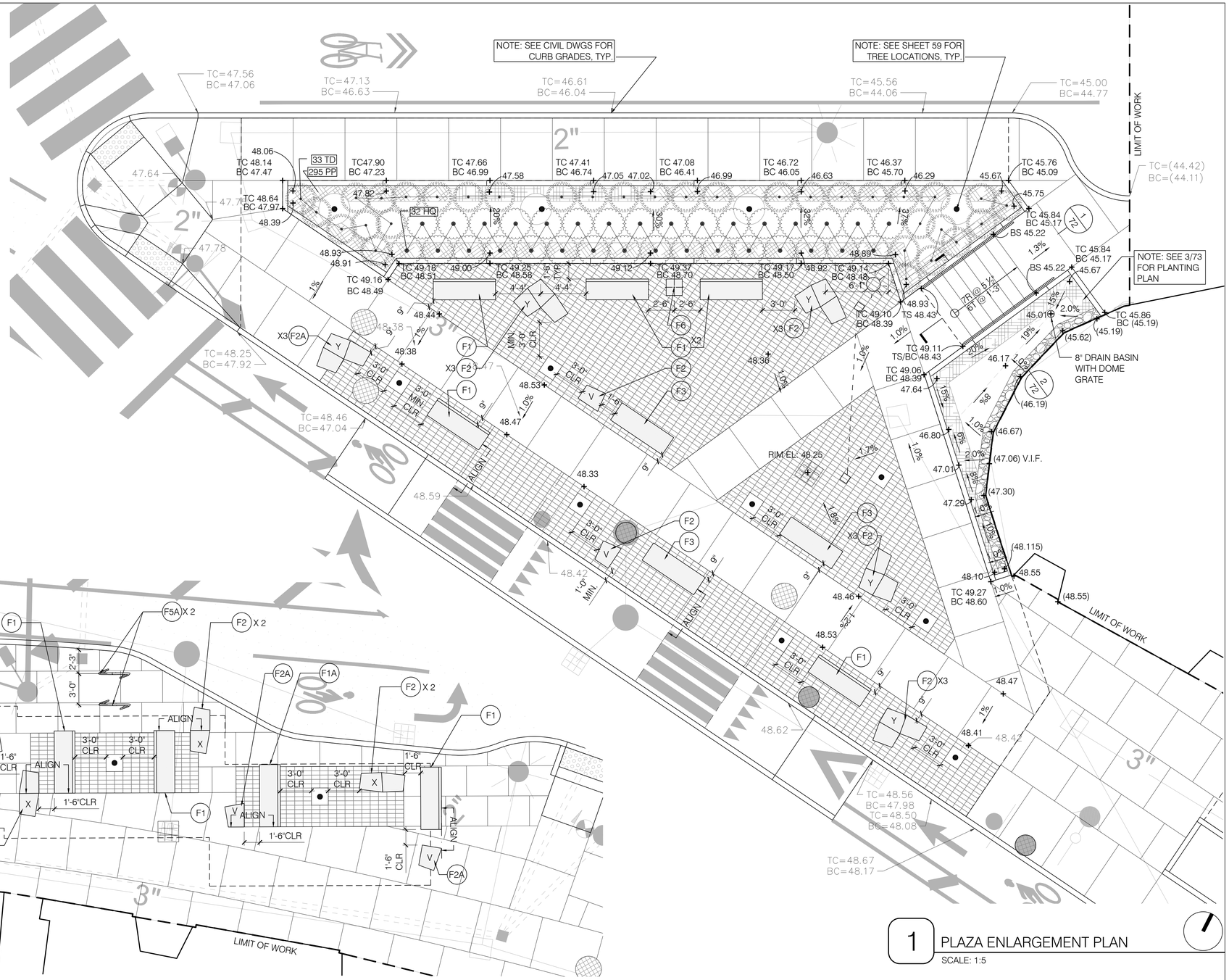
PLAZA PLANTING SCHEDULE

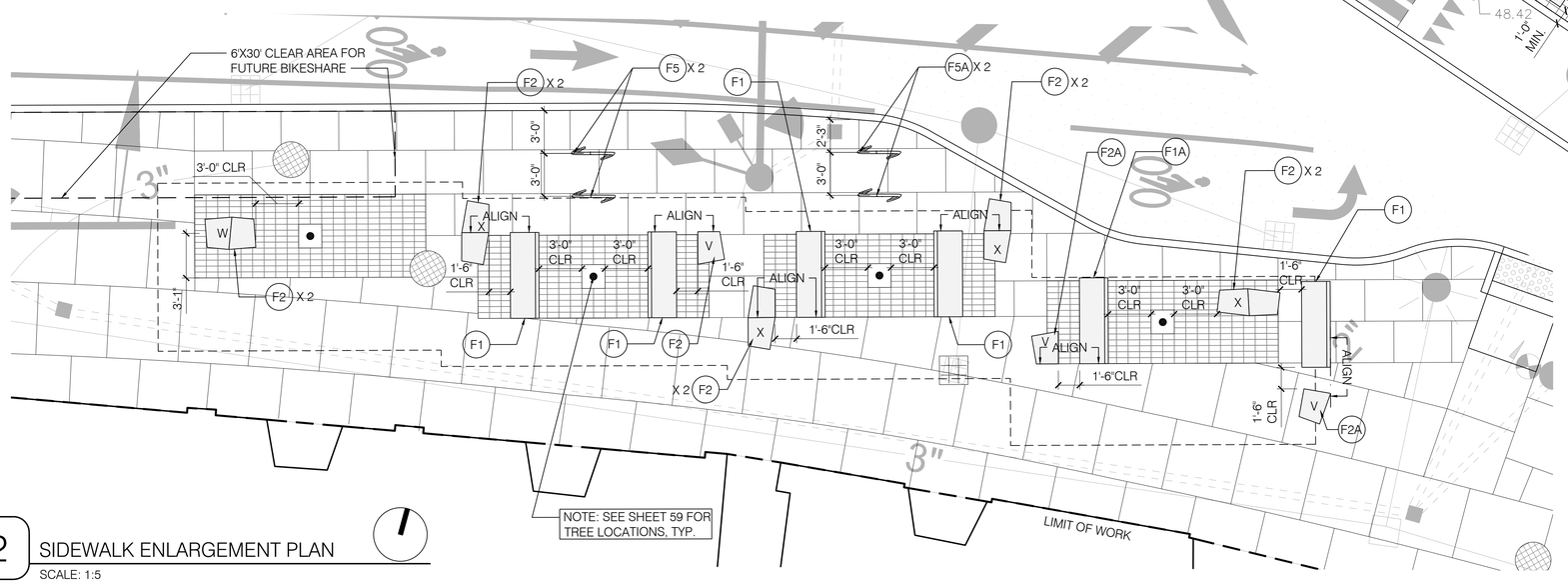
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
HQ	32	Hydrangea quercifolia `Pee Wee`	Oakleaf Hydrangea	3.5-4` b&b	36" O.C.
TD	33	Taxus x media `Densiformis`	Dense Yew	18-24" B&B	36" O.C.
TH3	3	Taxus x media `Hatfieldii` OR `Hicksii`	Hatfield Yew	2.5-3` B&B	36" O.C.
TH4	5	Taxus x media `Hatfieldii` OR `Hicksii`	Hatfield Yew	3-4` B&B	36" O.C.
TH5	8	Taxus x media `Hatfieldii` OR `Hicksii`	Hatfield Yew	4-5` B&B	36" O.C.
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
PP	360	Pachysandra procumbens	Allegheny Spurge	4" pot	9" O.C.

NOTES:
1. SCHEDULE FOR PLAZA RAISED PLANTER ONLY. SEE SHEET 70 FOR ALL OTHER RAISED PLANTER SCHEDULES
2. PERENNIAL PLANTING AND SHRUB PLANTING ARE INCLUDED IN BID ALT 4.



3 PLANTING ENLARGEMENT PLAN
SCALE: 1:5





2 SIDEWALK ENLARGEMENT PLAN
SCALE: 1:5

1 PLAZA ENLARGEMENT PLAN
SCALE: 1:5

LEGEND

- P1 (2/70) C.I.P. CONCRETE PAVEMENT
- P2 (3/70, 4/70) PERMEABLE PRECAST CONCRETE UNIT PAVERS
- W1 (8/70) GRANITE LANDSCAPE CURB
- F1 (1/71) PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 10)
- F1A (1/71) BID ALT. 2 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F1B (1/71) BID ALT. 3 - PARK BENCH TYPE 'A' - WITH BACK (TOTAL OF 3)
- F2 (5/71) PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 30)
- F2A (5/71) BID ALT. 2 - PARK BENCH TYPE 'B' - MODULAR (TOTAL OF 9)
- F3 (3/71) PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 5)
- F3A (3/71) BID ALT. 2 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 2)
- F3B (3/71) BID ALT. 3 - PARK BENCH TYPE 'C' - BACKLESS (TOTAL OF 7)
- F4 (2/71) BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 8)
- F4A (2/71) BID ALT. 2 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 7)
- F4B (2/71) BID ALT. 3 - BIKE RACK TYPE 'A' - HEAVY DUTY HOOP (TOTAL OF 5)
- F5 (4/71) BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F5A (4/71) BID ALT. 2 - BIKE RACK TYPE 'B' - LOOP (TOTAL OF 2)
- F6 BID ALT. 6 - SOOFA SOLAR CHARGING STATION (TOTAL OF 1)
- S1 (3/70, 2/70) SAND BASED STRUCTURAL SOIL BELOW PAVEMENT
- S2 (1/70) PLANTING BED SOIL
- PL1 (7/70) BID ALT. 4 - PERENNIAL PLANTING
- PL2 (3/72) BID ALT. 4 - SHRUB PLANTING
- T1 (8/70, 9/70) TREE PLANTING IN RAISED PLANTER
- T2 (6/70) TREE PLANTING IN PERMEABLE PAVERS

0 5 10 40
SCALE: 1" = 5'

TREE TYPES

- A# TREE TYPE 'A', (TOTAL OF 7)
- B# TREE TYPE 'B', (TOTAL OF 19)
- C# TREE TYPE 'C', (TOTAL OF 10)
- D# TREE TYPE 'D', (TOTAL OF 11)
- E (1/69) EXISTING TREE TO REMAIN
- EXTENTS OF SAND BASED STRUCTURAL SOIL BELOW PAVEMENT - SEE SHEETS 61-64
- LIMIT OF WORK

CITY OF NEWTON
MASSACHUSETTS

DESIGNED BY: KMDG
DRAWN BY: L PEREZ
CHECKED BY: K PETSCHKE
APPROVED BY: K. MARTIN

CITY OF NEWTON
MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS
FOR THE RECONSTRUCTION OF

WEST NEWTON SQUARE

LANDSCAPE DETAILS

SCALE: AS NOTED DATE: 01/10/19 SHEET 73 OF 73