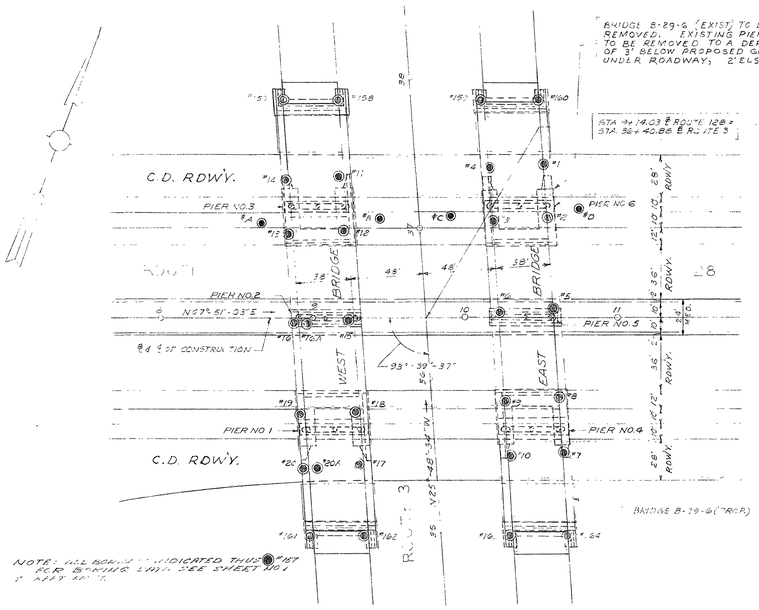
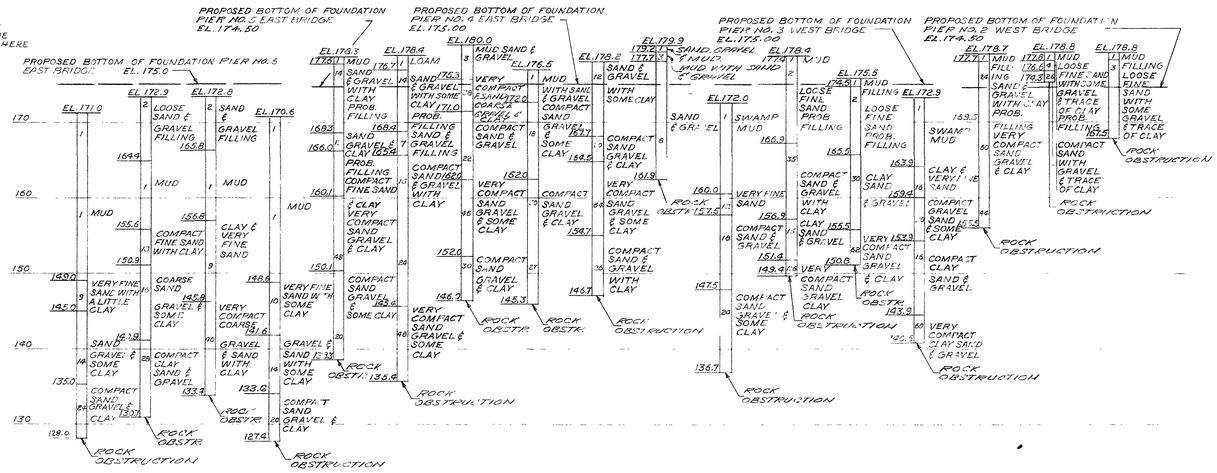
PUB. RD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	U-272 (60)		93	340



NOTE: PILE BORINGS INDICATED THUS ● #167 PER BRIDGE UNIT. SEE SHEET NO. 1 FOR KEY MAP.

KEY PLAN
SCALE 1" = 40'



BORING DATA
SCALE: 1/8" = 1'-0"

NOTES:
FIGURES IN COLUMNS INDICATE BLOWS PER FOOT ON A 1" DIA PIPE, PRODUCED BY A 30" DROP OF A 140 LB. HAMMER.
BORINGS 1 THRU 20A TAKEN DEC. 1951.
LOCATION OF BORINGS SHOWN ON KEY THUS ● #12
BORINGS WERE TAKEN FOR DESIGN OF EXISTING BRIDGE AND SHOW CONDITIONS AT BORING POINTS ONLY BUT DO NOT NECESSARILY SHOW NATURE OF MATERIAL TO BE ENCOUNTERED IN CONNECTION WITH CONSTRUCTION OF THE BRIDGE. SAMPLES FOR BORINGS SHOWN ON THIS SHEET ARE UNAVAILABLE. FOR ADDITIONAL BORINGS, SEE SHEET NO. 2

GENERAL NOTES

FOUNDATIONS

MAY BE ALTERED IF NECESSARY TO SUIT CONDITIONS ENCOUNTERED IN CONSTRUCTION.

DESIGN

ACCORDING TO SPECIFICATION OF AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1957 EDT) FOR H20-S16 LOADING.

REINFORCEMENT

ALL BARS SHALL HAVE DEFORMATIONS CONFORMING TO A.S.T.M. DESIGNATION A305 UNLESS OTHERWISE SHOWN ON THE PLANS. REINFORCING BARS SHALL BE LAPPED 20 DIAMETERS TO MAKE A SPLICE EXCEPT THAT MAIN REINFORCING BARS NEAR TOP OF SLABS AND BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER BARS SHALL BE LAPPED 35 DIAMETERS TO MAKE A SPLICE.

DATE & SEAL

TO BE PLACED IN CENTER OF INSIDE FACES OF NORTHWESTERLY (WEST BRIDGE) AND SOUTHEASTERLY (EAST BRIDGE) END POSTS AS SHOWN IN DETAIL ON SHEET NO. 6. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. SEAL WILL BE FURNISHED BY THE COMMONWEALTH AND SHALL BE PLACED BY THE CONTRACTOR.

BENCH MARK

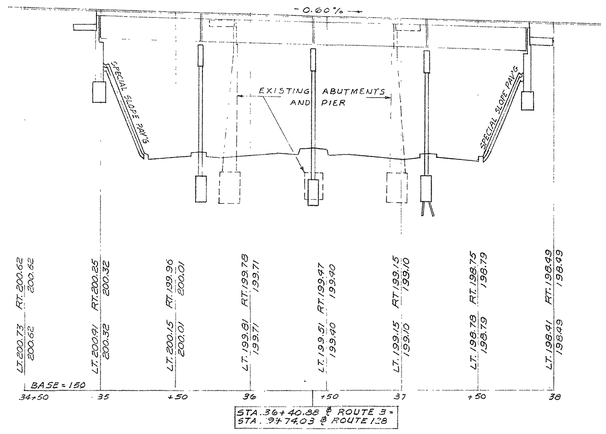
CHISEL CUT IN ROCK STA. 0+0 350 FT. LEFT ELEV. 191.79 LEVEL DATUM PLANE 1929 M.S.L

ESTIMATED QUANTITIES

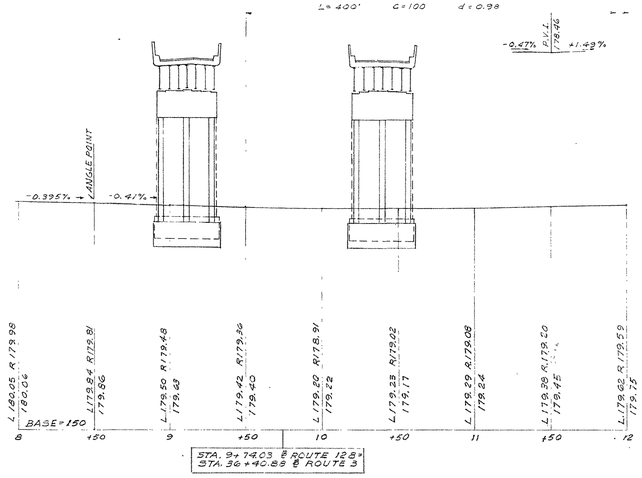
(NOT GUARANTEED)

BRIDGE EXCAVATION	3260 CY
CLASS 'B' ROCK EXCAVATION	10 CY
GRAVEL BORROW	610 CY
REMOVAL OF PRESENT STRUCTURE (B-29-6)	1 LUMP SUM
BRIDGE STRUCTURE (B-29-6)	1 LUMP SUM
CLASS I BIT. CONC. PAVING	
TYPE I-1	334 TONS
CAST IN PLACE CONCRETE PILES	1100 L.F.
* STRUCTURAL STEEL	836,000 LBS.
* STEEL REINF. FOR STRUCTURES	290,000 LBS

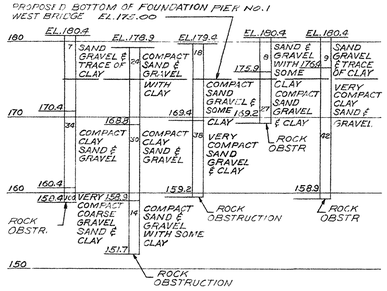
* ITEMS INCLUDED UNDER LUMP SUM FOR BRIDGE STRUCTURE



PROFILE ROUTE 3
SCALE: HOR. 1" = 40' VERT. 1" = 8'



PROFILE ROUTE 128
SCALE: HOR. 1" = 40' VERT. 1" = 8'



DUFFILL ASSOCIATES INC.,
CONSULTING ENGINEERS
BOSTON, MASS

COMMONWEALTH OF MASSACHUSETTS — CHARLES TERENZIO No. 16601 — REGISTERED PROFESSIONAL ENGINEER

JUNE 30, 1962	ISSUED FOR CONSTRUCTION

THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED BRIDGE

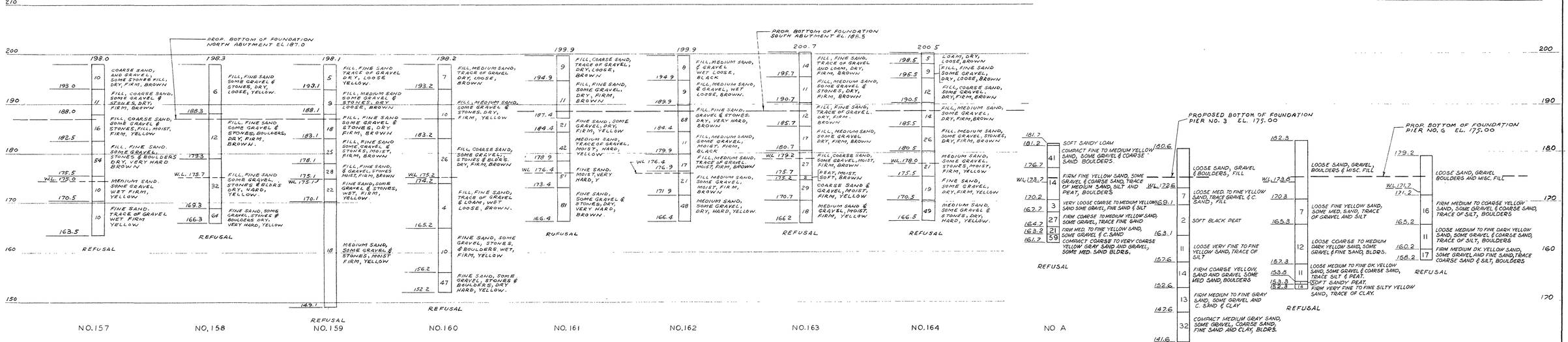
BURLINGTON

ROUTE 128 STA. 9+74.03 UNDER ROUTE 3 STA. 36+40.88

SCALES AS NOTED
OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 NASHUA ST. - BOSTON, MASS.
JUNE 1962

J. H. Kane — BRIDGE ENGINEER
E. W. Cassidy — CHIEF ENGINEER

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		94	340



BORING DATA

SCALE $\frac{1}{8}$ = 1'-0"

NOTES:

LOCATION OF BORINGS SHOWN ON KEY PLAN THUS ◉ # .122 (SEE SHEET #1)

BORINGS TAKEN FOR PURPOSE OF DESIGN & SHOW CONDITION AT BORING POINTS ONLY BUT DO NOT NECESSARILY SHOW NATURE OF MATERIAL TO BE ENCOUNTERED DURING CONSTRUCTION.

FIGURES IN COLUMNS INDICATE BLOWS PER FOOT ON 2" SPLIT TUBE SAMPLER PRODUCED BY 30" FALL OF 140 LB. HAMMER.

BORING SAMPLES MAY BE SEEN AT THE DEPARTMENT'S LABORATORY IN THE MAINTENANCE BUILDING ON ROUTE 9 IN WELLESLEY

BORING DATA FOR BORINGS # 157 THROUGH # 164 TAKEN AUG. 1959 BY CHARLES TEST BORING & CONST. CORP. BOSTON, MASS.

BORING DATA FOR BORINGS # A THROUGH # D TAKEN DEC. 1960 BY NEW ENGLAND TEST BORING CORP. BOSTON MASS.

TOP OF BEAM ELEVATIONS

BEAM NO.	SOUTH BEARING	1/4 POINT	1/2 POINT	1/4 POINT	NORTH BEARING	BEAM NO.	SOUTH BEARING	1/4 POINT	1/2 POINT	1/4 POINT	NORTH BEARING
1	199.03	199.03	198.97	198.88	198.60	29	199.29	199.30	199.18	199.09	198.86
2	199.16	199.16	199.09	198.95	198.73	30	199.43	199.42	199.38	199.21	199.00
3	199.30	199.29	199.23	199.09	198.88	31	199.57	199.56	199.49	199.35	199.14
4	199.44	199.44	199.37	199.23	199.02	32	199.50	199.49	199.42	199.28	199.07
5	199.52	199.52	199.44	199.30	199.09	33	199.36	199.36	199.29	199.15	198.94
6	199.38	199.38	199.31	199.17	198.95	34	199.23	199.22	199.16	199.01	198.80
7	199.24	199.24	199.16	199.02	198.83	35	199.10	199.09	199.01	198.87	198.67
8	198.63	198.64	198.55	198.41	198.19	36	198.89	198.89	198.81	198.67	198.45
9	198.78	198.79	198.70	198.55	198.33	37	199.04	199.04	198.96	198.82	198.60
10	198.91	198.92	198.83	198.69	198.47	38	199.18	199.18	199.10	198.96	198.74
11	199.06	199.07	198.98	198.83	198.61	39	199.11	199.11	199.03	198.89	198.67
12	199.13	199.14	199.05	198.91	198.69	40	198.98	198.98	198.90	198.75	198.53
13	199.00	199.01	198.92	198.77	198.55	41	198.84	198.84	198.76	198.62	198.40
14	198.86	198.87	198.78	198.64	198.42	42	198.70	198.70	198.62	198.48	198.26
15	198.18	198.18	198.09	197.96	197.74	43	198.44	198.44	198.36	198.22	198.00
16	198.32	198.32	198.23	198.11	197.89	44	198.59	198.59	198.51	198.37	198.15
17	198.47	198.47	198.38	198.25	198.03	45	198.73	198.73	198.65	198.51	198.29
18	198.61	198.61	198.52	198.39	198.17	46	198.66	198.66	198.58	198.44	198.22
19	198.68	198.68	198.59	198.46	198.24	47	198.53	198.53	198.45	198.31	198.09
20	198.55	198.55	198.46	198.33	198.11	48	198.39	198.39	198.31	198.17	197.95
21	198.41	198.41	198.32	198.19	197.97	49	198.25	198.25	198.17	198.03	197.81
22	197.73	197.73	197.66	197.52	197.28	50	197.99	197.99	197.92	197.78	197.54
23	197.85	197.85	197.78	197.64	197.42	51	198.12	198.11	198.04	197.90	197.68
24	198.00	197.99	197.92	197.78	197.56	52	198.26	198.25	198.18	198.04	197.82
25	198.14	198.13	198.06	197.92	197.70	53	198.19	198.19	198.12	197.97	197.76
26	198.21	198.21	198.14	197.99	197.78	54	198.05	198.05	197.98	197.84	197.62
27	198.08	198.07	198.00	197.86	197.64	55	197.92	197.92	197.85	197.70	197.49
28	197.95	197.36	197.90	197.74	197.51	56	197.80	197.81	197.73	197.59	197.35

NOTE

FOR USE OF RESIDENT ENGINEER IN THE FIELD FOR COMPARISON OF:

A: ELEVATIONS ALONG TOP FLANGE OF STRINGERS IN PLACE AND

B: THE DESIGN ELEVATIONS AT LEFT. THE ELEVS. SHOWN IN TABLE AT LEFT ARE WITHOUT DEAD LOAD OF SLAB AND CORINGS APPLIED, BUT INCLUDE DEFLECTIONS DUE TO DEAD LOAD OF STRUCTURAL STEEL ONLY.

DRAWN BY
DESIGNED BY
CHECKED BY

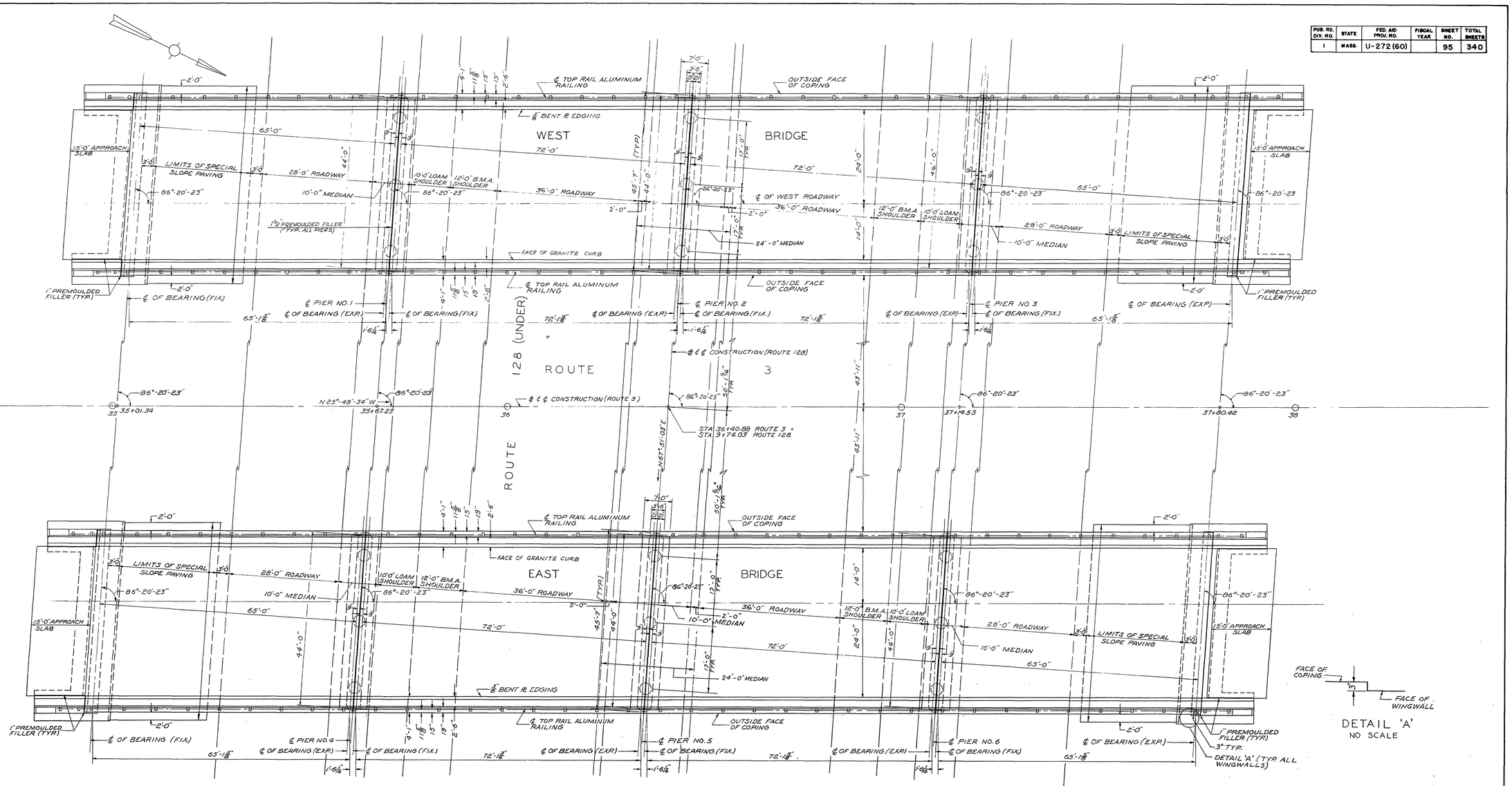
DATE	DESCRIPTION
JUNE 30, 1962	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

SHEET 2 OF 8 SHEETS BRIDGE NO. B-29-6

Boston Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		95	340



PLAN
SCALE 3/32" = 1'-0"

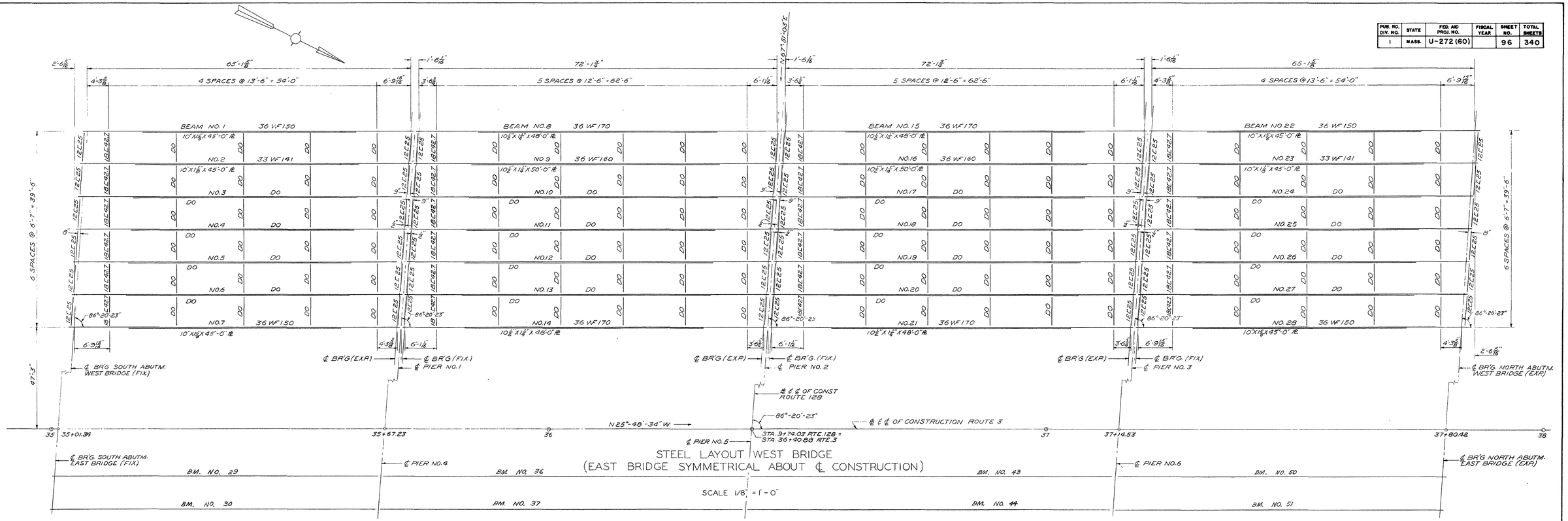
JUNE 30, 1962	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

DRAWN BY F.D.F.
DESIGNED BY
CHECKED BY

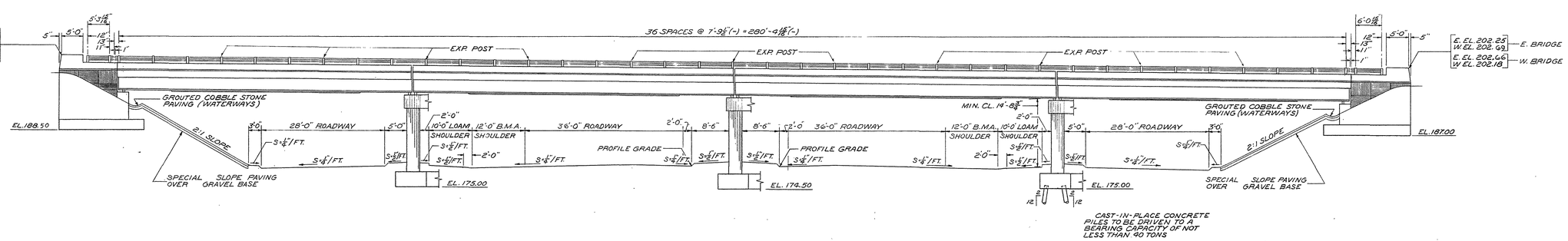
SHEET 3 OF 8 SHEETS BRIDGE NO. B-29-6

Boston Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		96	340



STEEL LAYOUT WEST BRIDGE
(EAST BRIDGE SYMMETRICAL ABOUT ℄ CONSTRUCTION)



EAST ELEVATION
SCALE 3/32" = 1'-0"

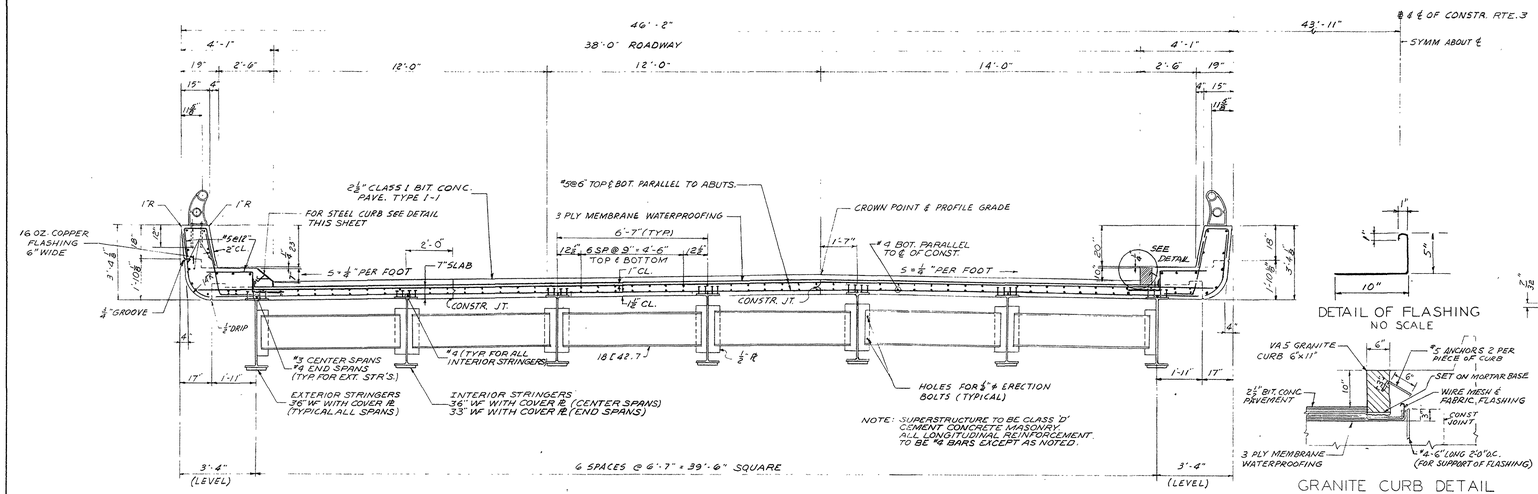
DATE	DESCRIPTION
JUNE 30, 1967	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

DRAWN BY
DESIGNED BY
CHECKED BY

SHEET 4 OF 8 SHEETS BRIDGE NO. B-29-6

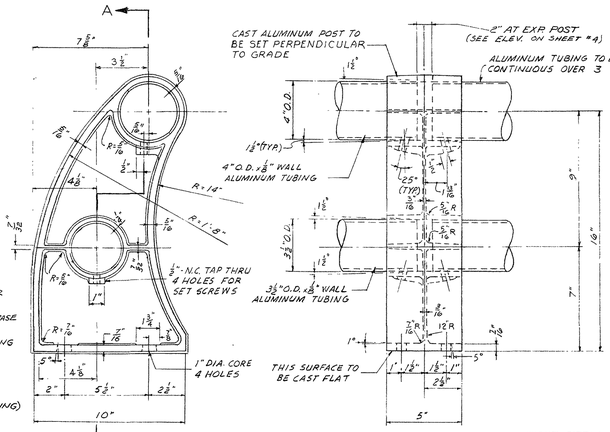
Boston Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		97	340

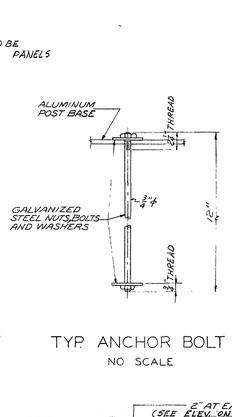


CROSS SECTION OF SUPERSTRUCTURE
SCALE: 3/8" = 1'-0"

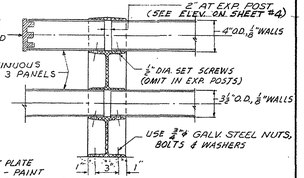
GRANITE CURB DETAIL
SCALE 3/4" = 1'-0"



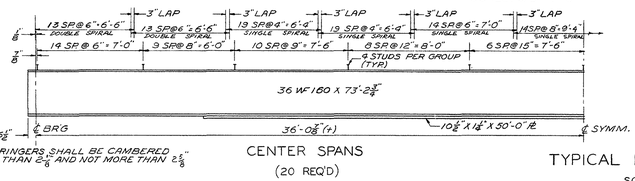
TYPICAL RAILING DETAILS
SCALE: 3" = 1'-0"



TYP. ANCHOR BOLT
NO SCALE

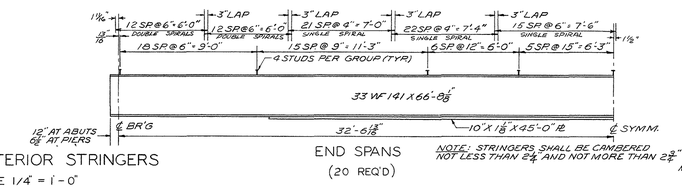


SECTION A-A
SCALE: 1 1/2" = 1'-0"



NOTE: STRINGERS SHALL BE CAMBERED NOT LESS THAN 2⅛" AND NOT MORE THAN 2⅝"

CENTER SPANS
(20 REQ'D)

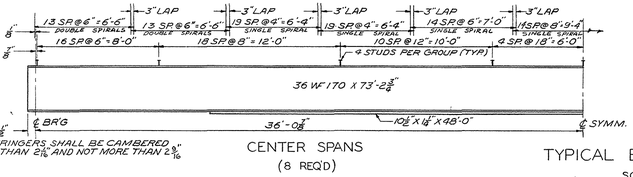


END SPANS
(20 REQ'D)

NOTE: STRINGERS SHALL BE CAMBERED NOT LESS THAN 2¾" AND NOT MORE THAN 2⅞"

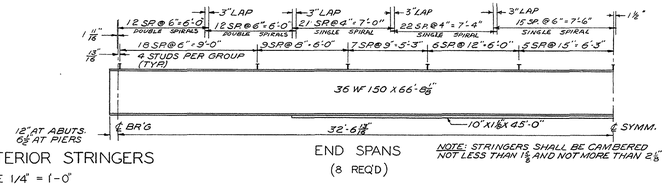
NOTE: SEE SHEET #6 FOR SHEAR CONN. DETAILS

TYPICAL INTERIOR STRINGERS
SCALE 1/4" = 1'-0"



NOTE: STRINGERS SHALL BE CAMBERED NOT LESS THAN 2⅛" AND NOT MORE THAN 2⅝"

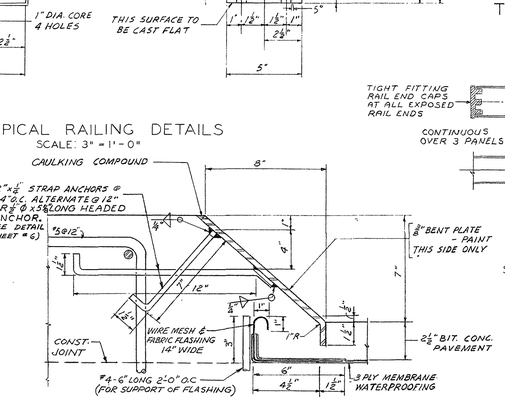
CENTER SPANS
(8 REQ'D)



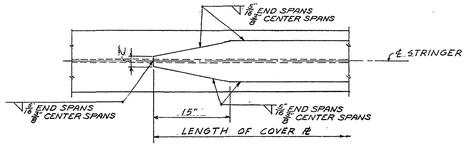
END SPANS
(8 REQ'D)

NOTE: STRINGERS SHALL BE CAMBERED NOT LESS THAN 1⅞" AND NOT MORE THAN 2⅛"

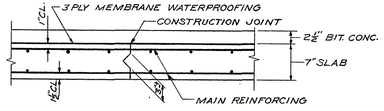
TYPICAL EXTERIOR STRINGERS
SCALE 1/4" = 1'-0"



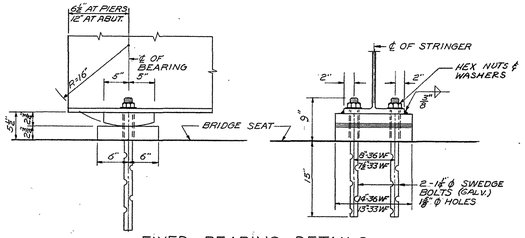
STEEL CURB DETAIL
SCALE: 3" = 1'-0"



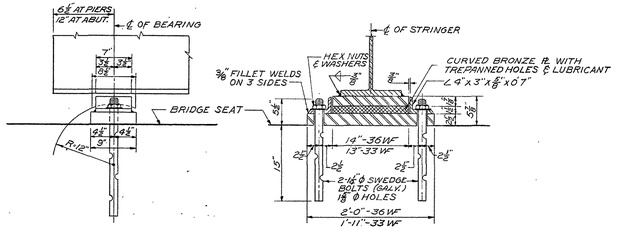
COVER PLATE DETAIL
NOT TO SCALE



CONSTRUCTION JOINT IN ROADWAY SLAB
SCALE 1" = 1'-0"



FIXED BEARING DETAILS
SCALE 1" = 1'-0"



EXPANSION BEARING DETAILS
SCALE 1" = 1'-0"

DRAWN BY
DESIGNED BY
CHECKED BY

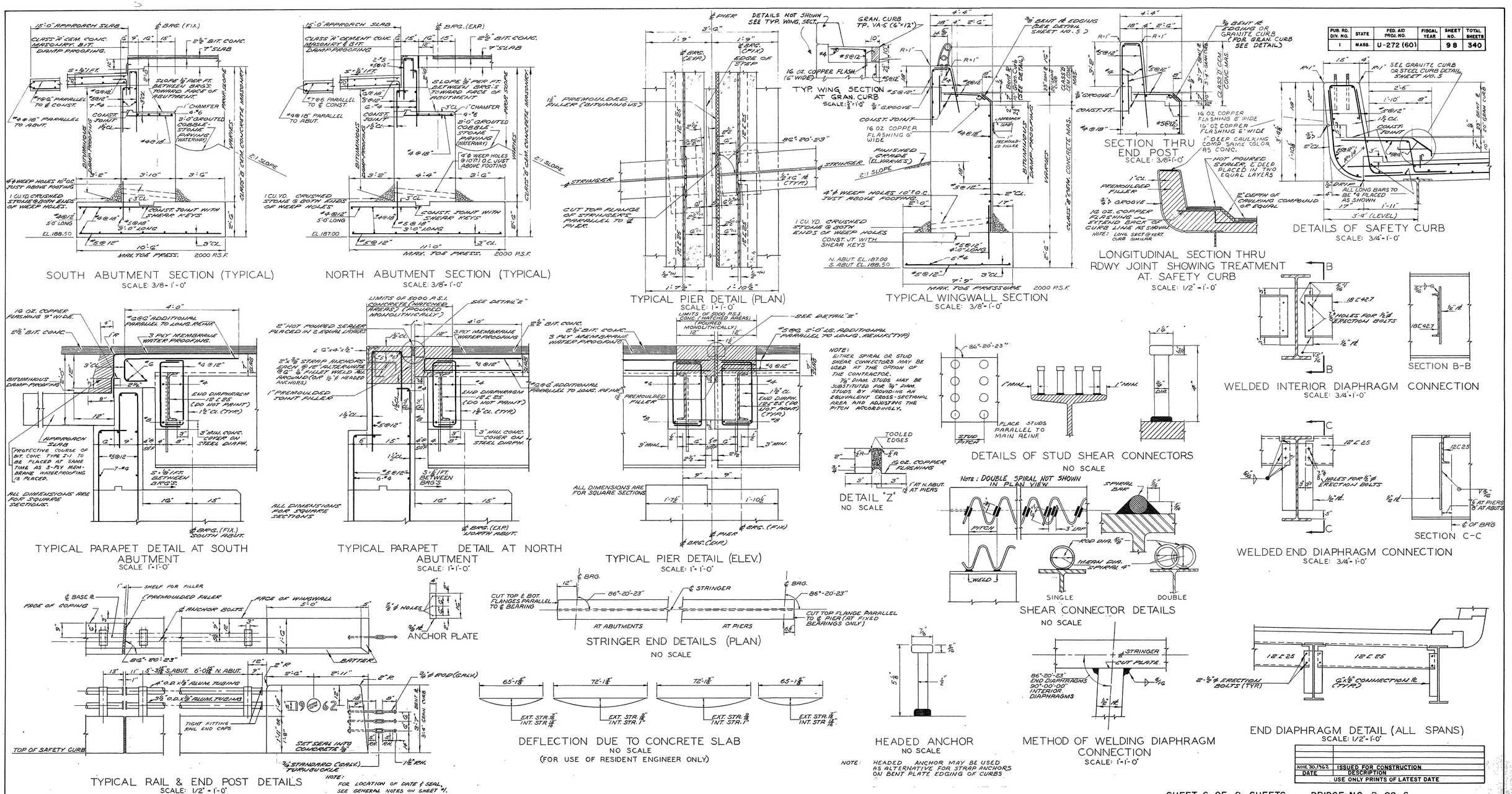
DATE	DESCRIPTION
JUNE 30, 1962	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE.

SHEET 5 OF 8 SHEETS BRIDGE NO. B-29-6

Boston Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		98	340



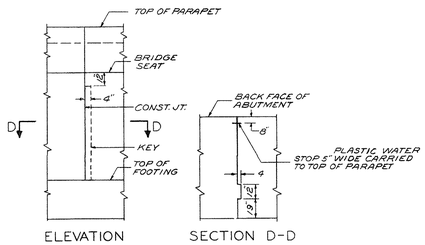
DATE	DESCRIPTION
JUNE 30, 1962	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

DRAWN BY
DESIGNED BY
CHECKED BY

SHEET 6 OF 8 SHEETS BRIDGE NO. B 29-6

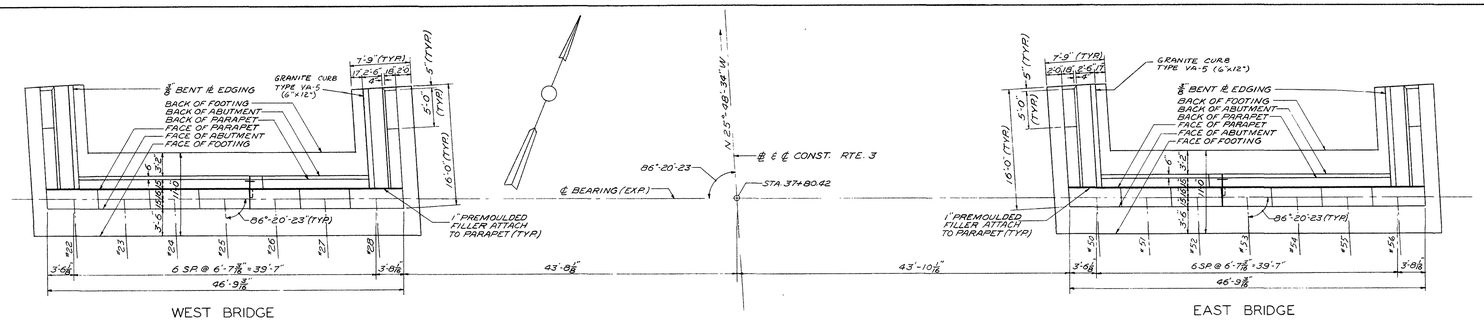
Boston Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272 (60)		99	340



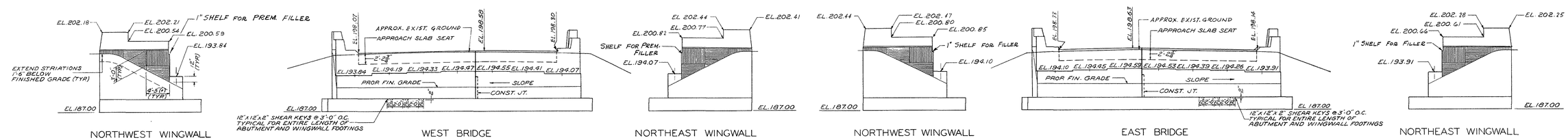
ABUTMENT CONSTRUCTION JOINT DETAILS

NO SCALE



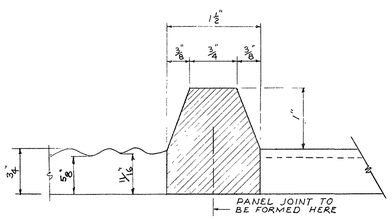
PLAN

SCALE 1/8" = 1'-0"



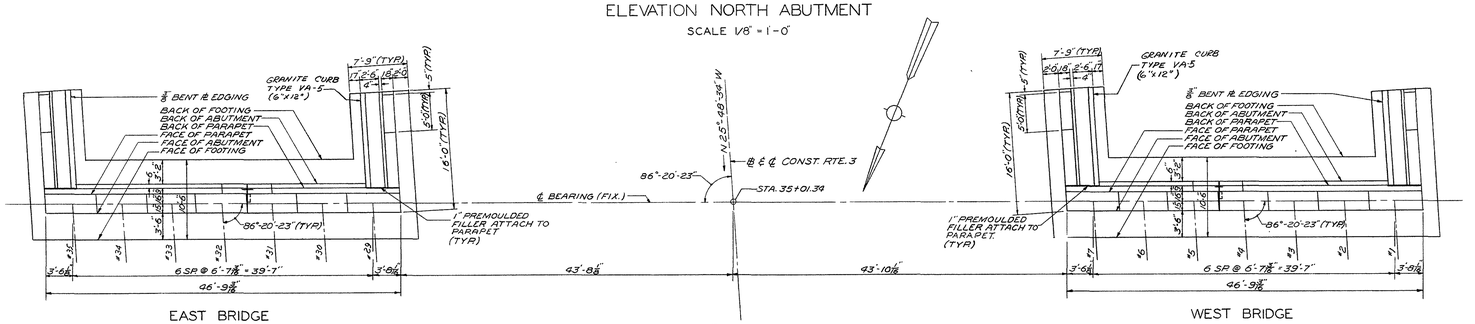
ELEVATION NORTH ABUTMENT

SCALE 1/8" = 1'-0"



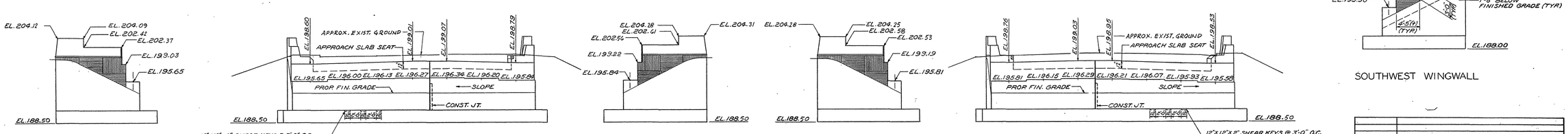
TYPICAL STRIATED PANEL JOINT

FULL SCALE



PLAN

SCALE 1/8" = 1'-0"



ELEVATION SOUTH ABUTMENT

SCALE 1/8" = 1'-0"

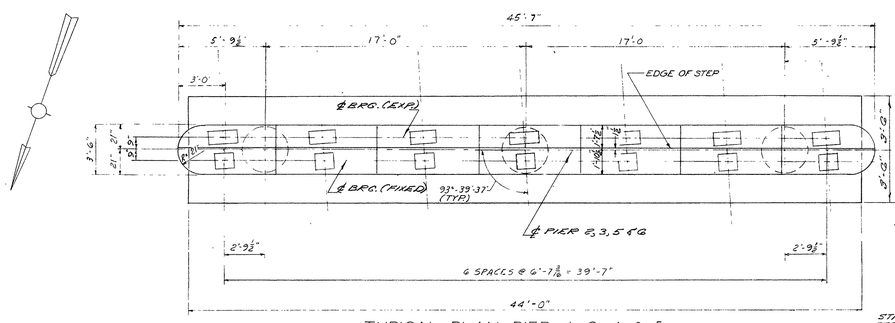
JUNE 30, 1962	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 7 OF 8 SHEETS BRIDGE NO. B-29-6

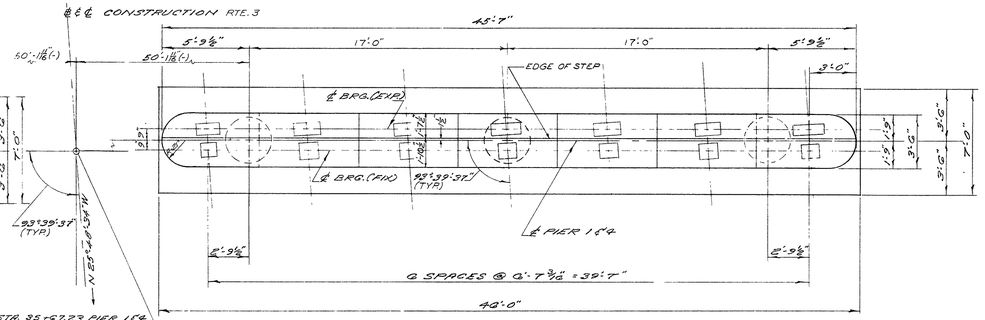
DRAWN BY RDF
DESIGNED BY
CHECKED BY

Brakin Blue Print-100-1-59

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	U-272(60)		100	340



TYPICAL PLAN - PIER 1, 2, 4, & 5
SCALE: 1/4" = 1'-0"



STA. 35+67.23 PIER 1 & 4
STA. 36+40.88 PIER 2 & 5
STA. 37+19.53 PIER 3 & 6

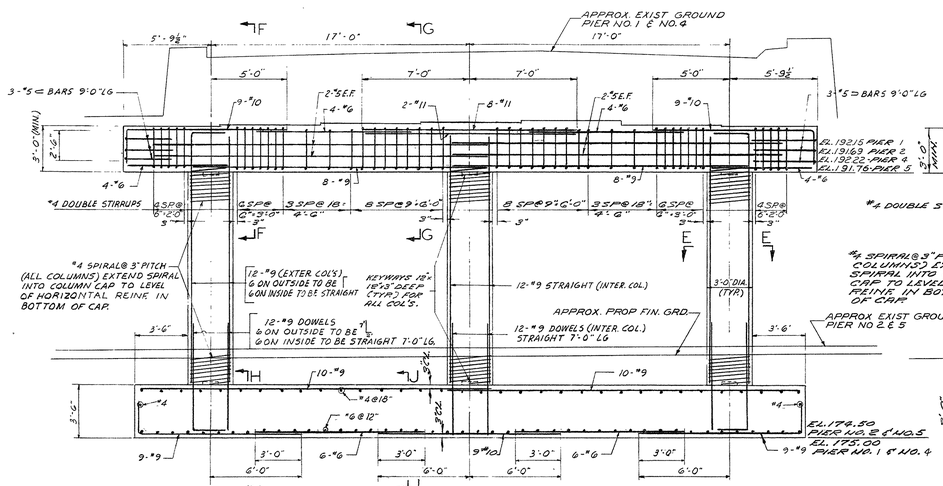
TYPICAL PLAN - PIER 3 & 6
SCALE: 1/4" = 1'-0"

NOTE: ALL PIERS SHALL BE CLASS "A" CEMENT CONCRETE MASONRY

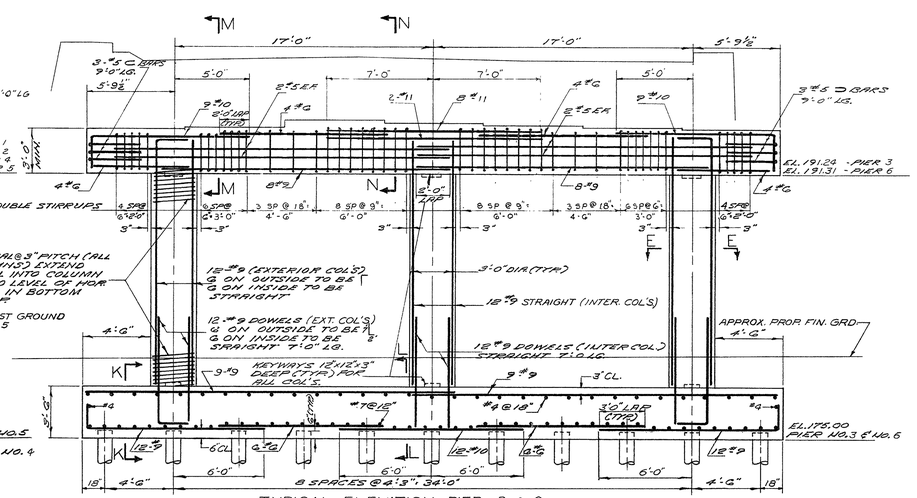
WEST BRIDGE — SEAT ELEVATIONS *											
PIER NO. 1				PIER NO. 2				PIER NO. 3			
BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.
1	195.15	8	195.16	8	194.69	15	194.71	15	194.23	22	194.28
2	195.51	9	195.38	9	194.84	16	194.87	16	194.40	23	194.63
3	195.65	10	195.46	10	194.98	17	195.01	17	194.54	24	194.77
4	195.79	11	195.60	11	195.12	18	195.15	18	194.68	25	194.91
5	195.86	12	195.67	12	195.20	19	195.22	19	194.75	26	194.98
6	195.73	13	195.54	13	195.06	20	195.09	20	194.62	27	194.85
7	195.38	14	195.39	14	194.92	21	194.94	21	194.47	28	194.50

EAST BRIDGE — SEAT ELEVATIONS *											
PIER NO. 4				PIER NO. 5				PIER NO. 6			
BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.	BM. NO.	SEAT ELEV.
29	195.42	36	195.42	36	194.95	43	194.97	43	194.50	50	194.52
30	195.77	37	195.58	37	195.11	44	195.13	44	194.66	51	194.89
31	195.91	38	195.72	38	195.25	45	195.27	45	194.80	52	195.03
32	195.84	39	195.65	39	195.18	46	195.20	46	194.73	53	194.96
33	195.71	40	195.52	40	195.04	47	195.07	47	194.60	54	194.83
34	195.57	41	195.38	41	194.91	48	194.93	48	194.46	55	194.70
35	195.22	42	195.23	42	194.76	49	194.78	49	194.37	56	194.35

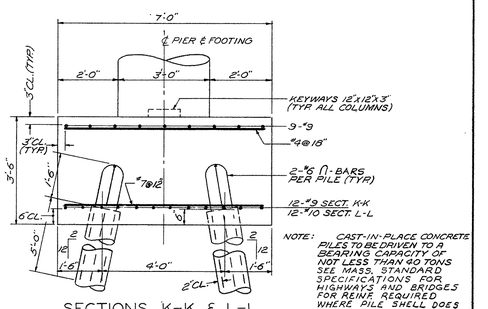
* ALL ELEVATIONS TO TOP OF MASONRY.



TYPICAL ELEVATION PIER 1, 2, 4, & 5
SCALE: 1/4" = 1'-0"

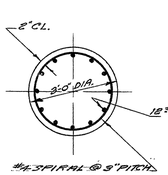


TYPICAL ELEVATION PIER 3 & 6
SCALE: 1/4" = 1'-0"

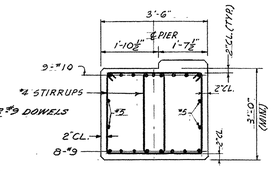


NOTE: CAST-IN-PLACE CONCRETE PILES TO BE DRIVEN TO A BEARING CAPACITY OF NOT LESS THAN 60 TONS SEE MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES FOR REINF. REQUIRED WHERE PILE SHELL DOES NOT PROVIDE REQUIRED AREA OF STEEL.

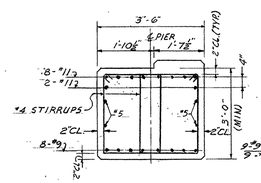
SECTIONS K-K & L-L
SCALE 1/2" = 1'-0"



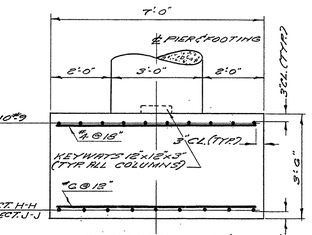
SECTION E-E
(TYPICAL ALL COLUMNS)
SCALE 1/2" = 1'-0"



SECTION F-F
SCALE 1/2" = 1'-0"

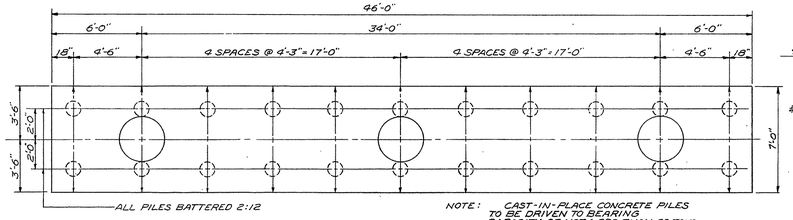


SECTION G-G
SCALE 1/2" = 1'-0"



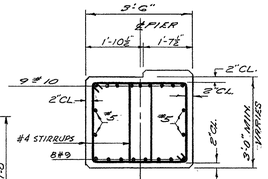
SECTIONS H-H & J-J
SCALE: 1/2" = 1'-0"

MAX. BEARING PRESSURE = 2 TONS/SQ.FT.

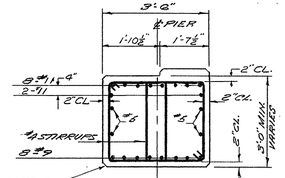


NOTE: CAST-IN-PLACE CONCRETE PILES TO BE DRIVEN TO BEARING CAPACITY OF NOT LESS THAN 60 TONS
MAX. DESIGN PILE LOAD = 36 TONS
TOTAL NO. OF PILES/PIER = 22

PILE PLAN PIERS 3 & 6
SCALE 1/4" = 1'-0"



SECTION M-M
SCALE 1/2" = 1'-0"



SECTION N-N
SCALE 1/2" = 1'-0"

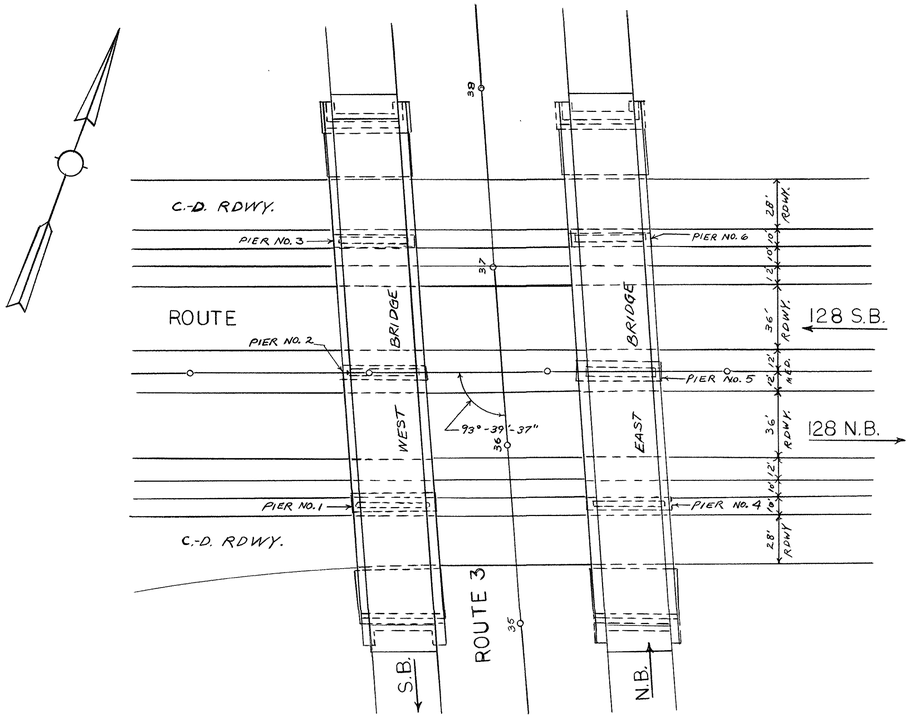
DATE	DESCRIPTION
JUNE 30, 1962	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

DRAWN BY F.E.
DESIGNED BY
CHECKED BY

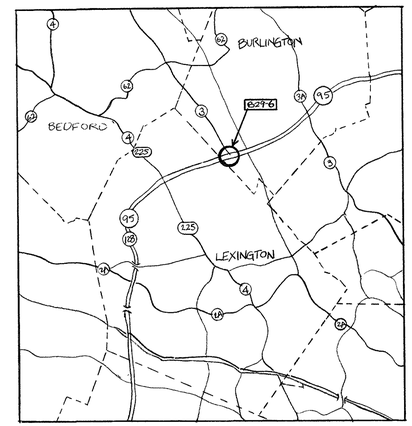
SHEET 8 OF 8 SHEETS BRIDGE NO. B-29-6

Drafax Blue Print-100-1-59

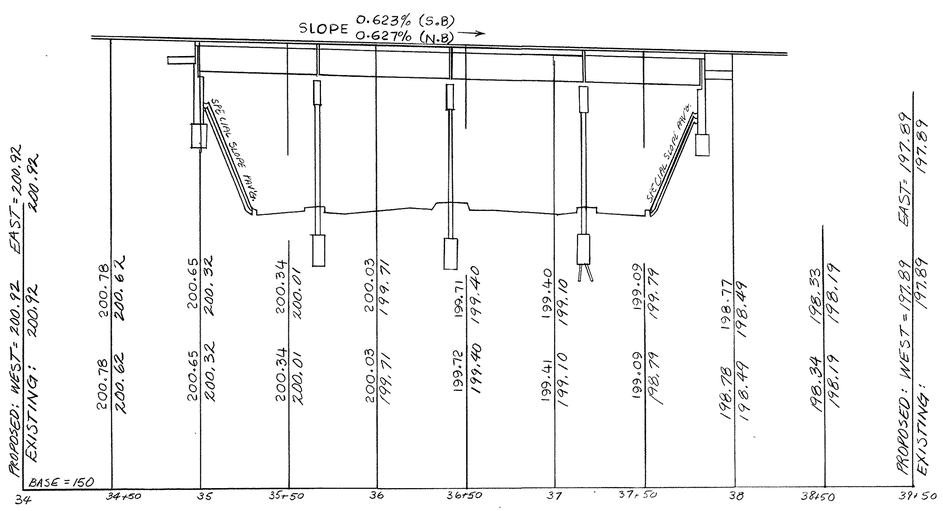
PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.		1992	1	13



KEY PLAN
SCALE: 1" = 40'



LOCUS PLAN
NO SCALE



PROFILE ROUTE 3
SCALE: HOR. 1" = 40'
VERT. 1" = 8'

GENERAL NOTES

DESIGN:
IN ACCORDANCE WITH THE 1989 SPECIFICATIONS OF THE A.A.S.H.T.O. WITH CURRENT INTERIM SPECIFICATIONS THROUGH 1990 FOR HS-20-44 LOADING.

BENCH MARK:
ELEVATION IS BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM OF 1929.

DATE AND SEAL:
TO BE PLACED ON THE INSIDE FACES OF NORTHWEST AND SOUTHEAST BRIDGE END POSTS. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED THE SEAL WILL BE FURNISHED BY THE STATE AND SET BY THE CONTRACTOR.

BRIDGE RAILING:
SEE DEPARTMENT STANDARD PLANS DATED OCTOBER 1978 FOR DETAILS OF BRIDGE RAILINGS.

ANCHOR BOLTS:
ALL ANCHOR BOLTS SHALL BE SET BY TEMPLATE BEFORE THE CONCRETE IS PLACED.

REINFORCEMENT:
REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A615 GRADE 60. ALL #4 BARS SHALL BE LAPPED 20". ALL #5 BARS SHALL BE LAPPED 26" FOR HORIZONTAL BARS WITH 12" OR MORE OF CONCRETE BELOW THE BAR, THE LAP LENGTHS SHALL BE 29" FOR #4 BARS AND 36" FOR #5 BARS. IF THE ABOVE BARS ARE SPACED 6" OR MORE ON CENTER, THE LAP LENGTH SHALL BE 80% OF LAP LENGTH GIVEN ABOVE. ALL OTHER BARS SHALL BE LAPPED AS SHOWN ON THE PLANS. EPOXY COATED BARS TO BE USED WITH CLASS D CEMENT CONCRETE MASONRY.

PLANS:
PLANS FOR EXISTING BRIDGE MAY BE SEEN AT THE OFFICE OF THE BRIDGE ENGINEER, DEPARTMENT OF PUBLIC WORKS, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.

TRAFFIC:
ONE LANE OF ROADWAY IN EACH DIRECTION MUST BE KEPT OPEN TO TRAFFIC AT ALL TIMES DURING THE DEMOLITION AND RECONSTRUCTION PHASES.

EXISTING CONDITIONS:
DIMENSIONS SHOWN ON EXISTING DETAILS ARE TAKEN FROM ORIGINAL DESIGN DRAWING AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH ALL DIMENSIONS AND EXISTING DETAILS NECESSARY FOR COMPLETION OF ALL WORK BY FIELD MEASUREMENTS AND SURVEY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND ACCURACY THEREOF, AND SHALL NOT ORDER ANY MATERIAL OR COMMENCE ANY FABRICATION UNTIL HE HAS MADE THE REQUIRED MEASUREMENTS ON THE ACTUAL STRUCTURE AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER. EXISTING STRUCTURE IS SHOWN THUS _____ - _____ UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL:
ALL STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A36, EXCEPT AS NOTED. PREPARATION AND ASSEMBLY OF MATERIALS FOR WELDING SHALL CONFORM TO AWS BRIDGE WELDING CODE. AWS D1.5-88, AS AMENDED BY CURRENT AASHTO INTERIM SPECIFICATIONS THROUGH 1990.

CONCRETE MIXES:

	(1)	(2)	(3)
CLASS D DENOTES:	4000	- 3/4	-610
CLASS E DENOTES:	4000	- 3/8	-660

(1) 28 DAY COMPRESSIVE STRENGTH (P.S.I.)
(2) MAXIMUM AGGREGATE SIZE (INCHES)
(3) CEMENT CONTENT (LB./CU. YD.)

	10-22-91	△2 REVISED SHEET NO. 13.
	10-18-91	△1 REVISED SHEETS 6 AND 8
		ISSUED FOR CONSTRUCTION

DESIGNED BY J. WHITENECK
DRAWN BY J. WHITENECK, J. DESMOND
CHECKED BY

THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED DECK REPLACEMENT

BURLINGTON

ROUTE 3 OVER
ROUTE 128 (I-95)

SCALE AS NOTED

DEPARTMENT OF PUBLIC WORKS
10 PARK PLAZA BOSTON, MA.

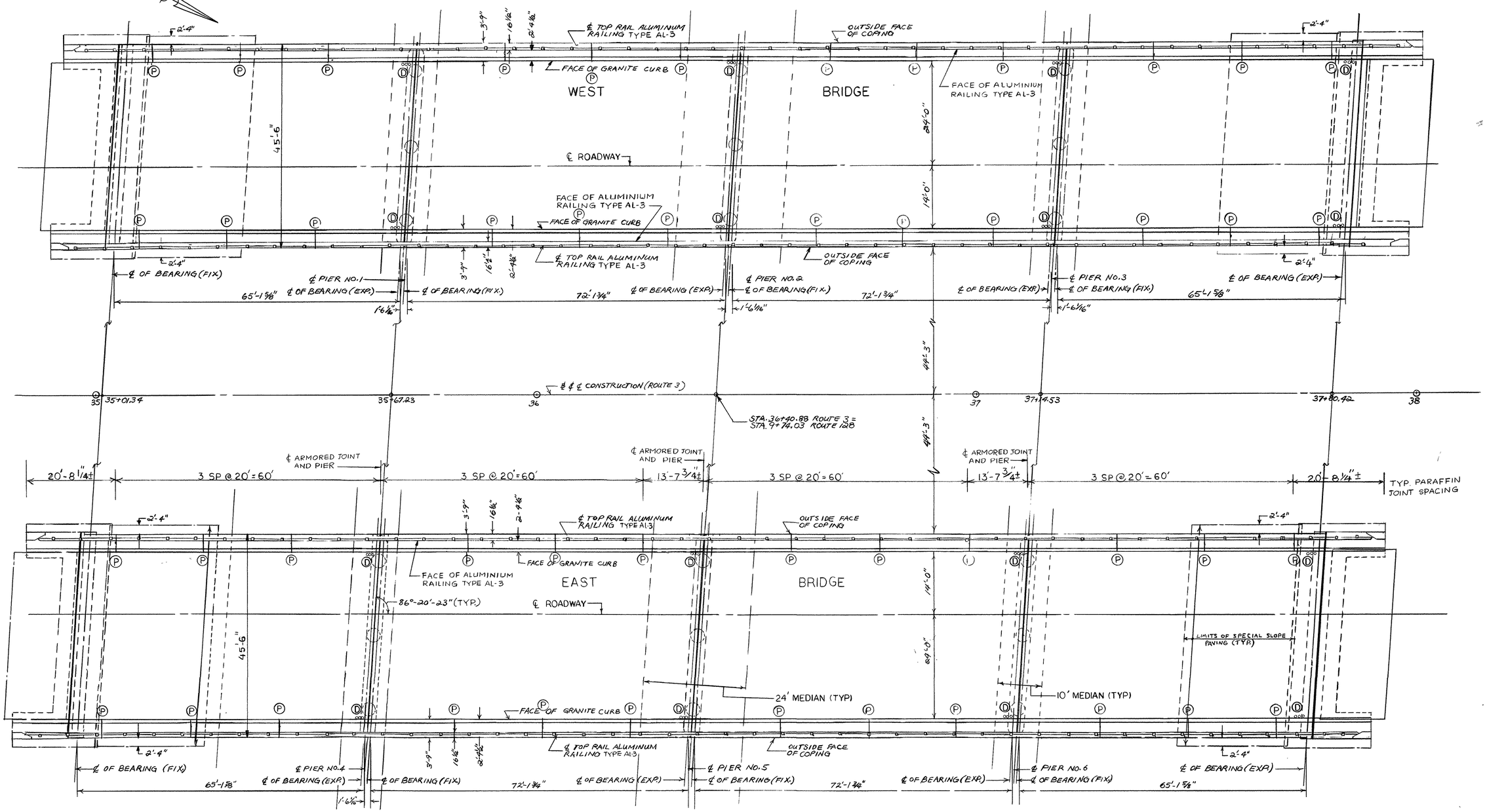
APPROVED FOR
DESIGN
SPECS

9/26/91 DATE — S. Bulwala — MAINTENANCE ENGINEER

SHEET 1 OF 13 SHEETS

BRIDGE NO. B29-6

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.		1992	2	13



PROPOSED DECK PLAN

SCALE 3/32" = 1'-0"

Ⓓ DENOTES LOCATION OF DECK DRAIN

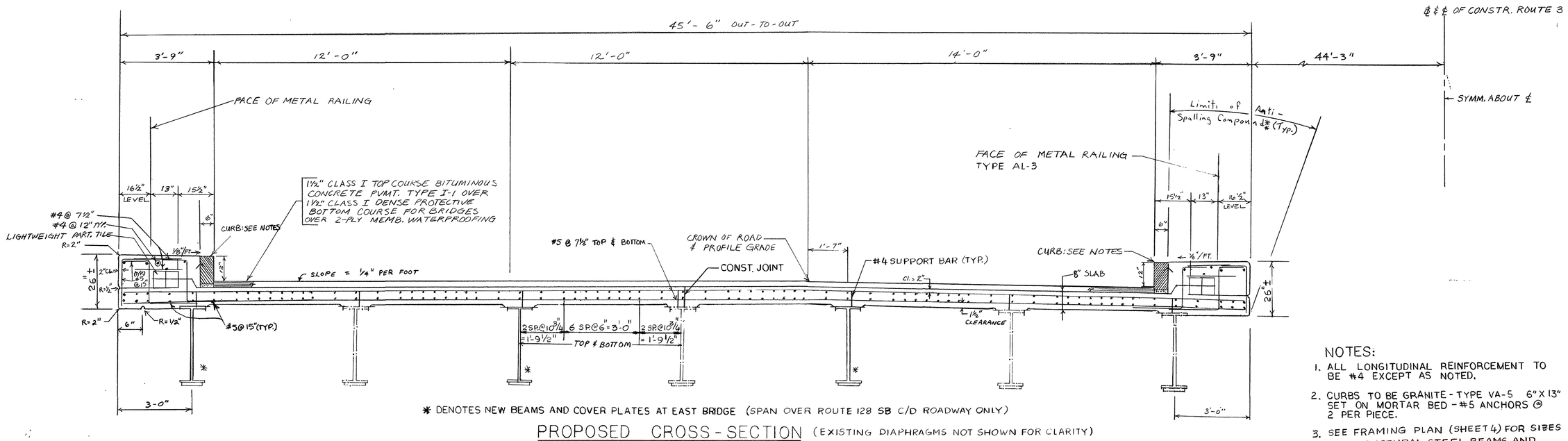
Ⓟ DENOTES LOCATION OF PARAFFIN JOINT

DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

SHEET 2 OF 13 SHEETS BRIDGE NO. B-29-6

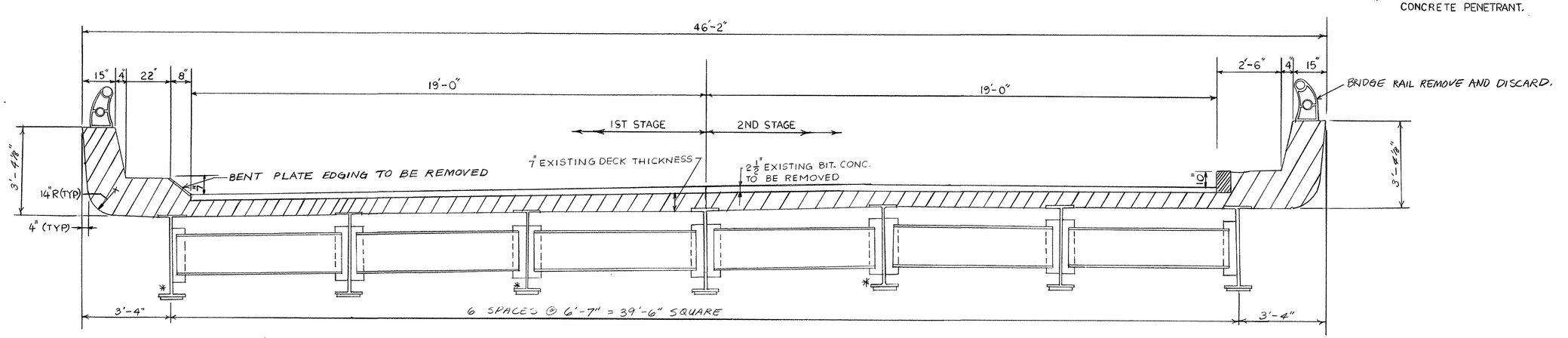
PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	3	13



PROPOSED CROSS-SECTION (EXISTING DIAPHRAGMS NOT SHOWN FOR CLARITY)
SCALE ½" = 1'-0"

NOTES:

1. ALL LONGITUDINAL REINFORCEMENT TO BE #4 EXCEPT AS NOTED.
2. CURBS TO BE GRANITE - TYPE VA-5 6" X 13" SET ON MORTAR BED - #5 ANCHORS @ 2 PER PIECE.
3. SEE FRAMING PLAN (SHEET 4) FOR SIZES OF STRUCTURAL STEEL BEAMS AND COVER PLATES.
4. * ANTI-SPALLING COMPOUND SHALL BE CONCRETE PENETRANT.



EXISTING CROSS-SECTION
SCALE ½" = 1'-0"

LIMITS OF REINF. CONC. EXCAVATION

* DENOTES DAMAGED BEAMS AND COVER PLATES AT EAST BRIDGE TO BE REPLACED. (SPAN OVER ROUTE 128 SB C/D ROADWAY ONLY)

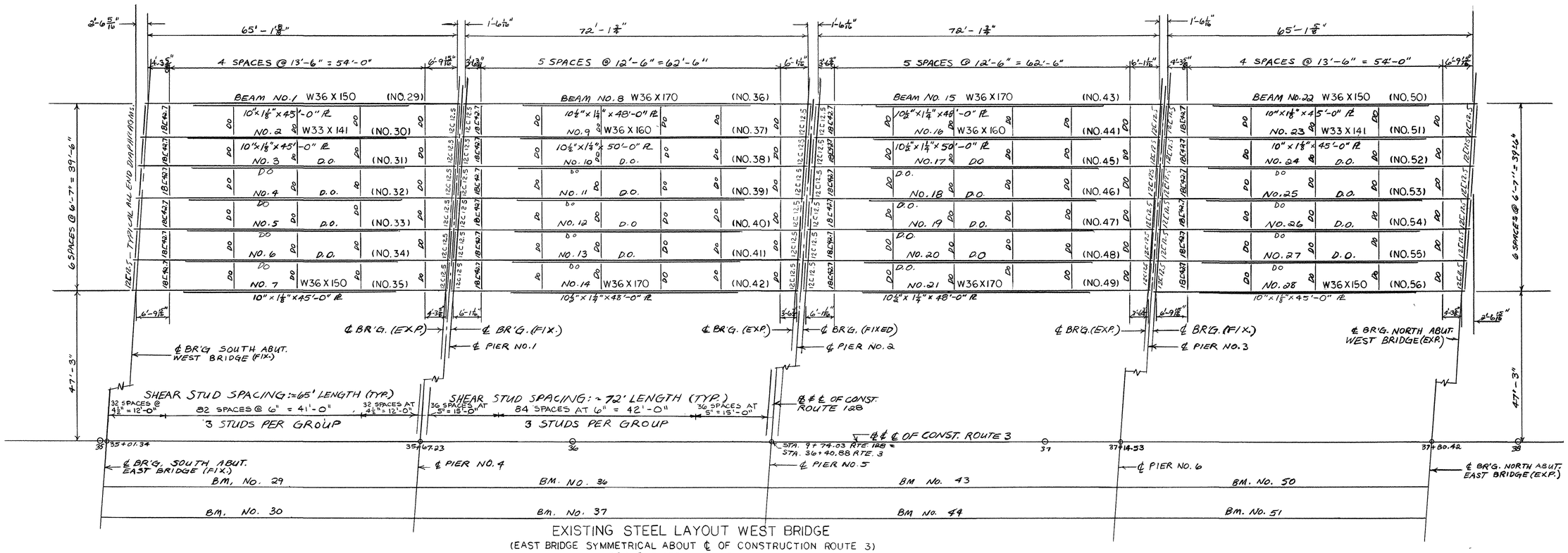
DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

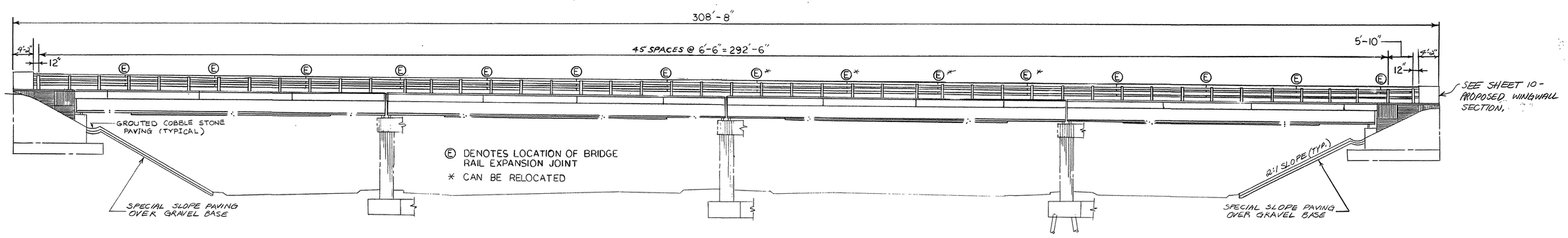
SHEET 3 OF 13 SHEETS BRIDGE NO. B29-6

PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	4	13

NOTES 1. BEAM NUMBERS ENCLOSED THUS, ( ) DENOTE EAST BRIDGE.
2. BEAMS 52 54 AND 56 TO BE REPLACED IN KIND. ALL DIAPHRAGMS ADJACENT THERETO SHALL BE REMOVED AND RESET WITH BOLTS.



EXISTING STEEL LAYOUT WEST BRIDGE
(EAST BRIDGE SYMMETRICAL ABOUT ℄ OF CONSTRUCTION ROUTE 3)
SCALE 3/32" = 1'-0"



EAST ELEVATION
SCALE 3/32" = 1'-0"

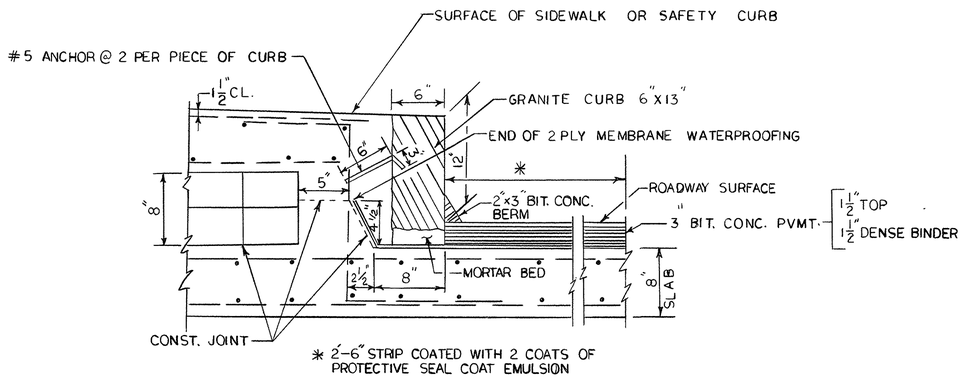
DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

SHEET 4 OF 13 SHEETS BRIDGE NO. B-29-6

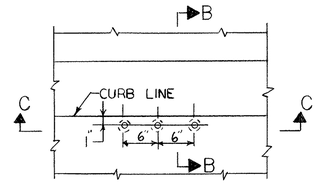
PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	5	13

ARMORED JOINT LOCATIONS			
OVERALL LENGTH = 42' 10-1/32" (TYPICAL)			
WEST STRUCTURE		EAST STRUCTURE	
LOCATION	STATION	LOCATION	STATION
SOUTH ABUT.	NO ARMORED JOINT	SOUTH ABUT.	NO ARMORED JOINT
PIER NO. 1	35+67.23	PIER NO. 4	35+67.23
PIER NO. 2	36+40.88	PIER NO. 5	36+40.88
PIER NO. 3	37+14.53	PIER NO. 6	37+14.53
NORTH ABUT.	37+80.42	NORTH ABUT.	37+80.42

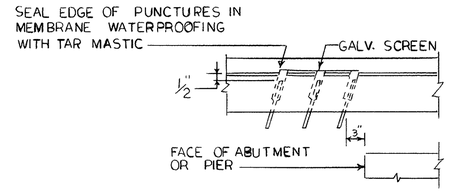


DETAILS OF CURB SIDEWALK AND SAFETY CURB

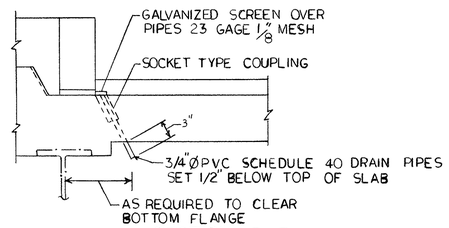
SCALE: 1 1/2" = 1'-0"



DECK PLAN AT DRAIN PIPE



SECTION C-C

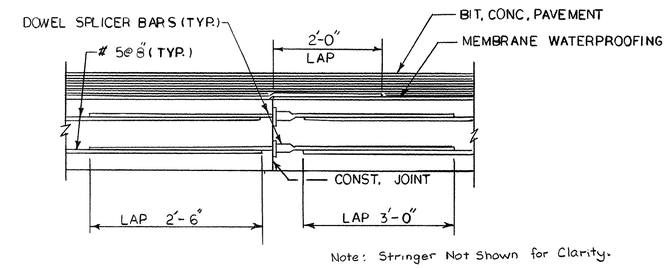


SECTION B-B

NOTE: DRAIN SHALL BE LOCATED AT THE DOWNHILL END OF EACH SPAN AT CURB LINE LOW POINTS

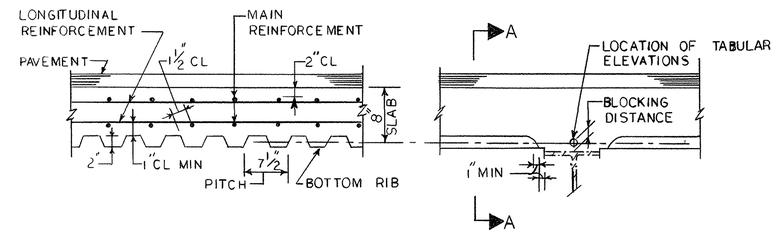
DETAIL OF DRAIN PIPES THROUGH DECK SLAB

SCALE: 1" = 1'-0"



CONSTRUCTION JOINT DETAILS

NO SCALE



SECTION A-A

HAUNCH DETAIL

STAY IN PLACE FORMS

NO SCALE

TOP OF FORM ELEVATIONS																			
BEAM NO.	SOUTH BEARING	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	NORTH BEARING	BEAM NO.	SOUTH BEARING	1/8 PT.	1/4 PT.	3/8 PT.	1/2 PT.	5/8 PT.	3/4 PT.	7/8 PT.	NORTH BEARING
1	199.15	199.14	199.13	199.11	199.07	199.01	198.93	198.84	198.75	29	199.41	199.41	199.39	199.37	199.33	199.27	199.20	199.11	199.02
2	199.29	199.29	199.28	199.26	199.23	199.17	199.09	199.00	198.90	30	199.56	199.56	199.55	199.53	199.49	199.43	199.35	199.26	199.16
3	199.43	199.43	199.42	199.40	199.37	199.31	199.23	199.14	199.04	31	199.70	199.70	199.69	199.67	199.63	199.57	199.49	199.40	199.30
4	199.57	199.57	199.56	199.54	199.51	199.45	199.37	199.28	199.18	32	199.63	199.63	199.62	199.60	199.56	199.50	199.42	199.33	199.23
5	199.65	199.65	199.64	199.62	199.58	199.52	199.44	199.35	199.25	33	199.49	199.49	199.48	199.46	199.43	199.37	199.29	199.20	199.10
6	199.51	199.51	199.50	198.48	199.45	199.39	199.31	199.22	199.12	34	199.36	199.36	199.35	199.33	199.29	199.23	199.15	199.06	198.96
7	199.38	199.37	199.36	199.34	199.30	199.24	199.16	199.07	198.98	35	199.22	199.21	199.20	199.18	199.14	199.08	199.00	198.91	198.82
8	198.76	198.76	198.75	198.73	198.68	198.62	198.53	198.43	198.32	36	199.02	199.00	198.98	198.95	198.90	198.84	198.76	198.67	198.58
9	198.90	198.90	198.80	198.87	198.83	198.76	198.67	198.57	198.45	37	199.16	199.15	199.13	199.10	199.05	198.99	198.91	198.82	198.72
10	199.04	199.04	199.04	199.01	198.97	198.90	198.81	198.71	198.59	38	199.30	199.29	199.27	199.24	199.19	199.13	199.05	198.96	198.86
11	199.18	199.18	199.18	199.15	199.11	199.04	198.95	198.85	198.73	39	199.23	199.22	199.20	199.17	199.12	199.06	198.98	198.89	198.79
12	199.25	199.26	199.25	199.23	198.18	199.12	199.03	198.93	198.81	40	199.10	199.09	199.07	199.03	198.99	198.92	198.84	198.75	198.65
13	199.12	199.12	199.12	199.09	199.05	198.98	198.89	198.79	198.67	41	198.96	198.95	198.93	198.90	198.85	198.79	198.71	198.62	198.52
14	198.99	198.99	198.98	198.96	198.91	198.85	198.76	198.66	198.55	42	198.83	198.81	198.79	198.76	198.71	198.65	198.57	198.48	198.39
15	198.31	198.31	198.30	198.28	198.23	198.17	198.08	197.98	197.87	43	198.57	198.55	198.53	198.50	198.45	198.39	198.31	198.22	198.13
16	198.45	198.46	198.45	198.43	198.38	198.32	198.23	198.13	198.01	44	198.71	198.70	198.68	198.65	198.60	198.54	198.46	198.37	198.27
17	198.59	198.60	198.59	198.57	198.52	198.46	198.37	198.27	198.15	45	198.85	198.84	198.82	198.79	198.74	198.68	198.60	198.51	198.41
18	198.73	198.74	198.73	198.71	198.66	198.60	198.51	198.41	198.29	46	198.78	198.77	198.75	198.72	198.67	198.61	198.53	198.44	198.34
19	198.80	198.81	198.80	198.78	198.73	198.67	198.58	198.48	198.36	47	198.65	198.64	198.62	198.59	198.54	198.48	198.40	198.31	198.21
20	198.67	198.68	198.67	198.65	198.60	198.54	198.45	198.35	198.23	48	198.51	198.50	198.48	198.45	198.40	198.34	198.26	198.17	198.07
21	198.54	198.54	198.53	198.51	198.46	198.40	198.31	198.21	198.10	49	198.38	198.36	198.34	198.31	198.26	198.20	198.12	198.03	197.94
22	197.85	197.84	197.83	197.80	197.76	197.70	197.63	197.54	197.44	50	198.11	198.10	198.09	198.06	198.02	197.96	197.89	197.80	197.70
23	197.99	197.99	197.98	197.96	197.92	197.85	197.78	197.68	197.58	51	198.25	198.25	198.24	198.22	198.18	198.11	198.04	197.94	197.84
24	198.13	198.13	198.12	198.10	198.06	197.99	197.92	197.82	197.72	52	198.39	198.39	198.38	198.36	198.32	198.25	198.18	198.08	197.98
25	198.27	198.27	198.26	198.24	198.20	198.13	198.06	197.96	197.86	53	198.32	198.32	198.31	198.29	198.25	198.19	198.11	198.02	197.92
26	198.34	198.34	198.33	198.31	198.27	198.21	198.13	198.04	197.94	54	198.19	198.19	198.18	198.16	198.12	198.05	197.98	197.88	197.78
27	198.21	198.21	198.20	198.18	198.14	198.07	198.00	197.90	197.80	55	198.06	198.06	198.05	198.03	197.99	197.92	197.85	197.75	197.65
28	198.07	198.06	198.05	198.03	197.99	197.93	197.85	197.76	197.67	56	197.92	197.91	197.90	197.87	197.83	197.77	197.70	197.61	197.51

NOTES:

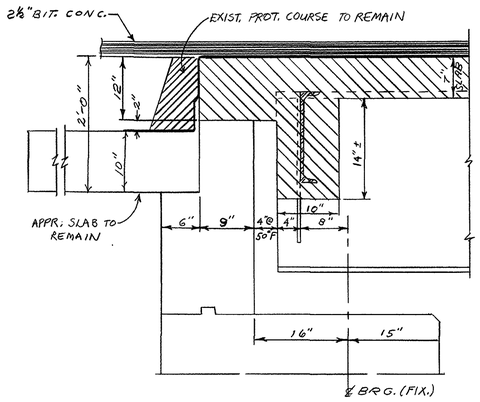
1. FOR TWO (2) INCH SIP FORM SET BOTTOM OF FORM ONE (1) INCH BELOW ELEVATIONS GIVEN IN TABLES. FOR TWO AND ONE HALF (2 1/2) INCH S.I.P. FORM SET BOTTOM OF FORM ONE AND ONE HALF (1 1/2) INCHES BELOW TABLE ELEVATIONS.
2. FORM ENDS SHALL BE CRIMPED CLOSED IN A TAPERED MANNER. SEPARATE END CLOSER PIECES WILL NOT BE ALLOWED.
3. SUPPORT ANGLES SHALL BE PLACED IN THE "LEG DOWN" POSITION WHERE POSSIBLE. WHERE LEG UP POSITION IS NECESSARY THE UPPER MOST PORTION OF THE ANGLE SHALL NOT PROJECT MORE THAN ONE INCH ABOVE THE TOP FLANGE OR COVER PLATE. THE CONTRACTOR SHALL HAVE AN ASSORTMENT OF ANGLES OF VARIOUS SIZES AVAILABLE ON THE SITE TO CONFORM TO THIS REQUIREMENT.
4. ALL MAIN STEEL REINFORCEMENT IN THE LOWER MAT SHALL BE CENTERED OVER THE VALLEY OF THE S.I.P. FORM.
5. WHERE ALL MAIN SUPPORTING BEAMS ARE PARALLEL AND MAIN DECK STEEL IS INDICATED ON THESE PLANS AS CROSSING THE BEAM AT LESS THAN 90 DEGREES (SKEWED), THE REBAR DIRECTION MAY BE ALTERED TO CROSS THE BEAMS AT 90 DEGREES TO FACILITATE THE USE OF SIP FORMS. THIS WILL BE FOR THE CONTRACTOR'S CONVENIENCE AND NO ADDITIONAL PAYMENTS WILL BE MADE FOR THIS CHANGE IN REIFORCEMENT. BAR SIZES AND SPACING WILL BE MAINTAINED FOR CURVED OR NON-PARALLEL MAIN SUPPORTING BEAMS. ALTERATIONS TO DECK REINFORCEMENT MUST BE APPROVED BY THE ENGINEER.

DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION

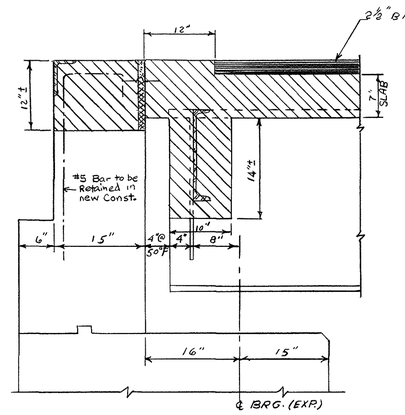
USE ONLY PRINTS OF LATEST DATE

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	6	13

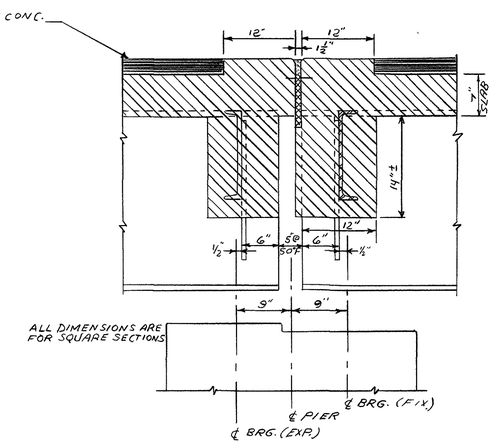
LIMITS OF REINFORCED CONCRETE EXCAVATION



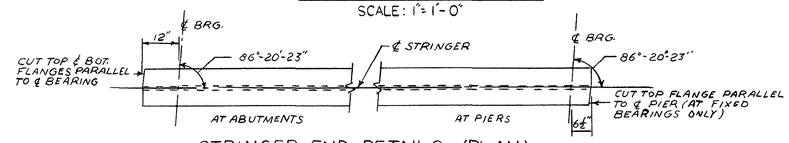
EXISTING SOUTH ABUTMENT DETAILS
SCALE: 1"=1'-0"



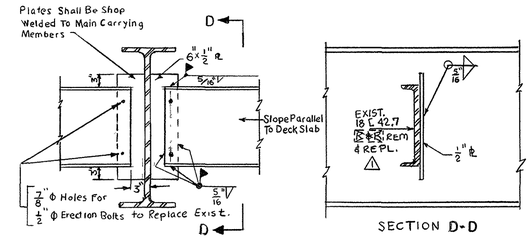
EXISTING NORTH ABUTMENT DETAILS
SCALE: 1"=1'-0"



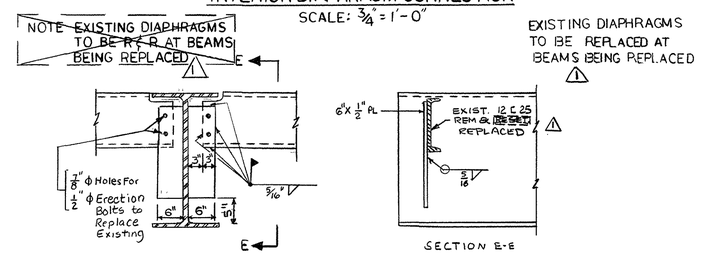
EXISTING PIER DETAILS
SCALE: 1"=1'-0"



STRINGER END DETAILS (PLAN)
NO SCALE

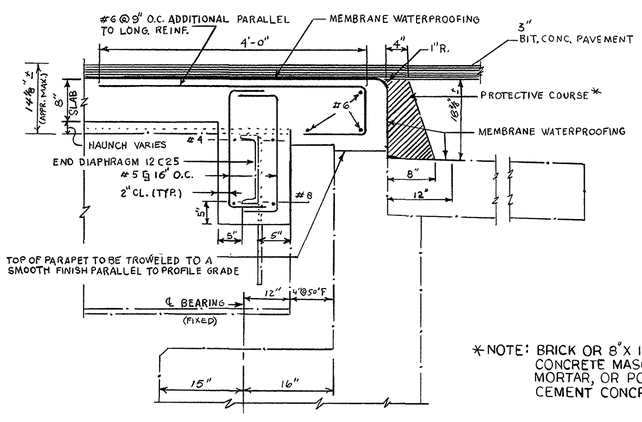


EXISTING & PROPOSED
INTERIOR DIAPHRAGM CONNECTION
SCALE: ¾"=1'-0"



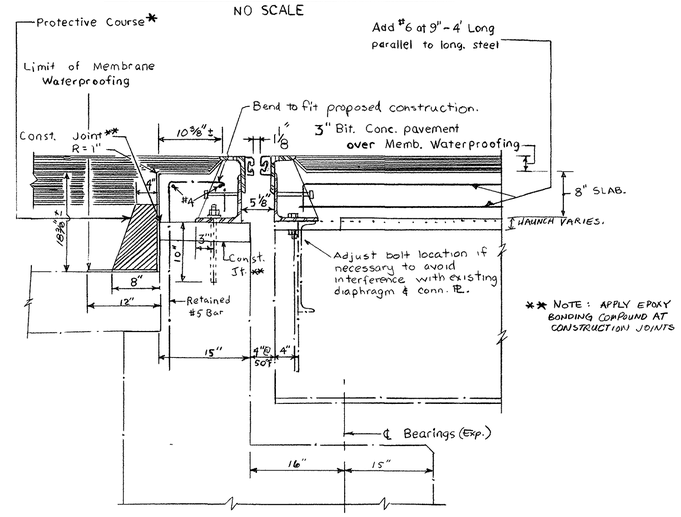
EXISTING & PROPOSED
END DIAPHRAGM CONNECTION
SCALE ¾"=1'-0"

Note:
1. End Diaphragms To Be Parallel To ℄ Bearing. Interior Diaphragms To Be Centered On Stringers. All Diaphragms to be R & R in Exist. Locations.
2. For Diaphragm Removal Detail and Method of Welding Diaphragm Connection Detail, See Sheet 8.
3. ALL EXISTING DIAPHRAGMS ATTACHED TO DAMAGED BEAMS TO BE REPLACED.

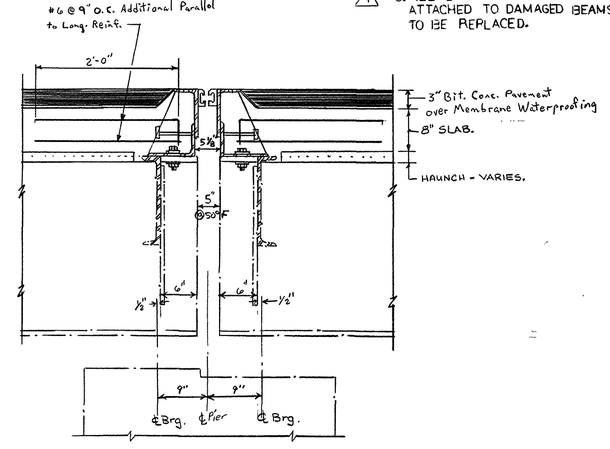


*NOTE: BRICK OR 8"X 16"X 2" CLASS D CEMENT CONCRETE MASONRY BLOCKS LAID IN MORTAR, OR POURED IN PLACE CLASS D CEMENT CONCRETE MASONRY.

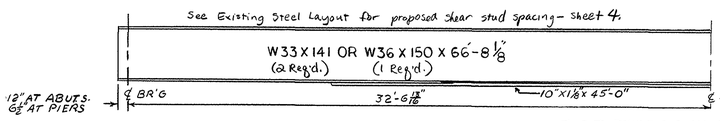
PROPOSED DECK DETAILS AT SOUTH ABUT.
NO SCALE



PROPOSED DECK DETAILS AT NORTH ABUTMENT
SCALE: 1"=1'-0"

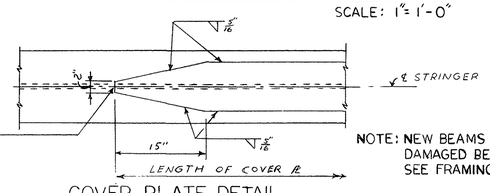


PROPOSED DECK DETAILS AT PIERS
SCALE: 1"=1'-0"



NOTE: EXT. STRINGERS SHALL BE CAMBERED NO LESS THAN 1 7/8" AND NO MORE THAN 2 1/8". INT. STRINGERS SHALL BE CAMBERED NO LESS THAN 2 1/4" AND NO MORE THAN 2 3/4"

REPLACEMENT STRINGERS
SCALE: ¼"=1'-0"



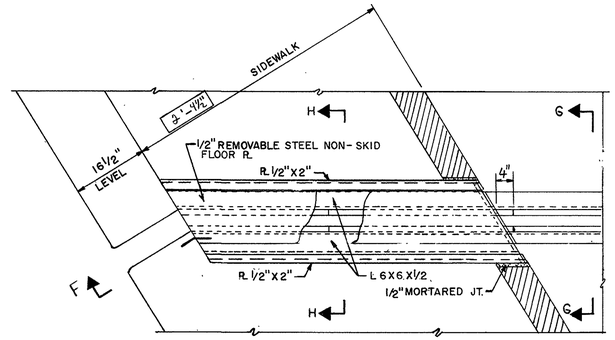
COVER PLATE DETAIL
NO SCALE

NOTE: NEW BEAMS AND COVER PLATES TO REPLACE DAMAGED BEAMS AND COVER PLATES IN KIND. SEE FRAMING PLAN FOR LOCATIONS.

DATE	DESCRIPTION
10-18-91	REVISED DIAPHRAGM CONN. DETAILS
	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

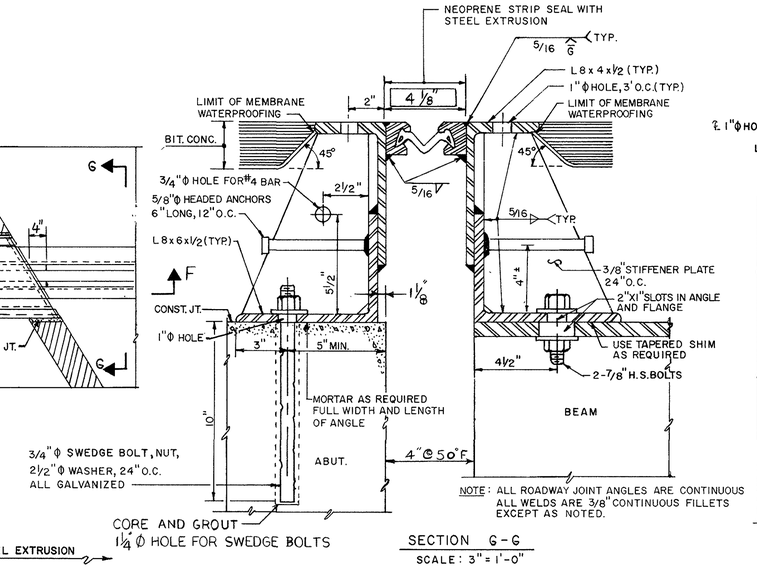
SHEET 6 OF 13 SHEETS BRIDGE No. B-29-6

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	7	13



PLAN — SIDEWALK

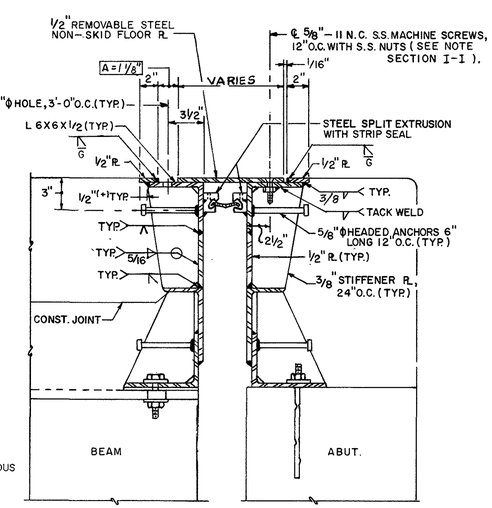
NOT TO SCALE



NOTE: ALL ROADWAY JOINT ANGLES ARE CONTINUOUS ALL WELDS ARE 3/8" CONTINUOUS FILLETS EXCEPT AS NOTED.

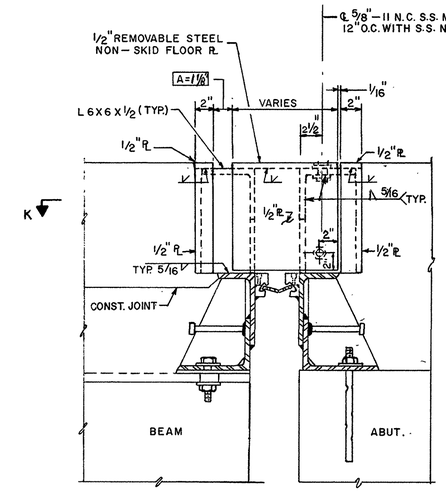
SECTION G-G

SCALE: 3" = 1'-0"



SIDEWALK - SECTION H-H

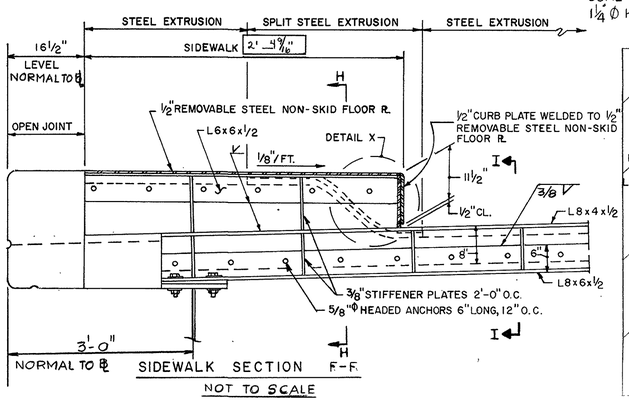
SCALE: 1 1/2" = 1'-0"



NOTE:
PRIOR TO PLACEMENT OF CONCRETE 5/8" ϕ S.S. MACHINE SCREWS TO BE LUBRICATED WITH GRAPHITE AND SECURELY SET IN PLACE. MACHINE SCREW TO BE TEMPORARILY REMOVED AFTER CONCRETE HAS ATTAINED FINAL SET.

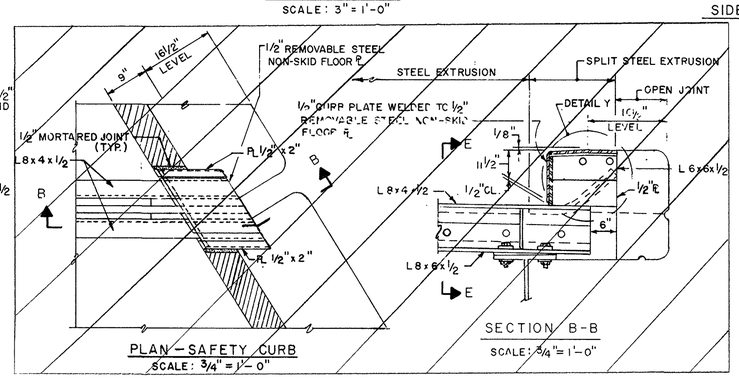
SECTION I-I

SCALE: 1 1/2" = 1'-0"



SIDEWALK SECTION F-F

NOT TO SCALE

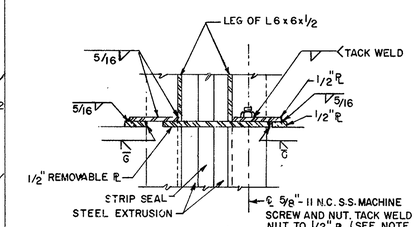


PLAN - SAFETY CURB

SCALE: 3/4" = 1'-0"

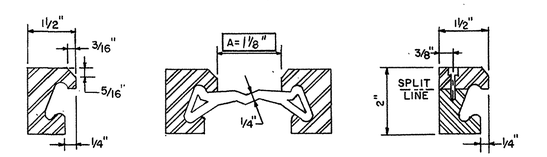
SECTION B-B

SCALE: 3/4" = 1'-0"



SECTION K-K

SCALE: 1 1/2" = 1'-0"

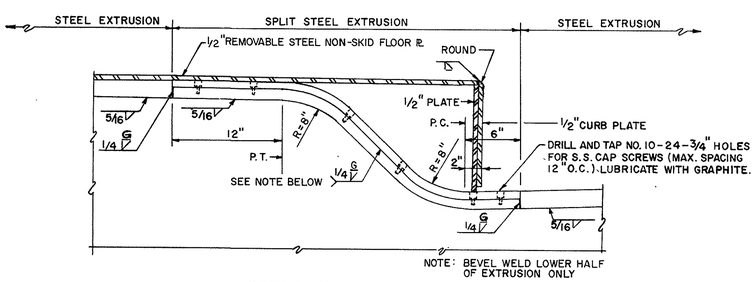


STEEL EXTRUSION FOR ROADWAY AREAS

SPLIT STEEL EXTRUSION

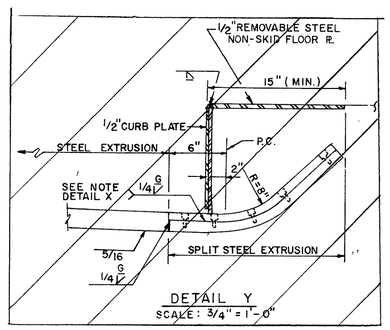
STRIP SEAL DETAILS

NOT TO SCALE



DETAIL X

SCALE: 1 1/2" = 1'-0"

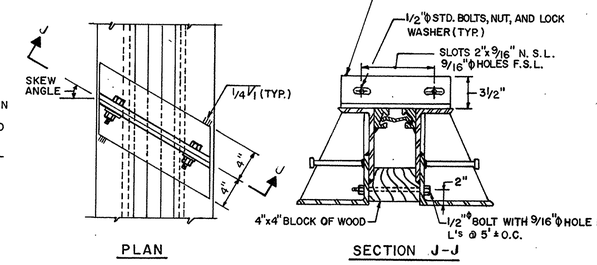


DETAIL Y

SCALE: 3/4" = 1'-0"

NOTES:

1. THE STRIP SEAL SYSTEM SHALL BE PRE-FABRICATED AND PRE-ASSEMBLED IN THE SHOP AND SHIPPED WITH SHIPPING DEVICE TO MAINTAIN PROPER SPACING AND FIT.
2. THE STRIP SEAL SHALL BE FIELD BONDED TO THE STEEL EXTRUSIONS IN ONE PIECE.
3. SHOP DRAWINGS OF THE STRIP SEAL ASSEMBLY AND SHIPPING DEVICE SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER.
4. WITH ARMORED JOINT IN PLACE, REMOVE WOOD BLOCKS AND THEIR 1/2" ϕ BOLTS BEFORE ANCHORING TO BRIDGE.
5. ARMORED JOINT DEVICE SHALL BE SECURED TO THE BEAM AND/OR ANCHOR BOLTS WHEN THE AMBIENT TEMPERATURE IS BETWEEN 40°F AND 80°F. NO FIELD ADJUSTMENT OF OPENING 'A' IS PERMITTED. SHIPPING DEVICE MUST BE REMOVED AFTER ARMORED JOINT IS SECURELY BOLTED IN PLACE.
6. GRIND ARMORED JOINT SURFACE TO A SMOOTH FINISH AFTER REMOVAL OF BACK-TO-BACK ANGLES.
7. ALL EXPOSED SURFACES ON ANGLES TO BE FIELD PAINTED.



PLAN

SECTION J-J

SHIPPING DEVICE FOR ARMORED JOINT

STRIP SEAL

SCALE: 1 1/2" = 1'-0"

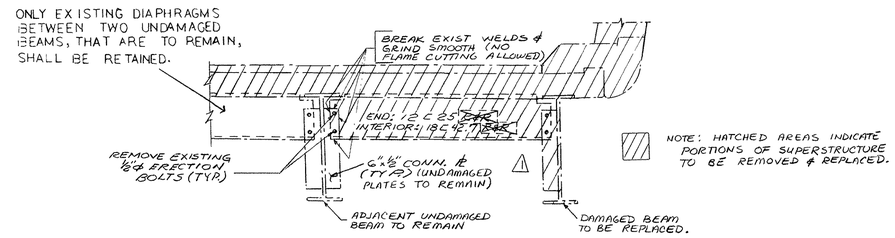
ROADWAY ARMORED JOINT — STRIP SEAL

DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

BRIDGE NO B-29-6

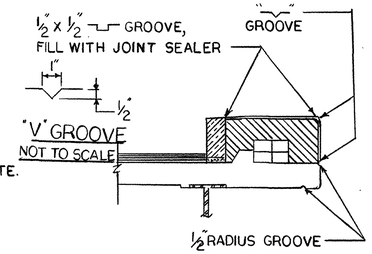
BRUNING 44-141 55042
HED-494

PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	8	13



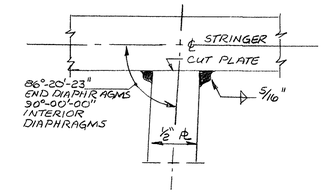
DIAPHRAGM REMOVAL DETAIL
NO SCALE

NOTES:
1) ALL CONCRETE CONSTRUCTION ABOVE SLAB SHALL BE POURED IN ALTERNATE SECTIONS AND SHALL HAVE A CURING PERIOD OF NOT LESS THAN 3 DAYS BETWEEN POURS.
2) A MORTARED JOINT IN THE CURB SHALL BE PLACED AT EACH PARAFFIN JOINT.
3) JOINT TO BE APPROXIMATE CENTER OF EVERY THIRD RAILING PANEL AS SHOWN ON SHT. 2 OF 9.
4) END OF REINFORING BARS SHALL BE 2" CLEAR OF JOINT.
5) DO NOT CARRY LONGITUDINAL BARS THROUGH THE PARAFFIN JOINTS.
6) JOINT SEALER TO BE SAME COLOR AS CONCRETE.
7) JOINT TO BE SQUARE TO THE FACE OF COPING OR CURB.

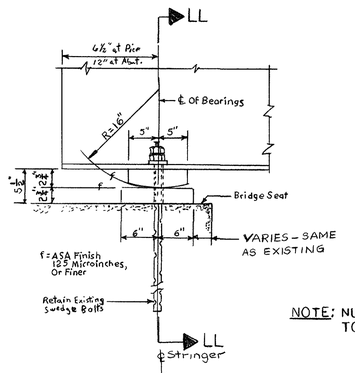


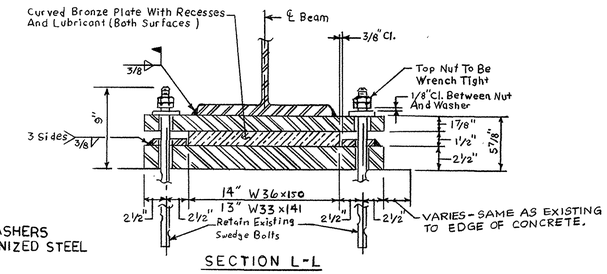
CROSS HATCHED AREA TO BE COATED WITH PARAFFIN

PARAFFIN JOINT DETAILS
NO SCALE



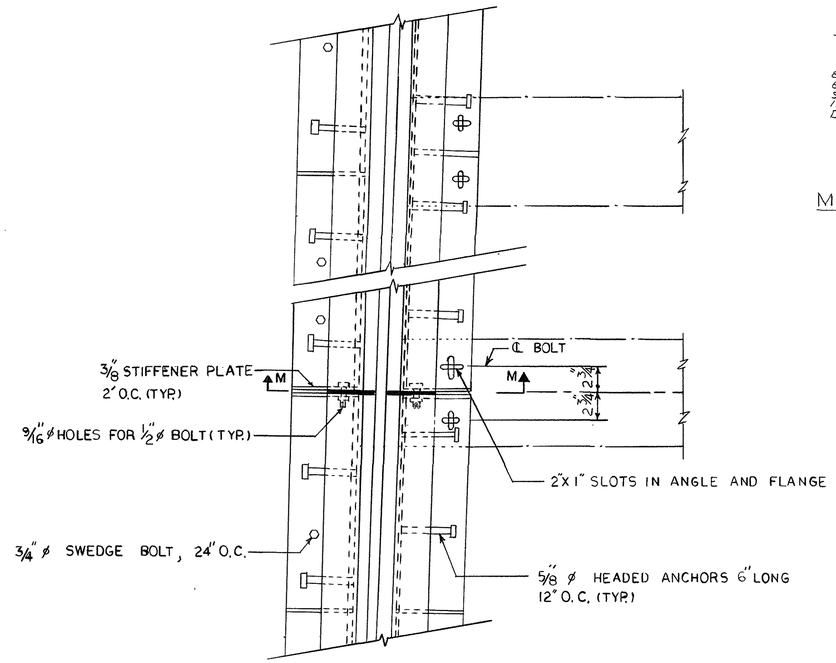
METHOD OF WELDING DIAPHRAGM CONNECTION
FULL SIZE



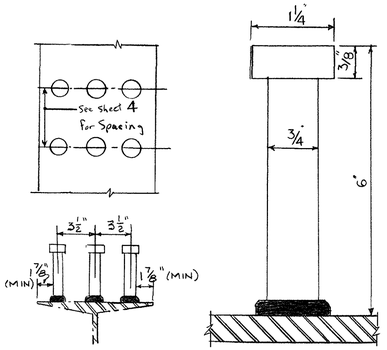


SECTION L-L

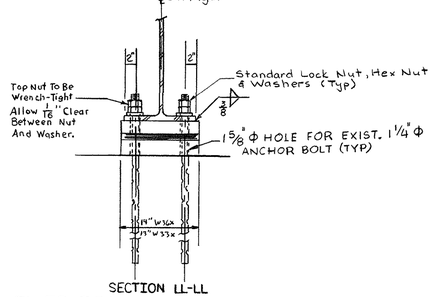
NOTE: NUTS AND WASHERS TO BE GALVANIZED STEEL



ARMORED JOINT SPLICE DETAIL
SCALE 1 1/2" = 1'-0"

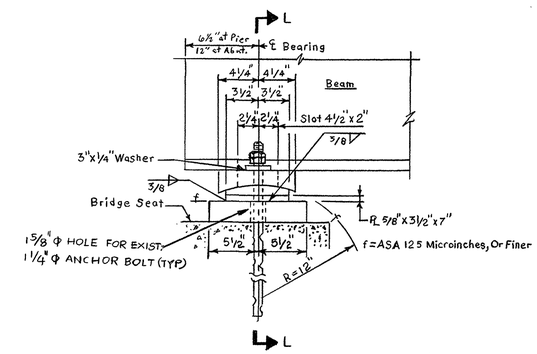


STUD SHEAR CONNECTORS
NO SCALE



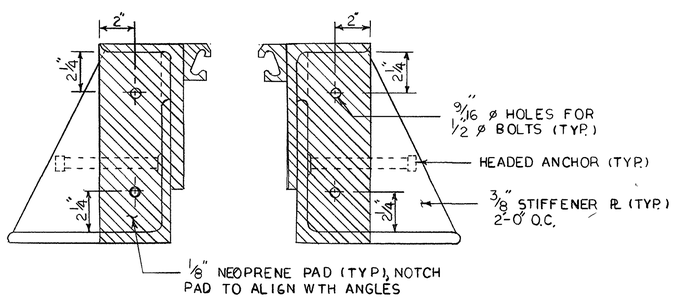
SECTION LL-LL

FIXED BEARINGS
SCALE: 1" = 1'-0"



NOTES:
1) SOLE PLATES FOR FIXED AND EXPANSION BEARINGS SHALL BE DELIVERED TO THE JOB SITE SHOP WELDED AT THE FIXED ENDS AND TACK WELDED AT THE EXPANSION ENDS.
2) THE EXPANSION END SOLE PLATES ARE TO BE ADJUSTED IN THE FIELD, AS NECESSARY, TO CENTER OVER THE MASONRY PLATE @ 50°F AND FIELD WELDED TO THE BOTTOM FLANGE.

EXPANSION BEARINGS
SCALE: 1 1/2" = 1'-0"

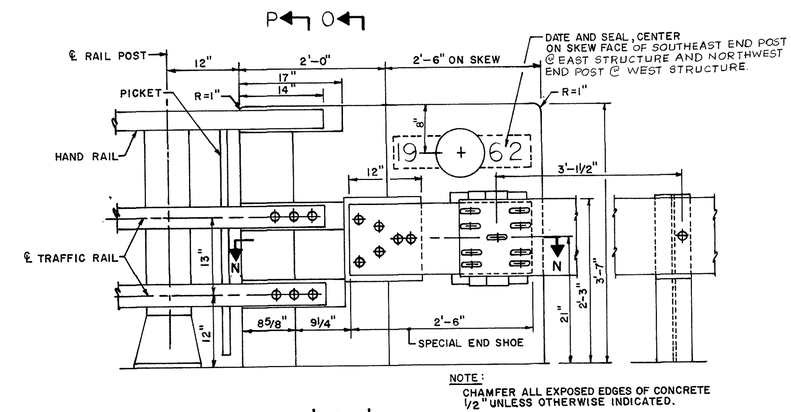


SECTION M-M
SCALE: 3" = 1'-0"

PROPOSED BEARING DEVICES FOR NEW BEAMS

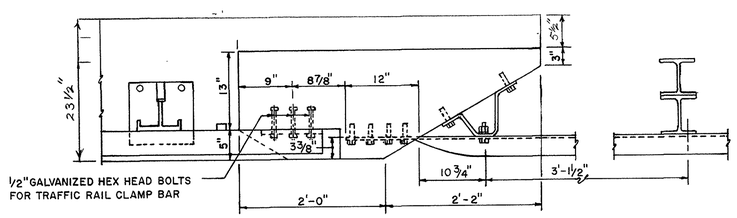
DATE	DESCRIPTION
10-18-91	1 REVISED DIAPHRAGM REMOVAL DET.
	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	9	13



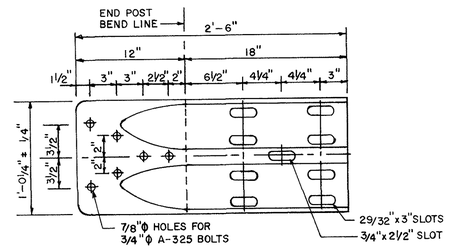
ELEVATION

END POST
SCALE: 1" = 1'-0"

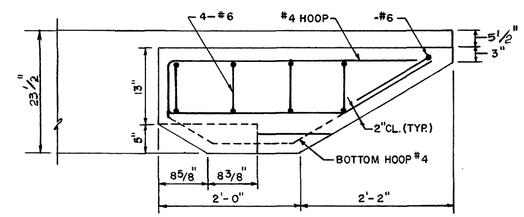


PLAN

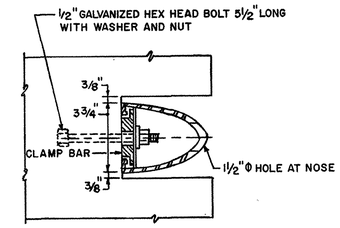
END POST
SCALE: 1" = 1'-0"



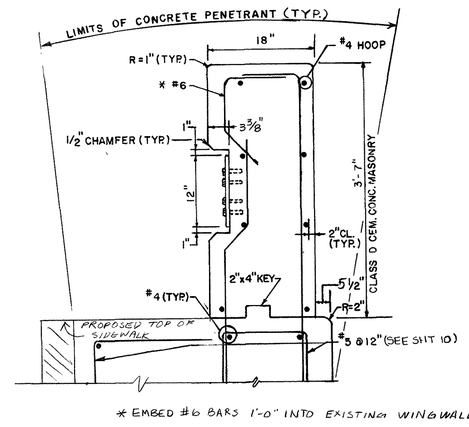
SPECIAL END SHOE (TYPE SS)
SCALE: 1½" = 1'-0"



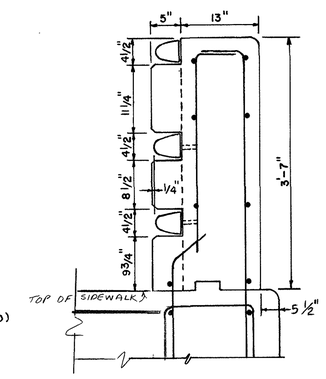
SECTION N-N
SCALE: 1" = 1'-0"



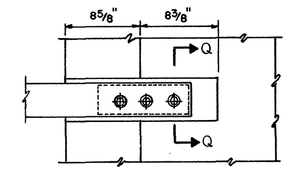
SECTION Q-Q
SCALE: 3" = 1'-0"



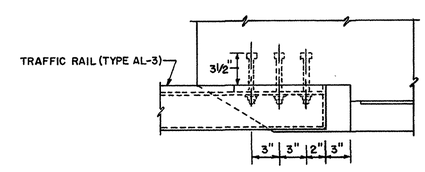
SECTION O-O
SCALE: 1" = 1'-0"



SECTION P-P
SCALE: 1" = 1'-0"

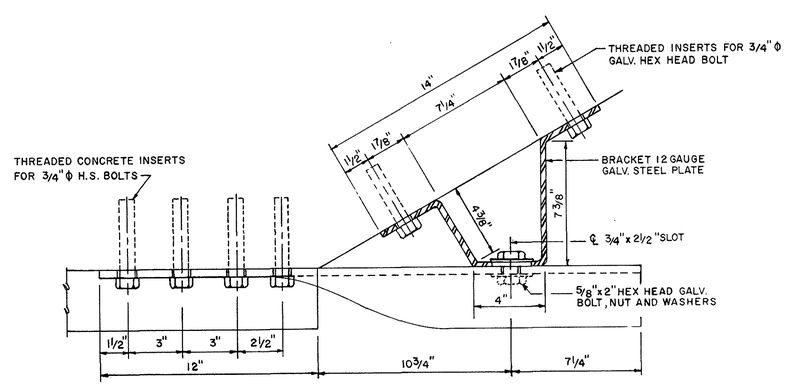


ELEVATION
SCALE: 1½" = 1'-0"

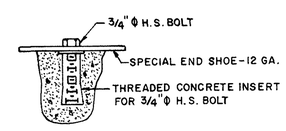


PLAN
SCALE: 1½" = 1'-0"

END POST RAIL ATTACHMENT



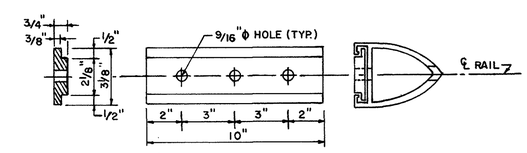
DETAIL OF CONNECTIONS FOR SPECIAL END SHOE
SCALE: 3" = 1'-0"



CONNECTION DETAIL
NO SCALE

NOTE:

1. CONCRETE INSERT SHALL BE PREQUALIFIED AS CAPABLE OF DEVELOPING 11,000 POUNDS OF SHEAR IN THE BOLT. THE TEST SHALL BE CERTIFIED BY A TESTING AGENCY ACCEPTABLE TO THE D.P.W.
2. THE THREADED INSERT FOR H.S. BOLTS SHALL BE CAST-IN-PLACE.



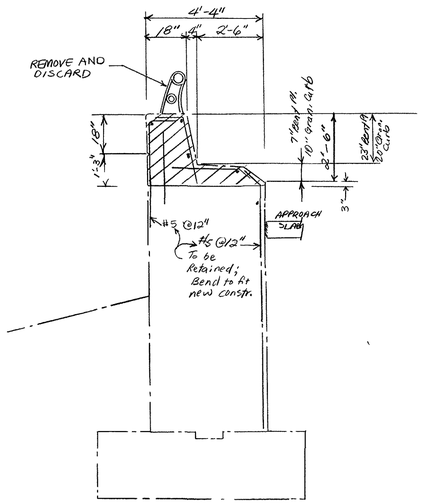
CLAMP BAR
SCALE: 3" = 1'-0"

END POST DETAILS

	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

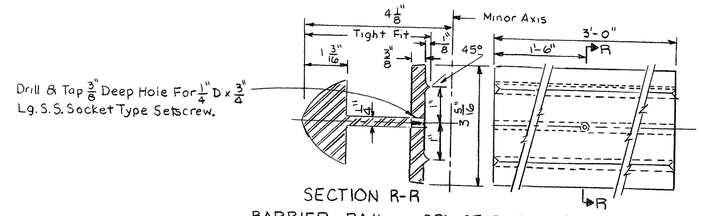
HED-494

PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	10	13

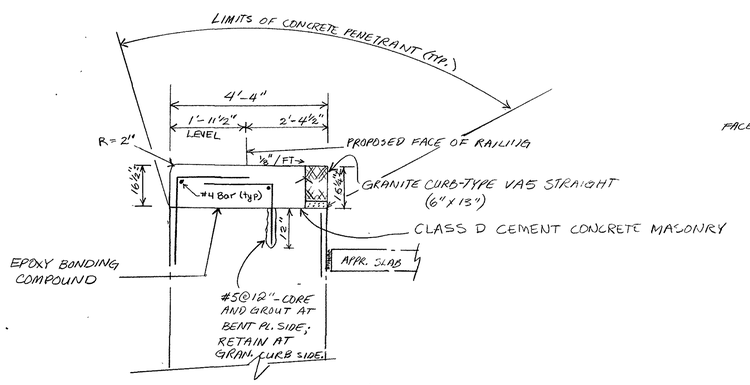


EXISTING WINGWALL SECTION (TYP.)
SCALE : 3/8" = 1'-0"

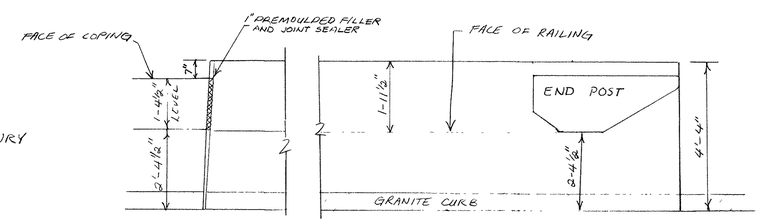
LIMITS OF REINFORCED CONCRETE EXCAVATION



SECTION R-R
BARRIER RAIL SPLICE DETAIL (ALTERNATE)
SCALE 1/2" = 1"



TYPICAL PROPOSED WINGWALL SECTION
SCALE: 1/2" = 1'-0"

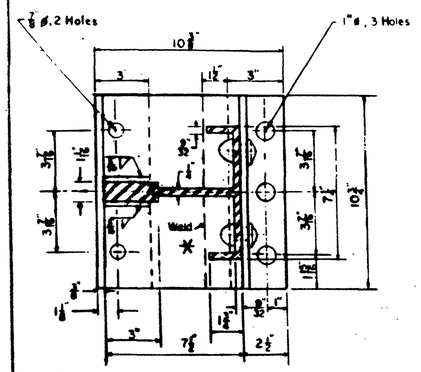


PROPOSED WINGWALL PLAN (TYP.)
SCALE 1/2" = 1'-0"

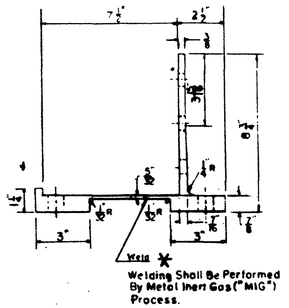
DATE	DESCRIPTION
	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 10 OF 13 SHEETS BRIDGE NO B-29-6

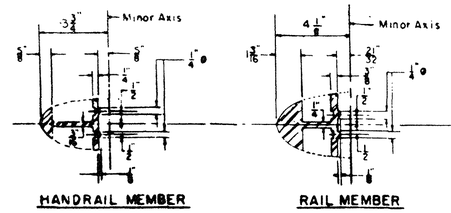
PUB. RD. DIV. NO.	STATE	FEDERAL AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	11	13



SECTION B-B

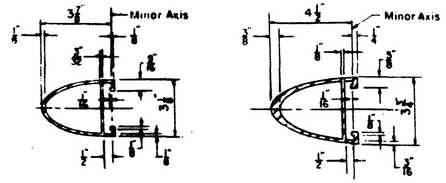


POST BASE ELEVATION

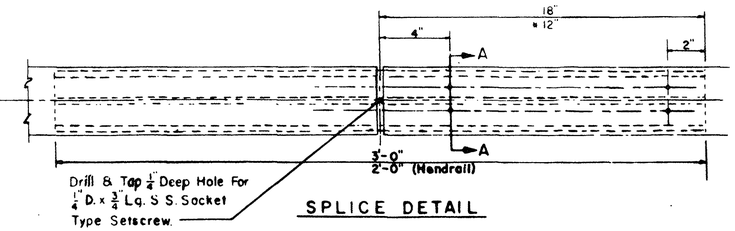


HANDRAIL MEMBER RAIL MEMBER

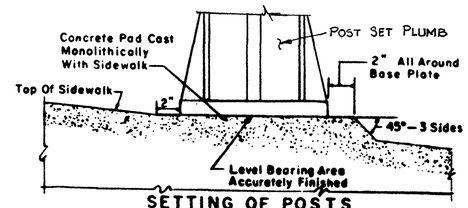
SECTION A-A



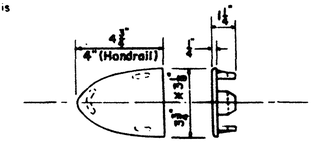
HANDRAIL MEMBER RAIL MEMBER



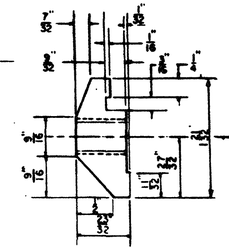
SPLICE DETAIL



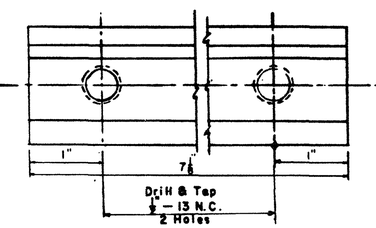
SETTING OF POSTS
(PROFILE GRADE OVER 1.5 %)
Not To Scale



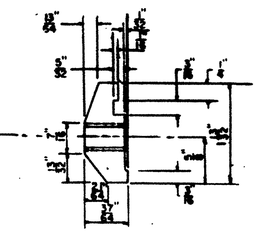
CAST ALUMINUM-DRIVE FIT RAIL CAP



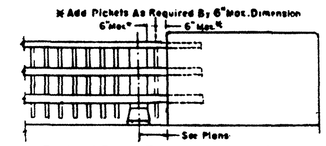
FOR RAIL MEMBER



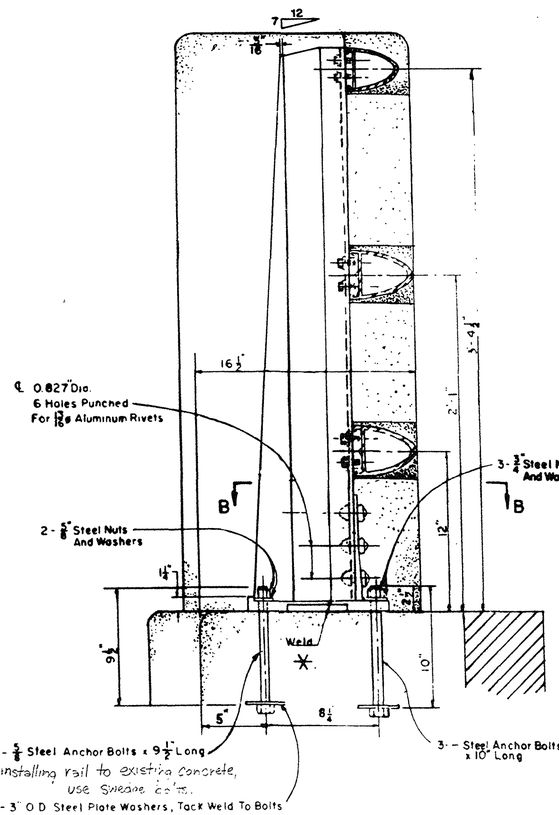
CLAMP BAR DETAILS
Scale: Full Size



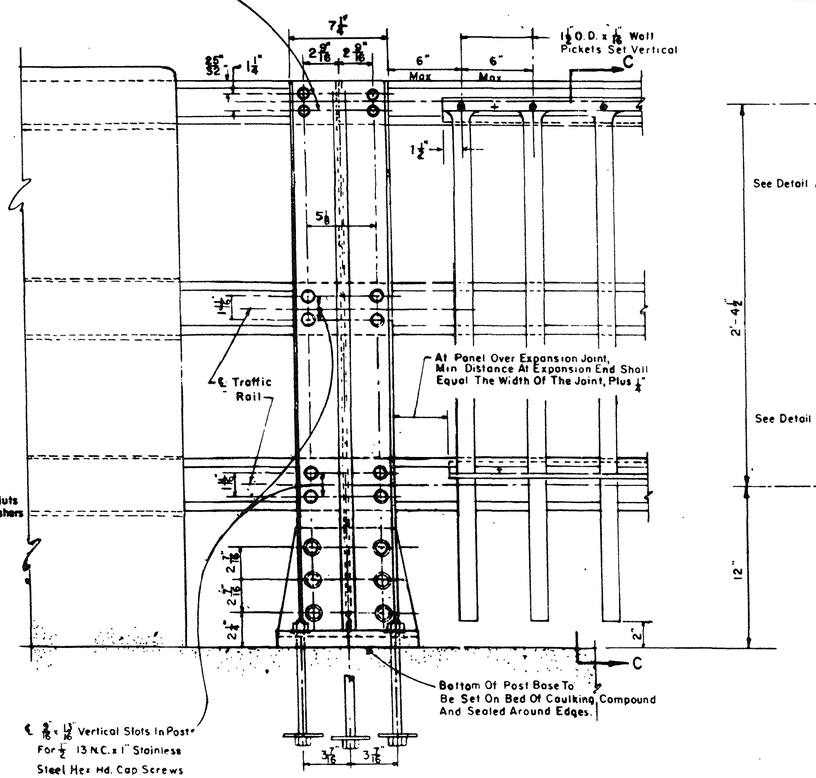
FOR HANDRAIL



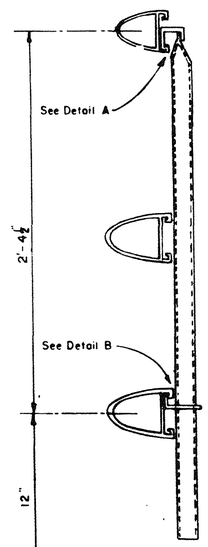
END DETAIL AT CONCRETE POST (N.T.S.)



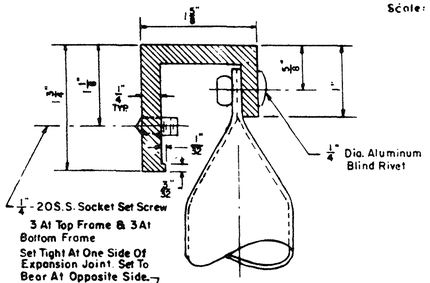
SIDE ELEVATION (PICKET NOT SHOWN)
Scale 3/16" = 1'



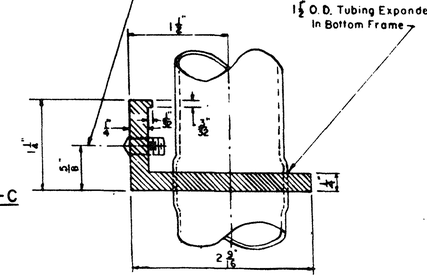
OUTSIDE ELEVATION OF POST
Scale 3/16" = 1'



SECTION C-C



DETAIL A
Scale: Full Size



DETAIL B
Scale: Full Size

NOTES:
- Maximum Post Spacing = 6'-6"
- Rails Shall Be Continuous From End To End Of Bridge With Splices, As Necessary.
- Rails Shall Be Continuous Over A Min. Of Four Posts Without Splices, Where Possible.
- Rails Shall Be Spliced In Panel Over Expansion Joints.
- Splices To Be Located 2'-0" From ℄ Of Post
- All Posts To Be Plumb When Profile Grade Exceeds 1.50%. See Detail Above.
- For Profile Grade Less Than 1.50%, Posts Shall Be Set Perpendicular To Grade.
- Design In Accordance With A.A.S.H.O. 1973 Standard Specifications For Highway Bridges And 1977 A.A.S.H.T.O. Interim Specifications.
- Picket Assembly Shall Not Be Used On Structures With Protective Screening.

MATERIAL NOTES:

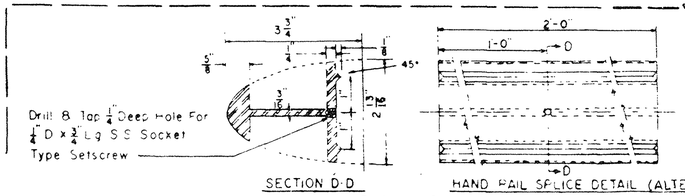
Rails, Posts, Post Bases.	ASTM B-221	Alloy 6061-T6
Splices, Clamp Bars.	ASTM B-221	Alloy 6061-T6
Rivets	ASTM B-316	Alloy 6061-T6
Aluminum Washers	ASTM B-209	Alloy Alclad 2024-T4
End Plugs	ASTM B-26	Alloy 43F Or 356F
Stainless Steel Cap And Set Screws	ASTM A-193	Grade B8
Steel Bolts, Nuts And Washers To Be In Accordance With The Provisions Of ASTM A325 And To Be Galvanized.		
Tubular Pickets	ASTM B-221	Alloy 6063-T5

Scales Apply To Full Size (22" x 36") Standard Plans.
SCALE: 1/4" = 1", UNLESS OTHERWISE NOTED.

* Note One-piece Base Plate May Be Substituted, Provided That The Required Length Is Cut From A One-piece Extrusion And Has The Geometric Shape Of The Two-piece Base Plate

Note
Where Galvanizing Is Damaged, The Damaged Areas Shall Be Thoroughly Cleaned And Given One Coat Of Zinc Dust-Zinc Oxide Paint Conforming To The Requirements For Type III As Specified In Federal Specification TT-P-641b.

For Barrier Rail Splice Detail Alternate, See Sheet No. 10 of 13.



SECTION D-D
HAND RAIL SPLICE DETAIL (ALTERNATE)
Scale: Half Size

COMMONWEALTH OF MASSACHUSETTS
DEPARTMENT OF PUBLIC WORKS

STANDARD METAL BRIDGE RAILINGS
TYPE AL-3 (ALUMINUM)

OCT. 1978

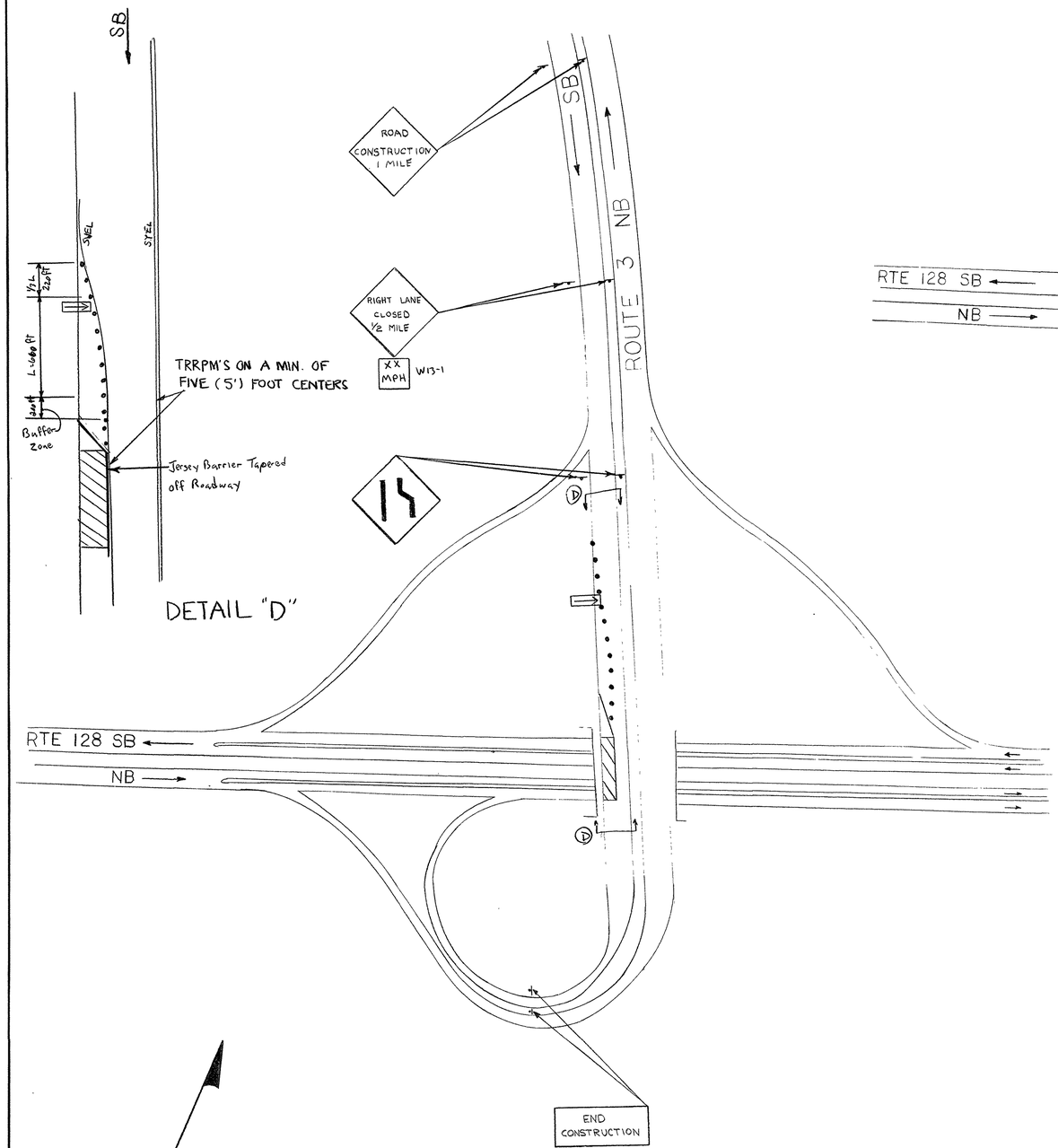
BRIDGE ENGINEER P.E. CHIEF ENGINEER

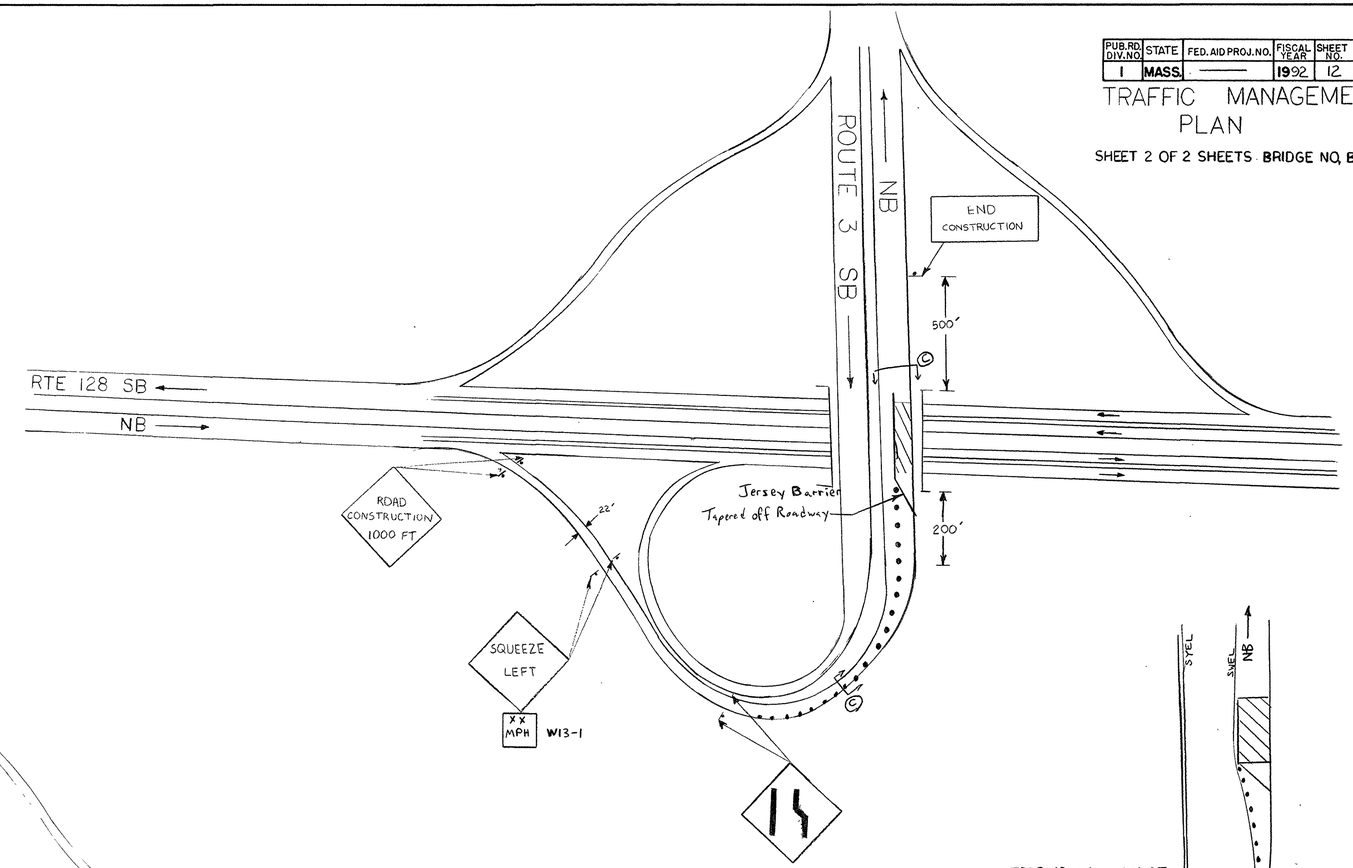
SHEET 11 OF 13 SHEETS BRIDGE NO. B-29-6

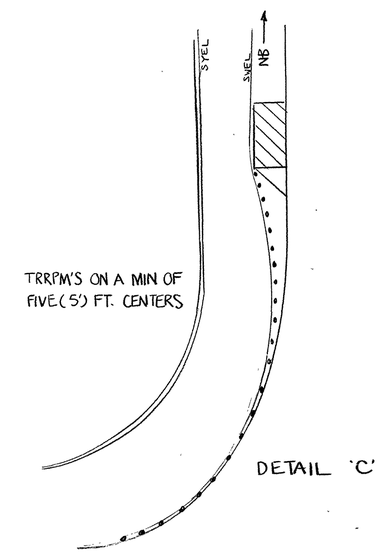
PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	12	13

TRAFFIC MANAGEMENT PLAN

SHEET 2 OF 2 SHEETS BRIDGE NO. B-29-6







WORK ZONE

PLASTIC DRUM w/TYPE C LIGHTS

SIGN LOCATION

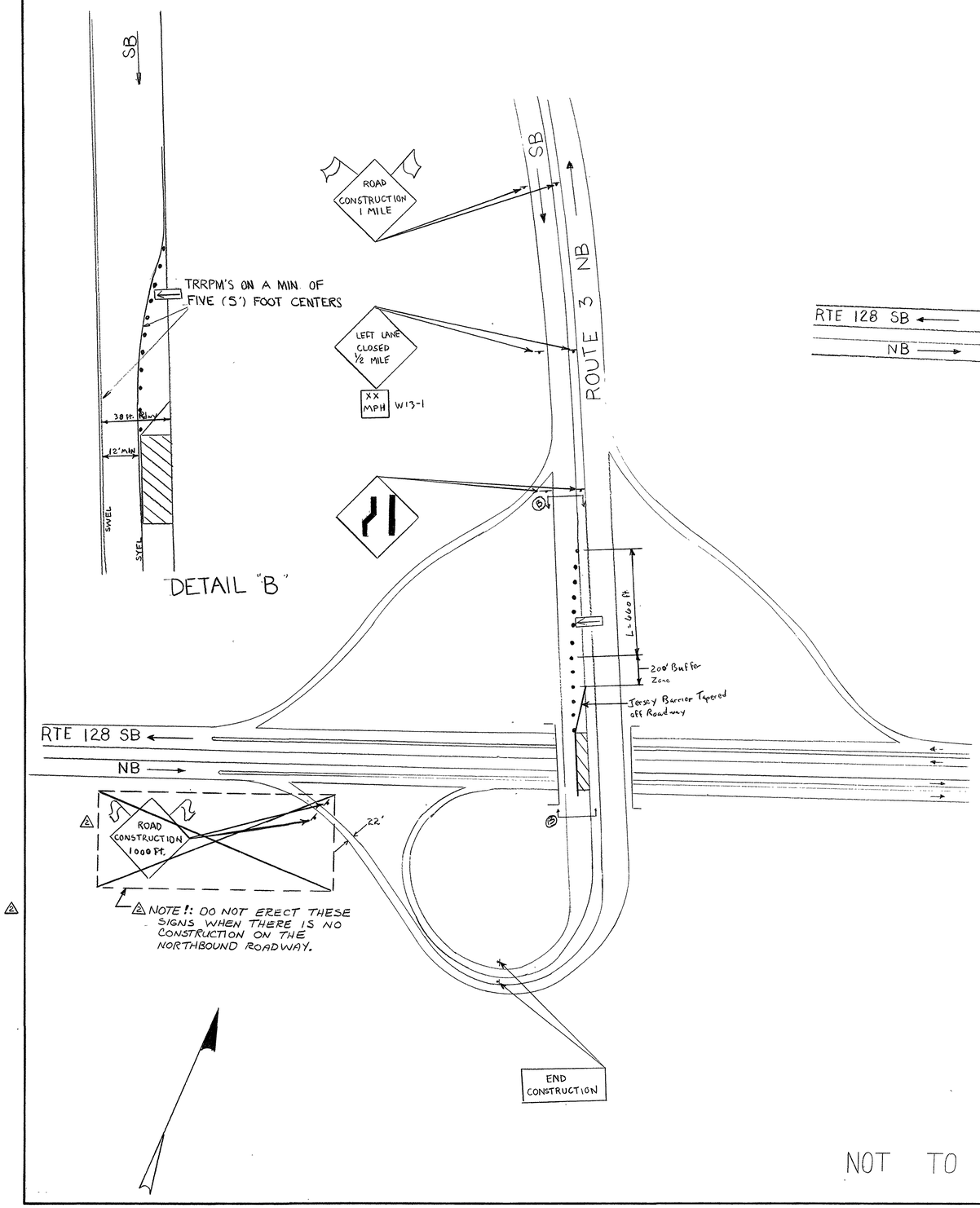
ARROW BOARD (FLASHING)

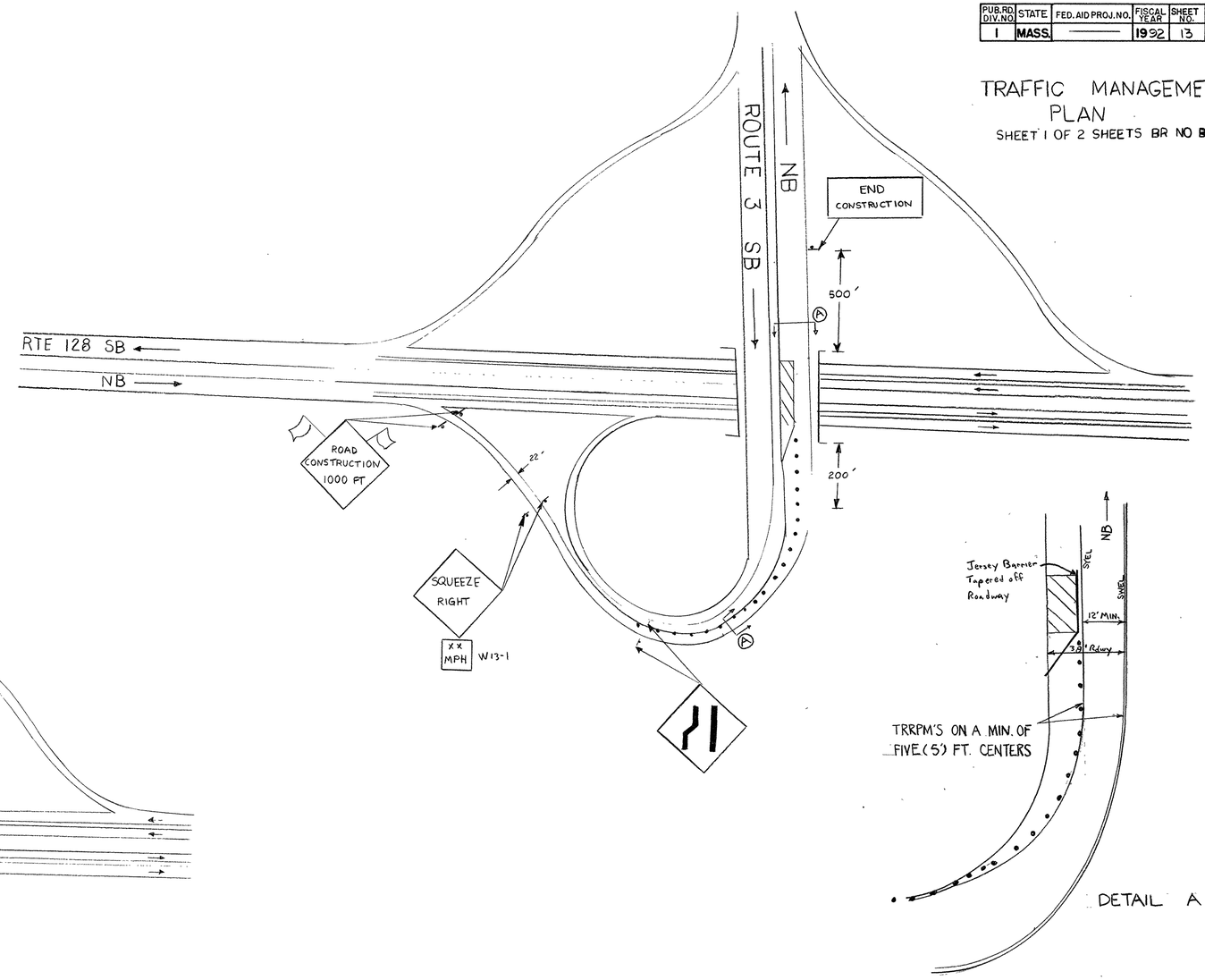
NOT TO SCALE

PUB.RD. DIV.NO.	STATE	FED. AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	———	1992	13	13

TRAFFIC MANAGEMENT PLAN

SHEET 1 OF 2 SHEETS BR NO B-29-6





WORK ZONE

PLASTIC DRUM w/TYPE C LIGHTS

SIGN LOCATION

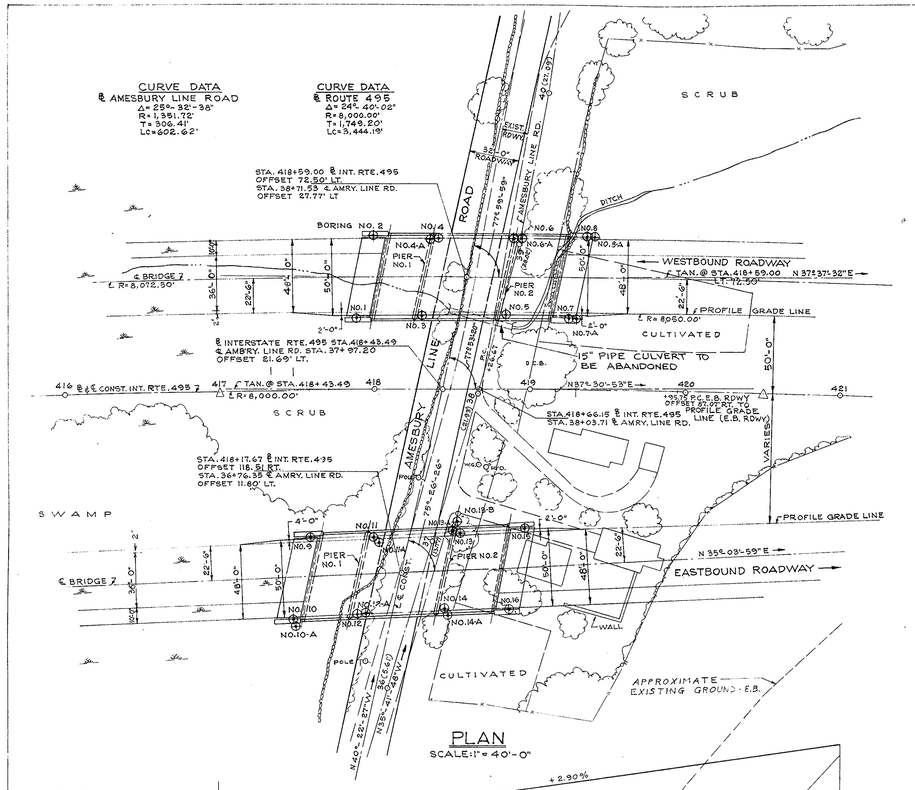
ARROW BOARD (FLASHING)

NOT TO SCALE

DATE	DESCRIPTION
10-22-91	SB CONST DETAIL; DELETE NB SIGNS & ADD NOTE.
	USE ONLY PRINTS OF LATEST DATE

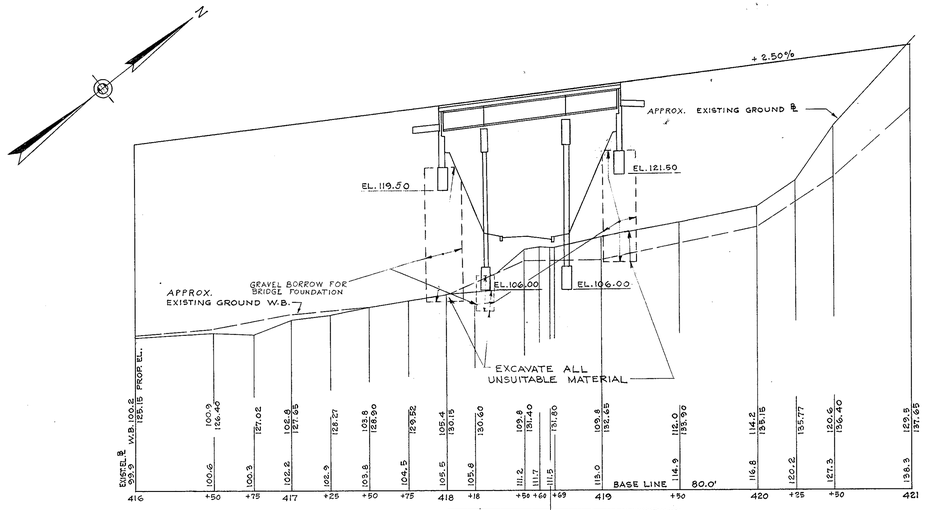
SHEET 13 OF 13 SHEETS BRIDGE NO B-29-6

PUB. ROAD DIV. NO	STATE	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	MASS.	I-495-6(8)101		68	409



PLAN

SCALE: 1" = 40'-0"



STA. 418+66.15 ℄ INTERSTATE RTE. 495 = STA. 38+03.71 ℄ AMESBURY LINE RD.

PROFILE INTERSTATE ROUTE 495

WESTBOUND ROADWAY

SCALES: HOR. 1" = 40'-0" VERT. 1" = 8'-0"

GENERAL NOTES

FOUNDATIONS:
MAY BE ALTERED IF NECESSARY, TO SUIT CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

REINFORCEMENT:
ALL REINFORCING STEEL BARS SHALL CONFORM TO A.S.T.M. SPECIFICATION A-305, UNLESS OTHERWISE SHOWN ON PLANS, REINFORCING BARS SHALL BE LAPPED 20 DIAMETERS TO MAKE A SPLICE EXCEPT THAT MAIN REINFORCING BARS NEAR THE TOP OF SLABS AND BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS SHALL BE LAPPED 35 DIAMETERS TO MAKE A SPLICE.

DESIGN:
IN ACCORDANCE WITH THE CURRENT SPECIFICATIONS OF THE A.A.S.H.O. FOR H-20-S16-44 MODIFIED MILITARY LOADING (1957 EDITION)

BENCH MARK:
STATION 417+50 RIGHT 250 FEET CHISELED □ ON BOULDER S.W. SIDE OLD AMESBURY LINE ROAD. ELEVATION 114.058 SEA LEVEL DATUM 1929

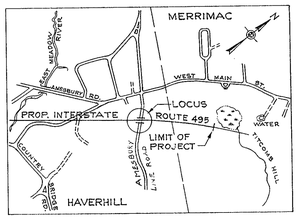
DATE SEAL:
TO BE PLACED ON THE INSIDE FACES OF THE N.W. CORNER WESTBOUND AND S.E. CORNER EASTBOUND END POSTS AS SHOWN IN DETAIL ON SHEET NO. 11
A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. SEAL WILL BE FURNISHED BY THE COMMONWEALTH AND PLACED BY THE CONTRACTOR.

ESTIMATED QUANTITIES

(NOT GUARANTEED)

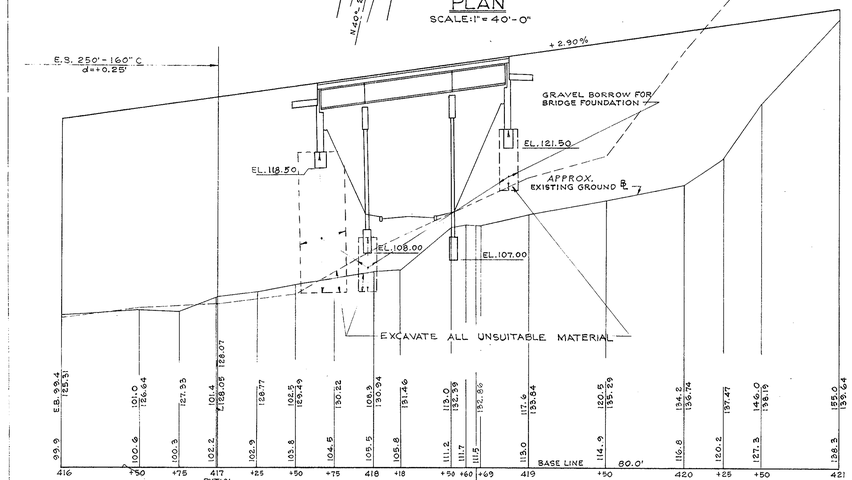
BRIDGE EXCAVATION	1700 CU. YDS.
CLASS B ROCK EXCAVATION	10 CU. YDS.
GRAVEL BORROW	300 CU. YDS.
GRAVEL BORROW FOR BRIDGE FOUNDATION	6000 CU. YDS.
CLASS I BIT. CONC. PAVE. TYPE I-1	200 TONS
ALUMINUM BRIDGE RAILINGS, OR METAL BRIDGE RAILINGS, TYPE K	533 L.F.
BRIDGE STRUCTURE (H-12-38)	1 LUMP SUM

NOTE:
STRUCTURAL STEEL 305,000 LBS.
STEEL REINFORCEMENT FOR STRUCTURES 192,000 LBS.
THESE QUANTITIES ARE PART OF LUMP SUM ITEM G15-3 FOR BRIDGE STRUCTURE (H-12-38) AND ARE NOT GUARANTEED.



LOCATION PLAN

NOT TO SCALE

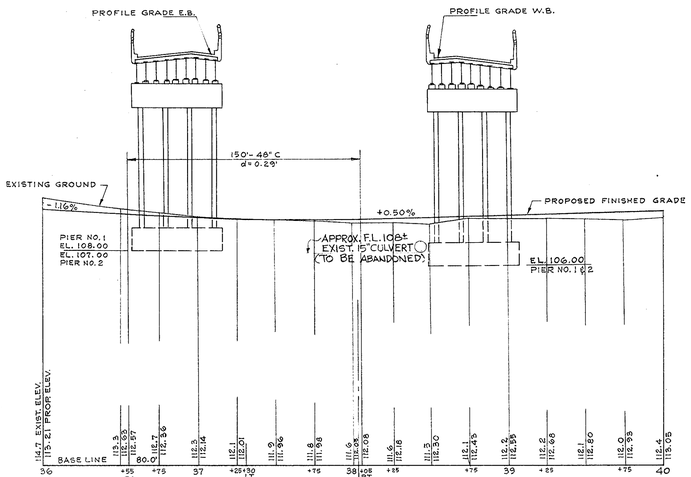


STA. 418+66.15 ℄ INTERSTATE RTE. 495 = STA. 38+03.71 ℄ AMESBURY LINE RD.

PROFILE INTERSTATE ROUTE 495

EASTBOUND ROADWAY

SCALES: HOR. 1" = 40'-0" VERT. 1" = 8'-0"



STA. 38+03.71 ℄ AMESBURY LINE RD. = STA. 418+66.15 ℄ INTERSTATE RTE. 495

PROFILE AMESBURY LINE ROAD

SCALES: HOR. 1" = 40'-0" VERT. 1" = 8'-0"

MAY 12, 1964	△1 REVISION SHEET 6
DEC. 28, 1963	ISSUED FOR CONSTRUCTION

THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED BRIDGE
HAVERHILL
INTERSTATE ROUTE 495 - OVER AMESBURY LINE ROAD

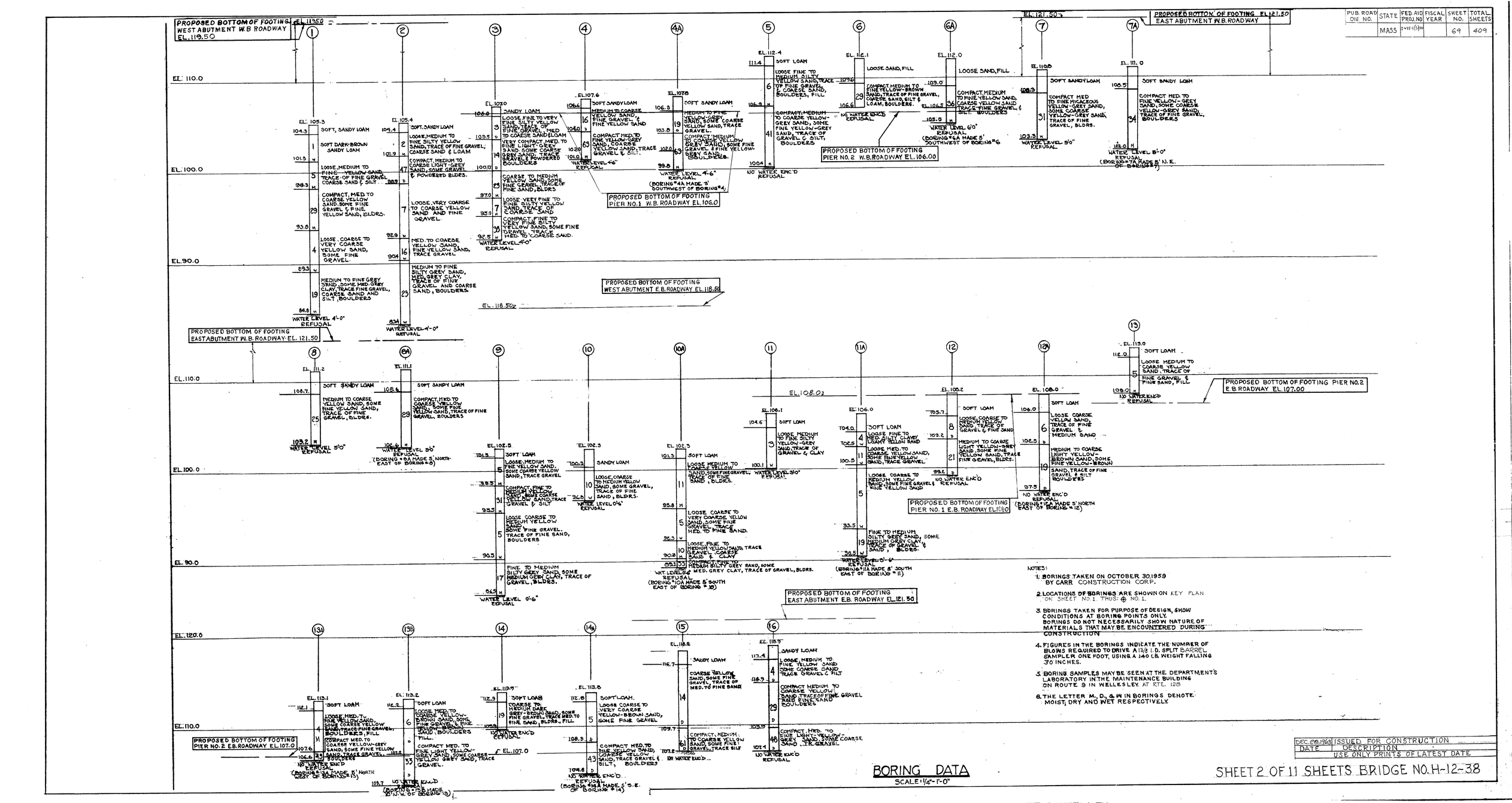
SCALE: AS NOTED
DEC., 1963

OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 NASHUA ST., BOSTON, MASS.

BRIDGE ENGINEER — CHIEF ENGINEER

SHEET 1 OF 11 SHEETS BRIDGE No. H-12-38

PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS	I-495-1(3)910		69	409



NOTES:

1. BORINGS TAKEN ON OCTOBER 30, 1959 BY CARR CONSTRUCTION CORP.
2. LOCATIONS OF BORINGS ARE SHOWN ON KEY PLAN ON SHEET NO. 1 THUS: ⊕ NO. 1.
3. BORINGS TAKEN FOR PURPOSE OF DESIGN, SHOW CONDITIONS AT BORING POINTS ONLY. BORINGS DO NOT NECESSARILY SHOW NATURE OF MATERIALS THAT MAY BE ENCOUNTERED DURING CONSTRUCTION
4. FIGURES IN THE BORINGS INDICATE THE NUMBER OF BLOWS REQUIRED TO DRIVE A 1 3/8 I.D. SPLIT BARREL SAMPLER ONE FOOT, USING A 140 LB. WEIGHT FALLING 30 INCHES.
5. BORING SAMPLES MAY BE SEEN AT THE DEPARTMENT'S LABORATORY IN THE MAINTENANCE BUILDING ON ROUTE 9 IN WELLESLEY AT RTE. 128
6. THE LETTER M, D, & W IN BORINGS DENOTE MOIST, DRY AND WET RESPECTIVELY

DATE	DESCRIPTION
DEC. 28, 1963	ISSUED FOR CONSTRUCTION

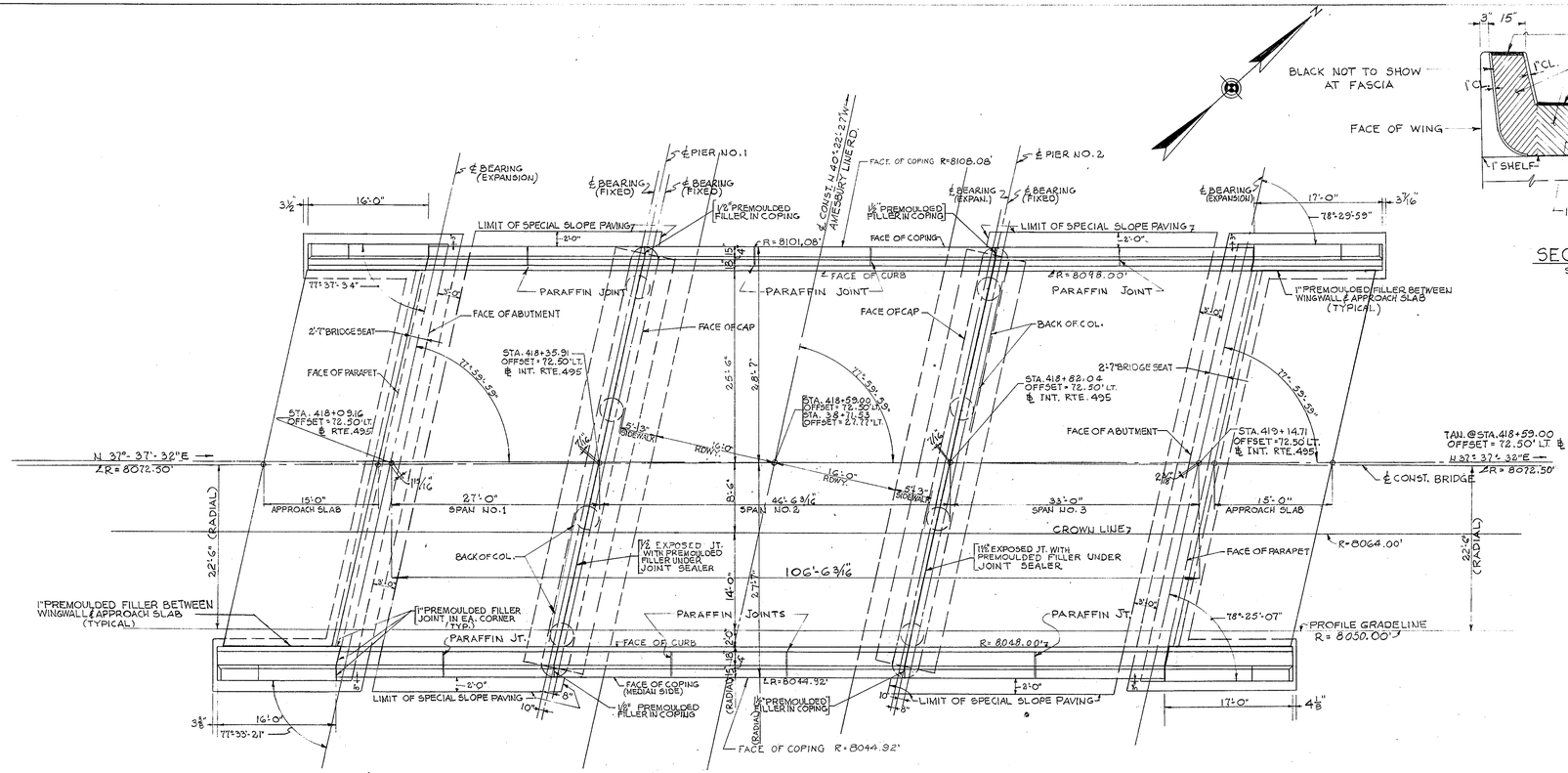
USE ONLY PRINTS OF LATEST DATE

BORING DATA

SCALE: 1 1/4" = 1'-0"

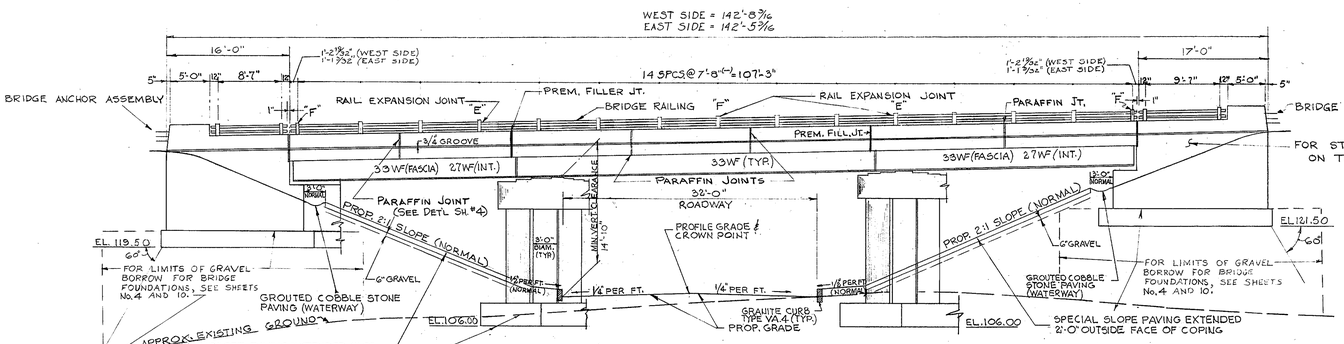
SHEET 2 OF 11 SHEETS BRIDGE NO. H-12-38

PUB. ROAD DIV. Nº	STATE	FED. AID PROJ. Nº	FISCAL YEAR	SHEET Nº	TOTAL SHEETS
	MASS.	(C-195-1.6)170		70	409

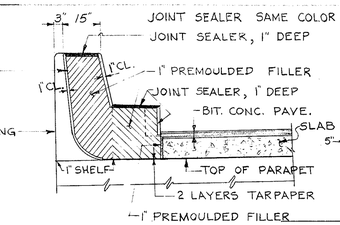


BRIDGE DECK PLAN
(WESTBOUND RDWY.)
SCALE: 1/8" = 1'-0"

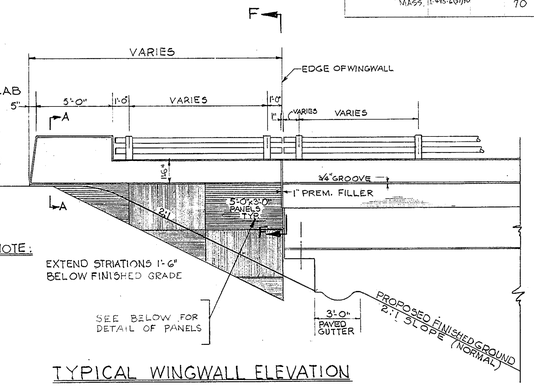
NOTE: FOR PARAFFIN JOINT DETAILS, SEE SHEET No. 4



EASTERLY ELEVATION
(WESTERLY ELEV. SIMILAR)
~ W.B. ROADWAY ~
SCALE: 1/8" = 1'-0"

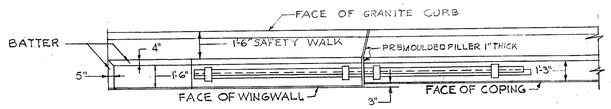


SECTION F-F
SCALE: 1/2" = 1'-0"

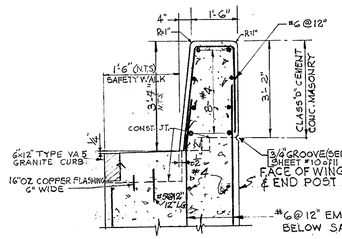


NOTE:

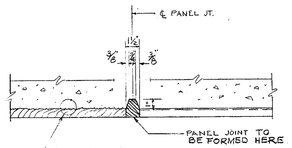
TYPICAL WINGWALL ELEVATION
SCALE: 1/4" = 1'-0"



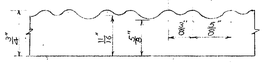
TYPICAL WINGWALL PLAN
SCALE: 1/4" = 1'-0"



SECTION A-A
SCALE: 1/2" = 1'-0"



TYPICAL STRIATED PANEL JOINT
SCALE: 1 1/2" = 1'-0"



DETAIL OF STRIATIONS
SCALE - FULL SIZE

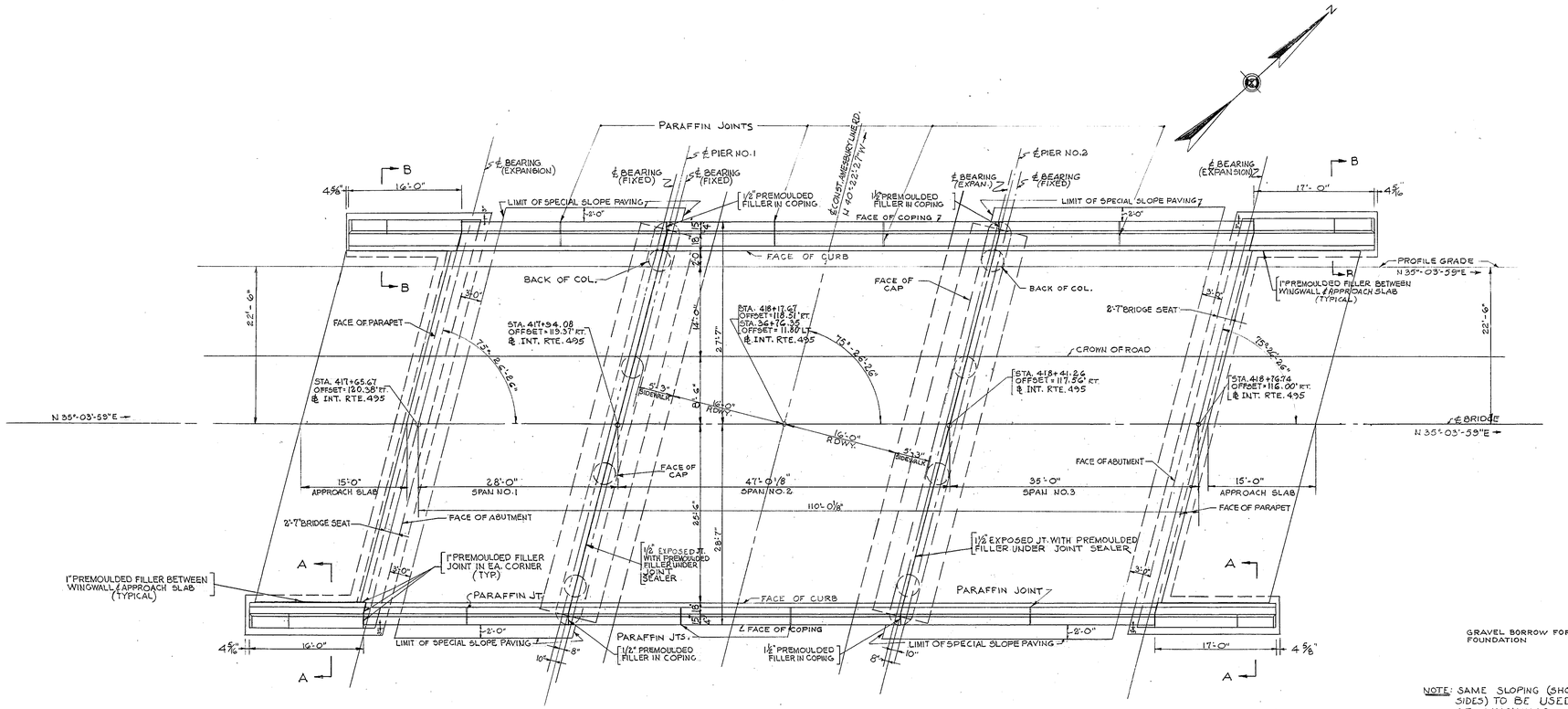
RAIL NOTES

1. ALL POSTS MARKED "F" INDICATE LOCATION OF FIXED POSTS FOR ALUMINUM BRIDGE RAILING ONLY.
2. ALL POSTS MARKED "E" INDICATE LOCATION OF EXPANSION POSTS FOR ALUMINUM BRIDGE RAILING ONLY.
3. ALL LOCATIONS NOTED AS "RAIL EXPANSION JOINT" REFER TO LOCATION OF RAIL EXP. JTS. FOR METAL BRIDGE RAILING TP. "K" ONLY, AND THEY MUST CROSS FILLER JOINTS OVER PIERS
4. ALL POSTS ON ABUTMENT WINGS ARE FIXED POSTS.

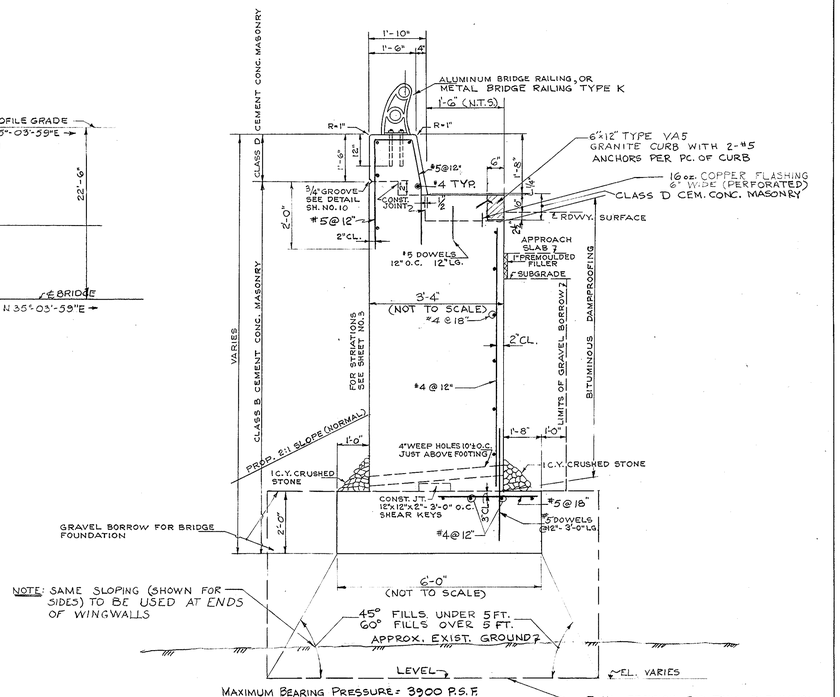
DATE	DESCRIPTION
DEC. 28, 1963	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

SHEET 3 OF 11 SHEETS BRIDGE No. H-12-38

PUB. ROAD DIV. Nº	STATE	FED. AID PROJ. Nº	FISCAL YEAR	SHEET Nº	TOTAL SHEETS
	MASS	I-495-(6)14		71	409



BRIDGE DECK PLAN
(EASTBOUND RDWY.)
SCALE: 1/8" = 1'-0"

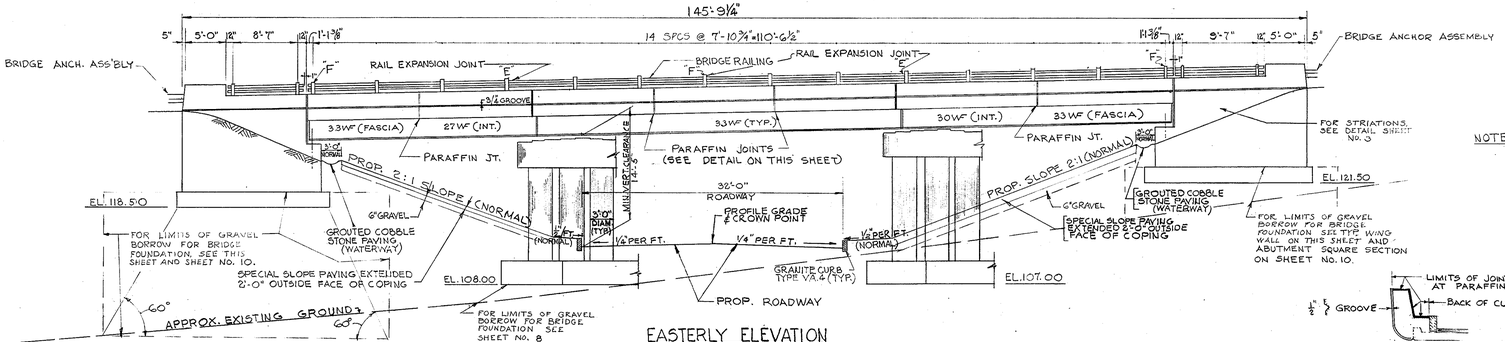


NOTE: SAME SLOPING (SHOWN FOR SIDES) TO BE USED AT ENDS OF WINGWALLS

Maximum Bearing Pressure = 3900 P.S.F.

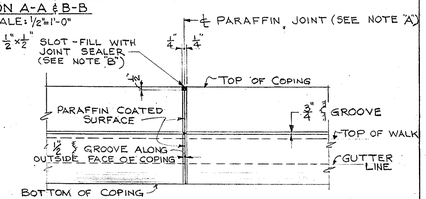
FINAL DECISION FOR THIS ELEVATION TO BE LEFT TO THE ENGINEER

TYPICAL WING WALL
SECTION A-A & B-B
SCALE: 1/2" = 1'-0"



EASTERLY ELEVATION
(WESTERLY ELEV. SIMILAR)
~E.B. ROADWAY~
SCALE: 1/8" = 1'-0"

NOTE: FOR RAIL NOTES, SEE RAIL NOTES #1 TO #4 INCLUSIVE ON SHEET NO. 3.



PARAFFIN JOINT THROUGH WALK AND COPING
SCALE: ½" = 1'-0"

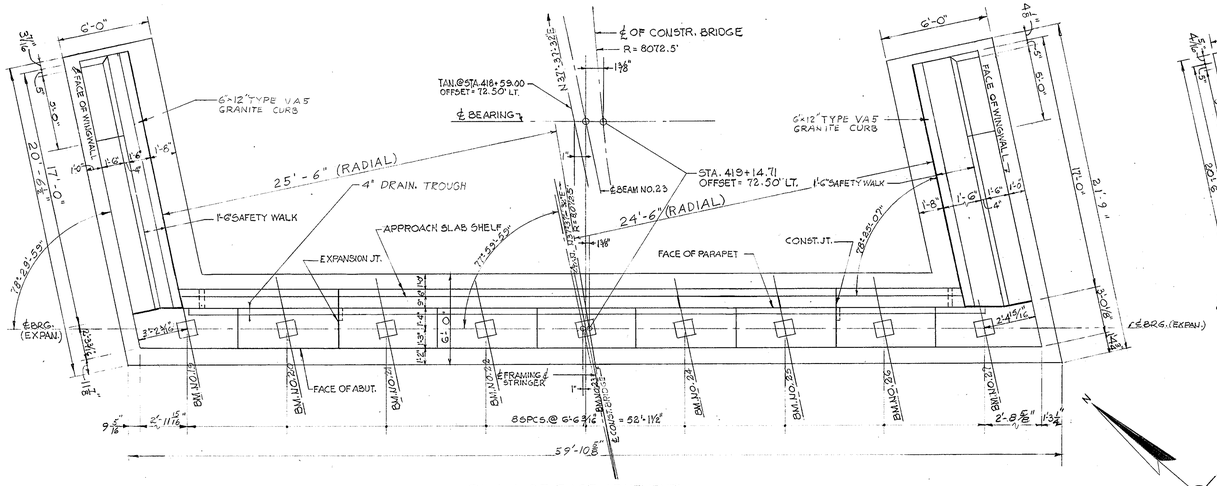
SKETCH "B"

NOTE "A": SAFETY WALKS & COPINGS SHALL BE POURED IN ALTERNATE SECTIONS AND SHALL HAVE A CURING PERIOD OF 14 DAYS BETWEEN POURS. JOINTS SHALL BE PLACED AT LEAST EVERY 20'-5" & DO NOT CARRY HORIZONTAL #4 BARS IN SAFETY WALK AND COPING THROUGH THE JOINT. STOP ALL HORIZONTAL BARS AT JOINT.

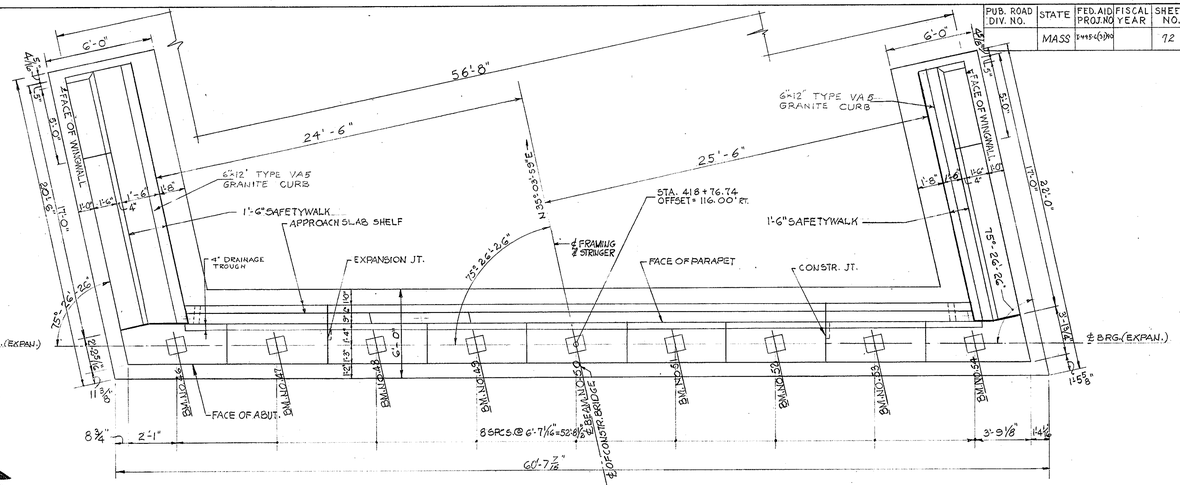
NOTE "B": CARRY ½"x½" SLOT ALONG TOP OF COPING, DOWN THE INSIDE FACE OF THE COPING, AND ALONG THE TOP OF THE SAFETY WALK TO THE BACK OF THE GRANITE CURB. FILL WITH JOINT SEALER. (SEE SKETCH "B")

DEC. 28, 1963	ISSUED FOR CONSTRUCTION
	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

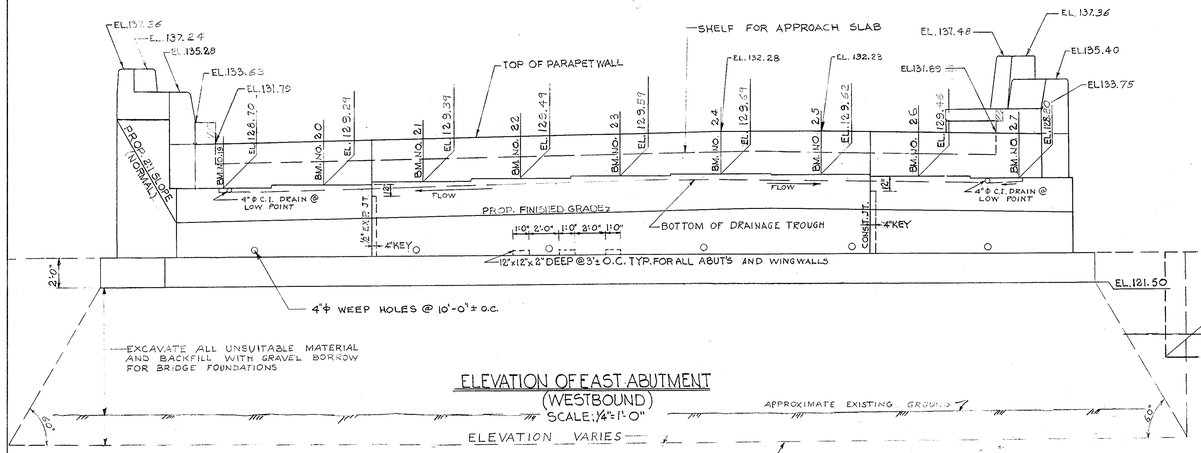
PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS	I-495-1(53)X6		72	409



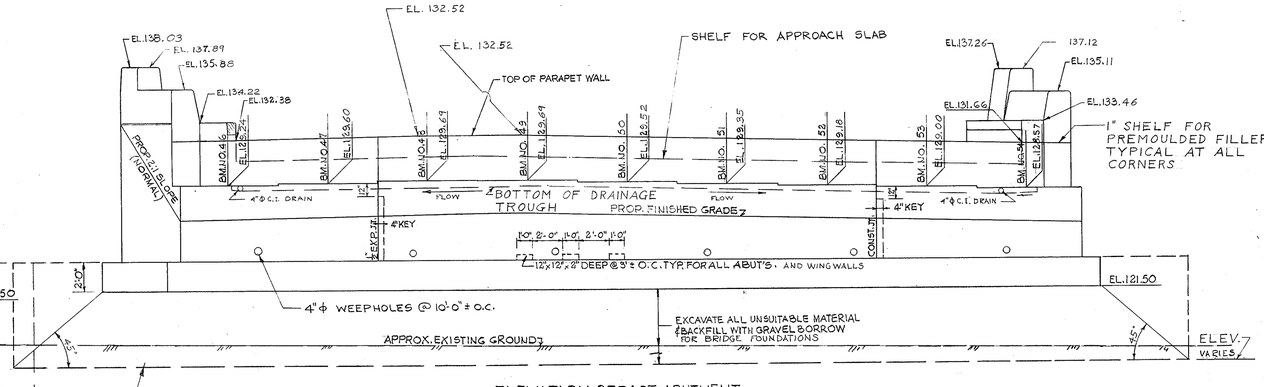
PLAN OF EAST ABUTMENT
(WESTBOUND)
SCALE: 1/4" = 1'-0"



PLAN OF EAST ABUTMENT
(EASTBOUND)
SCALE: 1/4" = 1'-0"



ELEVATION OF EAST ABUTMENT
(WESTBOUND)
SCALE: 1/4" = 1'-0"



ELEVATION OF EAST ABUTMENT
(EASTBOUND)
SCALE: 1/4" = 1'-0"

NOTE:
FOR ABUT. SQR. SECTION SEE SHEET NO. 10
FOR WINGWALL SQR. SECTION SEE SHEET NO. 4
FOR CONST. & EXPANSION JT. DETAILS SEE SHEET NO. 11
ALL BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED FOR THE PERMANENT BEAM CAMBER

FINAL DECISION FOR THIS ELEVATION TO BE LEFT TO THE ENGINEER

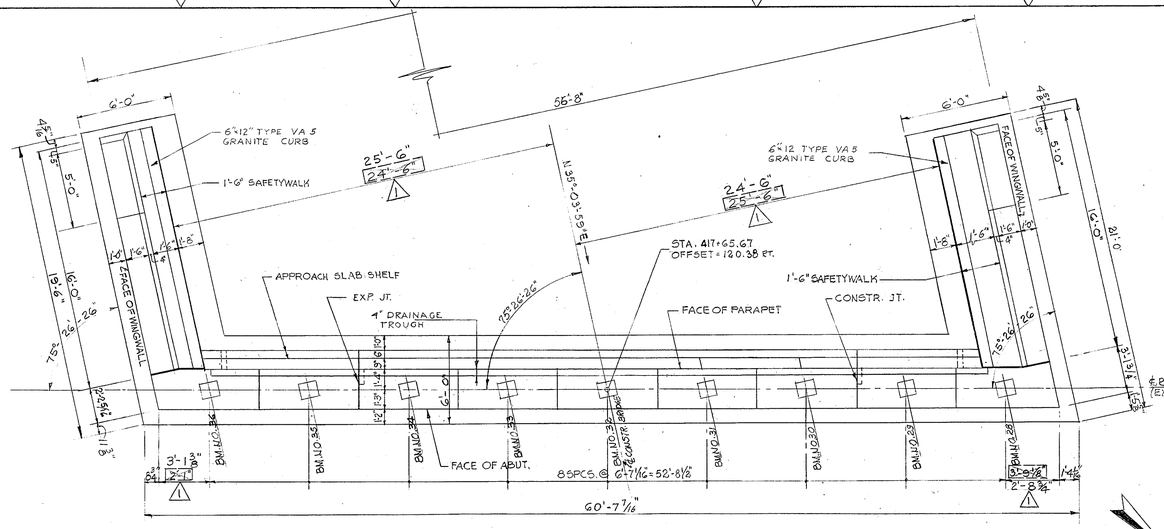
NOTE: MAX. PRESSURE UNDER ABUTMENTS = 3,900 LBS. PER SQ. FT.

DATE	DESCRIPTION
DEC. 28, 1963	ISSUED FOR CONSTRUCTION

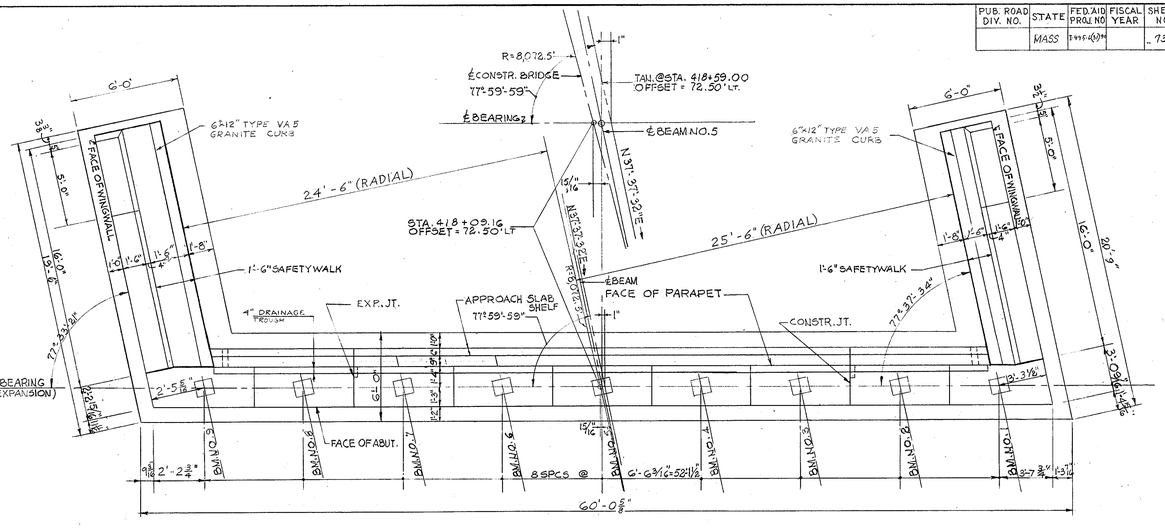
USE ONLY PRINTS OF LATEST DATE

SHEET 5 OF 11 SHEETS BRIDGE Nº H-12-38

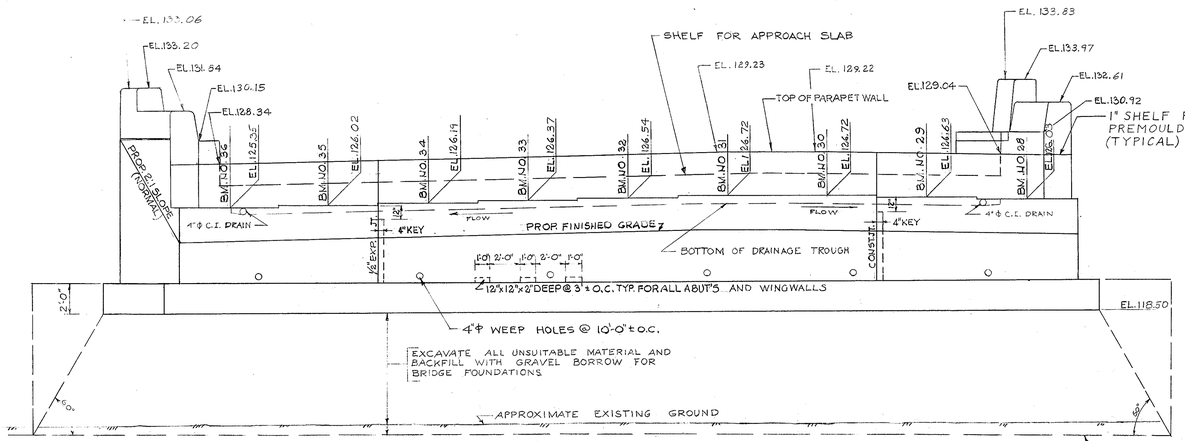
PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS	IM-F-(49)**		73	409



PLAN OF WEST ABUTMENT
(EASTBOUND)
SCALE: 1/4"=1'-0"



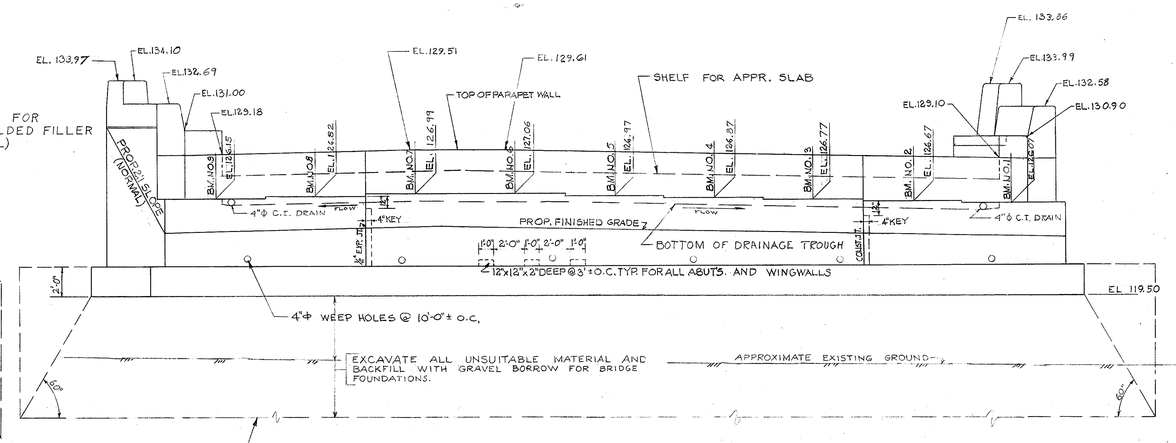
PLAN OF WEST ABUTMENT
(WESTBOUND)
SCALE: 1/4"=1'-0"



ELEVATION OF WEST ABUTMENT
(EASTBOUND)
SCALE: 1/4"=1'-0"

NOTE:

FOR ABUT. SQR. SECTION SEE SHT. NO. 10
FOR WINGWALL SQR. SECTION SEE SHT. NO. 4
FOR CONSTRUCTION AND EXPANSION JOINT DETAIL, SEE SHEET NO. 11.
ALL BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED FOR THE PERMANENT BEAM CAMBER.



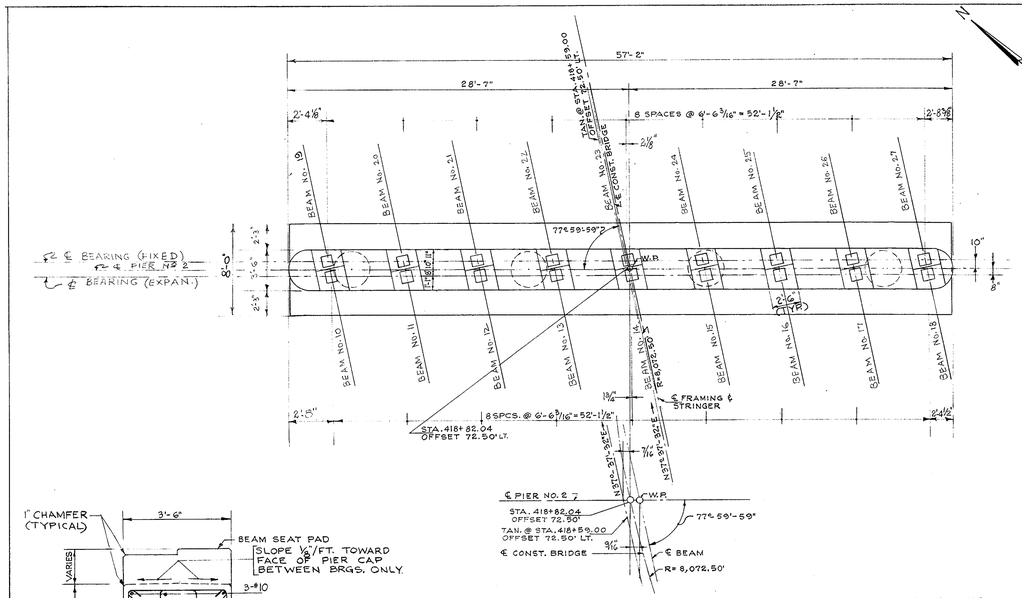
ELEVATION OF WEST ABUTMENT
(WESTBOUND)
SCALE: 1/4"=1'-0"

DATE	DESCRIPTION
MAY 12, 1964	⚠ REVISION - DIMENSIONS W. ABUT. (E.B.) - REVISED
DEC. 28, 1963	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

SHEET 6 OF 11 SHEETS BRIDGE Nº H-12:38

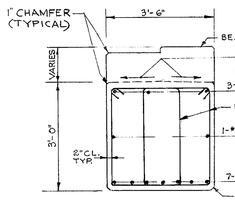
PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS	BRF-[illegible]		74	409



PLAN OF PIER NO. 2

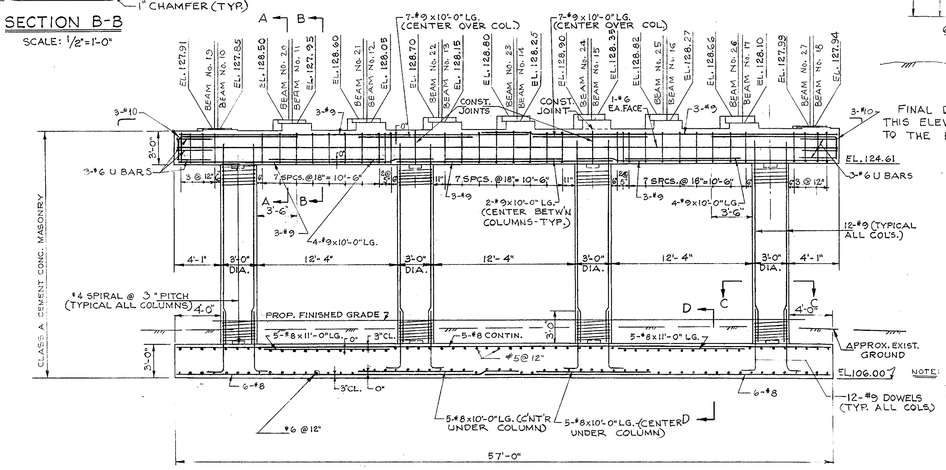
WESTBOUND ROADWAY

SCALE: 3/16"=1'-0"



SECTION B-B

SCALE: 1/2"=1'-0"



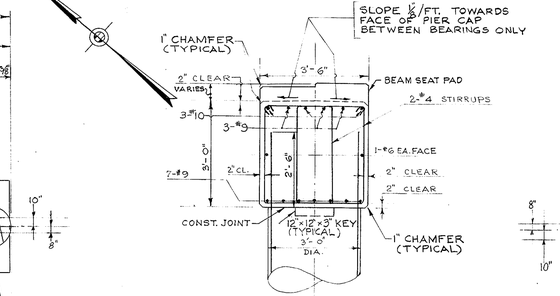
ELEVATION OF PIER Nº 2

LOOKING NORTHEAST

WESTBOUND ROADWAY

SCALE: 3/16"=1'-0"

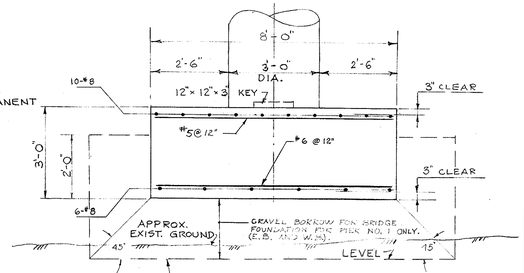
NOTE: ALL BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED FOR PERMANENT BEAM CAMBER.



SECTION A-A

SCALE: 1/2" = 1'-0"

NOTE:- 1" CHAMFER AT ALL EDGES OF PIER CAP

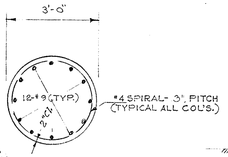


FINAL DECISION FOR THIS ELEV. TO BE LEFT TO THE ENGINEER

SECTION D-D

SCALE: 1/2" = 1'-0"

PIER NOTES:- IN PLACING OF CONC. PIER CAP SECOND POUR SHALL TAKE PLACE NO EARLIER THAN 24 HOURS AFTER THE FIRST POUR.

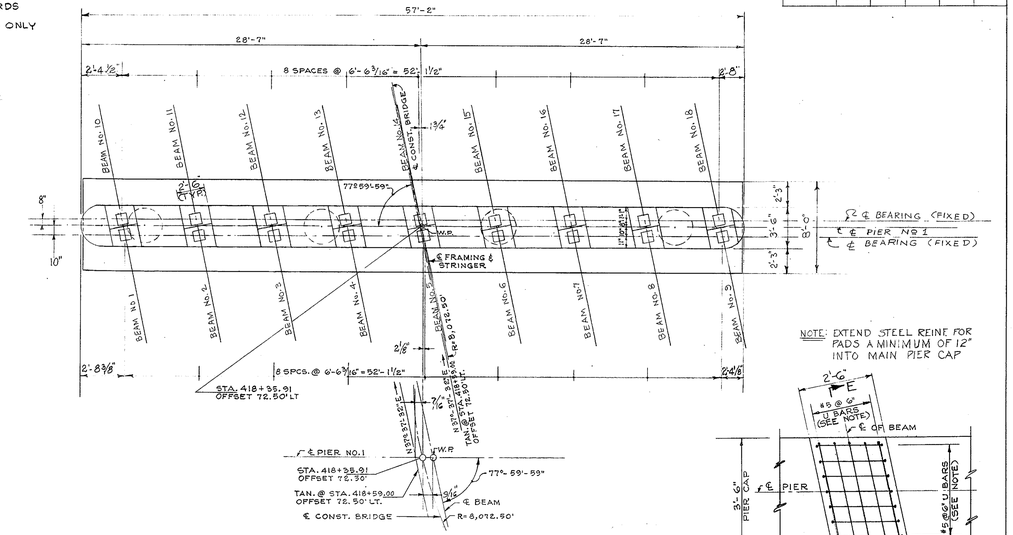


NOTE: SPIRAL REINFORCEMENT TO EXTEND FROM TOP OF FOOTING TO LEVEL OF BOTTOM REINFORCEMENT IN PIER CAP. REINF. DETAILS SHOWN ARE TYPICAL FOR ALL PIERS

SECTION C-C

SCALE: 1/2" = 1'-0"

MAX. SOIL BEARING PRESSURE: = 3,400 LBS. PER SQ. FT.

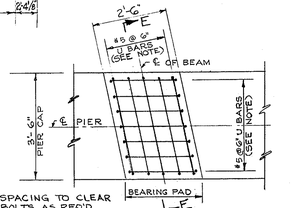


PLAN OF PIER NO. 1

WESTBOUND ROADWAY

SCALE: 3/16"=1'-0"

NOTE: EXTEND STEEL REINF. FOR PADS A MINIMUM OF 12" INTO MAIN PIER CAP



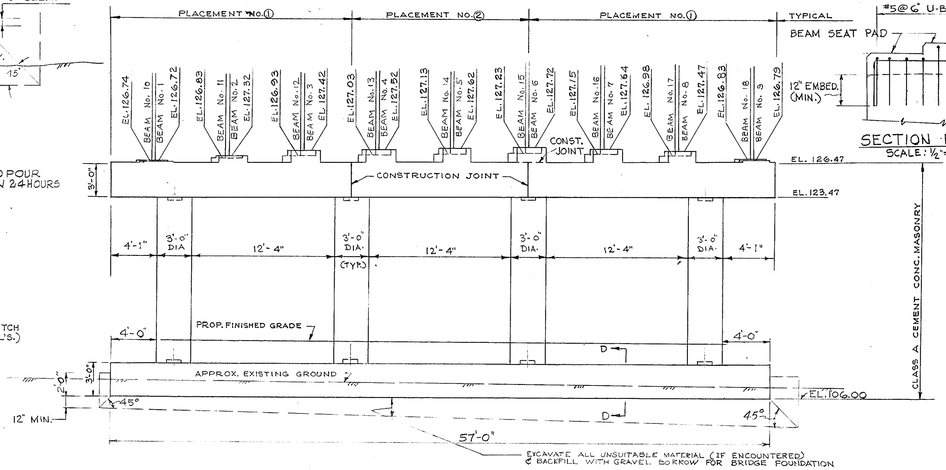
NOTE: ADJUST SPACING TO CLEAR ANCHOR BOLTS AS REQ'D.

DETAIL OF BEARING PAD

SHOWING REINFORCEMENT

SCALE: 1/2"=1'-0"

(SEE NOTE ON SHEET NO. 8)

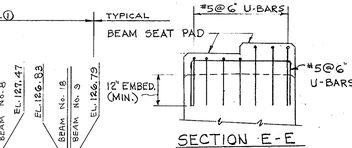


ELEVATION OF PIER Nº 1

LOOKING NORTHEAST

WESTBOUND ROADWAY

SCALE: 3/16"=1'-0"

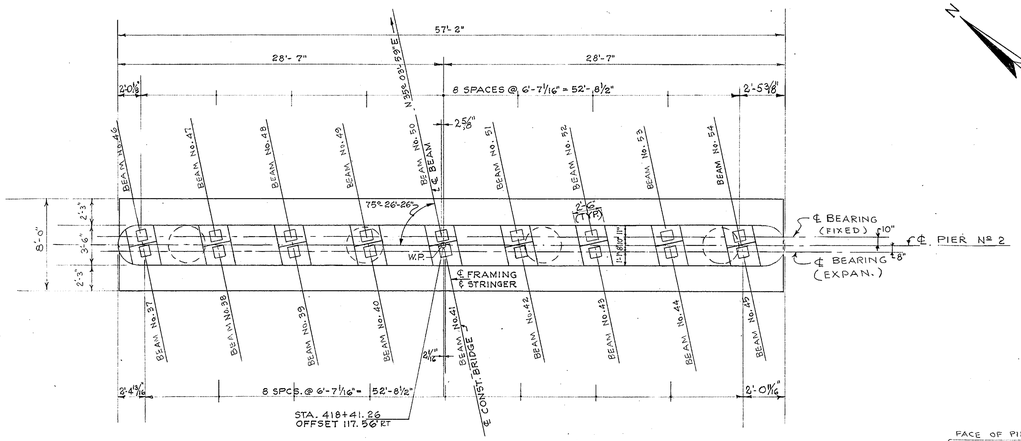


SECTION E-E

SCALE: 1/2"=1'-0"

DEC 28, 1963	ISSUED FOR CONSTRUCTION
	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

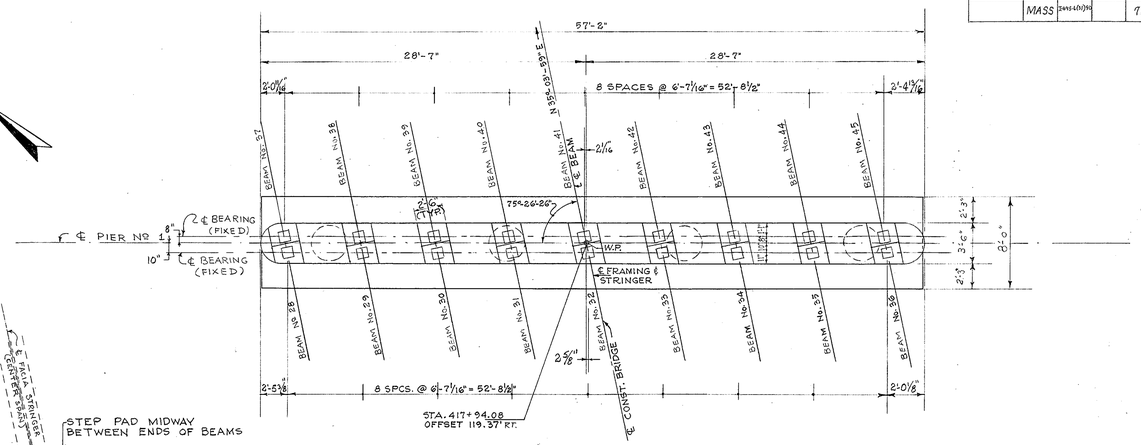
PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	MASS	BRIS-4(10)96		15	409



PLAN OF PIER Nº 2

EASTBOUND ROADWAY

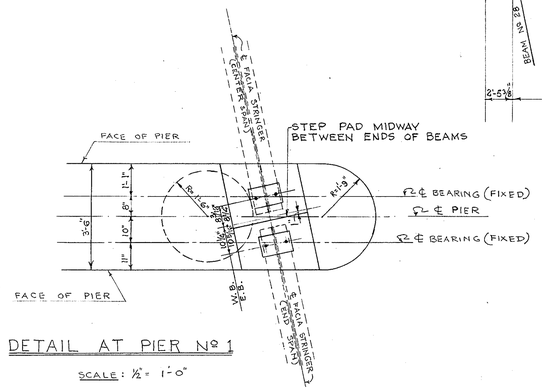
SCALE: 3/16"=1'-0"



PLAN OF PIER Nº 1

EASTBOUND ROADWAY

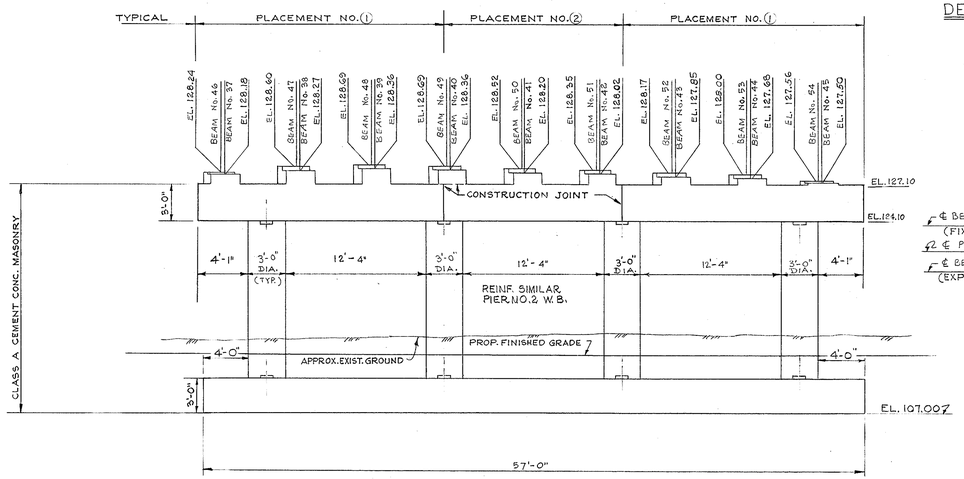
SCALE: 3/16"=1'-0"



DETAIL AT PIER Nº 1

SCALE: 1/2" = 1'-0"

NOTE: TYPICAL DETAIL OF LIMITS OF GRAVEL BORROW FOR BRIDGE FOUNDATION AT PIERS - SEE SECT D-D ON SHEET NO. 7.

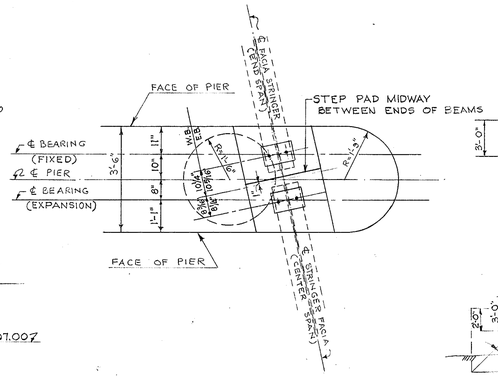


ELEVATION OF PIER Nº 2

LOOKING NORTHEAST

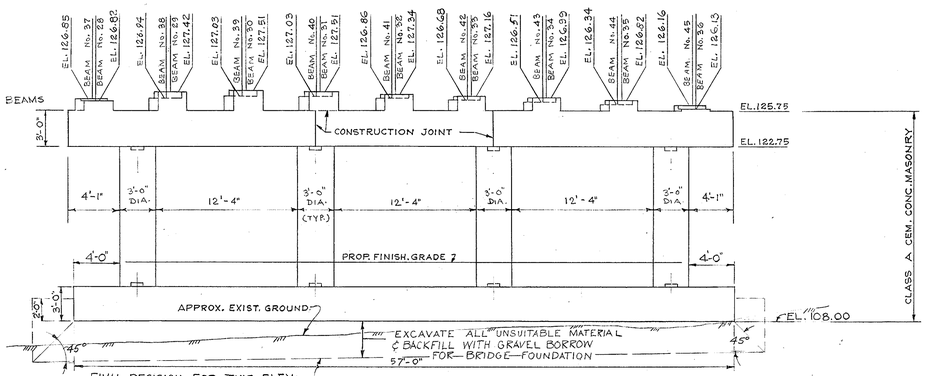
EASTBOUND ROADWAY

SCALE: 3/16"=1'-0"



DETAIL AT PIER Nº 2

SCALE: 1/2" = 1'-0"



FOR PIER NOTES SEE SHEET NO. 7

ELEVATION OF PIER Nº 1

LOOKING NORTHEAST

EASTBOUND ROADWAY

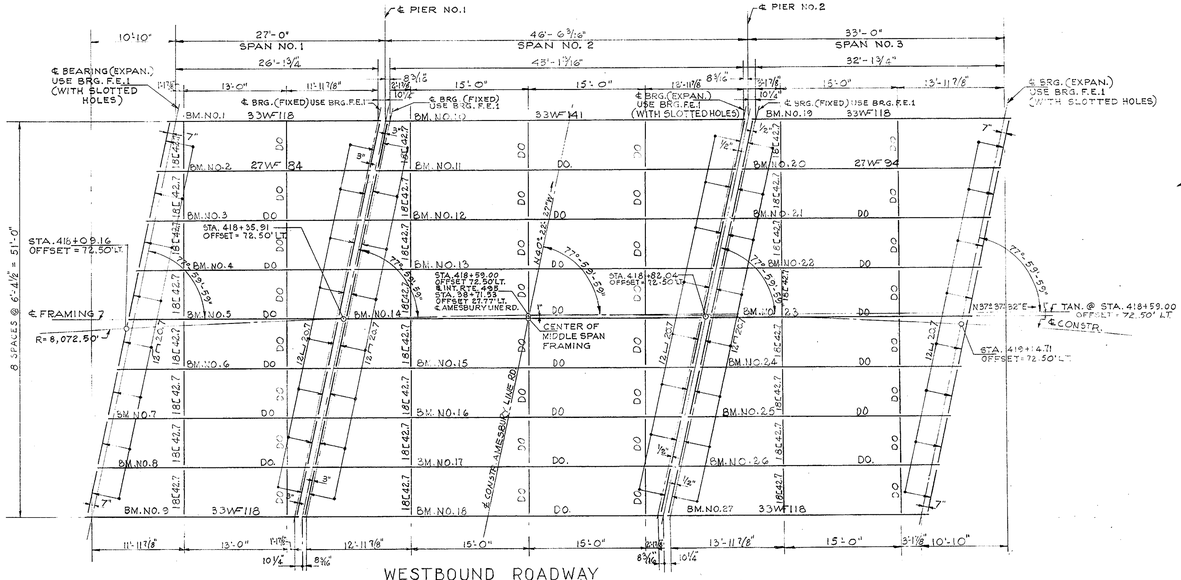
SCALE: 3/16"=1'-0"

NOTE:

1) PADS OVER CONSTR. JOINTS IN PIER CAP MUST BE PLACED 24 HOURS AFTER PIER CAP HAS BEEN COMPLETED. ALL OTHER PADS SHALL BE POURED MONOLITHICALLY.
2) ALL PADS 4" OR MORE IN HEIGHT MUST BE REINFORCED AS SHOWN ON SHEET NO. 7
3) ALL BRIDGE SEAT ELEVATIONS HAVE BEEN ADJUSTED FOR THE PERMANENT CAMBER.

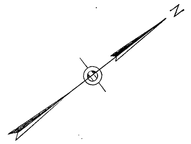
DEC. 28, 1963	ISSUED FOR CONSTRUCTION
	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

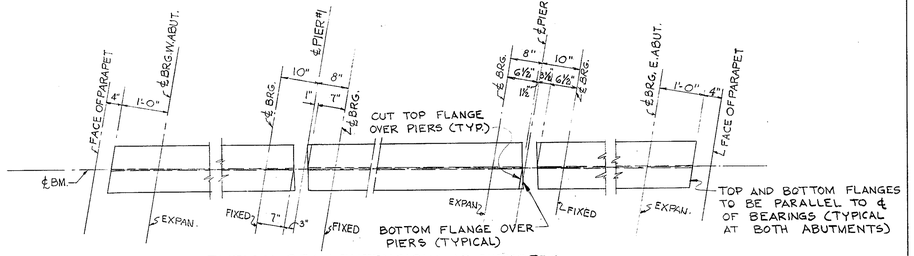
PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	MASS	BRS-L(3)10		76	409



WESTBOUND ROADWAY

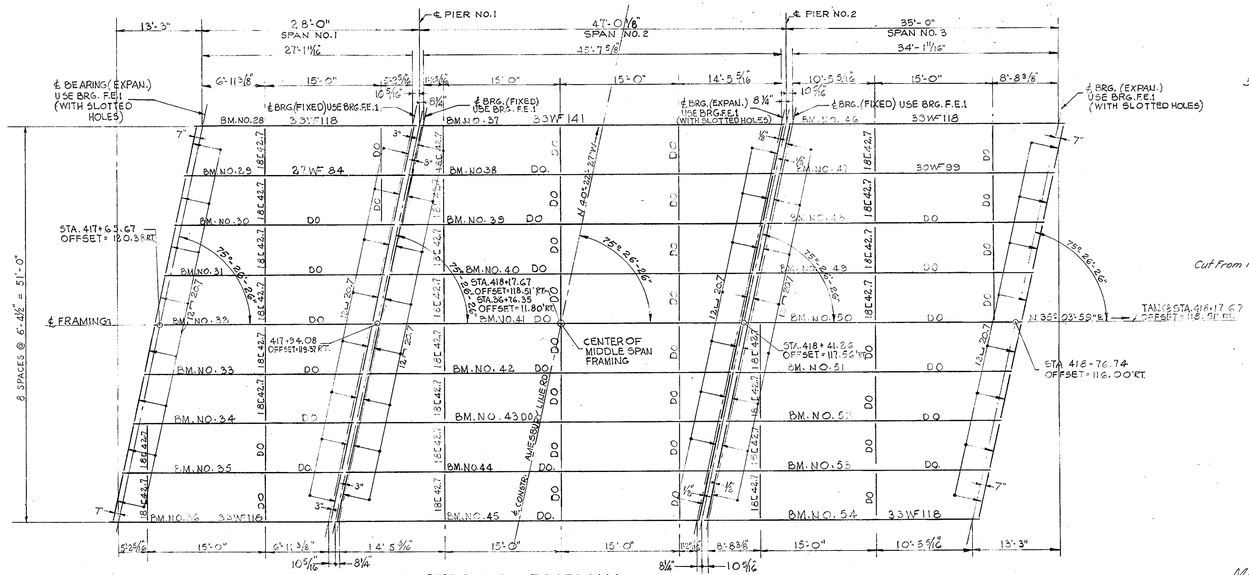
SCALE: 1/8" = 1'-0"





TYPICAL BEAM EXTENSIONS AT SUPPORTS

SCALE: 3/4" = 1'-0"



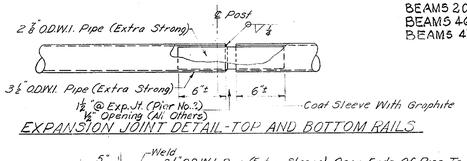
EASTBOUND ROADWAY

FRAMING PLANS

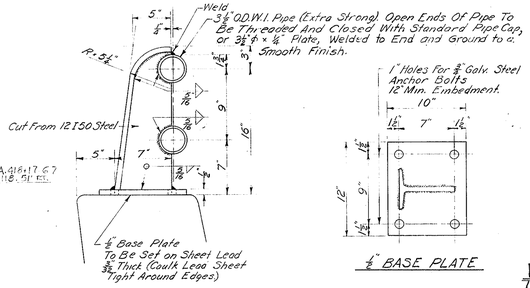
Scale: 1/8" = 1'-0"

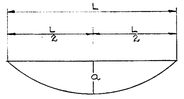
CAMBER NOTES:

BEAMS 1, 9, 28 & 36 INCLUSIVE SHALL BE CAMBERED NOT LESS THAN 1/2" AND NOT MORE THAN 3/4"
BEAMS 2 TO 8 & 29 TO 35 INCLUSIVE SHALL BE CAMBERED NOT LESS THAN 5/8" AND NOT MORE THAN 7/8"
BEAMS 10 TO 18 & 37 TO 45 INCLUSIVE SHALL BE CAMBERED NOT LESS THAN 1" AND NOT MORE THAN 1 1/4"
BEAMS 19 & 27 SHALL BE CAMBERED NOT LESS THAN 5/8" AND NOT MORE THAN 7/8"
BEAMS 20 TO 26 INCLUSIVE SHALL BE CAMBERED NOT LESS THAN 3/4" AND NOT MORE THAN 1"
BEAMS 46 & 54 SHALL BE SHALL BE CAMBERED NOT LESS THAN 5/8" AND NOT MORE THAN 7/8".
BEAMS 47 TO 53 SHALL BE SHALL BE CAMBERED NOT LESS THAN 3/8" AND NOT MORE THAN 1".



EXPANSION JOINT DETAIL-TOP AND BOTTOM RAILS





BEAM NUMBERS	a
1, 9, 28 & 36	NEGL.
2 TO 8 & 29 TO 35	1/16"
10, 18, 37 & 45	3/16"
11 TO 17 & 38 TO 44	1/4"
19 & 27	1/16"
20 TO 26	1/8"
46 & 54	1/16"
47 TO 53	1/8"

DEFLECTION DIAGRAM

(FOR USE OF THE RESIDENT ENGR. ONLY)

~ DUE TO SLAB ALONE ~

NOTES

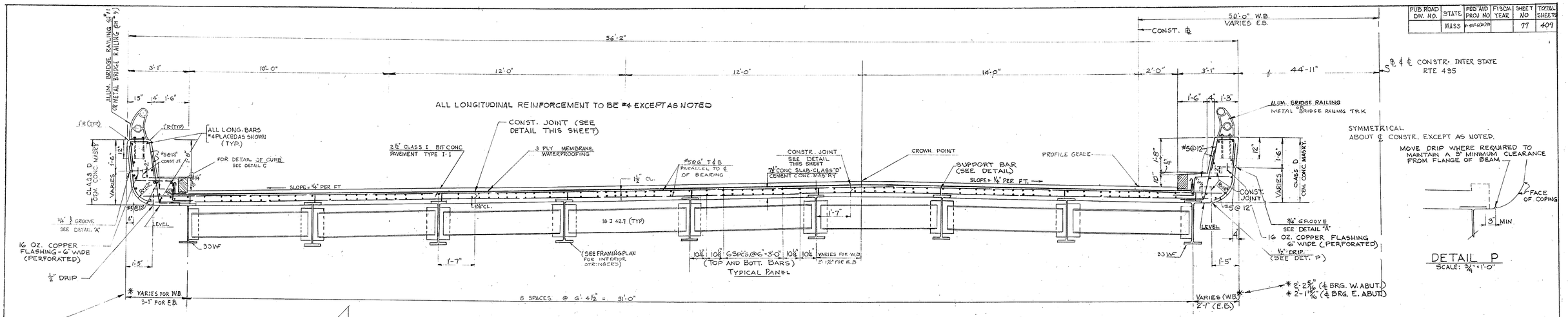
Posts Shall Be Set Perpendicular To Grade.
Railing Continuous Over Three Panels Where Possible.
Expansion Joints In Rails To Be Located As Close As Possible To ℄ Of Post At Every Third Panel. For Location of Exp. Posts, see Sheets No. 3 and 4.
Either Metal Bridge Railing Type K, or Aluminum Bridge Railing may be used at the Option of the Contractor.
For Alternate Railing (See Sheet 11)

METAL BRIDGE RAILING TYPE K

SCALE: 1 1/2" = 1'-0"

DATE	DESCRIPTION
DEC. 28, 1963	ISSUED FOR CONSTRUCTION
USE ONLY PRINTS OF LATEST DATE	

PUB ROAD DIV. NO.	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
	MASS	F-015-6(029)		77	409

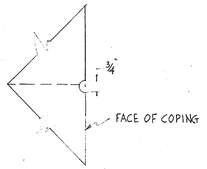


CROSS SECTION OF WEST BOUND ROADWAY

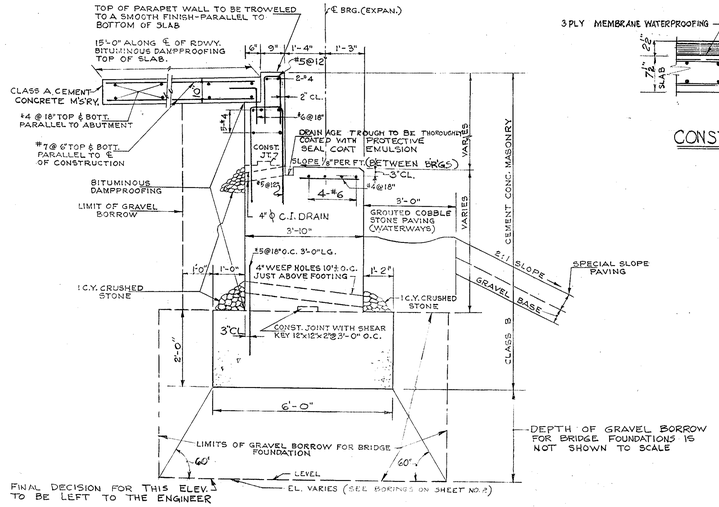
(LOOKING NORTHEASTERLY)

EAST BOUND SECTION OPPOSITE HAND

SCALE ½" = 1'-0"

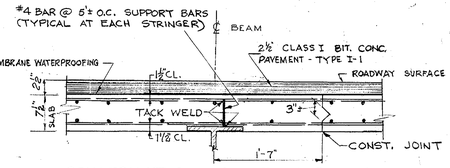


DETAIL "A"
SCALE 3" = 1'-0"



ABUTMENT SQUARE SECTION

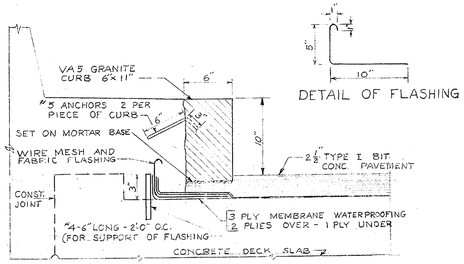
SCALE: ½" = 1'-0"



CONSTRUCTION JOINT IN ROADWAY SLAB

SCALE: 1" = 1'-0"

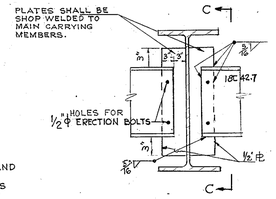
NOTE: ALL LONGITUDINAL REINFORCING TO BE #4 BARS & PLACED PARALLEL TO STRINGERS.



DETAIL OF FLASHING

DETAIL "C"

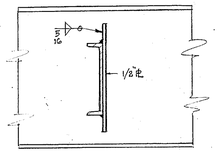
SCALE: 1½" = 1'-0"



NOTE:

a) ERECTION BOLTS, NUTS AND STANDARD WASHERS FOR DIAPHRAGM CONNECTIONS SHALL BE FURNISHED BY THE FABRICATOR.

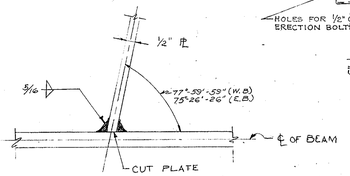
b) HOLES FOR ERECTION BOLTS IN DIAPHRAGMS SHALL BE 1/16" OVER-SIZE. USE STANDARD WASHERS. TOP OF END DIAPHRAGM MUST BE BROUGHT FLUSH WITH TOP OF BEAM. DIAPHRAGMS TO BE CENTERED ON STRINGERS. WHEREVER SIZE OF BEAMS VARY, CENTER DIAPHRAGM ON THE SMALLER BEAM.



SECTION "C-C"

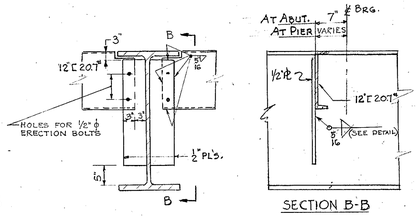
WELDED INTERMEDIATE DIAPHRAGM CONNECTION

SCALE: ¾" = 1'-0"



METHOD OF WELDING END DIAPHRAGM CONNECTION

NOT TO SCALE



SECTION B-B

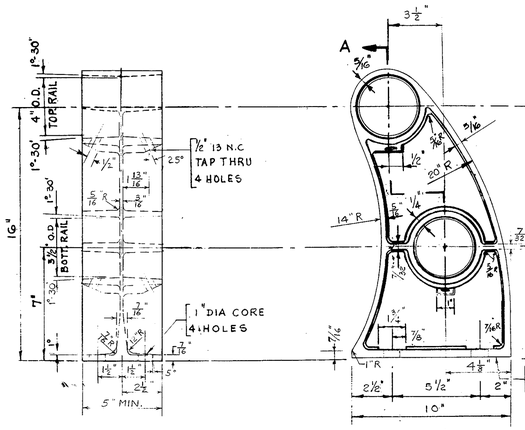
WELDED END DIAPHRAGMS CONNECTION

SCALE: ¾" = 1'-0"

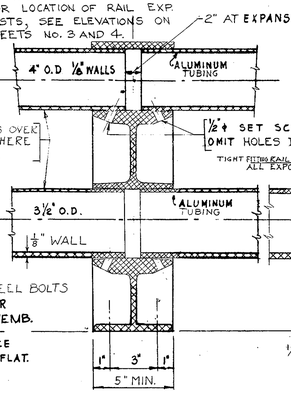
DATE	DESCRIPTION
DEC. 26, 1963	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

PUB. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F-R56(009)		78	409

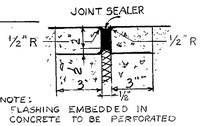
NOTES: ALL RAIL POSTS SHALL BE SET PERPENDICULAR TO GRADE.
FOR LOCATION OF RAIL EXP. POSTS, SEE ELEVATIONS ON SHEETS No. 3 AND 4.



OUTSIDE ELEVATION



POST ELEVATION



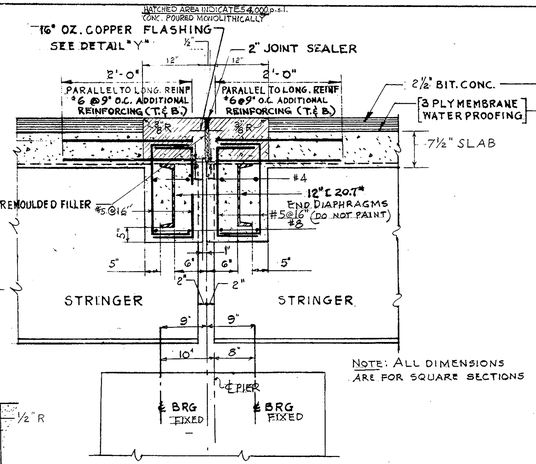
SECTION - A-A

DETAIL "Y"
SCALE 3" = 1'-0"

Note: For Alternate Railing (See Sheet 9) Either Aluminum or Metal Bridge Railing Type K may be used at the Option of the Contractor.

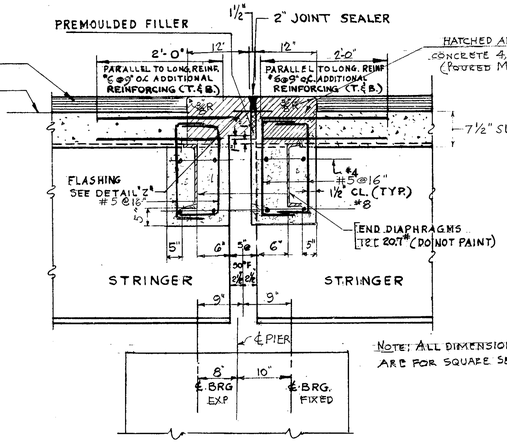
ALUMINUM RAIL DETAILS

SCALE 3" = 1'-0"



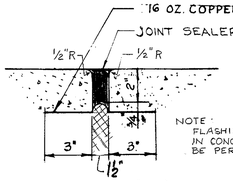
NOTE: ALL DIMENSIONS ARE FOR SQUARE SECTIONS

DECK DETAILS OVER PIER #1
(EXPOSED JOINT)
SCALE 1" = 1'-0"

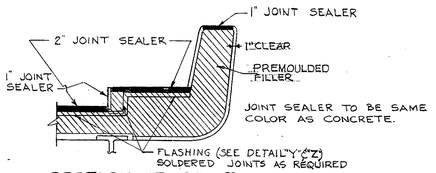


NOTE: ALL DIMENSIONS ARE FOR SQUARE SECTIONS.

DECK DETAILS OVER PIER #2
(EXPOSED JOINT)
SCALE 1" = 1'-0"

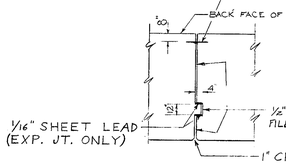


DETAIL "Z"
SCALE 3" = 1'-0"

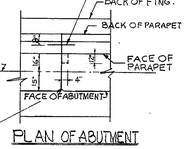


SECTION AT JOINT OVER PIER
SCALE: 1/2" = 1'-0"

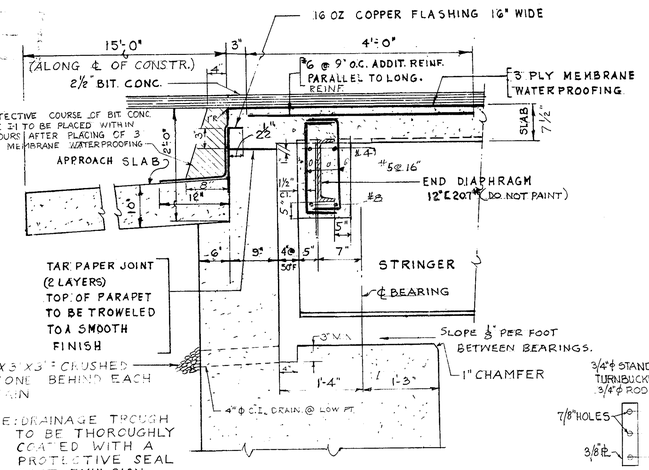
PLASTIC WATERSTOP 9" WIDE AT EXPANSION JOINTS
PLASTIC WATERSTOP 5" WIDE AT CONSTRUCTION JOINTS
CARRY TO 4" OF TOP OF PARAPET



HORIZONTAL SECTION



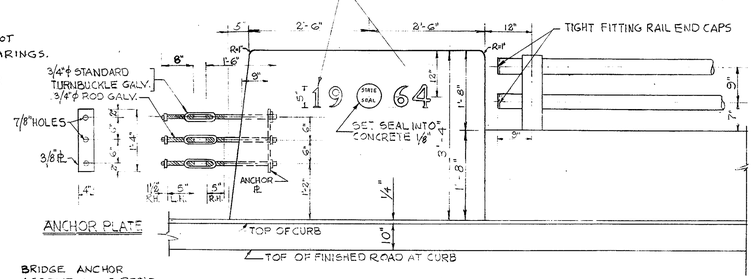
PLAN OF ABUTMENT



NOTE: DRAINAGE TROUGH TO BE THOROUGHLY COATED WITH A PROTECTIVE SEAL COAT EMULSION.

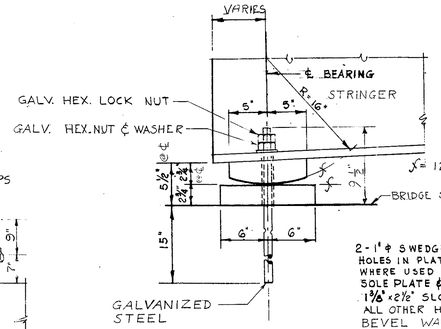
DECK DETAILS AT ABUTMENT
(ALL DIMENSIONS ARE FOR SQUARE SECTIONS)
SCALE 1" = 1'-0"

FOR LOCATION OF DATE & SEAL SEE GENERAL NOTES SHEET NO. 1.



BRIDGE ANCHOR ASSEMBLY: 8 REQ'D

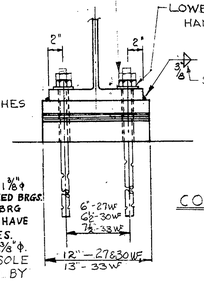
TYPICAL RAIL & END POST DETAILS
SCALE: 3/4" = 1'-0"

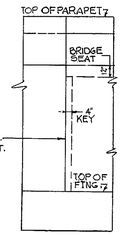


√ = 125 MICRO-INCHES

2 - 1" ϕ SWEDGE BOLTS WITH 1 3/8" ϕ HOLES IN PLATES & FLG. @ FIXED BRGS. WHERE USED AS EXPANSION BRG SOLE PLATE & FLANGE WILL HAVE 1 5/8" x 2 1/2" SLOTTED HOLES. ALL OTHER HOLES TO BE 1 3/8" ϕ. BEVEL WASHER AND SOLE PLATE AS REQUIRED BY PROFILE.

NOTE A:
SOLE PLATE TO BE FIELD WELDED AT EXPANSION BRGS. AND SHOP WELDED AT FIXED BRGS.





ELEVATION OF ABUTMENT

CONSTRUCTION & EXPANSION JOINT IN ABUTMENT
NO SCALE

BEARING DETAIL (FE-1)

SCALE 1 1/2" = 1'-0"

NOTE: THE FINISHED SURFACES SHALL MEET THE AMERICAN STANDARD ASSOCIATION SURFACE ROUGHNESS REQUIREMENTS AS DEFINED IN A.S.A. B 46.1, SURFACE ROUGHNESS, WAVINESS, AND LAY, PART I

DATE	DESCRIPTION
DEC. 28, 1965	ISSUED FOR CONSTRUCTION

USE ONLY PRINTS OF LATEST DATE

SHEET 11 OF 11 SHEETS BRIDGE No. H-12-38