

PUB. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(6)	19	35	227

GENERAL NOTES

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

DATE AND SEAL
 TO BE PLACED IN CENTER OF INSIDE FACES OF NORTHEASTERLY AND SOUTHWESTERLY END POSTS AS SHOWN IN DETAIL ON SHEET NO. 2. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. SEAL WILL BE FURNISHED BY THE COMMONWEALTH AND SHALL BE PLACED BY CONTRACTOR.

DESIGN
 ACCORDING TO SPECIFICATIONS OF AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1953 ED) FOR H20-44 LOADING.

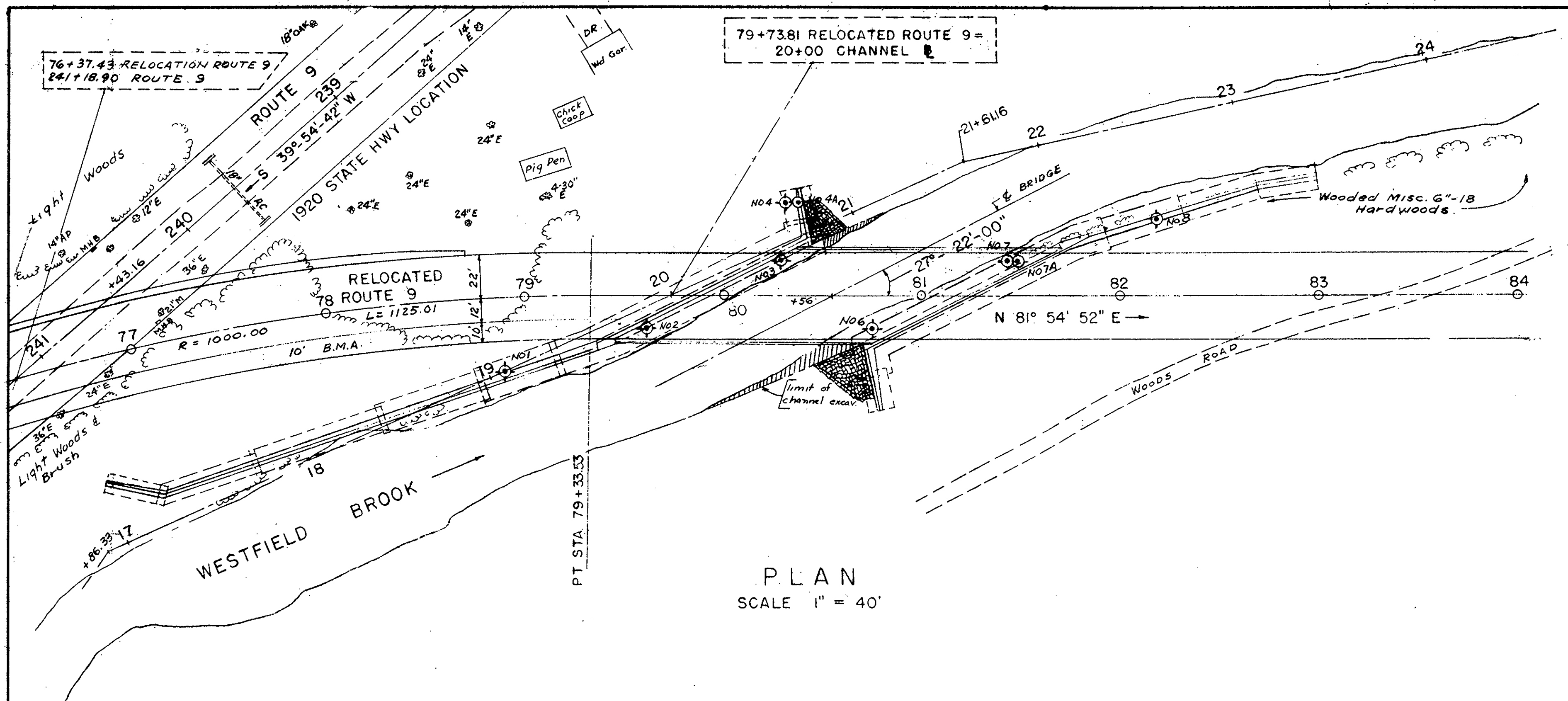
BENCH MARK
 STA 76+54, 22' RT VERT. SPK, 18" ELM EL. 1230.35' SEA LEVEL DATUM OF 1929.

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 THE BARS SHALL BE LAPPED 35 DIAMETERS TO MAKE A SPLICE.

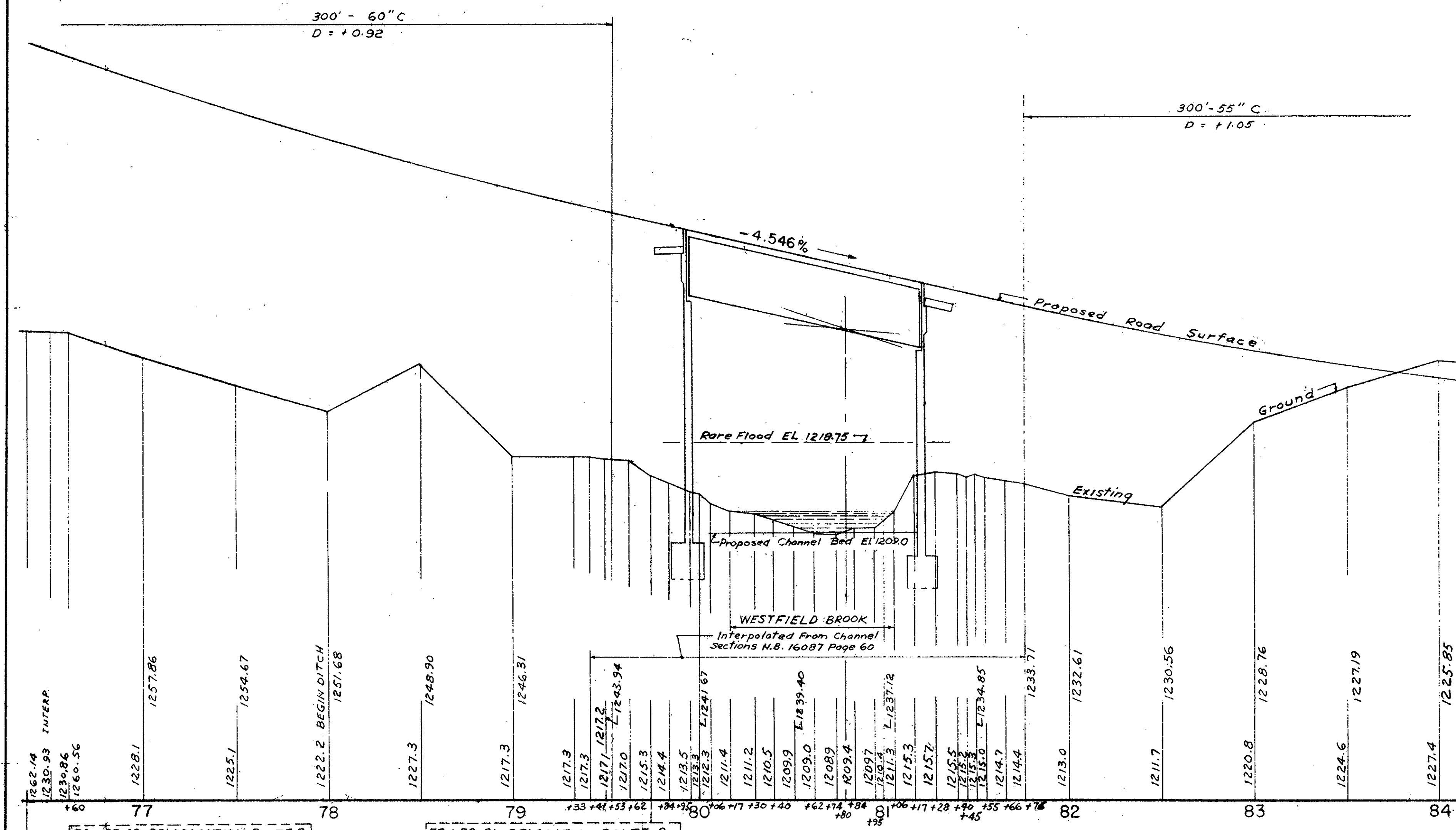
HYDRAULIC DATA
 SIZE OF DRAINAGE AREA=12.5 SQ MILES;
 BRIDGE OPENING PROVIDED FOR A RARE FLOOD
 ESTIMATED DISCHARGE=5480 CU.FT. PER SEC.
 VELOCITY OF FLOOD FLOW=10 FT. PER SECOND.

ESTIMATED QUANTITIES
 (NOT GUARANTEED)

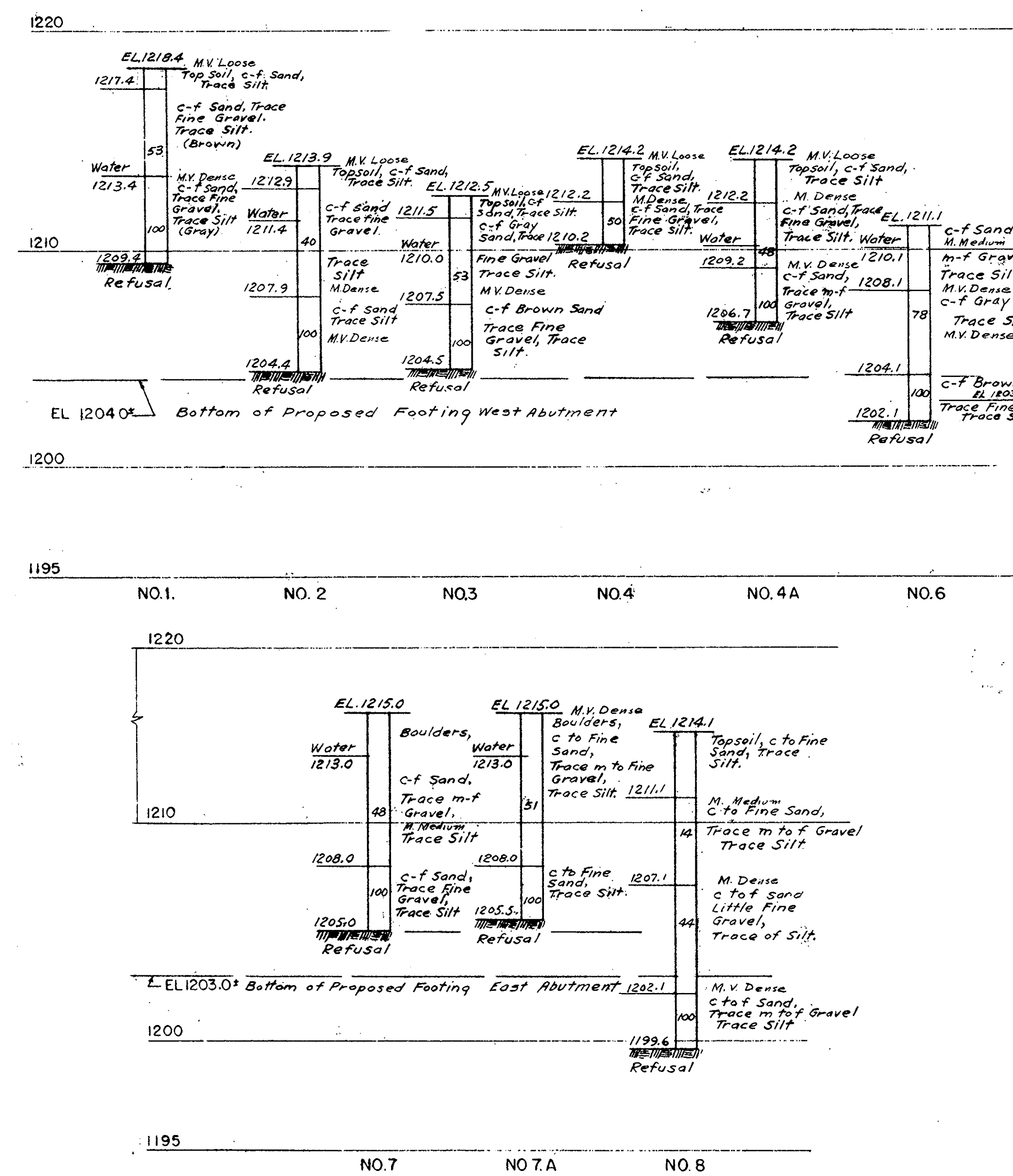
CLASS "A" ROCK EXCAVATION	10 CU. YD
BRIDGE EXCAVATION	4500 CU. YD
CHANNEL EXCAVATION	90 CU. YD
CLASS "B" ROCK EXCAVATION	400 CU. YD
GRAVEL BORROW	7900 CU. YD
CLASS "A" CEMENT CONCRETE MASONRY	3100 CU. Y
STEEL REINFORCING FOR STRUCTURES	225900 LBS
RIP RAP	260 CU. Y
BRIDGE SUPERSTRUCTURE	1 LUMP SUM



PLAN
 SCALE 1" = 40'



PROFILE
 SCALE: HOR 1" = 40'
 VERT 1" = 8'



BORING DATA
 SCALE 1" = 4'

BORINGS TAKEN MARCH 1957 BY ALLSTATE DRILLING CO., EAST PROVIDENCE, R.I.

BORING NOTES
 LOCATION OF BORINGS SHOWN ON KEY PLAN THUS NO 1
 BORINGS TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITION AT BORING POINTS ONLY. BUT DO NOT NECESSARILY SHOW NATURE OF MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
 FIGURES IN COLUMNS INDICATE BLOWS PER FOOT ON 1" PIPE PRODUCED BY 30" FALL OF 140 LB. HAMMER.
 BORING SAMPLES MAY BE SEEN AT THE DEPARTMENTS LABORATORY IN THE MAINTENANCE BUILDING ON ROUTE 9 IN WELLESLEY.

DUFFILL ASSOCIATES INC.,
 CONSULTING ENGINEERS
 BOSTON, MASS

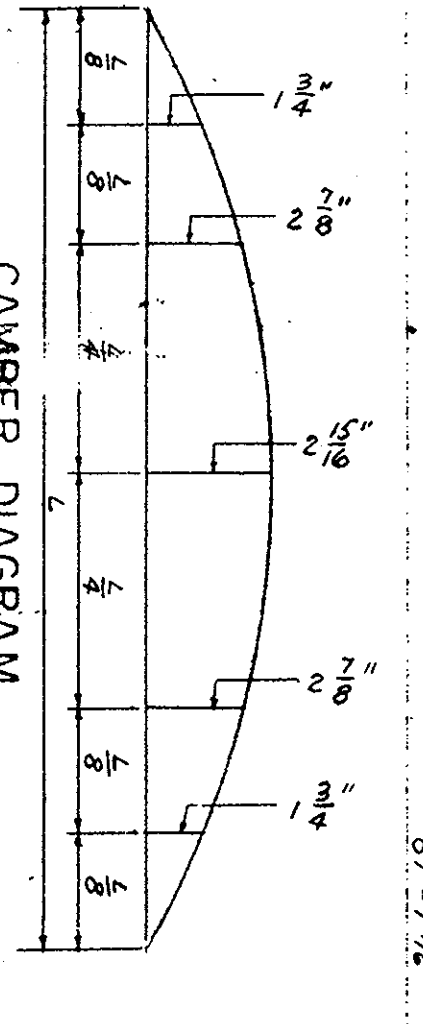
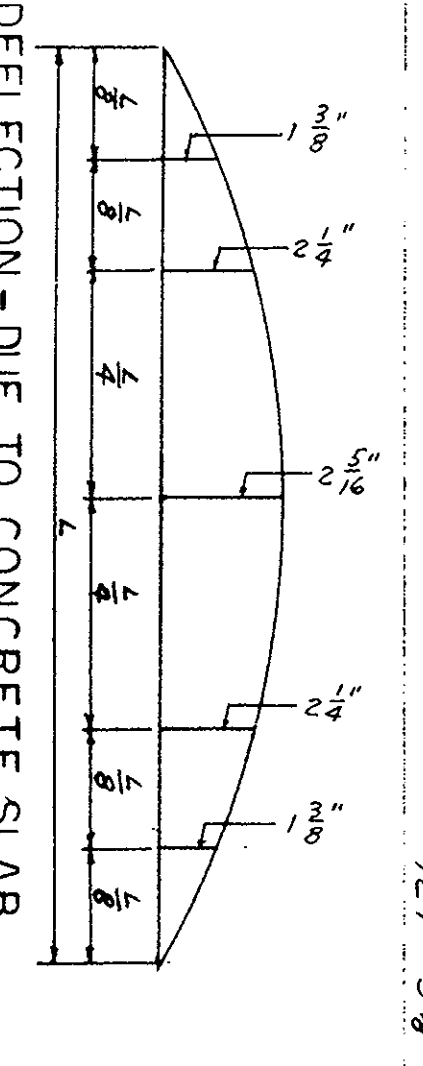
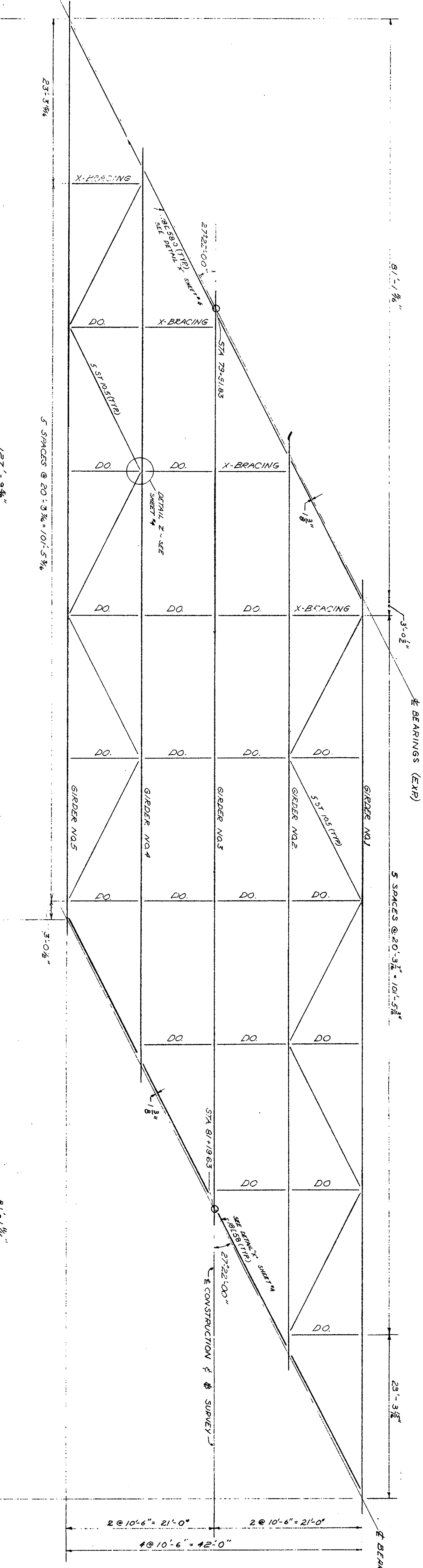
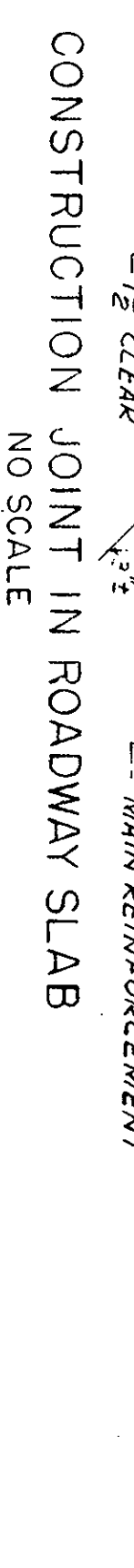
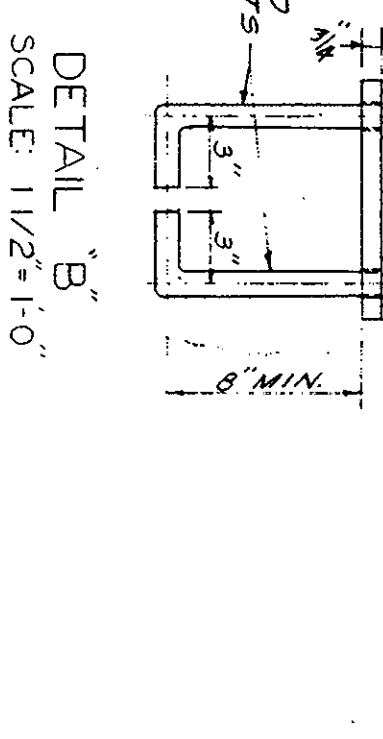
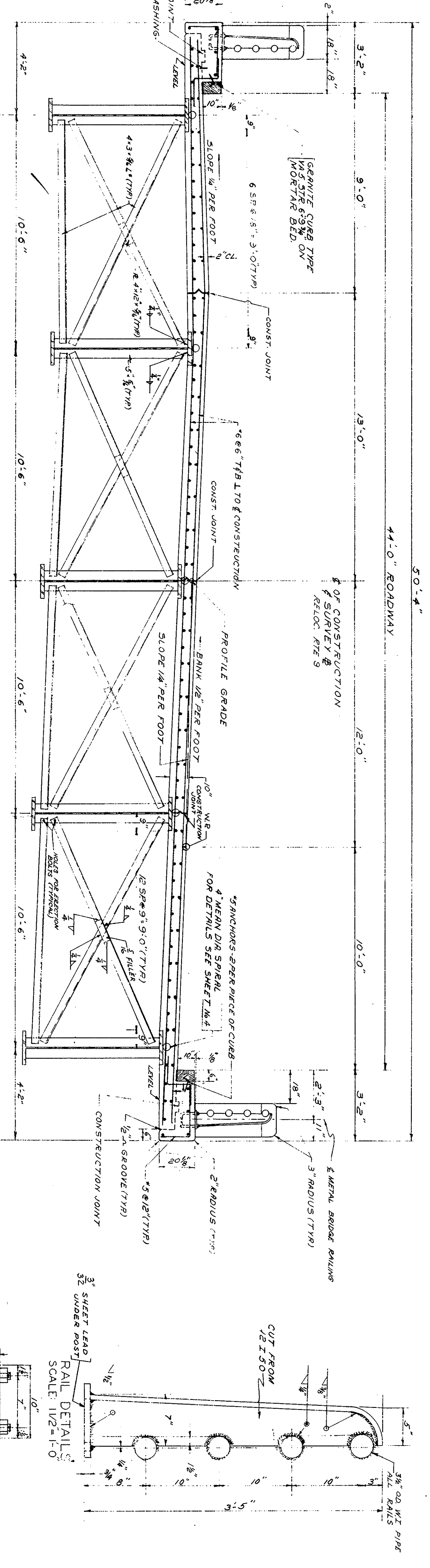
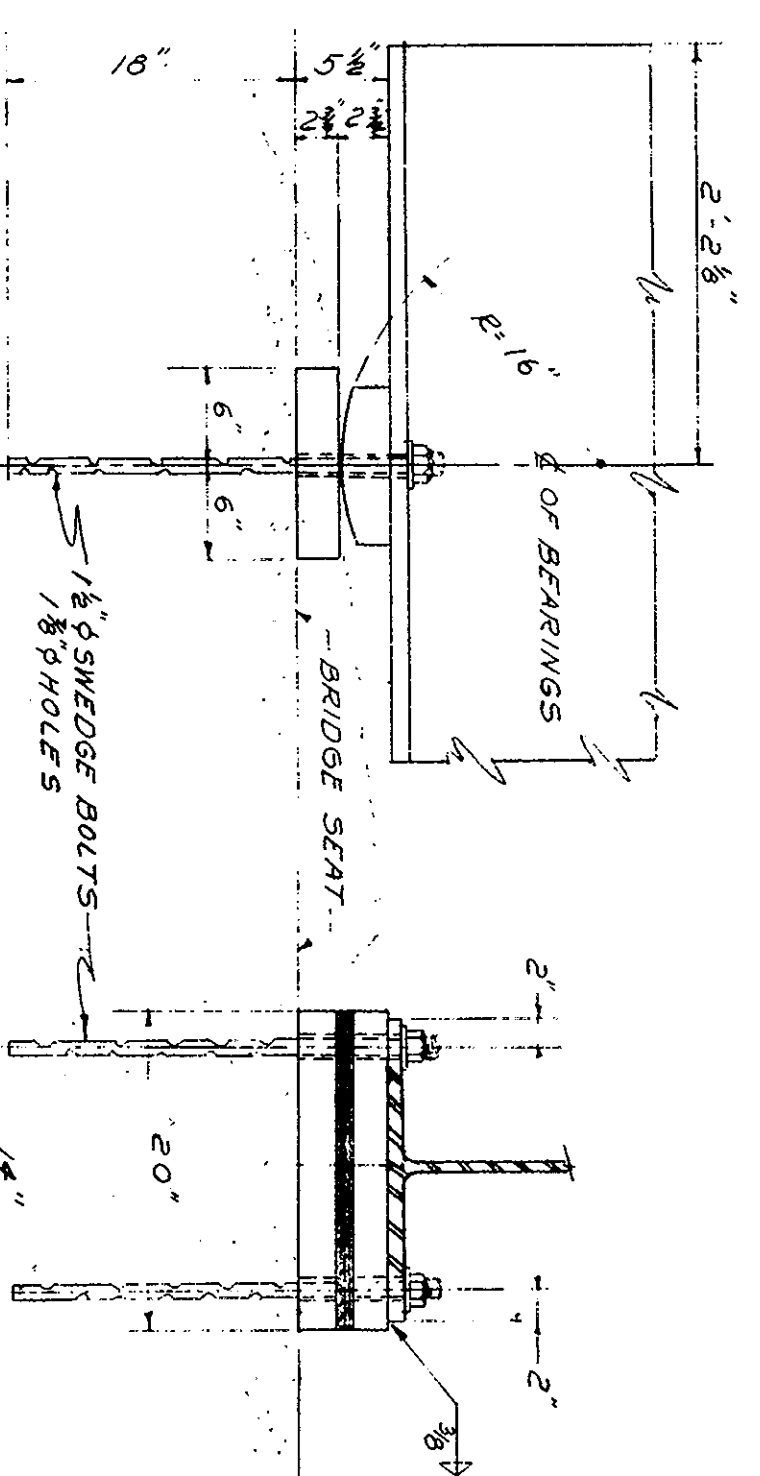
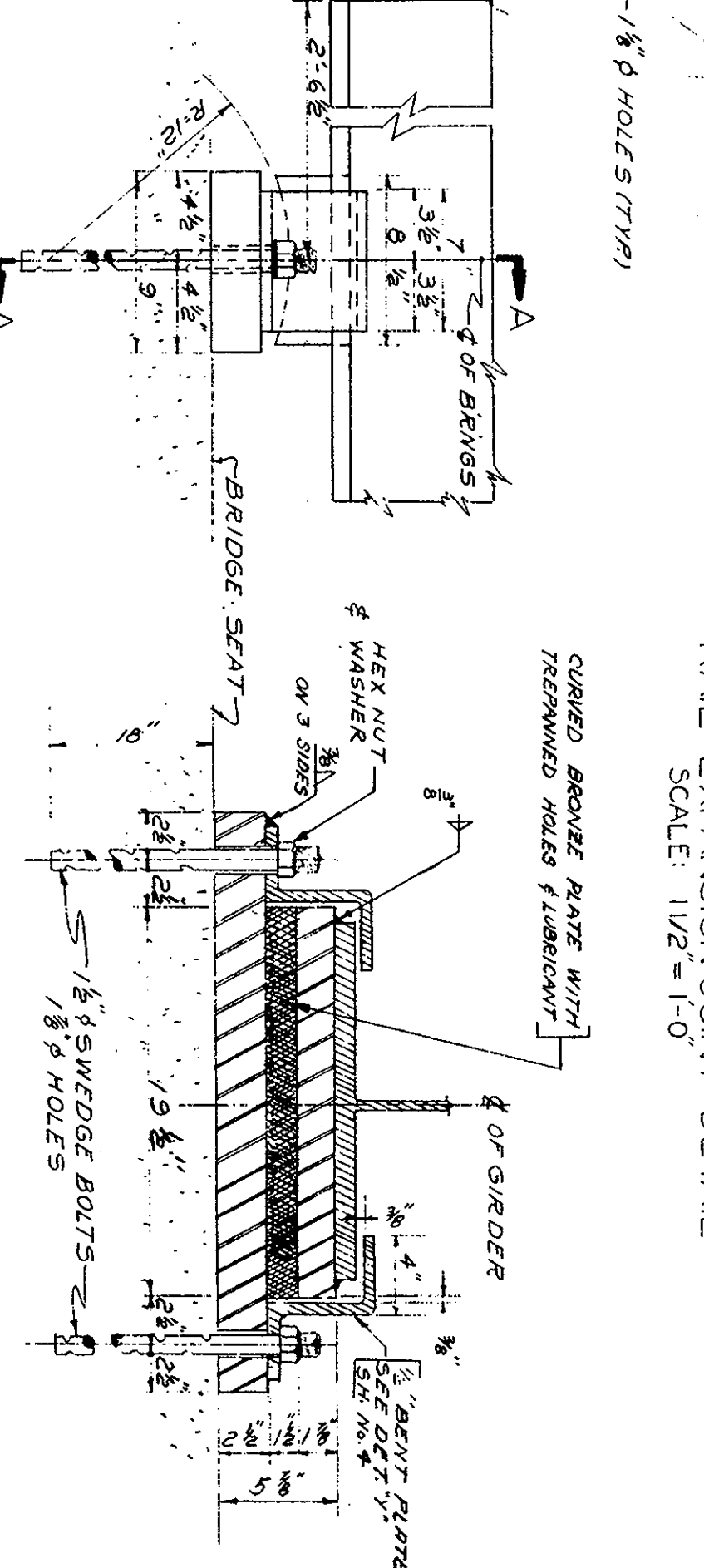
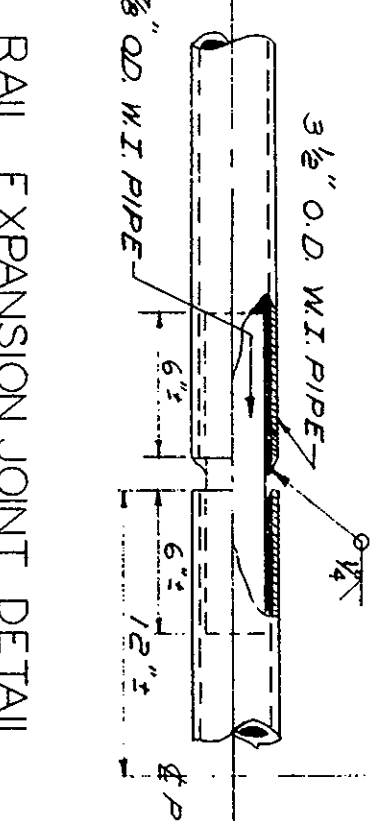
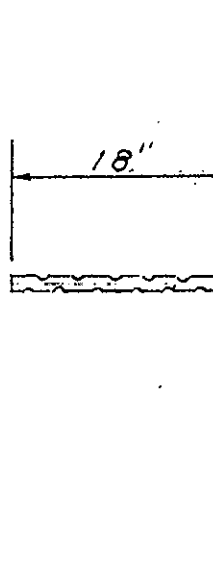
JULY 8, 1950 SHEET #5 ELEV. OF BRIDGE SEAT - REVISED
 MAY 7, 1958 SHEET #6 STEEL IN ABUT. FOOTING - REVISED
 DEC. 28, 1957 ISSUED FOR CONSTRUCTION

THE COMMONWEALTH OF MASSACHUSETTS
 PROPOSED BRIDGE
CUMMINGTON
 RELOCATION OF ROUTE 9 STA. 80+56.00
 OVER
 WESTFIELD BROOK
 SCALES AS NOTED
 OFFICE OF
 DEPARTMENT OF PUBLIC WORKS
 100 NASHUA ST. - BOSTON, MASS
 Dec. 1957

Skinner BRIDGE ENGINEER
S.M. Patten CHIEF ENGINEER

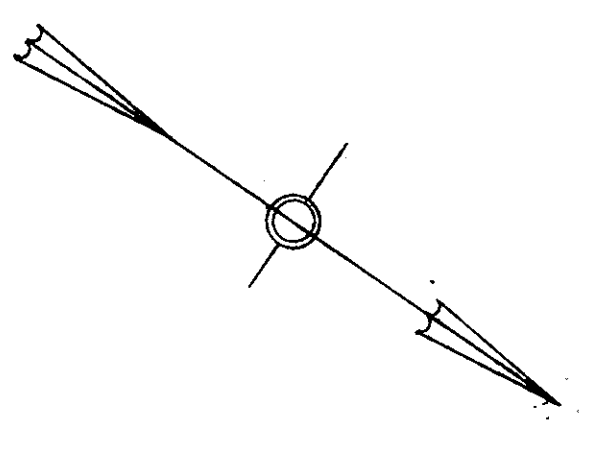
FIG. NO.	STATE	FED. AD. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(G)	19	31	227

FOR EXPANSION BEARING
FOR FIXED BEARING

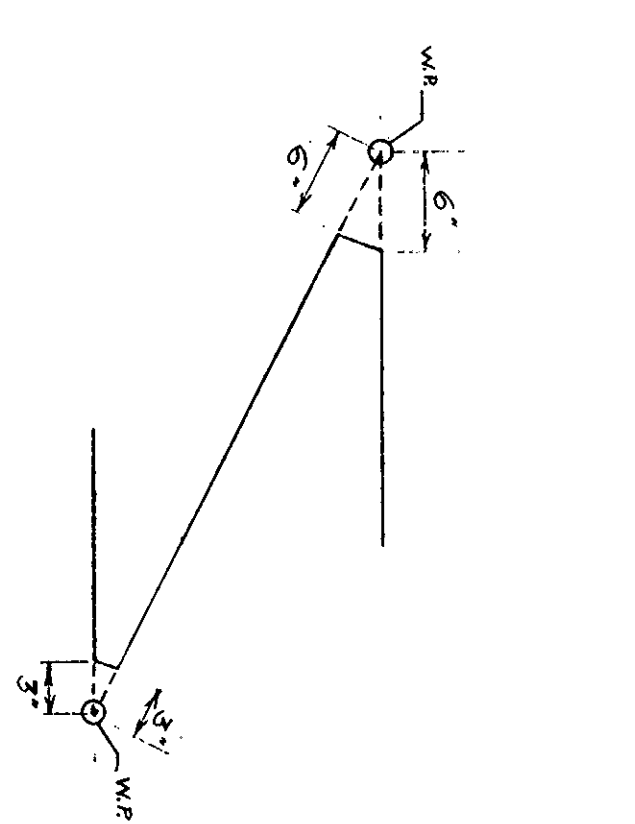


DEC 28 1951	SAVED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

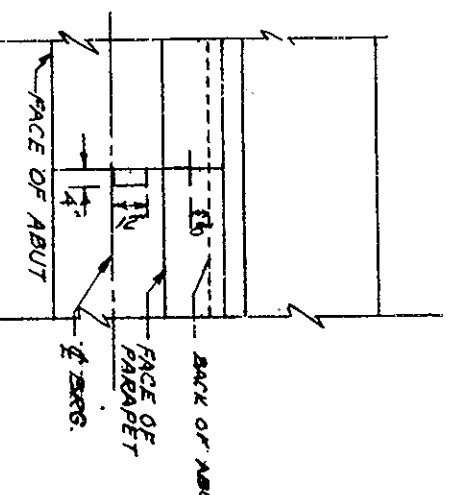
PUB. NO.	STATE	FED. AID PROJ. NO.	CONTRACT NO.	SHEET NO.
1	MASS	F 4(5)	19	39
				227



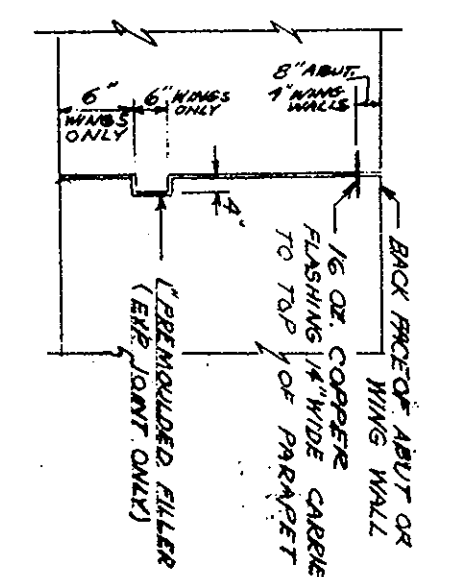
DETAIL OF CHAMFER
NO SCALE



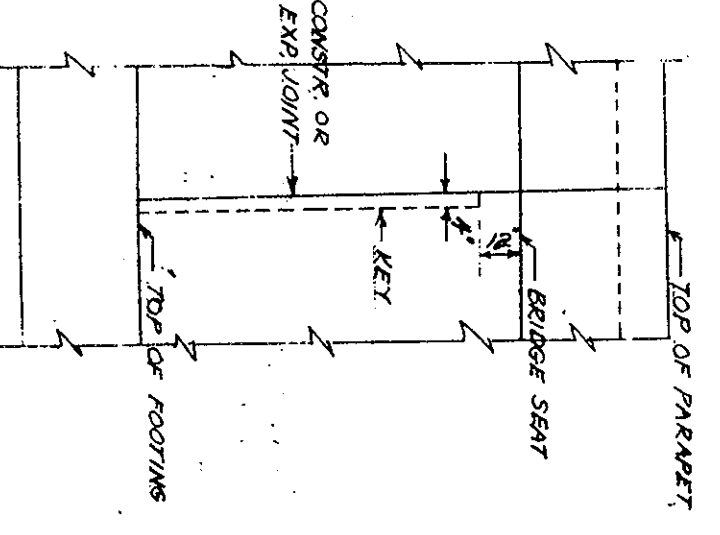
PLAN OF ABUTMENT



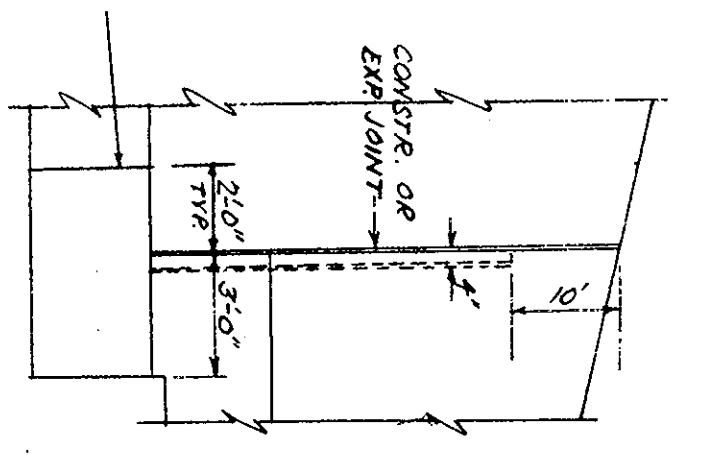
HORIZONTAL SECTION



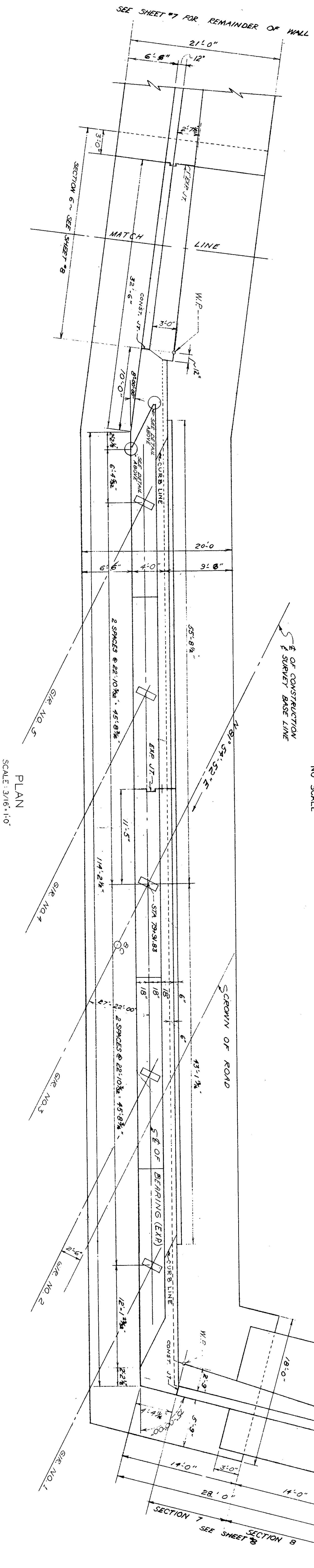
CONSTRUCTION & EXPANSION JOINTS IN ABUTMENTS & WING WALLS
NO SCALE



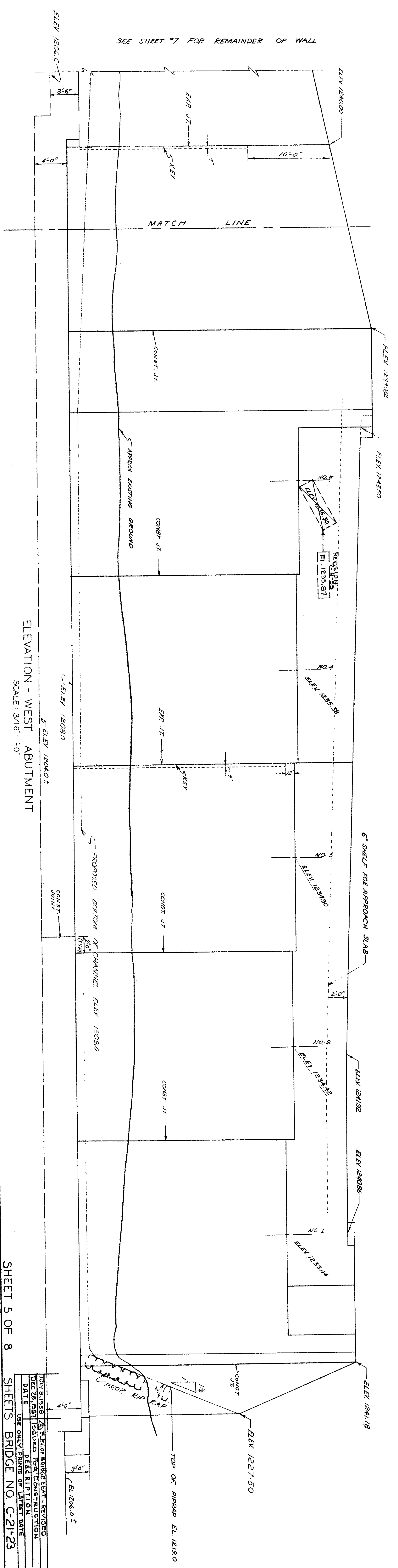
ELEV. OF ABUTMENT



ELEV. OF WING



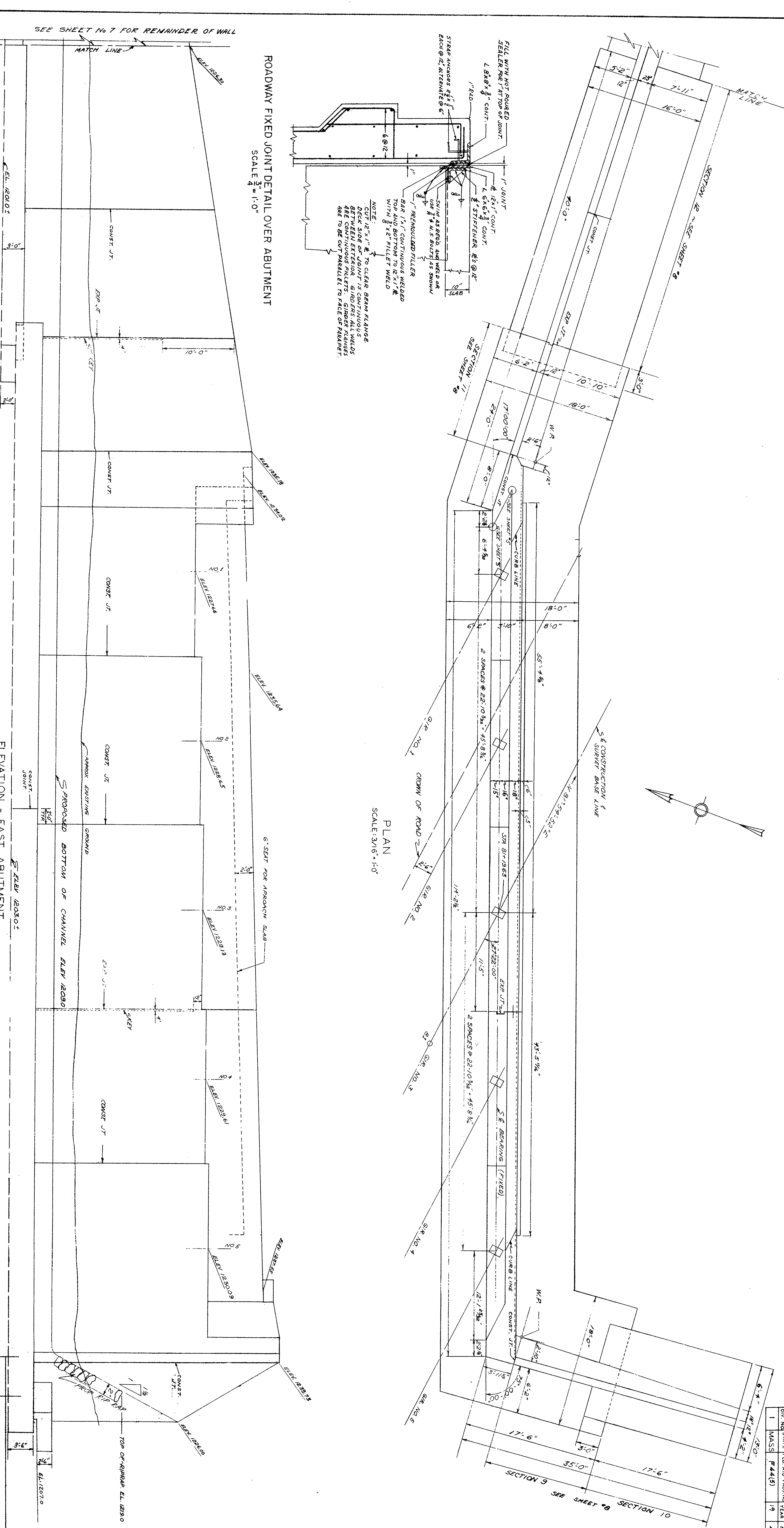
PLAN
SCALE: 3/16" = 1'-0"



ELEVATION - WEST ABUTMENT
SCALE: 3/16" = 1'-0"

DATE	BY	REVISION
DEC 28 1951	WST	ISSUED FOR SECTION
		DATE
		USE ONLY PARTS OF LATEST DATE

FIG. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(6)	19	40	227



ROADWAY FIXED JOINT DETAIL OVER ABUTMENT
SCALE: 3/8" = 1'-0"

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

ELEVATION - EAST ABUTMENT
SCALE: 3/16" = 1'-0"

NOTE:
CUT 12"x12" & TO CLEAR BEAM FLANGE
DECK SIDE OF JOINT IS CONTINUOUS
AND CONTINUOUS WELDS ARE CONTINUOUS
AND CONTINUOUS FILLER ARE TO BE CUT PARALLEL TO FACE OF PARAPET.

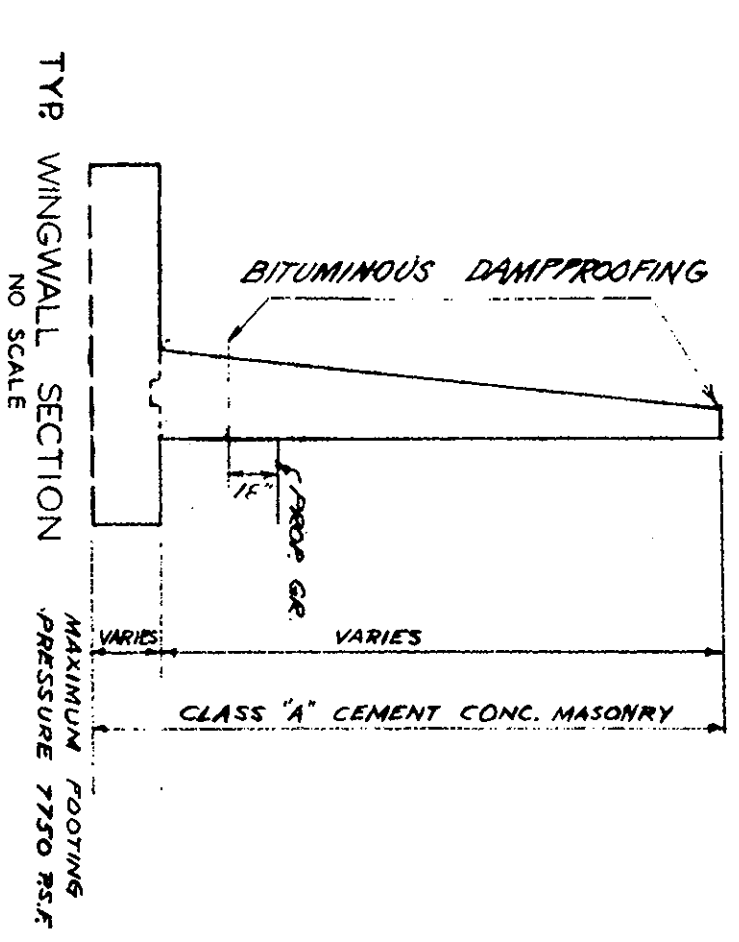
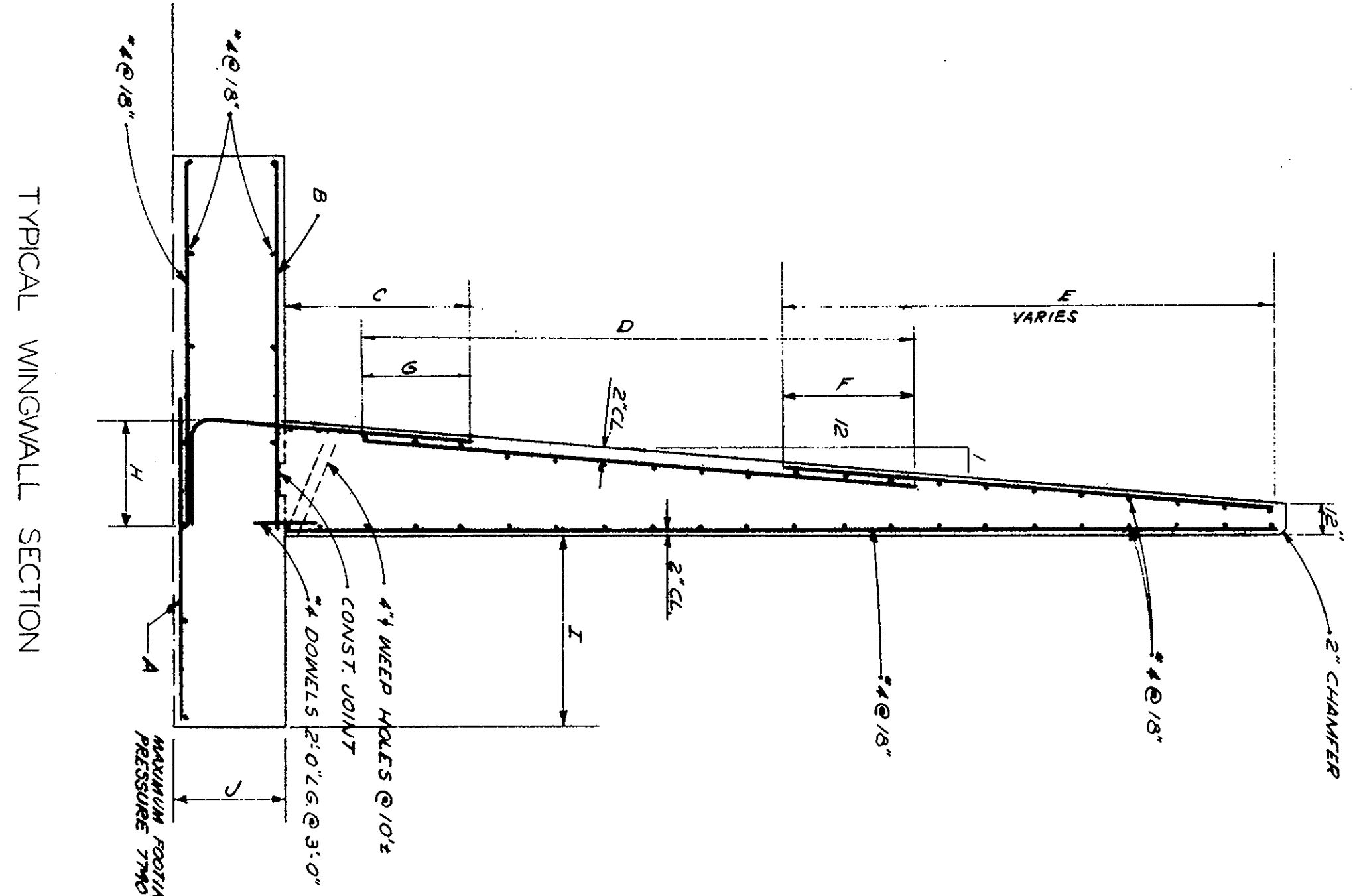
DATE	BY	REVISION
DEC 28 1931	REVISION	FOR CONSTRUCTION
	DATE	BY

WINGWALLS

SECTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SOUTH WEST	4	5	6	7	8	9	10	11	12	13	14	15	16	17
WEST	18	19	20	21	22	23	24	25	26	27	28	29	30	31
NORTH WEST	32	33	34	35	36	37	38	39	40	41	42	43	44	45
SOUTH EAST	46	47	48	49	50	51	52	53	54	55	56	57	58	59
NORTH EAST	60	61	62	63	64	65	66	67	68	69	70	71	72	73

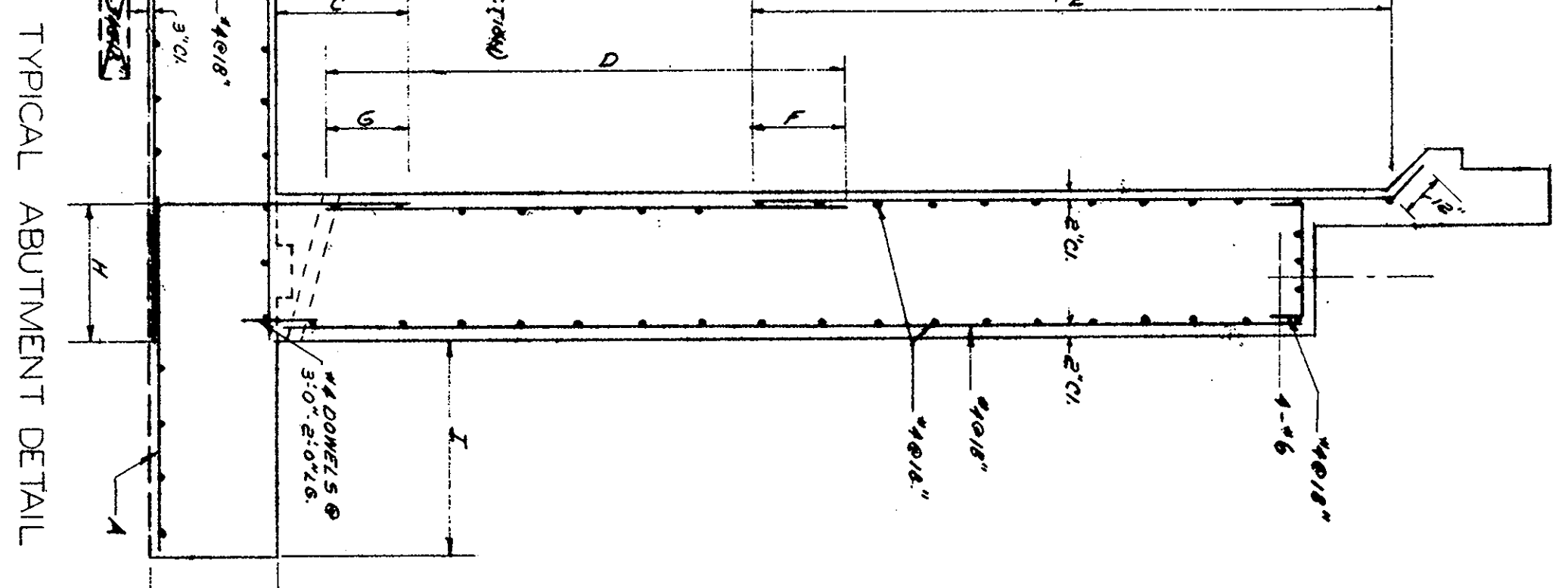
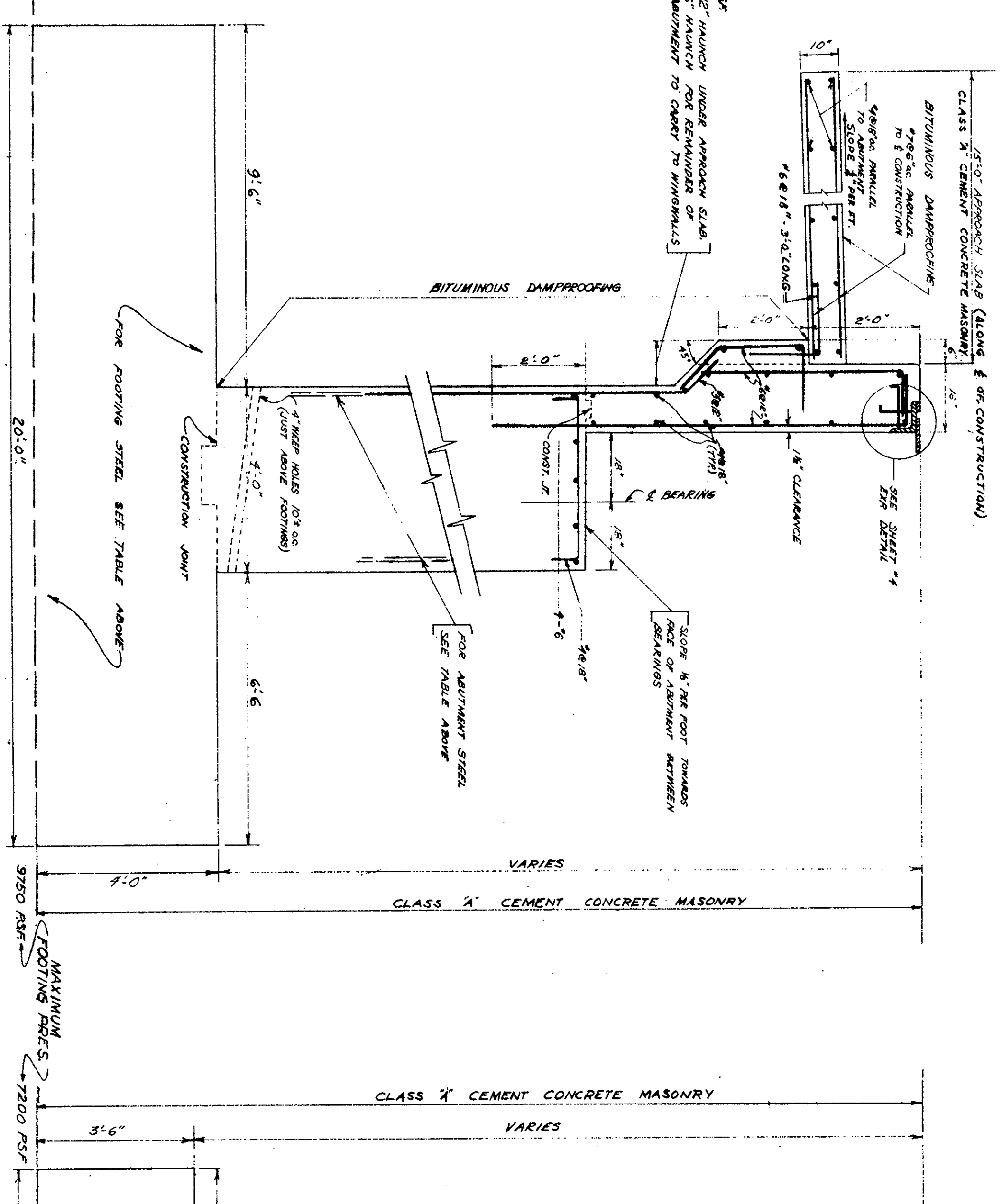
REINFORCING STEEL SCHEDULE

ABUTMENTS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
EAST WEST	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"	15/8" x 11/8"



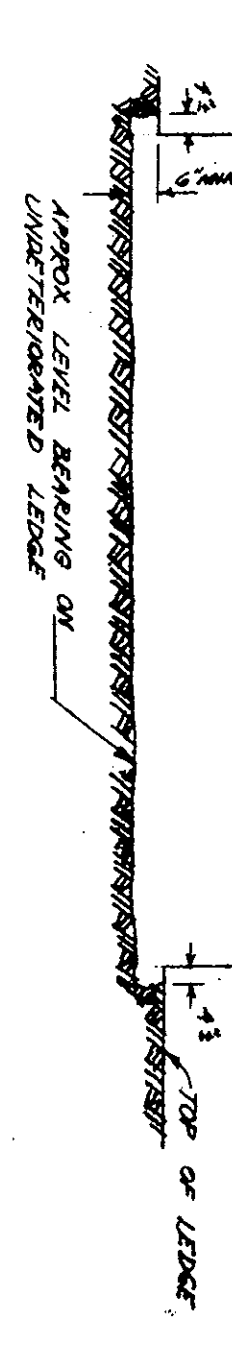
TYPICAL SECTION WEST ABUTMENT

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



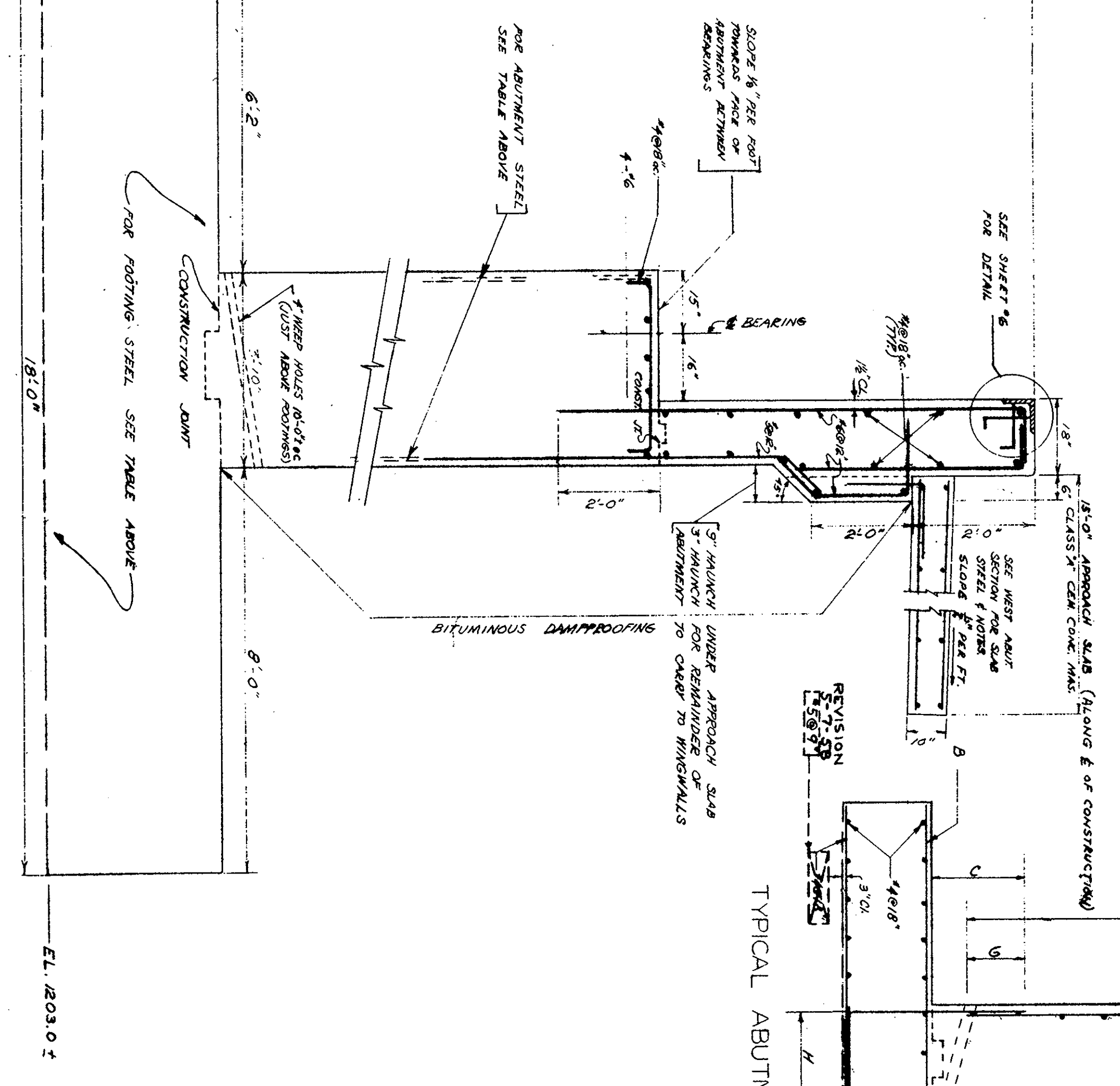
TYPICAL SECTION IF LEDGE IS ENCOUNTERED

NO SCALE



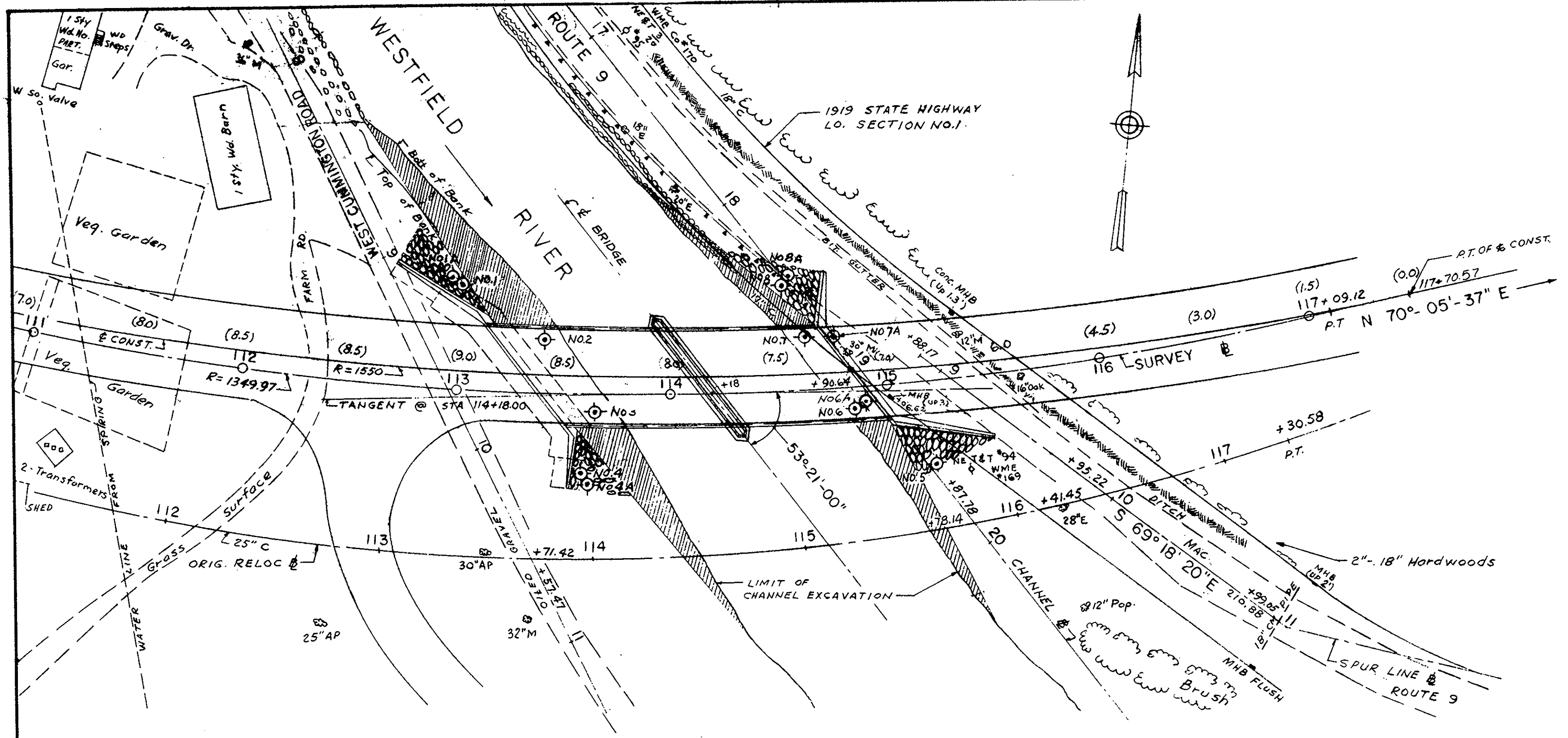
TYPICAL SECTION EAST ABUTMENT

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

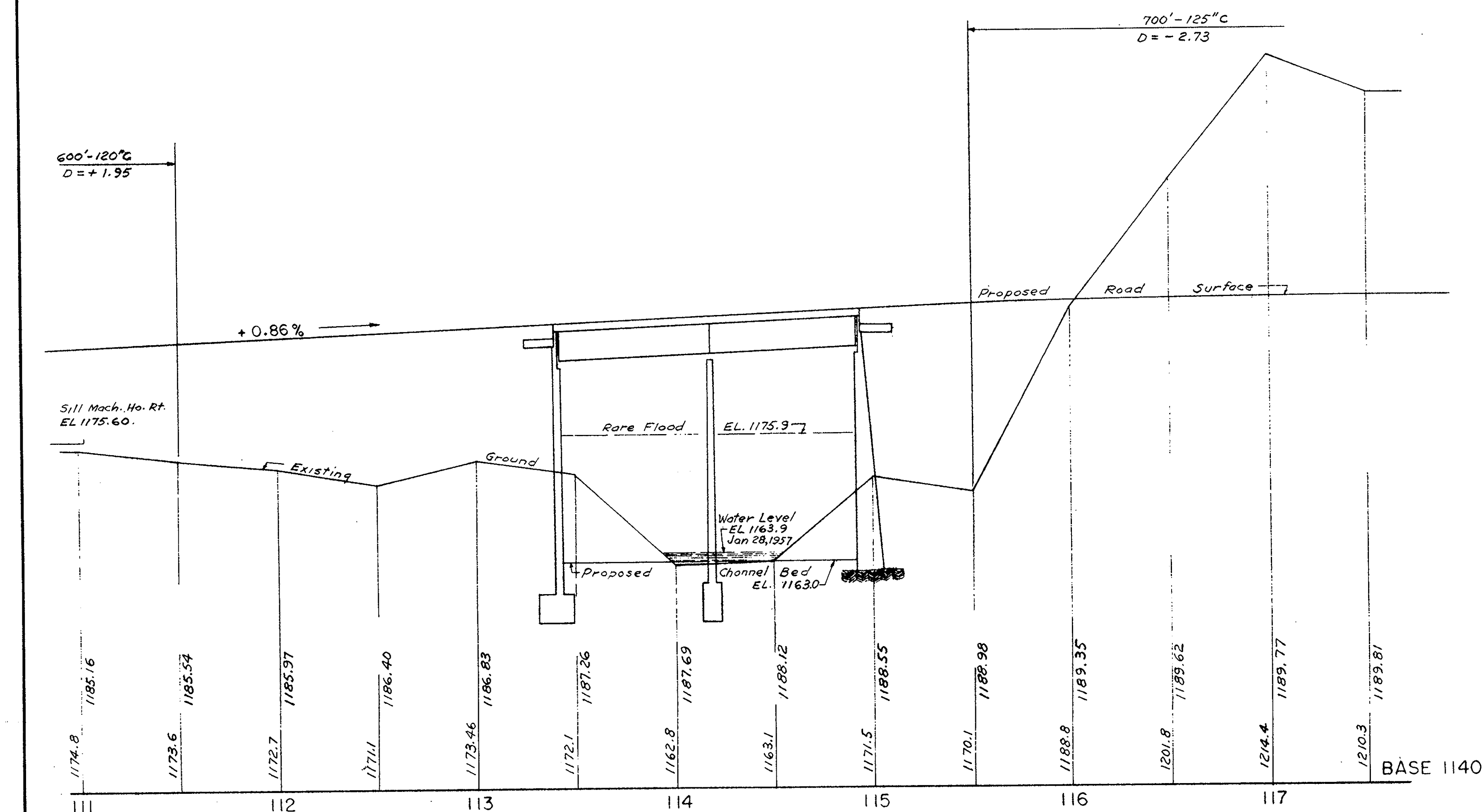


DATE	REVISION
MAY 7 1958	REVISION - STEEL IN ABUTMENT - REVISED
DEC 28 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY - PRINTING OF SHEET DATE	

PUB. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(5)	19	43	227



PLAN
SCALE 1" = 40'

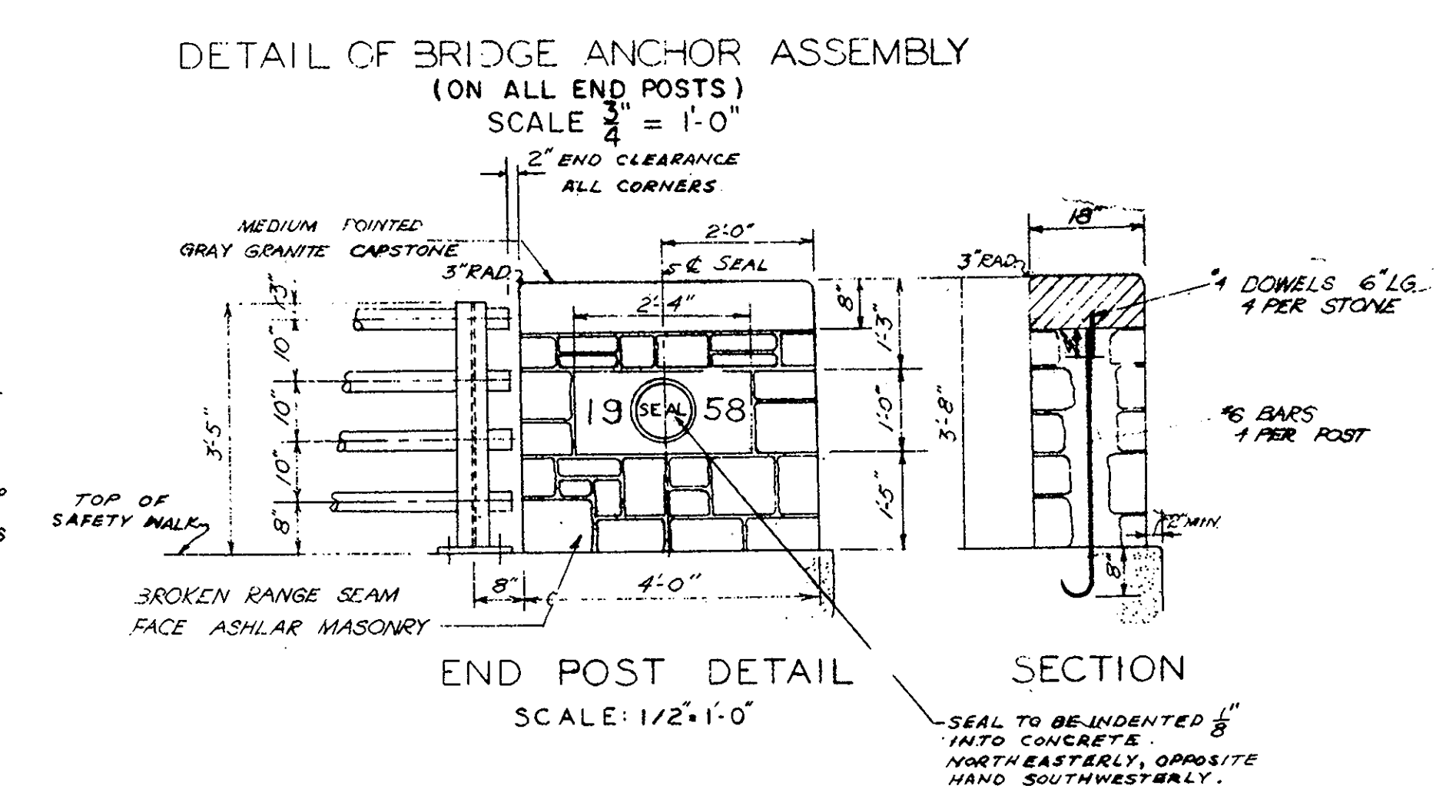
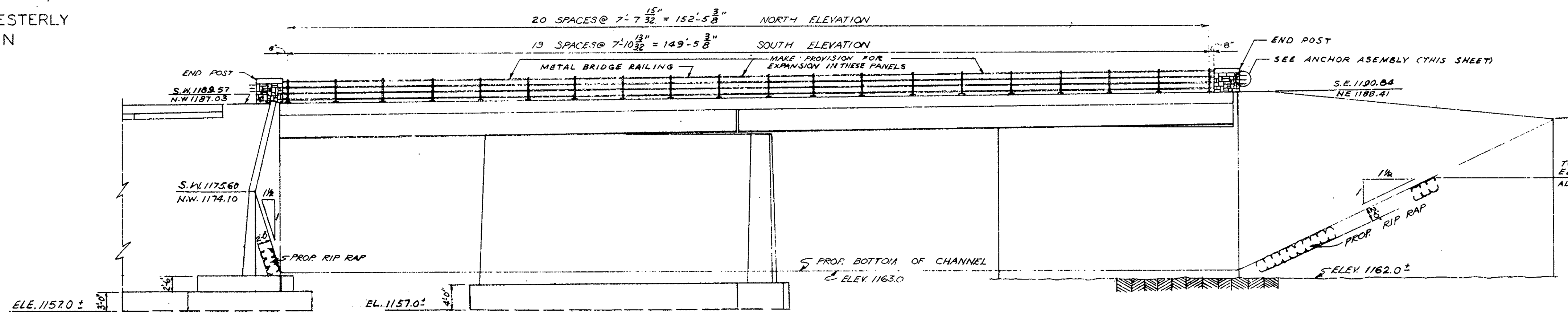
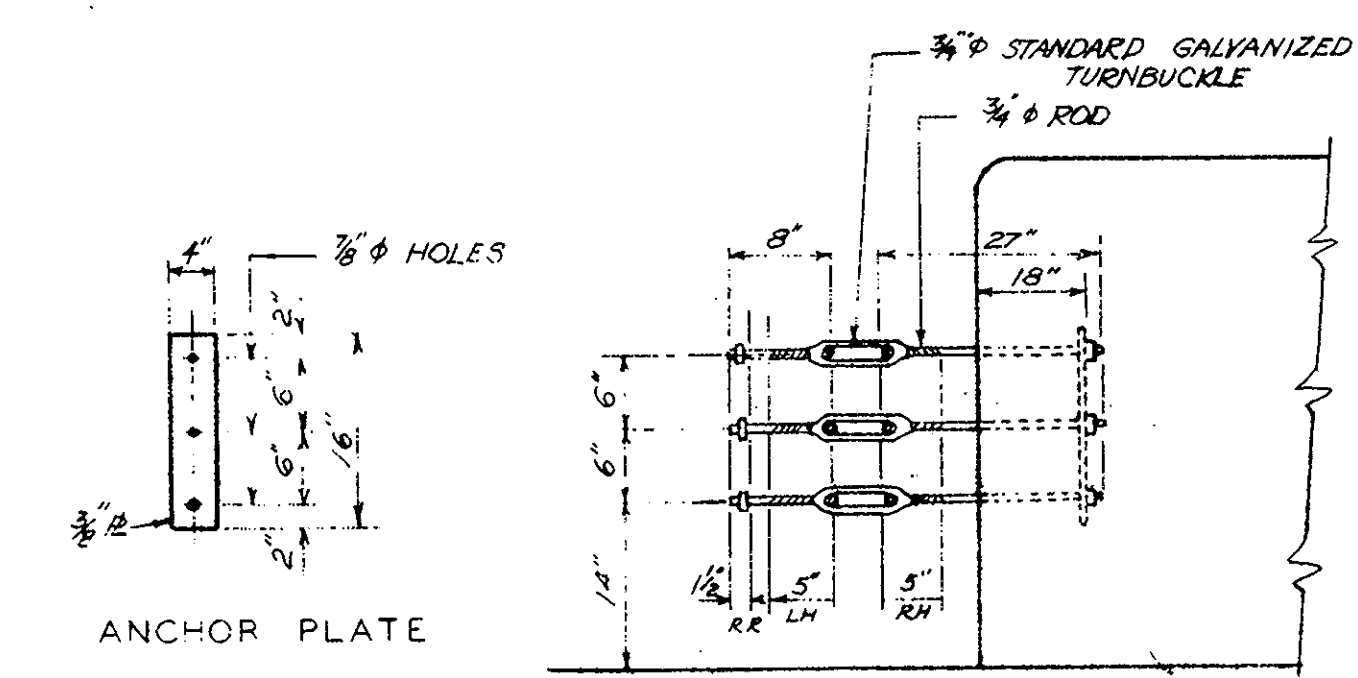
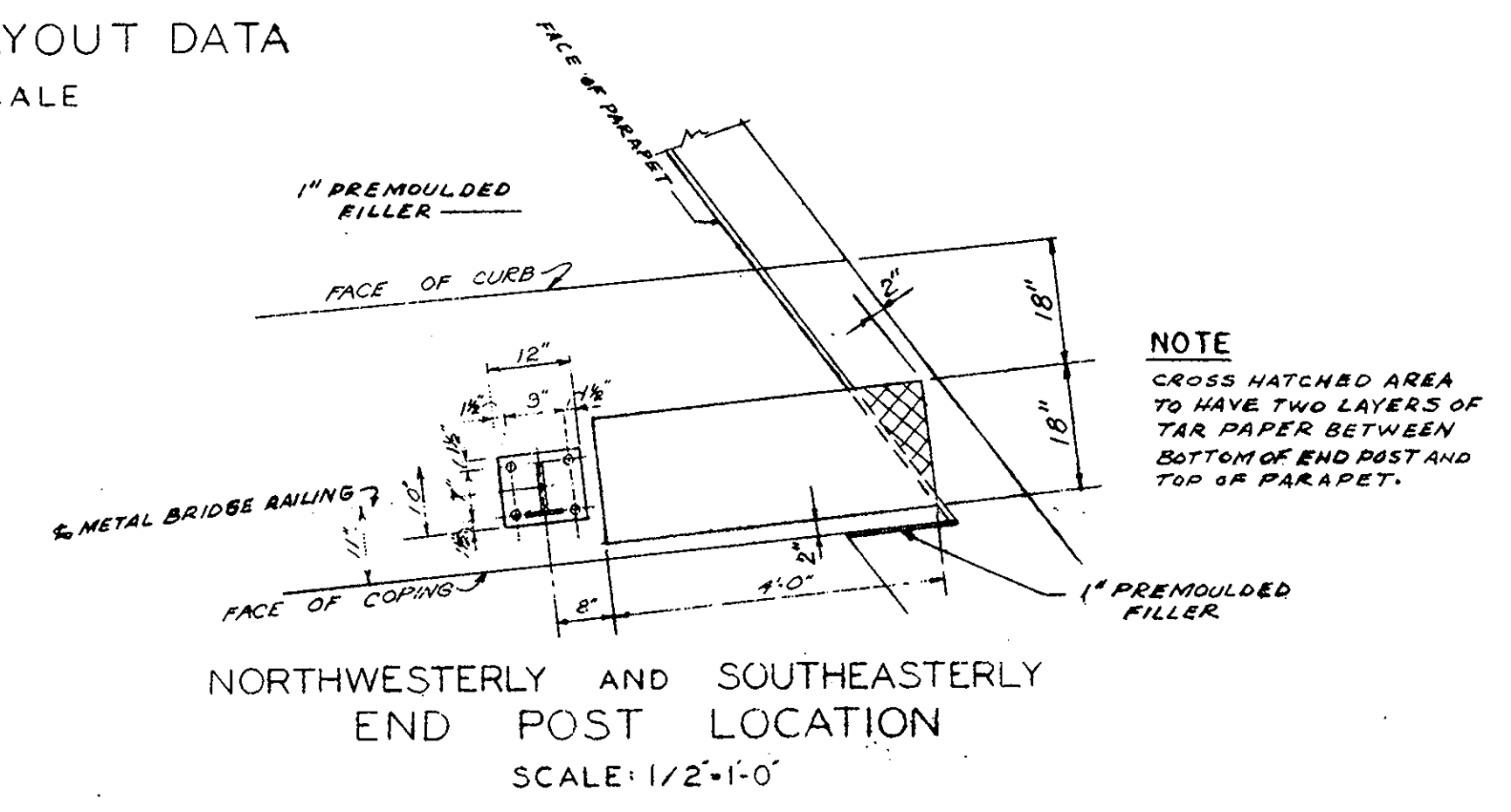
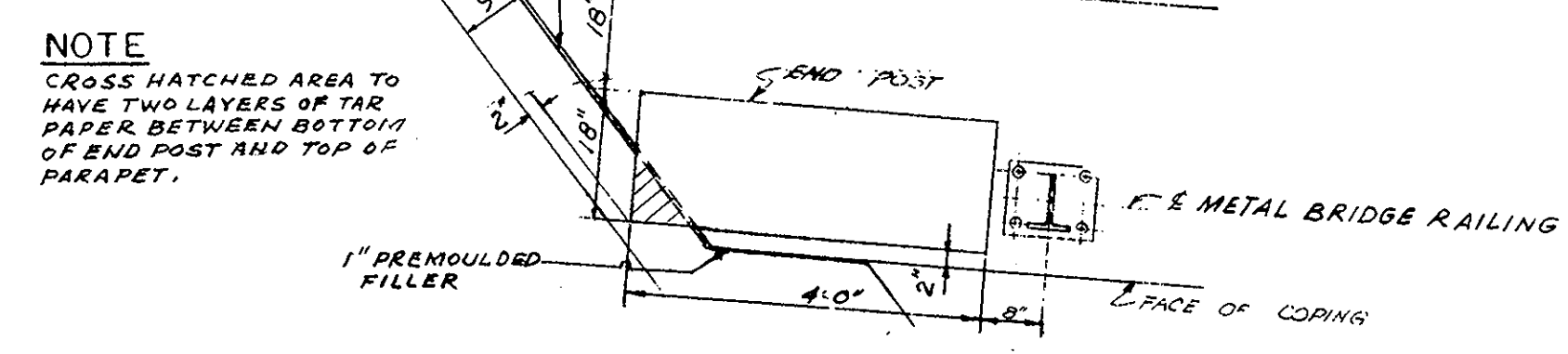
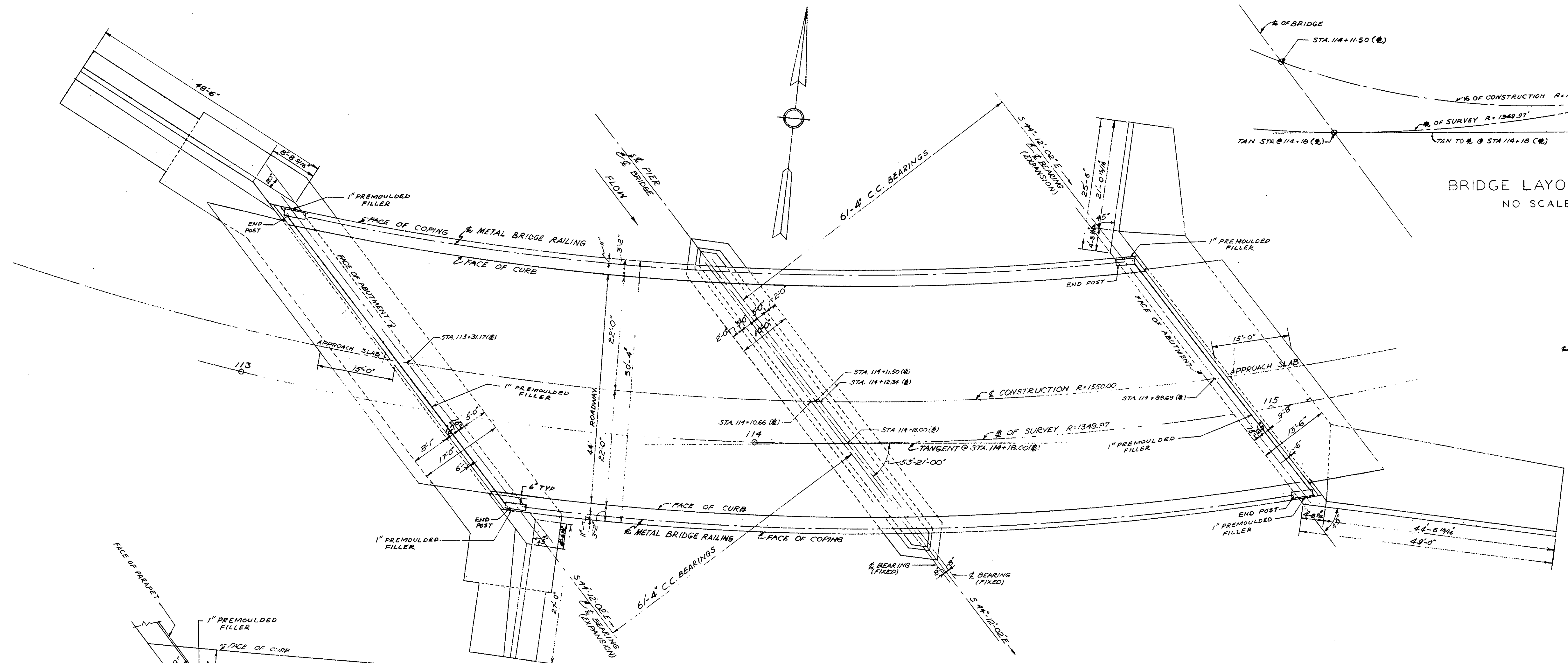


PROFILE
SCALE: HOR. 1" = 40'
VERT. 1" = 8'

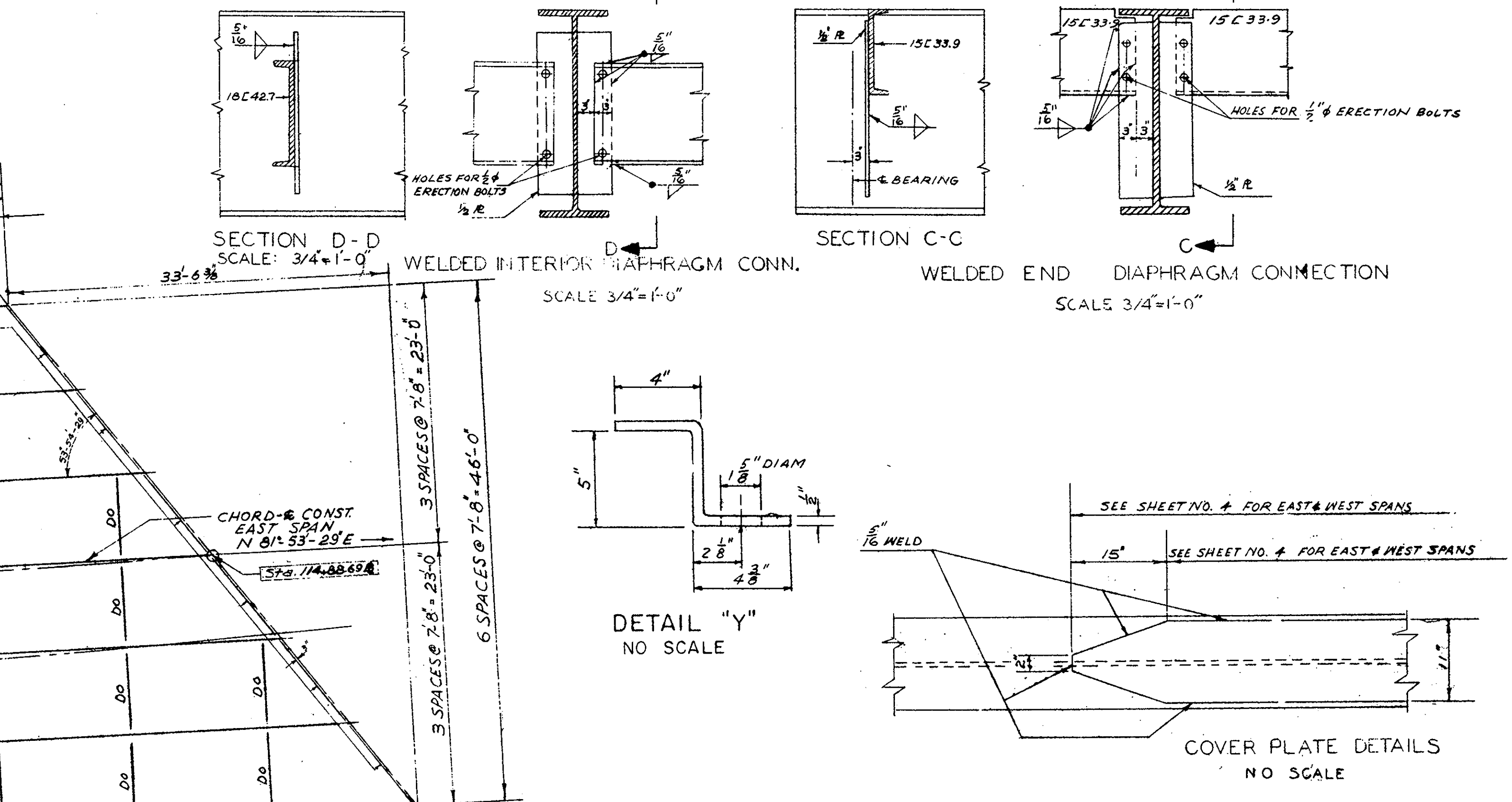
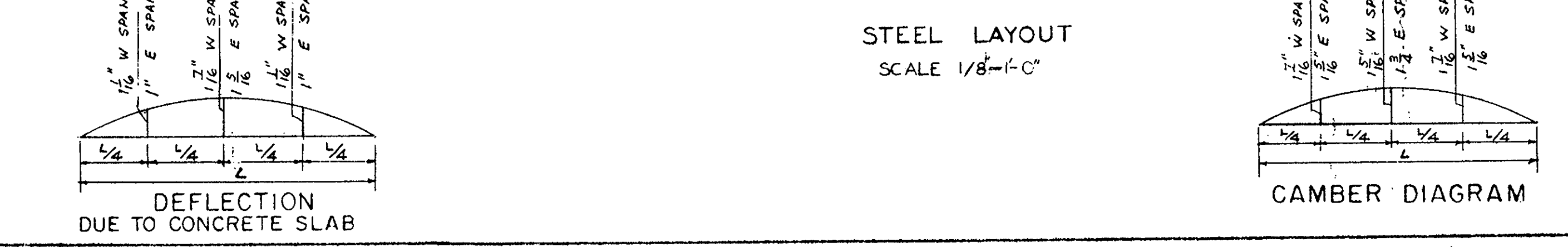
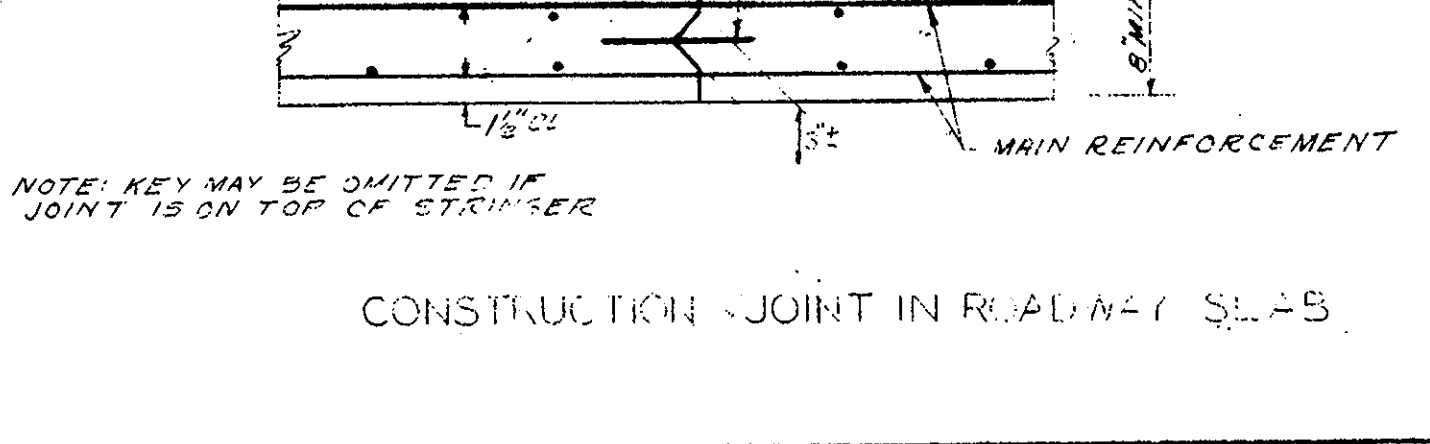
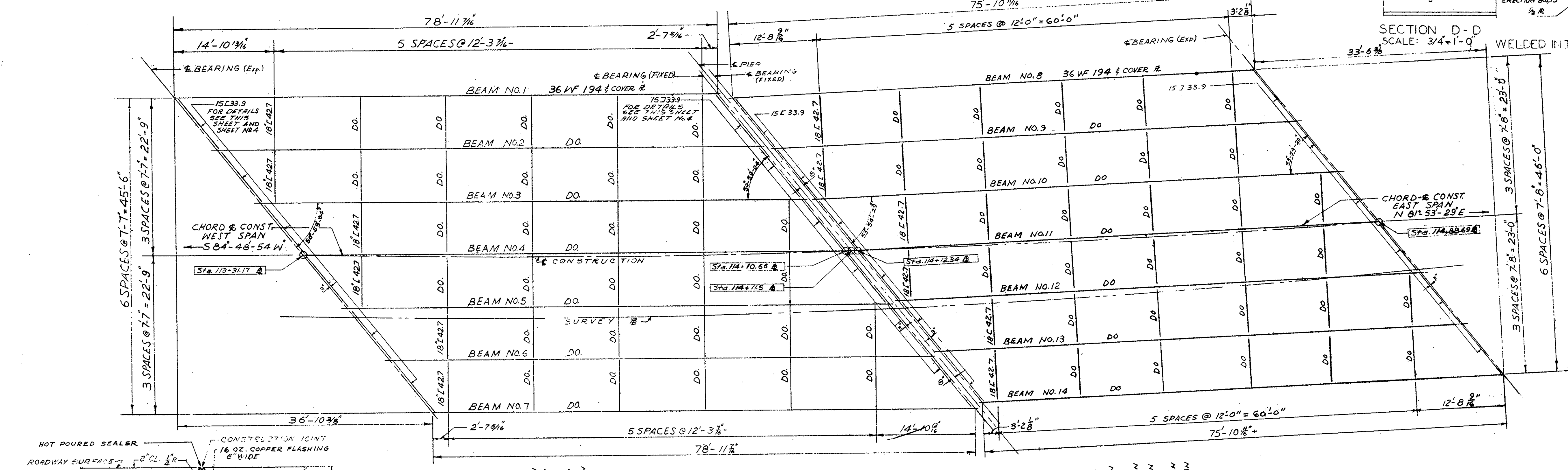
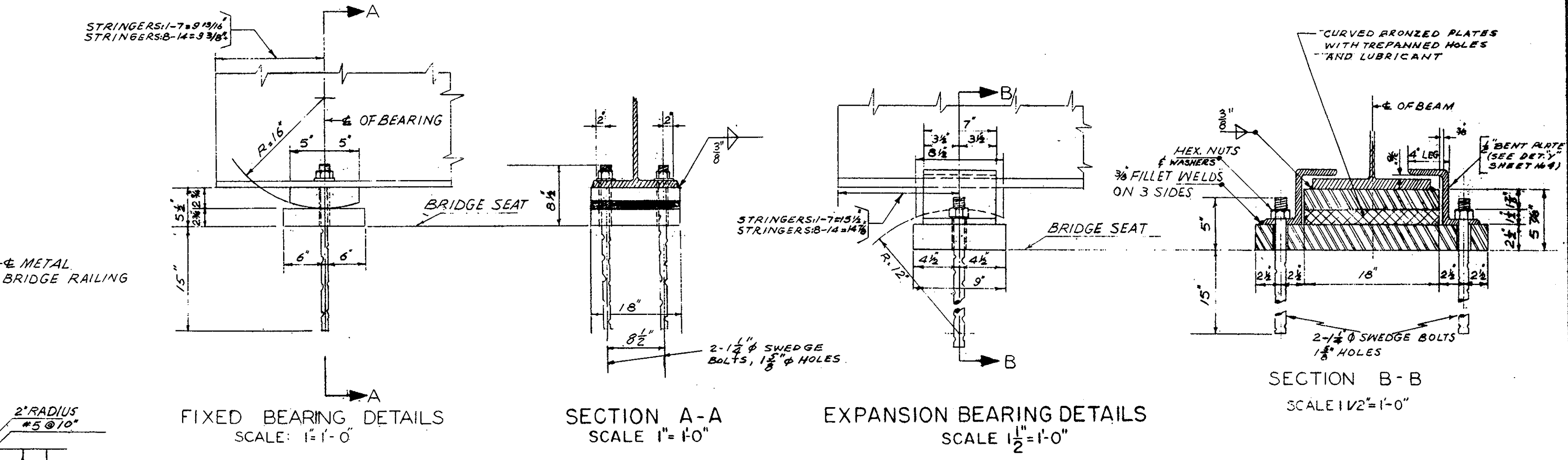
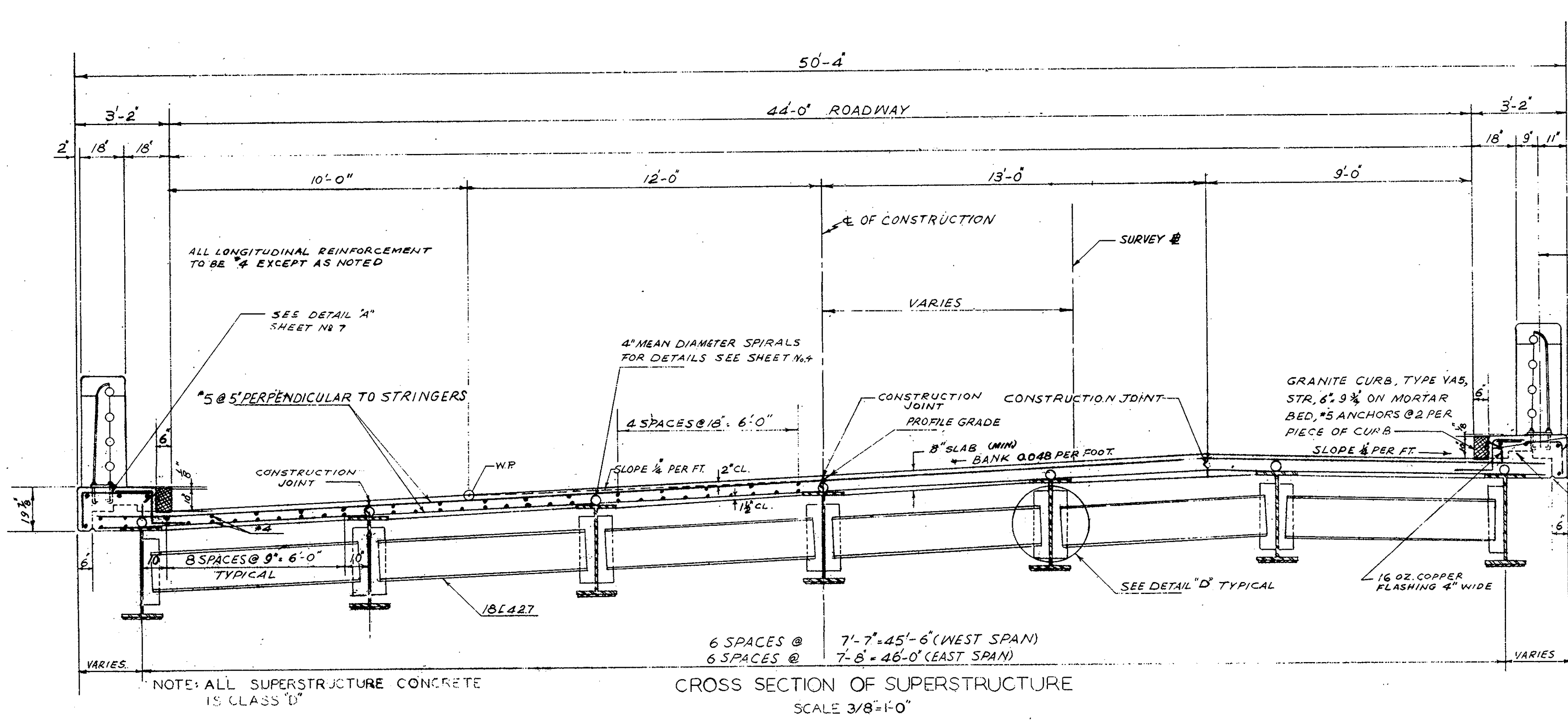
1175.0	EL 1172.3 Med. To Fine Sand 17 1166.3 Water 1164.3 1160.3	EL 1172.3 Fill, c & f Sand 17 1166.3 Water 1164.3 1160.3	EL 1166.6 c-f Gray Sand, 1165.6 Trace Fine Gravel, 1165.6 Trace Silt, M. Dense 1160.6	EL 1167.3 Water 1166.3 c-f Sand and Gravel, Boulders, 1165.7 c-f Sand, M. Dense 1162.2 Little m-f Gravel, 1162.2 Refusal	EL 1172.7 Topsoil, c-f Sand, Trace Silt, M. Medium 1171.7 4 1165.7 Trace m-f Gravel, M. Dense 1163.7 Trace Silt 1162.2 Refusal	EL 1172.7 Fill, c-f Sand, 1170.8 19 1165.7 Water 1163.7 1160.8	EL 1171.8 Topsoil, c-f Sand, Little Silt, M. Medium 72 1165.8 Trace m-f Gravel, M. Dense 1163.8 Trace Silt, M. Dense 1160.8
1170.0	33 1166.3 1164.3 1160.3	17 1166.3 1164.3 1160.3	17 1166.3 1164.3 1160.3	4 1165.7 1163.7 1162.2 1160.6	4 1165.7 1163.7 1162.2 1160.6	19 1165.7 1163.7 1160.8	72 1165.8 1163.8 1160.8
1160.0	47 1149.3 1147.3	47 1149.3 1147.3	47 1149.3 1147.3	47 1149.3 1147.3	47 1149.3 1147.3	47 1149.3 1147.3	47 1149.3 1147.3
1150.0	100 1147.3	100 1147.3	100 1147.3	100 1147.3	100 1147.3	100 1147.3	100 1147.3
1145.0	NO.1	NO.1A	NO.2	NO.3	NO.4	NO.4A	NO.5

1175.0	EL 1172.3 Med. To Fine Sand 17 1166.3 Water 1164.3 1160.3	EL 1172.3 Fill, c & f Sand 17 1166.3 Water 1164.3 1160.3	EL 1166.6 c-f Gray Sand, 1165.6 Trace Fine Gravel, 1165.6 Trace Silt, M. Dense 1160.6	EL 1167.3 Water 1166.3 c-f Sand and Gravel, Boulders, 1165.7 c-f Sand, M. Dense 1162.2 Little m-f Gravel, 1162.2 Refusal	EL 1172.7 Topsoil, c-f Sand, Trace Silt, M. Medium 1171.7 4 1165.7 Trace m-f Gravel, M. Dense 1163.7 Trace Silt 1162.2 Refusal	EL 1172.7 Fill, c-f Sand, 1170.8 19 1165.7 Water 1163.7 1160.8	EL 1171.8 Topsoil, c-f Sand, Little Silt, M. Medium 72 1165.8 Trace m-f Gravel, M. Dense 1163.8 Trace Silt, M. Dense 1160.8
1170.0	33 1166.3 1164.3 1160.3	17 1166.3 1164.3 1160.3	17 1166.3 1164.3 1160.3	4 1165.7 116			

PUB. RD. DIV. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F 44(5)	19	44	227



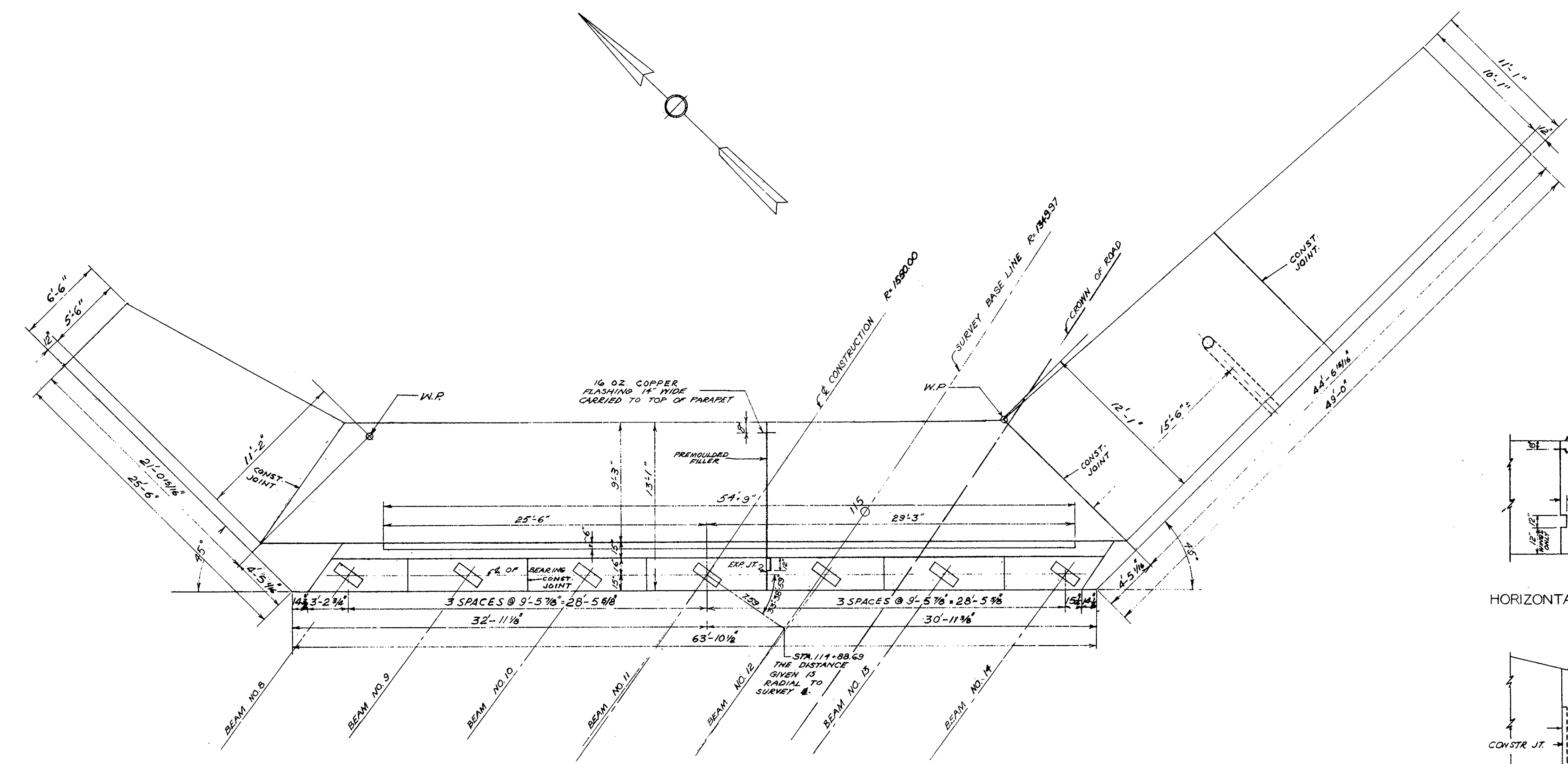
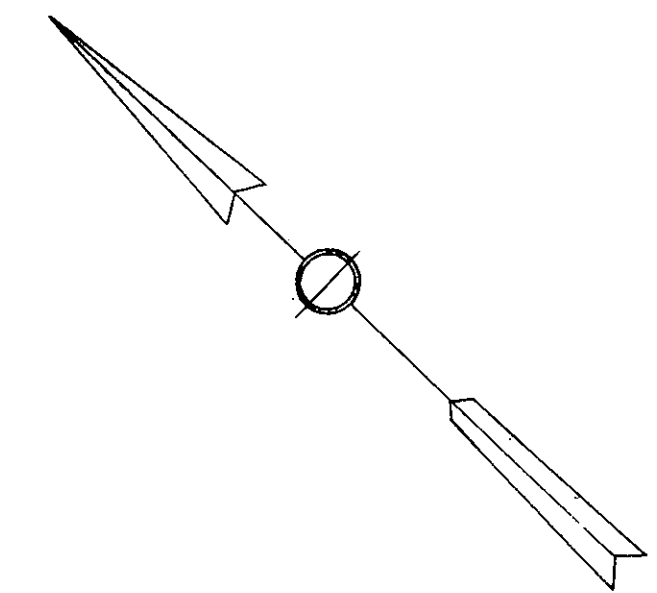
DATE	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	



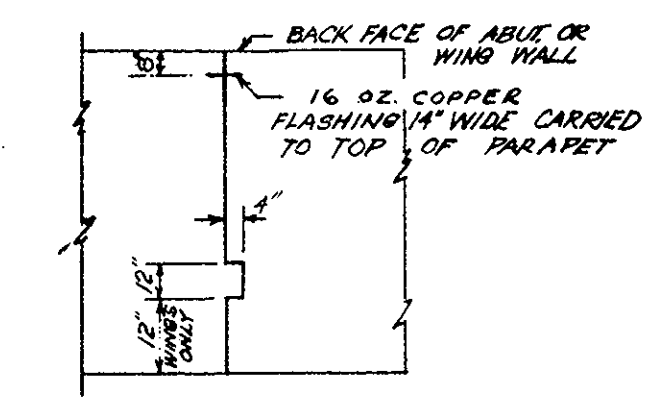
FOR SIZE AND LENGTH OF COVER PLATES SEE SHEET NO. 4

DEC 20 1957 ISSUED FOR CONSTRUCTION
DATE DESCRIPTION
USE ONLY PRINTS OF LATEST DATE

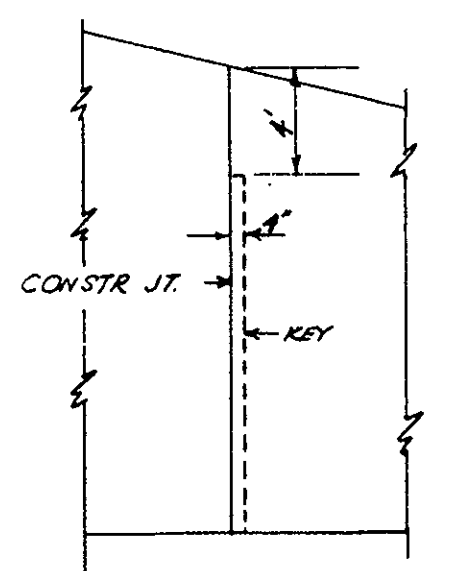
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1	MASS.	F 44(5)	19	47	227



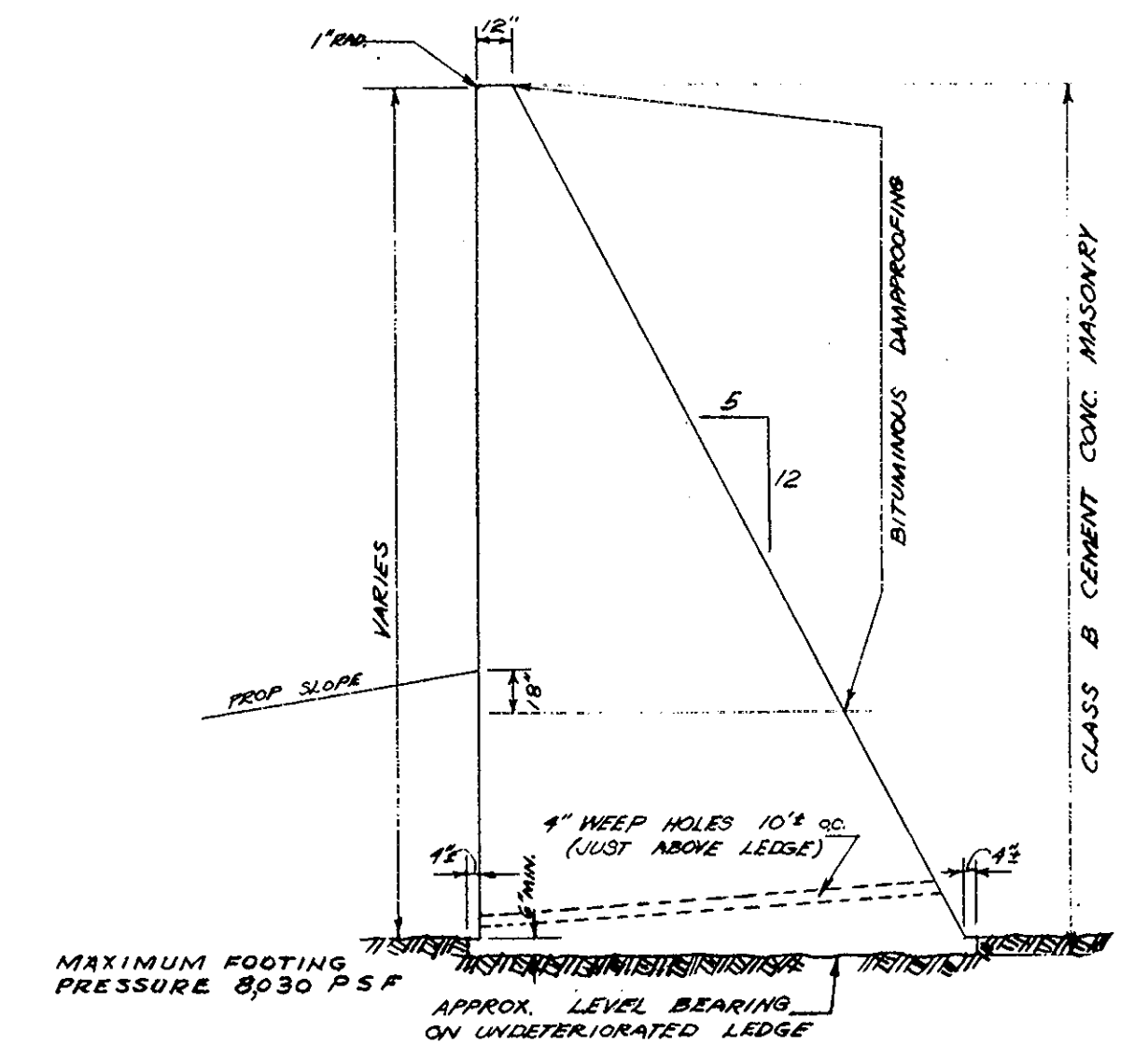
PLAN
SCALE: 3/16" = 1'-0"



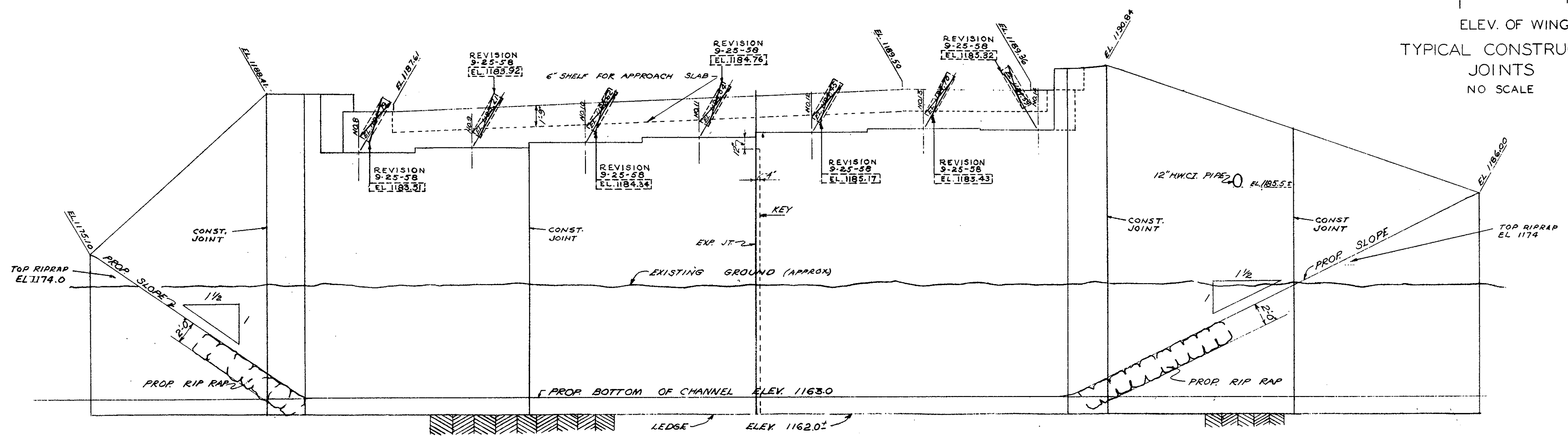
HORIZONTAL SECTION



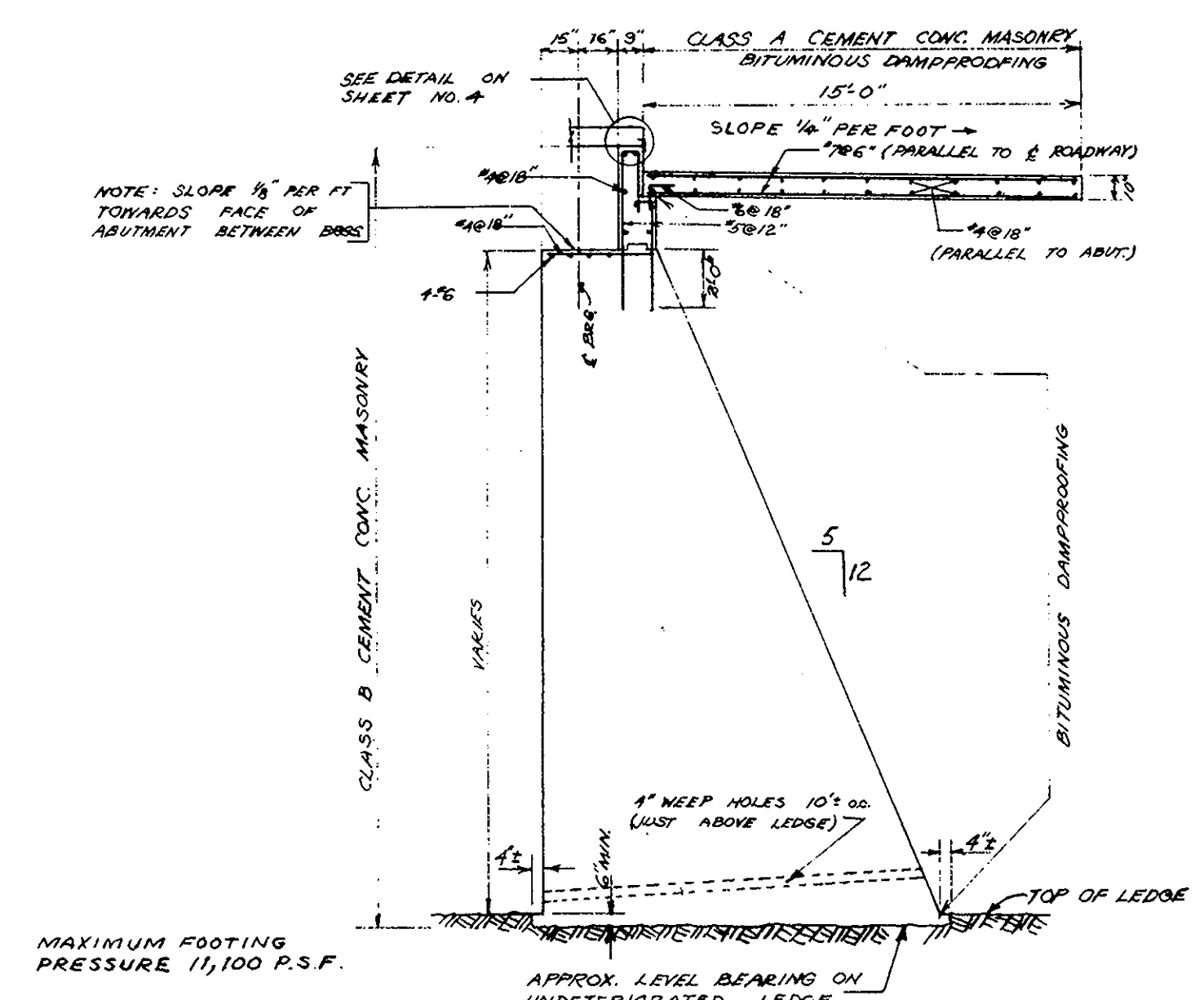
ELEV. OF WING
TYPICAL CONSTRUCTION
JOINTS
NO SCALE



TYPICAL SECTION OF WINGWALLS (EAST)
ABUTMENT
SCALE: 3/16" = 1'-0"



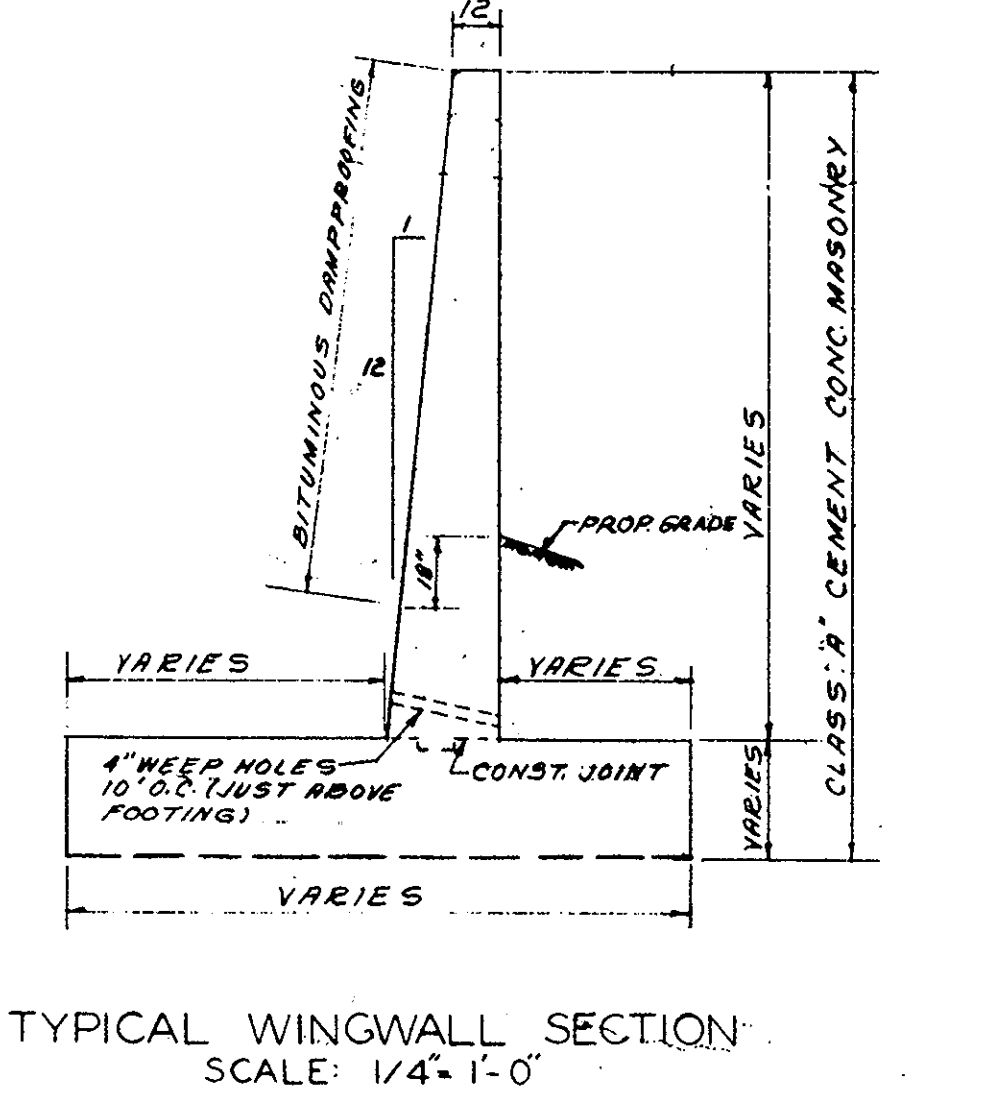
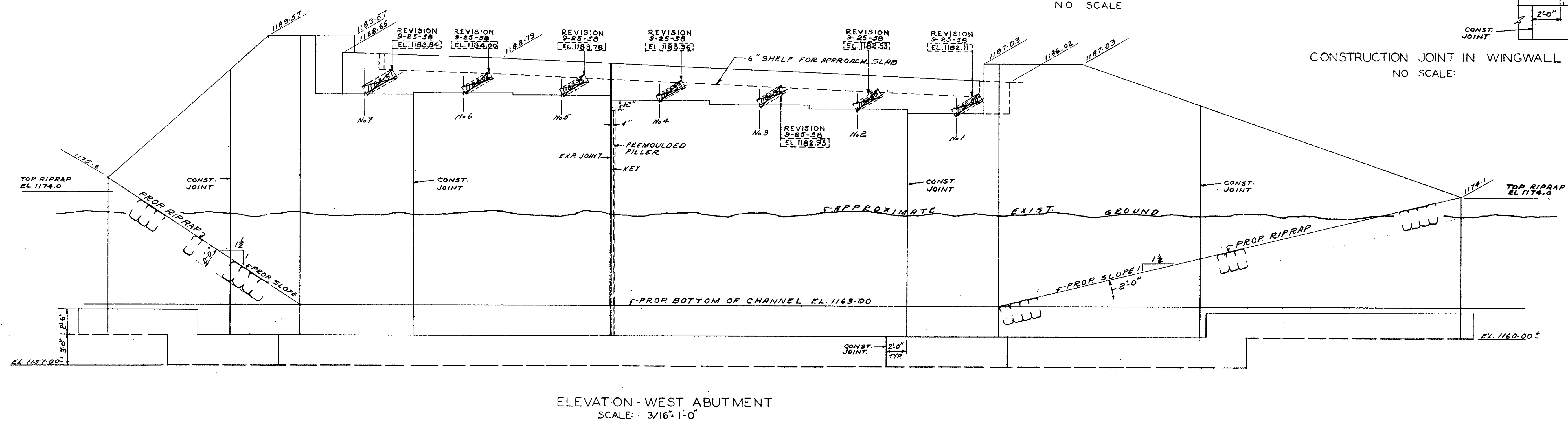
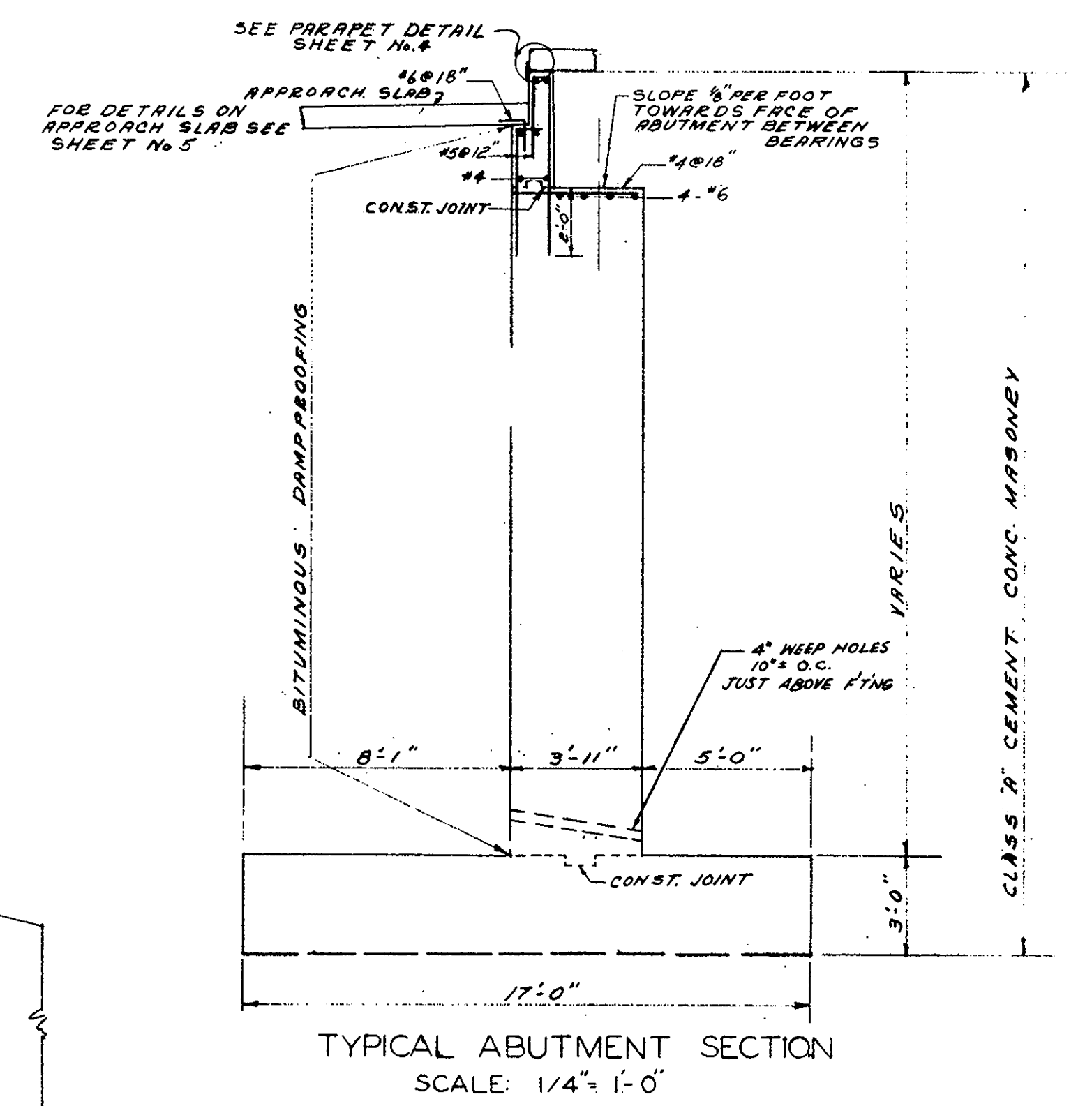
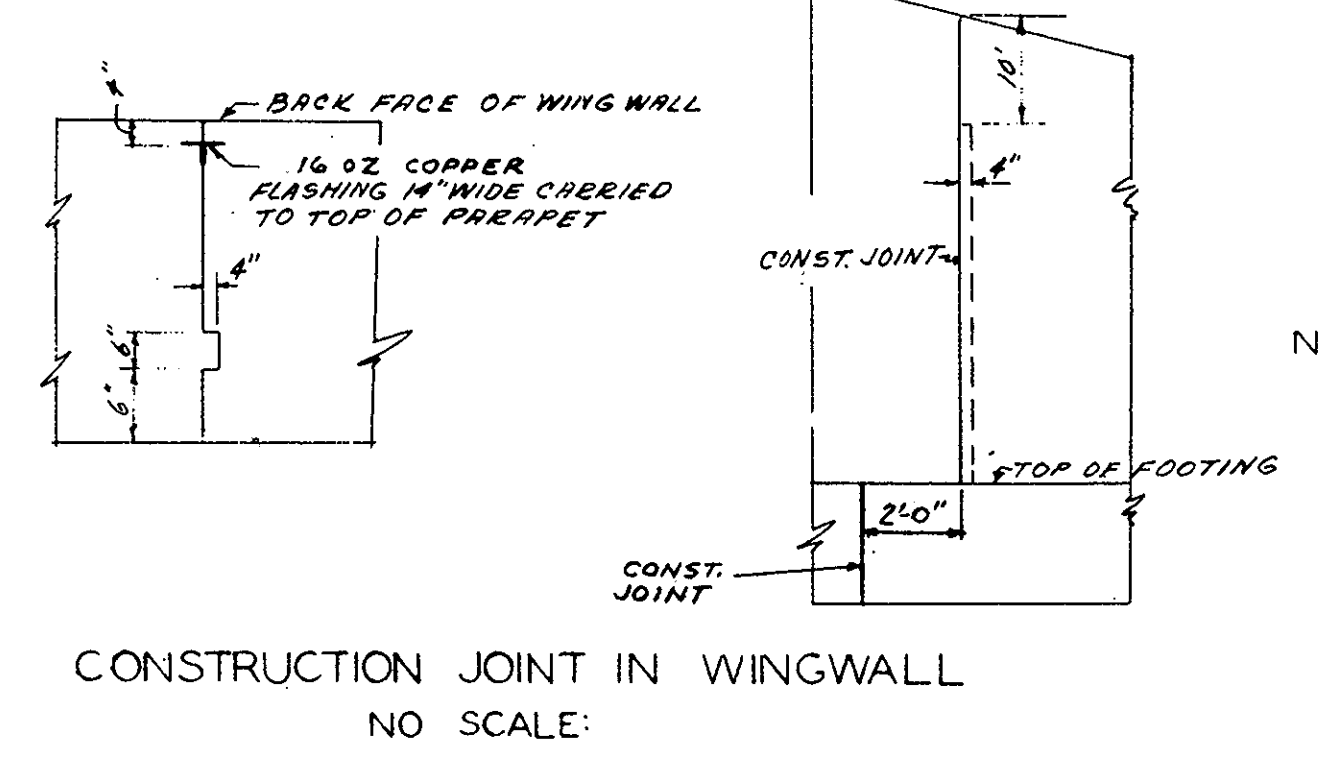
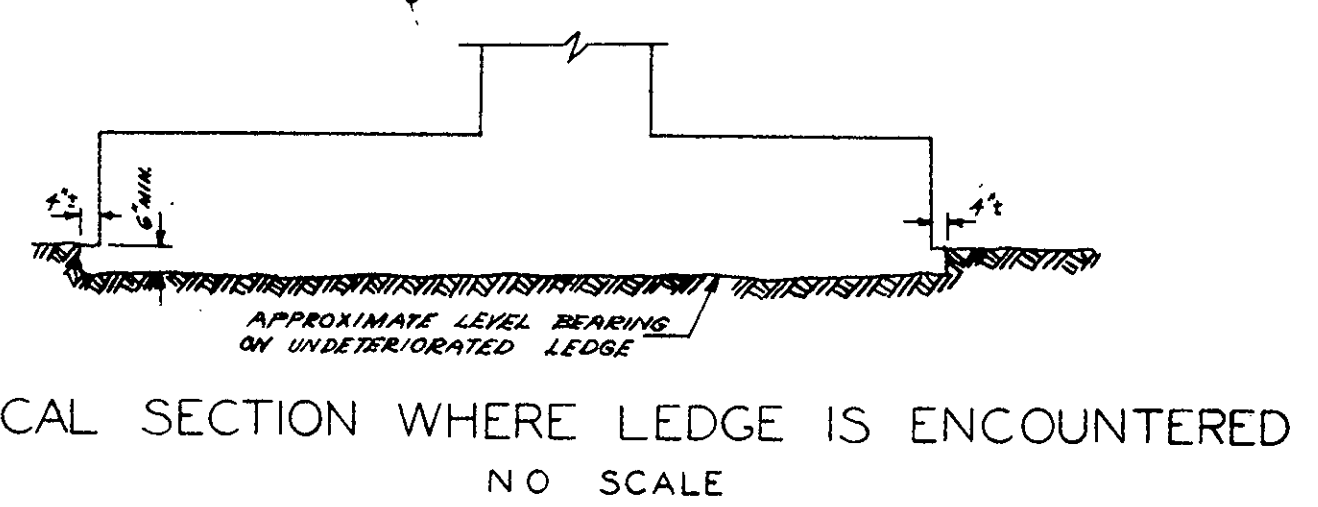
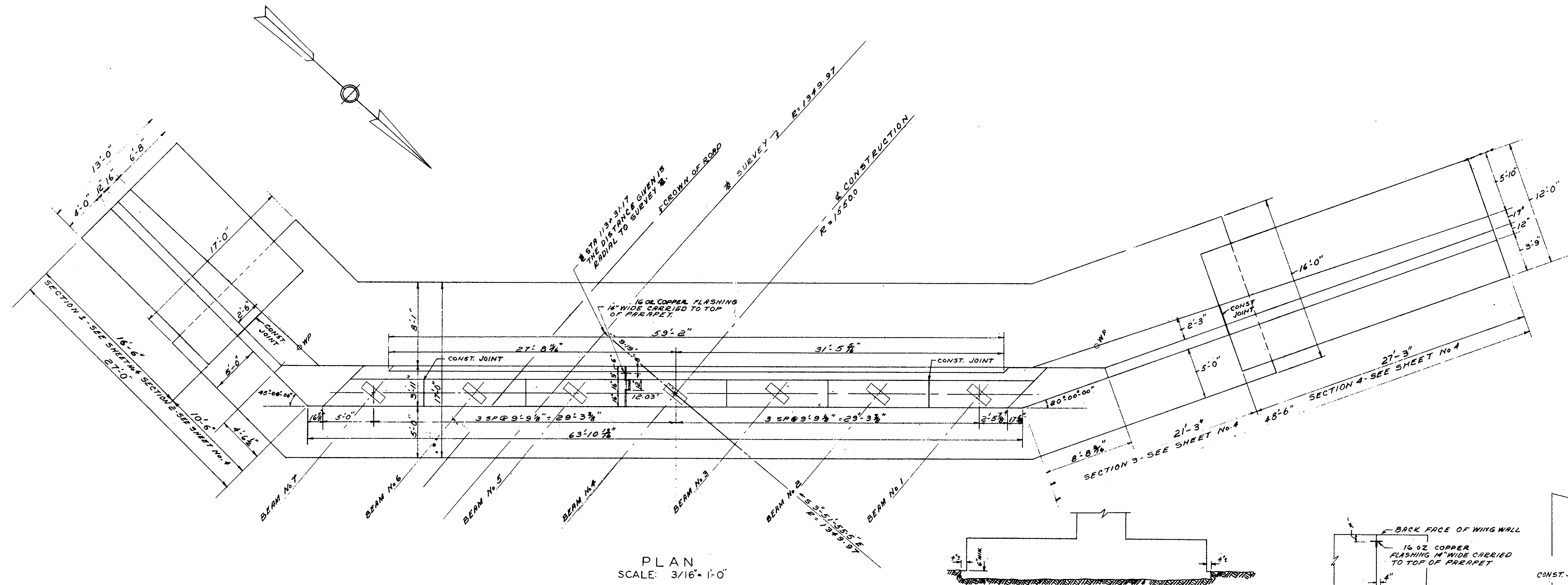
ELEVATION EAST ABUTMENT
SCALE: 3/16" = 1'-0"



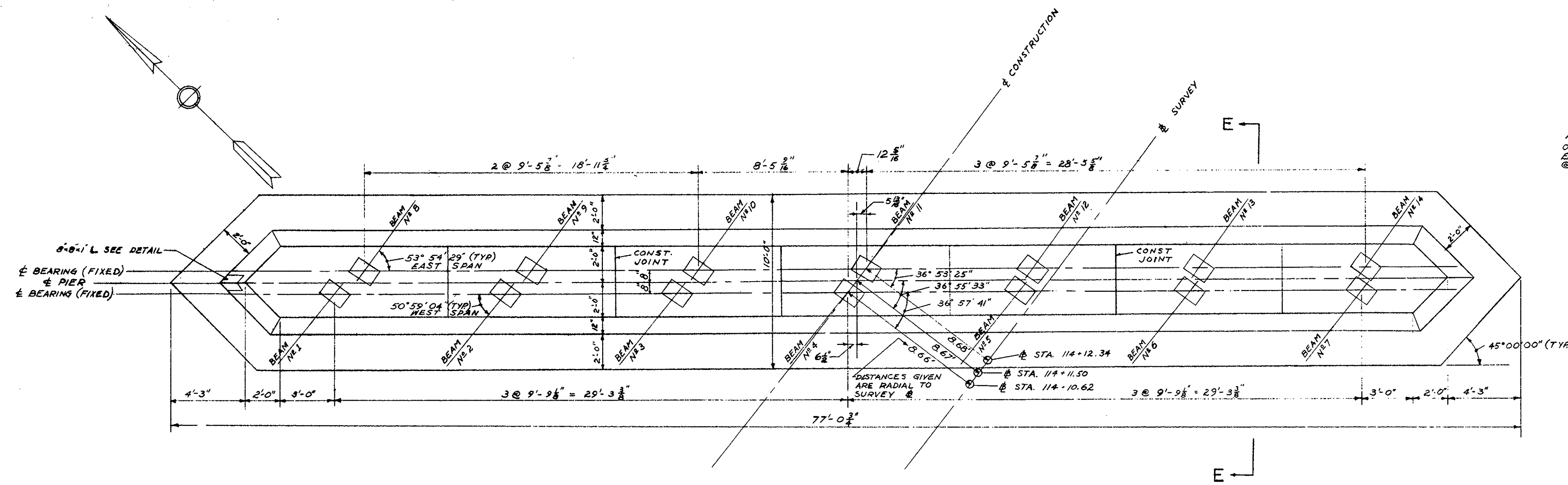
SECTION THRU ABUTMENT (EAST)
SCALE: 3/16" = 1'-0"

SEPT 25, 1958	BRIDGE SEAT ELEVATIONS REVISED
DEC 10, 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

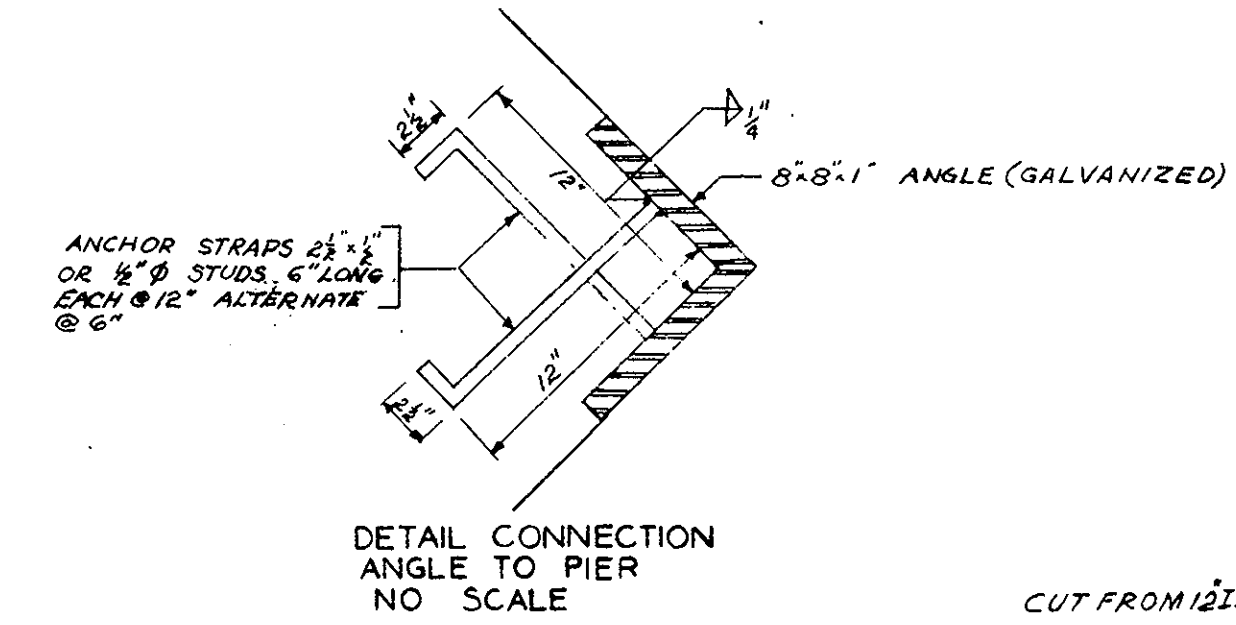
PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS.	F 44(5)	19	48	227



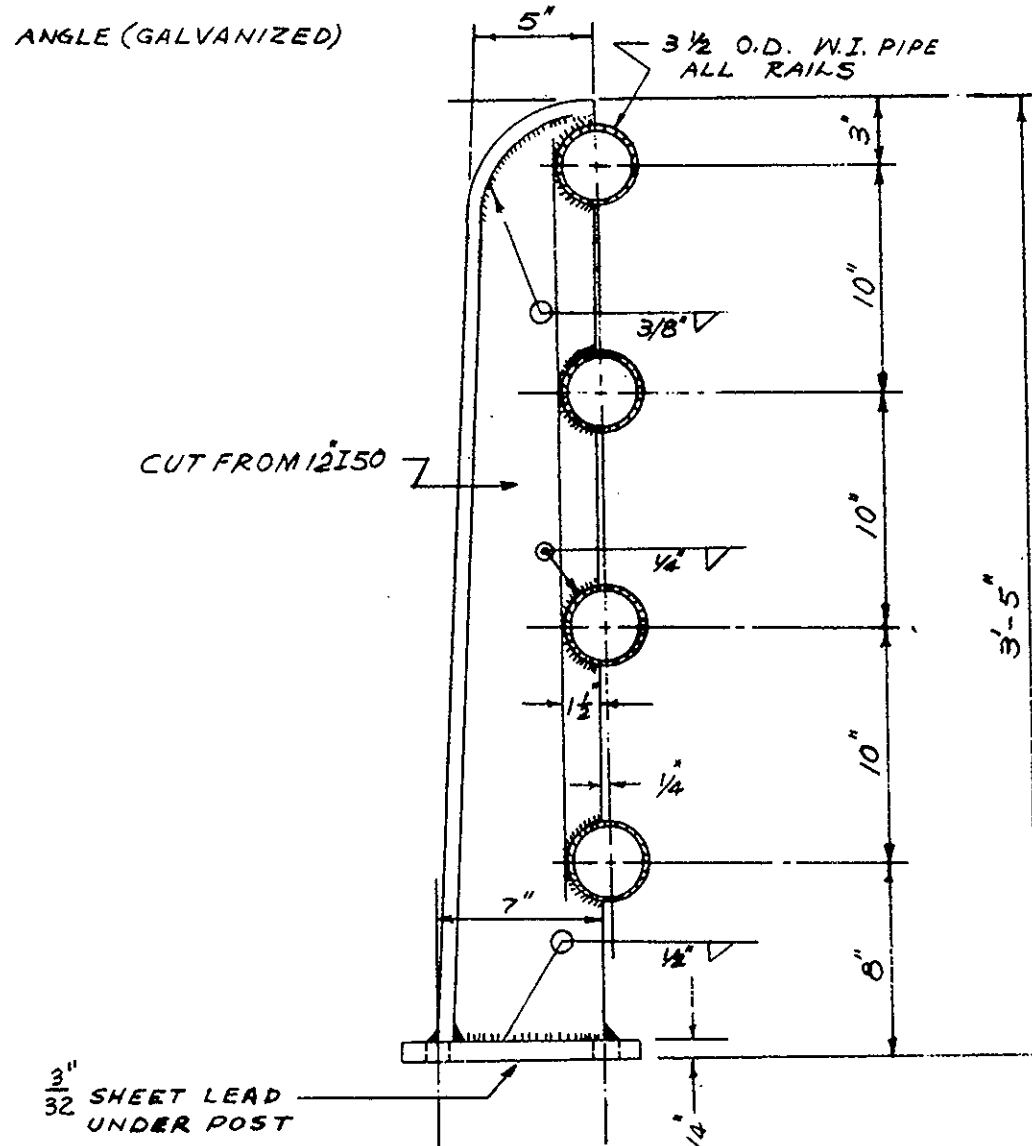
SEPT. 25, 1958	BRIDGE SEAT ELEVATIONS REVISED
DEC. 20, 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	



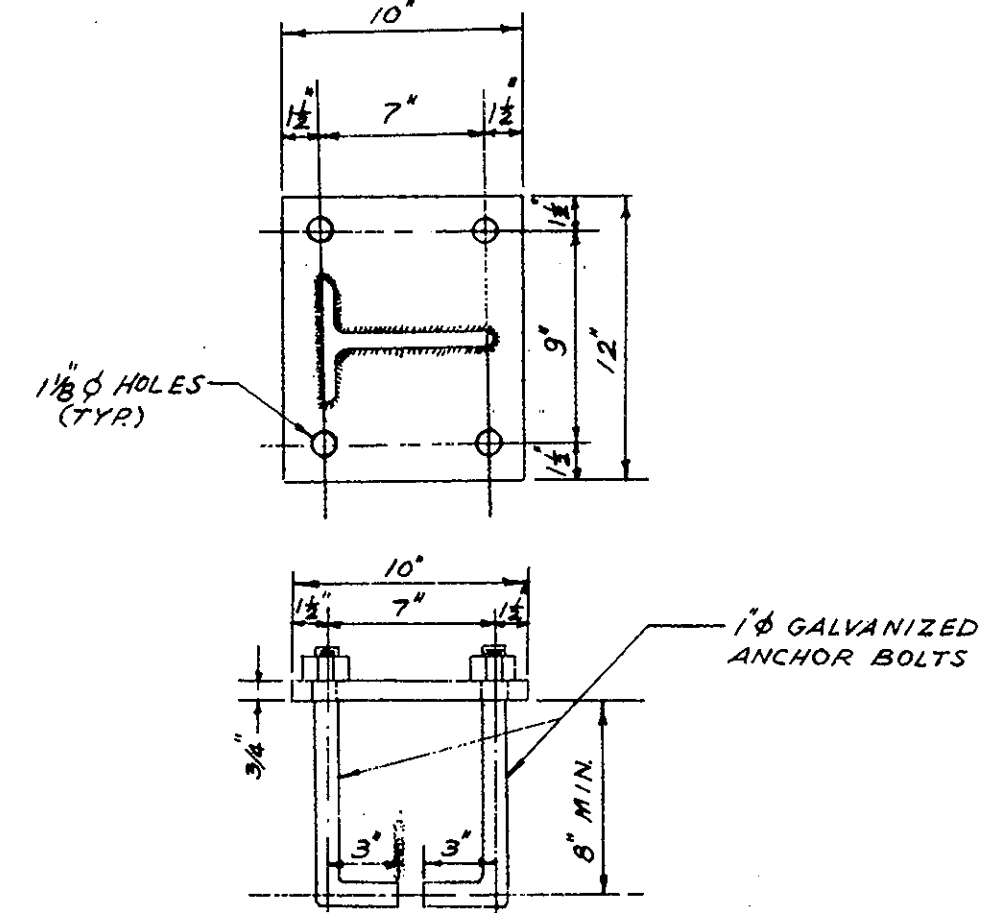
PLAN OF PIER
SCALE 1/4"=1'-0"



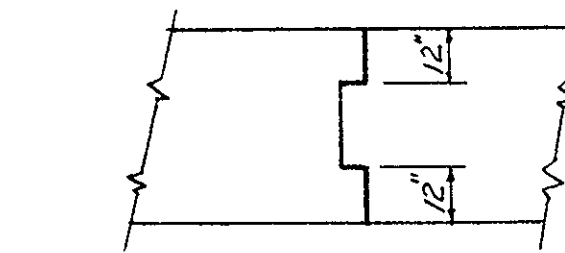
DETAIL CONNECTION
ANGLE TO PIER
NO SCALE



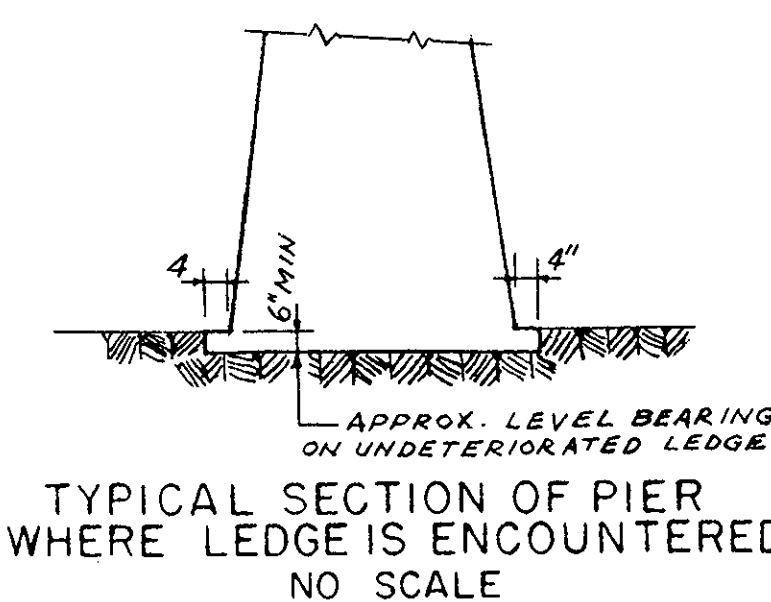
RAIL DETAILS
SCALE: 1 1/2"=1'-0"



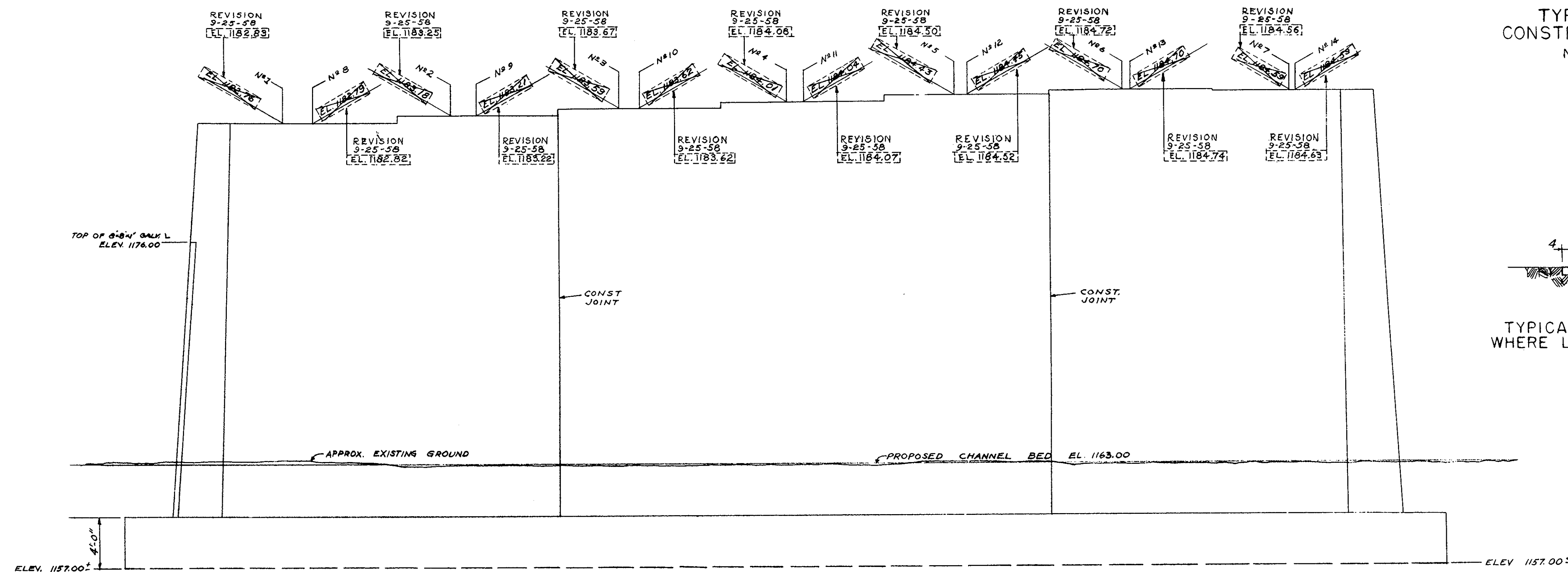
DETAIL A
SCALE: 1 1/2"=1'-0"



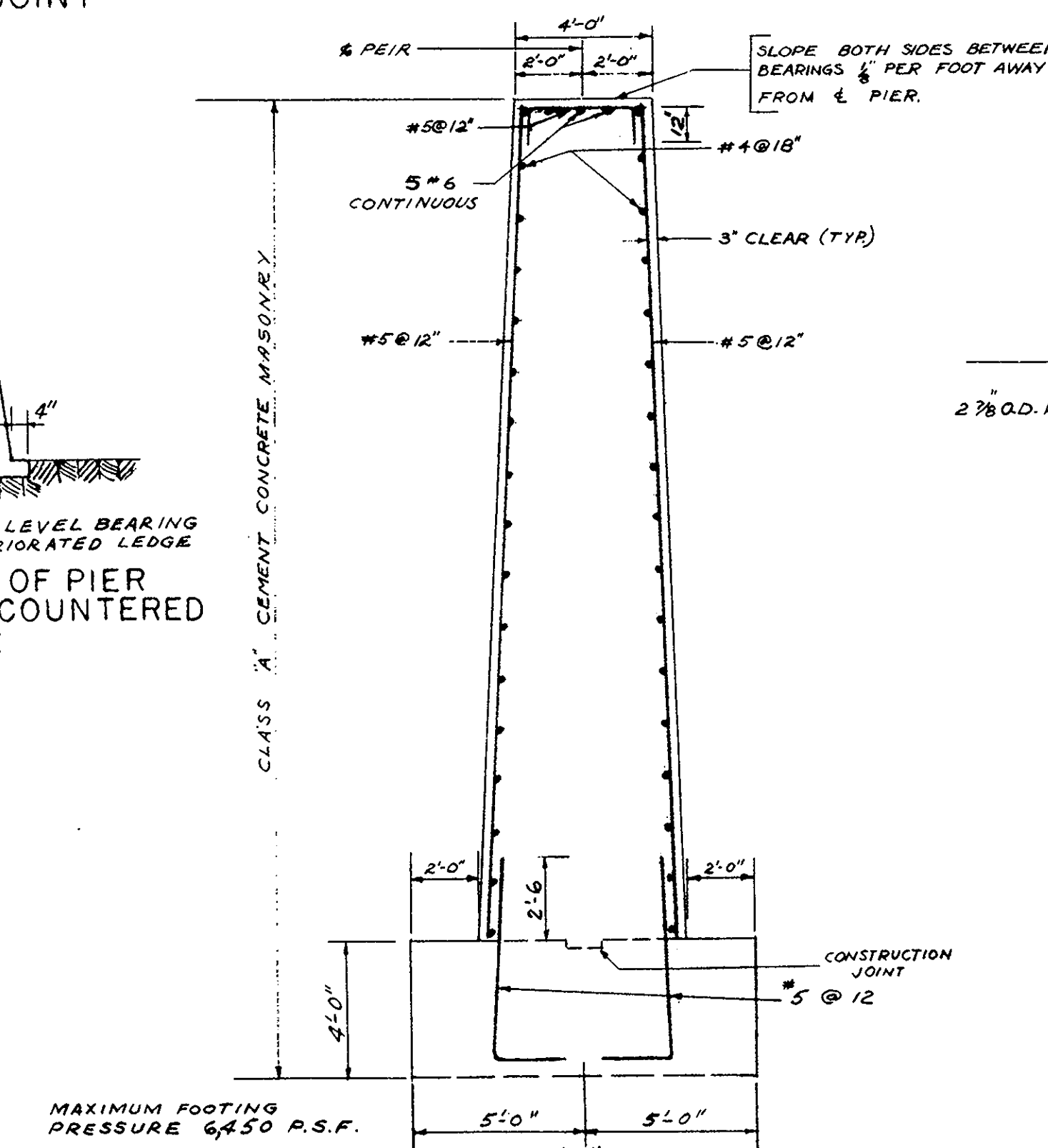
TYPICAL PIER
CONSTRUCTION JOINT
NO SCALE



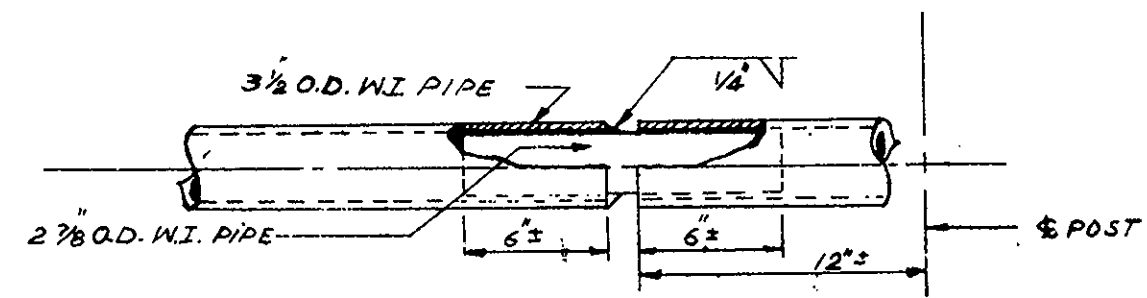
TYPICAL SECTION OF PIER
WHERE LEDGE IS ENCOUNTERED
NO SCALE



NORTHEAST ELEVATION OF PIER
SCALE 1/4"=1'-0"



SECTION E-E
SCALE 1/4"=1'-0"



RAIL EXPANSION JOINT
DETAIL
SCALE: 1 1/2"=1'-0"

SEPT. 25, 1958 BRIDGE SEAT ELEVATIONS REVISED
 DEC. 28, 1957 ISSUED FOR CONSTRUCTION
 DATE DESCRIPTION
 USE ONLY PRINTS OF LATEST DATA

PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F 44(5)	19	53	827

GENERAL NOTES

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

DATE AND SEAL
TO BE PLACED IN CENTER OF INSIDE FACES OF NORTHEASTERLY AND SOUTHWESTERLY END POSTS AS SHOWN IN DETAIL ON SHEET NO. 2. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED. SEAL WILL BE FURNISHED BY THE COMMONWEALTH AND SHALL BE PLACED BY CONTRACTOR.

DESIGN
ACCORDING TO SPECIFICATIONS OF AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS (1953 ED) FOR H20-44 LOADING.

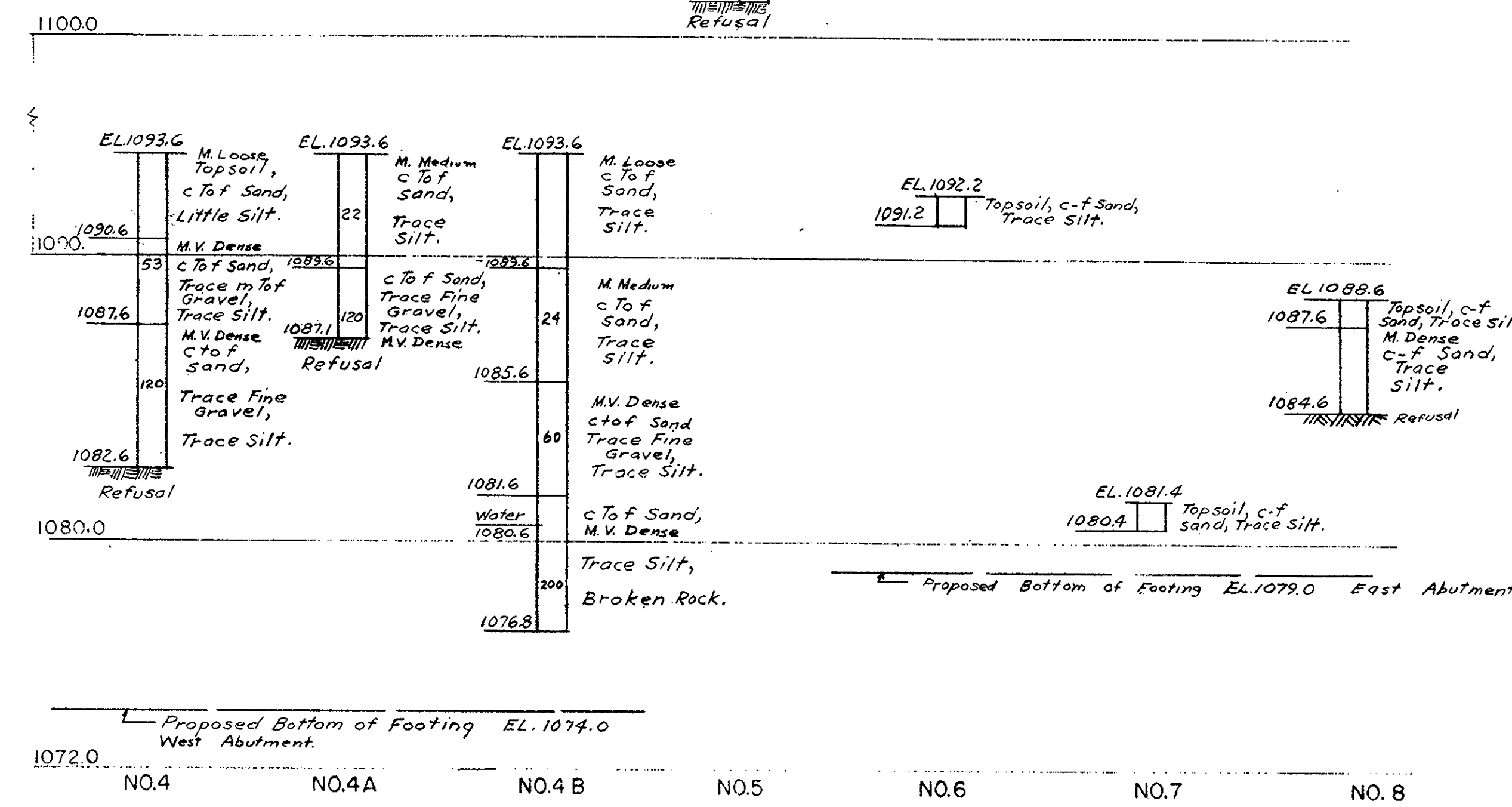
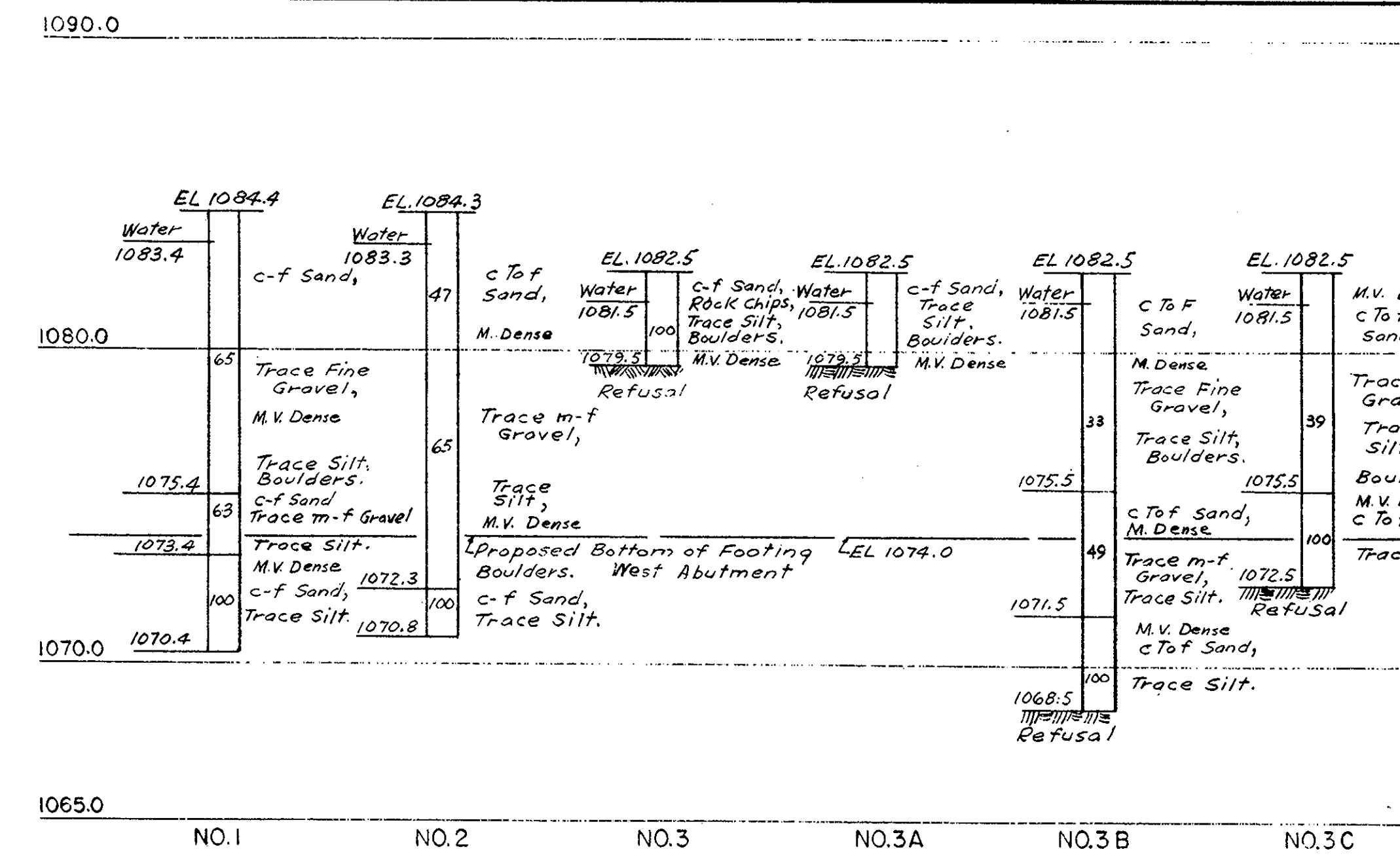
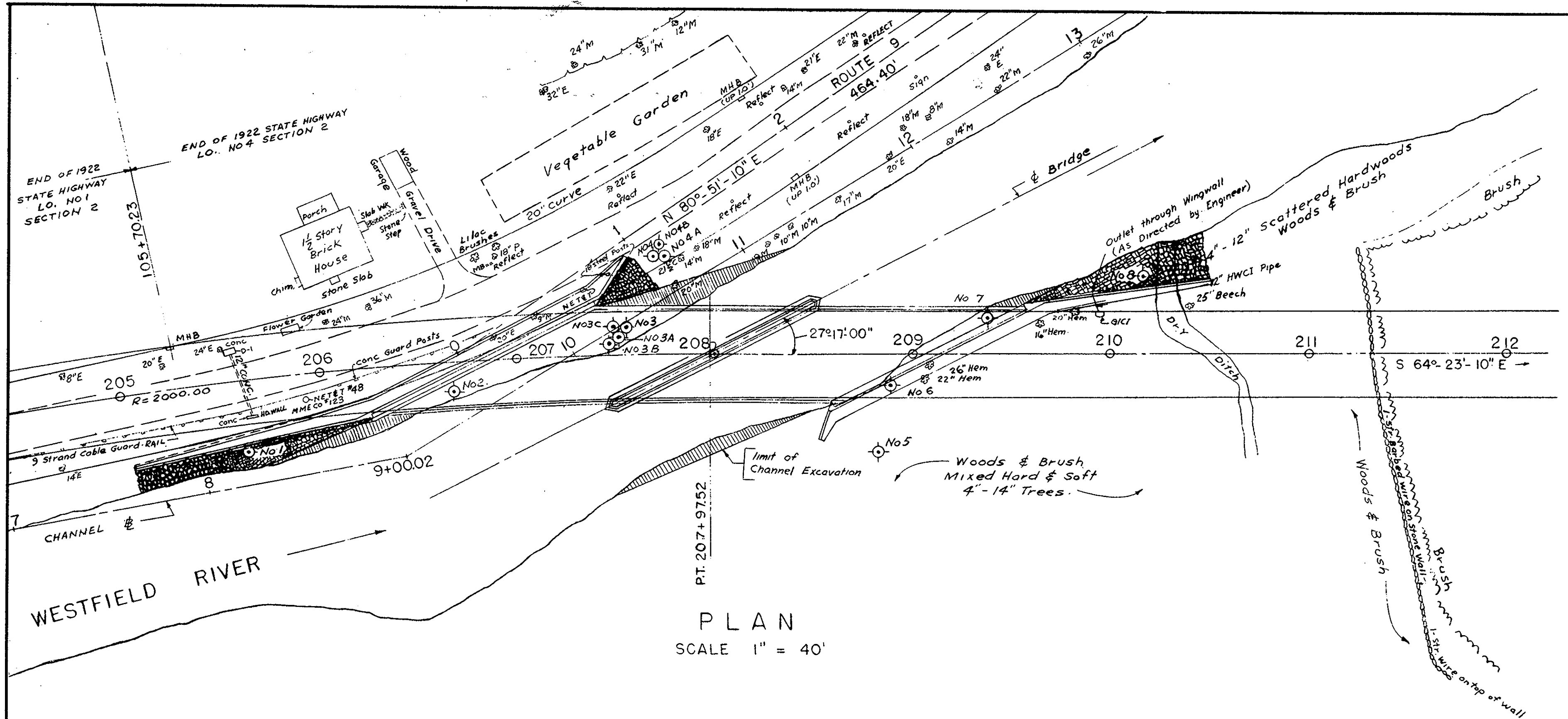
BENCH MARK
STA 207+05 - 150' LT. VERT. NAIL IN ROOT OF 35" TW. ELM EL. 1096.75 SEA LEVEL DATUM OF 1929.

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 THE BARS SHALL BE LAPPED 35 DIAMETERS TO MAKE A SPLICE.

HYDRAULIC DATA
SIZE OF DRAINAGE AREA - 411 SQ. MILES. BRIDGE OPENING PROVIDED FOR A RARE FLOOD. ESTIMATED DISCHARGE = 13500 CU. FT. PER SEC. VELOCITY OF FLOOD FLOW = 10.3 FT. PER SECOND.

ESTIMATED QUANTITIES (NOT GUARANTEED)

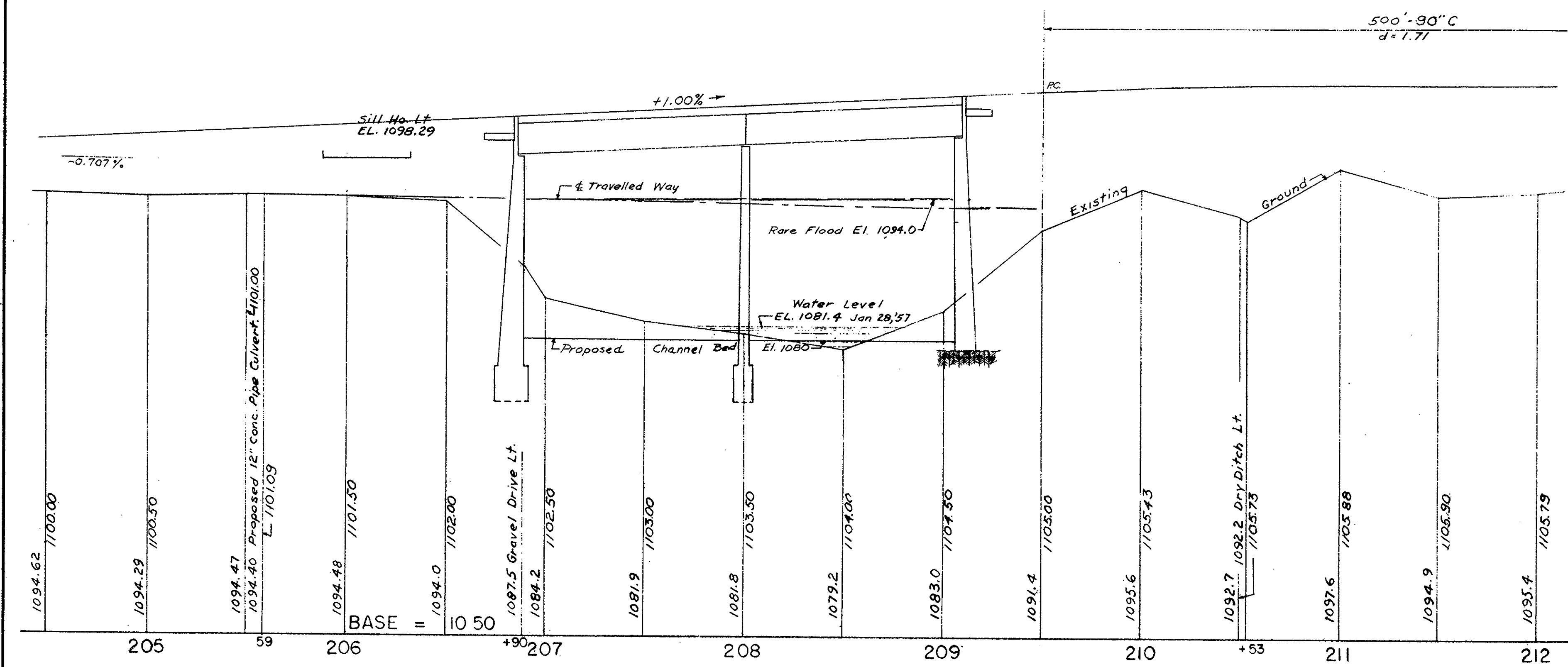
CLASS "A" ROCK EXCAVATION	300 CU. YD.
BRIDGE EXCAVATION	2400 CU. YD.
CHANNEL EXCAVATION	600 CU. YD.
CLASS "B" ROCK EXCAVATION	750 CU. YD.
GRAVEL BORROW	2150 CU. YD.
CLASS "A" CEMENT CONCRETE MASONRY	610 CU. YD.
CLASS "B" CEMENT CONCRETE MASONRY	2670 CU. YD.
STEEL REINFORCING FOR STRUCTURES	41,000 LBS.
RIP RAP	1,150 CU. YD.
BRIDGE SUPERSTRUCTURE	1 LUMP SUM.



BORING DATA

SCALE 1" = 4'
BORINGS TAKEN MARCH 1957 BY ALLSTATE DRILLING CO., EAST PROVIDENCE R.I.

BORING NOTES
LOCATION OF BORINGS SHOWN ON KEY PLAN THUS ⊕ NO. 1.
BORINGS TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITION AT BORING POINTS ONLY, BUT DO NOT NECESSARILY SHOW NATURE OF MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION.
FIGURES IN COLUMNS INDICATE BLOWS PER FOOT ON 1" PIPE 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.



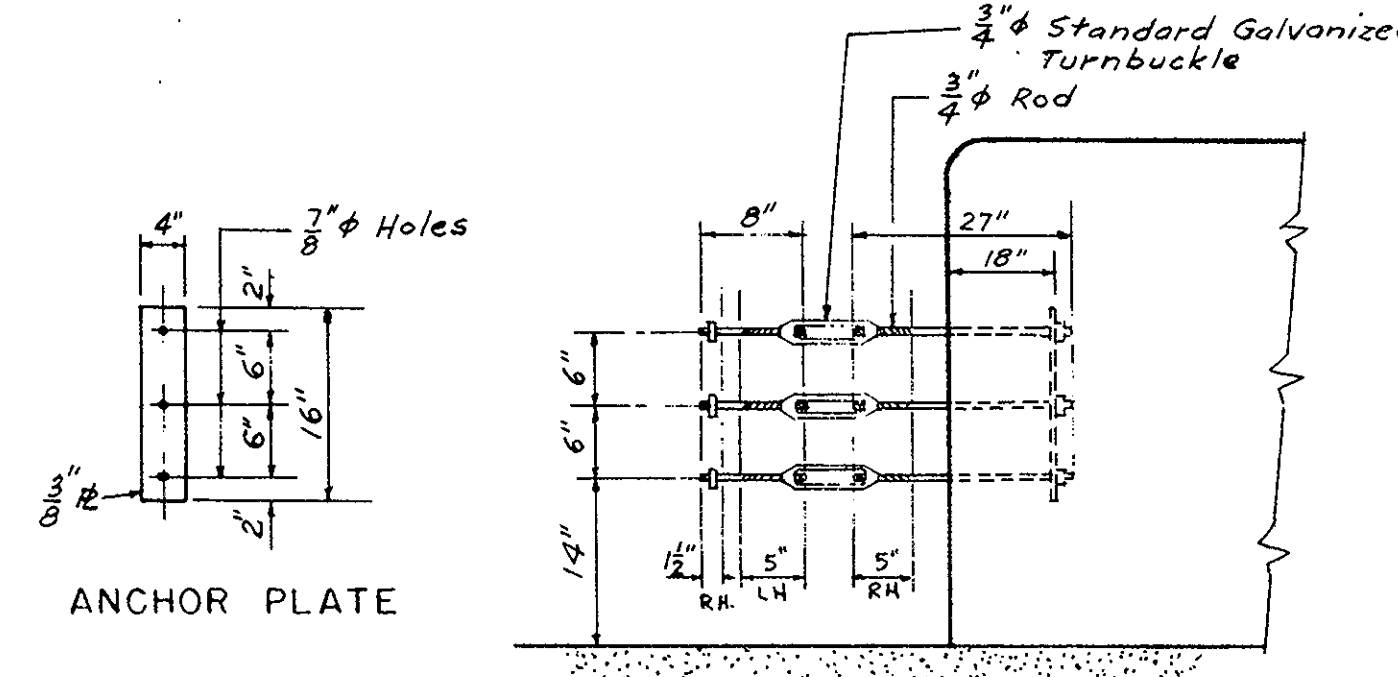
DUFFILL ASSOCIATES INC.,
CONSULTING ENGINEERS
BOSTON, MASS.

APRIL 11, 1958 SHEET #4 BEARING STIFFENER - REVISED
DEC. 28, 1957 ISSUED FOR CONSTRUCTION

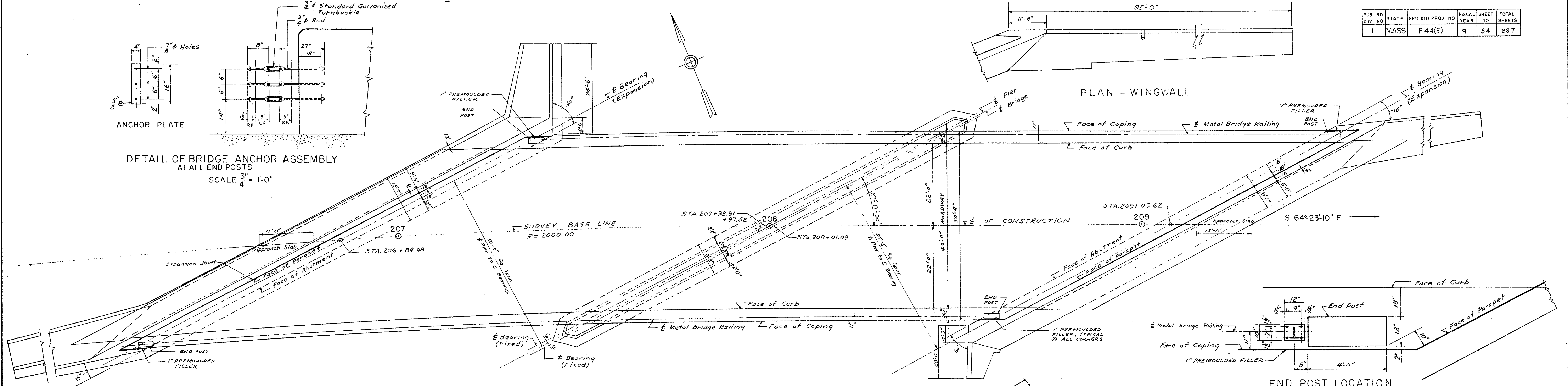
THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED BRIDGE
CUMMINGTON
RELOCATION OF ROUTE 9 STA. 208+00.00
OVER
WESTFIELD RIVER
SCALES AS NOTED
OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 HANSHUA ST - BOSTON, MASS.
DEC. 1957

BRIDGE ENGINEER
CHIEF ENGINEER

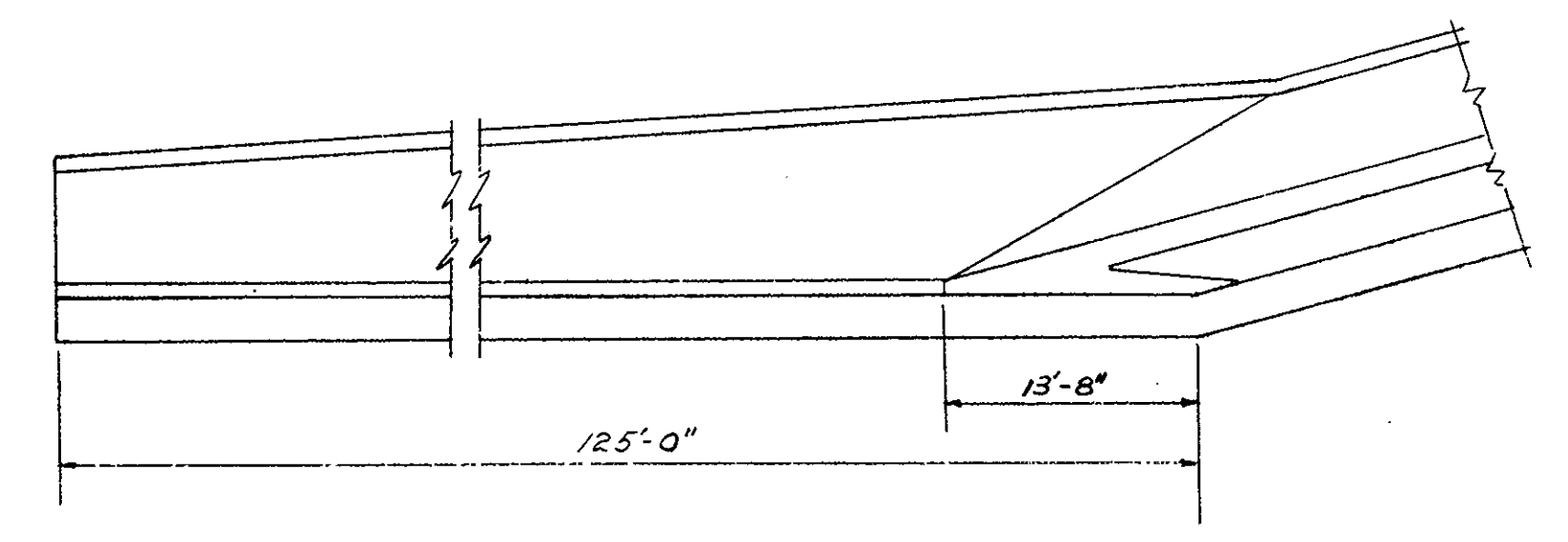
PUB. RD. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(5)	19	54	227



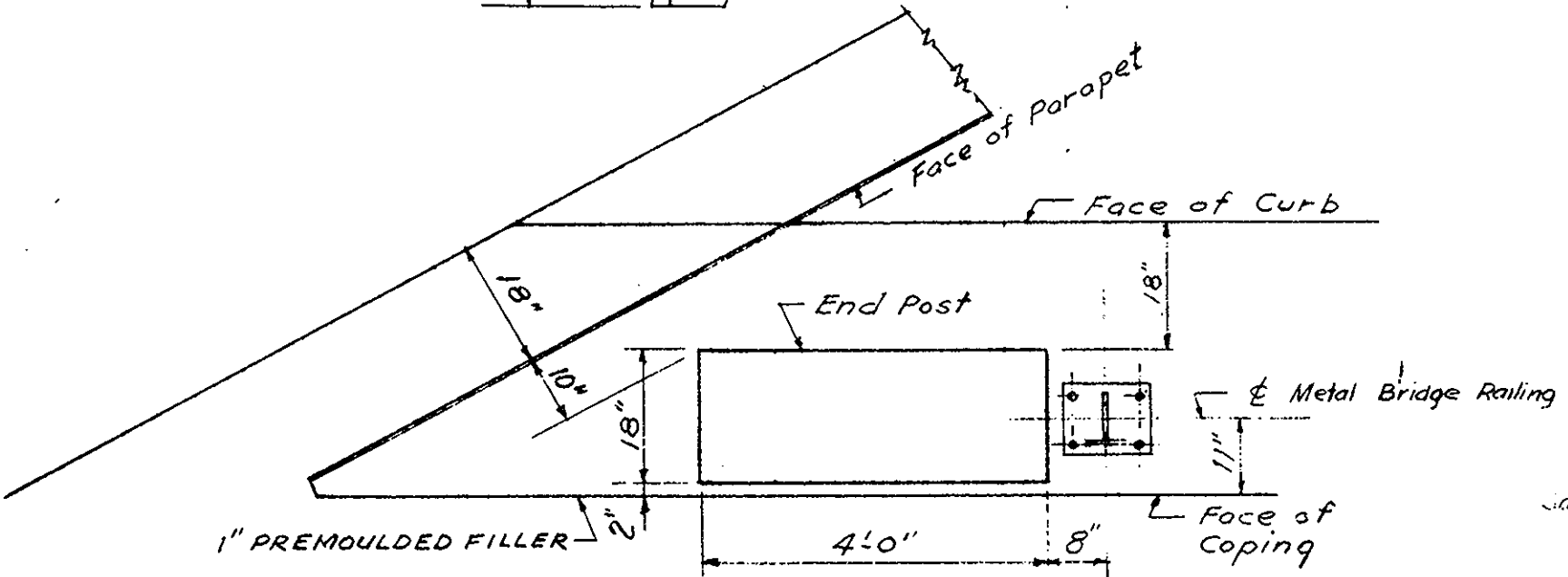
DETAIL OF BRIDGE ANCHOR ASSEMBLY AT ALL END POSTS
SCALE 3/4" = 1'-0"



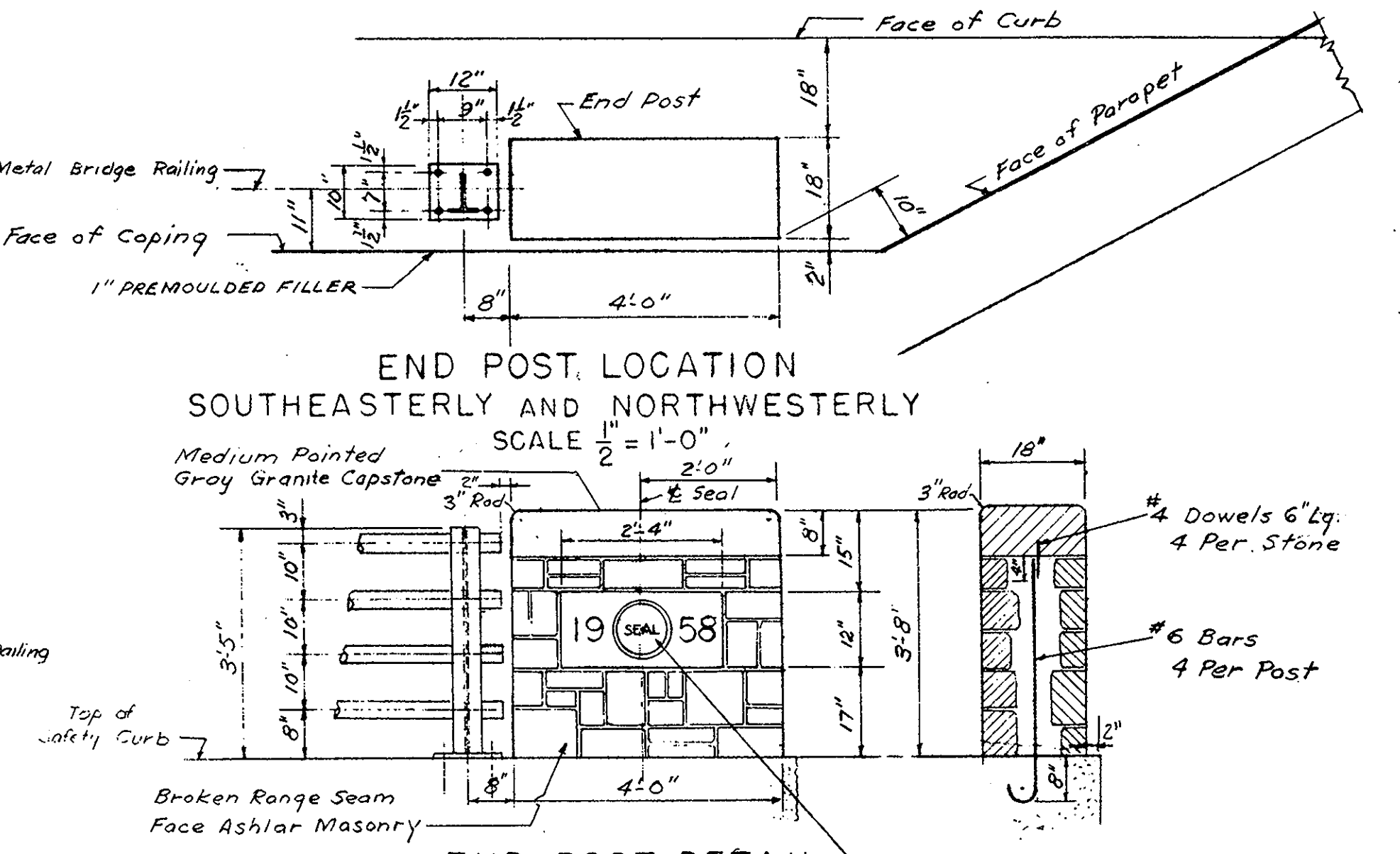
PLAN
SCALE 3/32" = 1'-0"



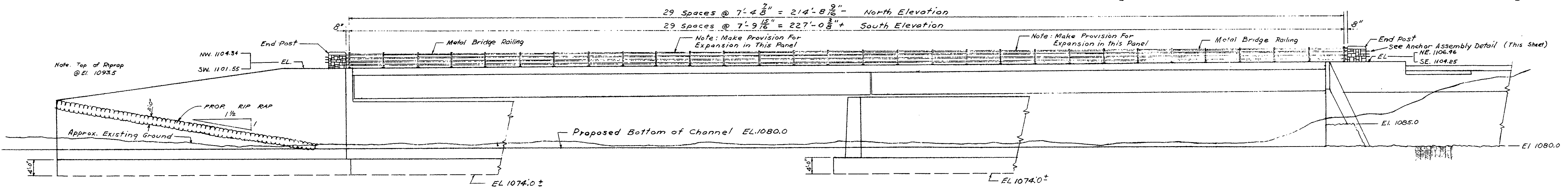
PLAN - WINGWALL



END POST LOCATION SOUTHWESTERLY AND NORTHEASTERLY
SCALE 1/2" = 1'-0"



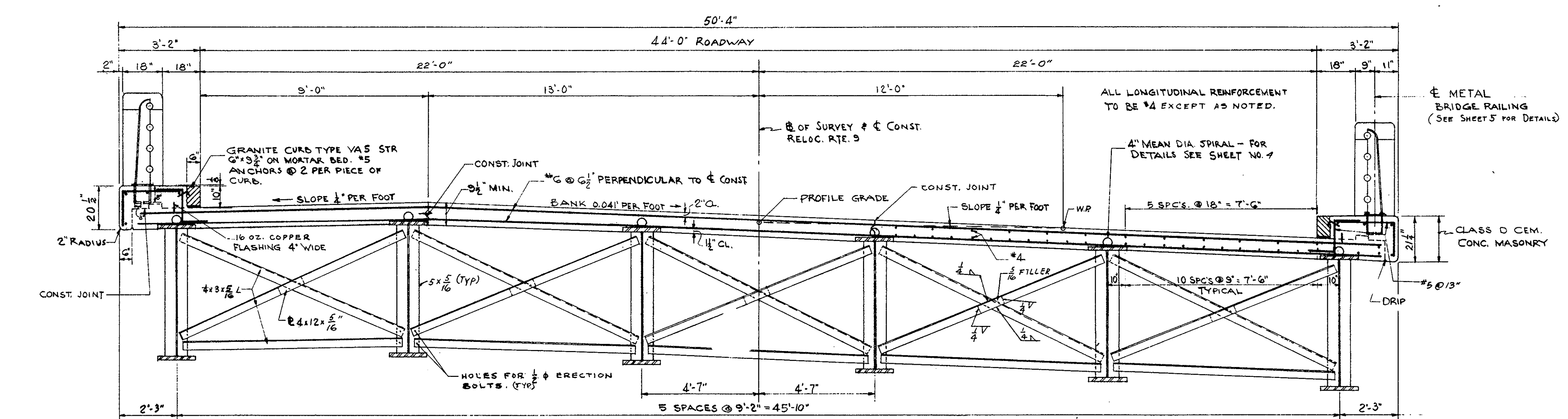
END POST DETAIL SECTION
SCALE 1/2" = 1'-0"



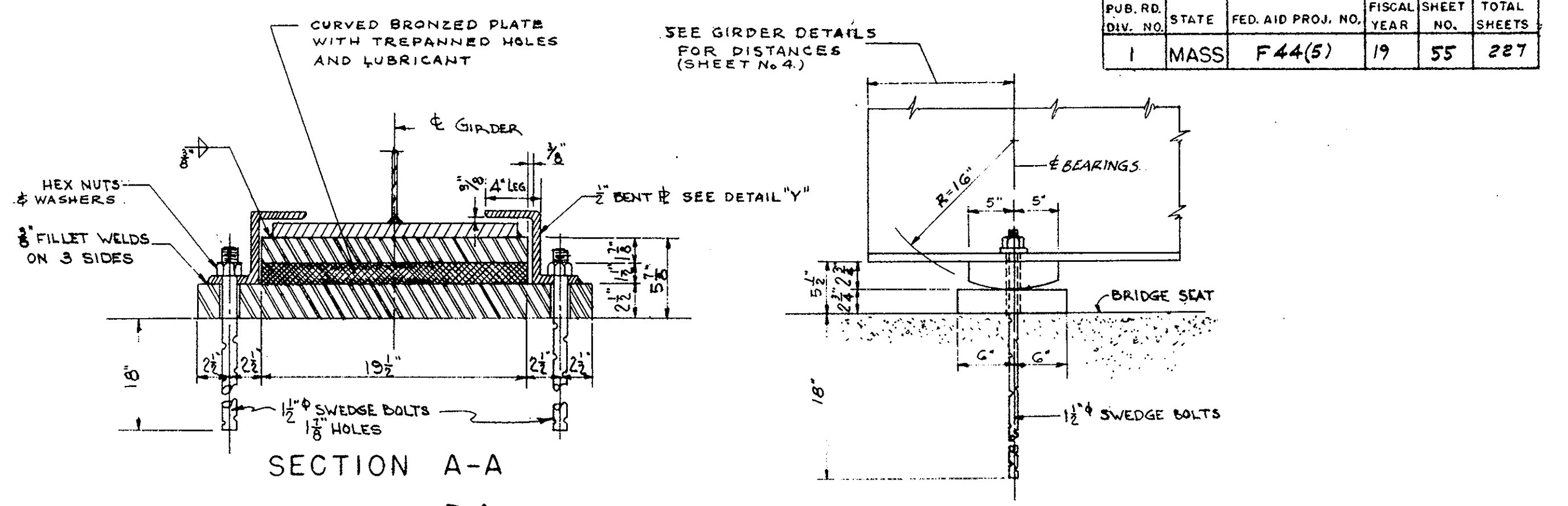
SOUTH ELEVATION
SCALE 3/32" = 1'-0"

DEC. 28, 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

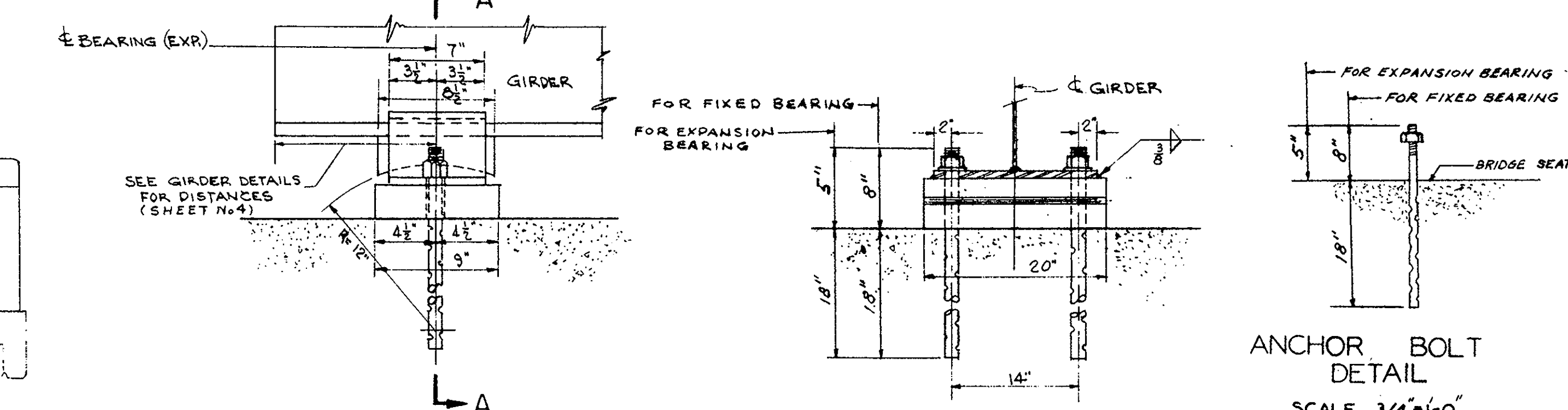
PUB. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F44(5)	19	55	227



TYPICAL SECTION - SUPERSTRUCTURE
EAST SPAN
SCALE $\frac{3}{8} = 1'-0''$



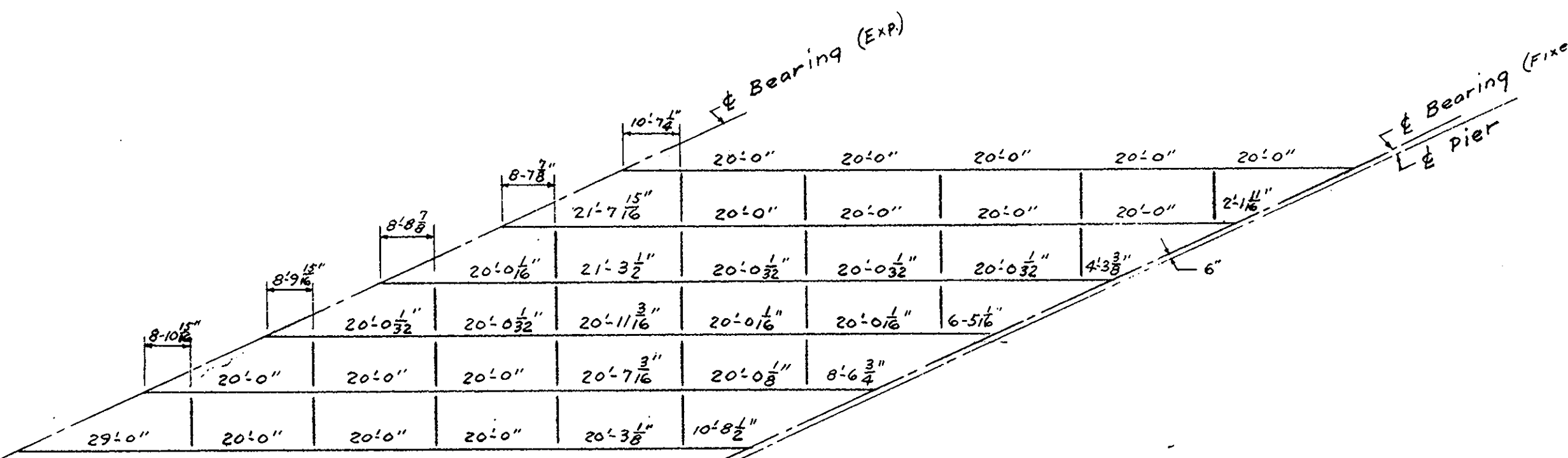
SECTION A-A



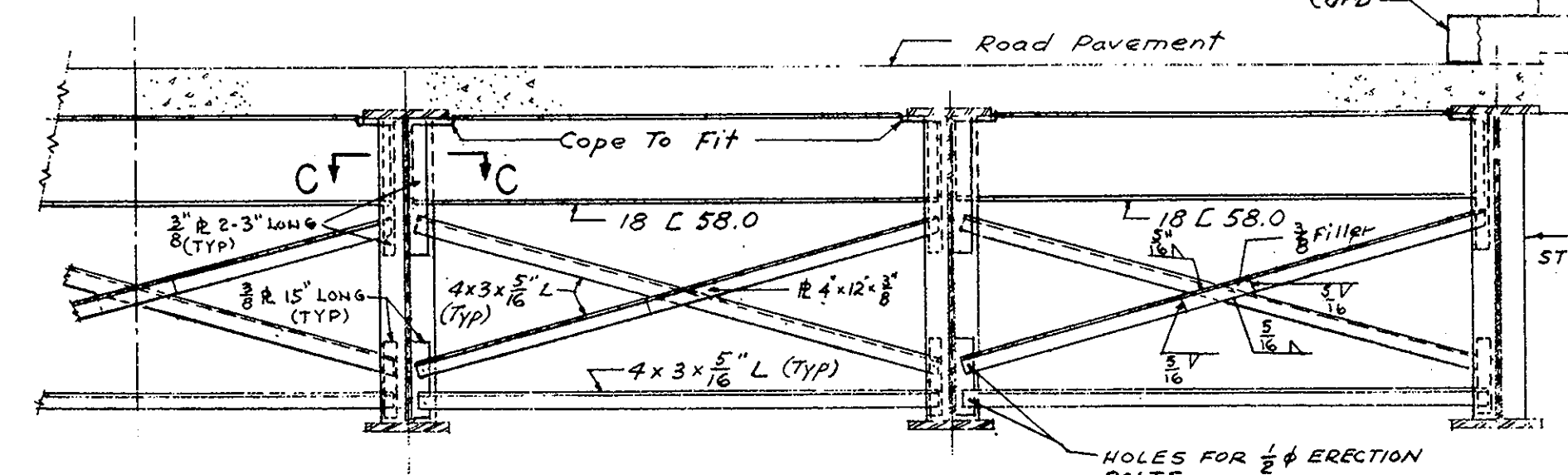
EXPANSION BEARING DETAILS
SCALE $\frac{1}{2} = 1'-0''$

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

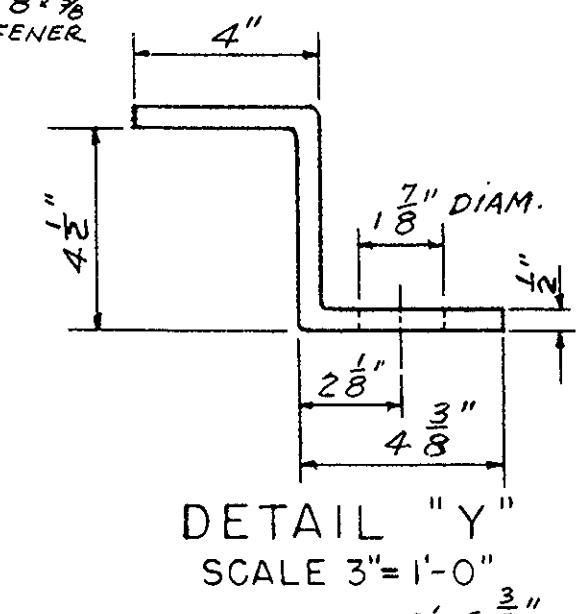
ANCHOR BOLT
DETAIL
SCALE $\frac{3}{4} = 1'-0''$



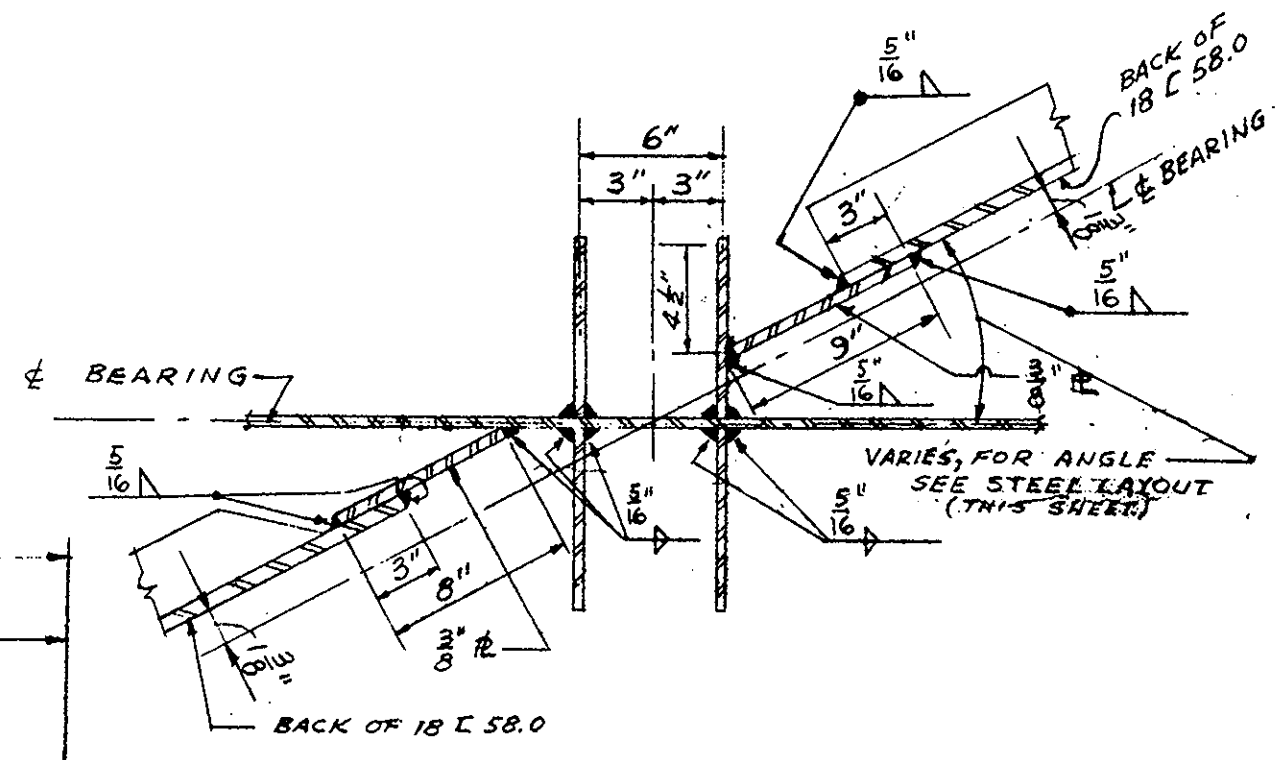
PLAN
LOCATION OF CROSS-BRACING IN WEST SPAN WITH ADDITIONAL
INTERMEDIATE STIFFENERS



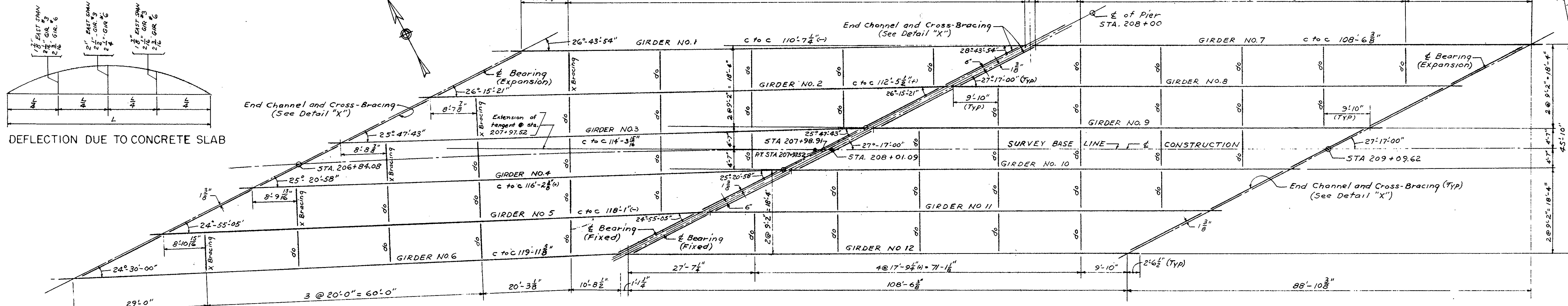
DETAIL "X"
SCALE $\frac{3}{8} = 1'-0''$



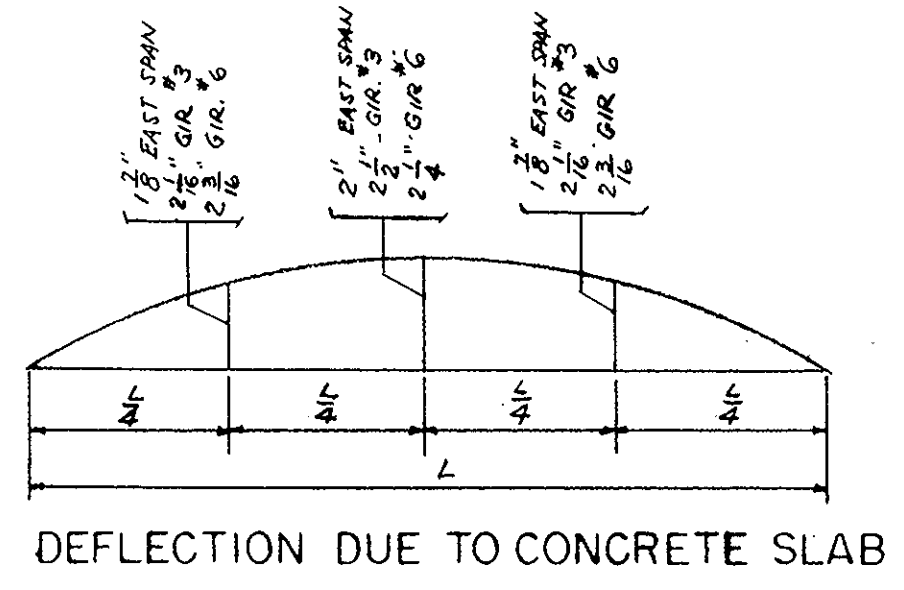
DETAIL "Y"
SCALE $3 = 1'-0''$



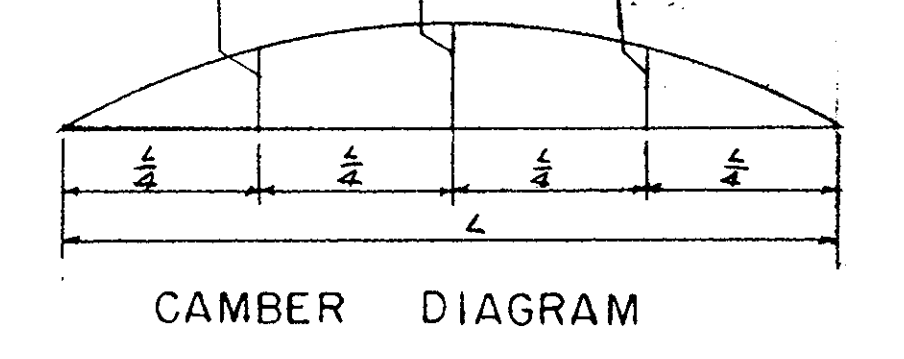
SECTION C-C
SCALE $\frac{1}{2} = 1'-0''$



STEEL LAYOUT
SCALE $\frac{3}{32} = 1'-0''$

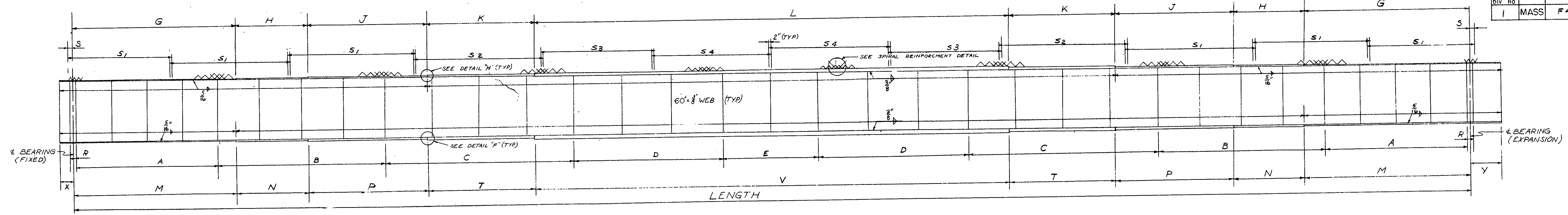


DEFLECTION DUE TO CONCRETE SLAB



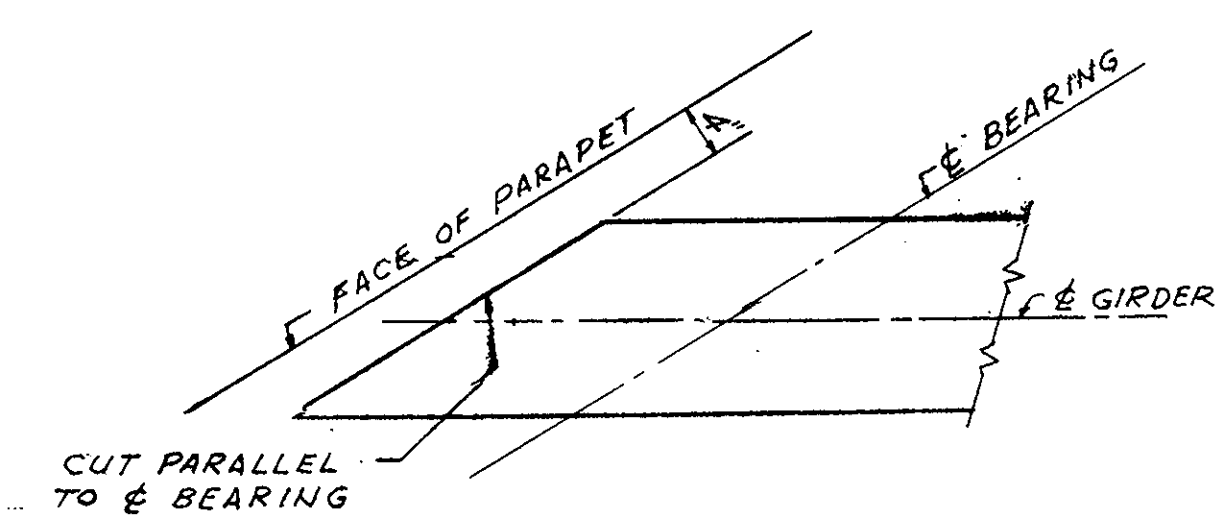
CAMBER DIAGRAM

DATE	DESCRIPTION
DEC 28 1957	ISSUED FOR CONSTRUCTION
	USE ONLY PRINTS OF LATEST DATE

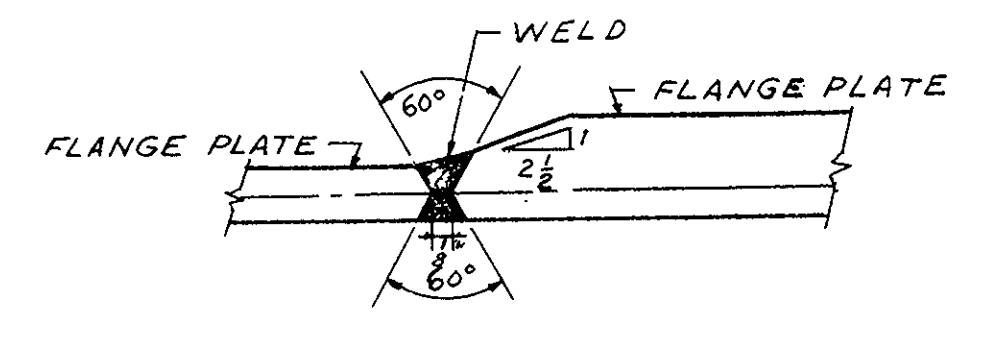


GIRDER DETAILS
NO SCALE

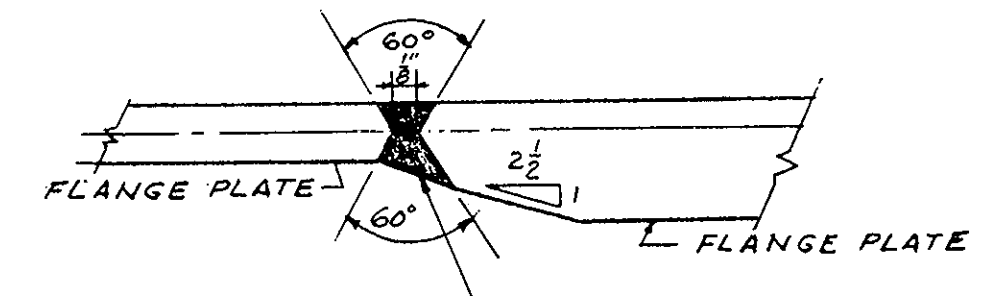
NOTE
GIRDER SPLICE LOCATIONS TO BE AT THE END OF THE COVER PLATE DESIGNATED V.
ALL STIFFENERS ARE TO BE WELDED TO THE TOP FLANGE OF GIRDER AND HAVE A MILL FIT AT BOTTOM FLANGE OF GIRDER.



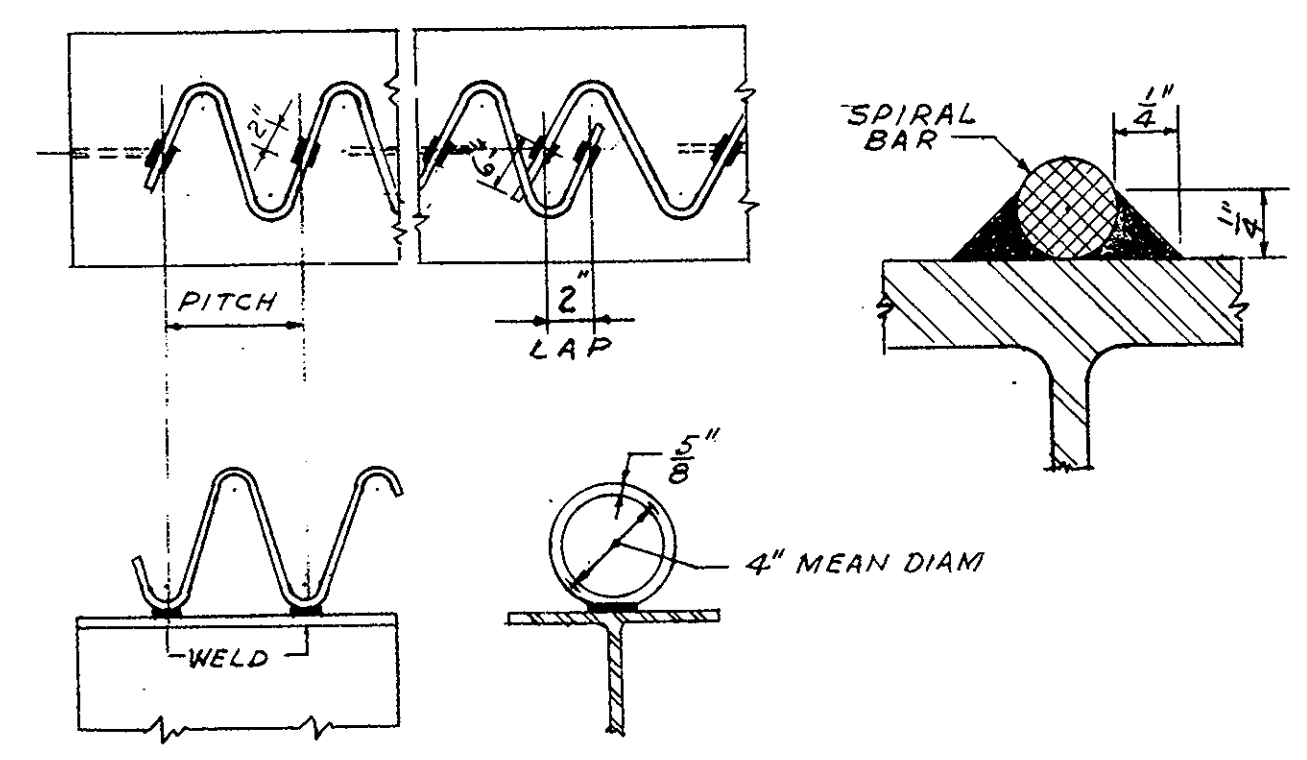
GIRDER-END DETAIL
NO SCALE



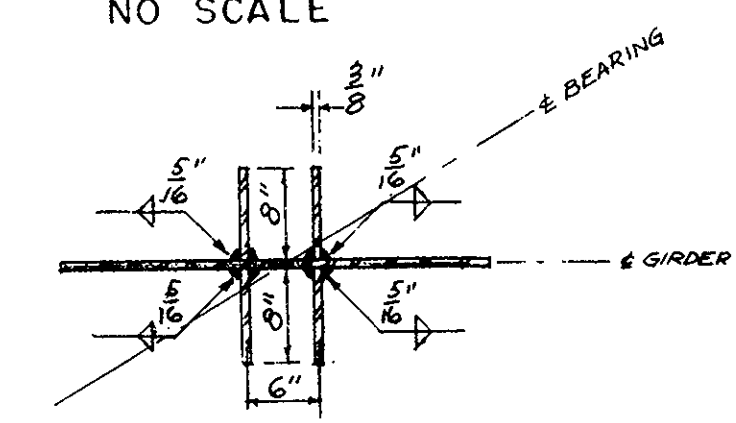
DETAIL "H"
NO SCALE



DETAIL "F"
NO SCALE



DETAILS OF SPIRAL REINFORCEMENT
NO SCALE

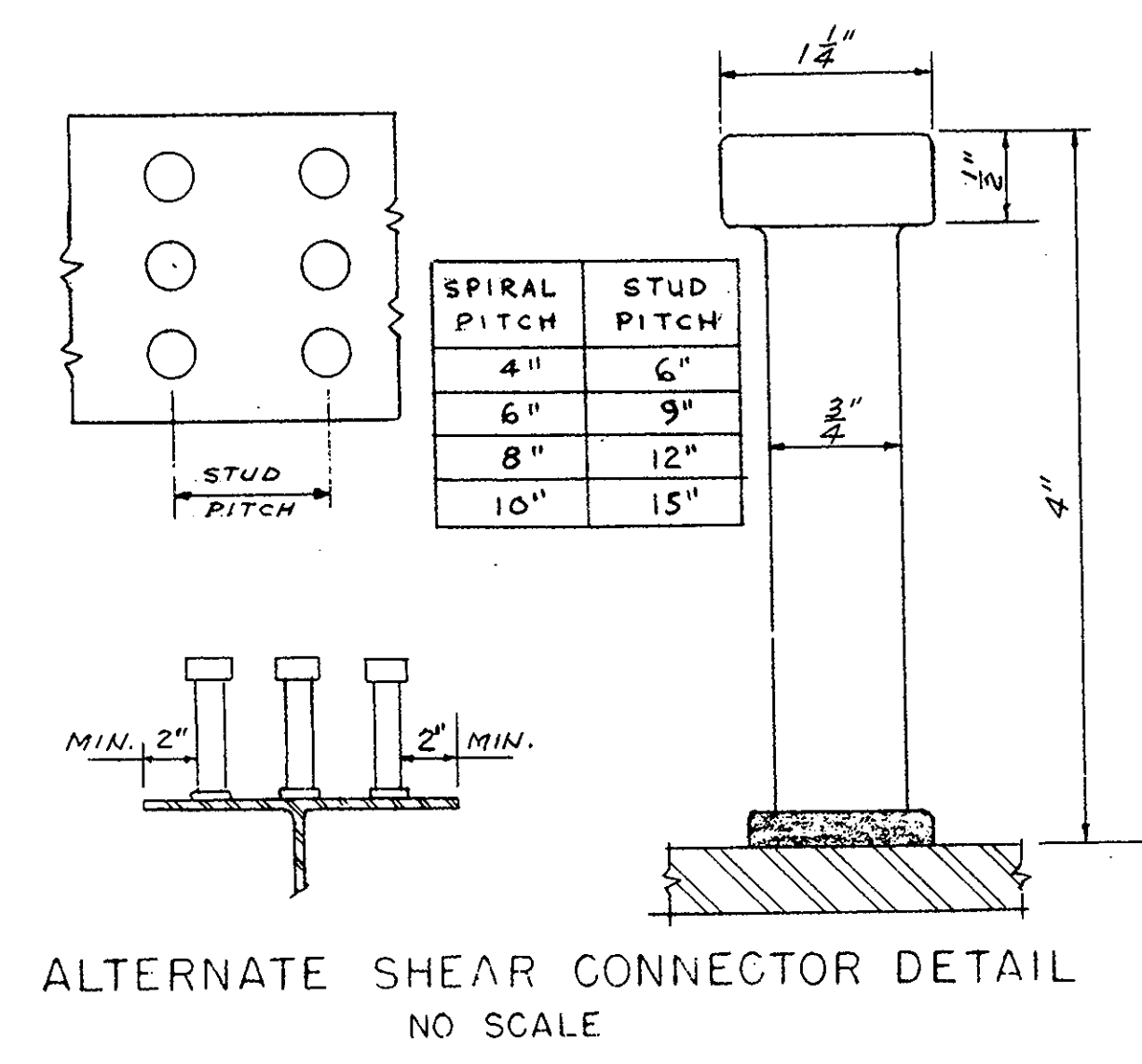


SECTION B-B
SCALE 3/4" = 1'-0"

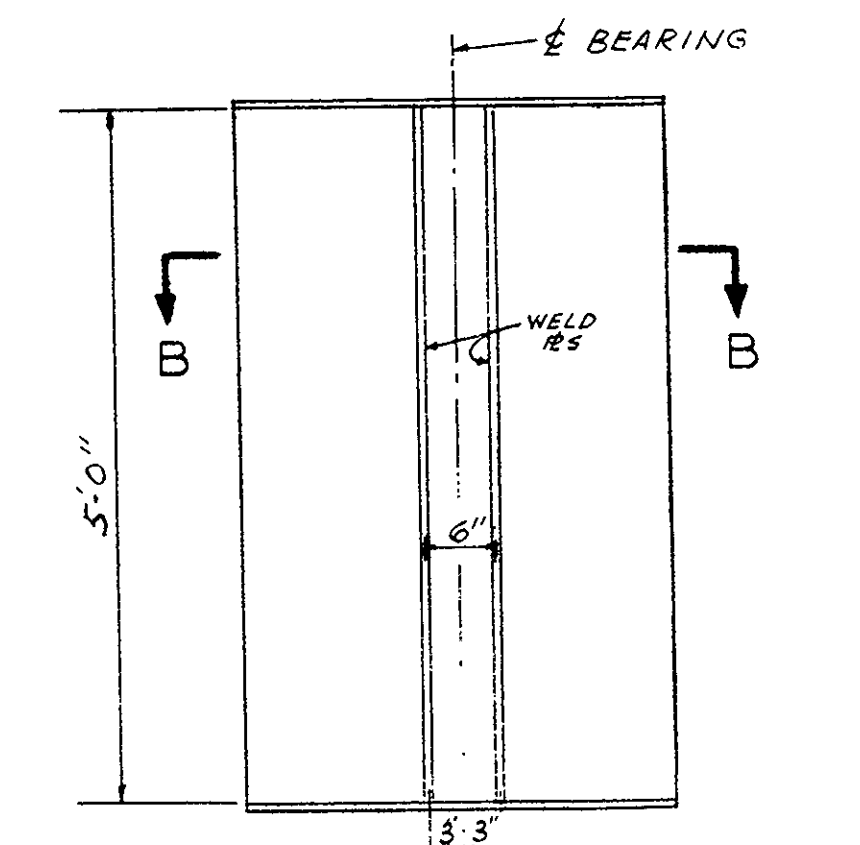
GIRDERS	FLANGE PLATES																		BEARING STIFFENERS	LENGTH & BEARING E OF BEARING	OVERHANG BEYOND E BEARING			
	G	H	J	K	L	M	N	P	T	V	R	X	Y											
1	18 x 3/4	25'-0"	0'-0"	0'-0"	18 x 1 1/2	12'-0"	18 x 1 1/2	36'-7 1/2"	18 x 3/4	16'-0"	0'-0"	18 x 1 1/2	9'-0"	18 x 1 1/2	12'-0"	18 x 1 1/2	36'-7 1/2"	8 x 3/8	110'-7 1/2"	1'-0 1/4"	2'-7 3/8"			
2	18 x 3/4	16'-0 3/4"	0'-0"	18 x 1	10'-0"	18 x 1 1/2	9'-0"	18 x 1 1/2	42'-3 3/4"	18 x 3/4	10'-0 3/4"	18 x 1 1/2	6'-0"	18 x 1 1/2	10'-0"	18 x 2 1/2	9'-0"	18 x 2 1/2	42'-3 3/4"	8 x 3/8	112'-5 3/4"	1'-0 3/8"	2'-7 3/8"	
3	18 x 3/4	17'-0 1/2"	0'-0"	18 x 1	10'-0"	18 x 1 1/2	9'-0"	18 x 1 1/2	42'-3 3/4"	18 x 3/4	11'-0 3/4"	18 x 1 1/2	6'-0"	18 x 1 1/2	10'-0"	18 x 2 1/2	9'-0"	18 x 2 1/2	42'-3 3/4"	8 x 3/8	114'-3 3/4"	1'-0 3/8"	2'-8 3/8"	
4	18 x 3/4	13'-0 3/4"	18 x 1	6'-0"	18 x 1 1/2	10'-0"	18 x 1 1/2	9'-0"	18 x 1 1/2	40'-1 1/2"	18 x 1	13'-0 3/4"	18 x 1 1/2	6'-0"	18 x 2 1/2	10'-0"	18 x 2 1/2	9'-0"	18 x 2 1/2	40'-1 1/2"	8 x 3/8	116'-2 3/4"	1'-0 3/8"	2'-8 3/8"
5	18 x 3/4	14'-0 1/2"	18 x 1	6'-0"	18 x 1 1/2	10'-0"	18 x 1 1/2	9'-0"	18 x 1 1/2	40'-1 1/2"	18 x 1	14'-0 1/2"	18 x 1 1/2	6'-0"	18 x 2 1/2	10'-0"	18 x 2 1/2	9'-0"	18 x 2 1/2	40'-1 1/2"	8 x 3/8	118'-1'-0"	1'-1"	2'-9 1/4"
6	18 x 3/4	19'-0"	0'-0"	18 x 1	9'-0"	18 x 1 1/2	10'-0"	18 x 1 1/2	43'-11 3/8"	18 x 3/4	12'-0"	18 x 1 1/2	7'-0"	18 x 1 1/2	9'-0"	18 x 2 1/2	10'-0"	18 x 2 1/2	43'-11 3/8"	8 x 3/8	119'-11 3/8"	1'-1 1/4"	2'-9 3/4"	
7-12 (Do)	18 x 3/4	19'-0"	0'-0"	0'-0"	18 x 1 1/2	12'-0"	18 x 1 1/2	46'-6 3/8"	18 x 3/4	12'-0"	0'-0"	18 x 1 1/2	7'-0"	18 x 1 1/2	12'-0"	18 x 2 1/2	14'-4 3/8"	8 x 3/8	106'-6 3/8"	1'-0"	2'-6 1/2"			

GIRDERS	INTERMEDIATE STIFFENERS 5" x 5/8"					SPIRAL PITCHES				
	A	B	C	D	E	S	S1	S2	S3	S4
1	4 @ 3'-12"-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-5"	2 @ 5'-10'-0"	2 @ 3'-0 3/4"-4'-1 1/4"	1 3/8"	24 @ 4'-8'-0"	25 @ 6'-12'-0"	15 @ 8'-10'-0"	12 @ 10'-10'-0"
2	4 @ 3'-12'-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-0"	2 @ 5'-10'-0"	2 @ 3'-11 3/4"-7'-1 1/2"	2 1/4"	24 @ 4'-8'-0"	27 @ 6'-13'-6"	15 @ 8'-10'-0"	13 @ 10'-10'-10"
3	4 @ 3'-12'-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-0"	3 @ 4'-6"-13'-6"	1 @ 2'-10"-2'-10"	1"	24 @ 4'-8'-0"	25 @ 6'-12'-6"	15 @ 8'-10'-0"	14 @ 10'-11'-8"
4	4 @ 3'-12'-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-0"	3 @ 4'-6"-13'-6"	1 @ 2'-10"-2'-10"	1 1/8"	24 @ 4'-8'-0"	24 @ 6'-12'-0"	16 @ 8'-10'-8"	15 @ 10'-12'-6"
5	1 @ 3'-12'-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-0"	3 @ 5'-15'-0"	1 @ 3'-7'-3'-7"	1 1/2"	24 @ 4'-8'-0"	24 @ 6'-12'-0"	16 @ 8'-10'-8"	16 @ 10'-13'-4"
6	4 @ 3'-12'-0"	4 @ 3'-6"-14'-0"	4 @ 4'-16'-0"	3 @ 4'-6"-13'-6"	2 @ 4'-2 1/2"-4'-5 1/2"	2 3/16"	24 @ 4'-8'-0"	26 @ 6'-13'-0"	15 @ 8'-10'-0"	17 @ 10'-14'-2"
7-12 (Do)	3 @ 3'-3 3/4"-9'-10"		3 @ 3'-6 1/4"-17'-5 1/4"	4 @ 4'-5 1/2"-17'-5 1/4"	4 @ 4'-5 1/2"-17'-5 1/4"	1 13/16"	24 @ 4'-8'-0"	24 @ 6'-12'-0"	14 @ 8'-9'-4"	12 @ 10'-10'-0"

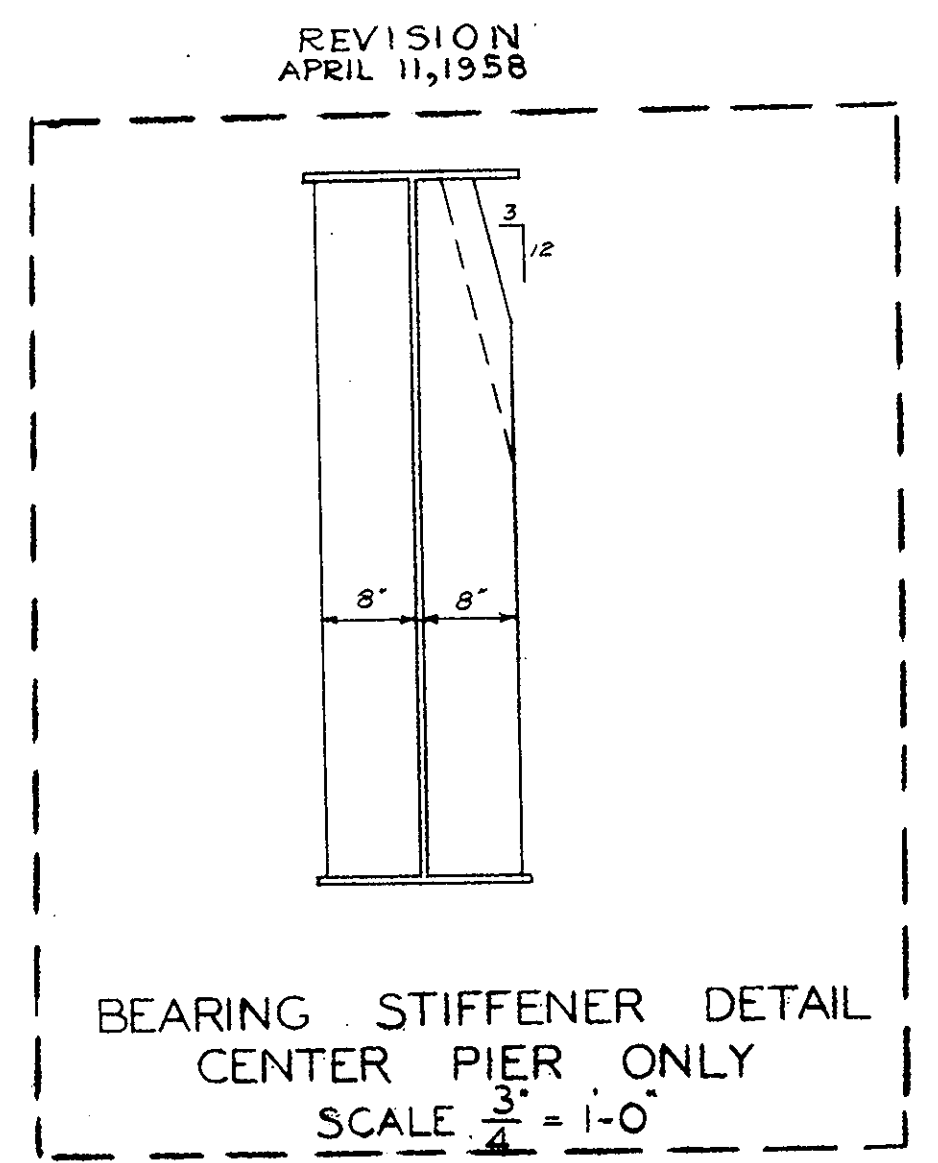
STEEL LAYOUT
NOTE: LOCATION OF ADDITIONAL INTERMEDIATE STIFFENERS FOR WEST SPAN WILL BE FOUND ON SHEET NO.3



ALTERNATE SHEAR CONNECTOR DETAIL
NO SCALE



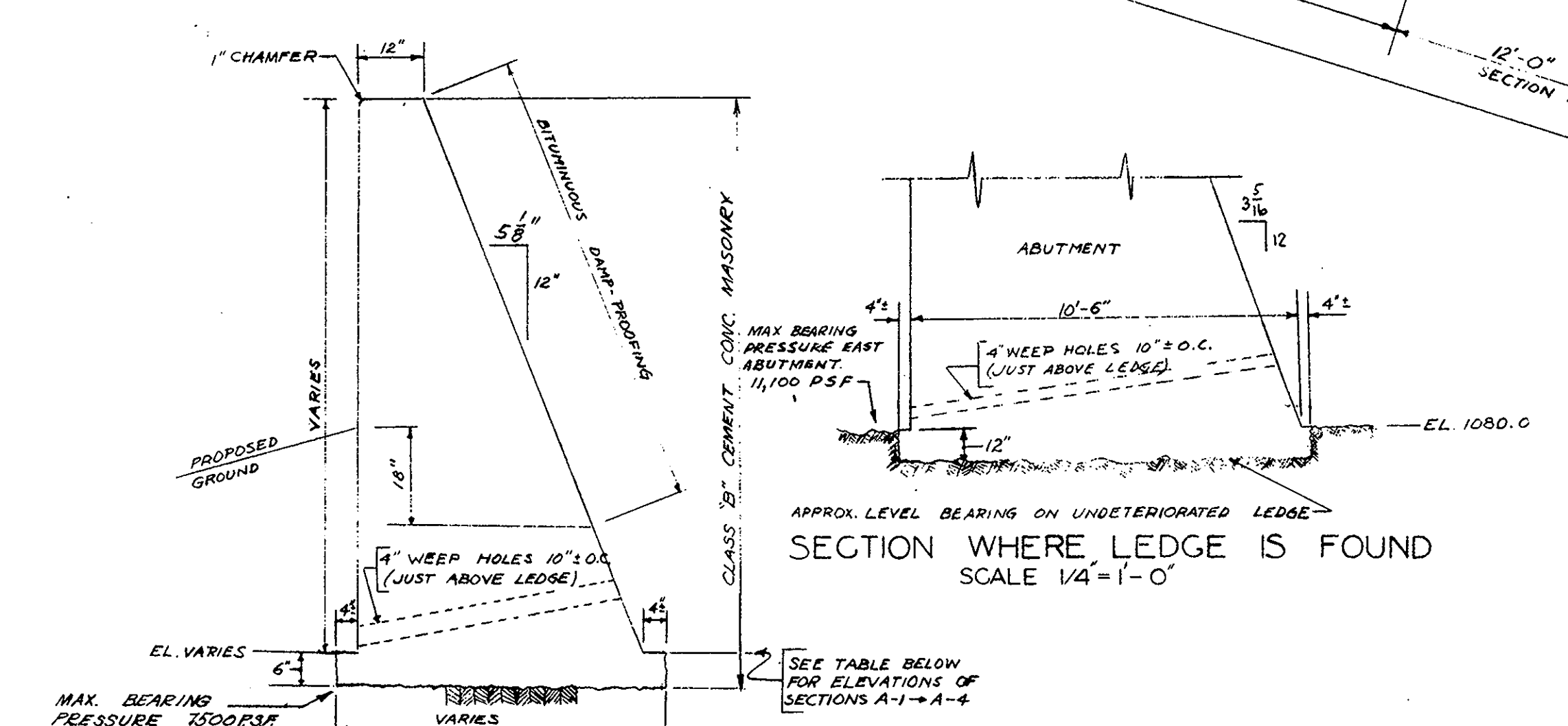
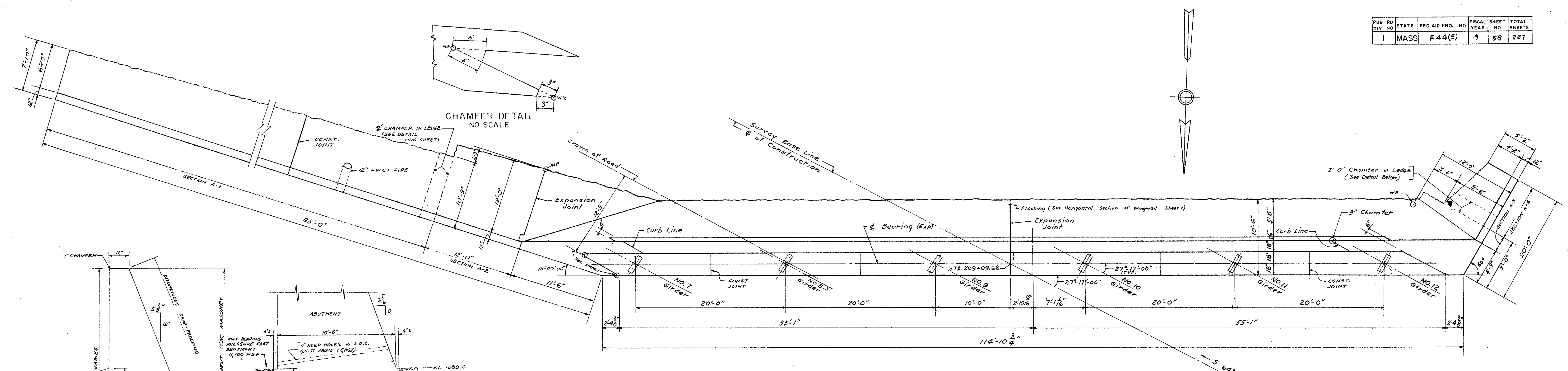
BEARING STIFFENER DETAIL
SCALE 3/4" = 1'-0"



BEARING STIFFENER DETAIL
CENTER PIER ONLY
SCALE 3/4" = 1'-0"

APRIL 11, 1958 REVISION BEARING STIFFENER - REVISED
DEC 28, 1957 ISSUED FOR CONSTRUCTION
DATE DESCRIPTION
USE ONLY PRINTS OF LATEST DATE

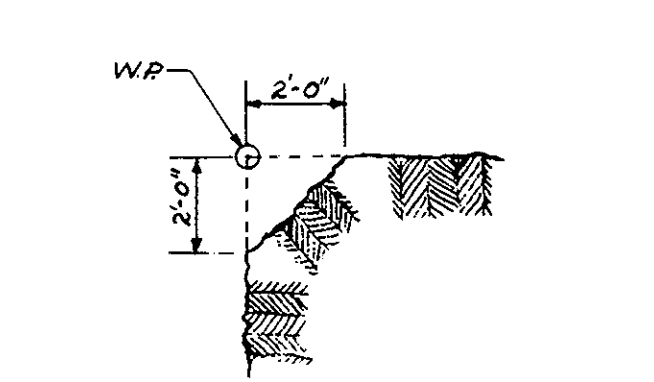
PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F 44(5)	19	58	227



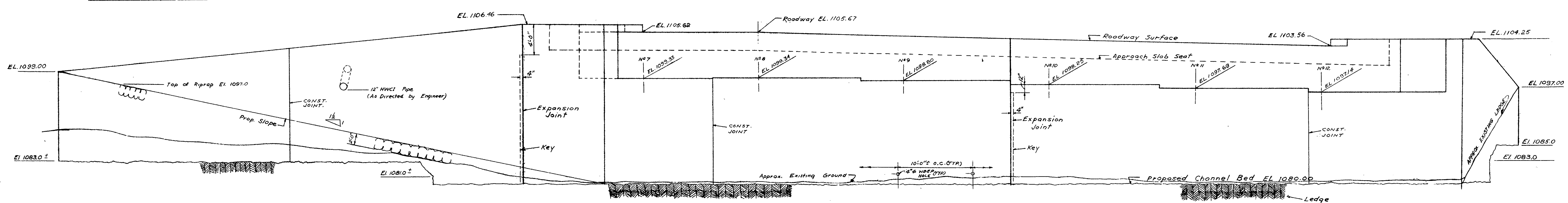
TYPICAL WINGWALL SECTION
SCALE 1/2" = 1'-0"

SECTION	ELEVATION
A-1	1083.0
A-2	1080.0
A-3	1080.0
A-4	1085.0

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



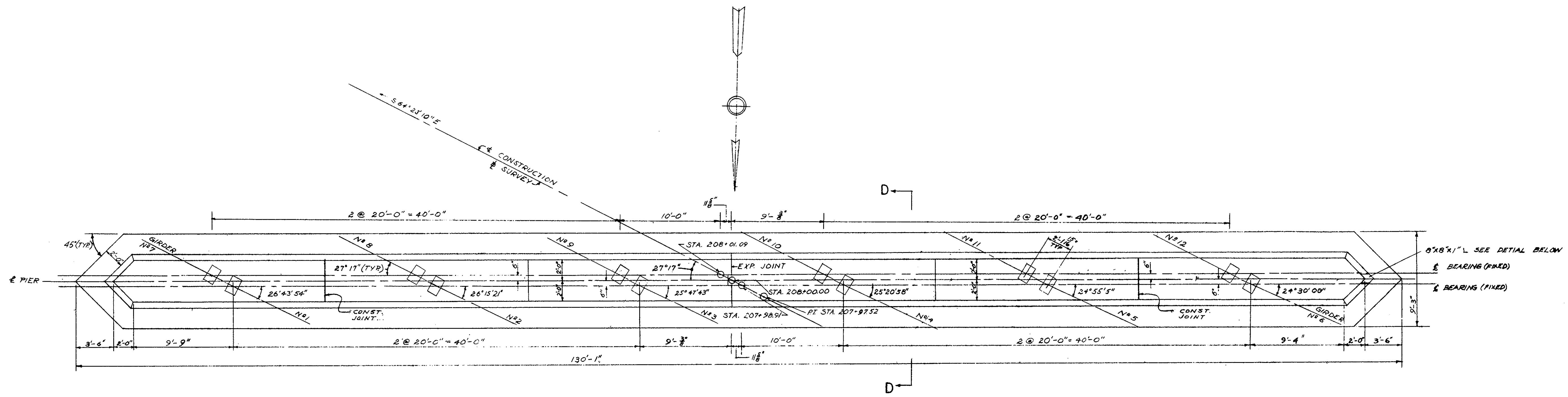
DETAIL 2' CHAMFER IN LEDGE
NO SCALE



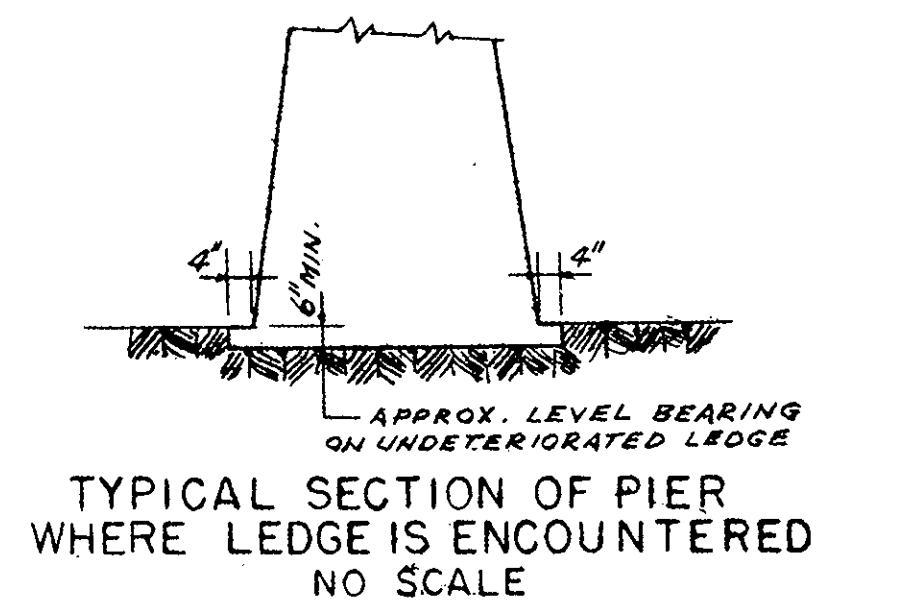
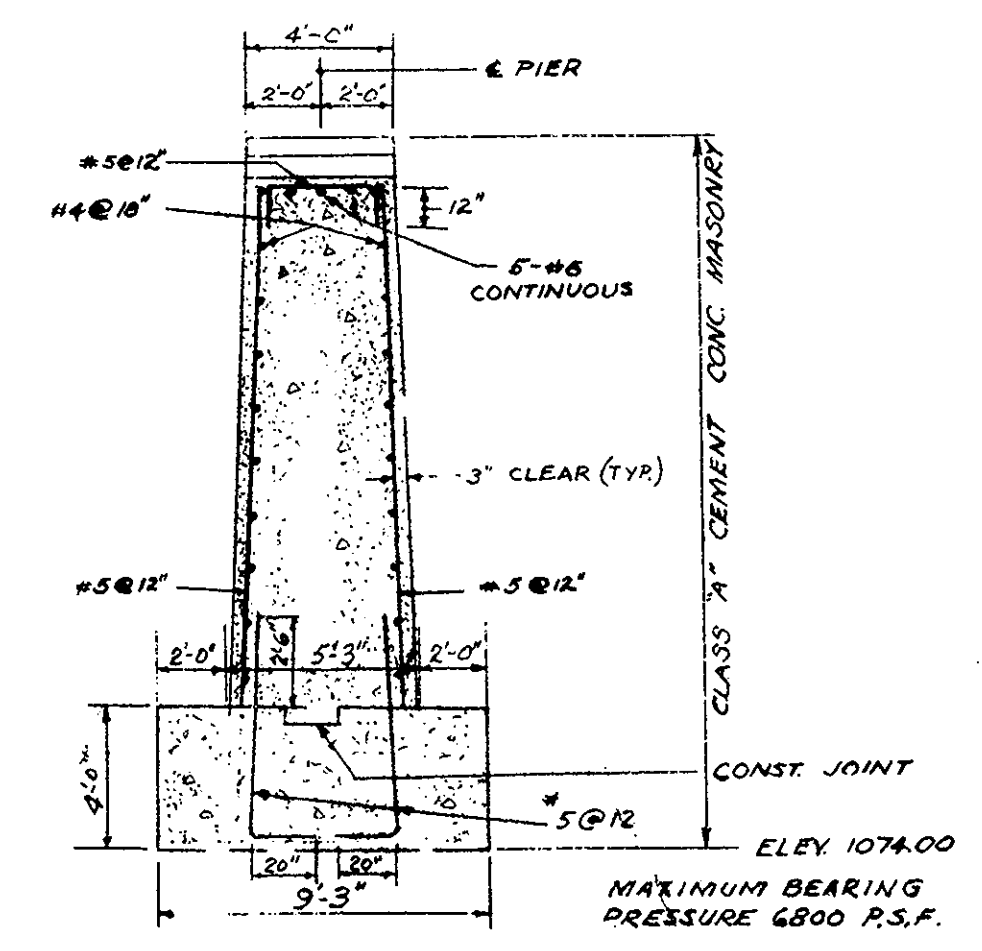
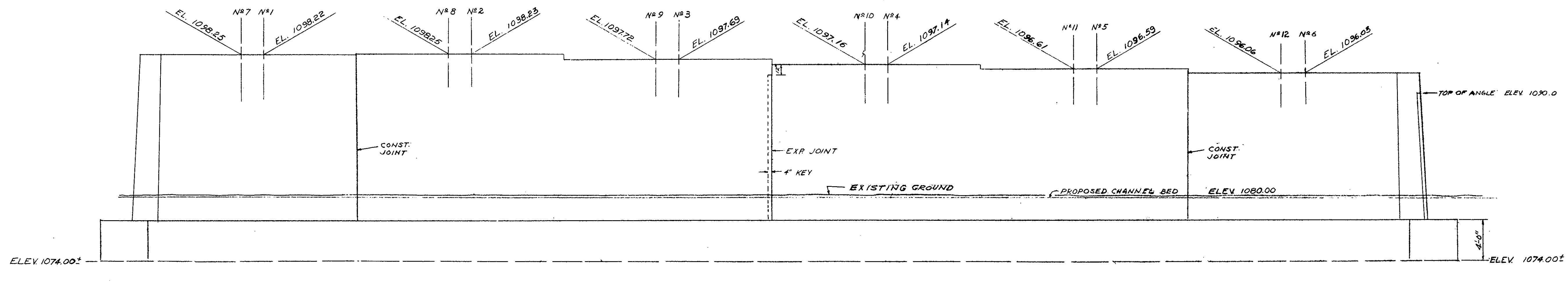
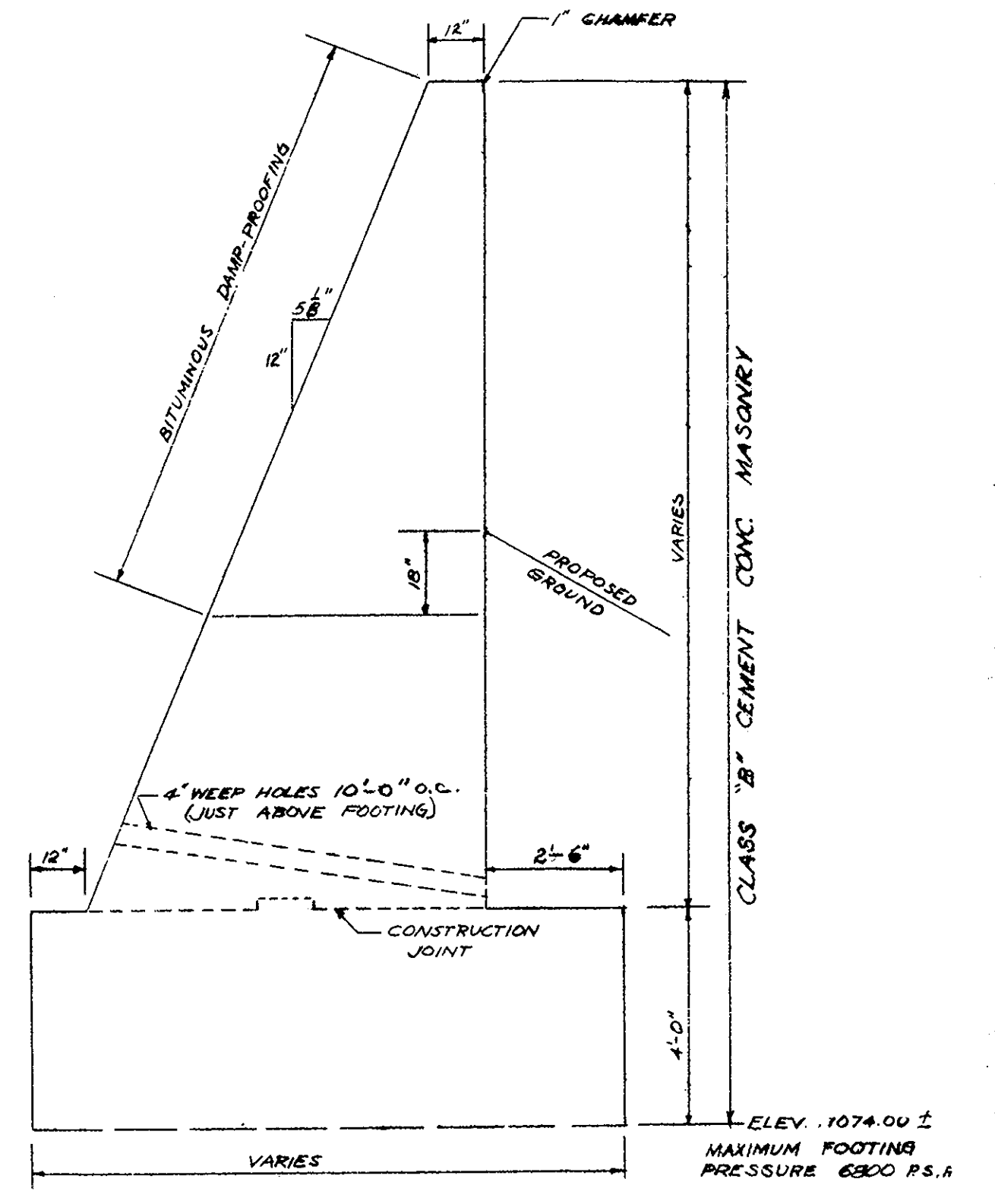
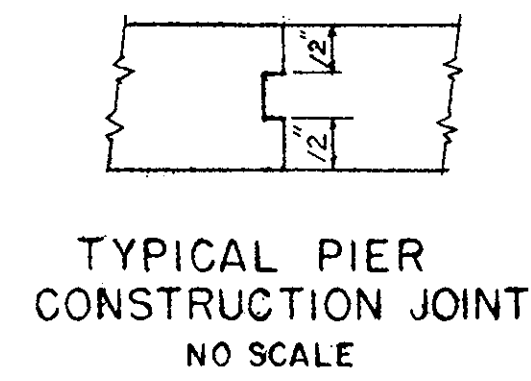
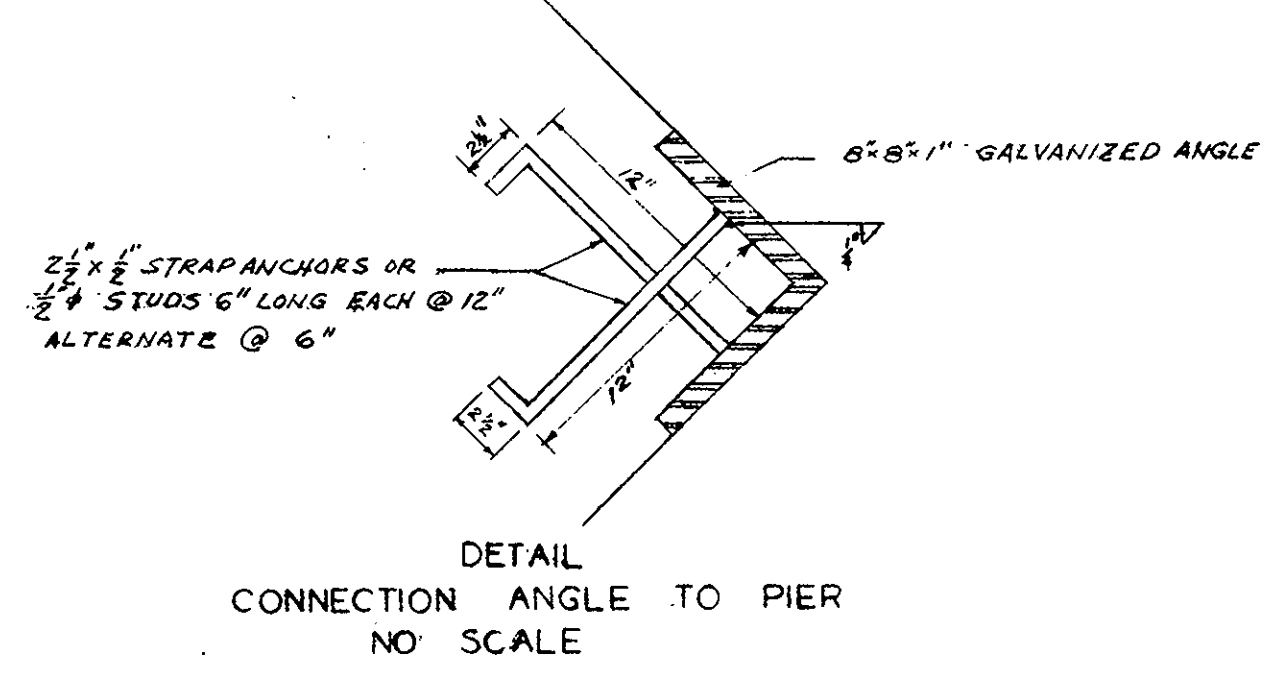
ELEVATION - EAST ABUTMENT
SCALE 3/16" = 1'-0"

DEC. 28, 1957	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
	USE ONLY PRINTS OF LATEST DATE

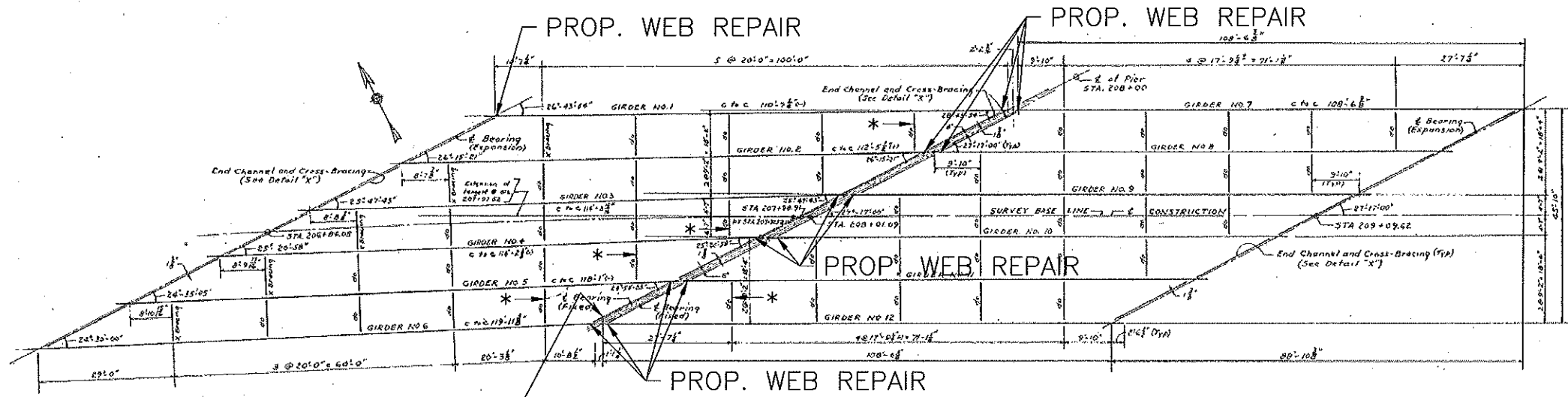
PUB. RD. DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS	F 44(5)	19	60	227



PLAN
SCALE 3/16"=1'



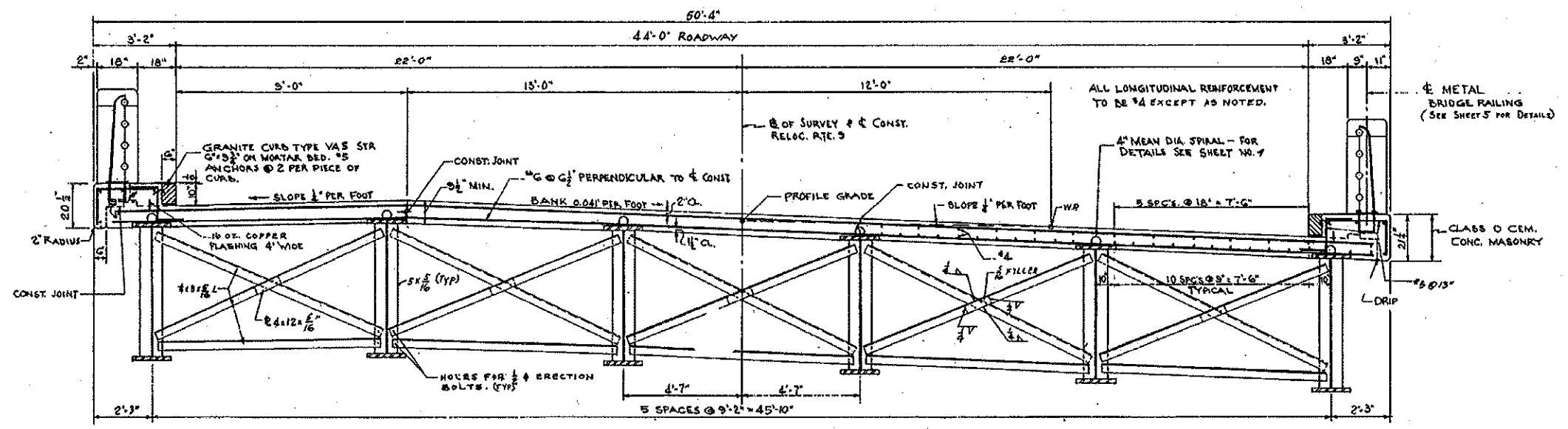
DATE	DESCRIPTION
DEC 28 1957	ISSUED FOR CONSTRUCTION



END CROSS FRAME TOP CONNECTION PLATE REPAIR AT GIRDER 6, SEE DETAIL ON SK-10

* - ANTICIPATED LOCATION OF INTERFERENCE BETWEEN EXISTING INTERIOR CROSS FRAMES AND PROPOSED REPAIRS. INTERIOR CROSS FRAMES SHALL BE REMOVED AND RESET TO ALLOW FOR INSTALLATION OF PROPOSED REPAIR (SEE SK-9).

FRAMING PLAN
 SCALE: 1"=30'-0"



EXISTING CROSS SECTION
 SCALE: 3/16"=1'-0"



REVISED: 6/8/2015
 REVISED: 4/28/2015
 DATE: 10/10/2014

PROPOSED SEQUENCE OF CONSTRUCTION:

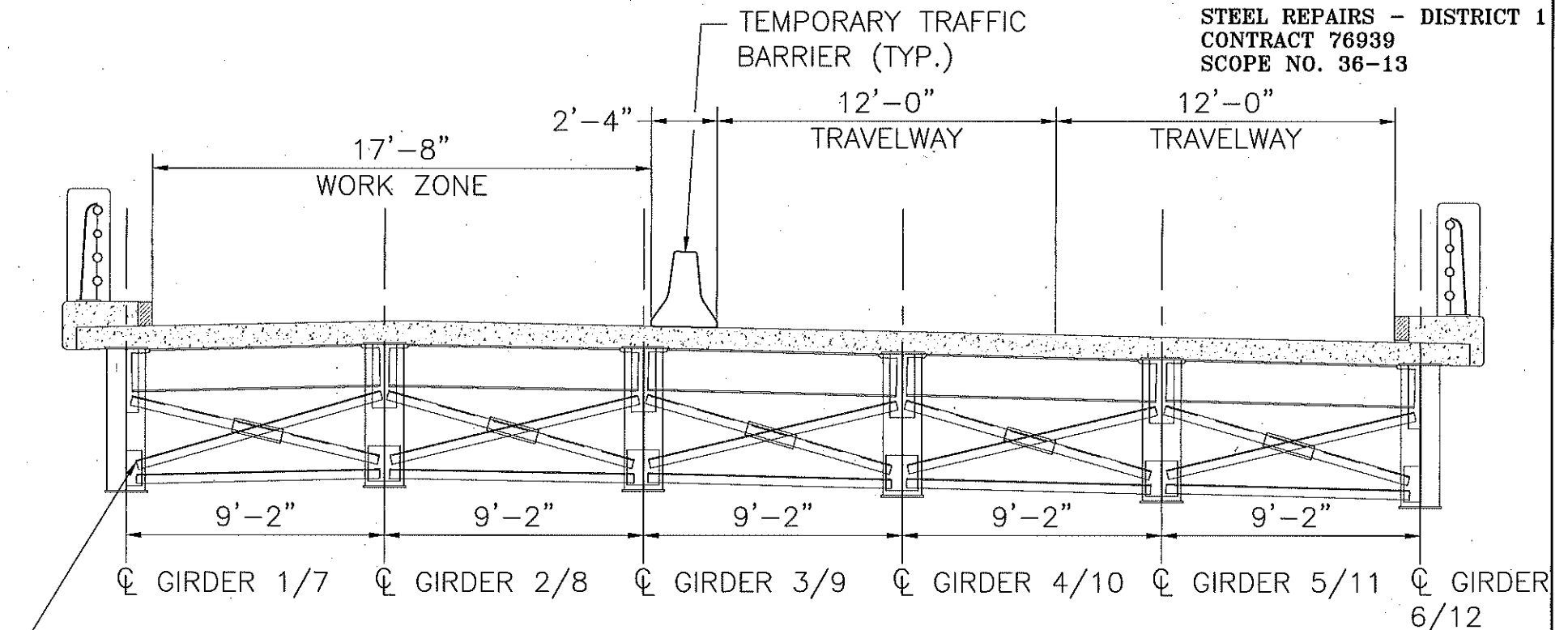
STAGE 1:

1. INSTALL STAGE 1 TRAFFIC CONTROL
2. REMOVE END CROSS FRAMES/INTERMEDIATE CROSS FRAMES AND BEARING/WEB STIFFENERS IN BAY 1, THEN INSTALL TEMPORARY TIMBER TOWER CRIBBING ADJACENT TO GIRDER 1/7 (SEE DETAIL ON SK-3).
3. REPAIR GIRDER 1/7.
4. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 1/7.
5. REPEAT STEP 2 FOR BAY 2 AND GIRDER 2/8.
6. REPAIR GIRDER 2/8.
7. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 2/8.
8. INSTALL PROPOSED END CROSS FRAMES AND RESET INTERMEDIATE CROSS FRAMES IN BAY 1.
9. REPEAT STEP 2 FOR BAY 3 AND GIRDER 3/9.
10. REPAIR GIRDER 3/9.
11. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 3/9.
12. REPEAT STEP 8 IN BAY 2.
13. REMOVE STAGE 1 TRAFFIC CONTROL.

STAGE 2:

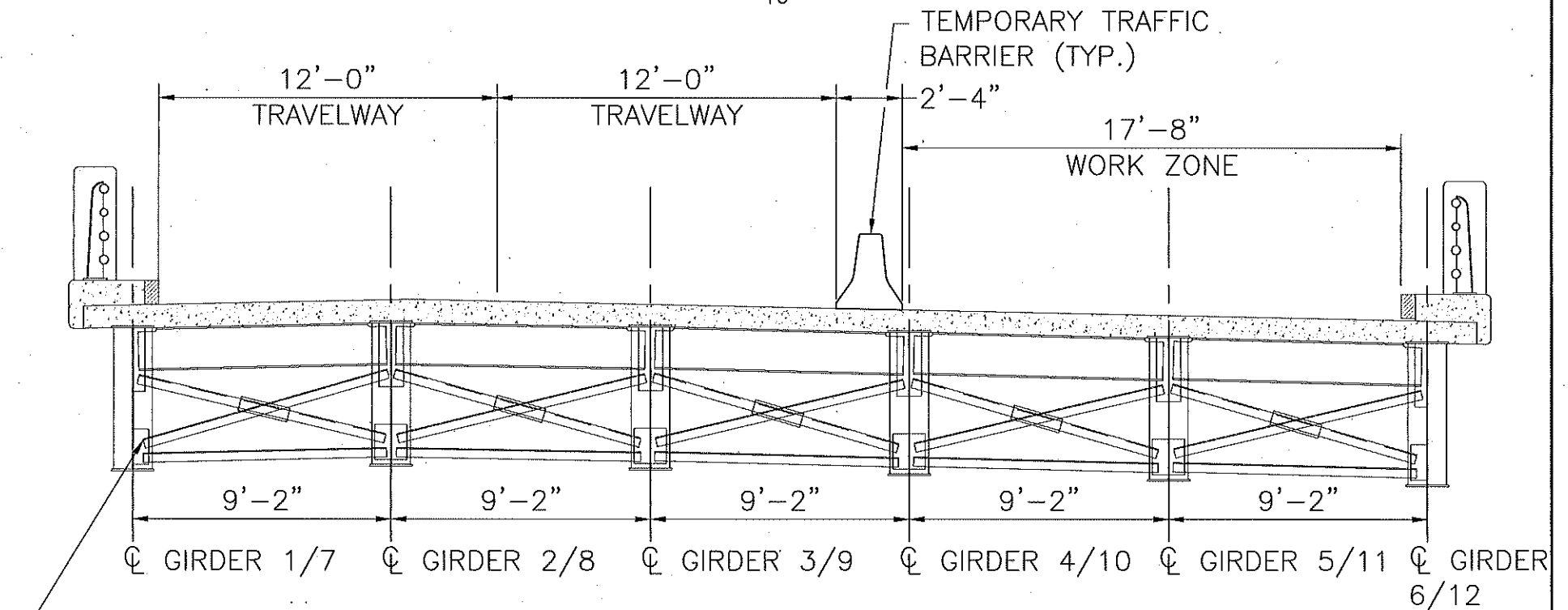
1. INSTALL STAGE 2 TRAFFIC CONTROL.
2. REMOVE END CROSS FRAMES/INTERMEDIATE CROSS FRAMES AND BEARING/WEB STIFFENERS IN BAY 4, THEN INSTALL TEMPORARY TIMBER TOWER CRIBBING ADJACENT TO GIRDER 4/10 (SEE DETAIL ON SK-3).
3. REPAIR GIRDER 4/10.
4. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 4/10.
5. INSTALL PROPOSED END CROSS FRAMES AND RESET INTERMEDIATE CROSS FRAMES IN BAY 3
6. REPEAT STEP 2 FOR BAY 5 AND GIRDER 5/11.
7. REPAIR GIRDER 5/11.
8. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 5/11.
9. REPEAT STEP 5 FOR BAY 4.
10. INSTALL TEMPORARY TIMBER TOWER CRIBBING ADJACENT TO GIRDER 6/12 (SEE DETAIL ON SK-3).
11. REPAIR GIRDER 6/12.
12. REMOVE TIMBER TOWER CRIBBING ADJACENT TO GIRDER 6/12.
13. REPEAT STEP 5 IN BAY 5.
14. REMOVE STAGE 2 TRAFFIC CONTROL.

STEEL REPAIRS - DISTRICT 1
CONTRACT 76939
SCOPE NO. 36-13



END CROSS FRAME (TYP.) **STAGE 1 - LOOKING EAST**

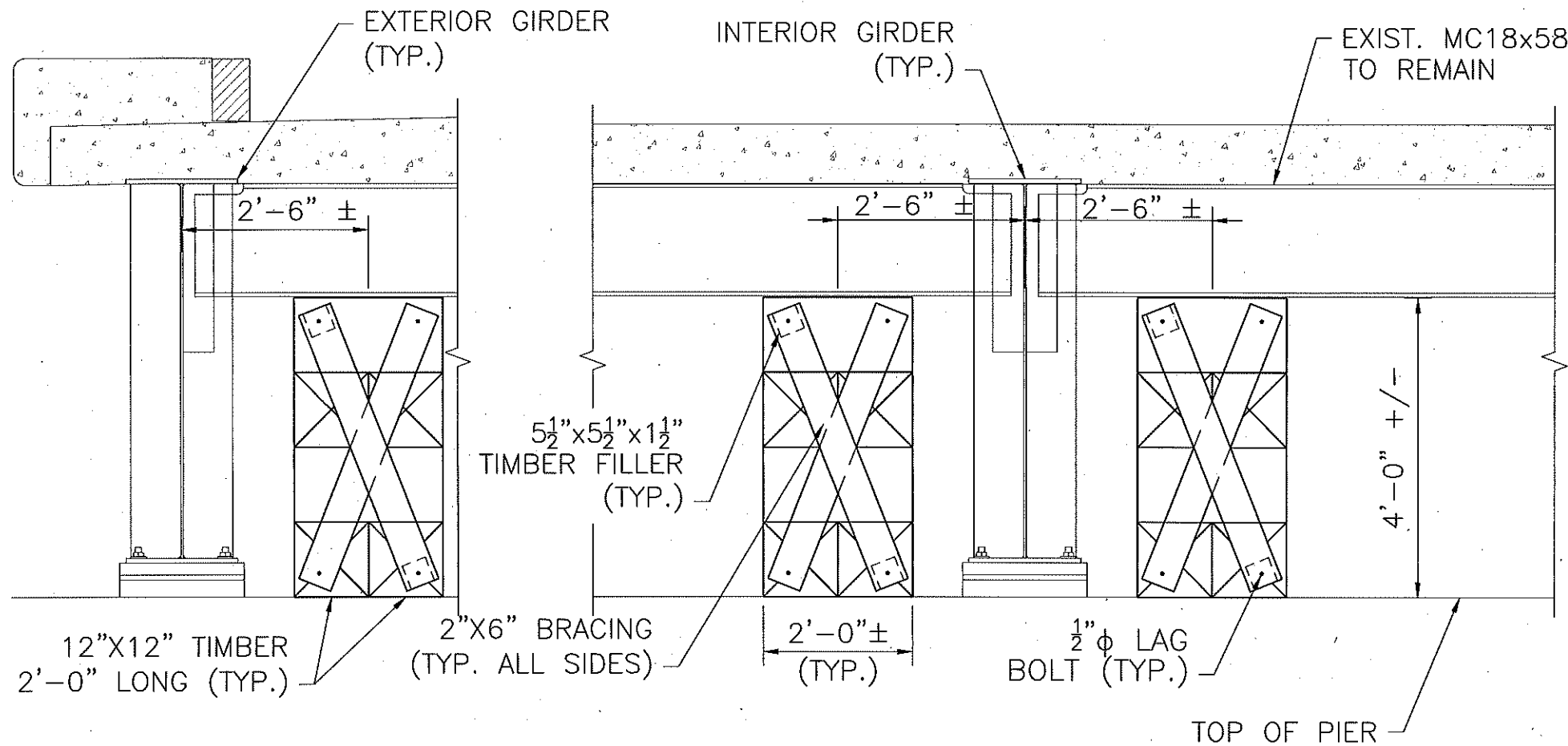
SCALE: $\frac{3}{16}'' = 1'-0''$



END CROSS FRAME (TYP.) **STAGE 2 - LOOKING EAST**

SCALE: $\frac{3}{16}'' = 1'-0''$

REVISED: 6/8/2015
 REVISED: 4/28/2015
 DATE: 10/10/2014



NOTES:

1. TIMBER CRIBBING SHALL BE 12"X12" (NOMINAL) DOUGLAS FIR #2. OTHER WOOD SPECIES MAY BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
2. HARDWOOD (OAK) WEDGES (12" WIDE) SHALL BE TIGHTLY DRIVEN UNDER THE CHANNEL. WEDGES SHALL BE SAFELY SECURED (NAILED) TO THE CRIBBING.

SUGGESTED CONSTRUCTION SEQUENCE:

- 1a. FOR EXTERIOR GIRDERS, REMOVE END CROSS BRACING, THEN INSTALL TIMBER TOWER CRIBBING ADJACENT TO INSIDE FACE OF GIRDER.
- 1b. FOR INTERIOR GIRDERS, REMOVE END CROSS BRACING, THEN INSTALL TIMBER TOWER CRIBBING ADJACENT TO BOTH SIDES OF GIRDER.
2. AFTER PROPOSED WEB REPAIR IS COMPLETED, REMOVE TIMBER TOWER CRIBBING AND INSTALL PROPOSED END CROSS BRACING.

TEMPORARY TIMBER TOWER CRIBBING

SCALE: $\frac{1}{2}$ " = 1'-0"

REVISED: 4/28/2015
 DATE: 10/10/2014

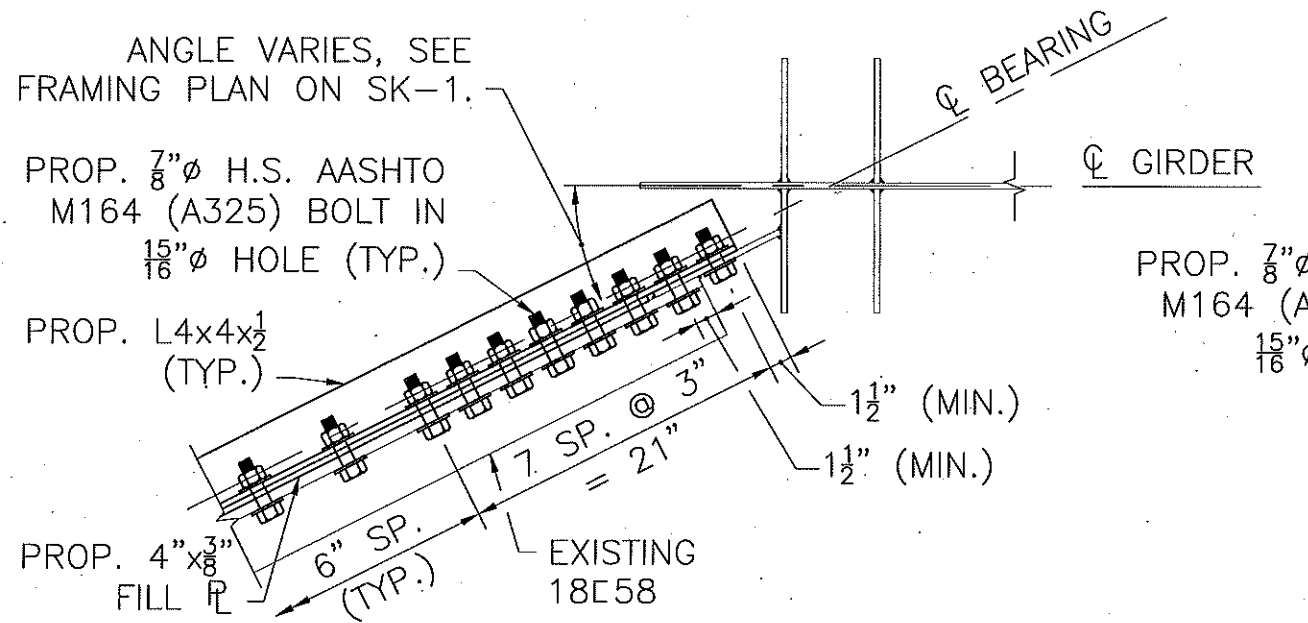
TIMBER CRIBBING TOWER
 STEEL REPAIRS FOR
 BRIDGE NO. C-21-025 (OJK)

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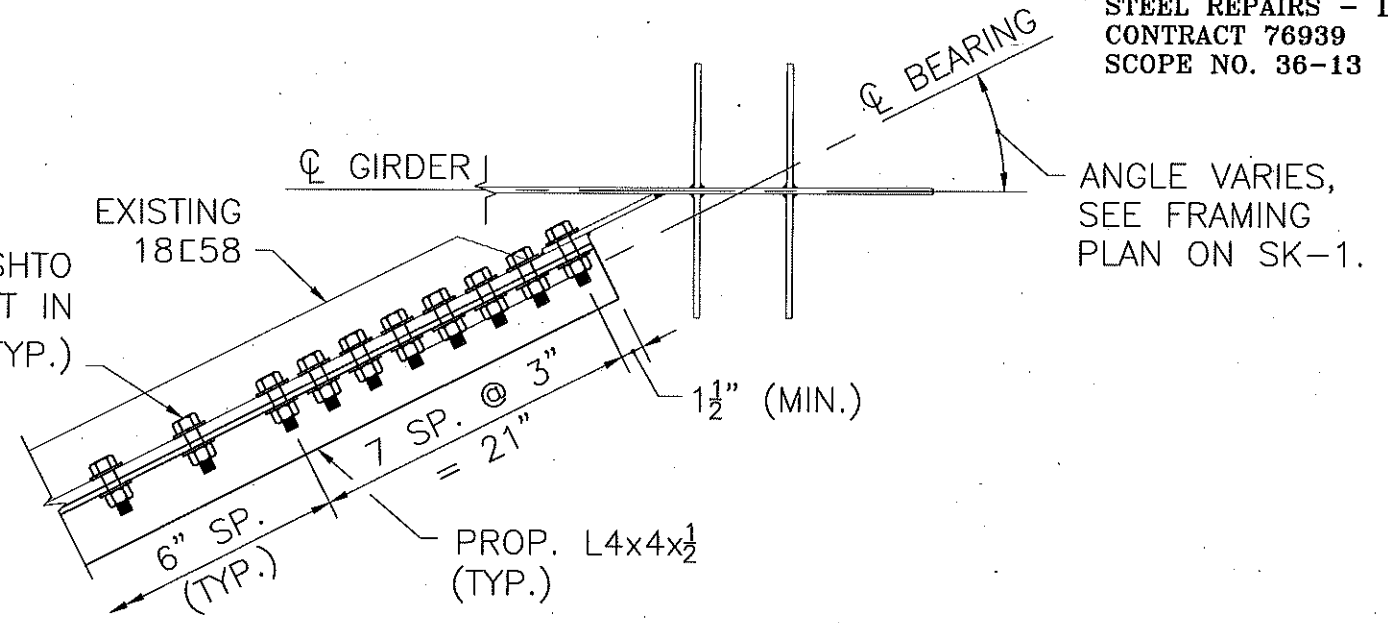
ROUTE 9 OVER
 WESTFIELD RIVER
 CUMMINGTON, MASSACHUSETTS

SK-3 OF 11



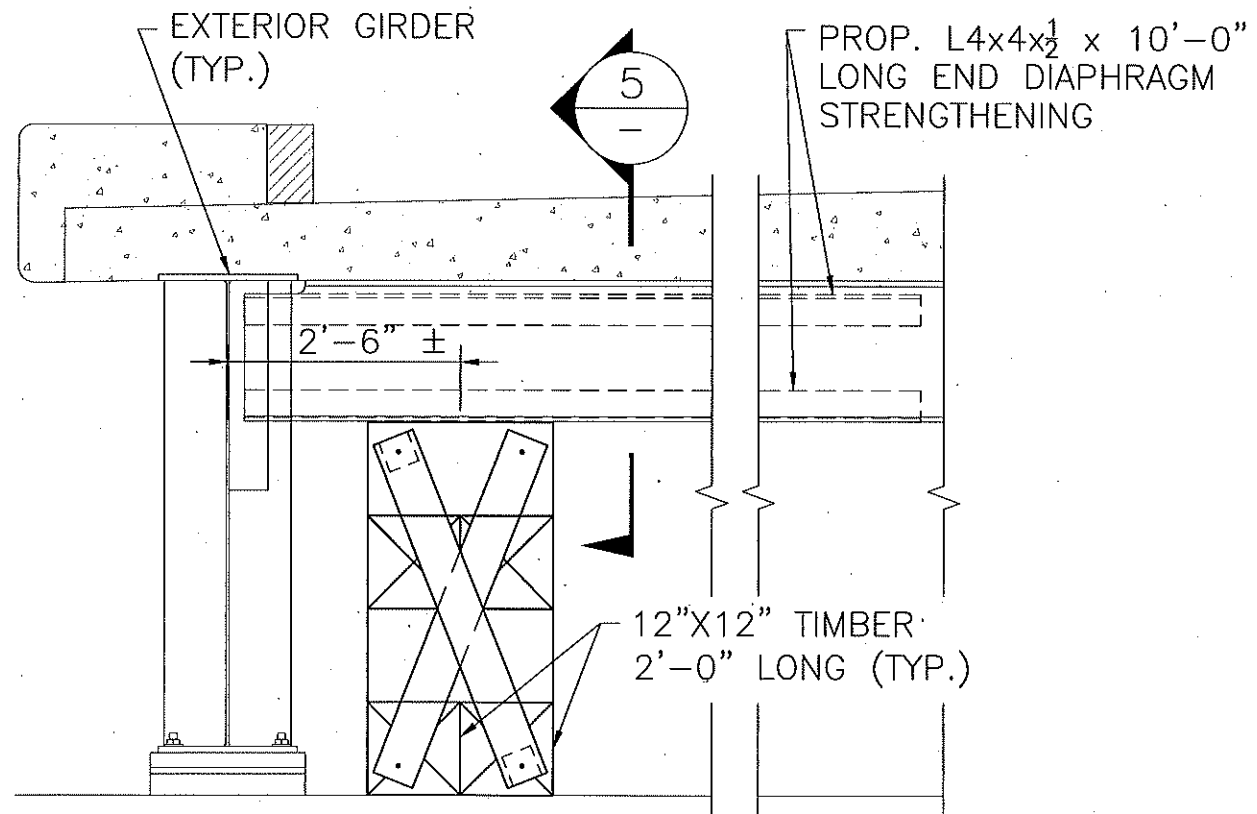
**EXTERIOR BAY END DIAPHRAGM STRENGTHENING
 PLAN AT TYPE I CONNECTION**

SCALE: 1" = 1'-0"



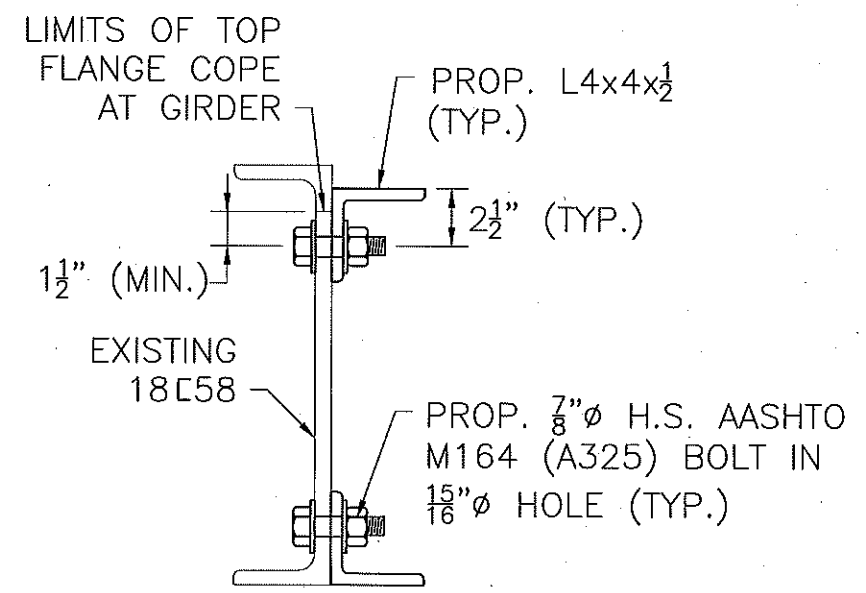
**EXTERIOR BAY END DIAPHRAGM STRENGTHENING
 PLAN AT TYPE II CONNECTION**

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

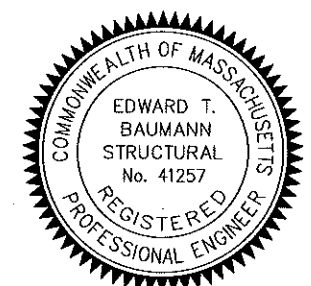


EXTERIOR BAY END DIAPHRAGM STRENGTHENING

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



SECTION 5
 SCALE: 1 1/2" = 1'-0"



Edward T. Baumann

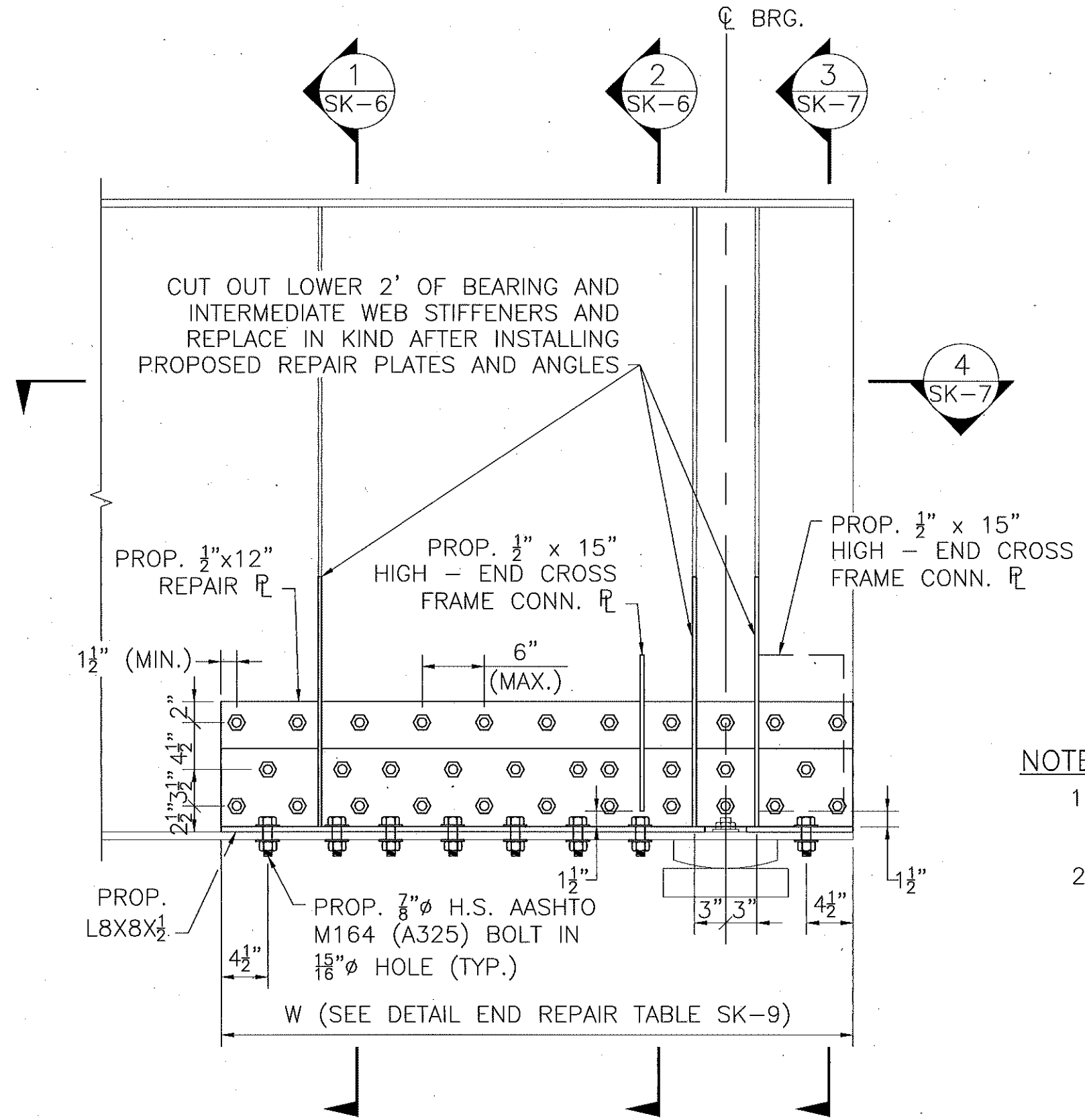
DATE: 6/16/2016

TIMBER CRIBBING TOWER
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ROUTE 9 OVER
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SK-3A OF 11



NOTES:

1. END CROSS FRAMES SHALL BE REPLACED IN ALL BAYS ADJACENT TO PROPOSED BEAM WEB REPAIRS. FOR DETAILS SEE SK-9.
2. CENTER OF PROPOSED BOLTS SHALL BE LOCATED A MINIMUM 2" FROM ADJACENT BEARING AND INTERMEDIATE WEB STIFFENER PLATES.

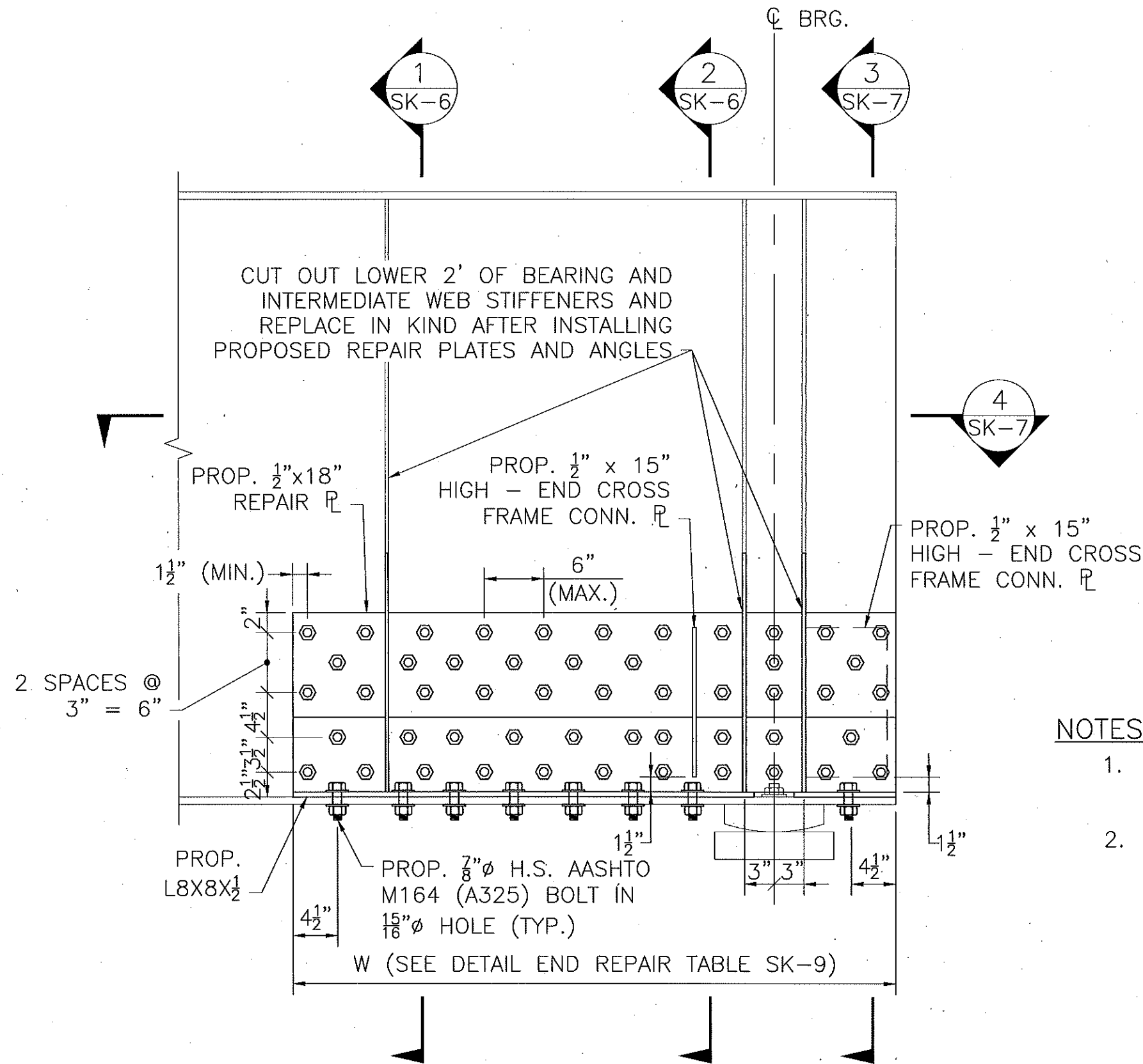
PROPOSED WEB REPAIR - TYPE I
 SCALE: 1"=1'-0"

REVISED: 4/28/2015
 REVISED: 12/22/2014
 DATE: 10/10/2014

PROPOSED WEB REPAIR
 STEEL REPAIRS FOR
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 CUMMINGTON, MASSACHUSETTS



NOTES:

1. END CROSS FRAMES SHALL BE REPLACED IN ALL BAYS ADJACENT TO PROPOSED BEAM WEB REPAIRS. FOR DETAILS SEE SK-9.
2. CENTER OF PROPOSED BOLTS SHALL BE LOCATED A MINIMUM 2" FROM ADJACENT BEARING AND INTERMEDIATE WEB STIFFENER PLATES.

PROPOSED WEB REPAIR - TYPE II

SCALE: 1"=1'-0"

REVISED: 4/28/2015
 REVISED: 12/22/2014
 DATE: 10/10/2014

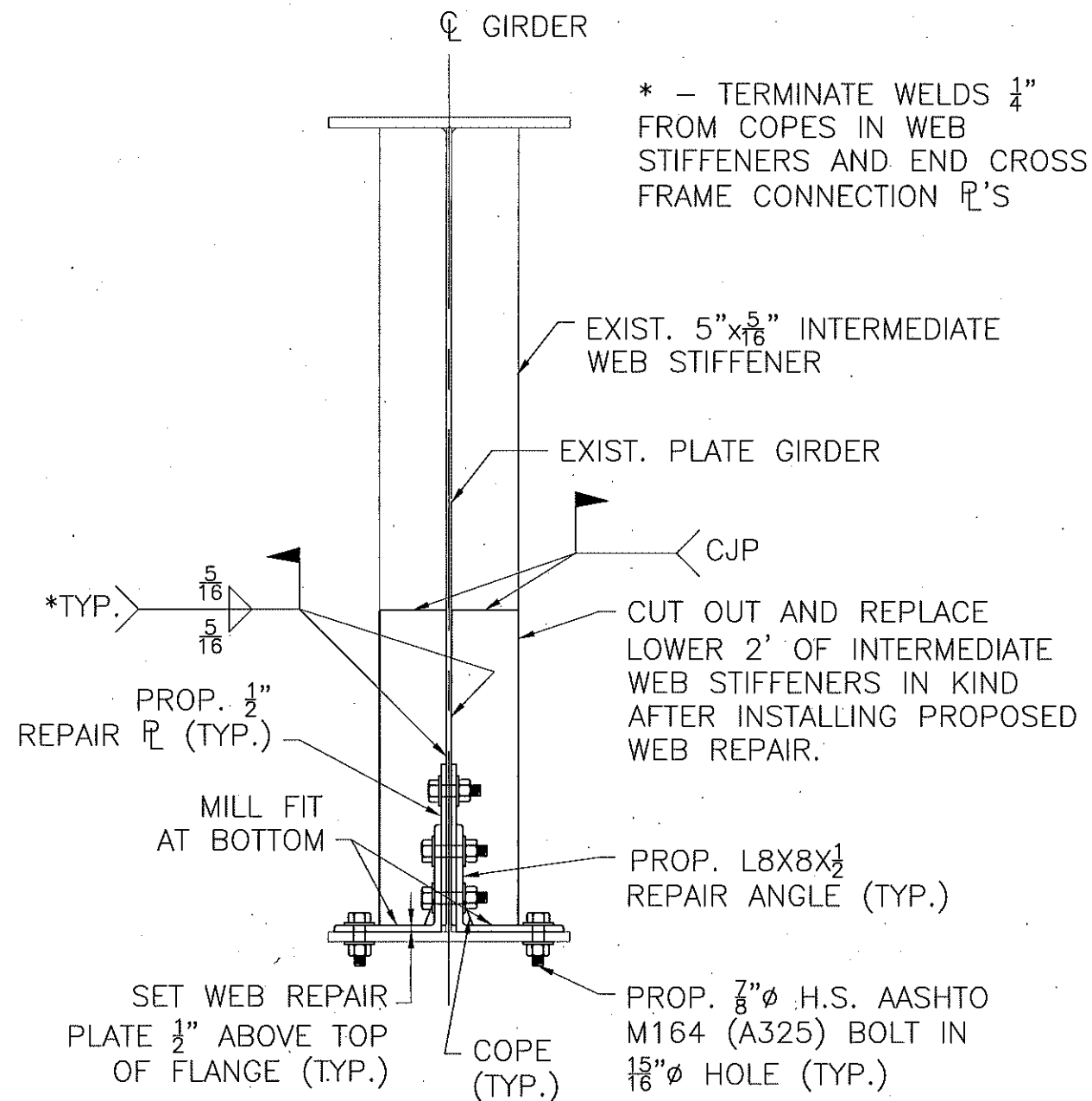
PROPOSED WEB REPAIR
 STEEL REPAIRS FOR
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ROUTE 9 OVER
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 CUMMINGTON, MASSACHUSETTS

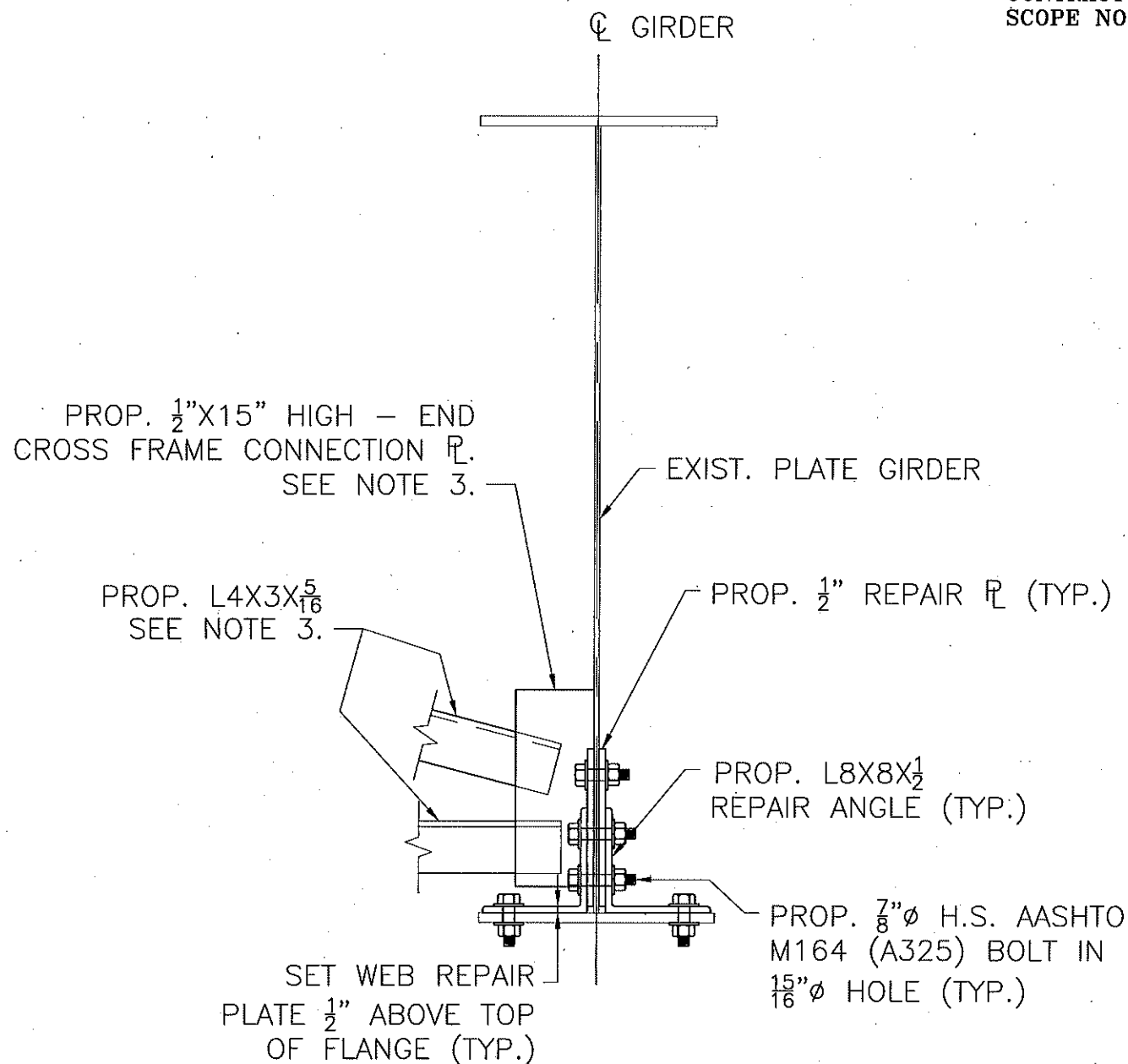
SK-5 OF 11



NOTES:

1. TYPE I WEB REPAIR SHOWN, TYPE II WEB REPAIR SIMILAR.
2. COPE PROPOSED WEB STIFFENERS TO FIT AROUND PROPOSED WEB REPAIR AS REQUIRED (TYP.)
3. AT LOCATIONS WHERE INTERIOR CROSS FRAMES ARE ATTACHED TO THE INTERMEDIATE WEB STIFFENERS, REMOVE THE CROSS FRAMES AS REQUIRED AND RESET AFTER INSTALLATION OF THE PROPOSED REPLACEMENT SECTION OF THE WEB STIFFENER. FOR CONNECTION DETAILS, SEE DETAIL A ON SHEET SK-8.

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



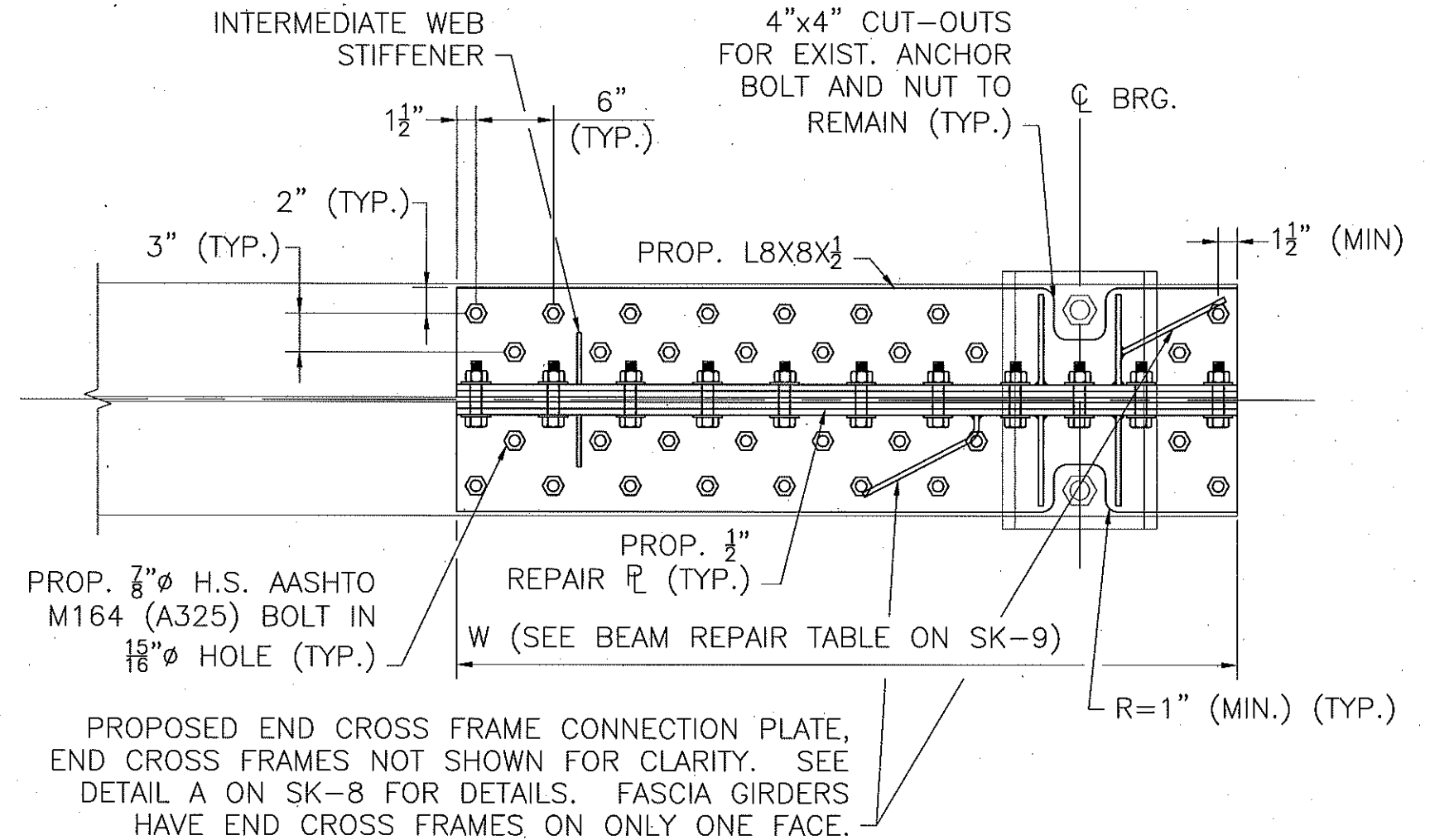
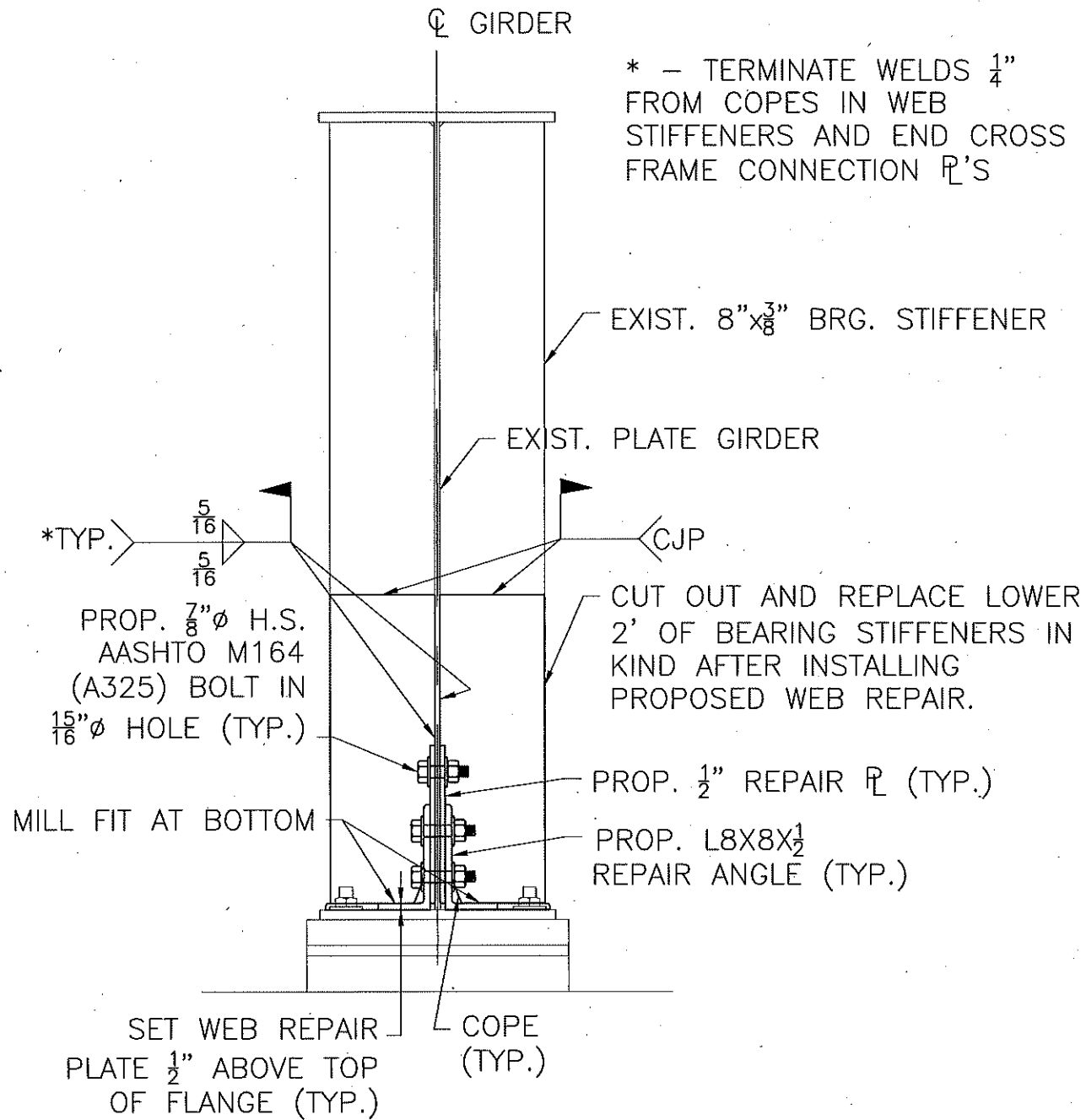
NOTES:

1. TYPE I WEB REPAIR SHOWN, TYPE II WEB REPAIR SIMILAR.
2. COPE PROPOSED END CROSS FRAME CONNECTION R TO FIT AROUND PROPOSED WEB REPAIR AS REQUIRED (TYP.)
3. FOR END CROSS FRAME CONNECTION DETAILS, SEE DETAIL A ON SHEET SK-8.

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

REVISED: 4/28/2015
 REVISED: 12/22/2014
 DATE: 10/10/2014

* - TERMINATE WELDS $\frac{1}{4}$ "
 FROM COPE IN WEB
 STIFFENERS AND END CROSS
 FRAME CONNECTION PL'S



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

NOTES:

1. TYPE I WEB REPAIR SHOWN, TYPE II WEB REPAIR SIMILAR.
2. COPE PROPOSED BEARING STIFFENERS TO FIT AROUND PROPOSED WEB REPAIR AS REQUIRED (TYP.)
3. PROPOSED END CROSS FRAME CONNECTION PLATE NOT SHOWN FOR CLARITY.

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

REVISED: 4/28/2015
 DATE: 10/10/2014

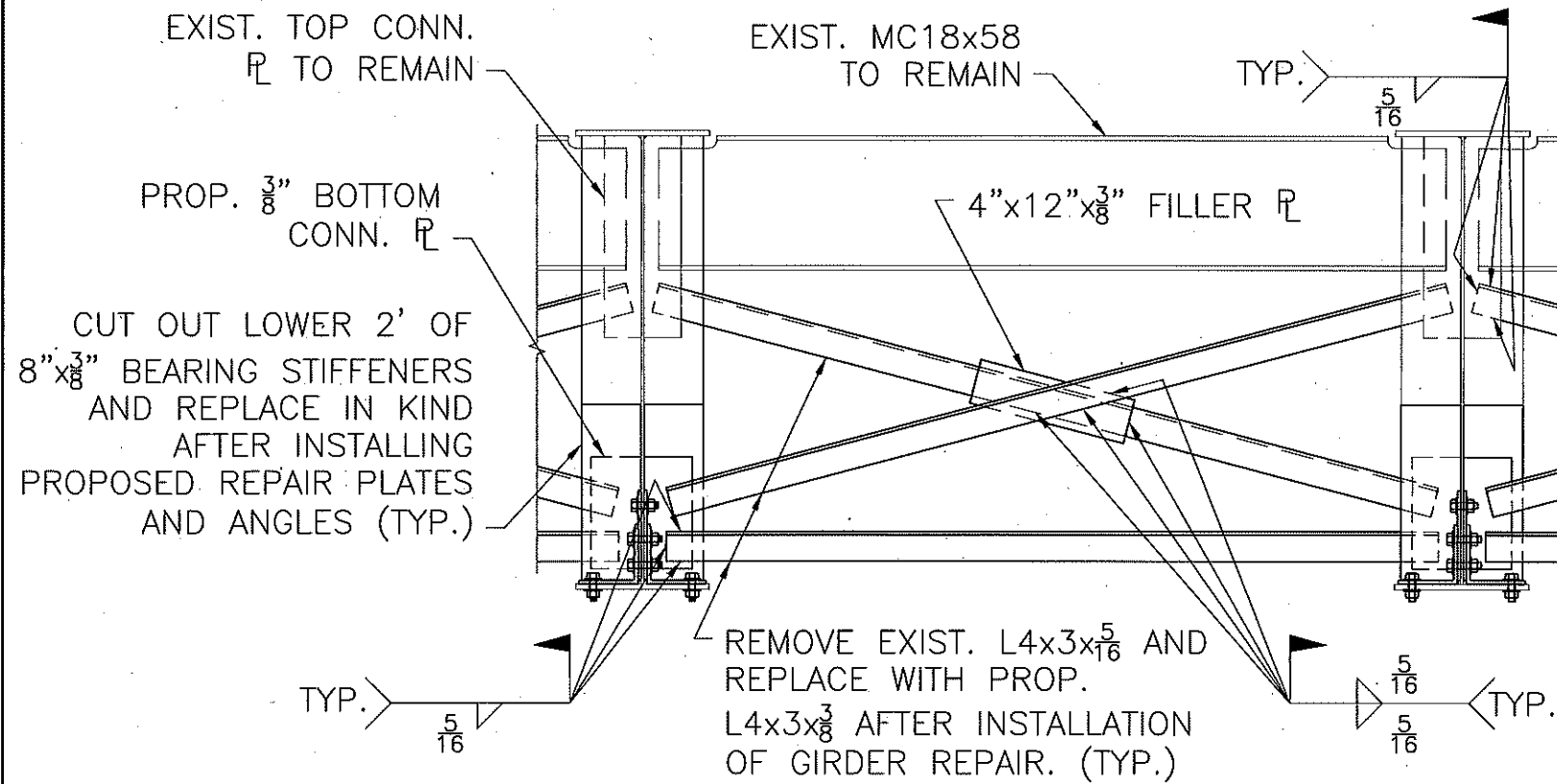
TYPICAL REPAIR SECTIONS
 STEEL REPAIRS FOR
 BRIDGE NO. C-21-025 (OJK)



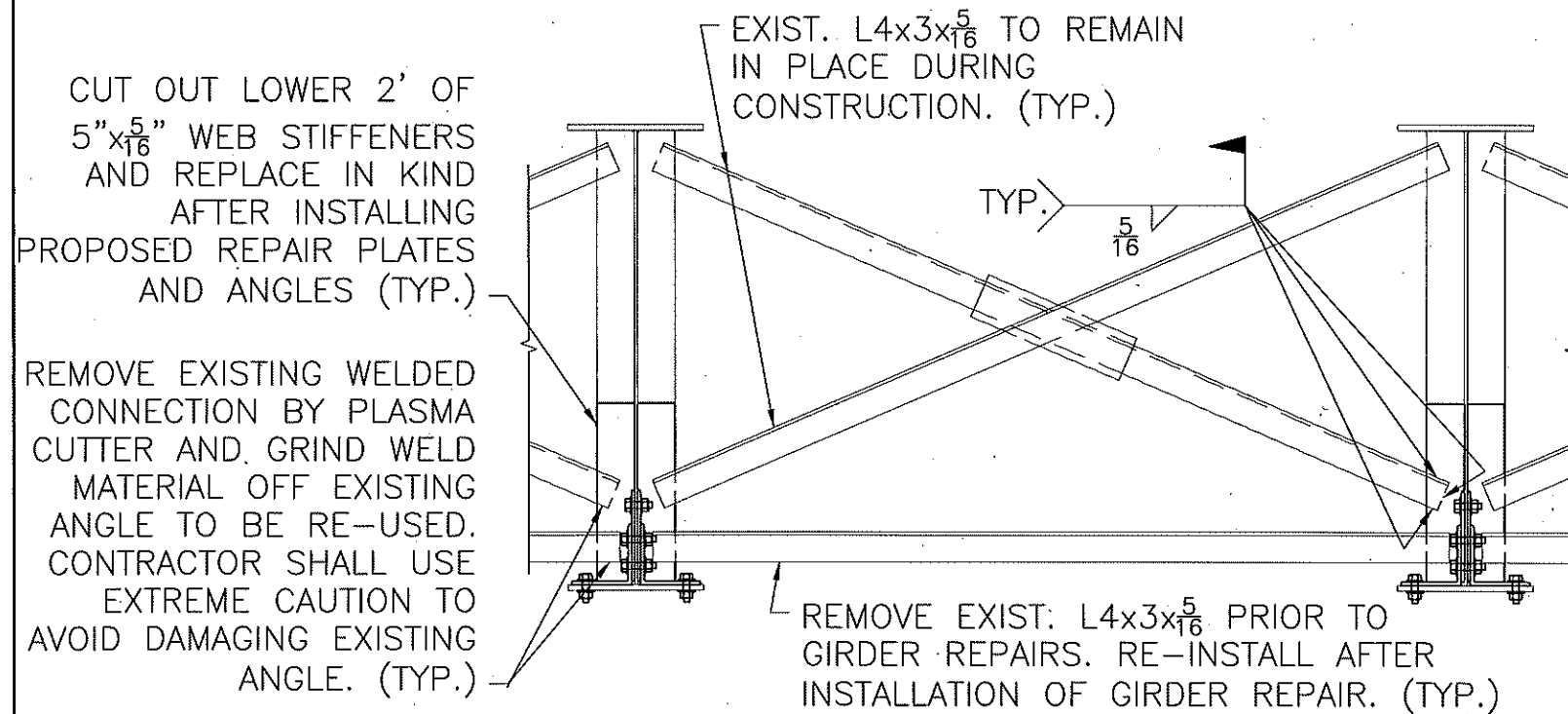
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ROUTE 9 OVER
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SK-7 OF 11



END CROSS FRAME DETAIL AT WEB REPAIR DETAIL
 NOT TO SCALE



INTERIOR CROSS FRAME DETAIL AT WEB REPAIR DETAIL
 NOT TO SCALE

BEAM END REPAIR TABLE						
SPAN	GIRDER	LOCATION	W	WEB REPAIR TYPE	Y	Z
WEST	1	WEST ABUTMENT	3'-8"	I	0	0
WEST	1	PIER	15'-3"	II	1	5
WEST	2	PIER	2'-9"	II	1	0
WEST	3	PIER	2'-9"	I	0	0
WEST	4	PIER	12'-0"	II	1	3
WEST	5	PIER	5'-9"	I	1	1
WEST	6	PIER	11'-7"	I	1	3
EAST	7	PIER	2'-9"	I	0	0
EAST	8	PIER	8'-4"	I	0	2
EAST	9	PIER	6'-9"	I	0	1
EAST	10	PIER	8'-4"	I	0	2
EAST	11	PIER	11'-7"	I	1	3
EAST	12	PIER	9'-3"	II	0	2

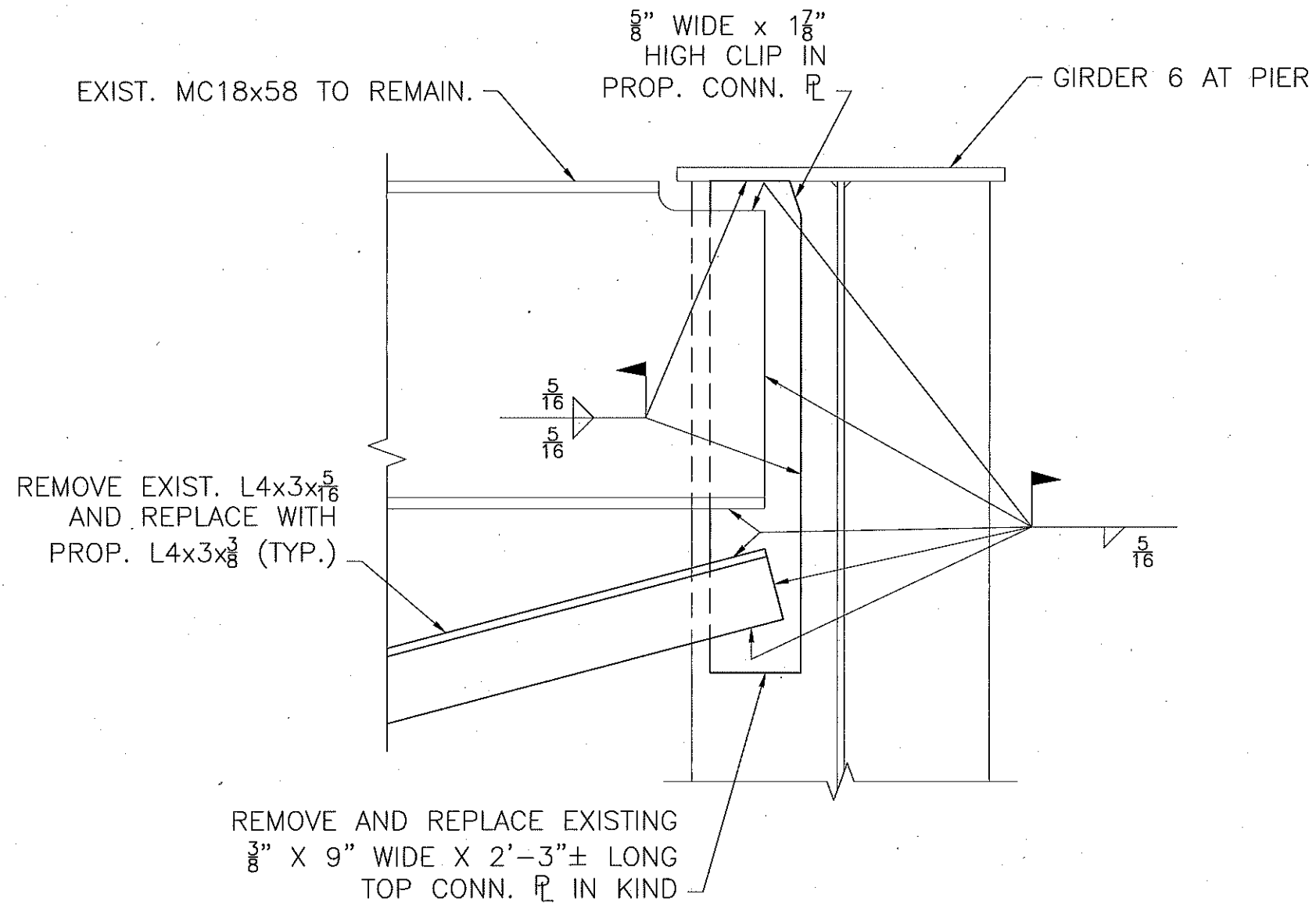
Y - ANTICIPATED NUMBER OF INTERIOR CROSS FRAMES TO BE REMOVED AND RESET TO ALLOW FOR INSTALLATION OF PROPOSED WEB REPAIRS.

Z - ANTICIPATED NUMBER OF INTERMEDIATE WEB STIFFENERS/CROSS FRAME CONNECTION PLATES TO BE PARTIALLY REPLACED TO ALLOW FOR INSTALLATION OF PROPOSED WEB REPAIRS.

NOTES:

1. TERMINATE FILLET WELDS 1/2" SHORT OF ALL PLATE EDGES.
2. ALIGN PROPOSED BOTTOM END CROSS FRAME CONNECTION TO DIRECTLY BELOW EXISTING TOP CONNECTION.
3. INTERIOR CROSS FRAME AND PIER END CROSS FRAME MEMBERS SHALL BE REMOVED AS REQUIRED TO ALLOW FOR INSTALLATION OF PROPOSED BEAM REPAIRS, THEN WELDED TO THE PROPOSED CONNECTION AS SHOWN IN DETAIL A. CROSS FRAME MEMBERS MAY BE CUT AS REQUIRED TO FACILITATE INSTALLATION.

REVISED: 6/8/2015
 REVISED: 4/28/2015
 DATE: 10/10/2014



NOTES:

1. TERMINATE FILLET WELDS $\frac{1}{2}$ " SHORT OF ALL PLATE EDGES.
2. EXIST. MC18x58 SHALL BE TEMPORARILY SUPPORTED DURING REMOVAL AND REPLACEMENT OF EXISTING $\frac{3}{8}$ " TOP CONN. PL., SEE TEMPORARY TIMBER CRIBBING ON SHEET SK-3.

END CROSS FRAME TOP CONNECTION PLATE REPAIR DETAIL
GIRDER 6 AT PIER

SCALE: $1\frac{1}{2}$ "=1'-0"

REVISED: 6/8/2015
 REVISED: 4/28/2015
 DATE: 10/10/2014

CROSS FRAME TOP CONN. REPAIR
 STEEL REPAIRS FOR
 BRIDGE NO. C-21-025 (OJK)



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ROUTE 9 OVER
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SK-10 OF 11

GENERAL REPAIR NOTES:

**STEEL REPAIRS - DISTRICT 1
CONTRACT 76939
SCOPE NO. 36-13**

1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, SUPERVISION, MATERIALS, AND EQUIPMENT AND PREPARATION OF SHOP DRAWINGS NECESSARY TO PERFORM THE SPECIFIED TASKS. THE CONTRACTOR IS CAUTIONED THAT HE IS WHOLLY RESPONSIBLE FOR FURNISHING AND INSTALLING MATERIALS OF THE QUALITY SPECIFIED UNDER THE TERMS OF THIS CONTRACT.
2. ALL DIMENSIONS AND DETAILS SHOWN FOR THE EXISTING STRUCTURE ARE BASED ON EXISTING PLANS AND ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED. THE CONTRACTOR SHALL DETERMINE AND ESTABLISH, BY FIELD MEASUREMENTS, ALL DIMENSIONS AND DETAILS NECESSARY FOR COMPLETION OF ALL WORK. 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 OF THE ACTUAL STRUCTURE AND UNTIL THE CONTRACTORS SHOP DRAWINGS AND THE EXTENT OF THE PROPOSED WORK HAS BEEN APPROVED BY THE ENGINEER.
3. THE CONTRACTOR SHALL ASSUME THE COATINGS ON THE STEEL CONTAIN LEAD, UNLESS OTHERWISE DETERMINED BY TESTING. THE CONTRACTOR SHALL CERTIFY IN WRITING TO THE ENGINEER THE RESULTS OF ALL TESTING, AND SHALL ALSO CERTIFY THAT ANY LEAD COATED STEEL REMOVED FROM THE PROJECT WAS NOT REUSED OR BURIED, BUT WAS SENT TO A SCRAP METAL RECYCLING FACILITY.
4. ALL CONTACT SURFACE AREAS (FAYING SURFACES) OF EXISTING PAINTED STEEL TO RECEIVE BOLTED REPAIR ELEMENTS SHALL BE CLEANED OF ALL EXISTING PAINT AND RUST. THESE CONTACT SURFACE AREAS OF THE EXISTING STEEL SHALL FIRST BE CLEANED IN ACCORDANCE WITH SSPC-SP1 (SOLVENT CLEANING) TO REMOVE OIL AND GREASE AND THEN SUBSEQUENTLY BE PREPARED IN ACCORDANCE WITH SSPC-SP15 (COMMERCIAL GRADE POWER TOOL CLEANING) OR SSPC-SP6 (COMMERCIAL BLAST CLEANING).
5. PRIOR TO CUTTING, WELDING OR BURNING OF ANY PAINTED STEEL SURFACES, THE CONTRACTOR MUST CHEMICALLY OR MECHANICALLY REMOVE THE ENTIRE COATING DOWN TO BARE METAL. THE PAINT COATING MUST BE REMOVED IN AN AREA PRESCRIBED BY A 6" MINIMUM OFFSET (1" FOR WELDING) FROM THE REQUIRED CUT. THE CONTRACTOR SHALL INSTALL PROPER SHIELDING AND/OR TARPULINS UNDER THE PAINT REMOVAL OPERATIONS IN ORDER TO CATCH ALL DEBRIS GENERATED DURING THIS PROCEDURE.
6. CUTTING OF EXISTING STEEL SHALL BE PERFORMED WITH CARE TO AVOID DAMAGING OR NOTCHING ANY OF THE MATERIAL TO REMAIN. IN THE EVENT THE CONTRACTOR DAMAGES MATERIALS TO REMAIN DURING CUTTING OPERATIONS, THE CONTRACTOR SHALL REPLACE, REPAIR OR REINFORCE THE DAMAGED AREA AS MAY BE REQUIRED TO RESTORE THE AREA TO EXISTING CONDITIONS PRIOR TO DAMAGE. THE WORK SHALL BE PERFORMED BY THE CONTRACTOR AND AS ORDERED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
7. CUTTING OF EXISTING STEEL MAY BE PERFORMED BY THE CARBON AIR ARC CUTTING METHOD, PLASMA CUTTING, OR GRINDING. FLAME CUTTING SHALL NOT BE ALLOWED. CARBON AIR ARC CUTTING SHALL BE DONE IN A MANNER NOT TO CREATE EXCESSIVE HEAT IN THE STEEL TO REMAIN, TEMPERATURE IN THE BASE STEEL SHALL NOT EXCEED 275°F.
8. ALL PROPOSED STEEL SHALL CONFORM TO AASHTO M270, GRADE 36, ZONE T2 UNLESS NOTED OTHERWISE. SHOP DRAWINGS AND STEEL MILL TESTS WILL BE REQUIRED FOR ALL NEW STRUCTURAL STEEL.
9. HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO M164 (ASTM A325 TYPE I), AND THE LATEST AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, AND SHALL BE SUPPLIED WITH HEAVY HEX NUTS CONFORMING TO ASTM A563 AND HARDENED STEEL WASHERS CONFORMING TO ASTM F436. BOLTS AND NUTS SHALL BE FURNISHED FROM THE SAME SOURCE AND SHALL BE MATCHED FOR PROPER FIT. REPLACEMENT BOLTS SHALL MATCH THE EXISTING FASTENER DIAMETER, NEW BOLTS IN NEW HOLES SHALL BE A MINIMUM OF $\frac{7}{8}$ " ϕ .
10. ALL BOLTS SHALL BE TIGHTENED BY THE CALIBRATED WRENCH TIGHTENING METHOD. AFTER ALL RIVETS ARE REPLACED WITH BOLTS, A FINAL TIGHTENING PASS SHALL BE PERFORMED ON THE ENTIRE REPAIR TO ENSURE PROPER TIGHTENING ON ALL BOLTS.
11. ALL STRUCTURAL STEEL ELEMENTS AND HIGH STRENGTH BOLTS SHALL BE PAINTED TO MATCH EXISTING COLOR AND SHALL BE IN ACCORDANCE WITH SUBSECTION 960.63 OF THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
12. THE SURFACE CONDITION OF THE PROPOSED STEEL SHALL BE CLASS B WITH A SLIP COEFFICIENT OF 0.5.
13. BOLTS SHALL BE SUFFICIENTLY LONG SUCH THAT THREADS OF BOLTS WILL NOT BE IN THE SHEAR PLANE.
14. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHIELDING TO PREVENT ANY DEBRIS FROM FALLING INTO THE RIVER BELOW.
15. PLANS FOR THE EXISTING BRIDGE MAY BE SEEN AT THE OFFICE OF THE STATE BRIDGE ENGINEER, MASSACHUSETTS DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION, 10 PARK PLAZA, BOSTON, MASSACHUSETTS.
16. ALL WELDING, FABRICATION, AND SURFACE PREPARATION FOR WELDING SHALL BE IN CONFORMANCE WITH AASHTO/AWS BRIDGE WELDING CODE (AASHTO/AWS D1.5). FILLER METALS FOR WELDING SHALL CONFORM TO ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5, E70xx SERIES FOR SHIELDED METAL-ARC WELDING. THE WELDING PROCEDURE FOR THESE REPAIRS SHALL INCLUDE A PROCEDURE FOR TESTING THE WELDABILITY OF THE EXISTING STEEL AT THE REPAIR LOCATION IN ACCORDANCE WITH AASHTO/AWS D1.5 AND SHALL BE SUBMITTED TO MASSDOT METALS CONTROL FOR APPROVAL PRIOR TO PERFORMING ANY REPAIR.

**REVISED: 6/8/2015
REVISED: 4/28/2015
DATE: 10/10/2014**

**GENERAL NOTES
STEEL REPAIRS FOR
BRIDGE NO. C-21-025 (OJK)**



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