

# CITY OF SOMERVILLE

## UNION SQUARE UTILITY AND ROADWAY EARLY ACTION PROJECT

### IFB #15-105-REBID

### UNION SQUARE

### SOMERVILLE, MASSACHUSETTS

**LIST OF DRAWINGS**

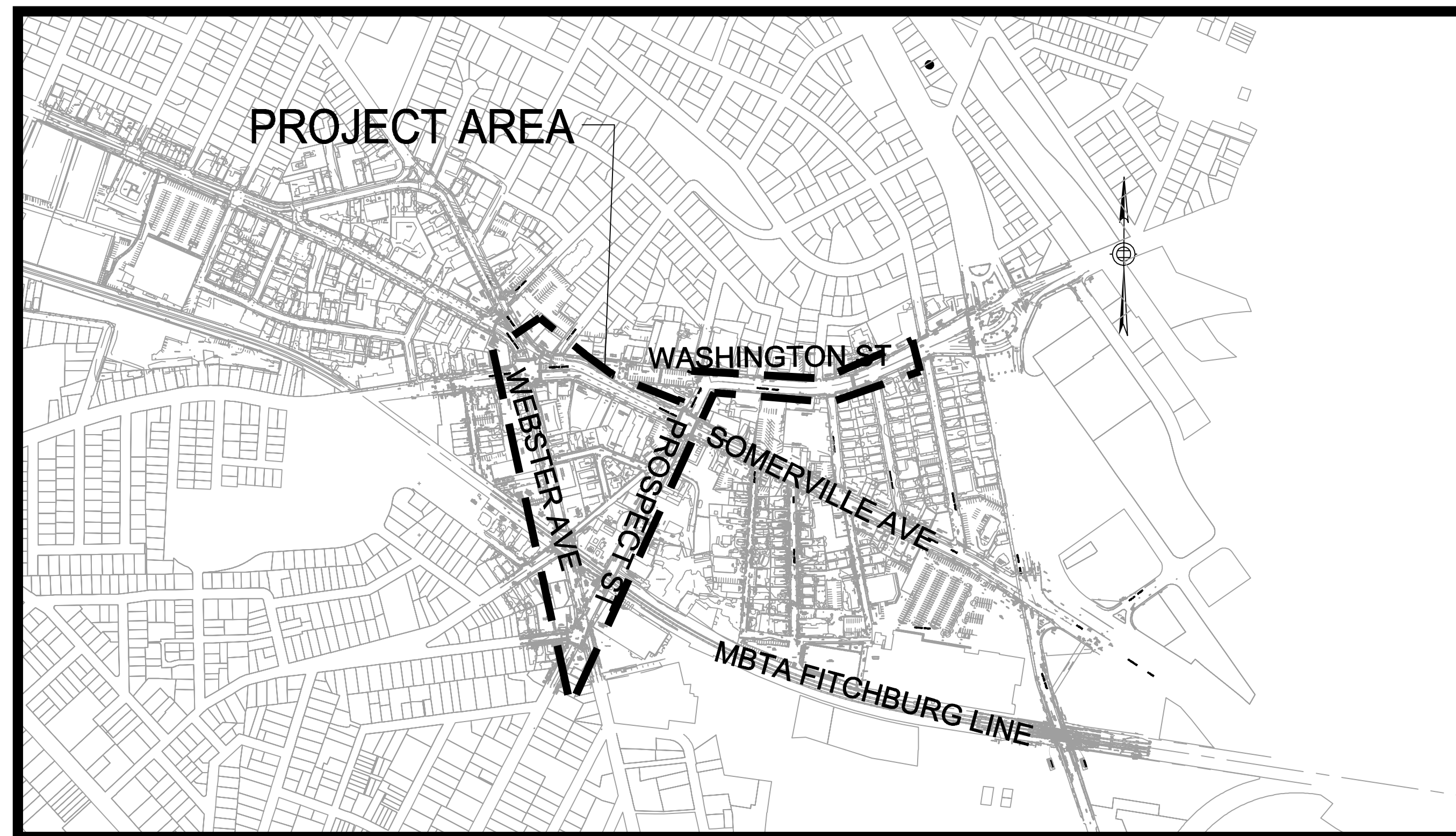
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\* ADD ALTERNATE 1



**LOCUS MAP**

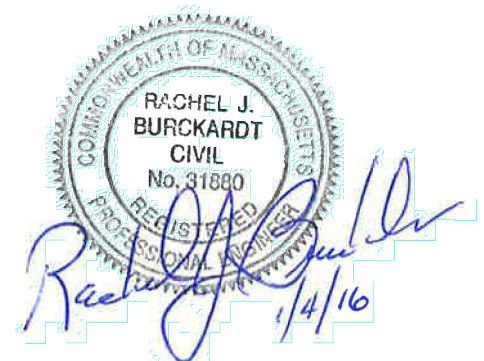
SCALE: 1"=400'



**PARSONS BRINCKERHOFF, INC**  
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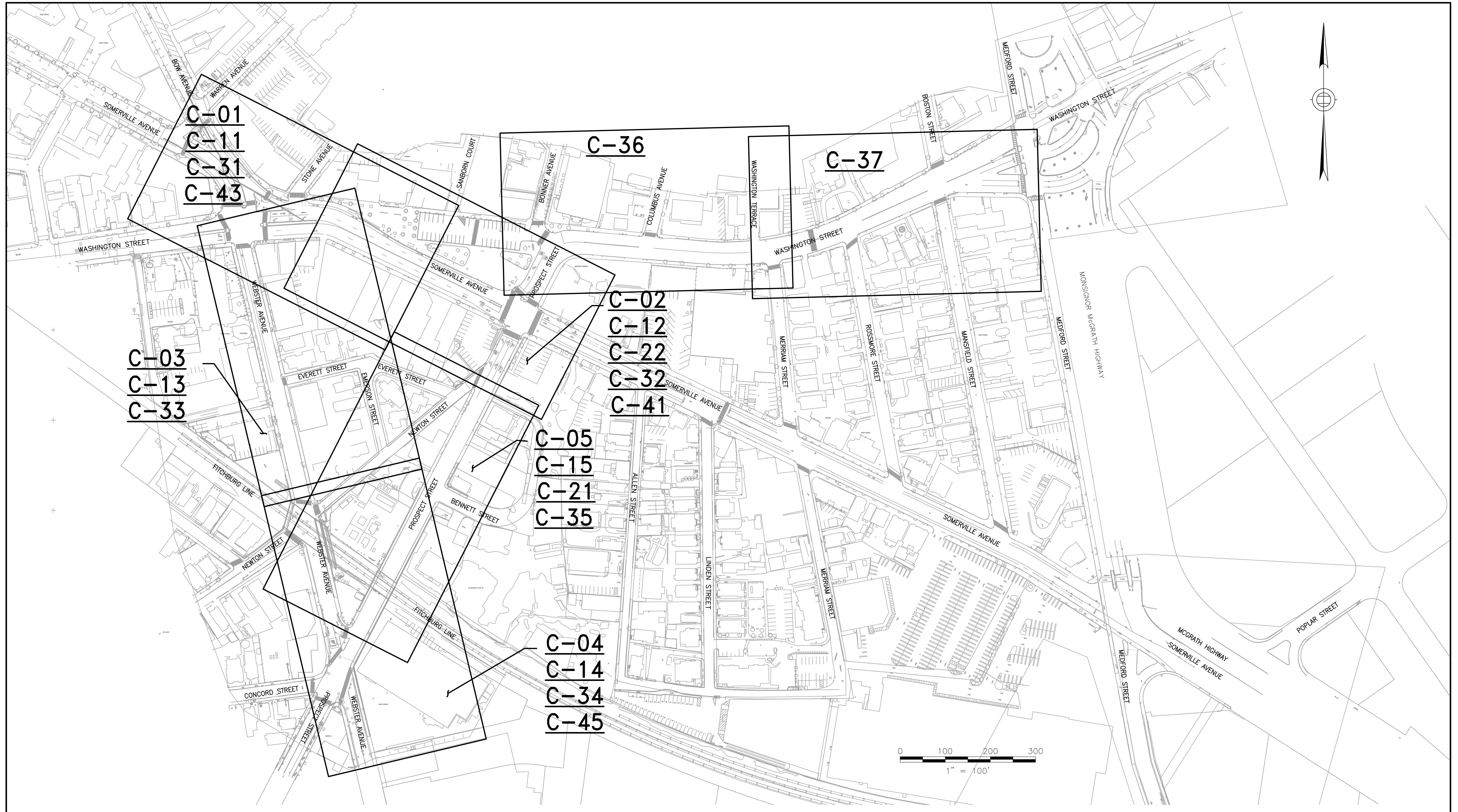
**BRYANT ASSOCIATES, INC.**  
 98 NORTH WASHINGTON STREET, SUITE B-1, BOSTON, MA 02114  
 Phone: (617) 248-0300 FAX: (617) 248-0212



**BID DOCUMENTS**  
**DATE: JANUARY 2016**

SHEET  
**G-1**





ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

KEYPLAN

DESIGNED: LAC  
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DRAWN: LAC  
CHECKED: RUB

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SHEET  
**G-2**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143



**LEGEND:**

**EXISTING**

	CATCH BASIN
	CABLE TELEVISION MANHOLE
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	MISCELLANEOUS MANHOLE
	SEWER MANHOLE
	TELEPHONE MANHOLE
	WATER MANHOLE
	MWRA WATER MANHOLE
	HANDHOLE
	GAS SHUT-OFF
	WATER SHUT-OFF
	GAS GATE
	STREET LIGHT CONTROL BOX
	WATER GATE
	FIRE HYDRANT
	UTILITY POLE
	LIGHT POLE
	TRASH CAN
	METAL POST
	GUARD POST
	SIGN POST
	SIGN
	DECIDUOUS TREE WITH TRUNK DIAMETER
	SPOT ELEVATION
	RIM ELEVATION EQUALS
	INVERT ELEVATION EQUALS
	TOP OF HATCH
	NO PIPES VISIBLE
	TOP OF WALL ELEVATION EQUALS
	UNDERGROUND CABLE TELEVISION LINE
	UNDERGROUND DRAIN LINE
	UNDERGROUND ELECTRIC LINE
	UNDERGROUND GAS LINE
	OVERHEAD ELECTRIC LINE
	OVERHEAD TELEPHONE LINE
	OVERHEAD WIRE
	UNDERGROUND SEWER LINE
	UNDERGROUND STREET LIGHTING LINE
	UNDERGROUND TELEPHONE LINE
	UNDERGROUND TRAFFIC CONTROL LINE
	UNDERGROUND WATER LINE
	BORING (SEE GENERAL NOTE 16)

**PROPOSED**

SEE LEGENDS ON THE VARIOUS PLANS

**GENERAL NOTES**

- TOPOGRAPHIC INFORMATION IS BASED ON AERIAL AND GROUND SURVEY BY BRYANT ASSOCIATES, INC. PERFORMED IN 2014.
- THE UTILITY INFORMATION SHOWN IS COMPILED BASED ON FIELD SURVEY BY BRYANT ASSOCIATES, INC IN 2014 AND BY RECORD INFORMATION OBTAINED FROM VARIOUS UTILITY COMPANIES. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM RECORD PLANS AND ARE APPROXIMATE ONLY. LOCATIONS OF UNDERGROUND STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. THE PROPER UTILITY ENGINEERING DEPARTMENT/COMPANY SHALL BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHALL BE DETERMINED IN THE FIELD. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233 SEVENTY-TWO HOURS PRIOR TO EXCAVATION, GRADING AND/OR PAVING.
  - ALSO CONTACT THE CITY, MWRA AND OTHER UTILITIES NOT COVERED BY DIG SAFE AT LEAST 72 HOURS PRIOR TO START OF EXCAVATION.
- ELEVATIONS REFER TO NORTH AMERICAN VERTICAL DATUM (NAVD88) FOR VERTICAL DATUM HORIZONTAL COORDINATES REFER TO MASSACHUSETTS STATE PLANE - MAINLAND ZONE THE NORTH AMERICAN DATUM OF 1983.
- PROTECT CATCH BASINS, INLETS AND MANHOLES FROM INFLOW OF SEDIMENT OR OTHER CONSTRUCTION DEBRIS. GROUND WATER DEWATERING SHALL PASS THROUGH AN APPROVED SEDIMENTATION BASIN PRIOR TO DISCHARGE TO ANY CB, INLET, MANHOLE, DITCH, BASIN, OR WATERBODY.
- THE CONTRACTOR SHALL SUPPORT IN PLACE ALL UTILITIES CROSSING TRENCH EXCAVATIONS AND SHALL BE RESPONSIBLE FOR THE SELECTION AND DESIGN OF THE TEMPORARY UTILITY SUPPORTS. THE PROPOSED SUPPORT SYSTEM SHALL BE SUBMITTED BY THE CONTRACTOR TO THE AFFECTED UTILITY OWNER FOR REVIEW AND APPROVAL. THIS WORK IS TO BE ACCOMPLISHED AT NO ADDITIONAL COST TO THE CITY.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN CONTINUOUS UTILITY SERVICE FOR ALL UTILITY SYSTEMS AND TO PREVENT DAMAGE TO ALL UTILITIES.
- PRIOR TO INITIATING LAND DISTURBING ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL SEDIMENT AND EROSION CONTROLS INDICATED ON THE PLANS AND SPECIFICATIONS.
- UNLESS OTHERWISE NOTED, ALL EXISTING TREES SHALL BE PRESERVED AND PROTECTED.
- INSTALLATION OF TEMPORARY SIGNS, DRUMS, BARRICADES, AND OTHER WARNING DEVICES FOR TRAFFIC MANAGEMENT SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- REFER TO CONTRACT SPECIFICATIONS FOR ADDITIONAL GENERAL AND CONSTRUCTION RELATED REQUIREMENTS.
- THE CONTRACTOR SHALL MAINTAIN RECORDS OF THE ACTUAL AS-BUILT LOCATIONS AND DIMENSIONS OF THE WORK.
- THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION ACTIVITIES TO THE ESTABLISHED LIMIT OF WORK SHOWN ON THE DRAWINGS AND IN CONJUNCTION WITH TRAFFIC MANAGEMENT PLANS, UNLESS OTHERWISE APPROVED BY THE CITY.
- ALL UTILITY COMPANIES, PUBLIC AND PRIVATE INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THE DRAWINGS MUST BE NOTIFIED (STATE OF MA, ACTS OF 1963, CHAPTER 370) PRIOR TO EXCAVATING, INSTALLING, BACKFILLING, AND GRADING OR PAVEMENT RESTORATION.
- REMOVE LITTER DAILY WITHIN THE LIMITS OF WORK.
- FOR CONTROL POINTS, SEE EXISTING CONDITIONS PLANS. PROTECT EXISTING CONTROL POINTS FROM DAMAGE DURING CONSTRUCTION.
- FOR WHEELCHAIR RAMPS, PROVIDE NEW GRANITE CURB.
- GRADE EVENLY BETWEEN SPOT GRADES.
- REMOVE EXISTING TRAFFIC SIGNAGE WHEN NEW SIGNAGE IS INSTALLED. FOR NEW SIGNAGE, SEE SHEETS C-31 THRU C-48.
- MAINTAIN ALL STOP AND GO TRAFFIC SIGNALS AT ALL TIMES.
- SWITCH-OVER FROM ONE-WAY PROSPECT AND WEBSTER TO TWO-WAY OPERATIONS SHALL OCCUR OVER A DESIGNATED WEEKEND PERIOD. SEE SPECIAL PROVISIONS.
- DO NOT DISTURB THE BRIDGE DECKS OF WEBSTER AVE. AND PROSPECT ST. OVER MBTA FITCHBURG LINE.
- PROJECT REQUIRES MWRA 8(m) PERMIT. MWRA EAST SPOT POND SUPPLY MAIN RUNS UNDER WEBSTER AVE. IN PROJECT AREA.
- WEBSTER AVE. WATER MAIN CLEANING PROJECT WILL BE COMPLETED WITHIN THE LIMITS OF THIS PROJECT PRIOR TO JULY 31, 2015.
- PRIOR TO COLD PLANE OPERATIONS, VERIFY IN THE FIELD THE EXACT LIMITS OF THIS WORK WITH THE ENGINEER. THE CITY RESERVES THE RIGHT TO REVISE THE LIMITS OF COLD PLANE AND OVERLAY.
- MAINTAIN ACCESS TO ABUTTING BUSINESSES, RESIDENCES AND OTHER PROPERTIES AT ALL TIMES.

**ABBREVIATIONS**

AD	ARITHMETIC DIFFERENCE	MIN.	MINIMUM
BIT. CONC.	BITUMINOUS CONCRETE	MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY
BC	BOTTOM OF CURB	NAVD	NORTH AMERICAN VERTICAL DATUM
BCB	BOSTON CITY BASE	O.C.	ON CENTER
BFP	BUREAU OF FEDERAL PRISONS	O.D.	OUTSIDE DIAMETER
B.O.	BLOW OFF	OH	OVERHEAD
BW	BOTTOM OF WALL	PC	POINT OF CURVATURE
CC	CONCRETE CURB	PCC	POINT OF COMPOUND CURVE
CONC	CONCRETE	PE	PLAIN END
CDF	CONTROL DENSITY FILL	PGL	PROFILE GRADE LINE
CF	CUBIC FOOT	POB	POINT OF BEGINNING
CLDI	CEMENT LINED DUCTILE IRON	PRC	POINT OF REVERSED CURVATURE
CLF	CHAIN LINK FENCE	PROP	PROPOSED
CMP	CORRUGATED METAL PIPE	PT	POINT OF TANGENCY
CU	COPPER ; CONTINUATION UNKNOWN	PVI	POINT OF VERTICAL INTERSECTION
D	DELTA ANGLE	PVC	POLY VINYL CHLORIDE
DEFL.	DEFLECTION	R	RIM, RADIUS
DIA.	DIAMETER	R & D	REMOVE AND DISCARD
DI	DUCTILE IRON	R & R	REMOVE AND RESET
DIP	DUCTILE IRON PIPE	R & S	REMOVE AND STACK
DMH	DRAIN MANHOLE	RCP	REINFORCED CONCRETE PIPE
ELEV.	ELEVATION	RTE.	ROUTE
EOP	EDGE OF PAVEMENT	SCHED	SCHEDULE
EXIST.	EXISTING	SL	STREET LIGHTING
EXT.	EXTENSION	SLCB	STREET LIGHTING CONTROL BOX
E.W.	EACH WAY	SQ.	SQUARE
FHWA	FEDERAL HIGHWAY ADMINISTRATION	STA.	STATION
FL	FLANGE	SW	SIDEWALK
GRAN.	GRANITE	TC	TREE CANOPY
GND	GROUND	T-CAN	TRAFFIC CONTROL; TOP OF CURB
GP	GUARD POST	TOH	TOP OF HOOD
H	HIGH, HEIGHT	TOW	TOP OF WATER
HH	HANDHOLE	TR	TOP OF RAIL
HWY	HIGHWAY	TS	TRAFFIC SIGNAL
I	INVERT	TSCB	TRAFFIC SIGNAL CONTROL BOX
INV.	INVERT	TYP.	TYPICAL
KV	KILO VOLT	TW	TOP OF WALL
L	LENGTH OF CURVE	UNK.	UNKNOWN
L.P.	LIGHT POLE	UNO	UNLESS NOTED OTHERWISE
MAX.	MAXIMUM	VC	VITRIFIED CLAY
MBTA	MASSACHUSETTS BAY TRANSPORTATION AUTHORITY	VC	VERTICAL CURVE
MET.W.W.	METROPOLITAN WATER WORKS (NOW MWRA)	VGC	VERTICAL GRANITE CURB
MH	MANHOLE	W/	WITH
MHD	MASSACHUSETTS HIGHWAY DEPARTMENT	WCR	WHEELCHAIR RAMP
M.J.	MECHANICAL JOINT		

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

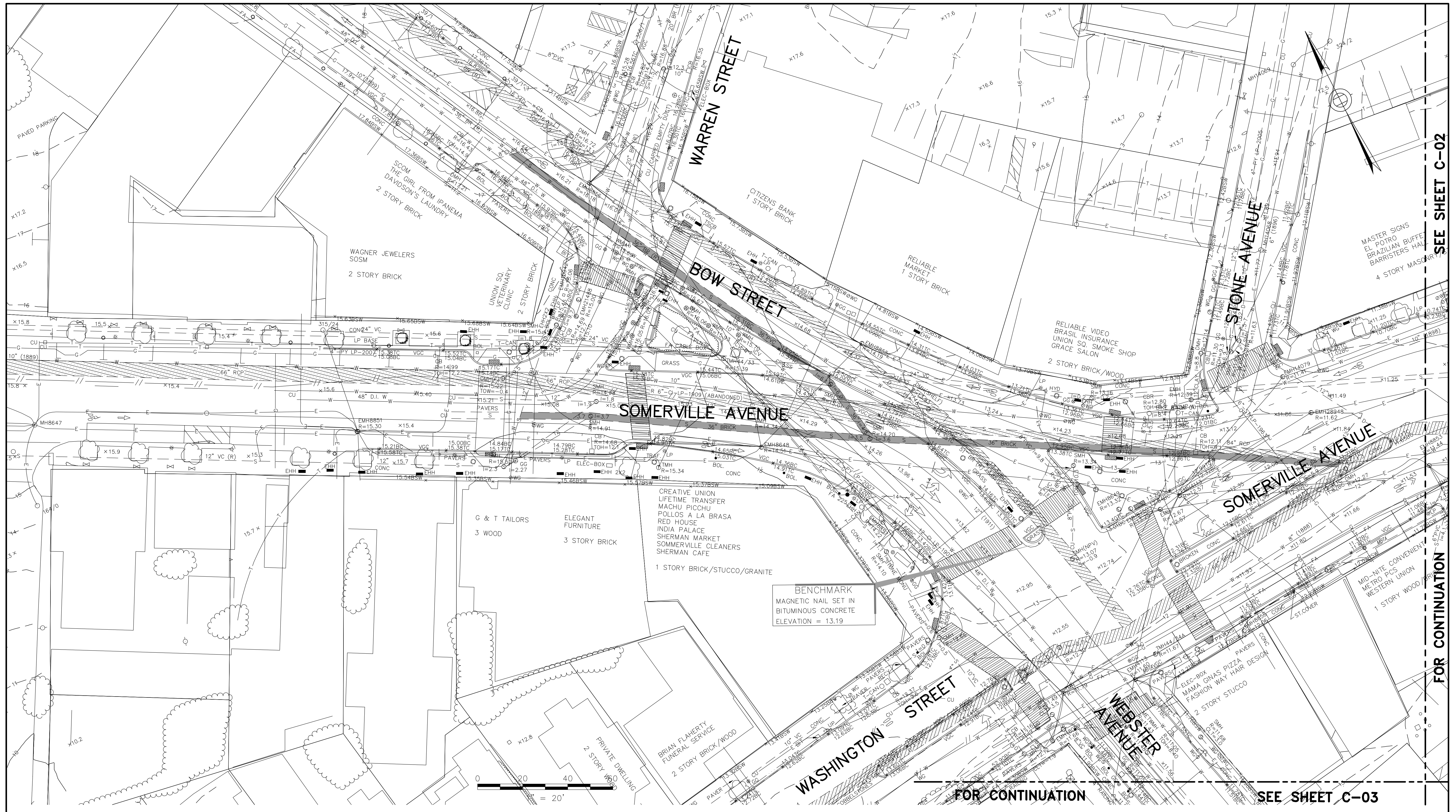
**LEGEND, ABBREVIATIONS & NOTES**

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b> Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RJB		<b>G-3</b>
DRAWN: LAC	IFB#15-105-REBID	SCALE: NONE
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CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

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SEE SHEET C-02

FOR CONTINUATION

FOR CONTINUATION

SEE SHEET C-03

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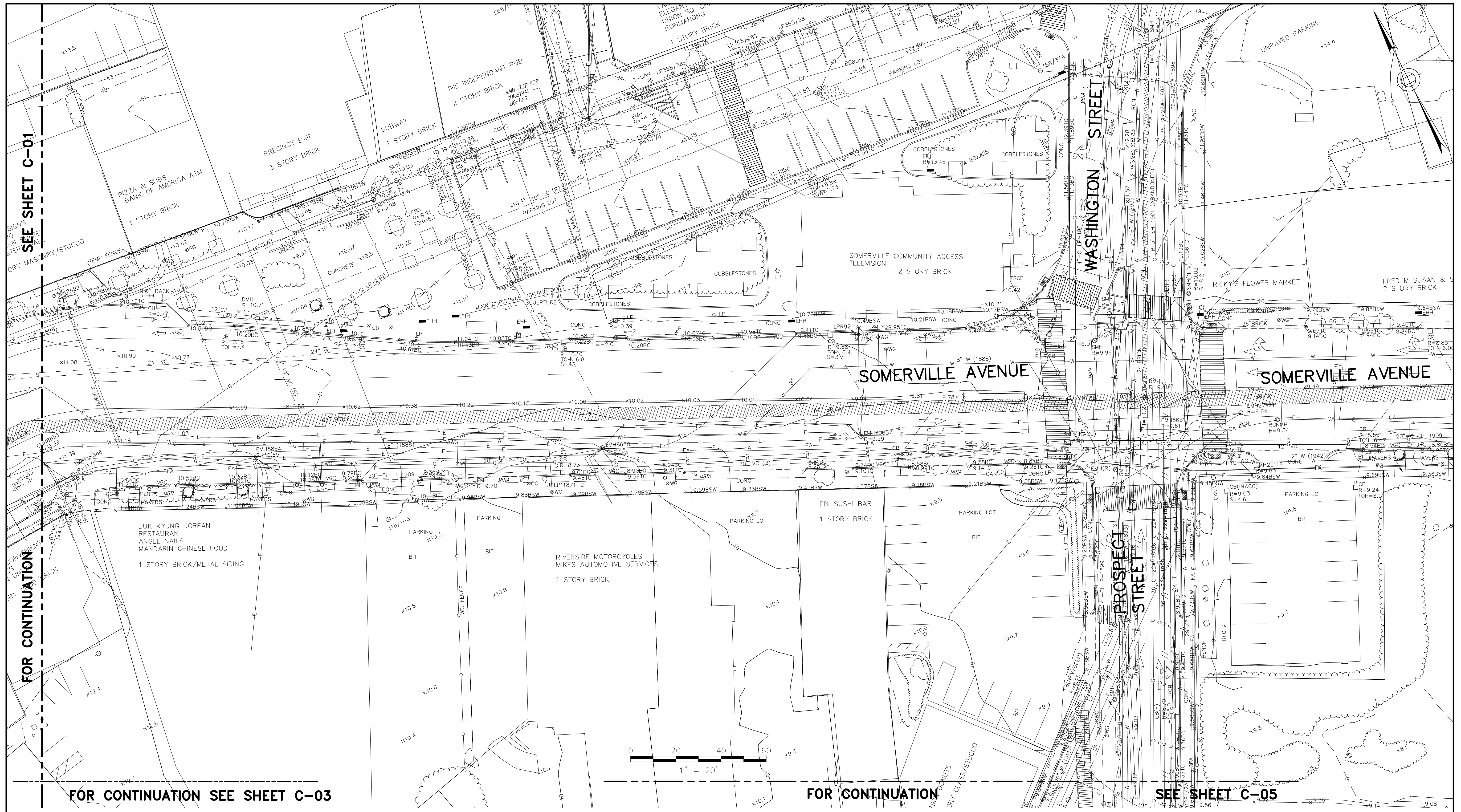
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CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

EXISTING CONDITIONS PLANS  
SHEET 1 OF 5

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CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		





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COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**  
EXISTING CONDITIONS PLANS  
SHEET 2 OF 5

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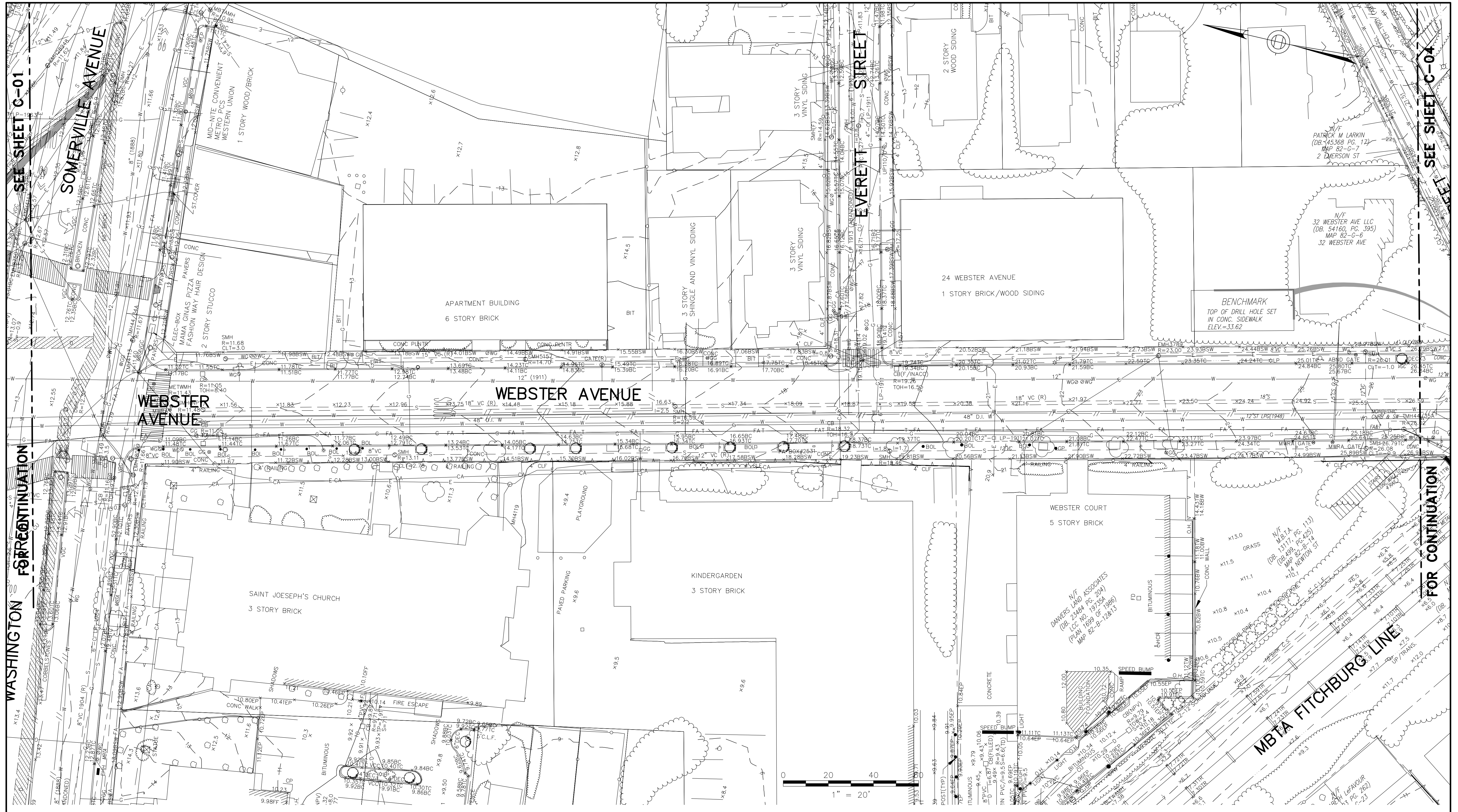
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DATE: JAN 4, 2016

SHEET  
**C-02**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

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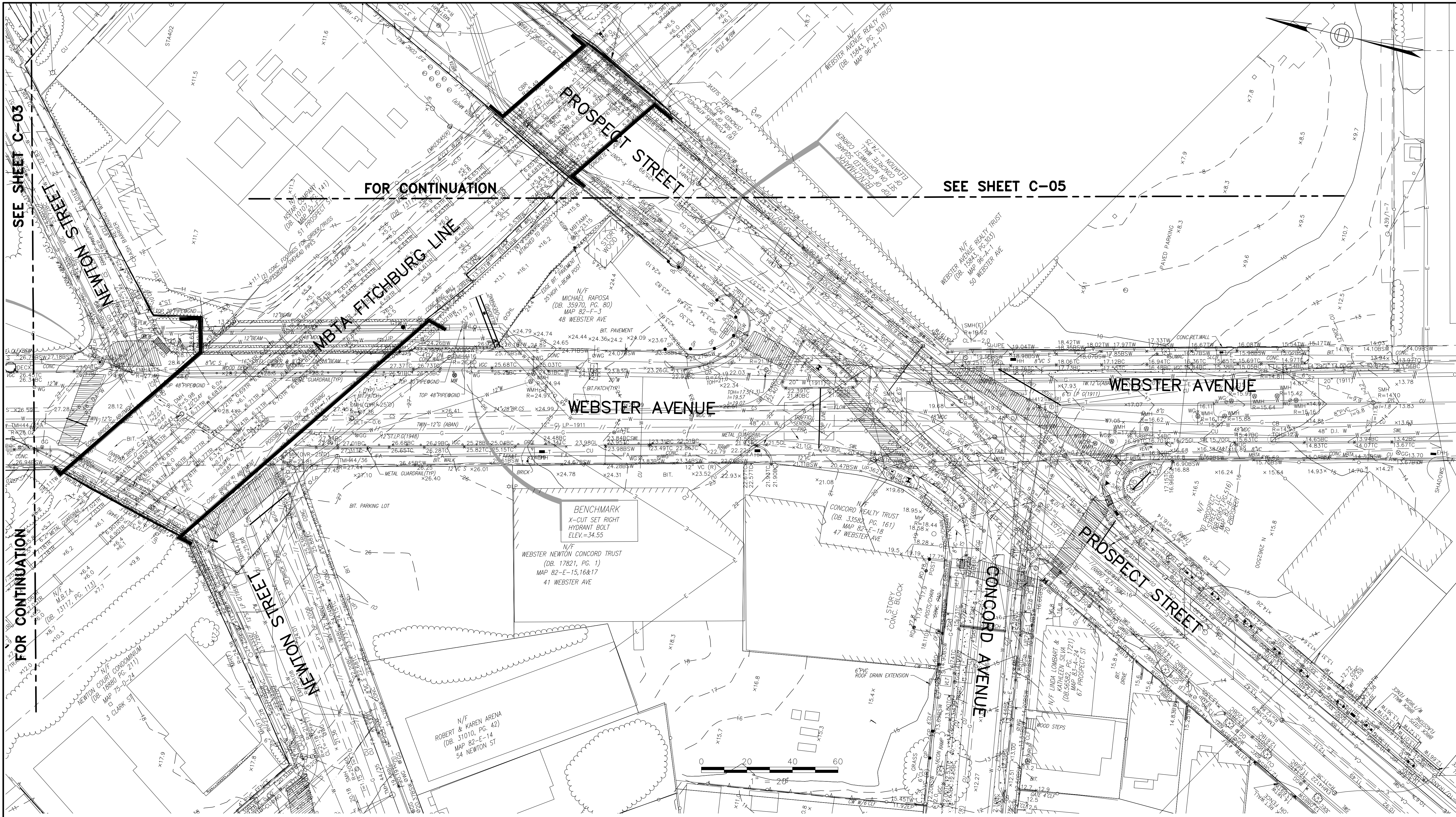
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CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**  
EXISTING CONDITIONS PLANS  
SHEET 3 OF 5

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
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SEE SHEET C-03

FOR CONTINUATION

SEE SHEET C-05

FOR CONTINUATION

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COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

EXISTING CONDITIONS PLANS  
SHEET 4 OF 5

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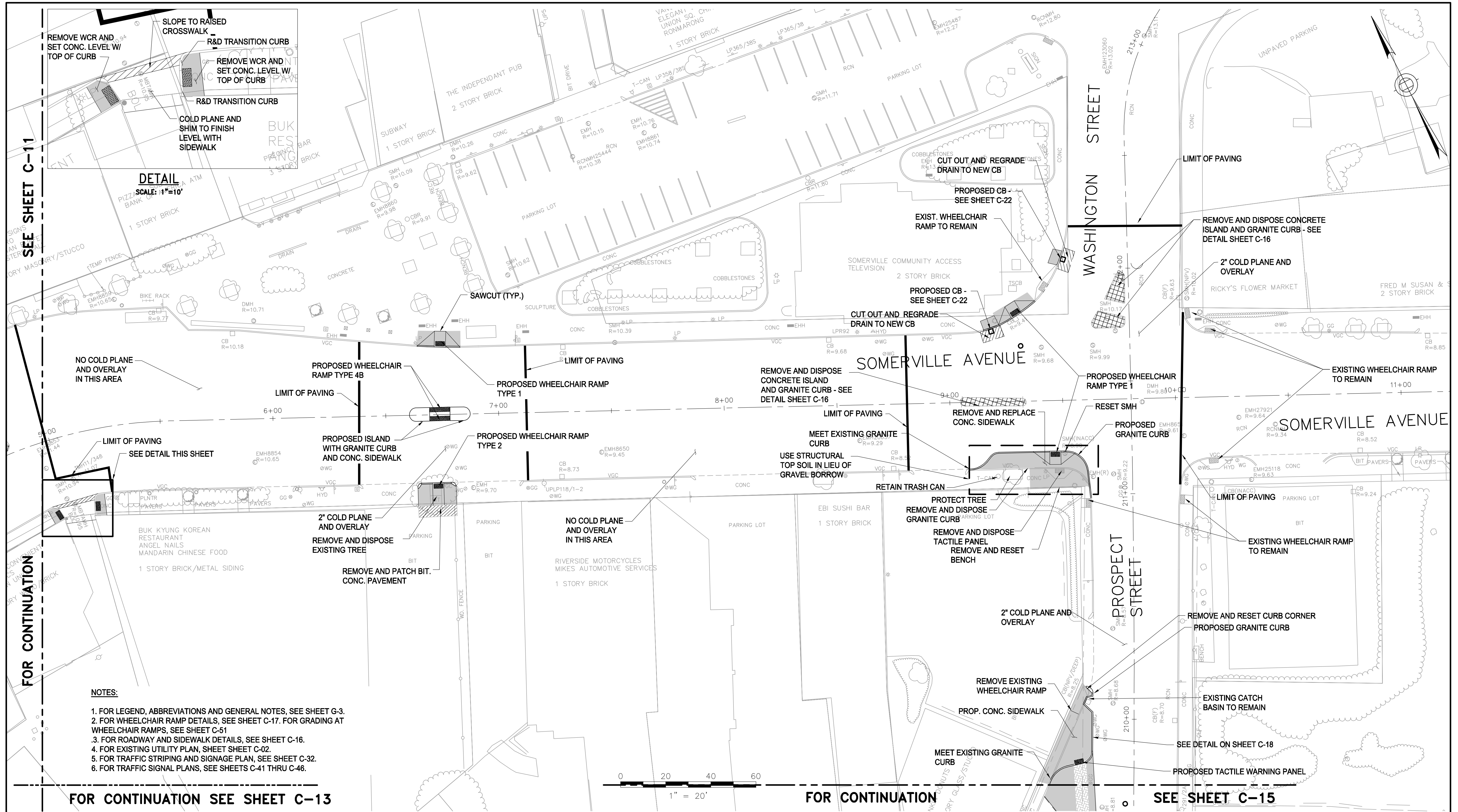












SEE SHEET C-11

FOR CONTINUATION

FOR CONTINUATION SEE SHEET C-13

FOR CONTINUATION

SEE SHEET C-15

- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17. FOR GRADING AT WHEELCHAIR RAMPS, SEE SHEET C-51
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-02.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-32.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.

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COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GENERAL PLANS  
SHEET 2 OF 5**

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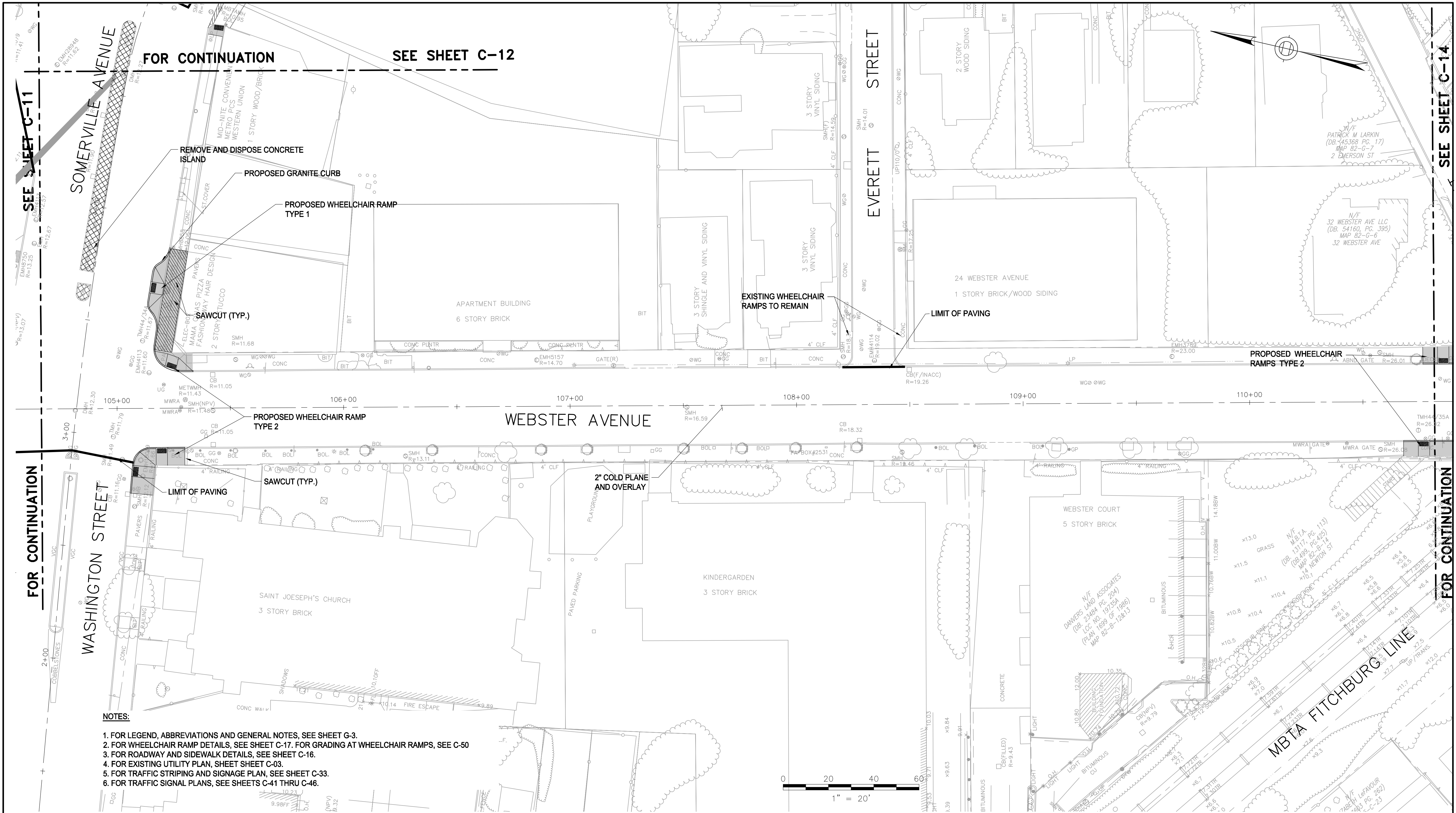
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SHEET  
**C-12**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

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**NOTES:**

1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17. FOR GRADING AT WHEELCHAIR RAMPS, SEE C-50
3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-03.
5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-33.
6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

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COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GENERAL PLANS  
SHEET 3 OF 5**

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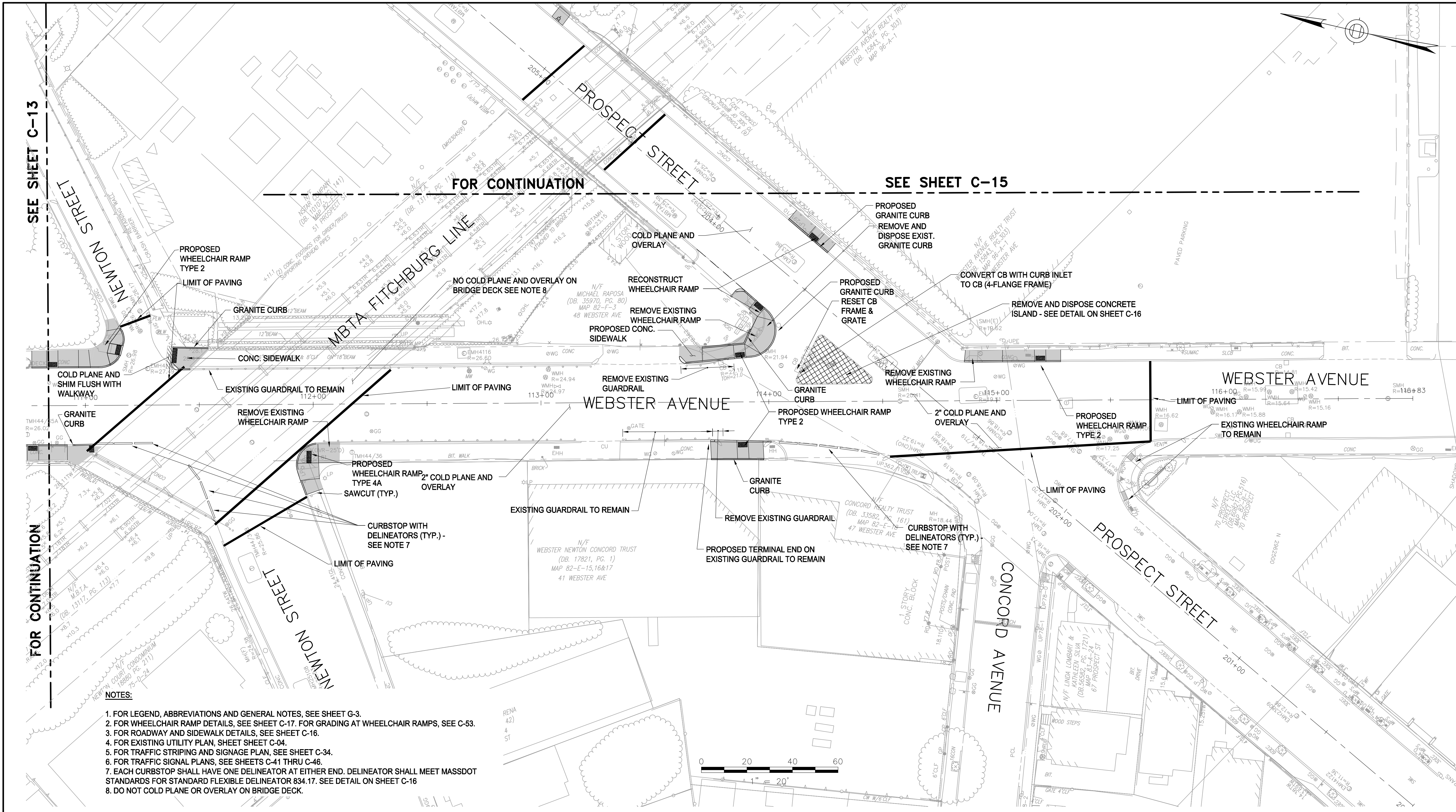
**C-13**

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17. FOR GRADING AT WHEELCHAIR RAMPS, SEE C-53.
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-04.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-34.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.
  7. EACH CURBSTOP SHALL HAVE ONE DELINEATOR AT EITHER END. DELINEATOR SHALL MEET MASSDOT STANDARDS FOR STANDARD FLEXIBLE DELINEATOR 834.17. SEE DETAIL ON SHEET C-16
  8. DO NOT COLD PLANE OR OVERLAY ON BRIDGE DECK.

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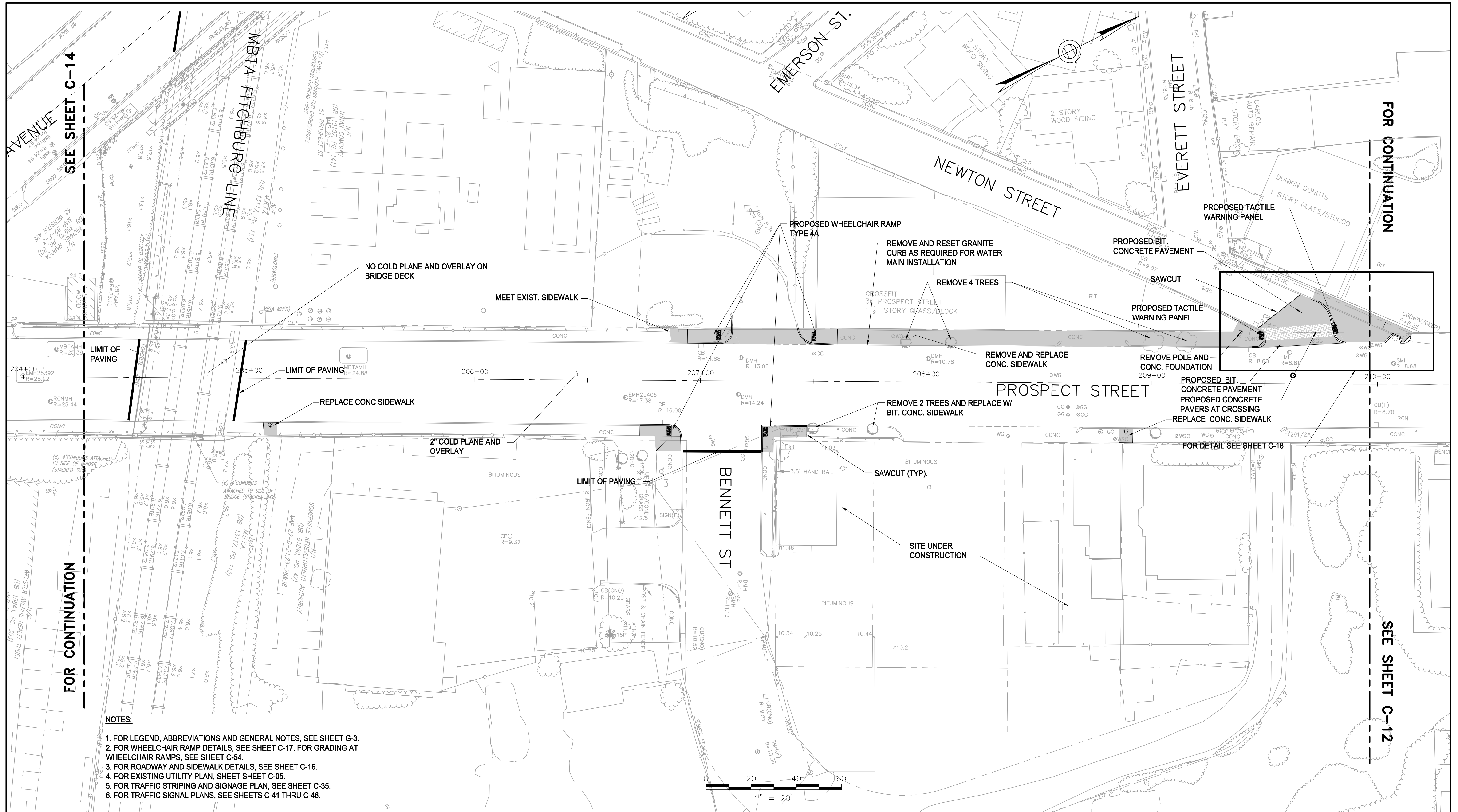


COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GENERAL PLANS  
SHEET 4 OF 5**

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RJB			<b>C-14</b>
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CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143			





- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17. FOR GRADING AT WHEELCHAIR RAMPS, SEE SHEET C-54.
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-05.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-35.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.

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COMMONWEALTH OF MASSACHUSETTS  
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**UNION SQ. UTILITY AND ROADWAY  
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GENERAL PLANS  
SHEET 5 OF 5**

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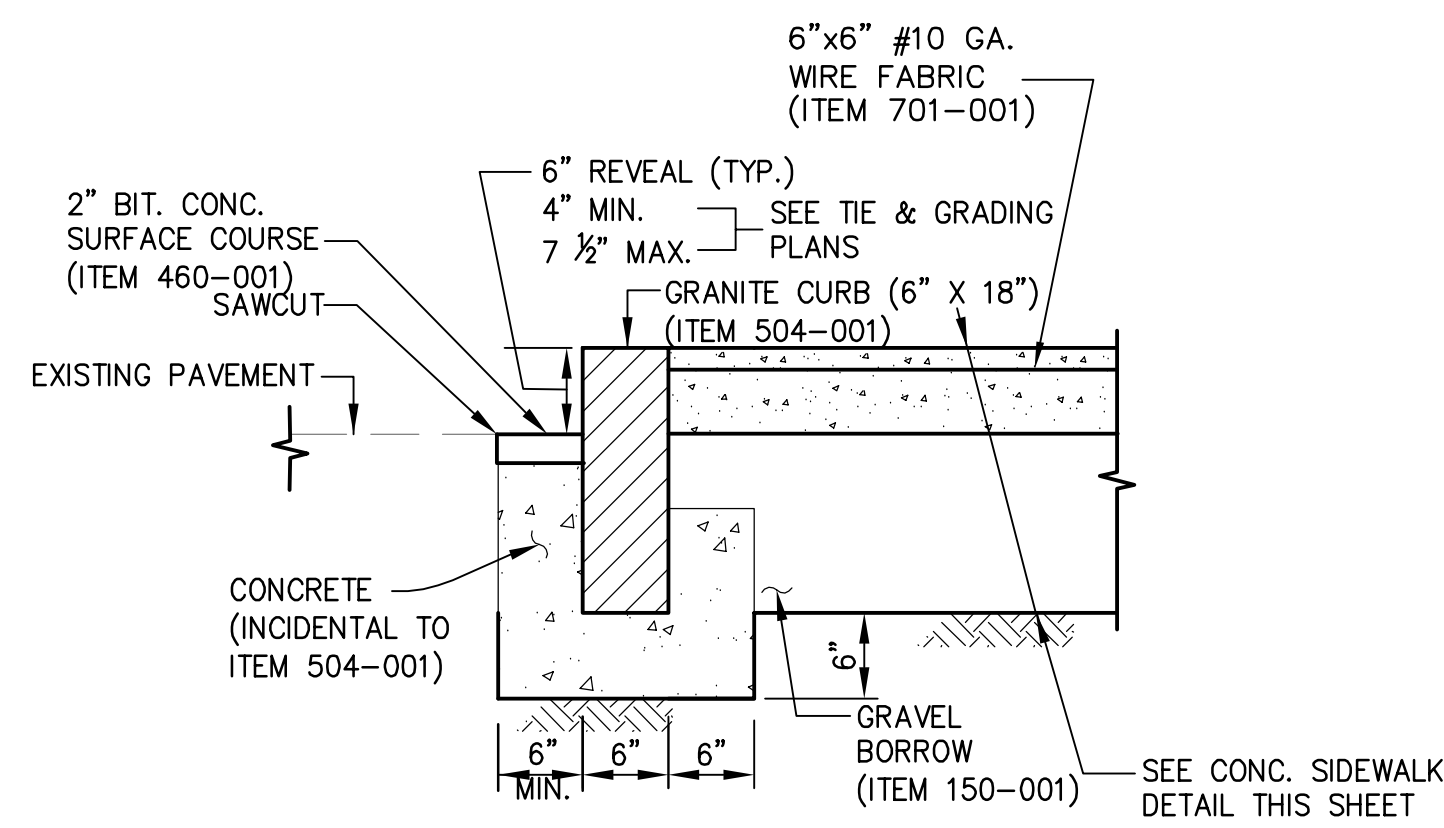
SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-15**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

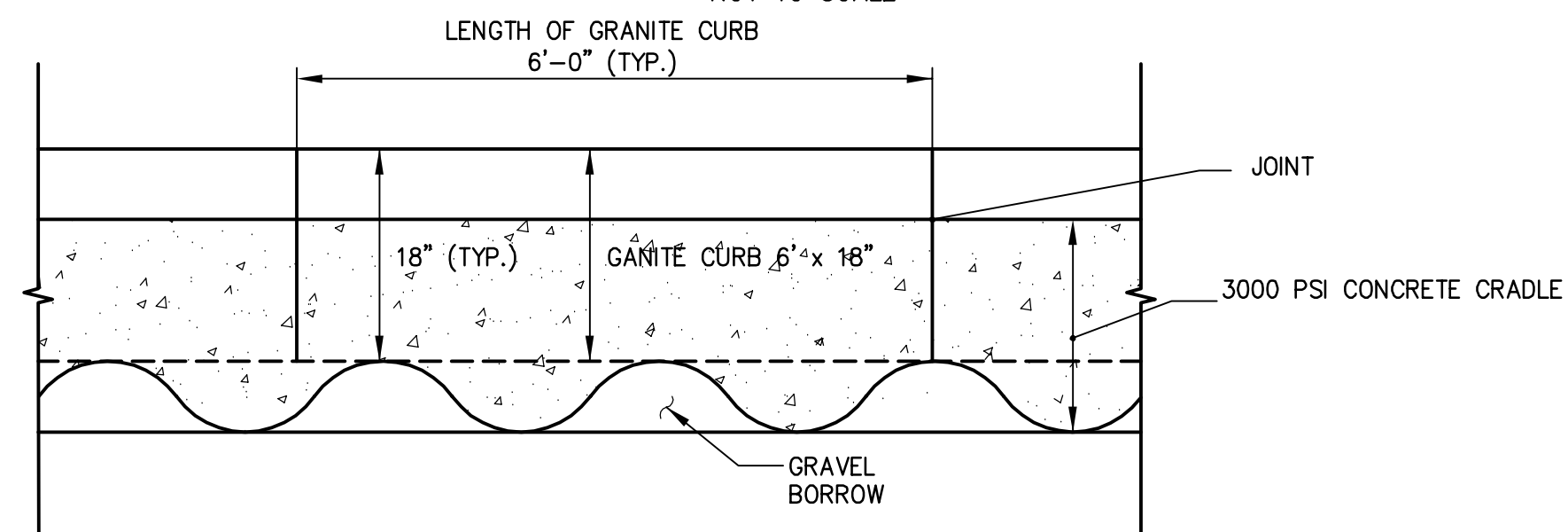
NO.	DATE	REVISIONS	BY





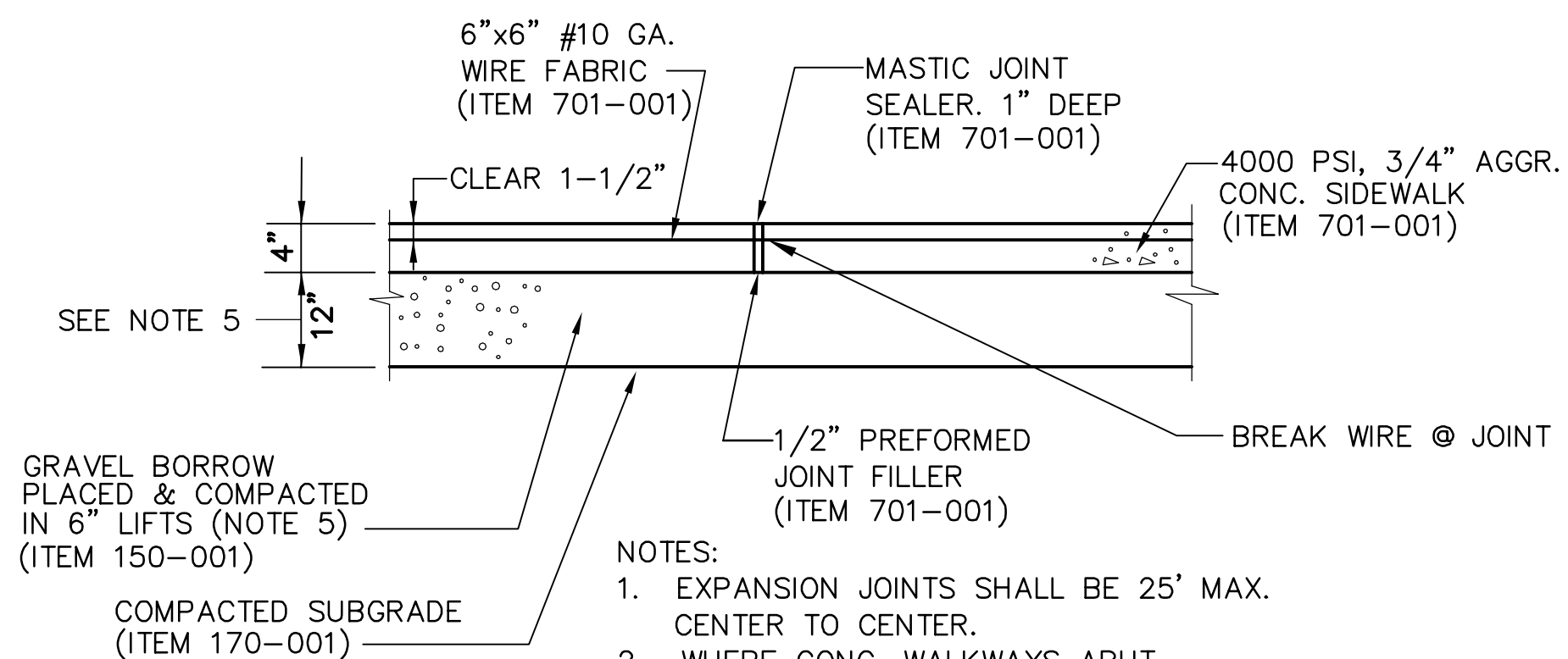
**TYPICAL GRANITE CURB WITH CONCRETE SIDEWALK**

NOT TO SCALE



**CONCRETE CRADLE FOR GRANITE CURB LONGITUDINAL SECTION**

NOT TO SCALE (INCIDENTAL TO ITEM 504-001)

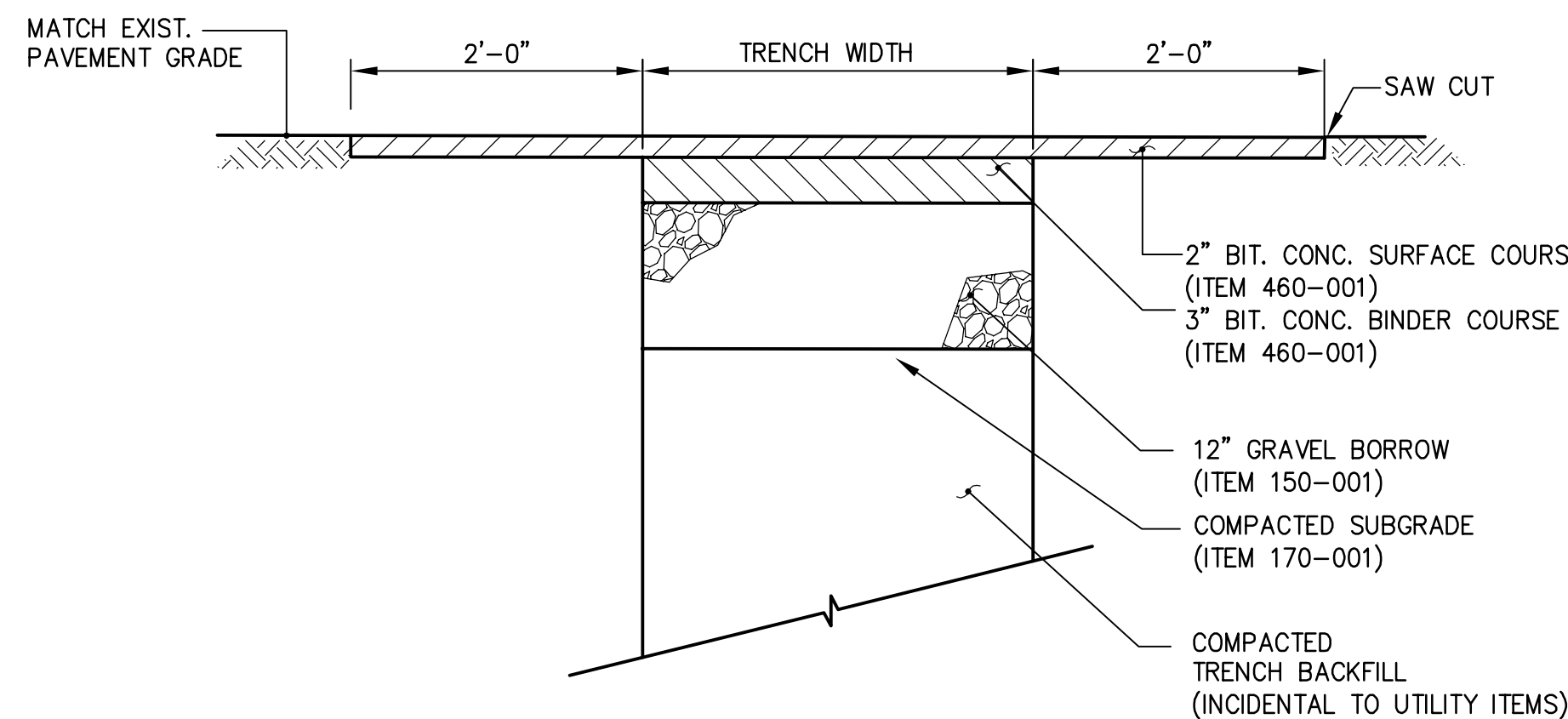


**CONCRETE SIDEWALK & DRIVEWAY DETAIL**

NOT TO SCALE

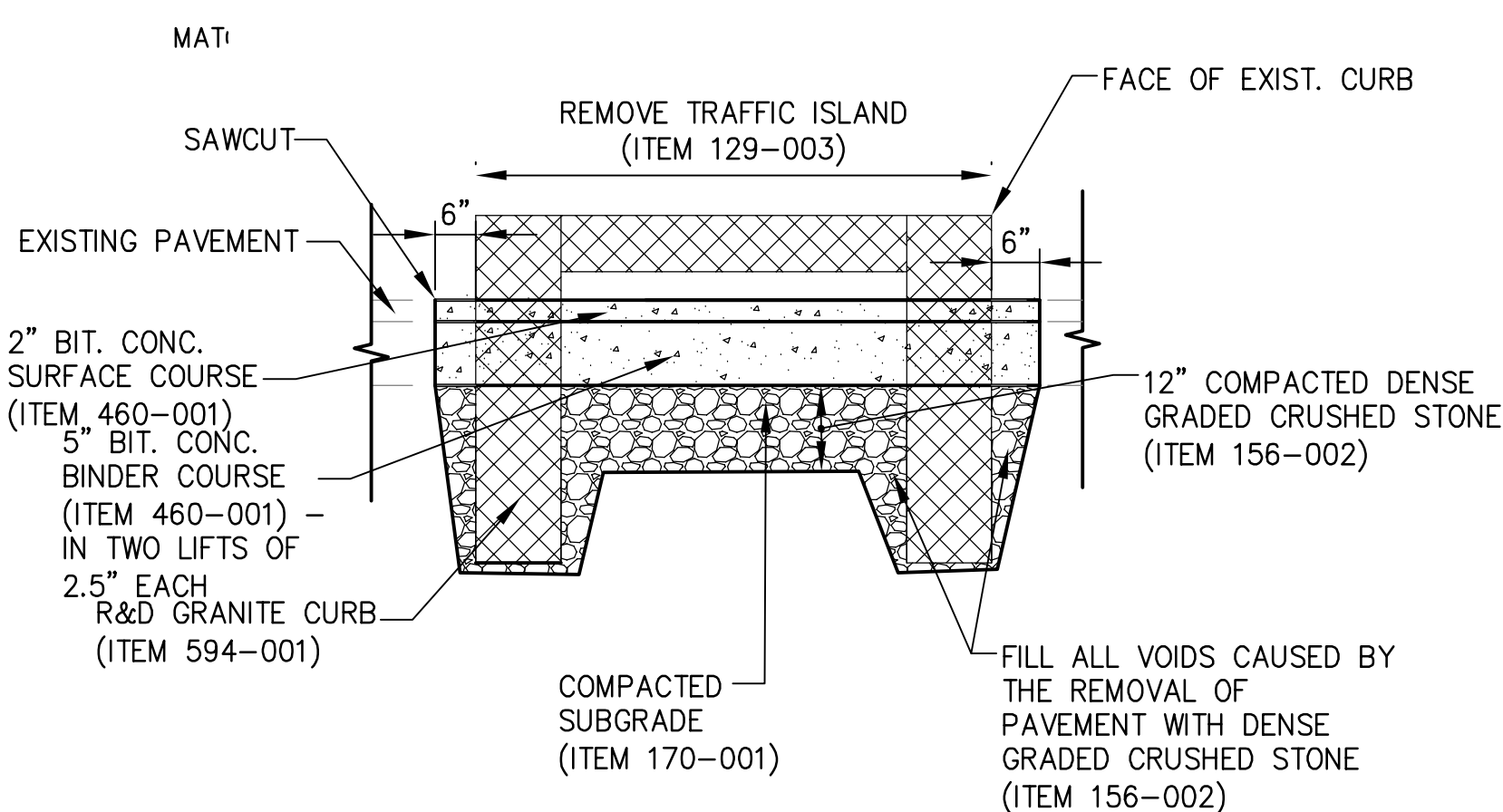
**NOTES:**

1. EXPANSION JOINTS SHALL BE 25' MAX. CENTER TO CENTER.
2. WHERE CONC. WALKWAYS ABUT STRUCTURES USE 1/2" PREFORMED JOINT FILLER AND 1" DEEP MASTIC JT SEALER.
3. PROVIDE BROOM FINISH
4. MATCH EXISTING SCORING PATTERN
5. SEE SPECIFICATIONS FOR REUSE OF EXIST. GRAVEL BASE



**TEMPORARY PATCH**

NOT TO SCALE



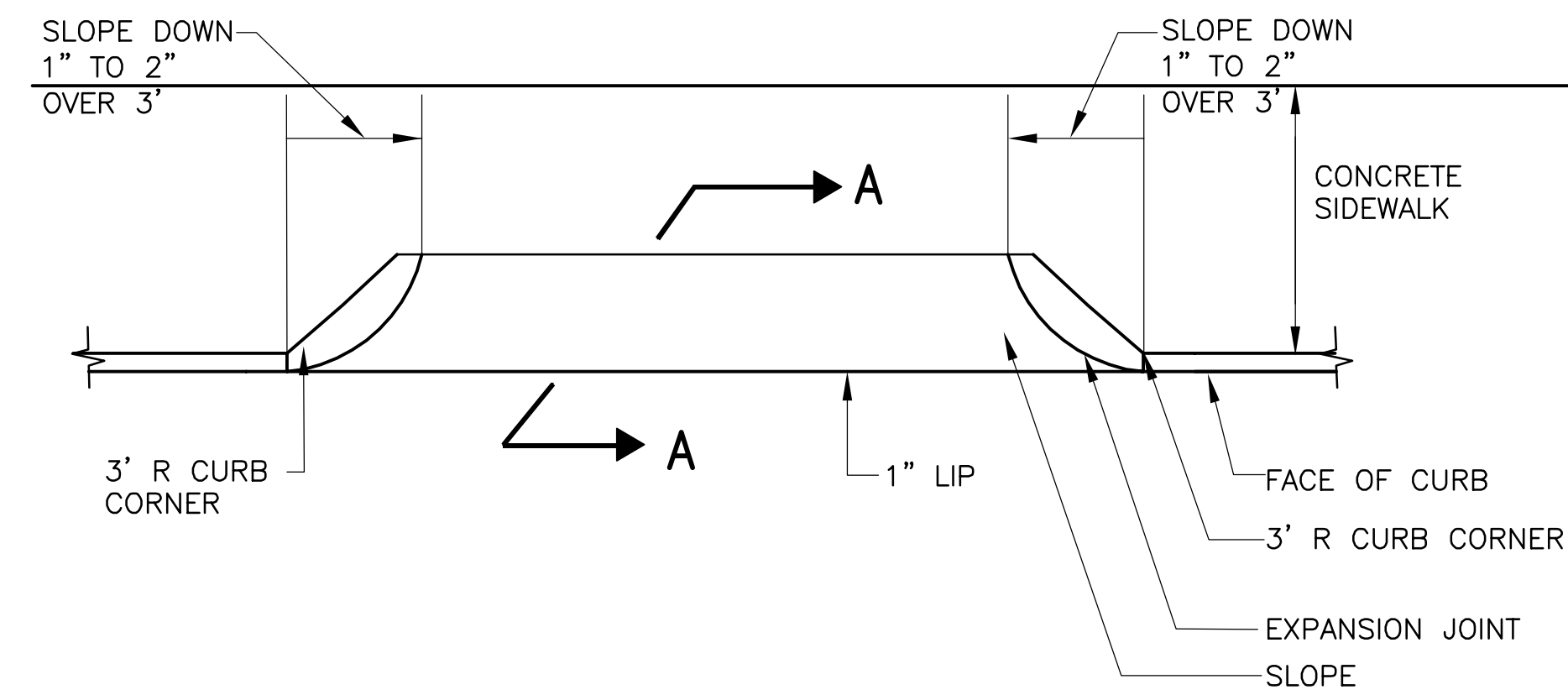
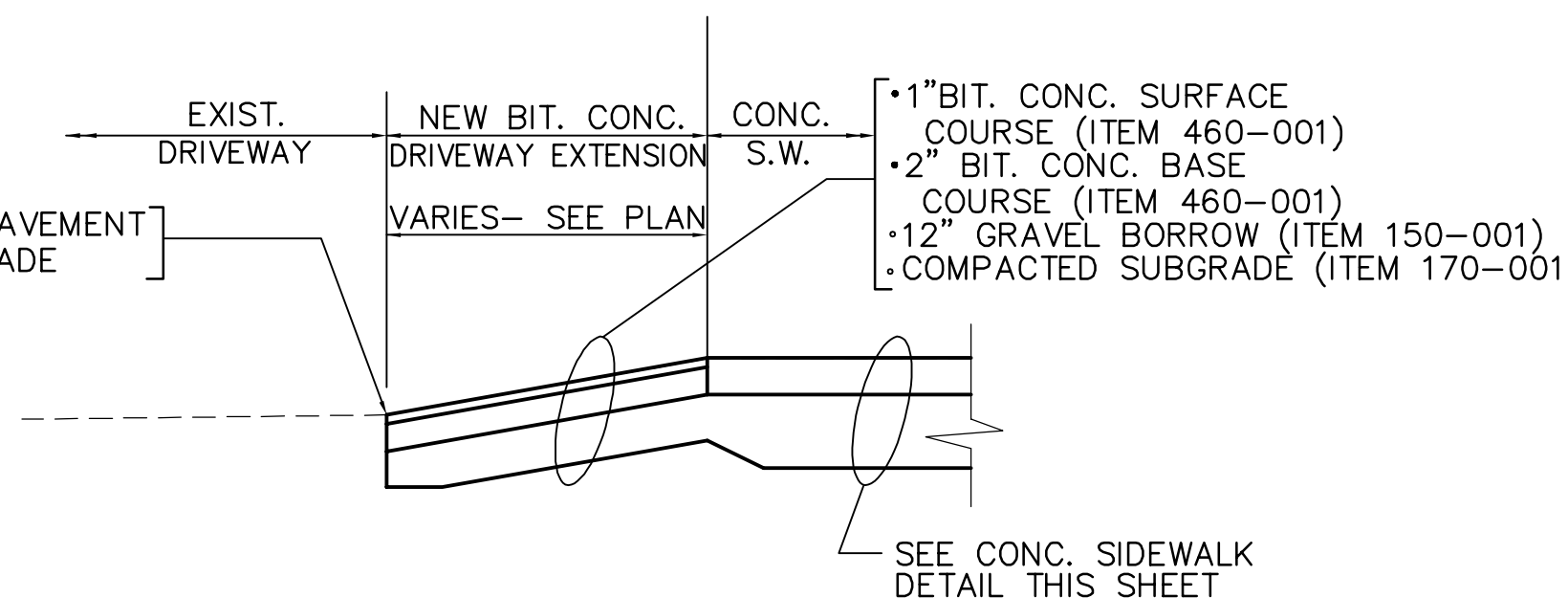
**TRAFFIC ISLAND REMOVAL**

NOT TO SCALE

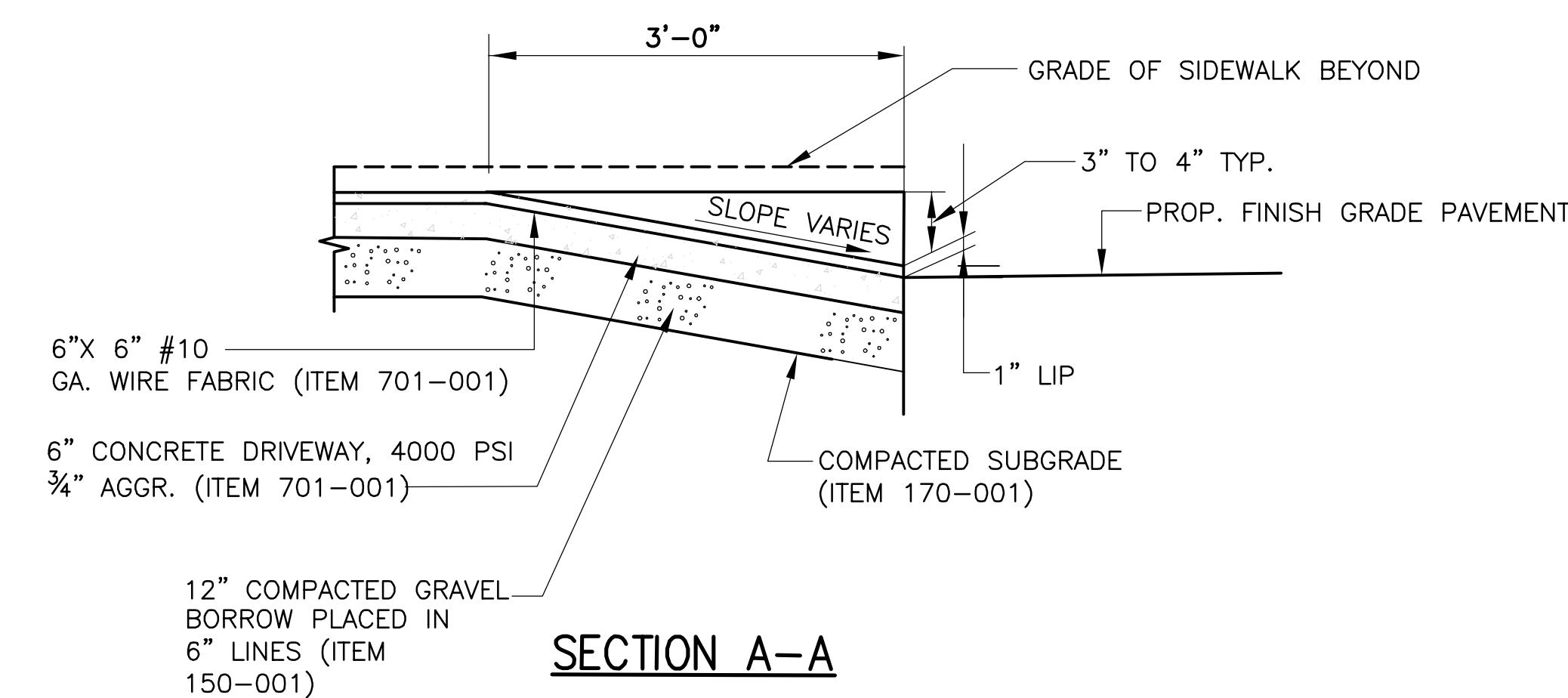
- SAWCUT EXIST. PAVEMENT
- MATCH EXIST. GRADE

**BIT. CONC. DRIVEWAY**

NOT TO SCALE



**PLAN**



**SECTION A-A**

**CONCRETE PAVEMENT DRIVEWAY DETAIL**

NOT TO SCALE

2 - 30" (min.) high orange delineators with 3 reflective stripes mounted on each wheel stop unit.

2 - 1" dia. holes - insert 3/4" galv. stl. bar extending 2' into ground (except on bridge deck)

**PRECAST CONCRETE WHEELSTOP W/ DELINEATORS**

NOT TO SCALE (ITEM 703-801)

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
ROADWAY DETAILS**

DESIGNED: RJB  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

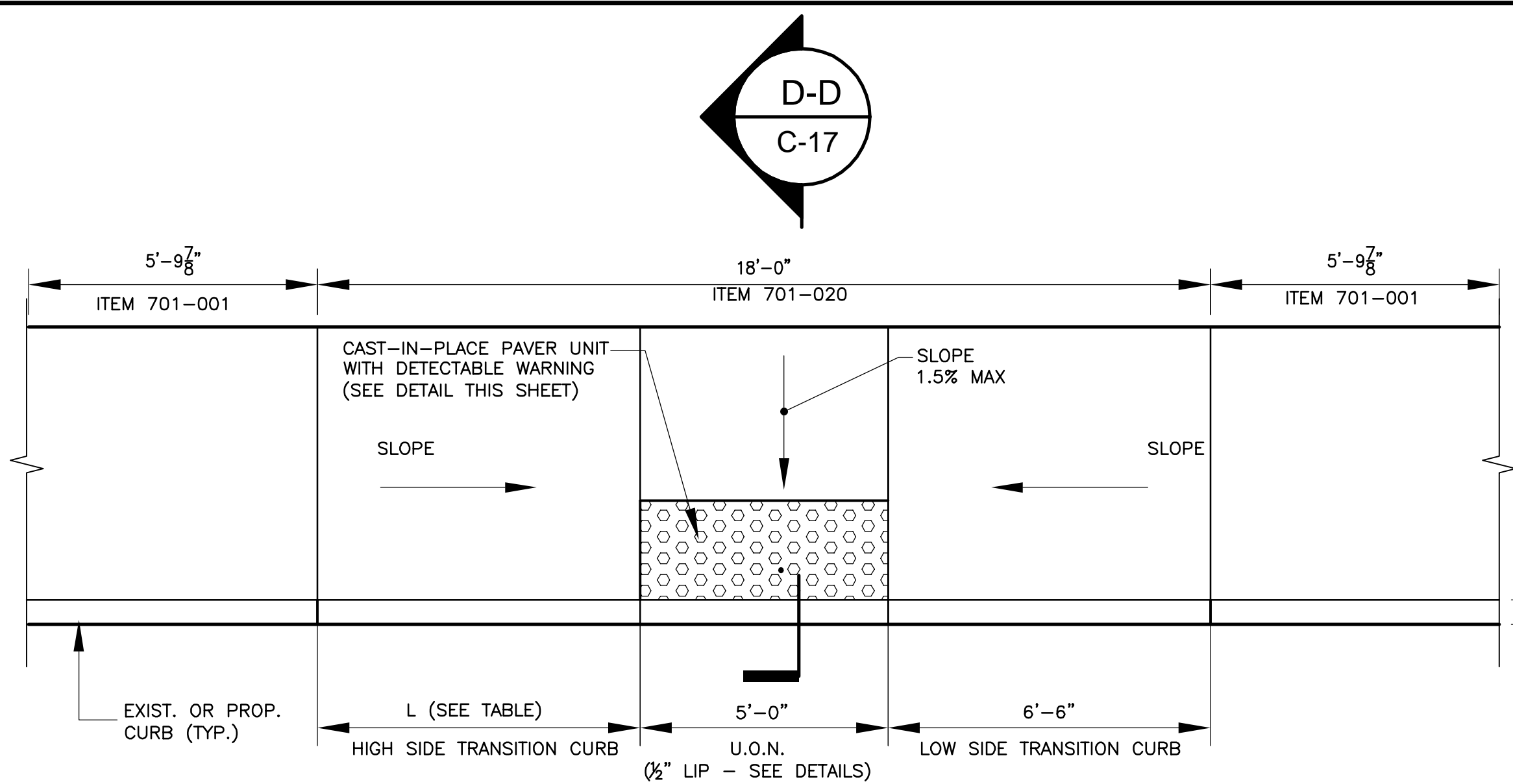
SCALE: NTS  
DATE: JAN 4, 2016

SHEET

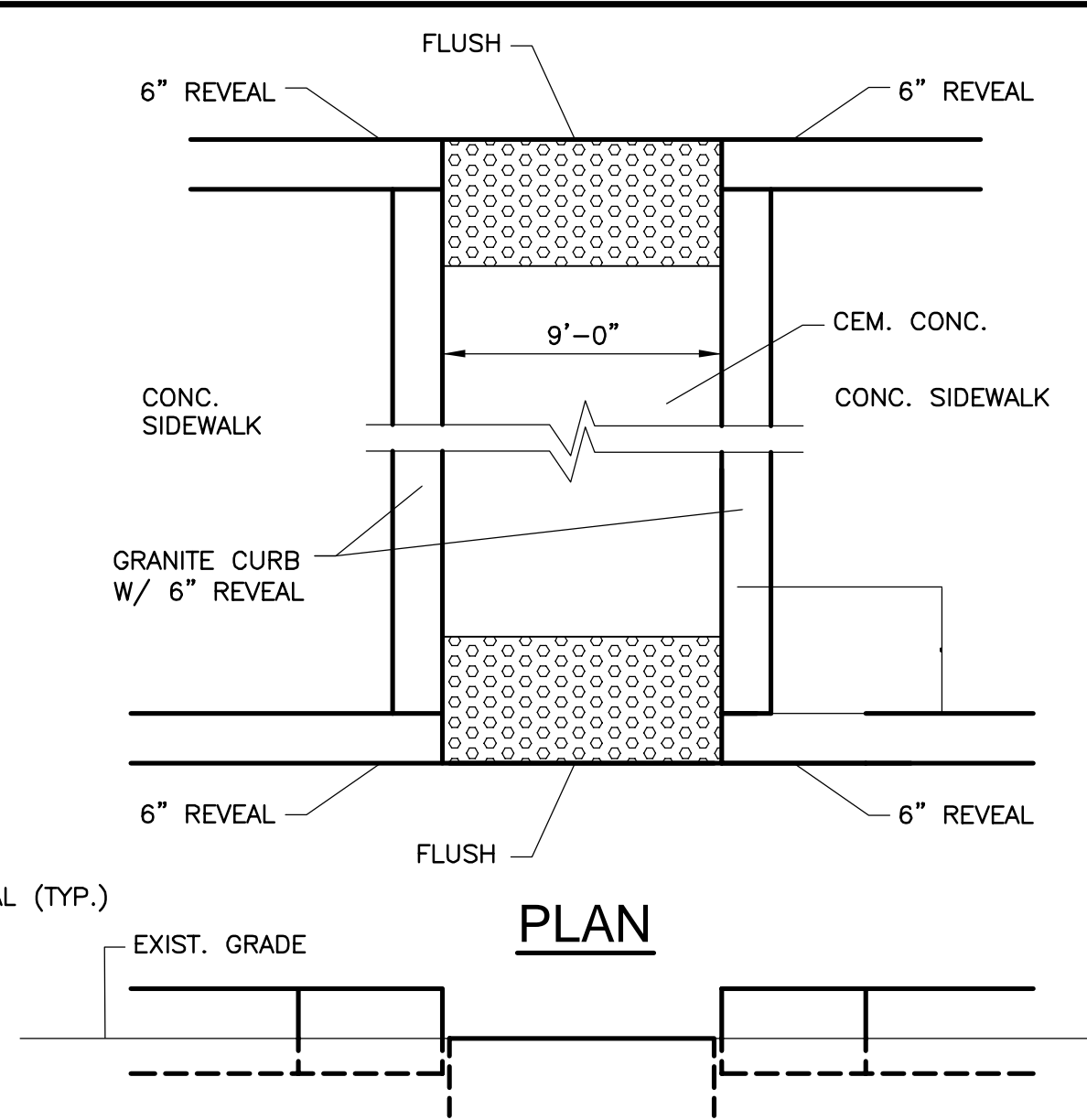
**C-16**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

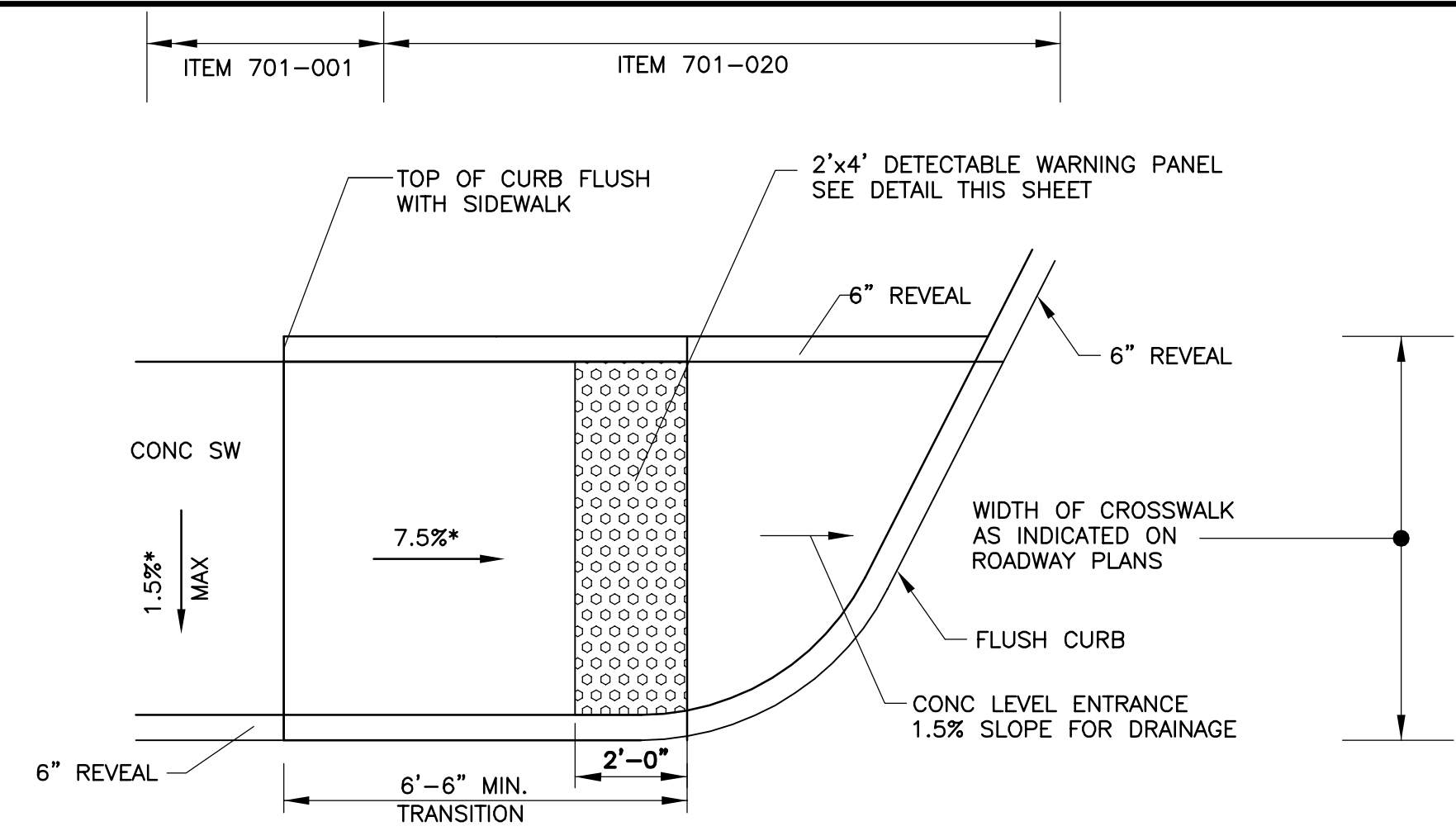




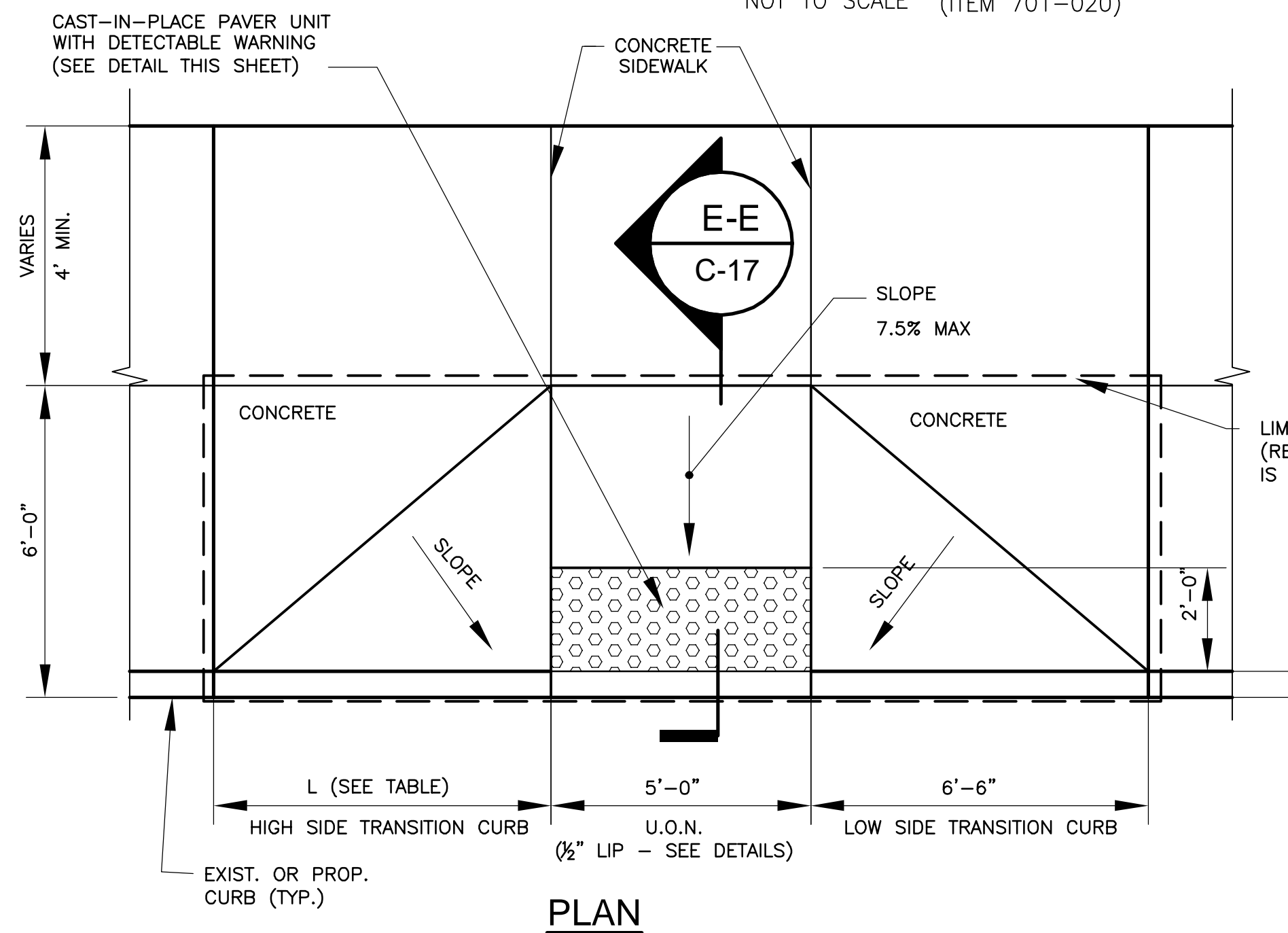
**WHEEL CHAIR RAMP - TYPE 2**  
NOT TO SCALE (ITEM 701-020)



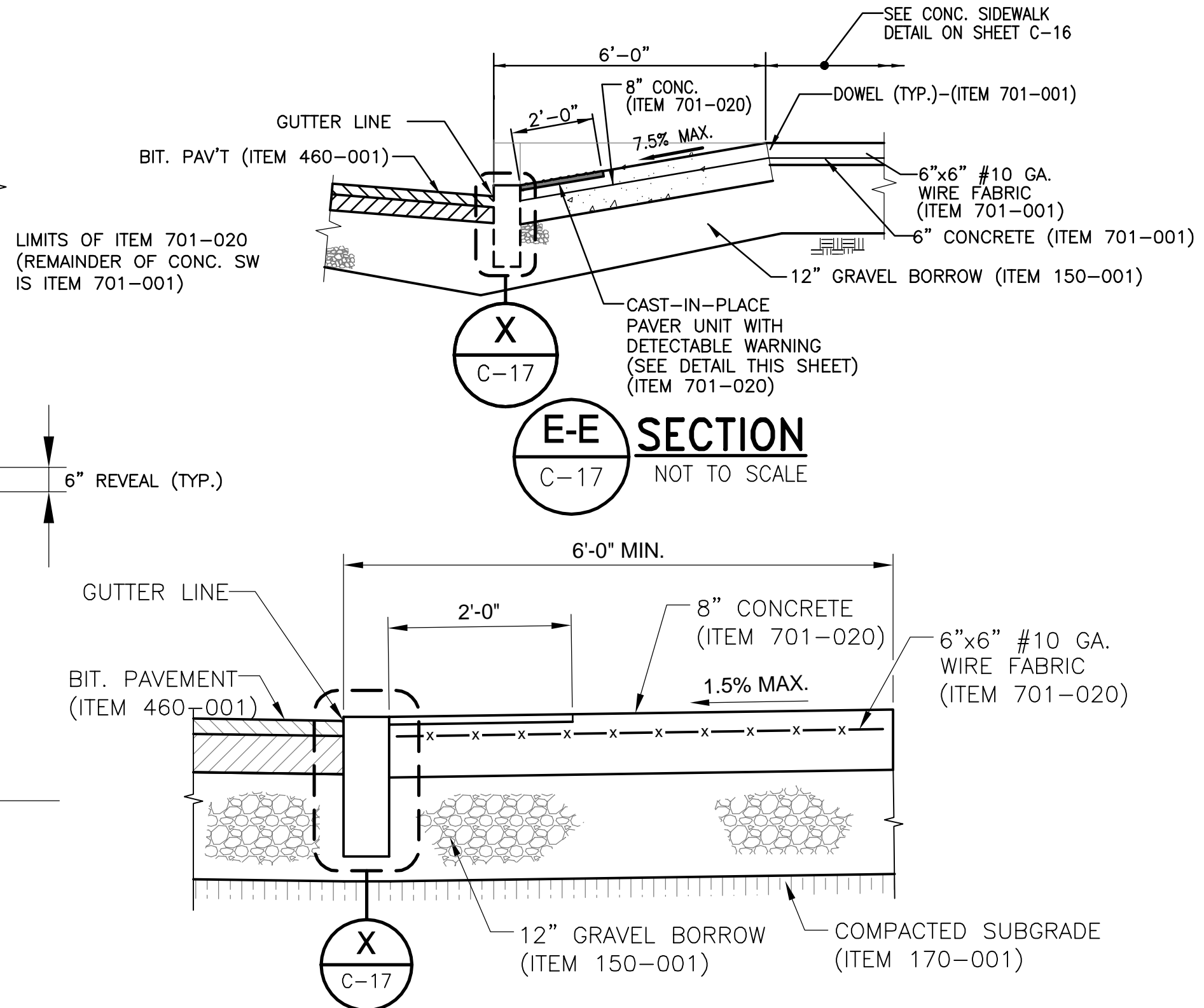
**WHEEL CHAIR RAMP - TYPE 4B**  
NOT TO SCALE (ITEM 701-020)



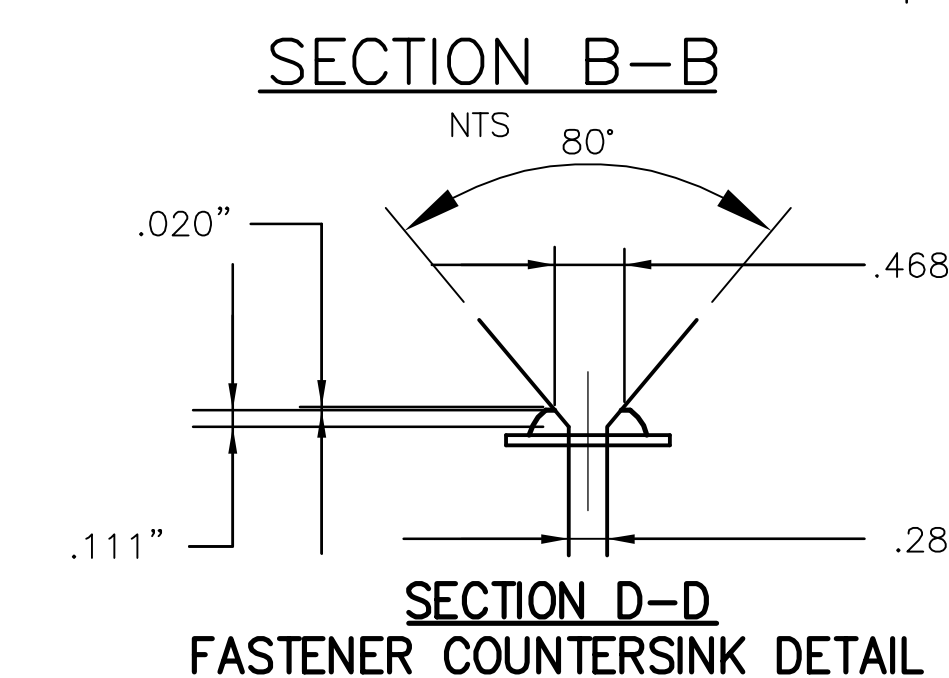
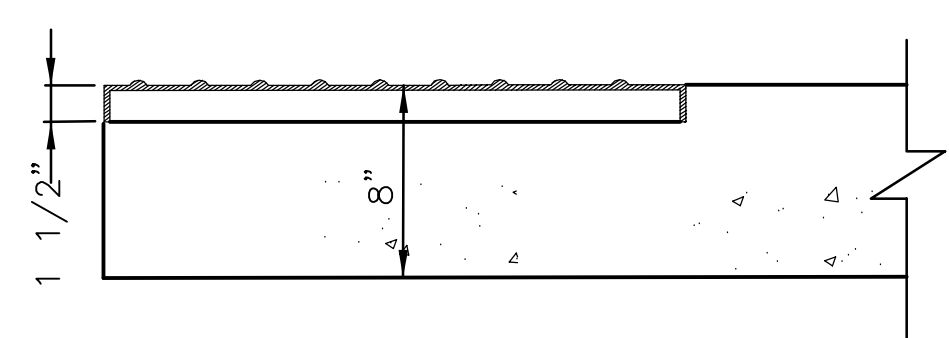
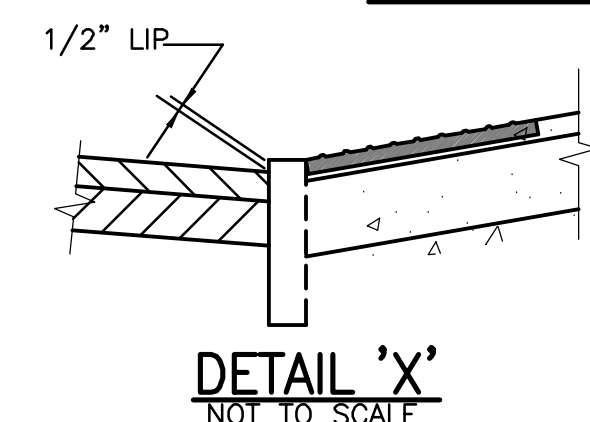
**WHEEL CHAIR RAMP - TYPE 4A**  
NOT TO SCALE (ITEM 701-020)



**WHEEL CHAIR RAMP - TYPE 1**  
NOT TO SCALE (ITEM 701-020)



**D-D SECTION**  
NOT TO SCALE



**ENLARGED PARTIAL PLAN SHOWING DETAILS OF SURFACE DETECTABLE WARNING STRIP-CAST-IN-PLACE TYPE**  
NOT TO SCALE (ITEM 701-020)

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



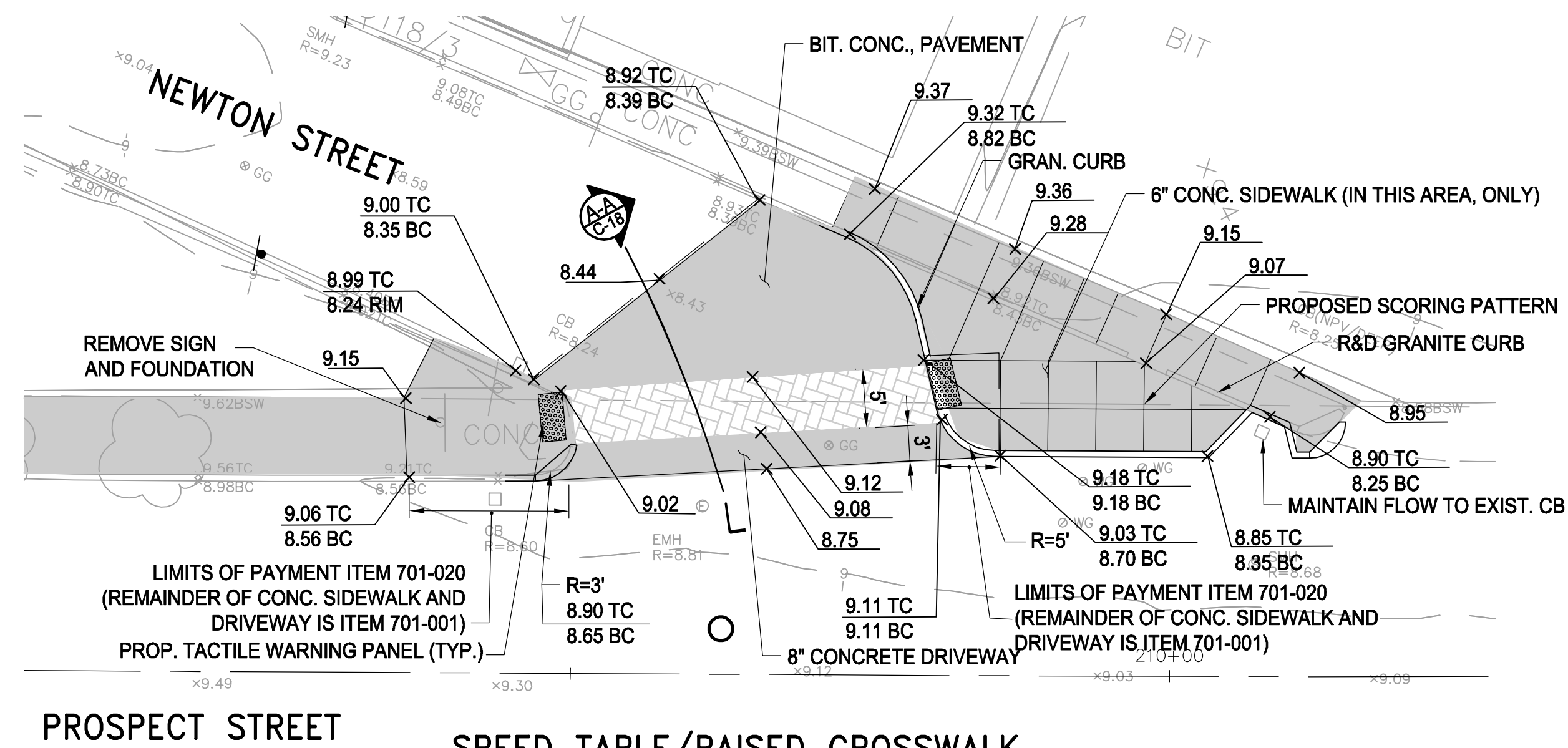
COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
CIVIL DETAILS**

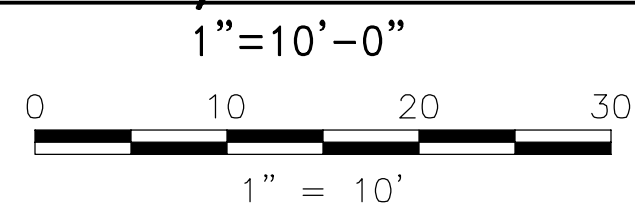
DESIGNED: RJB	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET <b>C-17</b>
CHECKED: RJB			
DRAWN: LAC	IFB#15-105-REBID	SCALE: NTS DATE: JAN 4, 2016	CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143
CHECKED: RJB			

NO.	DATE	REVISIONS	BY

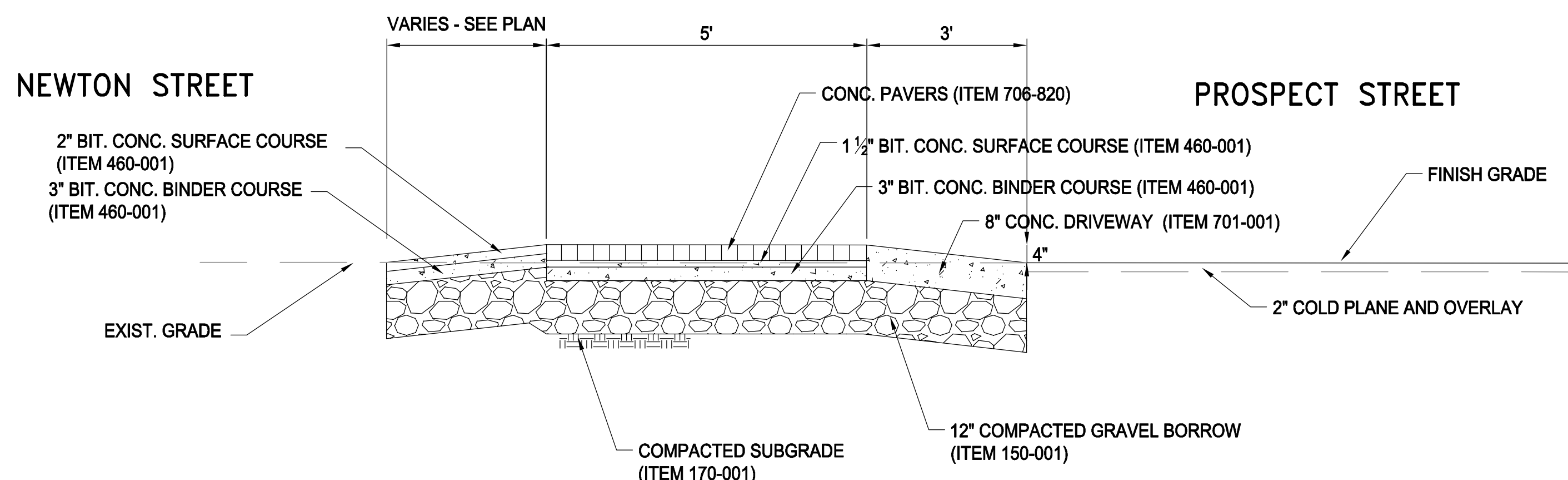




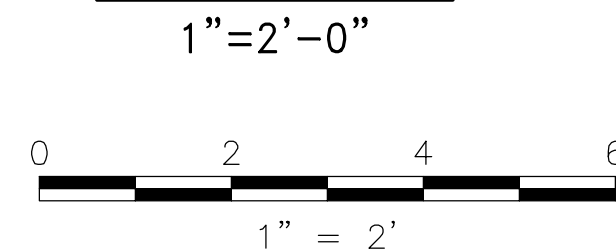
**SPEED TABLE/RAISED CROSSWALK**



NOTE: FOR PLAN, SEE SHEET C-15



**SECTION A-A**



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



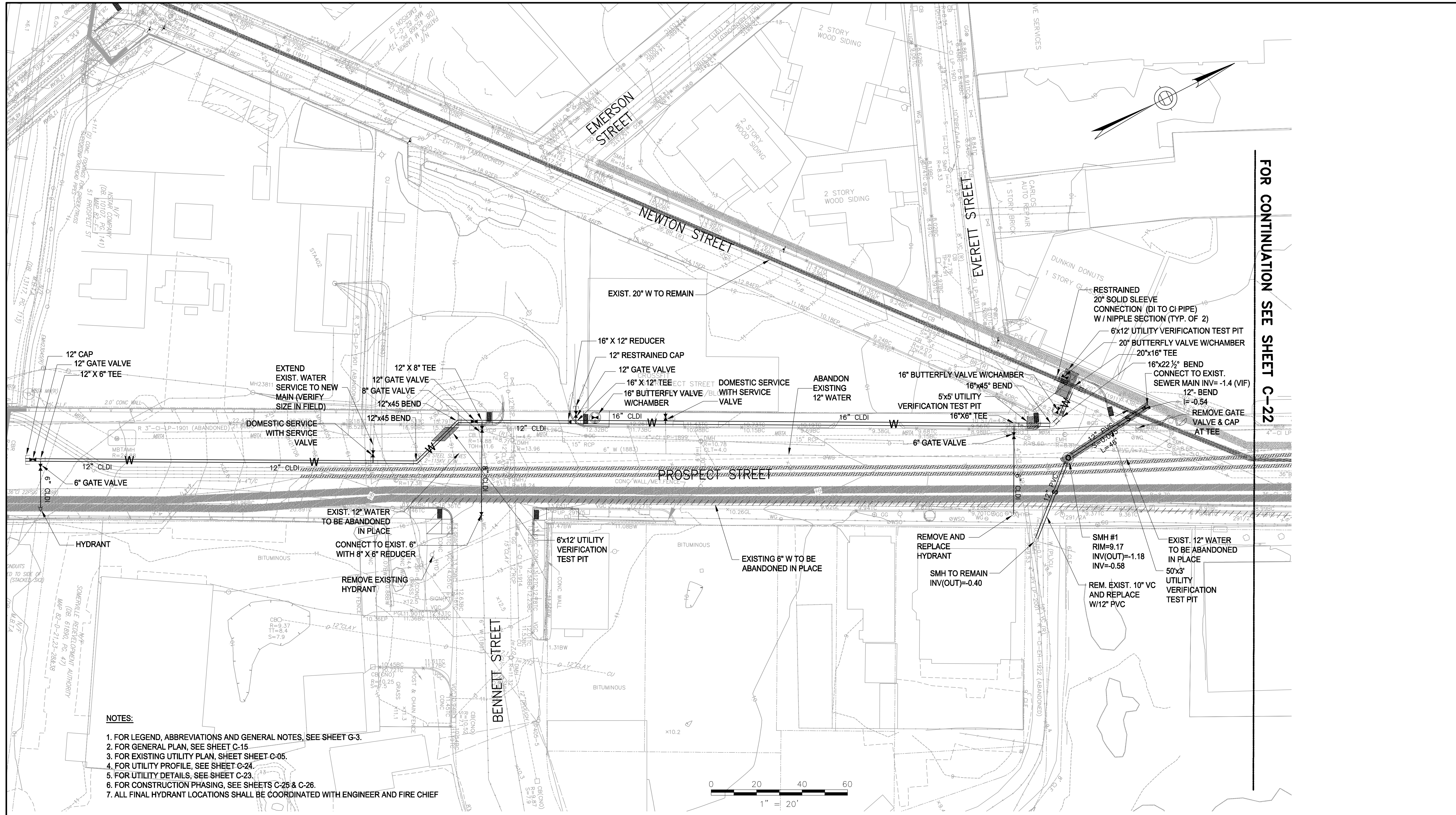
COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

NEWTON STREET  
SPEED TABLE DETAIL

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET <b>C-18</b>
CHECKED: RJB			
DRAWN: LAC	IFB#15-105-REBID		SCALE: AS NOTED
CHECKED: RJB	CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		DATE: JAN 4, 2016





FOR CONTINUATION SEE SHEET C-22

- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR GENERAL PLAN, SEE SHEET C-15
  3. FOR EXISTING UTILITY PLAN, SHEET SHEET C-05.
  4. FOR UTILITY PROFILE, SEE SHEET C-24.
  5. FOR UTILITY DETAILS, SEE SHEET C-23.
  6. FOR CONSTRUCTION PHASING, SEE SHEETS C-25 & C-26.
  7. ALL FINAL HYDRANT LOCATIONS SHALL BE COORDINATED WITH ENGINEER AND FIRE CHIEF

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

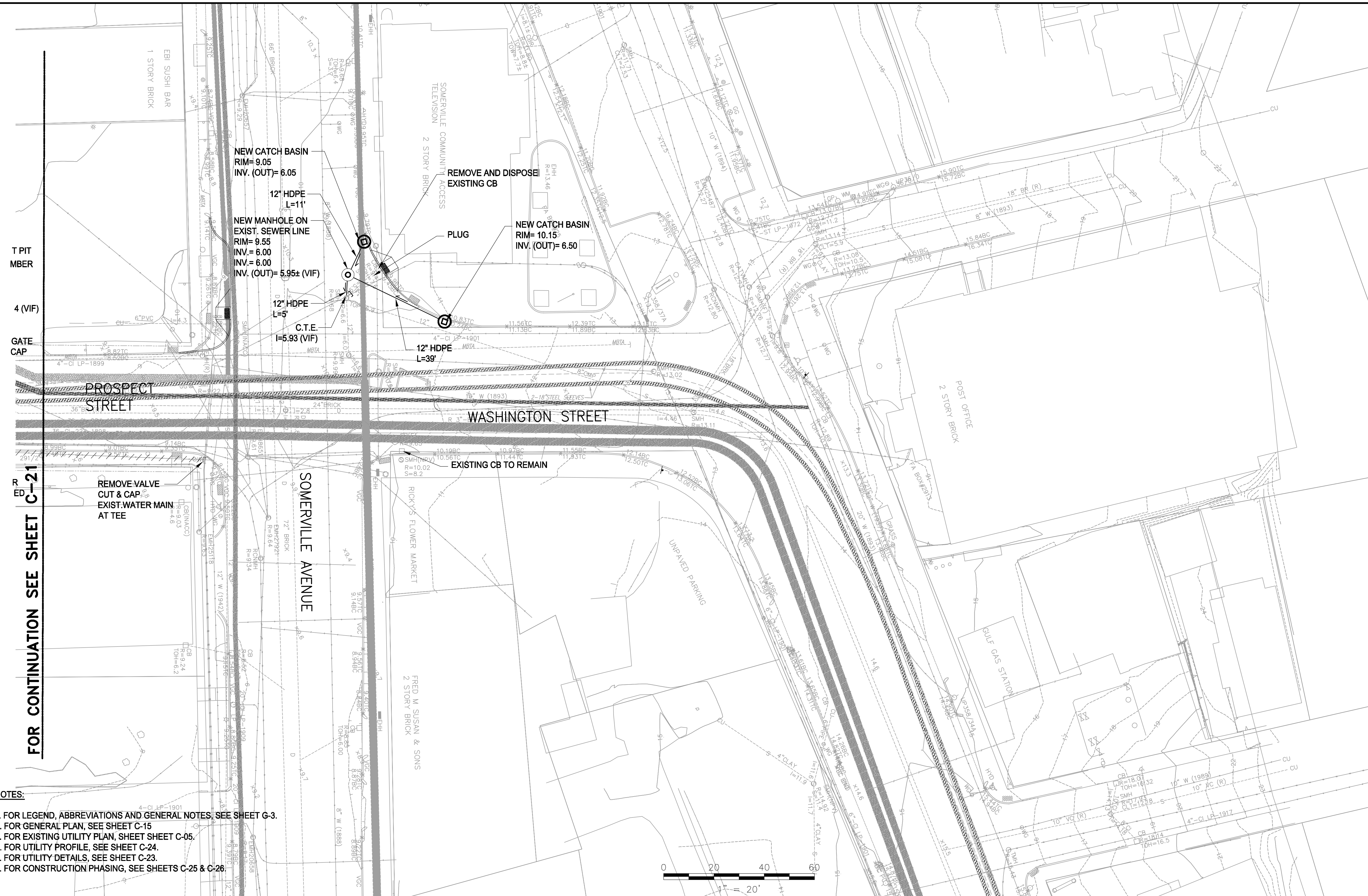
WATER AND SEWER IMPROVEMENTS  
PROSPECT STREET

DESIGNED: JF	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RUB			<b>C-21</b>
DRAWN: KW	IFB#15-105-REBID		SCALE: 1"=20'
CHECKED: RUB			DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

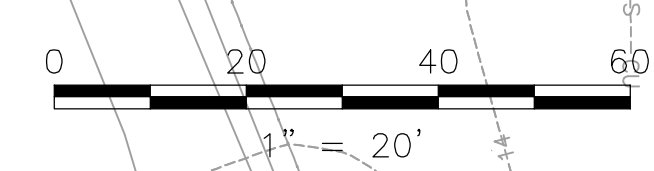
NO.	DATE	REVISIONS	BY





FOR CONTINUATION SEE SHEET C-21

- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR GENERAL PLAN, SEE SHEET C-15
  3. FOR EXISTING UTILITY PLAN, SHEET SHEET C-05.
  4. FOR UTILITY PROFILE, SEE SHEET C-24.
  5. FOR UTILITY DETAILS, SEE SHEET C-23.
  6. FOR CONSTRUCTION PHASING, SEE SHEETS C-25 & C-26.



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

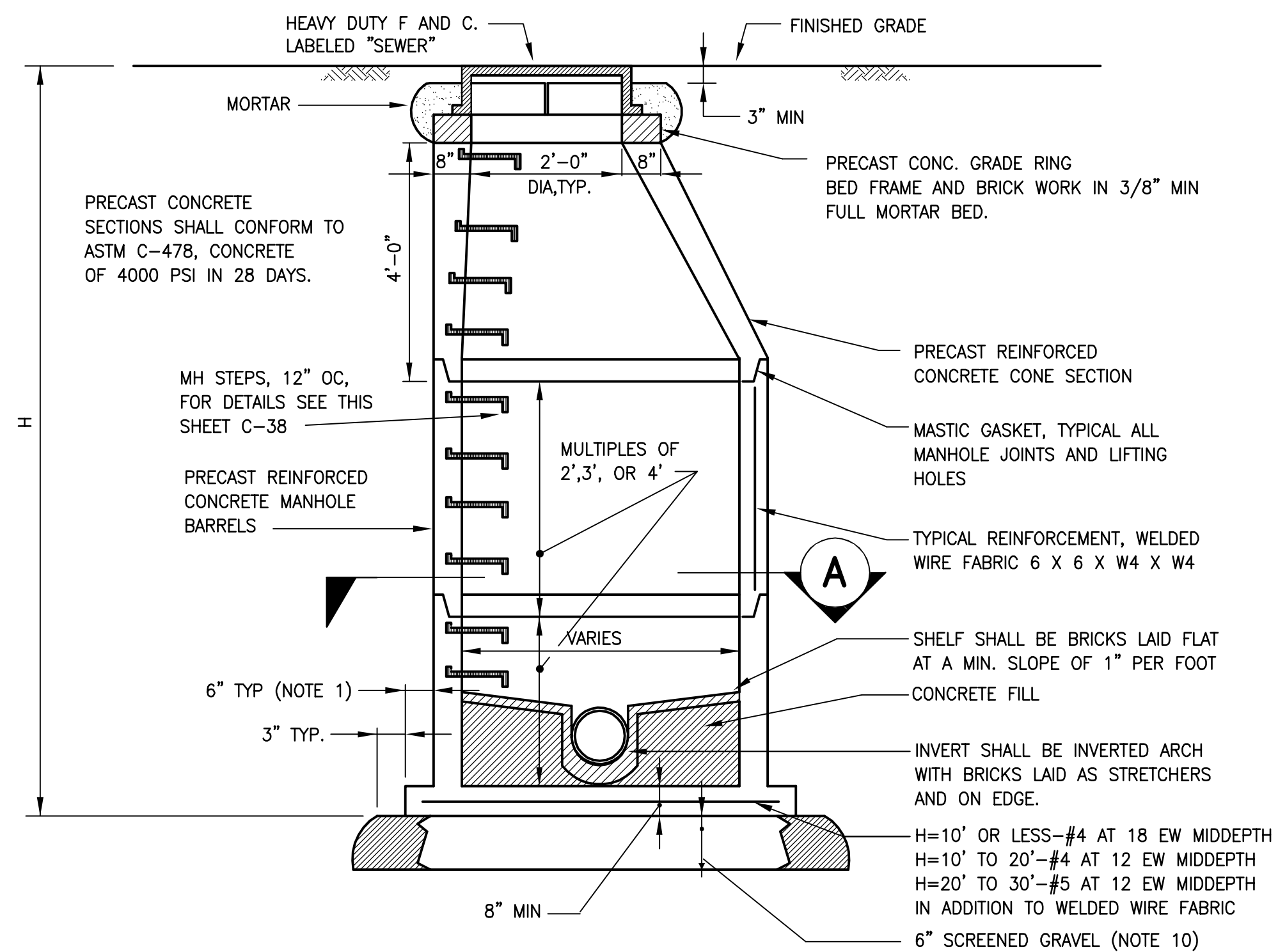
**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**  
DRAINAGE IMPROVEMENTS  
SOMERVILLE AVE & WASHINGTON ST

DESIGNED: RJB	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RJB			<b>C-22</b>
DRAWN: LAC	IFB#15-105-REBID		SCALE: 1"=20'
CHECKED: RJB			DATE: JAN 4, 2016
CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143			



# NOTES FOR MANHOLES

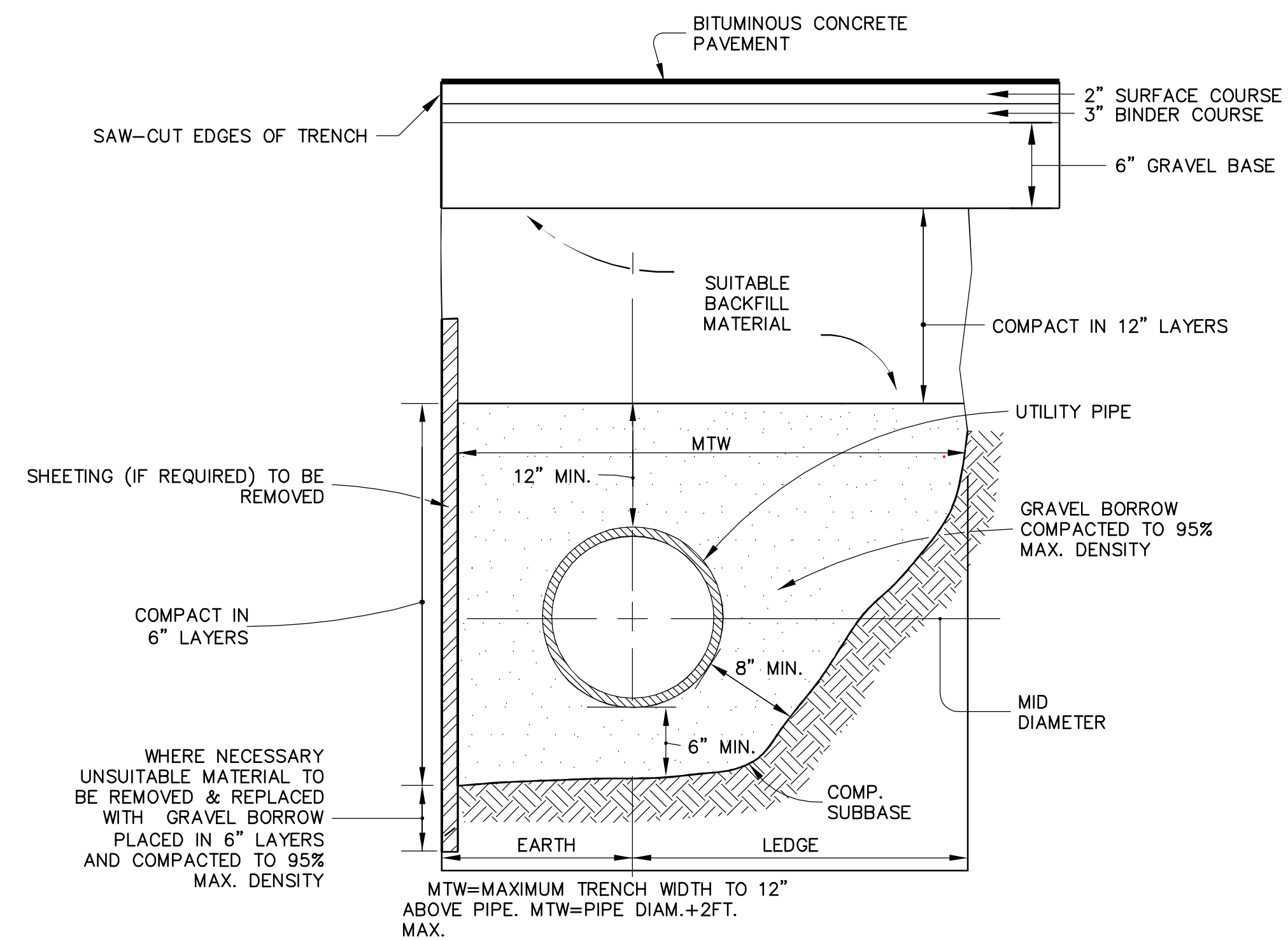
1. ALL CAST IN PLACE CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 3000 LBS PER SQ INCH, USING 3/4" MAXIMUM SIZE AGGREGATE.
2. REINFORCING STEEL BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL ASTM A615 GRADE 60.
3. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185.
4. CAST IRON FRAME, TYPE "A" AND COVER TYPE "A-2". COVERS SHALL BE MARKED "SEWER" OR "DRAIN".
5. DESIGN LIVE LOAD - HS20-44.
6. MINIMUM COVER FOR REINFORCING IN WALLS OR SLABS POURED AGAINST EARTH SHALL BE 3 INCHES, ALL OTHER SHALL BE 2 INCHES UNLESS OTHERWISE NOTED.
7. USE 2'-0" LENGTHS OF PIPE STUBS AT ALL MANHOLES FOR PVC PIPE. USE 4'-0" MAX LENGTH OF PIPE STUBS AT ALL MANHOLES FOR RC OR DI PIPE.
8. MAXIMUM PRESSURE ON SOIL BELOW CAST IN PLACE CONCRETE BASE SHALL NOT EXCEED ALLOWABLE BEARING PRESSURE.
9. WHERE WET CONDITION EXIST, SUBSTITUTE CRUSHED STONE FOR SCREENED GRAVEL FOR SUBBASE AT MANHOLE AND CATCH BASINS.



**TYPICAL PRECAST CONCRETE MANHOLE**

NOT TO SCALE

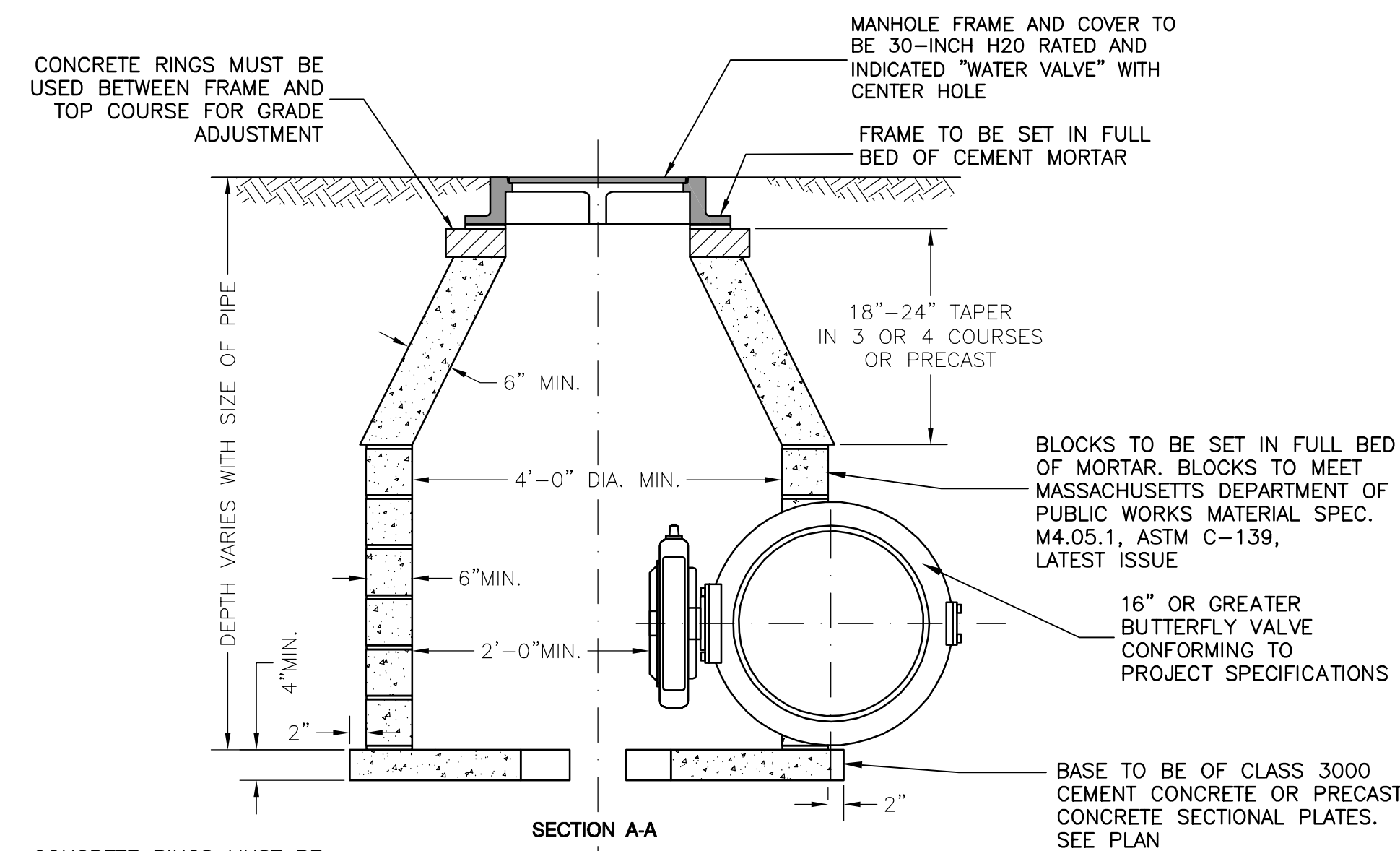
- NOTE:  
1. 6" LIP OPTIONAL UNLESS OTHERWISE NOTED



**ROADWAY UTILITY TRENCH**

NOT TO SCALE

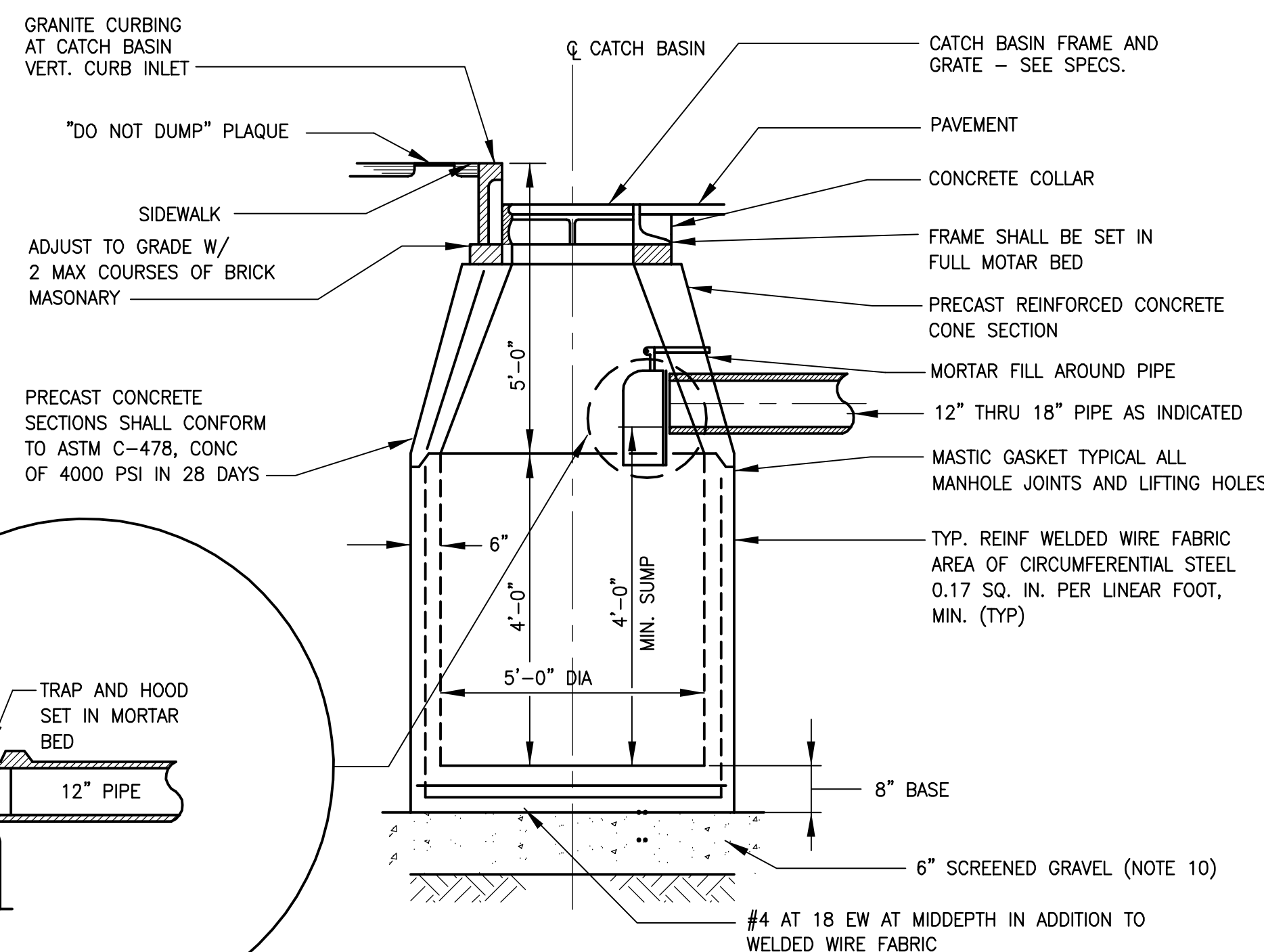
- NOTE:  
FOR TEMPORARY PATCH REQUIREMENTS SEE DRAWING C-16, TEMPORARY PATCH SHALL REMAIN IN PLACE UNTIL FINAL PAVING OPERATION.



**16-INCH OR GREATER BUTTERFLY VALVE & CHAMBER**

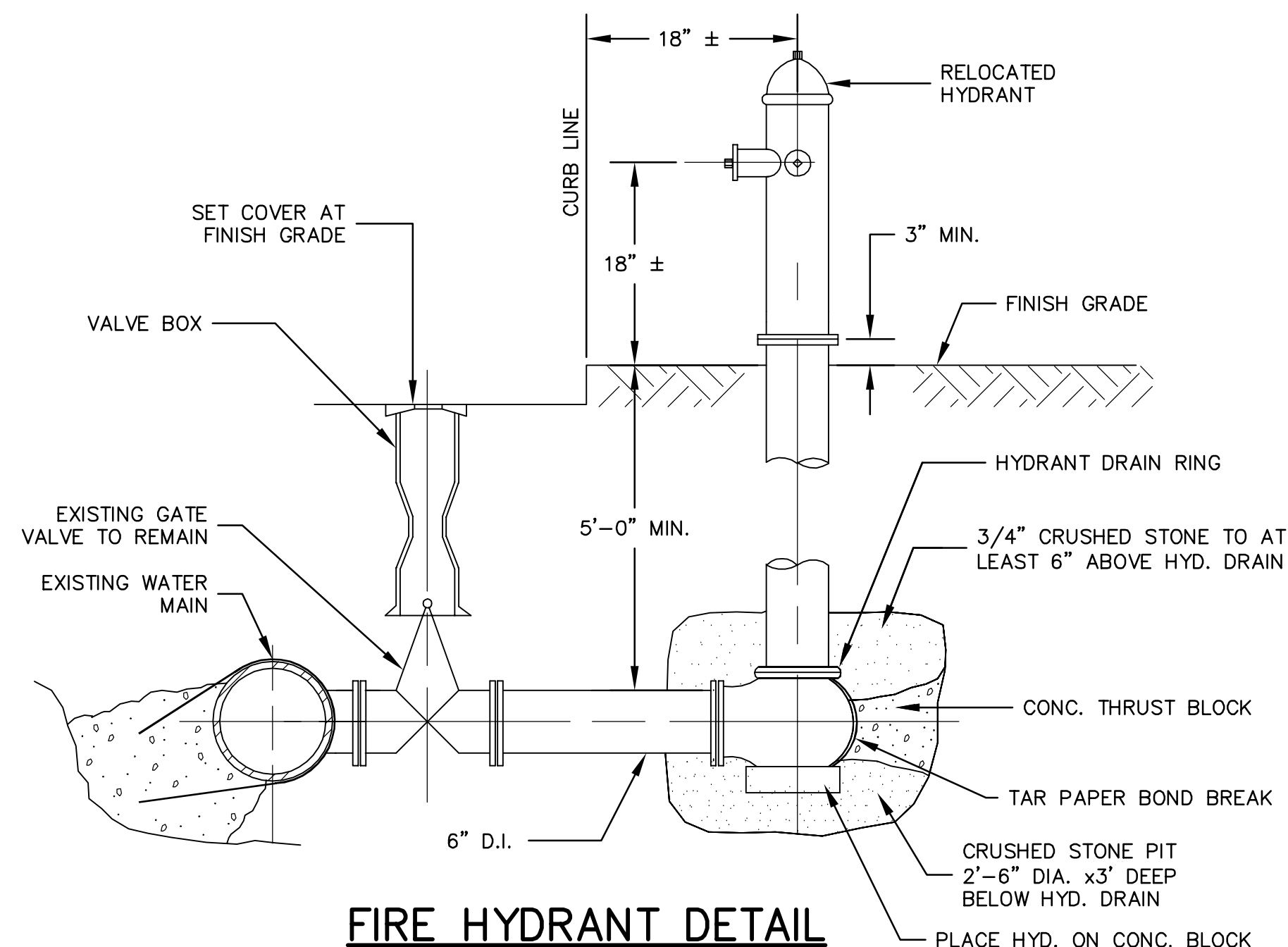
NOT TO SCALE

- NOTES:  
1.) PRECAST MANHOLES CONFORMING TO THESE DIMENSIONS ARE ACCEPTABLE. DESIGN SHOWN IS FOR MANHOLE DEPTHS OF 9' OR LESS. STANDARD MANHOLE DEPTH APPROX. 8'-6".  
2.) BUTTER FLY VALVES SHALL BE USED FOR MAINS 16-INCH OR GREATER.  
3.) ALL BUTTERFLY VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATIONS.



**TYPICAL CATCH BASIN**

NOT TO SCALE



**FIRE HYDRANT DETAIL**

NOT TO SCALE

- NOTE: ALL JOINTS ON HYDRANT BRANCH TO BE RESTRAINED JOINTS

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
UTILITY DETAILS**

DESIGNED: KEM  
CHECKED: GRB  
DRAWN: KEM  
CHECKED: GRB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

SHEET

**C-23**

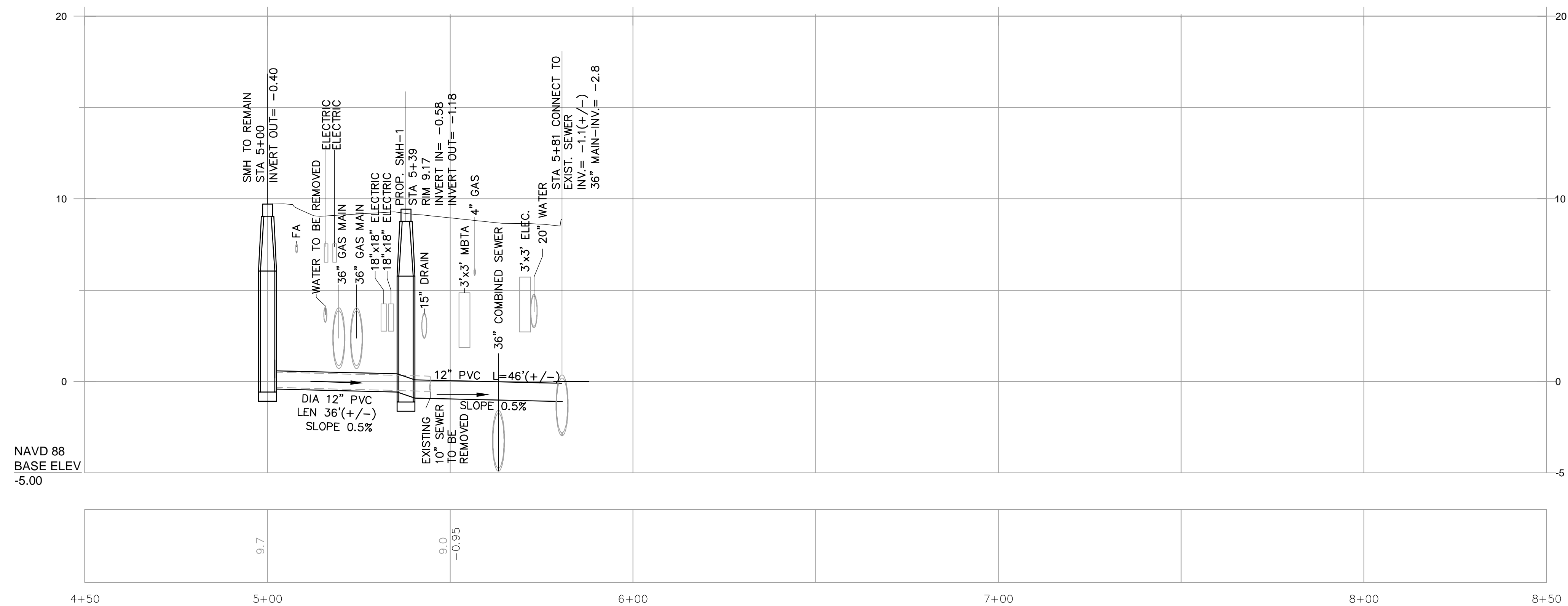
IFB#15-105-REBID  
101250X

SCALE: N.T.S.  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





PROSPECT STREET SEWER MAIN PROFILE  
 SCALE: VERTICAL: 1"=4'  
 HORIZONTAL: 1"=20'

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
 CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
 EARLY ACTION PROJECT**

PROSPECT STREET SEWER PROFILE

DESIGNED: JF  
 CHECKED: RJB  
 DRAWN: AM  
 CHECKED: JF

**PARSONS BRINCKERHOFF**  
 Parsons Brinckerhoff, Inc.  
 75 Arlington St. Boston, MA 02116  
 PH. (617)426-7330 FAX (617)482-8487

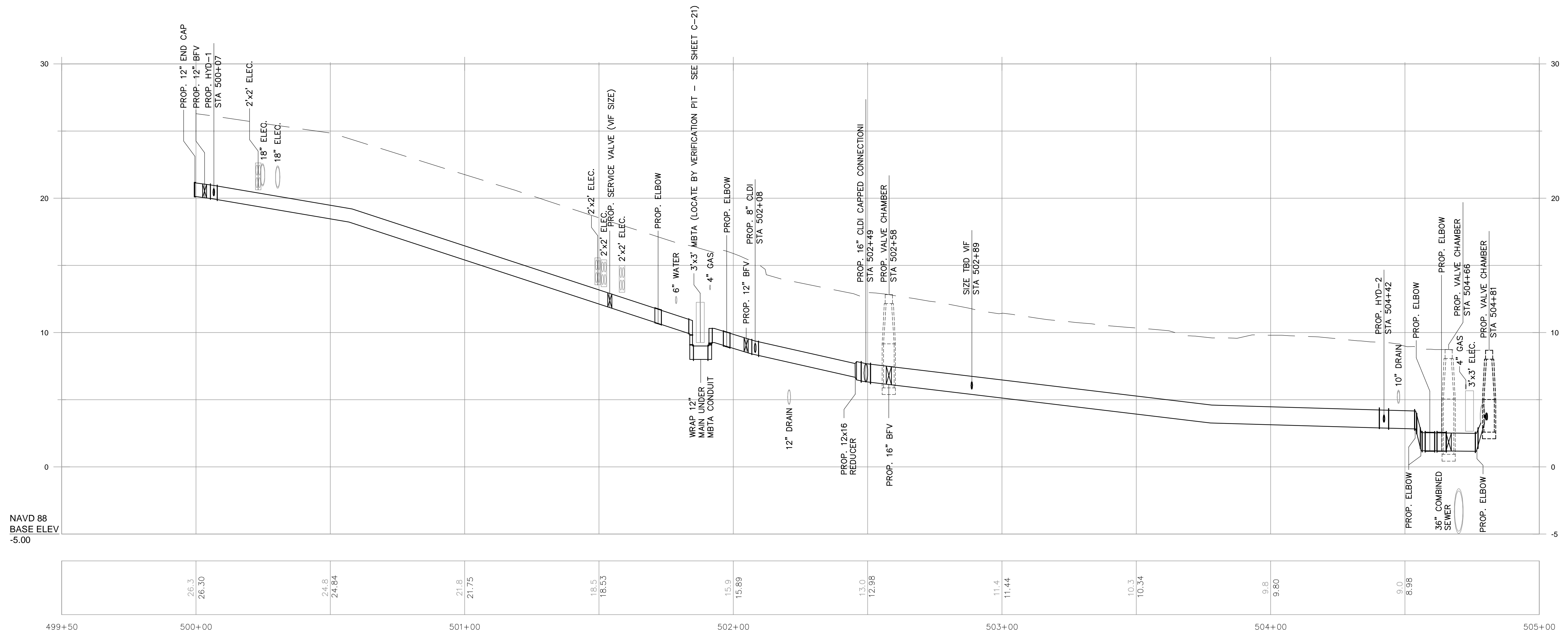
IFB#15-105-REBID

SCALE: AS NOTED  
 DATE: JAN 4, 2016

SHEET  
**C-24**

CITY OF SOMERVILLE  
 93 HIGHLAND AVENUE  
 SOMERVILLE, MA 02143





ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
 CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
 EARLY ACTION PROJECT**

PROSPECT STREET WATER PROFILE

DESIGNED: JF  
 CHECKED: RJB  
 DRAWN: AM  
 CHECKED: JF

**PARSONS BRINCKERHOFF**  
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 75 Arlington St. Boston, MA 02116  
 PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: AS NOTED  
 DATE: JAN 4, 2016

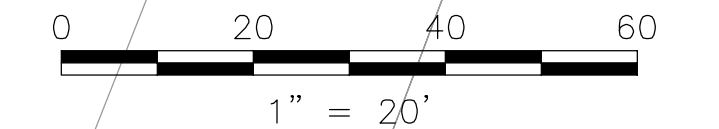
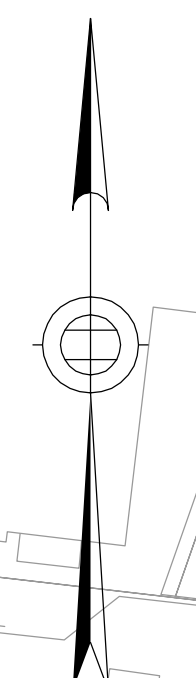
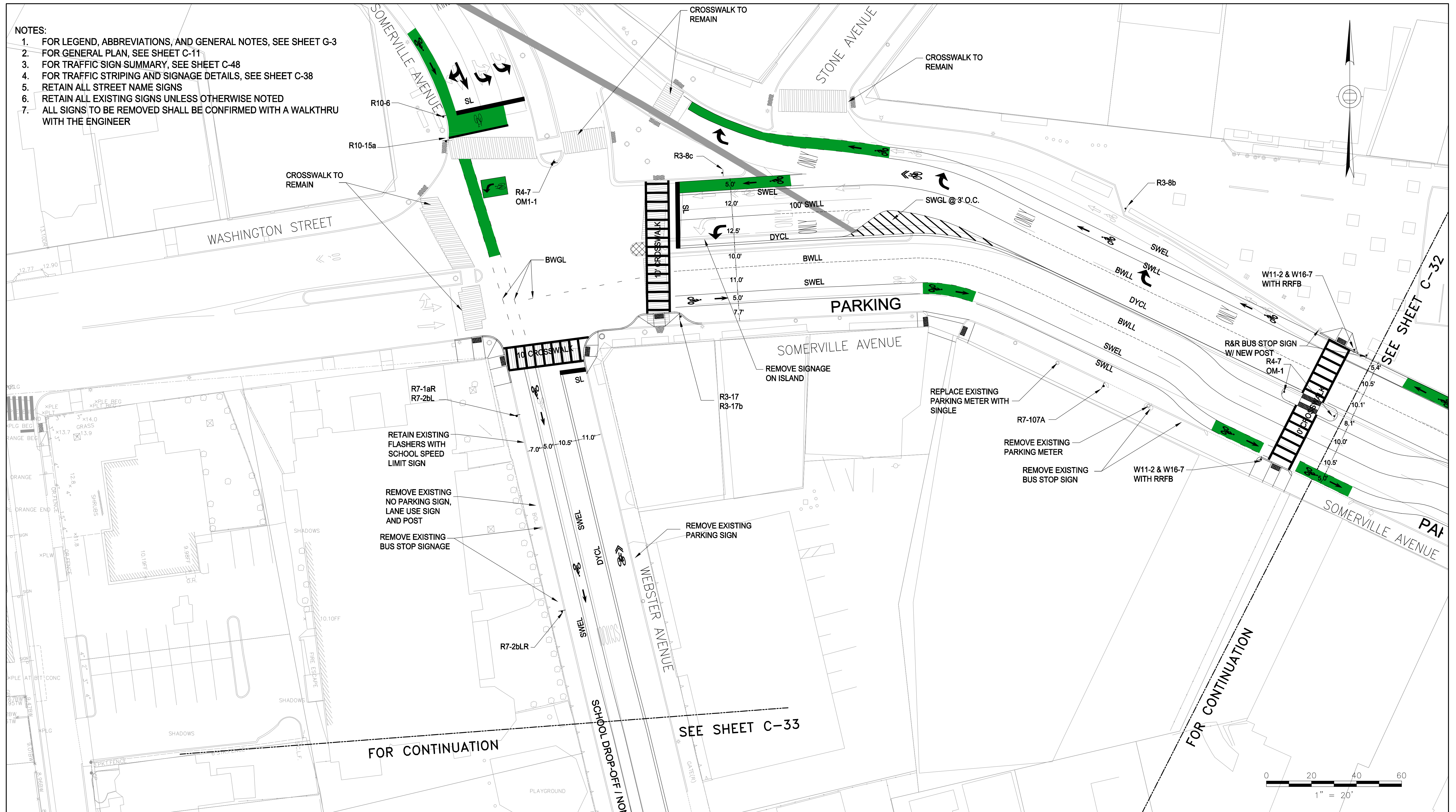
SHEET  
**C-25**

CITY OF SOMERVILLE  
 93 HIGHLAND AVENUE  
 SOMERVILLE, MA 02143



**NOTES:**

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
2. FOR GENERAL PLAN, SEE SHEET C-11
3. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
4. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
5. RETAIN ALL STREET NAME SIGNS
6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

TRAFFIC STRIPING AND SIGNAGE  
SHEET 1 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
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75 Arlington St. Boston, MA 02116  
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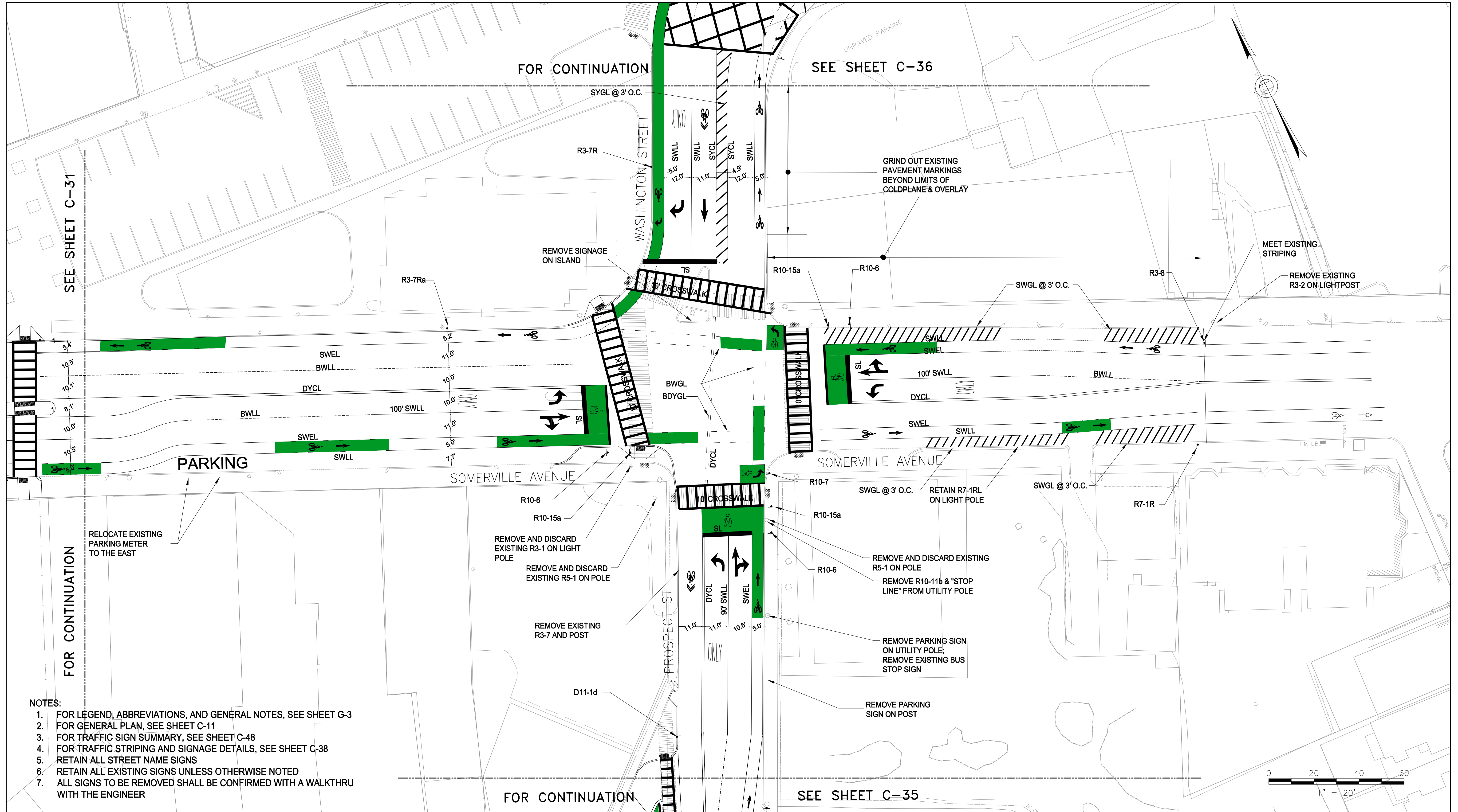
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-31**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





SEE SHEET C-31

FOR CONTINUATION

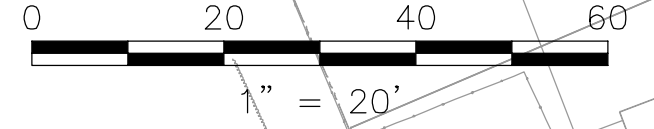
SEE SHEET C-36

FOR CONTINUATION

FOR CONTINUATION

SEE SHEET C-35

- NOTES:
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
  2. FOR GENERAL PLAN, SEE SHEET C-11
  3. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
  4. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
  5. RETAIN ALL STREET NAME SIGNS
  6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
  7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

TRAFFIC STRIPING AND SIGNAGE  
SHEET 2 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
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75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

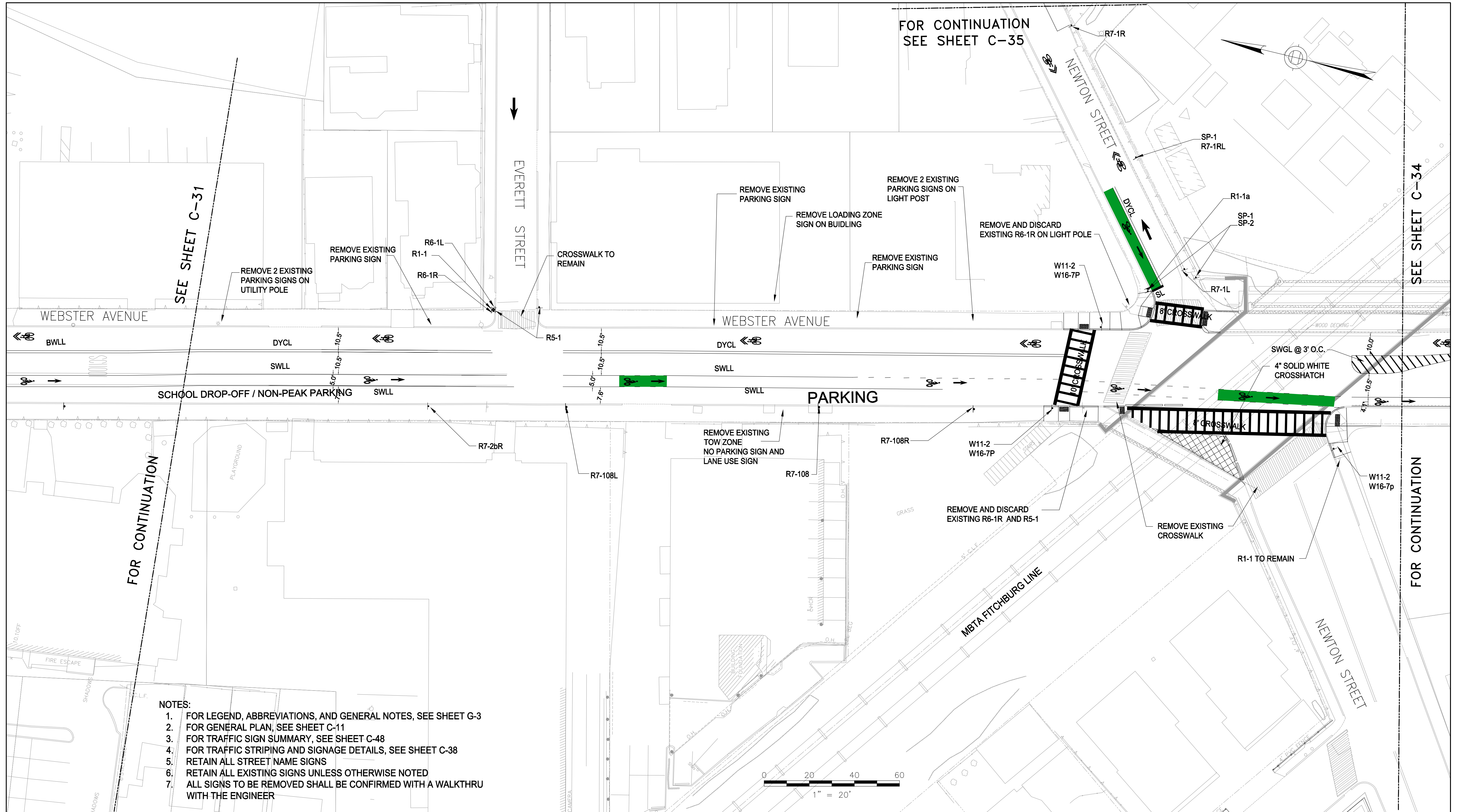
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-32**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





FOR CONTINUATION  
SEE SHEET C-35

SEE SHEET C-31

SEE SHEET C-34

FOR CONTINUATION

FOR CONTINUATION

**NOTES:**

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
2. FOR GENERAL PLAN, SEE SHEET C-11
3. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
4. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
5. RETAIN ALL STREET NAME SIGNS
6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



*Rachel J. Burckardt*  
1/4/16

COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**  
TRAFFIC STRIPING AND SIGNAGE  
SHEET 3 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB



Parsons Brinckerhoff, Inc.  
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PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

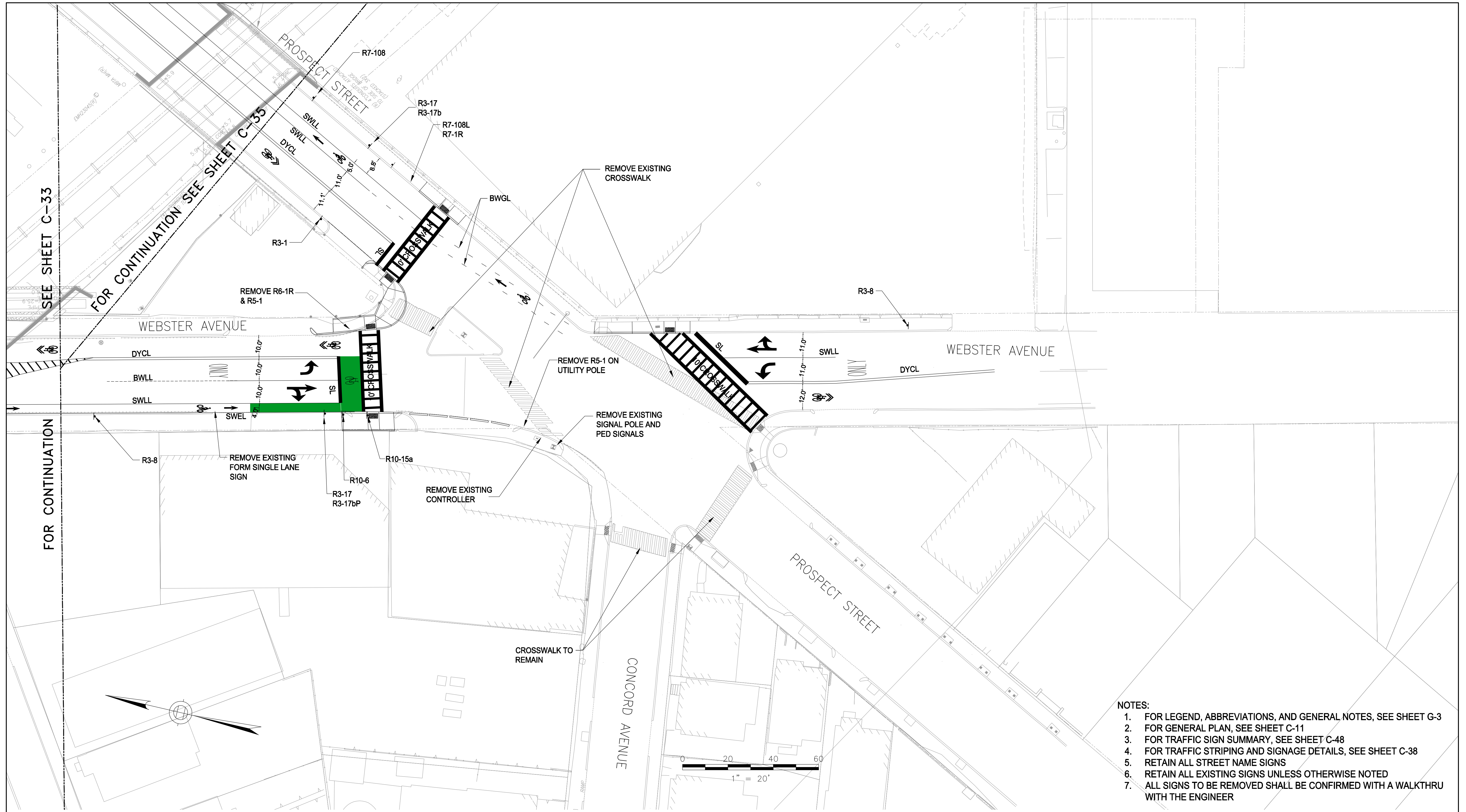
SHEET

**C-33**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





- NOTES:
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
  2. FOR GENERAL PLAN, SEE SHEET C-11
  3. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
  4. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
  5. RETAIN ALL STREET NAME SIGNS
  6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
  7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

TRAFFIC STRIPING AND SIGNAGE  
SHEET 4 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

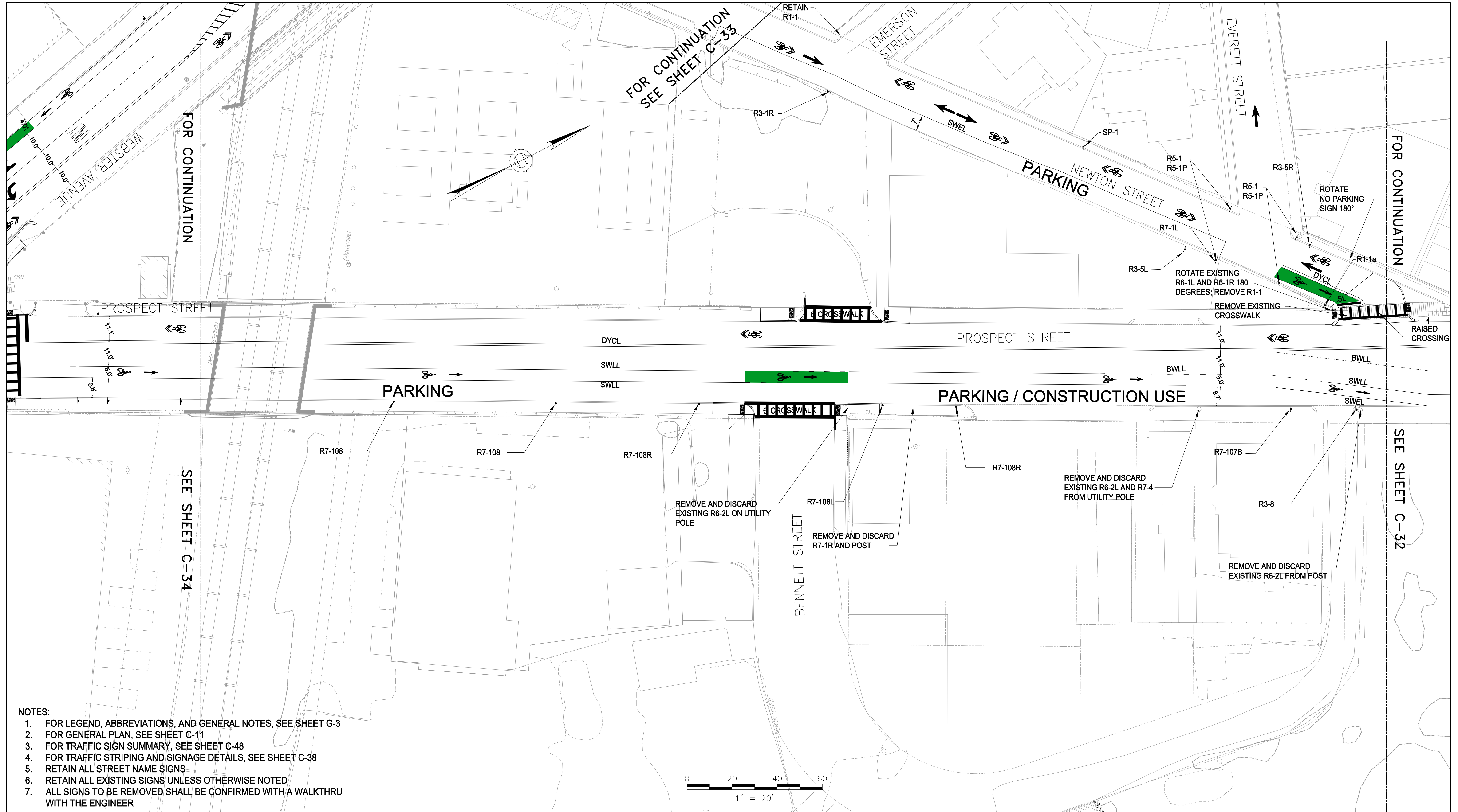
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-34**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





- NOTES:
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
  2. FOR GENERAL PLAN, SEE SHEET C-11
  3. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
  4. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
  5. RETAIN ALL STREET NAME SIGNS
  6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
  7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**  
ROADWAY IMPROVEMENTS  
SHEET 5 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

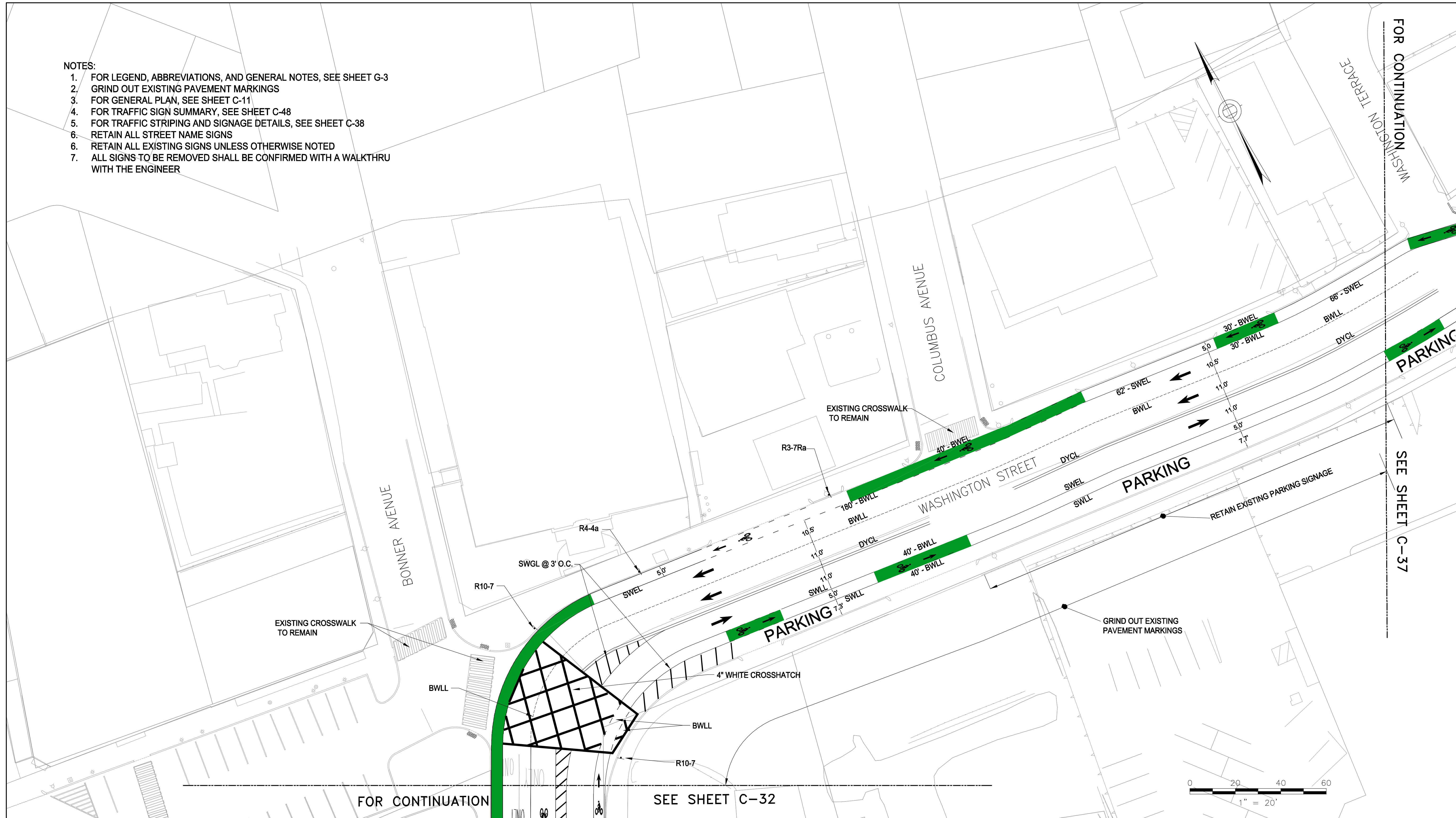
SHEET  
**C-35**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY



- NOTES:
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
  2. GRIND OUT EXISTING PAVEMENT MARKINGS
  3. FOR GENERAL PLAN, SEE SHEET C-11
  4. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
  5. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
  6. RETAIN ALL STREET NAME SIGNS
  6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
  7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

TRAFFIC STRIPING AND SIGNAGE  
SHEET 6 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

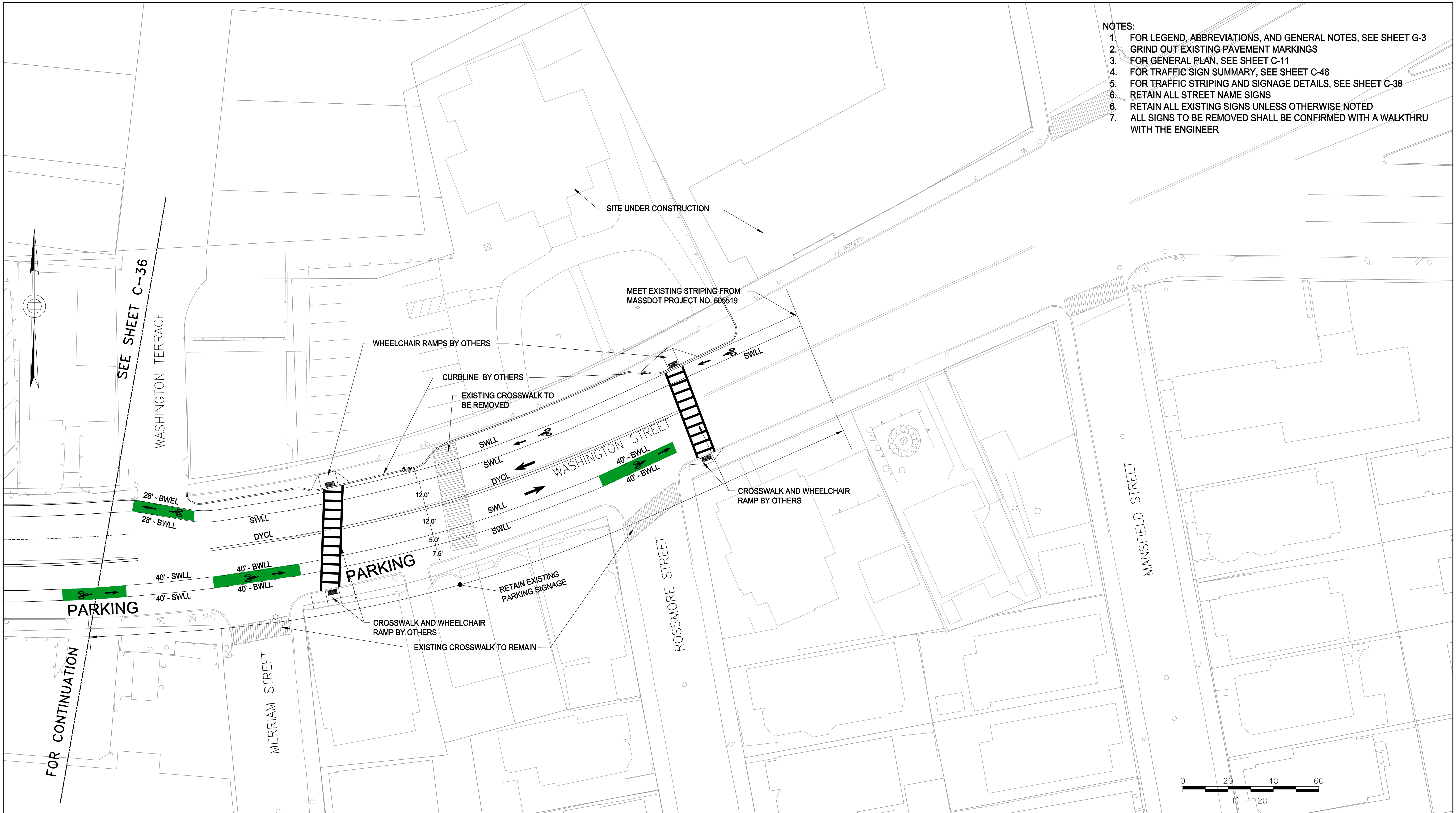
SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-36**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143



- NOTES:
1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE SHEET G-3
  2. GRIND OUT EXISTING PAVEMENT MARKINGS
  3. FOR GENERAL PLAN, SEE SHEET C-11
  4. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
  5. FOR TRAFFIC STRIPING AND SIGNAGE DETAILS, SEE SHEET C-38
  6. RETAIN ALL STREET NAME SIGNS
  6. RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED
  7. ALL SIGNS TO BE REMOVED SHALL BE CONFIRMED WITH A WALKTHRU WITH THE ENGINEER



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

TRAFFIC STRIPING AND SIGNAGE  
SHEET 7 OF 7

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

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Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

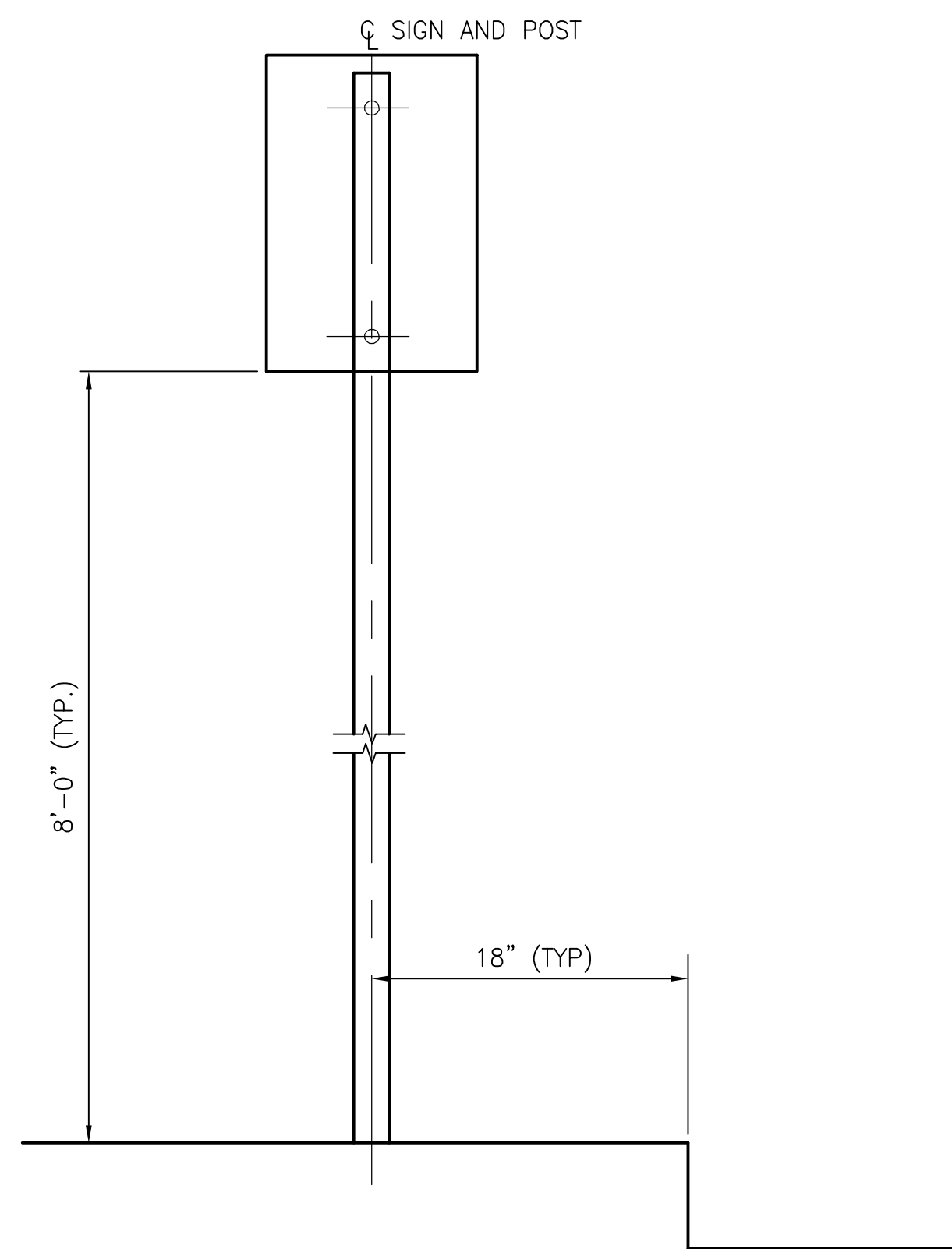
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-37**

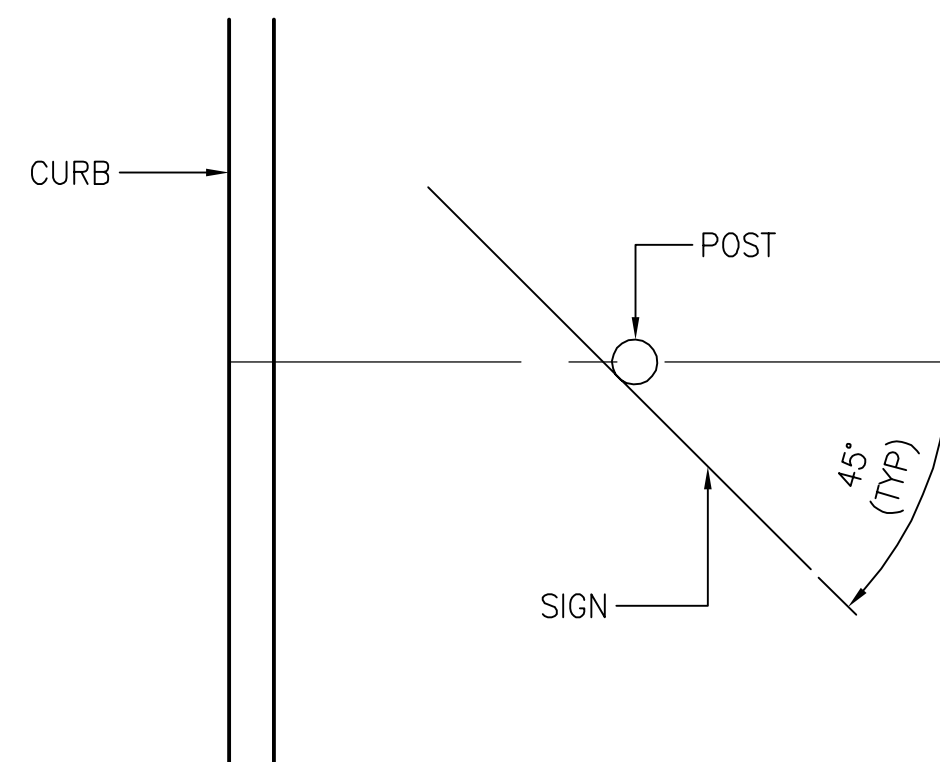
CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





SINGLE PARKING SIGN MOUNTING DETAIL

NTS



PLAN - PARKING SIGN ONLY

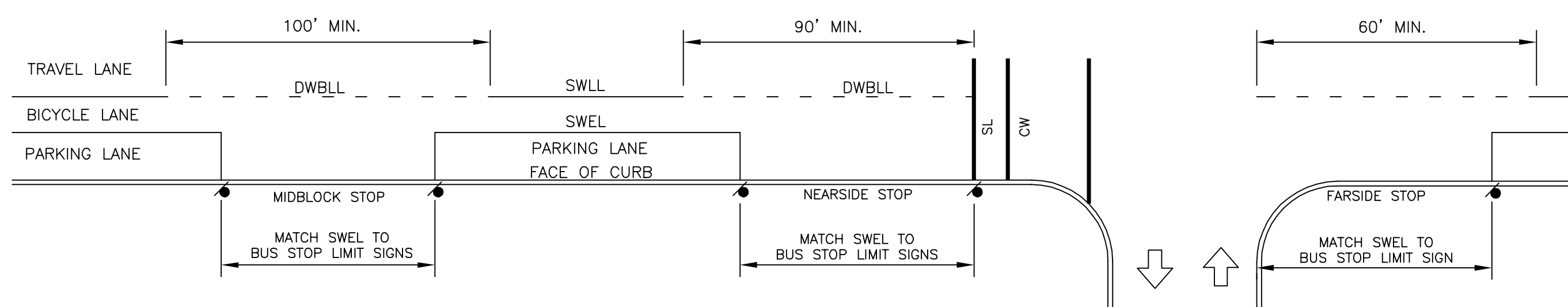
NTS

ABBREVIATIONS:

- BWGL BROKEN WHITE GUIDE LINE
- BWLL BROKEN WHITE LANE LINE
- DYCL DOUBLE YELLOW CENTER LINE
- SWEL SOLID WHITE EDGE LINE
- SWGK SOLID WHITE GUIDE LINE
- SWLL SOLID WHITE LANE LINE
- DWBLL DOUBLE WHITE BROKEN LANE LINE
- SYCL SOLID WHITE CENTER LINE
- SYGL SOLID YELLOW GORE LINE
- BDYGL BROKEN DOUBLE YELLOW GUIDE LINE

BUS STOP STRIPING NOTES:

1. MATCH EDGE OF PARKING LANE LINES TO BUS STOP LIMIT SIGNS (I.E. SIGN WITH ARROW IN ONE DIRECTION). IF A BUS STOP LIMIT SIGN DOES NOT EXIST, USE DIMENSIONS PER MBTA BUS STOP PLANNING AND DESIGN GUIDELINES AS SHOWN.
2. FOR MIDBLOCK BUS STOPS, INSTALL DOTTED BICYCLE LANE LINE A MINIMUM OF 100' CENTERED ON BUS STOP LIMITS IF SIGNS ARE LESS THAN 100'.
3. FOR NEARSIDE BUS STOPS, INSTALL DOTTED BICYCLE LANE LINE A MINIMUM OF 90' PRIOR TO THE STOP LINE.
4. FOR FARSIDE BUS STOPS, INSTALL DOTTED BICYCLE LANE LINE A MINIMUM OF 60' FROM THE EDGE OF THE INTERSECTION.
5. BUS STOP STRIPING IS BASED ON 40' BUS LENGTHS PER THE MBTA BUS STOP PLANNING AND DESIGN GUIDELINES UNLESS OTHERWISE NOTED.

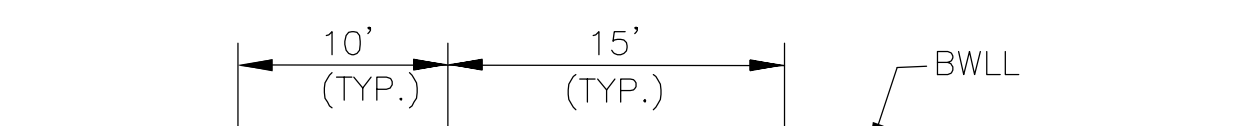


TYPICAL STRIPING WITH BUS STOPS

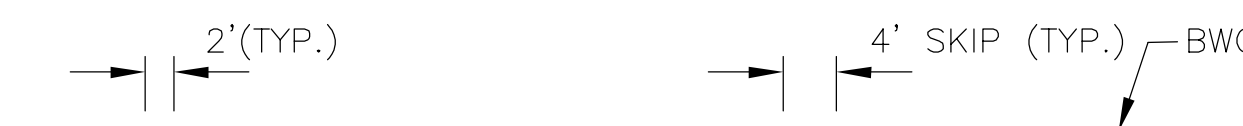
(UNLESS OTHERWISE NOTED)

NTS

STRIPING DETAILS



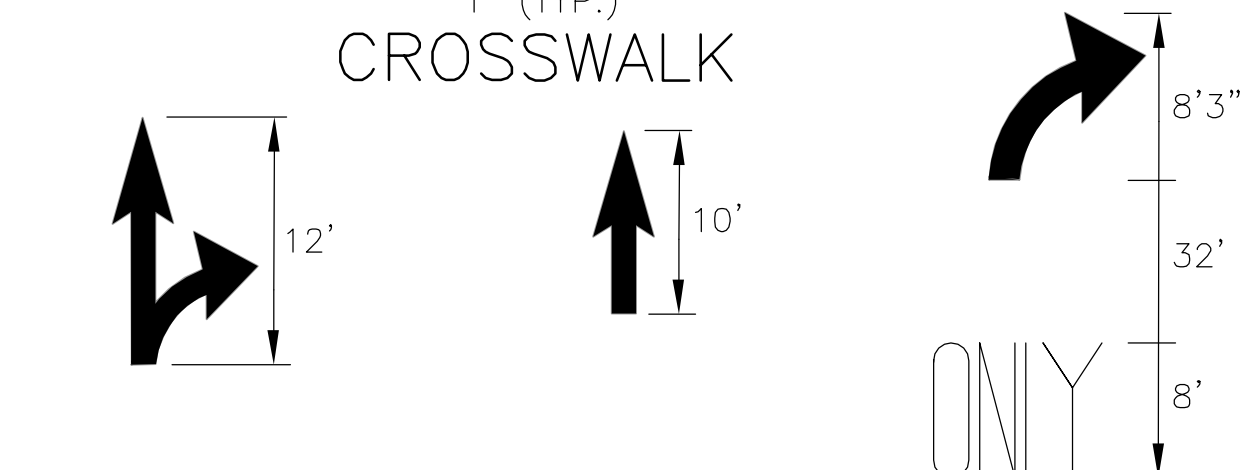
LANE STRIPES



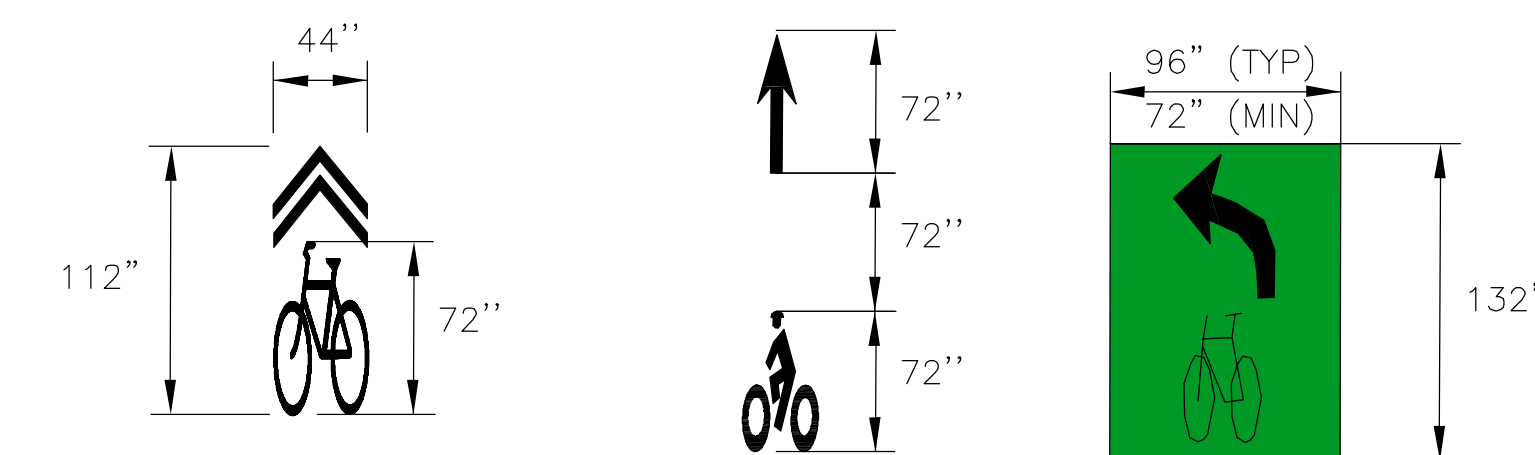
GUIDE LINES



CROSSWALK



TURNING MARKINGS



BICYCLE MARKINGS

NOTES:

1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
2. FOR TRAFFIC SIGN SUMMARY, SEE SHEET C-48
3. PRIOR TO INSTALLATION OF PERMANENT PAVEMENT MARKINGS, PROVIDE A SPRAY PAINT LAYOUT FOR APPROVAL BY THE ENGINEER.
4. EXACT LOCATION OF EACH SIGN WILL BE AS DETERMINED IN THE FIELD BY THE ENGINEER.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
TRAFFIC STRIPING AND SIGNAGE  
DETAILS**

DESIGNED: LAC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

SHEET  
**C-38**

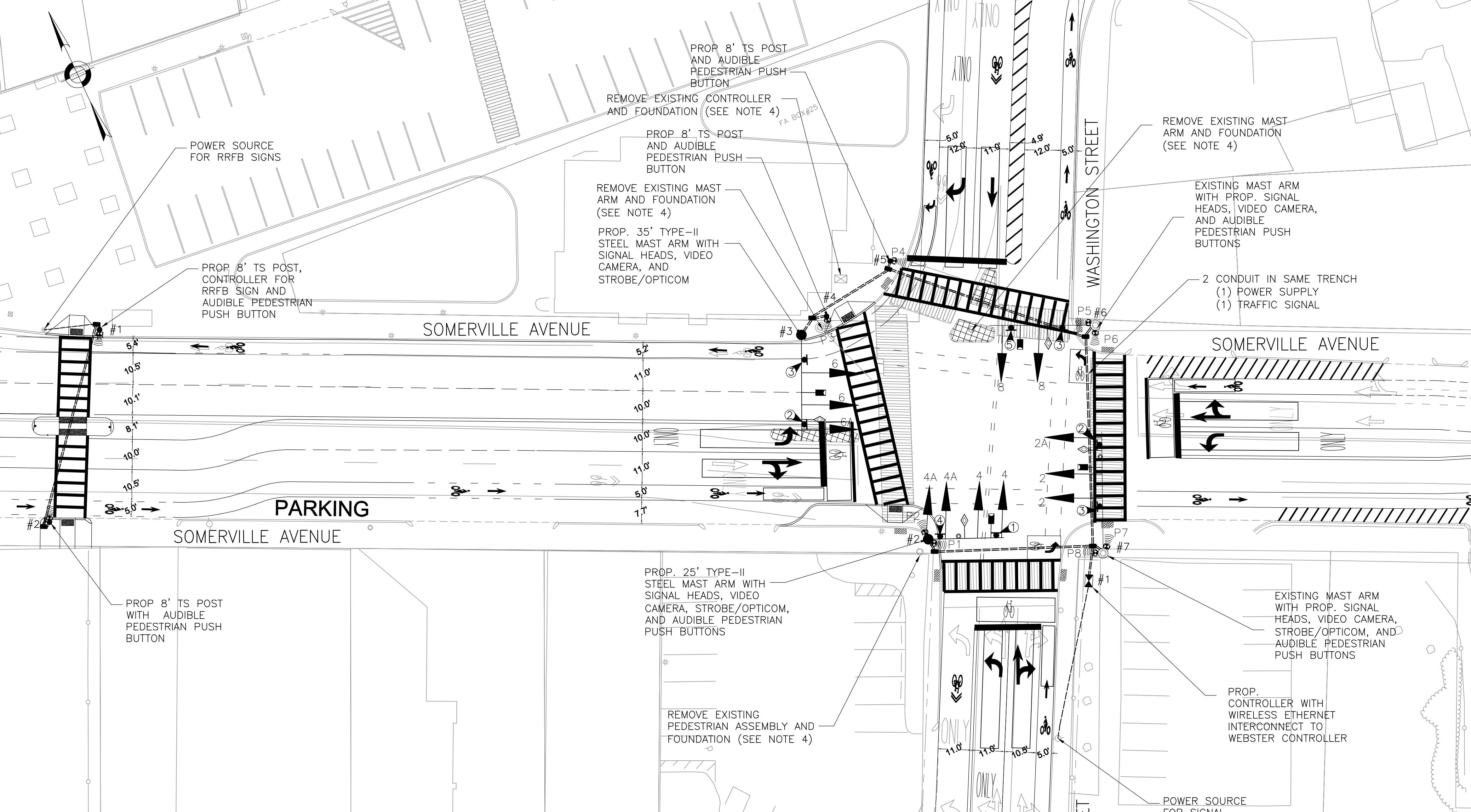
IFB#15-105-REBID

SCALE: AS SHOWN  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143



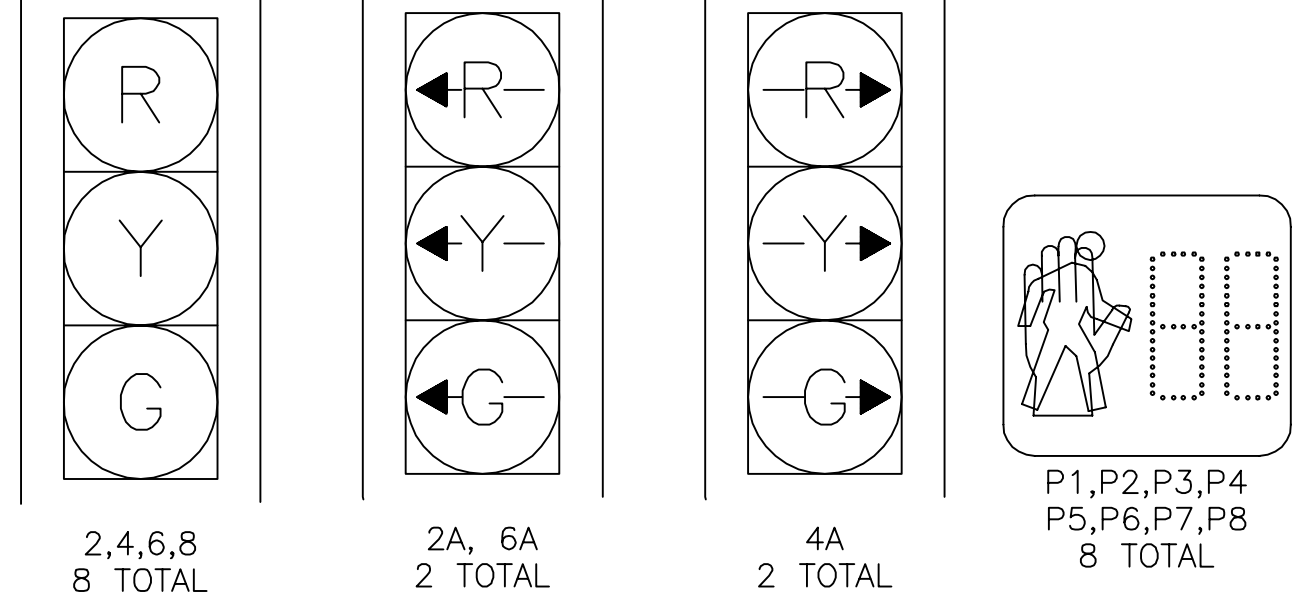
NOTES:



NOTES:

1. REMOVE AND STACK ALL EXISTING SIGNAL HEADS
2. REUSE EXISTING MAST ARMS UNLESS OTHERWISE NOTED
3. SEE SHEET C-31 THRU C-37 FOR PAVEMENT MARKING PLAN
4. REMOVE FOUNDATIONS TO MIN. 4' BELOW FINISH GRADE
5. REMOVE EXISTING SIGNAL EQUIPMENT WHERE NEW EQUIPMENT IS PROPOSED.
6. FOR GENERAL PLANS, SEE SHEET C-11

**SIGNAL FACES**

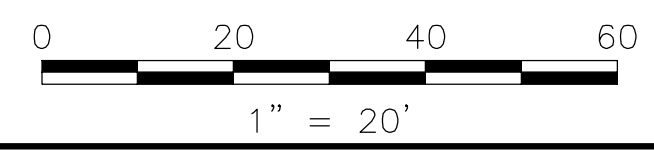


**SIGN SUMMARY**

ID	NAME	DESCRIPTION	QUANTITY
①	R3-2		1
②	R3-5		2
③	R10-11		3
④	R10-11b		1
⑤	R10-12		1

**SYMBOL LEGEND**

- EXISTING MAST ARM (LENGTH VARIES)
- MAST ARM (LENGTH VARIES)
- SIGNAL HEAD
- AUDIBLE PEDESTRIAN PUSH BUTTON
- VIDEO DETECTION CAMERA
- OPTICOM DETECTOR
- OPTICOM STROBE
- CONTROLLER CABINET
- EXISTING CONTROLLER CABINET (TO BE REMOVED)
- DETECTION ZONE
- PULL BOX
- ELECTRIC + SIGNAL CONDUIT IN SAME TRENCH



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY

COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

PROSPECT/SOMERVILLE/WASHINGTON  
SIGNAL PLAN

DESIGNED: KTC  
CHECKED: RDB  
  
DRAWN: BLT  
CHECKED: RDB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-41**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143



### TIMING AND SEQUENCE CHART

STREET/DIRECTION/FACE	Ø2			Ø6			Ø4 Ø8			Ø4 Ø8 Ø10			FLASHING
	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	
SOMERVILLE AVE/EB/2+2A	G-GL	Y-YL	R-RL	R	R	R	R	R	R	R	R	R	FY
SOMERVILLE AVE/WB/6+6A	R	R	R	G-GL	Y-YL	R-RL	R	R	R	R	R	R	FY
PROSPECT ST/NB/8	R	R	R	R	R	R	G	Y	R	G	Y	R	FR
WASHINGTON ST/SB THRU/4	R	R	R	R	R	R	G	Y	R	G	Y	R	FR
WASHINGTON ST/SB RT/4A	GR	YR	RR	R	R	R	R	R	R	GR	YR	RR	
C.W./E-W/P4-P5	DW	DW	DW	W	FDW	DW	DW	DW	DW	DW	DW	DW	OFF
C.W./E-W/P1-P8	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OFF
C.W./N-S/P6-P7	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	OFF
C.W./N-S/P2-P3	DW	DW	DW	DW	DW	DW	W	FDW	DW	DW	DW	DW	OFF

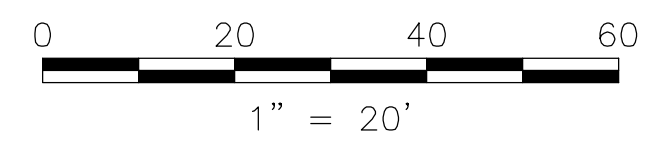
  

I N T E R V A L	MINIMUM GREEN	15		20		22		7	
	VEHICLE EXTENSION	3		3		3		3	
MAXIMUM 1 GREEN	60		33		39		23		
MAXIMUM 2 GREEN	48		33		43		24		
YELLOW CLEARANCE		3		3		3		3	
RED CLEARANCE			3		3		3		
WALK INTERVAL	9		9		9		9		
PED. CLEARANCE		12		17		19			
MEMORY	NON-LOCK			NON-LOCK			NON-LOCK		
RECALL (VEH./PED.)	MAX/ON			MAX/ON			OFF/OFF		

CYCLE NO.	CYCLE LENGTH	OFFSET (SEC.)	PHASE SPLITS IN SECONDS				HOURS OF OPERATION
			Ø2	Ø6	Ø4 Ø8	Ø4 Ø8 Ø10	
1	120	0	43	27	32	18	6:00 A.M. TO 10:00 A.M.
2	120	0	39	27	35	19	3:00 P.M. TO 7:00 P.M.

LOOP DETECTOR DATA									CLEARANCES								TECHNICAL NOTES	
IDENT.	QTY.	SIZE	SPLICE	TURNS	MODE	ØCALL	ØEXT.	CHNL.	FROM	TO								THIS LOCATION IS THE MASTER CONTROLLER.
									G	G-GL	GR	R	-	W	DW			
									G	G	-	-	Y	-	-			
									G-GL	-	G-GL	-	G-YL	-	-			
									GR	-	-	GR	YL	-	-			
									-	-	-	-	-	-	-			
									R	-	-	-	-	-	-			
									W	-	-	-	-	W	FDW			
									DW	-	-	-	-	-	DW			

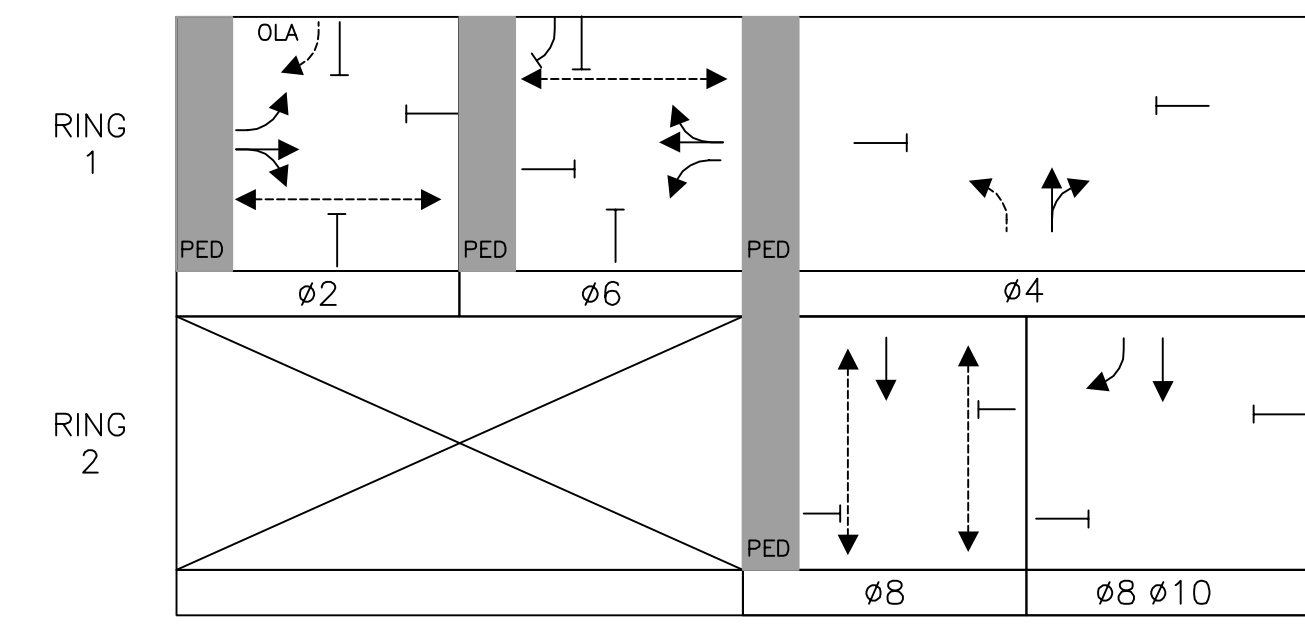


### MAJOR ITEMS REQUIRED

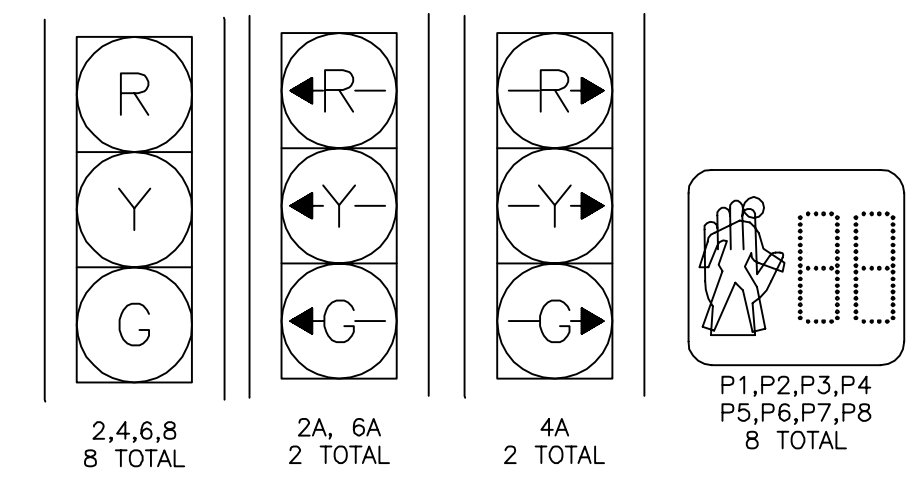
QUANTITY	MAJOR ITEMS REQUIRED
1	4DW CONTROLLER WITH INTERNAL RCU IN TYPE 'CB' CABINET, FOUNDATION, MMU, BUS INTERFACE UNITS, FLASHER LOAD SWITCHES
2	8' SIGNAL POST, BASE, PEDESTAL & FOUNDATION
8	12"- 3 SECTION (R,Y,G) L.E.D. VEHICLE SIGNAL INDICATION
2	12"- 3 SECTION (R,Y,G LEFT) L.E.D. VEHICLE SIGNAL INDICATION
2	12"- 3 SECTION (R,Y,G RIGHT) L.E.D. VEHICLE SIGNAL INDICATION
8	16"- PEDESTRIAN L.E.D. SIGNAL COUNTDOWN INDICATION
8	AUDIBLE PEDESTRIAN PUSHBUTTON, SIGN & SADDLE
4	VIDEO DETECTION CAMERA CAPABLE OF REMOTE DATA COLLECTION (OR 1 GRIDSMART 360 CAMERA WITH TRAFFIC COUNT MODULE)
1	OPTICOM PRE-EMPTION SYSTEM (4 DETECTORS, 2 STROBES, 1 4-CHANNEL PHASE SELECTOR)
1	25-FT STEEL MAST ARM AND POLE
1	35-FT STEEL MAST ARM AND POLE
1	CABINET POWER SUPPLY
1	RADIO FOR WIRELESS ETHERNET
1	SERVICE CONNECTION AND METER POST

PLUS ALL MISCELLANEOUS EQUIPMENT, WIRING, CABLE AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL  
 NOTE: HAND HOLES/ PULL BOXES AND CONDUIT SHOULD BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

### PHASING DIAGRAM



### SIGNAL FACES



- NOTE:
- ALL VEHICLE INDICATIONS SHALL BE 12" L.E.D. AND SHALL BE EQUIPPED WITH TUNNEL VISORS.
  - ALL PEDESTRIAN INDICATIONS SHALL BE 16" L.E.D. AND SHALL COUNTDOWN AND BE EQUIPPED WITH SUN CAP VISORS.
  - ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE RIGID MOUNTED AND BE EQUIPPED WITH 5" NON-LOUVERED BACKPLATES.
  - PEDESTRIAN WALK AND DON'T WALK SYMBOLS SHALL BE SOLID-TYPE L.E.D. OUTLINED SYMBOLS SHALL NOT BE USED PER BTD SPECS.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
 CITY OF SOMERVILLE

## UNION SQ. UTILITY AND ROADWAY EARLY ACTION PROJECT

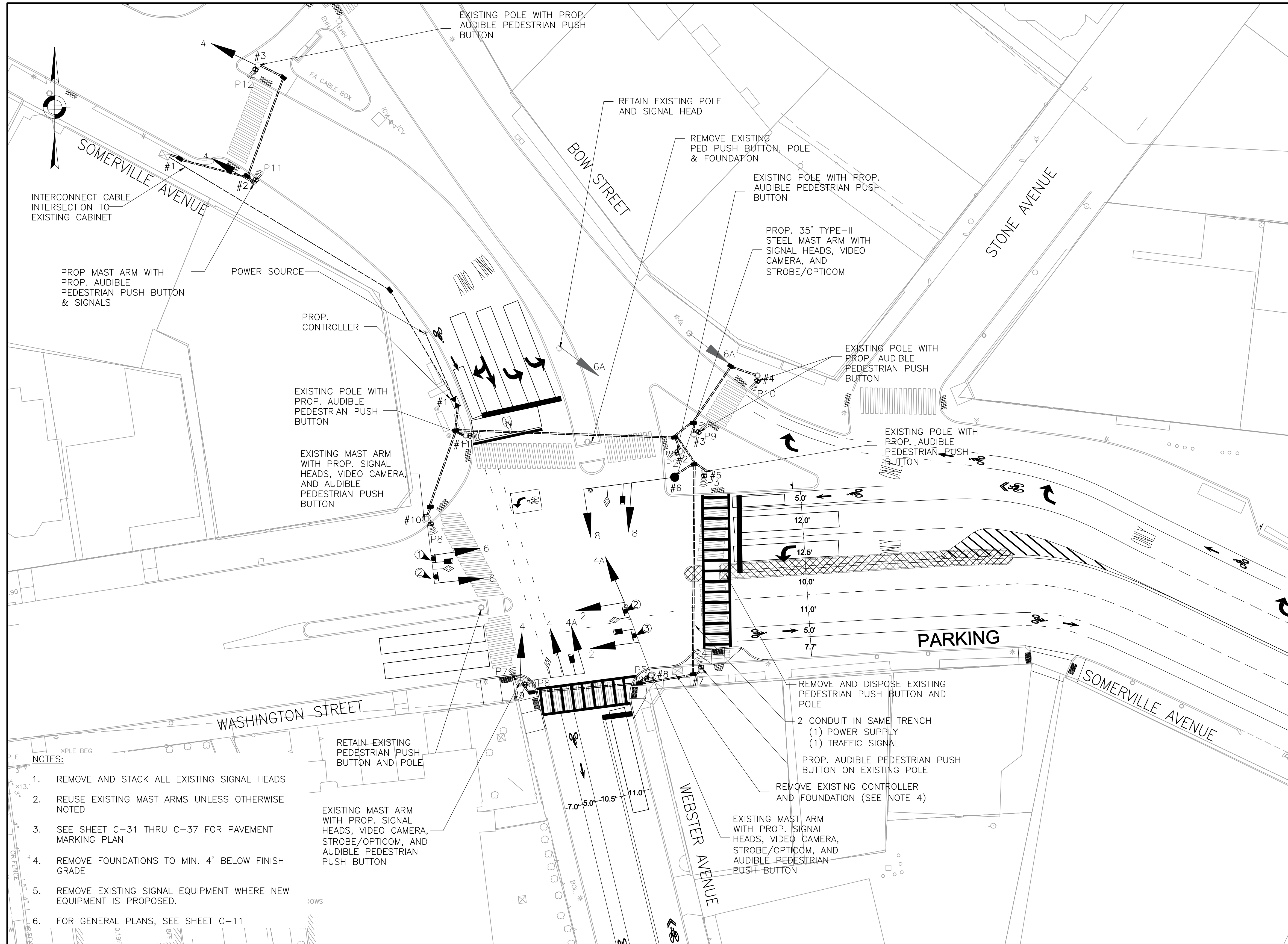
PROSPECT/SOMERVILLE/WASHINGTON  
 SIGNAL DATA

DESIGNED: KTC	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RDB		IFB#15-105-REBID	C-42
DRAWN: BLT		SCALE: 1"=20'	
CHECKED: RDB		DATE: JAN 4, 2016	

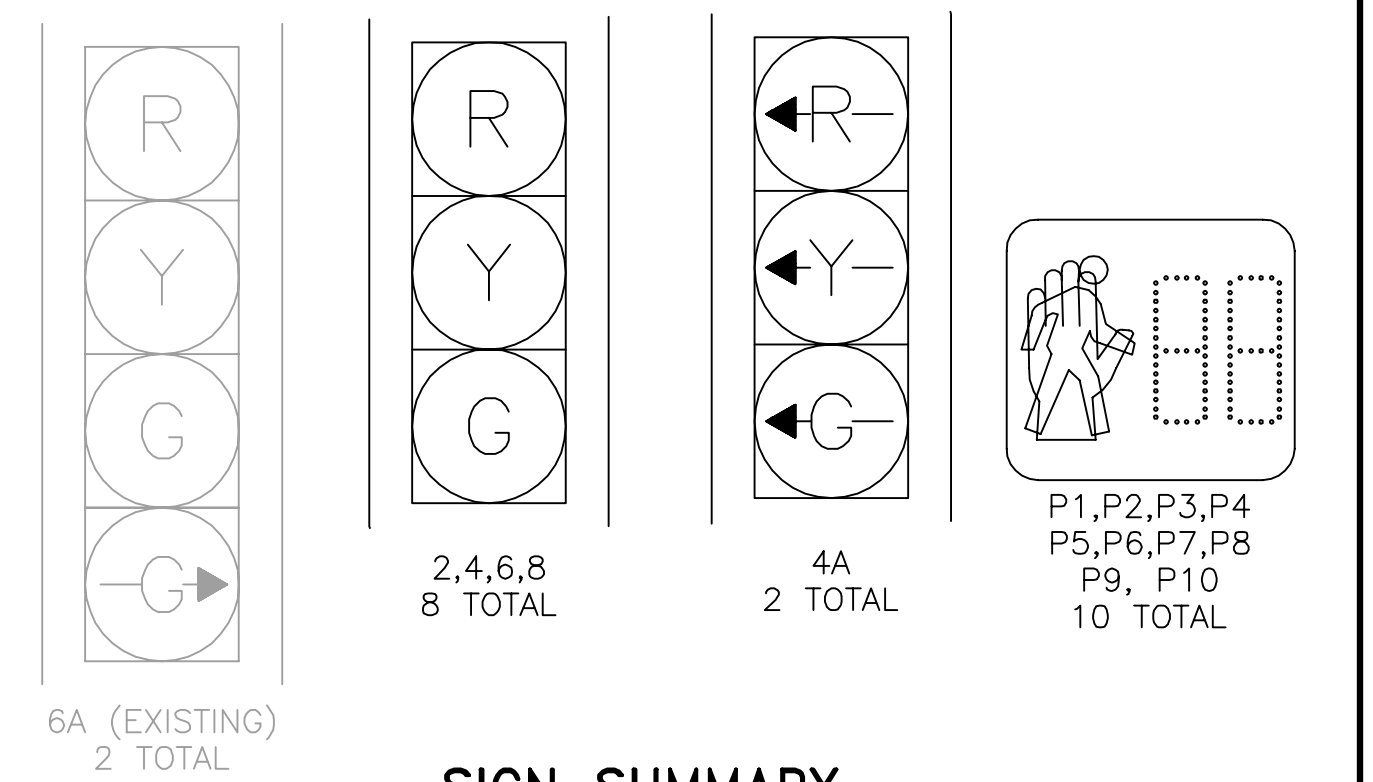
CITY OF SOMERVILLE  
 93 HIGHLAND AVENUE  
 SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





**SIGNAL FACES**

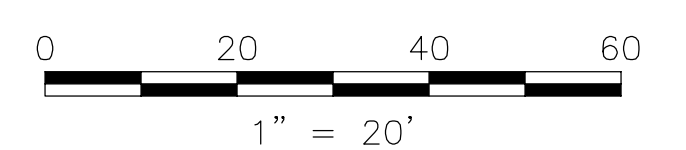


**SIGN SUMMARY**

ID	NAME	DESCRIPTION	QUANTITY
①	R3-8c		1
②	R10-12		2
③	R3-8d		1

**SYMBOL LEGEND**

- EXISTING MAST ARM (LENGTH VARIES)
- MAST ARM (LENGTH VARIES)
- SIGNAL HEAD
- AUDIBLE PEDESTRIAN PUSH BUTTON
- VIDEO DETECTION CAMERA
- OPTICOM DETECTOR
- OPTICOM STROBE
- CONTROLLER CABINET
- EXISTING CONTROLLER CABINET (TO BE REMOVED)
- DETECTION ZONE
- PULL BOX
- ELECTRIC + SIGNAL CONDUIT IN SAME TRENCH



- NOTES:**
1. REMOVE AND STACK ALL EXISTING SIGNAL HEADS
  2. REUSE EXISTING MAST ARMS UNLESS OTHERWISE NOTED
  3. SEE SHEET C-31 THRU C-37 FOR PAVEMENT MARKING PLAN
  4. REMOVE FOUNDATIONS TO MIN. 4' BELOW FINISH GRADE
  5. REMOVE EXISTING SIGNAL EQUIPMENT WHERE NEW EQUIPMENT IS PROPOSED.
  6. FOR GENERAL PLANS, SEE SHEET C-11

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT**

WEBSTER/SOMERVILLE/WASHINGTON  
SIGNAL PLAN

DESIGNED: KTC  
CHECKED: RDB  
DRAWN: BLT  
CHECKED: RDB

**PARSONS BRINCKERHOFF** Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-43**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143



### TIMING AND SEQUENCE CHART

STREET/DIRECTION/FACE	ø2 ø6			ø4			ø8		
	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL
WASHINGTON ST/EB/2	G	Y	R	R	R	R	R	R	R
SOMERVILLE AVE/SB/4+4A	R	R	R	G-GL	Y-YL	R-RL	R	R	R
SOMERVILLE AVE/WB/6	G	Y	R	R	R	R	R	R	R
SOMERVILLE AVE/WB RT/6A	R	R	R	G	Y	R	R	R	R
WEBSTER AVE/NB/8	R	R	R	R	R	R	G-GL	Y-YL	R-RL
C.W./E-W/P1-P2	W	FDW	DW	DW	DW	DW	DW	DW	DW
C.W./E-W/P5-P6	W	FDW	DW	DW	DW	DW	DW	DW	DW
C.W./N-S/P7-P8	DW	DW	DW	W	FDW	DW	DW	DW	DW
C.W./N-S/P3-P4	DW	DW	DW	DW	DW	DW	W	FDW	DW
C.W./N-S/P9-P10	DW	DW	DW	DW	DW	DW	W	FDW	DW

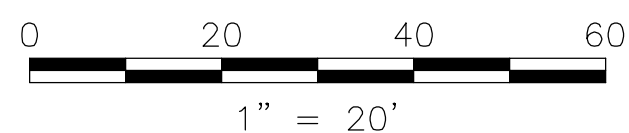
  

I N T E R V A L	MINIMUM GREEN	25		23		22	
	VEHICLE EXTENSION	3		3		3	
MAXIMUM 1 GREEN	53		52		43		
MAXIMUM 2 GREEN	57		45		45		
YELLOW CLEARANCE		3		3		3	
RED CLEARANCE			3		3		
WALK INTERVAL	9		9		9		
PED. CLEARANCE		22		20		19	
MEMORY	NON-LOCK		NON-LOCK		NON-LOCK		
RECALL (VEH./PED.)	MAX/ON		OFF/ON		OFF/ON		

CYCLE NO.	CYCLE LENGTH	OFFSET (SEC.)	PHASE SPLITS IN SECONDS			HOURS OF OPERATION
			ø2 ø6	ø4	ø8	
1	120	67	43	44	33	6:00 A.M. TO 10:00 A.M.
2	120	47	46	37	37	3:00 P.M. TO 7:00 P.M.

LOOP DETECTOR DATA										CLEARANCES								TECHNICAL NOTES
										FROM	TO							1. WIRELESS ETHERNET INTERCONNECT TO SOMERVILLE AVENUE/ PROSPECT STREET INTERSECTION AND WARREN STREET PEDESTRIAN SIGNAL.
										G	G-GL	R	-	-	W	DW		
										G	G	-	Y	-	-	-		
										G-GL	-	G-GL	G-YL	-	-	-		
										-	-	-	-	-	-	-		
										R	-	-	-	-	-	-		
										W	-	-	-	-	W	FDW		
										DW	-	-	-	-	-	DW		



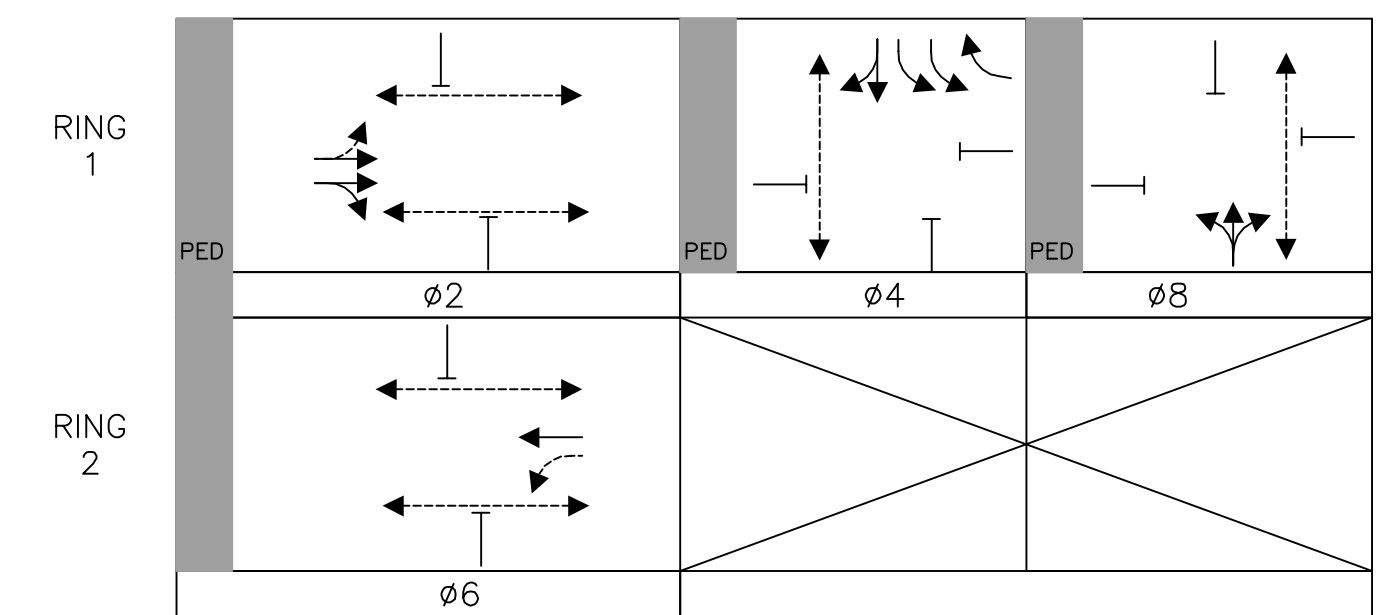
### MAJOR ITEMS REQUIRED

QUANTITY	MAJOR ITEMS REQUIRED
1	4DW CONTROLLER WITH INTERNAL RCU IN TYPE 'CB' CABINET, FOUNDATION, MMU, BUS INTERFACE UNITS, FLASHER LOAD SWITCHES
8	12"- 3 SECTION (R,Y,G) L.E.D. VEHICLE SIGNAL INDICATION
3	12"- 3 SECTION (R,Y,G LEFT) L.E.D. VEHICLE SIGNAL INDICATION
10	16"- PEDESTRIAN L.E.D. SIGNAL COUNTDOWN INDICATION
10	AUDIBLE PEDESTRIAN PUSHBUTTON, SIGN & SADDLE
4	VIDEO DETECTION CAMERA CAPABLE OF REMOTE DATA COLLECTION (OR 1 GRIDSMART 360 CAMERA WITH TRAFFIC COUNT MODULE)
1	OPTICOM PRE-EMPTION SYSTEM (4 DETECTORS, 2 STROBES, 1 4-CHANNEL PHASE SELECTOR)
1	35-FT STEEL MAST ARM AND POLE
1	CABINET POWER SUPPLY
1	RADIO FOR WIRELESS ETHERNET
1	SERVICE CONNECTION AND METER POST

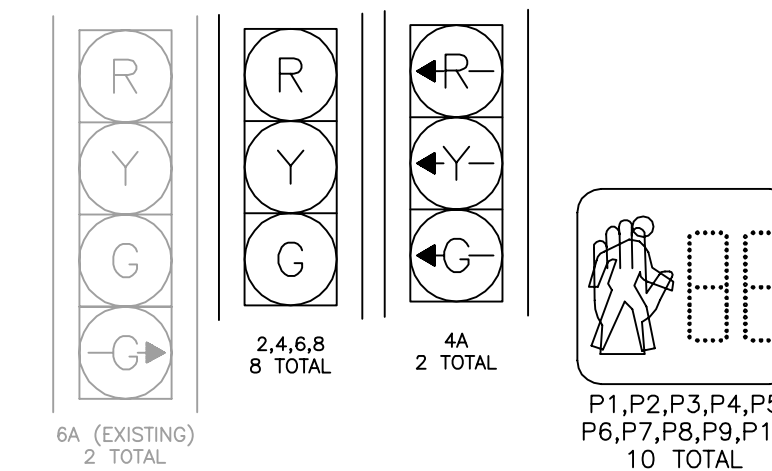
PLUS ALL MISCELLANEOUS EQUIPMENT, WIRING, CABLE AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL

NOTE: HAND HOLES/ PULL BOXES AND CONDUIT SHOULD BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

### PHASING DIAGRAM



### SIGNAL FACES



- NOTE:
- ALL VEHICLE INDICATIONS SHALL BE 12" L.E.D. AND SHALL BE EQUIPPED WITH TUNNEL VISORS.
  - ALL PEDESTRIAN INDICATIONS SHALL BE 16" L.E.D. AND SHALL COUNTDOWN AND BE EQUIPPED WITH SUN CAP VISORS.
  - ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE RIGID MOUNTED AND BE EQUIPPED WITH 5" NON-LOUVERED BACKPLATES.
  - PEDESTRIAN WALK AND DON'T WALK SYMBOLS SHALL BE SOLID-TYPE L.E.D. OUTLINED SYMBOLS SHALL NOT BE USED PER BTD SPECS.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
WEBSTER/SOMERVILLE/WASHINGTON  
SIGNAL DATA

DESIGNED: KTC  
CHECKED: RDB  
DRAWN: BLT  
CHECKED: RDB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-44**

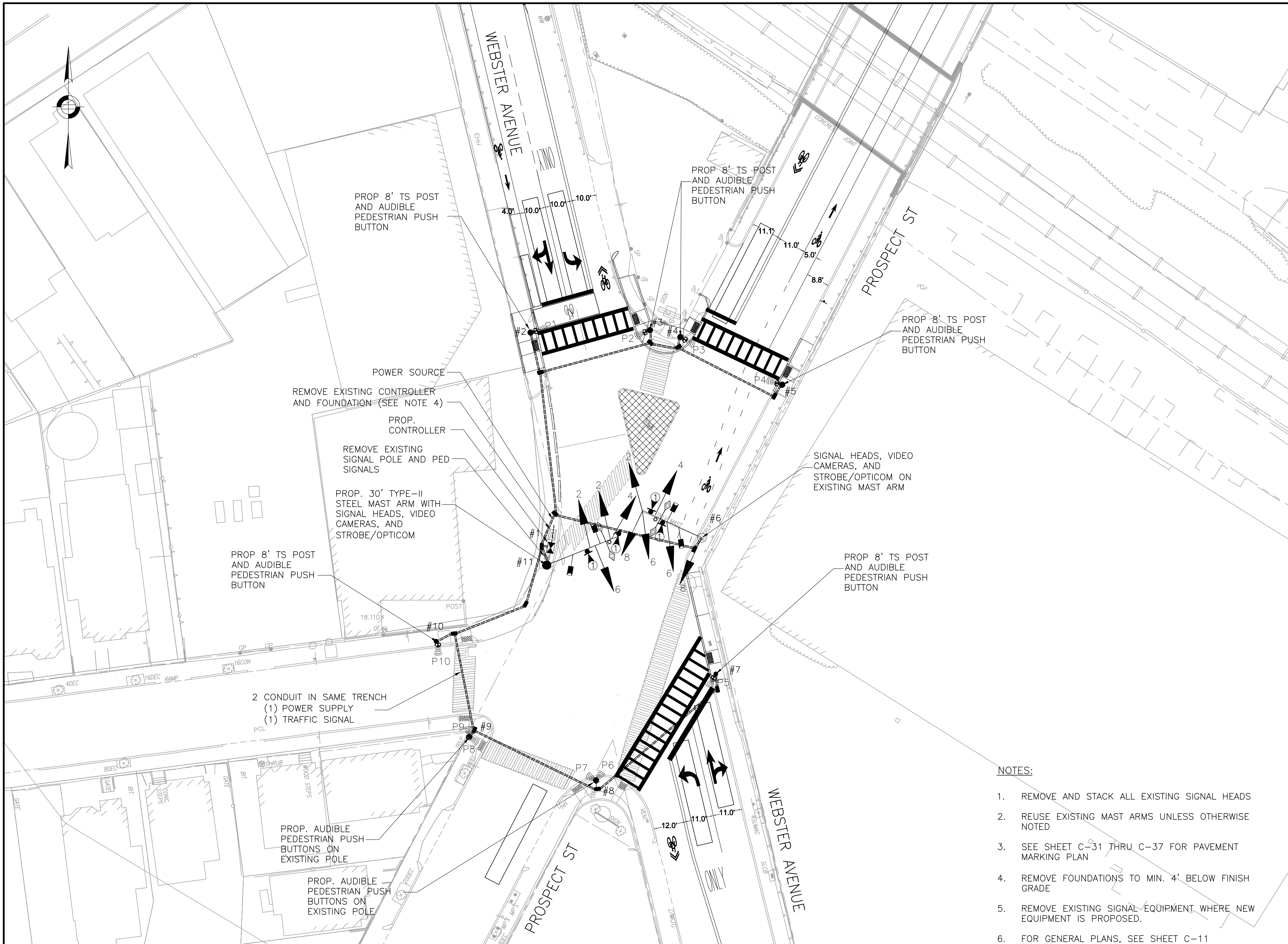
CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY

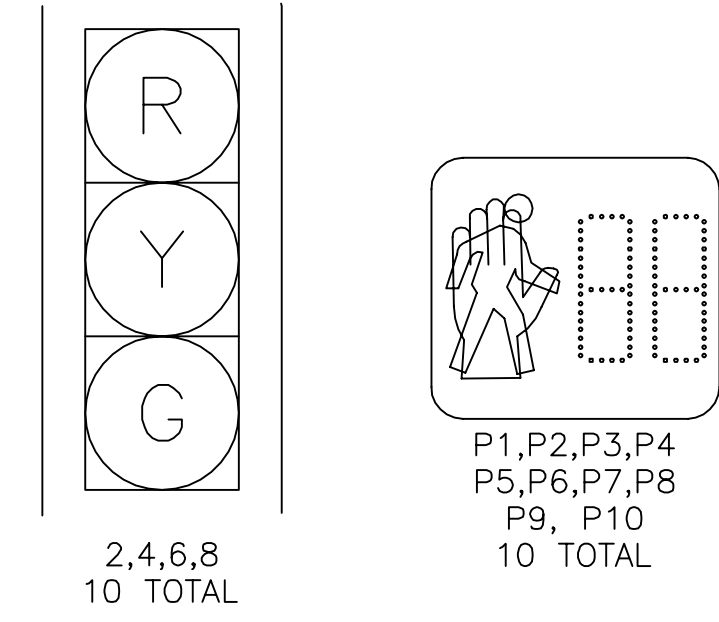








**SIGNAL FACES**



**SIGN SUMMARY**

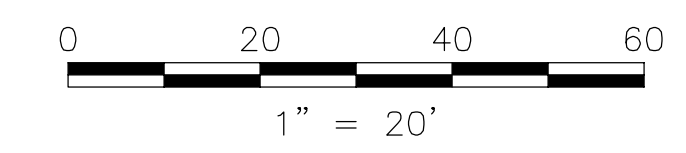
ID	NAME	DESCRIPTION	QUANTITY
①	R10-12	LEFT TURN YIELD ON GREEN	4

**SYMBOL LEGEND**

- — EXISTING MAST ARM (LENGTH VARIES)
- — MAST ARM (LENGTH VARIES)
- ▶ — SIGNAL HEAD
- Ⓟ — AUDIBLE PEDESTRIAN PUSH BUTTON
- — VIDEO DETECTION CAMERA
- ◇ — OPTICOM DETECTOR
- — OPTICOM STROBE
- ⊠ — CONTROLLER CABINET
- ⊞ — EXISTING CONTROLLER CABINET (TO BE REMOVED)
- — DETECTION ZONE
- — PULL BOX
- — ELECTRIC + SIGNAL CONDUIT IN SAME TRENCH

**NOTES:**

1. REMOVE AND STACK ALL EXISTING SIGNAL HEADS
2. REUSE EXISTING MAST ARMS UNLESS OTHERWISE NOTED
3. SEE SHEET C-31 THRU C-37 FOR PAVEMENT MARKING PLAN
4. REMOVE FOUNDATIONS TO MIN. 4' BELOW FINISH GRADE
5. REMOVE EXISTING SIGNAL EQUIPMENT WHERE NEW EQUIPMENT IS PROPOSED.
6. FOR GENERAL PLANS, SEE SHEET C-11



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY

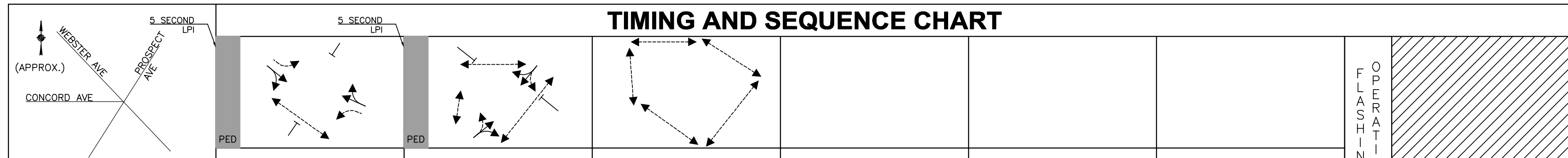
COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
PROSPECT/WEBSTER  
SIGNAL PLAN**

DESIGNED: KTC CHECKED: RDB	<b>PARSONS BRINCKERHOFF</b> Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
DRAWN: BLT CHECKED: RDB		<b>C-46</b>
IFB#15-105-REBID		SCALE: 1"=20' DATE: JAN 4, 2016
CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		



### TIMING AND SEQUENCE CHART



STREET/DIRECTION/FACE	Ø2 Ø6			Ø4 Ø8			Ø9			FLASHING
	GRN	CL	CL	GRN	CL	CL	GRN	CL	CL	
WEBSTER AVE/SB/2	G	Y	R	R	R	R	R	R	R	FY
WEBSTER AVE/NB/6	G	Y	R	R	R	R	R	R	R	FY
PROSPECT ST/WB/4	R	R	R	G	Y	R	R	R	R	FR
PROSPECT ST/EB/8	R	R	R	G	Y	R	R	R	R	FR
C.W./E-W/P1-P2	DW	DW	DW	W	FDW	DW	W	FDW	DW	OFF
C.W./N-S/P5-P6	DW	DW	DW	W	FDW	DW	W	FDW	DW	OFF
C.W./E-W/P7-P8	W	FDW	DW	DW	DW	DW	W	FDW	DW	OFF
C.W./E-W/P9-P10	DW	DW	DW	W	FDW	DW	W	FDW	DW	OFF
C.W./E-W/P3-P4	DW	DW	DW	DW	DW	DW	W	FDW	DW	OFF

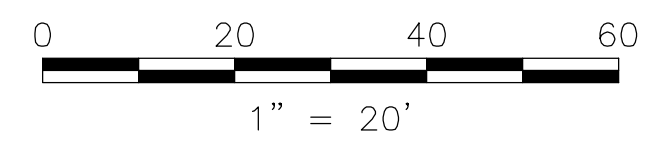
  

I N T E R V A L	MINIMUM GREEN	10		10						
	VEHICLE EXTENSION	3		3						
MAXIMUM 1 GREEN	53		69							
MAXIMUM 2 GREEN	44		78							
YELLOW CLEARANCE		3		3						
RED CLEARANCE			4		4					
WALK INTERVAL	9		9		9					
PED. CLEARANCE		12		16						
MEMORY		NON-LOCK		NON-LOCK						
RECALL (VEH./PED.)		MAX/OFF		OFF/OFF						

CYCLE NO.	CYCLE LENGTH	OFFSET (SEC.)	PHASE SPLITS IN SECONDS			HOURS OF OPERATION
			Ø2 Ø6	Ø4 Ø8	Ø9	
1	120	0	42	55	23	6:00 A.M. TO 10:00 A.M.
2	120	0	35	62	23	3:00 P.M. TO 7:00 P.M.

LOOP DETECTOR DATA									CLEARANCES								TECHNICAL NOTES		
IDENT.	QTY.	SIZE	SPLICE	TURNS	MODE	ØCALL	ØEXT.	CHNL.	FROM	TO								1. PHASE 9 EXCLUSIVE PEDESTRIAN PHASE ONLY CALLED BY P3-P4 ACTIVATION	2. WIRELESS ETHERNET INTERCONNECT TO SOMERVILLE AVENUE/ WEBSTER AVENUE INTERSECTION
									G	G-GL	R	-	-	W	DW				
									G	G	-	Y	-	-	-				
									G-GL	-	-	-	-	-	-				
									-	-	-	-	-	-	-				
									-	-	-	-	-	-	-				
									W	-	-	-	-	W	FDW				
									DW	-	-	-	-	-	DW				



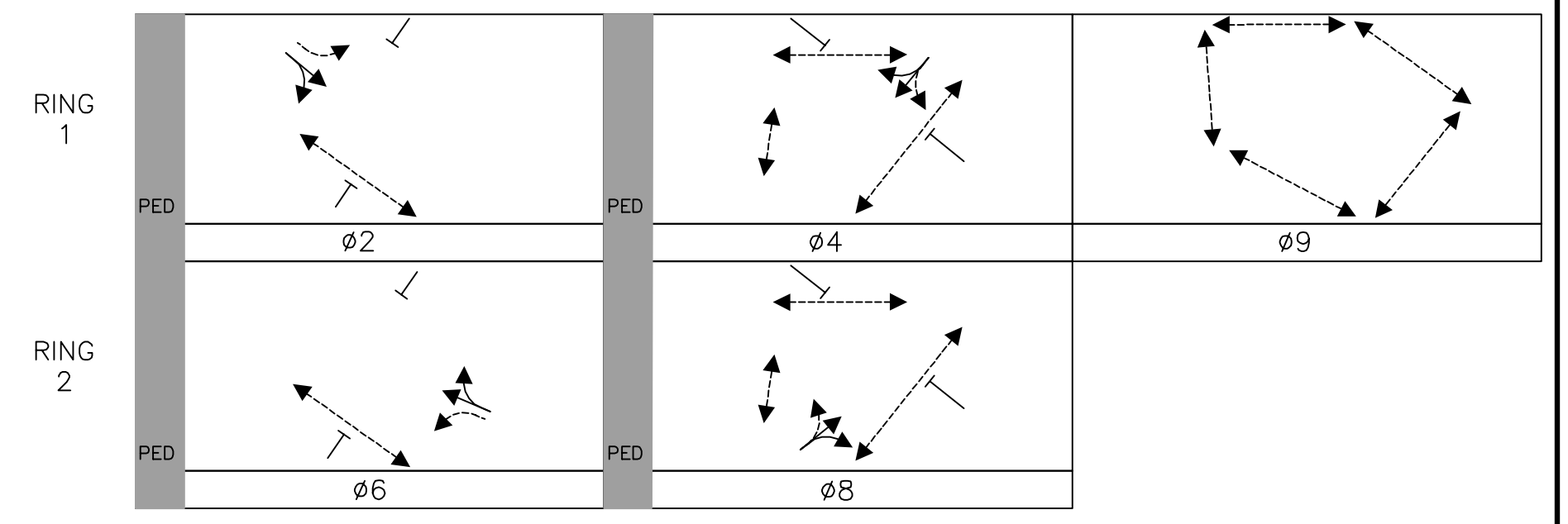
### MAJOR ITEMS REQUIRED

QUANTITY	MAJOR ITEMS REQUIRED
1	4DW CONTROLLER WITH INTERNAL RCU IN TYPE 'CB' CABINET, FOUNDATION, MMU, BUS INTERFACE UNITS, FLASHER LOAD SWITCHES
10	12"- 3 SECTION (R,Y,G) L.E.D. VEHICLE SIGNAL INDICATION
6	8' SIGNAL POST, BASE, PEDESTAL & FOUNDATION
10	16"- PEDESTRIAN L.E.D. SIGNAL COUNTDOWN INDICATION
10	AUDIBLE PEDESTRIAN PUSHBUTTON, SIGN & SADDLE
4	VIDEO DETECTION CAMERA CAPABLE OF REMOTE DATA COLLECTION (OR 1 GRIDSMART 360 CAMERA WITH TRAFFIC COUNT MODULE)
1	OPTICOM PRE-EMPTION SYSTEM (4 DETECTORS, 2 STROBES, 1 4-CHANNEL PHASE SELECTOR)
1	30-FT STEEL MAST ARM AND POLE
1	CABINET POWER SUPPLY
1	SERVICE CONNECTION AND METER POST

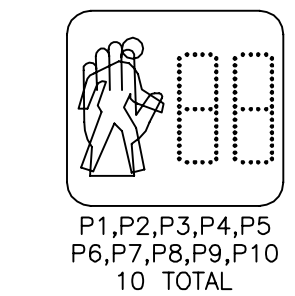
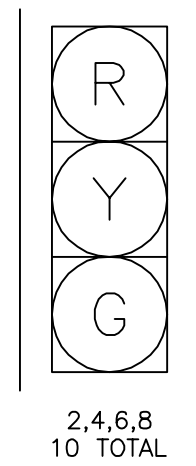
PLUS ALL MISCELLANEOUS EQUIPMENT, WIRING, CABLE AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL

NOTE: HAND HOLES/ PULL BOXES AND CONDUIT SHOULD BE PAID FOR UNDER THEIR RESPECTIVE ITEMS.

### PHASING DIAGRAM



### SIGNAL FACES



- NOTE:
- ALL VEHICLE INDICATIONS SHALL BE 12" L.E.D. AND SHALL BE EQUIPPED WITH TUNNEL VISORS.
  - ALL PEDESTRIAN INDICATIONS SHALL BE 16" L.E.D. AND SHALL COUNTDOWN AND BE EQUIPPED WITH SUN CAP VISORS.
  - ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE RIGID MOUNTED AND BE EQUIPPED WITH 5" NON-LOUVERED BACKPLATES.
  - PEDESTRIAN WALK AND DON'T WALK SYMBOLS SHALL BE SOLID-TYPE L.E.D. OUTLINED SYMBOLS SHALL NOT BE USED PER BTD SPECS.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

## UNION SQ. UTILITY AND ROADWAY EARLY ACTION PROJECT PROSPECT / WEBSTER SIGNAL DATA

DESIGNED: KTC  
CHECKED: RDB  
DRAWN: BLT  
CHECKED: RDB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-47**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY



IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		UNIT AREA SF	TEXT	TEXT DIMENSIONS		NUMBER OF SIGNS REQUIRED	COLOR	POST SIZE AND NUMBER REQUIRED PER SIGN		AREA IN SQUARE FEET
	WIDTH	HEIGHT			UC	NUMERAL					
D11-1d	24"	36"	6		3C 3C	N/A	1	GREEN/WHITE	P-2	1	6.0
R1-1	30"	30"	6.25		10C	N/A	2	RED/WHITE	ON BACK OF SP-2 AND R5-2 SIGNS		12.5
R1-1a	24"	24"	4.0		8C	N/A	2	RED/WHITE	P-2	1	8.0
R3-1	24"	24"	4.0		N/A	N/A	2	RED/WHITE/BLACK	P-2	1	8.0
R3-5L	30"	36"	7.5		6D	N/A	1	BLACK/WHITE	P-2	1	7.5
R3-5R	30"	36"	7.5		6D	N/A	1	BLACK/WHITE	P-2	1	7.5
R3-7R	30"	30"	6.25		4C 5C 4C	N/A	1	BLACK/WHITE	P-2	1	6.25
R3-7Ra	30"	36"	7.5		4C 5C 4C 4C	N/A	2	BLACK/WHITE	MOUNT ON EXISTING UTILITY POLE		15.0
R3-8	36"	30"	7.5		4D	N/A	4	BLACK/WHITE	P-2	1	30.0
R3-8b	48"	30"	10		4D	N/A	1	BLACK/WHITE	P-2	1	10.0
R3-8c	36"	30"	7.5		4D	N/A	1	BLACK/WHITE	P-2	1	7.5
R3-17	30"	24"	5.0		5C	N/A	3	BLACK/WHITE	P-2	1	15.0
R3-17b	30"	12"	2.5		5D	N/A	2	BLACK/WHITE	MOUNT BELOW R3-17		5.0
R3-17b	30"	12"	2.5		5D	N/A	1	BLACK/WHITE	MOUNT BELOW R3-17		2.5
R4-4a	30"	18"	3.75		4C 4C 4C	N/A	1	BLACK/WHITE	P-2	1	3.75
R4-7	24"	30"	5.0		N/A	N/A	3	BLACK/WHITE	P-2	1	15.0
R5-1	30"	30"	6.25		4D 4D	N/A	6	RED/WHITE	P-2	1	37.5
R5-1P	24"	18"	3.0		4D	N/A	4	BLACK/WHITE	MOUNT BELOW R5-1		12.0
R6-1L	36"	12"	3.0		4D	N/A	1	BLACK/WHITE	MOUNT ABOVE R1-1		3.0
R6-14	36"	12"	3.0		4D	N/A	1	BLACK/WHITE	MOUNT ABOVE R1-1		3.0

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		UNIT AREA SF	TEXT	TEXT DIMENSIONS		NUMBER OF SIGNS REQUIRED	COLOR	POST SIZE AND NUMBER REQUIRED		AREA IN SQUARE FEET
	WIDTH	HEIGHT			UC	NUMERAL					
R7-1L	12"	18"	1.5		3C 2C 2C	N/A	1	RED/WHITE	P-2	1	1.5
R7-1R	12"	18"	1.5		3C 2C 2C	N/A	3	RED/WHITE	MOUNT BELOW R7-108L		4.5
R7-1aR	12"	18"	1.5		3C 2C 2C	N/A	1	RED/WHITE	P-2	1	1.5
R7-2bR	12"	18"	1.5		1C 1C 1C	N/A	1	RED/WHITE	P-2	1	1.5
R7-2bL	12"	18"	1.5		1C 1C 1C	N/A	1	RED/WHITE	MOUNT BELOW R7-1aR		1.5
R7-2bLR	12"	18"	1.5		1C 1C 1C	N/A	1	RED/WHITE	P-2	1	1.5
R7-107A	12"	18"	1.5		TBD WITH MBTA		1	RED/WHITE/BLACK	P-2	1	1.5
R7-107B	12"	18"	1.5		TBD WITH MBTA		1	RED/WHITE/BLACK	P-2	1	1.5
R7-108	12"	18"	1.5		2B 2B 2B	4B	4	GREEN/WHITE	P-2	1	6.0
R7-108R	12"	18"	1.5		2B 2B 2B	4B	3	GREEN/WHITE	P-2	1	4.5
R7-108L	12"	18"	1.5		2B 2B 2B	4B	3	GREEN/WHITE	P-2	1	4.5
R10-6	24"	36"	6.0		5D 3D 5D	N/A	5	BLACK/WHITE	P-2	1	30.0
R10-7	24"	30"	5.0		6C 6C 4B	N/A	3	BLACK/WHITE	P-2	1	15.0
R10-15a	30"	36"	7.5		N/A	N/A	5	BLACK/WHITE/ RED/GREEN	P-2	1	37.5
W11-2	30"	30"	6.25		N/A	N/A	5	YELLOW/BLACK	P-2	1	31.25
W16-7P	24"	12"	2		N/A	N/A	5	YELLOW/BLACK	MOUNT BELOW W11-2		10.0
OM1-1	18"	18"	2.25		N/A	N/A	3	YELLOW	MOUNT BELOW R4-7		6.75
SP-1	30"	24"	5.0		4C 4C 4C	N/A	4	BLACK/WHITE	P-2	1	20.0
SP-2	36"	36"	9		4C 4C 4C	N/A	2	BLACK/WHITE	P-2	1	18.0

TOTAL AREA (SQUARE FEET) 413.5

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
TRAFFIC SIGN SUMMARY

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: KTC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

SHEET

C-48

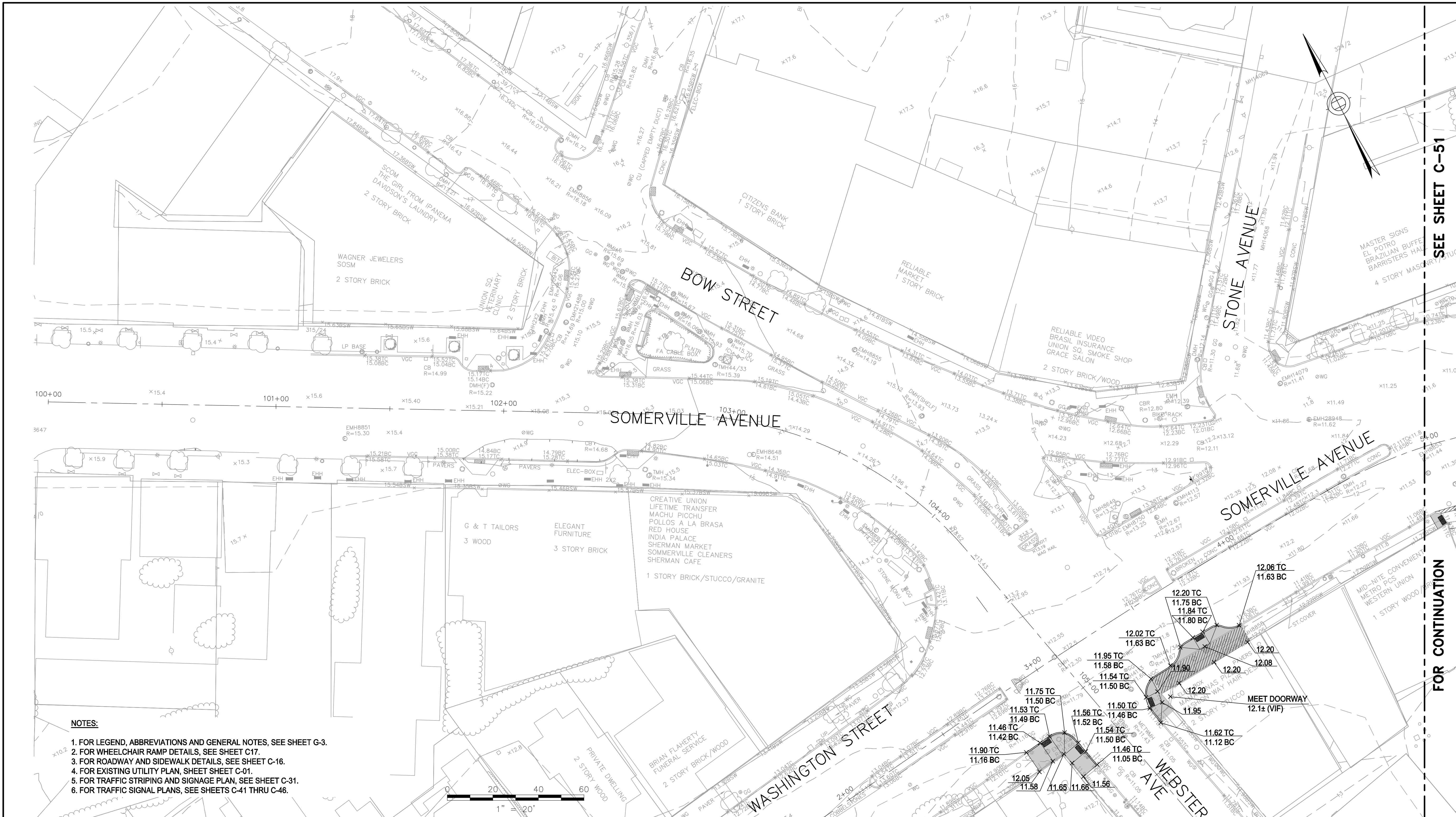
IFB#15-105-REBID

SCALE:  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C17.
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-01.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-31.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.

SEE SHEET C-51

FOR CONTINUATION

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



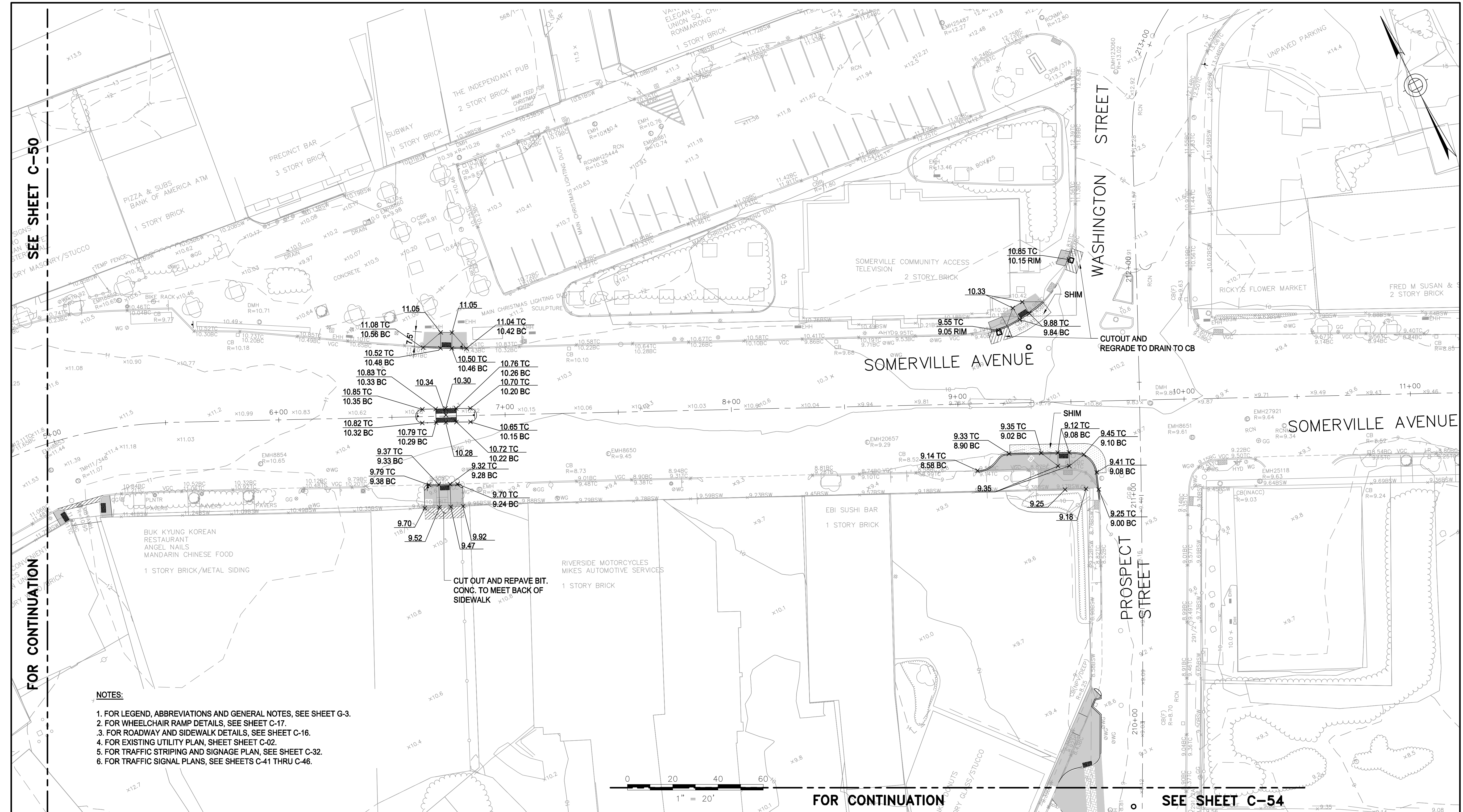
COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GRADING PLANS  
SHEET 1 OF 4**

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b>	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RJB			<b>C-50</b>
DRAWN: LAC	IFB#15-105-REBID		SCALE: 1"=20'
CHECKED: RJB			DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

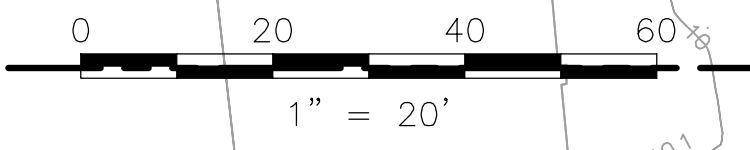




SEE SHEET C-50

FOR CONTINUATION

- NOTES:**
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17.
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-02.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-32.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.



FOR CONTINUATION

SEE SHEET C-54

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY

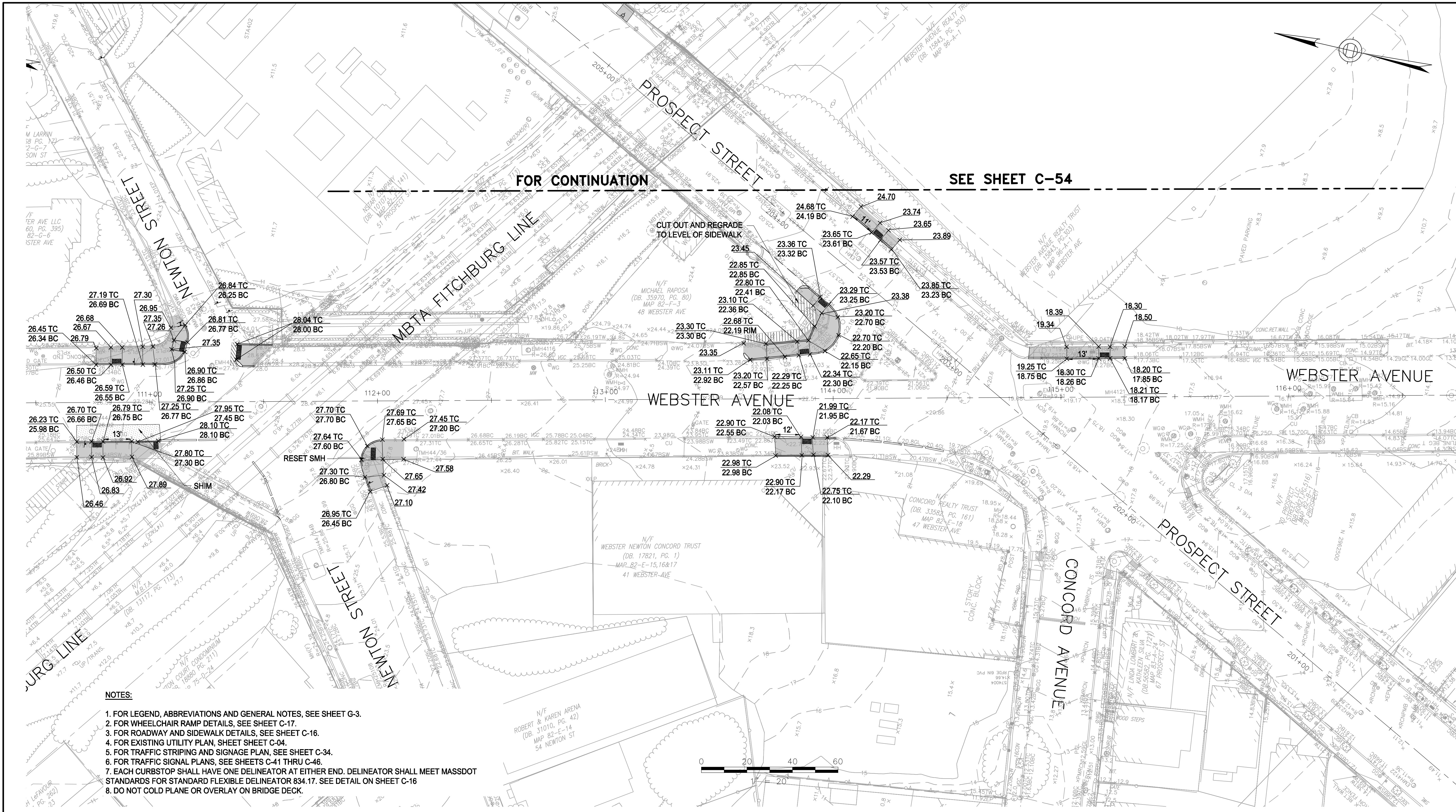


COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GRADING PLANS  
SHEET 2 OF 4**

DESIGNED: LAC	<b>PARSONS BRINCKERHOFF</b> Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET
CHECKED: RJB		<b>C-51</b>
DRAWN: LAC	IFB#15-105-REBID	SCALE: 1"=20'
CHECKED: RJB		DATE: JAN 4, 2016
CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		





**NOTES:**

1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17.
3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
4. FOR EXISTING UTILITY PLAN, SHEET SHEET C-04.
5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-34.
6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.
7. EACH CURBSTOP SHALL HAVE ONE DELINEATOR AT EITHER END. DELINEATOR SHALL MEET MASSDOT STANDARDS FOR STANDARD FLEXIBLE DELINEATOR 834.17. SEE DETAIL ON SHEET C-16
8. DO NOT COLD PLANE OR OVERLAY ON BRIDGE DECK.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



*Rachel J. Burckardt*  
7/1/16

COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GRADING PLANS  
SHEET 3 OF 4**

DESIGNED: LAC  
CHECKED: RUB  
DRAWN: LAC  
CHECKED: RUB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

SHEET  
**C-53**

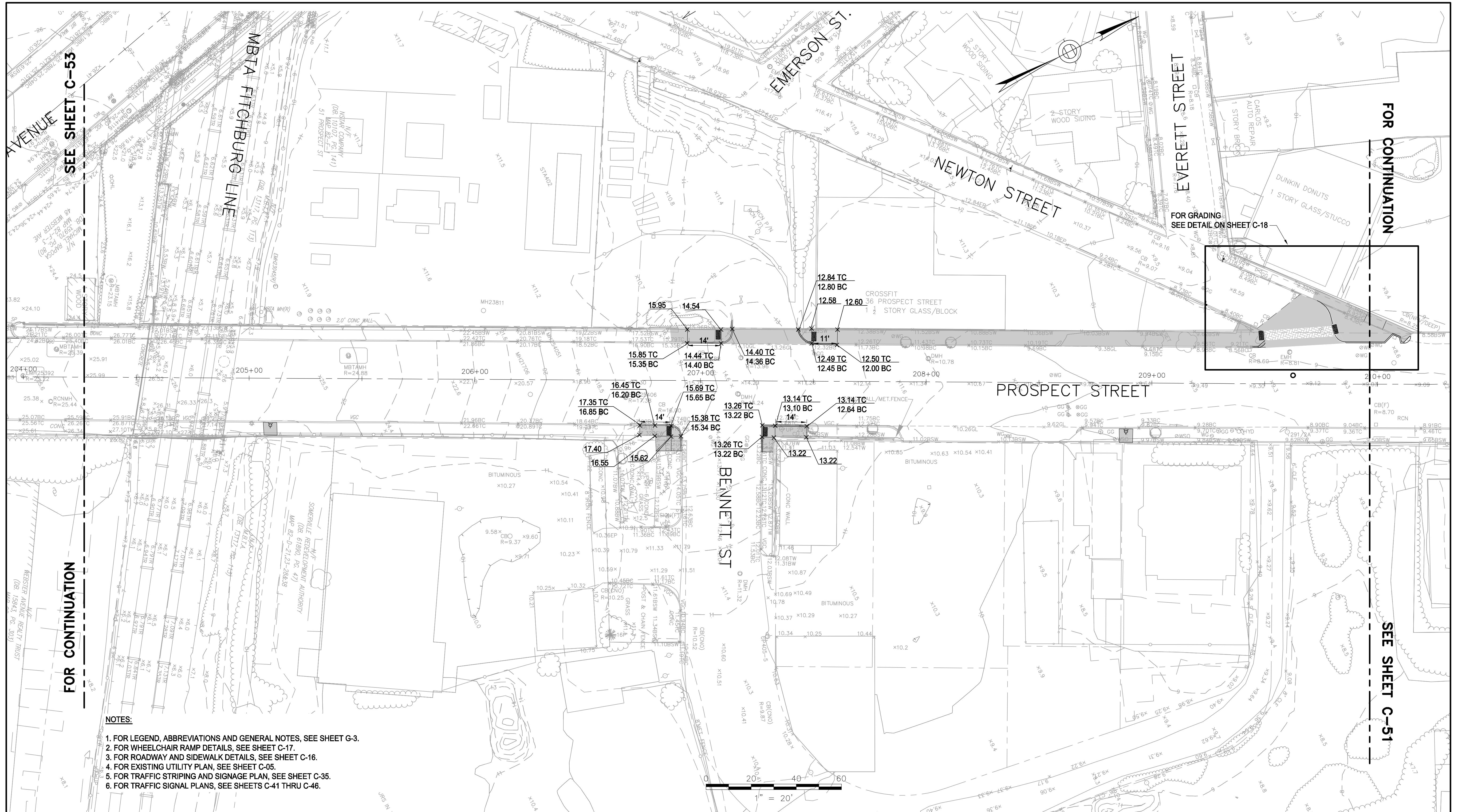
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





SEE SHEET C-53

FOR CONTINUATION

FOR CONTINUATION

SEE SHEET C-51

- NOTES:
1. FOR LEGEND, ABBREVIATIONS AND GENERAL NOTES, SEE SHEET G-3.
  2. FOR WHEELCHAIR RAMP DETAILS, SEE SHEET C-17.
  3. FOR ROADWAY AND SIDEWALK DETAILS, SEE SHEET C-16.
  4. FOR EXISTING UTILITY PLAN, SEE SHEET C-05.
  5. FOR TRAFFIC STRIPING AND SIGNAGE PLAN, SEE SHEET C-35.
  6. FOR TRAFFIC SIGNAL PLANS, SEE SHEETS C-41 THRU C-46.

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
GRADING PLANS  
SHEET 4 OF 4

DESIGNED: LAC  
CHECKED: RUB  
DRAWN: LAC  
CHECKED: RUB

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SHEET  
**C-54**

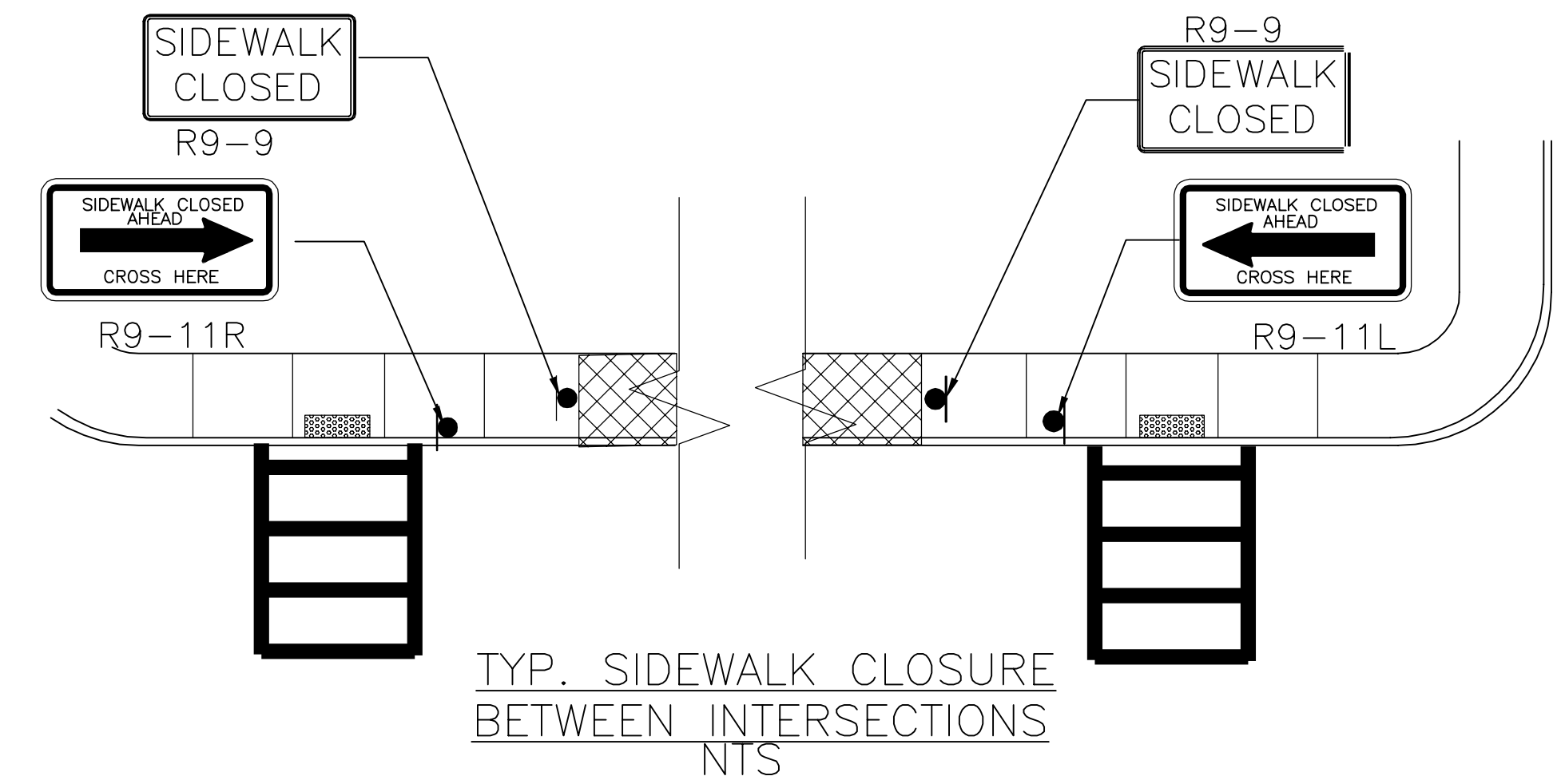
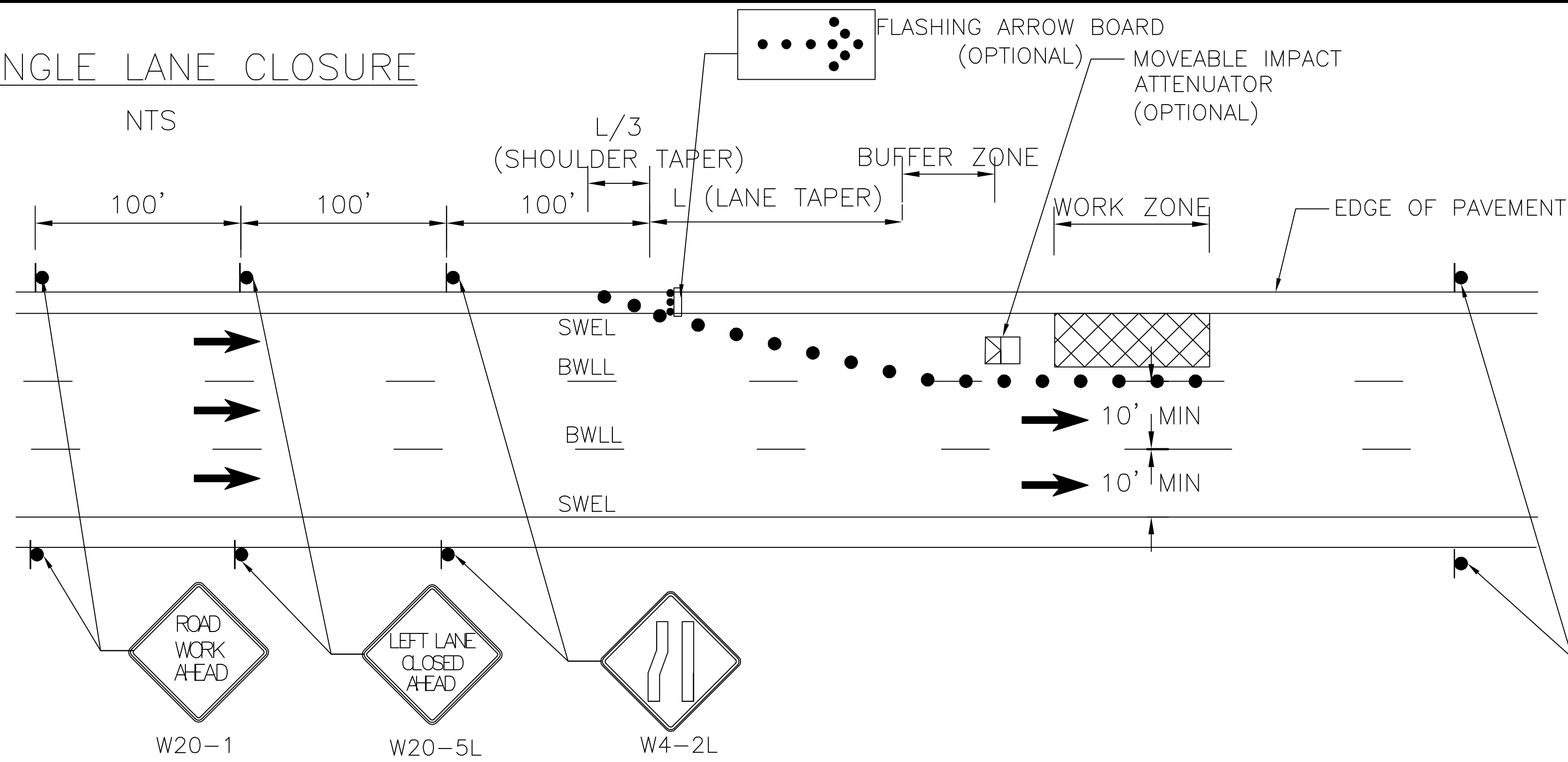
IFB#15-105-REBID  
SCALE: 1"=20'  
DATE: JAN 4, 2016

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY



### SINGLE LANE CLOSURE



**KEY**

- ▲ 36" REFLECTORIZED CONE
- REFLECTORIZED DRUM
- SLU (FLASHING ARROW)
- WORK ZONE
- MOVEABLE IMPACT ATTENUATOR
- WARNING SIGN
- TRAFFIC FLOW

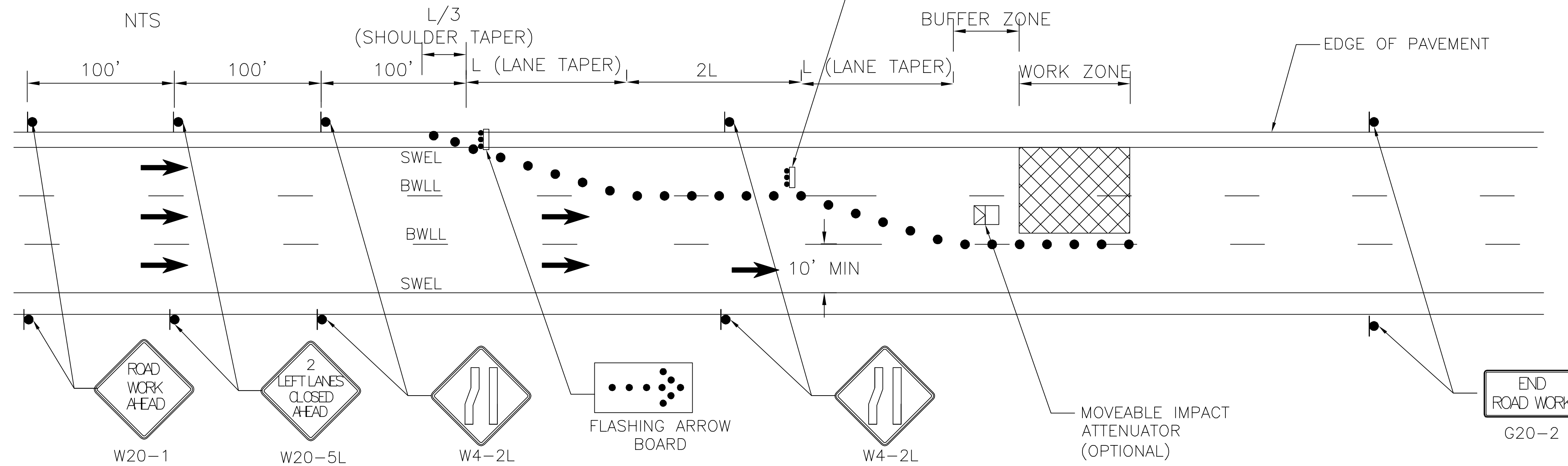
POSTED SPEED LIMIT	25 MPH
$L = (WS^2)/60$	125 FT
MERGING TAPER = L	125 FT
SHIFTING TAPER = (1/2)L	63 FT
SHOULDER TAPER = (1/3)L	42 FT

BUFFER SPACE*	
20 MPH POSTED SPEED	115 FT
25 MPH POSTED SPEED	155 FT
30 MPH POSTED SPEED	200 FT

\*STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

- TRAFFIC CONTROL GENERAL NOTES**
- CONTRACTOR SHALL SUBMIT TRAFFIC MANAGEMENT PLANS TO THE CITY OF SOMERVILLE FOR APPROVAL
  - ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AS AMENDED.
  - ALL DRUMS SHALL BE SET AT 20' ON CENTER MAX, ON LOCAL ROADWAY
  - ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORKING HOURS, TO MAINTAIN SUCH ACCESS.
  - EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORK HOURS
  - 10' MINIMUM LANE WIDTHS SHALL BE MAINTAINED AT ANY TIME DURING CONSTRUCTION.
  - NON-ESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
  - ALL TEMPORARY MARKINGS SHALL BE WATER-BORNE PAINT OR APPROVED TAPE.
  - POLICE DETAILS SHALL BE COORDINATED WITH THE CITY OF SOMERVILLE
  - REVERSE TAPERS AND USE RIGHT LANE SIGNAGE FOR RIGHT LANE CLOSURES.

### DOUBLE LANE CLOSURE



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
CONSTRUCTION PHASING  
TYPICAL LANE CLOSURES**

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: BLT  
CHECKED: RJB

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75 Arlington St. Boston, MA 02116  
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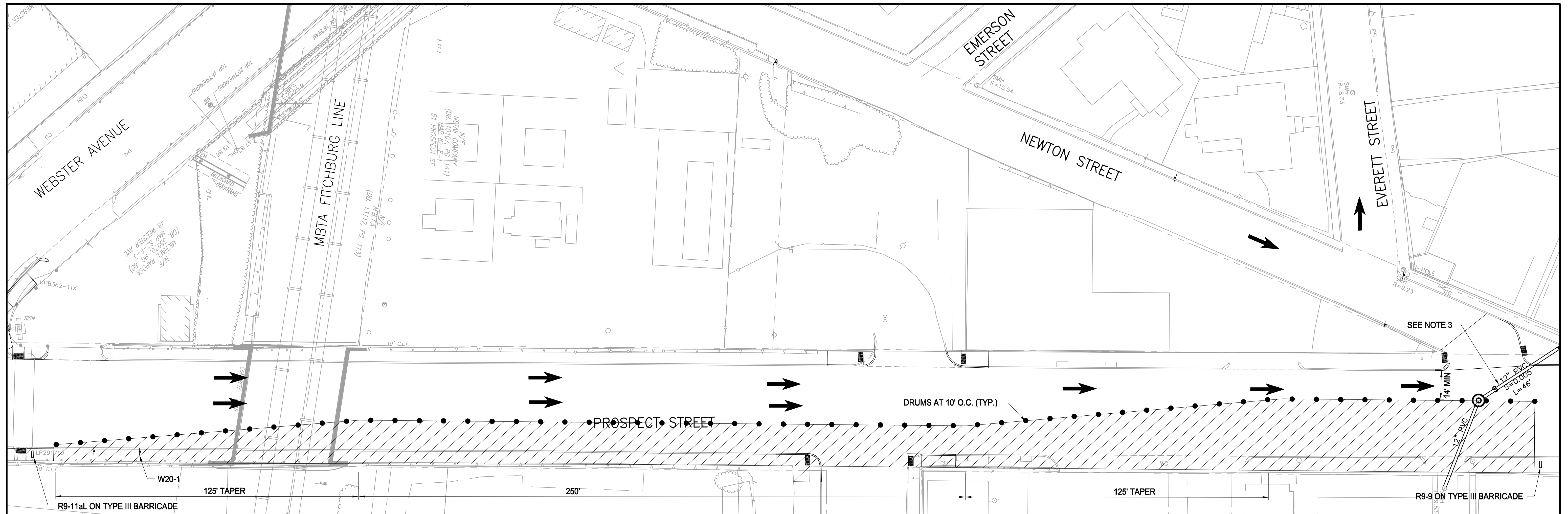
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-60**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143





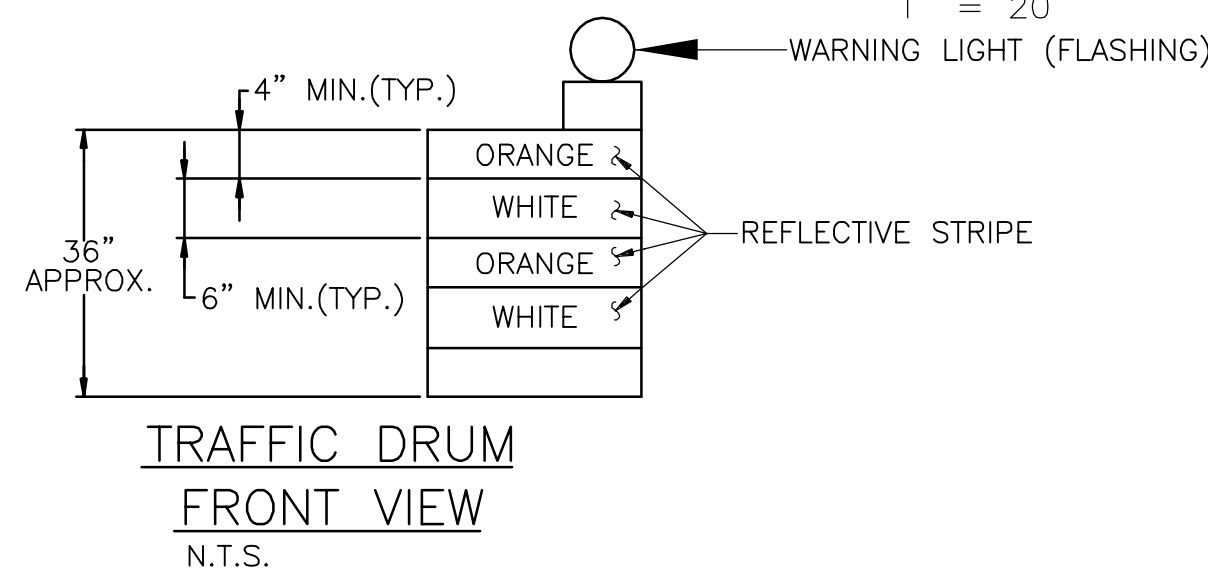
**NOTES:**

1. LANE CLOSURE WORK HOURS: 7 AM TO 7 PM
2. A MINIMUM OF ONE 14' TRAVEL LANE MUST BE MAINTAINED AT ALL TIMES.
3. FOR CONNECTION TO EXISTING SEWER, NEWTON STREET WILL BE CLOSED AT EVERETT STREET DURING THE WORK HOURS OF: 7 AM TO 5 PM. FOR ADDITIONAL SIGNAGE SEE SHEET C-64.

**LEGEND:**

WORK ZONE      ● BARRELL

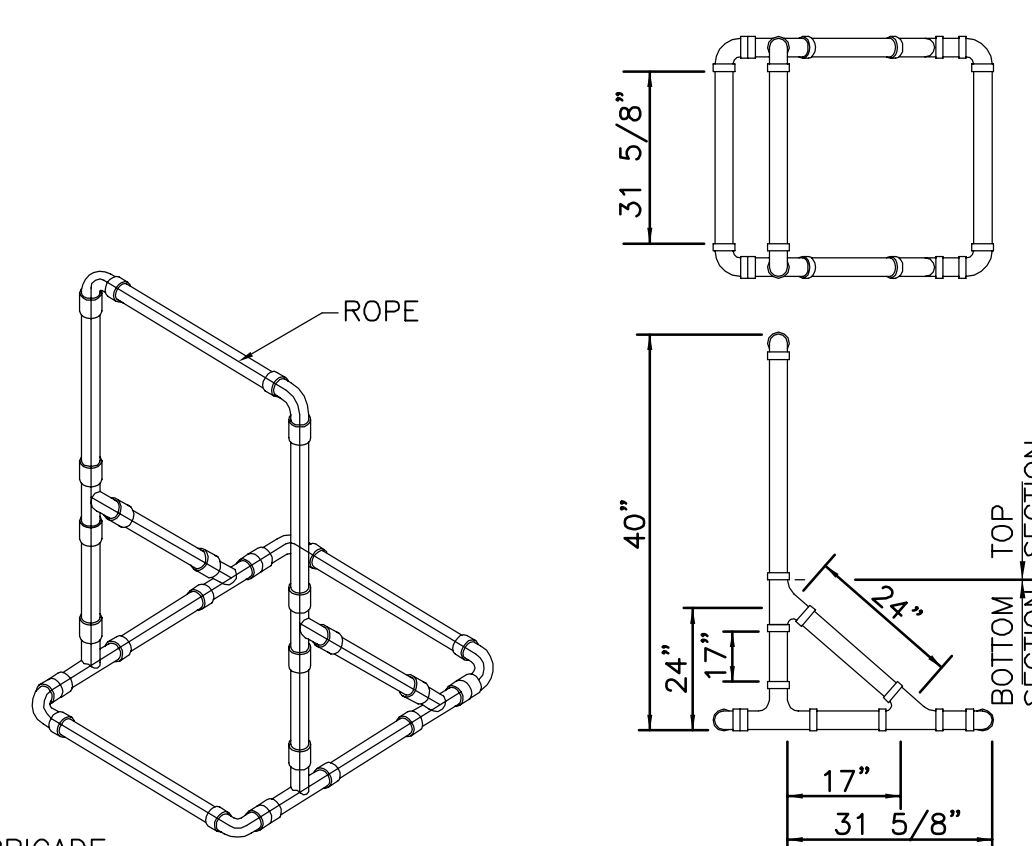
IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
R9-9	12"	24"	SIDWALK CLOSED	BLACK ON WHITE
R9-11R	12"	24"	SIDWALK CLOSED AHEAD → CROSS HERE	BLACK ON WHITE
R9-11gL	12"	24"	SIDWALK CLOSED ← CROSS HERE	BLACK ON WHITE



**TRAFFIC DRUM NOTES:**

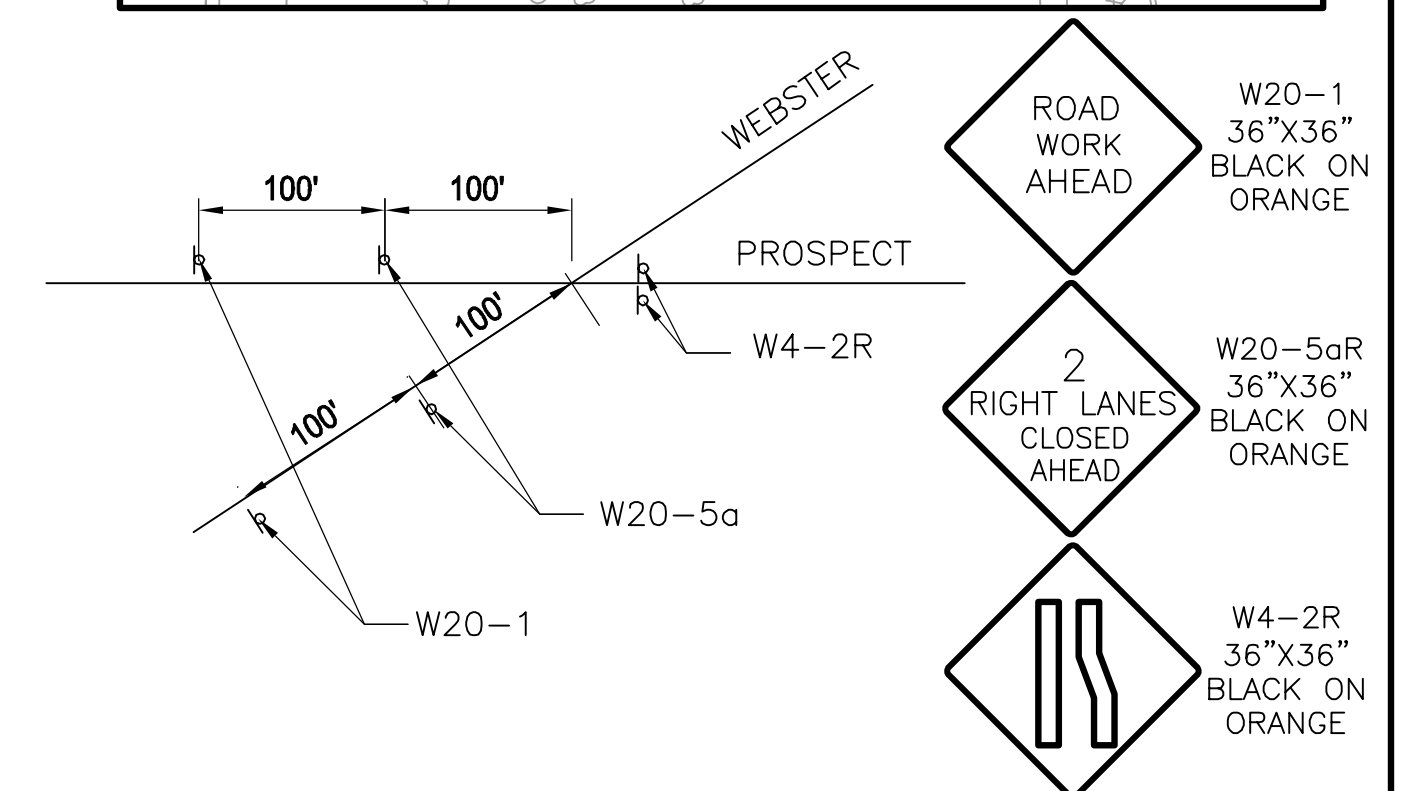
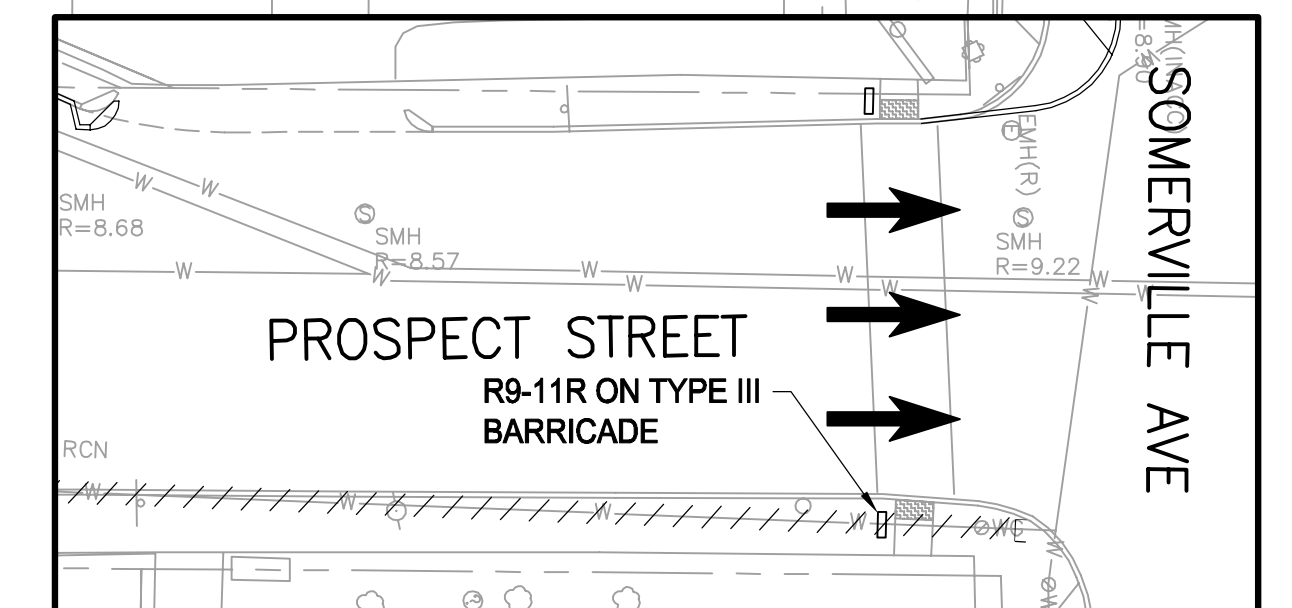
1. TRAFFIC DRUM SHALL BE DESIGNED IN ACCORDANCE WITH THE LATEST EDITION M.U.T.C.D.
2. THE ENGINEER RESERVES THE RIGHT TO REJECT ANY DRUM DEEMED NOT SUITABLE FOR THE PURPOSE INTENDED.
3. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE FLEXIBLE ENCAPSULATED LENS REFLECTIVE SHEETING.
4. REFLECTORIZED STRIPES SHOULD NOT BE PLACED OVER THE PROTRUDING CIRCUMFERENCIAL RIBS OF THE DRUM.
5. THE SECTIONS OF DRUMS NOT COVERED WITH REFLECTORIZED STRIPES SHALL BE ORANGE.
6. THE DESIGN OF THE DRUM WILL ALLOW FOR THE ATTACHMENT OF A BARRICADE WARNING LIGHT.

POSTED SPEED LIMIT	25 MPH
$L = (WS^2)/60$	125 FT
MERCING TAPER = L	125 FT
SHIFTING TAPER = (1/2)L	63 FT
SHOULDER TAPER = (1/3)L	42 FT



- BARRICADE NOTES:**
1. DIMENSIONS ARE APPROXIMATE.
  2. BOTTOM SECTION MAY BE FILLED WITH SAND FOR BALLAST.
  3. SUPPORT SHALL BE LOOSELY THREADED WITH ROPE, KNOTTED AS REQUIRED.

**TYPICAL 3" OR 4" PLASTIC SIGN/BARRICADE SUPPORT**  
NOT TO SCALE



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
CONSTRUCTION PHASING  
SEWER LINE CONSTRUCTION**

DESIGNED: LAC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

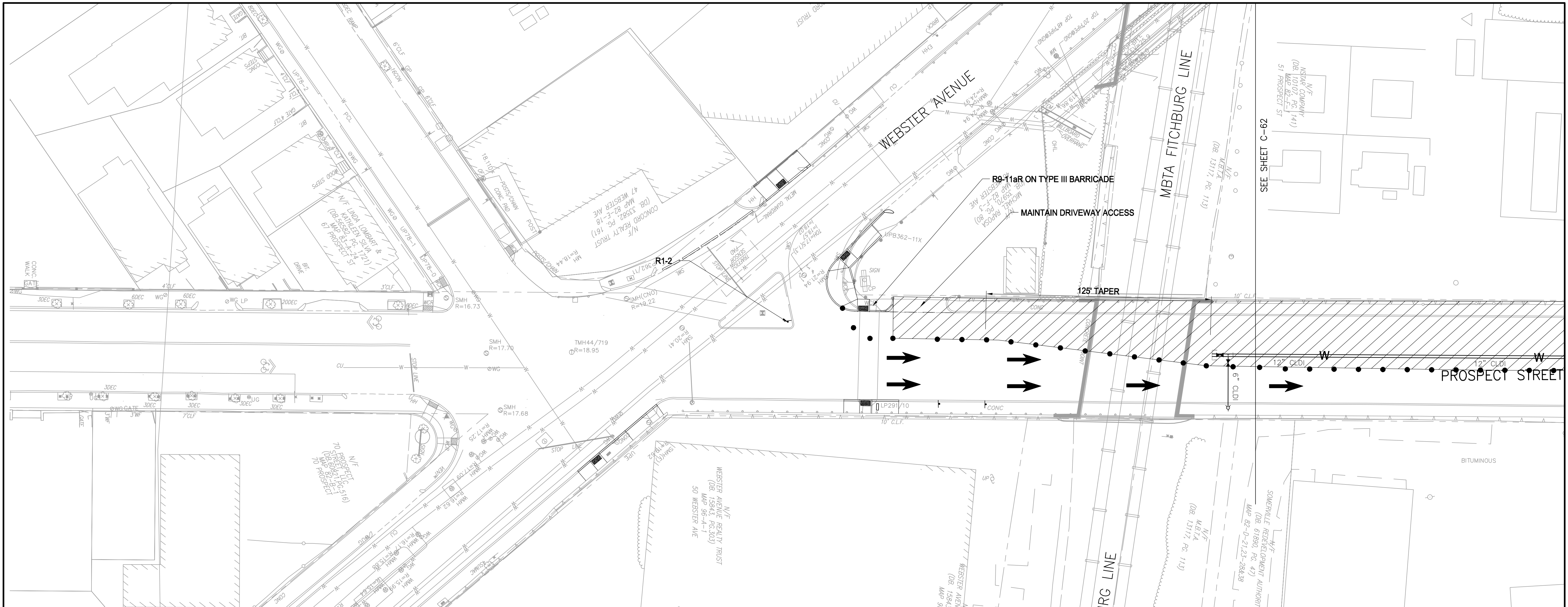
IFB#15-105-REBID

SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-61**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

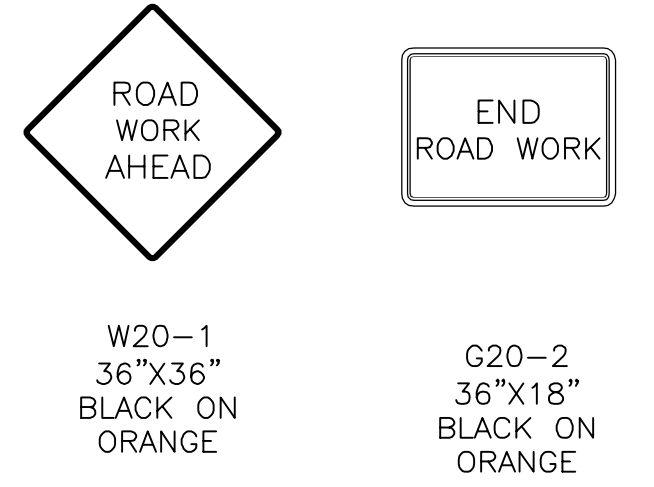
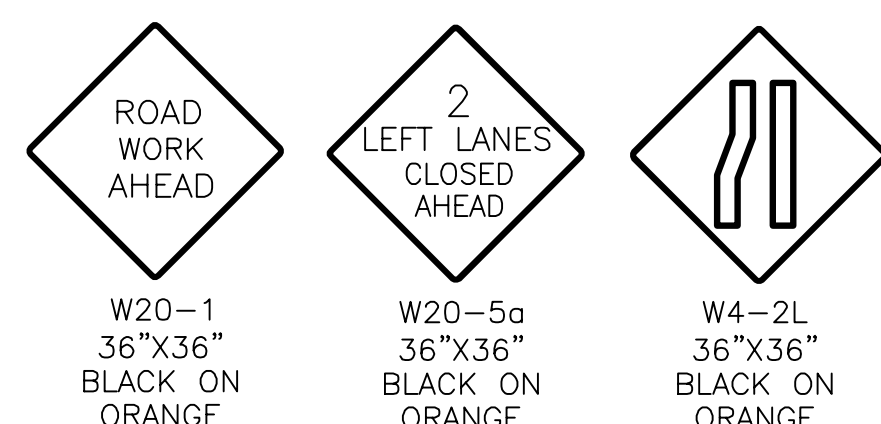
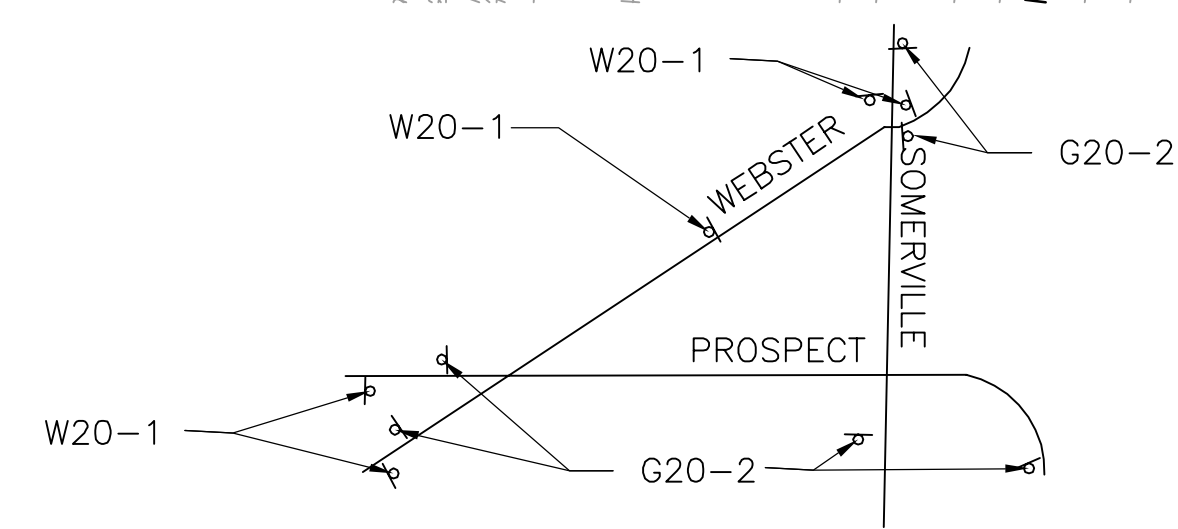
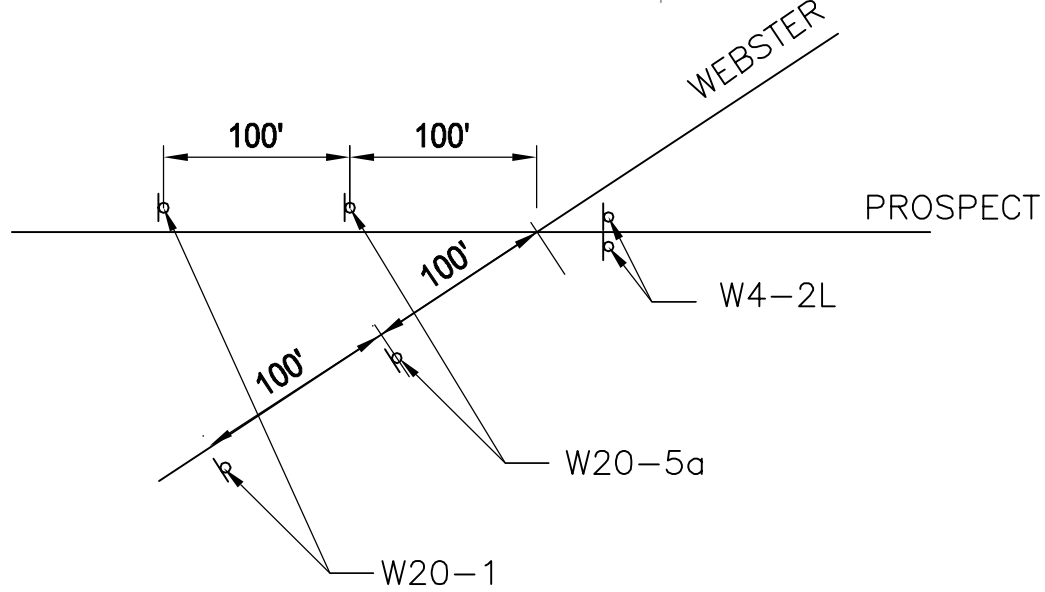
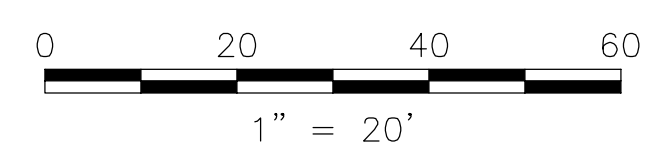




- NOTES:**
1. LANE CLOSURE WORK HOURS: 7 AM TO 7 PM
  2. A MINIMUM OF ONE 14' TRAVEL LANE MUST BE MAINTAINED AT ALL TIMES.
  3. FOR CONNECTION TO EXISTING WATER MAIN, NEWTON STREET WILL BE CLOSED AT EVERETT STREET DURING THE WORK HOURS OF: 7 AM TO 5 PM
  4. FOR PROPOSED LATERALS, TRAVEL LANE MUST BE DETOURED THROUGH THE WORK ZONE.
  5. MAINTAIN SIDEWALK ON EASTERN SIDE OF PROSPECT STREET AT ALL TIMES.

**LEGEND:**

WORK ZONE      ● BARRELL



IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
R9-11aR	12"	24"		BLACK ON WHITE
R1-2	36"	36"		RED AND WHITE

POSTED SPEED LIMIT	25 MPH
$L = (WS^2)/60$	125 FT
MERGING TAPER = L	125 FT
SHIFTING TAPER = (1/2)L	63 FT
SHOULDER TAPER = (1/3)L	42 FT

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
CONSTRUCTION PHASING  
WATER MAIN CONSTRUCTION**

DESIGNED: LAC  
CHECKED: RJB  
DRAWN: LAC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

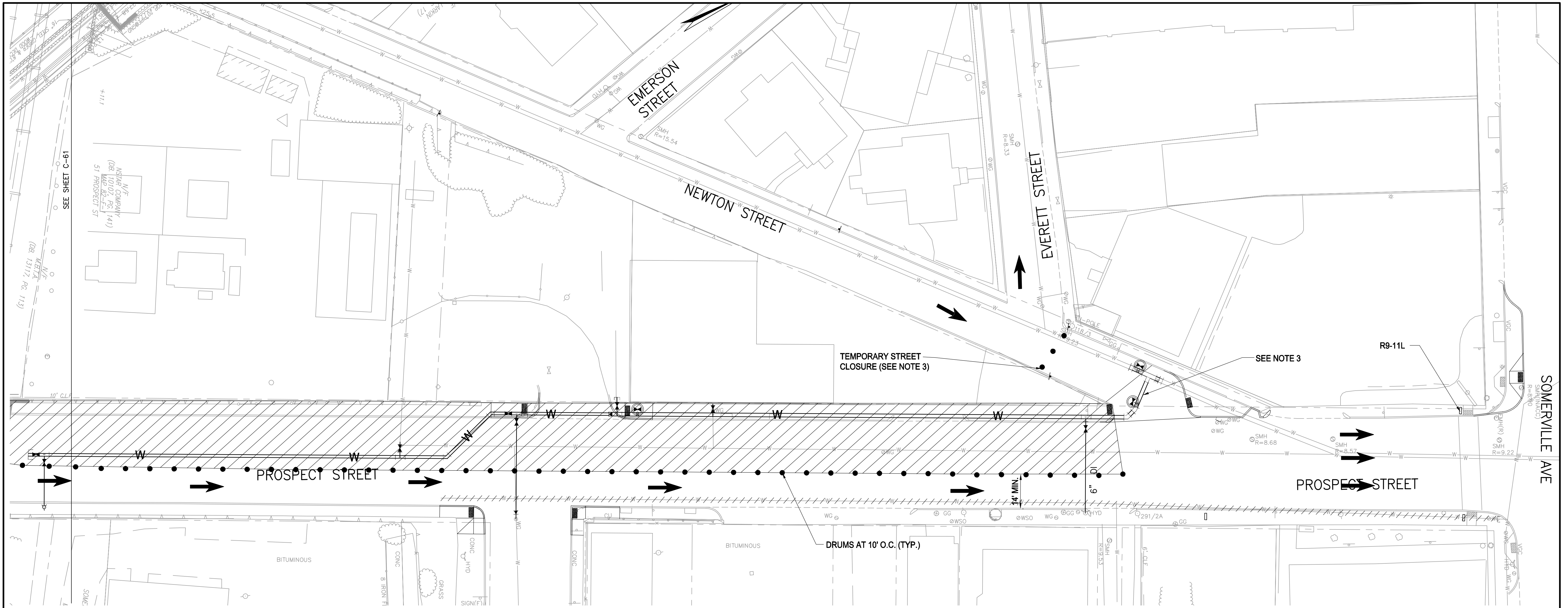
SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-62**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY





**NOTES:**

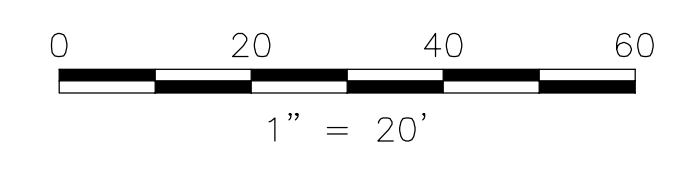
1. LANE CLOSURE WORK HOURS: 7 AM TO 7 PM
2. A MINIMUM OF ONE 14' TRAVEL LANE MUST BE MAINTAINED AT ALL TIMES.
3. FOR CONNECTION TO EXISTING WATER MAIN, NEWTON STREET WILL BE CLOSED AT EVERETT STREET DURING THE WORK HOURS OF: 7 AM TO 5 PM SEE ADDITIONAL SIGNAGE ON SHEET C-64.
4. FOR PROPOSED LATERALS, TRAVEL LANE MUST BE DETOURED THROUGH THE WORK ZONE.
5. MAINTAIN SIDEWALK ON EASTERN SIDE OF PROSPECT STREET AT ALL TIMES.

**LEGEND:**



IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
R9-11L	12"	24"		BLACK ON WHITE

POSTED SPEED LIMIT	25 MPH
$L = (WS^2)/60$	125 FT
MERGING TAPER = L	125 FT
SHIFTING TAPER = (1/2)L	63 FT
SHOULDER TAPER = (1/3)L	42 FT



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

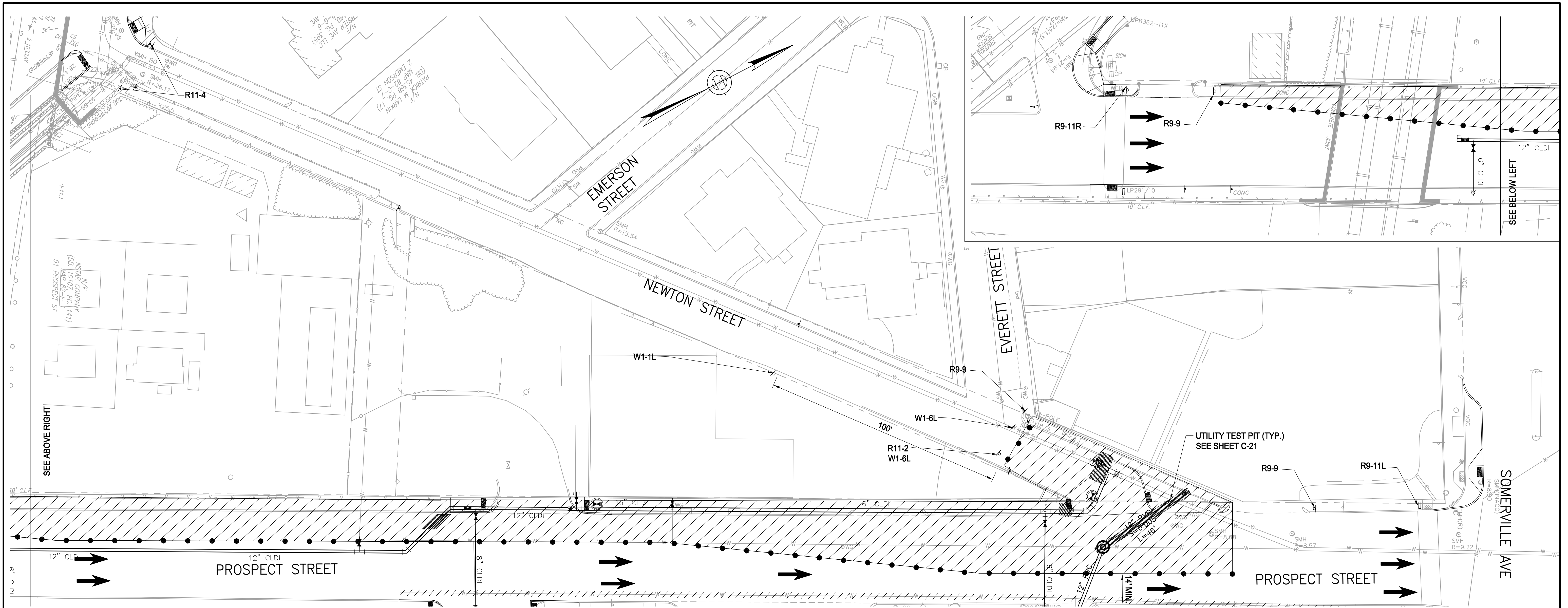
NO.	DATE	REVISIONS	BY



COMMONWEALTH OF MASSACHUSETTS  
 CITY OF SOMERVILLE  
**UNION SQ. UTILITY AND ROADWAY  
 EARLY ACTION PROJECT**  
 CONSTRUCTION PHASING  
 WATER MAIN CONSTRUCTION 2 OF 2

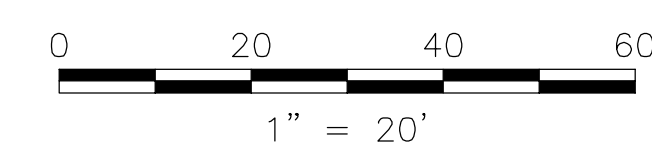
DESIGNED: LAC CHECKED: RJB DRAWN: LAC CHECKED: RJB	Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET <b>C-63</b>
IFB#15-105-REBID		SCALE: 1"=20' DATE: JAN 4, 2016
CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		





**NOTES:**  
 1. FOR CONNECTION TO EXISTING WATER MAIN, NEWTON STREET WILL BE CLOSED AT EVERETT STREET DURING THE WORK HOURS OF: 7 AM TO 5 PM

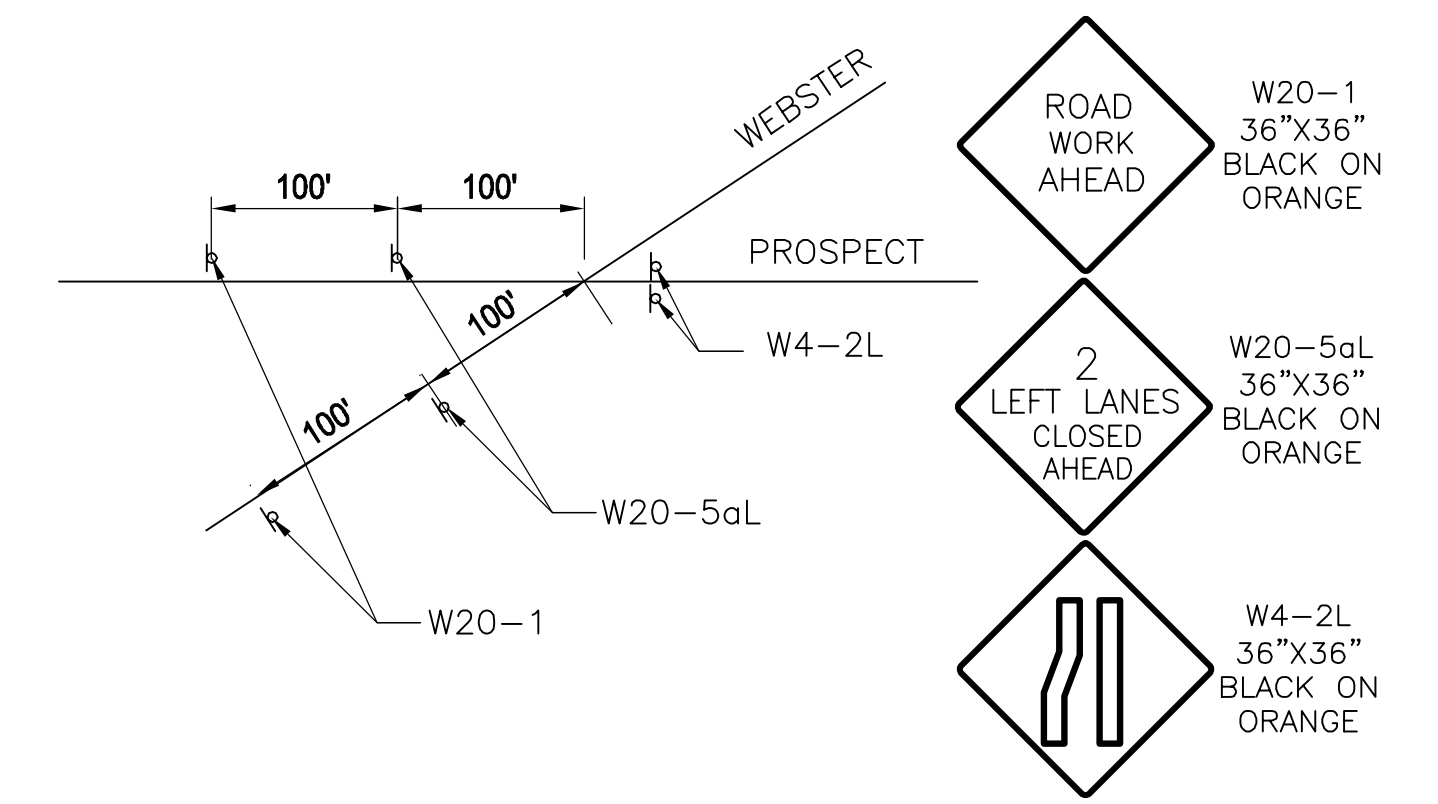
**LEGEND:**  
 WORK ZONE      ● BARRELL



IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
R9-9	12"	24"	SIDEWALK CLOSED	BLACK ON WHITE
R9-11L	12"	24"	SIDEWALK CLOSED AHEAD ← CROSS HERE	BLACK ON WHITE
R9-11R	12"	24"	SIDEWALK CLOSED AHEAD → CROSS HERE	BLACK ON WHITE

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
R11-2	30"	48"	ROAD CLOSED	BLACK ON WHITE
R11-4	30"	48"	ROAD CLOSED TO THRU TRAFFIC	BLACK ON WHITE

IDENTIFICATION NUMBER	SIZE OF SIGN		TEXT	COLOR
	HEIGHT	WIDTH		
W1-1L	24"	48"		BLACK ON ORANGE
W1-6L	24"	48"		BLACK ON ORANGE



ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM

NO.	DATE	REVISIONS	BY

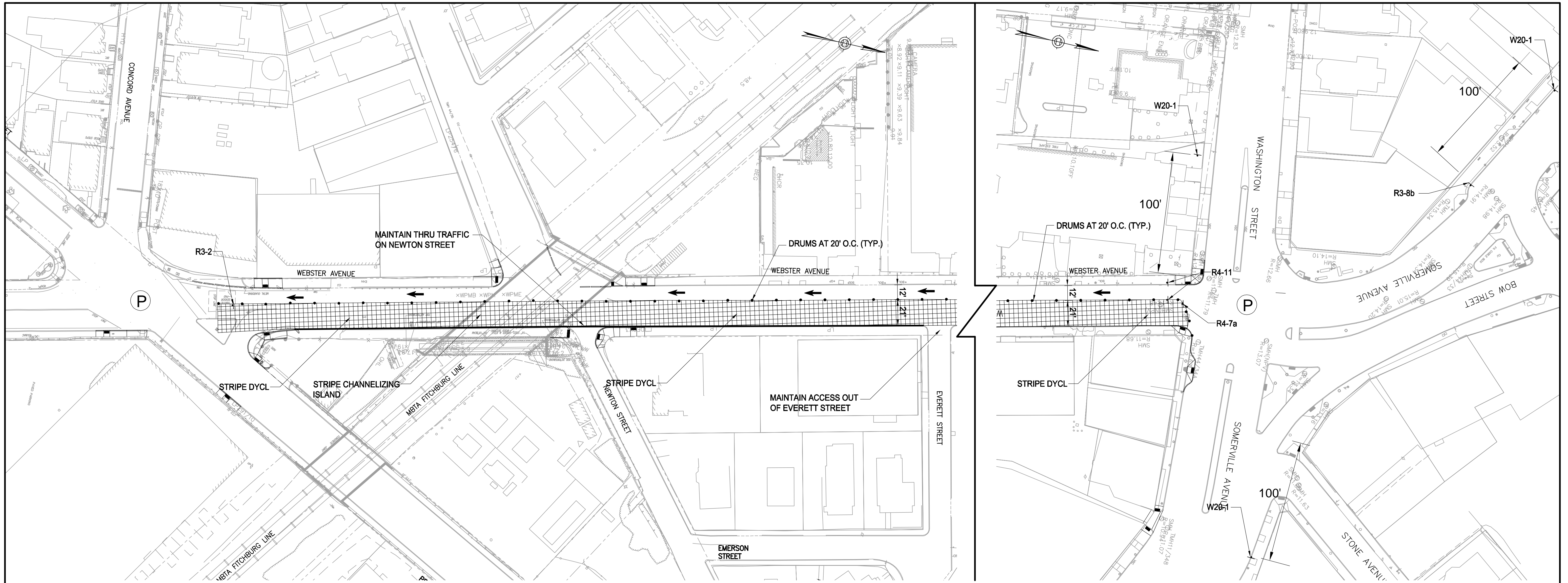


COMMONWEALTH OF MASSACHUSETTS  
 CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
 EARLY ACTION PROJECT  
 CONSTRUCTION PHASING  
 NEWTON STREET CLOSURE**

DESIGNED: LAC CHECKED: RJB	 Parsons Brinckerhoff, Inc. 75 Arlington St. Boston, MA 02116 PH. (617)426-7330 FAX (617)482-8487	SHEET <b>C-64</b>
DRAWN: LAC CHECKED: RJB		IFB#15-105-REBID
CITY OF SOMERVILLE 93 HIGHLAND AVENUE SOMERVILLE, MA 02143		








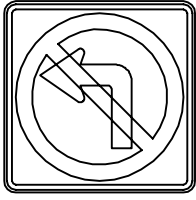
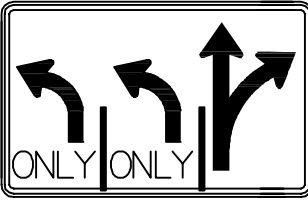



**NOTES:**

1. MAINTAIN EXISTING ONE-WAY TRAFFIC PATTERN ON WEBSTER AVENUE AND PROSPECT STREET UNTIL THE DESIGNATED WEEKEND SWITCHOVER TO TWO-WAY OPERATIONS.
2. PRIOR TO SWITCHOVER TO TWO-WAY OPERATION, MAINTAIN ALL TRAFFIC SIGNAGE AND TRAFFIC CONTROL SIGNAL SYSTEMS IN CURRENT CONFIGURATION TO SUPPORT ONE-WAY OPERATIONS.
3. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC CONTROL EQUIPMENT MAY BE INSTALLED, BUT SHALL BE COVERED AND NOT PLACE IN OPERATION.
4. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC SIGNAGE MAY BE INSTALLED, BUT SHALL BE COVERED UNTIL THE SWITCHOVER.
5. PRIOR TO THE SWITCHOVER TO TWO WAY OPERATIONS, MAINTAIN:
  - 5.1. AT LEAST ONE SOUTHBOUND TRAFFIC LANE ON WEBSTER AVENUE
  - 5.2. AT LEAST ONE NORTHBOUND TRAFFIC LANE ON PROSPECT STREET
  - 5.3. AT LEAST ONE EASTBOUND AND ONE WESTBOUND TRAFFIC LANE ON SOMERVILLE AVENUE.
6. AT ALL TIMES, MAINTAIN ACCESS TO EVERETT AND EMERSON STREETS VIA NEWTON STREET AND ALL ABUTTER ACCESS. (NOTE: NEWTON STREET BETWEEN EVERETT AND PROSPECT STREETS MAY BE CLOSED FOR SEWER, WATER, AND SPEED TABLE CONSTRUCTION)
7. THE SWITCHOVER FROM ONE-WAY TO TWO-WAY OPERATIONS ON WEBSTER AVENUE AND PROSPECT STREET SHALL OCCUR ON A DESIGNATED WEEKEND SWITCHOVER APPROVED BY THE CITY.
8. PERFORM ALL WORK REQUIRED PRIOR TO THE SWITCHOVER AS DETAILED IN SPECIFICATIONS.
9. BAN ALL PARKING ON WEBSTER AVENUE PRIOR TO WORK AND RESTRICT TRAFFIC TO A SINGLE 12 FT SOUTHBOUND LANE.
11. PROVIDE TRAFFIC OFFICERS AT SIGNALIZED INTERSECTIONS.
12. UTILIZE EXISTING TRAFFIC SIGNALS AT WEBSTER AVENUE AND PROSPECT STREET AND AT WEBSTER AVENUE AND SOMERVILLE AVENUE DURING THIS PHASE.
13. CONTRACT TO SUBMIT FINAL TMP PLAN TO CITY OF SOMERVILLE FOR APPROVAL FOR THIS WORK

**LEGEND:**

-  WORK ZONE
-  BARRELL
-  POLICE OFFICER

**SIGNAGE:**

-  R3-2  
24"x24"  
BLACK ON  
WHITE
-  R3-8a  
48"x30"  
BLACK ON  
ORANGE
-  R4-7a  
24"x30"  
BLACK ON  
WHITE
-  R4-11  
30"x30"  
BLACK ON  
ORANGE
-  W20-1  
36"x36"  
BLACK ON  
ORANGE

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

## UNION SQ. UTILITY AND ROADWAY EARLY ACTION PROJECT CONSTRUCTION PHASING PH. 1A STRIPING CONVERSION TMP

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: KTC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

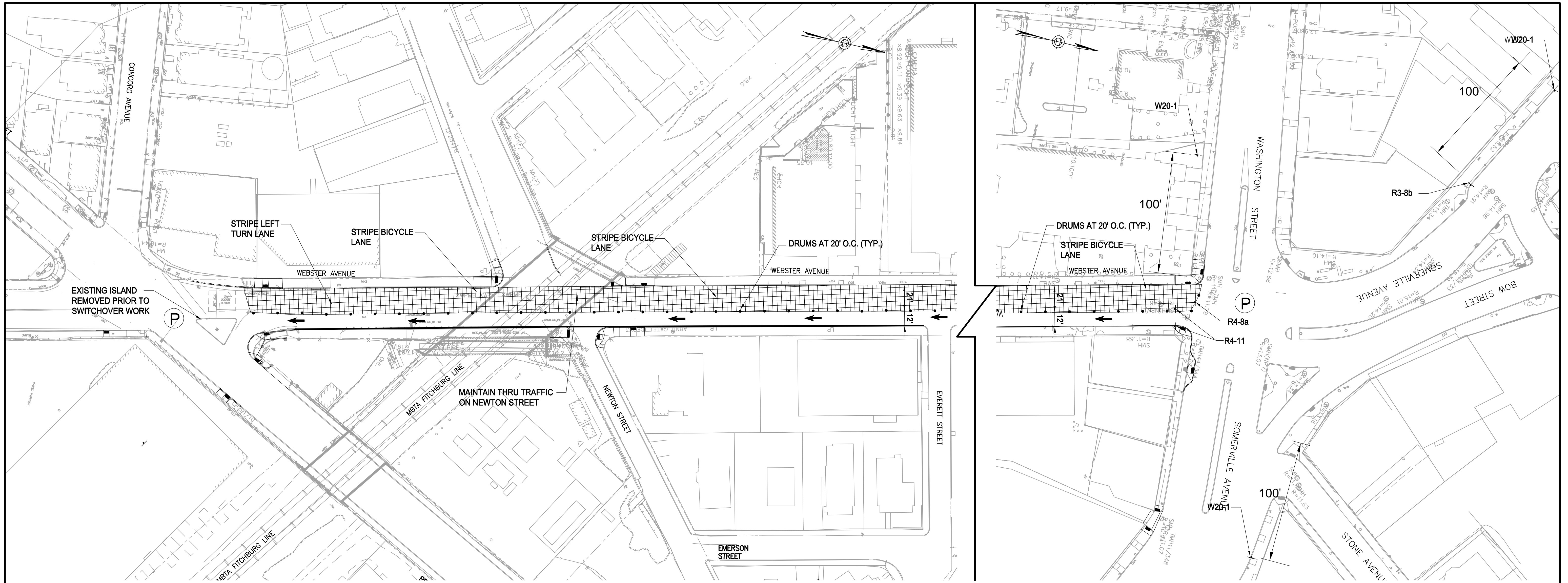
SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-65**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY









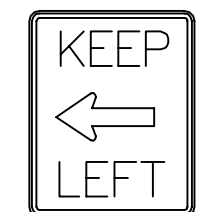


**NOTES:**

1. MAINTAIN EXISTING ONE-WAY TRAFFIC PATTERN ON WEBSTER AVENUE AND PROSPECT STREET UNTIL THE DESIGNATED WEEKEND SWITCHOVER TO TWO-WAY OPERATIONS.
2. PRIOR TO SWITCHOVER TO TWO-WAY OPERATION, MAINTAIN ALL TRAFFIC SIGNAGE AND TRAFFIC CONTROL SIGNAL SYSTEMS IN CURRENT CONFIGURATION TO SUPPORT ONE-WAY OPERATIONS.
3. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC CONTROL EQUIPMENT MAY BE INSTALLED, BUT SHALL BE COVERED AND NOT PLACE IN OPERATION.
4. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC SIGNAGE MAY BE INSTALLED, BUT SHALL BE COVERED UNTIL THE SWITCHOVER.
5. PRIOR TO THE SWITCHOVER TO TWO WAY OPERATIONS, MAINTAIN:
  - 5.1. AT LEAST ONE SOUTHBOUND TRAFFIC LANE ON WEBSTER AVENUE
  - 5.2. AT LEAST ONE NORTHBOUND TRAFFIC LANE ON PROSPECT STREET
  - 5.3. AT LEAST ONE EASTBOUND AND ONE WESTBOUND TRAFFIC LANE ON SOMERVILLE AVENUE.
6. AT ALL TIMES, MAINTAIN ACCESS TO EVERETT AND EMERSON STREETS VIA NEWTON STREET AND ALL ABUTTER ACCESS. (NOTE: NEWTON STREET BETWEEN EVERETT AND PROSPECT STREETS MAY BE CLOSED FOR SEWER, WATER, AND SPEED TABLE CONSTRUCTION)
7. THE SWITCHOVER FROM ONE-WAY TO TWO-WAY OPERATIONS ON WEBSTER AVENUE AND PROSPECT STREET SHALL OCCUR ON A DESIGNATED WEEKEND SWITCHOVER APPROVED BY THE CITY.
8. PERFORM ALL WORK REQUIRED PRIOR TO THE SWITCHOVER AS DETAILED IN SPECIFICATIONS.
9. BAN ALL PARKING ON WEBSTER AVENUE PRIOR TO WORK AND RESTRICT TRAFFIC TO A SINGLE 12 FT SOUTHBOUND LANE.
10. PROVIDE TRAFFIC OFFICERS AT SIGNALIZED INTERSECTIONS.
11. UTILIZE EXISTING TRAFFIC SIGNALS AT WEBSTER AVENUE AND PROSPECT STREET AND AT WEBSTER AVENUE AND SOMERVILLE AVENUE DURING THIS PHASE. AT COMPLETION OF PHASE, TURN OFF OLD SIGNAL SYSTEM AND ACTIVATE NEW SIGNAL SYSTEM.
12. CONTRACTOR TO SUBMIT FINAL TMP PLAN TO CITY OF SOMERVILLE FOR APPROVAL FOR THIS WORK

**LEGEND:**

-  WORK ZONE
-  BARRELL
-  POLICE OFFICER

**SIGNAGE:**

-  R3-8a  
48"x30"  
BLACK ON  
ORANGE
-  R4-8a  
24"x30"  
BLACK ON  
WHITE
-  R4-11  
30"x30"  
BLACK ON  
ORANGE
-  W20-1  
36"x36"  
BLACK ON  
ORANGE

ALL ELEVATIONS REFER TO NAVD 88 VERTICAL DATUM



COMMONWEALTH OF MASSACHUSETTS  
CITY OF SOMERVILLE

**UNION SQ. UTILITY AND ROADWAY  
EARLY ACTION PROJECT  
CONSTRUCTION PHASING  
PH. 1B STRIPING CONVERSION TMP**

DESIGNED: KTC  
CHECKED: RJB  
DRAWN: KTC  
CHECKED: RJB

**PARSONS BRINCKERHOFF**  
Parsons Brinckerhoff, Inc.  
75 Arlington St. Boston, MA 02116  
PH. (617)426-7330 FAX (617)482-8487

IFB#15-105-REBID

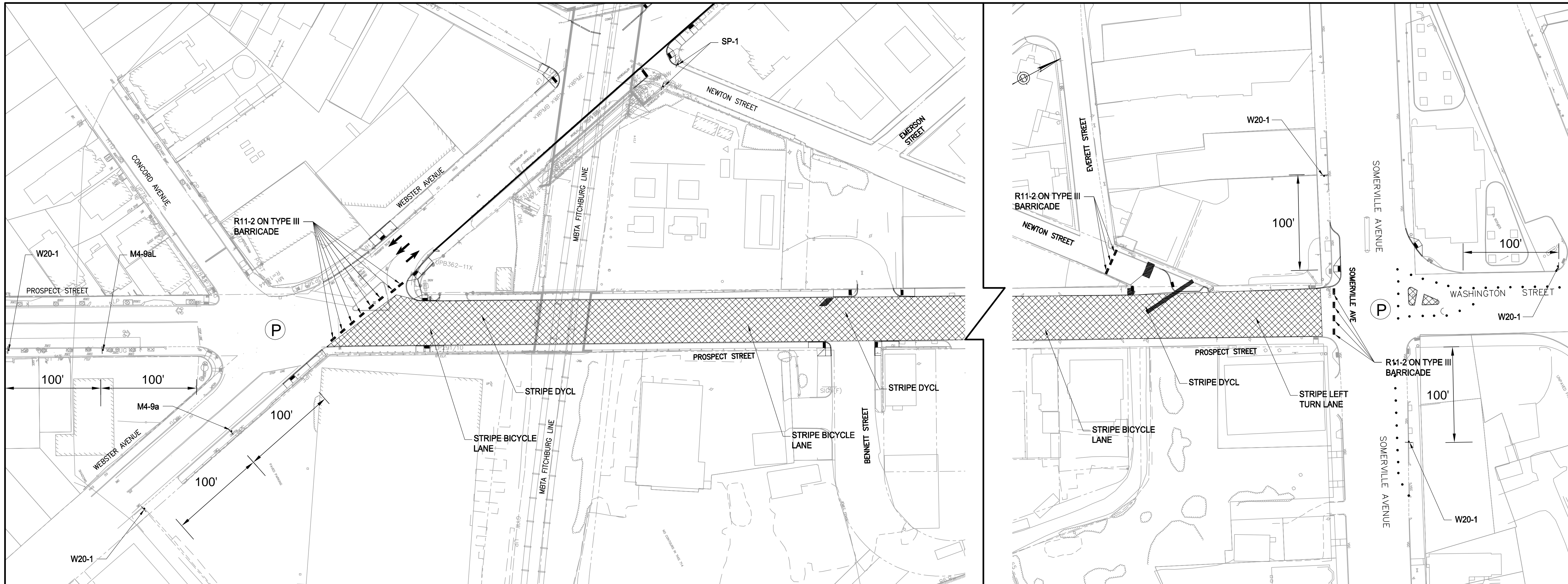
SCALE: 1"=20'  
DATE: JAN 4, 2016

SHEET  
**C-66**

CITY OF SOMERVILLE  
93 HIGHLAND AVENUE  
SOMERVILLE, MA 02143

NO.	DATE	REVISIONS	BY










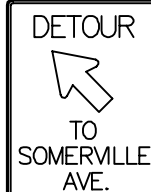



**NOTES:**

1. MAINTAIN EXISTING ONE-WAY TRAFFIC PATTERN ON WEBSTER AVENUE AND PROSPECT STREET UNTIL THE DESIGNATED WEEKEND SWITCHOVER TO TWO-WAY OPERATIONS.
2. PRIOR TO SWITCHOVER TO TWO-WAY OPERATION, MAINTAIN ALL TRAFFIC SIGNAGE AND TRAFFIC CONTROL SIGNAL SYSTEMS IN CURRENT CONFIGURATION TO SUPPORT ONE-WAY OPERATIONS.
3. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC CONTROL EQUIPMENT MAY BE INSTALLED, BUT SHALL BE COVERED AND NOT PLACE IN OPERATION.
4. PRIOR TO THE SWITCHOVER TO TWO-WAY OPERATION, NEW TRAFFIC SIGNAGE MAY BE INSTALLED, BUT SHALL BE COVERED UNTIL THE SWITCHOVER.
5. PRIOR TO THE SWITCHOVER TO TWO WAY OPERATIONS, MAINTAIN:
  - 5.1. AT LEAST ONE SOUTHBOUND TRAFFIC LANE ON WEBSTER AVENUE
  - 5.2. AT LEAST ONE NORTHBOUND TRAFFIC LANE ON PROSPECT STREET
  - 5.3. AT LEAST ONE EASTBOUND AND ONE WESTBOUND TRAFFIC LANE ON SOMERVILLE AVENUE.
6. AT ALL TIMES, MAINTAIN ACCESS TO EVERETT AND EMERSON STREETS VIA NEWTON STREET AND ALL ABUTTER ACCESS. (NOTE: NEWTON STREET BETWEEN EVERETT AND PROSPECT STREETS MAY BE CLOSED FOR SEWER, WATER, AND SPEED TABLE CONSTRUCTION)
7. THE SWITCHOVER FROM ONE-WAY TO TWO-WAY OPERATIONS ON WEBSTER AVENUE AND PROSPECT STREET SHALL OCCUR ON A DESIGNATED WEEKEND SWITCHOVER APPROVED BY THE CITY.
8. PERFORM ALL WORK REQUIRED PRIOR TO THE SWITCHOVER AS DETAILED IN SPECIFICATIONS.
9. CLOSE PROSPECT STREET TO ALL TRAFFIC AND DETOUR VIA SOMERVILLE AVENUE.
10. RE-STRIPE FOR TWO-WAY OPERATIONS AND UNWRAP ALL TRAFFIC AND PARKING SIGNAGE FOR TWO-WAY OPERATIONS.
11. PROVIDE TRAFFIC OFFICERS AT SIGNALIZED INTERSECTIONS.
12. UTILIZE NEW SIGNAL SYSTEM AT WEBSTER STREET/PROSPECT STREET DURING THIS PHASE. PROSPECT STREET AND SOMERVILLE AVENUE INTERSECTION TO USE EXISTING SIGNAL SYSTEM WITH POLICE CONTROL TO MODIFY TIMING AS NECESSARY.
13. CONTRACTOR TO SUBMIT FINAL TMP PLAN TO CITY OF SOMERVILLE FOR APPROVAL FOR THIS WORK

**LEGEND:**

-  WORK ZONE
-  TYPE III BARRICADE
-  POLICE OFFICER
-  BARRELL

**SIGNAGE:**

-  R11-2  
48"x30"  
BLACK ON ORANGE
-  M4-9aL  
36"x48"  
BLACK ON ORANGE
-  M4-9a  
36"x48"  
BLACK ON ORANGE
-  W20-1  
36"x36"  
BLACK ON ORANGE
-  SP-1  
36"x36"  
BLACK ON ORANGE

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PH. 2A STRIPING CONVERSION TMP**

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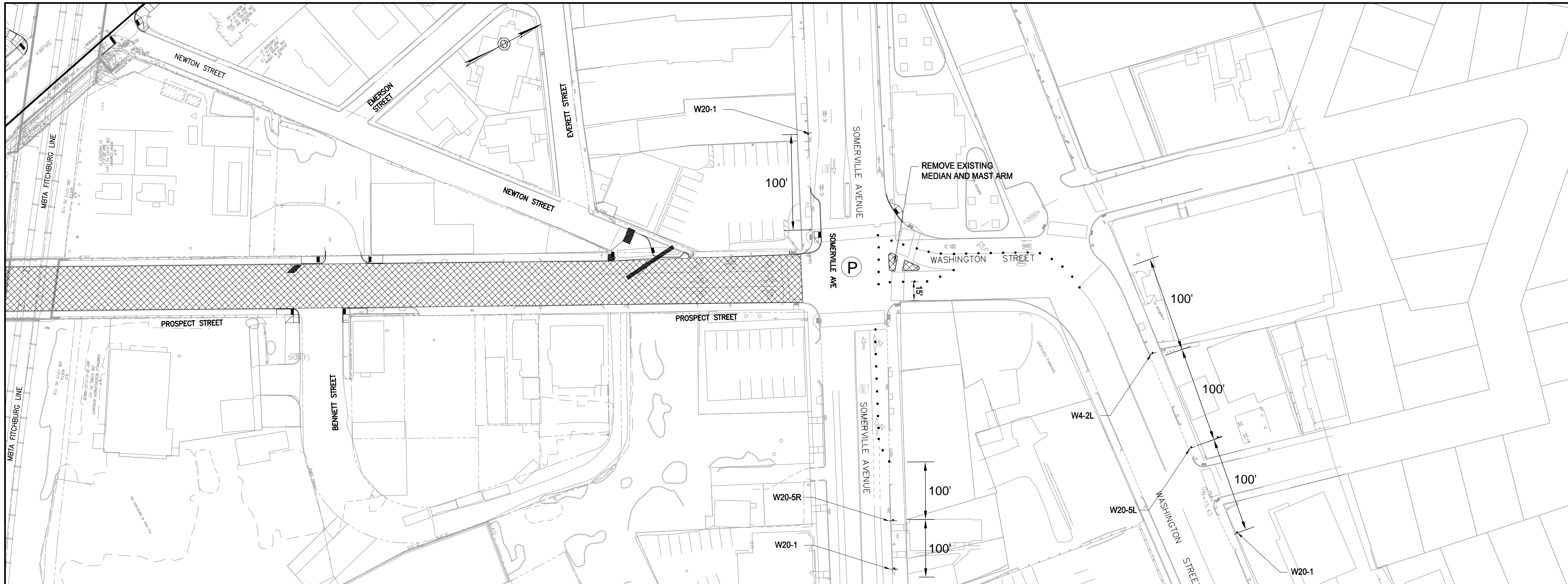
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SOMERVILLE, MA 02143

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**NOTES:**

1. MAINTAIN TRAFFIC CONTROL PLAN FROM PHASE 2A, INCLUDING ROAD CLOSURE, SIGNAGE, AND BARRICADES DURING THIS PHASE OF CONSTRUCTION.
2. PROVIDE TRAFFIC OFFICERS AT SIGNALIZED INTERSECTIONS.
3. UTILIZE NEW SIGNAL SYSTEM AT WEBSTER STREET/PROSPECT STREET DURING THIS PHASE. PROSPECT STREET AND SOMERVILLE AVENUE INTERSECTION TO USE EXISTING SIGNAL SYSTEM WITH POLICE CONTROL TO MODIFY TIMING AS NECESSARY.
4. AT COMPLETION OF WORK, ACTIVATE NEW SIGNAL SYSTEM AT PROSPECT STREET AND SOMERVILLE AVENUE INTERSECTION.
5. CONTRACTOR TO SUBMIT FINAL TMP PLAN TO CITY OF SOMERVILLE FOR APPROVAL FOR THIS WORK

**LEGEND:**

-  WORK ZONE
-  POLICE OFFICER
-  BARRELL

**SIGNAGE:**

-  W4-2L  
36"X36"  
BLACK ON ORANGE
-  W20-1  
36"X36"  
BLACK ON ORANGE
-  W20-5L  
36"X36"  
BLACK ON ORANGE
-  W20-5R  
36"X36"  
BLACK ON ORANGE

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