DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT

PROPOSED ROADWAY RECONSTRUCTION PROJECT FOR

GROVE STREET

IN THE CITY OF

SALEM

ESSEX COUNTY

SALEM
GROVE STREET IMPROVEMENTS

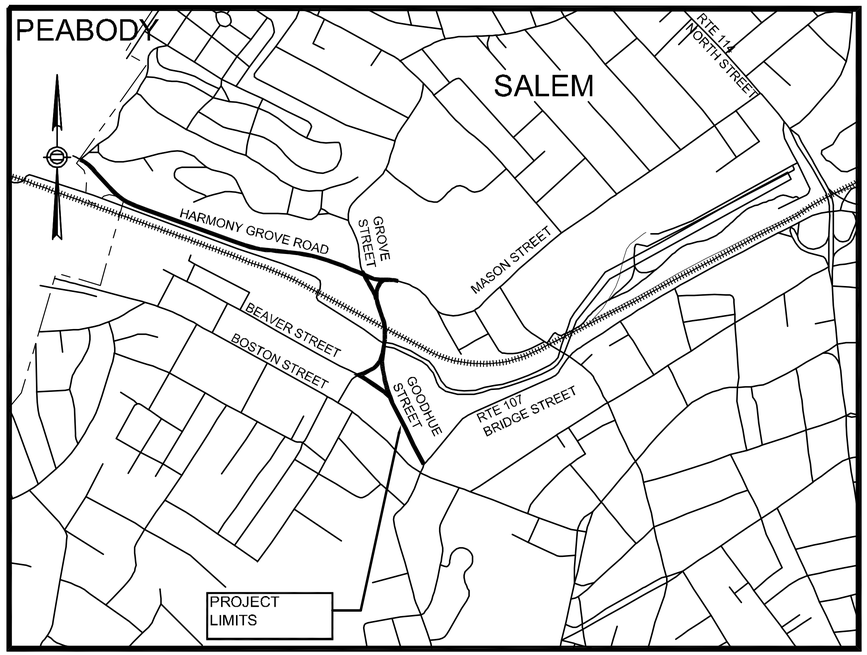
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	01	53
CONTRACT NO. Q-20			

TITLE SHEET & INDEX

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THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JUNE 15, 2012, THE 2012 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS (AS RELATES TO TRAFFIC STANDARD DETAILS ONLY), THE 2009 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.



500 0 500 1000

SCALE 1" = 500'

LENGTH OF PROJECT = 3,510 FEET = 0.66 MILES

DESIGN DESIGNATION

	GROVE STREET
DESIGN SPEED	25 MPH
ADT (2011)	5,630 VPD
ADT (2016)	7,200 VPD
K	8.9%
D	70% NB
DHV	640 VPH
DDHV	450 VPH
T (AVG DAY)	2%
T (PEAK HR)	2%
FUNCTIONAL CLASS	URBAN COLLECTOR

FS&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

ENGINEERS
FST
Since 1914
FAY, SPOFFORD & THORNDIKE
5 BURLINGTON WOODS
BURLINGTON, MA 01803

LEGEND

GENERAL SYMBOLS

EXISTING	PROPOSED	
CB	CB	CATCH BASIN
CI	CI	CURB INLET
	FPL	FLAG POLE
DI	DI	DROP INLET
MB	MB	MAIL BOX
CP		CONCRETE POST
GR		GRANITE POST
GP		GUARD POST (BOLLARD)
MP		METAL POST
FL		FLOW LINE
		MONITORING WELL
		ADJUST MONITORING WELL
HYD		HYDRANT
LPL		LIGHT POLE
UP/LP		UTILITY POLE/LIGHT POLE
DMH		DRAINAGE MANHOLE
SMH		SEWER MANHOLE
		ADJUST MANHOLE
WM		WATER METER
MON		MONUMENT
CB		CONCRETE BOUND
SB		STONE BOUND
DH		DRILL HOLE
		SURVEY CONTROL STATION
		TREE, BUSH OR STUMP
		PROPOSED TREE
FA		FIRE ALARM BOX
		GATE VALVE
		ADJUST GATE VALVE
		CURBING
		DRAIN PIPE
		GAS MAIN
		SEWER MAIN
		WATER MAIN
		WOOD GUARD RAIL
CLF		CHAIN LINK FENCE
		RETAINING WALL
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLAN & OVERLAY
		100 FT WETLAND OR 200 FT RIVERFRONT BUFFER
R.R. S/L ℄ OR APPROX. ℄		RAILROAD SIDELINE PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		TEMPORARY EASEMENT
		COMPOST FILTER TUBES

ABBREVIATIONS

GENERAL

AADT	ANNUAL AVERAGE DAILY TRAFFIC
ABAN	ABANDON
ADJ	ADJUST
ADJBO	ADJUST BY OTHERS
APPROX.	APPROXIMATE
BIT.	BITUMINOUS
BC	BOTTOM OF CURB
BCD	BITUMINOUS CONCRETE DRIVEWAY
BCW	BITUMINOUS CONCRETE SIDEWALK
BL	BASELINE
BLDG	BUILDING
BLSF	BORDERING LAND SUBJECT TO FLOODING
BO	BY OTHERS
BOS	BOTTOM OF SLOPE
CB	CATCH BASIN
CBCI	CATCH BASIN WITH CURB INLET
CEM	CEMENT
CI	CURB INLET
CIP	CAST IRON PIPE
CLF	CHAIN LINK FENCE
CL	CENTERLINE
C.L.	CITY LINE
CMP	CORRUGATED METAL PIPE
CP	CONCRETE PAD
CSP	CORRUGATED STEEL PIPE
CONC	CONCRETE
CONT	CONTINUOUS
CONST	CONSTRUCTION
CRW	CONCRETE RETAINING WALL
CW	CONCRETE WALK
DHV	DESIGN HOURLY VOLUME
DI	DROP INLET
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DWY	DRIVEWAY
ELEV (OR EL.)	ELEVATION
EOP	EDGE OF PAVEMENT
EXIST (OR EX)	EXISTING
EXC	EXCAVATION
F&C	FRAME AND COVER
F&G	FRAME AND GRATE
FDN.	FOUNDATION
FLDSTN	FIELDSTONE
FND	FOUND
GC	GRANITE CURB
GD	GROUND
GG	GAS GATE
GI	GUTTER INLET
GIP	GALVANIZED IRON PIPE
GRAN	GRANITE
GRAV	GRAVEL
GRD	GUARD
HLSD	HEADLIGHT SIGHT DISTANCE
HDW	HEADWALL
HMA	HOT MIX ASPHALT
HOR	HORIZONTAL
HYD	HYDRANT
I OR INV	INVERT
L	LENGTH OF CURVE
LST	LANDSCAPE TIMBER
LT	LEFT
MAG	MAGNETIC
MAX	MAXIMUM
MB	MAIL BOX
MH	MANHOLE
MHR	METAL HAND RAIL
MIN	MINIMUM
N/F	NOW OR FORMERLY
NIC	NOT IN CONTRACT
NO.	NUMBER
NPV	NO PIPE VISIBLE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
P.G.L.	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
PKT	PICKET FENCE
POC	POINT ON CURVE
POT	POINT ON TANGENT
PRC	POINT OF REVERSE CURVATURE
PROJ	PROJECT
PROP	PROPOSED
PT	POINT OF TANGENCY
PTH	PLANIMETER TO HERE
PVC	POINT OF VERTICAL CURVATURE OR POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PVMT	PAVEMENT

GENERAL (CONT.)

R	RADIUS OF CURVATURE, RIM OR RECORD
R&D	REMOVE AND DISPOSE
R&DBO	REMOVE AND DISPOSE BY OTHERS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDWY	ROADWAY
REM	REMOVE
RET	RETAIN
RET WALL	RETAINING WALL
RFA	RIVERFRONT AREA
ROW	RIGHT-OF-WAY
RR	RAILROAD
R&R	REMOVE AND RESET
R&RBO	REMOVE AND RESET BY OTHERS
R&S	REMOVE AND STACK
RT	RIGHT
SESD	SOUTH ESSEX SEWER DISTRICT
SHLDR	SHOULDER
SMH	SEWER MANHOLE
SRW	STONE RETAINING WALL
ST	STREET
STA	STATION
STK	STAKE OR STOCKADE FENCE
SSD	STOPPING SIGHT DISTANCE
SW	SIDEWALK
T	TANGENT DISTANCE OF CURVE/ TRUCK PERCENTAGE
TAN	TANGENT
TEMP	TEMPORARY
TC	TOP OF CURB
TOS	TOP OF SLOPE
TYP	TYPICAL
UG	UNKNOWN GATE
UP	UTILITY POLE
VAR	VARIES
VERT	VERTICAL
VC	VERTICAL CURVE
VCP	VITREOUS CLAY PIPE
WCR	WHEELCHAIR RAMP
WG	WATER GATE
WIF	WROUGHT IRON FENCE
WIP	WROUGHT IRON PIPE
WM	WATER METER/WATER MAIN
X-SECT	CROSS SECTION

GENERAL NOTES

1. FOR TRAFFIC GENERAL NOTES AND LEGEND SEE SHEET 18.
2. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES REQUIRED AND VERIFY THE LOCATION OF ALL EXISTING SUBSURFACE UTILITIES PRIOR TO PERFORMING ANY WORK. THE LOCATION OF EXISTING PIPES OR OTHER UNDERGROUND STRUCTURES 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 OR WWW.DIGSAFE.COM) 72 HOURS (EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS) PRIOR TO ANY EXCAVATION TO OBTAIN ACCURATE UTILITY LOCATIONS.
3. THE CONTRACTOR SHALL NOTE THAT RECORD PLANS INDICATE UTILITIES ARE SHALLOW OVER THE BRIDGE.
4. PRIOR TO THE INSTALLATION OF PROPOSED UTILITIES, THE CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS OF UTILITY CROSSINGS TO VERIFY DEPTHS AND LOCATIONS OF EXISTING PIPES, CONDUITS OR OTHER FACILITIES AND AS REQUIRED BY THE ENGINEER. WORK SHALL BE PAID FOR UNDER ITEM 141.1 TEST PIT FOR EXPLORATION.
5. THE EXISTING SURVEY IS BASED UPON ON-THE-GROUND INSTRUMENT SURVEY MADE DECEMBER, 2013 AND FEBRUARY 2014. 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, CORS ADJUSTMENT (NAD 83/CORS), BASED ON SURVEYING AND MAPPING CONSULTANTS OBSERVATIONS OF THE KEYNET GPS VIRTUAL REFERENCE SYSTEM (VRS) MADE DECEMBER, 2013, USING TRIMBLE GNSS GPS RECEIVERS.
6. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO SALEM CITY BASE VERTICAL DATUM, BASED ON THE ABOVE-NOTED KEYNET GPS VRS OBSERVATIONS, THE ELEVATIONS WHICH WERE CONVERTED FROM THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) TO SALEM CITY BASE USING MASSDOT'S PUBLISHED RELATIONSHIP BETWEEN DATUMS OF 5.17 FT.
7. STREET LINES AND PROPERTY LINES HAVE BEEN COMPILED FROM A COMBINATION OF AVAILABLE PLANS, RECOVERED MONUMENTATION, OCCUPATION AND DIGITAL PARCEL MAPPING OBTAINED FROM MASSGIS AND ARE APPROXIMATE.
8. EXISTING CATCH BASINS AND PIPES TO REMAIN AND WITHIN THE PROJECT LIMITS SHALL BE CLEANED AND PAID FOR UNDER ITEM 227.3 REMOVAL OF DRAINAGE STRUCTURE SEDIMENT AND ITEM 227.31 REMOVAL OF DRAINAGE PIPE SEDIMENT.
9. WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT, THE JOINT SHALL BE SAWCUT TO A NEAT VERTICAL LINE.
10. UNLESS OTHERWISE NOTED ALL PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC IN ACCORDANCE WITH MASSDOT'S LATEST SPECIFICATIONS.
11. SELECTIVE CLEARING AND GRUBBING IS NECESSARY WHERE TREES AND SHRUBS OVERHANG THE PROPOSED SIDEWALK AND AS REQUIRED BY THE CITY. WORK SHALL BE PAID FOR UNDER ITEM 102.61 SELECTIVE CLEARING AND GRUBBING.
12. ITEMS 102.5 ROADSIDE TREE PROTECTION AND 102.51 INDIVIDUAL TREE PROTECTION SHALL BE USED ON EXISTING TREES WITHIN THE PROJECT LIMIT AND TEMPORARY EASEMENT AREAS LABELED AS "RET".
13. ITEM 156. CRUSHED STONE SHALL BE USED UNDER CATCH BASINS AND PIPE IF UNSUITABLE MATERIALS ARE FOUND AND AS DIRECTED BY THE CITY.

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	02	53
CONTRACT NO. Q-20			

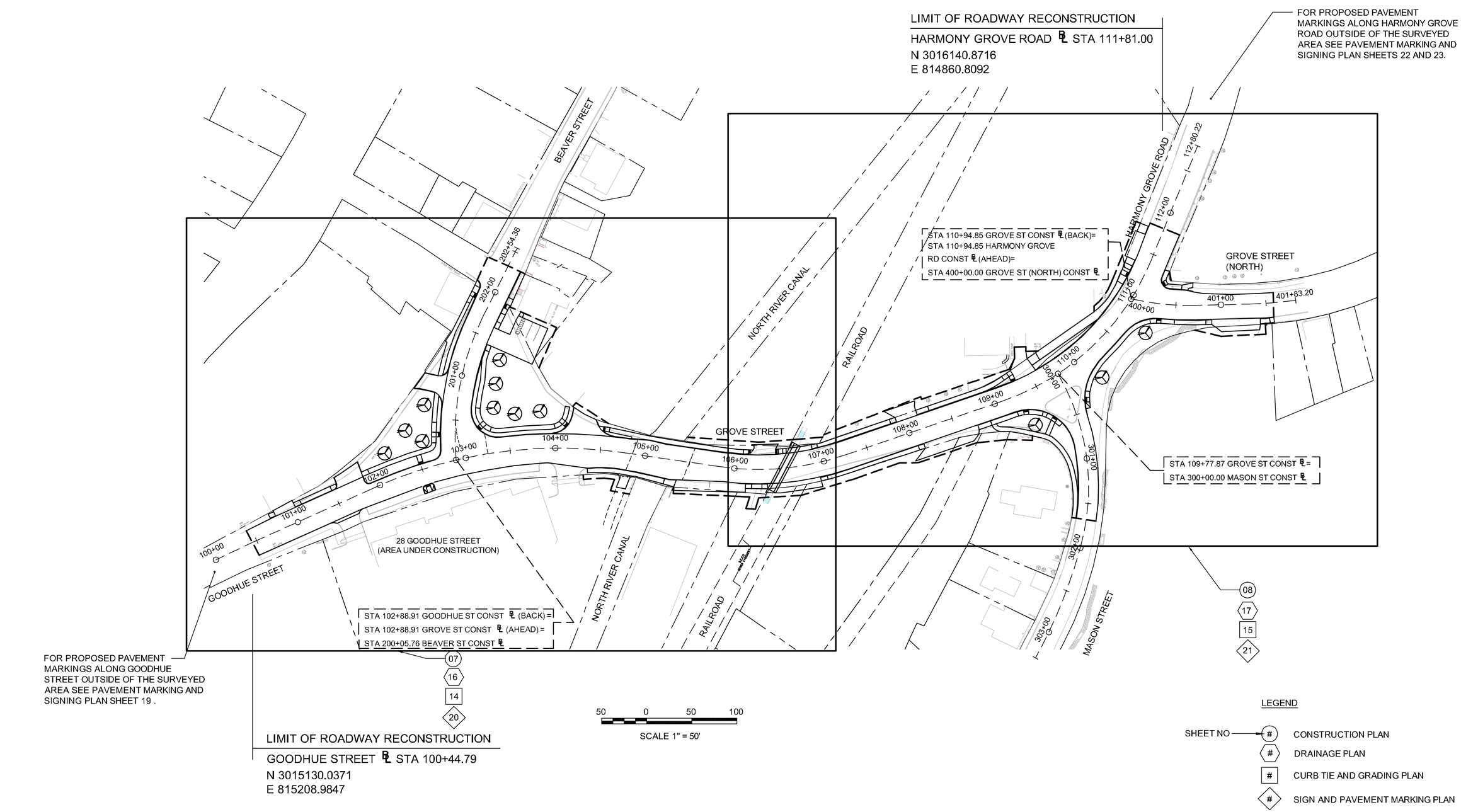
LEGEND, ABBREVIATIONS AND GENERAL NOTES

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

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MASS.	--	03	53
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KEY PLAN

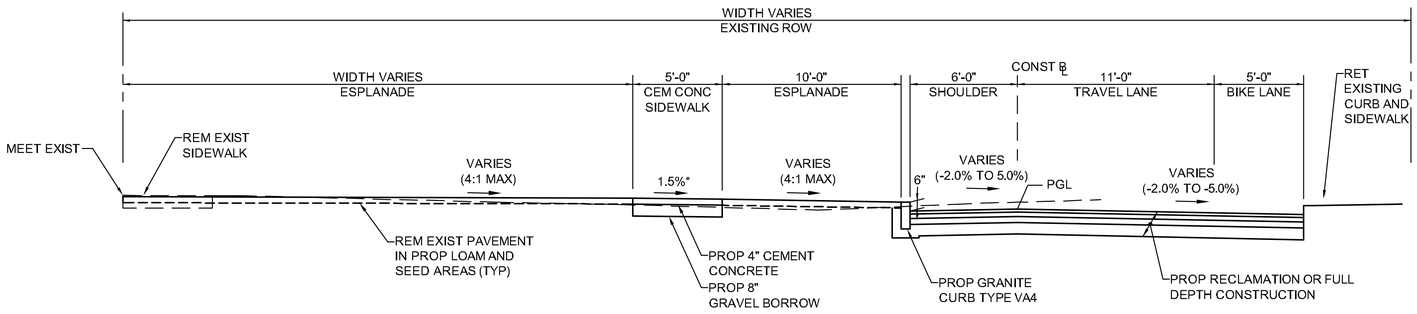


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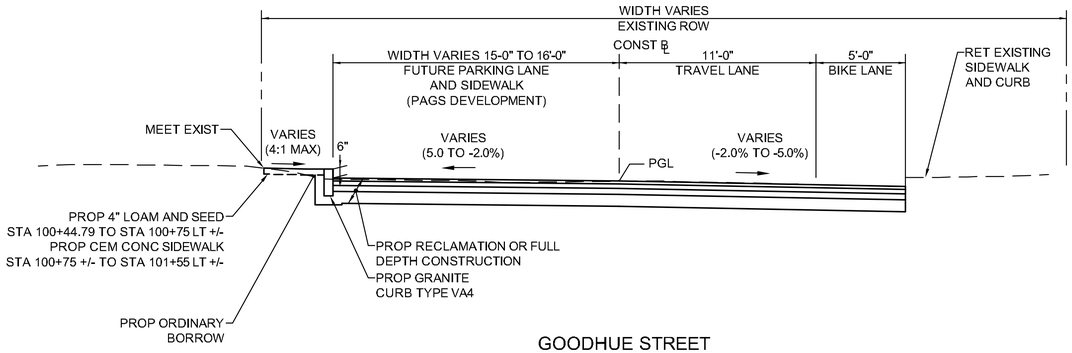
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
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TYPICAL SECTIONS
GOODHUE STREET



GOODHUE STREET
TYPICAL SECTION
STA 101+92+/- TO BEAVER STREET (STA 102+65±)
SCALE: 1" = 4'-0"



GOODHUE STREET
TYPICAL SECTION
STA 100+44.79 TO STA 101+55±
SCALE: 1" = 4'-0"

PAVEMENT NOTES

PROPOSED PAVEMENT MILLING & OVERLAY
(AT LIMITS OF PAVEMENT RECONSTRUCTION - SEE DETAIL SHEET 34)
(ON GROVE STREET IN THE AREA OF THE NORTH RIVER CANAL) 3
2" HMA SURFACE COURSE (SSC-9.5) PLACED
IN ONE LAYER OVER 2" MILLING

PROPOSED RECLAMATION (10" DEPTH)

SURFACE: 4.5 " SUPERPAVE HMA PAVEMENT
PLACED IN TWO (2) LAYERS:
2" SUPERPAVE HMA SURFACE COURSE (SSC-9.5) OVER
2.5" SUPERPAVE HMA INT. COURSE (SIC-12.5) OVER

BASE: 5.5" RECLAIMED BASE MATERIAL

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 4.5 " SUPERPAVE HMA PAVEMENT
PLACED IN TWO (2) LAYERS:
2" SUPERPAVE HMA SURFACE COURSE (SSC-9.5) OVER
2.5" SUPERPAVE HMA INT. COURSE (SIC-12.5) OVER

SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUB-BASE OVER
8" GRAVEL SUBBASE
(GRAVEL BORROW TYPE B OR PROCESSED GRAVEL)

SUBGRADE: AFTER THE EXISTING PAVEMENT HAS BEEN REMOVED FROM WITHIN THE LIMITS OF FULL DEPTH CONSTRUCTION THE SUBGRADE SHALL BE FINE GRADED AND COMPACTED.

PROPOSED CEMENT CONCRETE SIDEWALK & WHEELCHAIR RAMPS

SURFACE: 4" CEMENT CONCRETE
(AIR ENTRAINED 4000 PSI, 0.75", 610)

BASE: 8" GRAVEL BORROW, TYPE B

PROPOSED CEMENT CONCRETE DRIVEWAY

SURFACE: 6" CEMENT CONCRETE
(AIR ENTRAINED 4000 PSI, 0.75", 610)

BASE: 8" GRAVEL BORROW, TYPE B

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 2" SUPERPAVE HMA SURFACE COURSE (SSC-9.5) OVER
2" SUPERPAVE HMA INTERMEDIATE COURSE (SIC 12.5)

BASE: 8" GRAVEL BORROW, TYPE B

PROPOSED HMA DRIVEWAY

SURFACE: 2" SUPERPAVE HMA SURFACE COURSE (SSC-9.5) OVER
2" SUPERPAVE HMA INTERMEDIATE COURSE (SIC 12.5)

BASE: 8" GRAVEL SUBBASE
(GRAVEL BORROW TYPE B OR PROCESSED GRAVEL)

NOTES:
1. FOR WHEELCHAIR RAMP AND DRIVEWAY DETAILS, SEE SHEETS 31 AND 32.
2. FOR LIMITS OF FULL DEPTH CONSTRUCTION VERSUS RECLAMATION, SEE CONSTRUCTION PLAN SHEETS 07 AND 08.

* TOLERANCE FOR CONSTRUCTION ± 0.5%.

4 0 4 8
SCALE 1" = 4'

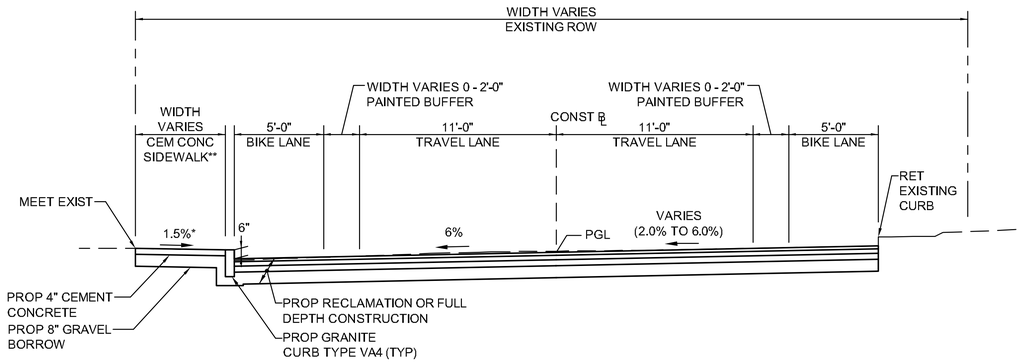
F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

ADDENDUM NO. 3 OCTOBER 3, 2014

SALEM
GROVE STREET IMPROVEMENTS

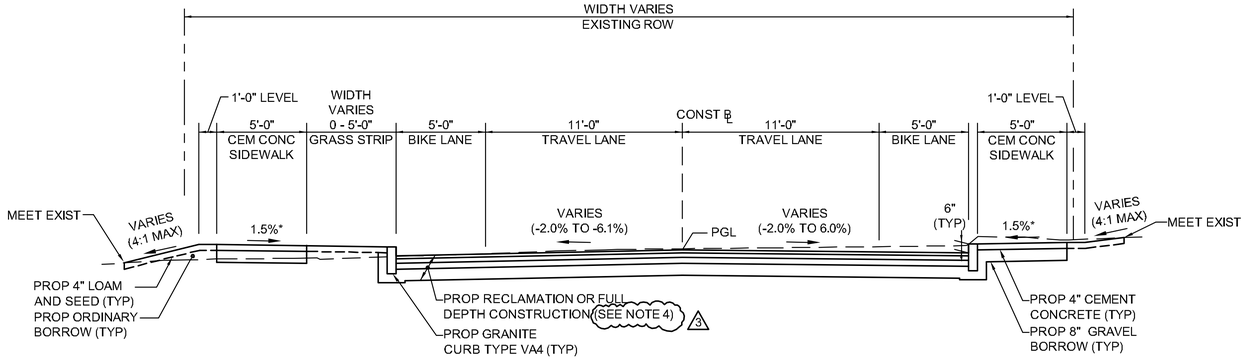
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TYPICAL SECTIONS
GROVE STREET
HARMONY GROVE
ROAD



** PROPOSED CEM CONC DRIVEWAY STATION 111+36 +/- LT TO 111+67 +/- LT

HARMONY GROVE ROAD
TYPICAL SECTION
GROVE ST (NORTH) (STA 110+95+/-) TO STA 111+77
SCALE: 1" = 4'-0"



GROVE STREET
TYPICAL SECTION
BEAVER ST (STA 103+40 +/-) TO GROVE ST (NORTH) (STA 110+95+/-)
SCALE: 1" = 4'-0"

NOTES:
1. FOR PAVEMENT DESIGN NOTES, SEE SHEET 04.
2. FOR WHEELCHAIR RAMP AND DRIVEWAY DETAILS, SEE SHEETS 31 AND 32.
3. FOR LIMITS OF FULL DEPTH CONSTRUCTION VERSUS RECLAMATION, SEE CONSTRUCTION PLAN SHEETS 07 AND 08.
4. FROM STA 104+85 TO STA 105+50, MILL AND OVERLAY ROADWAY SURFACE. SEE CONSTRUCTION PLAN SHEET 07.

3

* TOLERANCE FOR CONSTRUCTION ± 0.5%.

4 0 4 8
SCALE 1" = 4'

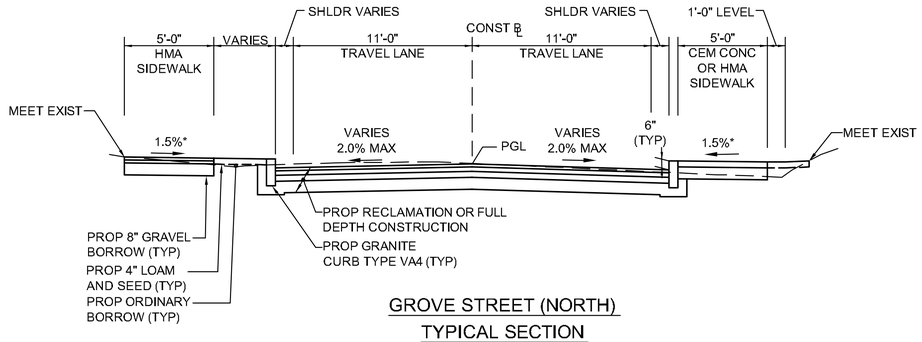
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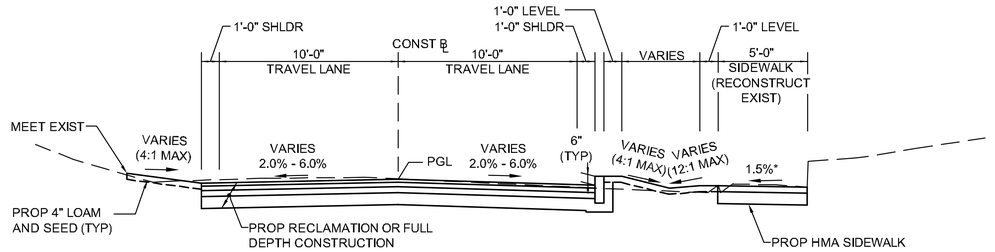
SALEM
GROVE STREET IMPROVEMENTS

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MASS.	--	06	53
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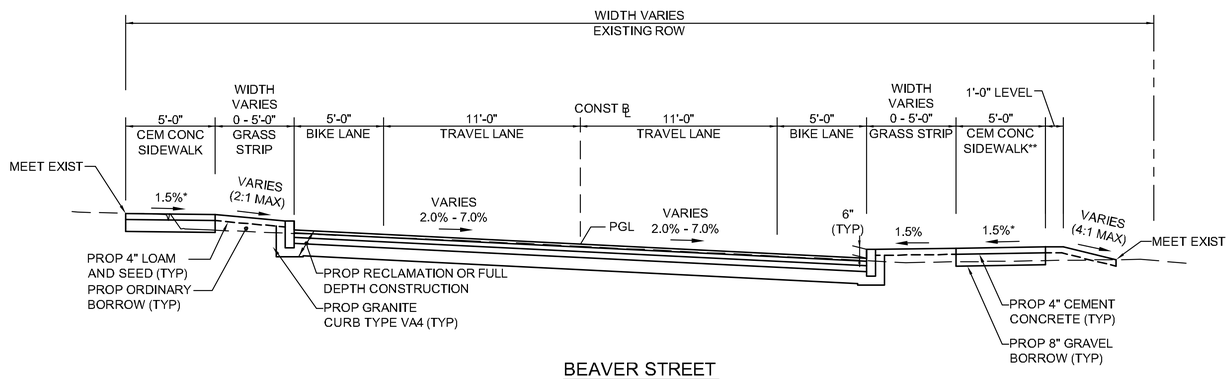
TYPICAL SECTIONS
BEAVER STREET
MASON STREET



GROVE STREET (NORTH)
TYPICAL SECTION



MASON STREET
TYPICAL SECTION



BEAVER STREET
TYPICAL SECTION

NOTES:
1. FOR PAVEMENT DESIGN NOTES, SEE SHEET 04.
2. FOR WHEELCHAIR RAMP AND DRIVEWAY DETAILS, SEE SHEETS 31 AND 32.
3. FOR LIMITS OF FULL DEPTH CONSTRUCTION VERSUS RECLAMATION, SEE CONSTRUCTION PLAN SHEETS 07 AND 08.

* TOLERANCE FOR CONSTRUCTION ± 0.5%.

4 0 4 8
SCALE 1" = 4'

F&T DWG. NO.			
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DES		CHK	
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SALEM
GROVE STREET IMPROVEMENTS

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CONSTRUCTION PLAN
PART 1 OF 2

GROVE STREET
BEAVER STREET
LIMIT OF WORK
BEAVER STREET ℄ STA 202+32.31
MEET EXIST
PROP SAWCUT
RET CURB STONE
PROP CEM CONC WCR (TYP)
PROP LOAM & SEED
PROP FULL DEPTH PAVEMENT RECONSTRUCTION
RETAIN EXIST RETAINING WALL
REMOVE STUMP
RET EXIST FENCE
PROP CEM CONC WALK
RET EXIST GRAN STEP
PROP TEMP EASEMENT
PROP HMA
PROP CEM CONC DRIVEWAY
REM EXIST SIDEWALK AND PAVEMENT PROP LOAM & SEED
REMOVE EXIST SIDEWALK
PROP BIKE PATH (BY OTHERS)
BLSF
WORK BY OTHERS
NORTH RIVER CANAL
BANK
R&S EXIST GRAN CURB
PROP TEMP EASEMENT
PROP SLOPE LIMIT (TYP)
PROP COMPOST FILTER TUBE (TYP)
PROP HMA DRIVEWAY
RET EXIST CONSTRUCTION FENCE
R&S CURB STONES (TYP)
PROP CEM CONC DRIVEWAY
PROP HMA DRIVEWAY
PROP CEM CONC WALK (TYP)
100 FT BUFFER TO BLSF
WORK BY OTHERS
REMOVE EXIST SIDEWALK AND PAVEMENT
PROP LOAM & SEED
PROP APPROX TREE LOCATION SEE LANDSCAPE PLANS SHEETS 29 AND 30 (TYP)
R&S EXIST CURB (TYP)
PROP CEM CONC WCR
PTH
PROP GRAN CURB TYPE VA4 (TYP)
L=284.39'
R=501.00'
CONST ℄
L=164.92'
R=299.00'
PROP SAWCUT AT BACK OF DRIVEWAY (TYP)
PROP HMA DRIVEWAY
RET EXIST CLF
PROP MILL AND OVERLAY
PROP PAVEMENT RECLAMATION
GROVE STREET
CONTINUED ON SHEET NO. 08
FOR PROPOSED PAVEMENT MARKINGS ALONG GOODHUE STREET OUTSIDE OF THE SURVEYED AREA SEE PAVEMENT MARKING AND SIGNING PLAN SHEET19.
PROP HMA DRIVEWAY
PROP CEM CONC DRIVEWAY
R&S EXIST CURB STONES (TYP)
PROP COMPOST FILTER TUBE (TYP)
PROP GRAN CURB TYPE VA4 (TYP)
PROP HMA DRIVEWAY
PROP CEM CONC DRIVEWAY
PROP CEM CONC TRANSITION
PROP SAWCUT
PROP LOAM & SEED
PROP CEM CONC SIDEWALK
PROP PAVEMENT RECLAMATION
PROP SAWCUT
PROP CEM CONC WCR (MEET 28 GOODHUE ST GRADES)
PROP TEMP EASEMENT
PROP HMA BIKE PATH
PROP MODIFIED ROCK FILL
RETAIN EXIST BOLLARDS
PROP CEM CONC WCR (TYP)
200 FT RFA
PROP COMPOST FILTER TUBE (TYP)
28 GOODHUE STREET AREA UNDER CONSTRUCTION
100 FT BUFFER TO BANK
PROP BIKE PATH (BY OTHERS)
PROP SAWCUT AT BACK OF DRIVEWAY (TYP)
PROP HMA DRIVEWAY
PROP TEMP EASEMENT
PROP CEM CONC DRIVEWAY
PROP CEM CONC SIDEWALK
REM DAMAGED CLF PANEL
PROP LOAM & SEED
AT GRADE RUBBERIZED CROSSING PANELS (BY OTHERS)
RAILROAD
GOODHUE STREET
RET CURB & SIDEWALK
28 GOODHUE STREET AREA UNDER CONSTRUCTION
PROP HMA DRIVEWAY
RET CURB & SIDEWALK (BY OTHERS)

STA 102+88.91 GOODHUE ST CONST ℄ (BACK) =
STA 102+88.91 GROVE ST CONST ℄ (AHEAD) =
STA 200+05.76 BEAVER ST CONST ℄

LIMIT OF ROADWAY RECONSTRUCTION
GOODHUE STREET ℄ STA 100+44.79
N 3015130.0371
E 815208.9847
MEET EXISTING

NOTES:
1. FOR PROFILES SEE SHEETS 09 THROUGH 13.
2. FOR DISPOSITION OF EXISTING UTILITIES, SEE DRAINAGE AND UTILITY PLANS SHEETS 16 AND 17.
3. FOR DRIVEWAY AND DRIVEWAY RAMP DETAILS, SEE SHEET 32.

SCALE 1" = 20'

F.S.&T. DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

[McLaug_J] – April 17, 2015 – 11:53am – T:\LG-423B Salem Grove St\Drawings\Grove St Construction Plan.dwg [Sht 01]

ADDENDUM NO. 3 OCTOBER 3, 2014

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	08	53
CONTRACT NO. Q-20			

CONSTRUCTION PLAN
PART 2 OF 2

FOR PROPOSED PAVEMENT MARKINGS ALONG HARMONY GROVE ROAD OUTSIDE OF THE SURVEYED AREA SEE PAVEMENT MARKING AND SIGNING PLAN SHEETS 22 AND 23.

LIMIT OF ROADWAY RECONSTRUCTION
HARMONY GROVE ROAD ℄ STA 111+81.00
N 3016140.8716
E 814860.8092
MEET EXISTING

LIMIT OF WORK
GROVE STREET (NORTH)
℄ STA 401+58.20
MEET EXISTING

CONTINUED ON SHEET NO. 07

NORTH RIVER CANAL

WORK BY OTHERS

PROP TEMP EASEMENT

PROP GRAN CURB TYPE VA4

PROP HMA DRIVEWAY

PROP CEM CONC SIDEWALK

PROP CEM CONC SIDEWALK (TYP)

R&R EXIST FENCE

RET TREES

PROP SLOPE LIMIT (TYP)

PROP CEM CONC DRIVEWAY

PROP HMA DRIVEWAY

PROP GRAN CURB TYPE VA4 (TYP)

R&R EXIST FENCE

PROP COMPOST FILTER TUBE (TYP)

PROP HMA DRIVEWAY

PROP CEM CONC DRIVEWAY

AT GRADE RUBBERIZED CROSSING PANELS (BY OTHERS)

PROP CEM CONC SIDEWALK

PROP LOAM & SEED

PROP LOAM & SEED

PROP COMPOST FILTER TUBE (TYP)

PROP CEM CONC SIDEWALK

PROP GRAN CURB TYPE VA4 (TYP)

PROP TEMP EASEMENT

PROP CEM CONC DRIVEWAY

PROP HMA DRIVEWAY

PROP LOAM & SEED

PROP PAVEMENT RECLAMATION

PROP CEM CONC SIDEWALK

PROP GRASS SWALE

PROP HMA DRIVEWAY

RETAIN EXIST WALL

PROP FULL DEPTH ROADWAY CONSTRUCTION

PROP CEM CONC DRIVEWAY

R&R BOUND

RETAIN EXIST STEP

RETAIN EXIST RAIL

PROP LOAM & SEED

100 FT BUFFER TO BLSF

100 FT BUFFER TO BANK

BLSF

200 FT RFA

PROP HMA DRIVEWAY

PROP CEM CONC SIDEWALK

PROP HMA WALK

REMOVE EXIST PAVEMENT
PROP LOAM & SEED

PROP FULL DEPTH ROADWAY CONSTRUCTION

PROP SAWCUT

PROP TEMP EASEMENT

PROP CEM CONC DRIVEWAY

PROP HMA DRIVEWAY

PROP HMA SIDEWALK

REMOVE EXIST PAVEMENT
PROP LOAM & SEED

PROP SLOPE LIMIT (TYP)

PROP TREE - SEE LANDSCAPE PLAN SHEETS 29 AND 30 (TYP)

PROP CEM CONC SIDEWALK (TYP)

PROP GRAN CURB TYPE VA4 (TYP)

PROP CEM CONC WCR (TYP)

PROP SAWCUT

PROP FULL DEPTH ROADWAY CONSTRUCTION

PROP HMA DRIVEWAY

PROP CEM CONC SIDEWALK

PROP HMA SIDEWALK

PROP LOAM & SEED

PROP HMA SIDEWALK

PROP LOAM & SEED

PROP CEM CONC SIDEWALK

PROP HMA DRIVEWAY

PROP CEM CONC DRIVEWAY

PROP GRAN CURB TYPE VA4

PROP HMA DRIVEWAY

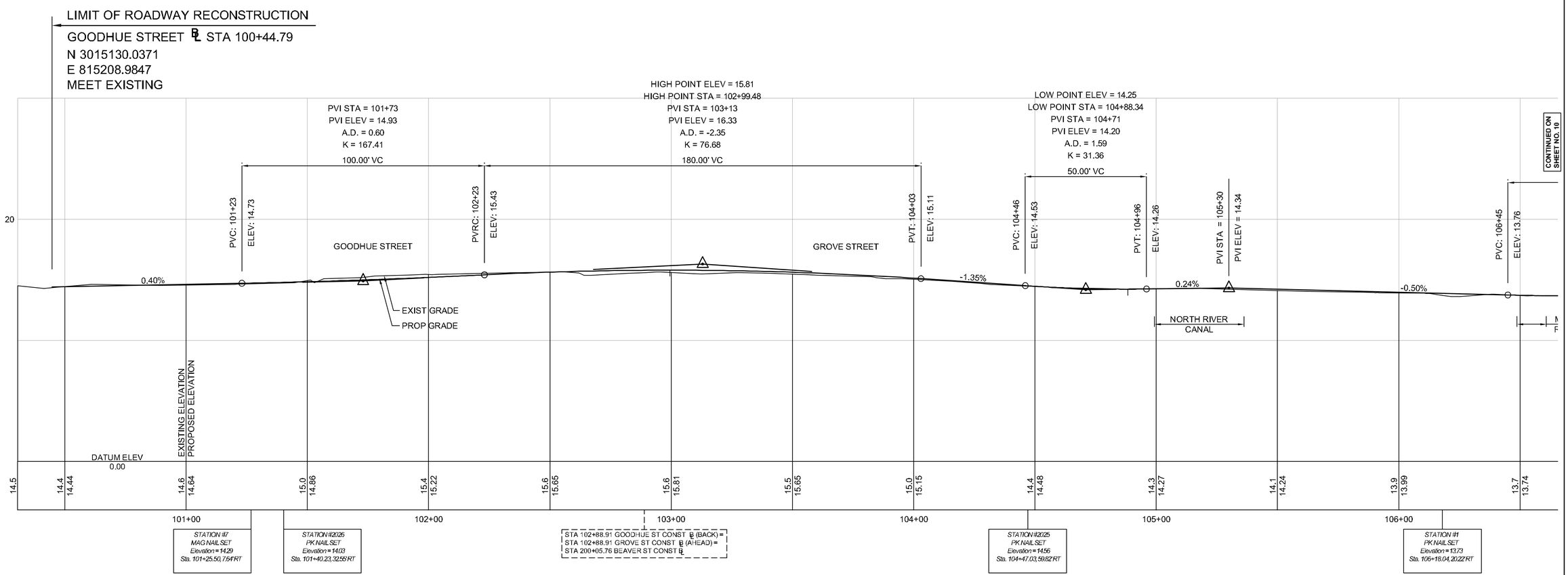
PROP CEM CONC DRIVEWAY

PROP HMA WALK

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	09	53
CONTRACT NO. Q-20			

PROFILES



GOODHUE STREET/ GROVE STREET

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 07

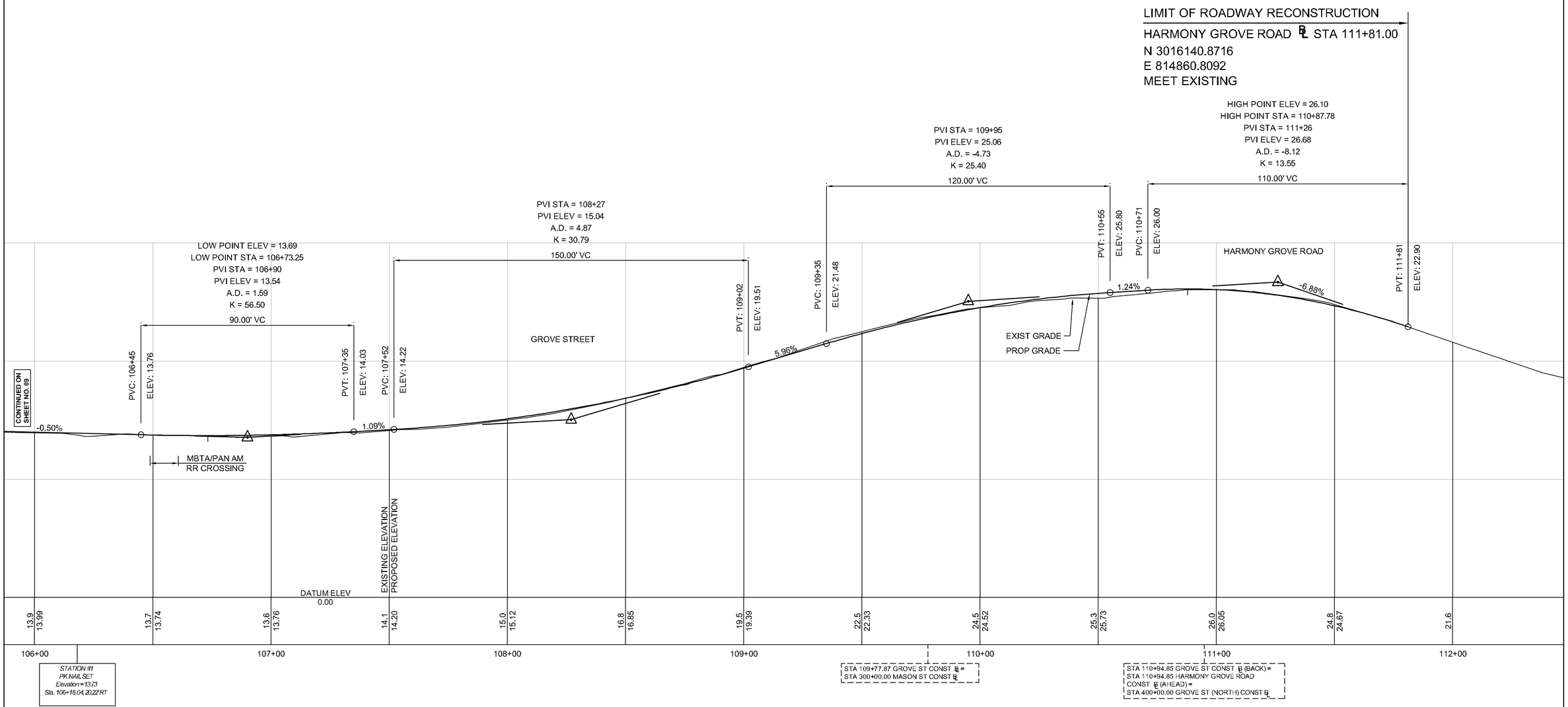
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	10	53
CONTRACT NO. Q-20			

PROFILES



GROVE STREET/
HARMONY GROVE ROAD

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 08

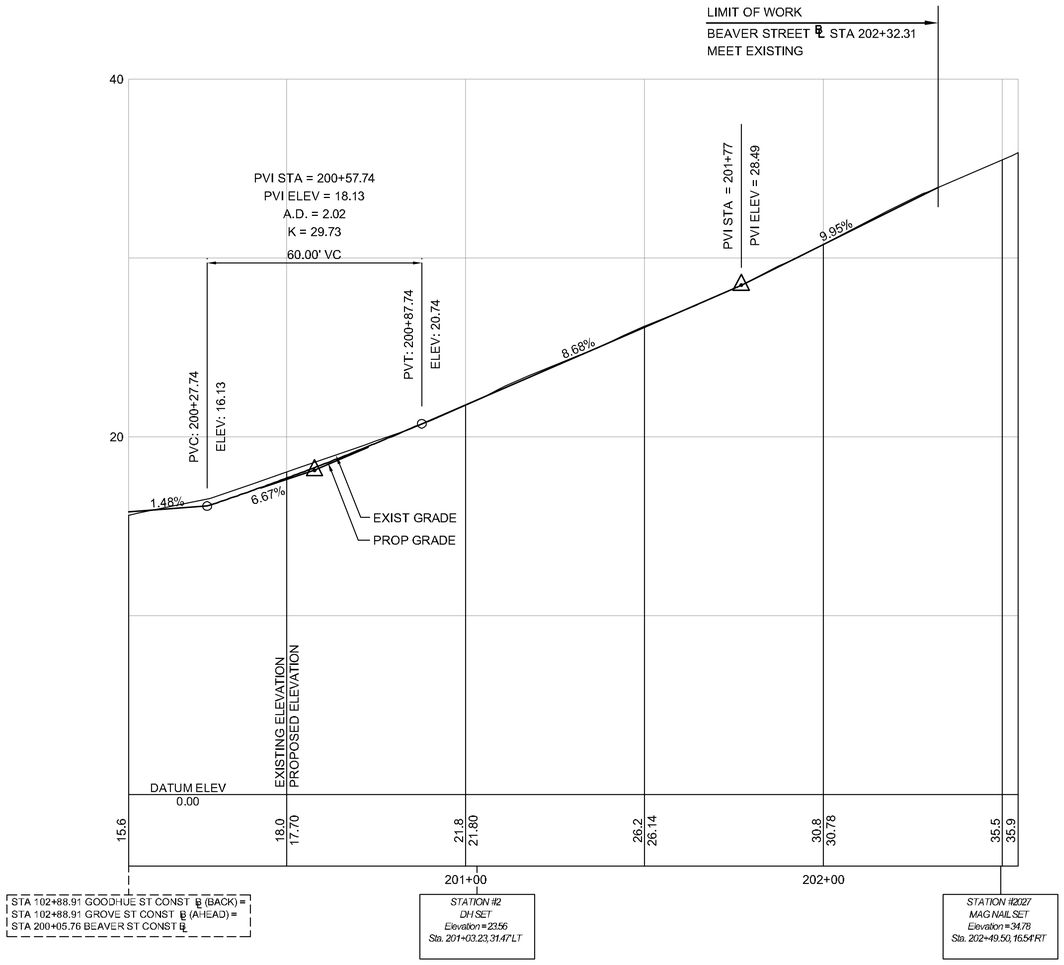
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

FS&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	11	53
CONTRACT NO. Q-20			

PROFILES



BEAVER STREET

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 07

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

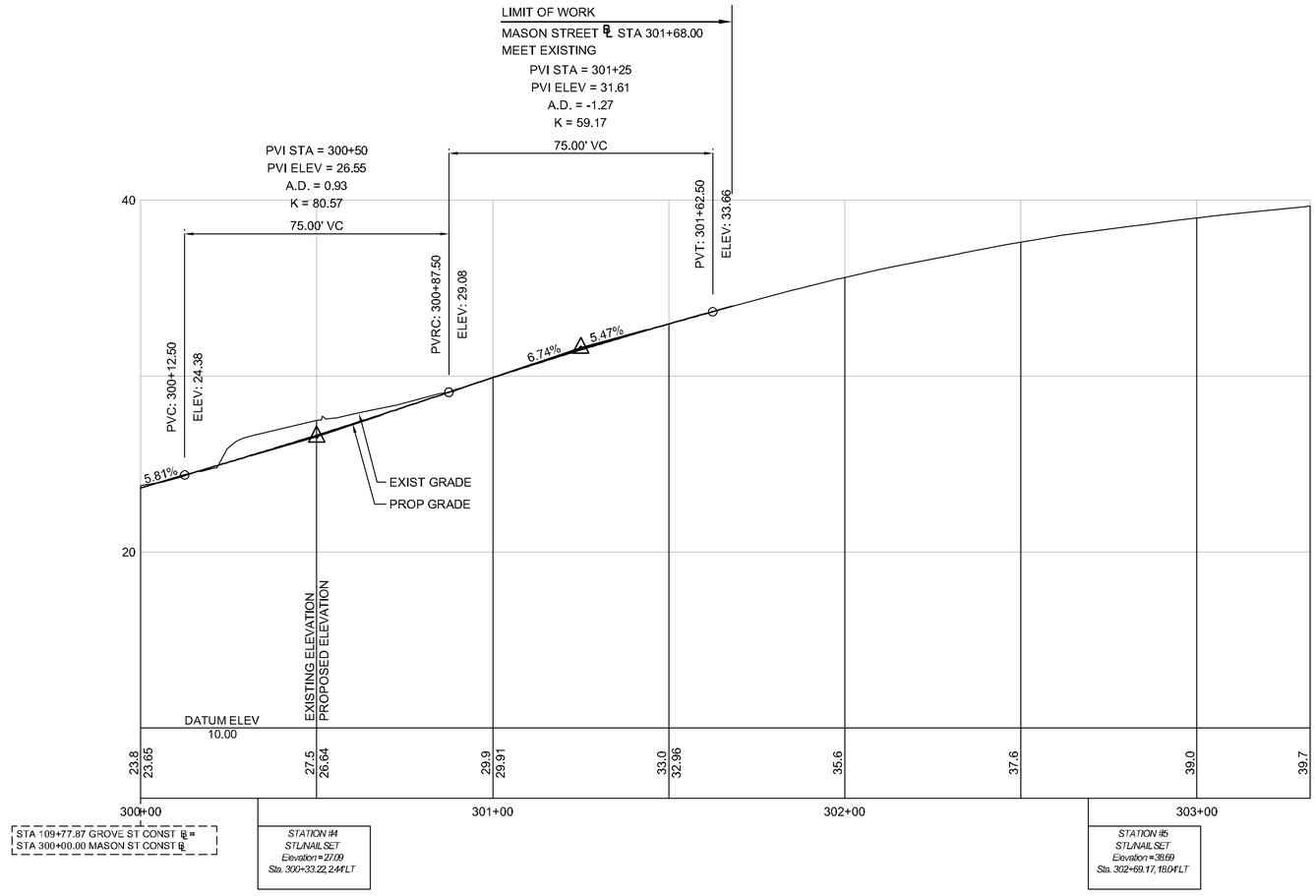
F&T DWG. NO.
LG-423B
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE

[McLaug_J] – April 17, 2015 – 11:53am – T:\LG–423B Salem Grove St\Drawings\Grove St Profiles.dwg [Beaver St]

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	12	53
CONTRACT NO. Q-20			

PROFILES



MASON STREET

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 08

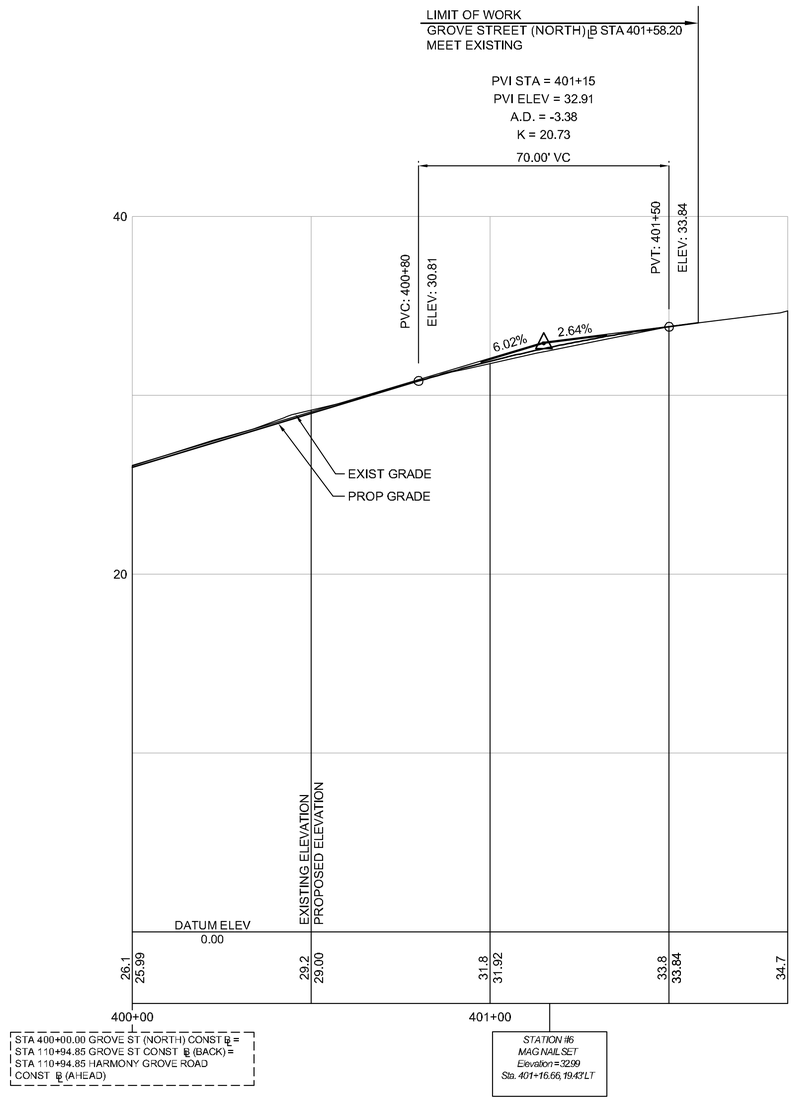
HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	13	53
CONTRACT NO. Q-20			

PROFILES



GROVE STREET (NORTH)

FOR CONSTRUCTION PLAN:
SEE SHEET NO. 08

HORIZONTAL
20 0 20 40
4 0 4 8
VERTICAL
SCALE IN FEET

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	14	53
CONTRACT NO. Q-20			

CURB TIE AND GRADING PLAN
PART 1 OF 2

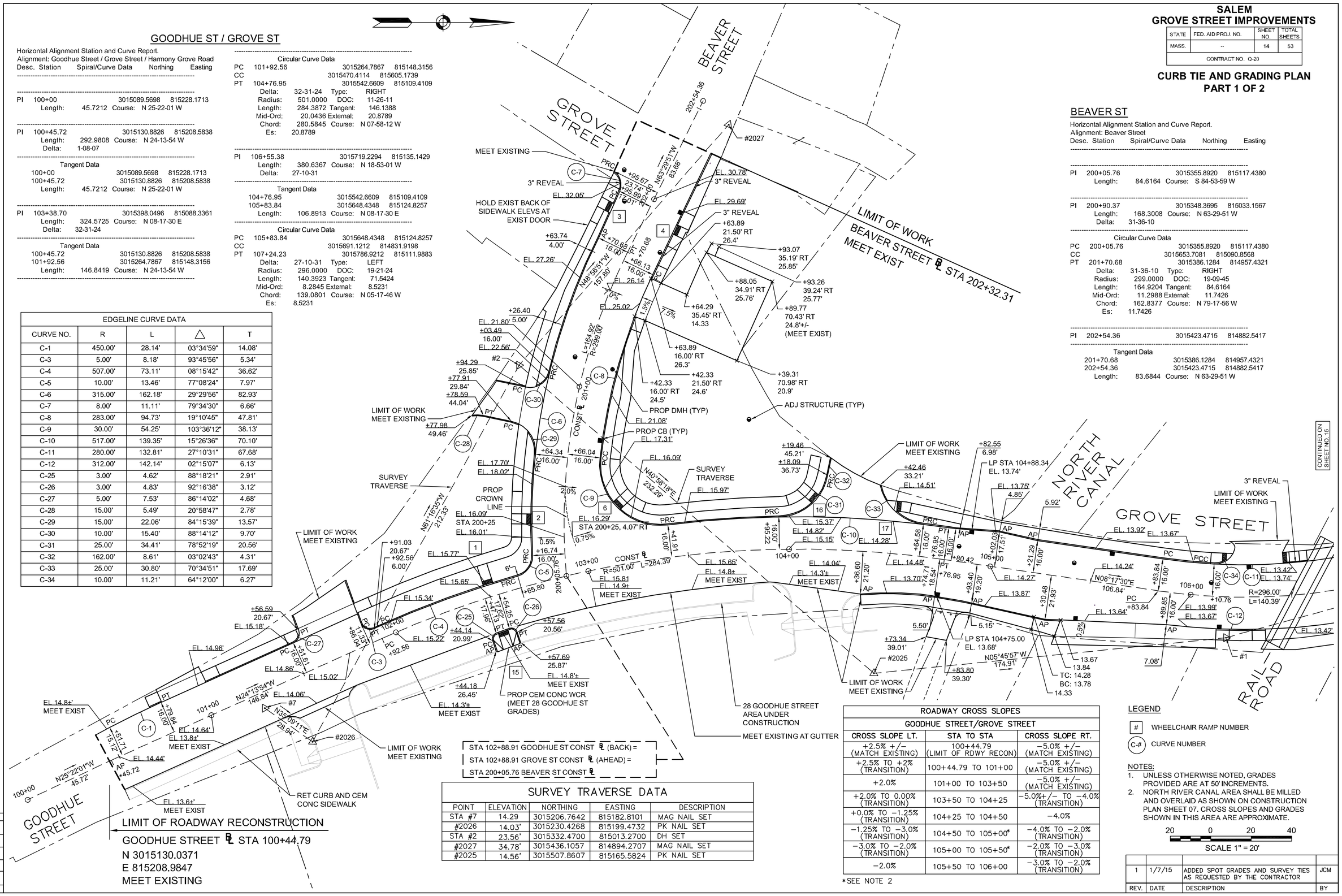
GOODHUE ST / GROVE ST

Horizontal Alignment Station and Curve Report.
Alignment: Goodhue Street / Grove Street / Harmony Grove Road

Desc.	Station	Spiral/Curve Data	Northing	Easting
PI	100+00		3015089.5698	815228.1713
	Length:	45.7212 Course: N 25-22-01 W		
PI	100+45.72		3015130.8826	815208.5838
	Length:	292.9808 Course: N 24-13-54 W		
	Delta:	1-08-07		
	Tangent Data			
	100+00		3015089.5698	815228.1713
	100+45.72		3015130.8826	815208.5838
	Length:	45.7212 Course: N 25-22-01 W		
PI	103+38.70		3015398.0496	815088.3361
	Length:	324.5725 Course: N 08-17-30 E		
	Delta:	32-31-24		
	Tangent Data			
	100+45.72		3015130.8826	815208.5838
	101+92.56		3015264.7867	815148.3156
	Length:	146.8419 Course: N 24-13-54 W		

	Circular Curve Data			
PC	101+92.56		3015264.7867	815148.3156
CC			3015470.4114	815605.1739
PT	104+76.95		3015542.6609	815109.4109
	Delta:	32-31-24 Type: RIGHT		
	Radius:	501.0000 DOC: 11-26-11		
	Length:	284.3872 Tangent: 146.1388		
	Mid-Ord:	20.0436 External: 20.8789		
	Chord:	280.5845 Course: N 07-58-12 W		
	Es:	20.8789		
PI	106+55.38		3015719.2294	815135.1429
	Length:	380.6367 Course: N 18-53-01 W		
	Delta:	27-10-31		
	Tangent Data			
	104+76.95		3015542.6609	815109.4109
	105+83.84		3015648.4348	815124.8257
	Length:	106.8913 Course: N 08-17-30 E		
	Circular Curve Data			
PC	105+83.84		3015648.4348	815124.8257
CC			3015691.1212	814831.9198
PT	107+24.23		3015786.9212	815111.9883
	Delta:	27-10-31 Type: LEFT		
	Radius:	296.0000 DOC: 19-21-24		
	Length:	140.3923 Tangent: 71.5424		
	Mid-Ord:	8.2845 External: 8.5231		
	Chord:	139.0801 Course: N 05-17-46 W		
	Es:	8.5231		

EDGELINE CURVE DATA				
CURVE NO.	R	L	△	T
C-1	450.00'	28.14'	03°34'59"	14.08'
C-3	5.00'	8.18'	93°45'56"	5.34'
C-4	507.00'	73.11'	08°15'42"	36.62'
C-5	10.00'	13.46'	77°08'24"	7.97'
C-6	315.00'	162.18'	29°29'56"	82.93'
C-7	8.00'	11.11'	79°34'30"	6.66'
C-8	283.00'	94.73'	19°10'45"	47.81'
C-9	30.00'	54.25'	103°36'12"	38.13'
C-10	517.00'	139.35'	15°26'36"	70.10'
C-11	280.00'	132.81'	27°10'31"	67.68'
C-12	312.00'	142.14'	02°15'07"	6.13'
C-25	3.00'	4.62'	88°18'21"	2.91'
C-26	3.00'	4.83'	92°16'38"	3.12'
C-27	5.00'	7.53'	86°14'02"	4.68'
C-28	15.00'	5.49'	20°58'47"	2.78'
C-29	15.00'	22.06'	84°15'39"	13.57'
C-30	10.00'	15.40'	88°14'12"	9.70'
C-31	25.00'	34.41'	78°52'19"	20.56'
C-32	162.00'	8.61'	03°02'43"	4.31'
C-33	25.00'	30.80'	70°34'51"	17.69'
C-34	10.00'	11.21'	64°12'00"	6.27'



SURVEY TRAVERSE DATA				
POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
STA #7	14.29	3015206.7642	815182.8101	MAG NAIL SET
#2026	14.03'	3015230.4268	815199.4732	PK NAIL SET
STA #2	23.56'	3015332.4700	815013.2700	DH SET
#2027	34.78'	3015436.1057	814894.2707	MAG NAIL SET
#2025	14.56'	3015507.8607	815165.5824	PK NAIL SET

ROADWAY CROSS SLOPES		
GOODHUE STREET/GROVE STREET		
CROSS SLOPE LT.	STA TO STA	CROSS SLOPE RT.
+2.5% +/- (MATCH EXISTING)	100+44.79 (LIMIT OF RDWY RECON)	-5.0% +/- (MATCH EXISTING)
+2.5% TO +2% (TRANSITION)	100+44.79 TO 101+00	-5.0% +/- (MATCH EXISTING)
+2.0%	101+00 TO 103+50	-5.0% +/- (MATCH EXISTING)
+2.0% TO 0.00% (TRANSITION)	103+50 TO 104+25	-5.0%+/- TO -4.0% (TRANSITION)
+0.0% TO -1.25% (TRANSITION)	104+25 TO 104+50	-4.0%
-1.25% TO -3.0% (TRANSITION)	104+50 TO 105+00*	-4.0% TO -2.0% (TRANSITION)
-3.0% TO -2.0% (TRANSITION)	105+00 TO 105+50*	-2.0% TO -3.0% (TRANSITION)
-2.0%	105+50 TO 106+00	-3.0% TO -2.0% (TRANSITION)

*SEE NOTE 2

BEAVER ST

Horizontal Alignment Station and Curve Report.
Alignment: Beaver Street

Desc.	Station	Spiral/Curve Data	Northing	Easting
PI	200+05.76		3015355.8920	815117.4380
	Length:	84.6164 Course: S 84-53-59 W		
PI	200+90.37		3015348.3695	815033.1567
	Length:	168.3008 Course: N 63-29-51 W		
	Delta:	31-36-10		
	Circular Curve Data			
PC	200+05.76		3015355.8920	815117.4380
CC			3015653.7081	815090.8568
PT	201+70.68		3015386.1284	814957.4321
	Delta:	31-36-10 Type: RIGHT		
	Radius:	299.0000 DOC: 19-09-45		
	Length:	164.9204 Tangent: 84.6164		
	Mid-Ord:	11.2988 External: 11.7426		
	Chord:	162.8377 Course: N 79-17-56 W		
	Es:	11.7426		
PI	202+54.36		3015423.4715	814882.5417
	Tangent Data			
	201+70.68		3015386.1284	814957.4321
	202+54.36		3015423.4715	814882.5417
	Length:	83.6844 Course: N 63-29-51 W		

LEGEND

[#] WHEELCHAIR RAMP NUMBER

(C-#) CURVE NUMBER

NOTES:
1. UNLESS OTHERWISE NOTED, GRADES PROVIDED ARE AT 50' INCREMENTS.
2. NORTH RIVER CANAL AREA SHALL BE MILLED AND OVERLAID AS SHOWN ON CONSTRUCTION PLAN SHEET 07. CROSS SLOPES AND GRADES SHOWN IN THIS AREA ARE APPROXIMATE.

20 0 20 40
SCALE 1" = 20'

FS&T DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

REV.	DATE	DESCRIPTION	BY
1	1/7/15	ADDED SPOT GRADES AND SURVEY TIES AS REQUESTED BY THE CONTRACTOR	JCM

[McLaug_J] – April 17, 2015 – 11:54am – T:\LG-423B Salem Grove St\Drawings\Grove St Curb Tie Grading.dwg [CTG 1]

CONSTRUCTION UPDATE NO. 01

GROVE ST / HARMONY GROVE ROAD

Horizontal Alignment Station and Curve Report.
Alignment: Grove Street / Harmony Grove Road

Desc.	Station	Spiral/Curve Data	Northing	Easting
PI	106+55.38		3015719.2294	815135.1429
	Length: 380.6367	Course: N 18-53-01 W		
	Delta: 27-10-31			
	Tangent Data			
	104+76.95		3015542.6609	815109.4109
	105+83.84		3015648.4348	815124.8257
	Length: 106.8913	Course: N 08-17-30 E		
	Circular Curve Data			
PC	105+83.84		3015648.4348	815124.8257
CC			3015691.1212	814831.9198
PT	107+24.23		3015786.9212	815111.9883
	Delta: 27-10-31	Type: LEFT		
	Radius: 296.0000	DOC: 19-21-24		
	Length: 140.3923	Tangent: 71.5424		
	Mid-Ord: 8.2845	External: 8.5231		
	Chord: 139.0801	Course: N 05-17-46 W		
	Es: 8.5231			
PI	110+33.33		3016079.3792	815011.9503
	Length: 262.3886	Course: N 67-51-39 W		
	Delta: 48-58-38			
	Tangent Data			
	107+24.23		3015786.9212	815111.9883
	109+07.61		3015960.4316	815052.6374
	Length: 183.3805	Course: N 18-53-01 W		
	Circular Curve Data			
PC	109+07.61		3015960.4316	815052.6374
CC			3015871.1046	814791.4925
PT	111+43.54		3016126.7554	814895.5052
	Delta: 48-58-38	Type: LEFT		
	Radius: 276.0000	DOC: 20-45-34		
	Length: 235.9280	Tangent: 125.7138		
	Mid-Ord: 24.8278	External: 27.2820		
	Chord: 228.8102	Course: N 43-22-20 W		
	Es: 27.2820			
PI	112+80.22		3016178.2624	814768.9073
	Tangent Data			
	111+43.54		3016126.7554	814895.5052
	112+80.22		3016178.2624	814768.9073
	Length: 136.6748	Course: N 67-51-39 W		

MASON ST

Horizontal Alignment Station and Curve Report.
Alignment: Mason Street

Desc.	Station	Spiral/Curve Data	Northing	Easting
PI	300+00		3016023.3151	815021.7270
	Length: 104.6837	Course: N 59-45-58 E		
PI	301+04.68		3016076.0267	815112.1713
	Length: 171.9584	Course: S 74-47-33 E		
	Delta: 45-26-29			
	Circular Curve Data			
PC	300+00		3016023.3151	815021.7270
CC			3015807.3210	815147.6101
PT	301+98.28		3016048.5664	815213.1892
	Delta: 45-26-29	Type: RIGHT		
	Radius: 250.0000	DOC: 22-55-06		
	Length: 198.2761	Tangent: 104.6837		
	Mid-Ord: 19.4005	External: 21.0326		
	Chord: 193.1202	Course: N 82-29-13 E		
	Es: 21.0326			
PI	302+65.55		3016030.9192	815278.1080
	Length: 67.2747	Course: S 61-12-43 E		
	Delta: 13-34-50			
	Circular Curve Data			
PC	301+98.28		3016048.5664	815213.1892
CC			3015503.3517	815064.9803
PT	303+32.19		3015998.5216	815337.0680
	Delta: 13-34-50	Type: RIGHT		
	Radius: 565.0000	DOC: 10-08-27		
	Length: 133.9188	Tangent: 67.2747		
	Mid-Ord: 3.9631	External: 3.9911		
	Chord: 133.6055	Course: S 68-00-08 E		
	Es: 3.9911			
PI	303+32.19		3015998.5216	815337.0680

GROVE ST (NORTH)

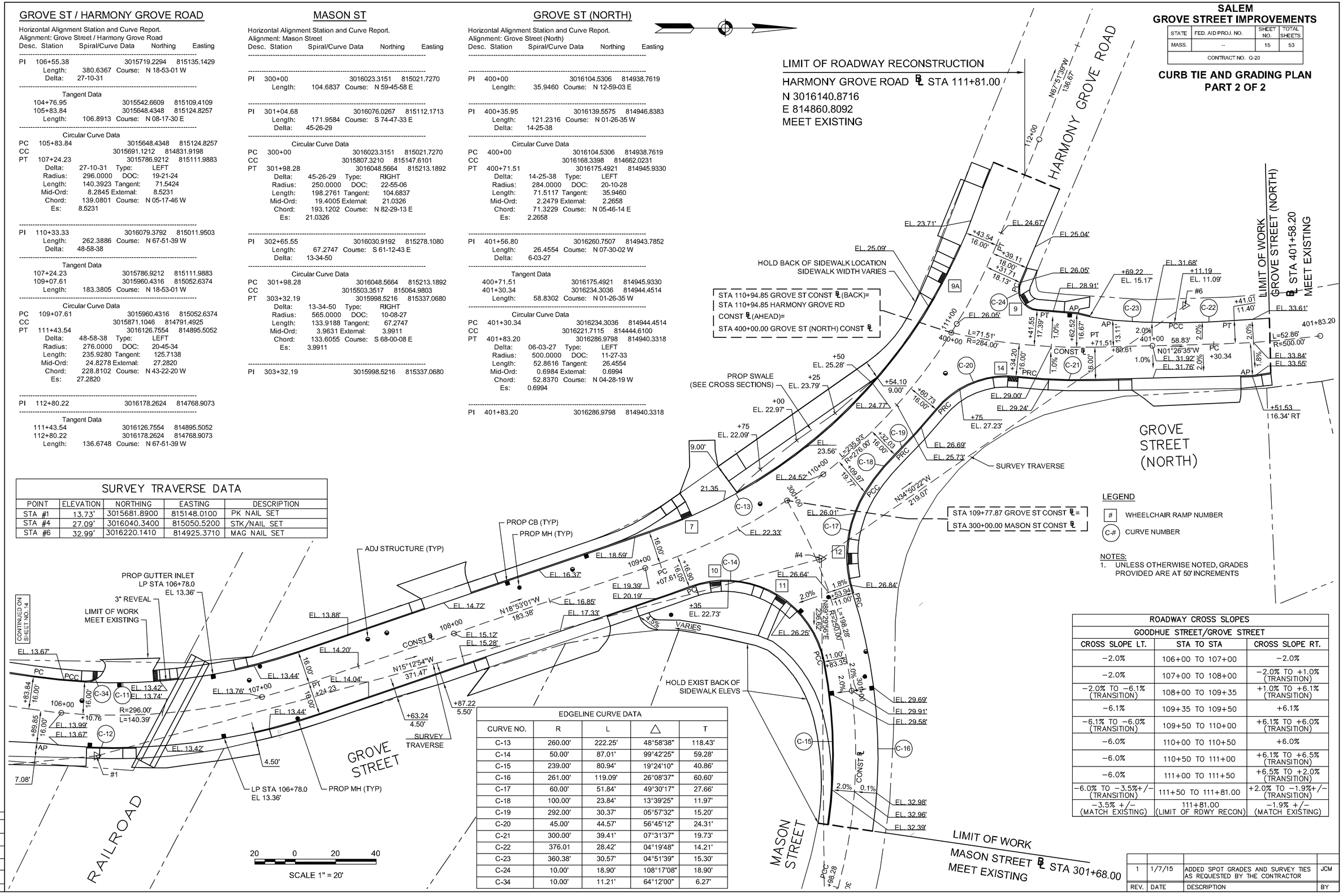
Horizontal Alignment Station and Curve Report.
Alignment: Grove Street (North)

Desc.	Station	Spiral/Curve Data	Northing	Easting
PI	400+00		3016104.5306	814938.7619
	Length: 35.9460	Course: N 12-59-03 E		
PI	400+35.95		3016139.5575	814946.8383
	Length: 121.2316	Course: N 01-26-35 W		
	Delta: 14-25-38			
	Circular Curve Data			
PC	400+00		3016104.5306	814938.7619
CC			3016168.3398	814662.0231
PT	400+71.51		3016175.4921	814945.9330
	Delta: 14-25-38	Type: LEFT		
	Radius: 284.0000	DOC: 20-10-28		
	Length: 71.5117	Tangent: 35.9460		
	Mid-Ord: 2.2479	External: 2.2658		
	Chord: 71.3229	Course: N 05-46-14 E		
	Es: 2.2658			
PI	401+56.80		3016260.7507	814943.7852
	Length: 26.4554	Course: N 07-30-02 W		
	Delta: 6-03-27			
	Tangent Data			
	400+71.51		3016175.4921	814945.9330
	401+30.34		3016234.3036	814944.4514
	Length: 58.8302	Course: N 01-26-35 W		
	Circular Curve Data			
PC	401+30.34		3016234.3036	814944.4514
CC			3016221.7115	814444.6100
PT	401+83.20		3016286.9798	814940.3318
	Delta: 06-03-27	Type: LEFT		
	Radius: 500.0000	DOC: 11-27-33		
	Length: 52.8616	Tangent: 26.4554		
	Mid-Ord: 0.6984	External: 0.6994		
	Chord: 52.8370	Course: N 04-28-19 W		
	Es: 0.6994			
PI	401+83.20		3016286.9798	814940.3318

SURVEY TRAVERSE DATA				
POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
STA #1	13.73'	3015681.8900	815148.0100	PK NAIL SET
STA #4	27.09'	3016040.3400	815050.5200	STK/NAIL SET
STA #6	32.99'	3016220.1410	814925.3710	MAG NAIL SET

EDGELINE CURVE DATA				
CURVE NO.	R	L	△	T
C-13	260.00'	222.25'	48°58'38"	118.43'
C-14	50.00'	87.01'	99°42'25"	59.28'
C-15	239.00'	80.94'	19°24'10"	40.86'
C-16	261.00'	119.09'	26°08'37"	60.60'
C-17	60.00'	51.84'	49°30'17"	27.66'
C-18	100.00'	23.84'	13°39'25"	11.97'
C-19	292.00'	30.37'	05°57'32"	15.20'
C-20	45.00'	44.57'	56°45'12"	24.31'
C-21	300.00'	39.41'	07°31'37"	19.73'
C-22	376.01	28.42'	04°19'48"	14.21'
C-23	360.38'	30.57'	04°51'39"	15.30'
C-24	10.00'	18.90'	108°17'08"	18.90'
C-34	10.00'	11.21'	64°12'00"	6.27'

ROADWAY CROSS SLOPES		
GOODHUE STREET/GROVE STREET		
CROSS SLOPE LT.	STA TO STA	CROSS SLOPE RT.
−2.0%	106+00 TO 107+00	−2.0%
−2.0%	107+00 TO 108+00	−2.0% TO +1.0% (TRANSITION)
−2.0% TO −6.1% (TRANSITION)	108+00 TO 109+35	+1.0% TO +6.1% (TRANSITION)
−6.1%	109+35 TO 109+50	+6.1%
−6.1% TO −6.0% (TRANSITION)	109+50 TO 110+00	+6.1% TO +6.0% (TRANSITION)
−6.0%	110+00 TO 110+50	+6.0%
−6.0%	110+50 TO 111+00	+6.1% TO +6.5% (TRANSITION)
−6.0%	111+00 TO 111+50	+6.5% TO +2.0% (TRANSITION)
−6.0% TO −3.5%+/− (TRANSITION)	111+50 TO 111+81.00	+2.0% TO −1.9%+/− (TRANSITION)
−3.5% +/− (MATCH EXISTING)	111+81.00 (LIMIT OF RDWY RECON)	−1.9% +/− (MATCH EXISTING)



LEGEND

- # — WHEELCHAIR RAMP NUMBER
- C-# — CURVE NUMBER

NOTES:
1. UNLESS OTHERWISE NOTED, GRADES PROVIDED ARE AT 50' INCREMENTS

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	15	53
CONTRACT NO. Q-20			

CURB TIE AND GRADING PLAN
PART 2 OF 2

REV.	DATE	DESCRIPTION	BY
1	1/7/15	ADDED SPOT GRADES AND SURVEY TIES AS REQUESTED BY THE CONTRACTOR	JCM

CONSTRUCTION UPDATE NO. 01

FS&T DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

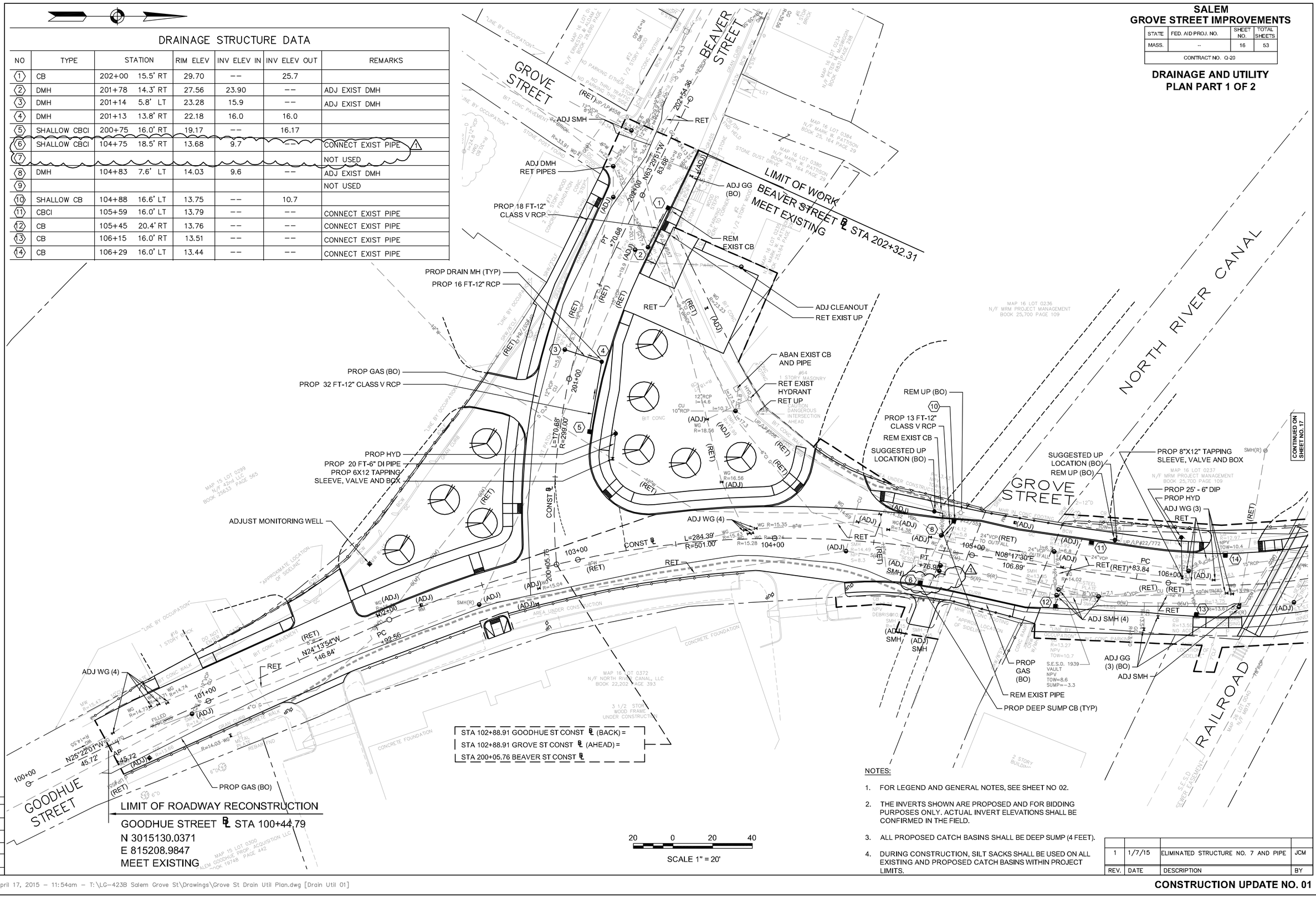
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	16	53
CONTRACT NO. Q-20			

DRAINAGE AND UTILITY PLAN PART 1 OF 2

DRAINAGE STRUCTURE DATA

NO	TYPE	STATION	RIM ELEV	INV ELEV IN	INV ELEV OUT	REMARKS
1	CB	202+00 15.5' RT	29.70	--	25.7	
2	DMH	201+78 14.3' RT	27.56	23.90	--	ADJ EXIST DMH
3	DMH	201+14 5.8' LT	23.28	15.9	--	ADJ EXIST DMH
4	DMH	201+13 13.8' RT	22.18	16.0	16.0	
5	SHALLOW CBCI	200+75 16.0' RT	19.17	--	16.17	
6	SHALLOW CBCI	104+75 18.5' RT	13.68	9.7	--	CONNECT EXIST PIPE 1
7						NOT USED
8	DMH	104+83 7.6' LT	14.03	9.6	--	ADJ EXIST DMH
9						NOT USED
10	SHALLOW CB	104+88 16.6' LT	13.75	--	10.7	
11	CBCI	105+59 16.0' LT	13.79	--	--	CONNECT EXIST PIPE
12	CB	105+45 20.4' RT	13.76	--	--	CONNECT EXIST PIPE
13	CB	106+15 16.0' RT	13.51	--	--	CONNECT EXIST PIPE
14	CB	106+29 16.0' LT	13.44	--	--	CONNECT EXIST PIPE



NOTES:

1. FOR LEGEND AND GENERAL NOTES, SEE SHEET NO 02.
2. THE INVERTS SHOWN ARE PROPOSED AND FOR BIDDING PURPOSES ONLY. ACTUAL INVERT ELEVATIONS SHALL BE CONFIRMED IN THE FIELD.
3. ALL PROPOSED CATCH BASINS SHALL BE DEEP SUMP (4 FEET).
4. DURING CONSTRUCTION, SILT SACKS SHALL BE USED ON ALL EXISTING AND PROPOSED CATCH BASINS WITHIN PROJECT LIMITS.

SCALE 1" = 20'

REV.	DATE	DESCRIPTION	BY
1	1/7/15	ELIMINATED STRUCTURE NO. 7 AND PIPE	JCM

F&T ENG. NO.
LG-423B

DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

[McLaug_J] – April 17, 2015 – 11:54am – T:\LG-423B Salem Grove St\Drawings\Grove St Drain Util Plan.dwg [Drain Util 01]

CONSTRUCTION UPDATE NO. 01

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	17	53
CONTRACT NO. Q-20			

DRAINAGE AND UTILITY PLAN
PART 2 OF 2

DRAINAGE STRUCTURE DATA

NO	TYPE	STATION	RIM ELEV	INV ELEV IN	INV ELEV OUT	REMARKS
(15)	GUTTER INLET	106+78 16.0' LT	13.26	--	10.2	
(16)	DMH	107+03 14.9' LT	13.34	9.3	--	CONNECT EXIST PIPES
(17)	SHALLOW CB	106+78 16.0' RT	13.26	--	10.2	
(18)	DMH	107+14 15' RT	13.39	10.1	10.1	
(19)	DMH	106+96 9.5' LT	13.42	9.9	--	ADJ EXIST DMH
(20)	SHALLOW CBCI	108+33 16.0' LT	15.72	–	12.7	
(21)	DMH	108+38 11.0' LT	16.00	12.5	--	CONNECT EXIST PIPES
(22)	CBCI	108+74 16.0' LT	17.29	--	--	CONNECT EXIST PIPES
(23)	CBCI	300+55 17.0' RT	26.62	--	22.6	
(24)	DMH	300+52 1.0' RT	26.76	22.5	--	CONNECT EXIST PIPES
(25)	SHALLOW CBCI	301+00 11.0' RT	29.69	--	26.7	
(26)	DMH	300+94 7.4' LT	29.37	25.3(S) 25.3(E)	--	
(27)	SHALLOW CB	301+00 11.0' LT	29.69	--	26.7	
(28)	CB	400+59 16.9' LT	29.19	--	--	CONNECT EXIST PIPES

CONTINUED ON SHEET NO.16

LIMIT OF ROADWAY RECONSTRUCTION
HARMONY GROVE ROAD ℄ STA 111+81.00
N 3016140.8716
E 814860.8092
MEET EXISTING

STA 110+94.85 GROVE ST CONST ℄ (BACK)=
STA 110+94.85 HARMONY GROVE RD CONST ℄ (AHEAD)=
STA 400+00.00 GROVE ST (NORTH) CONST ℄

LIMIT OF WORK
GROVE STREET (NORTH) ℄ STA 401+58.20
MEET EXISTING

STA 109+77.87 GROVE ST CONST ℄ =
STA 300+00.00 MASON ST CONST ℄

LIMIT OF WORK
MASON STREET ℄ STA 301+68.00
MEET EXISTING

NORTH RIVER CANAL
RAILROAD
GROVE STREET
MASON STREET
HARMONY GROVE ROAD

SUGGESTED UP LOCATION (BO)
REM UP (BO)
UP/LP#3032
PROP GAS (BO)
PROP 4" PVC CAP AND REBAR LOCATOR
PROP 28 FT-4" PVC
PROP 3 FT - 12" CLASS V RCP
PROP DMH (TYP)
RET UP
ADJ WG (3)
RET HYD
ADJ MH
REM UP (BO)
ADJ MH (3)
CTE 24" VCP
(SEE DRAIN CONNECTION DETAIL, SHEET 34)
ABAN EXIST CB AND PIPE
SUGGESTED UP LOCATION (BO)
PROP 20 FT - 12" CLASS V RCP
PROP 8"X12" TAPPING SLEEVE, VALVE AND BOX
PROP 25' - 6" DIP
PROP HYD
ADJ WG (3)
PROP GUTTER INLET
REM CB
SUGGESTED UP LOCATION (BO)
PROP 27 FT - 10" DIP
REM EXIST CB
REM UP (BO)
SUGGESTED UP LOCATION (BO)
PROP 34 FT - 12" CLASS V RCP
PROP DEEP SUMP CB (TYP)
ADJ GG (3) (BO)
CONVERT CB TO MH
PROP 12 FT-12" CLASS V RCP
REMODEL DMH
ADJ SMH
PROP 3 FT-12" RCP CLASS V
PROP 15 FT-12" CLASS V RCP
PROP GAS (BO)
ADJ SMH
PROP GAS (BO)
20"STUMP
ADJ SMH
STATION#4
STK/NAIL SET
N 3016040.34
E 815050.52
ELEV=27.09

CEMETERY
MAP 16 LOT 0377
N/F HARMONY GROVE CROP
BOOK 1982 PAGE 180

HARMONY GROVE CEMETERY
MAP 16 LOT 0242
N/F HARMONY GROVE CORP
BOOK 562 PAGE 112

MAP 16 LOT 0238
N/F 50 GROVE ST. REAL ESTATE, LLC
LCC 74834

MAP 16 LOT 0237
N/F MRM PROJECT MANAGEMENT
BOOK 25,700 PAGE 109

MAP 16 LOT 0367
N/F RWD HOLDINGS, LLC
BOOK 21,010 PAGE 597

MAP 16 LOT 0366
N/F ZYGMUNT & EMILIA JANKOWSKI
BOOK 5147 PAGE 759

MAP 16 LOT 0368
N/F P-MAC
BOOK 17,434 PAGE 6

MACK PARK
MAP 16 LOT 0333
N/F CITY OF SALEM

MAP 16 LOT 0333
N/F CITY OF SALEM
BOOK 1523 PAGE 223

"APPROXIMATE LOCATION OF SIDELINE"
"LINE BY OCCUPATION"

NOTES:

1. FOR LEGEND AND GENERAL NOTES, SEE SHEET NO 02.
2. THE INVERTS SHOWN ARE PROPOSED AND FOR BIDDING PURPOSES ONLY. ACTUAL INVERT ELEVATIONS SHALL BE CONFIRMED IN THE FIELD.
3. ALL PROPOSED CATCH BASINS SHALL BE DEEP SUMP (4 FEET).
4. DURING CONSTRUCTION, SILT SACKS SHALL BE USED ON ALL EXISTING AND PROPOSED CATCH BASINS WITHIN PROJECT LIMITS.

SCALE 1" = 20'

F&E DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

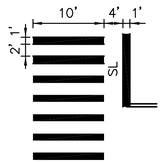
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	18	53
CONTRACT NO. Q-20			

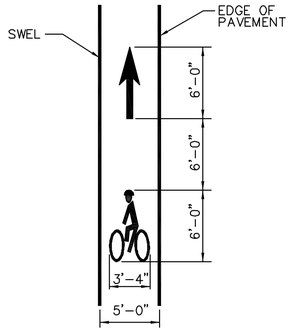
TRAFFIC LEGEND AND ABBREVIATIONS

PAVEMENT MARKINGS

SL	STOP LINE, 12" WHITE LINE (SEE DETAIL BELOW)
CW	CROSSWALK, 12" WHITE LINES (SEE DETAIL BELOW)
SWLL	SOLID WHITE LANE LINE–4"
SWEL	SOLID WHITE EDGE LINE–4"
BWLL	BROKEN WHITE LANE LINE–4", (10' LANE LINE, 30' SPACE)
DYCL	DOUBLE YELLOW CENTER LINE–2–4" LINES
SYEL	SOLID YELLOW EDGE LINE–4"
DWLL	DOTTED WHITE LANE LINE–4", (3' LINE, 9' SPACE)
WTL	WHITE TRANSVERSE LINE–6", (45° ANGLE)



CROSSWALK AND STOP LINE
TYPICAL DETAIL (N.T.S.)



BIKE LANE MARKINGS
NOT TO SCALE

PLAN ABBREVIATIONS

THE FOLLOWING LABELS MAY BE USED TO DENOTE EXISTING CONDITIONS OR PROPOSED CHANGES TO EXISTING CONDITIONS:

(EXIST)	EXISTING
(MOD)	MODIFY
(REM)	REMOVE
(R&R)	REMOVE AND RESET
(R&S)	REMOVE AND STACK
(R&D)	REMOVE AND DISCARD
(ABAN)	TO BE ABANDONED
(ADJ)	ADJUST TO GRADE
(NIC)	NOT IN CONTRACT
(PROP)	PROPOSED
(RET)	RETAIN
(PBS)	PRINT BOTH SIDES

EXISTING SIGNS

GROUND MOUNTED SINGLE POST SUPPORT

GROUND MOUNTED DOUBLE POST SUPPORT

PROPOSED SIGNS

GROUND MOUNTED SINGLE POST SUPPORT

GROUND MOUNTED DOUBLE POST SUPPORT

EXISTING DIRECTION OF FLOW

PROPOSED DIRECTION OF FLOW

F.S.&T. DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST.	–	CHK	–
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	19	53
CONTRACT NO. Q-20			

SIGN AND PAVEMENT MARKING PLAN
PART 1 OF 5

BOSTON STREET

LIMIT OF ROADWAY RECONSTRUCTION
GOODHUE STREET ℄ STA 100+44.79

R7-1R
R6-1R
R3-2
"APPROXIMATE LOCATION OF SIDELINE"
"LINE BY OCCUPATION"
#16
1 STORY BRICK
BIT CONC WALK
GATE
BIT CONC PAVEMENT
BCW
GC
MH Rim15.84
102+00
STYEL (62')
PC
+92.56
101+00
R6-1L
R3-1
MH Rim15.47
INV=7.47
CASE
CONCRETE WALK
drop
BRICK RUBBLE
REBAR END
CONCRETE FOUNDATION
R3-17
AP
145.72
MH Rim15.60
6"D
CONST ℄
100+00
GOODHUE STREET
R6-1L
R3-1
R7-9a
DO NOT ENTER
(REM)
CONTINUED ON SHEET NO. 20
VARIES
SWLL (606')
R3-17
BEGIN PROJECT
GROVE STREET ℄ STA 97+34.19
N 3014853.6881
E 815350.0178
BRIDGE STREET

20 0 20 40
SCALE 1" = 20'

FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST.	-	CHK	-
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	20	53
CONTRACT NO. Q-20			

SIGN AND PAVEMENT MARKING PLAN
PART 2 OF 5

GROVE STREET

BEAVER STREET

NORTH RIVER CANAL

RAILROAD

GOODHUE STREET

LIMIT OF WORK
BEAVER STREET ℄ STA 202+32.31
MEET EXIST

LIMIT OF ROADWAY RECONSTRUCTION
GOODHUE STREET ℄ STA 100+44.79

CONTINUED ON SHEET NO. 19

CONTINUED ON SHEET NO. 21

NO PARKING EITHER SIDE (RET)
R7-1R
HANDICAP PARKING ONLY (REM)
R3-17
R7-1
NO PARKING HERE TO CORNER (REM)
BEAVER ST (REM)
PEDESTRIAN WARNING (REM)
LEFT ARROW (REM)
9 FT X 19 FT PARKING STALLS (TYP)
SWEL (TYP)
4FT X 19 FT WTL (TYP)
R3-17
R3-17bP
CAUTION DANGEROUS INTERSECTION AHEAD (REM)
R1-1
R1-3P
D3-1-2
D3-1-4
R6-1(PBS)
R5-1
R3-5R
DO NOT ENTER (REM)
R6-1R
R3-2
R6-1L
R3-1
D3-1-2
D3-1-5
R3-5L
R7-9a
R15-1
RAILROAD CROSSING (REM)

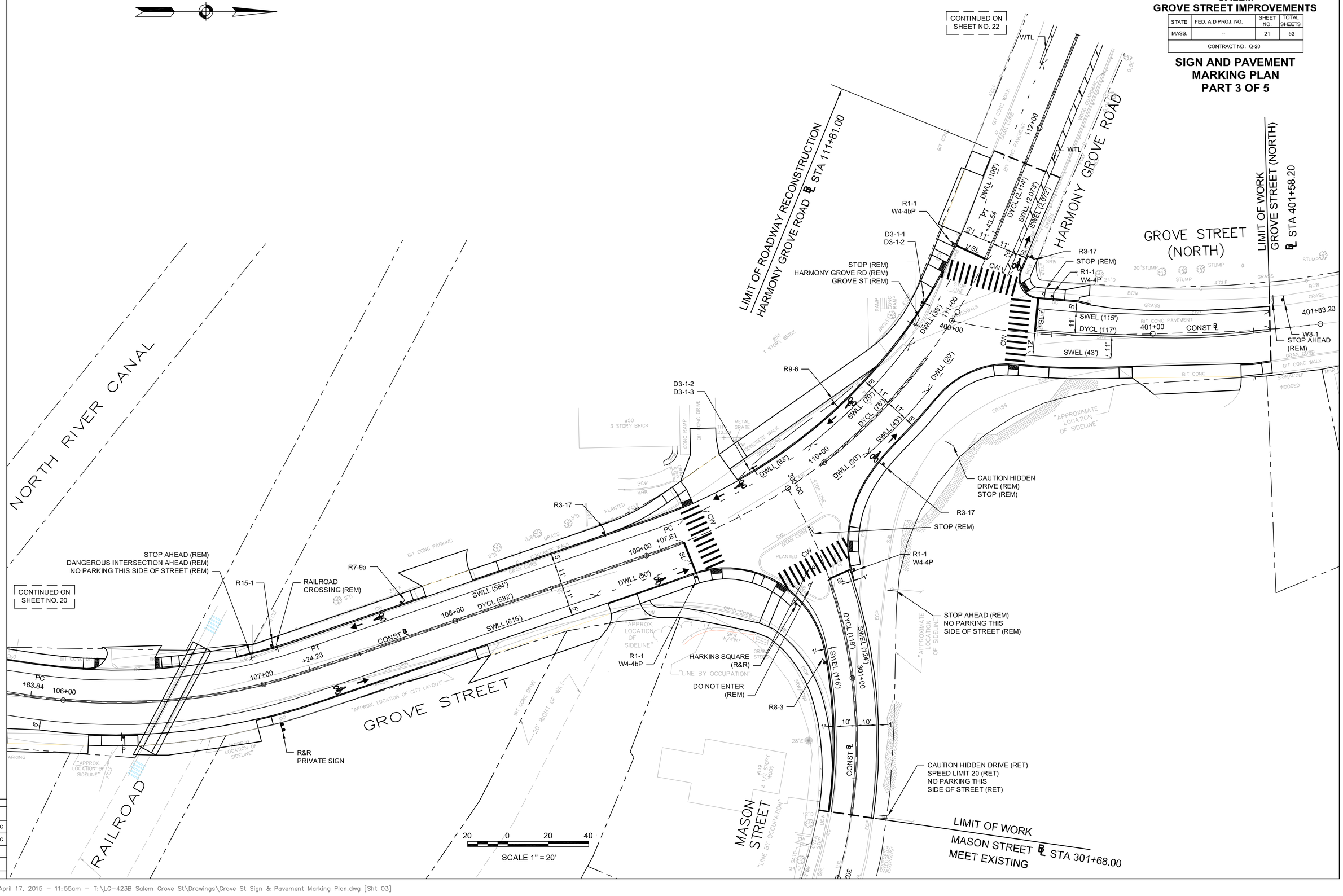
202+54.36
202+00
PT +70.68
CW
SWLL (142')
DYCL (140')
SWLL (139')
201+00
SL
SWEL (23')
SWLL (584')
DYCL (582')
104+00
105+00
SWLL (615')
PT +76.95
PC +83.84
106+00
200+05.76
103+00
102+00
SYEL (62')
PC +92.56
SWLL (506')
CONST ℄
101+00
AP 45.72
100+00
00+00
5'
11'
15'
27'
VARIES

"LINE BY OCCUPATION"
BIT CONC PAVEMENT
STONE POST FOUND
BIT CONC
BIT CONC WALK
GRAN CURB
BCW
GC
SW
SWK
#16 1 STORY BRICK
#12 2 1/2 STORY WOOD
#13 2 STORY WOOD FOUNDATION
#14 2 1/2 STORY WOOD
#15 1 STORY MASONRY
#64 1 STORY MASONRY
#5 1 STORY BRICK
CONC FOOTING
CONC STEPS
STONE DUST DRIVE
MAP LOT 42-1
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SIGN AND PAVEMENT MARKING PLAN PART 3 OF 5



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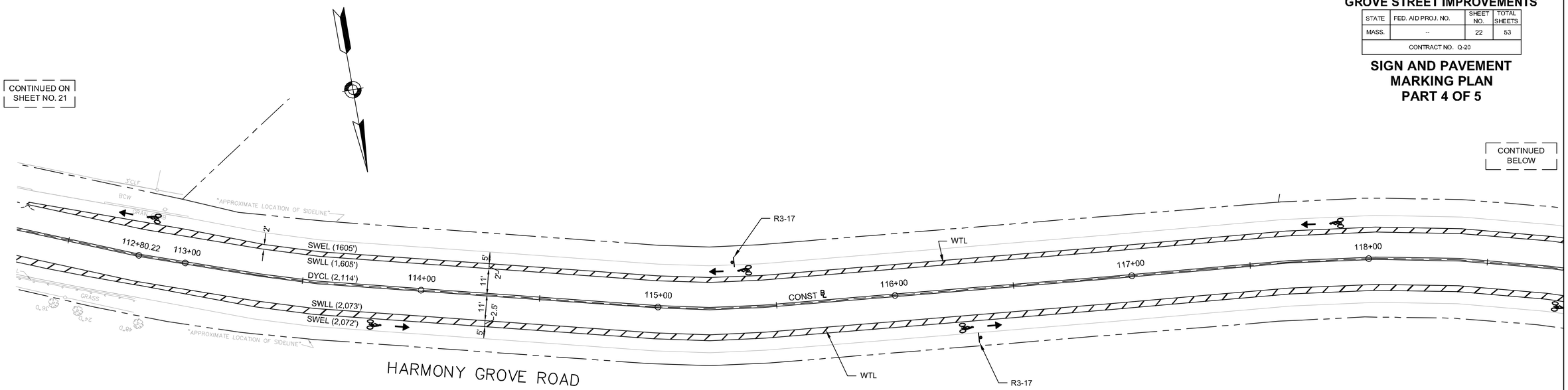
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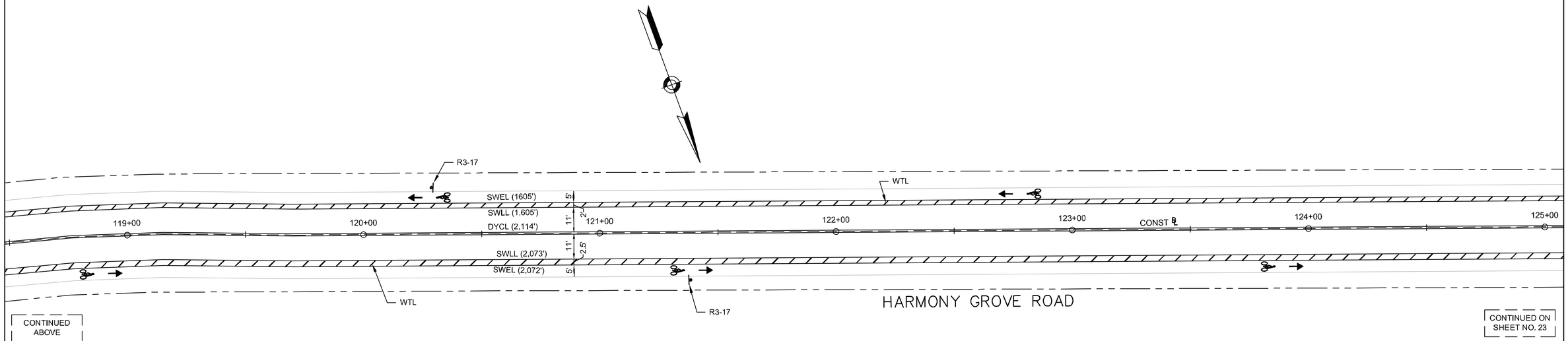
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SIGN AND PAVEMENT MARKING PLAN PART 4 OF 5

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CONTINUED ON SHEET NO. 23

20 0 20 40

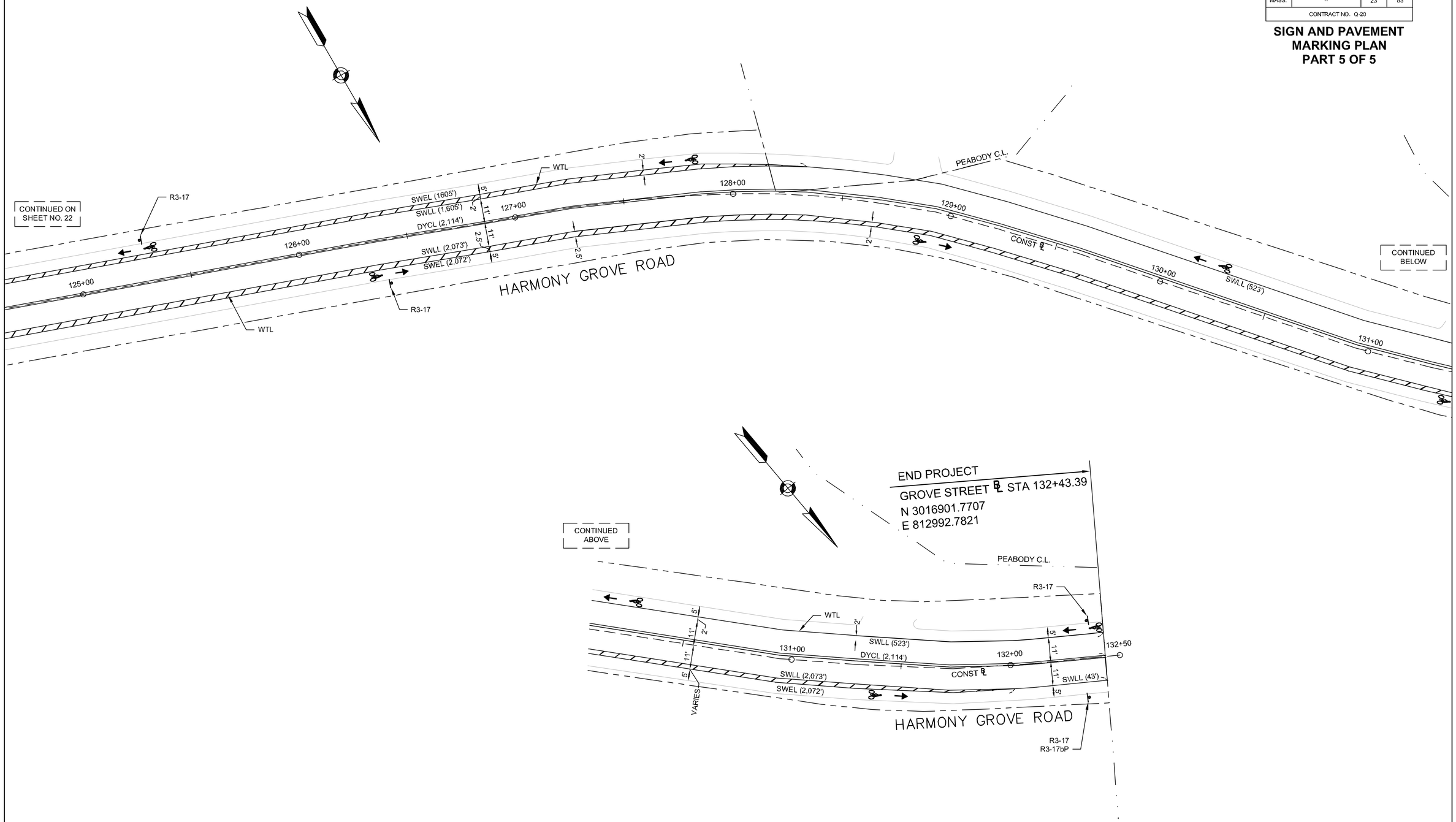
SCALE 1" = 20'

FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST	-	CHK	-
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	23	53
CONTRACT NO. Q-20			

SIGN AND PAVEMENT MARKING PLAN
PART 5 OF 5



20 0 20 40

SCALE 1" = 20'

FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST.	-	CHK	-
ENGINEER IN CHARGE			

NOTES:
1. ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION TO JUSTIFY WARRANTS BEFORE INSTALLATION. NUMERICAL LIMITS AND JUSTIFICATION FOR ALL SPEED LIMIT SIGNS WILL BE DETERMINED BY THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION BEFORE FABRICATION AND/OR ERECTION.

NOTE:
SUPER HIGH INTENSITY UNMETALIZED MICROPRISMATIC ELEMENT REFLECTIVE SHEETING M9.30.0 TYPE VII, VIII, IX, OR X SHALL BE USED FOR ALL SIGNS.

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	24	53
CONTRACT NO. Q-20			

TRAFFIC SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS LETTER HEIGHT	TEXT DIMENSIONS VERTICAL SPACING	TEXT DIMENSIONS ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	AREA IN SQUARE FEET
R1-1	30"	30"	STOP	SEE MUTCD			7	SEE MUTCD			1-P5 7	43.75
R1-3P	18"	6"	ALL WAY				3				MOUNT 3 WITH R1-1	2.25
R3-1	36"	36"					2				MOUNT 2 WITH R6-1L	18.00
R3-2	36"	36"					1				MOUNT 1 WITH R6-1R	9.00
R3-17	24"	18"	BIKE LANE				15				1-P5 15	45.00
R3-17bP	24"	8"	ENDS				2				MOUNT 2 WITH R3-17	2.67
R3-5L	30"	36"	ONLY				1				MOUNT 1 WITH D3-1-2	7.50
R3-5R	30"	36"	ONLY				1				MOUNT 1 WITH R6-1(PBS)	7.50
R5-1	30"	30"	DO NOT ENTER				2				MOUNT 2 WITH R6-1(PBS)	12.50
R6-1 (PBS)	36"	12"	ONE WAY				2				1-P5 2	6.00
R6-1L	36"	12"	ONE WAY				2				1-P5 2	6.00
R6-1R	36"	12"	ONE WAY				1				1-P5 1	3.00
R7-1	12"	18"	NO PARKING ANY TIME				1				1-P5 1	1.50

IDENTIFICATION NUMBER	SIZE OF SIGN WIDTH	SIZE OF SIGN HEIGHT	TEXT	TEXT DIMENSIONS LETTER HEIGHT	TEXT DIMENSIONS VERTICAL SPACING	TEXT DIMENSIONS ARROW	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	COLOR LEGEND	COLOR BORDER	POST SIZE AND NUMBER REQUIRED	AREA IN SQUARE FEET
R7-1R	12"	18"	NO PARKING ANY TIME	SEE MUTCD			2	SEE MUTCD			1-P5 2	3.00
R7-9a	12"	18"	R BIKE LANE				3				1-P5 3	4.50
R8-3	12"	18"	NO PARKING	SEE MASSDOT STANDARDS			1	SEE MASSDOT STANDARDS			1-P5 1	1.50
R15-1	9"	48"	RAIL CROSSING ROAD	SEE MUTCD AND MBTA STANDARDS			2				1-P5 2	6.00
W3-1	30"	30"		SEE MUTCD			1	SEE MUTCD			1-P5 1	6.25
W4-4P	24"	12"	CROSS TRAFFIC DOES NOT STOP				2				MOUNT 2 WITH R1-1	4.00
W4-4bP	24"	12"	ONCOMING TRAFFIC DOES NOT STOP				2				MOUNT 2 WITH R1-1	4.00
R9-6	12"	18"	YIELD TO PEDS				1				1-P5 1	1.50
D3-1-1	54"	12"	Harmony Grove Rd				1				1-P5 1	4.50
D3-1-2	30"	12"	Grove St				4				MOUNT 1 WITH D3-1-1 1-P5 3	10.00
D3-1-3	30"	12"	Mason St				1				MOUNT 1 WITH D3-1-2	2.50
D3-1-4	33"	12"	Beaver St				1				MOUNT 1 WITH D3-1-2	2.75
D3-1-5	36"	12"	Goodhue St				1				MOUNT 1 WITH D3-1-2	3.00

F&AT DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST	--	CHK	--
ENGINEER IN CHARGE			

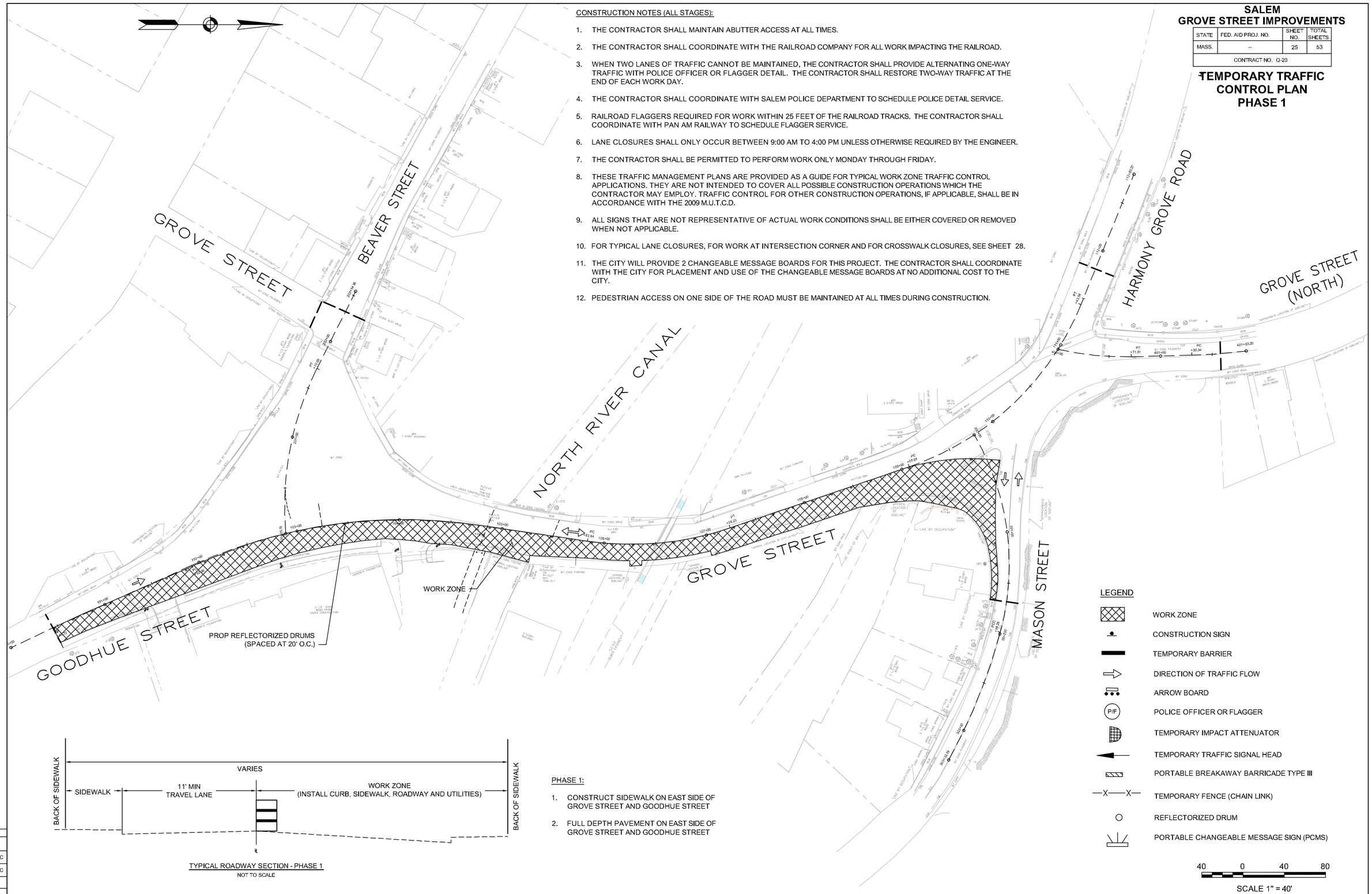
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	25	53
CONTRACT NO. Q-20			

TEMPORARY TRAFFIC CONTROL PLAN PHASE 1

CONSTRUCTION NOTES (ALL STAGES):

1. THE CONTRACTOR SHALL MAINTAIN ABUTTER ACCESS AT ALL TIMES.
2. THE CONTRACTOR SHALL COORDINATE WITH THE RAILROAD COMPANY FOR ALL WORK IMPACTING THE RAILROAD.
3. WHEN TWO LANES OF TRAFFIC CANNOT BE MAINTAINED, THE CONTRACTOR SHALL PROVIDE ALTERNATING ONE-WAY TRAFFIC WITH POLICE OFFICER OR FLAGGER DETAIL. THE CONTRACTOR SHALL RESTORE TWO-WAY TRAFFIC AT THE END OF EACH WORK DAY.
4. THE CONTRACTOR SHALL COORDINATE WITH SALEM POLICE DEPARTMENT TO SCHEDULE POLICE DETAIL SERVICE.
5. RAILROAD FLAGGERS REQUIRED FOR WORK WITHIN 25 FEET OF THE RAILROAD TRACKS. THE CONTRACTOR SHALL COORDINATE WITH PAN AM RAILWAY TO SCHEDULE FLAGGER SERVICE.
6. LANE CLOSURES SHALL ONLY OCCUR BETWEEN 9:00 AM TO 4:00 PM UNLESS OTHERWISE REQUIRED BY THE ENGINEER.
7. THE CONTRACTOR SHALL BE PERMITTED TO PERFORM WORK ONLY MONDAY THROUGH FRIDAY.
8. THESE TRAFFIC MANAGEMENT PLANS ARE PROVIDED AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY EMPLOY. TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS, IF APPLICABLE, SHALL BE IN ACCORDANCE WITH THE 2009 M.U.T.C.D.
9. ALL SIGNS THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
10. FOR TYPICAL LANE CLOSURES, FOR WORK AT INTERSECTION CORNER AND FOR CROSSWALK CLOSURES, SEE SHEET 28.
11. THE CITY WILL PROVIDE 2 CHANGEABLE MESSAGE BOARDS FOR THIS PROJECT. THE CONTRACTOR SHALL COORDINATE WITH THE CITY FOR PLACEMENT AND USE OF THE CHANGEABLE MESSAGE BOARDS AT NO ADDITIONAL COST TO THE CITY.
12. PEDESTRIAN ACCESS ON ONE SIDE OF THE ROAD MUST BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.



TYPICAL ROADWAY SECTION - PHASE 1
NOT TO SCALE

PHASE 1:

1. CONSTRUCT SIDEWALK ON EAST SIDE OF GROVE STREET AND GOODHUE STREET
2. FULL DEPTH PAVEMENT ON EAST SIDE OF GROVE STREET AND GOODHUE STREET

LEGEND

- WORK ZONE
- CONSTRUCTION SIGN
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD
- POLICE OFFICER OR FLAGGER (P/F)
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY TRAFFIC SIGNAL HEAD
- PORTABLE BREAKAWAY BARRICADE TYPE III
- TEMPORARY FENCE (CHAIN LINK)
- REFLECTORIZED DRUM
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

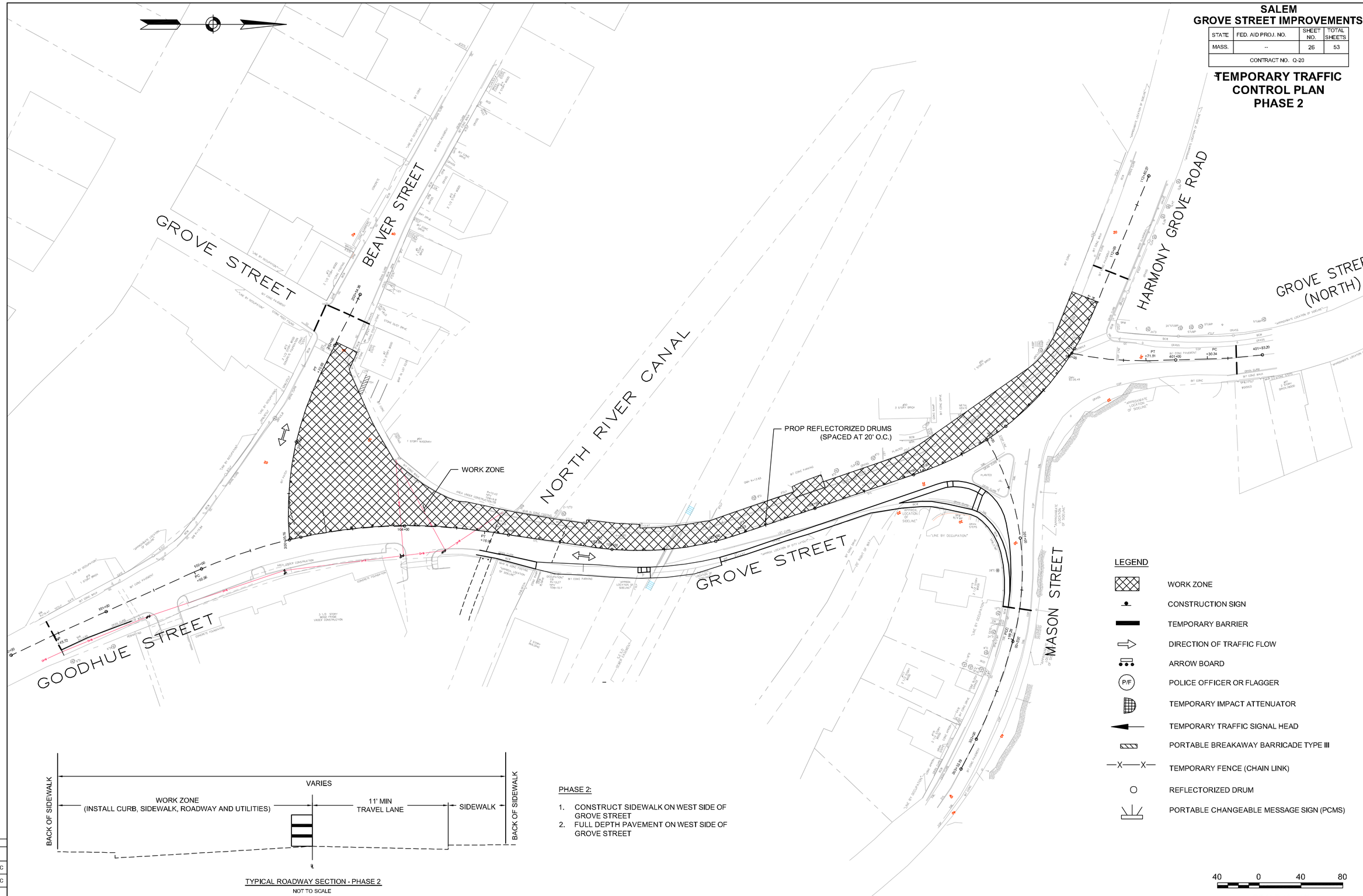
40 0 40 80
SCALE 1" = 40'

F&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST	-	CHK	-
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	26	53
CONTRACT NO. Q-20			

TEMPORARY TRAFFIC CONTROL PLAN PHASE 2



TYPICAL ROADWAY SECTION - PHASE 2

NOT TO SCALE

PHASE 2:

1. CONSTRUCT SIDEWALK ON WEST SIDE OF GROVE STREET
2. FULL DEPTH PAVEMENT ON WEST SIDE OF GROVE STREET

LEGEND

- WORK ZONE
- CONSTRUCTION SIGN
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD
- P/F — POLICE OFFICER OR FLAGGER
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY TRAFFIC SIGNAL HEAD
- PORTABLE BREAKAWAY BARRICADE TYPE III
- —X—X— TEMPORARY FENCE (CHAIN LINK)
- REFLECTORIZED DRUM
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

40 0 40 80

SCALE 1" = 40'

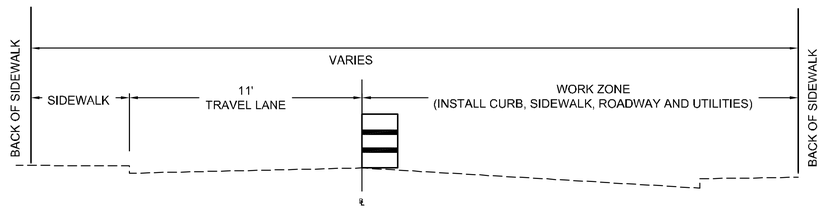
FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST	-	CHK	-
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	27	53
CONTRACT NO. Q-20			

TEMPORARY TRAFFIC CONTROL PLAN PHASE 3

GROVE STREET
BEAVER STREET
NORTH RIVER CANAL
HARMONY GROVE ROAD
GROVE STREET (NORTH)
GOODHUE STREET
GROVE STREET
MASON STREET
WORK ZONE
WORK ZONE
PROP REFLECTORIZED DRUMS (SPACED AT 20' O.C.)



TYPICAL ROADWAY SECTION - PHASE 3
NOT TO SCALE

PHASE 3:

1. CONSTRUCT SIDEWALK AND ROADWAY ON EAST SIDE OF GROVE STREET BETWEEN MASON STREET AND GROVE STREET (NORTH).
2. FULL DEPTH PAVEMENT AND SIDEWALK ON SOUTH SIDE OF BEAVER STREET.
3. ROADWAY AND SIDEWALK ON WEST SIDE OF GOODHUE STREET.

LEGEND

- WORK ZONE
- CONSTRUCTION SIGN
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD
- P/F — POLICE OFFICER OR FLAGGER
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY TRAFFIC SIGNAL HEAD
- PORTABLE BREAKAWAY BARRICADE TYPE III
- —X—X— TEMPORARY FENCE (CHAIN LINK)
- REFLECTORIZED DRUM
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

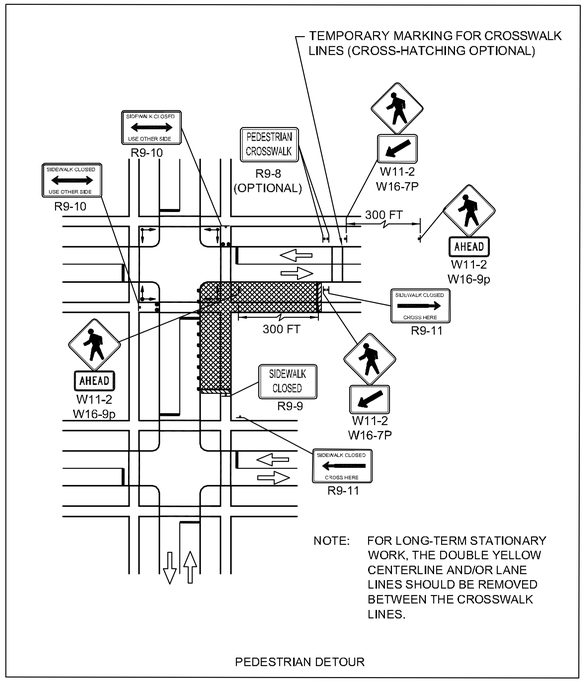
40 0 40 80
SCALE 1" = 40'

FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST.	-	CHK	-
ENGINEER IN CHARGE			

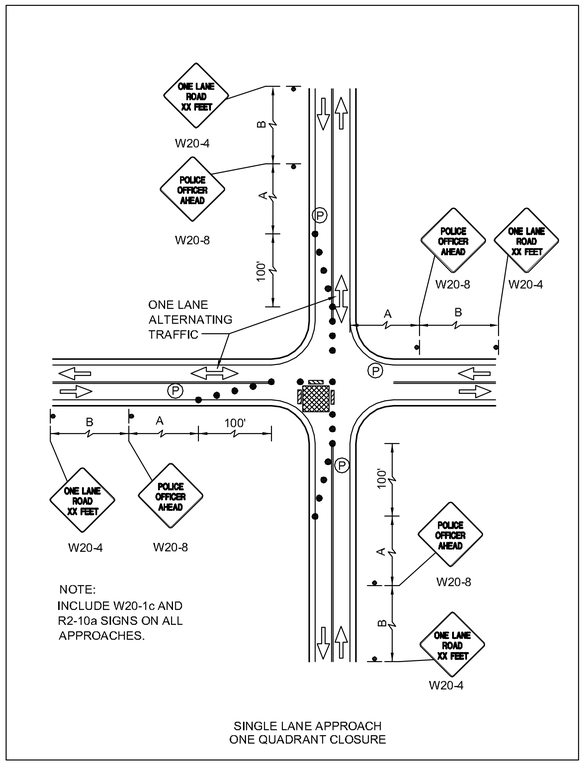
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	28	53
CONTRACT NO. Q-20			

TEMPORARY TRAFFIC CONTROL PLAN TYPICALS



PEDESTRIAN DETOUR



SINGLE LANE APPROACH
ONE QUADRANT CLOSURE

SUGGESTED WORK ZONE WARNING SIGN SPACING

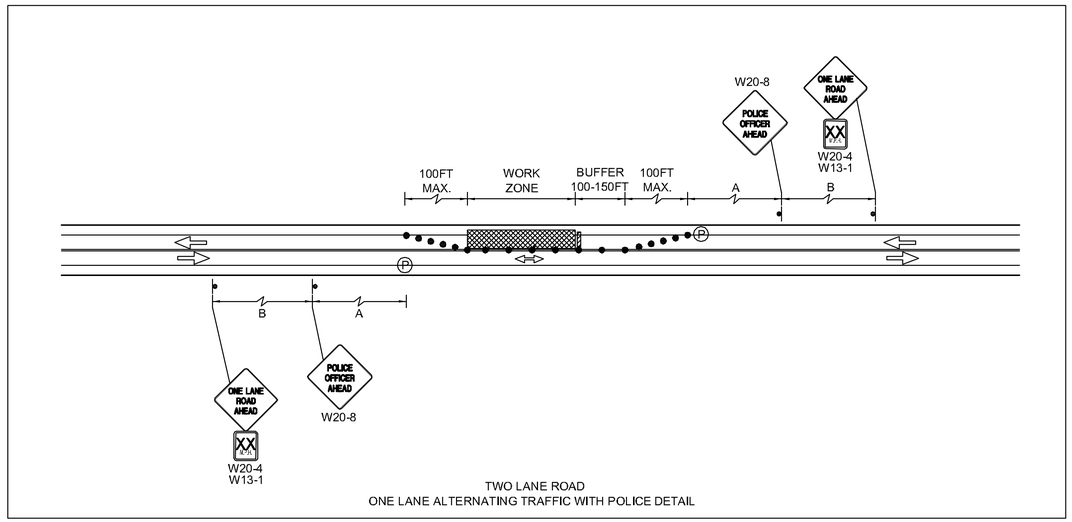
Road Type	Distance Between Signs**		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS*	350	350	350
MOST OTHER ROADWAYS*	500	500	500
FREEWAYS AND EXPRESSWAYS*	1,000	1,500	2,640

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	100 FT MAXIMUM
DOWNSTREAM TAPER	100 FT PER LANE

FORMULAS FOR DETERMINING TAPER LENGTHS

Speed Limit (S)	Taper Length (L) Feet
40 MPH OR LESS	$L = \frac{WS^2}{60}$
45 MPH OR MORE	$L = WS$



TWO LANE ROAD
ONE LANE ALTERNATING TRAFFIC WITH POLICE DETAIL

LEGEND

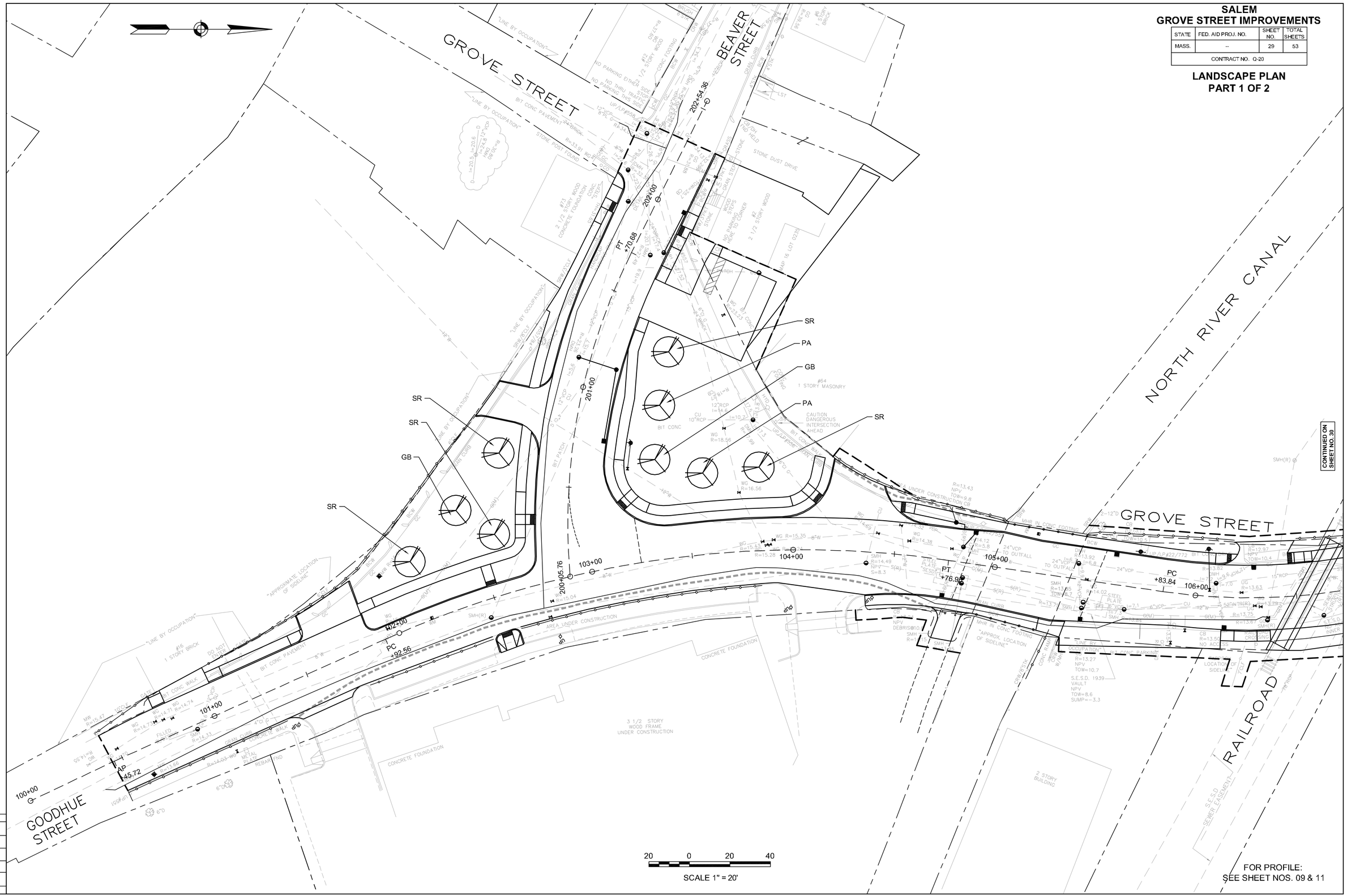
- WORK ZONE
- CONSTRUCTION SIGN
- TEMPORARY BARRIER
- DIRECTION OF TRAFFIC FLOW
- ARROW BOARD
- P/F — POLICE OFFICER OR FLAGGER
- TEMPORARY IMPACT ATTENUATOR
- TEMPORARY TRAFFIC SIGNAL HEAD
- PORTABLE BREAKAWAY BARRICADE TYPE III
- —X—X— TEMPORARY FENCE (CHAIN LINK)
- REFLECTORIZED DRUM
- PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

FS&T DWG. NO.			
LG-423B			
DES	SEB	CHK	ATC
DR	SEB	CHK	ATC
EST	-	CHK	-
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	29	53
CONTRACT NO. Q-20			

LANDSCAPE PLAN
PART 1 OF 2



20 0 20 40
SCALE 1" = 20'

FOR PROFILE:
SEE SHEET NOS. 09 & 11

FS&T DWG. NO.
LG-423B

DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

LANDSCAPE NOTES:

1. NO PLANT MATERIALS SHALL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
2. ALL TREES SHALL BE BALLED AND BURLAPPED, UNLESS OTHERWISE NOTED, OR APPROVED BY THE CITY. IF SYNTHETIC WRAP IS USED FOR ANY PLANT MATERIALS, IT SHALL BE COMPLETELY REMOVED PRIOR TO INSTALLATION.
3. 3" DEEP PINE BARK MULCH SHALL BE INSTALLED UNDER ALL NEW TREES AS SHOWN ON THE PLANS, OR AS REQUIRED BY THE CITY. COST SHALL BE INCIDENTAL TO THE TREE ITEMS.
4. FINAL QUANTITY FOR EACH PLANT TYPE SHALL BE AS SHOWN ON THE PLANS. THIS NUMBER SHALL TAKE PRECEDENCE IN CASE OF ANY DISCREPANCY BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND ON THE PLAN.
5. ANY PROPOSED PLANT SUBSTITUTIONS SHALL BE APPROVED IN WRITING BY THE CITY PRIOR TO THE START OF WORK.
6. ALL PLANT MATERIALS SHALL BE GUARANTEED FOR ONE YEAR FOLLOWING DATE OF FINAL ACCEPTANCE.

PLANT MAINTENANCE NOTES:

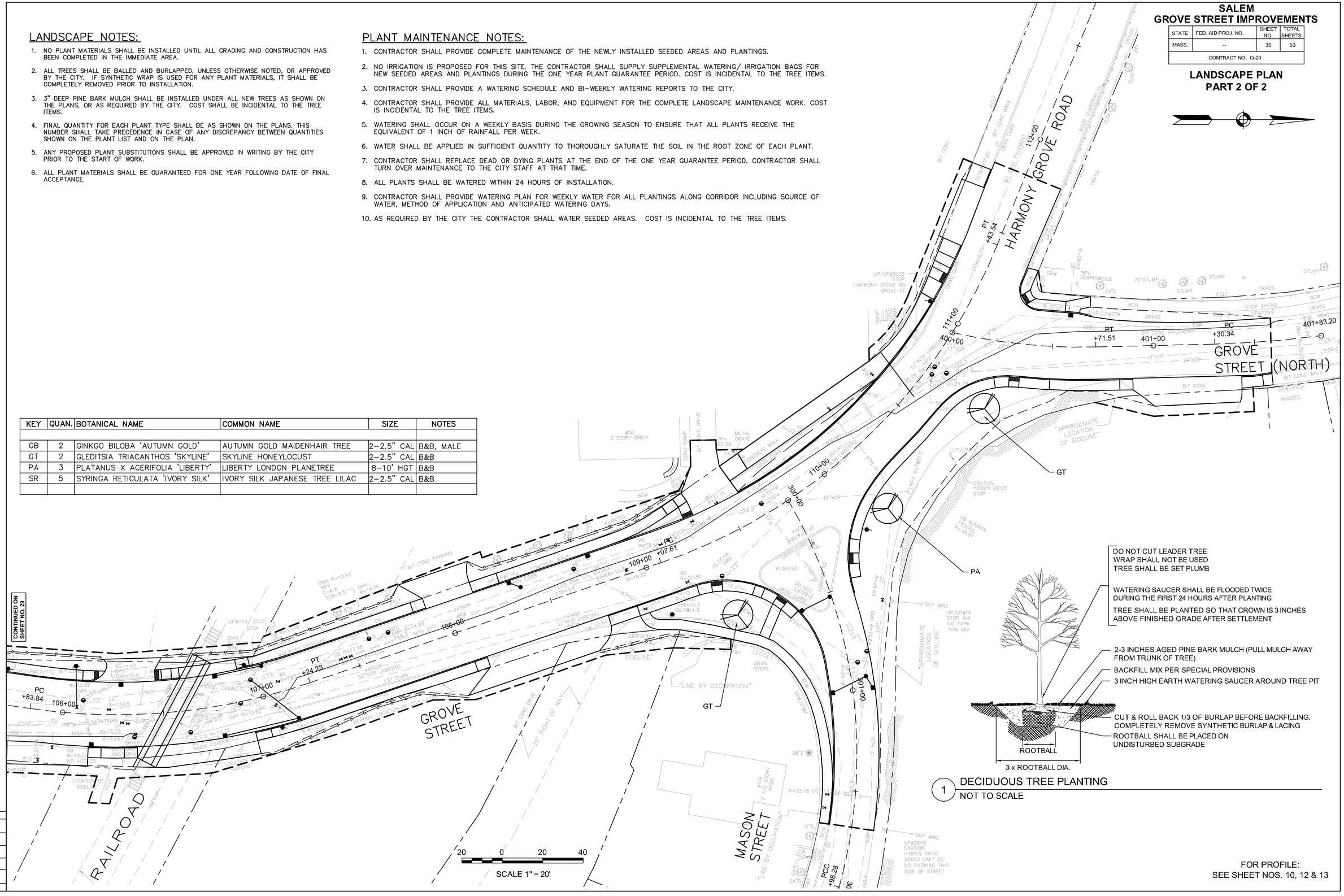
1. CONTRACTOR SHALL PROVIDE COMPLETE MAINTENANCE OF THE NEWLY INSTALLED SEEDED AREAS AND PLANTINGS.
2. NO IRRIGATION IS PROPOSED FOR THIS SITE. THE CONTRACTOR SHALL SUPPLY SUPPLEMENTAL WATERING/ IRRIGATION BAGS FOR NEW SEEDED AREAS AND PLANTINGS DURING THE ONE YEAR PLANT GUARANTEE PERIOD. COST IS INCIDENTAL TO THE TREE ITEMS.
3. CONTRACTOR SHALL PROVIDE A WATERING SCHEDULE AND BI-WEEKLY WATERING REPORTS TO THE CITY.
4. CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT FOR THE COMPLETE LANDSCAPE MAINTENANCE WORK. COST IS INCIDENTAL TO THE TREE ITEMS.
5. WATERING SHALL OCCUR ON A WEEKLY BASIS DURING THE GROWING SEASON TO ENSURE THAT ALL PLANTS RECEIVE THE EQUIVALENT OF 1 INCH OF RAINFALL PER WEEK.
6. WATER SHALL BE APPLIED IN SUFFICIENT QUANTITY TO THOROUGHLY SATURATE THE SOIL IN THE ROOT ZONE OF EACH PLANT.
7. CONTRACTOR SHALL REPLACE DEAD OR DYING PLANTS AT THE END OF THE ONE YEAR GUARANTEE PERIOD. CONTRACTOR SHALL TURN OVER MAINTENANCE TO THE CITY STAFF AT THAT TIME.
8. ALL PLANTS SHALL BE WATERED WITHIN 24 HOURS OF INSTALLATION.
9. CONTRACTOR SHALL PROVIDE WATERING PLAN FOR WEEKLY WATER FOR ALL PLANTINGS ALONG CORRIDOR INCLUDING SOURCE OF WATER, METHOD OF APPLICATION AND ANTICIPATED WATERING DAYS.
10. AS REQUIRED BY THE CITY THE CONTRACTOR SHALL WATER SEEDED AREAS. COST IS INCIDENTAL TO THE TREE ITEMS.

KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
GB	2	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	2-2.5" CAL	B&B, MALE
GT	2	GLEDITSIA TRIACANTHOS 'SKYLINE'	SKYLINE HONEYLOCUST	2-2.5" CAL	B&B
PA	3	PLATANUS X ACERIFOLIA 'LIBERTY'	LIBERTY LONDON PLANETREE	8-10' HGT	B&B
SR	5	SYRINGA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	2-2.5" CAL	B&B

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	30	53
CONTRACT NO. Q-20			

LANDSCAPE PLAN
PART 2 OF 2



1 DECIDUOUS TREE PLANTING
NOT TO SCALE

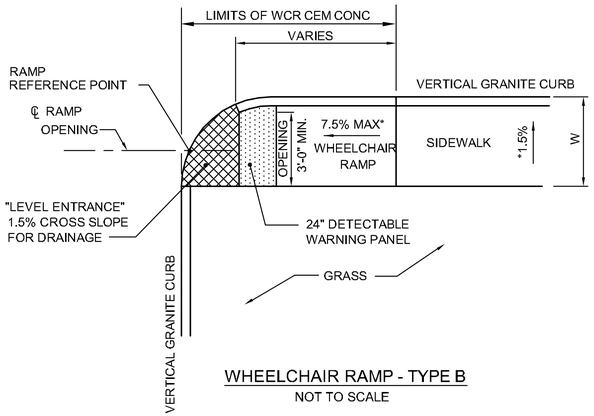
FOR PROFILE:
SEE SHEET NOS. 10, 12 & 13

F&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

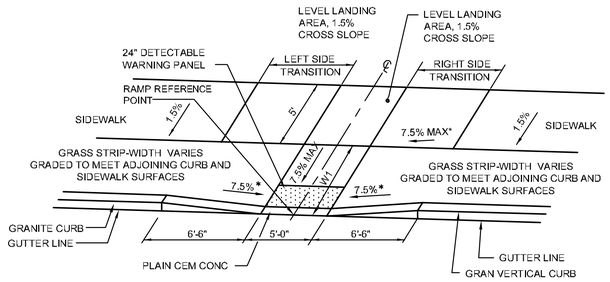
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	31	53
CONTRACT NO. Q-20			

WHEELCHAIR RAMP DETAILS



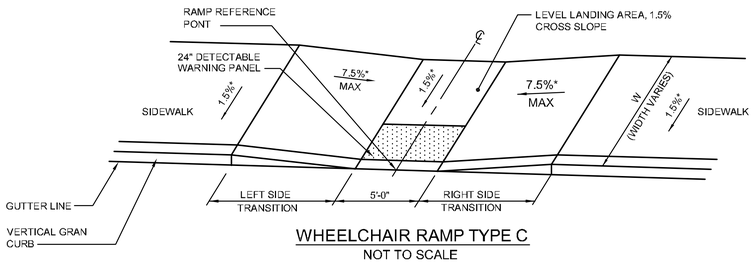
WHEELCHAIR RAMP - TYPE B
NOT TO SCALE



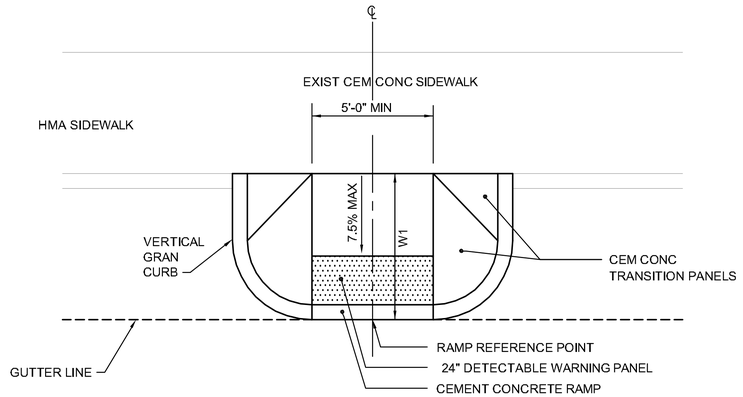
WHEELCHAIR RAMP TYPE D
NOT TO SCALE

NOTES:

1. DETECTABLE WARNING PANELS SHALL BE INSTALLED ON ALL WHEELCHAIR RAMPS AND WHERE SHOWN ON THE DRAWINGS AS PER STANDARD DRAWING E 107.6.5R. DETECTABLE WARNING PANELS SHALL BE BRICK RED IN COLOR.
2. UTILITY POLES, LIGHT POLE FOUNDATIONS, MAIL BOXES, AND HYDRANTS THAT ARE TO BE RETAINED OR ADJUSTED SHALL BE REMOVED AND RESET IF FIELD CONDITIONS INDICATE THE CLEAR PATH OF TRAVEL ON THE PROPOSED SIDEWALK IS LESS THAN 36" IN WIDTH.
3. ADA/MA AAB REQUIREMENTS SHALL BE FOLLOWED.



WHEELCHAIR RAMP TYPE C
NOT TO SCALE



WHEELCHAIR RAMP TYPE E
NOT TO SCALE

WHEELCHAIR RAMPS											
WCR #	TYPE	RAMP REFERENCE POINT			WIDTH OF SIDEWALK (W)	RAMP LENGTH (W1)	DEPTH OF LEVEL LANDING	ROADWAY GUTTER SLOPE	TRANSITION LENGTH		WIDTH OF RAMP OPENING
		BASELINE	STATION	OFFSET					LEFT SIDE	RIGHT SIDE	
1	D	GOODHUE STREET	102+50.70	6.00' LT	5.00'	10.50'	5.00'	0.6%	0'-0"	0'-0"	5.00'
2	D	BEAVER STREET	200+33.90	16.00' LT	5.00'	5.00'	5.00'	4.9%	6'-6"	11'-0"	5.00'
3	C/D	BEAVER STREET	201+86.79	16.64' LT	VARIES	N/A	6.14'	10.0%	6'-6"	7'-6" (3" REVEAL)	5.00'
4	C	BEAVER STREET	201+91.30	15.65' RT	VARIES	N/A	N/A	10.0%	7'-6" (3" REVEAL)	6'-6" (3" REVEAL)	5.00'
6	D	BEAVER STREET	200+40.99	25.63' RT	5.00'	5.00'	5.00'	4.6%	15'-0"	6'-6"	5.00'
7	E	GROVE STREET	109+28.93	16.00' LT	N/A	7.18'	N/A	6.1%	N/A	N/A	5.00'
9	C	GROVE STREET (N)	400+32.79	21.41' LT	5.50'	N/A	N/A	6.2%	10'-3"	15'-0"	5.00'
9A	C	HARMONY GROVE RD	111+16.74	16.00' LT	VARIES	N/A	N/A	1.5%	9'-0"	3'-3" (3" REVEAL)	5.00'
10	C	GROVE STREET	109+29.33	18.04' RT	5.50'	N/A	N/A	8.4%	15'-0"	6'-6"	5.00'
11	C	MASON STREET	300+44.53	22.71' RT	5.50'	N/A	N/A	8.4%	6'-6"	6'-6"	5.00'
12	C	MASON STREET	300+37.78	14.02' LT	5.50'	N/A	N/A	0.7%	6'-6"	6'-6"	5.00'
14	C	GROVE STREET (N)	400+32.93	16.02' RT	5.50'	N/A	N/A	6.0%	15'-0"	6'-6"	5.00'
15	E	GOODHUE STREET	102+50.70	17.81' RT	N/A	8.90'	N/A	0.6%	0'-0"	0'-0"	5.00'
16	D	GROVE STREET	104+12.91	24.57' LT	5.00'	5.00'	5.00'	3.7%	6'-6"	14'-0"	5.00'
17	B	GROVE STREET	104+47.80	23.50' LT	5.00'	6.50'	N/A	2.0%	N/A	6'-6"	5.00'

(LEFT SIDE\RIGHT SIDE DETERMINED WHEN STANDING IN ROADWAY LOOKING AT RAMP OR DRIVEWAY)

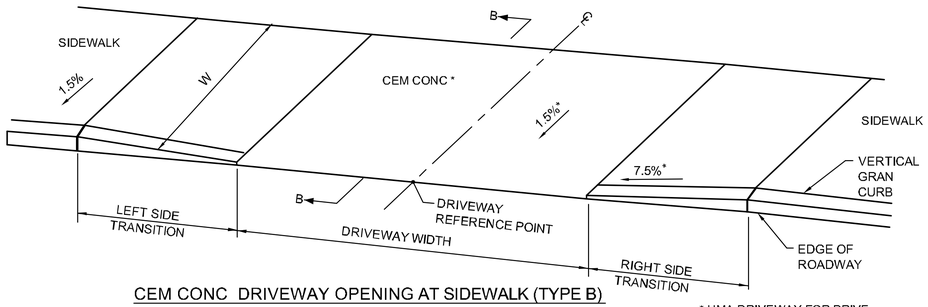
* = TOLERANCE FOR CONSTRUCTION = 0.5%±

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

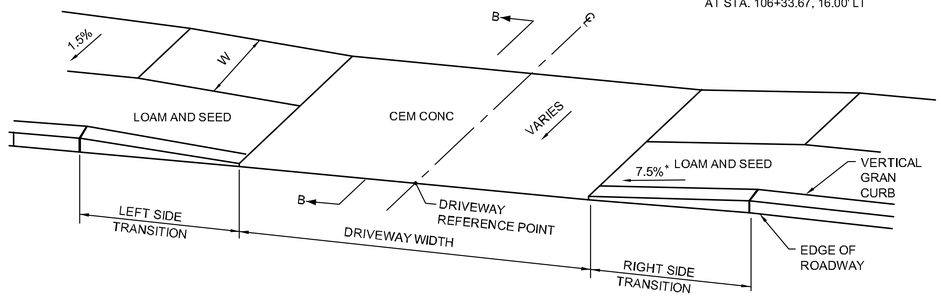
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	32	53
CONTRACT NO. Q-20			

DRIVEWAY DETAILS

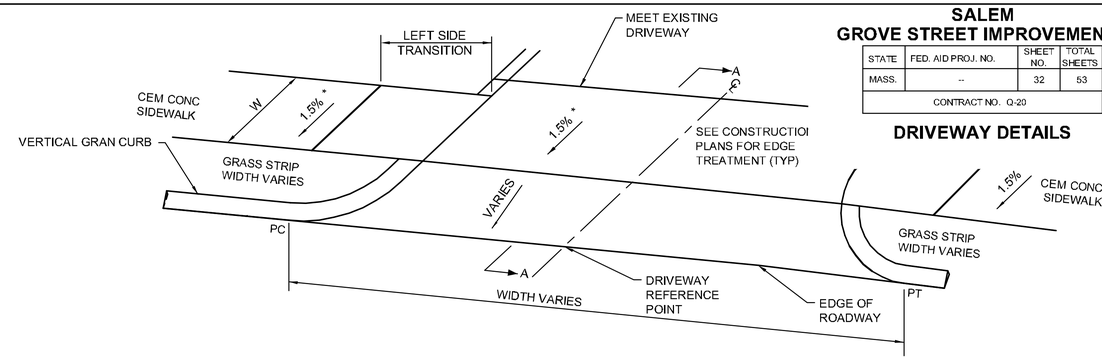


CEM CONC DRIVEWAY OPENING AT SIDEWALK (TYPE B)
NOT TO SCALE

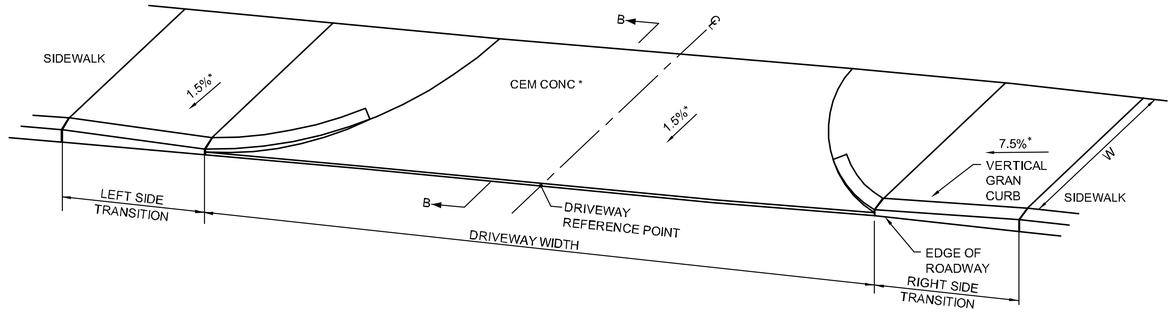
* HMA DRIVEWAY FOR DRIVE AT STA. 106+33.67, 16.00' LT



CEM CONC DRIVEWAY OPENING AT SIDEWALK WITH GRASS STRIP (TYPE C)
NOT TO SCALE



CEM CONC DRIVEWAY OPENING AT SIDEWALK (TYPE D)
NOT TO SCALE

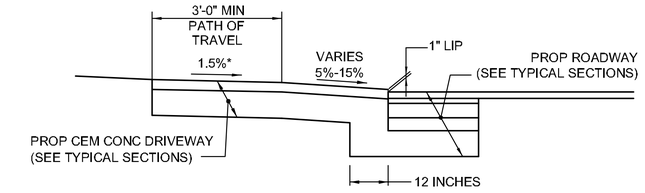


CEM CONC DRIVEWAY OPENING AT SIDEWALK (TYPE E)
NOT TO SCALE

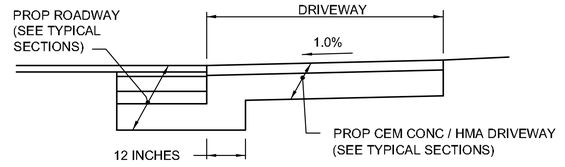
* HMA DRIVEWAY FOR DRIVE AT STA. 106+33.67, 16.00' LT

DRIVEWAY REFERENCE POINT			TYPE	W1	WIDTH OF SIDEWALK (W)	WIDTH OF DRIVEWAY	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	
BASELINE	STATION	OFFSET						LEFT SIDE	RIGHT SIDE
GOODHUE STREET	100+92.22	16.00' LT	B	N/A	5.50'	24.00'	0.4%	6'-6"	7'-8"
GOODHUE STREET	101+71.68	16.00' LT	D/E	N/A	5.50'	30.00'	0.7%	6'-6"	7'-8"
BEAVER STREET	200+85.82	17.00' LT	D	N/A	5.00'	18.00'	4.8%	N/A	N/A
BEAVER STREET	201+53.11	16.00' RT	B	N/A	5.50'	20.40'	8.7%	7'-6" (3" REVEAL)	6'-6"
GROVE STREET	104+29.90	16.00' LT	N/A	N/A	N/A	71.57'	1.6%	SEE WCR TABLE	
GROVE STREET	105+25.06	17.45' RT	B	N/A	5.50'	77.09'	0.5%	6'-6"	13'-0"
GROVE STREET	106+33.65	16.00' LT	B/E	N/A	5.50'	24.00'	0.5%	7'-8"	3'-3" (3" REVEAL)
GROVE STREET	106+68.21	16.00' RT	B	N/A	VARIES	66.90'	0.2%	7'-8"	3'-10" (3" REVEAL)
GROVE STREET	108+02.44	16.00' LT	B	N/A	5.50'	24.40'	2.8%	6'-6"	14'-0"
GROVE STREET	108+42.81	16.00' RT	B	N/A	5.50'	63.30'	5.1%	15'-0"	6'-6"
GROVE STREET	109+44.92	16.00' LT	C	N/A	VARIES	25.10'	5.0%	N/A	15'-0"
HARMONY GROVE RD	111+52.01	16.22' LT	B	N/A	VARIES	38.20'	3.2%	7'-0" (3" REVEAL)	9'-8"
GROVE STREET (N)	401+16.31	16.00' RT	B	2.00'	VARIES	58.90'	2.8%	11'-0"	6'-6"

NOTES:
1. LEFT SIDE\RIGHT SIDE DETERMINED WHEN STANDING IN ROADWAY LOOKING AT RAMP OR DRIVEWAY.
2. SEE CONSTRUCTION PLANS FOR LOCATIONS OF DETECTABLE WARNING PANELS AT DRIVEWAYS. COST SHALL BE INCIDENTAL TO ITEM 701.1 CEMENT CONCRETE SIDEWALK AT DRIVEWAYS. DETECTABLE WARNING PANELS SHALL BE BRICK RED IN COLOR.



DRIVEWAY SECTION A-A
NOT TO SCALE



DRIVEWAY SECTION B-B
NOT TO SCALE

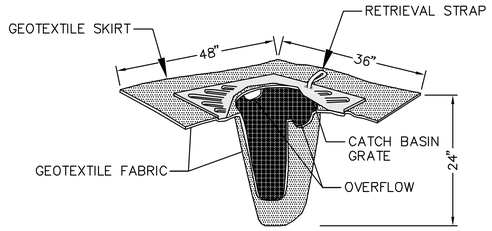
* = TOLERANCE FOR CONSTRUCTION = 0.5%±

F.S.&T. DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

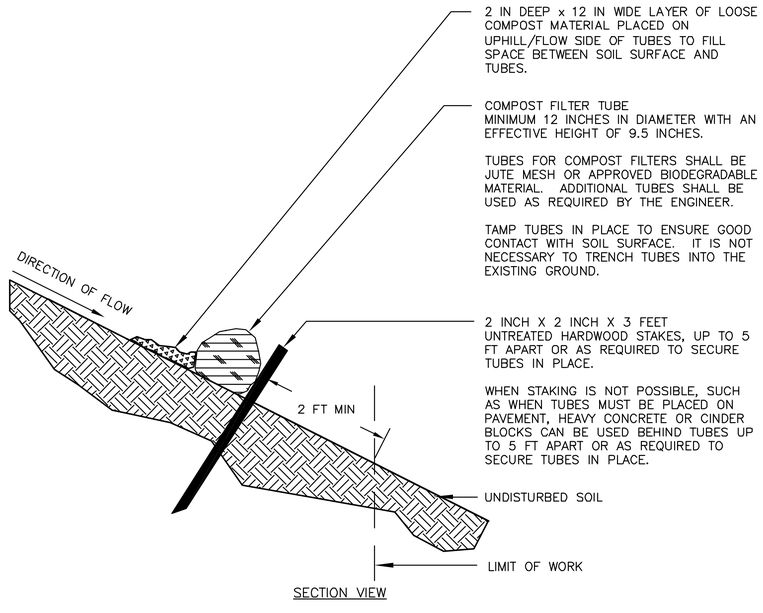
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	33	53
CONTRACT NO. Q-20			

CONSTRUCTION DETAILS

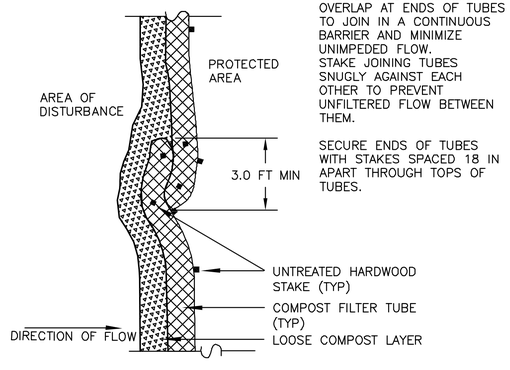


SILT SACK
NOT TO SCALE



SECTION VIEW

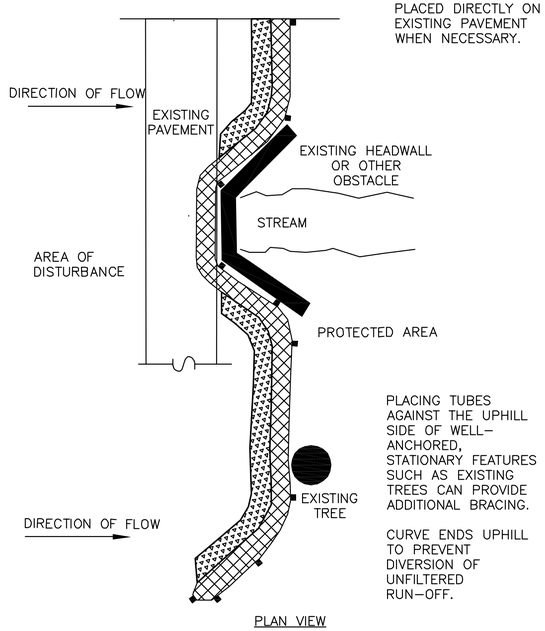
GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES FOR SLOPES UP TO 50 FEET IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.



PROVIDE A 3 FT MINIMUM OVERLAP AT ENDS OF TUBES TO JOIN IN A CONTINUOUS BARRIER AND MINIMIZE UNIMPEDED FLOW. STAKE JOINING TUBES SNUGLY AGAINST EACH OTHER TO PREVENT UNFILTERED FLOW BETWEEN THEM.

SECURE ENDS OF TUBES WITH STAKES SPACED 18 IN APART THROUGH TOPS OF TUBES.

PLAN VIEW – JOIN DETAIL



PLAN VIEW

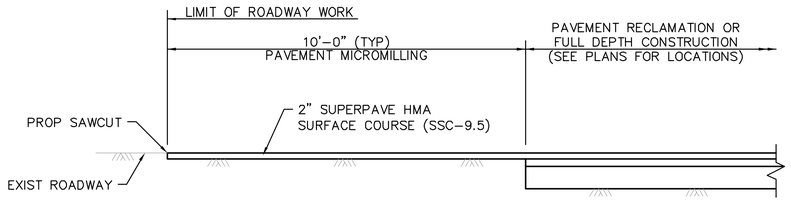
COMPOST FILTER TUBE DETAILS
NOT TO SCALE

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

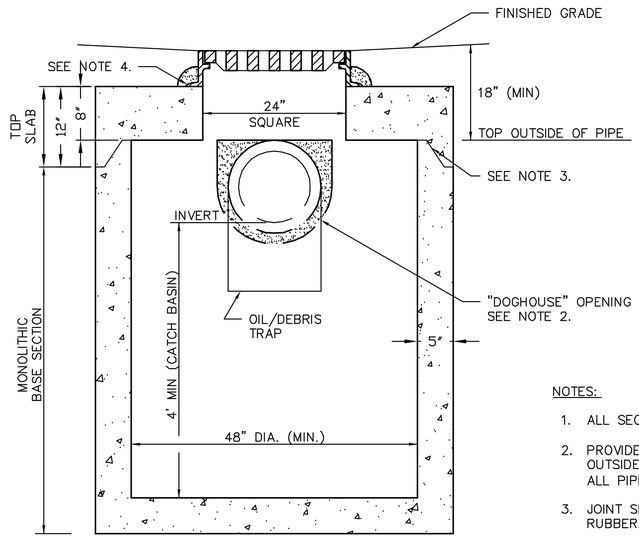
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	34	53
CONTRACT NO. Q-20			

CONSTRUCTION DETAILS



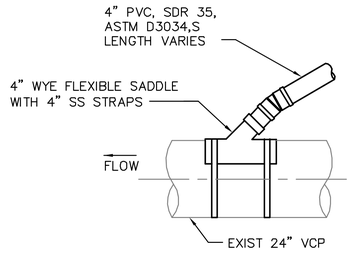
LIMIT OF WORK PAVEMENT KEY DETAIL
NOT TO SCALE



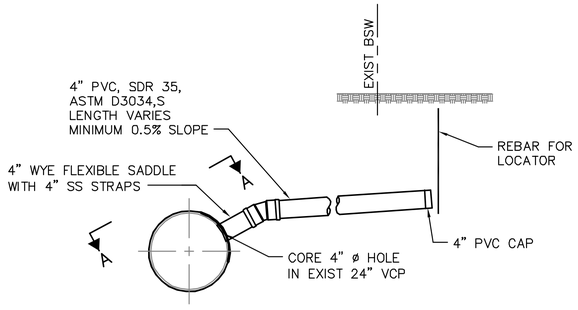
SHALLOW CATCH BASIN
NOT TO SCALE

NOTES:

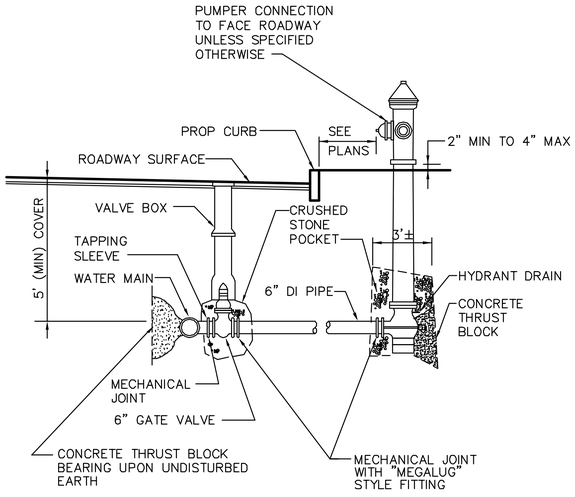
1. ALL SECTIONS SHALL BE DESIGNED FOR HS-20 LOADING.
2. PROVIDE DOGHOUSE OPENING FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. TOP SLAB SHALL NOT REST DIRECTLY ON PIPE. GROUT ALL PIPE CONNECTIONS (NON-SHRINK GROUT).
3. JOINT SEALANT BETWEEN PRECAST SECTIONS SHALL BE PREFORMED BUTYL RUBBER.
4. CATCH BASIN FRAME AND GRATE (8" DEPTH) SHALL BE SET IN FULL MORTAR BED.
5. ADJUST TO FINISH GRADE WITH MORTAR AS REQUIRED



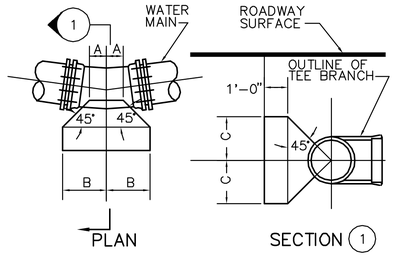
SECTION A-A



DRAIN CONNECTION
NOT TO SCALE



NEW FIRE HYDRANT CONNECTION
NOT TO SCALE



HORIZONTAL THRUST BLOCK SCHEDULE TABLE OF DIMENSIONS IN INCHES			
	A	B	C
6", 8" BEND			
1/32, 1/16	6	9	9
1/8	6	12	12
1/4	9	16	16
12" BEND			
1/32, 1/16	6	13	13
1/8	6	18	18
1/4	9	24	24
PLUG, TEE (BRANCH)			
6"	6	11	11
8"	9	14	14
12"	9	21	21

NOTES :
1. REFER TO SPECIFICATIONS FOR MATERIAL REQUIREMENTS
2. SUBJECT TO FIELD MODIFICATION BY ENGINEER

THRUST BLOCK DETAIL
NOT TO SCALE

F&E DWG. NO.
LG-423B

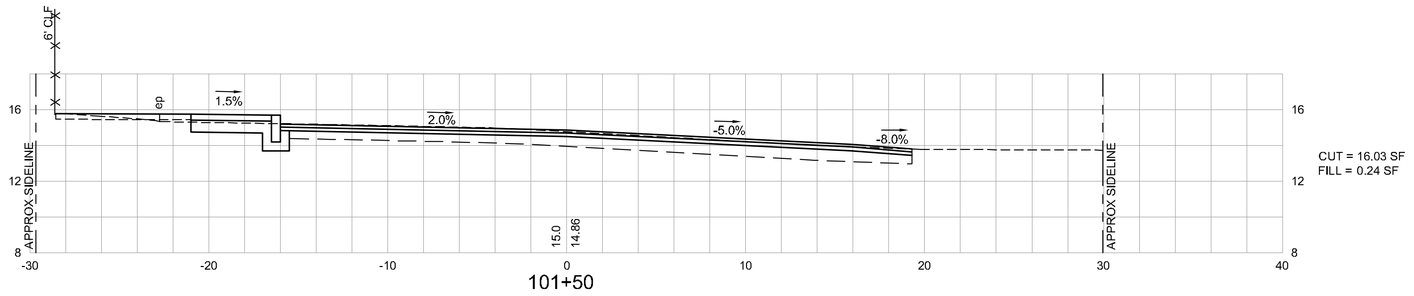
DES		CHK	
DR		CHK	
EST		CHK	

ENGINEER IN CHARGE

SALEM
GROVE STREET IMPROVEMENTS

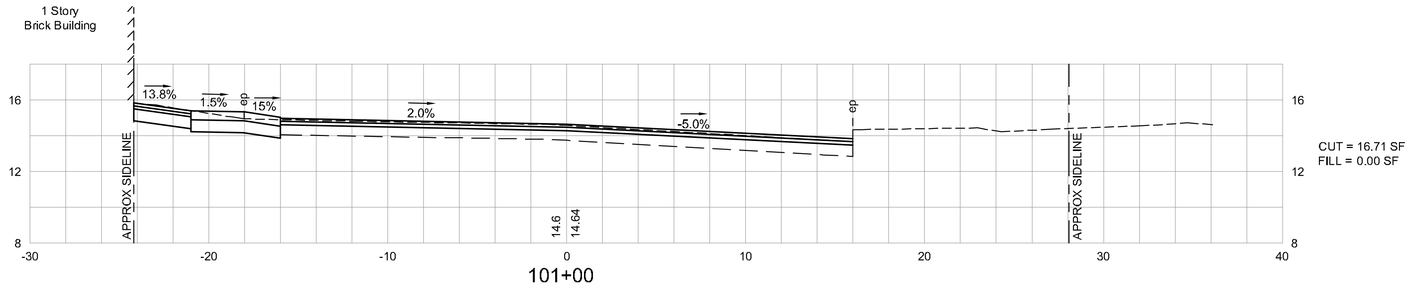
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	35	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GOODHUE STREET

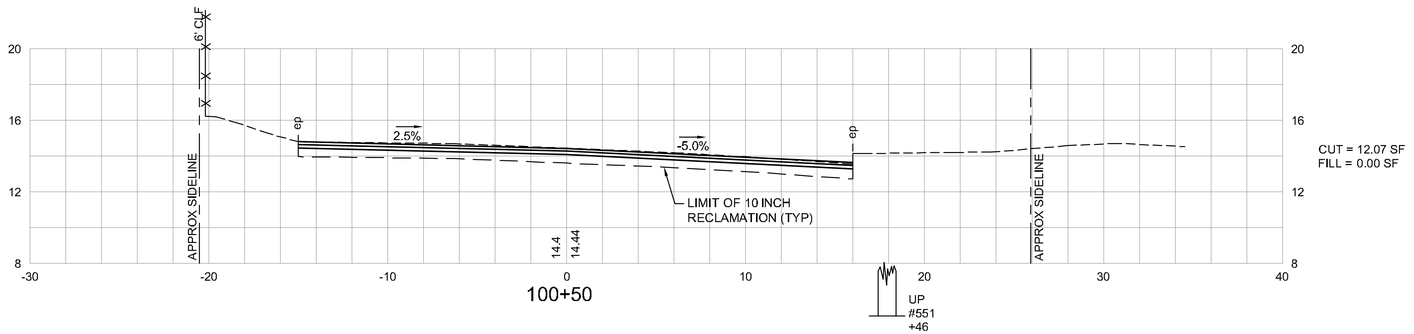


101+50





101+00



100+50



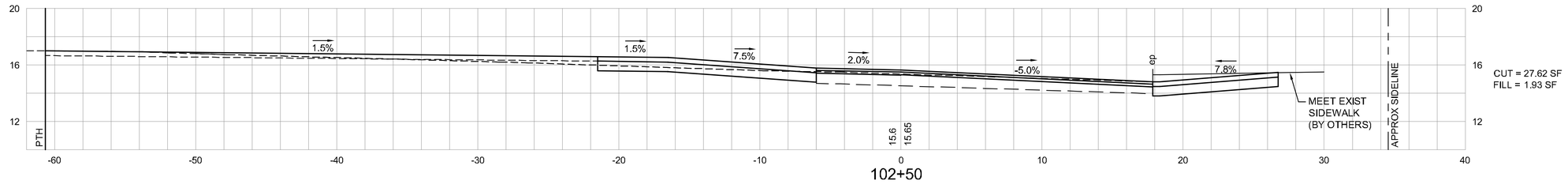
ESTIMATED SHRINKAGE = 15%

F&T DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

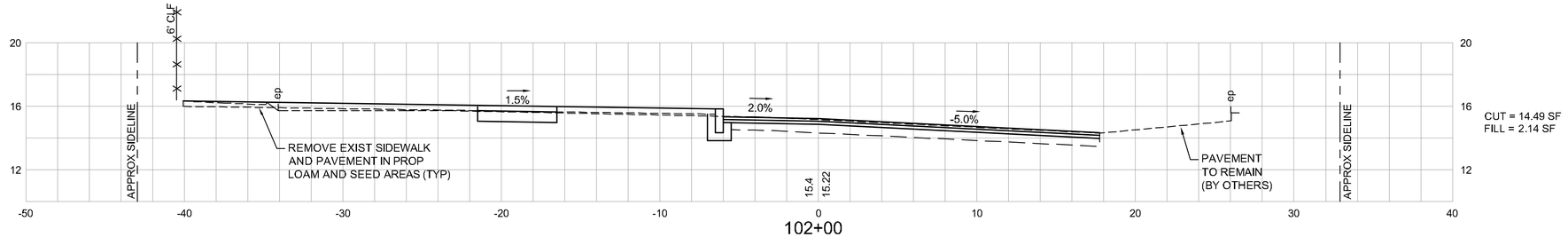
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	36	53
CONTRACT NO. Q-20			

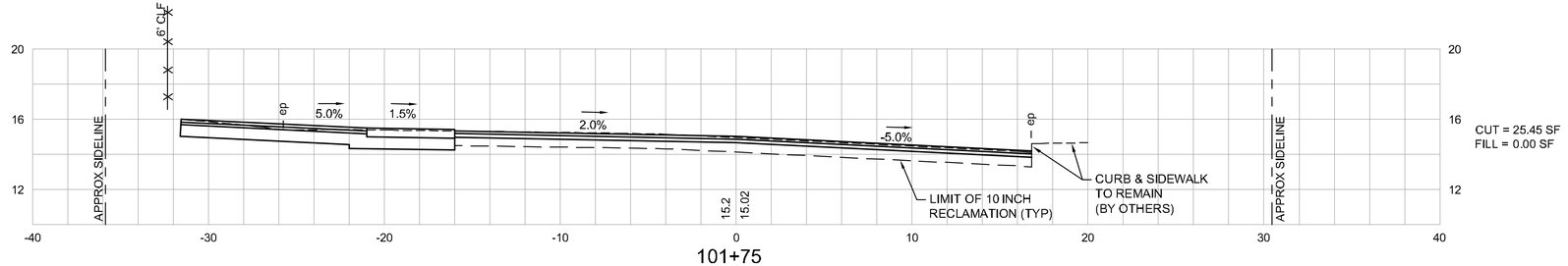
CROSS SECTIONS
GOODHUE STREET



102+50



102+00



101+75

4 0 4 8

SCALE IN FEET

F&T DWG. NO.
LG-423B

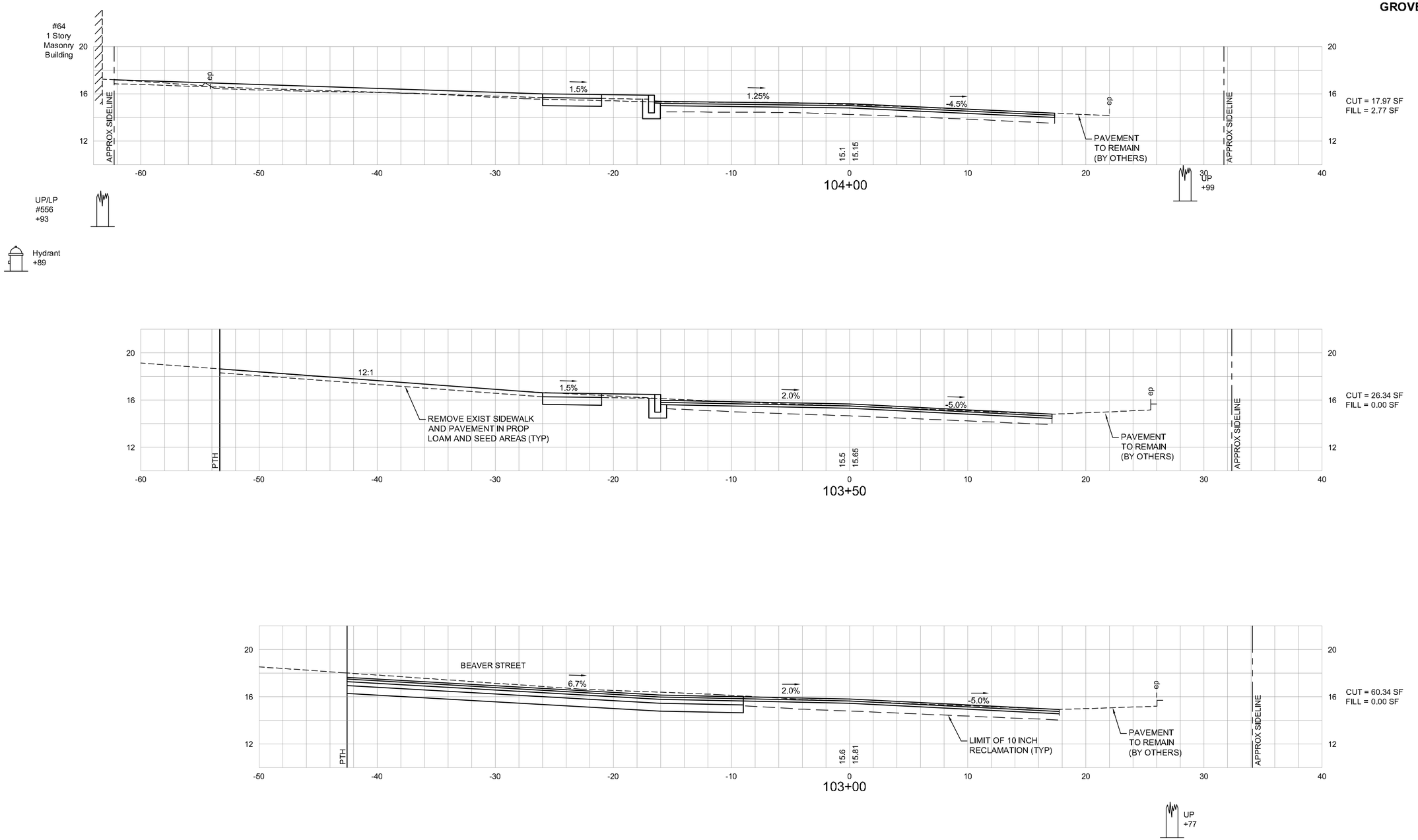
DES		CHK	
DR		CHK	
EST		CHK	

ENGINEER IN CHARGE

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	37	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET



4 0 4 8

SCALE IN FEET

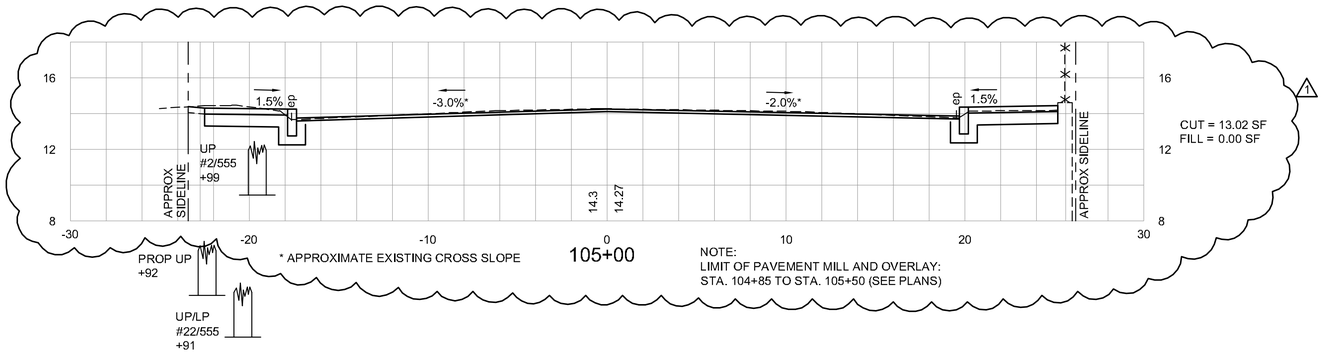
FS&T DWG. NO.
LG-423B

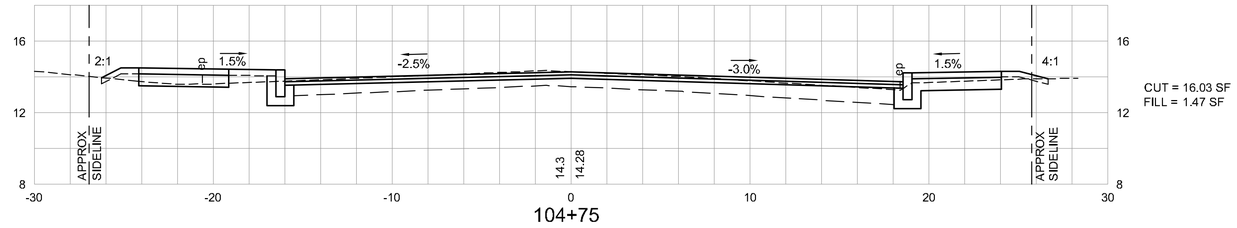
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

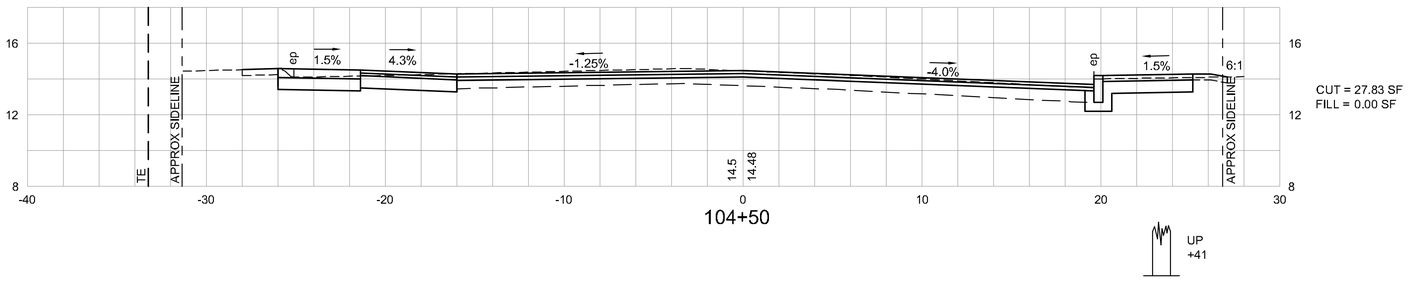
SALEM
GROVE STREET IMPROVEMENTS

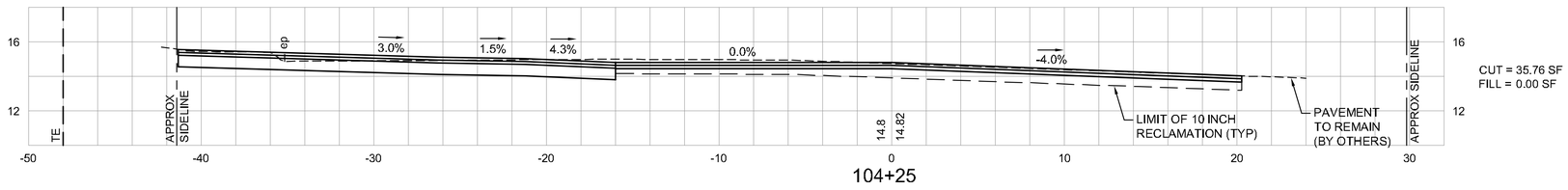
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	38	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET









4 0 4 8

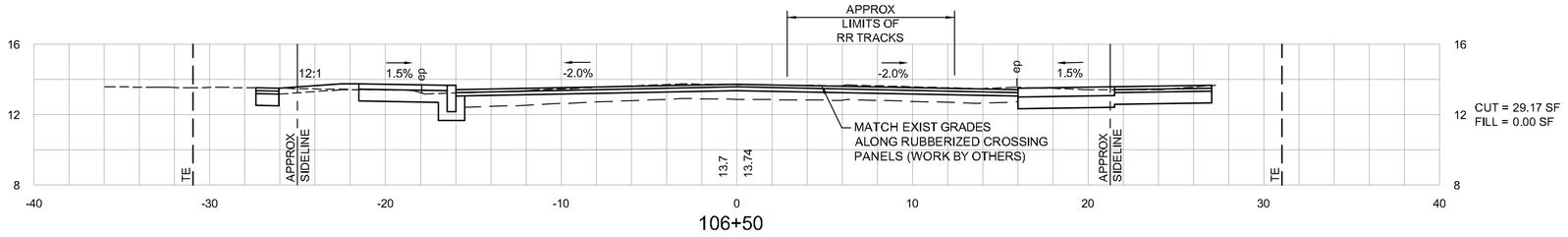
SCALE IN FEET

F&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

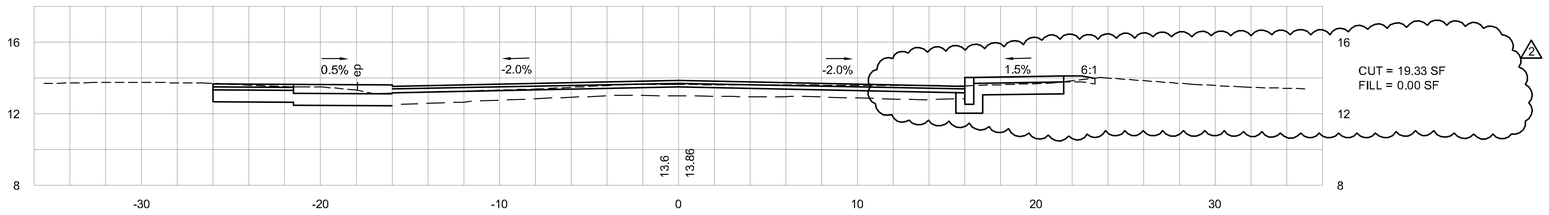
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	39	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET

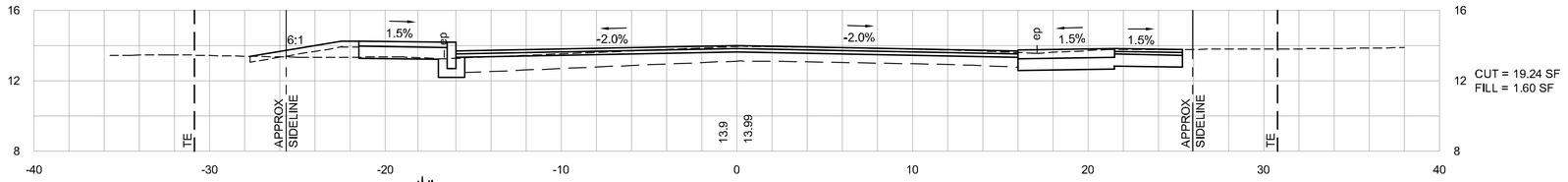


106+50



106+25

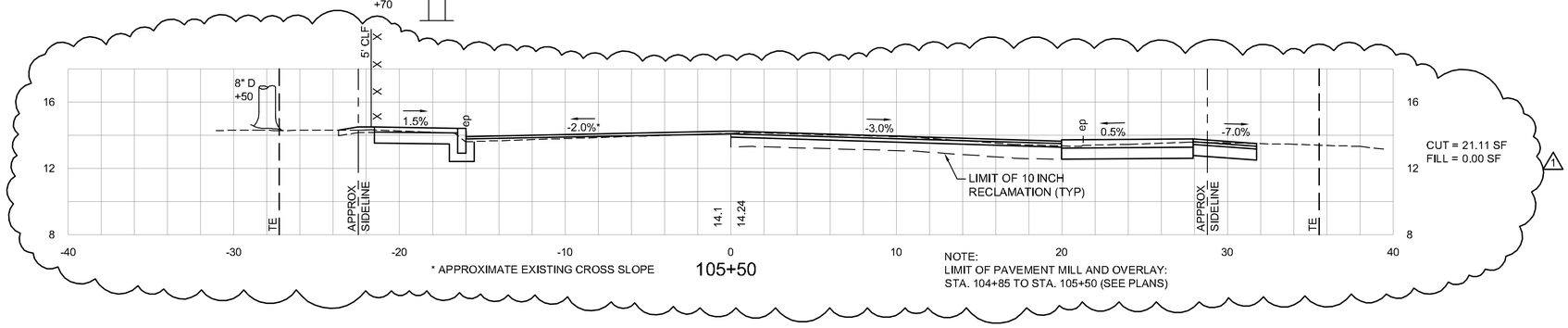
PROP HYD
+24



106+00

PROP UP
+70

UP/LP
#22/772
+70



* APPROXIMATE EXISTING CROSS SLOPE

105+50

NOTE:
LIMIT OF PAVEMENT MILL AND OVERLAY:
STA. 104+85 TO STA. 105+50 (SEE PLANS)

4 0 4 8

SCALE IN FEET

FS&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

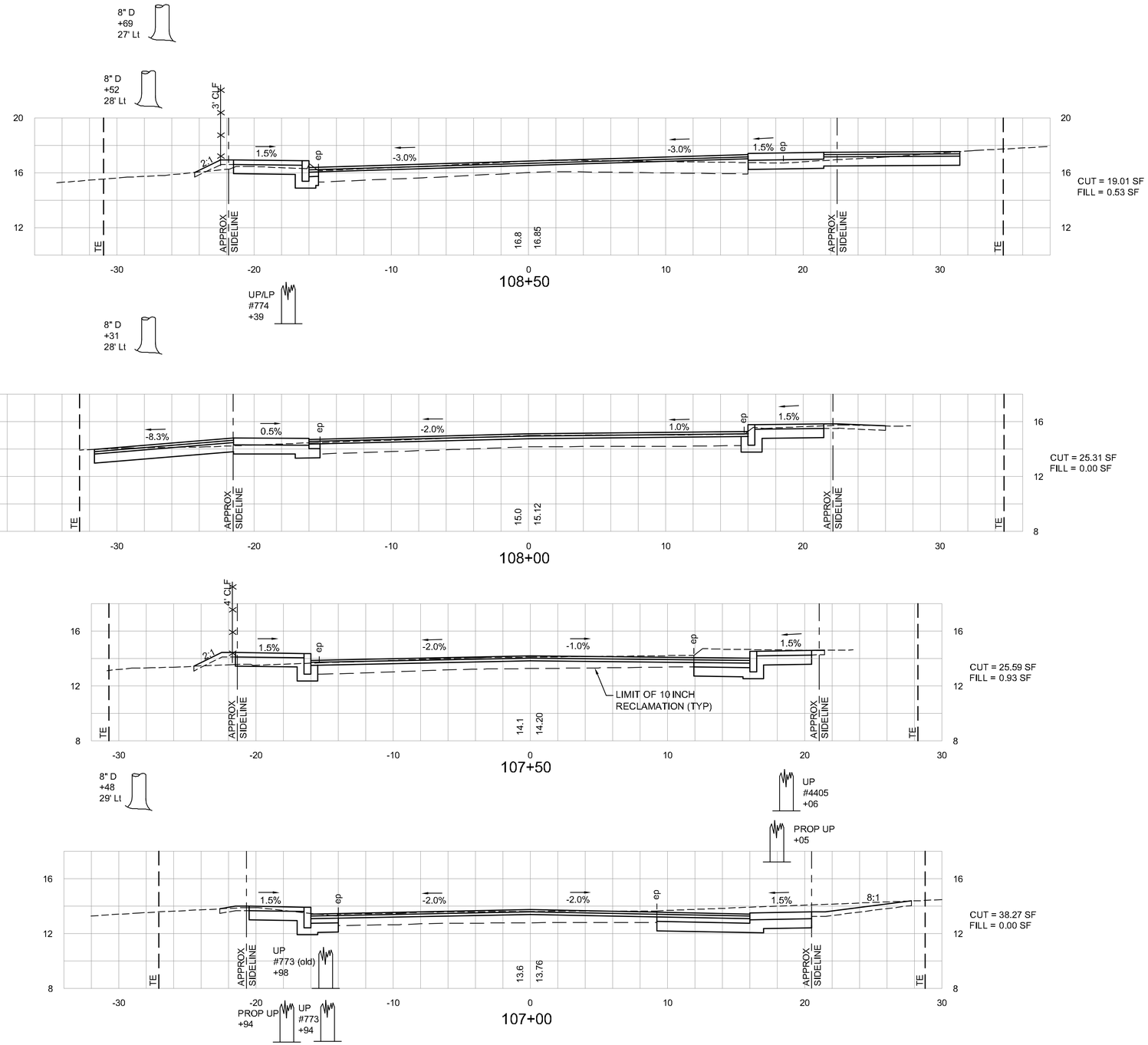
REV.	DATE	DESCRIPTION	BY
2	1/7/15	UPDATED CURB TO 6" REVEAL	JCM
1	10/3/14	ADDENDUM NO. 3 – REVISED TO MILL & OVERLAY	BTR

CONSTRUCTION UPDATE NO. 01

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	40	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET



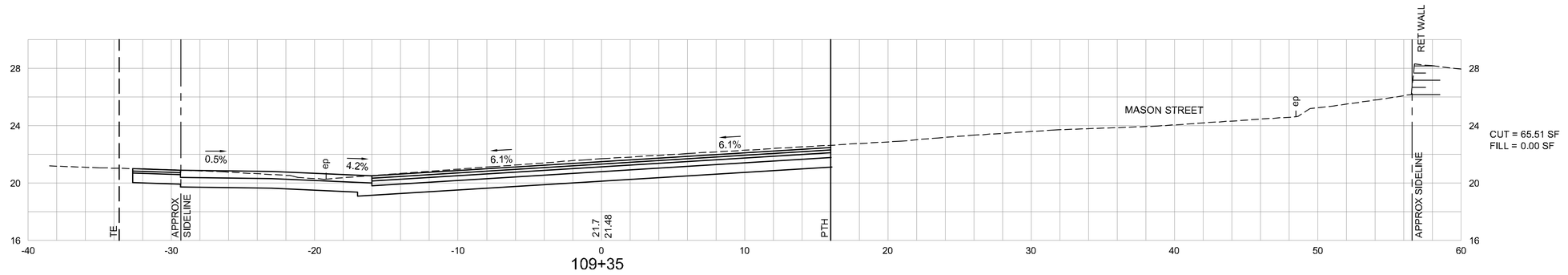
FS&T DWG. NO.
LG-423B

DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

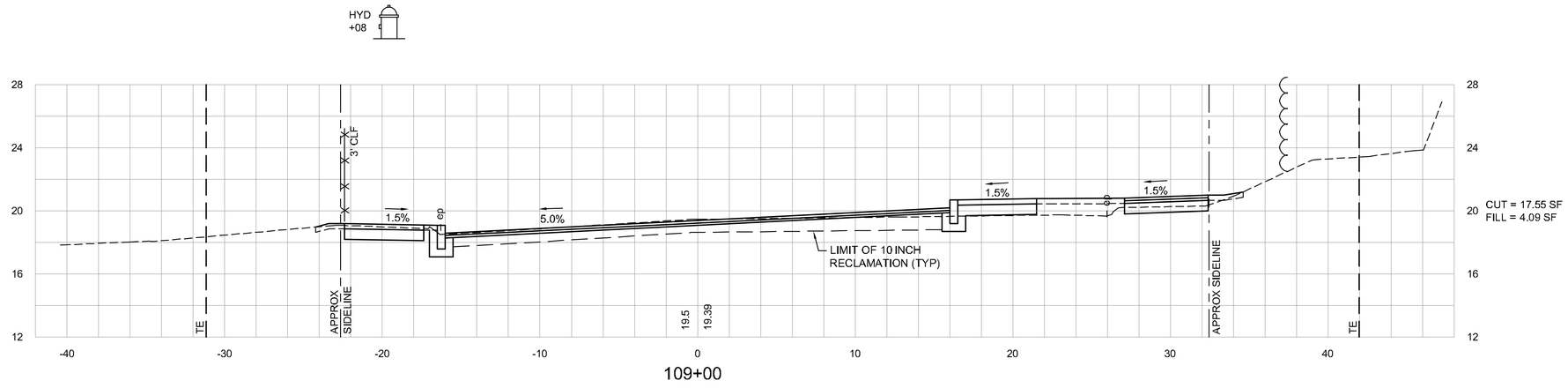
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	41	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET



109+35



109+00

4 0 4 8

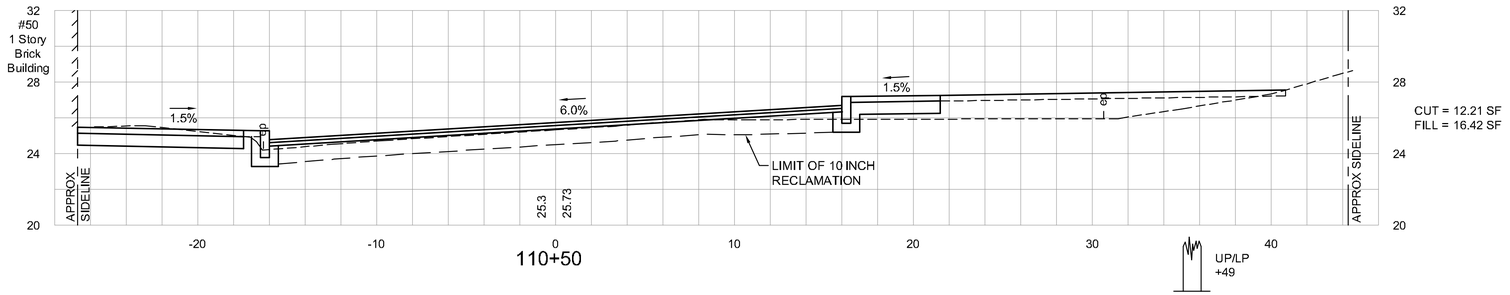
SCALE IN FEET

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

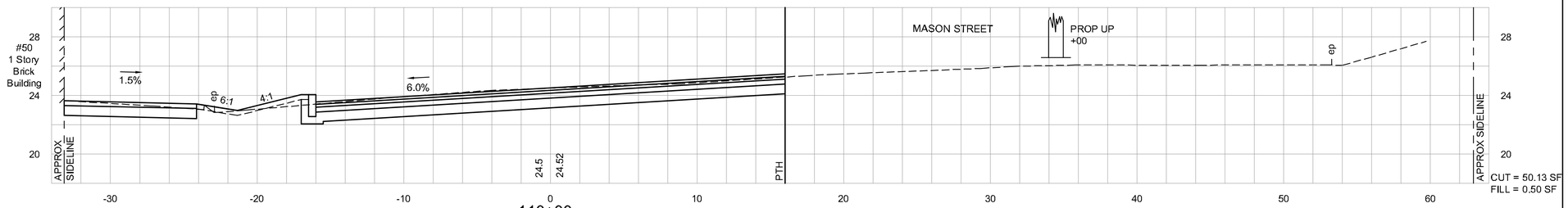
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	42	53
CONTRACT NO. Q-20			

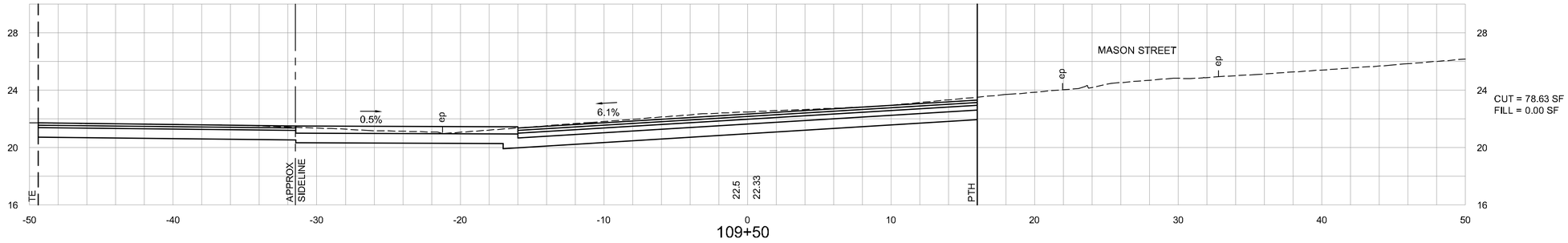
CROSS SECTIONS
GROVE STREET



110+50



110+00



109+50

4 0 4 8

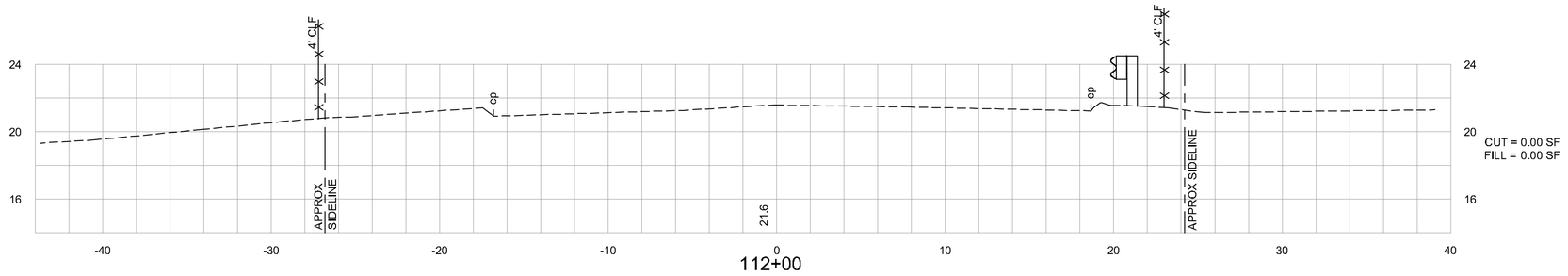
SCALE IN FEET

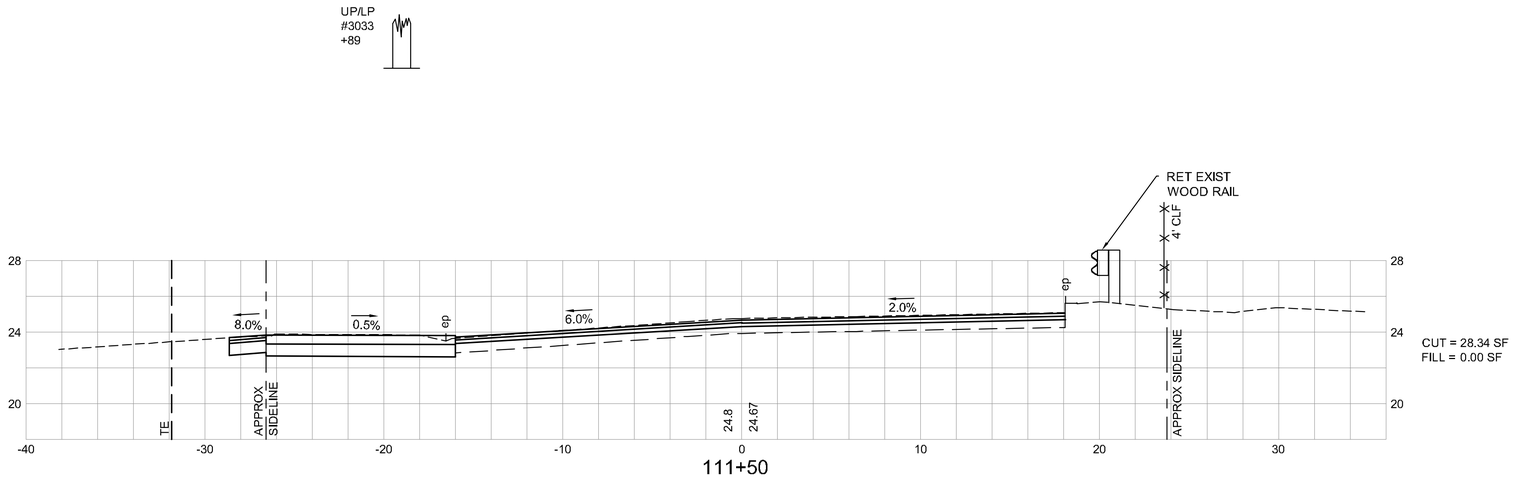
FS&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

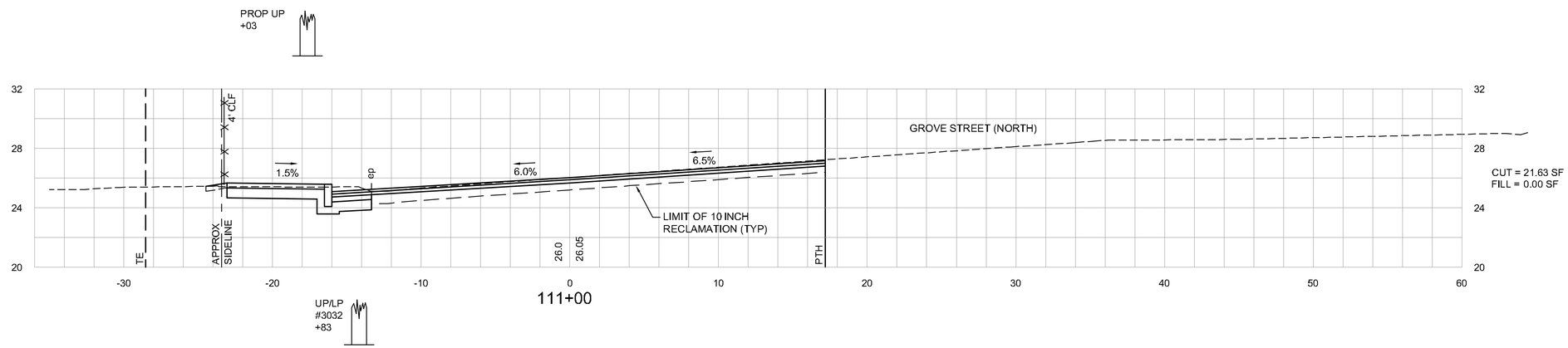
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	43	53
CONTRACT NO. Q-20			

CROSS SECTIONS
HARMONY GROVE ROAD







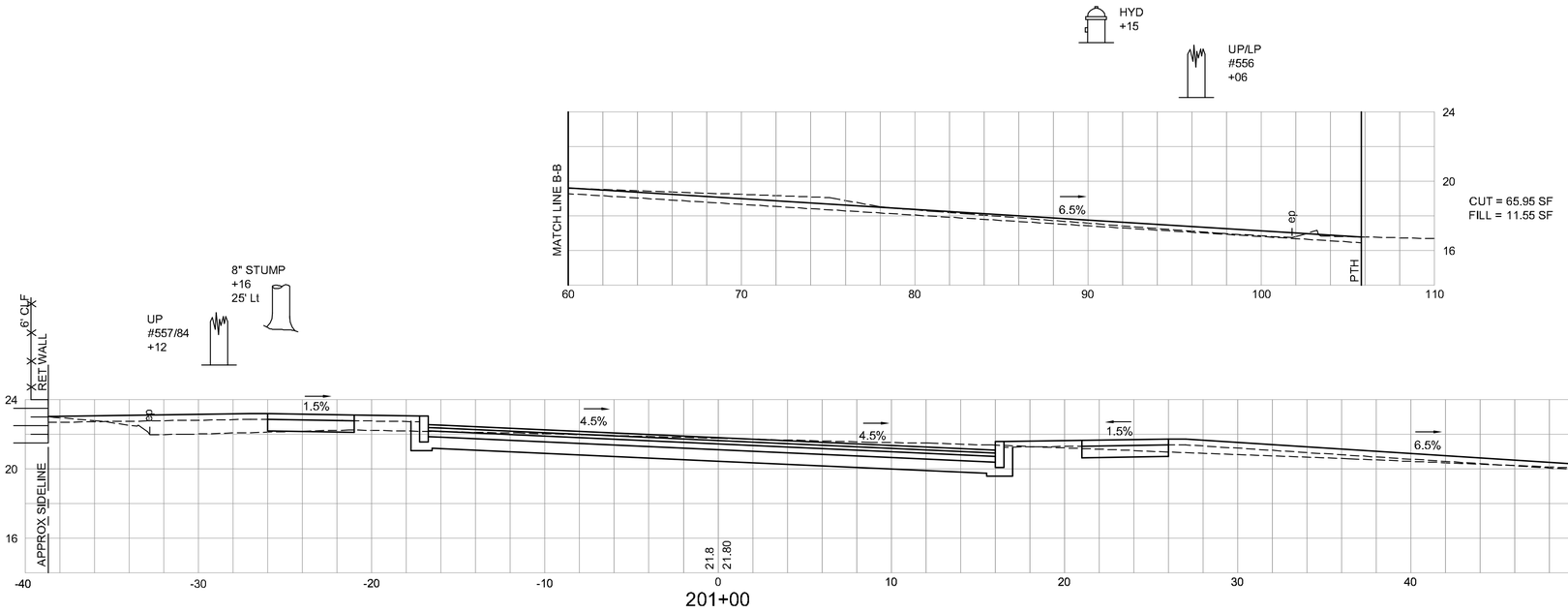


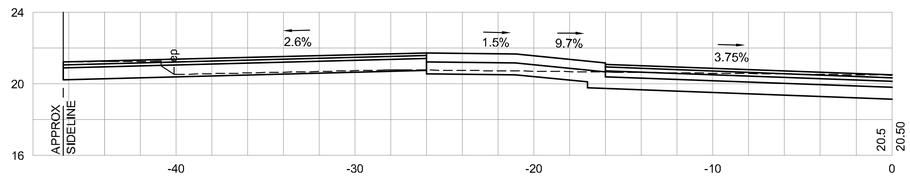
F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

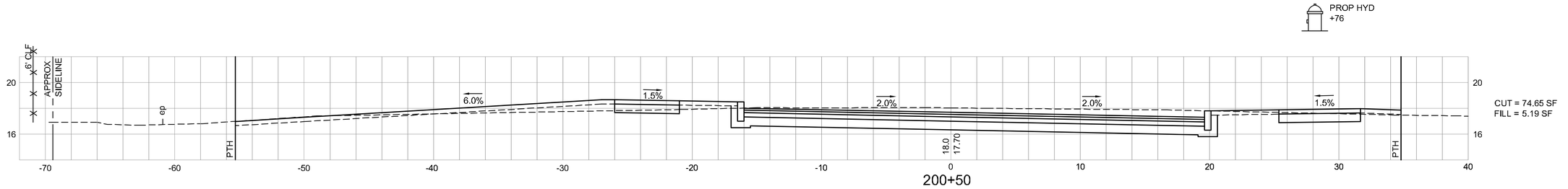
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	44	53
CONTRACT NO. Q-20			

CROSS SECTIONS
BEAVER STREET





200+85
DRIVE LT



200+50

4 0 4 8

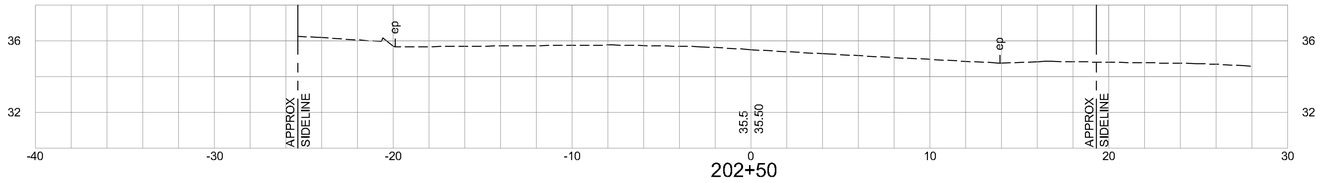
SCALE IN FEET

F&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

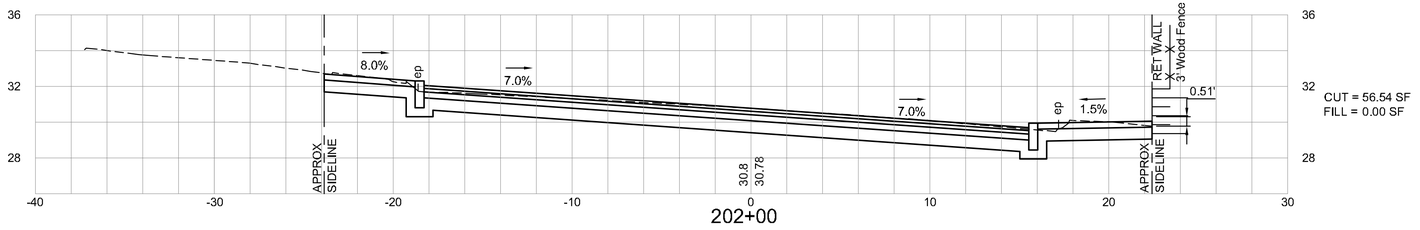
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	45	53
CONTRACT NO. Q-20			

CROSS SECTIONS
BEAVER STREET

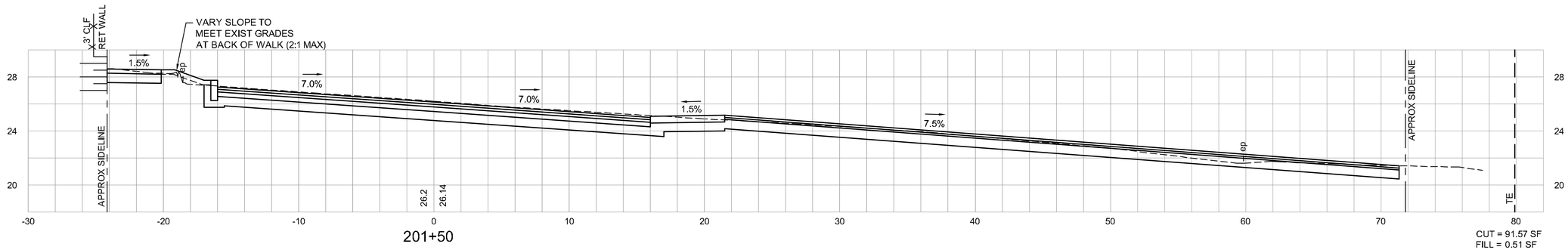


202+50



CUT = 56.54 SF
FILL = 0.00 SF

202+00



CUT = 91.57 SF
FILL = 0.51 SF

201+50

4 0 4 8

SCALE IN FEET

F&T DWG. NO.
LG-423B

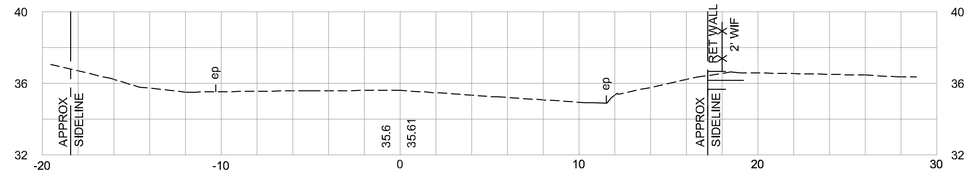
DES		CHK	
DR		CHK	
EST		CHK	

ENGINEER IN CHARGE

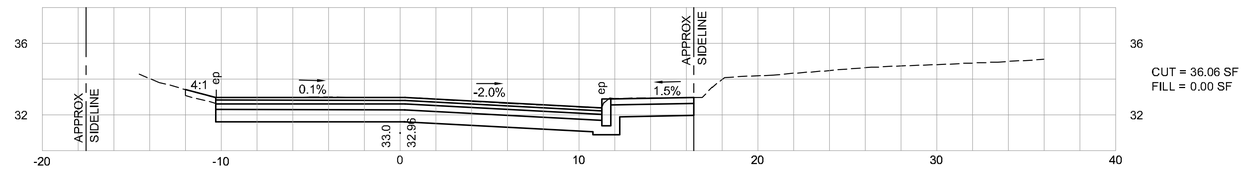
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	46	53
CONTRACT NO. Q-20			

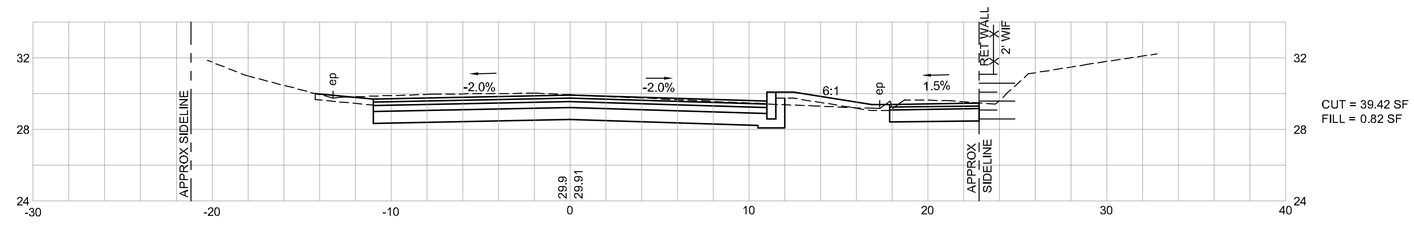
CROSS SECTIONS
MASON STREET



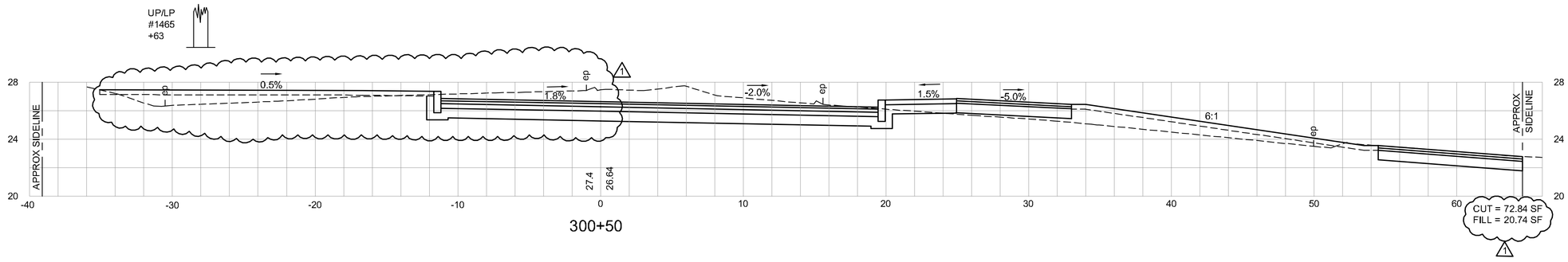
302+00



301+50



301+00



300+50

4 0 4 8

SCALE IN FEET

1	1/7/15	REVISED ROADWAY CROSS SLOPE	JCM
REV.	DATE	DESCRIPTION	BY

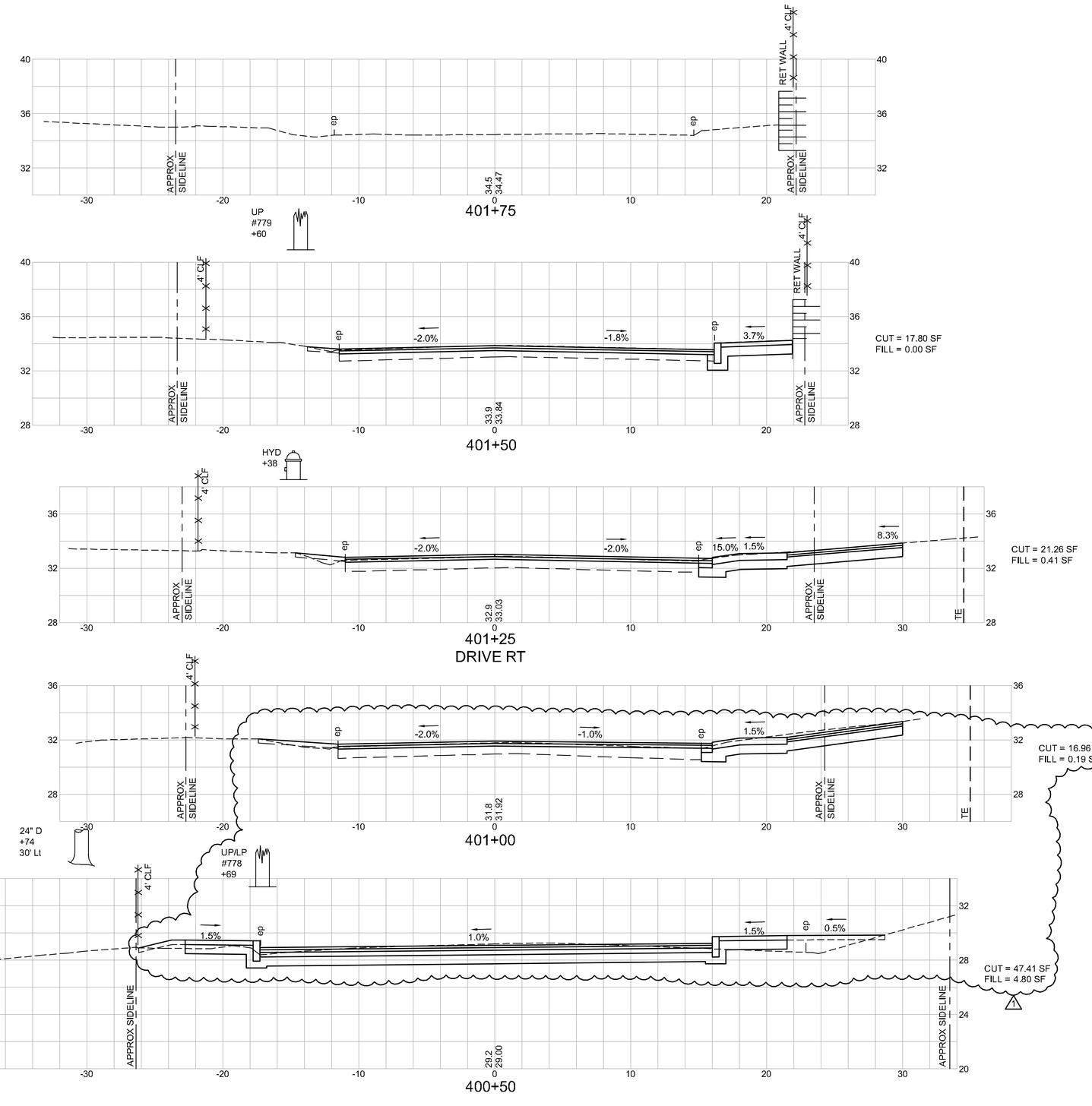
CONSTRUCTION UPDATE NO. 01

F&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	47	53
CONTRACT NO. Q-20			

CROSS SECTIONS
GROVE STREET (NORTH)



F&T DWG. NO.
LG-423B

DES		CHK	
DR		CHK	
EST		CHK	

ENGINEER IN CHARGE

REV.	DATE	DESCRIPTION	BY
1	1/7/15	REVISED ROADWAY CROSS SLOPE	JCM

[McLaug_J] – April 17, 2015 – 12:01pm – T:\LG-423B Salem Grove St\Drawings\Grove St Cross Sections Side St.dwg [Sht (01)]

CONSTRUCTION UPDATE NO. 01

SALEM
GROVE STREET IMPROVEMENTS

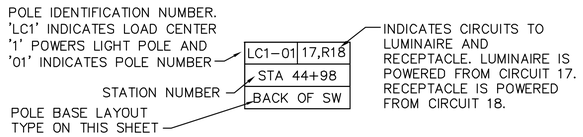
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	48	53
CONTRACT NO. Q-20			

LIGHTING LEGEND, ABBREVIATIONS, NOTES & DETAILS (ADD ALTERNATE)

ELECTRICAL LEGEND:

- LIGHTING CONDUIT DIRECT BURIED IN THE EARTH
- CONDUIT, CONCRETE ENCASED
- CONDUIT TURNING DOWN
- SINGLE LUMINAIRE WITH LIGHT POLE AND CONCRETE POLE FOUNDATION
- LIGHTING CONTROL CABINET
- PRE-CAST HANDHOLE

LUMINAIRE INFORMATION BOX

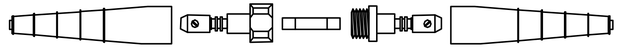


ABBREVIATIONS:

A	AMPERES
AFG	ABOVE FINISHED GRADE
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CM	CIRCULAR MIL
FBO	FURNISHED BY OTHERS
Fc	FOOT CANDLES
GAL	GALVANIZED
GND	GROUND
GFI	GROUND FAULT INTERRUPTER
IESNA	ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA
KVA	KILO VOLT AMPERES
LL	"L" LEFT
LT	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
NIC	NOT IN CONTRACT
PVC	POLYVINYL CHLORIDE
RCPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RNC	RIGID NON-METALLIC CONDUIT
RT	RAIN TIGHT
SCH	SCHEDULE
SW	SIDEWALK
UF	UNFUSED
V	VOLTS
W	WATTS
WP	WEATHERPROOF

GENERAL NOTES:

1. CONDUIT RUNS ARE DIAGRAMMATIC. COORDINATE CONDUIT RUNS WITH ALL OTHER EXISTING OR PROPOSED UNDERGROUND UTILITIES AND STRUCTURES.
2. PRIOR TO THE INSTALLATION OF PROPOSED LIGHTING, THE CONTRACTOR SHALL EXCAVATE TEST PITS AT LOCATIONS OF UTILITY CROSSINGS TO VERIFY DEPTHS AND LOCATIONS OF EXISTING PIPES, CONDUITS OR OTHER FACILITIES AND AS REQUIRED BY THE ENGINEER. WORK SHALL BE PAID FOR UNDER ITEM 141.1 TEST PIT FOR EXPLORATION.
3. COORDINATE ELECTRIC SERVICE WITH ELECTRIC UTILITLY COMPANY (NATIONAL GRID). ALL WORK ASSOCIATED WITH THE ELECTRIC SERVICE MUST BE COMPLETED IN ACCORDANCE WITH ELECTRIC COMPANY STANDARDS.
4. ALL UTILITY BACK CHARGES ARE THE RESPONSIBILITY OF THE CONTRACTOR FOR ALL WORK PERTAINING TO THIS PROJECT. COORDINATE ALL PERMANENT AND TEMPORARY POWER WITH THE UTILITY.
5. ALL ELECTRICAL EQUIPMENT SHALL BE UL LISTED FOR ITS INTENDED USE.
6. PROVIDE GROUND CONDUCTOR IN EACH ELECTRICAL RACEWAY IN ACCORDANCE WITH THE CODE.
7. THE HOT LINE AND NEUTRAL CONDUCTORS IN THE POLE HANDHOLE SHALL HAVE AN APPROVED STREET LIGHT FUSE CONNECTOR.

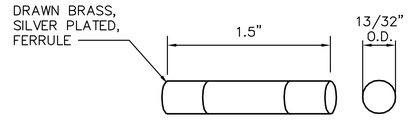


RATING: 600 VOLTS – 20 AMPS.	
FUSE SIZE: 1 1/2" x 13/32" O.D. – FERRULE 3/8"	
CONNECTOR SIZE: 8 1/2" x 7/8" O.D.	
CONNECTOR TYPE:	FUSE – QUICK DISCONNECT SET SCREW TYPE CONNECTION
CONNECTOR MATERIAL:	MOLDED PLASTIC BODY WITH RUBBER INSULATING BOOTS.
CONDUCTOR SIZE:	LINE AND LOAD #2 AWG THROUGH #12 AWG
REQUIRED FEATURES:	WATERTIGHT NO TAPING OR SEALANT REQUIRED
–FUSE HELD IN LOAD SIDE WHEN CONNECTOR IS DISCONNECTED. AASHTO COMPLIENT BREAKAWAY FUSE HOLDER. –PROVIDE APPROVED FUSE HOLDER WITH "DUMMY" ROD BLANK FUSE FOR NEUTRALS	

FUSE HELD IN LOAD SIDE WHEN CONNECTOR IS DISCONNECTED.

STRAIGHT THRU CONNECTOR

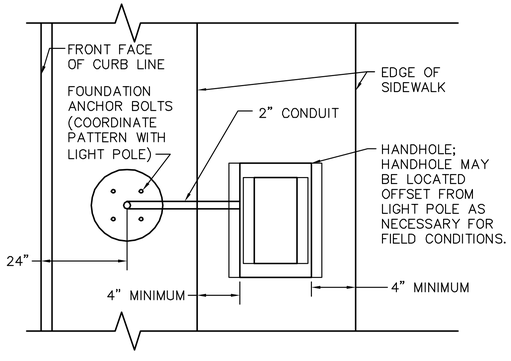
NOT TO SCALE



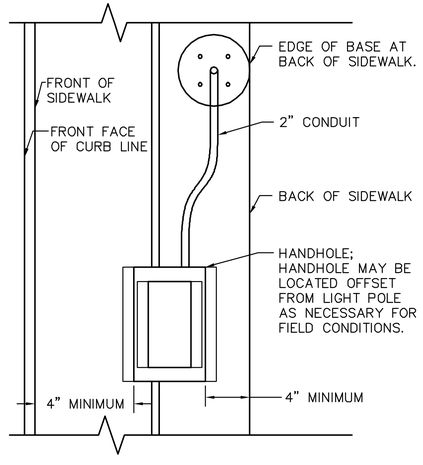
SIZE: MIDGET
TYPE: CURRENT LIMITING FUSE
VOLTAGE RATING: 120/240 VOLTS
USE: PROTECTION OF AREA LIGHTING EQUIPMENT

FUSES

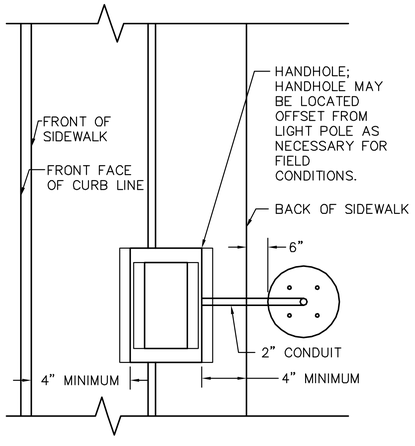
NOT TO SCALE



LAYOUT 'STREETSIDE'



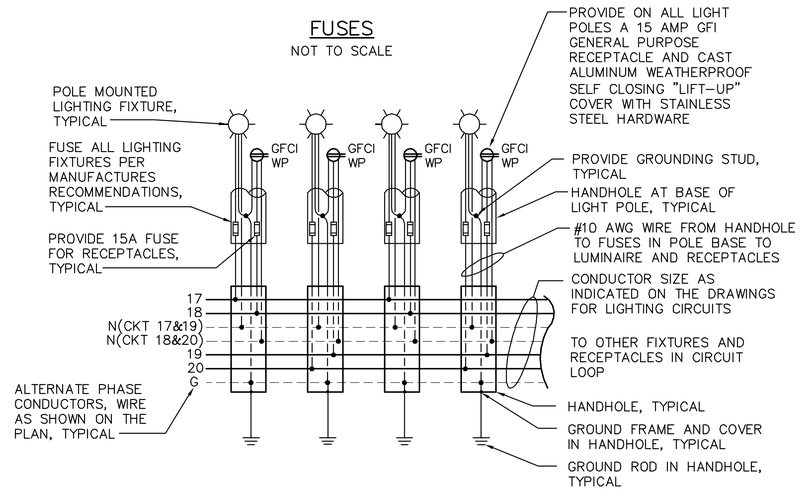
LAYOUT 'BACK OF SW'



LAYOUT 'BEHIND SW'

TYPICAL LIGHT POLE AND PULLBOX LAYOUT DETAILS

NOT TO SCALE



TYPICAL LIGHT POLE CIRCUITING ONE-LINE DIAGRAM

LIGHT POLE WIRING

NOT TO SCALE

FS&T DWG. NO.
LG-423B
DES CHK
DR CHK
EST CHK
ENGINEER IN CHARGE

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	49	53
CONTRACT NO. Q-20			

LIGHTING PLAN
PART 1 OF 2
(ADD ALTERNATE)

GROVE STREET

BEAVER STREET

LIMIT OF WORK
BEAVER STREET ℄ STA 202+32.31
MEET EXIST

NORTH RIVER CANAL

LC1-04	17,R18
STA	104+63
STREETSIDE	

LC1-03	19,R20
STA	103+46
STREETSIDE	

LC1-02	17,R18
STA	200+36
STREETSIDE	

LC1-01	19,R20
STA	102+40
STREETSIDE	

LC1-05	21,R22
STA	106+24
BACK OF SW	

2"C, 4#10 (CKT LC1-17,18), 3#10 (PHOTOCELL), 1#10-GND

3" SCH 80 PVC, 3#2 SERVICE CONDUIT. PROVIDE RISER ON UTILITY POLE TO UTILITY SPECIFICATIONS (RMC WHERE REQUIRED BY UTILITY)

COORDINATE WITH ELECTRIC UTILITY (NATIONAL GRID) FOR ELECTRIC SERVICE CONNECTION

PROVIDE PHOTOCELL ON LUMINAIRE WIRED BACK TO LOAD CENTER LC1

INSTALL CONDUIT IN TRENCH OVER CULVERT

2"C, 4#6,1#6-GND (CKT LC1-19,20) TYP.

2"C, 4#10,1#10-GND TYPICAL FROM HANDHOLE TO LIGHT POLE

2"C, 6#6,1#6-GND (CKT LC1-17,19,18,20) TYP.

2"C, 4#6 (CKT LC1-21,22), 1#6-GND

2-2"C (FROM LOAD CENTER 1 TO HANDHOLE), -1-2"C, 6#6 (CKT LC1-17,19,18,20), 3#10 (PHOTOCELL), 1#6-GND TYP. -1-2"C, 4#6,1#6-GND (CKT LC1-21,22) TYP.

LIGHTING LOAD CENTER 'LC1' - LOCATE FOUNDATION OF LOAD CENTER ABUTTING FRONT EDGE OF SIDEWALK

CONTINUED ON SHEET NO. 50

LIMIT OF ROADWAY RECONSTRUCTION
GOODHUE STREET ℄ STA 100+44.79
N 3015130.0371
E 815208.9847
MEET EXISTING

GOODHUE STREET

RAILROAD

SCALE 1" = 20'

F&T DWG. NO.
LG-423B

DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	50	53
CONTRACT NO. Q-20			

LIGHTING PLAN
PART 2 OF 2
(ADD ALTERNATE)

LIMIT OF ROADWAY CONSTRUCTION
HARMONY GROVE ROAD ℄ STA 111+81.00
N 3016140.8716
E 814860.8092
MEET EXISTING

HARMONY GROVE ROAD

GROVE STREET

MASON STREET

NORTH RIVER CANAL

CEMETERY
MAP 16 LOT 0377
N/F HARMONY GROVE CROP
BOOK 1982 PAGE 180

HARMONY GROVE CEMETERY
MAP 16 LOT 0242
N/F HARMONY GROVE CORP
BOOK 562 PAGE 112

MAP 16 LOT 0238
N/F 50 GROVE ST. REAL ESTATE, LLC
LCC 74834

MAP 16 LOT 0237
N/F MRM PROJECT MANAGEMENT
BOOK 25,700 PAGE 109

MAP 16 LOT 0368
N/F P-MAC
BOOK 17,434 PAGE 6

MAP 16 LOT 0366
N/F ZYGMUNT & EMILIA JANKOWSKI
BOOK 5147 PAGE 759

N/F RWD HOLDINGS, LLC
BOOK 21,010 PAGE 597

MAP 16 LOT 0365
N/F CITY OF SALEM
BOOK 5699 PAGE 523

LC2-04	17,R18
STA	109+85
STREETSIDE	

2"C, 4#6,1#6-GND (CKT LC2-17,18) TYP.

LC2-06	23,R24
STA	400+37
BEHIND SW	

2"C, 4#10,1#10-GND TYPICAL
FROM HANDHOLE TO LIGHT POLE

LC2-05	21,R22
STA	110+67
BEHIND SW	

PROVIDE PHOTOCELL ON LUMINAIRE
WIRED BACK TO LOAD CENTER LC2
2"C, 4#10 (CKT LC2-18,R20), 3#10 (PHOTOCELL), 1#10-GND

2"C, 6#6 (CKT LC2-21,23,22,24), 3#10 (PHOTOCELL), 1#6-GND

LIGHTING LOAD CENTER 'LC2'. LOCATE FOUNDATION OF
LOAD CENTER ABUTTING BACK EDGE OF SIDEWALK

2"C, 6#6,1#6-GND (CKT LC1-17,19,18,20) TYP.

3" SCH 80 PVC, 3#2 SERVICE CONDUIT. PROVIDE RISER
ON UTILITY POLE TO UTILITY SPECIFICATIONS
(RMC WHERE REQUIRED BY UTILITY)

COORDINATE WITH ELECTRIC UTILITY (NATIONAL GRID)
FOR ELECTRIC SERVICE CONNECTION

LIMIT OF WORK
MEET EXISTING

LC2-02	17,R18
STA	109+12
BEHIND SW	

2"C, 6#6,1#6-GND
(CKT LC1-17,19,18,20

2"C, 4#6,1#6-GND
(CKT LC2-17,18)

LC2-01	19,R20
STA	107+88
BACK OF SW	

LC2-03	19,R20
STA	300+60
STREETSIDE	

LIMIT OF WORK
MASON STREET ℄ STA 301+68.00
MEET EXISTING

STATION#1
PK NAIL SET
N 3015681.89
E 815148.01
ELEV=13.73

STATION#6
MAG NAIL SET
N 3016220.14
E 814925.37
ELEV=32.99

STATION#5
STK/NAIL SET
N 3016040.34
E 815050.52
ELEV=37.09

CONTINUED ON SHEET NO. 49

SCALE 1" = 20'

FS&T DWG. NO.
LG-423B

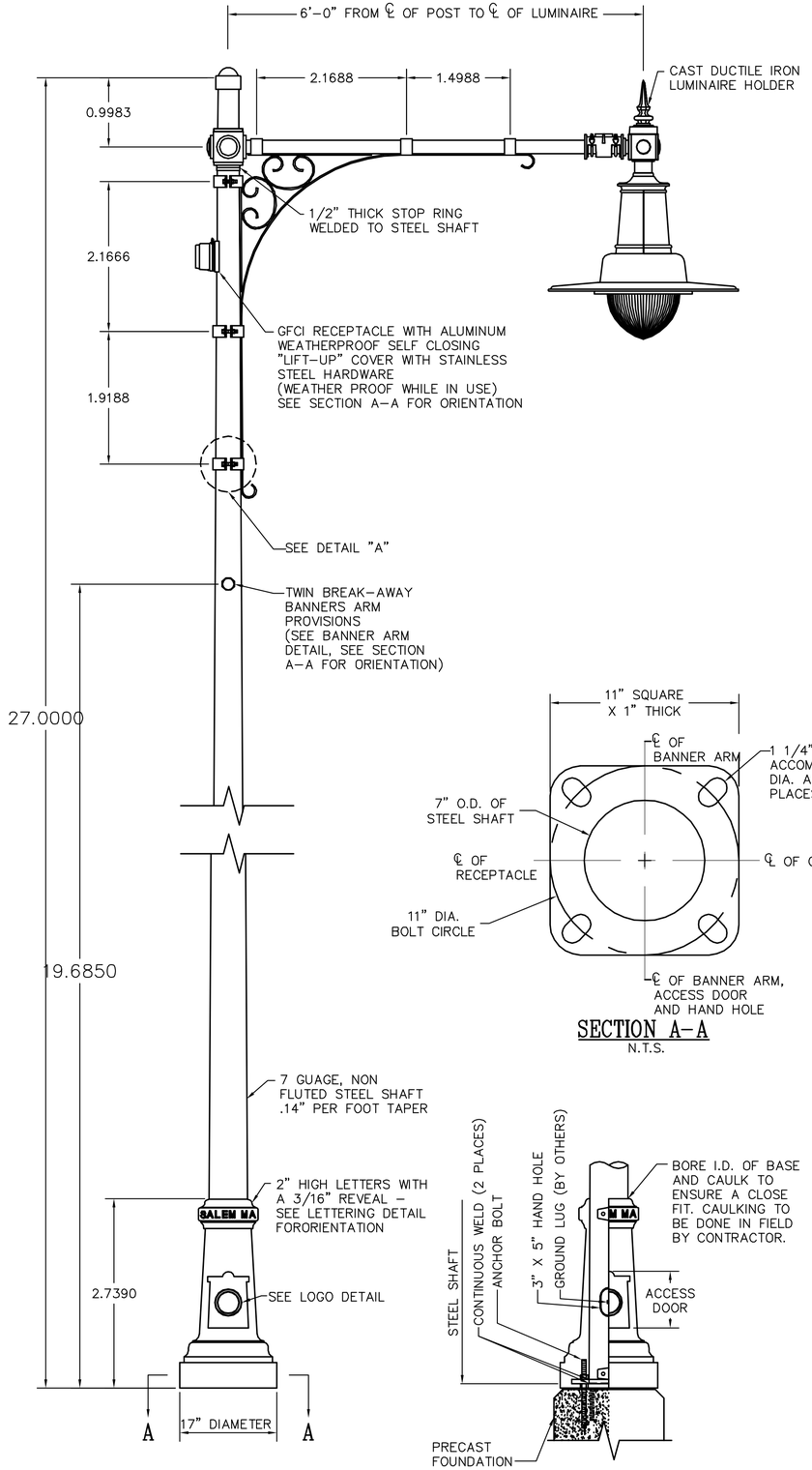
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

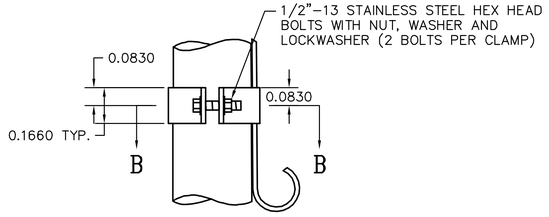
[McLaug_J] – April 17, 2015 – 12:02pm – T:\LG-423B Salem Grove St\Drawings\Grove St Lighting Plan.dwg [Sht 02]

SALEM
GROVE STREET IMPROVEMENTS

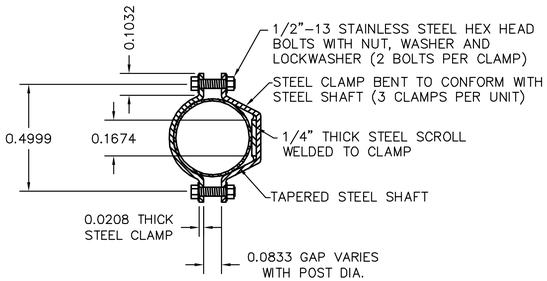
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	51	53
CONTRACT NO. Q-20			

LIGHTING DETAILS PART 1 OF 3 (ADD ALTERNATE)



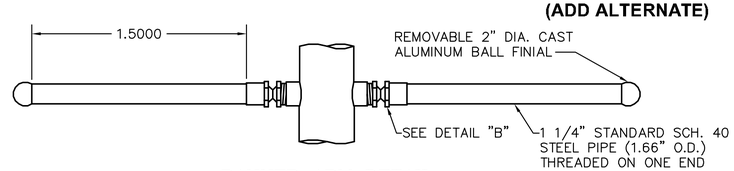


DETAIL "A"
N.T.S.

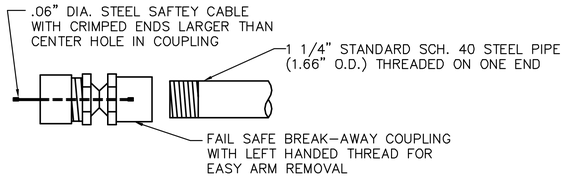


SECTION B-B
N.T.S.

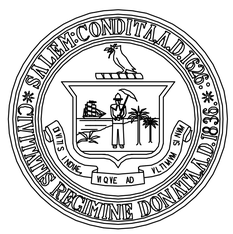
SECTION A-A
N.T.S.



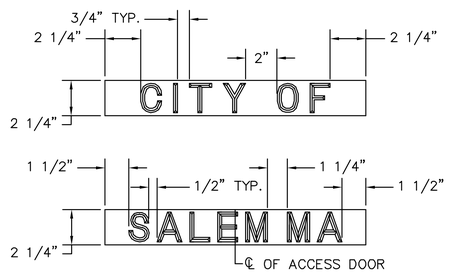
BANNER ARM DETAIL
N.T.S.



DETAIL "B"
N.T.S.



LOGO DETAIL
N.T.S.



LETTERING DETAIL
N.T.S.

LUMINAIRE SPECIFICATIONS (ITEM NUMBER: 823.101)

STYLE:	LECHMERE (ITEM NUMBER #: 823.101)
HEIGHT:	2'-4 7/8"
WIDTH:	2'9" DIA.
MATERIAL:	CAST ALUMINUM ALLOY ANSI 356 PER A.S.T.M. B26-95
GLOBE:	RIBBED GLASS
FINISH:	POWDER COAT - GLOSS BLACK
LAMPING:	155W LED
VOLTAGE:	ELECTRONIC WIRED AT 120-277
NUM. OF BOARDS:	2
COLOR TEMP:	4500K
DISTRIBUTION:	TYPE III (ASYMMETRIC DISTRIBUTION)
OPTICS:	CROSSFIRE REFRACTIVE
MODIFIER:	COLUMBIA VERTICAL ALIGNMENT
OUTPUT:	11,500 LUMEN MINIMUM

CROSS ARM SPECIFICATIONS (ITEM NUMBER: 821.3)

STYLE:	CAMBRIDGE SINGLE (ITEM NUMBER #: 821.3)
WIDTH:	6'-0" FROM ℄ OF POST TO ℄ OF LUMINAIRE
MATERIAL:	CAST DUCTILE IRON WITH 2" STANDARD STEEL PIPE AND STEEL SCROLL WORK
FINISH:	POWDER COAT - GLOSS BLACK

LAMP POST SPECIFICATIONS (ITEM NUMBER: 821.3)

STYLE:	CAMBRIDGE STEEL (CITY OF SALEM)
HEIGHT:	27'-0"
BASE:	17" DIAMETER
MATERIAL:	
SHAFT:	7 GAUGE, SMOOTH STEEL MONOTUBE CONSTRUCTION
BASE:	PLEASE SEE QUANTITY
FINISH:	
SHAFT:	HOT DIPPED GALVANIZED & POWDER COAT - GLOSS BLACK
BASE:	POWDER COAT - GLOSS BLACK
ACCESS DOOR:	LOCATED IN BASE TO COINCIDE WITH HAND HOLE IN STEEL SHAFT SECURED WITH TAMPER PROOF HEX SOCKET SECURITY MACHINE SCREWS
GROUND STUD PROVISIONS:	1/4"-20 SQUARE NUT WELDED TO INSIDE WALL OF SHAFT OPPOSITE HAND HOLE FOR GROUND STUD (STUD BY OTHERS)
ANCHOR BOLTS:	(4) 1" DIA. X 36" + 4" HOOK (FULLY GALVANIZED WITH 2 GALVANIZED NUTS AND 2 GALVANIZED WASHERS PER BOLT)
BOLT PROJECTION:	5" REQUIRED

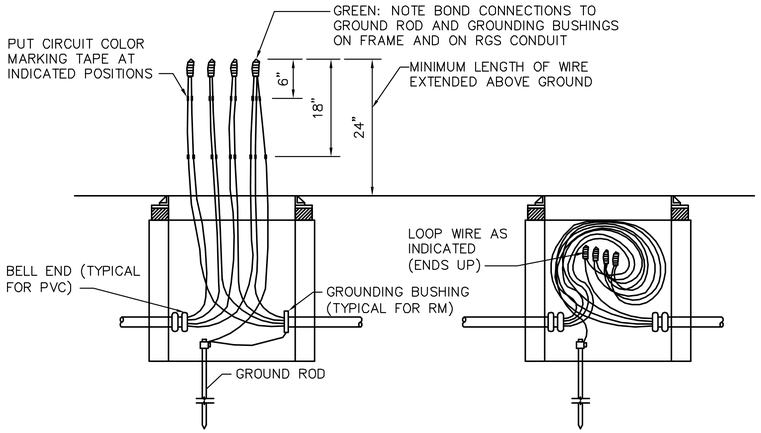
NOTE:
1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET 48.

FS&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

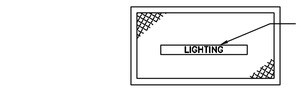
SALEM
GROVE STREET IMPROVEMENTS

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	52	53
CONTRACT NO. Q-20			

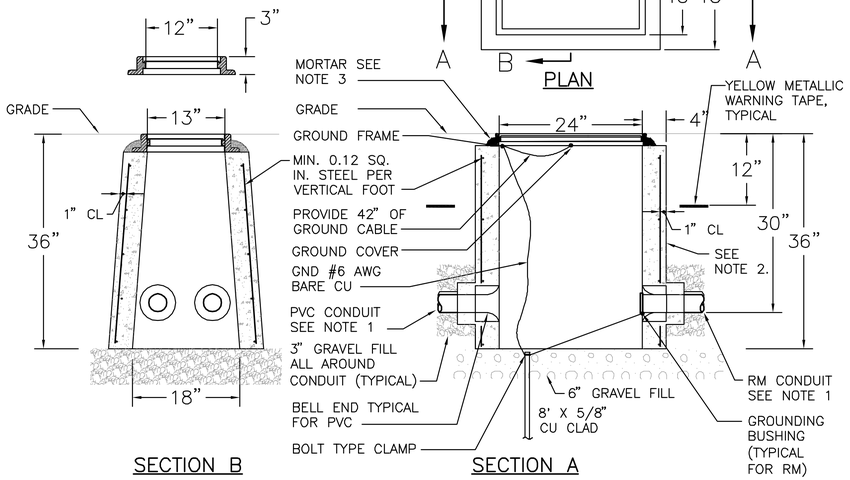
LIGHTING DETAILS PART 2 OF 3 (ADD ALTERNATE)



HANDHOLE WIRING DETAIL
NOT TO SCALE



HANDHOLE LABELING DETAIL
NOT TO SCALE



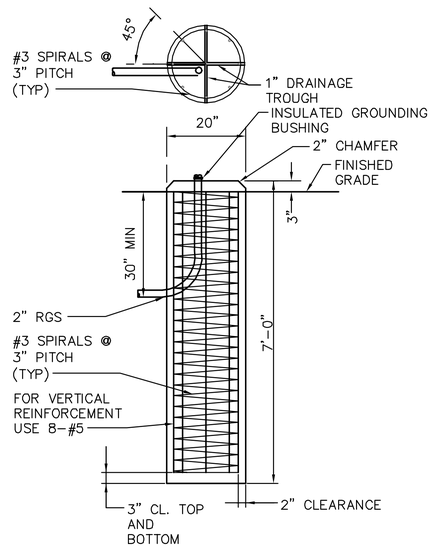
SECTION B SECTION A

PRECAST CONCRETE ELECTRIC HANDHOLE
SIZE 24 X 13 X 36 (SD2-022)
NOT TO SCALE

HANDHOLE NOTES:

1. ALL CONDUIT ENTERING HANDHOLES SHALL EXTEND INTO THE HANDHOLE CAVITY BY AT LEAST 2".
2. ALL HANDHOLES SHALL BE PRECAST CONCRETE REINFORCED WITH STEEL, AND SHALL BE FREE OF CRACKS OR OTHER DEFECTS. CONCRETE FOR PRECAST CONCRETE HANDHOLES SHALL BE 5000 PSI, 3/8 IN., 660 CEMENT CONCRETE MASONRY. REINFORCING BARS SHALL CONFORM TO AASHTO DESIGNATION M31 (ASTM DESIGNATION A 615) GRADE 60. AND SHALL BE EPOXY COATED.
3. CAST IRON FRAME SHALL BE MORTARED TO THE SURFACE OF THE PRECAST HANDHOLE.
4. ALL CONDUIT INSTALLED IN HANDHOLES SHALL BE INSTALLED IN KNOCKOUTS PROVIDED IN THE BOX AND NO EXCESS KNOCKOUTS SHALL BE MADE. THE KNOCKOUTS ARE DESIGNED TO BE MADE PRIOR TO BACKFILLING AROUND THE HANDHOLES. AFTER THE CONDUIT HAS BEEN INSTALLED IN THE HANDHOLE, THE OPEN SPACE BETWEEN THE BOX AND THE CONDUIT WILL BE SEALED WITH CLASS B CEMENT CONCRETE MASONRY. ANY CONDUIT INSTALLED IN SUCH A MANNER AS TO BLOCK COMPLETE ACCESS TO ANY OTHER CONDUIT SHALL BE REMOVED AND RESET.
5. FOR THE EXACT NUMBER, SIZE, AND ORIENTATION OF THE CONDUITS ENTERING THE HANDHOLE, SEE PLAN SHEETS.
6. CAST IRON HANDHOLE COVERS AND FRAMES SHALL BE PRODUCED BY THE SAME MANUFACTURER AND IN ACCORDANCE WITH MASSDOT SPECIFICATIONS.
7. METAL HANDHOLE COVER AND FRAME ARE TO BE BONDED (GROUNDED). DRILL AND TAP FRAME FOR MECHANICAL GROUND LUG CONNECTION. INSTALL A SERVIT POST GROUNDING CONNECTOR SUITABLE TO ACCOMMODATE ONE BARE #6 CONDUCTOR. EXTEND #6 GROUND CONDUCTOR THROUGH FRAME LUG TO BOND COVER. PROVIDE 42" OF SLACK FROM FRAME LUG TO BOND COVER. EXOTHERMICALLY WELD GROUND CONDUCTOR TO COVER.
8. FUNCTION DESIGNATION ON THE HANDHOLE SHALL BE LABELED AS FOLLOWS PER NEC ARTICLE 314.30D:

"LIGHTING" FOR LIGHTING CONDUIT



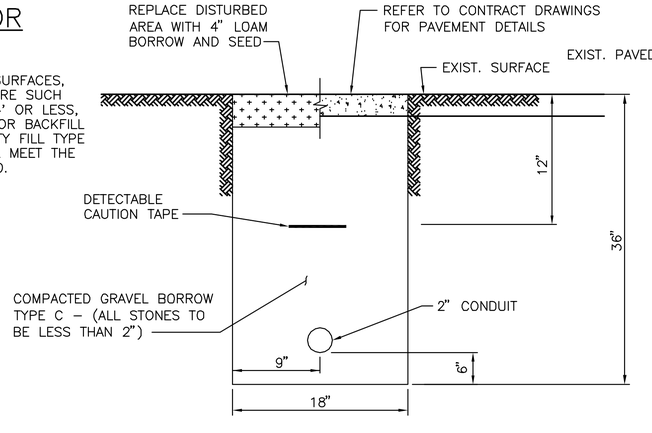
LIGHT STANDARD FOUNDATION NOTES:

1. CEMENT CONCRETE FOR FOUNDATIONS TO BE 4000 PSI, 1.5", 565 CEMENT CONCRETE. REINFORCING STEEL: SEE M4.03.05 OF THE STANDARD SPECIFICATIONS
2. A MINIMUM SLOPE OF 1/8" PER FOOT FROM EDGE OF BASE PLATE TO FACE OF CONCRETE.
3. THE ANCHOR BOLTS SHALL BE SUPPLIED BY THE LIGHT STANDARD MANUFACTURER. THE MANUFACTURER SHALL ALSO SUPPLY A TEMPLATE FOR SETTING THE BOLTS AND SHALL INDICATE THE NECESSARY PROJECTION.

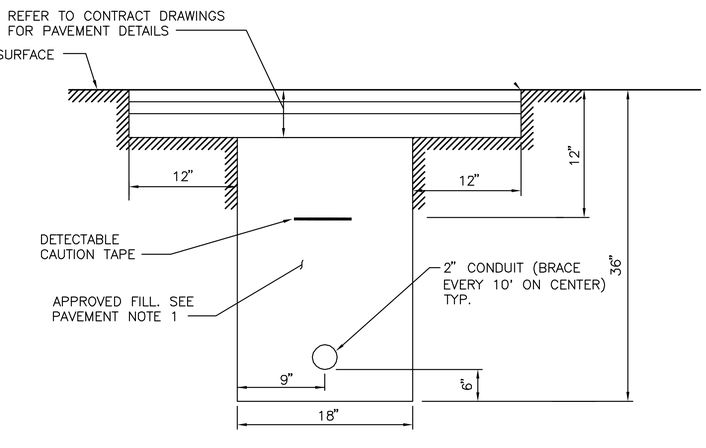
HIGHWAY LIGHT STANDARD FOUNDATION
NOT TO SCALE

PAVEMENT NOTES FOR TRENCH PATCHING:

1. FOR TRENCH CUTS WITHIN PAVED SURFACES, (MAINLINE AND LOCAL ROADS) WHERE SUCH TRENCH CUTS HAVE A DEPTH OF 4' OR LESS, CONTROLLED DENSITY FILL (CDF) FOR BACKFILL IS MANDATORY. CONTROLLED DENSITY FILL TYPE 2E, (FLOWABLE-EXCAVATABLE)SHALL MEET THE REQUIREMENTS OF SECTION M4.08.0.



SINGLE CONDUIT (UNDER GRASS AREA, OR SIDEWALK)



CONDUIT UNDER ROADWAY

TYPICAL TRENCH DETAILS FOR CONDUIT
NOT TO SCALE

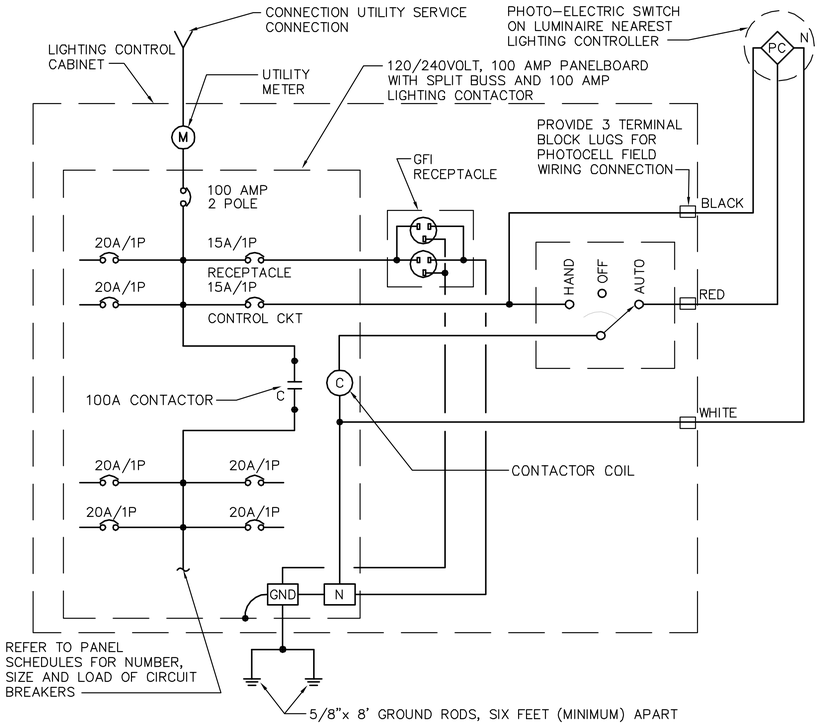
NOTE:
1. FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET ##

FS&T DWG. NO.			
LG-423B			
DES		CHK	
DR		CHK	
EST		CHK	
ENGINEER IN CHARGE			

SALEM
GROVE STREET IMPROVEMENTS

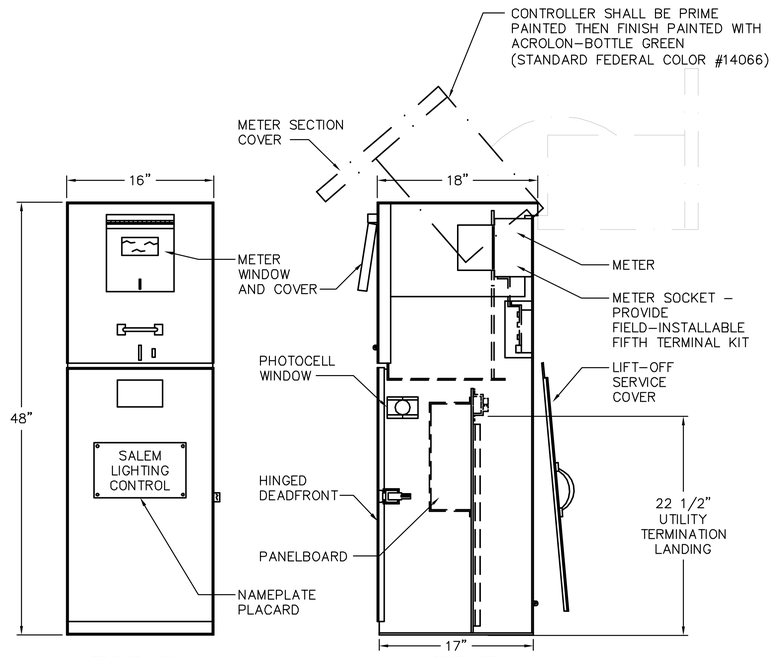
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	--	53	53
CONTRACT NO. Q-20			

LIGHTING DETAILS
PART 3 OF 3
(ADD ALTERNATE)



ONE LINE DIAGRAM

NOT TO SCALE

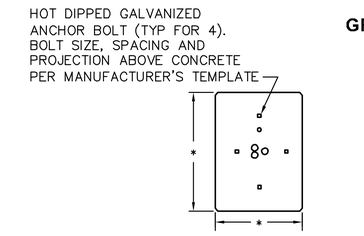


FRONT VIEW SIDE VIEW

NOTES:
1. PROVIDE MILBANK CP3B51110A22SL1 MODIFIED WITH 100 AMP CONTACTOR, PHOTOCELL TERMINALS, FIFTH TERMINAL KIT FOR USE WITH RINGLESS METER SOCKETS (COORDINATE WITH ELECTRIC UTILITY FOR METER SOCKET REQUIREMENTS), MOUNTING BASE, ANCHOR BOLT KIT, GFCI RECEPTACLE, AND INTERNAL LIGHT FIXTURE OR EQUIVALENT BY MYERS POWER PRODUCTS, OR VIT STRONG BOX.

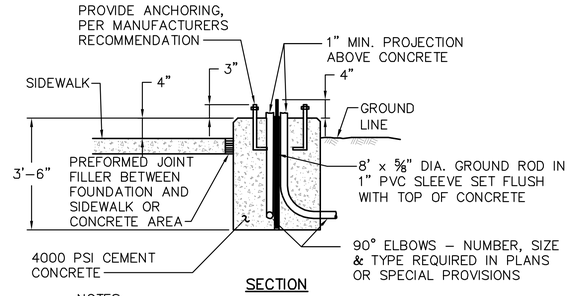
LIGHTING CONTROL CABINET DETAIL

NOT TO SCALE



* FOUNDATION SHALL BE 6" WIDER AND LONGER THAN CABINET BASE TO BE INSTALLED

PLAN



SECTION

NOTES:
1. ALL EXPOSED EDGES SHALL BE CHAMFERED ¾".
2. CONTRACTOR SHALL MAINTAIN ACCESS TO BOTH SIDES OF LOAD CENTER. FRONT FOR CUSTOMER ACCESS, BACK FOR UTILITY ACCESS. CONTRACTOR MAY ROTATE LOAD CENTER 90 DEGREES IF NECESSARY TO MAINTAIN ACCESS.
3. CONTRACTOR MUST MAINTAIN SIDEWALK CLEARANCE OF 3' MINIMUM AROUND CONCRETE FOUNDATION

CONCRETE FOUNDATION FOR LIGHTING CONTROL CABINET

NOT TO SCALE

PANELBOARD LC1-UNSWITCHED

UNSWITCHED LOADS ONLY

BUS: 120/240V, 1PH, 3W, 60HZ
MAIN LUGS ONLY : 100A
FEEDER SIZE: 3#2, 1#2-GND

SHORT CIRCUIT BRACING: 10-KAIC
CABINET: SURFACE
PANEL LOCATION: GROVE ST STA 104+71 LT

GROUND BAR

LOAD SERVED	HP	VA A	VA B	CKT. NO.	NEUTRAL A B	CKT. NO.	VA A	VA B	HP	LOAD SERVED
MAIN		–		1	100A	2	50			CONTROL CKT
MAIN			–	3	100A	4		180		GFI RECEPTACLE
SPARE		–		5	100A	6	–			SWITCHED LOAD CENTER (BELOW)
SPARE			–	7	100A	8		–		SWITCHED LOAD CENTER (BELOW)
SPARE		–		9		10	–			SPARE
SPACE			–	11		12		–		SPACE
SPACE		–		13		14	–			SPACE
SPACE			–	15		16		–		SPACE

PANELBOARD LC1-SWITCHED

SWITCHED LOADS ONLY

GROUND BAR

LOAD SERVED	HP	VA A	VA B	CKT. NO.	NEUTRAL A B	CKT. NO.	VA A	VA B	HP	LOAD SERVED
LUMINIARES - LIGHT POLES 02, 04		310		17		18	360			RECEPTACLES - LIGHT POLES 04, 04
LUMINIARES - LIGHT POLES 01, 03			310	19		20		360		RECEPTACLES - LIGHT POLES 01, 03
LUMINIARE - LIGHT POLE 05		155		21		22	180			RECEPTACLE - LIGHT POLE 05
SPARE			–	23		24		–		SPARE
SPARE		–		25		26	–			SPARE
SPACE			–	27		28		–		SPACE
SPACE		–		29		30	–			SPACE
SPACE			–	31		32		–		SPACE

VA A: 1055 VA B: 850
TOTAL CONNECTED LOAD: 1905 VA

ALL BRANCH C/B: 20 AMP TRIP
UNLESS OTHERWISE NOTED

PANELBOARD LC2-UNSWITCHED

UNSWITCHED LOADS ONLY

BUS: 120/240V, 1PH, 3W, 60HZ
MAIN LUGS ONLY : 100A
FEEDER SIZE: 3#2, 1#2-GND

SHORT CIRCUIT BRACING: 10-KAIC
CABINET: SURFACE
PANEL LOCATION: GROVE ST STA 110+25 RT

GROUND BAR

LOAD SERVED	HP	VA A	VA B	CKT. NO.	NEUTRAL A B	CKT. NO.	VA A	VA B	HP	LOAD SERVED
MAIN		–		1	100A	2	50			CONTROL CKT
MAIN			–	3	100A	4		180		GFI RECEPTACLE
SPARE		–		5	100A	6	–			SWITCHED LOAD CENTER (BELOW)
SPARE			–	7	100A	8		–		SWITCHED LOAD CENTER (BELOW)
SPARE		–		9		10	–			SPARE
SPACE			–	11		12		–		SPACE
SPACE		–		13		14	–			SPACE
SPACE			–	15		16		–		SPACE

PANELBOARD LC2-SWITCHED

SWITCHED LOADS ONLY

GROUND BAR

LOAD SERVED	HP	VA A	VA B	CKT. NO.	NEUTRAL A B	CKT. NO.	VA A	VA B	HP	LOAD SERVED
LUMINIARES - LIGHT POLES 02, 04		310		17		18	360			RECEPTACLES - LIGHT POLES 02, 04
LUMINIARES - LIGHT POLES 01, 03			310	19		20		360		RECEPTACLES - LIGHT POLES 01, 03
LUMINIARES - LIGHT POLES 05		155		21		22	180			RECEPTACLES - LIGHT POLES 05
LUMINIARES - LIGHT POLES 06			155	23		24		180		RECEPTACLES - LIGHT POLES 06
SPARE		–		25		26	–			SPARE
SPACE			–	27		28		–		SPACE
SPACE		–		29		30	–			SPACE
SPACE			–	31		32		–		SPACE

VA A: 1055 VA B: 1185
TOTAL CONNECTED LOAD: 2240 VA

ALL BRANCH C/B: 20 AMP TRIP
UNLESS OTHERWISE NOTED

NOTE: FOR GENERAL NOTES, LEGEND AND ABBREVIATIONS, SEE SHEET ##

F&T DWG. NO.	
LG-423B	
DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	