



MASSACHUSETTS DEPARTMENT OF TRANSPORTATION HIGHWAY DIVISION

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS	NFA	1	184

PROJECT FILE NO. 805517
TITLE SHEET & INDEX

PLAN AND PROFILE OF

REHABILITATION OF THE ANDERSON MEMORIAL BRIDGE BRIDGE NO. B-16-011 = C-01-007 NORTH HARVARD STREET OVER CHARLES RIVER

IN THE CITY OF

IN THE CITY OF

BOSTON

CAMBRIDGE

SUFFOLK COUNTY

MIDDLESEX COUNTY

THE MASSACHUSETTS HIGHWAY DEPARTMENT 1988 STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES; THE SUPPLEMENTAL SPECIFICATIONS DATED FEBRUARY 25, 2010; THE STANDARD SPECIAL PROVISIONS DATED JUNE 3, 2011; THE 2010 CONSTRUCTION STANDARD DETAILS; THE 2003 "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" WITH MASSACHUSETTS AMENDMENTS; THE 1990 "STANDARD DRAWINGS FOR SIGNS AND SUPPORTS"; THE 1968 STANDARD DRAWINGS FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING; AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK WILL GOVERN.

INDEX

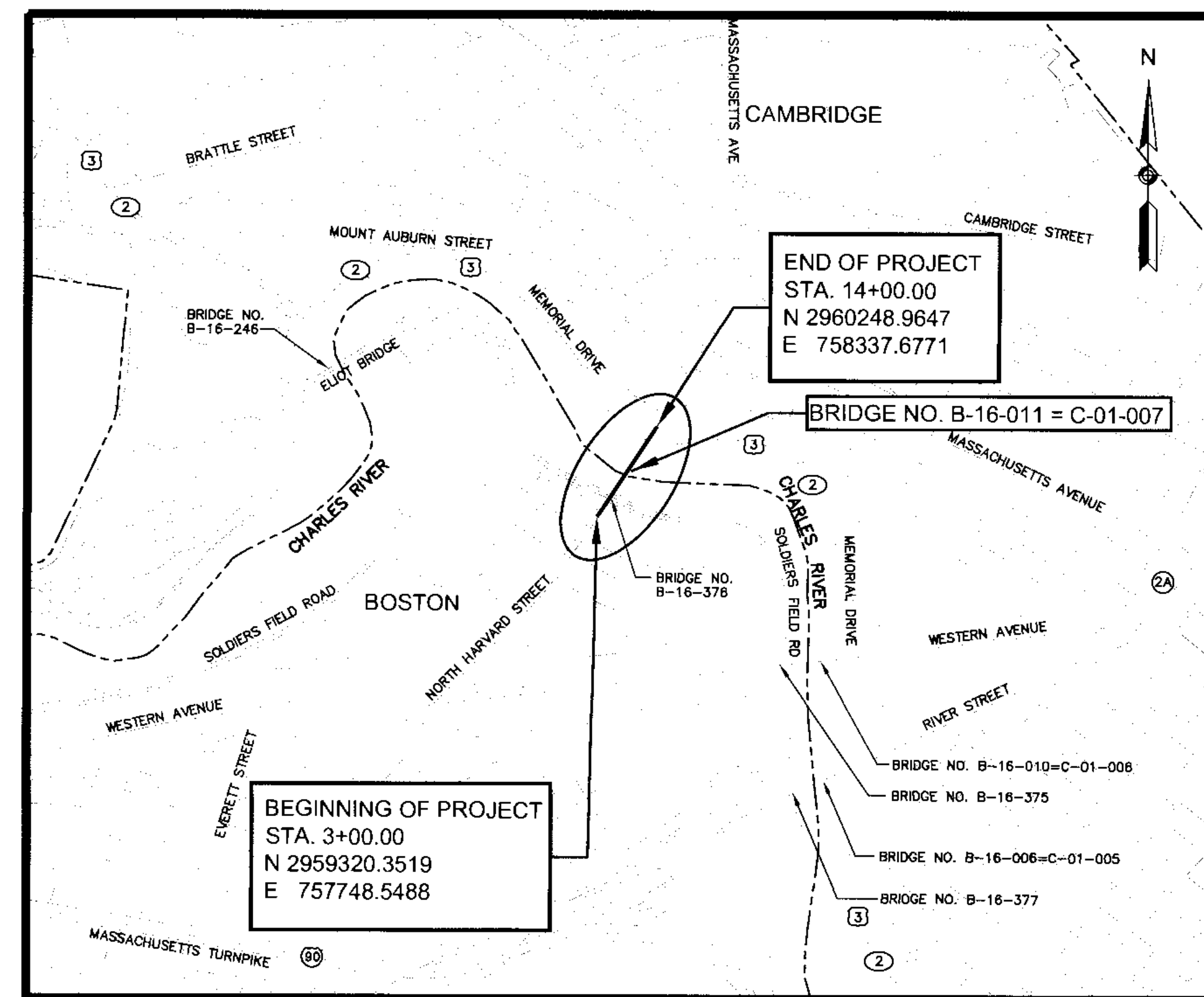
SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	GENERAL NOTES
3	LEGEND AND ABBREVIATIONS
4	KEY PLAN
5-8	TYPICAL SECTIONS
9-12	CONSTRUCTION PLANS
13-17	PROFILES
18-21	GRADING AND TIE PLANS
22-25	DRAINAGE, WATER AND MBTA DETAILS
26-28	SIGN AND PAVEMENT MARKING PLANS
29	TRAFFIC LEGEND AND NOTES
30-41	TRAFFIC SIGNAL PLANS AND DETAILS
42-68	TEMPORARY TRAFFIC CONTROL PLANS
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80-81	WATER AND UTILITY PROFILES AND SECTIONS
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99-180	BRIDGE PLANS
181-184	CROSS SECTIONS

DESIGN DESIGNATION

DESIGN SPEED	30 mph
ADT (2014)	21,300
ADT (2034)	24,300
K	8.0%
D	60.0%
T (PEAK HOUR)	3.0%
T (AVERAGE DAY)	3.0%
DHV	1,900
DDHV	1,140
FUNTIONAL CLASS	URBAN MINOR ARTERIAL

CONVENTIONAL SIGNS

COUNTY, CITY, OR TOWN BOUNDARY	-----
COUNTY, CITY, OR TOWN SIDE LINE	-----
FENCE LINE	-X-X-X-X-X-
BASE LINE OR SURVEY LINE	S36°04'20"W 2+00
RIGHT OF WAY LINE	53.578
CULVERT	-----
RETAINING WALL	-----
GUARD RAIL	-----
STONE WALL	-----
TREE LINE	-----
POLE	○

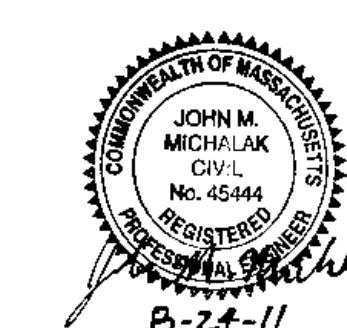
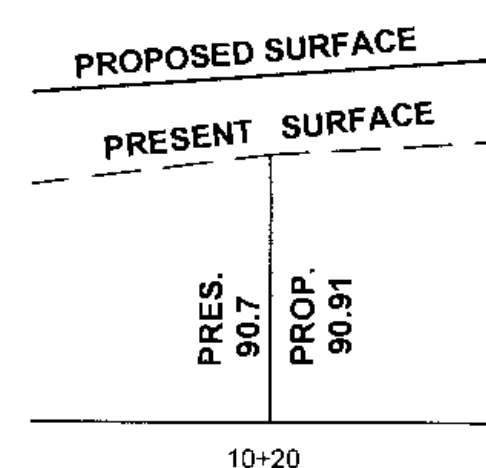


1000 0 1000 2000

SCALE 1" = 1000'

LENGTH OF PROJECT = 1,100.00 FEET = 0.21 MILES

ELEVATIONS



RECOMMENDED FOR APPROVAL

CHIEF ENGINEER DATE

APPROVED

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED:

DIVISION ADMINISTRATOR DATE

DIVISION ADMINISTRATOR DATE

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

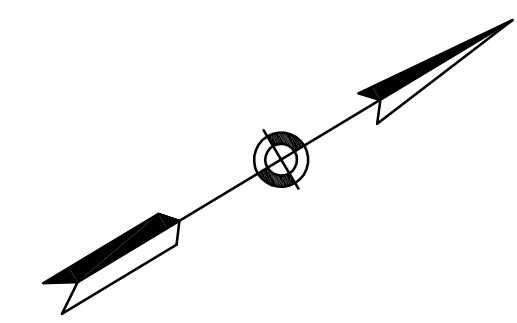
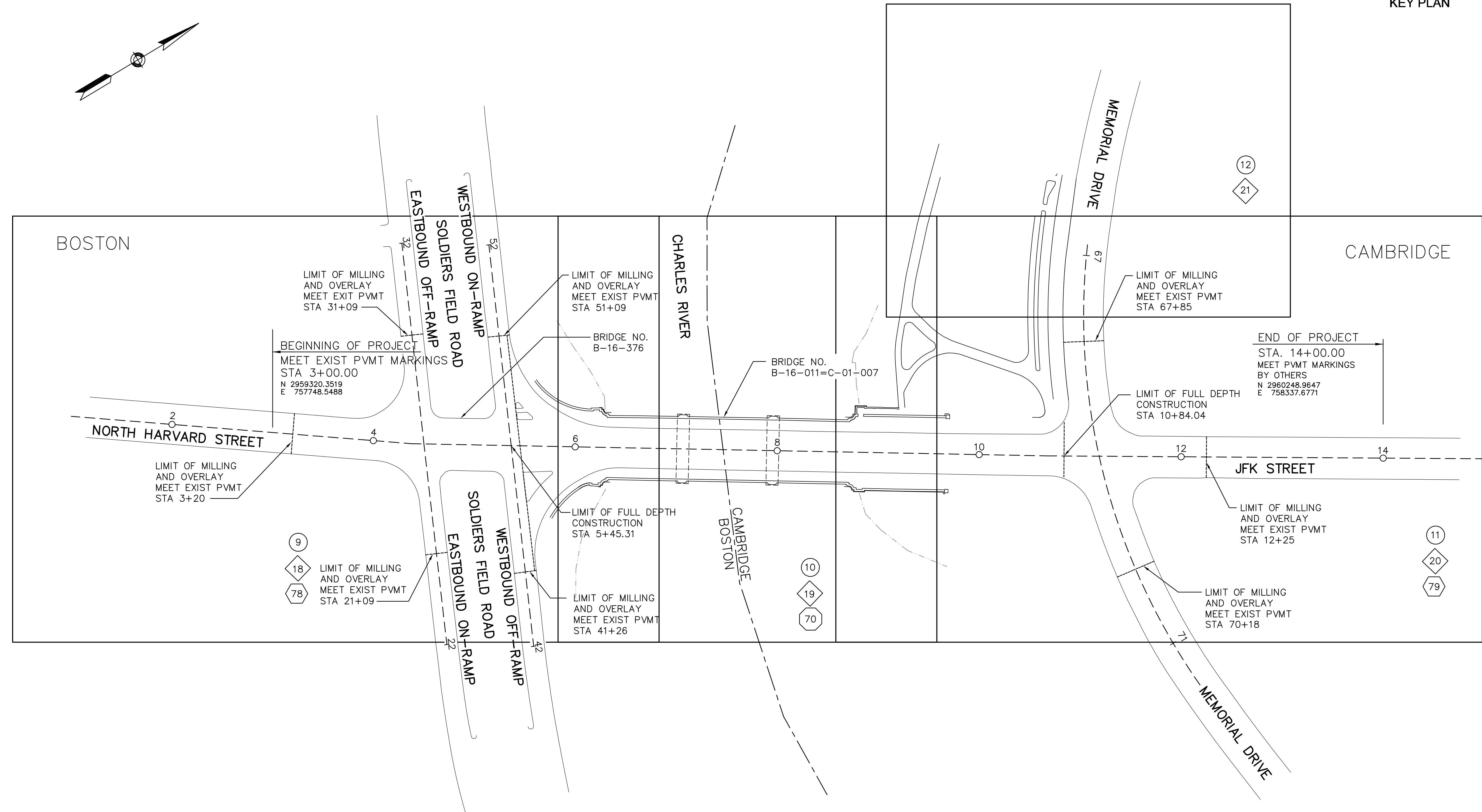
FS&T DWG. NO.	VQ-061		
DES.	AED	CHK.	JMM
DR.	AED	CHK.	JMM
EST.	FGM	CHK.	JMM
ENGINEER IN CHARGE			

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	4	184

PROJECT FILE NO. 605517

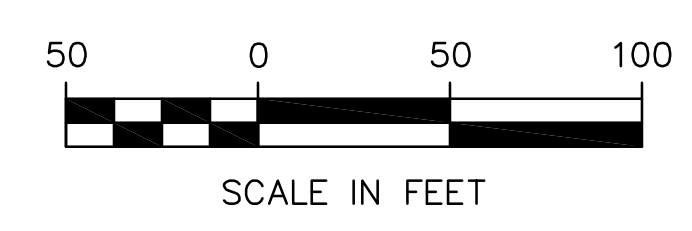
KEY PLAN



LEGEND

- SHEET NO. 9 CONSTRUCTION PLAN
- 18 GRADING AND TIE PLAN
- 78 UTILITY PLANS
- 70 STREET LIGHTING PLANS

FOR SIGN AND PAVEMENT MARKING PLANS SEE SHEET NOS. 26-27.
FOR TRAFFIC SIGNAL PLANS SEE SHEET NOS. 30-33.



FS&T DWG. NO.			
VQ-061			
DES	AED	CHK	JMM
DR	AED	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	5	184

PROJECT FILE NO. 605517

TYPICAL SECTIONS
SHEET 1 OF 4

PAVEMENT NOTES:

FULL DEPTH PAVEMENT (APPROACHES):

- SURFACE: 2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) (LATEX) OVER
- INTERMEDIATE: 2 1/2" SUPERPAVE INTERMEDIATE COURSE 19.0 (SIC-19.0) (LATEX) OVER
- BASE: 4 1/2" SUPERPAVE BASE COURSE 37.5 (SBC-37.5) OVER
- SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER COMPACTED SUB-GRADE

- ASPHALT EMULSION FOR TACK COAT APPLIED AT 0.05 GAL/SY

MILL AND OVERLAY (MEMORIAL DRIVE/JFK STREET):

- SURFACE: 2" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) (LATEX) OVER 2" PAVEMENT MICROMILLING

- ASPHALT EMULSION FOR TACK COAT APPLIED AT 0.07 GAL/SY OVER MILLED SURFACES

MILL AND OVERLAY (STORROW DRIVE/NO. HARVARD STREET):

- SURFACE: 1 3/4" SUPERPAVE SURFACE COURSE 12.5 (SSC-12.5) (LATEX) OVER 1 1/2" PAVEMENT MICROMILLING (TWO PASSES OF 3/4" OVER STORROW DRIVE OVERPASS)

- ASPHALT EMULSION FOR TACK COAT APPLIED AT 0.07 GAL/SY OVER MILLED SURFACES

FULL DEPTH PAVEMENT (ANDERSON MEMORIAL BRIDGE):

- SURFACE: 1 3/4" SUPERPAVE BRIDGE SURFACE COURSE 12.5 (SSC-B-12.5) (LATEX) OVER
- INTERMEDIATE: 1 3/4" SUPERPAVE BRIDGE PROTECTIVE COURSE 12.5 (SPC-B-12.5) (LATEX) OVER
- BASE: STRESS ABSORBING MEMBRANE INTERLAYER (SAMI) OVER 9" CONCRETE SLAB OVER

- SUBBASE: 4" DENSE GRADED CRUSHED STONE FOR SUBBASE OVER COMPACTED BRIDGE SUB-GRADE

- ASPHALT EMULSION FOR TACK COAT APPLIED AT 0.05 GAL/SY

CEMENT CONCRETE SIDEWALKS:

- SURFACE: 4" CEMENT CONCRETE (6" AT WHEELCHAIR RAMPS)
- FOUNDATION: 8" GRAVEL BORROW - TYPE b (MIN)

HOT MIX ASPHALT PATHS:

- SURFACE: 1 1/2" HOT MIX ASPHALT (HMA) TOP COURSE
- INTERMEDIATE: 2 1/2" HMA INTERMEDIATE BINDER COURSE
- FOUNDATION: 8" DENSE GRADED CRUSHED STONE FOR SUBBASE

- ASPHALT EMULSION FOR TACK COAT APPLIED AT 0.05 GAL/SY

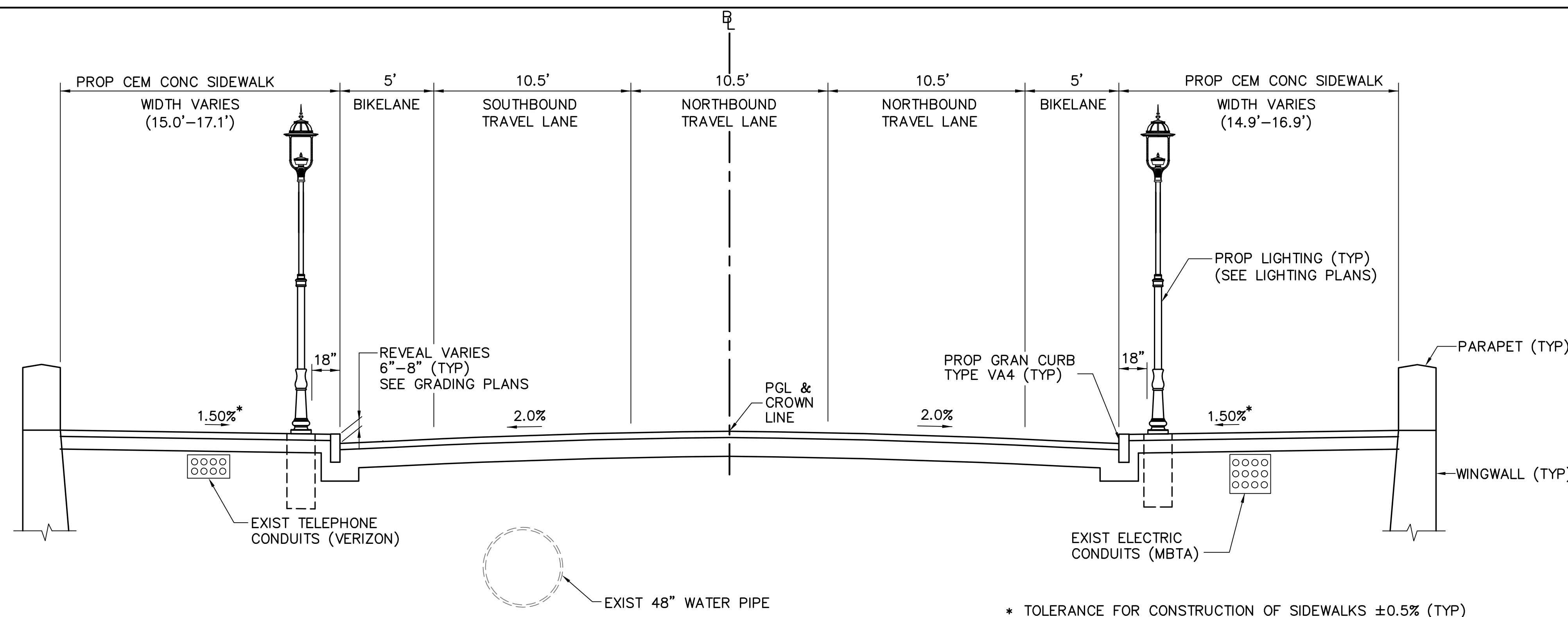
COLD-PLACED FLEXIBLE POROUS PAVEMENT PATHS:

- SURFACE: 2" COLD-PLACED FLEXIBLE POROUS PAVEMENT
- BASE: 6" 3/4" CRUSHED STONE BASE
- FOUNDATION: COMPACTED SUBGRADE

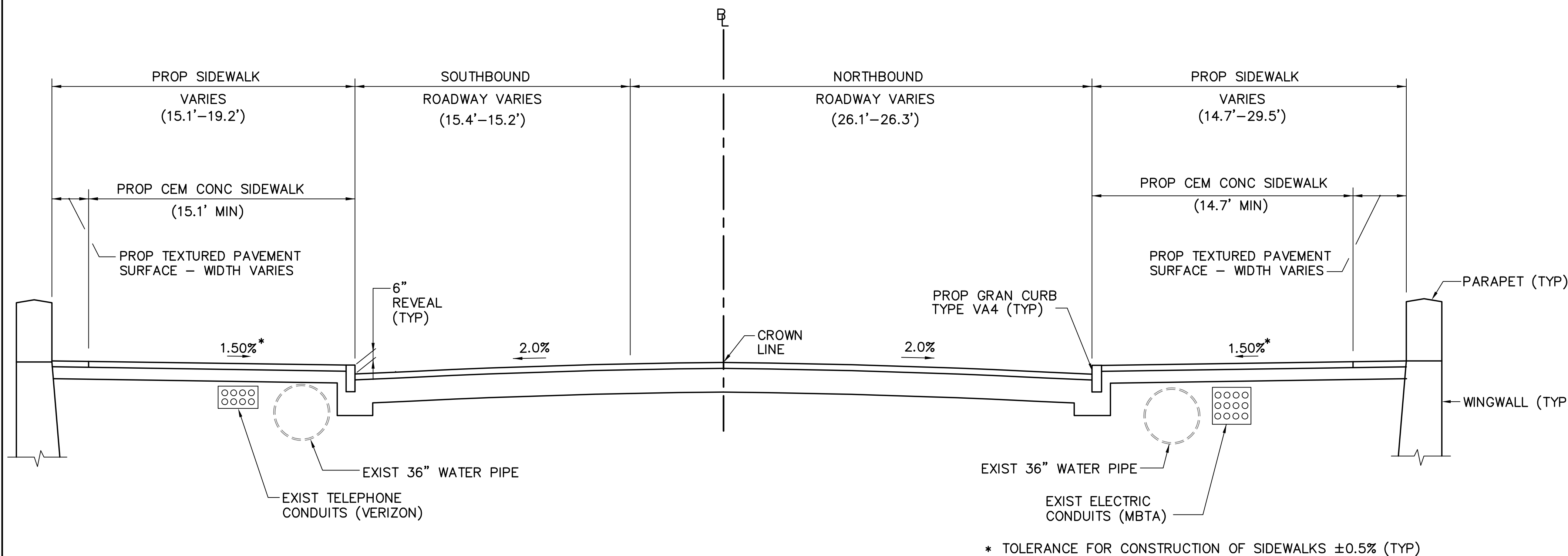
TEXTURED PAVEMENT SURFACE:

- SURFACE: IMPRINT TEXTURED PAVEMENT SURFACE OVER 4" HMA WALK SURFACE
- FOUNDATION: 8" GRAVEL BORROW - TYPE b (MIN)

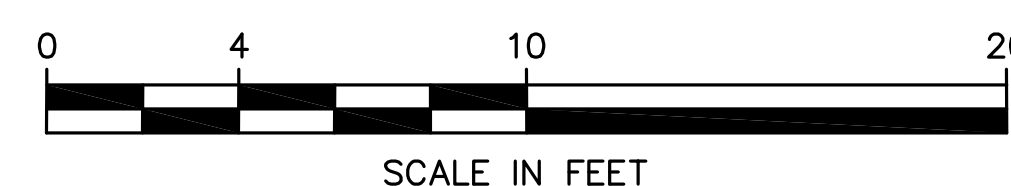
NOTE: ALL SURFACES SHALL BE TACK COATED PRIOR TO PAVING



NORTH APPROACH SECTION - JFK STREET, CAMBRIDGE
(STA 8+96± TO STA 10+57±)
(LOOKING UP STATION)

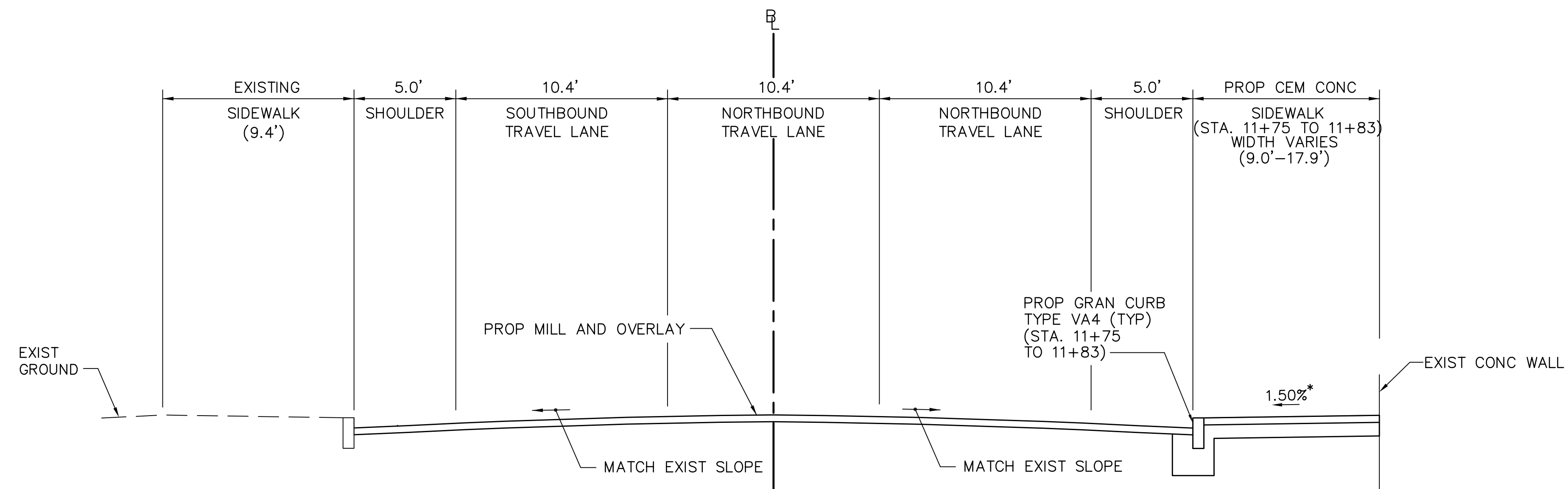


SOUTH APPROACH SECTION - NORTH HARVARD STREET, BOSTON
(STA 5+96± TO STA 6+06±)
(LOOKING UP STATION)



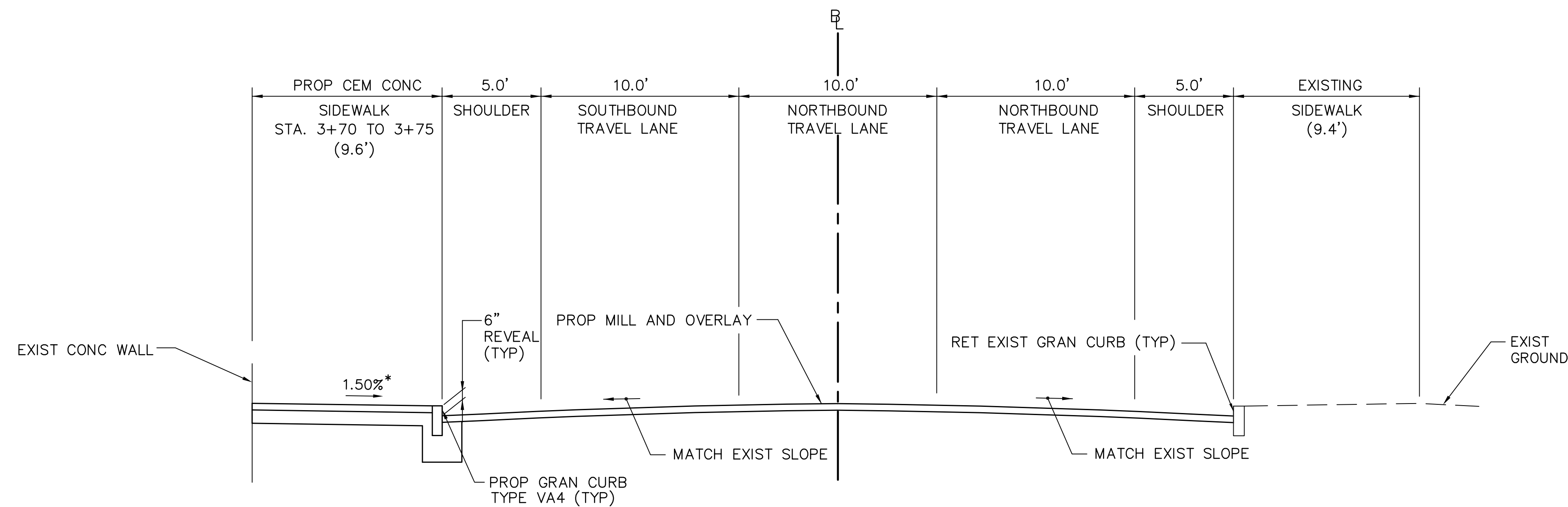
FS&T DWG. NO.			
VQ-061			
DES	AED	CHK	JMM
DR	AED	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	6	184
PROJECT FILE NO. 605517			



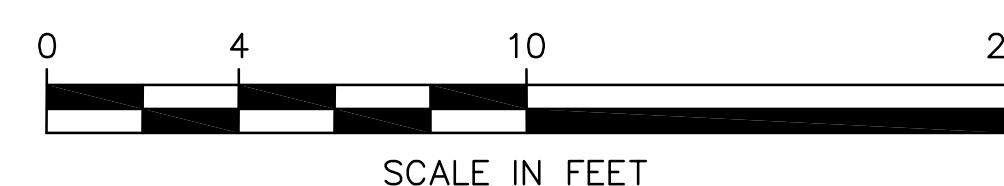
* TOLERANCE FOR CONSTRUCTION OF SIDEWALKS ±0.5% (TYP)

NORTH APPROACH SECTION - JFK STREET, CAMBRIDGE
(STA 11+75± TO STA 12+25)
(LOOKING UP STATION)



* TOLERANCE FOR CONSTRUCTION OF SIDEWALKS ±0.5% (TYP)

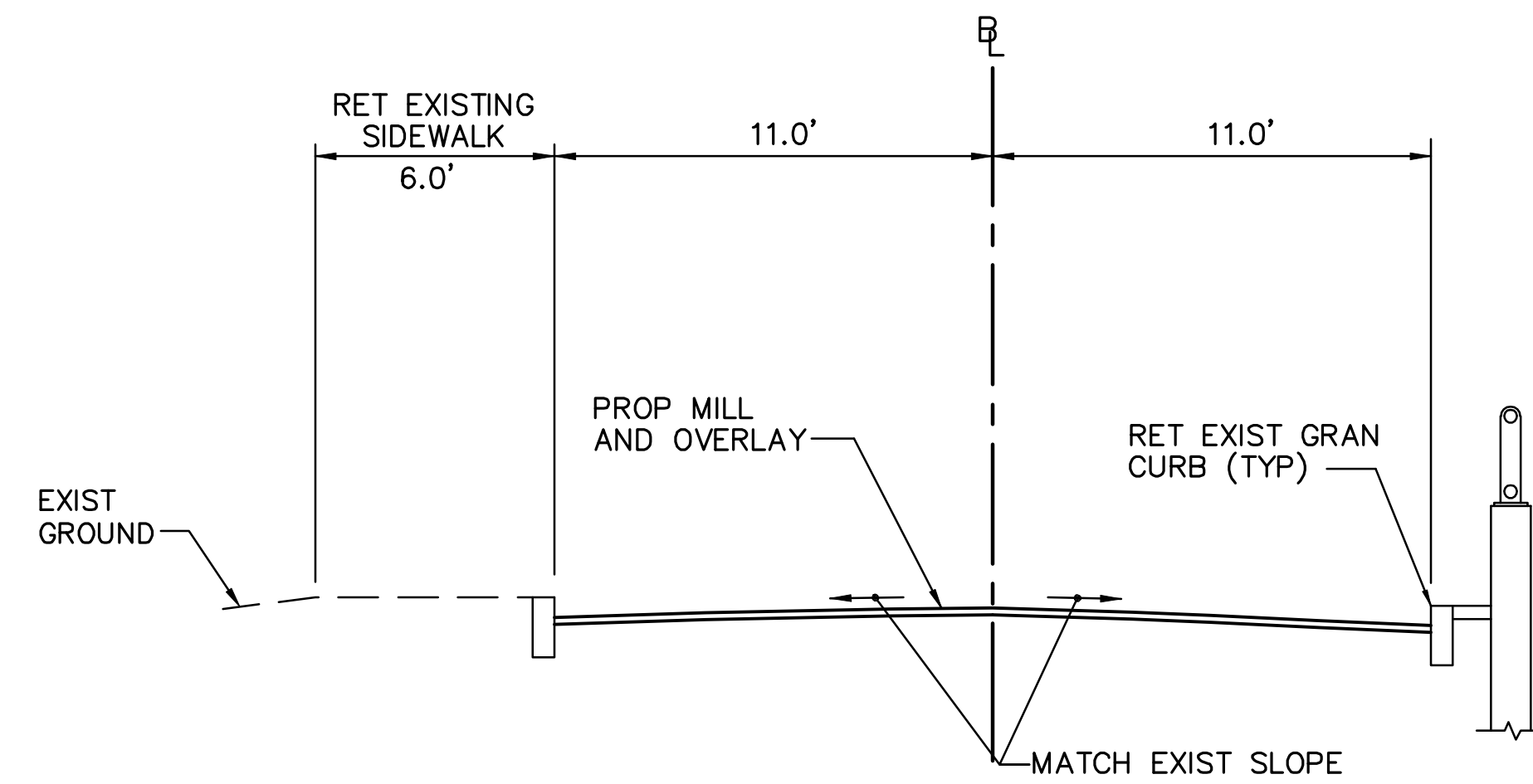
SOUTH APPROACH SECTION - NORTH HARVARD STREET, BOSTON
(STA 3+20 TO STA 3+75±)
(LOOKING UP STATION)



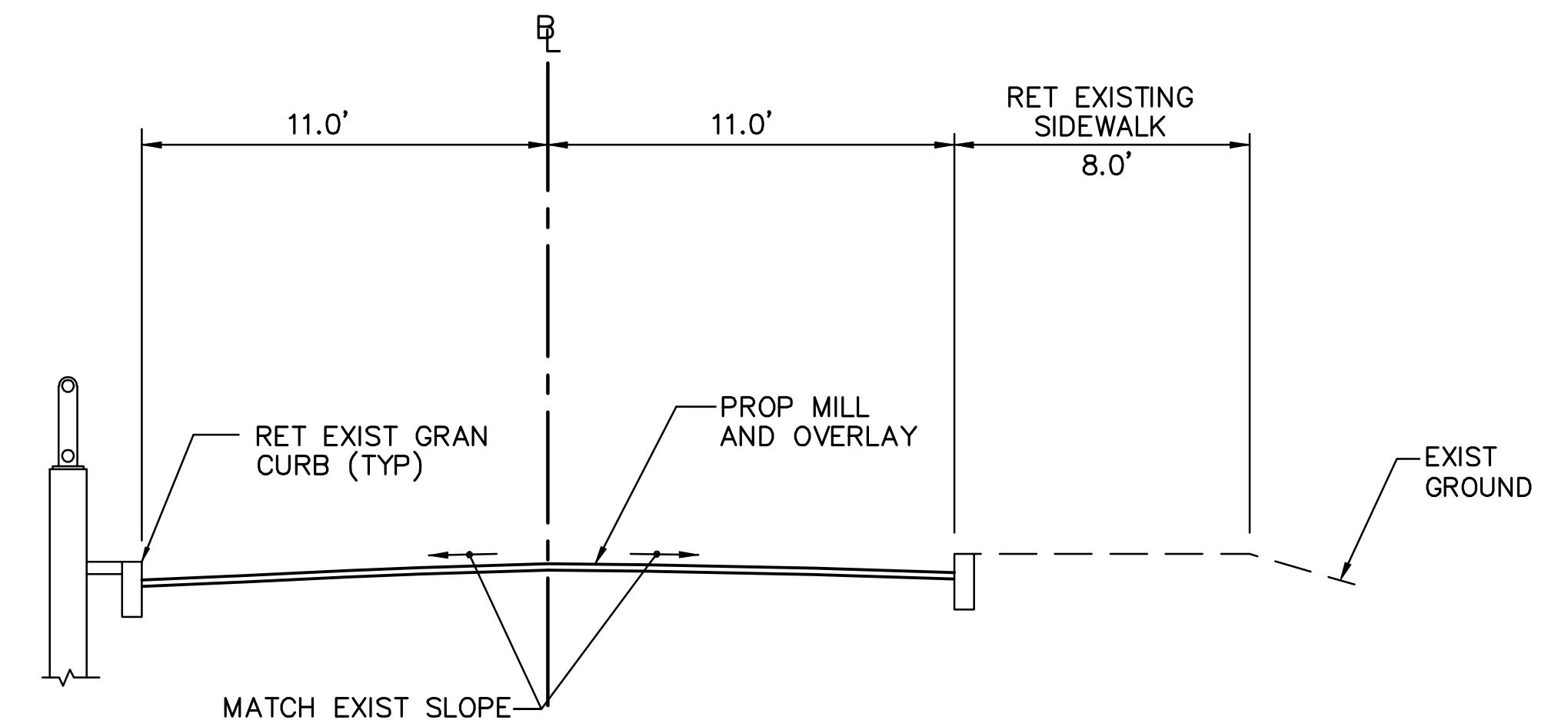
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VQ-061			
DES	AED	CHK	JMM
DR	AED	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	7	184

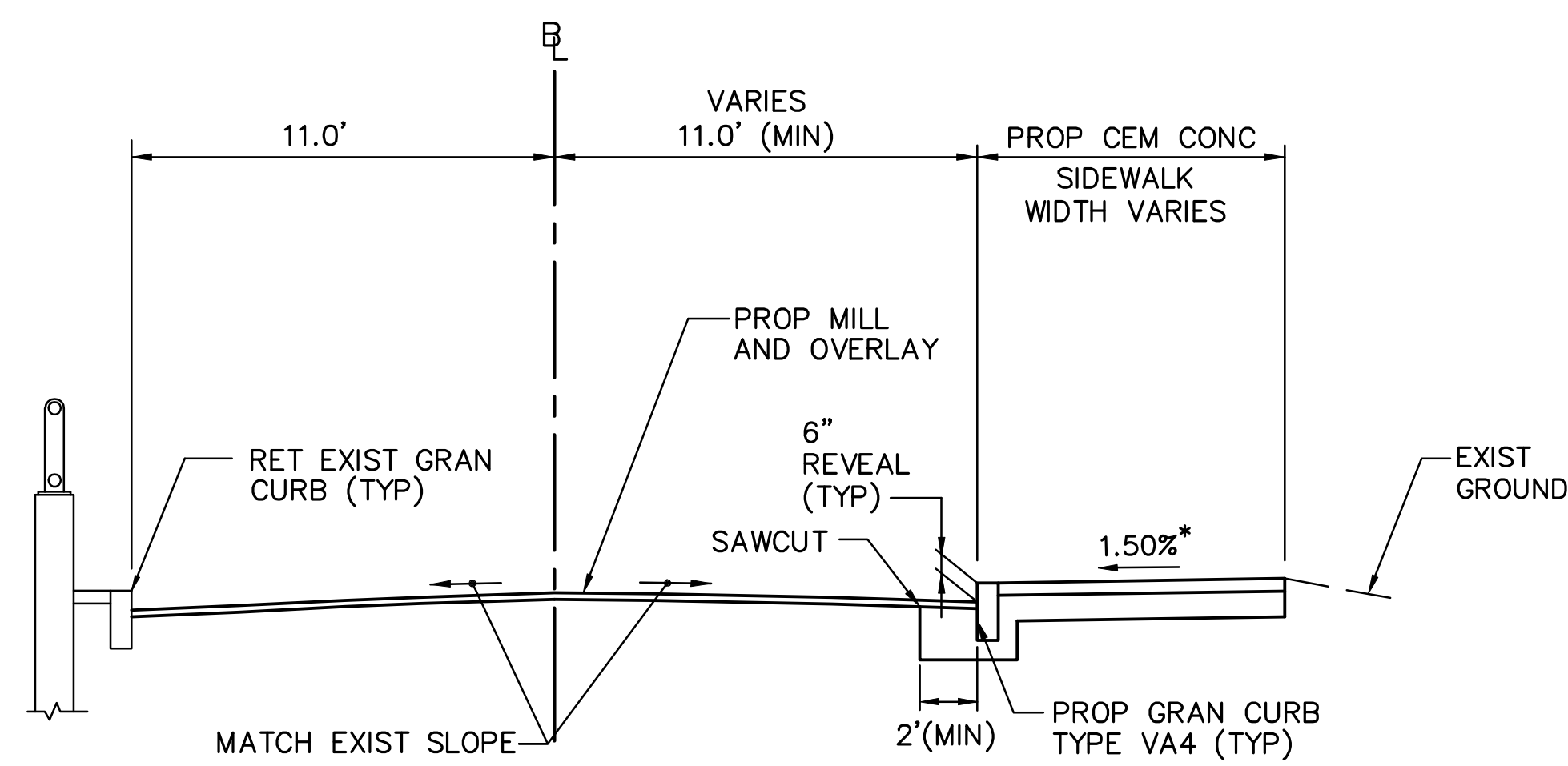
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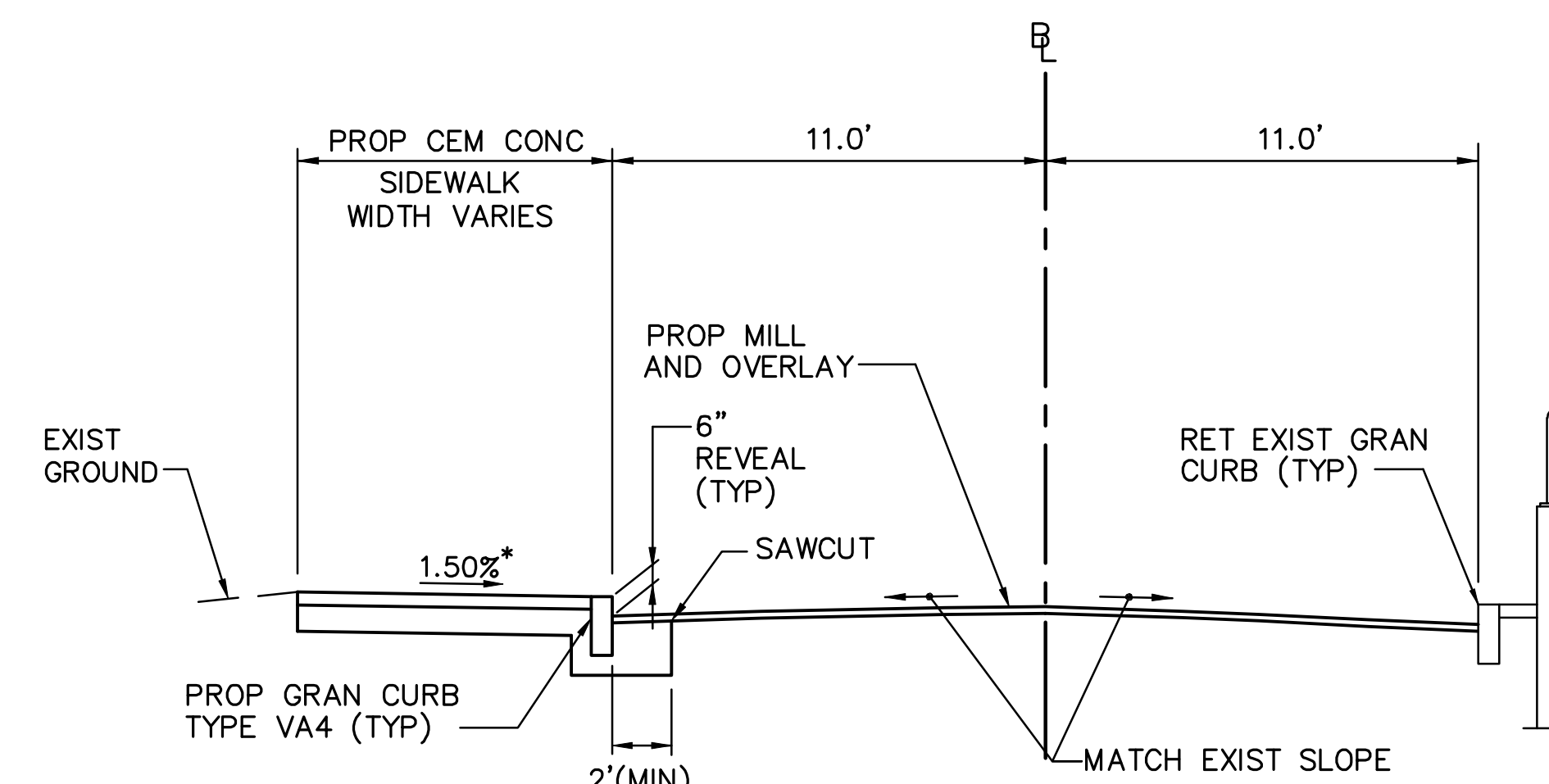
SOLDIERS FIELD ROAD
EASTBOUND OFF-RAMP
(STA 30+85± TO STA 31+09±)
(LOOKING UP STATION)



SOLDIERS FIELD ROAD
EASTBOUND ON-RAMP
(STA 20+62± TO STA 21+09±)
(LOOKING UP STATION)

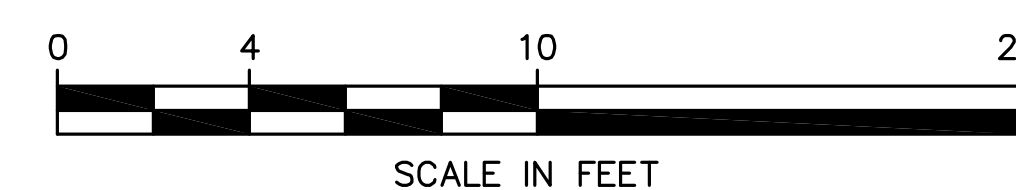


SOLDIERS FIELD ROAD
WESTBOUND ON-RAMP
(STA 50+38± TO STA 51+09±)
(LOOKING UP STATION)



SOLDIERS FIELD ROAD
WESTBOUND OFF-RAMP
(STA 40+36± TO STA 41+26±)
(LOOKING UP STATION)

* TOLERANCE FOR CONSTRUCTION OF SIDEWALKS ±0.5% (TYP)



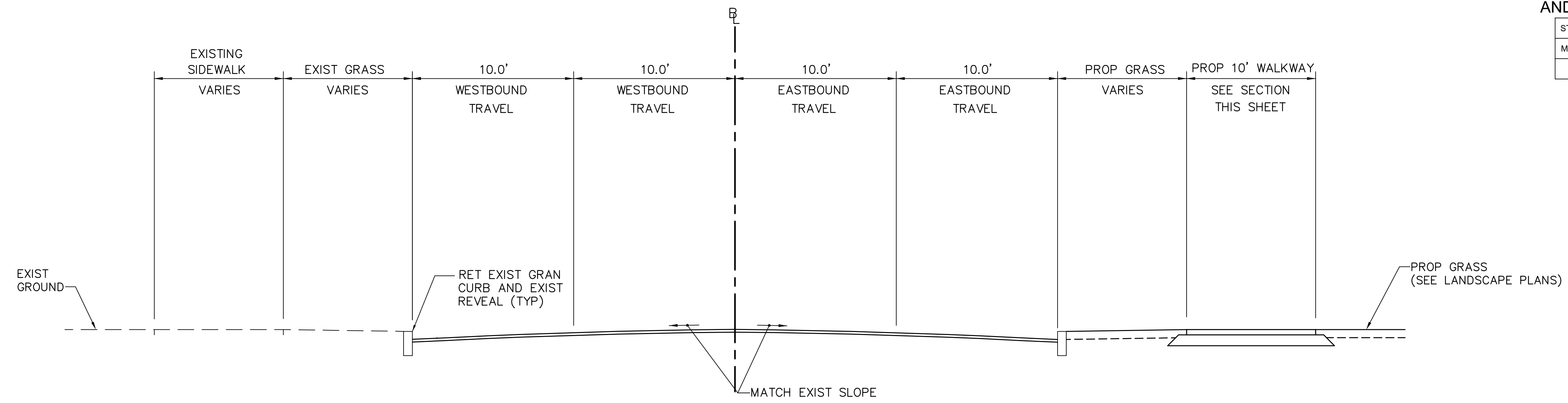
FSAT DWG. NO.			
VQ-061			
DES	AED	CHK	JMM
DR	AED	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	8	184

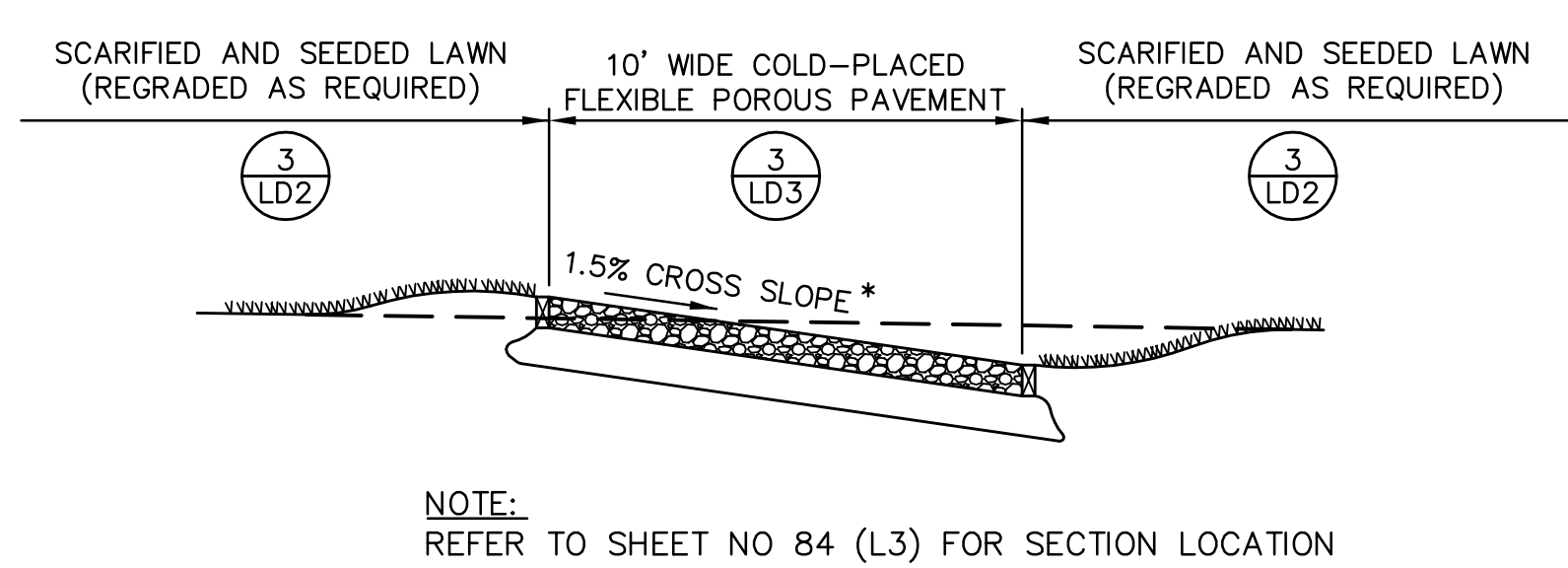
PROJECT FILE NO. 605517

TYPICAL SECTIONS
SHEET 4 OF 4

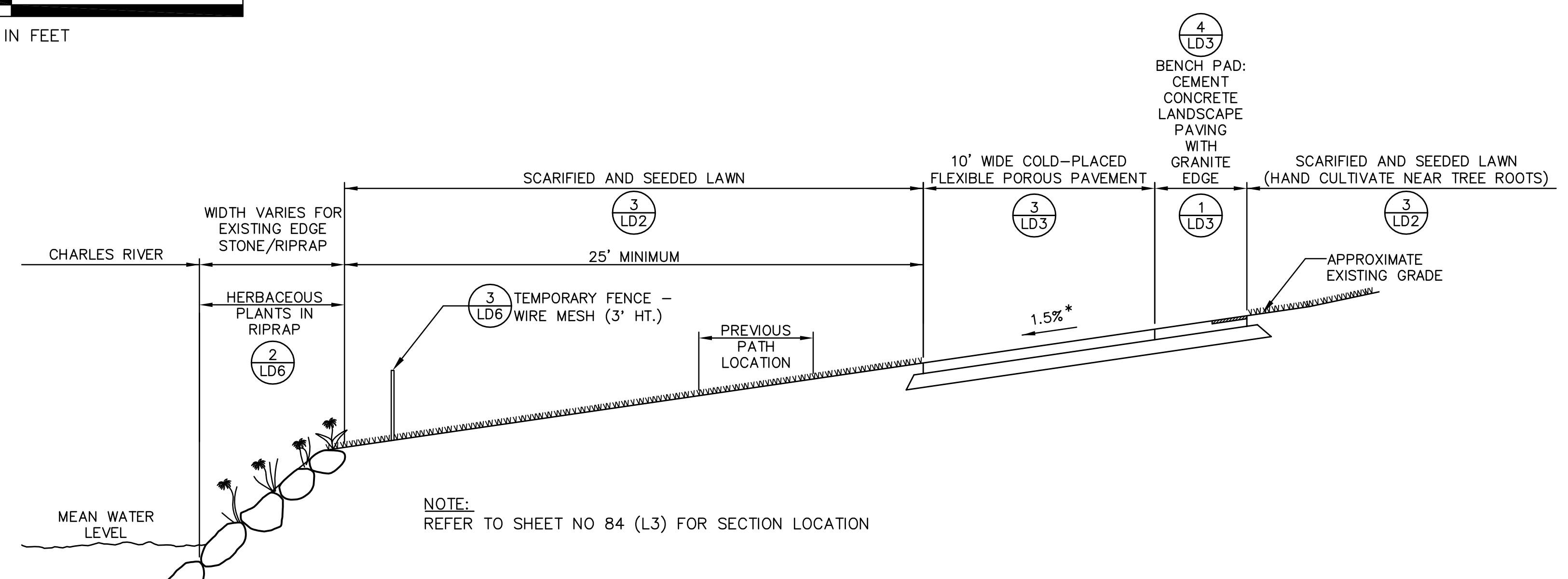


MEMORIAL DRIVE
(STA 67+85± TO STA 68+28±)
(STA 69+65± TO STA 70+18±)
(LOOKING UP STATION)

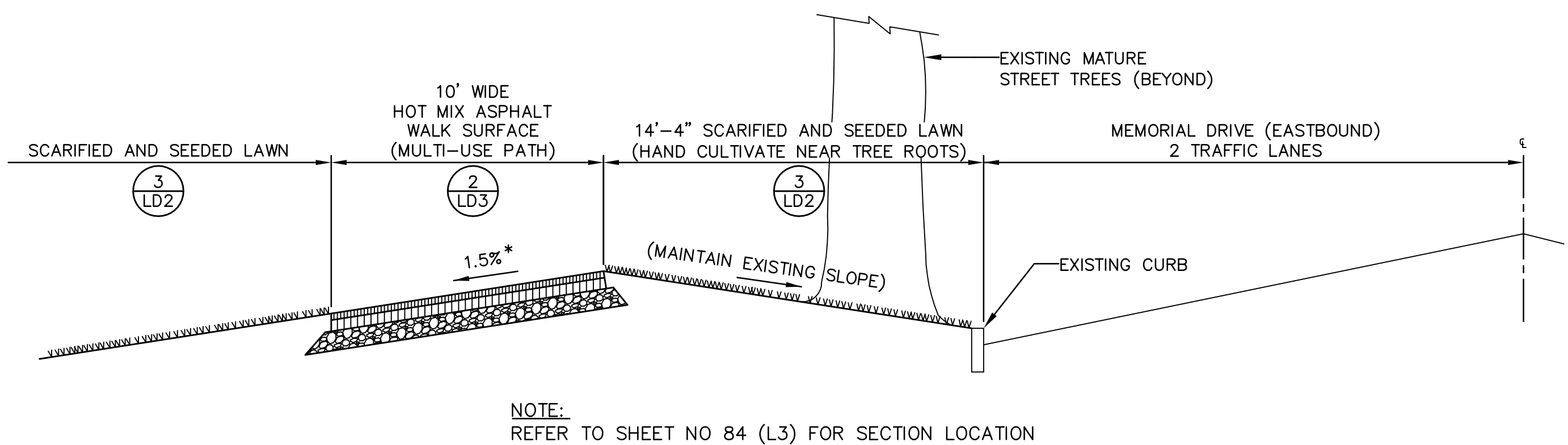
0 4 10 20
SCALE IN FEET



SECTION AT PATH TO RIVER (CAMBRIDGE WEST SIDE)
SCALE: HORIZONTAL 1"=4'; VERTICAL 1"=0.4' (10 TIMES VERTICAL EXAGGERATION)

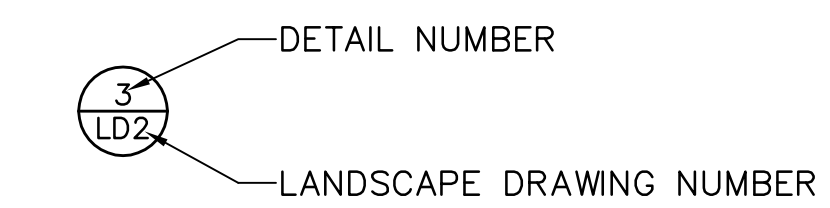


SECTION AT 10' WIDE PATH ALONG RIVER (CAMBRIDGE WEST AREA)
SCALE: HORIZONTAL 1"=4'; VERTICAL 1"=0.4' (10 TIMES VERTICAL EXAGGERATION)



SECTION AT WALKWAY ALONG MEMORIAL DRIVE (CAMBRIDGE WEST AREA)
SCALE: HORIZONTAL 1"=4'; VERTICAL 1"=0.4' (10 TIMES VERTICAL EXAGGERATION)

* TOLERANCE FOR CONSTRUCTION OF SIDEWALKS AND PATHS ±0.5% (TYP)



FS&T DWG. NO.			
VQ-061			
DES	AED	CHK	JMM
DR	AED	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	13	184

PROJECT FILE NO. 605517

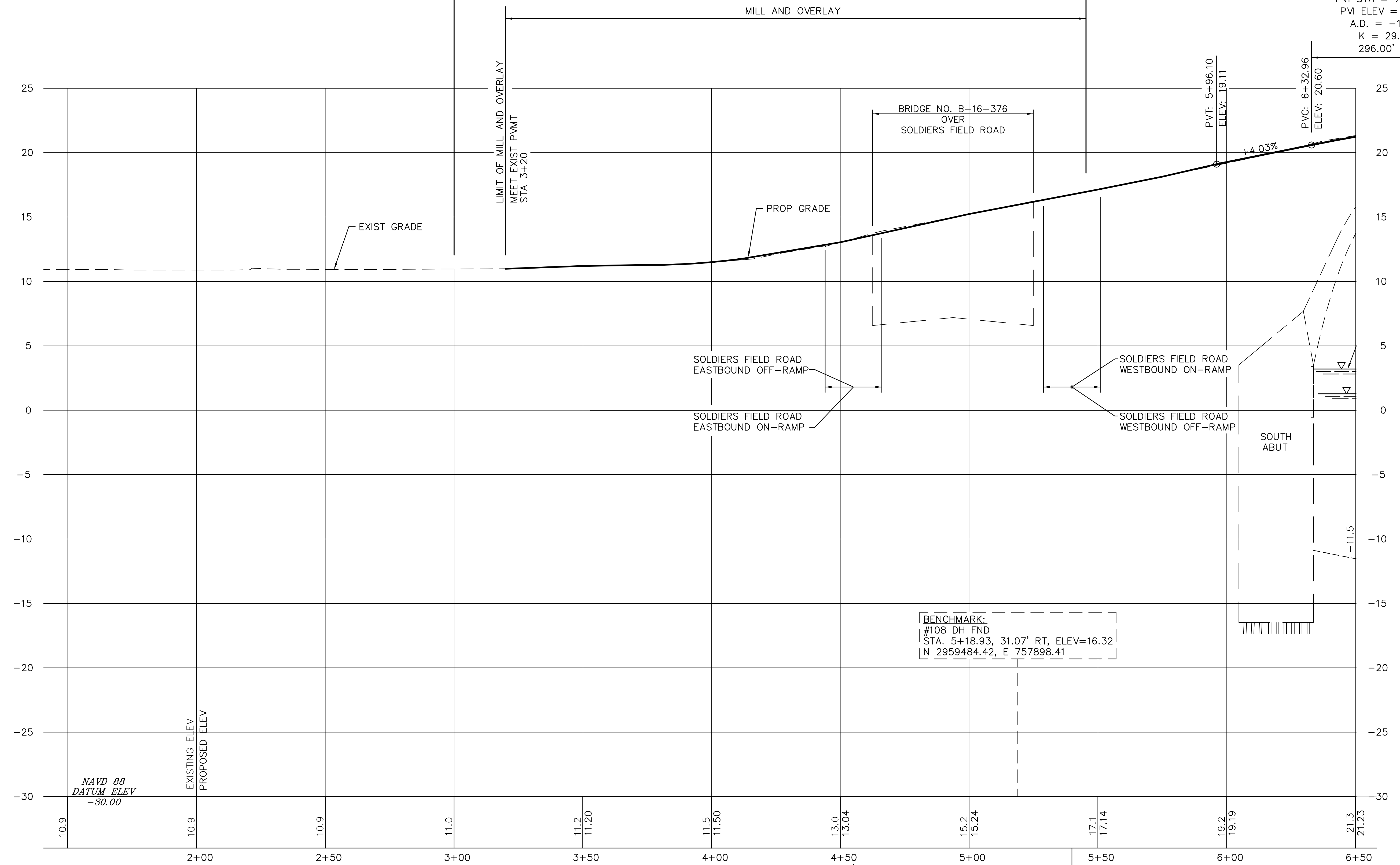
PROFILE
SHEET 1 OF 5

BOSTON

LIMIT OF FULL DEPTH
CONSTRUCTION
STA 5+45.31
MEET PROP PVMT

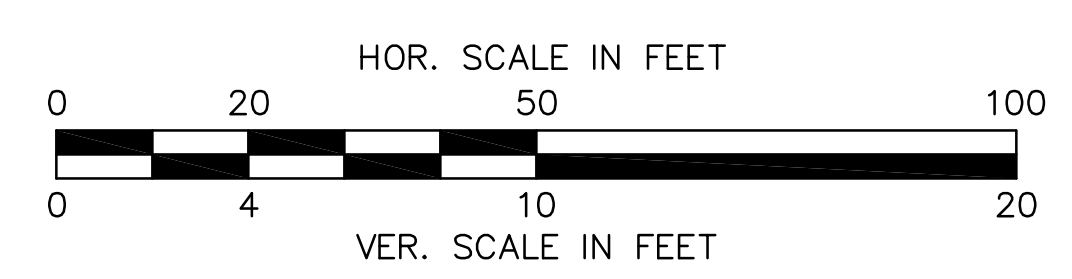
BEGINNING OF PROJECT
STA 3+00.00 MEET EXISTING
PAVEMENT MARKINGS
N 2959320.3519
E 757748.5488

HIGH POINT ELEV = 22.96
HIGH POINT STA = 7+50.0
PVI STA = 7+80.96
PVI ELEV = 26.56
A.D. = -10.19
K = 29.05
296.00' VC



CONT ON
SHEET NO 14

FS&T DWG. NO.			
VQ-061			
DES	PGM	CHK	JMM
DR	PGM	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			



STA 4+50.20 N HARVARD ST RT =
STA 30+00.00 SOLDIERS FIELD RD
EASTBOUND OFF-RAMP RT

STA 5+36.58 N HARVARD ST RT =
STA 50+00.00 SOLDIERS FIELD RD
WESTBOUND ON-RAMP RT

STA 4+50.20 N HARVARD ST RT =
STA 20+00.00 SOLDIERS FIELD RD
EASTBOUND ON-RAMP RT

STA 5+36.58 N HARVARD ST RT =
STA 40+00.00 SOLDIERS FIELD RD
WESTBOUND OFF-RAMP RT

NORTH HARVARD ST.

FOR CONSTRUCTION PLAN SEE SHEET 9

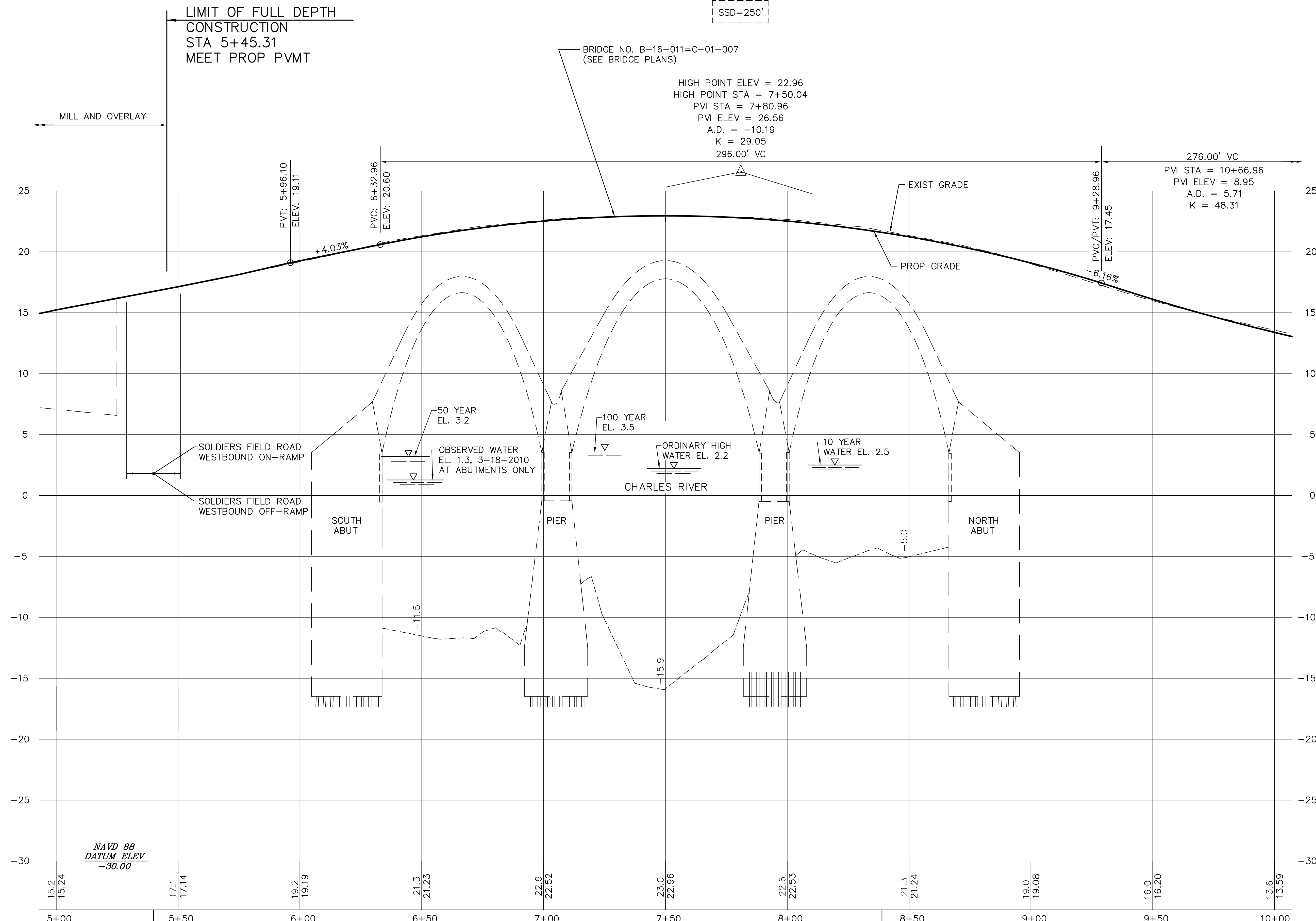
BOSTON CAMBRIDGE

BOSTON - CAMBRIDGE ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	14	184

PROJECT FILE NO. 605517

PROFILE
SHEET 2 OF 5



CONT. ON SHEET NO. 13

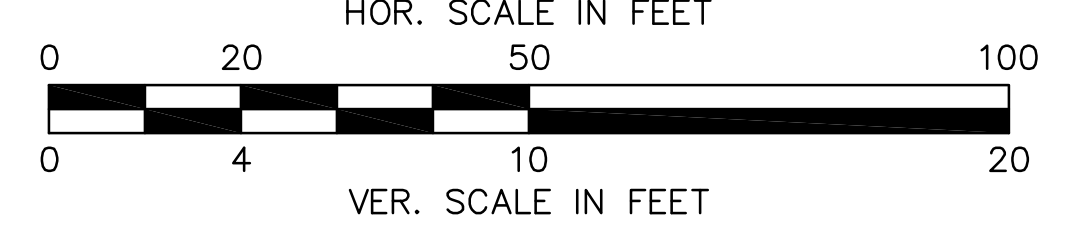
CONT. ON SHEET NO. 15

FS&T DWG. NO.			
VQ-061			
DES	PGM	CHK	JMM
DR	PGM	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

STA 5+36.58 N HARVARD ST
STA 50+00.00 SOLDIERS FIELD RD
WESTBOUND ON-RAMP

STA 5+36.58 N HARVARD ST
STA 40+00.00 SOLDIERS FIELD RD
WESTBOUND OFF-RAMP

NORTH HARVARD ST.



BENCHMARK:
#109 DH SET
STA. 8+38.89, 22.51' RT, ELEV=21.76
N 2959759.81, E 758061.53

FOR CONSTRUCTION PLAN SEE SHEET 10

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	15	184

PROJECT FILE NO. 605517

PROFILE
SHEET 3 OF 5

CAMBRIDGE

END OF PROJECT
STA 14+00.00 MEET PAVEMENT
MARKINGS (BY OTHERS)
N 2960248.9647
E 758337.6771

LIMIT OF FULL DEPTH
CONSTRUCTION
STA 10+84.04
MEET PROP PVMT

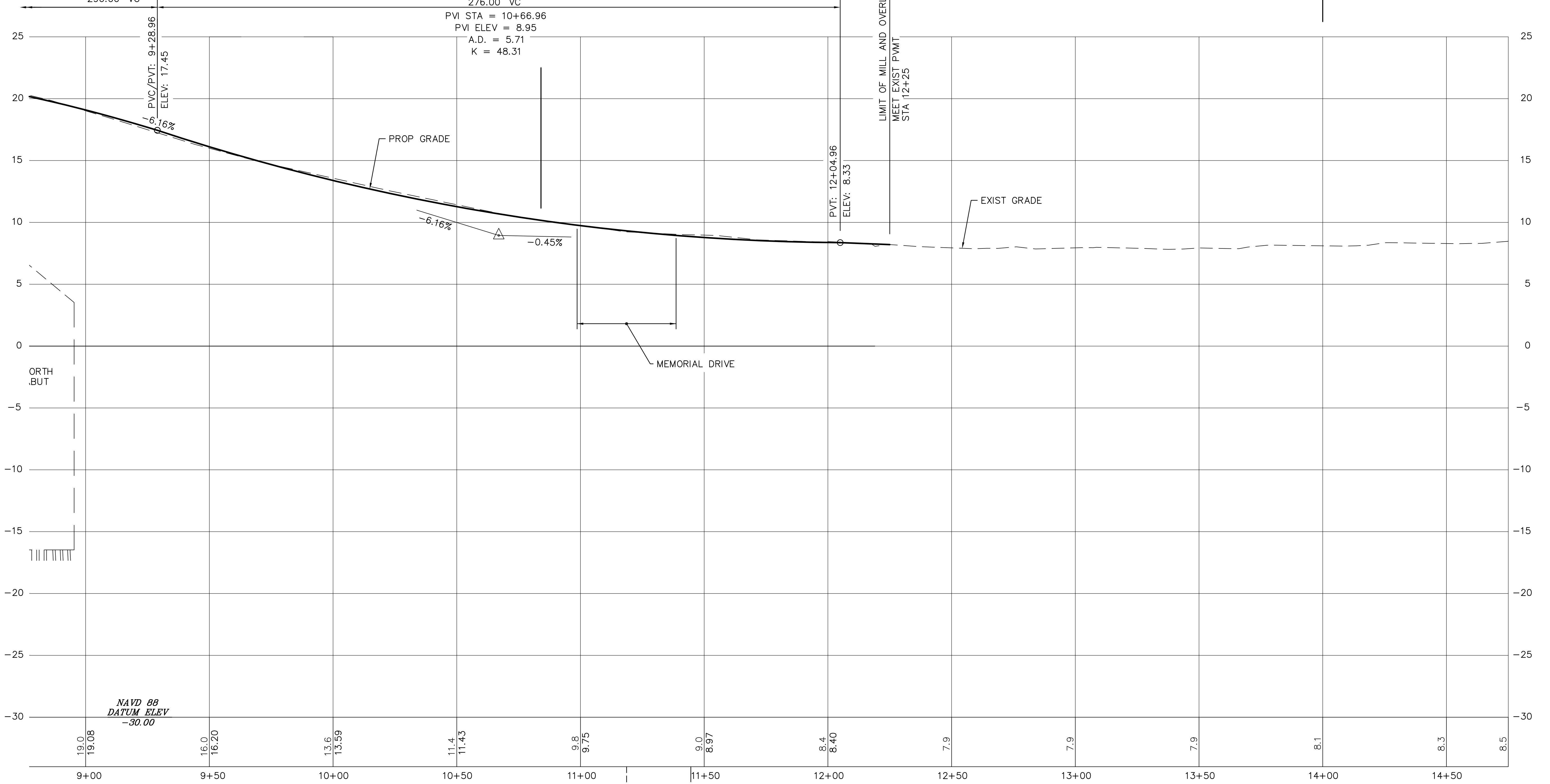
MILL AND OVERLAY

HIGH POINT ELEV = 22.96
HIGH POINT STA = 7+50.04
PVI STA = 7+80.96
PVI ELEV = 26.56
A.D. = -10.19
K = 29.05
296.00' VC

276.00' VC
PVI STA = 10+66.96
PVI ELEV = 8.95
A.D. = 5.71
K = 48.31

PVI: 12+04.96
ELEV: 8.33

LIMIT OF MILL AND OVERLAY
MEET EXIST PVMT
STA 12+25



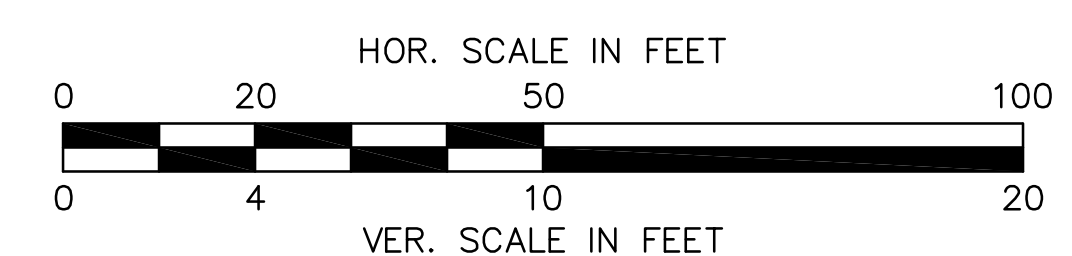
CONT. ON
SHEET NO. 14

FS&T DWG. NO.			
VQ-061			
DES	PGM	CHK	JMM
DR	PGM	CHK	JMM
EST	PGM	CHK	JMM
ENGINEER IN CHARGE			

STA 11+18.80 N HARVARD ST
STA 69+00.00 MEMORIAL DRIVE

BENCHMARK:
#112 DH SET
STA. 11+44.61, 30.24' LT, ELEV=8.73
N 2960046.68, E 758179.66

JFK STREET



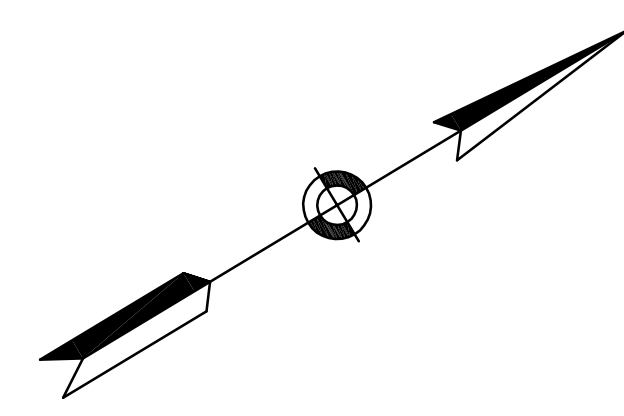
FOR CONSTRUCTION PLAN SEE SHEET 11

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	26	184

PROJECT FILE NO. 605517

TRAFFIC SIGN LOCATION
AND PAVEMENT MARKING PLAN
SHEET 1 OF 2



BOSTON

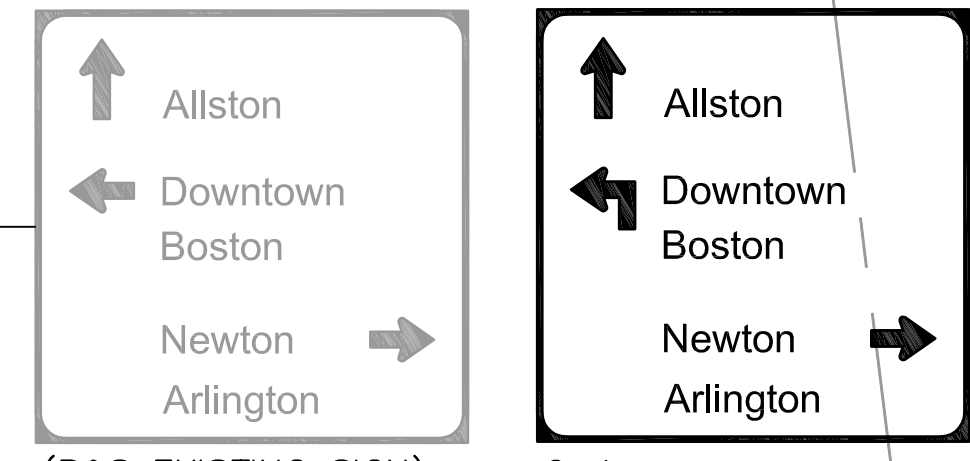
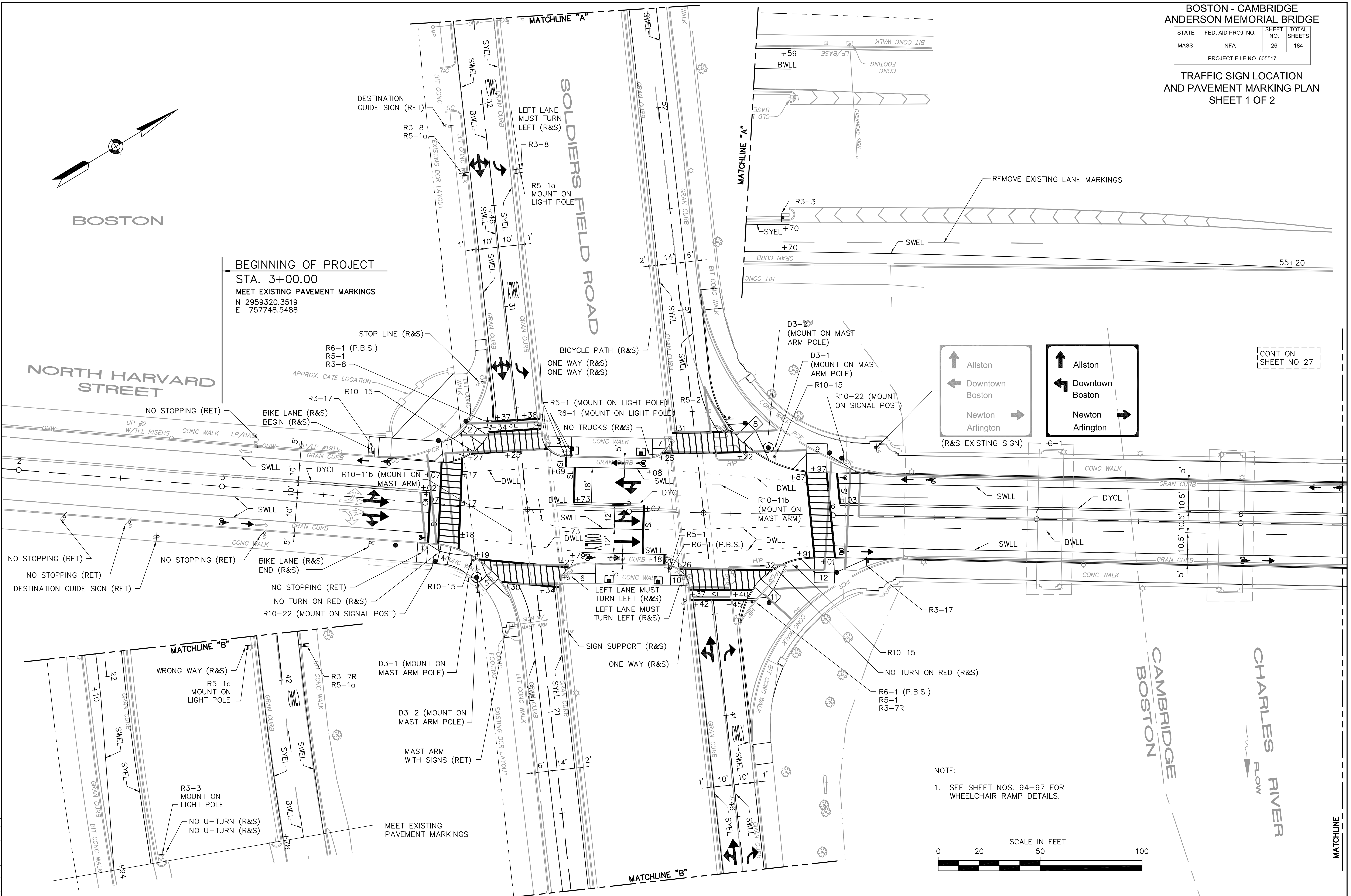
BEGINNING OF PROJECT
STA. 3+00.00
MEET EXISTING PAVEMENT MARKINGS
N 2959320.3519
E 757748.5488

NORTH HARVARD STREET

SOLDIERS FIELD ROAD

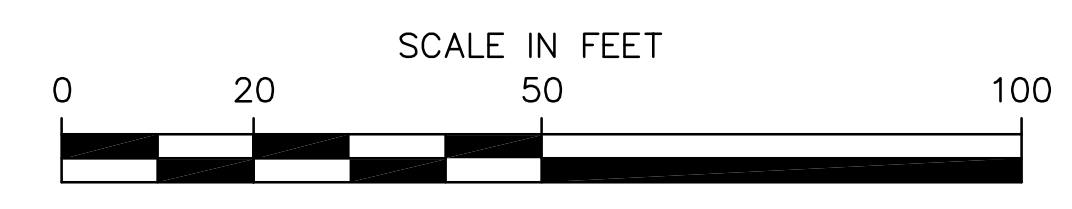
CAMBRIDGE
BOSTON

CHARLES RIVER
FLOW



CONT ON SHEET NO 27

NOTE:
1. SEE SHEET NOS. 94-97 FOR WHEELCHAIR RAMP DETAILS.



FS&T DWG. NO.	VQ-061
DES	JKM
CHK	WW
DR	JKM
CHK	WW
EST	JKM
CHK	WW
ENGINEER IN CHARGE	

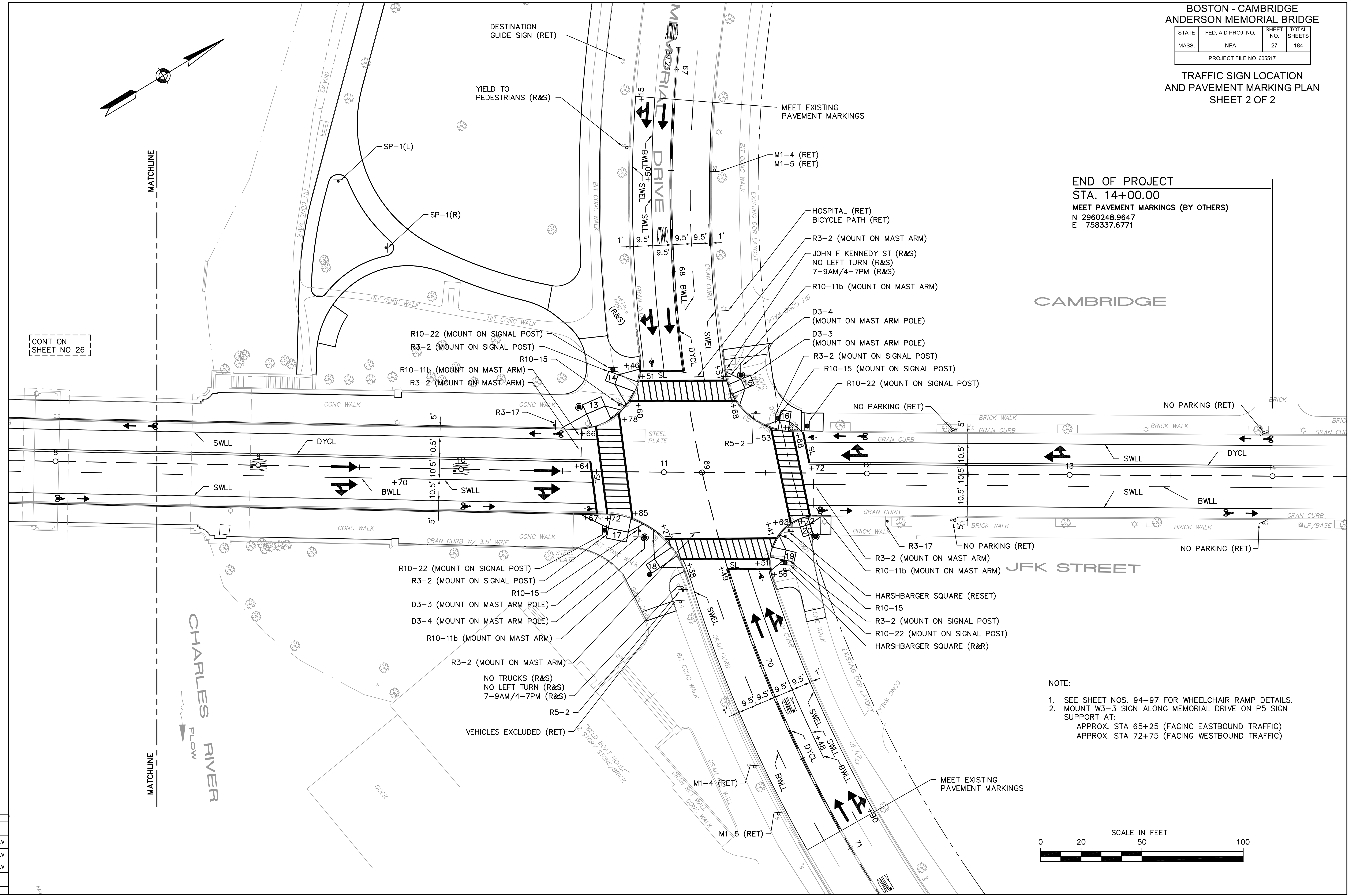
BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	27	184

PROJECT FILE NO. 605517

TRAFFIC SIGN LOCATION
AND PAVEMENT MARKING PLAN
SHEET 2 OF 2

END OF PROJECT
STA. 14+00.00
MEET PAVEMENT MARKINGS (BY OTHERS)
N 2960248.9647
E 758337.6771



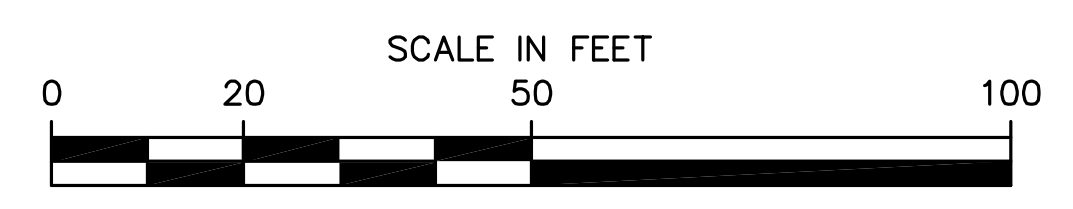
CONT ON
SHEET NO 26

CAMBRIDGE

JFK STREET

CHARLES RIVER
FLOW

- NOTE:
- SEE SHEET NOS. 94-97 FOR WHEELCHAIR RAMP DETAILS.
 - MOUNT W3-3 SIGN ALONG MEMORIAL DRIVE ON P5 SIGN SUPPORT AT:
APPROX. STA 65+25 (FACING EASTBOUND TRAFFIC)
APPROX. STA 72+75 (FACING WESTBOUND TRAFFIC)



DES	JKM	CHK	WW
DR	JKM	CHK	WW
EST	JKM	CHK	WW
ENGINEER IN CHARGE			

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

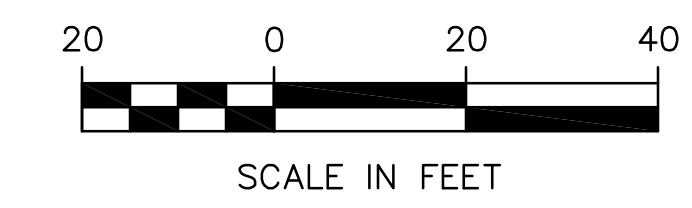
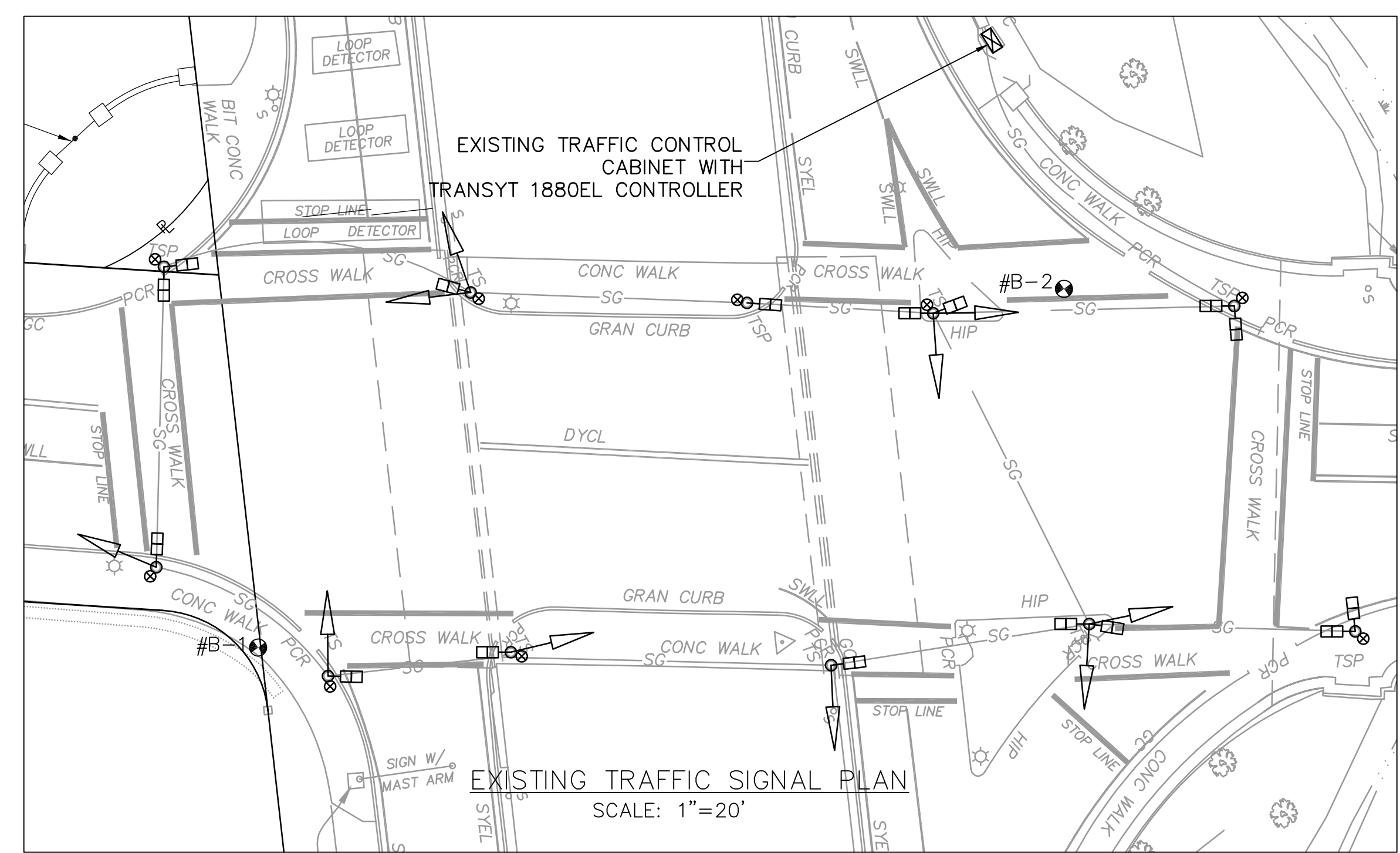
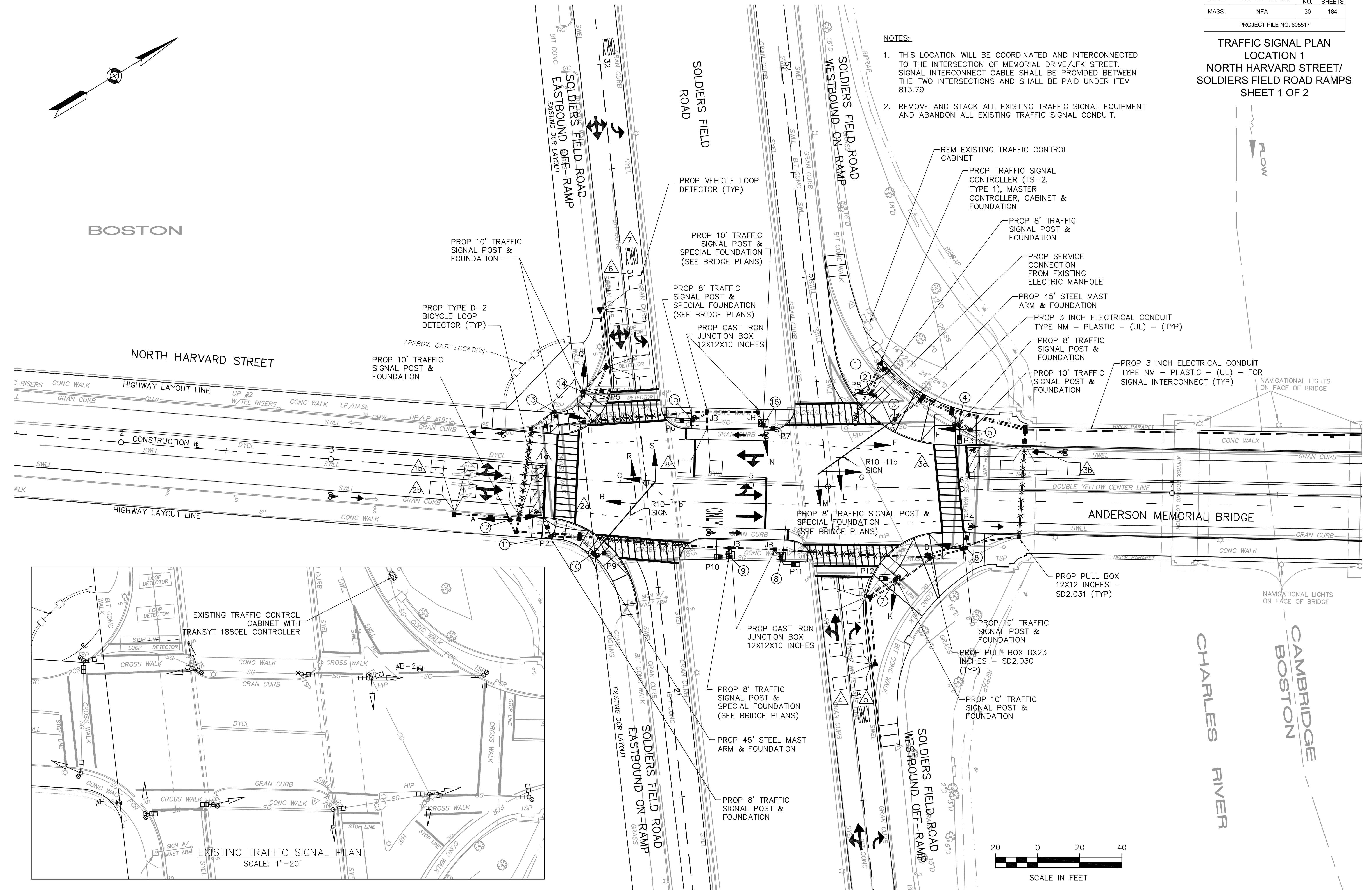
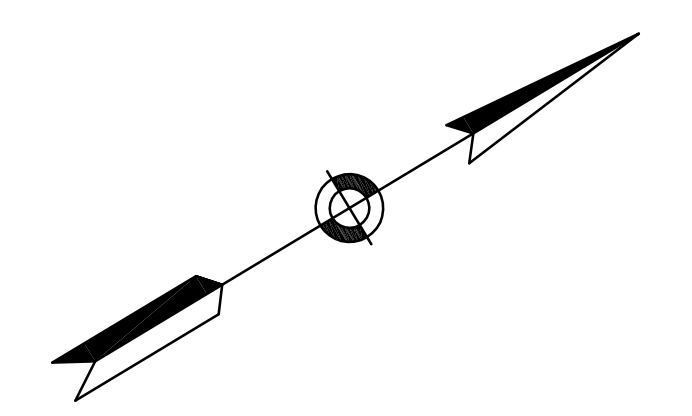
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	30	184

PROJECT FILE NO. 605517

TRAFFIC SIGNAL PLAN
LOCATION 1
NORTH HARVARD STREET/
SOLDIERS FIELD ROAD RAMPS
SHEET 1 OF 2

NOTES:

1. THIS LOCATION WILL BE COORDINATED AND INTERCONNECTED TO THE INTERSECTION OF MEMORIAL DRIVE/JFK STREET. SIGNAL INTERCONNECT CABLE SHALL BE PROVIDED BETWEEN THE TWO INTERSECTIONS AND SHALL BE PAID UNDER ITEM 813.79
2. REMOVE AND STACK ALL EXISTING TRAFFIC SIGNAL EQUIPMENT AND ABANDON ALL EXISTING TRAFFIC SIGNAL CONDUIT.



FS&T DWG. NO.	VQ-061		
DES	WW	CHK	FAM
DR	WW	CHK	FAM
EST	WW	CHK	FAM
ENGINEER IN CHARGE			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	31	184
PROJECT FILE NO. 605517			

TRAFFIC SIGNAL PLAN
LOCATION 1
NORTH HARVARD STREET/
SOLDIERS FIELD ROAD RAMP
SHEET 2 OF 2

SEQUENCE AND TIMING FOR FULLY-ACTUATED TRAFFIC SIGNAL CONTROL

STREET	DIR	HOUSING	Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	FLASHING OPERATION		
N HARVARD STREET	NB	A, B	R R R	G Y R R		R R R R		R R R R		R R R R	(Y)		
N HARVARD STREET	NB	C	R R R	G Y R R		R R R R		R R R R		R R R R	(Y)		
N HARVARD STREET	NB	D	R R R	G G Y R		G G Y R		R R R R		R R R R	(Y)		
N HARVARD STREET	NB	E	R R R	G G Y R		G G Y R		R R R R		R R R R	(Y)		
N HARVARD STREET	SB	F	R R R	R R R R		R R R R		G Y R R		R R R R	(Y)		
N HARVARD STREET	SB	G	R R R	R R R R		R R R R		G Y R R		R R R R	(Y)		
N HARVARD STREET	SB	H	R R R	R R R R		R R R R		G G Y R		G G Y R	(Y)		
N HARVARD STREET	SB	J	G/<GG/<Y	R R R R		R R R R		G G Y R		G G Y R	(Y)		
S.F.R WB OFF-RAMP	WB	K, L	R/G>R/Y>	R R R R		R R R R		R R R R		G Y R R	(R)		
S.F.R WB OFF-RAMP	WB	M	R R R	R R R R		R R R R		R R R R		G Y R R	(R)		
S.F.R WB OFF-RAMP	WB	N	R R R	R R R R		R R R R		R R R R		G/<G Y R R	(R)		
S.F.R. EB OFF-RAMP	EB	Q	R R R	R R R R		G Y R R		R R R R		R R R R	(R)		
S.F.R. EB OFF-RAMP	EB	R	R R R	R R R R		G/<G Y R R		R R R R		R R R R	(R)		
S.F.R. EB OFF-RAMP	EB	S	<R <R <R <R <R <R <R		<G <Y <R <R		<R <R <R <R		<R <R <R <R		<R <R <R <R	(R)	
PEDESTRIAN	EW	P1, P2	DW DW DW DW DW DW DW DW			W FDW FDW DW		DW DW DW DW DW DW DW DW		DW DW DW DW DW DW DW DW	OUT		
PEDESTRIAN	EW	P3, P4	DW DW DW DW DW DW DW DW			DW DW DW DW DW DW DW DW		DW DW DW DW DW DW DW DW		W FDW FDW DW	OUT		
PEDESTRIAN	NS	P5, P6	DW DW DW DW DW DW DW DW			DW DW DW DW DW DW DW DW		W FDW FDW DW		W FDW FDW DW	OUT		
PEDESTRIAN	NS	P7, P8	DW DW DW DW DW DW DW DW			W FDW FDW DW		W FDW FDW DW		DW DW DW DW DW DW DW DW	OUT		
PEDESTRIAN	NS	P9, P10	DW DW DW DW DW DW DW DW			DW DW DW DW DW DW DW DW		DW DW DW DW DW DW DW DW		W FDW FDW DW	OUT		
PEDESTRIAN	NS	P11, P12	DW DW DW DW DW DW DW DW			W FDW FDW DW		DW DW DW DW DW DW DW DW		DW DW DW DW DW DW DW DW	OUT		
INTERVALS (IN SECONDS)	MINIMUM GREEN	10		15		11		15		6			
	EXTENSION INTERVAL	2		2		2		2		2			
	MAXIMUM I (FREE)	10		16		11		30		6			
	MAXIMUM II (COORDINATED)	27		30		14		50		6			
	CLEARANCE INTERVAL		2	2	4	4	3		4	4	3		
	"WALK" INTERVAL							7					
PED CLEARANCE INTERVAL				10				12					
DETECTOR MEMORY		NON-LOCK	NON-LOCK			NON-LOCK		NON-LOCK		NON-LOCK			
RECALL SWITCH		OFF	SOFT			OFF		SOFT		OFF			
CYCLE 1		27	2	2	16	4	4	3		14	4	4	3
CYCLE 2		16	2	2	30	4	4	3		11	4	4	3
CYCLE 3													

FOUNDATION LOCATIONS

FOUNDATION LOC.	TYPE	STATION**	OFFSET	NOTES
1	CAB	B 50+66	32.04R	DOOR FACES SOUTHEAST
2	SP	B 50+41	25.16R	8-FT SIGNAL POST
3	MA	A 5+68	32.53L	45-FT TYPE II STEEL
4	SP	A 5+98	30.60L	8-FT SIGNAL POST
5	SP	A 6+04	28.12L	10-FT SIGNAL POST
6	SP	A 6+02	27.97R	10-FT SIGNAL POST
7	SP	A 5+70	43.46R	10-FT SIGNAL POST
8	SP	A 5+15***	35.09R	8-FT SIGNAL POST
9	SP	A 4+91***	35.02R	8-FT SIGNAL POST
10	MA	A 4+28	28.02R	45-FT TYPE II STEEL
11	SP	A 4+07	28.31R	8-FT SIGNAL POST
12	SP	A 3+87	21.90R	10-FT SIGNAL POST
13	SP	A 4+04	30.89L	10-FT SIGNAL POST
14	SP	A 4+17	41.44L	10-FT SIGNAL POST
15	SP	A 4+71***	30.22L	8-FT SIGNAL POST
16	SP	A 5+05***	28.36L	10-FT SIGNAL POST

* Ø A = NORTH HARVARD STREET
 Ø B = SOLDIERS FIELD ROAD WB ON-RAMP
 ** OFFSETS MEASURED FROM BASELINE TO CENTER OF FOUNDATION.
 *** OFFSETS MEASURED FROM BASELINE TO CENTER OF SIGNAL POST

LOOP DETECTOR OPERATION

DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE (FT)	AMPLIFIER NO.	CHANNEL NO.	SPLICE PATTERN*	NO. OF TURNS	Ø CALLED	Ø EXTENSION	MODE: A=PULSE B=PRES. C=CALLING	DELAY (SECONDS)	EXTENSION (SECONDS)
1a	1	6' x 6'	1	1	BL	4	2	2	C	0	0
1b	3	6' x 6'	1	2	S	3	2	2	B	0	0
2a	1	12' x 6'	2	1	BL	4	2	2	C	0	0
2b	3	6' x 6'	2	2	S	3	2	2	B	0	0
3a	1	12' x 6'	3	1	BL	4	1&6	6	C	0	0
3b	3	6' x 6'	3	2	S	3	1&6	6	B	0	0
4	4	6' x 6'	4	1	S	3	8	8	B	0	0
5	1	9' x 6'	4	2	S	3	8	8	B	0	0
6	3	6' x 6'	4	2	S	3	8	8	B	0	0
7	4	6' x 6'	5	1	S	3	4	4	B	0	0
8	4	6' x 6'	5	2	S	3	4	4	B	0	0
9	2	6' x 6'	6	1	S	3	1&6	-	C	30	-

* S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS
 LOOP DETECTOR NOTES:
 1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

MAJOR ITEM LIST

QTY.	ITEM
1	T.S. CONTROLLER, TS-2, TYPE 1 W/CABINET (BASE-MOUNTED) ON CONC. FND.
2	MAST ARM (TYPE II) W/ FOUNDATION & BASE, 45-FT, STEEL, TO ACCOMMODATE R10-11b PANEL
7	TRAFFIC SIGNAL POST, BASE & FOUNDATION, 10-FT.
6	TRAFFIC SIGNAL POST, BASE & FOUNDATION, 8-FT.
7	VEH. SIGNAL HEAD, 1-WAY, 3-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 1-WAY, 4-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 1-WAY, 5-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 2-WAY, 3/3-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 2-WAY, 3/5-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 2-WAY, 3/4-SECTION -12" LENS (L.E.D.)
1	SYSTEM MASTER CONTROLLER
12	PED. SIGNAL HEAD, INTERNATIONAL GRAPHIC SYMBOL W/COUNTDOWN (L.E.D.)
12	PED. PUSH BUTTON W/SIGN & SADDLE (ADA COMPLIANT - 2" BUTTON)
30	WIRE LOOP DETECTORS
6	LOOP DETECTOR AMPLIFIERS (DUAL CHANNEL)
11	PULL BOX, 12" x 12" (SD2.031)
5	PULL BOX, 8" x 23" (SD2.030)
4	JUNCTION BOX, 12"x12"x10"
1	SERVICE CONNECTION - ELECTRIC (UNDERGROUND)

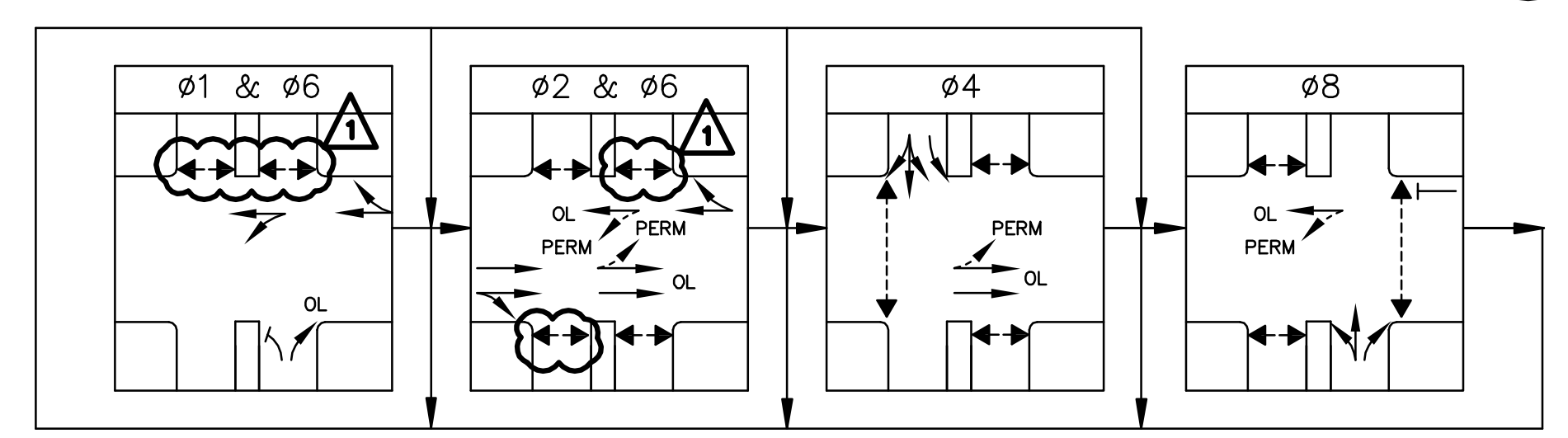
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION

TECHNICAL NOTES

PROGRAM/COORDINATION	CLEARANCES	TECHNICAL NOTES
CYCLE NO. LENGTH	OFFSET % / SEC	HOURS OF OPERATION
1 100	0 / 0	MON-FRI 6 AM-11 AM
2 100	0 / 0	MON-FRI 11 AM-8 PM
3		
COORDINATED OPERATION	MON-FRI 6 AM-8 PM	
FREE OPERATION	ALL OTHER TIMES	

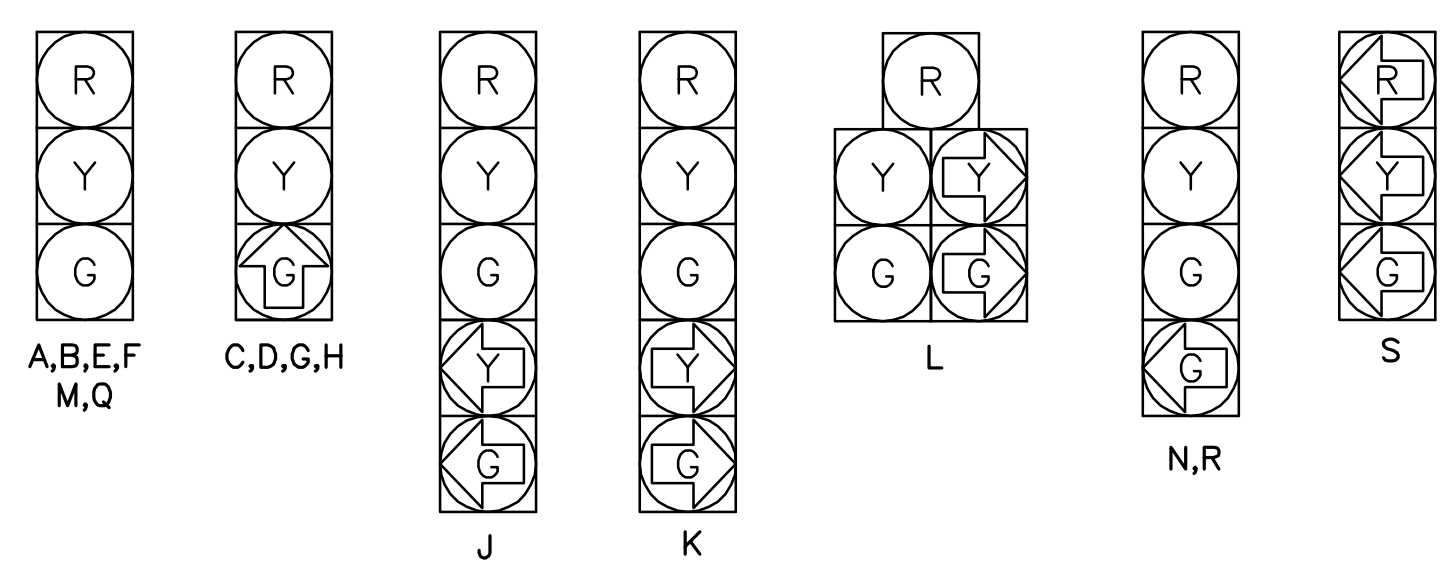
1. TIME FOR Ø8 (PEDESTRIAN) THAT CANNOT BE ACCOMMODATED WITHIN VEHICULAR Ø8 TO BE TAKEN FROM Ø1
 2. OFFSET REFERENCED TO BEGINNING OF GREEN OF THE COORDINATED PHASES, 2 & 6
 3. MASTER CONTROLLER AT LOCATION 1
 4. Ø1 & Ø6 DUAL ENTRY
 5. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL INDICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT-OF-WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED.
 6. IF NO CALLS ARE PRESENT ON Ø4 OR Ø8, YELLOW AND ALL-RED CLEARANCE INTERVALS SHALL BE DISPLAYED FOR Ø2+Ø6 BEFORE SERVICING Ø1+Ø6
 7. PEDESTRIAN WALK & CLEARANCE TIMES DEPICTED ON THIS PLAN ARE THE MINIMUM INTERVALS TO BE PROVIDED. PEDESTRIAN WALK & CLEARANCE TIMES SHALL BE EXTENDED TO COINCIDE WITH THE ENTIRE LENGTH OF THE CONCURRENT VEHICULAR PHASE.
 8. THIS INTERSECTION SHALL BE CAPABLE OF PROVIDING A LEADING PEDESTRIAN INTERVAL (LPI) FOR ALL CROSSINGS (FOR FUTURE USE).

PREFERENTIAL PHASING DIAGRAM

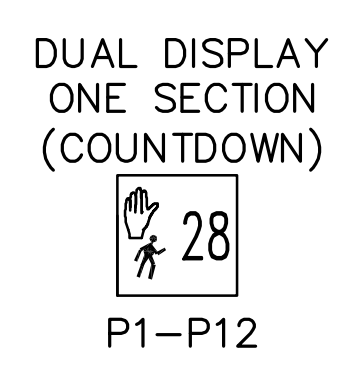


→ VEHICULAR MOVEMENT
 ←--- PEDESTRIAN MOVEMENT

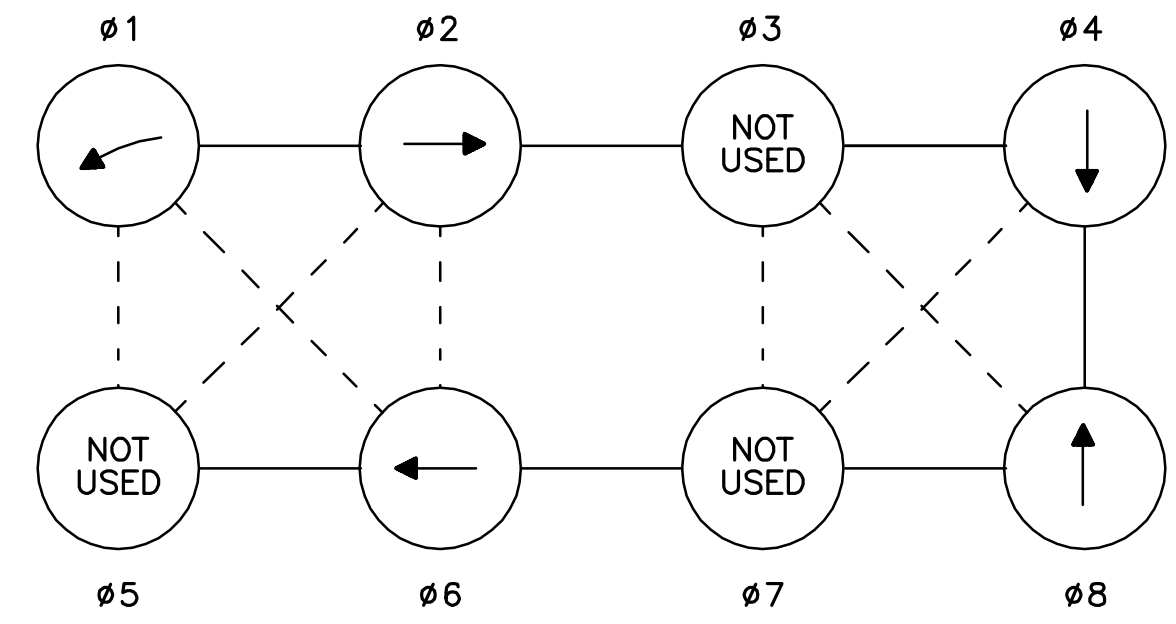
SIGNAL FACES



- ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.



NEMA DUAL RING PHASING NOTES:



- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
- PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
- THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.

REV.	DATE	DESCRIPTION	BY	CHKD	APP
1	1/11/2012	PEDESTRIAN SIGNAL MODIFICATIONS	WW	DCP	JMM

FS&T DWG. NO.	VQ-061		
DES	WW	CHK	FAM
DR	WW	CHK	FAM
EST	WW	CHK	FAM
ENGINEER IN CHARGE			

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

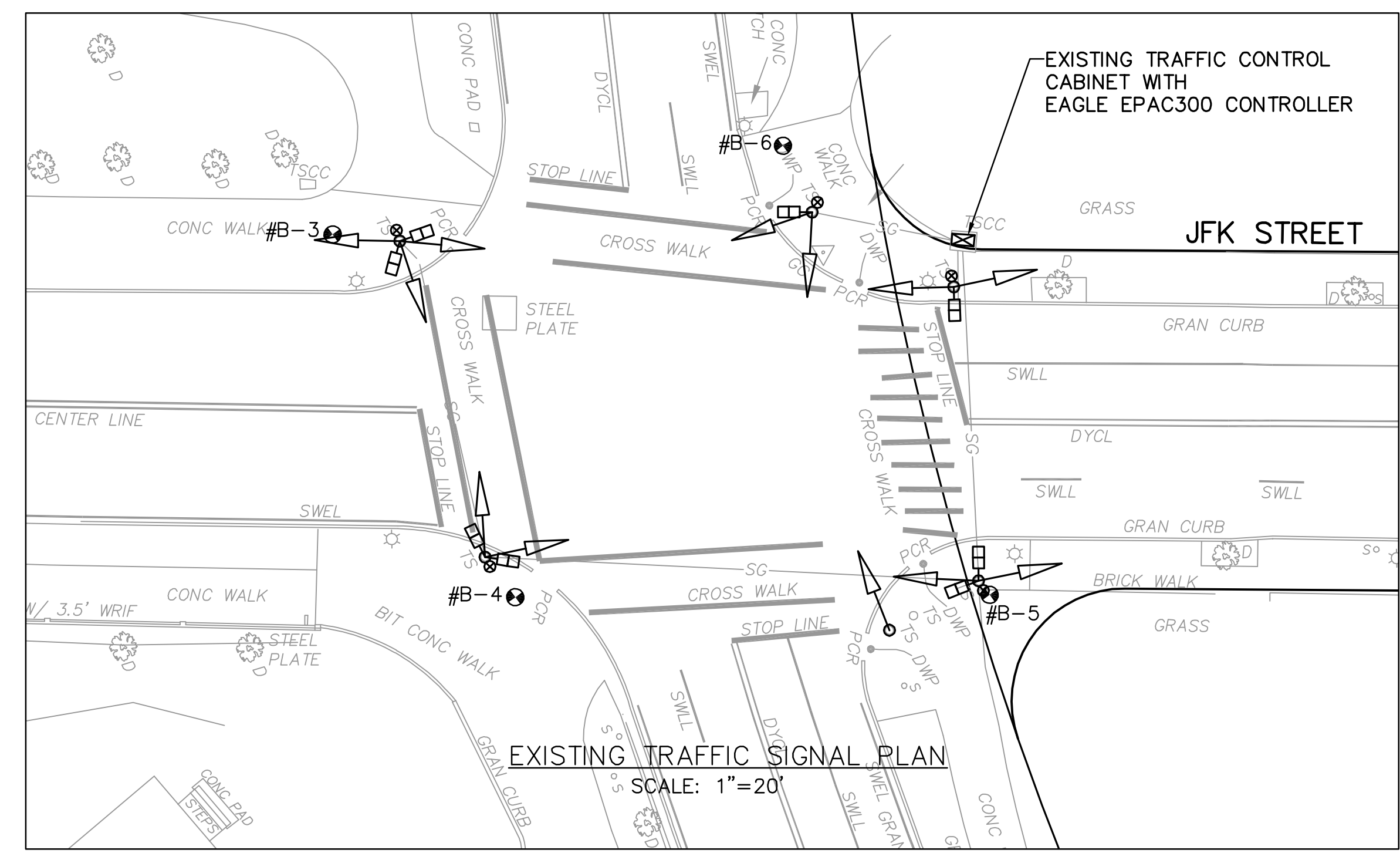
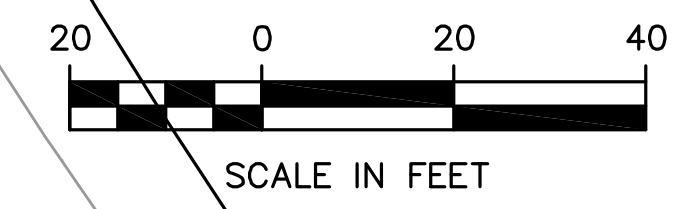
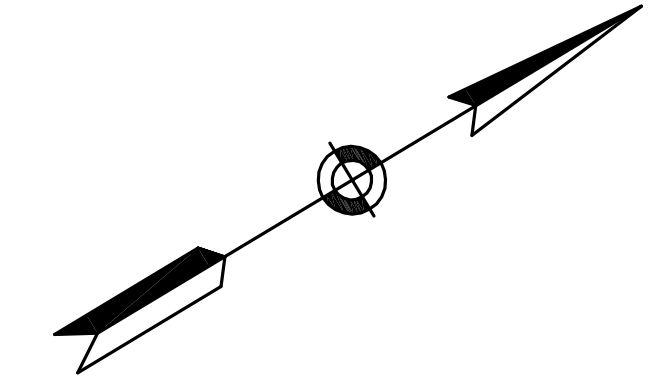
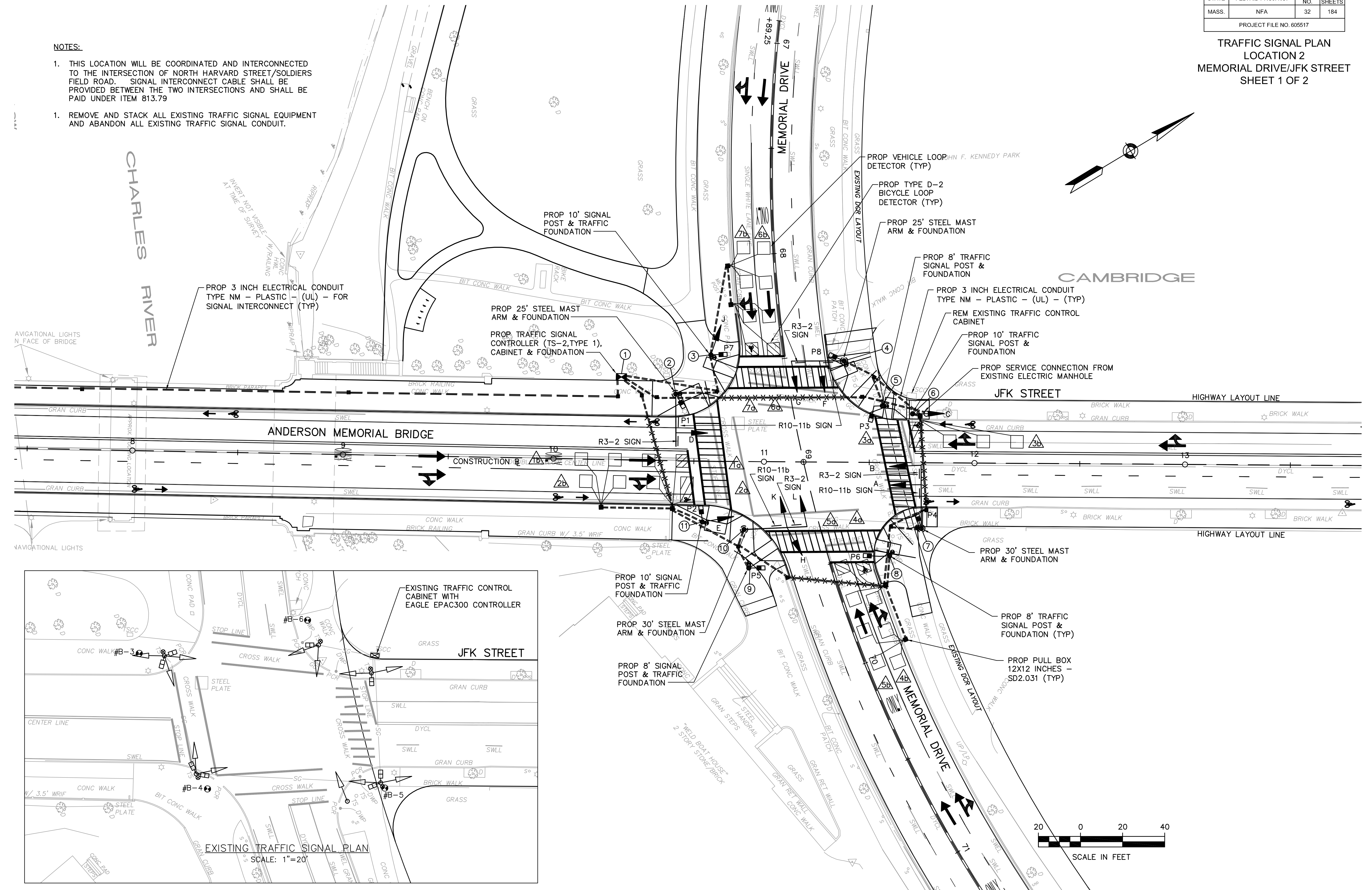
STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	32	184

PROJECT FILE NO. 605517

TRAFFIC SIGNAL PLAN
LOCATION 2
MEMORIAL DRIVE/JFK STREET
SHEET 1 OF 2

NOTES:

1. THIS LOCATION WILL BE COORDINATED AND INTERCONNECTED TO THE INTERSECTION OF NORTH HARVARD STREET/SOLDIERS FIELD ROAD. SIGNAL INTERCONNECT CABLE SHALL BE PROVIDED BETWEEN THE TWO INTERSECTIONS AND SHALL BE PAID UNDER ITEM 813.79
1. REMOVE AND STACK ALL EXISTING TRAFFIC SIGNAL EQUIPMENT AND ABANDON ALL EXISTING TRAFFIC SIGNAL CONDUIT.



FS&T DWG. NO.	VQ-061		
DES	WW	CHK	FAM
DR	WW	CHK	FAM
EST	WW	CHK	FAM
ENGINEER IN CHARGE			

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	33	184
PROJECT FILE NO. 605517			

TRAFFIC SIGNAL PLAN
LOCATION 2
MEMORIAL DRIVE/JFK STREET
SHEET 2 OF 2

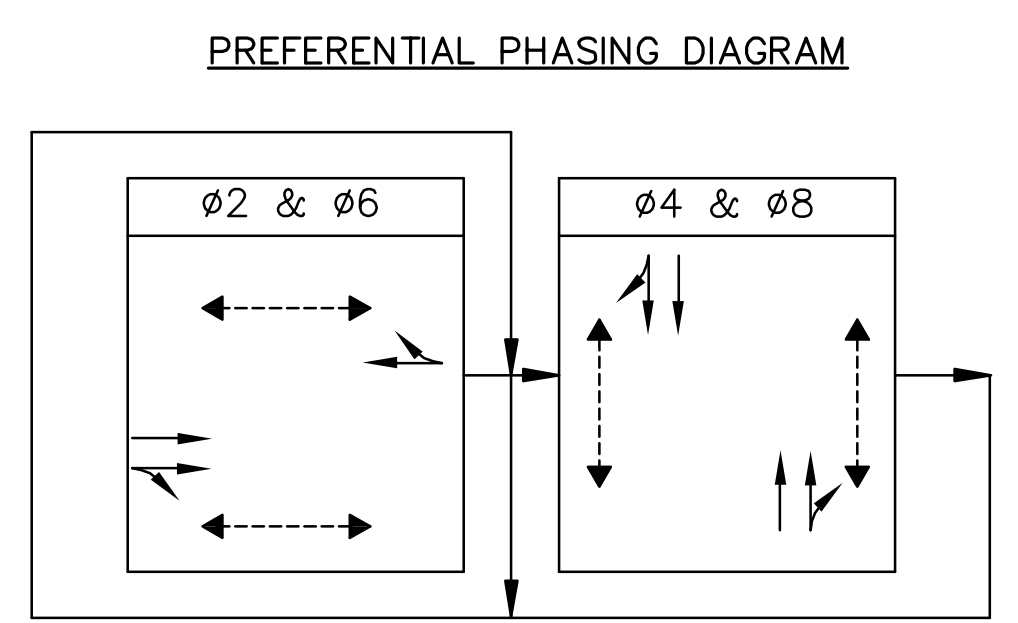
SEQUENCE AND TIMING FOR FULLY - ACTUATED TRAFFIC SIGNAL CONTROL															
STREET			DIR	HOUSING	φ1	φ2	φ3	φ4	φ5	φ6	φ7	φ8	φ9	FLASHING OPERATION	
JFK STREET	NB	A				R	G	Y	R						(R)
JFK STREET	NB	B				R	G	Y	R						(R)
JFK STREET	SB	C, D				R	R	R	R						(R)
JFK STREET	SB	E				R	R	R	R						(R)
MEMORIAL DRIVE	WB	F				R	R	R	R						(Y)
MEMORIAL DRIVE	WB	G, H				R	R	R	R						(Y)
MEMORIAL DRIVE	EB	J, K				R	R	R	R						(Y)
MEMORIAL DRIVE	EB	L				R	R	R	R						(Y)
PEDESTRIAN	EW	P1, P2			DW	DW	DW	DW							OUT
PEDESTRIAN	EW	P3, P4			DW	DW	DW	DW							OUT
PEDESTRIAN	NS	P5, P6							DW	DW	DW	DW			OUT
PEDESTRIAN	NS	P7, P8										DW	DW	DW	OUT
INTERVALS (IN SECONDS)	MINIMUM GREEN				17				20				20		
	EXTENSION INTERVAL				2				2				2		
	MAXIMUM I (FREE)				27				21				21		
	MAXIMUM II (COORDINATED)				41				40				40		
	CLEARANCE INTERVAL					3.6	2.4				3.6	2.4			
	"WALK" INTERVAL				5*	4			5*	9			5*	4	
PED CLEARANCE INTERVAL					16				15				15		
DETECTOR MEMORY					NON-LOCK				NON-LOCK				NON-LOCK		
RECALL SWITCH					SOFT				OFF				OFF		
CYCLE 1					5*	38	3.6	2.4		5*	40	4	2		
CYCLE 2					5*	41	3.6	2.4		5*	37	4	2		
CYCLE 3															
PROGRAM/COORDINATION			CLEARANCES			TECHNICAL NOTES									
CYCLE NO.	LENGTH	OFFSET % / SEC	HOURS OF OPERATION	FROM	TO	1. OFFSET REFERENCED TO BEGINNING OF GREEN OF THE COORDINATED PHASES, 2 & 6 2. MASTER CONTROLLER LOCATED AT LOCATION 1 3. φ2, φ6, φ4, φ8 DUAL ENTRY 4. ANY PHASE NOT CALLED WILL BE SKIPPED. SIGNAL INDICATION WILL NOT CHANGE IF THE ASSIGNED RIGHT-OF-WAY DOES NOT CHANGE DURING THE NEXT PHASE CALLED. 5. * = LEADING PEDESTRIAN INTERVAL (LPI) 6. PEDESTRIAN WALK & CLEARANCE TIMES DEPICTED ON THIS PLAN ARE THE MINIMUM INTERVALS TO BE PROVIDED. PEDESTRIAN WALK & CLEARANCE TIMES SHALL BE EXTENDED TO COINCIDE WITH THE ENTIRE LENGTH OF THE CONCURRENT VEHICULAR PHASE.									
1	100	87/87	MON-FRI 6 AM-11 AM	R	R										
2	100	95/95	MON-FRI 11 AM-8 PM	G	Y										
3				G	Y										
COORDINATED OPERATION			MON-FRI 6 AM-8 PM												
FREE OPERATION			ALL OTHER TIMES												

FOUNDATION LOCATIONS					
FOUNDATION LOC.	TYPE	STATION**	OFFSET	φ*	NOTES
1	CAB	A	10+32	39.34L	DOOR FACES EAST
2	MA	A	10+57	31.77L	25-FT TYPE II STEEL
3	SP	B	68+44	34.45R	10-FT SIGNAL POST
4	MA	B	68+55	27.76L	25-FT TYPE II STEEL
5	SP	A	11+56	26.90L	8-FT SIGNAL POST
6	SP	A	11+70	23.21L	10-FT SIGNAL POST
7	MA	A	11+75	31.25R	30-FT TYPE II STEEL
8	SP	B	69+55	27.43L	8-FT SIGNAL POST
9	SP	B	69+41	37.75R	8-FT SIGNAL POST
10	MA	A	10+91	32.25R	30-FT TYPE II STEEL
11	SP	A	10+71	28.81R	10-FT SIGNAL POST

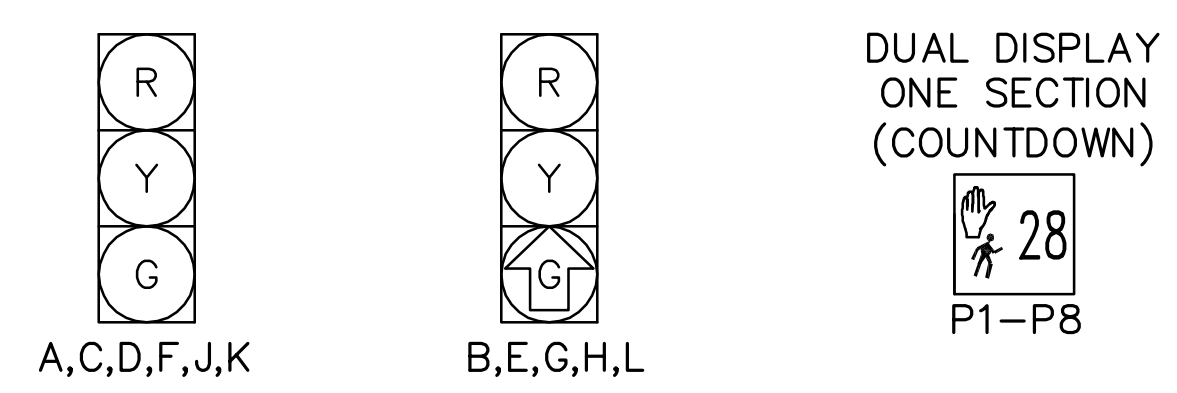
* φ A = NORTH HARVARD STREET/JFK STREET
 φ B = MEMORIAL DRIVE
 ** OFFSETS MEASURED FROM BASELINE TO CENTER OF FOUNDATION.

MAJOR ITEM LIST	
QTY.	ITEM
1	T.S. CONTROLLER, TS-2, TYPE 1 W/CABINET (BASE-MOUNTED) ON CONC. FND.
2	MAST ARM (TYPE II) W/FOUNDATION & BASE, 25-FT, STEEL, TO ACCOMMODATE R3-2 & R10-11b PANELS
2	MAST ARM (TYPE II) W/FOUNDATION & BASE, 30-FT, STEEL, TO ACCOMMODATE R3-2 & R10-11b PANELS
3	TRAFFIC SIGNAL POST, BASE & FOUNDATION, 10-FT.
3	TRAFFIC SIGNAL POST, BASE & FOUNDATION, 8-FT.
9	VEH. SIGNAL HEAD, 1-WAY, 3-SECTION -12" LENS (L.E.D.)
1	VEH. SIGNAL HEAD, 2-WAY, 3-SECTION -12" LENS (L.E.D.)
8	PED. SIGNAL HEAD, INTERNATIONAL GRAPHIC SYMBOL W/COUNTDOWN (L.E.D.)
8	PED. PUSH BUTTON W/SIGN & SADDLE (ADA COMPLIANT - 2" BUTTON)
8	AUDIBLE PEDESTRIAN CROSSING ASSEMBLY
28	WIRE LOOP DETECTORS
7	LOOP DETECTOR AMPLIFIERS (DUAL CHANNEL)
19	PULL BOX, 12" x 12" (SD2.031)
1	SERVICE CONNECTION - ELECTRIC (UNDERGROUND)

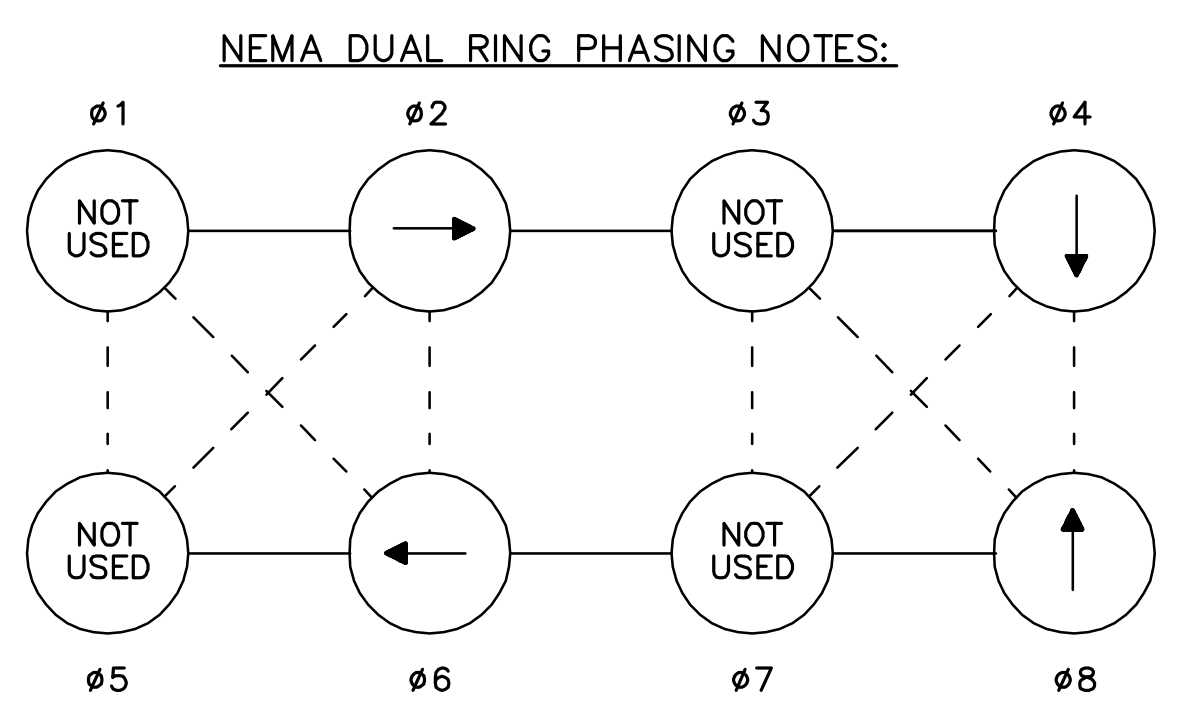
PLUS ALL NECESSARY DUCT, CABLE, LABOR, MISCELLANEOUS MATERIALS AND EQUIPMENT TO COMPLETE THE INSTALLATION



→ VEHICULAR MOVEMENT
 ← PEDESTRIAN MOVEMENT



- ALL TRAFFIC SIGNAL HEADS SHALL BE EQUIPPED WITH ±5" LOUVERED BACKPLATES.
- ALL SIGNAL HEADS SHALL BE EQUIPPED WITH L.E.D. MODULES WITH 12" LENSES.



- PHASES ASSOCIATED BY A SOLID LINE SHALL NOT OPERATE CONCURRENTLY.
- PHASES ASSOCIATED BY A DASHED LINE MAY OPERATE CONCURRENTLY.
- THROUGH MOVEMENTS MAY INCLUDE RIGHT TURNS.

LOOP DETECTOR OPERATION											
DETECTOR NO.	NO. OF SEGMENTS	LOOP SIZE (FT)	AMPLIFIER NO.	CHANNEL NO.	SPLICE PATTERN*	NO. OF TURNS	φ CALLED	φ EXTENSION	MODE: A=PULSE B=PRES. C=CALLING	DELAY (SECONDS)	EXTENSION (SECONDS)
1a	1	6' x 6'	1	1	BL	4	2	2	C	0	0
1b	3	6' x 6'	1	2	S	3	2	2	B	0	0
2a	1	12' x 6'	2	1	BL	4	2	2	C	0	0
2b	3	6' x 6'	2	2	S	3	2	2	B	0	0
3a	1	12' x 6'	3	1	BL	4	6	6	C	0	0
3b	3	6' x 6'	3	2	S	3	6	6	B	0	0
4a	1	6' x 6'	4	1	BL	4	8	8	C	0	0
4b	3	6' x 6'	4	2	S	3	8	8	B	0	0
5a	1	6' x 6'	5	1	BL	4	8	8	C	0	0
5b	3	6' x 6'	5	2	S	3	8	8	B	0	0
6a	1	6' x 6'	6	1	BL	4	4	4	C	0	0
6b	3	6' x 6'	6	2	S	3	4	4	B	0	0
7a	1	6' x 6'	7	1	BL	4	4	4	C	0	0
7b	3	6' x 6'	7	2	S	3	4	4	B	0	0

* S=SERIES, P=SERIES/PARALLEL, BL=BICYCLE LOOPS
 LOOP DETECTOR NOTES:
 1. SEE LOOP DETECTOR DETAIL SHEETS FOR SPLICE PATTERN AND OTHER INFORMATION.

1	1/11/2012	PEDESTRIAN SIGNAL MODIFICATIONS	WW	DCP	JMM
REV.	DATE	DESCRIPTION	BY	CHKD	APP

PLANT LIST-CAMBRIDGE SIDE

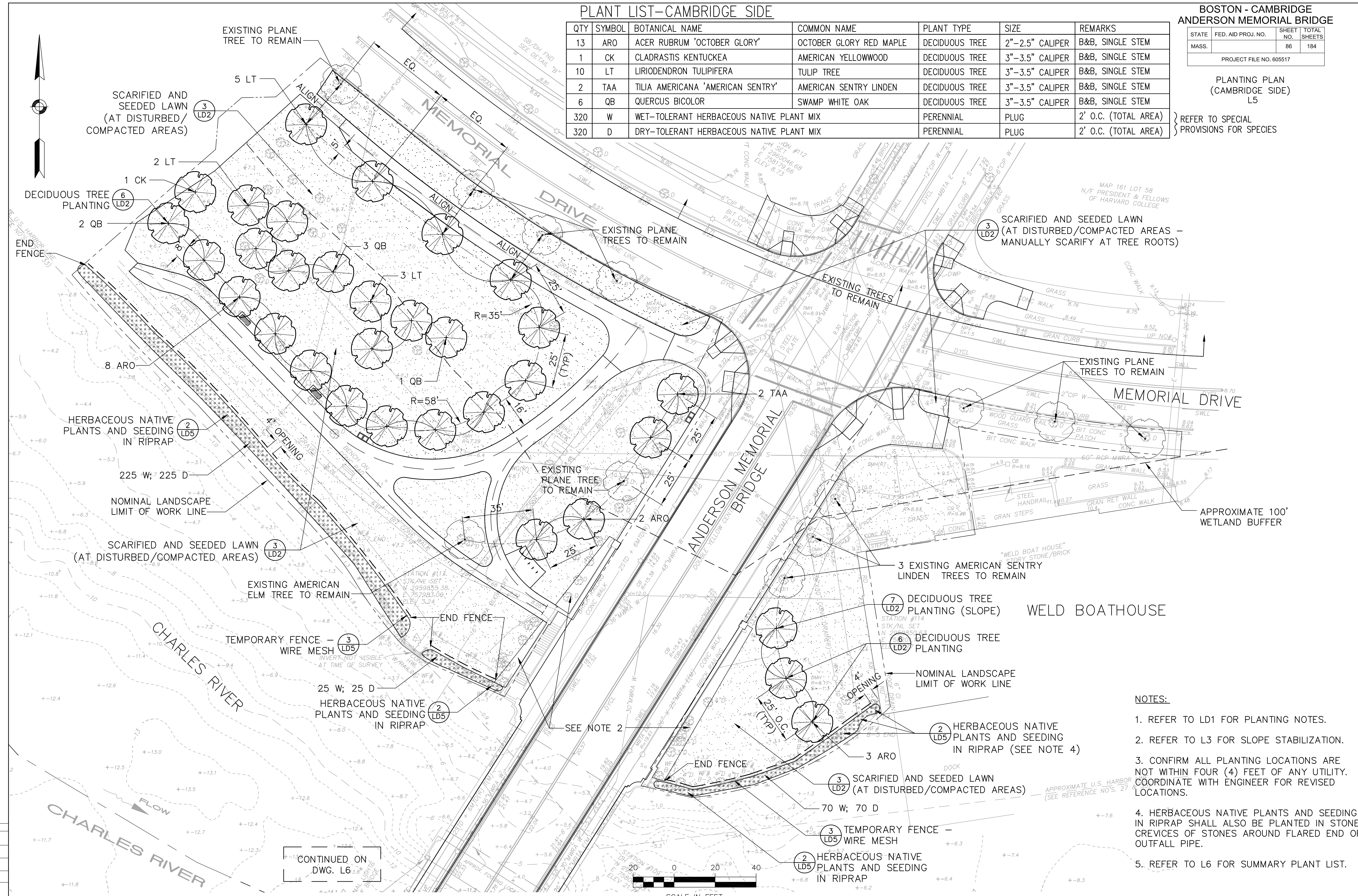
QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	PLANT TYPE	SIZE	REMARKS
13	ARO	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	DECIDUOUS TREE	2"-2.5" CALIPER	B&B, SINGLE STEM
1	CK	CLADRASTIS KENTUCKEA	AMERICAN YELLOWWOOD	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
10	LT	LIRIODENDRON TULIIFERA	TULIP TREE	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
2	TAA	TILIA AMERICANA 'AMERICAN SENTRY'	AMERICAN SENTRY LINDEN	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
6	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
320	W	WET-TOLERANT HERBACEOUS NATIVE PLANT MIX		PERENNIAL	PLUG	2' O.C. (TOTAL AREA)
320	D	DRY-TOLERANT HERBACEOUS NATIVE PLANT MIX		PERENNIAL	PLUG	2' O.C. (TOTAL AREA)

BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.		86	184

PLANTING PLAN
(CAMBRIDGE SIDE)
L5

REFER TO SPECIAL PROVISIONS FOR SPECIES



- NOTES:
- REFER TO LD1 FOR PLANTING NOTES.
 - REFER TO L3 FOR SLOPE STABILIZATION.
 - CONFIRM ALL PLANTING LOCATIONS ARE NOT WITHIN FOUR (4) FEET OF ANY UTILITY. COORDINATE WITH ENGINEER FOR REVISED LOCATIONS.
 - HERBACEOUS NATIVE PLANTS AND SEEDING IN RIPRAP SHALL ALSO BE PLANTED IN STONE CREVICES OF STONES AROUND FLARED END OF OUTFALL PIPE.
 - REFER TO L6 FOR SUMMARY PLANT LIST.

DES	CHK
DR	CHK
EST	CHK
ENGINEER IN CHARGE	

PLANT LIST-BOSTON SIDE

QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	PLANT TYPE	SIZE	REMARKS
7	ARO	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	DECIDUOUS TREE	2"-2.5" CALIPER	B&B, SINGLE STEM
6	TAA	TILIA AMERICANA 'AMERICAN SENTRY'	AMERICAN SENTRY LINDEN	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
380	DP	DENNSTAETIA PUNCTILOBULA	HAYSCENTED FERN	PERENNIAL	1 GAL. CONT.	1' O.C.
150	IV	IRIS VERSICOLOR	BLUE FLAG IRIS	PERENNIAL	1 GAL. CONT.	1' O.C.

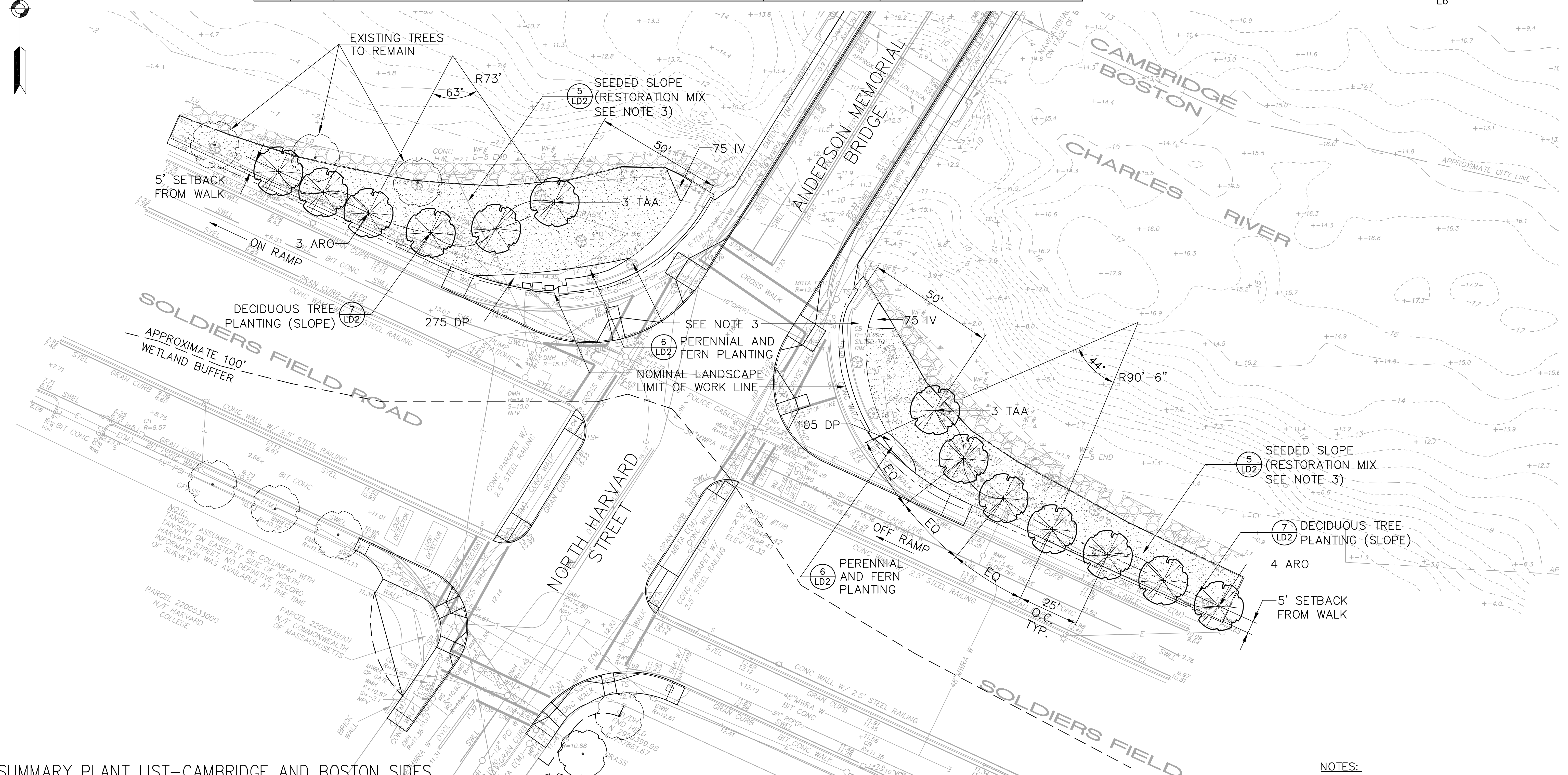
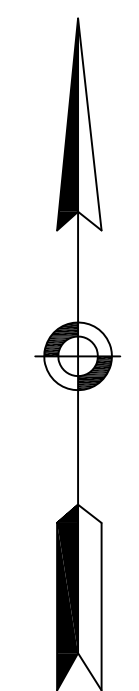
BOSTON - CAMBRIDGE
ANDERSON MEMORIAL BRIDGE

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.		87	184

PROJECT FILE NO. 605517

PLANTING PLAN
(BOSTON SIDE)
L6

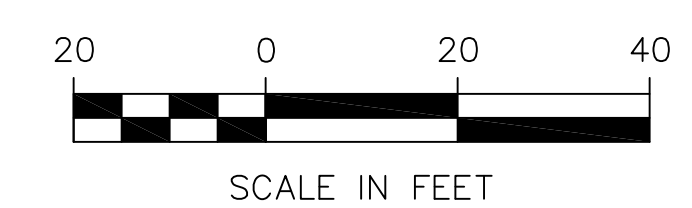
CONTINUED ON
DWG. L5



SUMMARY PLANT LIST-CAMBRIDGE AND BOSTON SIDES

CAMBRIDGE QTY	BOSTON QTY	TOTAL QTY	SYMBOL	BOTANICAL NAME	COMMON NAME	PLANT TYPE	SIZE	REMARKS
13	7	20	ARO	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	DECIDUOUS TREE	2"-2.5" CALIPER	B&B, SINGLE STEM
1	-	1	CK	CLADRASTIS KENTUCKEA	AMERICAN YELLOWWOOD	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
10	-	10	LT	LIRIODENDRON TULIPIFERA	TULIP TREE	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
2	6	8	TAA	TILIA AMERICANA 'AMERICAN SENTRY'	AMERICAN SENTRY LINDEN	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
6	-	6	QB	QUERCUS BICOLOR	SWAMP WHITE OAK	DECIDUOUS TREE	3"-3.5" CALIPER	B&B, SINGLE STEM
-	380	380	DP	DENNSTAETIA PUNCTILOBULA	HAYSCENTED FERN	PERENNIAL	1 GAL. CONT.	1' O.C.
-	150	150	IV	IRIS VERSICOLOR	BLUE FLAG IRIS	PERENNIAL	1 GAL. CONT.	1' O.C.
320	-	320	W	WET-TOLERANT HERBACEOUS NATIVE PLANT MIX		PERENNIAL	PLUG	2' O.C. (TOTAL AREA)
320	-	320	D	DRY-TOLERANT HERBACEOUS NATIVE PLANT MIX		PERENNIAL	PLUG	2' O.C. (TOTAL AREA)

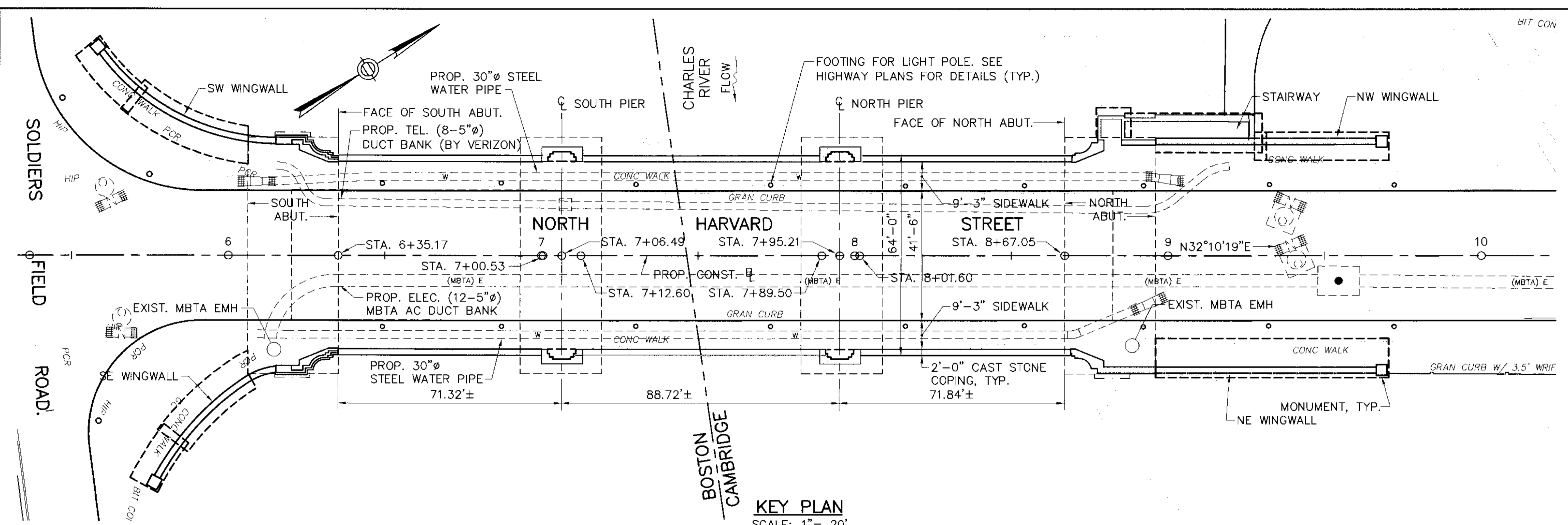
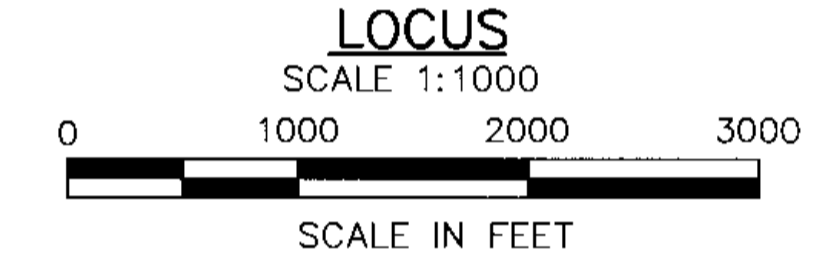
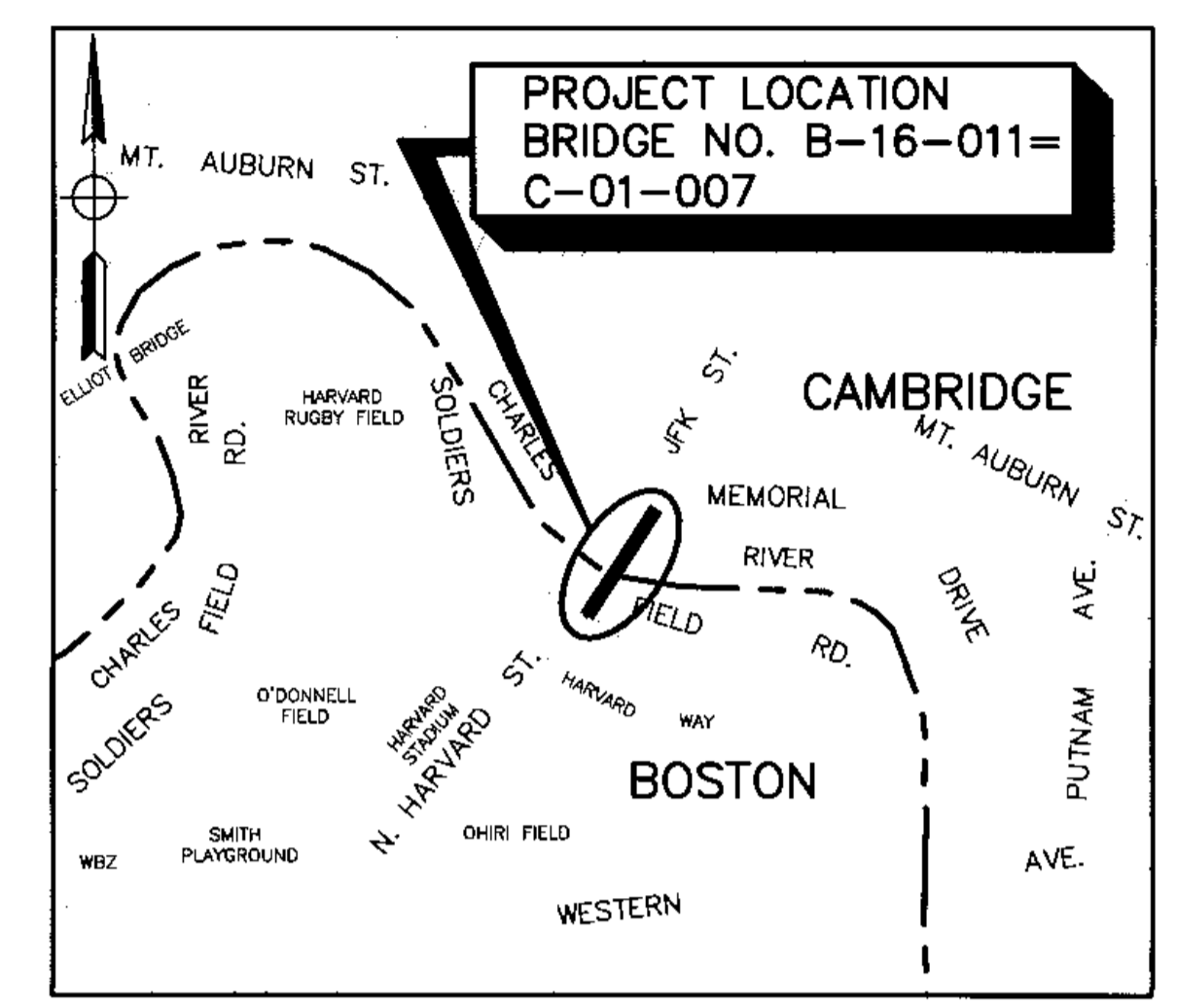
REFER TO SPECIAL PROVISIONS FOR SPECIES



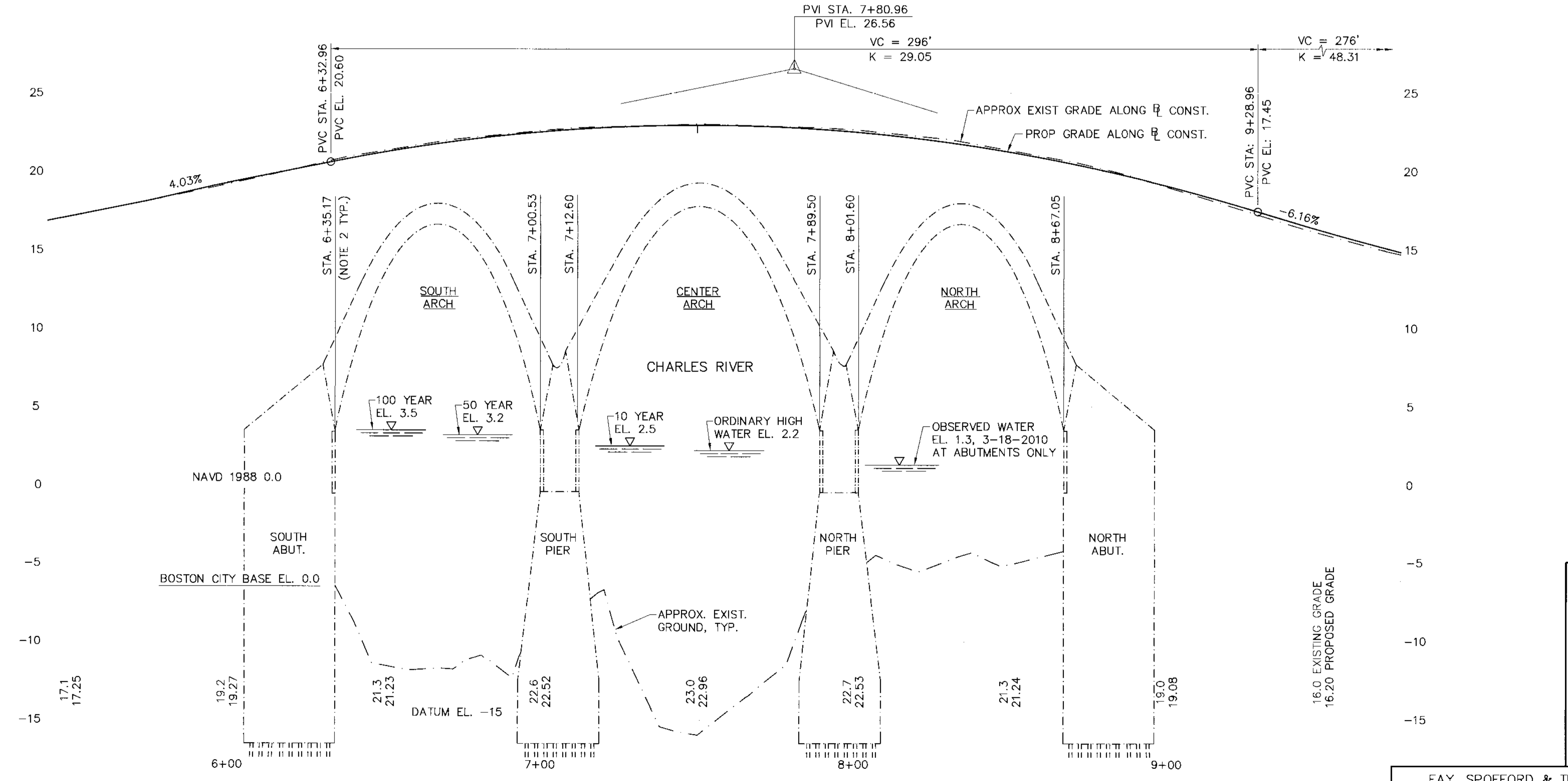
- NOTES:
- REFER TO LD1 FOR PLANTING NOTES.
 - REFER TO L3 FOR SLOPE STABILIZATION.
 - REFER TO L4 FOR GEOTEXTILE FABRIC FOR STABILIZATION APPLIED IN CONJUNCTION WITH SEEDING SLOPES.
 - CONFIRM ALL PLANTING LOCATIONS ARE NOT WITHIN FOUR (4) FEET OF ANY UTILITY. COORDINATE WITH ENGINEER FOR REVISED LOCATIONS.

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	99	184
PROJECT FILE NO. 605517			

KEY PLAN AND PROFILE



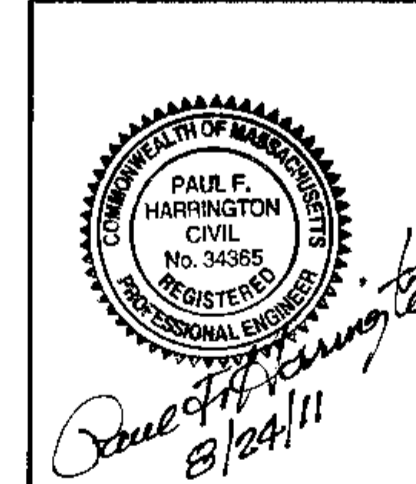
KEY PLAN
SCALE: 1" = 20'



PROFILE - NORTH HARVARD ST. OVER CHARLES RIVER
SCALE: HORIZ. 1" = 20'
VERT. 1" = 4'

- NOTES:
- FOR INDEX OF DRAWINGS AND ESTIMATED QUANTITIES, SEE SHEET 2.
 - STATIONS AT FACE OF ABUTMENTS AND PIERS ARE AT CONSTRUCTION, AND ARE BASED ON SURVEY.

DES.	DR.	EST.	CHK.	LC	RYK
VQ-061					
ENGINEER IN CHARGE					



ISSUED FOR CONSTRUCTION

massDOT
Massachusetts Department of Transportation
Highway Division

**PROPOSED BRIDGE REHABILITATION
BOSTON/CAMBRIDGE**

NORTH HARVARD STREET
OVER THE CHARLES RIVER

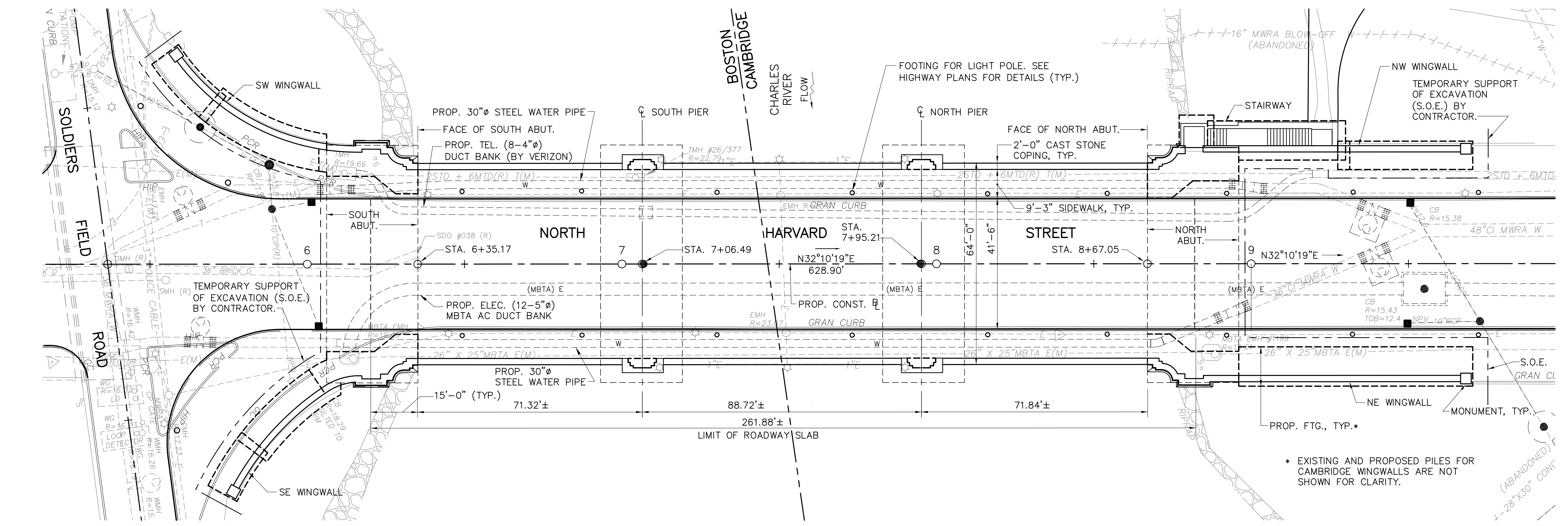
MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
10 PARK PLAZA BOSTON, MASS

FAY, SPOFFORD & THORNDIKE, LLC
BOSTON, MA - BURLINGTON, MA
BEDFORD, NH

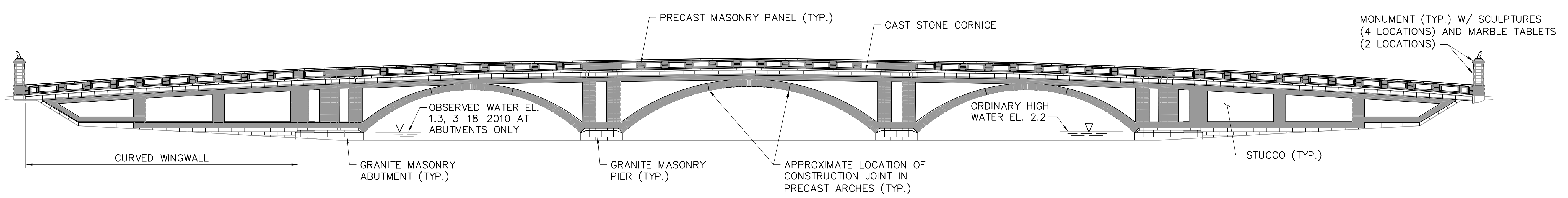
TITLE _____ CHIEF ENGINEER _____

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	107	184
PROJECT FILE NO. 605517			

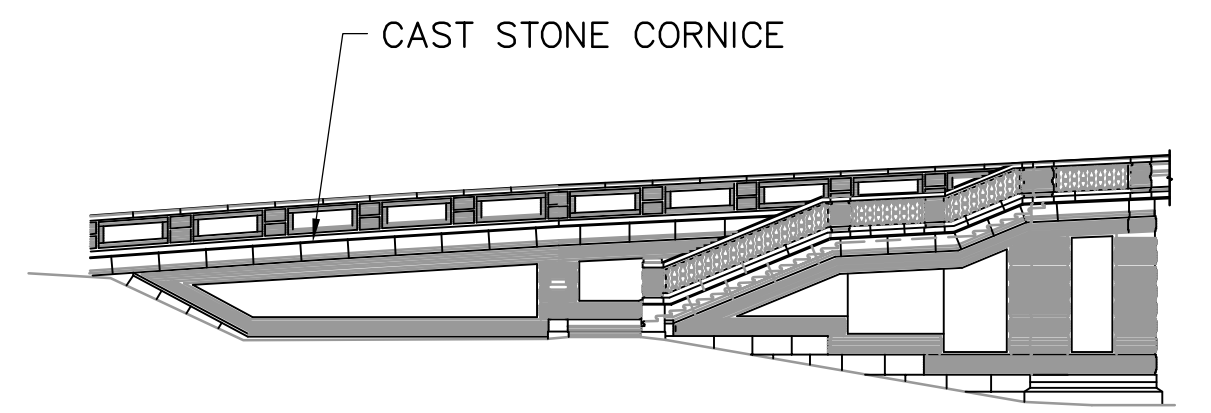
DECK PLAN AND ELEVATION



DECK PLAN
SCALE: 1/16"=1'-0"



DEVELOPED EAST ELEVATION
SCALE: 1/16"=1'-0"



WEST STAIR PARTIAL ELEVATION
SCALE: 1/16"=1'-0"

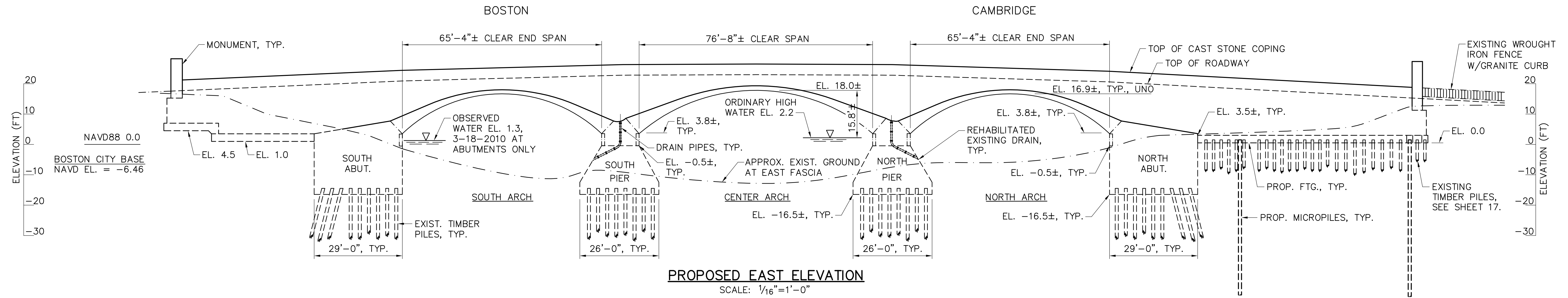
NOTE:
LIGHT POLE STANDARDS NOT SHOWN FOR CLARITY. SEE HIGHWAY PLANS FOR DETAILS.

SEPT 3, 2011	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

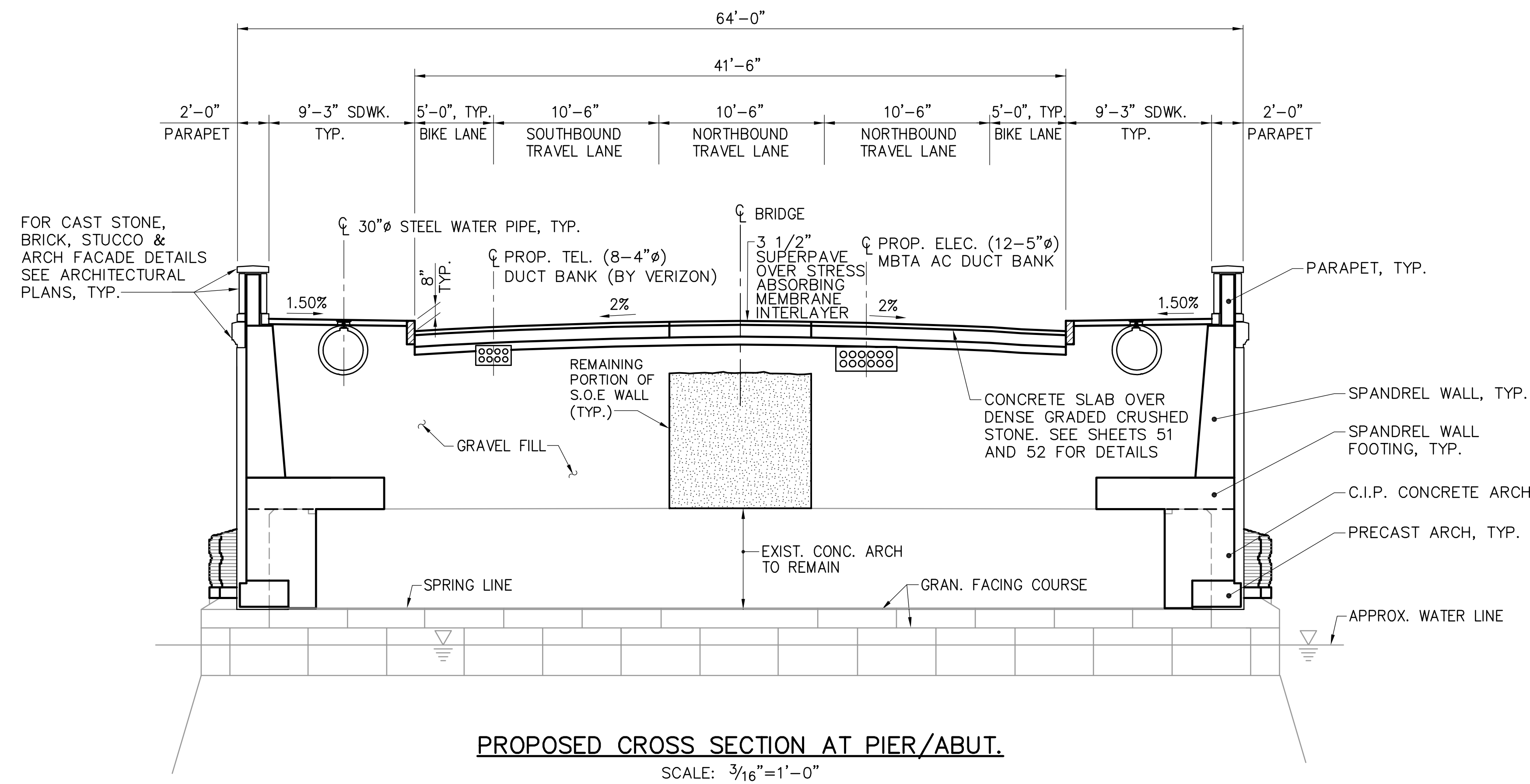
FS & T FILE NO.	VQ-061	ENGINEER IN CHARGE
DES.	DR.	EST.
BSK	RAT	--
CHK.	CHK.	CHK.
PFH	BSK	--

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MASS.	NFA	108	184
PROJECT FILE NO. 605517			

ELEVATION AND CROSS SECTION



- NOTE:**
- EXISTING ARCH CLEAR SPANS AND ELEVATIONS SHOWN ARE FROM EXISTING 1912 BRIDGE PLANS.



DES.	DR.	EST.
BSK	RAT	--
CHK.	CHK.	CHK.
PFH	BSK	--
FS & T FILE NO.	VQ-061	
ENGINEER IN CHARGE		

SEPT 3, 2011	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	