MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	2010	1	154
PROJECT FILE NO.: 603823				

TITLE & INDEX SHEET

PLAN AND PROFILE OF

RELOCATION OF PAWTUCKET BOULEVARD

IN THE CITY/TOWN OF

TYNGSBOROUGH

MIDDLESEX COUNTY

FEDERAL AID PROJECT NO. CM-002S(215)X

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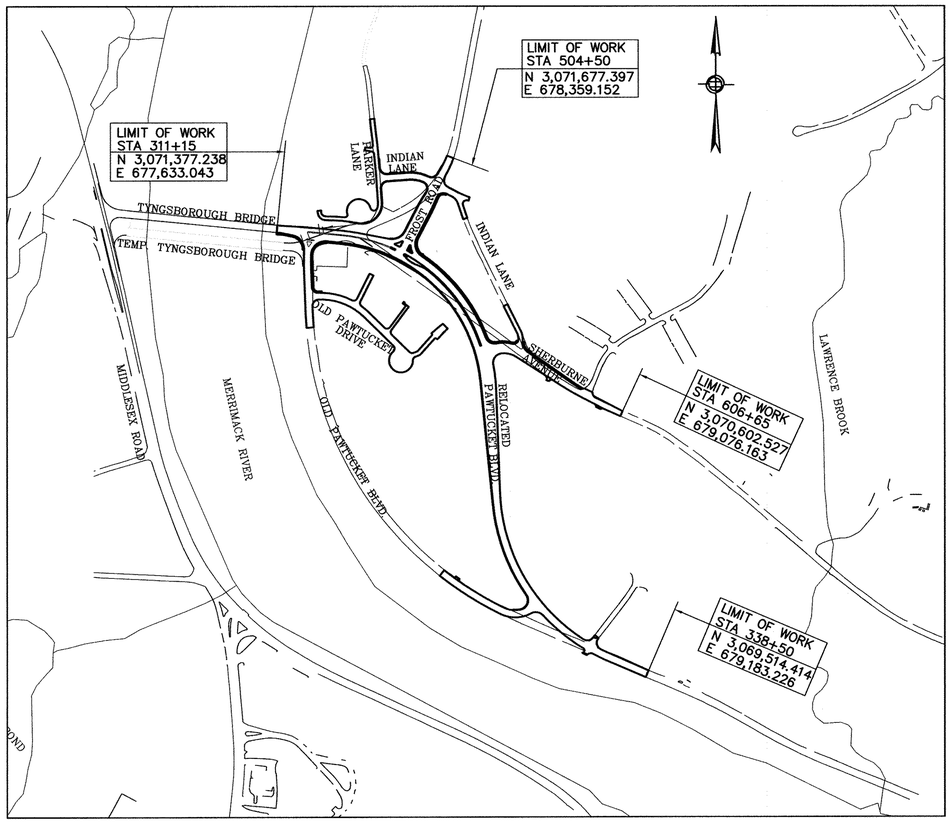

SCALE – 1"=300'

NOTE

LENGTH OF PROJECT = 2,735 FT = 0.52 MILES

GENERAL NOTES:

ALL WORK DONE UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH THE MASSACHUSETTS HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES ENGLISH EDITION, DATED 1988, THE JUNE 6, 2006 SUPPLEMENTAL SPECIFICATIONS, THE 1996 METRIC EDITION CONSTRUCTION AND TRAFFIC STANDARD DETAILS, THE APRIL 2003 SUPPLEMENTAL DRAWINGS, THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, THE RULES AND REGULATIONS OF THE ARCHITECTURAL ACCESS BOARD, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1–1996), THESE PLANS, THE SPECIAL PROVISIONS, AND ALL AMENDMENTS WILL GOVERN.

RELOCATED PAWTUCKET BOULEVARD
DESIGN DESIGNATION

URBAN MINOR ARTERIAL	
DESIGN SPEED (MPH)	40
ADT	8,200
ADT (20 YR)	22,700
K	8.5%
D	52%
T (PEAK HOUR)	5
T (AVERAGE DAY)	4
DHV	1,930
DDHV	1,003

SHERBURNE AVE.
DESIGN DESIGNATION

URBAN MINOR ARTERIAL	
DESIGN SPEED (MPH)	25
ADT	7,700
ADT (20 YR)	8,500
K	10%
D	59%
T (PEAK HOUR)	5
T (AVERAGE DAY)	4
DHV	850
DDHV	500

FROST ROAD (ROUTE 3A)
DESIGN DESIGNATION

URBAN MINOR ARTERIAL	
DESIGN SPEED (MPH)	30
ADT	10,900
ADT (20 YR)	12,000
K	9.2%
D	61.5%
T (PEAK HOUR)	5
T (AVERAGE DAY)	4
DHV	1,104
DDHV	679

CONVENTIONAL SIGNS

COUNTY, CITY, OR TOWN LAYOUT LINE
STATE HIGHWAY LAYOUT LINE (ALTERATION)
STATE HIGHWAY LAYOUT LINE
FENCE LINE
BASE LINE OR SURVEY LINE — 74
RIGHT OF WAY LINE — N 57 18 41 E 59.57
CULVERT

PROPOSED SURFACE
102.67 PROP.
ELEVATIONS
POLE — 74

ELEVATIONS NGVD 1988 DATUM

DAVID MARC PATNAUDE CIVIL No. 39145 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
9/2/2010

PLANS PREPARED BY
PARSONS
100 HIGH STREET, BOSTON, MA 02110

RECOMMENDED FOR APPROVAL

Frank A. Tramontozzi 9/7/2010
CHIEF ENGINEER DATE

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:
DIVISION ADMINISTRATOR DATE

APPROVED
9/7/10
DIVISION ADMINISTRATOR DATE

PARSONS

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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	2	154
PROJECT FILE NO.: 603823			

LEGEND, ABBREVIATIONS, AND GENERAL NOTES

ABBREVIATIONS:

ABAN.	ABANDON
AGGR.	AGGREGATE
BIT. CONC.	BITUMINOUS CONCRETE
℄	BASELINE
CB	CATCH BASIN
CBCI	CATCH BASIN CURB INLET
CL.	CLEARANCE
℄	CENTERLINE
CLF	CHAIN LINK FENCE
COMB.	COMBINED DRAIN & SANITARY LINES
CONC.	CONCRETE
CONN	CONNECT
CONSTR.	CONSTRUCTION
CMP	CORRUGATED METAL PIPE
CWE	CRASH WORTHY END
DET.	DETAIL
DBL	DOUBLE
D.I.	DUCTILE IRON
DI	DROP INLET
DMH	DRAIN MANHOLE
e	SUPERELEVATION
EB	EASTBOUND
EMH	ELECTRIC MANHOLE
ELEV.	ELEVATION
EXIST.	EXISTING
F.M.	FORCE MAIN
FPE	FLARED PIPE END
GI	GUTTER INLET
HW	HEADWALL/HIGH WATER
HH	HANDHOLE
HSW	HIGH SERVICE WATER
HWY	HIGHWAY
HYD	HYDRANT
INV	INVERT
IP	INTERMEDIATE PRESSURE
L	LENGTH OF CURVE
L.D.C.	LOCK DOWN COVER
LP	LOW PRESSURE/LIGHT POLE
LT.	LEFT
L.V.C.	LENGTH OF VERTICAL CURVE
M	MIDDLE ORDINATE
MAX.	MAXIMUM
MH	MANHOLE
MIN.	MINIMUM
MSE	MECHANICALLY STABILIZED EARTH
NB	NORTHBOUND
N/F	NOW OR FORMERLY
NTS	NOT TO SCALE
OH	OVERHEAD
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
POC	POINT ON CURVE
PSB	PLANTABLE SOIL BORROW
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
PROP.	PROPOSED
PWW	PAVED WATERWAY
R	RADIUS OF CURVATURE
RCP	REINFORCED CONCRETE PIPE
RMC	RIGID METAL CONDUIT
ROW	RIGHT OF WAY
RR	RAILROAD
R&REP.	REMOVE AND REPLACE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
RT.	RIGHT
RTE.	ROUTE

EXISTING SYMBOLS:

- CATCH BASIN
- STORM DRAIN MANHOLE
- HW — HEADWALL
- PWW — PAVED WATERWAY
- CBCI — CURB INLET
- 12" — STORM DRAIN
- 6" UD — SUBDRAIN PIPE
- PAVEMENT MARKINGS
- EDGE OF PAVEMENT
- 74 — BASELINE AND STATION
- GUARD RAIL
- ROADWAY LIGHT
- HH — HANDHOLE
- UTILITY POLE
- L.P. — LOW POINT
- H.P. — HIGH POINT
- CONDUIT
- WETLAND BOUNDARY
- LIMIT OF 100 YR. FLOOD PLAIN.

PROPOSED SYMBOLS:

- CATCH BASIN
- STORM DRAIN MANHOLE
- LEACHING BASIN
- 48FT-12" RCP — STORM DRAIN (DOUBLE LINE FOR 24IN OR LARGER)
- 15FT-8" PIPE SCCPP — SUBDRAIN PIPE
- SWALE
- (ABAND.) — ABANDON
- (ADJ.) — ADJUST
- (REM.) — REMOVE
- (R&S) — REMOVE AND STACK
- (R&R) — REMOVE AND RESET
- (REMOD.) — REMODEL
- (RET.) — RETAIN
- E — ELECTRICAL SERVICE
- T — TELEPHONE SERVICE
- EDGE OF PAVEMENT
- 52 — BASELINE AND STATION
- REFLECTORIZED DRUMS
- TRAFFIC CONES
- CONSTRUCTION SIGNS
- GUARD RAIL
- CONDUIT
- FLARED END
- HAYBALE AND SILTATION MATERIAL BARRIER
- TOP OF PROP. SLOPE
- BOTTOM OF PROP. SLOPE
- S — SEWER
- TEMPORARY IMPACT ATTENUATOR
- CEM. CONC. BARRIER OR CIVIL WALL W/ BARRIER
- CIVIL WALL W/CAP
- W — WATER
- D — DRAIN
- S — SANITARY SEWER
- G — GAS
- CATV — CABLE TELEVISION

ABBREVIATIONS (CONTINUED):

SB	SOUTHBOUND
SD	SUBDRAIN
SHLD.	SHOULDER
SPCPP	SLOTTED PERFORATED CORRUGATED PLASTIC PIPE
SSMH	SANITARY SEWER MANHOLE
STD.	STANDARD
ST.LT.	STREET LIGHT
TYP.	TYPICAL
UG	UNDERGROUND
VAR.	VARIES
WMH	WATER MANHOLE
WB	WESTBOUND
△	CENTRAL ANGLE OF HORIZONTAL CURVE

NOTES:

1. PRIOR TO THE START OF WORK THE CONTRACTOR SHALL CONFORM TO ALL OF THE REQUIREMENTS SET FORTH IN THE SPECIFICATIONS WITH REGARD TO UTILITY NOTIFICATIONS AND TO SUBMITTALS REQUIRED BY THE CONTRACTOR FOR THE MAINTENANCE AND PROTECTION OF TRAFFIC.
2. THE CONTRACTOR IS HEREBY NOTIFIED THAT ADDITIONAL WORK WITHIN THE PROJECT LIMITS MAY BE PERFORMED BY OTHERS.
3. THE CONTRACTOR SHALL COORDINATE ALL ACTIVITIES WITH OTHER CONTRACTORS PERFORMING WORK WITHIN AND AT THE PROJECT LIMITS.
4. THE CONTRACTOR SHALL PERFORM ITEMS OF WORK OUT OF NORMAL SEQUENCE AND SCHEDULE, AS DIRECTED BY THE ENGINEER, AS REQUIRED TO MEET THE OVERALL PROJECT SCHEDULE.
5. THE CONTRACTOR SHALL NOTIFY "DIG SAFE" AT 1-800-322-4844 AT LEAST 72 HOURS PRIOR TO THE START OF ANY EXCAVATION ON THE PROJECT.
6. ANY AND ALL TRAFFIC RELATED ITEMS REQUIRED TO MAINTAIN TRAFFIC FLOW THROUGH OR AROUND THE PROJECT AREA SHALL BE MAINTAINED IN A CONDITION ACCEPTABLE TO THE ENGINEER. FURTHER, THE CONTRACTOR SHALL REPLACE THOSE ITEMS AS REQUIRED BY THE SPECIFICATIONS OR AS DEEMED NECESSARY BY THE ENGINEER.
7. ALL CONSTRUCTION SIGNS IN PLACE BUT NOT PERTINENT TO THE ONGOING CONSTRUCTION PHASING SHALL BE BAGGED OR REMOVED.
8. THE CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND SILTATION BARRIERS TO PROTECT WETLAND RESOURCES AND IN THE 100 FT WETLAND BUFFER ZONES. BARRIERS ARE TO BE PLACED 5 FT DISTANT FROM THE BOTTOM OR TOP OF SLOPE AS SHOWN ON THE PLANS AND/OR AS REQUIRED BY THE SPECIFICATIONS OR DIRECTED BY THE ENGINEER.
9. THE CONTRACTOR SHALL PERFORM ALL SURVEY REQUIRED FOR THE LAYOUT OF PROPOSED CONSTRUCTION AND FOR DEVELOPING AS-BUILT DOCUMENTATION. NO SEPARATE PAYMENT FOR THIS WORK WILL BE MADE.
10. ELEVATIONS ARE REFERENCED TO NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NGVD 1988). ALL SURVEY POINTS HAVE BEEN DETERMINED WITH RESPECT TO THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM AS REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
11. THE MASSACHUSETTS HIGHWAY DEPARTMENT WILL SUPPLY BENCHMARKS AND SURVEY TIES.
12. THE LOCATIONS OF THE EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE LOCATION ONLY AND HAVE NOT BEEN VERIFIED. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.
13. ALL PROPOSED DRAINAGE STRUCTURE RIM ELEVATIONS AND PIPE INVERTS ARE TO BE FIELD VERIFIED BY THE CONTRACTOR AND ACCEPTED BY THE ENGINEER.

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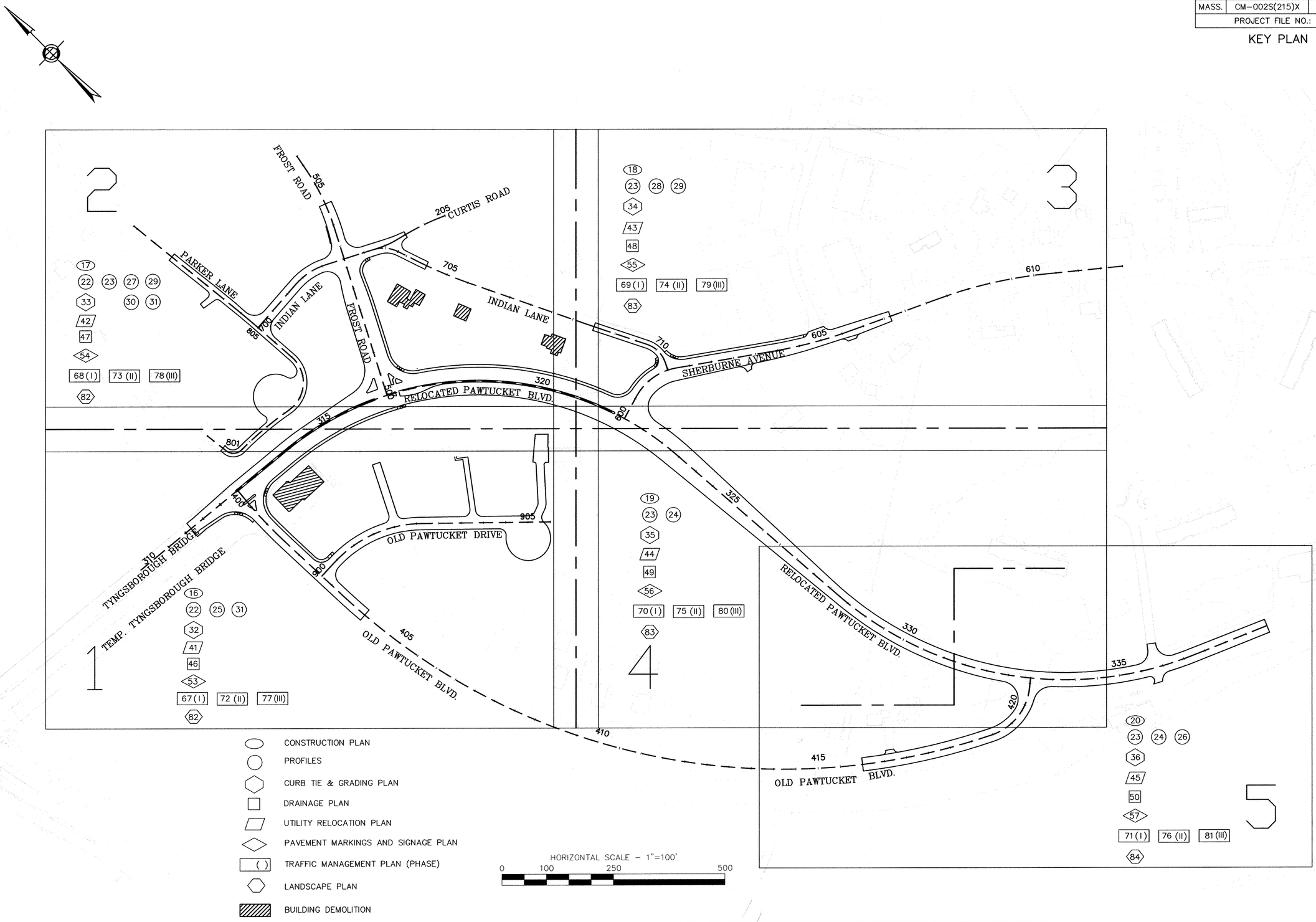
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	3	154
	PROJECT FILE NO.: 603823		

KEY PLAN



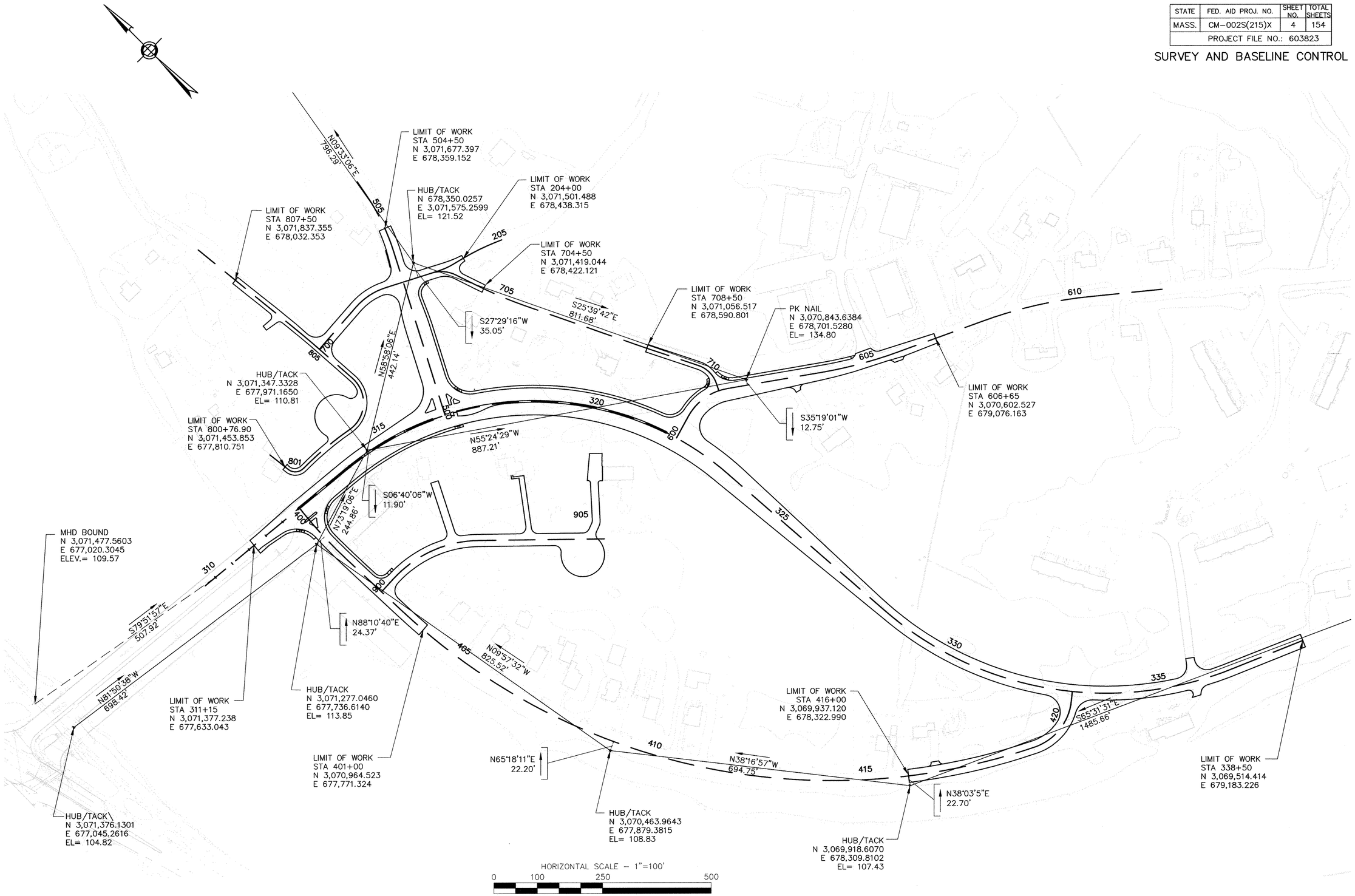
PARSONS

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	4	154
PROJECT FILE NO.: 603823			

SURVEY AND BASELINE CONTROL



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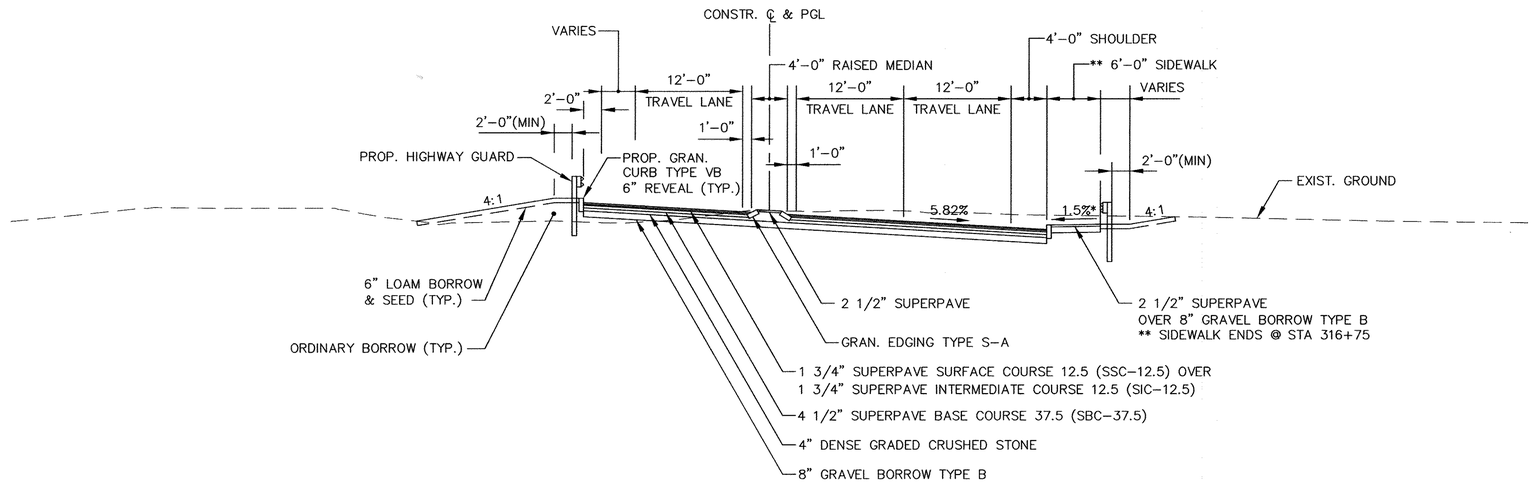
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

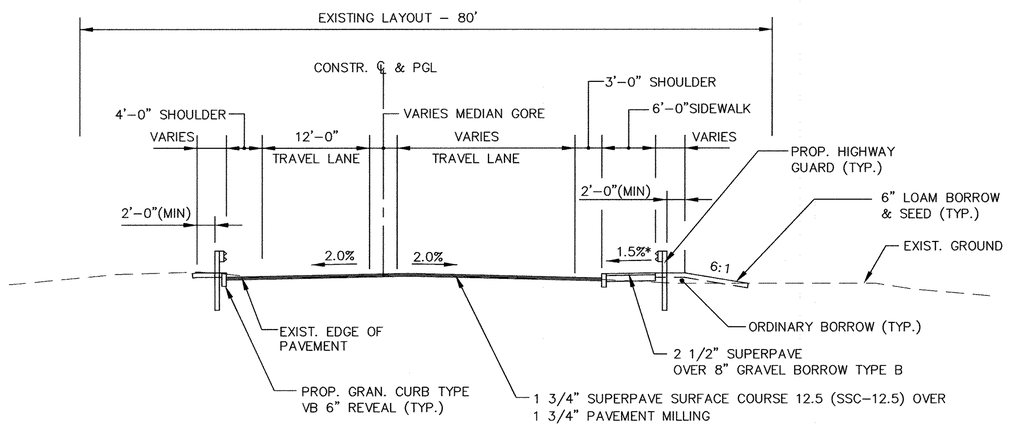
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM–002S(215)X	5	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS

SHEET 1 OF 10



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 312+50 TO 316+00



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 311+15 TO 312+50

HORIZONTAL SCALE – 1"=8'

0 8 20 40

PAVEMENT NOTES:

FULL DEPTH CONSTRUCTION

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC–12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC–12.5) OVER
4 1/2" SUPERPAVE BASE COURSE 37.5 (SBC–37.5) OVER
4" DENSE GRADED CRUSHED STONE FOR SUB–BASE OVER
8" GRAVEL BORROW – SUB–BASE (TYPE B) OVER
24" SPECIAL BORROW (95% COMPACTION) PER SPECIFICATIONS

FULL DEPTH WIDENING < 4' WIDE

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC–12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC–12.5) OVER
8" HIGH EARLY STRENGTH CEMENT CONCRETE FOR SUB–BASE OVER
8" GRAVEL BORROW – SUB–BASE (TYPE B)

PAVEMENT RESURFACING OVERLAY

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC–12.5) OVER
1 3/4" PAVEMENT MILLING

SIDEWALKS

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC–12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC–12.5) OVER
8" (MIN.) GRAVEL BORROW – SUB–BASE (TYPE B)

* ± 0.5% CONSTRUCTION TOLERANCE

ASPHALT EMULSION TACK COAT SHALL BE APPLIED AT THE RATE OF 0.05 GALS/SY TO PAVED SURFACES AND 0.07 GALS/SY TO MILLED SURFACES

HMA JOINT SEALANT SHALL BE APPLIED TO ALL JOINTS IN ACCORDANCE WITH STANDARD SPECIFICATION 450.57. SEALER SHALL BE APPLIED TO EDGING, CURB AND BERM, CASTINGS AND PAVEMENT JOINTS PRIOR TO PAVING AGAINST.

PARSONS

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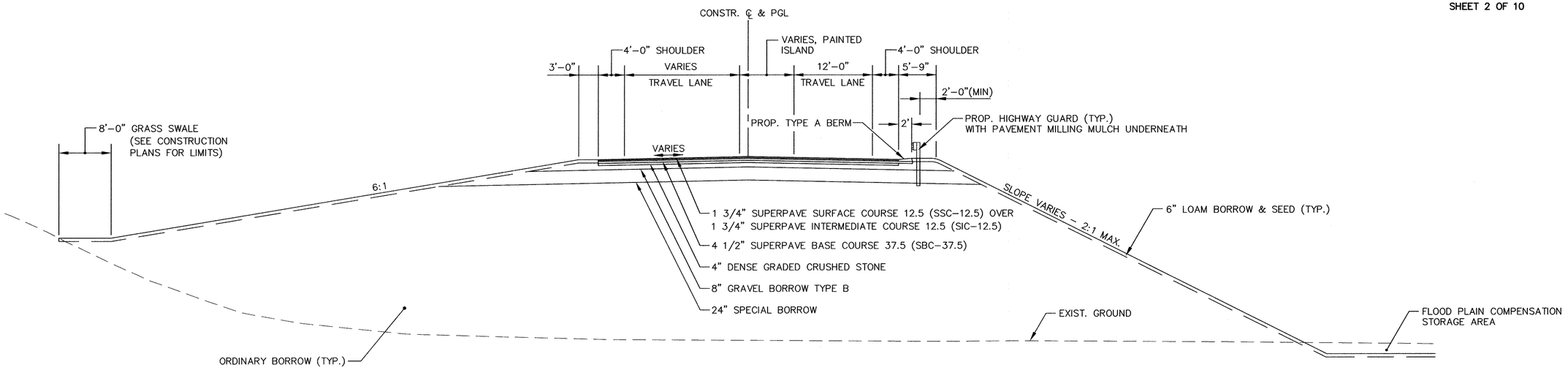
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	6	154
	PROJECT FILE NO.: 603823		

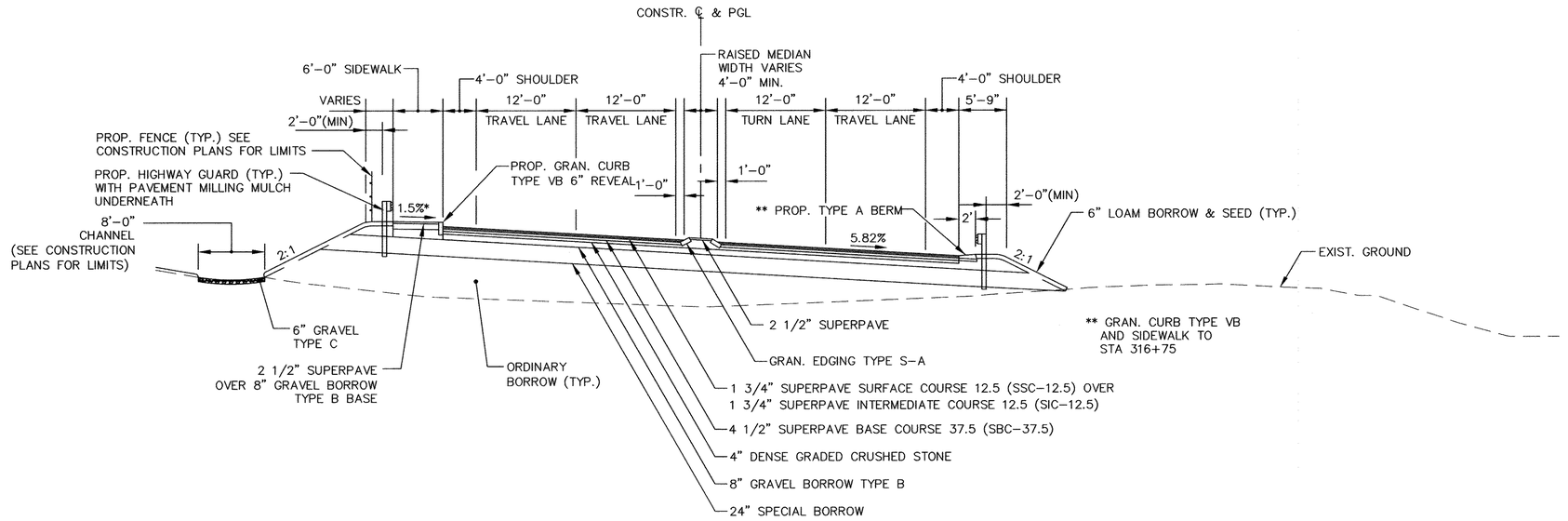
TYPICAL SECTIONS
SHEET 2 OF 10



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 322+00 TO 328+50

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 316+00 TO 322+00

HORIZONTAL SCALE - 1"=8'
0 8 20 40

PARSONS

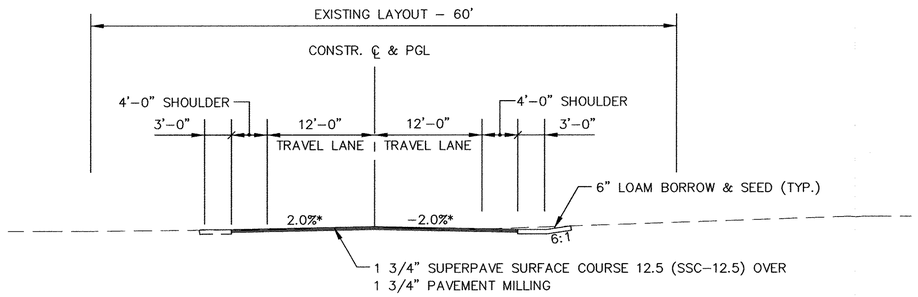
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

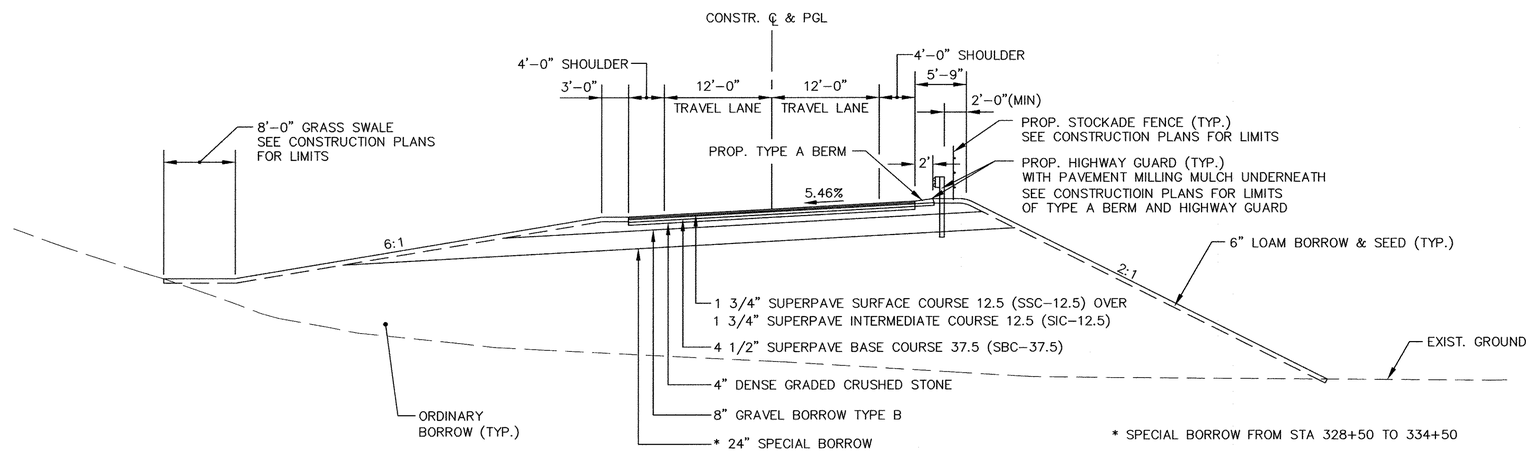
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	7	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS

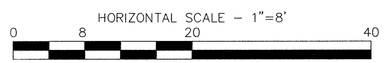
SHEET 3 OF 10



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 337+50 TO 338+50



RELOCATED PAWTUCKET BLVD. TYPICAL SECTION STA 328+50 TO 337+50



PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

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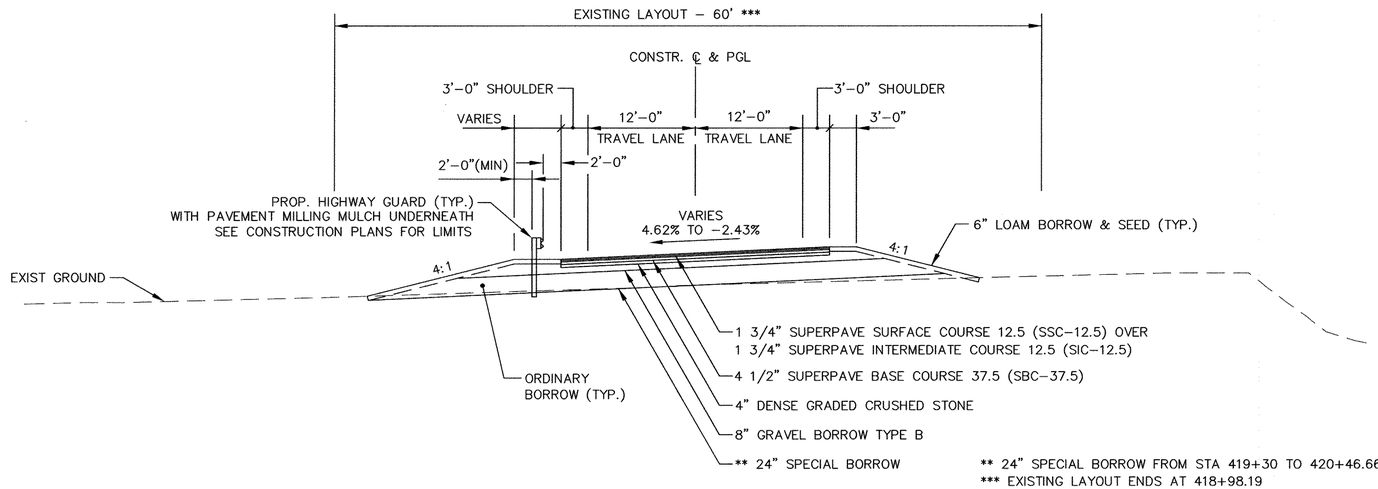
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

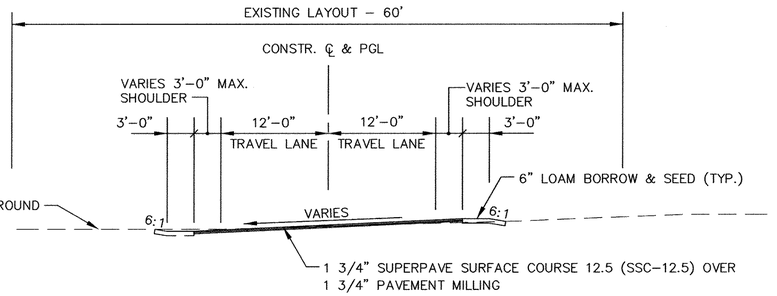
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	8	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS
SHEET 4 OF 10

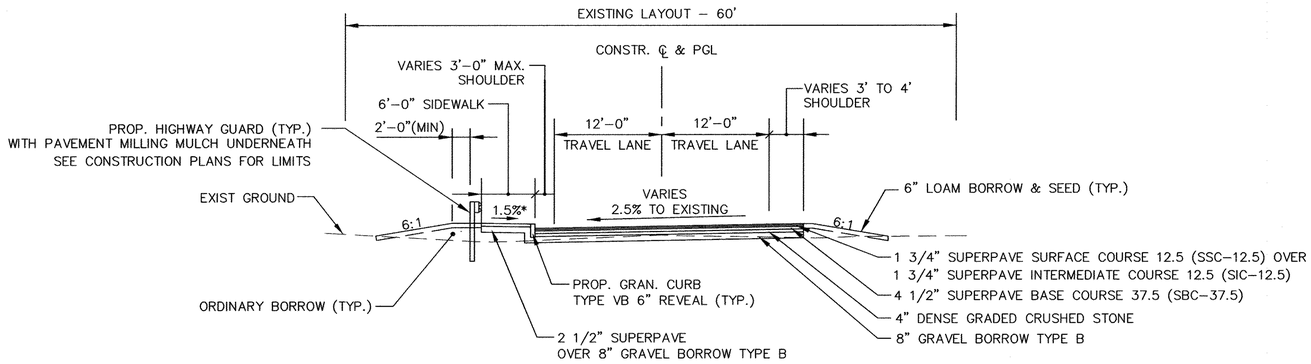


** 24" SPECIAL BORROW FROM STA 419+30 TO 420+46.66
*** EXISTING LAYOUT ENDS AT 418+98.19

OLD PAWTUCKET BLVD. STA 418+50 TO 420+46.66



OLD PAWTUCKET BLVD. STA 402+00 TO 404+00 AND STA 416+00 TO 418+50



OLD PAWTUCKET BLVD. STA 400+31 TO 402+00

HORIZONTAL SCALE – 1"=8'

0 8 20 40

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

PARSONS

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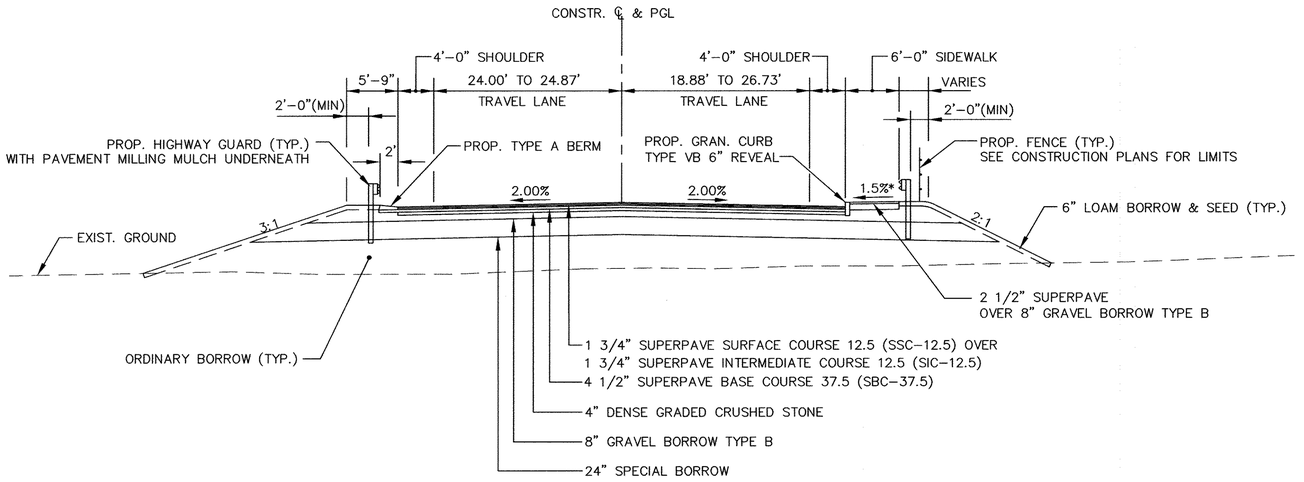
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	9	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS

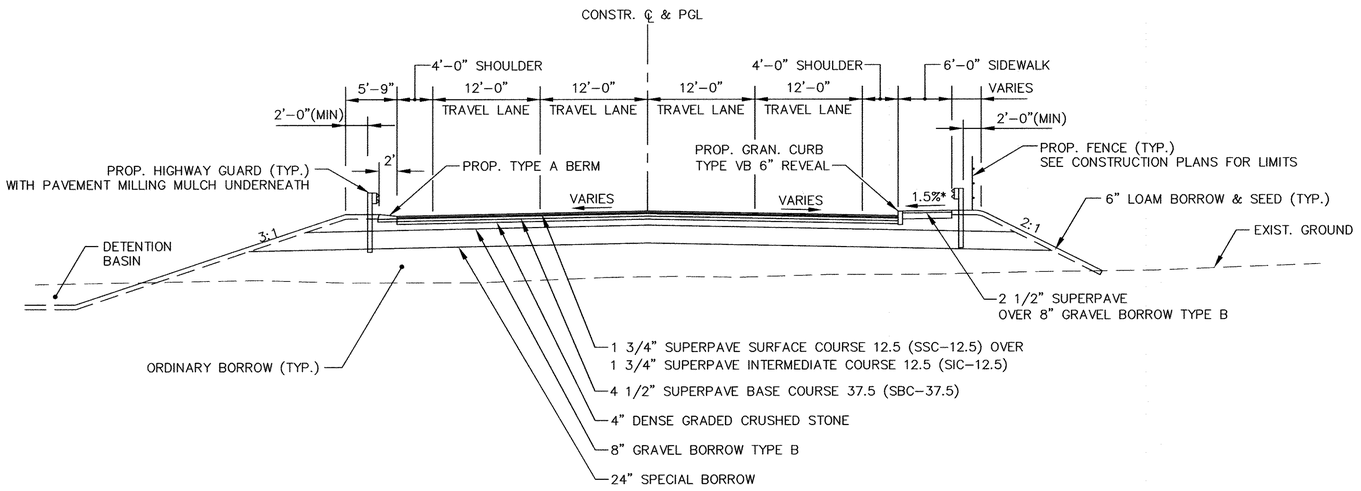
SHEET 5 OF 10



FROST ROAD TYPICAL SECTION STA 502+00 TO 503+00

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES



FROST ROAD TYPICAL SECTION STA 500+50 TO 502+00

HORIZONTAL SCALE - 1"=8'

0 8 20 40

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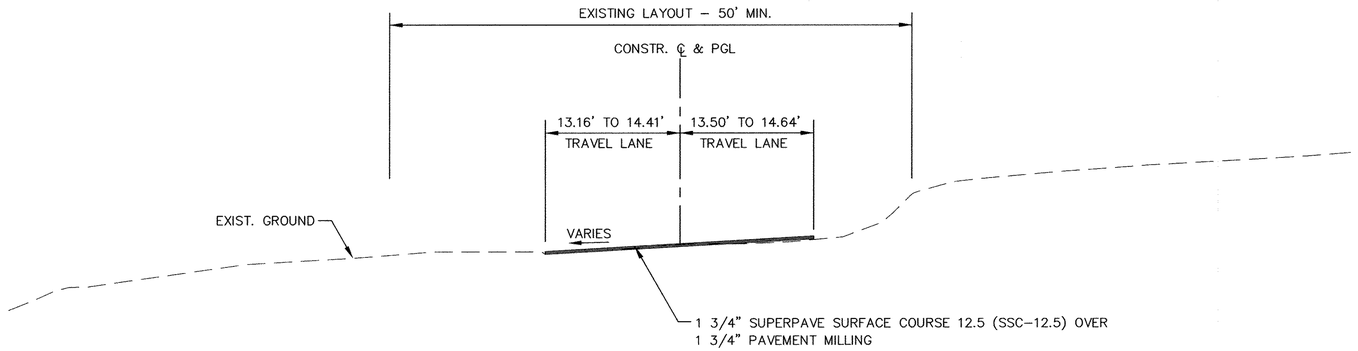
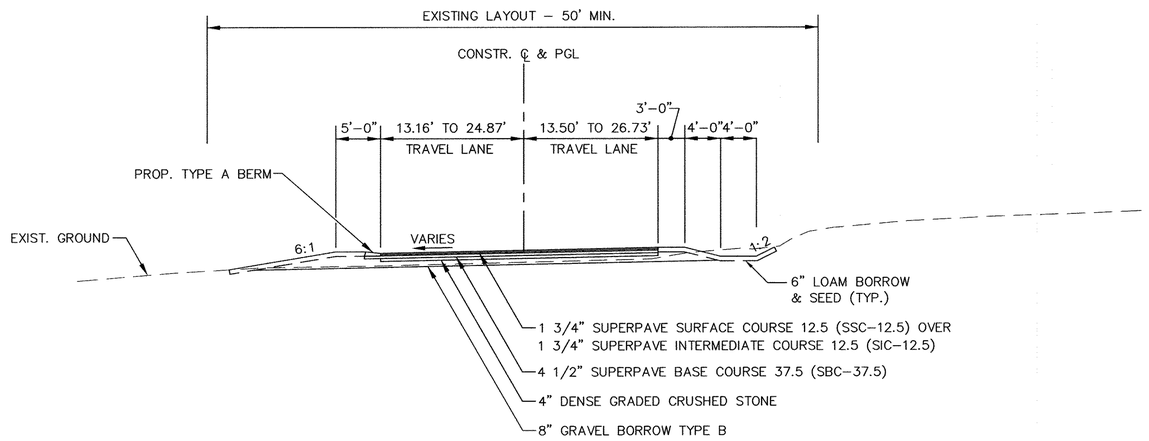
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	10	154
	PROJECT FILE NO.: 603823		

TYPICAL SECTIONS
SHEET 6 OF 10



FROST ROAD TYPICAL SECTION STA 504+00 TO 504+50



FROST ROAD TYPICAL SECTION STA 503+00 TO 504+00

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

HORIZONTAL SCALE – 1"=8'
0 8 20 40

PARSONS

File Name: P:\Massinghwy\646086_Tyngsborough\cadd\drawings\C005-014_TypicalSections.dwg
Plot Date: 10/19/2010 4:55 PM

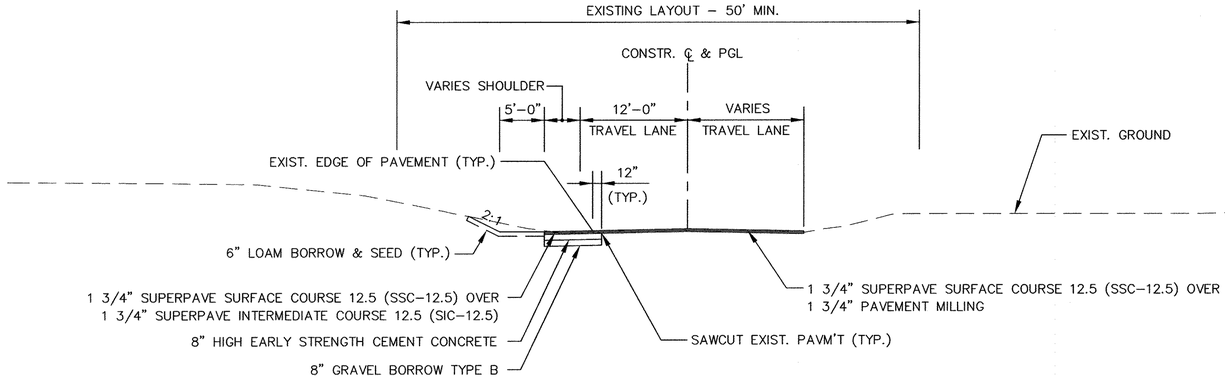
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

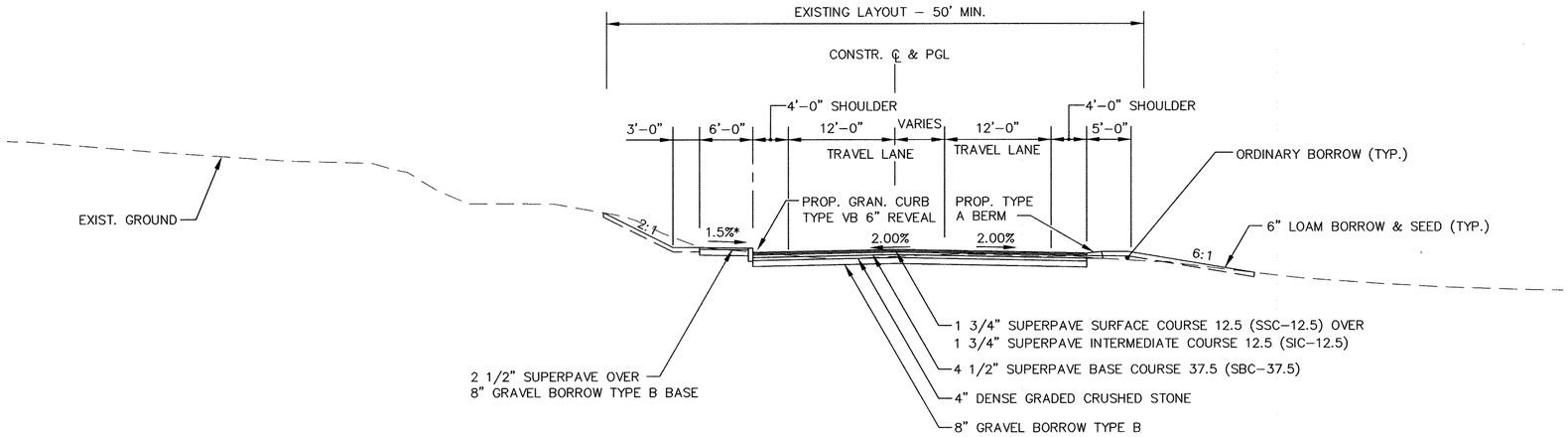
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	11	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS

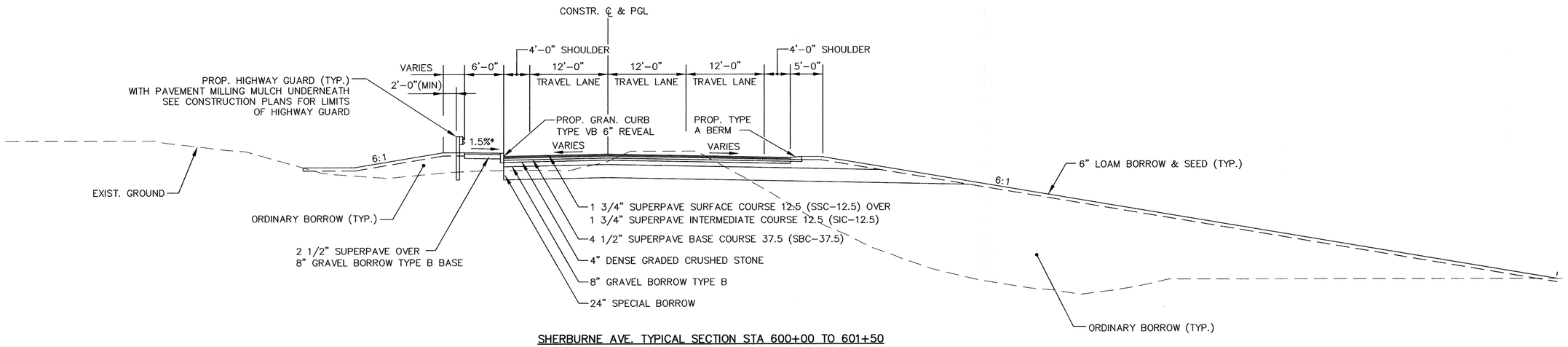
SHEET 7 OF 10



SHERBURNE AVE. TYPICAL SECTION STA 604+50 TO 606+65



SHERBURNE AVE. TYPICAL SECTION STA 601+50 TO 604+50



SHERBURNE AVE. TYPICAL SECTION STA 600+00 TO 601+50

HORIZONTAL SCALE – 1"=8'

0 8 20 40

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

PARSONS

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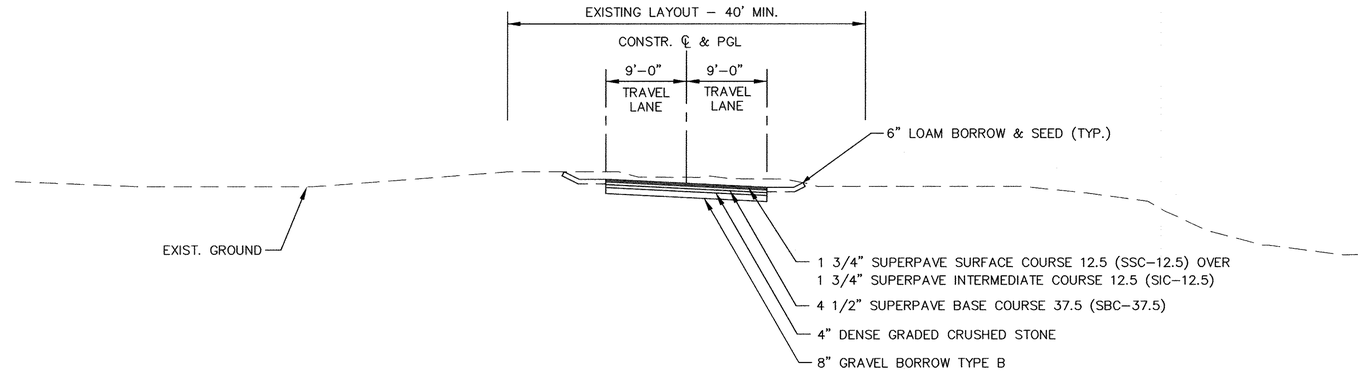
Plot Date: 10/19/2010 4:55 PM

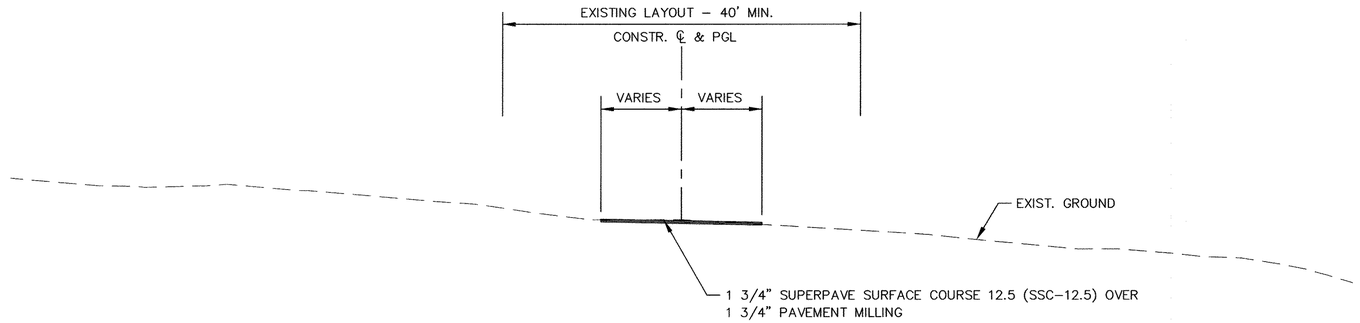
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	12	154
	PROJECT FILE NO.: 603823		

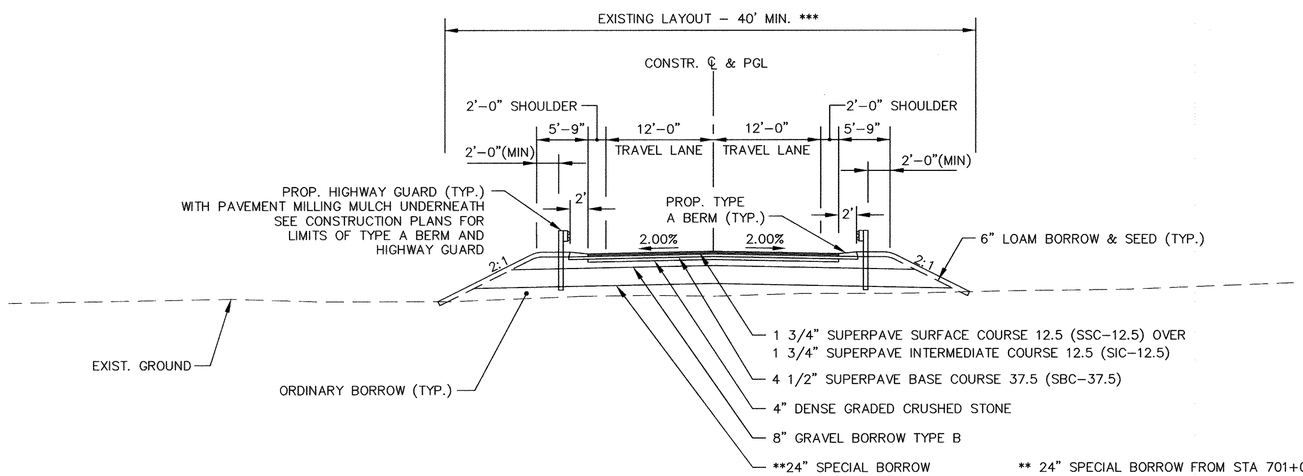
TYPICAL SECTIONS
SHEET 8 OF 10



INDIAN LANE TYPICAL SECTION STA 709+15 TO 710+53.15



INDIAN LANE TYPICAL SECTION STA 703+50 TO 704+50 & 708+50 TO 709+15



** 24" SPECIAL BORROW FROM STA 701+01.77 TO 702+36.80
*** OUTSIDE EXISITING LAYOUT UP TO 702+19.59

INDIAN LANE TYPICAL SECTION STA 700+08 TO 703+50

HORIZONTAL SCALE – 1"=8'
0 8 20 40

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

PARSONS

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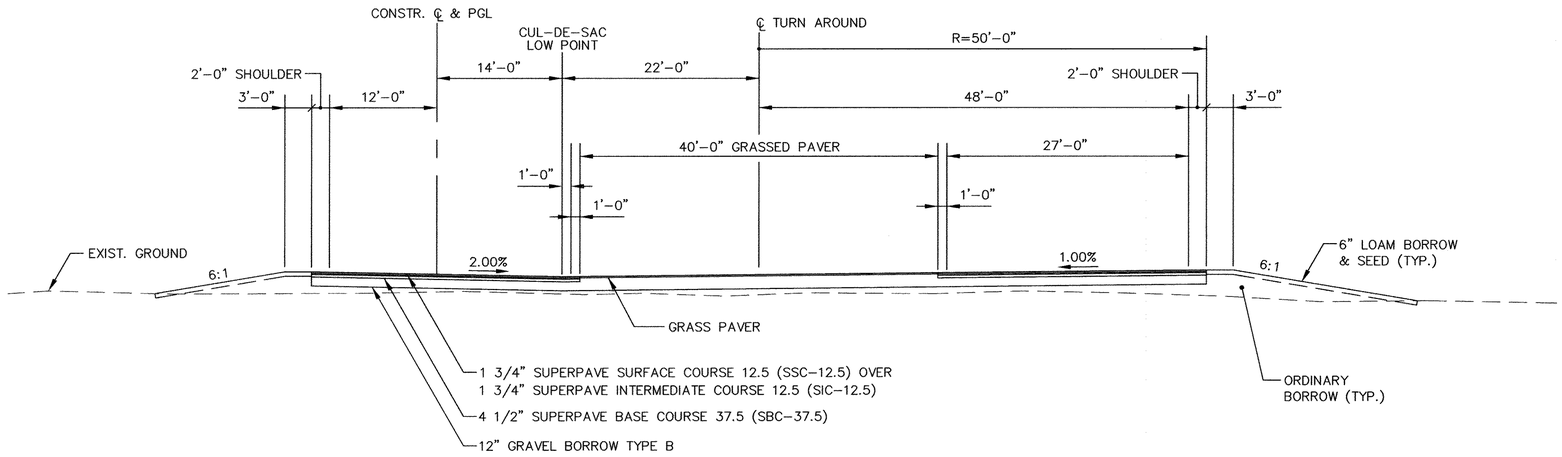
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	13	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS

SHEET 9 OF 10



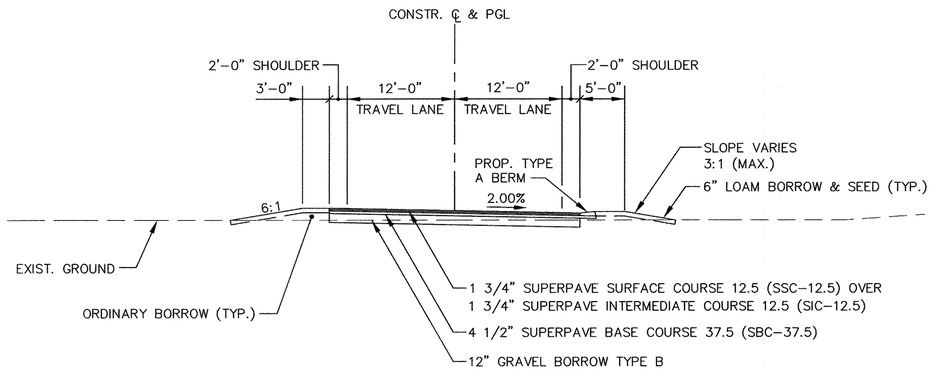
OLD PAWTUCKET DRIVE TYPICAL SECTION CUL-DE-SAC

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

OLD PAWTUCKET DRIVE

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
4 1/2" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
12" GRAVEL BORROW – SUB-BASE (TYPE B)



OLD PAWTUCKET DRIVE TYPICAL SECTION STA 900+15 TO 904+50

HORIZONTAL SCALE – 1"=8'

0 8 20 40

PARSONS

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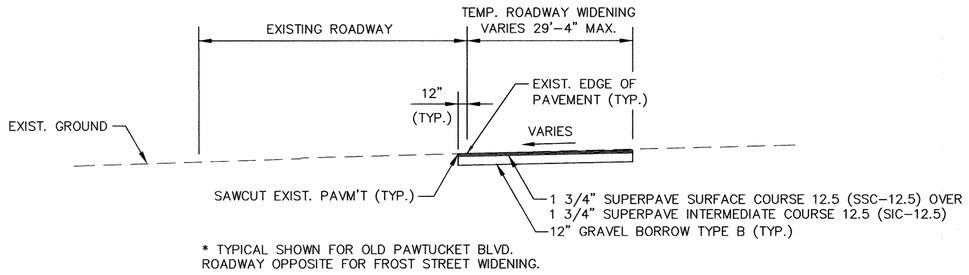
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

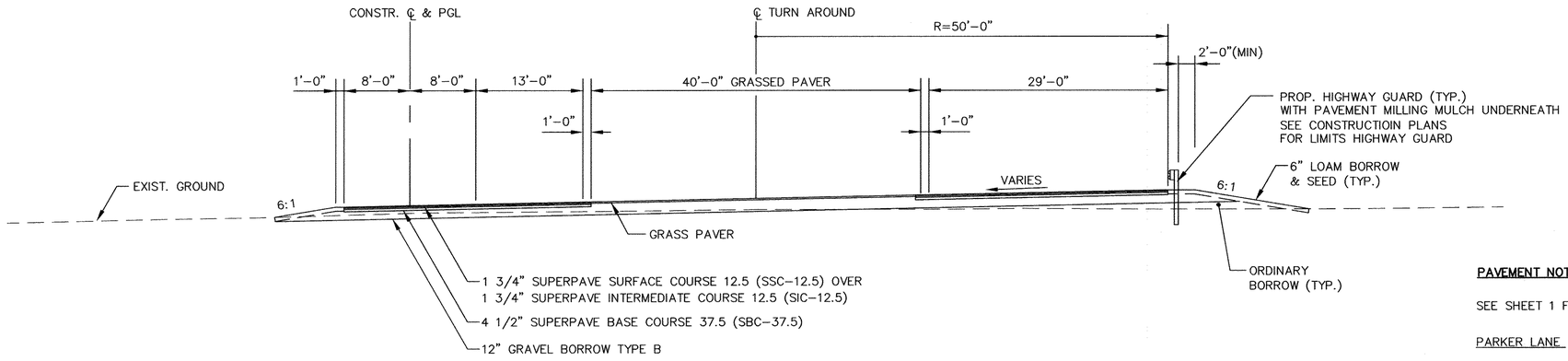
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	14	154
PROJECT FILE NO.: 603823			

TYPICAL SECTIONS
SHEET 10 OF 10

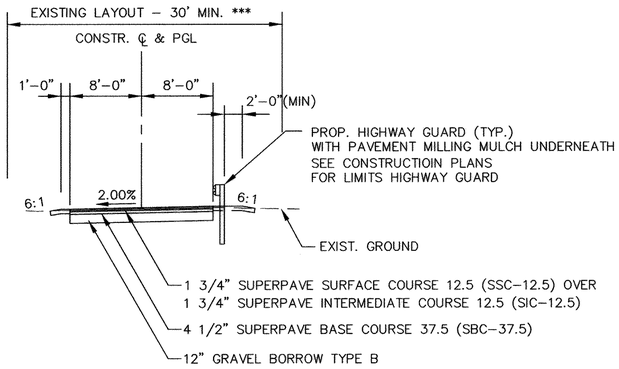


* TYPICAL SHOWN FOR OLD PAWTUCKET BLVD.
ROADWAY OPPOSITE FOR FROST STREET WIDENING.

TEMPORARY ROADWAY WIDENING
FROST ROAD AND OLD PAWTUCKET BLVD.

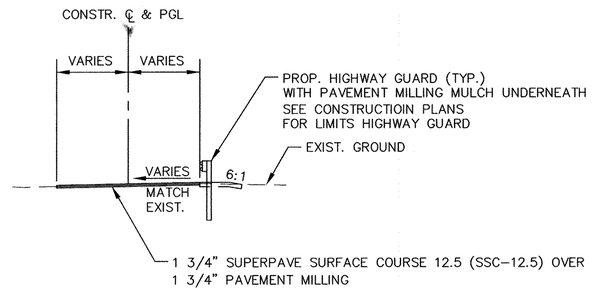


PARKER LANE TYPICAL SECTION CUL-DE-SAC



PARKER LANE 800+76.90 to 802+00 & 803+50 TO 804+50

*** BEYOND 803+82



PARKER LANE STA 804+50 TO 807+50

HORIZONTAL SCALE - 1"=8'
0 8 20 40

PAVEMENT NOTES:

SEE SHEET 1 FOR TYPICAL PAVEMENT NOTES

PARKER LANE

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
4 1/2" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
12" GRAVEL BORROW - SUB-BASE (TYPE B)

TEMPORARY ROADWAY WIDENING
FROST STREET AND OLD PAWTUCKET BLVD.

1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) OVER
1 3/4" SUPERPAVE INTERMEDIATE COURSE 12.5 (SIC-12.5) OVER
12" GRAVEL BORROW - SUB-BASE (TYPE B)

PARSONS

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TYNGSBOROUGH

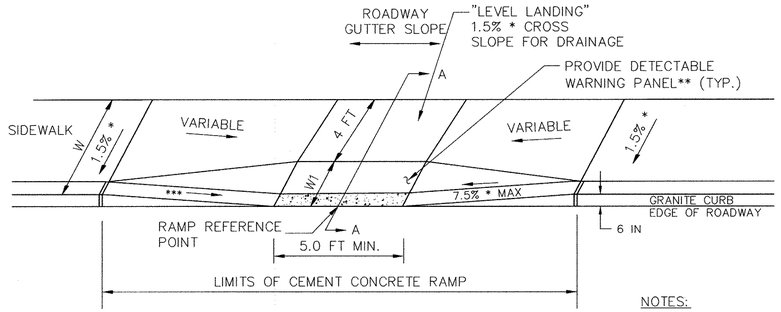
RELOCATION OF PAWTUCKET BOULEVARD

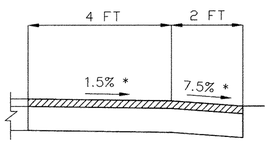
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	15	154
PROJECT FILE NO.: 603823			

WHEELCHAIR RAMPS DETAILS

WCR #	RAMP REFERENCE POINT		LENGTH OF PRIMARY RAMP (W1)	WIDTH OF SIDEWALK	WIDTH OF RAMP MIN. 5.0 FT	DEPTH OF LEVEL LANDING MIN. 4.0 FT	ROADWAY GUTTER SLOPE	TRANSITION LENGTH		STREET
	STATION	OFFSET (FT)						DOWNSTATION	UPSTATION	
W1	400+39.37	28.74 RT	2 FT	6 FT	5 FT	4.0 FT	-2.02%	11.00 FT	6.50 FT	OLD PAWT. BLVD.
W2	400+41.81	44.45 LT	2 FT	6 FT	5 FT	4.0 FT	-2.03%	11.00 FT	6.50 FT	OLD PAWT. BLVD.
W3	316+73.47	31.00 RT	2 FT	6 FT	5 FT	4.0 FT	1.94%	6.50 FT	9.00 FT	REL. PAWTUCKET BLVD.
W4	316+91.01	46.70 LT	2 FT	6 FT	5 FT	4.0 FT	2.23%	6.50 FT	11.00 FT	REL. PAWTUCKET BLVD.
W6	710+31.80	16.52 RT	2 FT	6 FT	5 FT	4.0 FT	1.82%	6.50 FT	9.00 FT	INDIAN LANE
W7	710+33.14	20.88 LT	2 FT	6 FT	5 FT	4.0 FT	1.89%	6.50 FT	9.00 FT	INDIAN LANE

STYLE "A" – WHEELCHAIR RAMP PARALLEL

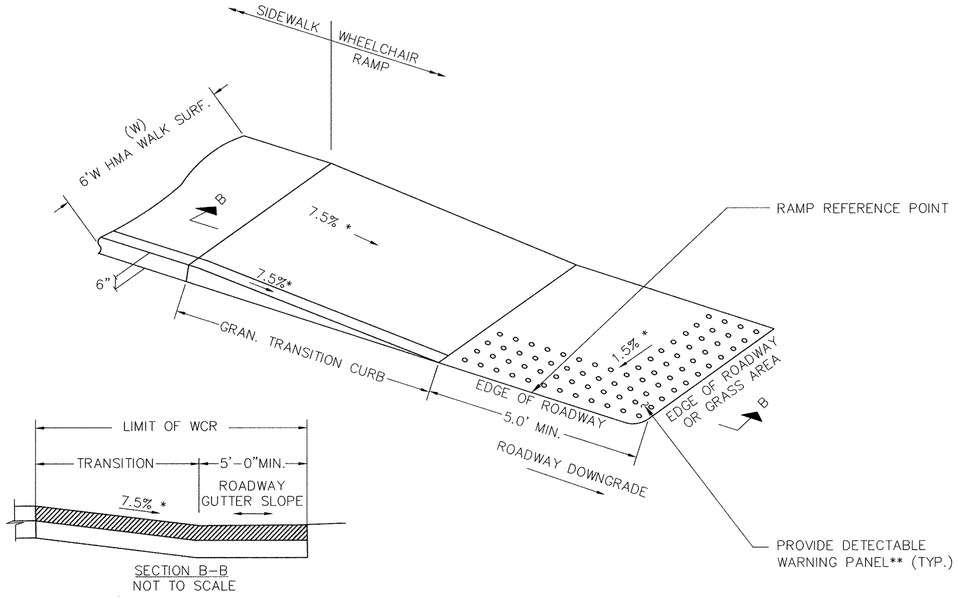




SECTION A–A
NOT TO SCALE

NOTES:

* CONSTRUCTION TOLERANCE ±0.5%
– SEE CONSTRUCTION STANDARD M/E 107.2.0
** SEE CONSTRUCTION STANDARD M/E 107.6.5
*** SEE CONSTRUCTION STANDARD M/E 107.9.0



WCR #	RAMP REFERENCE POINT		WIDTH OF SIDEWALK	LENGTH OF RAMP MIN. 5.0 FT	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	STREET
	STATION	OFFSET (FT)					
W5	203+05.06	14.10 RT	6 FT	5 FT	3.42%	6.50 FT	CURTIS RD.
W9	900+51.53	14.00 LT	6 FT	6 FT	-2.00%	9.00 FT	OLD PAWTUCKET DRIVE

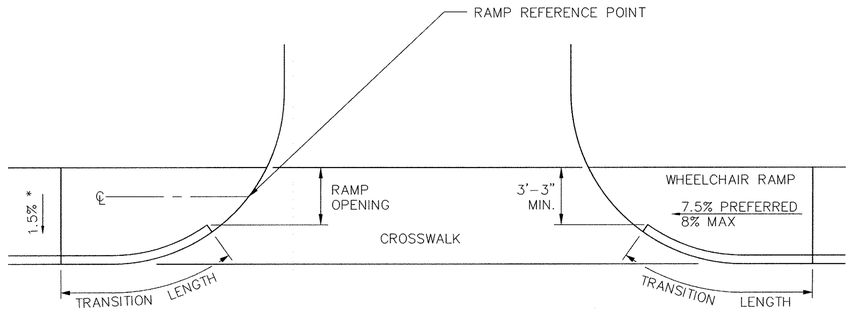
STYLE "B" – WHEELCHAIR RAMP ONE-WAY

NOTES:

* CONSTRUCTION TOLERANCE ±0.5%
** SEE CONSTRUCTION STANDARD M/E 107.6.5

WCR #	RAMP REFERENCE POINT		WIDTH OF RAMP OPENING	LENGTH OF RAMP MIN. 5.0 FT	ROADWAY GUTTER SLOPE	TRANSITION LENGTH	STREET
	STATION	OFFSET (FT)					
W8	604+72.31	20.24 LT	3'-3"	5 FT	6.00%	6.5 FT	SHERBURNE AVE.

STYLE "C" – WHEELCHAIR RAMP ONE-WAY



NOTES:

– * CONSTRUCTION TOLERANCE ±0.5%
– SEE CONSTRUCTION STANDARD M/E 107.6.0

PARSONS

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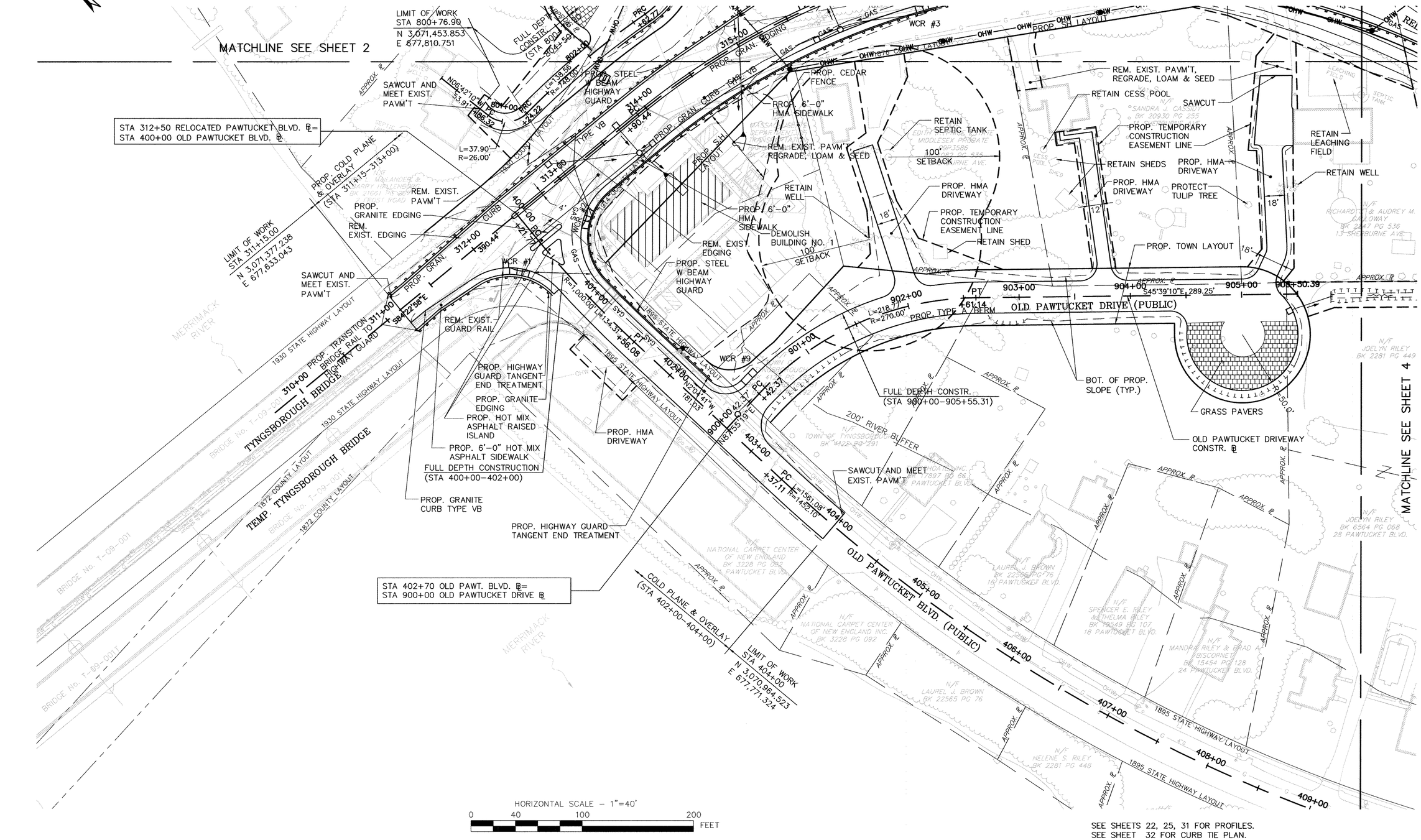
Print Date: 10/19/2010 5:03 PM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	16	154
PROJECT FILE NO.: 603823			

CONSTRUCTION PLAN
SHEET 1 OF 5

HIGHWAY GUARD RAIL	DRAINAGE & UTILITY DETAILS	WATER SUPPLY ALTERATION
SEE BELOW	SEE SHEETS 41 AND 46	NONE



HORIZONTAL SCALE – 1"=40'
0 40 100 200 FEET

PARSONS

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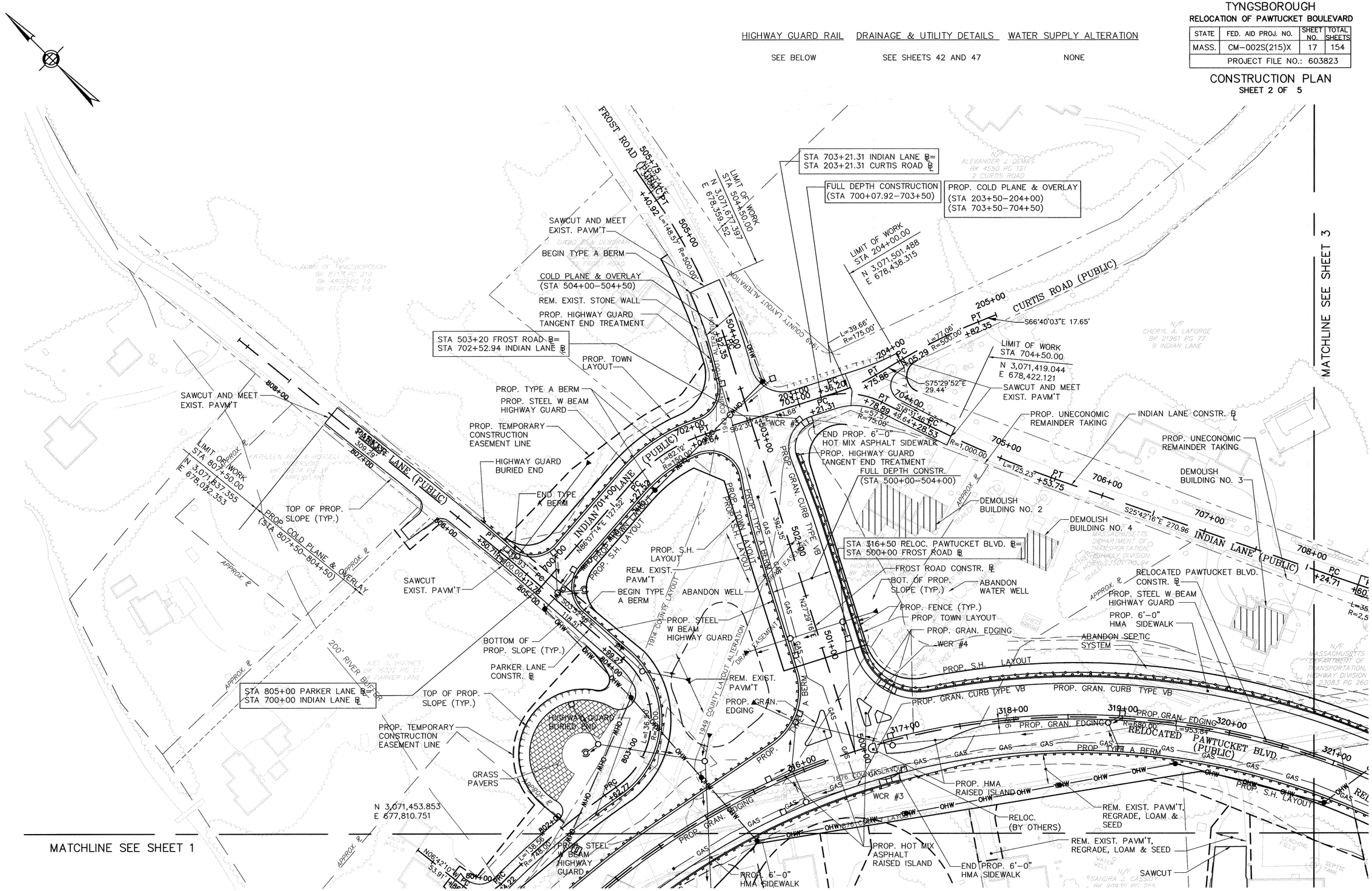
Plot Date: 10/21/2015 9:57 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	17	154
	PROJECT FILE NO.: 603823		

CONSTRUCTION PLAN
SHEET 2 OF 5

HIGHWAY GUARD RAIL	DRAINAGE & UTILITY DETAILS	WATER SUPPLY ALTERATION
SEE BELOW	SEE SHEETS 42 AND 47	NONE



SEE SHEET 22, 23, 27, 29, 30, 31 FOR PROFILES.
SEE SHEET 33 FOR CURB TIE PLAN.

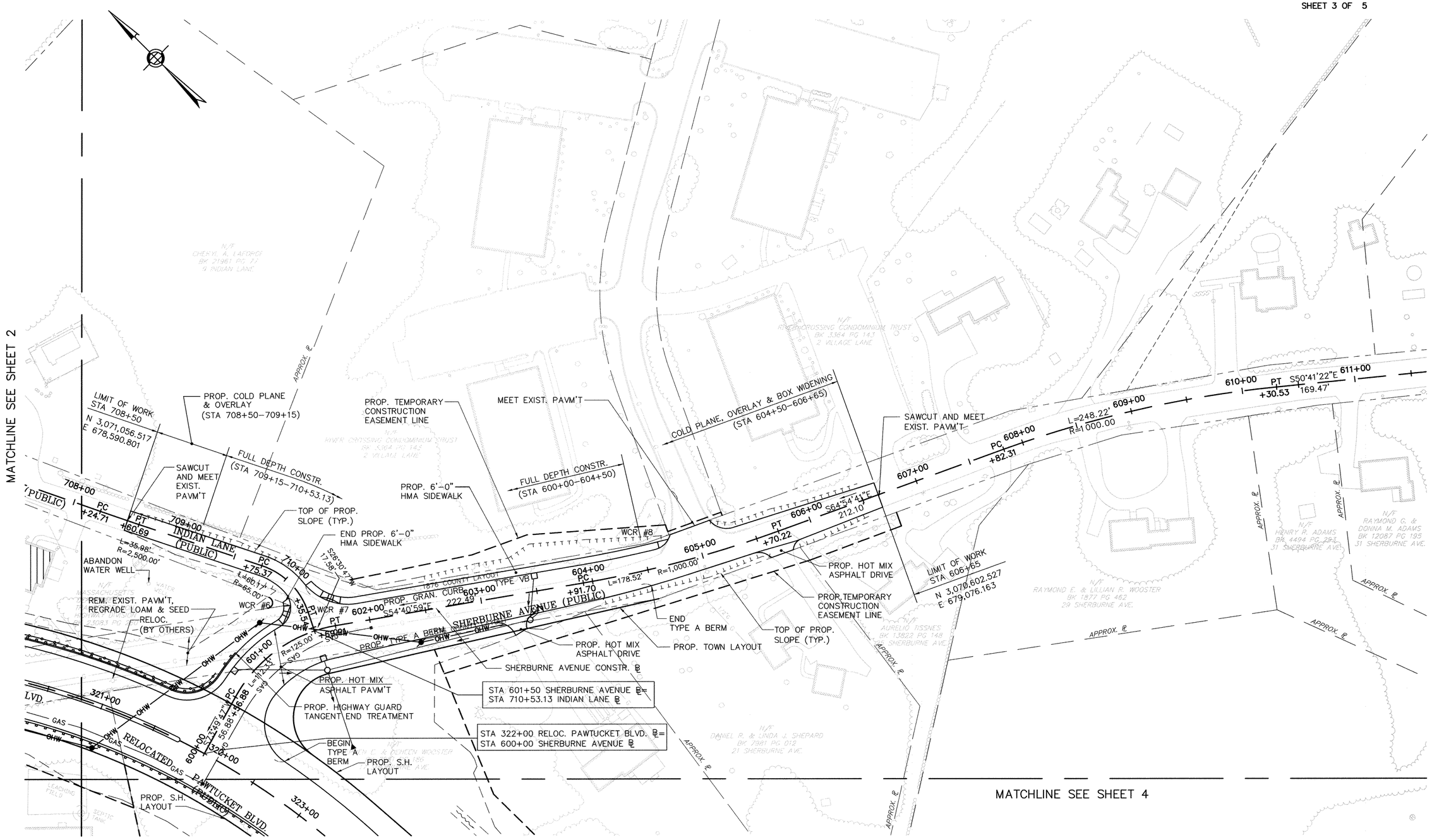
PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	18	154
PROJECT FILE NO.: 603823			

CONSTRUCTION PLAN
SHEET 3 OF 5

HIGHWAY GUARD RAIL	DRAINAGE & UTILITY DETAILS	WATER SUPPLY ALTERATION
SEE BELOW	SEE SHEETS 43 AND 48	NONE



HORIZONTAL SCALE - 1"=40'
0 40 100 200 FEET

SEE SHEETS 23, 28, 29 FOR PROFILES.
SEE SHEET 34 FOR CURB TIE PLAN.

PARSONS

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TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	19	154
PROJECT FILE NO.: 603823			

CONSTRUCTION PLAN
SHEET 4 OF 5

HIGHWAY GUARD RAIL	DRAINAGE & UTILITY DETAILS	WATER SUPPLY ALTERATION
SEE BELOW	SEE SHEETS 44 AND 49	NONE

MATCHLINE SEE SHEET 1

MATCHLINE SEE SHEET 3

MATCHLINE SEE SHEET 5

MATCHLINE SEE SHEET 5

RELOCATED PAWTUCKET BLVD. (PUBLIC)

PROP. S.H. LAYOUT

PROP. DRAINAGE AND SLOPE EASEMENT LINE

PROP. 8' GRASS SWALE

PROP. 4' GRASS SWALE

FULL DEPTH CONSTRUCTION

PROP. TYPE A BERM

SEDIMENT FOREBAY

DETENTION BASIN SEEDING

INFILTRATION BASIN

PROP. STEEL W BEAM HIGHWAY GUARD

PROP. STOCKADE FENCE (TYP.)

PROP. DRAINAGE EASEMENT LINE

PROP. HIGHWAY GUARD TANGENT END TREATMENT

END TYPE A BERM

BOTTOM OF PROP. SLOPE (TYP.)

200' RIVER BUFFER

STA 333+00 RELOC. PAWTUCKET BLVD. EQ= STA 420+62.66 OLD PAWTUCKET BLVD.

600+00 CL 56.85

320+00

323+00

PT +44.28

324+00

S04°00'48"E

325+00

476.64

326+00

327+00

328+00 PC +20.92

329+00

330+00

331+00 L=853.59' R=780.00'

332+00

333+00

334+00

PT +41.16

S50°47'44"W 21.50'

R=130.00'

42.97'

APPROX. R

OHW

N/F STEPHEN F. & PENEEN WOOSTER BK 7981 PG 186 17 SHERBURNE AVE.

N/F DANIEL R. & LINDA J. SHEPARD BK 7981 PG 012 21 SHERBURNE AVE.

N/F RICHARD T. & AUDREY M. CALLOWAY BK 2247 PG 536 13 SHERBURNE AVE.

N/F JOELYN RILEY BK 7281 PG 449

N/F JOELYN RILEY BK 6564 PG 068 28 PAWTUCKET BLVD.

N/F JOSEPH G. JR. & MARYANN PEIRCE BK 10695, PG 229 30 PAWTUCKET BLVD.

N/F MASSACHUSETTS DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION BK 22273 PG 3

N/F COLONY HEIGHTS TOWN HOUSE CONDOMINIUM ASSOCIATION MASTER DEED BK 2410 PG 412 46 PAWTUCKET BLVD.

N/F KENNETH J. LEMIRE & KATHLEEN A. WHITE 22887 PG 43 PAWTUCKET BLVD.

HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

SEE SHEETS 23, 24 FOR PROFILES.
SEE SHEET 35 FOR CURB TIE PLAN.

PARSONS

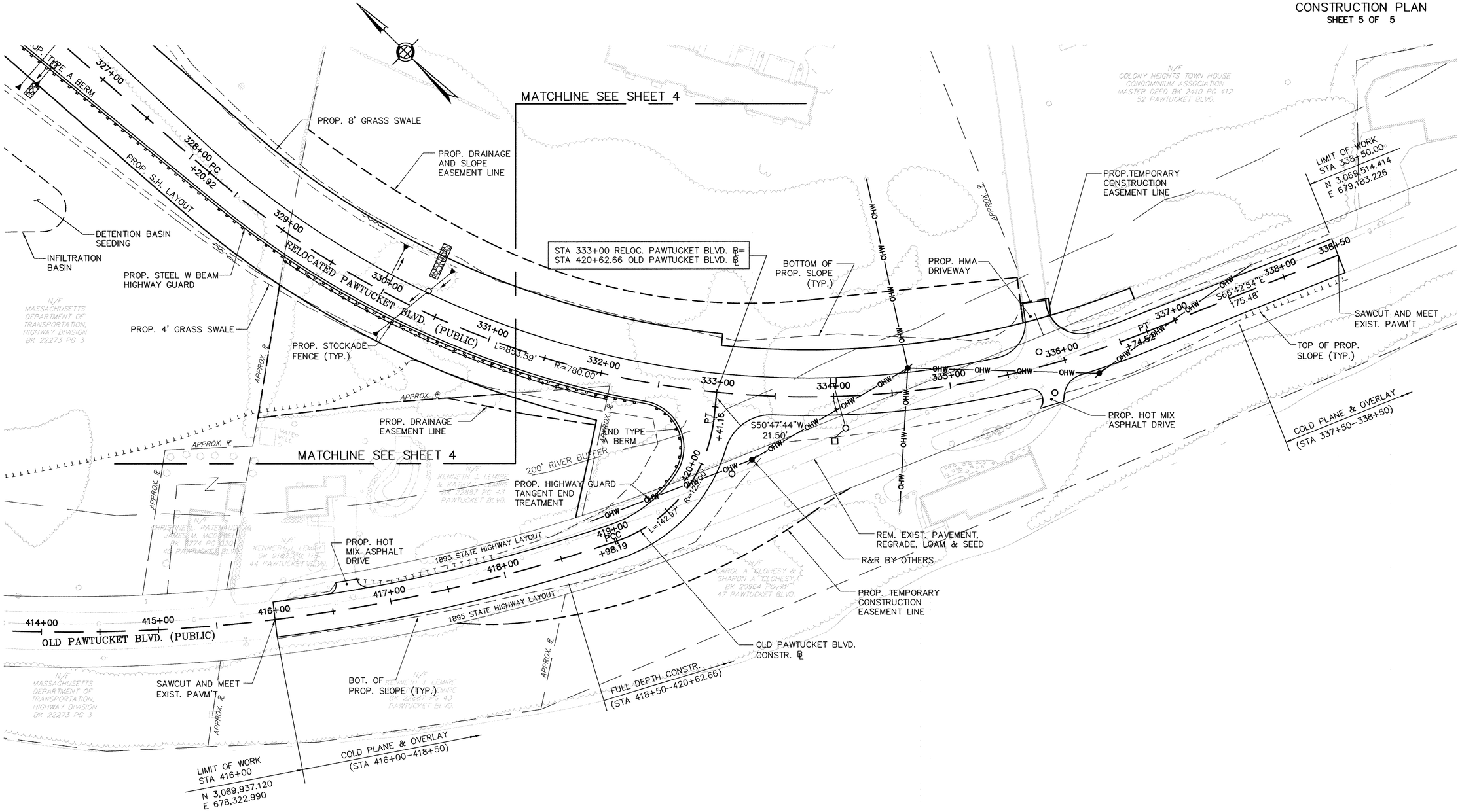
File Name: P:\Vaspalghwy\486088_3\ngdwrwg\vcad\dwrwg\V019_ConstPlan4.dwg
Plot Date: 10/20/2010 5:16 PM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	20	154
PROJECT FILE NO.: 603823			

CONSTRUCTION PLAN
SHEET 5 OF 5

HIGHWAY GUARD RAIL	DRAINAGE & UTILITY DETAILS	WATER SUPPLY ALTERATION
SEE BELOW	SEE SHEETS 45 AND 50	NONE



HORIZONTAL SCALE – 1"=40'
0 40 100 200 FEET

SEE SHEETS 23, 24, 26 FOR PROFILES.
SEE SHEET 36 FOR CURB TIE PLAN.

PARSONS

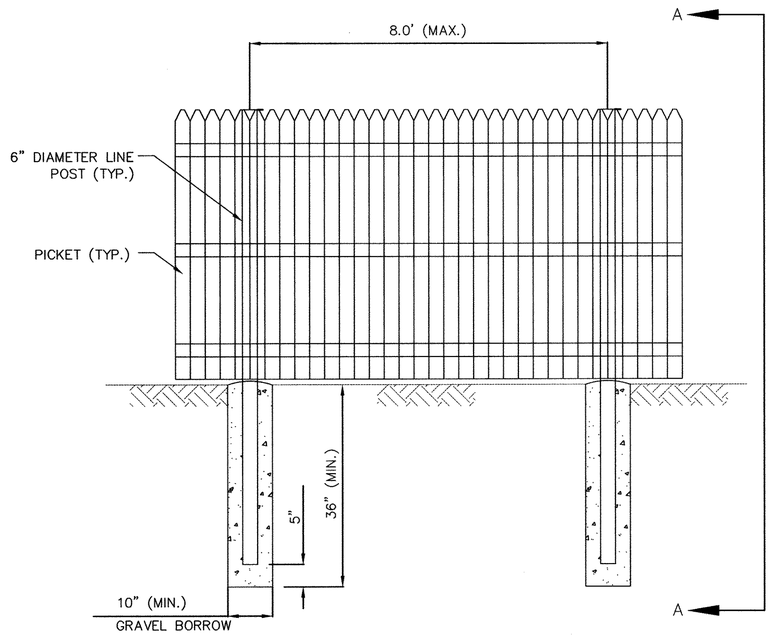
File Name: P:\Wastegrey\V45656_Tyngsborough\Local\drawings\V2020_ConstPlan5.dwg
Plot Date: 10/20/2016 5:27 PM

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

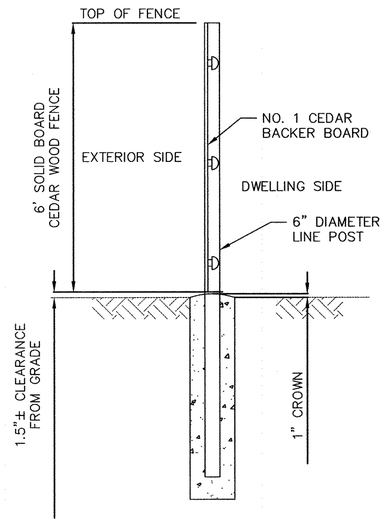
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	21	154
PROJECT FILE NO.: 603823			

CONSTRUCTION DETAILS



STOCKADE FENCE DETAIL

SCALE: N.T.S.

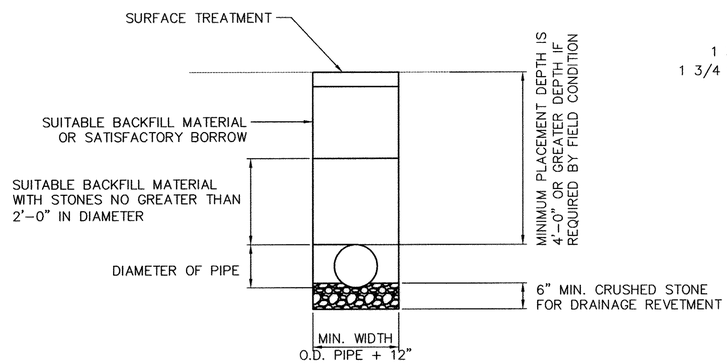


SECTION A-A

SCALE: N.T.S.

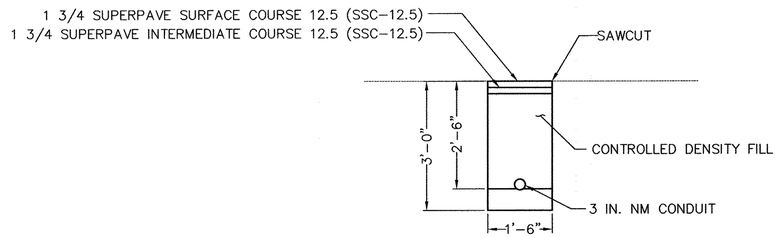
TYPICAL WOOD FENCING

1. ALL WOOD FENCE POSTS SHALL BE 6" DIAMETER PRESSURE TREATED LUMBER.
2. PICKETS TO BE 0.87 in. THICK NO. 1 CEDAR.
3. BACKER BOARDS SHALL BE 1/2 ROUND NO. 1 CEDAR.
4. ALL HARDWARE TO BE HOT DIP GALVANIZED.
5. ALL FENCE SEGMENTS SHALL BE DOWELED



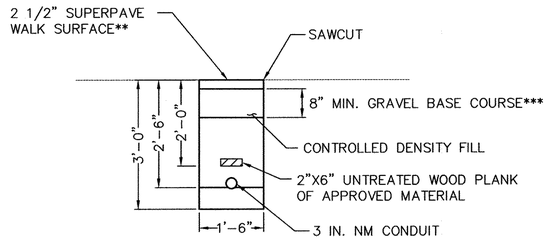
DRAINAGE TRENCH DETAIL

SCALE: N.T.S.



CONDUIT DETAIL FOR ROADWAY CROSSING

SCALE: N.T.S.



** 2 1/2" SUPERPAVE WHEN TRENCH IS IN SUPERPAVE PAVEMENT OR 4" SOD WHEN TRENCH IS ON TURF.

*** OR 8" TAMPED LOAM WHEN TRENCH IS IN TURF.

CONDUIT DETAIL FOR ROADWAY CROSSING

SCALE: N.T.S.

PARSONS

File Name: K:\Wassighorn\V45836_Tyngsborough\cadd\drawings\V0001_Construction.dwg
Plot Date: 10/21/2010 8:37 AM

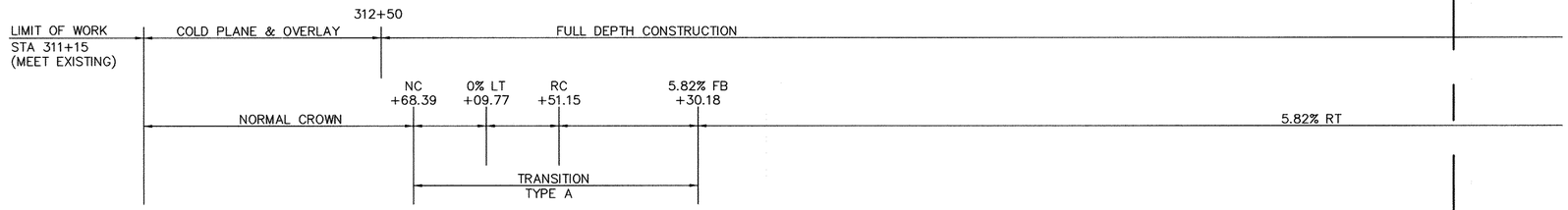
TYNGSBOROUGH

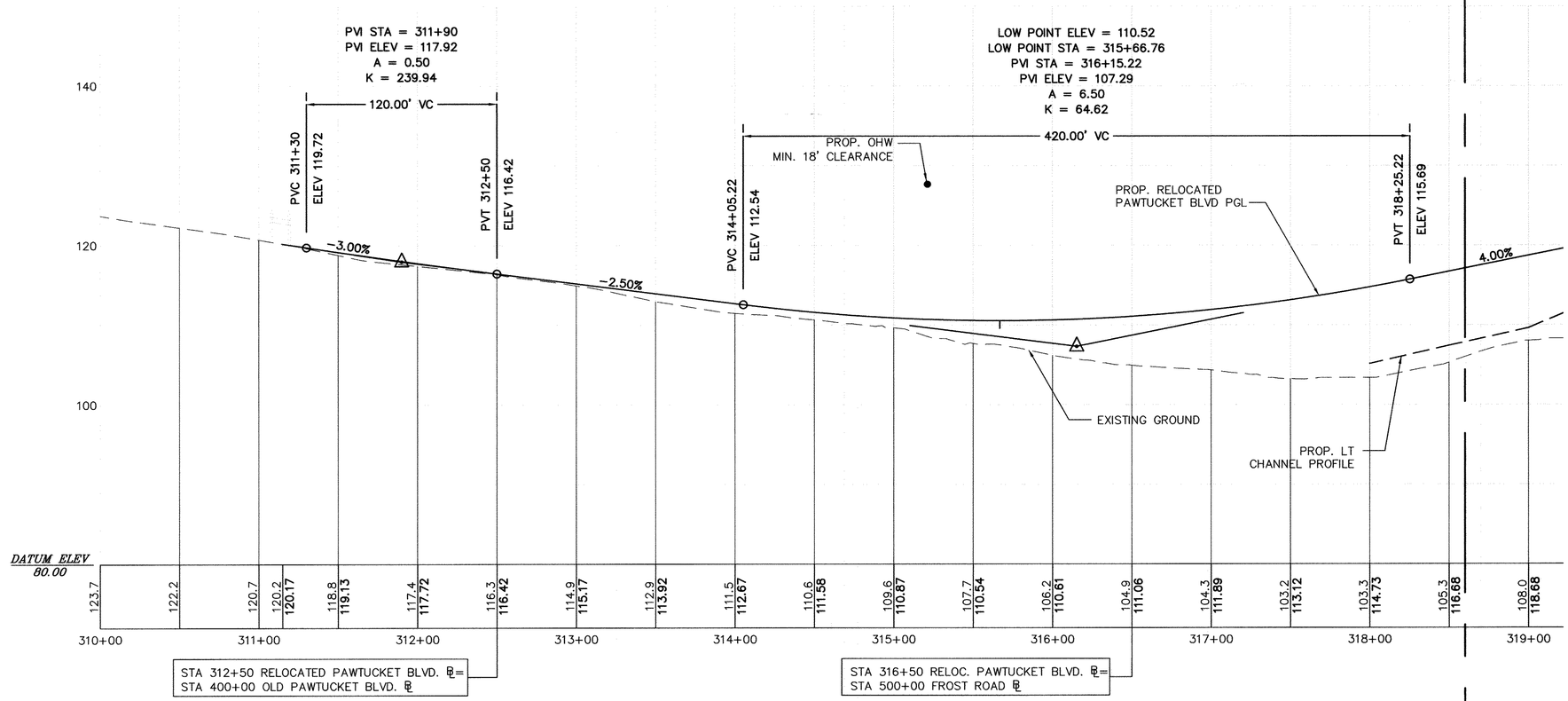
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	22	154
PROJECT FILE NO.: 603823			

RELOC. PAWTUCKET BLVD. PROFILE

SHEET 1 OF 3





HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE – 1"=8'

FOR CONSTRUCTION PLANS SEE SHEET NOS. 16 AND 17

PARSONS

File Name: P:\Mass\Highway\145656_Tyngsborough\cadd\Drawings\C0022_Profile1.dwg
Plot Date: 10/20/2010 11:03 AM

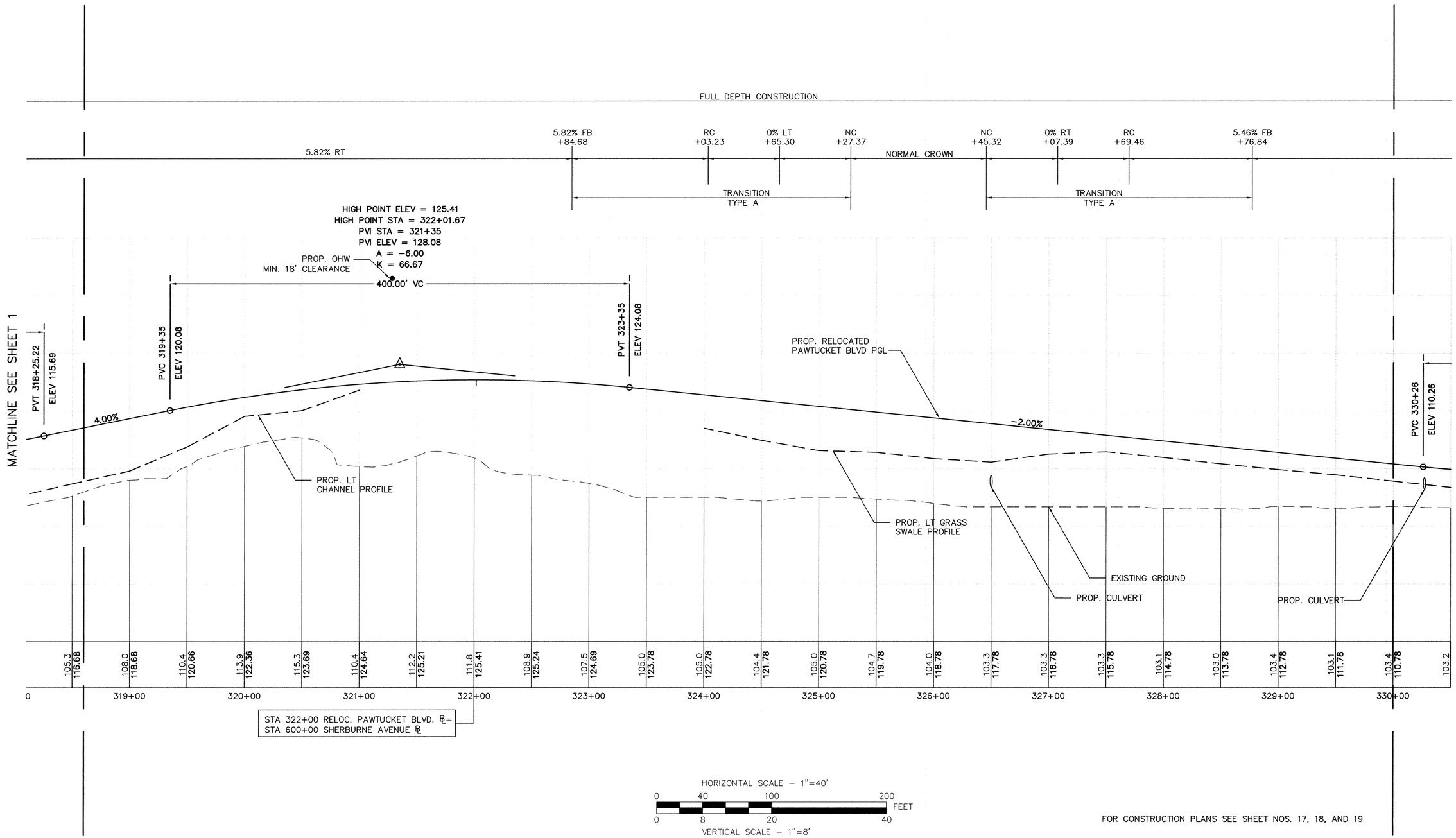
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	23	154
PROJECT FILE NO.: 603823			

RELOC. PAWTUCKET BLVD. PROFILE

SHEET 2 OF 3



FOR CONSTRUCTION PLANS SEE SHEET NOS. 17, 18, AND 19

PARSONS

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Plot Date: 10/20/2016 11:04 AM

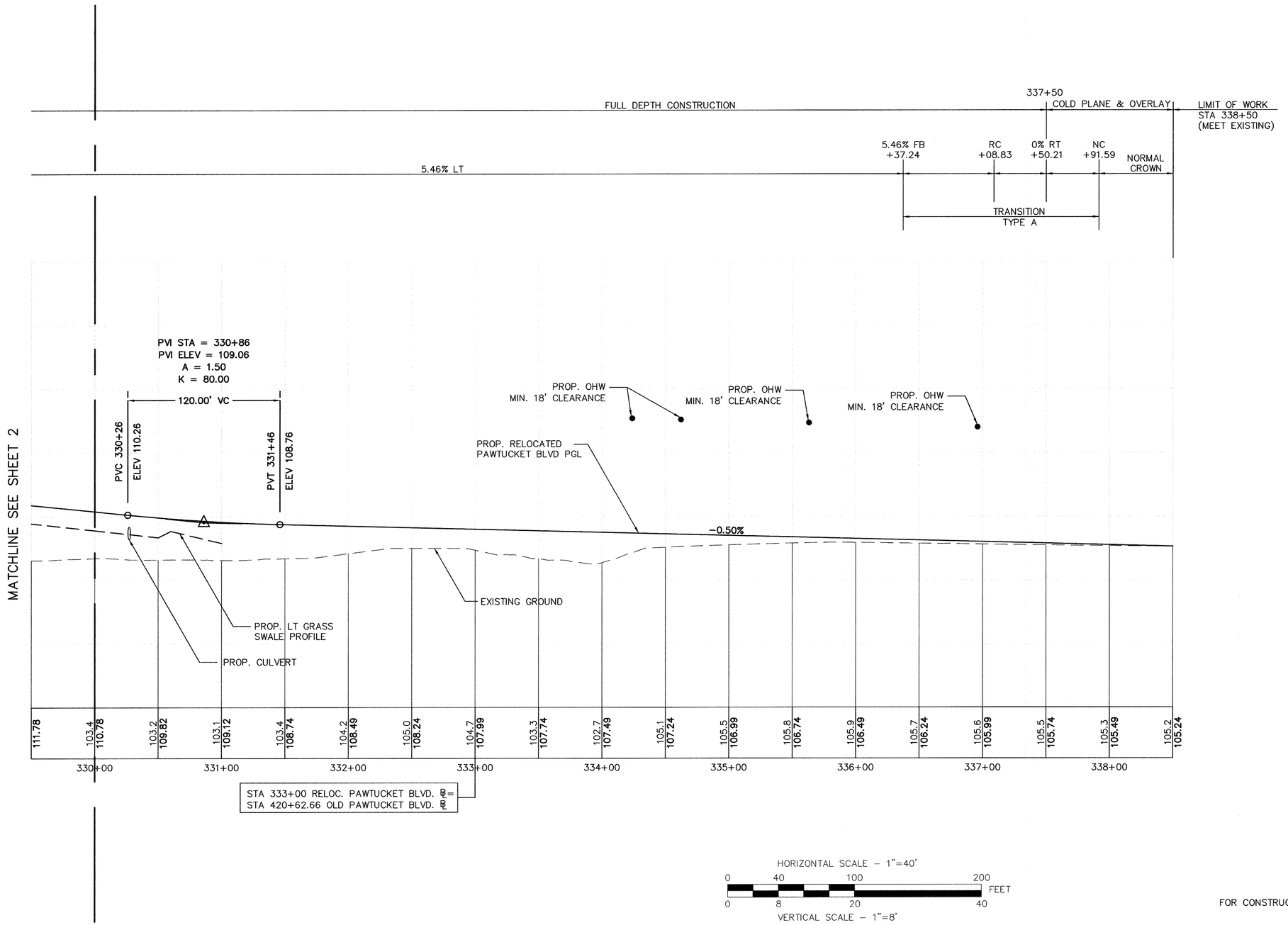
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	24	154
PROJECT FILE NO.: 603823			

RELOC. PAWTUCKET BLVD. PROFILE

SHEET 3 OF 3



FOR CONSTRUCTION PLANS SEE SHEET NOS. 19, AND 20

PARSONS

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Plot Date: 10/30/2015 11:04 AM

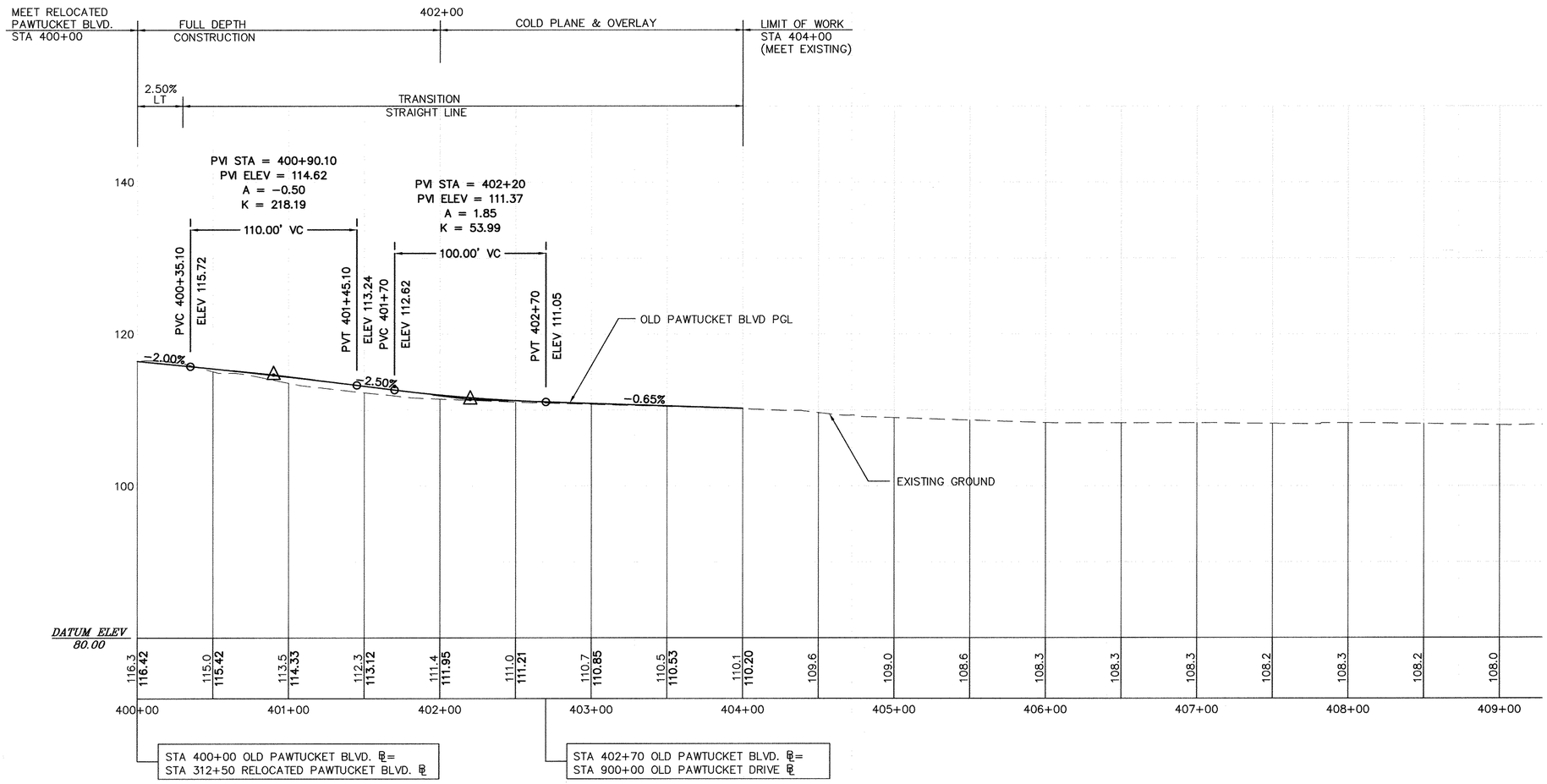
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	25	154
PROJECT FILE NO.: 603823			

OLD PAWTUCKET BLVD PROFILE

SHEET 1 OF 2



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE – 1"=8'

FOR CONSTRUCTION PLAN SEE SHEET NO. 16

PARSONS

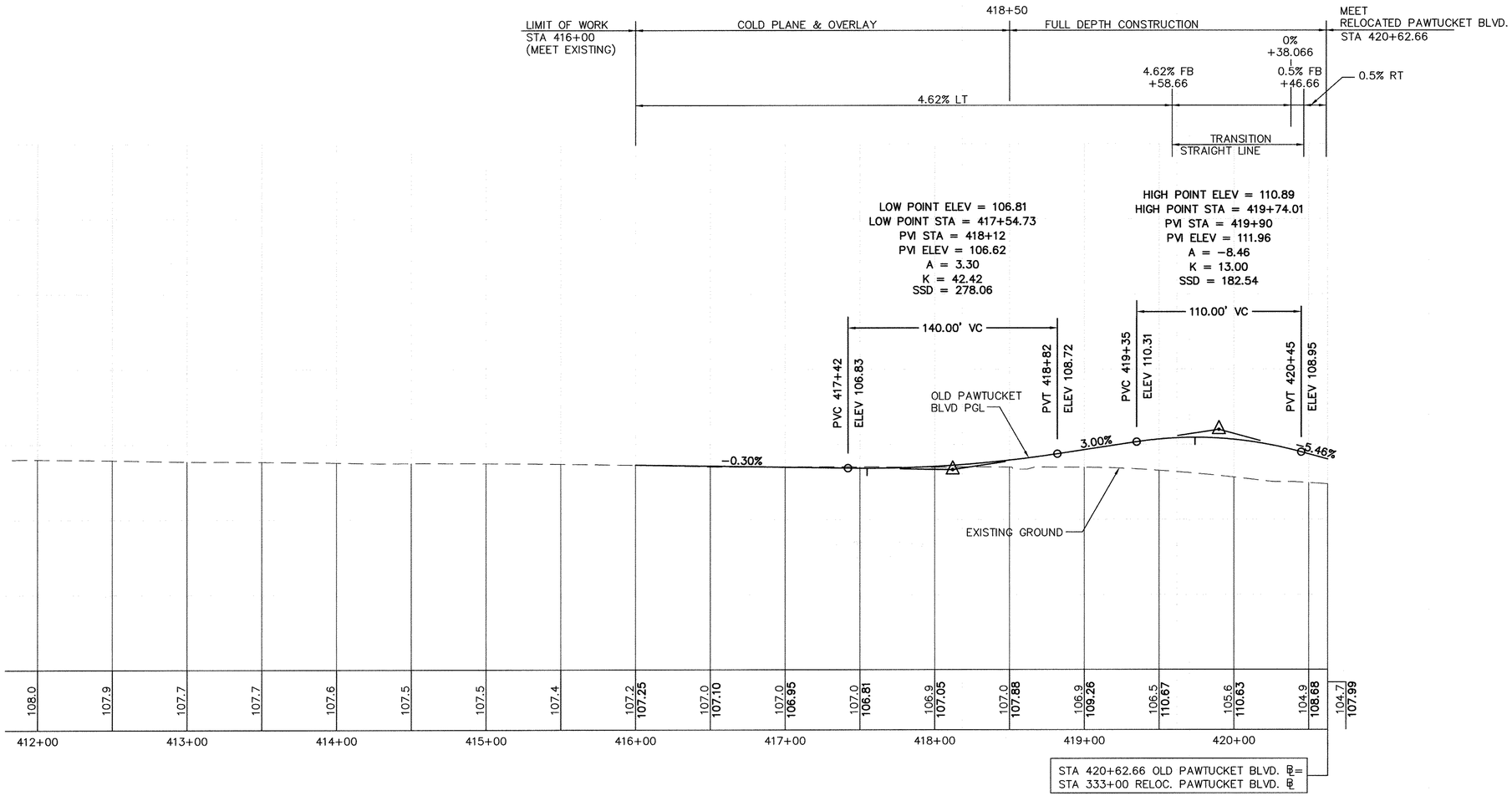
File Name: P:\Wastahgnrl\546088_tyngsborough\cadd\drwings\002S_Profile1.dwg
Plot Date: 10/20/2010 11:08 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	26	154
	PROJECT FILE NO.: 603823		

OLD PAWTUCKET BOULEVARD PROFILE

SHEET 2 OF 2



HORIZONTAL SCALE - 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE - 1"=8'

FOR CONSTRUCTION PLAN SEE SHEET NO. 20

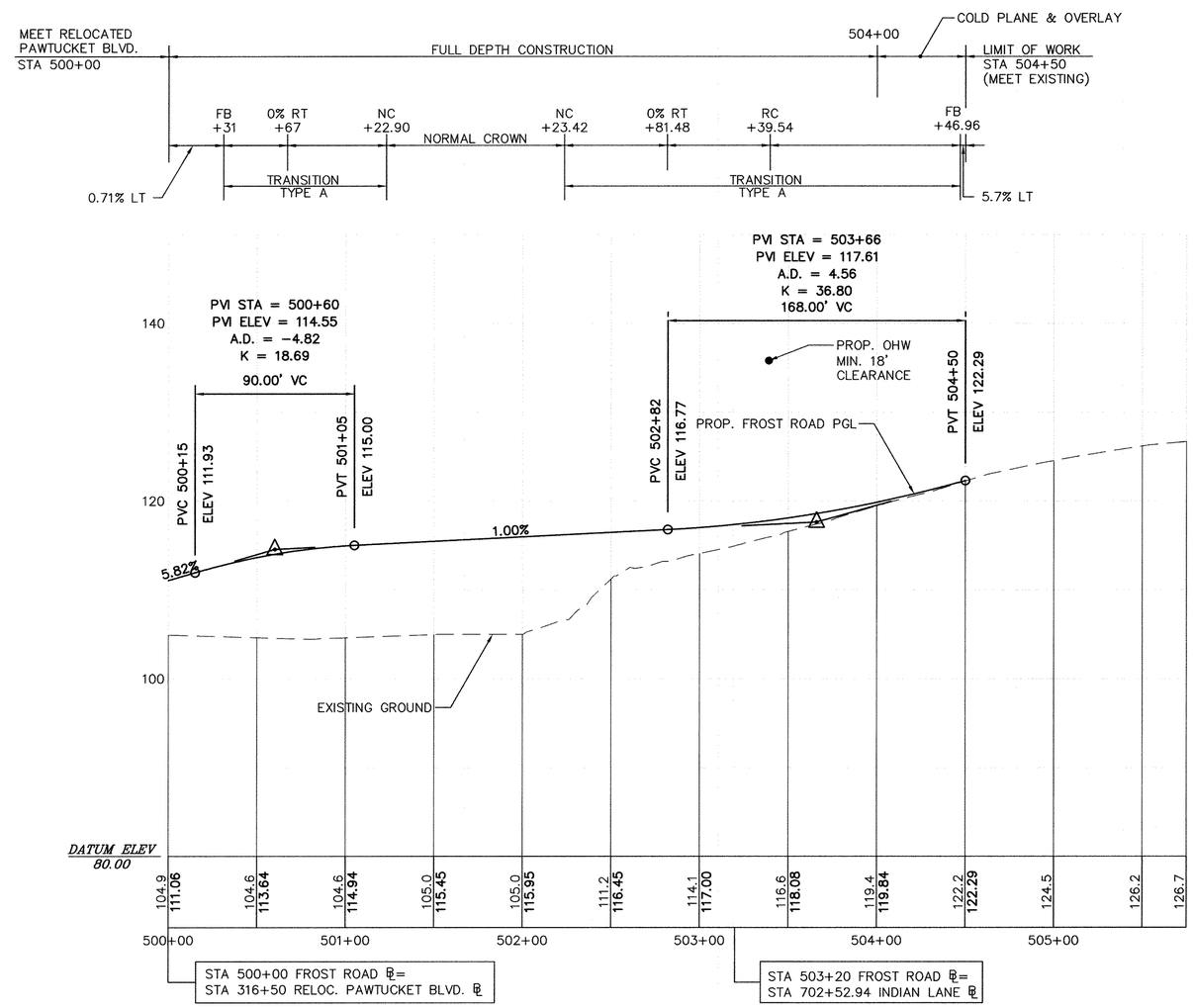
PARSONS

File Name: P:\Massdigitway\646086_Tyngsborough\cadd\drawings\C026_Profile5.dwg
Plot Date: 10/20/2010 11:05 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	27	154
	PROJECT FILE NO.: 603823		

FROST ROAD PROFILE



HORIZONTAL SCALE - 1"=40'
0 40 100 200 FEET
0 8 20 40
VERTICAL SCALE - 1"=8'

FOR CONSTRUCTION PLAN SEE SHEET NO. 17

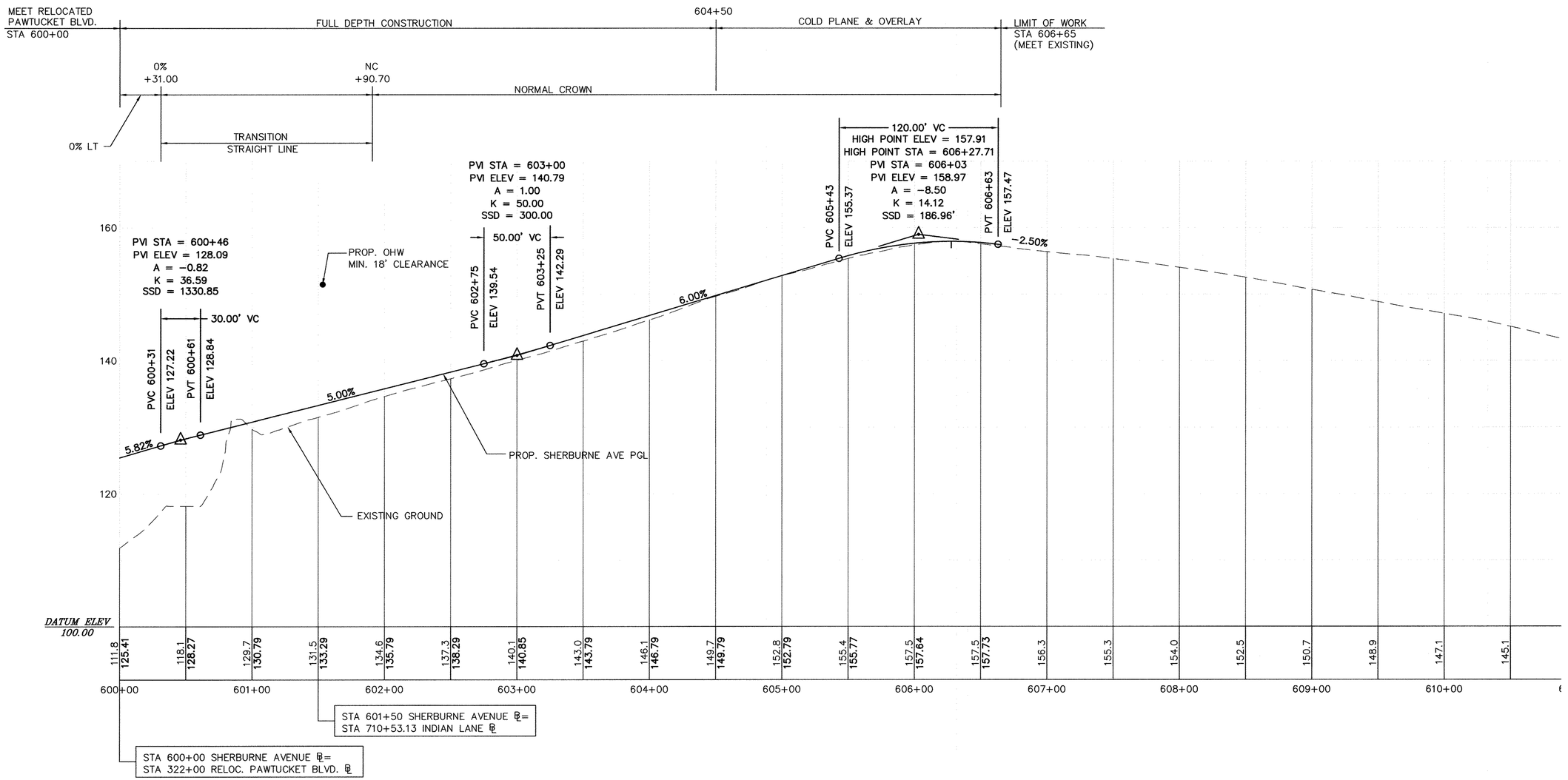
PARSONS

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	28	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE PROFILE



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE – 1"=8'

FOR CONSTRUCTION PLAN SEE SHEET NO. 18

PARSONS

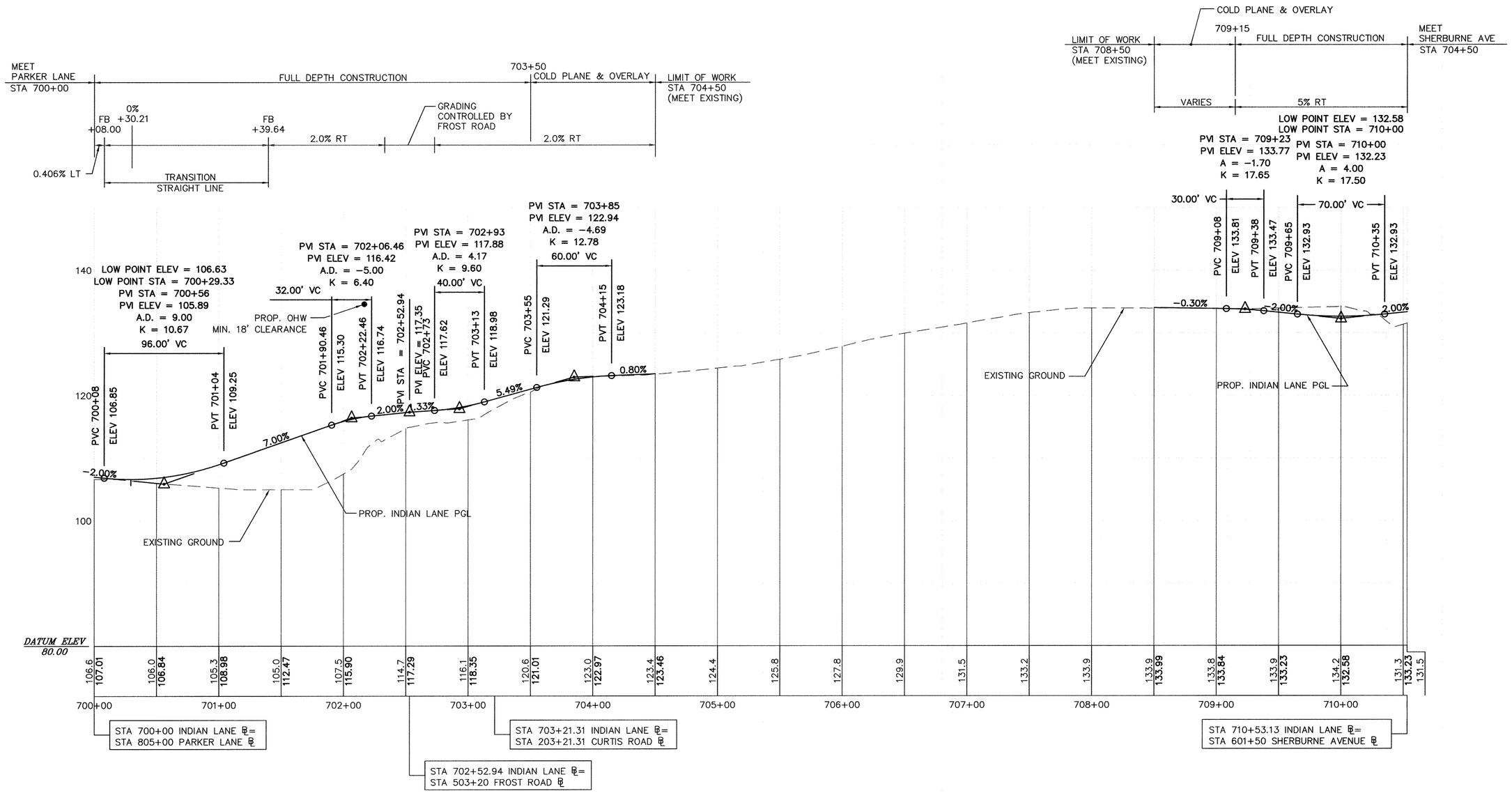
File Name: P:\Mass\Engrvy\X45086_tyngsborough\c002\d\roadway\c002_Profile7.dwg
Plot Date: 10/20/2010 11:06 AM

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	29	154
	PROJECT FILE NO.: 603823		

INDIAN LANE PROFILE



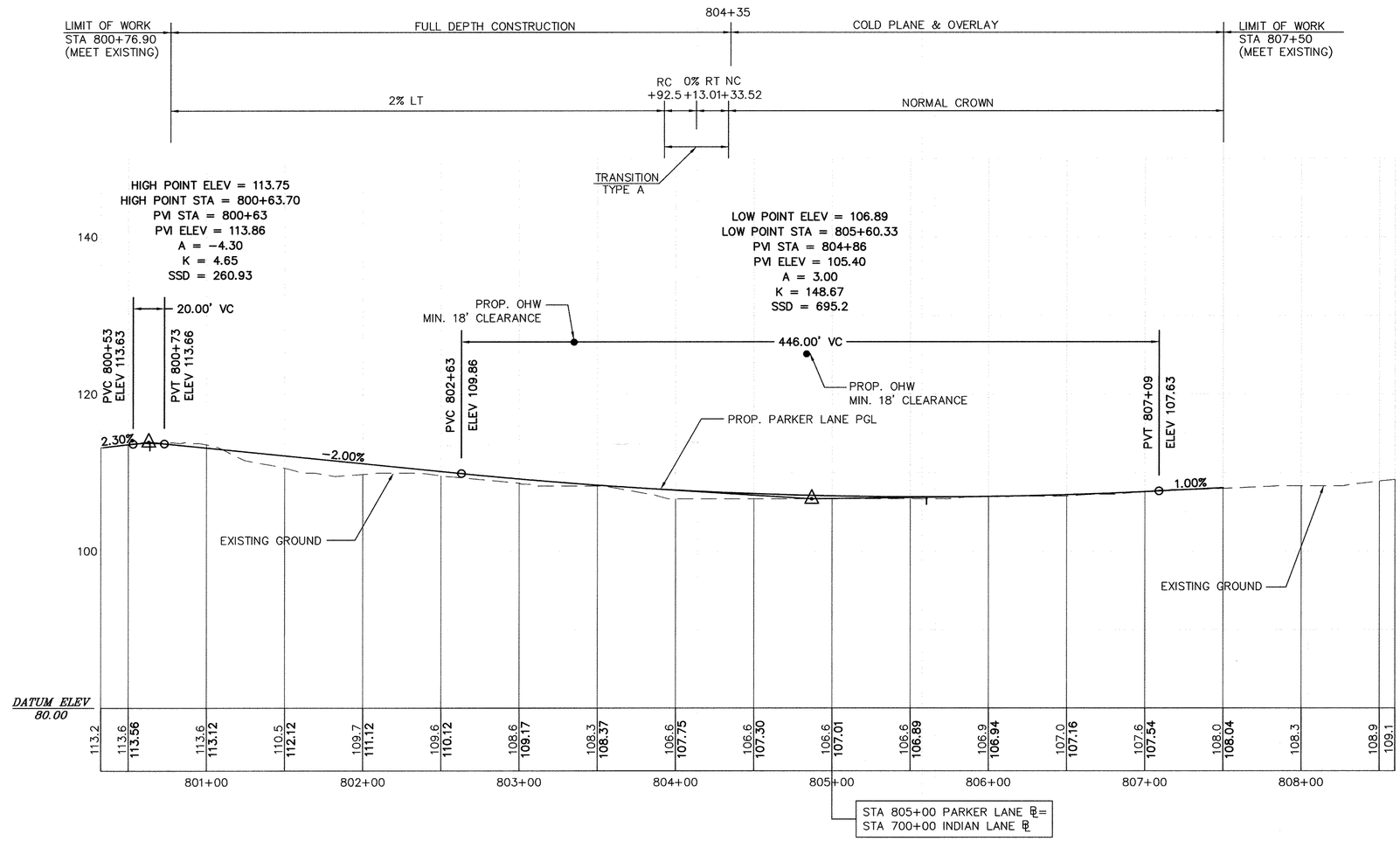
FOR CONSTRUCTION PLAN SEE SHEET NOS. 17 AND 18

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	30	154
	PROJECT FILE NO.: 603823		

PARKER LANE PROFILE



HORIZONTAL SCALE - 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE - 1"=8'

FOR CONSTRUCTION PLANS SEE SHEET NOS. 16 AND 17

PARSONS

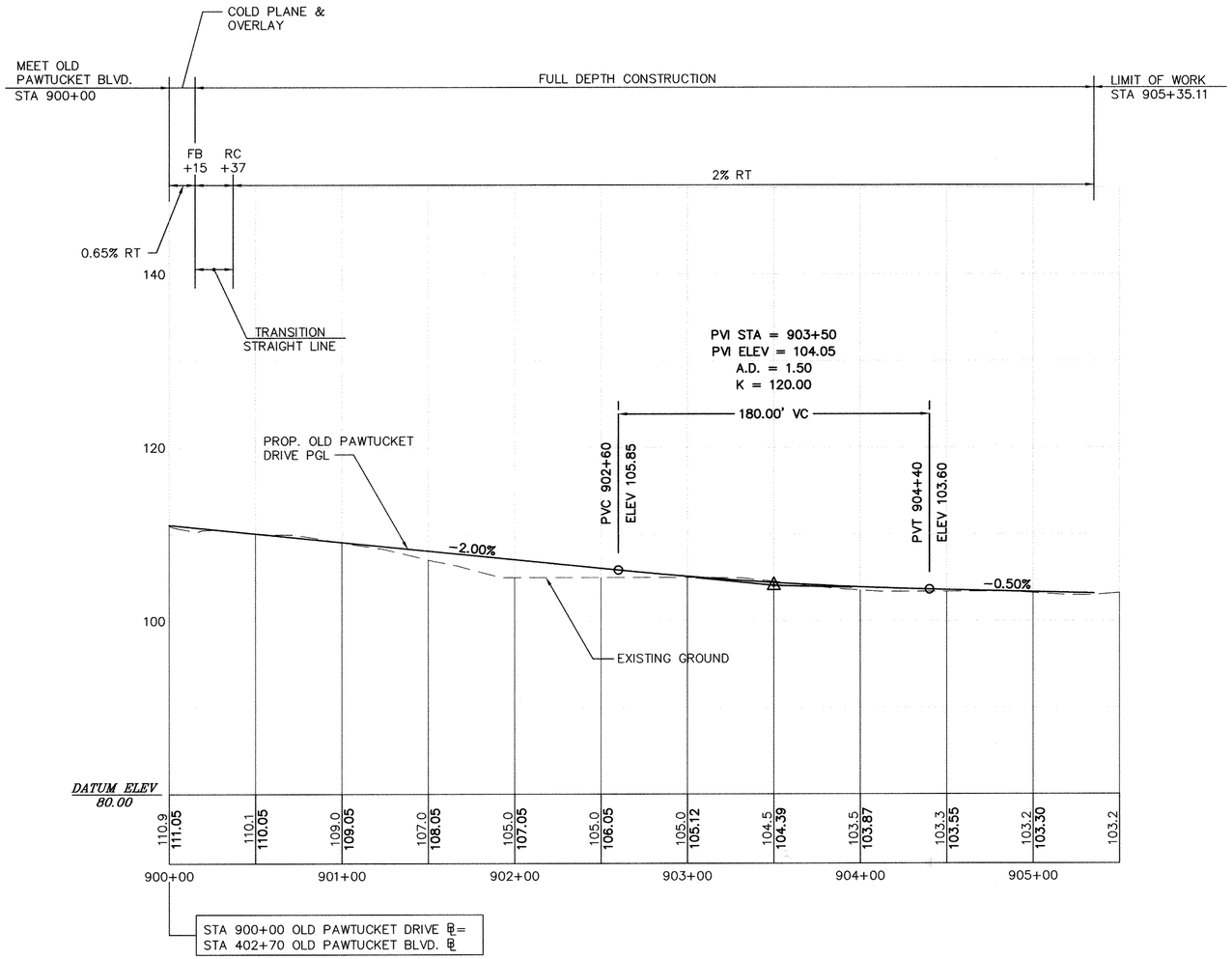
File Name: P:\Massachusetts\646086_Tyngsborough\cadd\drawings\C030_Profile6.dwg
Plot Date: 10/20/2010 11:07 AM

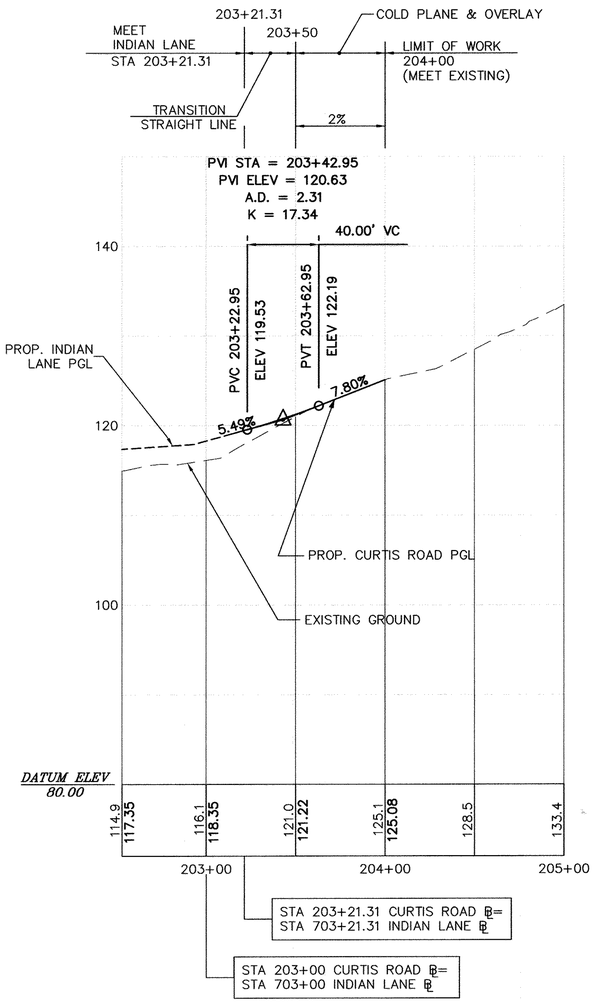
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	31	154
PROJECT FILE NO.: 603823			

OLD PAWTUCKET DRIVE AND CURTIS ROAD PROFILES





HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

0 8 20 40

VERTICAL SCALE – 1"=8'

FOR CONSTRUCTION PLANS SEE SHEET NOS. 16 AND 17

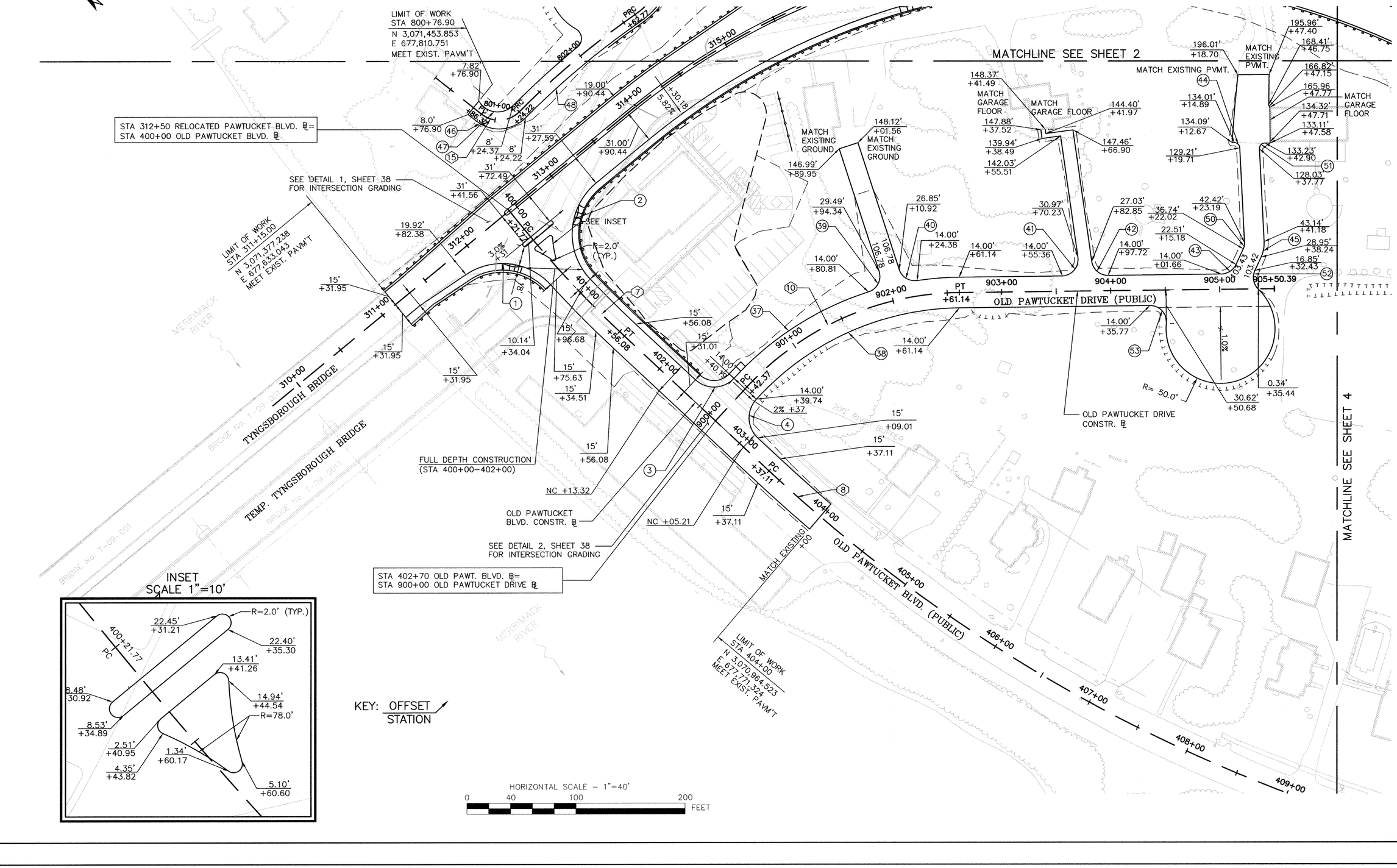
PARSONS

File Name: P:\Morehighway\Vol6006_tyngsborough\cadd\dgn\tyngs\C031_Profile10.dwg
Plot Date: 10/20/2010 5:04 PM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	32	154
PROJECT FILE NO.: 603823			

CURB TIE PLAN
SHEET 1 OF 5



PARSONS

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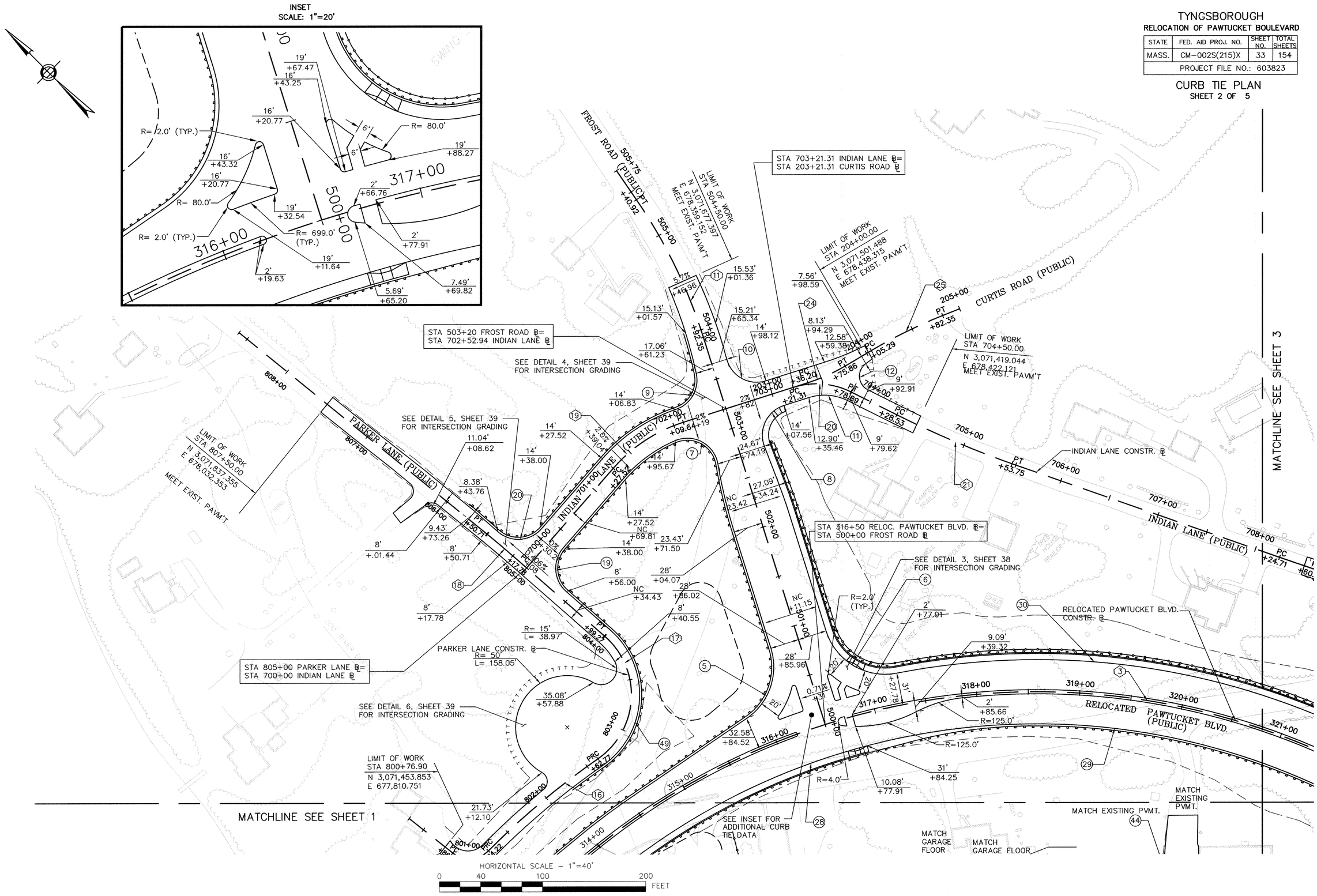
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	33	154
PROJECT FILE NO.: 603823			

CURB TIE PLAN
SHEET 2 OF 5

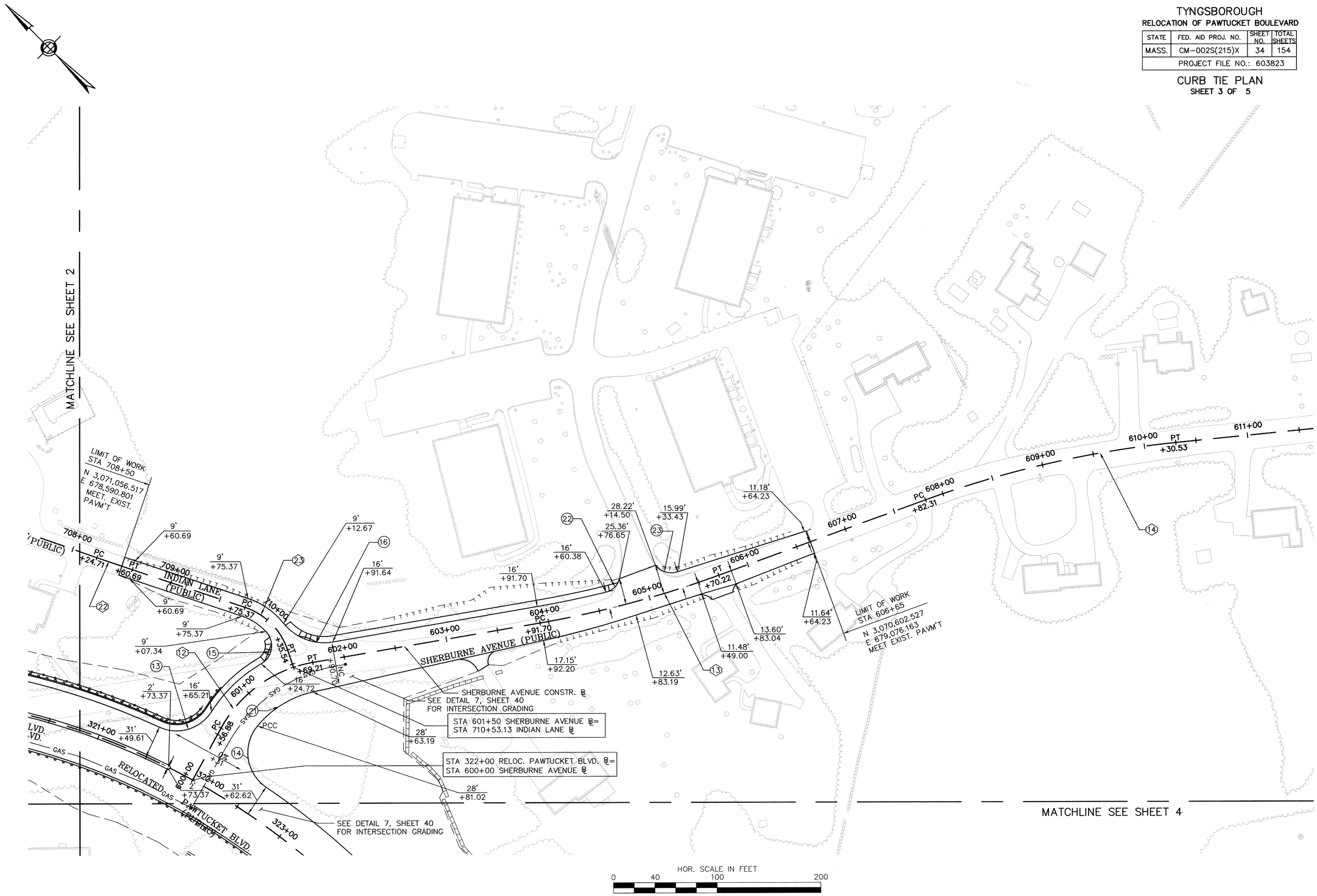


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	34	154
	PROJECT FILE NO.: 603823		

CURB TIE PLAN
SHEET 3 OF 5

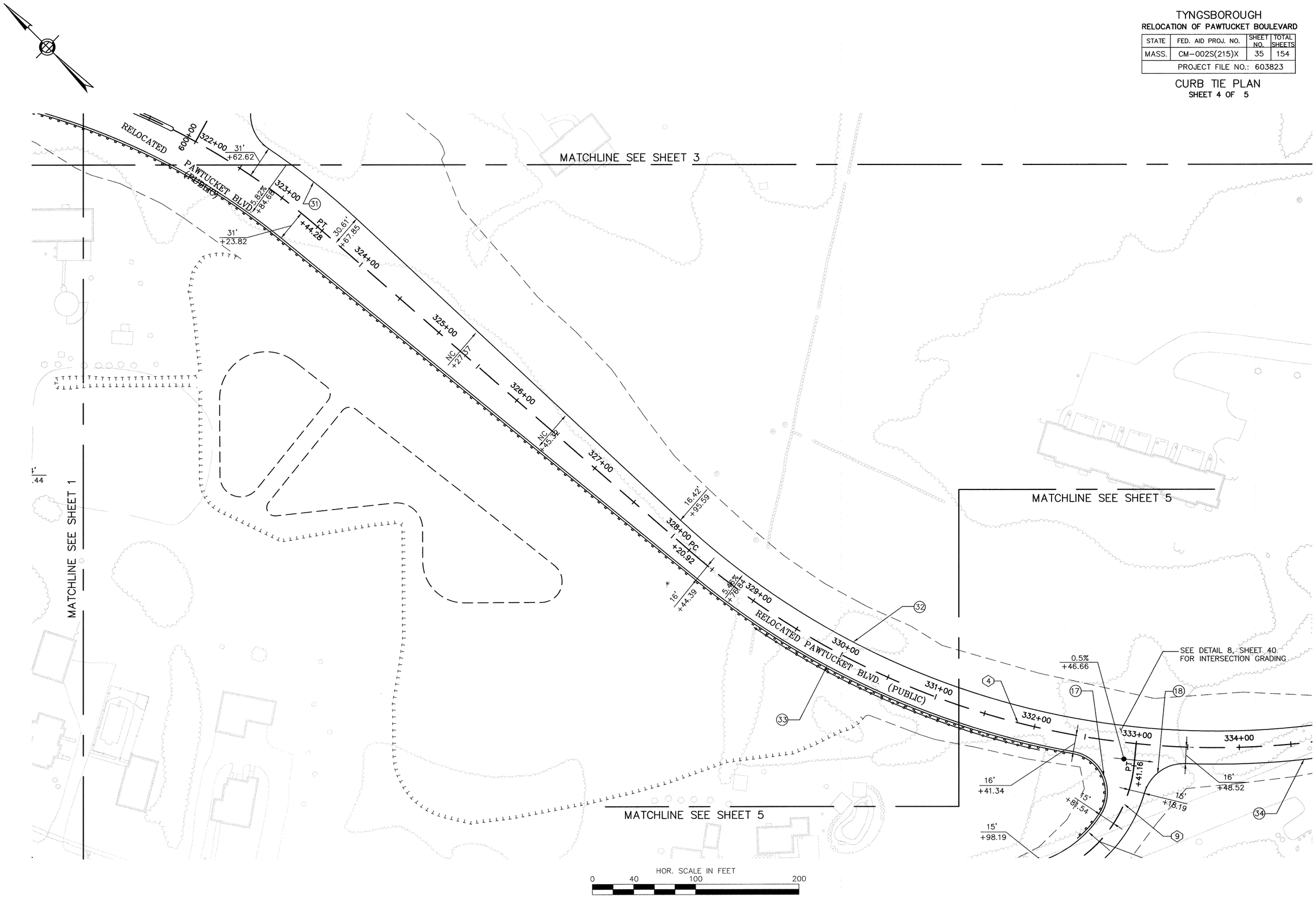


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	35	154
	PROJECT FILE NO.: 603823		

CURB TIE PLAN
SHEET 4 OF 5

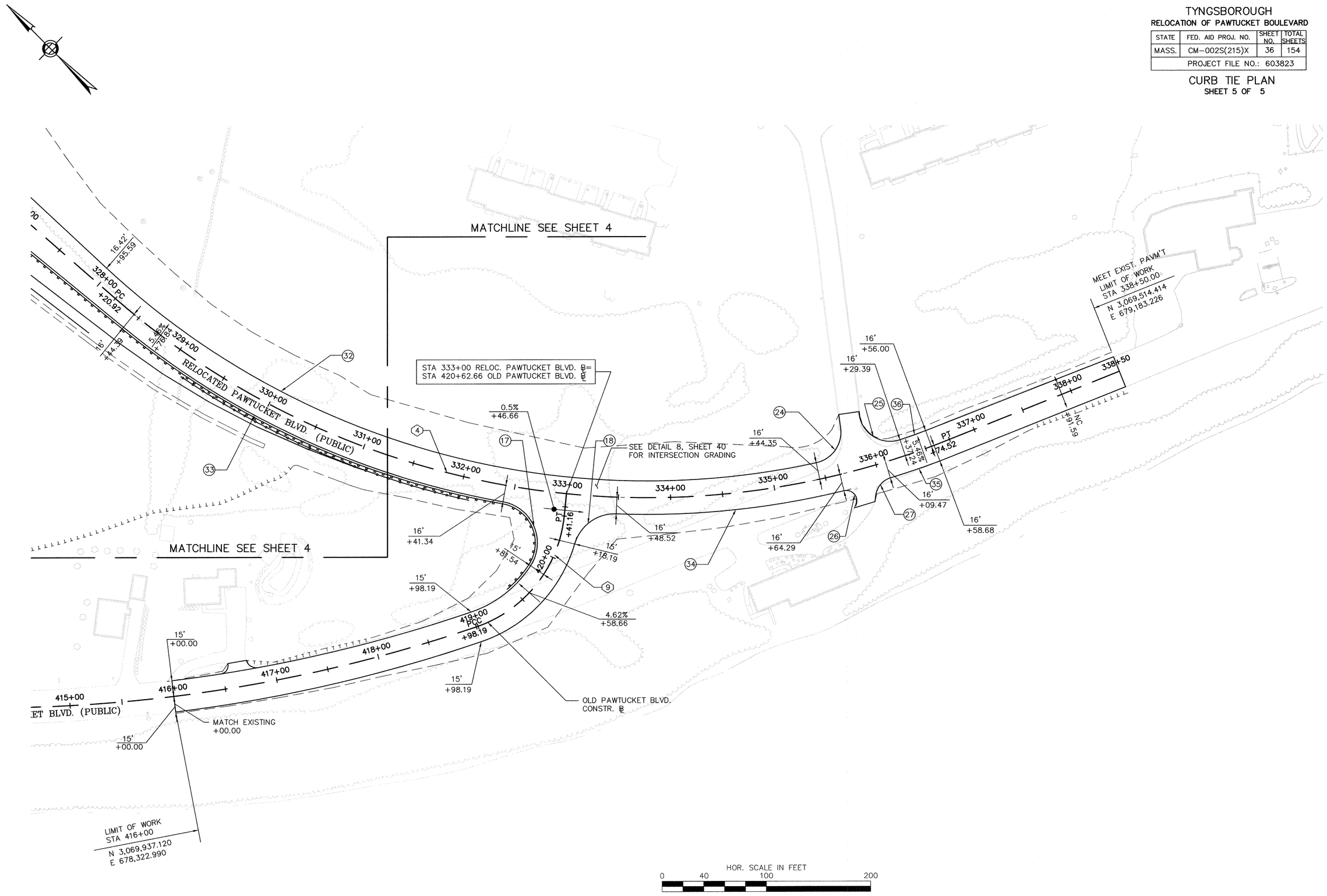


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	36	154
	PROJECT FILE NO.: 603823		

CURB TIE PLAN
SHEET 5 OF 5



PARSONS

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	37	154
PROJECT FILE NO.: 603823			

CURVE TABLES

CURB CURVE DATA				
CURVE NO.	R	L	Δ	T
①	60.00'	85.18'	81°20'33"	51.56
②	60.00'	98.74'	94°17'32"	64.67
③	25.00'	39.27'	90°00'00"	25.00
④	25.00'	39.27'	90°00'00"	25.00
⑤	60.00'	74.40'	71°02'49"	42.83
⑥	60.00'	87.39'	83°26'46"	53.50
⑦	30.00'	53.98'	103°05'06"	37.77
⑧	30.00'	48.94'	93°27'35"	31.87
⑨	30.00'	43.83'	83°42'05"	26.87
⑩	30.00'	48.47'	92°33'48"	31.37
⑪	50.00'	38.38'	43°58'58"	20.19
⑫	15.00'	30.68'	117°11'37"	24.57
⑬	40.00'	57.20'	81°56'03"	34.73
⑭	40.00'	66.87'	95°47'14"	44.26
⑮	20.00'	36.05'	103°16'37"	25.27
⑯	50.00'	53.27'	61°02'14"	29.47
⑰	40.00'	78.90'	113°01'13"	60.46
⑱	40.00'	52.99'	75°54'35"	31.20
⑲	30.00'	47.12'	90°00'00"	30.00
⑳	30.00'	47.12'	90°00'00"	30.00
㉑	97.00'	63.77'	37°40'03"	33.09
㉒	18.00'	19.41'	61°46'48"	10.77
㉓	20.00'	23.52'	67°23'22"	13.34
㉔	30.00'	44.77'	85°29'54"	27.73
㉕	30.00'	53.34'	101°52'26"	36.96
㉖	10.00'	23.29'	133°26'32"	23.24
㉗	20.00'	23.22'	66°30'46"	13.12
㉘	649.00'	80.41'	07°05'57"	40.26
㉙	649.00'	610.41'	53°53'20"	329.89
㉚	711.00'	441.06'	35°32'34"	227.89
㉛	711.00'	108.96'	08°46'50"	54.59
㉜	764.00'	733.92'	55°02'24"	398.05
㉝	796.00'	405.09'	29°09'29"	207.03
㉞	796.00'	220.20'	15°50'59"	110.81
㉟	796.00'	50.22'	03°36'54"	25.12
㊱	764.00'	26.06'	01°57'17"	13.03
㊲	284.00'	147.80'	29°49'06"	75.61
㊳	256.00'	210.06'	47°00'48"	111.35
㊴	15.00'	23.68'	90°26'13"	15.12
㊵	15.00'	21.03'	80°19'09"	12.66

CURB CURVE DATA				
CURVE NO.	R	L	Δ	T
㊶	15.00'	25.54'	97°32'48"	17.12
㊷	15.00'	21.59'	82°27'12"	13.14
㊸	15.00'	16.85'	64°20'49"	9.44
㊹	5.00'	7.48'	85°42'18"	4.64
㊺	30.00'	14.63'	27°56'56"	7.47
㊻	34.00'	49.56'	83°30'50"	30.35
㊼	20.00'	36.78'	105°21'21"	26.23
㊽	740.00'	137.08'	10°36'48"	68.73
㊾	83.00'	151.06'	104°16'35"	106.77
㊿	12.00'	5.85'	27°56'56"	2.99
(51)	5.00'	8.19'	93°47'40"	5.34
(52)	15.00'	18.63'	71°09'03"	10.73
(53)	15.00'	25.18'	96°10'56"	16.71

RELOCATED PAWTUCKET BLVD. – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 390.44' S84°22'58"E		
③	PC STA 313+90.44	R= 680.00' Δ= 80°22'10"	3071350.2776	677907.1566
	PT STA 323+44.28	L= 953.84' T= 574.33'	3070721.1346	678518.9292
④	PC STA 328+20.92	L= 476.64' S04°00'48"E	3070245.6601	678552.2887
	PT STA 336+74.52	R= 780.00' Δ= 62°42'06" L= 853.59' T= 475.20'	3069583.7822	679022.0380
		L= 175.48' S66°42'54"E		

OLD PAWTUCKET BLVD. – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 21.77' N05°37'02"E		
⑦	PC STA 400+21.77	R= 1000.00' Δ= 07°41'43"	3071342.3583	677765.2635
	PT STA 401+56.08	L= 134.31' T= 67.26'	3071208.2132	677761.1190
⑧	PC STA 403+37.11	L= 181.03' N02°04'41"W	3071027.2979	677767.6836
	PCC STA 418+98.19	R= 1452.10' Δ= 61°35'45" L= 1561.08' T= 865.55'	3069778.4589	678574.8510
⑨	PT STA 420+41.16	R= 125.00' Δ= 65°31'50" L= 142.97' T= 80.45'	3069793.6324	678709.2971
		L= 21.50' S50°47'44"W		

OLD PAWTUCKET DRIVE – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 42.37' N87°55'19"E		
⑩	PC STA 900+42.37	R= 270.00' Δ= 46°25'31"	3071095.9049	677807.5923
	PT STA 902+61.14	L= 218.77' T= 115.79'	3071019.1637	678006.1145
		L= 289.25' S45°39'10"E		

FROST ROAD – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 392.35' N27°29'16"E		
⑪	PC STA 503+92.35	R= 500.00' Δ= 17°01'31"	3071624.8325	678335.5462
	PT STA 505+40.92	L= 148.57' T= 74.84'	3071764.8174	678383.6785
		L= 34.08' N10°27'44"E		

SHERBURNE AVE. – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 56.88' S73°49'47"W		
⑫	PC STA 600+56.88	R= 125.00' Δ= 51°29'14"	3070878.7574	678548.3247
	PT STA 601+69.21	L= 112.33' T= 60.28'	3070860.6983	678655.3987
⑬	PC STA 603+91.70	L= 222.49' S54°40'59"E	3070732.0743	678836.9463
	PT STA 605+70.22	R= 1000.00' Δ= 10°13'42" L= 178.52' T= 89.50'	3070642.3874	678991.0260
⑭	PC STA 607+82.31	L= 212.09' S64°54'41"E	3070552.4556	679183.1084
	PT STA 610+30.53	R= 1000.00' Δ= 14°13'19" L= 248.22' T= 124.75'	3070420.5265	679392.6114
		L= 169.47' S50°41'22"E		

PARKER LANE – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 53.91' S06°42'10"E		
⑮	PC STA 800+86.32	R= 26.00' Δ= 83°30'49"	3071444.5028	677811.8496
	PCC STA 801+24.22	L= 37.90' T= 23.21'	3071421.5376	677837.7701
⑯	PCC STA 802+62.77	R= 748.00' Δ= 10°36'48" L= 138.56' T= 69.48'	3071409.2619	677975.5842
⑰	PT STA 803+99.27	R= 75.00' Δ= 104°16'35" L= 136.50' T= 96.47'	3071488.1049	678063.9472
	PC STA 805+17.78	L= 118.51' S03°52'46"E	3071606.3446	678055.9290
⑱	PT STA 805+50.71	R= 900.00' Δ= 02°05'47" L= 32.93' T= 16.47'	3071639.1526	678053.1004
		L= 309.29' S05°58'33"E		

INDIAN LANE – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 127.52' N86°07'14"E		
⑲	PC STA 701+27.52	R= 150.00' Δ= 31°22'02"	3071597.2301	678184.3569
	PT STA 702+09.64	L= 82.12' T= 42.12'	3071580.6403	678263.7392
⑳	PC STA 703+21.31	L= 111.68' S62°30'44"E	3071529.0950	678362.8089
	PT STA 703+78.89	R= 75.00' Δ= 43°58'59" L= 57.57' T= 30.29'	3071486.3960	678399.3041
㉑	PC STA 704+28.53	L= 49.64' S18°31'46"E	3071439.3289	678415.0794
	PT STA 705+53.75	R= 1000.00' Δ= 07°10'30" L= 125.23' T= 62.70'	3071323.3917	678462.1963
㉒	PC STA 708+24.71	L= 270.96' S25°42'16"E	3071079.2474	678579.7179
	PT STA 708+60.69	R= 2500.00' Δ= 00°49'29" L= 35.98' T= 17.99'	3071046.9390	678595.5573
㉓	PC STA 709+75.37	L= 114.67' S26°31'44"E	3070944.3386	678646.7768
	PT STA 710+35.54	R= 65.00' Δ= 53°02'31" L= 60.17' T= 32.44'	3070886.2903	678646.7850
		L= 17.58' S26°30'47"W		

CURTIS ROAD – BASELINE DATA				
CURVE NO.	DESCRIPTION	TANGENT/CURVE DATA	NORTHING	EASTING
		L= 83.26' S62°30'44"E		
㉔	PC STA 203+36.20	R= 175.00' Δ= 12°59'07"	3071522.2261	678376.0108
	PT STA 203+75.86	L= 39.66' T= 19.92'	3071508.0464	678412.9601
㉕	PC STA 204+05.29	L= 29.44' S75°29'52"E	3071500.6747	678441.4595
	PT STA 204+82.35	R= 500.00' Δ= 08°49'49" L= 77.06' T= 38.61'	3071475.7164	678514.2841
		L= 17.65' S66°40'03"E		

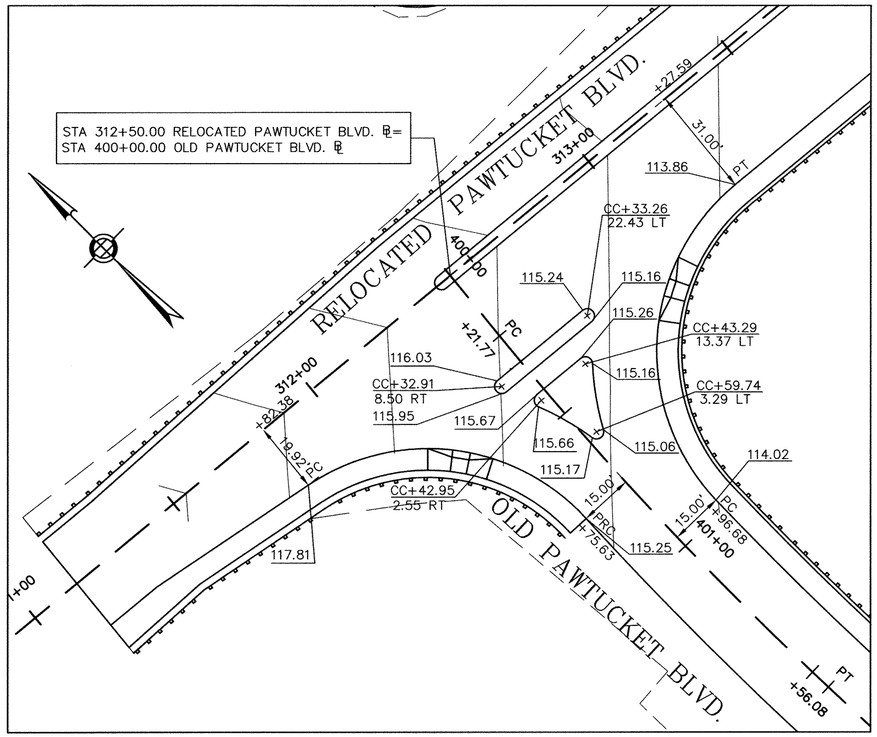
PARSONS

File Name: P:\Mcdesign-ny\568586_tyngsborough\cadd\drawings\0037_curvetbls.dwg
Plot Date: 10/20/2010 12:06 PM

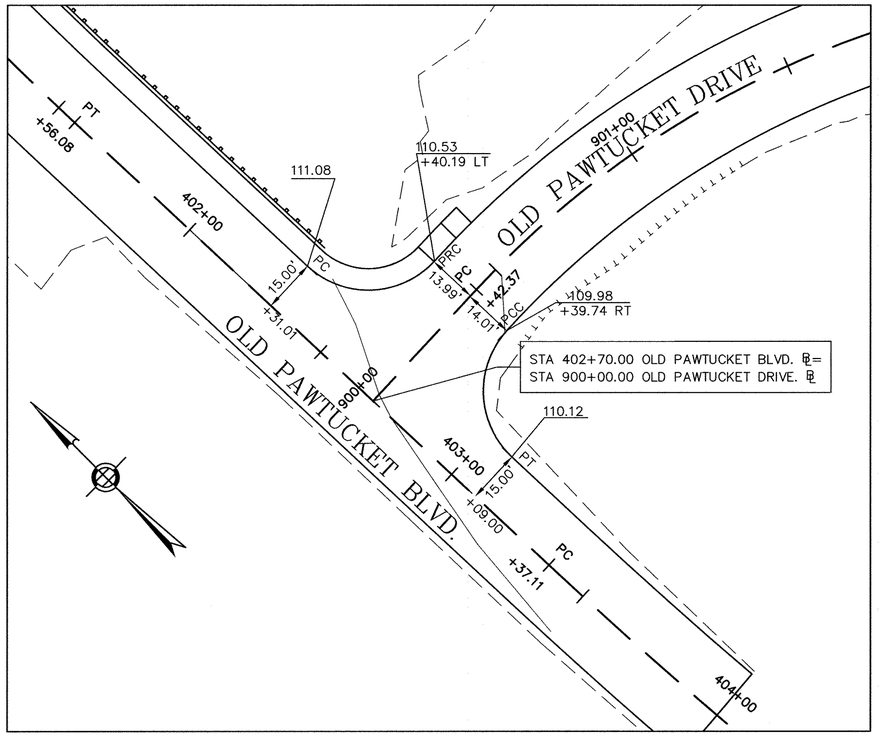
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	38	154
	PROJECT FILE NO.: 603823		

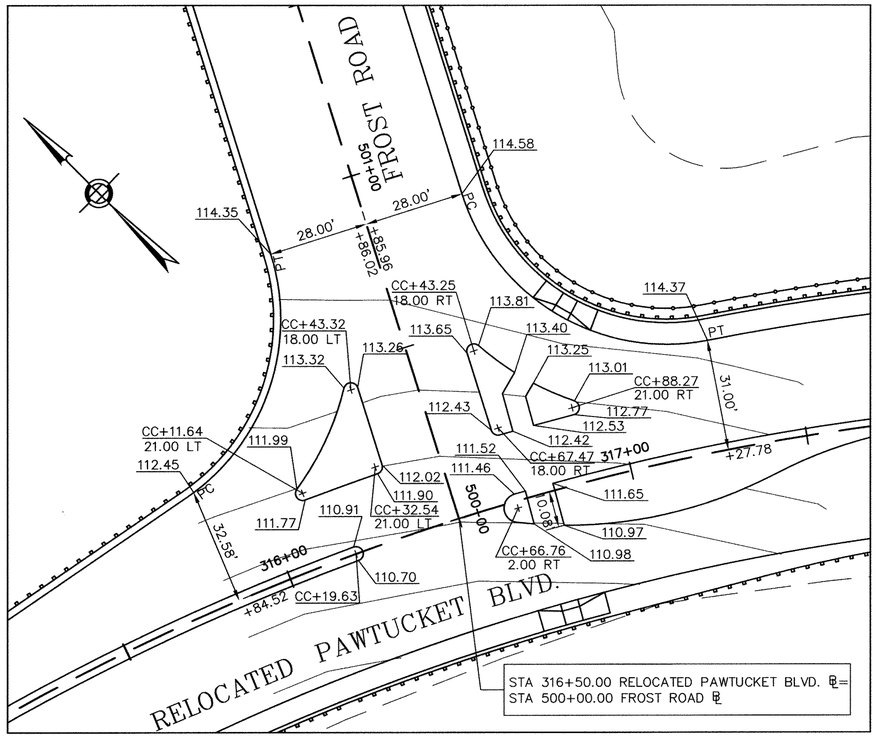
INTERSECTION GRADING PLAN
SHEET 1 OF 3



DETAIL 1 – RELOCATED PAWTUCKET BLVD. & OLD PAWTUCKET BLVD.



DETAIL 2 – OLD PAWTUCKET BLVD. & OLD PAWTUCKET DR.



DETAIL 3 – RELOCATED PAWTUCKET BLVD. & FROST RD.

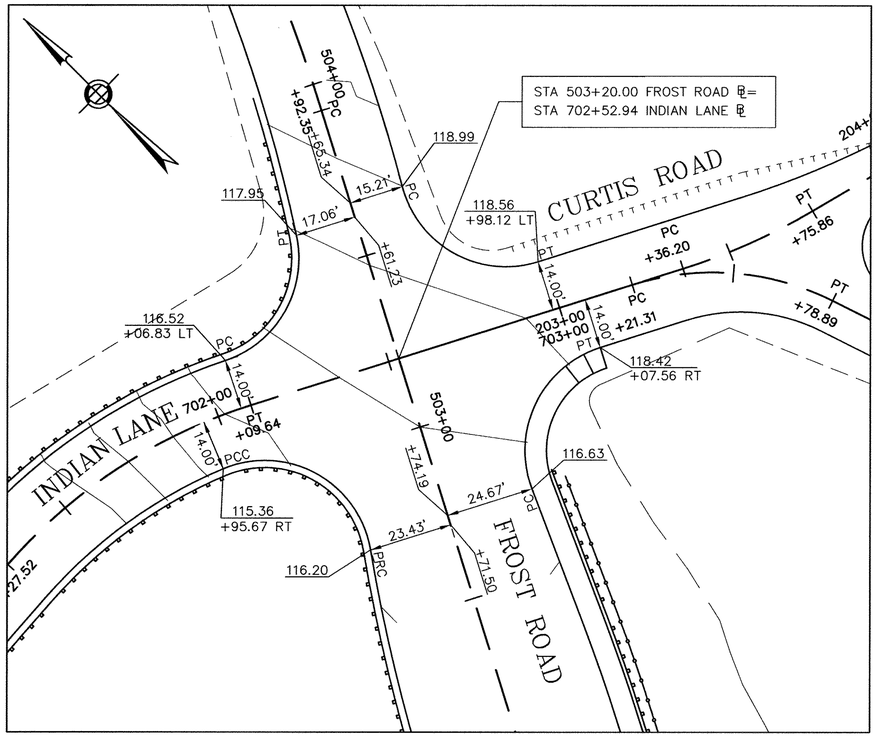
0 20 50 100 FEET
SCALE – 1"=20'

PARSONS

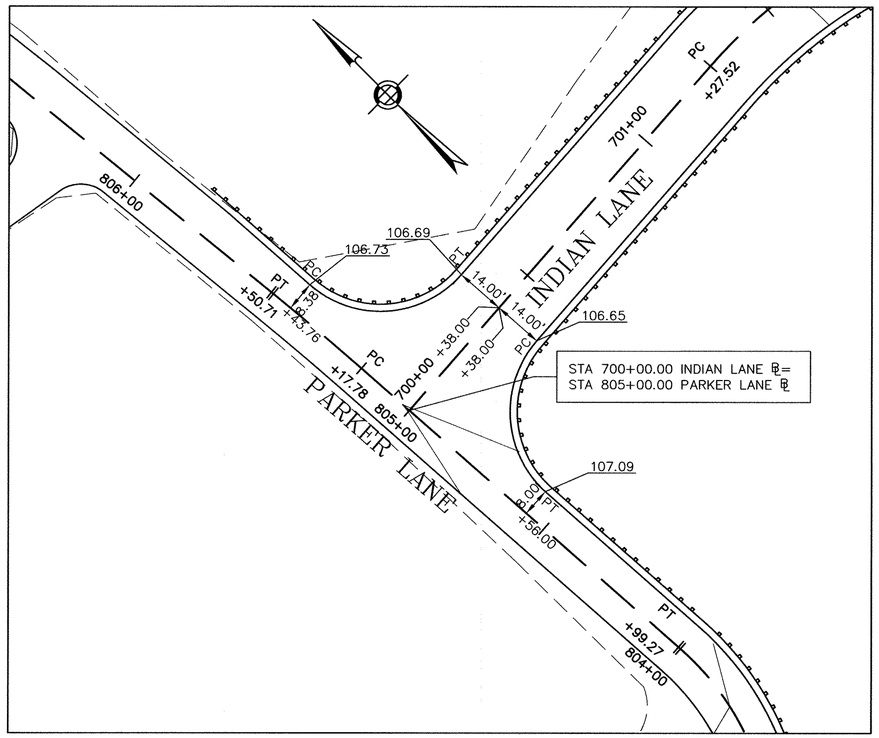
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	39	154
PROJECT FILE NO.: 603823			

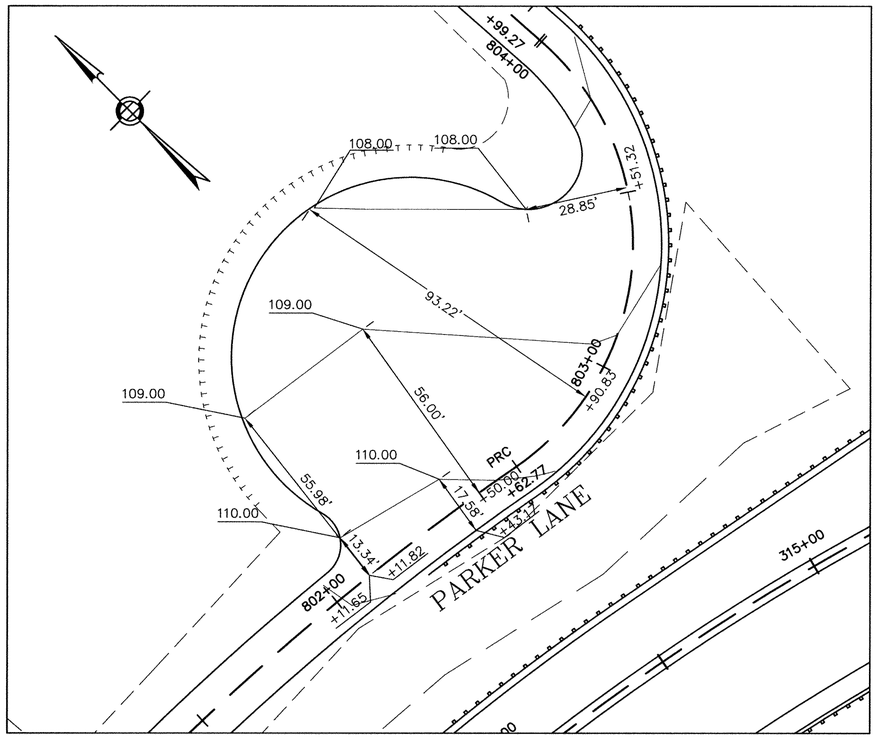
INTERSECTION GRADING PLAN
SHEET 2 OF 3



DETAIL 4 – INDIAN LANE, CURTIS RD. & FROST RD.



DETAIL 5 – PARKER LANE & INDIAN LANE



DETAIL 6 – PARKER LANE CUL-DE-SAC

0 20 50 100 FEET
SCALE – 1"=20'

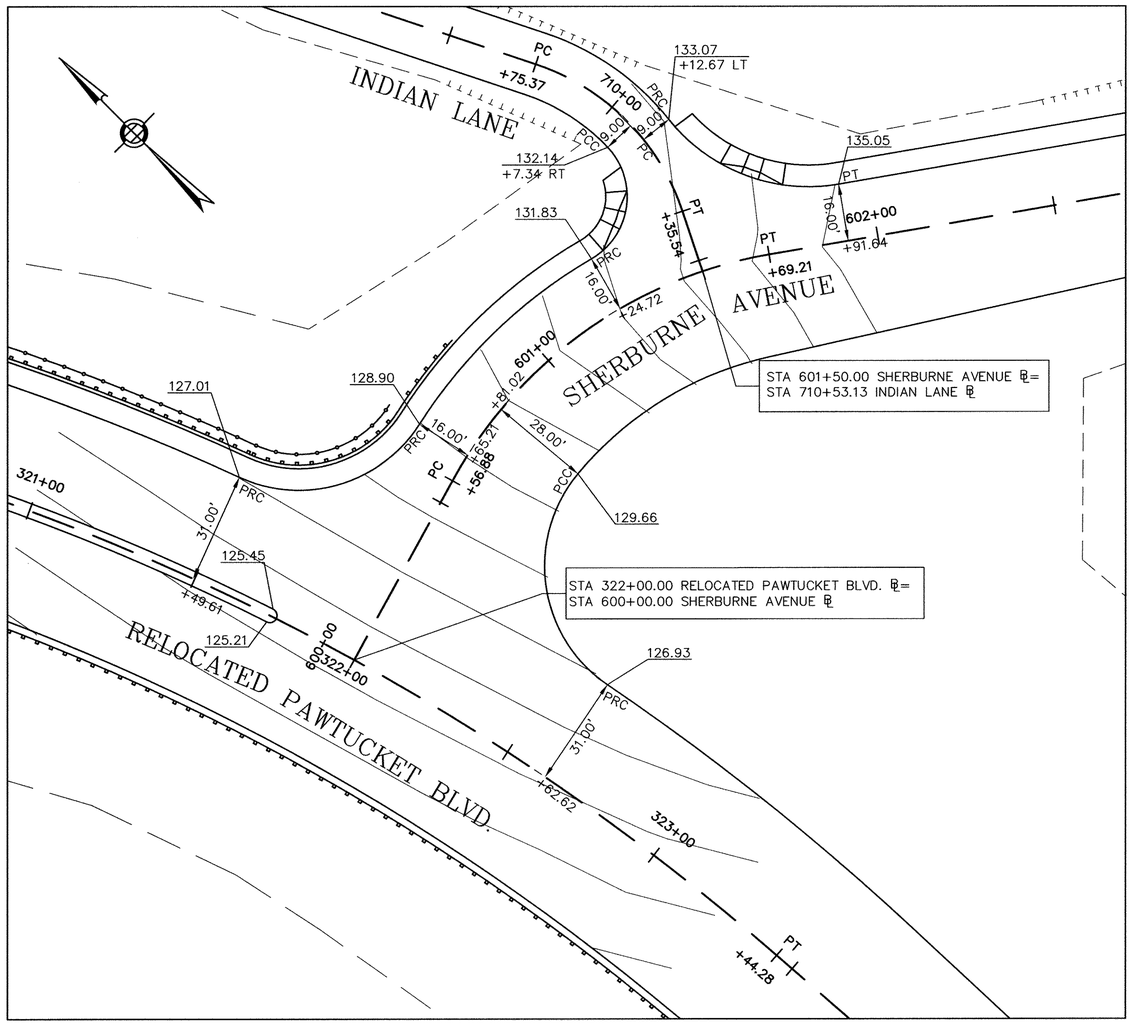
PARSONS

File Name: E:\Projects\Proj\454508_Tyngsborough\Local\Drawings\C03SB-DAD_Intersection Grading Plan.dwg
Plot Date: 10/30/2013 12:07 PM

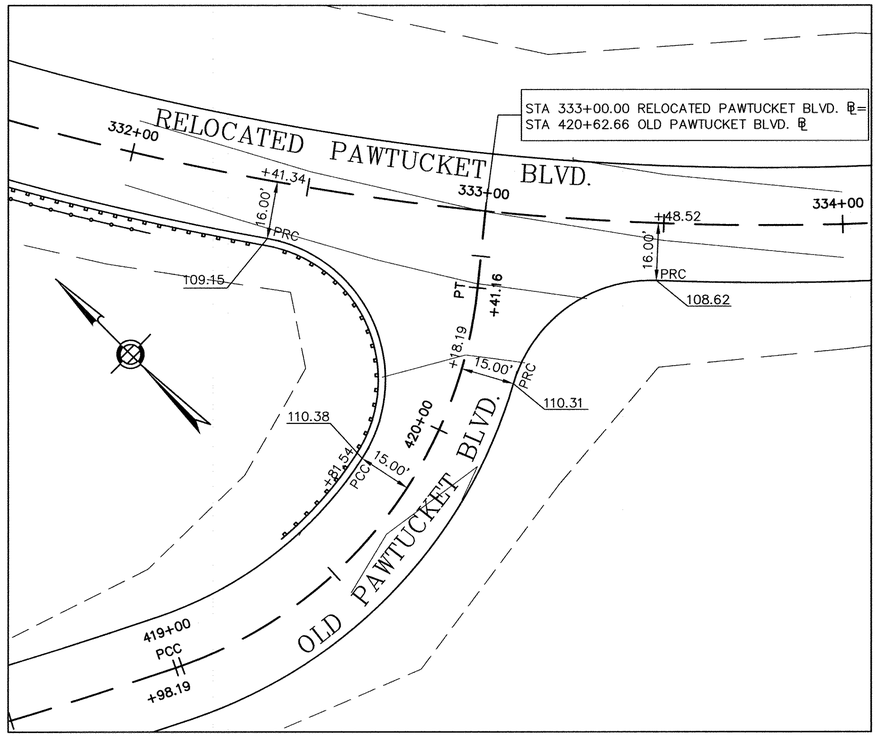
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	40	154
	PROJECT FILE NO.: 603823		

INTERSECTION GRADING PLAN
SHEET 3 OF 3



DETAIL 7 – RELOCATED PAWTUCKET BLVD. & SHERBURNE AVE.



DETAIL 8 – RELOCATED PAWTUCKET BLVD. & OLD PAWTUCKET BLVD.

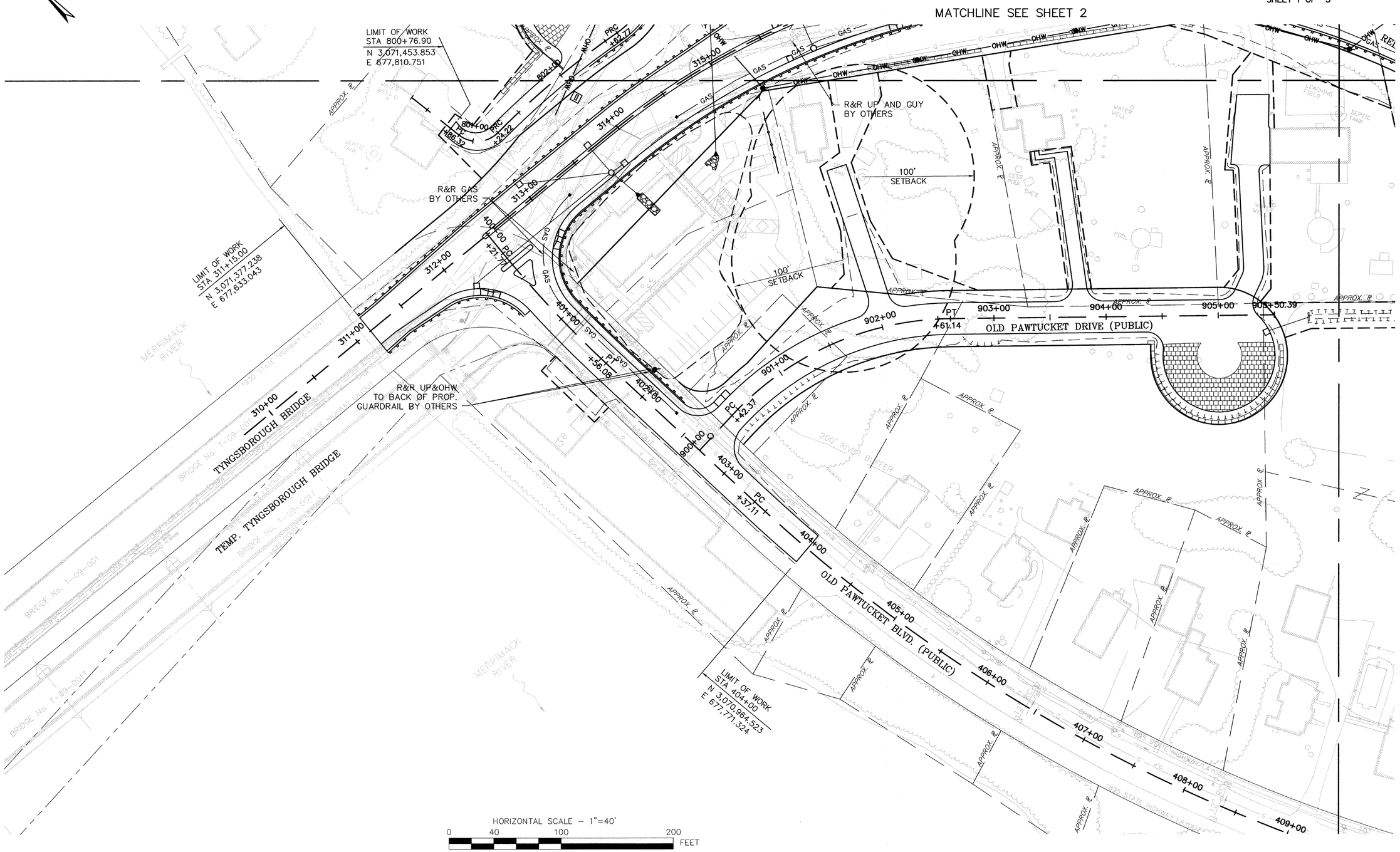
0 20 50 100 FEET
SCALE – 1"=20'

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	41	154
	PROJECT FILE NO.: 603823		

UTILITY RELOCATION PLAN
SHEET 1 OF 5



SEE SHEET 46 FOR DRAINAGE PLAN

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	42	154
	PROJECT FILE NO.: 603823		

UTILITY RELOCATION PLAN
SHEET 2 OF 5

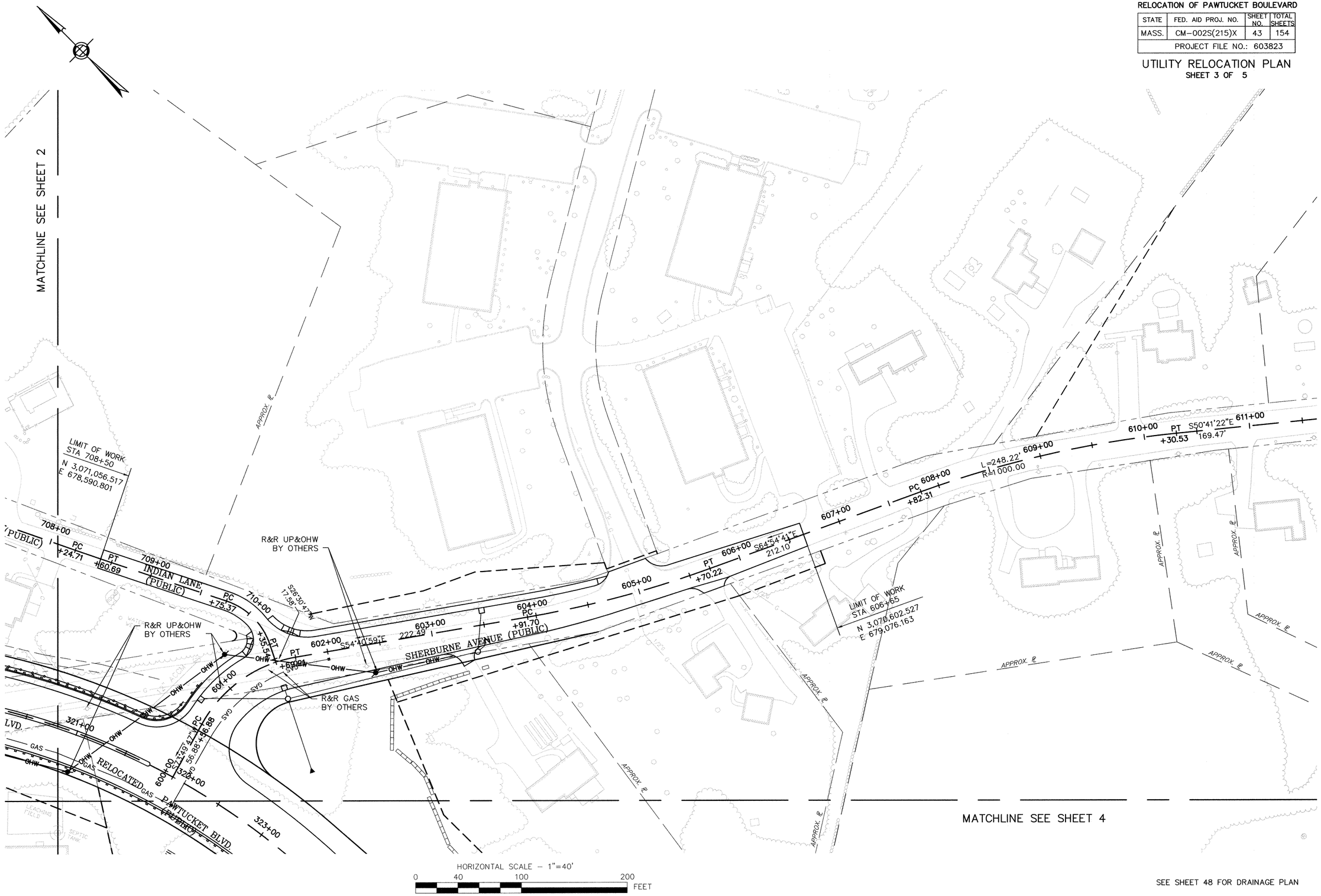
SEE SHEET 47 FOR DRAINAGE PLAN

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	43	154
	PROJECT FILE NO.: 603823		

UTILITY RELOCATION PLAN
SHEET 3 OF 5



HORIZONTAL SCALE – 1"=40'
0 40 100 200 FEET

SEE SHEET 48 FOR DRAINAGE PLAN

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	44	154
PROJECT FILE NO.: 603823			

UTILITY RELOCATION PLAN
SHEET 4 OF 5

SEE SHEET 49 FOR DRAINAGE PLAN

PARSONS

File Name: P:\MassHighway\646086_Tyngsborough\cadd\drawings\C044_Util4.dwg
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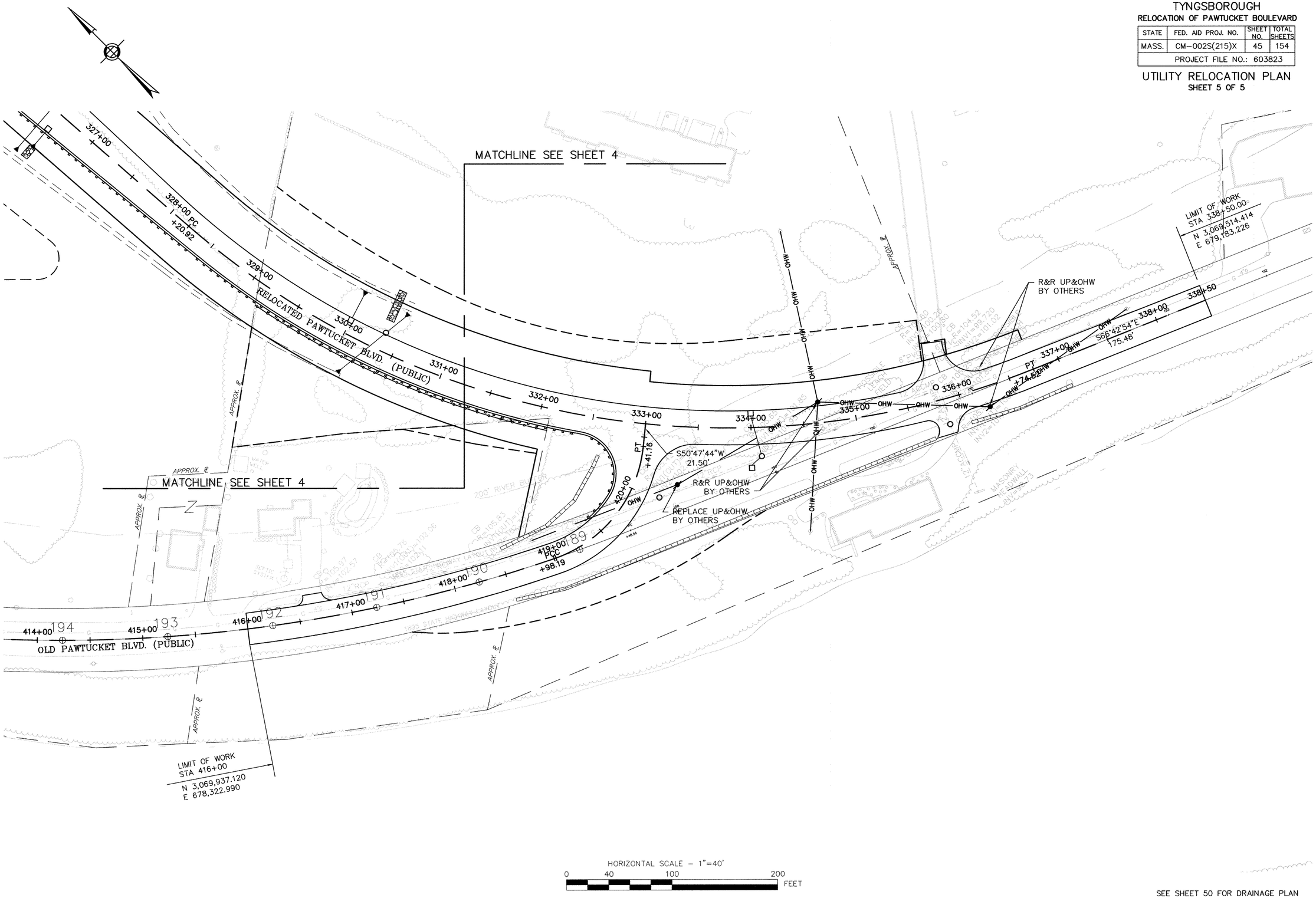
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	45	154
	PROJECT FILE NO.: 603823		

UTILITY RELOCATION PLAN
SHEET 5 OF 5



SEE SHEET 50 FOR DRAINAGE PLAN

PARSONS

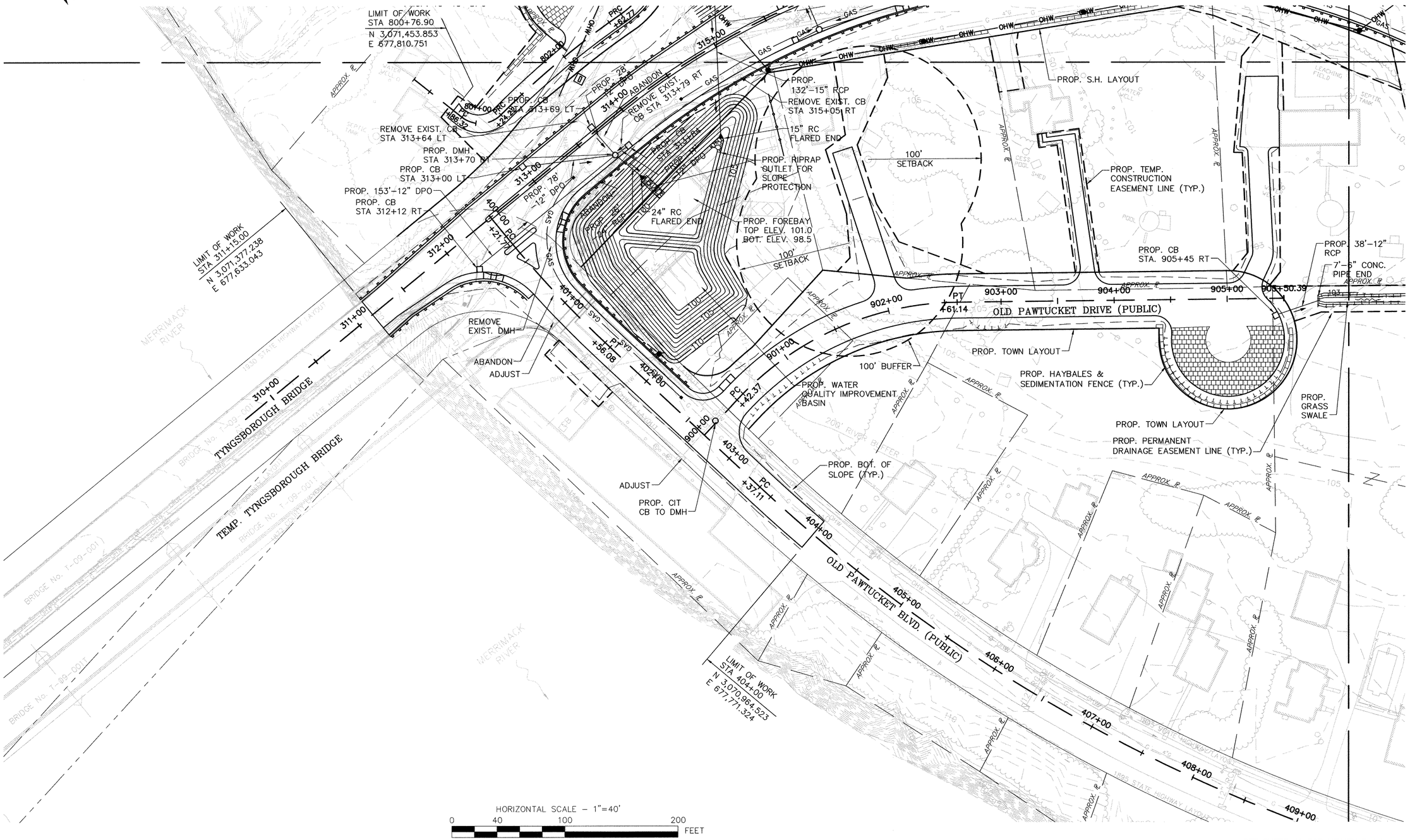
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	46	154
PROJECT FILE NO.: 603823			

DRAINAGE PLAN

SHEET 1 OF 5



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

SEE SHEET 41 FOR UTILITY PLAN

PARSONS

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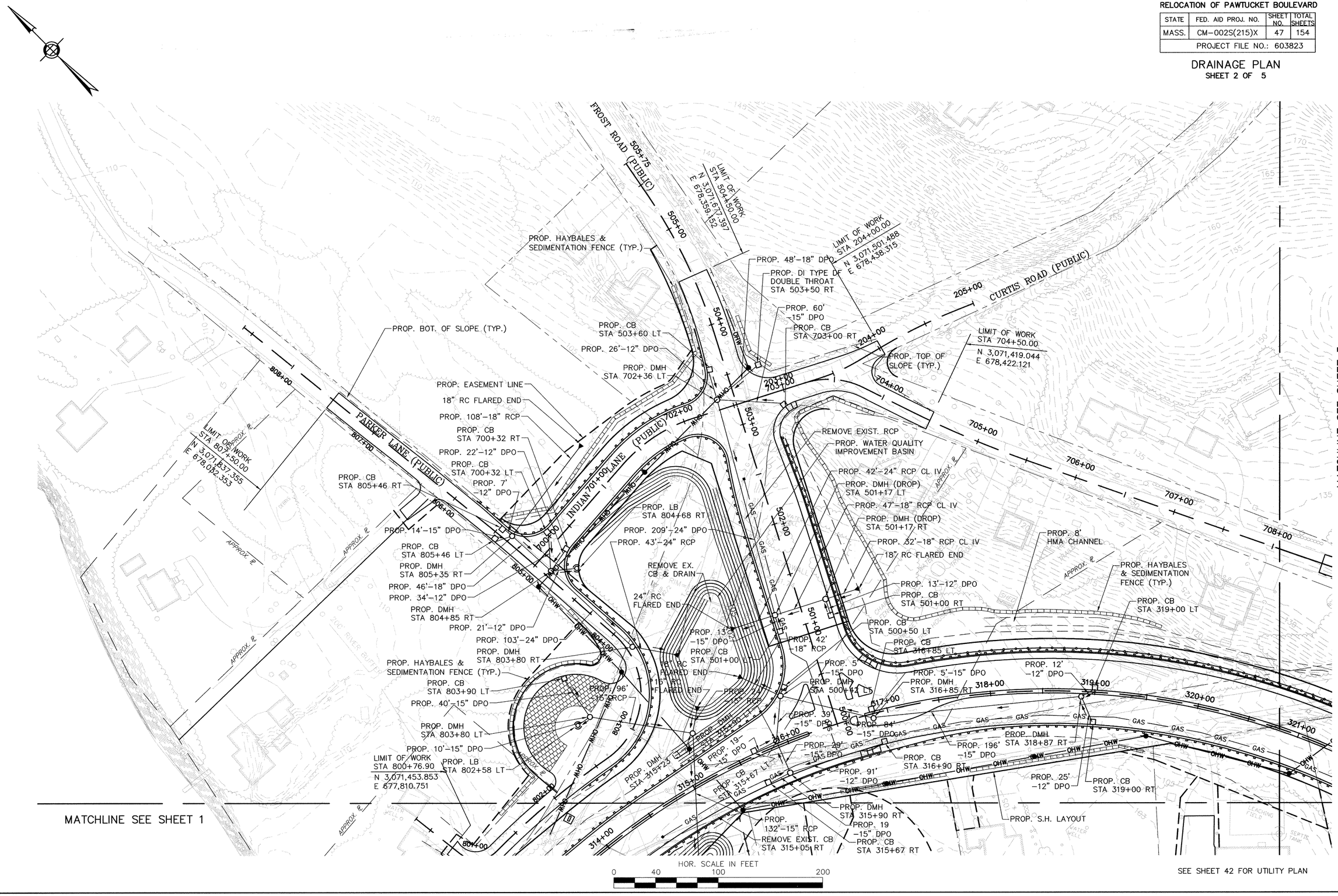
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	47	154
PROJECT FILE NO.: 603823			

DRAINAGE PLAN
SHEET 2 OF 5



SEE SHEET 42 FOR UTILITY PLAN

PARSONS

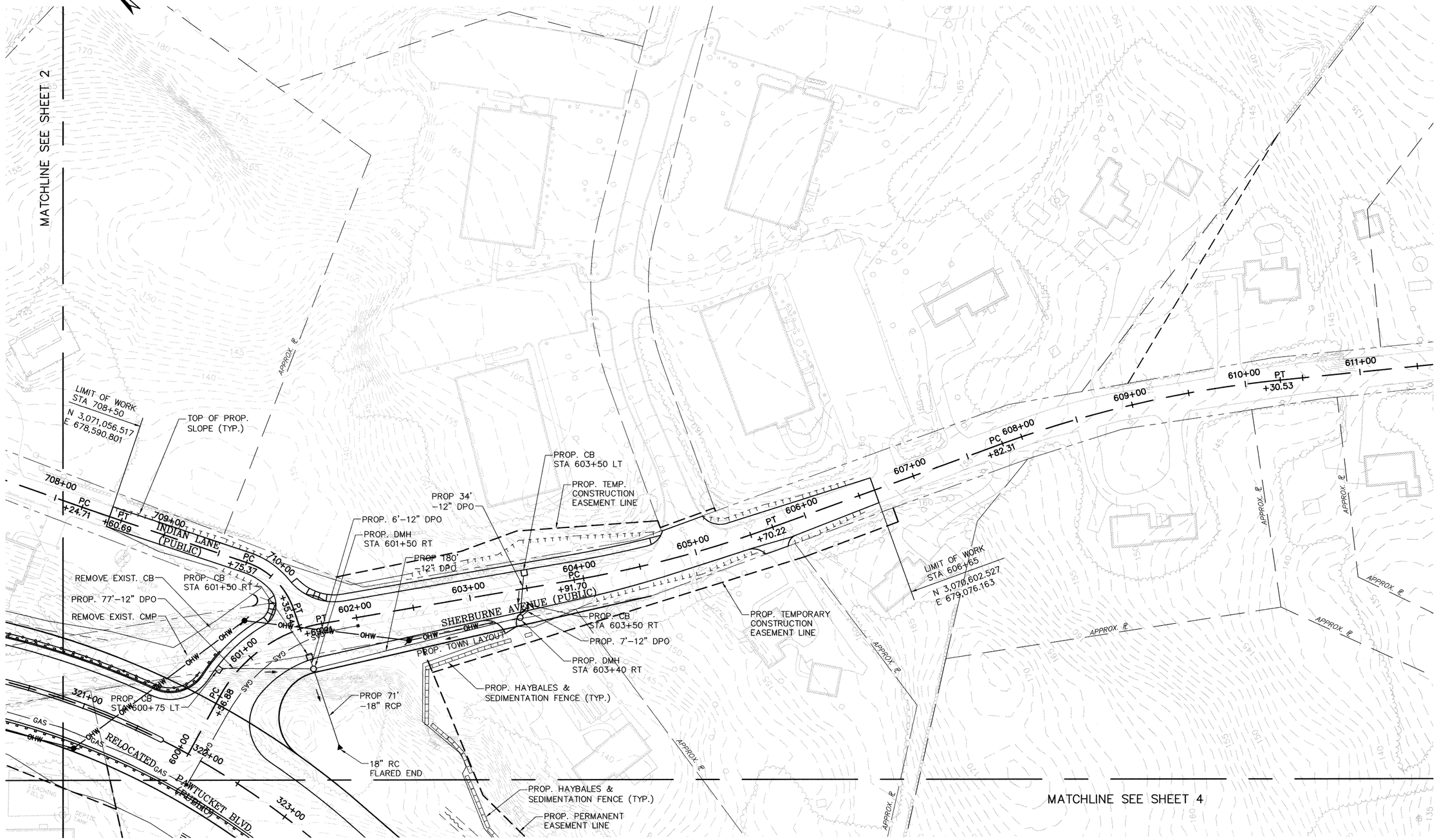
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	48	154
PROJECT FILE NO.: 603823			

DRAINAGE PLAN

SHEET 3 OF 5



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

SEE SHEET 43 FOR UTILITY PLAN

PARSONS

File Name: P:\Wastshgnwy\546086_tyngsborough\cosd\drawings\CO48_Drainage03.dwg
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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	49	154
PROJECT FILE NO.: 603823			

DRAINAGE PLAN

SHEET 4 OF 5

SEE SHEET 44 FOR UTILITY PLAN

PARSONS

File Name: P:\MassHighway\646086_Tyngsborough\cadd\drawings\C049_DrainUtil4.dwg
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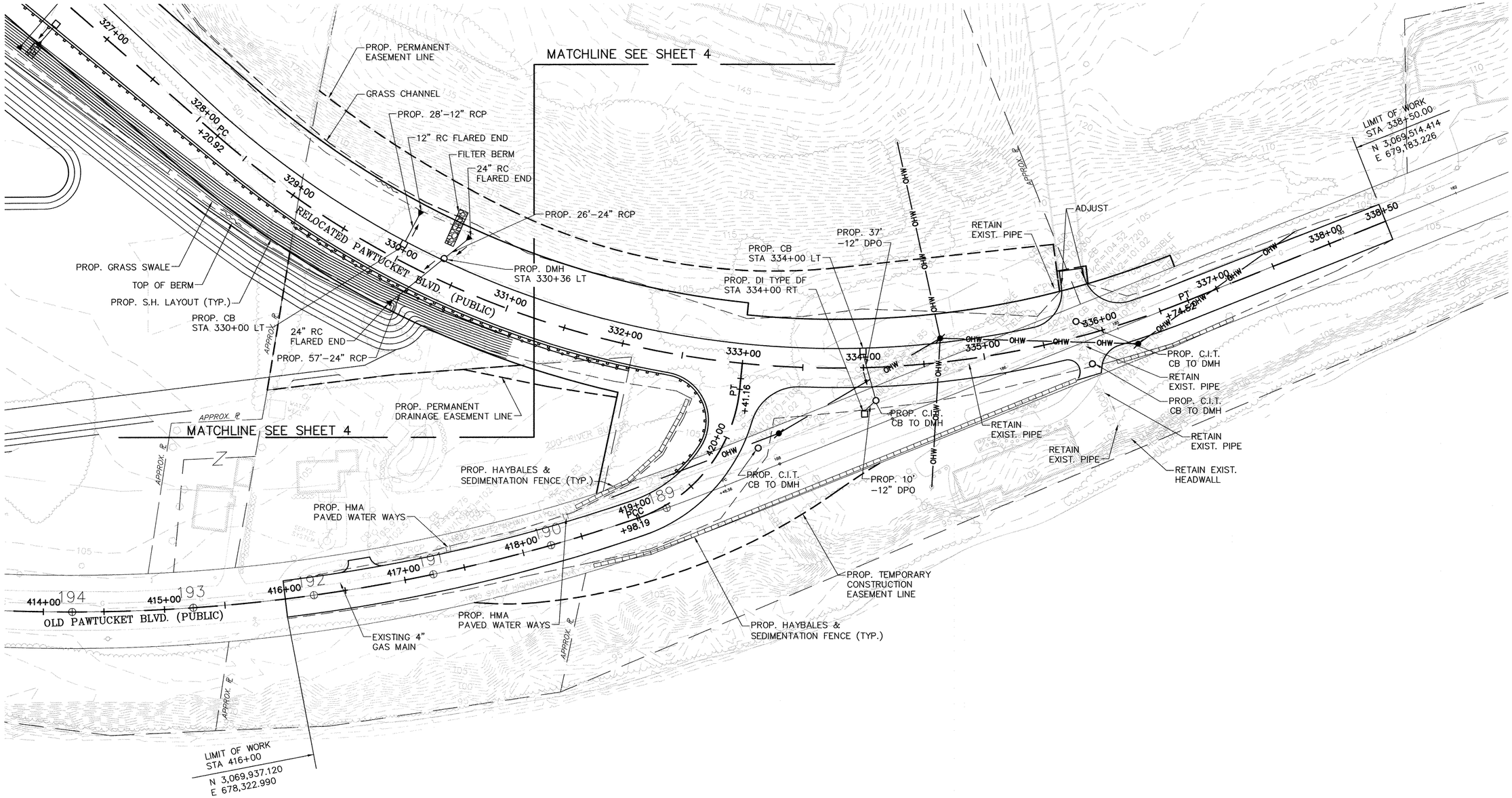
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	50	154
PROJECT FILE NO.: 603823			

DRAINAGE PLAN

SHEET 5 OF 5



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

SEE SHEET 45 FOR UTILITY PLAN

PARSONS

File Name: P:\Massachusetts\Tyngsborough\Design\Drawings\C0905_Drainage\DR05.dwg
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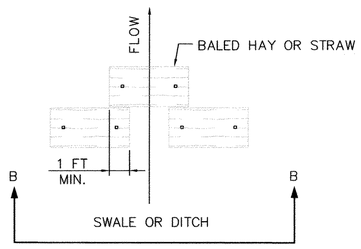
TYNGSBOROUGH

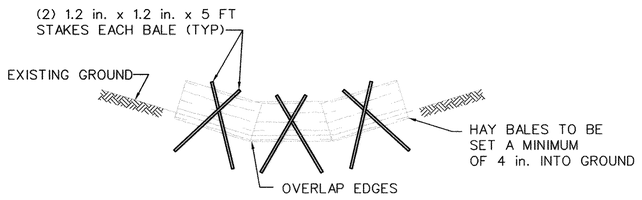
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	51	154
PROJECT FILE NO.: 603823			

DRAINAGE AND UTILITY DETAIL
EROSION CONTROL



PLAN



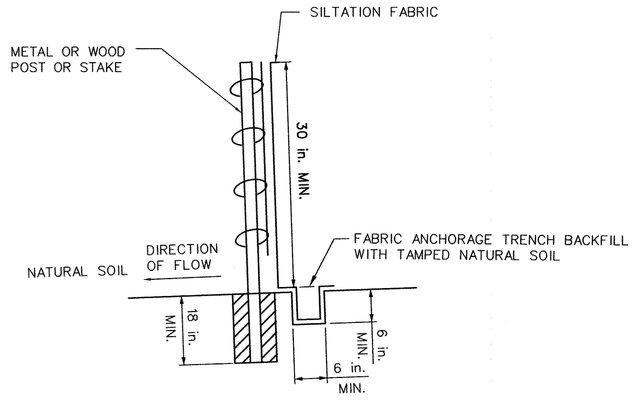
SECTION B-B

NOTE:

1. TO BE USED WHERE THE EXISTING GROUND SLOPES TOWARD THE EMBANKMENT AND IN PROPOSED DITCHES AND SWALES.

DRAINAGE SWALE OR DITCH EROSION CHECKS

NOT TO SCALE

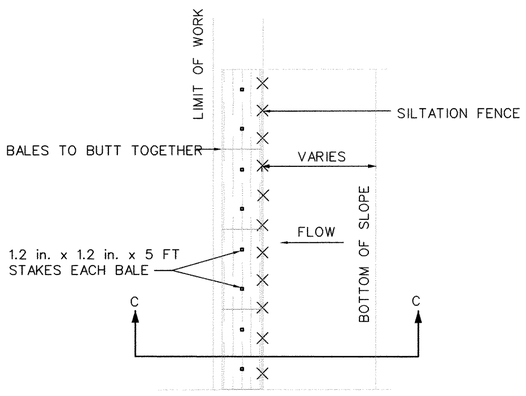


SILTATION FENCE DETAIL

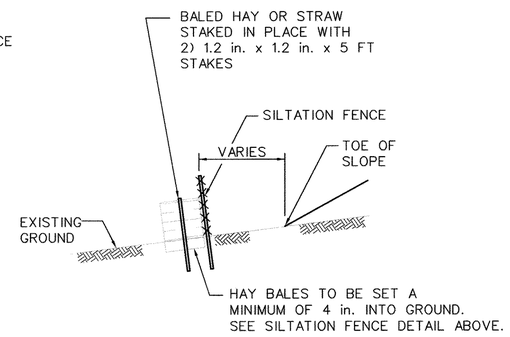
NOT TO SCALE

NOTES:

1. ATTACH FABRIC TO WIRE MESH WITH HOG RINGS, STEEL POSTS WITH TIE WIRES,OR WOOD POSTS WITH STAPLES
2. SPLICES SHALL BE MADE AT FENCE POSTS. FABRIC SHALL BE OVERLAPPED 6 in. AND SECURELY FASTENED.
3. POST SPACING SHALL BE A MAX. OF 4 FT O.C. WITHOUT SUPPORTING WIRE MESH OR 10FT O.C. WITH WIRE MESH
4. POSTS SHALL BE 2 in. DIAMETER WOOD OR STEEL WEIGHING NOT LESS THAN 1.3 lb/ft.



PLAN



SECTION C-C

NOTE: TO BE USED WHERE SHOWN ON PLANS AND AS DIRECTED BY THE ENGINEER.

TOE OF SLOPE AND/OR LIMIT OF WORK EROSION CHECKS

NOT TO SCALE

PARSONS

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Plot Date: 10/20/2010 12:18 PM

EXISTING	PROPOSED	
		CONTROL CABINET GROUND MOUNTED (WITH & WITHOUT CONC. PAD)
		CONTROL CABINET POLE MOUNTED
		FLASHING BEACON CONTROL & METER PEDESTAL
PB		PULL BOX (12"x12" OR AS NOTED)
		MAST ARM, SHAFT & BASE (ARM LENGTH AS NOTED)
TS		SIGNAL POST & BASE (ALPHA–NUMERIC DESIGNATION NOTED)
		VEHICULAR SIGNAL HEAD (ALPHA–NUMERIC DESIGNATION NOTED)
		VEHICULAR SIGNAL HEAD, OPTICALLY PROGRAMMED (ALPHA–NUMERIC DESIGNATION NOTED)
		FLASHING BEACON (ALPHA–NUMERIC DESIGNATION NOTED)
		PEDESTRIAN SIGNAL HEAD (ALPHA–NUMERIC DESIGNATION NOTED)
		AUDIBLE PEDESTRIAN INDICATION
		EMERGENCY PREEMPTION DETECTOR (OPTICAL)
		PREEMPTION CONFIRMATION STROBE
		PEDESTRIAN PUSH BUTTON, SIGN & SADDLE
		WIRE LOOP DETECTOR (6FT x 6FT OR AS NOTED)
M	M	HIGH MAST POLE OR TOWER
		MAGNETIC DETECTOR
ORD		MAGNETOMETER
		RADAR DETECTOR
		SIGNAL & LIGHTING MAST ARM
		TRAFFIC SIGN & POST
01	01	CONTROLLER PHASE ACTUATED
		ZONE OF DETECTION FOR SPECIAL DETECTORS
		ZONE OF VISIBILITY FOR PROGRAMMED SIGNAL
		TRAFFIC SIGNAL HEAD (12 in. LENSES OR AS NOTED)
OHW	OHW	OVERHEAD WIRE(S)
		DIRECT BURIAL CABLE
		TRAFFIC SIGNAL CONDUIT
		CONDUIT CROSSING ROADWAY WITH FLOWABLE FILL TRENCH
		CONDUIT ENCASED IN CEM. CONC. ENVELOPE (X–DUCT)

TRAFFIC SIGNAL LEGEND

TRAFFIC ABBREVIATIONS

R	STEADY CIRCULAR RED
Y	STEADY CIRCULAR AMBER
G	STEADY CIRCULAR GREEN
RL	STEADY RED LEFT ARROW
YL	STEADY AMBER LEFT ARROW
GL	STEADY GREEN LEFT ARROW
GV	STEADY GREEN VERTICAL ARROW
RR	STEADY RED RIGHT ARROW
YR	STEADY AMBER RIGHT ARROW
GR	STEADY GREEN RIGHT ARROW
FR	FLASHING CIRCULAR RED
FY	FLASHING CIRCULAR AMBER
FRL	FLASHING RED LEFT ARROW
FRR	FLASHING RED RIGHT ARROW
W	WALK – LUNAR WHITE
DW	DON'T WALK – PORTLAND ORANGE
FDW	FLASHING DON'T WALK – PORTLAND ORANGE
L	DETECTOR – LOCK
NL	DETECTOR – NON–LOCK
	VEHICLE MOVEMENT
	PEDESTRIAN MOVEMENT
	PERMISSIVE VEHICULAR MOVEMENT (ONLY SHOWN ON PHASING DIAGRAMS)
	DETECTOR CONTROLLING PHASE
	DON'T WALK / WALK

PAVEMENT MARKING AND SIGNING PLAN LEGEND

BWLL	6 in. BROKEN WHITE LANE LINE
CW	12 in. CROSS WALK (WHITE)
DYCL	6 in. DOUBLE YELLOW CENTER LINE
DYEL	6 in. DOUBLE YELLOW EDGE LINE
LDL	6 in. LANE DELINEATOR LINE (WHITE)
SL	12 in. STOP LINE (WHITE)
SWEL	6 in. SOLID WHITE EDGE LINE
SWLL	6 in. SOLID WHITE LANE LINE
SYEL	6 in. SOLID YELLOW EDGE LINE
WGL	12 in. WHITE GORE LINE
YGL	12 in. YELLOW GORE LINE
	PROPOSED SIGN STRUCTURE
	EXISTING SIGN STRUCTURE

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM–002S(215)X	52	154
PROJECT FILE NO.: 603823			

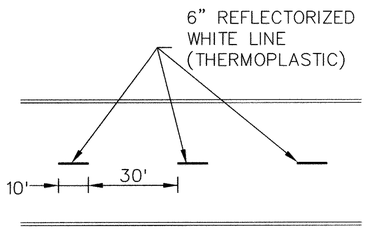
TRAFFIC AND PAVEMENT MARKING NOTES

TRAFFIC SIGNAL NOTES

1. SEE CONSTRUCTION AND TRAFFIC PLANS FOR ADDITIONAL DETAILS.
2. PROPOSED CONTROLLERS SHALL BE NEMA TS2 COMPLIANT, KEYBOARD ENTRY MENU–DRIVEN WITH INTERNAL COORDINATION CAPABILITIES, UNLESS OTHERWISE NOTED IN MAJOR ITEMS.
3. POLE–MOUNTED SIGNALS SHALL BE MOUNTED TO PROVIDE A 2FT MINIMUM CLEARANCE BETWEEN VERTICAL PROJECTION OF THE CURBLINE AND THE SIGNAL VISOR. WHEN FEASIBLE, INSTALL AT BACK OF SIDEWALK UNLESS OTHERWISE NOTED. PROVIDE SPECIAL MOUNTING HARDWARE AS REQUIRED.
4. CONSTRUCTION OF THE TRAFFIC CONTROL SIGNAL SYSTEMS SHOWN ON THE FOLLOWING DRAWINGS SHALL CONFORM TO THE MASSACHUSETTS HIGHWAY DEPARTMENT'S "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES", AS AMENDED, AND THE FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", 2003 EDITION AS AMENDED.
5. ALL TRAFFIC CONTROL SIGNAL EQUIPMENT SHALL BE LISTED ON THE CURRENT MASSACHUSETTS HIGHWAY DEPARTMENT "APPROVED LIST" AND IS SUBJECT TO THE APPROVAL OF THE DESIGN ENGINEER AND/OR THE MASS. HIGHWAY DEPARTMENT.
6. ALL OVERHEAD CONDUCTORS FOR SIGNAL HOUSINGS SHALL BE STRANDED WIRE.
7. ALL EXISTING WIRED LOOP DETECTORS THAT CONFLICT WITH PROPOSED NEW LOOPS SHALL BE ABANDONED.
8. ALL PROPOSED WIRE LOOP DETECTORS SHALL BE CENTERED WITHIN RESPECTIVE LANES UNLESS OTHERWISE NOTED.
9. ALL PROPOSED LENSES SHALL HAVE TUNNEL VISORS.
10. ALL MAST ARM MOUNTED SIGNALS SHALL BE RIGIDLY MOUNTED.
11. FLASHING OPERATION PER M.U.T.C.D., SECTION 4D.12.
12. 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).
13. ALL EXISTING SIGNALS TO BE RELOCATED SHALL BE OVERHAULED AND REFURBISHED INCLUDING CLEANING, PAINTING, NEW BULBS AND GASKETS AND MADE OPERATIVE. ALL LENSES SHALL BE AS SHOWN.
14. ALL NEW TRAFFIC CONTROLLER CABINETS SHALL BE EQUIPPED WITH A LEVER–TYPE METER BY–PASS. SPECIFICATIONS FOR THE BY–PASS MUST BE APPROVED BY THE APPROPRIATE UTILITY COMPANY.

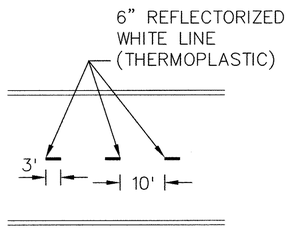
LOOP DETECTOR NOTES

1. SEE LOOP DETECTOR DETAIL SHEET FOR SPLICE PATTERN AND OTHER INFORMATION.
2. DELAY AND EXTENSION TIMES ARE IN SECONDS.
3. DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY A DETECTOR.



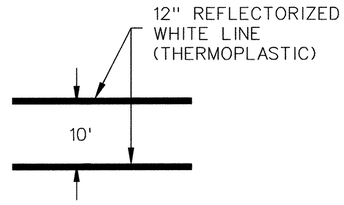
BROKEN WHITE LANE LINE DETAIL

SCALE: 1/2"=1'



LANE DELINEATION LINE DETAIL

SCALE: 3/4"=1'



CROSSWALK PAVEMENT MARKING DETAIL

SCALE: 1"=1'

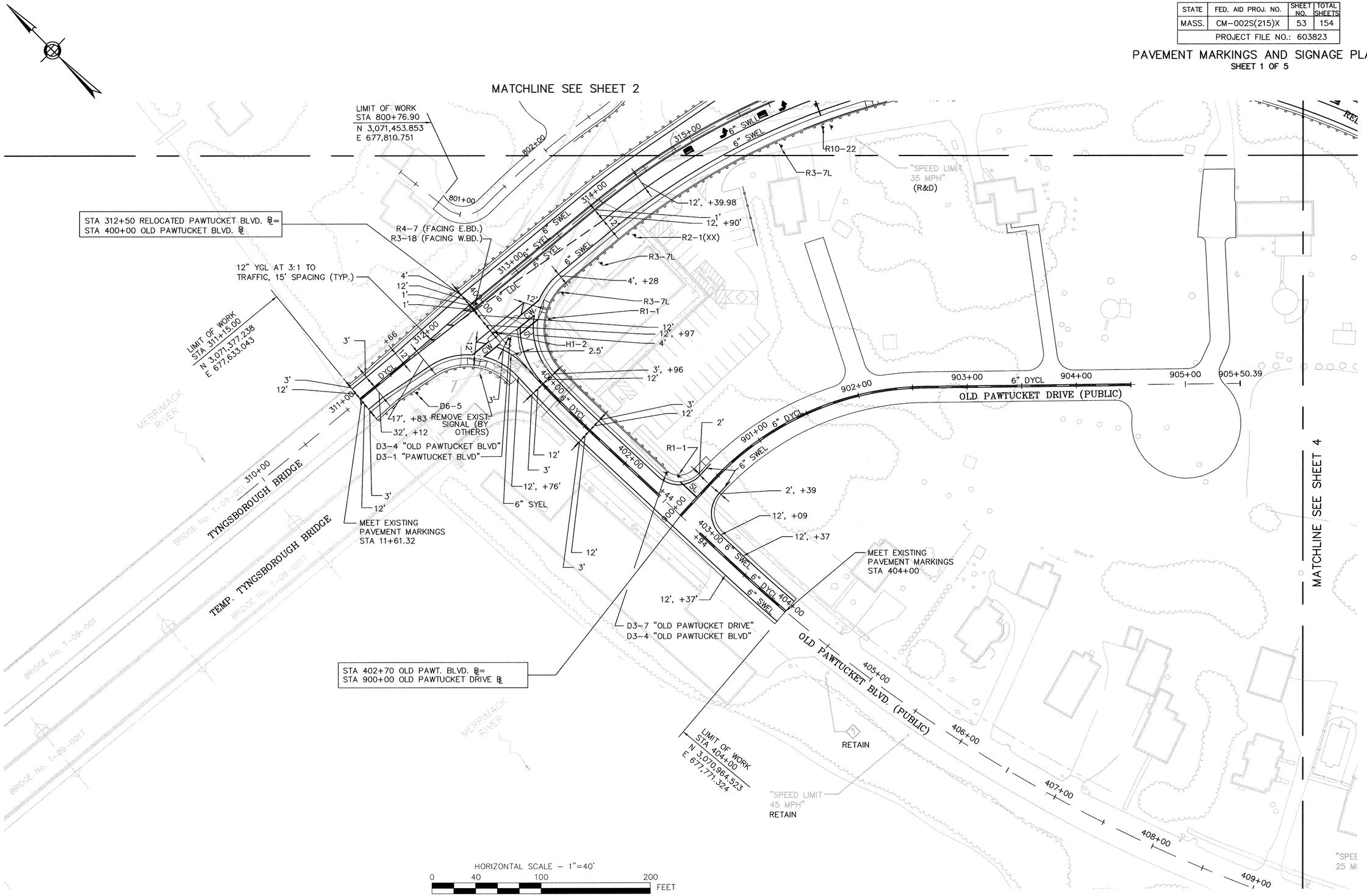
PARSONS

File Name: P:\Massdigmpro\456098_Tyngsborough\cad\drawings\0002_Traffic Notes.dwg
Plot Date: 10/20/2010 12:18 PM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	53	154
PROJECT FILE NO.: 603823			

PAVEMENT MARKINGS AND SIGNAGE PLAN
SHEET 1 OF 5



HORIZONTAL SCALE – 1"=40'
0 40 100 200 FEET

PARSONS

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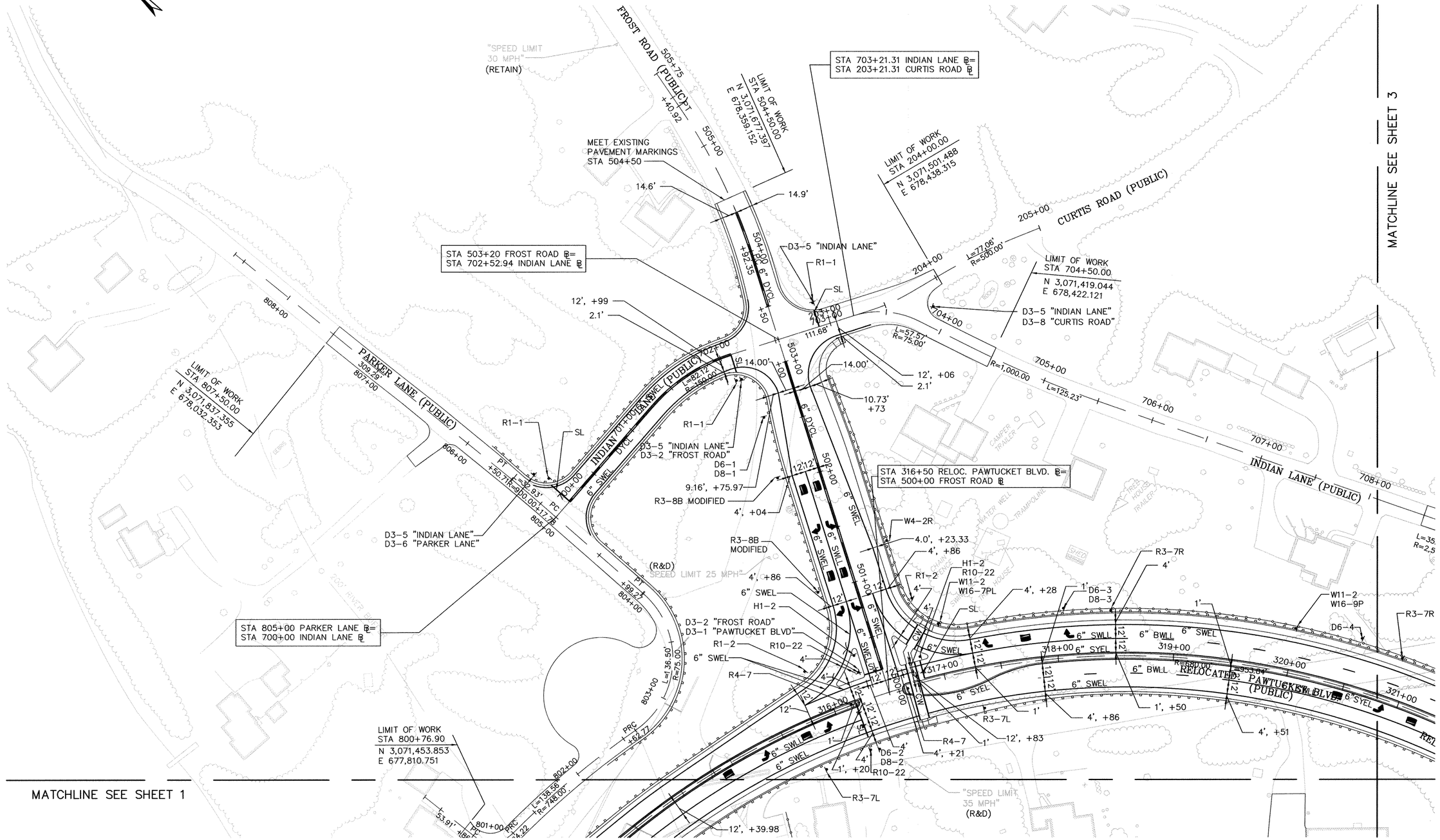
Plot Date: 10/20/2010 12:40 PM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	54	154
	PROJECT FILE NO.: 603823		

PAVEMENT MARKINGS AND SIGNAGE PLAN
SHEET 2 OF 5



PARSONS

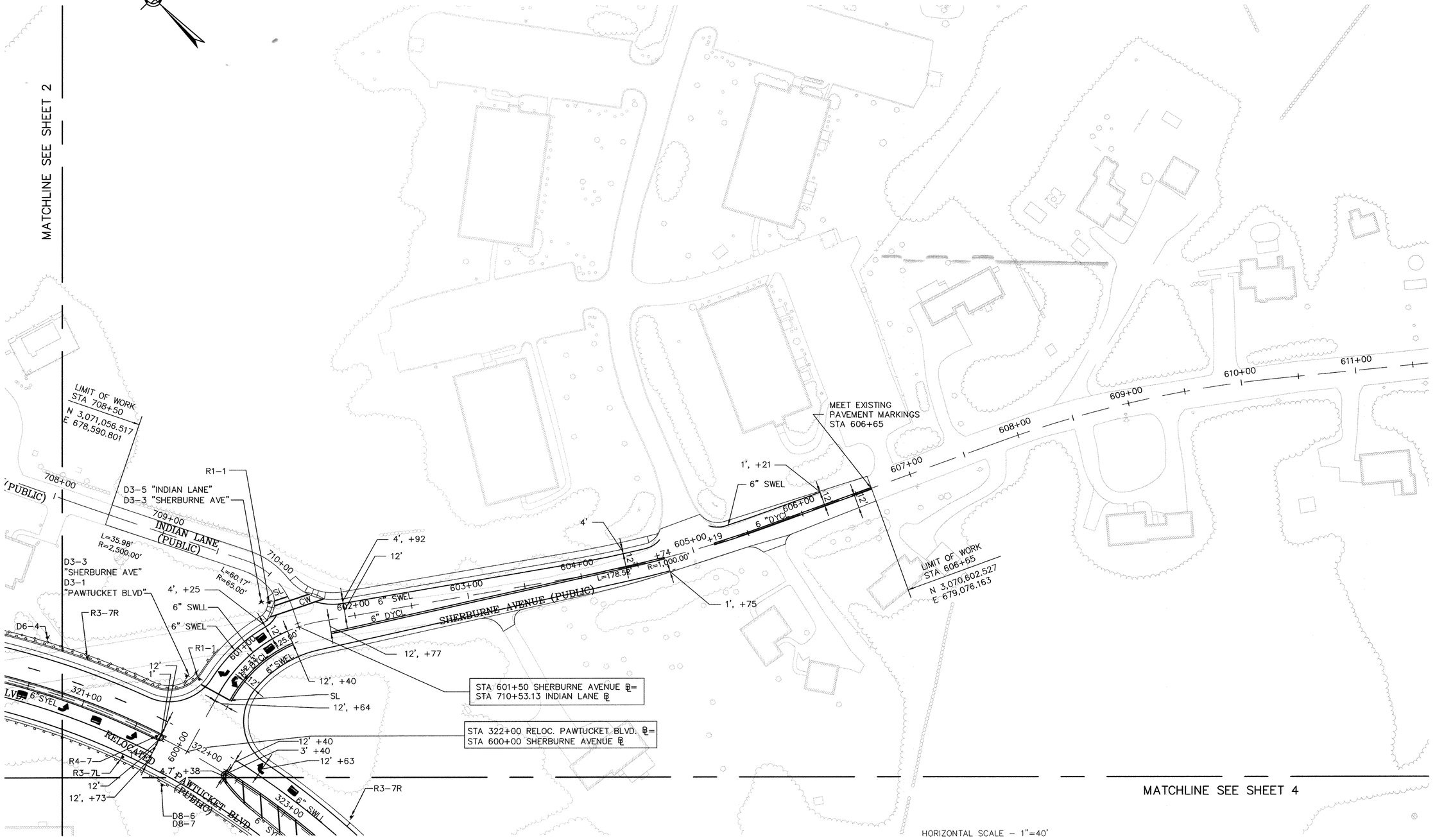
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	55	154
PROJECT FILE NO.: 603823			

PAVEMENT MARKINGS AND SIGNAGE PLAN

SHEET 3 OF 5



PARSONS

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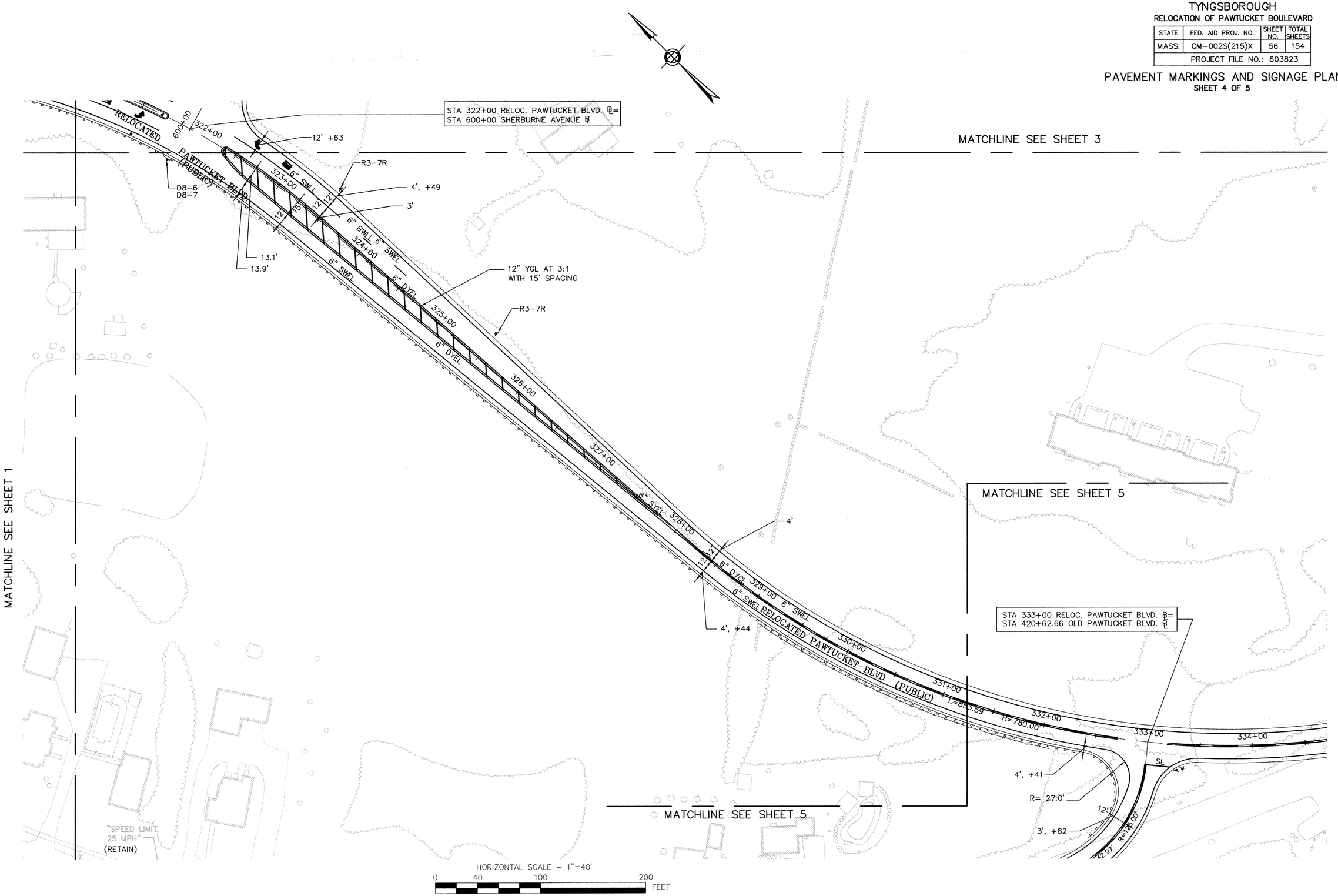
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	56	154
	PROJECT FILE NO.: 603823		

PAVEMENT MARKINGS AND SIGNAGE PLAN
SHEET 4 OF 5

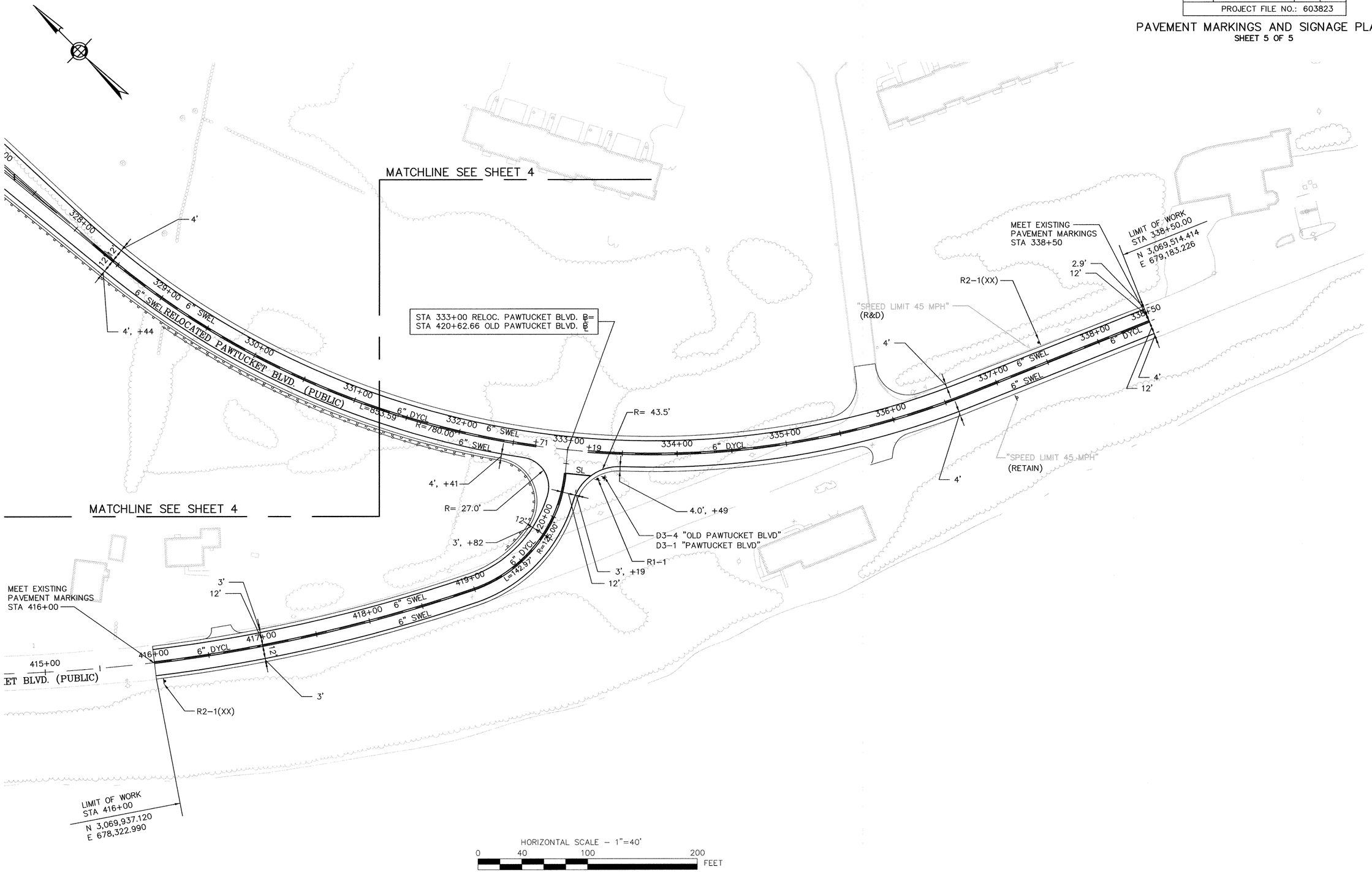


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	57	154
	PROJECT FILE NO.: 603823		

PAVEMENT MARKINGS AND SIGNAGE PLAN
SHEET 5 OF 5



PARSONS

TRAFFIC SIGN SUMMARY

NOTES:
1. ALL WARNING, REGULATORY AND ROUTE MARKERS SHALL BE FABRICATED WITH HIGH INTENSITY ENCAPSULATED LENS REFLECTIVE SHEETING (SEE SECTION M9.30.0) TYPE III OR IV.
2. ALL SIGNS NOTED AS "(R&R)" SHALL BE MOUNTED ON NEW P5 POSTS OR AS OTHERWISE INDICATED.
3. ALL P5 POSTS SHALL BE TELESCOPIC BREAKAWAY RECTANGULAR TYPE POSTS.
4. QUANTITIES OF SIGNS SHOWN ON THIS SHEET MAY DIFFER FROM THE PAVEMENT MARKING AND SIGNING PLANS. WHERE DIFFERENCES OCCUR, THE PAVEMENT MARKINGS AND SIGNING PLANS SHALL PREVAIL.
5. ALL STOP AND YIELD SIGNS PROPOSED IN THIS CONTRACT ARE SUBJECT TO FIELD INVESTIGATION BY THE DISTRICT OFFICE OF THE MASSACHUSETTS HIGHWAY DEPARTMENT TO JUSTIFY WARRANTS BEFORE INSTALLATION.

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	58	154
PROJECT FILE NO.: 603823			

SIGN SUMMARY

IDENTIFICATION NUMBER	SIZE OF SIGN (IN) WIDTH	HEIGHT	DESCRIPTION	TEXT DIMENSIONS (INCHES) LETTER HEIGHT	VERTICAL SPACING	NUMBER OF SIGNS REQUIRED	COLOR BACKGROUND	LEGEND	BORDER	POST SIZE/ QTY.	UNIT AREA (SF)	TOTAL AREA (SF)
R1-1	30	30	STOP	LATEST MUTCD STANDARD		8	LATEST MUTCD STANDARD			P5/1 & MOUNT W/ CURTIS RD./1	6.25	43.75
R1-2	36	36	YIELD			1				P5/2	9.00	18.00
R3-7L	30	30	LEFT LANE MUST TURN LEFT			5				P5/1	6.25	31.25
R3-7R	30	30	RIGHT LANE MUST TURN RIGHT			4				P5/1	6.25	25.00
R3-8B (MODIFIED)	30	30	ONLY ONLY			2				P5/1	6.25	12.50
R3-18	30	30				1				P5/1	6.25	6.25
R2-1 (XX)	24	30	SPEED LIMIT XX			3				P5/1	5.0	15.00
R4-7	24	30				4				P5/1	5.0	20.00
R10-22	17.7	23.6	TO REQUEST GREEN WAIT HERE			3				P5/1	2.9	8.70
W4-2R	30	30				1				P5/1	6.25	6.25
W11-2	30	30				2				P5/1	6.25	12.50
W16-7PL	24	12				1				P5/1	2.0	2.00
W16-9P	24	12	AHEAD			1				P5/1	2.0	2.00
H1-2	24	24		MASSHIGHWAY STANDARD		3	MASSHIGHWAY STANDARD			P5/1	4.00	12.00
D3-1	VAR.	12	PAWTUCKET BLVD.	6C/4C	3 3	4	GREEN	WHITE	WHITE	P5/1	PAY UNDER ITEM 874.	
D3-2	VAR.	12	FROST RD	6C/4C	3 3	2	GREEN	WHITE	WHITE	P5/1 & MOUNT W/ PAW. BLVD./1	PAY UNDER ITEM 874.	
D3-3	VAR.	12	SHERBURNE AVE.	6C/4C	3 3	2	GREEN	WHITE	WHITE	P5/1 & MOUNT W/ PAW. BLVD./1	PAY UNDER ITEM 874.	
D3-4	VAR.	12	OLD PAWTUCKET BLVD.	6C/4C	3 3	3	GREEN	WHITE	WHITE	P5/1, MOUNT W/ PAW. BLVD. & OLD DRIVE/1	PAY UNDER ITEM 874.	
D3-5	VAR.	12	INDIAN LN	6C/4C	3 3	5	GREEN	WHITE	WHITE	P5/1, MOUNT W/FROST RD. /1 & SHERB. AVE./1	PAY UNDER ITEM 874.	
D3-6	VAR.	12	PARKER LN	6C/4C	3 3	1	GREEN	WHITE	WHITE	P5 W/ INDIAN	PAY UNDER ITEM 874.	
D3-7	VAR.	12	OLD PAWTUCKET DR.	6C/4C	3 3	1	GREEN	WHITE	WHITE	P5/1	PAY UNDER ITEM 874.	
D3-8	VAR.	12	CURTIS RD	6C/4C	3 3	1	GREEN	WHITE	WHITE	MOUNT W/ INDIAN LN/1	PAY UNDER ITEM 874.	
D6-1	60	42	SOUTH WEST 3A 113 LOWELL	7C/6C 18/9D 6C 6C	4 3 5 5 6	1	GREEN	WHITE	WHITE	5" TUBULAR POST / 2	25	25
D6-2	48	42	3A NORTH NASHUA, NH	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	5" TUBULAR POST / 2	14	14
D6-3	60	42	SOUTH WEST 3A 113 LOWELL	7C/6C 18/9D 6C 6C	4 3 5 5 6	1	GREEN	WHITE	WHITE	5" TUBULAR POST / 2	25	25
D6-4	48	42	3A NORTH NASHUA, NH NEXT RIGHT	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	5" TUBULAR POST / 2	14	14
D6-5	48	42	3A NORTH NASHUA, NH NEXT LEFT	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	5" TUBULAR POST / 2	14	14
D8-1	48	42	113 EAST DUNSTABLE	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	MOUNT W/ D6-1	14	14
D8-2	48	42	113 EAST DUNSTABLE	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	MOUNT W/ D6-2	14	14
D8-3	48	42	3A NORTH NASHUA, NH	18 9D 7C 6C	2.5 2.5 2.5 2.5	1	GREEN	WHITE	WHITE	MOUNT W/ D6-3	14	14

PARSONS

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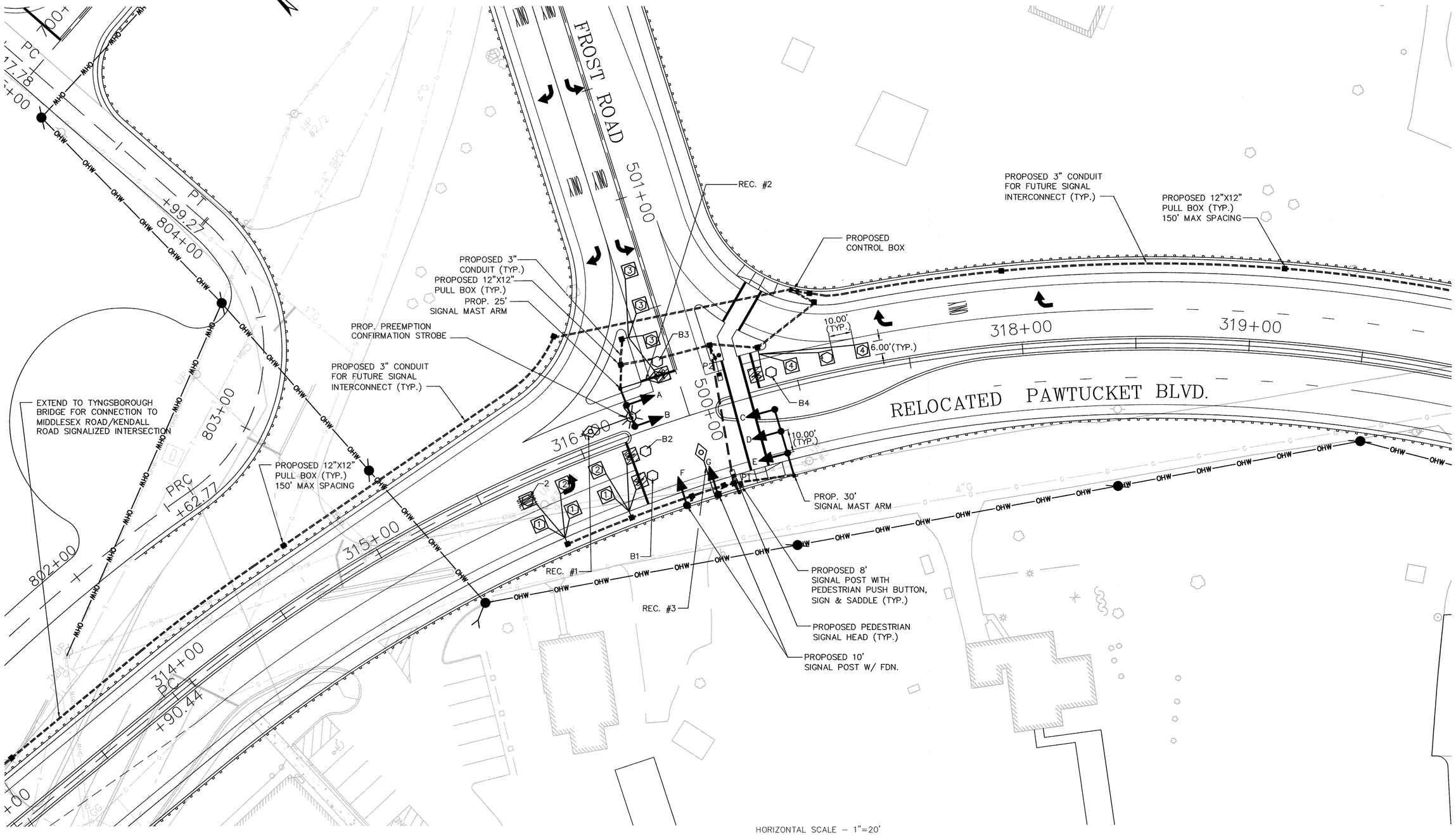
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	59	154
PROJECT FILE NO.: 603823			

TRAFFIC SIGNAL PLAN

SHEET 1 OF 2



HORIZONTAL SCALE – 1"=20'

0 20 50 100 FEET

PARSONS

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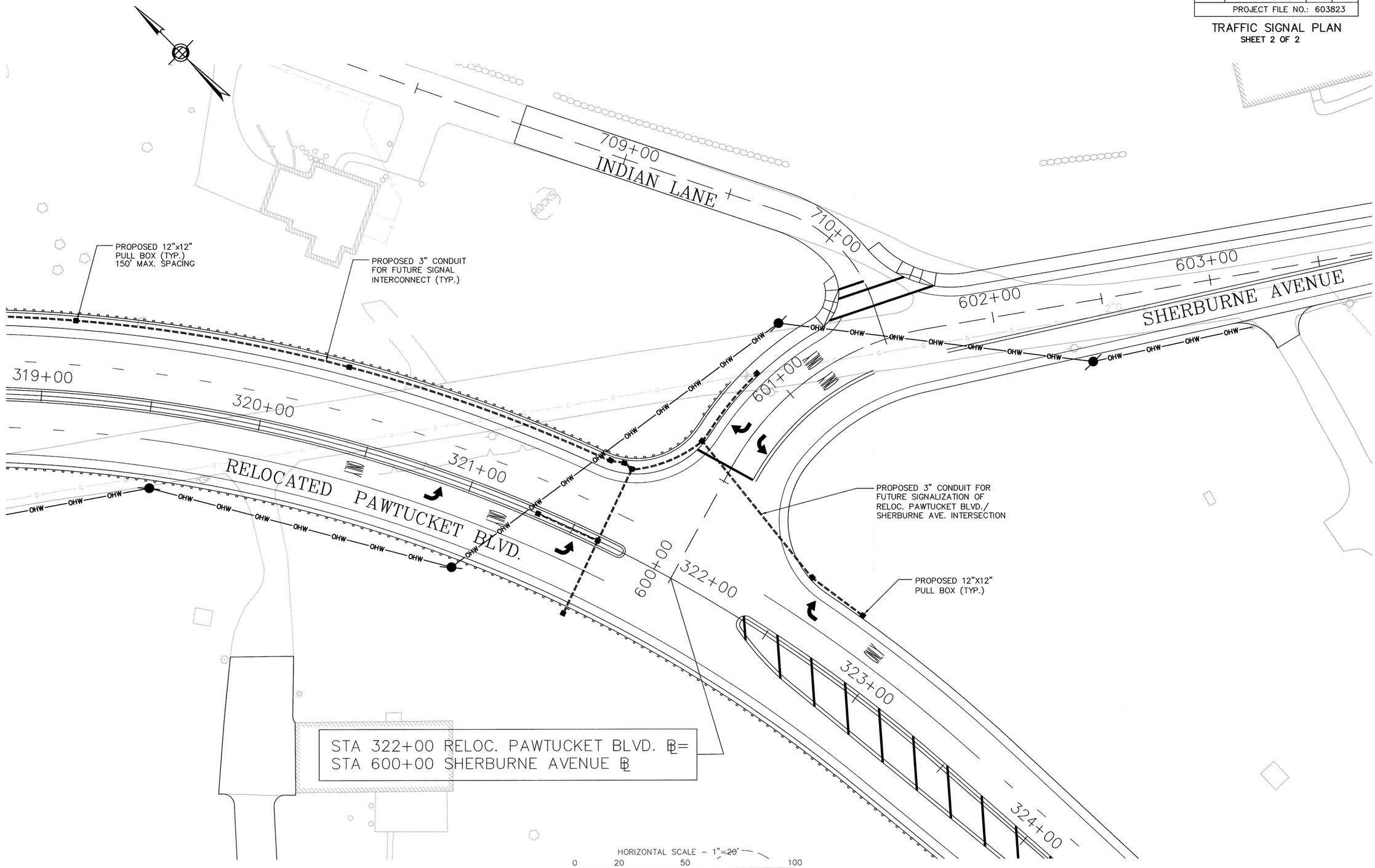
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	60	154
	PROJECT FILE NO.: 603823		

TRAFFIC SIGNAL PLAN
SHEET 2 OF 2



PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	61	154
PROJECT FILE NO.: 603823			

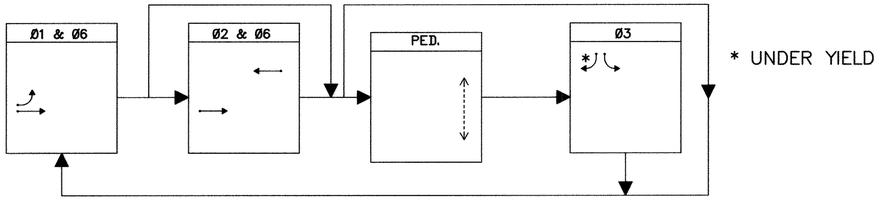
TRAFFIC SIGNAL SCHEDULES
LOCATION 1

RELOC. PAWTUCKET BLVD. AT FROST STREET

LOOP DETECTOR DATA								
DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE	SPLICE PATTERN	NO. OF TURNS	CALLED ø	MODE A=PULSE B=PRES.	DELAY TIME	EXT. TIME
1	3	6' X 6'	SERIES	3	6	B	–	–
2	3	6' X 6'	SERIES	3	1	B	–	–
3	3	6' X 6'	SERIES	3	3	B	–	–
4	3	6' X 6'	SERIES	–	2	B	–	–
B1	1	6' X 6'	BICYCLE	–	6	B	–	–
B2	1	6' X 6'	BICYCLE	–	1	B	–	–
B3	1	6' X 6'	BICYCLE	–	3	B	–	–
B4	1	6' X 6'	BICYCLE	–	2	B	–	–

LOOP DETECTOR NOTES:
1. SEE LOOP DETECTOR DETAIL SHEET FOR SPLICE PATTERN AND OTHER INFORMATION.
2. DELAY AND EXTENSION ARE IN SECONDS.
3. DELAY TIME SHALL BE EFFECTIVE ONLY DURING THE RED PORTION OF THE PHASE THAT IS CALLED BY THE DETECTOR.

PREFERENTIAL PHASE SEQUENCE



EMERGENCY VEHICLE PREMPTION	
EB – REC. #1	CALL Ø1 AND Ø6
WB – REC. #2	CALL Ø2
SB – REC. #3	CALL Ø3

PROPOSED SIGNALS			
C	F, G	A, B D, E	$P_1 - P_2$
ALL 12" LENS R Y G	ALL 12" LENS R Y G	ALL 12" LENS R Y G	

NOTES:
1. ALL VEHICLE & PEDESTRIAN INDICATIONS SHALL BE "LED" TYPE LENS IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
2. ALL SIGNALS ON SPANWIRE SHALL BE TETHERED AND EQUIPPED WITH 5" LOUVERED BACKPLATES.

GENERAL NOTES:

1. SEE SHEET 45 FOR TRAFFIC LEGEND, ABBREVIATIONS AND GENERAL NOTES.

816.01 MAJOR ITEMS REQUIRED	
QUANTITY	DESCRIPTION
1	CONTROLLER & CABINET NEMA (TS2-TYPE 1) w/FDN. & CONC. PAD
1	POWER SERVICE CONNECTION
2	8' SIGNAL POST, BASE & FOUNDATION
1	SIGNAL MAST ARM 30 FEET – ALUMINUM
1	SIGNAL MAST ARM 25 FEET – ALUMINUM
6	SIGNAL HEAD, 3 SECTION (ALL LED)
1	SIGNAL HEAD, 5 SECTION (ALL LED)
2	PEDESTRIAN HOUSING GRAPHIC LED
2	PEDESTRIAN PUSH BUTTON, SIGN & SADDLE
12	ROADWAY VEHICLE LOOP DETECTOR
4	DUAL CHANNEL LOOP DETECTOR AMPLIFIER
4	BICYCLE LOOP DETECTORS
1	FIRE PRE-EMPTION SYSTEM
2	SIGNAL MAST ARM FOUNDATION
2	10' SIGNAL POST, BASE & FOUNDATION

PLUS ALL MISCELLANEOUS EQUIPMENT AND MATERIAL NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL. ELECTRICAL CONDUIT WILL BE PAID FOR UNDER ITEM 804.03, 3 INCH ELECTRICAL CONDUIT, TYPE NM PULL BOXES WILL BE PAID FOR UNDER ITEM 811.31, PULL BOX 12 INCH x 12 INCH.

FULLY-ACTUATED ☒ ISOLATED ☒
SEMI-ACTUATED ☐ COORDINATED ☐
PRE-TIMED ☐ WIRE ☐ TBCU ☐

SEQUENCE AND TIMING																	
STREET	DIRECTION	HOUSINGS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	FLASH OPERATION
REL. PAWTUCKET BLVD.	WB	A, B	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FY
REL. PAWTUCKET BLVD.	EB	C	R	R	R	R/~~G~~	R/~~Y~~	R	G	Y	R	R	R	R	R	R	R	FY
REL. PAWTUCKET BLVD.	EB	D, E	R	R	R	~~G~~	~~Y~~	R	G	Y	R	R	R	R	R	R	R	FY
FROST ROAD	SB	F, G	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~R~~	~~G~~	~~Y~~	~~R~~	~~FR~~
PEDESTRIANS	NB & SB	P1, P2	W	FDW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	OUT
TIMING IN SECONDS																		
MINIMUM INITIAL						7			7			7			7			EMERGENCY
PASSAGE (VEHICLE EXTENSION)						3			3			3			3			
MAXIMUM 1						36			78			38			11			
YELLOW							3			4			4			3		
ALL RED								1			1			1			1	
PEDESTRIAN			7	14	1													
RECALL			OFF			MIN			MIN			MIN			OFF			
MEMORY			LOCK			NON-LOCK			NON-LOCK			NON-LOCK			NON-LOCK			

TRAFFIC CONTROLLER DATA	
PARAMETER	SELECTION
PHASE ASSIGNMENTS	STD. NEMA
OVERLAPS	STD. NEMA
RINGS	DUAL
DUAL ENTRY	ON
SIMULTANEOUS GAP OUT DISABLED	YES
ALL RED REST	OFF
RED REVERT-# OF SECONDS	–
MINIMUM YELLOW IN SECONDS	3
MAX II BY INTERNAL CLOCK	NO
NIGHT TIME FLASH BY INTERNAL CLOCK	NOT USED

PARSONS

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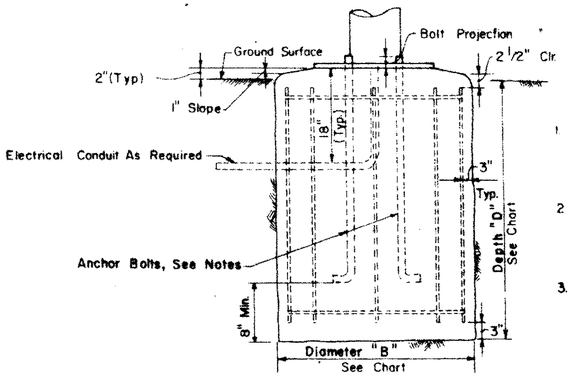
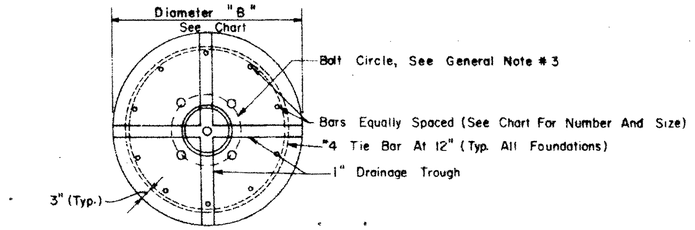


ELEVATION
NOT TO SCALE

NOTES:

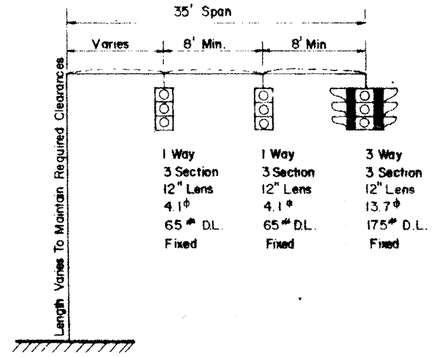
1. Pole, Base Plate And Anchor Bolts Shall Be Designed By The Pole Manufacturer
2. Minimum Foundation Depth Shall Be Checked To Insure Adequate Anchor Bolt Embedment - Clearance, And Projection
3. Optional End Anchorage For Anchor Bolts Can Be A Steel Plate With Threaded Holes Designed By The Pole Manufacturer



PLAN
NOT TO SCALE

SOIL TYPE (SEE GENERAL NOTE NO. 7)	DIA. (B) = 2'-6"		DIA. (B) = 3'-0"		DIA. (B) = 3'-6"	
	DEPTH (D)	VERTICAL BARS	DEPTH (D)	VERTICAL BARS	DEPTH (D)	VERTICAL BARS
DRY SANDY SOIL	5'-9"	10 # 5	5'-0"	10 # 6	4'-9"	10 # 7
WET SANDY SOIL	6'-9"	10 # 5	6'-0"	10 # 6	5'-6"	10 # 7
CLAYEY SOIL (MEDIUM STIFF)	9'-9"	10 # 5	8'-9"	10 # 6	8'-0"	10 # 7
ALLUVIAL SOIL	14'-3"	10 # 5	12'-9"	10 # 6	11'-9"	10 # 7

FOUNDATION DESIGN CHART



TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	62	154
PROJECT FILE NO.: 603823			

MAST ARM DETAILS

GENERAL NOTES:

1. Foundations Shall Be Class "A" Cement Concrete Masonry.
2. Reinforcement Shall Be A.S.T.M. A615-Gr 60.
3. Bolt Circle And Anchor Bolts To Be Provided By The Contractor The Anchor Bolts Shall Be Supplied With A Template For Setting The Bolts And Necessary Bolt Projections.
4. Provide For Electrical Conduit As Required.
5. Excavation Shall Be By The Auger Method To The Neat Lines Of The Outside Dimension Of The Foundation Without Disturbing The Soil Around And Below The Proposed Foundation Bottom. Alternate Methods Of Excavation May Be Submitted For Approval If They Meet The Requirements Listed In The General Notes Of Sheets 3 & 4 Of The Span Wire Assembly Foundation Details & Design Charts
6. If The Soil Is Disturbed Or Removed Beyond The Neat Lines Of The Outside Dimension Of The Foundation As Specified, It Shall Be Replaced With Concrete. Any Additional Cost For The Concrete Shall Be Paid For By The Contractor
7. Determination Of Existing Soil Conditions Shall Be Made By The Design Engineer
8. Vertical Reinforcement Bars Are To Be Evenly Spaced In The Foundation As Shown
9. The Smallest Diameter Foundation Shall Be Used That Will Meet The Moment Requirement And Be At Least 16" Greater In Diameter Than The Bolt Circle Diameter
10. If A Poor Soil Or Ledge Is Encountered, (i.e., One Which Does Not Apply To The Design Charts Shown On This Sheet), An Alternative Design Shall Be Developed By The Design Engineer. Decisions Made In Notes #7 & #10, Shall Be Submitted To The M.D.P.W. For Approval. If Utilities Or Other Underground Obstructions Are Encountered, The Contractor Shall Backfill The Area To Its Original Condition Until An Alternate Design Has Been Provided By The Design Engineer.
11. The Foundations Shown On This Drawing Are For A 35-Foot Cantilevered Type II Mast Arm Carrying A Three Way, Three Section, Twelve Inch (12") Lens Traffic Signal Housing Fixed At The End Of The Arm, And A One-Way, Three-Section, Twelve Inch (12") Lens Traffic Signal Fixed Twelve Feet (12') Away, And Another One-Way, Three-Section Twelve Inch (12") Lens Traffic Signal Fixed Twelve Feet (12') Away From That.

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

STANDARD DRAWINGS
35' FOOT-TYPE II MAST ARM
CORED PIER FOUNDATIONS

Revised Date January 2, 1985

TRAFFIC ENGINEER — BRIDGE ENGINEER
DIRECTOR B.T.P.&D. — CHIEF ENGINEER

BY: J. BELCASTRO - B.T.P.&D. & G.N. TSAKOS - BRIDGE SECTION

PARSONS

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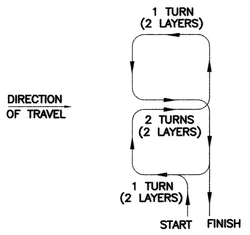
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

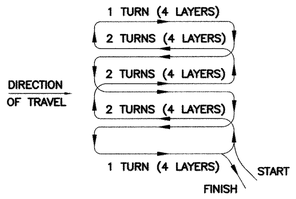
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	63	154
PROJECT FILE NO.: 603823			

LOOP DETECTOR DETAILS

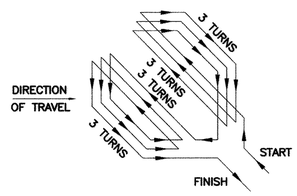
WINDING DETAILS



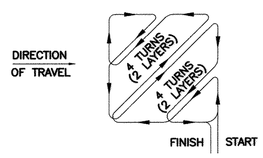
TYPE Q DETECTOR



TYPE D-Q DETECTOR

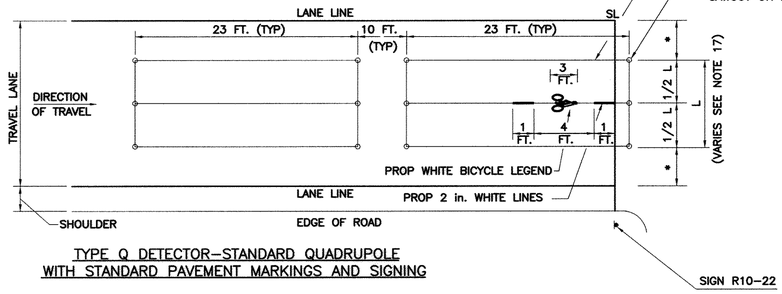


TYPE D-1 DETECTOR



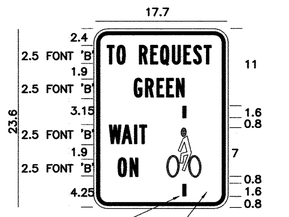
TYPE D-2 DETECTOR

INSTALLATION DETAILS



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

SIGN R10-22



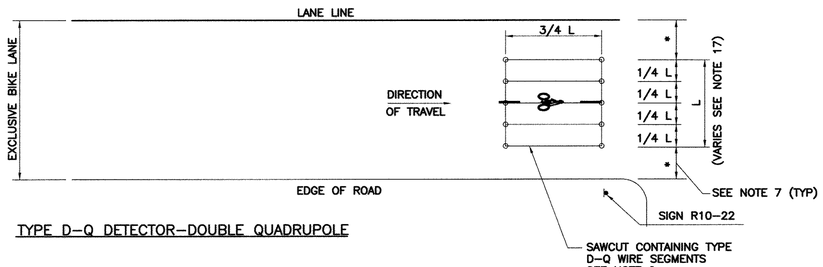
0.8 in. LINE (TYP)

WHITE BACKGROUND
BLACK LEGEND AND LINES

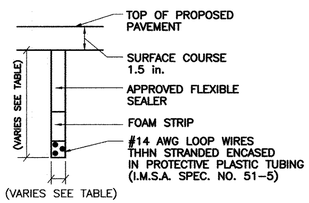
SIGN BORDER - R=1.5, TH=0.5, INS=0.4

NOTE: ALL SIGN DIMENSIONS IN INCHES

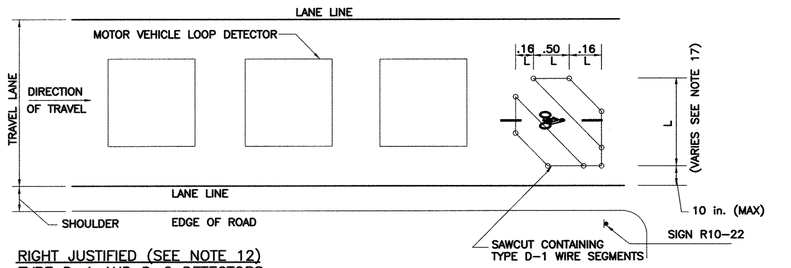
NOTE: SIGN PANEL NOT SHOWN TO SCALE



TYPE D-Q DETECTOR-DOUBLE QUADRUPOLE

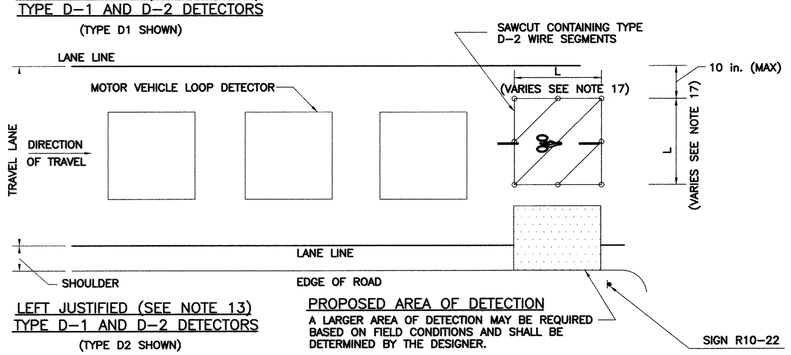


SECTION THRU LOOP DETECTOR



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.

SAWCUT SLOT DEPTH GUIDE		
TURNS OF WIRE	SLOT SIZE	
	DEPTH (in.)	WIDTH (in.)
1	1.2	0.4
2	1.4	0.4
3	1.6	0.4
4	1.8	0.4
5	2	0.5
6	2	0.5
7	2	0.5
8	2	0.5

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 100 mm 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 MAXIMUM OFFSET FROM LANE LINE AND CURB LINE SHALL BE 10 in.
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.

REVISED 2007
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Moving Massachusetts Forward. massDOT Highway

MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
REVISED OCTOBER 5, 2004

PARSONS

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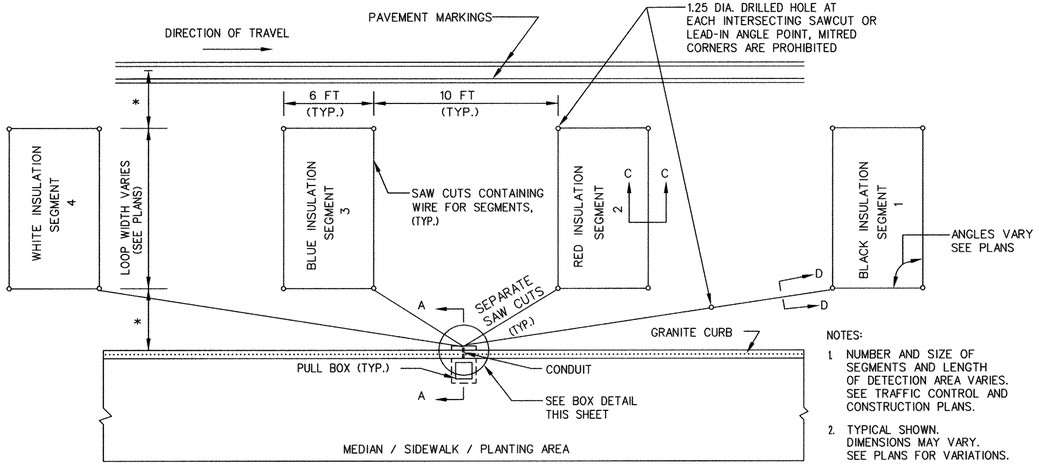
Plot Date: 10/20/2010 12:51 PM

TYNGSBOROUGH

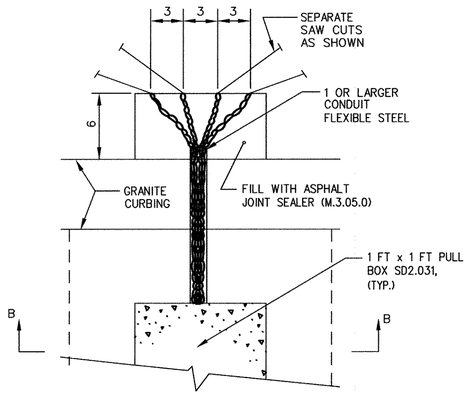
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	64	154
PROJECT FILE NO.: 603823			

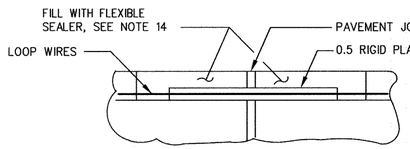
LOOP DETECTOR DETAILS



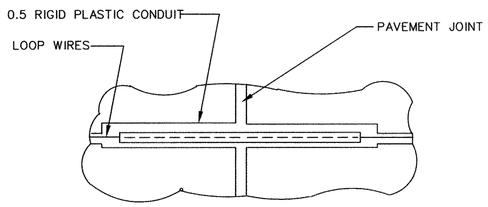
PLAN OF SEGMENTED DETECTOR DETAIL
NOT TO SCALE



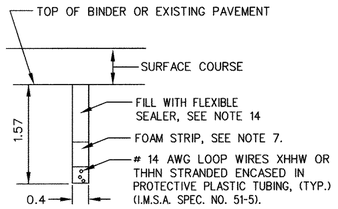
BOX DETAIL - PLAN VIEW
NOT TO SCALE



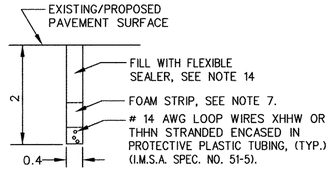
VERTICAL SECTION
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



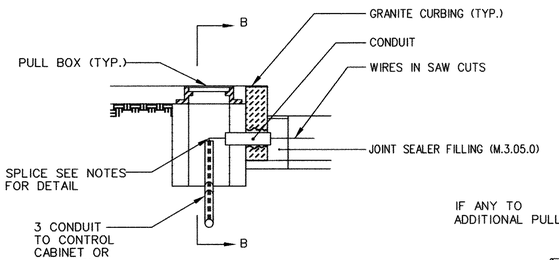
PLAN
TREATMENT AT PAVEMENT JOINTS
NOT TO SCALE



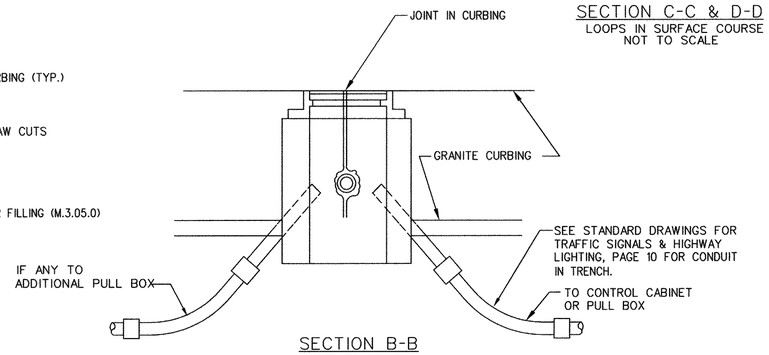
SECTION C-C & D-D
LOOPS IN BINDER COURSE
NOT TO SCALE



SECTION C-C & D-D
LOOPS IN SURFACE COURSE
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

DETECTOR NOTES

1. IN PULL BOX, SPLICE ALL SEGMENTS TO TYPE II-SHIELDED LOOP DETECTOR LEAD-IN CABLE I.M.S.A. SPEC. NO. 50-2 (M8. 16. 11). SEGMENTS SHALL BE SPLICED IN PARALLEL, IN SERIES, OR IN A COMBINATION OF PARALLEL & SERIES AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. NUMBER OF TURNS OF WIRE SHALL ALSO BE AS SHOWN ON THE PLAN SHEET FOR EACH DETECTOR. SEE NOTES 12 & 13 BELOW.
2. SEE SPECIAL PROVISIONS FOR REQUIREMENTS OF DETECTOR AMPLIFIER.
3. LEAD IN WIRES SHALL BE TWISTED FROM SEGMENT TO SPLICE WITH SHIELDED CABLE AT FIVE TURNS PER FOOT.
4. BEFORE STARTING ANY SPLICING, THE ELECTRICAL CONTRACTOR SHALL FURNISH DATA SHEETS ON THE MATERIALS AND/OR METHODS TO BE USED IN ACCORDANCE WITH THE DEPARTMENT'S STANDARD OPERATING PROCEDURES FOR APPROVAL OF SHOP DRAWINGS SEE SECTION 815.64, ESPECIALLY PARAGRAPH 1.
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 NOT BE GROUNDED TO THE EARTH GROUNDING BUSS IN THE CONTROLLER, AND THE SHIELD AND DRAIN WIRE SHALL BE CAREFULLY INSULATED FROM THE TRANSFORMER NEUTRAL OR FROM EARTH GROUND AT ALL 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 WATER WITH OIL-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. DO NOT ALLOW OVERFLOW TO REMAIN ON TOP COURSE OF PAVEMENT.
8. THE COMBINED ROADWAY LOOP, TWISTED LEAD-IN WIRES, SPLICE AND SHIELDED LEAD-IN CABLE SHALL HAVE A RESISTANCE TO GROUND OF AT LEAST 100 MEGOHMS. SEE SPECIAL PROVISIONS FOR ADDITIONAL REQUIREMENTS.
9. FOR INSTALLATION OF SINGLE (ONE SEGMENT) SMALL WIRE LOOP DETECTOR, DETAIL IS THE SAME.
10. CUT LOOPS IN SURFACE COURSE IN ALL CASES UNLESS ROADWAY OWNER REQUIRES OTHERSWISE.
11. DETECTOR WIRE SHALL BE A DIFFERENT COLOR FOR EACH SEGMENT OF A DETECTOR GROUP. SEE DETAIL.
12. SPLICING PATTERN S/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.
13. 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.
14. FOR THIS PROJECT, USE BONDO 575 POLYETHYLENE SEALER. DO NOT USE EPOXY PRODUCTS.
15. ALL DIMENSIONS ARE IN INCHES UNLESS SHOWN OTHERWISE.

REVISED 12/20/1994
REVISED 2007
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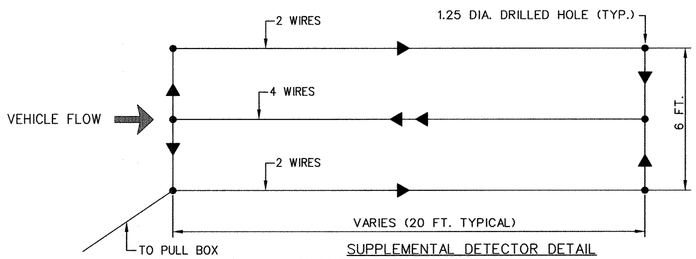

SUPPLEMENTAL DETECTOR DETAIL
QUADRUPOLE TYPE LOOP DETECTOR INSTALLATION
NOT TO SCALE

THIS DETAIL IS INTENDED TO SHOW THE LOOP DETECTOR CONFIGURATION ONLY. REFER TO THE STANDARD LOOP DETECTOR DETAILS (SHOWN ON THIS SHEET) FOR OTHER DETAILS SUCH AS PULL BOXES, SAW CUTTING, ETC.

THE TYPICAL QUADRUPOLE TYPE LOOP DETECTOR INSTALLATION CONSISTS OF ONE OR MORE 6 FT x 20 FT RECTANGULAR LOOP(S) WITH A CENTER CUT WHICH HAS TWICE THE WINDINGS AS THE PERIMETER CUTS. FOR A 20 FT. LONG INSTALLATION, THE WIRES WILL CONSIST OF A "2-4-2" CONFIGURATION INDICATING 2 PERIMETER WIRES AND 4 CENTER WIRES. FOR A 6 FT x 40 FT. OR 6 FT. x 50 FT. LOOP, THE NUMBER OF WINDINGS AND CONFIGURATION WILL BE "1-2-1".

PARSONS

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Plot Date: 10/20/2010 12:51 PM

TRAFFIC MANAGEMENT NOTES

GENERAL

1. ALL TRAFFIC MANAGEMENT AND WORK ZONE TRAFFIC CONTROL MEASURES SHALL CONFORM TO THE 2003 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.), THE STANDARD SPECIFICATIONS, AND THE FOLLOWING NOTES.
2. THE TRAFFIC MANAGEMENT PLANS CONTAINED HEREIN ARE GIVEN AS A GUIDE FOR TYPICAL WORK ZONE TRAFFIC CONTROL APPLICATIONS FOR THE TYPES OF WORK ANTICIPATED FOR THIS PROJECT. THEY ARE NOT INTENDED TO COVER ALL POSSIBLE CONSTRUCTION OPERATIONS WHICH THE CONTRACTOR MAY CHOOSE TO EMPLOY. WORK ZONE TRAFFIC CONTROL FOR OTHER CONSTRUCTION OPERATIONS OR OTHER TRAFFIC SITUATIONS IF APPLICABLE SHALL BE IN ACCORDANCE WITH THE 2003 M.U.T.C.D. AND AS APPROVED OR DIRECTED BY THE ENGINEER.
3. LANE RESTRICTIONS MAY NOT REMAIN OVERNIGHT OR DURING NON-WORKING HOURS. AFTER EACH WORKING DAY, TRAFFIC CONTROL DEVICES THAT ARE NOT REQUIRED SHALL BE MOVED OFF THE ROADWAY OR FULL DEPTH CONSTRUCTION AREA AND PLACED SO AS NOT TO IMPEDE PEDESTRIAN AREAS, ABUTTER ACCESS OR CAUSE CONFUSION TO MOTORISTS. IN CERTAIN CIRCUMSTANCES, AND ONLY WITH THE APPROVAL OF MHD AND THE ENGINEER, CAN LANE RESTRICTIONS REMAIN OVERNIGHT.
4. CONTRACTOR SHALL PROVIDE A SAFE TEMPORARY PEDESTRIAN ACCESS WHERE EXISTING SIDEWALKS OR OTHER PEDESTRIAN AREAS ARE AFFECTED BY CONSTRUCTION WORK. MAINTAIN ABUTTER ACCESS AT ALL TIMES EXCEPT FOR SHORT PERIODS APPROVED BY THE ENGINEER.
5. PLACE ALL CONSTRUCTION SIGNING, TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS FOR EACH PHASE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
6. A MINIMUM OF ONE (1) THRU TRAVEL LANE HAVING A MINIMUM WIDTH OF 10ft SHALL BE PROVIDED IN EACH DIRECTION DURING ALL PHASES OF CONSTRUCTION AS SHOWN ON THE TRAFFIC MANAGEMENT PLANS, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. WHEN WORK INFRINGES UPON THE TRAVELED WAY, WORK SHALL BE RESTRICTED TO OFF-PEAK HOURS ONLY. (NORMALLY 9.00am TO 4.00pm, MONDAY TO FRIDAY)
8. TAPER LENGTH FORMULAE FOR CHANNELIZATION DEVICES: L = WxS FOR SPEED EQUAL TO OR GREATER THAN 45 M.P.H. L = WxS^2 /60 FOR SPEED EQUAL TO OR LESS THAN 40 M.P.H. WHERE: L = MIN. LENGTH OF TAPER, S = POSTED SPEED (M.P.H.), W = OFFSET WIDTH (FEET).
9. ADVISORY SPEED LIMIT, IF NEEDED SHALL BE SET IN THE FIELD BY THE ENGINEER. W13-1 PLATES SHALL BE USED WHERE APPROPRIATE.
10. FLASHING ARROW PANEL SHALL BE SET IN "ARROW MODE" WHEN USED FOR ACTUAL LANE CLOSURES ONLY. FOR SHOULDER CLOSURES, BULBS TO BE ILLUMINATED IN A NON-DIRECTIONAL CAUTION CONFIGURATION TO AVOID UNNECESSARY LANE SHIFTS.
11. DISTANCES SHOWN ON THE TRAFFIC MANAGEMENT PLANS ARE A GUIDE ONLY, AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
12. ACCESS IS TO BE MAINTANED FOR RESIDENCES AT ALL TIMES

GRADE DIFFERENCES

13. WHERE THERE IS A LONGITUDINAL DIFFERENCE IN ELEVATION BETWEEN EXISTING PAVEMENT AND COLD PLANED OR NEW PAVEMENT, THE CONTRACTOR SHALL PATCH A TEMPORARY BIT. CONC. WEDGE WITH A 12:1 (OR FLATTER) SLOPE FOR SMOOTH TRANSITION. SEE DETAIL, THIS SHEET.
14. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 2in DURING NON-WORKING HOURS WILL REQUIRE DELINEATION BY USE OF REFLECTORIZED DRUMS.
15. CROSS-SECTIONAL GRADE DIFFERENCES IN EXCESS OF 4in DURING NON-WORKING HOURS SHALL BE PROTECTED BY BACKFILLING WITH A WEDGE OF EARTHWORK TO BE COMPACTED AT 4:1 SLOPE AND WILL ALSO REQUIRE DELINEATION BY USE OF DRUMS.
16. A MINIMUM SLOPE OF 4:1 MUST BE MAINTAINED AFTER WORKING HOURS DURING SUBBASE AND BASE COURSE INSTALLATION ALONG EDGE OF THE TRAVELWAY (SEE DETAIL, THIS SHEET). A MINIMUM SLOPE OF 8:1 MUST BE MAINTAINED ON ALL ABUTTER ACCESS DRIVES AND A MINIMUM SLOPE OF 12:1 MUST BE MAINTAINED ON ALL SIDEWALKS.

CONSTRUCTION SIGNING

17. THE FIRST CONSTRUCTION SIGN IN A SERIES ON EACH APPROACH TO THE PROJECT SHALL BE FLUORESCENT ORANGE, HIGH PERFORMANCE (OR HIGH INTENSITY) SHEETING.
18. ALL CONSTRUCTION SIGNS SHALL BE BLACK LEGEND ON A REFLECTORIZED ORANGE BACKGROUND UNLESS OTHERWISE NOTED.
19. CONSTRUCTION SIGNING SHOWN ON THE ADVANCE SIGNING PLAN CAN REMAIN IN PLACE FOR THE ENTIRE PROJECT DURATION, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
20. STANDARD ORANGE OR FLUORESCENT RED-ORANGE FLAGS (16in x 16in MIN.) MAY BE ATTACHED TWO (2) EACH ON ALL ADVANCE WARNING SIGNS. FLAGS SHALL NOT INTERFERE WITH A CLEAR VIEW OF THE SIGN FACE.
21. EXISTING GUIDE SIGNS SHALL BE TEMPORARILY RESET AS DIRECTED BY THE ENGINEER.
22. ALL SIGNS, INCLUDING EXISTING, THAT ARE NOT REPRESENTATIVE OF ACTUAL WORK CONDITIONS SHALL BE EITHER COVERED OR REMOVED WHEN NOT APPLICABLE.
23. IF USED, ALL W20-4 AND W20-5 SIGNS SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY UNLESS LANE RESTRICTIONS ARE PERMITTED TO REMAIN OVERNIGHT IN ACCORDANCE WITH NOTE NO. 3 ABOVE.
24. USE W20-8 SIGNS ONLY WHILE POLICE ARE DIRECTING TRAFFIC. THEY SHALL BE TAKEN DOWN OR COVERED AT THE CLOSE OF EACH DAY.

PAVEMENT MARKINGS

25. PAVEMENT MARKINGS WHICH ARE NO LONGER APPLICABLE SHALL BE REMOVED. APPLY TEMPORARY MARKINGS WHERE SHOWN ON THE TRAFFIC MANAGEMENT PLANS.
26. ON PROJECTS WHERE PAVEMENT OVERLAY IS NOT DESIGNATED, EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH TEMPORARY TRAFFIC CONTROLS SHOULD BE COVERED TEMPORARILY WITH BLACKOUT TAPE, AS DIRECTED BY THE ENGINEER, FOR THE FULL DURATION OF THE PHASE IN PROGRESS. TEMPORARY PAINTED OR REMOVABLE TAPE MARKINGS SHALL BE USED AS NECESSARY FOR ALL PHASES OF CONSTRUCTION.

CHANNELIZATION

27. REFLECTORIZED CONES SHALL BE MINIMUM 28in HIGH, 36in CONES ARE RECOMMENDED.
28. FLASHING OR STEADY BURN WARNING LIGHTS CAN BE USED ON BARRICADES, JERSEY BARRIERS OR WHERE DIRECTED BY THE ENGINEER.
29. METAL DRUMS ARE PROHIBITED AS CHANNELIZATION DEVICES.
30. PLASTIC DRUMS WITH SOME FORM OF LIGHTING DEVICE MOUNTED ON THEM MUST PASS THE CRITERIA SET FORTH IN NCHRP 350 " RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES." IF THEY DO NOT MEET THIS CRITERIA, THEY MUST BE REMOVED FROM THE PROJECT.
31. TEMPORARY IMPACT ATTENUATORS MUST MEET THE PERFORMANCE STANDARDS ON NCHRP 350.

SUGGESTED WORK ZONE WARNING SIGN SPACING

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

TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES

Type of Taper	Taper Length (L)*
MERGING TAPER	AT LEAST L
SHIFTING TAPER	AT LEAST 0.5L
SHOULDER TAPER	AT LEAST 0.33L
ONE-LANE, TWO-WAY TRAFFIC TAPER	100 FT MAXIMUM
DOWNSTREAM TAPER	100 FT PER LANE

FORMULAS FOR DETERMINING TAPER LENGTHS

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

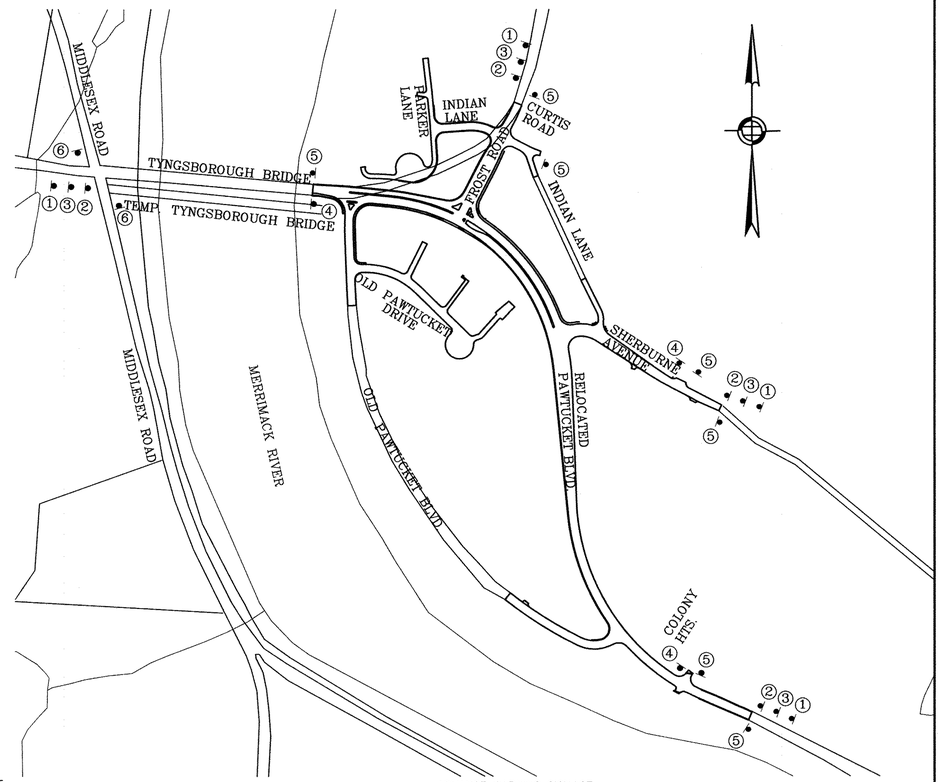
WHERE: L = TAPER LENGTH IN FEET

W = WIDTH OF OFFSET IN FEET

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

LEGEND:

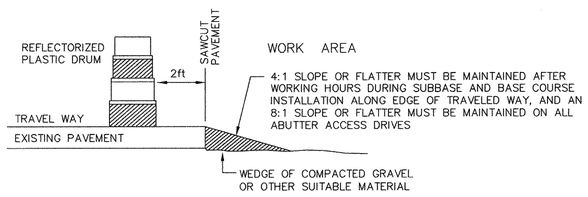
- REFLECTORIZED PLASTIC DRUM WITH FLASHING LIGHTS
- P POLICE DETAIL
- TYPE III BARRICADE
- MESSAGE BOARD
- FLASHING ARROW PANEL
- WORK ZONE
- DIRECTION OF TRAFFIC
- IMPACT ATTENUATOR
- MEDIAN BARRIER
- MEDIAN BARRIER WITH WARNING LIGHTS
- WORK VEHICLE
- TRUCK MOUNTED ATTENUATOR
- TRAFFIC OR PEDESTRIAN SIGNAL
- SIGN



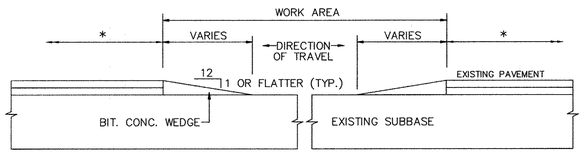
ADVANCE WARNING SIGNAGE

ADVANCE WARNING SIGN SUMMARY

①	②	④	③	⑤	⑥
ROAD WORK 1500 FT	ROAD WORK 1000 FT	ROAD WORK AHEAD	STATE LAW / SPEEDING FINES DOUBLED IN WORK ZONES	END ROAD WORK	ROAD WORK RT 113 E
W20-1a (36 X 36)	W20-1b (36 X 36)	W20-1c (36 X 36)	R2-10a (48 X 36)	G20-2 (36 X 18)	W20-1d (36 X 36)



AFTER WORK HOURS TREATMENT FOR LATERAL SLOPING



TEMPORARY RAMP

* SEE 2 LANE ROAD SCARIFIED PAVEMENT DETAIL ON SHEET 61 FOR ADVANCED SIGNING

TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	65	154
PROJECT FILE NO.: 603823			

TYPICAL TRAFFIC MANAGEMENT SETUPS & SIGNAGE

SHEET 1 OF 2

PARSONS

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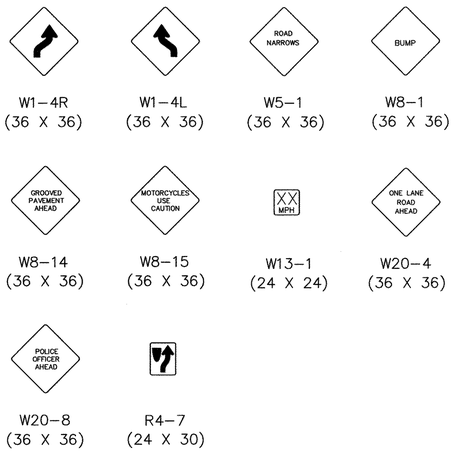
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

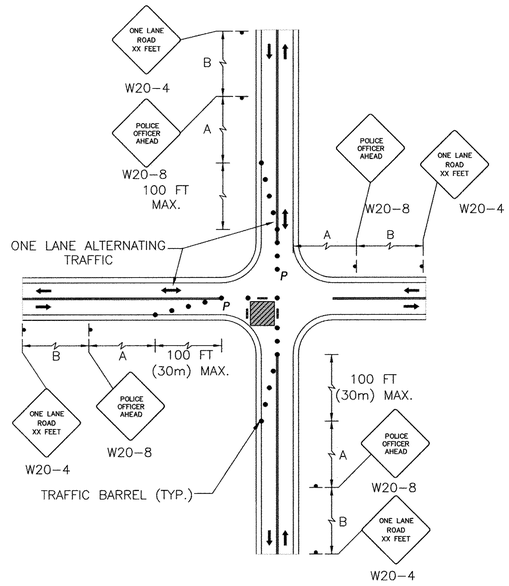
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	66	154
PROJECT FILE NO.: 603823			

TYPICAL TRAFFIC MANAGEMENT SETUPS & SIGNAGE

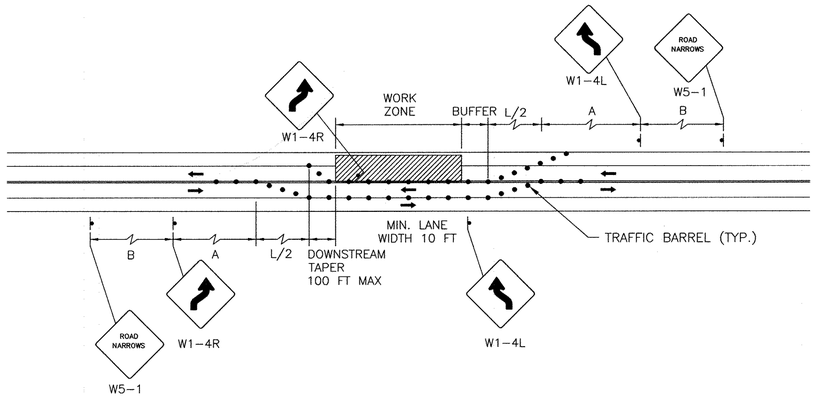
SHEET 2 OF 2

TRAFFIC MANAGEMENT SIGN SUMMARY

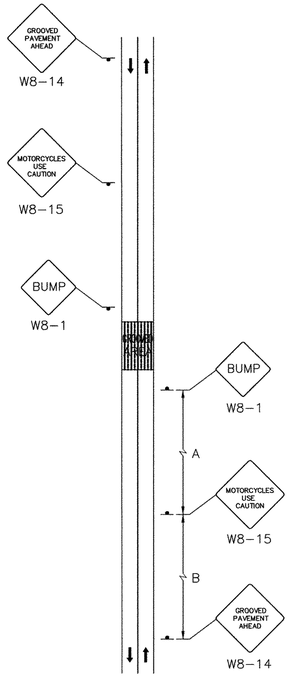




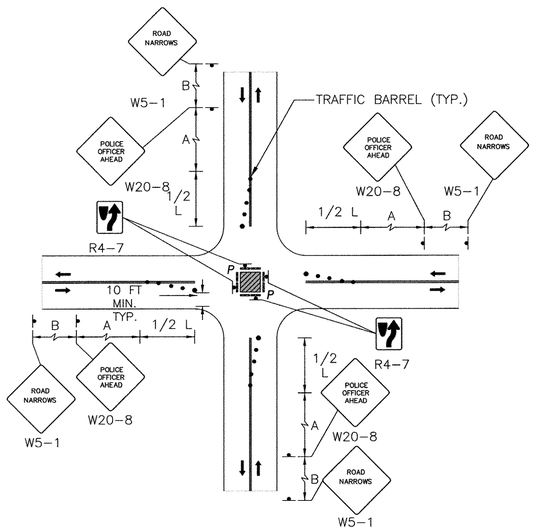
SINGLE LANE APPROACH
ONE QUADRANT CLOSURE



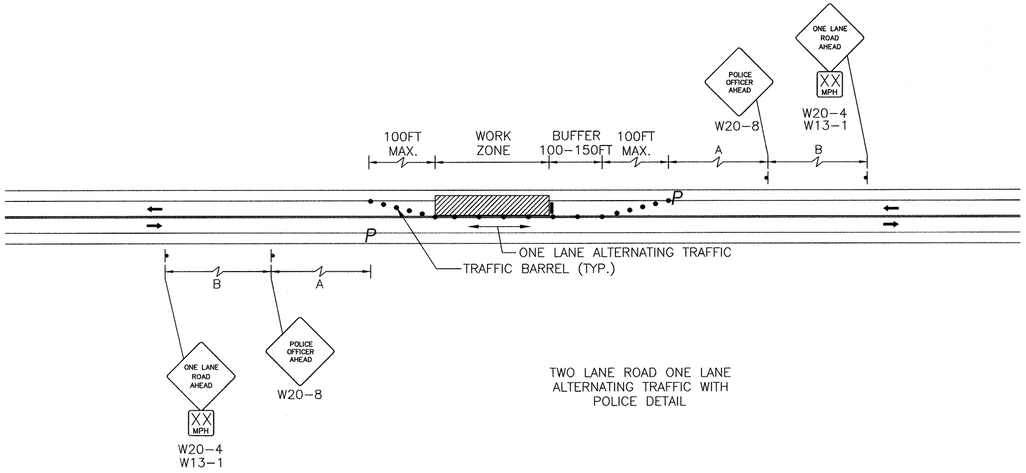
TWO LANE ROAD – SHOULDER
AND TRAVEL LANE CLOSED



2-LANE ROAD
SCARIFIED PAVEMENT



SINGLE LANE APPROACH
CENTER LANE CLOSURE



TWO LANE ROAD ONE LANE
ALTERNATING TRAFFIC WITH
POLICE DETAIL

PARSONS

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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	67	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE I

SHEET 1 OF 5

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

LIMIT OF WORK
STA 800+76.90
N 3,071,453.853
E 677,810.751

SHERBURNE AVENUE

STA 312+50 RELOCATED PAWTUCKET BLVD. ℄=
STA 400+00 OLD PAWTUCKET BLVD. ℄

MAINTAIN EXISTING TEMPORARY TRAFFIC SIGNAL

TEMPORARY PRECAST CONC. BARRIER

TEMPORARY IMPACT ATTENUATOR

LIMIT OF WORK
STA 311+15.00
N 3,071,377.238
E 677,633.043

MERRIMACK RIVER

TYNGSBOROUGH BRIDGE

BRIDGE No. T-09-001

TEMP. TYNGSBOROUGH BRIDGE

BRIDGE No. T-09-001I

MAINTAIN EXISTING TRAFFIC SIGNAL AND TRAFFIC PATTERNS DURING THIS PHASE

STA 402+70 OLD PAWT. BLVD. ℄=
STA 900+00 OLD PAWTUCKET DRIVE ℄

OLD PAWTUCKET DRIVE (PUBLIC)

OLD PAWTUCKET BLVD. (PUBLIC)

LIMIT OF WORK
STA 404+00
N 3,070,964.523
E 677,771.324

PHASE I

1. INSTALL TEMPORARY PRECAST CONCRETE BARRIERS MAINTAINING CURRENT TRAFFIC PATTERN ON EXISTING ROADS.
2. CONSTRUCT FUTURE ROADWAYS SHOWN AS
3. CONSTRUCT TEMPORARY WIDENING OF EXISTING ROADWAY SHOWN AS
4. INSTALL PARTIAL PROPOSED TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET BOULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52).

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PARSONS

File Name: P:\Massdigmaps\45488c_Tyngsborough\cosd\drawings\CO67_TMPP1-1.dwg
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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	68	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE I

SHEET 2 OF 5

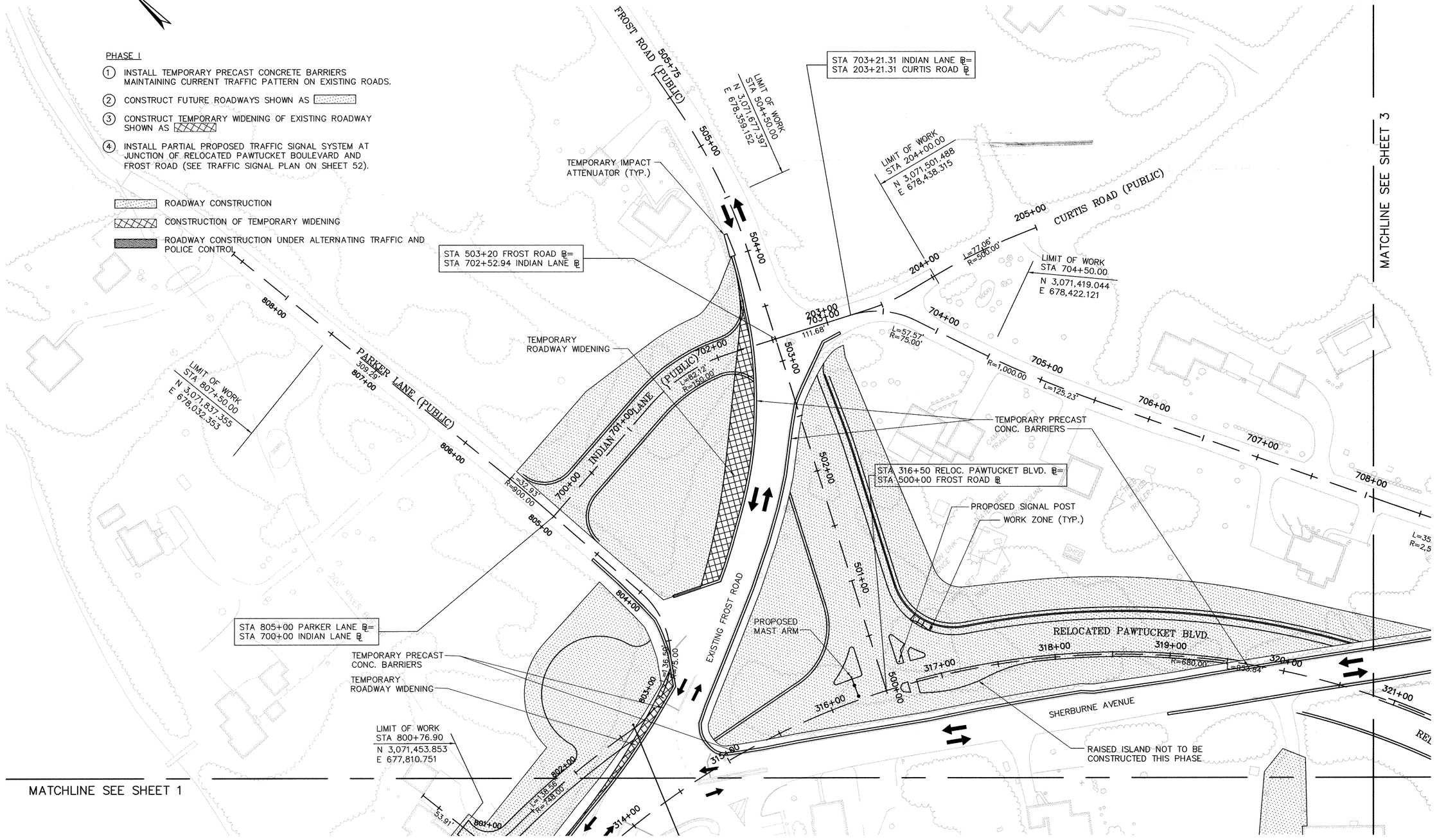
PHASE I

1. INSTALL TEMPORARY PRECAST CONCRETE BARRIERS MAINTAINING CURRENT TRAFFIC PATTERN ON EXISTING ROADS.
2. CONSTRUCT FUTURE ROADWAYS SHOWN AS
3. CONSTRUCT TEMPORARY WIDENING OF EXISTING ROADWAY SHOWN AS
4. INSTALL PARTIAL PROPOSED TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET BOULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52).

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PARSONS

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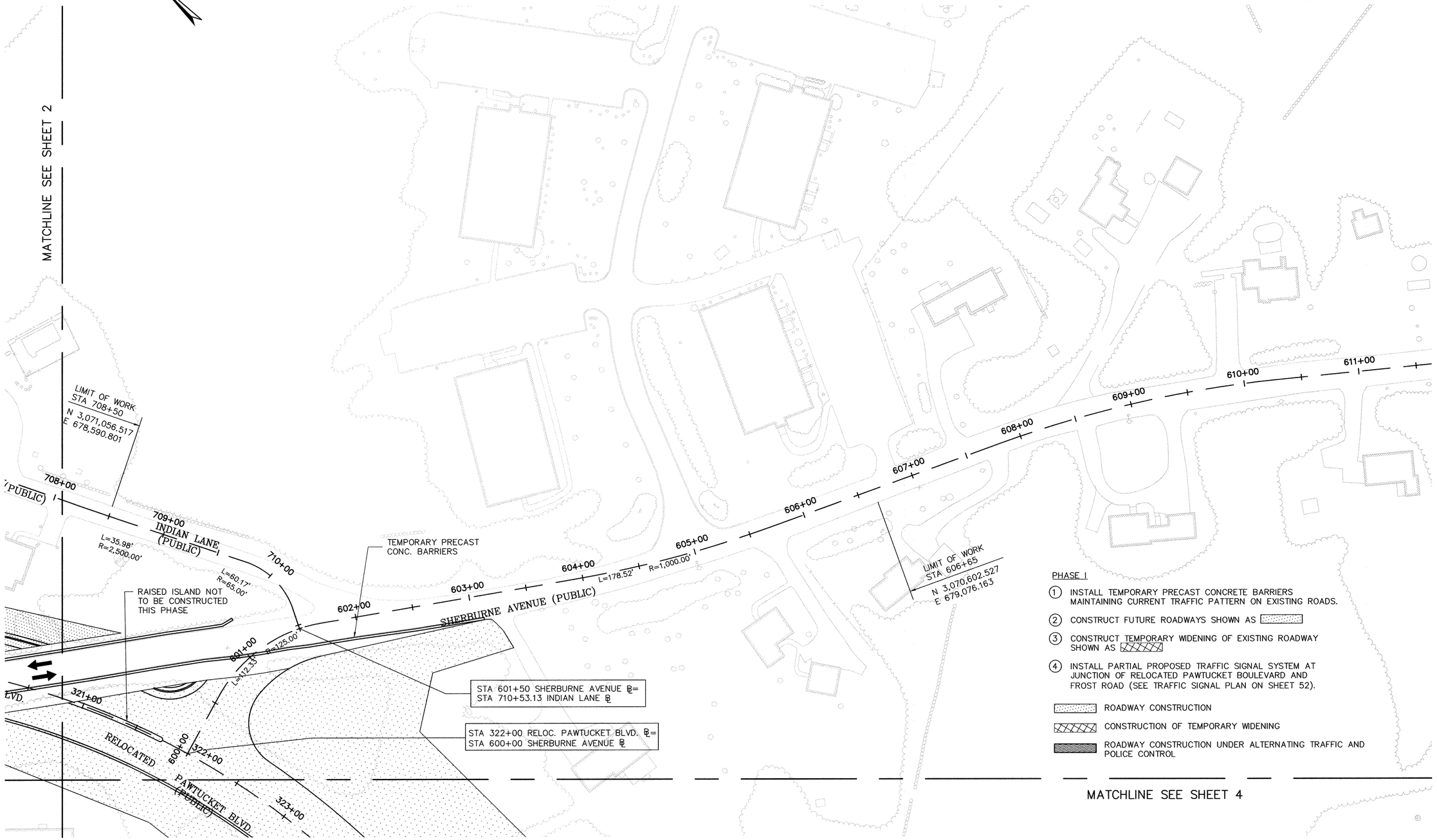
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	69	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE I

SHEET 3 OF 5



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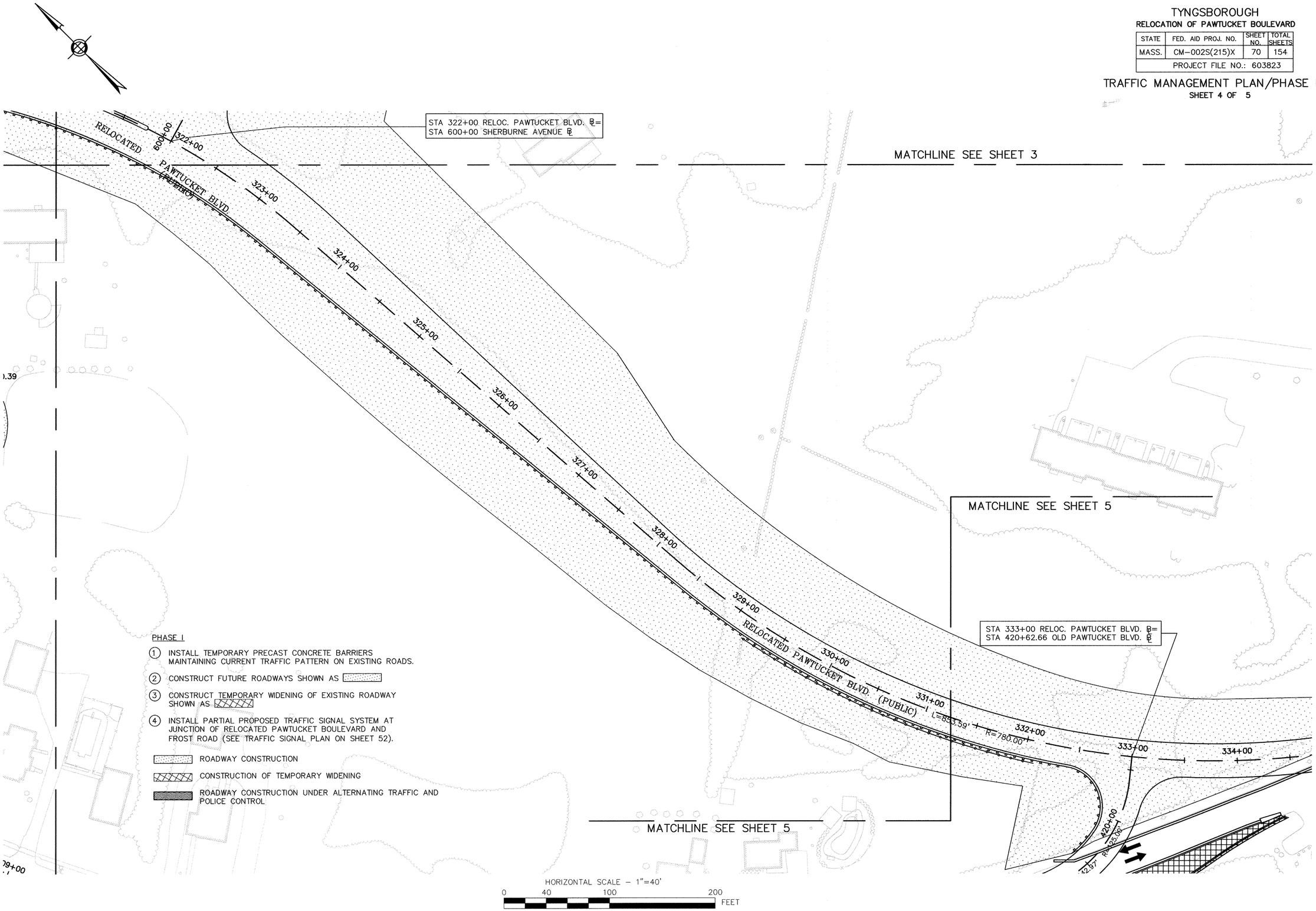
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	70	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE I
SHEET 4 OF 5



PHASE I

1. INSTALL TEMPORARY PRECAST CONCRETE BARRIERS MAINTAINING CURRENT TRAFFIC PATTERN ON EXISTING ROADS.
2. CONSTRUCT FUTURE ROADWAYS SHOWN AS
3. CONSTRUCT TEMPORARY WIDENING OF EXISTING ROADWAY SHOWN AS
4. INSTALL PARTIAL PROPOSED TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET BOULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52).

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

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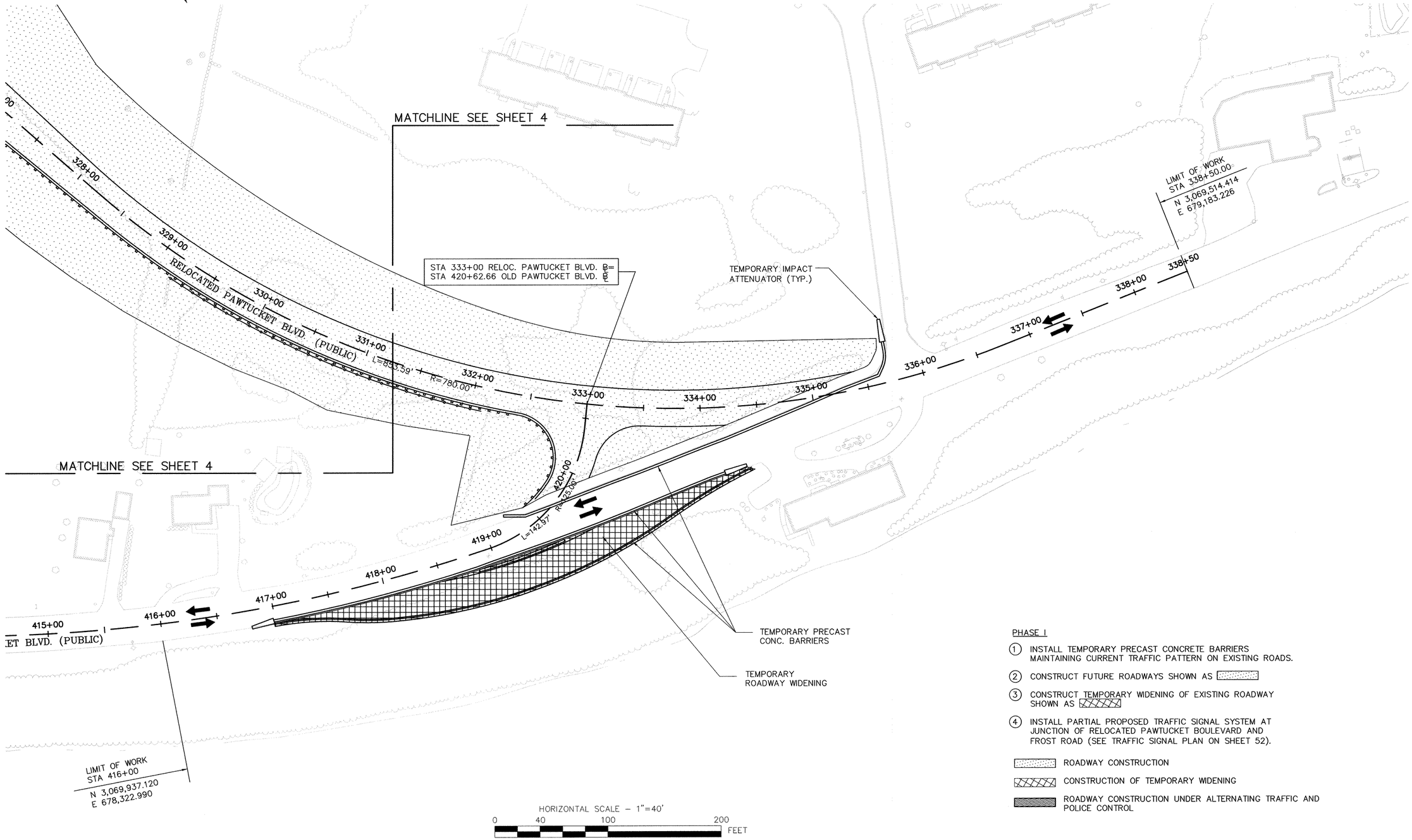
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	71	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE I

SHEET 5 OF 5



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PHASE I

1. INSTALL TEMPORARY PRECAST CONCRETE BARRIERS MAINTAINING CURRENT TRAFFIC PATTERN ON EXISTING ROADS.
2. CONSTRUCT FUTURE ROADWAYS SHOWN AS
3. CONSTRUCT TEMPORARY WIDENING OF EXISTING ROADWAY SHOWN AS
4. INSTALL PARTIAL PROPOSED TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET BOULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52).

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	72	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE II

SHEET 1 OF 5

LIMIT OF WORK
STA 800+76.90
N 3,071,453.853
E 677,810.751

STA 312+50 RELOCATED PAWTUCKET BLVD. ℄=
STA 400+00 OLD PAWTUCKET BLVD. ℄

LIMIT OF WORK
STA 311+15.00
N 3,071,377.238
E 677,633.043

STA 402+70 OLD PAWTUCKET BLVD. ℄=
STA 900+00 OLD PAWTUCKET DRIVEWAY ℄

LIMIT OF WORK
STA 404+00
N 3,070,964.523
E 677,771.324

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

EXISTING SHERBURNE AVE.

SHERBURNE AVE.

EXISTING FROST RD

WORK ZONE (TYP.)

REMOVE EXISTING TEMPORARY TRAFFIC SIGNAL

TEMPORARY IMPACT ATTENUATOR (TYP.)

TEMP. PAINTED SL

TEMP. PAINTED DYCL

TEMPORARY PRECAST CONC. BARRIERS (TYP.)

MAINTAIN EXISTING TRAFFIC SIGNAL AND TRAFFIC PATTERNS

TEMP. TYNGSBOROUGH BRIDGE

TYNGSBOROUGH BRIDGE

MERRIMACK RIVER

OLD PAWTUCKET DRIVE (PUBLIC)

OLD PAWTUCKET BLVD. (PUBLIC)

L=37.90'
R=26.00'

L=138.56'
R=748.00'

L=134.31'
R=1,000.00'

L=218.77'
R=270.00'

L=1561.08'
R=1452.10'

53.91'

S84°22'55"E

390.44'

90.44'

801+00 802+00 311+00 310+00 312+00 313+00 314+00 315+00 400+00 401+00 402+00 900+00 901+00 902+00 903+00 904+00 905+00 905+50.39 403+00 404+00 405+00 406+00 407+00 408+00 409+00 410

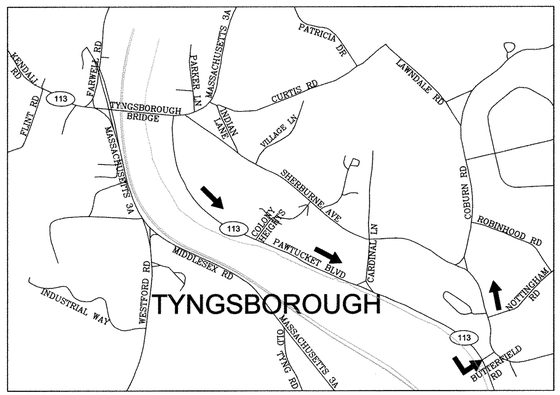
PHASE II (DURATION 2 MONTHS MAXIMUM)

1. MAKE INDIAN LANE ONE WAY HEADING NORTHERLY, DETOUR WESTBOUND SHERBURNE AVENUE TRAFFIC TO INDIAN LANE. DETOUR EASTBOUND SHERBURNE AVENUE & INDIAN LANE VIA OLD PAWTUCKET BOULEVARD TO BUTTERFIELD RD CONNECTOR (SEE INSET).
2. CONSTRUCT PORTION OF RELOCATED PAWTUCKET BOULEVARD AT CROSSING OF EXISTING SHERBURNE AVENUE AND AT JUNCTION OF EXISTING FROST ROAD TO BASE COURSE LEVEL.
3. COMPLETE INSTALLATION OF TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET COULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52). COVER SIGNAL HEADS.

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL



INSET
NTS

HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PARSONS

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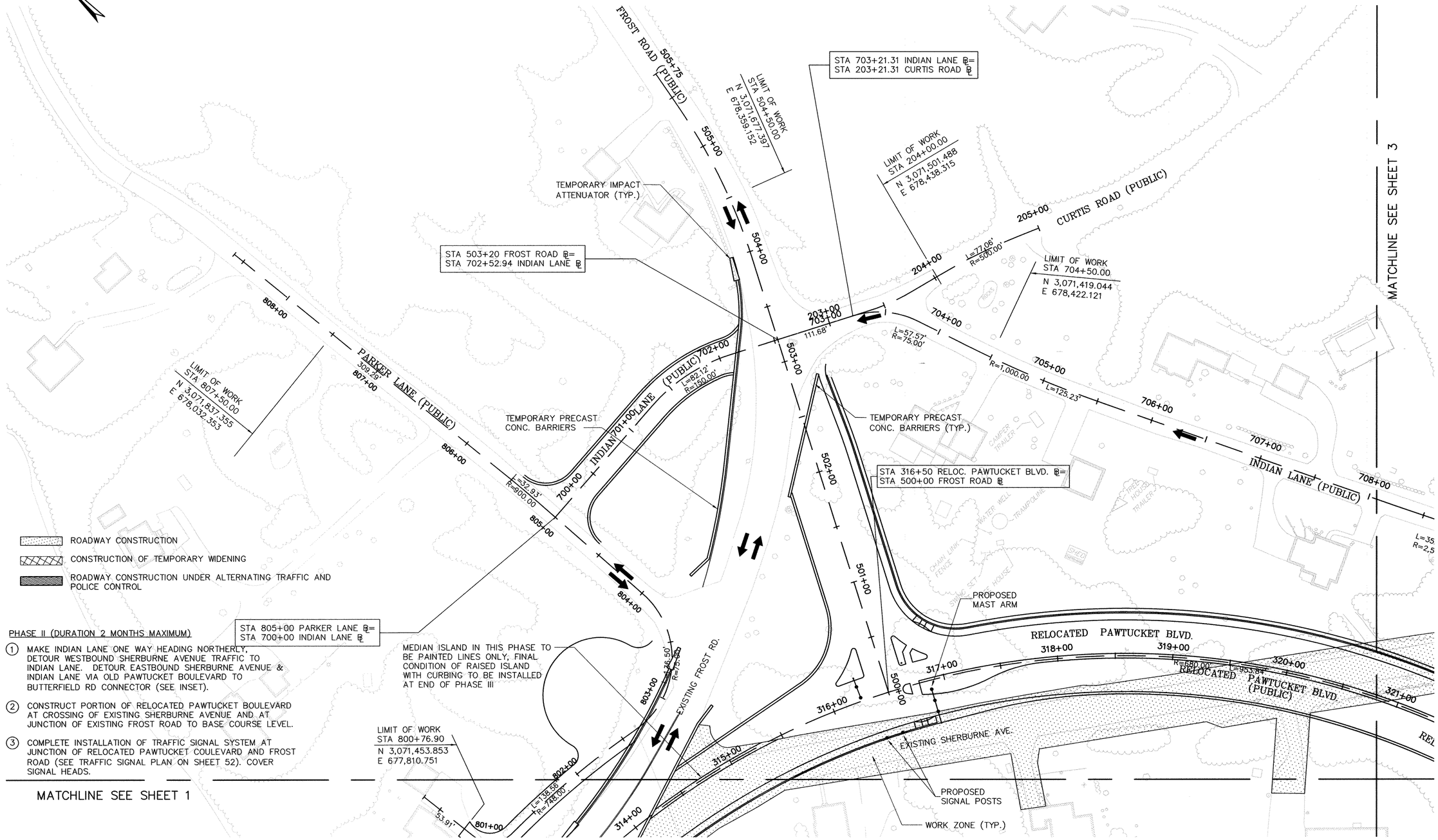
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	73	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE II

SHEET 2 OF 5



PHASE II (DURATION 2 MONTHS MAXIMUM)

1. MAKE INDIAN LANE ONE WAY HEADING NORTHERLY, DETOUR WESTBOUND SHERBURNE AVENUE TRAFFIC TO INDIAN LANE. DETOUR EASTBOUND SHERBURNE AVENUE & INDIAN LANE VIA OLD PAWTUCKET BOULEVARD TO BUTTERFIELD RD CONNECTOR (SEE INSET).
2. CONSTRUCT PORTION OF RELOCATED PAWTUCKET BOULEVARD AT CROSSING OF EXISTING SHERBURNE AVENUE AND AT JUNCTION OF EXISTING FROST ROAD TO BASE COURSE LEVEL.
3. COMPLETE INSTALLATION OF TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET COULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52). COVER SIGNAL HEADS.

PARSONS

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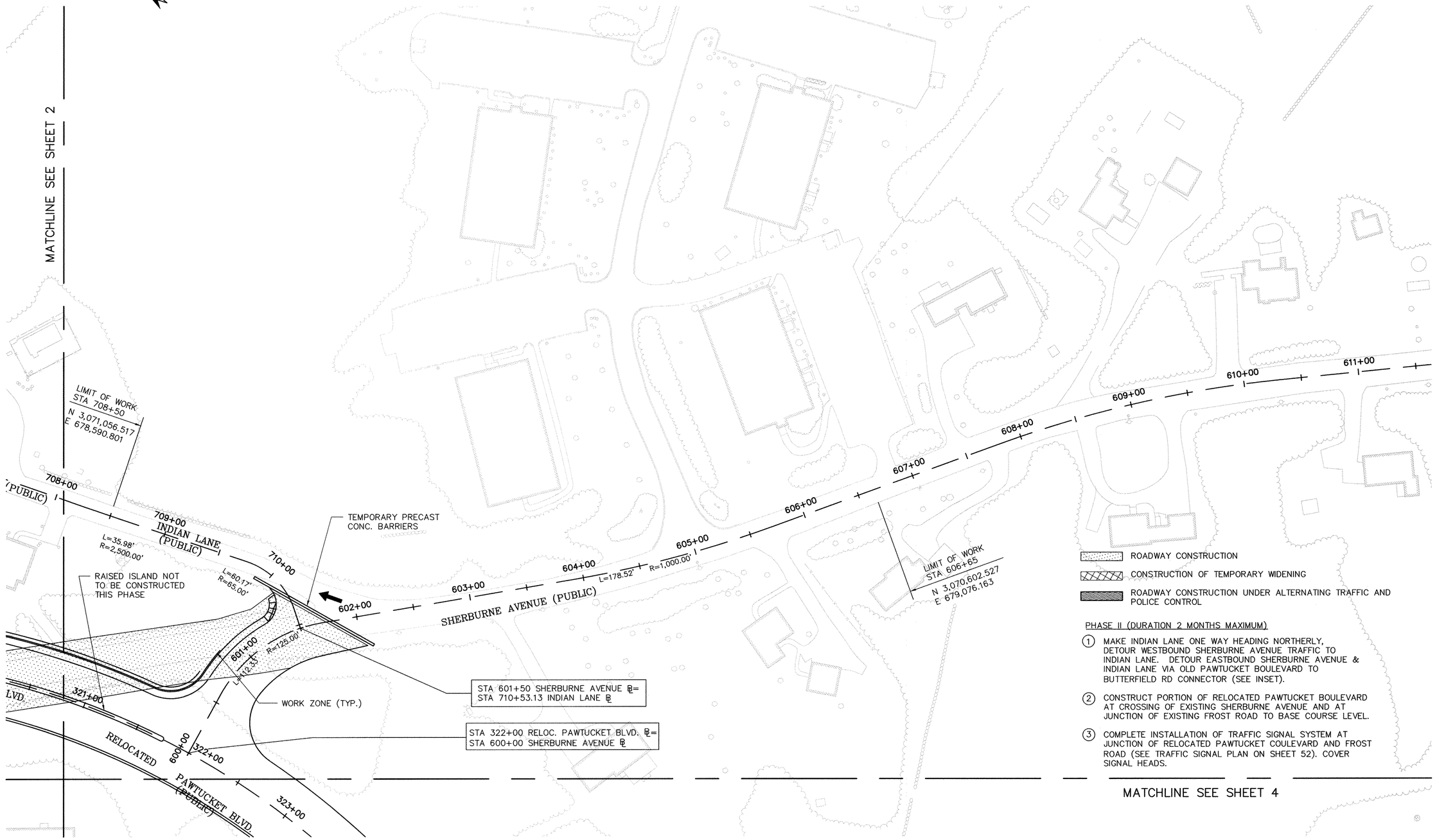
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	74	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE II

SHEET 3 OF 5



PHASE II (DURATION 2 MONTHS MAXIMUM)

1. MAKE INDIAN LANE ONE WAY HEADING NORTHERLY, DETOUR WESTBOUND SHERBURNE AVENUE TRAFFIC TO INDIAN LANE. DETOUR EASTBOUND SHERBURNE AVENUE & INDIAN LANE VIA OLD PAWTUCKET BOULEVARD TO BUTTERFIELD RD CONNECTOR (SEE INSET).
2. CONSTRUCT PORTION OF RELOCATED PAWTUCKET BOULEVARD AT CROSSING OF EXISTING SHERBURNE AVENUE AND AT JUNCTION OF EXISTING FROST ROAD TO BASE COURSE LEVEL.
3. COMPLETE INSTALLATION OF TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET COULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52). COVER SIGNAL HEADS.

MATCHLINE SEE SHEET 4

HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PARSONS

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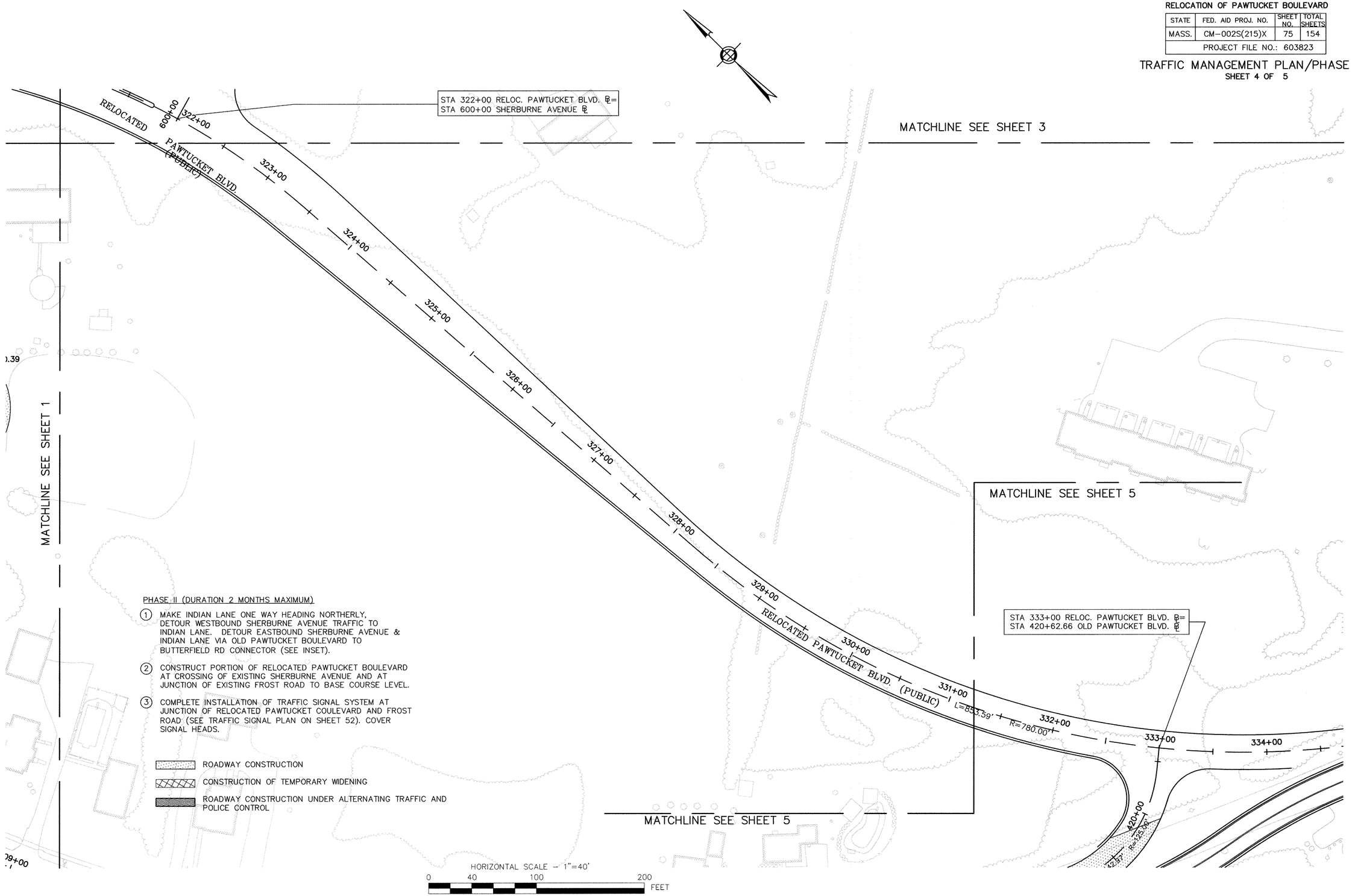
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	75	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE II
SHEET 4 OF 5



PHASE II (DURATION 2 MONTHS MAXIMUM)

1. MAKE INDIAN LANE ONE WAY HEADING NORTHERLY, DETOUR WESTBOUND SHERBURNE AVENUE TRAFFIC TO INDIAN LANE. DETOUR EASTBOUND SHERBURNE AVENUE & INDIAN LANE VIA OLD PAWTUCKET BOULEVARD TO BUTTERFIELD RD CONNECTOR (SEE INSET).
2. CONSTRUCT PORTION OF RELOCATED PAWTUCKET BOULEVARD AT CROSSING OF EXISTING SHERBURNE AVENUE AND AT JUNCTION OF EXISTING FROST ROAD TO BASE COURSE LEVEL.
3. COMPLETE INSTALLATION OF TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET COULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52). COVER SIGNAL HEADS.

ROADWAY CONSTRUCTION
CONSTRUCTION OF TEMPORARY WIDENING
ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

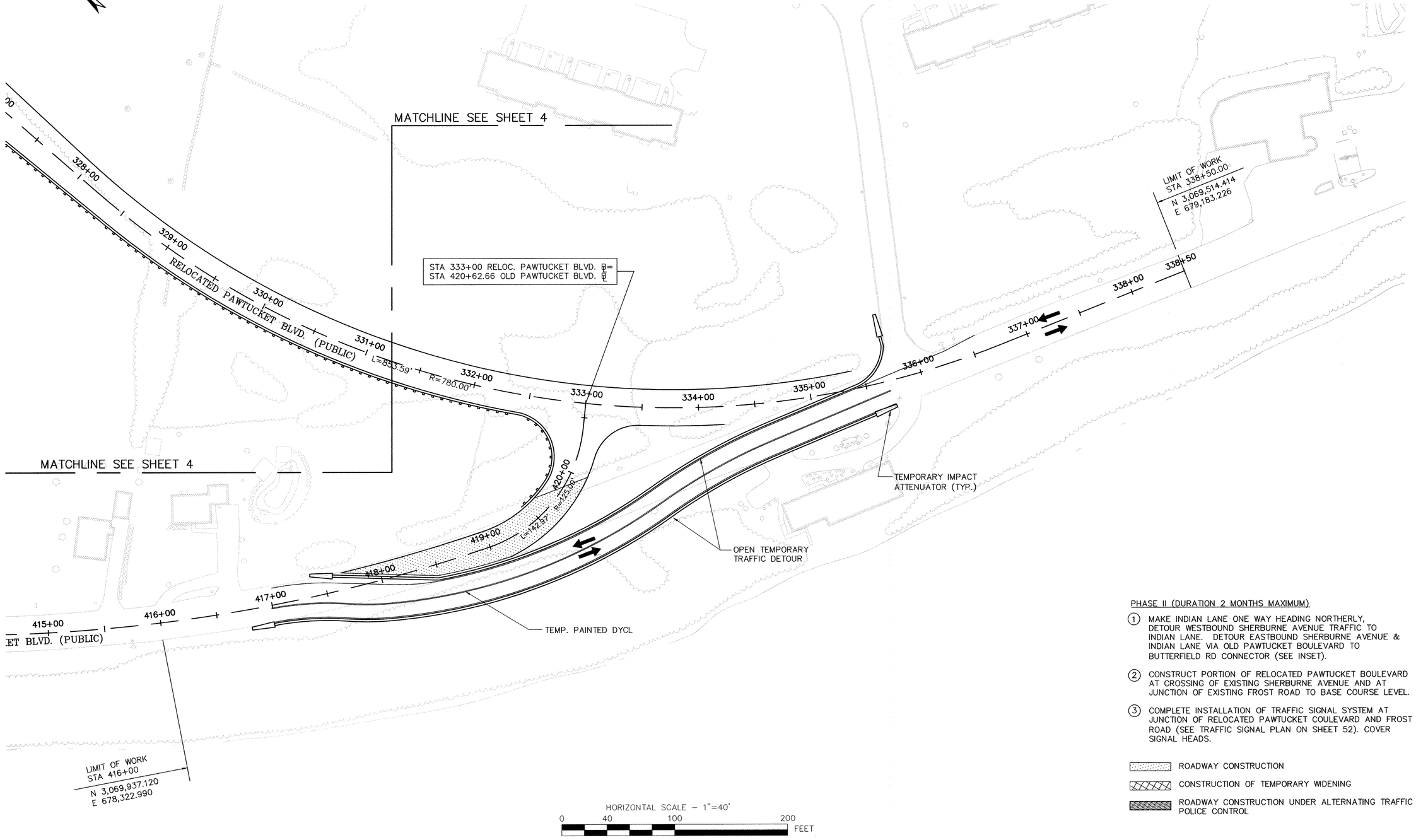
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	76	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE II

SHEET 5 OF 5



HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PHASE II (DURATION 2 MONTHS MAXIMUM)

1. MAKE INDIAN LANE ONE WAY HEADING NORTHERLY, DETOUR WESTBOUND SHERBURNE AVENUE TRAFFIC TO INDIAN LANE. DETOUR EASTBOUND SHERBURNE AVENUE & INDIAN LANE VIA OLD PAWTUCKET BOULEVARD TO BUTTERFIELD RD CONNECTOR (SEE INSET).
2. CONSTRUCT PORTION OF RELOCATED PAWTUCKET BOULEVARD AT CROSSING OF EXISTING SHERBURNE AVENUE AND AT JUNCTION OF EXISTING FROST ROAD TO BASE COURSE LEVEL.
3. COMPLETE INSTALLATION OF TRAFFIC SIGNAL SYSTEM AT JUNCTION OF RELOCATED PAWTUCKET COULEVARD AND FROST ROAD (SEE TRAFFIC SIGNAL PLAN ON SHEET 52). COVER SIGNAL HEADS.

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

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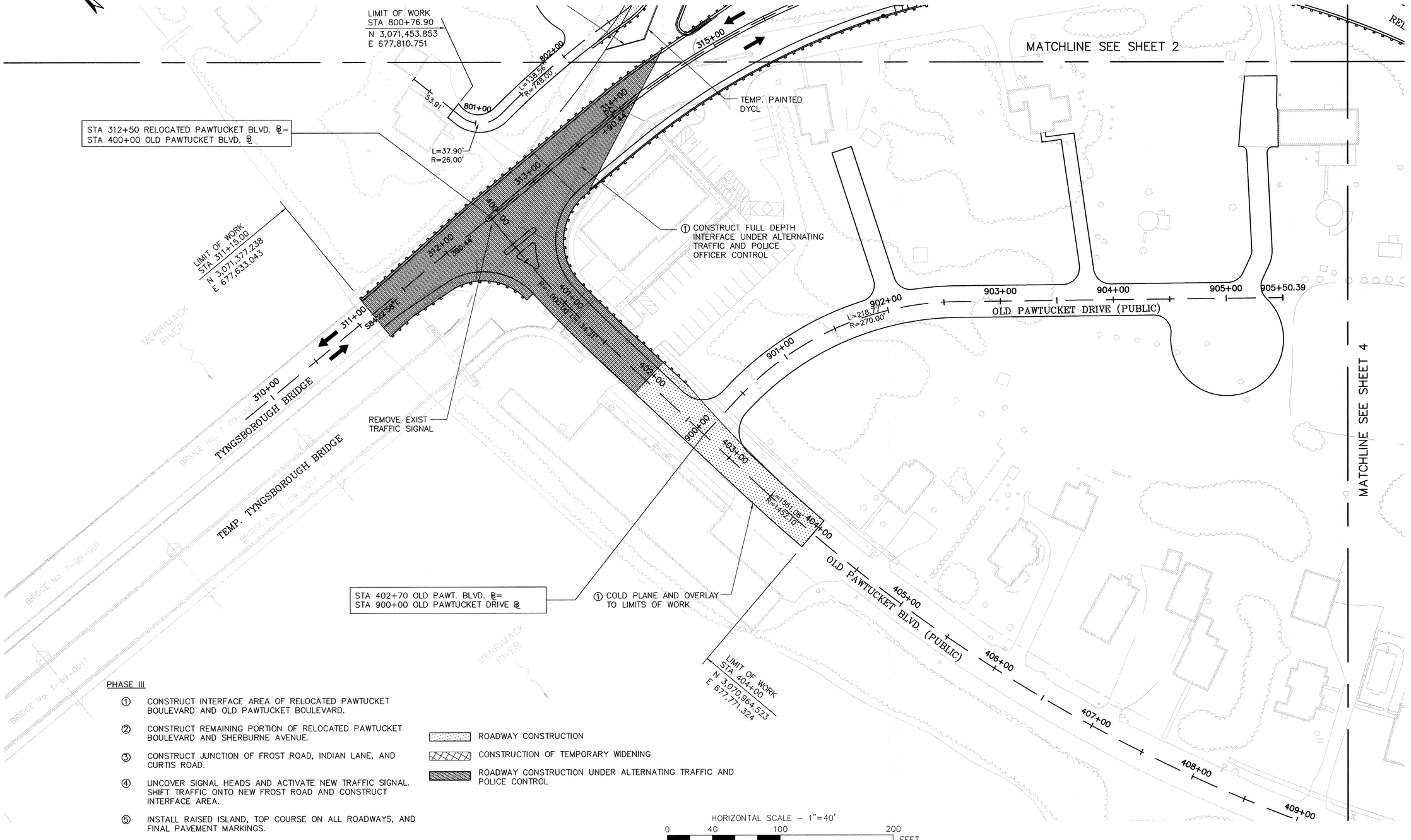
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	77	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE III

SHEET 1 OF 5



PHASE III

① CONSTRUCT INTERFACE AREA OF RELOCATED PAWTUCKET BOULEVARD AND OLD PAWTUCKET BOULEVARD.

② CONSTRUCT REMAINING PORTION OF RELOCATED PAWTUCKET BOULEVARD AND SHERBURNE AVENUE.

③ CONSTRUCT JUNCTION OF FROST ROAD, INDIAN LANE, AND CURTIS ROAD.

④ UNCOVER SIGNAL HEADS AND ACTIVATE NEW TRAFFIC SIGNAL. SHIFT TRAFFIC ONTO NEW FROST ROAD AND CONSTRUCT INTERFACE AREA.

⑤ INSTALL RAISED ISLAND, TOP COURSE ON ALL ROADWAYS, AND FINAL PAVEMENT MARKINGS.

⑥ REMOVE TEMPORARY WIDENING AND RESTORE WITH LOAM AND SEED

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

HORIZONTAL SCALE – 1"=40'

0 40 100 200 FEET

PARSONS

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TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	78	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE III

SHEET 2 OF 5

PHASE III

① CONSTRUCT INTERFACE AREA OF RELOCATED PAWTUCKET BOULEVARD AND OLD PAWTUCKET BOULEVARD.

② CONSTRUCT REMAINING PORTION OF RELOCATED PAWTUCKET BOULEVARD AND SHERBURNE AVENUE.

③ CONSTRUCT JUNCTION OF FROST ROAD, INDIAN LANE, AND CURTIS ROAD.

④ UNCOVER SIGNAL HEADS AND ACTIVATE NEW TRAFFIC SIGNAL. SHIFT TRAFFIC ONTO NEW FROST ROAD AND CONSTRUCT INTERFACE AREA.

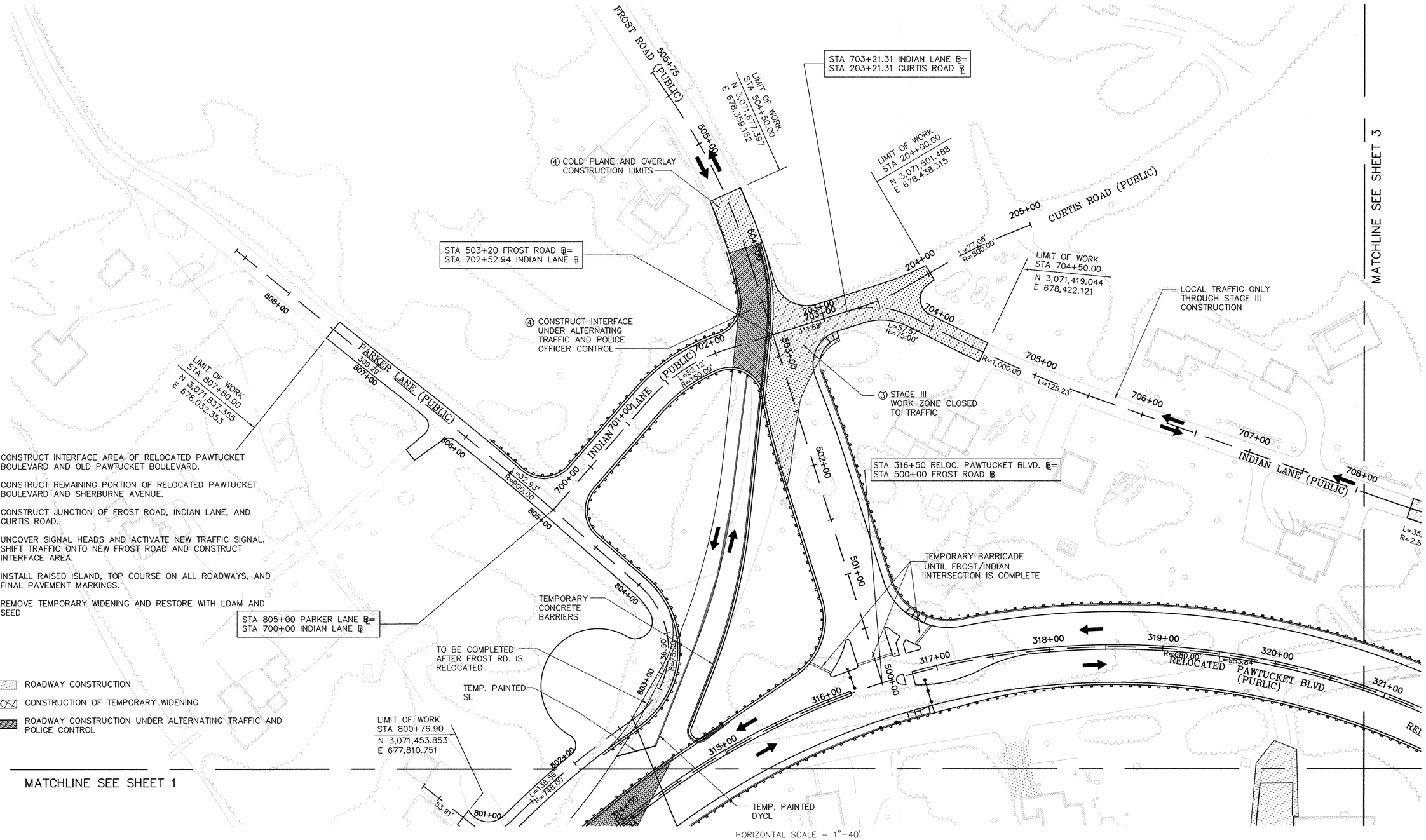
⑤ INSTALL RAISED ISLAND, TOP COURSE ON ALL ROADWAYS, AND FINAL PAVEMENT MARKINGS.

⑥ REMOVE TEMPORARY WIDENING AND RESTORE WITH LOAM AND SEED

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL



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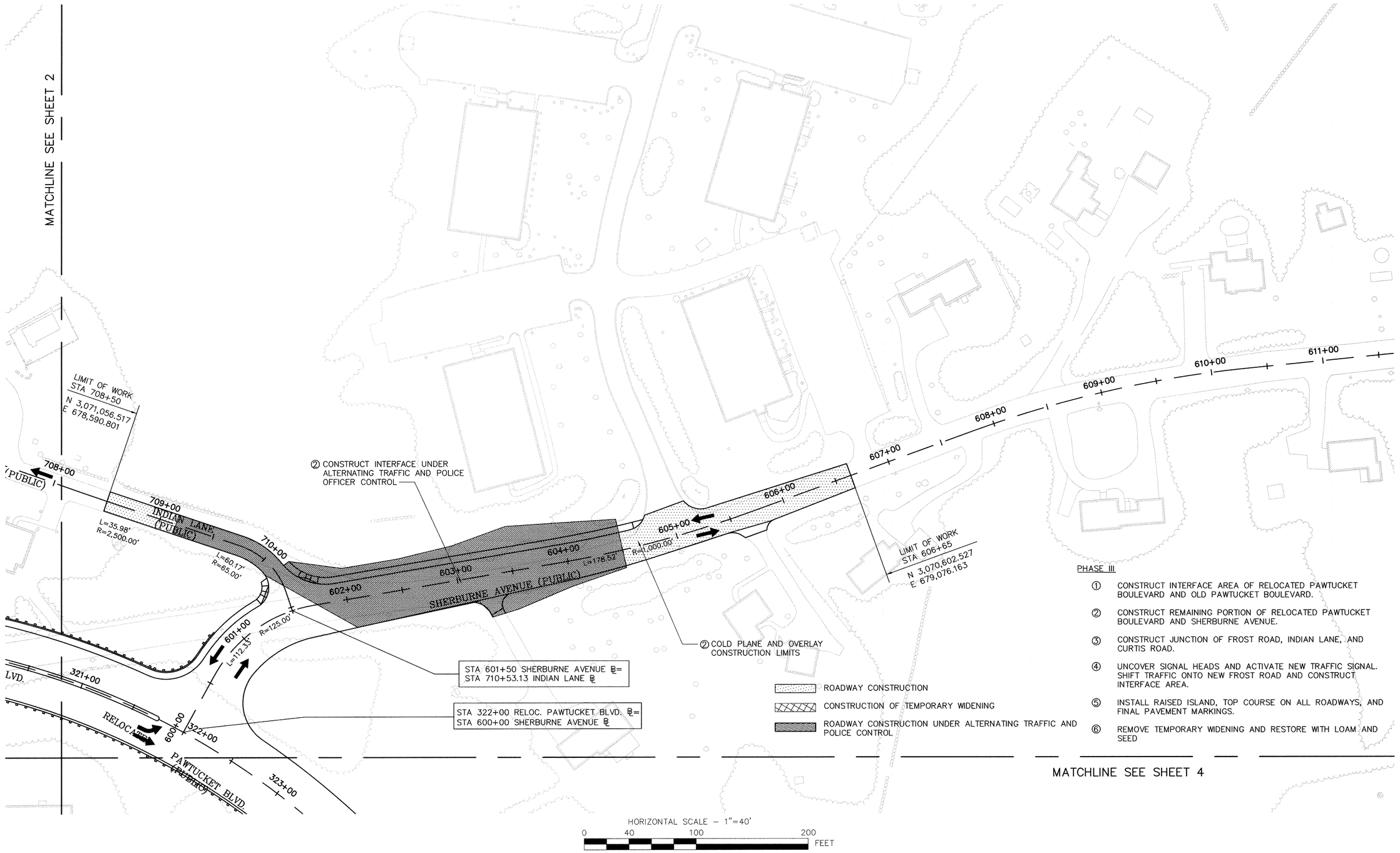
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	79	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE III

SHEET 3 OF 5



PHASE III

① CONSTRUCT INTERFACE AREA OF RELOCATED PAWTUCKET BOULEVARD AND OLD PAWTUCKET BOULEVARD.

② CONSTRUCT REMAINING PORTION OF RELOCATED PAWTUCKET BOULEVARD AND SHERBURNE AVENUE.

③ CONSTRUCT JUNCTION OF FROST ROAD, INDIAN LANE, AND CURTIS ROAD.

④ UNCOVER SIGNAL HEADS AND ACTIVATE NEW TRAFFIC SIGNAL. SHIFT TRAFFIC ONTO NEW FROST ROAD AND CONSTRUCT INTERFACE AREA.

⑤ INSTALL RAISED ISLAND, TOP COURSE ON ALL ROADWAYS, AND FINAL PAVEMENT MARKINGS.

⑥ REMOVE TEMPORARY WIDENING AND RESTORE WITH LOAM AND SEED

PARSONS

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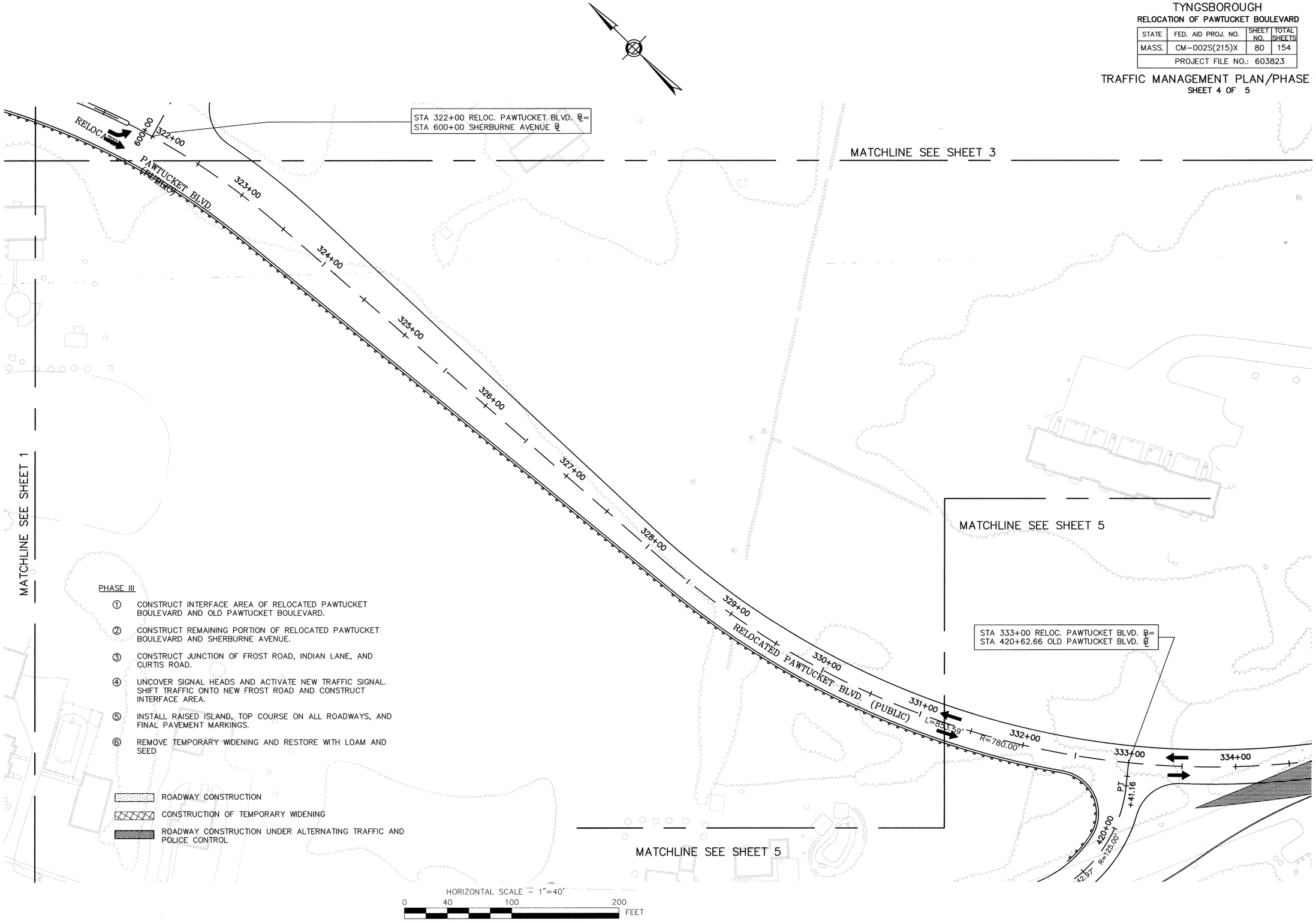
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	80	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE III
SHEET 4 OF 5



PHASE III

① CONSTRUCT INTERFACE AREA OF RELOCATED PAWTUCKET BOULEVARD AND OLD PAWTUCKET BOULEVARD.

② CONSTRUCT REMAINING PORTION OF RELOCATED PAWTUCKET BOULEVARD AND SHERBURNE AVENUE.

③ CONSTRUCT JUNCTION OF FROST ROAD, INDIAN LANE, AND CURTIS ROAD.

④ UNCOVER SIGNAL HEADS AND ACTIVATE NEW TRAFFIC SIGNAL. SHIFT TRAFFIC ONTO NEW FROST ROAD AND CONSTRUCT INTERFACE AREA.

⑤ INSTALL RAISED ISLAND, TOP COURSE ON ALL ROADWAYS, AND FINAL PAVEMENT MARKINGS.

⑥ REMOVE TEMPORARY WIDENING AND RESTORE WITH LOAM AND SEED

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

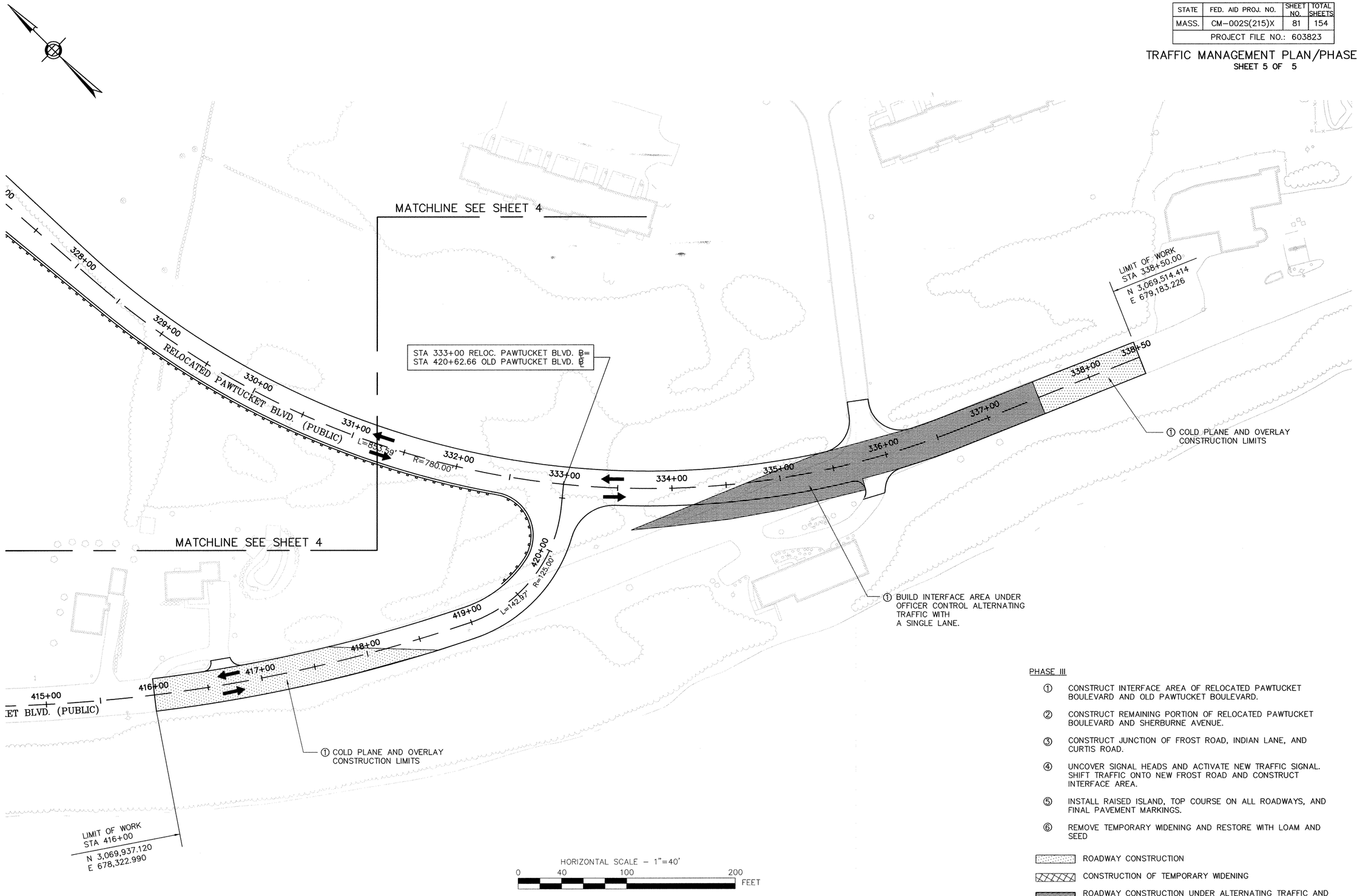
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	81	154
PROJECT FILE NO.: 603823			

TRAFFIC MANAGEMENT PLAN/PHASE III

SHEET 5 OF 5



PHASE III

① CONSTRUCT INTERFACE AREA OF RELOCATED PAWTUCKET BOULEVARD AND OLD PAWTUCKET BOULEVARD.

② CONSTRUCT REMAINING PORTION OF RELOCATED PAWTUCKET BOULEVARD AND SHERBURNE AVENUE.

③ CONSTRUCT JUNCTION OF FROST ROAD, INDIAN LANE, AND CURTIS ROAD.

④ UNCOVER SIGNAL HEADS AND ACTIVATE NEW TRAFFIC SIGNAL. SHIFT TRAFFIC ONTO NEW FROST ROAD AND CONSTRUCT INTERFACE AREA.

⑤ INSTALL RAISED ISLAND, TOP COURSE ON ALL ROADWAYS, AND FINAL PAVEMENT MARKINGS.

⑥ REMOVE TEMPORARY WIDENING AND RESTORE WITH LOAM AND SEED

ROADWAY CONSTRUCTION

CONSTRUCTION OF TEMPORARY WIDENING

ROADWAY CONSTRUCTION UNDER ALTERNATING TRAFFIC AND POLICE CONTROL

PARSONS

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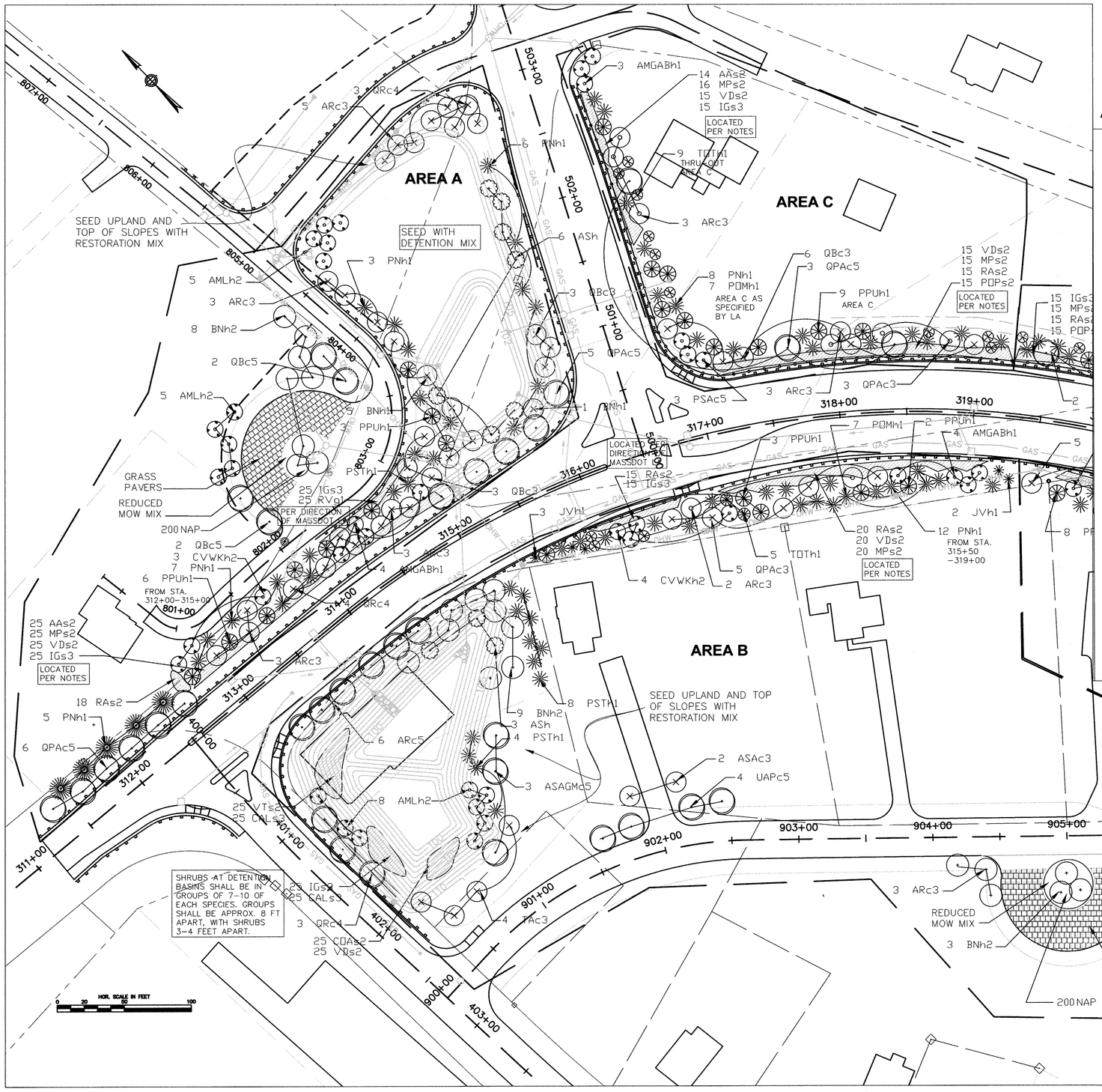
TYNGSBOROUGH
PAWTUCKET BOULEVARD

FHWA DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1	MASS.	CM-002S(215)X	82	154
PROJECT FILE NO. 603823				

LANDSCAPE PLAN – 1

AREAS A, B & C



PLANT LIST - Areas A, B & C

EVERGREEN TREES

SYM	QTY	BOTANICAL NAME	COMMON NAME	SIZE
JVHI	5	JUNIPERUS VIRGINIANA	CEDAR - EASTERN RED	5-6 FT
POMHI	14	PICEA OMORIKA	SPRUCE - SERBIAN	5-6 FT
PPUHI	23	PICEA PUNGENS	SPRUCE - COLORADO GREEN	5-6 FT
PNHI	39	PINUS NIGRA	PINE - AUSTRIAN	5-6 FT
PSTHI	18	PINUS STROBUS	PINE - WHITE	5-6 FT
TOTHI	14	THUJA OCCIDENTALIS 'TECHNY'	ARBORVITAE 'TECHNY'	5-6 FT

DECIDUOUS TREES

ARc5	6	ACER RUBRUM	MAPLE - RED	2-2.5 IN CAL
ARc3	25	ACER RUBRUM	MAPLE - RED	1-1.5 IN CAL
ASH	10	ACER SACCHARINUM	MAPLE - SILVER	4-5 FT
ASAc3	2	ACER SACCHARUM	MAPLE - SUGAR	1-1.5 IN CAL
ASAGMc5	3	ACER SACCHARUM 'GREEN MTN'	MAPLE - SUGAR 'GREEN MOUNTAIN'	2-2.5 IN CAL
AMGABHI	11	AMEL. GRAND. 'AUTUMN BRILL.'	SERVICEBERRY 'AUTUMN BRILLIANCE'	5-6 FT
AMLH2	18	AMELANCHIER LAEVIS	SERVICEBERRY - ALLEGHENY	6-8 FT
BNH2	23	BETULA NIGRA	BIRCH - RIVER	6-8 FT
BNHI	6	BETULA NIGRA	BIRCH - RIVER	5-6 FT
CVWKH2	7	CRATAEGUS VIRIDIS 'WINTER KING'	HAWTHORN - 'WINTER KING'	6-8 FT
PSAc5	3	PRUNUS SUBHIRTELLA 'AUTUMNALIS'	CHERRY - AUTUMN FLOWERING	2-2.5 IN CAL
QBc3	14	QUERCUS BICOLOR	OAK - SWAMP WHITE	1-1.5 IN CAL
QBc5	4	QUERCUS BICOLOR	OAK - SWAMP WHITE	2-2.5 IN CAL
QPAc5	14	QUERCUS PALUSTRIS	OAK - PIN	2-2.5 IN CAL
QPAc3	8	QUERCUS PALUSTRIS	OAK - PIN	1-1.5 IN CAL
QRc4	10	QUERCUS RUBRA	OAK - NORTHERN RED	1.5-2 IN CAL
TAc3	4	TILLIA AMERICANA	LINDEN - AMERICAN	1-1.5 IN CAL
UAPc5	4	ULMUS AMERICANA 'PRINCETON'	ELM - AMERICAN 'PRINCETON'	2-2.5 IN CAL

SHRUBS

IGs3	105	ILEX GLABRA	INKBERRY	2-3 FT
AAs2	39	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	2-2.5 FT
CALs3	50	CLETHRA ALNIFOLIA	SUMMERSWEET	2-3 FT
COAs2	25	CORNUS AMOMUM	DOGWOOD - SILKY	2-2.5 FT
MPs2	76	MYRICA PENSYLVANICA	BAYBERRY - NORTHERN	2-2.5 FT
POPs2	15	PHYSOCARPUS OPULIFOLIUS	EASTERN NINEBARK	2-2.5 FT
RAs2	68	RHUS AROMATICA	SUMAC SHRUB - FRAGRANT	2-2.5 FT
RVGI	25	ROSA VIRGINIANA	ROSE - VIRGINIA	1 GALLON
VDs2	100	VIBURNUM DENTATUM	VIBURNUM - ARROWWOOD	2-2.5 FT
VTs2	25	VIBURNUM TRILOBUM	VIBURNUM - HIGHBUSH CRANBERRY	2-2.5 FT
NAP	400	NARCISSUS POETICUS	NARCISSUS - POET'S	TOP

PLANTING NOTES:

PROPOSED LOCATIONS ARE APPROXIMATE AND MAY BE CHANGED TO ACCOMMODATE ACTUAL CONDITIONS. FINAL LOCATIONS SHALL BE AS DIRECTED BY THE MASSDOT LANDSCAPE ARCHITECT IN COORDINATION WITH THE ENGINEER, PRIOR TO INSTALLATION. AVOID PLANTING UNDER UTILITY LINES.

ALL PLANT SUBSTITUTIONS MUST BE APPROVED BY MASSDOT LANDSCAPE ARCHITECT.

SHRUBS LOCATED ALONG THE ROADWAYS SHALL BE LOCATED A MINIMUM OF 6 FEET FROM SIDEWALK OR ROADWAY. SHRUBS SHALL BE ARRANGED NATURALISTICALLY THROUGHOUT AREAS, IN CLUSTERS OF 3–15, OR AS DIRECTED, TO PROVIDE SCREENING FOR THE NEIGHBORHOODS. SPACING BETWEEN SHRUBS WITHIN EACH GROUP SHALL BE 3–4 FEET APART.

NARCISSUS SHALL BE AS SPECIFIED (NARCISSUS POETICUS) AND SHALL BE PLANTED IN NATURALISTIC GROUPINGS OF 50 PER GROUP AND AS DIRECTED. BULBS SHALL BE SPACED .5 –1 FOOT APART, TOP SIDE UP.

SEEDING SHALL BE WITH THE MIXES SPECIFIED AND PER THE SPECIAL PROVISIONS. UNOPENED BAGS OF SEED ALONG WITH THE SEED CERTIFICATIONS MUST BE BROUGHT TO THE SITE FOR APPROVAL BY THE ENGINEER PRIOR TO SEEDING. CERTIFICATION MUST MATCH SPECIES AND PERCENTAGES LISTED IN SPECIAL PROVISIONS.

TYGNSBOROUGH
PAWTUCKET BOULEVARD

FHWA DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1	MASS.	CM-002S(215)X	83	154
PROJECT FILE NO. 603823				

LANDSCAPE PLAN – 2

AREAS D, E & F

PLANT LIST - Areas D, E & F

EVERGREEN TREES

SYM	QTY	BOTANICAL NAME	COMMON NAME	SIZE
JVHl	14	JUNIPERUS VIRGINIANA	CEDAR - EASTERN RED	5-6 FT
PGHl	14	PICEA GLAUCA	WHITE SPRUCE	5-6 FT
POMHl	18	PICEA OMORIKA	SPRUCE - SERBIAN	5-6 FT
PPUHl	17	PICEA PUNGENS	SPRUCE - COLORADO GREEN	5-6 FT
PNHl	30	PINUS NIGRA	PINE - AUSTRIAN	5-6 FT
PSTHl	27	PINUS STROBUS	PINE - WHITE	5-6 FT
TOTHl	9	THUJA OCCIDENTALIS 'TECHNY'	ARBORVITAE 'TECHNY'	5-6 FT

DECIDUOUS TREES

ARc3	23	ACER RUBRUM	MAPLE - RED	1-1.5 IN CAL
ARc5	3	ACER RUBRUM	MAPLE - RED	2-2.5 IN CAL
ASh	8	ACER SACCHARINUM	MAPLE - SILVER	4-5 FT
ASAc3	10	ACER SACCHARUM	MAPLE - SUGAR	1-1.5 IN CAL
AMLh2	27	AMELANCHIER LAEVIS	SERVICEBERRY - ALLEGHENY	6-8 FT
BNHl	10	BETULA NIGRA	BIRCH - RIVER	5-6 FT
BNh2	7	BETULA NIGRA	BIRCH - RIVER	6-8 FT
CVWKh2	11	CRATAEGUS VIRIDIS 'WINTER KING'	HAWTHORN - 'WINTER KING'	6-8 FT
PSAc5	5	PRUNUS SUBHIRTELLA 'AUTUMNALIS'	CHERRY - AUTUMN FLOWERING	2-2.5 IN CAL
QBc3	19	QUERCUS BICOLOR	OAK - SWAMP WHITE	1-1.5 IN CAL
QPAc3	4	QUERCUS PALUSTRIS	OAK - PIN	1-1.5 IN CAL
QPAc5	11	QUERCUS PALUSTRIS	OAK - PIN	2-2.5 IN CAL
QRc4	8	QUERCUS RUBRA	OAK - NORTHERN RED	1.5-2 IN CAL
TAc3	4	TILLIA AMERICANA	LINDEN - AMERICAN	1-1.5 IN CAL
UAPc5	3	ULMUS AMERICANA 'PRINCETON'	ELM - AMERICAN 'PRINCETON'	2-2.5 IN CAL

SHRUBS

IGs3	90	ILEX GLABRA	INKBERRY	2-3 FT
AAs2	30	ARONIA ARBUTIFOLIA	RED CHOKEBERRY	2-2.5 FT
AMs2	29	ARONIA MELANOCARPA	BLACK CHOKEBERRY	2-2.5 FT
CALs3	27	CLETHRA ALNIFOLIA	SUMMERSWEET	2-3 FT
IVs2	30	ILEX VERTICILATA	WINTERBERRY	2-2.5 FT
MPs2	61	MYRICA PENSYLVANICA	BAYBERRY - NORTHERN	2-2.5 FT
POPs2	45	PHYSOCARPUS OPULIFOLIUS	EASTERN NINEBARK	2-2.5 FT
RAs2	60	RHUS AROMATICA	SUMAC SHRUB - FRAGRANT	2-2.5 FT
RVgl	25	ROSA VIRGINIANA	ROSE - VIRGINIA	1 GALLON
VCs2	45	VACCINIUM CORYMBOSUM	BLUEBERRY - HIGHBUSH	2-2.5 FT
VDs2	15	VIBURNUM DENTATUM	VIBURNUM - ARROWWOOD	2-2.5 FT
VPs3	15	VIBURNUM PRUNIFOLIUM	VIBURNUM - BLACKHAW	2-3 FT
VTs2	27	VIBURNUM TRILOBUM	VIBURNUM - HIGHBUSH CRANBERRY	2-2.5 FT

PLANTING NOTES:

PROPOSED LOCATIONS ARE APPROXIMATE AND MAY BE CHANGED TO ACCOMMODATE ACTUAL CONDITIONS. FINAL LOCATIONS SHALL BE AS DIRECTED BY THE MASSDOT LANDSCAPE ARCHITECT IN COORDINATION WITH THE ENGINEER, PRIOR TO INSTALLATION. AVOID PLANTING UNDER UTILITY LINES.

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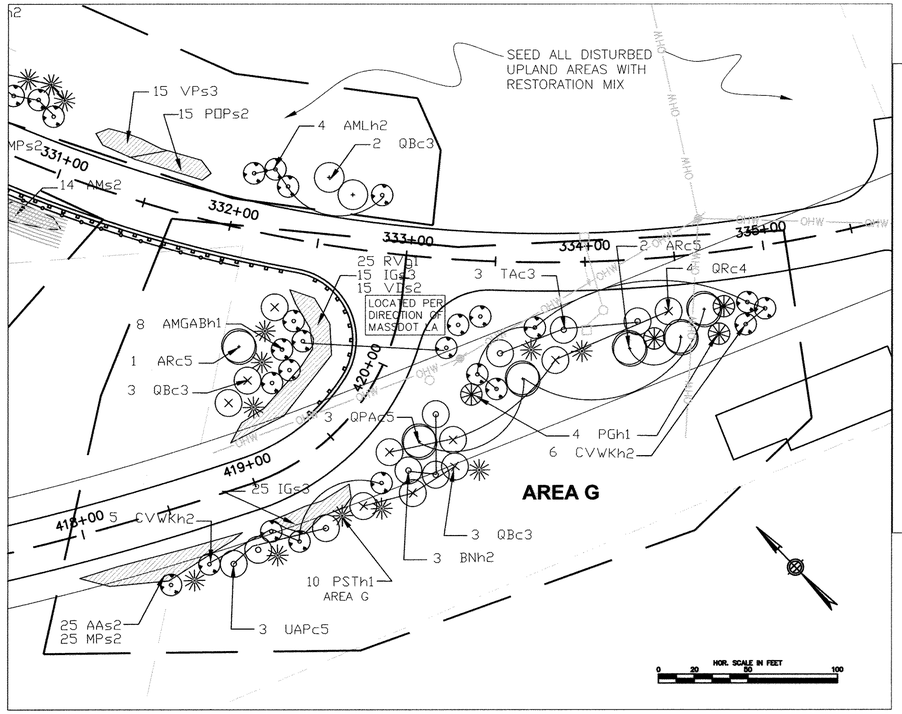
NARCISSUS SHALL BE AS SPECIFIED (NARCISSUS POETICUS) AND SHALL BE PLANTED IN NATURALISTIC GROUPINGS OF 50 PER GROUP AND AS DIRECTED. BULBS SHALL BE SPACED .5 –1 FOOT APART, TOP SIDE UP.

SEEDING SHALL BE WITH THE MIXES SPECIFIED AND PER THE SPECIAL PROVISIONS. UNOPENED BAGS OF SEED ALONG WITH THE SEED CERTIFICATIONS MUST BE BROUGHT TO THE SITE FOR APPROVAL BY THE ENGINEER PRIOR TO SEEDING. CERTIFICATION MUST MATCH SPECIES AND PERCENTAGES LISTED IN SPECIAL PROVISIONS.

TYGNSBOROUGH
PAWTUCKET BOULEVARD

FHWA DIV.NO.	STATE	FED.AID PROJ.NO.	SHEET NO.	TOTAL SHEETS
1	MASS.	CM-002S(215)X	84	154
PROJECT FILE NO. 603823				

LANDSCAPE PLAN – 3



AREA G

PLANTING NOTES:

PROPOSED LOCATIONS ARE APPROXIMATE AND MAY BE CHANGED TO ACCOMMODATE ACTUAL CONDITIONS. FINAL LOCATIONS SHALL BE AS DIRECTED BY THE MASSDOT LANDSCAPE ARCHITECT IN COORDINATION WITH THE ENGINEER, PRIOR TO INSTALLATION. AVOID PLANTING UNDER UTILITY LINES.

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PLANT LIST - Area G

EVERGREEN TREES

SYM	QTY	BOTANICAL NAME	COMMON NAME	SIZE
PGHl	4	Picea glauca	White Spruce	5-6 FT
PSTHl	10	Pinus strobus	Pine - White	5-6 FT

DECIDUOUS TREES

ARc5	3	Acer rubrum	Maple - Red	2-2.5 IN CAL
AMGABHl	8	Amel. grand. 'Autumn Brill.'	Serviceberry 'Autumn Brilliance'	5-6 FT
BNh2	3	Betula nigra	Birch - River	6-8 FT
CVWKh2	11	Crataegus viridis 'Winter King'	Hawthorn - 'Winter King'	6-8 FT
QBc3	6	Quercus bicolor	Oak - Swamp White	1-1.5 IN CAL
QRc4	4	Quercus rubra	Oak - Northern Red	1.5-2 IN CAL
QPAc5	3	Quercus palustris	Oak - Pin	2-2.5 IN CAL
TAc3	3	Tillia americana	Linden - American	1-1.5 IN CAL
UAPc5	3	Ulmus americana 'Princeton'	Elm - American 'Princeton'	2-2.5 IN CAL

SHRUBS

IGs2	40	Ilex glabra	Inkberry	2-2.5 FT
AAs2	25	Aronia arbutifolia	Red Chokeberry	2-2.5 FT
MPs2	25	Myrica pensylvanica	Bayberry - Northern	2-2.5 FT
RVGl	25	Rosa virginiana	Rose - Virginia	1 Gallon
VDs2	15	Viburnum dentatum	Viburnum - Arrowwood	2-2.5 FT

SUMMARY PLANT LIST

EVERGREEN TREES

SYM	QTY	BOTANICAL NAME	COMMON NAME	SIZE
JVHl	19	Juniperus virginiana	Cedar - Eastern Red	5-6 FT
PGHl	18	Picea glauca	White Spruce	5-6 FT
POMHl	32	Picea omorika	Spruce - Serbian	5-6 FT
PPUHl	40	Picea pungens	Spruce - Colorado Green	5-6 FT
PNHl	71	Pinus nigra	Pine - Austrian	5-6 FT
PSTHl	55	Pinus strobus	Pine - White	5-6 FT
TOTHl	23	Thuja occidentalis 'Techny'	Arborvitae 'Techny'	5-6 FT

DECIDUOUS TREES

ARc3	48	Acer rubrum	Maple - Red	1-1.5 IN CAL
ARc5	12	Acer rubrum	Maple - Red	2-2.5 IN CAL
ASH	17	Acer saccharinum	Maple - Silver	4-5 FT
ASAc3	12	Acer saccharum	Maple - Sugar	1-1.5 IN CAL
ASAGMc5	3	Acer saccharum 'Green Mtn	Maple - Sugar 'Green Mountain'	2-2.5 IN CAL
AMGABHl	19	Amel. grand. 'Autumn Brill.'	Serviceberry 'Autumn Brilliance'	5-6 FT
AMLh2	45	Amelanchier laevis	Serviceberry - Allegheny	6-8 FT
BNHl	16	Betula nigra	Birch - River	5-6 FT
BNh2	33	Betula nigra	Birch - River	6-8 FT
CVWKh2	29	Crataegus viridis 'Winter King'	Hawthorn - 'Winter King'	6-8 FT
PSAc5	8	Prunus subhirtella 'Autumnalis'	Cherry - Autumn Flowering	2-2.5 IN CAL
QBc3	39	Quercus bicolor	Oak - Swamp White	1-1.5 IN CAL
QBc5	4	Quercus bicolor	Oak - Swamp White	2-2.5 IN CAL
QPAc3	11	Quercus palustris	Oak - Pin	1-1.5 IN CAL
QPAc5	28	Quercus palustris	Oak - Pin	2-2.5 IN CAL
QRc4	22	Quercus rubra	Oak - Northern Red	1.5-2 IN CAL
TAc3	11	Tillia americana	Linden - American	1-1.5 IN CAL
UAPc5	10	Ulmus americana 'Princeton'	Elm - American 'Princeton'	2-2.5 IN CAL

SHRUBS

IGs3	235	Ilex glabra	Inkberry	2-3 FT
AAs2	94	Aronia arbutifolia	Red Chokeberry	2-2.5 FT
AMs2	29	Aronia melanocarpa	Black Chokeberry	2-2.5 FT
CALs3	77	Clethra alnifolia	Summersweet	2-3 FT
COAs2	25	Cornus amomum	Dogwood - Silky	2-2.5 FT
IVs2	30	Ilex verticilata	Winterberry	2-2.5 FT
MPs2	162	Myrica pensylvanica	Bayberry - Northern	2-2.5 FT
POPs2	60	Physocarpus opulifolius	Eastern Ninebark	2-2.5 FT
RAs2	128	Rhus aromatica	Sumac Shrub - Fragrant	2-2.5 FT
RVGl	75	Rosa virginiana	Rose - Virginia	1 Gallon
VCs2	45	Vaccinium corymbosum	Blueberry - Highbush	2-2.5 FT
VDs2	130	Viburnum dentatum	Viburnum - Arrowwood	2-2.5 FT
VPs3	15	Viburnum prunifolium	Viburnum - Blackhaw	2-3 FT
VTs2	52	Viburnum trilobum	Viburnum - Highbush Cranberry	2-2.5 FT
NAP	400	Narcissus poeticus	Narcissus - Poet's	TOP

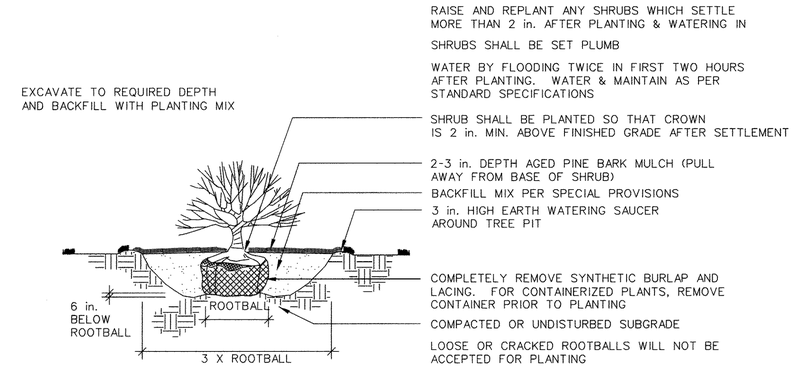
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	85	154
PROJECT FILE NO.: 603823			

LANDSCAPE DETAILS

SHEET 1 OF 2



1 SHRUB PLANTING

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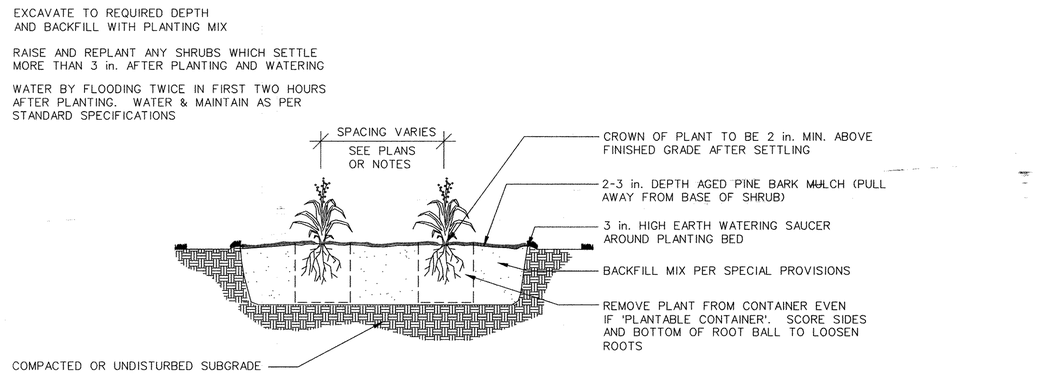
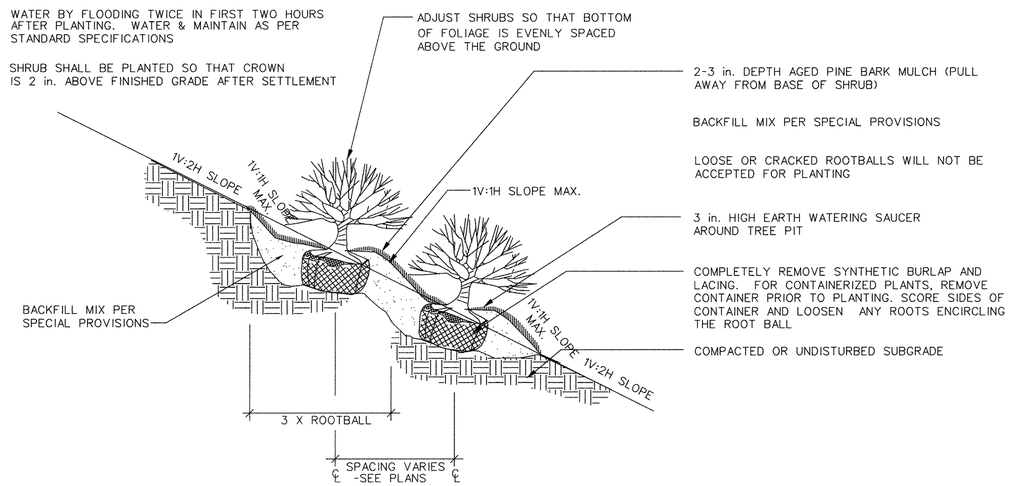


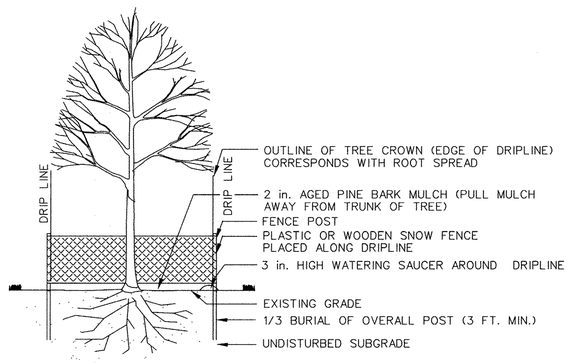
3 PERENNIAL PLANTING

NOT TO SCALE



2 CONTAINERIZED SHRUB PLANTING (SLOPE) DETAIL

NOT TO SCALE



4 TREE PROTECTION

NOT TO SCALE

PARSONS

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Plot Date: 10/20/2010 2:20 PM

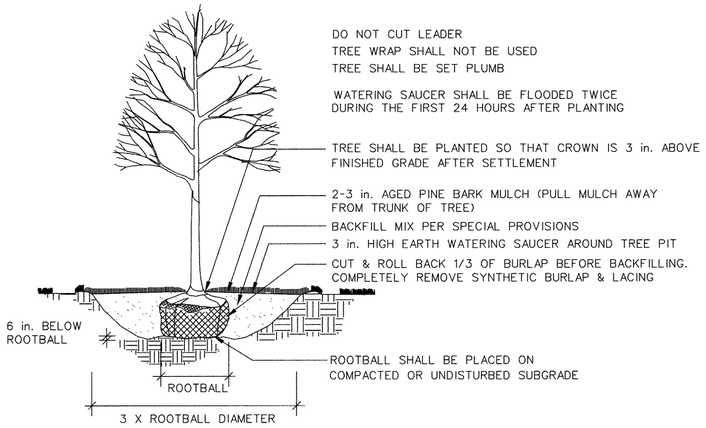
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	86	154
PROJECT FILE NO.: 603823			

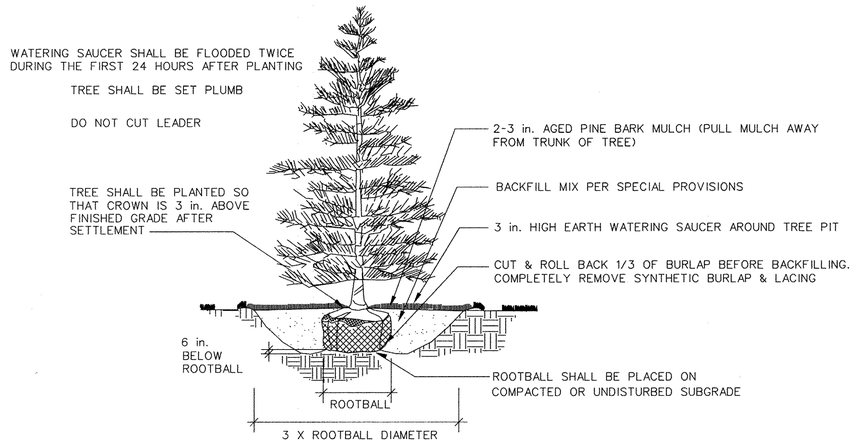
LANDSCAPE DETAILS

SHEET 2 OF 2



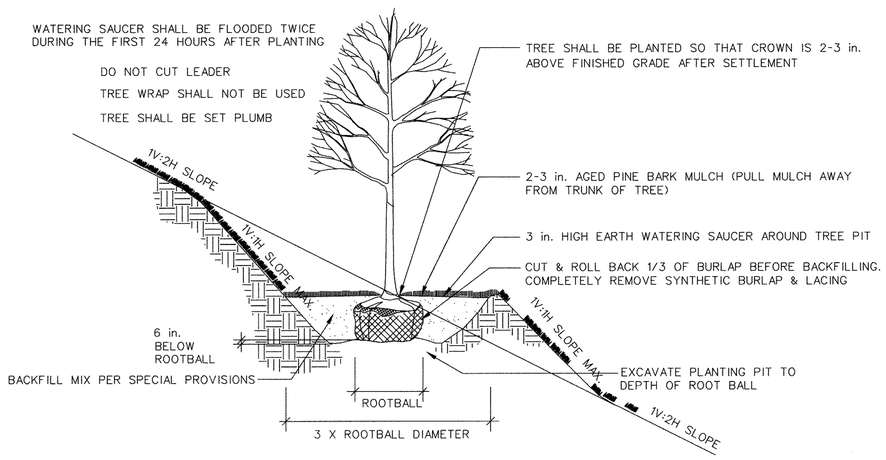
5 DECIDUOUS TREE PLANTING

NOT TO SCALE



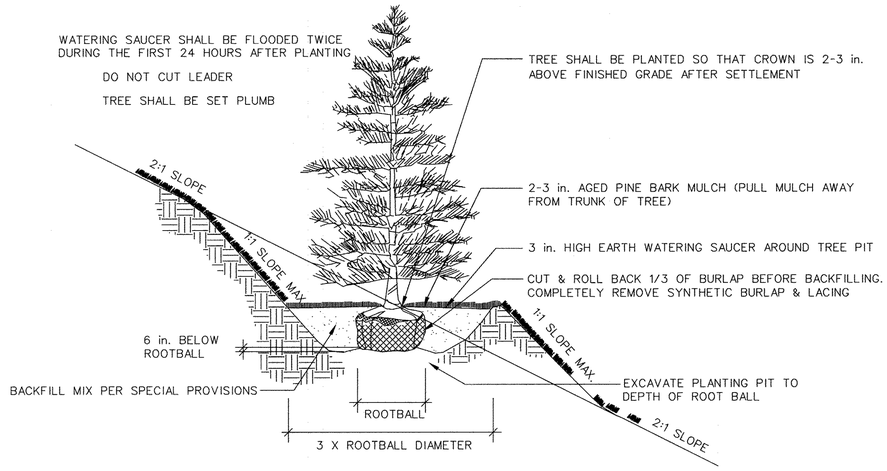
7 EVERGREEN TREE PLANTING

NOT TO SCALE



6 DECIDUOUS TREE PLANTING (SLOPE)

NOT TO SCALE



8 EVERGREEN TREE PLANTING (SLOPE)

NOT TO SCALE

PARSONS

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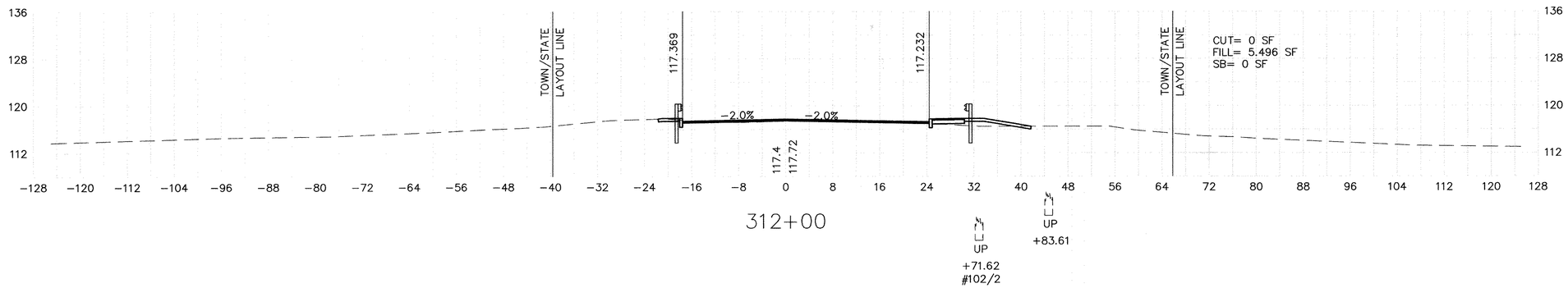
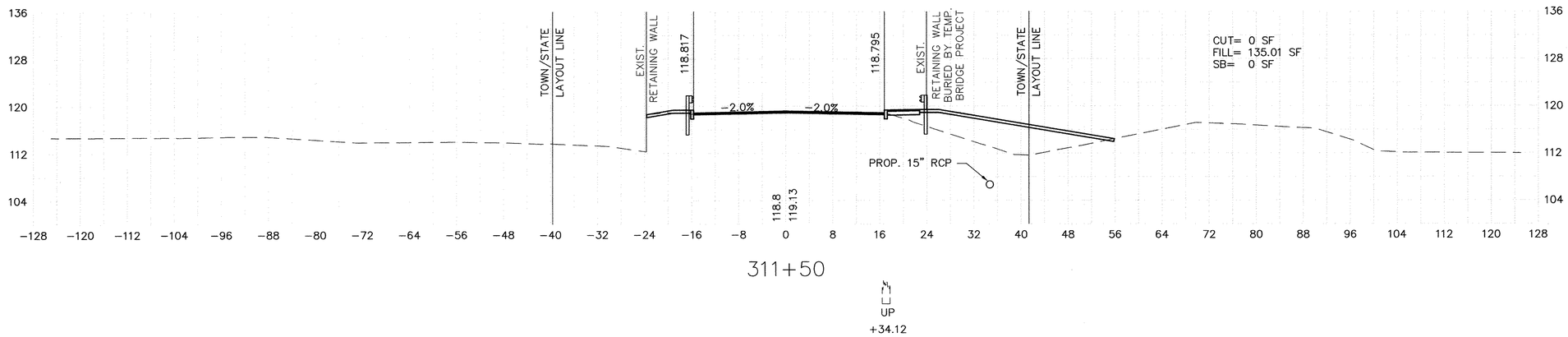
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	87	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 1 OF 28





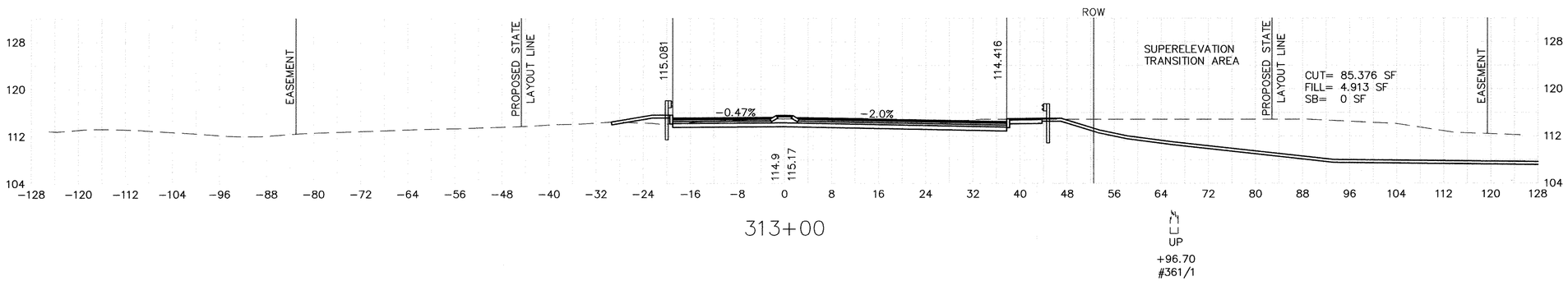
HOR. SCALE IN FEET
0 10 25 50

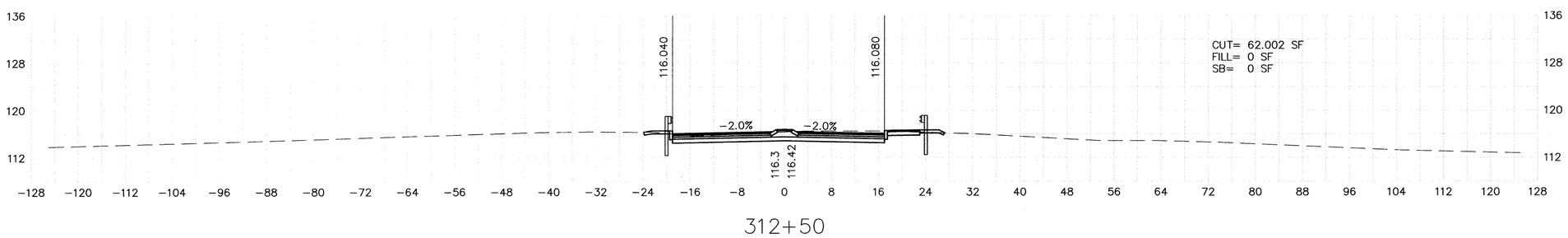
PARSONS

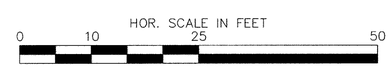
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	88	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 2 OF 28







PARSONS

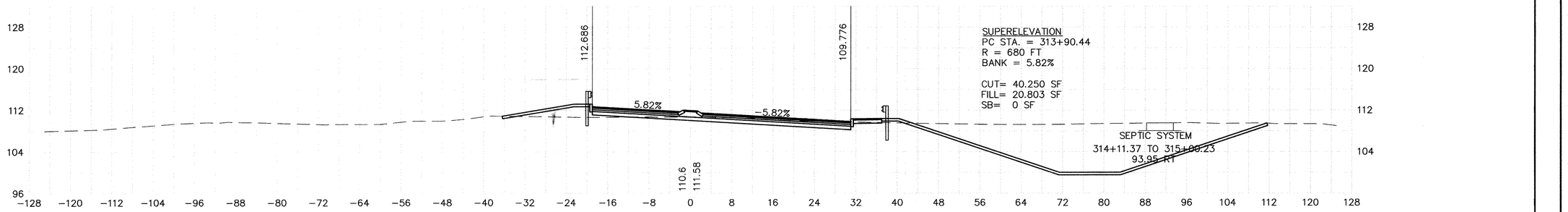
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

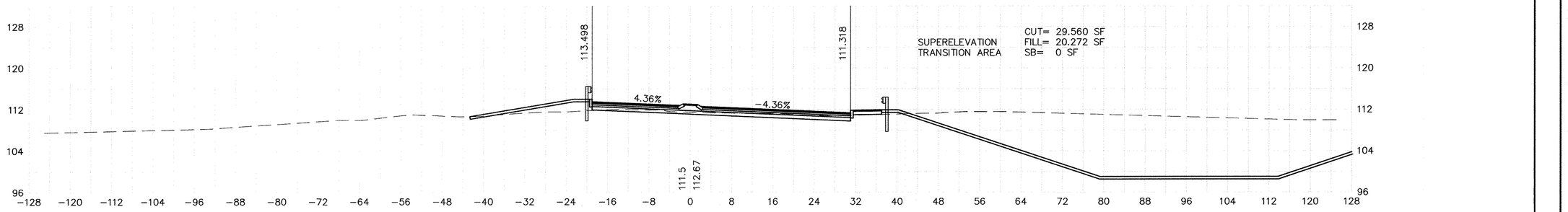
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	89	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD CROSS SECTIONS

SHEET 3 OF 28

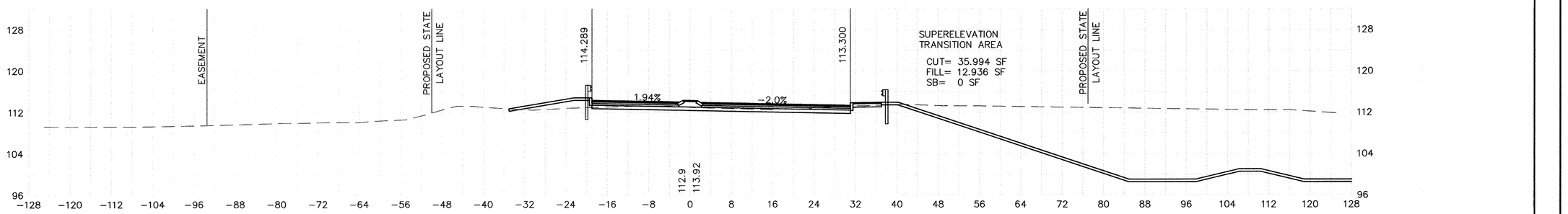


314+50



314+00

PC
UP
+64.62



313+50

HOR. SCALE IN FEET

0 10 25 50

PARSONS

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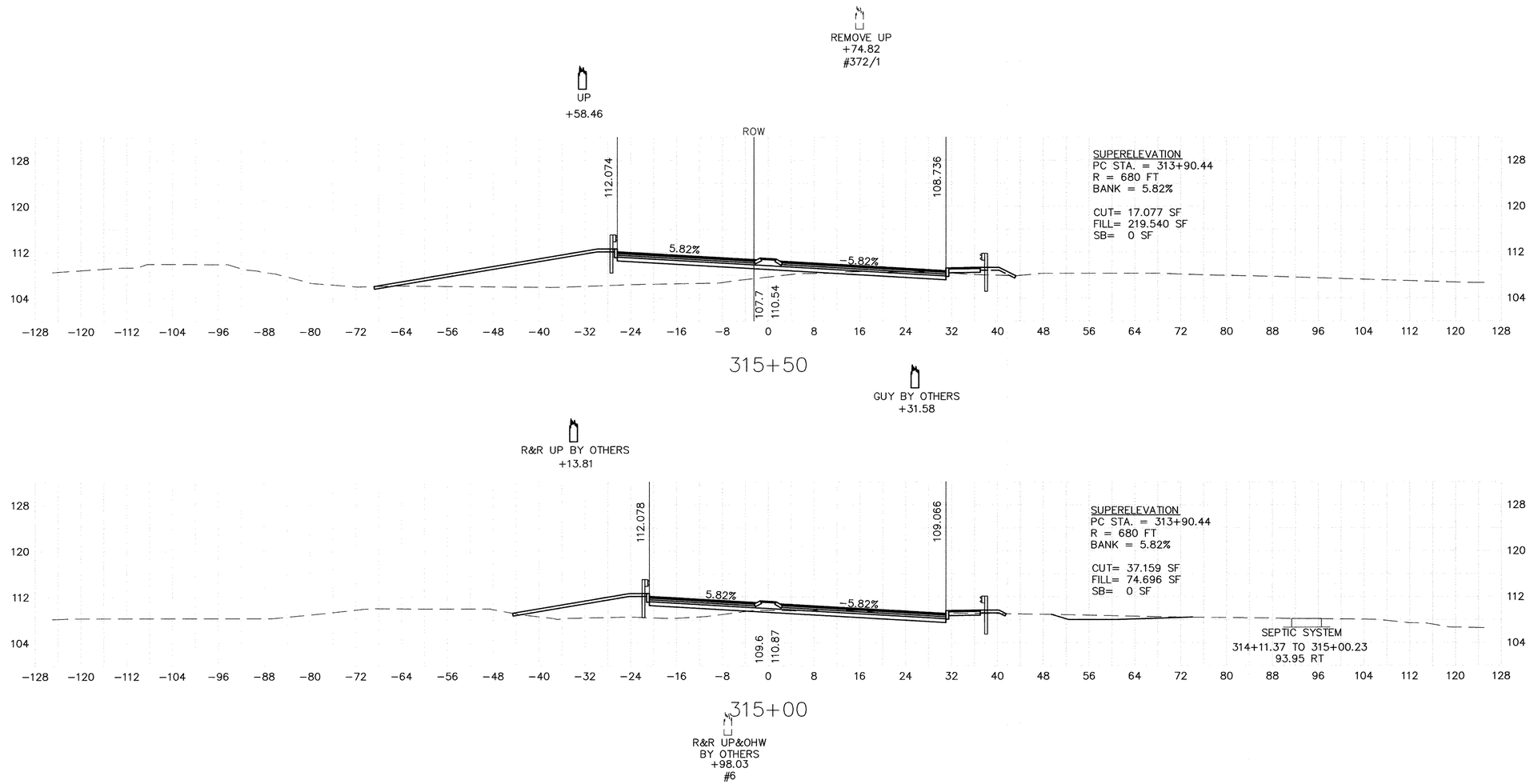
Plot Date: 10/20/2010 8:29 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	90	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 4 OF 28



PARSONS

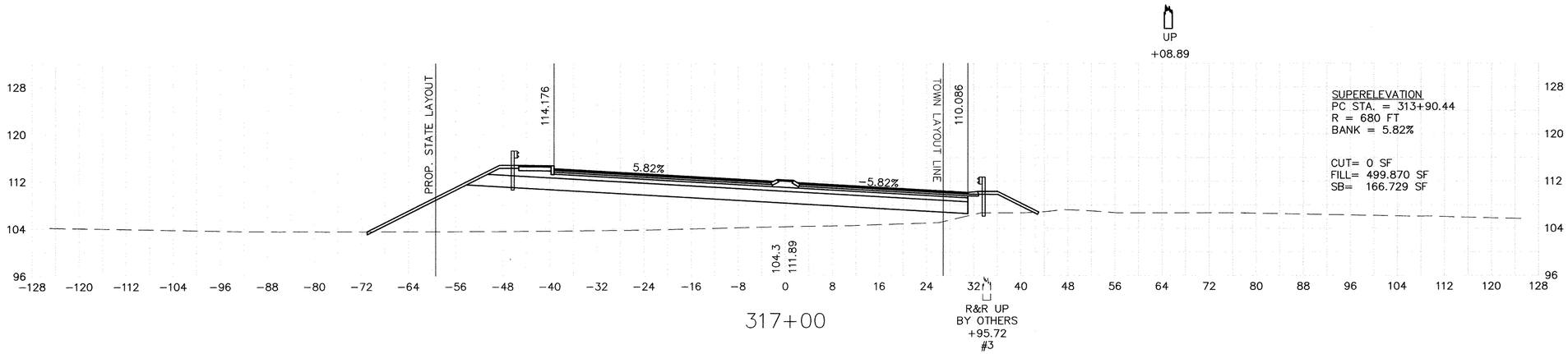
TYNGSBOROUGH

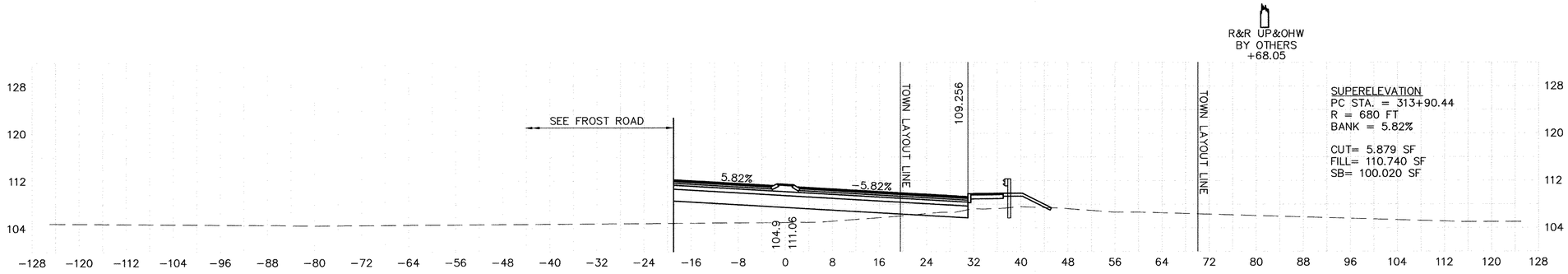
RELOCATION OF PAWTUCKET BOULEVARD

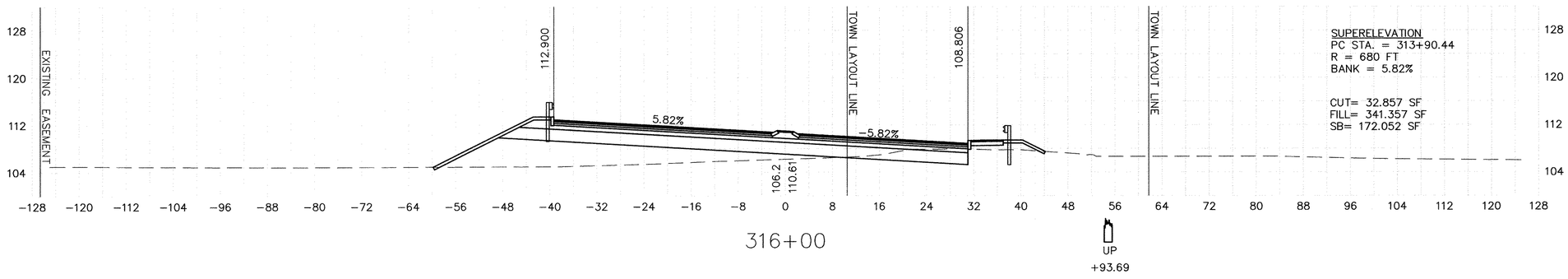
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	91	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD CROSS SECTIONS

SHEET 5 OF 28







HOR. SCALE IN FEET

0 10 25 50

PARSONS

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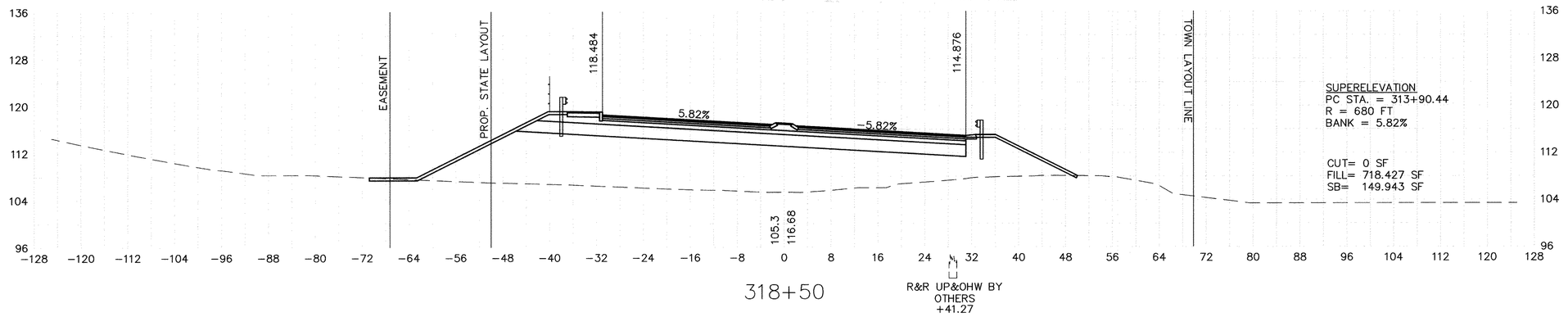
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	92	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD CROSS SECTIONS

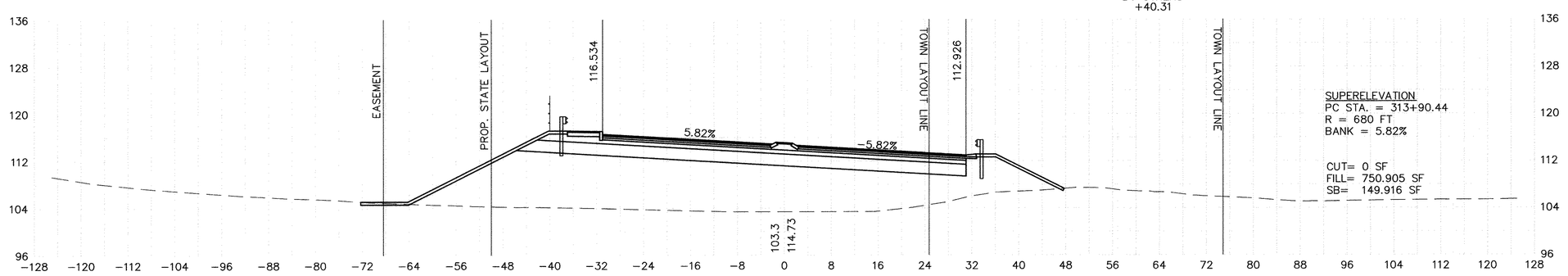
SHEET 6 OF 28



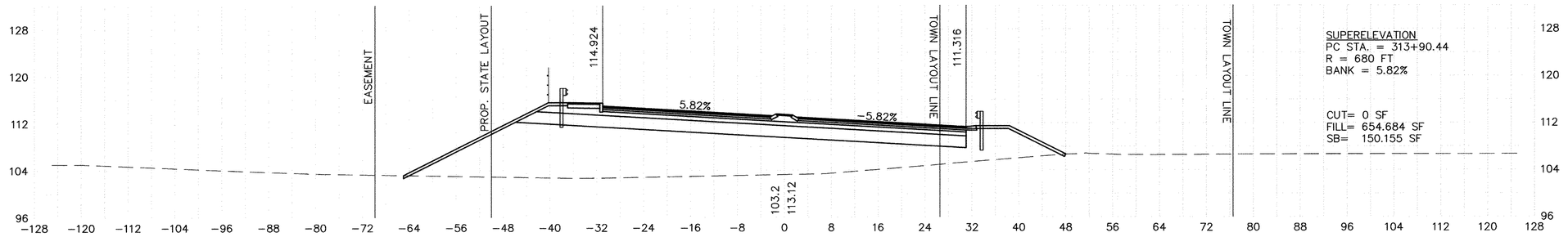
318+50

R&R UP&OHW BY OTHERS +41.27

R&R UP&OHW BY OTHERS +40.31



318+00



317+50

HOR. SCALE IN FEET

0 10 25 50

PARSONS

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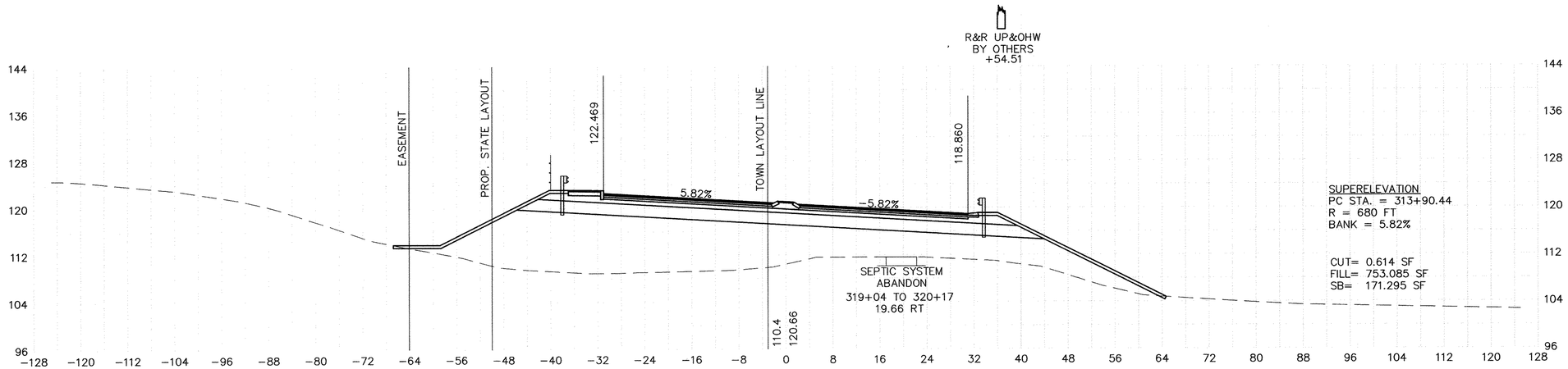
Plot Date: 10/20/2010 9:01 AM

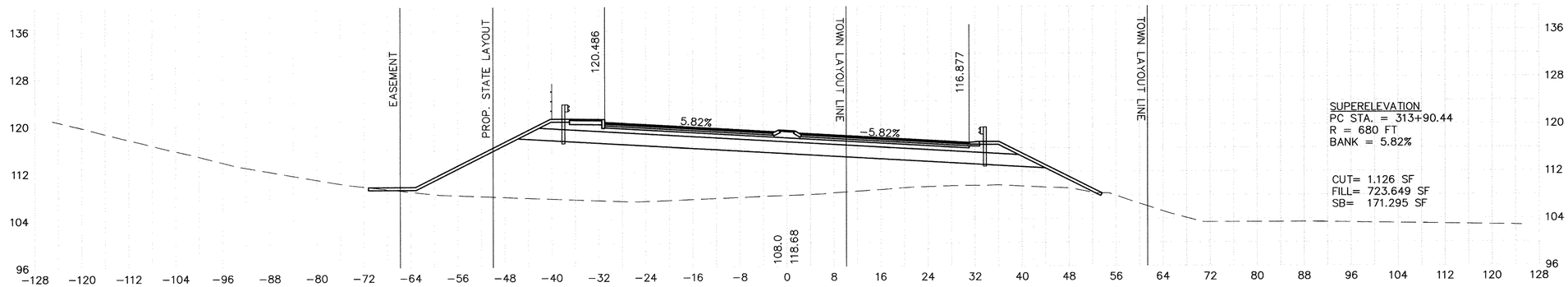
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	93	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 7 OF 28



319+50



319+00

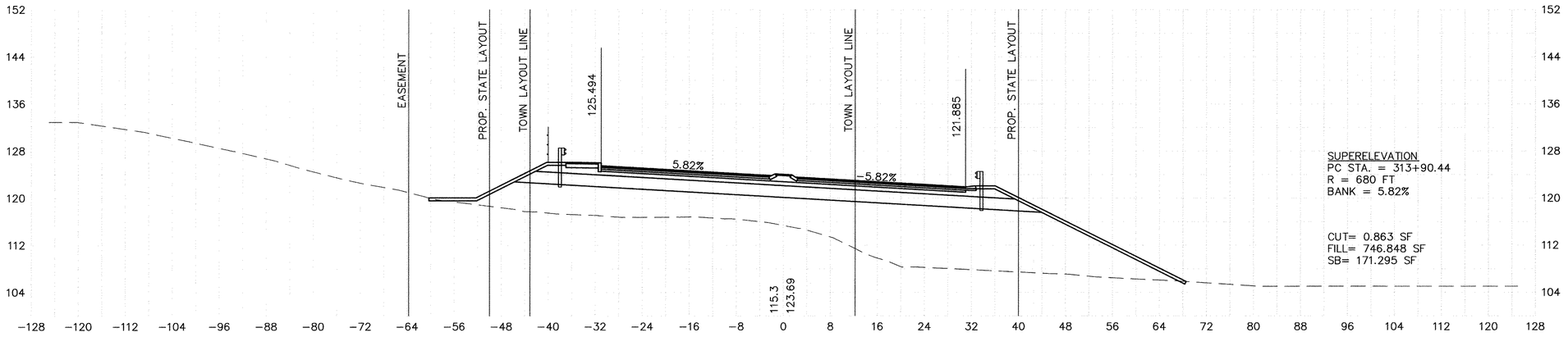
HOR. SCALE IN FEET
0 10 25 50

PARSONS

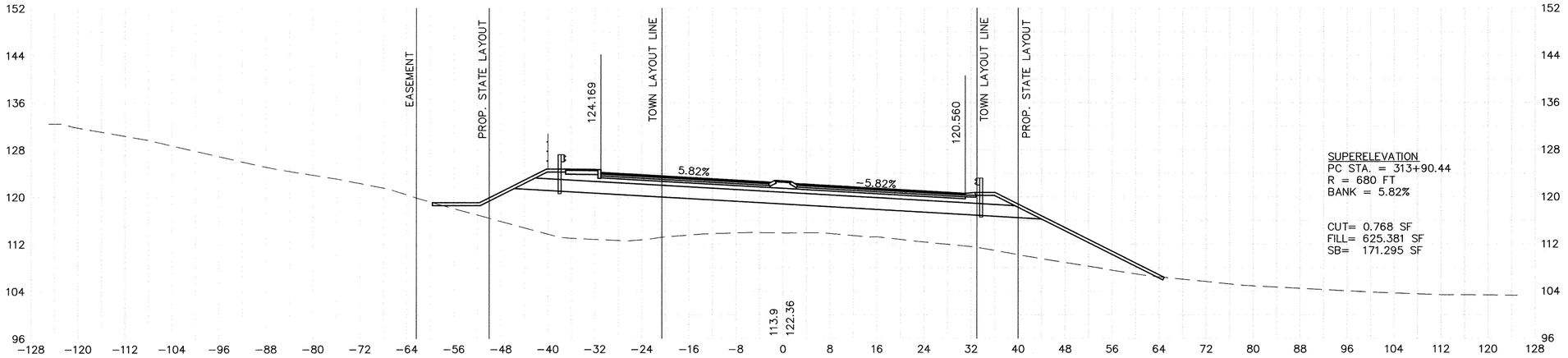
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	94	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 8 OF 28



320+50



320+00

R&R UP&OHW
BY OTHERS
+79.23

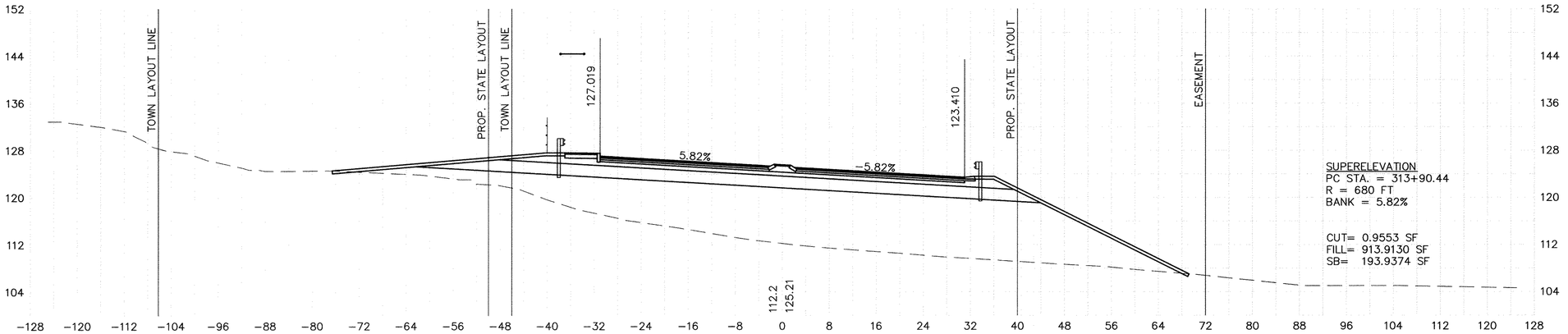
HOR. SCALE IN FEET
0 10 25 50

PARSONS

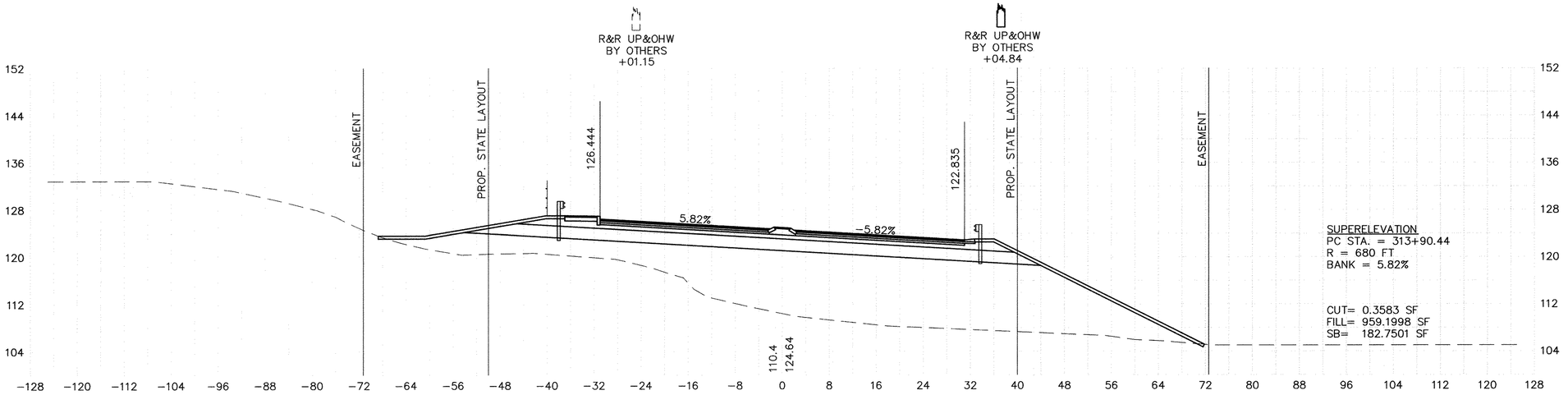
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	95	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 9 OF 28



321+50



321+00

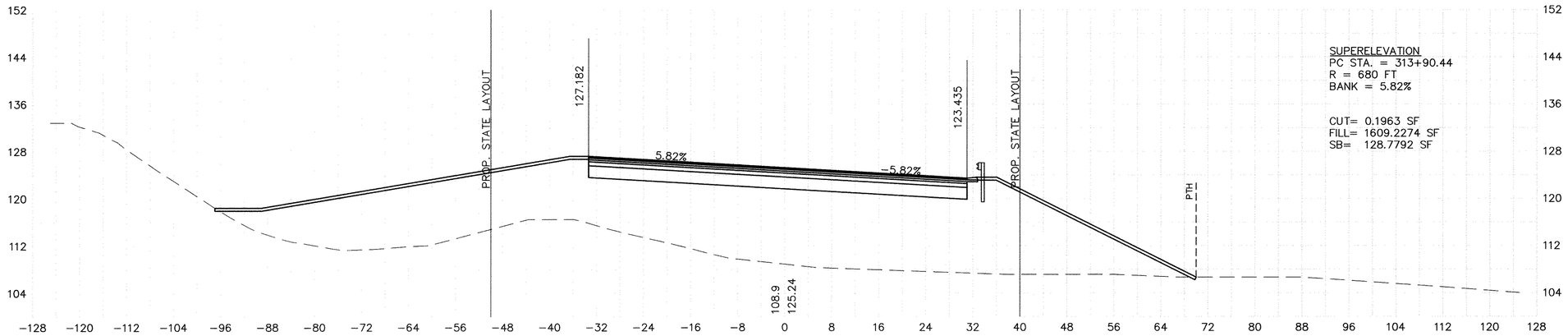
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	96	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 10 OF 28



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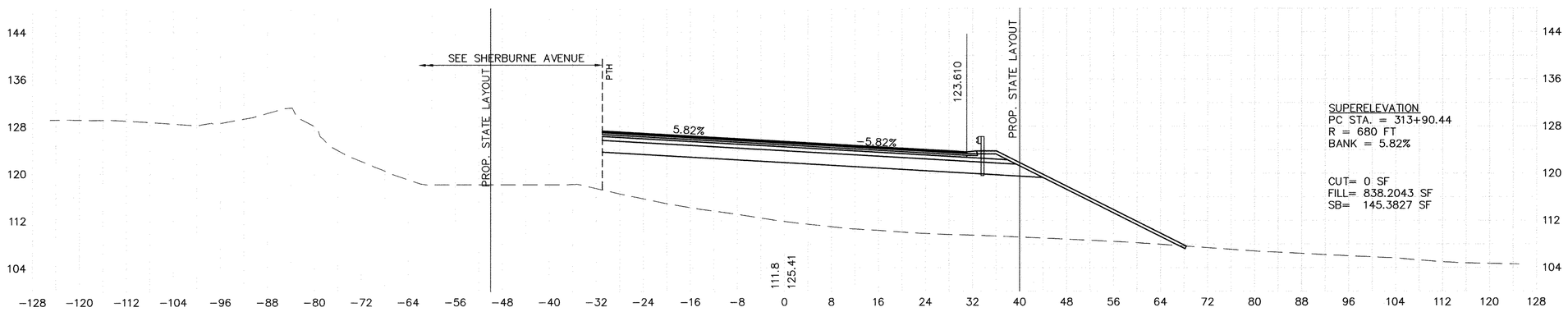


322+00

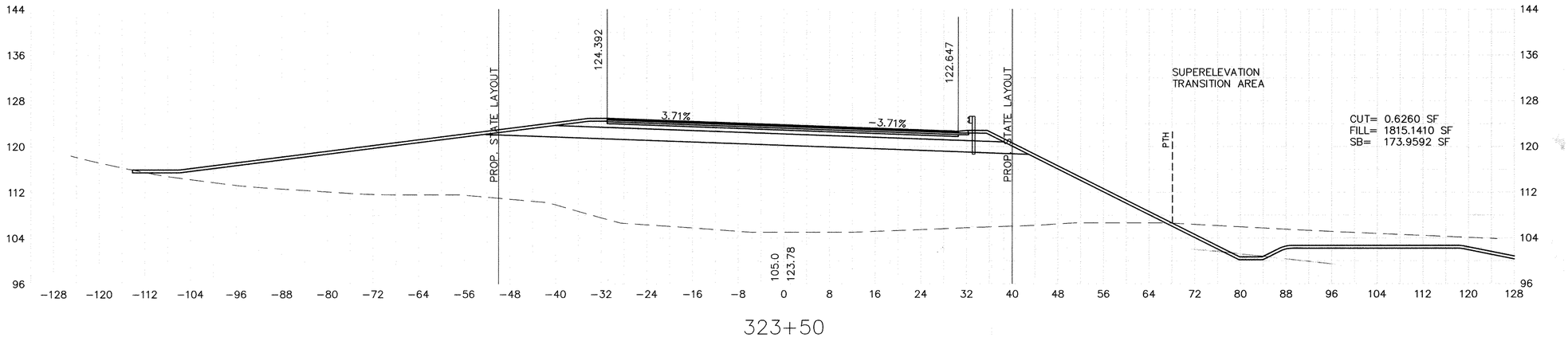
HOR. SCALE IN FEET
0 10 25 50

PARSONS

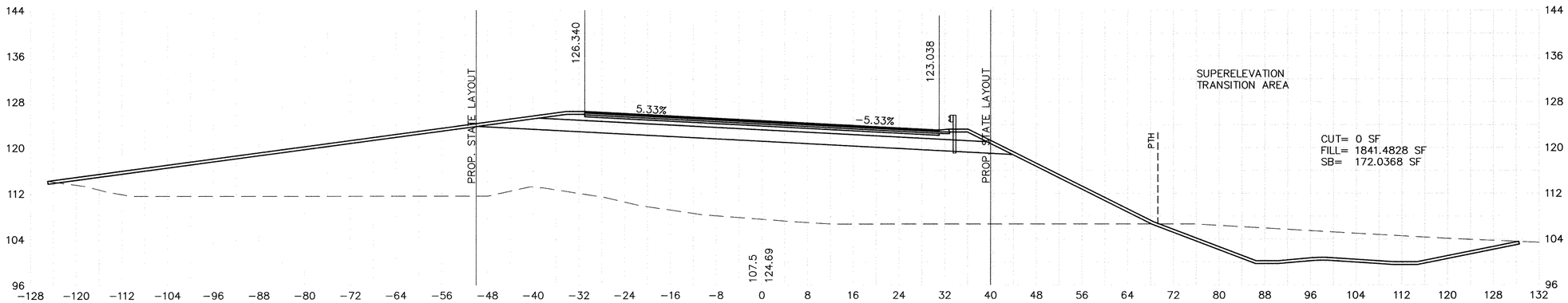
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	97	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 11 OF 28



323+50



323+00

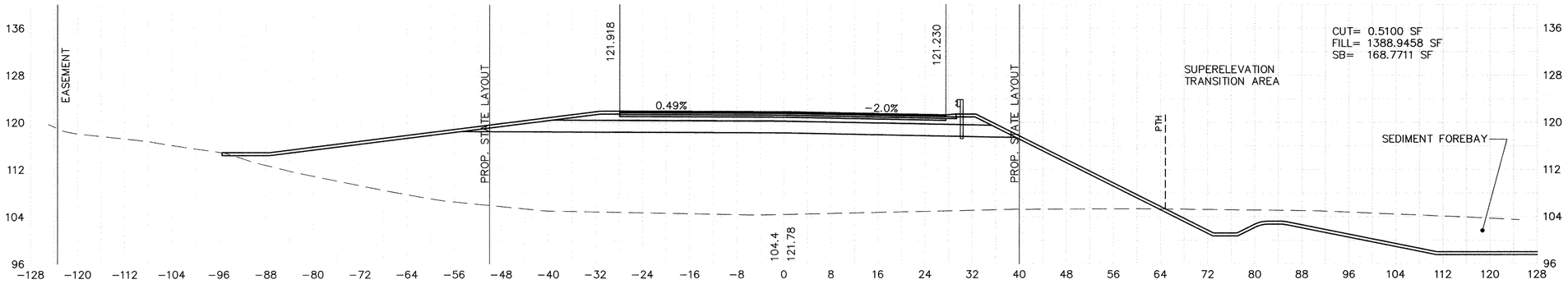
HOR. SCALE IN FEET
0 10 25 50

PARSONS

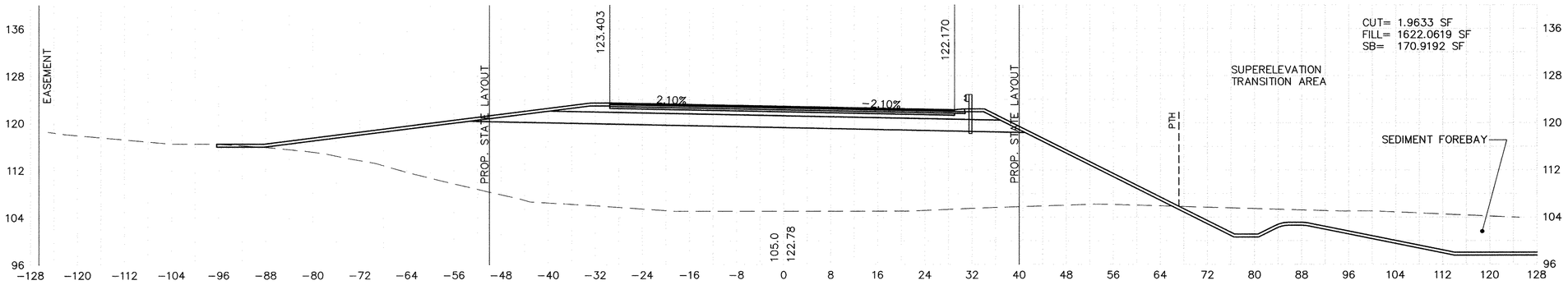
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	98	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 12 OF 28



324+50



324+00

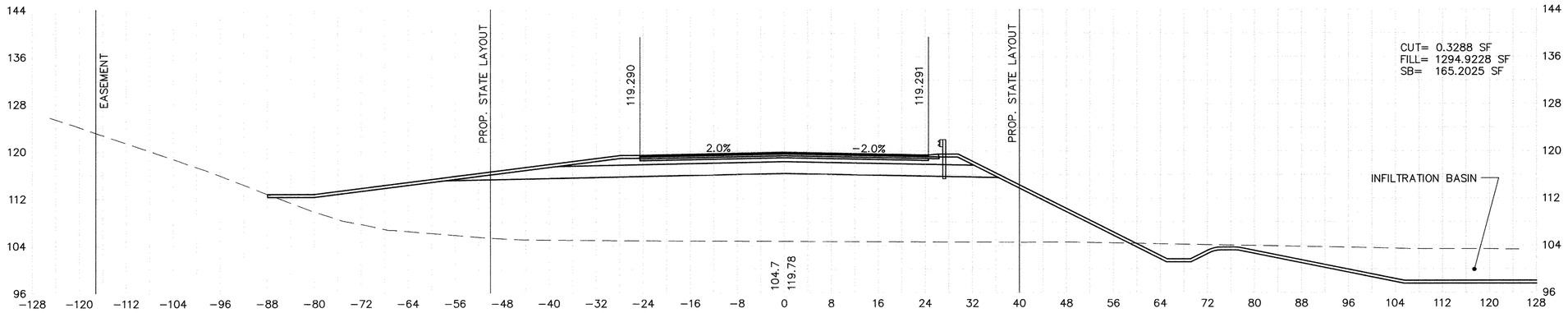
HOR. SCALE IN FEET
0 10 25 50

PARSONS

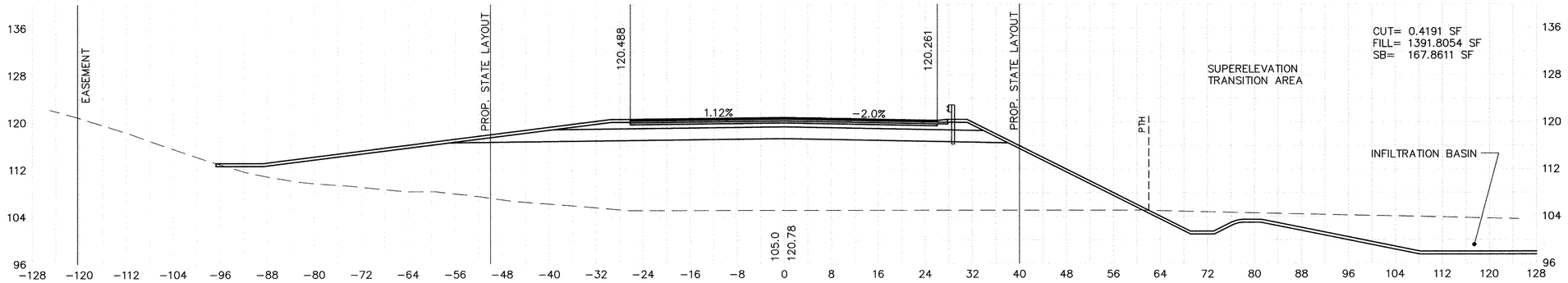
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	99	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 13 OF 28



325+50



325+00

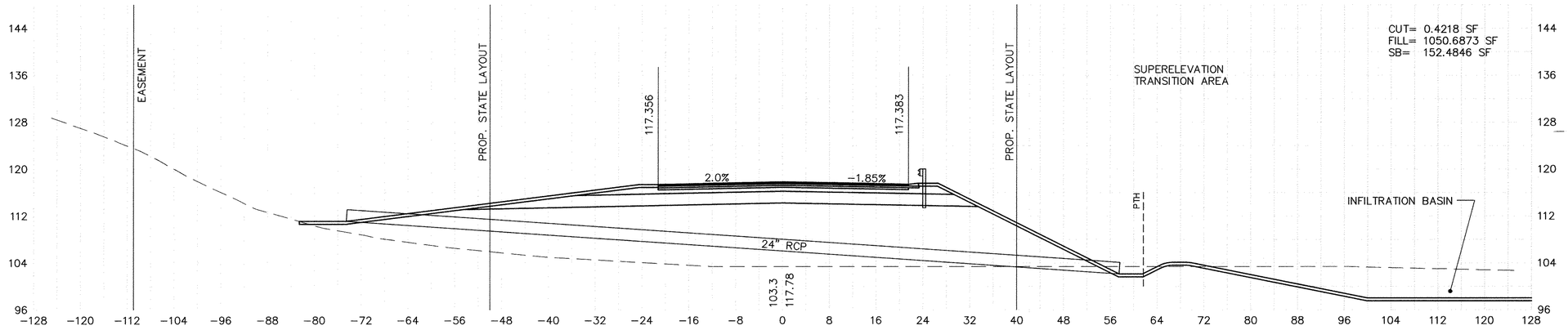
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	100	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 14 OF 28



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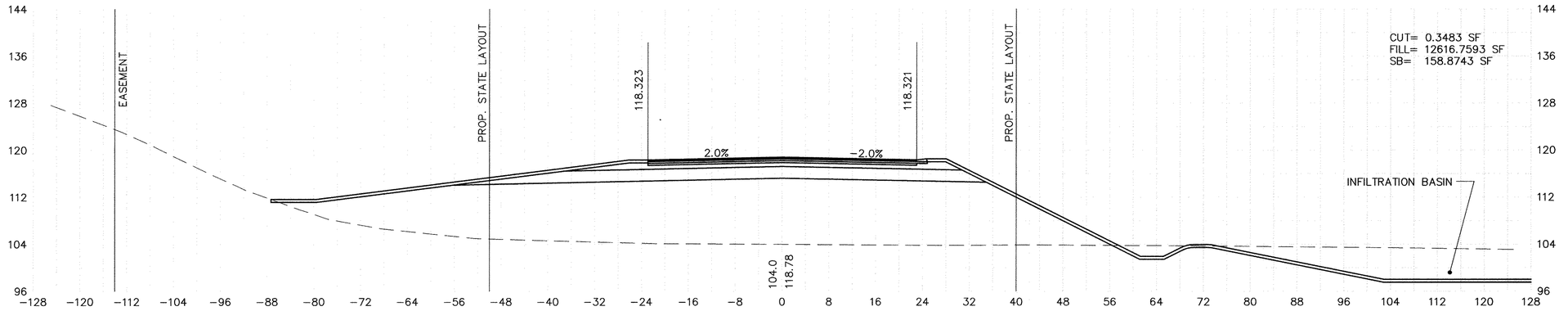


326+00

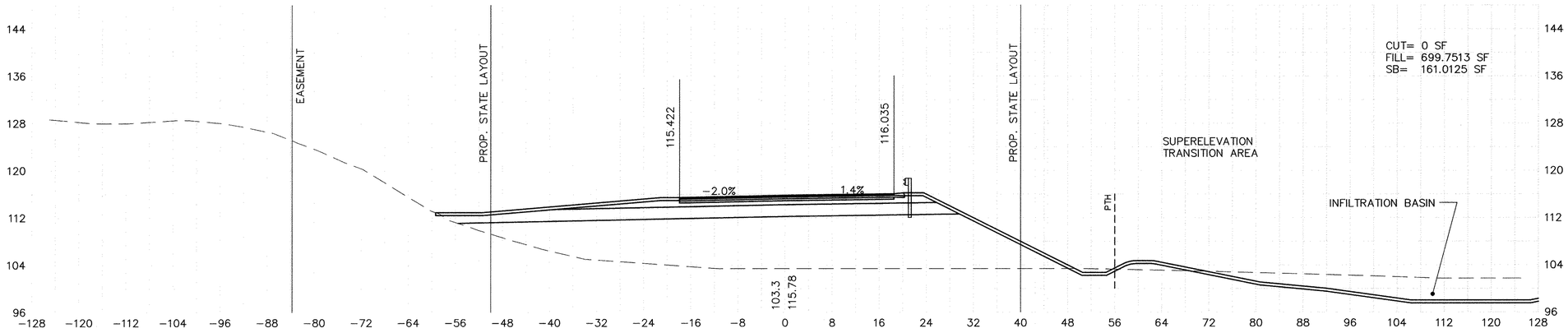
HOR. SCALE IN FEET
0 10 25 50

PARSONS

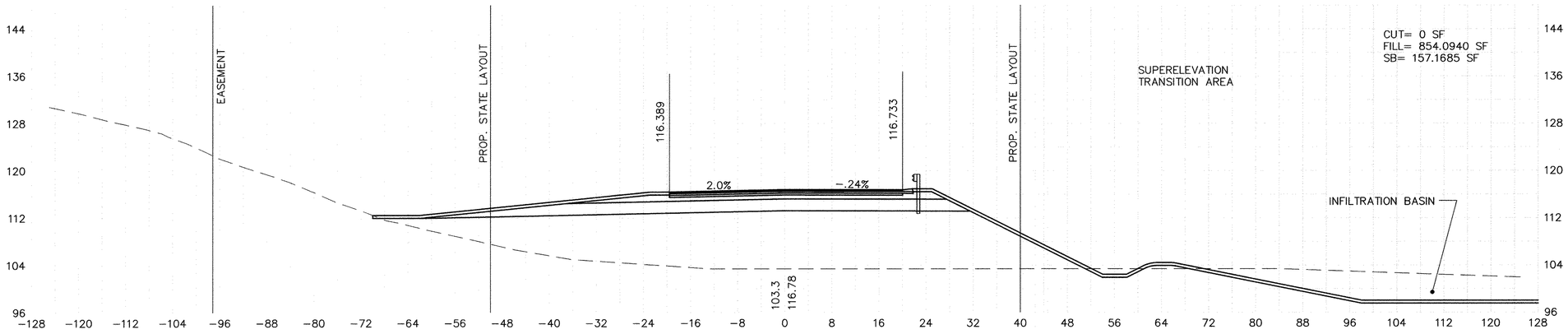
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	101	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 15 OF 28



327+50



327+00

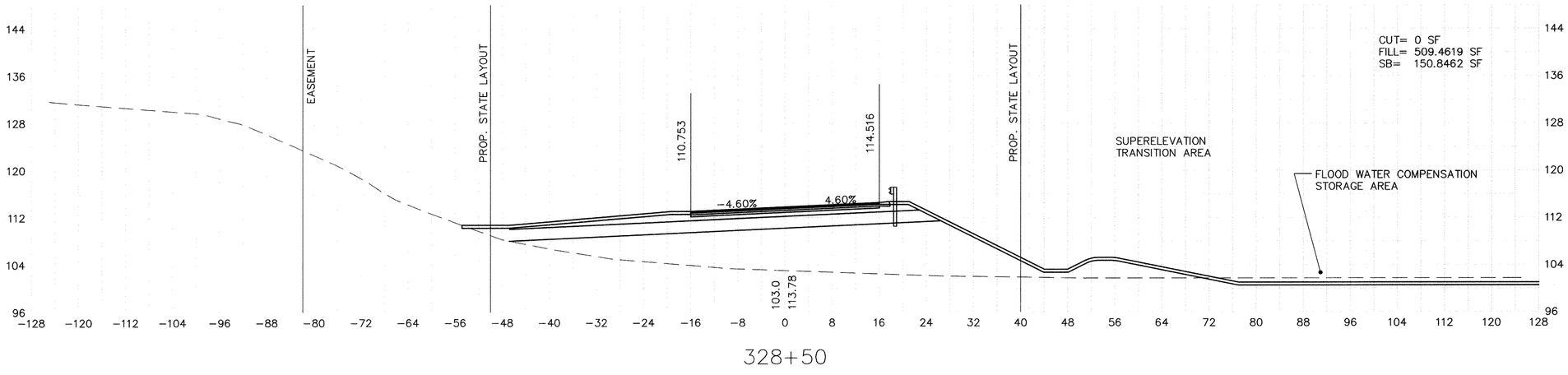
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	102	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 16 OF 28



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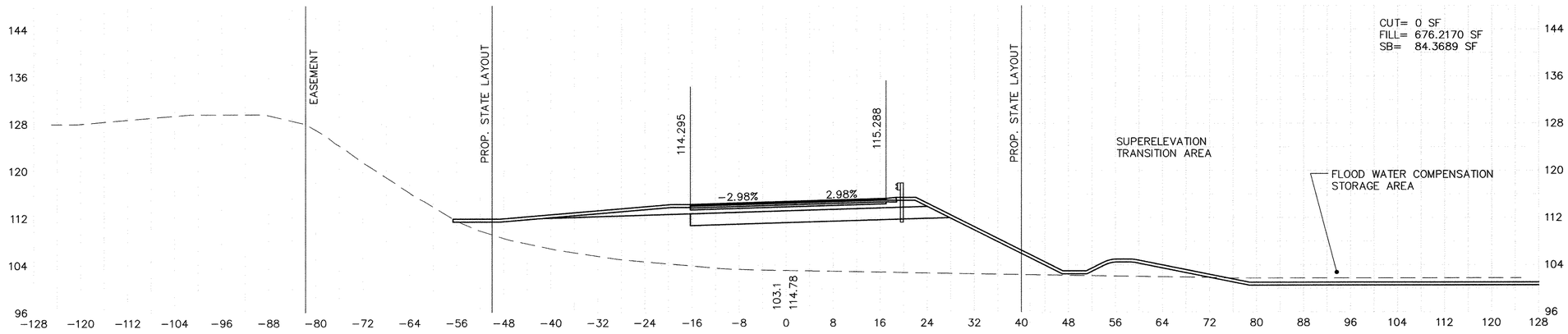


328+00

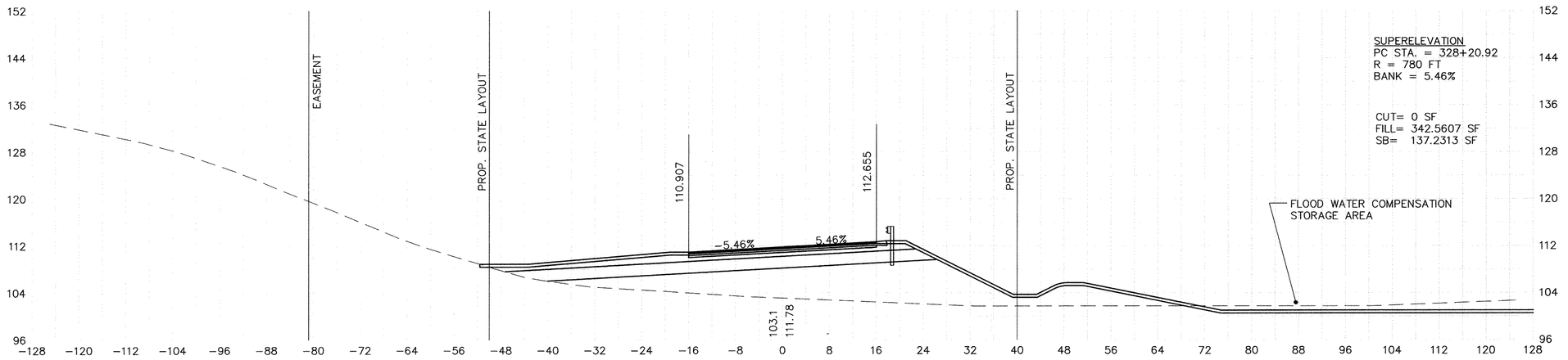
HOR. SCALE IN FEET
0 10 25 50

PARSONS

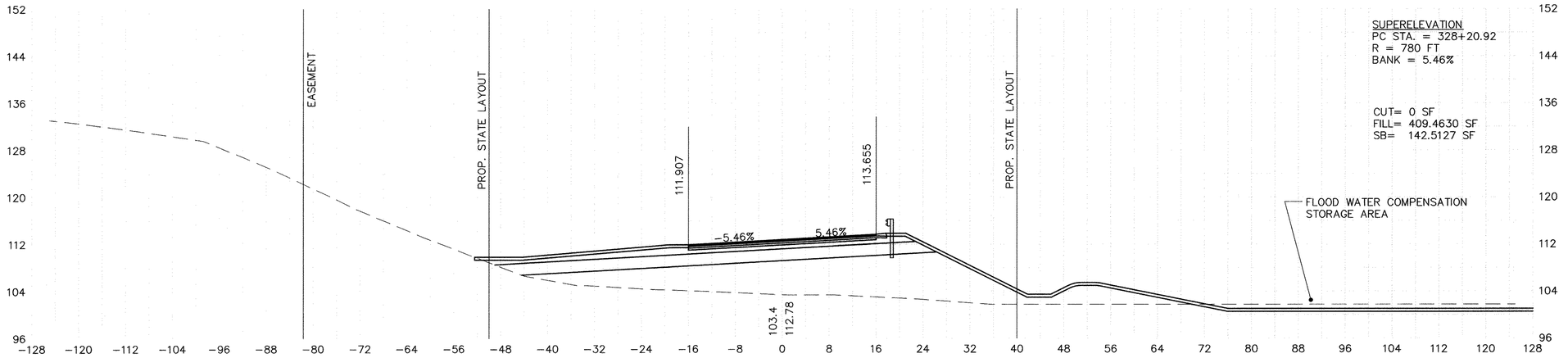
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	103	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 17 OF 28



329+50



329+00

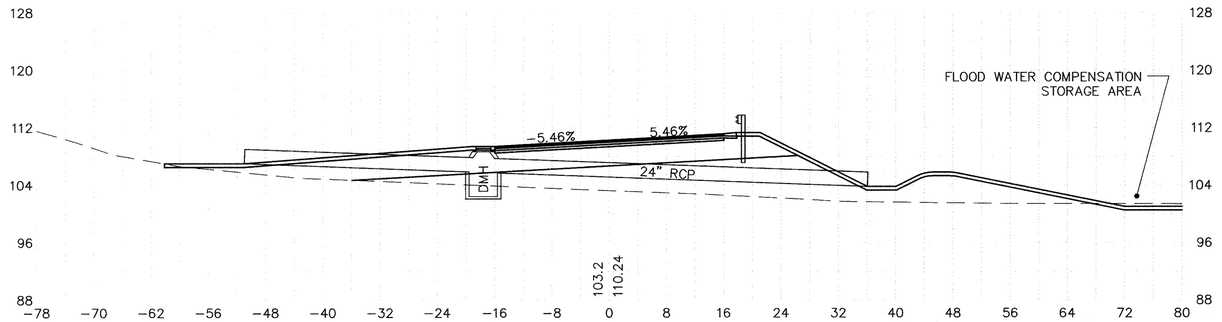
HOR. SCALE IN FEET
0 10 25 50

PARSONS

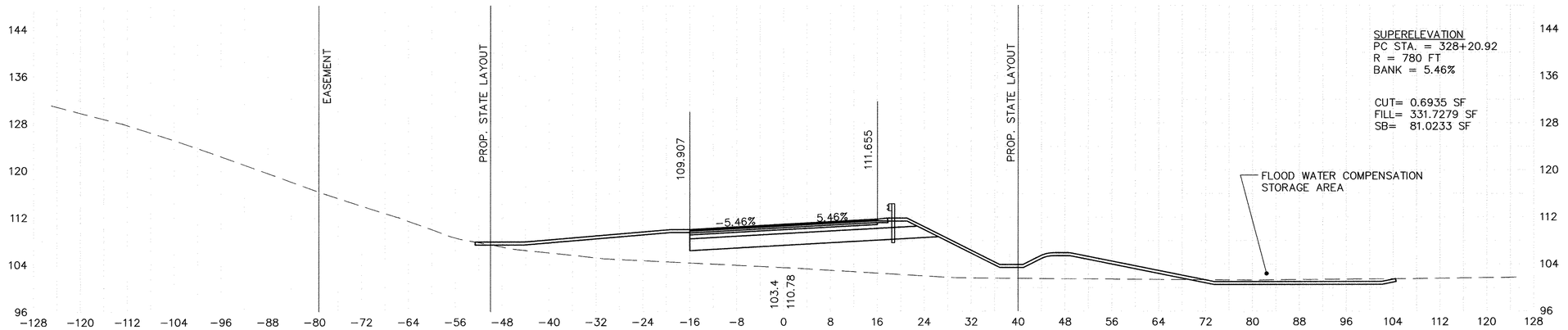
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	104	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 18 OF 28



330+27.13



330+00

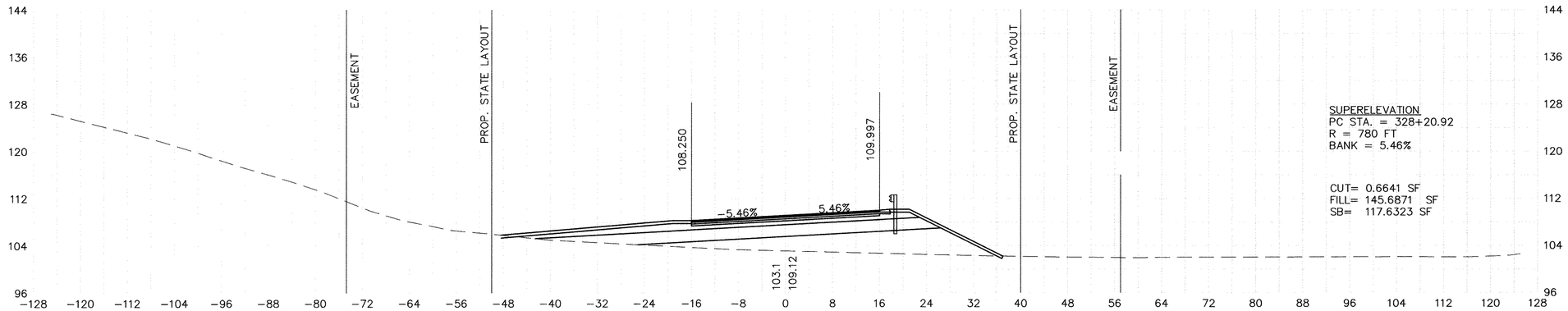
HOR. SCALE IN FEET
0 10 25 50

PARSONS

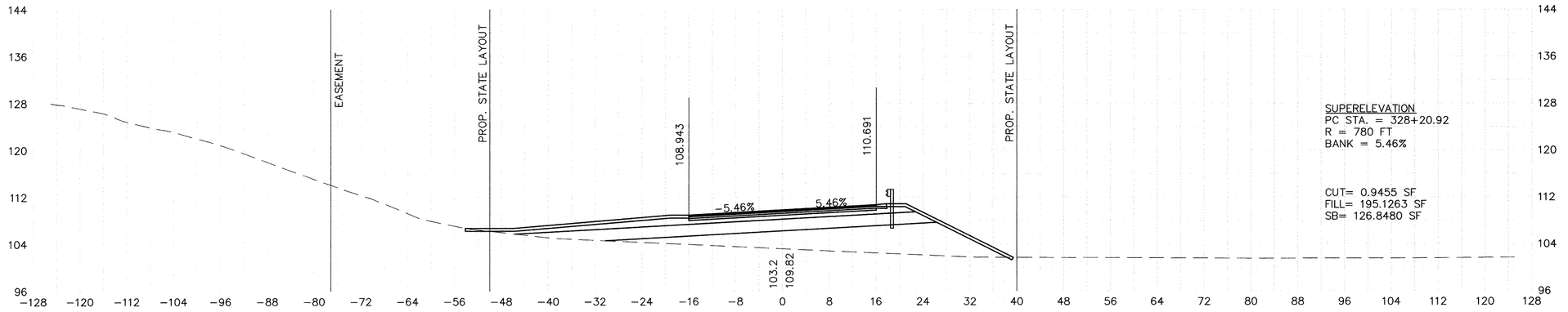
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	105	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 19 OF 28



331+00



330+50

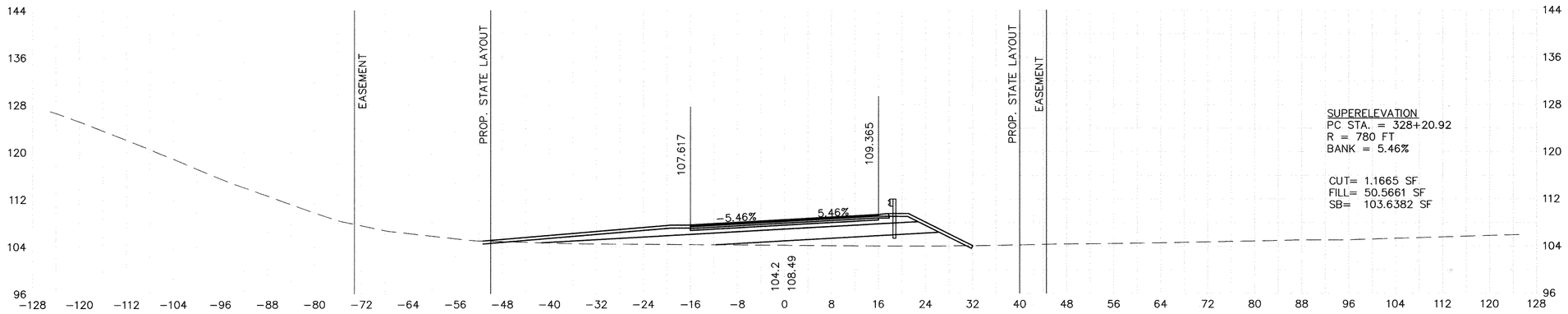
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	106	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 20 OF 28

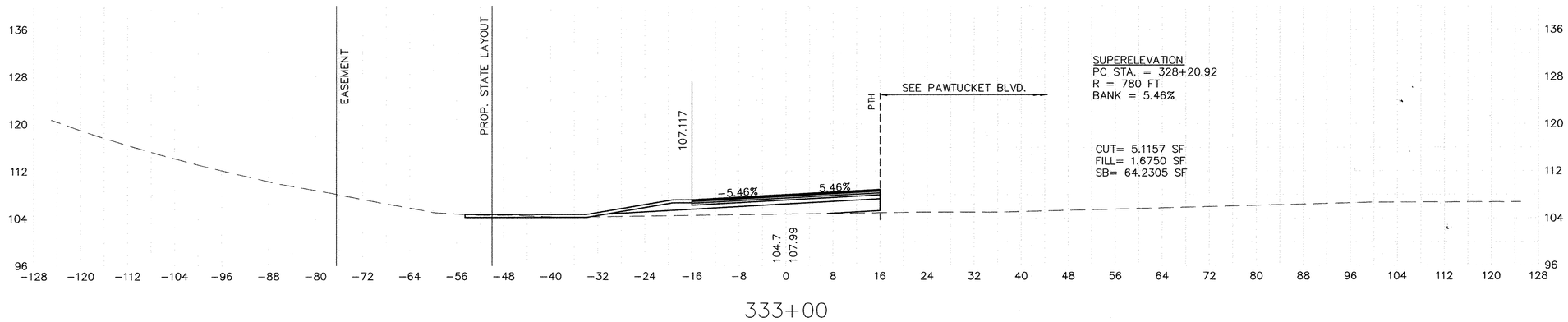


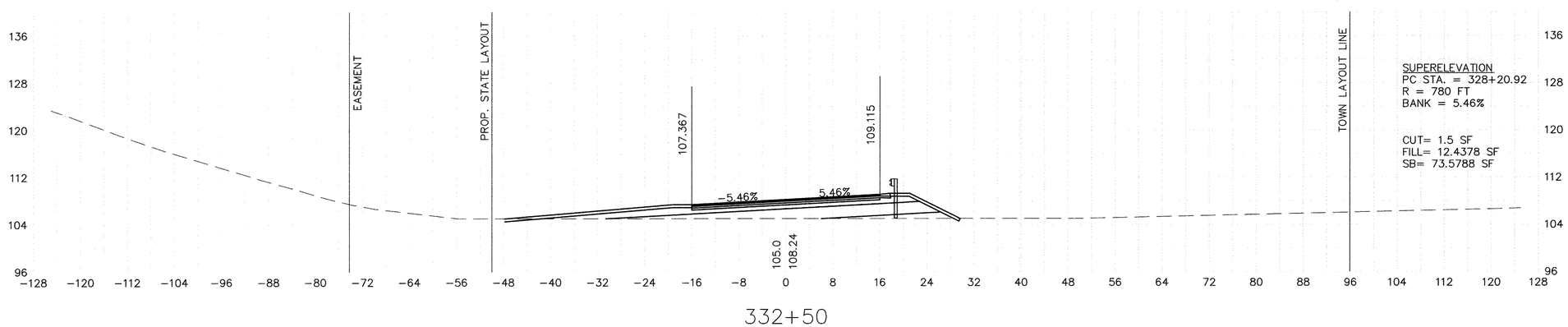
PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	107	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 21 OF 28





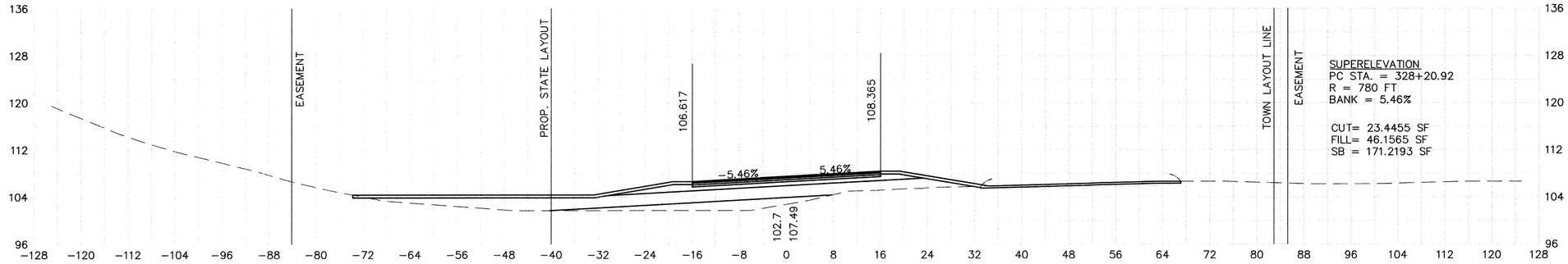
HOR. SCALE IN FEET
0 10 25 50

PARSONS

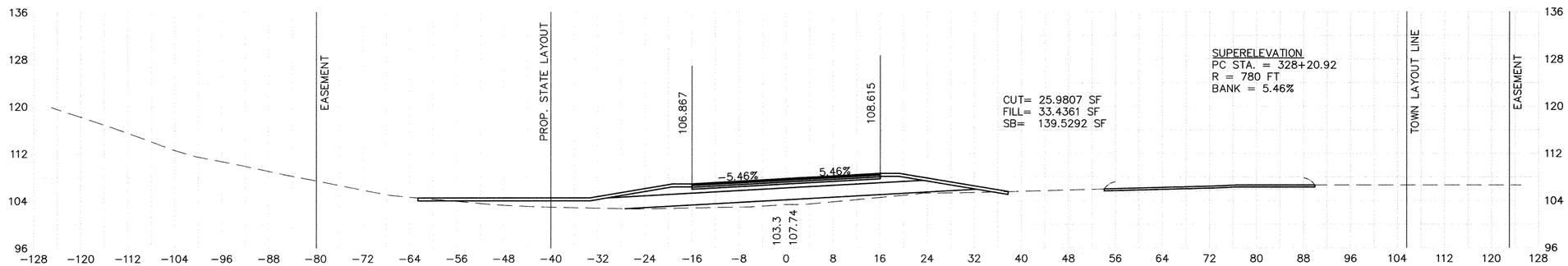
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	108	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 22 OF 28



334+00



333+50

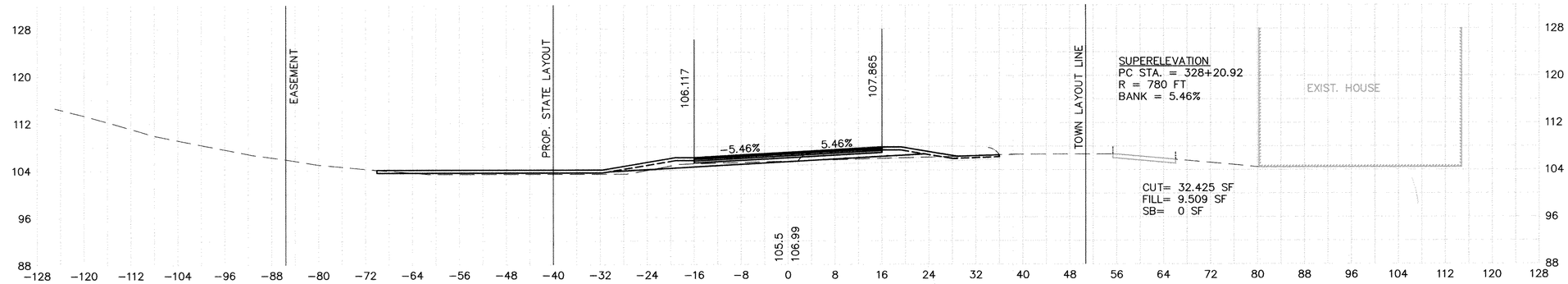
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	109	154
	PROJECT FILE NO.: 603823		

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 23 OF 28

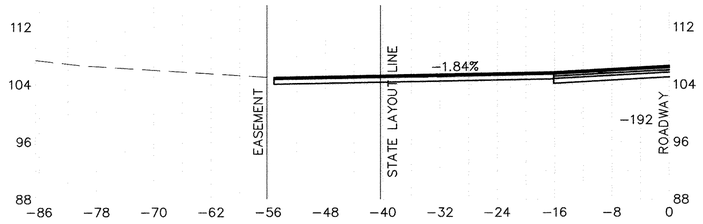


PARSONS

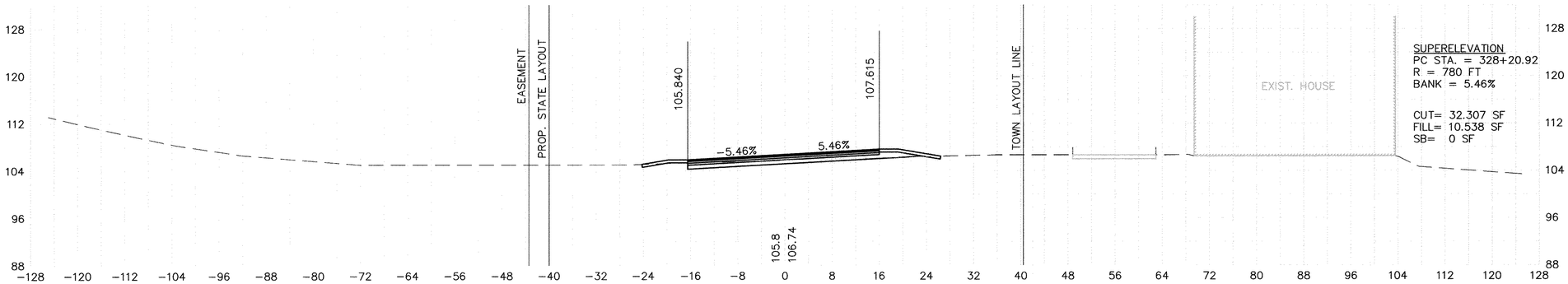
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	110	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 24 OF 28



335+80.53 SKEWED



335+50

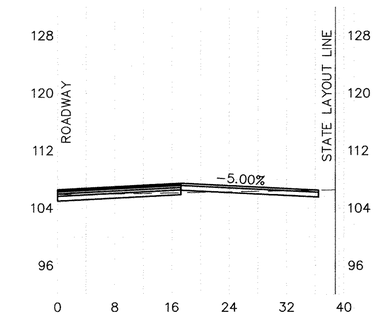
HOR. SCALE IN FEET
0 10 25 50

PARSONS

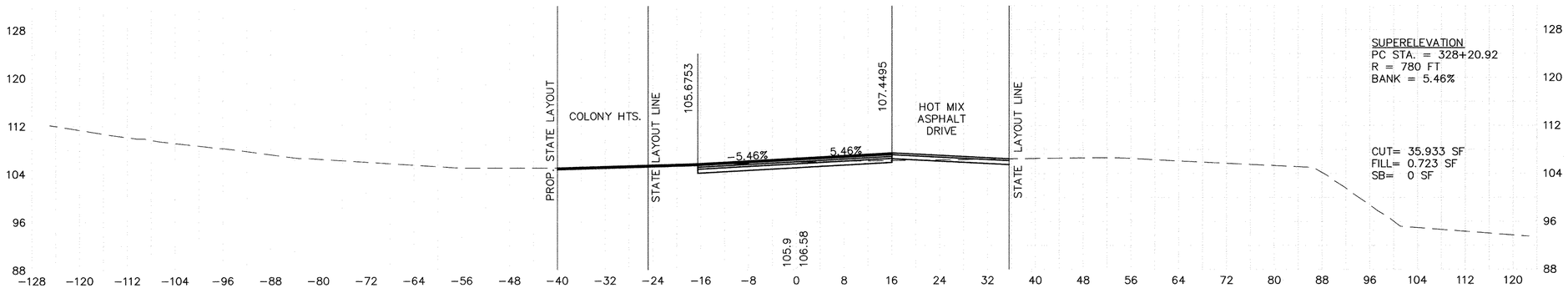
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	111	154
PROJECT FILE NO.: 603823			

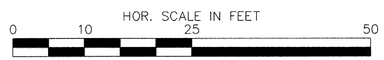
RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 25 OF 28



335+93.10 SKEWED



335+83

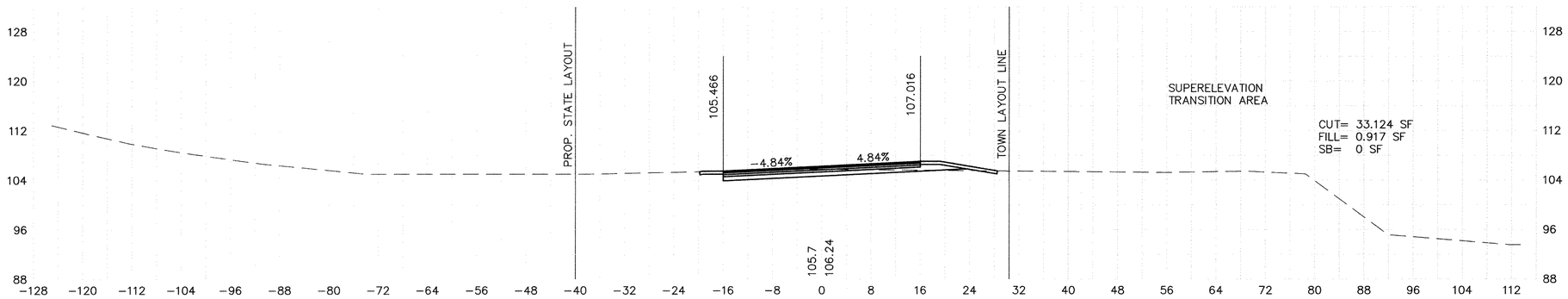


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

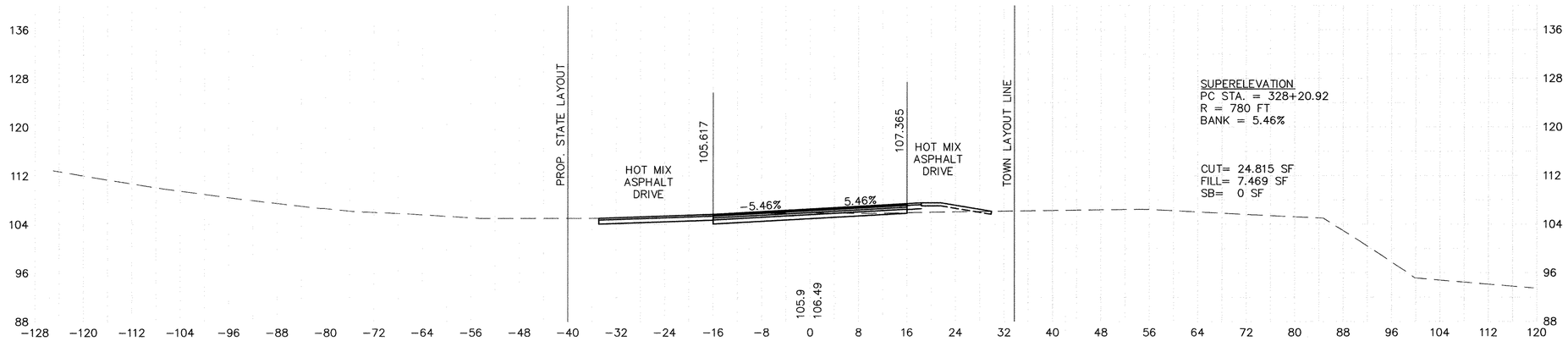
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	112	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 26 OF 28



336+50

R&R UP&OHW
BY OTHERS
+24.58



336+00

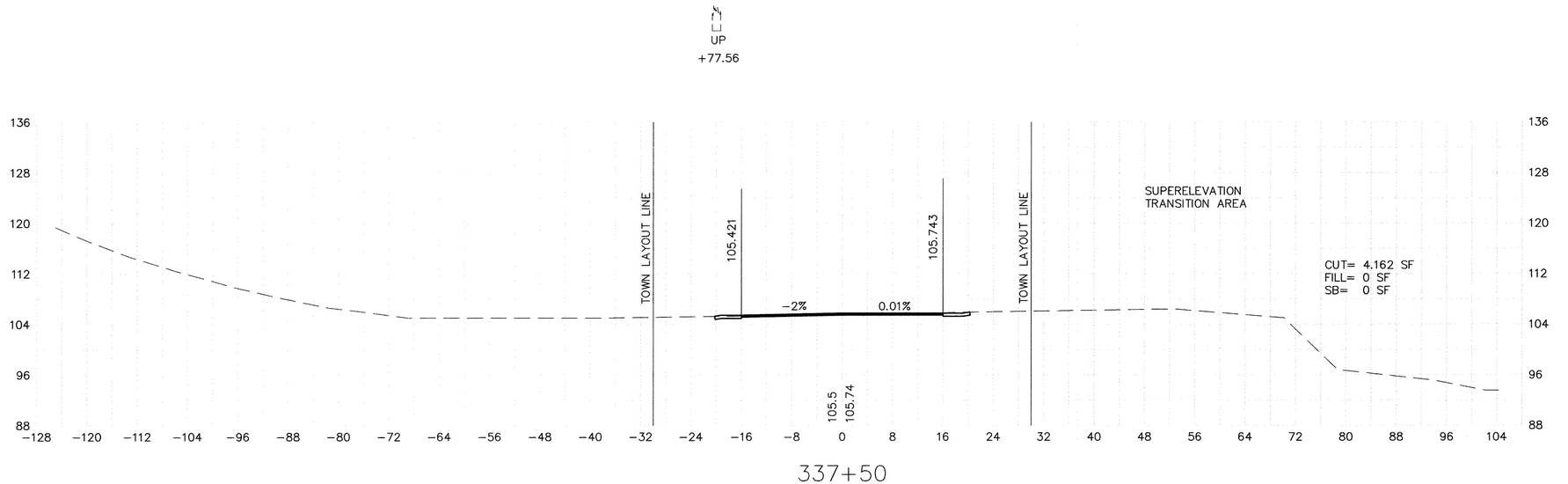
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	113	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 27 OF 28

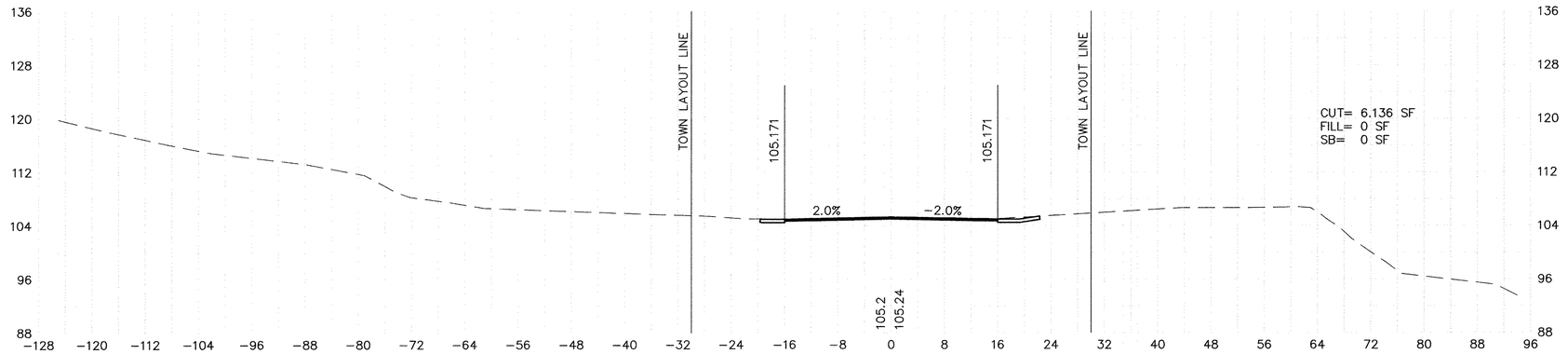


PARSONS

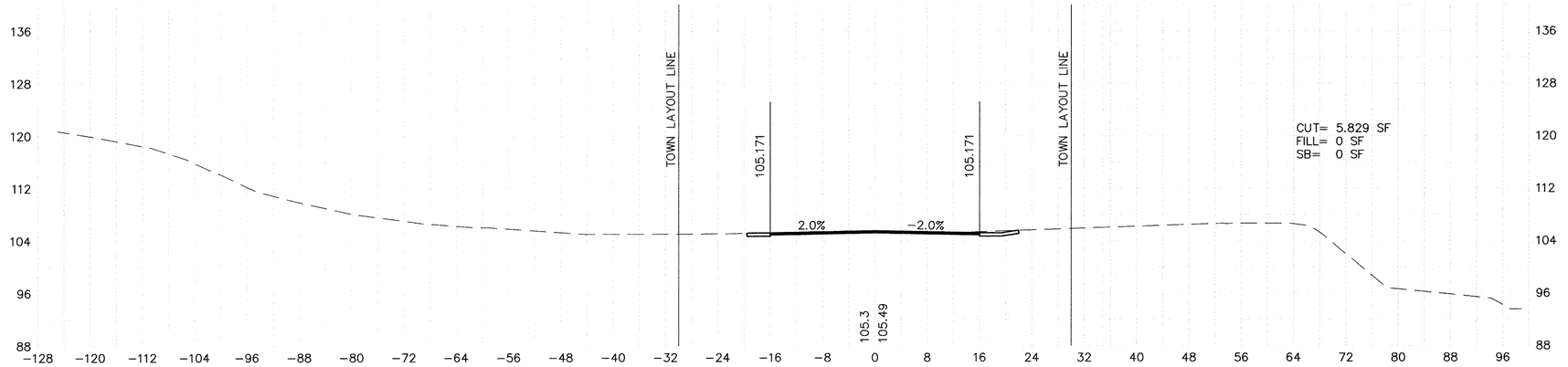
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	114	154
PROJECT FILE NO.: 603823			

RELOCATED PAWTUCKET BLVD
CROSS SECTIONS
SHEET 28 OF 28



338+50



338+00

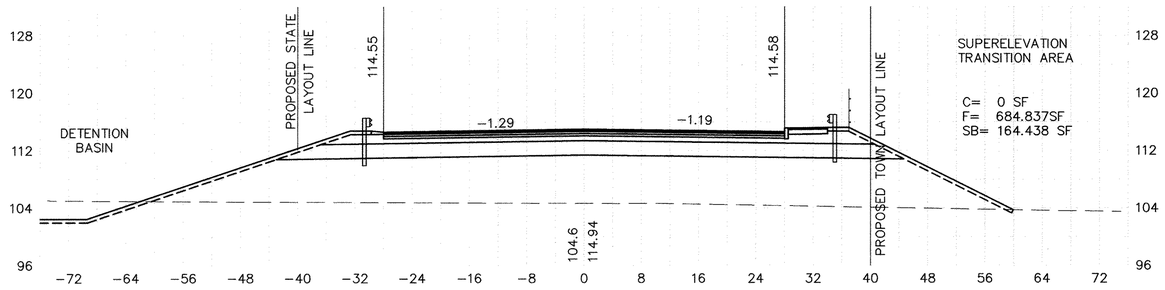
HOR. SCALE IN FEET
0 10 25 50

PARSONS

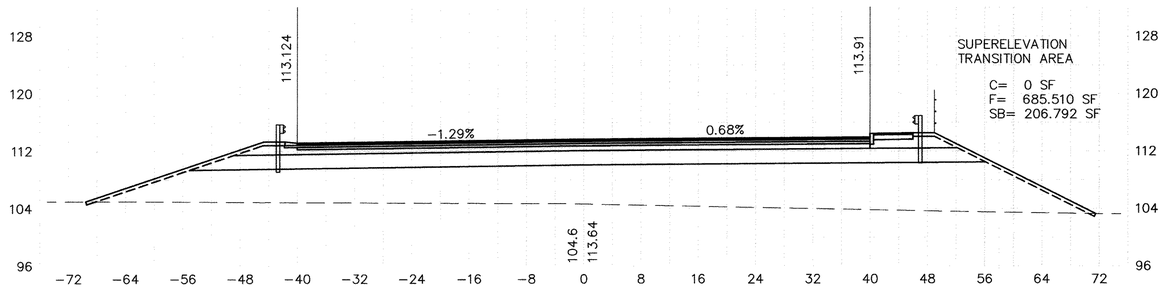
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	115	154
	PROJECT FILE NO.: 603823		

FROST ROAD
CROSS SECTIONS
SHEET 1 OF 5



501+00



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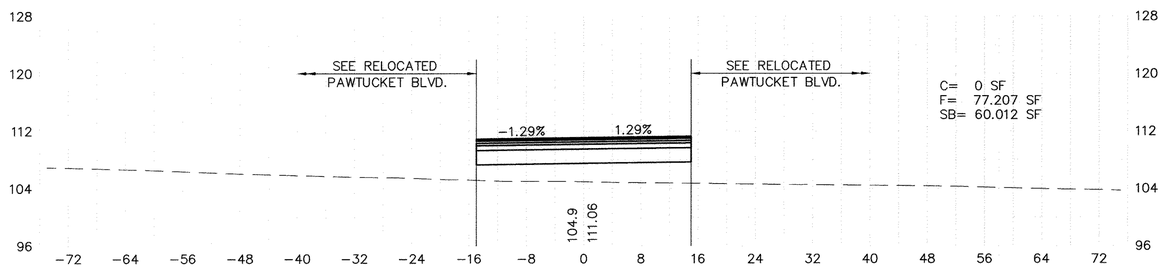

500+00

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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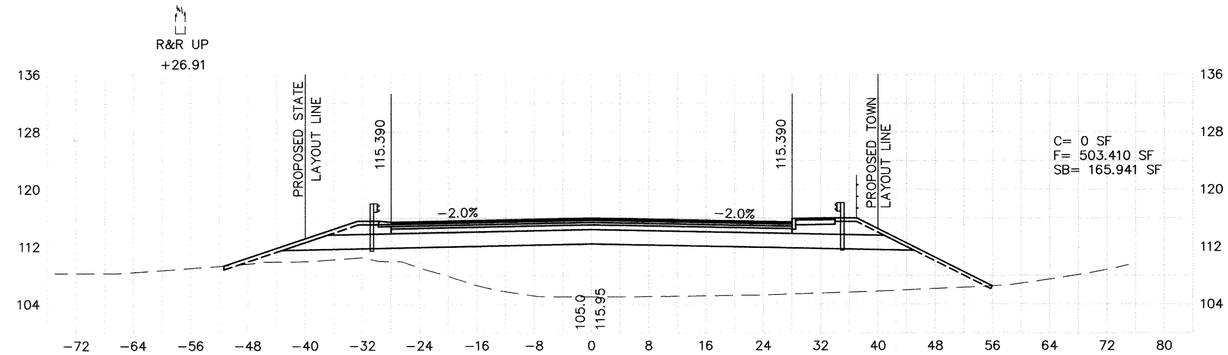
Plot Date: 10/20/2010 8:39 AM

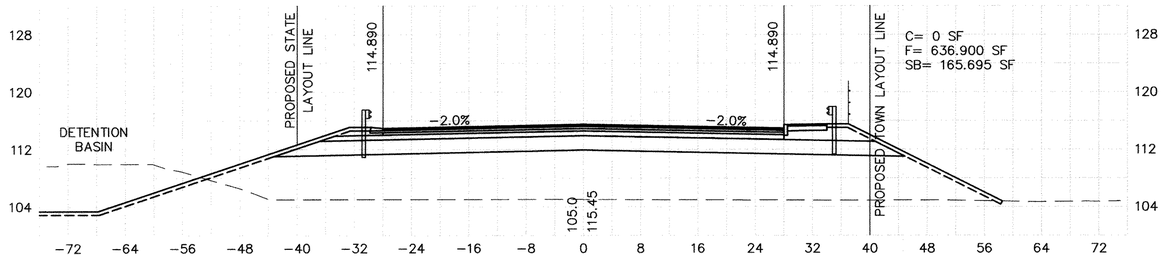
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	116	154
	PROJECT FILE NO.: 603823		

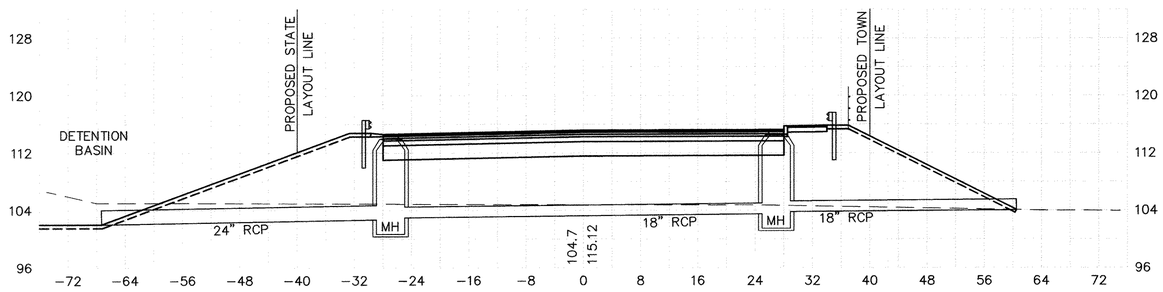
FROST ROAD
CROSS SECTIONS
SHEET 2 OF 5



502+00



501+50



501+17

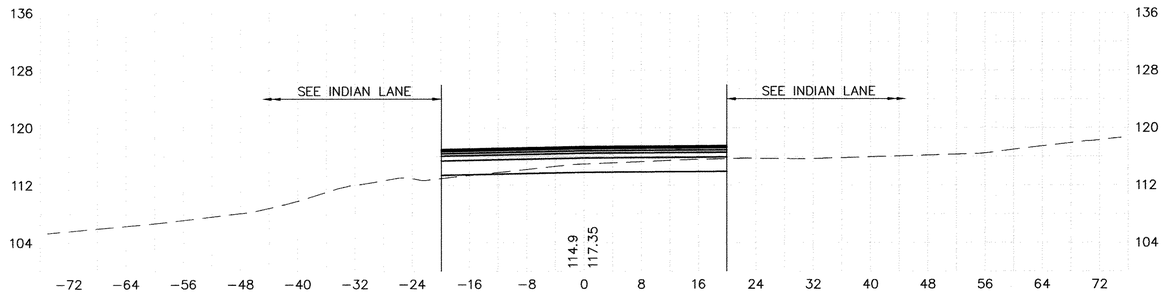
HOR. SCALE IN FEET
0 10 25 50

PARSONS

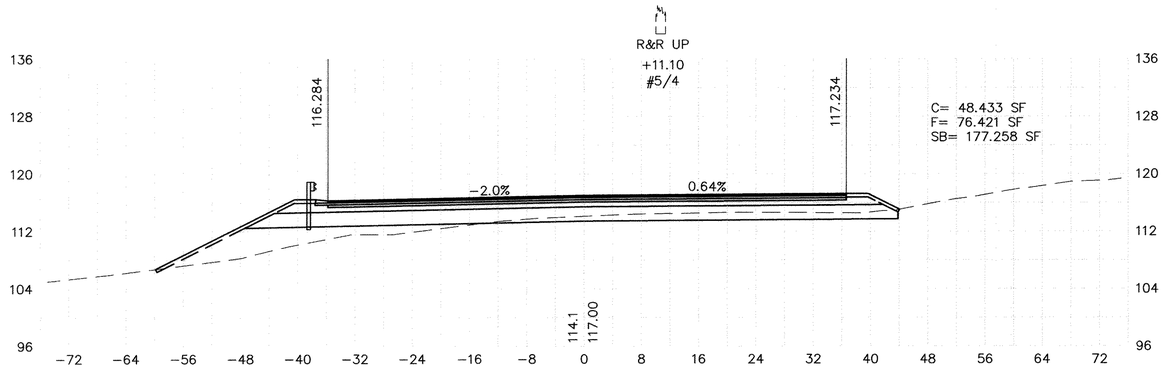
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	117	154
	PROJECT FILE NO.: 603823		

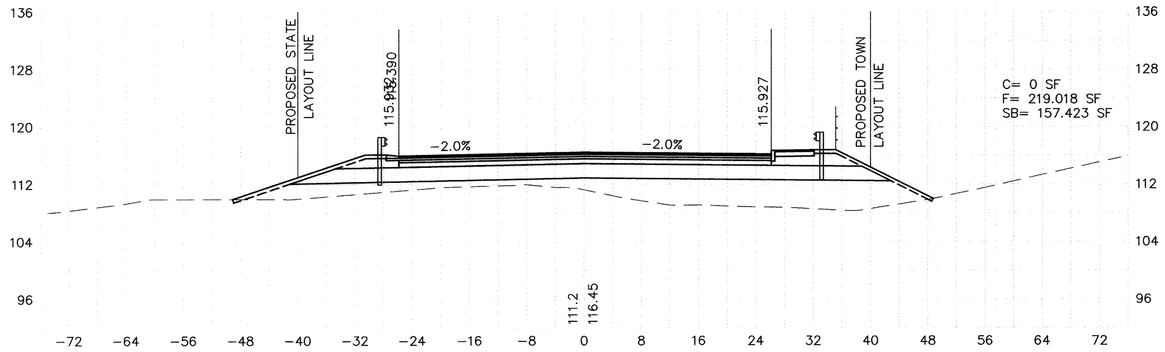
FROST ROAD
CROSS SECTIONS
SHEET 3 OF 5



503+20



503+00



502+50

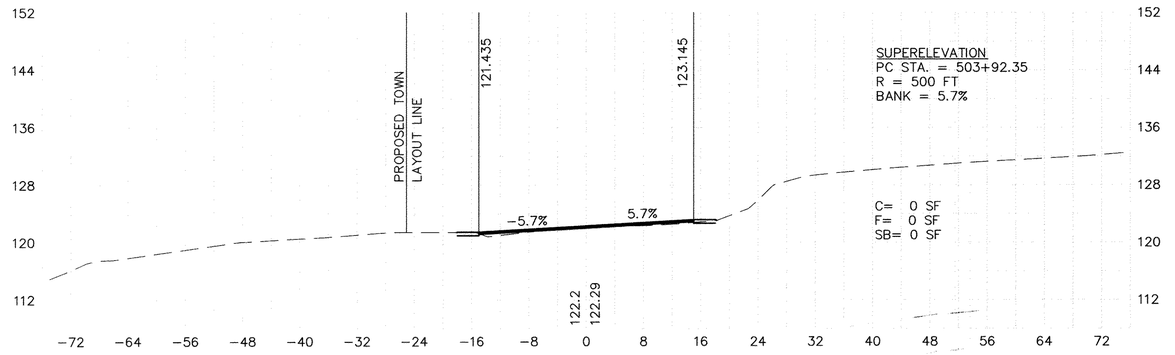
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	118	154
	PROJECT FILE NO.: 603823		

FROST ROAD
CROSS SECTIONS
SHEET 4 OF 5



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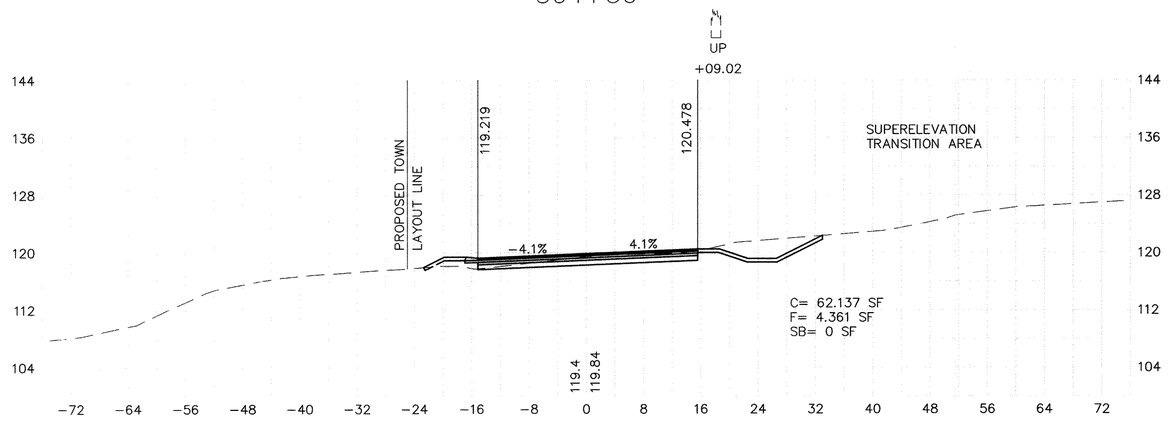

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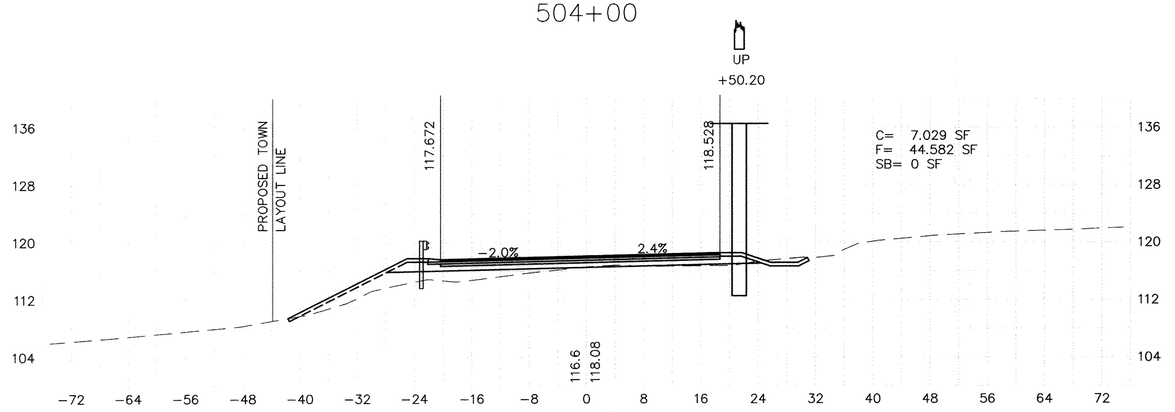


503+50

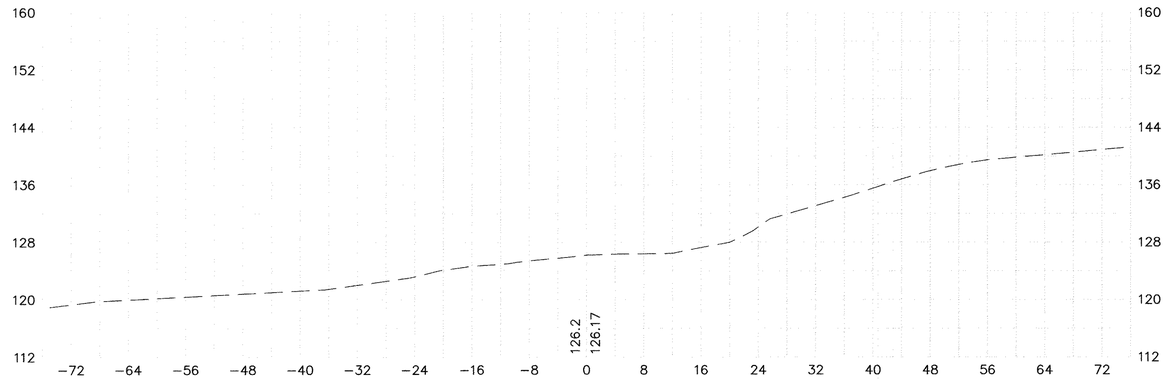
HOR. SCALE IN FEET
0 10 25 50

PARSONS

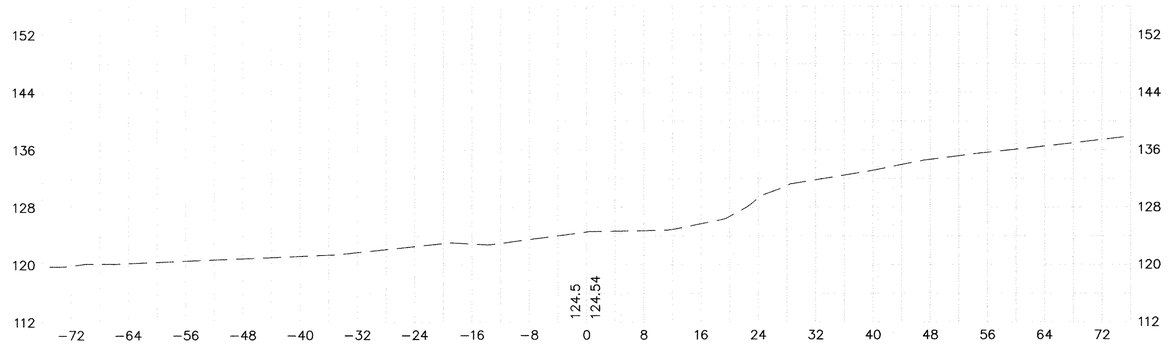
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	119	154
	PROJECT FILE NO.: 603823		

FROST ROAD
CROSS SECTIONS
SHEET 5 OF 5



505+50



505+00

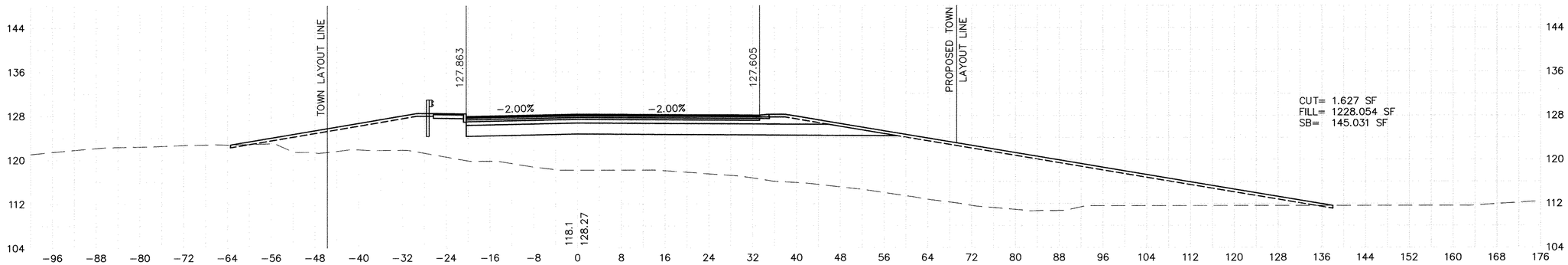
HOR. SCALE IN FEET
0 10 25 50

PARSONS

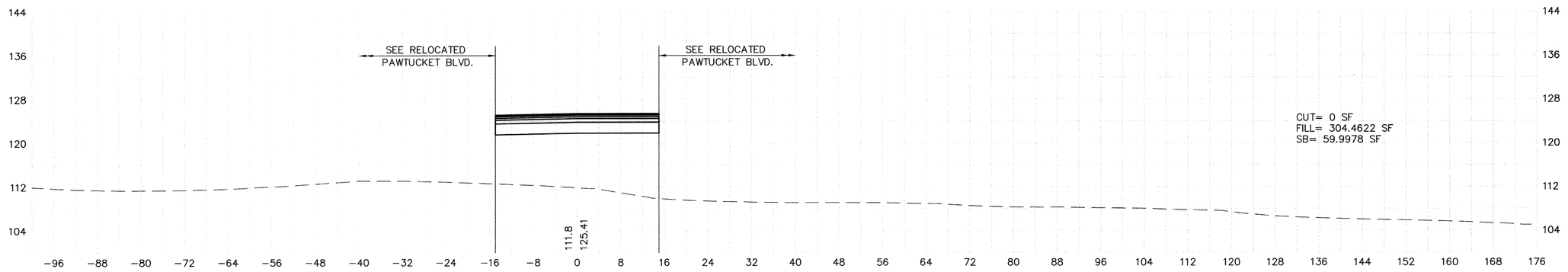
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	120	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE
CROSS SECTIONS
SHEET 1 OF 7



600+50



600+00

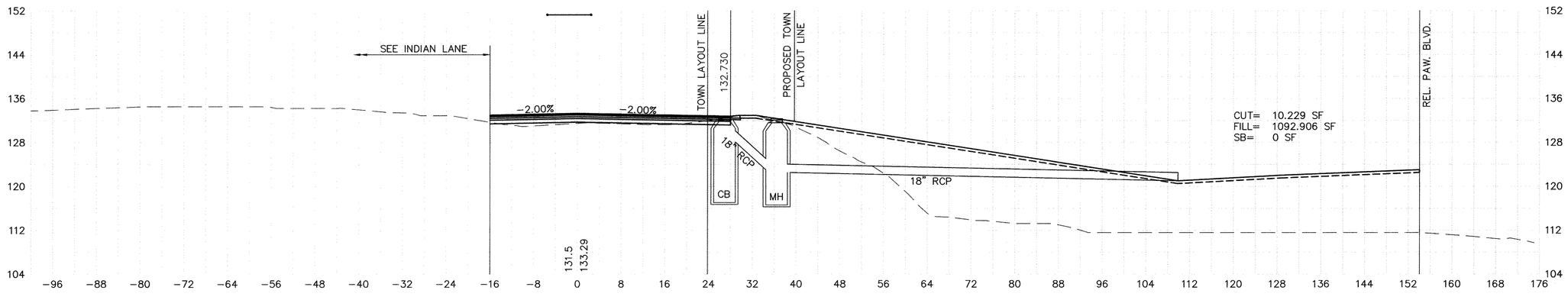
HOR. SCALE IN FEET
0 10 25 50

PARSONS

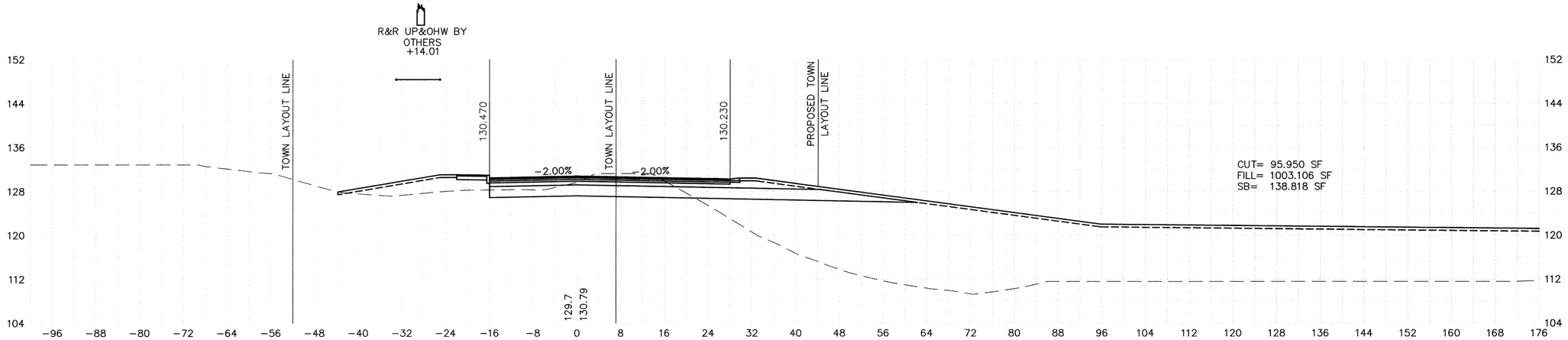
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	121	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE
CROSS SECTIONS
SHEET 2 OF 7



601+50



601+00

R&R UP BY OTHERS +94.20

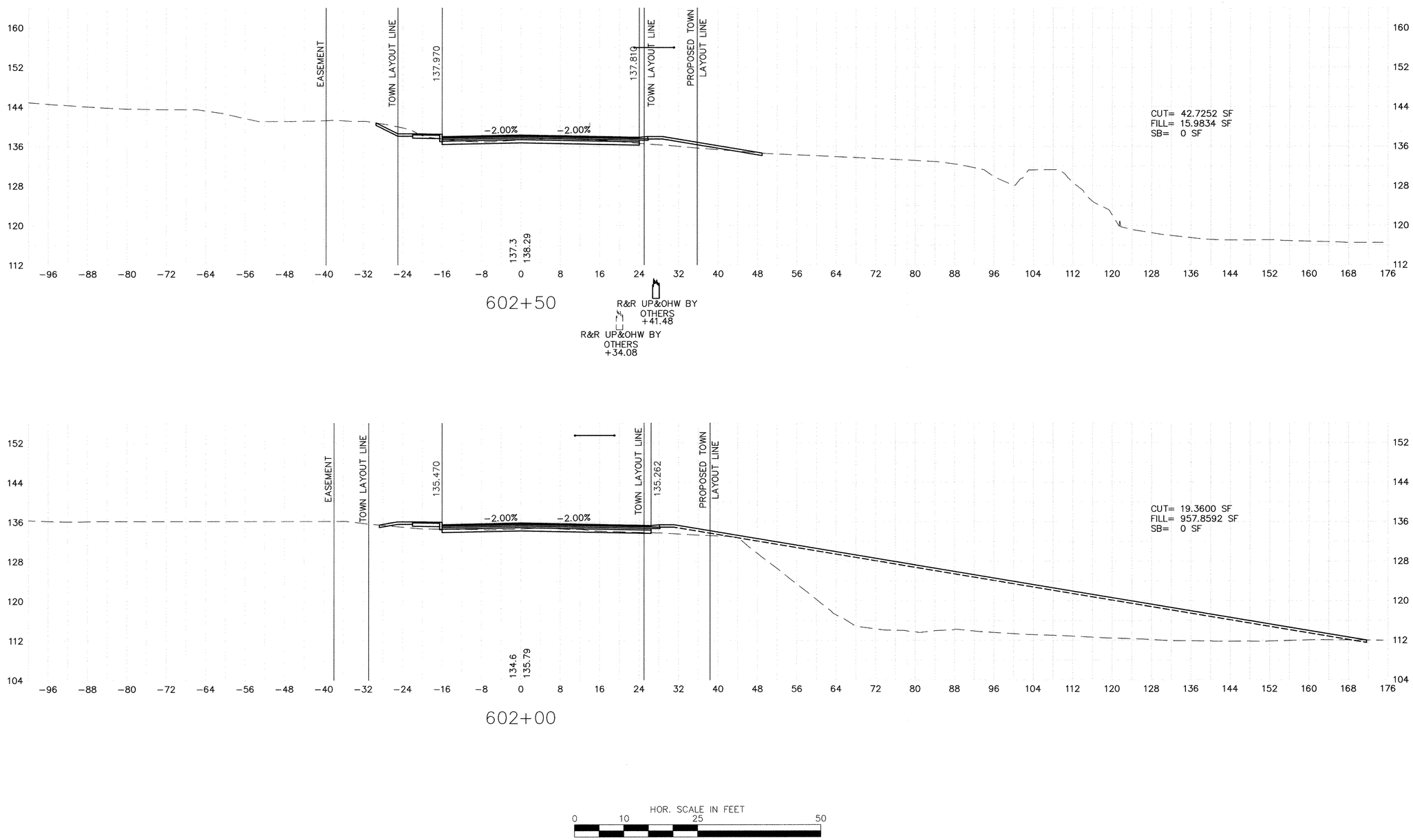
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	122	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE
CROSS SECTIONS
SHEET 3 OF 7

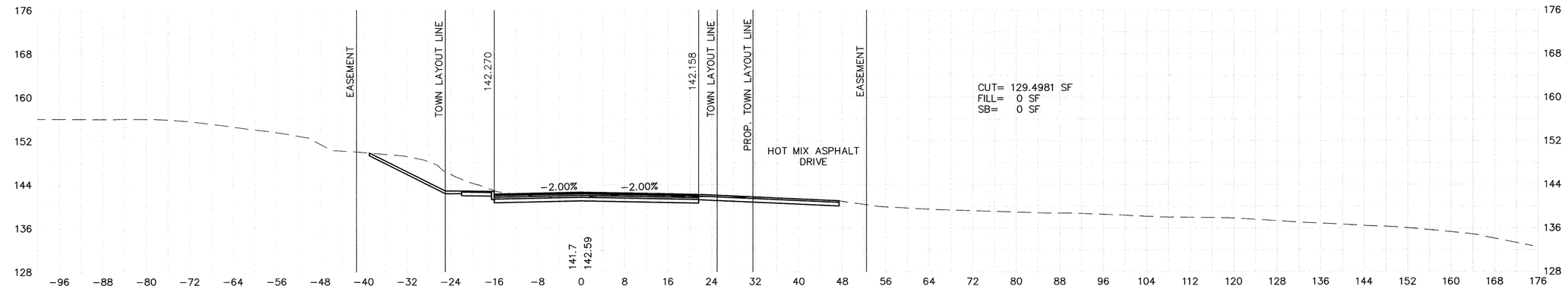


PARSONS

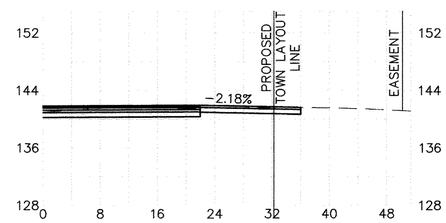
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	123	154
	PROJECT FILE NO.: 603823		

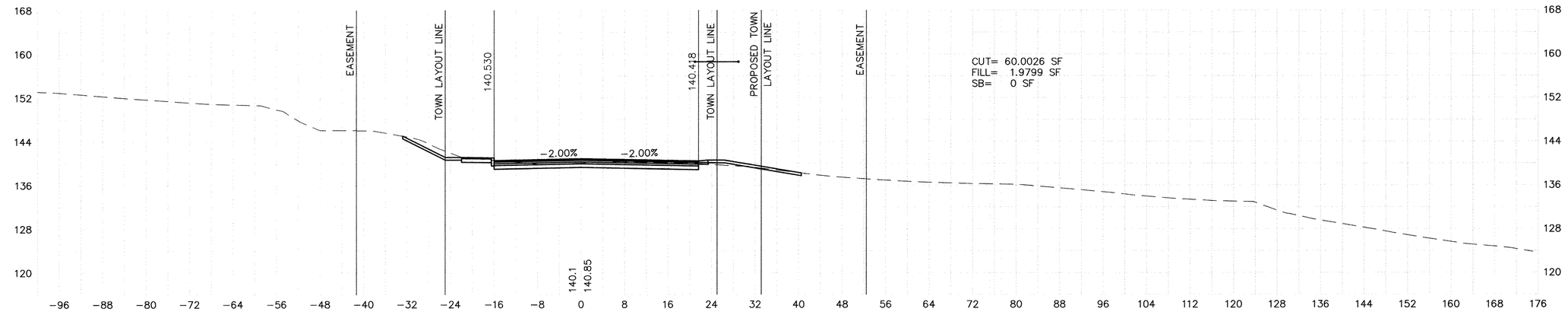
SHERBURNE AVENUE
CROSS SECTIONS
SHEET 4 OF 7



603+30



603+17.04



603+00

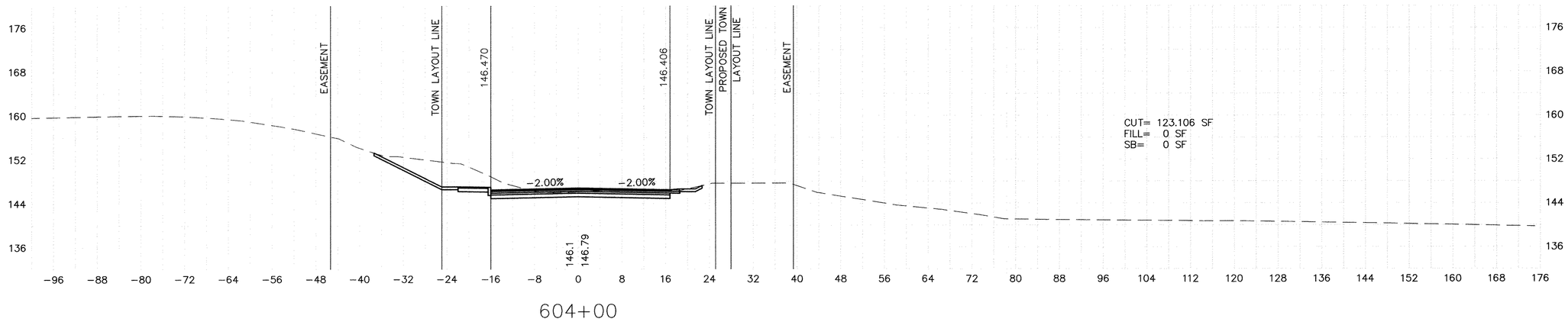
HOR. SCALE IN FEET
0 10 25 50

PARSONS

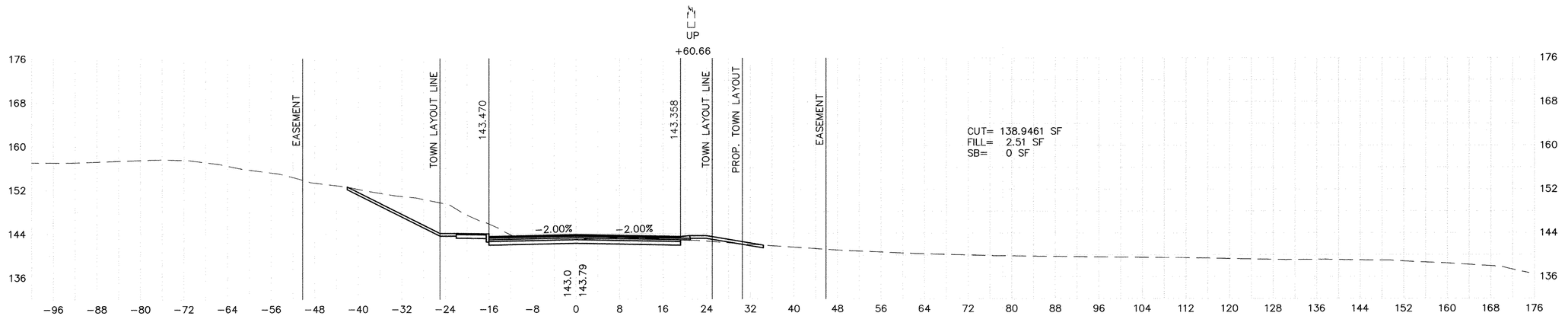
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	124	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE
CROSS SECTIONS
SHEET 5 OF 7



604+00



603+50

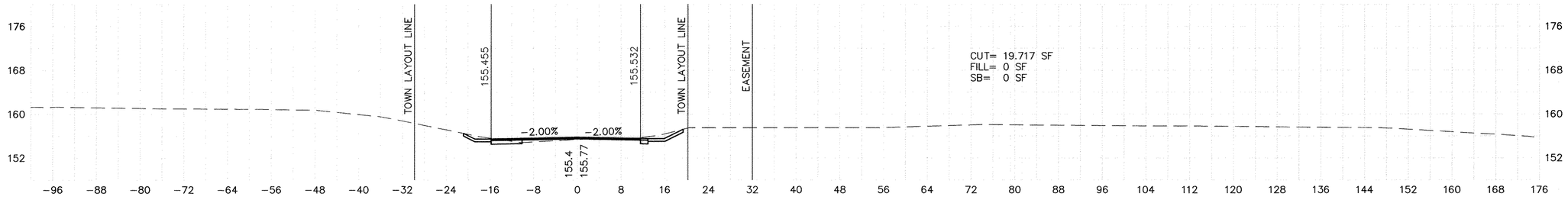
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	125	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE
CROSS SECTIONS
SHEET 6 OF 7



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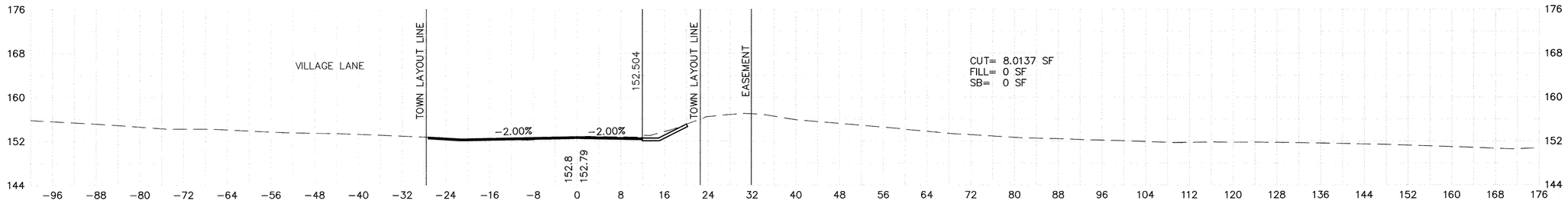
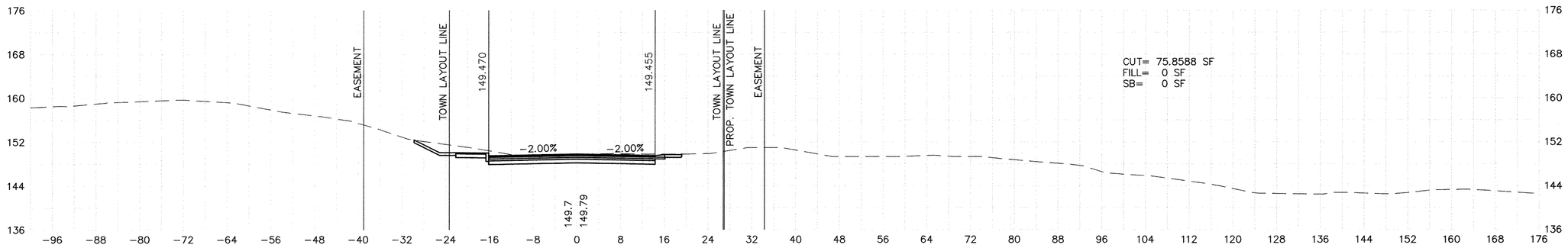


605+00



604+50

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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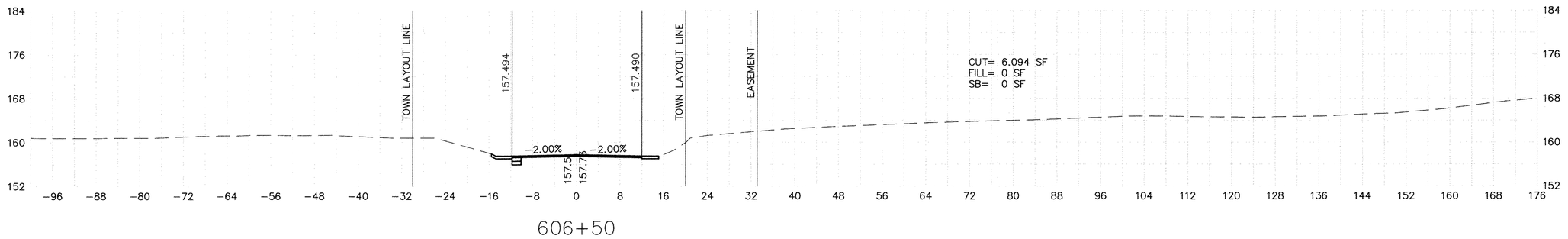
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

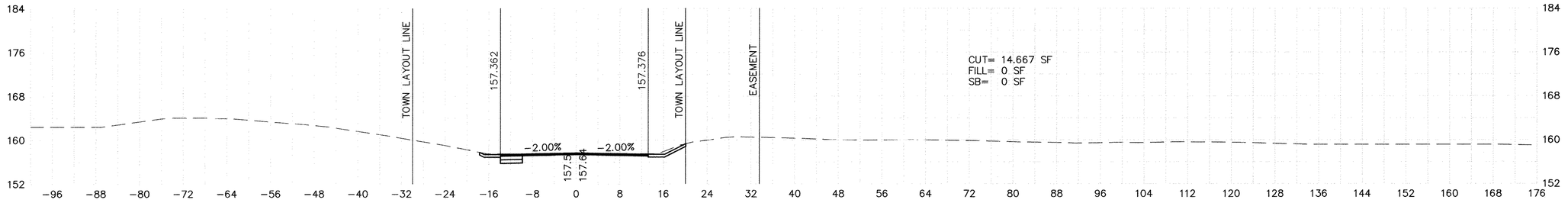
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	126	154
PROJECT FILE NO.: 603823			

SHERBURNE AVENUE CROSS SECTIONS

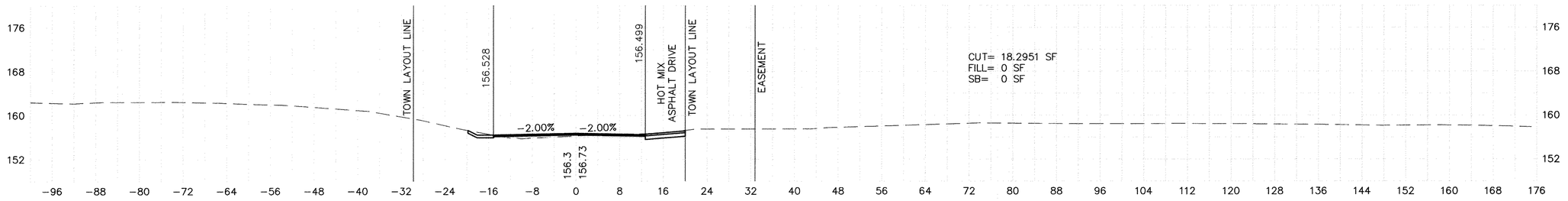
SHEET 7 OF 7



606+50



606+00



605+70

HOR. SCALE IN FEET

0 10 25 50

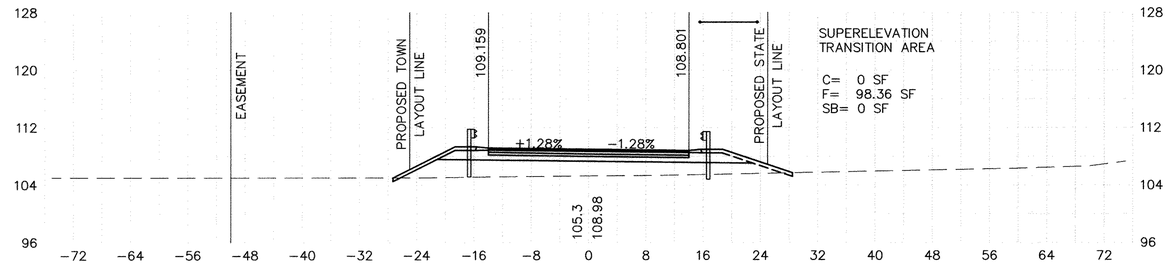
PARSONS

File Name: P:\Massachusetts\45088_Tyngsborough\Cadd\drawings\Vol01-126_XSECT-Sherburne.dwg
Plot Date: 10/20/2016 9:10 AM

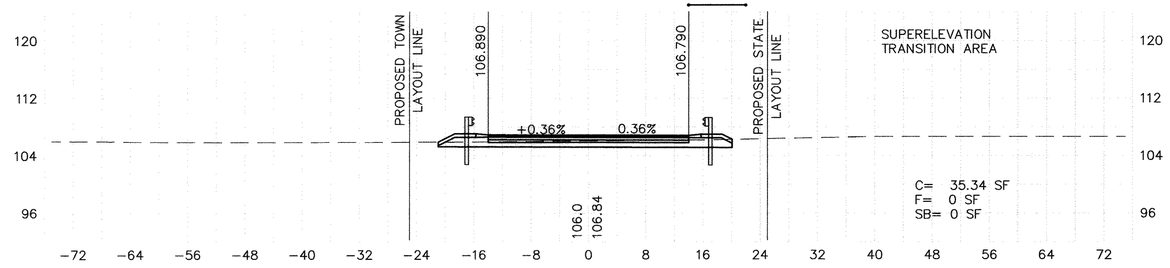
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	127	154
	PROJECT FILE NO.: 603823		

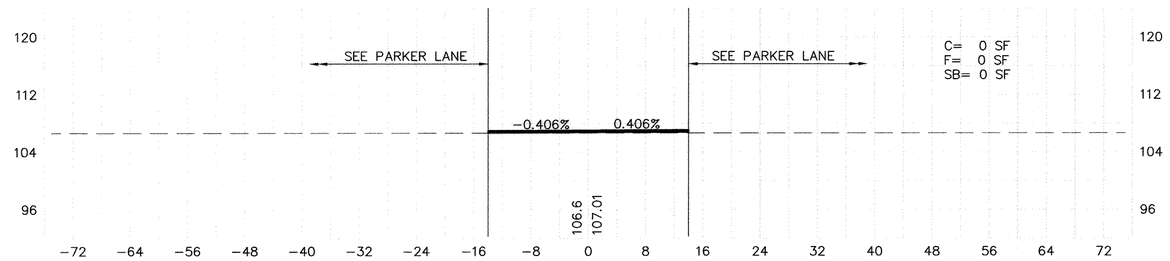
INDIAN LANE
CROSS SECTIONS
SHEET 1 OF 7



701+00



700+50



700+00

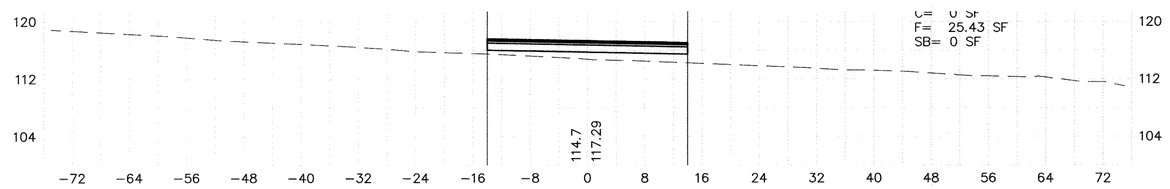
HOR. SCALE IN FEET
0 10 25 50

PARSONS

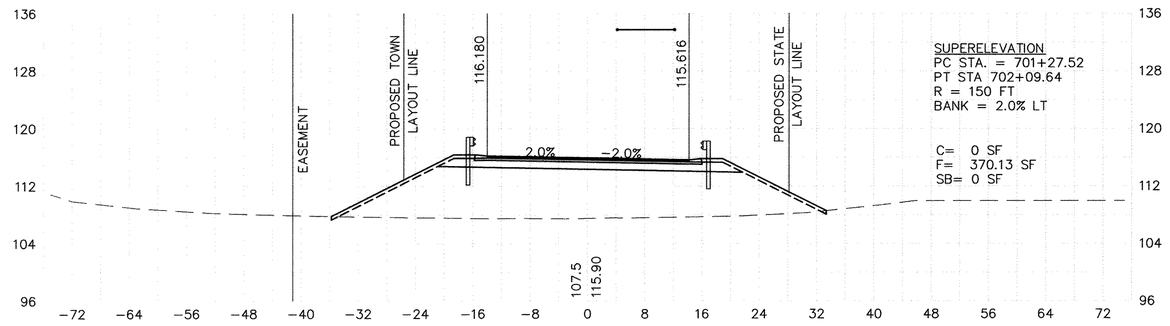
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	128	154
	PROJECT FILE NO.: 603823		

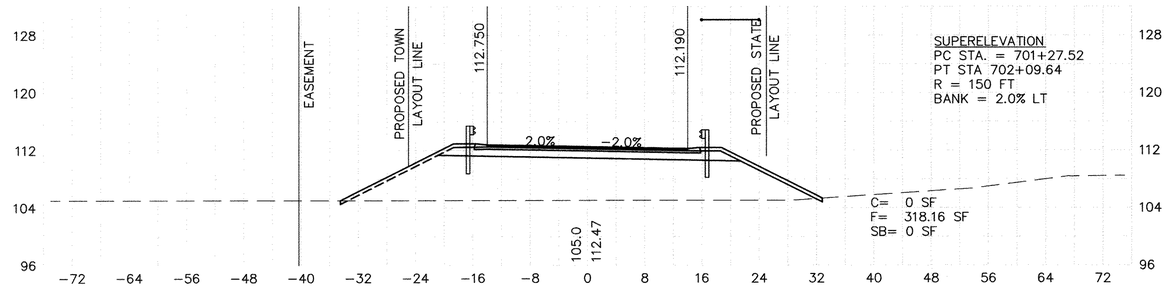
INDIAN LANE
CROSS SECTIONS
SHEET 2 OF 7



702+50



702+00



701+50

R&R UP&OHW BY
OTHERS
+37.29

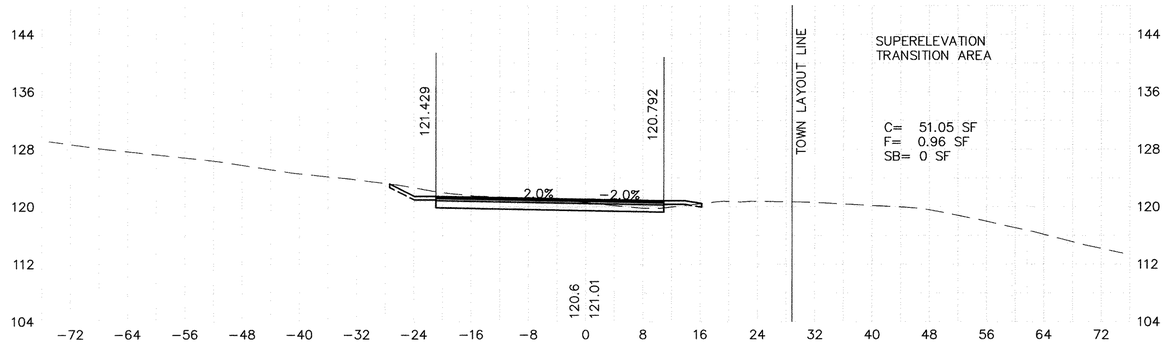
HOR. SCALE IN FEET
0 10 25 50

PARSONS

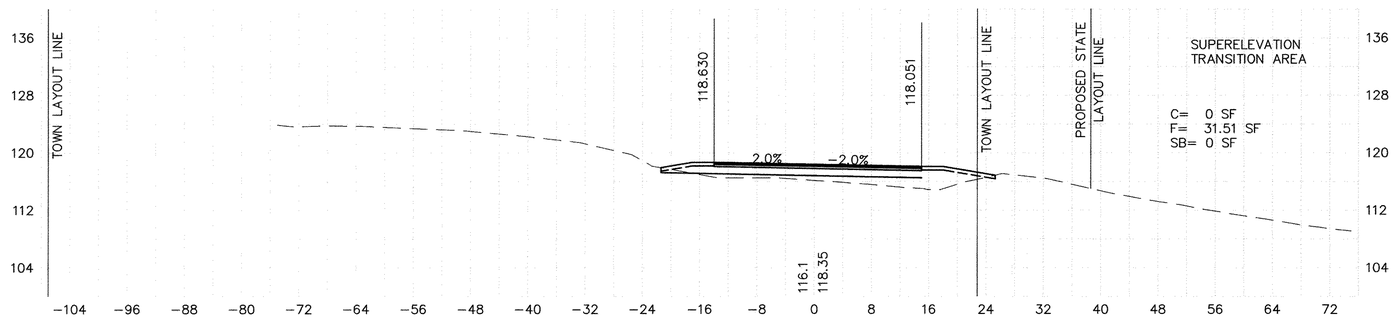
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	129	154
	PROJECT FILE NO.: 603823		

INDIAN LANE
CROSS SECTIONS
SHEET 3 OF 7



703+50



703+00

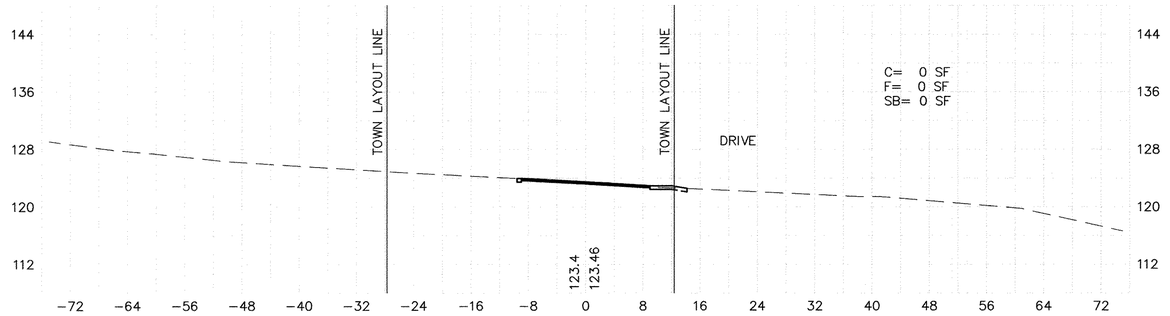
UP
+74.28
HOR. SCALE IN FEET
0 10 25 50

PARSONS

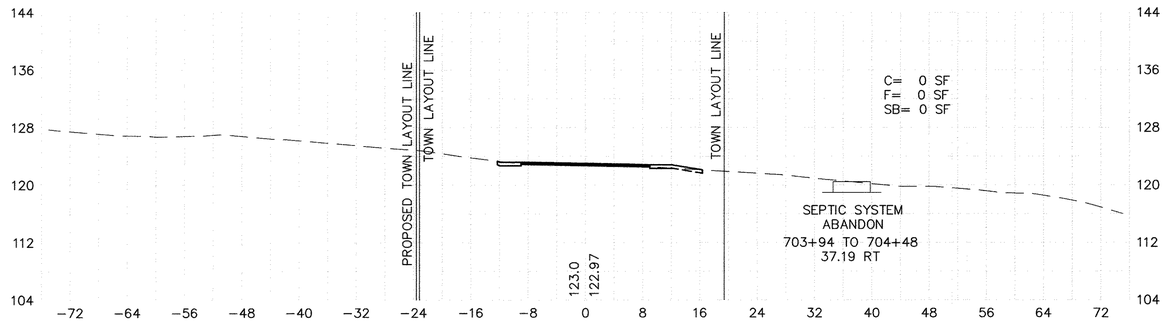
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	130	154
	PROJECT FILE NO.: 603823		

INDIAN LANE
CROSS SECTIONS
SHEET 4 OF 7



704+50



704+00

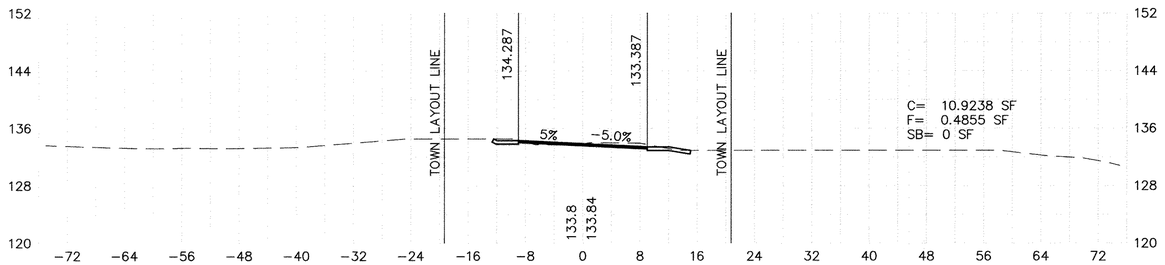
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

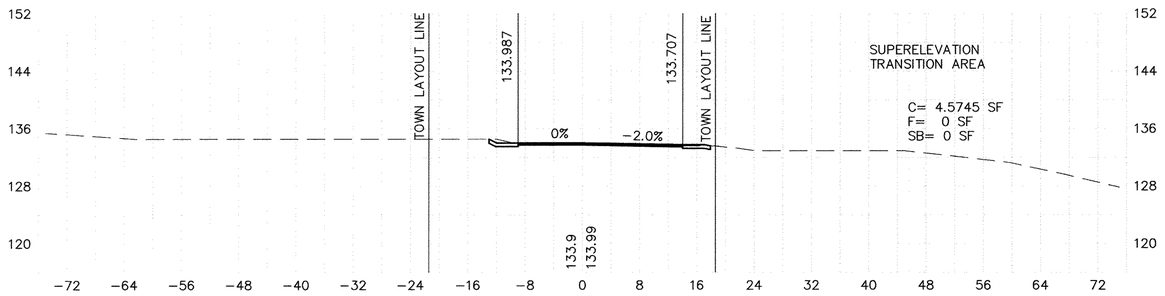
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	131	154
	PROJECT FILE NO.: 603823		

INDIAN LANE
CROSS SECTIONS
SHEET 5 OF 7



709+00

WATER WELL
ABANDON
+85.41
46.61 RT



708+50

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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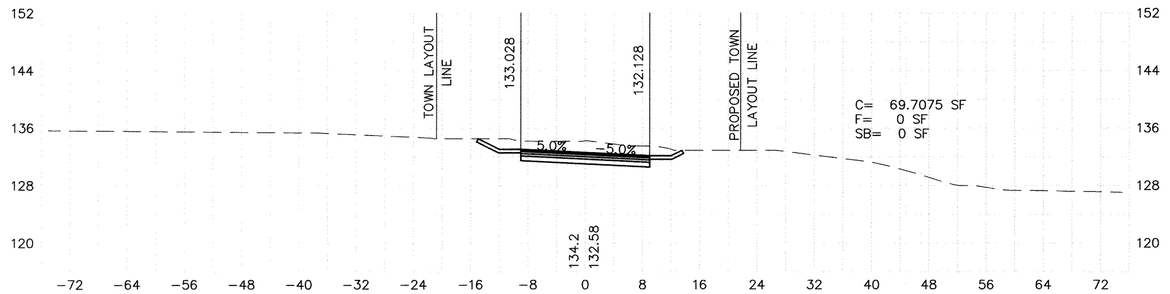
Plot Date: 10/20/2010 9:13 AM

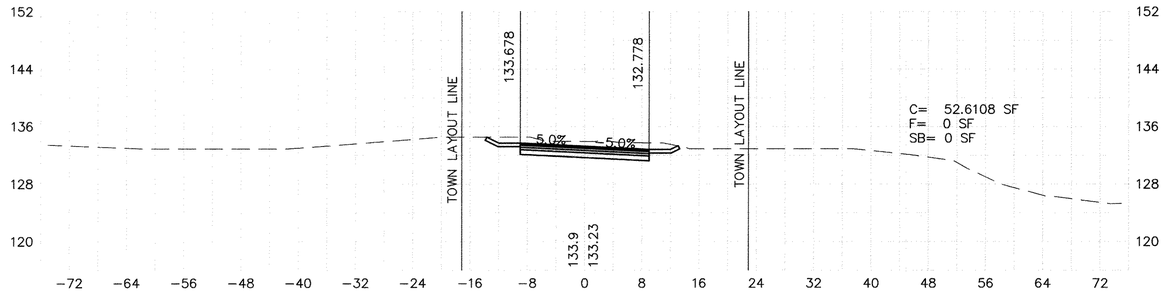
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	132	154
PROJECT FILE NO.: 603823			

INDIAN LANE
CROSS SECTIONS
SHEET 6 OF 7



710+00



709+50

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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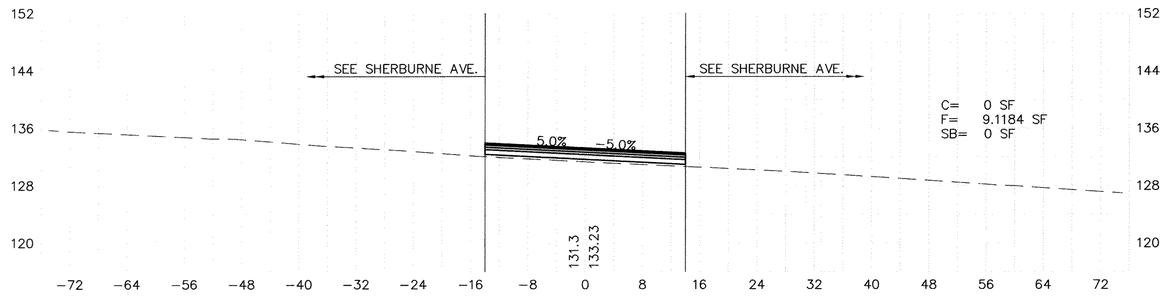
Plot Date: 10/20/2010 9:13 AM

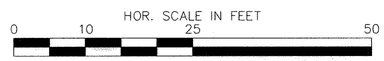
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	133	154
PROJECT FILE NO.: 603823			

INDIAN LANE
CROSS SECTIONS
SHEET 7 OF 7



710+50

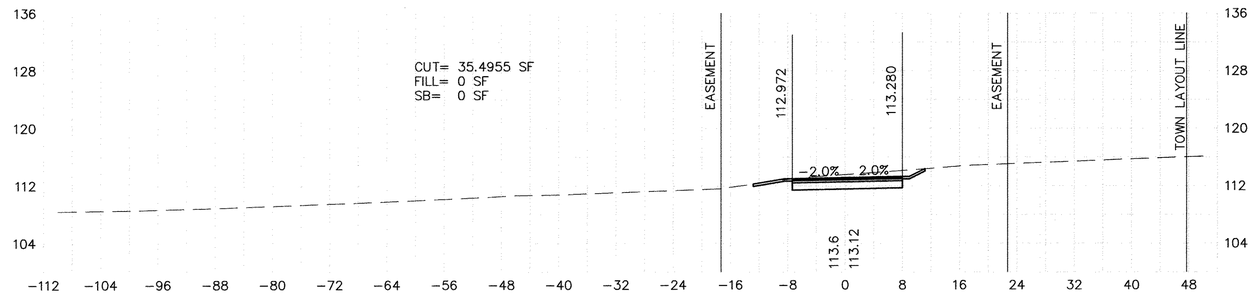


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	134	154
	PROJECT FILE NO.: 603823		

PARKER LANE
CROSS SECTIONS
SHEET 1 OF 6



801+00

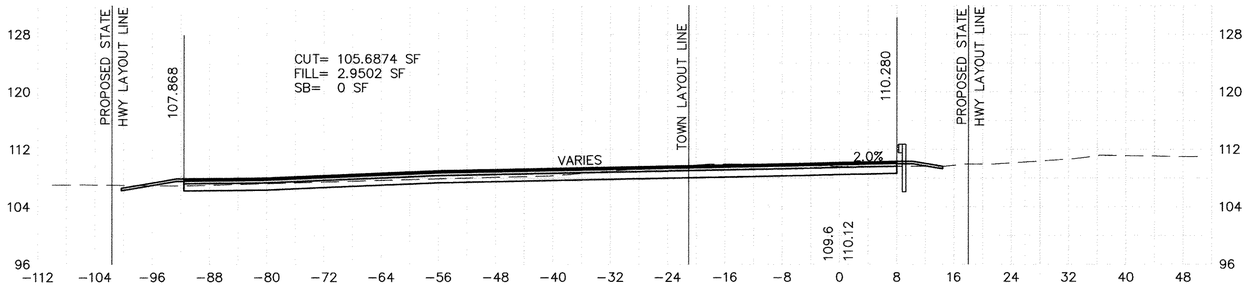
HOR. SCALE IN FEET
0 10 25 50

PARSONS

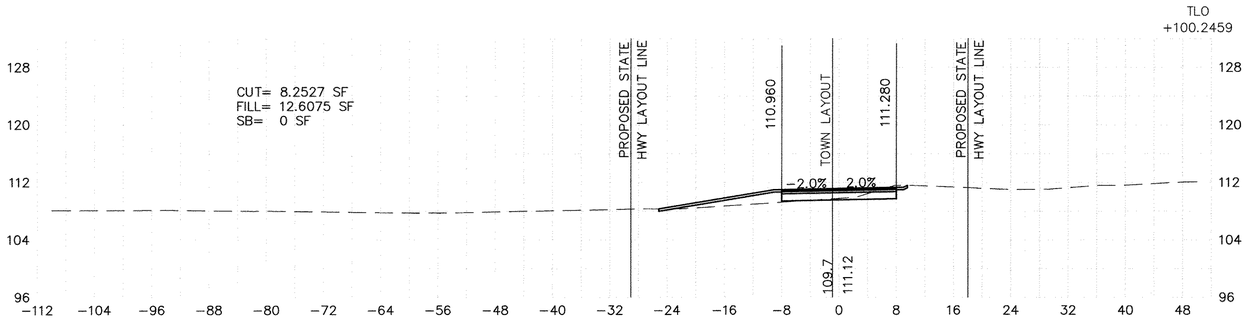
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	135	154
	PROJECT FILE NO.: 603823		

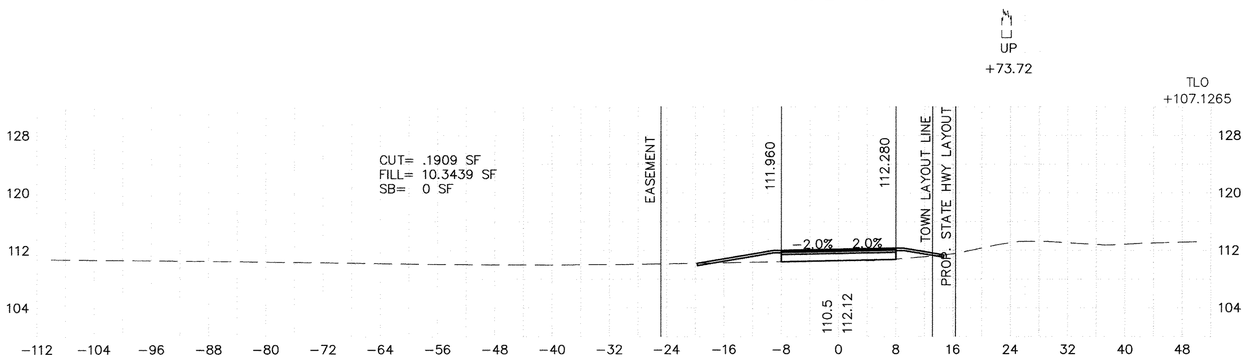
PARKER LANE
CROSS SECTIONS
SHEET 2 OF 6



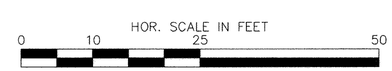
802+50



802+00



801+50

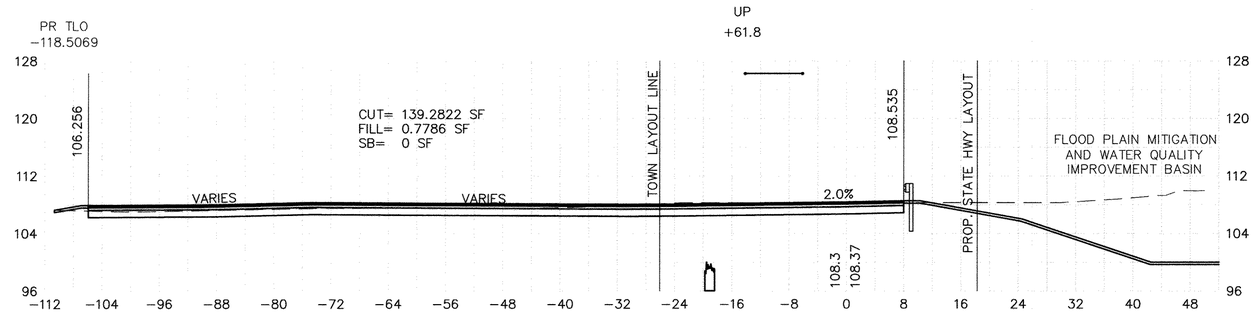


PARSONS

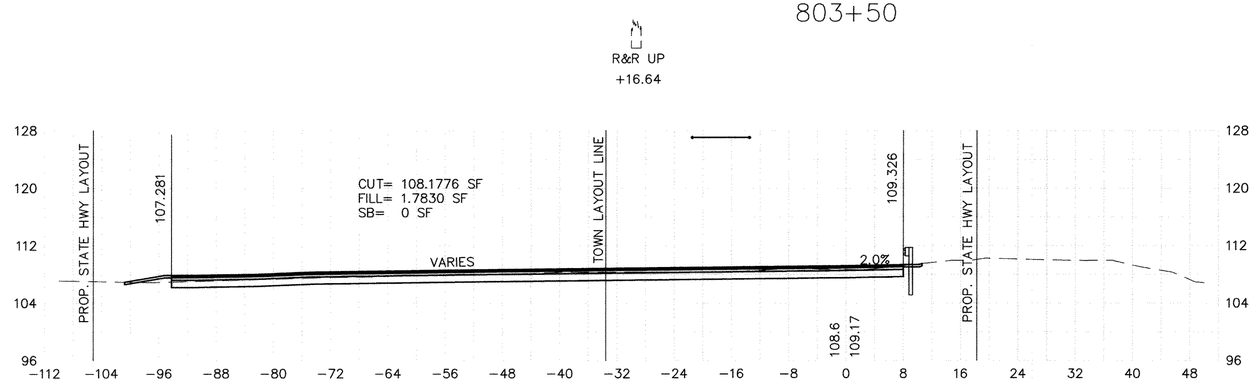
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	136	154
	PROJECT FILE NO.: 603823		

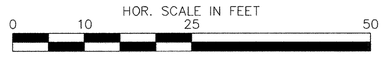
PARKER LANE
CROSS SECTIONS
SHEET 3 OF 6



803+50



803+00

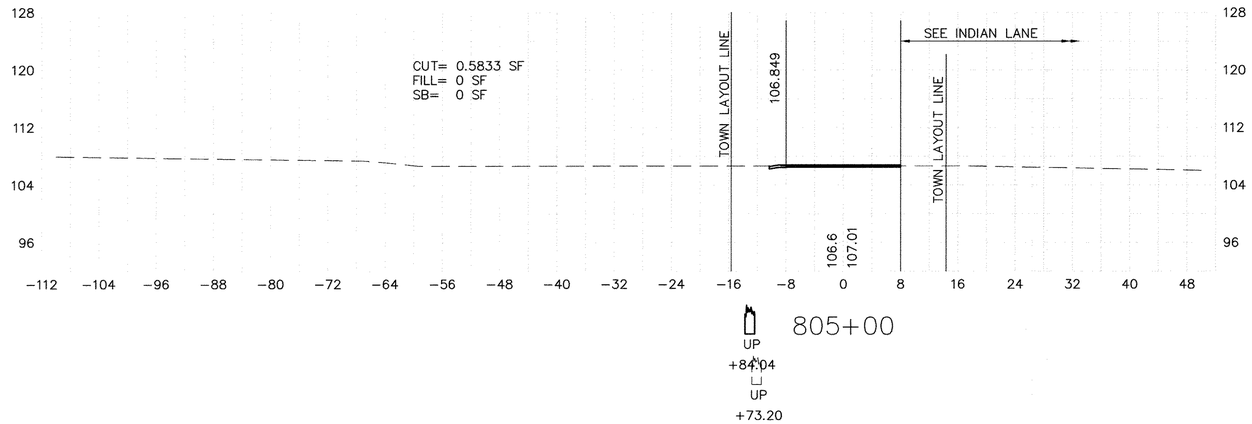


PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	137	154
PROJECT FILE NO.: 603823			

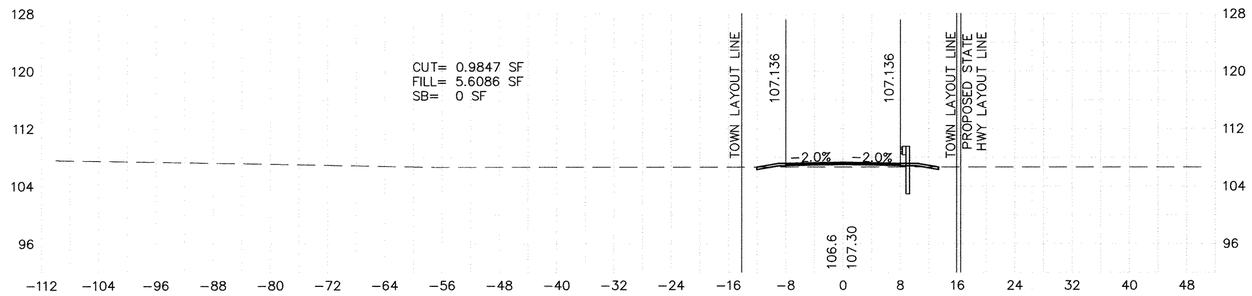
PARKER LANE
CROSS SECTIONS
SHEET 4 OF 6



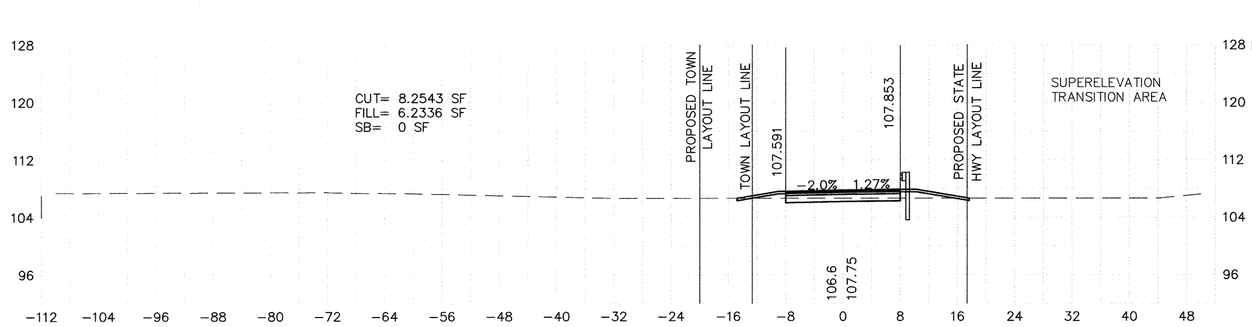
805+00

UP
+84.04

UP
+73.20



804+50



R&R UP
+01.14
#2/2

804+00

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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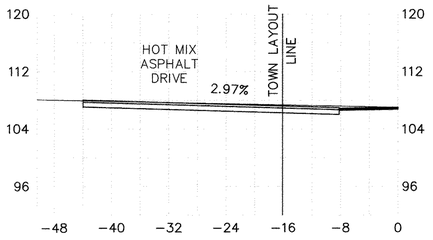
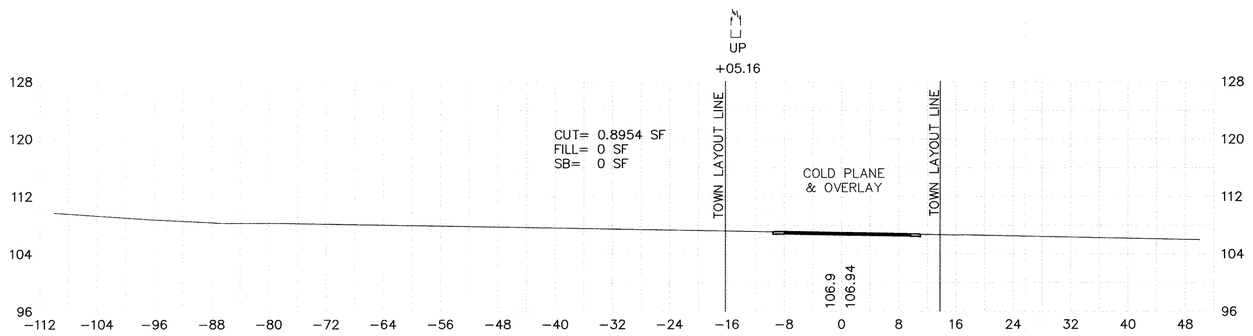
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	138	154
PROJECT FILE NO.: 603823			

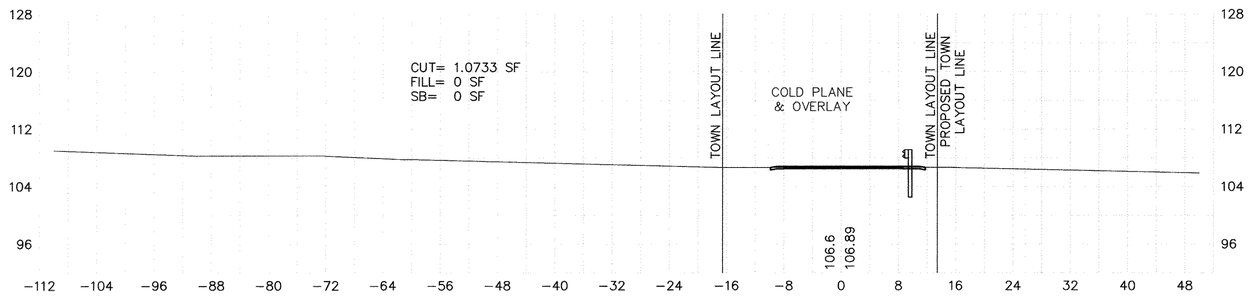
PARKER LANE
CROSS SECTIONS
SHEET 5 OF 6



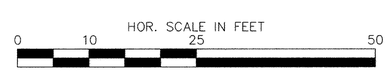
806+18.22



806+00



805+50

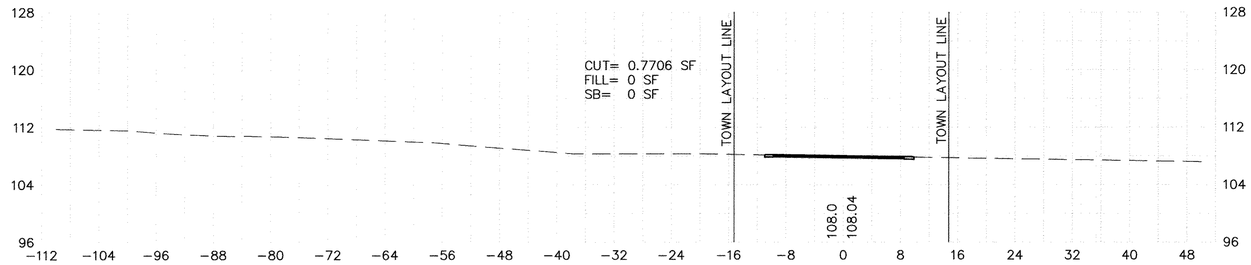


PARSONS

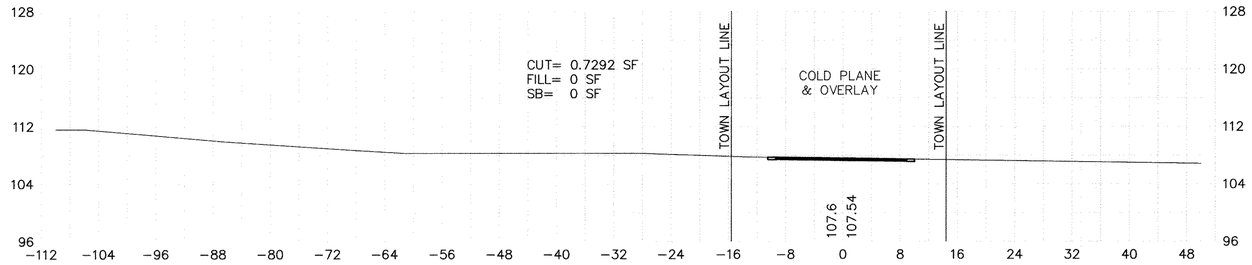
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	139	154
	PROJECT FILE NO.: 603823		

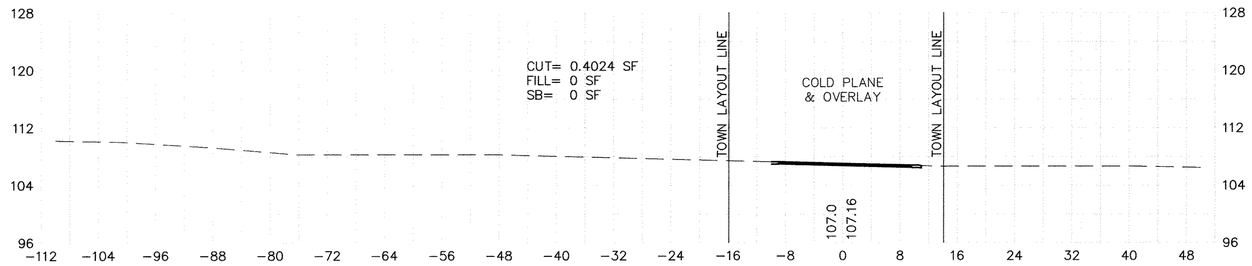
PARKER LANE
CROSS SECTIONS
SHEET 6 OF 6



807+50



807+00



806+50

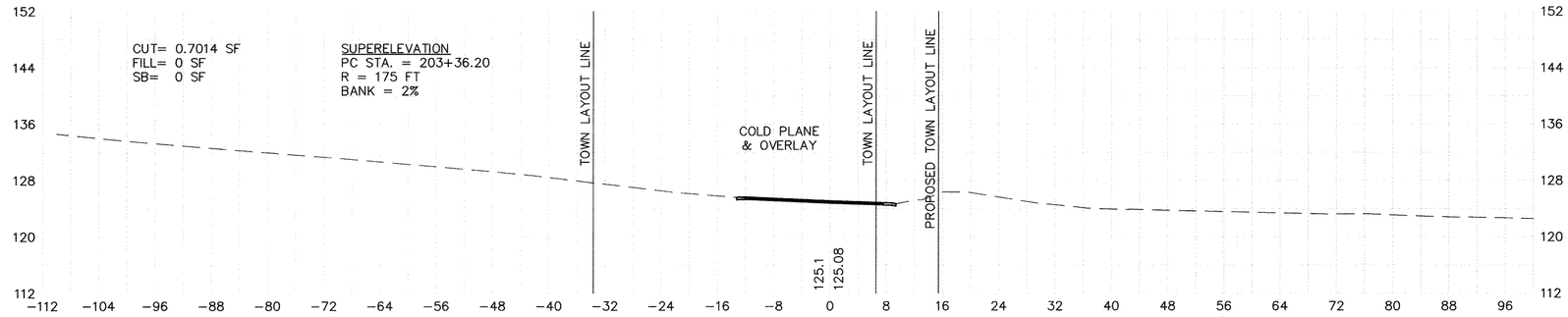
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

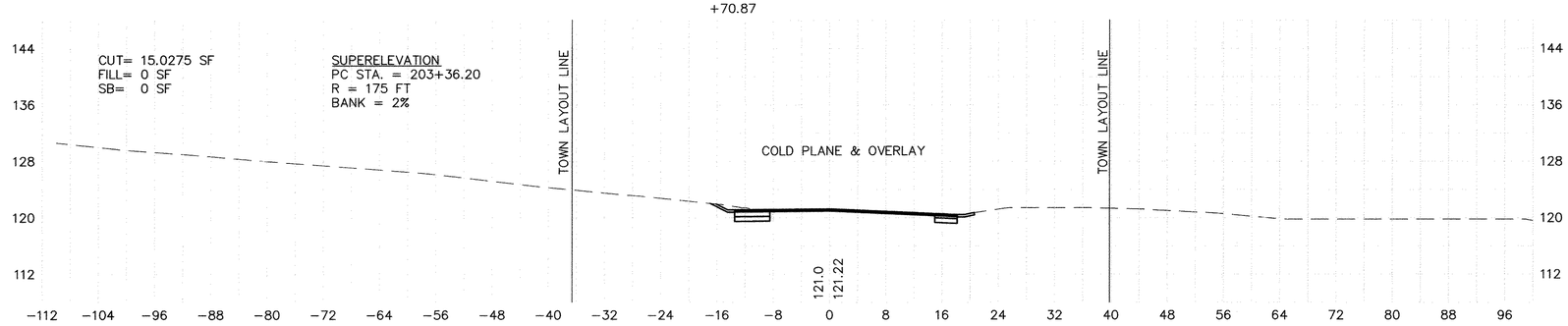
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	140	154
PROJECT FILE NO.: 603823			

CURTIS ROAD
CROSS SECTIONS
SHEET 1 OF 2

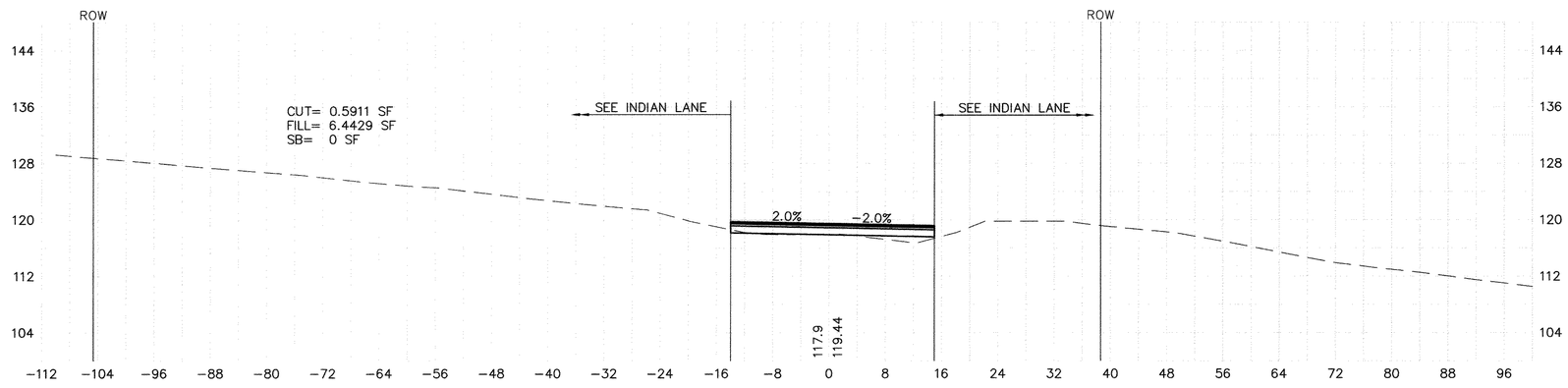


204+00

UP
+70.87



203+50



203+21.31

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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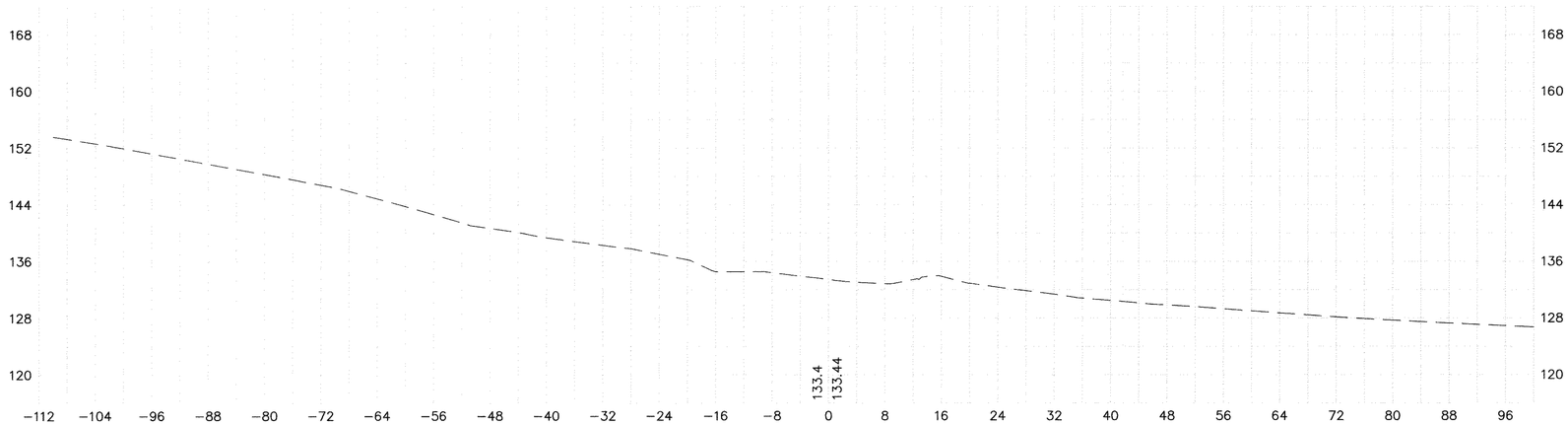
Plot Date: 10/20/2010 9:23 AM

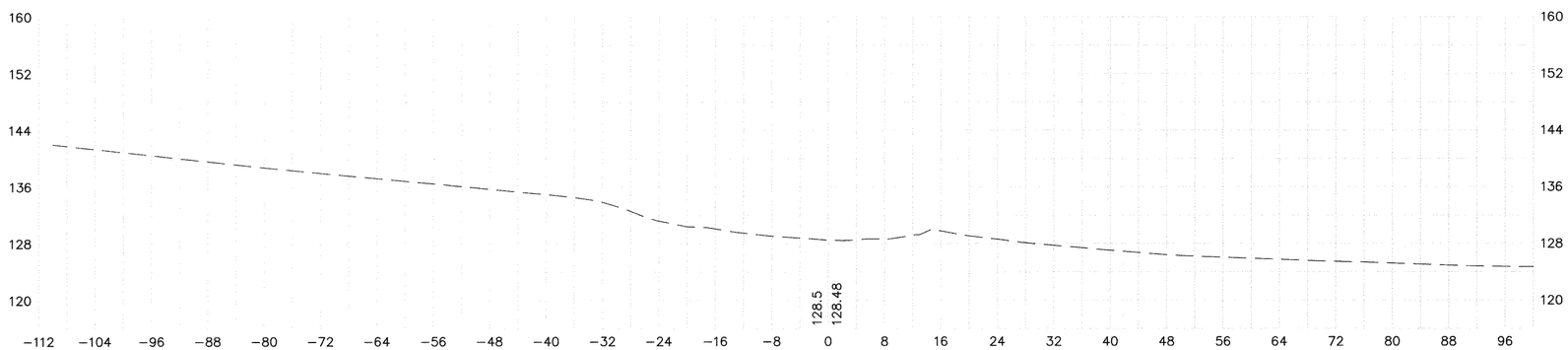
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	141	154
	PROJECT FILE NO.: 603823		

CURTIS ROAD
CROSS SECTIONS
SHEET 2 OF 2



205+00



204+50

HOR. SCALE IN FEET
0 10 25 50

PARSONS

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Plot Date: 10/20/2010 9:23 AM

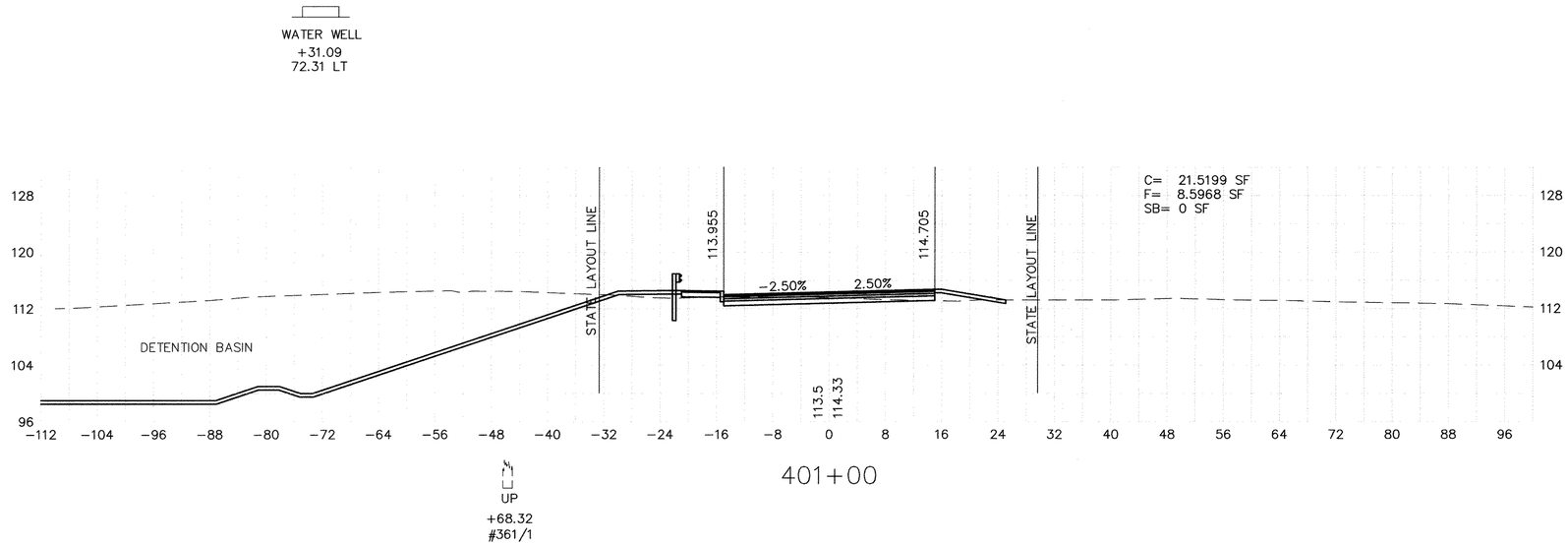
TYNGSBOROUGH

RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	142	154
PROJECT FILE NO.: 603823			

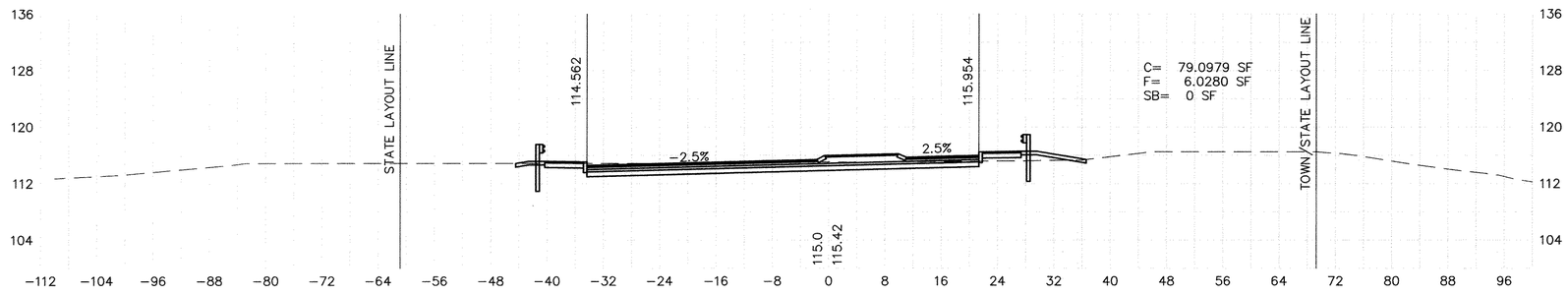
OLD PAWTUCKET BLVD CROSS SECTIONS

SHEET 1 OF 8

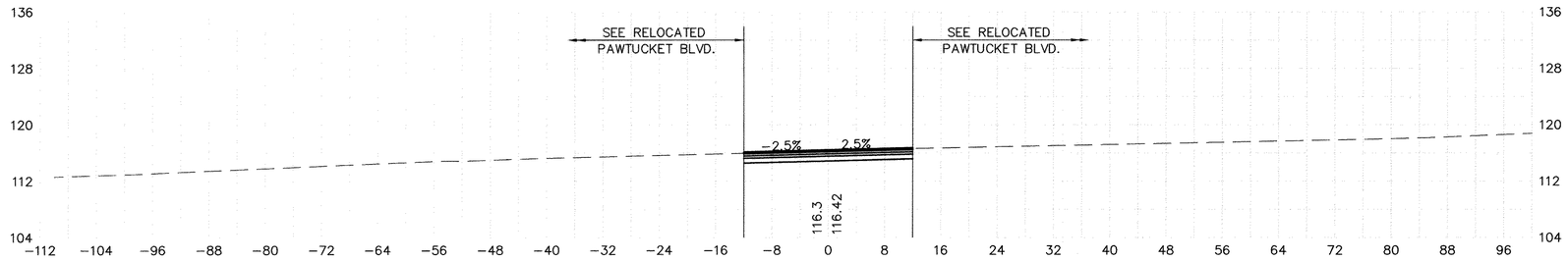


401+00

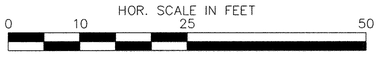
UP
+68.32
#361/1



400+50



400+00



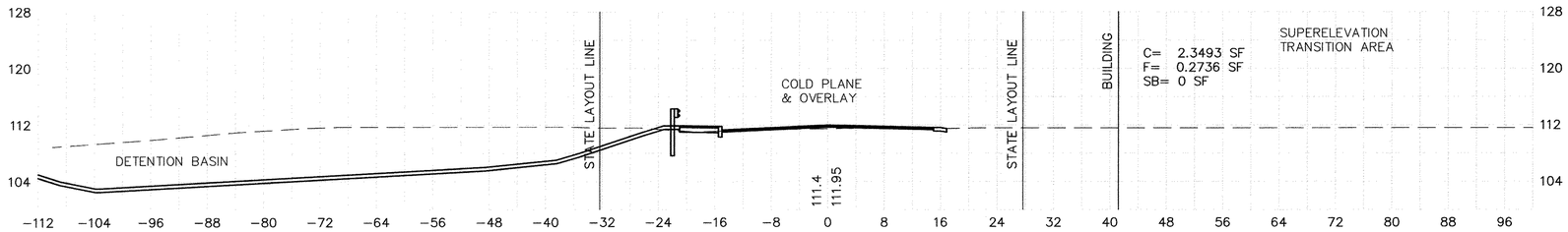
PARSONS

File Name: E:\Massdigway\Y#6888_Tyngsborough\cosdt\drawings\CM142-149_XSEC01-06Plan.dwg
Plot Date: 10/20/2010 9:26 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	143	154
PROJECT FILE NO.: 603823			

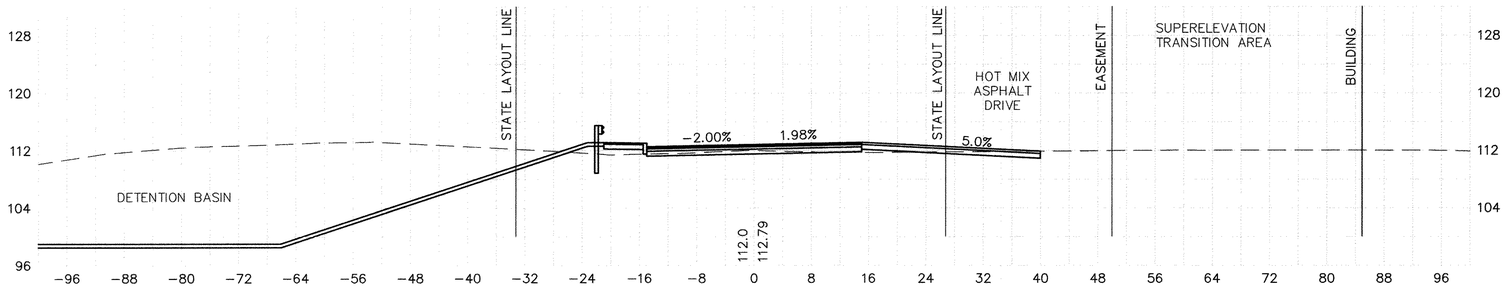
OLD PAWTUCKET BLVD
CROSS SECTIONS
SHEET 2 OF 8



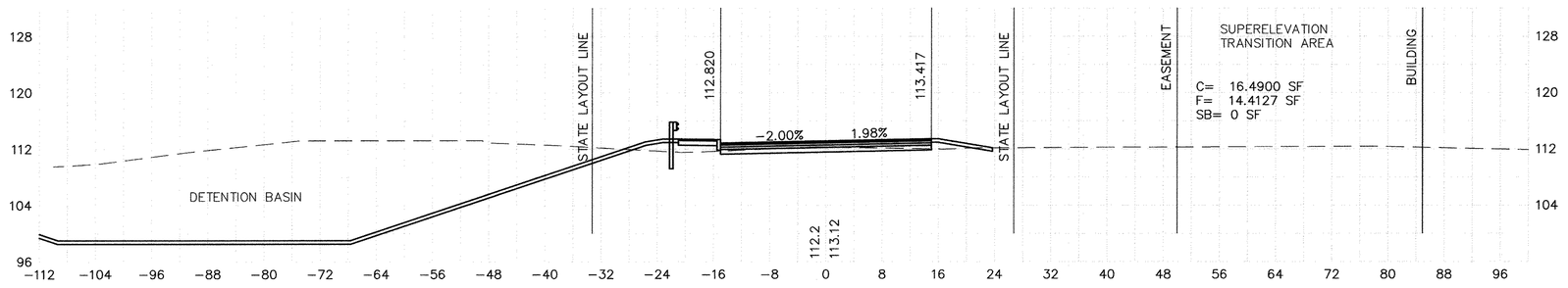
402+00

R&R UP&OHW +91.56

R&R UP&OHW +91.78



401+63.06



401+50

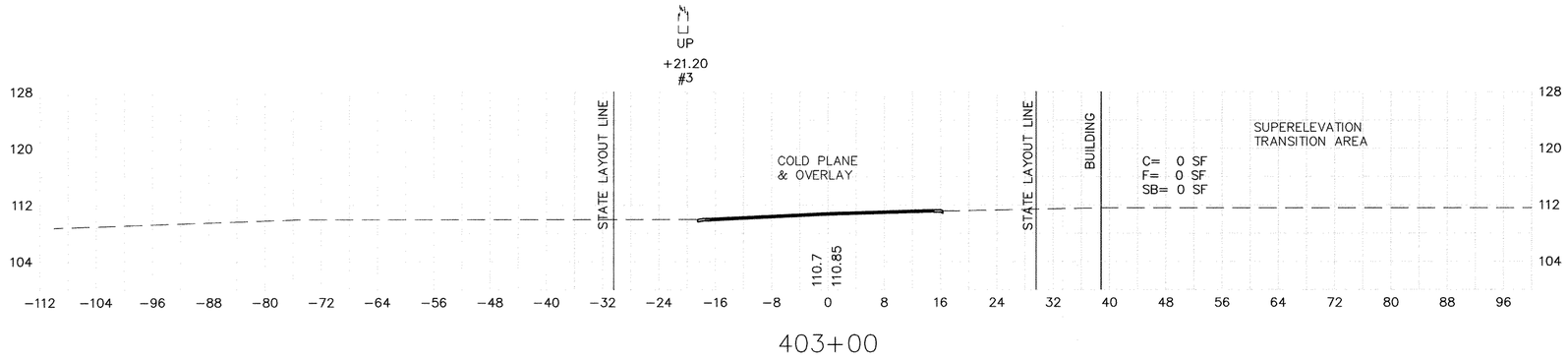
HOR. SCALE IN FEET
0 10 25 50

PARSONS

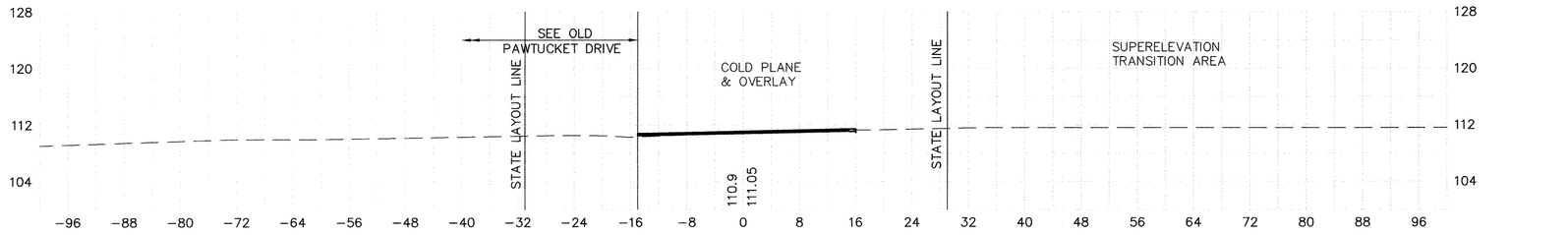
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	144	154
PROJECT FILE NO.: 603823			

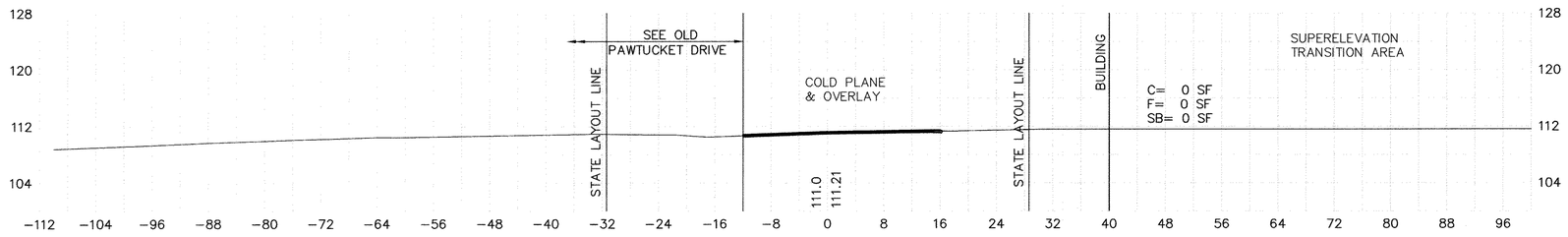
OLD PAWTUCKET BLVD
CROSS SECTIONS
SHEET 3 OF 8



403+00



402+70



402+50

HOR. SCALE IN FEET
0 10 25 50

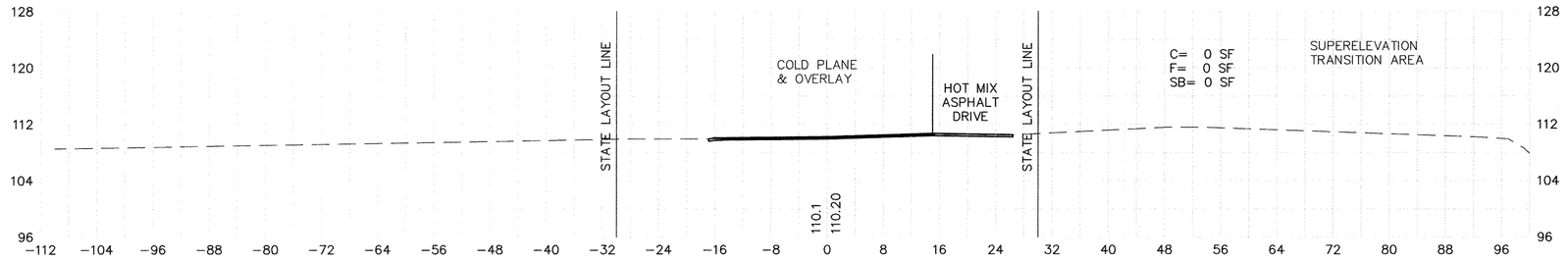
PARSONS

File Name: P:\Wasatch\proj\V46086_1\ygsborough\vcad\drawings\XS142-148_XSECT-OldPaw.dwg
Plot Date: 10/20/2010 9:26 AM

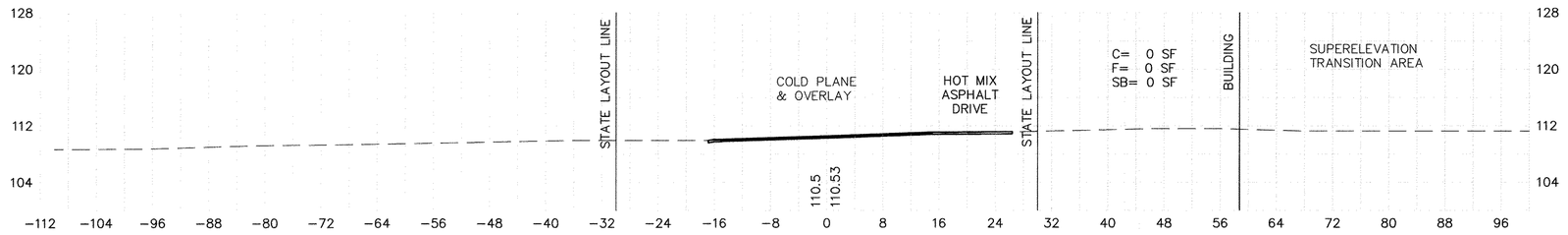
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	145	154
PROJECT FILE NO.: 603823			

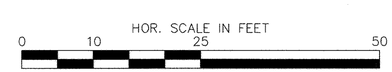
OLD PAWTUCKET BLVD
CROSS SECTIONS
SHEET 4 OF 8



404+00



403+50



PARSONS

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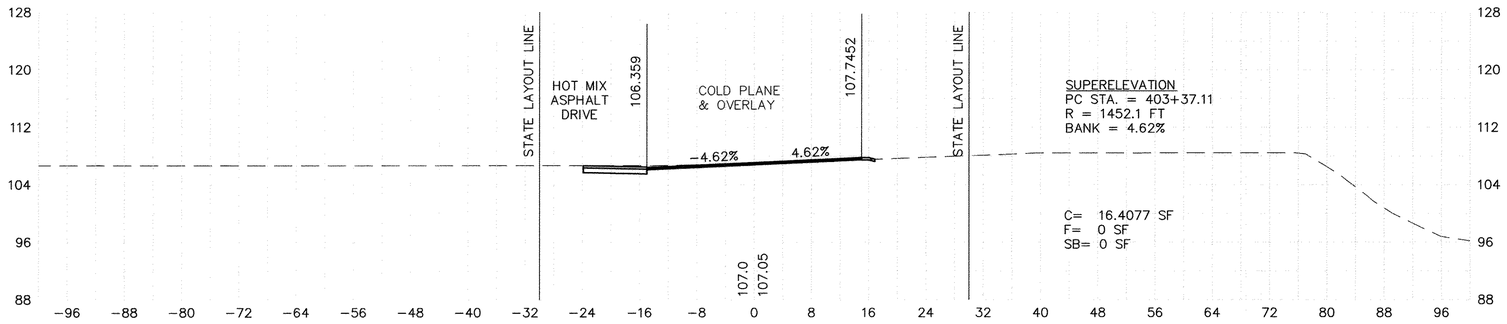
Plot Date: 10/20/2010 9:27 AM

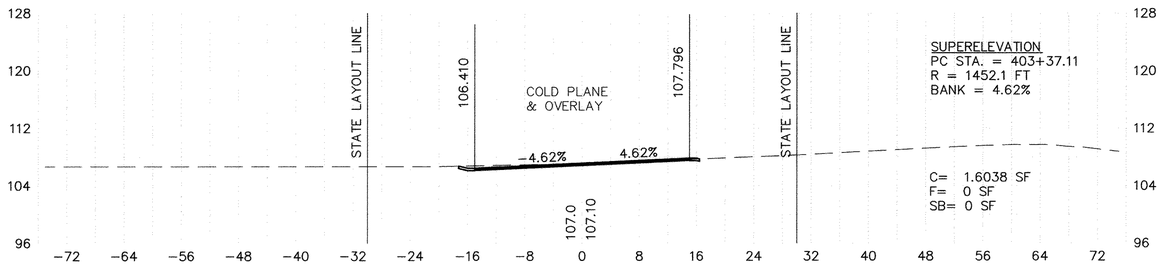
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	146	154
	PROJECT FILE NO.: 603823		

OLD PAWTUCKET BLVD
CROSS SECTIONS
SHEET 5 OF 8

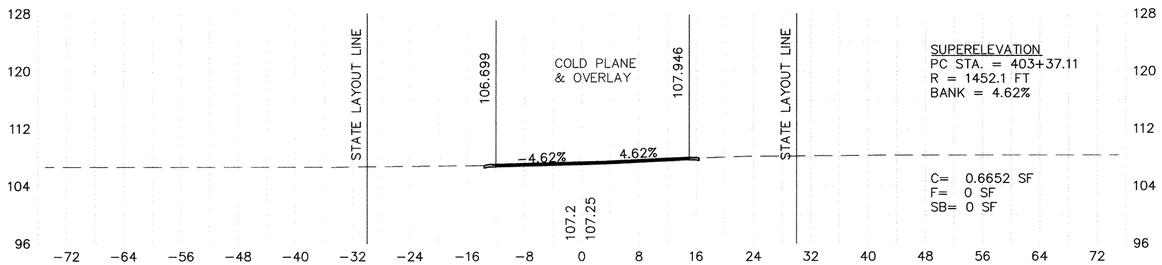


416+67



416+50

SEPTIC SYSTEM
+41.02
42.58 LT



416+00

HOR. SCALE IN FEET
0 10 25 50

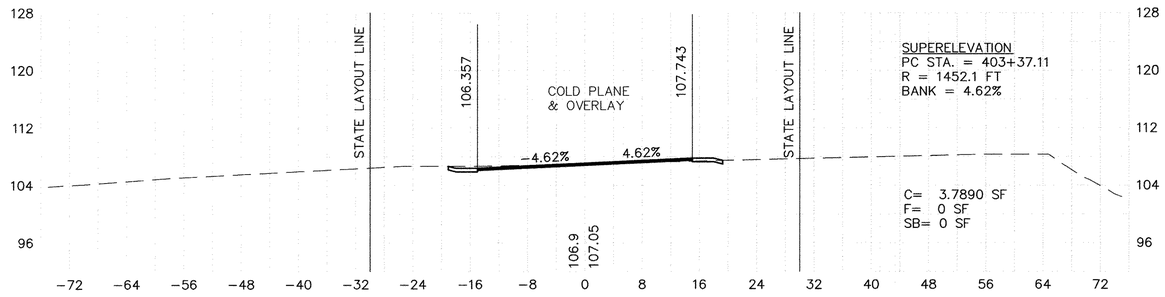
PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

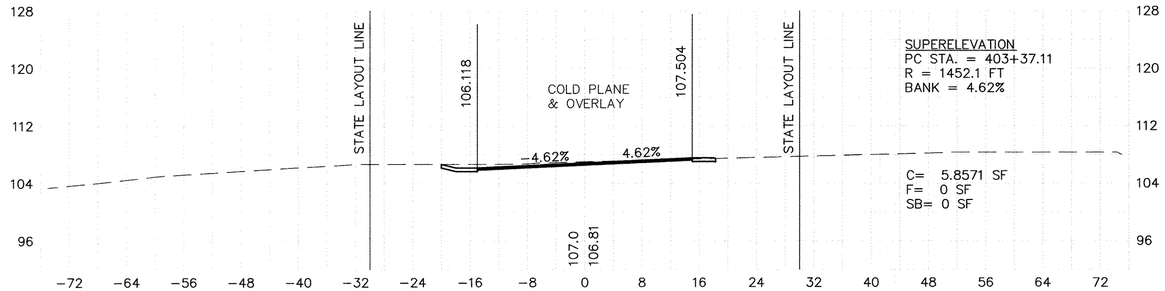
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	147	154
PROJECT FILE NO.: 603823			

OLD PAWTUCKET BLVD CROSS SECTIONS

SHEET 6 OF 8

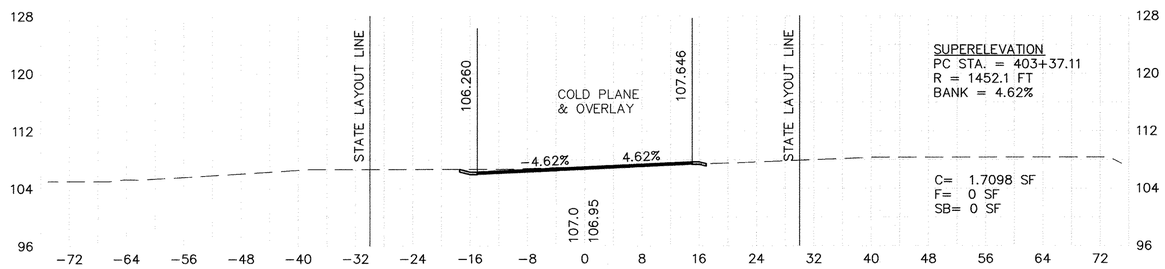


418+00



CL UP +32.96

417+50



417+00

HOR. SCALE IN FEET
0 10 25 50

PARSONS

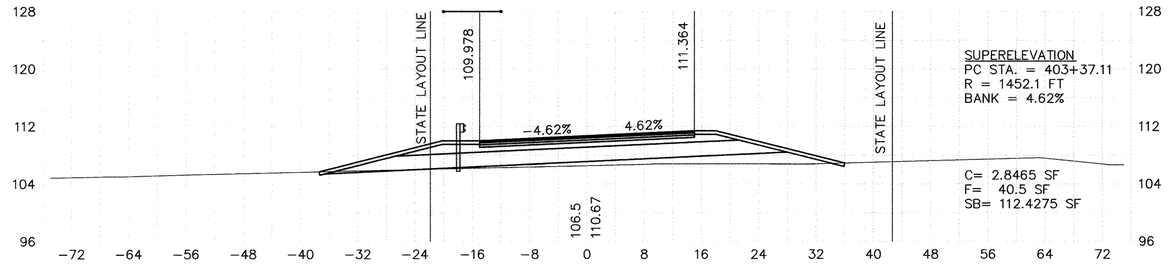
File Name: P:\Mass\Highway\416686_Tyngsborough\Cadd\Drawings\CH2-149_XS601-00Plan.dwg
Plot Date: 10/20/2010 9:27 AM

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

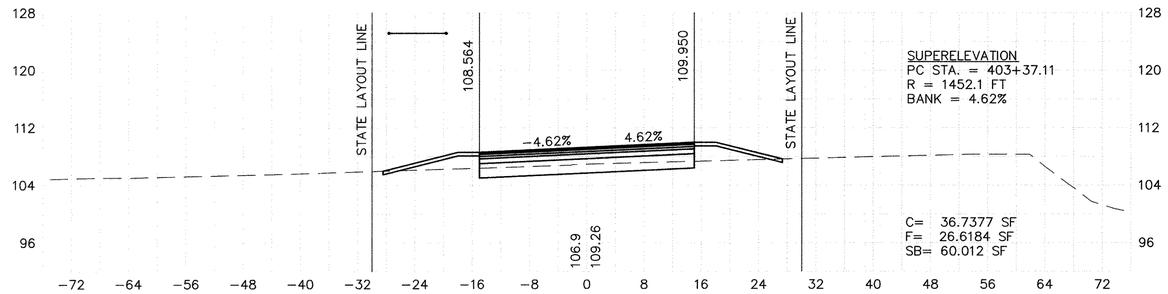
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	148	154
PROJECT FILE NO.: 603823			

OLD PAWTUCKET BLVD CROSS SECTIONS

SHEET 7 OF 8

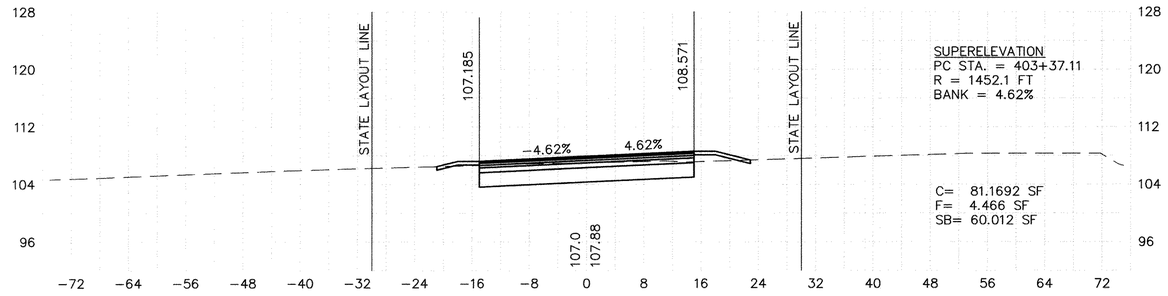


419+50



419+00

UP
+83.49



418+50

HOR. SCALE IN FEET
0 10 25 50

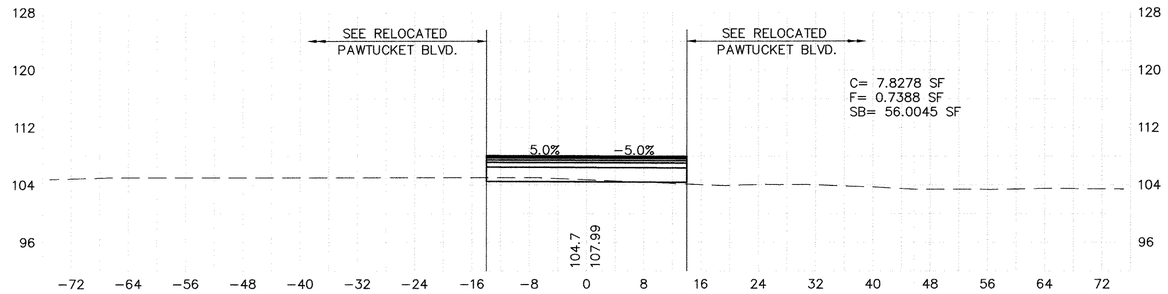
PARSONS

File Name: P:\Wastegroup\V46088_Tyngsborough\Cadd\Drawings\Civil\42-149_XSEC1-OldRow.dwg
Plot Date: 10/20/2015 9:27 AM

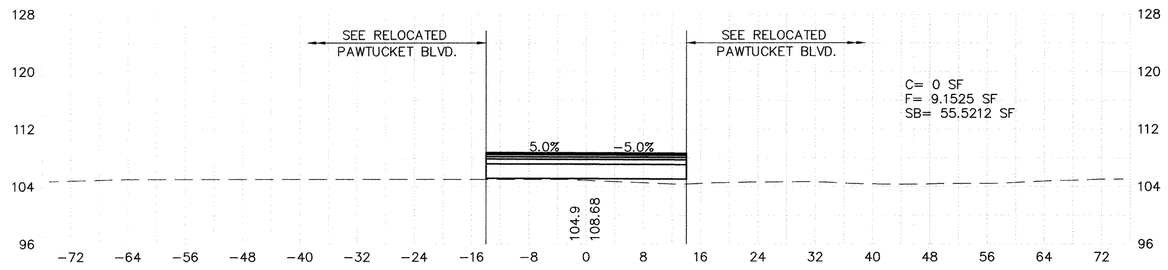
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	149	154
PROJECT FILE NO.: 603823			

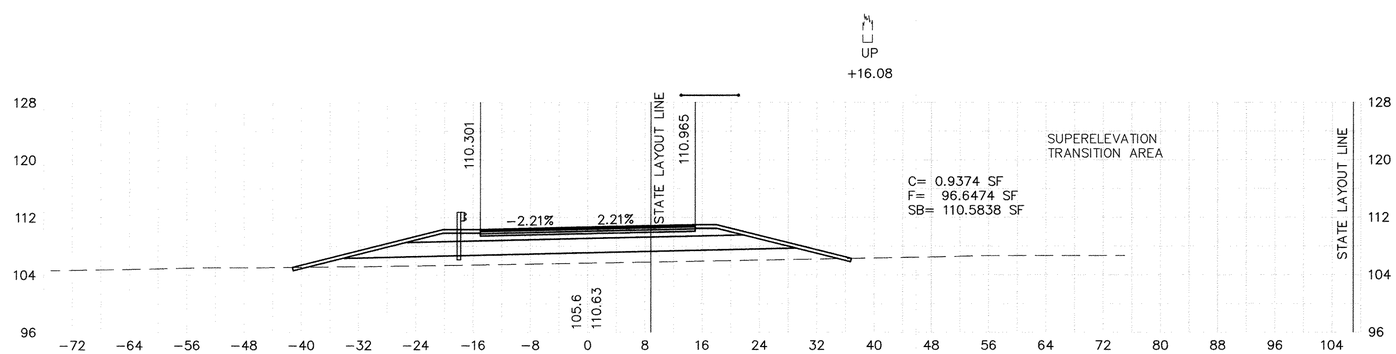
OLD PAWTUCKET BLVD
CROSS SECTIONS
SHEET 8 OF 8



420+62.66



420+50



420+00

PARSONS

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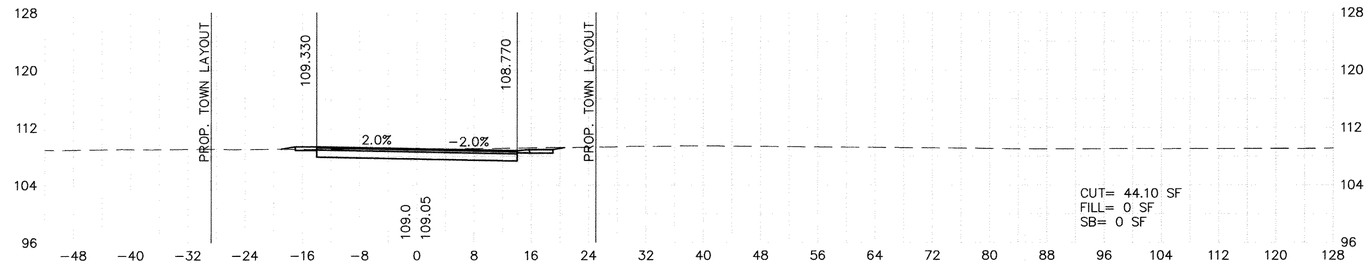
Plot Date: 10/20/2010 9:27 AM

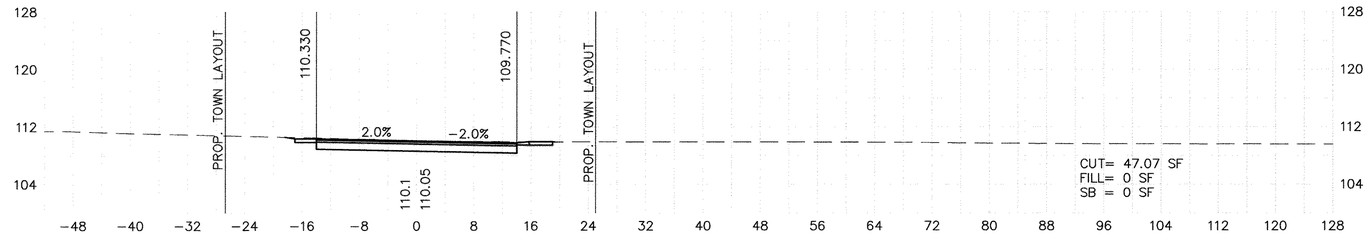
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	150	154
	PROJECT FILE NO.: 603823		

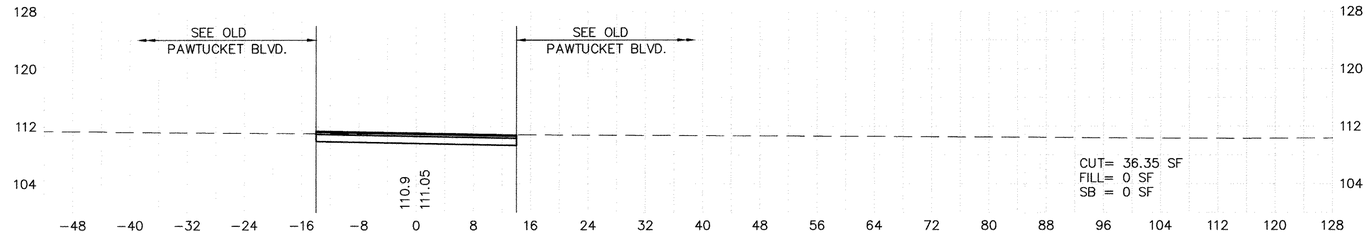
OLD PAWTUCKET DRIVE
CROSS SECTIONS
SHEET 1 OF 5



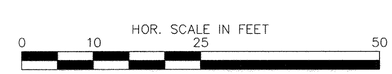
901+00



900+50



900+00

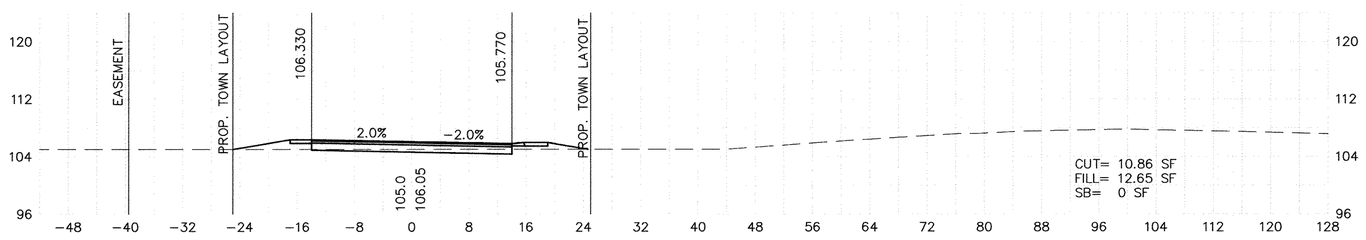


PARSONS

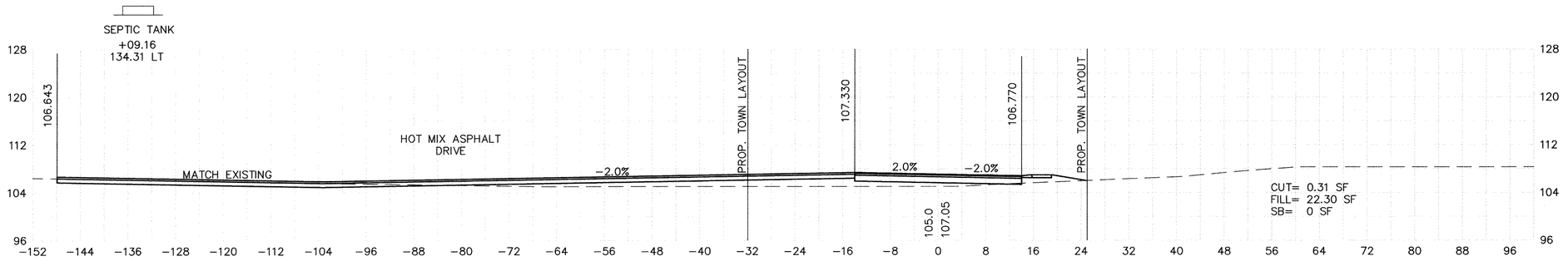
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	151	154
	PROJECT FILE NO.: 603823		

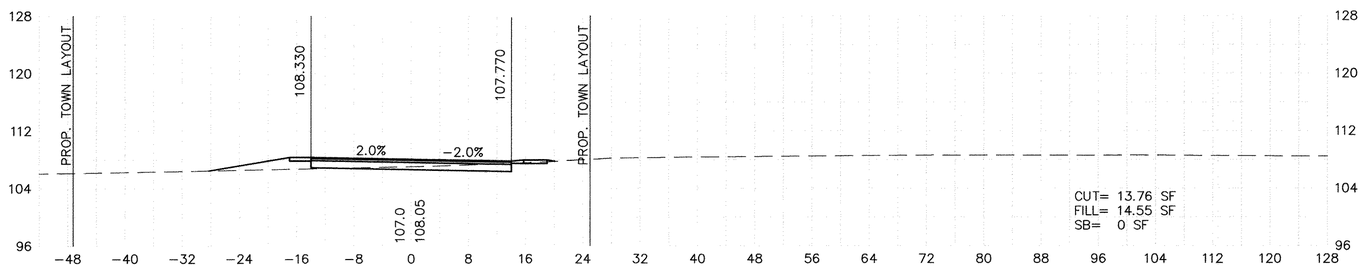
OLD PAWTUCKET DRIVE
CROSS SECTIONS
SHEET 2 OF 5



902+50



902+00



901+50

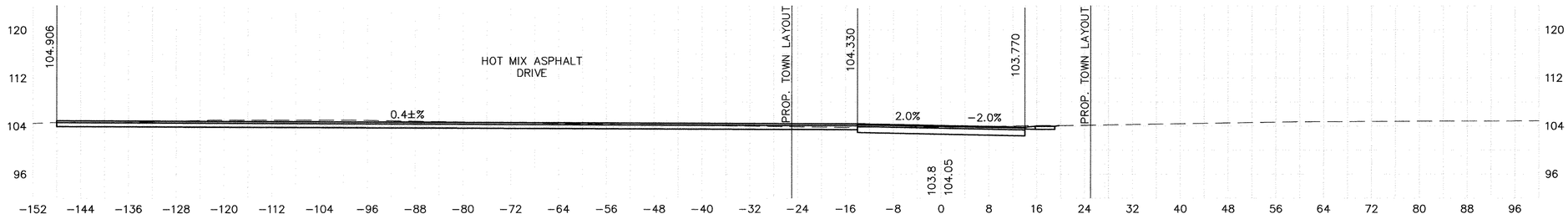
HOR. SCALE IN FEET
0 10 25 50

PARSONS

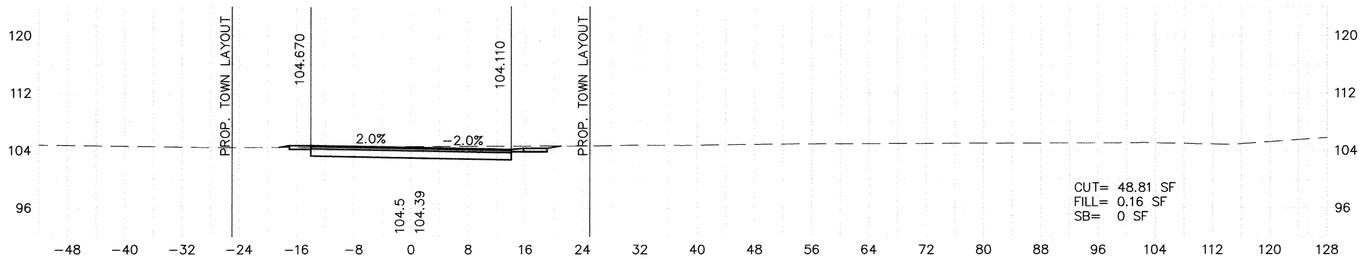
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	152	154
PROJECT FILE NO.: 603823			

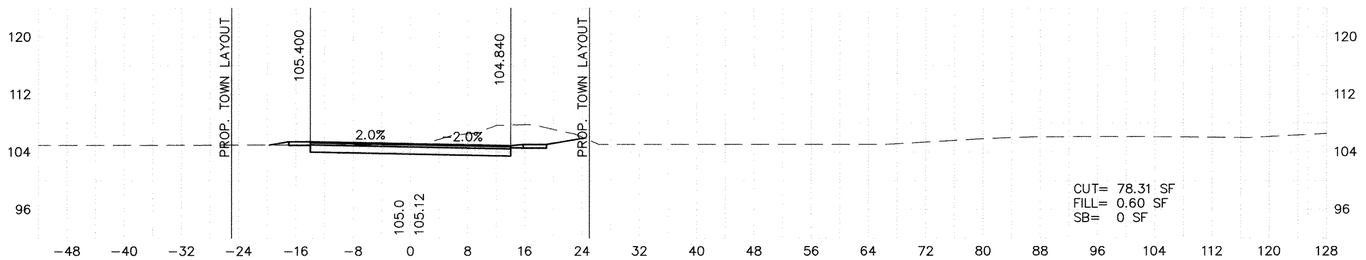
OLD PAWTUCKET DRIVE
CROSS SECTIONS
SHEET 3 OF 5



903+80.4



903+50



903+00

HOR. SCALE IN FEET
0 10 25 50

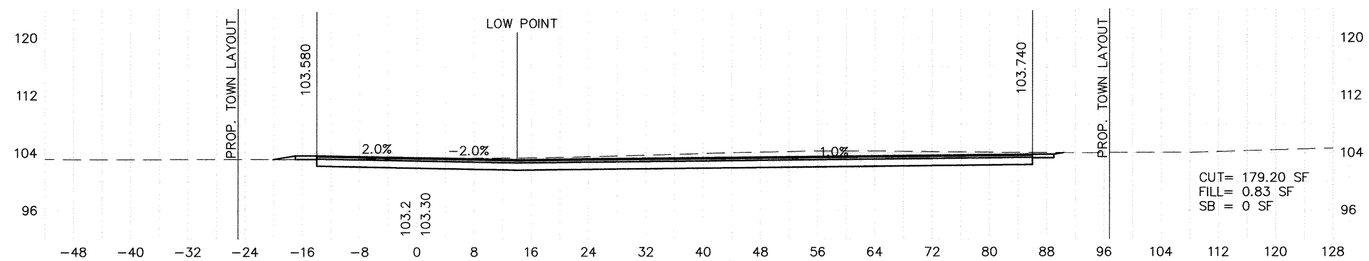
PARSONS

File Name: P:\Massdrighway\646086_Tyngsborough\cadd\drawings\C150-154_XSECT-OldPawDrive.dwg
Plot Date: 10/20/2010 9:29 AM

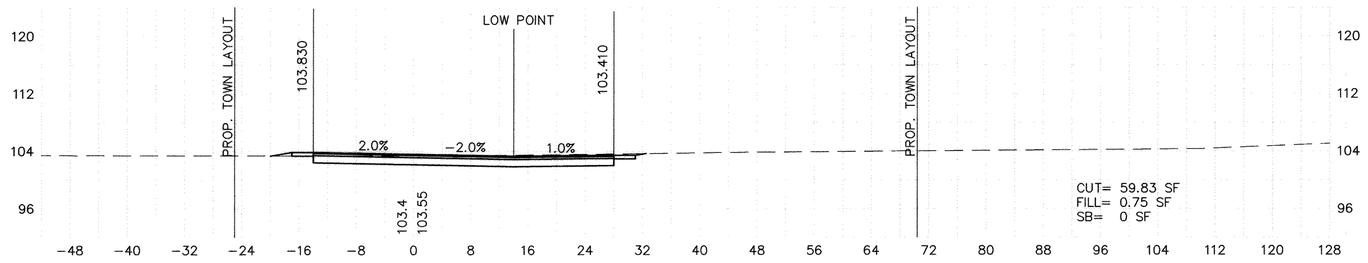
TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	153	154
	PROJECT FILE NO.: 603823		

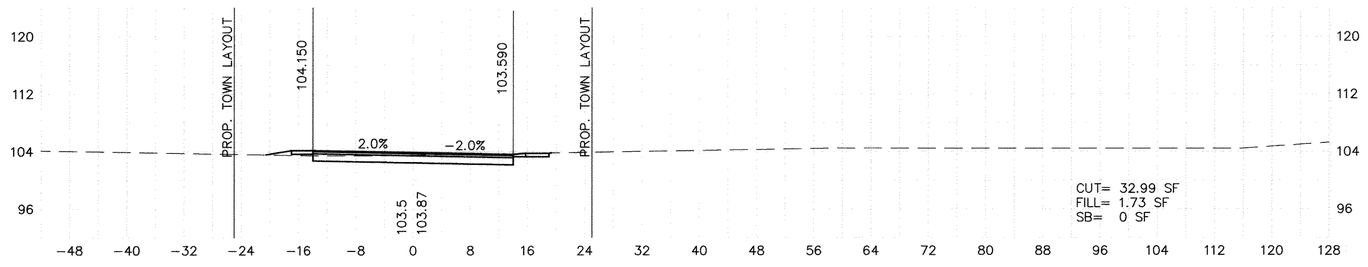
OLD PAWTUCKET DRIVE
CROSS SECTIONS
SHEET 4 OF 5



905+00



904+50



904+00

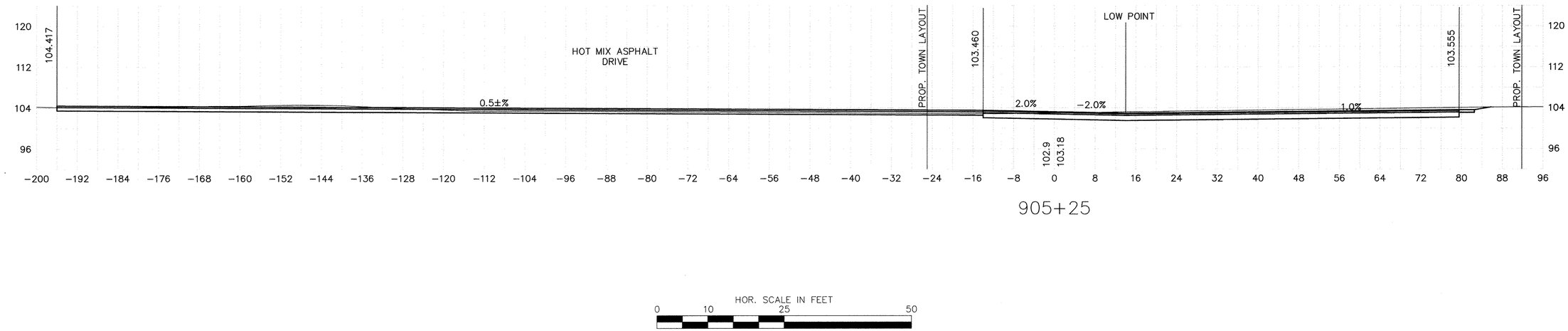
HOR. SCALE IN FEET
0 10 25 50

PARSONS

TYNGSBOROUGH
RELOCATION OF PAWTUCKET BOULEVARD

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	CM-002S(215)X	154	154
PROJECT FILE NO.: 603823			

OLD PAWTUCKET DRIVE
CROSS SECTIONS
SHEET 5 OF 5



PARSONS