MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	1	139
PROJECT FILE NO.	607309		

HINGHAM
DERBY STREET

TITLE SHEET & INDEX

PLAN AND PROFILE OF

DERBY STREET

IN THE TOWN OF

HINGHAM

PLYMOUTH COUNTY

FEDERAL AID PROJECT NO. 607309

100% SUBMITTAL

THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES DATED 1988, AS AMENDED, THE SUPPLEMENTAL SPECIFICATIONS DATED JULY 1, 2015, THE 2016 CONSTRUCTION STANDARD DETAILS, THE 1996 CONSTRUCTION AND TRAFFIC STANDARD DETAILS, (AS RELATED TO TRAFFIC STANDARD DETAILS ONLY), THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS WITH MASSACHUSETTS AMENDMENTS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE OVERHEAD SIGNAL STRUCTURE & FOUNDATION STANDARD DRAWINGS DATED DECEMBER 2015 AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, WILL GOVERN.

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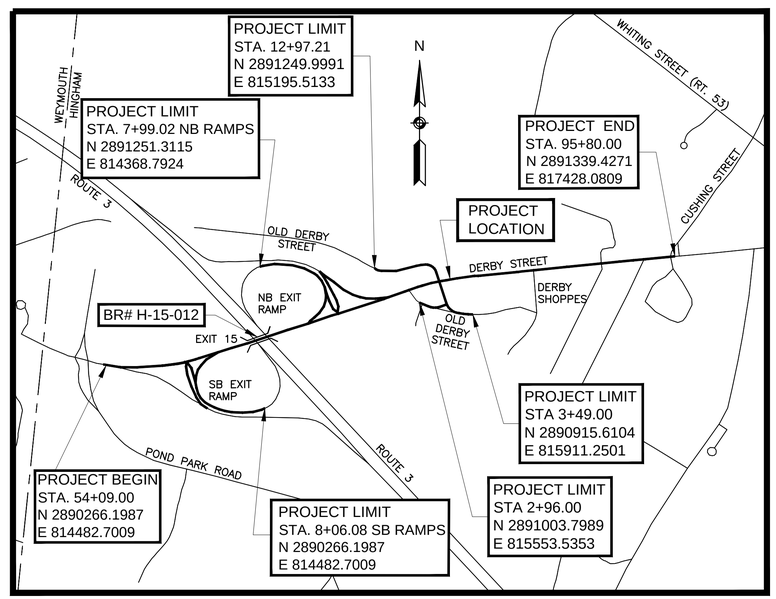

LENGTH OF PROJECT = 3872.00 FEET = 0.7333 MILES

DESIGN DESIGNATION (DERBY STREET)

DESIGN SPEED	45 MPH
ADT (2012)	27,900
ADT (2032)	34,000
K	8.5%
D	56% (WB)
T (PEAK HOUR)	3.0%
T (AVERAGE DAY)	2.0%
DHV	2,380
DDHV	1,330
FUNCTIONAL CLASSIFICATION	URBAN MINOR ARTERIAL

DESIGN DESIGNATION (OLD DERBY STREET)

DESIGN SPEED	25 MPH
ADT (2016)	3,100
ADT (2032)	3,360
K	10.8%
D	93% (SB)
T (PEAK HOUR)	0.8%
T (AVERAGE DAY)	-
DHV	340
DDHV	315
FUNCTIONAL CLASSIFICATION	LOCAL ROAD

DATE	DESCRIPTION	REV #

CHA
101 Accord Park Drive
Norwell, MA 02061
Main: (781) 982-5400 • www.chacompanies.com

massDOT
Massachusetts Department of Transportation
Highway Division

RECOMMENDED FOR APPROVAL

CHIEF ENGINEER **DATE**

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR **DATE**

APPROVED

HIGHWAY ADMINISTRATOR **DATE**

607309_HD(TITLE).DWG Plotted on 26-Jan-2017 4:51 PM

GENERAL SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
JB	JB	JERSEY BARRIER ON BRIDGE OR JERSEY BARRIER
CB	CB	CATCH BASIN
		CATCH BASIN CURB INLET
FP	FP	FLAG POLE
GP	GP	GAS PUMP
MB	MB	MAIL BOX
		POST SQUARE
		POST CIRCULAR
WELL	WELL	WELL
EHH	EHH	ELECTRIC HANDHOLE
		FENCE GATE POST
GG	GG	GAS GATE
BHL #	BHL #	BORING HOLE
MW #	MW #	MONITORING WELL
TP #	TP #	TEST PIT
		HYDRANT
		LIGHT POLE
CO.BD.		COUNTY BOUND
		GPS POINT
		CABLE MANHOLE
		DRAINAGE MANHOLE
		ELECTRIC MANHOLE
		GAS MANHOLE
		MISC MANHOLE
		SEWER MANHOLE
		TELEPHONE MANHOLE
		WATER MANHOLE
MHB	MHB	MASSACHUSETTS HIGHWAY BOUND
MON		MONUMENT
SB		STONE BOUND
TB		TOWN OR CITY BOUND
		TRAVERSE OR TRIANGULATION STATION
TPL or GUY	TPL or GUY	TROLLEY POLE OR GUY POLE
HTP		TRANSMISSION POLE
UFB	UFB	UTILITY POLE W/ FIREBOX
UPDL	UPDL	UTILITY POLE WITH DOUBLE LIGHT
ULT	ULT	UTILITY POLE W / 1 LIGHT
UPL	UPL	UTILITY POLE
		BUSH
SIZE & TYPE		TREE
		STUMP
		SWAMP / MARSH
WG	WG	WATER GATE
PM	PM	PARKING METER
		OVERHEAD CABLE/WIRE
		CURBING
100 99		CONTOURS
		UNDERGROUND DRAIN PIPE (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND ELECTRIC DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND GAS MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND SEWER MAIN (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND TELEPHONE DUCT (DOUBLE LINE 24 INCH AND OVER)
		UNDERGROUND WATER MAIN (DOUBLE LINE 24 INCH AND OVER)
		BALANCE STONE WALL
		GUARD RAIL - STEEL POSTS
		GUARD RAIL - WOOD POSTS
		CHAIN LINK OR METAL FENCE
		WOOD FENCE
		HAY BALES/SILT FENCE/ COMPOST FILTER TUBES
		TREE LINE OR LIMIT OF CLEARING AND GRUBBING
		SAWCUT LINE
		TOP OR BOTTOM OF SLOPE
		LIMIT OF EDGE OF PAVEMENT OR COLD PLANE AND OVERLAY
		BANK OF RIVER OR STREAM
		BORDER OF WETLAND
		100 FT WETLAND BUFFER
		200 FT RIVERFRONT BUFFER
		STATE HIGHWAY LAYOUT
		TOWN OR CITY LAYOUT
		COUNTY LAYOUT
		RAILROAD SIDELINE
		TOWN OR CITY BOUNDARY LINE
		PROPERTY LINE OR APPROXIMATE PROPERTY LINE
		EASEMENT
		HIGHWAY LAYOUT BASELINE
		CONSTRUCTION BASELINE

TRAFFIC SYMBOLS

EXISTING	PROPOSED	DESCRIPTION
1	1	CONTROLLER PHASE ACTUATED
		TRAFFIC SIGNAL HEAD (SIZE AS NOTED)
		WIRE LOOP DETECTOR (6' x 6' TYP UNLESS OTHERWISE SPECIFIED)
		VIDEO DETECTION CAMERA
		MICROWAVE DETECTOR
		PEDESTRIAN PUSH BUTTON, SIGN (DIRECTIONAL ARROW AS SHOWN) AND SADDLE
		EMERGENCY PREEMPTION CONFIRMATION STROBE LIGHT
		VEHICULAR SIGNAL HEAD
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED
		FLASHING BEACON
		PEDESTRIAN SIGNAL HEAD, (TYPE AS NOTED OR AS SPECIFIED)
RRSG	RRSG	RAILROAD SIGNAL
OR		SIGNAL POST AND BASE (ALPHA-NUMERIC DESIGNATION NOTED)
	20'	MAST ARM, SHAFT AND BASE (ARM LENGTH AS NOTED)
		HIGH MAST POLE OR TOWER
		SIGN AND POST
		SIGN AND POST (2 POSTS)
	20'	MAST ARM WITH LUMINAIRE
		OPTICAL PRE-EMPTION DETECTOR
		CONTROL CABINET, GROUND MOUNTED
		CONTROL CABINET, POLE MOUNTED
		FLASHING BEACON CONTROL AND METER PEDESTAL
		LOAD CENTER ASSEMBLY
		PULL BOX 12"x12" (OR AS NOTED)
		ELECTRIC HANDHOLE 12"x24" (OR AS NOTED)
		TRAFFIC SIGNAL CONDUIT

PAVEMENT MARKINGS SYMBOLS

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

ABBREVIATIONS

GENERAL

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

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	2	139
PROJECT FILE NO.	607309		

LEGEND & ABBREVIATIONS

ABBREVIATIONS (cont.)

GENERAL

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

TRAFFIC SIGNAL

CAB.	CABINET
CCVE	CLOSED CIRCUIT VIDEO EQUIPMENT
DW	STEADY DON'T WALK
FDW	FLASHING DON'T WALK
FR	FLASHING CIRCULAR RED
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
FY	FLASHING CIRCULAR AMBER
FYL	FLASHING AMBER LEFT ARROW
FYR	FLASHING AMBER RIGHT ARROW
G	STEADY CIRCULAR GREEN
GL	STEADY GREEN LEFT ARROW
GR	STEADY GREEN RIGHT ARROW
GSL	STEADY GREEN SLASH LEFT ARROW
GSR	STEADY GREEN SLASH RIGHT ARROW
GV	STEADY GREEN VERTICAL ARROW
OL	OVERLAP
PED	PEDESTRIAN
PTZ	PAN, TILE, ZOOM
R	STEADY CIRCULAR RED
RL	STEADY RED LEFT ARROW
RR	STEADY RED RIGHT ARROW
TR SIG	TRAFFIC SIGNAL
TSC	TRAFFIC SIGNAL CONDUIT
W	STEADY WALK
Y	STEADY CIRCULAR AMBER
YL	STEADY AMBER LEFT ARROW

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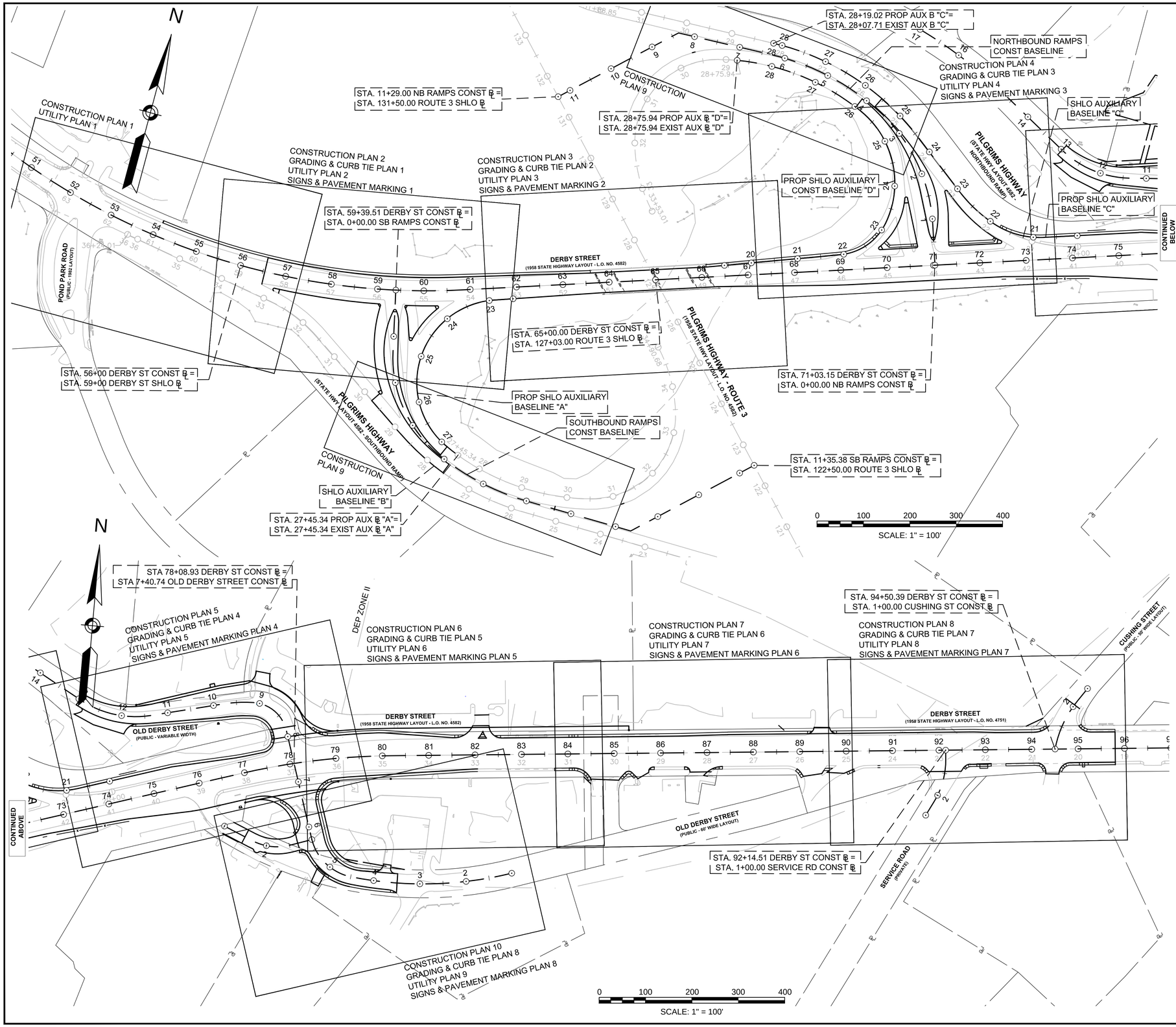

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	3	139
PROJECT FILE NO.	607309		

KEY PLAN & GENERAL NOTES

GENERAL NOTES

1. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH MASSDOT AND THE TOWN OF HINGHAM STANDARD DETAILS AND SPECIFICATIONS.
2. SURFACE OBSERVABLE INFORMATION SHOWN HEREON WAS PROVIDED AS A DIGITAL FILE FROM THE TOWN OF HINGHAM DPW ENTITLED "TOPOGRAPHIC PLAN OF LAND IN HINGHAM, MA ROUTE 53 & ROUTE 228" AS PREPARED BY JC ENGINEERING, INC. ON SEPTEMBER 8, 2009 FOR MASSDOT AND SUPPLEMENTED WITH AN ON-THE-GROUND SURVEY AT POND PARK ROAD PERFORMED BY COLER & COLANTONIO, INC. IN JULY AND AUGUST OF 2010.
3. PROPERTY LINE INFORMATION SHOWN HERE IS COMPILED FROM VARIOUS SOURCES AND DOES NOT REPRESENT A PROPERTY LINE RETRACEMENT SURVEY.
4. ELEVATIONS SHOWN HEREON ARE REFERENCED TO NAVD88, AND HAVE BEEN ESTABLISHED FOR PERMITTING AND DESIGN PURPOSES ONLY. REFERENCE BENCHMARK: HUB & TACK AT THE ENTRANCE ISLAND OF POND PARK ROAD ELEV.=149.37 (NAVD 88), OBTAINED FROM THE HINGHAM DPW (SEE NOTE 5).
5. IN THE EVENT THAT BENCHMARKS (TBM'S), ESTABLISHED FOR THIS PROJECT AND PUBLISHED ON THIS SURVEY, ARE DESTROYED, NOT RECOVERABLE OR A DISCREPANCY IS FOUND, THE USER SHOULD NOTIFY THIS FIRM IN WRITING PRIOR TO COMMENCING OR CONTINUING ANY WORK.
6. WETLAND LINE A1-D1 SHOWN HEREON WERE DELINEATED BY COLER & COLANTONIO, INC. IN JULY OF 2010. WETLAND LINES A-I SHOWN HEREON WERE DELINEATED BY COLER & COLANTONIO, INC. IN AUGUST OF 2012.
7. LOCATIONS AND DEPTHS OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE SHOWN BASED ON RECORD DATA PROVIDED BY THE OPERATING AUTHORITIES, AND HAVE BEEN FIELD INSPECTED WHERE POSSIBLE. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATION, ETC. BY THE CONTRACTOR PRIOR TO NEW CONNECTIONS TO OR OF SAME. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY THIS FIRM OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK. NAMES AND CONTACTS FOR UTILITY OPERATING AUTHORITIES ARE AVAILABLE UPON REQUEST.
8. HORIZONTAL AND VERTICAL DATUMS REFERENCED FROM NAD OF '83 AND NAVD OF '88.
9. THE SUBJECT SURVEY LIES IN FIRM ZONE "C" (AREA OF MINIMAL FLOODING), AS DESCRIBED ON COMMUNITY-PANEL NUMBER 250268 0010 B, EFFECTIVE DATE OF JUNE 3, 1986.
10. ANY RIM AND INVERT ELEVATIONS AND SPOT ELEVATIONS ARE PUBLISHED FOR DESIGN PURPOSES ONLY. VERTICAL BENCHMARKS SHOWN ON THE PLAN ARE TO BE USED FOR CONSTRUCTION EFFORTS.
11. THE CONTRACTOR WILL COORDINATE ALL PRIVATE CASTINGS AND POLES THAT ARE TO BE ADJUSTED, RESET OR RELOCATED WITH THE APPROPRIATE UTILITY PURVEYOR. THE RELOCATION, INSTALLATION OR REMOVAL OF PRIVATE UTILITIES SHALL BE ACCOMPLISHED BY THEIR OWNER. THE CONTRACTOR SHALL COOPERATE WITH THE PRIVATE UTILITY PURVEYORS AND ALLOW THEM ADEQUATE TIME TO COMPLETE THEIR WORK IN ADVANCE OF PERFORMING ANY PAVING OPERATIONS OR OTHER FINISH WORK.
12. THE CONTRACTOR SHALL MAKE DETERMINATIONS OF SUBSURFACE CONDITIONS, INCLUDING THE LOCATION OF ROCK AND THE ACTUAL LOCATION OF UTILITIES OR OTHER FEATURES WHICH MAY AFFECT THE WORK.
13. 6' LENGTH GRANITE TRANSITION CURBS SHALL BE INSTALLED WHERE PROPOSED GRANITE CURB ENDS AND HMA BERM OR NO EDGE TREATMENT BEGINS.
14. THE CONTRACTOR SHALL CAUSE AS LITTLE INTERFERENCE AND INCONVENIENCE TO ABUTTERS AS POSSIBLE. THE CONTRACTOR SHALL MAINTAIN SAFE AND CONVENIENT ACCESS TO PRIVATE PROPERTIES AT ALL TIMES.
15. THE FLOW OF TRAFFIC THROUGH CONSTRUCTION ZONES IN EXISTING PUBLIC WAYS SHALL BE MAINTAINED AT ALL TIMES UNLESS OTHERWISE SPECIFIED ON THE PLANS AND IN THE SPECIAL PROVISIONS.
16. ALL PERMANENT PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
17. A MINIMUM OF 4" LOAM AND SEED SHALL BE PLACED AS NOTED ON THE PLANS AND ON DISTURBED AREAS.
18. DRAINAGE ELEVATIONS ARE PROVIDED FOR DESIGN PURPOSES ONLY. THE CONTRACTOR SHALL VERIFY BY TEST PIT, THE LOCATIONS OF EXISTING UTILITIES WHICH MAY CONFLICT WITH THE PROPOSED DRAINAGE DESIGN. ANY FIELD ADJUSTMENTS REQUIRED WILL BE MADE AS APPROVED OR DIRECTED BY THE ENGINEER. ONLY AFTER THE CONTRACTOR VERIFIES ELEVATIONS FOR THE CONSTRUCTABILITY OF THE DRAINAGE SYSTEM SHALL ANY STRUCTURES BE ORDERED. ANY FIELD ADJUSTMENTS TO LINE & GRADE UP TO A DEPTH OF 5' SHALL BE INCLUDED IN THE COST OF THE PIPE. PIPE EXCAVATION GREATER THAN 5' WILL BE PAID UNDER CLASS B TRENCH EXCAVATION.
19. FOR OTHER NOTES, REFER TO SPECIFIC PLANS AND DETAILS.

607309_HDK(KEY_PLAN).DWG 26-Jan-2017

HINGHAM
DERBY STREET

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MA	-	4	139
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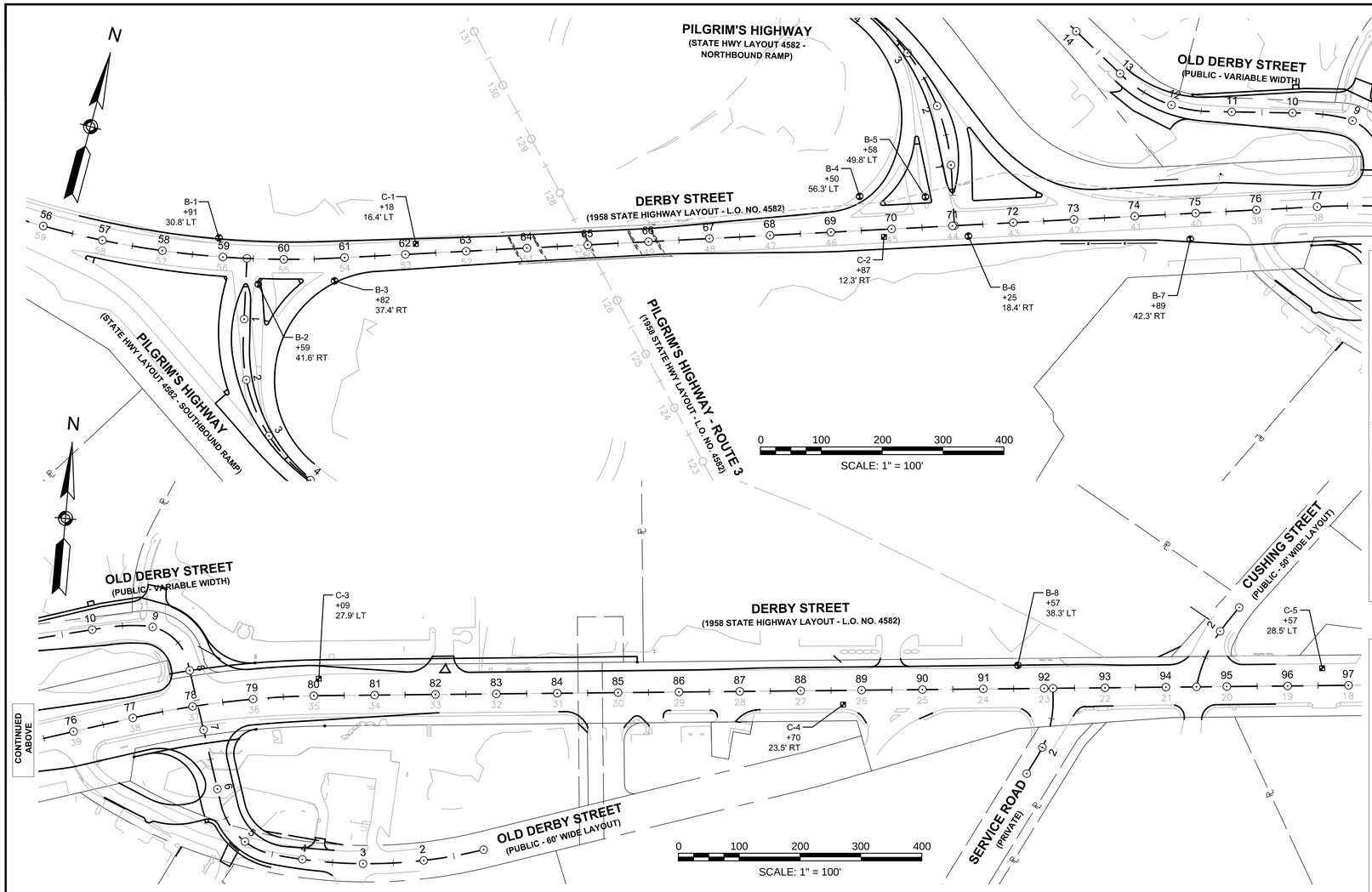
PAVEMENT CORE & BORING LOGS PLAN

26-Jan-2017

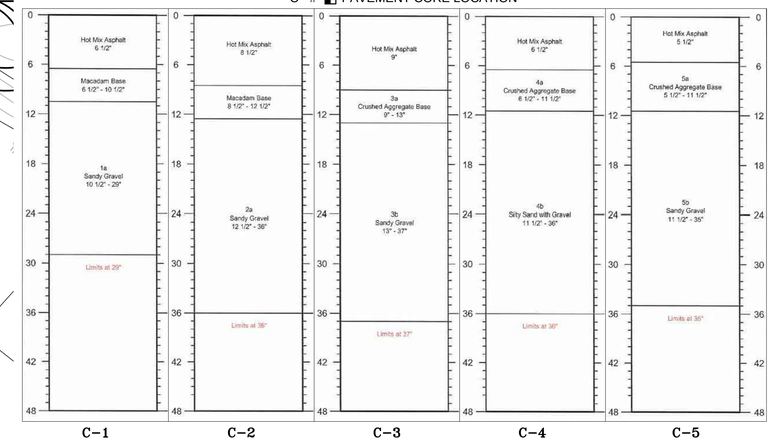
607309_HD(BORING LOCATION).DWG



PAVEMENT CORES

CONDUCTED BY ATC ASSOCIATES, INC. ON JULY 2, 2012

C - # ■ PAVEMENT CORE LOCATION



SOIL BORINGS

CONDUCTED BY ATC ASSOCIATES, INC. ON FEBRUARY 2, 2012 & FEBRUARY 17, 2016

B1

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
1	1	1	10"	0-2'0"	6-7-10-14		Medium dense, dry, fine to coarse sand, trace gravel and loam, fill.
5	Run	1		5'0'-6'0' 6'0'-7'0' 7'0'-8'0' 8'0'-9'0' 9'0'-10'0'	4 min. ft. 5 min. ft. 5 min. ft. 5 min. ft. 5 min. ft.	5'0'	End of boring at 5'0'. Refusal with augers. No water encountered.
10						10'0'	End of boring at 10'0'. Run 1 Recovery 58"/60".
15							
20							
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B2

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
1		1	13"	0-2'0"	4-13-7-8		Medium dense to very dense, dry, fine to coarse sand, some fine to coarse gravel, trace loam, etc. fill.
5		2	3"	5'0'-5'4"	75/4"		
	Run	1		7'0'-8'0' 8'0'-9'0' 9'0'-10'0' 10'0'-11'0' 11'0'-12'0'	3 min. ft. 5 min. ft. 6 min. ft. 5 min. ft. 5 min. ft.	7'0'	End of boring at 7'0". Refusal with augers. No water encountered.
10						12'0'	End of boring at 12'0". Run 1 Recovery 58"/60".
15							
20							
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B3

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
						8"	Asphalt.
1		1	12"	1'0'-3'0"	7-8-11-12		Medium dense, fine to coarse sand, fine to coarse gravel, some inorganic silt.
5		2	10"	5'0'-7'0"	2-2-4-5	4'0'	Loose, fine to medium sand, some coarse sand, some wood and organic fibers.
10		3	14"	10'0'-12'0'	5-6-12-18	7'0'	Dense to very dense, dry, fine to coarse sand, fine to coarse gravel, cobbles and inorganic silt.
15		4	18"	15'0'-17'0'	23-52-61-48	15'0'	Granite boulder.
		5	14"	19'0'-20'0'	12-9-12-10	20'0'	End of boring at 20'0". Cored granite boulder 16'0"-19'2". No water encountered.
20							
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B4

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
1		1	18"	0-2'0"	2-5-4-4		
5		2	14"	5'0'-7'0"	2-7-10-14		Loose to medium dense, dry, fine to coarse sand, some fine to coarse gravel, trace brick, etc. fill.
10		3	10"	10'0'-12'0'	6-10-7-12		
15		4	2"	15'0'-17'0'	7-10-6-6	15'0'	
20		5	10"	20'0'-22'0'	3-5-7-13	22'0'	Medium dense, wet, fine to coarse sand, trace fine to coarse gravel, trace silt.
							End of boring at 22'0". Water encountered at 18'0" upon completion.
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B5

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
						8"	Asphalt.
1		1	10"	1'0'-3'0"	8-9-14-19		Medium dense to very dense, dry, fine to coarse sand, fine to coarse gravel, cobbles, small boulders and inorganic silt.
5		2	10"	5'0'-7'0'	22-17-18-10	7'0'	
	Core	1		7'6"-9'6"		9'0'	Core run on granite boulder.
10		3		10'0'-12'0'	18-27-33-29		Medium dense to very dense, dry, fine to coarse sand, fine to coarse gravel, cobbles, small boulders and inorganic silt.
15						15'0'	End of boring at 15'0". Refusal. No water encountered.
20							
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B6

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
1		1	8"	0'-2'0"	7-12-14-26		Medium dense, fine to coarse sand, fine to coarse gravel and inorganic silt.
5		2	16"	5'0'-7'0"	10-8-13-11	5'0'	
10		3 3A	12" 8"	10'0'-11'0' 11'0'-12'0'	8-12 22-24	11'0'	Medium dense, fine to coarse sand, little fine gravel, trace inorganic silt.
		4	12"	13'0'-15'0'	15-23-31-37	15'0'	Very dense, fine to coarse sand, fine to coarse gravel, cobbles, glacial till.
15							End of boring at 15'0". Water encountered at 8'0".
20							
25							
30							
35							
39							

Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

B7

Depth Ft.	Casing blows	Sample No.	Pen/Rec	Depth	Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
1		1	14"	0-2'0"	7-9-4-5		Medium dense, dry, fine to coarse sand, some fine to coarse gravel, trace organics, fill.
5		2	18"	5'0'-7'0"	11-31-50-50/3"	4'0'	Very dense, wet, fine to coarse sand and gravel, cobbles.
10	Run	1		10'0'-11'0' 11'0'-12'0' 12'0'-13'0' 13'0'-14'0' 14'0'-15'0'	3 min. ft. 3 min. ft. 5 min. ft. 5 min. ft. 5 min. ft.	10'0'	End of boring at 10'0". Refusal with augers. Water encountered at 4'0" upon completion.
15						15'0'	End of boring at 15'0". Run 1 Recovery 36"/60".
20							
25							
30							
35							
39							

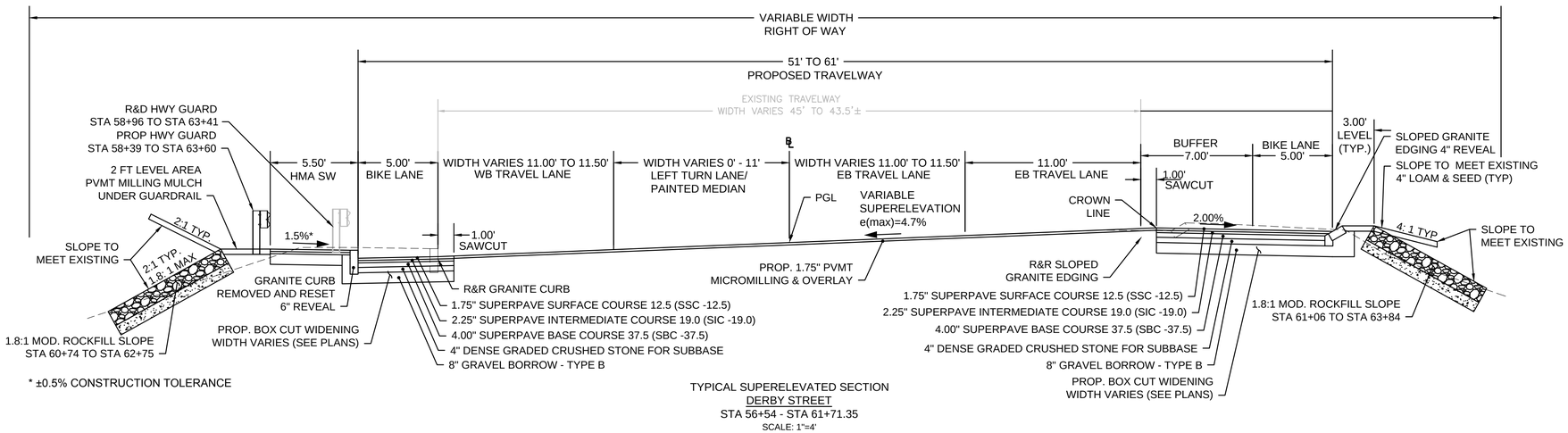
Notes: Hollow Stem Auger Size - 4 1/4"

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 -30 M Dense, 30 -50 Dense, 50+ V Dense. Cohesive: 0 -2 V Soft, 2 -4 Soft, 4 -8 M Stiff 8 -15 Stiff, 15 -30 V. Stiff, 30 + Hard.

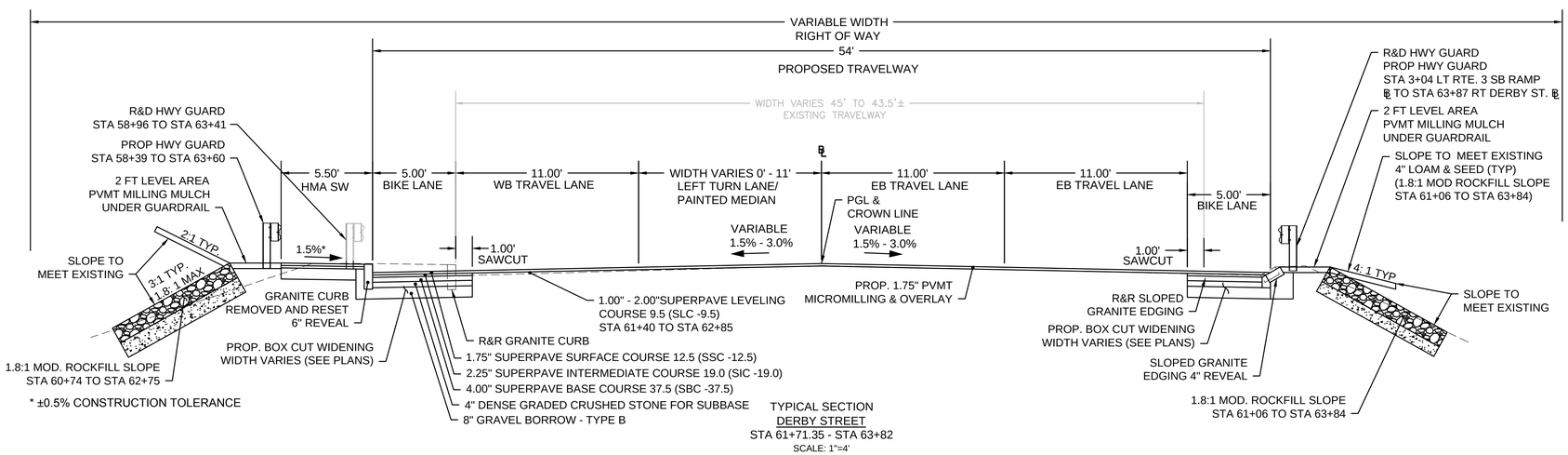
Trace	0 to 10%
Little	10 to 20%
Some	20 to 35%
And	35% to 50%

	CASING	SAMPLE	CORE TYPE
ID SIZE (IN)		SS	
HAMMER WGT (LB)		140 lb.	
HAMMER FALL (IN)		30"	

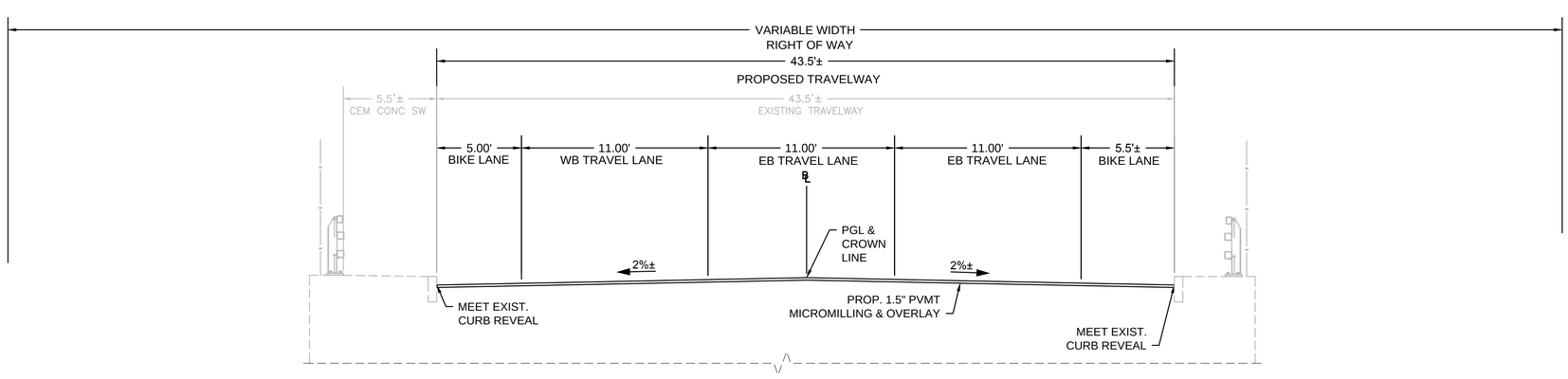
B8



TYPICAL SUPERELEVATED SECTION
DERBY STREET
STA 56+54 - STA 61+71.35
SCALE: 1"=4'



TYPICAL SECTION
DERBY STREET
STA 61+71.35 - STA 63+82
SCALE: 1"=4'



TYPICAL BRIDGE SECTION
DERBY STREET BRIDGE NO. H-15-012
STA 63+82 - STA 66+16
SCALE: 1"=4'

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	5	139
PROJECT FILE NO.	607309		

TYPICAL SECTIONS 1

PAVEMENT NOTES

PROPOSED PAVEMENT MICROMILLING & OVERLAY

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1.75" PAVEMENT MICROMILLING
BITUMEN FOR TACK COAT @ 0.07 GAL/SY OVER EXISTING PAVEMENT
OR MILLED SURFACE

PROPOSED PAVEMENT MICROMILLING & OVERLAY ON BRIDGE

SURFACE: 1.5" SUPERPAVE BRIDGE SURFACE COURSE 9.5 (SSC- B-9.5) OVER
1.5" PAVEMENT MICROMILLING
BITUMEN FOR TACK COAT @ 0.07 GAL/SY OVER
EXISTING PAVEMENT OR MILLED SURFACE

PROPOSED FULL DEPTH PAVEMENT - BOX WIDENING LESS THAN 4 FT

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
INTERMEDIATE: 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
BASE: 6" HIGH EARLY STRENGTH CEMENT CONCRETE BASE COURSE OVER
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED FULL DEPTH PAVEMENT CONSTRUCTION &
BOX WIDENING GREATER THAN 4 FEET

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
INTERMEDIATE: 2.25" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) OVER
BASE: 4.00" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER
8" GRAVEL BORROW - TYPE B

PROPOSED PAVEMENT LEVELING

SURFACE: 1.00" - 2.00" SUPERPAVE LEVELING COURSE 9.5 (SLC - 9.5) OVER
BITUMEN FOR TACK COAT @ 0.07 GAL/SY OVER MILLED SURFACE

PROPOSED HOT MIX ASPHALT DRIVEWAY

SURFACE: 3.5 " HOT MIX ASPHALT PAVEMENT PLACED IN TWO LAYERS: 1.5"
SURFACE COURSE MATERIAL OVER 2" INTERMEDIATE COURSE
MATERIAL
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED CEMENT SIDEWALK AT DRIVEWAY

SURFACE: 6" CEMENT CONCRETE OVER
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED HOT MIX ASPHALT SIDEWALK

SURFACE: 3.5" HMA FOR SIDEWALKS PLACED IN TWO LAYERS: 1.75" SURFACE
COURSE MATERIAL OVER 1.75" INTERMEDIATE COURSE MATERIAL
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED CEMENT CONCRETE SIDEWALK/WCR

SURFACE: 4" CEMENT CONCRETE OVER
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED HOT MIX ASPHALT MEDIAN

SURFACE: 2.5" HMA FOR SIDEWALKS PLACED IN TWO LAYERS: 1.25" SURFACE
COURSE MATERIAL OVER 1.25" INTERMEDIATE COURSE MATERIAL
SUBBASE: 8" GRAVEL BORROW - TYPE B

PROPOSED PERMANENT HMA TRENCH PATCH

SURFACE: 1.75" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
INTERMEDIATE: 2.25" SUPERPAVE INTERMEDIATE COURSE (SIC-19.0) OVER
BASE: 6' SUPERPAVE INTERMEDIATE COURSE (SIC-19.0) (COMPACTED IN
TWO LIFTS)
SUBBASE: 12" GRAVEL BORROW - TYPE B OVER
COMPACTED TRENCH BACKFILL

PROPOSED TEMPORARY HMA TRENCH PATCH

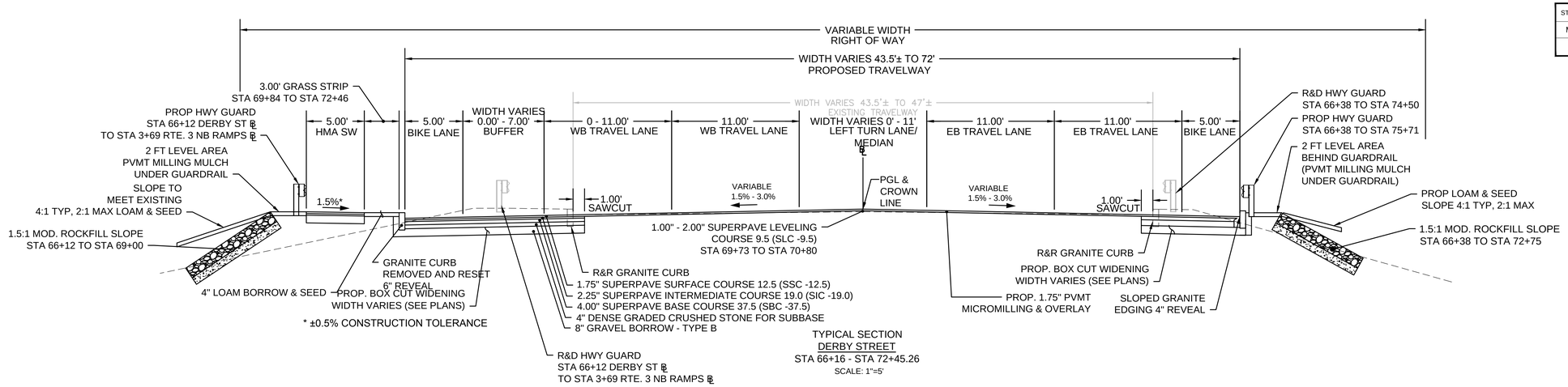
SURFACE: 3" SUPERPAVE INTERMEDIATE COURSE (SIC 19.0) OVER
BASE: 12" GRAVEL BORROW -TYPE B OVER
COMPACTED TRENCH BACKFILL

607309_HD(TYP).DWG Plotted on 26-Jan-2017 4:53 PM

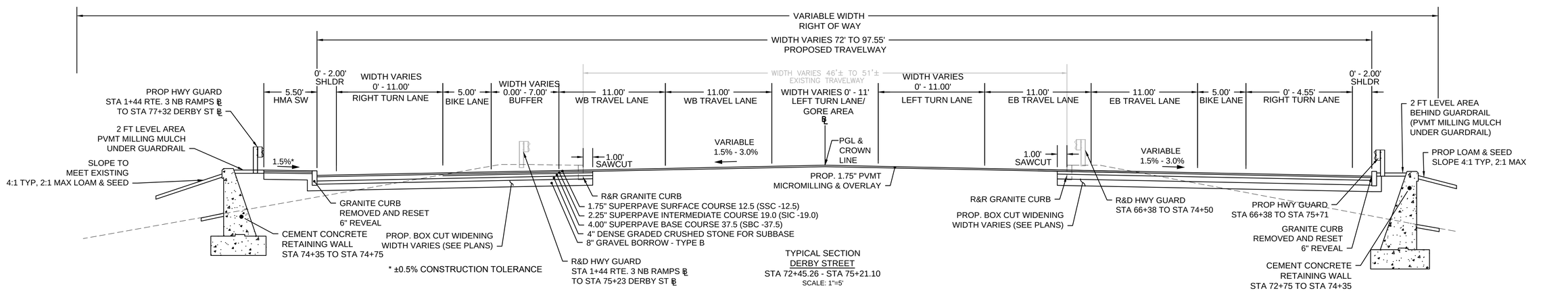
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	6	139
PROJECT FILE NO.	607309		

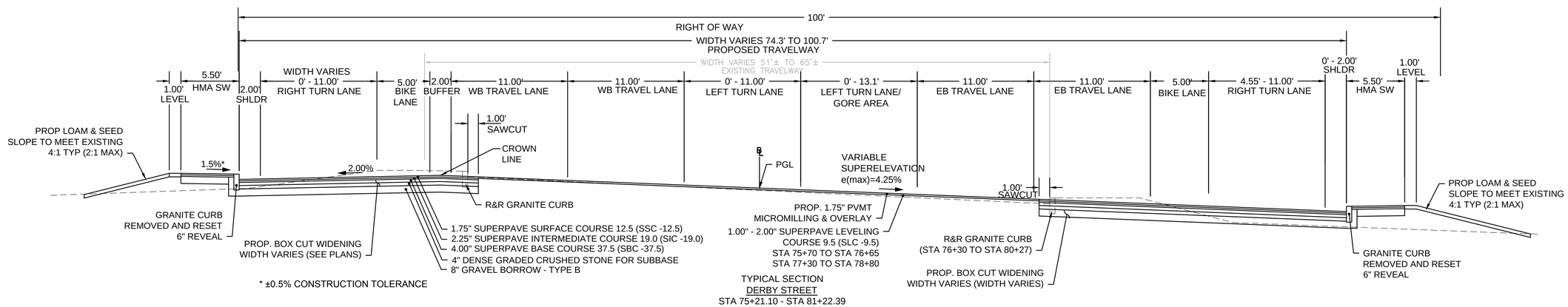
TYPICAL SECTIONS 2



TYPICAL SECTION
DERBY STREET
STA 66+16 - STA 72+45.26
SCALE: 1"=5'



TYPICAL SECTION
DERBY STREET
STA 72+45.26 - STA 75+21.10
SCALE: 1"=5'



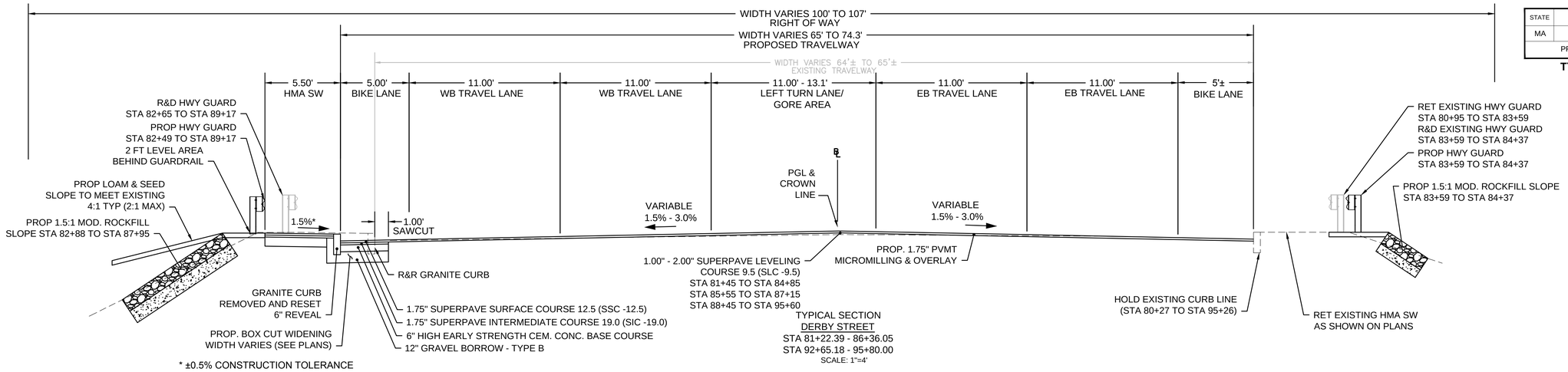
TYPICAL SECTION
DERBY STREET
STA 75+21.10 - STA 81+22.39
SCALE: 1"=5'

607309_HD(TYP).DWG Plotted on 26-Jan-2017 4:53 PM

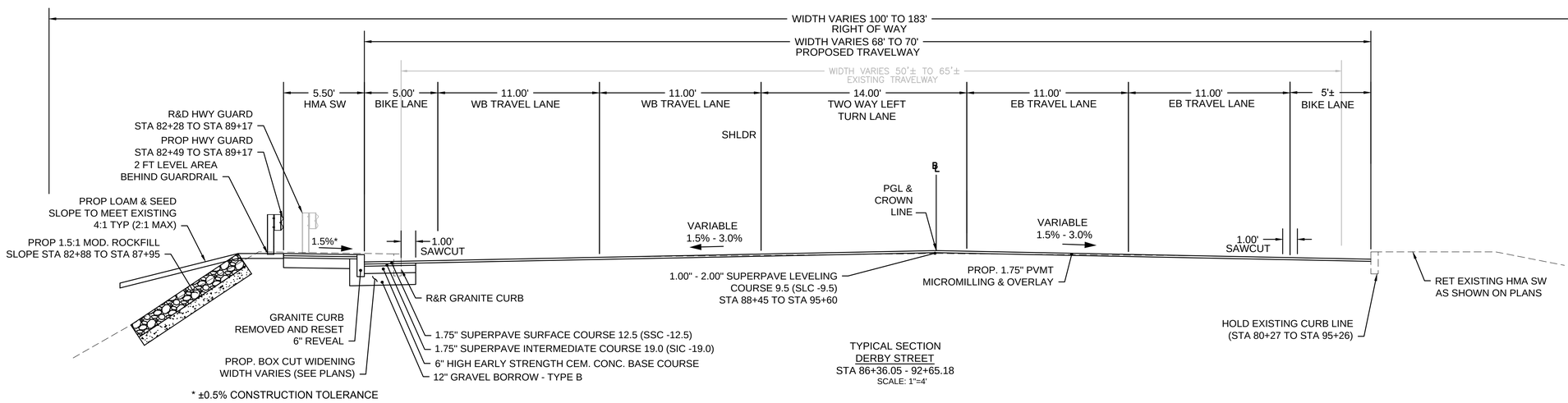
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	7	139
PROJECT FILE NO.	607309		

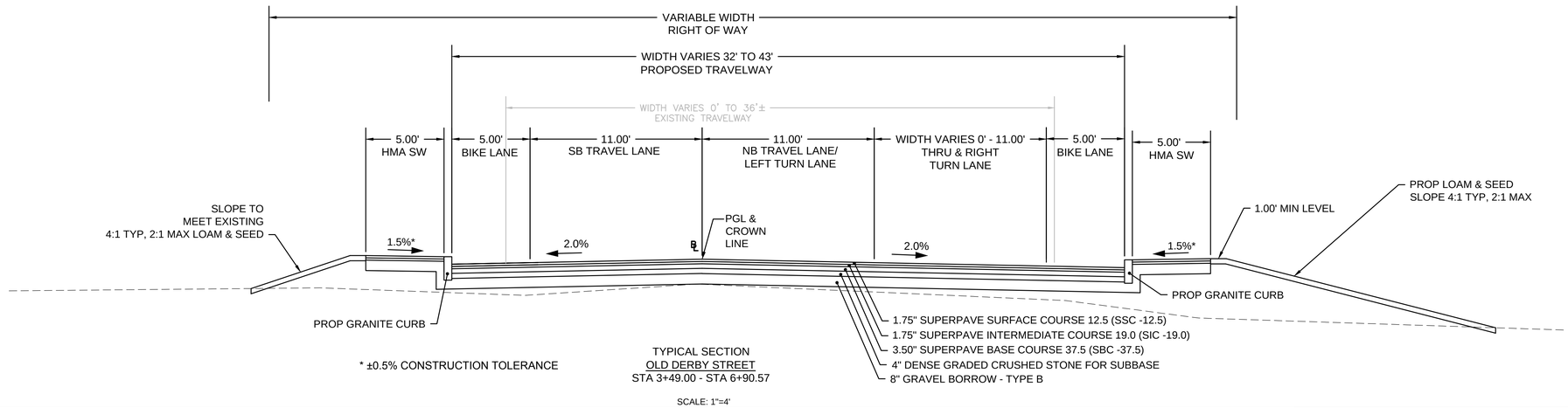
TYPICAL SECTIONS 3



TYPICAL SECTION
DERBY STREET
STA 81+22.39 - 86+36.05
STA 92+65.18 - 95+80.00
SCALE: 1"=4'



TYPICAL SECTION
DERBY STREET
STA 86+36.05 - 92+65.18
SCALE: 1"=4'



TYPICAL SECTION
OLD DERBY STREET
STA 3+49.00 - STA 6+90.57

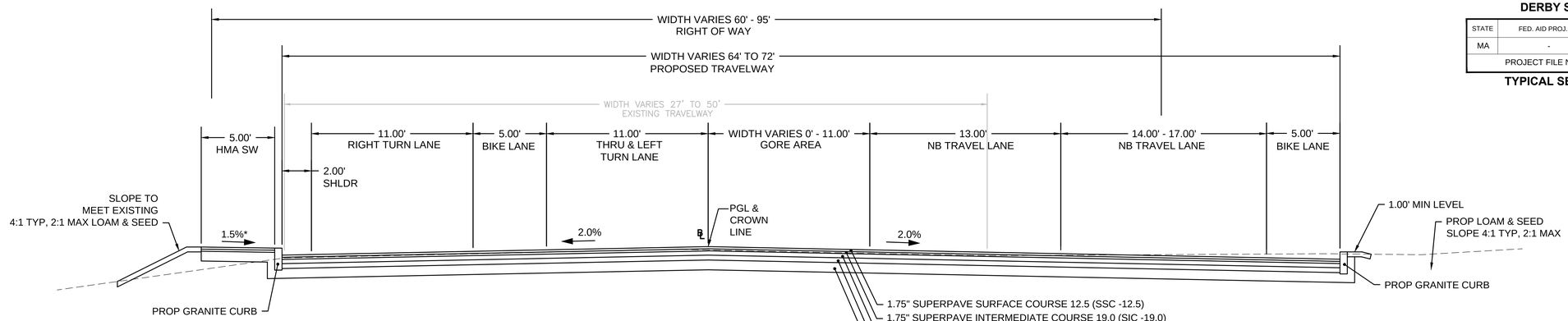
SCALE: 1"=4'

607309_HD(TYP).DWG Plotted on 26-Jan-2017 4:53 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	8	139
PROJECT FILE NO.	607309		

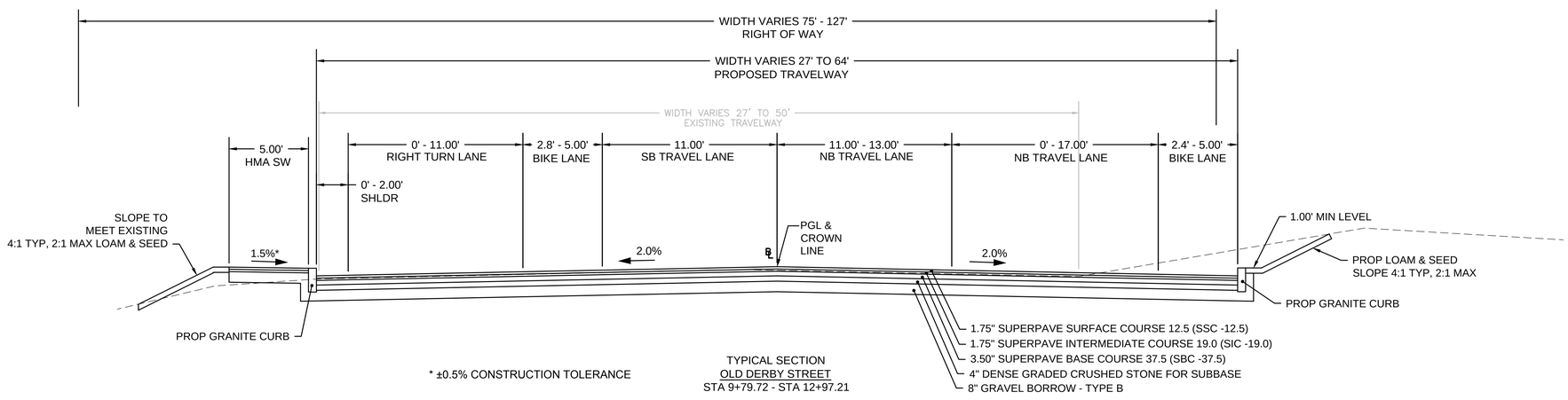
TYPICAL SECTIONS 4



* ±0.5% CONSTRUCTION TOLERANCE

TYPICAL SECTION
OLD DERBY STREET
STA 7+78.83 - STA 9+79.72

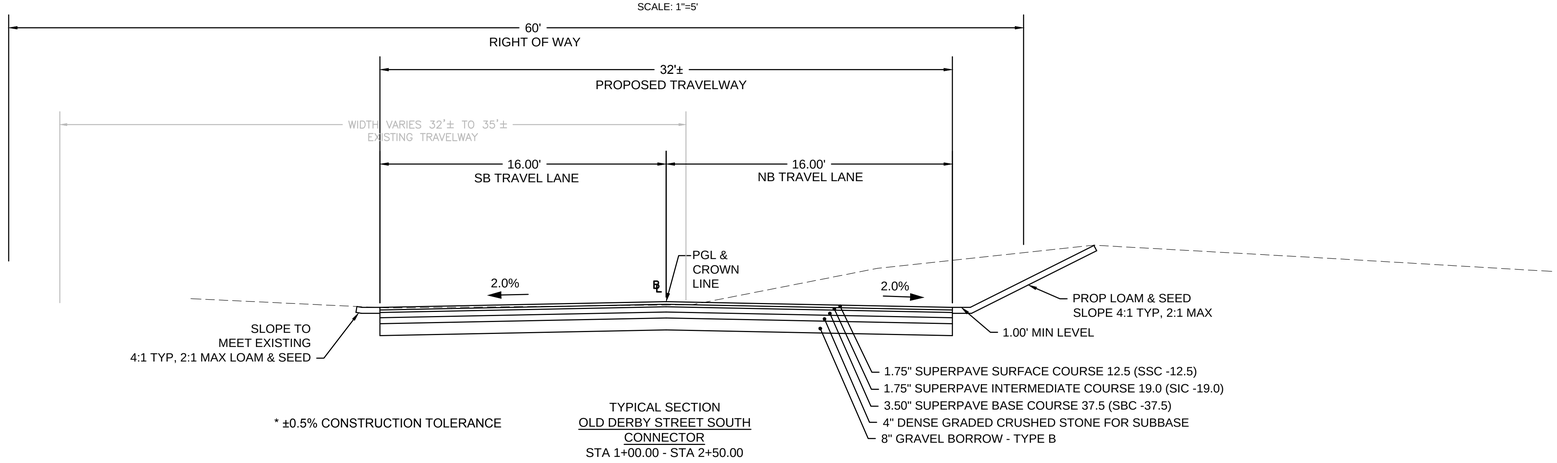
SCALE: 1"=5'



* ±0.5% CONSTRUCTION TOLERANCE

TYPICAL SECTION
OLD DERBY STREET
STA 9+79.72 - STA 12+97.21

SCALE: 1"=5'



* ±0.5% CONSTRUCTION TOLERANCE

TYPICAL SECTION
OLD DERBY STREET SOUTH
CONNECTOR
STA 1+00.00 - STA 2+50.00

SCALE: 1"=5'

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HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 40 & 41

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

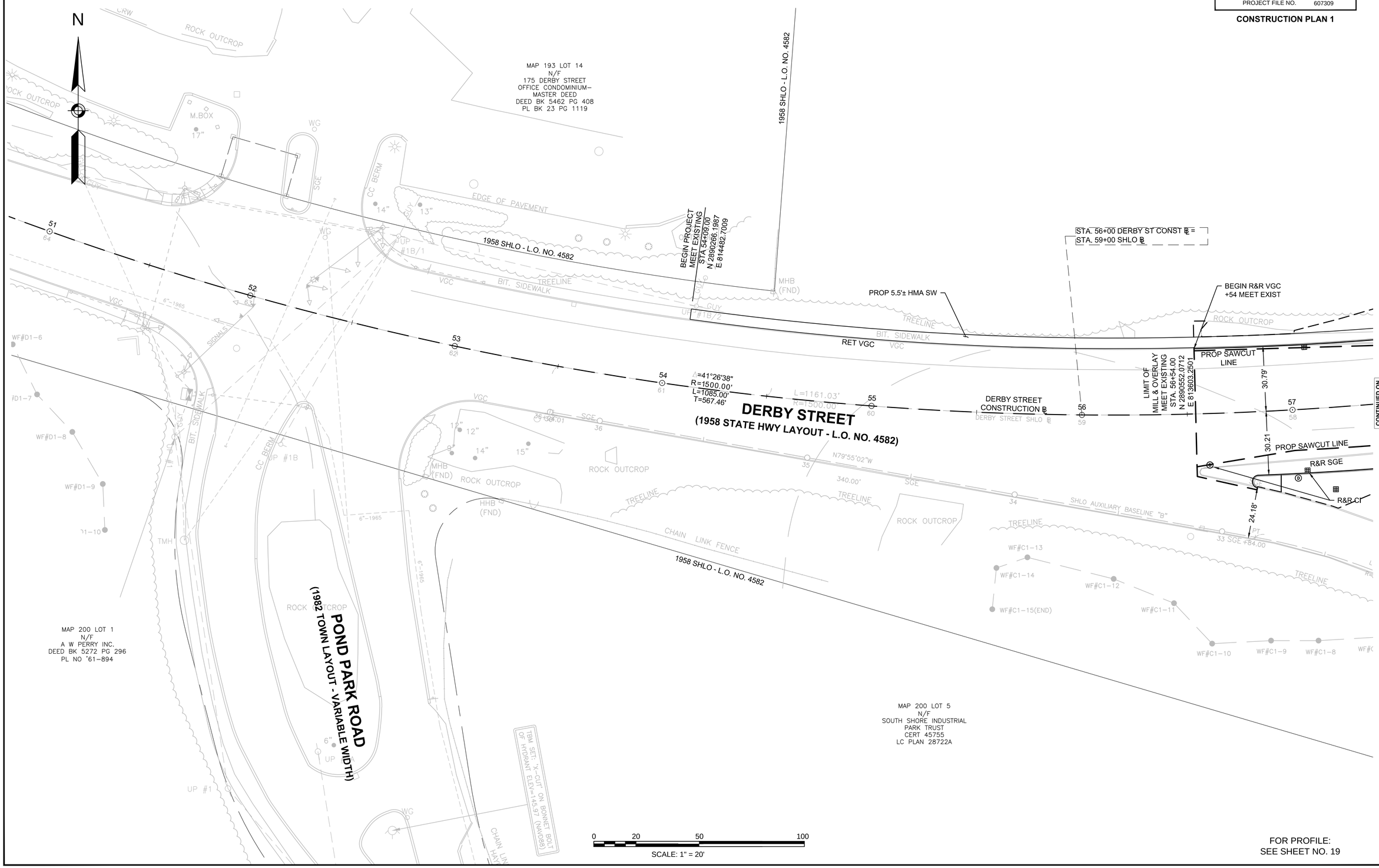
SEE SHEET 65

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	9	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 1

607309_HD(CP).DWG 26-Jan-2017



FOR PROFILE:
SEE SHEET NO. 19

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	10	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 2

26-Jan-2017

607309_HD(CP).DWG

HIGHWAY GUARD DETAILS

STA. 58+39 LT TERMINAL SECTION
STA. 58+39 LT TO STA. 63+33 LT
STA. 2+66.50 LT TO STA. 3+04 LT BURIED END
STA. 2+66.50 LT TO STA. 63+60 RT

TRAFFIC SIGNAL CONDUIT

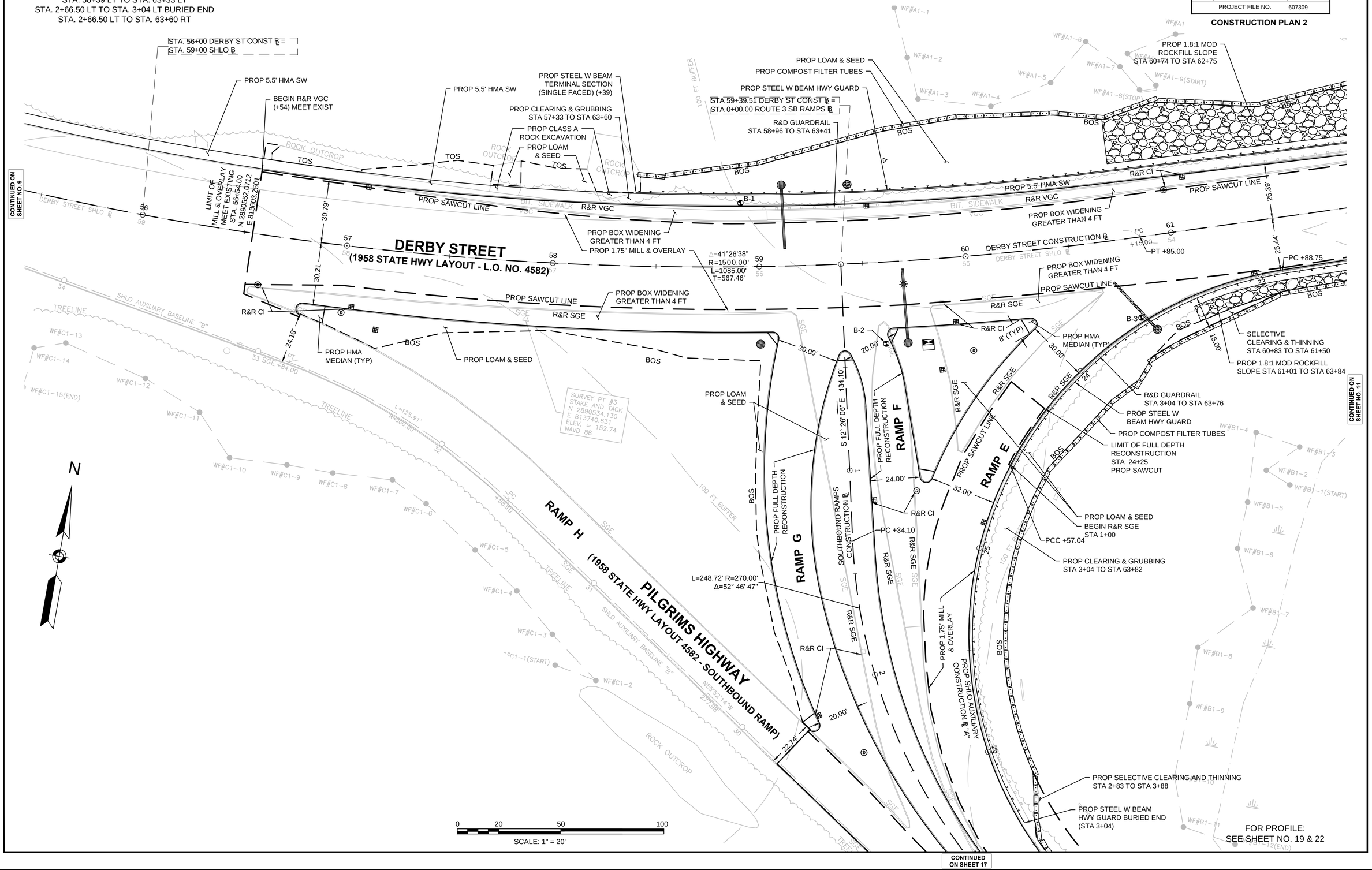
SEE SHEET 41

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 66



FOR PROFILE:
SEE SHEET NO. 19 & 22

CONTINUED
ON SHEET 17

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	11	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 3

607309_HD(CP).DWG 26-Jan-2017

HIGHWAY GUARD DETAILS

STA. 58+39 LT TO STA. 63+33 LT
STA. 63+33 LT TO STA. 63+60 LT BRIDGE TRANSITION
STA. 2+66.50 LT TO STA. 63+60 RT
STA 63+60 RT TO STA. 63+87 RT BRIDGE TRANSITION
STA. 66+12 LT TO STA 66+39 LT BRIDGE TRANSITION
STA. 66+39 LT TO STA. 3+69 LT
STA. 66+38 RT TO STA. 66+65 RT BRIDGE TRANSITION
STA. 66+65 RT TO STA. 75+33.50 RT

TRAFFIC SIGNAL CONDUIT

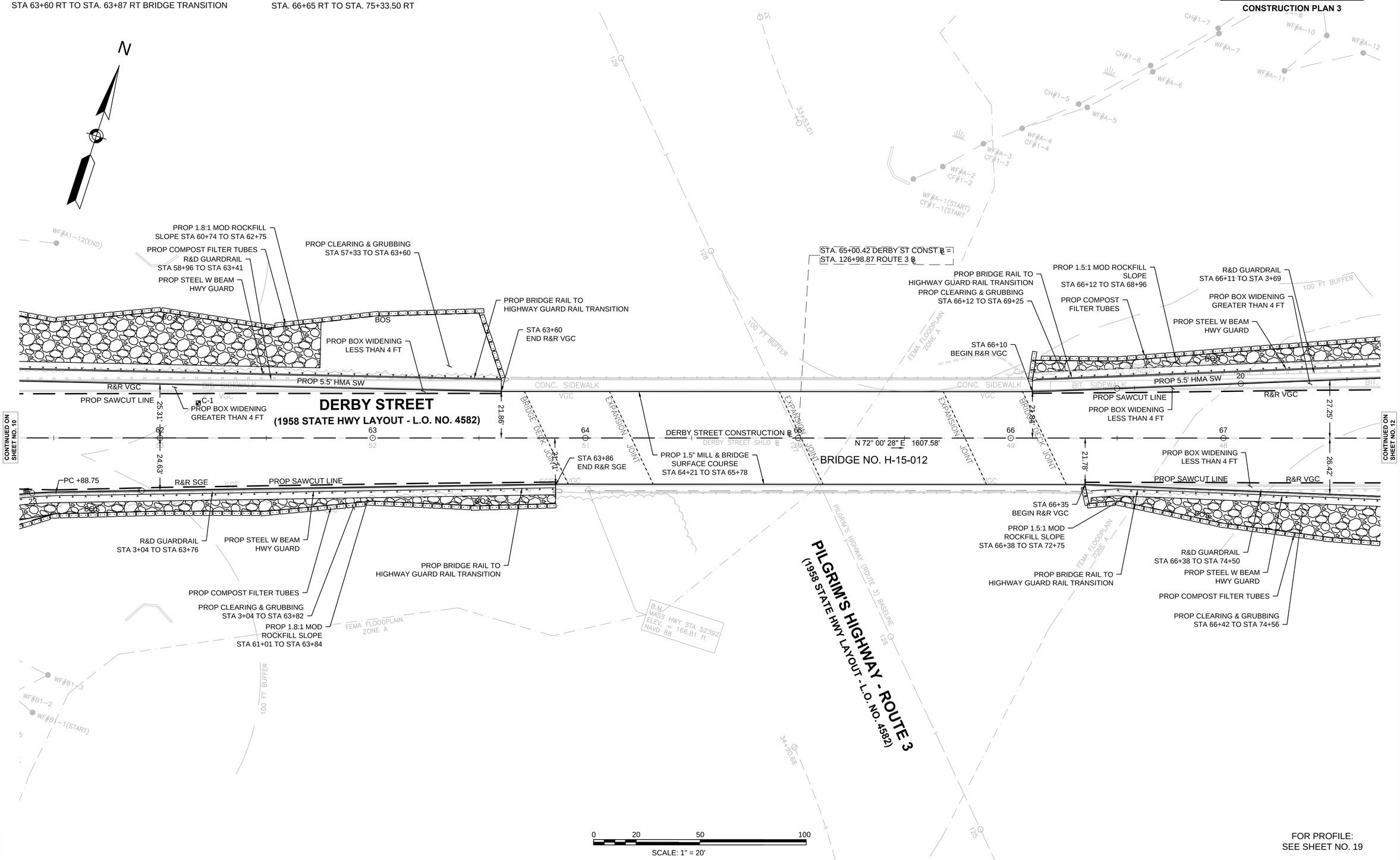
NONE

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 67



FOR PROFILE:
SEE SHEET NO. 19

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	12	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 4

607309_HD(CP).DWG 26-Jan-2017

HIGHWAY GUARD DETAILS

STA. 66+39 LT TO STA. 3+69 LT
STA. 3+69 LT MEET EXISTING
STA. 66+65 RT TO STA. 75+33.50 RT
STA. 1+44 RT MEET EXISTING
STA. 1+44 RT TO STA. 76+96 LT
STA. 0+57 LT TERMINAL SECTION
STA. 0+57 LT TO 0+82 LT
STA. 0+82 LT TERMINAL SECTION
STA. 0+50 RT TO STA 0+84 RT FLARED END
STA. 0+84 RT TO STA. 1+44 RT
STA. 1+44 RT TERMINAL SECTION
STA. 0+53 RT TO STA 0+76 RT FLARED END
STA. 0+76 RT TO STA 1+44 RT
STA. 1+44 RT TERMINAL SECTION

TRAFFIC SIGNAL CONDUIT

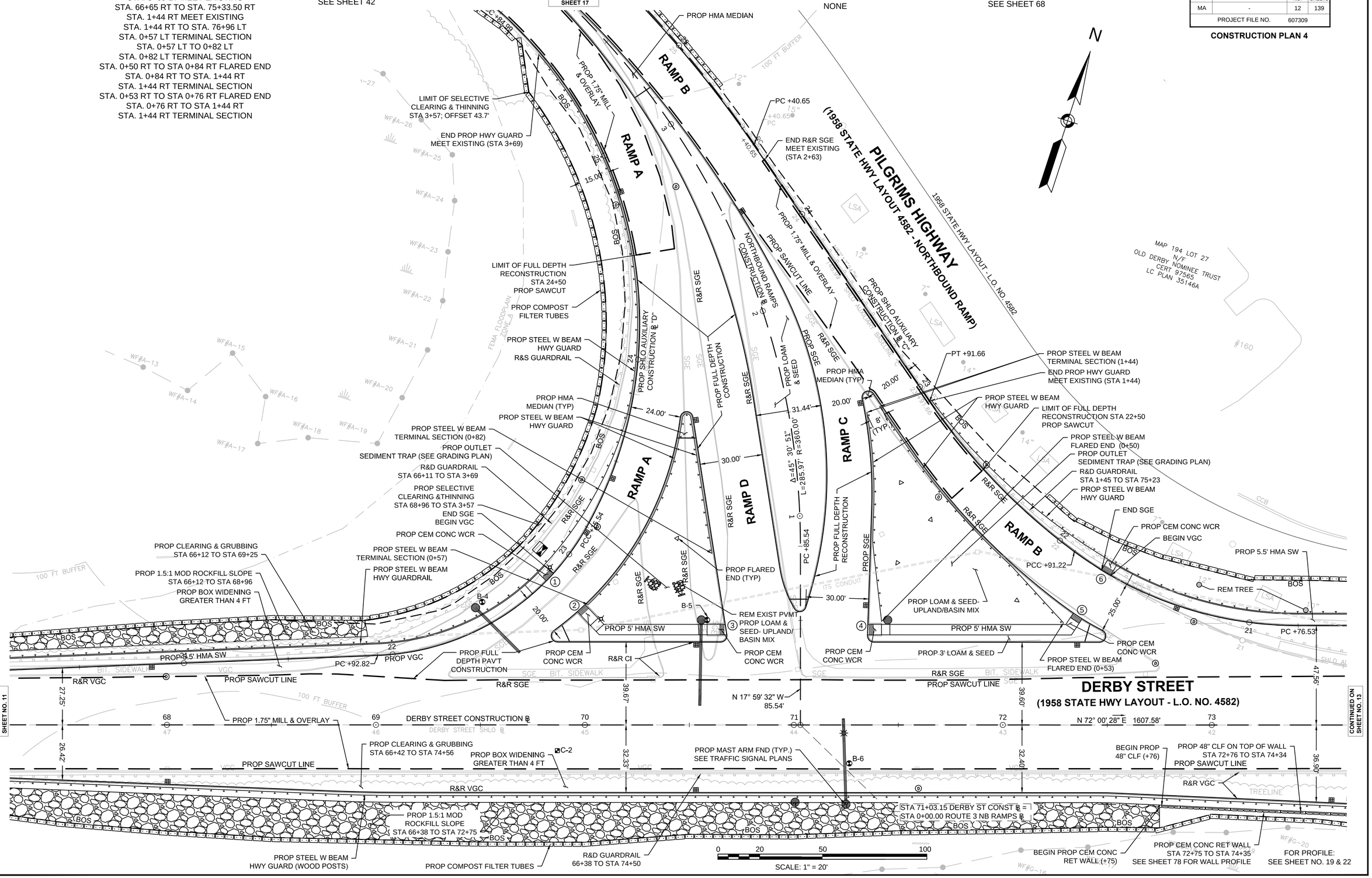
SEE SHEET 42

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 68

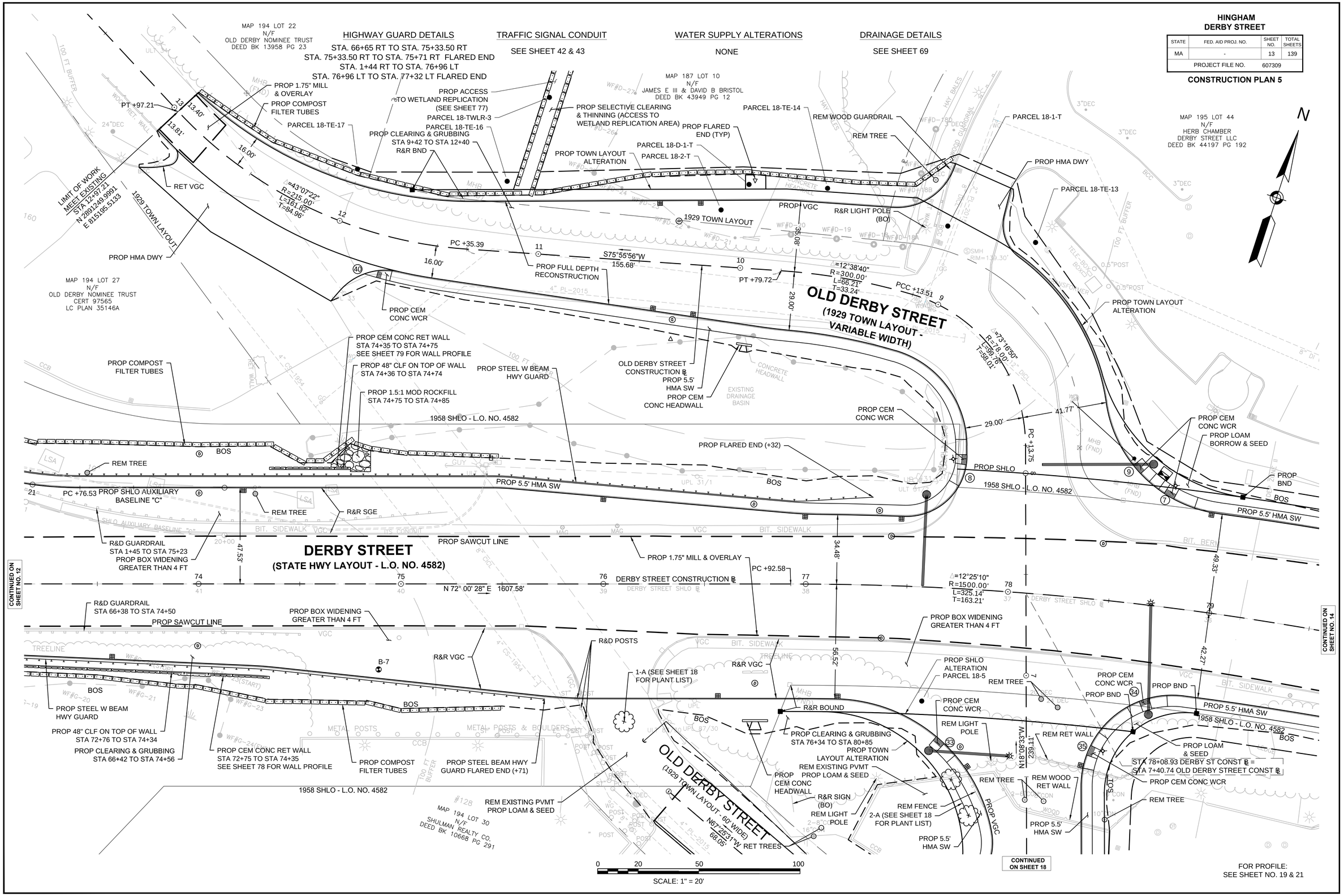


HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	13	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 5

607309_HD(CP).DWG 26-Jan-2017



HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	14	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 6

26-Jan-2017

607309_HD(CP).DWG

HIGHWAY GUARD DETAILS

STA. 81+67 RT TO STA. 82+05 RT FLARED END
82+05 RT MEET EXISTING
STA. 82+49 LT TO STA. 82+83 LT FLARED END
STA. 82+83 LT TO STA. 88+95 LT
STA. 83+59 RT MEET EXISTING
STA. 83+59 RT TO STA. 84+37 RT
STA. 84+37 RT TERMINAL SECTION

TRAFFIC SIGNAL CONDUIT

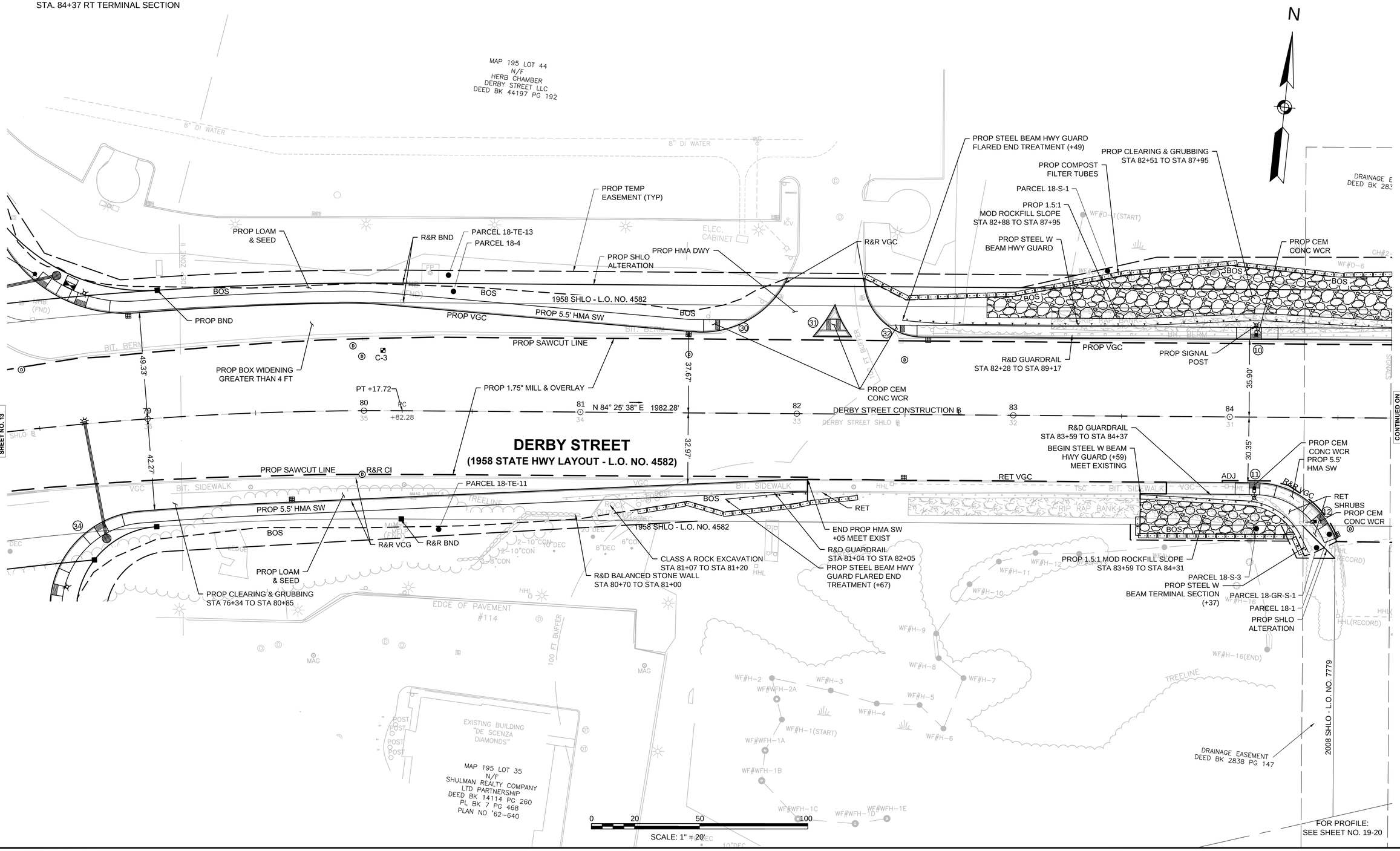
SEE SHEET 43

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 70



HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	15	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 7

26-Jan-2017

607309_HD(CP).DWG

HIGHWAY GUARD DETAILS

STA. 82+83 LT TO STA. 88+95 LT
88+95 LT TO STA 89+17 LT FLARED END
STA. 83+59 RT TO STA. 84+37 RT
STA. 84+37 RT TERMINAL SECTION

TRAFFIC SIGNAL CONDUIT

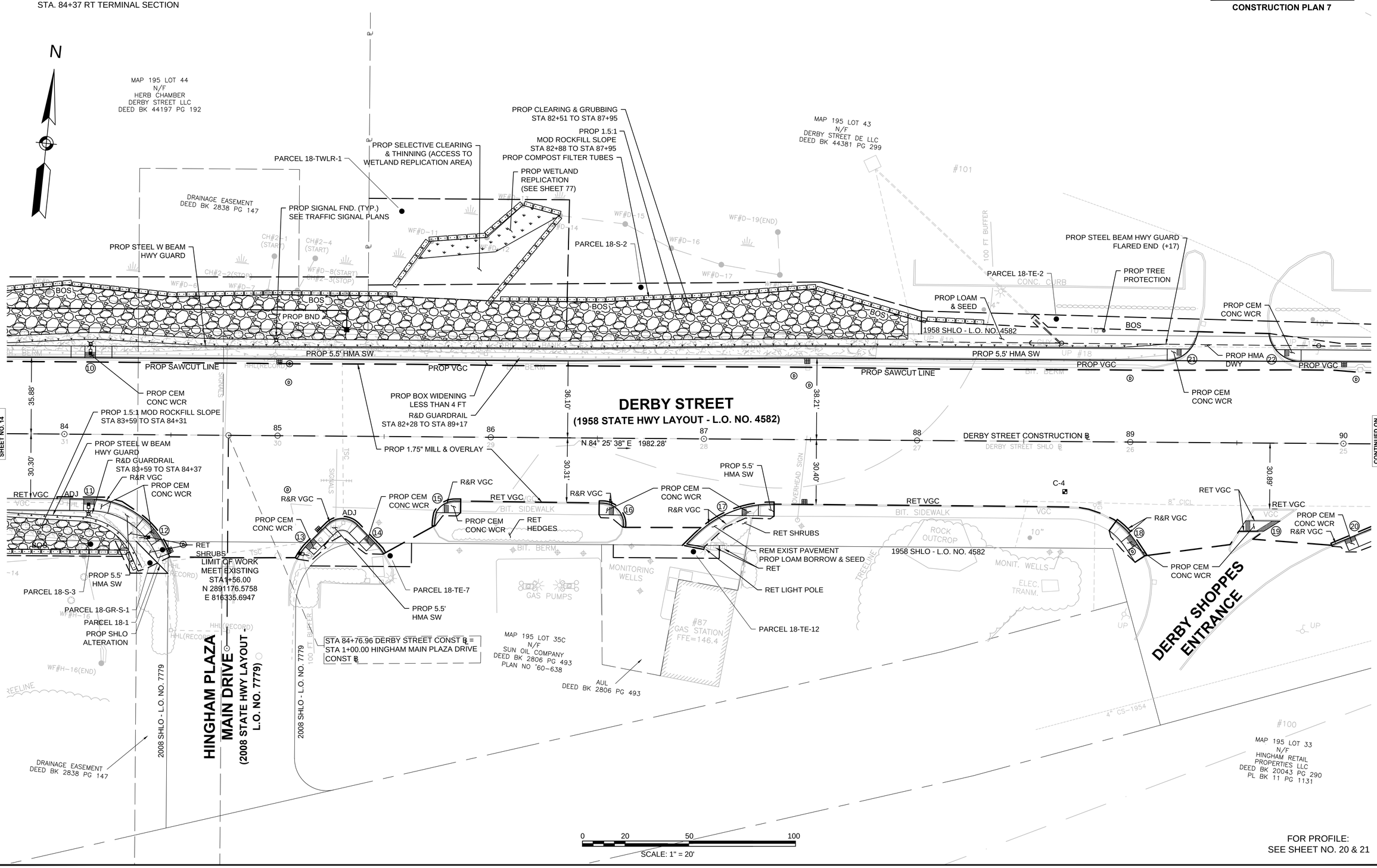
SEE SHEET 44

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

SEE SHEET 71



FOR PROFILE:
SEE SHEET NO. 20 & 21

HIGHWAY GUARD DETAILS

NONE

TRAFFIC SIGNAL CONDUIT

SEE SHEET 45

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

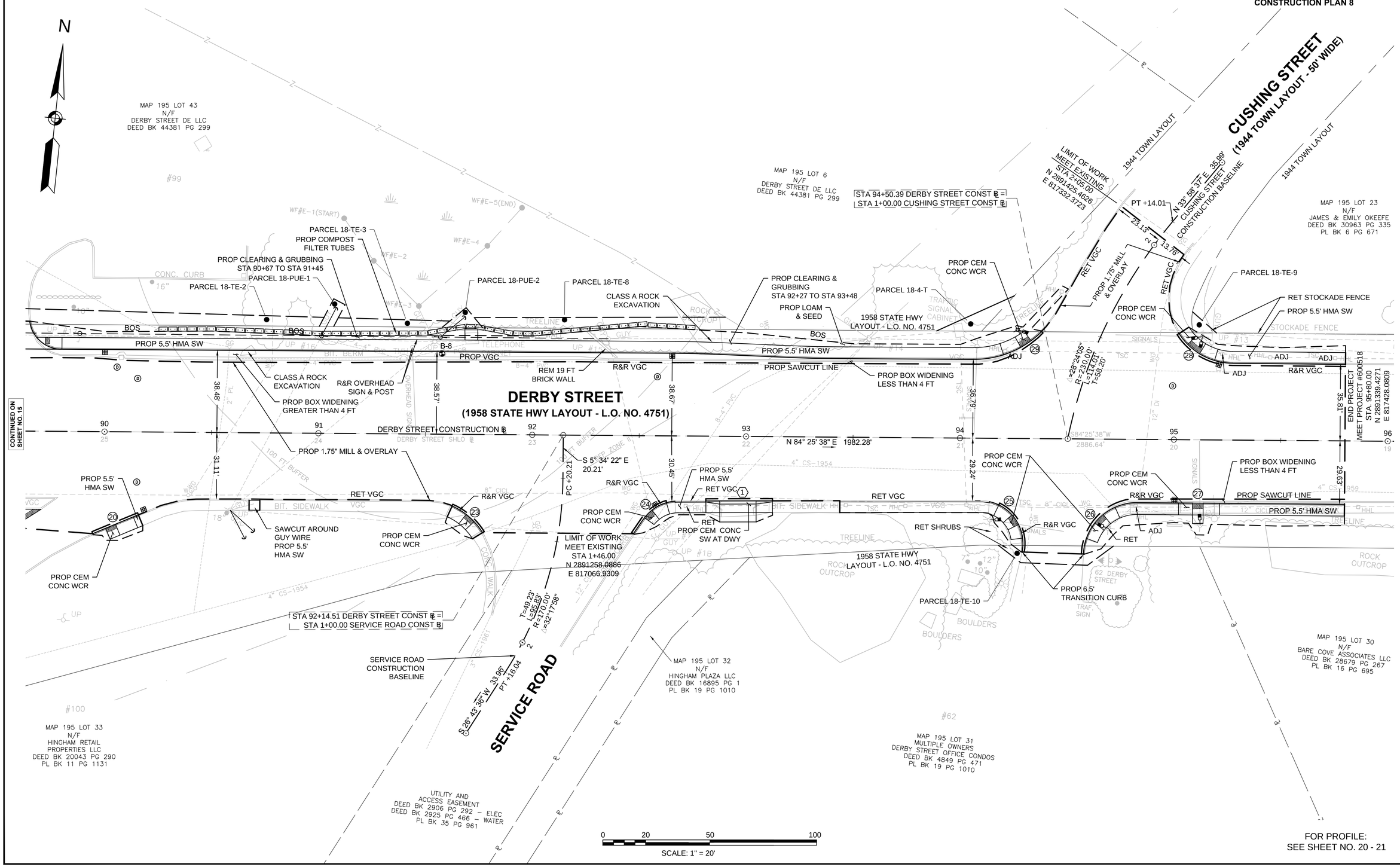
SEE SHEET 71

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	16	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 8

607309_HD(CP).DWG 26-Jan-2017



CONTINUED ON SHEET NO. 15

FOR PROFILE:
SEE SHEET NO. 20 - 21

HIGHWAY GUARD DETAILS

STA 63+58 RT TO STA 2+66.50 LT
STA 2+66.50 LT TO STA 3+04 LT BURIED END

TRAFFIC SIGNAL CONDUIT

SEE SHEET 41 & 42

WATER SUPPLY ALTERATIONS

NONE

DRAINAGE DETAILS

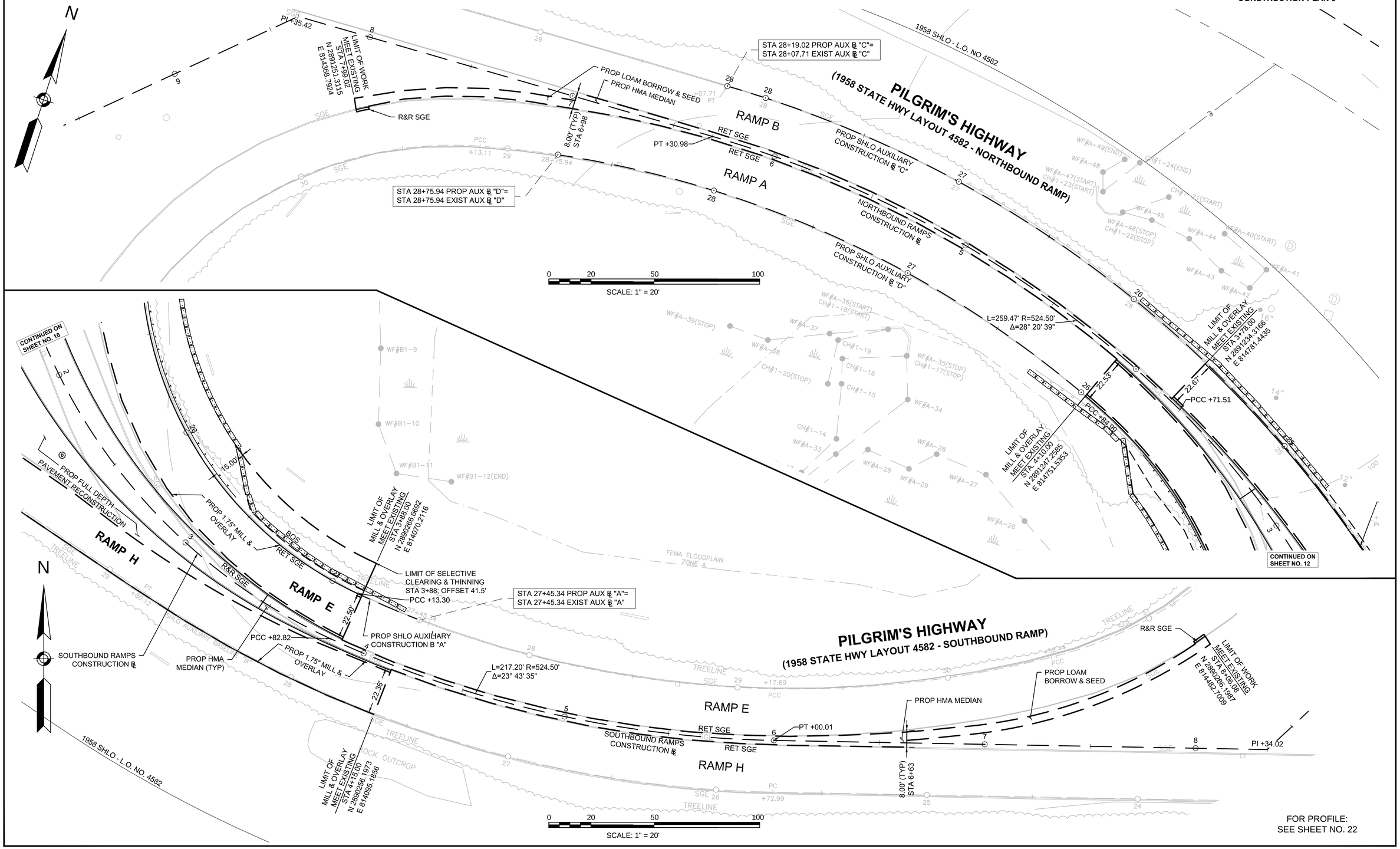
NONE

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	17	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 9

607309_HD(CP).DWG 26-Jan-2017



FOR PROFILE:
SEE SHEET NO. 22

HIGHWAY GUARD DETAILS
NONE

TRAFFIC SIGNAL CONDUIT
SEE SHEET 43

WATER SUPPLY ALTERATIONS
NONE

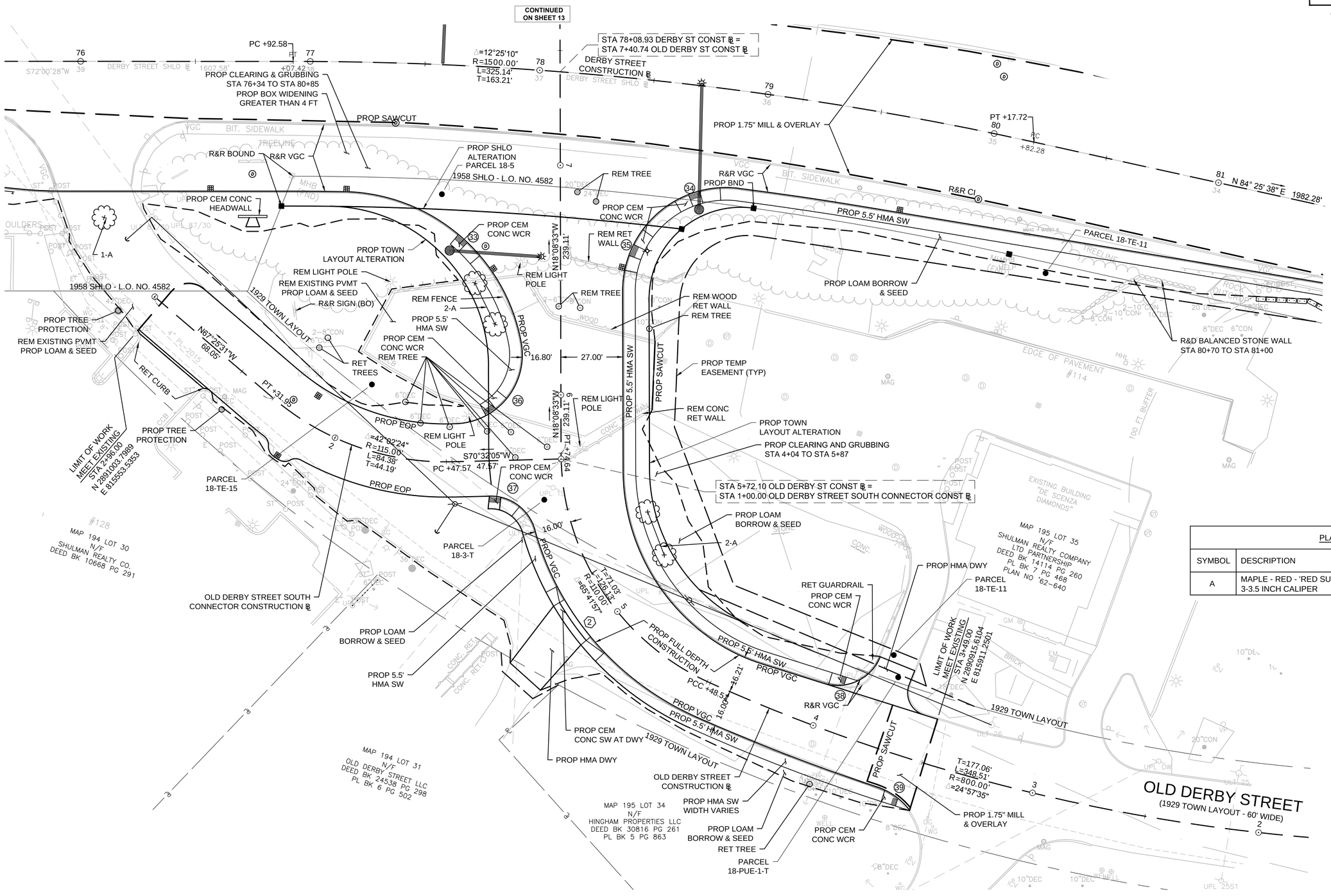
DRAINAGE DETAILS
SEE SHEET 73

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	18	139
PROJECT FILE NO.	607309		

CONSTRUCTION PLAN 10

607309_HD(CP).DWG 26-Jan-2017



PLANT LIST			
SYMBOL	DESCRIPTION	SPACING	NO. REQ'D
A	MAPLE - RED - 'RED SUNSET' 3-3.5 INCH CALIPER	20'	5 EA

0 20 50 100
SCALE: 1" = 20'

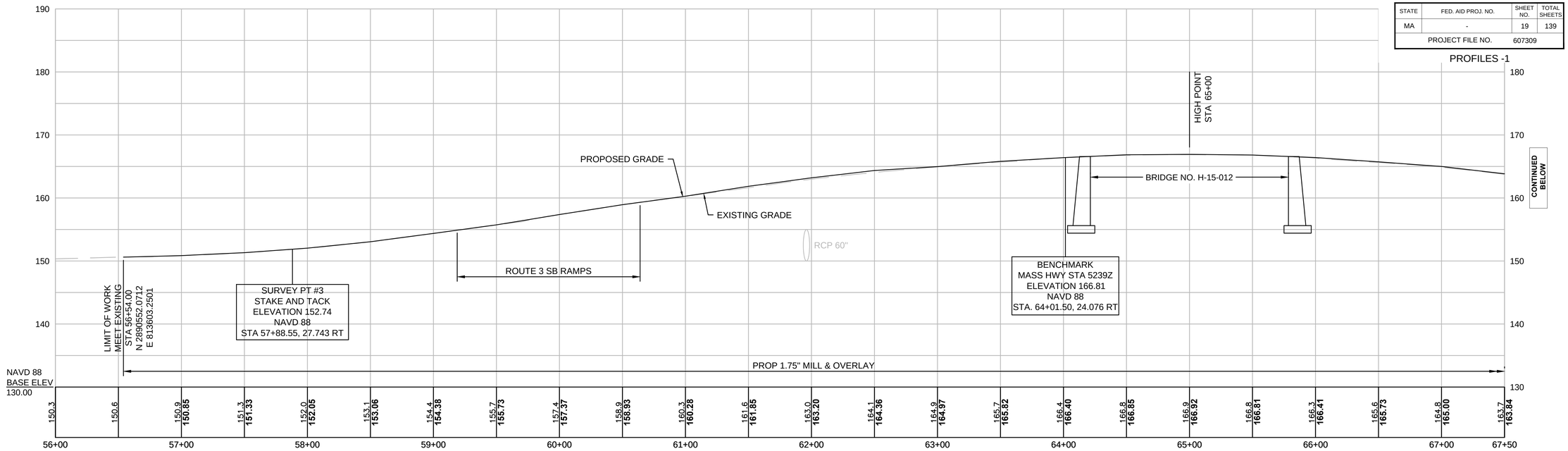
FOR PROFILE:
SEE SHEET NO. 21

HINGHAM
DERBY STREET

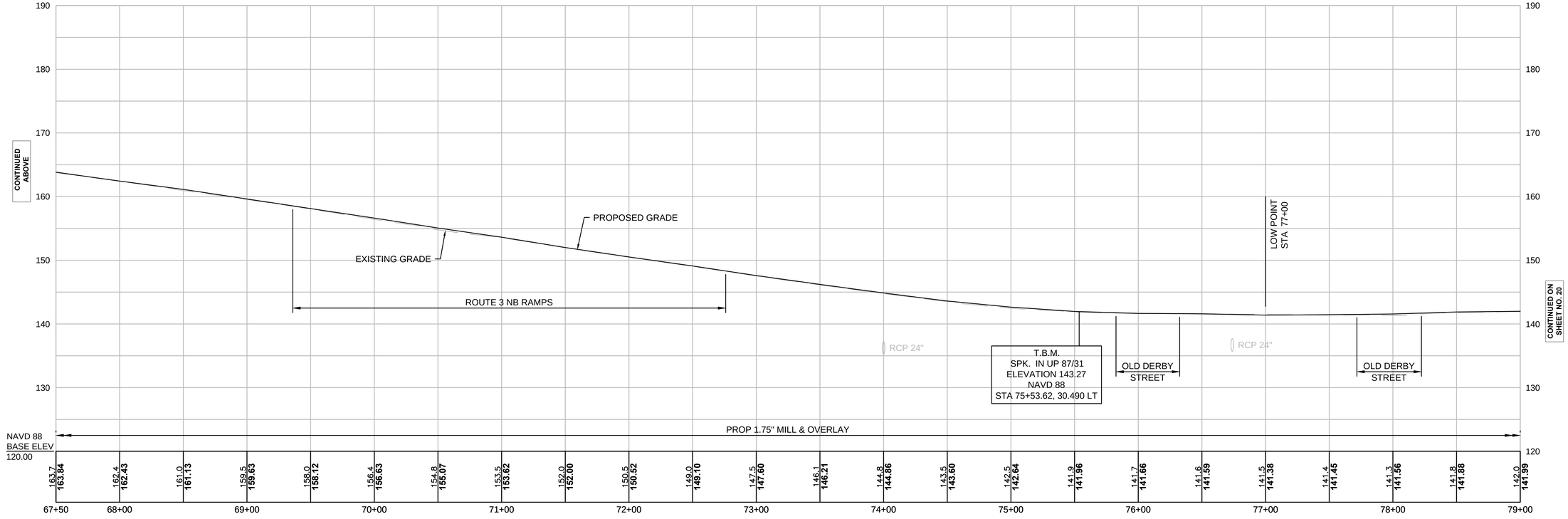
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	19	139
PROJECT FILE NO.	607309		

PROFILES -1

DERBY STREET CONSTRUCTION BASELINE



DERBY STREET CONSTRUCTION BASELINE



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

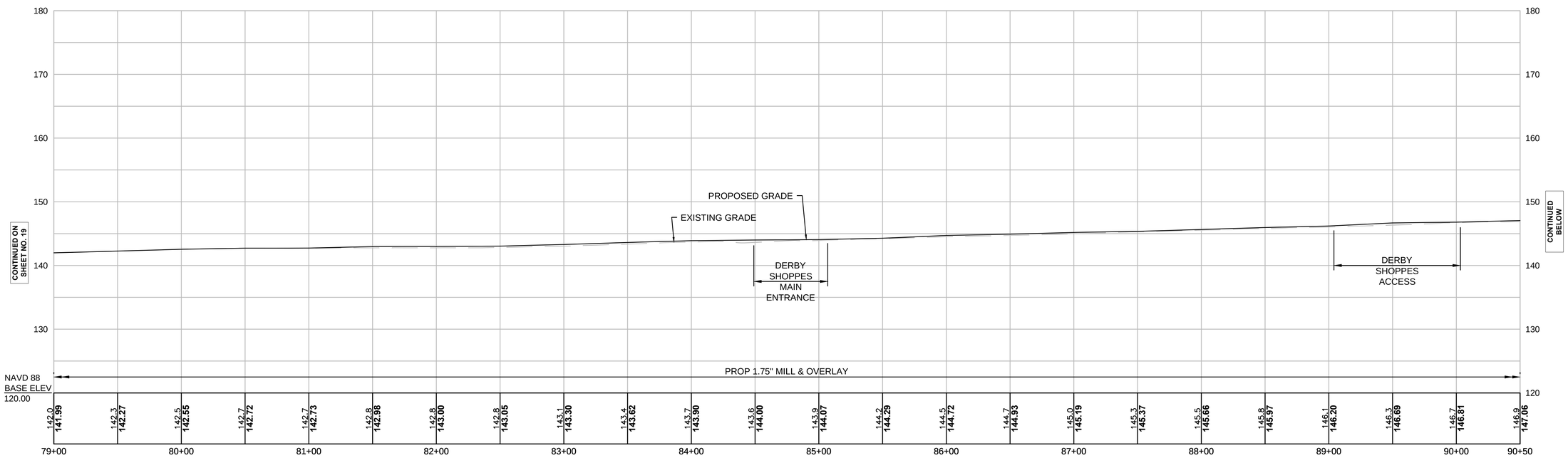
607309_HD(PROFILES).DWG Plotted on 20-Feb-2016 4:56 PM

HINGHAM
DERBY STREET

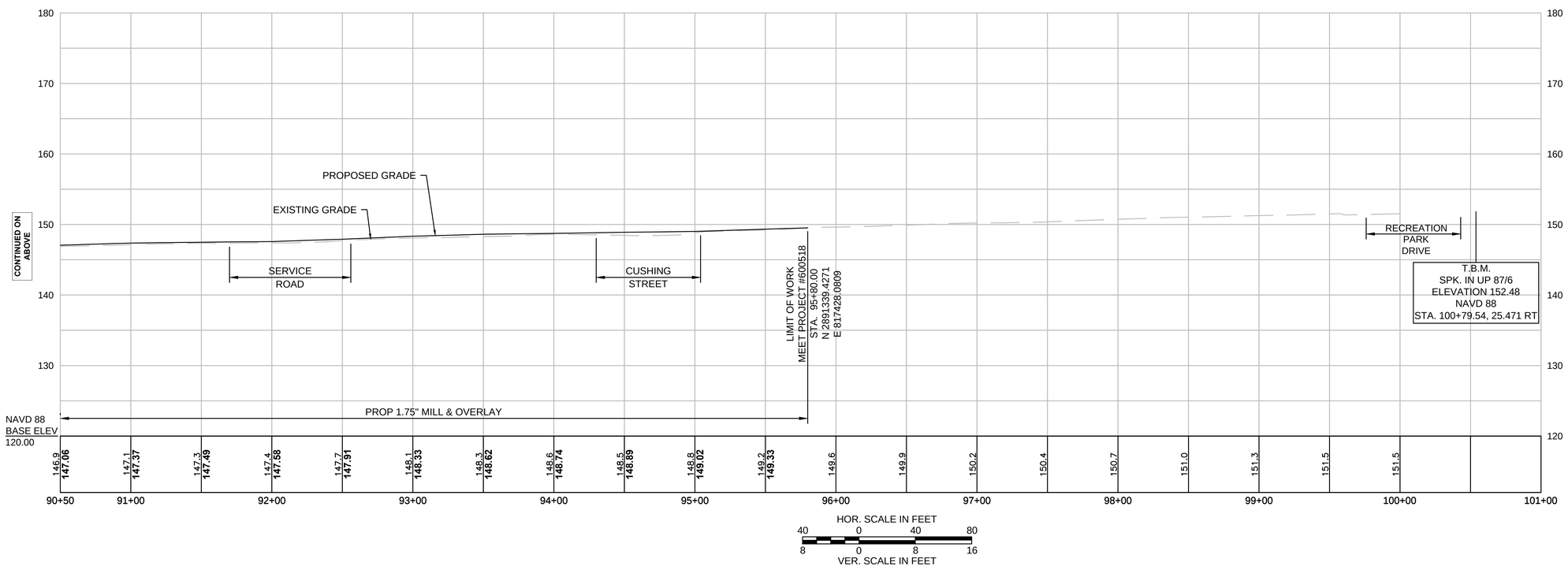
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	20	139
PROJECT FILE NO.	607309		

PROFILES -2

DERBY STREET CONSTRUCTION BASELINE



DERBY STREET CONSTRUCTION BASELINE



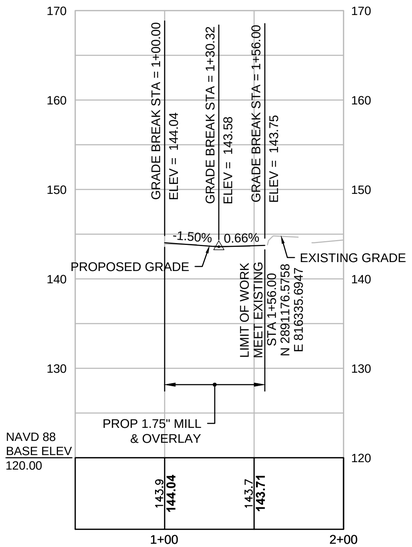
607309_HD(PROFILES).DWG Plotted on 20-Feb-2016 4:56 PM

HINGHAM
DERBY STREET

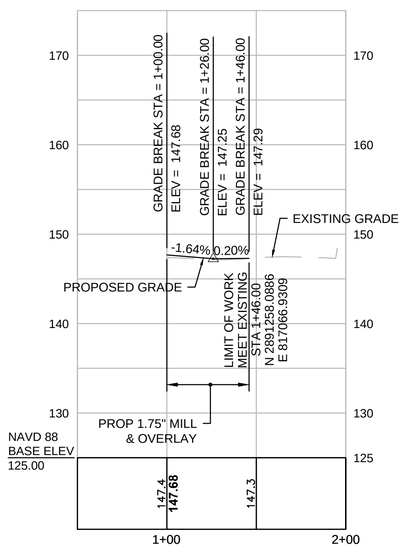
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	21	139
PROJECT FILE NO.	607309		

PROFILES - 3
SIDE STREET PROFILES

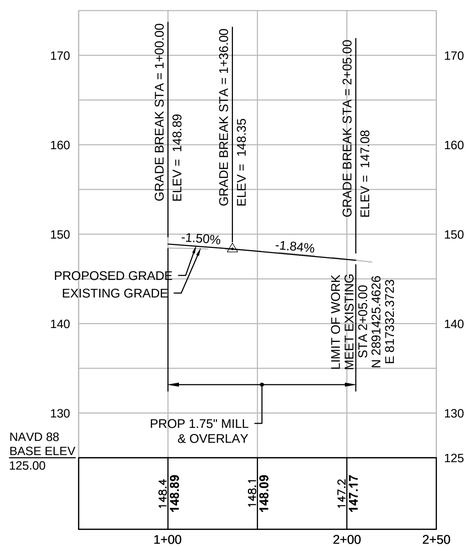
HINGHAM PLAZA MAIN DRIVE



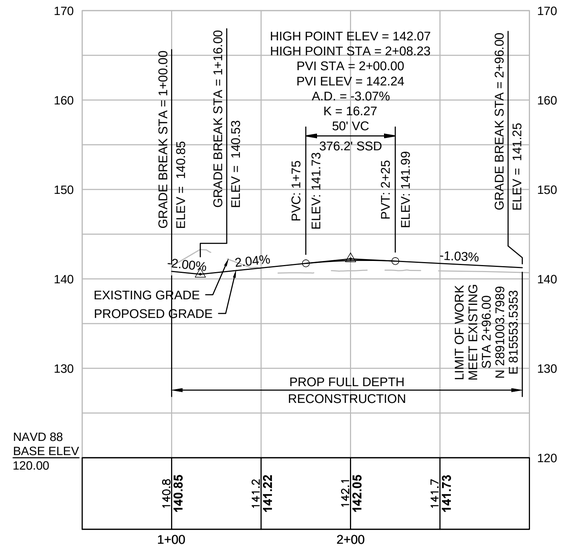
SERVICE ROAD



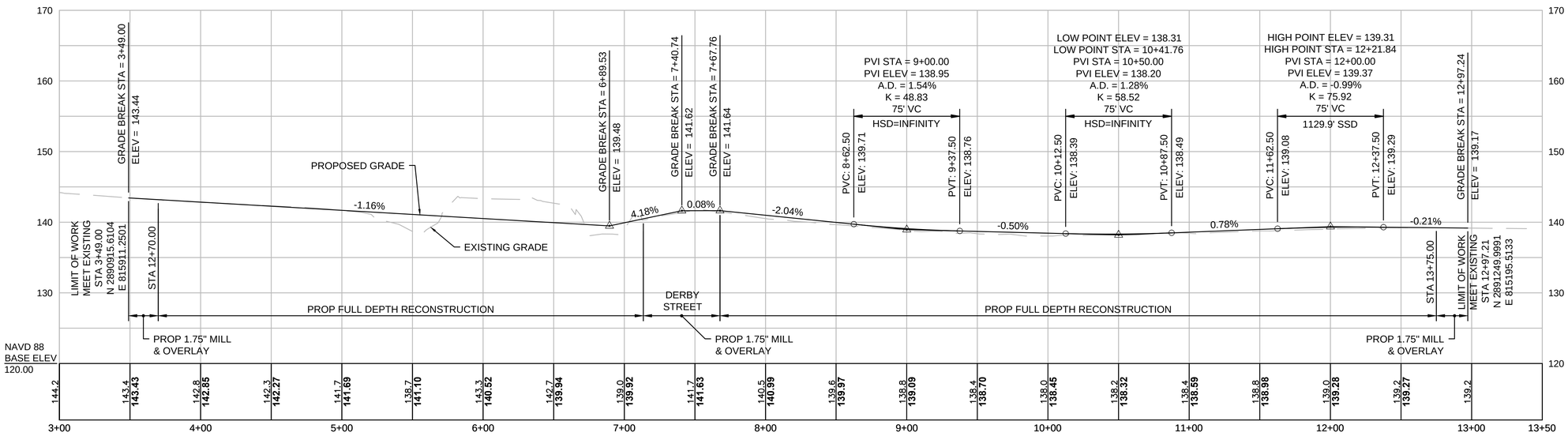
CUSHING STREET



OLD DERBY STREET SOUTH CONNECTOR



OLD DERBY STREET



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

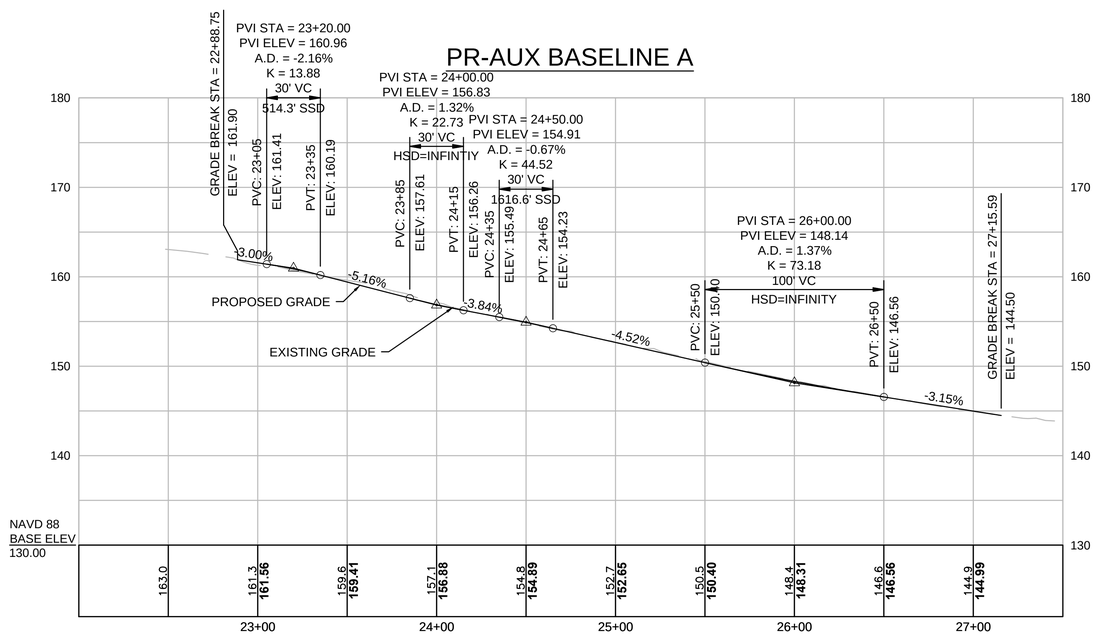
607309_HD(PROFILES).DWG Plotted on 20-Feb-2016 4:56 PM

HINGHAM
DERBY STREET

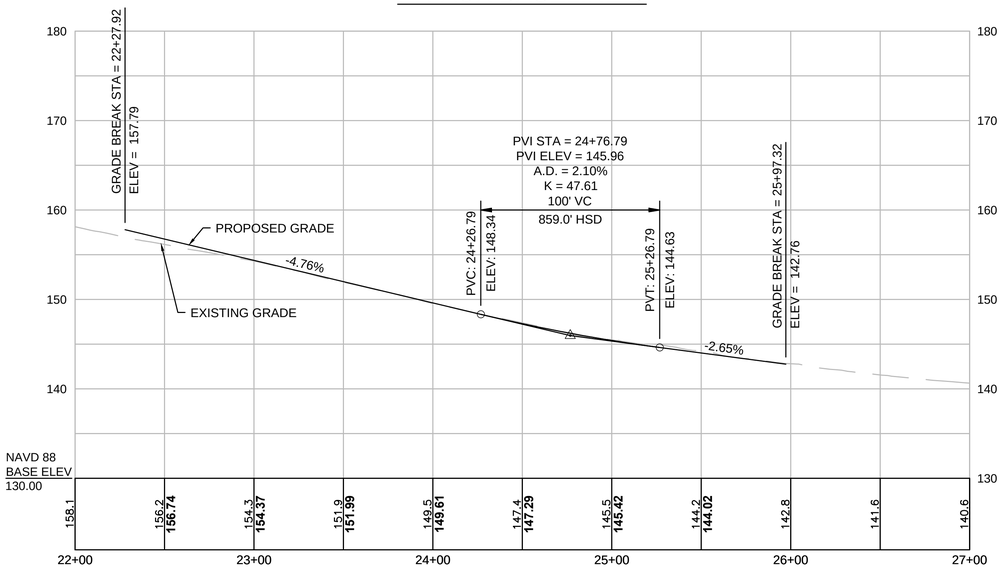
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	22	139
PROJECT FILE NO.	607309		

PROFILES - 4
RAMP PROFILES

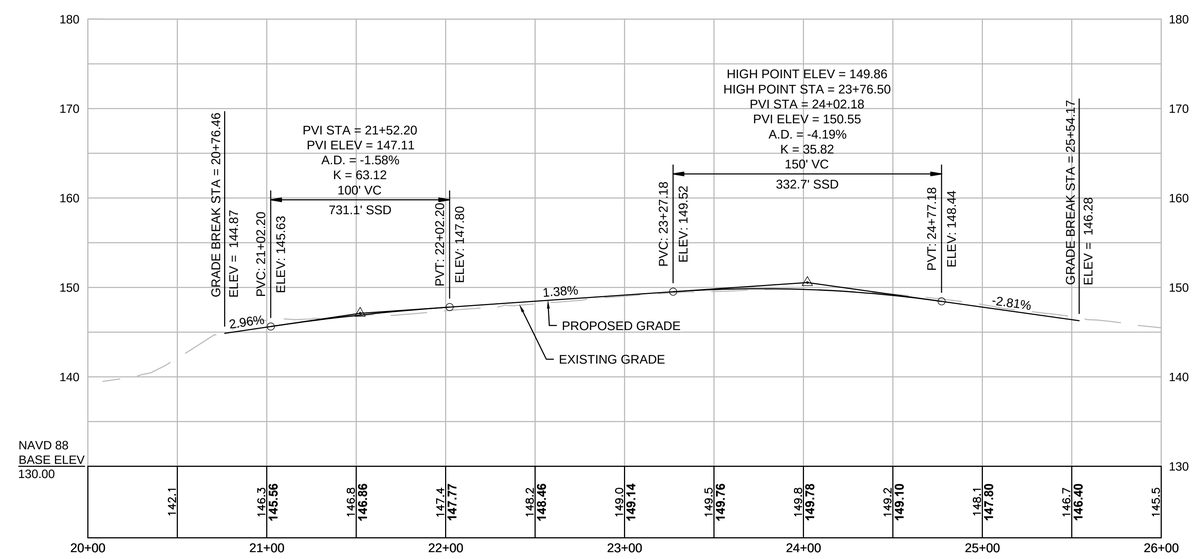
PR-AUX BASELINE A



PR-AUX BASELINE D



PR-AUX BASELINE C



HOR. SCALE IN FEET
40 0 40 80
8 0 8 16
VER. SCALE IN FEET

607309_HD(PROFILES).DWG Plotted on 20-Feb-2016 4:56 PM

SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
1*	148.32	2890644.6400	812970.8653	MAG SET
2*	149.37	2890562.9109	813188.4607	HT SET
3	152.74	2890534.1300	813740.6310	HT SET

* SURVEY PT 1: STA 50+16.20, 26.51' RT
* SURVEY PT 2: STA 52+44.30, 35.07' RT

DERBY STREET CONSTRUCTION BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
PC STA 50+00.00			2890675.443	812966.255
	R = 1500.00'	Δ = 41°26'38"		
PT STA 60+85.00	L = 1085.00'	T = 567.46'	2890624.889	814026.551
	L = 1607.58'	N 72°00'28" E		
PC STA 76+92.58			2891121.4510	815555.5180
	R = 1500.00'	Δ = 12°25'10"		
PT STA 80+17.72	L = 325.14'	T = 163.21'	2891187.7140	815873.1850
	L = 1982.28'	N 84°25'38" E		
END STA 100+00.00			2891380.2130	817846.0960

DERBY STREET 1958 STATE HIGHWAY BASELINE DATA

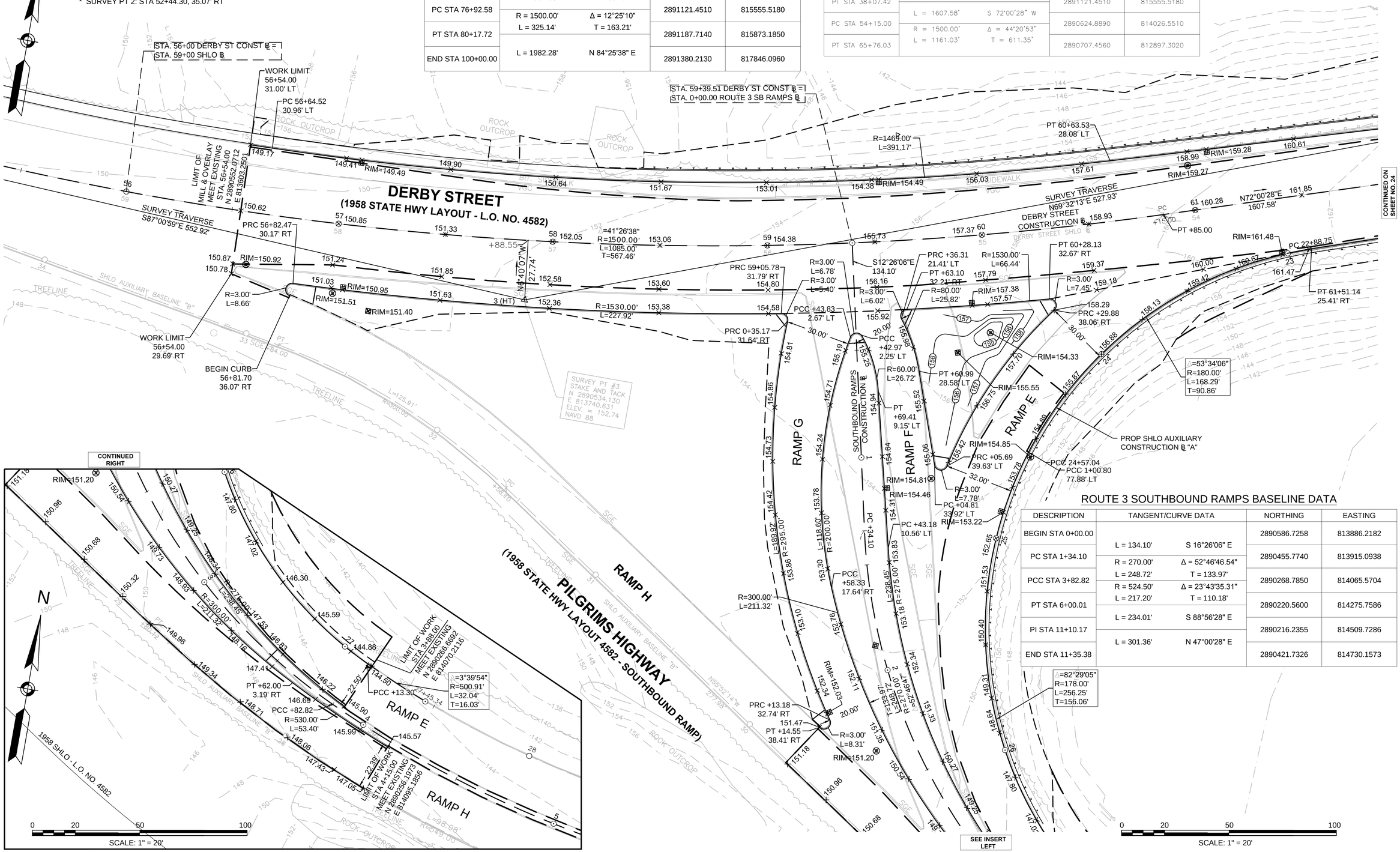
DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
BEGIN STA 5+95.64			2891468.036	818746.181
	L = 2886.64'	S 84°25'38" W		
PC STA 34+82.28			2891187.714	815873.185
	R = 1500.00'	Δ = 12°25'10"		
PT STA 38+07.42	L = 325.14'	T = 163.21'	2891121.4510	815555.5180
	L = 1607.58'	S 72°00'28" W		
PC STA 54+15.00			2890624.8890	814026.5510
	R = 1500.00'	Δ = 44°20'53"		
PT STA 65+76.03	L = 1161.03'	T = 611.35'	2890707.4560	812897.3020

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	23	139
PROJECT FILE NO.		607309	

GRADING & TIE PLANS - 1

607309_HD(CTG).DWG 26-Jan-2017



ROUTE 3 SOUTHBOUND RAMPS BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
BEGIN STA 0+00.00			2890586.7258	813886.2182
	L = 134.10'	S 16°26'06" E		
PC STA 1+34.10			2890455.7740	813915.0938
	R = 270.00'	Δ = 52°46'46.54"		
PCC STA 3+82.82	L = 248.72'	T = 133.97'	2890268.7850	814065.5704
	R = 524.50'	Δ = 23°43'35.31"		
PT STA 6+00.01	L = 217.20'	T = 110.18'	2890220.5600	814275.7586
	L = 234.01'	S 88°56'28" E		
PI STA 11+10.17			2890216.2355	814509.7286
	L = 301.36'	N 47°00'28" E		
END STA 11+35.38			2890421.7326	814730.1573

HINGHAM
DERBY STREET

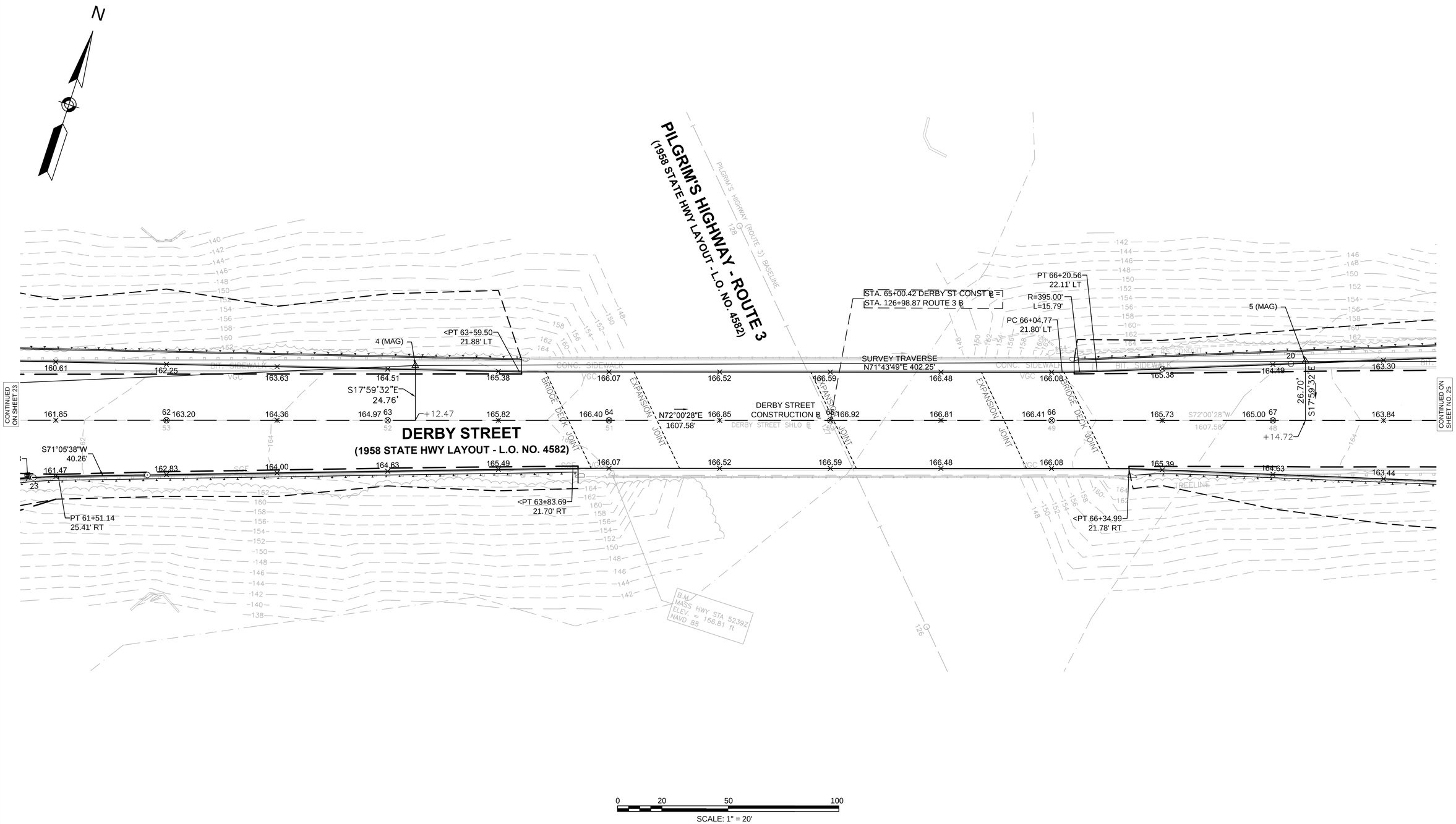
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	24	139
PROJECT FILE NO.	607309		

GRADING & TIE PLANS - 2

607309_HD(CTG).DWG 26-Jan-2017

SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
4	165.52	2890718.6959	814235.2484	MAG SET
5	164.81	2890844.7998	814617.2260	MAG SET

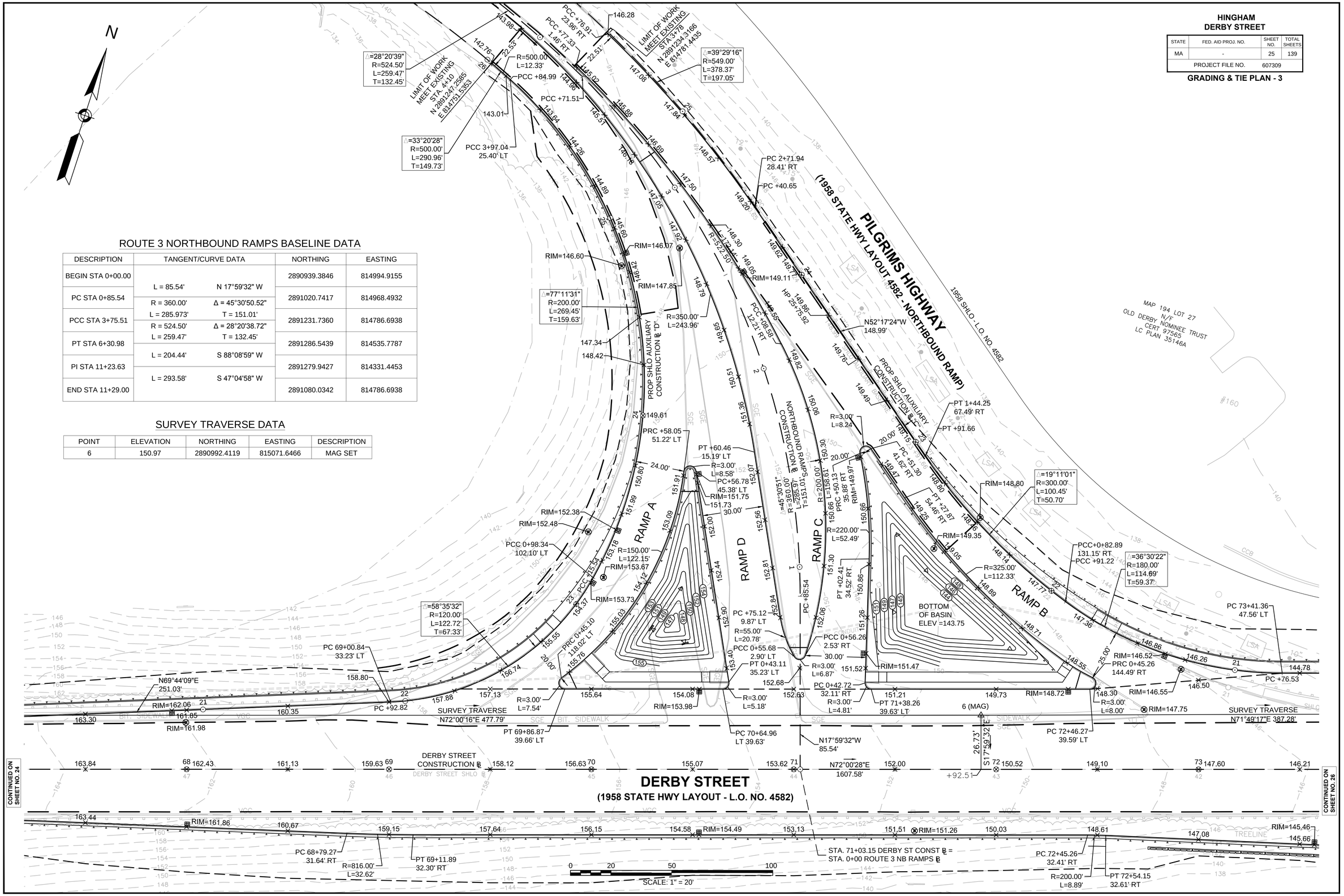


HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	25	139
PROJECT FILE NO.	607309		

GRADING & TIE PLAN - 3

607309_HD(CTG).DWG 26-Jan-2017



ROUTE 3 NORTHBOUND RAMPS BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
BEGIN STA 0+00.00			2890939.3846	814994.9155
	L = 85.54'	N 17°59'32" W		
PC STA 0+85.54			2891020.7417	814968.4932
	R = 360.00'	Δ = 45°30'50.52"		
PCC STA 3+75.51	L = 285.973'	T = 151.01'	2891231.7360	814786.6938
	R = 524.50'	Δ = 28°20'38.72"		
PT STA 6+30.98	L = 259.47'	T = 132.45'	2891286.5439	814535.7787
	L = 204.44'	S 88°08'59" W		
PI STA 11+23.63			2891279.9427	814331.4453
	L = 293.58'	S 47°04'58" W		
END STA 11+29.00			2891080.0342	814786.6938

SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
6	150.97	2890992.4119	815071.6466	MAG SET

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	26	139
PROJECT FILE NO.	607309		

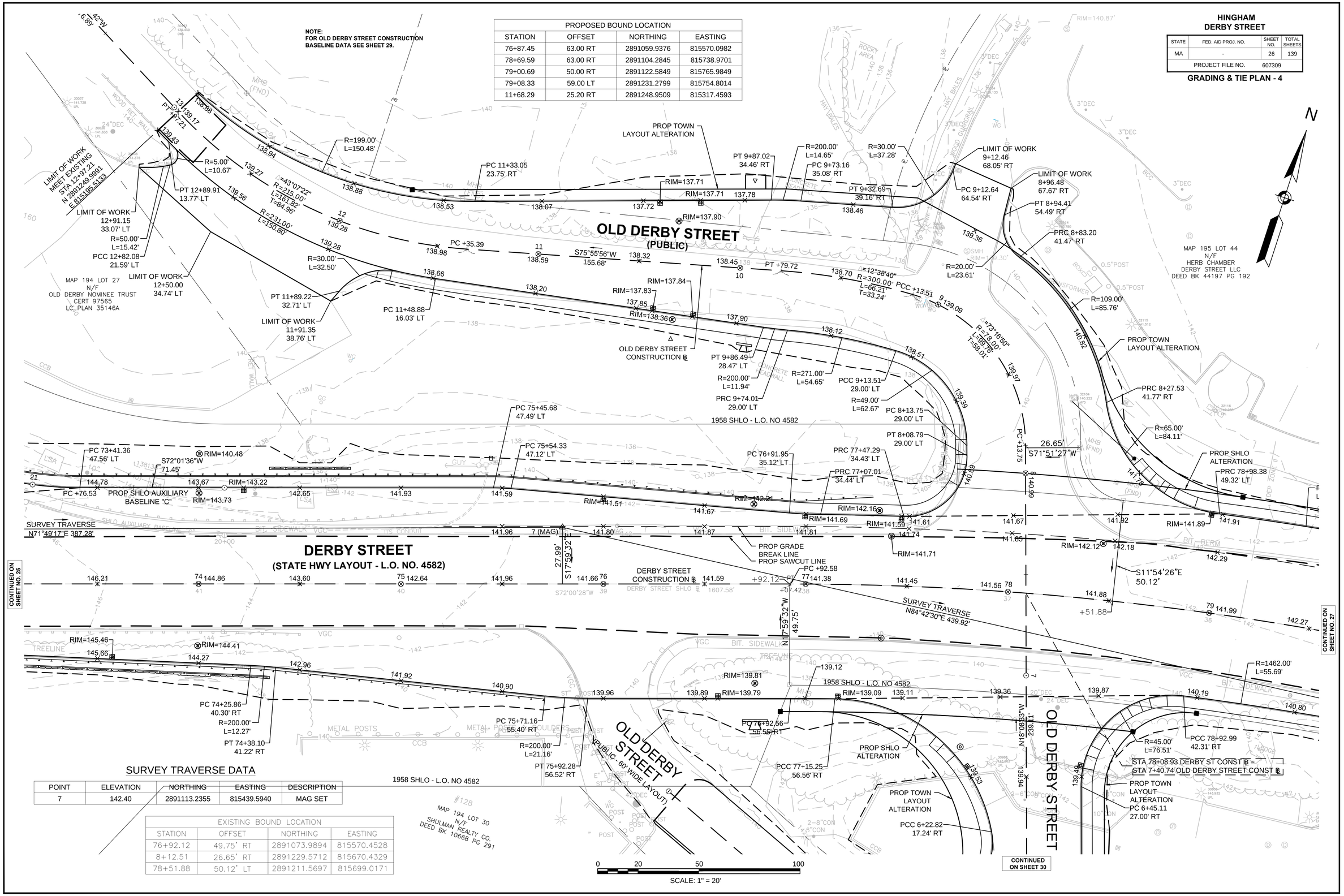
GRADING & TIE PLAN - 4

26-Jan-2017

607309_HD(CTG).DWG

NOTE:
FOR OLD DERBY STREET CONSTRUCTION BASELINE DATA SEE SHEET 29.

PROPOSED BOUND LOCATION			
STATION	OFFSET	NORTHING	EASTING
76+87.45	63.00 RT	2891059.9376	815570.0982
78+69.59	63.00 RT	2891104.2845	815738.9701
79+00.69	50.00 RT	2891122.5849	815765.9849
79+08.33	59.00 LT	2891231.2799	815754.8014
11+68.29	25.20 RT	2891248.9509	815317.4593



SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
7	142.40	2891113.2355	815439.5940	MAG SET

EXISTING BOUND LOCATION			
STATION	OFFSET	NORTHING	EASTING
76+92.12	49.75' RT	2891073.9894	815570.4528
8+12.51	26.65' RT	2891229.5712	815670.4329
78+51.88	50.12' LT	2891211.5697	815699.0171

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	27	139
PROJECT FILE NO.	607309		

GRADING & TIE PLAN - 5

26-Jan-2017

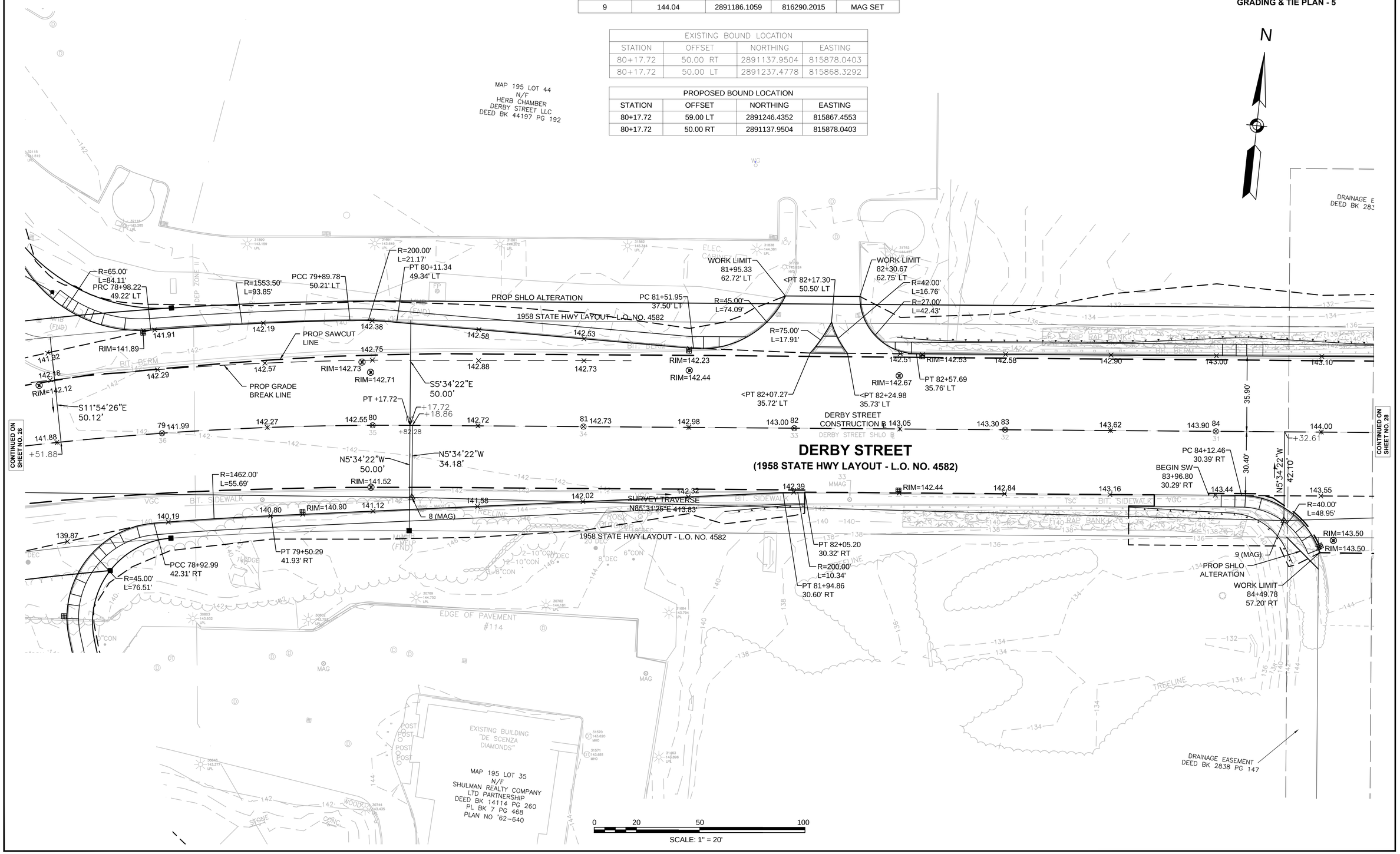
607309_HD(CTG).DWG

SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
8	142.07	2891153.8076	815877.6376	MAG SET
9	144.04	2891186.1059	816290.2015	MAG SET

EXISTING BOUND LOCATION			
STATION	OFFSET	NORTHING	EASTING
80+17.72	50.00 RT	2891137.9504	815878.0403
80+17.72	50.00 LT	2891237.4778	815868.3292

PROPOSED BOUND LOCATION			
STATION	OFFSET	NORTHING	EASTING
80+17.72	59.00 LT	2891246.4352	815867.4553
80+17.72	50.00 RT	2891137.9504	815878.0403



HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	28	139
PROJECT FILE NO.	607309		

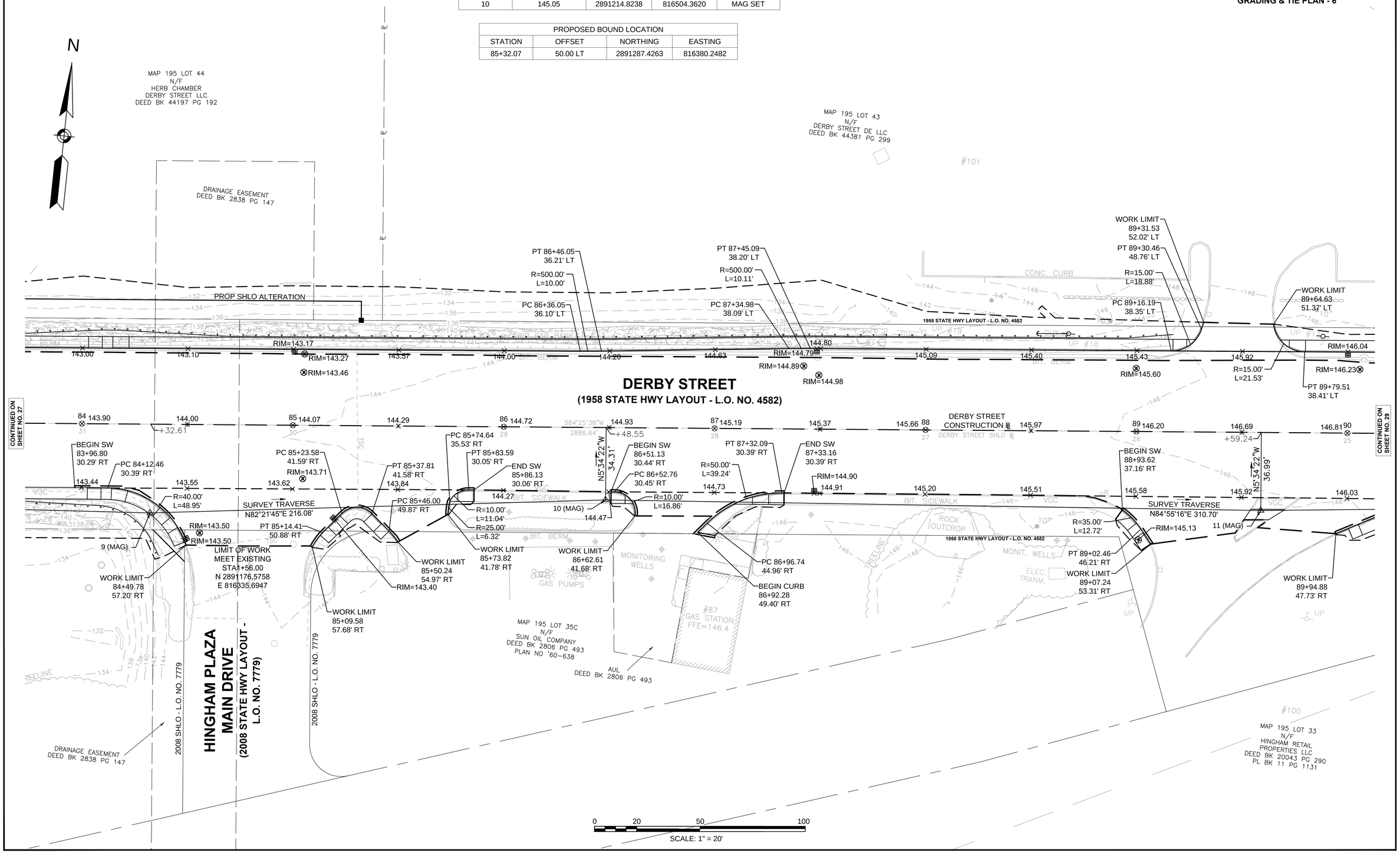
GRADING & TIE PLAN - 6

607309_HD(CTG).DWG 26-Jan-2017

SURVEY TRAVERSE DATA

POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
9	144.04	2891186.1059	816290.2015	MAG SET
10	145.05	2891214.8238	816504.3620	MAG SET

PROPOSED BOUND LOCATION			
STATION	OFFSET	NORTHING	EASTING
85+32.07	50.00 LT	2891287.4263	816380.2482



SERVICE ROAD CONSTRUCTION BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
BEGIN STA 1+00.00			2891303.9341	817064.3154
	L = 20.21'	S 5°34'22" E		
PC STA 1+20.21			2891283.8211	817066.2779
	R = 170.00'	Δ = 32°17'57.54"		
	L = 95.83'	T = 49.23'		
PT STA 2+16.04			2891190.8578	817048.9191
	L = 33.96'	S 26°43'36" W		
END STA 3+00.00			2891160.5283	817033.6473

CUSHING STREET CONSTRUCTION BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
BEGIN STA 1+00.00			2891326.8402	817299.0785
	R = 230.00'	Δ = 28°24'04.90"		
	L = 114.01'	T = 58.20'		
PT STA 2+14.01			2891433.0313	817337.2602
	L = 35.99'	N 33°58'37" E		
END STA 2+50.00			2891462.8761	817357.3734

SURVEY TRAVERSE DATA

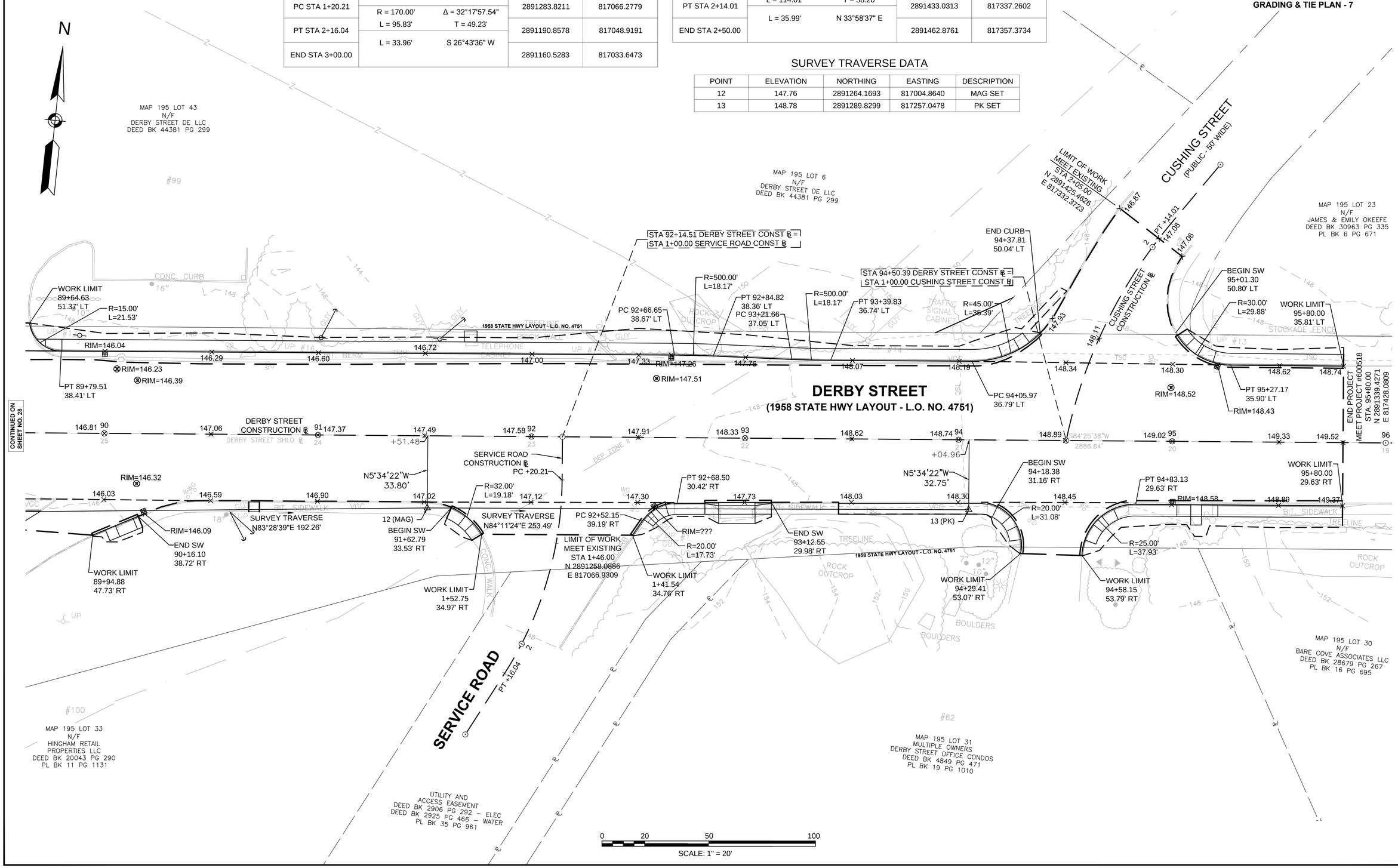
POINT	ELEVATION	NORTHING	EASTING	DESCRIPTION
12	147.76	2891264.1693	817004.8640	MAG SET
13	148.78	2891289.8299	817257.0478	PK SET

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	29	139
PROJECT FILE NO.	607309		

GRADING & TIE PLAN - 7

607309_HD(CTG).DWG 26-Jan-2017

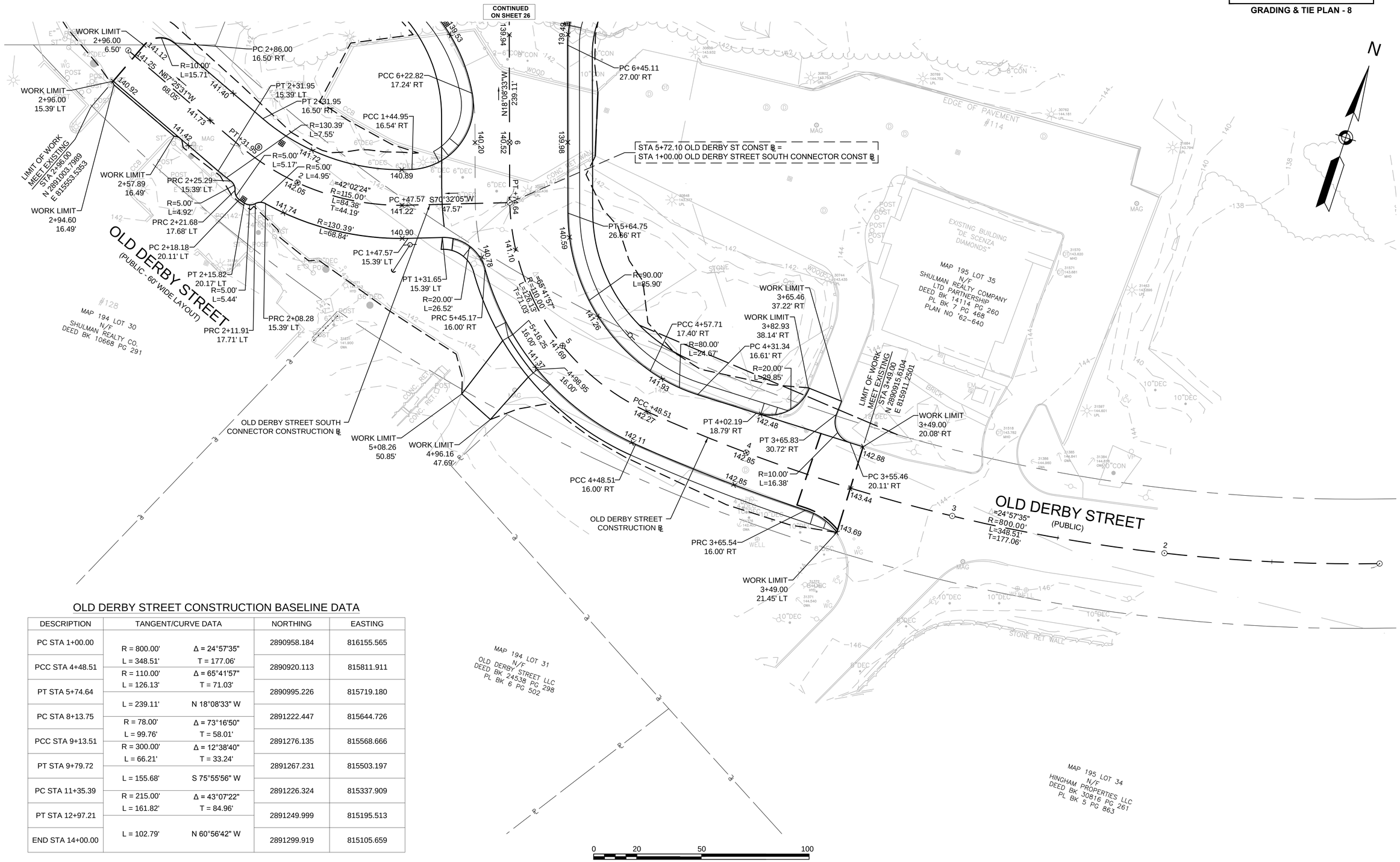


HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	30	139
PROJECT FILE NO.	607309		

GRADING & TIE PLAN - 8

607309_HD(CTG).DWG 26-Jan-2017



OLD DERBY STREET CONSTRUCTION BASELINE DATA

DESCRIPTION	TANGENT/CURVE DATA		NORTHING	EASTING
PC STA 1+00.00			2890958.184	816155.565
	R = 800.00'	Δ = 24°57'35"		
PCC STA 4+48.51	L = 348.51'	T = 177.06'	2890920.113	815811.911
	R = 110.00'	Δ = 65°41'57"		
PT STA 5+74.64	L = 126.13'	T = 71.03'	2890995.226	815719.180
	L = 239.11'	N 18°08'33" W		
PC STA 8+13.75			2891222.447	815644.726
	R = 78.00'	Δ = 73°16'50"		
PCC STA 9+13.51	L = 99.76'	T = 58.01'	2891276.135	815568.666
	R = 300.00'	Δ = 12°38'40"		
PT STA 9+79.72	L = 66.21'	T = 33.24'	2891267.231	815503.197
	L = 155.68'	S 75°55'56" W		
PC STA 11+35.39			2891226.324	815337.909
	R = 215.00'	Δ = 43°07'22"		
PT STA 12+97.21	L = 161.82'	T = 84.96'	2891249.999	815195.513
	L = 102.79'	N 60°56'42" W		
END STA 14+00.00			2891299.919	815105.659

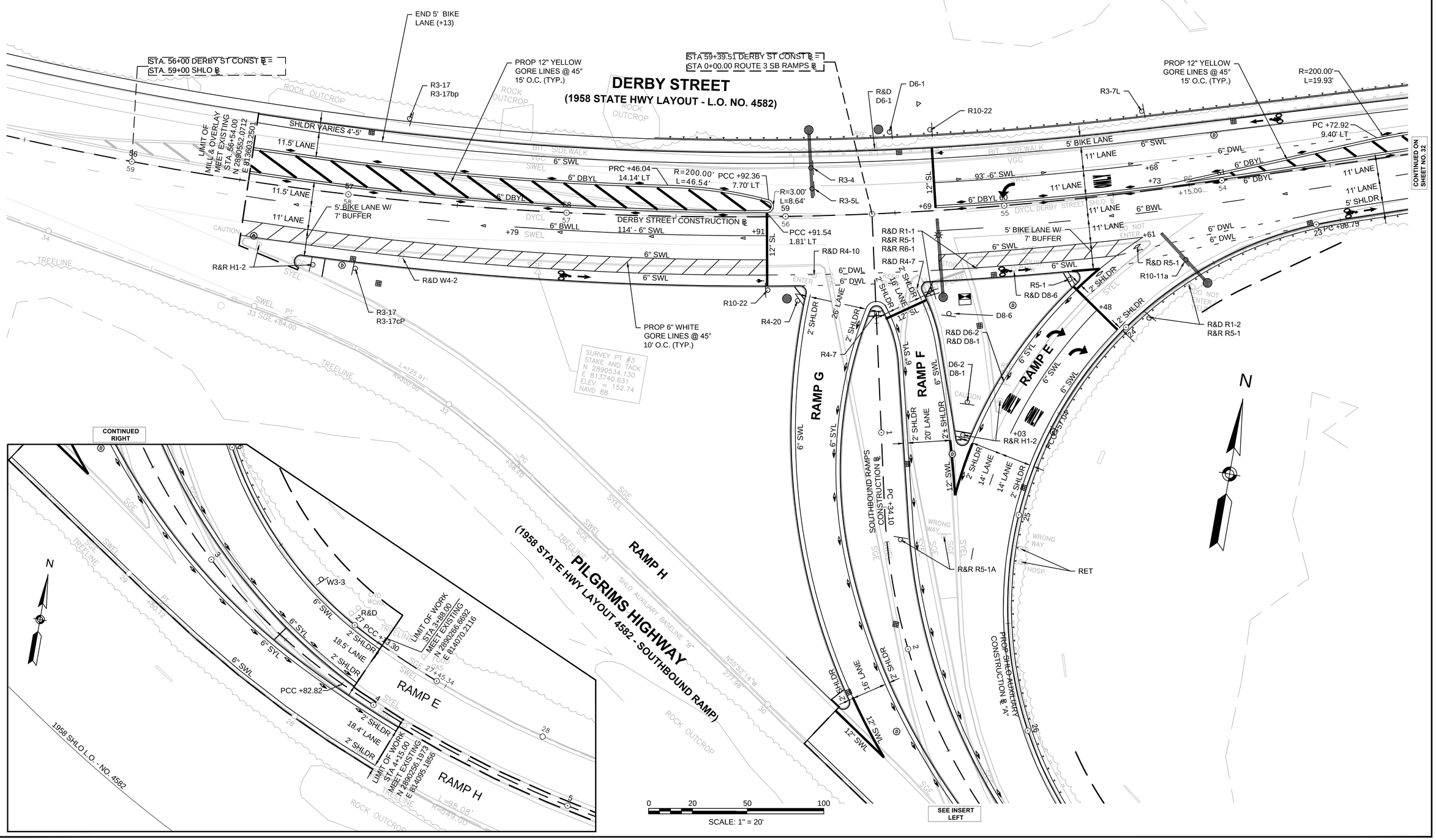
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	31	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 1

NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ◁ ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ◀ ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. ◀▶ TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. ◀▷ TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. ◁▷ TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING



607309_TR(SIGN_STRIPING).DWG 22-Feb-2016

NOTES:

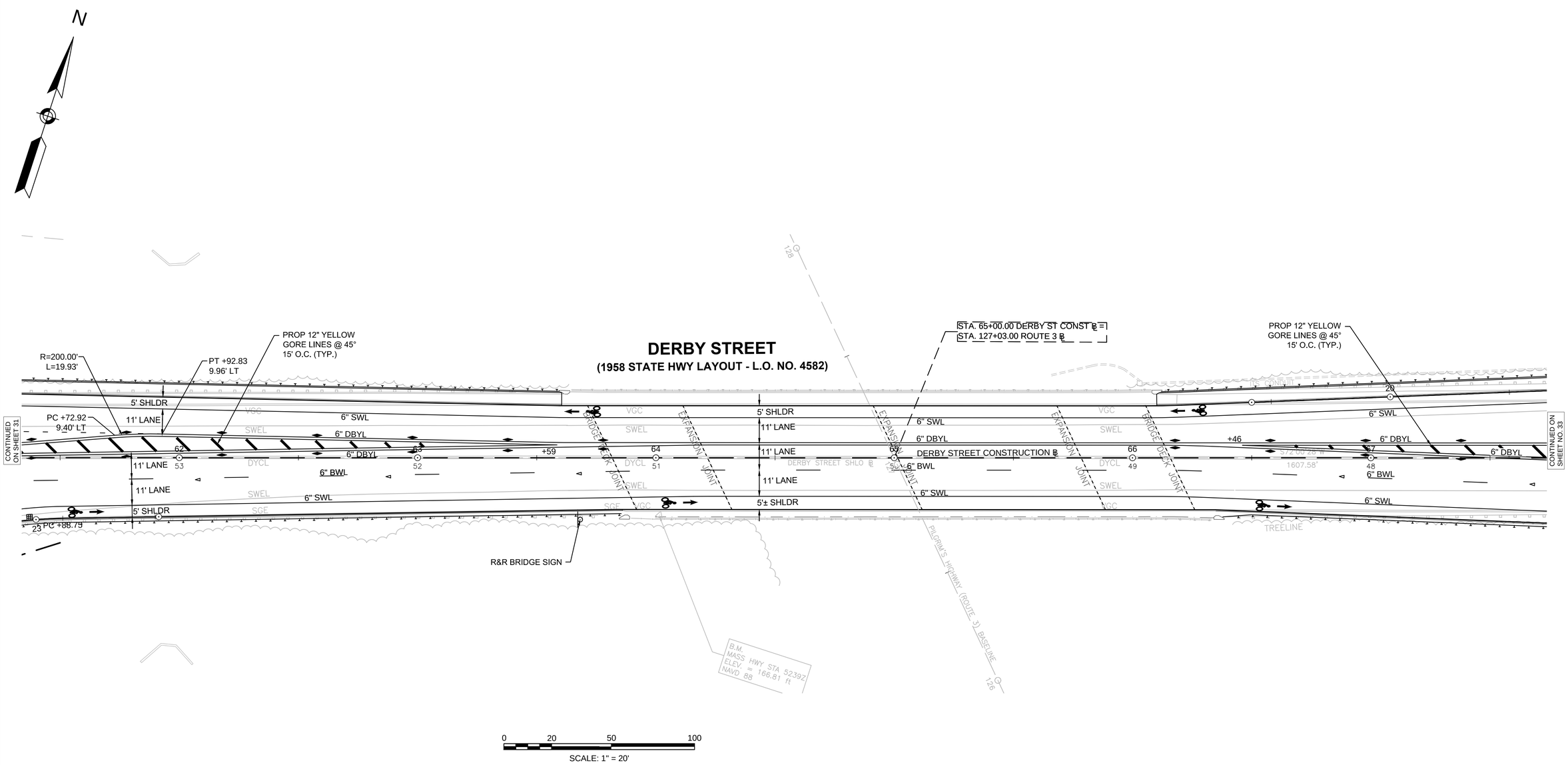
1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	32	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 2

607309_TR(SIGN_STRIPING).DWG 22-Feb-2016



NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTE WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL

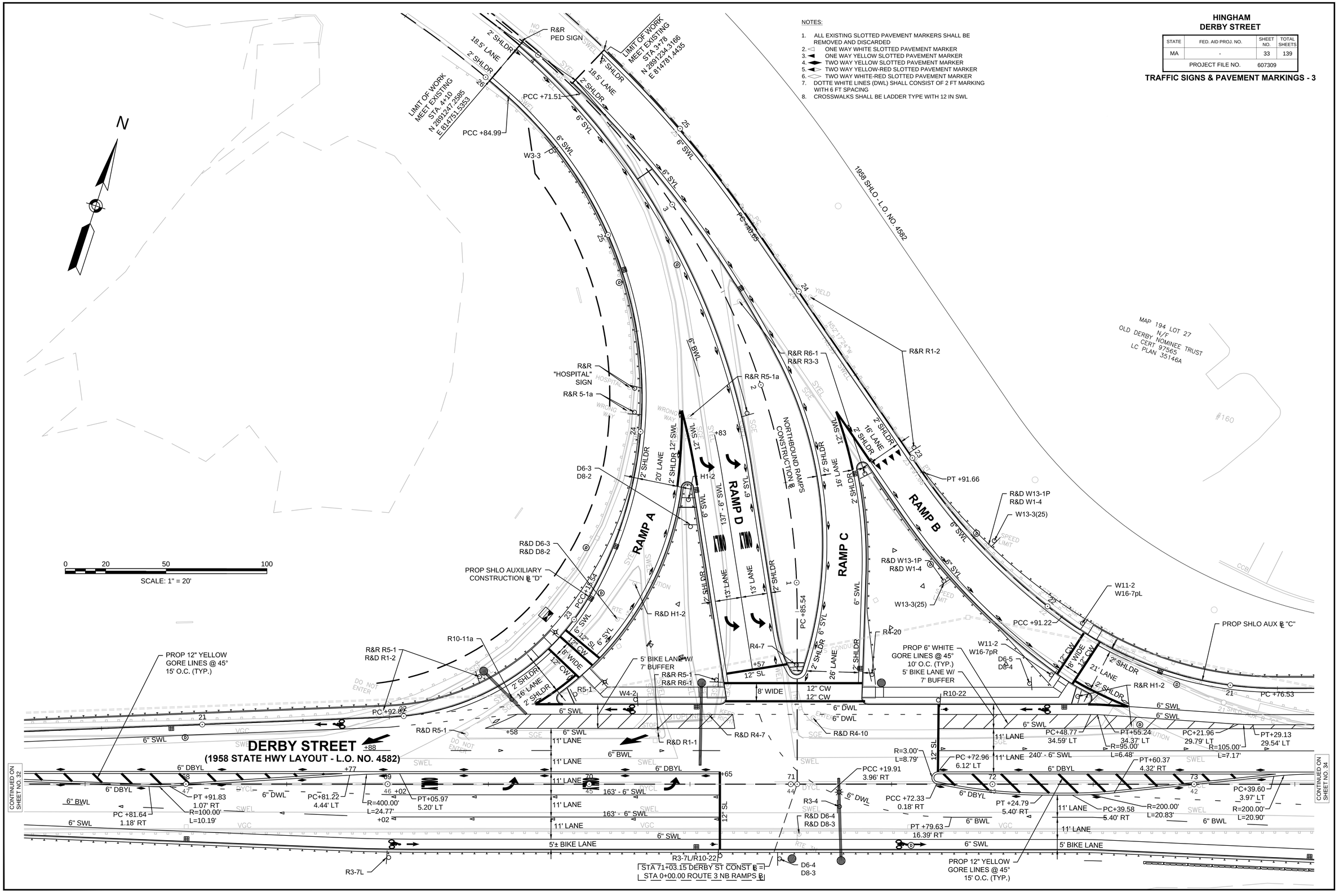
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	33	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 3

22-Feb-2016

607309_TR(SIGN_STRIPING).DWG



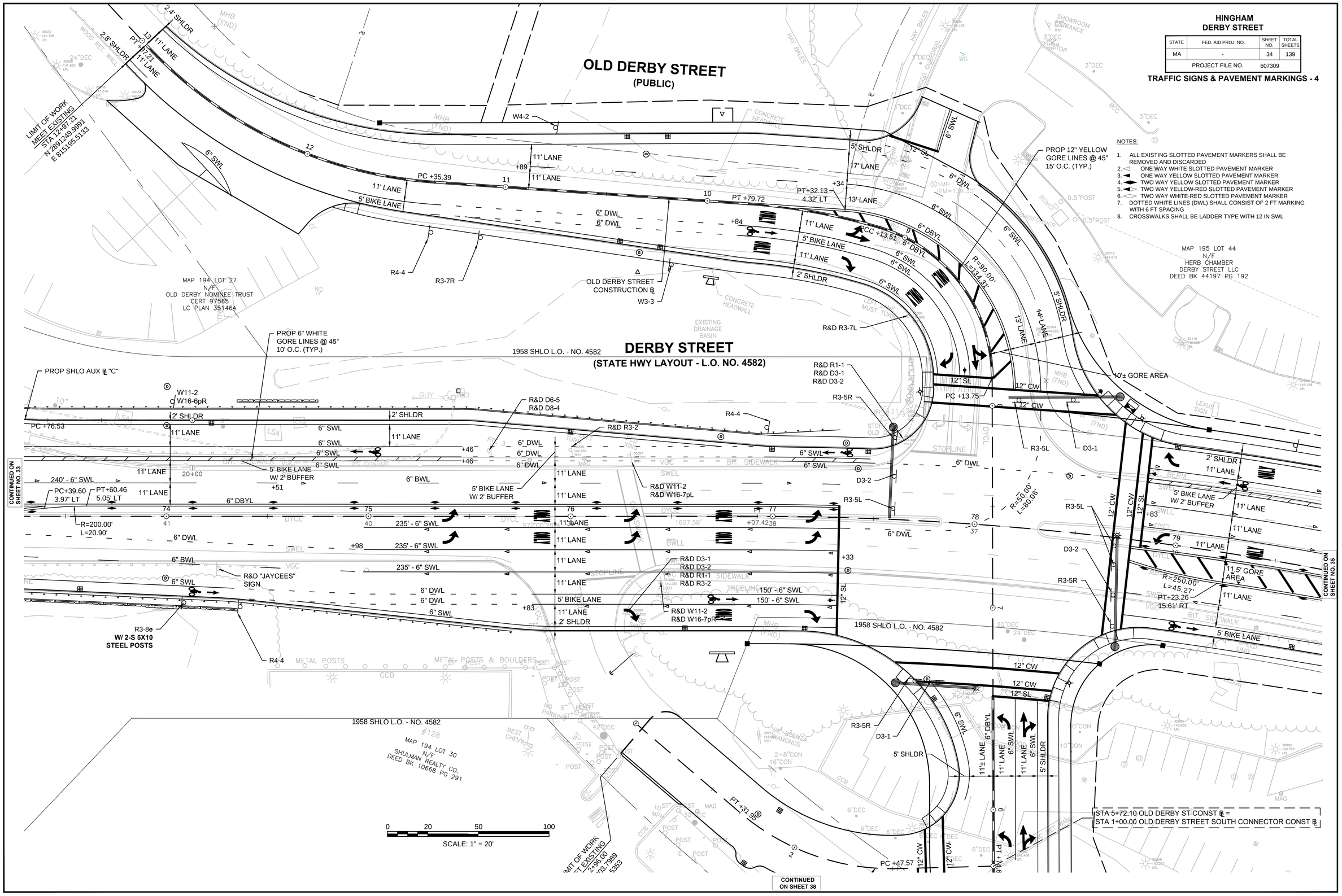
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	34	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 4

NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL



607309_TR(SIGN_STRIPING).DWG 22-Feb-2016

NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ◁ ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ◀ ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. ◀▶ TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. ◀▷ TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. ◁▷ TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL

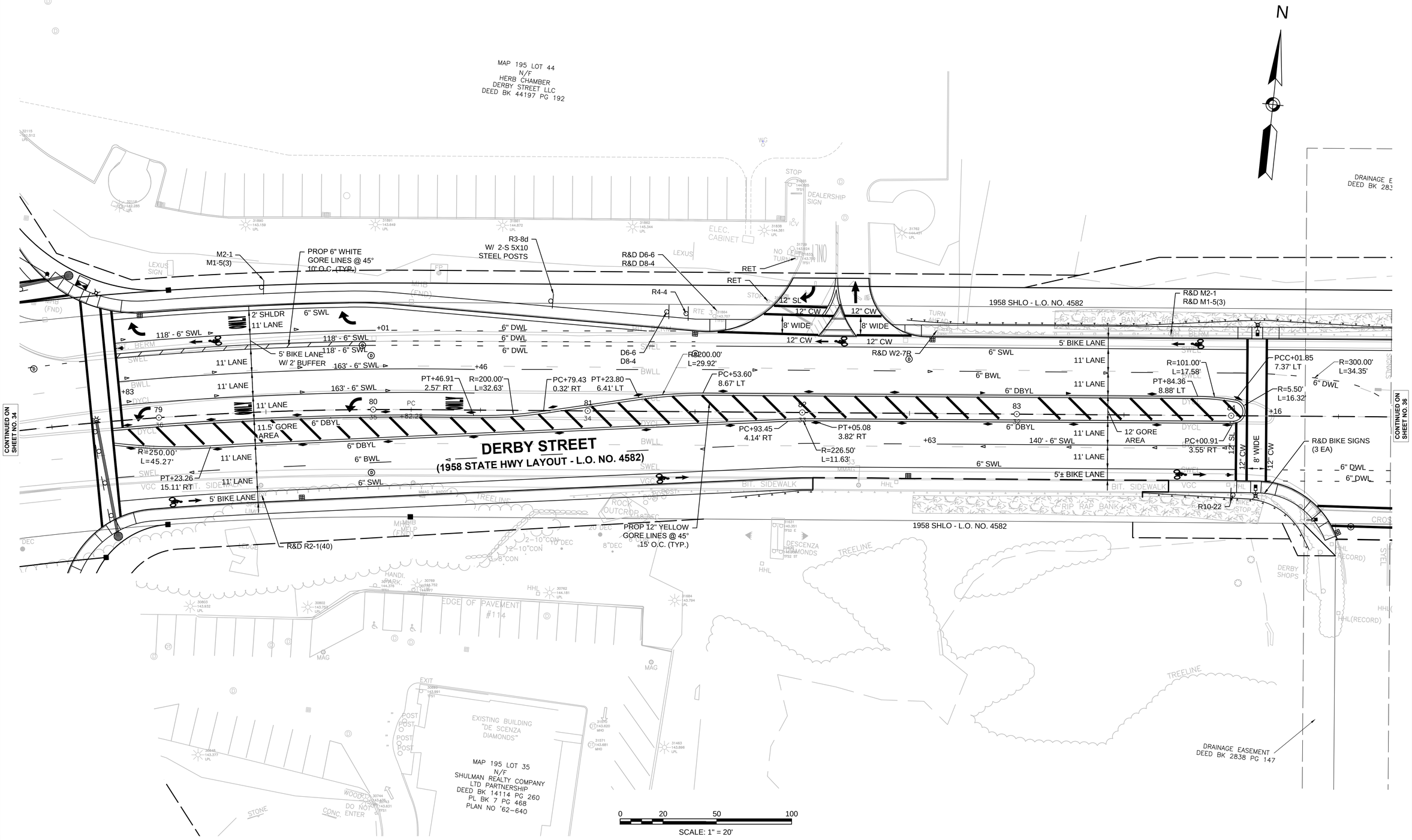
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	35	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 5

22-Feb-2016

607309_TR(SIGN_STRIPING).DWG



NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL

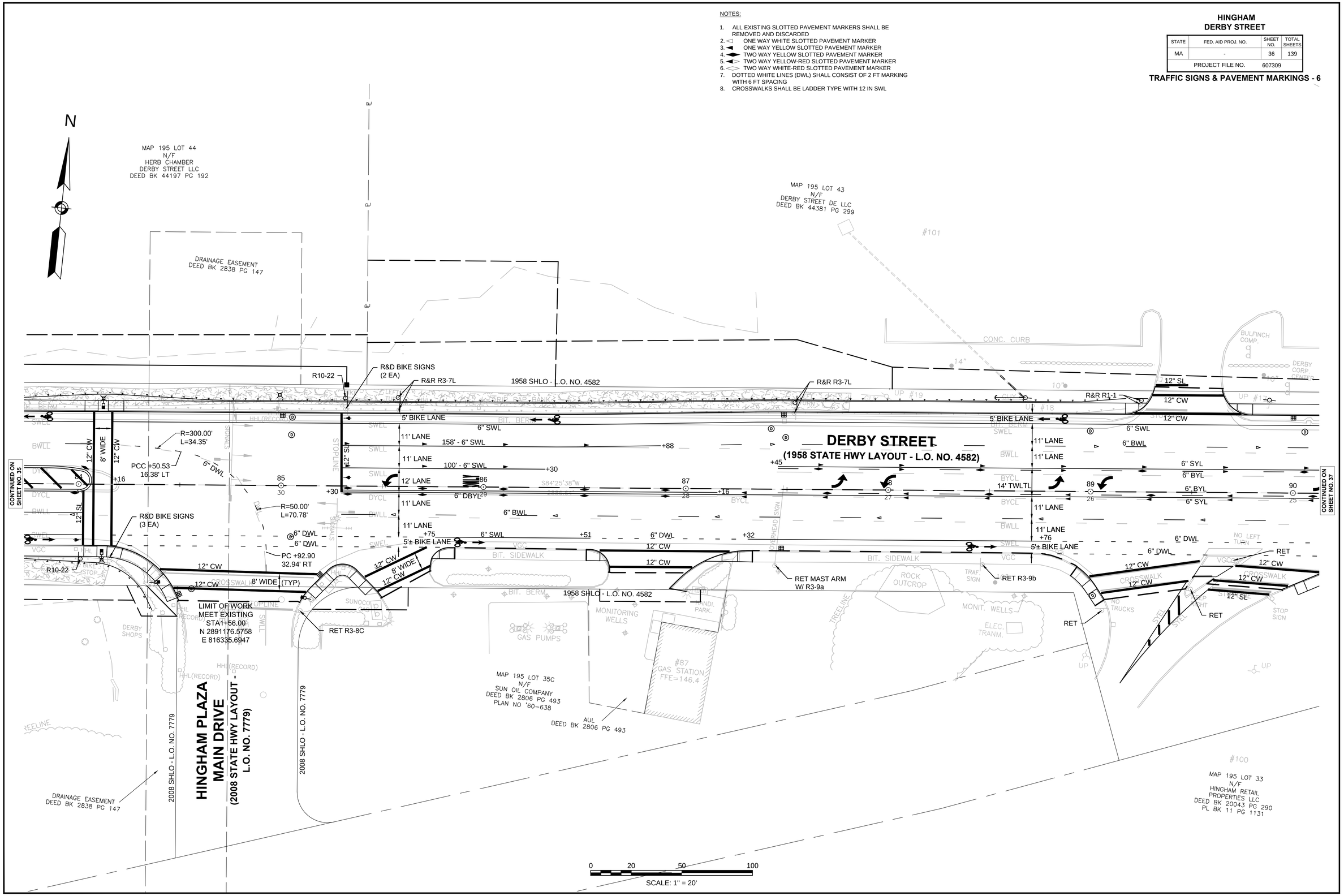
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	36	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 6

22-Feb-2016

607309_TR(SIGN_STRIPING).DWG



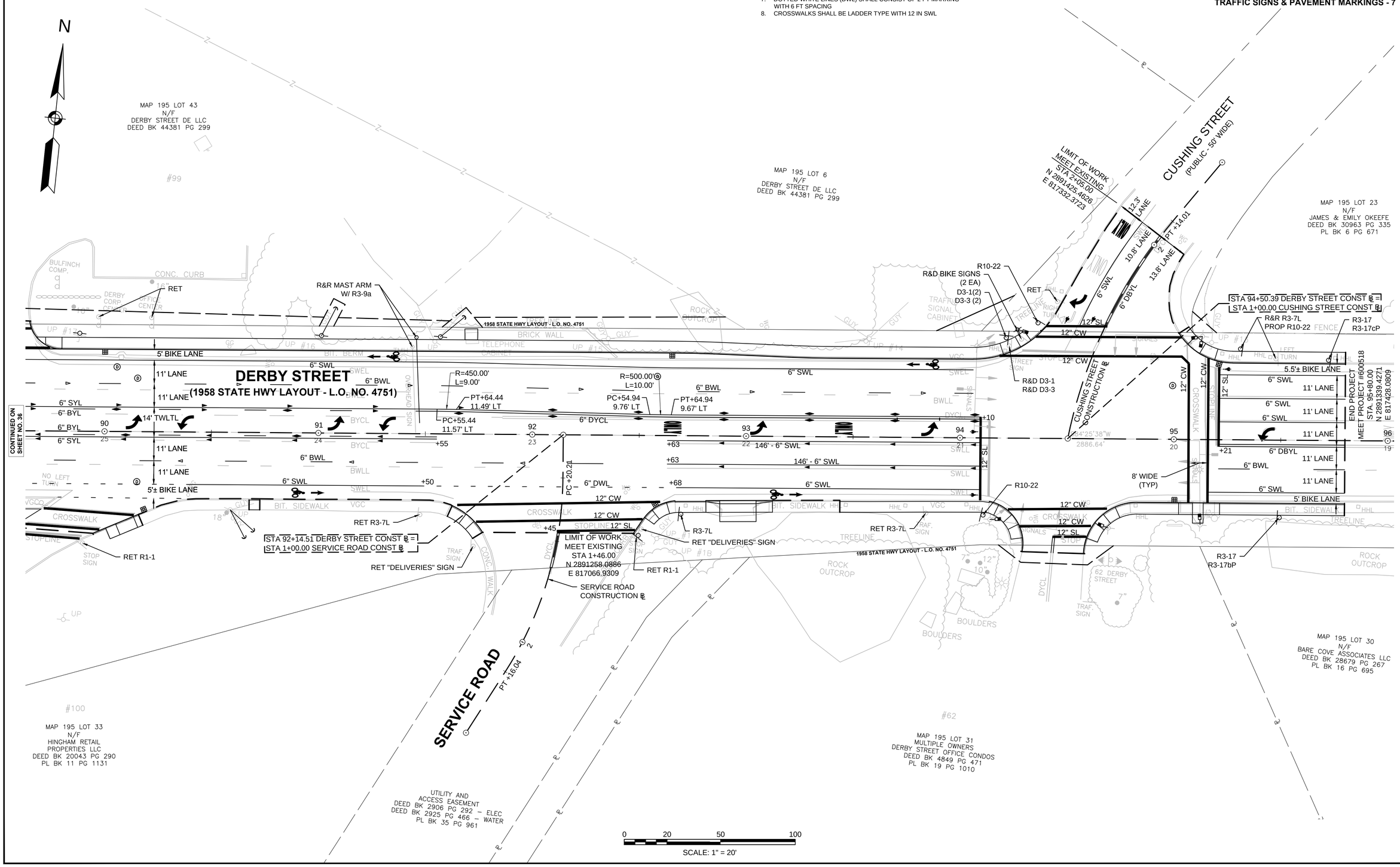
NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	37	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 7



607309_TR(SIGN_STRIPING).DWG 22-Feb-2016

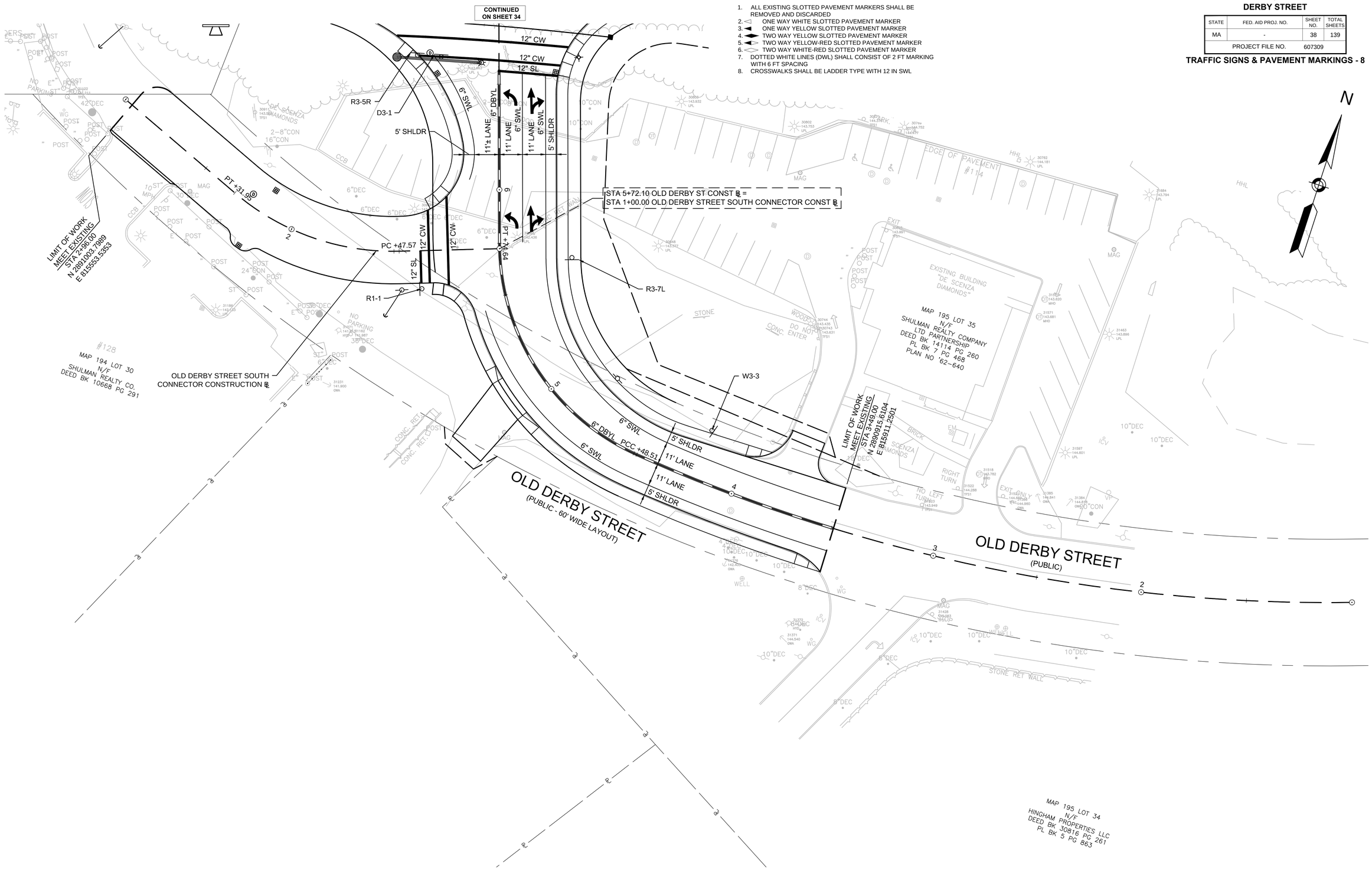
NOTES:

1. ALL EXISTING SLOTTED PAVEMENT MARKERS SHALL BE REMOVED AND DISCARDED
2. ONE WAY WHITE SLOTTED PAVEMENT MARKER
3. ONE WAY YELLOW SLOTTED PAVEMENT MARKER
4. TWO WAY YELLOW SLOTTED PAVEMENT MARKER
5. TWO WAY YELLOW-RED SLOTTED PAVEMENT MARKER
6. TWO WAY WHITE-RED SLOTTED PAVEMENT MARKER
7. DOTTED WHITE LINES (DWL) SHALL CONSIST OF 2 FT MARKING WITH 6 FT SPACING
8. CROSSWALKS SHALL BE LADDER TYPE WITH 12 IN SWL

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	38	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNS & PAVEMENT MARKINGS - 8



607309_TR(SIGN_STRIPING).DWG 22-Feb-2016

PROPOSED TRAFFIC SIGN SUMMARY

IDENTIFI–CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK–GROUND	LEGEND	BORDER			
R1-1	36"	36"	STOP	SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			1	RED	WHITE	WHITE	P-5 1 REQ'D	9.00	9.00
R3-4	36"	36"					2	WHITE	BLACK/ RED	BLACK	MOUNT W/ MAST	9.00	18.00
R3-5L	30"	36"	ONLY				5	WHITE	BLACK	BLACK	MOUNT W/ MAST	7.50	45.00
R3-5R	30"	36"	ONLY				3	WHITE	BLACK	BLACK	MOUNT W/ MAST	7.50	22.50
R3-7L	36"	36"	LEFT LANE MUST TURN LEFT				5	WHITE	BLACK	BLACK	P-5 5 REQ'D	9.00	45.00
R3-7R	36"	36"	RIGHT LANE MUST TURN RIGHT				1	WHITE	BLACK	BLACK	P-5 1 REQ'D	9.00	9.00
R3-8e	72"	30"					1	WHITE	BLACK	BLACK	S5X10-STEEL 2 REQ'D	15.00	15.00
R3-8d	54"	30"					1	WHITE	BLACK	BLACK	S5X10-STEEL 2 REQ'D	11.25	11.25
R3-17	30"	24"	BIKE LANE				4	WHITE	BLACK	BLACK	P-5 4 REQ'D	5.00	20.00
R3-17bP	30"	12"	ENDS				2	WHITE	BLACK	BLACK	MOUNT W/ R3-17	2.50	5.00
R3-17cP	30"	12"	BEGINS				2	WHITE	BLACK	BLACK	MOUNT W/ R3-17	2.50	5.00
R4-4	36"	30"	BIKES RIGHT TURN LANE YIELD TO BIKES				4	WHITE	BLACK	BLACK	P-5 4 REQ'D	7.50	30.00
R4-7	24"	30"					2	WHITE	BLACK	BLACK	P-5 2 REQ'D	5.00	10.00
R4-20	24"	30"	ENTER HERE				2	WHITE	BLACK	BLACK	P-5 2 REQ'D	5.00	10.00
R5-1	30"	30"	DO NOT ENTER				2	RED	WHITE	RED	P-5 2 REQ'D	9.00	18.00
R10-3F	9"	12"					17	WHITE	BLACK/ ORANGE	BLACK	MOUNT W/ POST	0.75	12.75
R10-11a	30"	36"	NO TURN ON RED				2	WHITE	BLACK	BLACK	MOUNT W/ MAST	7.50	15.00
R10-12a	30"	36"	LEFT TURN YIELD ON FLASHING				1	WHITE	BLACK	BLACK	MOUNT W/ MAST ARM	7.50	7.50
R10-22	18"	24"	PUSH BUTTON FOR WALK SIGNAL WHEN GREEN WALK OR DON'T WALK				9	WHITE	BLACK	BLACK	P-5 - 7 REQ'D MOUNT 1 W/ PED SIGNAL MOUNT 1 W/ R3-7L	3.00	27.00
H1-2	30"	30"		SEE 1990 MASSDOT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS			1	YELLOW	REFL. YELLOW	-	P-5 1 REQ'D	6.25	6.25
W3-3	36"	36"		SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			4	YELLOW	BLACK	BLACK	P-5 4 REQ'D	9.00	36.00
W4-2	36"	36"					2	YELLOW	BLACK	BLACK	P-5 2 REQ'D	9.00	18.00
W11-2	36"	36"					3	FLOUR-ESCENT YELLOW/ GREEN	BLACK	BLACK	P-5 3 REQ'D	9.00	27.00
W13-3(25)	24"	30"	RAMP 25 MPH				2	YELLOW	BLACK	BLACK	P-5 2 REQ'D	5.00	10.00
W16-6pR	24"	18"					1	YELLOW	BLACK	BLACK	MOUNT W/ W11-2	3.00	3.00
W16-7pL	24"	12"					1	FLOUR-ESCENT YELLOW/ GREEN	BLACK	BLACK	MOUNT W/ W11-2	2.00	2.00
W16-7pR	24"	12"					1	FLOUR-ESCENT YELLOW/ GREEN	BLACK	BLACK	MOUNT W/ W11-2	2.00	2.00

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

NOTE: 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 JUSTIFCATION FOR SPEED & ADVISORY EXIT SPEED SIGNS SHALL BE OBTAINED FROM THE SPEED ZONING UNIT OF THE TRAFFIC ENGINEERING SECTION, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS, BEFORE FABRICATION AND/OR ERECTION.

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	39	139
PROJECT FILE NO.	607309		

TRAFFIC SIGN SUMMARY SHEET

IDENTIFI–CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			POST SIZE AND NUMBER REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK–GROUND	LEGEND	BORDER			
D3-1	30"	12"	POS Derby St	PRIMARY 12"/9" UPPER-LOWER SECONDARY 9"/9" UPPER-LOWER	SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS		4	GREEN	WHITE	WHITE	P-5 1 REQ'D MOUNT 2 W/ MAST ARM	EA	EA
D3-2	42"	12"	POS Old Derby St				2	GREEN	WHITE	WHITE	MOUNT W/ MAST ARM	EA	EA
D3-3	36"	12"	POS Cushing St				2	GREEN	WHITE	WHITE	MOUNT W/ D3-1	EA	EA
D6-1	60"	60"	3 SOUTH Plymouth Cape Cod	8C -UPPER 6C - LOWER	3 3 4.5 4 3	8x36	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D6-2	60"	60"	TO 53 Hingham Norwell	8C -UPPER 6C - LOWER	3 3 4.5 4 3	8x36	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D6-3	60"	60"	TO 53 Hingham Norwell	8C -UPPER 6C - LOWER	3 3 4.5 4 3	8x36	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D6-4	60"	60"	3 NORTH Braintree Boston	8C -UPPER 6C - LOWER	3 3 4.5 4 3	8x36	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D6-5	60"	60"	3 NORTH Braintree Boston	8C -UPPER 6C - LOWER	3 3 4.5 4 3	8x36	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D6-6	60"	60"	3 NORTH Braintree Boston SECOND RIGHT	8C -UPPER 6C - LOWER	3 3 4.5 4 3	-	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	25.00	25.00
D8-1	60"	42"	Derby St Weymouth	8C -UPPER 6C - LOWER	5 4.5 4 4	8x18	1	GREEN	WHITE	WHITE	MOUNT WITH D6-2	17.50	17.50
D8-2	60"	42"	Derby St Weymouth	8C -UPPER 6C - LOWER	5 4.5 4 4	8x18	1	GREEN	WHITE	WHITE	MOUNT WITH D6-3	17.50	17.50
D8-3	48"	48"	TO 53 Hingham	8C -UPPER 6C - LOWER	3 4 4 3	8x18	1	GREEN	WHITE	WHITE	MOUNT WITH D6-5/6	16.00	16.00
D8-4	48"	48"	SOUTH 3 Cape Cod	8C -UPPER 6C - LOWER	3 4 4 3	8x18	2	GREEN	WHITE	WHITE	MOUNT WITH D6-5/6	16.00	32.00
D8-6	60"	42"	Industrial Park	8C -UPPER 6C - LOWER	3 4 4 3	8x18	1	GREEN	WHITE	WHITE	5"STEEL 1 REQ'D	17.50	17.50
M1-5(3)	24"	24"	3	SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS			1	WHITE	BLACK	BLACK	P-5 1 REQ'D	4.00	4.00
M2-1	21"	15"	JCT				1	WHITE	BLACK	BLACK	MOUNT W/ M1-5(3)	2.19	2.19

EXISTING SIGN SUMMARY

D6-1	3 SOUTH PLYMOUTH CAPE COD	D6-5	3 NORTH BRAINTREE BOSTON	D8-3	TO 53 HINGHAM	M1-5(3)	3	R3-2		R3-9b	CENTER LANE ONLY	W4-2	
D6-2	TO 53 HINGHAM NORWELL	D6-6	3 NORTH BRAINTREE BOSTON SECOND RIGHT	D8-4	SOUTH 3 CAPE COD	M2-1	JCT	R3-3	NO TURNS	R5-1	DO NOT ENTER	W16-7pL	
D6-3	TO 53 HINGHAM NORWELL	D8-1	DERBY ST WEYMOUTH	D8-6	INDUSTRIAL PARK	R1-1	STOP	R3-8c	ONLY	R5-1A	WRONG WAY	W16-7pR	
D6-4	3 NORTH BRAINTREE BOSTON	D8-2	DERBY ST WEYMOUTH	H1-2		R1-2	YIELD	R3-9a	ONLY	R6-1	ONE WAY		

607309_TR(SIGN_SUMMARY).DWG 26-Jan-2017

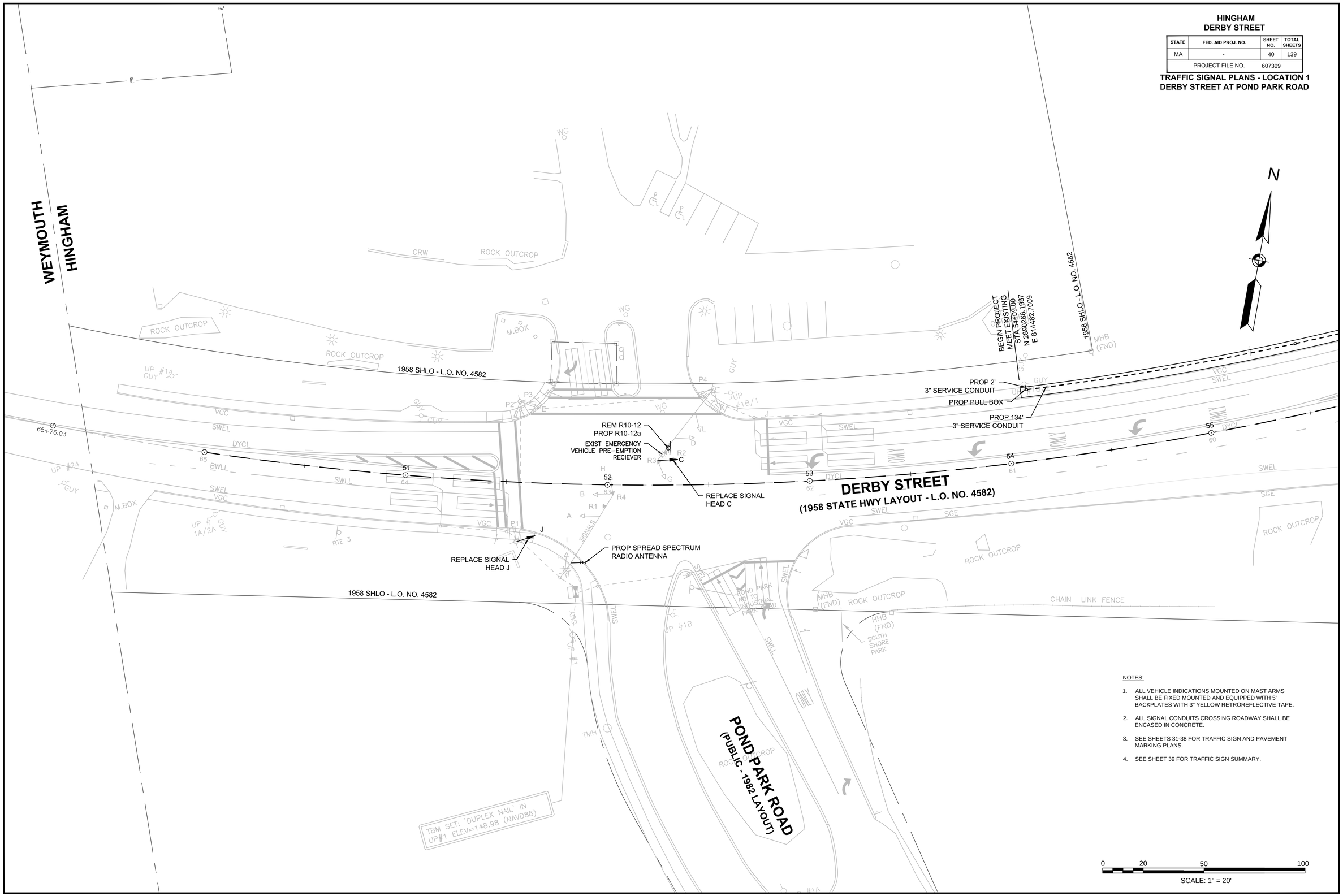
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	40	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL PLANS - LOCATION 1
DERBY STREET AT POND PARK ROAD

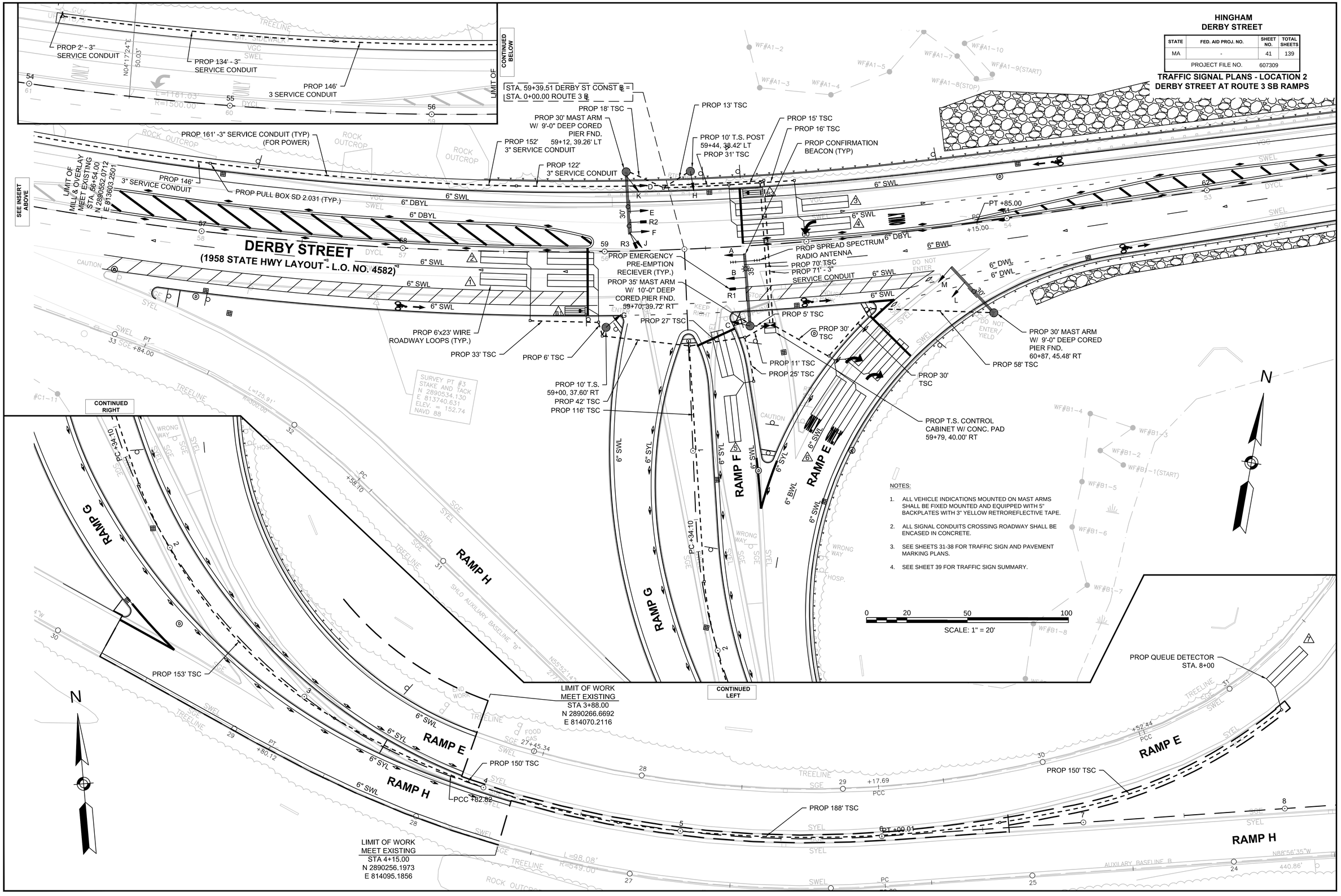
26-Jan-2017

607309_TR(SIGNAL_PLANS).DWG



NOTES:

1. ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE FIXED MOUNTED AND EQUIPPED WITH 5" BACKPLATES WITH 3" YELLOW RETROREFLECTIVE TAPE.
2. ALL SIGNAL CONDUITS CROSSING ROADWAY SHALL BE ENCASED IN CONCRETE.
3. SEE SHEETS 31-38 FOR TRAFFIC SIGN AND PAVEMENT MARKING PLANS.
4. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY.



NOTES:

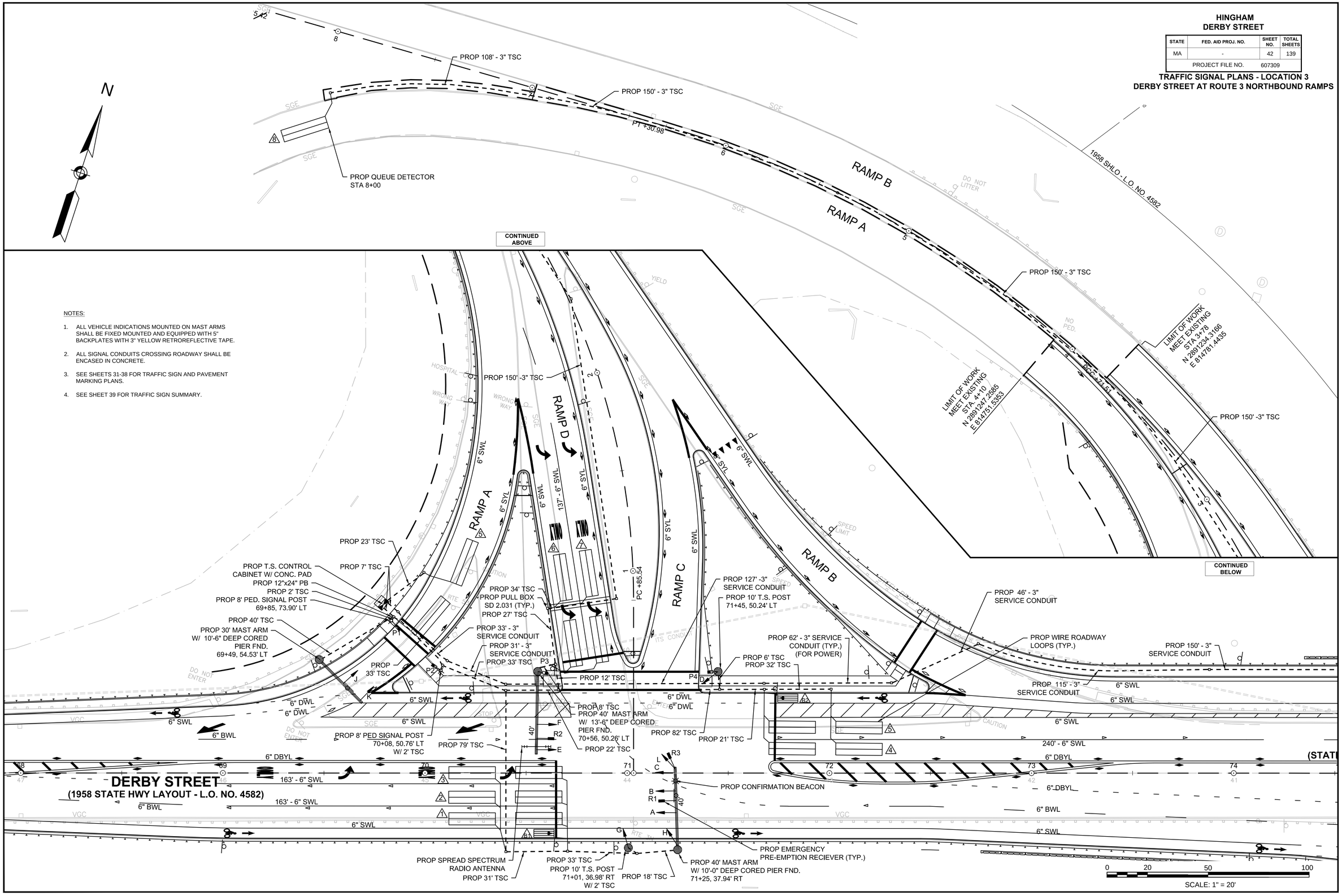
1. ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE FIXED MOUNTED AND EQUIPPED WITH 5" BACKPLATES WITH 3" YELLOW RETROREFLECTIVE TAPE.
2. ALL SIGNAL CONDUITS CROSSING ROADWAY SHALL BE ENCASED IN CONCRETE.
3. SEE SHEETS 31-38 FOR TRAFFIC SIGN AND PAVEMENT MARKING PLANS.
4. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY.

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	42	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL PLANS - LOCATION 3
DERBY STREET AT ROUTE 3 NORTHBOUND RAMPS

607309_TR(SIGNAL_PLANS).DWG 26-Jan-2017



NOTES:

1. ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE FIXED MOUNTED AND EQUIPPED WITH 5" BACKPLATES WITH 3" YELLOW RETROREFLECTIVE TAPE.
2. ALL SIGNAL CONDUITS CROSSING ROADWAY SHALL BE ENCASED IN CONCRETE.
3. SEE SHEETS 31-38 FOR TRAFFIC SIGN AND PAVEMENT MARKING PLANS.
4. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY.

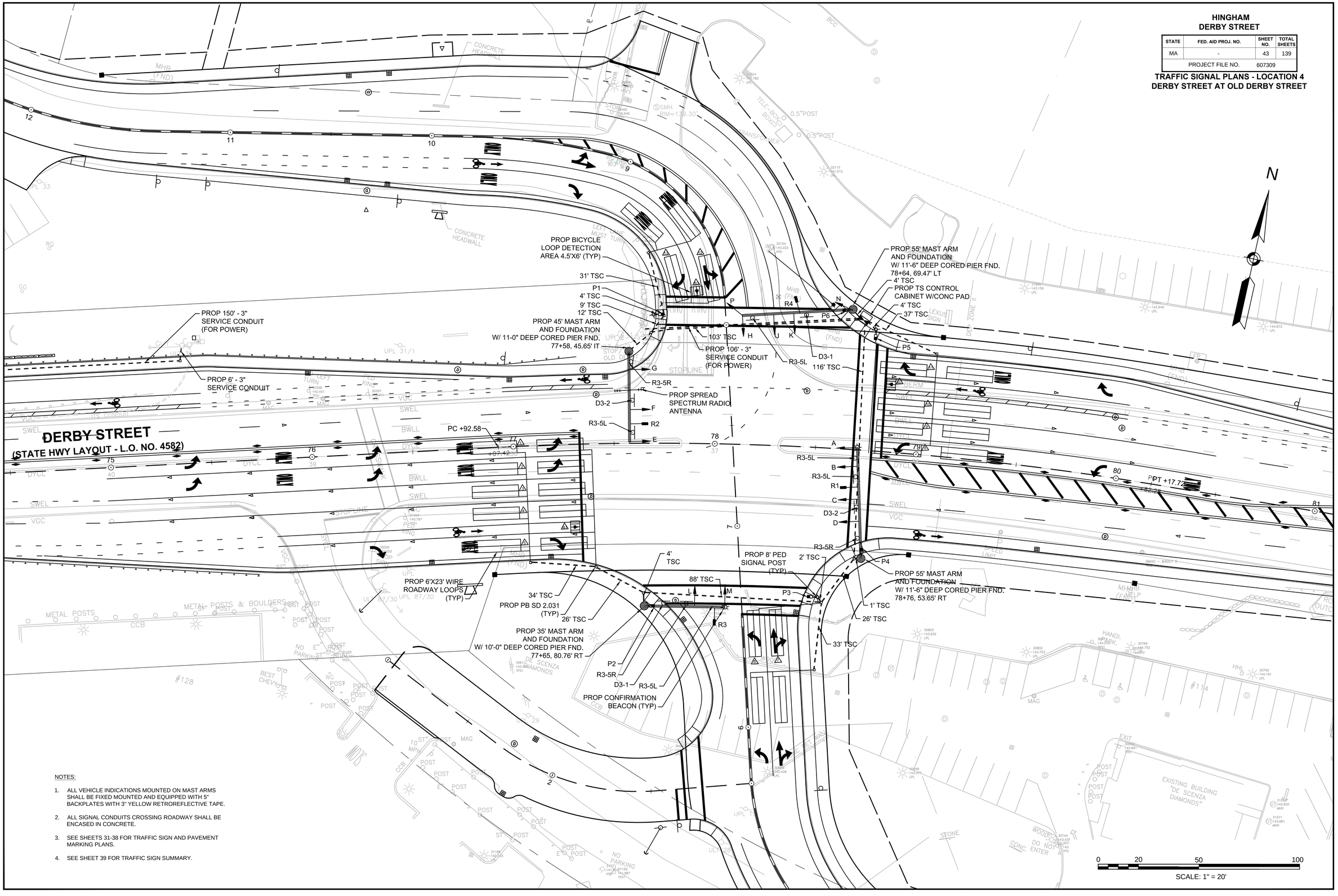
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	43	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL PLANS - LOCATION 4
DERBY STREET AT OLD DERBY STREET

26-Jan-2017

607309_TR(SIGNAL_PLANS).DWG



NOTES:

1. ALL VEHICLE INDICATIONS MOUNTED ON MAST ARMS SHALL BE FIXED MOUNTED AND EQUIPPED WITH 5" BACKPLATES WITH 3" YELLOW RETROREFLECTIVE TAPE.
2. ALL SIGNAL CONDUITS CROSSING ROADWAY SHALL BE ENCASED IN CONCRETE.
3. SEE SHEETS 31-38 FOR TRAFFIC SIGN AND PAVEMENT MARKING PLANS.
4. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY.

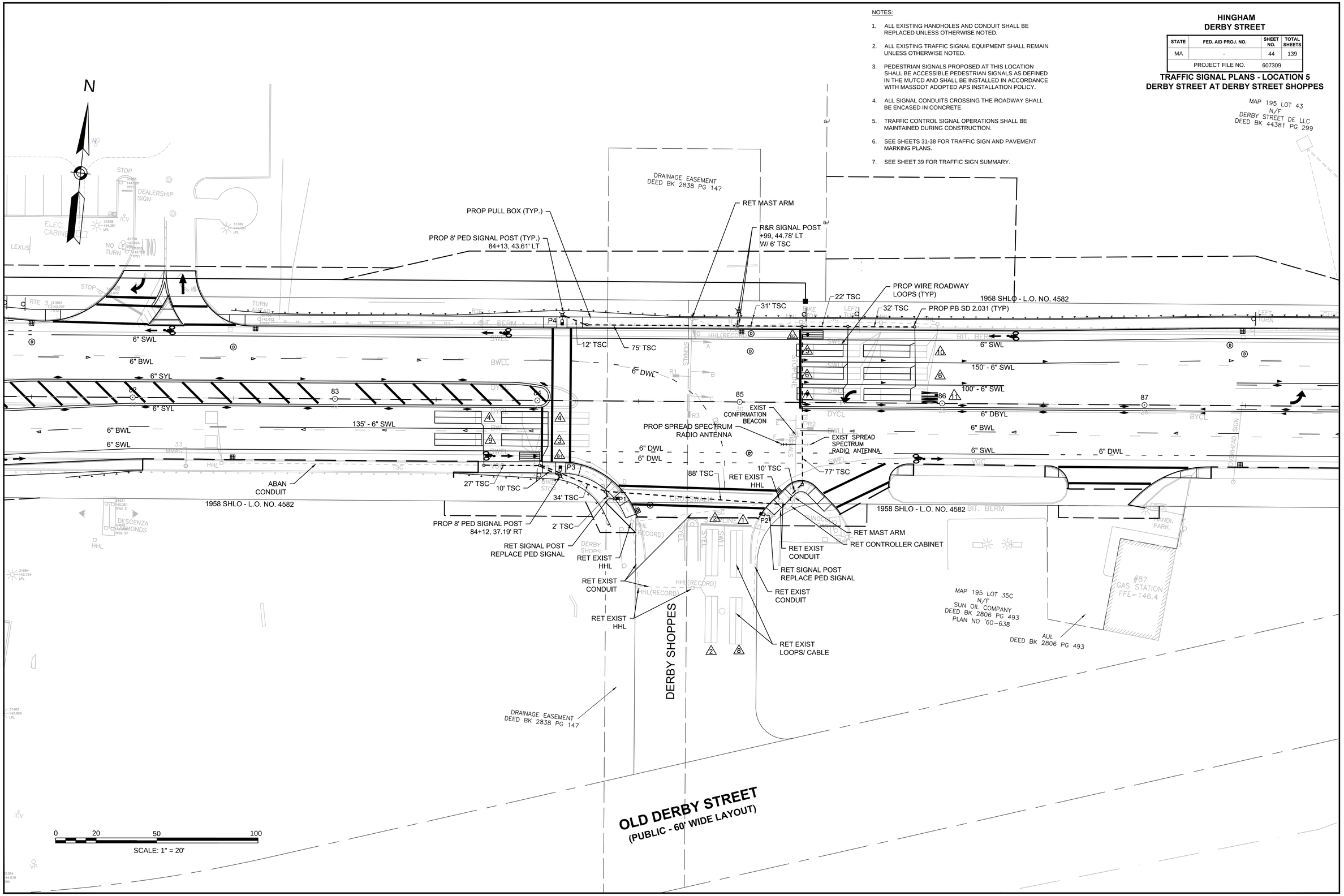
NOTES:

1. ALL EXISTING HANDHOLES AND CONDUIT SHALL BE REPLACED UNLESS OTHERWISE NOTED.
2. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL REMAIN UNLESS OTHERWISE NOTED.
3. PEDESTRIAN SIGNALS PROPOSED AT THIS LOCATION SHALL BE ACCESSIBLE PEDESTRIAN SIGNALS AS DEFINED IN THE MUTCD AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT ADOPTED APS INSTALLATION POLICY.
4. ALL SIGNAL CONDUITS CROSSING THE ROADWAY SHALL BE ENCASED IN CONCRETE.
5. TRAFFIC CONTROL SIGNAL OPERATIONS SHALL BE MAINTAINED DURING CONSTRUCTION.
6. SEE SHEETS 31-38 FOR TRAFFIC SIGN AND PAVEMENT MARKING PLANS.
7. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY.

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	44	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL PLANS - LOCATION 5
DERBY STREET AT DERBY STREET SHOPPES



607309_TR(SIGNAL_PLANS).DWG 26-Jan-2017

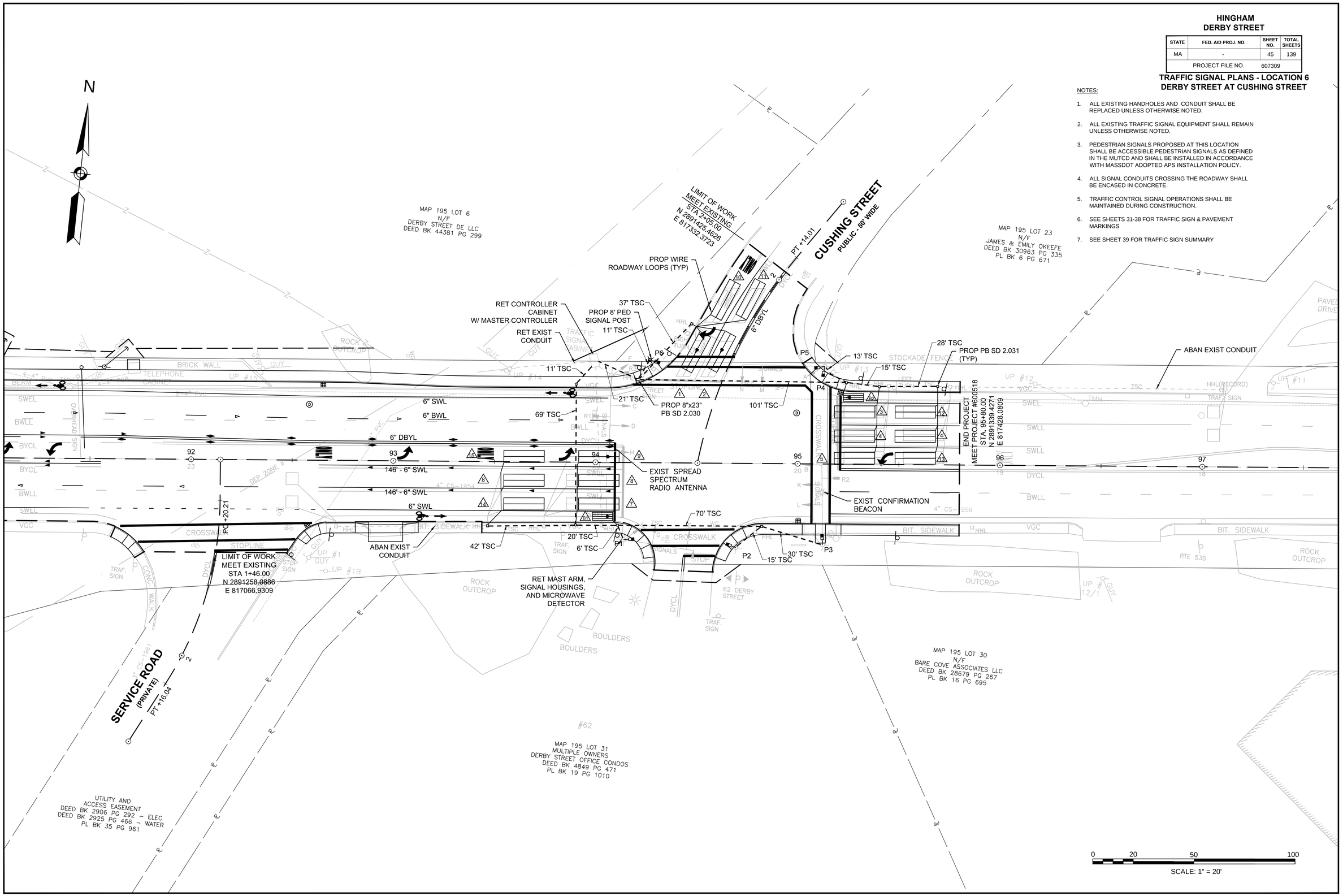
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	45	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL PLANS - LOCATION 6
DERBY STREET AT CUSHING STREET

NOTES:

1. ALL EXISTING HANDHOLES AND CONDUIT SHALL BE REPLACED UNLESS OTHERWISE NOTED.
2. ALL EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL REMAIN UNLESS OTHERWISE NOTED.
3. PEDESTRIAN SIGNALS PROPOSED AT THIS LOCATION SHALL BE ACCESSIBLE PEDESTRIAN SIGNALS AS DEFINED IN THE MUTCD AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT ADOPTED APS INSTALLATION POLICY.
4. ALL SIGNAL CONDUITS CROSSING THE ROADWAY SHALL BE ENCASED IN CONCRETE.
5. TRAFFIC CONTROL SIGNAL OPERATIONS SHALL BE MAINTAINED DURING CONSTRUCTION.
6. SEE SHEETS 31-38 FOR TRAFFIC SIGN & PAVEMENT MARKINGS
7. SEE SHEET 39 FOR TRAFFIC SIGN SUMMARY

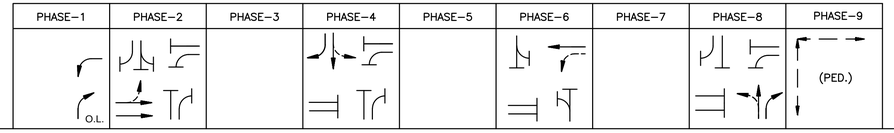


607309_TR(SIGNAL_PLANS).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	46	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 1
DERBY STREET AT POND PARK ROAD



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	EB	A,B	R	R	R	G	Y	R				R	R	R				R	R	R				R	R	R	R	R	R	FY
DERBY STREET	WB	C,J	GLA	YLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA				FYA	SYA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FYA
DERBY STREET	WB	D,E	R	R	R	R	R	R				R	R	R				G	Y	R				R	R	R	R	R	R	FY
POND PARK ROAD	NB	G	R	R	R	R	R	R				R	R	R				R	R	R				G	Y	R	R	R	R	FR
POND PARK ROAD	NB	K,L	GRA/R	YRA/R	R	R	R	R				R	R	R				R	R	R				G	Y	R	R	R	R	FR
OFFICE DRIVEWAY	SB	H,I	R	R	R	R	R	R				G	Y	R				R	R	R				R	R	R	R	R	R	FR
PEDESTRIAN	NB-SB	P1-P2	DW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
PEDESTRIAN	EB-WB	P3-P4	DW	DW	DW	DW	DW	DW				DW	DW	DW				DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT

TIMING IN SECONDS

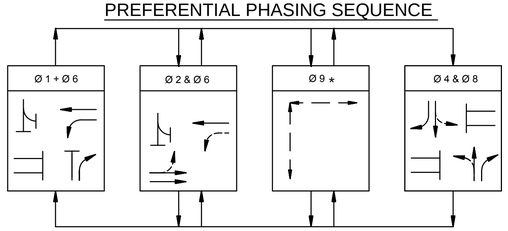
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
MINIMUM GREEN (INITIAL)	6			10						6						10						6						EMERGENCY ONLY
PASSAGE TIME (VEHICLE)	3			3						3						3						3						
MAXIMUM 1 (FREE OPERATION)	20			43						21						69						21						
YELLOW CLEARANCE		4.5			4.5						4						4.5						4					
RED CLEARANCE			1.5			1.5						2						1.5						2				
WALK (W)																									7			
PEDESTRIAN CLEARANCE																										19	3	
RECALL	OFF			SOFT						OFF						SOFT						OFF			OFF			
MEMORY	NON-LOCK			NON-LOCK						NON-LOCK						NON-LOCK						NON-LOCK			LOCK			

COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
1. A.M.	90	18	26	48		16		74		16	
2. P.M.	90	8	14	49		27		63		27	
3. SAT, SUN, HOLIDAY	90	20	15	60		15		75		15	

NOTES:
1. OFFSET REFERENCES $\phi 2 + \phi 6$ START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M-F
3. COORDINATION PM, 12PM TO 10PM M-F
4. COORDINATION SAT, SUN, HOLIDAY 8AM-10PM
5. FREE OPERATION ALL OTHER TIMES
6. PHASE 6 FYA SHALL ONLY BE ACTIVE W/ PHASE 2

	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
816.01	1	SPREAD SPECTRUM RADIO FOR COORDINATION
	1	SPREAD SPECTRUM RADIO ANTENNA
	2	1-WAY, 4-SECTION SIGNAL HOUSINGS (C, J)
	1	MALFUNCTION MANAGEMENT UNIT - 16 PHASE (TS2)
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

PREFERENTIAL PHASING SEQUENCE

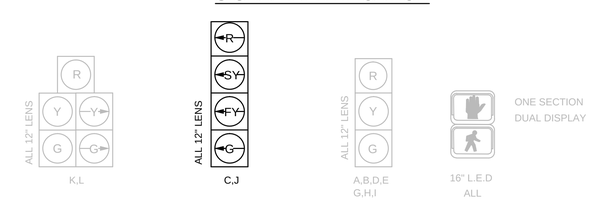


* PUSH BUTTON ACTIVATED ONLY

FIRE PREEMPTION SCHEDULE

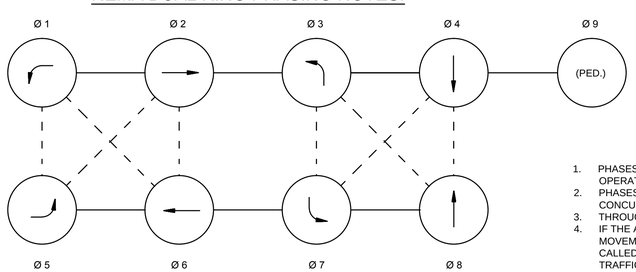
APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2	2+6
WESTBOUND (R2)	1+6	2+6
NORTHBOUND (R3)	8	1+6
SOUTHBOUND (R4)	4	4+8

SIGNAL IDENTIFICATION



NOTES:
1. ALL NEW SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL NEW SIGNALS SHALL HAVE 12" LED WITH 5" BACK PLATES W/ 3" YELLOW RETROREFLECTIVE TAPE.

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

EMERGENCY VEHICLE PREEMPTION OPERATION:

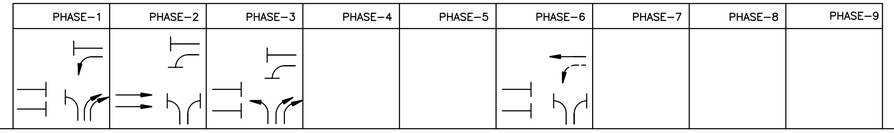
1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

607309_TR(SIGNAL_DATA).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	47	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 2
DERBY STREET AT SOUTHBOUND RAMPS



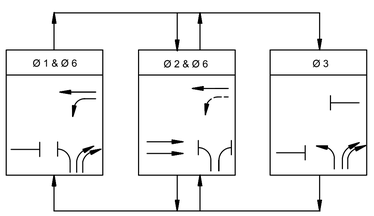
SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	EB	A,B,C	R	R	R	G	Y	R	R	R	R							R	R	R										FY
DERBY STREET	WB	D,E	R	R	R	R	R	R	R	R	R							G	Y	R										FY
DERBY STREET	WB	F,G	GLA	YLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA							FYA	SYA	RLA										FYA
ROUTE 3 RAMP	NB	H,K,J	R	R	R	R	R	R	G	Y	R							R	R	R										FR
ROUTE 3 SB RAMP	NB	M,L	GRA	YRA	RRA	RRA	RRA	RRA	GRA	YRA	RRA							RRA	RRA	RRA										FRA
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)			6			10			6									10												EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			3			3			3									3												
MAXIMUM 1 (FREE OPERATION)			25			47			14									70												
YELLOW CLEARANCE				4.5			4.5			3.5									4.5											
RED CLEARANCE					1			1			2.5									1										
RECALL			OFF			SOFT			OFF									SOFT												
MEMORY			NON-LOCK			NON-LOCK			NON-LOCK									NON-LOCK												

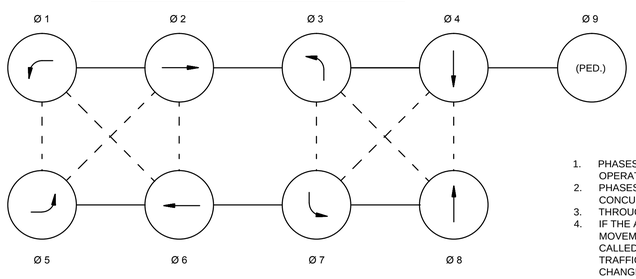
COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
A.M.	90	50	17	53	20			70			
P.M.	90	46	24	52	14			76			
SAT, SUN, HOLIDAY	90	50	31	46	13			77			

NOTES:
1. OFFSET REFERENCES $\phi 2+\phi 6$ START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M-F
3. COORDINATION PM, 12PM TO 10PM M-F
4. COORDINATION SAT, SUN, HOLIDAY 8AM-10PM
5. FREE OPERATION ALL OTHER TIMES

PREFERENTIAL PHASING SEQUENCE



NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2	2+6
WESTBOUND (R2)	1+6	2+6
NORTHBOUND (R3)	3	1+6

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
815.2	1	ACTIVATED CONTROLLER TS2 TYPE 1 W/ CABINET (TYPECC), FDN + CONC PAD
	1	SERVICE CONNECTION
	1	35' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	30' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	TRAFFIC SIGNAL POST 10' STANDARD INCL. FOUNDATION
	10	SIGNAL HEAD 1-WAY, 3 SECTION, 12" LENSES
	2	SIGNAL HEAD 1-WAY, 4 SECTION, 12" LENSES
	16	PULL BOXES 12"X12"
	5	DUAL CHANNEL LOOP DETECTOR AMPLIFIERS
	11	23'X6'WIRE ROADWAY LOOPS TYPE Q (QUADRUPLE)
	-	PRE-EMPTION SELECTOR RACK
	1	FOUR CHANNEL PRE-EMPTION PHASE SELECTOR
	3	1 CHANNEL, 1 DIRECTION, OPTICAL DETECTOR
	1	CONFIRMATION BEACON (COLOR-CLEAR)
	1	SPREAD SPECTRUM RADIO FOR COORDINATION
	1	SPREAD SPECTRUM RADIO ANTENNA
811.31	16	PULL BOXES 12"X12"
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

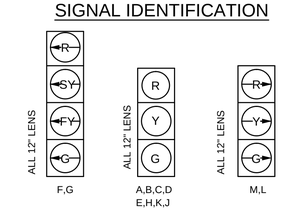
LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	1	1	2 -23'X6'	2-4-2	2	2	B	-	-
2	1	2	2 -23'X6'	2-4-2	2	2	B	-	-
3	2	1	2 -23'X6'	2-4-2	6	6	B	-	-
4	2	2	2 -23'X6'	2-4-2	1	1	B	-	-
5	3	1	2 -23'X6'	2-4-2	3	3	B	-	-
6	3	2	4 -23'X6'	2-4-2	3	3	B	-	-
7	4	1	1 -23'X6'	2-4-2	*	*	B	5	-
B1	4	2	1 -23'X6'		2	2	B	-	-
B2	5	1	1 -23'X6'		6	6	B	-	-

* DETECTOR 7 SHALL ACT AS AN OVERALL QUEUE DETECTOR. IF CALL IS PLACED THEN PHASE 8 SHALL BE EXTENDED 30 SECONDS.

SIGNAL IDENTIFICATION



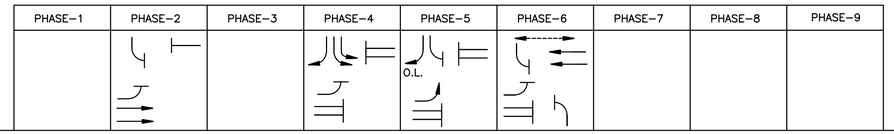
NOTES:
1. ALL SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" BACK PLATES W/ 3" YELLOW RETROREFLECTIVE TAPE.

607309_TR(SIGNAL_DATA).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	48	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 3
DERBY STREET AT NORTHBOUND RAMPS



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

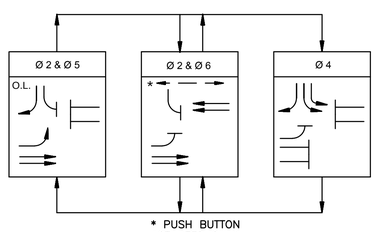
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	EB	A,B				G	Y	R				R	R	R	R	R	R	R	R	R										FY
DERBY STREET	EB	C,D				RLA	RLA	RLA				RLA	RLA	RLA	GLA	YLA	RLA	RLA	RLA	RLA										FRA
DERBY STREET	WB	E,F				R	R	R				R	R	R	R	R	R	G	Y	R										FY
ROUTE 3 NB RAMP	SB	G,H,L				R	R	R				G	Y	R	R	R	R	R	R	R										FR
ROUTE 3 NB RAMP	SB RT	J,K				RLA	RLA	RLA				GRA	YRA	RRA	GRA	YRA	RRA	RRA	RRA	RRA										FRA
PEDESTRIAN	EB-WB	P1-P2				DW	DW	DW				DW	DW	DW	DW	DW	DW	W	FDW	DW										OUT
PEDESTRIAN	EB-WB	P3-P4				DW	DW	DW				DW	DW	DW	DW	DW	DW	W	FDW	DW										
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)						10						6			6			10												EMERGENCY ONLY
PASSAGE TIME (VEHICLE)						3						3			3			3												
MAXIMUM 1 (FREE OPERATION)						71						11			24			50												
YELLOW CLEARANCE							5						3			4.5			5											
RED CLEARANCE								2						3			2.5			2										
WALK																		*	17	3										
PEDESTRIAN CLEARANCE (P1 - P2)																			16	3										
PEDESTRIAN CLEARANCE (P3 - P4)																			6	3										
RECALL						SOFT						OFF			OFF			SOFT												
MEMORY						NON-LOCK						NON-LOCK			NON-LOCK			NON-LOCK												

COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
A.M.	90	48		78		12	31	47			
P.M.	90	56		78		12	23	55			
SAT, SUN, HOLIDAY	90	57		73		17	16	57			

NOTES:
1. OFFSET REFERENCES $\phi 2+\phi 6$ START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M-F
3. COORDINATION PM, 12PM TO 10PM M-F
4. COORDINATION SAT, SUN, HOLIDAY 8AM-10PM
5. FREE OPERATION ALL OTHER TIMES
6. PEDESTRIAN WALK SIGNAL SHALL ONLY BE DISPLAYED WHEN PUSH BUTTON IS ACTIVATED. PEDESTRIAN PHASE SHALL OPERATE CONCURRENTLY WITH PHASE 2 & PHASE 6.

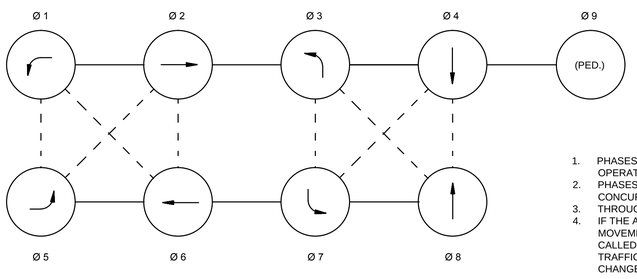
* WALK TIME VARIES BY PHASE LENGTH WITH 6 SECOND MINIMUM.

PREFERENTIAL PHASING SEQUENCE



* PUSH BUTTON ACTIVATED ONLY

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2+5	2+6
WESTBOUND (R2)	6	2+6
SOUTHBOUND (R3)	4	2+5

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

PAY ITEM	QUANTITY	MAJOR ITEMS REQUIRED ITEM
815.3	1	ACTIVATED CONTROLLER TS2 TYPE 1 W/ CABINET (TYPECC), FDN + CONC PAD
	1	SERVICE CONNECTION
	1	30' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	40' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	TRAFFIC SIGNAL POST 10' STANDARD INCL. FOUNDATION
	2	PEDESTRIAN SIGNAL POST 8' STANDARD INCL. FOUNDATION
	11	SIGNAL HEAD 1-WAY, 3 SECTION, 12" LENSES
	4	PEDESTRIAN SIGNAL HEAD 16" W/ LED COUNTDOWN DISPLAY
	6	DUAL CHANNEL LOOP DETECTOR AMPLIFIERS
	17	23'X6'WIRE ROADWAY LOOPS TYPE Q (QUADRUPLE)
	-	PRE-EMPTION SELECTOR RACK
	1	FOUR CHANNEL PRE-EMPTION PHASE SELECTOR
	3	1 CHANNEL, 1 DIRECTION, OPTICAL DETECTOR
	1	CONFIRMATION BEACON (COLOR-CLEAR)
	1	SPREAD SPECTRUM RADIO FOR COORDINATION
	1	SPREAD SPECTRUM RADIO ANTENNA
	4	PEDESTRIAN PUSH BUTTON W/ R10-3F SIGNS
811.31	26	PULL BOXES 12"X12"
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

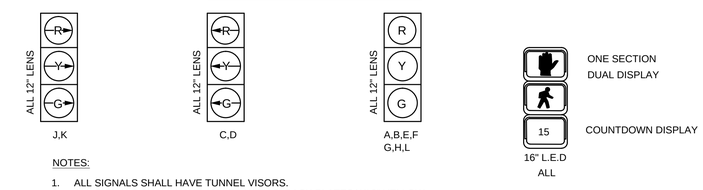
LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	1	1	2 -23'X6'	2-4-2	2	2	B	-	-
2	1	2	2 -23'X6'	2-4-2	2	2	B	-	-
3	2	1	2 -23'X6'	2-4-2	5	5	B	-	-
4	2	2	2 -23'X6'	2-4-2	6	6	B	-	-
5	3	1	2 -23'X6'	2-4-2	6	6	B	-	-
6	4	1	2 -23'X6'	2-4-2	4	4	B	-	-
7	4	2	2 -23'X6'	2-4-2	4	4	B	-	-
8	5	1	2 -23'X6'	2-4-2	*	*	B	5	-
B1	6	1	1 -10'X4'		2	2	B	-	-
B2	6	2	1 -10'X4'		6	6	B	-	-

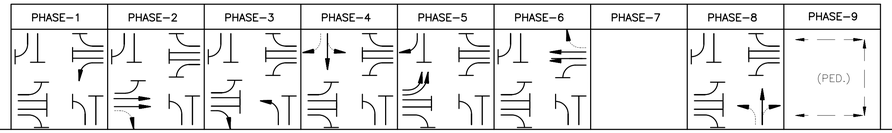
* DETECTOR 8 SHALL ACT AS AN OVERALL QUEUE DETECTOR. IF CALL IS PLACED THEN PHASE 4 SHALL BE EXTENDED 30 SECONDS.

SIGNAL IDENTIFICATION



NOTES:
1. ALL SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" BACK PLATES W/ 3" YELLOW RETROREFLECTIVE TAPE.

607309_TR(SIGNAL_DATA).DWG 26-Jan-2017



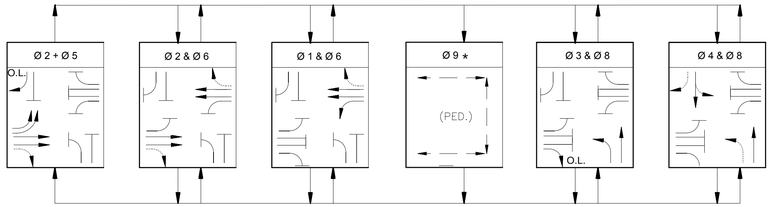
SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	EB	A,B	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	GLA	YLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FYA
DERBY STREET	EB	C	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	FY
DERBY STREET	EB	D	R	R	R	G	Y	R	R/GRA	R/YRA	R	R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	FY
DERBY STREET	WB	E	GLA	YLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FYA
DERBY STREET	WB	F,G	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	FY
OLD DERBY STREET	NB	H	RLA	RLA	RLA	RLA	RLA	RLA	GLA	YLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA				FYA	SLA	RLA	RLA	RLA	RLA	FRA
OLD DERBY STREET	NB	K,J	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R				G	Y	R	R	R	R	FR
OLD DERBY STREET	SB	M,N,P	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R				R	R	R	R	R	R	FR
OLD DERBY STREET	SB	L	R	R	R	R	R	R	R	R	R	G	Y	R	R/GRA	R/YRA	R	R	R	R				R	R	R	R	R	R	FR
PEDESTRIAN	EB-WB	P1,P2,P3,P6	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
PEDESTRIAN	NB-SB	P4,P5	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
TIMING IN SECONDS																														
MINIMUM GREEN (INITIAL)			6			10			6			7			6			10						6						EMERGENCY ONLY
PASSAGE TIME (VEHICLE)			3			3			3			3			3			3						3						
MAXIMUM 1 (FREE OPERATION)			4			50			9			7			4			50						22						
YELLOW CLEARANCE				4			4.5			4			4			4			4.5						4					
RED CLEARANCE					3			1			2			2			3			1						2				
WALK																											7			
PEDESTRIAN CLEARANCE																												25	3	
RECALL			OFF			SOFT			OFF			OFF			OFF			SOFT						OFF						
MEMORY			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK						NON-LOCK						

COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
A.M.	90	3	11	56	10	13	11	56		23	
P.M.	90	88	11	52	14	13	11	52		27	
SAT, SUN, HOLIDAY	90	4	11	51	15	13	11	51		28	

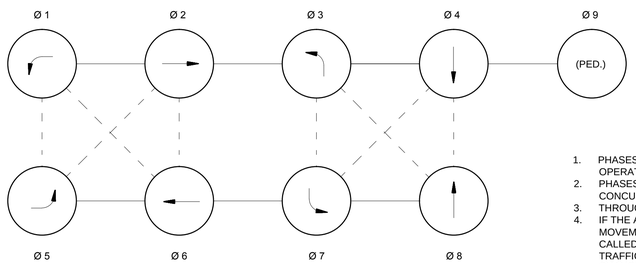
NOTES:
1. OFFSET REFERENCES $\phi 2+\phi 6$ START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M-F
3. COORDINATION PM, 12PM TO 10PM M-F
4. COORDINATION SAT, SUN, HOLIDAY 8AM-10PM
5. FREE OPERATION ALL OTHER TIMES
6. PEDESTRIAN WALK SIGNAL SHALL ONLY BE DISPLAYED WHEN PUSH BUTTON IS ACTIVATED.

PREFERENTIAL PHASING SEQUENCE



* PUSH BUTTON ACTIVATED ONLY

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2+5	2+6
WESTBOUND (R2)	1+6	2+6
NORTHBOUND (R3)	8	4+8
SOUTHBOUND (R4)	4	4+8

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

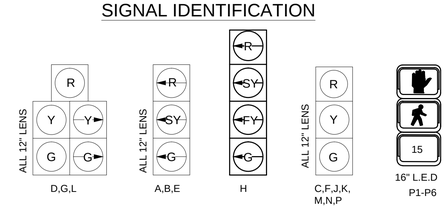
	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
815.4	1	CONTROLLER NEMA 8 PHASE TS2-TYPE 1 CAB&FDN, W/ CONC PAD
	1	SERVICE CONNECTION
	3	8' SIGNAL POLE BASE & FDN
	1	35' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	1	45' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	2	55' TYPE II, GALV. STEEL MAST ARM ASSEMBLY, BASE & FDN
	10	1-WAY 3 SECTION SIGNAL HOUSING (12" LED)
	1	1-WAY 4 SECTION SIGNAL HOUSING (12" LED)
	3	1-WAY 5 SECTION SIGNAL HOUSING (12" LED)
	6	PEDESTRIAN SIGNAL HEADS 16" LED W/ COUNTDOWN DISPLAY
	6	PEDESTRIAN PUSH BUTTONS, W/ R10-3E SIGNS
	1	SPREAD SPECTRUM RADIO ANTENNA
	4	PRE-EMPTION RECEIVER - SINGLE CHANNEL
	2	PRE-EMPTION PHASE SELECTION MODUAL - DUAL CHANNEL
	1	CARD RACK
	2	CONFIRMATION STROBE (WHITE)
	8	DUAL CHANNEL LOOP DETECTOR AMPLIFIER
	26	ROADWAY LOOP DETECTORS 23'X6'
	3	ROADWAY BIKE LOOP DETECTORS 4.5'X6'
811.31	11	PULL BOXES 12" X 12"
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	1	1	2 @ 23'X6'	2-4-2	5	5	B	-	-
2	1	2	2 @ 23'X6'	2-4-2	5	5	B	-	-
3	2	1	2 @ 23'X6'	2-4-2	2	2	B	-	-
4	2	2	2 @ 23'X6'	2-4-2	2	2	B	-	-
B1	3	1	1 @ 4.5'X6'	4-8-8-8-4	2	2	B	-	-
5	3	2	2 @ 23'X6'	2-4-2	2	2	B	5	-
6	4	1	2 @ 23'X6'	2-4-2	3	3	B	-	-
7	4	2	2 @ 23'X6'	2-4-2	8	8	B	-	-
8	5	1	2 @ 23'X6'	2-4-2	1	1	B	-	-
9	5	2	2 @ 23'X6'	2-4-2	6	6	B	-	-
10	6	1	2 @ 23'X6'	2-4-2	6	6	B	-	-
B2	6	2	1 @ 4.5'X6'	4-8-8-8-4	6	6	B	-	-
11	7	1	2 @ 23'X6'	2-4-2	6	6	B	5	-
12	7	2	2 @ 23'X6'	2-4-2	4	4	B	-	-
B3	8	1	1 @ 4.5'X6'	4-8-8-8-4	4	4	B	-	-
13	8	2	2 @ 23'X6'	2-4-2	4	4	B	5	-

SIGNAL IDENTIFICATION



ONE SECTION DUAL DISPLAY

COUNTDOWN DISPLAY

NOTES:
1. ALL SIGNALS SHALL HAVE TUNNEL VISORS.
2. ALL SIGNALS SHALL HAVE 12" LED WITH 5" BACK PLATES W/ 3" YELLOW RETROREFLECTIVE TAPE.

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	49	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 4
DERBY STREET AT OLD DERBY STREET

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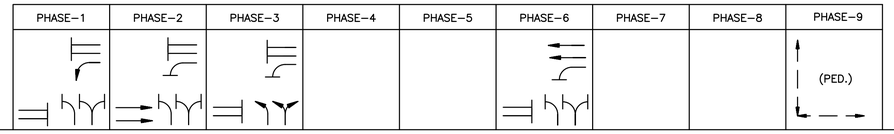
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	50	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 5
DERBY STREET AT DERBY SHOPPES



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	WB	A,B	R	R	R	R	R	R	R	R	R							G	Y	R							R	R	R	FY
DERBY STREET	WB LT	C,D	GLA	YLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA							RLA	RLA	RLA							RLA	RLA	RLA	FRA
DERBY STREET	EB	E,F	R	R	R	G	Y	R	R	R	R							R	R	R							R	R	R	FY
DERBY SHOPPES DRIVE	NB	G,H	R	R	R	R	R	R	G	Y	R							R	R	R							R	R	R	FR
PEDESTRIAN	E/W	P1-P2	DW	DW	DW	DW	DW	DW	DW	DW	DW							DW	DW	DW							W	FDW	DW	OUT
PEDESTRIAN	N/S	P3-P4	DW	DW	DW	DW	DW	DW	DW	DW	DW							DW	DW	DW							W	FDW	DW	OUT

TIMING IN SECONDS

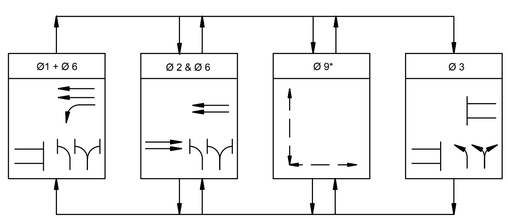
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
MINIMUM GREEN (INITIAL)	6			15			6									15											
PASSAGE TIME (VEHICLE)	3			3			3									3											
MAXIMUM 1 (FREE OPERATION)	18			47			18									66											
YELLOW CLEARANCE		4			4.5			3.5									4.5										
RED CLEARANCE			2.5			1			3									1									
WALK (W)																									7		
PEDESTRIAN CLEARANCE																										13	3
RECALL	OFF			SOFT			OFF									SOFT									OFF		
MEMORY	NON-LOCK			NON-LOCK			NON-LOCK									NON-LOCK									LOCK		

EMERGENCY ONLY

COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
A.M.	90	5	19	53	18			72			
P.M.	90	4	19	49	22			68			
SAT, SUN, HOLIDAY	90	4	24	42	24			66			

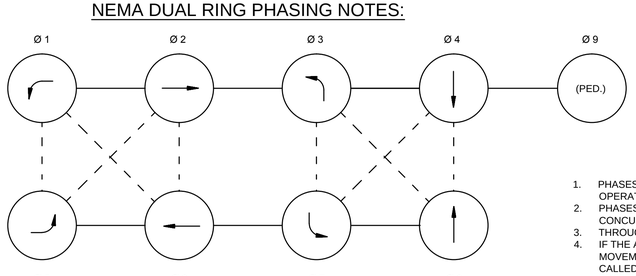
NOTES:
1. OFFSET REFERENCES ϕ2+ϕ6 START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M-F
3. COORDINATION PM, 12PM TO 10PM M-F
4. COORDINATION SAT, SUN, HOLIDAY 8AM-10PM
5. FREE OPERATION ALL OTHER TIMES
6. IF PED PHASE CALLED DURING COORDINATION, ϕ2+ϕ6 SPLIT TO BE REDUCED BY 18 SEC. AND ϕ3 SPLIT REDUCED BY 5 SEC

PREFERENTIAL PHASING SEQUENCE



* PUSH BUTTON ACTIVATED ONLY

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2	2+6
WESTBOUND (R2)	1+6	2+6
NORTHBOUND (R3)	3	1+6

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE TEN SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

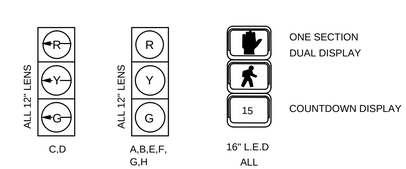
PAY ITEM	QUANTITY	MAJOR ITEMS REQUIRED ITEM
816.02	2	TRAFFIC SIGNAL POST 8' STANDARD INCL. FOUNDATION
	1	PULL BOXES 12"X12"
	4	PEDESTRIAN SIGNAL W/ COUNTDOWN DISPLAY
	4	PEDESTRIAN PUSHBUTTONS W/ R10-3F SIGNS
	1	SPREAD SPECTRUM RADIO ANTENNA
	10	23'X6'WIRE ROADWAY LOOPS TYPE Q (QUADRUPLE)
	2	10'X4' BIKE LOOP DETECTORS
	1	DUAL CHANNEL LOOP DETECTOR AMPLIFIER
811.31	9	PULL BOX 12" X 12"
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

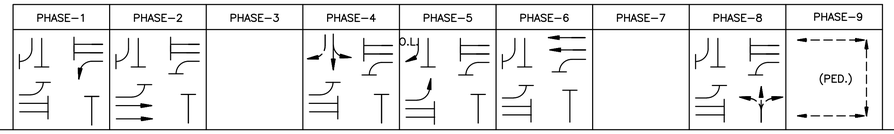
DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	-	-	1 -23'X6'	-	3	3	B	-	-
2	-	-	2 -23'X6'	-	3	3	B	-	-
3	-	-	1 -23'X6'	-	2	2	B	-	-
4	-	-	2 -23'X6'	-	2	2	B	-	-
5	-	-	1 -23'X6'	-	6	6	B	-	-
6	-	-	2 -23'X6'	-	6	6	B	-	-
7	-	-	1 -23'X6'	-	1	1	B	-	-
8	-	-	1 -23'X6'	-	3	3	B	-	-
9	-	-	1 -23'X6'	-	2	2	B	-	-
10	-	-	1 -23'X6'	-	6	6	B	-	-
11	-	-	1 -23'X6'	-	1	1	B	-	-
B1	7	1	1 -4'X10'	-	6	6	B	-	-
B2	7	1	1 -4'X10'	-	1	1	B	-	-

SIGNAL IDENTIFICATION



NOTES:
1. EXISTING SIGNALS SHALL BE RETAINED.

607309_TR(SIGNAL_DATA).DWG 26-Jan-2017



SEQUENCE AND TIMING FOR FULL ACTUATED CONTROL (COORDINATED)

STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	FLASH OPER.
DERBY STREET	EB LT	A,B	RLA	RLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	GLA	YLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FRA
DERBY STREET	WB	C,D	R	R	R	R	R	R				R	R	R	R	R	R	G	Y	R				R	R	R	R	R	R	FY
CUSHING STREET	SB	E	R	R	R	R	R	R				G	Y	R	R	R	R	R	R	R				R	R	R	R	R	R	FR
CUSHING STREET	SB/SB RT	F,G	R	R	R	R	R	R				G	Y	R	GRA/R	YRA/R	R	R	R	R				R	R	R	R	R	R	FR
DERBY STREET	WBLT	H,J	GLA	YLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA	RLA				RLA	RLA	RLA	RLA	RLA	RLA	FRA
DERBY STREET	EB	K,L	R	R	R	G	Y	R				R	R	R	R	R	R	R	R	R				R	R	R	R	R	R	FY
62 DERBY STREET	NB	M,N	R	R	R	R	R	R				R	R	R	R	R	R	R	R	R				G	Y	R	R	R	R	FR
PEDESTRIAN	E/W	P1–P2,P5–P6	DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT
PEDESTRIAN	N/S	P3–P4	DW	DW	DW	DW	DW	DW				DW	DW	DW	DW	DW	DW	DW	DW	DW				DW	DW	DW	W	FDW	DW	OUT

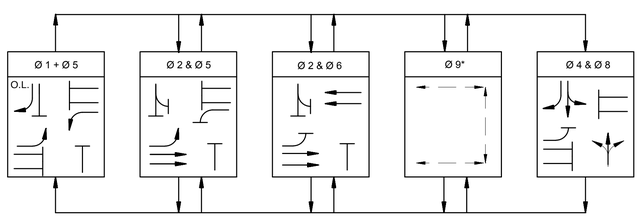
TIMING IN SECONDS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
MINIMUM GREEN (INITIAL)	6			15						6			6			15						6						EMERGENCY ONLY
PASSAGE TIME (VEHICLE)	3			3						3			3			3						3						
MAXIMUM 1 (FREE OPERATION)	6			60						8			37			35						8						
YELLOW CLEARANCE		4			4.5						4			4			4.5						4					
RED CLEARANCE			3			1						1			3			1						1				
WALK (W)																									7			
PEDESTRIAN CLEARANCE																										13	3	
RECALL	OFF			SOFT						OFF			OFF			SOFT						OFF			OFF			
MEMORY	NON–LOCK			NON–LOCK						NON–LOCK			NON–LOCK			NON–LOCK						NON–LOCK			LOCK			

COORDINATION DATA			COORDINATION PHASE TIMING								
TIMING PLAN	CYCLE LENGTH	REF/OFFSET	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.	SEC.
A.M.	90	0	13	64		13	36	41		13	
P.M.	90	0	13	66		11	42	37		11	
SAT, SUN, HOLIDAY	90	0	13	66		11	44	35		11	

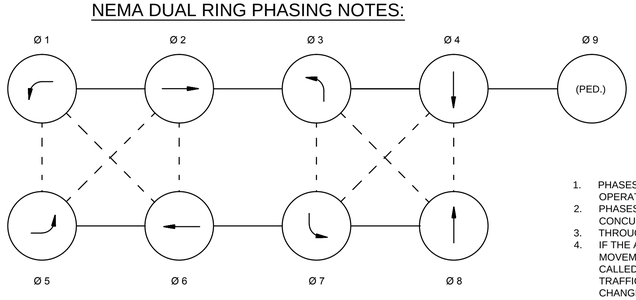
NOTES:
1. OFFSET REFERENCES ϕ2+ϕ6 START OF YELLOW
2. COORDINATION AM, 6AM TO 12PM M–F
3. COORDINATION PM, 12PM TO 10PM M–F
4. COORDINATION SAT, SUN, HOLIDAY 8AM–10PM
5. FREE OPERATION ALL OTHER TIMES

PREFERENTIAL PHASING SEQUENCE



* PUSH BUTTON ACTIVATED ONLY

NEMA DUAL RING PHASING NOTES:



1. PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
2. PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
3. THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.
4. IF THE ASSIGNED RIGHT OF WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT SHALL NOT CHANGE DURING THE CHANGE INTERVAL(S) UNLESS OTHERWISE NOTED.

FIRE PREEMPTION SCHEDULE

APPROACH	PREEMPTION PHASE	NEXT PHASE CALLED
EASTBOUND (R1)	2+5	2+6
WESTBOUND (R2)	1+6	2+6
SOUTHBOUND (R3)	4	1+5

EMERGENCY VEHICLE PREEMPTION OPERATION:

1. EMERGENCY VEHICLE PREEMPTION SHALL BE ACTUATED BY AN OPTICAL SIGNAL FROM AN OPTICAL EMITTER MOUNTED ON AN EMERGENCY VEHICLE AND RECEIVED BY AN OPTICAL DETECTOR LOCATED AT INTERSECTION. A SEPARATE RECEIVING DETECTOR IS REQUIRED FOR EACH DETECTED APPROACH.
2. PREEMPTION SIGNALS FROM MULTIPLE APPROACHES SHALL BE SERVICED ON A FIRST DETECTED FIRST SERVED BASIS.
3. IN RESPONSE TO A PREEMPTION SIGNAL RECEIVED AT AN INTERSECTION BY AN OPTICAL DETECTOR, THE CONTROLLER SHALL TIME THE CLEARANCE INTERVALS OF THE ACTIVE PHASE (IF DIFFERENT THAT TO BE SERVICED) AND ADVANCE TO AND/OR HOLD IN EMERGENCY VEHICLE PREEMPTION PHASE UNTIL PREEMPTION SIGNAL CEASES. THE CONTROLLER SHALL THEN TIME CLEARANCES AND SIMILARLY SERVICE OTHER EMERGENCY VEHICLE PREEMPTION SEQUENCES IN THE ORDER RECEIVED (IF RECEIVED) OTHERWISE, RESUME NORMAL PREFERENTIAL PHASE SEQUENCE.
4. PREEMPTION MINIMUM GREENS SHALL BE SIX SECONDS.
5. NORMAL CLEARANCES SHALL BE PROVIDED ON PHASES THAT ARE TERMINATED BY PREEMPTION DEMAND.
6. ACTUAL TIMMING FOR PREEMPTION SHALL BE DETERMINED IN THE FIELD IN COORDINATION WITH THE FIRE DEPARTMENT AND SHALL BE APPROVED BY MASSDOT PRIOR TO OPERATION.

	MAJOR ITEMS REQUIRED	
PAY ITEM	QUANTITY	ITEM
816.03	1	TRAFFIC SIGNAL POST 8' STANDARD INCL. FOUNDATION
	6	PEDESTRIAN SIGNAL W/ COUNTDOWN DISPLAY
	4	PEDESTRIAN PUSH BUTTON W/ R10–3F SIGNS
	16	23'X6'WIRE ROADWAY LOOPS TYPE Q (QUADRUPLE)
	2	10'X4' BIKE LOOP DETECTORS
	1	DUAL CHANNEL LOOP DETECTOR AMPLIFIER
811.30	1	PULL BOX 8" x 23"
811.31	9	PULL BOX 12" x 12"
		Plus all necessary duct, cable, labor, miscellaneous
		material and equipment to complete the installation.

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	51	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DATA - LOCATION 6
DERBY STREET AT CUSHING STREET

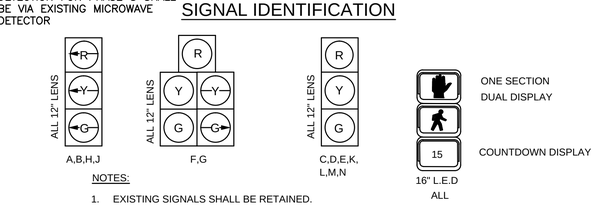
LOOP DETECTOR DATA

SEE PLAN SHEET-LOOP DETECTOR DETAILS FOR LOOP CONSTRUCTION. SPLICING, DETAILS & NOTES. DELAY TIME EFFECTIVE ONLY DURING CALLED Ø RED. TIME IN SEC.

DETECTOR NUMBER	AMPLIFIER NUMBER	CHANNEL NUMBER	LOOP SIZE	NUM. OF TURNS	Ø CALLED	Ø EXT.	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	-	-	1 -23'X6'	-	4	4	B	-	-
2	-	-	1 -23'X6'	-	4	4	B	-	-
3	-	-	1 -23'X6'	-	6	6	B	-	-
4	-	-	2 -23'X6'	-	6	6	B	-	-
5	-	-	1 -23'X6'	-	1	1	B	-	-
6	-	-	-	-	-	-	B	-	-
7	-	-	1 -23'X6'	-	2	2	B	-	-
8	-	-	2 -23'X6'	-	2	2	B	-	-
9	-	-	1 -23'X6'	-	5	5	B	-	-
10	-	-	1 -23'X6'	-	4	4	B	-	-
11	-	-	1 -23'X6'	-	4	4	B	-	-
12	-	-	1 -23'X6'	-	6	6	B	-	-
13	-	-	1 -23'X6'	-	1	1	B	-	-
14	-	-	1 -23'X6'	-	2	2	B	-	-
15	-	-	1 -23'X6'	-	5	5	B	-	-
B1	9	1	1 -10'X4'	-	5	5	B	-	-
B2	9	2	1 -10'X4'	-	5	5	B	-	-

NOTES: DETECTION FOR PHASE 8 SHALL BE VIA EXISTING MICROWAVE DETECTOR

SIGNAL IDENTIFICATION



NOTES:
1. EXISTING SIGNALS SHALL BE RETAINED.

607309_TR(SIGNAL_DATA).DWG 26-Jan-2017

POND PARK RD. @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø1	26
SPLITS Ø2	48
SPLITS Ø4	16
SPLITS Ø6	74
SPLITS Ø8	16

	PLAN 1 (SEC.)
CYCLE LENGTH	90
OFFSET	18
SPLITS Ø1 & Ø6	26
SPLITS Ø2 & Ø6	48
SPLITS Ø4 & Ø8	16

ROUTE 3 SB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø1	17
SPLITS Ø2	53
SPLITS Ø6	70
SPLITS Ø8	20

	PLAN 1 (SEC.)
CYCLE LENGTH	90
OFFSET	50
SPLITS Ø1 & Ø6	17
SPLITS Ø2 & Ø6	53
SPLITS Ø8	20

ROUTE 3 NB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø2	78
SPLITS Ø4	12
SPLITS Ø5	31
SPLITS Ø6	47

	PLAN 1 (SEC.)
CYCLE LENGTH	90
OFFSET	48
SPLITS Ø2 & Ø5	31
SPLITS Ø2 & Ø6	47
SPLITS Ø4	12

NOTES:

1. IF THERE IS A PED CALL, THEN PED PHASE SHALL OCCUR AT THE BEGINNING OF PHASE 6 SPLIT AND RUN CONCURRENTLY.

OLD DERBY STREET @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø1	11
SPLITS Ø2	56
SPLITS Ø3	10
SPLITS Ø4	13
SPLITS Ø5	11
SPLITS Ø6	56
SPLITS Ø8	23

	PLAN 1 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	3	3
SPLITS Ø2 & Ø5	11	10
SPLITS Ø2 & Ø6	45	23
SPLITS Ø1 & Ø6	11	10
SPLITS Ø3 & Ø8	10	0
SPLITS Ø4 & Ø8	13	12
Ø9	–	35

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	52	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL COORDINATION PLAN - 1

DERBY SHOPPES @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø1	19
SPLITS Ø2	53
SPLITS Ø6	72
SPLITS Ø3	18

	PLAN 1 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	5	5
SPLITS Ø1 & Ø6	19	19
SPLITS Ø2 & Ø6	53	33
SPLITS Ø3	18	15
Ø9	–	23

CUSHING ST. @ DERBY STREET
COORDINATION DATA

	PLAN 1 (SEC.)
SPLITS Ø1	13
SPLITS Ø2	64
SPLITS Ø4	13
SPLITS Ø5	36
SPLITS Ø6	41
SPLITS Ø8	13

	PLAN 1 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	0	0
SPLITS Ø1 & Ø5	13	13
SPLITS Ø2 & Ø5	23	23
SPLITS Ø2 & Ø6	41	20
SPLITS Ø4 & Ø8	13	10
Ø9	–	23

NOTES:

1. THIS INTERSECTION IS THE MASTER CONTROLLER.

NOTES:

1. OFFSET IS REFERENCED TO BEGINNING OF FIRST OF PHASE 2 OR PHASE 6 YELLOW
2. SPLIT TIMES INCLUDE GREEN AND CLEARENCE INTERVAL.
3. PLAN 1 TO BE USED MON–FRI 6AM–12PM, PLAN 2 ON MON–FRI 12PM–10PM AND PLAN 3 ON SAT–SUN 8AM–10PM.

DAILY PRORAMMING
COORDINATION DATA

	MONDAY THRU FRIDAY	SATURDAY	SUNDAY
PLAN 1 (90 SEC. CYCLE)	0600–1200		
PLAN 2 (90 SEC. CYCLE)	1200–2200		
PLAN 3 (90 SEC. CYCLE)		0800–2200	0800–2200
FREE OPERATIION	0000–0600 2200–2400	0000–0800 2200–2400	0000–0800 2200–2400

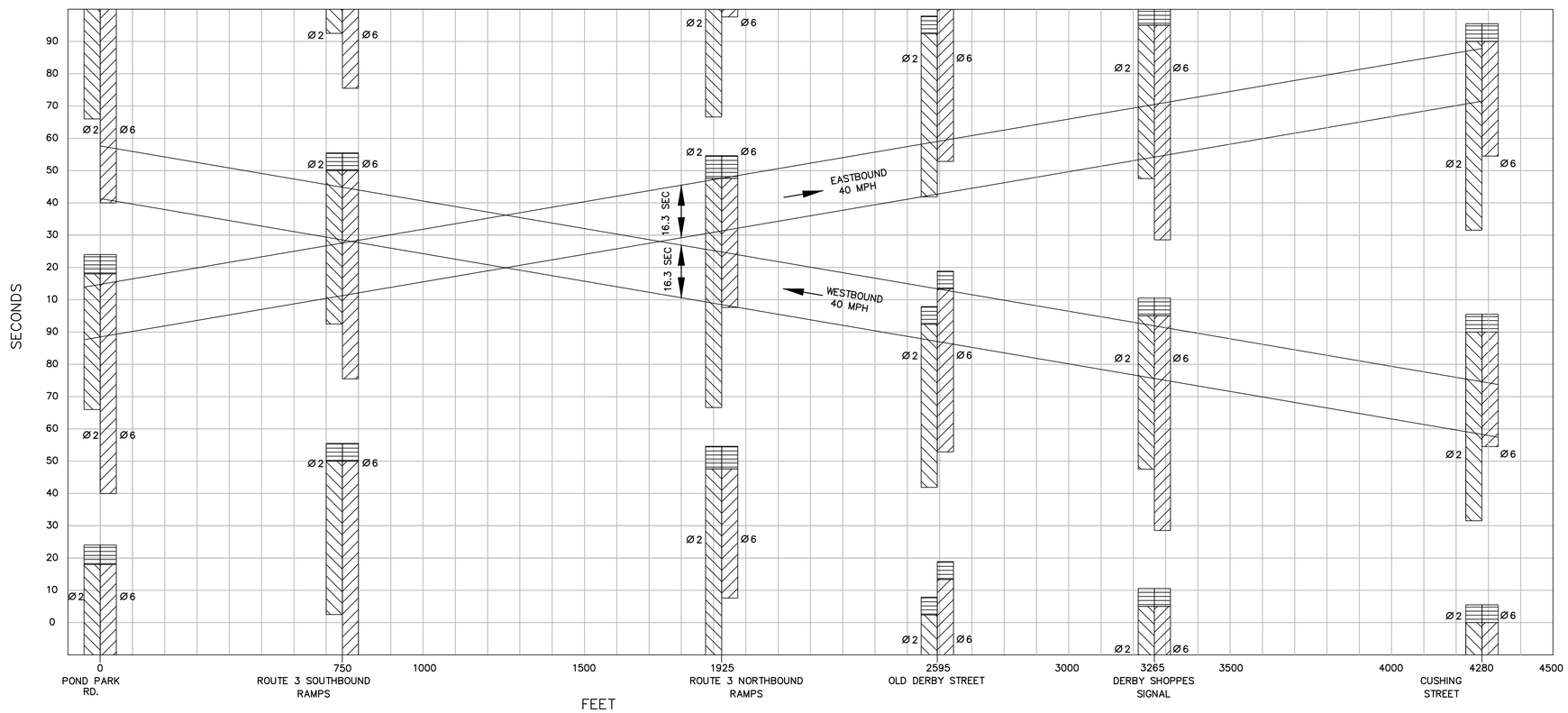
LEGEND

YELLOW AND RED CLEARENCE INTERVAL

WESTBOUND GREEN TIME

EASTBOUND GREEN TIME

TIME–SPACE DIAGRAMS
PLAN 1 – MONDAY–FRIDAY AM
90 SECOND CYCLE



607309_TR(COORDINATION PLAN).DWG Plotted on 26-Jan-2017 5:05 PM

POND PARK RD. @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø1	14
SPLITS Ø2	49
SPLITS Ø4	27
SPLITS Ø6	63
SPLITS Ø8	27

	PLAN 2 (SEC.)
CYCLE LENGTH	90
OFFSET	12
SPLITS Ø1 & Ø6	14
SPLITS Ø2 & Ø6	49
SPLITS Ø4 & Ø8	27

ROUTE 3 SB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø1	24
SPLITS Ø2	52
SPLITS Ø6	76
SPLITS Ø8	14

	PLAN 2 (SEC.)
CYCLE LENGTH	90
OFFSET	46
SPLITS Ø1 & Ø6	24
SPLITS Ø2 & Ø6	52
SPLITS Ø8	14

ROUTE 3 NB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø2	78
SPLITS Ø4	12
SPLITS Ø5	23
SPLITS Ø6	55

	PLAN 2 (SEC.)
CYCLE LENGTH	90
OFFSET	56
SPLITS Ø2 & Ø5	23
SPLITS Ø2 & Ø6	55
SPLITS Ø4 & Ø8	12

NOTES:

1. IF THERE IS A PED CALL, THEN PED PHASE SHALL OCCUR AT THE BEGINNING OF PHASE 6 SPLIT AND RUN CONCURRENTLY.

OLD DERBY STREET @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø1	11
SPLITS Ø2	52
SPLITS Ø3	14
SPLITS Ø4	13
SPLITS Ø5	11
SPLITS Ø6	52
SPLITS Ø8	27

	PLAN 2 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	2	2
SPLITS Ø2 & Ø5	11	10
SPLITS Ø2 & Ø6	41	23
SPLITS Ø1 & Ø6	11	10
SPLITS Ø3 & Ø8	14	0
SPLITS Ø4 & Ø8	13	12
Ø9	–	35

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	53	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL COORDINATION PLAN - 2

DERBY SHOPPES @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø1	19
SPLITS Ø2	49
SPLITS Ø6	68
SPLITS Ø8	22

	PLAN 2 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	4	4
SPLITS Ø1 & Ø6	19	19
SPLITS Ø2 & Ø6	49	30
SPLITS Ø8	22	18
Ø9	–	23

CUSHING ST. @ DERBY STREET
COORDINATION DATA

	PLAN 2 (SEC.)
SPLITS Ø1	13
SPLITS Ø2	64
SPLITS Ø4	13
SPLITS Ø5	42
SPLITS Ø6	37
SPLITS Ø8	11

	PLAN 2 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	0	0
SPLITS Ø1 & Ø5	13	13
SPLITS Ø2 & Ø5	29	22
SPLITS Ø2 & Ø6	37	22
SPLITS Ø4 & Ø8	11	10
Ø9	–	23

NOTES:

1. THIS INTERSECTION IS THE MASTER CONTROLLER.

NOTES:

1. OFFSET IS REFERENCED TO BEGINNING OF FIRST OF PHASE 2 OR PHASE 6 YELLOW
2. SPLIT TIMES INCLUDE GREEN AND CLEARENCE INTERVAL.
3. PLAN 1 TO BE USED MON–FRI 6AM–12PM, PLAN 2 ON MON–FRI 12PM–10PM AND PLAN 3 ON SAT–SUN 8AM–10PM.

DAILY PRORAMMING
COORDINATION DATA

	MONDAY THRU FRIDAY	SATURDAY	SUNDAY
PLAN 1 (90 SEC. CYCLE)	0600–1200		
PLAN 2 (90 SEC. CYCLE)	1200–2200		
PLAN 3 (90 SEC. CYCLE)		0800–2200	0800–2200
FREE OPERATIION	0000–0600 2200–2400	0000–0800 2200–2400	0000–0800 2200–2400

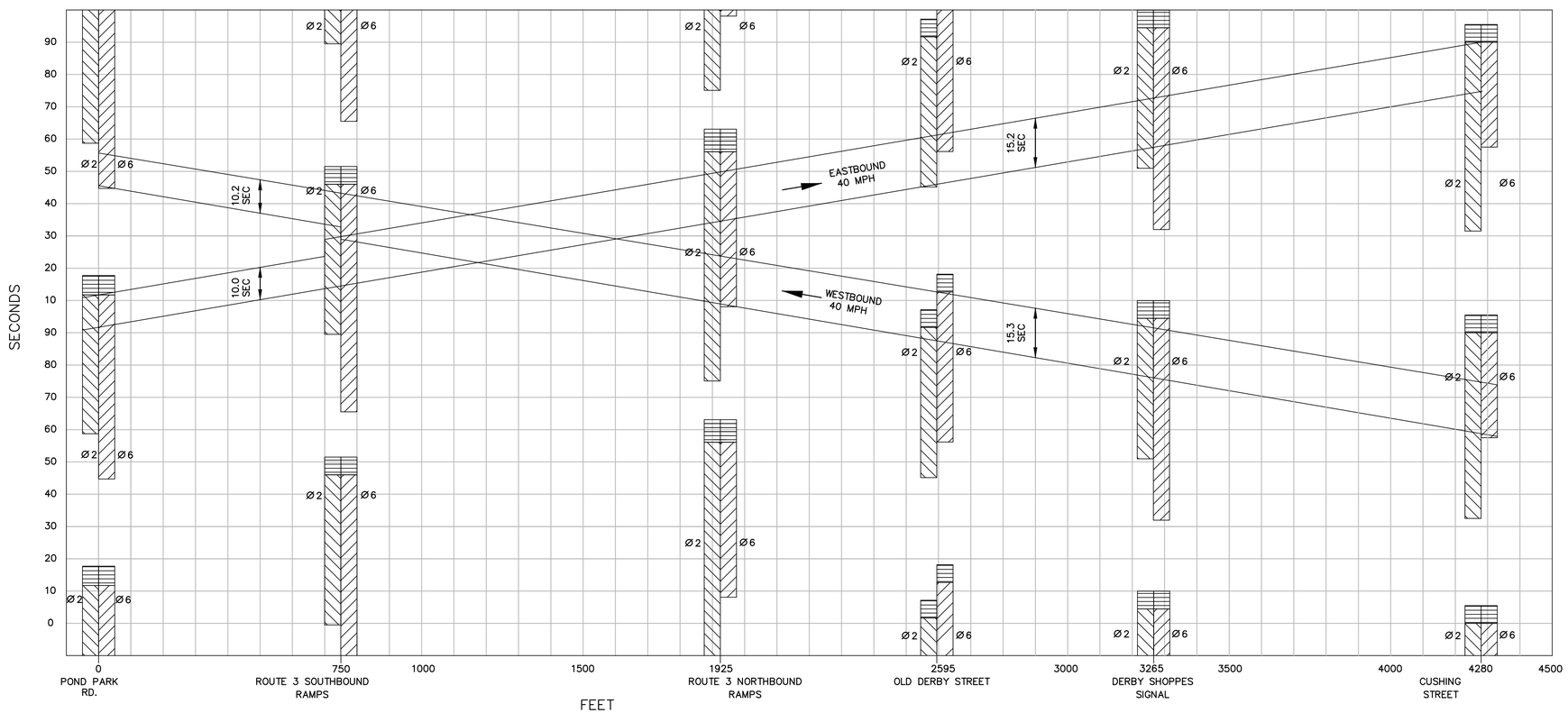
LEGEND

YELLOW AND RED CLEARENCE INTERVAL

WESTBOUND GREEN TIME

EASTBOUND GREEN TIME

TIME–SPACE DIAGRAMS
PLAN 2 – MONDAY–FRIDAY PM
90 SECOND CYCLE



607309_TR(COORDINATION PLAN).DWG Plotted on 26-Jan-2017 5:05 PM

POND PARK RD. @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø1	15
SPLITS Ø2	60
SPLITS Ø4	15
SPLITS Ø6	75
SPLITS Ø8	15

	PLAN 3 (SEC.)
CYCLE LENGTH	90
OFFSET	20
SPLITS Ø1 & Ø6	15
SPLITS Ø2 & Ø6	60
SPLITS Ø4 & Ø8	15

ROUTE 3 SB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø1	31
SPLITS Ø2	46
SPLITS Ø6	77
SPLITS Ø8	13

	PLAN 3 (SEC.)
CYCLE LENGTH	90
OFFSET	50
SPLITS Ø1 & Ø6	31
SPLITS Ø2 & Ø6	46
SPLITS Ø8	13

ROUTE 3 NB RAMP @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø2	73
SPLITS Ø4	17
SPLITS Ø5	16
SPLITS Ø6	57

	PLAN 3 (SEC.)
CYCLE LENGTH	90
OFFSET	57
SPLITS Ø2 & Ø5	16
SPLITS Ø2 & Ø6	57
SPLITS Ø4 & Ø8	17

NOTES:

1. IF THERE IS A PED CALL, THEN PED PHASE SHALL OCCUR AT THE BEGINNING OF PHASE 6 SPLIT AND RUN CONCURRENTLY.

OLD DERBY STREET @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø1	11
SPLITS Ø2	51
SPLITS Ø3	15
SPLITS Ø4	13
SPLITS Ø5	11
SPLITS Ø6	51
SPLITS Ø8	28

	PLAN 3 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	4	4
SPLITS Ø2 & Ø5	11	10
SPLITS Ø2 & Ø6	40	22
SPLITS Ø1 & Ø6	11	10
SPLITS Ø3 & Ø8	15	0
SPLITS Ø4 & Ø8	13	13
Ø9	–	35

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	54	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL COORDINATION PLAN - 3

DERBY SHOPPES @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø1	24
SPLITS Ø2	42
SPLITS Ø6	66
SPLITS Ø8	24

	PLAN 3 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	4	4
SPLITS Ø1 & Ø6	24	24
SPLITS Ø2 & Ø6	42	23
SPLITS Ø8	24	20
Ø9	–	23

CUSHING ST. @ DERBY STREET
COORDINATION DATA

	PLAN 3 (SEC.)
SPLITS Ø1	13
SPLITS Ø2	66
SPLITS Ø4	11
SPLITS Ø5	44
SPLITS Ø6	35
SPLITS Ø8	11

	PLAN 3 (SEC.)	W/ PED Ø (SEC.)
CYCLE LENGTH	90	90
OFFSET	0	0
SPLITS Ø1 & Ø5	13	13
SPLITS Ø2 & Ø5	31	22
SPLITS Ø2 & Ø6	35	22
SPLITS Ø4 & Ø8	11	10
Ø9	–	23

NOTES:

1. THIS INTERSECTION IS THE MASTER CONTROLLER.

NOTES:

1. OFFSET IS REFERENCED TO BEGINNING OF FIRST OF PHASE 2 OR PHASE 6 YELLOW
2. SPLIT TIMES INCLUDE GREEN AND CLEARENCE INTERVAL.
3. PLAN 1 TO BE USED MON–FRI 6AM–12PM, PLAN 2 ON MON–FRI 12PM–10PM AND PLAN 3 ON SAT–SUN 8AM–10PM.

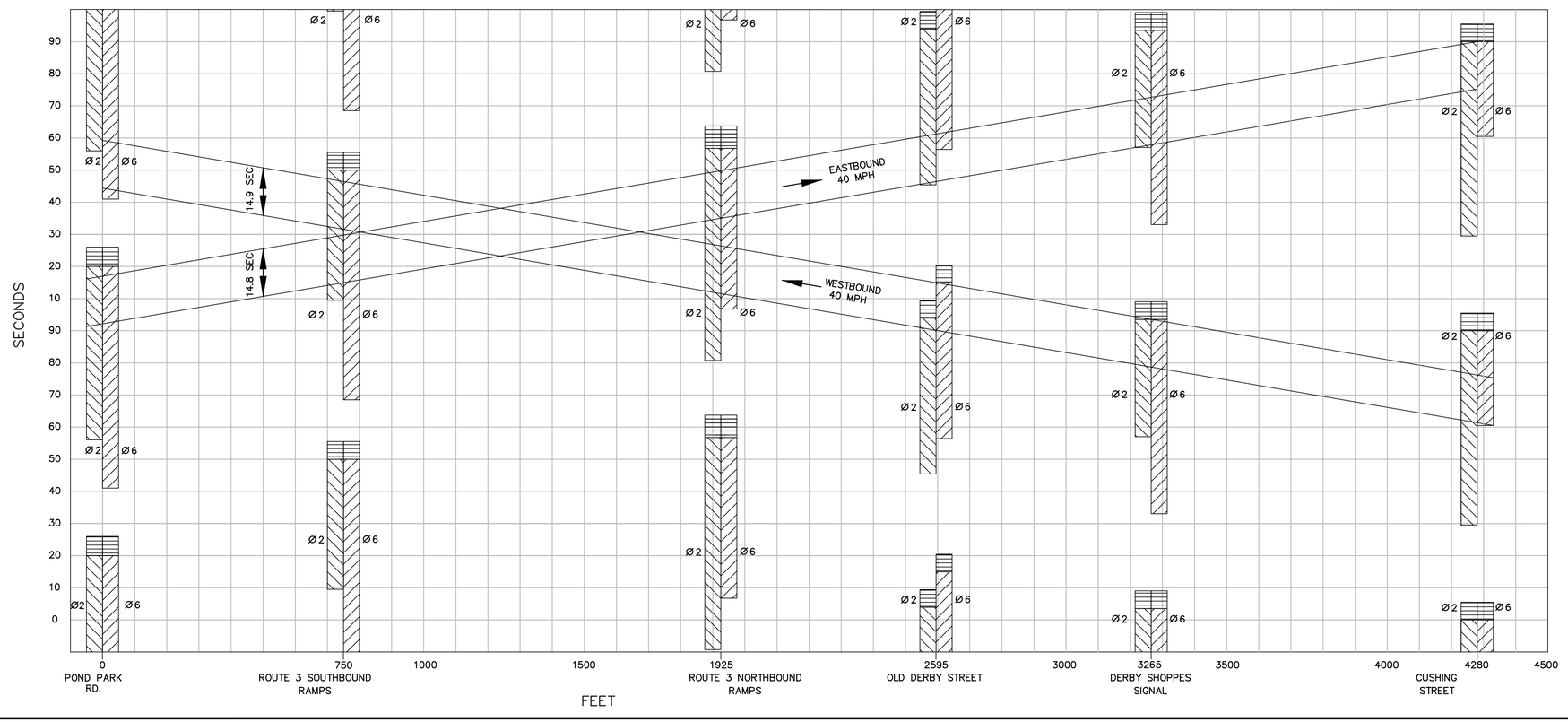
DAILY PRORAMMING
COORDINATION DATA

	MONDAY THRU FRIDAY	SATURDAY	SUNDAY
PLAN 1 (90 SEC. CYCLE)	0600–1200		
PLAN 2 (90 SEC. CYCLE)	1200–2200		
PLAN 3 (90 SEC. CYCLE)		0800–2200	0800–2200
FREE OPERATIION	0000–0600 2200–2400	0000–0800 2200–2400	0000–0800 2200–2400

LEGEND

- YELLOW AND RED CLEARENCE INTERVAL
- WESTBOUND GREEN TIME
- EASTBOUND GREEN TIME

TIME–SPACE DIAGRAMS
PLAN 3 – SATURDAY AND SUNDAY
90 SECOND CYCLE



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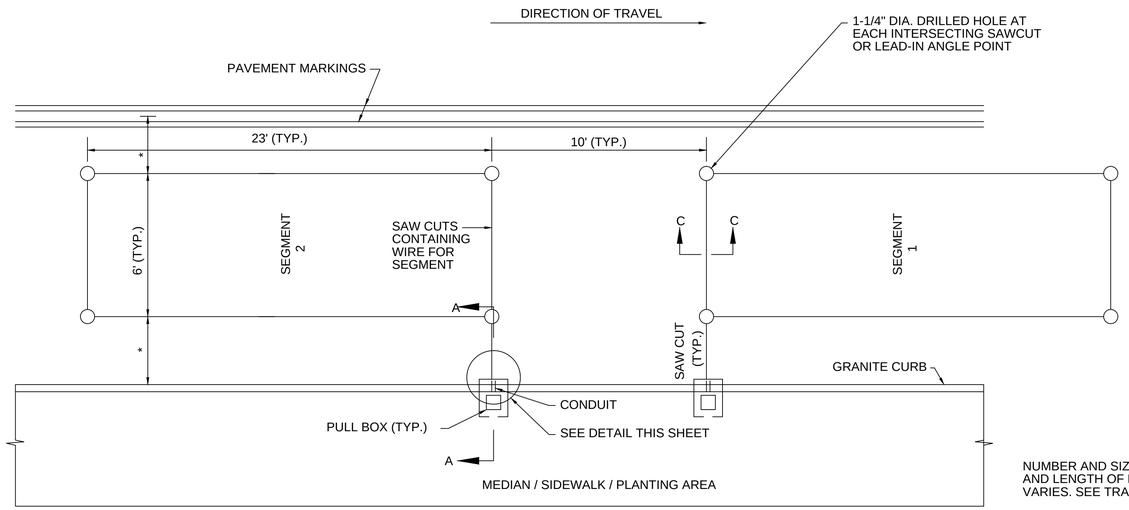
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	55	139
PROJECT FILE NO.	607309		

LOOP DETECTOR DETAILS



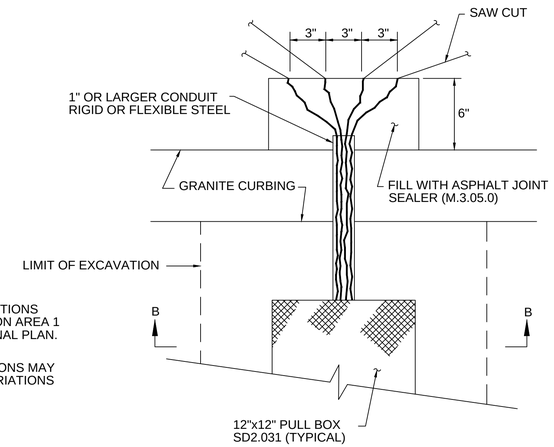
* OFFSETS FROM CURB TO LOOP AND EDGE OF LANE TO LOOP EQUAL IF NOT SHOWN

PLAN OF SEGMENTED DETECTOR DETAIL

NOT TO SCALE

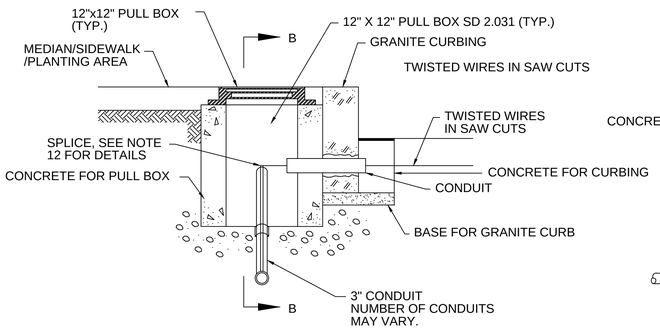
NUMBER AND SIZE OF SECTIONS AND LENGTH OF DETECTION AREA 1 VARIES. SEE TRAFFIC SIGNAL PLAN.

TYPICAL SHOWN. DIMENSIONS MAY VARY. SEE PLANS FOR VARIATIONS



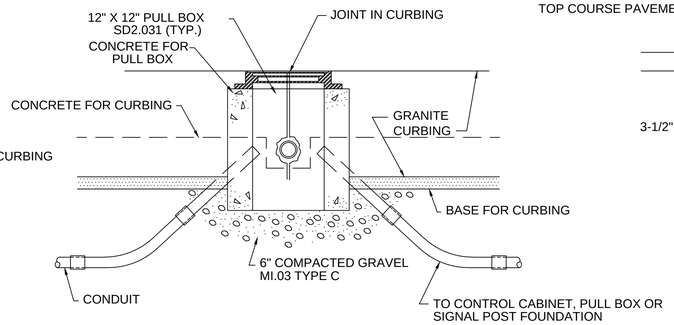
DETAIL-PLAN VIEW

NOT TO SCALE



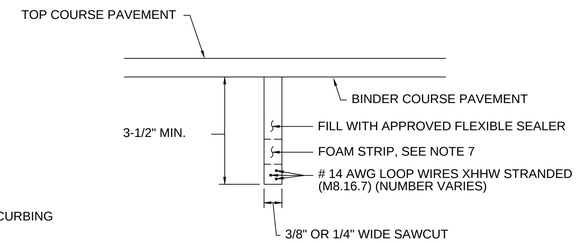
SECTION A-A

NOT TO SCALE



SECTION B-B

NOT TO SCALE



SECTION C-C
LOOPS IN SURFACE COURSE

NOT TO SCALE

DETECTOR NOTES:

1. IN BASE OR HANDHOLE, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE. SEGMENTS SHALL BE SPLICED IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON TRAFFIC SIGNAL PLAN 1. FOR ALL 6'x6' WIRE LOOP DECTORS USE 3 TURNS IN THE SAWCUT AND FOR LARGER LOOPS USE TWO TURNS. REFER TO TRAFFIC SIGNAL PLAN 1 FOR WIRE LOOP LAYOUT.

2. SEE STANDARDS SPECS. (MDPW 88) FOR REQUIREMENTS OF DETECTOR AMPLIFIER.

3. LEAD-IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE. FIVE TURNS PER FOOT. LEAD-IN SHALL BE TYPE II (M8. 16. II).

4. BEFORE STARTING ANY SPLICING THE ELECTRICAL CONTRACT-OR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE MDPW STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS. SEE SECTION 815.64

5. THE METALLIC SHIELD WHICH SHALL ENCASE THE DETECTOR LEADS FROM A SPLICE (TYPICALLY LOCATED IN A PULL BOX NEAR THE ROADWAY COMPONENT OF THE DETECTOR) TO THE CONTROLLER, AND THE DRAIN WIRE UNDER THE METALLIC SHIELD SHALL BE FIRMLY BONDED TO THE EARTH GROUNDING BUS IN THE CONTROLLER. HOWEVER, THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL OTHER POINTS ALONG ITS LENGTH. SPECIFICALLY, THIS INCLUDES CAREFUL INSULATION OF THE EXPOSED PORTION OF THE SHIELD AND THE DRAIN WIRE AT THE END AWAY FROM THE CONTROLLER WHERE IT IS SPLICED TO WIRES LEADING TO THE ROADWAY COMPONENT OF THE DETECTOR. THIS IS IMPORTANT TO AVOID A GROUND RETURN LOOP.

6. FILL ALL CONDUIT OPENINGS WITH DUCT SEAL.

7. AFTER SAW CUTS ARE COMPLETE, BLOW OUT WITH OIL AND WATER & FREE COMPRESSED AIR UNTIL CUTS ARE CLEAN AND DRY. INSERT WIRE INTO CLEAN SLOT WITH A BLUNT, SMOOTH, ROUND EDGED TOOL OF WOOD OR PLASTIC SUCH AS A PAINT STIRRER, DO NOT USE A SCREWDRIVER. THEN INSERT FOAM PLASTIC HOLD DOWN STRIPS, SIMILAR TO ETHA FOAM SB STRIPS SHALL BE ABOUT 2" LONG, PLACED IN THE SLOT ABOUT EVERY 2 FEET. THEN POUR SEALER, TAKING CARE TO ELIMINATE BUBBLES.

8. THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHOULD HAVE A RES-ISTANCE TO GROUND OF AT LEAST 50 TO 100 MEGOHMS. THE LOWEST ACCEPTABLE VALUE SHALL BE 10 MEGOHMS UNDER WORST CASE CONDITIONS. SEE STANDARD SPECS. (MDPW 88) FOR ADDITIONAL REQUIREMENTS.

9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR. DETAIL IS THE SAME.

10. CUT LOOPS INTO EXISTING PAVEMENT AND FILL WITH APPROVED FLEXIBLE LOOP.

11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH LOOP.

12. SPLICING PATTERN P= SERIES/PARALLEL: SPLICE SEGMENTS 1 AND 3 OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE SEGMENTS 2 AND 4 IN SERIES. SPLICE THE RESULTANT TWO GROUPS IN PARALLEL. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE. CONNECT THIS CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

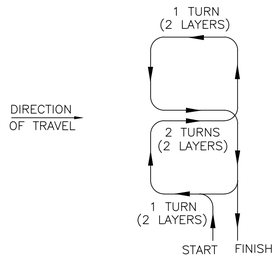
SPLICING PATTERN S=SERIES: SPLICE ALL SEGMENTS (TYPICALLY FOUR, BUT MAY BE LESS) OF AN INDIVIDUAL DETECTOR IN SERIES. SPLICE THE RESULTANT COMBINATION TO ONE LEAD-IN CABLE TO AN OTHERWISE UNUSED AMPLIFIER CHANNEL.

607309_TR(LOOP_DETECTOR).DWG Plotted on 26-Jan-2017 5:05 PM

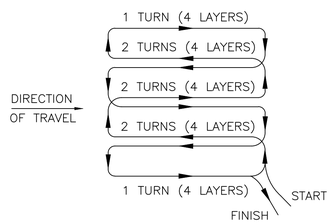
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	56	139
PROJECT FILE NO.	607309		

TRAFFIC SIGNAL DETAILS
BICYCLE LOOP DETECTOR

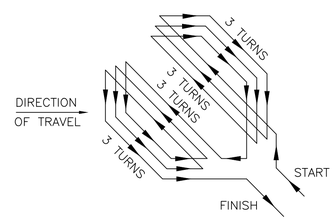
WINDING DETAILS



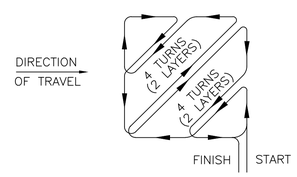
TYPE Q DETECTOR



TYPE D–Q DETECTOR

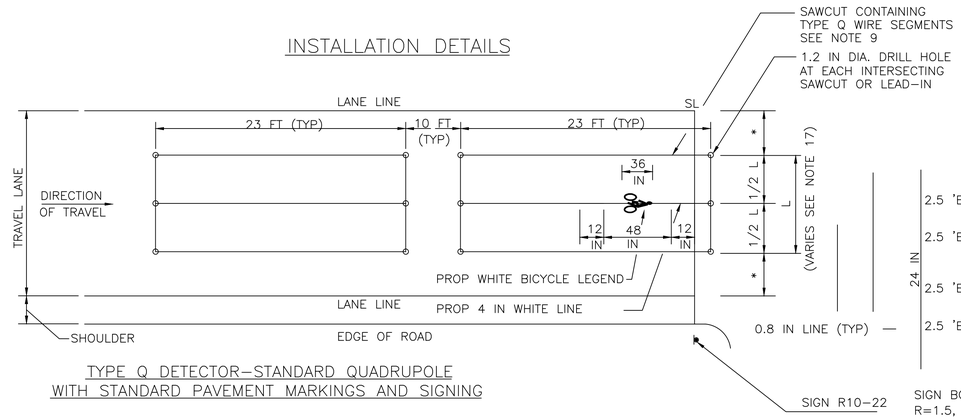


TYPE D–1 DETECTOR

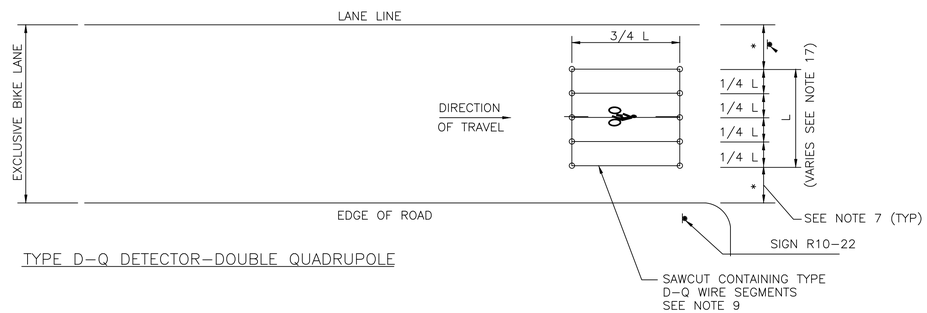


TYPE D–2 DETECTOR

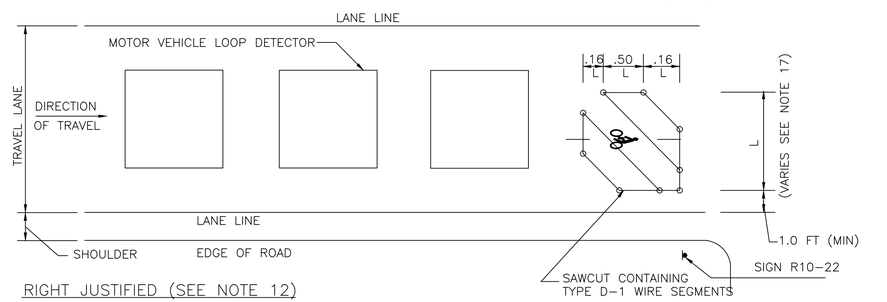
INSTALLATION DETAILS



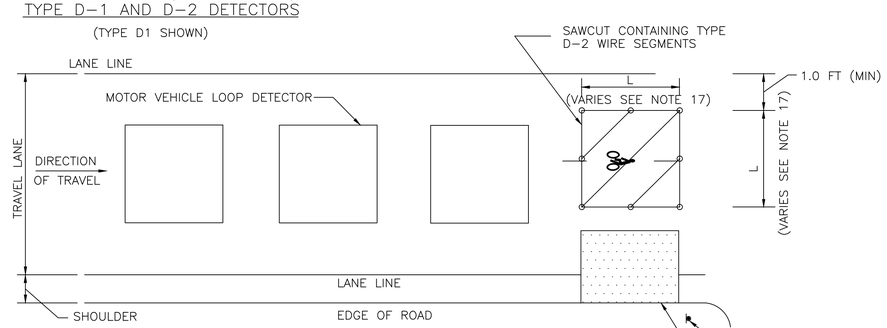
TYPE Q DETECTOR–STANDARD QUADRUPOLE
WITH STANDARD PAVEMENT MARKINGS AND SIGNING



TYPE D–Q DETECTOR–DOUBLE QUADRUPOLE



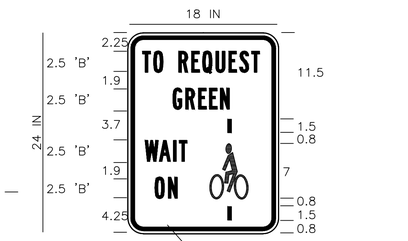
RIGHT JUSTIFIED (SEE NOTE 12)
TYPE D–1 AND D–2 DETECTORS
(TYPE D1 SHOWN)



LEFT JUSTIFIED (SEE NOTE 13)
TYPE D–1 AND D–2 DETECTORS
(TYPE D2 SHOWN)

PROPOSED AREA OF DETECTION
A LARGER AREA OF DETECTION MAY BE REQUIRED BASED ON FIELD CONDITIONS AND SHALL BE DETERMINED BY THE DESIGNER.

SIGN R10–22

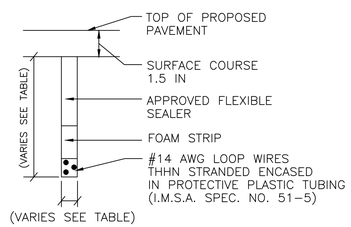


SIGN BORDER:
R=1.5, TH=0.5, INS=.38

WHITE BACKGROUND
BLACK LEGEND AND LINES

NOTE: ALL SIGN DIMENSIONS IN INCHES

NOTE: SIGN PANEL NOT SHOWN TO SCALE



SECTION THRU LOOP DETECTOR

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (IN)	WIDTH (IN)
1	1.5	0.5
2	1.5	0.5
3	1.5	0.5
4	2.0	0.5
5	2.0	0.5
6	2.0	0.5
7	2.0	0.5
8	2.0	0.5

BICYCLE LOOP DETECTOR DETAILS

NOTES:

1. REFER TO VEHICLE LOOP DETECTOR DETAIL SHEET FOR ADDITIONAL NOTES AND CONSTRUCTION DETAILS.
2. ALL DETAILS ARE GRAPHICAL WITH NO SCALE.
3. THE NUMBER, SIZE, LOCATION AND LENGTH OF DETECTION AREA VARIES AND SHALL BE DETERMINED BY THE DESIGNER REFER TO TRAFFIC SIGNAL PLAN.
4. BICYCLE LOOPS SHALL BE CONNECTED TO SEPARATE LOOP DETECTOR AMPLIFIERS CAPABLE OF HIGHER LEVELS OF SENSITIVITY.
5. BICYCLE LOOPS SHALL BE INSTALLED IN THE BASE COURSE OF EXISTING PAVEMENT. THE EXISTING PAVEMENT SHALL BE COLD PLANED TO THE BASE COURSE AND SAWCUT FOR LOOP INSTALLATION.
6. SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED FOR ALL BICYCLE DETECTORS TO INFORM CYCLISTS OF THE DETECTION AREA.
7. * OFFSETS FROM LANE LINE EQUAL UNLESS OTHERWISE NOTED. SEE PLANS.
8. TYPE Q DETECTORS SHALL BE WIRED IN A FIGURE EIGHT PATTERN WITH A DOUBLE LAYER DESIGN ("2–4–2") WITH 2 TURNS IN THE PERIMETER SLOTS AND 4 TURNS IN THE CENTER SLOT AS SHOWN IN THE WINDING DETAIL.
9. BICYCLES WILL BE DETECTED WITHIN 4 IN. OF THE INTERIOR LONGITUDINAL LOOP WIRES FOR TYPE Q AND D–Q DETECTORS.
10. PROVIDE 3 TURNS FOR TYPE D–1 DETECTORS.
11. INSTALL 2 LAYERS OF WIRE WOUND IN THE SAME DIRECTION IN BOTH LAYERS FOR TYPE D–2 DETECTORS. THE RESULT IS 4 TURNS IN EACH DIAGONAL.
12. RIGHT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE RIGHT SIDE OF A THRU TRAVEL LANE.
    b) BICYCLE STOPPING ON THE RIGHT SIDE OF AN EXCLUSIVE LEFT TURN LANE.
13. LEFT JUSTIFIED LOOP DETECTORS SHALL BE CONSIDERED FOR THE FOLLOWING CONDITIONS:
    a) BICYCLE STOPPING ON THE LEFT SIDE OF A SHARED LEFT/THRU LANE.
    b) BICYCLE STOPPING JUST TO THE RIGHT OF THE CENTERLINE WHEN TURNING LEFT ON A TWO–LANE ROADWAY.
14. RECTANGULAR LOOP DETECTORS SHALL BE CONSIDERED FOR BICYCLES STOPPING ON EITHER THE LEFT OR RIGHT SIDE OF A TWO–LANE ROADWAY. THE MINIMUM OFFSET FROM LANE LINE OR CURB LINE SHALL BE 1.0 FT.
15. PAVEMENT CORES OR TEST PITS MAY BE REQUIRED TO DETERMINE THE DEPTH OF EXISTING PAVEMENT AND CONFIRM THAT THE DETECTION OPTION CHOSEN AND CORRESPONDING WINDING PATTERN CAN BE ACCOMMODATED.
16. THESE DETAILS APPLY TO BICYCLE LOOPS INSTALLED IN ROADWAYS. PUSH BUTTON ACTUATION SHALL BE CONSIDERED FOR RECREATIONAL BIKE PATHS.
17. THE MINIMUM DIMENSION FOR L SHALL BE 6 FT MIN. FOR DETECTORS TYPE D–Q, D–1 & D–2. FINAL DIMENSIONS SHALL BE DETERMINED BY THE DESIGN ENGINEER.

607309_TRLLOOP_DETECTOR).DWG Plotted on 26-Jan-2017 5:05 PM

① SEE MUTCD 2009 EDITION, 1979 STD. HWY. SIGNS AND SECTION M9.30.0 TYPE III OF THE MHD STANDARD SPECIFICATION, AND MASS. HIGHWAY DEPARTMENT STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, 1990.

LEGEND

- HIGH LEVEL WARNING DEVICE - FLAG TREE
- REFLECTORIZED CONE
- REFLECTORIZED DRUM
- PROPOSED TRAFFIC FLOW
- WORK ZONE
- TYPE III BARICADE
- POLICE DETAIL
- CONSTRUCTION SIGN
- N.T.S. — NOT TO SCALE

IDENTIFI–CATION NUMBER	SIZE OF SIGN		TEXT	TEXT DIMENSIONS (INCHES)			NUMBER OF SIGNS REQUIRED	COLOR			NUMBER OF POSTS REQUIRED	UNIT AREA (S.F.)	AREA IN SQUARE FEET
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW RTE. MKR.		BACK–GROUND	LEGEND	BORDER			
W20-1	36"	36"	ROAD WORK AHEAD	①	①	①	5	FLOURE-SCENT ORANGE	BLACK	BLACK	5	9.00	45.00
W20-1b	36"	36"	ROAD WORK 1500FT				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	45.00
W20-7b	36"	36"	POLICE OFFICER AHEAD	SEE MASSDOT STANDARD SIGN BOOK			4	FLOURE-SCENT ORANGE	BLACK	BLACK	4	9.00	36.00
R2-10a	48"	36"	WORK ZONES SPEEDING FINES DOUBLED	SEE MASSDOT STANDARD SIGN BOOK			7	FLOURE-SCENT ORANGE	BLACK	BLACK	14	12.00	84.00
R2-10e	36"	48"	END ROAD WORK DOUBLE FINES END	SEE MASSDOT STANDARD SIGN BOOK			7	FLOURE-SCENT ORANGE	BLACK	BLACK	14	12.00	84.00
W5-1	36"	36"	ROAD NARROWS	①	①	①	2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00
W5-4	36"	36"	RAMP NARROWS				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00
W1-4R	36"	36"					1	FLOURE-SCENT ORANGE	BLACK	BLACK	1	9.00	9.00
W1-4L	36"	36"					1	FLOURE-SCENT ORANGE	BLACK	BLACK	1	9.00	9.00
W13-1	24"	24"	XX M.P.H.				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	4.00	8.00
W13-4P	36"	36"	ON RAMP				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00
R9-9	30"	18"	SIDEWALK CLOSED				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00
W4-2L	36"	36"					2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	9.00
W4-2R	36"	36"					1	FLOURE-SCENT ORANGE	BLACK	BLACK	1	9.00	9.00
W20-4	36"	36"	ONE LANE ROAD 1500FT				1	FLOURE-SCENT ORANGE	BLACK	BLACK	1	9.00	9.00
W20-5R	36"	36"	RIGHT LANE CLOSED AHEAD				1	FLOURE-SCENT ORANGE	BLACK	BLACK	1	9.00	9.00
W20-5L	36"	36"	LEFT LANE CLOSED AHEAD				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00
W8-1	36"	36"	BUMP				2	FLOURE-SCENT ORANGE	BLACK	BLACK	2	9.00	18.00

HINGHAM
DERBY STREET

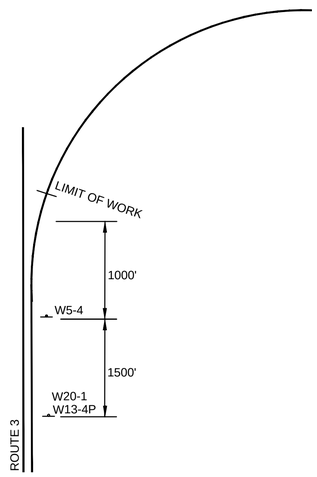
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	57	139
PROJECT FILE NO.	607309		

TEMPORARY TRAFFIC CONTROL PLANS - 1

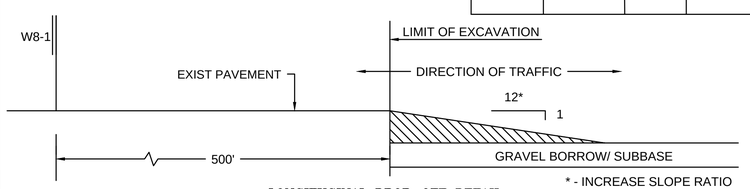
607309_TR(TTCP).DWG 21-Feb-2016

GENERAL NOTES

1. ALL CONSTRUCTION SIGNING, DRUMS, BARRICADES AND OTHER DEVICES SHALL CONFORM WITH PART 6 OF THE LATEST EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
2. ALL CHANNELIZING DEVICES SHALL BE SET @ 25' O.C. MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE RESIDENT ENGINEER.
3. ALL DRUMS SHALL BE APPROPRIATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES. WORK MAY REQUIRE ADDITIONAL SIGNS, DRUMS AND OTHER TRAFFIC CONTROL DEVICES, GRADING AND TEMPORARY PAVEMENT FOR PASSAGE OF PEDESTRIAN, VEHICULAR AND EMERGENCY TRAFFIC THROUGH THE WORK AREAS, BOTH DURING AND AFTER WORK HOURS, TO MAINTAIN SUCH ACCESS.
4. THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
5. THE CONTRACTOR SHALL NOTIFY MASSDOT, THE TOWN OF HINGHAM POLICE, FIRE, AND DEPARTMENT OF PUBLIC WORKS AT LEAST 48 HOURS IN ADVANCE OF LANE CLOSURES.
6. A MINIMUM OF ONE LANE OF TRAFFIC IN EACH DIRECTION SHALL BE MAINTAINED AT ALL TIMES.
7. GRADE SEPARATIONS IN EXCESS OF 2 INCHES DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF DRUMS.
8. EXCAVATION EDGES IN EXCESS OF 4 INCHES DEEP SHALL BE PROTECTED DURING NON-WORKING HOURS BY BACKFILLING WITH A WEDGE OF GRAVEL OR SOIL COMPACTED TO A 4:1 SLOPE.
9. 11' MINIMUM LANE WIDTHS SHALL BE MAINTAINED DURING CONSTRUCTION.
10. NON ESSENTIAL TEMPORARY CONSTRUCTION TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
11. THE GENERAL SEQUENCE OF WORK IS DEPENDENT UPON THE REMOVAL AND RELOCATION OF THE EXISTING UTILITY POLES AND WIRES THAT ARE FOUND TO BE IN CONFLICT WITH THE PROPOSED WORK, BY THE UTILITY COMPANIES. THE CONTRACTOR SHALL SCHEDULE THE WORK IN EACH AREA TO COORDINATE WITH THE POLE RELOCATION WORK.
12. ADVISORY SPEED PLATES (W13-1) SHALL BE USED IF APPROPRIATE AND AS REQUIRED BY THE ENGINEER.
13. SUPPORTS FOR ALL TRAFFIC MANAGEMENT SIGNS SHALL BE 4" X 4" PRESSURE TREATED WOOD POSTS.
14. LOCATIONS OF SIGNS SHOWN ARE APPROXIMATE ONLY, DISTANCES MAY BE ADJUSTED IN THE FIELD FOR IMPROVED VISABILITY.
15. THE CONTRACTOR SHALL MAINTAIN AN ACCESSIBLE ROUTE FOR PEDESTRIANS THROUGH THE WORK ZONE AT ALL TIMES.

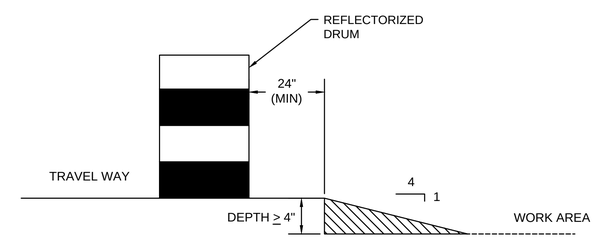


ADVANCED WARNING SIGN SCHEMATIC
RAMP WORK
N.T.S.



LONGITUGINAL DROP–OFF DETAIL
N.T.S.

* - INCREASE SLOPE RATIO FOR HIGHER SPEEDS



LATERAL DROP–OFF DETAIL
N.T.S.

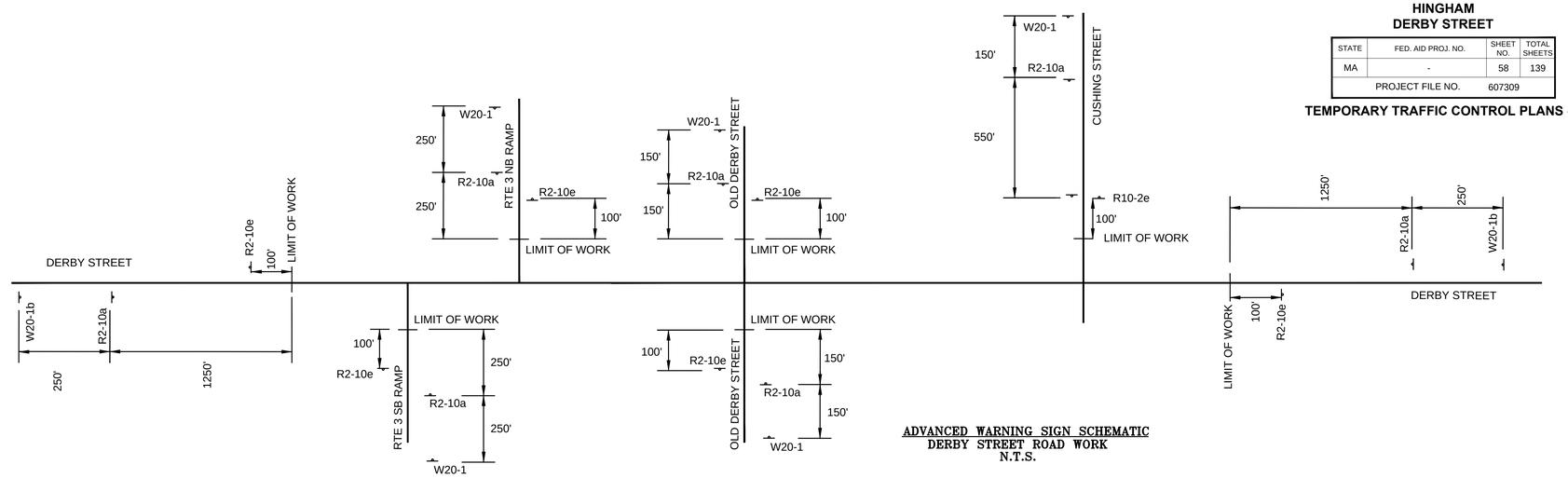
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	58	139
PROJECT FILE NO.	607309		

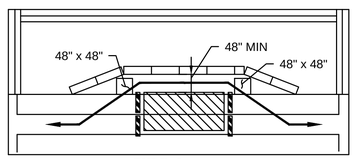
TEMPORARY TRAFFIC CONTROL PLANS - 2

607309_TR(TTCP).DWG 25-Feb-2016

TEMPORARY LANE CLOSURES SHOWN ARE FOR ROADWAY CONSTRUCTION. ALL DRUMS AND SIGNS ARE SHOWN AS THEY SHOULD APPEAR DURING THE WORKING DAY, OR WHILE OPERATING IN THE WORK ZONE. FOR WORK ON OPPOSITE SIDES OF ROADWAY, REVERSE ALL SIGNING, DRUMS, AND TAPER LENGTHS.



ADVANCED WARNING SIGN SCHEMATIC
DERBY STREET ROAD WORK
N.T.S.

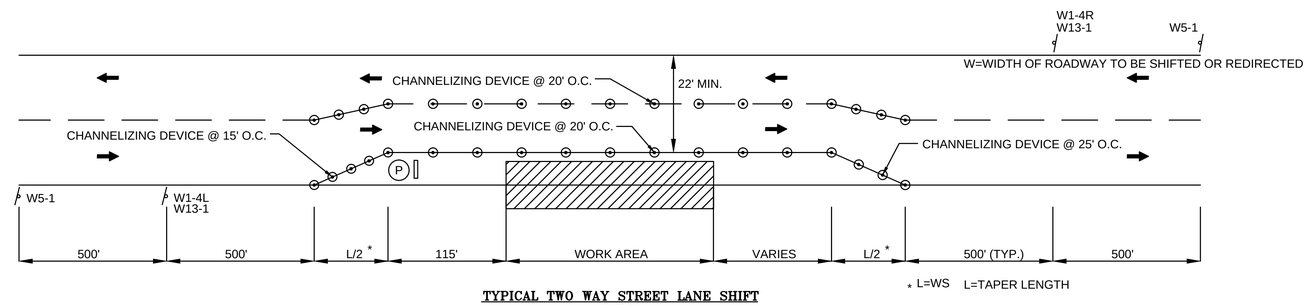


TYPE I

NOTES

1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
2. CONTROLS ONLY FOR PEDESTRIAN TRAFFIC ARE SHOWN. VEHICULAR TRAFFIC SHOULD BE HANDLED AS SHOWN ELSEWHERE.
3. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN, PEDESTRIANS MAY BE REQUIRED TO CROSS TO THE OPPOSITE SIDE OF THE STREET AS DIRECTED BY THE RESIDENT ENGINEER.
4. BYPASS IS TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE RESIDENT ENGINEER.

PEDESTRIAN BYPASS
N.T.S.

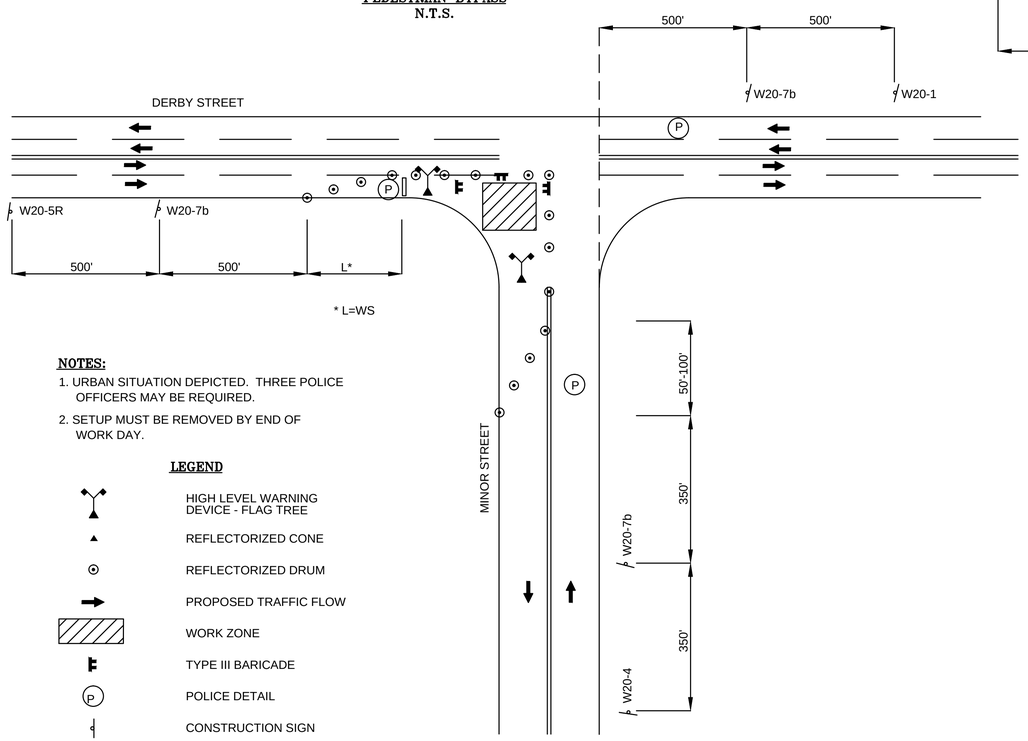


* L=WS L=TAPER LENGTH

S=POSTED SPEED LIMIT

TYPICAL TWO WAY STREET LANE SHIFT
N.T.S.

NOTE: WORK THAT WILL DISRUPT EXISTING TRAFFIC PATTERNS WITHIN THE EXISTING ROADWAYS (LANE REDUCTION, ETC.) SHALL ONLY BE DONE DURING OFF PEAK HOURS. NUMBERS AND LOCATION OF POLICE DETAILS FOR WORK ZONE AND/OR DETOUR MANAGEMENT SHALL BE DETERMINED BY THE RESIDENT ENGINEER ON A CASE BY CASE BASIS, AS WORK PROGRESSES.



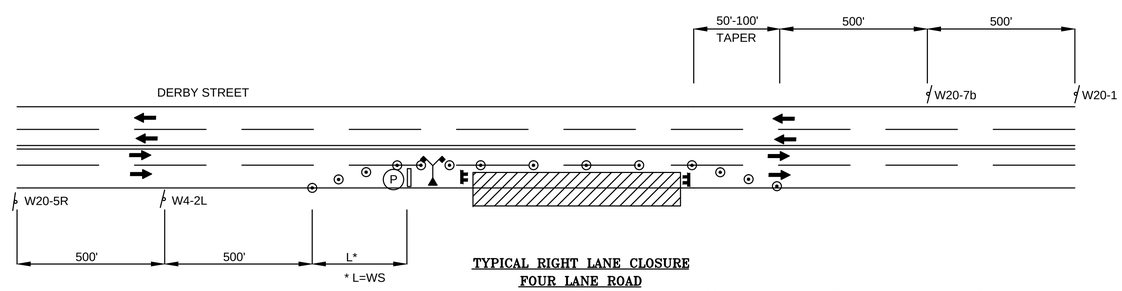
NOTES:

1. URBAN SITUATION DEPICTED. THREE POLICE OFFICERS MAY BE REQUIRED.
2. SETUP MUST BE REMOVED BY END OF WORK DAY.

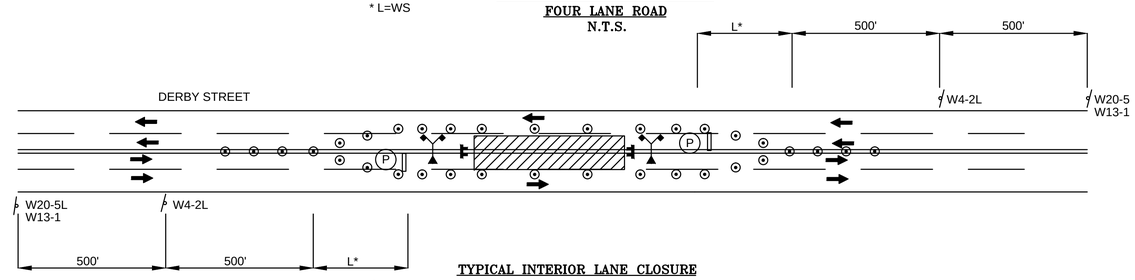
LEGEND

	HIGH LEVEL WARNING DEVICE - FLAG TREE
	REFLECTORIZED CONE
	REFLECTORIZED DRUM
	PROPOSED TRAFFIC FLOW
	WORK ZONE
	TYPE III BARICADE
P	POLICE DETAIL
	CONSTRUCTION SIGN
	ARROW BOARD
N.T.S.	NOT TO SCALE

TYPICAL INTERSECTION
MOVABLE WORK AREA
"OPERATIONAL" (DAY-TO-DAY) PLAN
N.T.S.



TYPICAL RIGHT LANE CLOSURE
FOUR LANE ROAD
N.T.S.



TYPICAL INTERIOR LANE CLOSURE
FOUR LANE ROAD
N.T.S.

HINGHAM
DERBY STREET

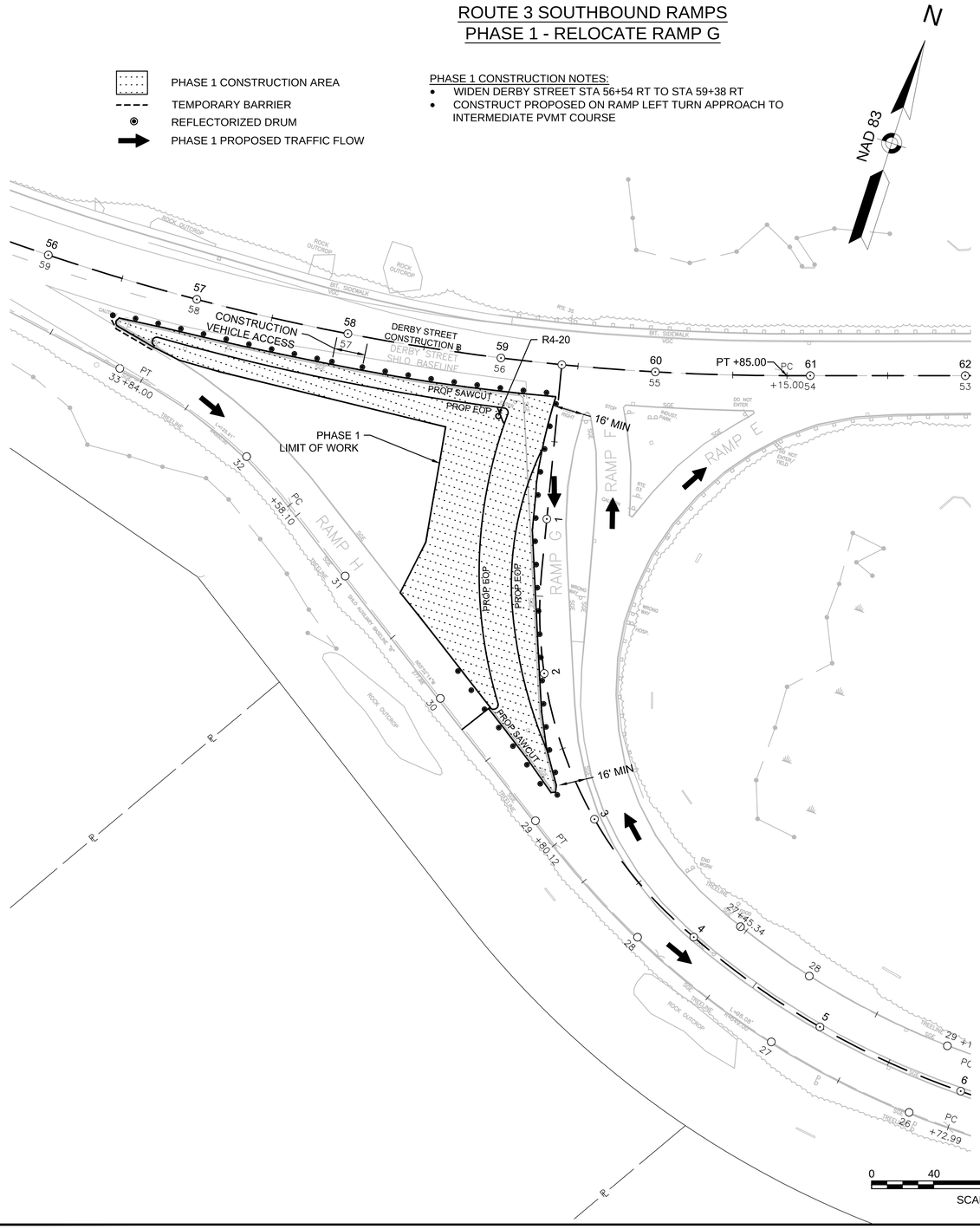
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	59	139
PROJECT FILE NO.	607309		

STAGING & TRAFFIC HANDLING PLAN
RTE. 3 SOUTHBOUND RAMPS - 1

ROUTE 3 SOUTHBOUND RAMPS
PHASE 1 - RELOCATE RAMP G

PHASE 1 CONSTRUCTION AREA
TEMPORARY BARRIER
REFLECTORIZED DRUM
PHASE 1 PROPOSED TRAFFIC FLOW

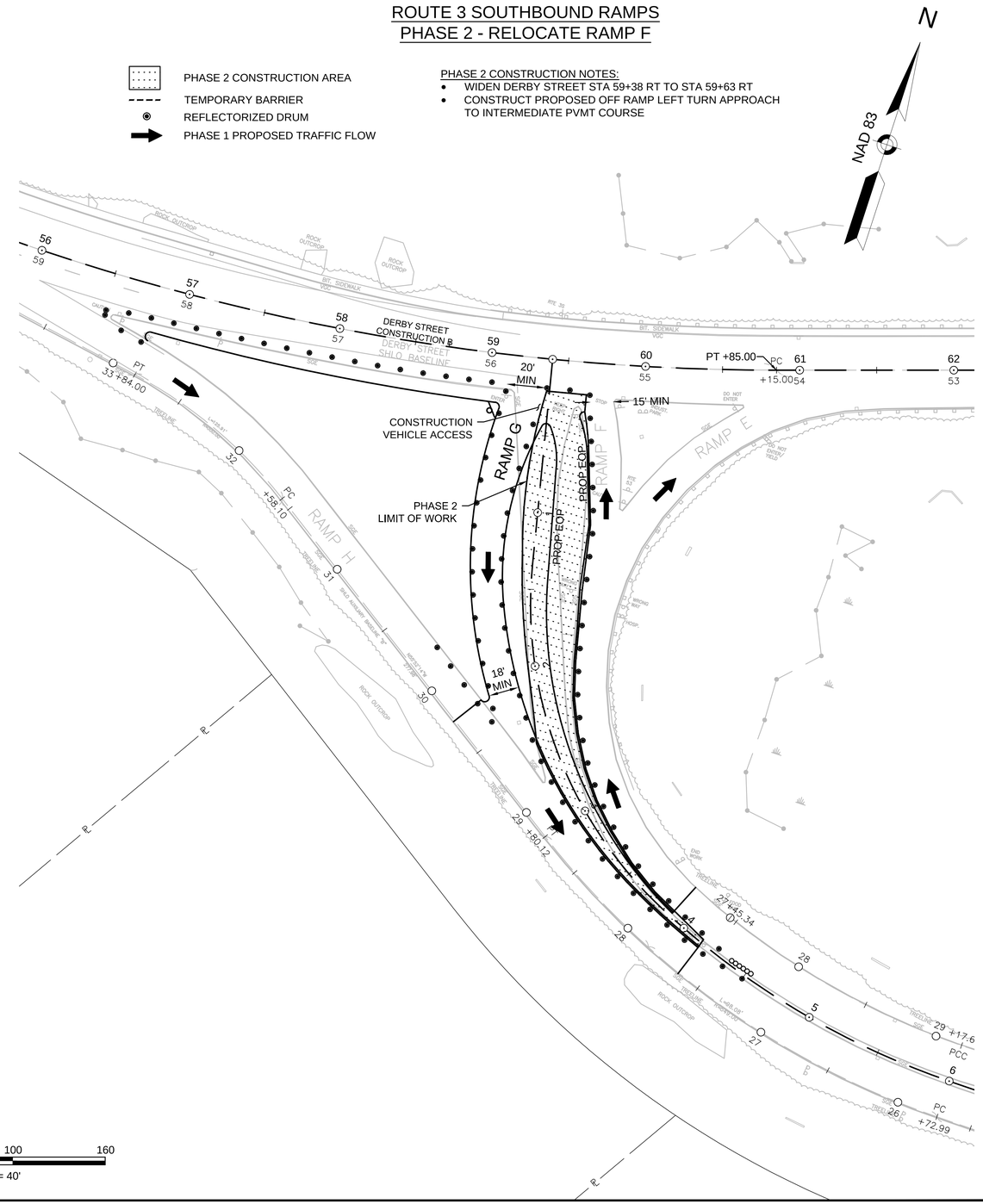
PHASE 1 CONSTRUCTION NOTES:
- WIDEN DERBY STREET STA 56+54 RT TO STA 59+38 RT
- CONSTRUCT PROPOSED ON RAMP LEFT TURN APPROACH TO INTERMEDIATE PVMT COURSE



ROUTE 3 SOUTHBOUND RAMPS
PHASE 2 - RELOCATE RAMP F

PHASE 2 CONSTRUCTION AREA
TEMPORARY BARRIER
REFLECTORIZED DRUM
PHASE 1 PROPOSED TRAFFIC FLOW

PHASE 2 CONSTRUCTION NOTES:
- WIDEN DERBY STREET STA 59+38 RT TO STA 59+63 RT
- CONSTRUCT PROPOSED OFF RAMP LEFT TURN APPROACH TO INTERMEDIATE PVMT COURSE



0 40 100 160
SCALE: 1" = 40'

607309_HD(STAGING).DWG Plotted on 22-Feb-2016 5:06 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	60	139
PROJECT FILE NO.	607309		

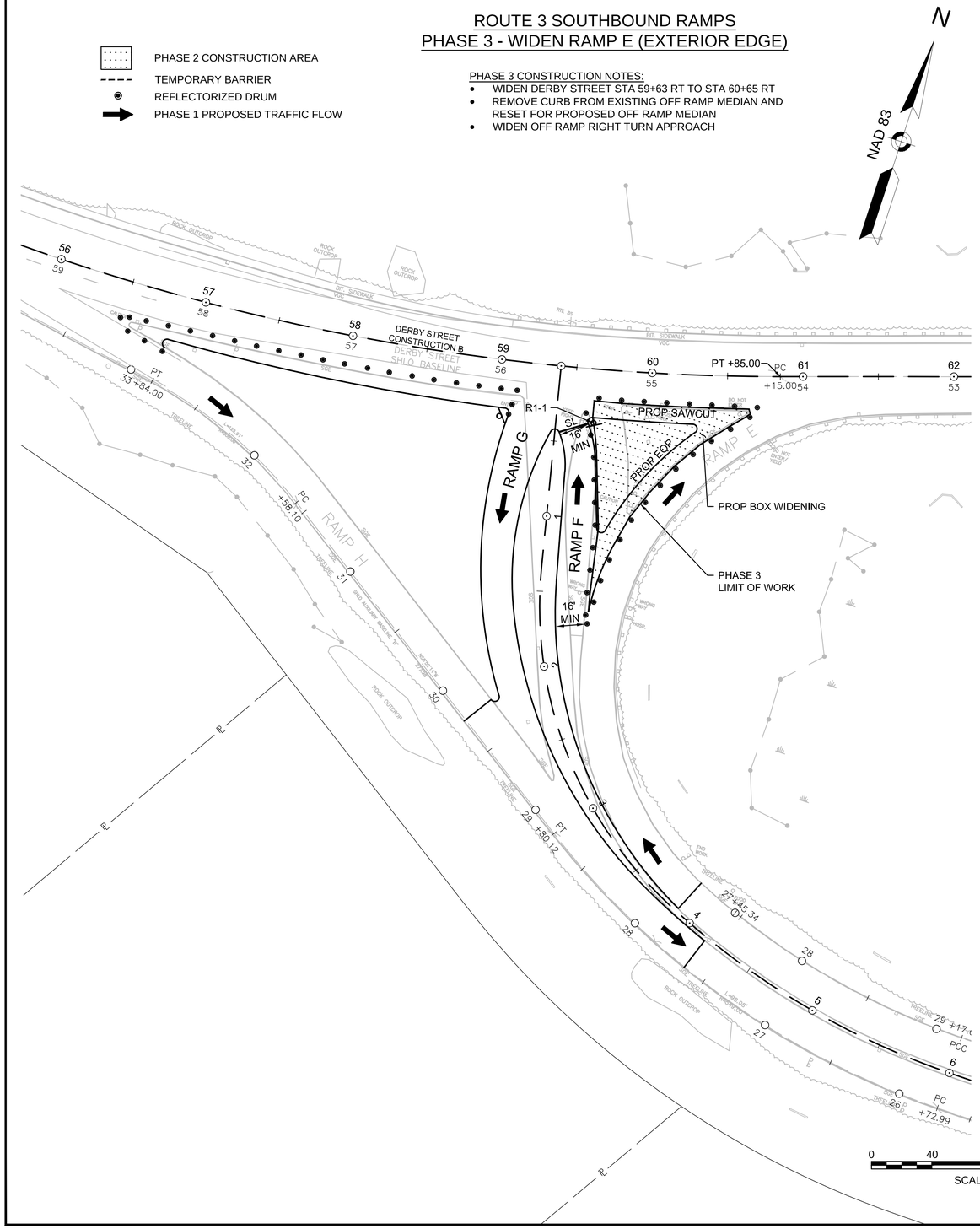
STAGING & TRAFFIC HANDLING PLAN
RTE. 3 SOUTHBOUND RAMPS - 2

ROUTE 3 SOUTHBOUND RAMPS
PHASE 3 - WIDEN RAMP E (EXTERIOR EDGE)

PHASE 2 CONSTRUCTION AREA
TEMPORARY BARRIER
REFLECTORIZED DRUM
PHASE 1 PROPOSED TRAFFIC FLOW

PHASE 3 CONSTRUCTION NOTES:

- WIDEN DERBY STREET STA 59+63 RT TO STA 60+65 RT
- REMOVE CURB FROM EXISTING OFF RAMP MEDIAN AND RESET FOR PROPOSED OFF RAMP MEDIAN
- WIDEN OFF RAMP RIGHT TURN APPROACH

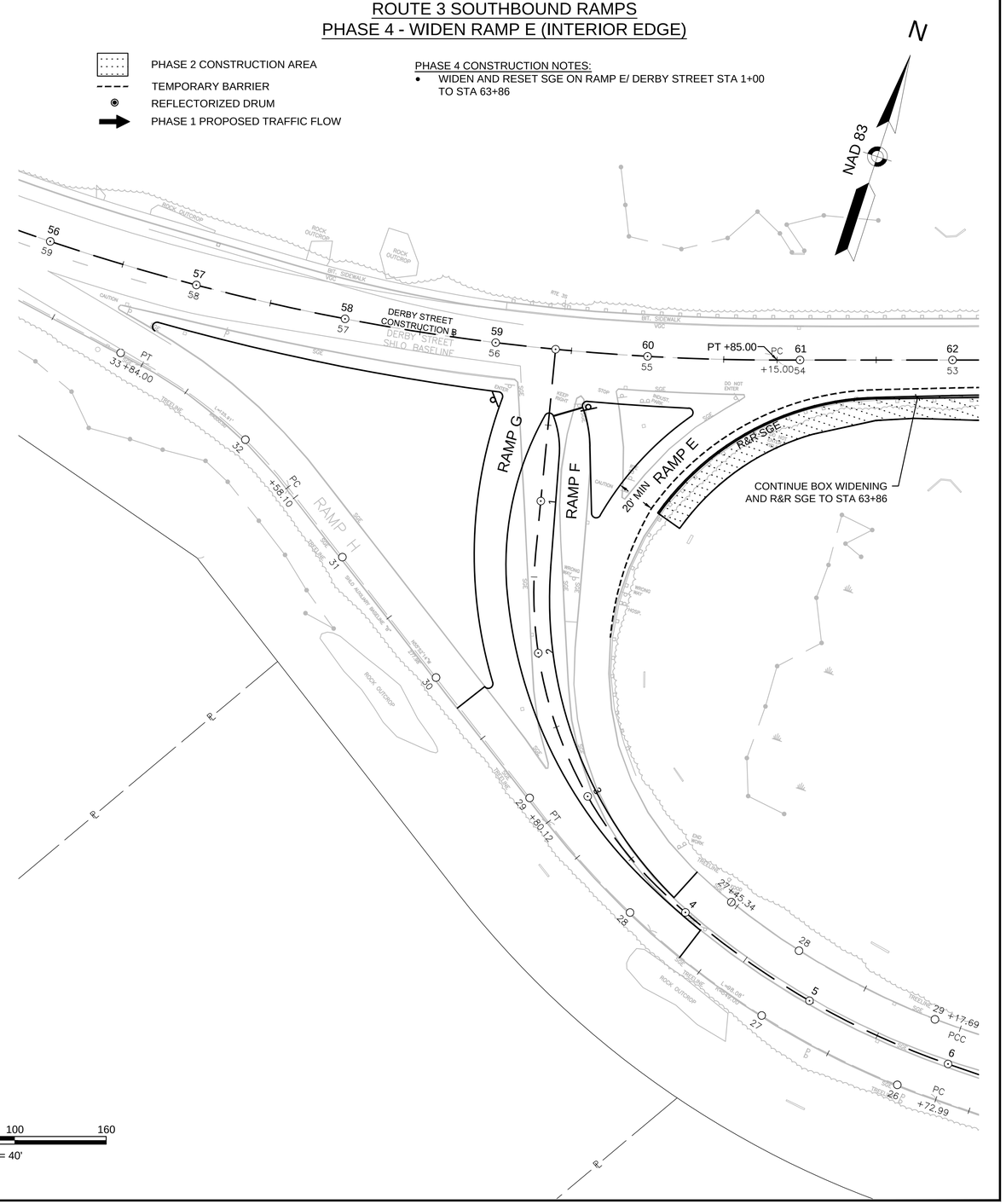


ROUTE 3 SOUTHBOUND RAMPS
PHASE 4 - WIDEN RAMP E (INTERIOR EDGE)

PHASE 2 CONSTRUCTION AREA
TEMPORARY BARRIER
REFLECTORIZED DRUM
PHASE 1 PROPOSED TRAFFIC FLOW

PHASE 4 CONSTRUCTION NOTES:

- WIDEN AND RESET SGE ON RAMP E/ DERBY STREET STA 1+00 TO STA 63+86



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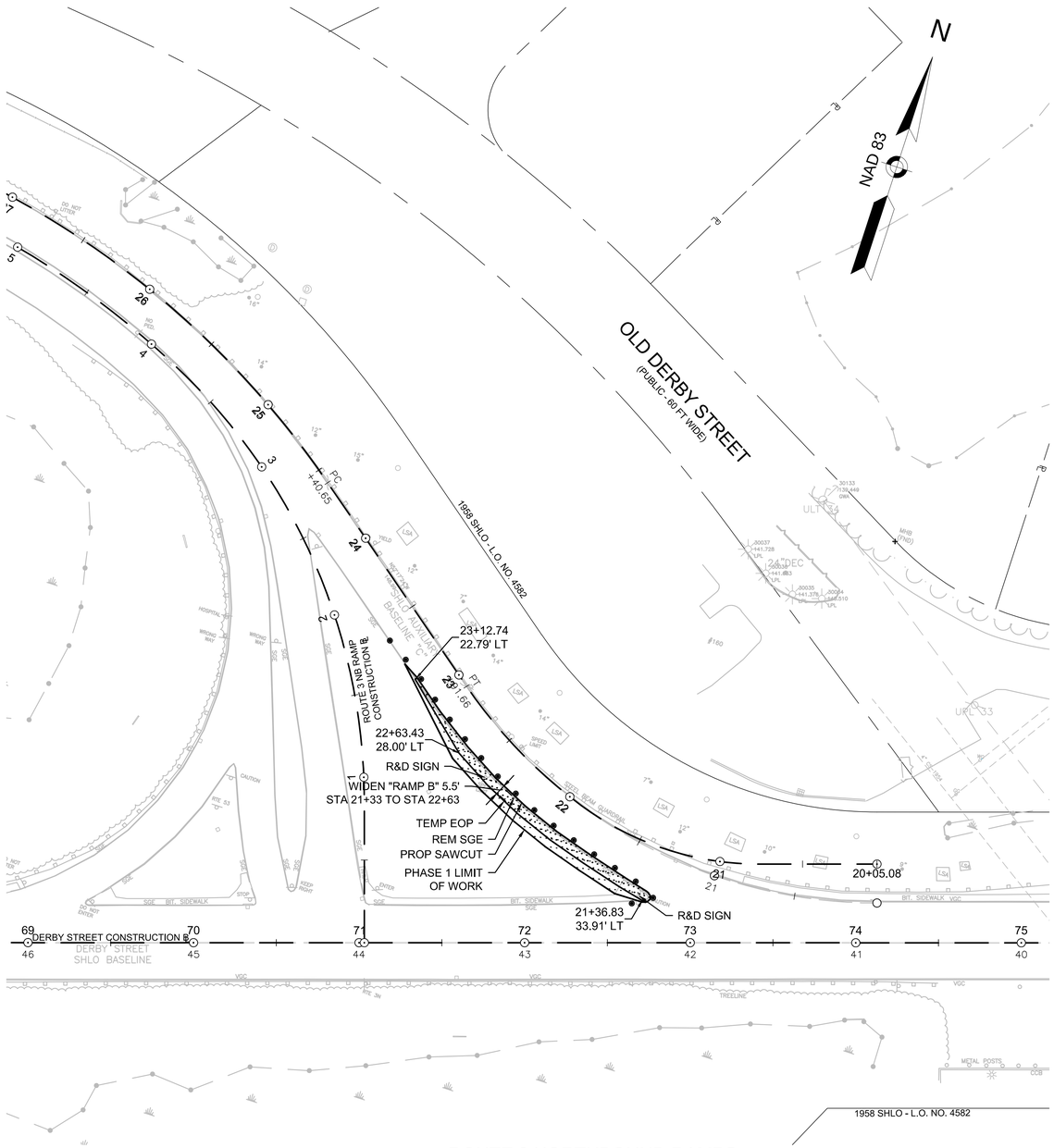
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	61	139
PROJECT FILE NO.	607309		

STAGING & TRAFFIC HANDLING PLAN
RTE. 3 NORTHBOUND RAMPS - 1



ROUTE 3 NORTHBOUND RAMPS
PHASE 1- TEMP WIDEN RAMP B

PHASE 1 CONSTRUCTION AREA

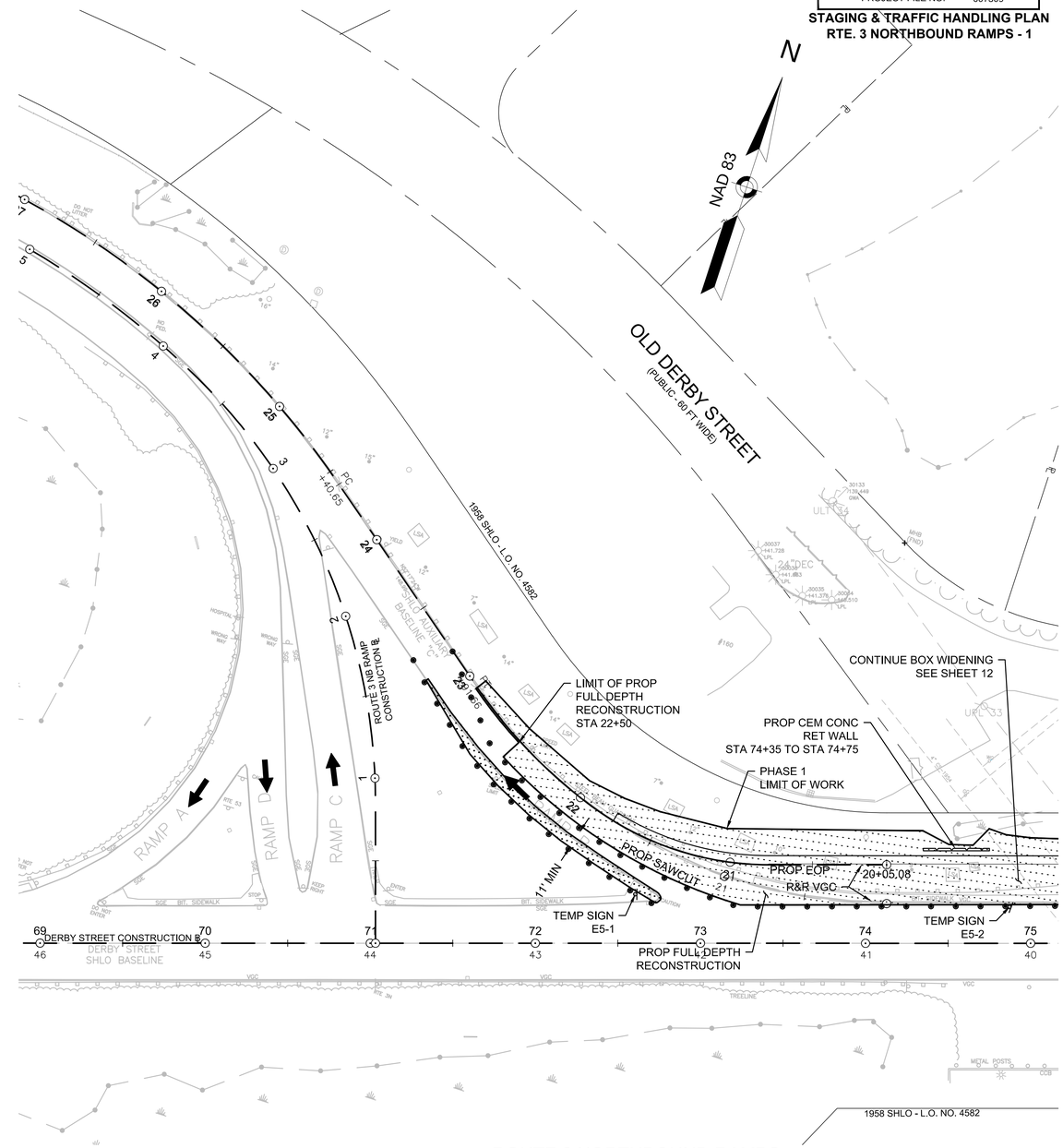
PHASE 1 TEMP PAVEMENT

REFLECTORIZED DRUM

PHASE 1 PROPOSED TRAFFIC FLOW

PHASE 1 CONSTRUCTION NOTES:

- WIDEN NB RAMP B INTERIOR EDGE BY 5.5'



ROUTE 3 NORTHBOUND RAMPS
PHASE 2- WIDEN RAMP B (EXTERIOR EDGE)

PHASE 2 CONSTRUCTION AREA

PHASE 1 & 2 TEMP PAVEMENT

REFLECTORIZED DRUM

PHASE 1 PROPOSED TRAFFIC FLOW

PHASE 2 CONSTRUCTION NOTES:

- RECONSTRUCT NB RAMP B TO OLD DERBY STREET INTERSECTION; CONSTRUCT PROPOSED RETAINING WALL
- SET CURBING AND HIGHWAY GUARD RAIL OR PROVIDE TEMPORARY BARRIERS BEHIND PROP EOP BEFORE BEGINNING PHASE 3

0 40 100 160

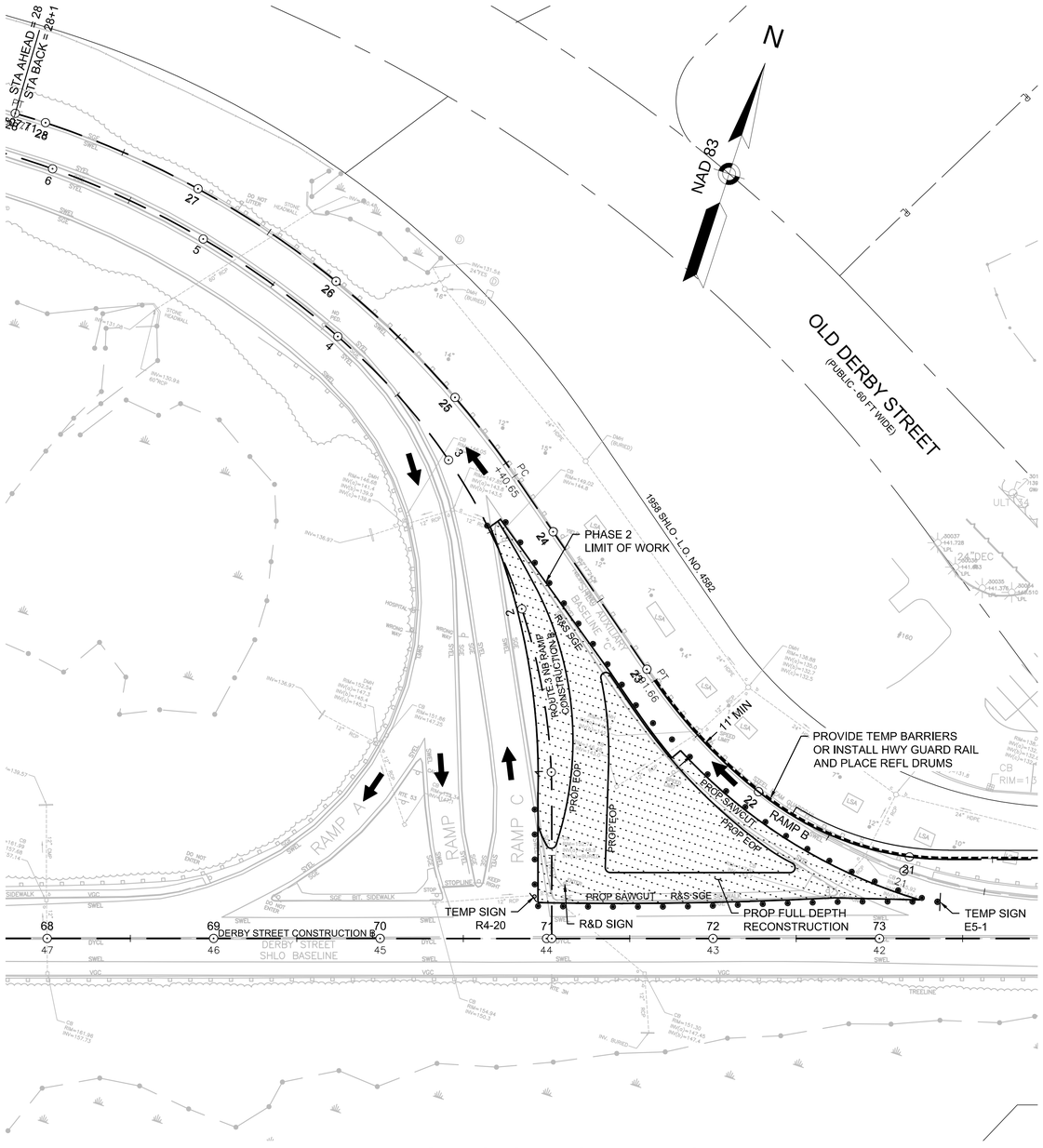
SCALE: 1" = 40'

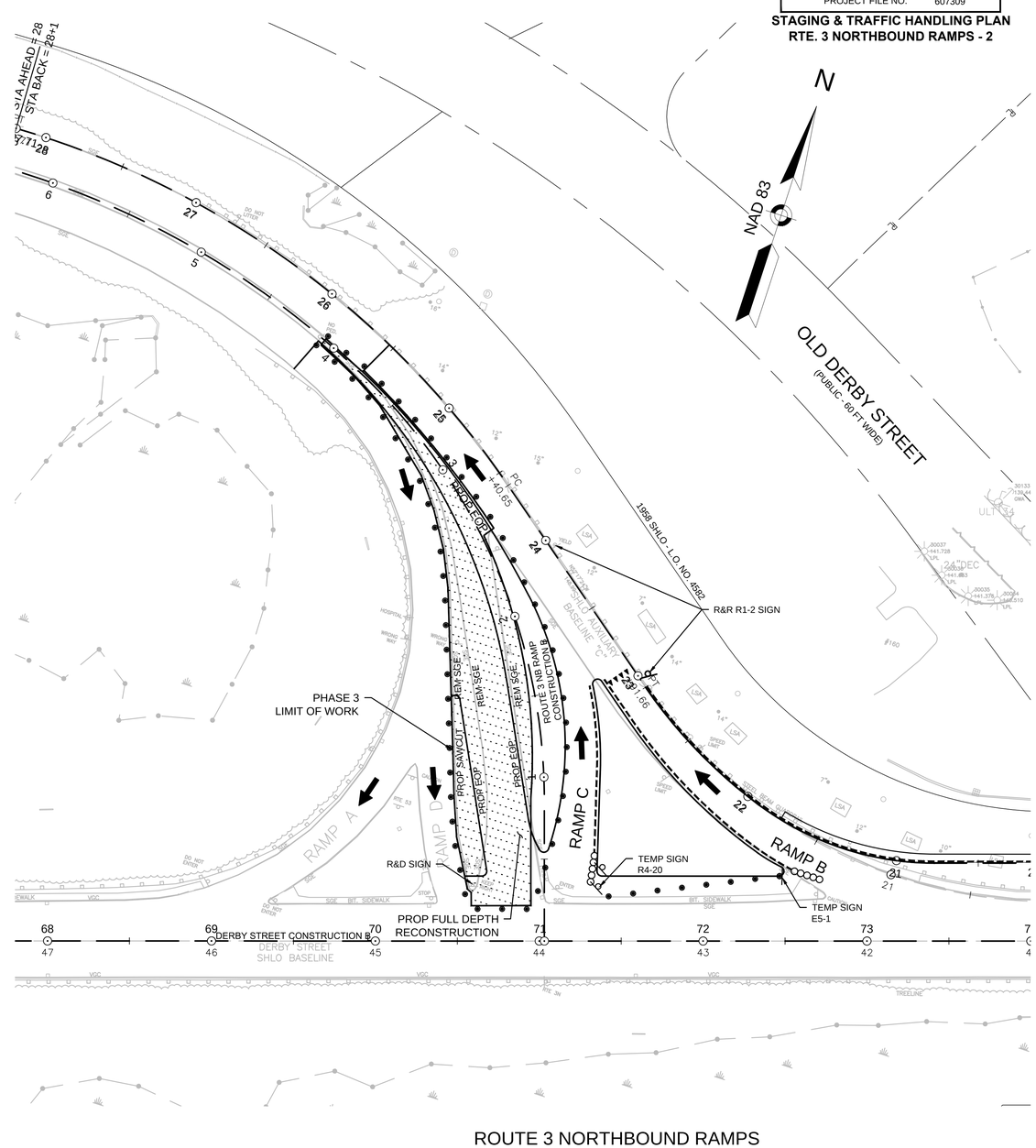
607309_HD(STAGING).DWG Plotted on 22-Feb-2016 5:06 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	62	139
PROJECT FILE NO.	607309		

STAGING & TRAFFIC HANDLING PLAN
RTE. 3 NORTHBOUND RAMPS - 2





ROUTE 3 NORTHBOUND RAMPS
PHASE 3- RELOCATE RAMP C

PHASE 3 CONSTRUCTION AREA
TEMPORARY BARRIER
PHASE 3 PROPOSED TRAFFIC FLOW
REFLECTORIZED DRUM

PHASE 3 CONSTRUCTION NOTES:

- WIDEN DERBY STREET STA 70+95 TO STA 73+36
- CONSTRUCT PROPOSED RAMP C
- WIDEN RAMP B INTERIOR EDGE/ REMOVE TEMP PVMT FROM PHASE 1 & 2
- REMOVE EXISTING CURB TO EXTENTS SHOWN ABOVE

0 40 100 160
SCALE: 1" = 40'

ROUTE 3 NORTHBOUND RAMPS
PHASE 4 - RELOCATE RAMP D

PHASE 4 CONSTRUCTION AREA
TEMPORARY BARRIER
PHASE 4 PROPOSED TRAFFIC FLOW
REFLECTORIZED DRUM
TEMPORARY IMPACT ATTENUATOR

PHASE 4 CONSTRUCTION NOTES:

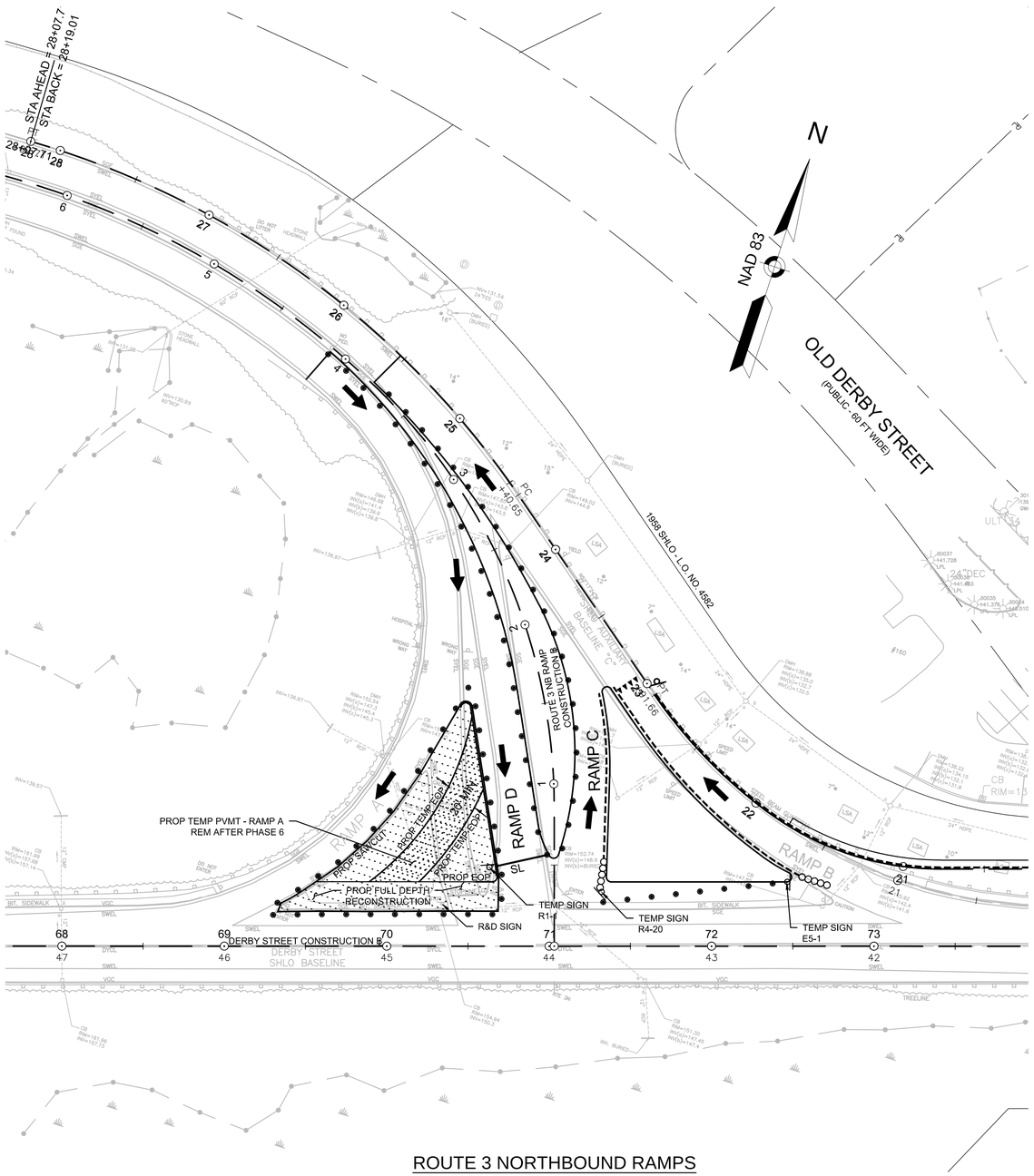
- WIDEN DERBY STREET STA 70+54 TO STA 70+95
- REMOVE CURB FROM EXISTING CENTER MEDIAN AND REMAINDER OF ON RAMP MEDIAN
- CONSTRUCT PROPOSED OFF RAMP LEFT TURN APPROACH TO INTERMEDIATE PVMT COURSE

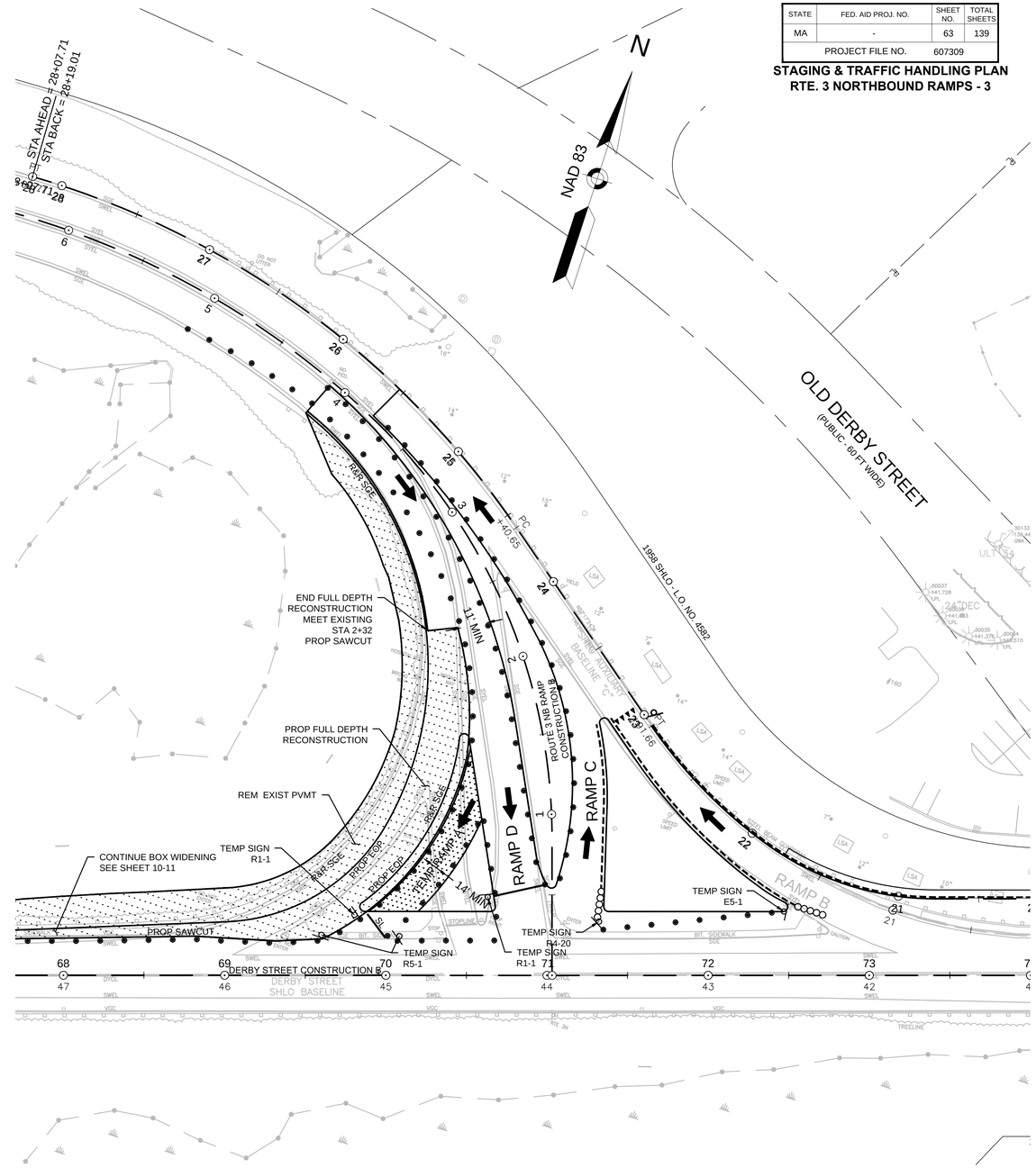
607309_HD(STAGING).DWG Plotted on 22-Feb-2016 5:06 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	63	139
PROJECT FILE NO.	607309		

STAGING & TRAFFIC HANDLING PLAN
RTE. 3 NORTHBOUND RAMPS - 3





ROUTE 3 NORTHBOUND RAMPS
PHASE 5 - CONSTRUCT TEMP RAMP A

TEMP PVMT AREA

PHASE 5 CONSTRUCTION AREA

TEMPORARY BARRIER

PHASE 5 PROPOSED TRAFFIC FLOW

REFLECTORIZED DRUM

PHASE 5 CONSTRUCTION NOTES:

- WIDEN DERBY STREET STA 69+10 TO STA 70+54
- CONSTRUCT TEMPORARY NB RAMP A

0 40 100 160

SCALE: 1" = 40'

ROUTE 3 NORTHBOUND RAMPS
PHASE 6 - RELOCATE RAMP A

TEMP PVMT AREA

PHASE 6 CONSTRUCTION AREA

TEMPORARY BARRIER

PHASE 6 PROPOSED TRAFFIC FLOW

REFLECTORIZED DRUM

PHASE 6 CONSTRUCTION NOTES:

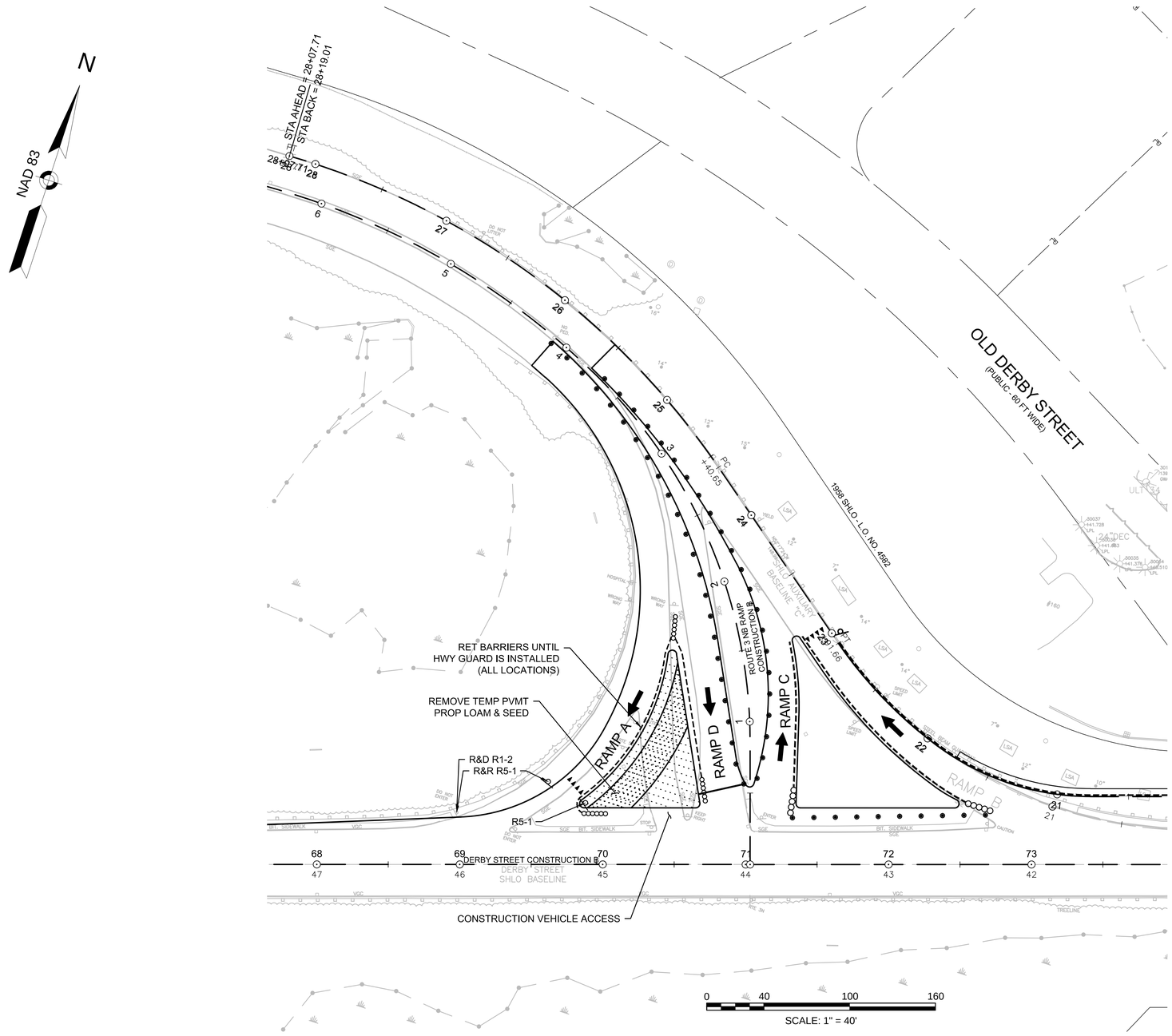
- WIDEN DERBY STREET STA 66+20 TO STA 69+10
- CONSTRUCT OFF RAMP RIGHT TURN APPROACH; REMOVE EXISTING PAVEMENT AS SHOWN ABOVE

607309_HD(STAGING).DWG Plotted on 22-Feb-2016 5:06 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	64	139
PROJECT FILE NO.	607309		

STAGING & TRAFFIC HANDLING PLAN
RTE. 3 NORTHBOUND RAMPS - 4



ROUTE 3 NORTHBOUND RAMPS
PHASE 7 - REMOVE TEMP RAMP A

TEMP PVMT AREA

PHASE 7 CONSTRUCTION AREA

TEMPORARY BARRIER

PHASE 7 PROPOSED TRAFFIC FLOW

PHASE 7 CONSTRUCTION NOTES:

- REMOVE PAVEMENT FOR TEMPORARY RAMP A IN OFF RAMP ISLAND
- GRADE, LOAM & SEED OFF RAMP ISLAND

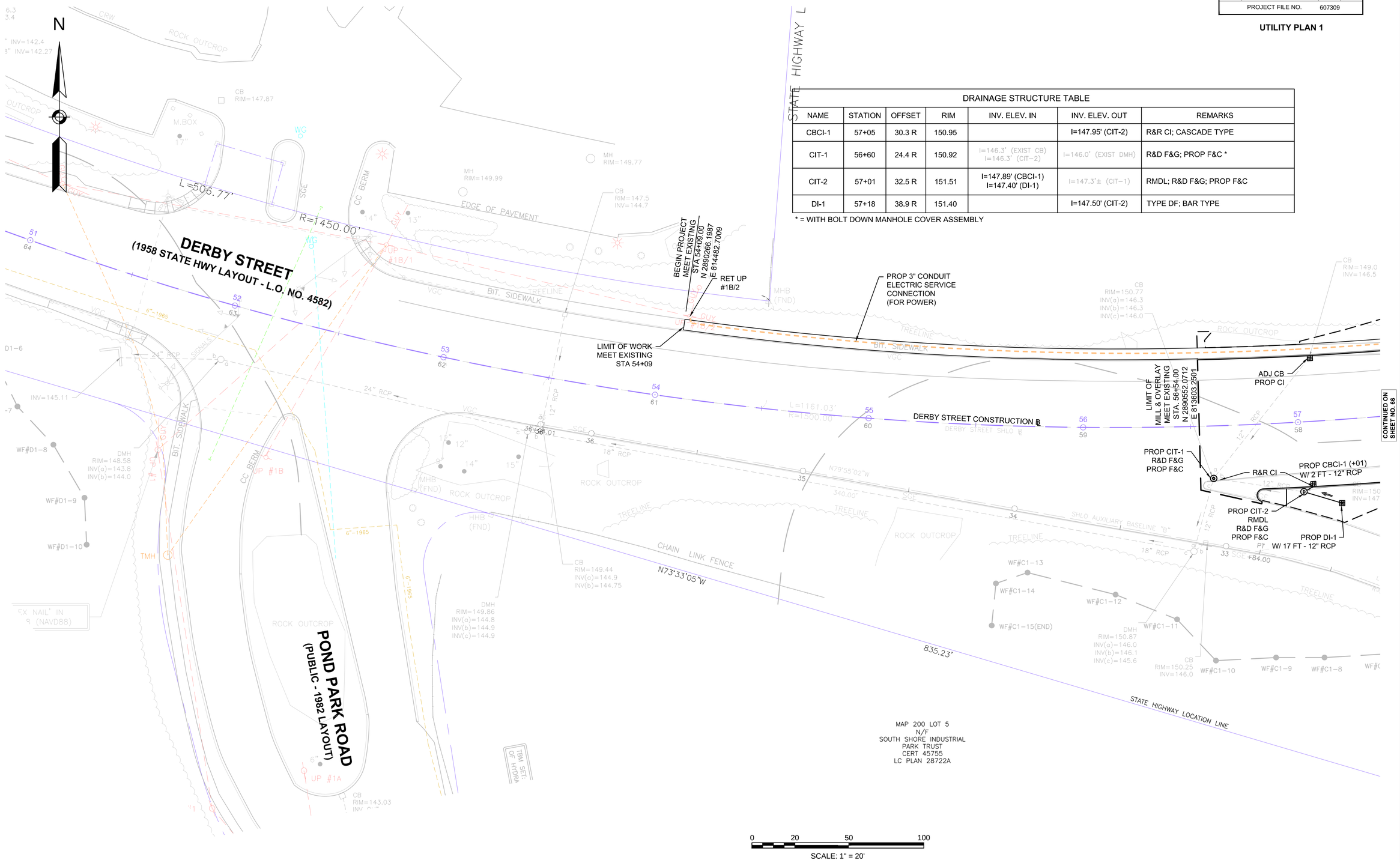
607309_HD(STAGING).DWG Plotted on 22-Feb-2016 5:07 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	65	139
PROJECT FILE NO.	607309		

UTILITY PLAN 1

607309_HD(UT).DWG 26-Jan-2017



DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-1	57+05	30.3 R	150.95		I=147.95' (CIT-2)	R&R CI; CASCADE TYPE
CIT-1	56+60	24.4 R	150.92	I=146.3' (EXIST CB) I=146.3' (CIT-2)	I=146.0' (EXIST DMH)	R&D F&G; PROP F&C *
CIT-2	57+01	32.5 R	151.51	I=147.89' (CBCI-1) I=147.40' (DI-1)	I=147.3'± (CIT-1)	RMDL; R&D F&G; PROP F&C
DI-1	57+18	38.9 R	151.40		I=147.50' (CIT-2)	TYPE DF; BAR TYPE

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-5	2+10	33.05 R	151.65		I=147.65' (CIT-6)	R&R CI; BAR TYPE
CIT-6	2+33	17.8 R	151.13	I=147.0' (CBCI-5) I=146.0' (CIT-4)	I=144.9' (OUTLET)	RMDL; R&D F&G; PROP F&C*
CBCI-6	61+09	27.3 L	159.28		I=155.28' (CIT-7)	R&R CI; CASCADE TYPE
CIT-7	60+99	21.0 L	159.27	I=154.9' (EXIST CB) I=155.10' (CBCI-6)	I=153.7' (OUTLET)	R&D F&G; PROP F&C *

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

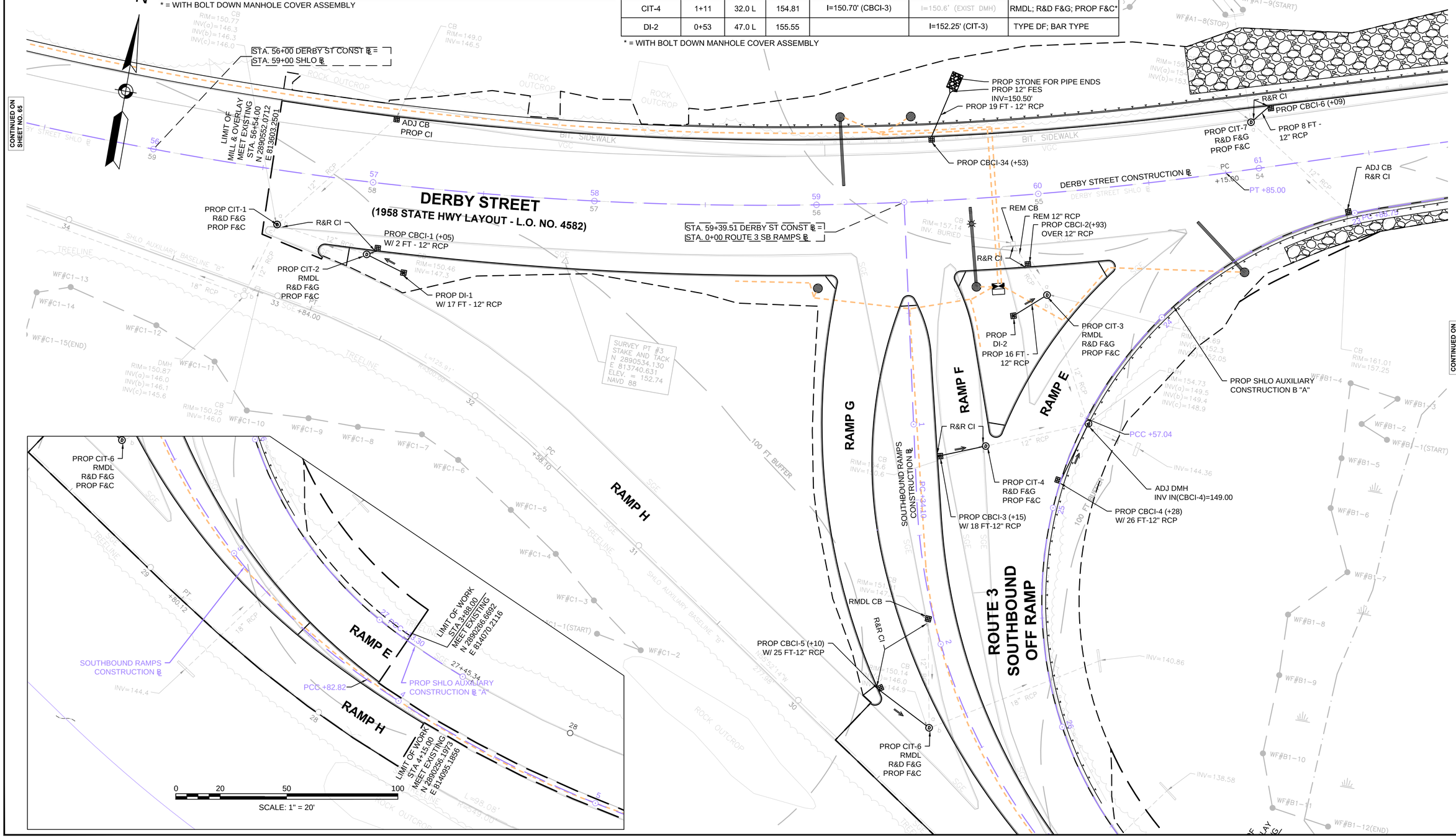
DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-2	59+93	32.4 R	157.38		I=153.0'± (CIT-3)	R&R CI; CASCADE TYPE
CBCI-3	1+15	10.1 L	154.46		I=150.96' (CIT-4)	R&R CI; BAR TYPE
CBCI-4	1+28	65.0 L	153.22		I=149.72' (EXIST DMH)	PROP CI; BAR TYPE
CBCI-34	59+53	28.9 L	154.49		I=150.99' (PROP 12" FES)	PROP CI; CASCADE TYPE
CIT-3	0+44	62.4 L	154.33	I=152.30' (CBCI-2) I=152.15' (DI-2)	I=152.05' (EXIST DMH)	RMDL; R&D F&G; PROP F&C
CIT-4	1+11	32.0 L	154.81	I=150.70' (CBCI-3)	I=150.6' (EXIST DMH)	RMDL; R&D F&G; PROP F&C*
DI-2	0+53	47.0 L	155.55		I=152.25' (CIT-3)	TYPE DF; BAR TYPE

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	66	139
PROJECT FILE NO.	607309		

UTILITY PLAN 2

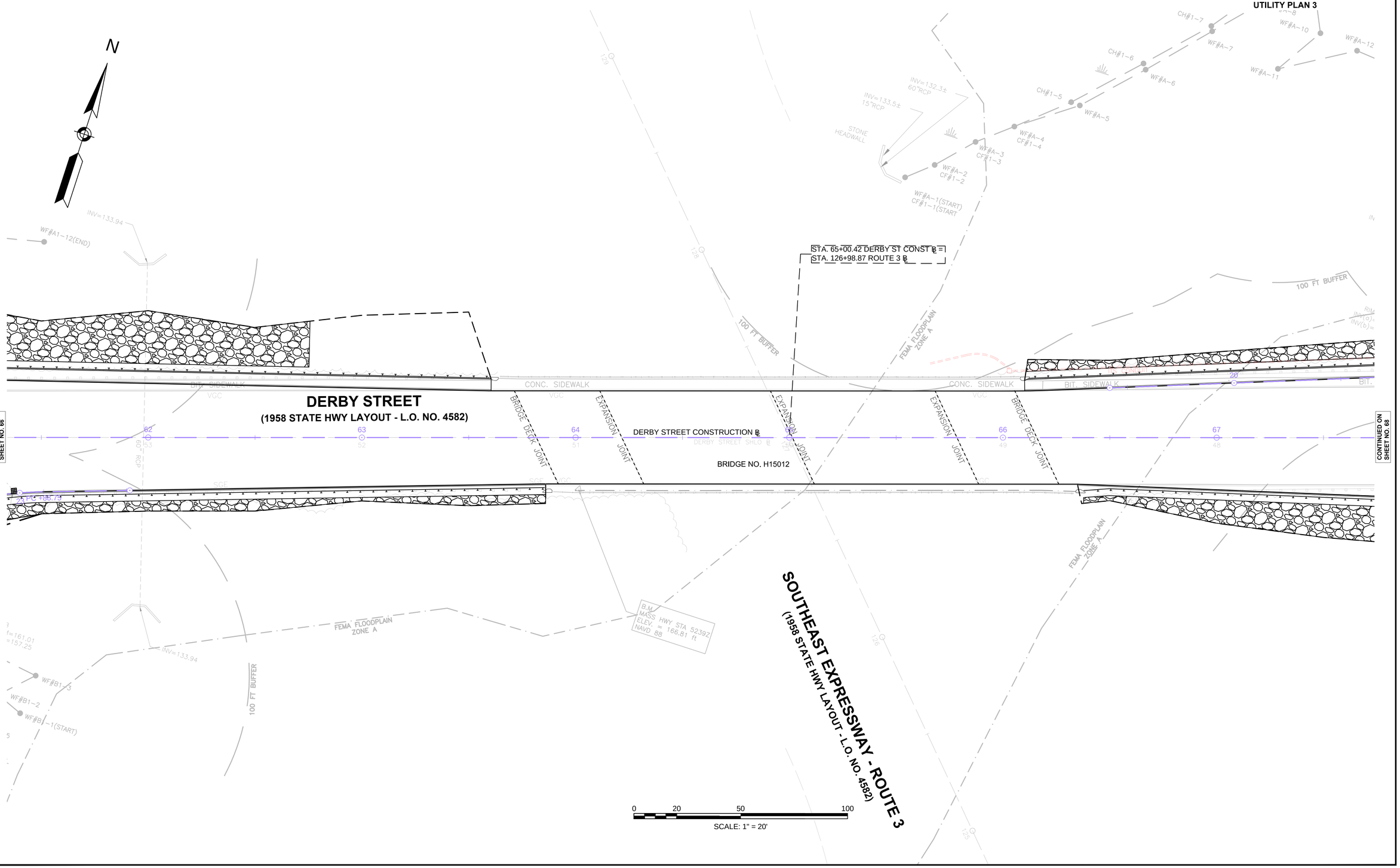


607309_HD(UT).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	67	139
PROJECT FILE NO.	607309		

UTILITY PLAN 3

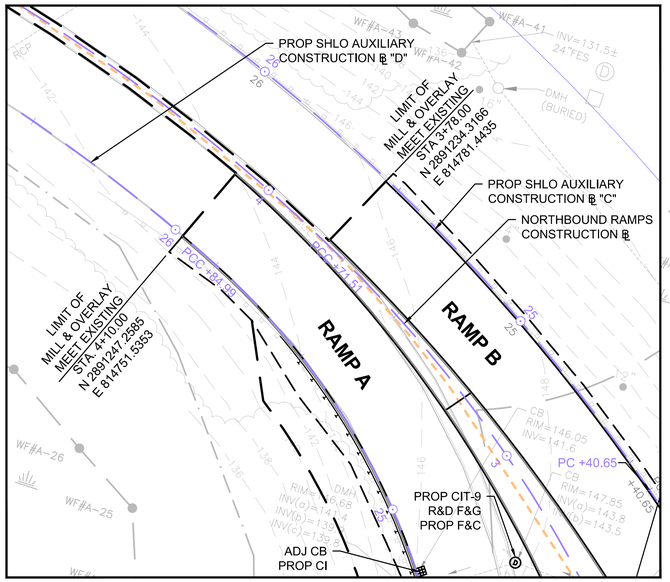


607309_HD(UT).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	68	139
PROJECT FILE NO.	607309		

UTILITY PLAN 4

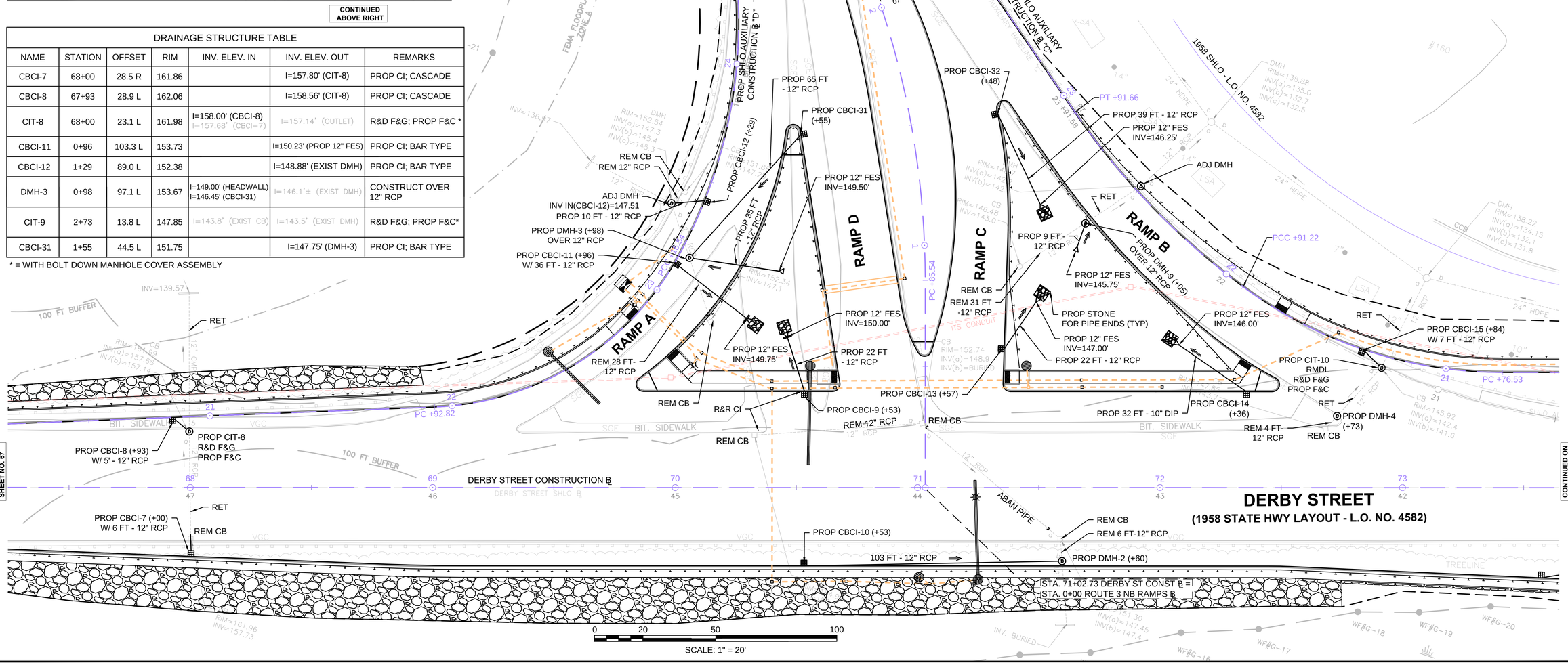


DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-7	68+00	28.5 R	161.86		I=157.80' (CIT-8)	PROP CI; CASCADE
CBCI-8	67+93	28.9 L	162.06		I=158.56' (CIT-8)	PROP CI; CASCADE
CIT-8	68+00	23.1 L	161.98	I=158.00' (CBCI-8) I=157.68' (CBCI-7)	I=157.14' (OUTLET)	R&D F&G; PROP F&C *
CBCI-11	0+96	103.3 L	153.73		I=150.23' (PROP 12" FES)	PROP CI; BAR TYPE
CBCI-12	1+29	89.0 L	152.38		I=148.88' (EXIST DMH)	PROP CI; BAR TYPE
DMH-3	0+98	97.1 L	153.67	I=149.00' (HEADWALL) I=146.45' (CBCI-31)	I=146.1'± (EXIST DMH)	CONSTRUCT OVER 12" RCP
CIT-9	2+73	13.8 L	147.85	I=143.8' (EXIST CB)	I=143.5' (EXIST DMH)	R&D F&G; PROP F&C*
CBCI-31	1+55	44.5 L	151.75		I=147.75' (DMH-3)	PROP CI; BAR TYPE

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-9	70+53	39.7 L	153.98		I=150.48' (PROP 12" FES)	R&R CI; CASCADE
CBCI-10	70+53	32.3 R	154.99		I=151.49' (DMH-2)	PROP CI; CASCADE
CBCI-13	0+57	32.6 R	151.23		I=147.73' (PROP 12" FES)	PROP CI; BAR TYPE
DMH-2	71+60	30.4 R	151.26	I=145.77' (CBCI-10)	I=144.87' (OUTLET)	PROP F&C *;CONSTRUCT OVER EXIST 12" RCP
CBCI-14	72+36	39.6 L	148.72		I=146.22' (PROP 12" FES)	PROP CI; CASCADE
CBCI-15	72+84	57.1 L	146.52		I=142.52' (CIT-10)	PROP CI; BAR TYPE
CIT-10	72+91	49.4 L	146.55	I=142.40' (DMH-4) I=142.00' (CBCI-15)	I=141.6' (EXIST DMH)	RMDL; R&D F&G; PROP F&C*
DMH-4	72+73	29.6 L	147.75		I=143.3'± (CIT-10)	PROP F&C *; CONSTRUCT OVER 12" RCP
DMH-9	1+04	64.3 R	149.35	I=145.35' (HEADWALL)	I=143.7'± (EXIST DMH)	PROP F&C; CONSTRUCT OVER 12" RCP
CBCI-32	1+48	35.9 R	149.97		I=146.47' (PROP 12" FES)	PROP CI; BAR TYPE

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY



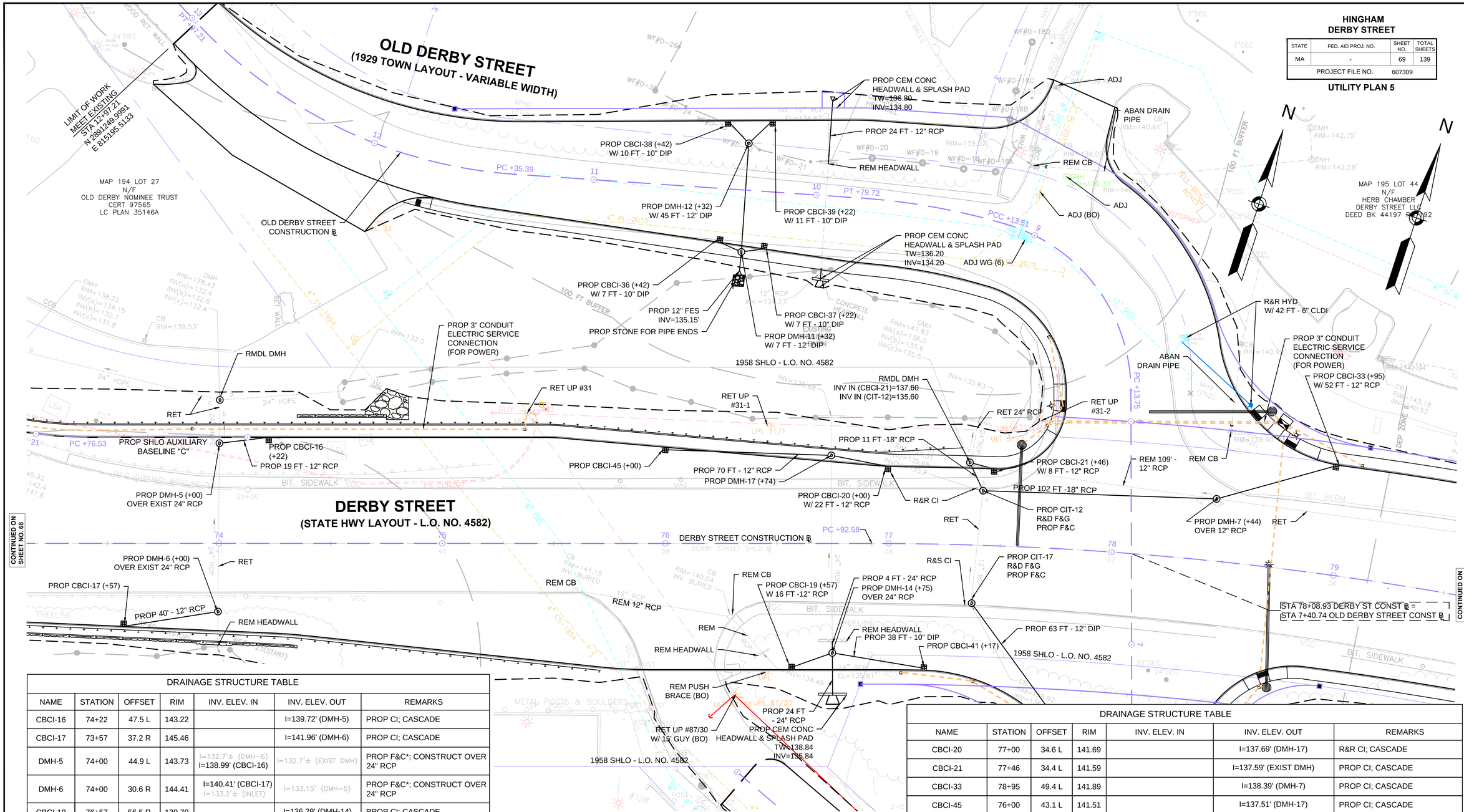
607309_HD(UT).DWG 26-Jan-2017

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	69	139
PROJECT FILE NO.	607309		

UTILITY PLAN 5

607309_HD(UT).DWG 26-Jan-2017



NOTE:
- FRAME & GRATES/COVERS ON OLD DERBY STREET SHALL BE MUNICIPAL STANDARD

DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-16	74+22	47.5 L	143.22		I=139.72' (DMH-5)	PROP CI; CASCADE
CBCI-17	73+57	37.2 R	145.46		I=141.96' (DMH-6)	PROP CI; CASCADE
DMH-5	74+00	44.9 L	143.73	I=132.7'± (DMH-6) I=138.99' (CBCI-16)	I=132.7'± (EXIST DMH)	PROP F&C*; CONSTRUCT OVER 24" RCP
DMH-6	74+00	30.6 R	144.41	I=140.41' (CBCI-17) I=133.2'± (INLET)	I=133.15' (DMH-5)	PROP F&C*; CONSTRUCT OVER 24" RCP
CBCI-19	76+57	56.5 R	139.79		I=136.29' (DMH-14)	PROP CI; CASCADE
DMH-14	76+75	49.0 R	139.81	I=135.82' (INLET) I=135.92' (CBCI-19) I=136.31' (CBCI-41)	I=135.82'± (DMH-17)	PROP F&C*; CONSTRUCT OVER 24" RCP
CBCI-36	10+42	24.1 L	137.83		I=135.83' (DMH-11)	PROP CI; CASCADE
CBCI-37	10+22	25.7 L	137.84		I=135.84' (DMH-11)	PROP CI; CASCADE
CBCI-38	10+42	30.5 R	137.71		I=135.71' (DMH-12)	PROP CI; CASCADE
CBCI-39	10+22	31.9 R	137.71		I=135.71' (DMH-12)	PROP CI; CASCADE
CBCI-41	77+17	56.6 R	139.09		I=137.09' (DMH-14)	PROP CI; CASCADE
CIT-17	77+38	26.1 R	140.35	I=136.20' (DMH-13)	I=136.1' (CIT-12)	R&S F&G; PROP F&C*

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-20	77+00	34.6 L	141.69		I=137.69' (DMH-17)	R&R CI; CASCADE
CBCI-21	77+46	34.4 L	141.59		I=137.59' (EXIST DMH)	PROP CI; CASCADE
CBCI-33	78+95	49.4 L	141.89		I=138.39' (DMH-7)	PROP CI; CASCADE
CBCI-45	76+00	43.1 L	141.51		I=137.51' (DMH-17)	PROP CI; CASCADE
CIT-12	77+42	24.5 L	141.42	I=136.0 (CIT-17) I=135.90' (DMH-7)	I=135.8' (EXIST DMH)	R&D F&G; PROP F&C*
DMH-7	78+44	27.8 L	142.12	I=136.4'± (EXIST DMH) I=137.90' (CBCI-33)	I=136.40' (CIT-12)	PROP F&C*; CONSTRUCT OVER 12" RCP *
DMH-11	10+32	27.8 L	138.36	I=135.40' (CBCI-36) I=135.40' (CBCI-37) I=135.28' (DMH-12)	I=135.18' (FES)	PROP F&C
DMH-12	10+32	21.0 R	137.90	I=135.64' (CBCI-38) I=135.63' (CBCI-39)	I=135.53' (DMH-11)	PROP F&C
DMH-17	76+74	39.5 L	142.21	I=135.75'± (DMH-14) I=137.40' (CBCI-20) I=136.01' (CBCI-45)	I=135.75'± (EXIST HW)	PROP F&C*; CONSTRUCT OVER 24" RCP

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-18	79+66	41.7 R	140.90		I=137.40' (CIT-16)	PROP CI; CASCADE
CBCI-25	82+60	35.8 L	142.53		I=138.53' (EXIST DMH)	PROP CI; CASCADE
CBCI-44	81+50	37.6 L	142.23		I=138.23' (DMH-15)	PROP CI; CASCADE
DMH-16	81+50	27.0 L	142.44	I=137.9' (EXIST DMH) I=138.00' (CBCI-44)	I=137.9' (EXIST DMH)	PROP F&C*; CONSTRUCT OVER 12" RCP
CIT-16	79+99	29.4 R	141.52	I=136.56' (CBCI-18)	I=137.7' (EXIST DMH)	R&D F&G; PROP F&C*

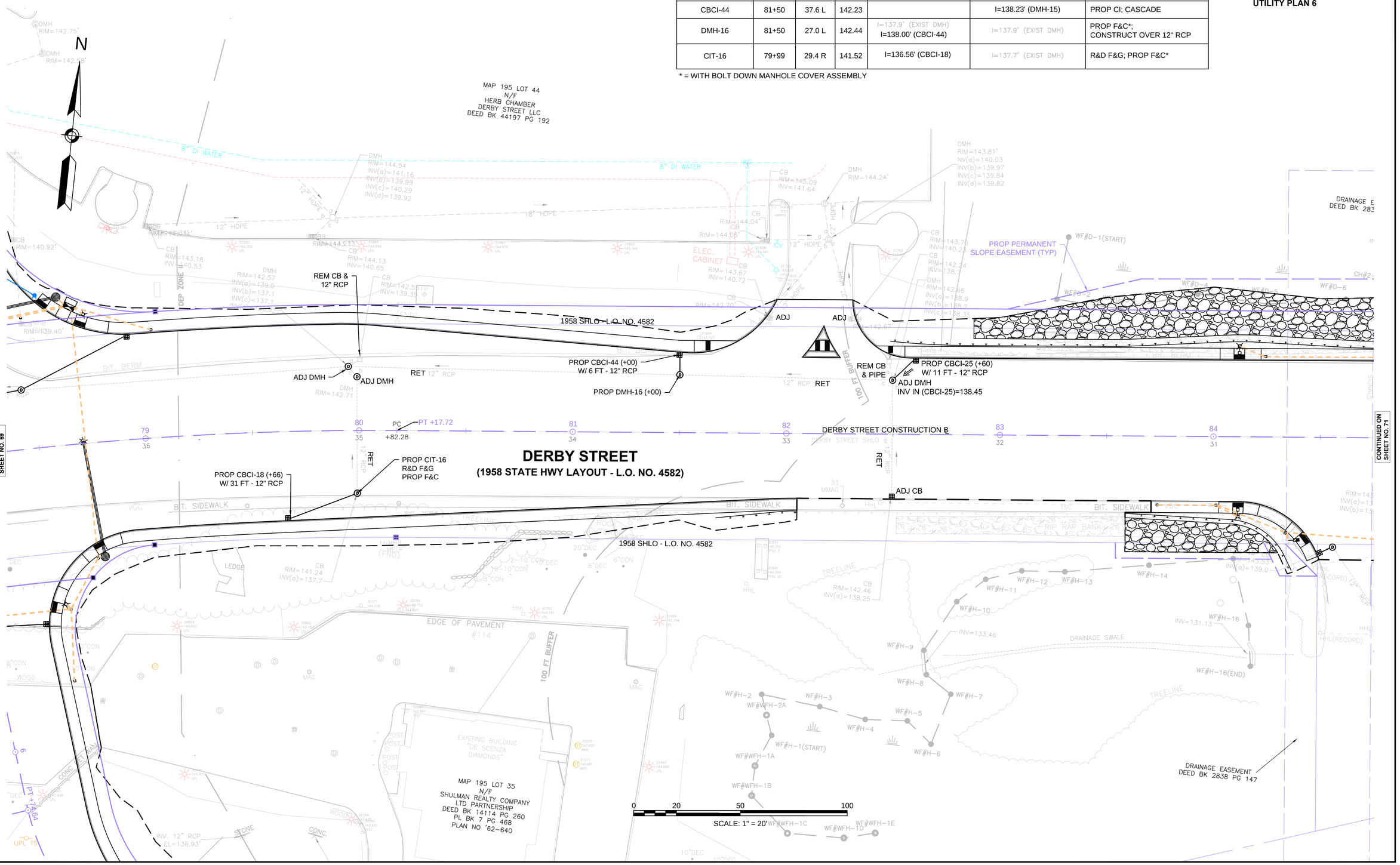
* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	70	139
PROJECT FILE NO.	607309		

UTILITY PLAN 6

607309_HD(UT).DWG 26-Jan-2017



HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	71	139
PROJECT FILE NO.	607309		

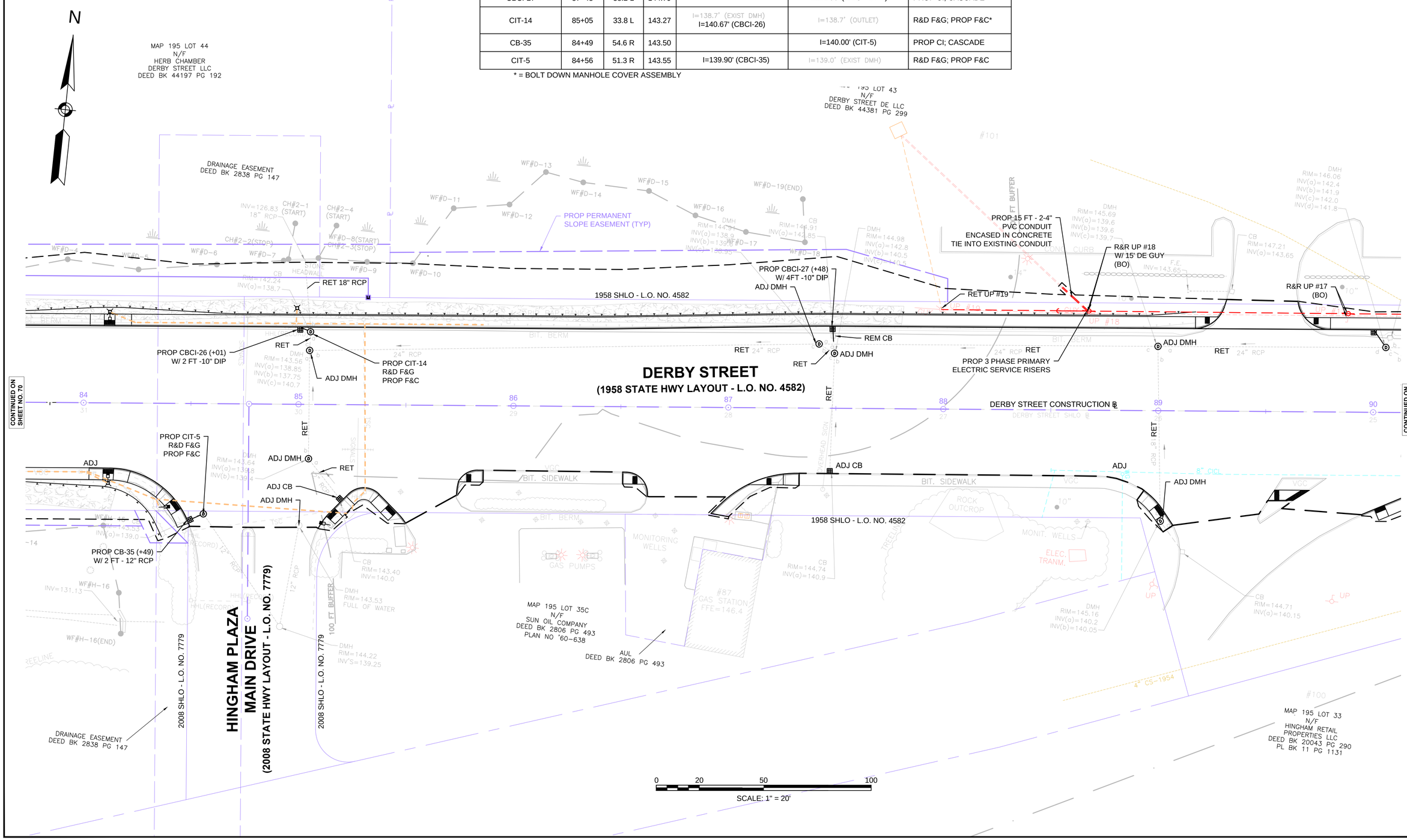
UTILITY PLAN 7

607309_HD(UT).DWG 26-Jan-2017

DRAINAGE STRUCTURE TABLE

NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-26	85+01	36.0 L	143.18		I=140.68' (CIT-14)	PROP CI; CASCADE
CBCI-27	87+48	38.2 L	144.79		I=142.90' (EXIST DMH)	PROP CI; CASCADE
CIT-14	85+05	33.8 L	143.27	I=138.7' (EXIST DMH) I=140.67' (CBCI-26)	I=138.7' (OUTLET)	R&D F&G; PROP F&C*
CB-35	84+49	54.6 R	143.50		I=140.00' (CIT-5)	PROP CI; CASCADE
CIT-5	84+56	51.3 R	143.55	I=139.90' (CBCI-35)	I=139.0' (EXIST DMH)	R&D F&G; PROP F&C

* = BOLT DOWN MANHOLE COVER ASSEMBLY



HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	72	139
PROJECT FILE NO.	607309		

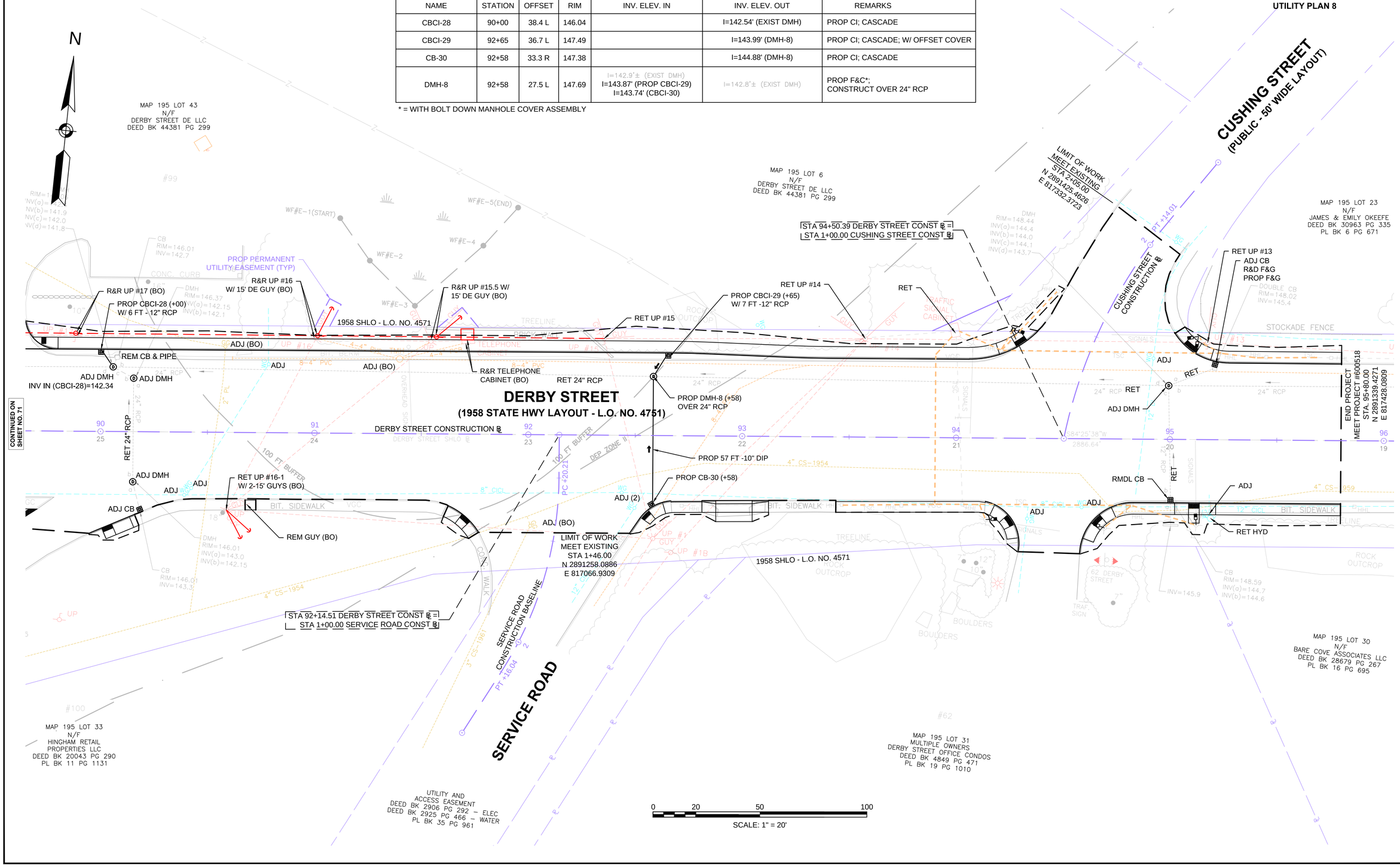
UTILITY PLAN 8

26-Jan-2017

607309_HD(UT).DWG

DRAINAGE STRUCTURE TABLE						
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-28	90+00	38.4 L	146.04		I=142.54' (EXIST DMH)	PROP CI; CASCADE
CBCI-29	92+65	36.7 L	147.49		I=143.99' (DMH-8)	PROP CI; CASCADE; W/ OFFSET COVER
CB-30	92+58	33.3 R	147.38		I=144.88' (DMH-8)	PROP CI; CASCADE
DMH-8	92+58	27.5 L	147.69	I=142.9'± (EXIST DMH) I=143.87' (PROP CBCI-29) I=143.74' (CBCI-30)	I=142.8'± (EXIST DMH)	PROP F&C*; CONSTRUCT OVER 24" RCP

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY



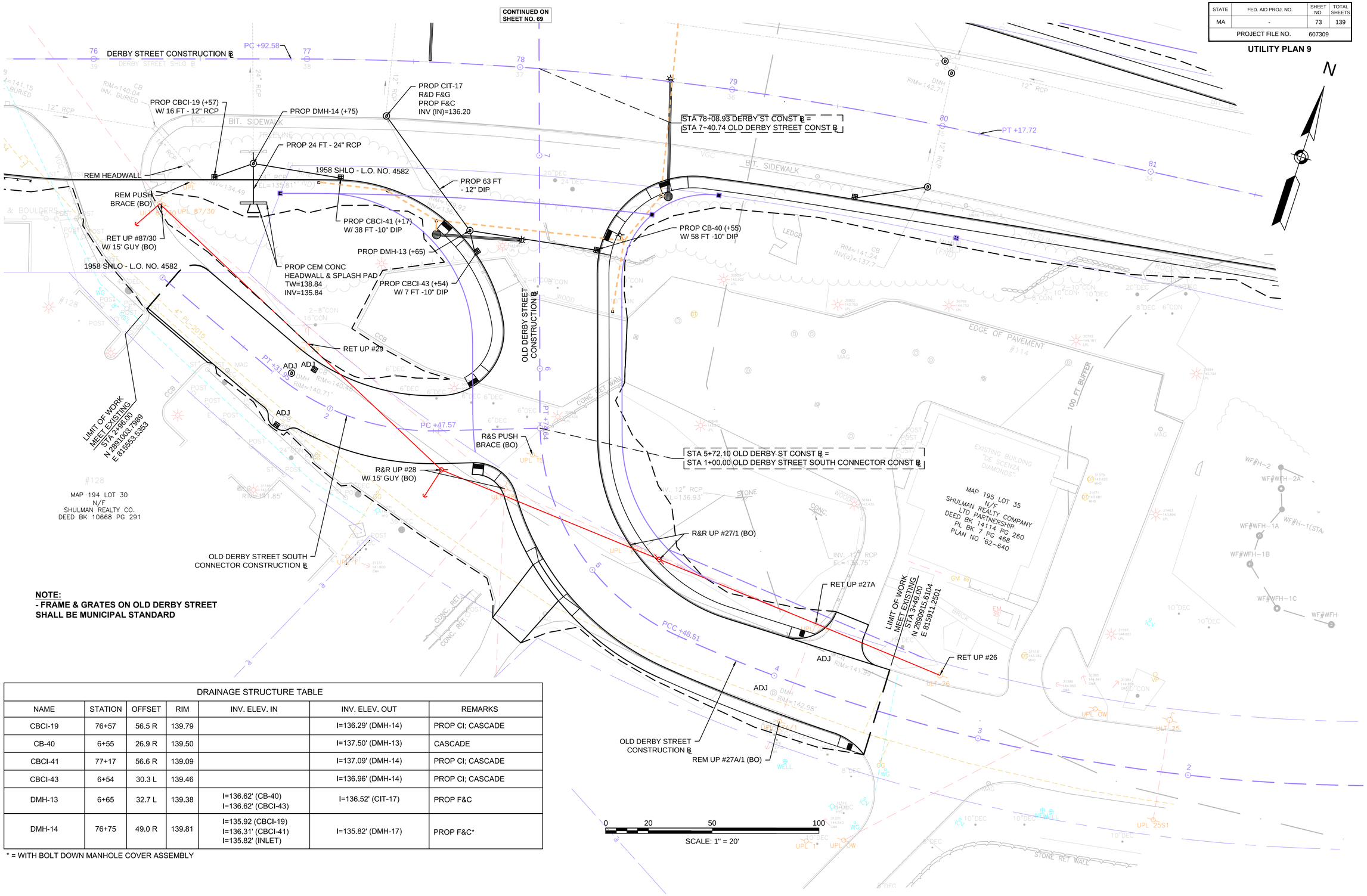
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	73	139
PROJECT FILE NO.	607309		

UTILITY PLAN 9

26-Jan-2017

607309_HD(UT).DWG



NOTE:
- FRAME & GRATES ON OLD DERBY STREET SHALL BE MUNICIPAL STANDARD

DRAINAGE STRUCTURE TABLE

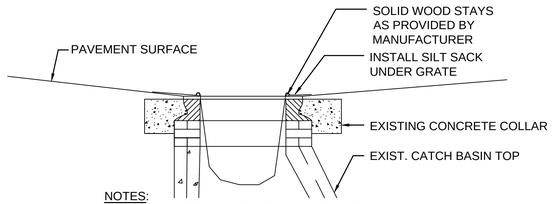
NAME	STATION	OFFSET	RIM	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
CBCI-19	76+57	56.5 R	139.79		I=136.29' (DMH-14)	PROP CI; CASCADE
CB-40	6+55	26.9 R	139.50		I=137.50' (DMH-13)	CASCADE
CBCI-41	77+17	56.6 R	139.09		I=137.09' (DMH-14)	PROP CI; CASCADE
CBCI-43	6+54	30.3 L	139.46		I=136.96' (DMH-14)	PROP CI; CASCADE
DMH-13	6+65	32.7 L	139.38	I=136.62' (CB-40) I=136.62' (CBCI-43)	I=136.52' (CIT-17)	PROP F&C
DMH-14	76+75	49.0 R	139.81	I=135.92 (CBCI-19) I=136.31' (CBCI-41) I=135.82' (INLET)	I=135.82' (DMH-17)	PROP F&C*

* = WITH BOLT DOWN MANHOLE COVER ASSEMBLY

HINGHAM
DERBY STREET

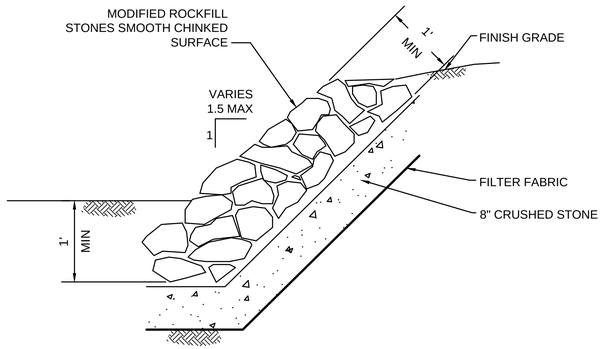
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	74	139
PROJECT FILE NO.	607309		

CONSTRUCTION DETAILS

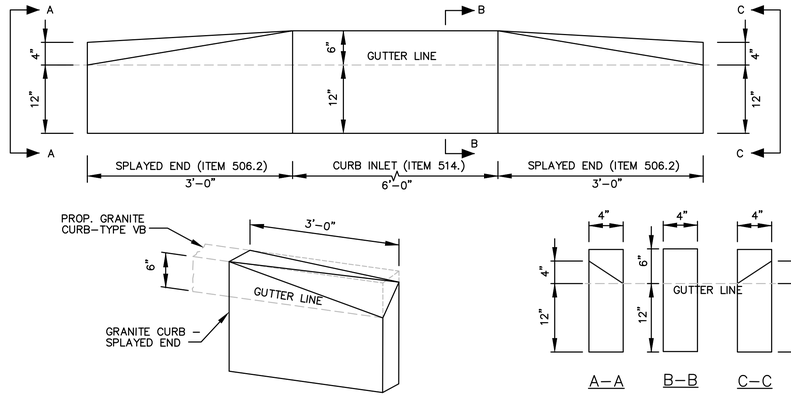


NOTES:
1. REMOVE ACCUMULATED SEDIMENTS AS REQUIRED TO MANTAIN DRAINAGE.
2. INSPECT FABRIC EVERY WEEK DURING CONSTRUCTION.

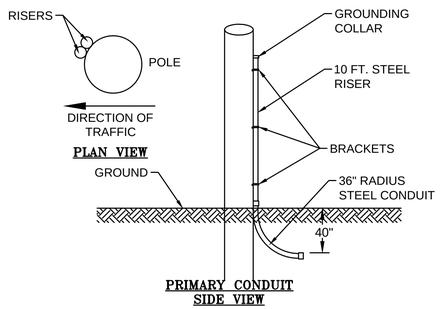
SILT SACK
NOT TO SCALE



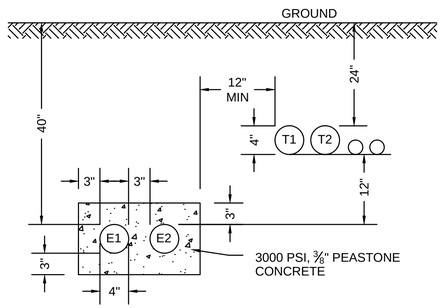
MODIFIED ROCKFILL SLOPE PROTECTION DETAIL
NOT TO SCALE



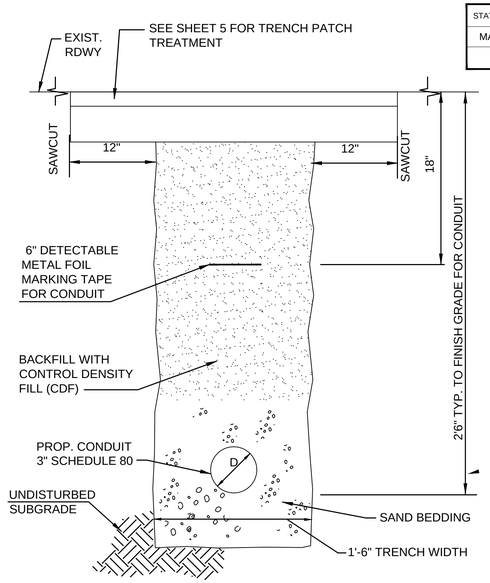
GRANITE CURB TYPE VB - SPLAYED END (ITEM 506.2) (TRANSITION FROM CURB INLET TO EDGING)
NOT TO SCALE



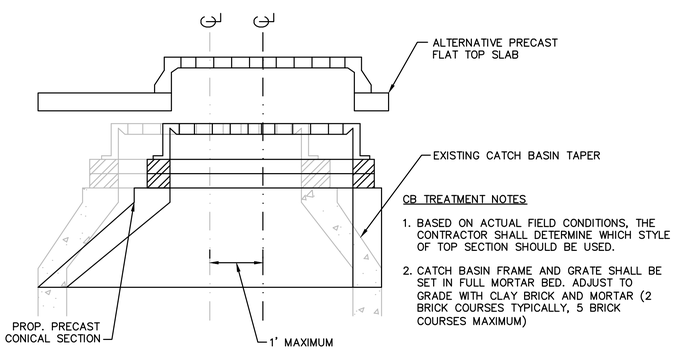
PRIMARY CONDUIT INSTALLATION ON RISER POLES
NOT TO SCALE



TYPICAL UTILITY DUCTBANK CROSS SECTION
NOT TO SCALE



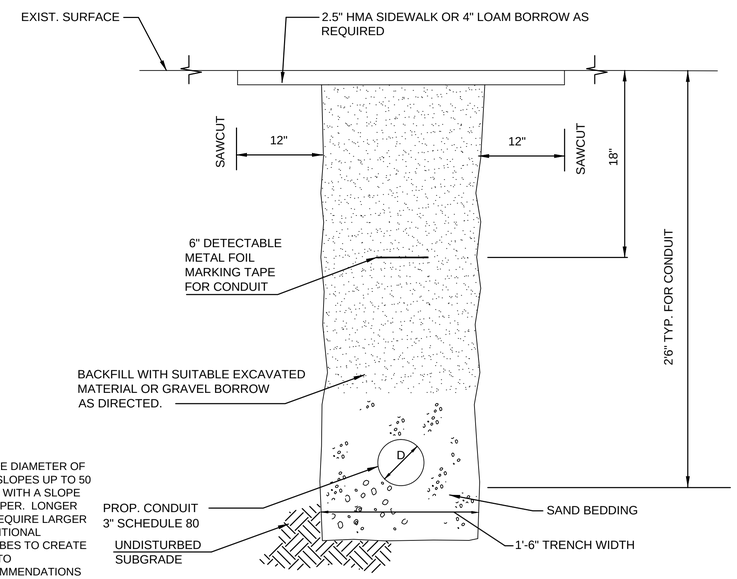
CONDUIT TRENCH PATCH DETAIL (IN ROADWAY)
NOT TO SCALE



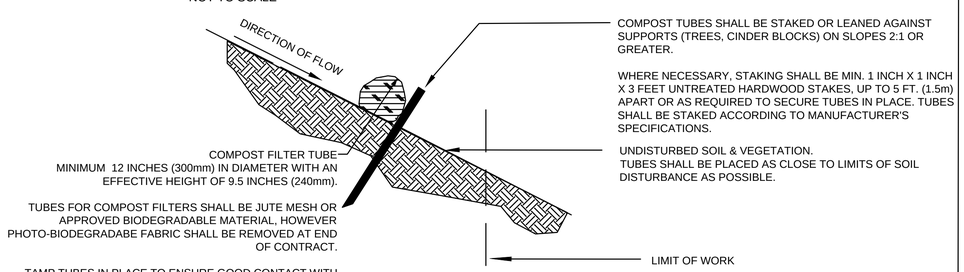
CB TREATMENT NOTES

1. BASED ON ACTUAL FIELD CONDITIONS, THE CONTRACTOR SHALL DETERMINE WHICH STYLE OF TOP SECTION SHOULD BE USED.
2. CATCH BASIN FRAME AND GRATE SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 BRICK COURSES MAXIMUM)

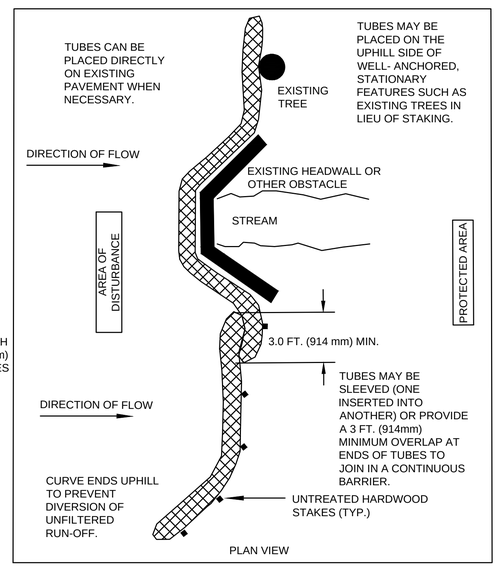
REMODELED CATCH BASIN TREATMENT
NOT TO SCALE



CONDUIT TRENCH PATCH DETAIL (OUTSIDE ROADWAY)
NOT TO SCALE



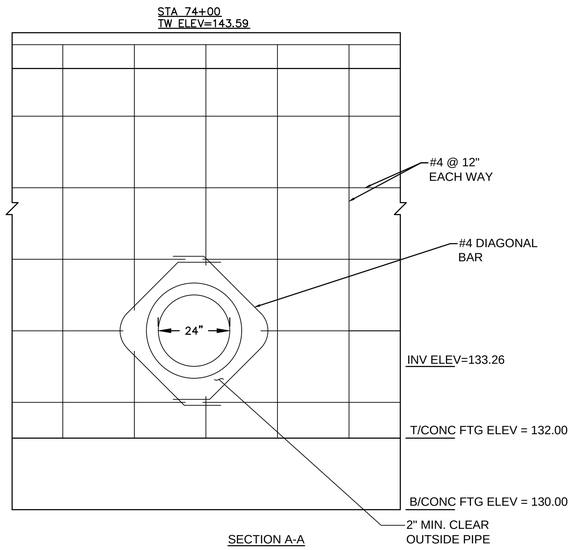
COMPOST FILTER TUBE
NOT TO SCALE



GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) 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. TUBE LOCATION MAY BE SHIFTED TO ADJUST TO LANDSCAPE FEATURES, BUT SHALL PROTECT UNDISTURBED AREA AND VEGETATION TO MAXIMUM EXTENT POSSIBLE.
4. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
5. ADDITIONAL TUBES SHALL BE USED AT THE DIRECTION OF THE ENGINEER.
6. ADDITIONAL STAKING SHALL BE USED AT THE DIRECTION OF THE ENGINEER.

607309_HD(DETAILS).DWG Plotted on 26-Jan-2017 5:08 PM

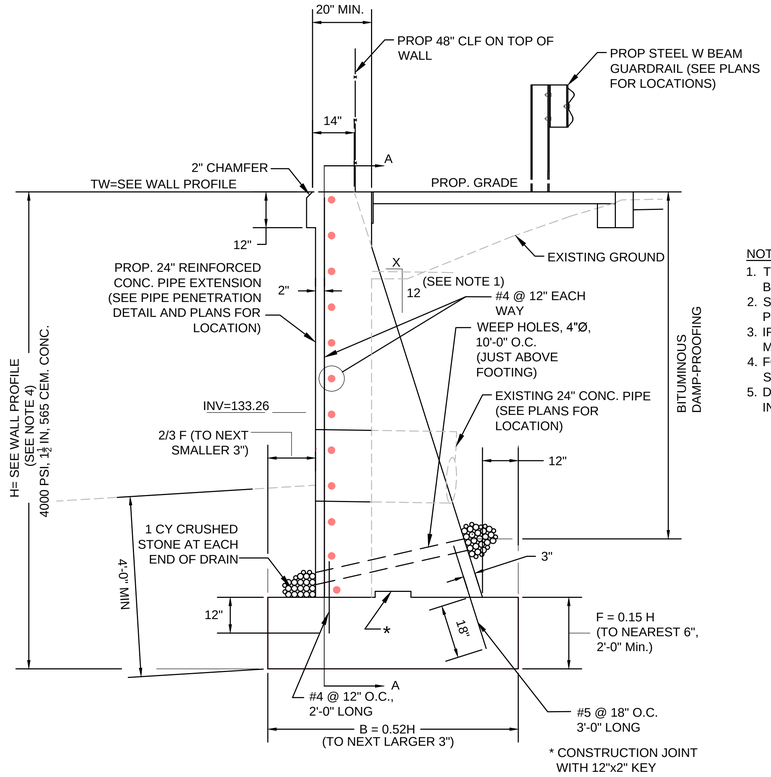
607309_HD(DETAILS).DWG Plotted on 26-Jan-2017 5:08 PM



SECTION A-A

DERBY STREET STA 73+99 RT CULVERT PIPE PENETRATION THROUGH CEMENT CONCRETE RETAINING WALL

NOT TO SCALE

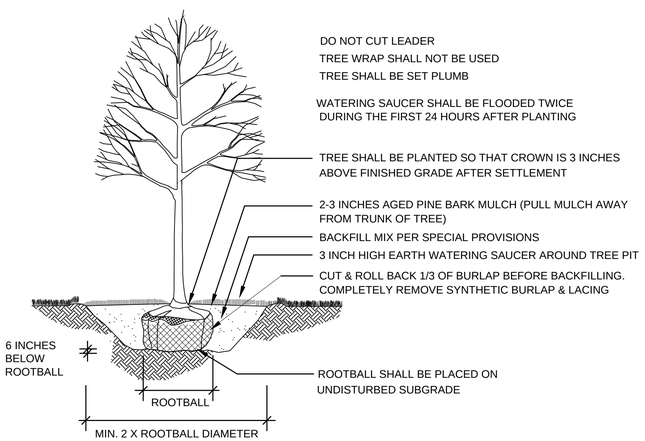


CEMENT CONCRETE HEADWALL WITH CHAINLINK FENCE

NOT TO SCALE

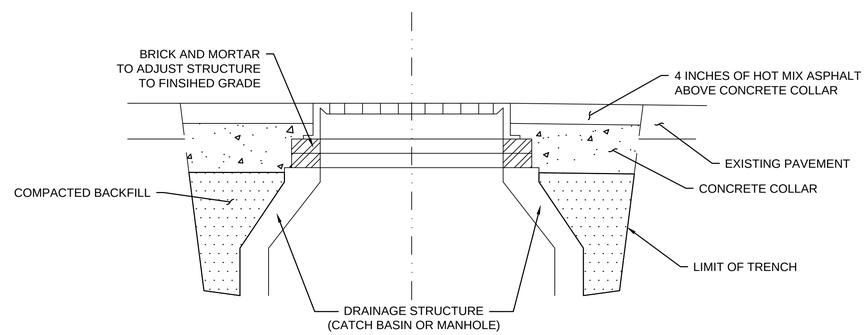
NOTES:

1. THE BACK BATTER SHALL BE CONSTANT AND SHALL BE DETERMINED BY THE HIGHEST SECTION CONTAINED BETWEEN EXPANSION JOINTS.
2. SHOW MAXIMUM FACTORED TOE PRESSURE OR PILE LOAD, IF ON PILES.
3. IF PILES ARE REQUIRED, SEE SECTION 3.6 OF THE MASSDOT BRIDGE MANUAL.
4. FOOTING TO BE OMITTED WHEN FOUNDED ON LEDGE. FOR TYPICAL SECTION SEE MASSDOT BRIDGE MANUAL DWG. NO. 3.6.4.
5. DESIGN BASE WIDTH INCLUDING ANY LIVE LOAD SURCHARGE AND INCLUDE THE EFFECTS OF SLOPING BACKFILLS WHERE APPLICABLE.



DECIDUOUS TREE PLANTING

NOT TO SCALE



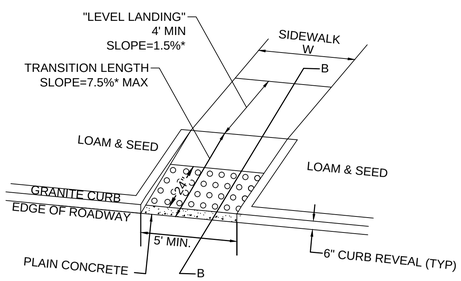
CONCRETE COLLAR AROUND DRAINAGE STRUCTURES

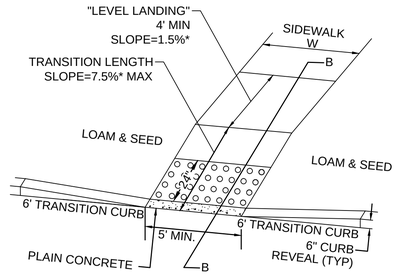
NOT TO SCALE

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	76	139
PROJECT FILE NO.	607309		

WHEELCHAIR RAMP/ DRIVEWAY DETAILS



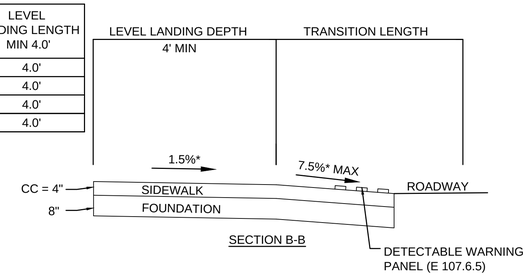


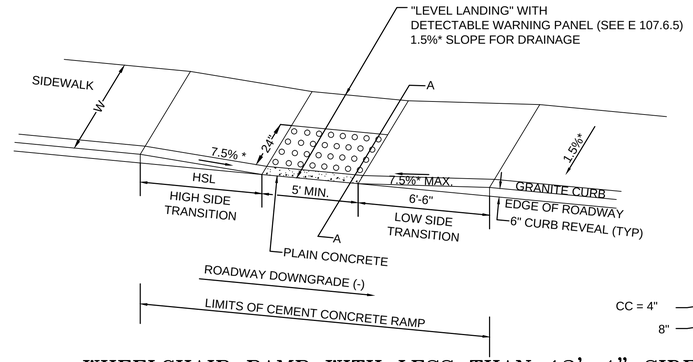
WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL WITH LANDSCAPED SIDES

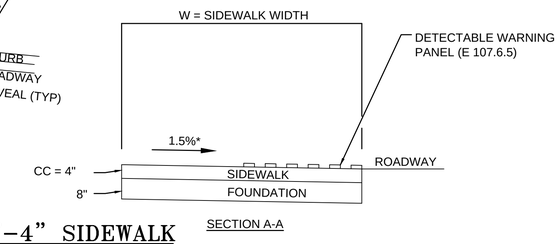
REFER TO MASSDOT STD. DTL. E 107.6.9

NOT TO SCALE

WCR #	ALIGNMENT	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP Min. 5.0'	TRANSITION LENGTH	LEVEL LANDING LENGTH MIN 4.0'
		STATION	OFFSET				
2	NB RAMPS	0+55.69	105.05' LT	5.0'	5.0'	9.0'	4.0'
3	NB RAMPS	0+45.62	35.62' LT	5.0'	5.0'	9.0'	4.0'
4	NB RAMPS	0+45.63	32.20' RT	5.0'	5.0'	6.5'	4.0'
5	NB RAMPS	0+52.10	132.66' RT	5.0'	5.0'	2.5'	4.0'







WHEELCHAIR RAMP WITH LESS THAN 12'-4" SIDEWALK

REFER TO MASSDOT STD. DTL. E 107.2.1

NOT TO SCALE

WCR #	ALIGNMENT	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP Min. 5.0'	ROADWAY GUTTER SLOPE (%)	TRANSITION LENGTH	
		STATION	OFFSET				LEFT	RIGHT
1	NB RAMPS	0+70.72	119.86' LT	5.5'	5.0'	-1.95%	9'-0"	-
6	NB RAMPS	0+72.87	146.23' RT	5.5'	5.0'	1.64%	-	9'-0"
7	DERBY ST	78+73.48	54.53' LT	5.5'	5.0'	2.17%	3'-3"**	11'-0"
8	OLD DERBY ST	8+06.83	29.06' LT	5.5'	5.0'	-2.04%	11'-0"	6'-6"
9	OLD DERBY ST	8+01.82	54.87' RT	5.5'	5.0'	2.24%	-	5'6"**
10	DERBY ST	84+11.95	35.90' LT	5.5'	5.0'	0.54%	6'-6"	7'-8"
11	DERBY ST	84+11.88	30.37' RT	5.5'	5.0'	-0.49%	7'-8"	6'-6"
12	DERBY ST	84+44.22	46.66' RT	5.5'	5.0'	-0.33%	7'-8"	6'-6"
13	DERBY ST	85+15.28	50.00' RT	5.5'	5.0'	-0.95%	7'-8"	-
14	DERBY ST	85+44.27	48.12' RT	5.5'	5.0'	-1.15%	-	6'-6"
18	DERBY ST	89+01.96	45.49' RT	5.5'	5.0'	1.84%	6'-6"	9'-0"
20	DERBY ST	90+03.05	44.24' RT	5.5'	5.0'	-1.72%	9'-0"	-
23	DERBY ST	91+71.24	39.08' RT	5.5'	5.0'	0.66%	6'-6"	7'-8"
24	DERBY ST	92+54.27	36.48' RT	5.5'	5.0'	-0.30%	7'-8"	-
25	DERBY ST	94+26.18	37.78' RT	5.5'	5.0'	0.79%	6'-6"	7'-8"
26	DERBY ST	94+64.07	38.07' RT	5.5'	5.0'	0.51%	6'-6"	7'-8"
27	DERBY ST	95+12.06	28.68' RT	5.5'	5.0'	-0.42%	7'-8"	6'-6"
28	DERBY ST	95+08.40	42.52' LT	5.5'	7.0'	0.68%	6'-6"	7'-8"
29	DERBY ST	94+30.75	44.25' LT	5.5'	5.0'	-1.02%	9'-0"	-
33	OLD DERBY ST	6+68.24	42.48' LT	5.5'	5.0'	-0.69%	7'-6"	-
34	DERBY ST	78+73.29	46.58' RT	5.5'	5.0'	-1.90%	9'-0"	6'-6"
35	OLD DERBY ST	6+63.21	30.80' RT	5.5'	5.0'	-0.28%	7'-6"	6'-6"
36	OLD DERBY ST	5+92.40	30.43' LT	5.5'	5.0'	-1.04%	-	6'-6"
37	OLD DERBY ST	5+59.86	30.03' LT	5.5'	5.0'	-1.12%	9'-0"	-

NOTES:

HSL = HIGH SIDE TRANSITION LENGTH (SEE E 107.9.0)

W = SIDEWALK WIDTH

CC = CEMENT CONCRETE

* TOLERANCE FOR CONSTRUCTION ±0.5%

** TRANSITION TO 3" REVEAL

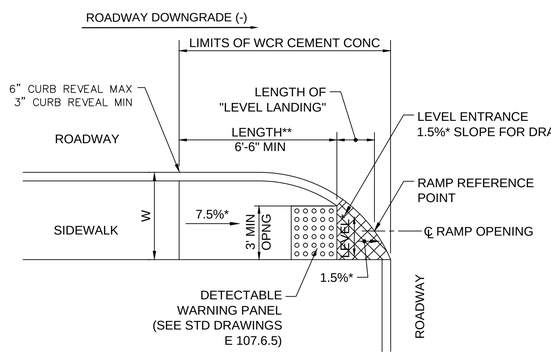
USABLE SIDEWALK WIDTH PER AAB = W-Wc

USABLE SIDEWALK WIDTH PER AAB IS NOT TO BE LESS THAN 4'0"

SEE E 107.6.5R FOR DETAILS OF DETECTABLE WARNING PANEL

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

TRANSITION LENGTH LEFT/RIGHT BASED ON VIEW FROM BASELINE



LEGEND:

LEVEL LANDING

DETECTABLE WARNING PANEL

NOTES:

- SEE CONSTRUCTION STANDARD E 107.6.0
- *CONSTRUCTION TOLERANCE ±0.5%
- **SEE CONSTRUCTION STANDARD E 107.9.0

WHEELCHAIR RAMPS WILL BE FITTED WITH DETECTABLE WARNING PANELS (SEE E 107.6.5)

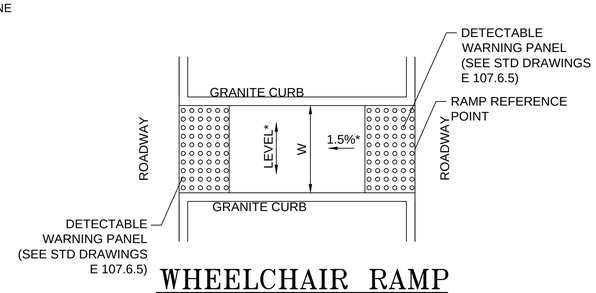
TRANSITION LENGTH LEFT/RIGHT BASED ON VIEW FROM BASELINE

WHEELCHAIR RAMP FOR ONE CONTINUOUS DIRECTION OF PEDESTRIAN TRAVEL

REFER TO MASSDOT STD. DTL. E 107.6.0

NOT TO SCALE

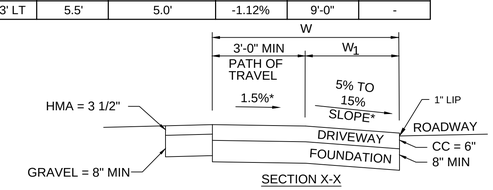
WCR #	ALIGNMENT	RAMP REFERENCE POINT		LENGTH OF LEVEL LANDING	WIDTH OF RAMP (MIN 3.00')	WIDTH OF SIDEWALK (W)	TRANSITION		
		STATION	OFFSET				ROADWAY GUTTER SLOPE (%)	LEFT OR RIGHT	LENGTH
15	DERBY ST	85+75.77	33.78' RT	2.68'	3.00'	5.5'	-0.68%	LEFT	7'-8"
16	DERBY ST	86+60.37	34.31' RT	2.57'	3.00'	5.5'	0.54%	RIGHT	6'-6"
17	DERBY ST	87+17.92	34.12' RT	5.18'	3.00'	5.5'	-0.77%	LEFT	7'-8"
21	DERBY ST	89+26.39	42.36' LT	2.84'	3.00'	5.5'	0.90%	LEFT	6'-6"
22	DERBY ST	89+69.67	42.08' LT	2.85'	3.00'	5.5'	-0.75%	RIGHT	7'-8"
30	DERBY ST	81+69.22	39.24' LT	5.57'	3.00'	5.5'	0.37%	LEFT	6'-6"
32	DERBY ST	82+44.27	39.32' LT	4.04'	3.00'	5.5'	-0.16%	RIGHT	7'-8"
38	OLD DERBY ST	3+91.66	22.25' RT	3.39'	3.00'	5.5'	1.16%	LEFT	6'-6"
39	OLD DERBY ST	3+52.62	19.18' LT	4.30'	3.00'	5.5'	1.60%	RIGHT	6'-6"
40	OLD DERBY ST	11+78.48	19.17' LT	4.08'	3.00'	5.5'	1.04%	LEFT	6'-6"



WHEELCHAIR RAMP AT REFUGE ISLAND

NOT TO SCALE

WCR #	WCR #	RAMP REFERENCE POINT		WIDTH OF SIDEWALK (W)	WIDTH OF RAMP Min. 5.0'
		STATION	OFFSET		
19	DERBY ST	89+66.82	38.95' RT	5.0'	5.0'
31	DERBY ST	82+21.25	41.18' LT	5.0'	5.0'



LEGEND:

HSL HIGH SIDE FRONT TRANSITION LENGTH (SEE E 107.9.0)

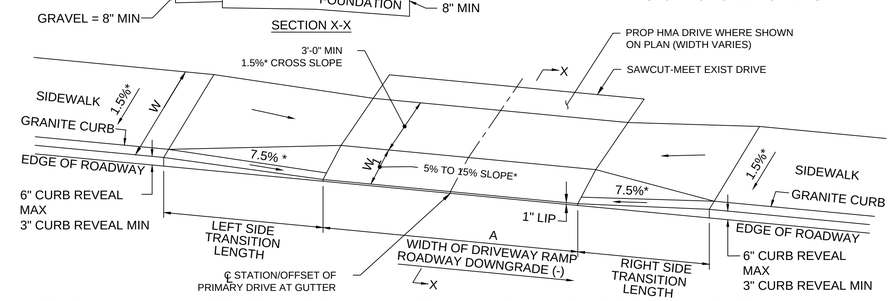
W SIDEWALK WIDTH

CC CEMENT CONCRETE

HMA HOT MIX ASPHALT

* TOLERANCE FOR CONSTRUCTION ±0.5%

** TRANSITION TO 3" CURB REVEAL AS SHOWN ON GRADING PLANS



SIDEWALK THROUGH DRIVEWAYS WITHOUT CURB RETURNS

REFER TO MASSDOT STD. DTL. E 107.7.0

NOT TO SCALE

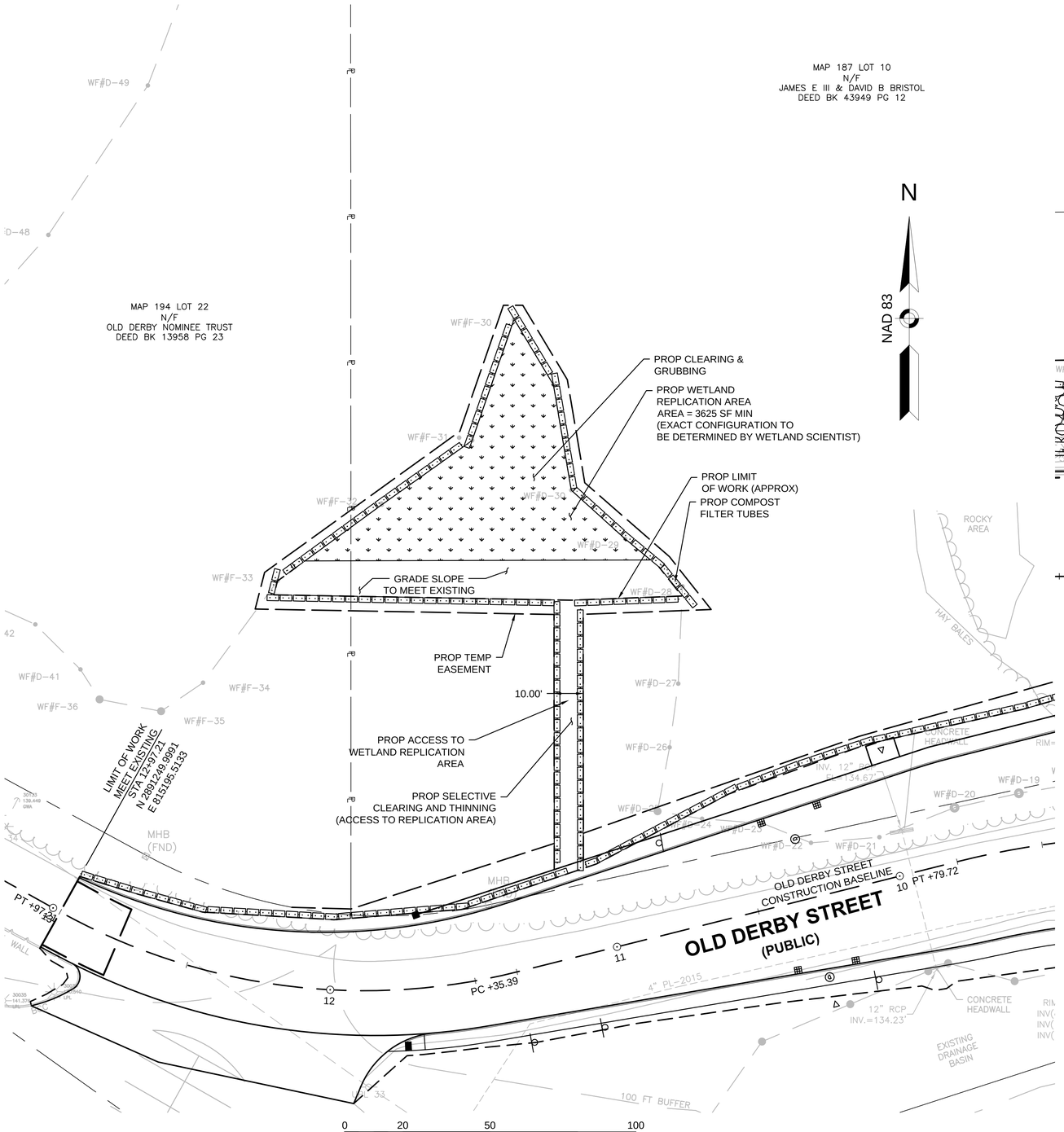
DWY #	ALIGNMENT	DWY REFERENCE POINT ℄		LENGTH OF PRIMARY RAMP (W_1)	DEPTH OF LEVEL LANDING (MIN 3.00')	WIDTH OF DRIVEWAY RAMP (A)	ROADWAY GUTTER	TRANSITION LENGTH	
		STATION	OFFSET					LEFT	RIGHT
1	DERBY ST	92+96.96	30.13' RT	1.50'	4.00'	17.00'	-0.39%	7'-8"	6'-6"
2	OLD DERBY ST	5+07.31	16.00' LT	2.50'	3.00'	20.00'	-1.04%	9'-0"	6'-6"

607309_HD(DETAILS).DWG Plotted on 26-Jan-2017 5:08 PM

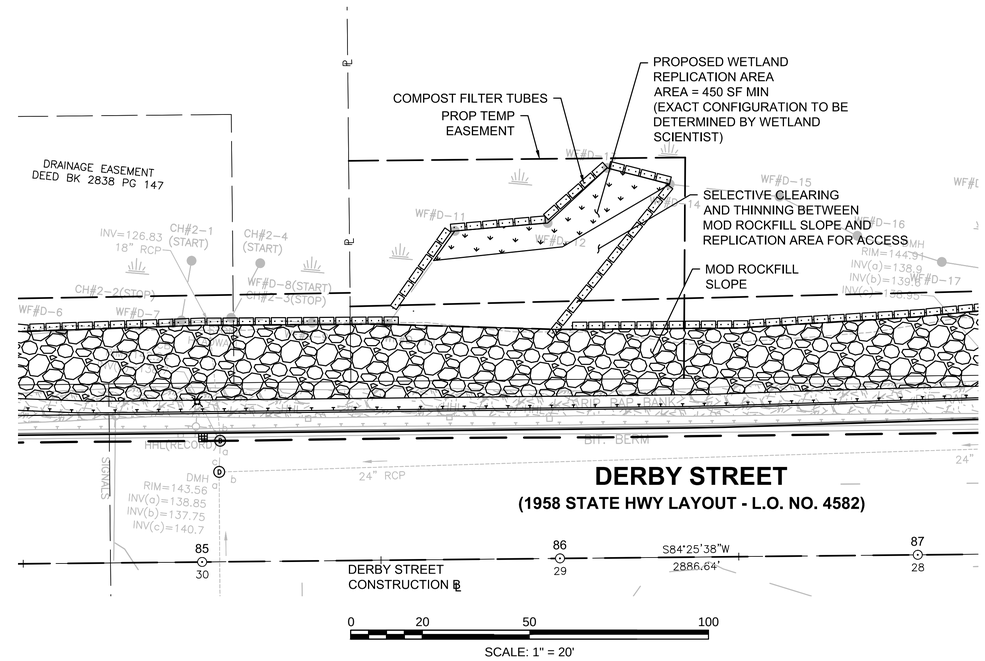
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	77	139
PROJECT FILE NO.	607309		

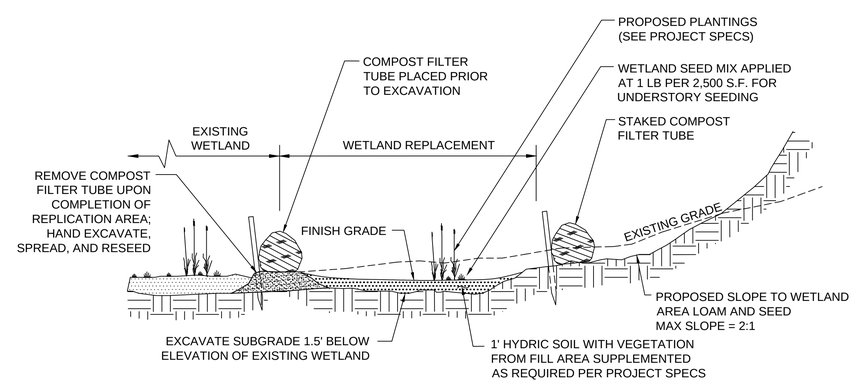
WETLAND REPLICATION PLAN



WETLAND REPLICATION AREA "A"
STA 11+25 RT OLD DERBY STREET



WETLAND REPLICATION AREA "B"
STA 86+00 LT DERBY STREET



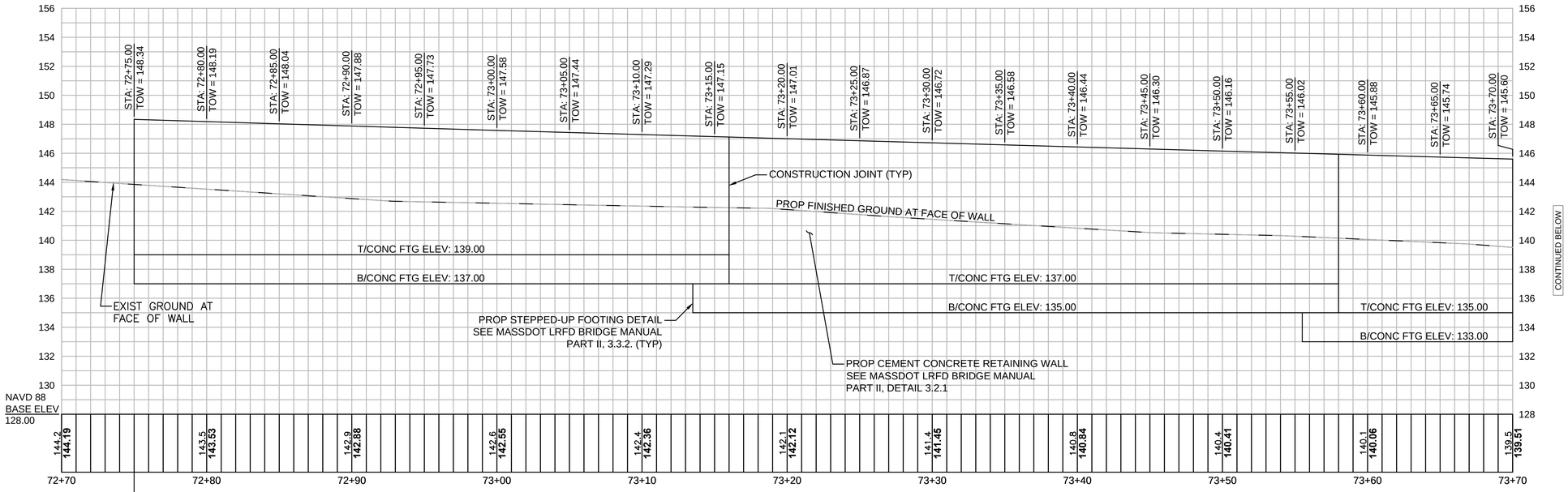
WETLAND RESTORATION DETAIL
NOT TO SCALE

607309_HD(WETLAND_REPLICATION).DWG Plotted on 26-Jan-2017 5:09 PM

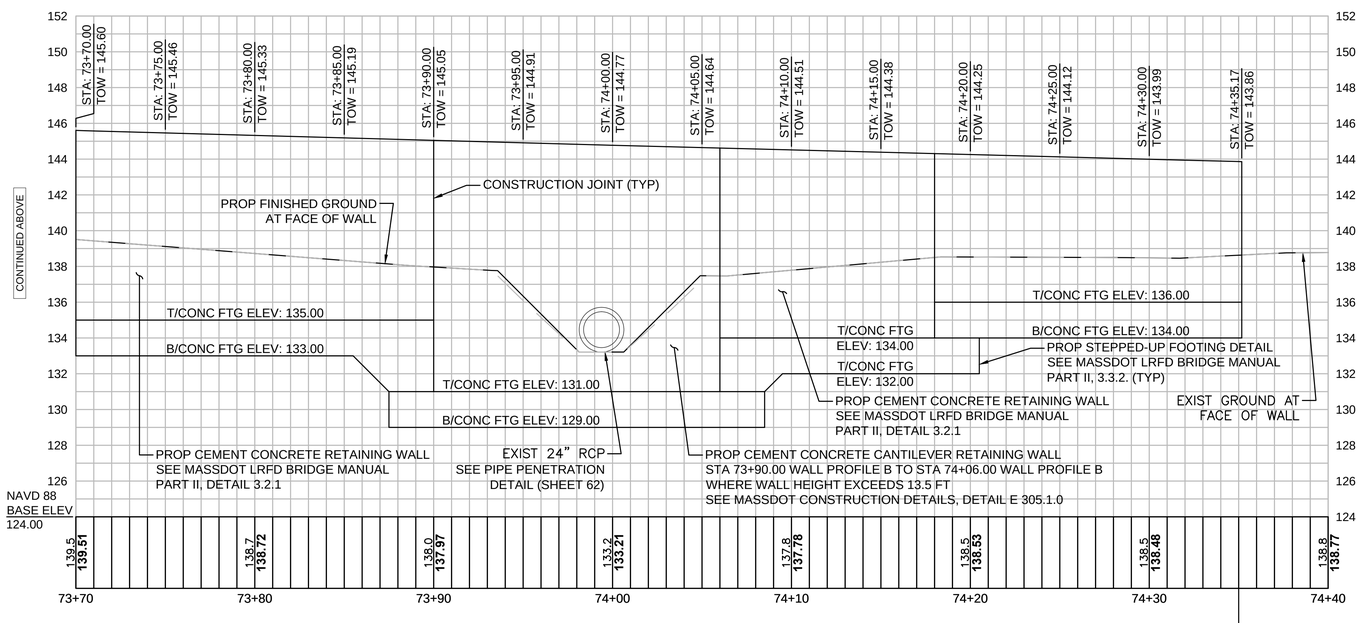
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	78	139
PROJECT FILE NO.	607309		

WALL PROFILES - 1



WALL PROFILE
STA 72+75.00 RT DERBY ST ℄ TO
STA 74+35.00 RT DERBY ST ℄
SCALE: 1" = 4'



WALL PROFILE
STA 72+75.00 RT DERBY ST ℄ TO
STA 74+35.00 RT DERBY ST ℄
SCALE: 1" = 4'

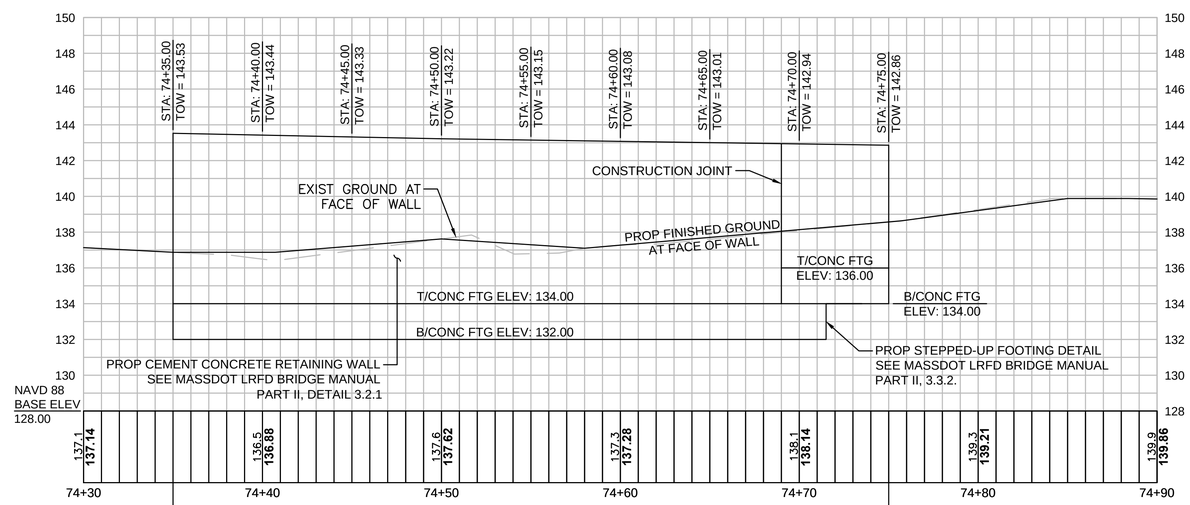
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

607309_HD(PROFILES-WALL).DWG Plotted on 26-Jan-2017 5:09 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	79	139
PROJECT FILE NO.	607309		

WALL PROFILES - 2



STA 74+35.00 WALL PROFILE ℄ = STA 74+35.00 DERBY ST ℄

WALL PROFILE
STA 74+35.00 LT DERBY ST ℄ TO
STA 74+75.00 LT DERBY ST ℄
SCALE: 1" = 4'

STA 74+75.00 WALL PROFILE ℄ = STA 74+75.00 DERBY ST ℄

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

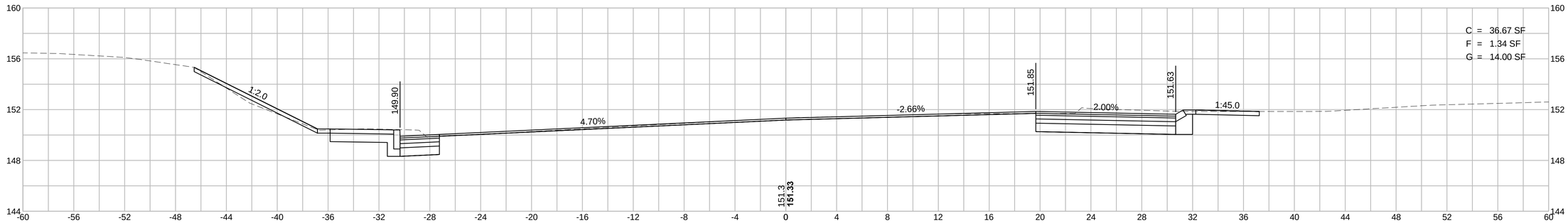
607309_HD(PROFILES-WALL).DWG Plotted on 26-Jan-2017 5:09 PM

HINGHAM
DERBY STREET

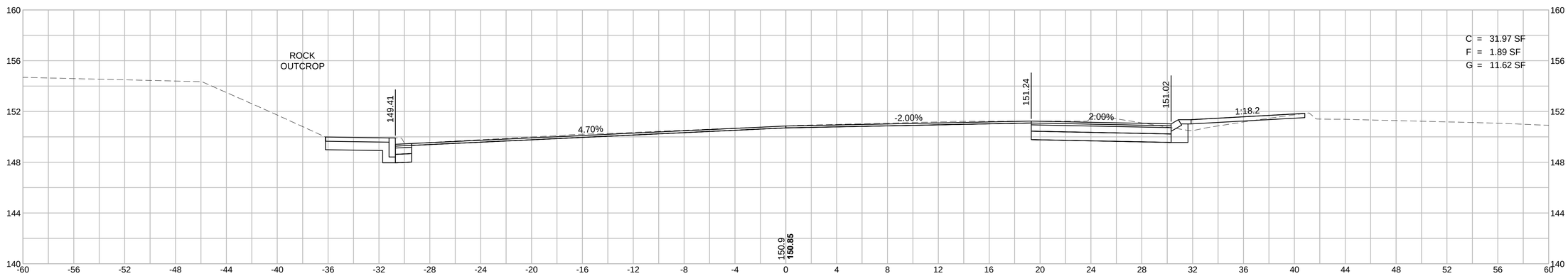
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	80	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 1

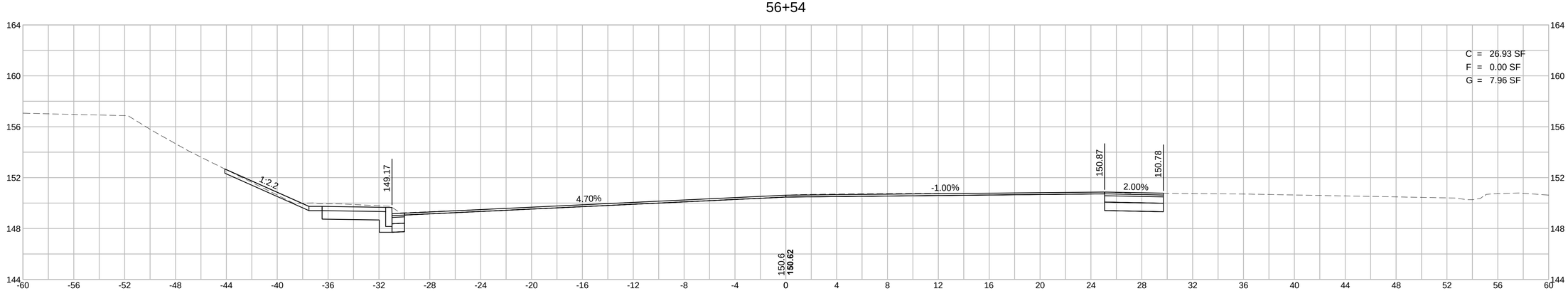
DERBY STREET CONST BASELINE
57+50



DERBY STREET CONST BASELINE
57+00



DERBY STREET CONST BASELINE
56+54



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

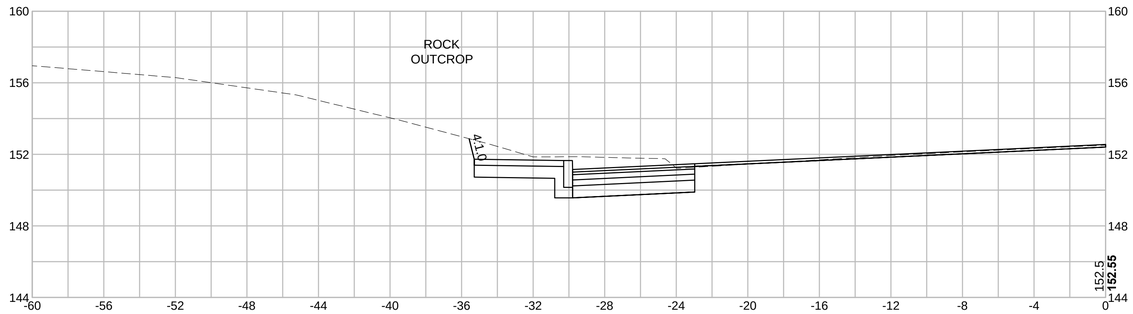
CORRIDOR.DWG Plotted on 26-Jan-2017 3:02 PM

HINGHAM
DERBY STREET

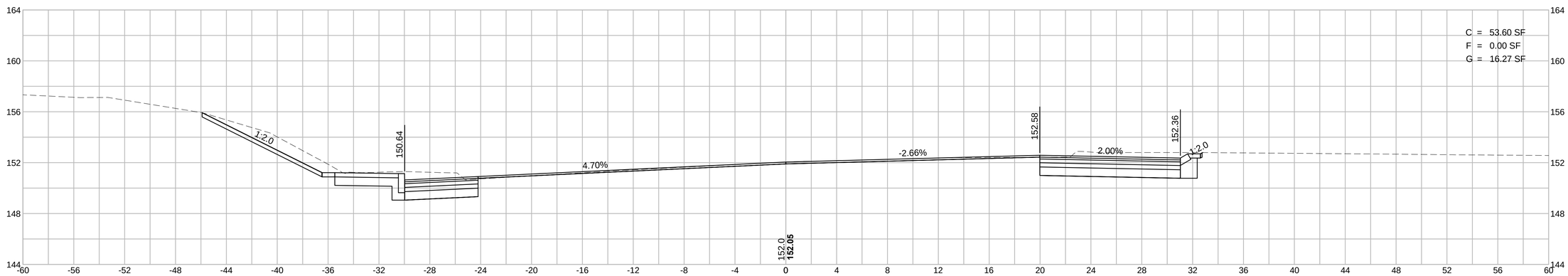
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	81	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 2

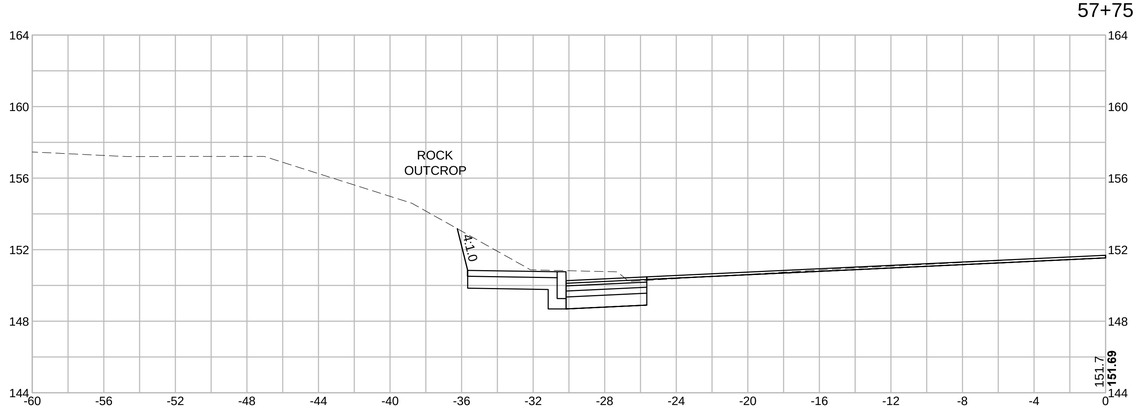
DERBY STREET CONST BASELINE
58+25



DERBY STREET CONST BASELINE
58+00



DERBY STREET CONST BASELINE
57+75



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

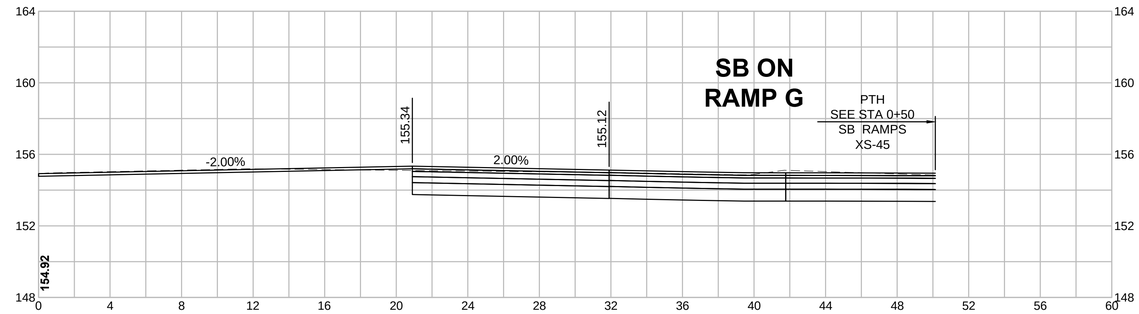
Plotted on 26-Jan-2017 3:02 PM
CORRIDOR.DWG

HINGHAM
DERBY STREET

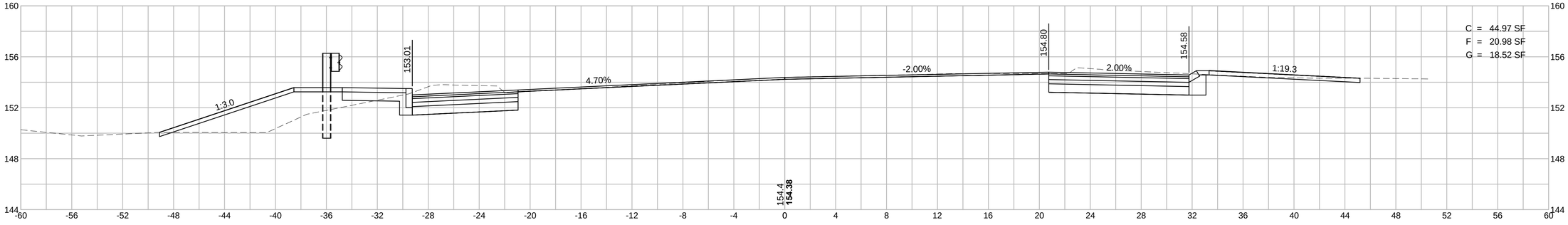
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	82	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 3

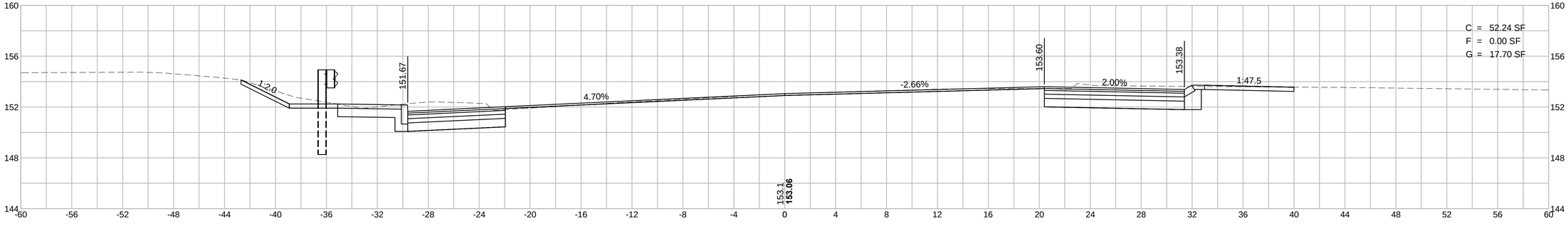
DERBY STREET CONST BASELINE
59+20



DERBY STREET CONST BASELINE
59+00



DERBY STREET CONST BASELINE
58+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

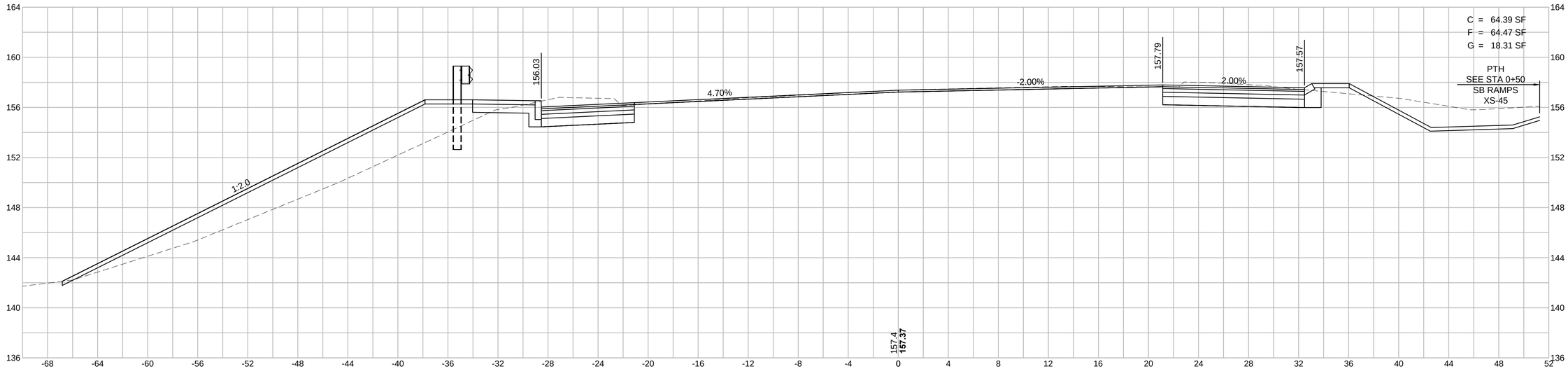
CORRIDOR.DWG Plotted on 26-Jan-2017 3:02 PM

HINGHAM
DERBY STREET

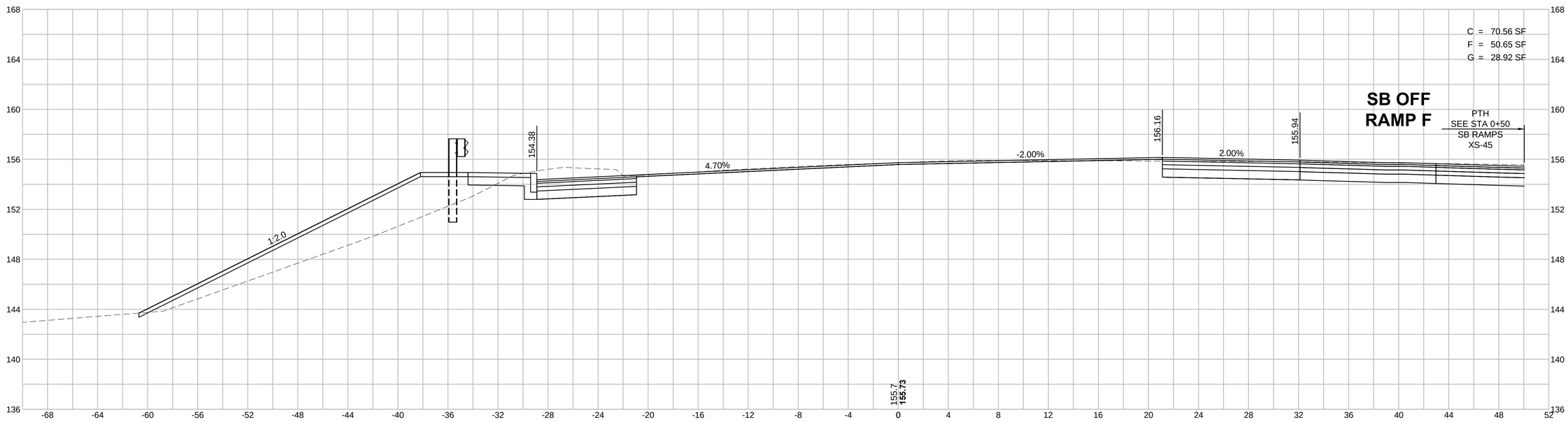
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	83	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 4

DERBY STREET CONST BASELINE
60+00



DERBY STREET CONST BASELINE
59+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

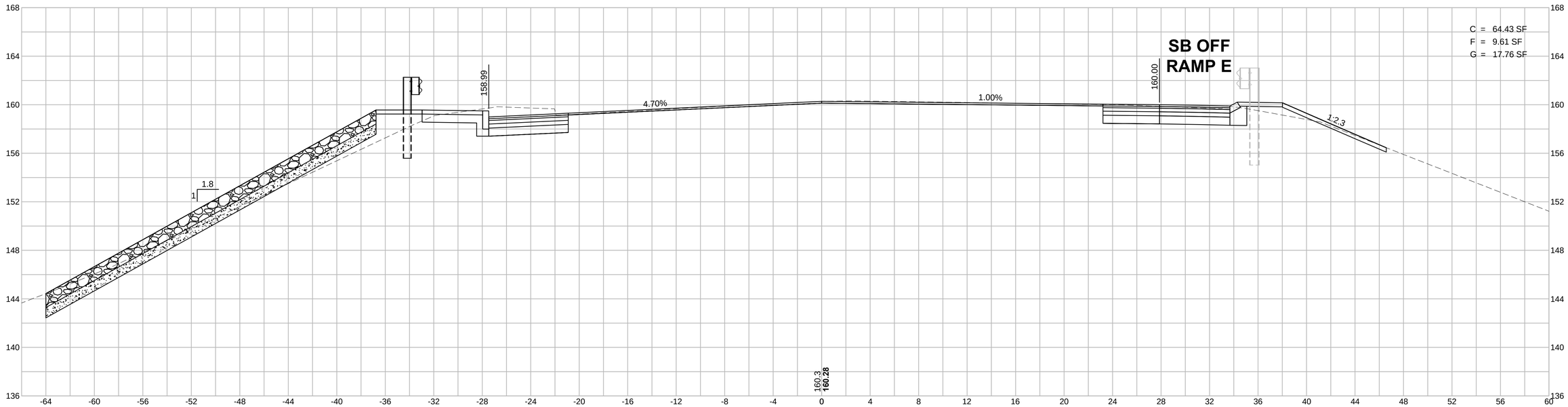
CORRIDOR.DWG Plotted on 26-Jan-2017 3:03 PM

HINGHAM
DERBY STREET

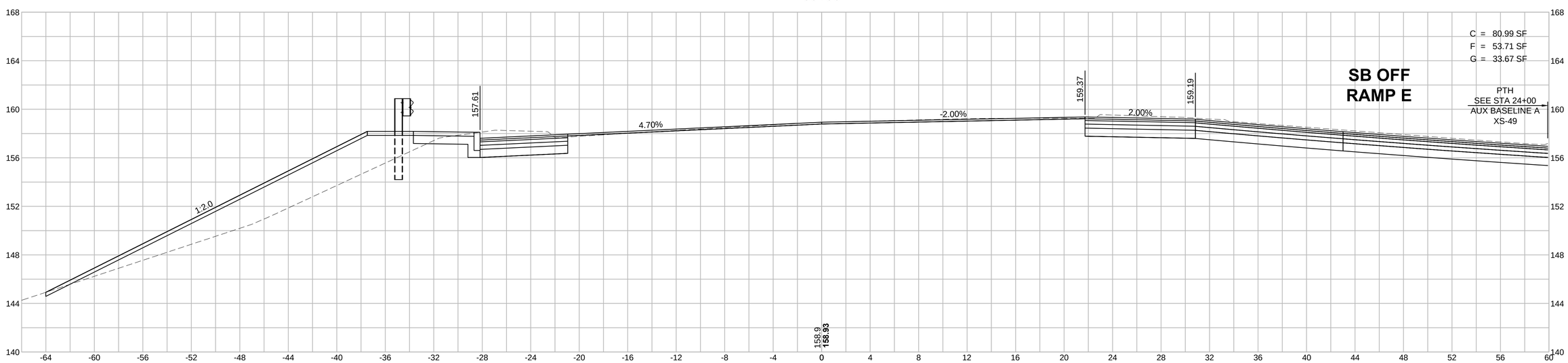
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	84	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 5

DERBY STREET CONST BASELINE
61+00



DERBY STREET CONST BASELINE
60+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CORRIDOR.DWG Plotted on 26-Jan-2017 3:03 PM

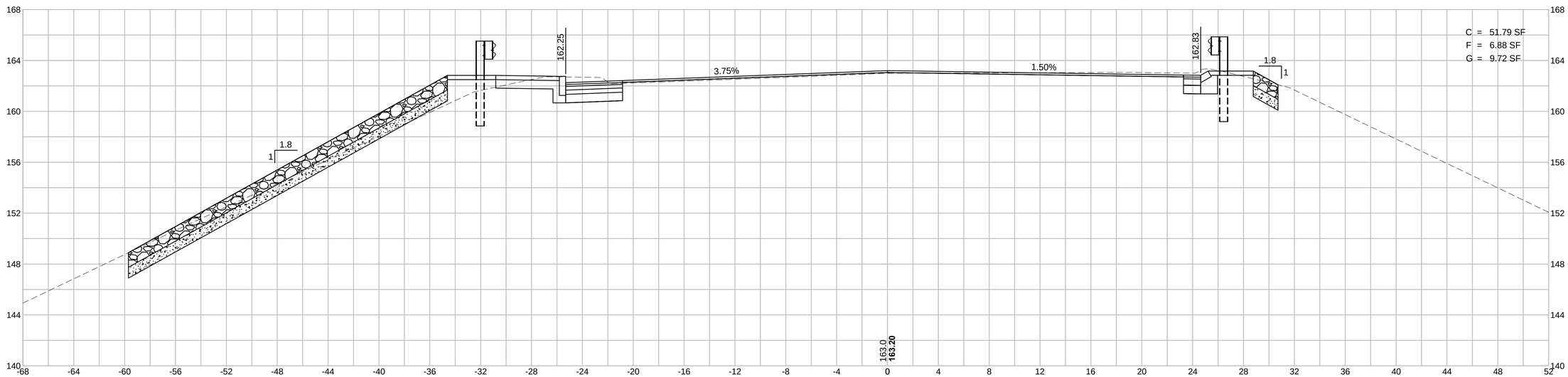
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	85	139
PROJECT FILE NO.	607309		

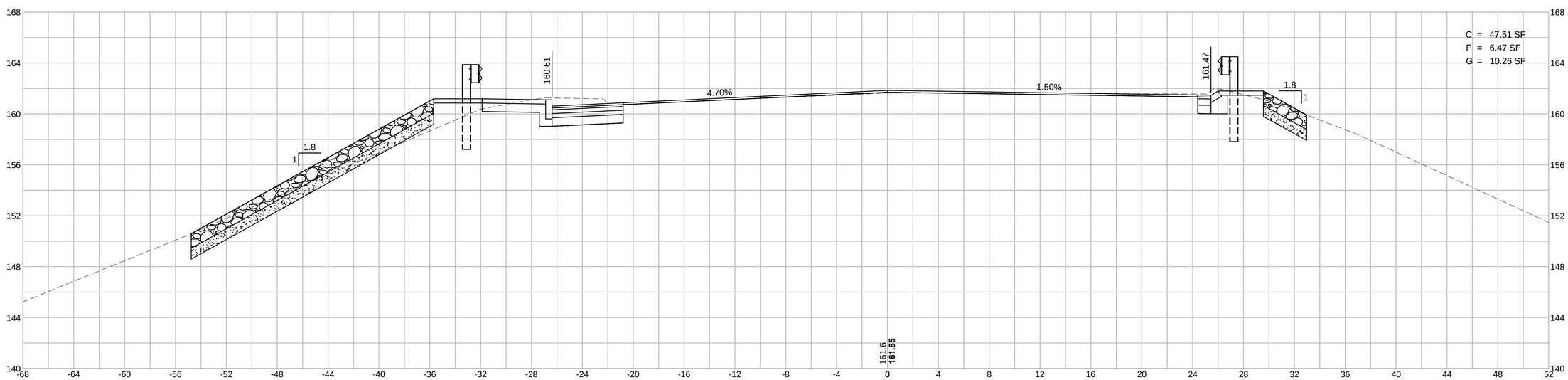
DERBY STREET
CROSS SECTIONS - 6

CORRIDOR.DWG Plotted on 26-Jan-2017 3:03 PM

DERBY STREET CONST BASELINE
62+00



DERBY STREET CONST BASELINE
61+50



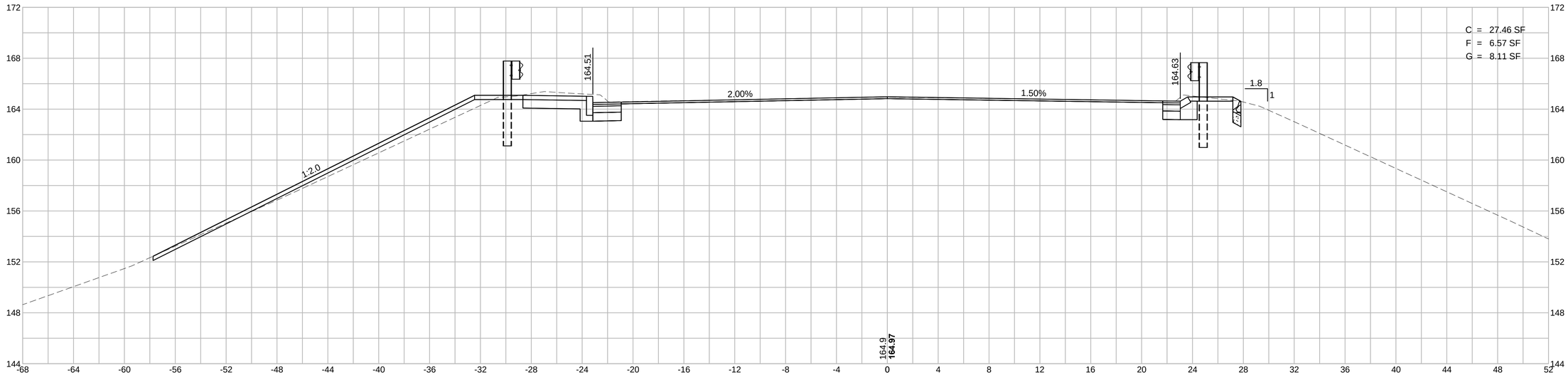
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HINGHAM
DERBY STREET

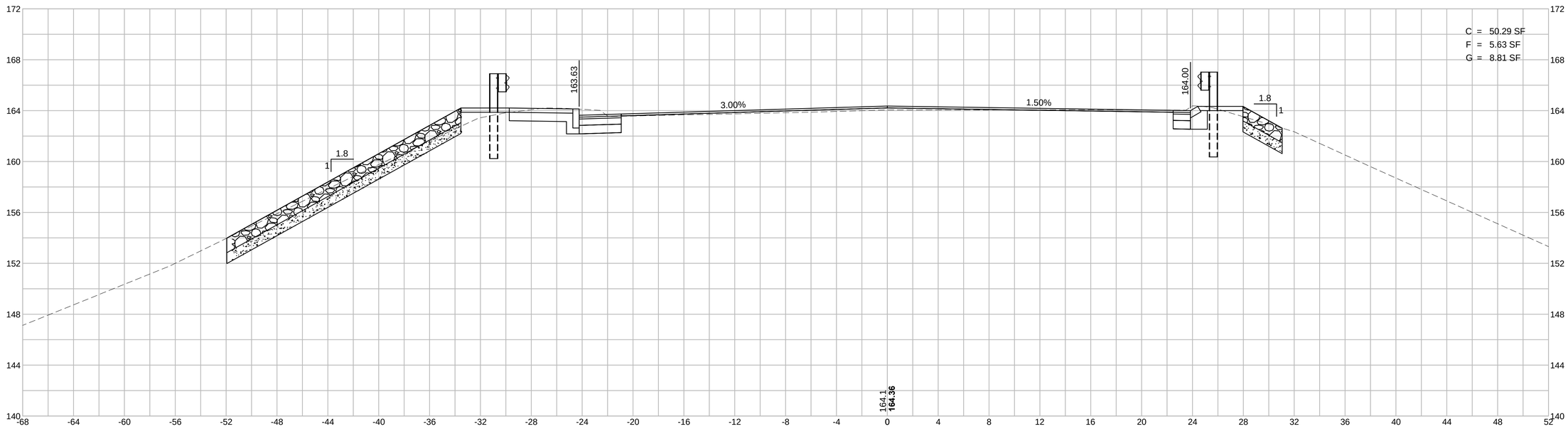
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	86	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 7

DERBY STREET CONST BASELINE
63+00



DERBY STREET CONST BASELINE
62+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

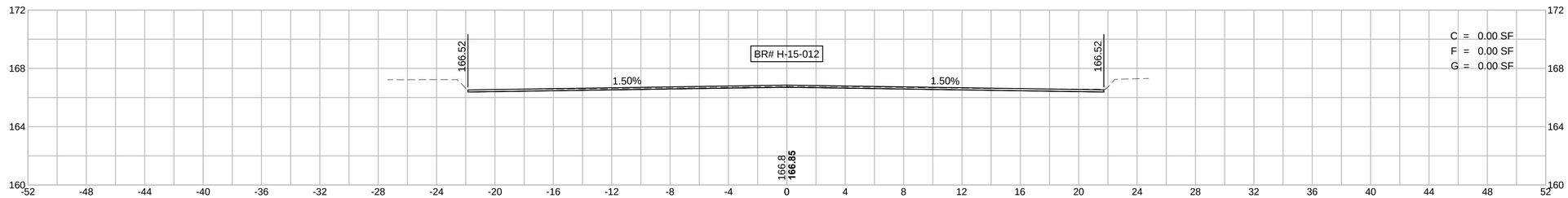
CORRIDOR.DWG Plotted on 26-Jan-2017 3:03 PM

HINGHAM
DERBY STREET

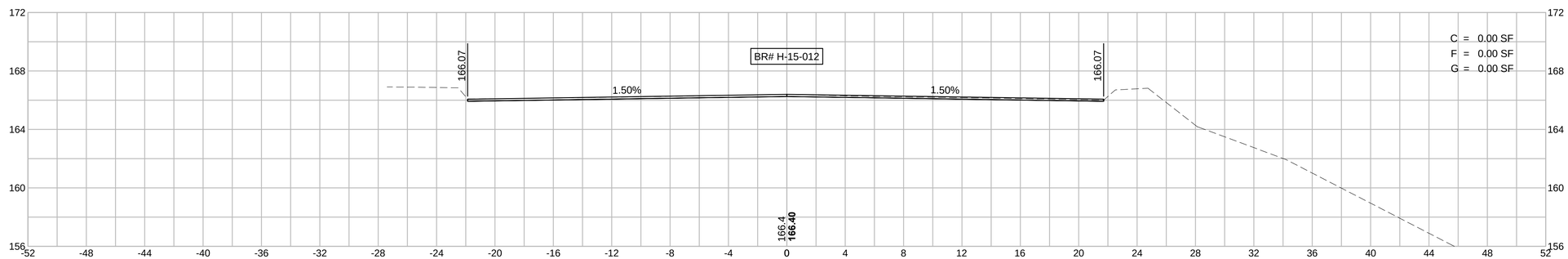
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	87	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 8

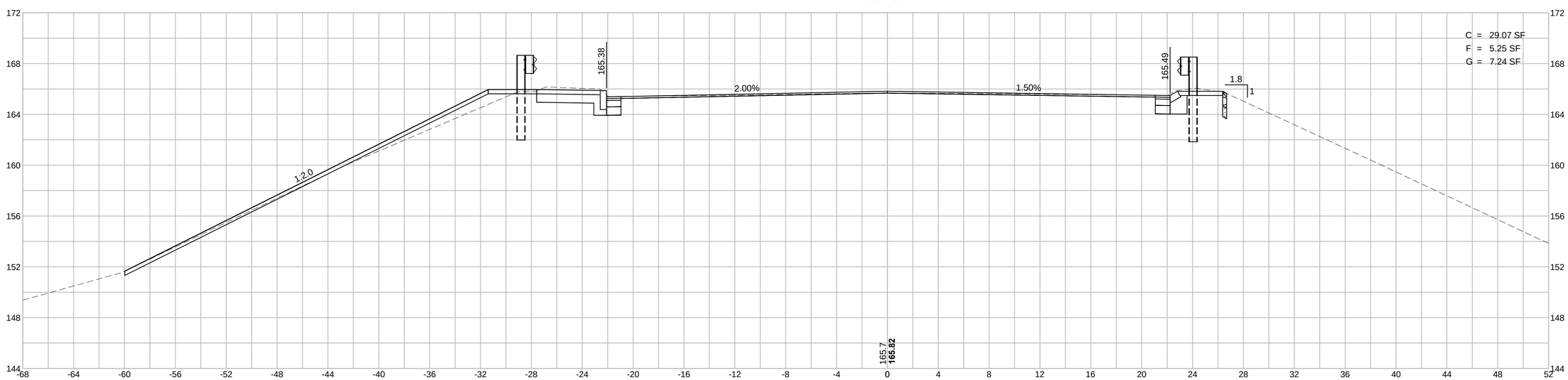
DERBY STREET CONST BASELINE
64+50



DERBY STREET CONST BASELINE
64+00



DERBY STREET CONST BASELINE
63+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

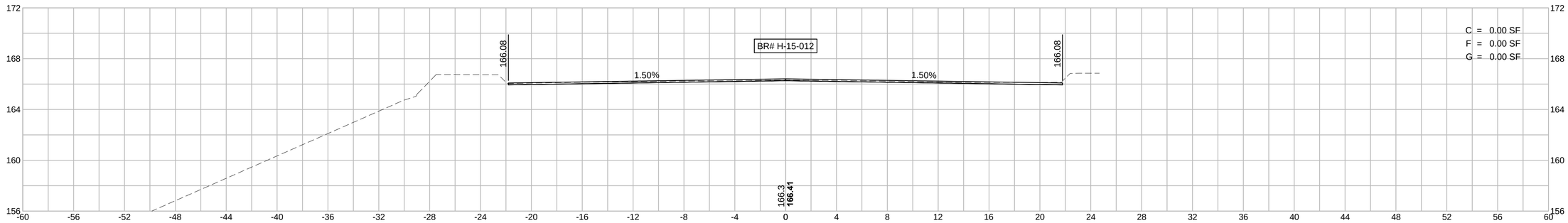
CORRIDOR.DWG Plotted on 26-Jan-2017 3:04 PM

HINGHAM
DERBY STREET

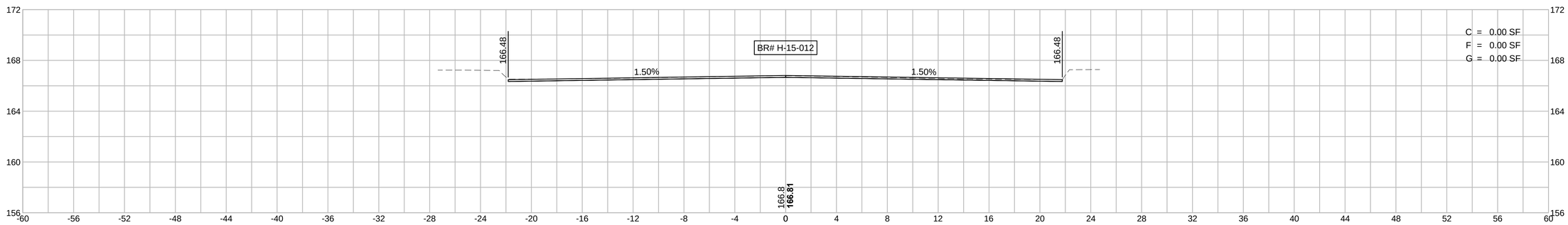
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	88	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 9

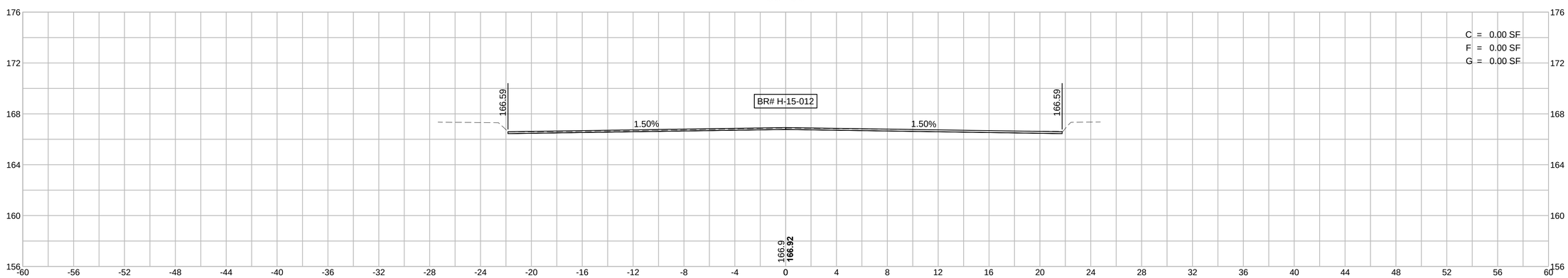
DERBY STREET CONST BASELINE
66+00



DERBY STREET CONST BASELINE
65+50



DERBY STREET CONST BASELINE
65+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

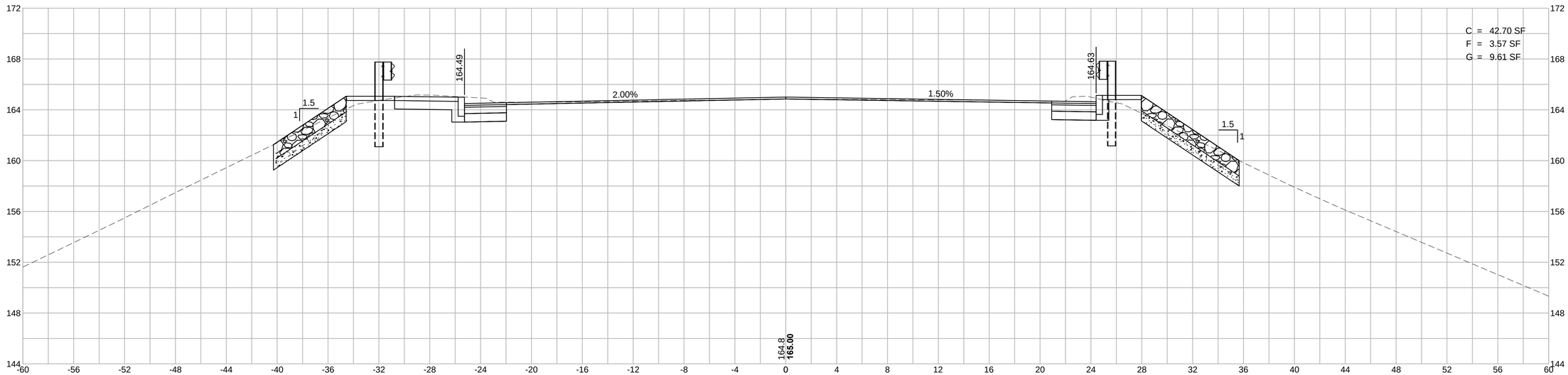
CORRIDOR.DWG Plotted on 26-Jan-2017 3:04 PM

HINGHAM
DERBY STREET

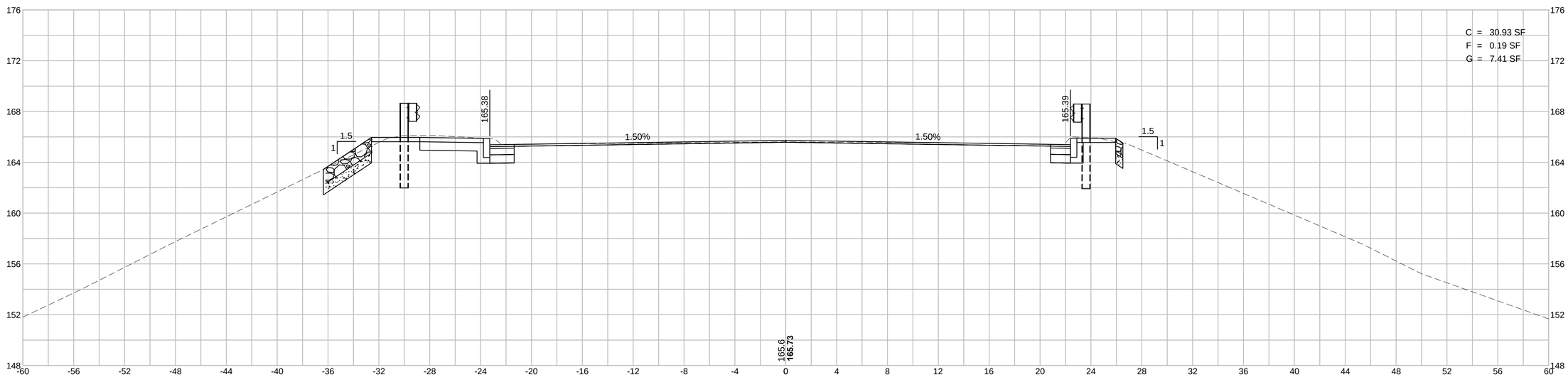
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	89	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 10

DERBY STREET CONST BASELINE
67+00



DERBY STREET CONST BASELINE
66+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

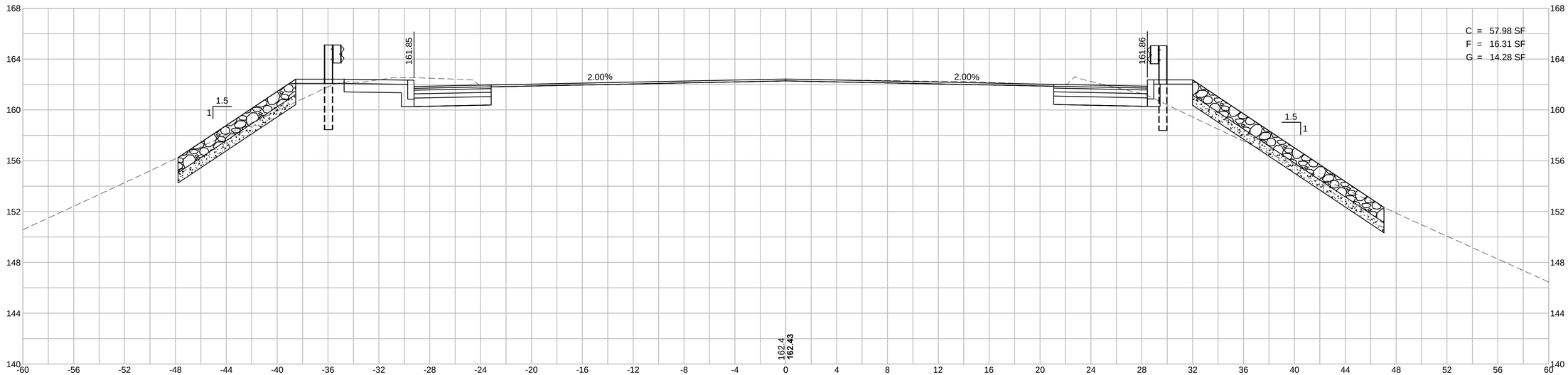
CORRIDOR.DWG Plotted on 26-Jan-2017 3:04 PM

HINGHAM
DERBY STREET

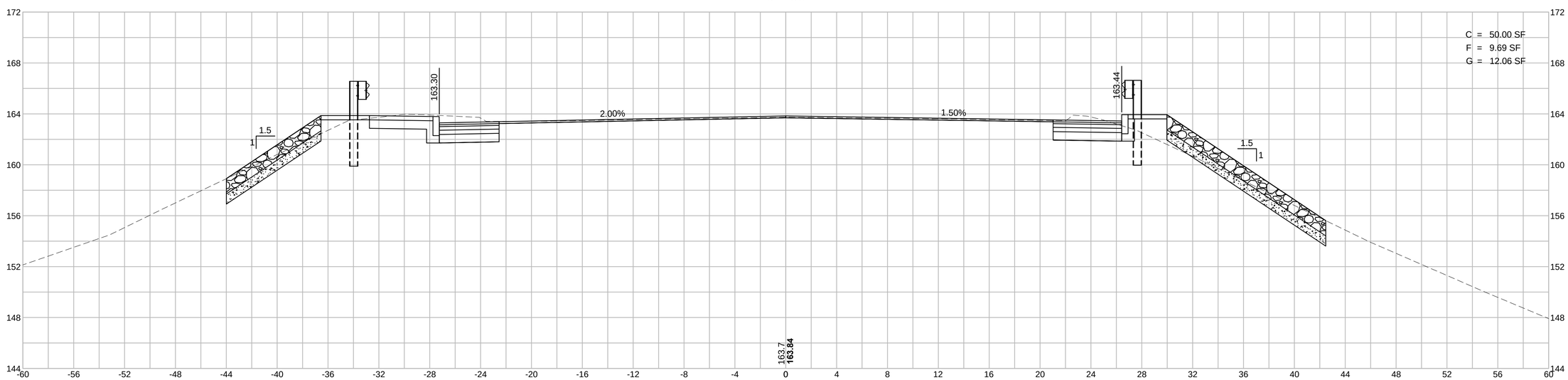
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	90	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 11

DERBY STREET CONST BASELINE
68+00



DERBY STREET CONST BASELINE
67+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

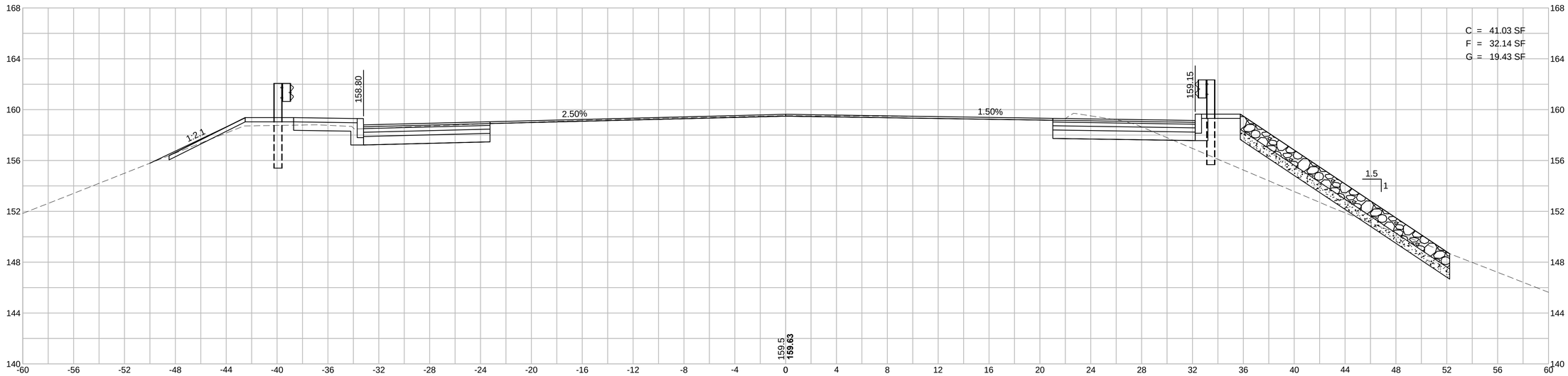
CORRIDOR.DWG Plotted on 26-Jan-2017 3:04 PM

HINGHAM
DERBY STREET

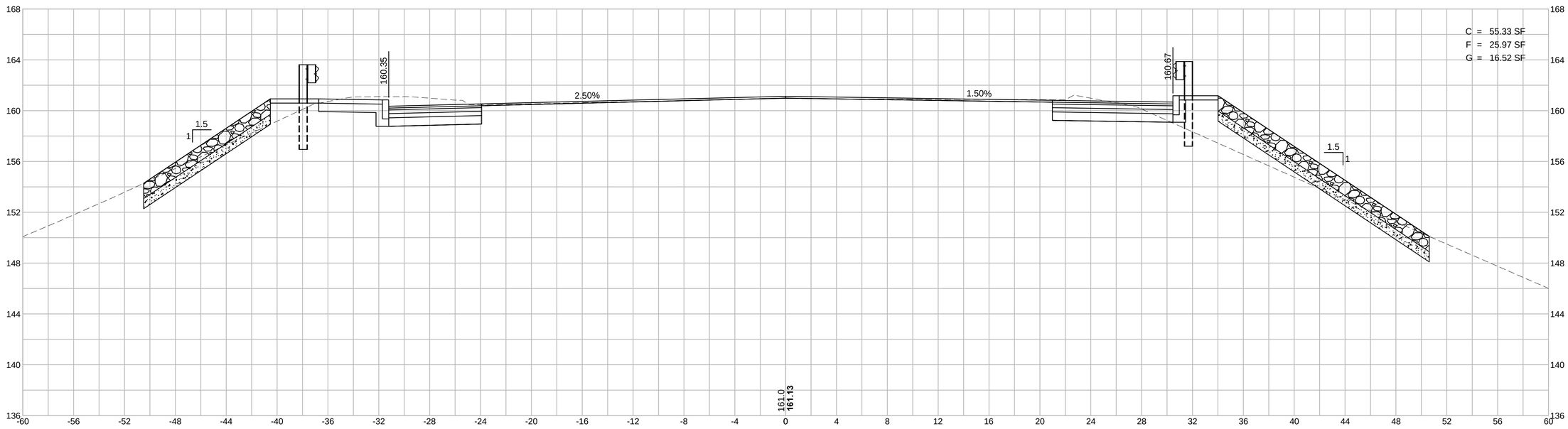
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	91	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 12

DERBY STREET CONST BASELINE
69+00



DERBY STREET CONST BASELINE
68+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

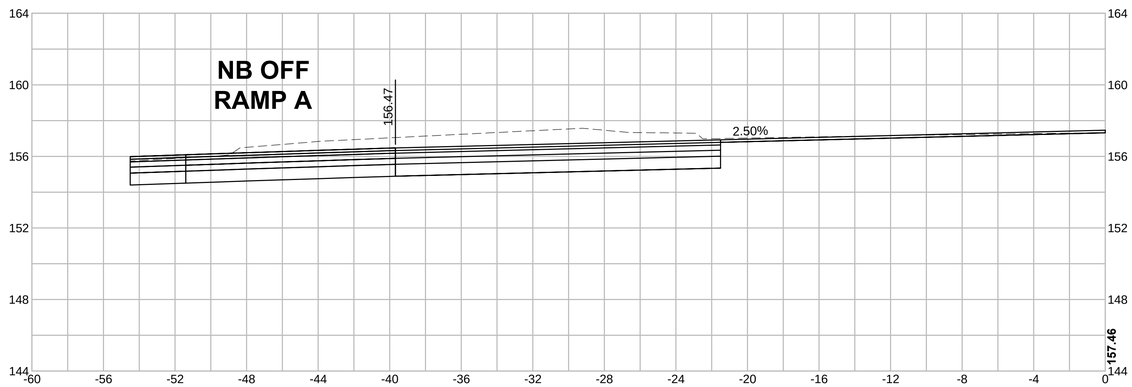
CORRIDOR.DWG Plotted on 26-Jan-2017 3:05 PM

HINGHAM
DERBY STREET

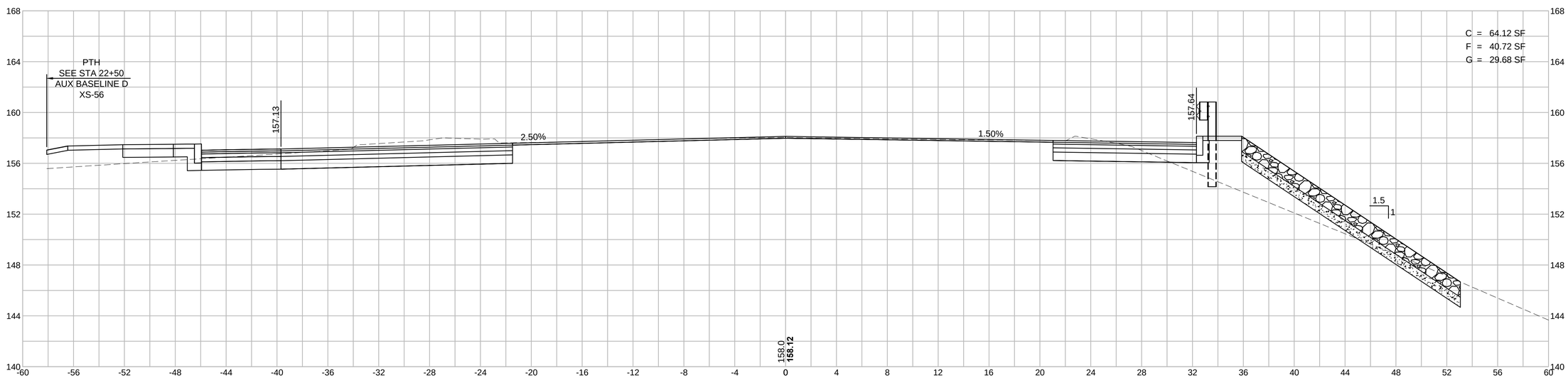
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	92	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 13

DERBY STREET CONST BASELINE
69+72



DERBY STREET CONST BASELINE
69+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

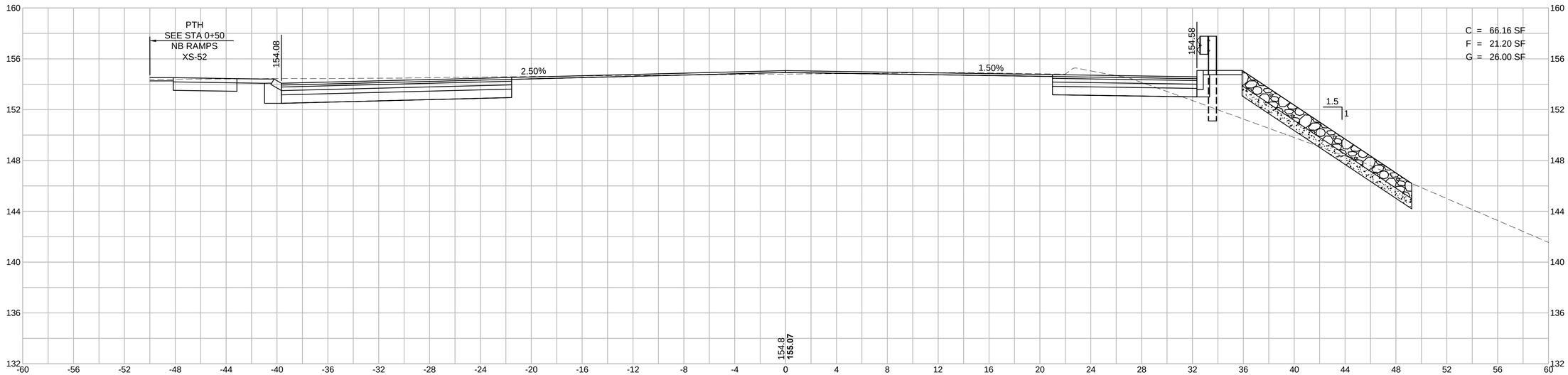
CORRIDOR.DWG Plotted on 26-Jan-2017 3:05 PM

HINGHAM
DERBY STREET

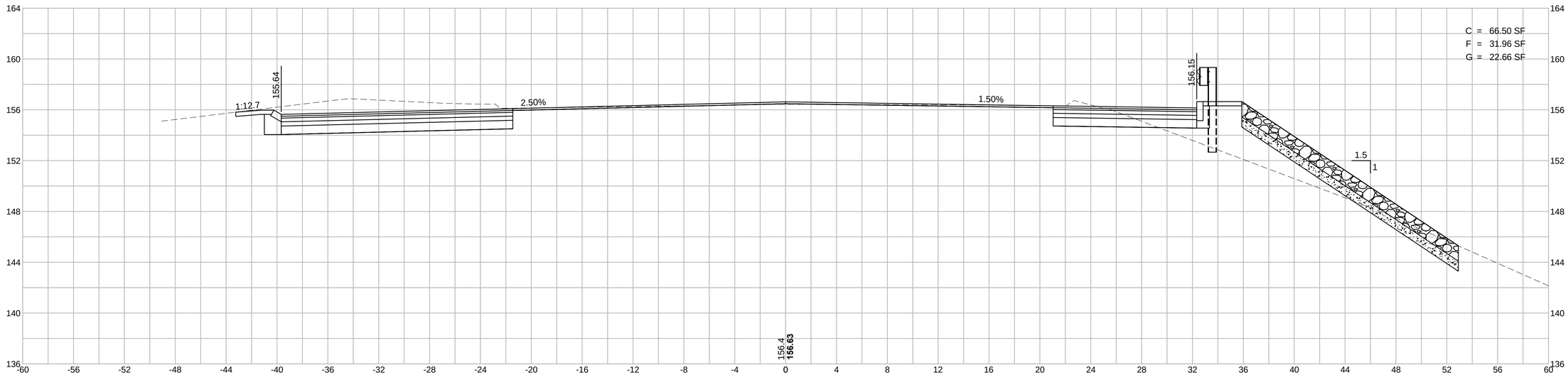
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	93	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 14

DERBY STREET CONST BASELINE
70+50



DERBY STREET CONST BASELINE
70+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

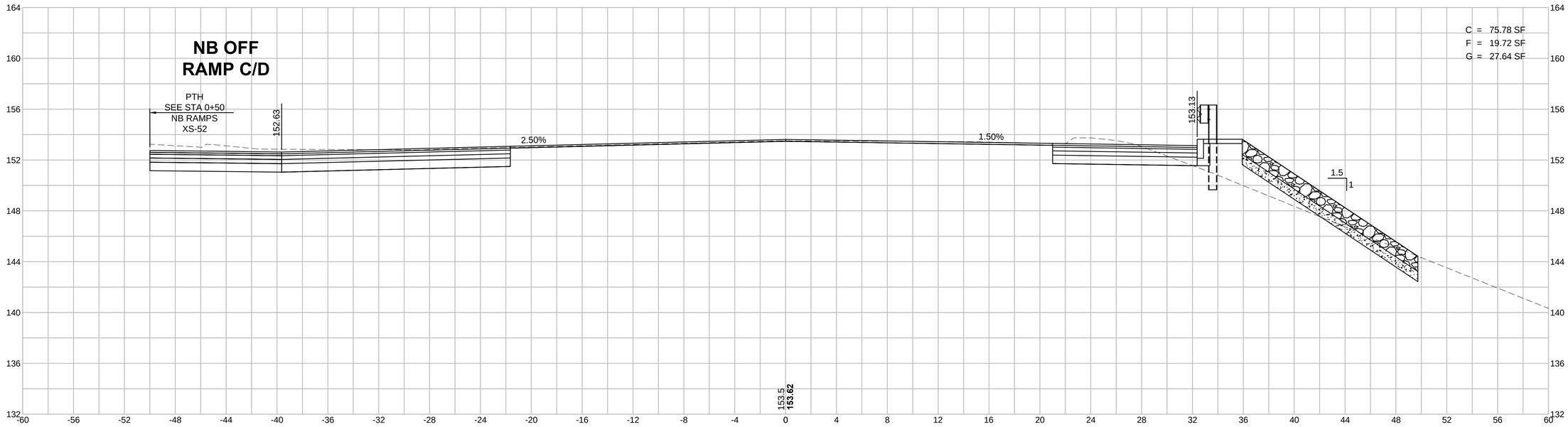
CORRIDOR.DWG Plotted on 26-Jan-2017 3:05 PM

HINGHAM
DERBY STREET

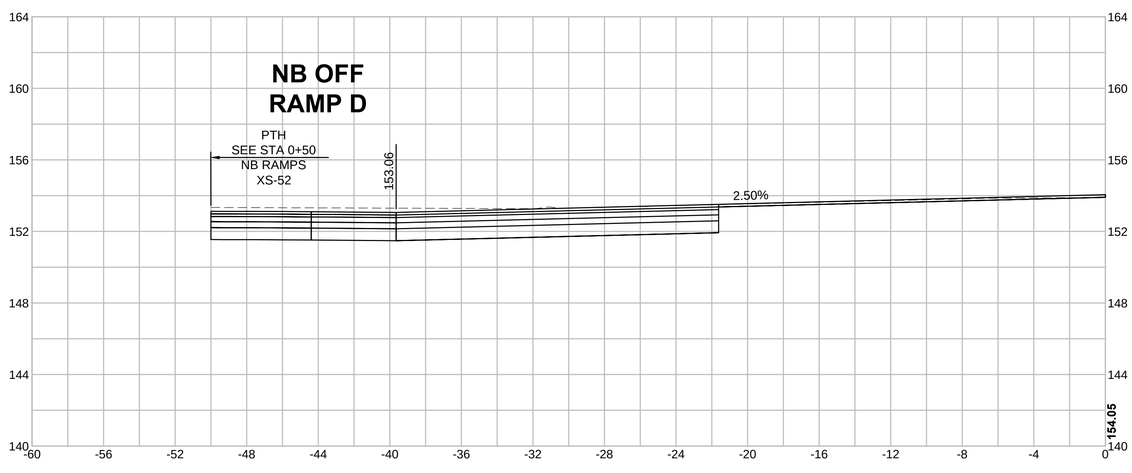
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	94	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 15

DERBY STREET CONST BASELINE
71+00



DERBY STREET CONST BASELINE
70+85



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

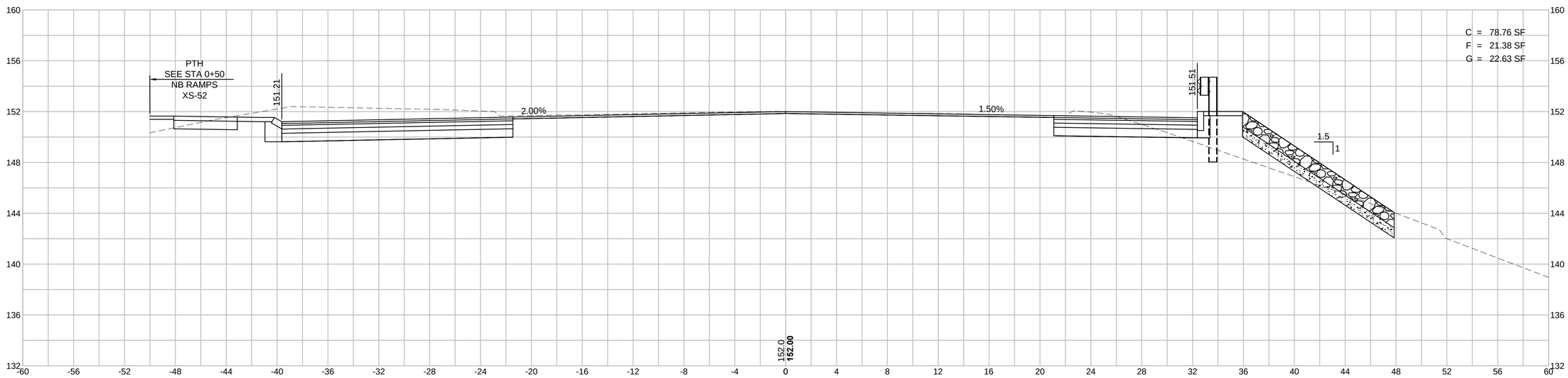
Plotted on 26-Jan-2017 3:05 PM
CORRIDOR.DWG

HINGHAM
DERBY STREET

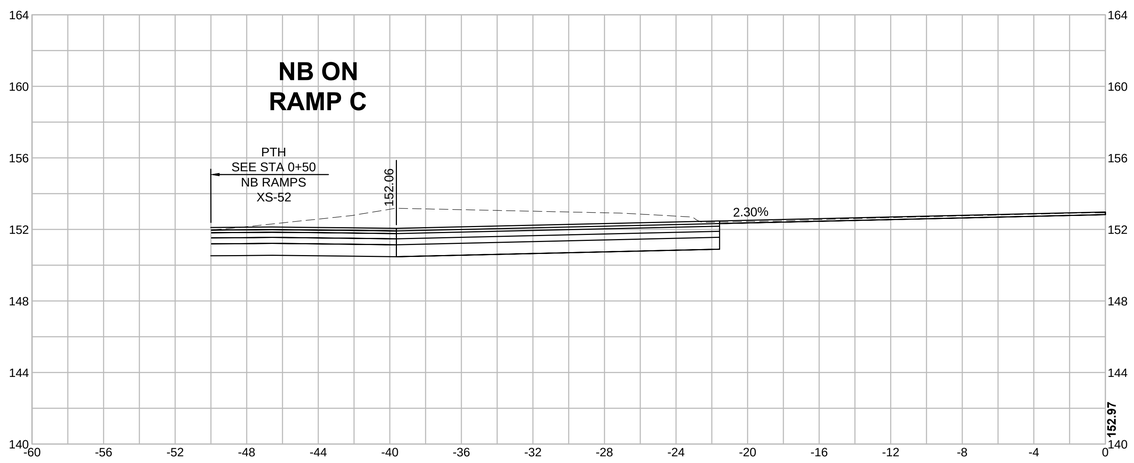
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	95	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 16

DERBY STREET CONST BASELINE
71+50



DERBY STREET CONST BASELINE
71+20



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

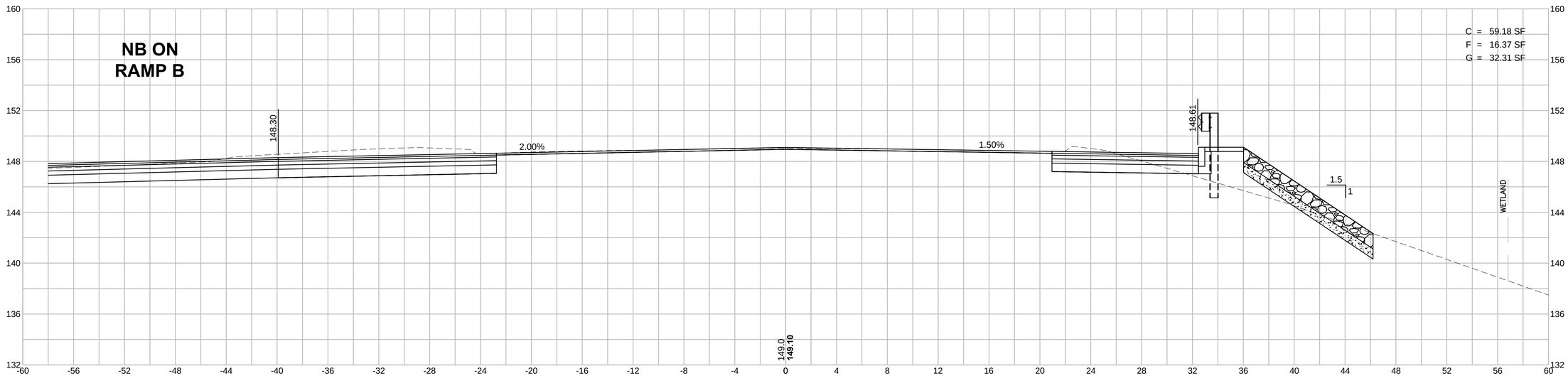
CORRIDOR.DWG Plotted on 26-Jan-2017 3:06 PM

HINGHAM
DERBY STREET

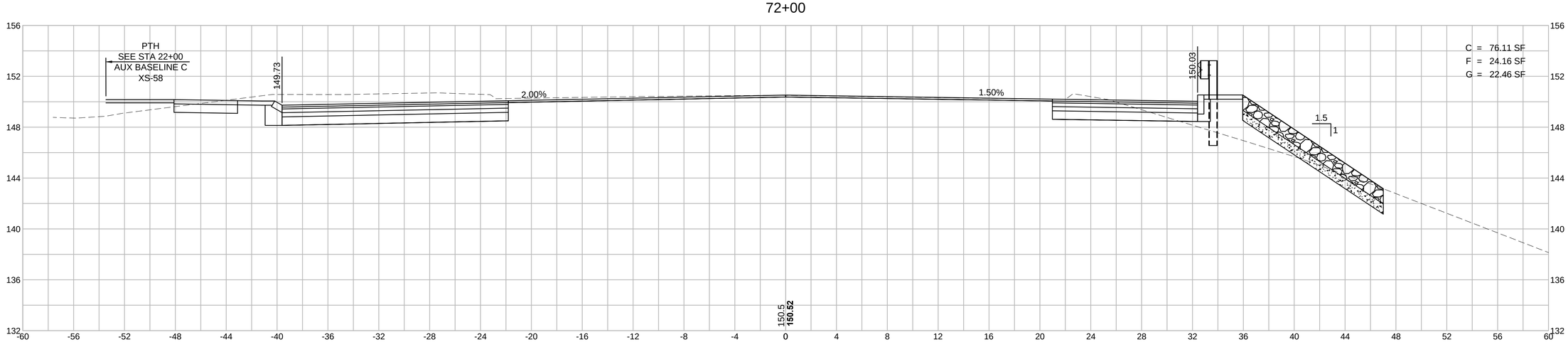
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	96	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 17

DERBY STREET CONST BASELINE
72+50



DERBY STREET CONST BASELINE
72+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

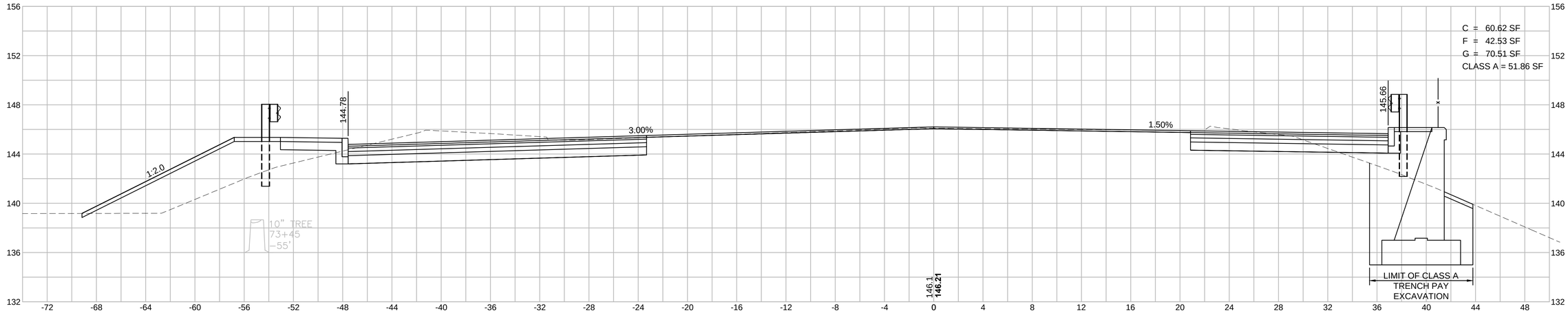
CORRIDOR.DWG Plotted on 26-Jan-2017 3:06 PM

HINGHAM
DERBY STREET

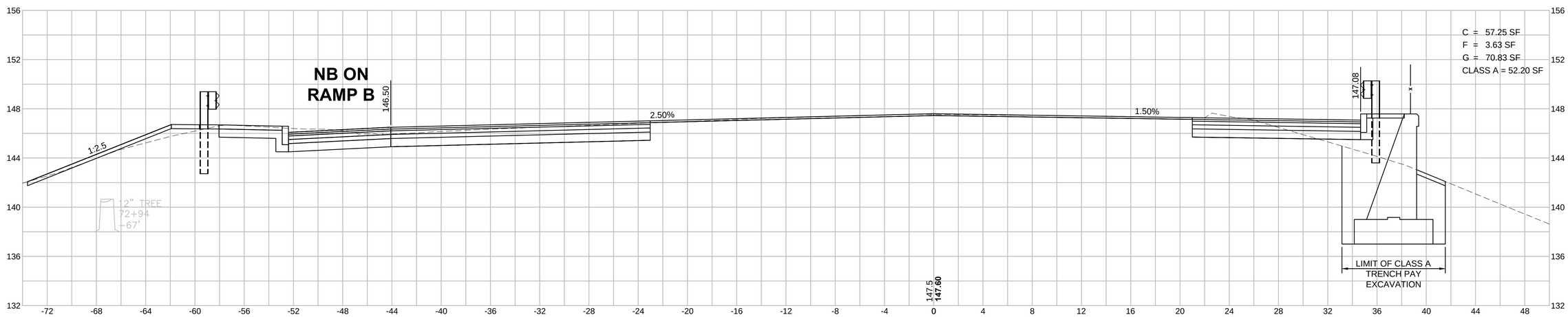
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	97	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 18

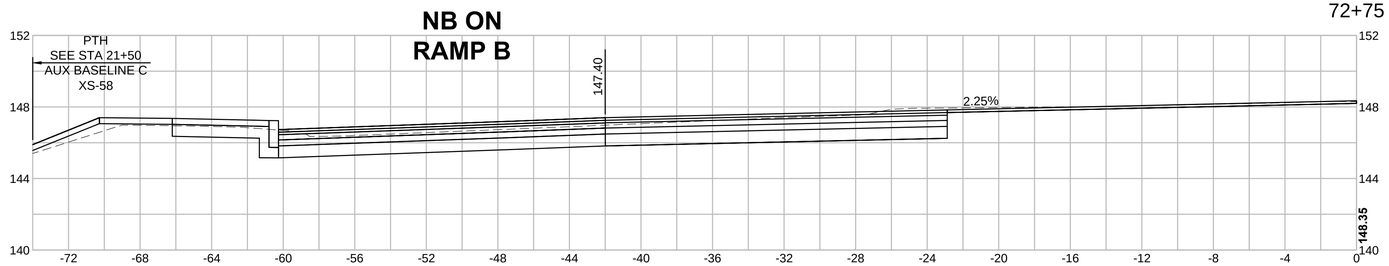
DERBY STREET CONST BASELINE
73+50



DERBY STREET CONST BASELINE
73+00



DERBY STREET CONST BASELINE
72+75



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

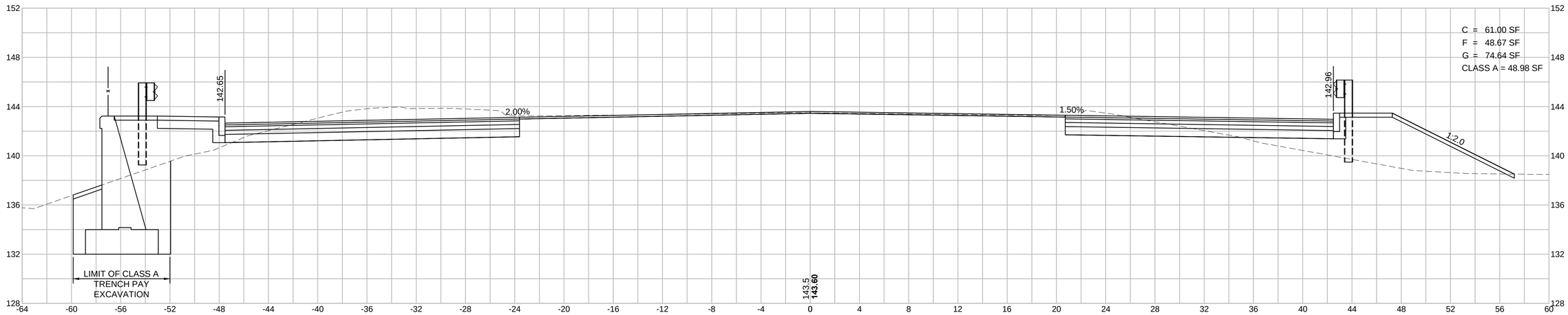
CORRIDOR.DWG Plotted on 26-Jan-2017 3:06 PM

HINGHAM
DERBY STREET

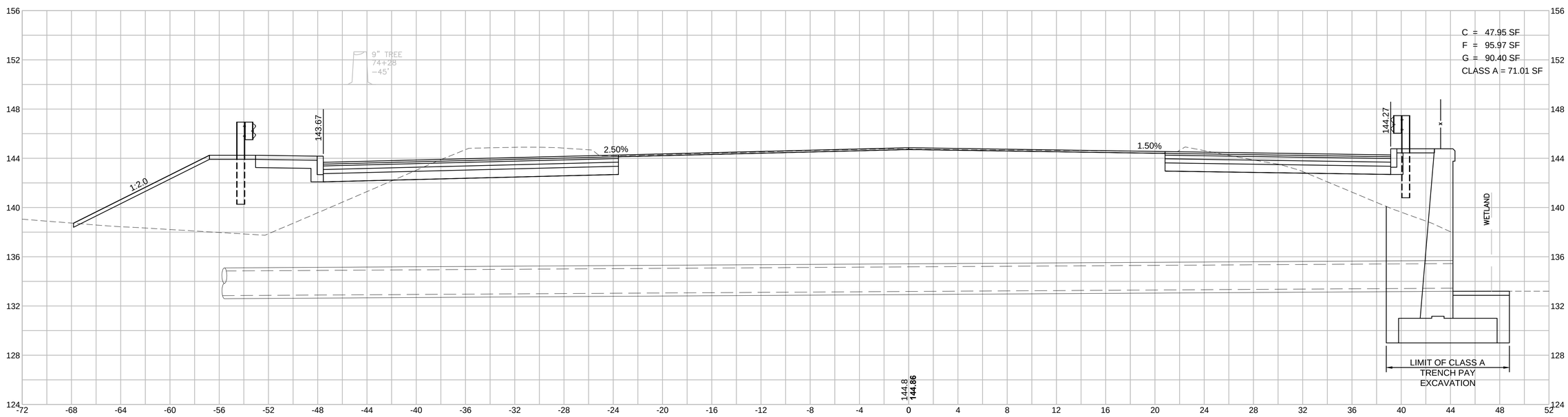
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	98	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 19

DERBY STREET CONST BASELINE
74+50



DERBY STREET CONST BASELINE
74+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

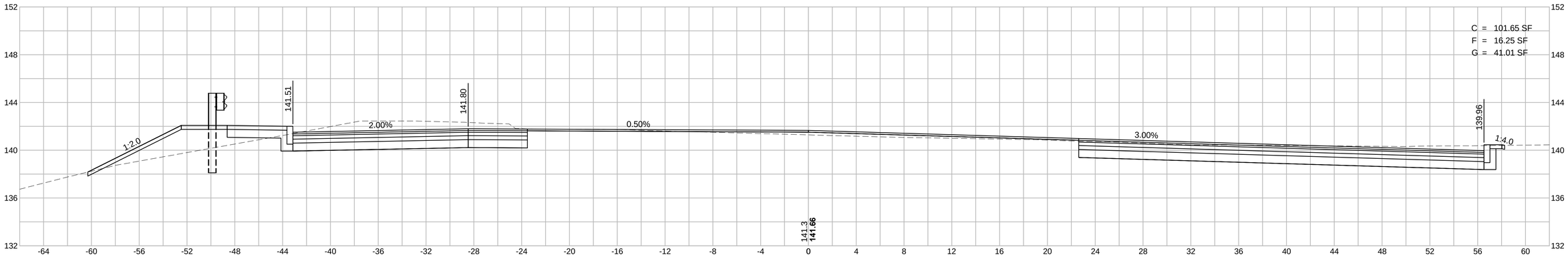
CORRIDOR.DWG Plotted on 26-Jan-2017 3:06 PM

HINGHAM
DERBY STREET

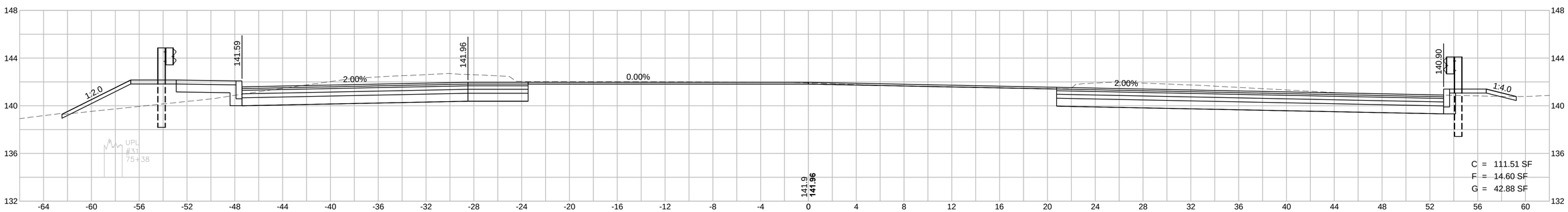
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	99	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 20

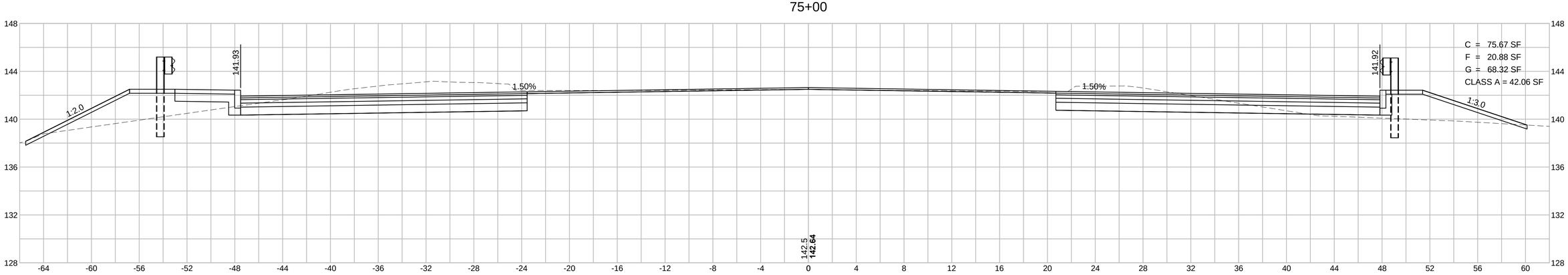
DERBY STREET CONST BASELINE
76+00



DERBY STREET CONST BASELINE
75+50



DERBY STREET CONST BASELINE
75+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CORRIDOR.DWG Plotted on 26-Jan-2017 3:07 PM

HINGHAM
DERBY STREET

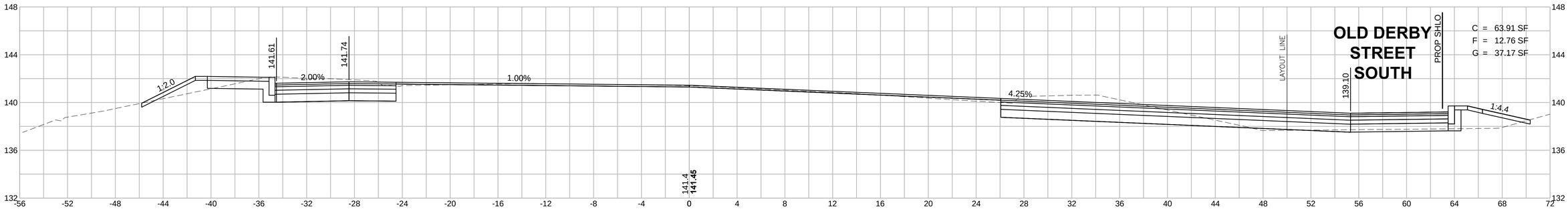
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	100	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 21

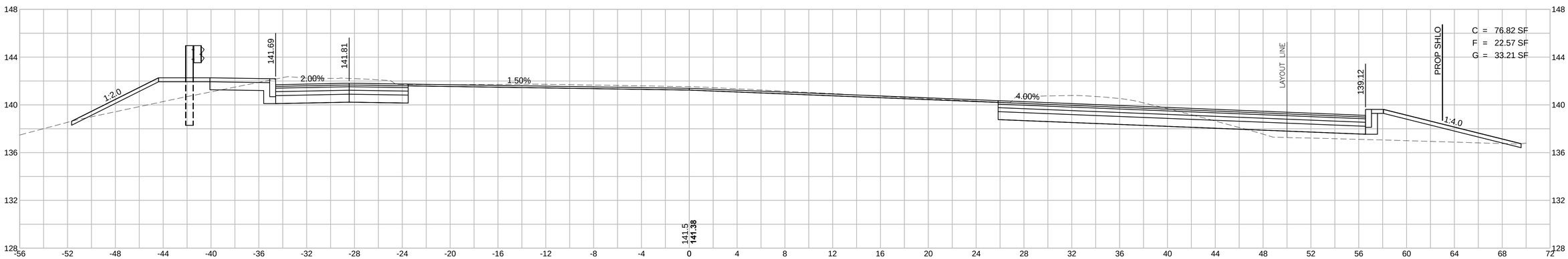
Plotted on 26-Jan-2017 3:07 PM

CORRIDOR.DWG

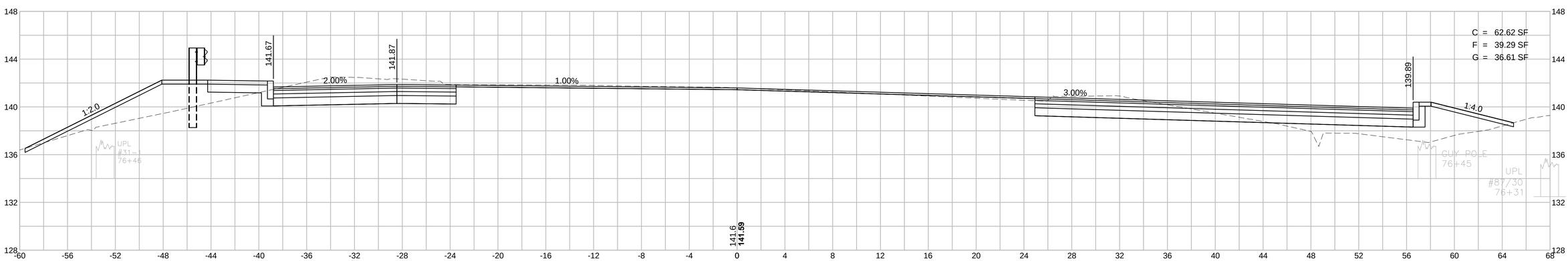
DERBY STREET CONST BASELINE
77+50



DERBY STREET CONST BASELINE
77+00



DERBY STREET CONST BASELINE
76+50



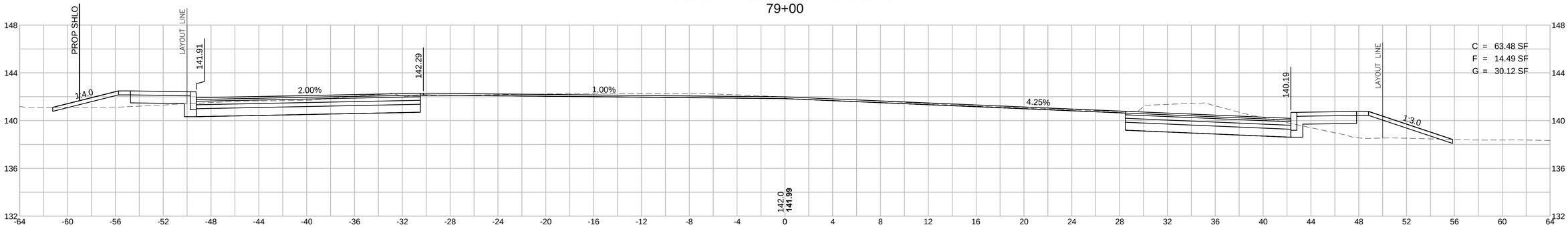
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HINGHAM
DERBY STREET

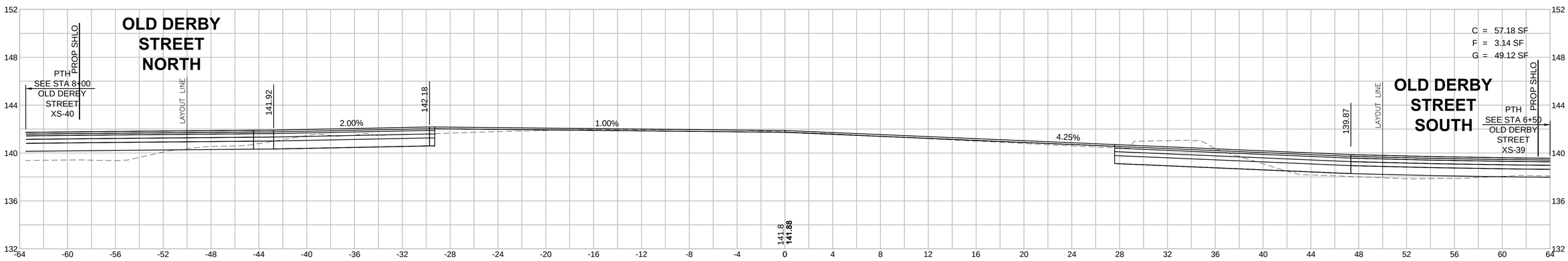
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	101	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 22

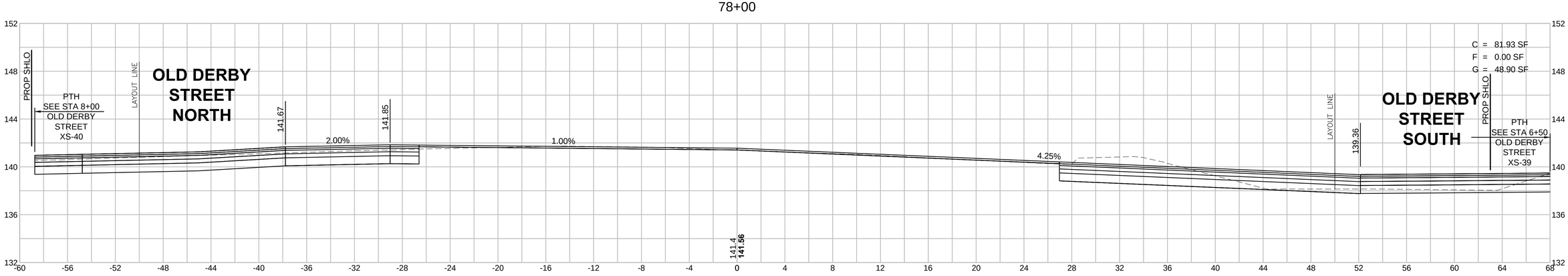
DERBY STREET CONST BASELINE
79+00



DERBY STREET CONST BASELINE
78+50



DERBY STREET CONST BASELINE
78+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

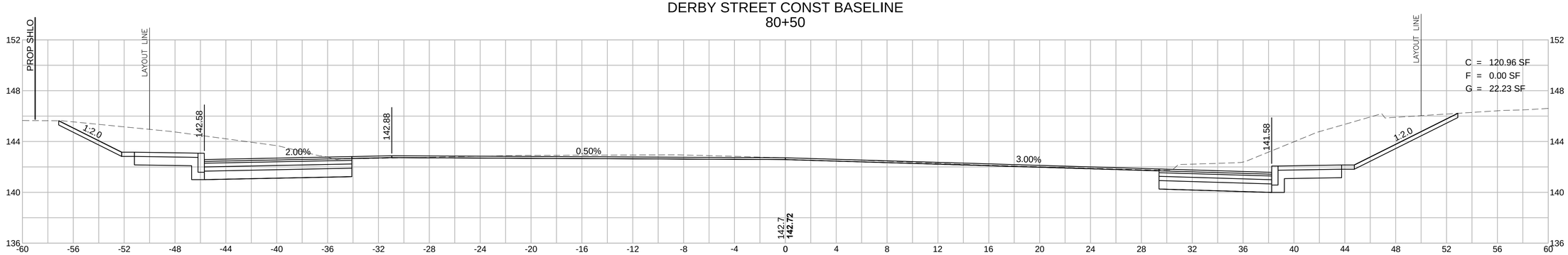
CORRIDOR.DWG Plotted on 26-Jan-2017 3:07 PM

HINGHAM
DERBY STREET

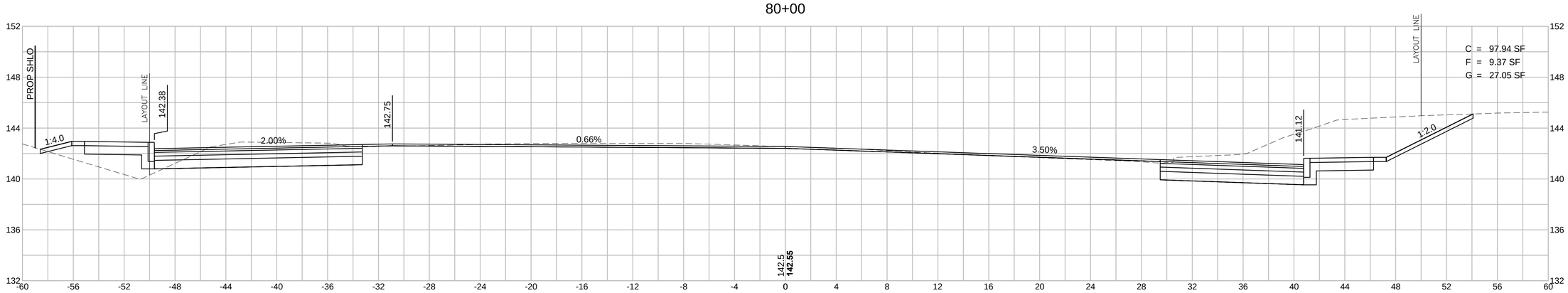
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	102	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 23

DERBY STREET CONST BASELINE
80+50



DERBY STREET CONST BASELINE
80+00



DERBY STREET CONST BASELINE
79+50

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

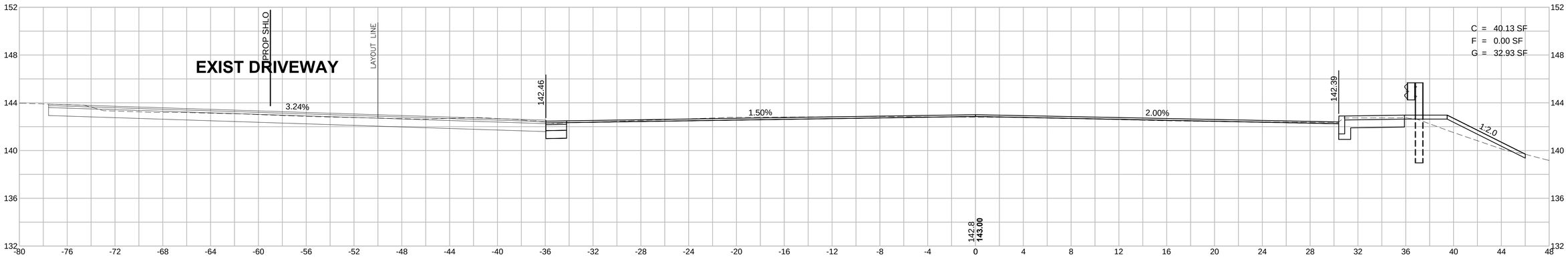
CORRIDOR.DWG Plotted on 26-Jan-2017 3:08 PM

HINGHAM
DERBY STREET

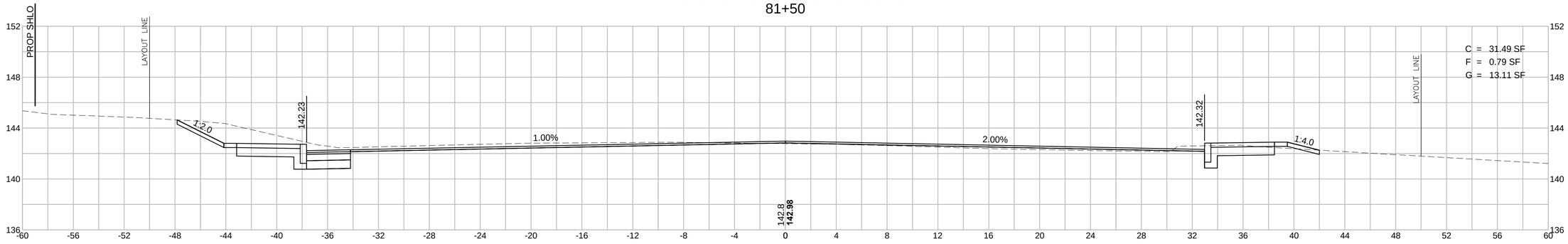
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	103	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 24

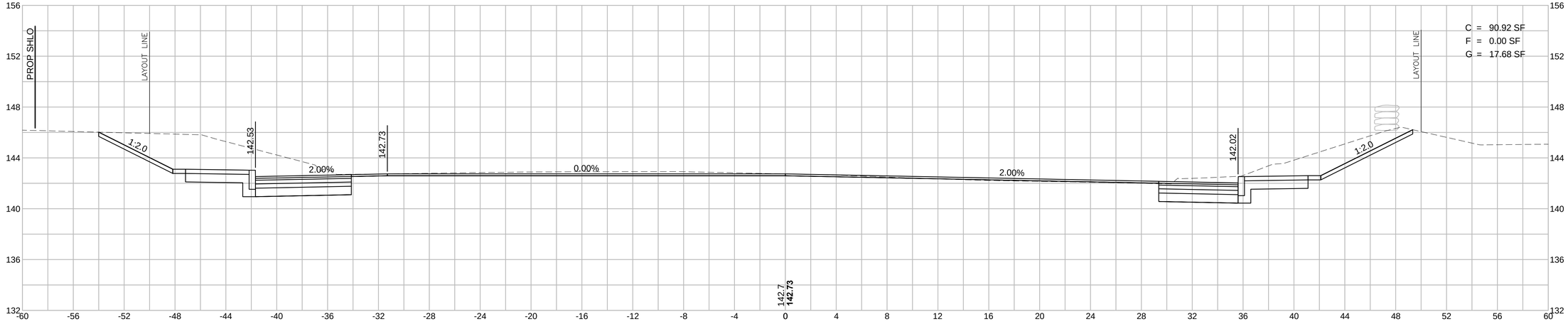
DERBY STREET CONST BASELINE
82+00



DERBY STREET CONST BASELINE
81+50



DERBY STREET CONST BASELINE
81+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

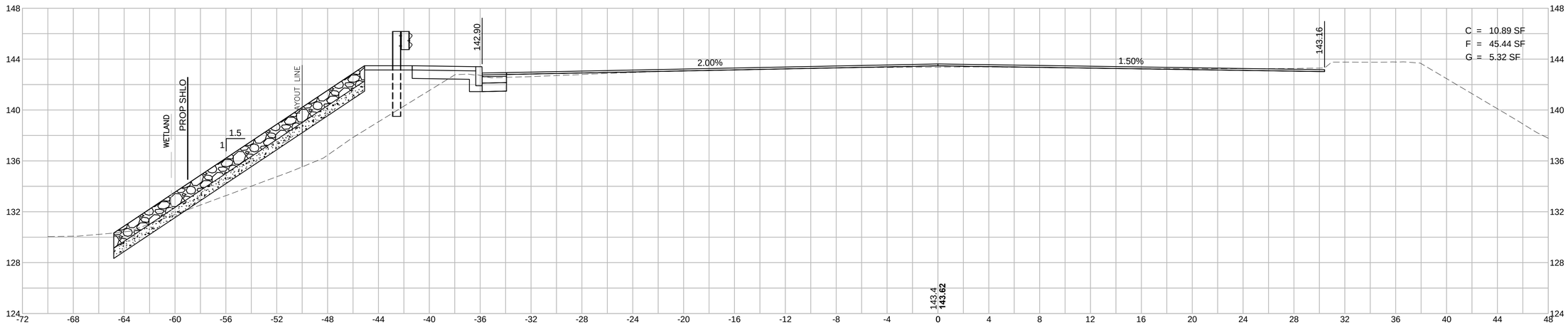
CORRIDOR.DWG Plotted on 26-Jan-2017 3:08 PM

HINGHAM
DERBY STREET

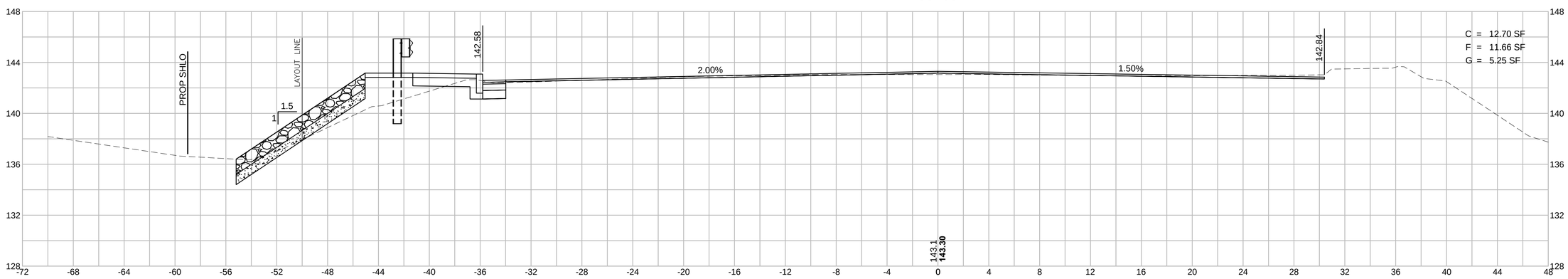
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	104	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 25

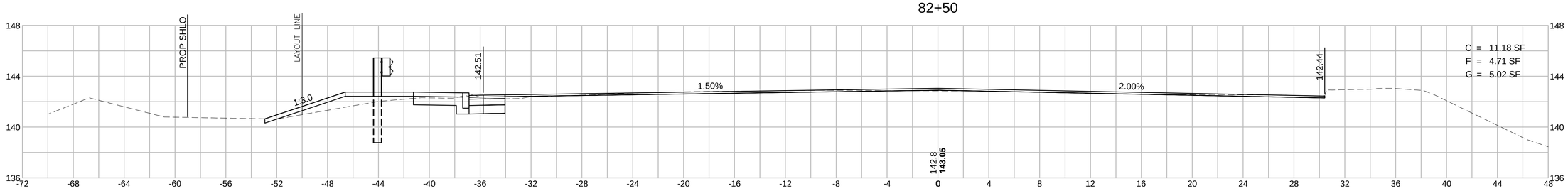
DERBY STREET CONST BASELINE
83+50



DERBY STREET CONST BASELINE
83+00



DERBY STREET CONST BASELINE
82+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

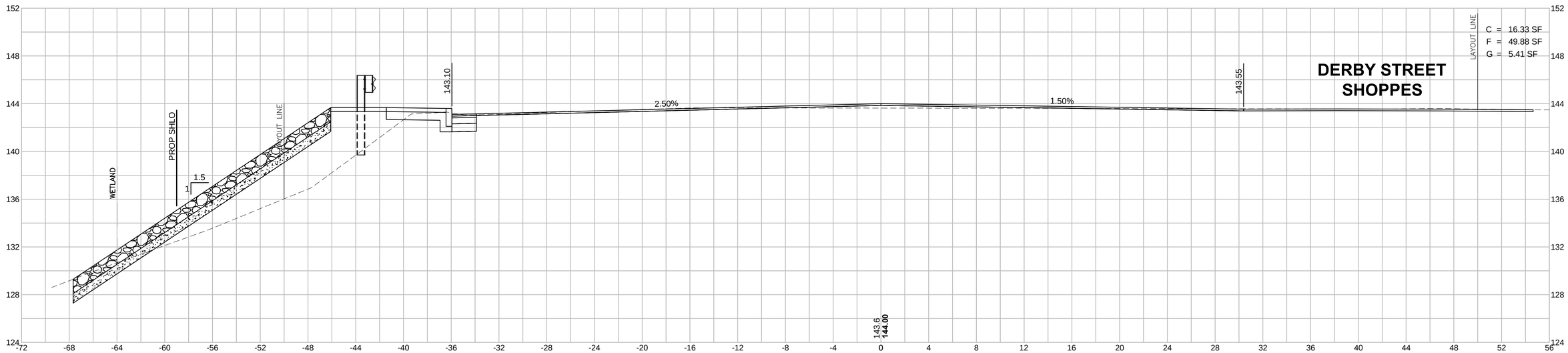
Plotted on 26-Jan-2017 3:08 PM
CORRIDOR.DWG

HINGHAM
DERBY STREET

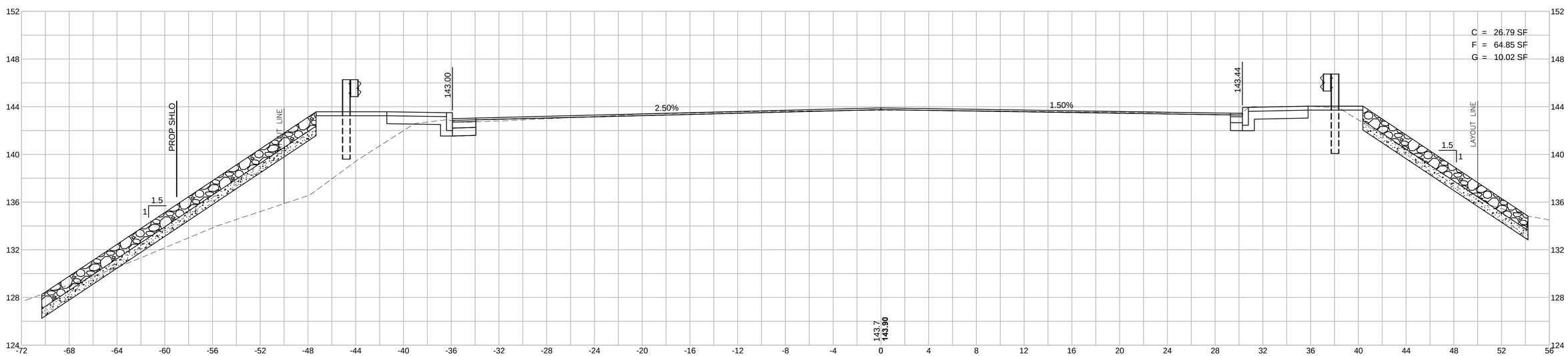
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	105	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 26

DERBY STREET CONST BASELINE
84+50



DERBY STREET CONST BASELINE
84+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

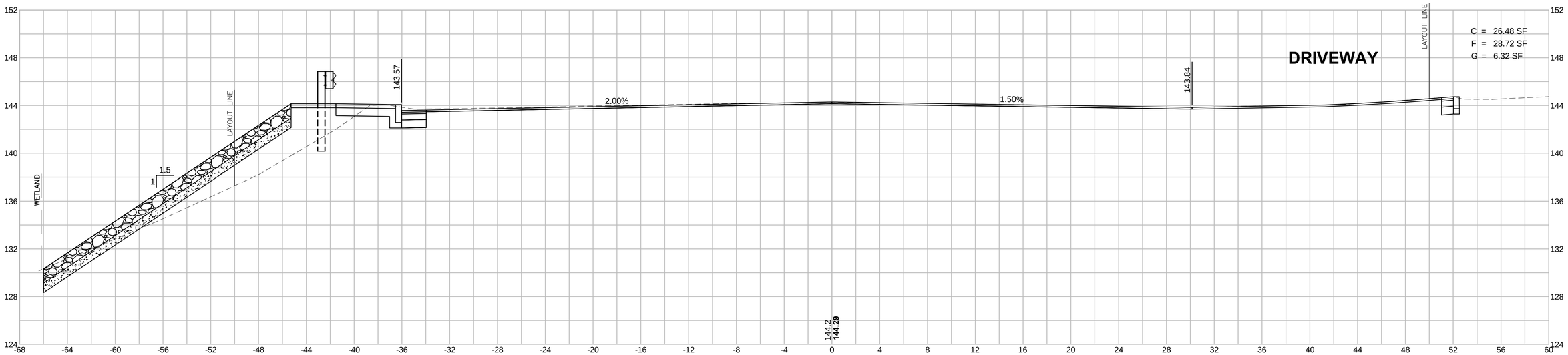
CORRIDOR.DWG Plotted on 26-Jan-2017 3:08 PM

HINGHAM
DERBY STREET

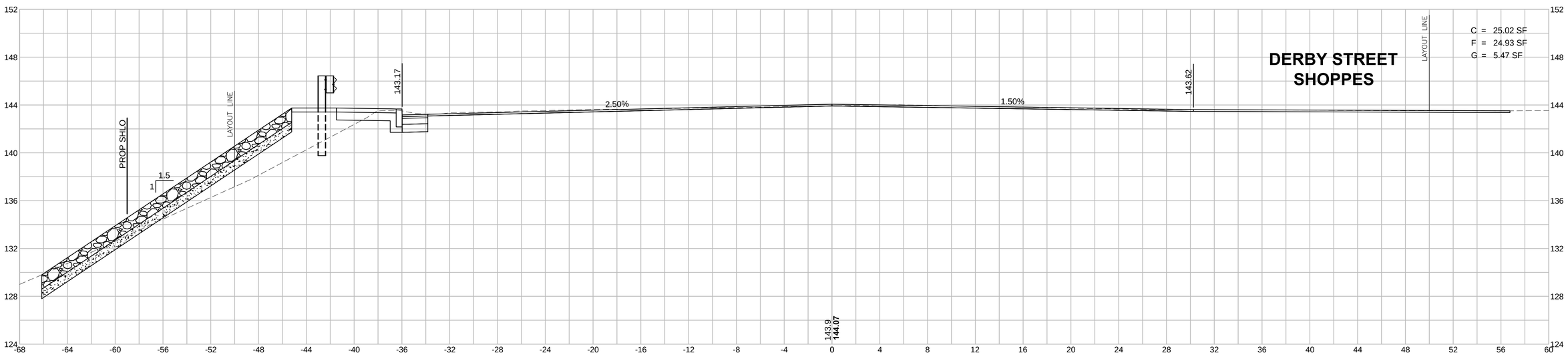
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	106	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 27

DERBY STREET CONST BASELINE
85+50



DERBY STREET CONST BASELINE
85+00



HOR. SCALE IN FEET
VER. SCALE IN FEET

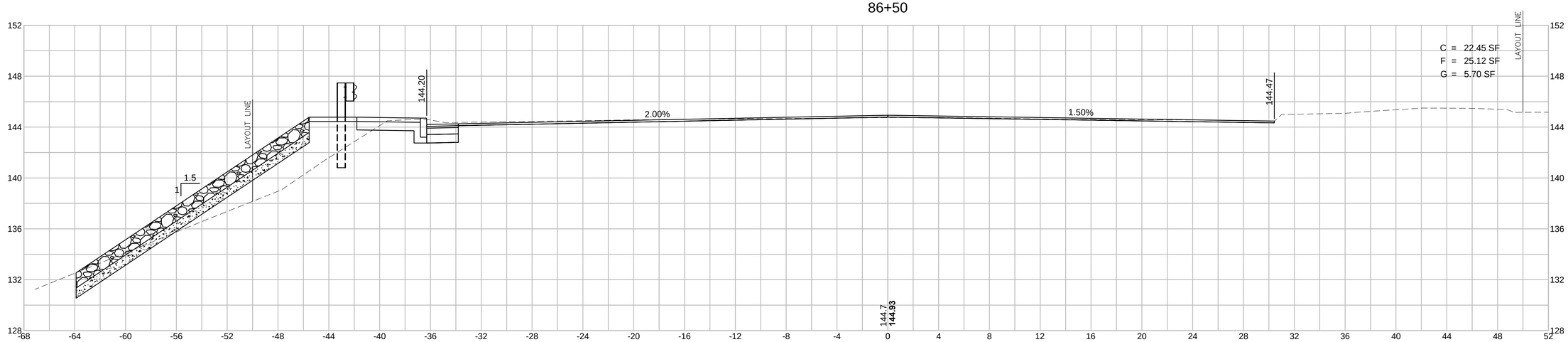
CORRIDOR.DWG Plotted on 26-Jan-2017 3:09 PM

HINGHAM
DERBY STREET

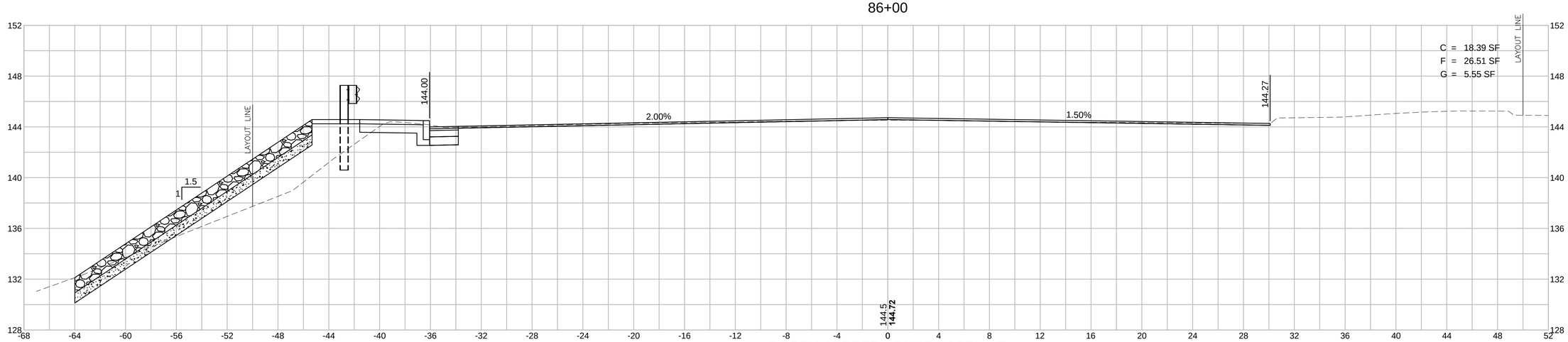
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	107	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 28

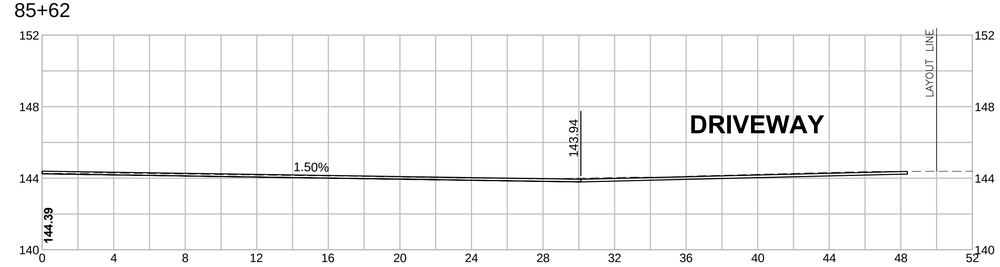
DERBY STREET CONST BASELINE
86+50



DERBY STREET CONST BASELINE
86+00



DERBY STREET CONST BASELINE
85+62



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

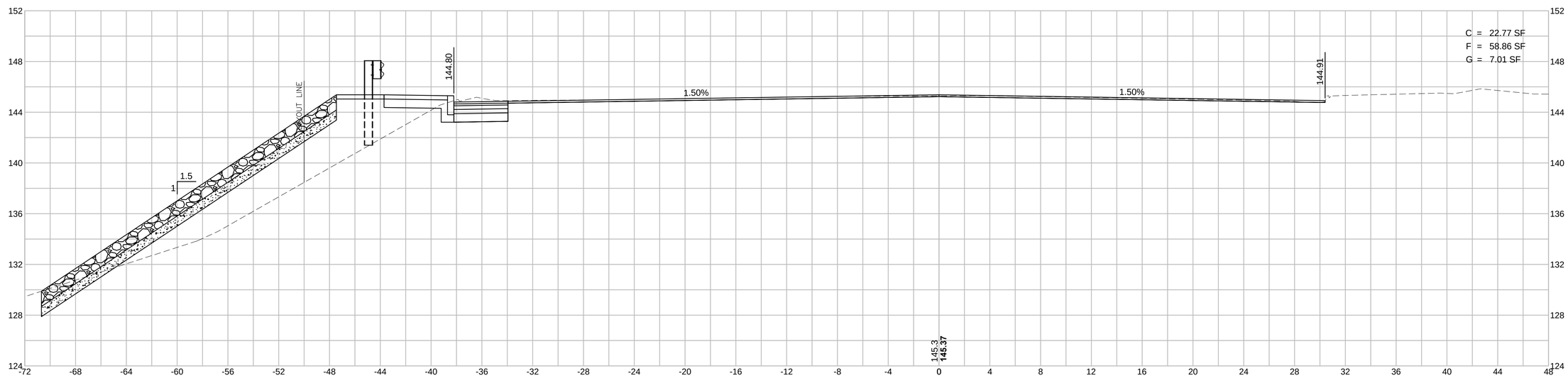
CORRIDOR.DWG Plotted on 26-Jan-2017 3:09 PM

HINGHAM
DERBY STREET

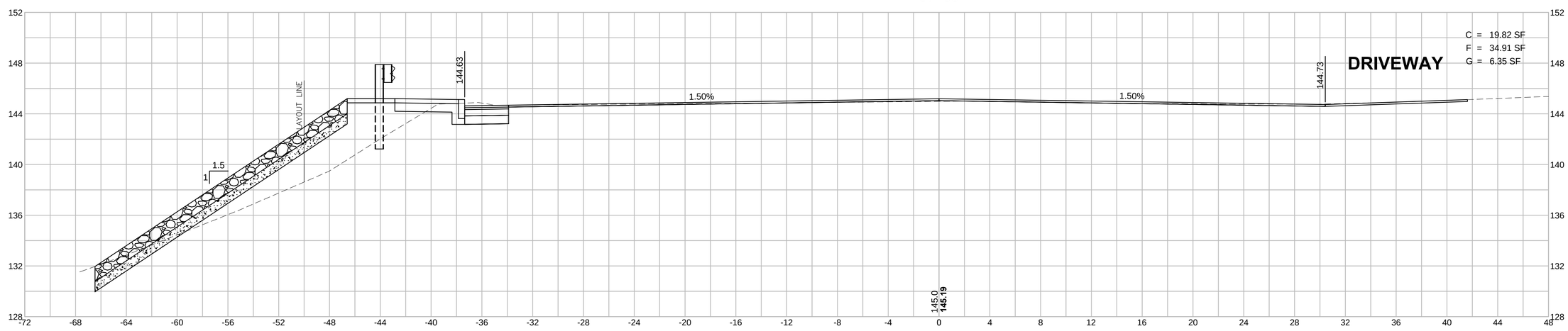
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	108	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 29

DERBY STREET CONST BASELINE
87+50



DERBY STREET CONST BASELINE
87+00



HOR. SCALE IN FEET
VER. SCALE IN FEET

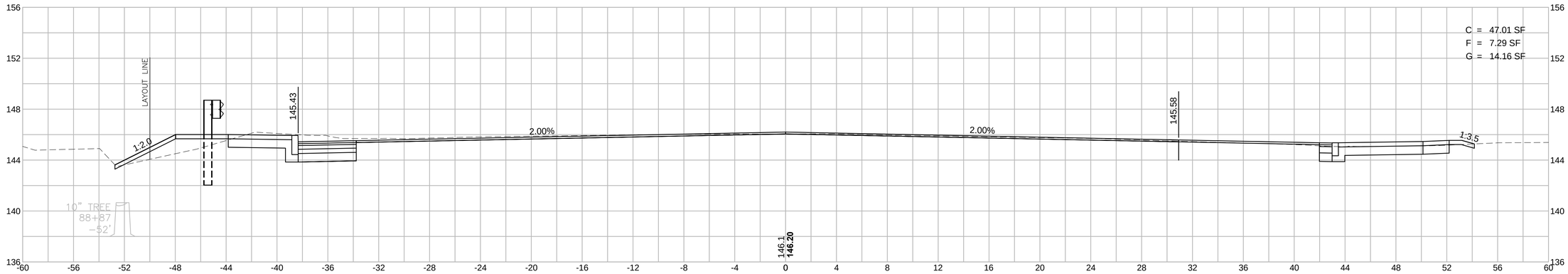
CORRIDOR.DWG Plotted on 26-Jan-2017 3:09 PM

HINGHAM
DERBY STREET

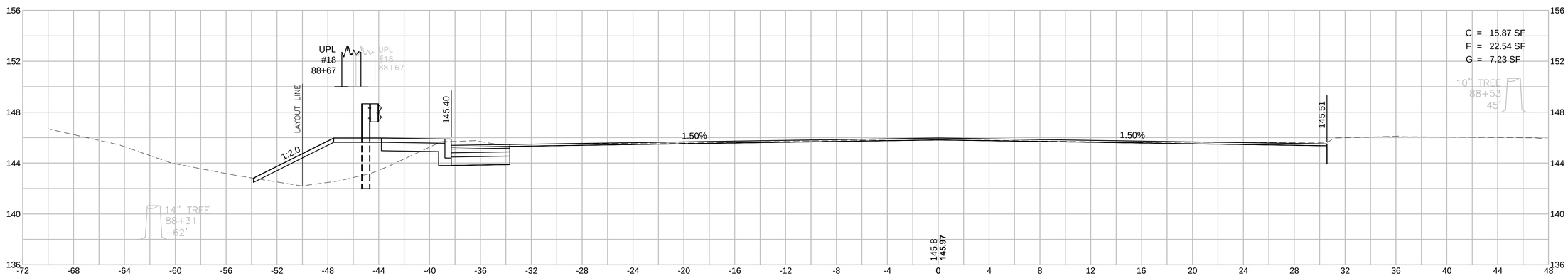
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	109	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 30

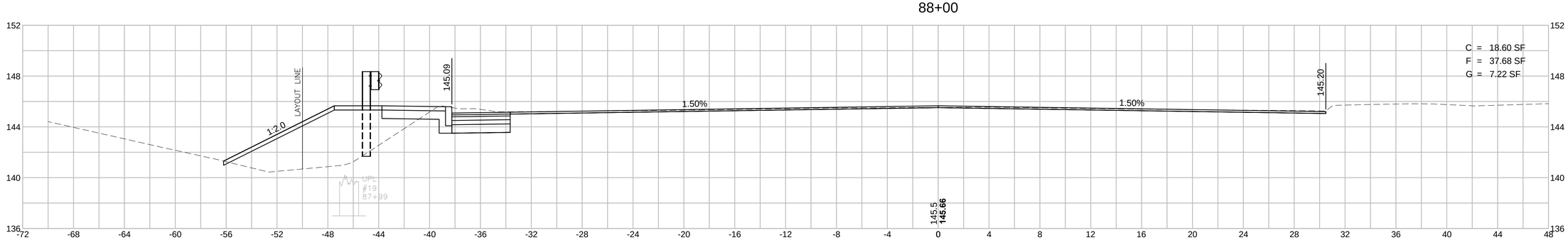
DERBY STREET CONST BASELINE
89+00



DERBY STREET CONST BASELINE
88+50



DERBY STREET CONST BASELINE
88+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

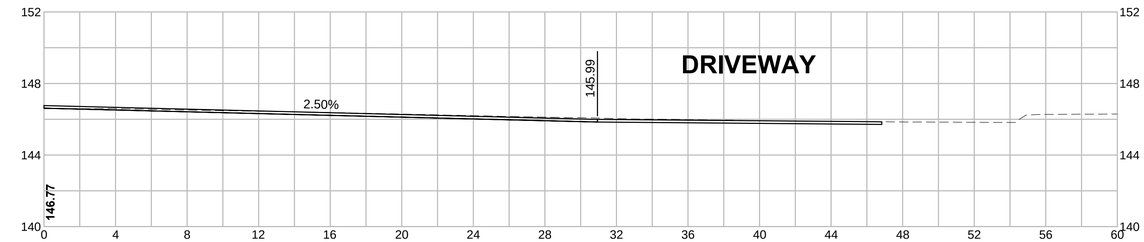
CORRIDOR.DWG Plotted on 26-Jan-2017 3:09 PM

HINGHAM
DERBY STREET

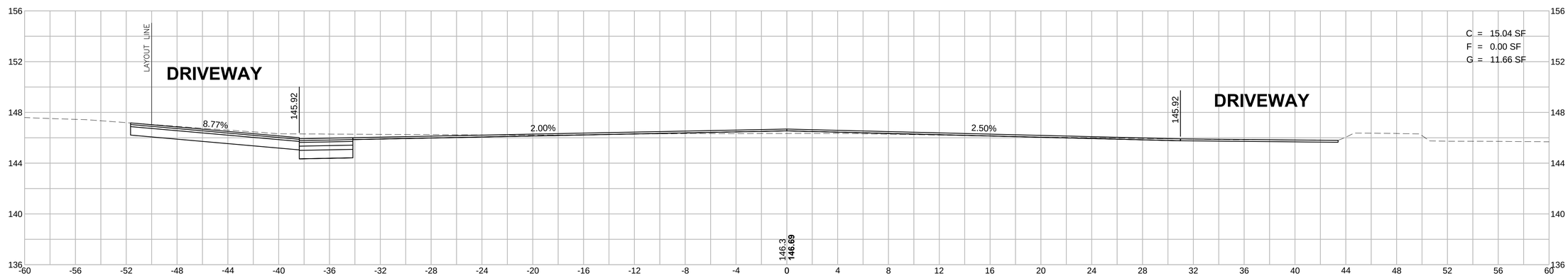
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	110	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 31

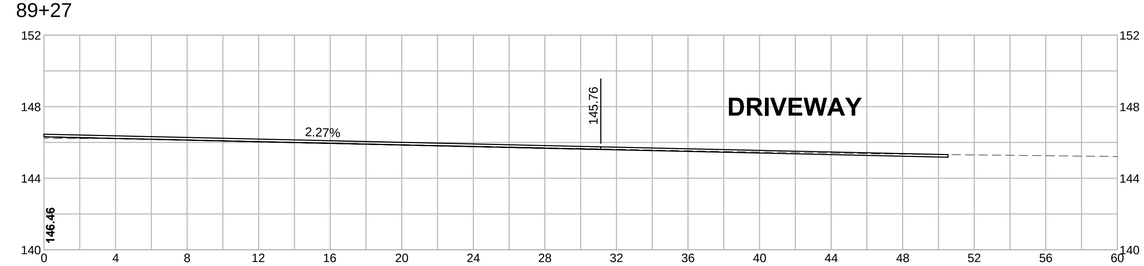
DERBY STREET CONST BASELINE
89+82



DERBY STREET CONST BASELINE
89+50



DERBY STREET CONST BASELINE
89+27



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

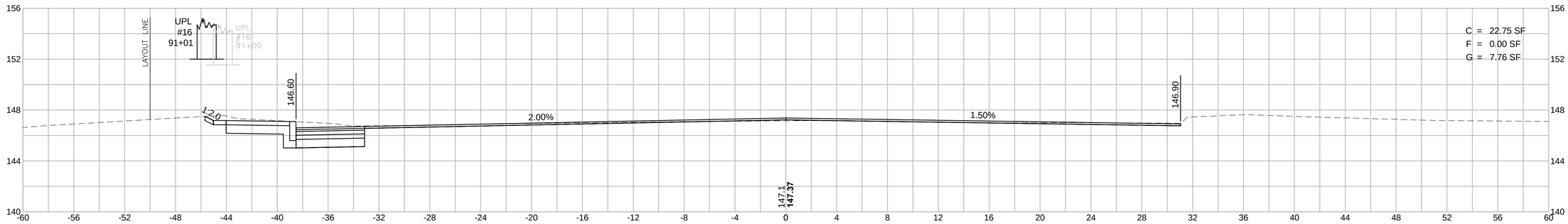
CORRIDOR.DWG Plotted on 26-Jan-2017 3:10 PM

HINGHAM
DERBY STREET

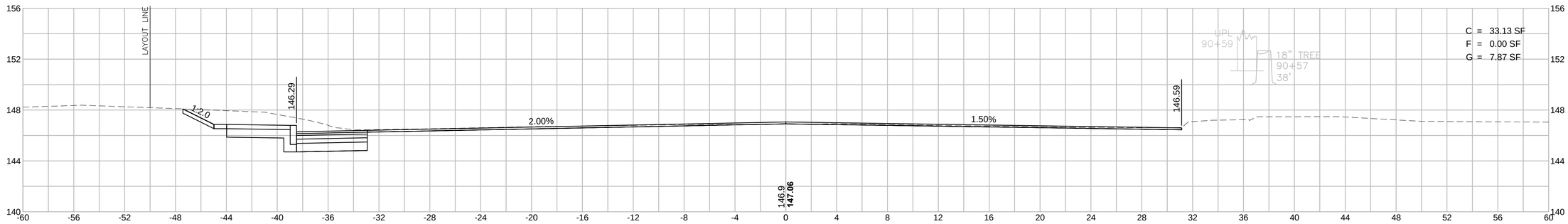
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	111	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 32

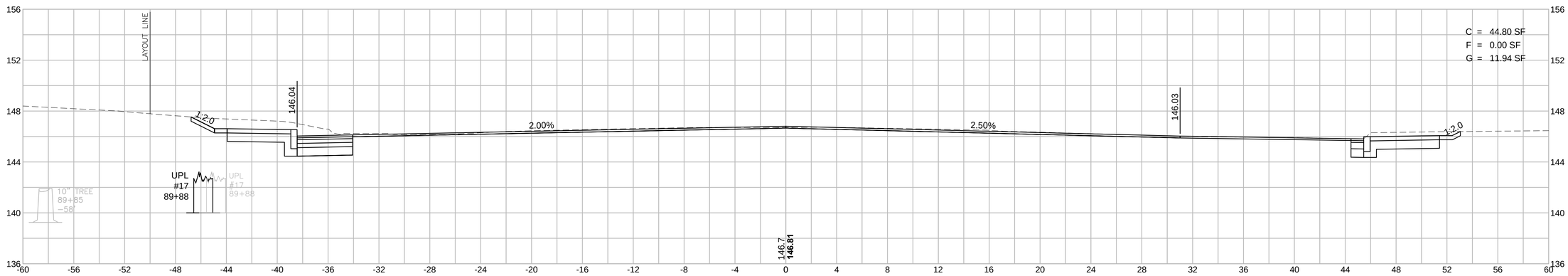
DERBY STREET CONST BASELINE
91+00



DERBY STREET CONST BASELINE
90+50



DERBY STREET CONST BASELINE
90+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

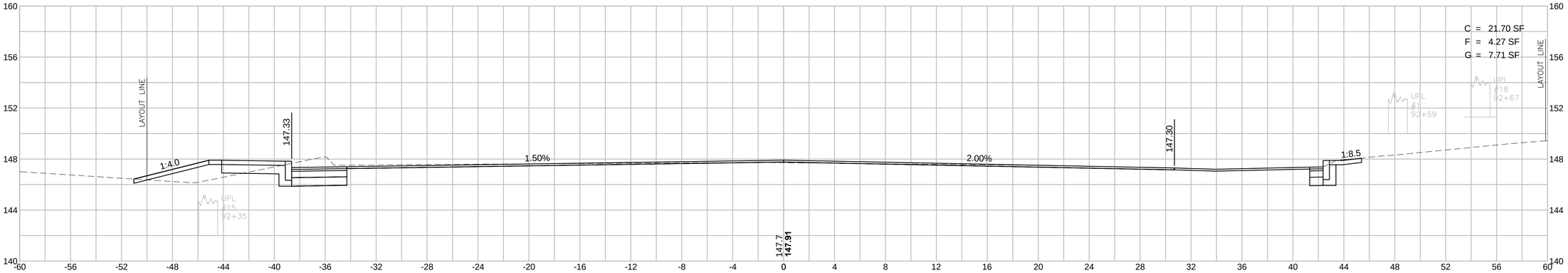
CORRIDOR.DWG Plotted on 26-Jan-2017 3:10 PM

HINGHAM
DERBY STREET

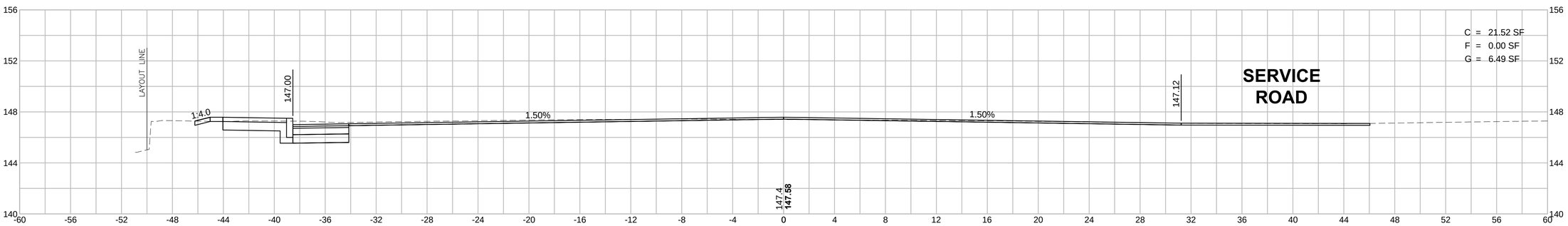
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	112	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 33

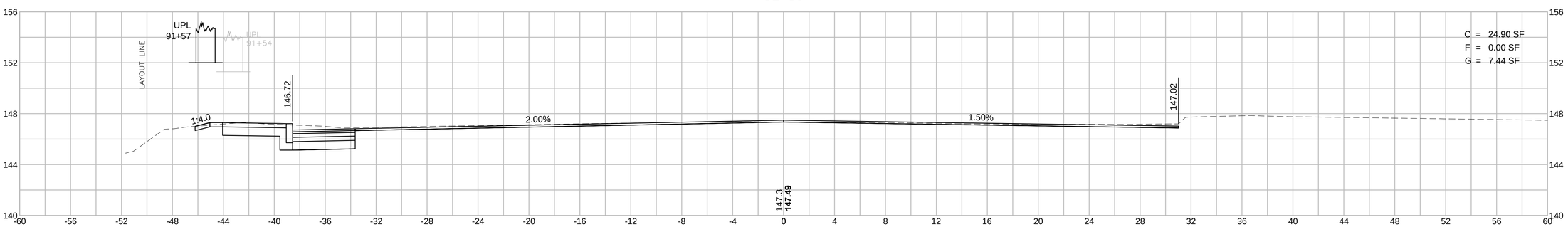
DERBY STREET CONST BASELINE
92+50



DERBY STREET CONST BASELINE
92+00



DERBY STREET CONST BASELINE
91+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

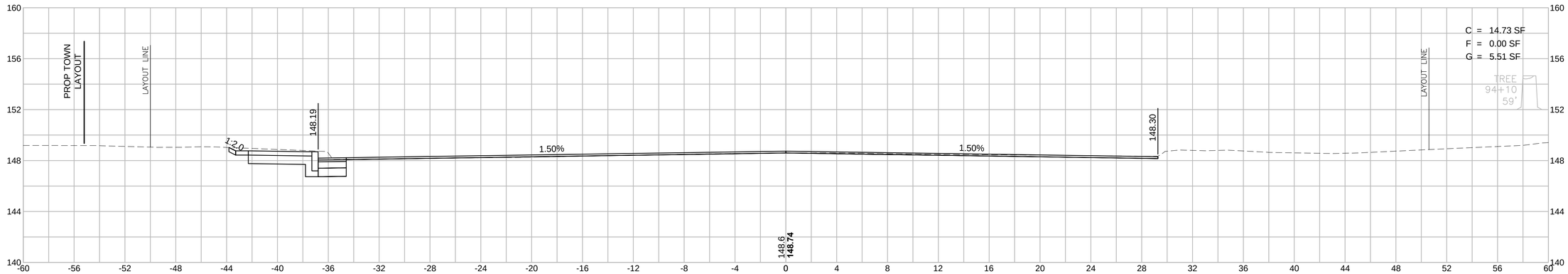
CORRIDOR.DWG Plotted on 26-Jan-2017 3:10 PM

HINGHAM
DERBY STREET

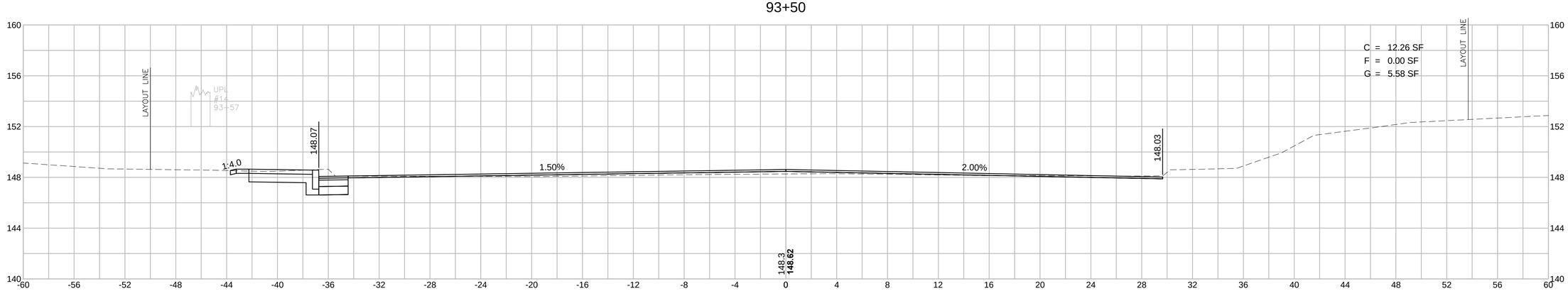
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	113	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 34

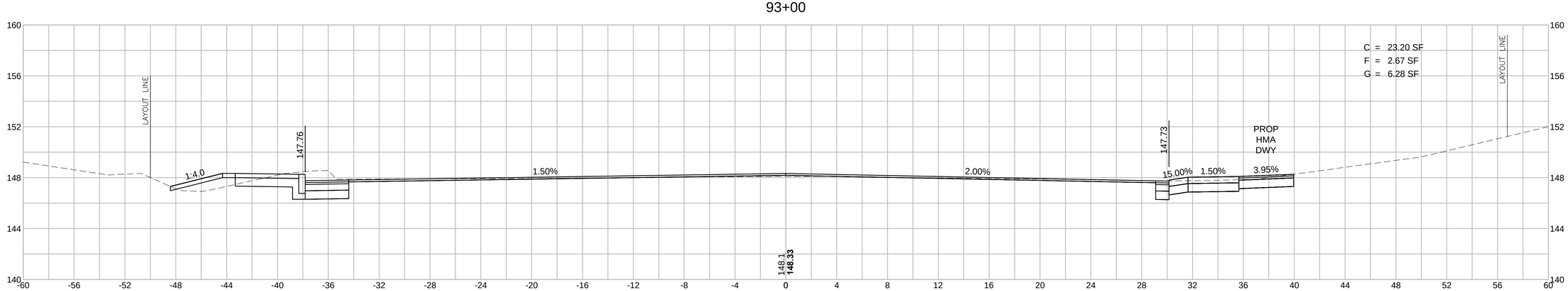
DERBY STREET CONST BASELINE
94+00



DERBY STREET CONST BASELINE
93+50



DERBY STREET CONST BASELINE
93+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

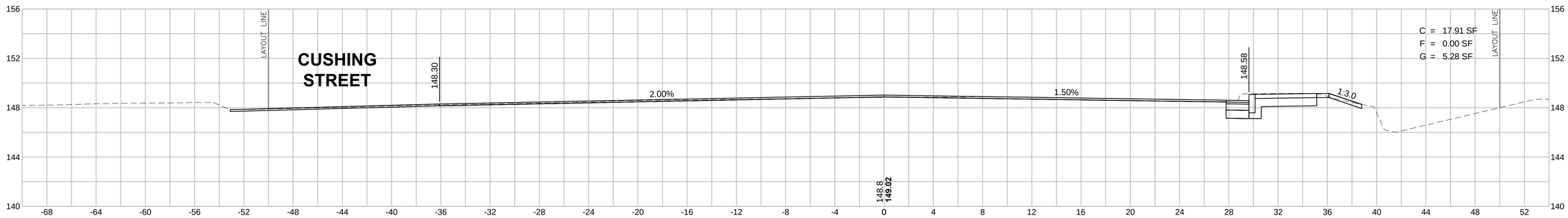
CORRIDOR.DWG Plotted on 26-Jan-2017 3:10 PM

HINGHAM
DERBY STREET

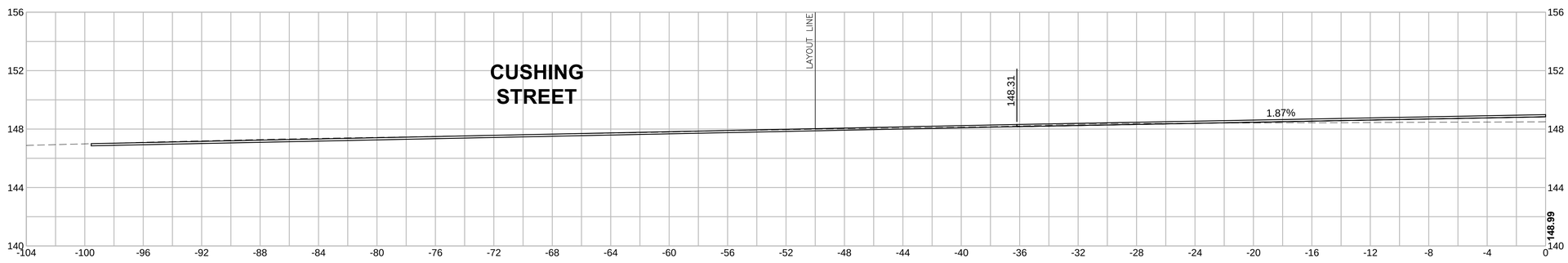
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	114	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 35

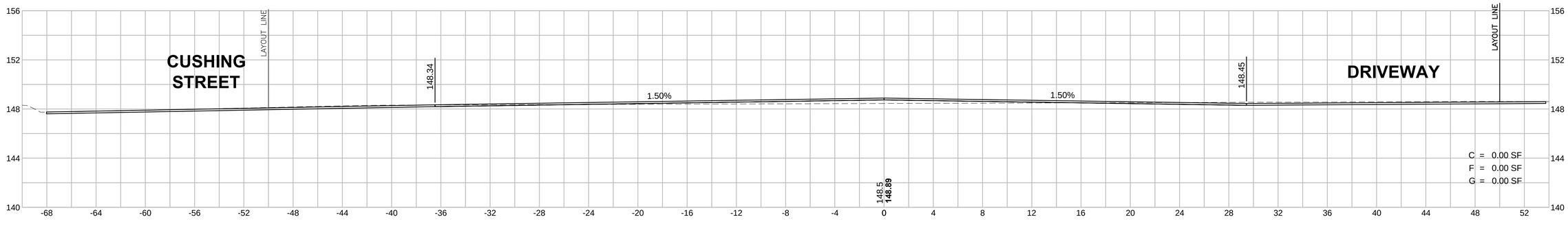
DERBY STREET CONST BASELINE
95+00



DERBY STREET CONST BASELINE
94+87



DERBY STREET CONST BASELINE
94+50



HOR. SCALE IN FEET
VER. SCALE IN FEET

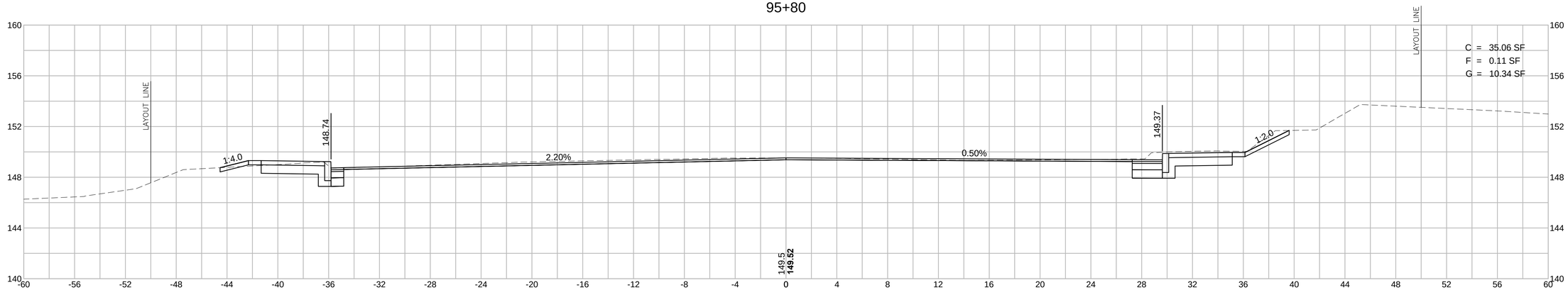
CORRIDOR.DWG Plotted on 26-Jan-2017 3:11 PM

HINGHAM
DERBY STREET

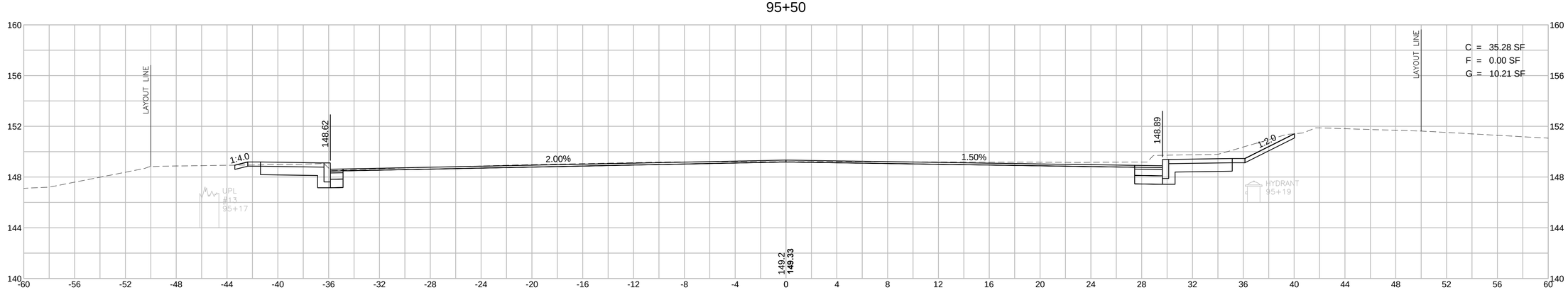
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	115	139
PROJECT FILE NO.	607309		

DERBY STREET
CROSS SECTIONS - 36

DERBY STREET CONST BASELINE
95+80



DERBY STREET CONST BASELINE
95+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

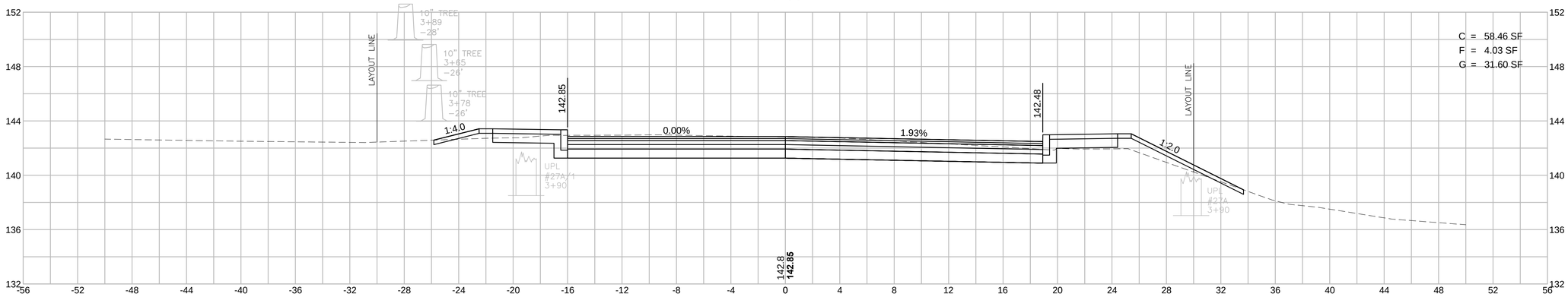
CORRIDOR.DWG Plotted on 26-Jan-2017 3:11 PM

HINGHAM
DERBY STREET

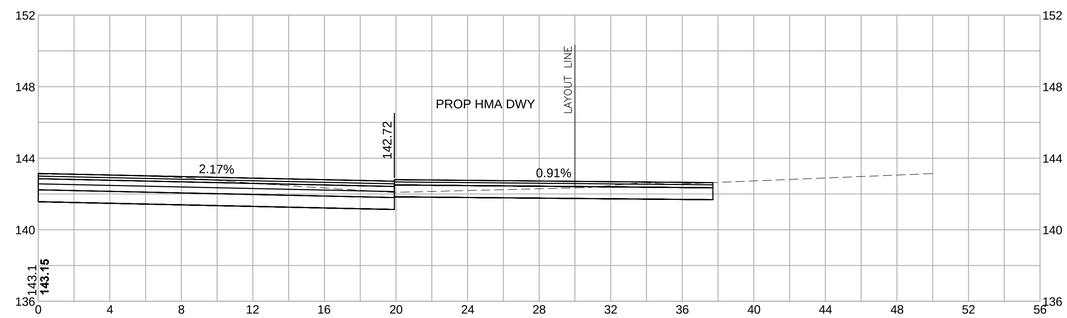
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	116	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 37

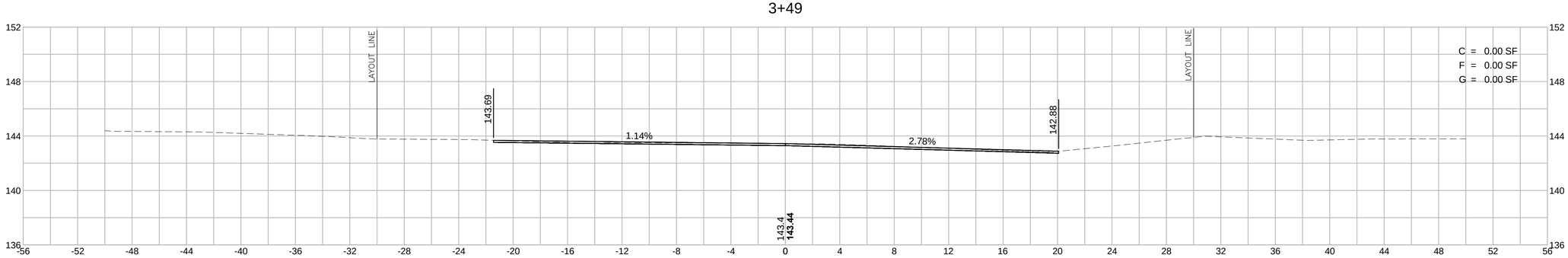
OLD DERBY STREET CONST BASELINE
4+00



OLD DERBY STREET CONST BASELINE
3+74



OLD DERBY STREET CONST BASELINE
3+49



HOR. SCALE IN FEET
VER. SCALE IN FEET

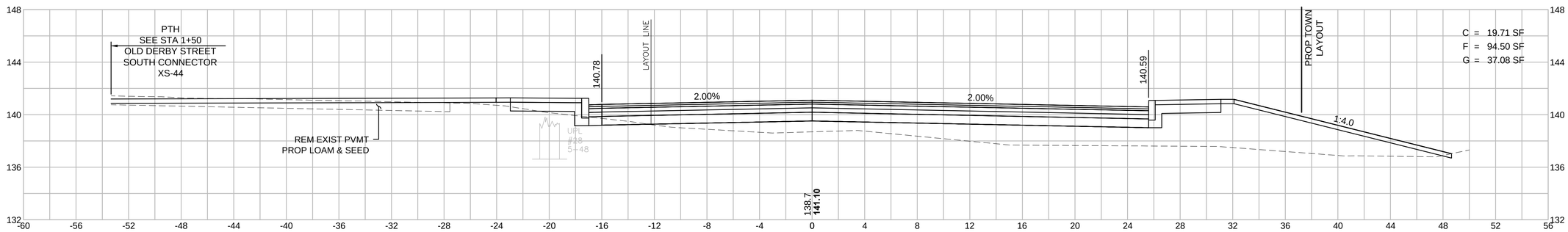
CORRIDOR.DWG Plotted on 26-Jan-2017 3:11 PM

HINGHAM
DERBY STREET

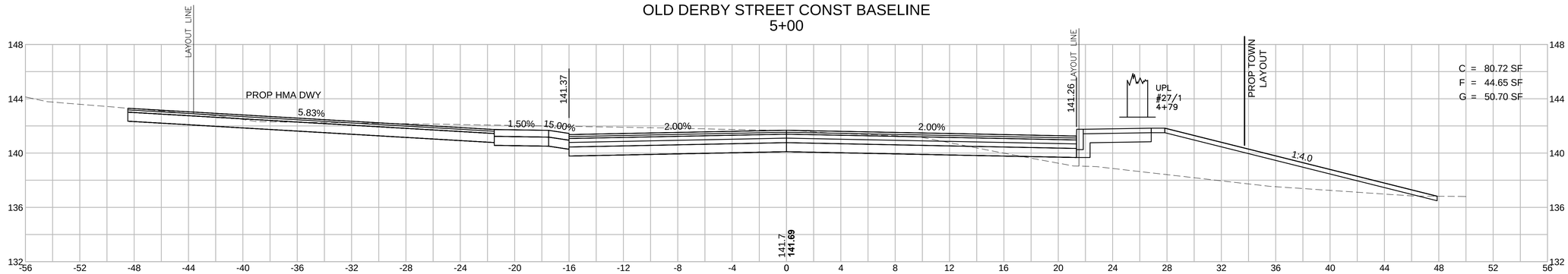
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	117	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 38

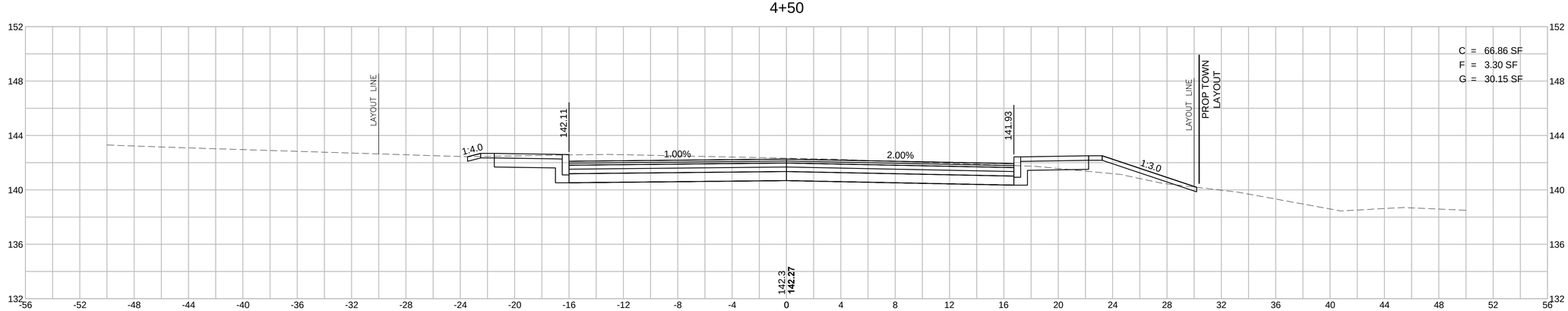
OLD DERBY STREET CONST BASELINE
5+50



OLD DERBY STREET CONST BASELINE
5+00



OLD DERBY STREET CONST BASELINE
4+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

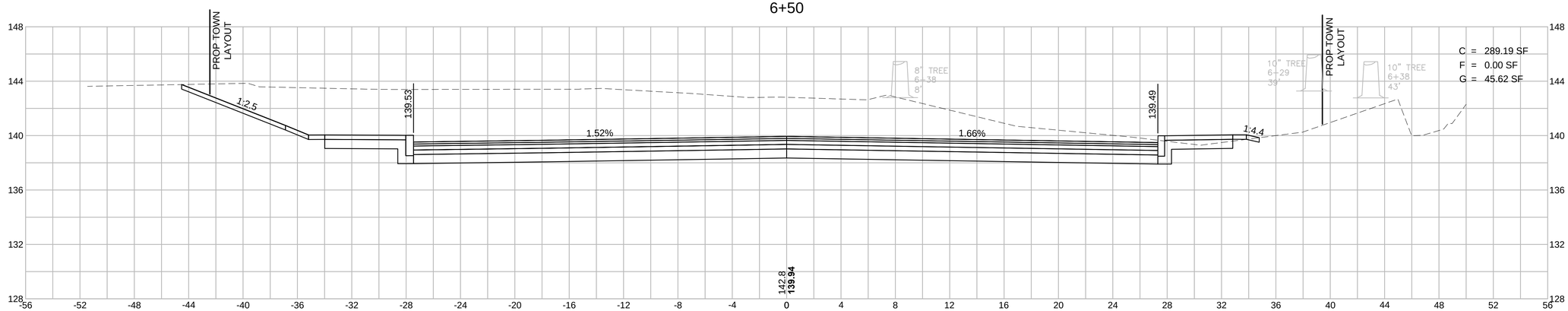
CORRIDOR.DWG Plotted on 26-Jan-2017 3:11 PM

HINGHAM
DERBY STREET

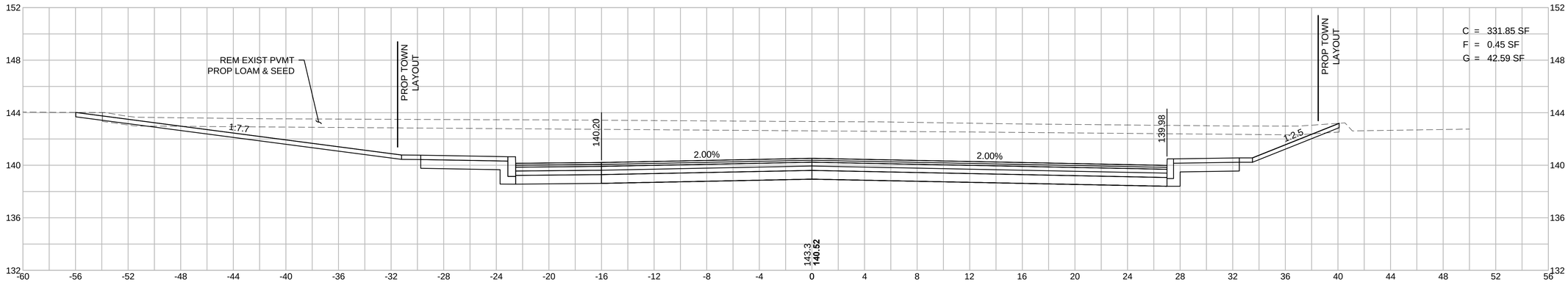
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	118	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 39

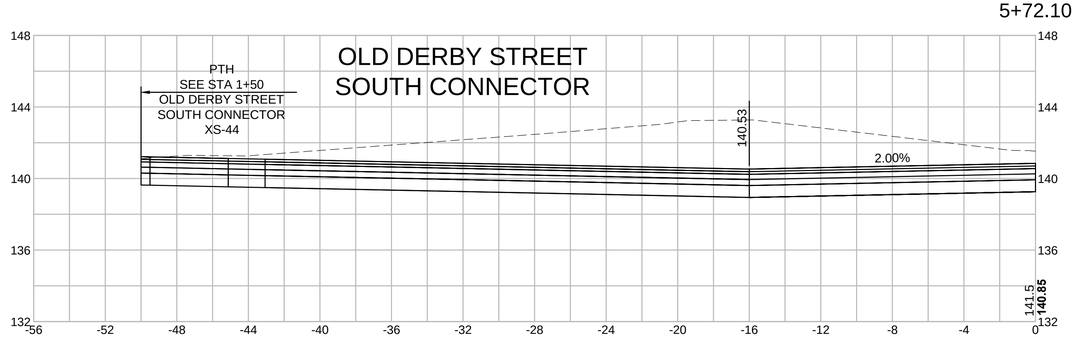
OLD DERBY STREET CONST BASELINE
6+50



OLD DERBY STREET CONST BASELINE
6+00



OLD DERBY STREET CONST BASELINE
5+72.10



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

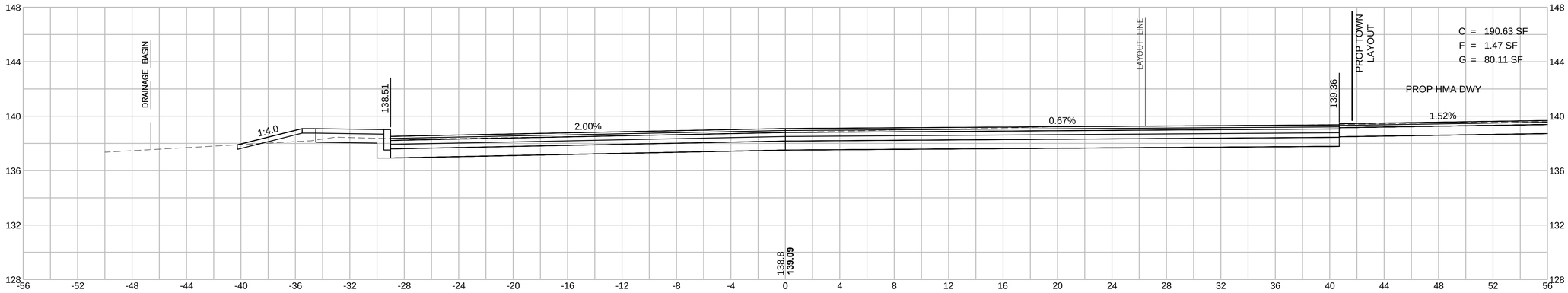
CORRIDOR.DWG Plotted on 26-Jan-2017 5:27 PM

HINGHAM
DERBY STREET

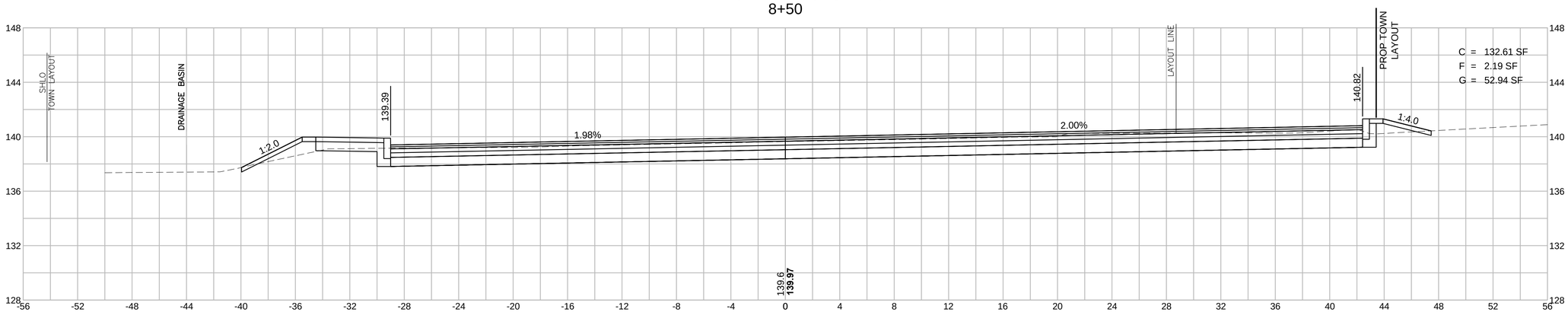
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	119	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 40

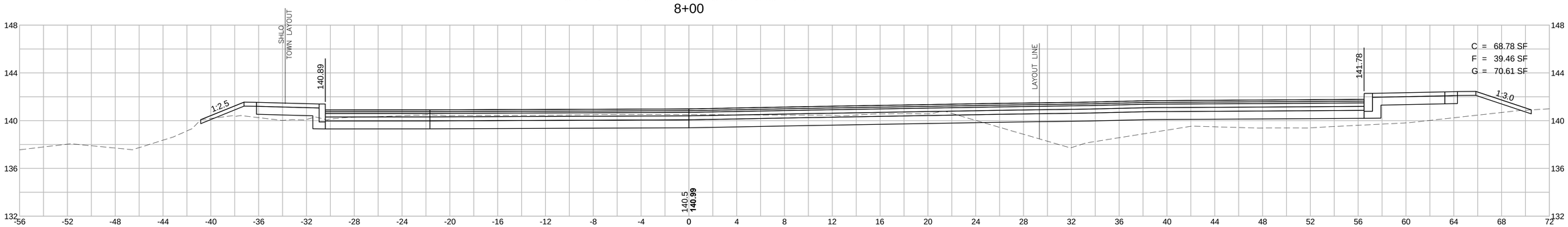
OLD DERBY STREET CONST BASELINE
9+00



OLD DERBY STREET CONST BASELINE
8+50



OLD DERBY STREET CONST BASELINE
8+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

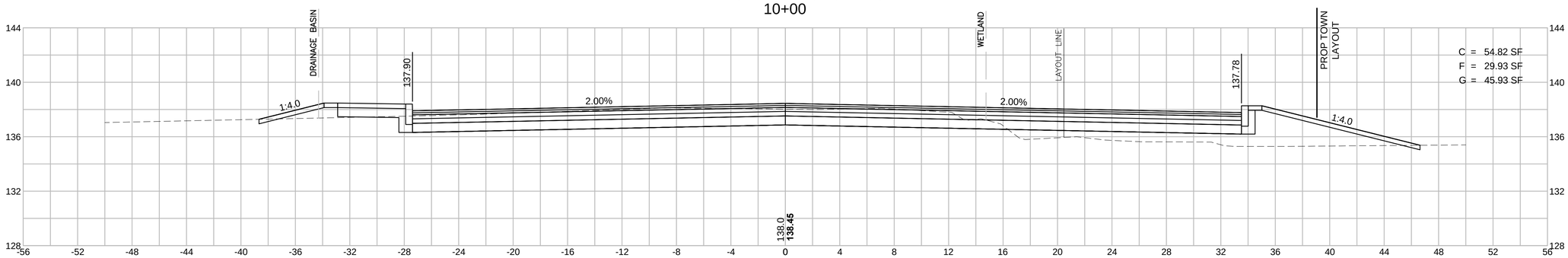
CORRIDOR.DWG Plotted on 26-Jan-2017 3:12 PM

HINGHAM
DERBY STREET

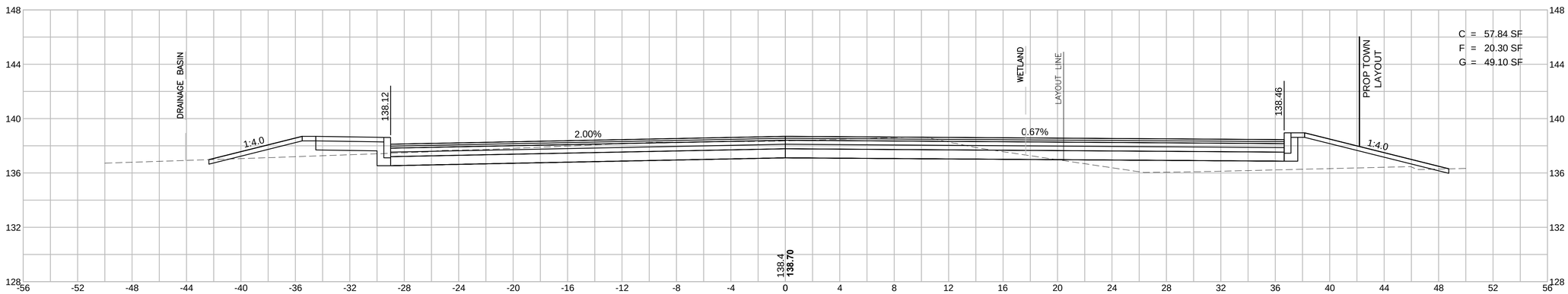
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	120	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 41

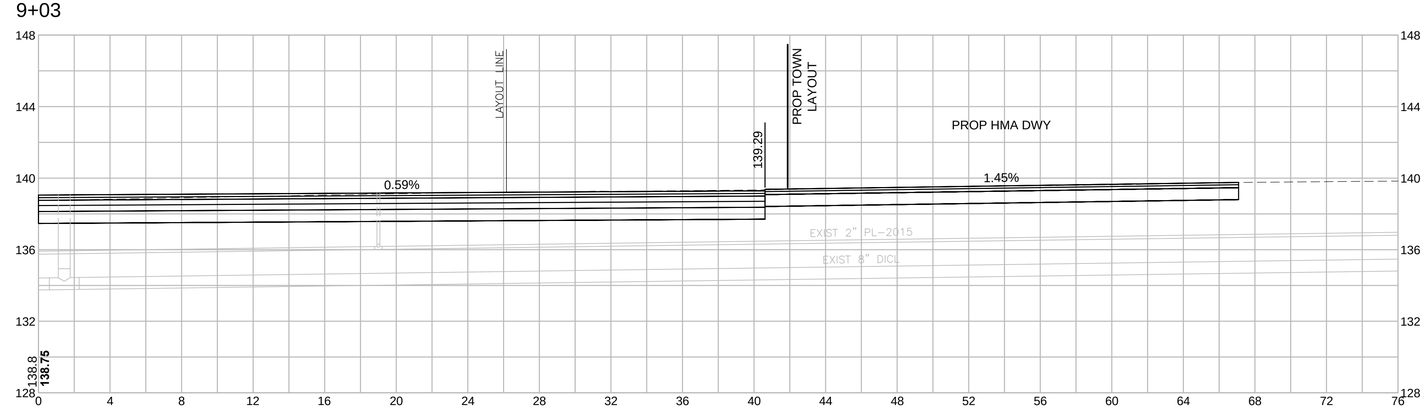
OLD DERBY STREET CONST BASELINE
10+00



OLD DERBY STREET CONST BASELINE
9+50



OLD DERBY STREET CONST BASELINE
9+03



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

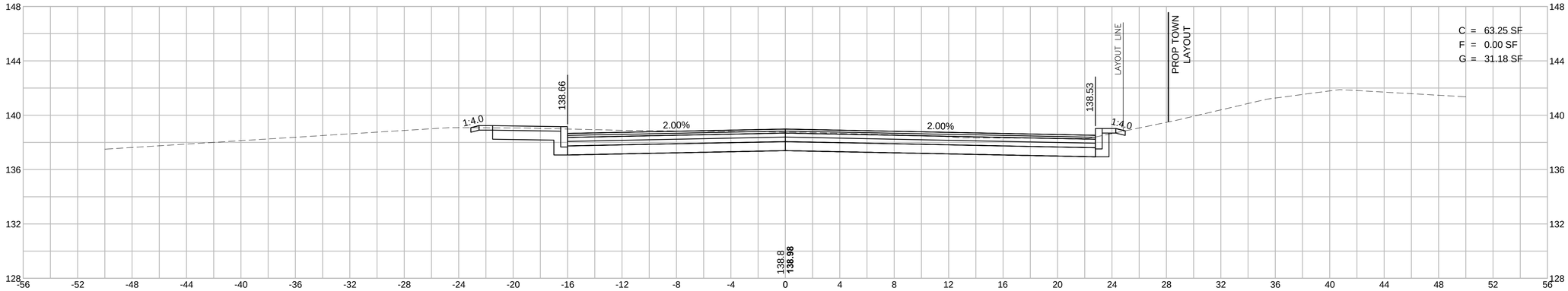
Plotted on 26-Jan-2017 3:12 PM
CORRIDOR.DWG

HINGHAM
DERBY STREET

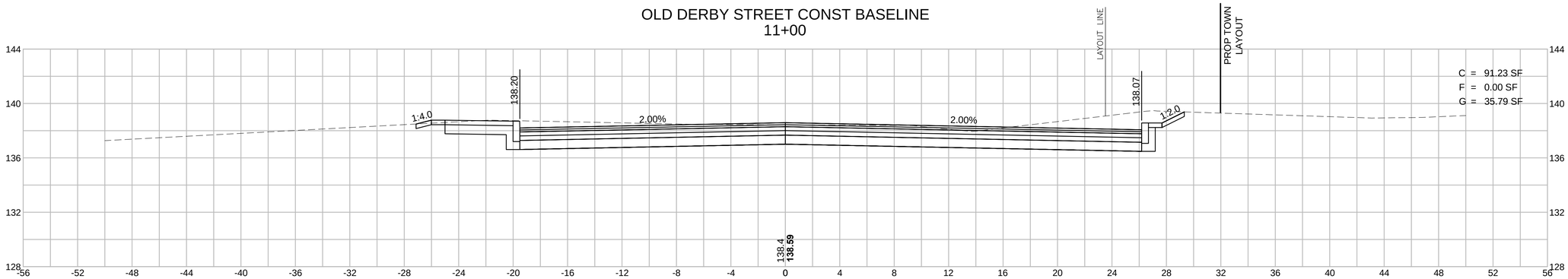
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	121	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 42

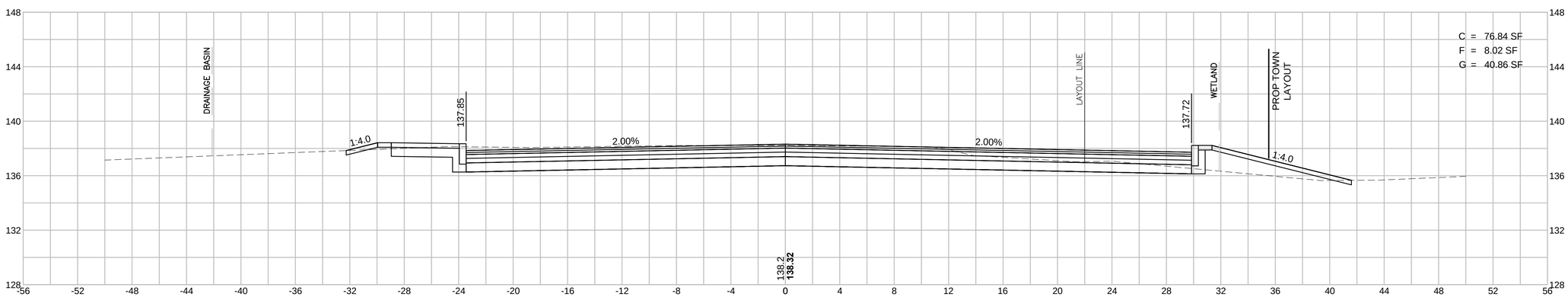
OLD DERBY STREET CONST BASELINE
11+50



OLD DERBY STREET CONST BASELINE
11+00



OLD DERBY STREET CONST BASELINE
10+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

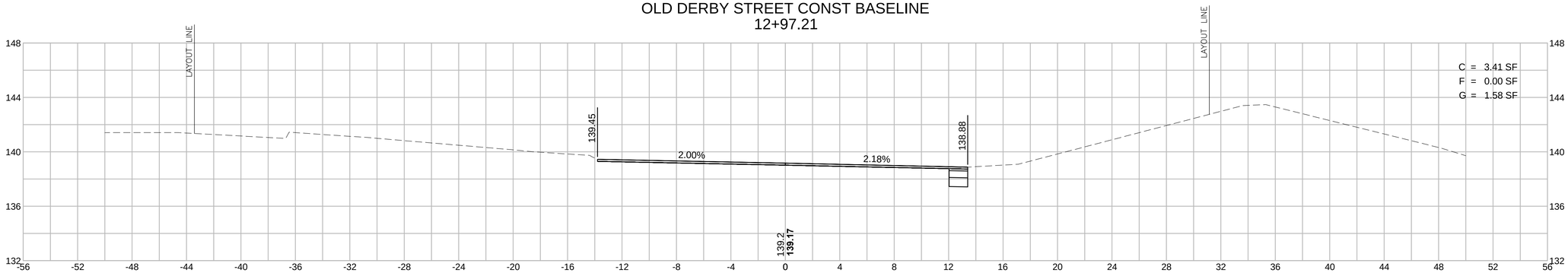
CORRIDOR.DWG Plotted on 26-Jan-2017 3:12 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	122	139
PROJECT FILE NO.	607309		

OLD DERBY STREET
CROSS SECTIONS - 43

OLD DERBY STREET CONST BASELINE
12+97.21



OLD DERBY STREET CONST BASELINE
12+50

OLD DERBY STREET CONST BASELINE
12+00

HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CORRIDOR.DWG Plotted on 26-Jan-2017 3:13 PM

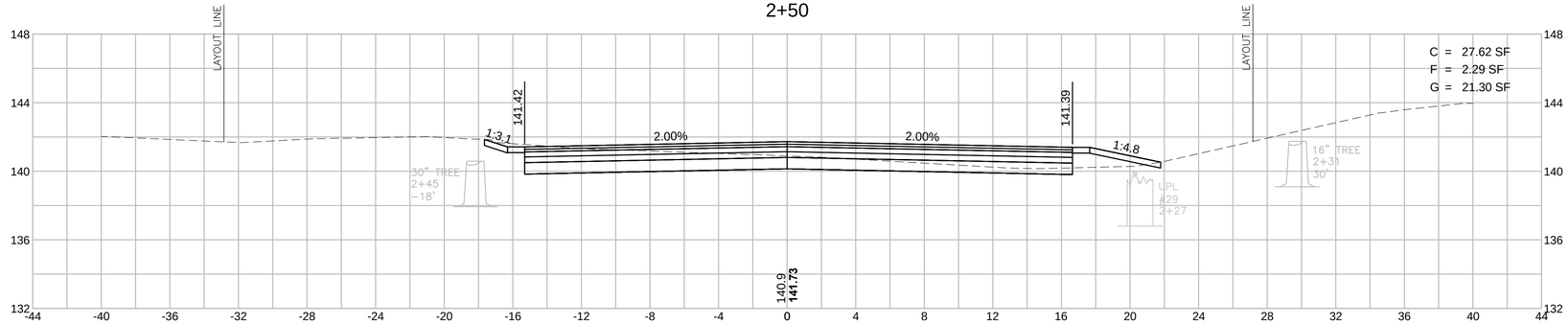
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	123	139
PROJECT FILE NO.	607309		

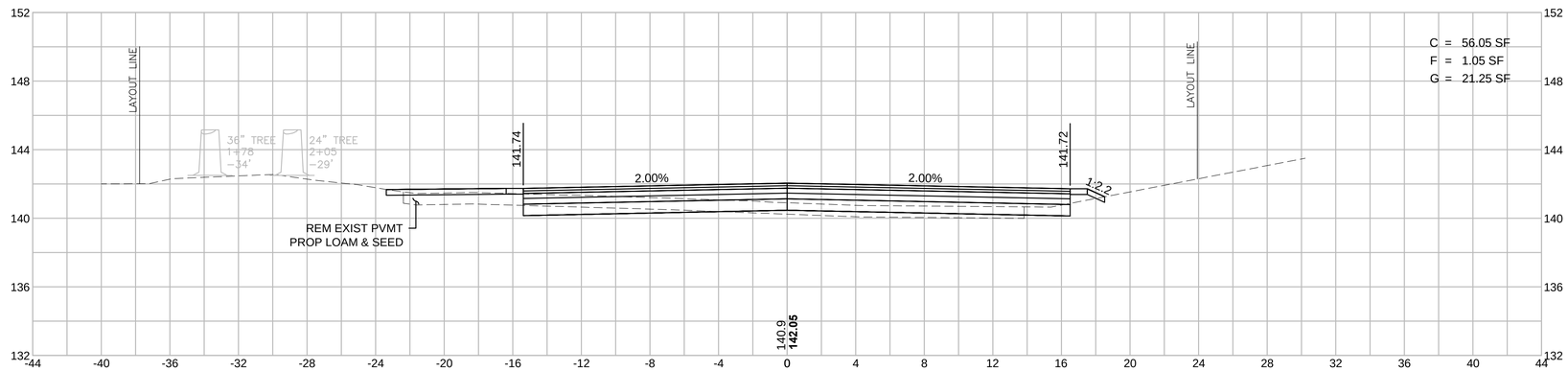
OLD DERBY STREET SOUTH CONNECTOR
CROSS SECTIONS - 44

Plotted on 26-Jan-2017 3:13 PM
CORRIDOR.DWG

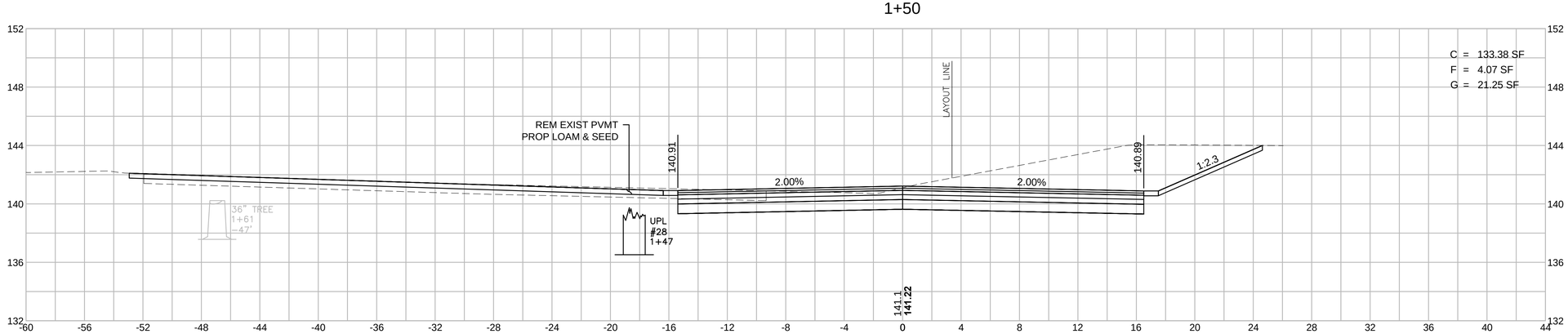
OLD DERBY STREET SOUTH CONNECTOR CONST BASELINE
2+50



OLD DERBY STREET SOUTH CONNECTOR CONST BASELINE
2+00



OLD DERBY STREET SOUTH CONNECTOR CONST BASELINE
1+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

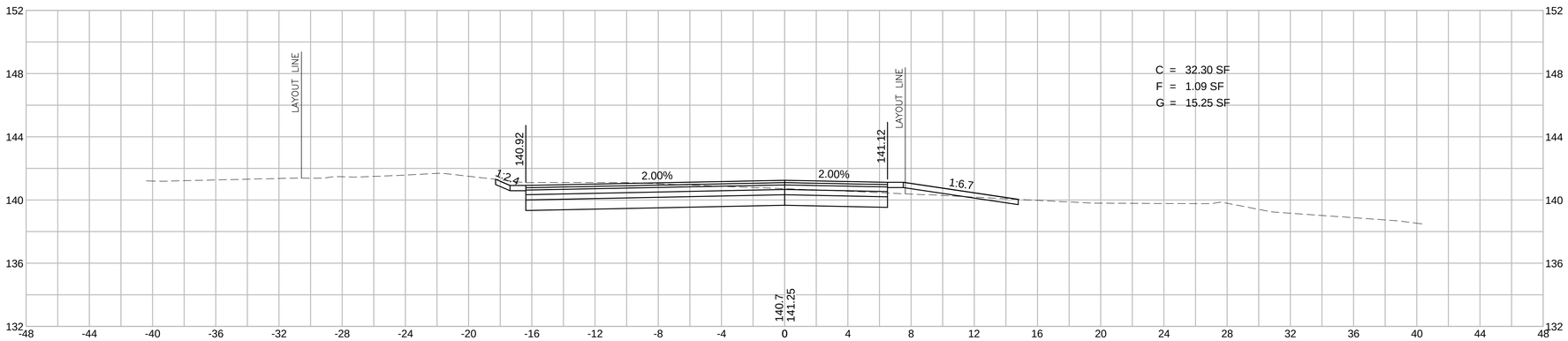
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	124	139
PROJECT FILE NO.	607309		

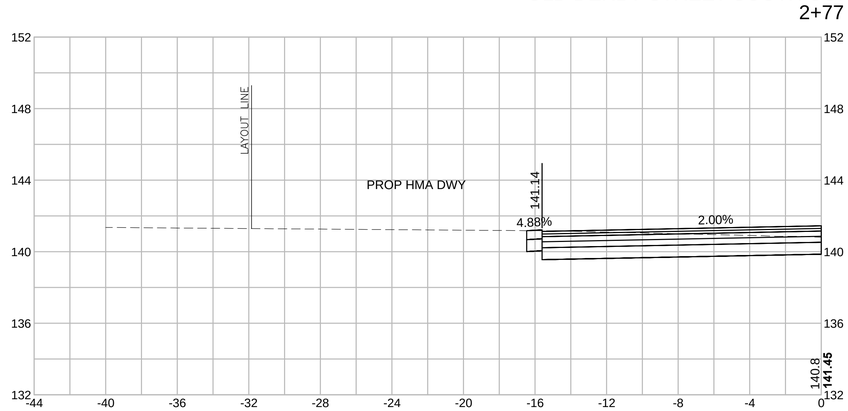
OLD DERBY STREET SOUTH CONNECTOR
CROSS SECTIONS - 45

CORRIDOR.DWG Plotted on 26-Jan-2017 3:13 PM

OLD DERBY STREET SOUTH CONNECTOR CONST BASELINE
2+96



OLD DERBY STREET SOUTH CONNECTOR CONST BASELINE
2+77



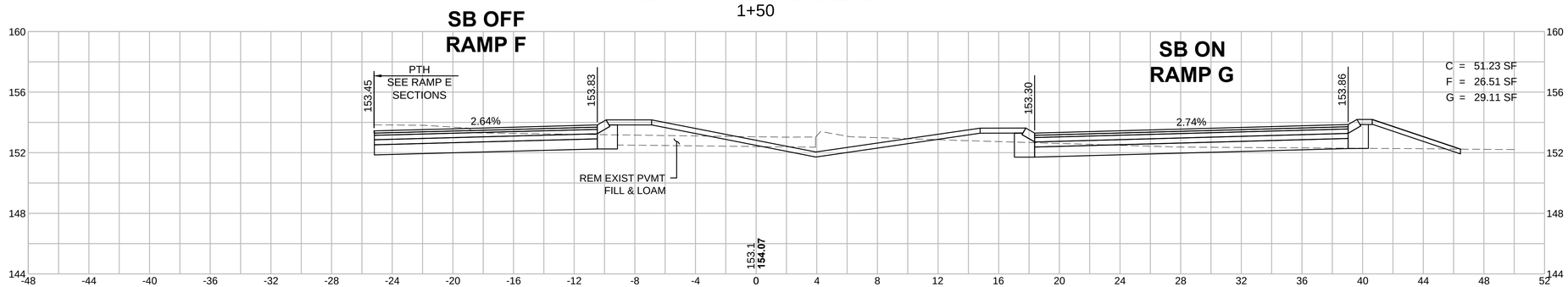
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HINGHAM
DERBY STREET

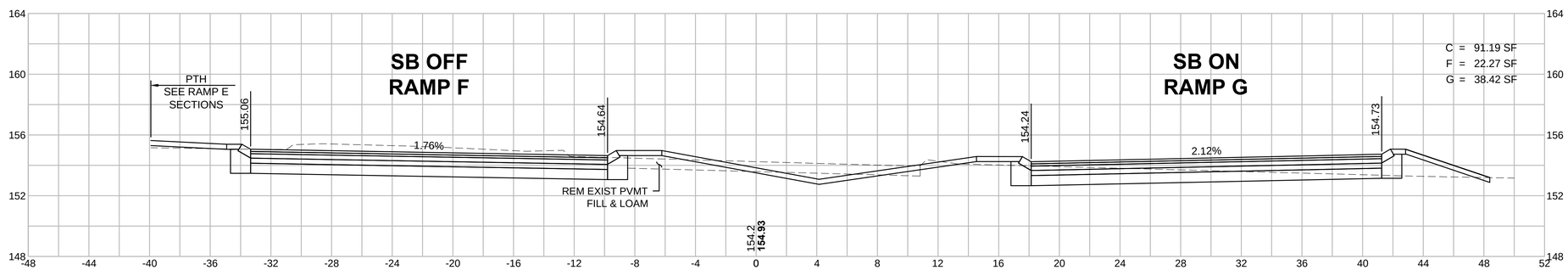
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	125	139
PROJECT FILE NO.	607309		

SOUTHBOUND RAMPS BASELINE
CROSS SECTIONS - 46

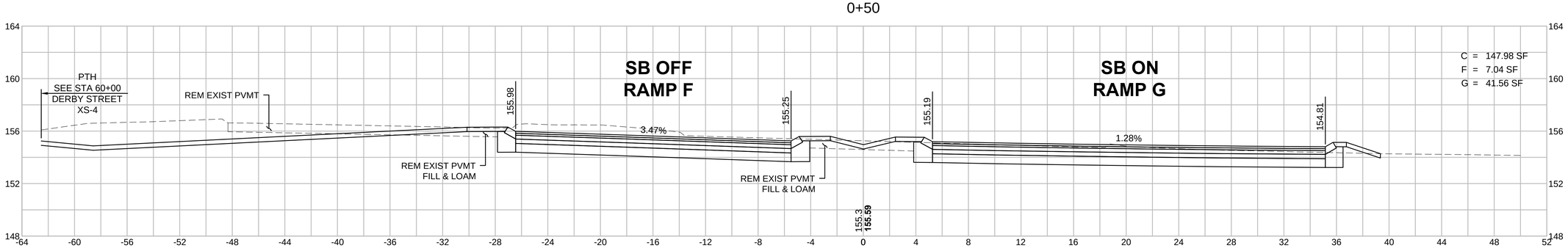
SB RAMPS CONST BASELINE
1+50



SB RAMPS CONST BASELINE
1+00



SB RAMPS CONST BASELINE
0+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

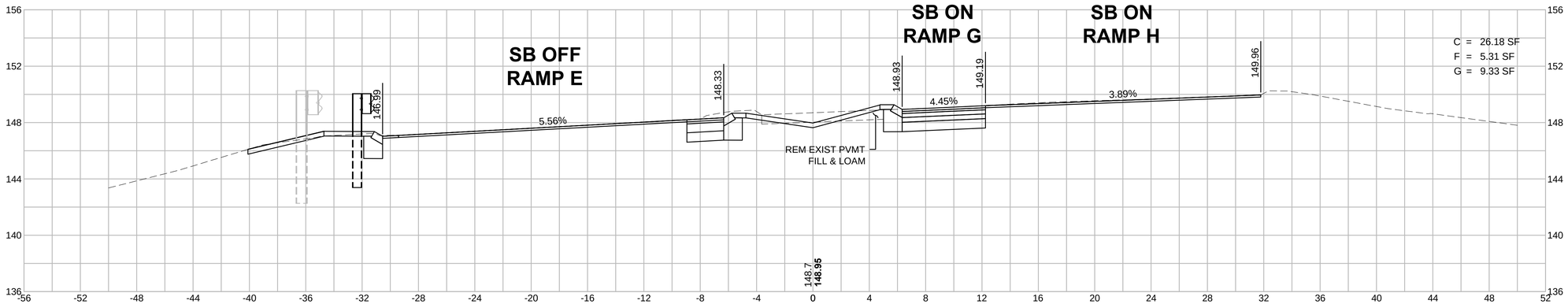
CORRIDOR.DWG Plotted on 26-Jan-2017 3:14 PM

HINGHAM
DERBY STREET

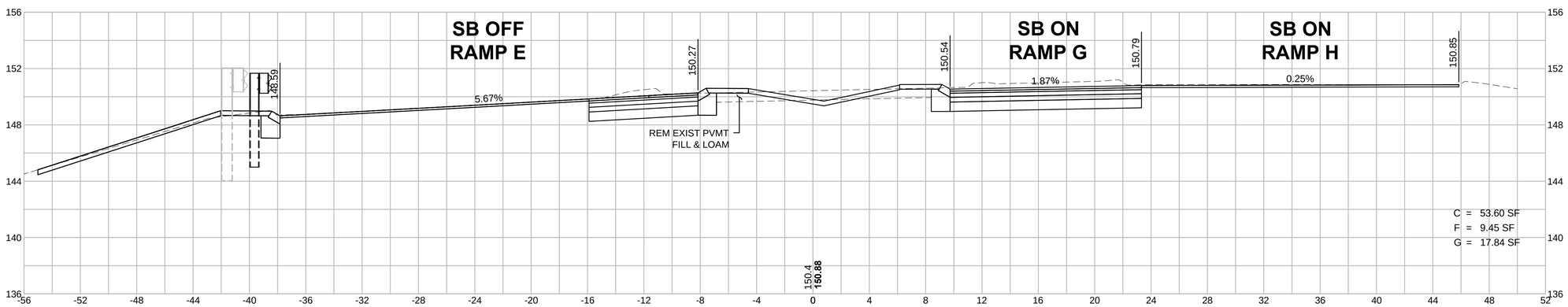
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	126	139
PROJECT FILE NO.	607309		

SOUTHBOUND RAMPS BASELINE
CROSS SECTIONS - 47

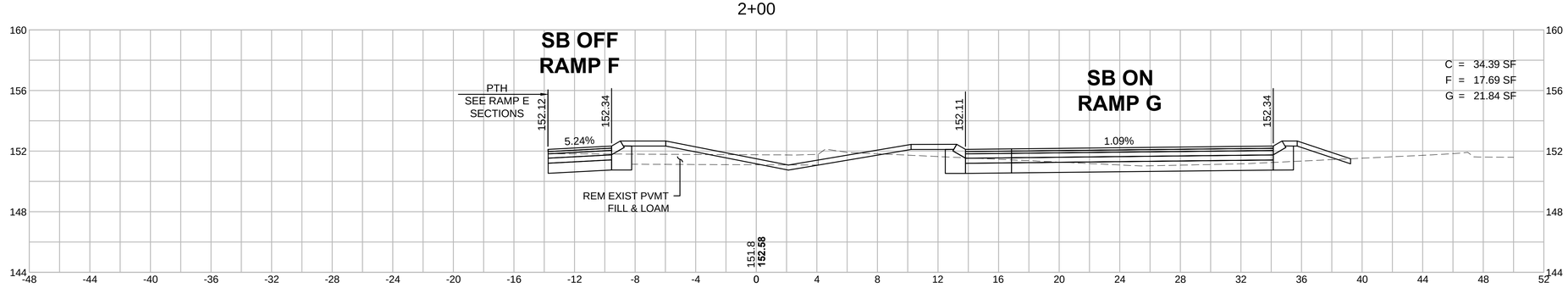
SB RAMPS CONST BASELINE
3+00



SB RAMPS CONST BASELINE
2+50



SB RAMPS CONST BASELINE
2+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

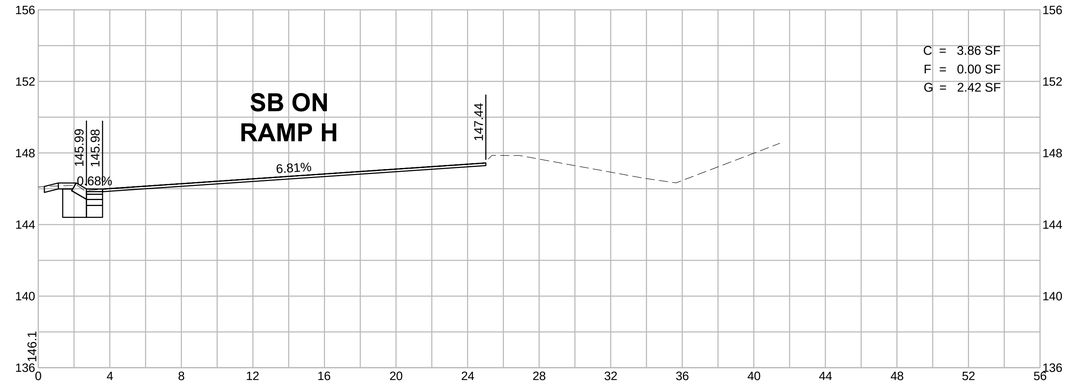
CORRIDOR.DWG Plotted on 26-Jan-2017 3:14 PM

HINGHAM
DERBY STREET

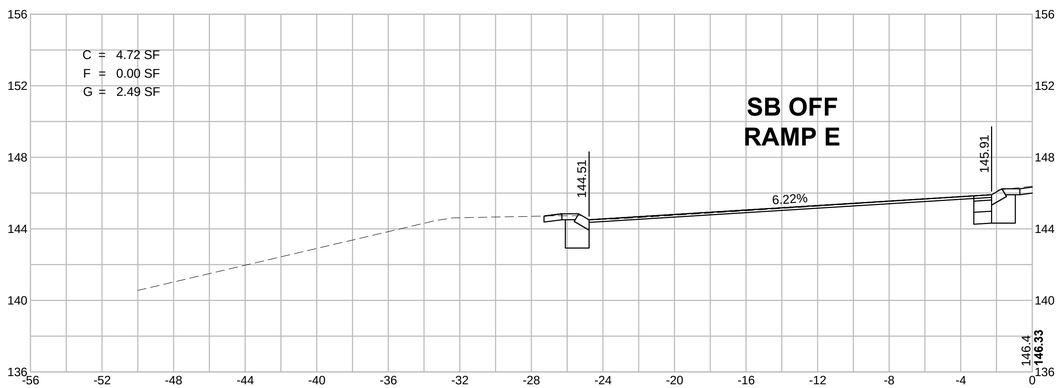
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	127	139
PROJECT FILE NO.	607309		

SOUTHBOUND RAMPS BASELINE
CROSS SECTIONS - 48

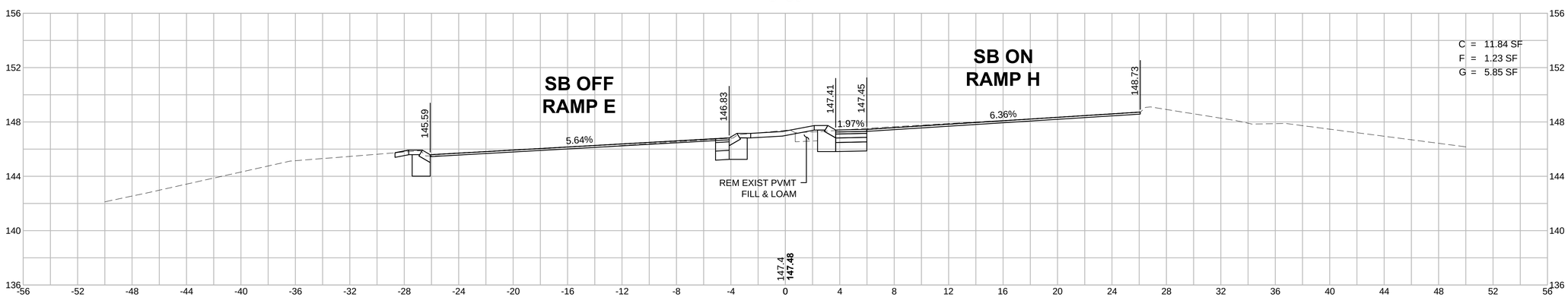
SB RAMPS CONST BASELINE
4+00



SB RAMPS CONST BASELINE
3+88



SB RAMPS CONST BASELINE
3+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

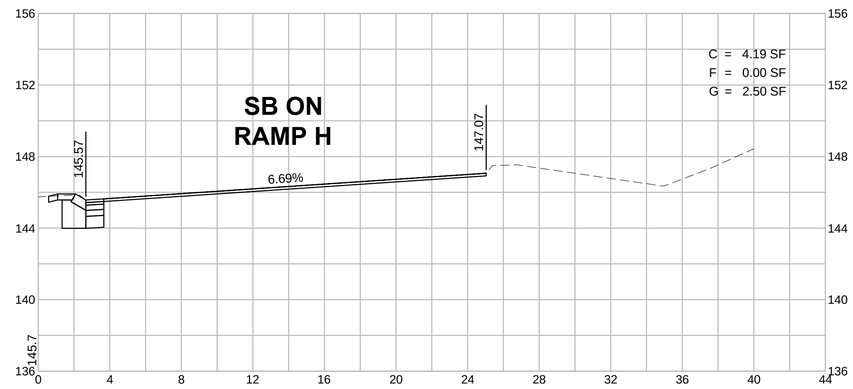
CORRIDOR.DWG Plotted on 26-Jan-2017 3:14 PM

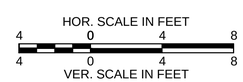
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	128	139
PROJECT FILE NO.		607309	

SOUTHBOUND RAMPS BASELINE
CROSS SECTIONS - 49

SB RAMPS CONST BASELINE
4+15





CORRIDOR.DWG Plotted on 26-Jan-2017 3:14 PM

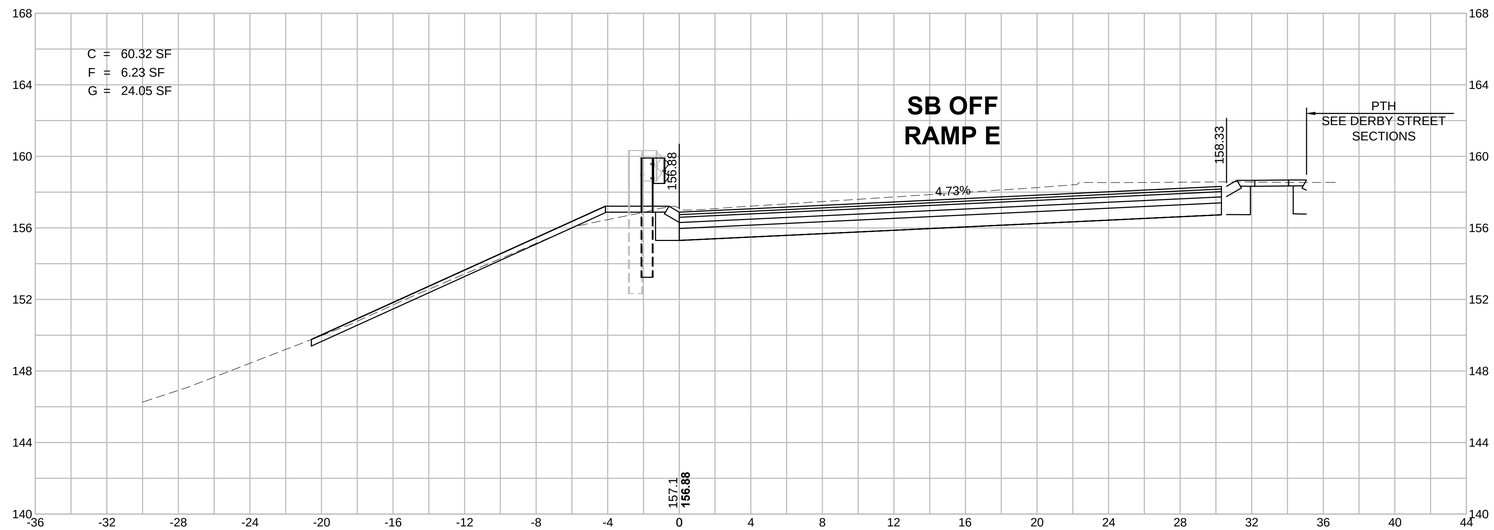
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	129	139
PROJECT FILE NO.	607309		

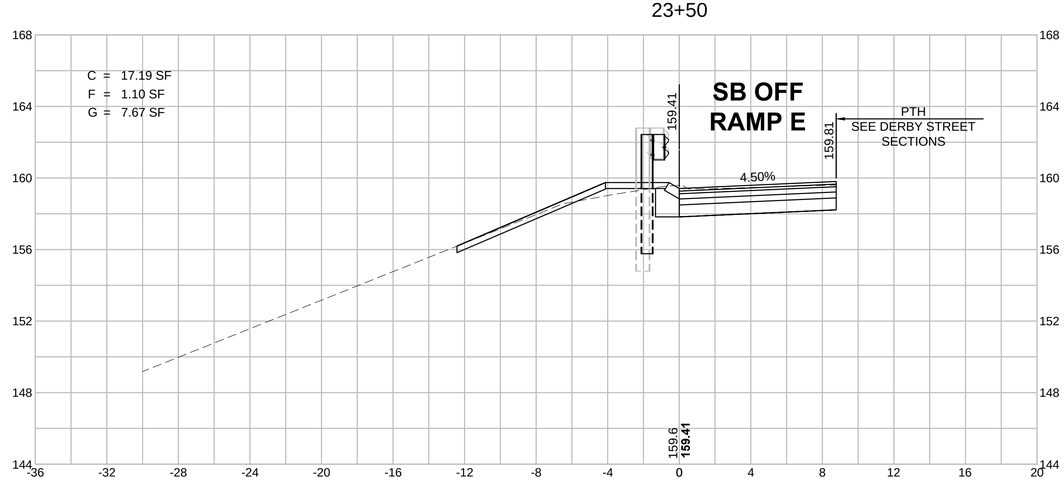
SOUTHBOUND RAMP E
PROP SHLO AUXILIARY BASELINE "A"
CROSS SECTIONS - 50

CORRIDOR.DWG Plotted on 26-Jan-2017 3:15 PM

PROP SHLO AUXILIARY CONST BASELINE "A"
24+00



PROP SHLO AUXILIARY CONST BASELINE "A"
23+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

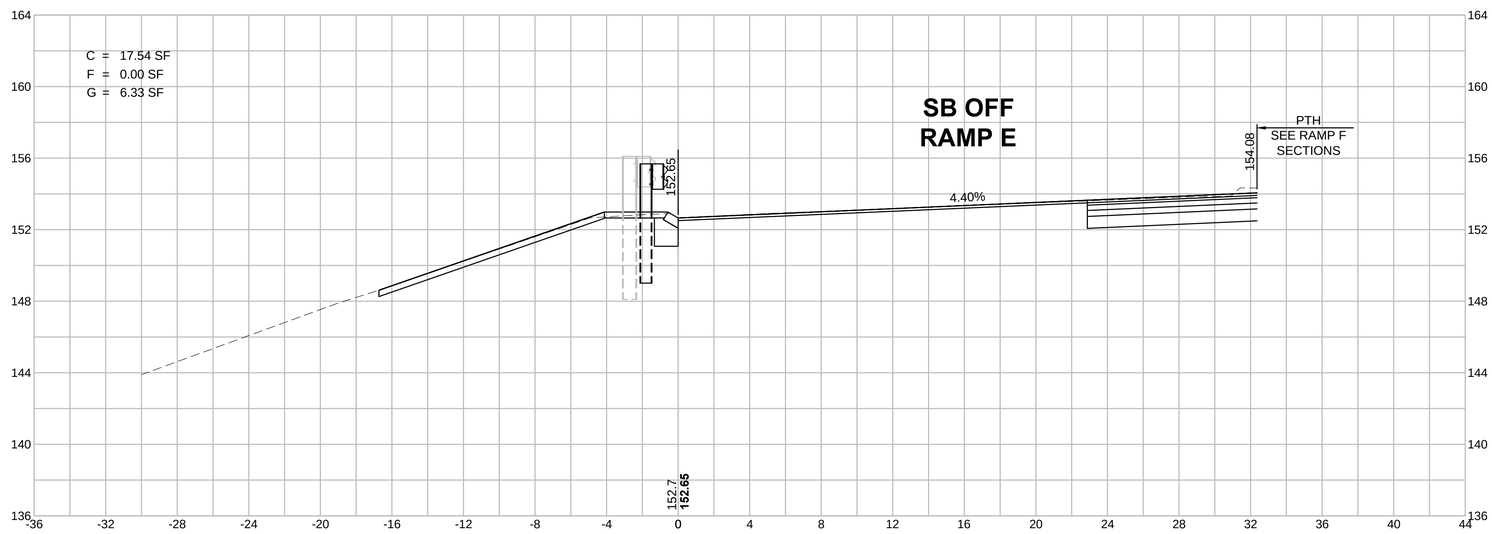
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	130	139
PROJECT FILE NO.	607309		

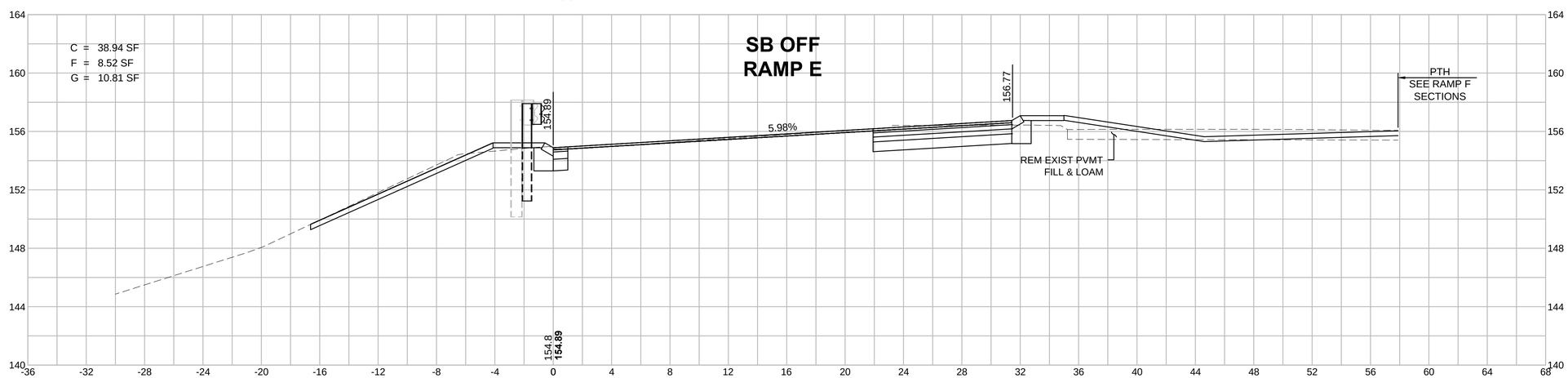
SOUTHBOUND RAMP E
PROP SHLO AUXILIARY BASELINE "A"
CROSS SECTIONS - 51

CORRIDOR.DWG Plotted on 26-Jan-2017 3:15 PM

PROP SHLO AUXILIARY CONST BASELINE "A"
25+00



PROP SHLO AUXILIARY CONST BASELINE "A"
24+50



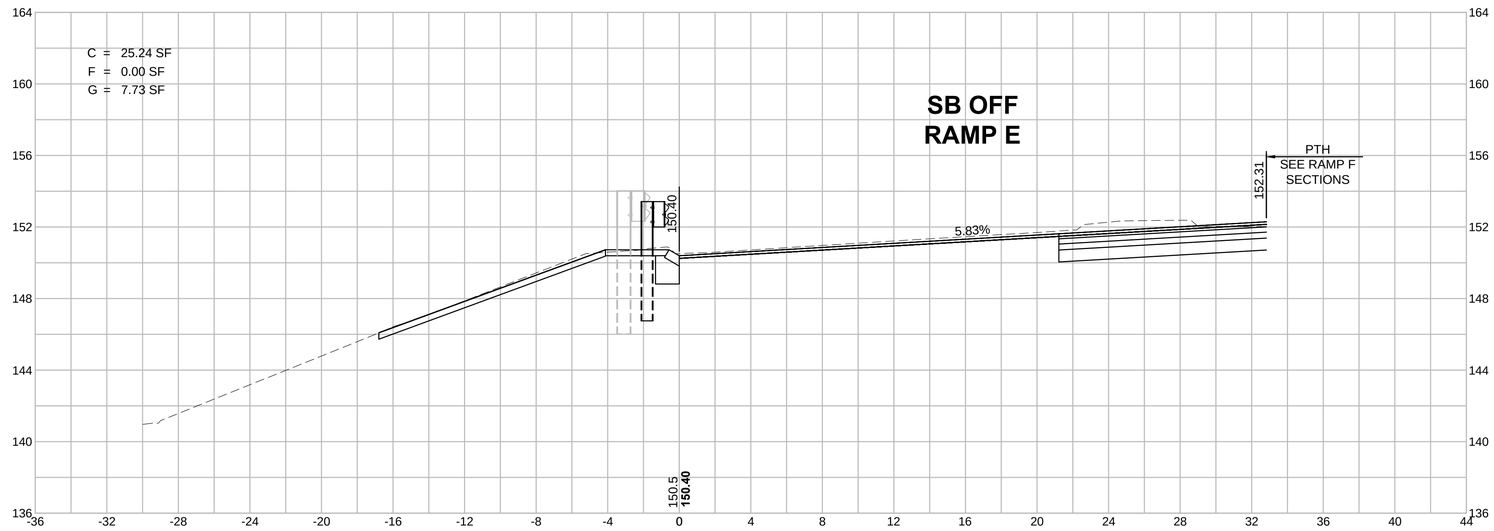
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	131	139
PROJECT FILE NO.	607309		

SOUTHBOUND RAMP E
PROP SHLO AUXILIARY BASELINE "A"
CROSS SECTIONS - 52

PROP SHLO AUXILIARY CONST BASELINE "A"
25+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

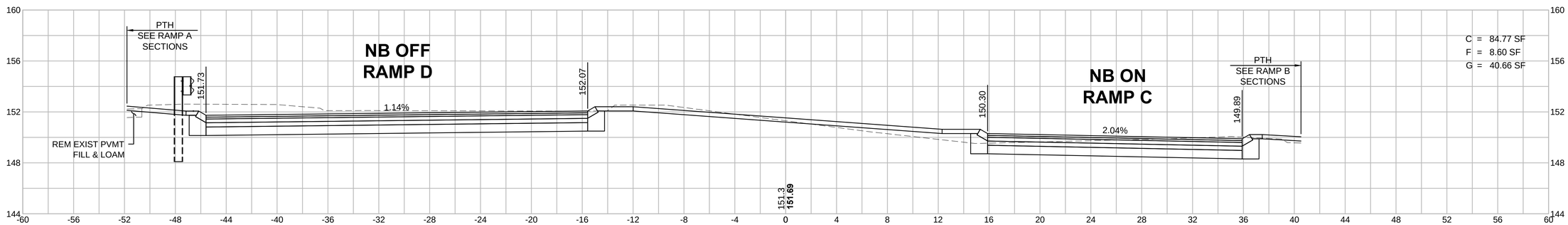
CORRIDOR.DWG Plotted on 26-Jan-2017 3:15 PM

HINGHAM
DERBY STREET

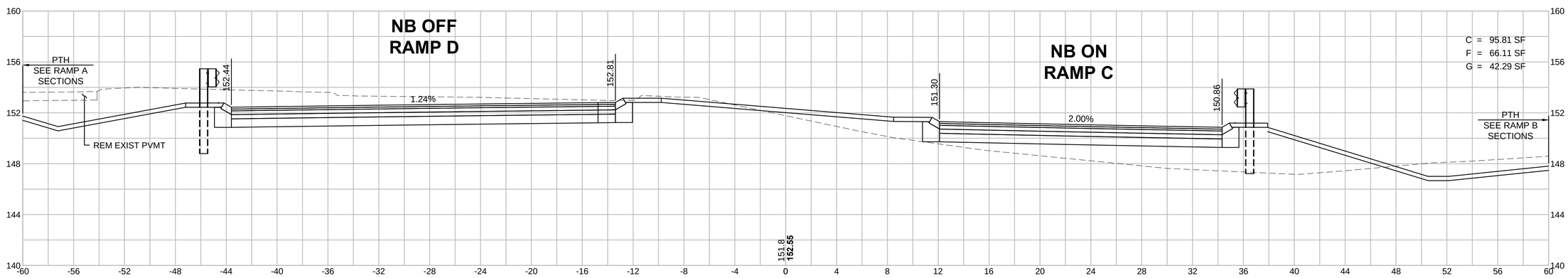
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	132	139
PROJECT FILE NO.	607309		

NORTHBOUND RAMPS BASELINE
CROSS SECTIONS - 53

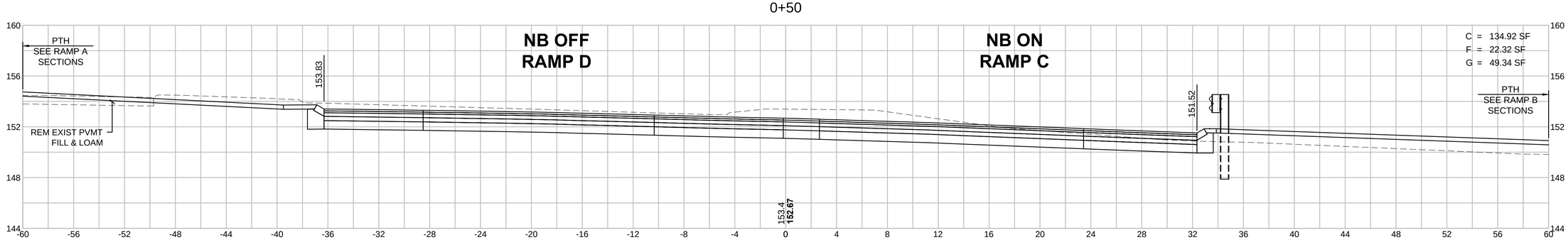
NB RAMPS CONST BASELINE
1+50



NB RAMPS CONST BASELINE
1+00



NB RAMPS CONST BASELINE
0+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

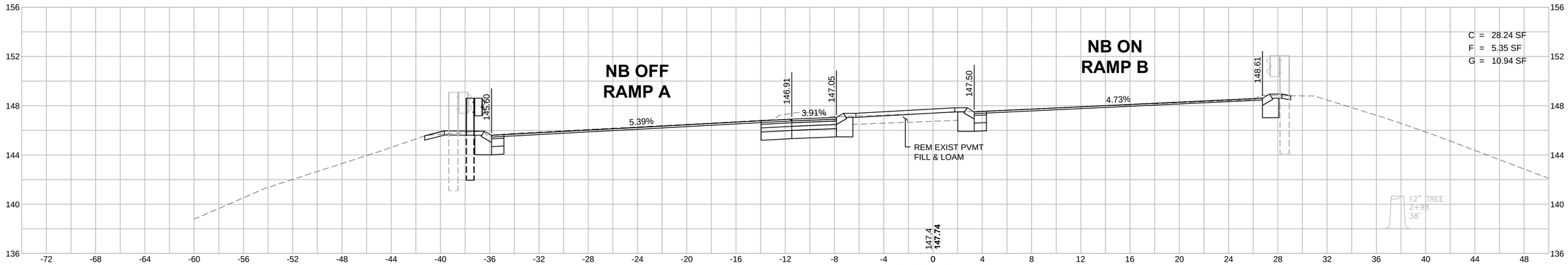
CORRIDOR.DWG Plotted on 26-Jan-2017 3:15 PM

HINGHAM
DERBY STREET

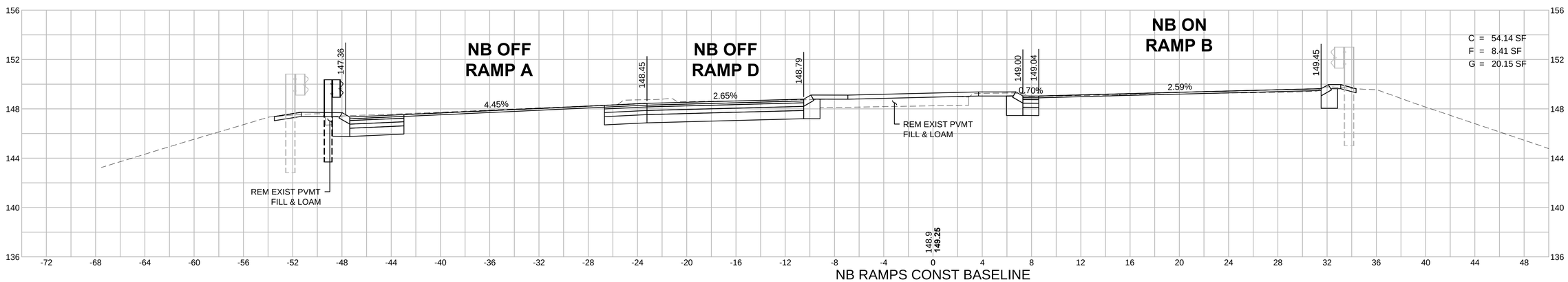
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	133	139
PROJECT FILE NO.		607309	

NORTHBOUND RAMPS BASELINE
CROSS SECTIONS - 54

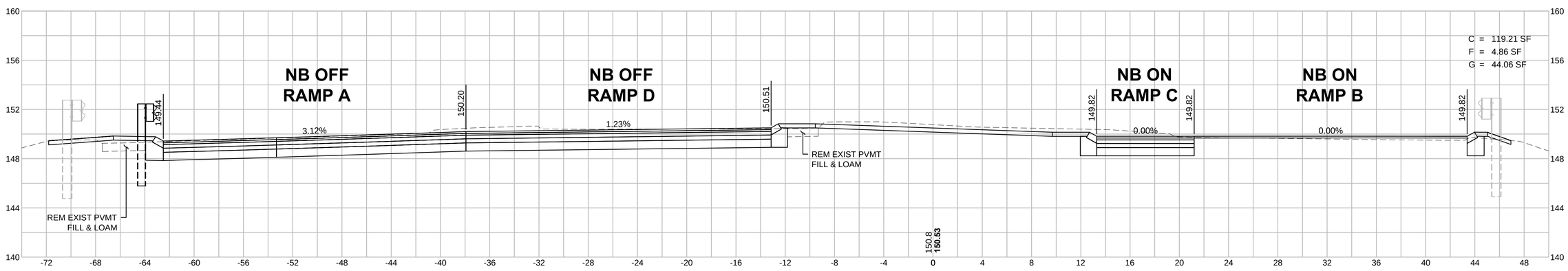
NB RAMPS CONST BASELINE
3+00



NB RAMPS CONST BASELINE
2+50



NB RAMPS CONST BASELINE
2+00



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

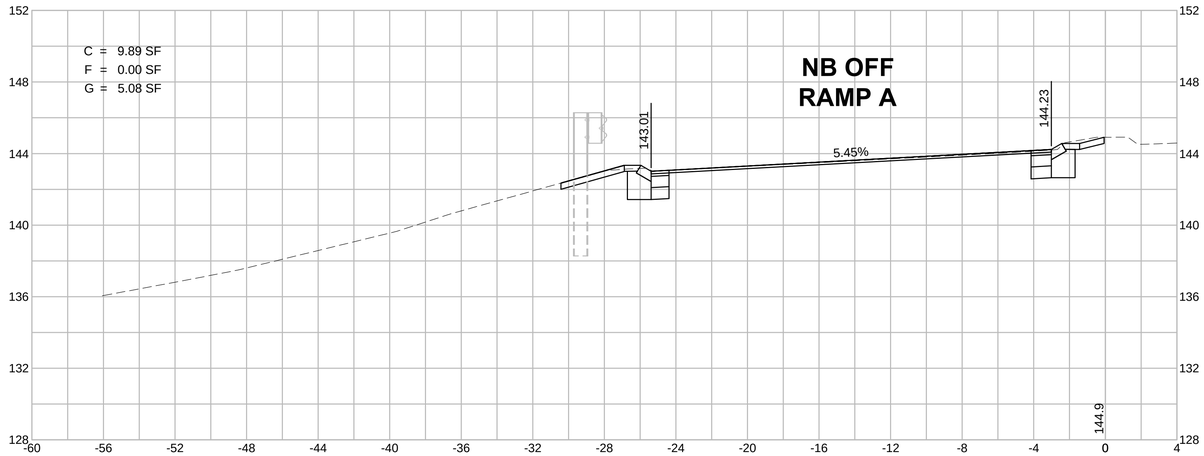
CORRIDOR.DWG Plotted on 26-Jan-2017 3:16 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	134	139
PROJECT FILE NO.	607309		

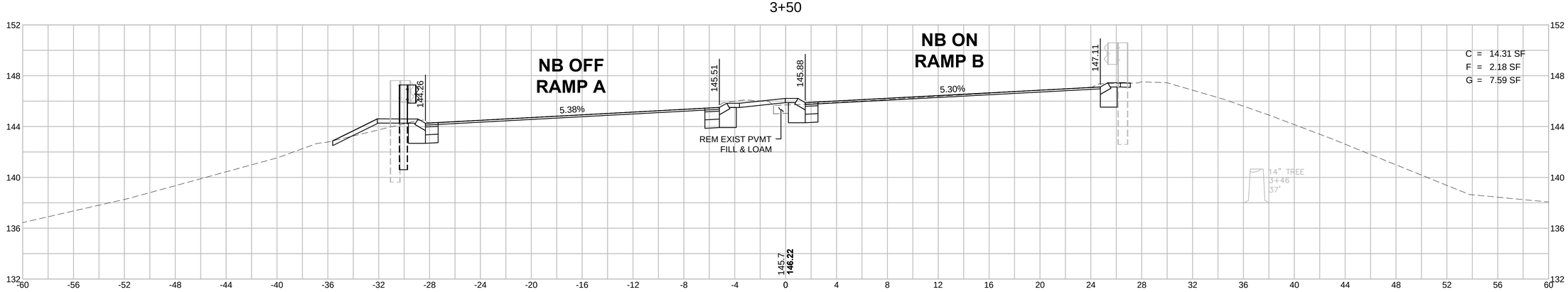
NORTHBOUND RAMPS BASELINE
CROSS SECTIONS - 55

NB RAMPS CONST BASELINE
4+00



NB RAMPS CONST BASELINE
3+78

NB RAMPS CONST BASELINE
3+50



HOR. SCALE IN FEET
VER. SCALE IN FEET

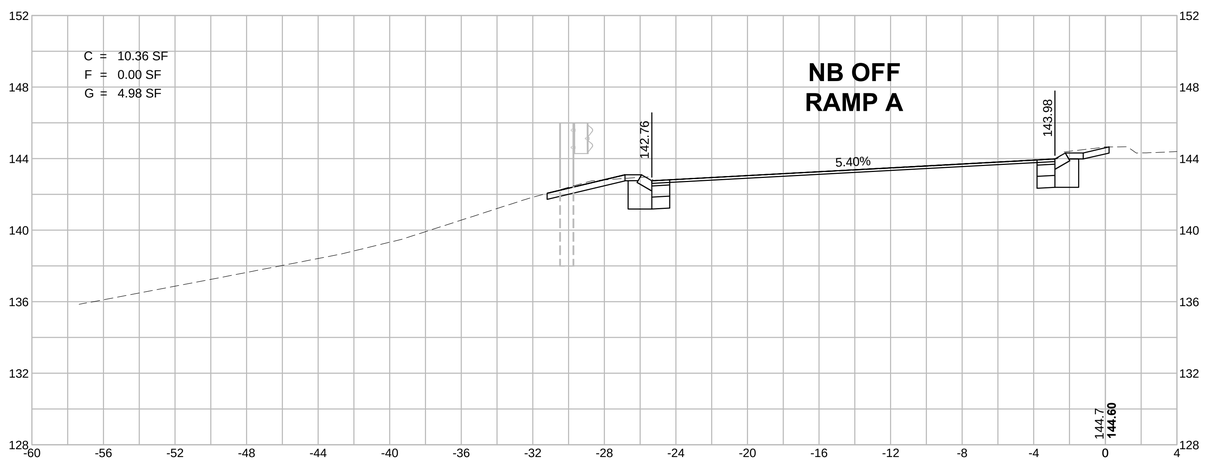
CORRIDOR.DWG Plotted on 26-Jan-2017 3:16 PM

HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	135	139
PROJECT FILE NO.		607309	

NORTHBOUND RAMPS BASELINE
CROSS SECTIONS - 56

NB RAMPS CONST BASELINE
4+10



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

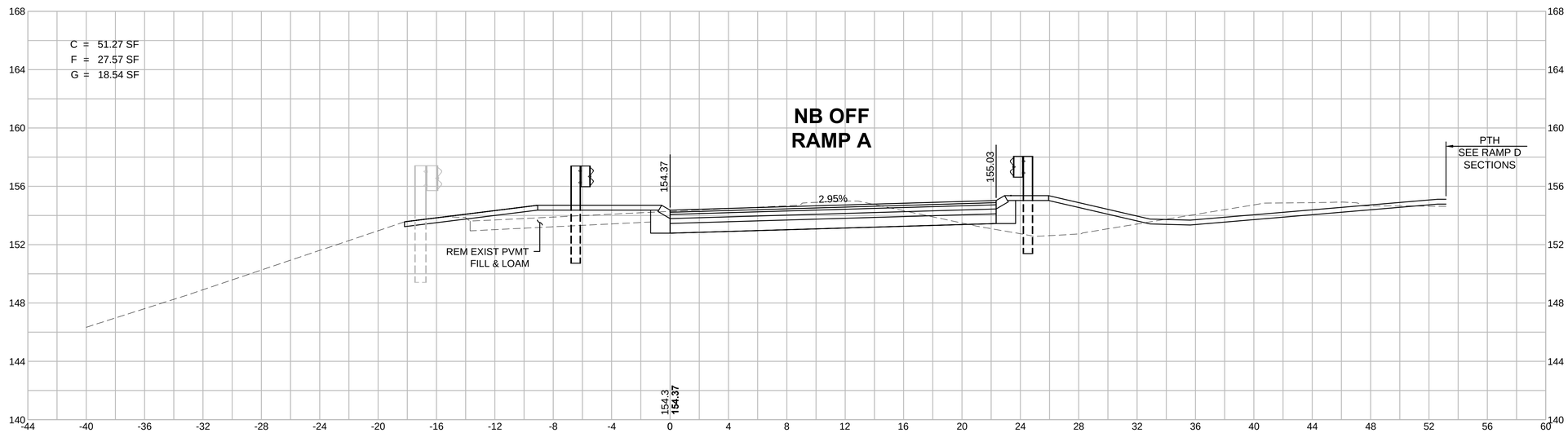
CORRIDOR.DWG Plotted on 26-Jan-2017 3:16 PM

HINGHAM
DERBY STREET

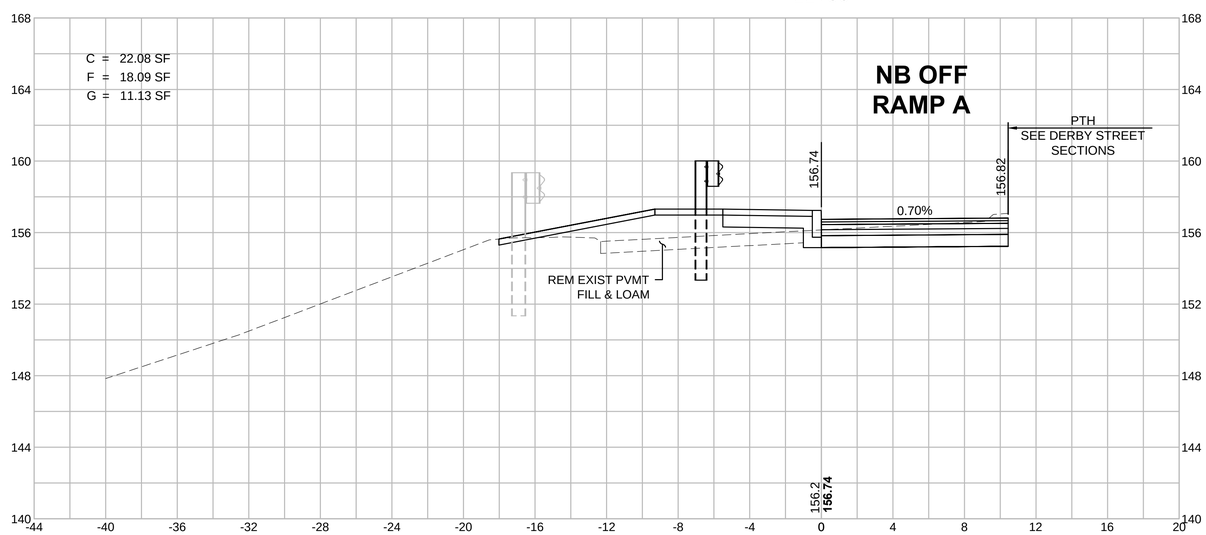
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	136	139
PROJECT FILE NO.	607309		

NORTHBOUND RAMP A
PROP SHLO AUXILIARY BASELINE "D"
CROSS SECTIONS - 57

PROP SHLO AUXILIARY CONST BASELINE "D"
23+00



PROP SHLO AUXILIARY CONST BASELINE "D"
22+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CORRIDOR.DWG Plotted on 26-Jan-2017 3:16 PM

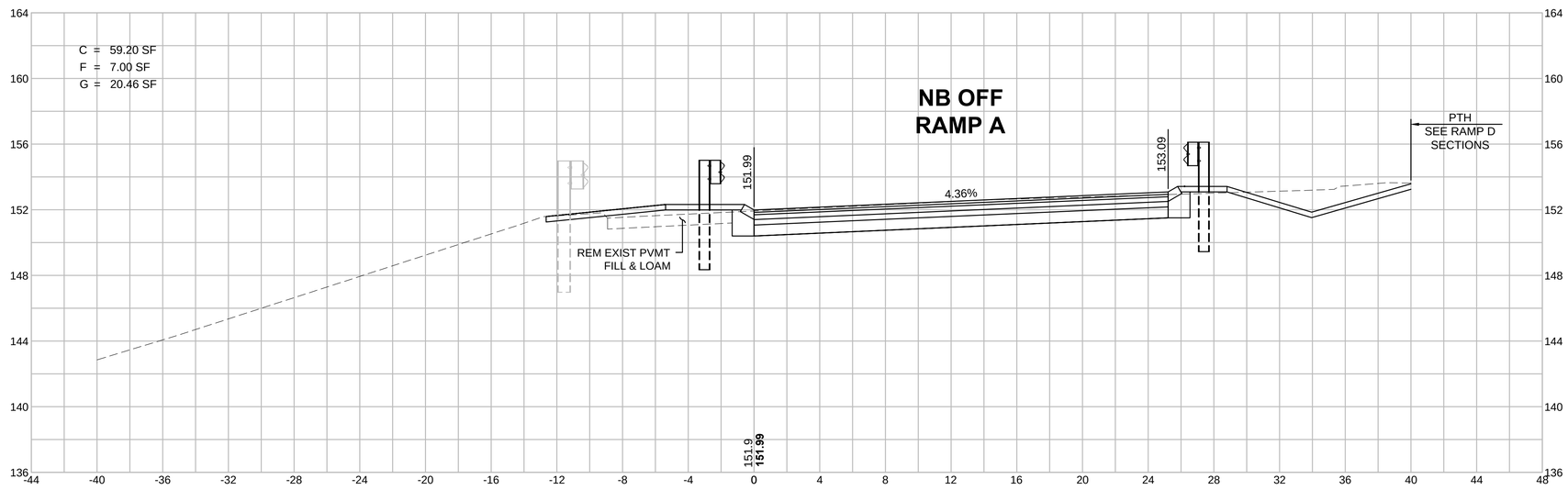
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	137	139
PROJECT FILE NO.	607309		

NORTHBOUND RAMP A
PROP SHLO AUXILIARY BASELINE "D"
CROSS SECTIONS - 58

CORRIDOR.DWG Plotted on 26-Jan-2017 3:17 PM

PROP SHLO AUXILIARY CONST BASELINE "D"
23+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

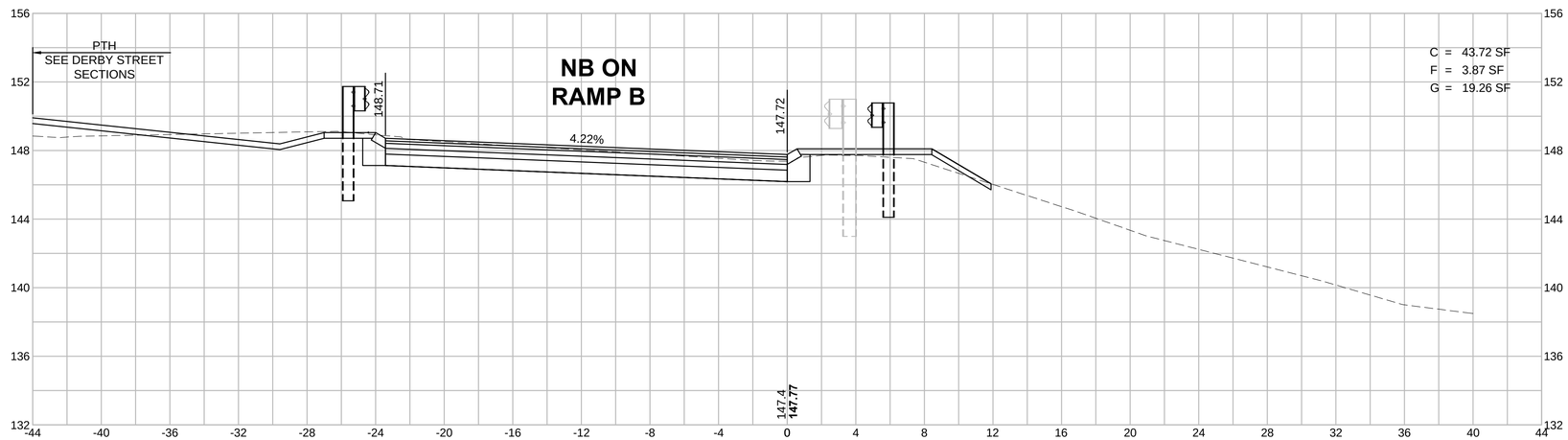
HINGHAM
DERBY STREET

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	138	139
PROJECT FILE NO.	607309		

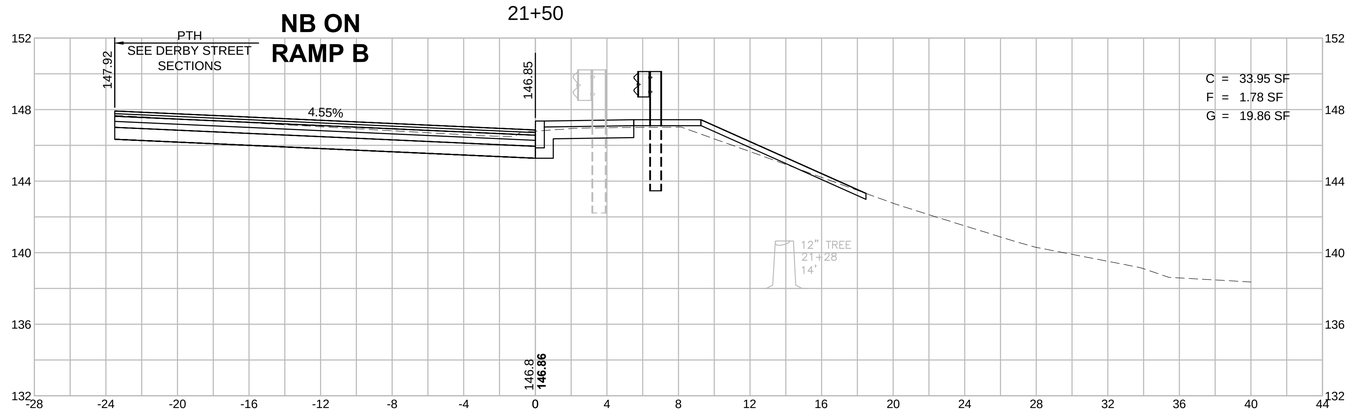
NORTHBOUND RAMP B
PROP SHLO AUXILIARY BASELINE "C"
CROSS SECTIONS - 59

CORRIDOR.DWG Plotted on 26-Jan-2017 3:17 PM

PROP SHLO AUXILIARY CONST BASELINE "C"
22+00



PROP SHLO AUXILIARY CONST BASELINE "C"
21+50



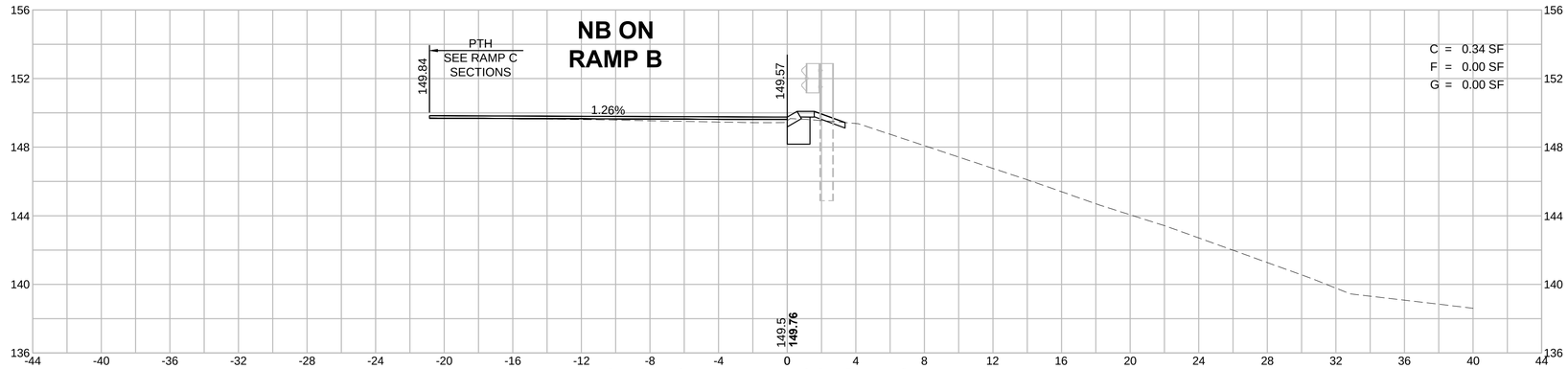
HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

HINGHAM
DERBY STREET

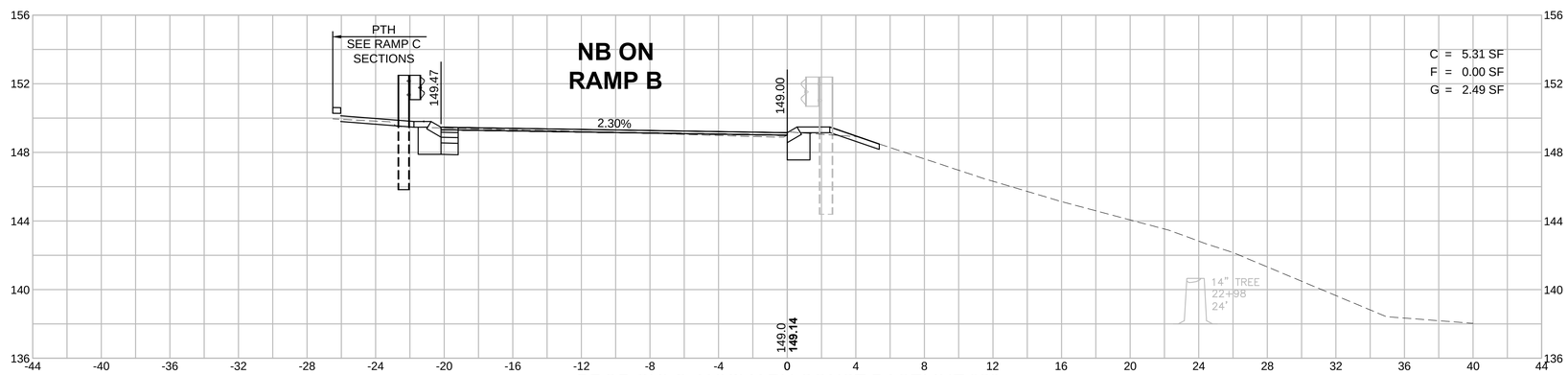
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA	-	139	139
PROJECT FILE NO.	607309		

NORTHBOUND RAMP B
PROP SHLO AUXILIARY BASELINE "C"
CROSS SECTIONS - 60

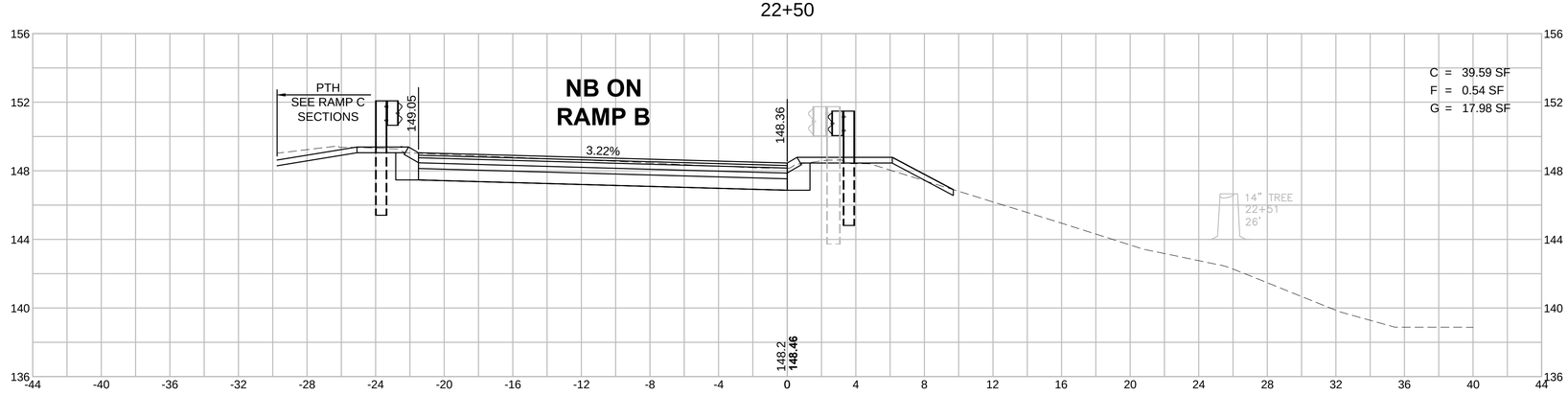
PROP SHLO AUXILIARY CONST BASELINE "C"
23+50



PROP SHLO AUXILIARY CONST BASELINE "C"
23+00



PROP SHLO AUXILIARY CONST BASELINE "C"
22+50



HOR. SCALE IN FEET
4 0 4 8
4 0 4 8
VER. SCALE IN FEET

CORRIDOR.DWG Plotted on 26-Jan-2017 3:17 PM