FOSTER STREET RECONSTRUCTION PHASE II

LITTLETON, MASSACHUSETTS

PRELIMINARY DESIGN SUBMITTAL

MARCH 1, 2021

PREPARED FOR

TOWN OF LITTLETON
37 SHATTUCK ST, PO BOX 1305
LITTLETON, MA 01460

PREPARED BY

FUSS & O'NEILL
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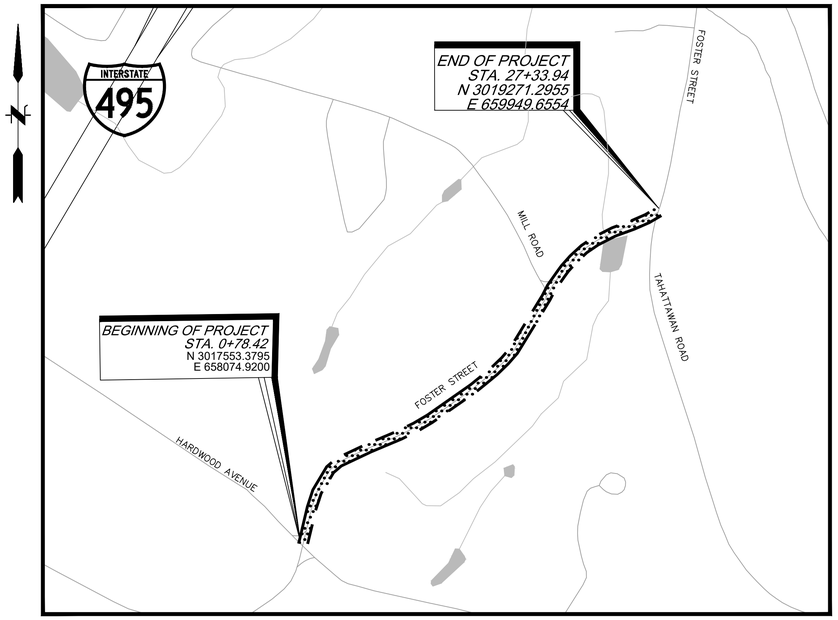

LOCATION MAP
SCALE: 1" = 400'

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PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

GI-001

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GENERAL SYMBOLS

EXISTING	PROPOSED	
CB (OR GI, LB)	CB	CATCH BASIN (OR GUTTER INLET, OR LEACHING BASIN)
CBCI (OR GICI)	CBCI (OR GICI)	CATCH BASIN (OR GUTTER INLET) WITH CURB INLET (GUTTERMOUTH)
		EDGESTONE–TYPE NOTED
		EDGE OF ROAD
EHH	EHH	ELECTRIC HANDHOLE (NUMBER AS NOTED)
EMH	EMH	ELECTRIC MANHOLE "
TMH	TMH	TELEPHONE MANHOLE "
WMH	WMH	WATER MANHOLE "
SMH	SMH	SEWER MANHOLE "
DMH	DMH	DRAINAGE MANHOLE "
GG	GG	GAS GATE
WG	WG	WATER GATE
CS	CS	CURB STOP
Hyd	HYD	HYDRANT
FA	FA	FIRE ALARM BOX
PM	PM	PARKING METER
LP	LP	STREET LIGHT POLE
UP	UP	UTILITY POLE
Guy	GUY	GUY POLE
12" RCP D	D 21'–12"RCP	DRAIN PIPE (UNDER 24")
	D 21'–24"RCP	DRAIN PIPE (DOUBLE LINE 24" AND OVER)
8" VCP S	S 82'–8"VCP	SEWER MAIN " "
E	E	ELECTRIC DUCT " "
4" HP G	G 8"GAS	GAS MAIN " "
8" C.I. W	W 12"DI	WATER MAIN " "
T	T	TELEPHONE DUCT " "
MB	MB	MAIL BOX
		HIGHWAY GUARD (TYPE NOTED)
x x	x o	FENCE (SIZE AND TYPE NOTED)
MHB	MHB	HIGHWAY/PROPERTY BOUND (TYPE NOTED)
LABEL/DATE	LABEL/DATE	CITY, TOWN, OR COUNTY LAYOUT
		STATE HIGHWAY LAYOUT (S.H.L.O.)
		EASEMENT LINE
℄	℄	PROPERTY LINE
NAME		CITY, TOWN, OR COUNTY BOUNDARY
NAME		STATE BOUNDARY
N00°00'00"E		BASE OR SURVEY LINE
	+57.59 10 P.C. N00°00'00"E	CONSTRUCTION BASELINE
		TREE (SIZE AND TYPE NOTED)
		APPROXIMATE FULL DEPTH AREA
		COMPOST FILTER TUBE
BVW		BORDERING VEGETATED WETLAND
		50' BUFFER TO WETLAND
		100' BUFFER TO WETLAND
		100' INNER RIPARIAN
		200' RIVERFRONT BUFFER
		MAJOR CONTOUR
		MINOR CONTOUR

TRAFFIC SIGNAL SYMBOLS

EXISTING	PROPOSED	
TS		FLASHING BEACON CONTROL & METER PEDESTAL
		SIGNAL POST & BASE
	A	FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD
		PEDESTRIAN PUSH BUTTON

PAVEMENT MARKINGS AND SIGNING SYMBOLS

EXISTING	PROPOSED	
		PAVEMENT ARROW AND LEGEND
CW	CW	CROSSWALK, 2–12" WHITE LINES (WIDTH NOTED)
SL	SL	STOP LINE, 12" WHITE LINE 4.0' BEHIND CW (TYP)
		YIELD LINE, 24" x 36" WHITE TRIANGLE, 36" O.C.
SWCHL	SWCHL	SOLID WHITE CHANNELIZING LINE–SIZE AS NOTED
SYCHL	SYCHL	SOLID YELLOW CHANNELIZING LINE–SIZE AS NOTED
BWLL	BWLL	BROKEN WHITE LANE LINE – 4"
SWLL	SWL	SOLID WHITE LINE – 6"
DYCL	DBYL	DOUBLE YELLOW CENTERLINE – 6"
SYEL	DWLL	DASHED WHITE LANE LINE – 4"
SWEL	SYEL	SOLID YELLOW EDGE LINE – 4"
BYLL	SWEL	SOLID WHITE EDGE LINE – 4"
	BYLL	BROKEN YELLOW LANE LINE – 4"
		BICYCLE LANE
		BICYCLE DETECTION LEGEND
Sign		SIGN AND POST
		DELINEATOR

REGULATORY REQUIREMENTS

1. THIS PROJECT DISTURBS AREAS LOCATED WITHIN DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) REGULATED AREAS AND REQUIRES THE FILING OF A NOTICE OF INTENT (NOI). TOWN OF LITTLETON HAS SUBMITTED REQUIRED INFORMATION TO THE DEP AND TOWN OF LITTLETON CONSERVATION COMMISSION.
2. ALL WORK SHALL CONFORM WITH THE ORDER OF CONDITIONS (OOC) ISSUED FOR THE PROJECT.
3. NOTIFY TOWN OF LITTLETON CONSERVATION COMMISSION A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION.
4. FIELD INSPECTOR SHALL BE NOTIFIED 48 HOURS PRIOR TO CONSTRUCTION.
5. POST DEP SIGN NUMBER ASSIGNED IN ACCORDANCE WITH THE ORDER OF CONDITIONS.
6. APPROVED PLANS SHALL BE ON SITE AT ALL TIMES.
7. WITHIN LOCAL RIGHTS–OF–WAY, PERFORM THE WORK IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS.
8. WITHIN STATE RIGHTS–OF–WAY, PERFORM THE WORK IN ACCORDANCE WITH THE MASS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
9. THE CONTRACTOR IS RESPONSIBLE FOR SITE SECURITY AND JOB SAFETY. PERFORM CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH OSHA STANDARDS AND LOCAL REQUIREMENTS.
10. DISPOSE OF DEMOLITION DEBRIS IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND STATUTES.
11. THIS PROJECT DISTURBS MORE THAN ONE ACRE OF LAND OR IS A PHASE OF A LARGER PROJECT THAT DISTURBS MORE THAN AN ACRE AND REQUIRES THE COMPLETION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND THE FILING OF A CONSTRUCTION GENERAL PERMIT (CGP). THE SWPPP SHALL REMAIN ON SITE AT ALL TIMES. THE CONTRACTOR IS RESPONSIBLE FOR THE FILING OF THE CGP.

GENERAL NOTES:

1. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. NO GUARANTEE TO THE ACCURACY OF THE EXISTING UTILITIES FACILITIES SHOWN IN THIS PROJECT IS EXPRESSED OR IMPLIED UNLESS OTHERWISE NOTED. CONTRACTOR SHALL CONTACT "Mass DIG–SAFE", 1–888–344–7233. CONTRACTOR SHALL MAINTAIN MARKINGS WHERE NEEDED DURING PROJECT. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF UTILITIES AND SERVICE LATERALS PRIOR TO CONSTRUCTION. ANY CONFLICTS WITH LOCATIONS OF LIGHT POLES, TREES, ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY LOCAL AND STATE APPROVALS AND PERMITS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE LOCAL AND STATE AGENCIES. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS AND FEES REQUIRED FOR THIS WORK INCLUDING BUT NOT LIMITED TO CITY SIDEWALK AND EXCAVATION PERMITS AND ASSOCIATED BONDING.
3. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND STRUCTURES. THOSE OF WHICH HAVE BEEN DAMAGED SHALL BE PROMPTLY REPAIRED TO EXISTING OR BETTER CONDITION AT THE CONTRACTOR'S EXPENSE.
4. THE ROADWAY IS TO BE GRADED SMOOTHLY AND EVENLY IN ACCORDANCE WITH THE GRADING AND TIE PLANS, PROFILE, AND CROSS SECTIONS. THE CONTRACTOR IS RESPONSIBLE FOR INSURING A POSITIVE DRAINAGE FLOW TO ALL CATCH BASINS WITHOUT CREATING ANY FLAT SPOTS THAT WILL RESULT IN STANDING WATER.
5. THE CONTRACTOR SHALL COORDINATE WITH PROPERTY OWNERS TO REMOVE ANY PERSONAL ITEMS, LANDSCAPING, PLANT BULBS, PAVERS LOCATED IN THE TEMPORARY EASEMENT AND CITY LAYOUT.
6. ANY PUBLIC OR PRIVATE PROPERTY DISTURBED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESTORED AS QUICKLY AS POSSIBLE AND TO THE SATISFACTION OF THE ENGINEER.
7. RIM OR FRAME ELEVATIONS OF ALL UTILITY STRUCTURES SHALL BE ADJUSTED TO MEET FINISHED PAVED SURFACES. PRIVATE UTILITIES WHO ARE RESPONSIBLE FOR ADJUSTING THEIR OWN STRUCTURES SHALL BE NOTIFIED AT LEAST 2 WEEKS IN ADVANCE BY THE CONTRACTOR.
8. STAGING AREAS AND MATERIAL STOCK PILES SHALL BE LIMITED WITHIN THE SITE AND LOCATED SO AS NOT TO INTERFERE WITH PEDESTRIAN OR VEHICULAR TRAFFIC UNLESS APPROVED OTHERWISE BY THE TOWN. THE CONTRACTOR SHALL PROVIDE SAFETY DEVICES (IF ORDERED BY THE ENGINEER) TO PROTECT STOCK PILES/WORK STAGING AREAS. IF THIS WORK IS SO ORDERED THERE WILL BE NO ADDITIONAL COMPENSATION MADE TO THE CONTRACTOR.
9. HOURS OF WORK SHALL BE DEFINED IN THE CONTRACT DOCUMENTS. THE TOWN RESERVES THE RIGHT TO ADJUST THESE HOURS IN THE INTEREST OF PUBLIC SAFETY.
10. ACCESS TO PRIVATE PROPERTIES MUST BE MAINTAINED AT ALL TIMES. FOR SECURITY REASONS ALL PRIVATELY OWNED FENCING THAT IS TO BE REMOVED SHALL BE REPLACED WITHIN 72 HOURS OF REMOVAL.
11. INSTALL SEDIMENTATION AND EROSION CONTROL MEASURES PRIOR TO START OF CONSTRUCTION. EXISTING AND PROPOSED CATCH BASINS DOWNGRADE OF ALL WORK AREAS SHALL BE SURROUNDED BY EROSION CONTROL MEASURES DURING CONSTRUCTION.

MAP REFERENCE

1. EXISTING CONDITIONS DEPICTED ON THIS PLAN ARE BASED ON PLANS ENTITLED: PLAN OF LAND IN LITTLETON, MASSACHUSETTS, SURVEYED FOR THE TOWN OF LITTLETON, REVISED THROUGH: DECEMBER 9, 2020 AND OCTOBER4, 2020 PREPARED BY SHERMAN & FRYDRYK, LLC., REGISTERED PROFESSIONAL LAND SURVEYORS, 3 CONVERSE STREET, SUITE 203 PALMER, MASSACHUSETTS 01069
2. TOPOGRAPHIC ELEVATIONS ARE BASED ON N.A.V.D. 1988.

ABBREVIATIONS

GENERAL

ABAN	ABANDON	NTS	NOT TO SCALE
ADJ	ADJUST	PGL	PROFILE GRADE LINE
APPROX	APPROXIMATE	PROP	PROPOSED
BIT	BITUMINOUS	PVM'T	PAVEMENT
BOS	BOTTOM OF SLOPE	REM	REMOVE
(B.O.)	BY OTHERS	REMOD	REMODEL
CLF	CHAINLINK FENCE	RET	RETAIN
CONC	CONCRETE	R&D	REMOVE AND DISCARD
ELEV	ELEVATION	R&R	REMOVE AND RESET
EOP	EDGE OF PAVEMENT	R&S	REMOVE AND STACK
EXIST	EXISTING	RT	RIGHT
FND	FOUNDATION	STA	STATION
GRAN	GRANITE	TEMP	TEMPORARY
HMA	HOT MIX ASPHALT	TOS	TOP OF SLOPE
LOAM	LOAM BORROW	TYP	TYPICAL
LT	LEFT		
MAX	MAXIMUM		
MIN	MINIMUM		

UTILITIES

ACCMP	ASHPALT COATED CORRIGATED METAL PIPE
CAP	CORRUGATED ALUMINUM PIPE
CIP	CAST IRON PIPE
CIT	CHANGE IN TYPE
COND	CONDUIT
DIP	DUCTILE IRON PIPE
FES	FLARED END SECTION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
HW	HEADWALL
HYD	HYDRANT
INV	INVERT
PVC	POLYVINYLCHLORIDE PIPE
PWW	PAVED WATER WAY
RCP	REINFORCED CONCRETE PIPE
TSV&B	TAPPING SLEEVE VALVE AND BOX
UP	UTILITY POLE

ALIGNMENT/GRADING

CC	CENTER OF CURVE
HP	HIGH POINT
LP	LOW POINT
PC	POINT OF CURVE
PI	POINT OF INTERSECTION
PNT	POINT
PCC	POINT OF COMPOUND CURVE
PRC	POINT OF REVERSE CURVE
PT	POINT OF TANGENT
25.45	SPOT ELEVATION

PROFILES

AD	ALGEBRAIC DIFFERENCE IN RATES OF GRADE
ELEV	ELEVATION
HSD	HORIZONTAL SIGHT DISTANCE
K	RATE OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVC	POINT OF VERTICAL CURVE
PVT	POINT OF VERTICAL TANGENT
PVRC	POINT OF VERTICAL REVERSE CURVE
PVCC	POINT OF VERTICAL COMPOUND CURVE
SSD	STOPPING SIGHT DISTANCE
VC	VERTICAL CURVE

TRAFFIC SIGNAL SYSTEMS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR YELLOW
G	STEADY CIRCULAR GREEN
FR	FLASHING CIRCULAR RED
–FR	FLASHING RED ARROW
FY	FLASHING CIRCULAR YELLOW
–FY	FLASHING YELLOW ARROW
	STEADY VERTICAL GREEN ARROW
X–	STEADY LEFT ARROW (RED, YELLOW OR GREEN PREFIX)
–X	STEADY RIGHT ARROW (RED, YELLOW OR GREEN PREFIX)
W	STEADY WALK–WHITE
DW	STEADY DON'T WALK–PORTLAND ORANGE
FDW	FLASHING DON'T WALK–PORTLAND ORANGE

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TOWN OF LITTLETON
LEGEND & GENERAL NOTES
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

GI-002

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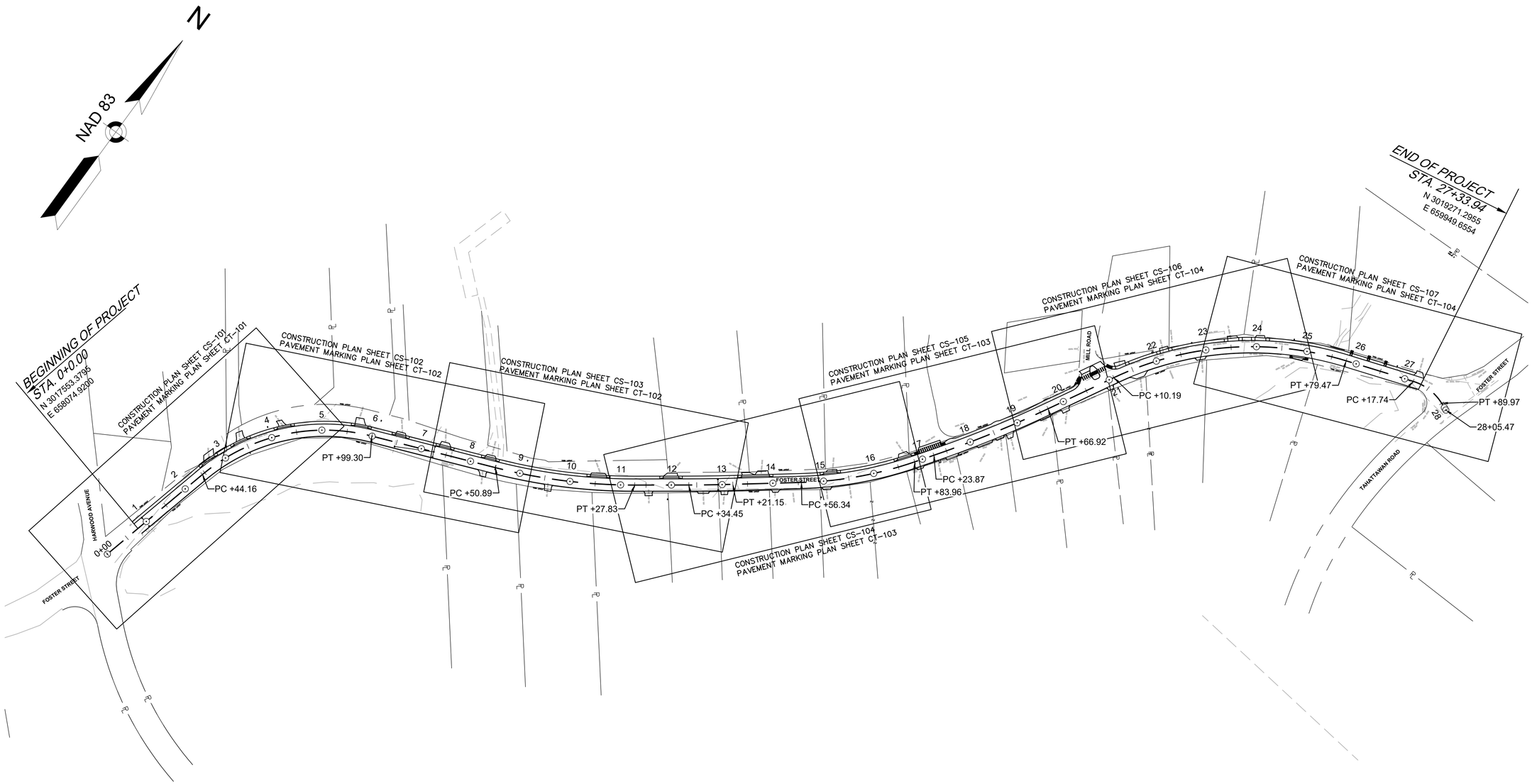

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TOWN OF LITTLETON

KEY PLAN

RECONSTRUCTION OF FOSTER STREET
PHASE II

LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

GI-101

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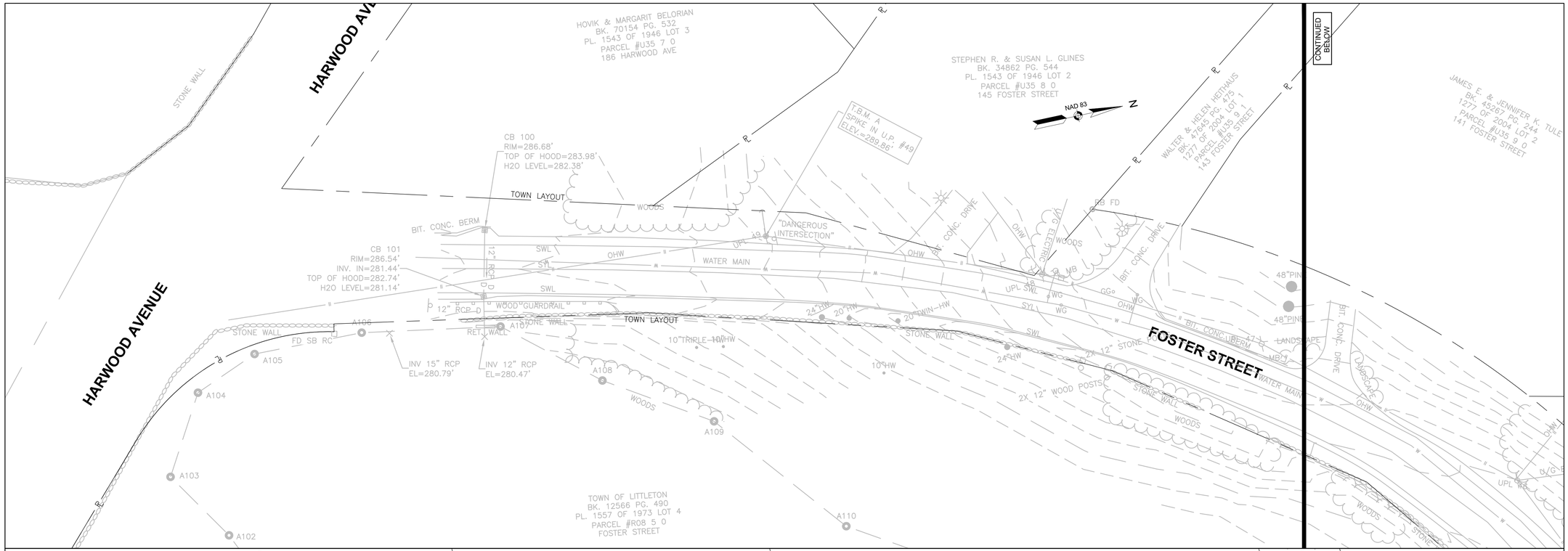

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TOWN OF LITTLETON
EXISTING CONDITIONS PLAN
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
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EXC-101

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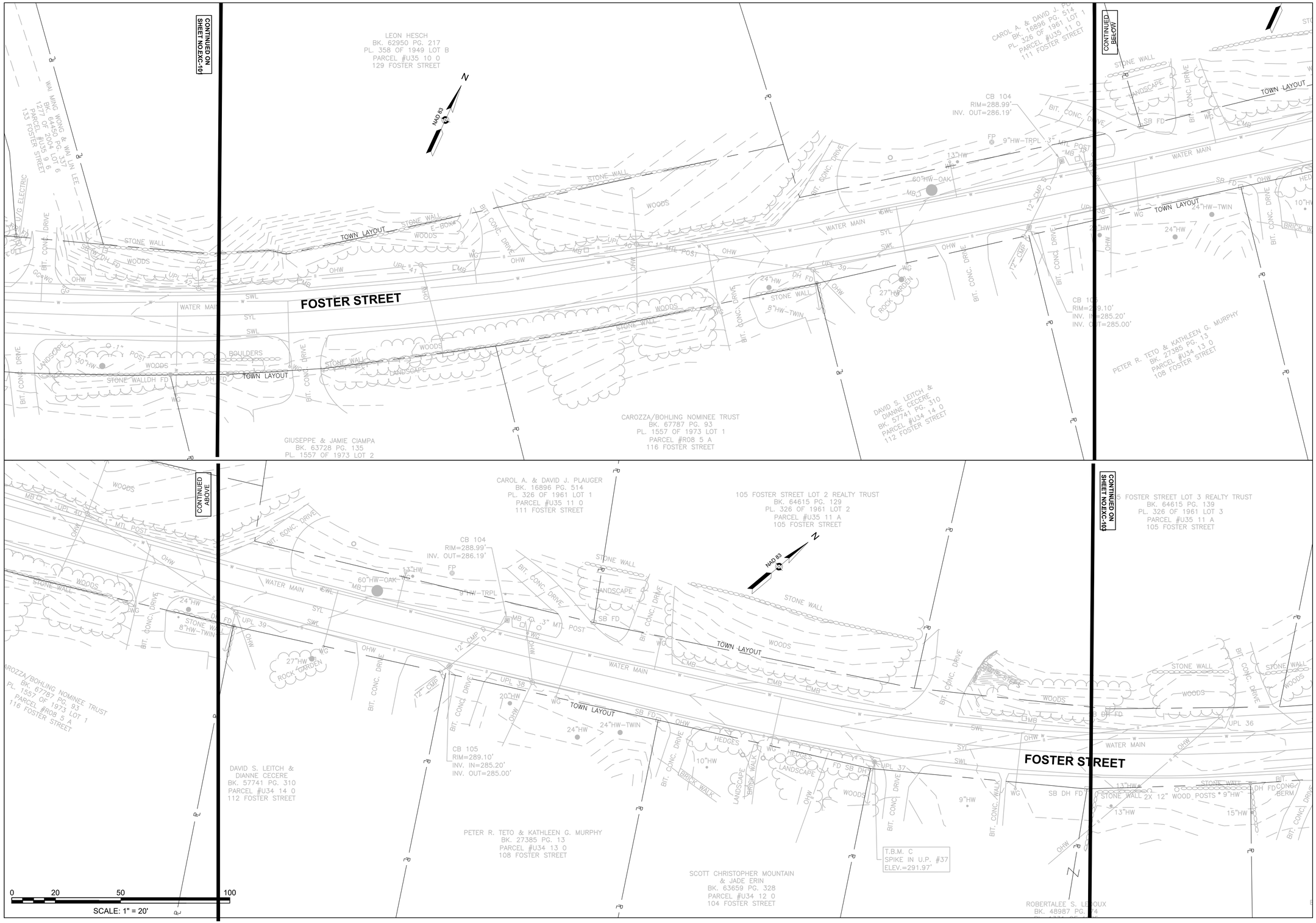

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EXISTING CONDITIONS PLAN
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
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EXC-102

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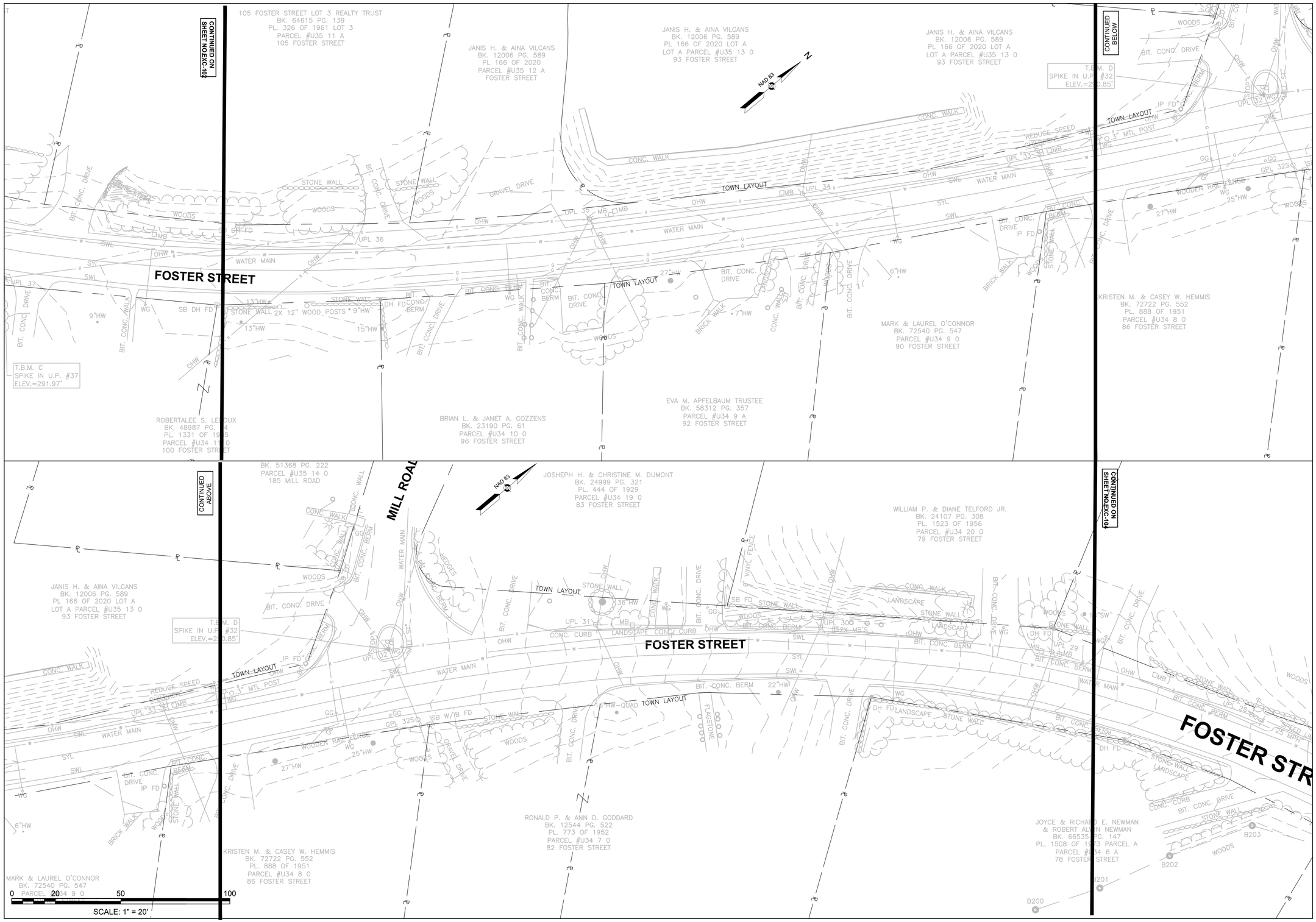

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EXISTING CONDITIONS PLAN
RECONSTRUCTION OF FOSTER STREET
PHASE II
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EXC-103

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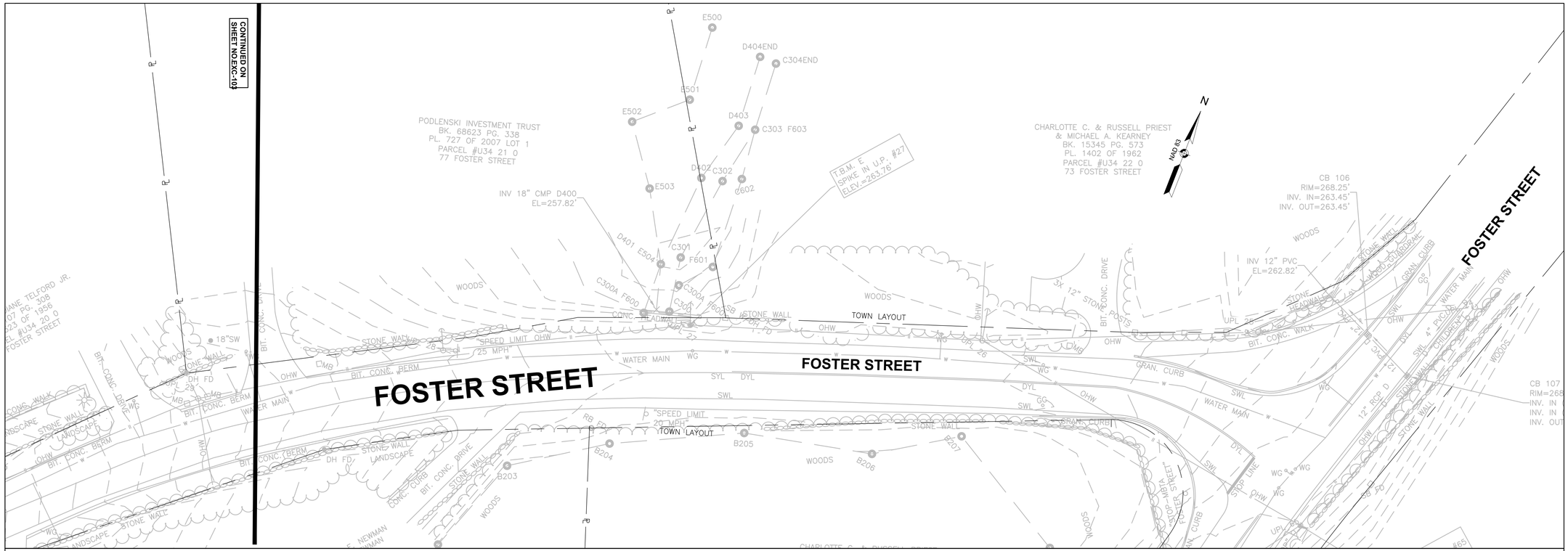

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TOWN OF LITTLETON

EXISTING CONDITIONS PLAN

RECONSTRUCTION OF FOSTER STREET
PHASE II

LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

EXC-104

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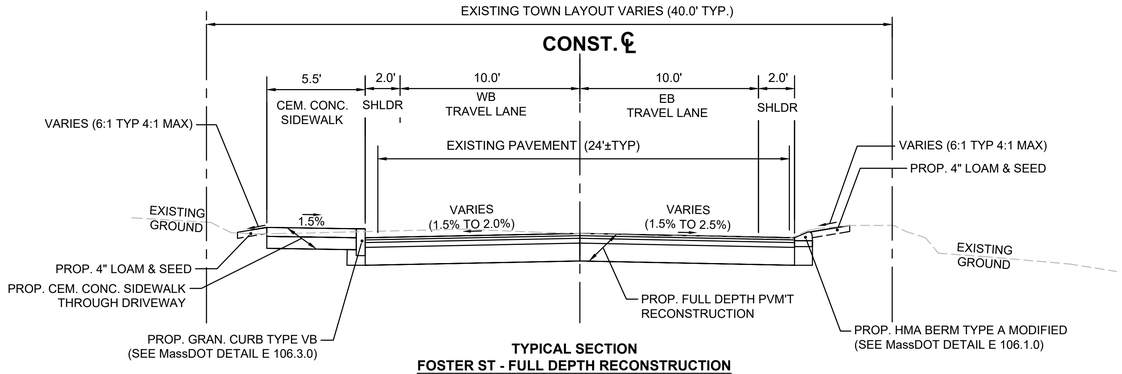


TYPICAL SECTION
FOSTER ST - FULL DEPTH RECONSTRUCTION

STA. 0+78 TO STA. 3+50
STA. 6+00 TO STA. 8+70
STA. 9+45 TO STA. 11+20
STA. 11+83 TO STA. 24+50
* TOLERANCE FOR CONSTRUCTION ±0.5%
N.T.S

PAVEMENT NOTES:

PROPOSED FULL DEPTH PAVEMENT RECONSTRUCTION

SURFACE: 1 1/2 " SUPERPAVE SURFACE COURSE - 9.5 OVER
INTERMEDIATE: 1 3/4 " SUPERPAVE INTERMEDIATE COURSE - 12.5 OVER
2 3/4 " SUPERPAVE INTERMEDIATE COURSE - 19 OVER
SUBBASE: 4" DENSE GRADED CRUSHED STONE
8 " GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK

SURFACE: 4" CEMENT CONCRETE
AIR ENTRAINED 4000psi, 3/4", 610
FOUNDATION: 8" GRAVEL BORROW, TYPE b.

PROPOSED CEMENT CONCRETE WHEELCHAIR RAMP

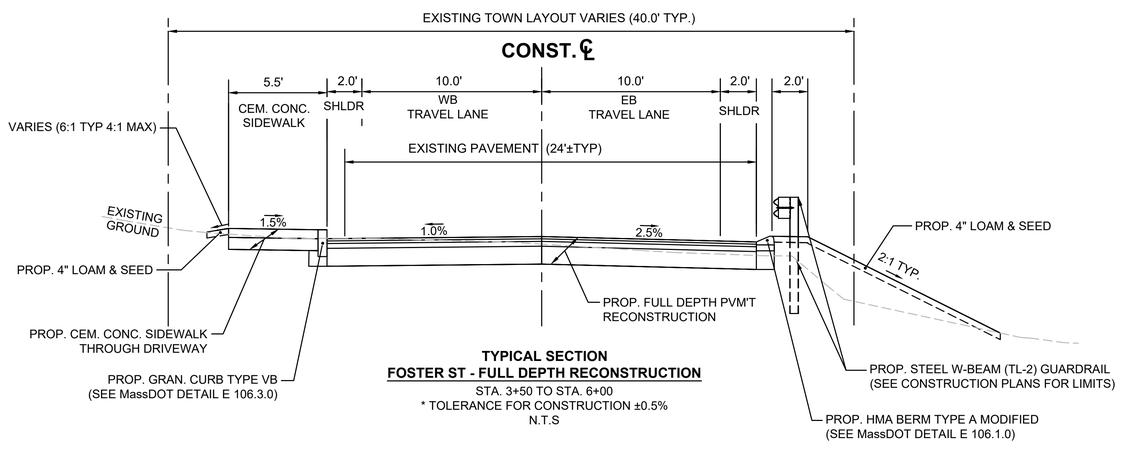
SURFACE: 6" CEMENT CONCRETE
AIR ENTRAINED 4000psi, 3/4", 610
FOUNDATION: 8" GRAVEL BORROW, TYPE b.

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 1-1/2" SUPERPAVE SURFACE COURSE - 9.5 OVER
2" SUPERPAVE INTERMEDIATE COURSE - 12.5
FOUNDATION: 8" GRAVEL BORROW, TYPE b.

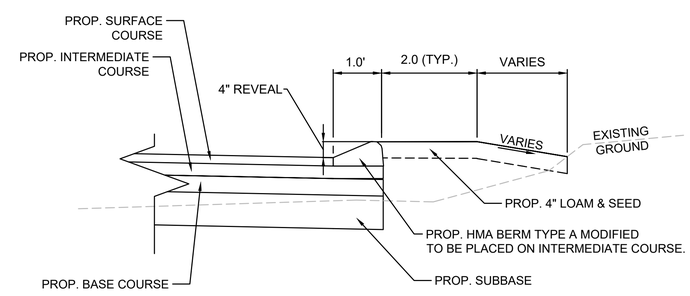
NOTES: ASPHALT EMULSION FOR TACK COAT AND HMA JOINT SEALANT SHALL BE APPLIED PER SECTION 450 QA OF THE SPECIAL PROVISIONS.

HMA FOR MISCELLANEOUS WORK SHALL BE USED FOR ALL TEMPORARY CONSTRUCTION, TAPER RAMPS, CURB CUT RAMPS, TEMPORARY TRENCH REPAIR, ETC.



TYPICAL SECTION
FOSTER ST - FULL DEPTH RECONSTRUCTION

STA. 3+50 TO STA. 6+00
* TOLERANCE FOR CONSTRUCTION ±0.5%
N.T.S



PROP. HMA BERM TYPE A MODIFIED PLACEMENT
SCALE: NTS

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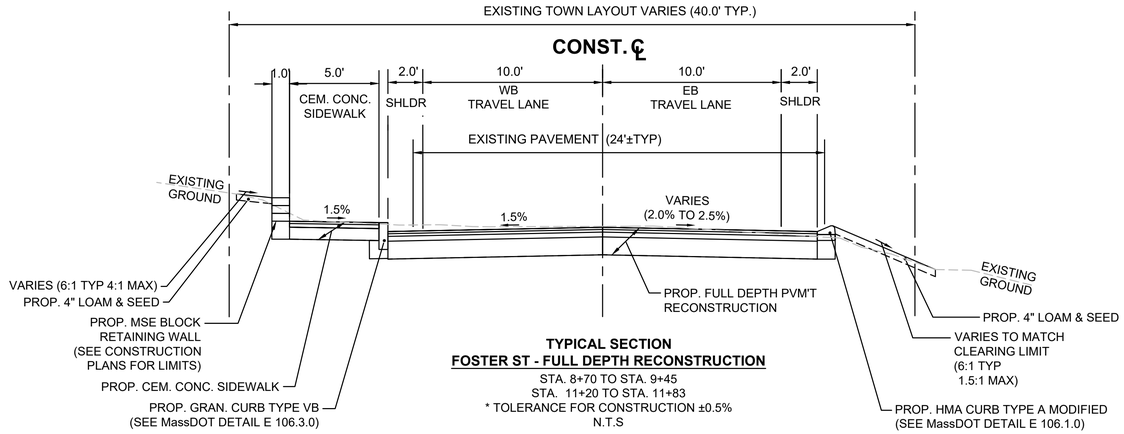
TOWN OF LITTLETON
TYPICAL ROADWAY SECTIONS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

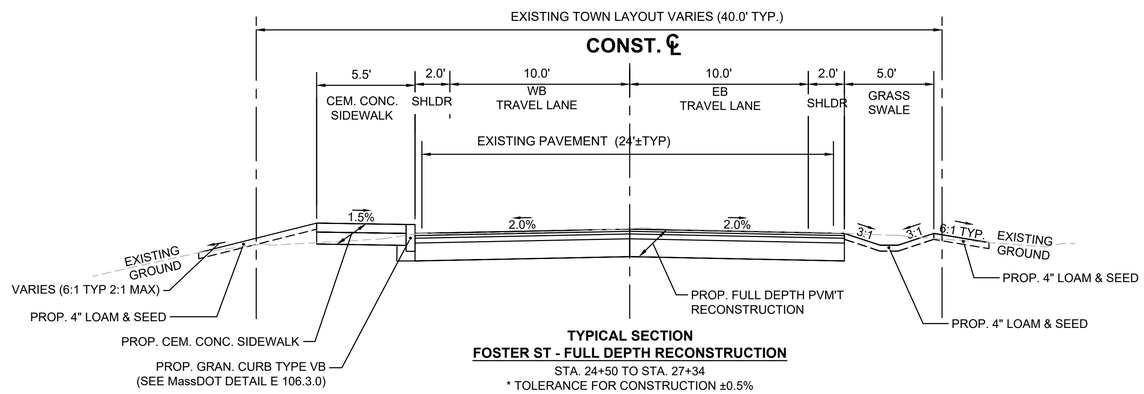
PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

GI-301

File Path: J:\DWG\P2017\0044\A30\Civil\Details\20170044A30_TYP01.dwg Layout: GI-301 Plotted: Fri, March 05, 2021 - 3:21 PM User: jdeskavich
MS VIEW: Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB
LAYER STATE:



TYPICAL SECTION
FOSTER ST - FULL DEPTH RECONSTRUCTION
STA. 8+70 TO STA. 9+45
STA. 11+20 TO STA. 11+83
* TOLERANCE FOR CONSTRUCTION ±0.5%
N.T.S



TYPICAL SECTION
FOSTER ST - FULL DEPTH RECONSTRUCTION
STA. 24+50 TO STA. 27+34
* TOLERANCE FOR CONSTRUCTION ±0.5%
N.T.S

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			xx/xx	xx

SCALE: HORZ.: N.T.S VERT.:
DATUM: HORZ.: VERT.:
0 GRAPHIC SCALE

FUSS & O'NEILL
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TOWN OF LITTLETON
TYPICAL ROADWAY SECTIONS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

GI-302

File Path: J:\DWG\P2017\0044\A30\Civil\Details\20170044A30_TYP01.dwg Layout: GI-302 Plotted: Fri, March 05, 2021 - 3:21 PM User: jdeskavich
MS VIEW: LAYER STATE: Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB

LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

NAD 83

HARWOOD AVE (PUBLIC)

BEGINNING OF PROJECT
STA. 0+78.42
N 3017553.3795
E 658074.9200

HOVIK & MARGARIT BELORIAN
BK. 70154 PG. 532
PL. 1543 OF 1946 LOT 3
PARCEL #U35 7 0
186 HARWOOD AVE

STEPHEN R. & SUSAN L. GLINES
BK. 34862 PG. 544
PL. 1543 OF 1946 LOT 2
PARCEL #U35 8 0
145 FOSTER STREET

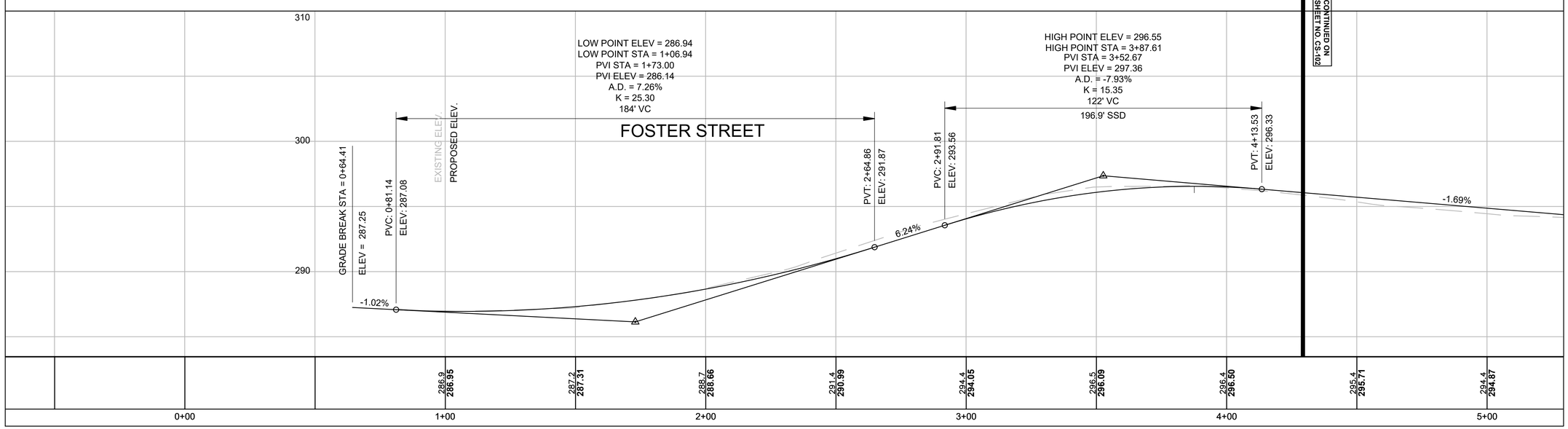
WALTER & HELEN HEITHAUS
BK. 47545 PG. 475
1277 OF 2004 LOT 1
PARCEL #U35 9 1
143 FOSTER STREET

JAMES E. & JENNIFER K. TULE
BK. 45267 PG. 244
1277 OF 2004 LOT 2
PARCEL #U35 9 0 2
141 FOSTER STREET

TOWN OF LITTLETON
BK. 12566 PG. 490
PL. 1557 OF 1973 LOT 4
PARCEL #R08 5 0
FOSTER STREET

CONTINUED ON SHEET NO. CS-102

PROP. CLEARING AND GRUBBING
APPROX. SLOPE LIMIT
PROP. LOAM & SEED
PROP. PERMANENT EASEMENT
PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
PROP. CEM. CONC. SIDEWALK
BEGIN PROP. GRAN. CURB
CONSTRUCTION ℄ N 13° 58' 57" E 244.16'
PC +44.16
FOSTER STREET (PUBLIC)
PROP. CLEARING AND GRUBBING
R&R MAILBOX
PROP. LOAM & SEED
PROP. HMA DRIVEWAY
PROP. LOAM & SEED
R&R MAILBOX
RET. TREE
BEGIN PROP. HMA BERM TYPE A MODIFIED
REM. WOOD GUARDRAIL
PROP. FULL DEPTH PVM'T RECONSTRUCTION
REM. TREE
REM. TREE
PROP. LOAM & SEED
REM. TREE
RET. STONE WALL
APPROX. SLOPE LIMIT
RET. TREE
BEGIN PROP. TL-2 GUARDRAIL
PROP. TANGENT END TREATMENT
RE-STACK STONE WALL (IF NEEDED)
PROP. CLEARING AND GRUBBING
RET. POSTS
Δ=54° 15' 42"
L=355.14' R=375.00'



No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: HORZ.: 1" = 20' VERT.:
DATUM: HORZ.: VERT.:
GRAPHIC SCALE 20 10 0 20

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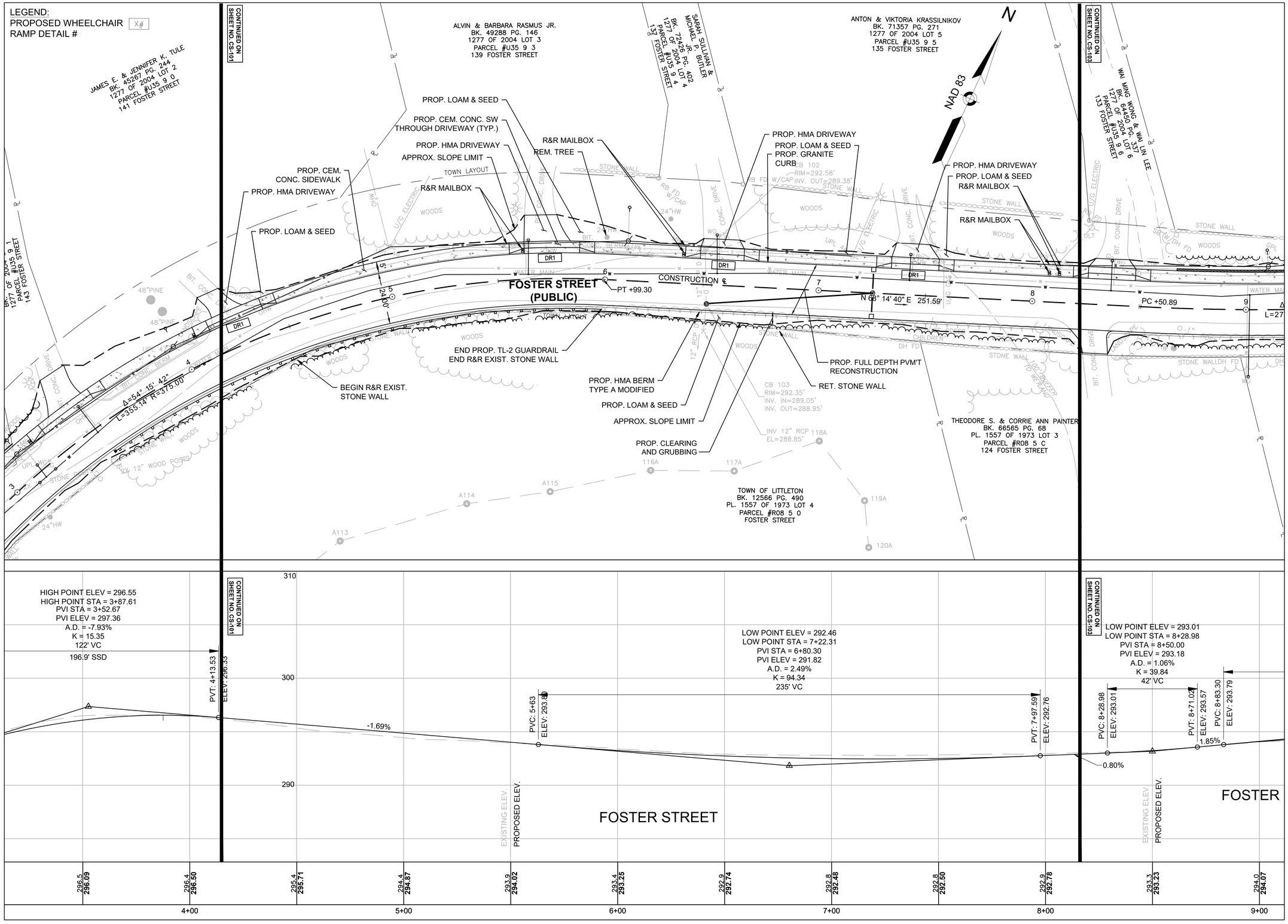
TOWN OF LITTLETON
CONSTRUCTION PLANS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-101

File Path: J:\DWG\P2017\0044\A30\Civil\Plan\20170044A30_HPN01.dwg Layout: CS-101 Plotted: Mon, March 01, 2021 - 11:28 AM User: jdeskavich
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB
MS VIEW:
LAYER STATE:



No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE:
HORZ.: 1" = 20'
VERT.:
DATUM:
HORZ.:
VERT.:
20 10 0 20
GRAPHIC SCALE

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TOWN OF LITTLETON
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RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-102

File Path: J:\DWG\P2017\0044\A30\Civil\Plan\20170044A30_HPN01.dwg Layout: CS-102 Plotted: Mon, March 01, 2021 - 11:28 AM User: jdeskavich
MS VIEW:
LAYER STATE:
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB

LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

CONTINUED ON SHEET NO. CS-102

CONTINUED ON SHEET NO. CS-104

ON & VIKTORIA KRASSILNIKOV
BK. 71357 PG. 271
1277 OF 2004 LOT 5
PARCEL #U35 9 5
135 FOSTER STREET

NAD 83

WAI MING WONG & WAI LIN LEE
BK. 64450 PG. 337
1277 OF 2004 LOT 6
PARCEL #U35 9 6
133 FOSTER STREET

LEON HESCH
BK. 62950 PG. 217
PL. 358 OF 1949 LOT B
PARCEL #U35 10 0
129 FOSTER STREET

CAROL A. & DAVID J. PLAUGER
BK. 16896 PG. 514
PL. 326 OF 1961 LOT 1
PARCEL #U35 11 0
111 FOSTER STREET

THEODORE S. & CORRIE ANN PAINTER
BK. 66565 PG. 68
PL. 1557 OF 1973 LOT 3
PARCEL #R08 5 C
124 FOSTER STREET

GIUSEPPE & JAMIE CIAMPA
BK. 63728 PG. 135
PL. 1557 OF 1973 LOT 2
PARCEL #R08 5 B
120 FOSTER STREET

CAROZZA/BOHLING NOMINEE TRUST
BK. 67787 PG. 93
PL. 1557 OF 1973 LOT 1
PARCEL #R08 5 A
116 FOSTER STREET

DAVID S. LEITCH & DIANNE CECERE
BK. 57741 PG. 310
PARCEL #U34 14 0
112 FOSTER STREET

PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
PROP. GRANITE CURB
PROP. RETAINING WALL (SEE CONST. DETAIL)
R&R MAILBOX
APPROX. SLOPE LIMIT
PROP. LOAM & SEED
PROP. CEM. CONC. SIDEWALK
PROP. RETAINING WALL (SEE CONST. DETAIL)
PROP. HMA DRIVEWAY
RET. TREE
R&S 1" POST
RET. STONE WALL
REM. BOULDERS
PROP. FULL DEPTH PVM'T RECONSTRUCTION
PROP. HMA BERM TYPE A MODIFIED
PROP. CLEARING AND GRUBBING
REM. TREE
CONSTRUCTION ℄ 24.00'
FOSTER STREET (PUBLIC)
PC +50.89
Δ=14° 25' 31"
L=276.95' R=1100.00'
PT +27.83
PC +34.45
Δ=1° 30' 57"
L=86.70' R=3277.11'
N 53° 49' 09" E 106.62'
N 68° 14' 40" E 251.59'
TOWN LAYOUT
WATER MAIN
STONE WALL
WOODS
LANDSCAPE
DR1
DR2

310
300
290

LOW POINT ELEV = 293.01
LOW POINT STA = 8+28.98
PVI STA = 8+50.00
PVI ELEV = 293.18
A.D. = 1.06%
K = 39.84
42' VC

HIGH POINT ELEV = 294.59
HIGH POINT STA = 9+69.35
PVI STA = 9+37.38
PVI ELEV = 294.80
A.D. = -2.33%
K = 46.43
108' VC
517.3' SSD

PVI STA = 11+12.73
PVI ELEV = 293.96
A.D. = -3.10%
K = 22.10
68' VC
382.7' SSD

LOW POINT ELEV = 289.62
LOW POINT STA = 12+94.69
PVI STA = 12+42.63
PVI ELEV = 289.32
A.D. = 4.07%
K = 33.85
138' VC

PVT: 7+97.59 ELEV: 292.76
PVC: 8+28.98 ELEV: 293.01
PVT: 8+71.02 ELEV: 293.57
PVC: 8+83.30 ELEV: 293.79
PVT: 9+91.46 ELEV: 294.54
PVC: 10+78.51 ELEV: 294.12
PVT: 11+46.95 ELEV: 292.74
PVC: 11+73.75 ELEV: 291.78
PVT: 13+11.52 ELEV: 289.66

0.80%
1.85%
-0.48%
-3.57%

EXISTING ELEV. / PROPOSED ELEV.

FOSTER STREET

292.8	292.50	292.9	292.78	293.3	293.23	294.0	294.07	294.4	294.55	294.5	294.50	294.3	294.26	294.1	293.92	292.9	292.63
291.0	290.94	289.8	289.91	289.5	289.62												

8+00 9+00 10+00 11+00 12+00 13+00

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: HORZ.: 1" = 20' VERT.:
DATUM: HORZ.: VERT.:
20 10 0 20
GRAPHIC SCALE

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TOWN OF LITTLETON
CONSTRUCTION PLANS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-103

File Path: J:\DWG\P\20170044\A30\Civil\Plan\20170044A30_HPN01.dwg Layout: CS-103 Plotted: Mon, March 01, 2021 - 11:29 AM User: jdeskavich
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB
LAYER STATE:
MS VIEW:

LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

NAD 83

CONTINUED ON SHEET NO. CS-103

CONTINUED ON SHEET NO. CS-105

APPROX. SLOPE LIMIT
R&R MAILBOX
REM. TREE
PROP. LOAM & SEED
RET. TREE
RET. FP
R&R MAILBOX
R&S POST
RET. BOUND
PROP. HMA DRIVEWAY
R&R MAILBOX
PROP. LOAM & SEED
R&R MAILBOX
PROP. CLEARING AND GRUBBING
PROP. CEM. CONC. SIDEWALK
PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
R&R MAILBOX
PROP. LOAM & SEED
PROP. GRANITE CURB
PROP. CLEARING AND GRUBBING
R&R MAILBOX

CAROL A. & DAVID J. PLAUGER
BK. 16896 PG. 514
PL. 326 OF 1961 LOT 1
PARCEL #U35 11 0
111 FOSTER STREET

105 FOSTER STREET LOT 2 REALTY TRUST
BK. 64615 PG. 129
PL. 326 OF 1961 LOT 2
PARCEL #U35 11 A
105 FOSTER STREET

105 FOSTER STREET LOT 3 REALTY TRUST
BK. 64615 PG. 139
PL. 326 OF 1961 LOT 3
PARCEL #U35 11 A
105 FOSTER STREET

CAROZZA/BOHLING NOMINEE TRUST
BK. 67787 PG. 93
PL. 1557 OF 1973 LOT 1
PARCEL #R08 5 A
116 FOSTER STREET

DAVID S. LEITCH & DIANNE CECERE
BK. 57741 PG. 310
PARCEL #U34 14 0
112 FOSTER STREET

PETER R. TETO & KATHLEEN G. MURPHY
BK. 27385 PG. 13
PARCEL #U34 13 0
108 FOSTER STREET

SCOTT CHRISTOPHER MOUNTAIN & JADE ERIN
BK. 63659 PG. 328
PARCEL #U34 12 0
104 FOSTER STREET

ROBERTALEE S. LEDOUX
BK. 48987 PG. 7[illegible]
PL. 1331 OF 1985
PARCEL #U34 11 0
100 FOSTER STREET

PT +27.83
N 53° 49' 09" E 106.62'
PC +34.45
Δ=1° 30' 57"
L=86.70' R=3277.11'
PT +21.15
FOSTER STREET (PUBLIC)
CONSTRUCTION ℄ PC +56.34
N 52° 18' 12" E 135.19'
Δ=17° 23' 22"
L=227.63' R=750.00'

CB 104
RIM=288.99'
INV. OUT=286.19'

CB 105
RIM=289.10'
INV. IN=285.20'
INV. OUT=285.00'

PROP. HMA DRIVEWAY
PROP. LOAM & SEED
RET. TREE
PROP. HMA DRIVEWAY
PROP. LOAM & SEED
APPROX. SLOPE LIMIT
PROP. HMA DRIVEWAY
TRIM HEDGES AS NEEDED
PROP. LOAM & SEED
TRIM HEDGES AS NEEDED
RET. BRICK WALK
RET. CONC. WALK
PROP. HMA BERM TYPE A MODIFIED
PROP. HMA DRIVEWAY
PROP. FULL DEPTH PVM'T RECONSTRUCTION
PROP. LOAM & SEED

PVI STA = 11+12.73
PVI ELEV = 293.96
A.D. = -3.10%
K = 22.10
68' VC
382.7' SSD

LOW POINT ELEV = 289.62
LOW POINT STA = 12+94.69
PVI STA = 12+42.63
PVI ELEV = 289.32
A.D. = 4.07%
K = 33.85
138' VC

LOW POINT ELEV = 289.95
LOW POINT STA = 13+70.39
PVI STA = 14+20.99
PVI ELEV = 290.21
A.D. = 1.07%
K = 94.19
101' VC

300

PVT: 11+46.95 ELEV: 292.74
PVC: 11+73.75 ELEV: 291.78
PVT: 13+11.52 ELEV: 289.66
PVC: 13+70.39 ELEV: 289.95
PVT: 14+71.58 ELEV: 291.00
PVC: 16+44.15 ELEV: 293.71

-3.57%
0.50%
1.57%

290

EXISTING ELEV.
PROPOSED ELEV.

FOSTER STREET

11+00	12+00	13+00	14+00	15+00	16+00
294.1 / 293.92	292.9 / 292.63	291.0 / 290.94	289.8 / 289.91	289.5 / 289.62	289.8 / 289.85
289.9 / 290.15	290.6 / 290.69	291.4 / 291.45	292.3 / 292.23	293.4 / 293.02	294.1 / 293.80

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: HORZ.: 1" = 20' VERT.:
DATUM: HORZ.: VERT.:
20 10 0 20 GRAPHIC SCALE

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TOWN OF LITTLETON
CONSTRUCTION PLANS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-104

File Path: J:\DWG\P\20170044\A30\Civil\Plan\20170044A30_HPN01.dwg Layout: CS-104 Plotted: Mon, March 01, 2021 - 11:29 AM User: jdeskavich
MS VIEW: LAYER STATE: Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB

LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

CONTINUED ON SHEET NO. CS-104

NAD 83

N

105 FOSTER STREET LOT 3 REALTY TRUST
BK. 64615 PG. 139
PL. 326 OF 1961 LOT 3
PARCEL #U35 11 A
105 FOSTER STREET

JANIS H. & AINA VILCANS
BK. 12006 PG. 589
PL 166 OF 2020 LOT A
PARCEL #U35 12 A
FOSTER STREET

JANIS H. & AINA VILCANS
BK. 12006 PG. 589
PL 166 OF 2020 LOT A
LOT A PARCEL #U35 13 0
93 FOSTER STREET

JANIS H. & AINA VILCANS
BK. 12006 PG. 589
PL 166 OF 2020 LOT A
LOT A PARCEL #U35 13 0
93 FOSTER STREET

CATHY A. HARRIS
BK. 51368 PG. 222
PARCEL #U35 14 0
185 MILL ROAD

CONTINUED ON SHEET NO. CS-106

PROP. LOAM & SEED
PROP. CLEARING AND GRUBBING
PROP. CEM. CONC. SIDEWALK
PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
PROP. LOAM & SEED
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. HMA DRIVEWAY
PROP. CEM. CONC. WHEELCHAIR RAMP
R&R MAILBOX
R&R MAILBOX
APPROX. SLOPE LIMIT
PROP. LOAM & SEED
R&R MAILBOX
PROP. CEM. CONC. SIDEWALK
PROP. GRANITE CURB
R&R MAILBOX

TOWN LAYOUT
CONSTRUCTION ℄
FOSTER STREET (PUBLIC)
PT +83.96
PC +23.87
PT +66.92
N 34° 54' 50" E 39.91'
N 28° 35' 03" E 143.27'
Δ=17° 23' 22"
L=227.63' R=750.00'
Δ=6° 19' 47"
L=243.05' R=2200.00'
24.00'
PROP. CONC. WALK
PROP. HMA BERM TYPE A MODIFIED
PROP. LOAM & SEED
REM. BIT. CONC. BERM
PROP. HMA DRIVEWAY
PROP. HMA DRIVEWAY
PROP. HMA DRIVEWAY
PROP. FULL DEPTH PVM'T RECONSTRUCTION
PROP. LOAM & SEED
RET. LANDSCAPING
RET. TREE
PROP. LOAM & SEED
TRIMMING AS NEEDED
PROP. HMA DRIVEWAY
REM. BIT. CONC. BERM
APPROX. SLOPE LIMIT
PROP. LOAM & SEED
PROP. HMA DRIVEWAY
RET. STONE WALL
PROP. LOAM & SEED
RET. WOOD POSTS
REM. TREE
RET. STONE WALL

KRISTEN M. & CASEY W. HEMMIS
BK. 72722 PG. 552
PL. 888 OF 1951
PARCEL #U34 8 0
86 FOSTER STREET

MARK & LAUREL O'CONNOR
BK. 72540 PG. 547
PARCEL #U34 9 0
90 FOSTER STREET

EVA M. APFELBAUM TRUSTEE
BK. 58312 PG. 357
PARCEL #U34 9 A
92 FOSTER STREET

BRIAN L. & JANET A. COZZENS
BK. 23190 PG. 61
PARCEL #U34 10 0
96 FOSTER STREET

ROBERTALEE S. LEDOUX
BK. 48987 PG. 74
PL. 1331 OF 1985
PARCEL #U34 11 0
100 FOSTER STREET

HIGH POINT ELEV = 294.09
HIGH POINT STA = 16+92.63
PVI STA = 17+06.09
PVI ELEV = 294.69
A.D. = -4.02%
K = 30.85
124' VC
330.7' SSD

LOW POINT ELEV = 290.51
LOW POINT STA = 19+20.58
PVI STA = 18+65.79
PVI ELEV = 290.78
A.D. = 1.95%
K = 56.15
110' VC

PVC: 16+44.15 ELEV: 293.71
PVT: 17+68.03 ELEV: 293.17
PVC: 18+11 ELEV: 292.12
PVT: 19+20.58 ELEV: 290.51
PVC: 20+17.10 ELEV: 290.04

1.57%
-2.44%
-0.49%

EXISTING ELEV.
PROPOSED ELEV.

FOSTER STREET

15+00	16+00	17+00	18+00	19+00	20+00
291.4 / 291.45	292.3 / 292.23	293.4 / 293.02	294.1 / 293.80	293.8 / 294.08	293.2 / 293.56
292.4 / 292.39	291.6 / 291.30	291.0 / 290.65	290.4 / 290.37	289.9 / 290.12	289.4 / 289.66

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: HORZ.: 1" = 20' VERT.:
DATUM: HORZ.: VERT.:
20 10 0 20 GRAPHIC SCALE

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TOWN OF LITTLETON
CONSTRUCTION PLANS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-105

File Path: J:\DWG\P2017\0044\A30\Civil\Plan\20170044A30_HPN01.dwg Layout: CS-105 Plotted: Mon, March 01, 2021 - 11:29 AM User: jdeskavich
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB
MS VIEW:
LAYER STATE:

LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

CONTINUED ON SHEET NO. CS-105

CATHY A. HARRIS
BK. 51368 PG. 222
PARCEL #U35 14 0
185 MILL ROAD

JOSHEPH H. & CHRISTINE M. DUMONT
BK. 24999 PG. 321
PL. 444 OF 1929
PARCEL #U34 19 0
83 FOSTER STREET

WILLIAM P. & DIANE TELFORD JR.
BK. 24107 PG. 308
PL. 1523 OF 1956
PARCEL #U34 20 0
79 FOSTER STREET

JANIS H. & AINA VILCANS
BK. 12006 PG. 589
PL 166 OF 2020 LOT A
LOT A PARCEL #U35 13 0
93 FOSTER STREET

MARK & LAUREL O'CONNOR
BK. 72540 PG. 547
PARCEL #U34 9 0
90 FOSTER STREET

KRISTEN M. & CASEY W. HEMMIS
BK. 72722 PG. 552
PL. 888 OF 1951
PARCEL #U34 8 0
86 FOSTER STREET

RONALD P. & ANN D. GODDARD
BK. 12544 PG. 522
PL. 773 OF 1952
PARCEL #U34 7 0
82 FOSTER STREET

JOYCE & RICHARD E. NEWMAN
& ROBERT ALWIN NEWMAN
BK. 66535 PG. 147
PL. 1508 OF 1973 PARCEL A
PARCEL #U34 6 A
78 FOSTER STREET

NAD 83

N

FOSTER STREET (PUBLIC)

CONSTRUCTION ℄

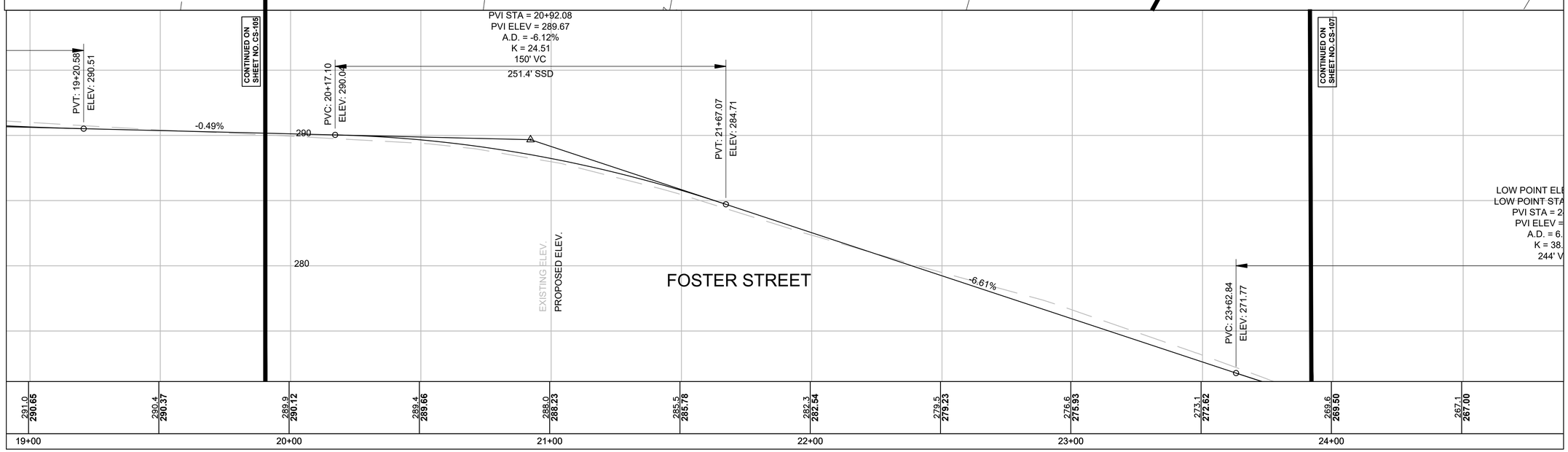
PC +10.19

PT +66.92

N 28° 35' 03" E 143.27'

Δ=42° 22' 08"
L=469.28' R=634.61'

PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. PERMANENT EASEMENT
PROP. GRANITE CURB
PROP. CEM. CONC. SIDEWALK
PROP. LOAM & SEED
END PROP. GRANITE CURB
PROP. RAISED CEM. CONC. ISLAND (SEE DETAIL)
BEGIN PROP. GRANITE CURB
PROP. LOAM & SEED
PROP. CEM. CONC. WHEELCHAIR RAMP
PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
PROP. LOAM & SEED
RET. STONE WALL AND TREE
R&R MAILBOX
PROP. CEM. CONC. SIDEWALK
APPROX. SLOPE LIMIT
PROP. HMA DRIVEWAY
PROP. CLEARING AND GRUBBING
R&R DRY STACK STONE WALL
R&R MAILBOX
PROP. LOAM & SEED
PROP. CEM. CONC. SIDEWALK
PROP. HMA DRIVEWAY
PROP. LOAM & SEED
TRIMMING AS NEEDED
RET. STONE WALL
R&R MAILBOX
R&R MAILBOX
PROP. HMA BERM TYPE A MODIFIED
RET. WOODEN RAIL FENCE
PROP. LOAM & SEED
PROP. HMA DRIVEWAY
PROP. LOAM & SEED
APPROX. SLOPE LIMIT
PROP. HMA DRIVEWAY
PROP. FULL DEPTH PVM'T RECONSTRUCTION
PROP. LOAM & SEED
PROP. HMA DRIVEWAY
REM. BIT CONC. BERM
RET. TREE
RET. LANDSCAPE AND STONE WALL
PROP. LOAM & SEED
PROP. HMA DRIVEWAY
REM. BIT CONC. BERM



No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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SCALE: HORZ.: 1" = 20' VERT.:
DATUM: HORZ.: VERT.:
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TOWN OF LITTLETON
CONSTRUCTION PLANS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CS-107

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LEGEND:
PROPOSED WHEELCHAIR RAMP DETAIL # X#

CONTINUED ON SHEET NO. CS-106

PODLENSKI INVESTMENT TRUST
BK. 68623 PG. 338
PL. 727 OF 2007 LOT 1
PARCEL #U34 21 0
77 FOSTER STREET

CHARLOTTE C. & RUSSELL PRIEST
& MICHAEL A. KEARNEY
BK. 15345 PG. 573
PL. 1402 OF 1962
PARCEL #U34 22 0
73 FOSTER STREET

CHARLOTTE C. & RUSSELL PRIEST
& MICHAEL A. KEARNEY
BK. 15345 PG. 573
PL. 1508 OF 1973 PARCEL B
PARCEL #U34 6 0
73 FOSTER STREET

JOYCE & RICHARD E. NEWMAN
& ROBERT ALLEN NEWMAN
BK. 66535 PG. 147
PL. 1508 OF 1973 PARCEL A
PARCEL #U34 6 A
78 FOSTER STREET

NAD 83

N

END OF PROJECT
STA. 27+33.94
N 3019271.2955
E 659949.6554

CB 106
RIM=268.25'
INV. IN=263.45'
INV. OUT=263.45'

CB 107
RIM=268.
INV. IN
INV. IN
INV. OUT

INV 18" CMP D400
EL=257.82'

INV 12" PVC
EL=262.82'

100' BUFFER TO WETLAND

PROP. HMA DRIVEWAY
PROP. CEM. CONC. SW THROUGH DRIVEWAY (TYP.)
R&R MAILBOX
PROP. GRANITE CURB
RET. STONE WALL
END PROP. HMA BERM TYPE A MODIFIED
APPROX. SLOPE LIMIT
PROP. SILT FENCE AND COMPOST FILTER TUBES
RET. STONE WALL
PROP. CLEARING AND GRUBBING
PROP. LOAM & SEED
PROP. CEM. CONC. SIDEWALK
R&R MAILBOX
END PROP. GRANITE CURB
PROP. HMA DRIVEWAY
LIMIT OF PROP. FULL DEPTH PVM'T RECONSTRUCTION MATCH EXISTING

CONSTRUCTION ℄ PT +79.47

FOSTER STREET
(PUBLIC)

N 70° 57' 11" E 138.28'

PC +17.74

Δ=41° 22' 59"
L=72.23' R=100.00'

PT +89.46

Δ=42° 22' 08"
L=469.28' R=634.61'

PROP. HMA CURB AT DRIVEWAY
PROP. HMA DRIVEWAY
PROP. HMA CURB AT DRIVEWAY
BEGIN PROP. GRASS SWALE
RET. STONE WALL AND LANDSCAPE
PROP. LOAM & SEED
APPROX. SLOPE LIMIT
PROP. FULL DEPTH PVM'T RECONSTRUCTION
PROP. LOAM & SEED
R&R STONE WALL
END PROP. GRASS SWALE

DR2
DR3

TOWN LAYOUT

LOW POINT ELEV = 263.39
LOW POINT STA = 26+06.97
PVI STA = 24+84.90
PVI ELEV = 263.71
A.D. = 6.35%
K = 38.45
244' VC

FOSTER STREET

EXISTING ELEV.
PROPOSED ELEV.

PVC: 23+62.84
ELEV: 271.77

PVT: 26+06.97
ELEV: 263.39

PVC: 26+09.66
ELEV: 263.38

-0.26%

LOW POINT ELEV = 263.37
LOW POINT STA = 26+19.75
PVI STA = 26+65.62
PVI ELEV = 263.23
A.D. = 2.90%
K = 38.62
112' VC

PVT: 27+21.49
ELEV: 264.71

2.64%

GRADE BREAK STA = 27+34.72
ELEV = 265.06

280
270
260

276.6	273.1	269.6	267.1	265.2	263.9	263.6	263.7	264.2	265.6	268.5
275.93	272.62	269.50	267.00	265.15	263.96	263.41	263.48	264.20		

23+00 24+00 25+00 26+00 27+00 28+00

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CS-107

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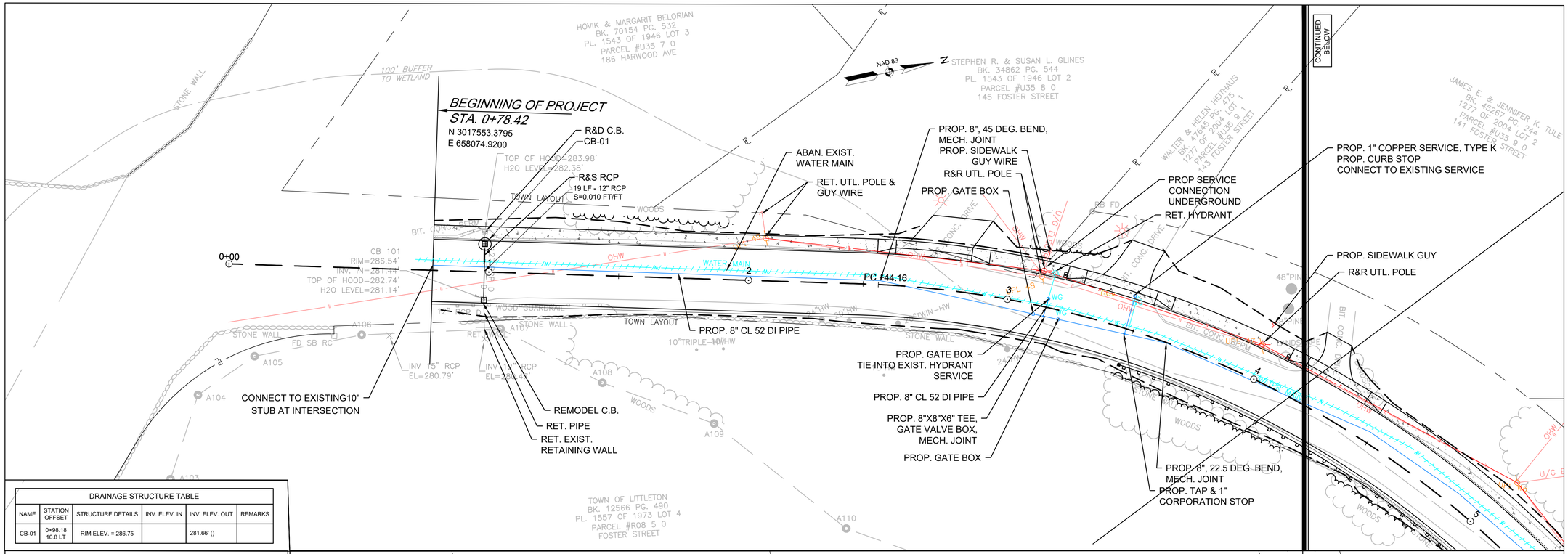
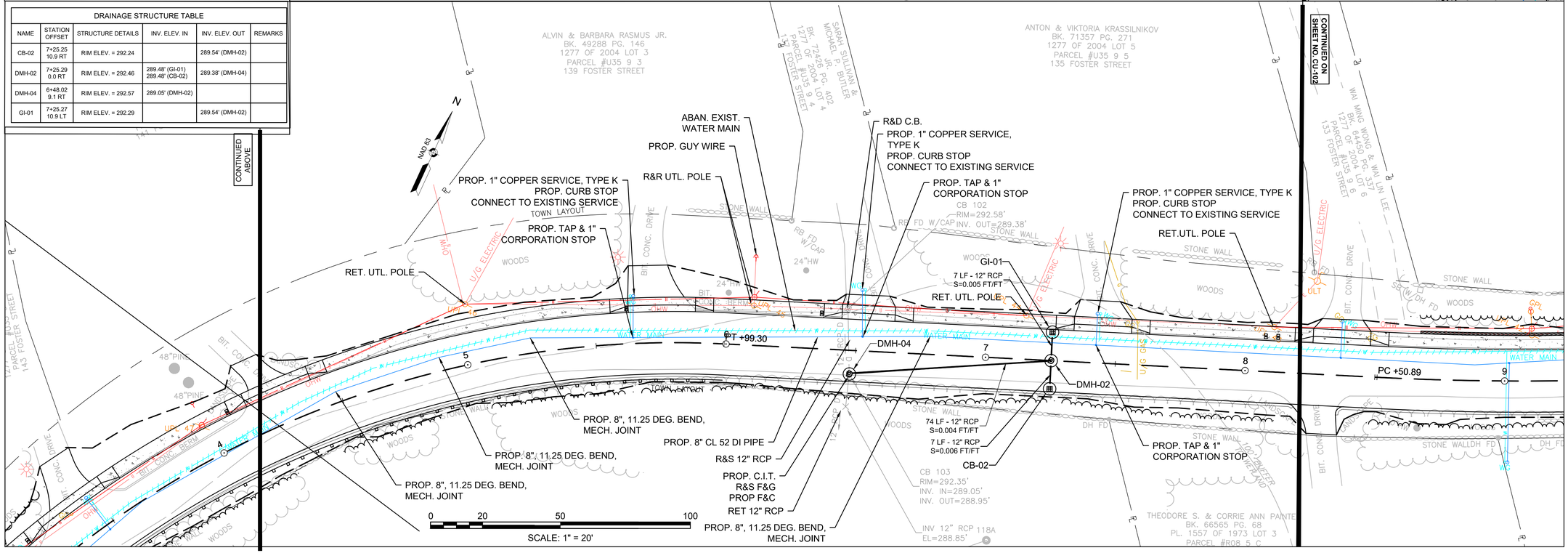
*SEE PAGE CU-104 FOR UTILITY GENERAL NOTES



DRAINAGE STRUCTURE TABLE					
NAME	STATION OFFSET	STRUCTURE DETAILS	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-01	0+98.18 10.8 LT	RIM ELEV. = 286.75		281.66' ()	

DRAINAGE STRUCTURE TABLE					
NAME	STATION OFFSET	STRUCTURE DETAILS	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-02	7+25.25 10.9 RT	RIM ELEV. = 292.24		289.54' (DMH-02)	
DMH-02	7+25.29 0.0 RT	RIM ELEV. = 292.46	289.48' (GI-01) 289.48' (CB-02)	289.38' (DMH-04)	
DMH-04	6+48.02 9.1 RT	RIM ELEV. = 292.57	289.05' (DMH-02)		
GI-01	7+25.27 10.9 LT	RIM ELEV. = 292.29		289.54' (DMH-02)	



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PROJ. No.: 20170044.A30
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CU-101

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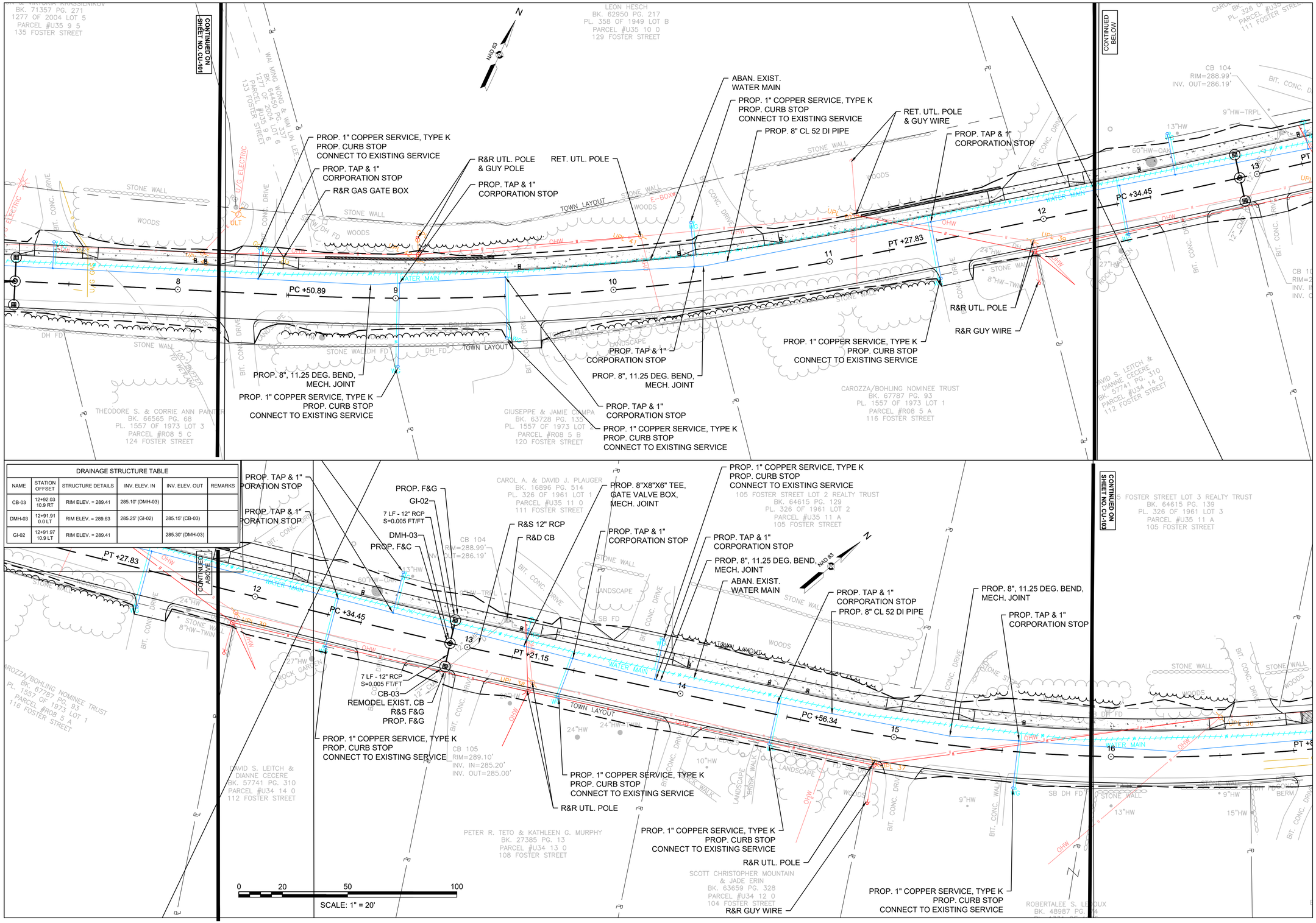

DRAINAGE STRUCTURE TABLE

NAME	STATION OFFSET	STRUCTURE DETAILS	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CB-03	12+92.03 10.9 RT	RIM ELEV. = 289.41	285.10' (DMH-03)		
DMH-03	12+91.91 0.0 LT	RIM ELEV. = 289.63	285.25' (GI-02)	285.15' (CB-03)	
GI-02	12+91.97 10.9 LT	RIM ELEV. = 289.41		285.30' (DMH-03)	

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CU-102

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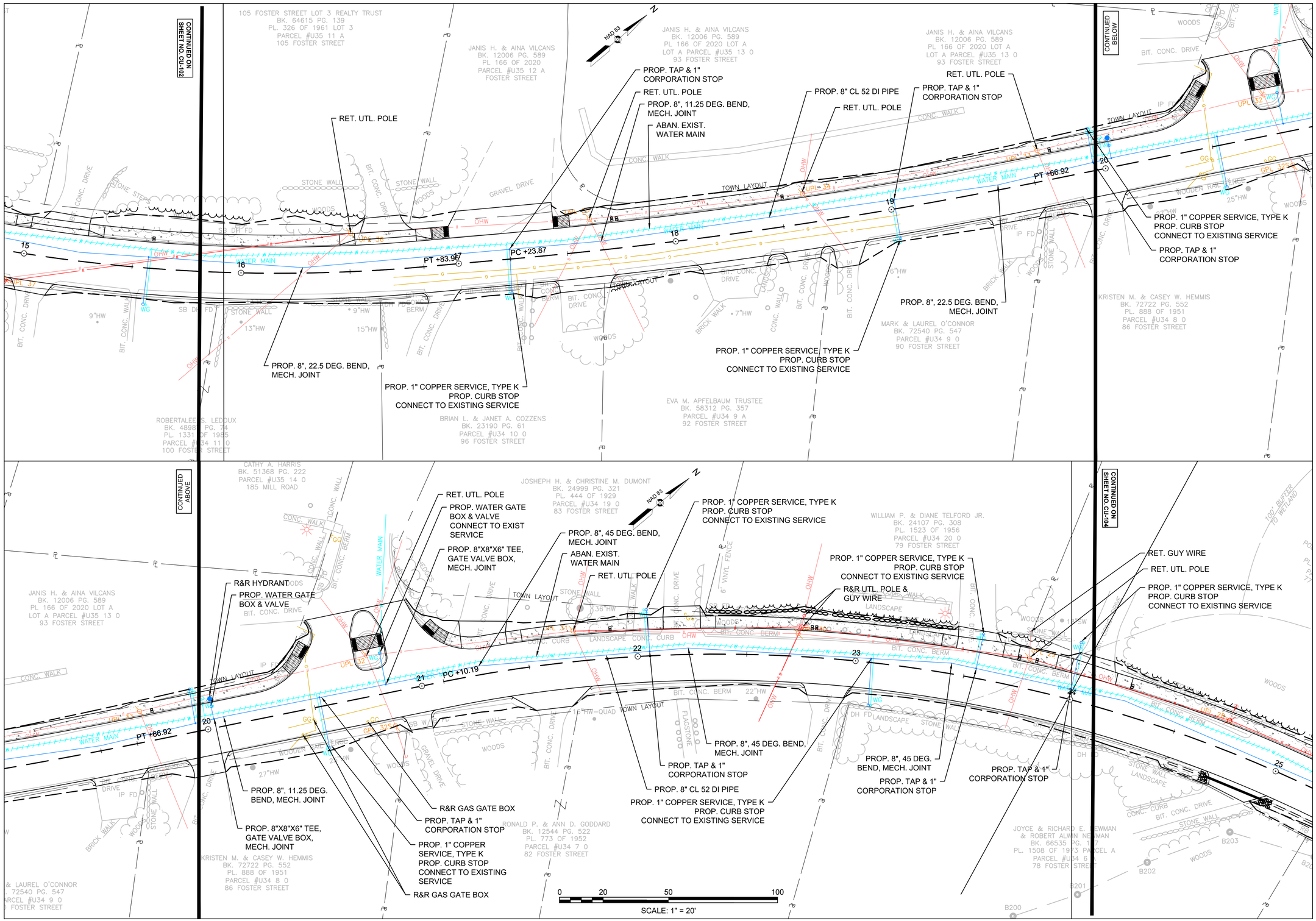

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LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
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CU-103

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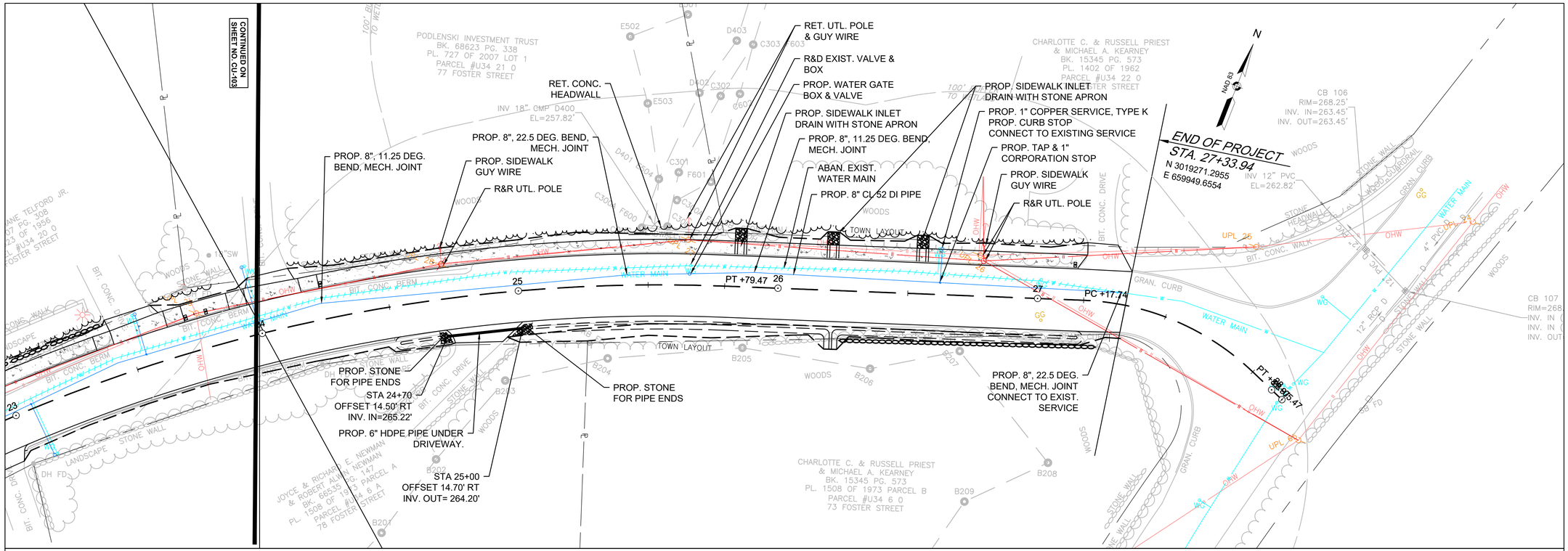

0 20 50 100

SCALE: 1" = 20'

GENERAL NOTES:

1. IF EXISTING PIPES SHOWN TO BE REMOVED ARE WITHIN THE LIMITS OF NEW PIPE TRENCH EXCAVATION THAN THE REMOVAL COST OF THE OLD PIPES SHALL BE INCLUDED IN THE UNIT COST FOR THE NEW PIPE THAT IS BEING INSTALLED. IF PIPES SHOWN TO BE REMOVED ARE OUTSIDE THE LIMITS OF NEW PIPE TRENCH (AS DETERMINED BY THE ENGINEER) THEN REMOVAL COST SHALL BE PAID UNDER ITEM 141. CLASS A TRENCH EXCAVATION.
2. ALL PROPOSED (NEW) CATCH BASINS SHALL HAVE 4' SUMPS.
3. ALL CATCH BASINS WITHIN THE PAVED ROADWAY SHALL HAVE CASCADE STYLE/BICYCLE SAFE GRATES UNLESS OTHERWISE NOTED ON THE PLANS.
4. ALL ELEVATIONS, STATION, AND OFFSETS FOR ALL CATCH BASINS, DRAINAGE MANHOLES, AND SEWER MANHOLES COME FROM CENTER OF COVER OR GRATE.
5. CONTRACTOR SHALL USE APPROPRIATELY SIZED RCP TO MATCH INTO EXISTING PIPES AS SHOWN.
6. SILT SACKS SHALL BE INSTALLED ON ALL CATCH BASINS WITHIN PROJECT LIMITS (SEE CONSTRUCTION DETAILS).
7. IT IS THE INTENT TO REPLACE RESIDENTIAL SERVICE CURB STOPS DIRECTLY ADJACENT TO THE EXISTING CURB STOPS. LOCATIONS SHOWN ON PLANS ARE SCHEMATIC ONLY.
8. ALL EXISTING CURB STOPS ARE TO BE REMOVED AND DISCARDED UPON ACTIVATION OF NEW WATER LINE. ALL EXISTING WATER SERVICES CONNECTING THE CURB STOP TO THE WATER MAIN ARE TO BE ABANDONED.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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PROJ. No.: 20170044.A30
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CU-104

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MARKING LEGEND	
▶	PROPOSED SIGN
SL	PROPOSED 12" WHITE STOP LINE
CW	PROPOSED 24" WHITE CROSS WALK
SWL	PROPOSED 6" SINGLE WHITE LINE
DBYL	PROPOSED 6" DOUBLE YELLOW LINE

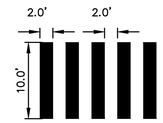
NOTES:

1. ALL EXISTING SIGNS TO REMAIN UNLESS OTHERWISE NOTED ON PLANS
2. ALL PROPOSED PAVEMENT MARKING LINES ON SHALL BE WET REFLECTORIZED RECESSED THERMOPLASTIC. ALL MARKINGS SHALL BE 6" WIDE, EXCEPT STOP BARS WHICH SHALL BE 12" WIDE.
3. ALL SIGNS SHALL BE MOUNTED ON A STANDARD P-5 POST FACTORY COATED GLOSS BLACK AT STANDARD MUTCD HEIGHT UNLESS OTHERWISE SHOWN ON PLANS.
4. SEE SIGN SUMMARY ON SHEET CT-601 FOR SIGN DETAILS.

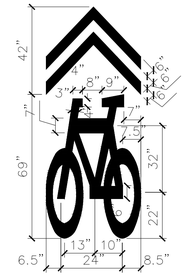
CONFIRM WITH TOWN

XXXX PROPOSED SIGN DESIGNATION

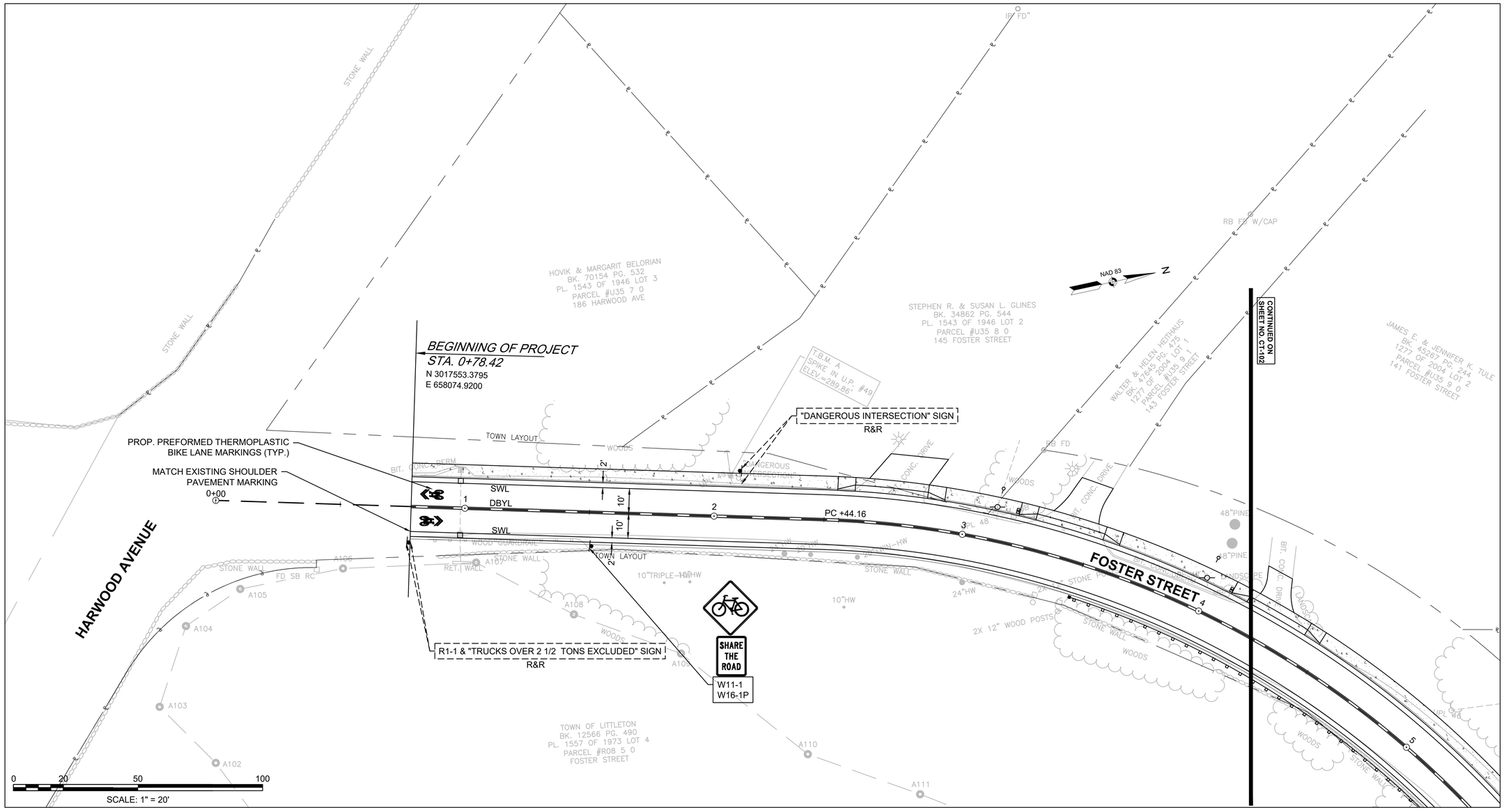
XXXX EXISTING SIGN DESIGNATION



CROSSWALK DETAIL
N.T.S



SHARED BICYCLE LANE MARKING DETAIL
N.T.S



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CT-101

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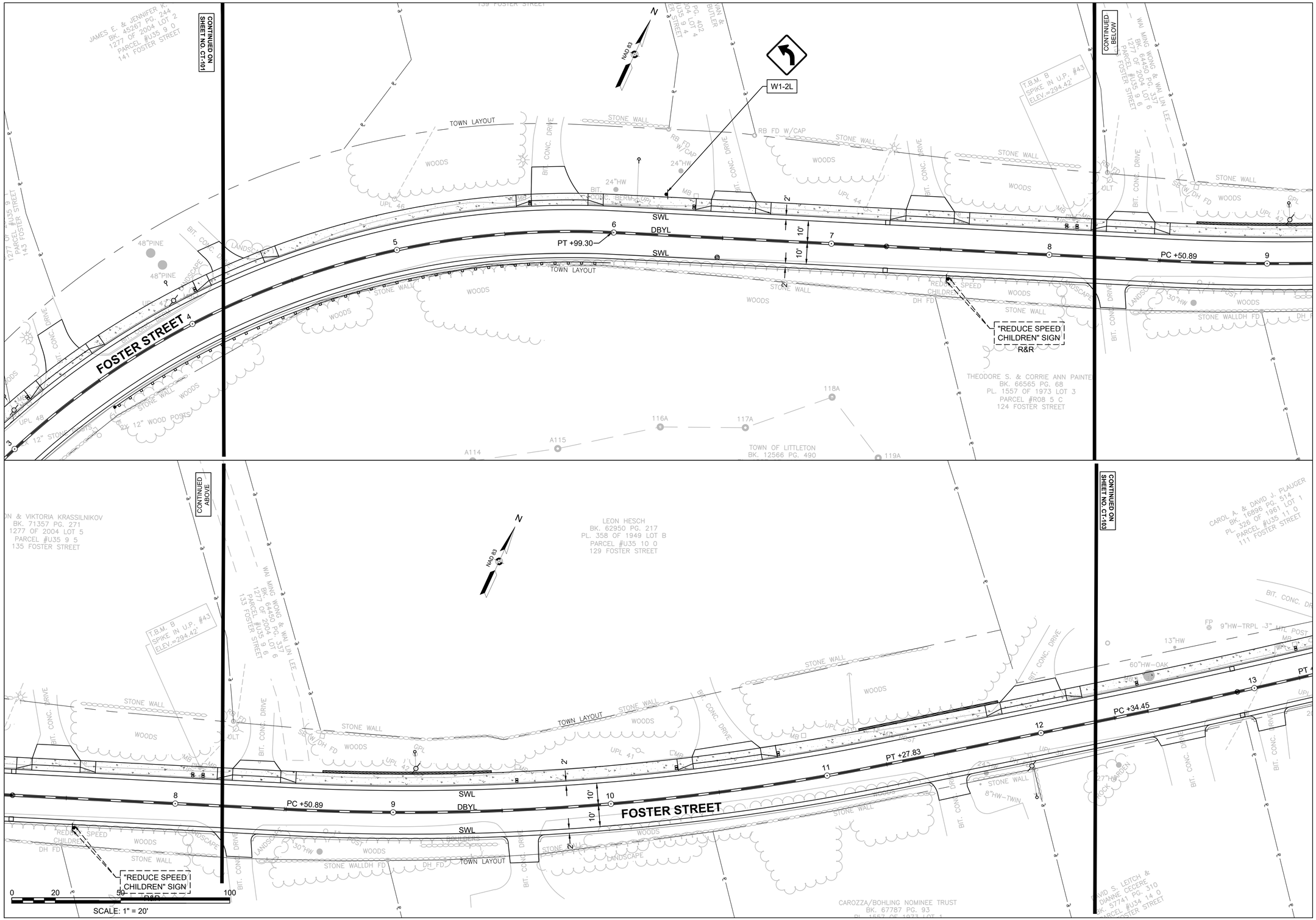

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CT-102

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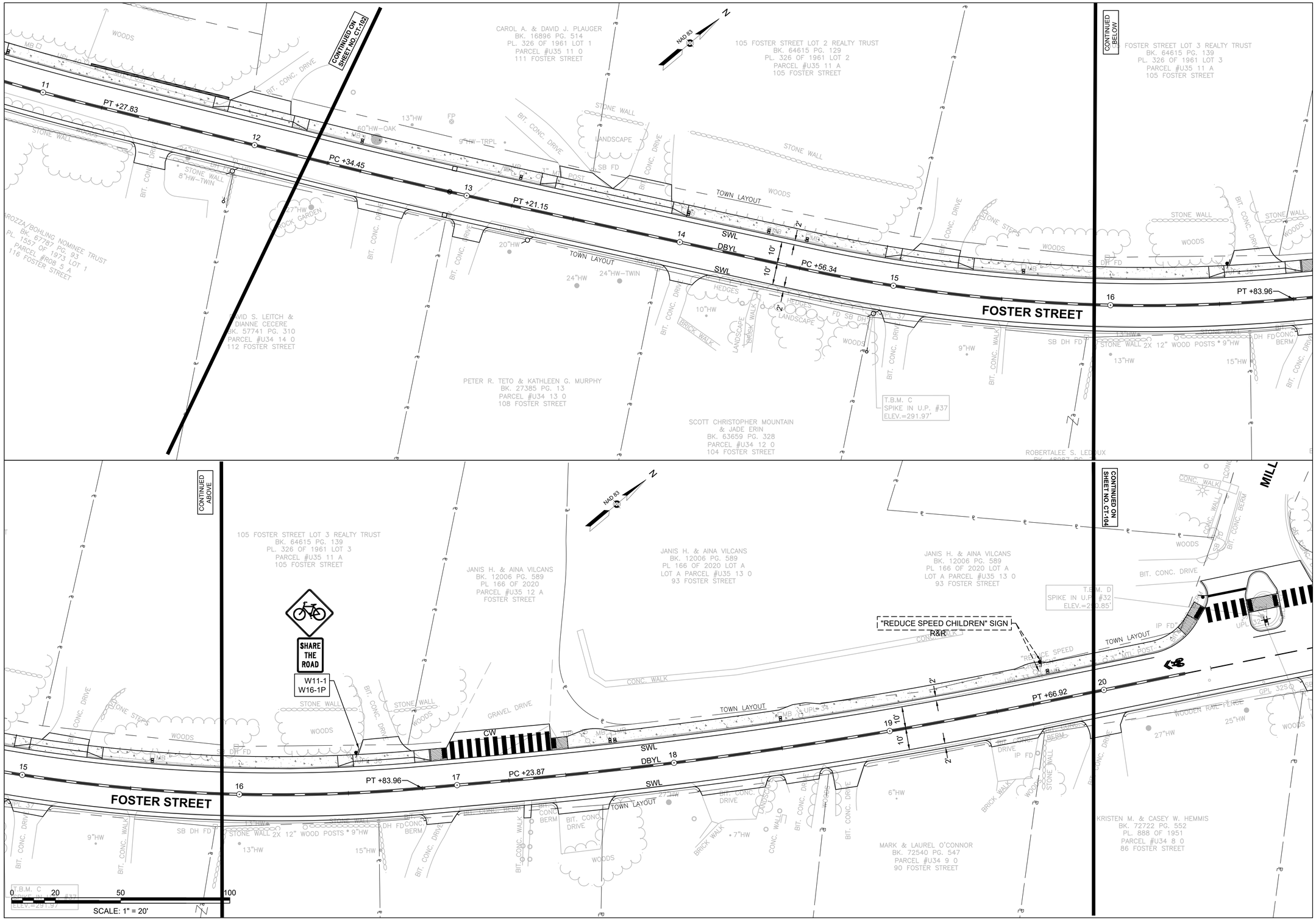

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CT-103

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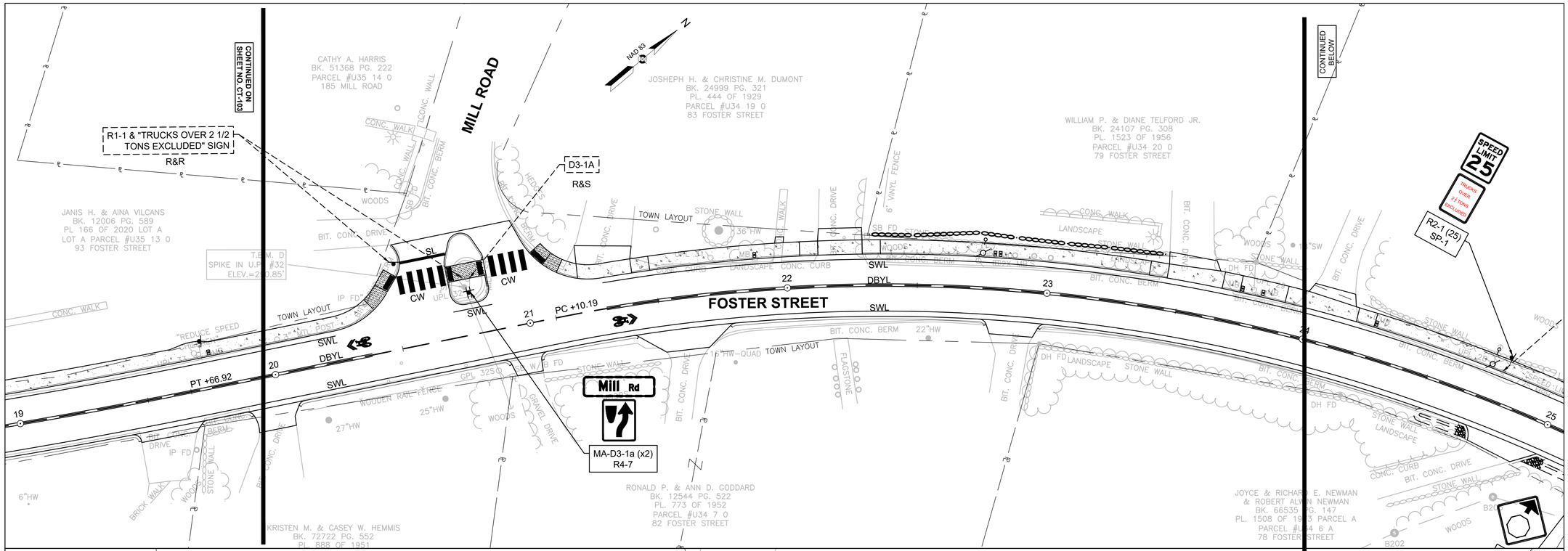

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CT-104

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NOTES:
HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING SHALL BE USED FOR ALL SIGNS. THE 2009 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE 1990 MDPW "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS", AND ALL AMENDMENTS WILL GOVERN.

ALL P5 SIGN POSTS SHALL BE 2" SQUARE POSTS FACTORY COATED GLOSS BLACK UNLESS OTHERWISE NOTED
(PBS) = PAINTED BOTH SIDES

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	SIGN FACE AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R2-1 (20)	24	30	SPEED LIMIT 20	SEE FHWA 2004 STANDARD HIGHWAY SIGNS MANUAL (ENGLISH VERSION)			1	WHITE	BLACK	BLACK	P-5 1 REQ'D	5.00	5.00
R2-1 (25)	24	30	SPEED LIMIT 25				1	WHITE	BLACK	BLACK	P-5 1 REQ'D	5.00	5.00
R4-7	24	30					1	WHITE	BLACK	BLACK	P-5 1 REQ'D	5.00	5.00
W1-2L	36	36					1	YELLOW	BLACK	BLACK	P-5 1 REQ'D	9.00	9.00
W11-1	36	36					3	YELLOW	BLACK	BLACK	P-5 3 REQ'D	9.00	27.00
W16-1	18	24	SHARE THE ROAD				3	YELLOW	BLACK	BLACK	MOUNTED WITH W11-1	3.00	9.00
W3-1	36	36					1	YELLOW	BLACK	BLACK	P-5 1 REQ'D	9.00	9.00
MA-D3-1a	36	12	Mill Rd	6D/4D	3 3.25	N/A	2	GREEN	WHITE	WHITE	MOUNTED WITH R4-7	-	EACH
SP-1	24	30	TRUCKS OVER 2½ TONS EXCLUDED	4C	2.5	N/A	1	WHITE	BLACK	BLACK	MOUNTED WITH R2-1 (25)	5.00	5.00

IDENTIFI-CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	SIGN FACE AREA (S.F.)	TOTAL AREA (S.F.)
	WIDTH (IN)	HEIGHT (IN)		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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TOWN OF LITTLETON
TRAFFIC SIGN SUMMARY SHEET
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CT-601

File Path: J:\DWG\P2017\0044\A30\Civil\Details\20170044A30_SIGNSUM01.dwg Layout: CT-601 Plotted: Mon, March 01, 2021 - 1:50 PM User: jdeskevich
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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.

massDOT Massachusetts Department of Transportation Highway Division | Standard Details and Drawings for the Development of Temporary Traffic Control Plans | FIGURE Gen-1 GENERAL GUIDELINES

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.

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

R2-10a, 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

massDOT Massachusetts Department of Transportation Highway Division | Notes for Temporary Traffic Control Plans | FIGURE Gen-2 NOTES ON WORK ZONE DISTANCES

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

massDOT Massachusetts Department of Transportation Highway Division | Notes for Temporary Traffic Control Plans | FIGURE Gen-3 NOTES ON WORK ZONE DISTANCES

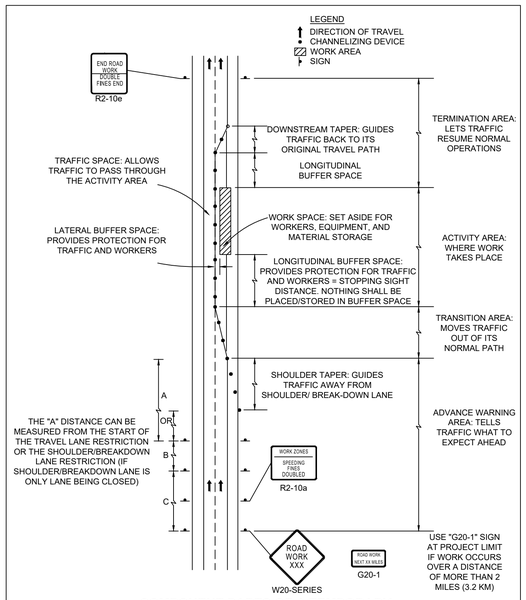
GENERAL NOTES:

1. ALL TRAFFIC MANAGEMENT CONFIGURATIONS SHALL CONFORM TO THE STANDARD MASSDOT DETAILS ON THE FOLLOWING SHEETS AND APPLY TO ALL LOCATIONS INCLUDED IN THE CONTRACT.
2. THE CONTRACTOR SHALL BE PERMITTED TO PERFORM TEMPORARY ROADWAY OR LANE CLOSURES FROM 8:00 A.M. TO 3:00 P.M. CHANGES TO THESE TIMES REQUIRE APPROVAL FROM THE TOWN OF LITTLETON
3. ALL TRENCHES IN THE ROADWAY SHALL EITHER BE BACKFILLED AND PATCHED WITH HOT MIX ASPHALT, COVERED WITH BEVELED EDGES STEEL PLATES, OR HOT MIX ASPHALT AROUND STEEL PLATES BEFORE REOPENING THE ROADWAY TO TRAFFIC. UNBEVELED STEEL PLATE MAY BE USED IF HMA WEDGES ARE PLACED IN ACCORDANCE WITH THE LONGITUDINAL DROP OFF DETAIL.
4. COVER ALL EXISTING SIGNAGE THAT CONFLICTS WITH THE TRAFFIC MANAGEMENT SETUP IN PLACE.
5. PORTABLE CHANGEABLE MESSAGE BOARDS (PCMB) SHALL BE USED ON THE PROJECT SITE; THESE SIGNS SHALL ADVISE MOTORISTS TO EXPECT DELAYS, AND ADVISE TRAILER TRUCKS OF RESTRICTED LANE WIDTHS (AND POSSIBLE DETOUR ROUTES) ON SPECIFIC APPROACHES DURING CERTAIN STAGES OF CONSTRUCTION.
6. THE CONTRACTOR SHALL PLACE TWO PORTABLE CHANGEABLE MESSAGE BOARDS (PCMB) ON THE PROJECT SITE, FOR SEVEN DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
7. ALL ADVANCED SIGNAGE SHALL REMAIN IN PLACE FOR THE DURATION OF THE PROJECT.

FOSTER STREET	
ROADWAY TYPE	URBAN PRINCIPAL ARTERIAL
ADT	2,100
DISTANCE "A*"	350 FT
DISTANCE "B*"	350 FT
DISTANCE "C"	350 FT
ANTICIPATED SPEED	25 MPH

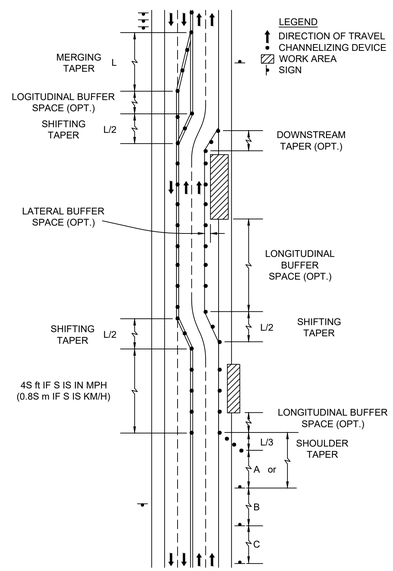
THE DIMENSIONS FOR A* & B* MAY REQUIRE FIELD ADJUSTMENTS DUE TO THE URBAN NATURE OF THE PROJECT AREA.

8. IF FLAGGERS ARE USED FOR TRAFFIC CONTROL, THE FLAGGER SIGN (W20-7a) SHALL BE SUBSTITUTED FOR THE POLICE OFFICER AHEAD (W20-7b) SIGN.



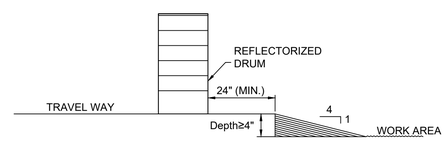
COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE

massDOT Massachusetts Department of Transportation Highway Division | Standard Details and Drawings for the Development of Temporary Traffic Control Plans | FIGURE Gen-4 COMPONENT PARTS OF A TEMPORARY TRAFFIC CONTROL (TTC) ZONE NOT TO SCALE



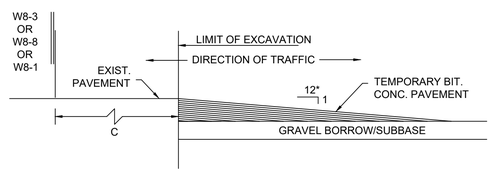
TYPES OF TAPERS AND BUFFER SPACES

massDOT Massachusetts Department of Transportation Highway Division | Standard Details and Drawings for the Development of Temporary Traffic Control Plans | FIGURE Gen-5 TYPES OF TAPERS AND BUFFER SPACES NOT TO SCALE



LATERAL DROP-OFF DETAIL

NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL

NOT TO SCALE

* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

LATERAL AND LONGITUDINAL DROP-OFF DETAILS

massDOT Massachusetts Department of Transportation Highway Division | Standard Details and Drawings for the Development of Temporary Traffic Control Plans | FIGURE Gen-6 LATERAL AND LONGITUDINAL DROP-OFF DETAILS NOT TO SCALE

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TOWN OF LITTLETON
TRAFFIC MANAGEMENT PLAN
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

TMP-101

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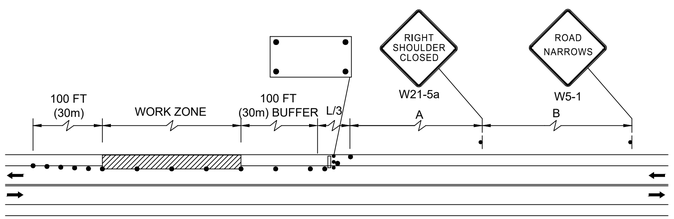
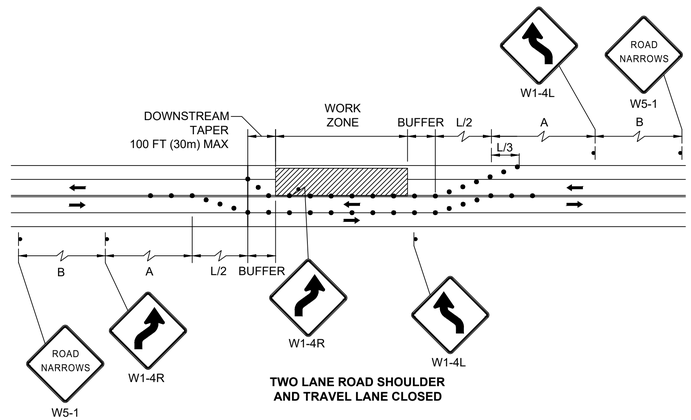


TWO LANE ROAD SHOULDER CLOSED

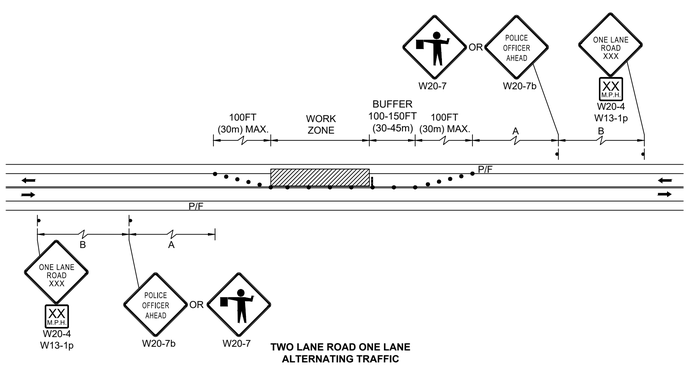
DRUM SPACING DEPENDENT ON SPEED

massDOT Highway Division	Standard Details and Drawings for the Development of Temporary Traffic Control Plans	FIGURE TLR-1 TWO LANE ROAD SHOULDER CLOSED NOT TO SCALE



TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED

massDOT Highway Division	Standard Details and Drawings for the Development of Temporary Traffic Control Plans	FIGURE TLR-2 TWO LANE ROAD SHOULDER AND TRAVEL LANE CLOSED NOT TO SCALE



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC

massDOT Highway Division	Standard Details and Drawings for the Development of Temporary Traffic Control Plans	FIGURE TLR-5 TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH POLICE DETAIL NOT TO SCALE

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TYPICAL CONSTRUCTION SIGNING

N.T.S.

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	TEXT DIMENSIONS (in) LETTER HEIGHT	TEXT DIMENSIONS (in) VERTICAL SPACING	TEXT DIMENSIONS (in) ARROW RTE. MKR.	ESTIMATED NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	SIGN FACE AREA (S.F.)	TOTAL AREA (S.F.)
R3-7L	30	30	LEFT LANE MUST TURN LEFT	SEE FHWA 2004 STANDARD HIGHWAY SIGNS MANUAL & 2012 SUPPLEMENT (ENGLISH VERSION)			2	WHITE	BLACK	BLACK	6.25	12.50
R3-7R	30	30	RIGHT LANE MUST TURN RIGHT				2	WHITE	BLACK	BLACK	6.25	12.50
R4-7	24	30					2	WHITE	BLACK	BLACK	6.25	12.50
R9-8	36	18	PEDESTRIAN CROSSWALK				1	FLRSCNT. ORANGE	BLACK	BLACK	4.50	4.50
R9-9	24	12	SIDEWALK CLOSED				2	FLRSCNT. ORANGE	BLACK	BLACK	2.00	4.00
R9-10	24	12	SIDEWALK CLOSED USE OTHER SIDE				2	FLRSCNT. ORANGE	BLACK	BLACK	2.00	4.00
R9-11L	24	18	SIDEWALK CLOSED AHEAD CROSS HERE				1	FLRSCNT. ORANGE	BLACK	BLACK	3.00	3.00
R9-11R	24	18	SIDEWALK CLOSED AHEAD CROSS HERE				1	FLRSCNT. ORANGE	BLACK	BLACK	3.00	3.00
R9-11aL	24	18	SIDEWALK CLOSED CROSS HERE				2	FLRSCNT. ORANGE	BLACK	BLACK	3.00	6.00
R9-11aR	24	18	SIDEWALK CLOSED CROSS HERE				2	FLRSCNT. ORANGE	BLACK	BLACK	3.00	6.00
W1-4L	36	36					2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W1-4R	36	36					2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W4-2L	36	36					4	FLRSCNT. ORANGE	BLACK	BLACK	9.00	36.00
MA-W4-7L	36	36	THRU TRAFFIC MERGE LEFT	SEE MASSDOT 2016 STANDARD SIGNS BOOK			2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W5-1	36	36	ROAD NARROWS	SEE FHWA 2004 STANDARD HIGHWAY SIGNS MANUAL & 2012 SUPPLEMENT (ENGLISH VERSION)			7	FLRSCNT. ORANGE	BLACK	BLACK	9.00	63.00
W8-3	36	36	PAVEMENT ENDS				2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W11-2	30	30					8	FLRSCNT. ORANGE	BLACK	BLACK	6.25	50

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH (IN)	SIZE OF SIGN HEIGHT (IN)	TEXT	TEXT DIMENSIONS (in) LETTER HEIGHT	TEXT DIMENSIONS (in) VERTICAL SPACING	TEXT DIMENSIONS (in) ARROW RTE. MKR.	ESTIMATED NUMBER OF SIGNS REQUIRED	COLOR BACK-GROUND	COLOR LEGEND	COLOR BORDER	SIGN FACE AREA (S.F.)	TOTAL AREA (S.F.)
W13-1	24	24	XX M.P.H.	SEE FHWA 2004 STANDARD HIGHWAY SIGNS MANUAL & 2012 SUPPLEMENT (ENGLISH VERSION)			2	FLRSCNT. ORANGE	BLACK	BLACK	4.00	8.00
W16-7PL	24	12					6	FLRSCNT. ORANGE	BLACK	BLACK	2.00	12.00
W16-9P	24	12	AHEAD				2	FLRSCNT. ORANGE	BLACK	BLACK	2.00	4.00
W20-4	36	36	ONE LANE ROAD AHEAD				8	FLRSCNT. ORANGE	BLACK	BLACK	9.00	72.00
W20-5L	36	36	LEFT LANE CLOSED AHEAD				2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W20-5R	36	36	RIGHT LANE CLOSED AHEAD				2	FLRSCNT. ORANGE	BLACK	BLACK	9.00	18.00
W20-7a	36	36					4	FLRSCNT. ORANGE	BLACK	BLACK	9.00	36.00
MA-W20-7b	36	36	POLICE OFFICER AHEAD	SEE MASSDOT 2016 STANDARD SIGNS BOOK			8	FLRSCNT. ORANGE	BLACK	BLACK	9.00	72.00
W21-5aR	36	36	RIGHT SHOULDER CLOSED	SEE FHWA 2004 STANDARD HIGHWAY SIGNS MANUAL & 2012 SUPPLEMENT (ENGLISH VERSION)			1	FLRSCNT. ORANGE	BLACK	BLACK	9.00	9.00
MA-W21-5c	36	36	BIKE LANE CLOSED AHEAD	SEE MASSDOT 2016 STANDARD SIGNS BOOK			4	FLRSCNT. ORANGE	BLACK	BLACK	9.00	36.00
MA-M4-9cL	30	24	DETOUR				2	FLRSCNT. ORANGE	BLACK	BLACK	5.00	10.00
MA-M4-9cR	30	24	DETOUR				2	FLRSCNT. ORANGE	BLACK	BLACK	5.00	10.00
MA-R2-10a	48	36	WORK ZONES SPEEDING FINES DOUBLED	SEE MASSDOT 2016 STANDARD SIGNS BOOK			5	FLRSCNT. ORANGE WHITE	BLACK BLACK	BLACK BLACK	12.00	60.00
MA-R2-10e	36	48	END ROAD WORK DOUBLE FINES END	SEE MASSDOT 2016 STANDARD SIGNS BOOK			5	FLRSCNT. ORANGE/ WHITE	BLACK	BLACK	12.00	60.00
W20-1c	36	36	ROAD WORK AHEAD	5C	3	N/A	5	FLRSCNT. ORANGE	BLACK	BLACK	9.00	45.00

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TMP-103

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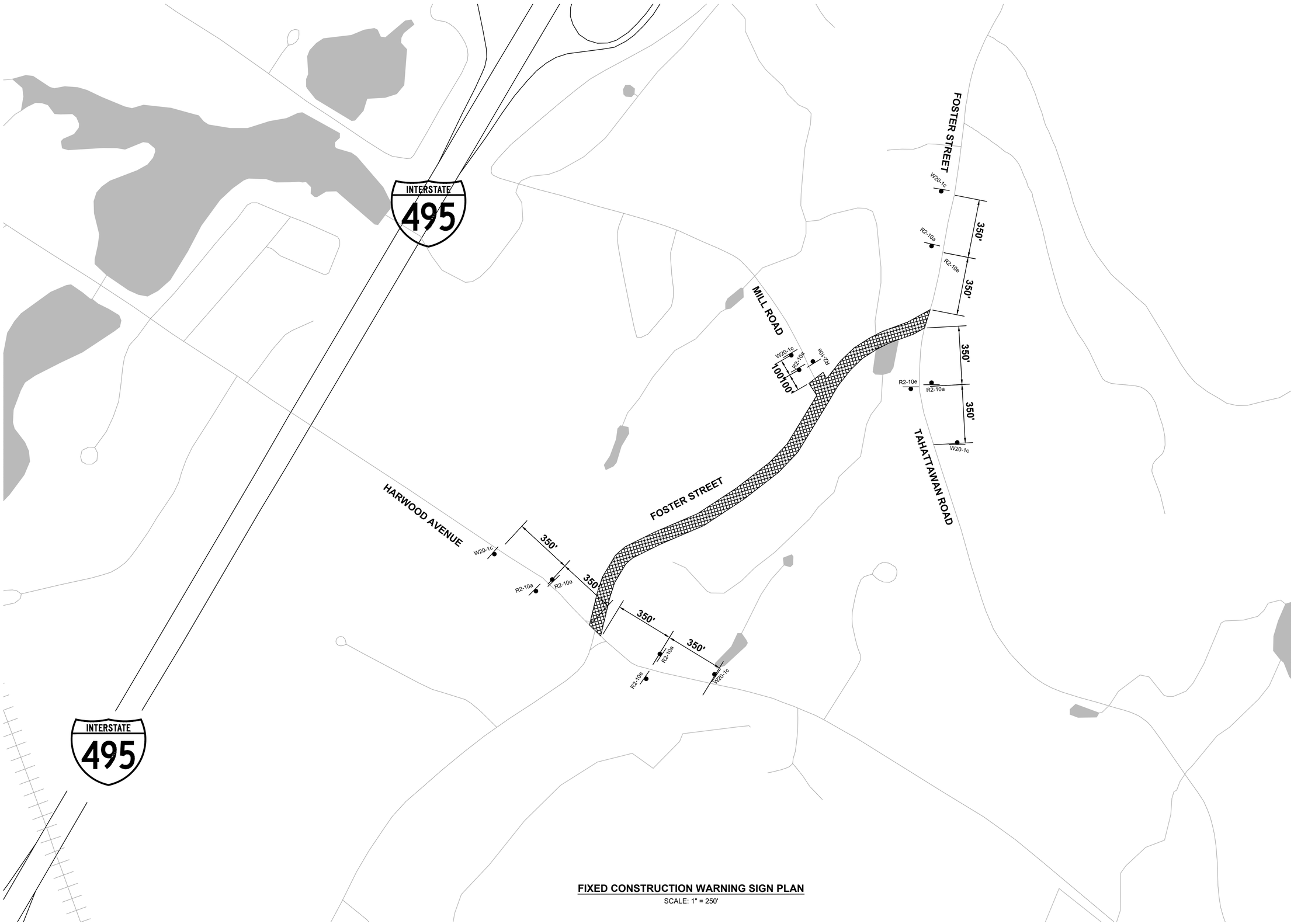

FIXED CONSTRUCTION WARNING SIGN PLAN

SCALE: 1" = 250'

File Path: J:\DWG\P20170044A30\Civil\Details\20170044A30_TMP02.dwg Layout: TMP FIXED WARNING SIGNS Plotted: Mon, March 01, 2021 - 11:38 AM User: jdeskavich
MS VIEW: LAYER STATE: Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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TOWN OF LITTLETON

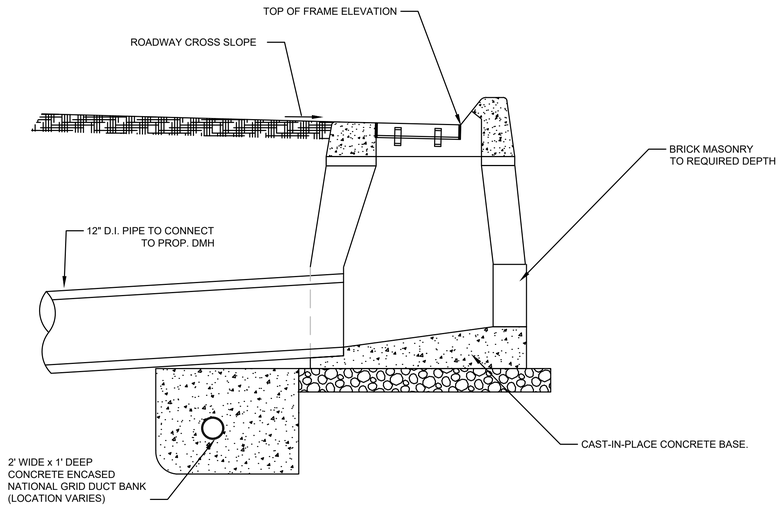
TRAFFIC MANAGEMENT PLAN

RECONSTRUCTION OF FOSTER STREET
PHASE II

LITTLETON MASSACHUSETTS

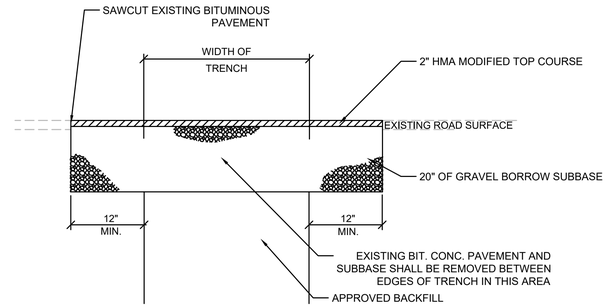
PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

TMP-104



5 GUTTER INLET – SPECIAL TYPE 2

SCALE: N.T.S.

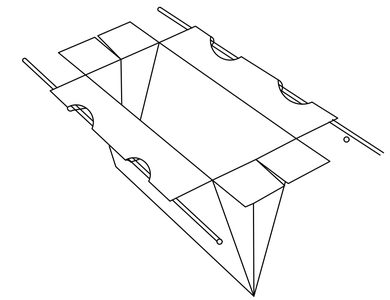


NOTES:
THE TEMPORARY PAVEMENT TRENCH REPAIR SHALL BE USED DURING THE TIME BETWEEN COMPLETION OF THE UTILITY CONSTRUCTION AND CONSTRUCTION OF THE PROPOSED ROADWAY PAVEMENT STRUCTURE OR PERMANENT PAVEMENT TRENCH REPAIR.

TEMPORARY ASHPALT SHALL BE PAID FOR UNDER ITEM #472

10 TEMPORARY PAVEMENT TRENCH REPAIR

SCALE: N.T.S.



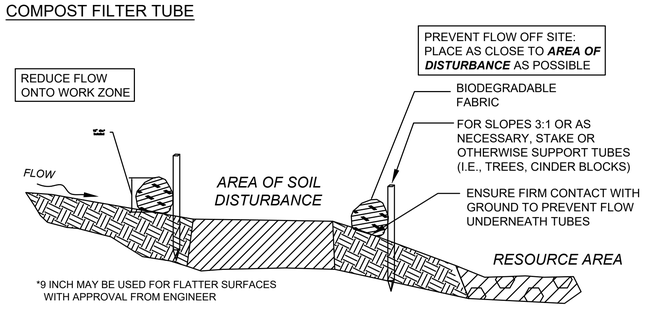
NOTES:

1. SIZED TO FIT ANY SIZE OR SHAPE CATCH BASIN.
2. ALL SEAMS DOUBLE STITCHED.
3. PERMEABILITY - REGULAR FLOW SILTSACK - 40 gal./min./sq. ft.
   HI - FLOW SILTSACK - 200 gal./min./sq. ft.

7 CATCH BASIN SILT SACK

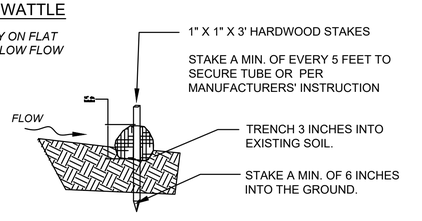
SCALE: N.T.S.

COMPOST FILTER TUBE

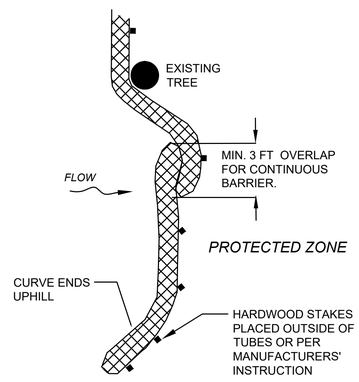


12 INCH STRAW WATTLE

TO BE USED ONLY ON FLAT SURFACES WITH LOW FLOW



SECTION



PLACE TUBE ALONG CONTOURS AND PERPENDICULAR TO FLOW.

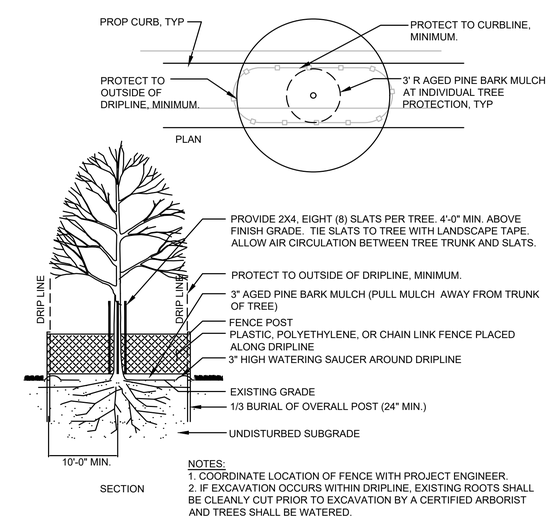
ADJUST LOCATION AS REQUIRED FOR OPTIMUM EFFECTIVENESS. DO NOT INSTALL IN WATERWAYS.

PLACE STAKES AS NEEDED TO SECURE TUBES IN PLACE.

PLAN VIEW

6 SEDIMENT BARRIERS – COMPOST FILTER TUBES

SCALE: N.T.S.



NOTES:
1. COORDINATE LOCATION OF FENCE WITH PROJECT ENGINEER.
2. IF EXCAVATION OCCURS WITHIN DRIPLINE, EXISTING ROOTS SHALL BE CLEANLY CUT PRIOR TO EXCAVATION BY A CERTIFIED ARBORIST AND TREES SHALL BE WATERED.

8 INDIVIDUAL TREE PROTECTION

SCALE: N.T.S.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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TOWN OF LITTLETON
CONSTRUCTION DETAILS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CD-501

File Path: J:\DWG\P\20170044\A30\Civil\Details\20170044A30_DET01.dwg Layout: CD 501 Plotted: Mon, March 01, 2021 - 11:33 AM User: jdeskavich
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB
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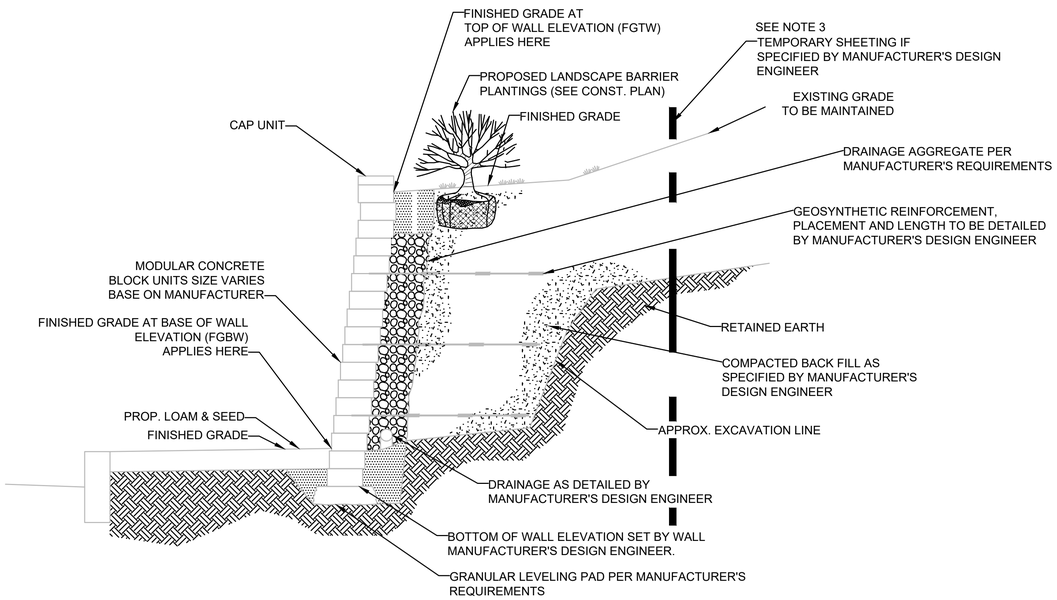


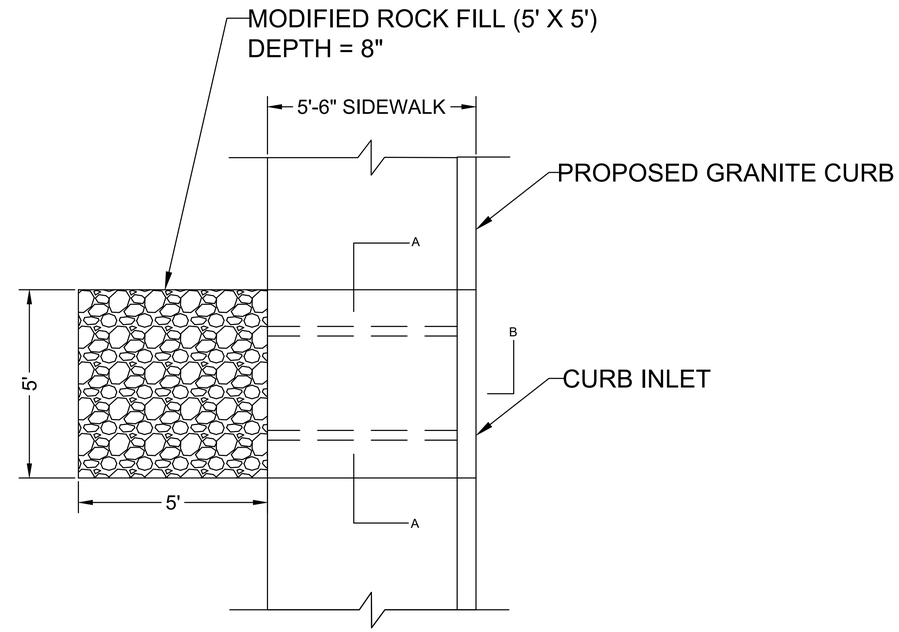
TYPICAL SECTION

NOTES

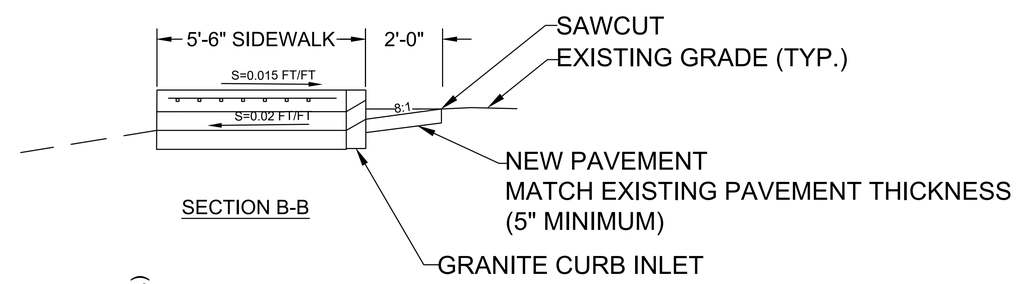
1. DETAILS AND NOTES HEREON ARE GENERIC AND ARE INTENDED TO GIVE A GENERAL DESCRIPTION OF THE WALL.
2. DETAILED WALL CONSTRUCTION PLANS, STAMPED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE COMMONWEALTH OF MASSACHUSETTS, SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
3. MANUFACTURER'S USE OF TEMPORARY SHEETING SHALL BE FOR CONTRACTOR CONVIENIENCE ONLY. ANY TEMPORARY SHEETING USED SHALL BE PAID FOR AT THE EXPENSE OF THE CONTRACTOR.
4. SEE CONTRACT SPECIAL PROVISIONS FOR WALL FINISHES, COLOR, AND WALL FACE TREATMENTS

12 MECHANICALLY STABILIZED EARTH WALL

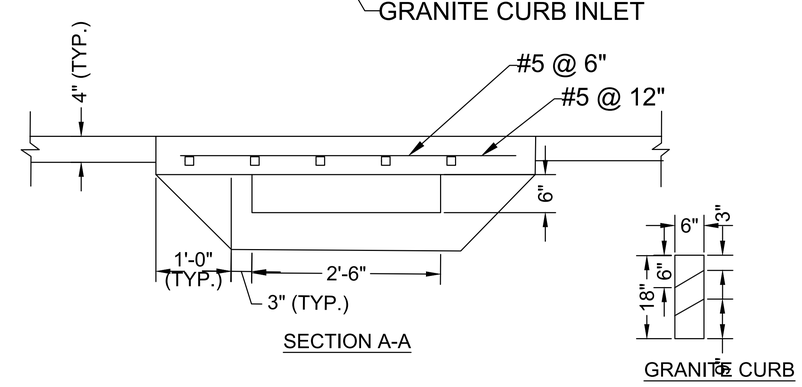
SCALE: N.T.S.



PLAN



SECTION B-B



SECTION A-A

GRANITE CURB

20 SIDEWALK INLET DETAIL

SCALE: N.T.S.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: N.T.S
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TOWN OF LITTLETON
CONSTRUCTION DETAILS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CD-502

File Path: J:\DWG\P2017\0044\A30\Civil\Details\20170044A30_DET01.dwg Layout: CD 502 Plotted: Mon, March 01, 2021 - 11:33 AM User: jdeskavich
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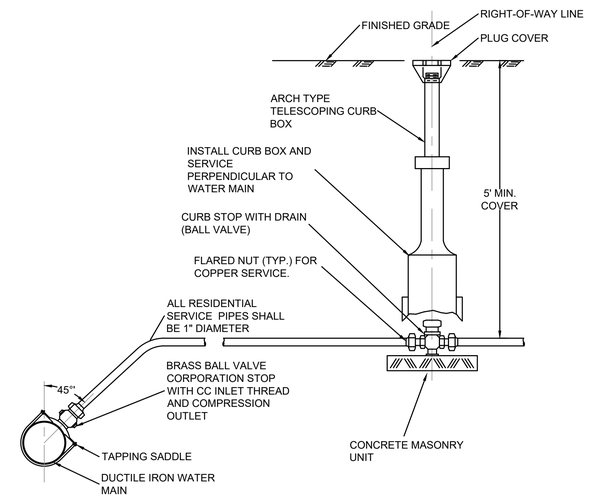
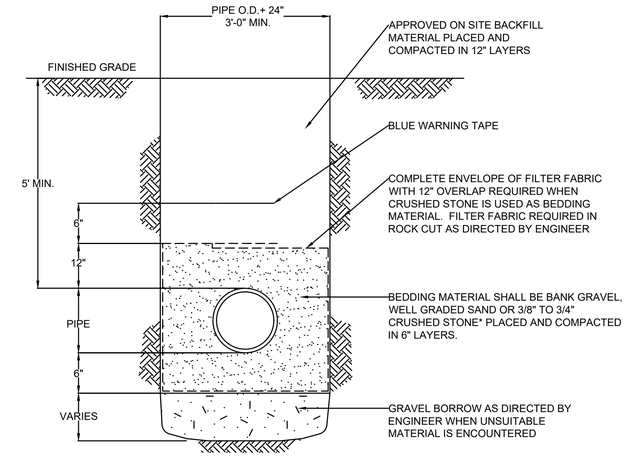


26 WATER SERVICE CONNECTION

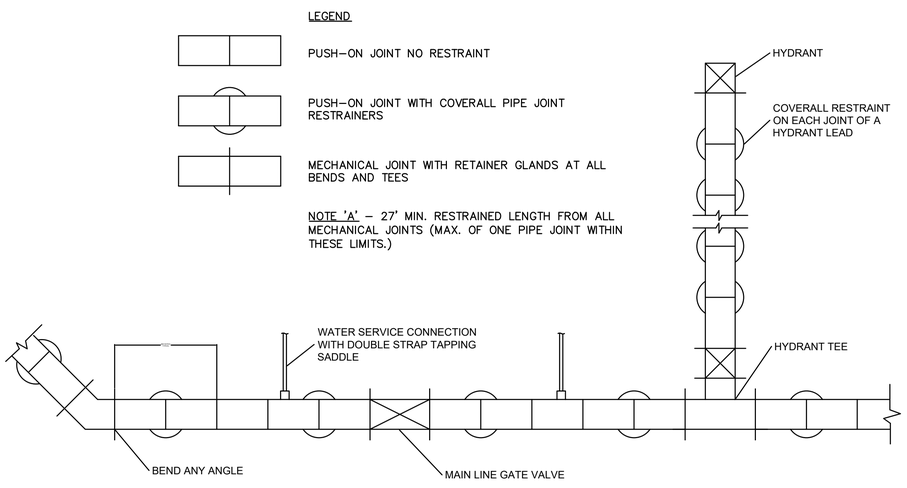
SCALE: N.T.S.



*CRUSHED STONE SHALL BE USED IN HIGH GROUNDWATER CONDITIONS AS DIRECTED BY THE ENGINEER.

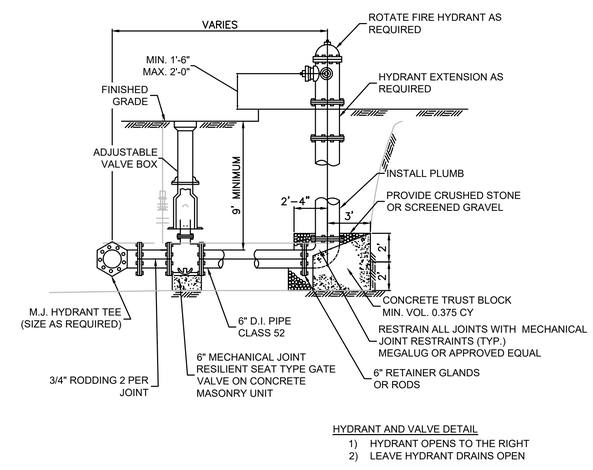
27 WATER MAIN TRENCH

SCALE: N.T.S.



19 WATER MAIN JOINT RESTRAINT

SCALE: N.T.S.



HYDRANT AND VALVE DETAIL

1) HYDRANT OPENS TO THE RIGHT
2) LEAVE HYDRANT DRAINS OPEN

18 HYDRANT AND VALVE DETAIL

SCALE: N.T.S.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: N.T.S
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TOWN OF LITTLETON
CONSTRUCTION DETAILS
RECONSTRUCTION OF FOSTER STREET
PHASE II
LITTLETON MASSACHUSETTS

PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CD-503

File Path: J:\DWG\P\20170044\A30\Civil\Details\20170044A30_DET01.dwg Layout: CD 503 Plotted: Mon, March 01, 2021 - 11:33 AM User: jdeskavich
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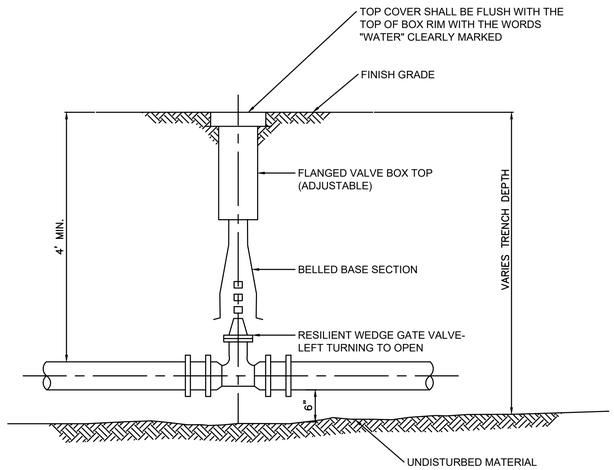
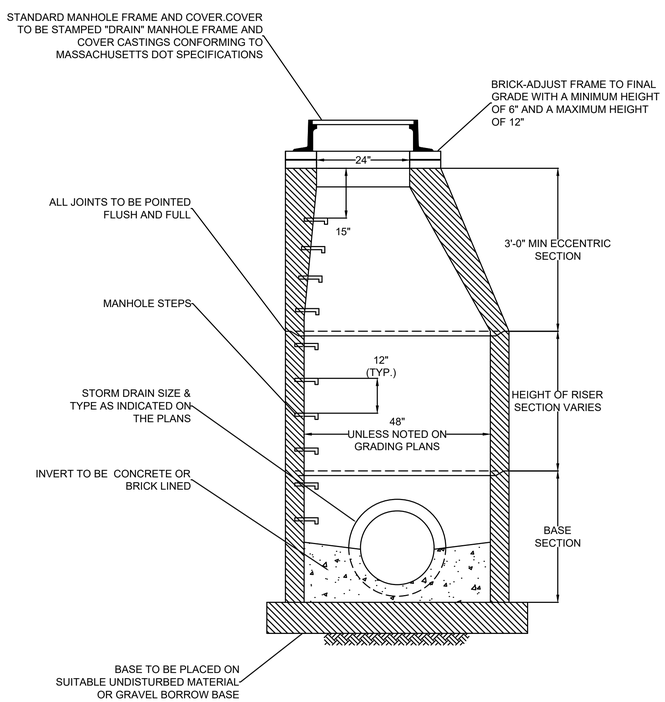


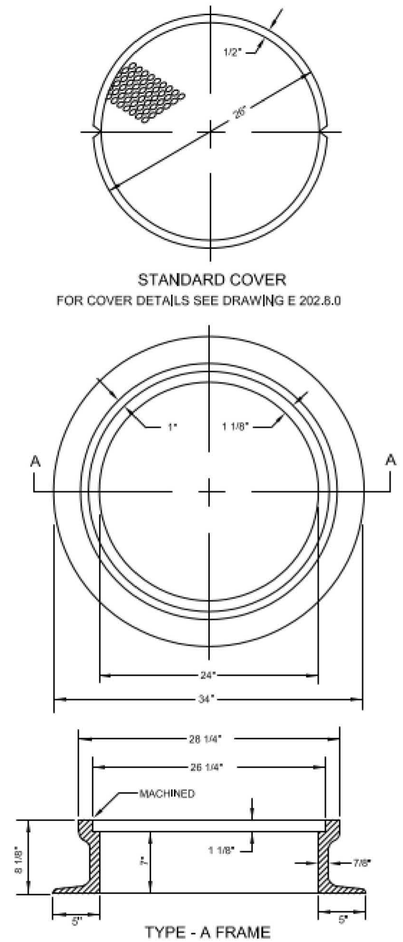
21 GATE VALVE

SCALE: N.T.S.



20 DRAINAGE MANHOLE

SCALE: N.T.S.



NOTES:
1. MINIMUM MASS - 265 LBS.
2. MATERIAL - CAST IRON - SEE STANDARD SPECIFICATIONS WITH NO BLACK ASPHALT COATING ALLOWED

22 MANHOLE FRAME AND COVER – A FRAME

SCALE: N.T.S.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.			XX/XX	XX

SCALE: N.T.S
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TOWN OF LITTLETON
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PROJ. No.: 20170044.A30
DATE: MARCH 1, 2021

CD-504

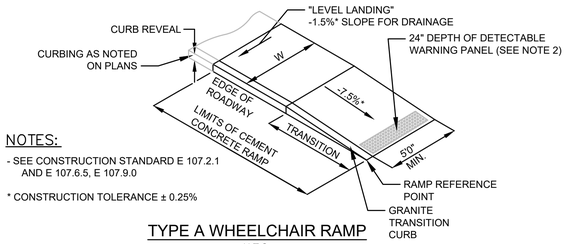
File Path: J:\DWG\P2017\0044\A30\Civil\Details\20170044A30_DET01.dwg Layout: CD 504 Plotted: Mon, March 01, 2021 - 11:33 AM User: jdeskavich
MS VIEW:
LAYER STATE:
Plotter: DWG TO PDF.PC3 CTB File: MADOT-D.STB

LEGEND & GENERAL NOTES:

W = SIDEWALK WIDTH
CC = CEMENT CONCRETE
HMA = HOT MIX ASPHALT
G = WIDTH OF GRASS BUFFER

1. SEE CONSTRUCTION STANDARD E 107.8.0 SIDEWALK THROUGH DRIVEWAY WITH CURB RETURNS.
2. SEE CONSTRUCTION STANDARD E 107.9.0 CURB TRANSITION LENGTHS.

* CONSTRUCTION TOLERANCE ± 0.5%

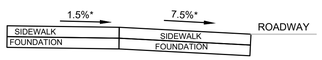


NOTES:

- SEE CONSTRUCTION STANDARD E 107.2.1 AND E 107.6.5, E 107.9.0

* CONSTRUCTION TOLERANCE ± 0.25%

TYPE A WHEELCHAIR RAMP
N.T.S.



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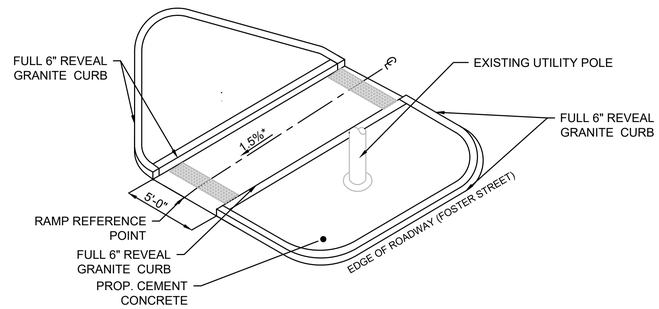
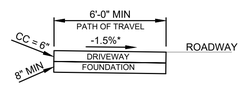


TYPE C1 WHEELCHAIR RAMP
PEDESTRIAN REFUGE ISLAND AT MILL ROAD
N.T.S.



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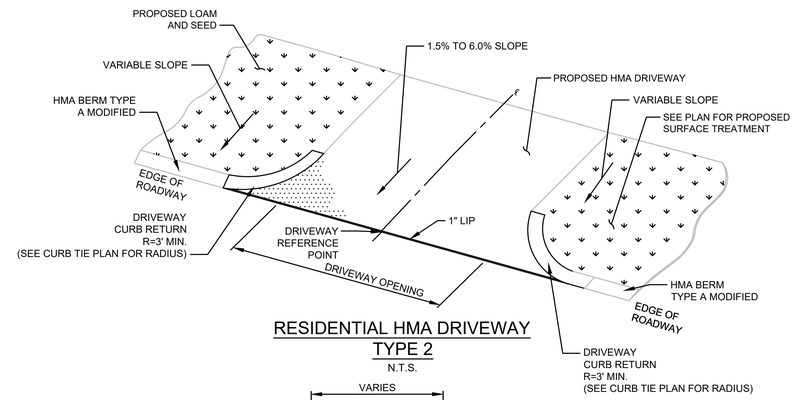

RESIDENTIAL HMA DRIVEWAY TYPE 2
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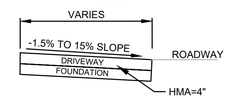

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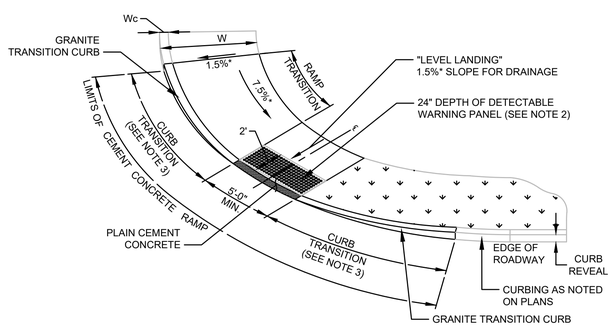
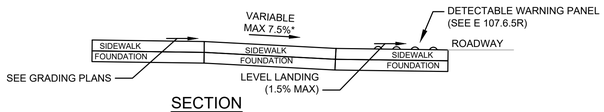


TYPE B WHEELCHAIR RAMP
ON CORNER RADIUS (W = 5.5' TO 6.5')
N.T.S.



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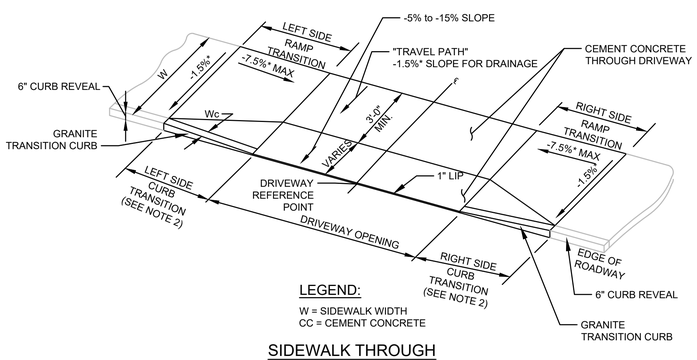
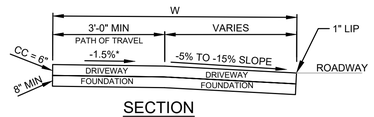


LEGEND:
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE

SIDEWALK THROUGH DRIVEWAYS - TYPE 1
N.T.S.



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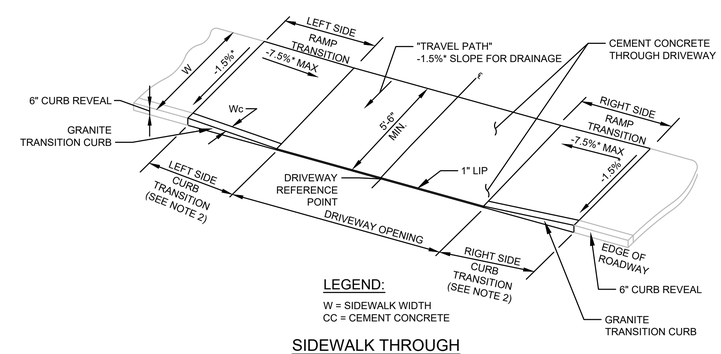
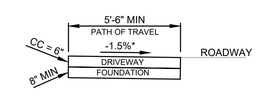


LEGEND:
W = SIDEWALK WIDTH
CC = CEMENT CONCRETE

SIDEWALK THROUGH DRIVEWAYS - TYPE 3
N.T.S.



SECTION
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No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
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CD-505

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