

# MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	128
PROJECT FILE NO.		604694	

TITLE SHEET & INDEX

## PLAN AND PROFILE OF LOWELL CONNECTOR/GORHAM STREET

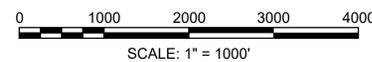
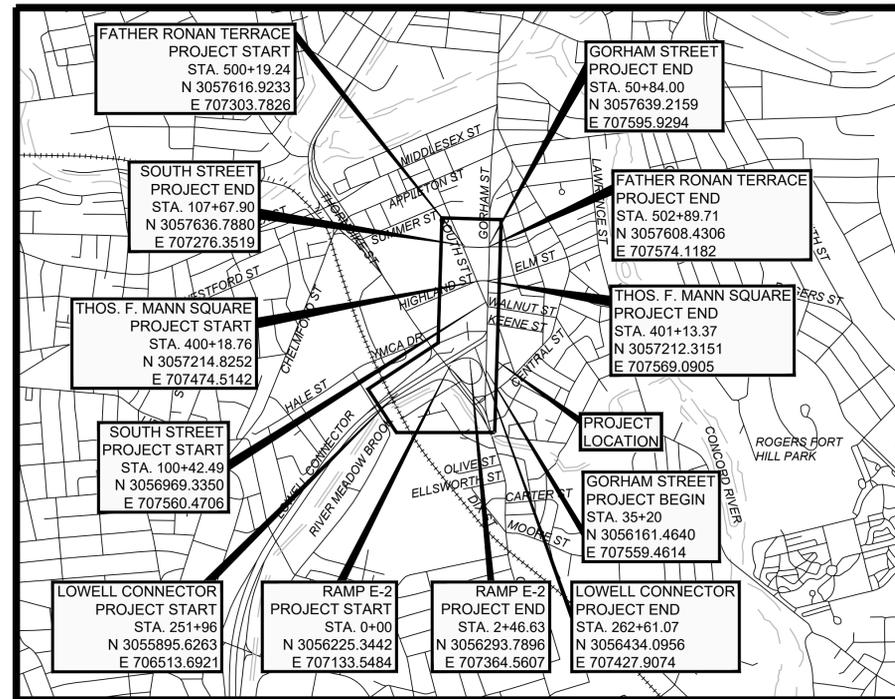
THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 2024, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

IN THE CITY OF  
**LOWELL**  
MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. -

# 25% SUBMITTAL

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LENGTH OF PROJECT = 3,684 FEET = 0.70 MILES

### DESIGN DESIGNATION (LOWELL CONNECTOR)

DESIGN SPEED	60 MPH
ADT (2030)	19,520
ADT (2050)	21,570
K	12%
D	55%
T (PEAK HOUR)	2.0%
T (AVERAGE DAY)	2.0%
DHV	2,600
DDHV	1,430
FUNCTIONAL CLASSIFICATION	OTHER FREEWAY OR EXPRESSWAY

### DESIGN DESIGNATION (GORHAM STREET)

DESIGN SPEED	30 MPH
ADT (2030)	22,590
ADT (2050)	24,960
K	8%
D	55%
T (PEAK HOUR)	2.0%
T (AVERAGE DAY)	2.0%
DHV	2,000
DDHV	1,100
FUNCTIONAL CLASSIFICATION	PRINCIPAL ARTERIAL

### DESIGN DESIGNATION LOCAL STREETS

	SOUTH ST	HIGHLAND / ELM	FATHER RONAN TERRACE
DESIGN SPEED	30 MPH	30 MPH	30 MPH
AADT (2030)	1,189	4,149	1,189
AADT (2050)	1,314	4,585	1,314
K	8.0%	10.0%	10.0%
D	100.0%	55.0%	100.0%
T (PEAK HOUR)	1.0%	3.0%	0.0%
T (AVERAGE DAY)	1.0%	3.0%	0.0%
DHV	105	459	131
DDHV	105	252	131
FUNCTIONAL CLASSIFICATION	LOCAL ROAD	URBAN COLLECTOR	LOCAL ROAD

DATE	DESCRIPTION	REV #

**CDR | MAGUIRE ENGINEERING**

35 VILLAGE ROAD,  
SUITE #100  
MIDDLETON, MA 01949

**massDOT**  
Massachusetts Department of Transportation  
Highway Division

APPROVED

\_\_\_\_\_  
CHIEF ENGINEER

\_\_\_\_\_  
DATE

**GENERAL SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		JERSEY BARRIER
		CATCH BASIN
		CATCH BASIN CURB INLET
		FLAG POLE
		GAS PUMP
		MAIL BOX
		POST SQUARE
		POST CIRCULAR
		WELL
		ELECTRIC HANDHOLE
		FENCE GATE POST
		GAS GATE
		BORING HOLE
		MONITORING WELL
		TEST PIT
		HYDRANT
		LIGHT POLE
		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
		MASSACHUSETTS HIGHWAY BOUND
		MONUMENT
		STONE BOUND
		TOWN OR CITY BOUND
		TROLLEY POLE OR GUY POLE
		TRANSMISSION POLE
		UTILITY POLE W/ FIREBOX
		UTILITY POLE WITH DOUBLE LIGHT
		UTILITY POLE W / 1 LIGHT
		UTILITY POLE
		BUSH
		TREE
		STUMP
		SWAMP / MARSH
		WATER GATE
		PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
		CONTOURS (ON-THE-GROUND SURVEY DATA)
		CONTOURS (PHOTOGRAMMETRIC DATA)
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCED STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		GUARD RAIL - DOUBLE FACE - STEEL POSTS
		GUARD RAIL - DOUBLE FACE - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE
		TREE LINE
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT

**TRAFFIC SYMBOLS**

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

**PAVEMENT MARKINGS SYMBOLS**

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT ARROW - WHITE
		LEGEND "ONLY" - WHITE
		STOP LINE
		CROSSWALK
		SOLID WHITE LINE
		SOLID YELLOW LINE
		BROKEN WHITE LINE
		BROKEN YELLOW LINE
		DOTTED WHITE LINE
		DOTTED YELLOW LINE
		DOTTED WHITE LINE EXTENSION
		DOTTED YELLOW LINE EXTENSION
		DOUBLE WHITE LINE
		DOUBLE YELLOW LINE

**ABBREVIATIONS**

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

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

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MA	-	2	128

**LEGEND & ABBREVIATIONS**

**ABBREVIATIONS (cont.)**

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

**TRAFFIC SIGNAL ABBREVIATIONS**

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

## GENERAL NOTES

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT FOR REVIEW A SCHEDULE OF OPERATIONS IN ADDITION TO OTHER CONTRACT REQUIREMENTS TO THE ENGINEER.
2. COORDINATES, IN U.S. SURVEY FEET, ARE IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MCS), MAINLAND ZONE, REFERENCED TO THE NORTH AMERICAN DATUM OF 1983, (NAD 83/2011, EPOCH 2010.00), BASED ON THE KeyNetGPS VIRTUAL REFERENCE SYSTEM (VRS).
3. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED ON THE KeyNetGPS VIRTUAL REFERENCE SYSTEM (VRS)
4. SUBSURFACE UTILITY LINES AND FEATURES, AS SHOWN HEREON, WERE COMPILED FROM FIELD EVIDENCE AND/OR AVAILABLE RECORD INFORMATION (SEE REFERENCES), AND THEIR LOCATIONS ARE ONLY APPROXIMATE. ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.  
  
GREENE ASSUMES NO RESPONSIBILITY FOR DAMAGES INCURRED AS AS RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN.  
  
BEFORE DESIGNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITIES MUST BE CONSULTED.  
  
BEFORE CONSTRUCTION, ALL UTILITIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED (SEE MASSACHUSETTS GENERAL LAWS, CHAPTER 82 SECTION 40). CALL "DIG SAFE" 1-888-DIG-SAFE. (888-344-7233).
5. BEFORE SAWCUTTING, EXCAVATING, BACK FILLING, GRADING, PAVEMENT RESTORATION, OR REPAIRING, ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE CONTACTED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THESE PLANS. SEE CHAPTER 370, ACT OF 1963, MASSACHUSETTS GENERAL LAWS. THE OWNER AND ENGINEER ASSUME NO RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES OMITTED OR INACCURATELY SHOWN. BEFORE PLANNING FUTURE CONNECTIONS, THE APPROPRIATE UTILITY ENGINEERING DEPARTMENT MUST BE CONSULTED. DIG SAFE AT 811 OR 1-(888) DIG-SAFE. REFER TO THE SPECIAL PROVISIONS FOR A LIST OF THE CONTACT PERSONS AT AFFECTED UTILITIES.
6. CONSTRUCTION WORK THAT WILL IMPACT EXISTING TRAVEL LANES SHALL BE PERFORMED IN A MANNER APPROVED BY THE ENGINEER.
7. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO VERIFY LOCATIONS OF EXISTING UTILITIES AS INDICATED OR AS DIRECTED BY THE ENGINEER.
8. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.
9. THE CONTRACTOR SHALL PROVIDE METHODS DURING DEWATERING OPERATIONS AND FOR STORM WATER RUNOFF NOT TO ALLOW SILT OR DEBRIS TO ENTER EXISTING DRAINAGE FACILITIES OR CREATE NUISANCES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING EXISTING OR NEW FACILITIES IF SILTATION OCCURS DUE TO THE CONTRACTOR'S OPERATIONS.
10. FINAL LOCATION OF TRAFFIC SIGNS AND SUPPORTS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
11. DAMAGE OF PROPERTY BEYOND THE WORK LIMITS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, SUBJECT TO THE APPROVAL OF THE ENGINEER.
12. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS AT HIS OWN EXPENSE IF NOT OTHERWISE SPECIFIED, OUTSIDE OF THE PROJECT LIMITS.
13. IF THE CONTRACTOR DAMAGES UTILITY SERVICES, HE SHALL IMMEDIATELY NOTIFY THE RESPECTIVE UTILITY COMPANY AND SHALL IMMEDIATELY PROVIDE ACCESS TO THE UTILITY COMPANY SO THEY CAN REPLACE OR REPAIR THE DAMAGE.
14. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE MASSDOT MUTCD AND THE SPECIAL PROVISIONS.
15. ALL AREAS OUTSIDE OF THE LIMIT OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT THE CONTRACTORS OWN EXPENSE
16. NO ALTERATION SHALL BE UNDERTAKEN WHICH DECREASES OR HAS THE EFFECT OF DECREASING ACCESSIBILITY OR USABILITY OF A FACILITY BELOW THE REQUIREMENTS FOR NEW CONSTRUCTION.
17. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLD, OR ONTER "SURFACE" TYPE STRUCNRE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED. SUCH THAT THE TOP MOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH CURB RAMP SURFACE.
18. PROPOSED TREE LOCATIONS SHALL BE MARKED FOR REVIEW BY THE CITY OF LOWELL AND THE RESIDENT ENGINEER PRIOR TO CEMENT CONCRETE SIDEWALK INSTALLATION. ALL PLANTS WILL BE MULCHED PER THE PLANTING SPECIFICATIONS, DETAILS, AND SPECIAL PROVISIONS. ALL PLANT MATERIAL WILL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME, AND SIZE.
19. EXISTING AND PROPOSED MANHOLES, HAND HOLDS, AND GATE LOCATIONS WITHIN SIDEWALK OR ACCESSIBLE PATH AREAS SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOP MOST SURFACES AND OR STRUCTURE COVER ARE FLUSH WITH THE PROPOSED SURFACE.

## UTILITY NOTES

1. ALL UNDERGROUND UTILITIES AS SHOWN WERE COMPILED USING FIELD SURVEY INFORMATION AND AVAILABLE RECORD INFORMATION.
2. RECORD UTILITY INFORMATION FROM THE VARIOUS UTILITY COMPANIES AND PUBLIC AGENCIES, ARE APPROXIMATE ONLY AND ACTUAL LOCATIONS MUST BE DETERMINED IN THE FIELD.
3. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORING OR REPAVING.
4. COORDINATE ALL ACTIVITIES AROUND AND INVOLVING ITS DEVICES (CCTV, VMS, RWIS, AND TCS) WITH ITS-PROGRAMS.
5. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES OR PROPERTY LINES ARE NOT WARRANTED TO BE EXACT, NOR IS IT WARRANTED THAT ALL UNDERGROUND PIPES OR STRUCTURES ARE SHOWN. THE CONTRACTOR SHALL CALL "DIG SAFE" (1-888-344-7233) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
6. SUBSURFACE UTILITY LOCATIONS HAVE BEEN PLOTTED BASED ON UTILITY QUALITY LEVEL "C/D". THE UNDERGROUND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS BASED ON ABOVE-GROUND FIELD OBSERVATION AND EXISTING RECORD INFORMATION RECEIVED FROM THE UTILITY STAKE-HOLDERS. UTILITY RECORD PLANS WERE REQUESTED AND RECEIVED FROM THE FOLLOWING UTILITY COMPANIES/AGENCIES/MUNICIPALITIES: VERIZON, NATIONAL GRID, MBTA, LUMEN, LOWELL, FIRST LIGHT, CROWN CASTLE, AND LIGHT PATH FIBER
7. INVERTS SHOWN ON PLAN ARE NOT GUARANTEED TO BE ACCURATE. DUE TO THE LIMITATIONS OF FIELD OBSERVATION AND SURVEY TECHNIQUES THE INVERTS ARE SHOWN AS APPROXIMATE ONLY AND SHALL NOT BE WARRANTED TO BE CORRECT. ADDITIONAL FIELD INVESTIGATION IS NECESSARY WHERE ACCURATE MEASUREMENTS ARE REQUIRED FOR DESIGN OF CRITICAL AREAS.
8. THE EXISTING CONDITIONS PLAN IS TO BE USED FOR THE SPECIFIED PROJECT ONLY AND IS NOT WARRANTED TO BE COMPLETE FOR ANY OTHER FUTURE PROJECTS.
9. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTIBILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5 FT SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5 FT WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
10. PRIOR TO BULK EXCAVATION, IT IS RECOMMENDED THAT THE CONTRACTOR DIG TEST PITS AT ANY LOCATION WHERE EXISTING UTILITIES MAY BE EXPOSED OR DISTURBED DURING EXCAVATION. CONTRACTOR TO NOTE UTILITIES SHOWN ON THE DRAWINGS AND AS FIELD LOCATED BY DIG SAFE.
11. PRIOR TO THE INSTALLATION OF UTILITIES, THE CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS OF UTILITY CROSSINGS TO VERIFY DEPTH OF EXISTING PIPES, CONDUITS, OR OTHER FACILITIES, AS REQUIRED BY THE ENGINEER.

## SURVEY NOTES

1. THE EXISTING CONDITIONS SHOWN ON THIS BASE MAP ARE THE RESULT OF AN ON THE GROUND INSTRUMENT SURVEY PERFORMED BETWEEN FEBRUARY 2, 2016 AND MARCH 3, 2023 BY GREEN INTERNATIONAL AFFILIATES, INC. (GREEN); (SEE FIELD NOTES IN MASSDOT DISTRICT 4 FIELD BOOK 41133).
2. HORIZONTAL AND VERTICAL CONTROL WAS ESTABLISHED BY MASSDOT SURVEY, IN BOOK 41023, PAGE 52 ANA 53, ON JANUARY 27, 2016. HORIZONTAL DATUM IS BASED ON THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (MAINLAND) NAD83 (2011), 2010.00 EPOCH. VERTICAL DATUM IS NAVD88 (COMPUTED USING GEOID12B) USING THE FOLLOWING CONTROL POINTS:

POINT	GRID		ELEVATION	GRID SCALE FACTOR	
	NORTHING	EASTING			
438D	3089914.942	735292.417	126.529	1.000004881188815	7914
3058864.192	710797.403	148.341	0.999991346454857		
C33	3041796.536	710540.621	112.379	0.999987122422145	
MATB	3054693.740	717666.340	133.650	0.999990523328339	

MASSDOT ESTABLISHED THE FOLLOWING POINTS FOR THIS PROJECT:

POINT	GRID		ELEVATION	GRID SCALE FACTOR
	NORTHING	EASTING		
1653	3056254.663	707193.415	126.430	0.999991447850587
1654	3056448.106	707506.599	117.703	0.999991934964339

THE UNIT OF MEASUREMENTS IS US FEET. THE PROJECT COMBINED SCALE FACTOR IS 0.99999691407463.

3. THE ROTATIONS FROM RECORD BEARING SYSTEMS TO THE BEARING SYSTEM OF THIS BASEMAP ARE AS FOLLOWS:

1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)	0°02'00" (CLOCKWISE)
2007 STATE HIGHWAY LAYOUT (SHLO NO. 8060)	0°02'44" (CLOCKWISE)
1914 RR RIGHT OF WAY VAL MAP 13.1 S.L.24	0°25'06" (COUNTER-CLOCKWISE)
4. THE RIGHT OF WAY LINES SHOWN HERE ARE THE DIRECT RESULT OF AN INSTRUMENT SURVEY PERFORMED ON THE GROUND BY GREEN INTERNATIONAL AFFILIATES, INC. WITH AN ERROR OF CLOSURE OF 1 IN 52,061, AND FROM PLANS AND DEEDS OF RECORD. PRIVATE PROPERTY LINES HAVE NOT BEEN SURVEYED, THEY ARE COMPILED FROM GIS & RECORD PLAN INFORMATION AND SHOULD BE CONSIDERED APPROXIMATE.

**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	128
PROJECT FILE NO.		604694	

## GENERAL NOTES

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

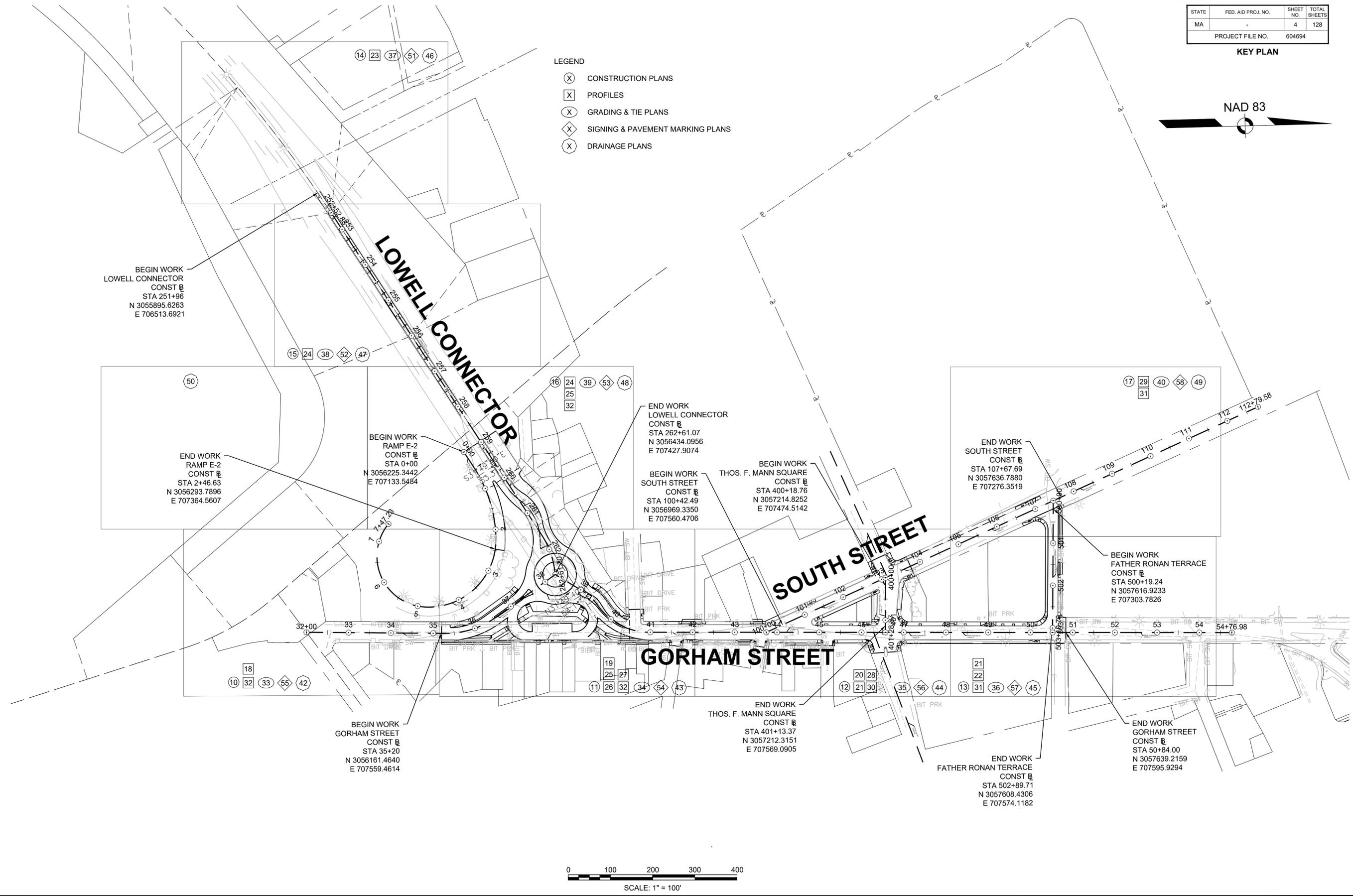
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	4	128
PROJECT FILE NO.		604694	

**KEY PLAN**

NAD 83



- LEGEND**
- (X) CONSTRUCTION PLANS
  - (X) PROFILES
  - (X) GRADING & TIE PLANS
  - (X) SIGNING & PAVEMENT MARKING PLANS
  - (X) DRAINAGE PLANS



BEGIN WORK  
LOWELL CONNECTOR  
CONST @  
STA 251+96  
N 3055895.6263  
E 706513.6921

END WORK  
RAMP E-2  
CONST @  
STA 2+46.63  
N 3056293.7896  
E 707364.5607

BEGIN WORK  
RAMP E-2  
CONST @  
STA 0+00  
N 3056225.3442  
E 707133.5484

END WORK  
LOWELL CONNECTOR  
CONST @  
STA 262+61.07  
N 3056434.0956  
E 707427.9074

BEGIN WORK  
SOUTH STREET  
CONST @  
STA 100+42.49  
N 3056969.3350  
E 707560.4706

BEGIN WORK  
THOS. F. MANN SQUARE  
CONST @  
STA 400+18.76  
N 3057214.8252  
E 707474.5142

END WORK  
SOUTH STREET  
CONST @  
STA 107+67.69  
N 3057636.7880  
E 707276.3519

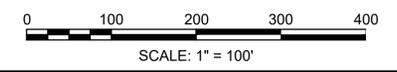
BEGIN WORK  
FATHER RONAN TERRACE  
CONST @  
STA 500+19.24  
N 3057616.9233  
E 707303.7826

BEGIN WORK  
GORHAM STREET  
CONST @  
STA 35+20  
N 3056161.4640  
E 707559.4614

END WORK  
THOS. F. MANN SQUARE  
CONST @  
STA 401+13.37  
N 3057212.3151  
E 707569.0905

END WORK  
FATHER RONAN TERRACE  
CONST @  
STA 502+89.71  
N 3057608.4306  
E 707574.1182

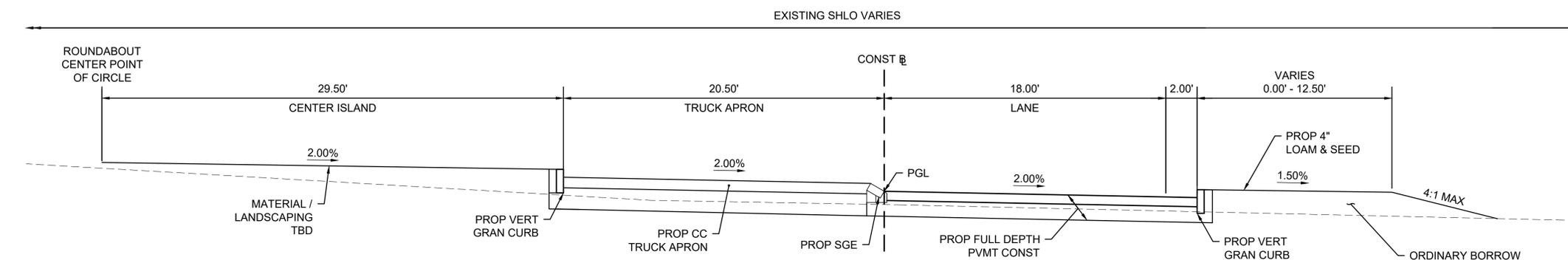
END WORK  
GORHAM STREET  
CONST @  
STA 50+84.00  
N 3057639.2159  
E 707595.9294



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	128
PROJECT FILE NO.		604694	

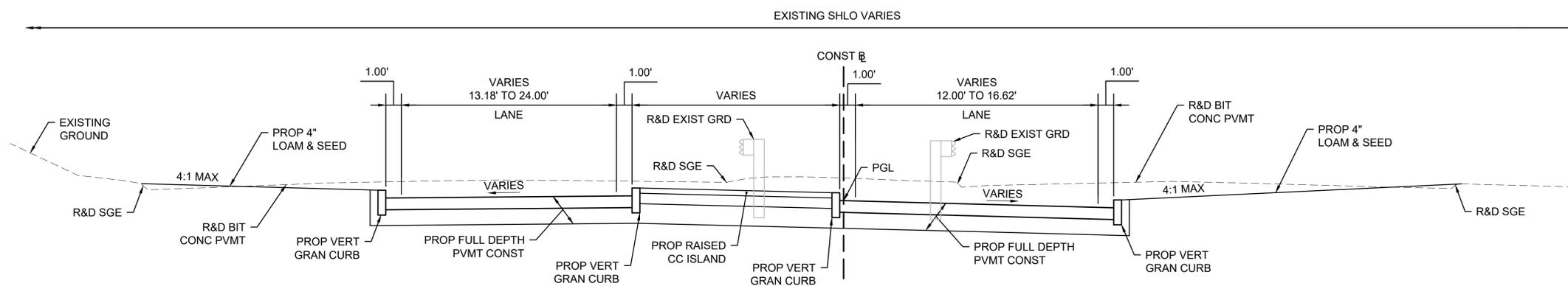
TYPICAL SECTIONS



**ROUNDABOUT  
FULL DEPTH PAVEMENT**

NOT TO SCALE

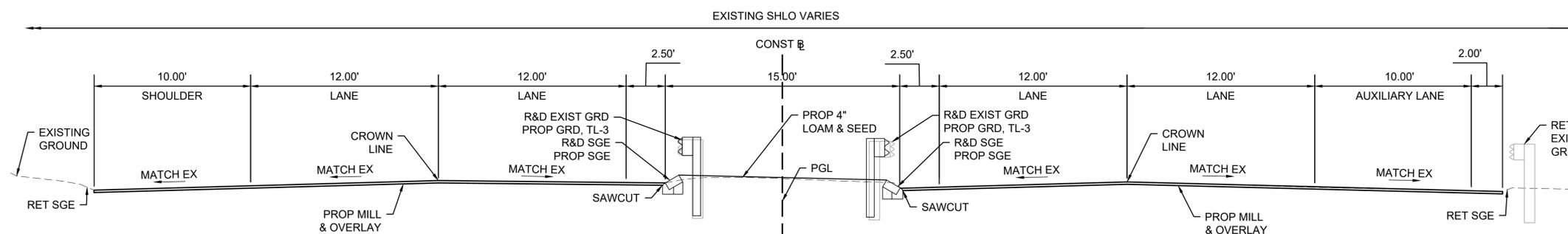
STATION 10+00.00 TO 13+14.16



**LOWELL CONNECTOR  
FULL DEPTH PAVEMENT**

NOT TO SCALE

STATION 260+00.00 TO 261+90.47



**LOWELL CONNECTOR  
MILL & OVERLAY**

NOT TO SCALE

STATION 258+97.00 TO 260+00.00

**PAVEMENT DESIGN**

**PROPOSED FULL DEPTH PAVEMENT - LOWELL CONNECTOR**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 4.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED FULL DEPTH PAVEMENT - GORHAM STREET,  
ROUNDABOUT & PARKING LOT**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
- 3.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED MILLING AND OVERLAY**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC - 12.5 P) OVER
- 1.75" PAVEMENT FINE MILLING

**PROPOSED SIDEWALKS & ISLANDS**

- 4.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SIDEWALK THROUGH DRIVEWAYS**

- 6.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED ROUNDABOUT TRUCK APRON**

- 8.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SHARED USE PATHS (SUP) & HMA DRIVEWAYS**

- 1.50" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
- 2.50" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 8.00" GRAVEL BORROW

**GENERAL NOTES**

- ASPHALT EMULSION FOR TACK COAT SHALL BE SPRAY APPLIED FOR UNIFORM COVERAGE IN ACCORDANCE WITH SECTION 450.
- HMA JOINT SEALANT SHALL BE APPLIED TO ALL PAVEMENT JOINTS AND ALONG ADJOINING EDGES SUCH AS CURB, CASTINGS AND SAWCUTS PRIOR TO PLACING SURFACE COURSE.
- TOLERANCE FOR CONSTRUCTION 0.5%±

**CUT/FILL SLOPES**

MAX 2:1

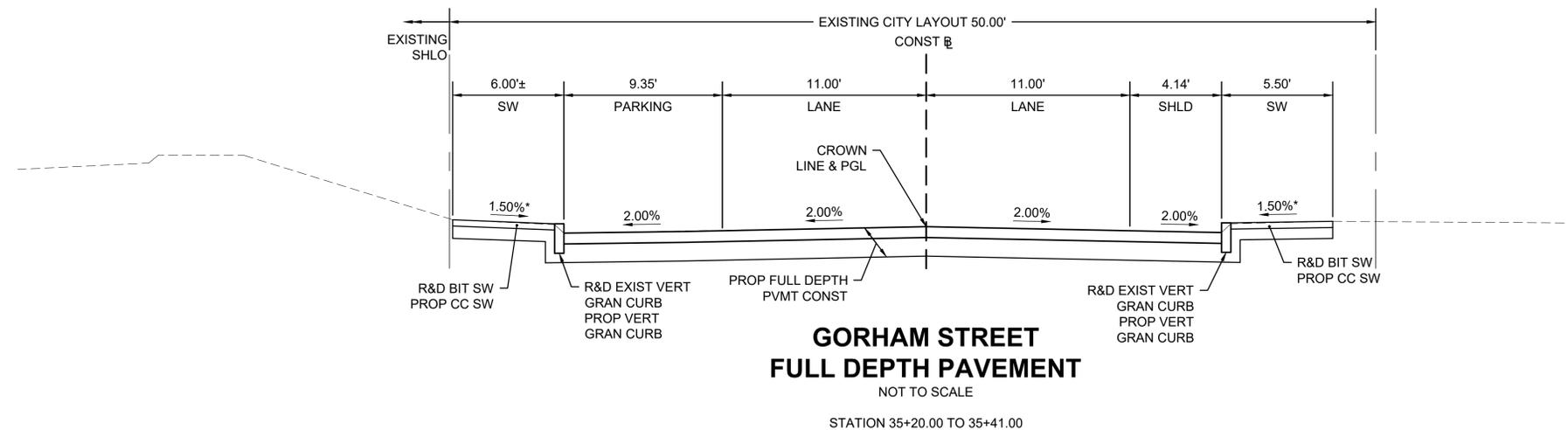
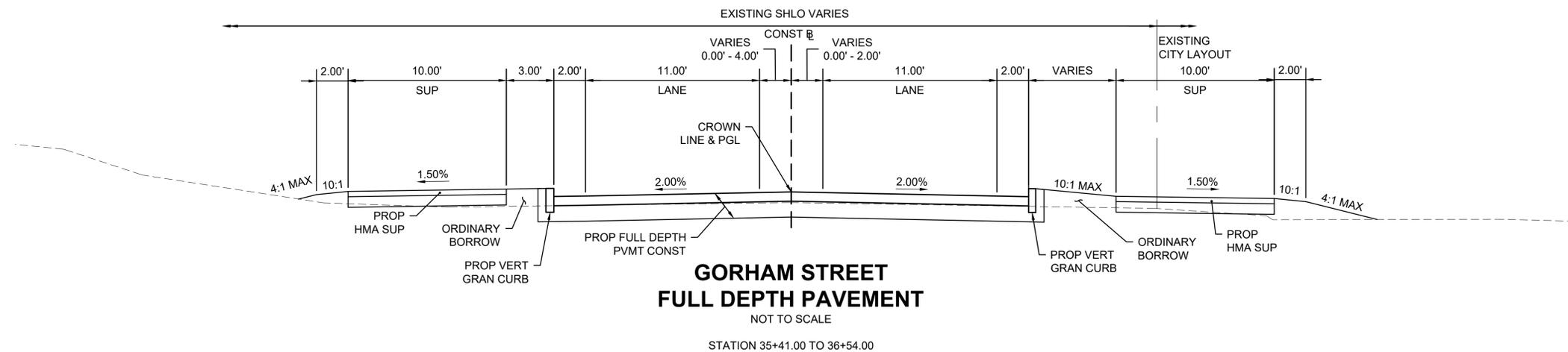
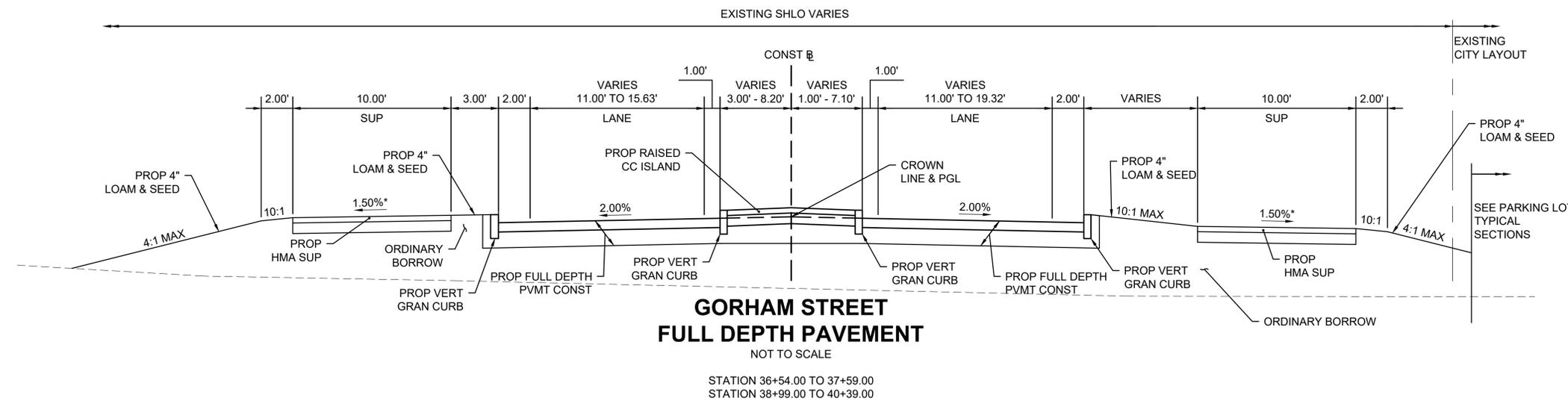
\*SIDEWALK AND SUP CROSS SLOPE SHALL HAVE A TOLERANCE OF ± 0.50%



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	128
PROJECT FILE NO.		604694	

**TYPICAL SECTIONS**



**PAVEMENT DESIGN**

**PROPOSED FULL DEPTH PAVEMENT - LOWELL CONNECTOR**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 4.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED FULL DEPTH PAVEMENT - GORHAM STREET, ROUNDABOUT & PARKING LOT**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
- 3.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED MILLING AND OVERLAY**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC - 12.5 P) OVER
- 1.75" PAVEMENT FINE MILLING

**PROPOSED SIDEWALKS & ISLANDS**

- 4.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SIDEWALK THROUGH DRIVEWAYS**

- 6.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED ROUNDABOUT TRUCK APRON**

- 8.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SHARED USE PATHS (SUP) & HMA DRIVEWAYS**

- 1.50" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
- 2.50" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 8.00" GRAVEL BORROW

**GENERAL NOTES**

- ASPHALT EMULSION FOR TACK COAT SHALL BE SPRAY APPLIED FOR UNIFORM COVERAGE IN ACCORDANCE WITH SECTION 450.
- HMA JOINT SEALANT SHALL BE APPLIED TO ALL PAVEMENT JOINTS AND ALONG ADJOINING EDGES SUCH AS CURB, CASTINGS AND SAWCUTS PRIOR TO PLACING SURFACE COURSE.
- TOLERANCE FOR CONSTRUCTION 0.5%±

**CUT/FILL SLOPES**

MAX 2:1

\*SIDEWALK AND SUP CROSS SLOPE SHALL HAVE A TOLERANCE OF ± 0.50%

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	128
PROJECT FILE NO.		604694	

**TYPICAL SECTIONS**

**PAVEMENT DESIGN**

**PROPOSED FULL DEPTH PAVEMENT - LOWELL CONNECTOR**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 4.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED FULL DEPTH PAVEMENT - GORHAM STREET, ROUNDABOUT & PARKING LOT**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
- 3.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED MILLING AND OVERLAY**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC - 12.5 P) OVER
- 1.75" PAVEMENT FINE MILLING

**PROPOSED SIDEWALKS & ISLANDS**

- 4.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SIDEWALK THROUGH DRIVEWAYS**

- 6.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED ROUNDABOUT TRUCK APRON**

- 8.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SHARED USE PATHS (SUP) & HMA DRIVEWAYS**

- 1.50" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
- 2.50" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 8.00" GRAVEL BORROW

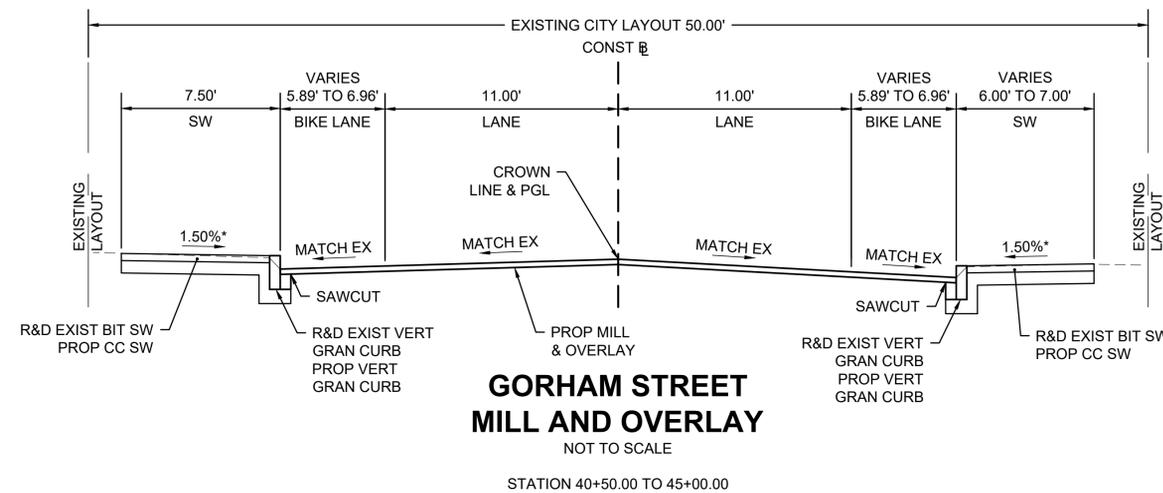
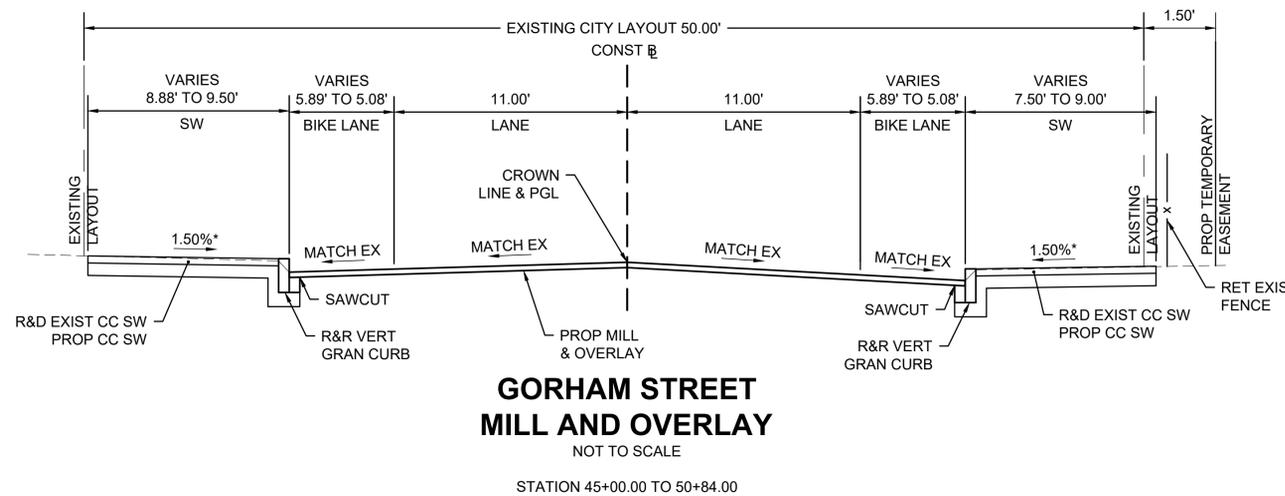
**GENERAL NOTES**

1. ASPHALT EMULSION FOR TACK COAT SHALL BE SPRAY APPLIED FOR UNIFORM COVERAGE IN ACCORDANCE WITH SECTION 450.
2. HMA JOINT SEALANT SHALL BE APPLIED TO ALL PAVEMENT JOINTS AND ALONG ADJOINING EDGES SUCH AS CURB, CASTINGS AND SAWCUTS PRIOR TO PLACING SURFACE COURSE.
3. TOLERANCE FOR CONSTRUCTION 0.5%±

**CUT/FILL SLOPES**

MAX 2:1

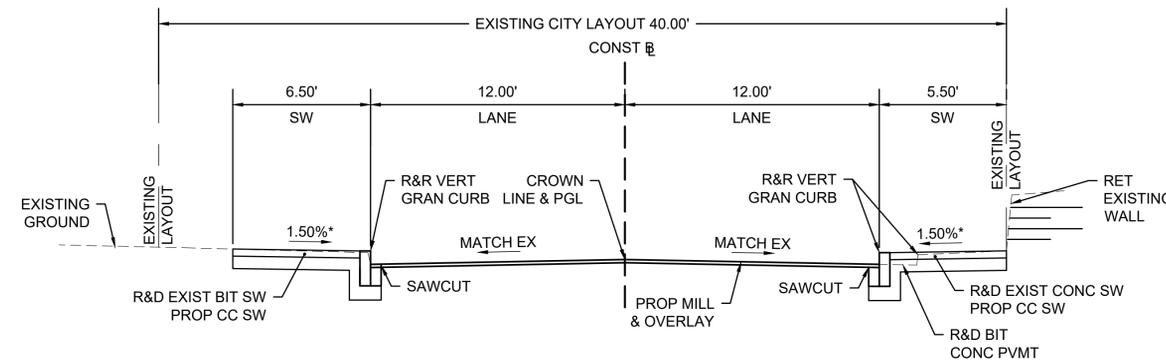
\*SIDEWALK AND SUP CROSS SLOPE SHALL HAVE A TOLERANCE OF ± 0.50%



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	128
PROJECT FILE NO.		604694	

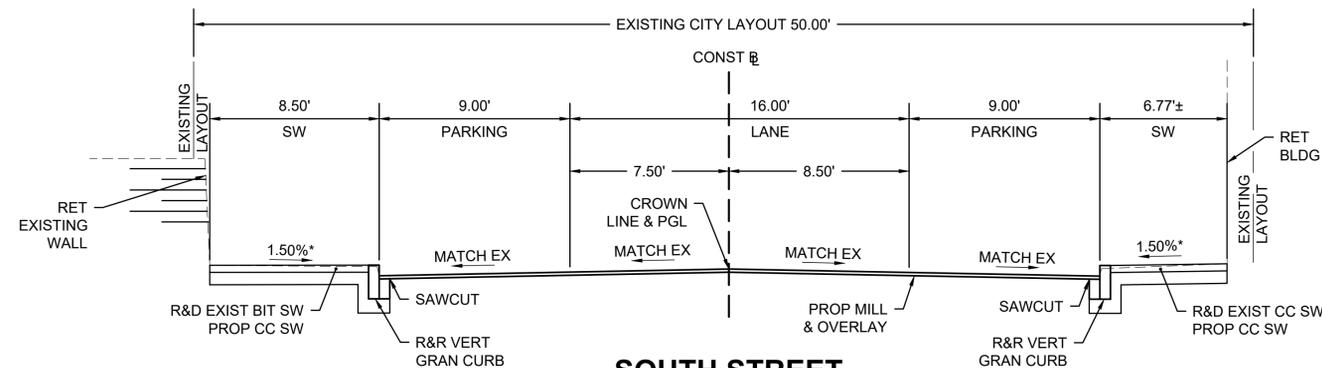
TYPICAL SECTIONS



**FATHER RONAN TERRACE  
MILL AND OVERLAY**

NOT TO SCALE

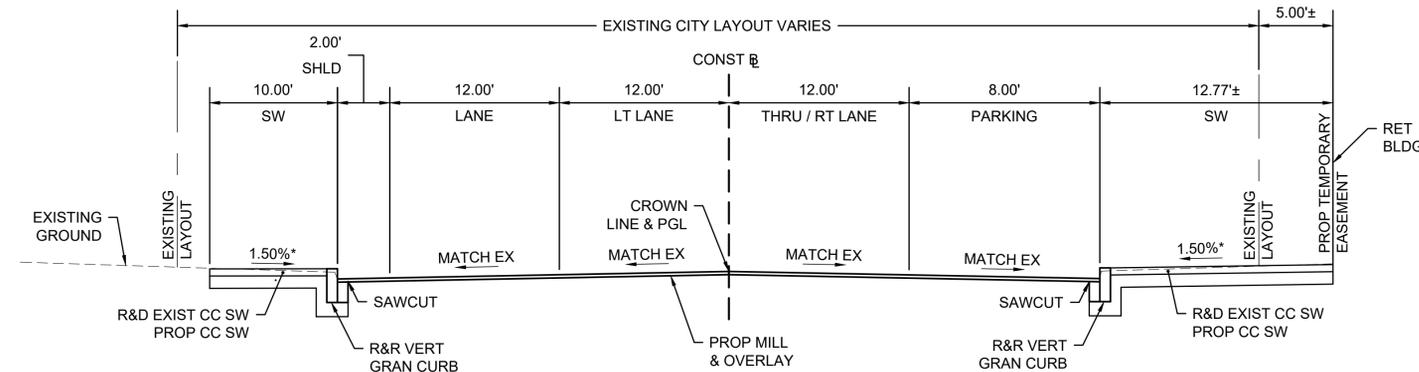
STATION 500+19.24 TO 502+89.71



**SOUTH STREET  
MILL AND OVERLAY**

NOT TO SCALE

STATION 100+42.49 TO 103+75.00



**THOS. F. MANN SQUARE  
MILL AND OVERLAY**

NOT TO SCALE

STATION 400+18.76 TO 401+13.37

**PAVEMENT DESIGN**

**PROPOSED FULL DEPTH PAVEMENT - LOWELL CONNECTOR**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 4.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED FULL DEPTH PAVEMENT - GORHAM STREET, ROUNDABOUT & PARKING LOT**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC-12.5 P) OVER
- 1.75" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
- 3.50" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- 4.00" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER
- 8.00" GRAVEL BORROW

**PROPOSED MILLING AND OVERLAY**

- 1.75" SUPERPAVE SURFACE COURSE 12.5 POLYMER (SSC - 12.5 P) OVER
- 1.75" PAVEMENT FINE MILLING

**PROPOSED SIDEWALKS & ISLANDS**

- 4.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SIDEWALK THROUGH DRIVEWAYS**

- 6.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED ROUNDABOUT TRUCK APRON**

- 8.00" CEMENT CONCRETE OVER
- 8.00" GRAVEL BORROW

**PROPOSED SHARED USE PATHS (SUP) & HMA DRIVEWAYS**

- 1.50" SUPERPAVE SURFACE COURSE 9.5 (SSC-9.5) OVER
- 2.50" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
- 8.00" GRAVEL BORROW

**GENERAL NOTES**

1. ASPHALT EMULSION FOR TACK COAT SHALL BE SPRAY APPLIED FOR UNIFORM COVERAGE IN ACCORDANCE WITH SECTION 450.
2. HMA JOINT SEALANT SHALL BE APPLIED TO ALL PAVEMENT JOINTS AND ALONG ADJOINING EDGES SUCH AS CURB, CASTINGS AND SAWCUTS PRIOR TO PLACING SURFACE COURSE.
3. TOLERANCE FOR CONSTRUCTION 0.5%±

**CUT/FILL SLOPES**

MAX 2:1

\*SIDEWALK AND SUP CROSS SLOPE SHALL HAVE A TOLERANCE OF ± 0.50%

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

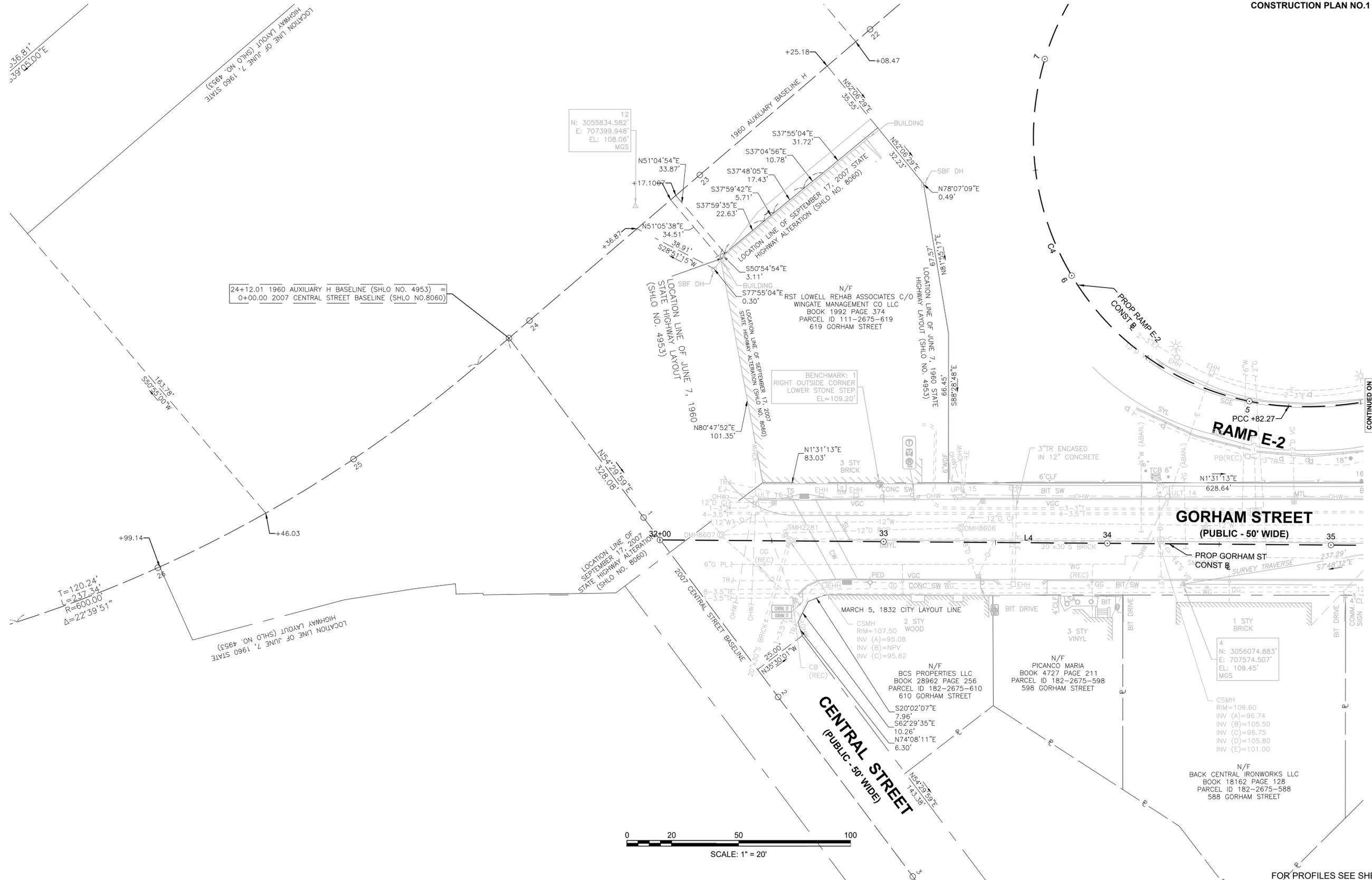
SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	128
PROJECT FILE NO.		604694	

CONSTRUCTION PLAN NO.1



24+12.01 1960 AUXILIARY H BASELINE (SHLO NO. 4953) =  
 0+00.00 2007 CENTRAL STREET BASELINE (SHLO NO.8060)

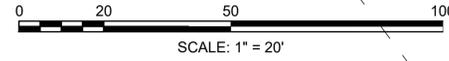
T=120.24'  
 L=237.34'  
 R=600.00'  
 Δ=22°39'51"

12  
 N: 3055834.582'  
 E: 707399.948'  
 EL: 108.06'  
 MGS

BENCHMARK: 1  
 RIGHT OUTSIDE CORNER  
 LOWER STONE STEP  
 EL=109.20'

4  
 N: 3056074.883'  
 E: 707574.507'  
 EL: 109.45'  
 MGS

N/F  
 BACK CENTRAL IRONWORKS LLC  
 BOOK 18162 PAGE 128  
 PARCEL ID 182-2675-588  
 588 GORHAM STREET



CONTINUED ON  
SHEET NO. 11

FOR PROFILES SEE SHEETS 18

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

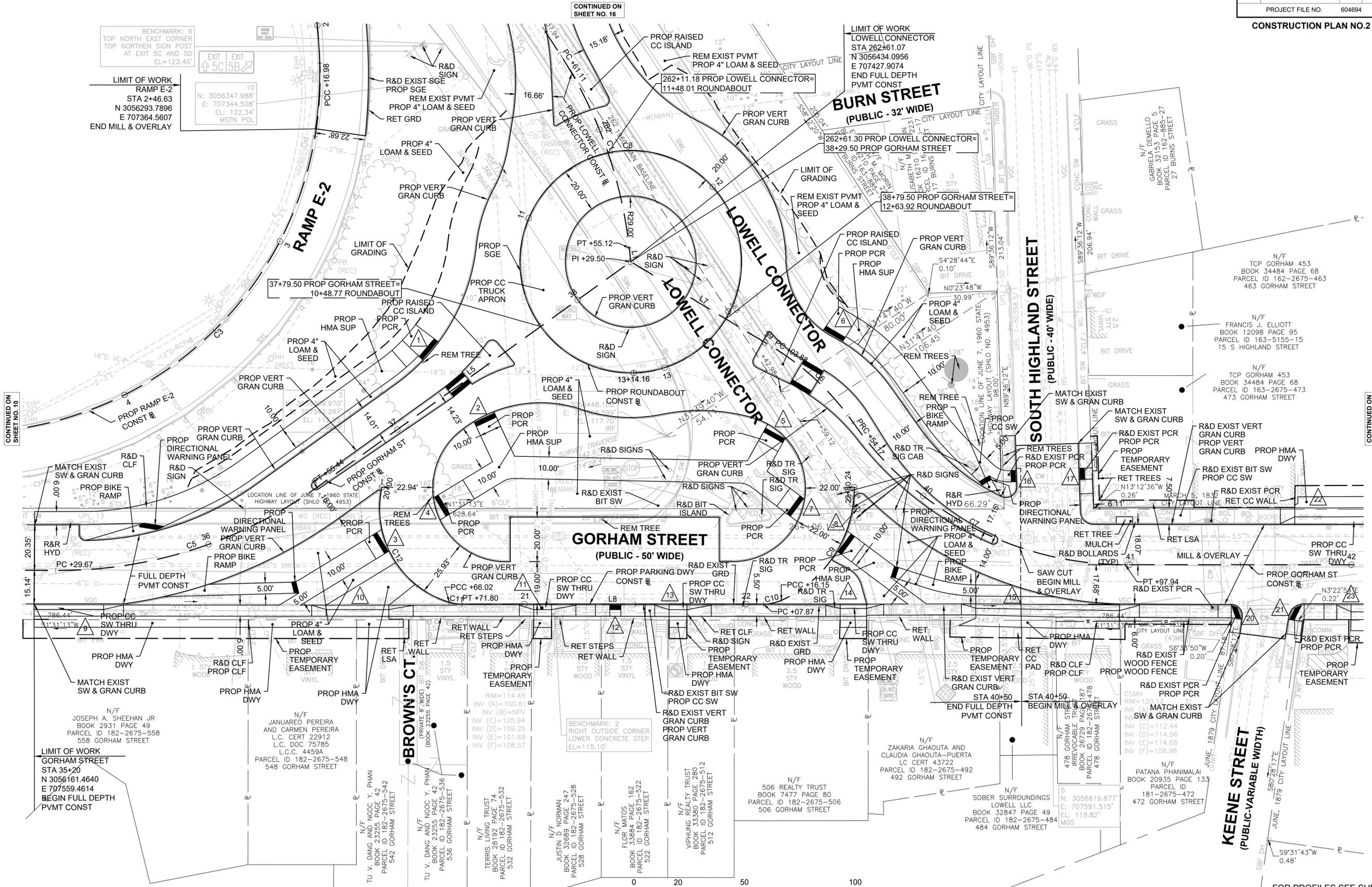
SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	128
PROJECT FILE NO.		604694	

CONSTRUCTION PLAN NO.2

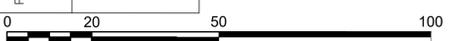


GORHAM STREET  
(PUBLIC - 50' WIDE)

BURN STREET  
(PUBLIC - 32' WIDE)

SOUTH HIGHLAND STREET  
(PUBLIC - 40' WIDE)

KEENE STREET  
(PUBLIC-VARIABLE WIDTH)



SCALE: 1" = 20'

FOR PROFILES SEE SHEETS 20

CONTINUED ON SHEET NO. 10

CONTINUED ON SHEET NO. 12

CONTINUED ON SHEET NO. 16

HIGHWAY GUARD DETAILS

TRAFFIC SIGNAL CONDUIT

WATER SUPPLY ALTERATIONS

DRAINAGE DETAILS

NONE

SEE BELOW

SEE BELOW

SEE BELOW

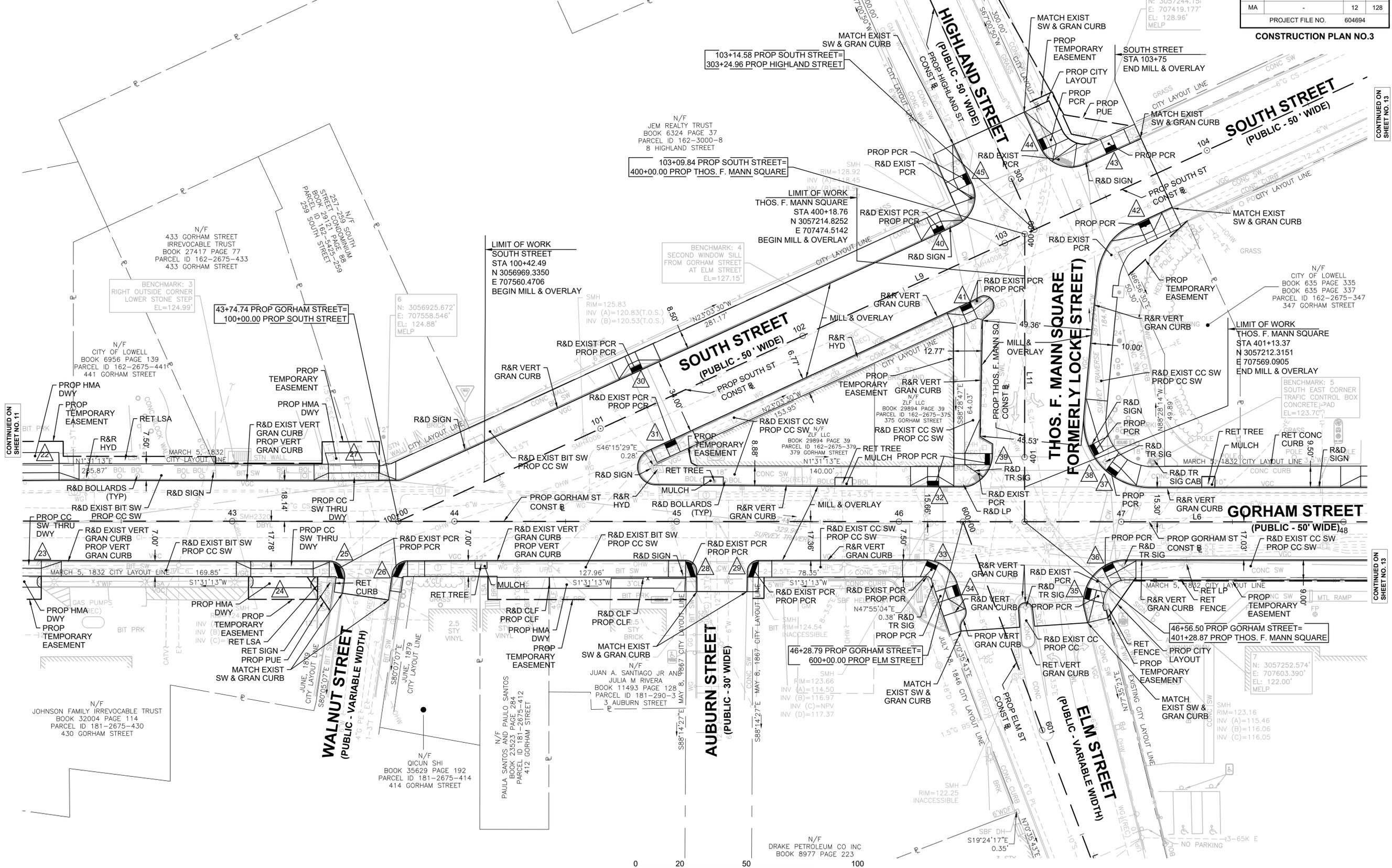


LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	128

PROJECT FILE NO. 604694

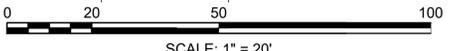
CONSTRUCTION PLAN NO.3



CONTINUED ON SHEET NO. 11

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 13



FOR PROFILES SEE SHEETS 19

604694\_H0(CONSTR).DWG Plotted on 22-May-2024 10:20 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	128
PROJECT FILE NO.		604694	

CONSTRUCTION PLAN NO.4

CONTINUED ON  
SHEET NO. 17

N/F  
GORHAM STREET LLC  
BOOK 27402 PAGE 52  
PARCEL ID 162-2675-305  
305 GORHAM STREET

N/F  
ACRE FAMILY CHILD CARE, INC.  
BOOK 36324 PAGE 42  
PARCEL ID 162-2675-327  
327 GORHAM STREET

N/F  
GORHAM STREET LLC  
BOOK 27402 PAGE 52  
PARCEL ID 162-2675-305  
305 GORHAM STREET

N/F  
LOWELL HOUSING AUTHORITY  
BOOK 1368 PAGE 208  
PARCEL ID 181-2675-179  
179 GORHAM STREET

LIMIT OF WORK  
FATHER RONAN TERRACE  
STA 502+89.71  
N 3057608.4306  
E 707574.1182  
END MILL & OVERLAY

LIMIT OF WORK  
GORHAM STREET  
STA 50+84  
N 3057639.2159  
E 707595.9294  
END MILL & OVERLAY

CONTINUED ON  
SHEET NO. 13

50+52.51 PROP GORHAM STREET=  
503+10.70 PROP FATHER RONAN TERRACE

BENCHMARK: 7  
S.W. CORNER OF  
CONC BASE OF  
LIGHT POLE 14  
EL=113.21'

N/F  
ST. JOHN'S EPISCOPAL CHURCH  
BOOK 3833 PAGE 229  
PARCEL ID 181-2675-260  
260 GORHAM STREET

N/F  
ST. PETER'S SCHOOL CONDOMINIUM  
BOOK 3833 PAGE 229  
PARCEL ID 181-2675-230  
230 GORHAM STREET



SCALE: 1" = 20'

FOR PROFILES SEE SHEETS 24

604694\_H0(CONST).DWG Plotted on 22-May-2024 10:20 AM

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	128

PROJECT FILE NO. 604694

CONSTRUCTION PLAN NO.5

**HOWARD STRE**  
(PUBLIC - 50' WIDE)

248+83.20 1960 MAIN BASELINE  
9+77.26 1960 AUXILIARY BASELINE G

912  
N: 3055663.613'  
E: 706196.329'  
EL: 135.83'  
MSTN TRG

911  
N: 3055688.330'  
E: 706230.055'  
EL: 135.93'  
MSTN TRG

+83.20  
PCC

910  
N: 3055769.034'  
E: 706342.347'  
EL: 139.45'  
MSTN TRG

27  
N: 3055889.736'  
E: 706435.434'  
EL: 140.53'  
MMAG

908  
N: 3055889.928'  
E: 706510.379'  
EL: 140.71'  
MSTN TRG

LIMIT OF WORK  
LOWELL CONNECTOR  
STA 251+96  
N 3055895.6263  
E 706513.6921

M/S/CH/LETTS BAY  
TRANSPORTATION AUTHORITY  
PARCEL ID 142-5098-214.1



SCALE: 1" = 20'

CONTINUED ON  
SHEET NO. 15

FOR PROFILES SEE SHEETS 21

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

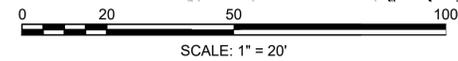
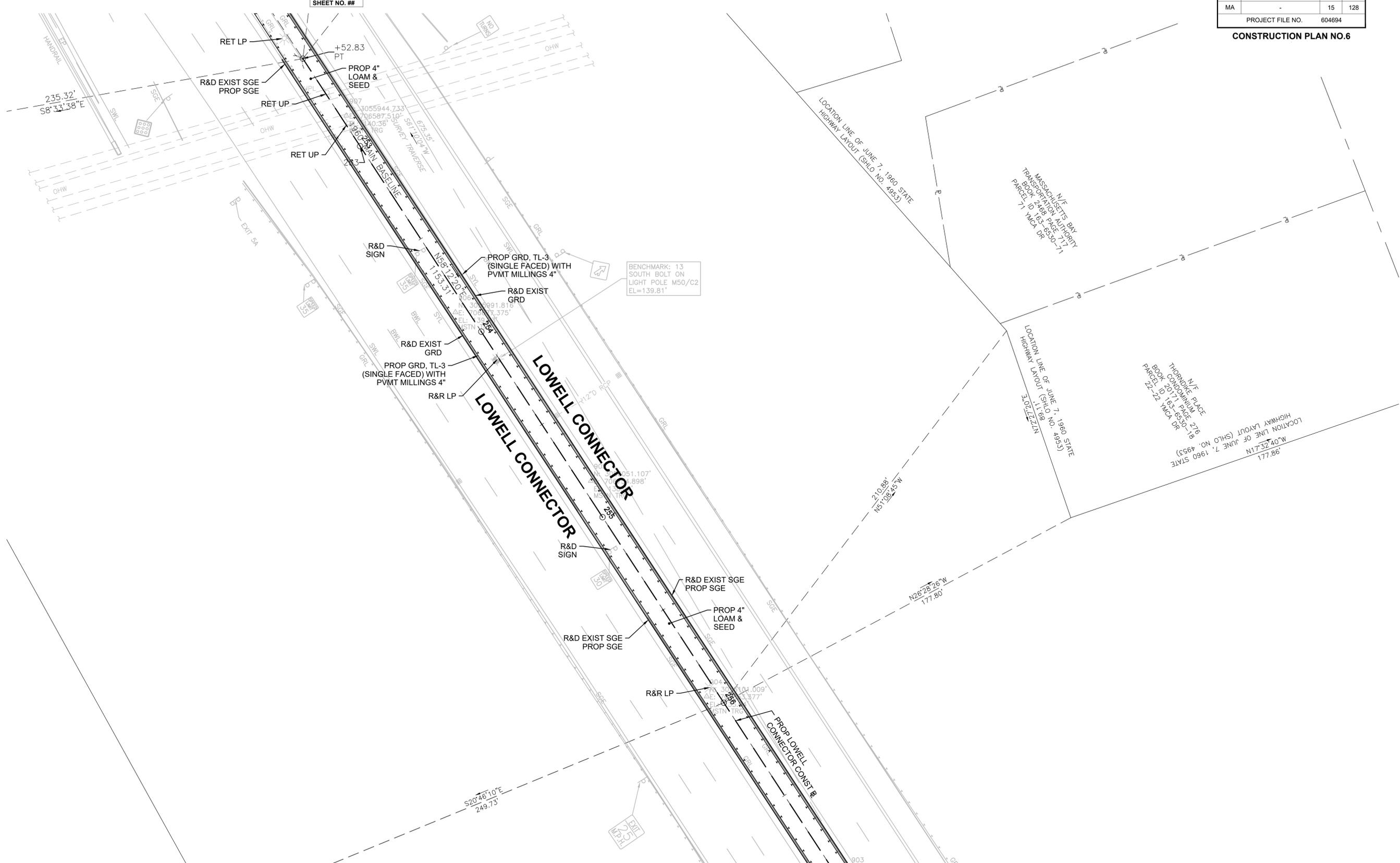
SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	128
PROJECT FILE NO.		604694	

CONSTRUCTION PLAN NO.6



SCALE: 1" = 20'

CONTINUED ON SHEET NO. 16

FOR PROFILES SEE SHEETS 21

HIGHWAY GUARD DETAILS

SEE BELOW

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

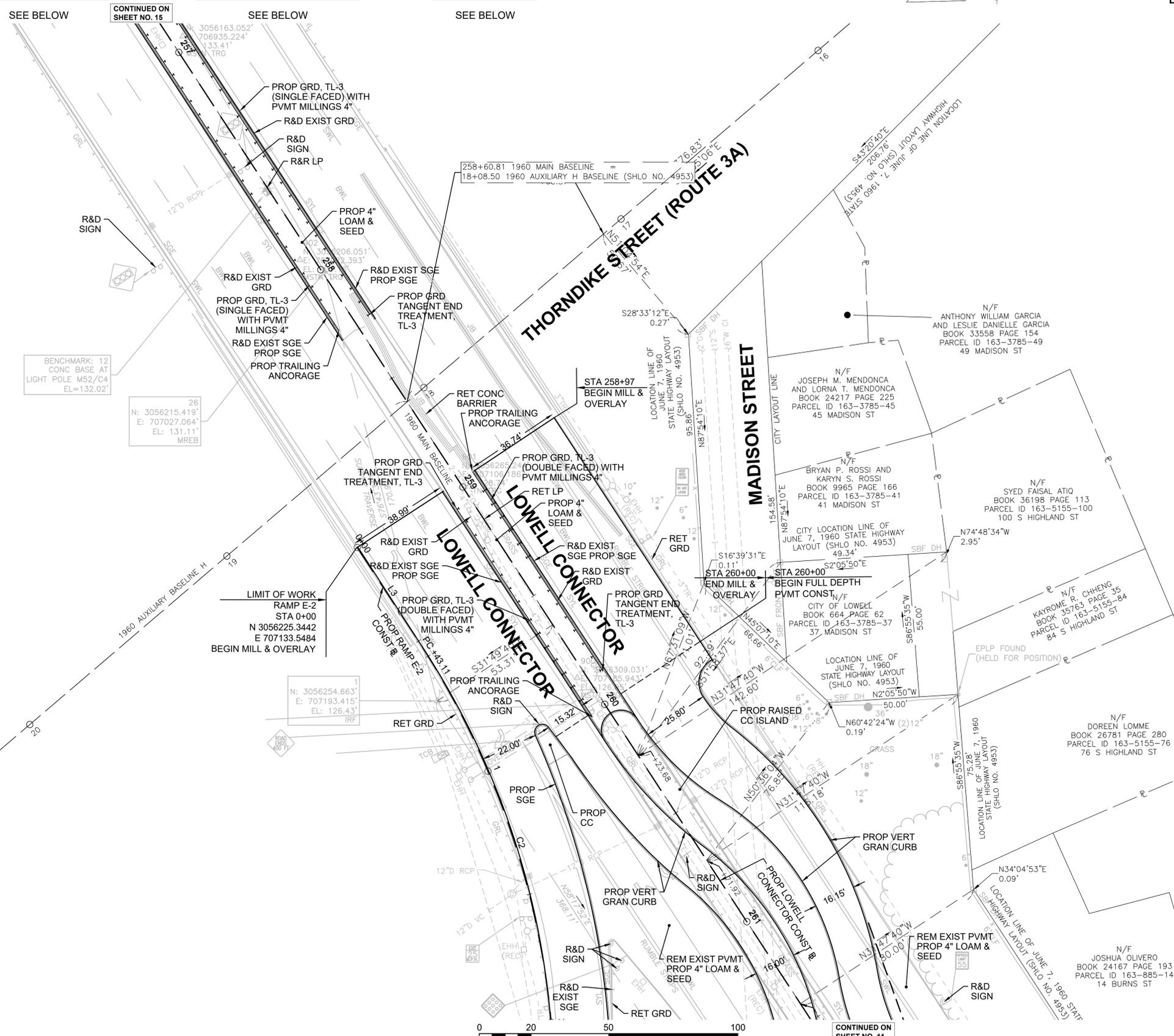
SEE BELOW



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	128
PROJECT FILE NO.		604694	

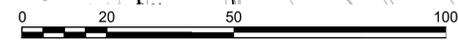
CONSTRUCTION PLAN NO.7



BENCHMARK: 12  
CONC BASE AT  
LIGHT POLE M52/C4  
EL=132.02'

26  
N: 3056215.419'  
E: 707027.064'  
EL: 131.11'  
MREB

N: 3056254.663'  
E: 707193.415'  
EL: 126.43'  
TRF



SCALE: 1" = 20'

CONTINUED ON  
SHEET NO. 11

S33°20'53"W

FOR PROFILES SEE SHEETS 21

604694\_H0(CONST).DWG Plotted on 22-May-2024 10:20 AM

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE BELOW

WATER SUPPLY ALTERATIONS

SEE BELOW

DRAINAGE DETAILS

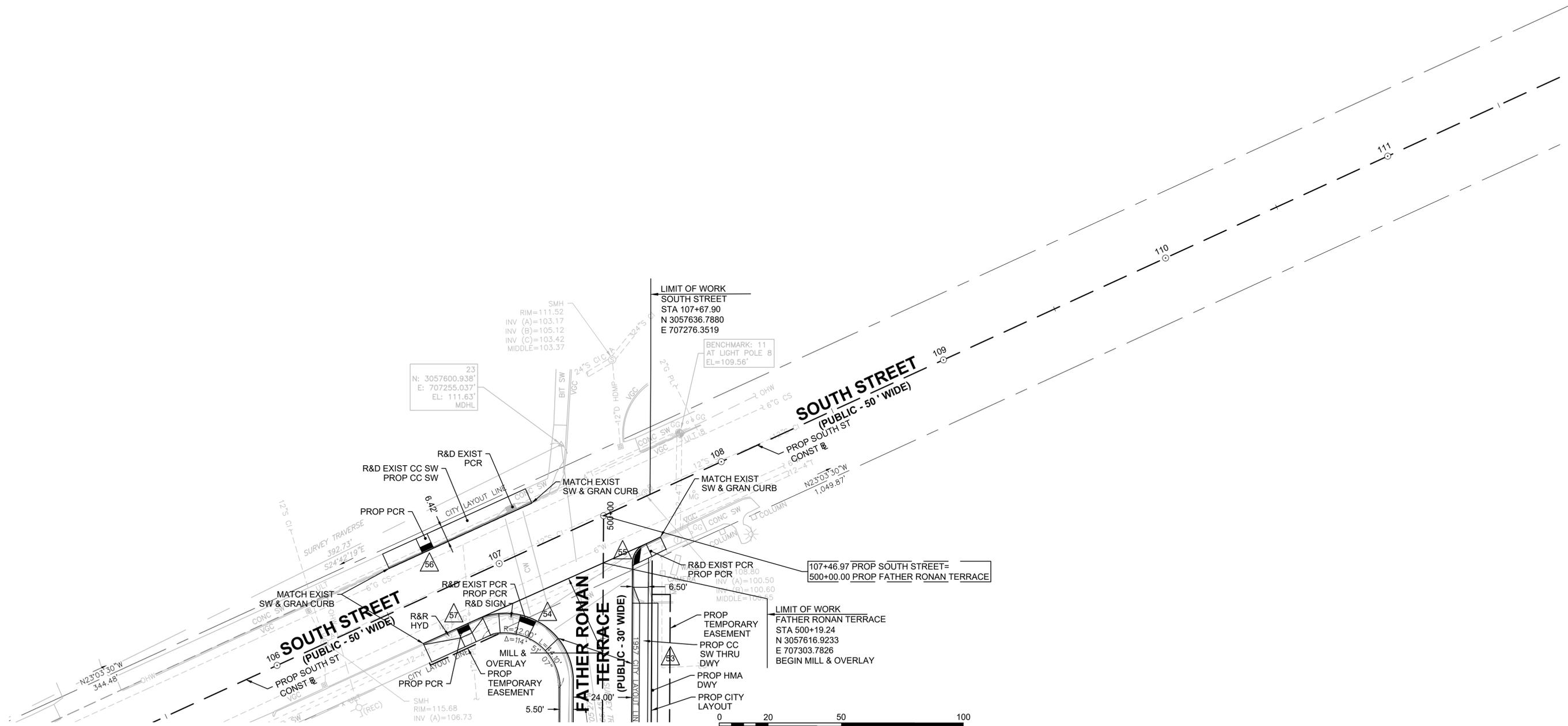
SEE BELOW



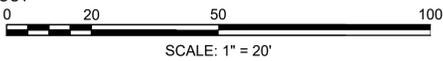
LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	128
PROJECT FILE NO.		604694	

CONSTRUCTION PLAN NO.8



CONTINUED ON SHEET NO. 13

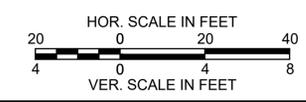
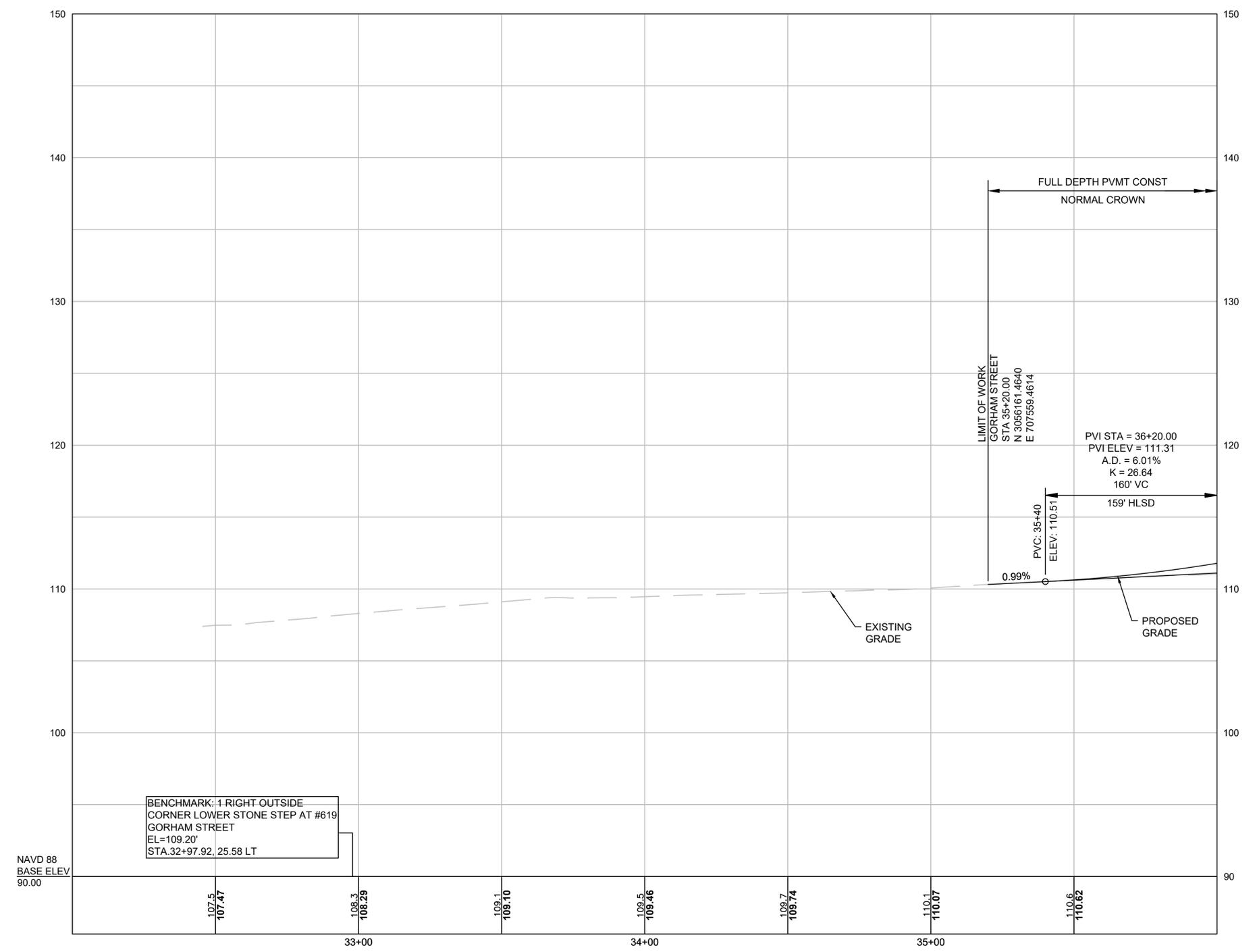


FOR PROFILES SEE SHEETS 24

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	128
PROJECT FILE NO.		604694	

**GORHAM ST PROFILE**



FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 10

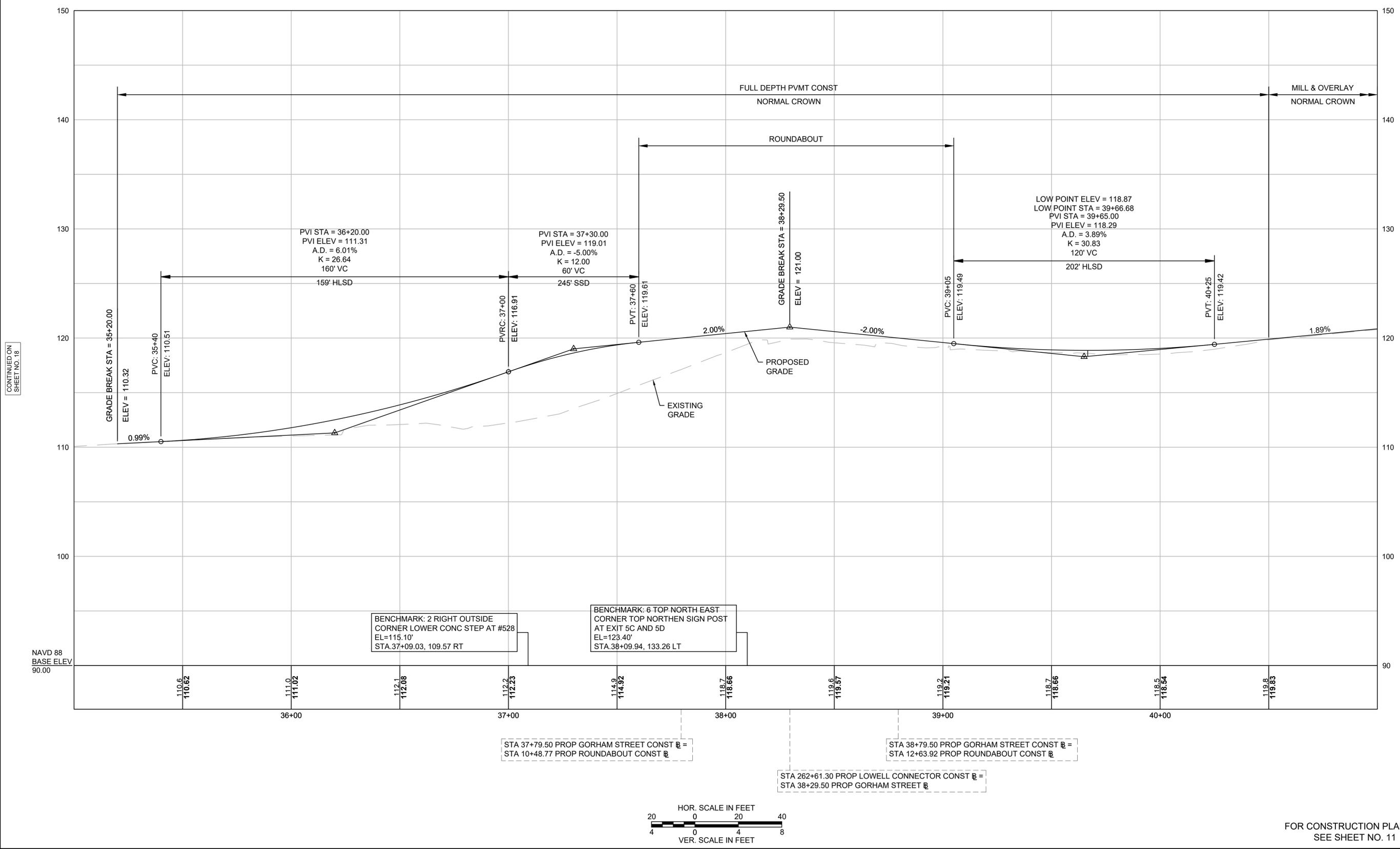
CONTINUED ON  
SHEET NO. 17

CONTINUED ON  
SHEET NO. 19

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	128
PROJECT FILE NO.		604694	

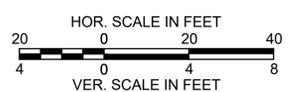
**GORHAM ST PROFILE**



CONTINUED ON  
SHEET NO. 18

CONTINUED ON  
SHEET NO. 20

NAVD 88  
BASE ELEV  
90.00

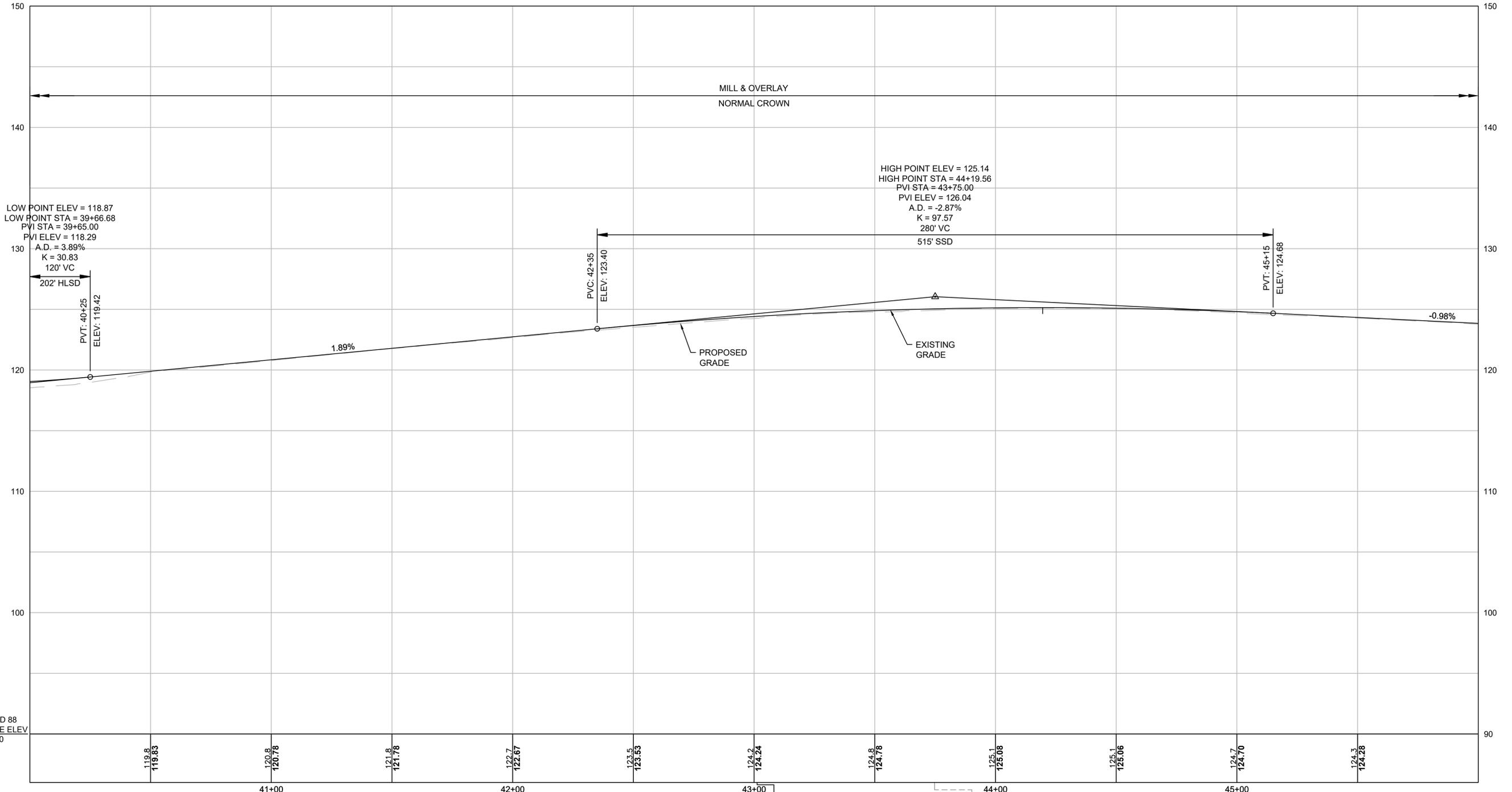


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 11

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	128
PROJECT FILE NO.		604694	

GORHAM ST PROFILE

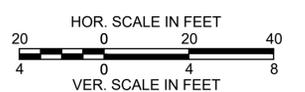


CONTINUED ON  
SHEET NO. 19

CONTINUED ON  
SHEET NO. 21

BENCHMARK: 3 RIGHT OUTSIDE  
CORNER LOWER STONE STEP AT  
#433 GORHAM STREET  
EL=124.99'  
STA.43+01.26, 25.49 LT

STA 43+74.74 PROP GORHAM STREET CONST @ =  
STA 100+00.00 PROP SOUTH STREET CONST @

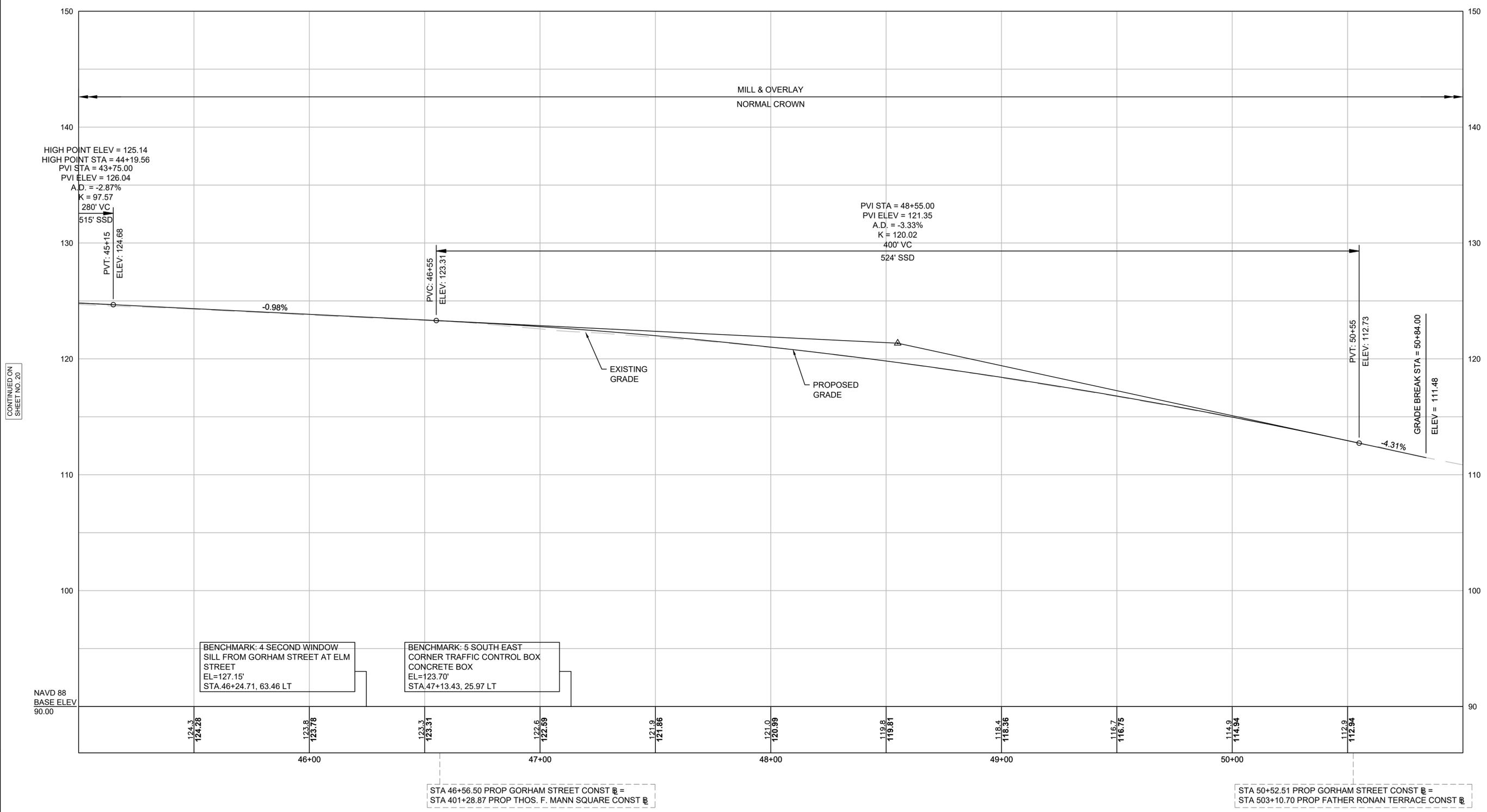


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 12

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

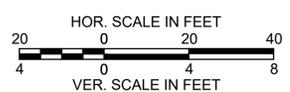
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	128
PROJECT FILE NO.		604694	

GORHAM ST PROFILE



CONTINUED ON  
SHEET NO. 20

CONTINUED ON  
SHEET NO. 22

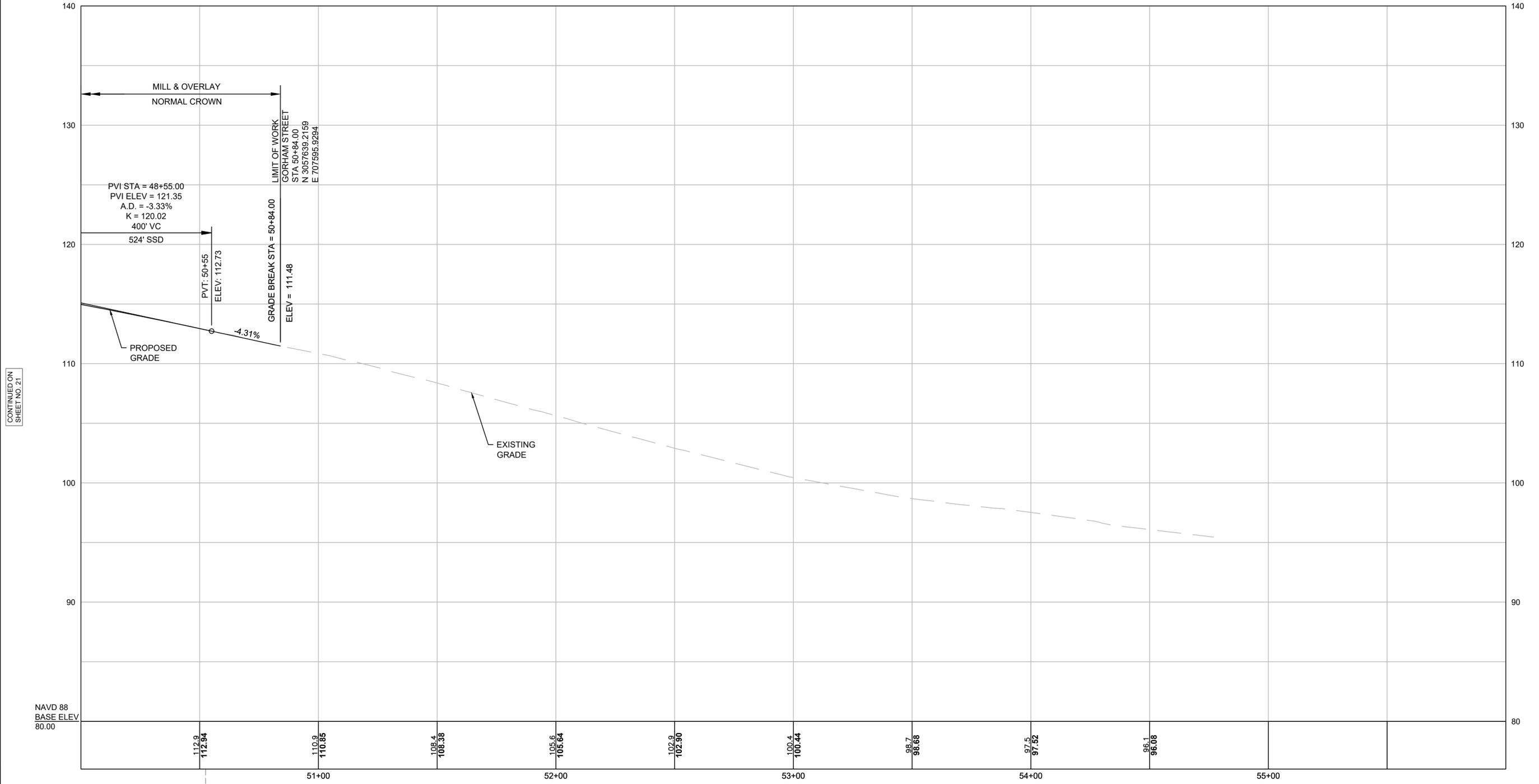


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 13

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	128
PROJECT FILE NO.		604694	

GORHAM STREET PROFILE



CONTINUED ON  
SHEET NO. 21

NAVD 88  
BASE ELEV  
80.00

STA 50+52.51 PROP GORHAM STREET CONST R =  
STA 503+10.70 PROP FATHER RONAN TERRACE CONST R

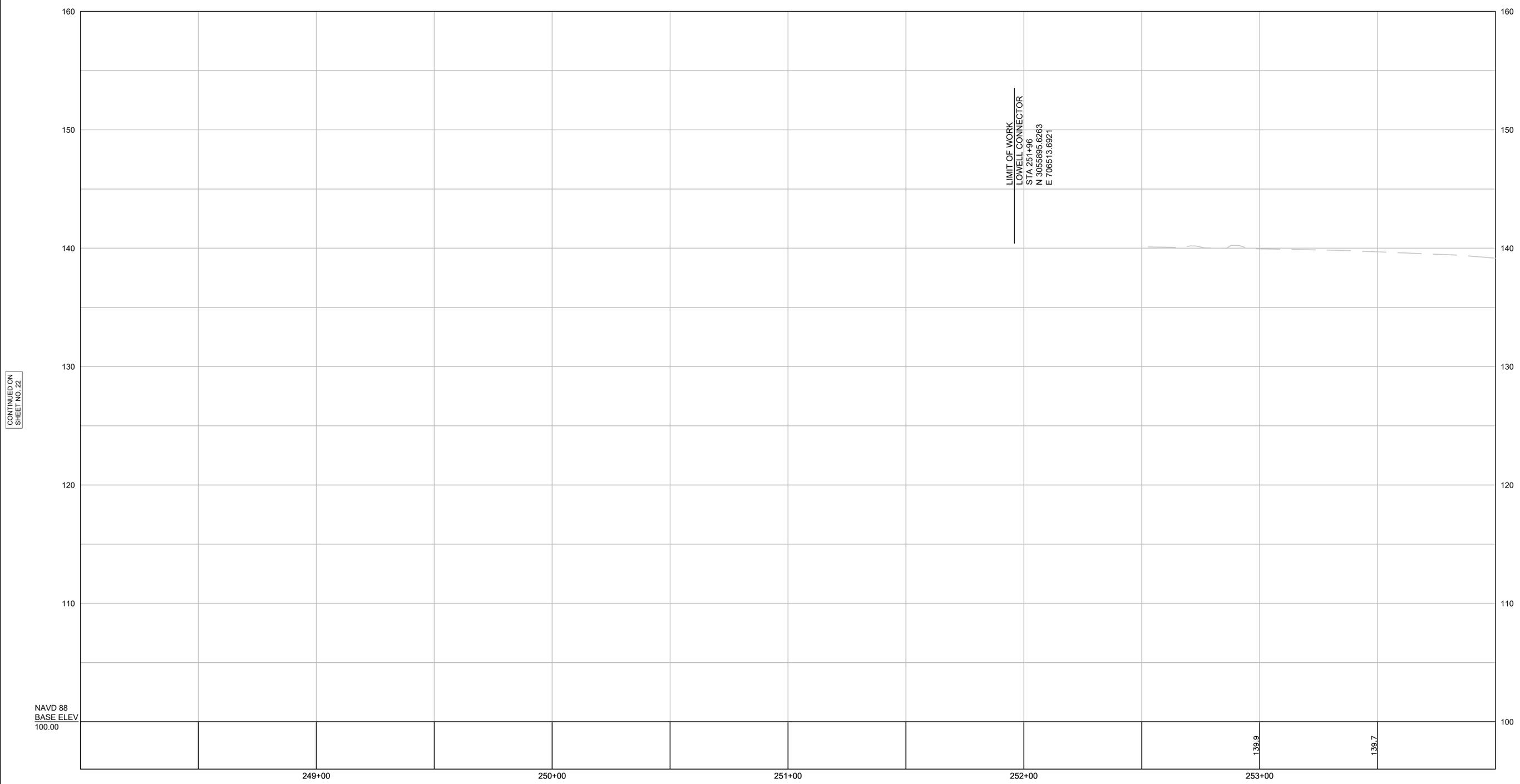


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 13

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	128
PROJECT FILE NO.		604694	

**LOWELL CONNECTOR PROFILE**

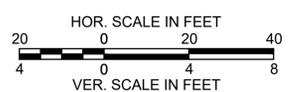


LIMIT OF WORK  
LOWELL CONNECTOR  
STA 251+96  
N 3055895.6263  
E 706513.6921

NAVD 88  
BASE ELEV  
100.00

CONTINUED ON  
SHEET NO. 22

CONTINUED ON  
SHEET NO. 24

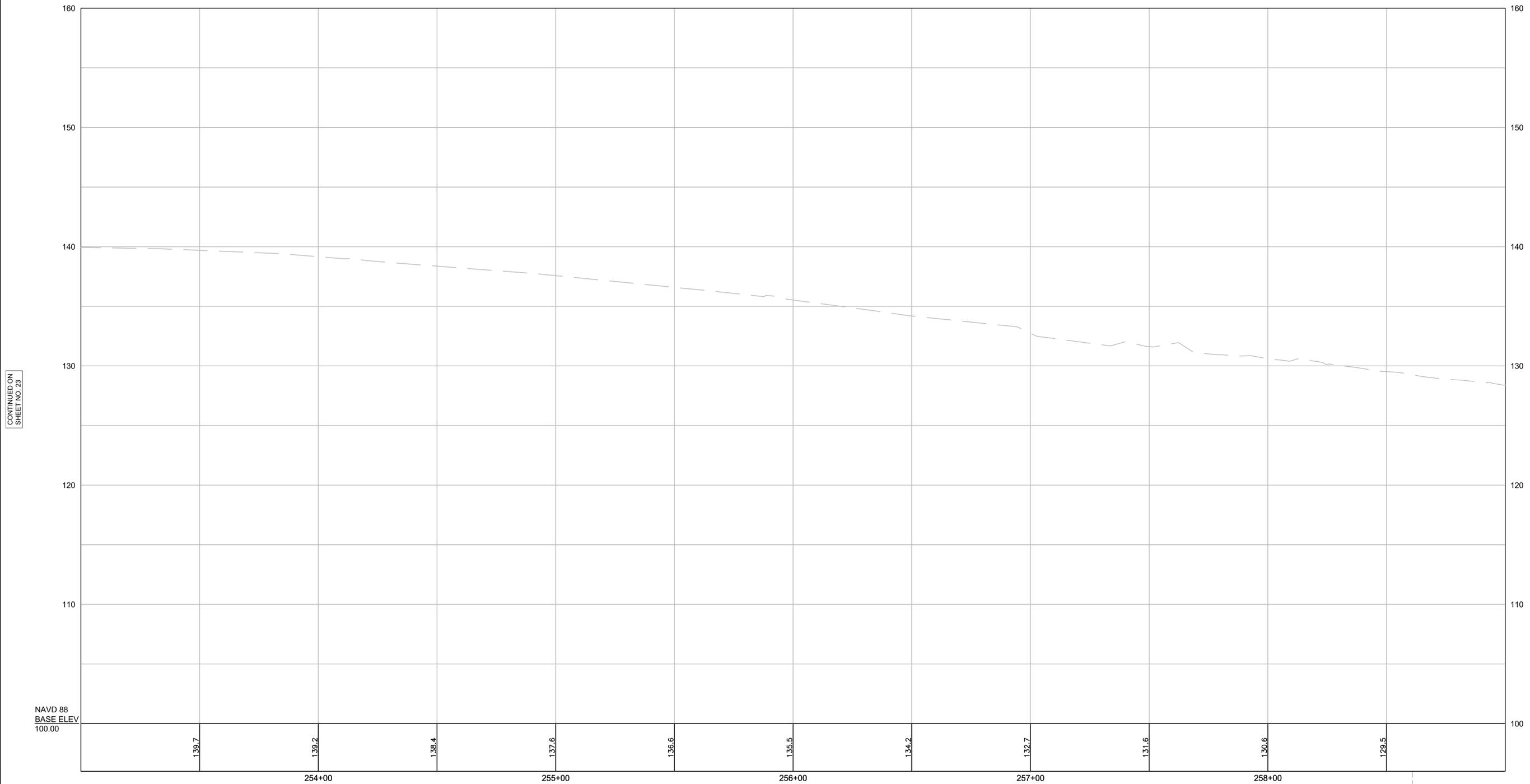


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 16

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	128
PROJECT FILE NO.		604694	

**LOWELL CONNECTOR PROFILE**

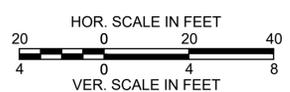


CONTINUED ON  
SHEET NO. 23

CONTINUED ON  
SHEET NO. 25

NAVD 88  
BASE ELEV  
100.00

STA 258+60.81 PROP LOWELL CONNECTOR CONST E =  
STA 18+08.50 THORNDIKE STREET RECORD E =

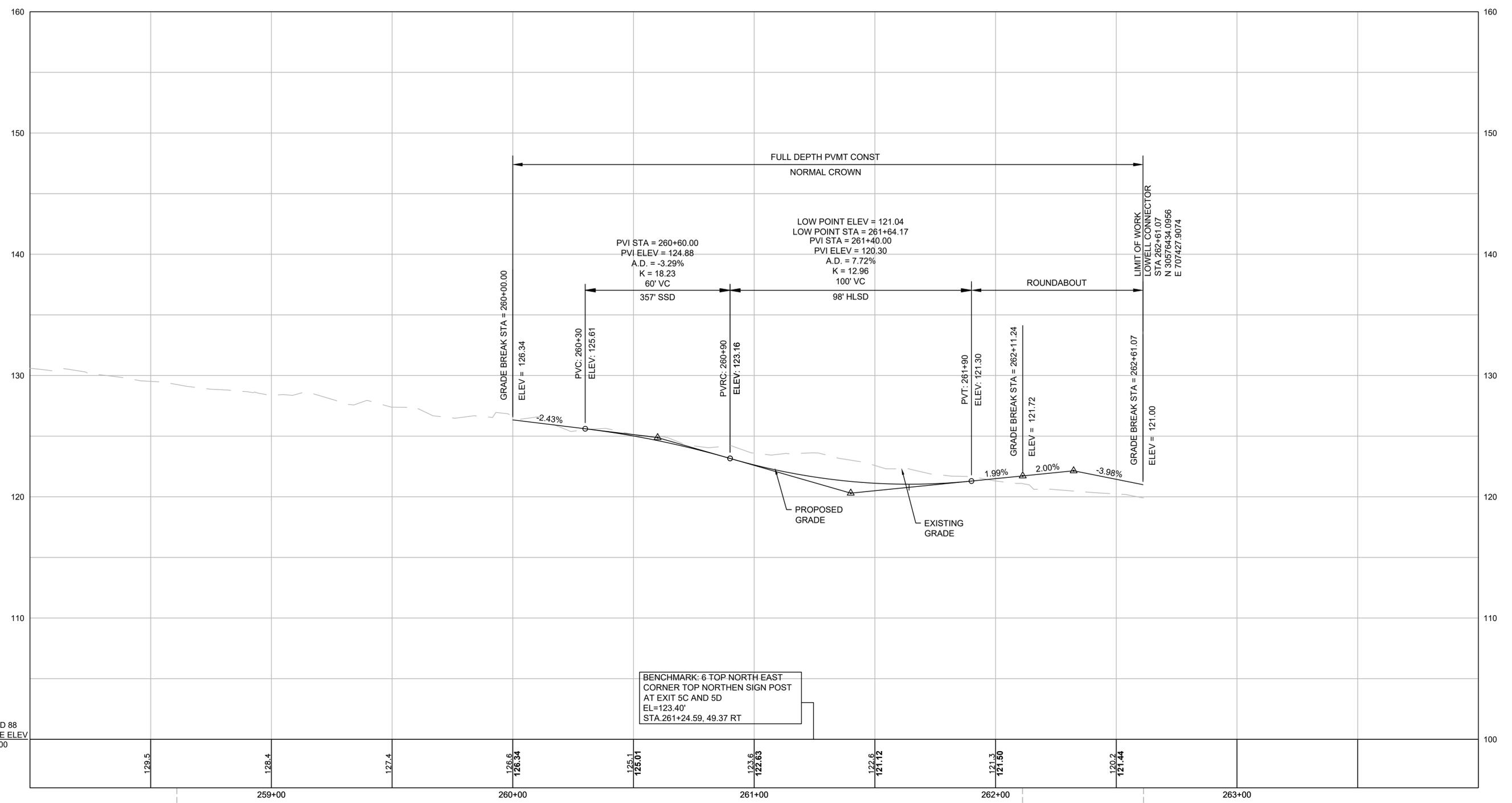


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 16

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	128
PROJECT FILE NO.		604694	

**LOWELL CONNECTOR PROFILE**



CONTINUED ON  
SHEET NO. 24

CONTINUED ON  
SHEET NO. 26

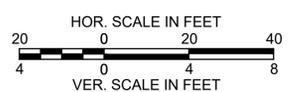
NAVD 88  
BASE ELEV  
100.00

BENCHMARK: 6 TOP NORTH EAST  
CORNER TOP NORTHERN SIGN POST  
AT EXIT 5C AND 5D  
EL=123.40  
STA.261+24.59, 49.37 RT

STA 258+60.81 PROP LOWELL CONNECTOR CONST =  
STA 18+08.50 THORNDIKE STREET RECORD =

STA 262+11.18 PROP LOWELL CONNECTOR CONST =  
STA 11+48.01 PROP ROUNDABOUT CONST =

STA 262+61.30 PROP LOWELL CONNECTOR CONST =  
STA 38+29.50 PROP GORHAM STREET =

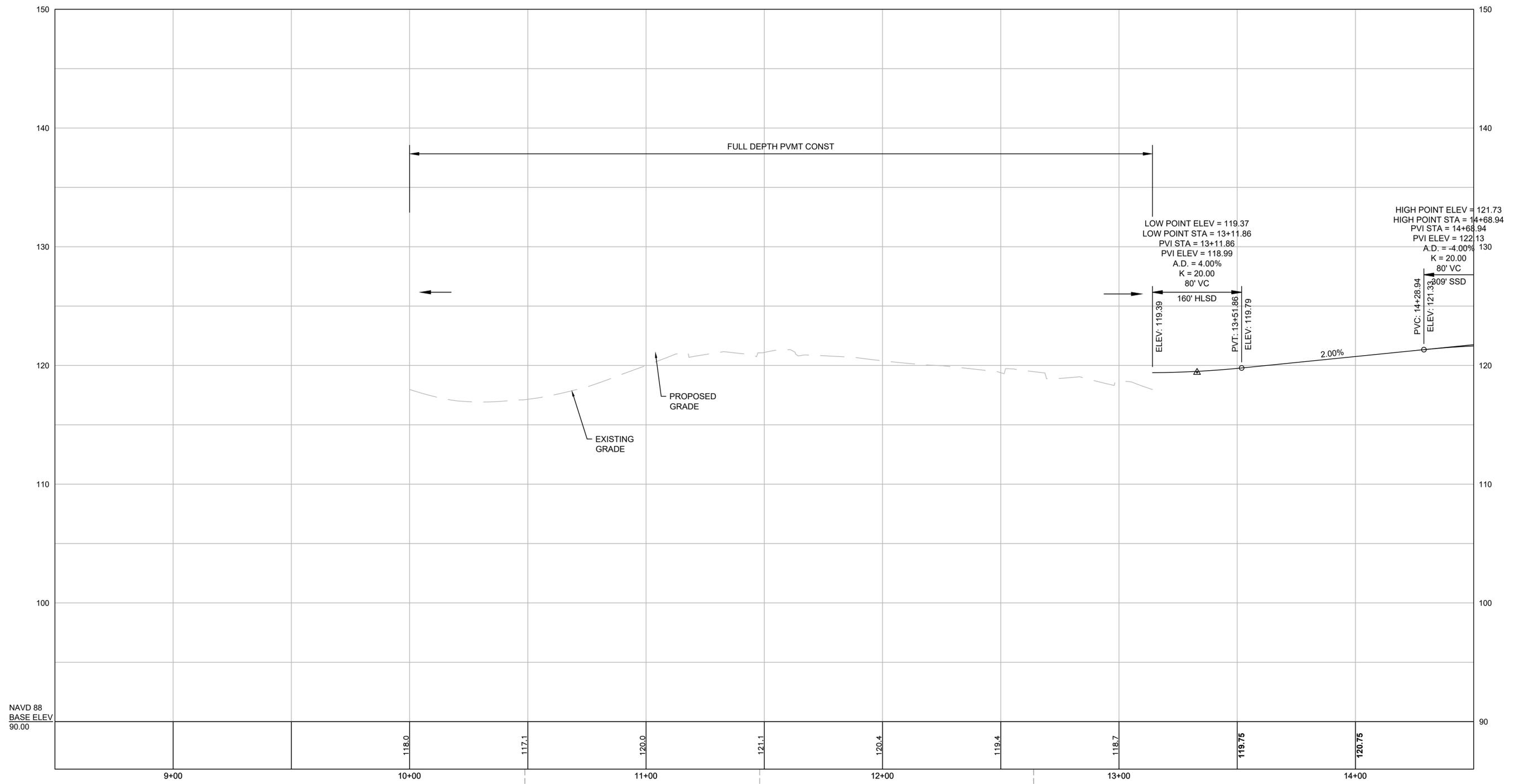


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 16

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	128
PROJECT FILE NO.		604694	

**ROUNDABOUT PROFILE**

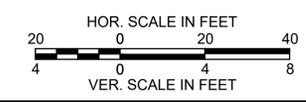


NAVD 88  
BASE ELEV  
90.00

STA 10+48.77 PROP ROUNDABOUT CONST =  
STA 37+79.50 PROP GORHAM STREET CONST =

STA 11+48.01 PROP ROUNDABOUT CONST =  
STA 262+11.18 PROP LOWELL CONNECTOR CONST =

STA 12+63.92 PROP ROUNDABOUT CONST =  
STA 38+79.50 PROP GORHAM STREET CONST =

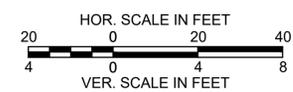
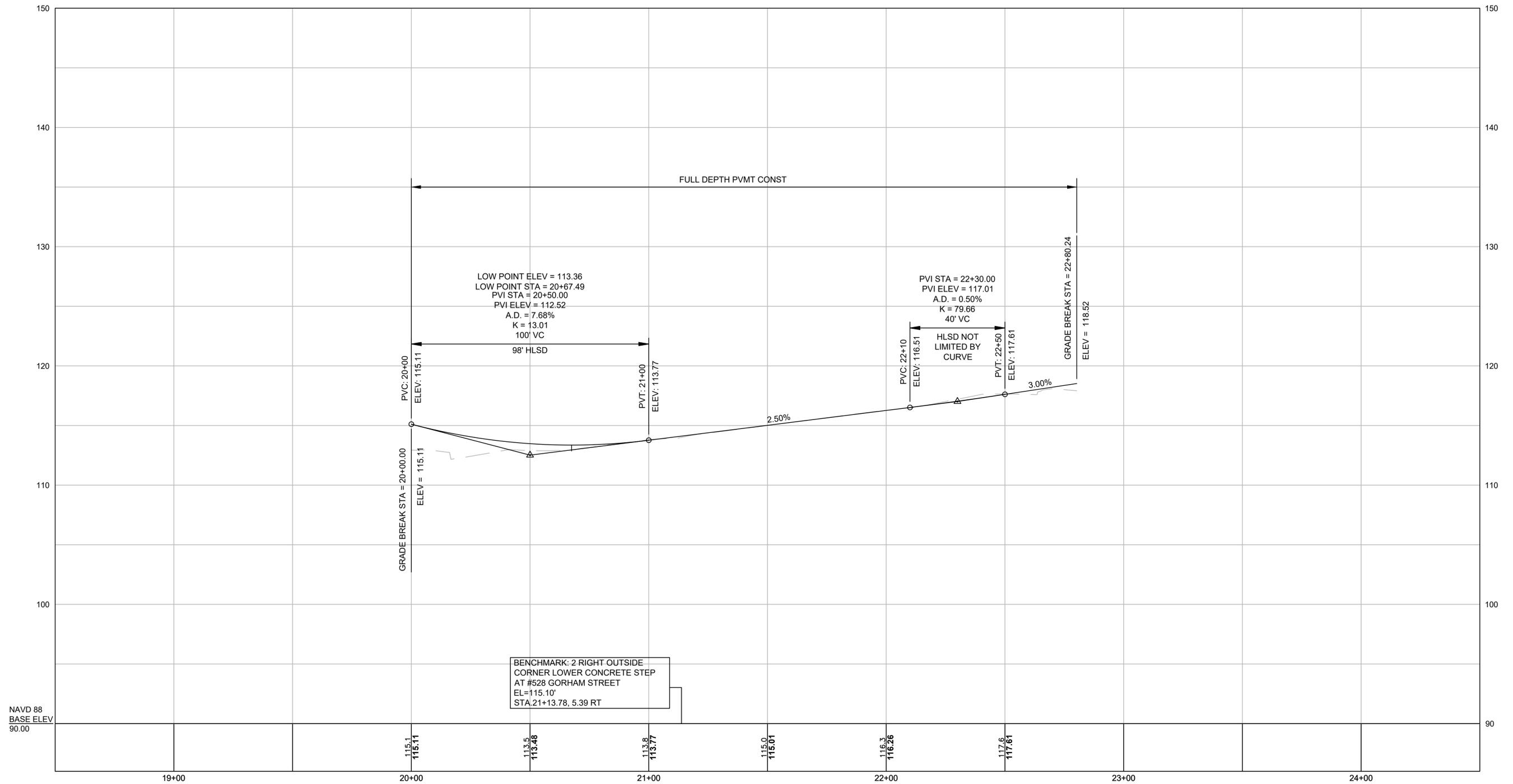


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. ##

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	128
PROJECT FILE NO.		604694	

**PARKING LOT PROFILE**

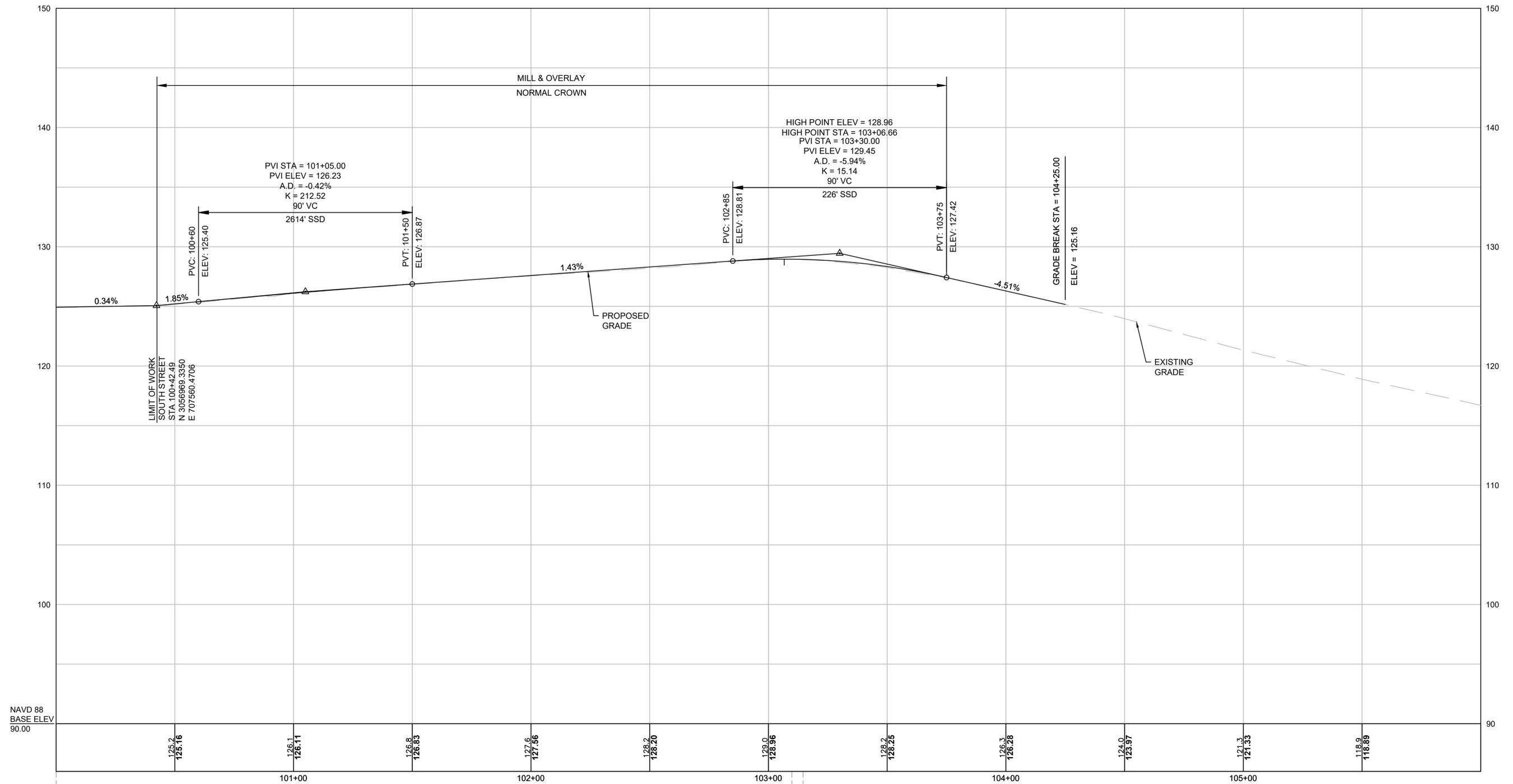


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 11

**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	128
PROJECT FILE NO.		604694	

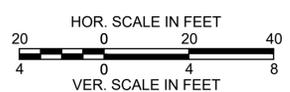
**SOUTH ST PROFILE**



STA 100+00.00 PROP SOUTH STREET CONST =  
 STA 43+74.74 PROP GORHAM STREET CONST =

STA 103+09.84 PROP SOUTH STREET CONST =  
 STA 400+00.00 PROP THOS. F. MANN SQUARE CONST =

STA 103+14.58 PROP SOUTH STREET CONST =  
 STA 303+24.96 PROP HIGHLAND STREET CONST =

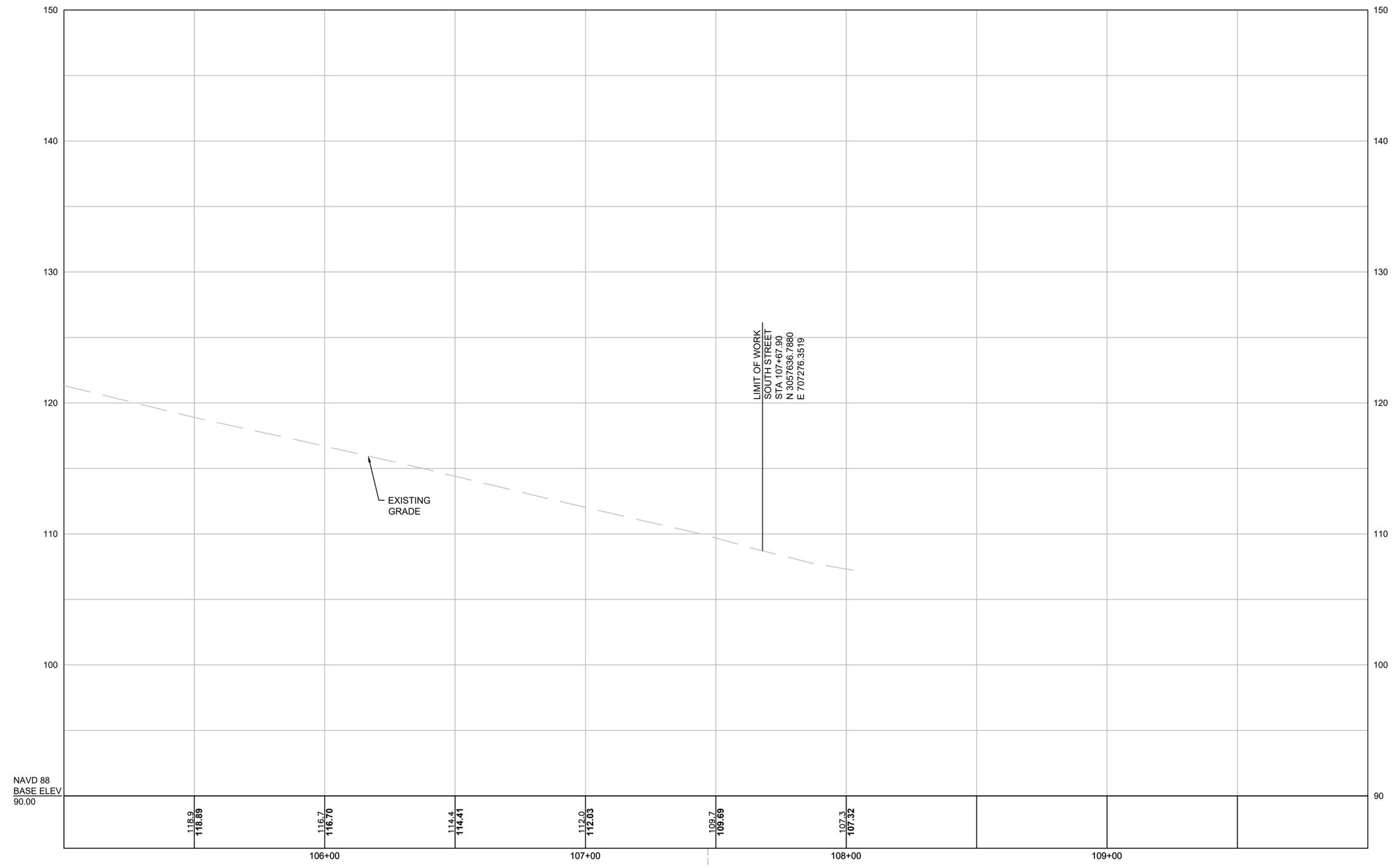


FOR CONSTRUCTION PLAN:  
 SEE SHEET NO. 11

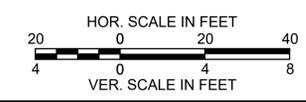
**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	128
PROJECT FILE NO.		604694	

**SOUTH ST PROFILE**



STA 107+46.97 PROP SOUTH STREET CONST @ =  
 STA 500+00.00 PROP FATHER RONAN TERRACE CONST @

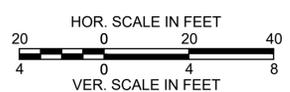
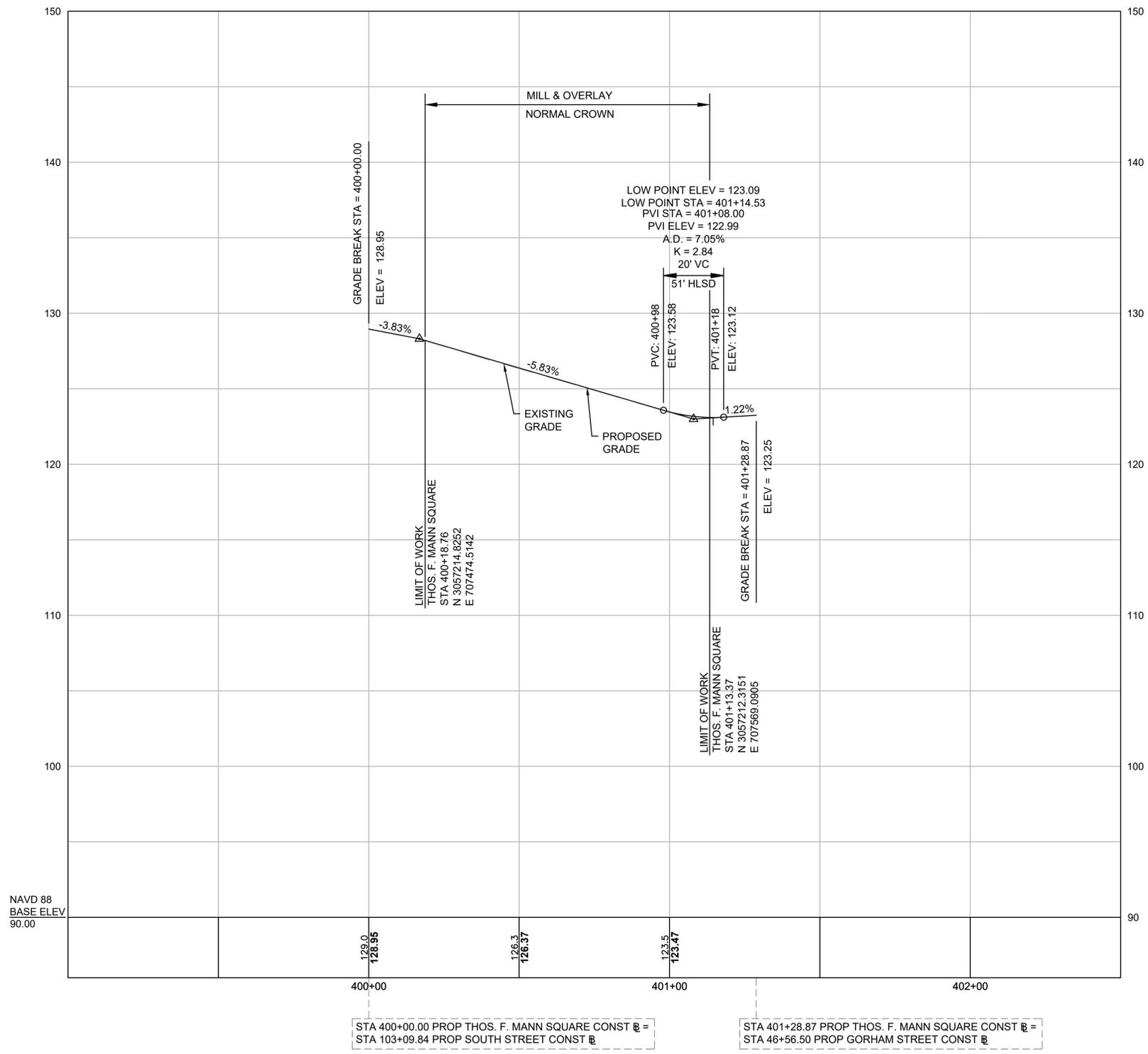


FOR CONSTRUCTION PLAN:  
 SEE SHEET NO. 11

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	128
PROJECT FILE NO.		604694	

THOS. F. MANN SQUARE

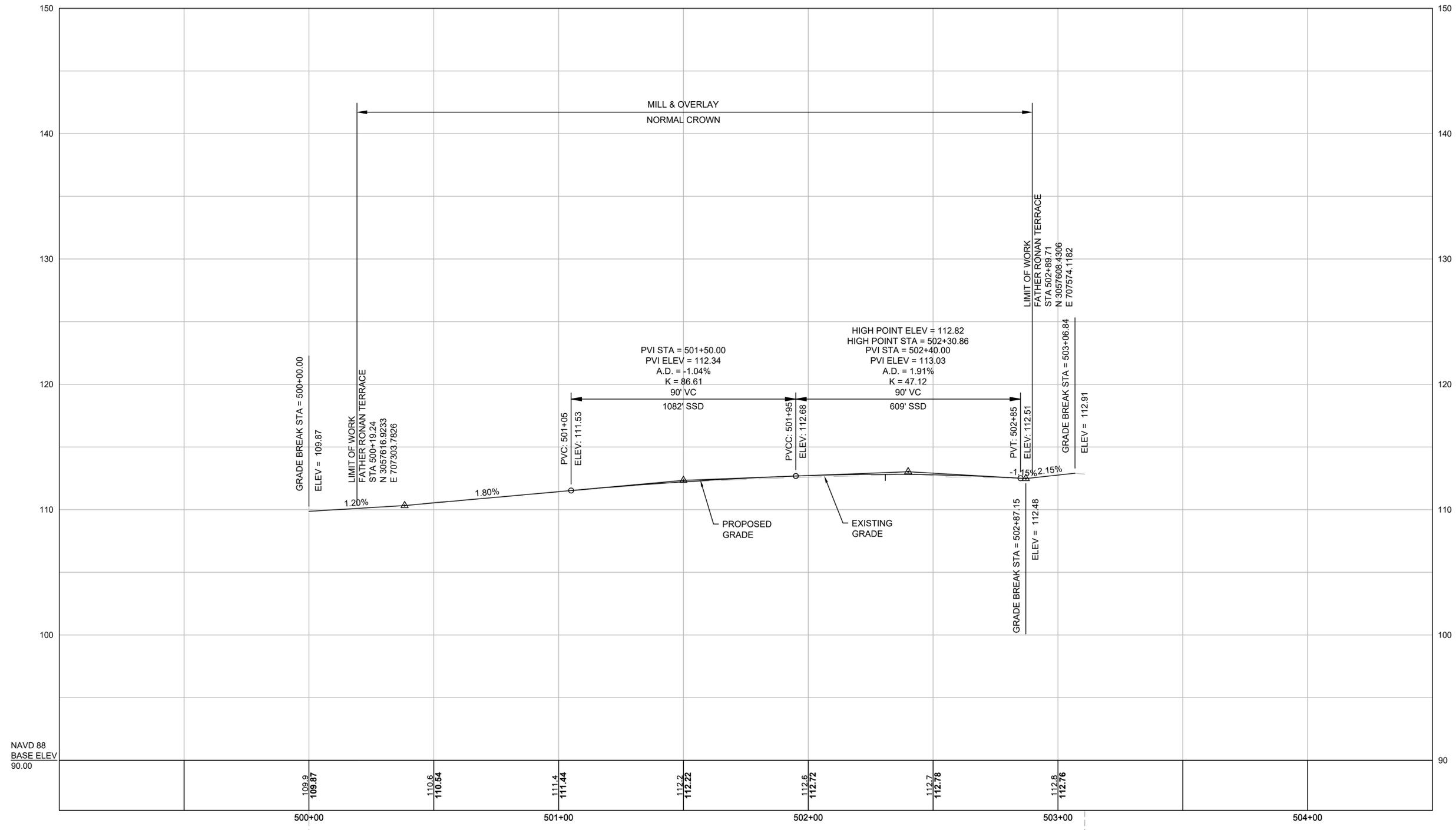


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 11

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

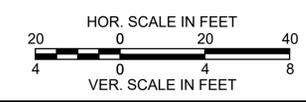
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	128
PROJECT FILE NO.		604694	

**FATHER RONAN TERRACE**



STA 500+00.00 PROP FATHER RONAN TERRACE CONST  $\square$  =  
STA 107+46.97 PROP SOUTH STREET CONST  $\square$

STA 503+10.70 PROP FATHER RONAN TERRACE CONST  $\square$  =  
STA 50+52.51 PROP GORHAM STREET CONST  $\square$

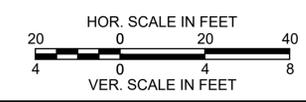
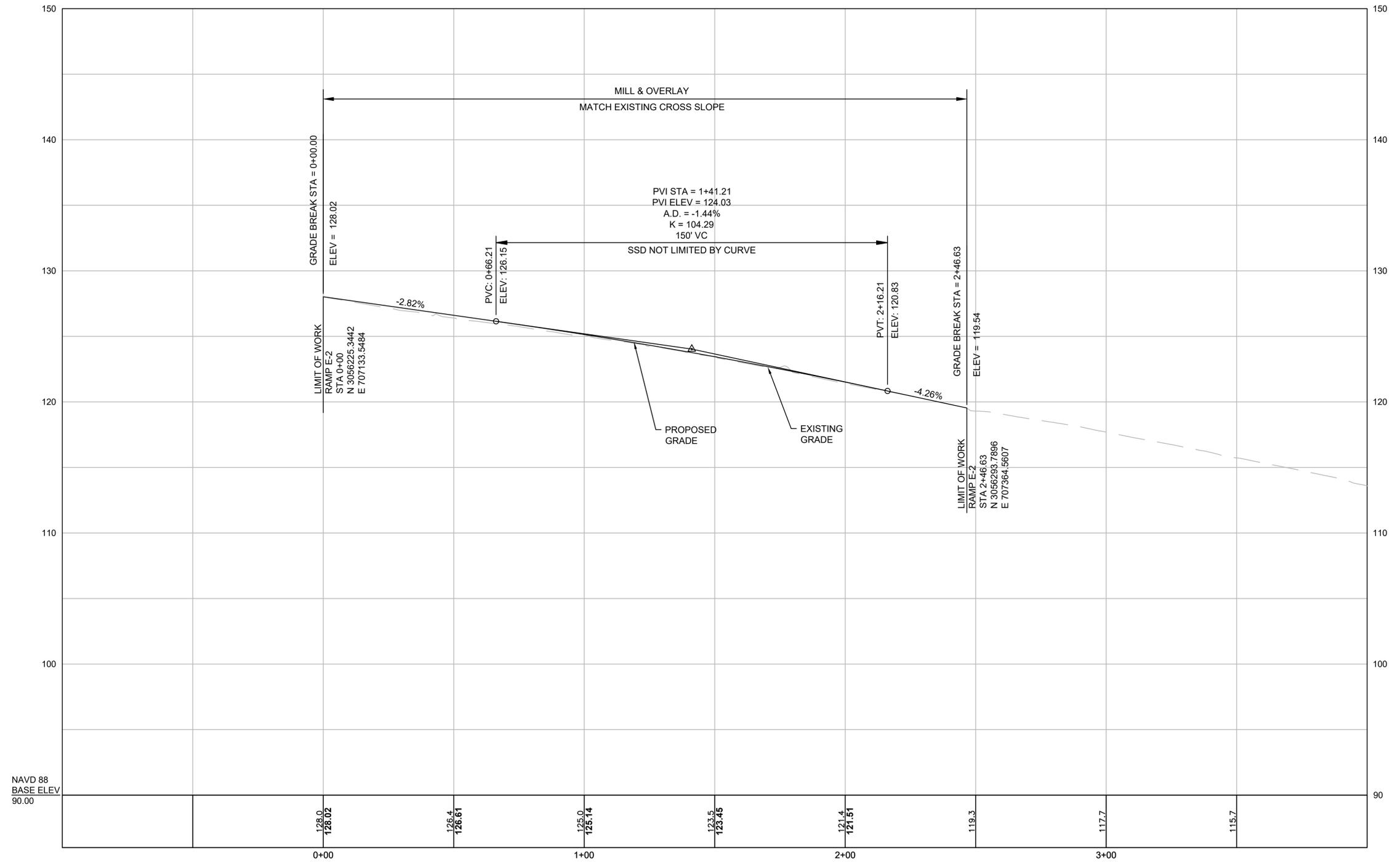


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 11

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	128
PROJECT FILE NO.		604694	

RAMP E-2

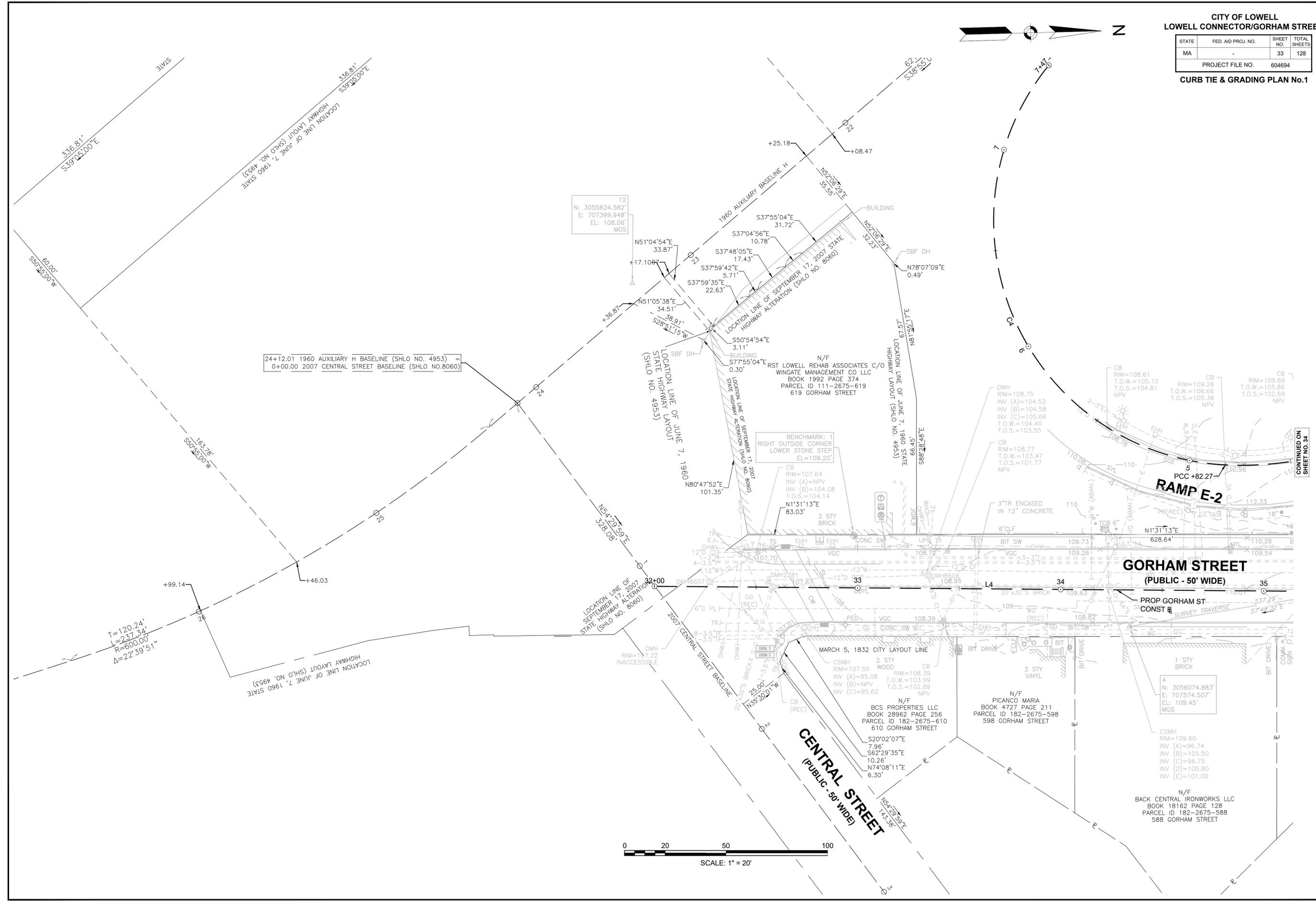


FOR CONSTRUCTION PLAN:  
SEE SHEET NO. 11

CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	128
PROJECT FILE NO.		604694	

CURB TIE & GRADING PLAN No.1



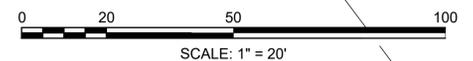
24+12.01 1960 AUXILIARY H BASELINE (SHLO NO. 4953) =  
0+00.00 2007 CENTRAL STREET BASELINE (SHLO NO.8060)

12  
N: 3055834.582'  
E: 707399.948'  
EL: 106.06'  
MGS

BENCHMARK: 1  
RIGHT OUTSIDE CORNER  
LOWER STONE STEP  
EL=109.20'

4  
N: 3056074.883'  
E: 707574.507'  
EL: 109.45'  
MGS

N/F  
BACK CENTRAL IRONWORKS LLC  
BOOK 18162 PAGE 128  
PARCEL ID 182-2675-588  
588 GORHAM STREET

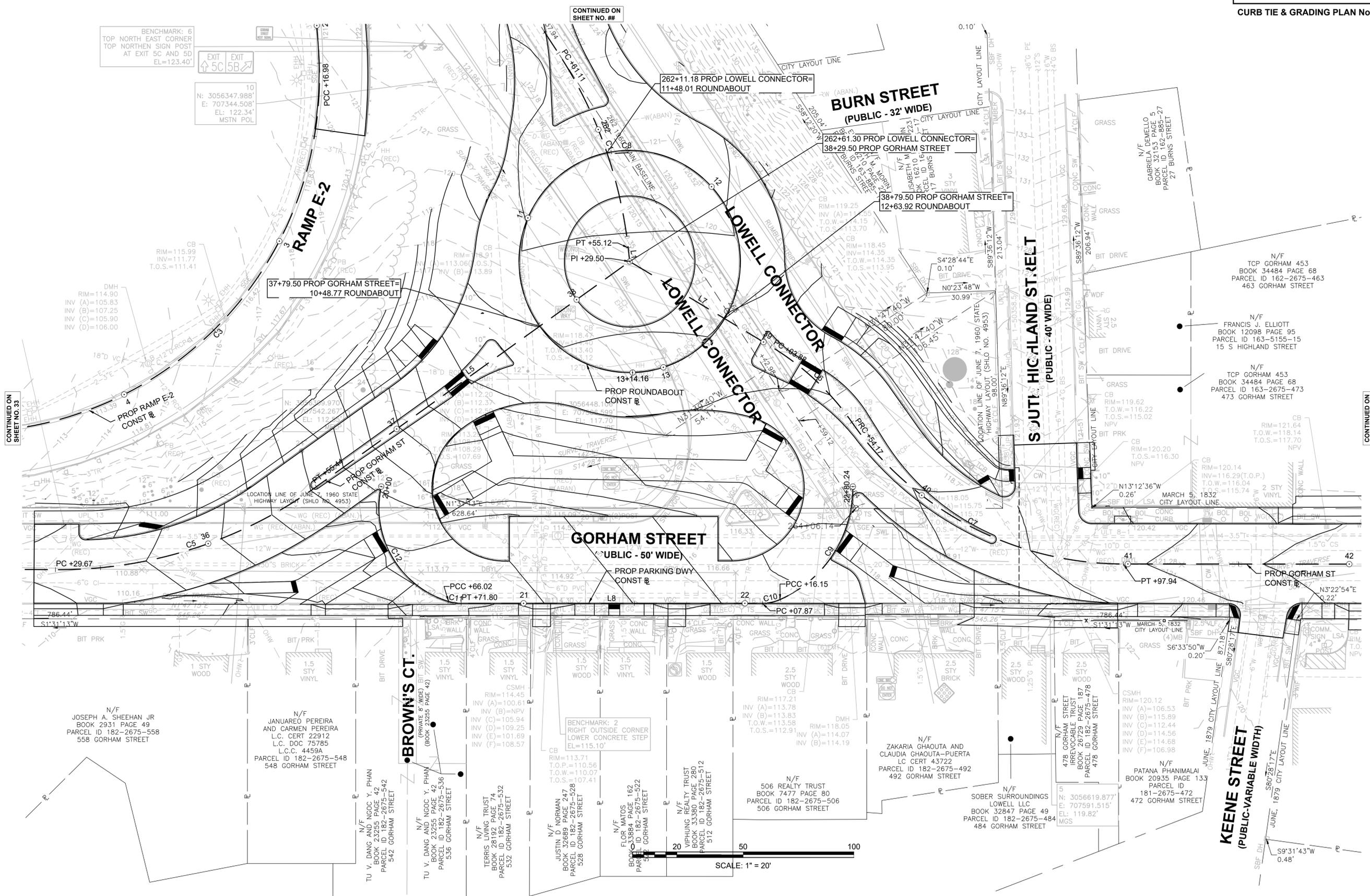


CONTINUED ON  
SHEET NO. 34

CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	128
PROJECT FILE NO.		604694	

CURB TIE & GRADING PLAN No.2



BENCHMARK: 6  
TOP NORTH EAST CORNER  
TOP NORTHERN SIGN POST  
AT EXIT 5C AND 5D  
EL=123.40'

EXIT 5C  
EXIT 5B  
10  
N: 3056347.988'  
E: 707344.508'  
EL: 122.34'  
MSTN POL

CONTINUED ON  
SHEET NO. ##

CONTINUED ON  
SHEET NO. 33

CONTINUED ON  
SHEET NO. 35

N/F  
JOSEPH A. SHEEHAN JR  
BOOK 2931 PAGE 49  
PARCEL ID 182-2675-558  
558 GORHAM STREET

N/F  
JANUARIO PEREIRA  
AND CARMEN PEREIRA  
L.C. CERT 22912  
L.C. DOC 75785  
L.C.C. 4459A  
PARCEL ID 182-2675-548  
548 GORHAM STREET

•BROWN'S CT.  
(PRIVATE 8' WIDE)  
BIT SW  
(BOOK 2305 PAGE 42)

N/F  
TU V. DANG AND NGOC Y. PHAN  
BOOK 2325 PAGE 42  
PARCEL ID 182-2675-536  
536 GORHAM STREET

N/F  
TERRIS LIVING TRUST  
BOOK 2619 PAGE 74  
PARCEL ID 182-2675-532  
532 GORHAM STREET

N/F  
JUSTIN D. NORMAN  
BOOK 32689 PAGE 247  
PARCEL ID 182-2675-528  
528 GORHAM STREET

N/F  
FLOR MATOS  
BOOK 33884 PAGE 162  
PARCEL ID 182-2675-522  
522 GORHAM STREET

N/F  
VIPHUNS REALTY TRUST  
BOOK 33489 PAGE 280  
PARCEL ID 182-2675-512  
512 GORHAM STREET

N/F  
506 REALTY TRUST  
BOOK 7477 PAGE 80  
PARCEL ID 182-2675-506  
506 GORHAM STREET

N/F  
ZAKARIA GHOUTA AND  
CLAUDIA GHOUTA-PUERTA  
LC CERT 43722  
PARCEL ID 182-2675-492  
492 GORHAM STREET

N/F  
SOBER SURROUNDINGS  
LOWELL LLC  
BOOK 32847 PAGE 49  
PARCEL ID 182-2675-484  
484 GORHAM STREET

N/F  
478 GORHAM STREET  
IRREVOCABLE TRUST  
BOOK 1820 PAGE 87  
PARCEL ID 182-2675-478  
478 GORHAM STREET

N/F  
PATANA PHANIMALAI  
BOOK 20935 PAGE 133  
PARCEL ID  
181-2675-472  
472 GORHAM STREET

KEENE STREET  
(PUBLIC-VARIABLE WIDTH)

GORHAM STREET  
(PUBLIC - 50' WIDE)

BURN STREET  
(PUBLIC - 32' WIDE)

SJUTI HIGHLAND ST. RT.  
(PUBLIC - 40' WIDE)

262+11.18 PROP LOWELL CONNECTOR=  
11+48.01 ROUNDABOUT

262+61.30 PROP LOWELL CONNECTOR=  
38+29.50 PROP GORHAM STREET

38+79.50 PROP GORHAM STREET=  
12+63.92 ROUNDABOUT

37+79.50 PROP GORHAM STREET=  
10+48.77 ROUNDABOUT

PROP ROUNDABOUT  
CONST. @

PROP RAMP E-2  
CONST. @

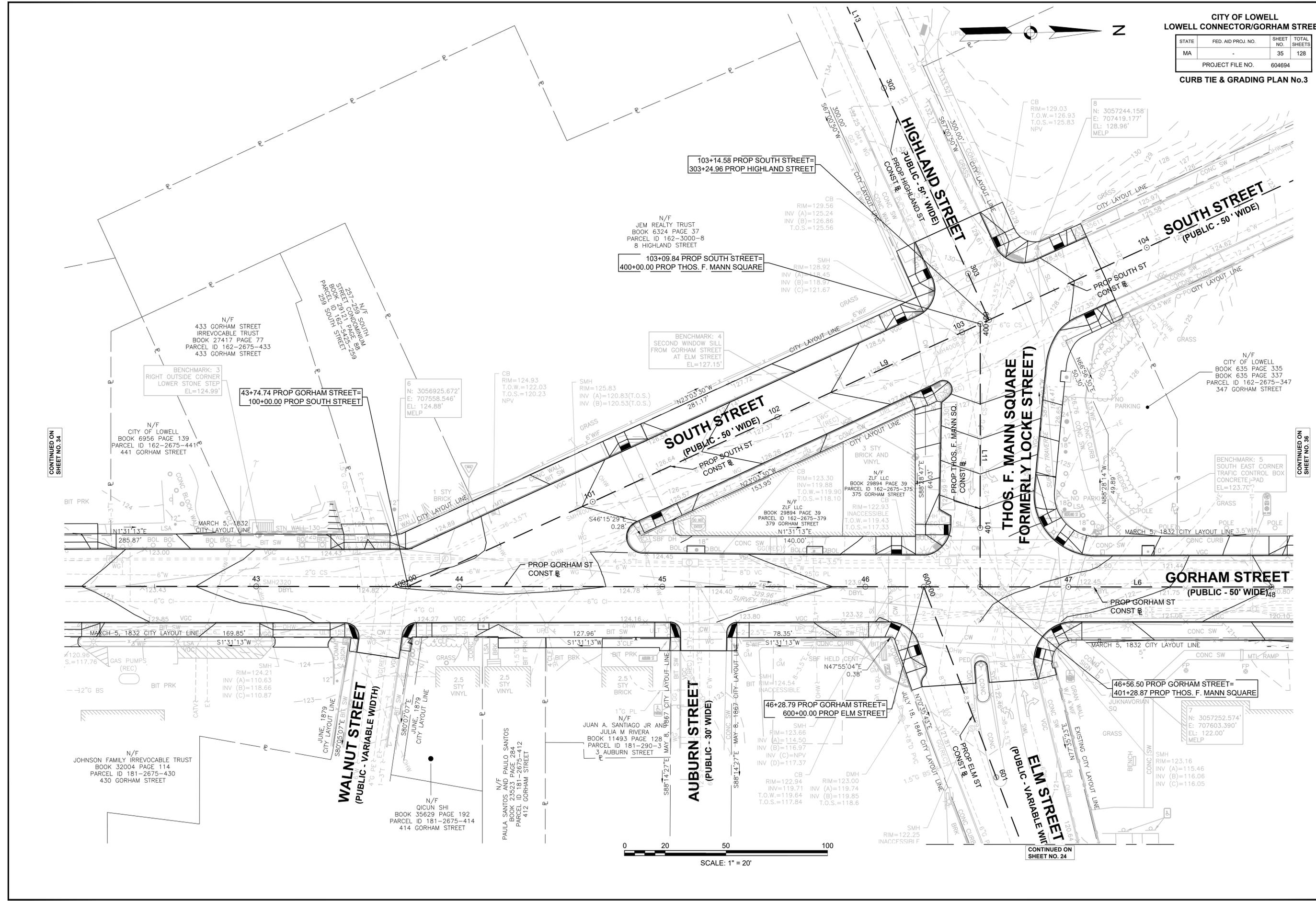
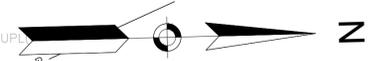
PROP GORHAM ST  
CONST. @

PROP GORHAM ST  
CONST. @

SCALE: 1" = 20'

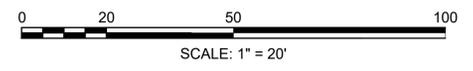
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	128

PROJECT FILE NO. 604694  
CURB TIE & GRADING PLAN No.3



CONTINUED ON SHEET NO. 34

CONTINUED ON SHEET NO. 36

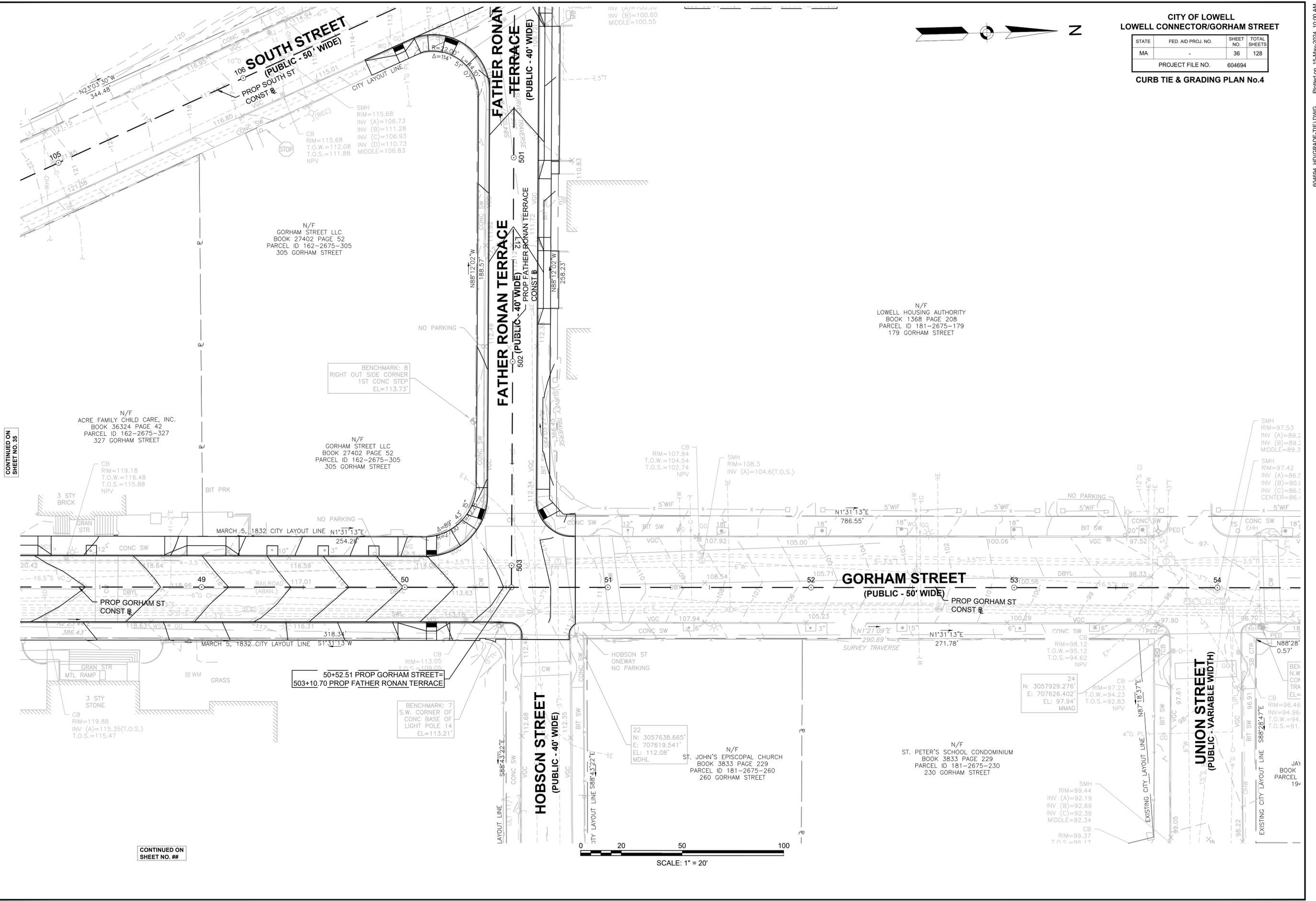


CONTINUED ON SHEET NO. 24

CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

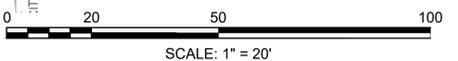
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	128

PROJECT FILE NO. 604694  
CURB TIE & GRADING PLAN No.4



CONTINUED ON SHEET NO. 35

CONTINUED ON SHEET NO. ##



CITY OF LOWELL  
 LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	128

PROJECT FILE NO. 604694  
 CURB TIE & GRADING PLAN No.5



**HOWARD STREET**  
 (PUBLIC - 50' WIDE)

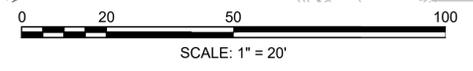
248+83.20 1960 MAIN BASELINE  
 9+77.26 1960 AUXILIARY BASELINE

25' WIDE MASS  
 ELECTRIC CASEMENT  
 (PLAN BOOK 124 PLAN 15)  
 LOCATION  
 HIGHWAY LAYOUT (SILO NO. 495)

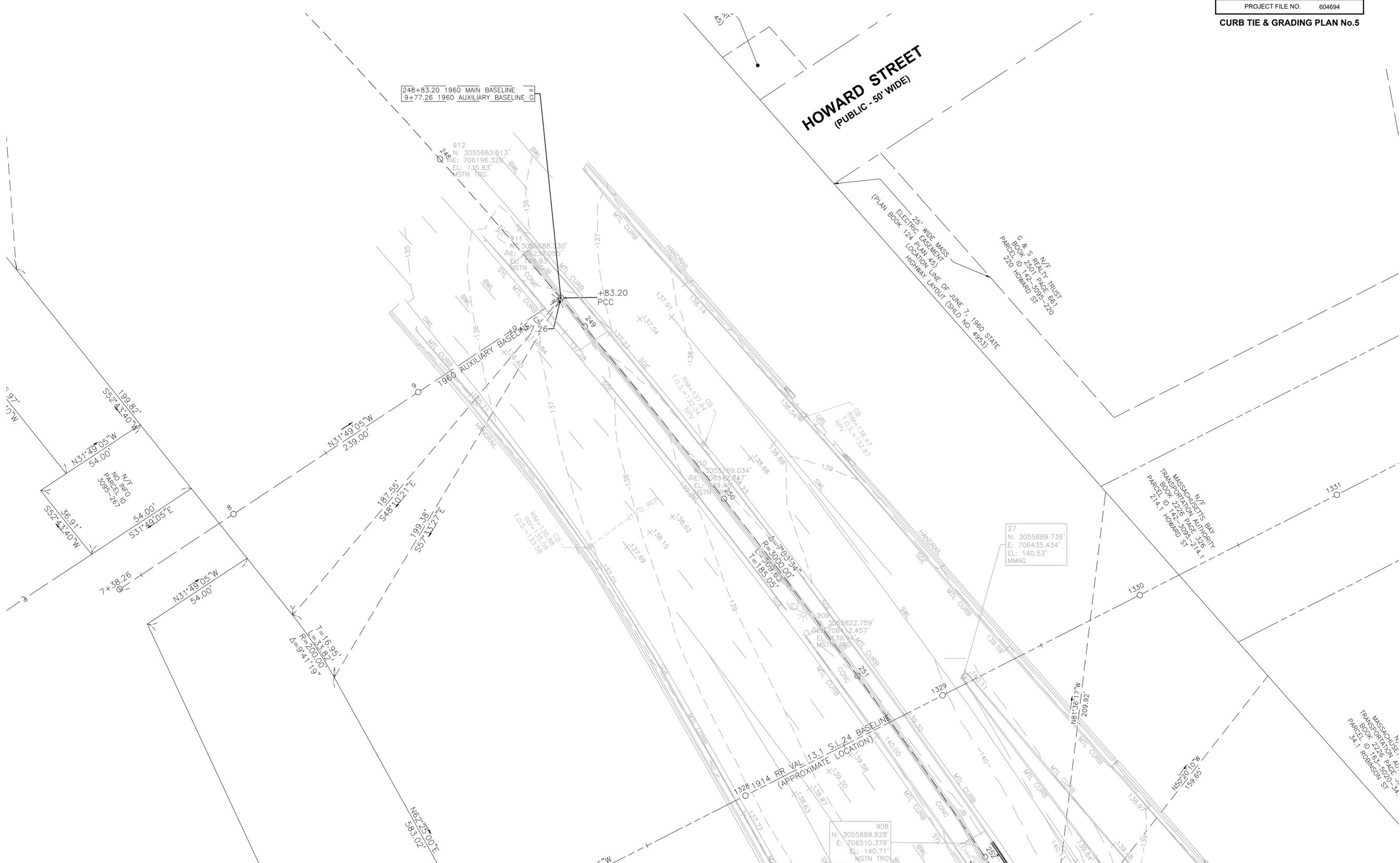
G & S REALTY TRUST  
 800K 2001 PAGE 891  
 PARCEL ID 142-3095-220  
 220 HOWARD ST

MASSACHUSETTS BAY  
 TRANSPORTATION AUTHORITY  
 PARCEL ID 2226 PAGE 326  
 214.1 HOWARD ST

MASSACHUSETTS BAY  
 TRANSPORTATION AUTHORITY  
 PARCEL ID 163-2020-34  
 34.1 ROBINSON ST



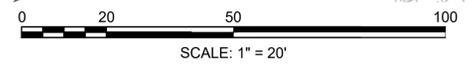
CONTINUED ON  
 SHEET NO. 39



CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	128

PROJECT FILE NO. 604694  
**CURB TIE & GRADING PLAN No.5**

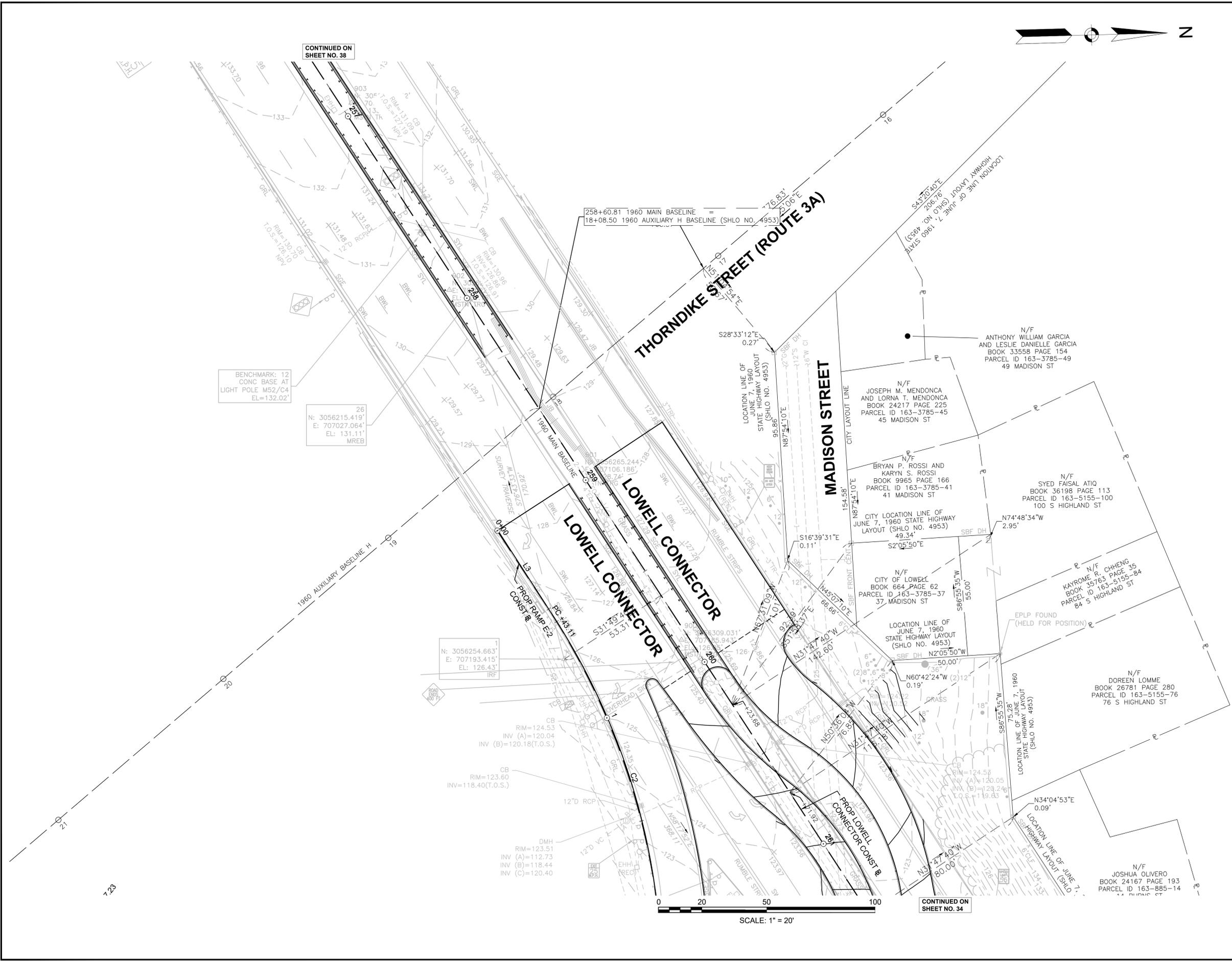


CONTINUED ON  
SHEET NO. 39

CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	128
PROJECT FILE NO.		604694	

CURB TIE & GRADING PLAN No.5



BENCHMARK: 12  
CONC BASE AT  
LIGHT POLE M52/C4  
EL=132.02'

26  
N: 3056215.419'  
E: 707027.064'  
EL: 131.11'  
MREB

1  
N: 3056254.663'  
E: 707193.415'  
EL: 126.43'  
IRF

CB  
RIM=124.53  
INV (A)=120.04  
INV (B)=120.18(T.O.S.)

CB  
RIM=123.60  
INV (A)=120.05  
INV (B)=119.83

DMH  
RIM=123.51  
INV (A)=112.73  
INV (B)=118.44  
INV (C)=120.40

258+60.81 1960 MAIN BASELINE  
18+08.50 1960 AUXILIARY H BASELINE (SHLO NO. 4953)

THORNDIKE STREET (ROUTE 3A)

MADISON STREET

LOWELL CONNECTOR

SCALE: 1" = 20'

CONTINUED ON  
SHEET NO. 34

123

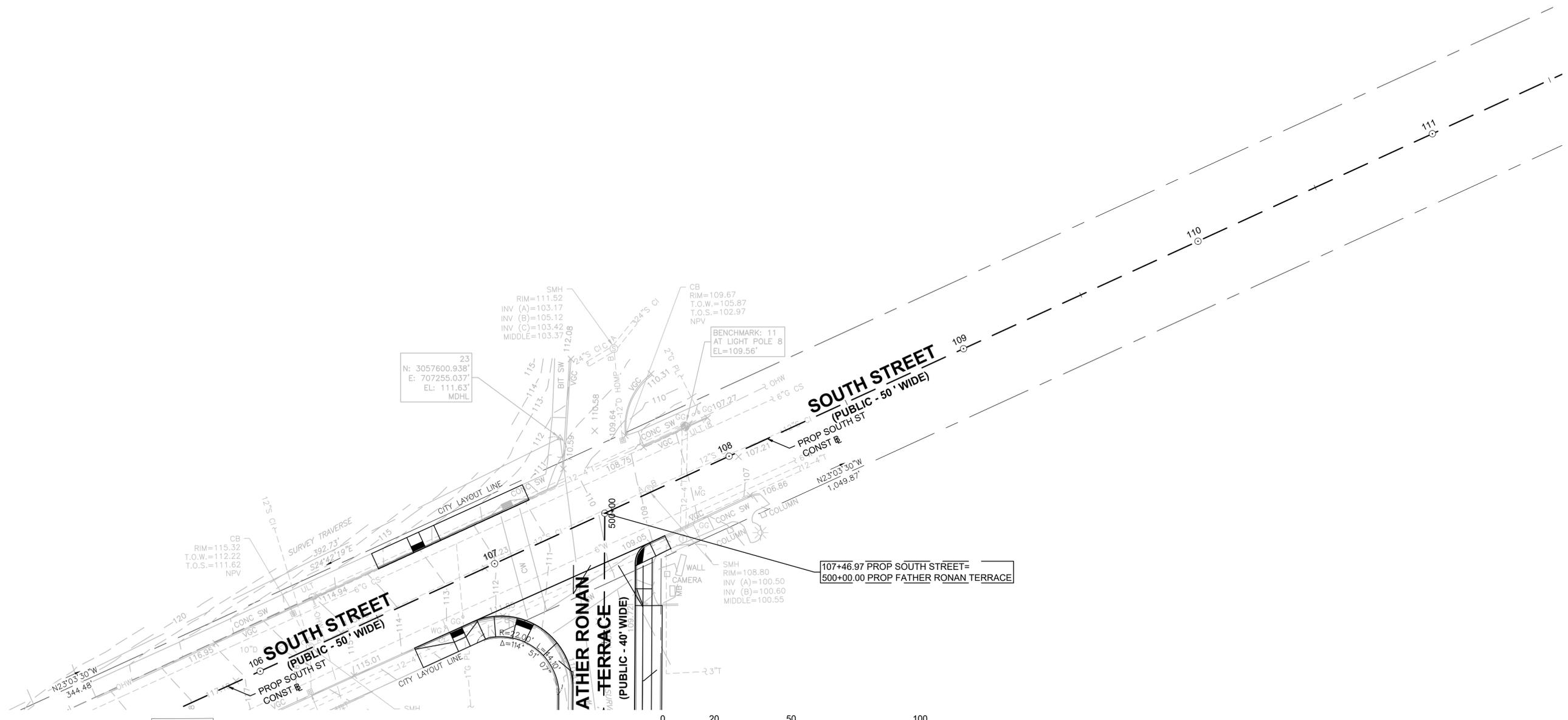


CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	128

PROJECT FILE NO. 604694  
CURB TIE & GRADING PLAN No.6

604694\_HD\GRADE-TIE.DWG Plotted on 15-May-2024 10:00 AM



23  
N: 3057600.938'  
E: 707255.037'  
EL: 111.63'  
MDHL

BENCHMARK: 11  
AT LIGHT POLE 8  
EL=109.56'

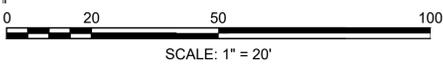
**SOUTH STREET**  
(PUBLIC - 50' WIDE)

**SOUTH STREET**  
(PUBLIC - 50' WIDE)

**FATHER RONAN TERRACE**  
(PUBLIC - 40' WIDE)

107+46.97 PROP SOUTH STREET=  
500+00.00 PROP FATHER RONAN TERRACE

CONTINUED ON  
SHEET NO. 36



DEPT  
30

CITY OF LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	41	128
PROJECT FILE NO.		604694	

CURB TIE & GRADING PLAN No.6

PROP LOWELL CONNECTOR CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C1	261+61.11	3056404.284	707333.330	R=200.00' Δ=26°55'50" L=94.01' T=47.89'		262+55.12	3056433.572	707421.748
L1	262+55.12	3056433.572	707421.748		N85°08'18"E 6.18'	262+61.30	3056434.096	707427.907

RAMP E-2 CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3	0+00.00	3056225.344	707133.548		N58°10'20"E 43.11'	0+43.11	3056248.079	707170.176
C2	0+43.11	3056248.079	707170.176	R=320.00' Δ=31°07'53" L=173.87' T=89.14'		2+16.98	3056296.171	707335.044
C3	2+16.98	3056296.171	707335.044	R=160.00' Δ=95°00'00" L=265.29' T=174.61'		4+82.27	3056124.177	707496.538
C4	4+82.27	3056124.177	707496.538	R=120.00' Δ=126°30'33" L=264.96' T=238.12'		7+47.23	3056042.359	707298.446

PROP GORHAM STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	32+00.00	3055841.643	707548.767		N1°55'13"E 329.67'	35+29.67	3056171.125	707559.814
C5	35+29.67	3056171.125	707559.814	R=200.00' Δ=36°01'53" L=125.77' T=65.04'		36+55.44	3056289.988	707525.517
L5	36+55.44	3056289.988	707525.517		N34°06'40"W 174.05'	38+29.50	3056434.096	707427.907
L7	38+29.50	3056434.096	707427.907		N32°25'46"E 74.39'	39+03.88	3056496.883	707467.799
C6	39+03.88	3056496.883	707467.799	R=120.00' Δ=24°00'33" L=50.28' T=25.52'		39+54.17	3056532.527	707502.746
C7	39+54.17	3056532.527	707502.746	R=150.00' Δ=54°55'06" L=143.78' T=77.95'		40+97.94	3056653.542	707569.769
L6	40+97.94	3056653.542	707569.769		N1°31'13"E 1379.04'	54+76.98	3058032.096	707606.357

ROUNDBOUT CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C8	10+00.00	3056434.096	707477.907	R=50.00' Δ=360°00'00" L=314.16' T=0.00'		13+14.16	3056434.096	707477.907

PARKING DRIVEWAY CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C12	20+00.00	3056319.237	707526.238	R=44.00' Δ=85°57'49" L=66.02' T=41.00'		20+66.02	3056348.291	707578.728
C11	20+66.02	3056348.291	707578.728	R=20.00' Δ=16°34'19" L=5.78' T=2.91'		20+71.80	3056353.972	707579.706
L8	20+71.80	3056353.972	707579.706		N1°28'53"E 136.07'	22+07.87	3056489.995	707583.224
C10	22+07.87	3056489.995	707583.224	R=20.00' Δ=23°43'41" L=8.28' T=4.20'		22+16.15	3056498.084	707581.742
C9	22+16.15	3056498.084	707581.742	R=55.00' Δ=66°45'49" L=64.09' T=36.24'		22+80.24	3056532.252	707531.786

PROP SOUTH STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L9	100+00.00	3056930.240	707577.113		N23°03'30"W 1279.58'	112+79.58	3058107.591	707075.943

PROP ELM STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L10	600+00.00	3057184.205	707583.853		N70°35'43"E 326.69'	603+26.69	3057292.744	707891.987

PROP THOS. F. MANN SQUARE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L11	400+00.00	3057215.323	707455.759		S88°28'47"E 128.87'	401+28.87	3057211.904	707584.588

PROP FATHER RONAN TERRACE CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L12	500+00.00	3057617.528	707284.551		S88°12'02"E 310.70'	503+10.70	3057607.772	707595.095

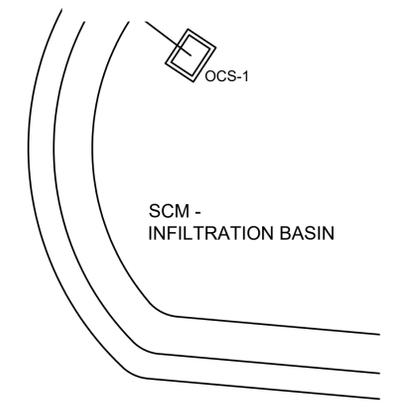
PROP HIGHLAND STREET CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L13	300+00.00	3057092.790	707154.738		N67°00'50"E 324.96'	303+24.96	3057219.690	707453.898



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	128
PROJECT FILE NO.		604694	

UTILITY & DRAINAGE PLAN NO.1



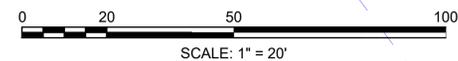
12  
N: 3055834.582'  
E: 707399.948'  
EL: 108.06'  
MGS

24+12.01 1960 AUXILIARY H BASELINE (SHLO NO. 4953) =  
0+00.00 2007 CENTRAL STREET BASELINE (SHLO NO.8060)

BENCHMARK: 1  
RIGHT OUTSIDE CORNER  
LOWER STONE STEP  
EL=109.20'

4  
N: 3056074.883'  
E: 707574.507'  
EL: 109.45'  
MGS

N/F  
BACK CENTRAL IRONWORKS LLC  
BOOK 18162 PAGE 128  
PARCEL ID 182-2675-588  
588 GORHAM STREET



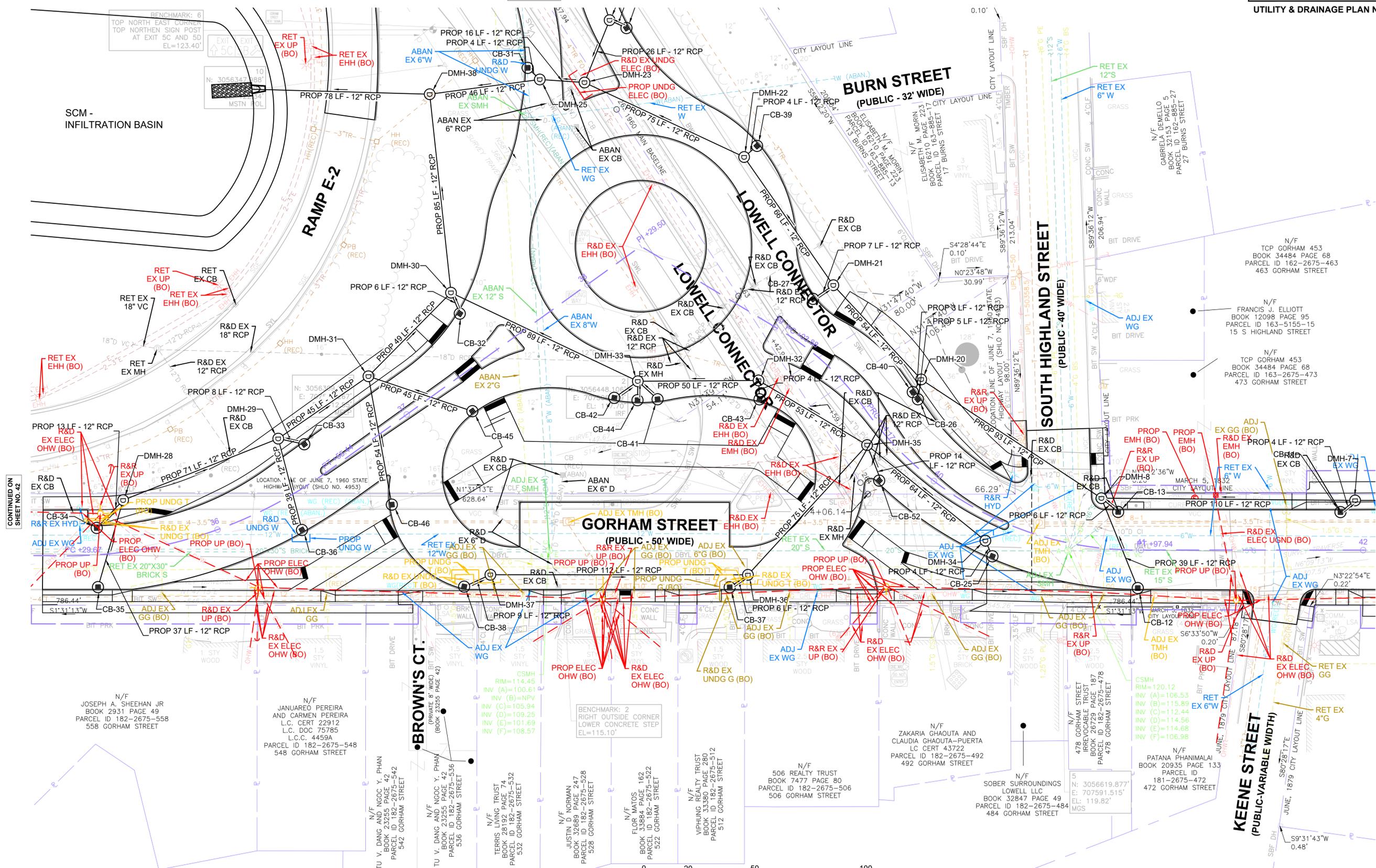
CONTINUED ON  
SHEET NO. 43



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

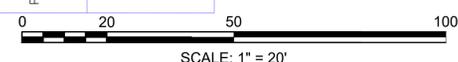
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	128
PROJECT FILE NO. 604694			
<b>UTILITY &amp; DRAINAGE PLAN NO.2</b>			

CONTINUED ON  
SHEET NO. 47



CONTINUED ON  
SHEET NO. 42

CONTINUED ON  
SHEET NO. 44



SCM -  
INFILTRATION BASIN

RAMP E-2

BURN STREET  
(PUBLIC - 32' WIDE)

LOWELL CONNECTOR

SOUTH HIGHLAND STREET  
(PUBLIC - 40' WIDE)

GORHAM STREET  
(PUBLIC - 50' WIDE)

KEENE STREET  
(PUBLIC-VARIABLE WIDTH)

BROWN'S CT.  
(PRIVATE 8' WIDE)

N/F  
JOSEPH A. SHEEHAN JR  
BOOK 2931 PAGE 49  
PARCEL ID 182-2675-558  
558 GORHAM STREET

N/F  
JANUARIO PEREIRA  
AND CARMEN PEREIRA  
L.C. CERT 22912  
L.C. DOC 75785  
L.C.C. 4459A  
PARCEL ID 182-2675-548  
548 GORHAM STREET

N/F  
TU V. DANG AND NGOC Y. PHAN  
BOOK 23735 PAGE 42  
PARCEL ID 182-2675-542  
542 GORHAM STREET

N/F  
TU V. DANG AND NGOC Y. PHAN  
BOOK 23735 PAGE 42  
PARCEL ID 182-2675-536  
536 GORHAM STREET

N/F  
TERRIS LIVING TRUST  
BOOK 26182 PAGE 74  
PARCEL ID 182-2675-532  
532 GORHAM STREET

N/F  
JUSTIN D. NORMAN  
BOOK 32689 PAGE 247  
PARCEL ID 182-2675-528  
528 GORHAM STREET

N/F  
FLOR MATOS  
BOOK 33884 PAGE 162  
PARCEL ID 182-2675-522  
522 GORHAM STREET

N/F  
VI PHUNG LEADERSHIP TRUST  
BOOK 4585 PAGE 280  
PARCEL ID 182-2675-512  
512 GORHAM STREET

N/F  
506 REALTY TRUST  
BOOK 7477 PAGE 80  
PARCEL ID 182-2675-506  
506 GORHAM STREET

N/F  
ZAKARIA GHAOUTA AND  
CLAUDIA GHAOUTA-PUERTA  
L.C. CERT 43722  
PARCEL ID 182-2675-492  
492 GORHAM STREET

N/F  
SOBER SURROUNDINGS  
LOWELL LLC  
BOOK 32847 PAGE 49  
PARCEL ID 182-2675-484  
484 GORHAM STREET

N/F  
478 GORHAM STREET  
IREVOCABLE TRUST  
BOOK 29782 PAGE 478  
PARCEL ID 182-2675-478  
478 GORHAM STREET

N/F  
PATANA PHANMALAI  
BOOK 20935 PAGE 133  
PARCEL ID  
181-2675-472  
472 GORHAM STREET

N/F  
5  
N: 3056619.877'  
E: 707591.515'  
EL: 119.82'  
MGS

N/F  
RET EX  
ELEC UGND (BO)

N/F  
RET EX  
ELEC UGND (BO)

N/F  
RET EX  
ELEC UGND (BO)

CONTINUED ON  
SHEET NO. 44



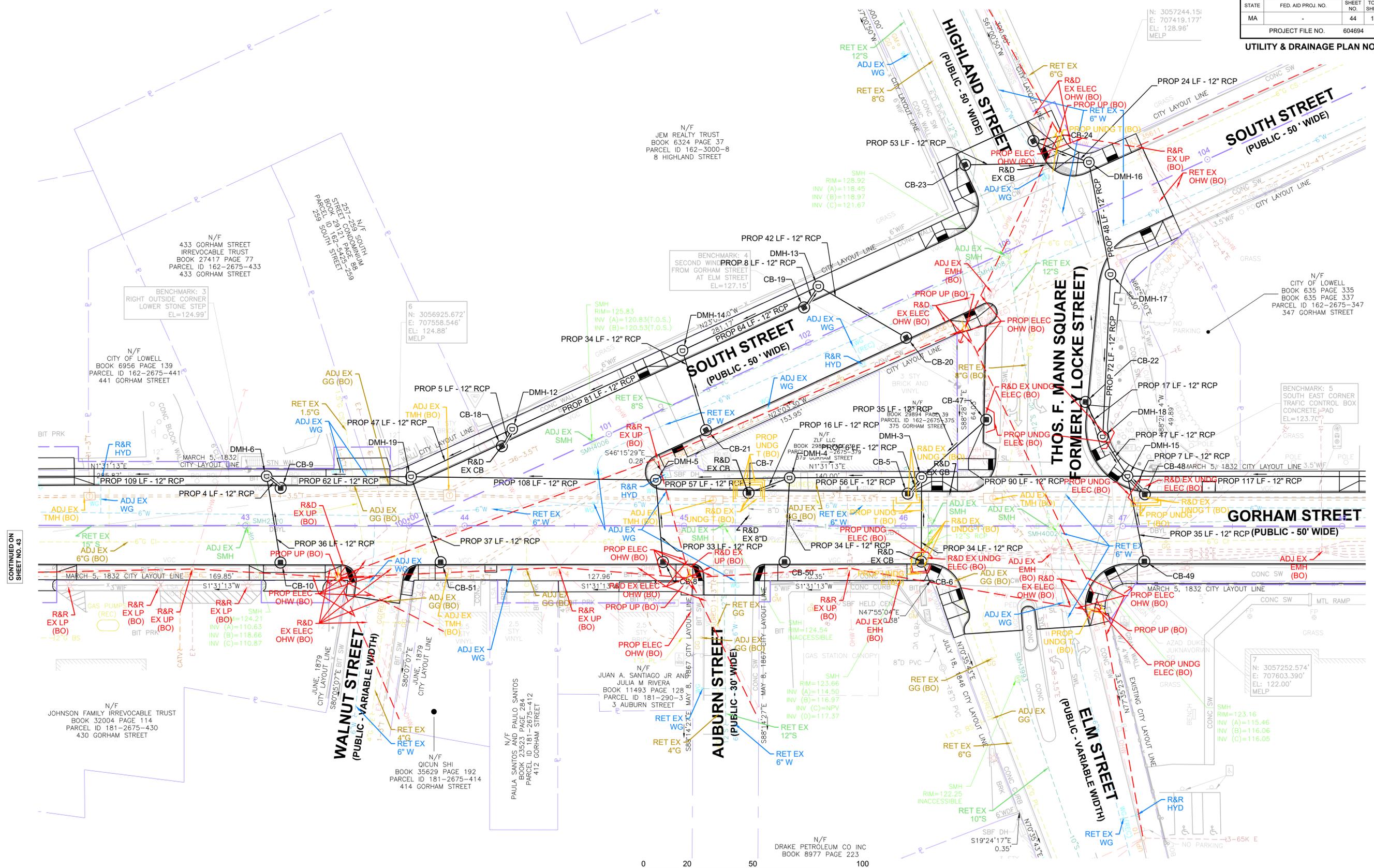
**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	128

PROJECT FILE NO. 604694  
**UTILITY & DRAINAGE PLAN NO.3**

CONTINUED ON  
SHEET NO. 49

CONTINUED ON  
SHEET NO. 45



N/F  
JEM REALTY TRUST  
BOOK 6324 PAGE 37  
PARCEL ID 162-3000-8  
8 HIGHLAND STREET

N/F  
433 GORHAM STREET  
IRREVOCABLE TRUST  
BOOK 27417 PAGE 77  
PARCEL ID 162-2675-433  
433 GORHAM STREET

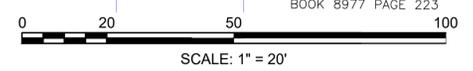
N/F  
CITY OF LOWELL  
BOOK 6956 PAGE 139  
PARCEL ID 162-2675-441  
441 GORHAM STREET

N/F  
CITY OF LOWELL  
BOOK 635 PAGE 335  
BOOK 635 PAGE 337  
PARCEL ID 162-2675-347  
347 GORHAM STREET

N/F  
JUAN A. SANTIAGO JR AND  
JULIA M. RIVERA  
BOOK 11493 PAGE 128  
PARCEL ID 181-290-3  
3 AUBURN STREET

N/F  
QICUN SHI  
BOOK 35629 PAGE 192  
PARCEL ID 181-2675-414  
414 GORHAM STREET

N/F  
DRAKE PETROLEUM CO INC  
BOOK 8977 PAGE 223



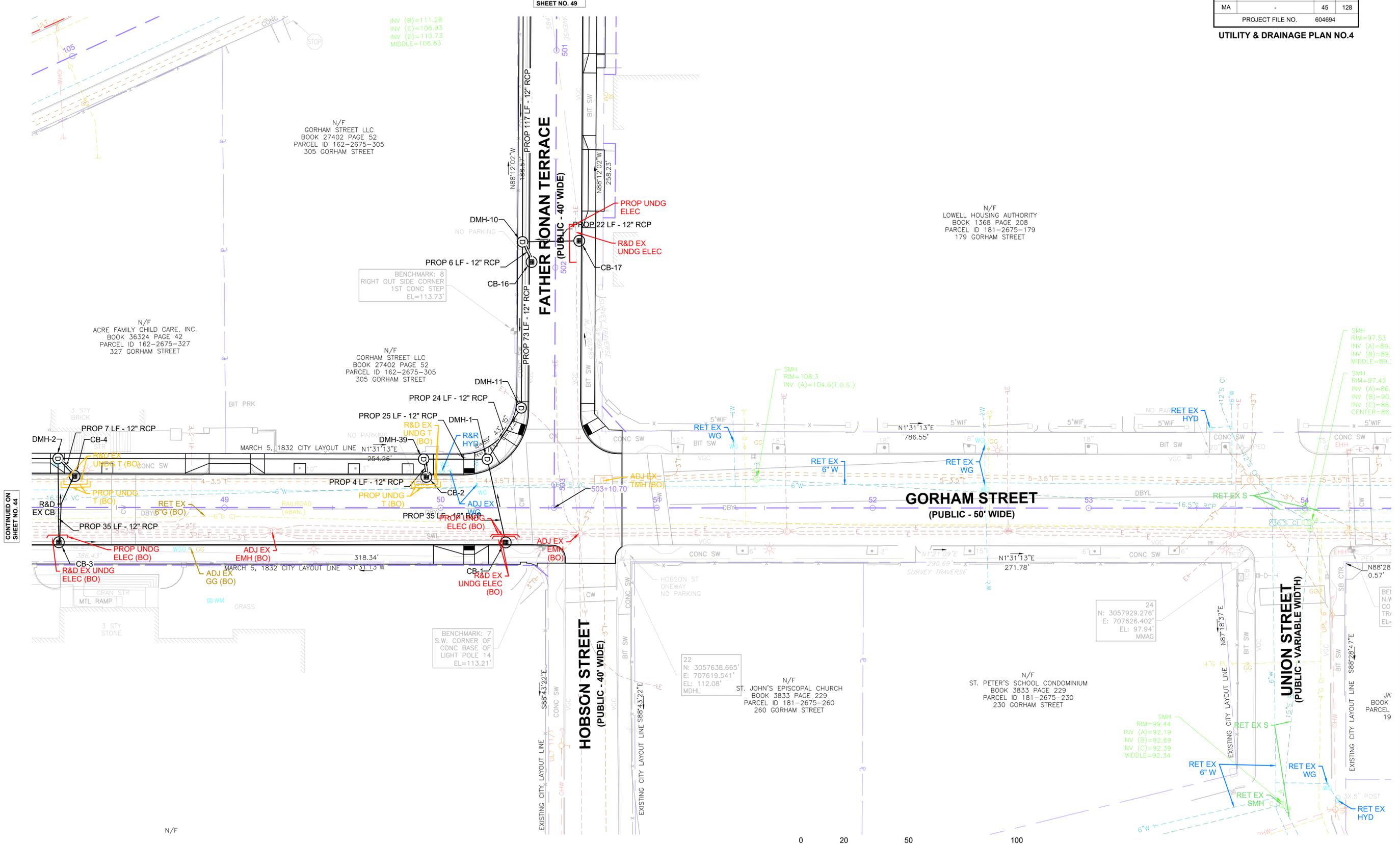


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

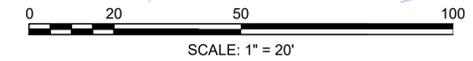
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	128
PROJECT FILE NO.		604694	

**UTILITY & DRAINAGE PLAN NO.4**

CONTINUED ON  
SHEET NO. 49



CONTINUED ON  
SHEET NO. 44





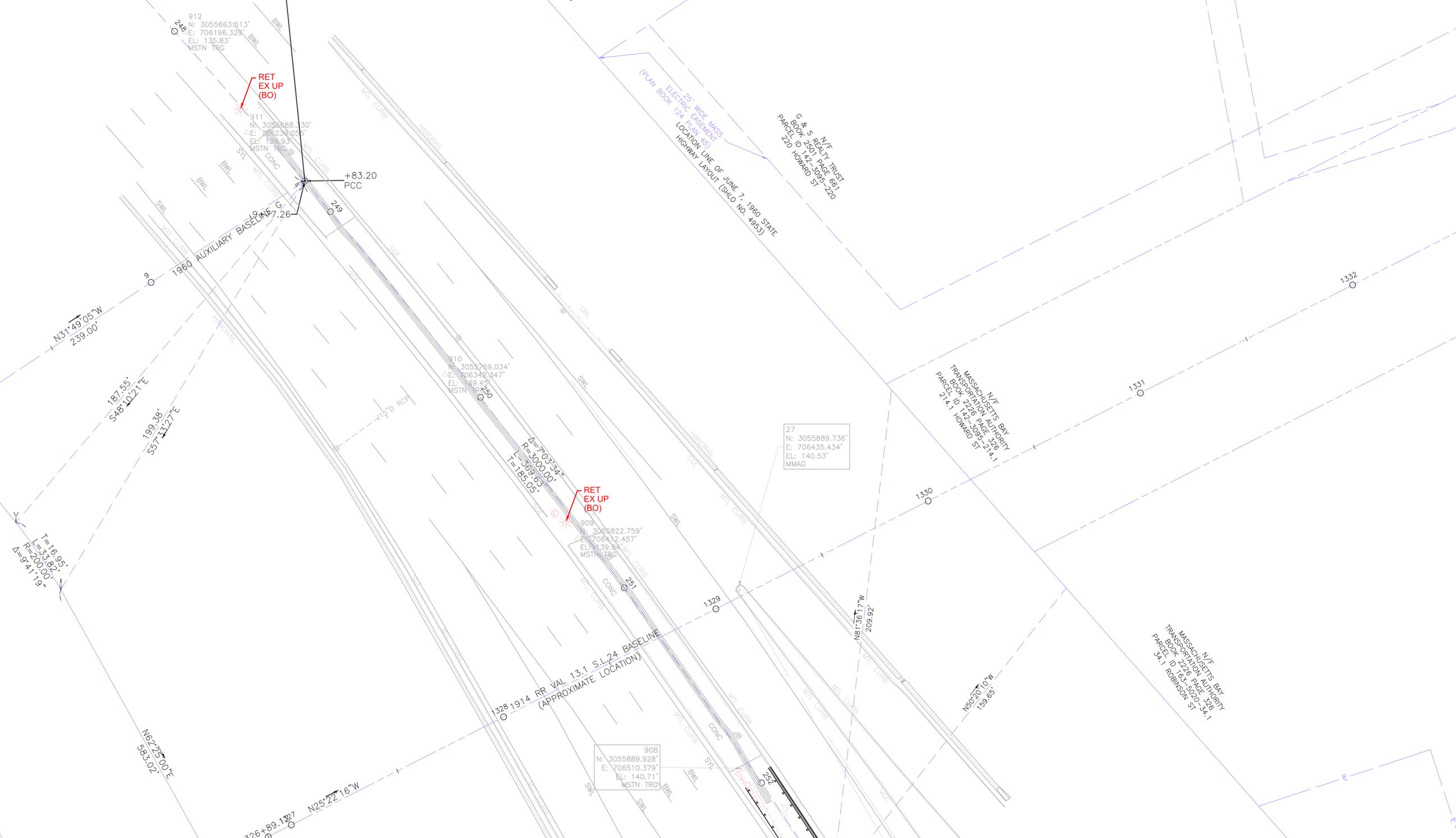
**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	128
PROJECT FILE NO.		604694	

**UTILITY & DRAINAGE PLAN NO.5**

**HOWARD STREL**  
(PUBLIC - 50' WIDE)

248+83.20 1960 MAIN BASELINE  
9+77.26 1960 AUXILIARY BASELINE G



25' WIDE MASS  
ELECTRIC CABLEWAY  
LOCATION LINE OF JUNE 7, 1960 STATE  
HIGHWAY LAYOUT (SHLD. NO. 4853)  
(PLAN BOOK 124, PLIN 15)

G & S REALTY TRUST  
PARCEL 250, PAGE 561  
PARCEL 250 HOWARD ST

MASSACHUSETTS BAY  
TRANSFORMATION AUTHORITY  
PARCEL 214.1 HOWARD ST

MASSACHUSETTS BAY  
TRANSFORMATION AUTHORITY  
PARCEL 34.1 ROBINSON ST

N31°49'05"W  
239.00'

S48°10'27"E  
187.55'

S55°13'27"E  
199.38'

T=16.95'  
L=51.89'  
R=200.00'  
Δ=94°11'9"

N62°25'00"E  
583.02'

N25°22'16"W

1328+1914 RR VAL 13.1 S.L.24 BASELINE  
(APPROXIMATE LOCATION)

908  
N: 3055889.928'  
E: 706510.379'  
EL: 140.71'  
MSTN TRG

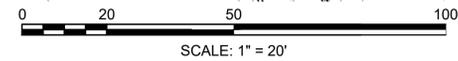
27  
N: 3055889.736'  
E: 706435.434'  
EL: 140.53'  
MMAG

909  
N: 3055822.759'  
E: 706942.457'  
EL: 139.84'  
MSTN TRG

910  
N: 3055769.034'  
E: 706342.347'  
EL: 139.45'  
MSTN TRG

912  
N: 3055663.613'  
E: 706196.329'  
EL: 135.83'  
MSTN TRG

911  
N: 3055688.330'  
E: 706290.055'  
EL: 138.93'  
MSTN TRG



SCALE: 1" = 20'

CONTINUED ON  
SHEET NO. 48



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

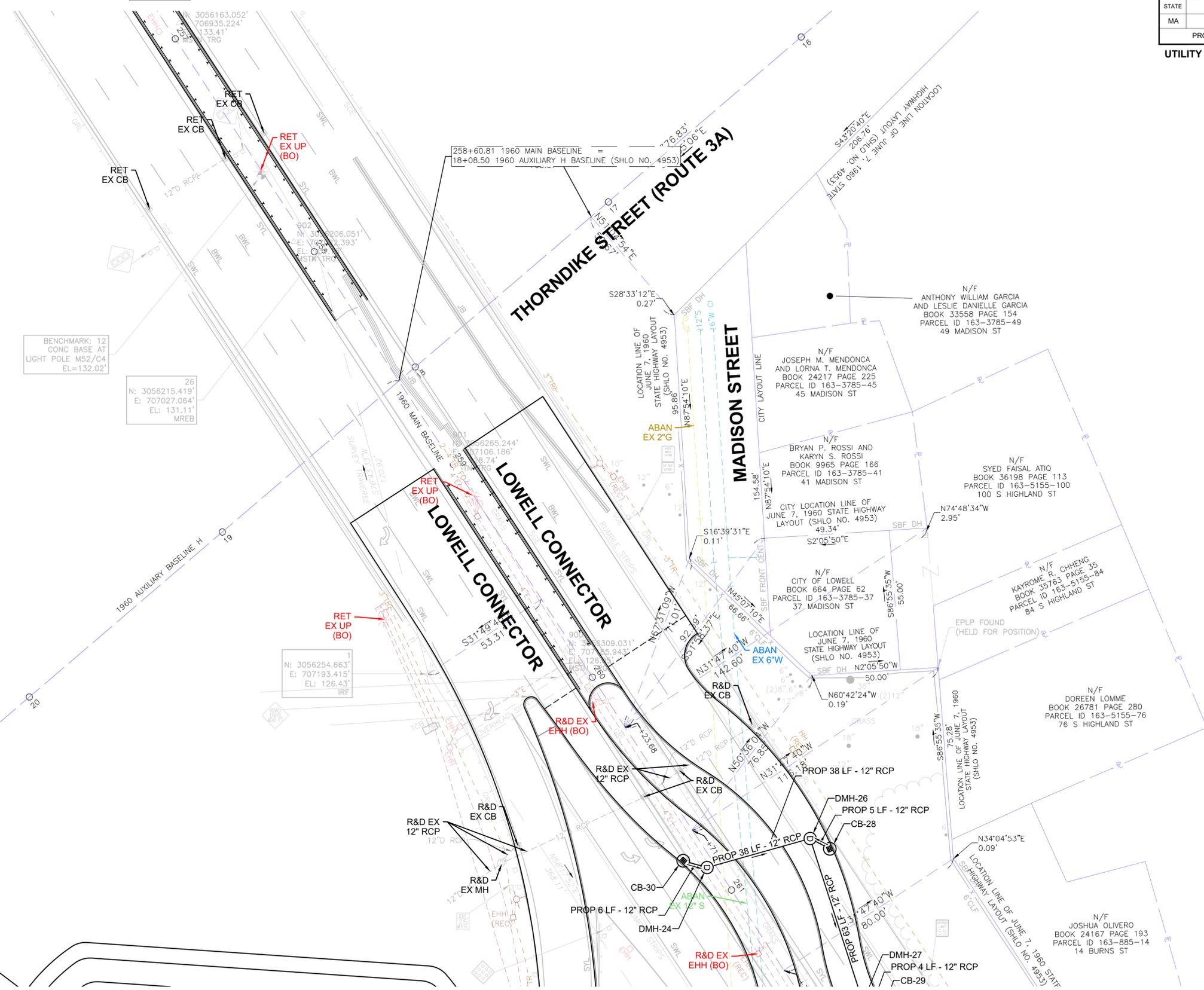
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	128
PROJECT FILE NO.		604694	

UTILITY & DRAINAGE PLAN NO.6



CONTINUED ON SHEET NO. 48

CONTINUED ON SHEET NO. 43



BENCHMARK: 12  
CONC BASE AT  
LIGHT POLE M52/C4  
EL=132.02'

26  
N: 3056215.419'  
E: 707027.064'  
EL: 131.11'  
MREB

N: 3056254.663'  
E: 707193.415'  
EL: 126.43'  
IRF

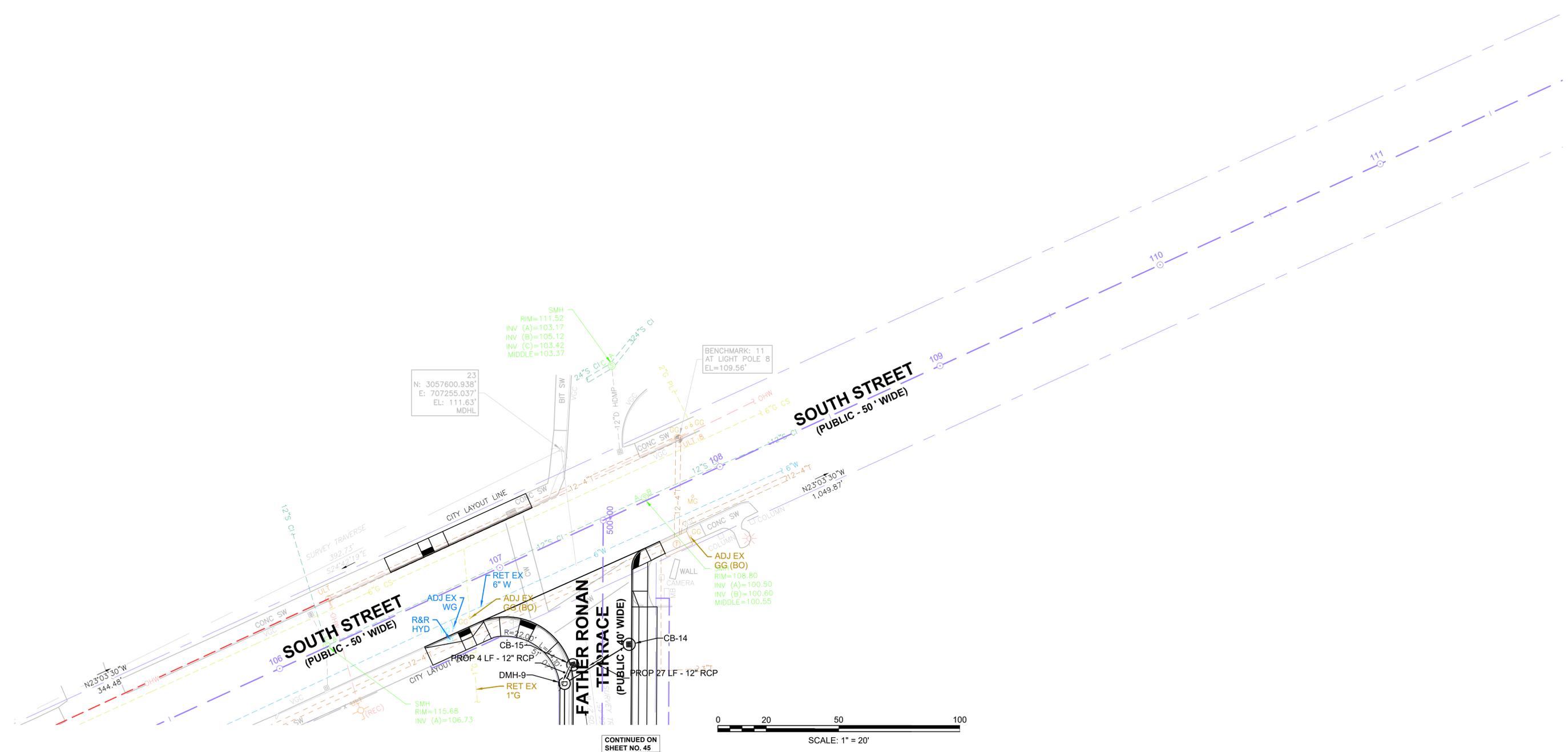




LOWELL  
LOWELL CONNECTOR/GORHAM STREET

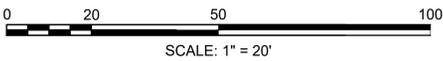
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	128

PROJECT FILE NO. 604694  
UTILITY & DRAINAGE PLAN NO.8



23  
N: 3057600.938'  
E: 707255.037'  
EL: 111.63'  
MDHL

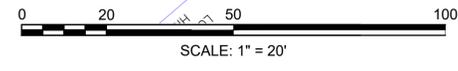
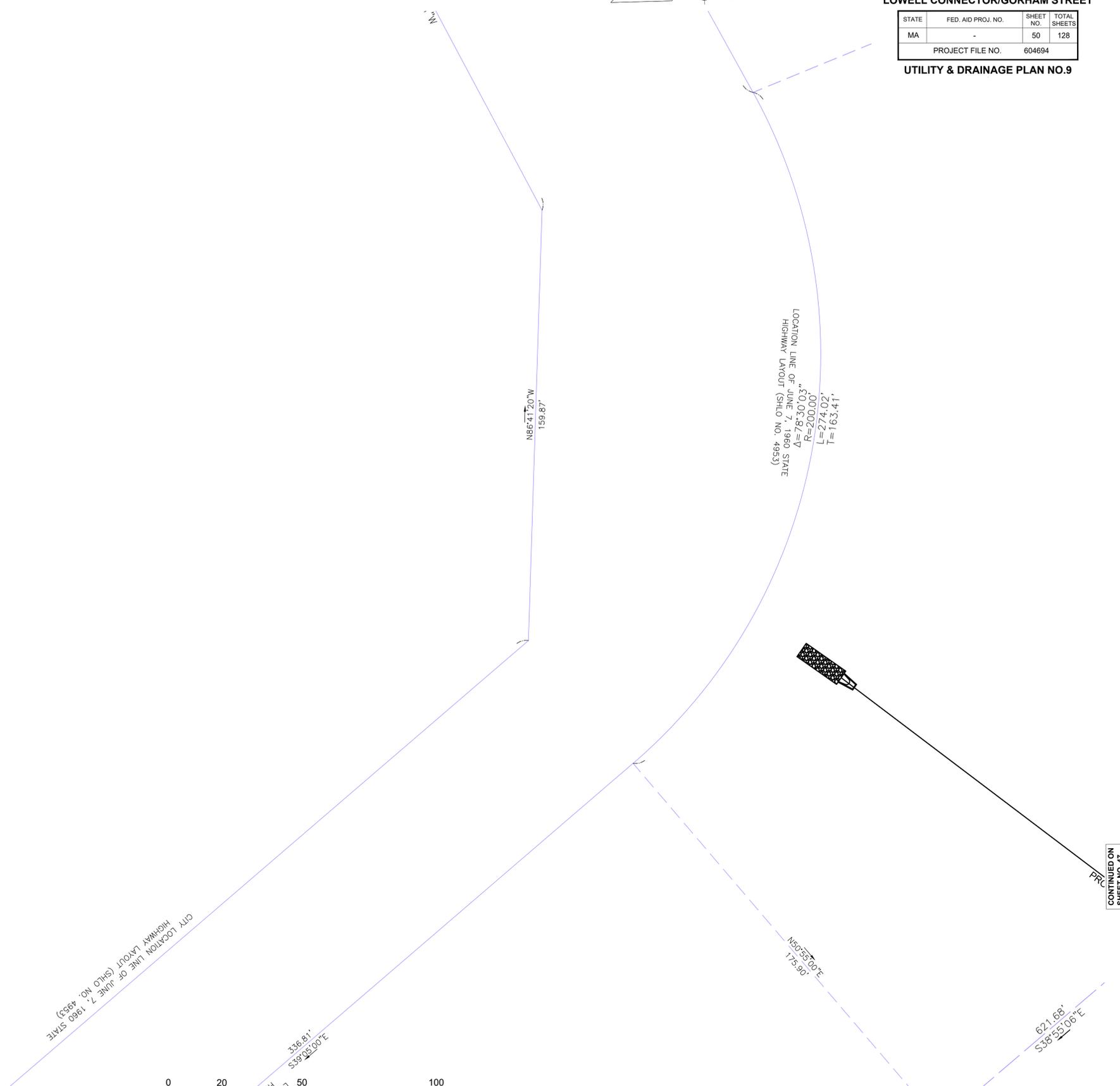
BENCHMARK: 11  
AT LIGHT POLE 8  
EL=109.56'



CONTINUED ON  
SHEET NO. 45

LOWELL  
 LOWELL CONNECTOR/GORHAM STREET  
 UTILITY & DRAINAGE PLAN NO.9

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	128
PROJECT FILE NO.		604694	



CONTINUED ON SHEET NO. 42

CONTINUED ON SHEET NO. 47



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	128
PROJECT FILE NO. 604694			

**TRAFFIC SIGN & PAVEMENT MARKINGS**

248+83.20 1960 MAIN BASELINE  
9+77.26 1960 AUXILIARY BASELINE G

912  
N: 3055663.613'  
E: 706196.329'  
EL: 135.83'  
MSTN TRG

911  
N: 3055688.330'  
E: 706290.056'  
EL: 135.93'  
MSTN TRG

+83.20  
PCC

910  
N: 3055769.034'  
E: 706342.347'  
EL: 139.45'  
MSTN TRG

4" = 200.00'  
R = 3000.00'  
T = 185.05'

909  
N: 3055822.759'  
E: 706412.457'  
EL: 139.38'  
MSTN TRG

908  
N: 3055888.922'  
E: 706472.572'  
EL: 139.37'  
MSTN TRG

907  
N: 3055955.085'  
E: 706532.687'  
EL: 139.36'  
MSTN TRG

906  
N: 3056021.248'  
E: 706592.802'  
EL: 139.35'  
MSTN TRG

905  
N: 3056087.411'  
E: 706652.917'  
EL: 139.34'  
MSTN TRG

904  
N: 3056153.574'  
E: 706713.032'  
EL: 139.33'  
MSTN TRG

903  
N: 3056219.737'  
E: 706773.147'  
EL: 139.32'  
MSTN TRG

902  
N: 3056285.900'  
E: 706833.262'  
EL: 139.31'  
MSTN TRG

901  
N: 3056352.063'  
E: 706893.377'  
EL: 139.30'  
MSTN TRG

900  
N: 3056418.226'  
E: 706953.492'  
EL: 139.29'  
MSTN TRG

899  
N: 3056484.389'  
E: 707013.607'  
EL: 139.28'  
MSTN TRG

898  
N: 3056550.552'  
E: 707073.722'  
EL: 139.27'  
MSTN TRG

897  
N: 3056616.715'  
E: 707133.837'  
EL: 139.26'  
MSTN TRG

896  
N: 3056682.878'  
E: 707193.952'  
EL: 139.25'  
MSTN TRG

895  
N: 3056749.041'  
E: 707254.067'  
EL: 139.24'  
MSTN TRG

894  
N: 3056815.204'  
E: 707314.182'  
EL: 139.23'  
MSTN TRG

893  
N: 3056881.367'  
E: 707374.297'  
EL: 139.22'  
MSTN TRG

892  
N: 3056947.530'  
E: 707434.412'  
EL: 139.21'  
MSTN TRG

891  
N: 3057013.693'  
E: 707494.527'  
EL: 139.20'  
MSTN TRG

890  
N: 3057079.856'  
E: 707554.642'  
EL: 139.19'  
MSTN TRG

889  
N: 3057146.019'  
E: 707614.757'  
EL: 139.18'  
MSTN TRG

888  
N: 3057212.182'  
E: 707674.872'  
EL: 139.17'  
MSTN TRG

887  
N: 3057278.345'  
E: 707734.987'  
EL: 139.16'  
MSTN TRG

886  
N: 3057344.508'  
E: 707795.102'  
EL: 139.15'  
MSTN TRG

885  
N: 3057410.671'  
E: 707855.217'  
EL: 139.14'  
MSTN TRG

884  
N: 3057476.834'  
E: 707915.332'  
EL: 139.13'  
MSTN TRG

883  
N: 3057542.997'  
E: 707975.447'  
EL: 139.12'  
MSTN TRG

882  
N: 3057609.160'  
E: 708035.562'  
EL: 139.11'  
MSTN TRG

881  
N: 3057675.323'  
E: 708095.677'  
EL: 139.10'  
MSTN TRG

880  
N: 3057741.486'  
E: 708155.792'  
EL: 139.09'  
MSTN TRG

879  
N: 3057807.649'  
E: 708215.907'  
EL: 139.08'  
MSTN TRG

878  
N: 3057873.812'  
E: 708276.022'  
EL: 139.07'  
MSTN TRG

877  
N: 3057939.975'  
E: 708336.137'  
EL: 139.06'  
MSTN TRG

876  
N: 3058006.138'  
E: 708396.252'  
EL: 139.05'  
MSTN TRG

875  
N: 3058072.301'  
E: 708456.367'  
EL: 139.04'  
MSTN TRG

874  
N: 3058138.464'  
E: 708516.482'  
EL: 139.03'  
MSTN TRG

873  
N: 3058204.627'  
E: 708576.597'  
EL: 139.02'  
MSTN TRG

872  
N: 3058270.790'  
E: 708636.712'  
EL: 139.01'  
MSTN TRG

871  
N: 3058336.953'  
E: 708696.827'  
EL: 139.00'  
MSTN TRG

870  
N: 3058403.116'  
E: 708756.942'  
EL: 138.99'  
MSTN TRG

869  
N: 3058469.279'  
E: 708817.057'  
EL: 138.98'  
MSTN TRG

868  
N: 3058535.442'  
E: 708877.172'  
EL: 138.97'  
MSTN TRG

867  
N: 3058601.605'  
E: 708937.287'  
EL: 138.96'  
MSTN TRG

866  
N: 3058667.768'  
E: 708997.402'  
EL: 138.95'  
MSTN TRG

865  
N: 3058733.931'  
E: 709057.517'  
EL: 138.94'  
MSTN TRG

864  
N: 3058800.094'  
E: 709117.632'  
EL: 138.93'  
MSTN TRG

863  
N: 3058866.257'  
E: 709177.747'  
EL: 138.92'  
MSTN TRG

862  
N: 3058932.420'  
E: 709237.862'  
EL: 138.91'  
MSTN TRG

861  
N: 3058998.583'  
E: 709297.977'  
EL: 138.90'  
MSTN TRG

860  
N: 3059064.746'  
E: 709358.092'  
EL: 138.89'  
MSTN TRG

859  
N: 3059130.909'  
E: 709418.207'  
EL: 138.88'  
MSTN TRG

858  
N: 3059197.072'  
E: 709478.322'  
EL: 138.87'  
MSTN TRG

857  
N: 3059263.235'  
E: 709538.437'  
EL: 138.86'  
MSTN TRG

856  
N: 3059329.398'  
E: 709598.552'  
EL: 138.85'  
MSTN TRG

855  
N: 3059395.561'  
E: 709658.667'  
EL: 138.84'  
MSTN TRG

854  
N: 3059461.724'  
E: 709718.782'  
EL: 138.83'  
MSTN TRG

853  
N: 3059527.887'  
E: 709778.897'  
EL: 138.82'  
MSTN TRG

852  
N: 3059594.050'  
E: 709839.012'  
EL: 138.81'  
MSTN TRG

851  
N: 3059660.213'  
E: 709899.127'  
EL: 138.80'  
MSTN TRG

850  
N: 3059726.376'  
E: 709959.242'  
EL: 138.79'  
MSTN TRG

849  
N: 3059792.539'  
E: 710019.357'  
EL: 138.78'  
MSTN TRG

848  
N: 3059858.702'  
E: 710079.472'  
EL: 138.77'  
MSTN TRG

847  
N: 3059924.865'  
E: 710139.587'  
EL: 138.76'  
MSTN TRG

846  
N: 3059991.028'  
E: 710199.702'  
EL: 138.75'  
MSTN TRG

845  
N: 3060057.191'  
E: 710259.817'  
EL: 138.74'  
MSTN TRG

844  
N: 3060123.354'  
E: 710319.932'  
EL: 138.73'  
MSTN TRG

843  
N: 3060189.517'  
E: 710380.047'  
EL: 138.72'  
MSTN TRG

842  
N: 3060255.680'  
E: 710440.162'  
EL: 138.71'  
MSTN TRG

841  
N: 3060321.843'  
E: 710500.277'  
EL: 138.70'  
MSTN TRG

840  
N: 3060388.006'  
E: 710560.392'  
EL: 138.69'  
MSTN TRG

839  
N: 3060454.169'  
E: 710620.507'  
EL: 138.68'  
MSTN TRG

838  
N: 3060520.332'  
E: 710680.622'  
EL: 138.67'  
MSTN TRG

837  
N: 3060586.495'  
E: 710740.737'  
EL: 138.66'  
MSTN TRG

836  
N: 3060652.658'  
E: 710800.852'  
EL: 138.65'  
MSTN TRG

835  
N: 3060718.821'  
E: 710860.967'  
EL: 138.64'  
MSTN TRG

834  
N: 3060784.984'  
E: 710921.082'  
EL: 138.63'  
MSTN TRG

833  
N: 3060851.147'  
E: 710981.197'  
EL: 138.62'  
MSTN TRG

832  
N: 3060917.310'  
E: 711041.312'  
EL: 138.61'  
MSTN TRG

831  
N: 3060983.473'  
E: 711101.427'  
EL: 138.60'  
MSTN TRG

830  
N: 3061049.636'  
E: 711161.542'  
EL: 138.59'  
MSTN TRG

829  
N: 3061115.799'  
E: 711221.657'  
EL: 138.58'  
MSTN TRG

828  
N: 3061181.962'  
E: 711281.772'  
EL: 138.57'  
MSTN TRG

827  
N: 3061248.125'  
E: 711341.887'  
EL: 138.56'  
MSTN TRG

826  
N: 3061314.288'  
E: 711402.002'  
EL: 138.55'  
MSTN TRG

825  
N: 3061380.451'  
E: 711462.117'  
EL: 138.54'  
MSTN TRG

824  
N: 3061446.614'  
E: 711522.232'  
EL: 138.53'  
MSTN TRG

823  
N: 3061512.777'  
E: 711582.347'  
EL: 138.52'  
MSTN TRG

822  
N: 3061578.940'  
E: 711642.462'  
EL: 138.51'  
MSTN TRG

821  
N: 3061645.103'  
E: 711702.577'  
EL: 138.50'  
MSTN TRG

820  
N: 3061711.266'  
E: 711762.692'  
EL: 138.49'  
MSTN TRG

819  
N: 3061777.429'  
E: 711822.807'  
EL: 138.48'  
MSTN TRG

818  
N: 3061843.592'  
E: 711882.922'  
EL: 138.47'  
MSTN TRG

817  
N: 3061909.755'  
E: 711943.037'  
EL: 138.46'  
MSTN TRG

816  
N: 3061975.918'  
E: 712003.152'  
EL: 138.45'  
MSTN TRG

815  
N: 3062042.081'  
E: 712063.267'  
EL: 138.44'  
MSTN TRG

814  
N: 3062108.244'  
E: 712123.382'  
EL: 138.43'  
MSTN TRG

813  
N: 3062174.407'  
E: 712183.497'  
EL: 138.42'  
MSTN TRG

812  
N: 3062240.570'  
E: 712243.612'  
EL: 138.41'  
MSTN TRG

811  
N: 3062306.733'  
E: 712303.727'  
EL: 138.40'  
MSTN TRG

810  
N: 3062372.896'  
E: 712363.842'  
EL: 138.39'  
MSTN TRG

809  
N: 3062439.059'  
E: 712423.957'  
EL: 138.38'  
MSTN TRG

808  
N: 3062505.222'  
E: 712484.072'  
EL: 138.37'  
MSTN TRG

807  
N: 3062571.385'  
E: 712544.187'  
EL: 138.36'  
MSTN TRG

806  
N: 3062637.548'  
E: 712604.302'  
EL: 138.35'  
MSTN TRG

805  
N: 3062703.711'  
E: 712664.417'  
EL: 138.34'  
MSTN TRG

804  
N: 3062769.874'  
E: 712724.532'  
EL: 138.33'  
MSTN TRG

803  
N: 3062836.037'  
E: 712784.647'  
EL: 138.32'  
MSTN TRG

802  
N: 3062902.200'  
E: 712844.762'  
EL: 138.31'  
MSTN TRG

801  
N: 3062968.363'  
E: 712904.877'  
EL: 138.30'  
MSTN TRG

800  
N: 3063034.526'  
E: 712964.992'  
EL: 138.29'  
MSTN TRG

799  
N: 3063100.689'  
E: 713025.107'  
EL: 138.28'  
MSTN TRG

798  
N: 3063166.852'  
E: 713085.222'  
EL: 138.27'  
MSTN TRG

797  
N: 3063233.015'  
E: 713145.337'  
EL: 138.26'  
MSTN TRG

796  
N: 3063299.178'  
E: 713205.452'  
EL: 138.25'  
MSTN TRG

795  
N: 3063365.341'  
E: 713265.567'  
EL: 138.24'  
MSTN TRG

794  
N: 3063431.504'  
E: 713325.682'  
EL: 138.23'  
MSTN TRG

793  
N: 3063497.667'  
E: 713385.797'  
EL: 138.22'  
MSTN TRG

792  
N: 3063563.830'  
E: 713445.912'  
EL: 138.21'  
MSTN TRG

791  
N: 3063629.993'  
E: 713506.027'  
EL: 138.20'  
MSTN TRG

790  
N: 3063696.156'  
E: 713566.142'  
EL: 138.19'  
MSTN TRG

789  
N: 3063762.319'  
E: 713626.257'  
EL: 138.18'  
MSTN TRG

788  
N: 3063828.482'  
E: 713686.372'  
EL: 138.17'  
MSTN TRG

787  
N: 3063894.645'  
E: 713746.487'  
EL: 138.16'  
MSTN TRG

786  
N: 3063960.808'  
E: 713806.602'  
EL: 138.15'  
MSTN TRG

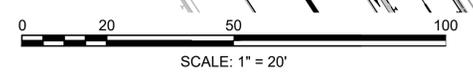
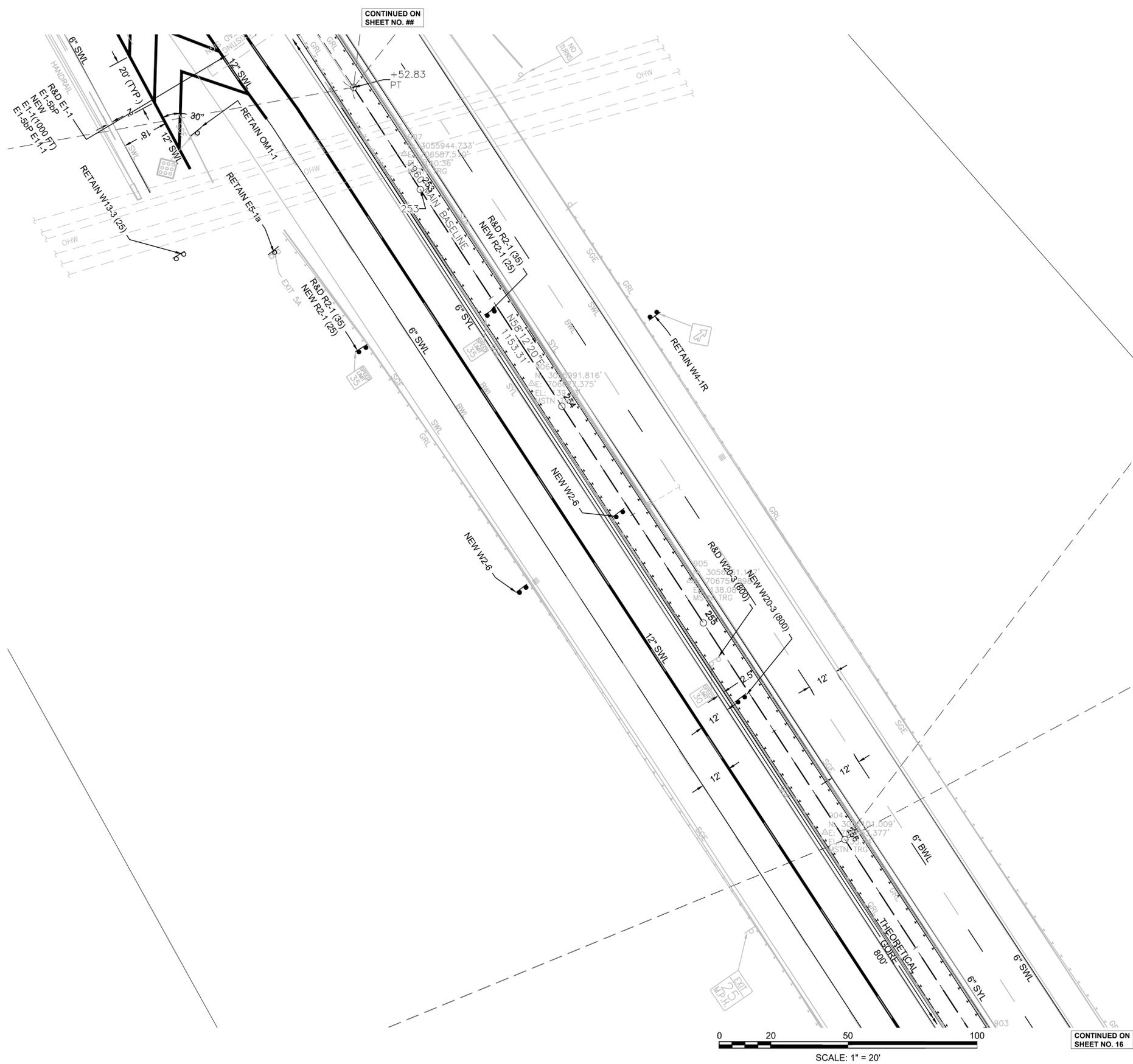


LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	128

PROJECT FILE NO. 604694

TRAFFIC SIGN & PAVEMENT MARKINGS



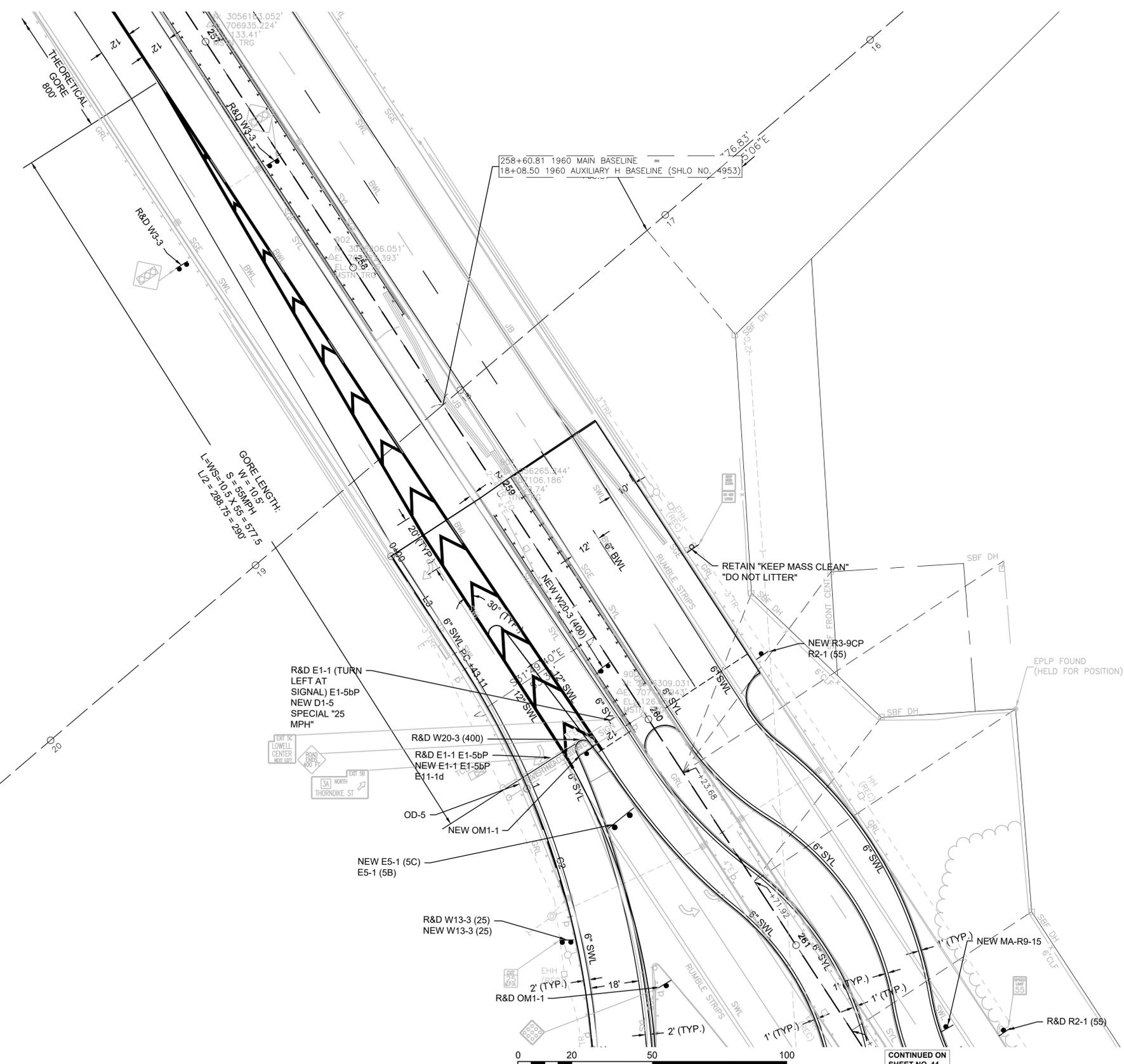
CONTINUED ON  
SHEET NO. 16



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	128
PROJECT FILE NO.		604694	

**TRAFFIC SIGN & PAVEMENT MARKINGS**



GORE LENGTH:  
W = 10.5'  
S = 50' PPI  
L = WS = 10.5 x 55 = 577.5  
L2 = 288.75 = 290

258+60.81 1960 MAIN BASELINE =  
18+08.50 1960 AUXILIARY H BASELINE (SHLO NO. 4953)



CONTINUED ON  
SHEET NO. 11

7+47.23

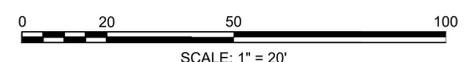
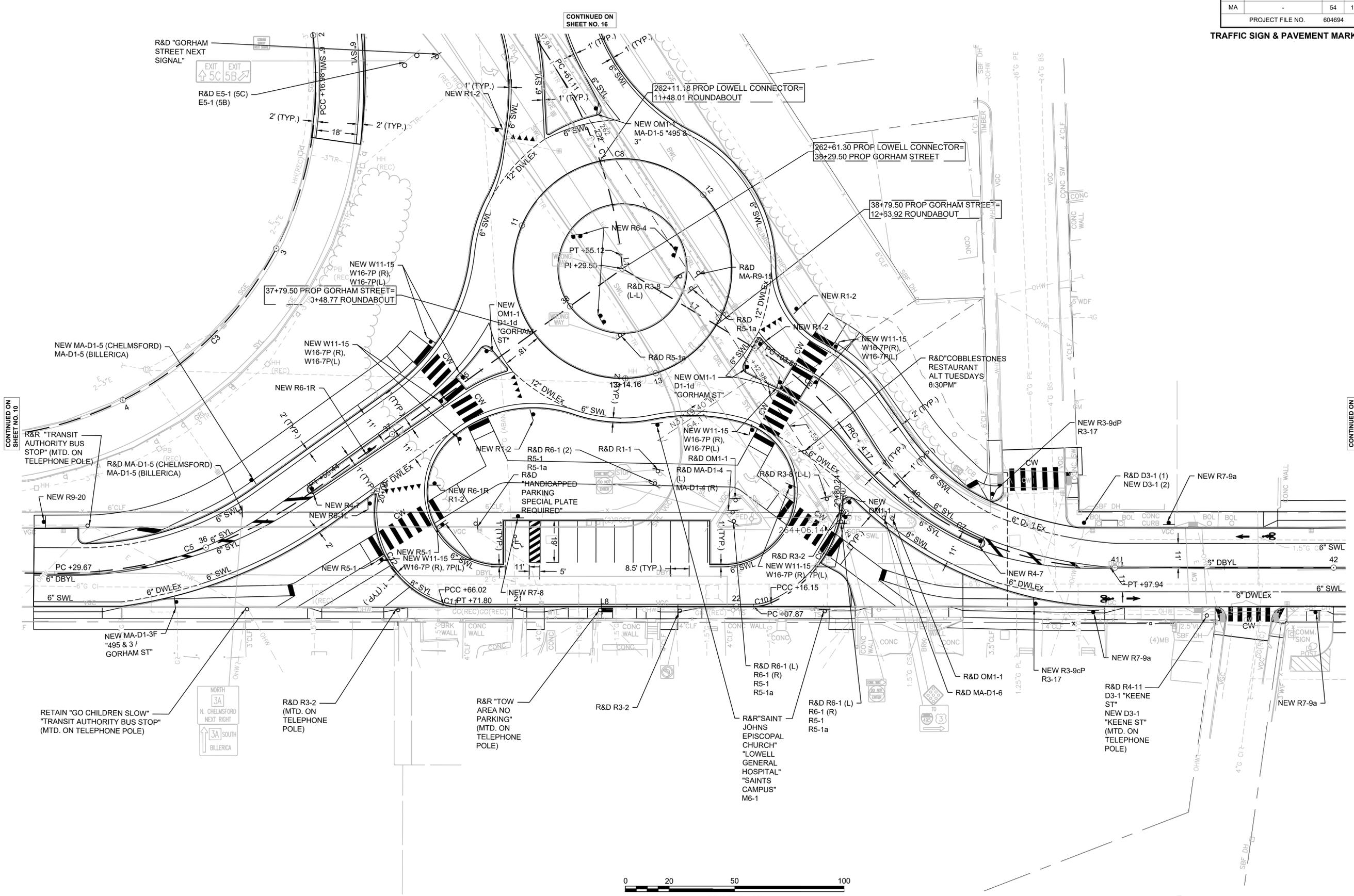


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	54	128

PROJECT FILE NO. 604694

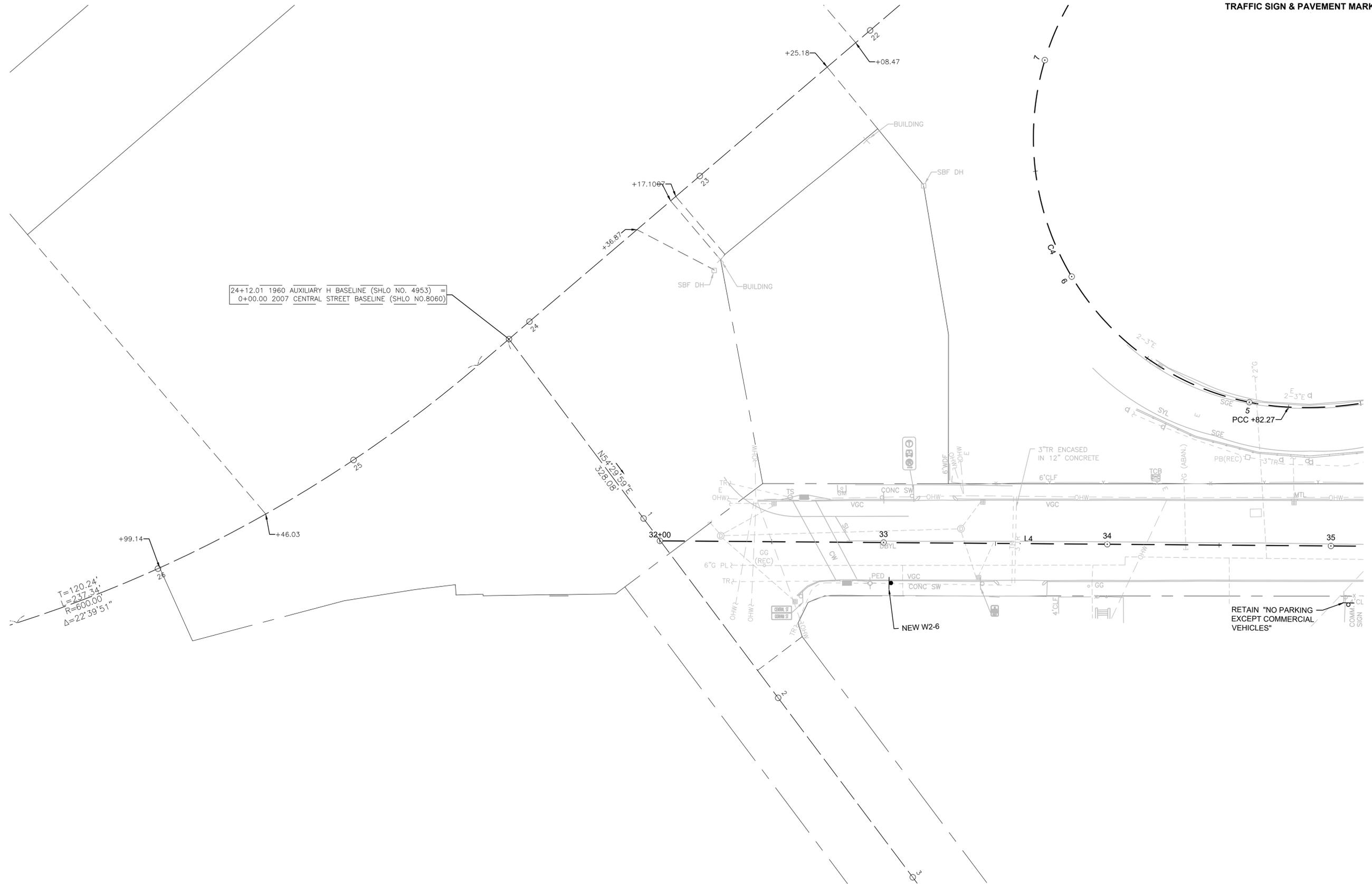
**TRAFFIC SIGN & PAVEMENT MARKINGS**



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	128
PROJECT FILE NO.		604694	

TRAFFIC SIGN & PAVEMENT MARKINGS

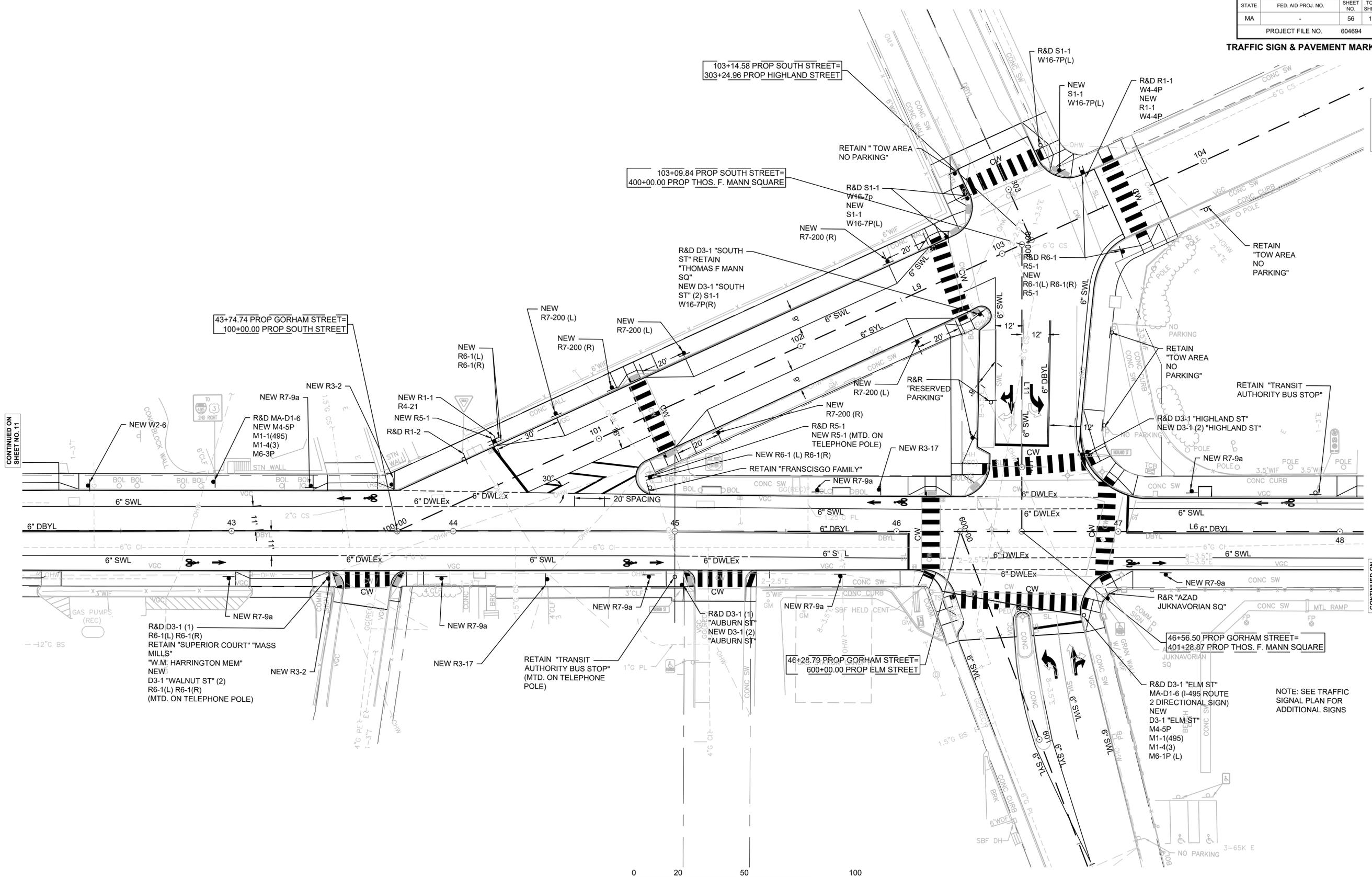




**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	128
PROJECT FILE NO.		604694	

**TRAFFIC SIGN & PAVEMENT MARKINGS**



CONTINUED ON SHEET NO. 11

CONTINUED ON SHEET NO. 13

CONTINUED ON SHEET NO. 13

R&D D3-1 (1)  
R6-1(L) R6-1(R)  
RETAIN "SUPERIOR COURT" "MASS MILLS"  
"W.M. HARRINGTON MEM"  
NEW  
D3-1 "WALNUT ST" (2)  
R6-1(L) R6-1(R)  
(MTD. ON TELEPHONE POLE)

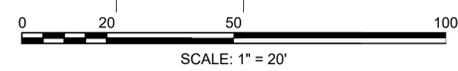
RETAIN "TRANSIT AUTHORITY BUS STOP"  
(MTD. ON TELEPHONE POLE)

46+28.79 PROP GORHAM STREET=  
600+00.00 PROP ELM STREET

46+56.50 PROP GORHAM STREET=  
401+28.07 PROP THOS. F. MANN SQUARE

R&D D3-1 "ELM ST"  
MA-D1-6 (1-495) ROUTE 2 DIRECTIONAL SIGN  
NEW  
D3-1 "ELM ST"  
M4-5P  
M1-1(495)  
M1-4(3)  
M6-1P (L)

NOTE: SEE TRAFFIC SIGNAL PLAN FOR ADDITIONAL SIGNS



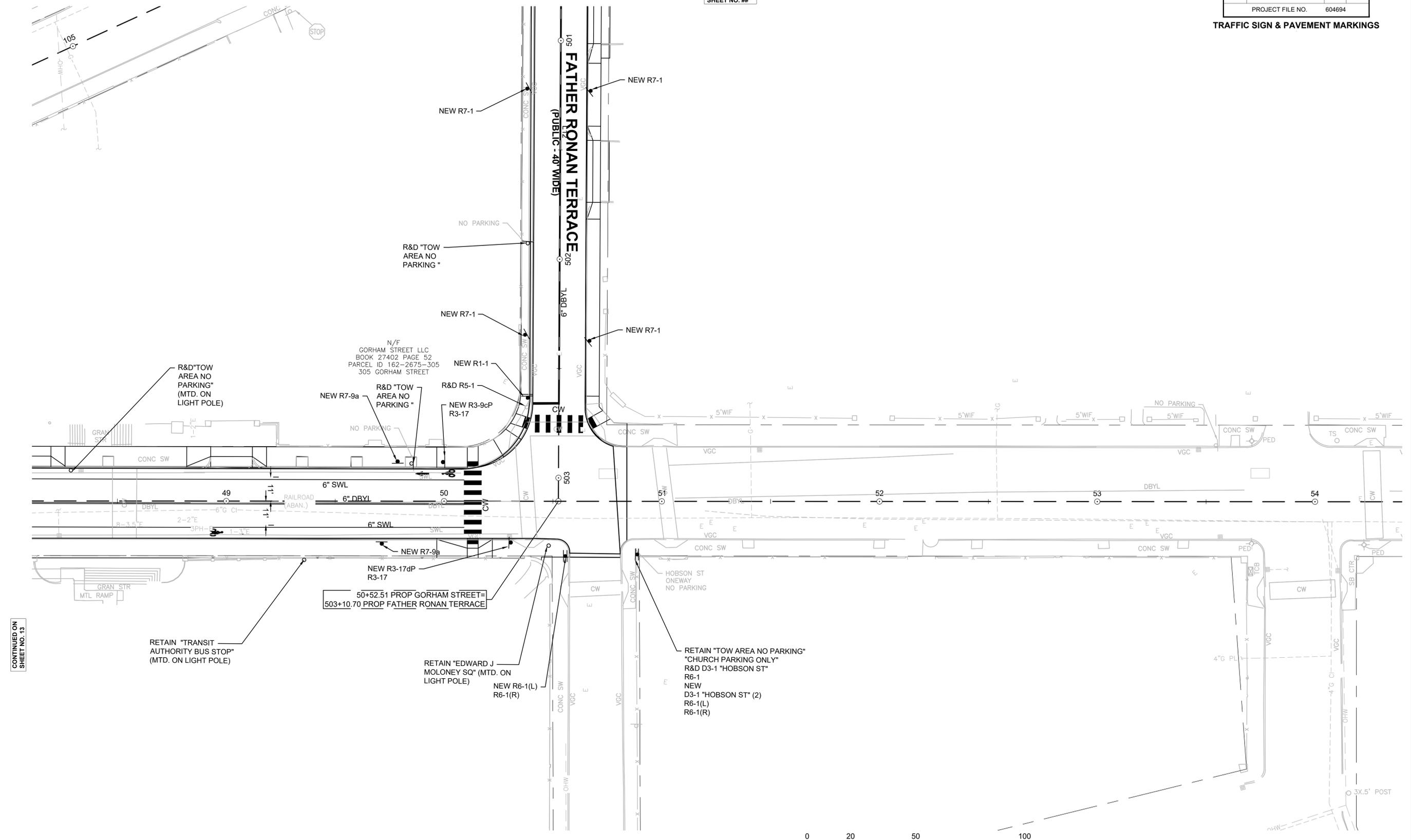
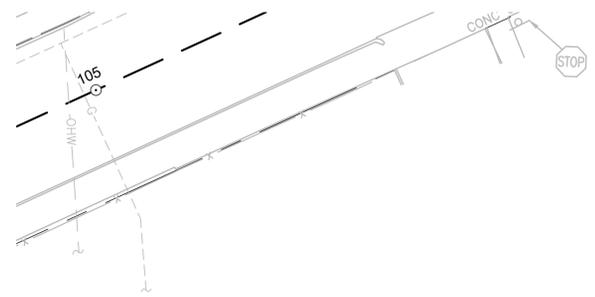


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

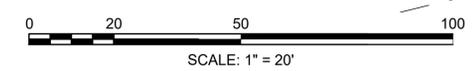
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	128
PROJECT FILE NO.		604694	

**TRAFFIC SIGN & PAVEMENT MARKINGS**

CONTINUED ON SHEET NO. ##



CONTINUED ON SHEET NO. 13



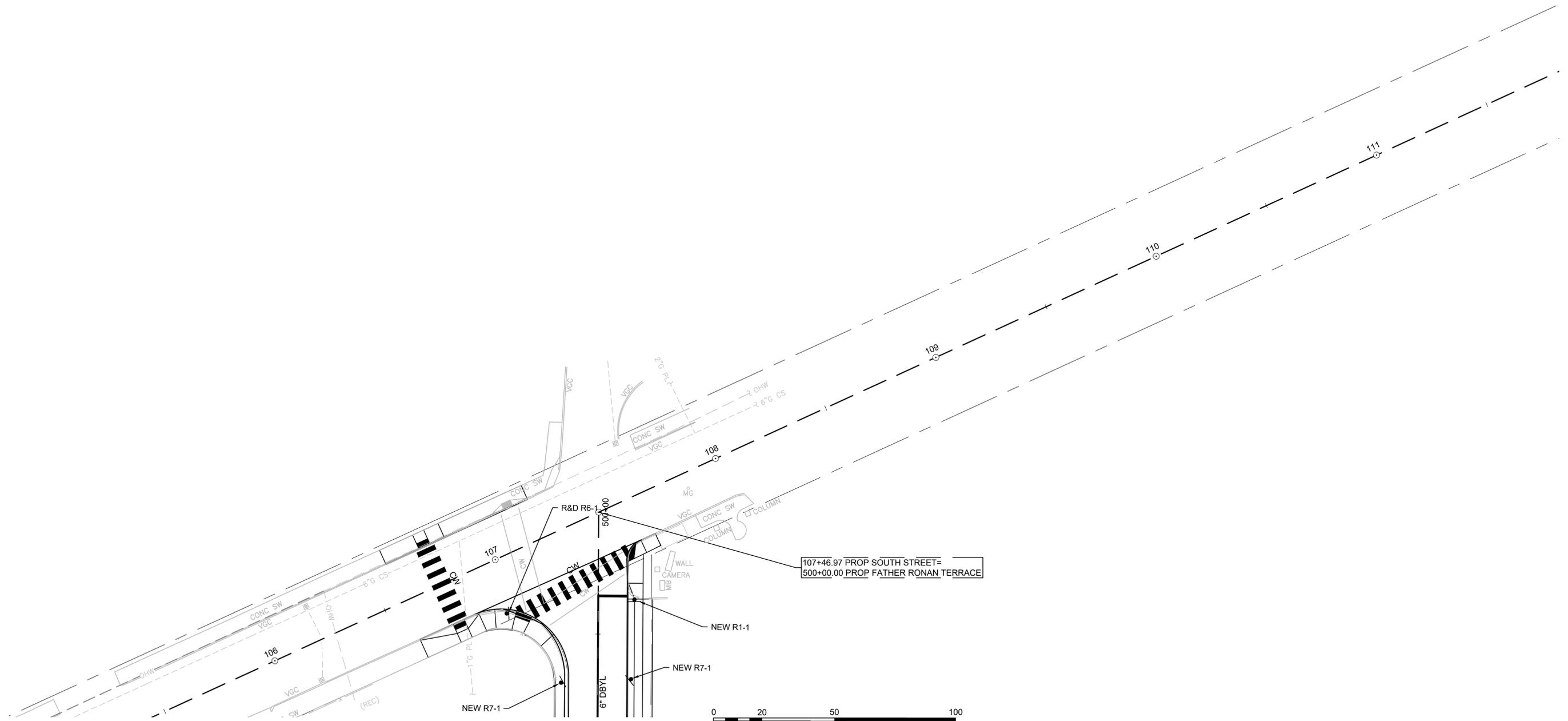


LOWELL  
LOWELL CONNECTOR/GORHAM STREET

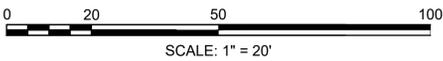
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	128

PROJECT FILE NO. 604694

TRAFFIC SIGN & PAVEMENT MARKINGS



CONTINUED ON  
SHEET NO. 13

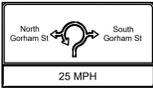


## TRAFFIC SIGN SUMMARY TABLE

**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	59	128
PROJECT FILE NO.		604694	

**TRAFFIC SIGN & PAVEMENT MARKINGS**

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
D1-1d "Gorham St"	TBD	18		SEE 2023 MUTCD DWGS.			2	Green	White	White		TBD	TBD
D1-5 SPECIAL "25 MPH"	TBD	TBD					1	Green Yellow	White Black	White Black		TBD TBD TBD	TBD TBD TBD
D3-1 "Auburn St"	TBD	12					2	Green	White	White		TBD	TBD
D3-1 "ELM ST"	TBD	12					1	Green	White	White		TBD	TBD
D3-1 "Highland St"	TBD	12					4	Green	White	White		TBD	TBD
D3-1 "HOBSON ST"	TBD	12					2	Green	White	White		TBD	TBD
D3-1 "KEENE ST"	TBD	12					1	Green	White	White		TBD	TBD
D3-1 "S Highland St"	TBD	12					2	Green	White	White		TBD	TBD
D3-1 "South St"	TBD	12					2	Green	White	White		TBD	TBD
D3-1 "Walnut St"	TBD	12					2	Green	White	White		TBD	TBD
E1-1 E1-5bP SPECIAL "25 MPH"	TBD	TBD					1	Green Green Yellow	White White Black	White White Black		TBD TBD TBD	TBD TBD TBD
E1-1 (1000 FT) E1-5bP E11-1	TBD	TBD					1	Green Green Green	White White White	White White White		TBD TBD TBD	TBD TBD TBD
E1-1 E1-5bP E11-1	TBD	TBD					1	Green Green Green	White White White	White White White		TBD TBD TBD	TBD TBD TBD
E1-1 E1-5bP E11-1	TBD	TBD				1	Green Green Green	White White White	White White White		TBD TBD TBD	TBD TBD TBD	

## TRAFFIC SIGN SUMMARY TABLE

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
E1-1 E1-5bP E11-1d	TBD TBD TBD	TBD TBD TBD		SEE 2023 MUTCD DWGS.	1	Green Green Green	White White White	White White White		TBD TBD TBD	TBD TBD TBD		
E1-1 E1-5bP E11-1d	TBD TBD TBD	TBD TBD TBD			1	Green Green Green	White White White	White White White		TBD TBD TBD	TBD TBD TBD		
E1-1 E1-5bP SPECIAL "25 MPH AHEAD"	TBD TBD TBD	TBD TBD TBD			1	Green Green Yellow	White White Black	White White Black		TBD TBD TBD	TBD TBD TBD		
E1-5eP E1-2 SPECIAL "REDUCE SPEED"	TBD TBD TBD	TBD TBD TBD			1	Green Green Yellow	White White Black	White White Black		TBD TBD TBD	TBD TBD TBD		
E5-1 (5B)	72	60			1	Green	White	White		30	30		
E5-1 (5C)	72	60			1	Green	White	White		30	30		
M1-1(495)	24	24			2	White	Black	Black		4	8		
M1-4(3)	24	24			2	White	Black	Black		4	8		
M4-5P	24	12			2	White	Black	Black		2	4		
M6-1P(L)	21	15			1	White	Black	Black		2.1875	2.1875		
M6-3P	21	15			1	White	Black	Black		2.1875	2.1875		
MA-D1-5 "495 & 3"	54	54			1	Green	White	White		20.25	20.25		
MA-D1-5 "BILLERICA"	66	48			1	Green	White	White		22	22		
MA-D1-5 "CHELMSFORD"	66	48			1	Green	White	White		22	22		
MA-D1-3F	84	84			1	Green	White	White		49	49		
MA-R9-15	30	30		1	White	Red/Black	Black		6.25	6.25			

### TRAFFIC SIGN SUMMARY TABLE

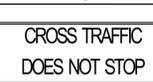
IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
OM1-1	18	18		SEE 2023 MUTCD DWGS.			5	Yellow	NA	NA		2.25	11.25
R1-1	30	30					4	Red	White	White		6.25	25
R1-2	36	36					5	White	Red	Red		9	45
R2-1 (25MPH)	48	60					2	White	Black	Black		20	40
R2-1 (55mph)	48	60					1	White	Black	Black		20	20
R3-17	30	24					6	White/Black	Black	White		5	30
R3-2	24	24					2	White	Red	Black		4	8
R3-9CP	36	18					1	White	Black	Black		4.5	4.5
R3-9cP	24	12					2	White	Black	Black		2	4
R3-9dP	24	12					2	White	Black	Black		2	4
R4-21	24	30					1	White	Black	Black		5	5
R4-7	24	30					2	White	Black	Black		5	10
R5-1	36	36					2	White	Red	White		9	18
R5-1	30	30					4	White	Red	White		6.25	25
R6-1 ( L )	36	12					7	White	Black	Black		3	21
R6-1 ( R )	36	12					8	White	Black	Black		3	24
R6-4	30	24					3	White	Black	Black		5	15
R7-1	12	18					6	White	Red	Red		1.5	9
R7-200 ( L )	12	18					3	White	Red	Red		1.5	4.5
R7-200 ( R )	12	18					3	White	Red	Red		1.5	4.5
R7-8	12	18		1	White	Green	Green		1.5	1.5			

**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	61	128
PROJECT FILE NO.		604694	

**TRAFFIC SIGN & PAVEMENT MARKINGS**

## TRAFFIC SIGN SUMMARY TABLE

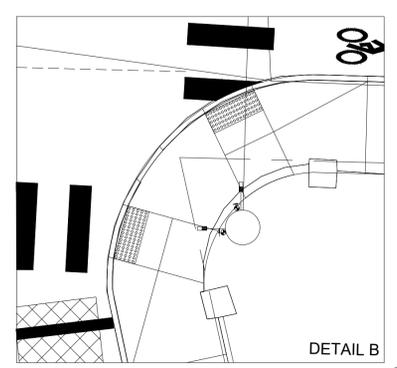
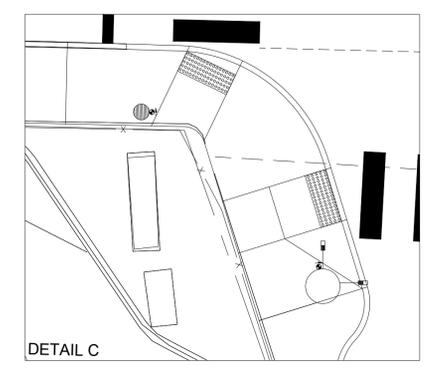
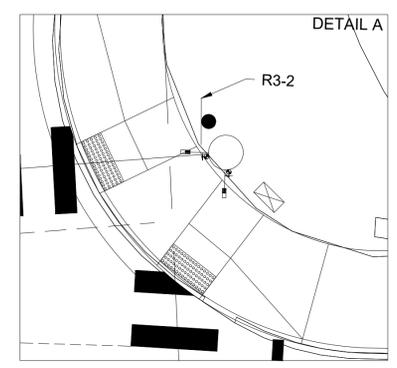
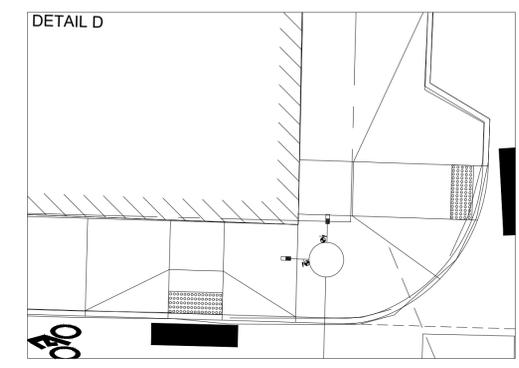
INDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
R7-9a	12	18		SEE 2023 MUTCD DWGS.			13	White	Red	Red		1.5	19.5
R9-20	30	30					1	White	Black	Black		6.25	6.25
S1-1	36	36					4	Yellow	Black	Black		9	36
W11-15	36	36					8	Yellow	Black	Black		9	72
W13-3 (25)	48	60					1	Yellow	Black	Black		20	20
W16-7P ( L )	24	12					8	Yellow	Black	Black		2	16
W16-7P ( R )	24	12					7	Yellow	Black	Black		2	14
W20-3 (400FT)	48	48					1	Yellow	Black	Black		16	16
W20-3 (800FT)	48	48					1	Yellow	Black	Black		16	16
W2-6	48	48					2	Yellow	Black	Black		16	32
W2-6	36	36					2	Yellow	Black	Black		9	18
W3-5(25)	48	48					4	Yellow	Black	Black		16	64
W4-4P	30	15					1	Yellow	Black	Black		3.125	3.125

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	63	128

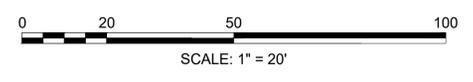
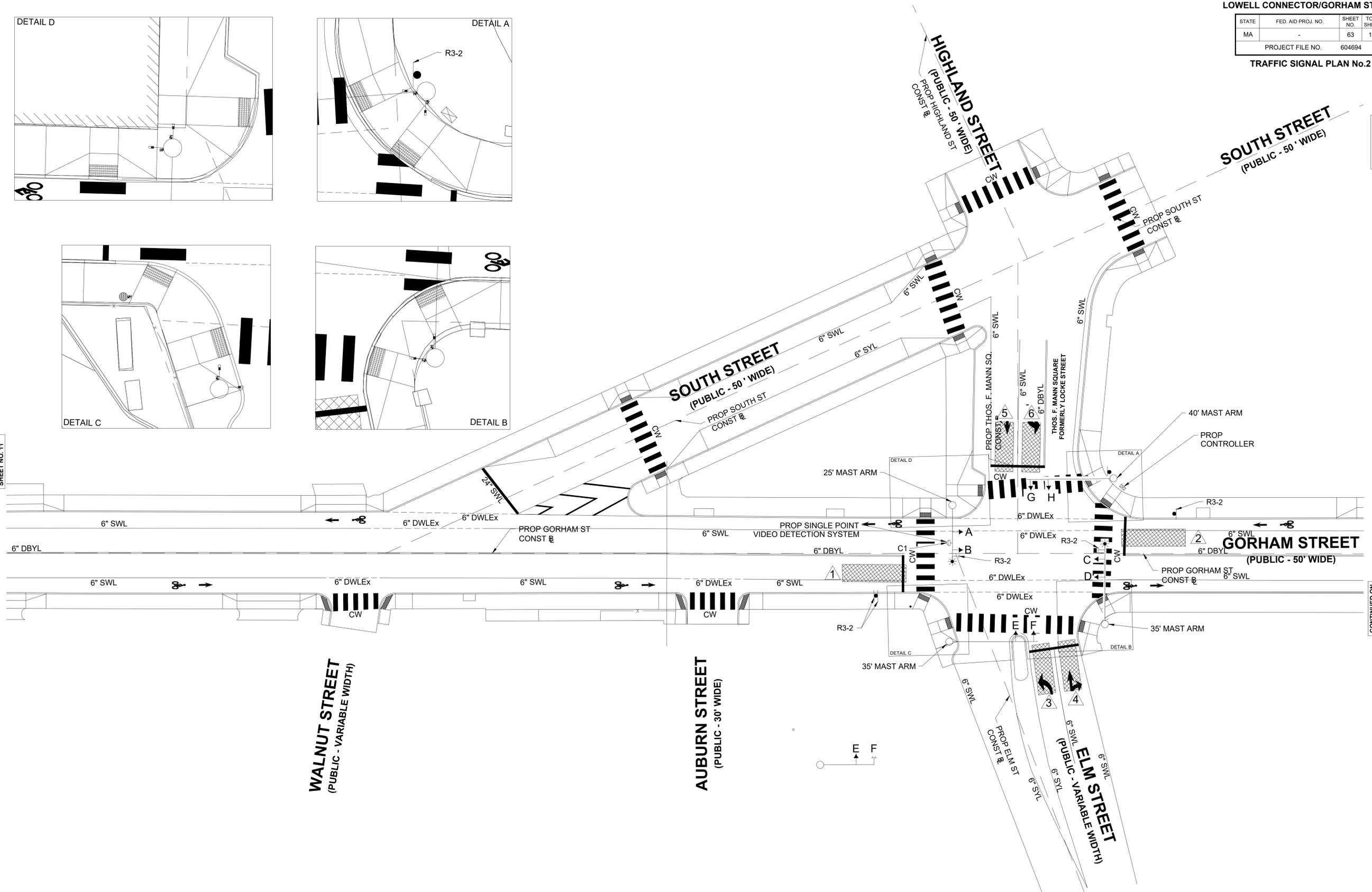


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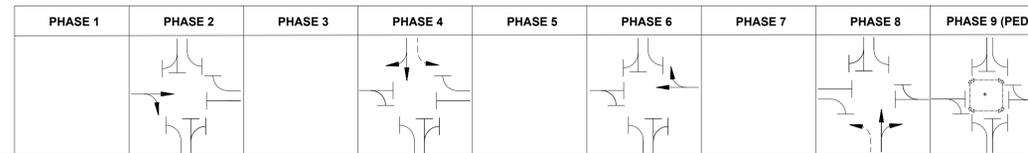


CONTINUED ON SHEET NO. ##

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	64	128
PROJECT FILE NO.		604694	

TRAFFIC SIGNAL PLAN No.1

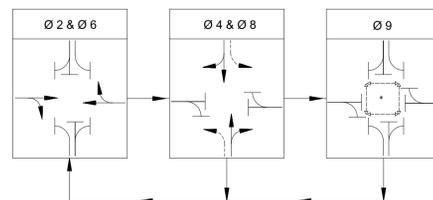


SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (ISOLATED)																											
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	10	11	12	13	14	15	16	17	18	22	23	24	25	26	27	FLASH OPER.			
GORHAM STREET	SB	A,B				R	R	R	R	R	R					G	Y	R	R	R	R	R	R	R	FY		
GORHAM STREET	NB	C,D				G	Y	R	R	R	R					R	R	R	R	R	R	R	R	R	FY		
HIGHLAND STREET	EB	E,F				R	R	R	G	Y	R					R	R	R	R	R	R	R	R	R	FR		
ELM STREET	WB	G,H				R	R	R	R	R	R					R	R	R	G	Y	R	R	R	R	FR		
TIMING IN SECONDS																											
MINIMUM GREEN (INITIAL)																										EMERGENCY ONLY	
PASSAGE TIME (VEHICLE)																											
MAXIMUM 1																											
MAXIMUM 2																											
YELLOW CLEARANCE																											
RED CLEARANCE																											
PEDESTRIAN WALK (W)						DW	DW	DW	DW	DW	DW					DW	DW	DW	DW	DW	DW	W	W	W			
PEDESTRIAN CLEARANCE																											
RECALL																											
MEMORY			RECALL			RECALL			RECALL			RECALL			RECALL			RECALL			RECALL			RECALL			
COORDINATION DATA														COORDINATION PHASE TIMING													
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.											

- NOTES:
- AUTOMATIC FLASHING OPERATION PER 2009 M.U.T.C.D., AS AMENDED.
  - \* UPON PEDESTRIAN PUSH BUTTON ACTUATION
  - OL = OVERLAP
  - PERM = PERMISSIVE
  - MAXIMUM 1 = NORMAL OPERATION
  - MAXIMUM 2 = NOT USED
  - STOP AND GO OPERATION FOR 24 HOURS PER DAY. FLASHING OPERATION FOR EMERGENCY ONLY.
  - DURING PEDESTRIAN INTERVAL, FDW THROUGH YELLOW OPERATION SHALL NOT BE IN EFFECT.
  - INHIBIT MAX TERMINATION SHALL BE IN EFFECT DURING COORDINATION.

VIDEO DETECTION DATA				
DETECTION ZONE	APPROACH LANE	CAMERA	DELAY/EXT	CALL PHASE
1	GORHAM NB	C1	0	Ø 2
2	GORHAM SB	C1	0	Ø 6
3	ELM NB LEFT LANE	C1	0	Ø 3
4	ELM NB THRU/ RT LANE	C1	0	Ø 8
5	HIGHLAND SB THRU/ RT LANE	C1	0	Ø 7
6	HIGHLAND SB LEFT LANE	C1	0	Ø 4

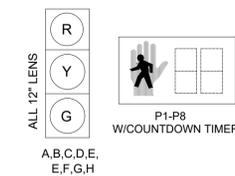
PREFERENTIAL PHASING SEQUENCE



SEQUENCE & TIMING NOTES:

- IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
- THE RIGHT OF WAY MAY BE ASSIGNED TO ANY PHASE OR ANY COMBINATION OF NON-CONFLICTING PHASES.
- IF CALLS EXIST ON ALL PHASES, THE ASSIGNMENT OF RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE PREFERENTIAL PHASE SEQUENCE.
- IF THE ASSIGNED RIGHT-OF-WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.

SIGNAL IDENTIFICATION



NOTES:

- ALL SIGNAL HEADS SHALL BE RIGID MOUNTED.
- ALL SIGNAL HEADS SHALL BE EQUIPPED WITH 5"± LOUVERED BACKPLATES. ALL BACKPLATES SHALL CONTAIN A 2" WIDE YELLOW REFLECTIVE BORDER.
- ALL SIGNAL HEADS SHALL BE EQUIPPED WITH TUNNEL VISORS.
- ALL SIGNAL DISPLAYS SHALL BE EQUIPPED WITH L.E.D. MODULES.
- ALL 12" LENS

## TEMPORARY TRAFFIC CONTROL PLAN GENERAL NOTES

- ALL CONSTRUCTION SIGNING, TEMPORARY TRAFFIC CONTROL DEVICES, AND ROADSIDE ELEMENTS SHALL CONFORM WITH THE LATEST VERSION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), WITH MASSACHUSETTS STATE AMENDMENTS TO MUTCD, THE LATEST REVISIONS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO), ROADSIDE DESIGN GUIDE: AASHOT POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AND THE AASTHO MANUAL FOR ASSESSING SAFETY HARDWARE (MASH).
- ALL DRUMS SHALL BE SET AT 35 FEET ON CENTER MAX ON THE LOWELL CONNECTOR UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.
- 11' MINIMUM WIDTHS SHALL BE MAINTAINED UNLESS OTHERWISE NOTED ON THE PLANS.
- TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS OR WHEN NOT IN USE.
- ADVISORY SPEED PLATES (W13-1P) SHALL BE USED IF APPROPRIATE AND AS REQUESTED BY THE ENGINEER. ADVISORY SPEED SHALL BE AS ESTABLISHED BY THE MASSDOT DISTRICT 4 OFFICE.
- SIGNS INSTALLED ON PORTABLE STANDS REQUIRE 12 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS INSTALLED ON PORTABLE STANDS PLACED AMONG CHANNELIZATION DEVICES REQUIRE A 36 INCH MINIMUM MOUNTING HEIGHT FROM THE ROADWAY SURFACE TO THE BOTTOM OF THE SIGN.
- SIGNS MOUNTED ON POSTS REQUIRE A MINIMUM 84 INCH MOUNTING HEIGHT FROM THE ROADWAY OR SIDEWALK SURFACE TO THE BOTTOM OF THE SIGN.
- THE CONTRACTOR SHALL REPLACE THE FULL SIDEWALK PANEL AFFECTED BY THE REMOVAL OF POST MOUNTED SIGNS. THE CONTRACTOR SHALL NOT "PLUG" HOLE FOR ANY TEMPORARY POST MOUNTED SIGN LOCATED WITHIN CITY LAYOUT.
- REFLECTORIZED CONES SHALL BE A MINIMUM OF 36 INCHES IN HEIGHT.
- CONTRACTOR SHALL HAVE TRUCK MOUNTED ATTENUATORS (1 PER CLOSED LANE OR USABLE SHOULDER) IN ADVANCE OF THE WORK AREA FOR ALL TEMPORARY WORK ZONES ON THE LOWELL CONNECTOR, OR AS DIRECTED BY THE ENGINEER.
- PROVIDE CLEAR ZONES AROUND TRUCK MOUNTED ATTENUATOR DEVICES AS REQUIRED BY THE MANUFACTURER.
- DRUMS SHALL BE USED FOR LANE CLOSURE TAPERS. THE FIRST TEN DRUMS IN THE TAPER SHALL BE MOUNTED WITH SEQUENTIAL FLASHING LIGHTS.
- POLICE DETAILS ARE REQUIRED IN EACH CLOSED LANE OF THE LOWELL CONNECTOR IN ACCORDANCE WITH MASSDOT STANDARDS AND AS REQUIRED BY THE ENGINEER ON ALL OTHER ROADWAYS.
- W20-8 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF AREAS WHERE UTILITY CASTINGS HAVE BEEN RAISED IN ADVANCE OF PAVING OPERATIONS OR AS REQUESTED BY THE ENGINEER.
- W8-15 SIGNS SHALL BE INSTALLED IN ADVANCE (100' MIN) OF PAVEMENT MILLING AREAS OR AS REQUESTED BY THE ENGINEER.
- WHERE EXISTING PAVEMENT MARKINGS ARE DIFFERENT THAN PROPOSED MARKINGS SHOWN OR CONFLICTING WITH TEMPORARY MARKINGS, REMOVE BY AN APPROVED METHOD.
- RETAIN ALL EXISTING SIGNS UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL SECURE ALL WORK AREAS AT ALL TIMES TO PREVENT UNAUTHORIZED ACCESS.
- GRADE SEPARATION IN EXCESS OF 2" DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
- EXCAVATION EDGES IN EXCESS OF 4" DEEP SHALL BE PROTECTED DURING NON-WORK HOURS BY BACKFILLING WITH A WEDGE OF SUITABLE MATERIAL SUCH AS GRAVEL OR SOIL COMPACTED TO A 4:1 SLOPE.
- BLUNT ENDS OF BARRIER SHALL BE PROTECTED AT ALL TIMES IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE AND MASSDOT STANDARDS.
- ILLUMINATION REQUIRED FOR NIGHTTIME WORK SHALL BE IN ACCORDANCE WITH MASSDOT STANDARDS.
- ALL TEMPORARY FENCING SHALL BE CHAIN-LINK FENCE.
- TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 2 (TL-2) ON ROADWAYS HAVING A POSTED SPEED LESS THAN OR EQUAL TO 40 MPH.
- TEMPORARY IMPACT ATTENUATORS SHALL BE DESIGNED FOR TEST LEVEL 3 (TL-3) ON ROADWAYS HAVING A POSTED SPEED IN EXCESS OF 40 MPH.
- TRUCK MOUNTED ATTENUATORS ON ROADWAYS WITH A POSTED SPEED OF 30 MPH OR LESS MAY BE USED AT CONTRACTOR'S OPTION. AT ALL OTHER LOCATIONS, TRUCK MOUNTED ATTENUATORS WILL BE REQUIRED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- CONFLICTING SIGNS SHALL BE COVERED OR REMOVED.
- AT ROAD CLOSURE, PROVIDE A SUFFICIENT NUMBER OF TYPE III BARRICADES TO CLOSE THE ENTIRE ROADWAY.
- ERADICATE ALL CONFLICTING PAVEMENT MARKINGS.
- ALL TEMPORARY MARKINGS ON THE LOWELL CONNECTOR SHALL BE 6" UNLESS OTHERWISE NOTED.
- NO ALTERATION SHALL BE UNDERTAKEN WHICH DECREASES OR HAS THE EFFECT OF DECREASING ACCESSIBILITY OR USABILITY OF A FACILITY BELOW THE REQUIREMENTS FOR NEW CONSTRUCTION.

## SEQUENCE OF CONSTRUCTION

### PHASE 1

#### LOWELL CONNECTOR

CONSTRUCT THE NORTHBOUND MEDIAN CROSSOVER ON THE LOWELL CONNECTOR BETWEEN EXIT 5A (S. LOWELL) AND EXIT 5C (GORHAM ST LOWELL CTR). IN THE NORTHBOUND DIRECTION, THE THREE LANE SECTION SHALL BE MERGED INTO TWO LANES BY CHANNELIZING OFF THE LEFT MOST LANE OF THE CONNECTOR. TEMPORARY BARRIER SHALL BE INSTALLED ALONG THE WORK AREA PER THE APPROVED TRAFFIC CONTROL PLAN. TRAFFIC IN THE SOUTHBOUND DIRECTION SHALL BE RESTRICTED TO THE RIGHT LANE ONLY WITH TEMPORARY BARRIER RUNNING BETWEEN THE EXISTING LEFT LANE AND RIGHT LANE OF THE CONNECTOR PER THE APPROVED TRAFFIC CONTROL PLAN. REMOVE THE GUARDRAIL FROM STATION 253+00 TO 257+00. PLACE TEMPORARY PAVEMENT IN THIS LOCATION FOR THE FUTURE CROSSOVERS.

### PHASE 2

#### LOWELL CONNECTOR

PLACE TEMPORARY PAVEMENT AT STATION 40+00 PRIOR TO CROSSING NORTHBOUND TRAFFIC OVER VIA THE CROSSOVER. TRAFFIC CONTROL FOR THIS OPERATION SHALL BE IN ACCORDANCE WITH TLR-5 OF THE MASSDOT STANDARD DRAWINGS.

CONSTRUCT THE SOUTHERN SECTION OF THE ROUNDABOUT. COMPLETE FULL-DEPTH RECONSTRUCTION ALONG SOUTHBOUND GORHAM STREET.

IN THE NORTHBOUND DIRECTION, THE THREE LANE SECTION SHALL BE MERGED INTO TWO LANES BY CHANNELIZING OFF THE LEFT MOST LANE OF THE CONNECTOR. ONCE NORTHBOUND TRAFFIC IS RESTRICTED TO THE TWO RIGHT MOST LANES, SHIFT THE LEFT MOST LANE (EXISTING CENTER LANE) THROUGH THE NORTHBOUND CROSSOVER. ACCESS SHALL BE MAINTAINED TO THE THORNDIKE ST RAMP VIA THE NORTHBOUND RIGHT LANE.

IN THE SOUTHBOUND DIRECTION, A SINGLE LANE OF TRAFFIC SHALL BE SHIFTED ONTO THE RIGHT SHOULDER OF THE CONNECTOR WITH THE APPROPRIATE DEVICES SEPARATING THE NORTHBOUND CROSSOVER LANE AND THE SOUTHBOUND TRAVEL LANE.

#### GORHAM STREET

DETOUR THE SOUTHBOUND DIRECTION OF GORHAM STREET FROM THE LOWELL CONNECTOR TO CENTRAL STREET. REDUCE THE LANE WIDTH ON GORHAM STREET PER THE APPROVED TRAFFIC CONTROL PLANS AND DETOUR TRUCKS IN THE NORTHBOUND DIRECTION OF GORHAM STREET FROM CENTRAL STREET TO HIGHLAND STREET.

### PHASE 3

#### LOWELL CONNECTOR

CONSTRUCT THE NORTHERN SECTION OF THE ROUNDABOUT. COMPLETE FULL-DEPTH RECONSTRUCTION ALONG NORTHBOUND GORHAM STREET.

IN THE NORTHBOUND DIRECTION, THE THREE LANE SECTION SHALL BE MERGED INTO TWO LANES BY CHANNELIZING OFF THE LEFT MOST LANE OF THE CONNECTOR. ONCE NORTHBOUND TRAFFIC IS RESTRICTED TO THE TWO RIGHT MOST LANES, THE RIGHT LANE SHALL BECOME AN EXIT ONLY LANE TO RAMP E-2 AND GORHAM STREET SOUTH AND THE LEFT LANE SHALL FREE FLOW ONTO GORHAM STREET NORTH.

IN THE SOUTHBOUND DIRECTION, A SINGLE LANE OF TRAFFIC SHALL BE SHIFTED ONTO THE NORTHBOUND SIDE OF THE CONNECTOR, AT THE INTERSECTION WITH GORHAM STREET, UTILIZING THE LEFT MOST CLOSED LANE OF THE NORTHBOUND LOWELL CONNECTOR. THE SOUTHBOUND TRAVEL LANE SHALL BE SEPARATED FROM THE NORTHBOUND LANES WITH THE APPROPRIATE DEVICES AS SHOWN ON THE APPROVED TRAFFIC CONTROL PLANS. SHIFT THE SOUTHBOUND TRAVEL LANE THROUGH THE SOUTHBOUND CROSSOVER.

#### GORHAM STREET

DETOUR THE NORTHBOUND DIRECTION AND SOUTHBOUND DIRECTION OF GORHAM STREET FROM THE LOWELL CONNECTOR TO CENTRAL STREET. THE ACCESS FROM THE LOWELL CONNECTOR NORTHBOUND TO GORHAM STREET SOUTHBOUND SHALL BE MAINTAINED PER THE APPROVED TRAFFIC CONTROL PLAN.

### PHASE 4

#### LOWELL CONNECTOR

CONSTRUCT THE REMAINING MEDIAN AREAS IN THE ROUNDABOUT. MILL AND RESURFACE, COMPLETE ADA RAMP WORK, AND PAVEMENT MARKING UPGRADES ALONG GORHAM STREET NORTH AND SOUTH OF THE ROUNDABOUT. MILL AND RESURFACE AND COMPLETE PAVEMENT MARKING UPGRADES ALONG RAMP E-2. COMPLETE SIGNAL CONSTRUCTION AT THE INTERSECTION OF GORHAM ST AND HIGHLAND STREET. REMOVE CROSSOVER ALONG LOWELL CONNECTOR.

IN THE NORTHBOUND DIRECTION, THE THREE LANE SECTION SHALL BE MERGED INTO TWO LANES BY CHANNELIZING OFF THE LEFT MOST LANE OF THE CONNECTOR. TRAFFIC IN THE SOUTHBOUND DIRECTION SHALL BE RESTRICTED TO THE RIGHT LANE ONLY. MAINTAIN TRAFFIC THROUGH THE NEWLY CONSTRUCTED ROUNDABOUT. UTILIZE FLAGGING OPERATIONS THROUGH THE ROUNDABOUT IN ACCORDANCE WITH TA-52 AND TA-53 OF THE MUTCD. MAINTAIN TRAFFIC ON RAMP E-2 UTILIZING R-2 AND R-5 OF THE MASSDOT STANDARD DRAWINGS.

#### GORHAM STREET

MAINTAIN TRAFFIC THROUGH THE NEWLY CONSTRUCTED ROUNDABOUT. TRAFFIC SHALL BE IN ACCORDANCE WITH TA-10 OF THE MUTCD AND TLR-5 OF THE MASSDOT STANDARD DRAWINGS. FOR WORK TAKING PLACE AT AN INTERSECTION, TRAFFIC SHALL BE IN ACCORDANCE WITH INT -2, INT-3, INT-4, INT-5 OF THE MASSDOT STANDARD DRAWINGS. PEDESTRIAN TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH TA-29 OF THE MUTCD AND PED-6 OF THE MASSDOT STANDARD DRAWINGS.

## LOWELL LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	65	128
PROJECT FILE NO.		604694	

## TEMPORARY TRAFFIC CONTROL PLANS GENERAL NOTES / SEQUENCE OF CONSTRUCTION

## DESIGN CRITERIA

### SUGGESTED WORK ZONE WARNING SIGN SPACING

ROAD TYPE	DISTANCE BETWEEN SIGNS (FT)		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1000	1500	2640

\*ROAD TYPE TO BE DETERMINED BY MASSDOT

### FORMULAS DETERMINING TAPER LENGTH

SPEED	FORMULA
40 MPH OR LESS	$L=WS^2/60$
45 MPH OR GREATER	$L=WS$

L= TAPER LENGTH IN FEET

W= WIDTH OF OFFSET IN FEET

S= POSTED SPEED, THE OFF-PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED IN MPH

### TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

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

## LEGEND

	CONSTRUCTION SIGN
	TEMPORARY BARRIER
	WORK ZONE
	REFLECTORIZED PLASTIC DRUM
	DIRECTION OF TRAFFIC
	IMPACT ATTENUATOR
	CHANGEABLE MESSAGE SIGN
	ARROW BOARD
	TEMPORARY PAVEMENT

**CROSSOVER GEOMETRIC POINTS**

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	66	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS  
GENERAL NOTES / SEQUENCE OF CONSTRUCTION**

PHASE 2 CROSSOVER CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1000	1000+00.00	3055895.285	706533.200		N57°57'00"E 108.90'	1001+08.90	3055953.074	706625.503
C1001	1001+08.90	3055953.074	706625.503	R = 1040.00' Δ= 8°23'00" L=152.17' T=76.22'		1002+61.07	3056042.956	706748.123
L1002	1002+61.07	3056042.956	706748.123		N49°33'59"E 120.22'	1003+81.29	3056120.926	706839.629
C1003	1003+81.29	3056120.926	706839.629	R = 1051.00' Δ= 8°38'58" L=158.66' T=79.48'		1005+39.95	3056214.338	706967.687
L1004	1005+39.95	3056214.338	706967.687		N58°12'57"E 260.05'	1008+00.00	3056351.312	707188.740

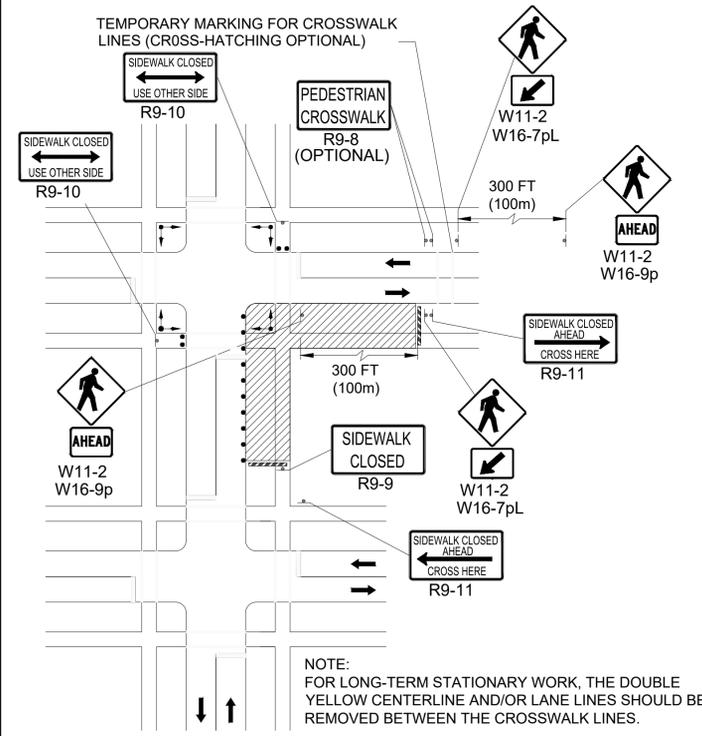
PHASE 3 CROSSOVER CONSTRUCTION BASELINE DATA								
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L3000	3000+00.00	3055922.481	706516.173		N58°12'20"E 128.95'	3001+28.95	3055990.419	706625.769
C3001	3001+28.95	3055990.419	706625.769	R = 1051.00' Δ= 5°50'08" L=107.04' T=53.57'		3002+35.99	3056042.090	706719.461
L3004	3002+35.99	3056042.090	706719.461		N64°02'28"E 181.74'	3004+17.73	3056121.643	706882.867
C3003	3004+17.73	3056121.643	706882.867	R = 1040.00' Δ= 5°58'55" L=108.58' T=54.34'		3005+26.31	3056174.176	706977.835
L3002	3005+26.31	3056174.176	706977.835		N58°03'33"E 272.59'	3007+98.90	3056318.390	707209.157

**TRAFFIC CONTROL STANDARD DRAWINGS**

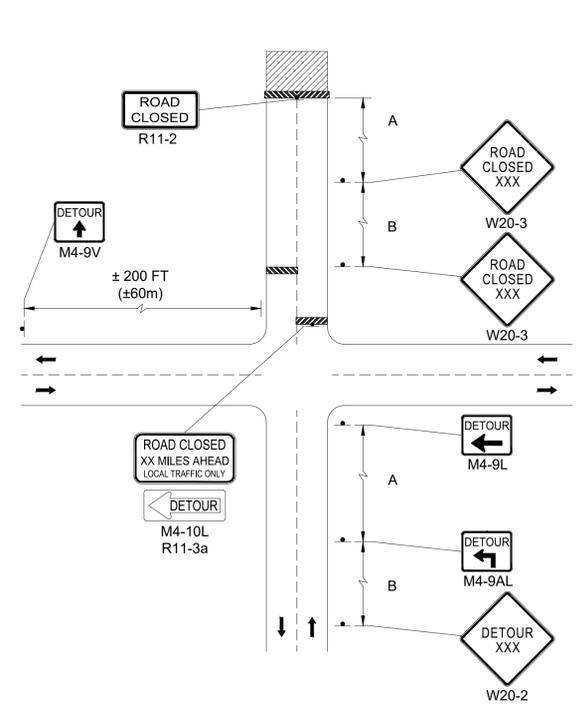
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	67	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**GENERAL NOTES / SEQUENCE OF CONSTRUCTION**

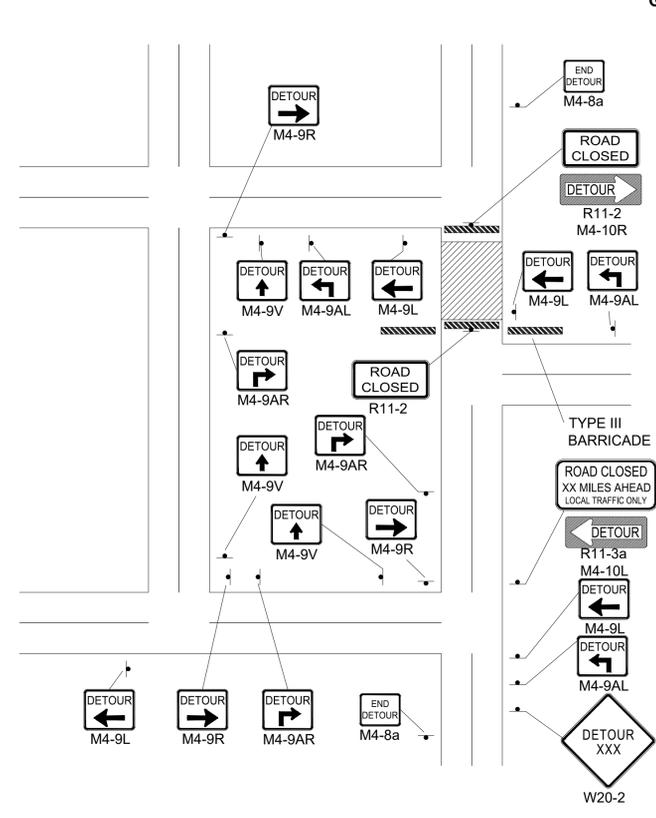
**FIGURE PED-6**



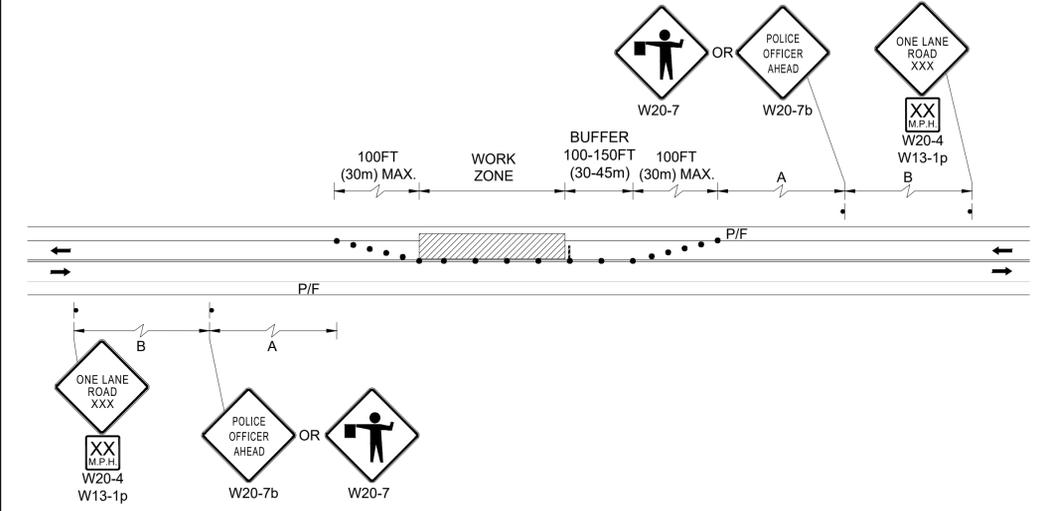
**FIGURE D-1**



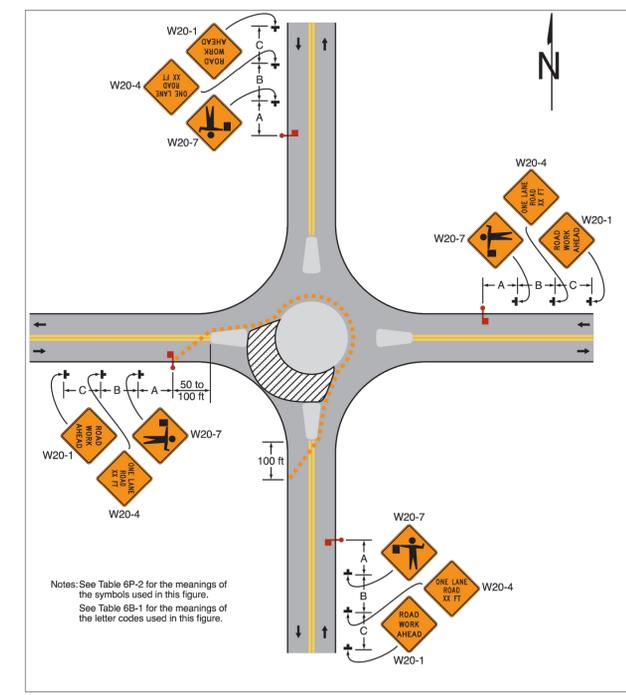
**FIGURE D-2**



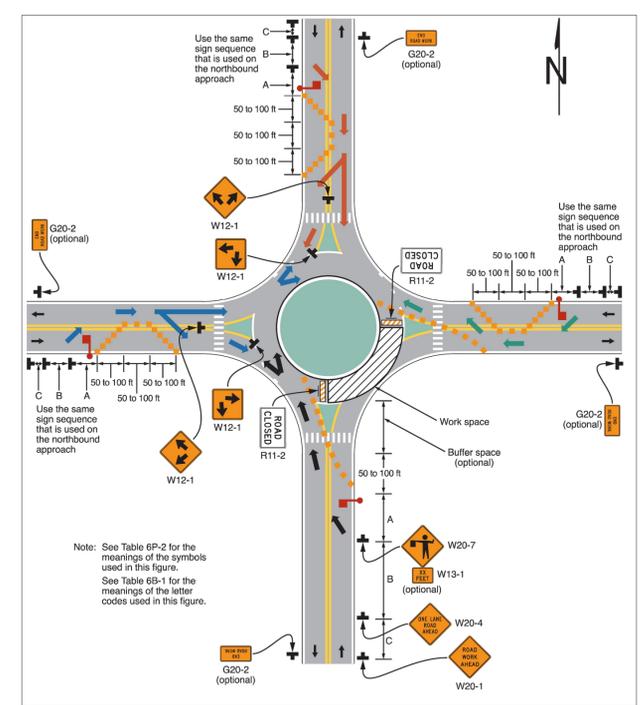
**FIGURE TLR-5**



**MUTCD TA-52**



**MUTCD TA-53**



TRAFFIC CONTROL STANDARD DRAWINGS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	68	128
PROJECT FILE NO.		604694	

TEMPORARY TRAFFIC CONTROL PLANS  
GENERAL NOTES / SEQUENCE OF CONSTRUCTION

604694\_TR(GEN\_NOTES).DWG Plotted on 14-May-2024 1:58 PM

FIGURE INT-2

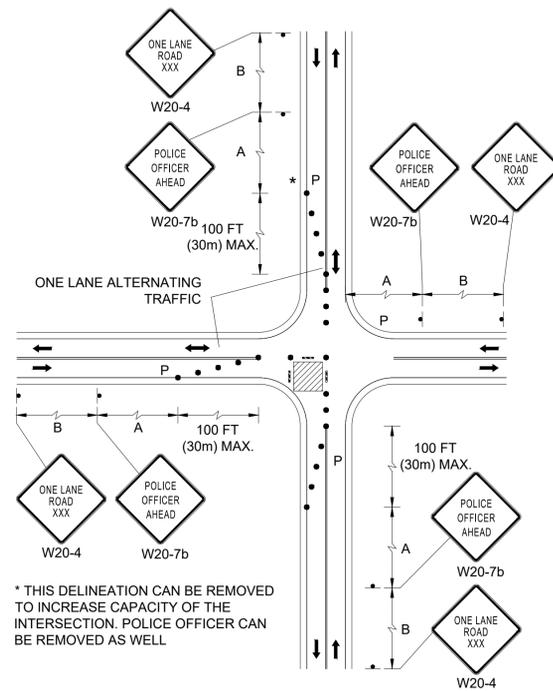


FIGURE INT-3

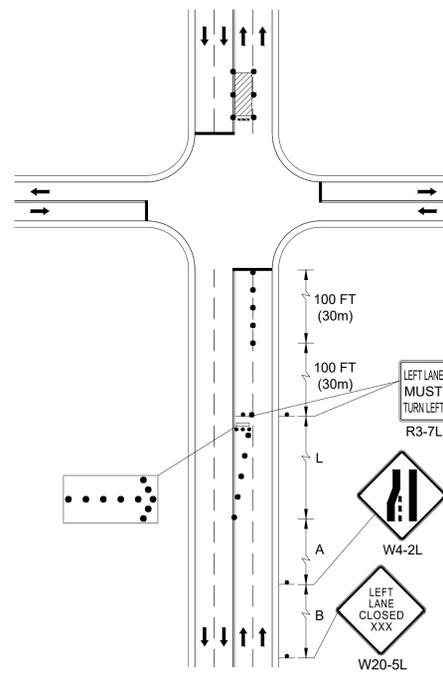


FIGURE INT-4

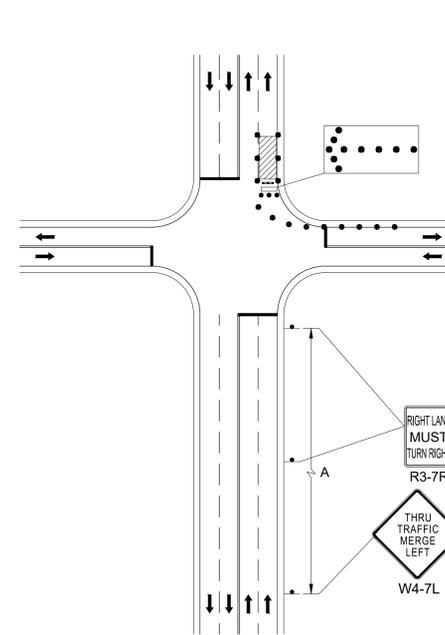


FIGURE PED-5

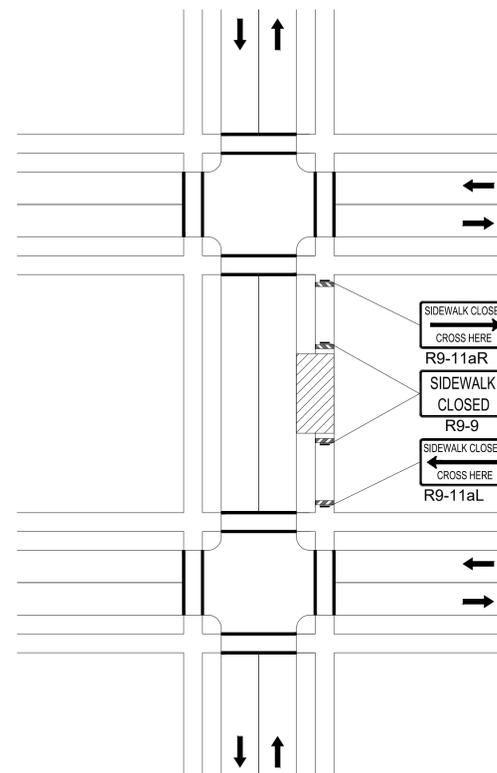


FIGURE INT-5

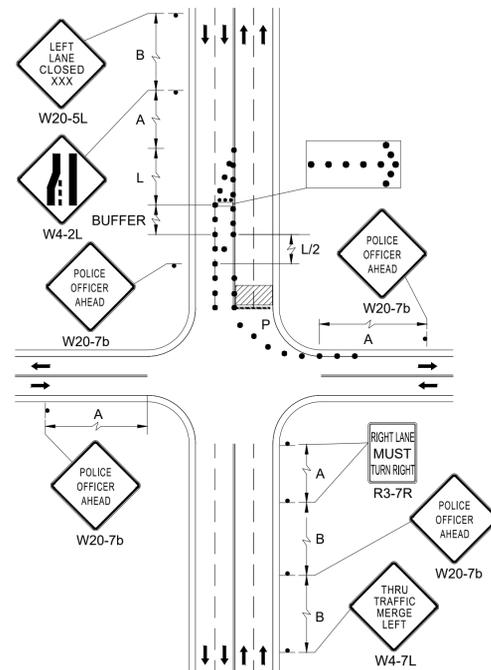


FIGURE R-2

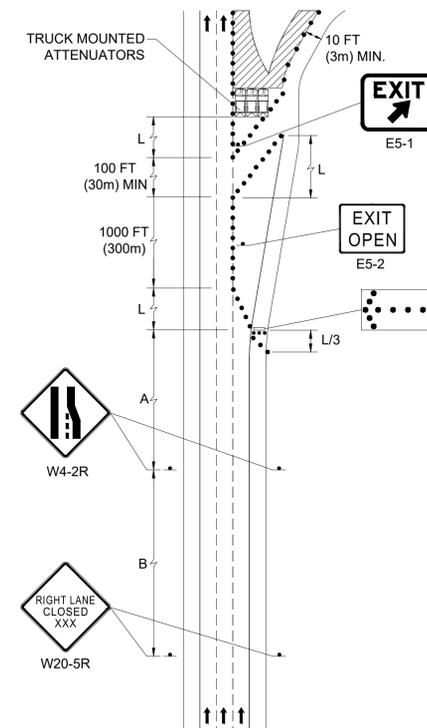
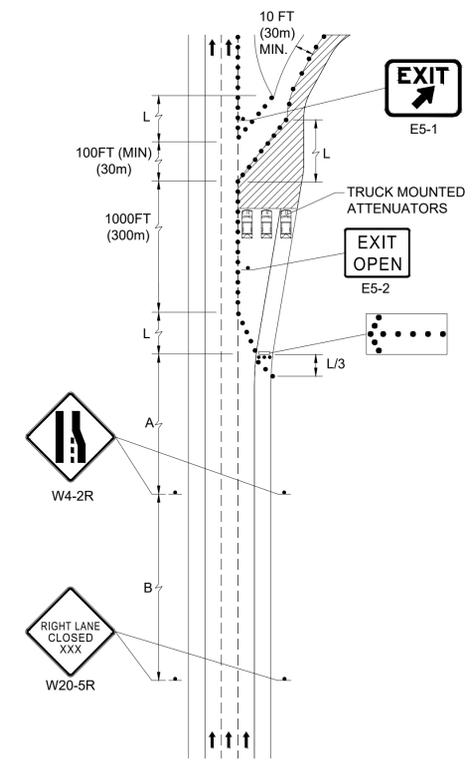


FIGURE R-3



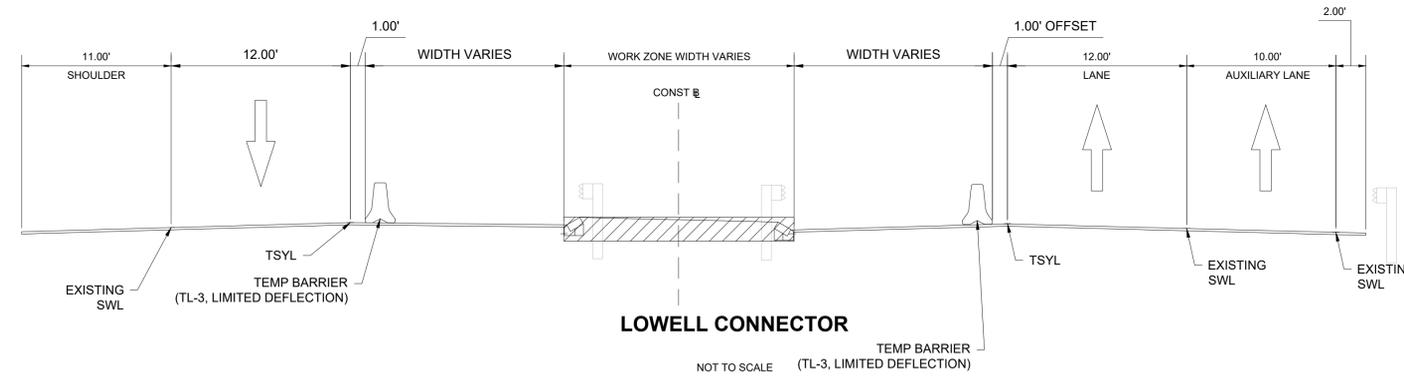
NOTE: IF A MINIMUM WIDTH OF 48" OF SOLID SMOOTH UNOBSTRUCTED SURFACE REMAINS ALONG THE WORK AREA THEN THE DETAIL CAN BE DISREGARDED. DELINEATION OF THE WORK AREA WILL STILL BE REQUIRED. ALL PEDESTRIAN DETOUR ROUTES SHALL BE ADA/MAAB COMPLIANT IN THEIR ENTIRETY.

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

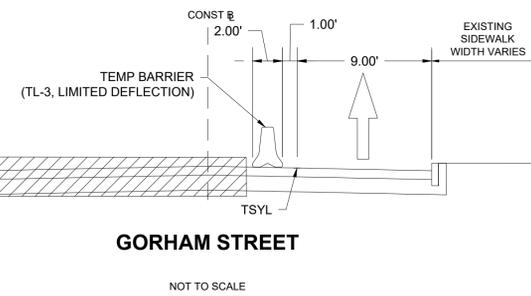
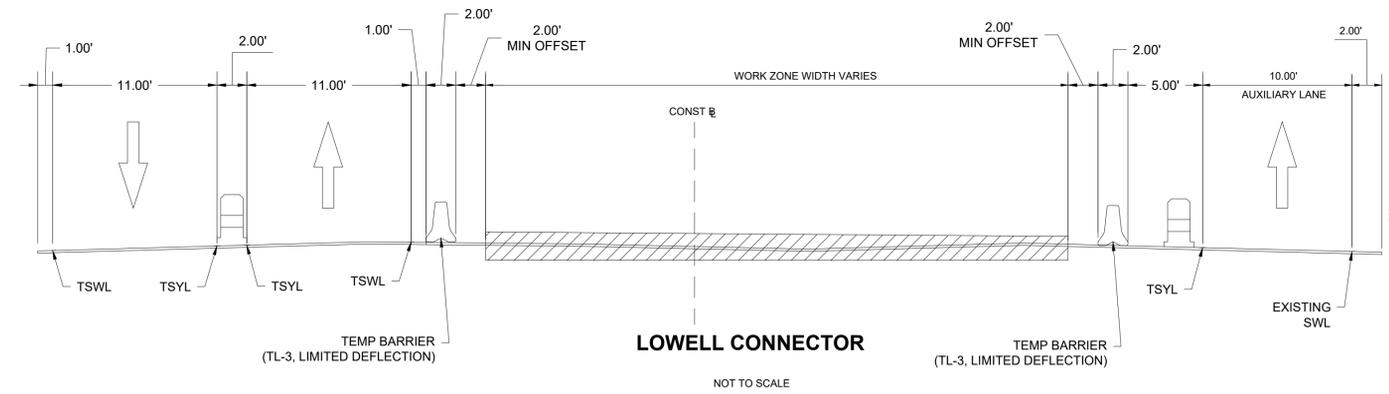
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	69	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS  
TYPICAL SECTIONS**

**PHASE 1**



**PHASE 2**

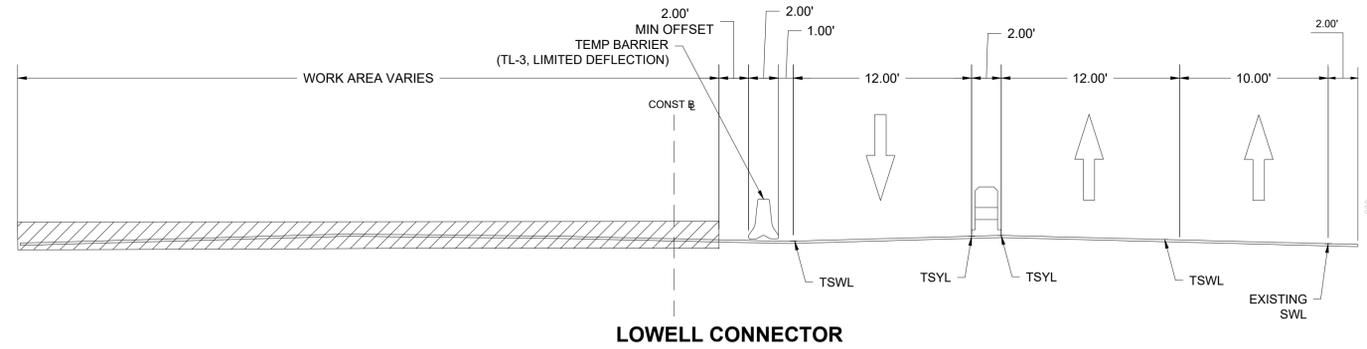


**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	70	128
PROJECT FILE NO.		604694	

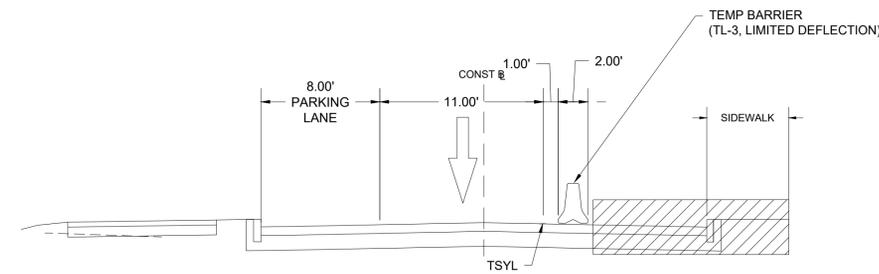
**TEMPORARY TRAFFIC CONTROL PLANS  
TYPICAL SECTIONS**

**PHASE 3**



NOT TO SCALE

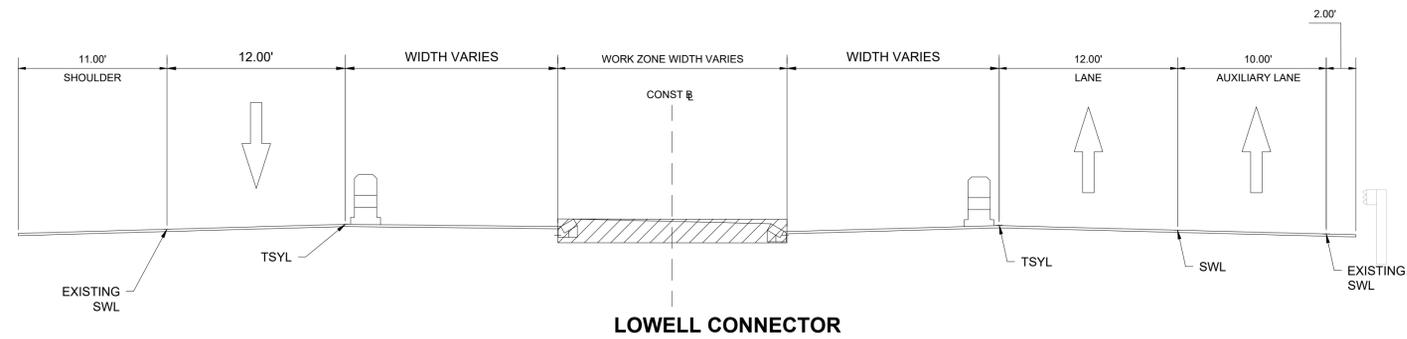
**LOWELL CONNECTOR**



NOT TO SCALE

**GORHAM STREET**

**PHASE 4**



NOT TO SCALE

**LOWELL CONNECTOR**



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

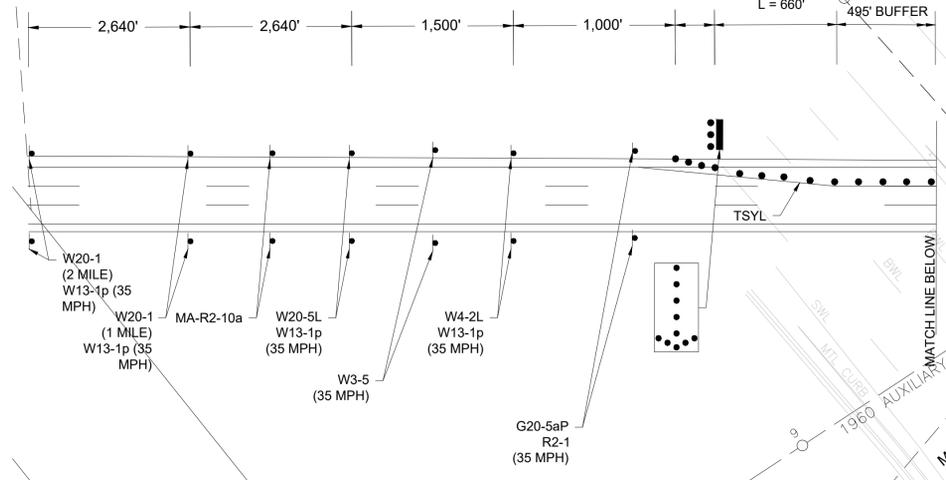
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	71	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 1**

**HOWARD STREET**  
(PUBLIC - 50' WIDE)

248+83.20 1960 MAIN BASELINE  
9+77.26 1960 AUXILIARY BASELINE

SHOULDER  
TAPER  
L= 55 MPH X 3'  
L/3 = 55' LANE DROP  
L= 55 MPH X 12'  
L = 660'



495' BUFFER

245'

TSYL

CONC

MATCH LINE BELOW

MATCH LINE ABOVE

1960 AUXILIARY BASELINE

245'

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MATCH LINE BELOW

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1960 AUXILIARY BASELINE

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CONC

MATCH LINE BELOW



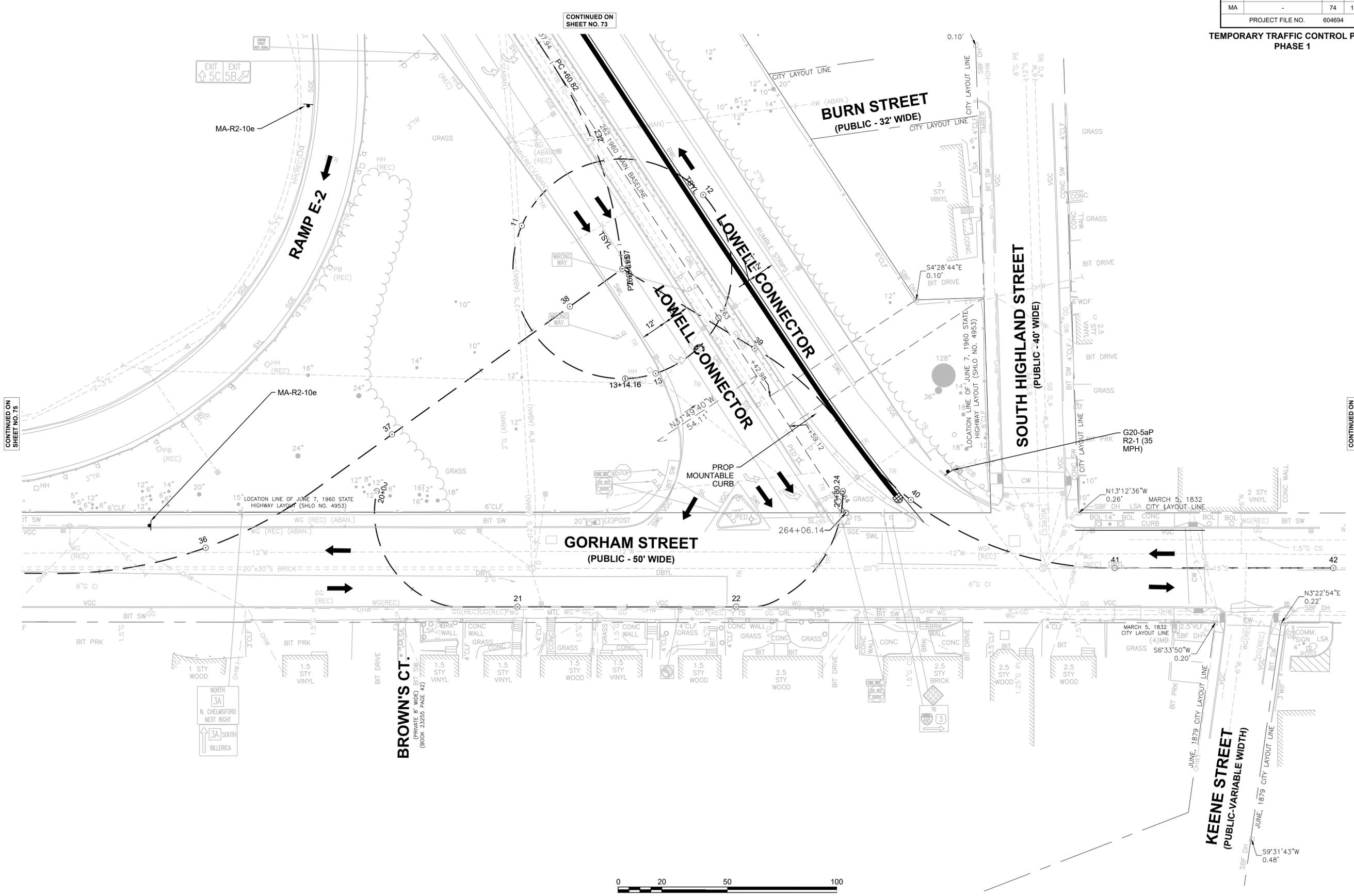




**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

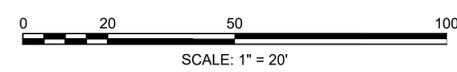
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	74	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 1**



CONTINUED ON SHEET NO. 73

CONTINUED ON SHEET NO. 76





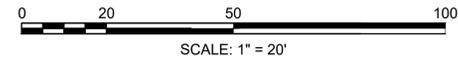
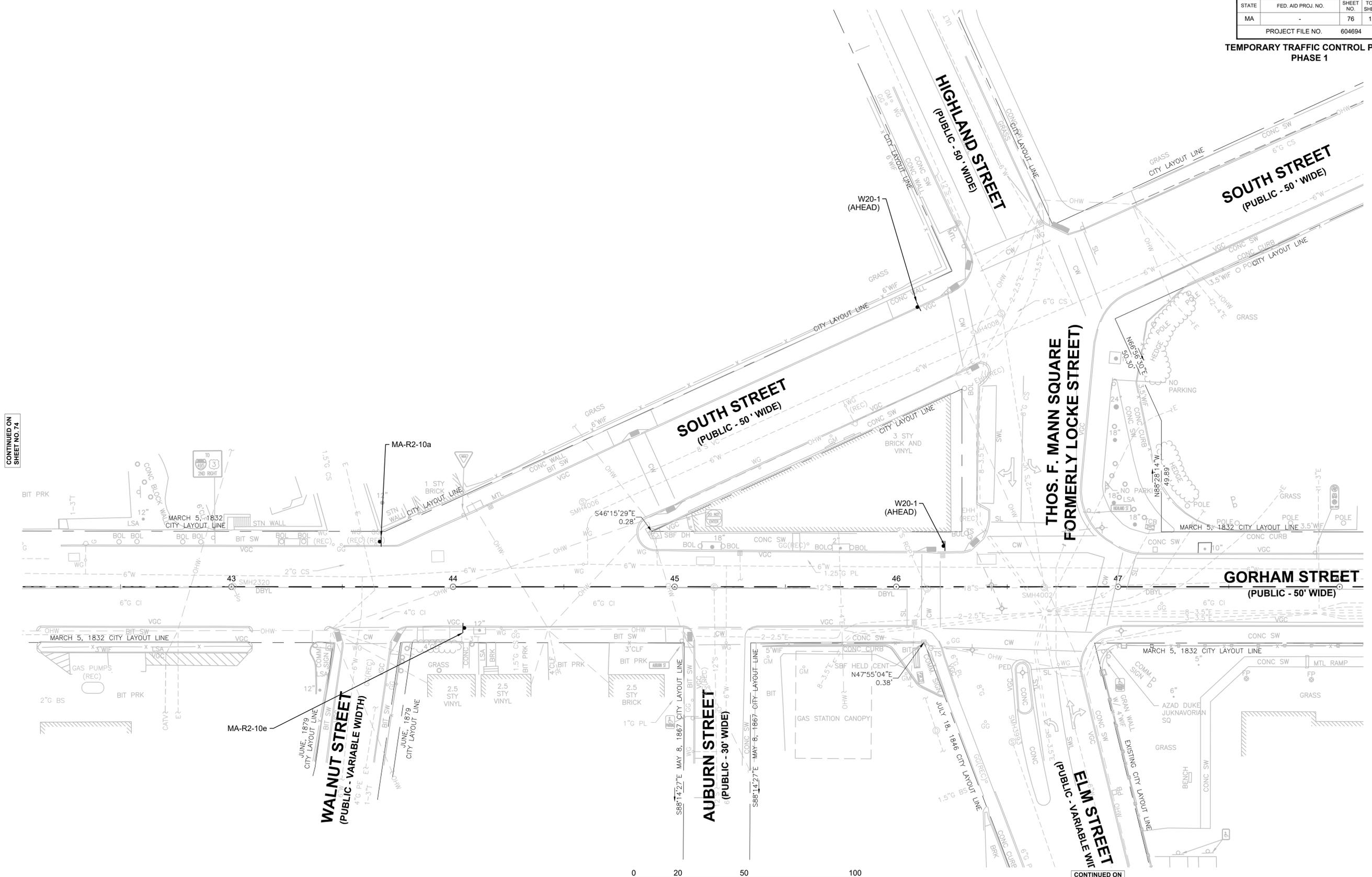


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	76	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 1**

CONTINUED ON SHEET NO. 74



CONTINUED ON SHEET NO. ##





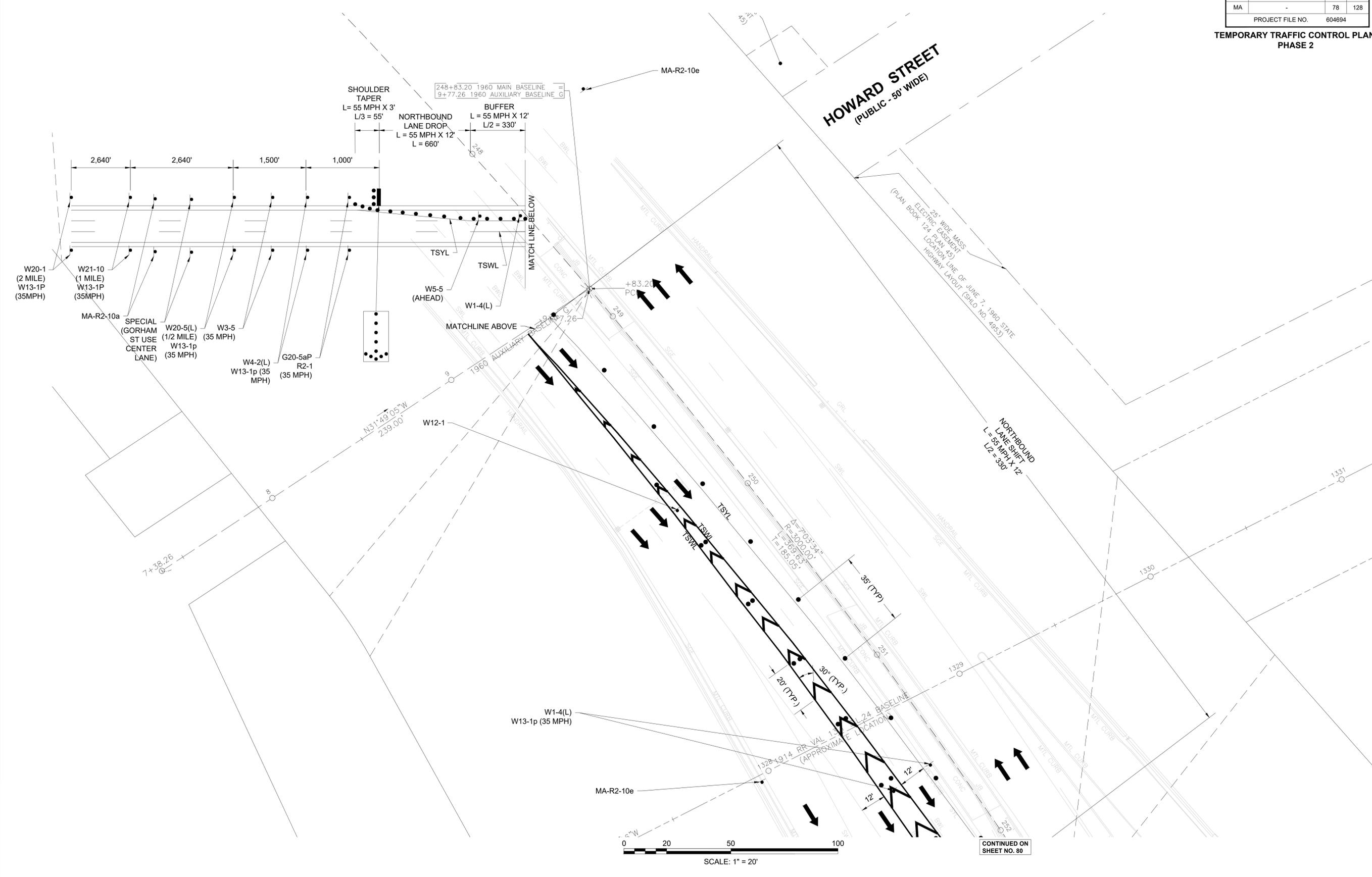
**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	78	128

PROJECT FILE NO. 604694

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 2**

**HOWARD STREET**  
(PUBLIC - 50' WIDE)

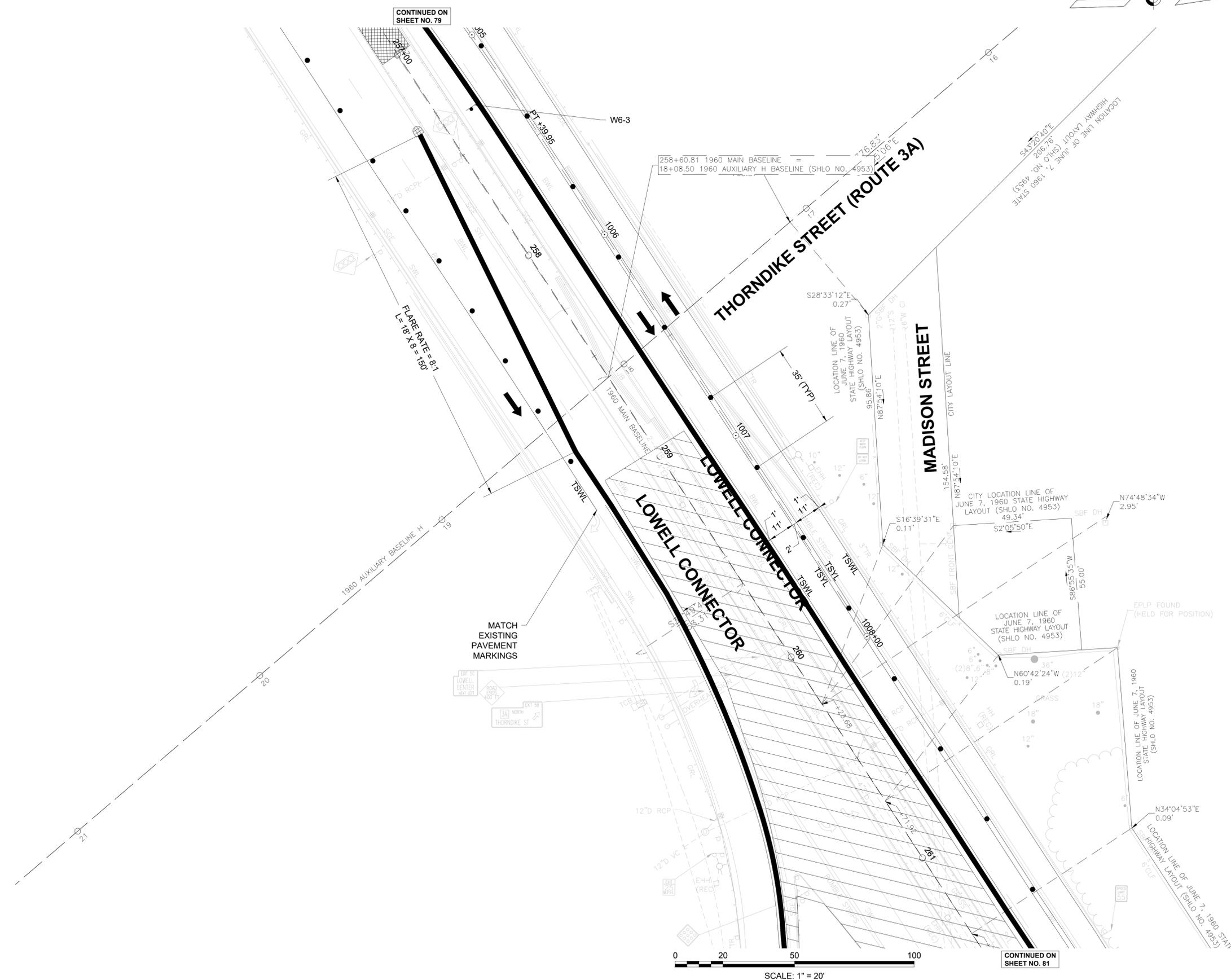




LOWELL  
LOWELL CONNECTOR/GORHAM STREET

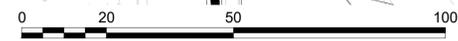
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	80	128
PROJECT FILE NO.		604694	

TEMPORARY TRAFFIC CONTROL PLANS  
PHASE 2



CONTINUED ON SHEET NO. 79

CONTINUED ON SHEET NO. 81



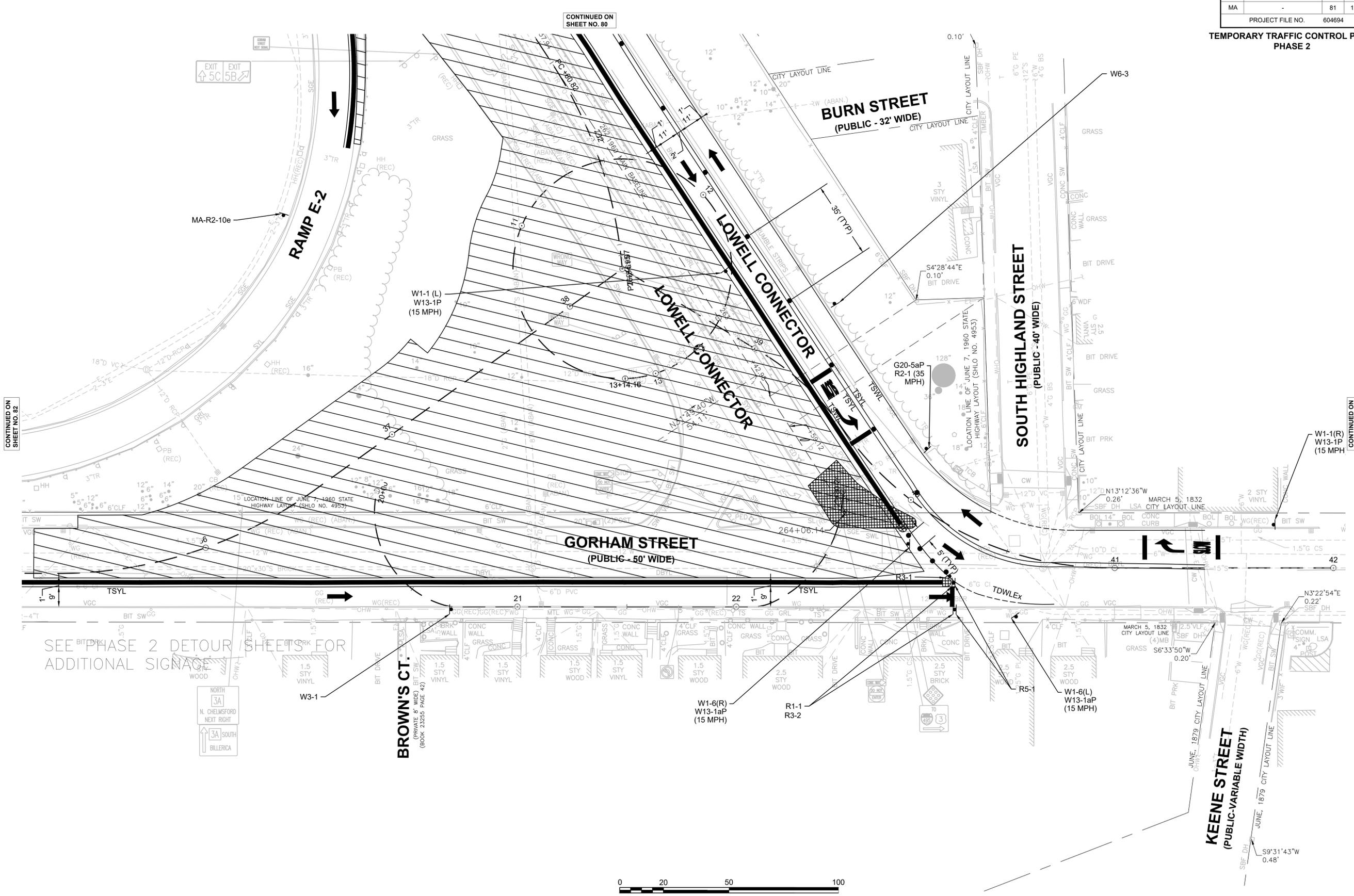
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**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	81	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 2**

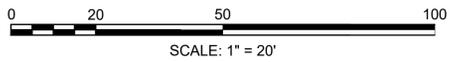


CONTINUED ON  
SHEET NO. 80

CONTINUED ON  
SHEET NO. 82

CONTINUED ON  
SHEET NO. 83

SEE PHASE 2 DETOUR SHEETS FOR  
ADDITIONAL SIGNAGE

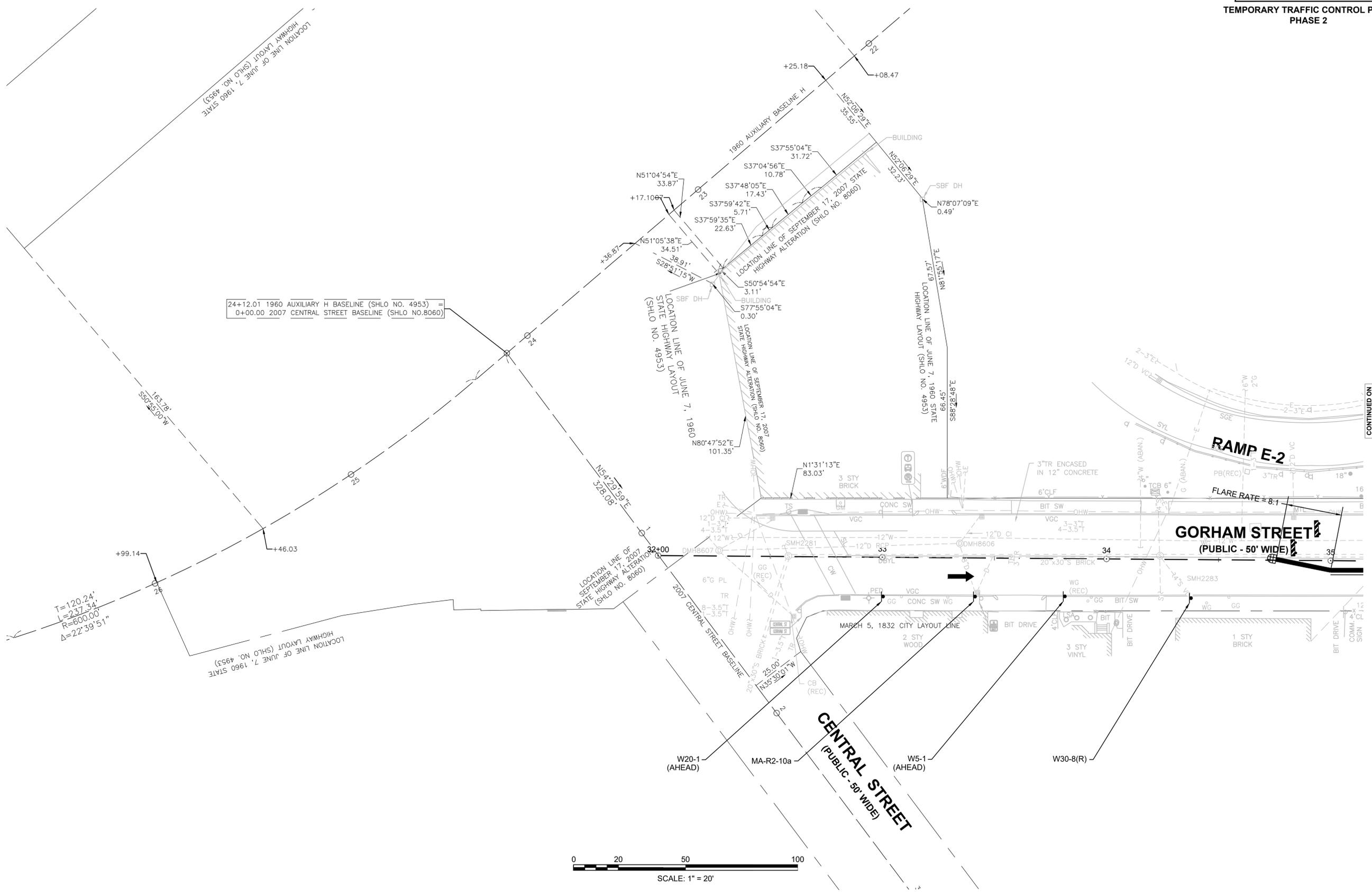




**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

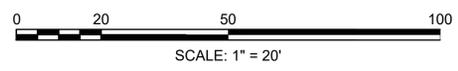
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	82	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 2**



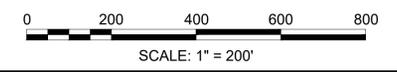
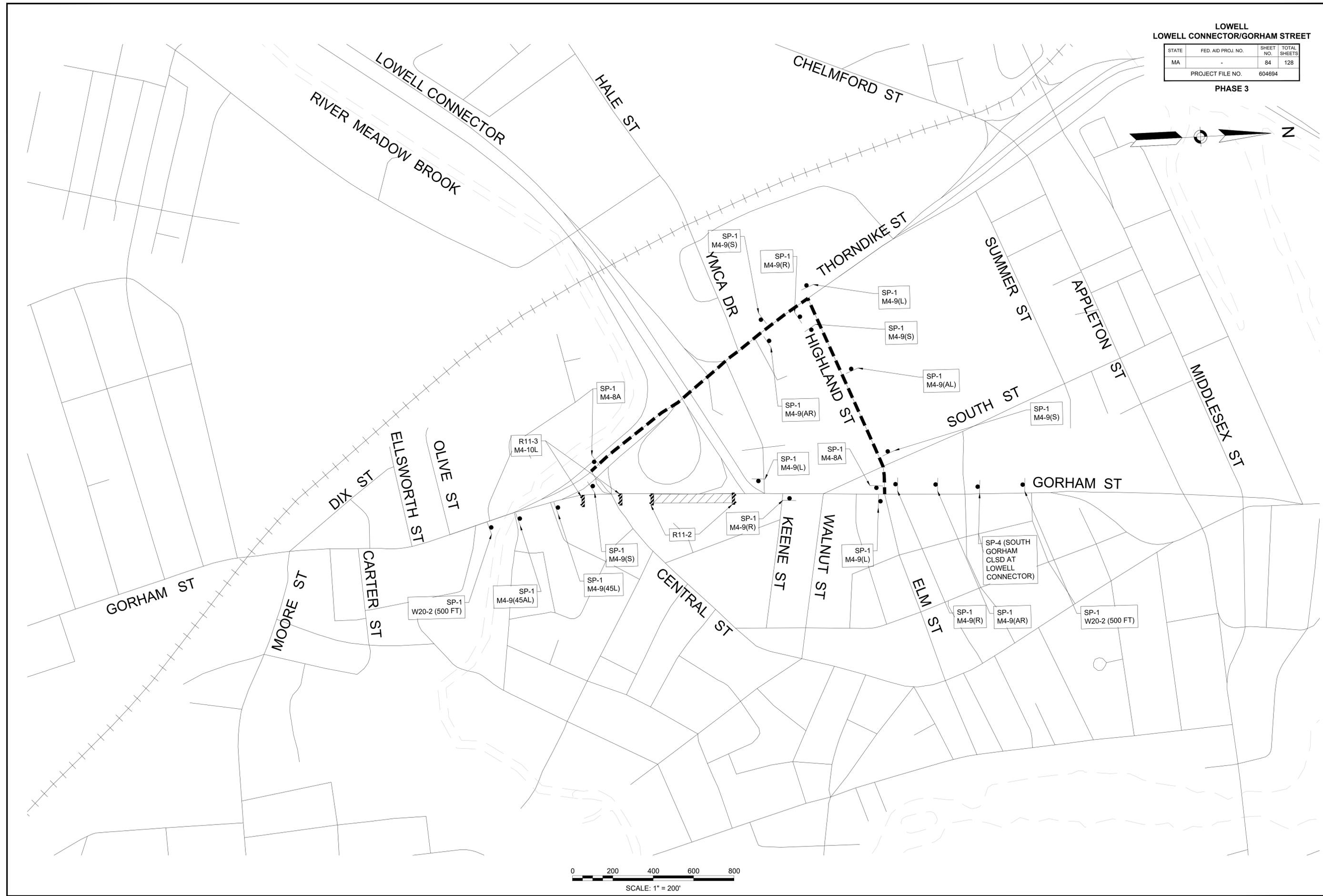
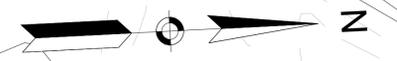
24+12.01 1960 AUXILIARY H BASELINE (SHLO NO. 4953) =  
0+00.00 2007 CENTRAL STREET BASELINE (SHLO NO. 8060)

$T=120.24'$   
 $L=237.34'$   
 $R=600.00'$   
 $\Delta=22^{\circ}39'51''$



CONTINUED ON SHEET NO. 81





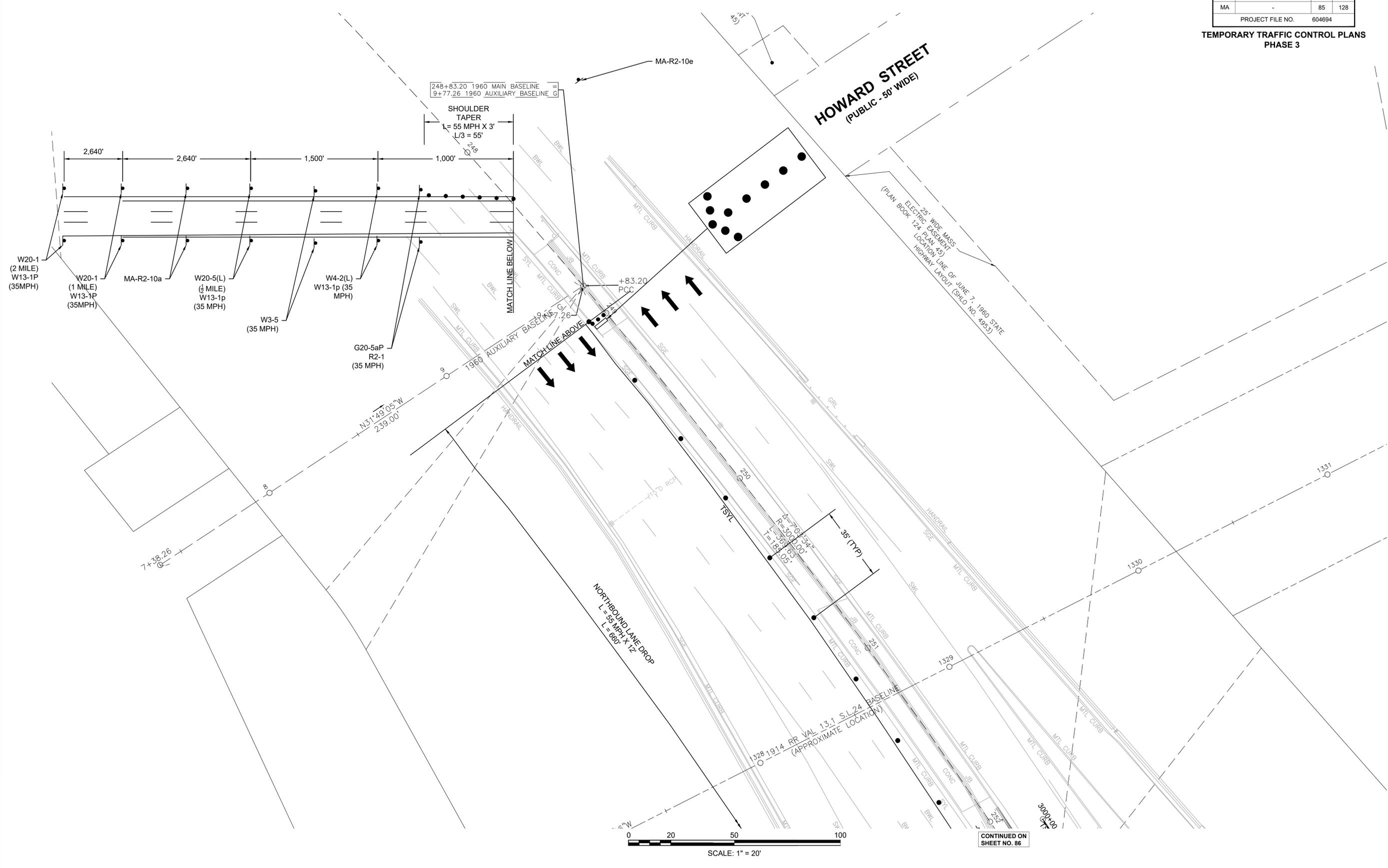


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	85	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 3**

**HOWARD STREET**  
(PUBLIC - 50' WIDE)



CONTINUED ON  
SHEET NO. 86



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	86	128
PROJECT FILE NO.		604694	

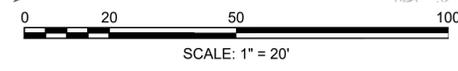
**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 3**



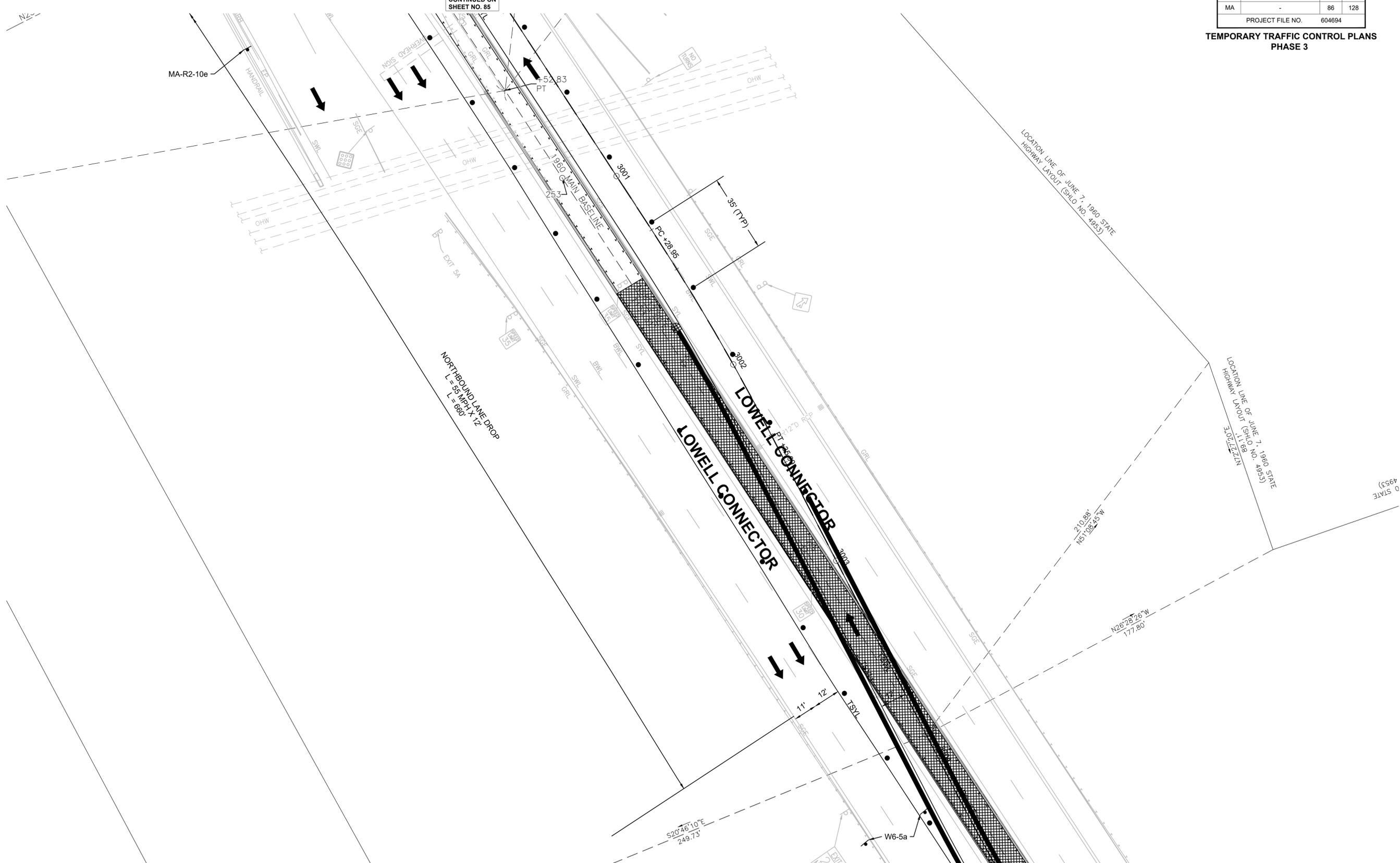
MA-R2-10e

CONTINUED ON SHEET NO. 85

NORTHBOUND LANE DROP  
L = 55 MPH X 12  
L = 660'



CONTINUED ON SHEET NO. 87







**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

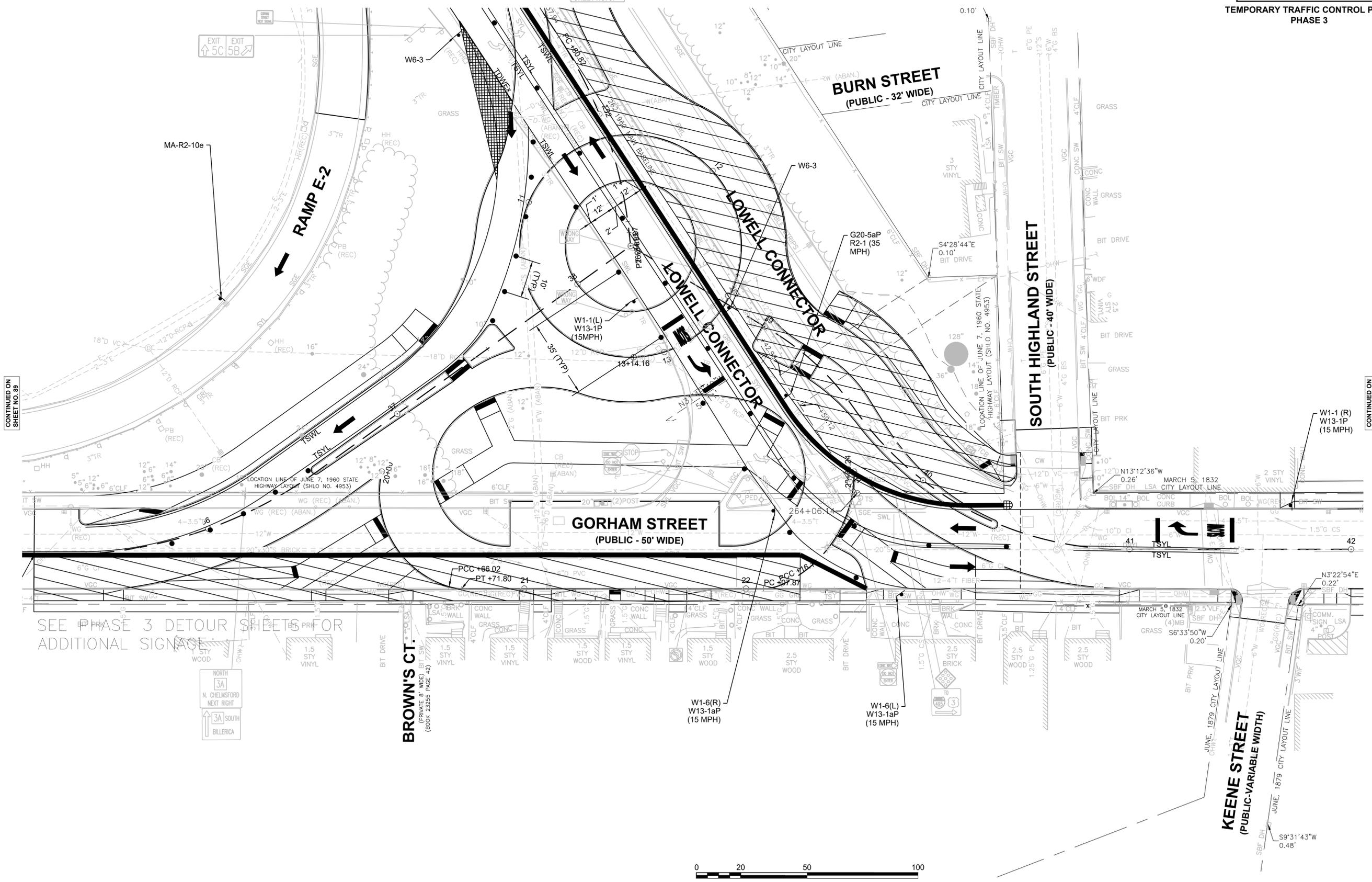
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	88	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 3**

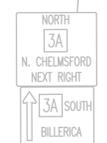
CONTINUED ON SHEET NO. 87

CONTINUED ON SHEET NO. 88

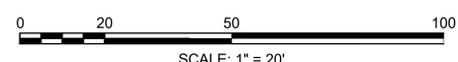
CONTINUED ON SHEET NO. 90



SEE PHASE 3 DETOUR SHEETS FOR  
ADDITIONAL SIGNAGE



**BROWN'S CT.**  
(PRIVATE 8' WIDE) BIT SW  
(BOOK 23265 PAGE 42)

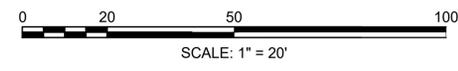
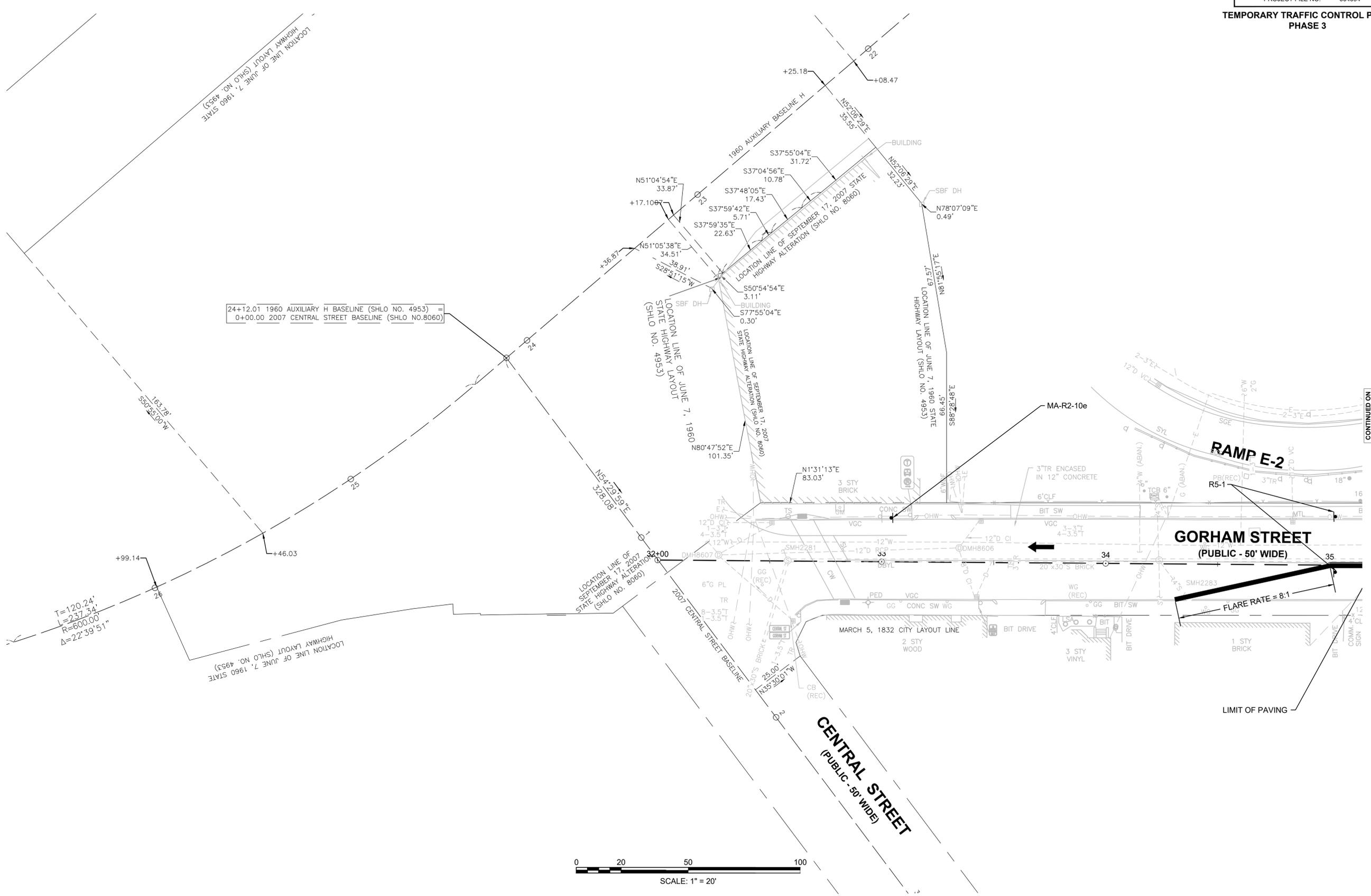




**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	89	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 3**



CONTINUED ON SHEET NO. 88

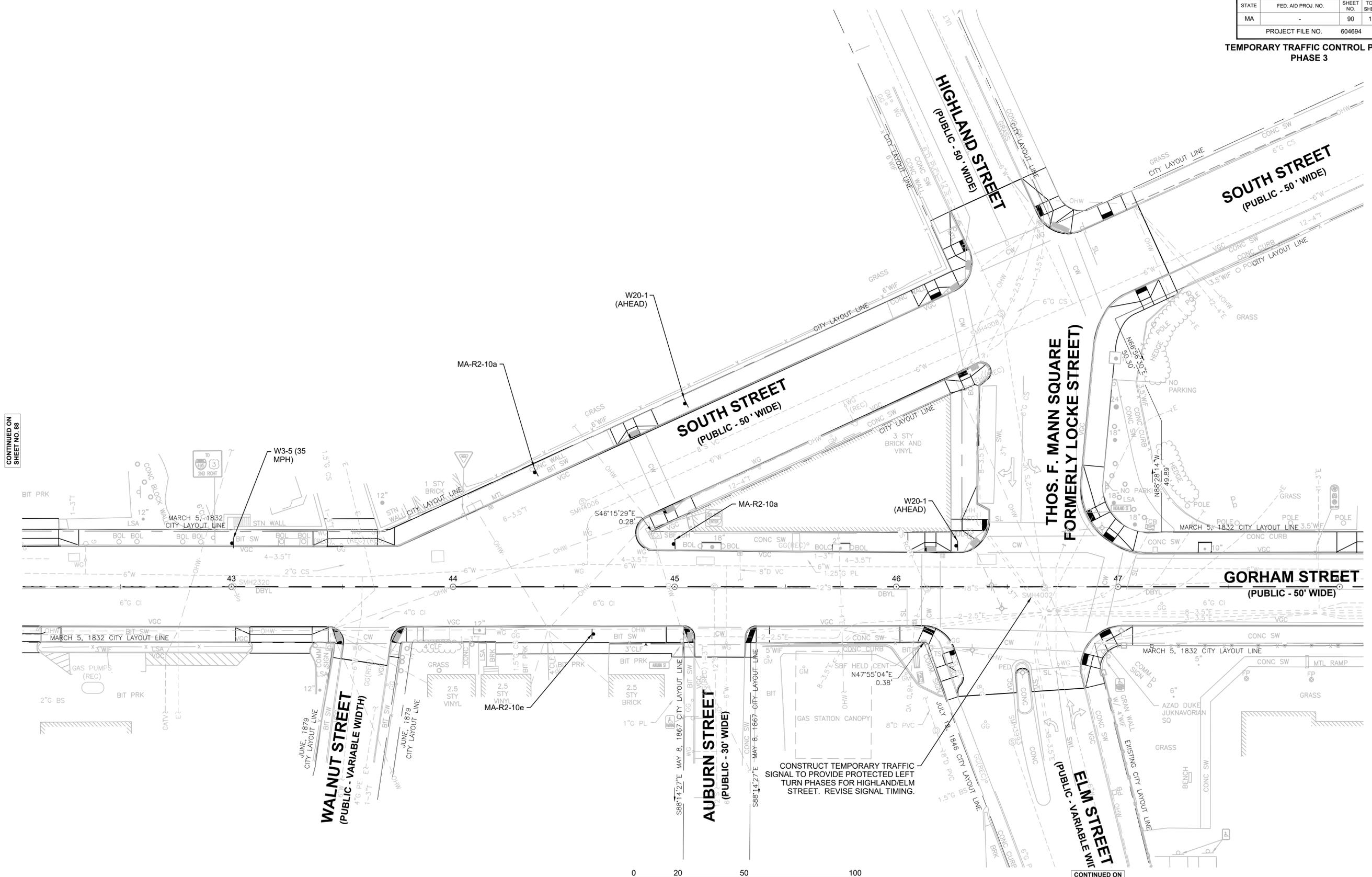


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

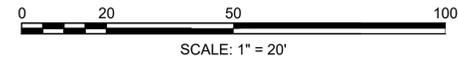
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	90	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 3**

CONTINUED ON SHEET NO. 88



CONSTRUCT TEMPORARY TRAFFIC SIGNAL TO PROVIDE PROTECTED LEFT TURN PHASES FOR HIGHLAND/ELM STREET. REVISE SIGNAL TIMING.



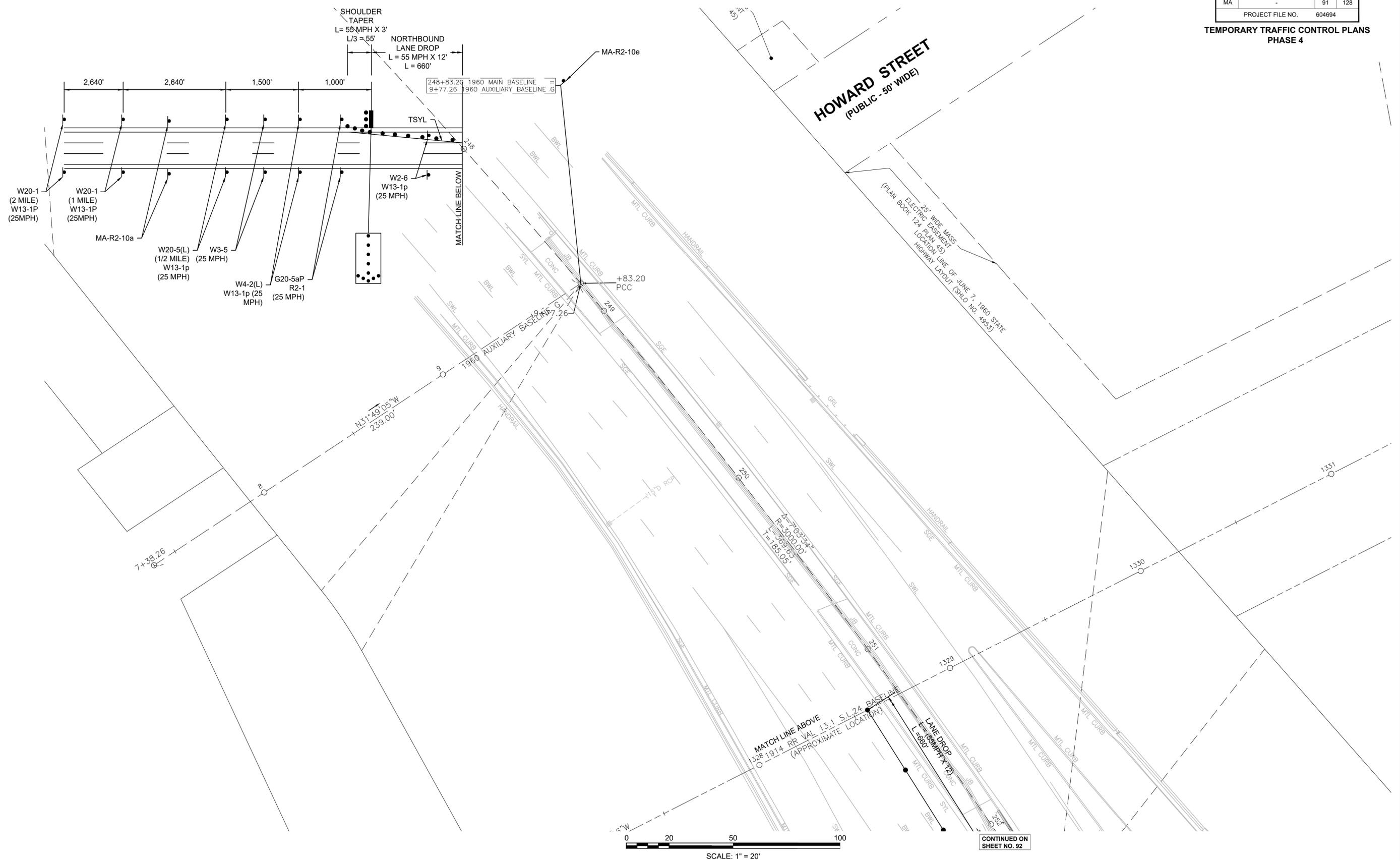
CONTINUED ON SHEET NO. ##



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	91	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 4**





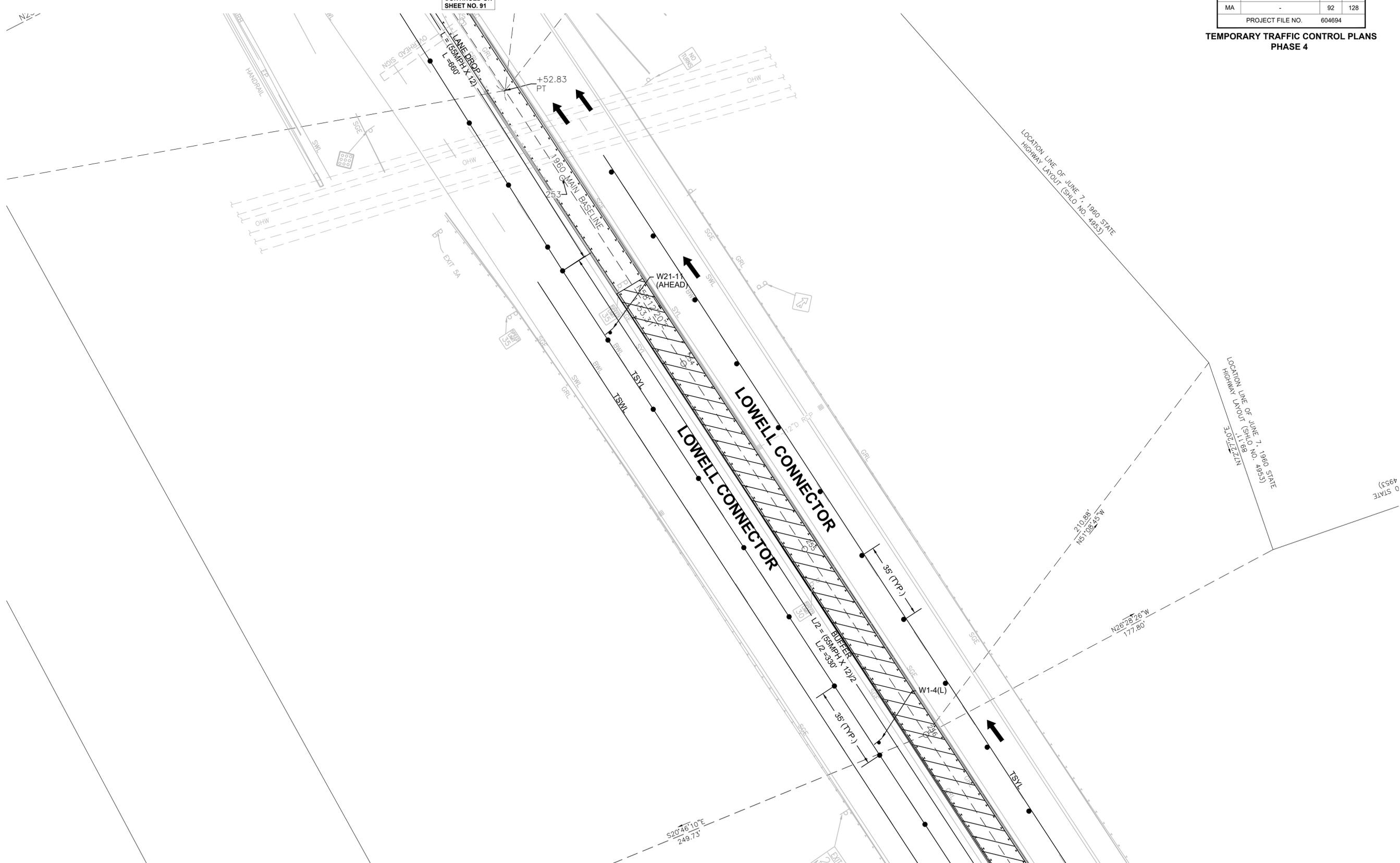
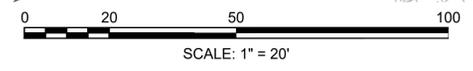
**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	92	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 4**

CONTINUED ON  
SHEET NO. 91

CONTINUED ON  
SHEET NO. 93



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	93	128
PROJECT FILE NO.		604694	

TEMPORARY TRAFFIC CONTROL PLANS  
PHASE 4



CONTINUED ON  
SHEET NO. 92

258+60.81 1960 MAIN BASELINE = 776.83'  
18+08.50 1960 AUXILIARY H BASELINE (SHLO NO. 4953) 28.06'

LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
S28°20'40"E  
206.76'

THORNDIKE STREET (ROUTE 3A)

MADISON STREET

LOWELL CONNECTOR

LOWELL CONNECTOR

1960 AUXILIARY BASELINE H

LIMIT OF PAVING

LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
S28°33'12"E  
0.27'

CITY LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
S16°39'31"E  
0.11'

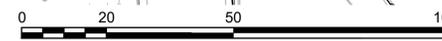
LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
S2°05'50"E  
49.34'

EPLP FOUND (HELD FOR POSITION)

LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
N74°48'34"W  
2.95'

LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
N60°42'24"W (2)12"  
0.19'

LOCATION LINE OF JUNE 7, 1960 STATE HIGHWAY LAYOUT (SHLO NO. 4953)  
N34°04'53"E  
0.09'



SCALE: 1" = 20'

CONTINUED ON  
SHEET NO. 94



**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

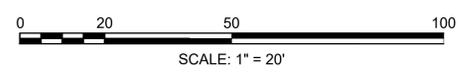
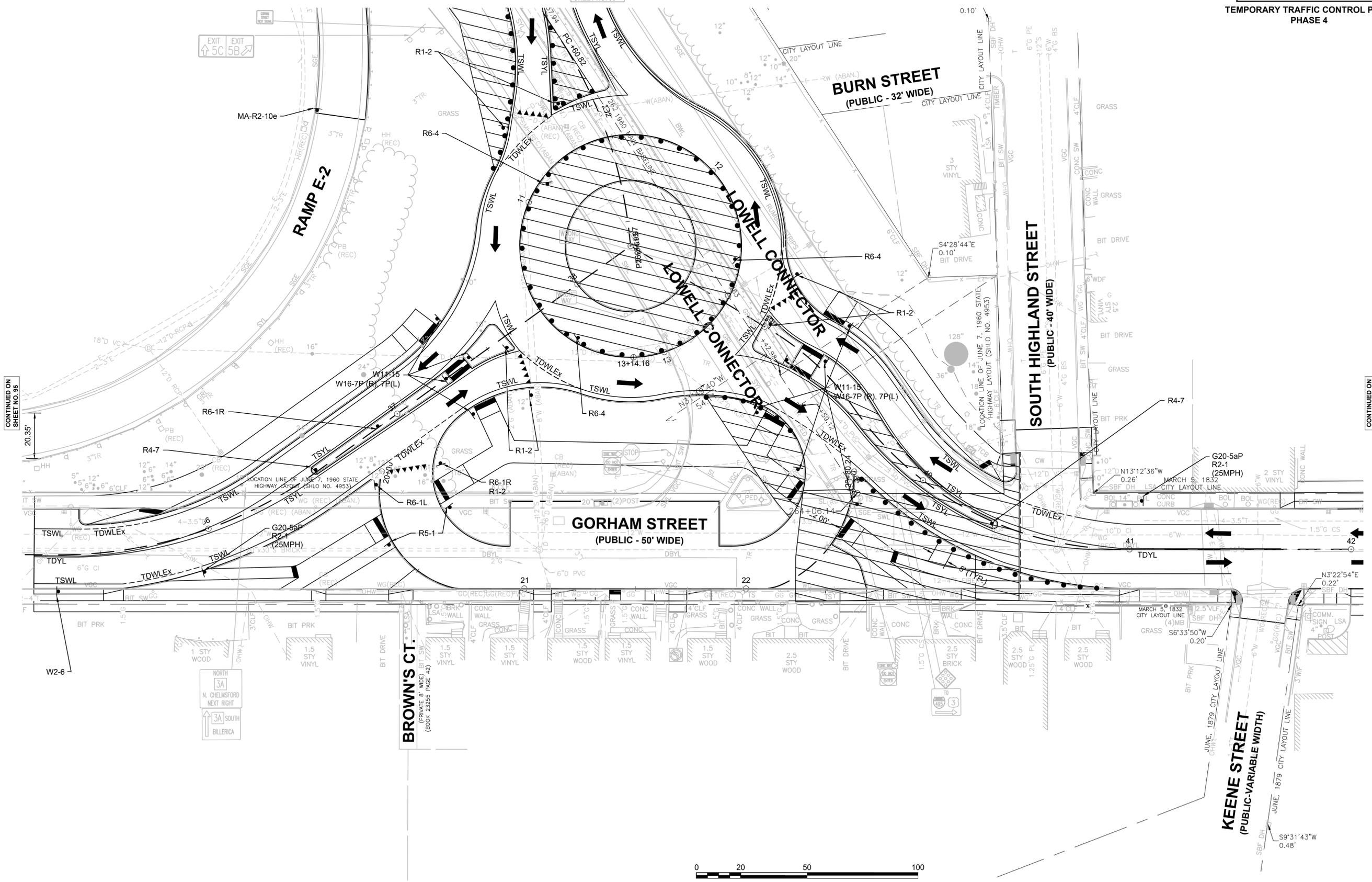
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	94	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 4**

CONTINUED ON  
SHEET NO. 93

CONTINUED ON  
SHEET NO. 95

CONTINUED ON  
SHEET NO. 96





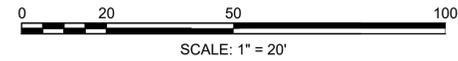
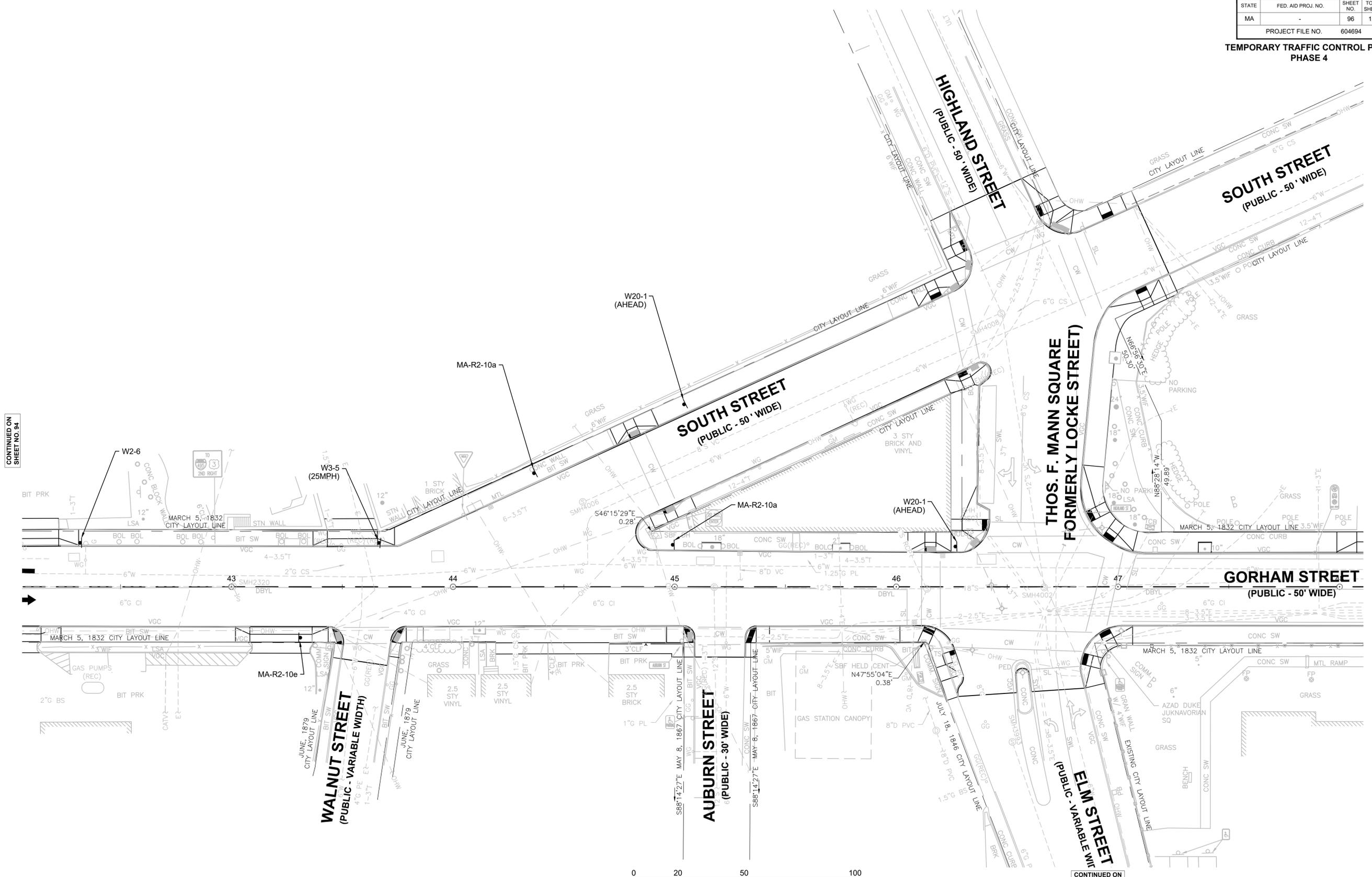


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	96	128
PROJECT FILE NO.		604694	

**TEMPORARY TRAFFIC CONTROL PLANS**  
**PHASE 4**

CONTINUED ON SHEET NO. 94



CONTINUED ON SHEET NO. ##

# TEMPORARY TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
G20-5aP	30	24					4	ORANGE	BLACK	BLACK		5	20
M4-10L	48	18					2	ORANGE	BLACK	BLACK		6	12
M4-8a	24	18					2	ORANGE	BLACK	BLACK		3	6
M4-9 (45AL)	30	24					1	ORANGE	BLACK	BLACK		5	5
M4-9 (45L)	30	24		▼	▼	▼	1	ORANGE	BLACK	BLACK		5	5
M4-9 (AL)	30	24					2	ORANGE	BLACK	BLACK		5	10
M4-9 (AL)	48	36					1	ORANGE	BLACK	BLACK		12	12
M4-9 (AR)	30	24					2	ORANGE	BLACK	BLACK		5	10
M4-9 (L)	30	24					3	ORANGE	BLACK	BLACK		5	15
M4-9 (R)	30	24					3	ORANGE	BLACK	BLACK		5	15
M4-9 (S)	30	24					5	ORANGE	BLACK	BLACK		5	25
MA-R2-10a	48	36					3	ORANGE/WHITE	BLACK	BLACK		12	36
MA-R2-10a	60	48					2	ORANGE/WHITE	BLACK	BLACK		20	40
MA-R2-10e	48	36					2	ORANGE/WHITE	BLACK	BLACK		12	24
MA-R2-10e	60	48					3	ORANGE/WHITE	BLACK	BLACK		20	60
R1-1	30	30					2	RED	WHITE	BLACK		6.25	12.5
R11-2	48	30					2	WHITE	BLACK	BLACK		10	20
R11-3	60	30					2	WHITE	BLACK	BLACK		12.5	25
R1-2	36	36					7	RED/WHITE	RED	BLACK		9	63
R2-1 (25 MPH)	36	48					2	WHITE	BLACK	BLACK		12	24
R2-1 (25 MPH)	24	30					2	WHITE	BLACK	BLACK		5	10
R2-1 (35 MPH)	36	48					3	WHITE	BLACK	BLACK		12	36
R3-2	24	24					2	WHITE	RED/BLACK	BLACK		4	8
R4-7	24	30					2	WHITE	BLACK	BLACK		5	10
R5-1	30	30					2	WHITE/RED	WHITE	BLACK		6.25	12.5
R6-1L	36	12					1	WHITE	BLACK	BLACK		3	3
R6-1R	36	12					2	WHITE	BLACK	BLACK		3	6
R6-4	30	24					3	WHITE	BLACK	BLACK		5	15
SP-1 (GORHAM ST)	30	24					23	ORANGE	BLACK	BLACK		5	115
SP-3 (TRUCK)	24	12					7	ORANGE	BLACK	BLACK		2	14
SP-4 (SOUTH GORHAM CLOSED AT LOWELL CONNECTOR)	TBD	TBD					1	ORANGE	BLACK	BLACK		TBD	TBD
SPECIAL GORHAM	30	24					2	ORANGE	BLACK	BLACK		5	10
W1-1 (L)	48	48					1	ORANGE	BLACK	BLACK		16	16
W1-1 (L)	48	48					1	ORANGE	BLACK	BLACK		16	16
TOTAL AREA OF SIGNS (SQUARE FEET)											711		

# TEMPORARY TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (INCHES)		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA IN SQUARE FEET	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE MKR.		BACK-GROUND	LEGEND	BORDER			
W1-1 (R)	36	36					1	ORANGE	BLACK	BLACK		9	9
W11-15	36	36					10	ORANGE	BLACK	BLACK		9	90
W12-1	36	36					1	ORANGE	BLACK	BLACK		9	9
W13-1aP (15 MPH)	60	18					2	ORANGE	BLACK	BLACK		7.5	15
W13-1P (15 MPH)	18	18					1	ORANGE	BLACK	BLACK		2.25	2.25
W13-1P (15 MPH)	24	24					1	ORANGE	BLACK	BLACK		4	4
W13-1P (25 MPH)	18	18					1	ORANGE	BLACK	BLACK		2.25	2.25
W13-1p (25 MPH)	24	24					10	ORANGE	BLACK	BLACK	SEE MASSDOT STANDARDS	4	40
W13-1p (35 MPH)	24	24					10	ORANGE	BLACK	BLACK		4	40
W1-4L	48	48					4	ORANGE	BLACK	BLACK		16	64
W16-7P (L)	24	12					5	ORANGE	BLACK	BLACK		2	10
W16-7P (R)	24	12					5	ORANGE	BLACK	BLACK		2	10
W1-6L	96	48					1	ORANGE	BLACK	BLACK		32	32
W1-6R	96	48					1	ORANGE	BLACK	BLACK		32	32
W20-1 (1 MILE)	48	48					2	ORANGE	BLACK	BLACK		16	32
W20-1 (2 MILE)	48	48					2	ORANGE	BLACK	BLACK		16	32
W20-1 (AHEAD)	36	36					3	ORANGE	BLACK	BLACK		9	27
W20-2 (1000 FT)	48	48					1	ORANGE	BLACK	BLACK		16	16
W20-2 (500 FT)	36	36					2	ORANGE	BLACK	BLACK		9	18
W20-2 (500 FT)	48	48					1	ORANGE	BLACK	BLACK		16	16
W20-5L	48	48					2	ORANGE	BLACK	BLACK		16	32
W20-5L (1/2 MILE)	48	48					2	ORANGE	BLACK	BLACK		16	32
W21-10 (1 MILE)	48	48					2	ORANGE	BLACK	BLACK		16	32
W21-11 (AHEAD)	48	48					1	ORANGE	BLACK	BLACK		16	16
W2-6	36	36					2	ORANGE	BLACK	BLACK		9	18
W2-6	48	48					3	ORANGE	BLACK	BLACK		16	48
W30-8R	36	36					1	ORANGE	BLACK	BLACK		9	9
W3-1	36	36					1	ORANGE	BLACK/RED	BLACK		9	9
W3-5 (25 MPH)	48	48					2	ORANGE	BLACK	BLACK		16	32
W3-5 (25 MPH)	36	36					2	ORANGE	BLACK	BLACK		9	18
W3-5 (35 MPH)	36	36					1	ORANGE	BLACK	BLACK		9	9
W3-5 (35 MPH)	48	48					2	ORANGE	BLACK	BLACK		16	32
W4-2L	48	48					2	ORANGE	BLACK	BLACK		16	32
W5-1 (AHEAD)	36	36					1	ORANGE	BLACK	BLACK		9	9
W5-5 (AHEAD)	48	48					1	ORANGE	BLACK	BLACK		16	16
W6-3	48	48					2	ORANGE	BLACK	BLACK		16	32
W6-5a	48	48					2	ORANGE	BLACK	BLACK		16	32
TOTAL AREA OF SIGNS (SQUARE FEET)											908.50		

## LOWELL LOWELL CONNECTOR/GORHAM STREET

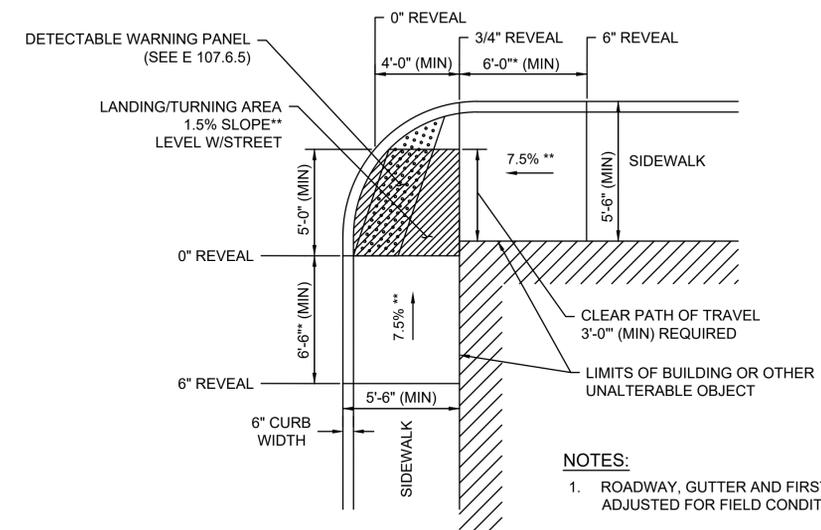
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	97	128
PROJECT FILE NO.		604694	

## TEMPORARY TRAFFIC CONTROL PLANS TEMPORARY TRAFFIC SIGN SUMMARY

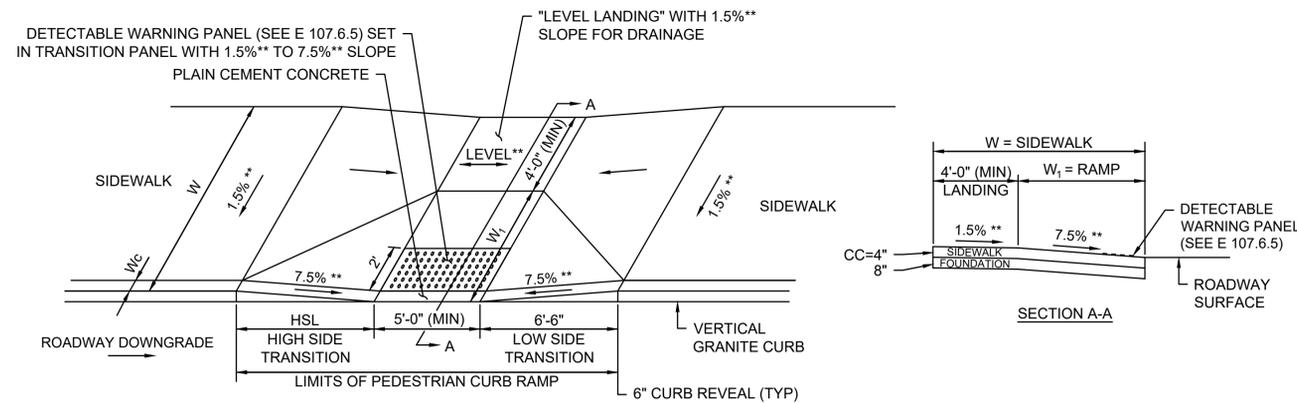
LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	98	128
PROJECT FILE NO.		604694	

DETAILS NO.1



"T" INTERSECTION PEDESTRIAN CURB RAMP  
N.T.S.



PEDESTRIAN CURB RAMP WITH LESS THAN 12'-4" SIDEWALK  
N.T.S.

WCR NO.	RAMP LOCATION INFORMATION			SIDEWALK WIDTH	RAMP ENTRANCE WIDTH	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STREET	STATION	OFFSET				HSL	LSL
30	SOUTH STREET	101+25.85	16.30' LT	8'-6"	5'-0"	1.64%	9'-0"	6'-6"
32	GORHAM STREET	46+15.34	15.34' LT	9'-0"	5'-0"	-0.98%	7'-8"	6'-6"
35	ELM STREET	600+49.32	39.73' LT	9'-0"	5'-0"	-1.42%	N/A*	6'-6"
36	GORHAM STREET	46+93.51	19.21' RT	9'-0"	5'-0"	-1.43%	N/A*	6'-6"
37	GORHAM STREET	46+95.03	21.31' LT	9'-9"	5'-0"	-1.43%	N/A*	6'-6"
38	THOS. F. MANN SQUARE	400+97.31	29.87' LT	10'-0"	5'-0"	-4.96%	15'-0"	N/A*
40	SOUTH STREET	102+75.40	16.38' LT	8'-6"	5'-0"	1.73%	9'-0"	6'-6"
41	SOUTH STREET	102+72.30	17.42' RT	7'-1"	5'-0"	1.74%	9'-0"	6'-6"
44	HIGHLAND STREET	302+91.66	17.74' LT	12'-1"	5'-0"	-3.45%	14'-0"	6'-6"
45	HIGHLAND STREET	302+91.70	16.95' RT	10'-8"	5'-0"	-3.45%	14'-0"	6'-6"
49	GORHAM STREET	50+13.20	16.98' RT	9'-0"	5'-0"	-3.75%	14'-0"	6'-6"
57	SOUTH STREET	106+75.68	16.88' RT	8'-2"	5'-0"	-4.76%	15'-0"	6'-6"

\* FLUSH WITH ADJACENT CURB RAMP

WCR NO.	RAMP LOCATION INFORMATION			RAMP ENTRANCE WIDTH	SIDEWALK WIDTH, MAJOR ST***	ROADWAY GUTTER SLOPE, MAJOR ST	SIDEWALK WIDTH, MINOR ST***	ROADWAY GUTTER SLOPE, MINOR ST	TRANSITION LENGTH	
	STREET	STATION	OFFSET						MAJOR STREET	MINOR STREET
20	GORHAM STREET	41+49.91	19.87' RT	5'-6"	6'-0"	1.89%	4'-7"	-1.99%	6'-0"	6'-6"
21	GORHAM STREET	41+73.76	19.55' RT	6'-5"	7'-0"	1.89%	6'-5"	-1.99%	9'-0"	6'-6"
25	GORHAM STREET	43+48.97	20.30' RT	6'-2"	7'-0"	0.34%	3'-11"	-3.15%	7'-2"	6'-6"
26	GORHAM STREET	43+73.99	19.82' RT	6'-5"	7'-0"	0.77%	5'-1"	-3.15%	7'-8"	6'-6"
28	GORHAM STREET	45+08.34	20.00' RT	7'-0"	7'-6"	-0.98%	5'-0"	-3.13%	7'-8"	6'-6"
29	GORHAM STREET	45+32.46	20.17' RT	7'-0"	7'-6"	-0.98%	5'-0"	-3.13%	6'-0"	6'-6"
55	FATHER RONAN TERRACE	500+14.79	13.17' LT	5'-0"	5'-6"	-5.25%	6'-6"	1.20%	6'-6"	9'-0"

\* TRANSITIONS TO ADJACENT SIDEWALK THROUGH DRIVEWAY

LEGEND

- W = SIDEWALK WIDTH
- Wc = CURB WIDTH
- W1 = PERPENDICULAR RAMP LENGTH
- CC = CEMENT CONCRETE
- HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT DRAWING E 107.9.0)
- \* = TRANSITION LENGTH SHOWN IS THE MINIMUM. ACTUAL LENGTH DETERMINED FROM TABLE E 107.9.0.
- \*\* = TOLERANCE FOR CONSTRUCTION ±0.5%.
- \*\*\* = SIDEWALK WIDTHS INCLUSIVE OF CURB WHERE ADJACENT TO SIDEWALK
- ▨ BUILDING OR OTHER UNALTERABLE CONDITION

DETECTABLE WARNING PANELS:

DETECTABLE WARNING SURFACES ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED PEDESTRIAN CURB RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE MASSDOT STANDARD DRAWING E 107.6.5.

NOTES:

ADA COMPLIANT ACCESS SHALL BE MAINTAINED AT ALL TIME, INCLUDING PEDESTRIAN GUIDANCE SYSTEMS IN WORK ZONES. ANY PEDESTRIAN DETOURS OR BYPASSES SHALL INCLUDE AN ADA COMPLIANT ROUTE WITH PROPER BARRICADES, RAILING, RAMPS AND SIGNAGE.

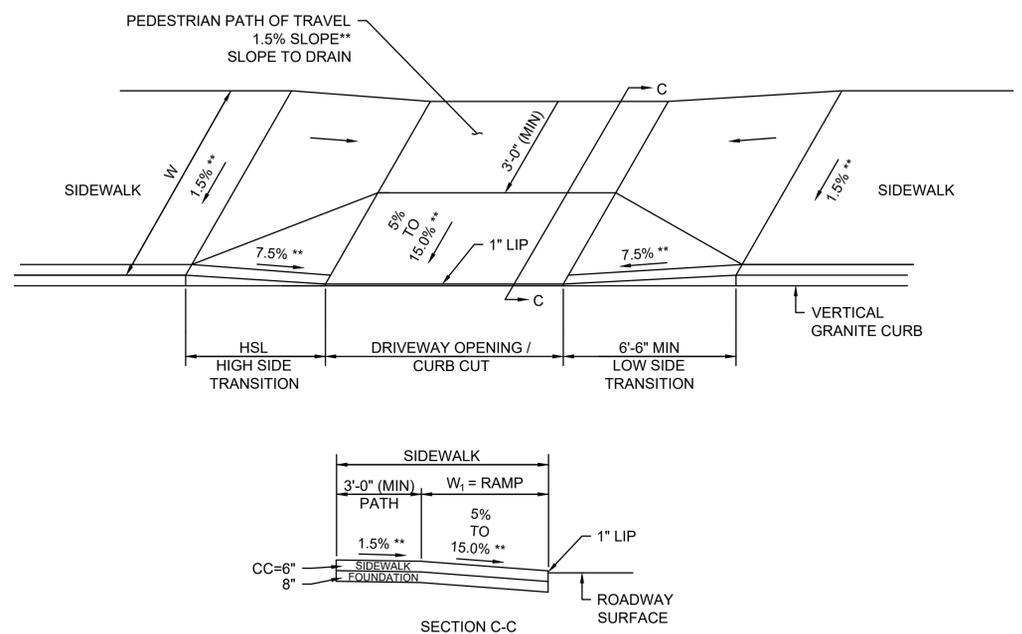
IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.

FOR ADDITIONAL INFORMATION AND DETAILS, SEE MASSDOT CONSTRUCTION STANDARDS.

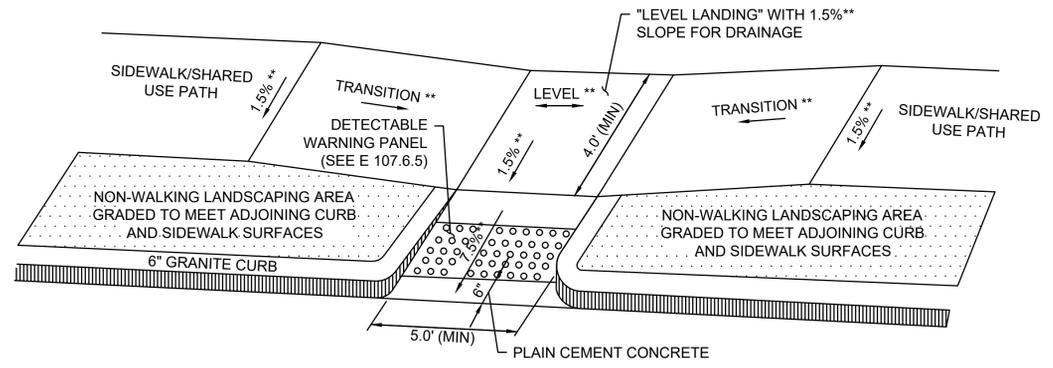
**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	99	128
PROJECT FILE NO.		604694	

**DETAILS NO.2**



**SIDEWALK THROUGH DRIVEWAYS WITHOUT CURB RETURNS**  
N.T.S.



**PEDESTRIAN CURB RAMP WITH LANDSCAPING STRIP**  
N.T.S.

WCR NO.	RAMP LOCATION INFORMATION			PED. PATH DEPTH	SIDEWALK WIDTH	DRIVEWAY ENTRANCE WIDTH	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STREET	STATION	OFFSET					HSL	LSL
9	GORHAM STREET	35+35.29	15.10' RT	3'-0"	5'-6"	31'-5"	0.99%	9'-0"	N/A
10	GORHAM STREET	36+42.82	54.19' RT	3'-0"	5'-0"	28'-4"	2.20%	11'-0"	6'-6"
11	PARKING LOT	21+08.19	00.00'	3'-0"	5'-6"	8'-0"	2.50%	11'-0"	6'-6"
13	PARKING LOT	21+69.25	00.00'	3'-0"	5'-6"	8'-0"	2.50%	11'-0"	6'-6"
14	GORHAM STREET	40+03.31	57.76' RT	3'-0"	5'-6"	11'-11"	0.88%	7'-8"	6'-6"
15	GORHAM STREET	40+69.46	17.33' RT	3'-0"	5'-6"	64'-10"	1.89%	9'-0"	6'-6"
22	GORHAM STREET	41+98.26	18.16' LT	4'-0"	7'-6"	47'-7"	1.89%	9'-0"	6'-6"
23	GORHAM STREET	42+06.99	17.62' RT	3'-6"	7'-0"	14'-3"	1.89%	9'-0"	6'-6"
24	GORHAM STREET	43+22.37	17.78' RT	3'-6"	7'-0"	28'-1"	1.07%	7'-3"	6'-6"
27	GORHAM STREET	43+54.61	18.18' LT	4'-0"	7'-6"	22'-7"	0.35%	7'-8"	6'-6"
46	GORHAM STREET	48+13.58	15.51' LT	4'-6"	9'-6"	11'-9"	-2.34%	9'-0"	6'-6"
47	GORHAM STREET	49+02.40	15.36' LT	4'-6"	9'-6"	19'-2"	-3.21%	11'-0"	6'-6"
52	FATHER RONAN TERRACE	501+56.40	12.08' LT	3'-6"	6'-6"	28'-3"	0.94%	7'-8"	6'-6"
53	FATHER RONAN TERRACE	500+68.45	15.00' LT	3'-6"	6'-6"	65'-8"	1.80%	9'-0"	6'-6"

WCR NO.	RAMP LOCATION INFORMATION			SIDEWALK WIDTH	RAMP ENTRANCE WIDTH	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STREET	STATION	OFFSET				HSL	LSL
1	GORHAM STREET	37+32.81	19.64' LT	10'-0"	10'-0"	4.26%	N/A	6'-6"
2	GORHAM STREET	37+35.15	17.76' RT	10'-0"	10'-0"	4.26%	N/A	6'-6"
3	GORHAM STREET	36+66.45	37.23' RT	10'-0"	10'-0"	5.39%	N/A	6'-6"
4	GORHAM STREET	36+93.24	39.20' RT	10'-0"	10'-0"	6.47%	15'-0"	N/A
5	GORHAM STREET	39+31.91	28.48' RT	10'-0"	10'-0"	-1.28%	N/A	6'-6"
6	GORHAM STREET	39+21.94	19.49' LT	10'-0"	10'-0"	-2.59%	N/A	6'-6"
7	GORHAM STREET	39+69.13	42.59' RT	10'-0"	10'-0"	0.11%	7'-8"	N/A
8	GORHAM STREET	39+86.80	39.02' RT	10'-0"	10'-0"	0.44%	7'-8"	N/A
16	GORHAM STREET	40+35.19	29.40' LT	5'-0"	5'-0"	1.89%	N/A	6'-6"

**LEGEND**

- W = SIDEWALK WIDTH
- Wc = CURB WIDTH
- W<sub>r</sub> = PERPENDICULAR RAMP LENGTH
- CC = CEMENT CONCRETE
- HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT DRAWING E 107.9.0)
- \* = TRANSITION LENGTH SHOWN IS THE MINIMUM. ACTUAL LENGTH DETERMINED FROM TABLE E 107.9.0.
- \*\* = TOLERANCE FOR CONSTRUCTION ±0.5%.
- \*\*\* = SIDEWALK WIDTHS INCLUSIVE OF CURB WHERE ADJACENT TO SIDEWALK
- ▣ BUILDING OR OTHER UNALTERABLE CONDITION

**DETECTABLE WARNING PANELS:**

DETECTABLE WARNING SURFACES ARE REQUIRED TO BE CONSTRUCTED ON ALL PROPOSED PEDESTRIAN CURB RAMPS AND ARE TO BE INSTALLED IN ACCORDANCE WITH MASSDOT STANDARD DRAWING E 107.6.5.

**NOTES:**

ADA COMPLIANT ACCESS SHALL BE MAINTAINED AT ALL TIME, INCLUDING PEDESTRIAN GUIDANCE SYSTEMS IN WORK ZONES. ANY PEDESTRIAN DETOURS OR BYPASSES SHALL INCLUDE AN ADA COMPLIANT ROUTE WITH PROPER BARRICADES, RAILING, RAMPS AND SIGNAGE.

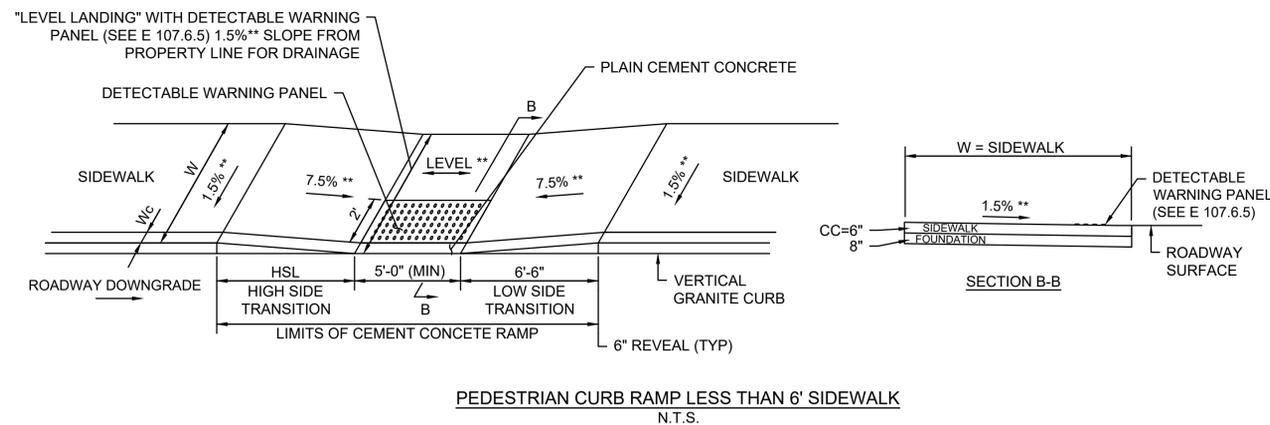
IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) ACCESSIBLE SURFACE, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACE.

FOR ADDITIONAL INFORMATION AND DETAILS, SEE MASSDOT CONSTRUCTION STANDARDS.

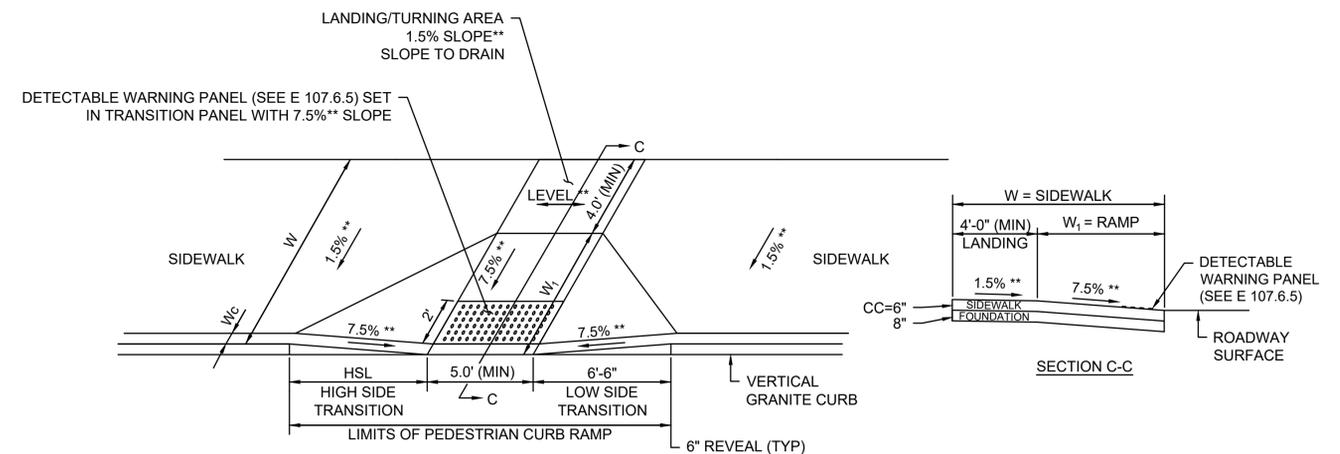
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	100	128
PROJECT FILE NO.		604694	

DETAILS NO.3

604694\_H01(DETAILS)DWG Plotted on 14-May-2024 3:03 PM



PEDESTRIAN CURB RAMP LESS THAN 6' SIDEWALK  
N.T.S.



PEDESTRIAN CURB RAMP WITH GREATER THAN 12'-4\"/>

WCR NO.	RAMP LOCATION INFORMATION			SIDEWALK WIDTH	RAMP ENTRANCE WIDTH	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STREET	STATION	OFFSET				HSL	LSL
12	PARKING LOT	21+40.97	00.00'	5'-6"	5'-0"	2.50%	11'-0"	6'-6"
16	GORHAM STREET	40+35.19	29.40' LT	5'-0"	5'-0"	5.81%	15'-0"	6'-6"
17	GORHAM STREET	40+69.63	38.81' LT	6'-1"	5'-0"	5.81%	11'-2"	6'-6"
31	SOUTH STREET	101+25.84	17.85' RT	6'-6"	5'-0"	1.64%	9'-0"	6'-6"
33	GORHAM STREET	46+15.45	17.63' RT	7'-6"	5'-0"	-0.98%	7'-8"	N/A*
34	ELM STREET	600+27.84	12.46' RT	10'-6"	5'-0"	-2.21%	N/A*	6'-6"
43	SOUTH STREET	103+60.84	17.19' LT	7'-1"	5'-0"	-3.43%	14'-0"	6'-6"
48	GORHAM STREET	50+13.19	15.28' LT	9'-6"	5'-0"	-3.75%	14'-0"	6'-6"
50	FATHER RONAN TERRACE	502+75.23	13.55' RT	6'-6"	5'-0"	-1.10%	9'-0"	6'-6"
51	FATHER RONAN TERRACE	502+75.48	13.80' LT	5'-6"	5'-0"	-1.10%	9'-0"	6'-6"
54	FATHER RONAN TERRACE	500+41.62	30.44' RT	7'-9"	5'-0"	1.80%	9'-0"	6'-6"
56	SOUTH STREET	106+75.68	16.93' LT	6'-5"	5'-0"	-4.76%	15'-0"	6'-6"

\* FLUSH WITH ADJACENT CURB RAMP

WCR NO.	RAMP LOCATION INFORMATION			SIDEWALK WIDTH	RAMP ENTRANCE WIDTH	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
	STREET	STATION	OFFSET				HSL	LSL
39	THOS. F. MANN SQUARE	401+00.93	14.60' RT	16'-7"	5'-0"	-4.96%	15'-0"	6'-6"
42	SOUTH STREET	103+60.84	16.69' RT	13'-4"	5'-0"	-3.43%	14'-0"	6'-6"

LEGEND

- W = SIDEWALK WIDTH
- W<sub>c</sub> = CURB WIDTH
- W<sub>r</sub> = PERPENDICULAR RAMP LENGTH
- CC = CEMENT CONCRETE
- HSL = HIGH SIDE TRANSITION LENGTH (SEE MASSDOT DRAWING E 107.9.0)
- \* = TRANSITION LENGTH SHOWN IS THE MINIMUM. ACTUAL LENGTH DETERMINED FROM TABLE E 107.9.0.
- \*\* = TOLERANCE FOR CONSTRUCTION ±0.5%.
- \*\*\* = SIDEWALK WIDTHS INCLUSIVE OF CURB WHERE ADJACENT TO SIDEWALK
- BUILDING OR OTHER UNALTERABLE CONDITION

DETECTABLE WARNING PANELS:

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FOR ADDITIONAL INFORMATION AND DETAILS, SEE MASSDOT CONSTRUCTION STANDARDS.

**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	101	128
PROJECT FILE NO.		604694	

**DETAILS NO.4**

CONTINUOUS SIDEWALK SCHEDULE						
STREET	SIDEWALK LOCATION				SIDEWALK WIDTH (MIN)	SIDEWALK TYPE
	STA	TO	STA	SIDE		
GORHAM STREET	35+20.00	TO	37+38.00	LT	6'-0"	HMA
GORHAM STREET	35+20.00	TO	41+62.00	RT	5'-0"	CONC
GORHAM STREET	36+26.00	TO	40+08.00	RT	10'-0"	HMA
GORHAM STREET	39+17.65	TO	40+98.64	LT	10'-0"	HMA
GORHAM STREET	40+98.64	TO	40+58.00	LT	5'-0"	CONC
GORHAM STREET	40+58.00	TO	43+74.74	LT	7'-6"	CONC
GORHAM STREET	41+62.00	TO	45+20.00	RT	7'-0"	CONC
GORHAM STREET	43+74.74	TO	46+56.50	LT	8'-10"	CONC
GORHAM STREET	45+20.00	TO	46+56.50	RT	7'-6"	CONC
GORHAM STREET	46+56.50	TO	50+84.00	LT	9'-6"	CONC
GORHAM STREET	46+56.50	TO	50+84.00	RT	9'-0"	CONC
SOUTH STREET	100+00.00	TO	103+14.58	LT	8'-6"	CONC
SOUTH STREET	100+00.00	TO	103+14.58	RT	6'-9"	CONC
SOUTH STREET	103+14.58	TO	103+75.00	LT	7'-1"	CONC
SOUTH STREET	103+14.58	TO	103+75.00	RT	10'-0"	CONC
THOS. F. MANN SQUARE	400+00.00	TO	401+28.87	LT	10'-0"	CONC
THOS. F. MANN SQUARE	400+00.00	TO	401+28.87	RT	12'-9"	CONC
FATHER RONAN TERRACE	500+00.00	TO	503+10.70	LT	6'-6"	CONC
FATHER RONAN TERRACE	500+00.00	TO	503+10.70	RT	5'-6"	CONC

LOWELL  
LOWELL CONNECTOR/GORHAM STREET

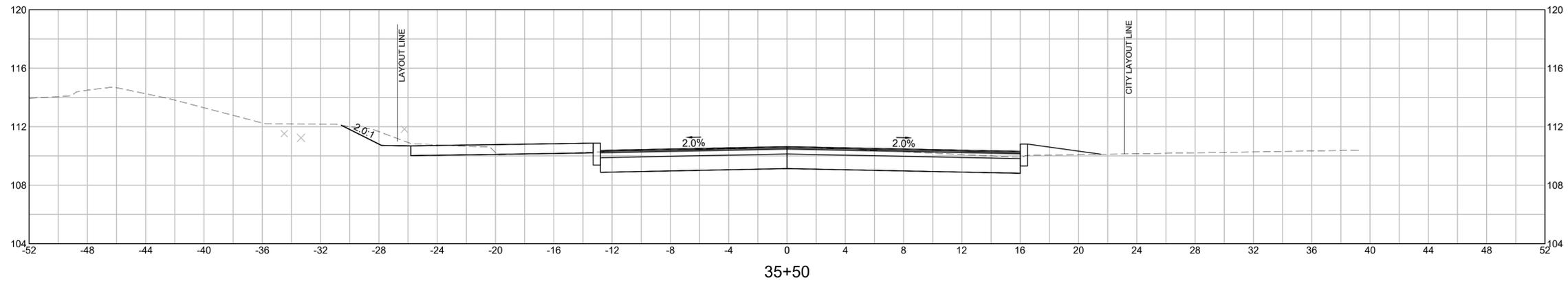
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	102	128
PROJECT FILE NO.		604694	

GORHAM CROSS SECTIONS

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STA: +91.53  
OFF: -33.34

TREE: 12" DIA.  
STA: +77.72  
OFF: -34.49

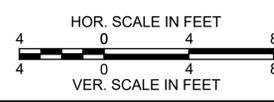
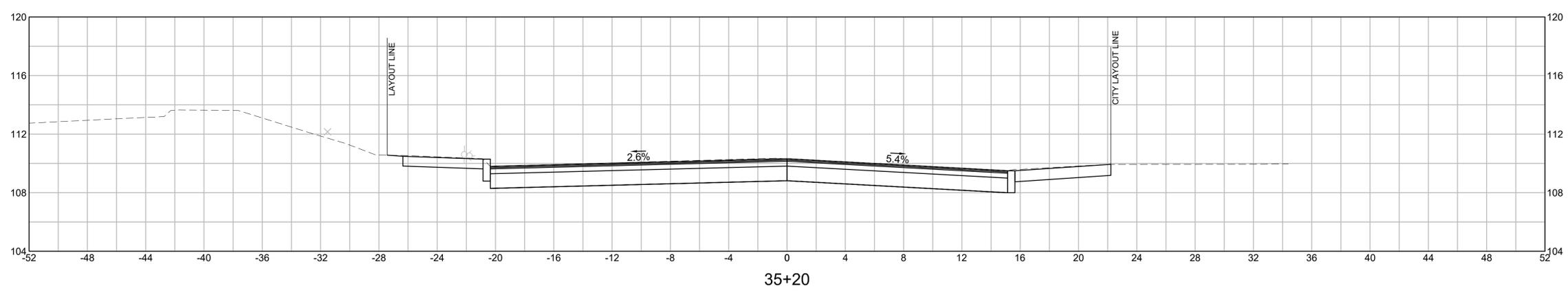
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STA: +78.99  
OFF: -26.24



TREE: 12" DIA.  
STA: +49.80  
OFF: -31.52

POLE: UPL 13  
STA: +47.54

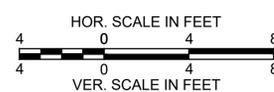
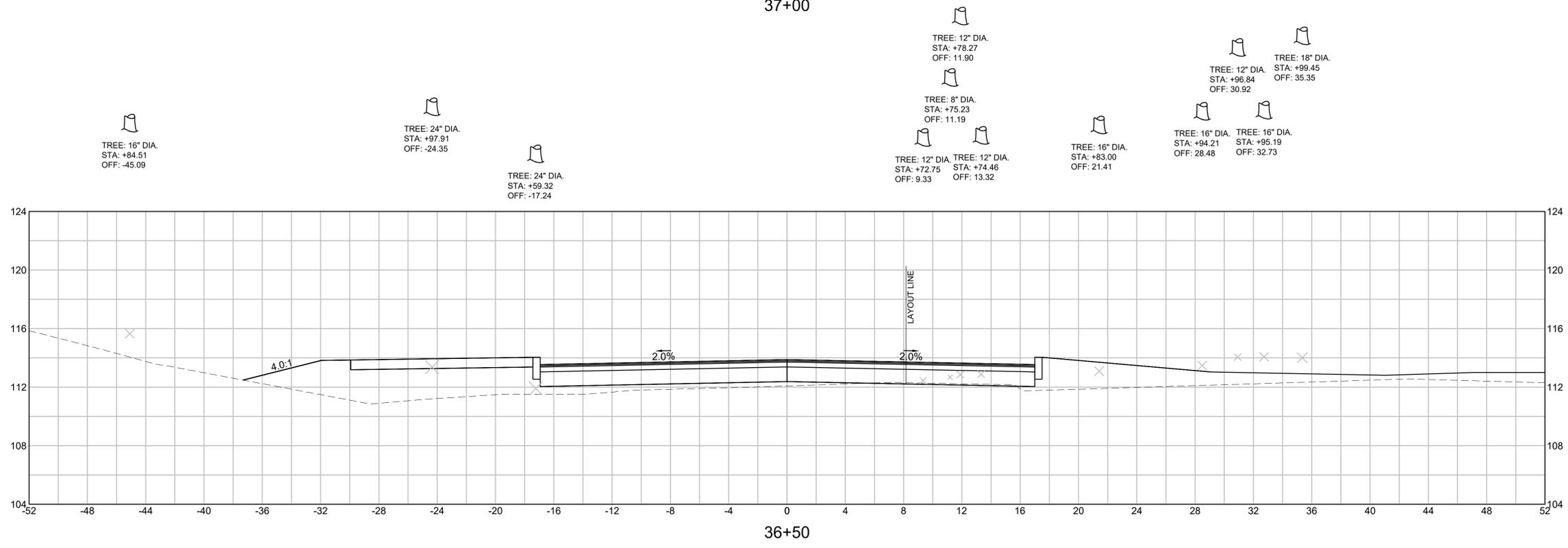
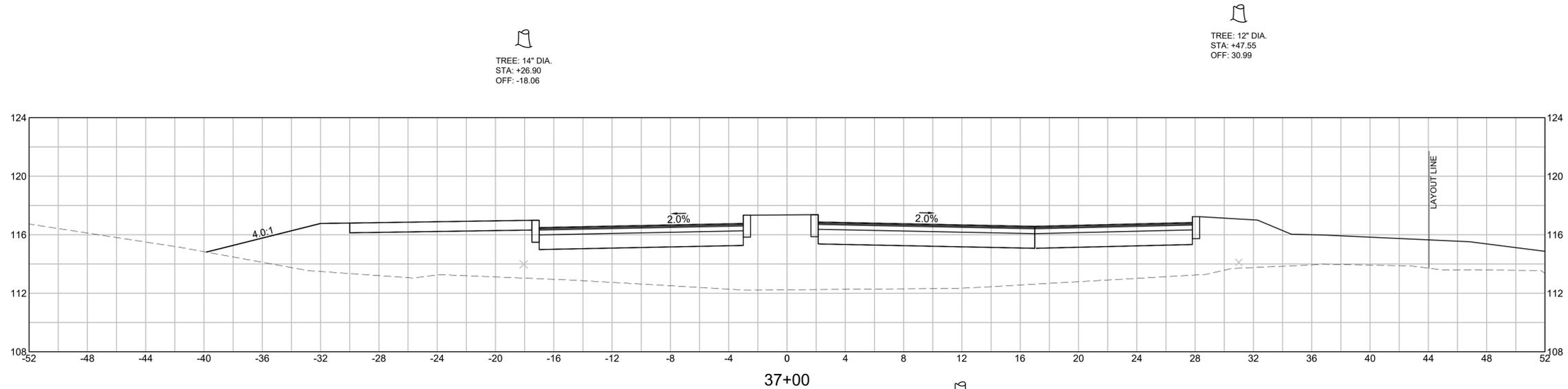
HYDRANT  
STA: +37.18



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	103	128
PROJECT FILE NO.		604694	

GORHAM CROSS SECTIONS

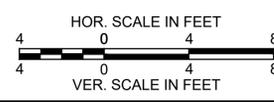
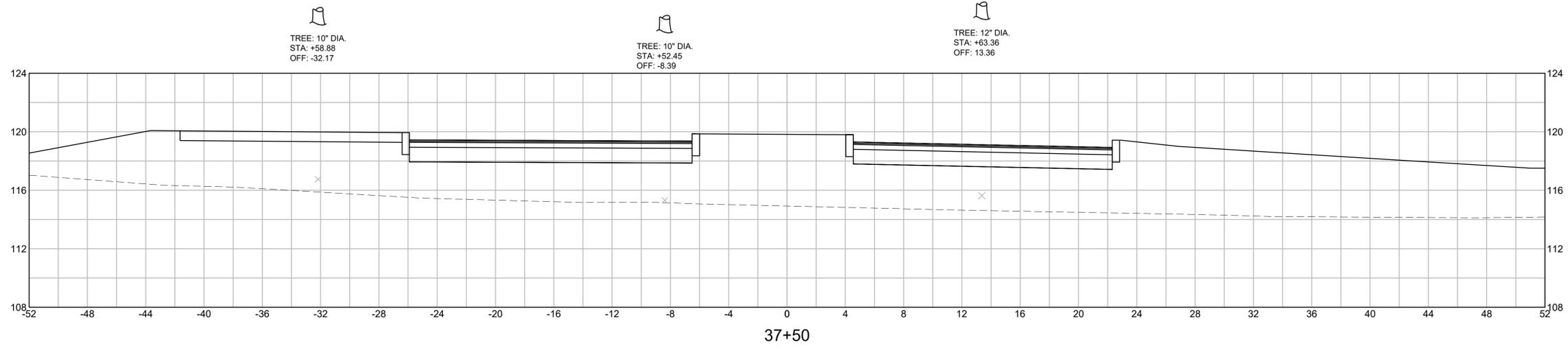
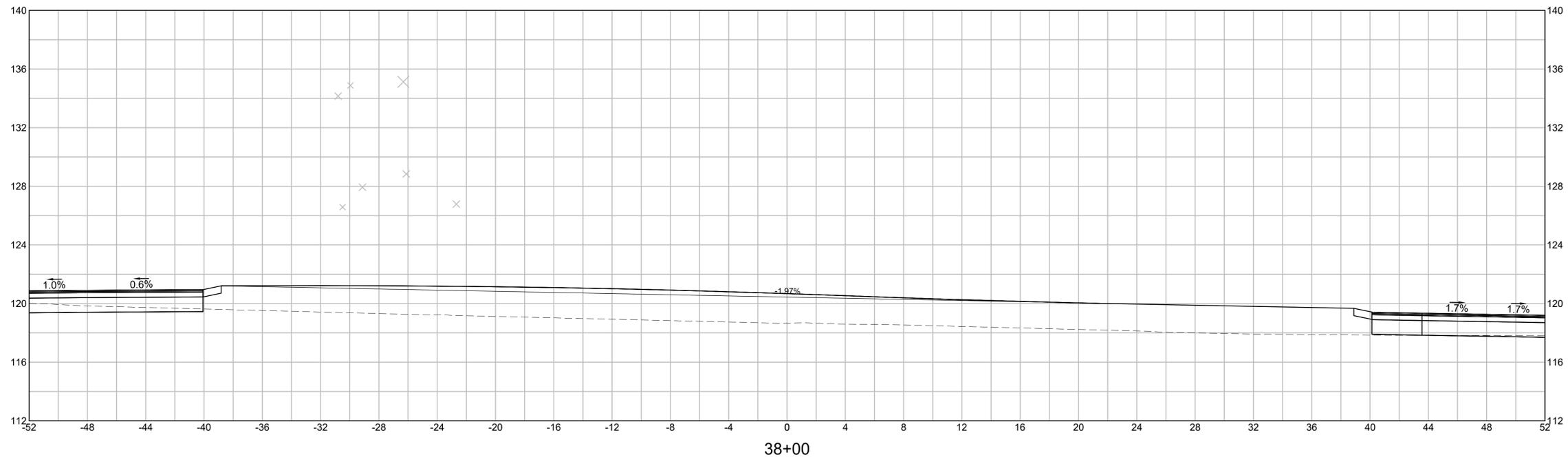


LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	104	128
PROJECT FILE NO.		604694	

GORHAM CROSS SECTIONS

- TREE: 8" DIA.  
STA: +36.96  
OFF: -29.13
- TREE: 10" DIA.  
STA: +42.59  
OFF: -29.95
- TREE: 10" DIA.  
STA: +34.61  
OFF: -30.49
- TREE: 20" DIA.  
STA: +46.66  
OFF: -26.32
- TREE: 12" DIA.  
STA: +41.18  
OFF: -22.69
- TREE: 12" DIA.  
STA: +39.71  
OFF: -30.80
- TREE: 12" DIA.  
STA: +40.59  
OFF: -26.12

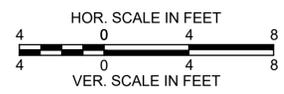
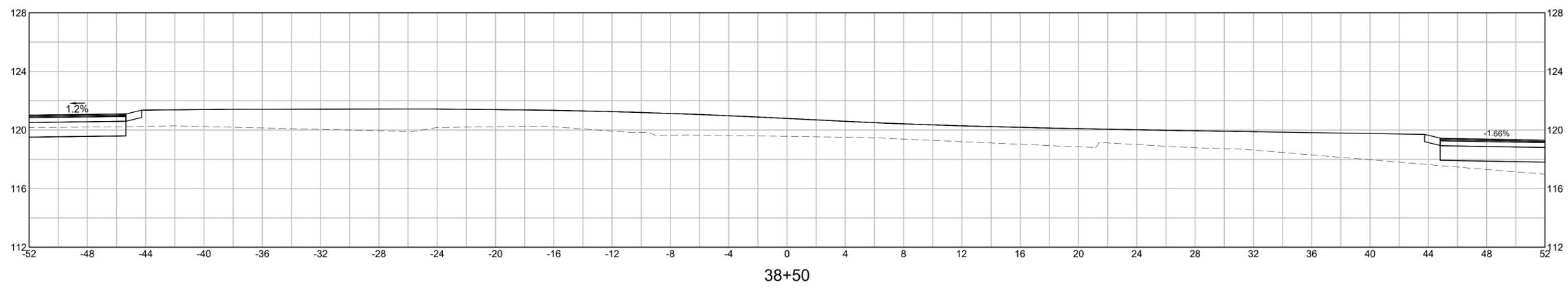
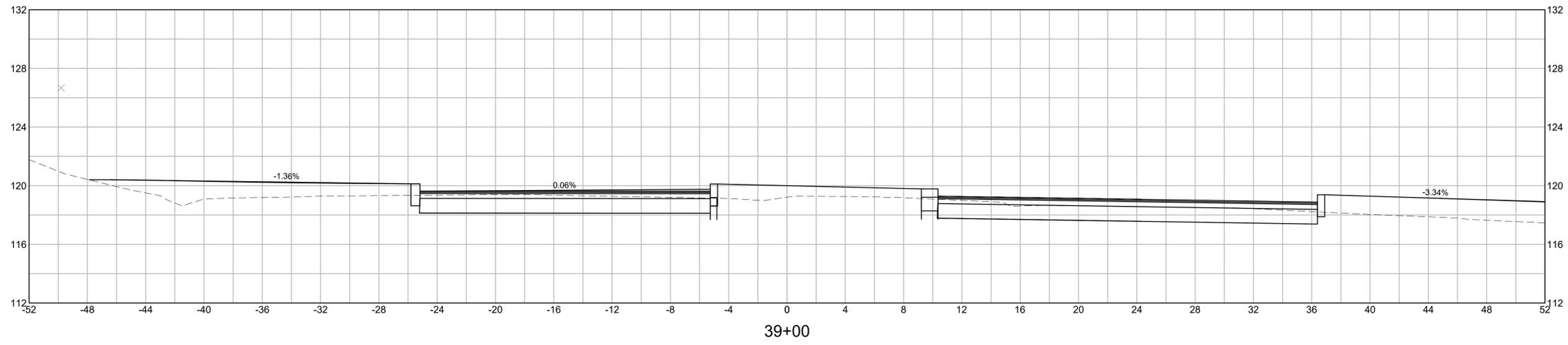


**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	105	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**

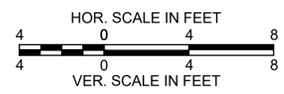
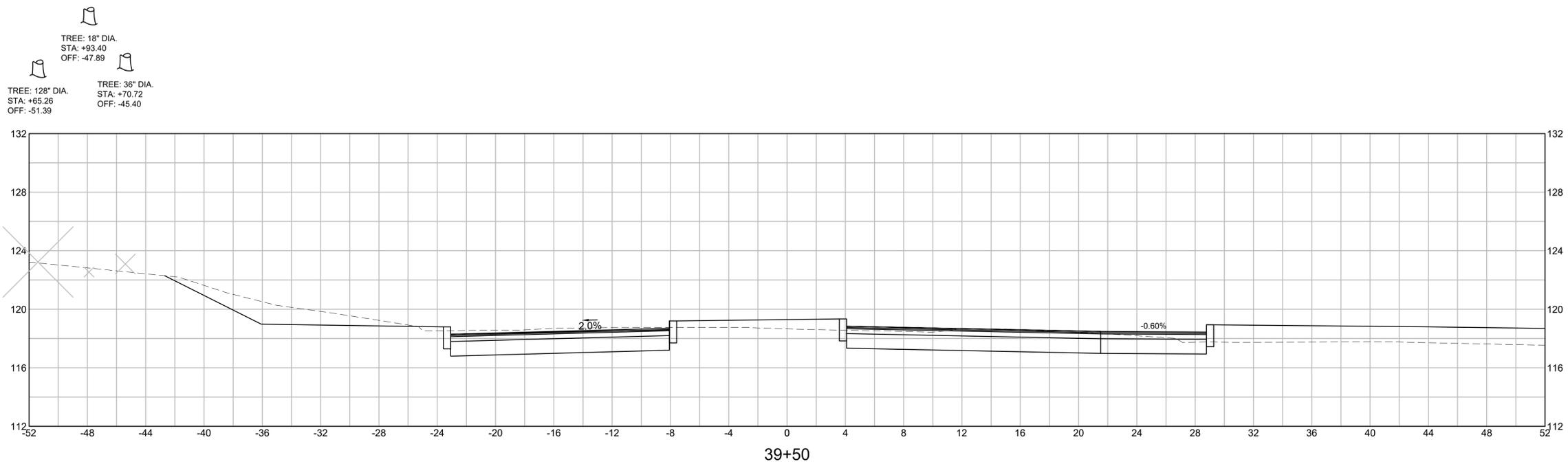
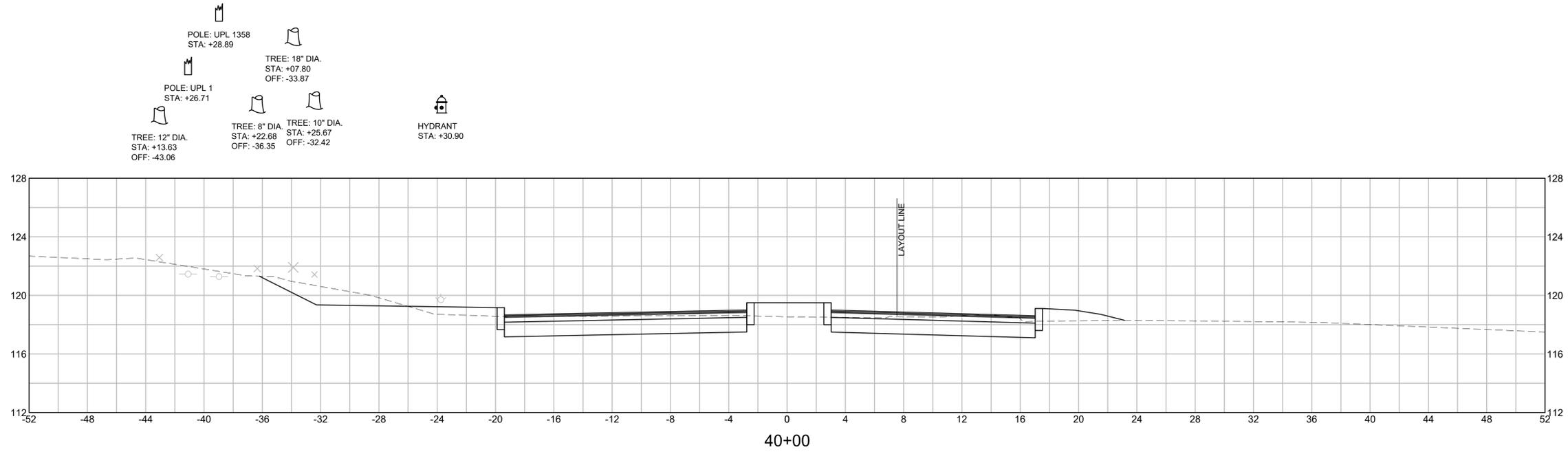
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STA: +30.65  
OFF: -49.80



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	106	128
PROJECT FILE NO.		604694	

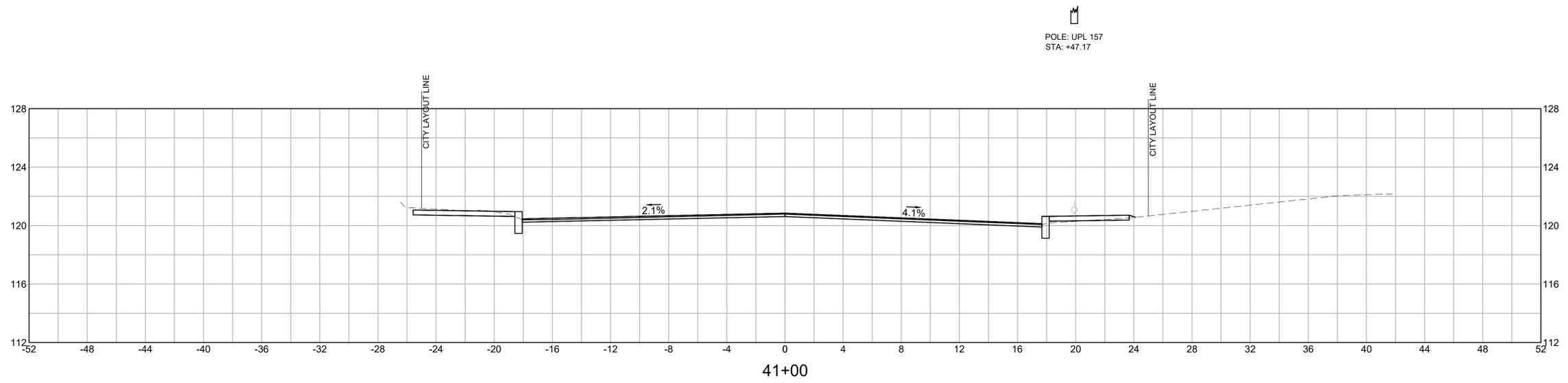
GORHAM CROSS SECTIONS



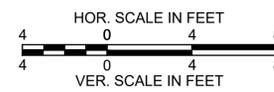
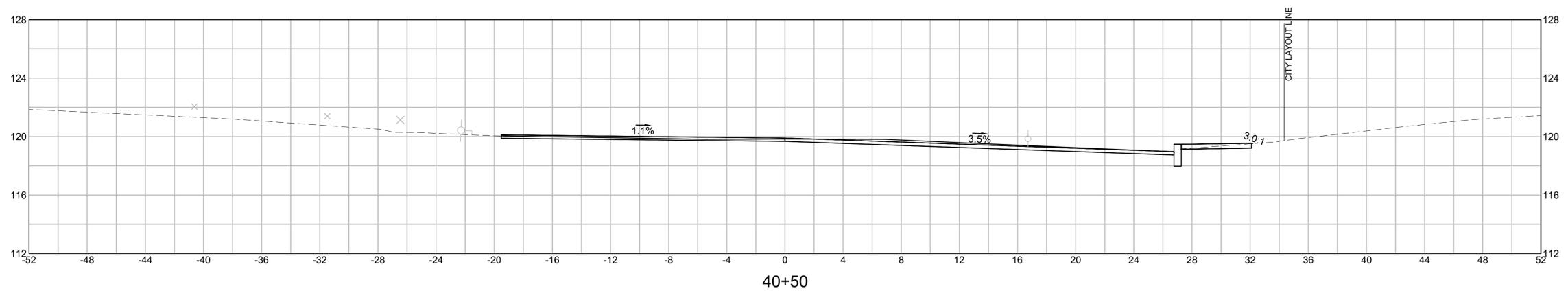
**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	107	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**



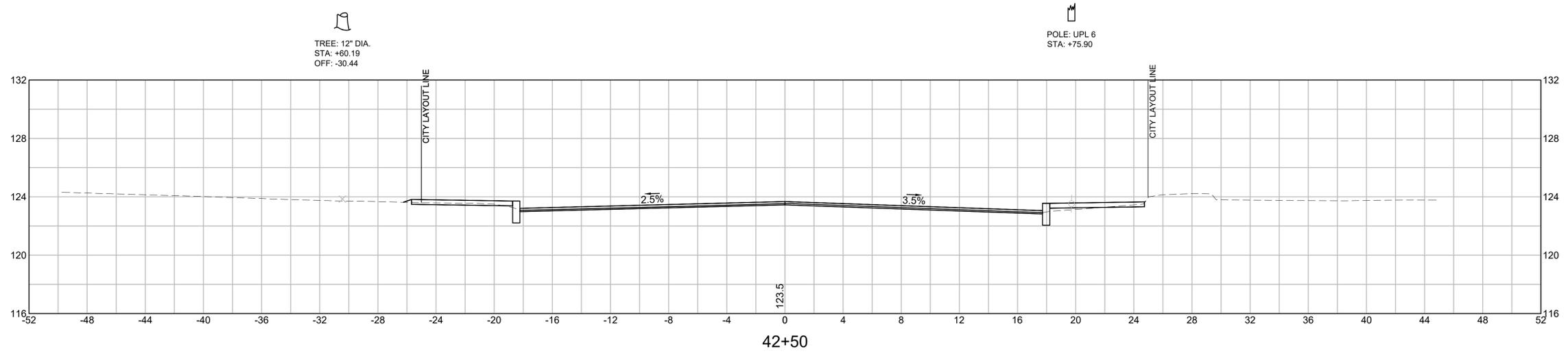
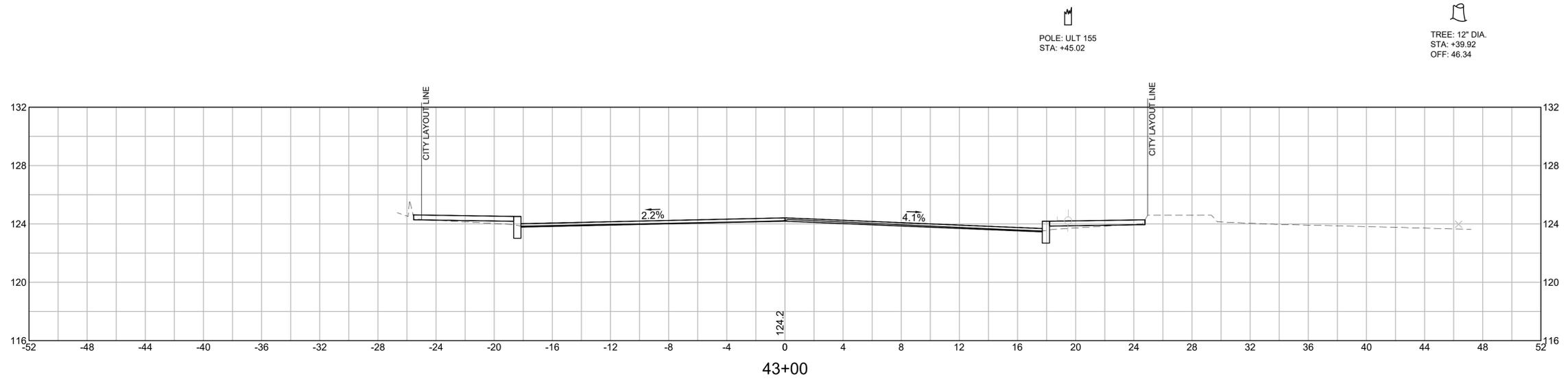
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STA: +81.53  
OFF: -40.62
- TREE: 10" DIA.  
STA: +83.29  
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- TREE: 14" DIA.  
STA: +97.76  
OFF: -26.46
- POLE: ULT 8-1  
STA: +84.66
- POLE: UPL 8  
STA: +79.91



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	108	128
PROJECT FILE NO.		604694	

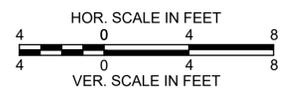
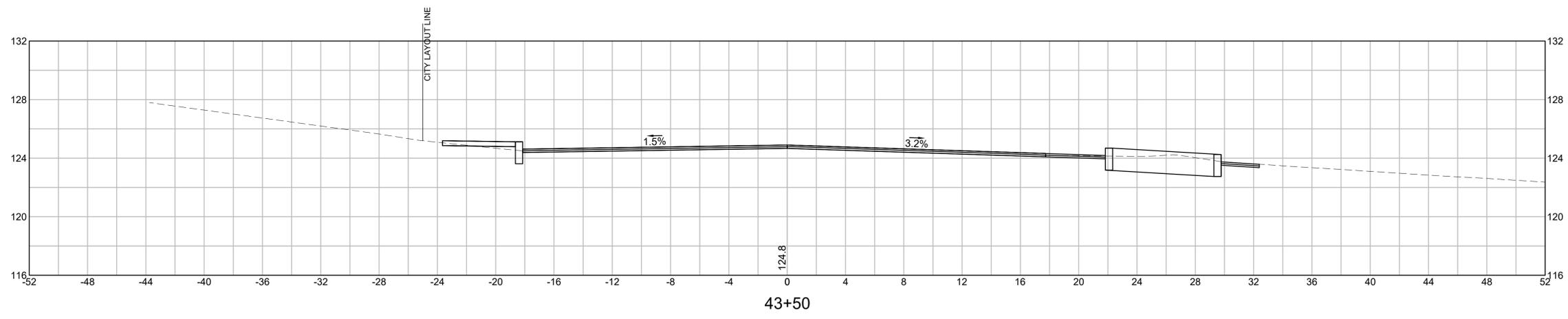
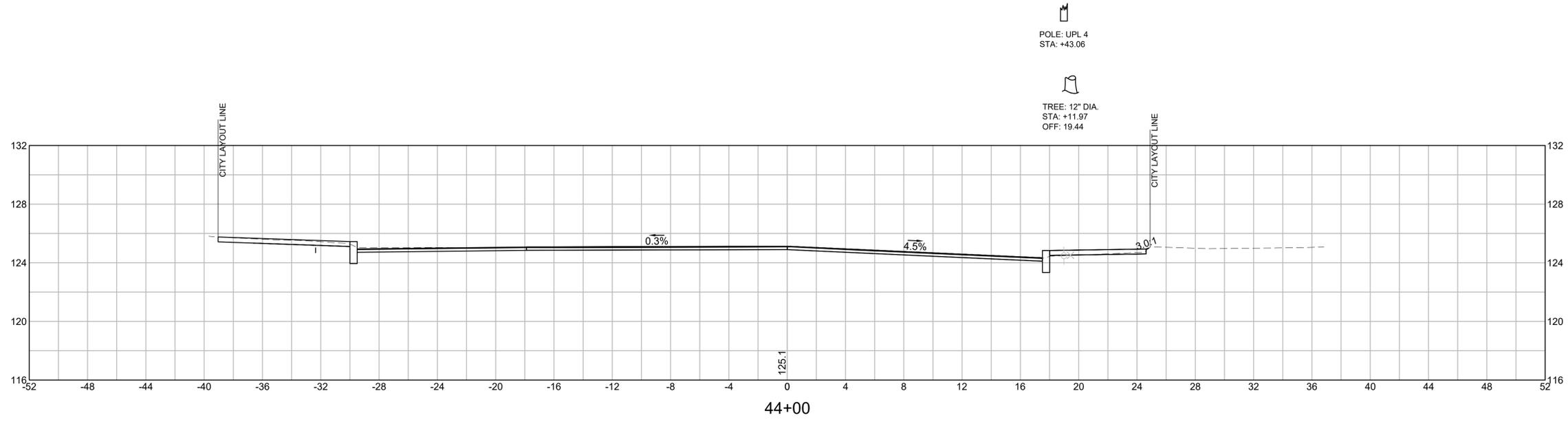
**GORHAM CROSS SECTIONS**



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	109	128
PROJECT FILE NO.		604694	

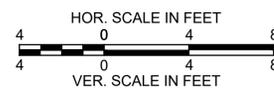
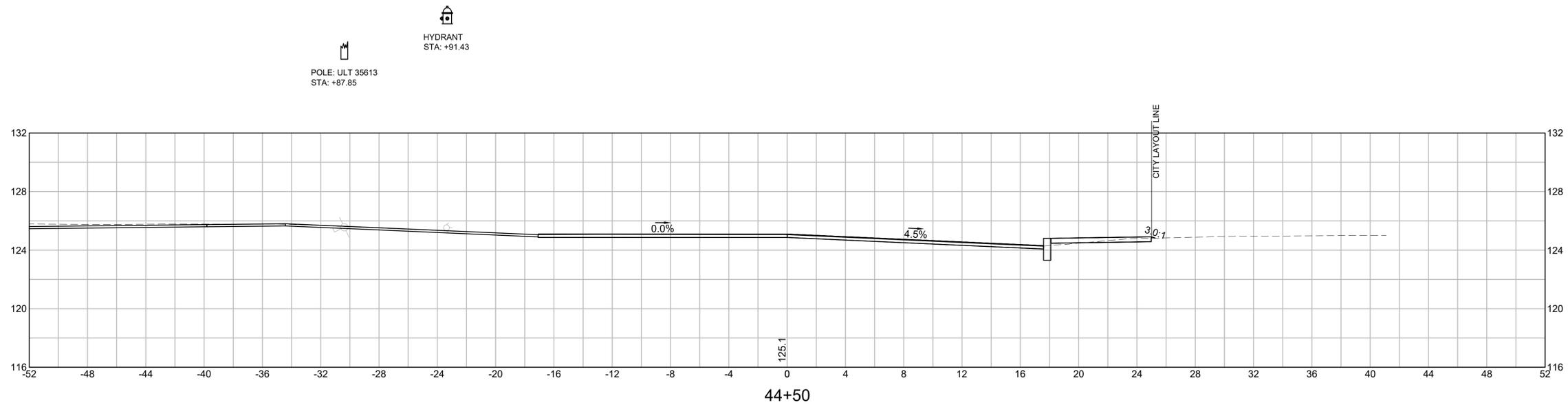
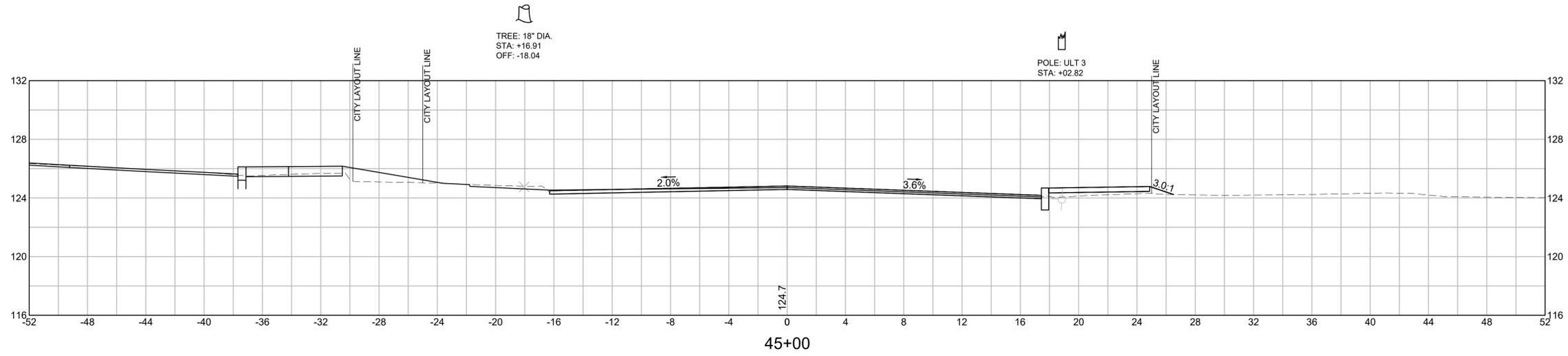
**GORHAM CROSS SECTIONS**



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	110	128
PROJECT FILE NO.		604694	

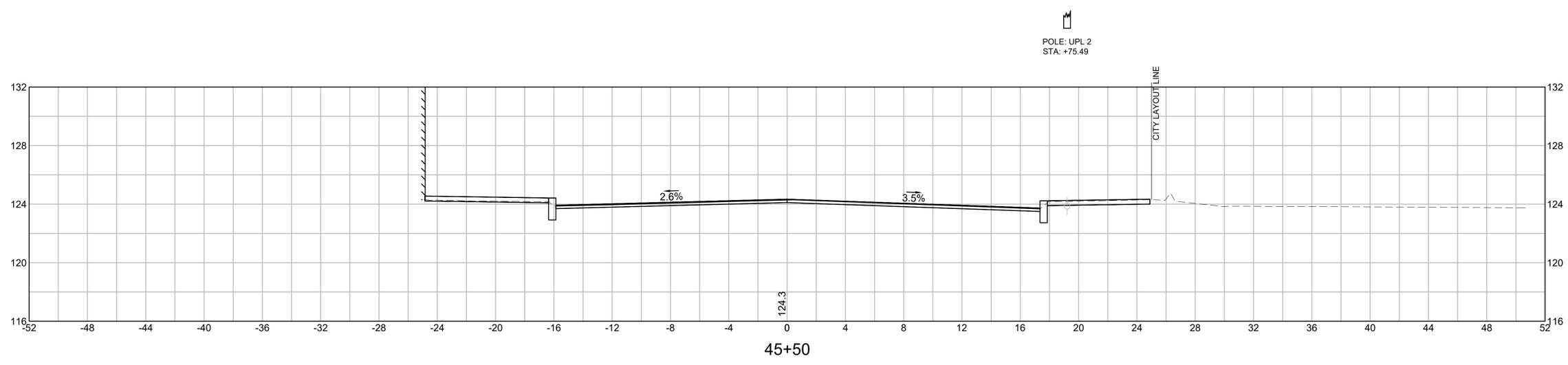
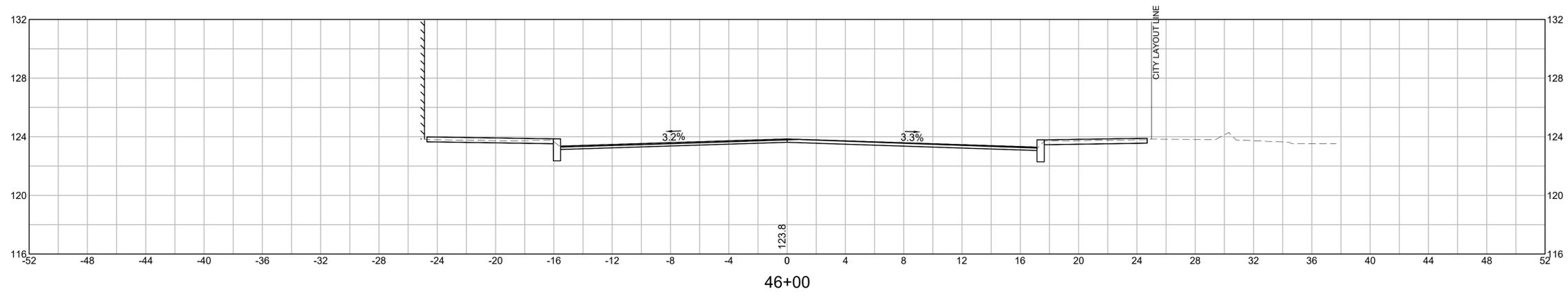
**GORHAM CROSS SECTIONS**



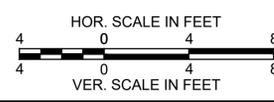
**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	111	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**



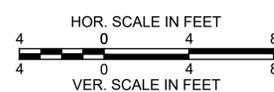
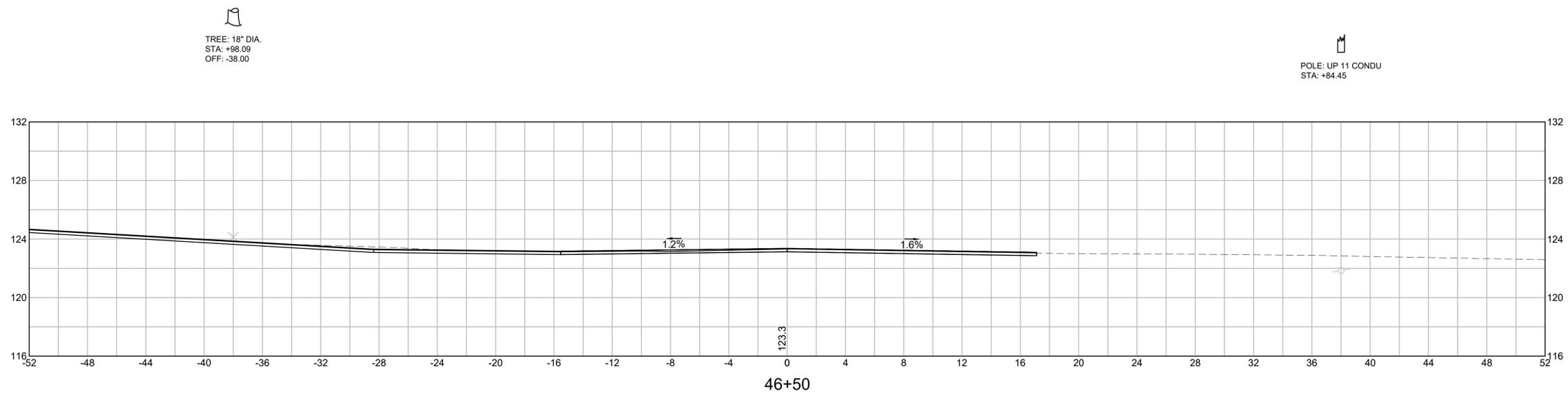
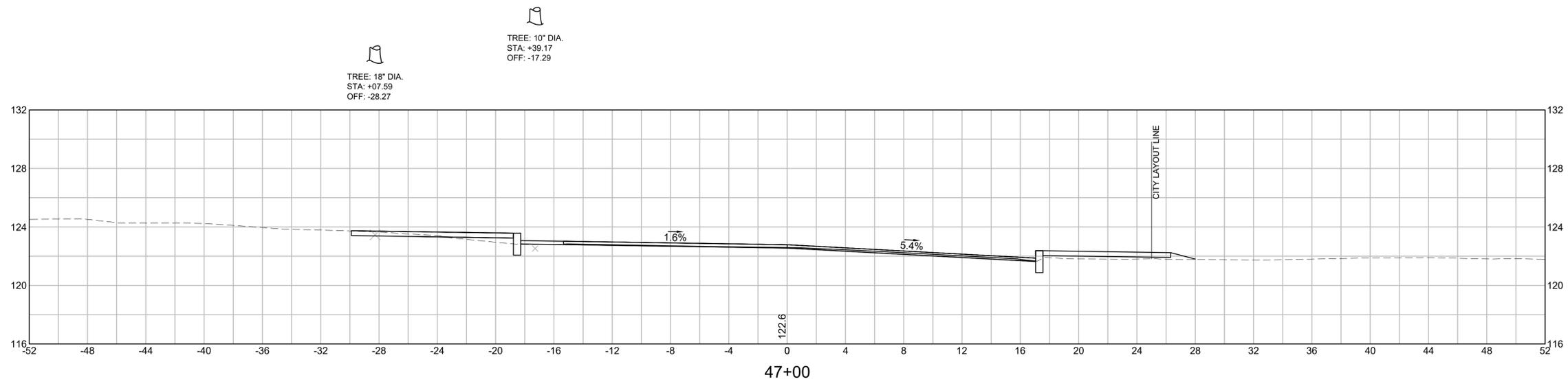
POLE: UPL 2  
STA: +75.49



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	112	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**

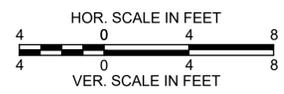
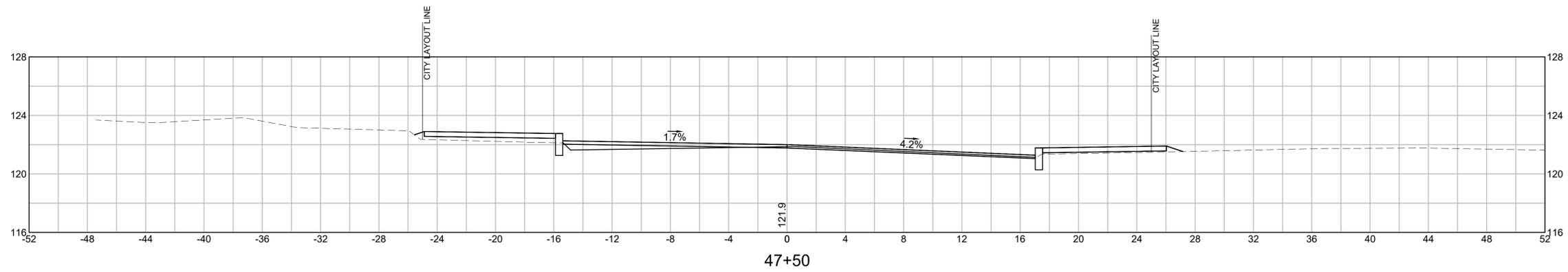
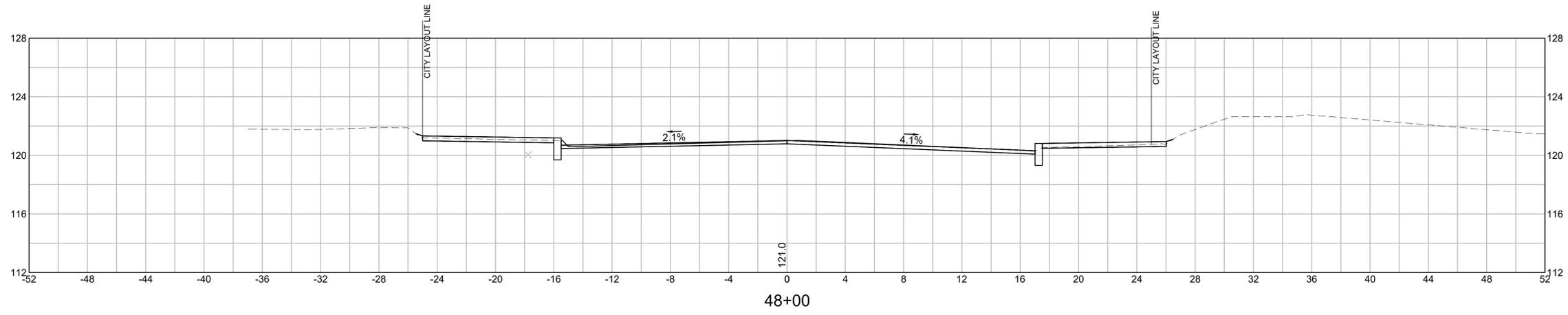


**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	113	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**

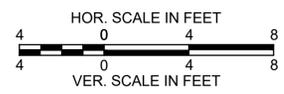
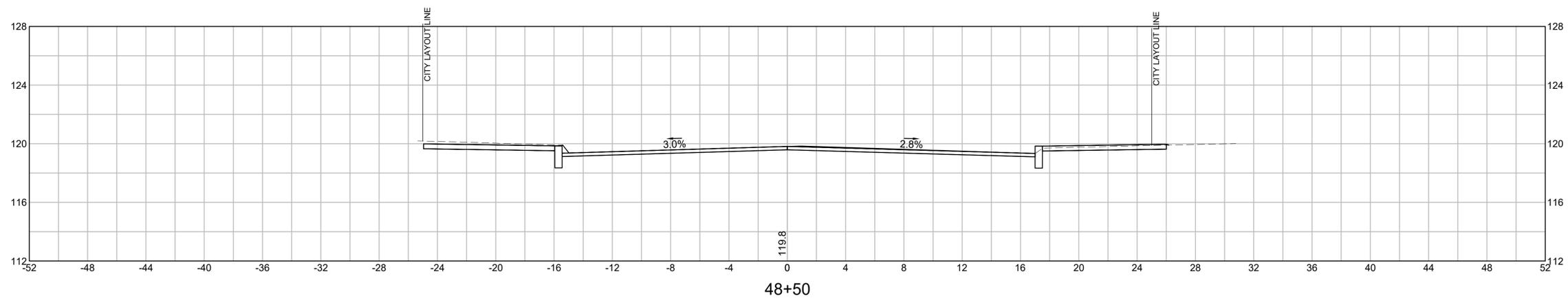
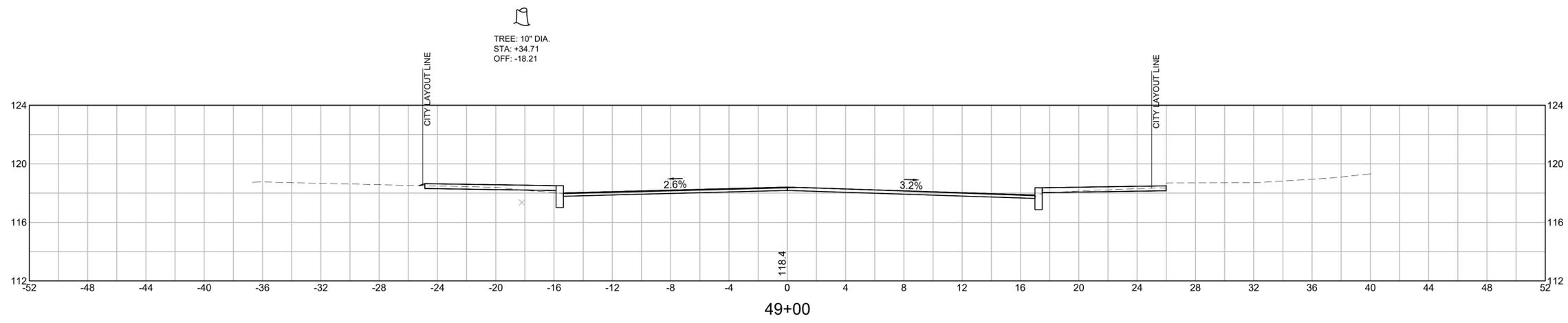
TREE: 12" DIA.  
STA: +45.43  
OFF: -17.76



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	114	128
PROJECT FILE NO.		604694	

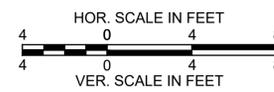
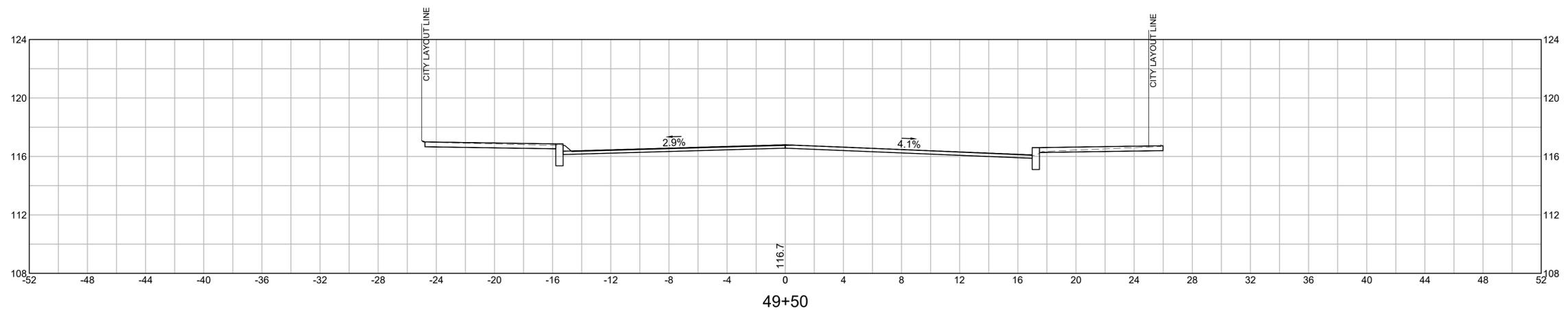
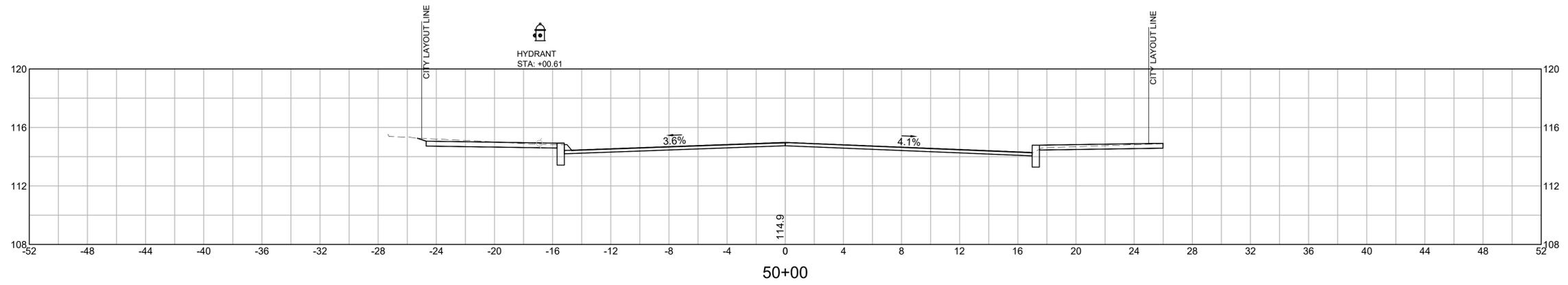
**GORHAM CROSS SECTIONS**



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	115	128
PROJECT FILE NO.		604694	

**GORHAM CROSS SECTIONS**



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	116	128
PROJECT FILE NO.		604694	

GORHAM CROSS SECTIONS

TREE: 18" DIA.  
STA: +99.84  
OFF: -28.46

TREE: 18" DIA.  
STA: +44.48  
OFF: -28.70

TREE: 18" DIA.  
STA: +33.46  
OFF: -27.89

TREE: 20" DIA.  
STA: +63.12  
OFF: -28.39

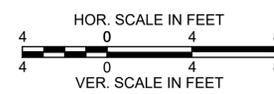
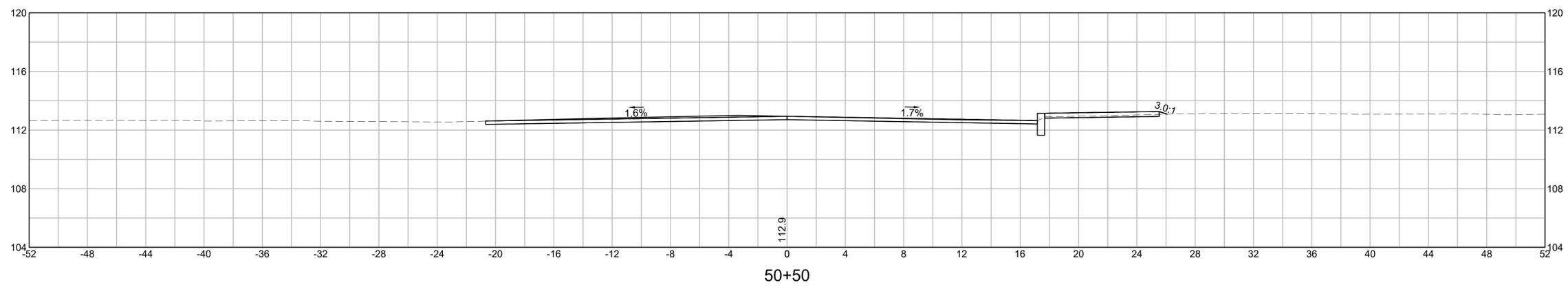
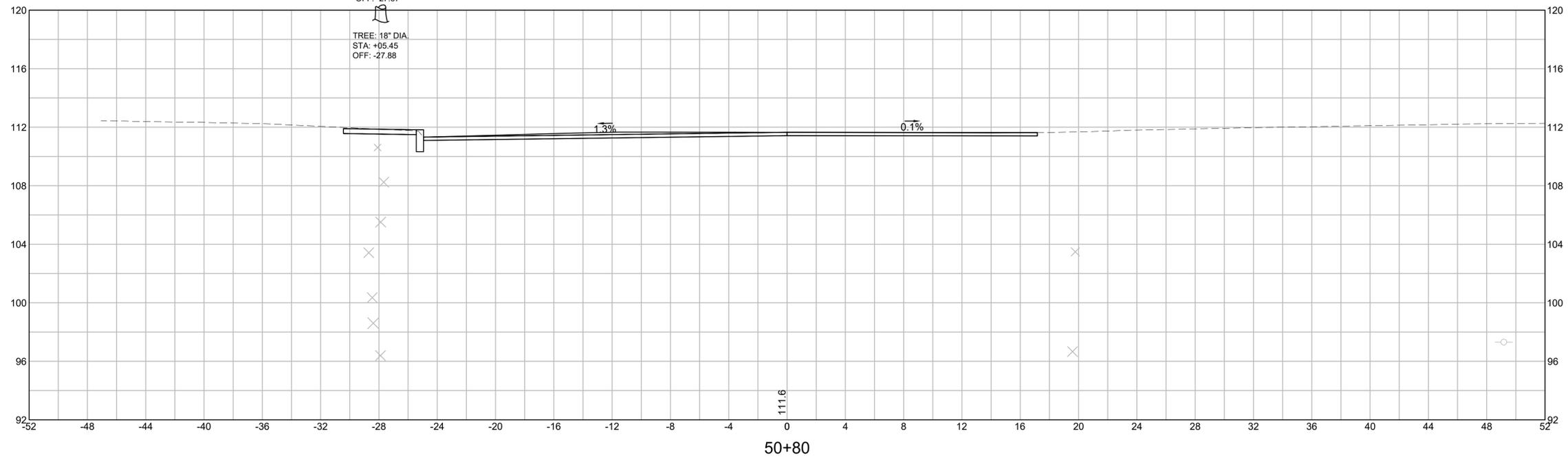
TREE: 12" DIA.  
STA: +103.2  
OFF: -28.00

TREE: 18" DIA.  
STA: +55.96  
OFF: -27.67

TREE: 18" DIA.  
STA: +05.45  
OFF: -27.88

TREE: 18" DIA.  
STA: +44.602  
OFF: -19.687

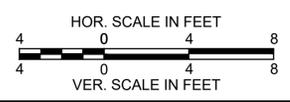
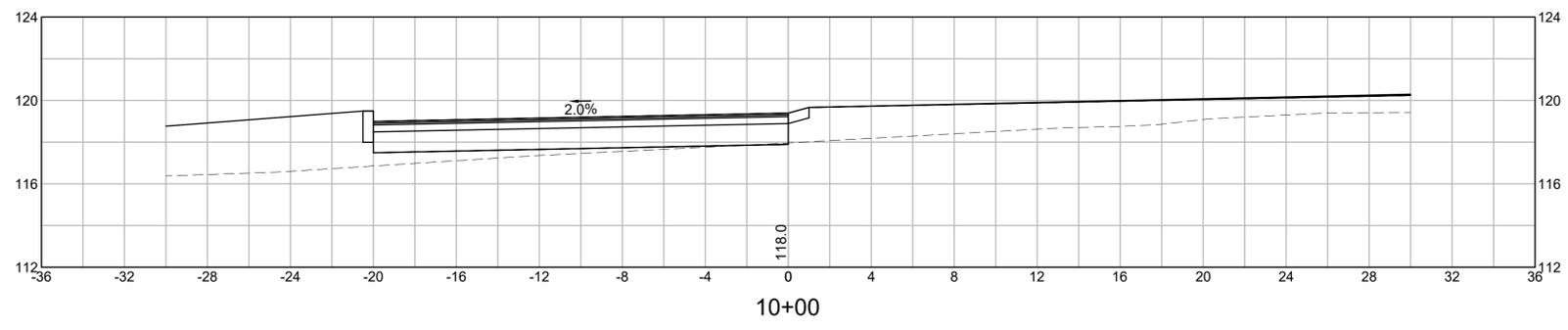
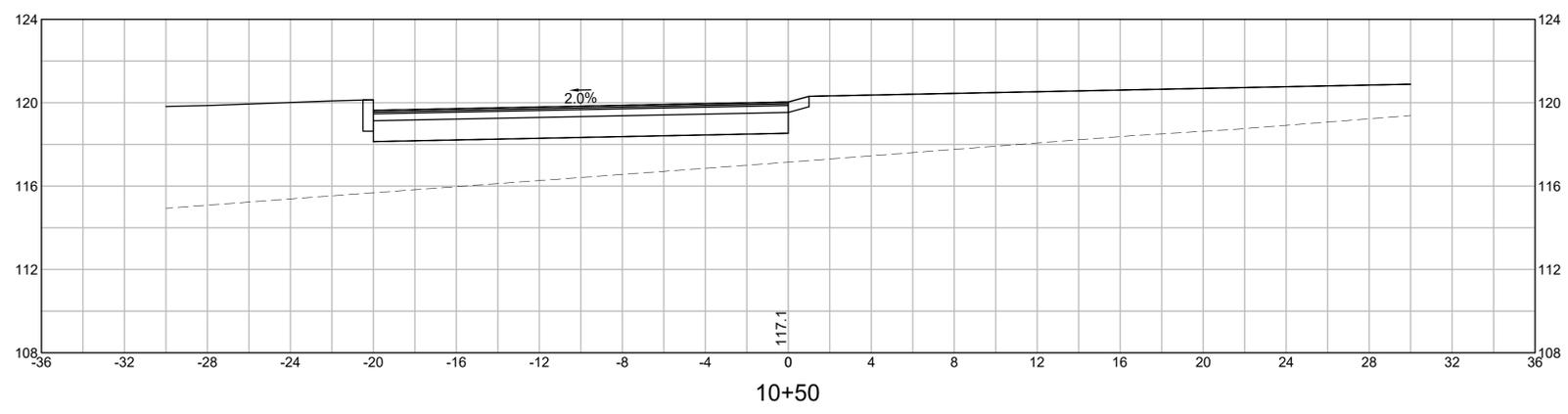
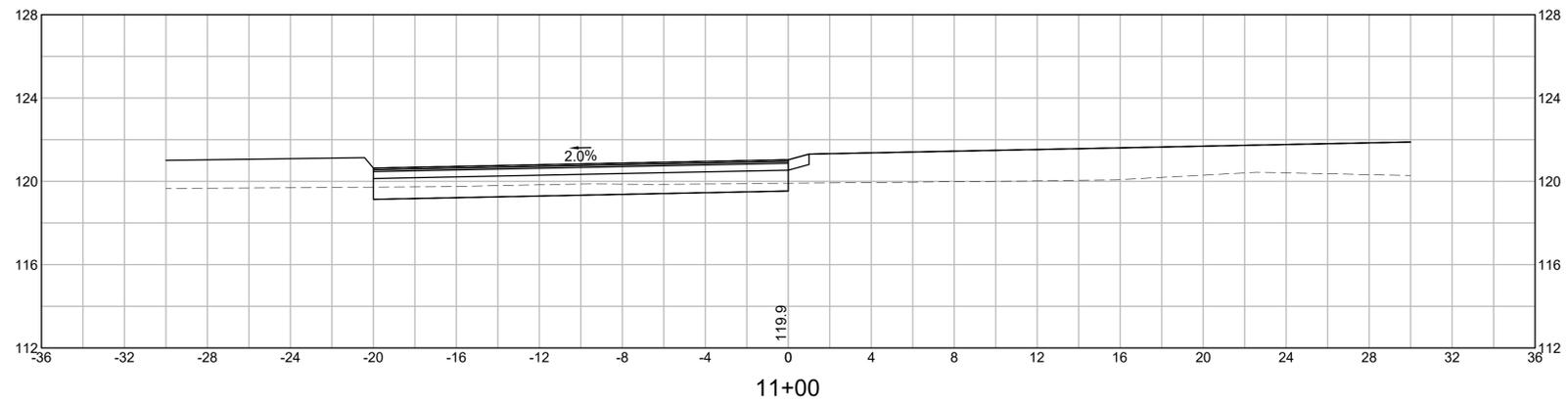
POLE: UPL 6  
STA: +12.87



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	117	128
PROJECT FILE NO.		604694	

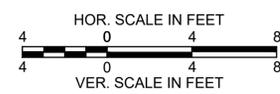
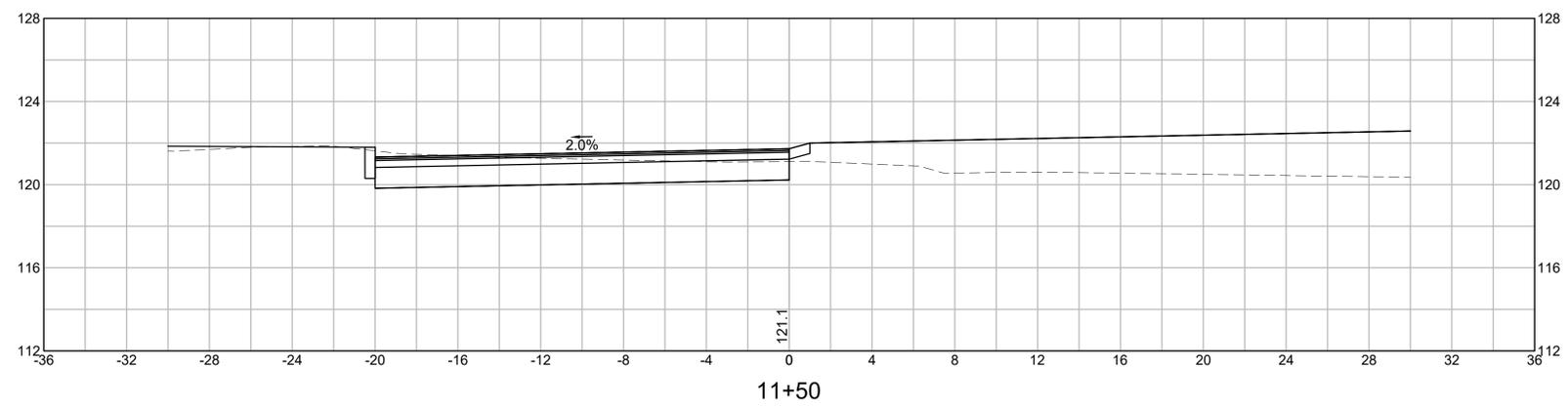
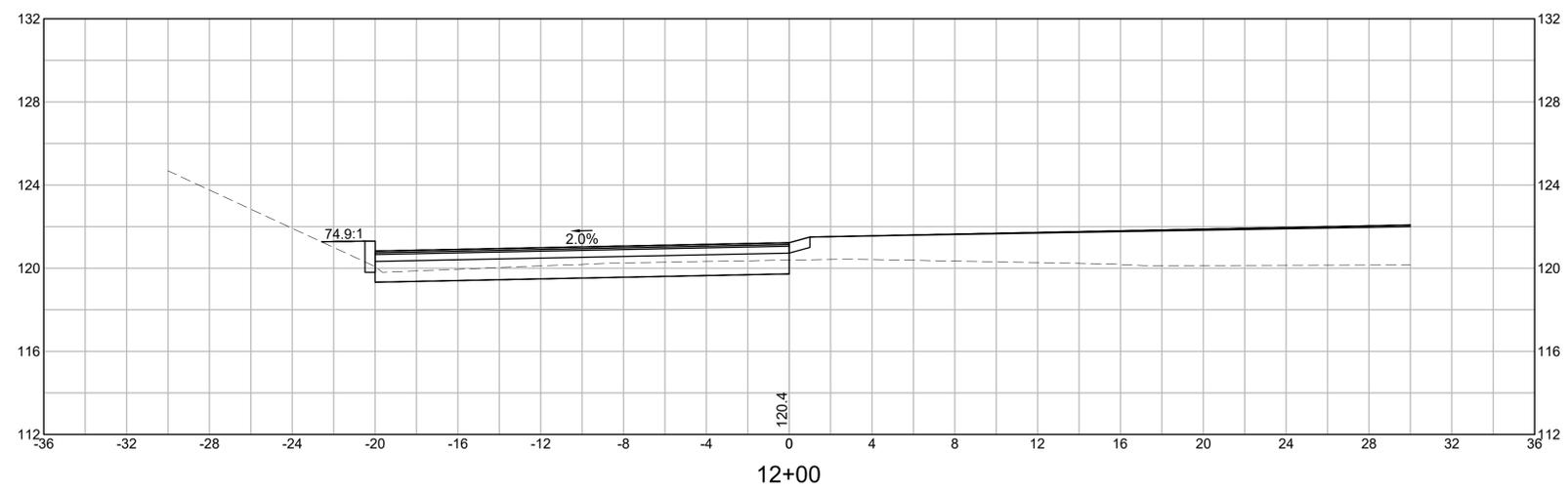
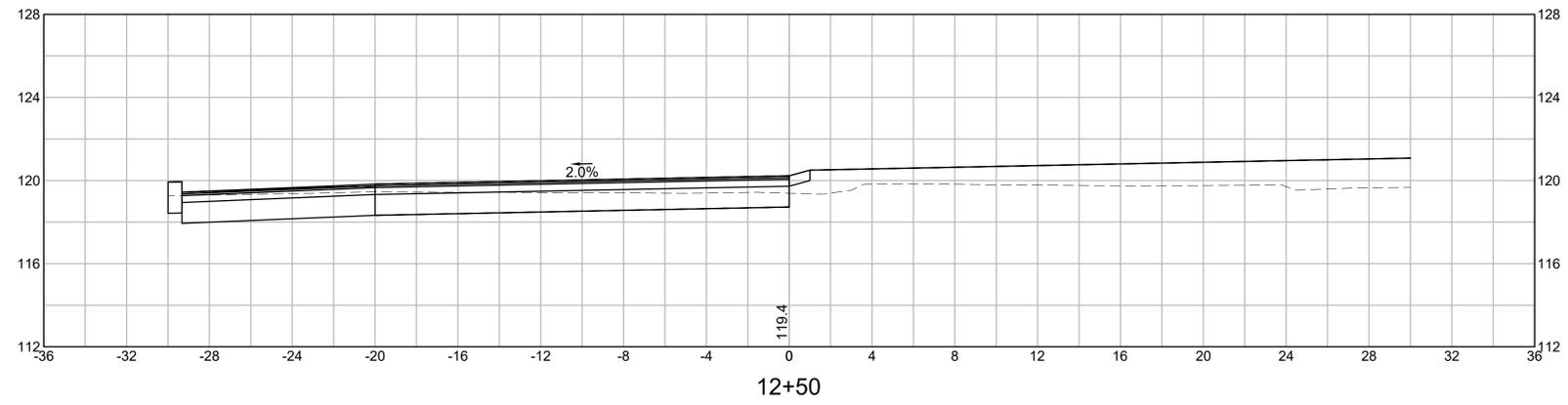
**ROUNDBABOUT CROSS SECTIONS**



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	118	128
PROJECT FILE NO.		604694	

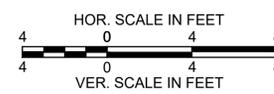
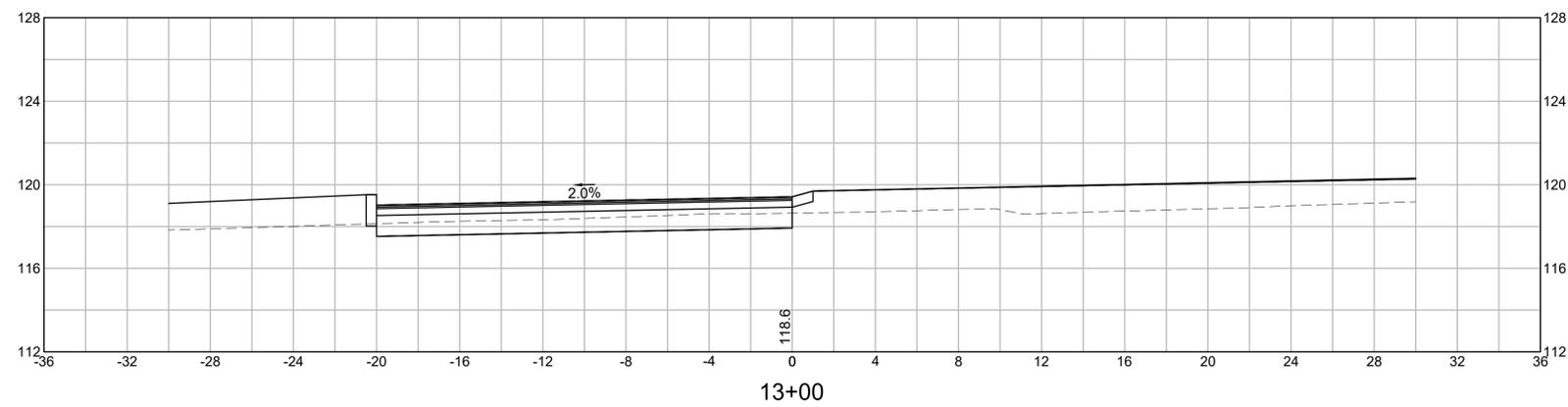
**ROUNDBOUT CROSS SECTIONS**



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	119	128
PROJECT FILE NO.		604694	

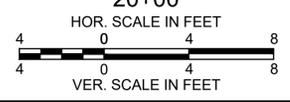
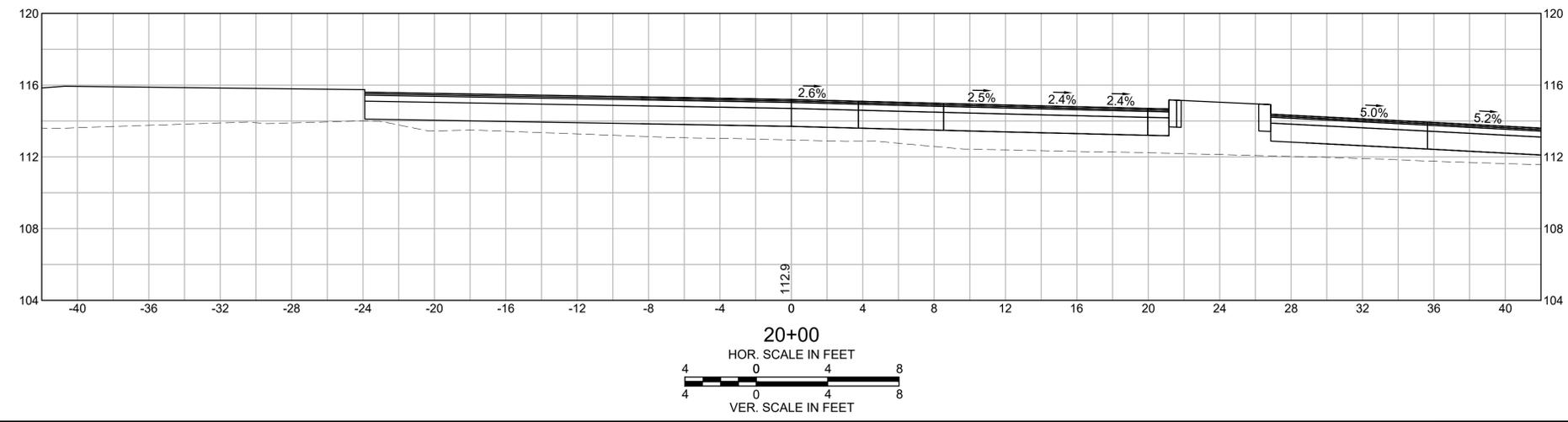
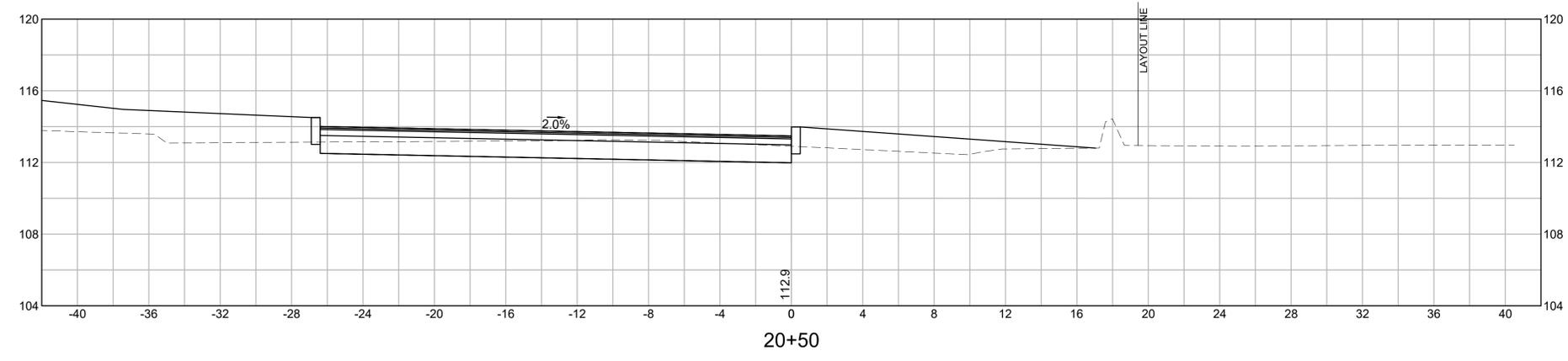
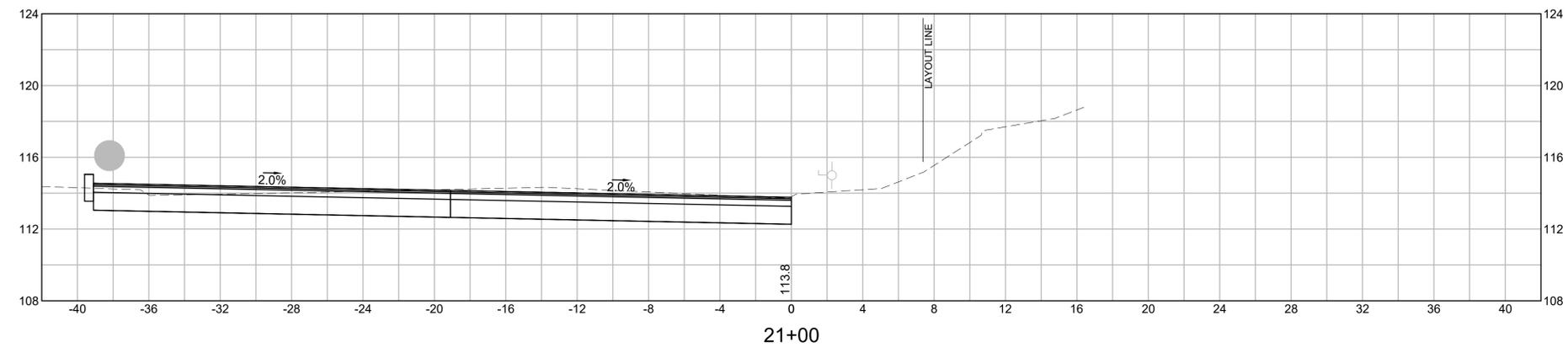
ROUNDABOUT CROSS SECTIONS



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	120	128
PROJECT FILE NO.		604694	

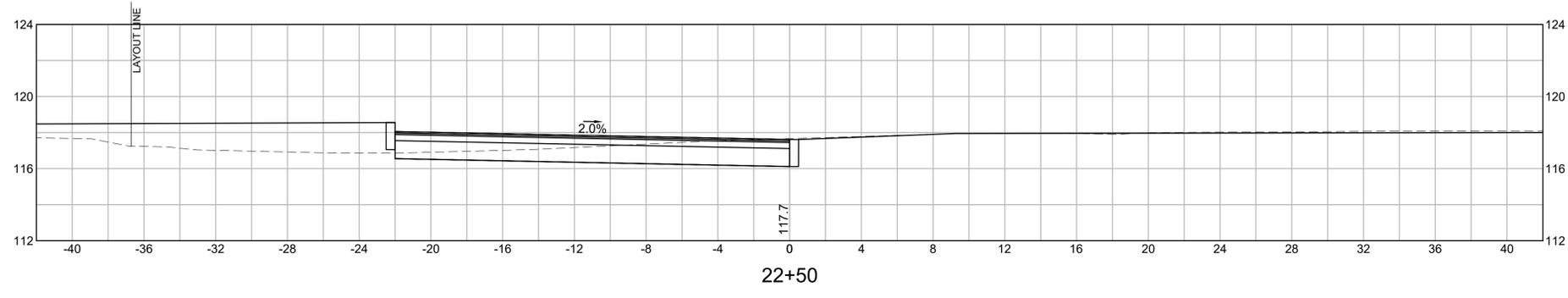
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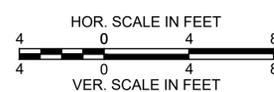
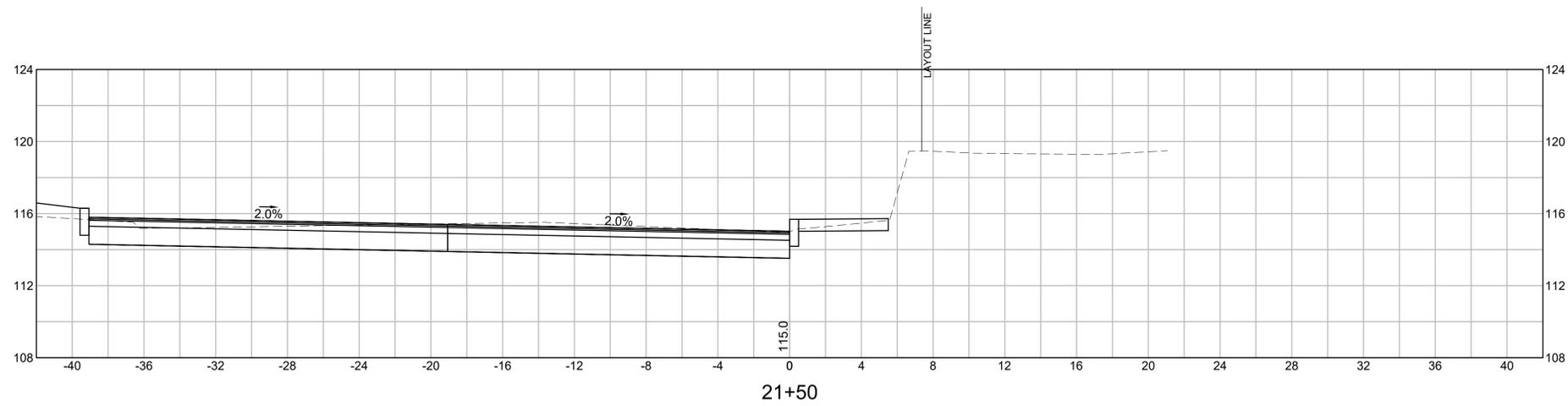
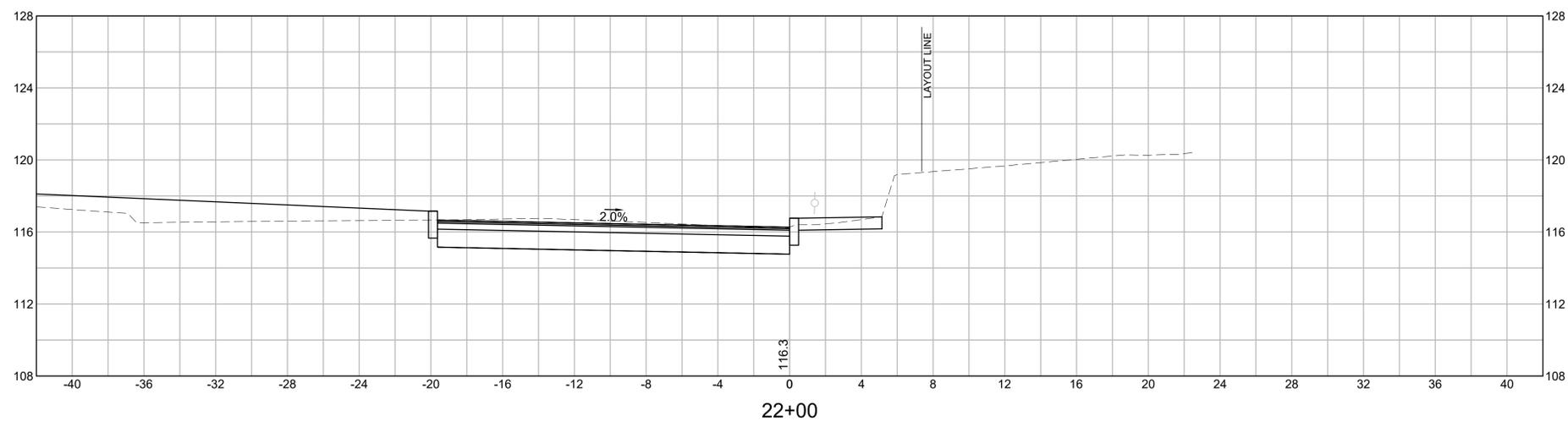
**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	121	128
PROJECT FILE NO.		604694	

**PARKING CROSS SECTIONS**



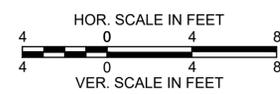
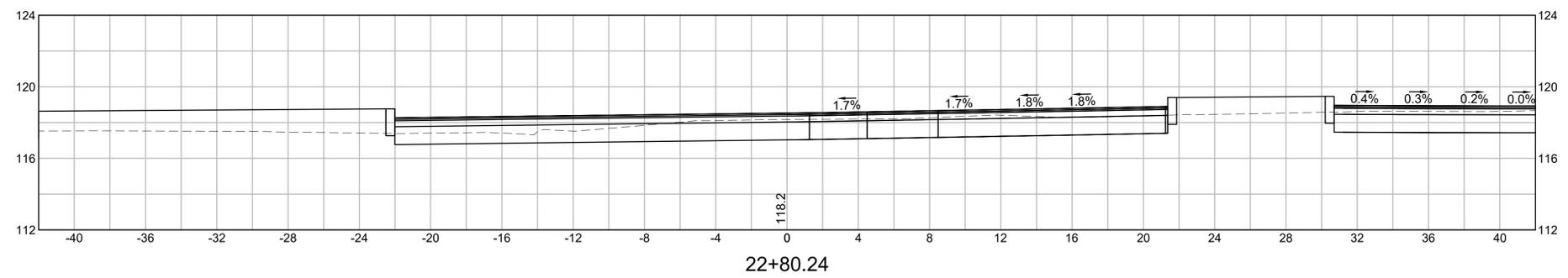
POLE: UPL 9  
STA: +41.31



LOWELL  
LOWELL CONNECTOR/GORHAM STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	122	128
PROJECT FILE NO.		604694	

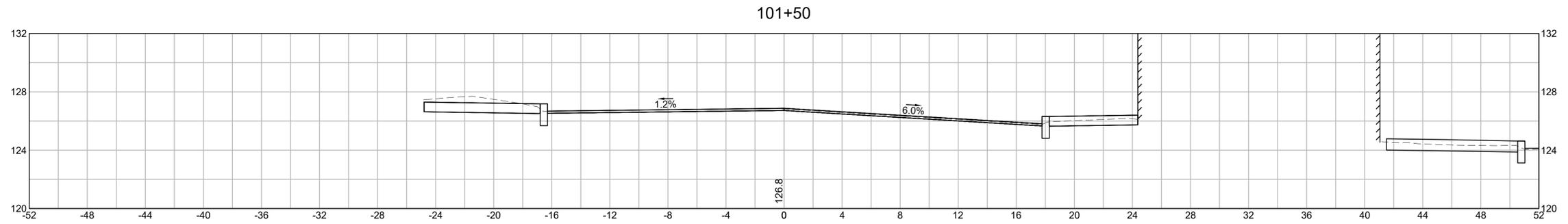
PARKING CROSS SECTIONS



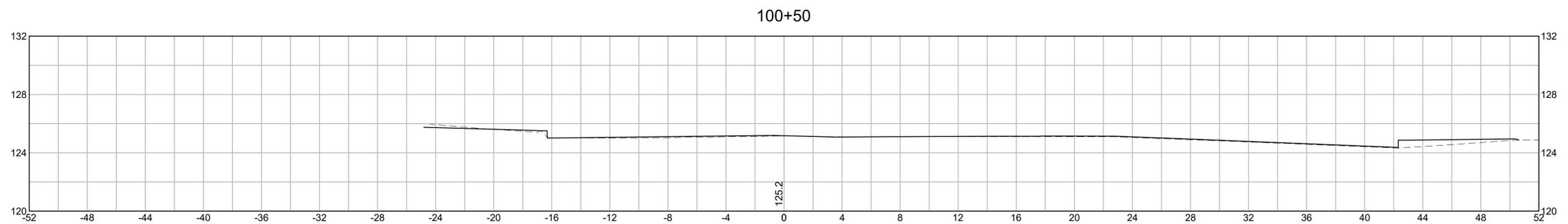
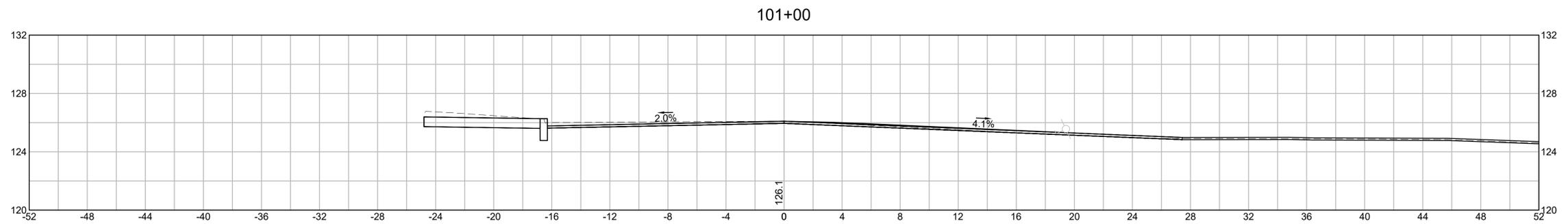
**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	123	128
PROJECT FILE NO.		604694	

**SOUTH ST CROSS SECTIONS**



POLE: ULT 35613  
STA: +15.49

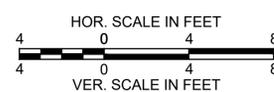
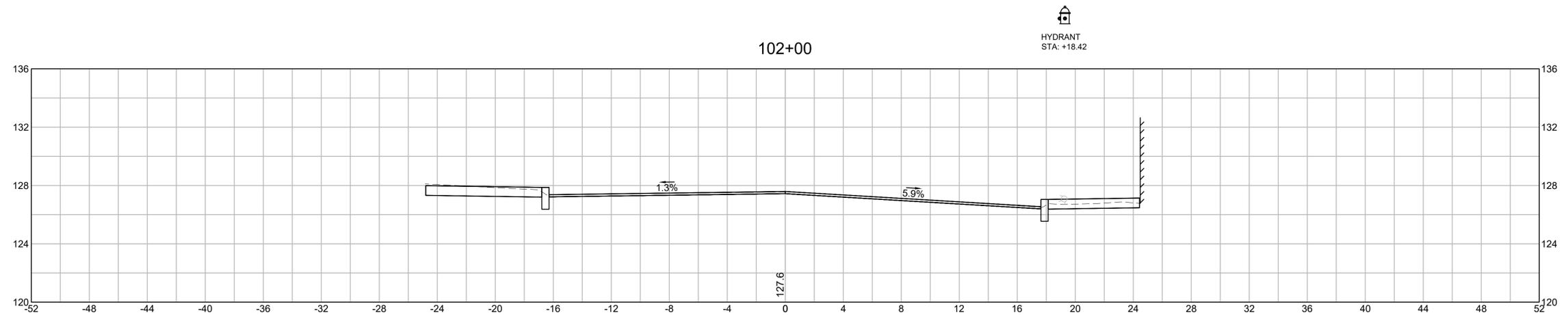
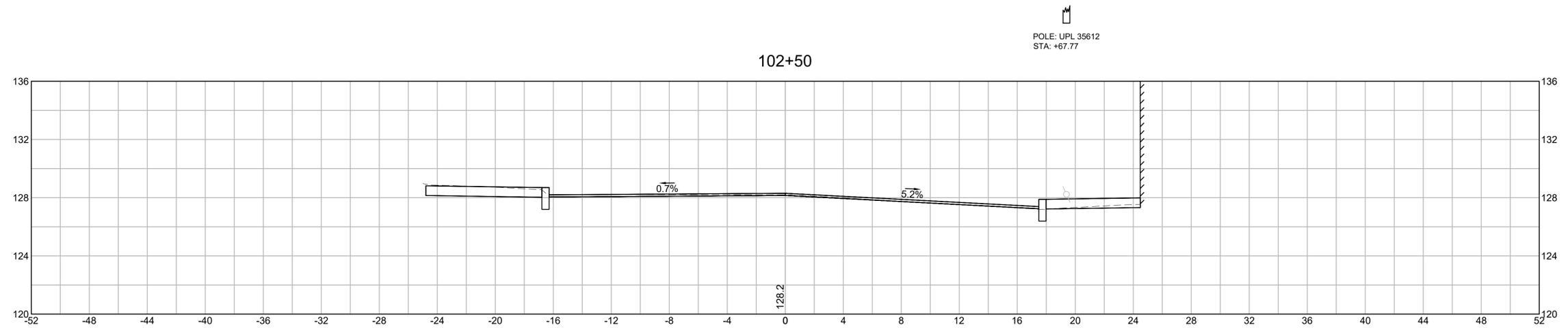
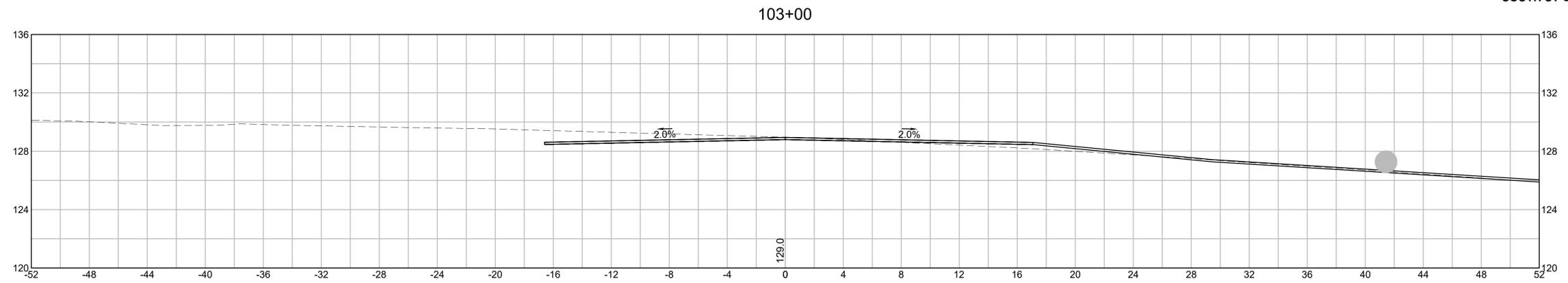


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	124	128
PROJECT FILE NO.		604694	

TREE: 18" DIA.  
STA: +37.65  
OFF: 41.43

**SOUTH ST CROSS SECTIONS**



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

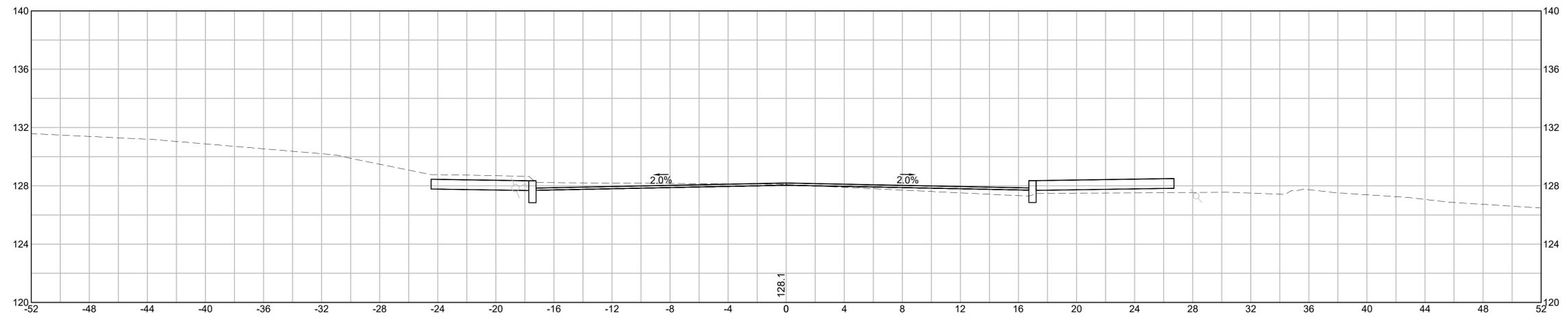
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	125	128
PROJECT FILE NO.		604694	

**SOUTH ST CROSS SECTIONS**

POLE: ULT 35611  
STA: +73.07

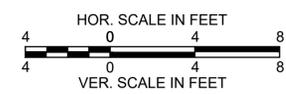
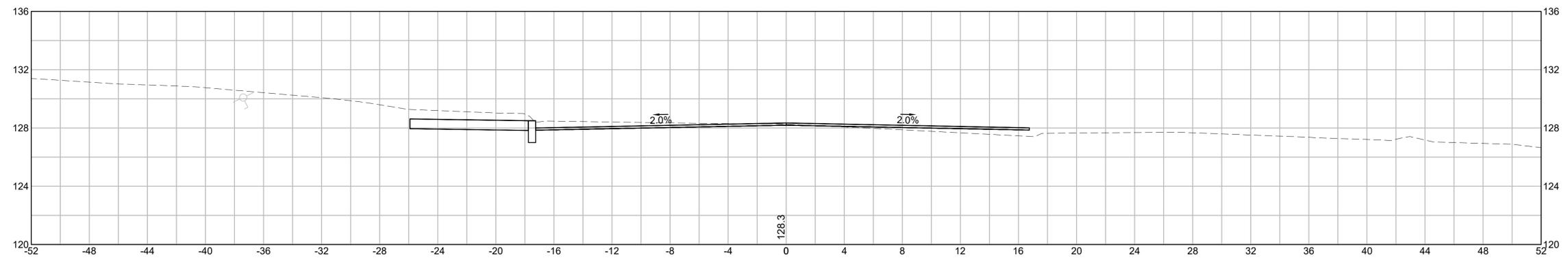
POLE: UP 11-1  
STA: +71.31

103+55



POLE: ULT 1  
STA: +36.39

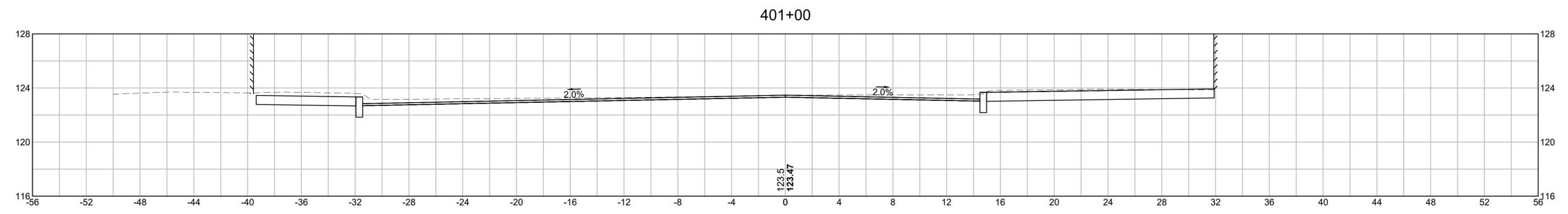
103+50



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

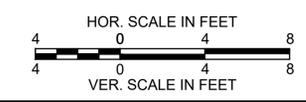
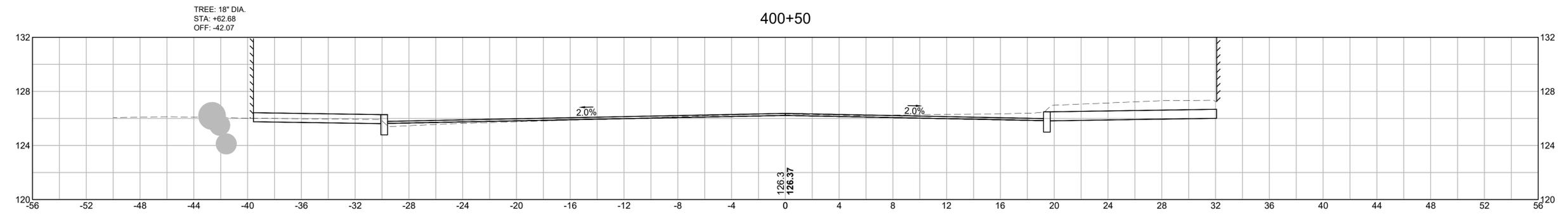
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	126	128
PROJECT FILE NO.		604694	

**SOUTH ST CROSS SECTIONS**



TREE: 18" DIA.  
STA: +90.88  
OFF: -41.59

TREE: 18" DIA.  
STA: +82.68  
OFF: -42.07

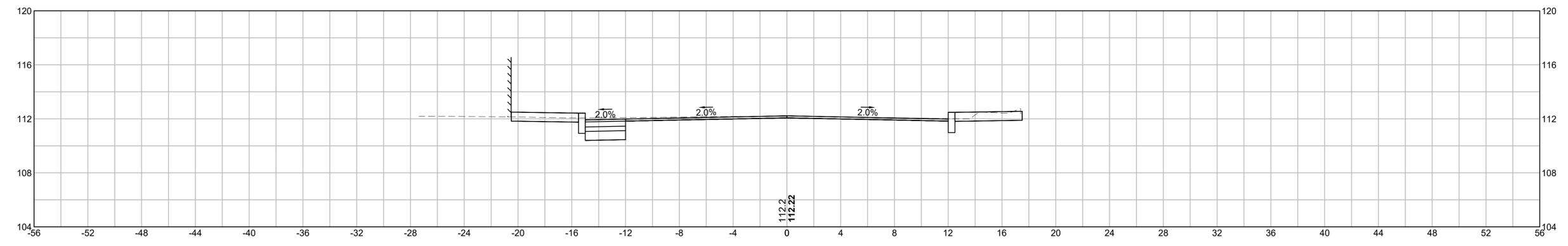


**LOWELL**  
**LOWELL CONNECTOR/GORHAM STREET**

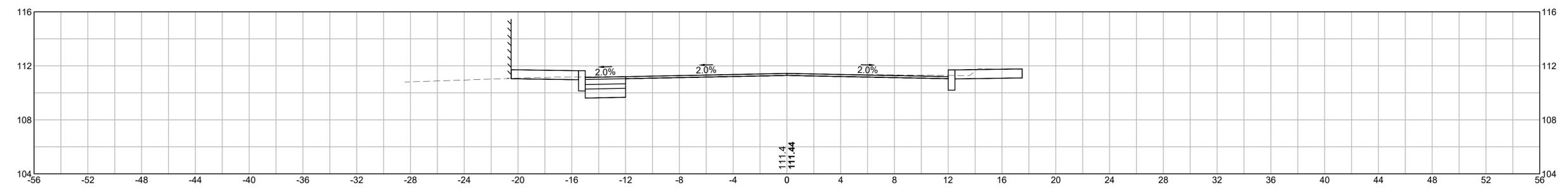
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	127	128
PROJECT FILE NO.		604694	

**FATHER RONAN CROSS SECTIONS**

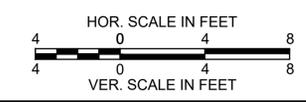
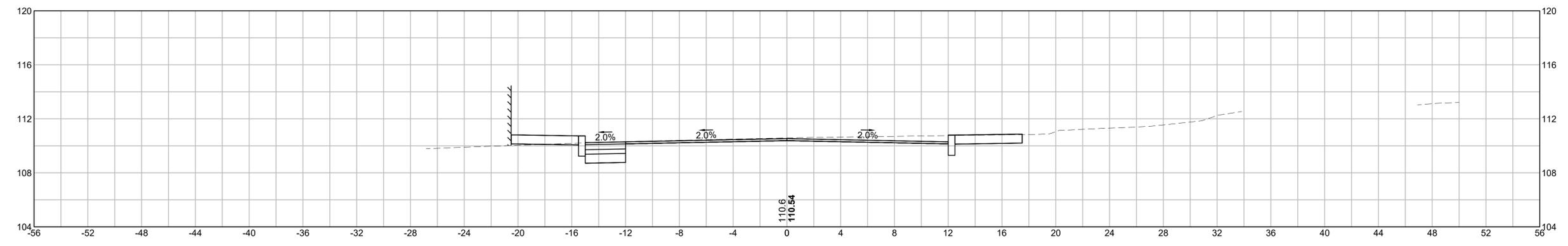
501+50



501+00



500+50



**LOWELL  
LOWELL CONNECTOR/GORHAM STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	128	128
PROJECT FILE NO.		604694	

**FATHER RONAN CROSS SECTIONS**

