

Intersection Improvements at Pleasant Street and Spring Street, Stoneham, Massachusetts

100 Nickerson Road
Marlborough, MA 01752
Phone: 508-786-2200 Fax: 508-786-2201

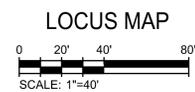


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CLIENT:
TOWN OF STONEHAM
DEPARTMENT OF PUBLIC WORKS
16 PINE STREET
STONEHAM, MA 02180

Tt PROJECT No.:
143-305337-20001

THESE PLANS ARE SUPPLEMENTED BY THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, 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.



DRAWING LIST

- | | |
|---|-----------------------------------|
| 1 | COVER SHEET |
| 2 | GENERAL NOTES AND ABBREVIATIONS |
| 3 | TYPICAL SECTIONS |
| 4 | CONSTRUCTION PLAN |
| 5 | CURB TIE AND GRADING PLAN |
| 6 | SIGNING AND PAVEMENT MARKING PLAN |
| 7 | TEMPORARY TRAFFIC CONTROL DETAILS |
| 8 | CONSTRUCTION DETAILS |

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
CB	CB	CATCH BASIN
FP	FP	CATCH BASIN CURB INLET
GP	GP	FLAG POLE
MB	MB	GAS PUMP
MB	MB	MAIL BOX
O	O	POST SQUARE
O	O	POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
EHH	EHH	FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
H	H	HYDRANT
*	*	LIGHT POLE
C	C	CABLE MANHOLE
D	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
UPL	UPL	UTILITY POLE
BUSH	BUSH	BUSH
TREE	TREE	TREE
STUMP	STUMP	STUMP
SWAMP / MARSH	SWAMP / MARSH	SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
SIGN AND POST	SIGN AND POST	SIGN AND POST
OVERHEAD CABLE/WIRE	OVERHEAD CABLE/WIRE	OVERHEAD CABLE/WIRE
CURBING	CURBING	CURBING
100' -99'	100' -99'	CONTOURS (ON-THE-GROUND SURVEY DATA)
UNDERGROUND DRAIN PIPE	UNDERGROUND DRAIN PIPE	UNDERGROUND DRAIN PIPE
UNDERGROUND ELECTRIC DUCT	UNDERGROUND ELECTRIC DUCT	UNDERGROUND ELECTRIC DUCT
UNDERGROUND GAS MAIN	UNDERGROUND GAS MAIN	UNDERGROUND GAS MAIN
UNDERGROUND SEWER MAIN	UNDERGROUND SEWER MAIN	UNDERGROUND SEWER MAIN
UNDERGROUND TELEPHONE DUCT	UNDERGROUND TELEPHONE DUCT	UNDERGROUND TELEPHONE DUCT
UNDERGROUND WATER MAIN	UNDERGROUND WATER MAIN	UNDERGROUND WATER MAIN
BALANCED STONE WALL	BALANCED STONE WALL	BALANCED STONE WALL
GUARD RAIL - STEEL POSTS	GUARD RAIL - STEEL POSTS	GUARD RAIL - STEEL POSTS
GUARD RAIL - WOOD POSTS	GUARD RAIL - WOOD POSTS	GUARD RAIL - WOOD POSTS
GUARD RAIL - DOUBLE FACE - STEEL POSTS	GUARD RAIL - DOUBLE FACE - STEEL POSTS	GUARD RAIL - DOUBLE FACE - STEEL POSTS
GUARD RAIL - DOUBLE FACE - WOOD POSTS	GUARD RAIL - DOUBLE FACE - WOOD POSTS	GUARD RAIL - DOUBLE FACE - WOOD POSTS
CHAIN LINK OR METAL FENCE	CHAIN LINK OR METAL FENCE	CHAIN LINK OR METAL FENCE
WOOD FENCE	WOOD FENCE	WOOD FENCE
HAY BALES/SILT FENCE	HAY BALES/SILT FENCE	HAY BALES/SILT FENCE
TREE LINE	TREE LINE	TREE LINE
SAWCUT LINE	SAWCUT LINE	SAWCUT LINE
TOP OR BOTTOM OF SLOPE	TOP OR BOTTOM OF SLOPE	TOP OR BOTTOM OF SLOPE
STATE HIGHWAY LAYOUT	STATE HIGHWAY LAYOUT	STATE HIGHWAY LAYOUT
TOWN OR CITY LAYOUT	TOWN OR CITY LAYOUT	TOWN OR CITY LAYOUT
COUNTY LAYOUT	COUNTY LAYOUT	COUNTY LAYOUT
TOWN OR CITY BOUNDARY LINE	TOWN OR CITY BOUNDARY LINE	TOWN OR CITY BOUNDARY LINE
PROPERTY LINE OR APPROX PROPERTY LINE	PROPERTY LINE OR APPROX PROPERTY LINE	PROPERTY LINE OR APPROX PROPERTY LINE
EASEMENT	EASEMENT	EASEMENT

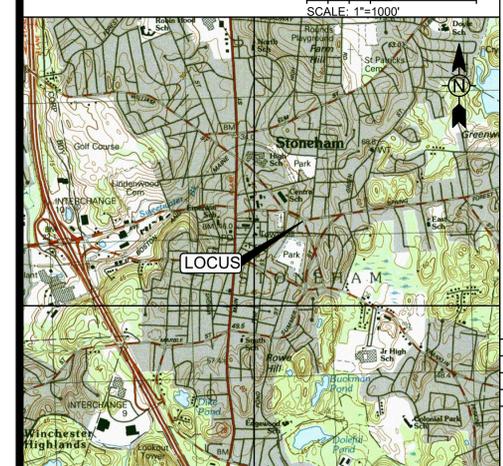
PAVEMENT MARKINGS SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
ONLY	ONLY	PAVEMENT ARROW - WHITE
ONLY	ONLY	LEGEND "ONLY" - WHITE
SL	SL	STOP LINE
CW	CW	CROSSWALK
SWL	SWL	SOLID WHITE LINE
SYL	SYL	SOLID YELLOW LINE
BWL	BWL	BROKEN WHITE LINE
BYL	BYL	BROKEN YELLOW LINE
DBWL	DBWL	DOTTED WHITE LINE
DBYL	DBYL	DOTTED YELLOW LINE

ISSUED:

MAY 22, 2020 90% DESIGN
xx ISSUED FOR CONSTRUCTION

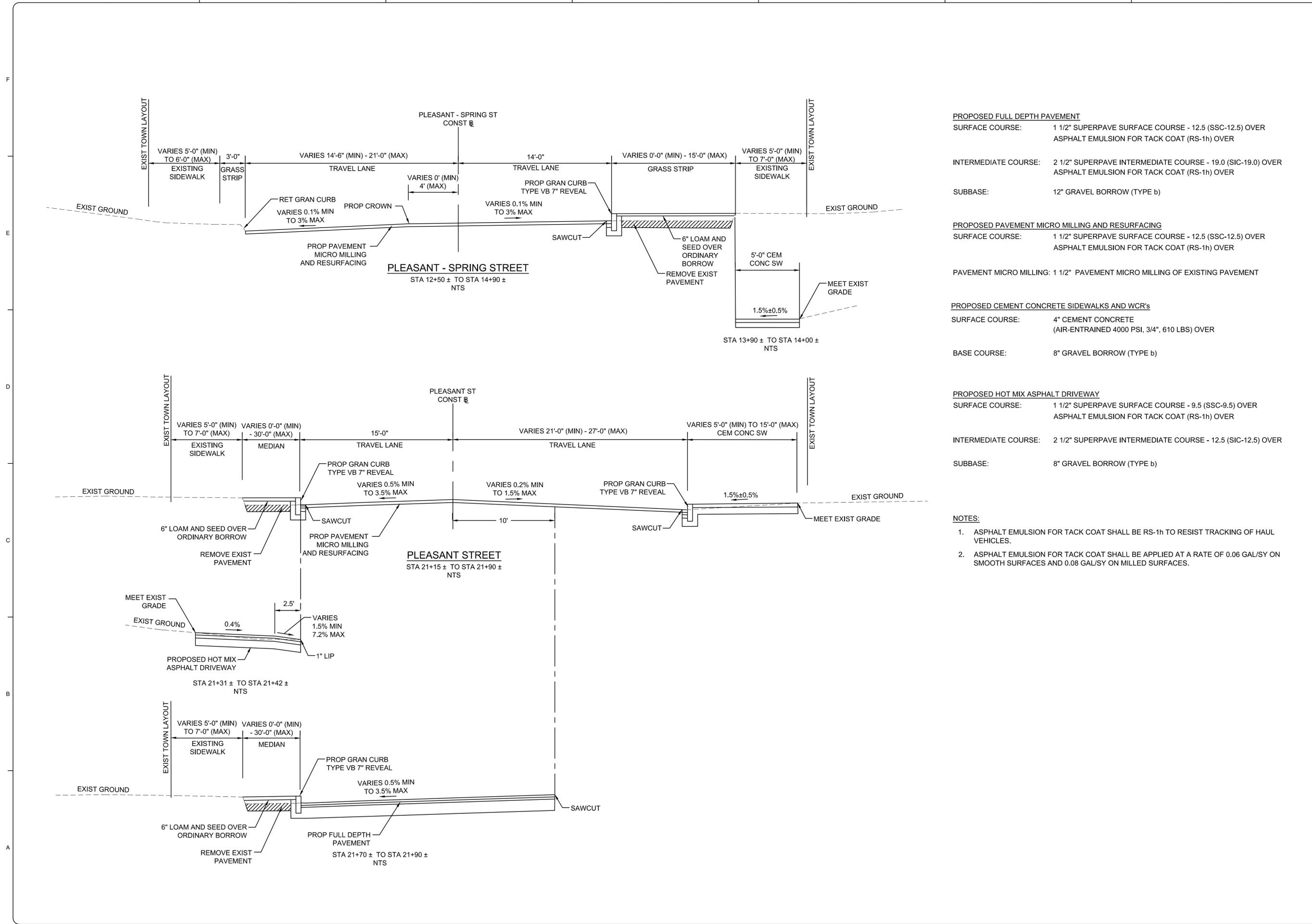
USGS MAP:



Client: Town of Stoneham DPW
 Proj. Loc.: Pleasant Street Stoneham MA
 Intersection Improvements at
 Pleasant Street and Spring Street
 Stoneham, Massachusetts
Cover Sheet

Project No.: 143-305337-20001
Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:

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PROPOSED FULL DEPTH PAVEMENT

- SURFACE COURSE:** 1 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h) OVER
- INTERMEDIATE COURSE:** 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC-19.0) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h) OVER
- SUBBASE:** 12" GRAVEL BORROW (TYPE b)

PROPOSED PAVEMENT MICRO MILLING AND RESURFACING

- SURFACE COURSE:** 1 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC-12.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h) OVER
- PAVEMENT MICRO MILLING:** 1 1/2" PAVEMENT MICRO MILLING OF EXISTING PAVEMENT

PROPOSED CEMENT CONCRETE SIDEWALKS AND WCR'S

- SURFACE COURSE:** 4" CEMENT CONCRETE (AIR-ENTRAINED 4000 PSI, 3/4", 610 LBS) OVER
- BASE COURSE:** 8" GRAVEL BORROW (TYPE b)

PROPOSED HOT MIX ASPHALT DRIVEWAY

- SURFACE COURSE:** 1 1/2" SUPERPAVE SURFACE COURSE - 9.5 (SSC-9.5) OVER ASPHALT EMULSION FOR TACK COAT (RS-1h) OVER
- INTERMEDIATE COURSE:** 2 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SIC-12.5) OVER
- SUBBASE:** 8" GRAVEL BORROW (TYPE b)

NOTES:

- ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1h TO RESIST TRACKING OF HAUL VEHICLES.
- ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED AT A RATE OF 0.06 GAL/SY ON SMOOTH SURFACES AND 0.08 GAL/SY ON MILLED SURFACES.



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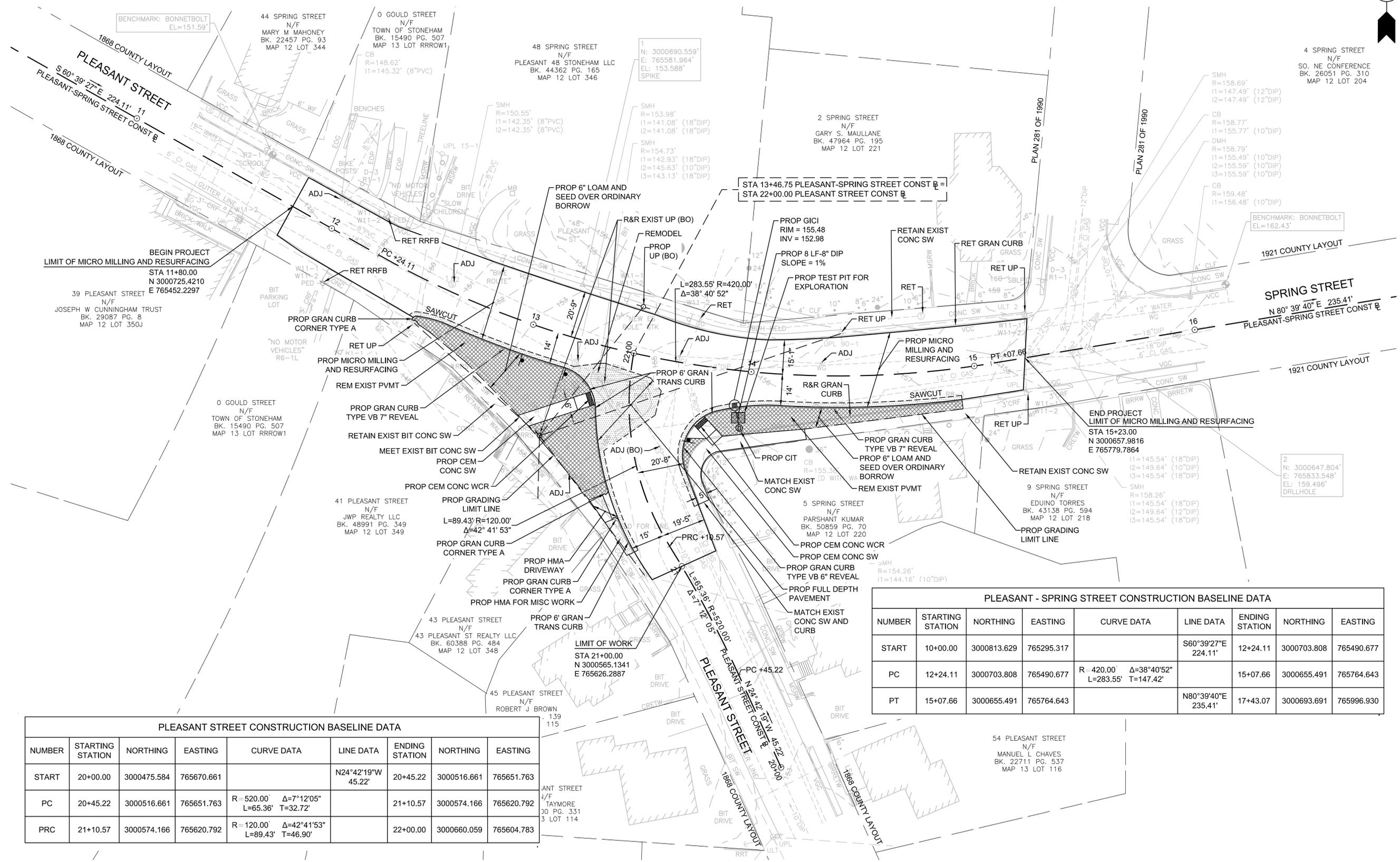
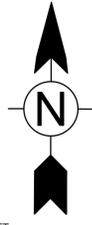
MARK	DATE	DESCRIPTION	BY
1	5/22/20	90% DESIGN	L.K.T.

Client: TOWN OF STONEHAM
Proj. Loc.: PLEASANT ST AND SPRING ST, STONEHAM, MA
INTERSECTION IMPROVEMENTS AT PLEASANT STREET AND SPRING STREET
STONEHAM, MASSACHUSETTS
TYPICAL SECTIONS

Project No.: 143-305337-20001
Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:

3

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Bar Measures 1 inch



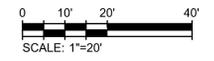
PLEASANT STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
START	20+00.00	3000475.584	765670.661		N24°42'19"W 45.22'	20+45.22	3000516.661	765651.763
PC	20+45.22	3000516.661	765651.763	R=520.00' Δ=7°12'05" L=65.36' T=32.72'		21+10.57	3000574.166	765620.792
PRC	21+10.57	3000574.166	765620.792	R=120.00' Δ=42°41'53" L=89.43' T=46.90'		22+00.00	3000660.059	765604.783

PLEASANT - SPRING STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
START	10+00.00	3000813.629	765295.317		S60°39'27"E 224.11'	12+24.11	3000703.808	765490.677
PC	12+24.11	3000703.808	765490.677	R=420.00' Δ=38°40'52" L=283.55' T=147.42'		15+07.66	3000655.491	765764.643
PT	15+07.66	3000655.491	765764.643		N80°39'40"E 235.41'	17+43.07	3000693.691	765996.930

NOTES:
1. EXISTING LIGHT POLES LABELED (APPROX) WERE ADDED TO SURVEY BASE PLAN BASED ON A VISUAL FIELD INSPECTION. LOCATION OF ALL LIGHT POLES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. EXIST CONDUIT FOR LIGHT POLES IS NOT SHOWN ON PLANS, BUT IS ASSUMED TO BE PRESENT. THE CONTRACTOR SHALL USE CAUTION DURING CONSTRUCTION AND REPLACE CONDUIT IF NEEDED TO AVOID ANY CONFLICT.



MARK	DATE	DESCRIPTION
1	5/22/20	90% DESIGN

Client: TOWN OF STONEHAM
Proj. Loc.: PLEASANT ST AND SPRING ST, STONEHAM, MA
INTERSECTION IMPROVEMENTS AT PLEASANT STREET AND SPRING STREET STONEHAM, MASSACHUSETTS CONSTRUCTION PLAN

Project No.: 143-305337-20001
Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:

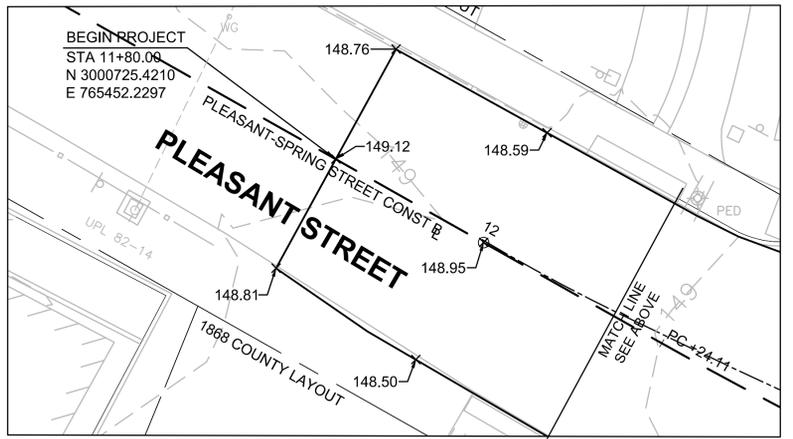
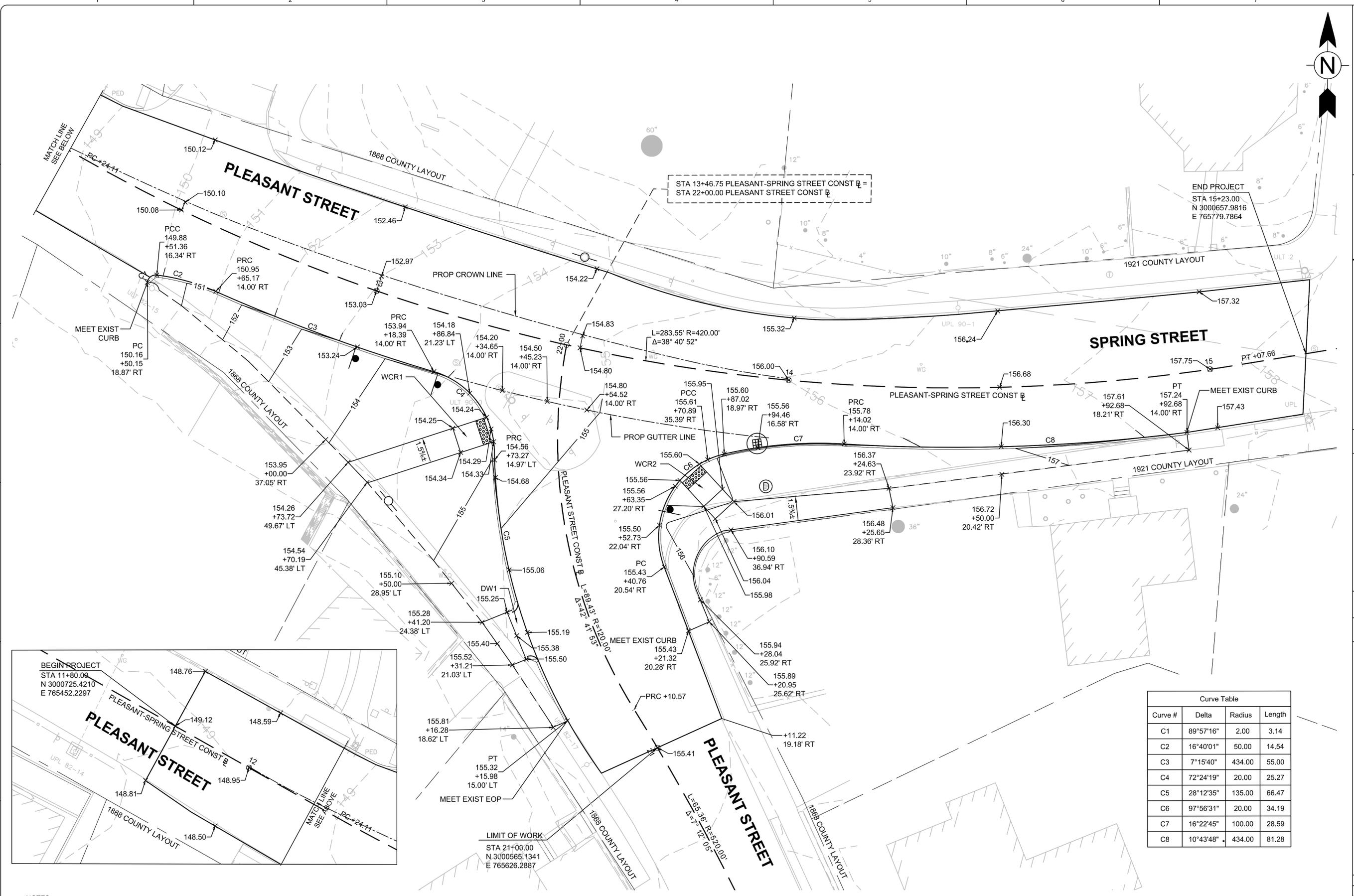
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MARK	DATE	DESCRIPTION	BY
1	5/22/20	90% DESIGN	L.K.T.

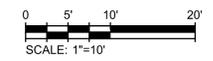
Client: TOWN OF STONEHAM
Proj. Loc: PLEASANT ST AND SPRING ST, STONEHAM, MA
Project No.: 143-305337-20001
Intersection Improvements at Pleasant Street and Spring Street
Stoneham, Massachusetts
Curb Tie and Grading Plan

Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:



Curve #	Delta	Radius	Length
C1	89°57'16"	2.00	3.14
C2	16°40'01"	50.00	14.54
C3	7°15'40"	434.00	55.00
C4	72°24'19"	20.00	25.27
C5	28°12'35"	135.00	66.47
C6	97°56'31"	20.00	34.19
C7	16°22'45"	100.00	28.59
C8	10°43'48"	434.00	81.28

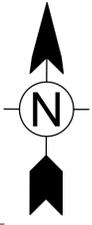
- NOTES:**
- GRADES ARE SHOWN AT PAVEMENT ELEVATION AND TOP OF CURB.
 - GRADES ARE SHOWN AT 10' INTERVALS ALONG CURVES WITHIN INTERSECTIONS STARTING AT THE PC.



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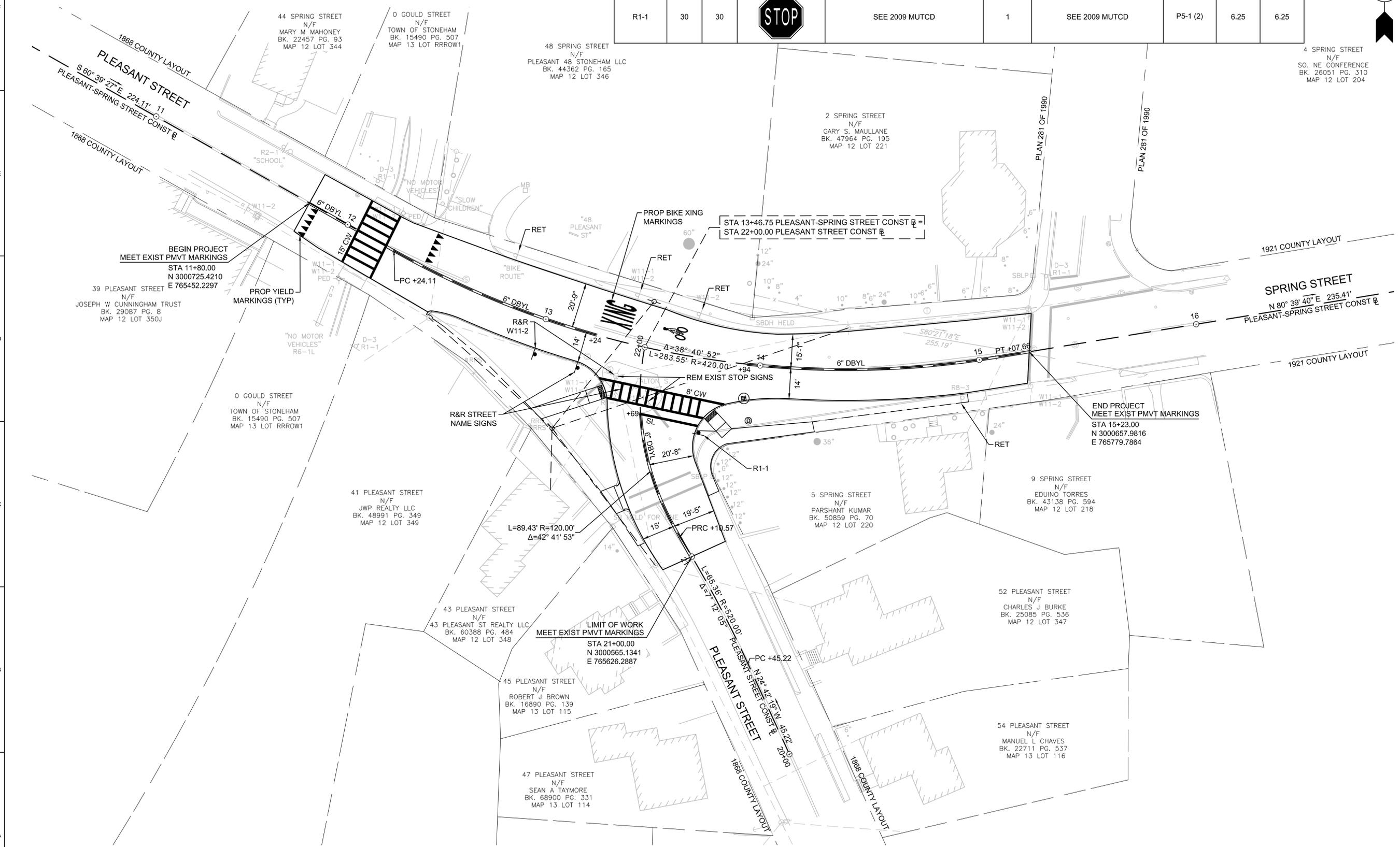
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IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND (NUMBER REQUIRED)	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK-GROUND	LEGEND	BORDER			
R1-1	30	30		SEE 2009 MUTCD			1	SEE 2009 MUTCD			P5-1 (2)	6.25	6.25



TETRA TECH

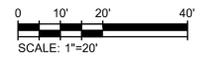
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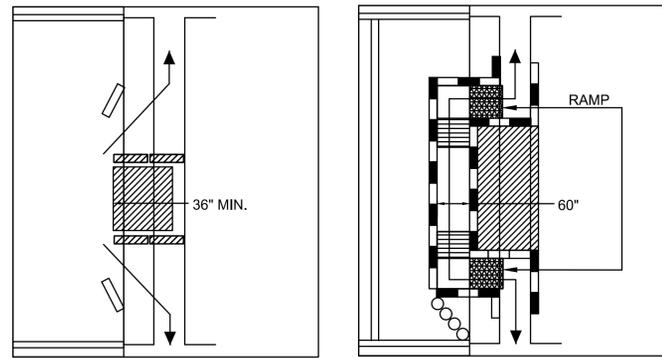


MARK	DATE	DESCRIPTION	BY
1	5/22/20	80% DESIGN	L.K.T.

Client: TOWN OF STONEHAM
 Project: PLEASANT ST AND SPRING ST, STONEHAM, MA
INTERSECTION IMPROVEMENTS AT PLEASANT STREET AND SPRING STREET STONEHAM, MASSACHUSETTS
 SIGN AND PAVEMENT MARKING PLAN

Project No.: 143-305337-20001
 Designed By: E.A.P.
 Drawn By: L.K.T.
 Checked By:



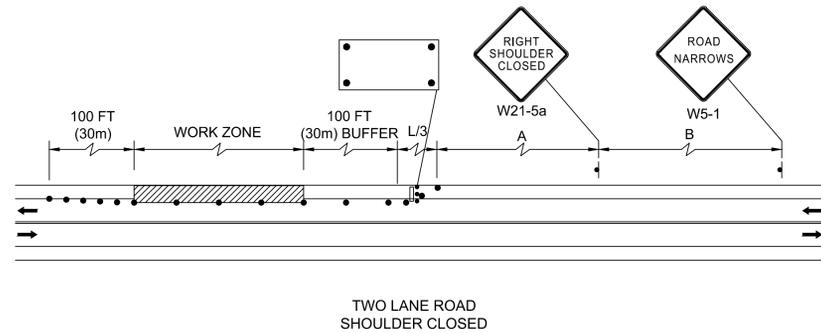


- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A TTC ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE FEATURES PRESENT IN THE EXISTING PEDESTRIAN FACILITY.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES PED-1 & PED-2).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE FOR THE ENTIRE LENGTH OF THE TEMPORARY PEDESTRIAN FACILITY.
- THE PROTECTIVE REQUIREMENTS OF A TTC SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.

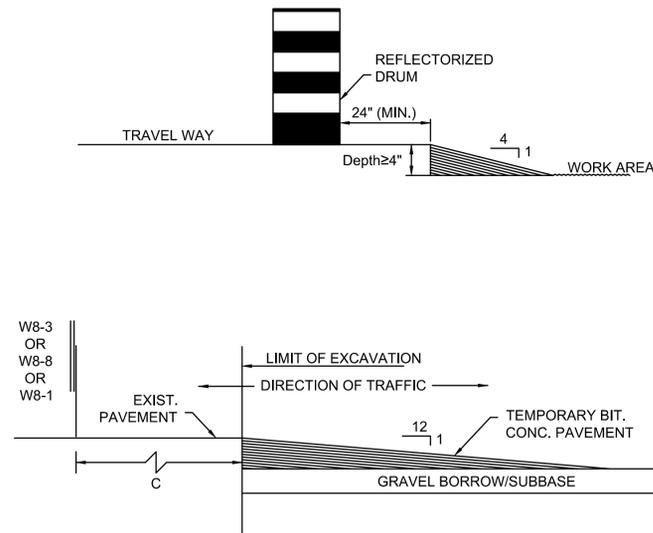
AUDIBLE DEVICES

FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPEECH MESSAGING FOR PEDESTRIANS WITH VISUAL DISABILITIES SHALL BE PROVIDED. AUDIBLE INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.

PEDESTRIAN DETAILS



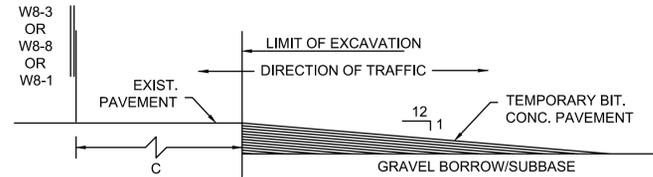
TWO LANE ROAD SHOULDER CLOSED



LONGITUDINAL DROP-OFF DETAIL

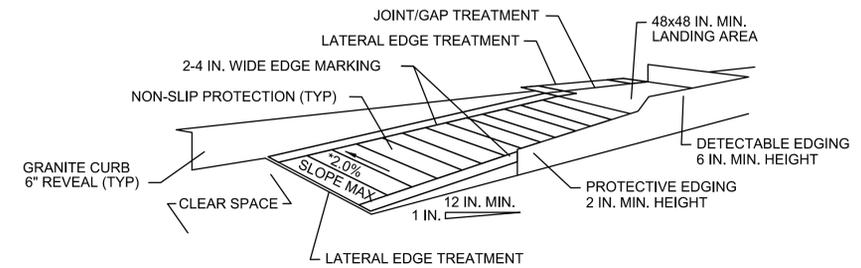
* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS

LATERAL AND LONGITUDINAL DROP-OFF DETAILS

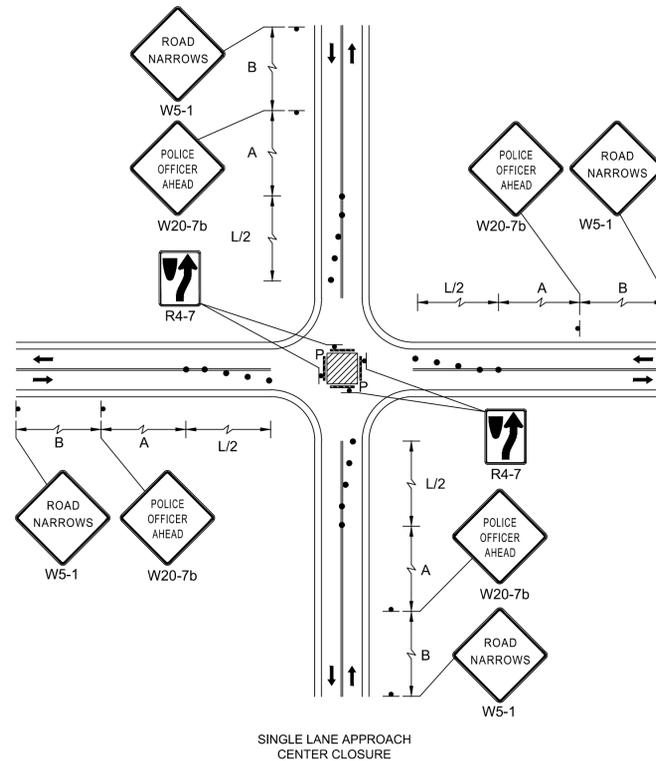


NOTES:

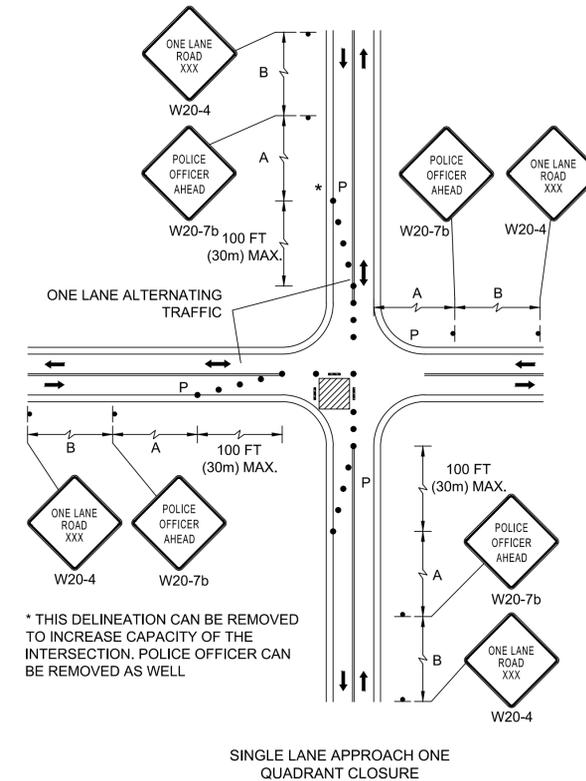
1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED WHEN THE CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6 IN. OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3 (33%). PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN THE CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3 IN. OR MORE.
3. DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
4. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
5. CLEAR SPACE OF 48x48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
6. THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR 2 TO 4 IN. WIDE MARKING. THE MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.
7. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE MINIMAL RESTRICTION.
8. LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
9. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. LATERAL EDGES SHOULD BE VERTICAL UP TO 0.25 IN. HIGH, AND BEVELED AT 1:2 BETWEEN 0.25 IN. AND 0.5 IN. HEIGHT.



TEMPORARY CURB RAMP-PARALLEL TO CURB



SINGLE LANE APPROACH CENTER CLOSURE

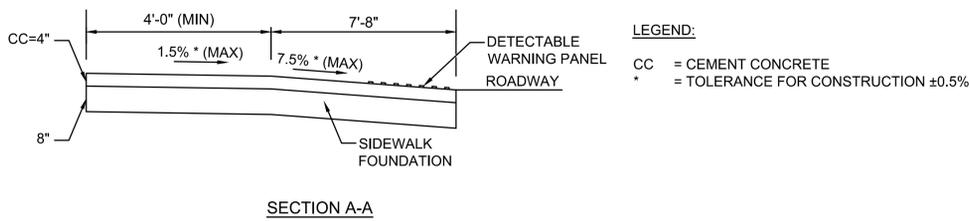
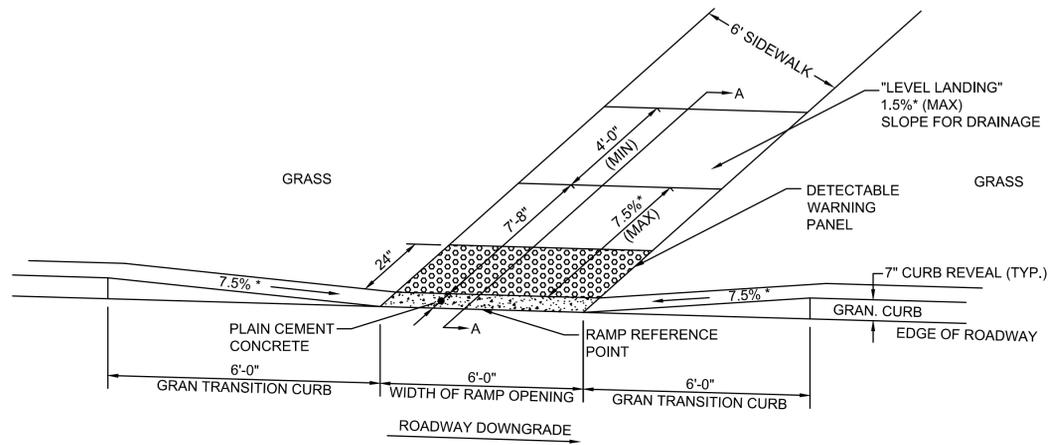


SINGLE LANE APPROACH ONE QUADRANT CLOSURE

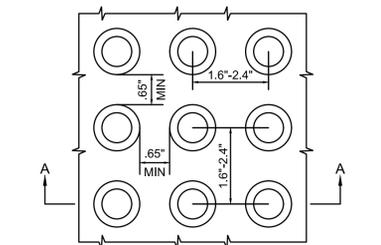
MARK	DATE	DESCRIPTION	BY
1	5/22/20	90% DESIGN	L.K.T.

Client: TOWN OF STONEHAM
Proj. Loc.: PLEASANT ST AND SPRING ST, STONEHAM, MA
Project No.: 143-305337-20001
Intersection Improvements at PLEASANT STREET AND SPRING STREET STONEHAM, MASSACHUSETTS
TEMPORARY TRAFFIC CONTROL DETAILS

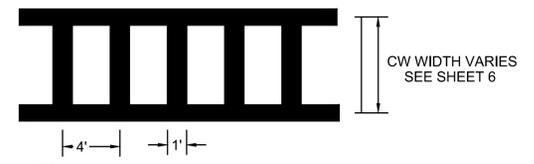
Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:



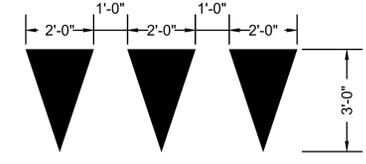
WHEELCHAIR RAMP 1
STA 21+80, 15.8' LT
NTS



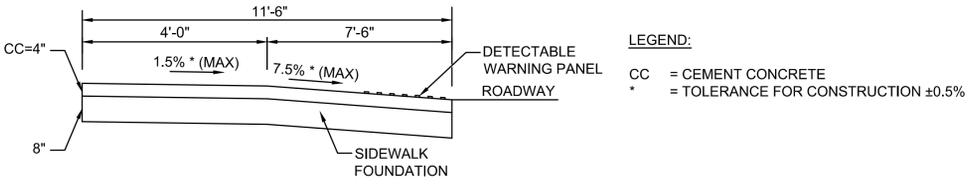
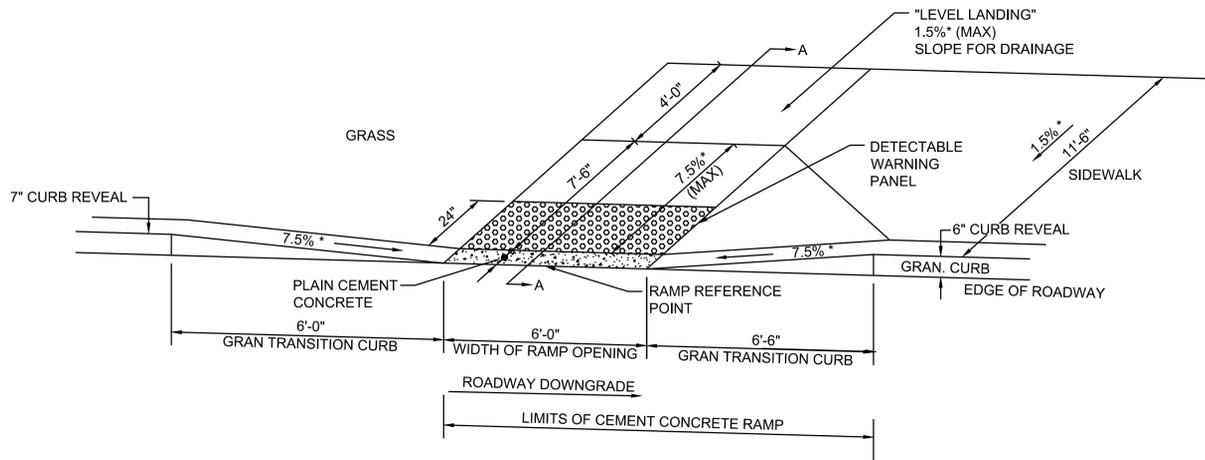
DETAIL OF DETECTABLE WARNING PANEL
DETECTABLE WARNING PANEL FOR WHEELCHAIR RAMPS
NTS



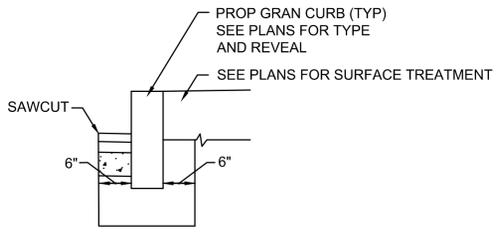
CROSSWALK STRIPING DETAIL
NTS



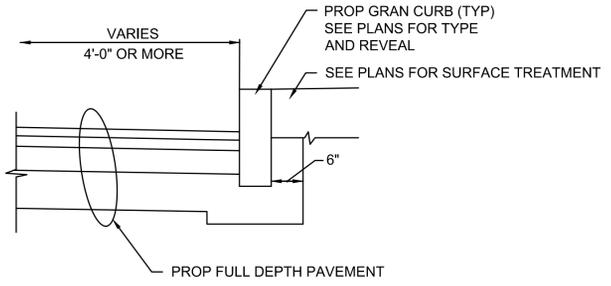
YIELD MARKINGS
NTS



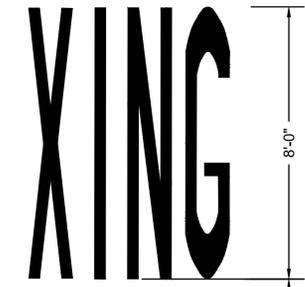
WHEELCHAIR RAMP 2
STA 21+68, 31.0' RT
NTS



GRANITE CURB SET IN EXISTING PAVEMENT
NTS



GRANITE CURB SET IN FULL DEPTH PAVEMENT GREATER THAN 4 FEET WIDE
NTS



BIKE LANE MARKING
NTS

MARK	DATE	DESCRIPTION	BY
1	5/22/20	90% DESIGN	L.K.T.

Client: TOWN OF STONEHAM
Proj. Loc.: PLEASANT ST AND SPRING ST, STONEHAM, MA
Project No.: 143-305337-20001
Intersection Improvements at PLEASANT STREET AND SPRING STREET STONEHAM, MASSACHUSETTS
CONSTRUCTION DETAILS

Designed By: E.A.P.
Drawn By: L.K.T.
Checked By:

5/22/2020 8:11:56 AM - P:\305337\143-305337-20001\CAD\SHEETFILES\TCD01.DWG - THATCHER, LINDE

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