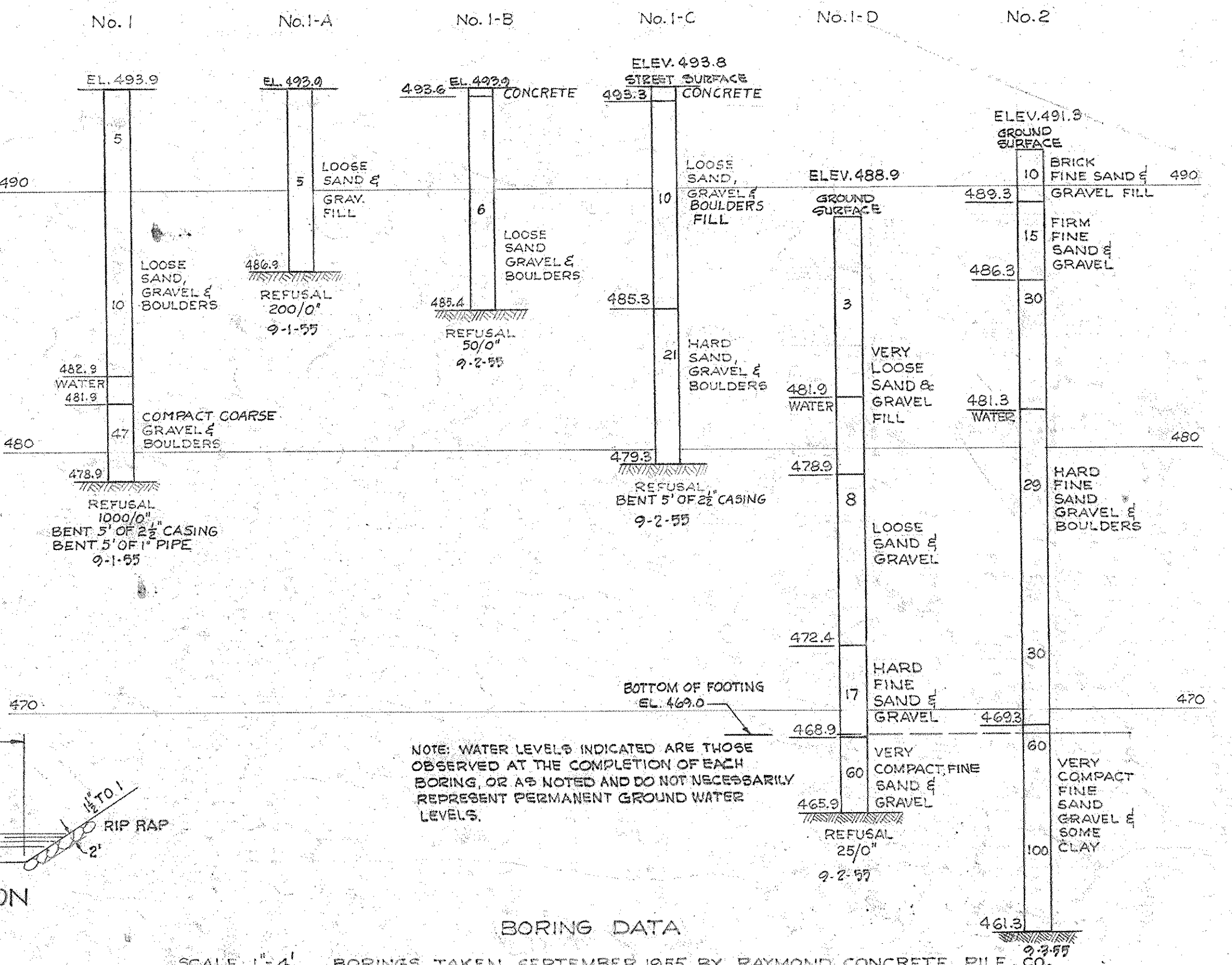
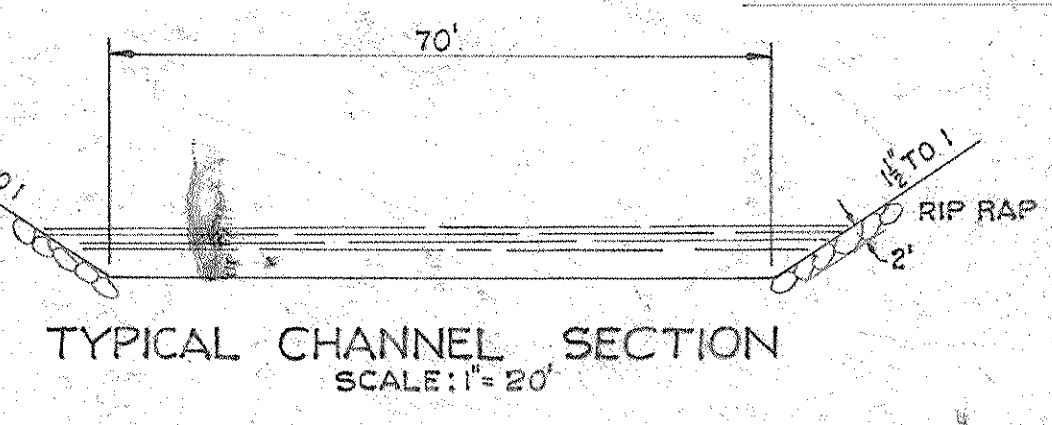
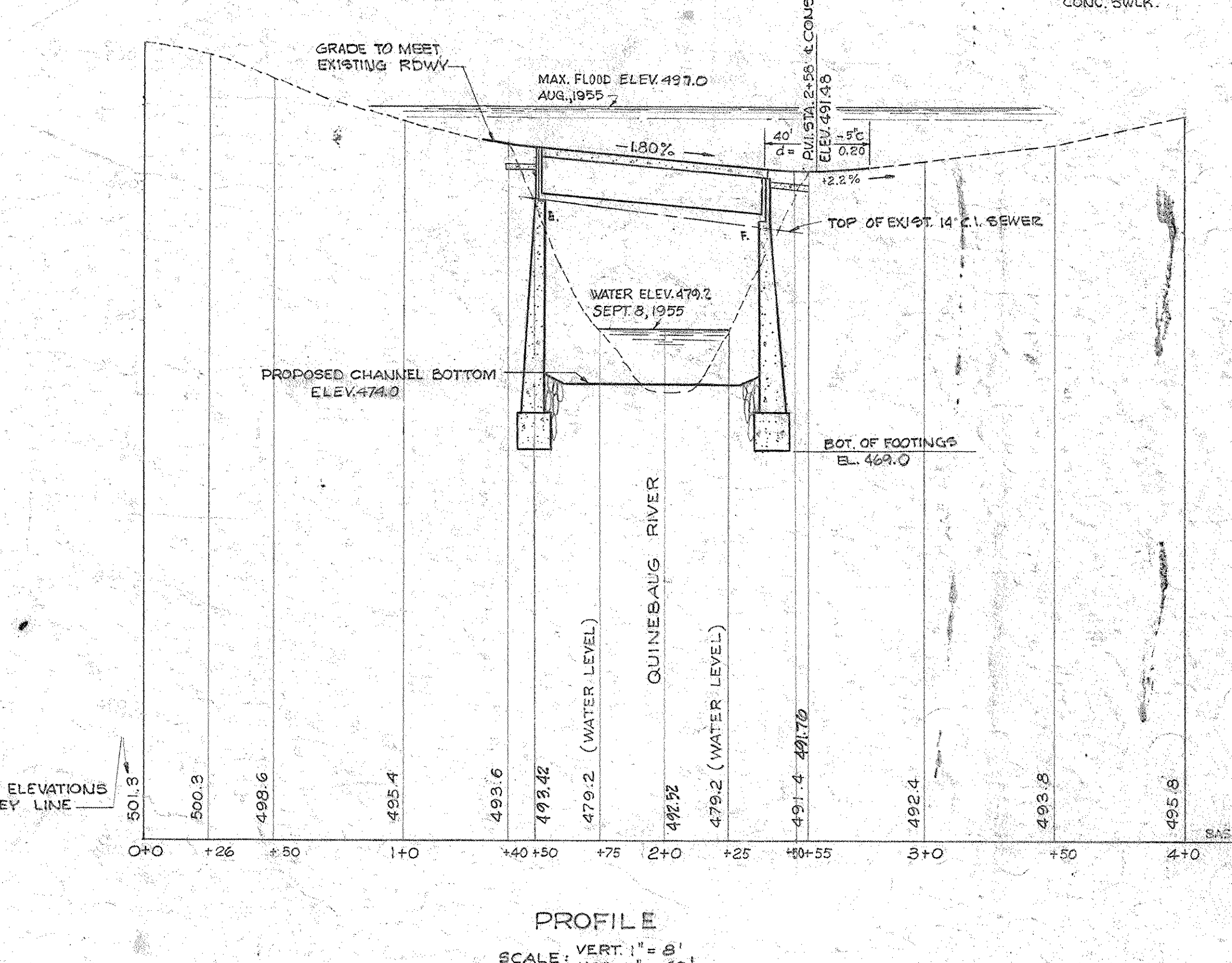
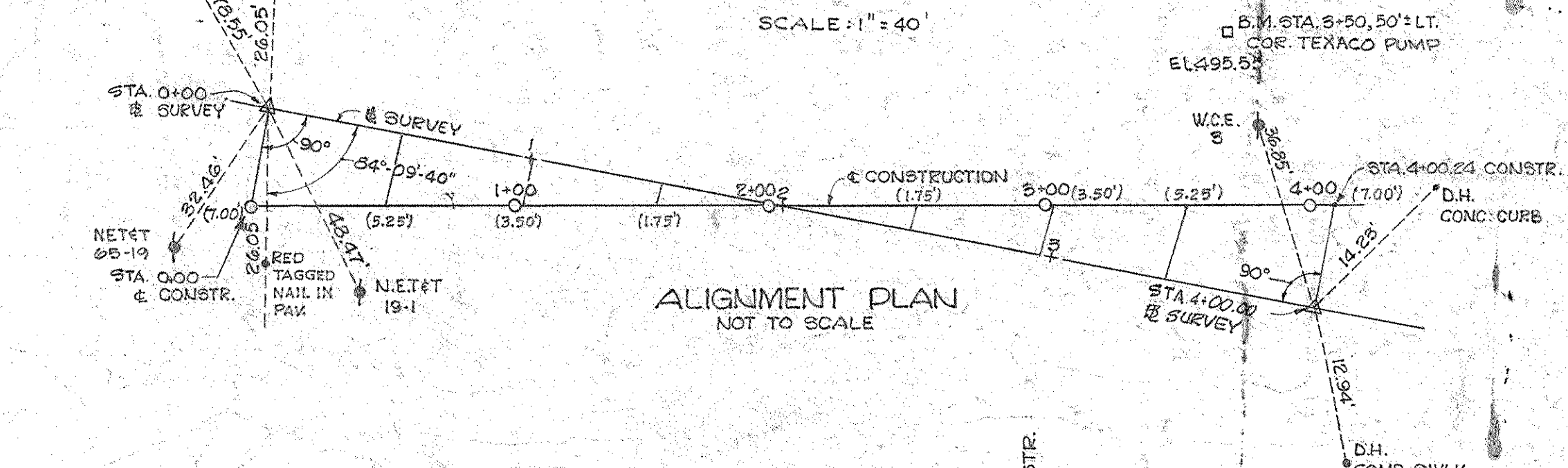
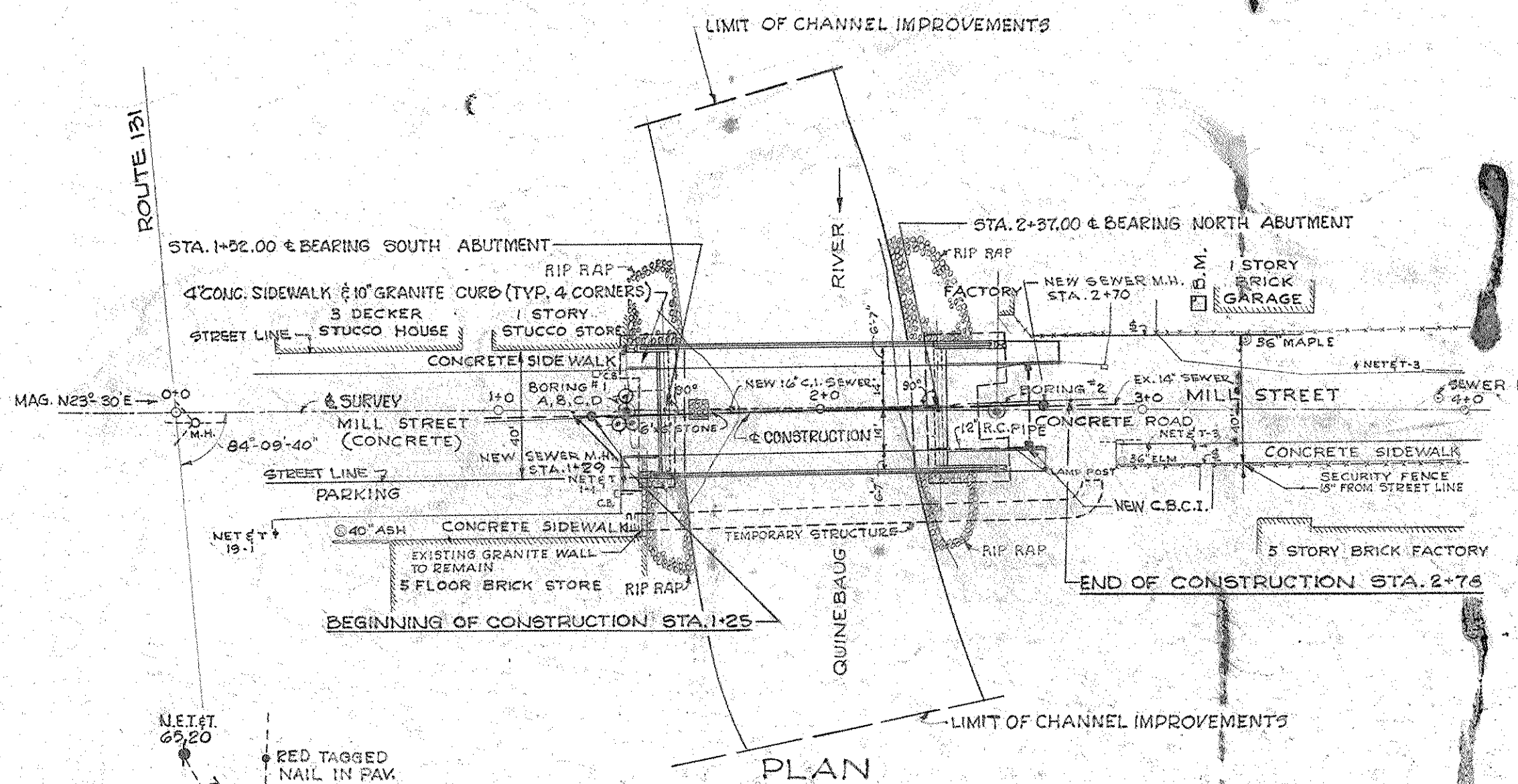
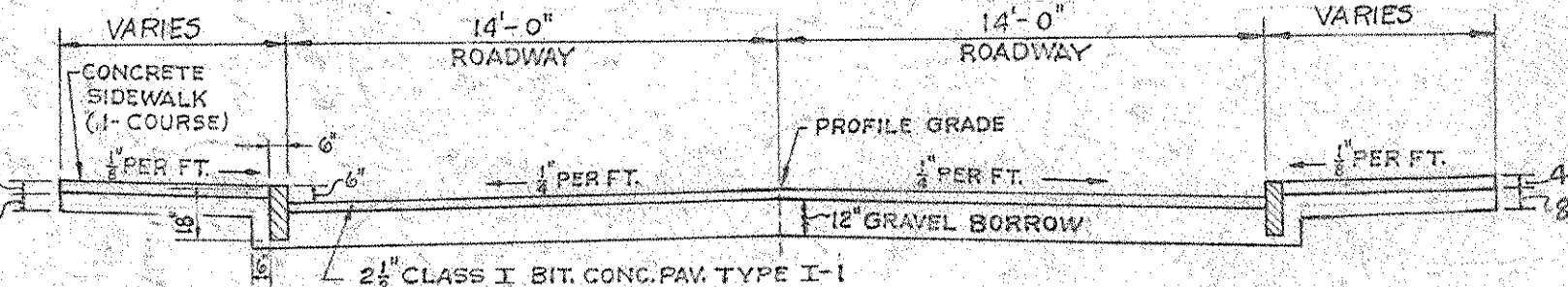
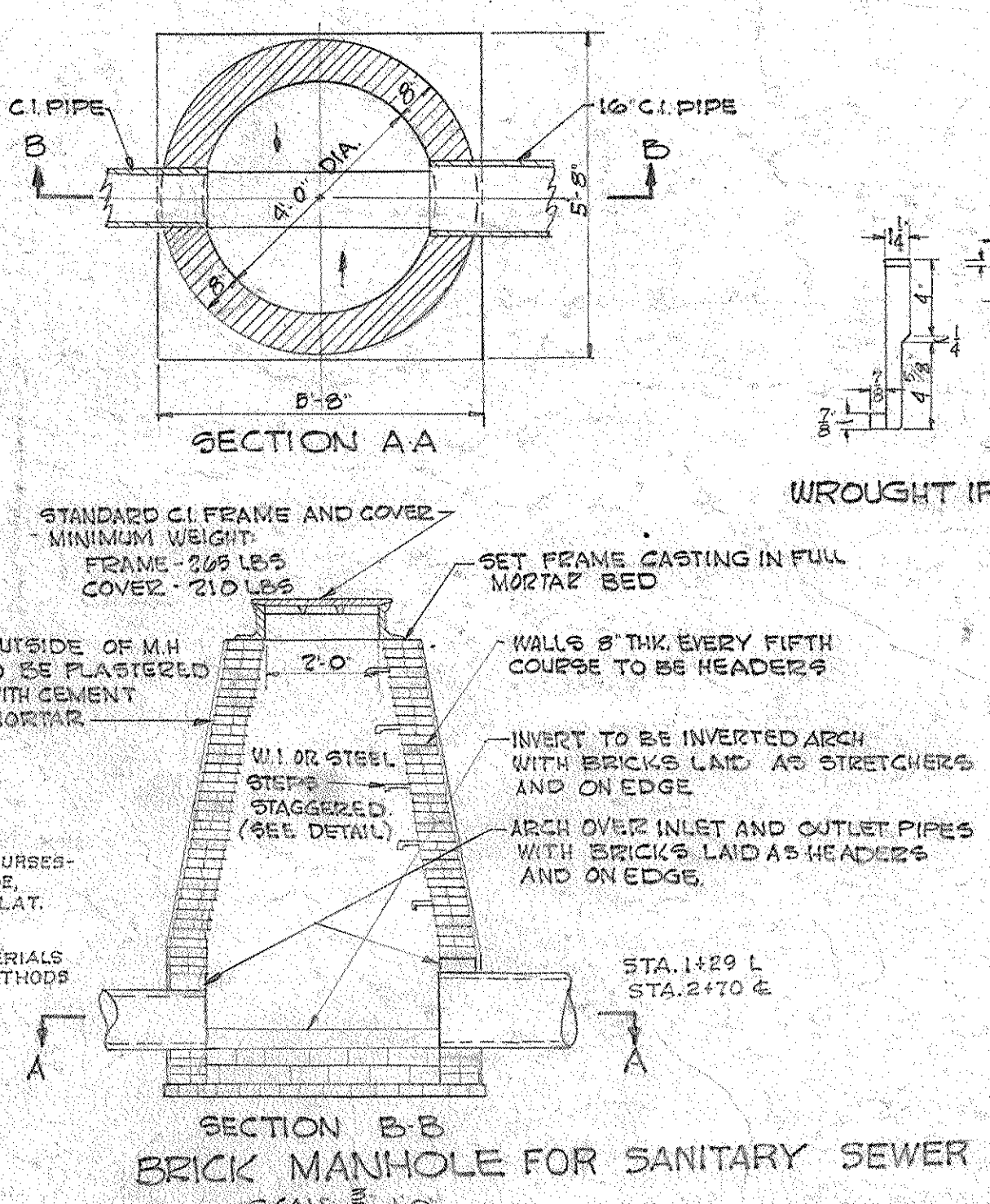
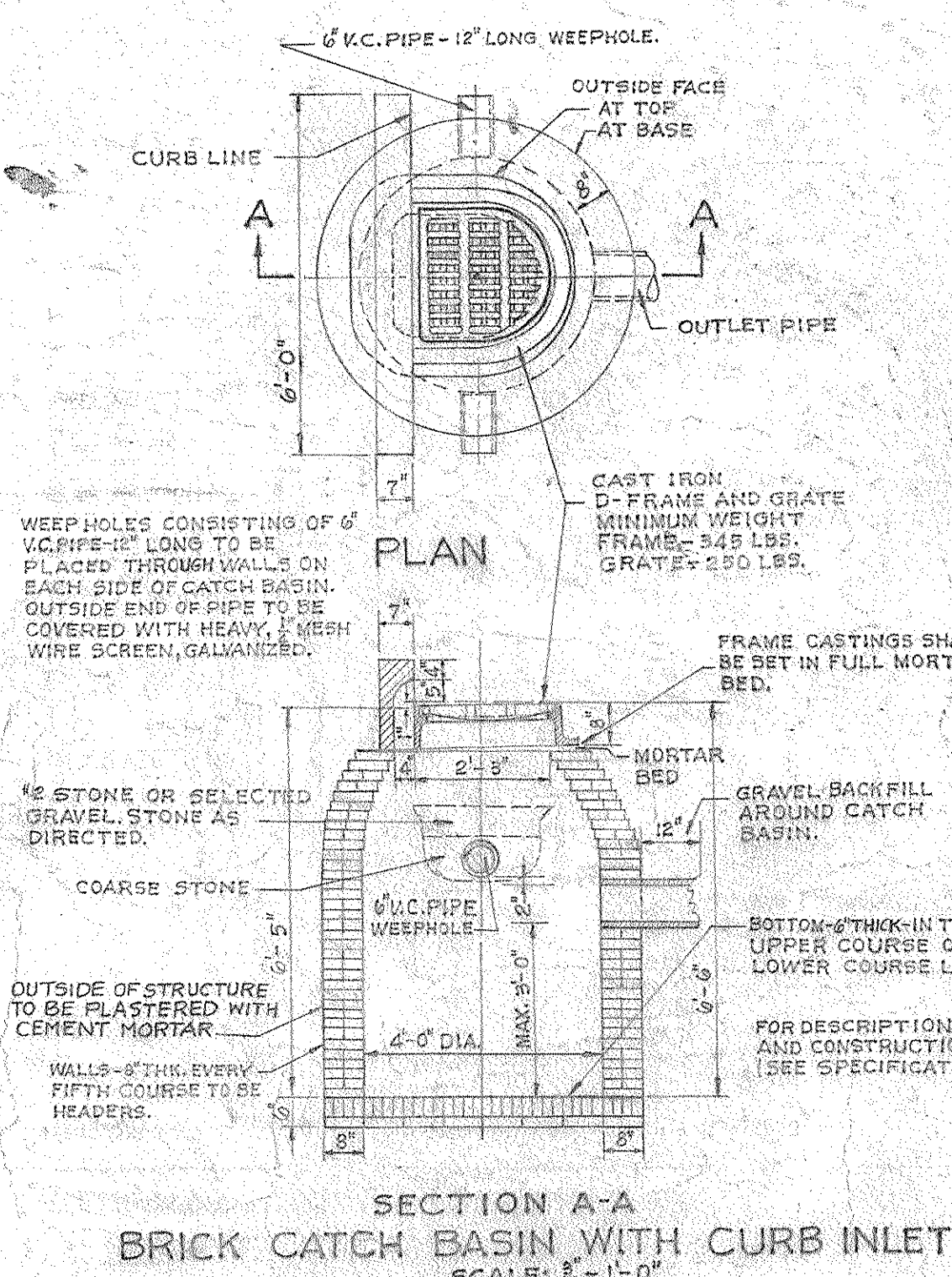




BORING NOTES

LOCATION OF BORINGS SHOWN ON KEY PLAN. THUS BORING NO. 1 BORINGS TAKEN FOR PURPOSE OF DESIGN AND SHOW CONDITIONS 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 OFFICE OF THE BRIDGE ENGINEER, MR. J.C. RUNDLETT, ROOM 602, 100 NASHUA ST., BOSTON, MASS.



GENERAL NOTES

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

DATE:
TO BE PLACED IN CENTER OF INSIDE FACES OF NORTHWESTERLY AND SOUTHEASTERLY END POST AS SHOWN IN DETAIL ON SHEET 2. A SHEET SHOWING SIZE AND CHARACTER OF NUMERALS WILL BE FURNISHED.

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

BENCH MARK:
STA. 3+30 50' LT. SURVEY LINE, STATE B.M. CORNER TEXACO PUMP, ELEV. 495.55 MEAN SEA LEVEL DATUM OF 1929.

REINFORCEMENT:
ALL BARS SHALL HAVE DEFORMATIONS CONFORMING TO ASTM DESIGNATION A305 UNLESS OTHERWISE SHOWN ON THE PLANS. REINFORCING BARS SHALL BE LAPPED 20 DIAMETERS TO MAKE A SPICE EXCEPT THAT MAIN REINFORCING BARS NEAR TOP OF SLABS AND BEAMS HAVING MORE THAN 12 INCHES OF CONCRETE UNDER THE BARS SHALL BE LAPPED 36 DIAMETERS TO MAKE A SPICE.

HYDRAULIC DATA:
SIZE OF DRAINAGE AREA = 99.4 SQ. MILES.
BRIDGE OPENING PROVIDED FOR MAJOR FLOOD.
ESTIMATED DISCHARGE = 5050 CU. FT. PER SECOND.
VELOCITY OF FLOOD FLOW = 10.2 FT. PER SECOND.

ESTIMATED QUANTITIES FOR BRIDGE NO. 3-21-3 (NOT GUARANTEED)

CLASS A ROCK EXCAVATION	10 CU. YDS.
CLASS B ROCK EXCAVATION	10 CU. YDS.
BRIDGE EXCAVATION (S-21-3, S-21-13)	1070 CU. YDS.
CHANNEL EXCAVATION (S-21-1, S-21-3)	1200 CU. YDS.
GRAVEL BORROW	560 CU. YDS.
CLASS I BIT. CONC. PAV. TYPE I-1	20 TONS.
BITUMEN FOR TACK COAT	35 GALS.
RIP RAP	190 CU. YDS.
TEMPORARY STRUCTURE (S-21-3)	1 LUMP SUM
STONE MAS. WALLS R&R (CEM.)	35 CU. YDS.
CATCH BASINS (EXCL. COST OF CAST.)	2 EA.
MANHOLES (EXCL. COST OF CAST.)	2 EA.
12" REINFORCED CONCRETE PIPE	60 LIN. FT.
16" HEAVY WEIGHT CAST IRON PIPE	150 LIN. FT.
GRANITE CURB TYPE VA4 STRAIGHT	110 LIN. FT.
GRANITE CURB CORNERS TYPE B	1 EA.
CONCRETE SIDEWALKS (1 COURSE)	75 SQ. YDS.
BRIDGE STRUCTURE (S-21-3)	1 LUMP SUM
GRANITE CURB INLETS STRAIGHT	2 EA.

FEB. 3, 1956
NOV. 30, 1955

SHEET 43 - ANCHOR BOLT SPACING - REVISED
ISSUED FOR CONSTRUCTION

THE COMMONWEALTH OF MASSACHUSETTS
PROPOSED 1955 FLOOD BRIDGE
SOUTHBRIDGE
MILL STREET BRIDGE
OVER QUINEBAUG RIVER
SCALE 3 AS NOTED
OFFICE OF
DEPARTMENT OF PUBLIC WORKS
100 NASHUA ST. - BOSTON, MASS.
NOV. 1955

CONSULTING ENGINEER
FAY, SPOFFORD & THORNDIKE
ENGINEERS - BOSTON

BRIDGE ENGINEER
CHIEF ENGINEER

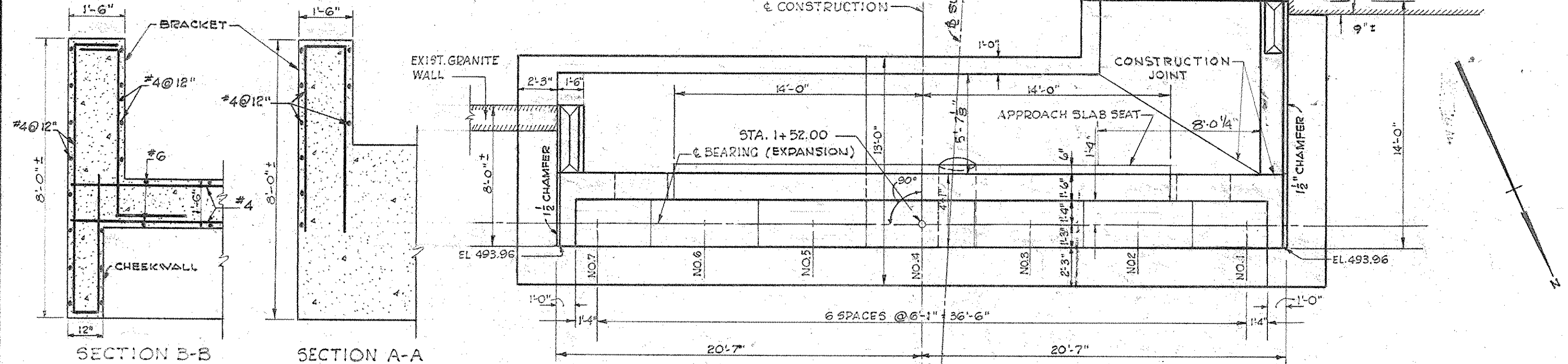
SHEET 1 OF 36 SHEETS BRIDGE NO. 3-21-3

FINISHED ELEVATIONS OF BRIDGE SEAT

BEAM	NO. 7	NO. 6	NO. 5	NO. 4	NO. 3	NO. 2	NO. 1
ELEVATION	488.96	489.04	489.16	489.29	489.16	489.04	488.96

SOUTH ABUTMENT

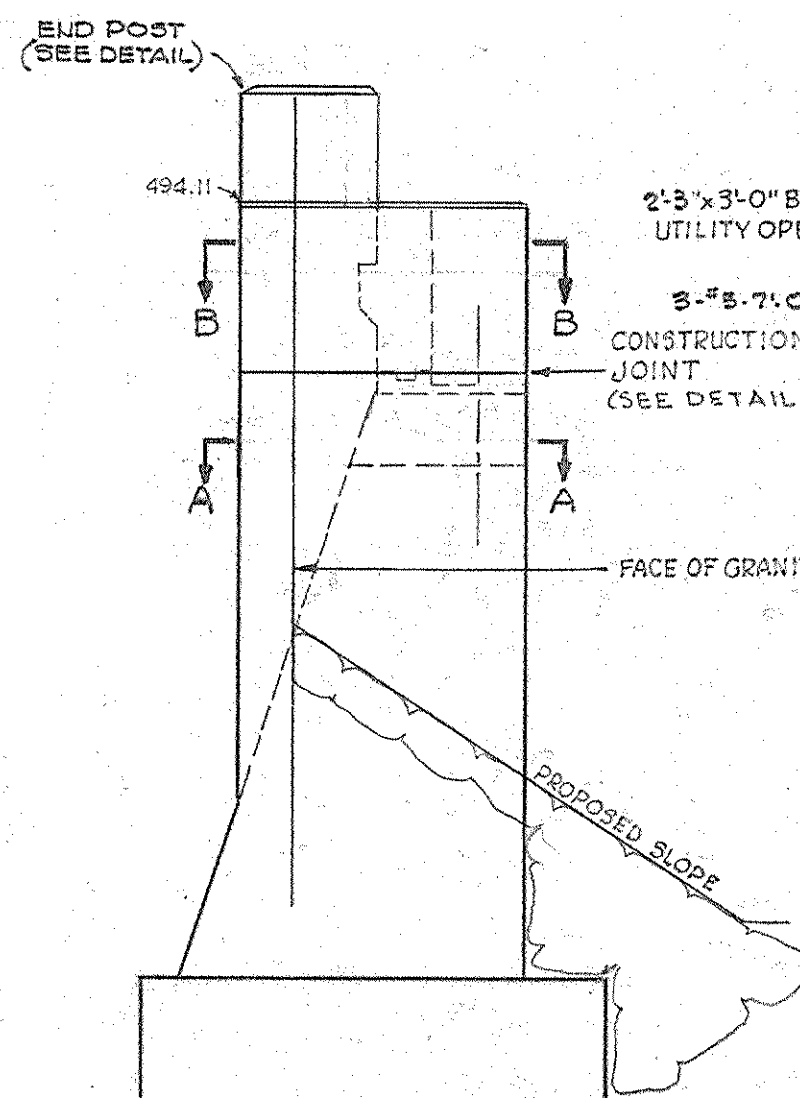
NOTE: ELEVATIONS GIVEN AT 6" BEARING



PLAN SOUTH ABUTMENT

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

NOTE: CONCRETE END POST AND BRACKET TO ALIGN WITH INSIDE FACE OF EXISTING CAP STONE



EAST WING WALL ELEVATION

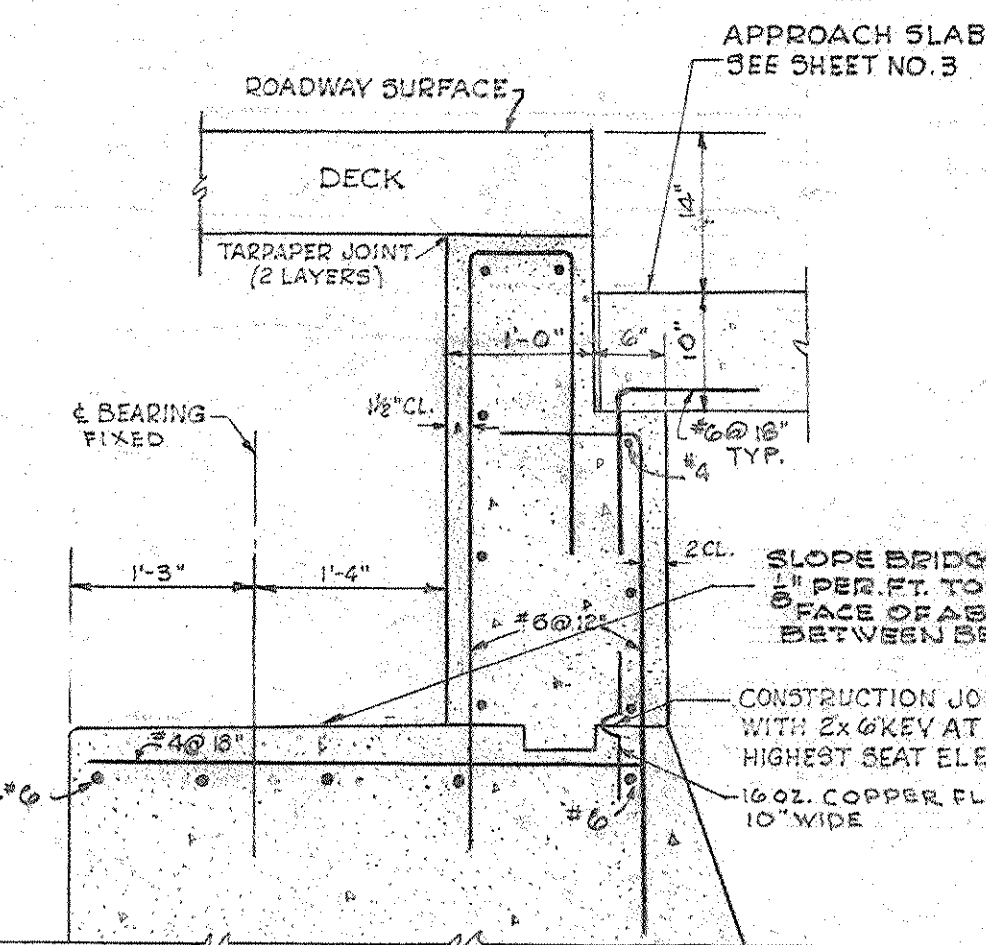
SCALE: 3/16" = 1'-0"

ELEVATION

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

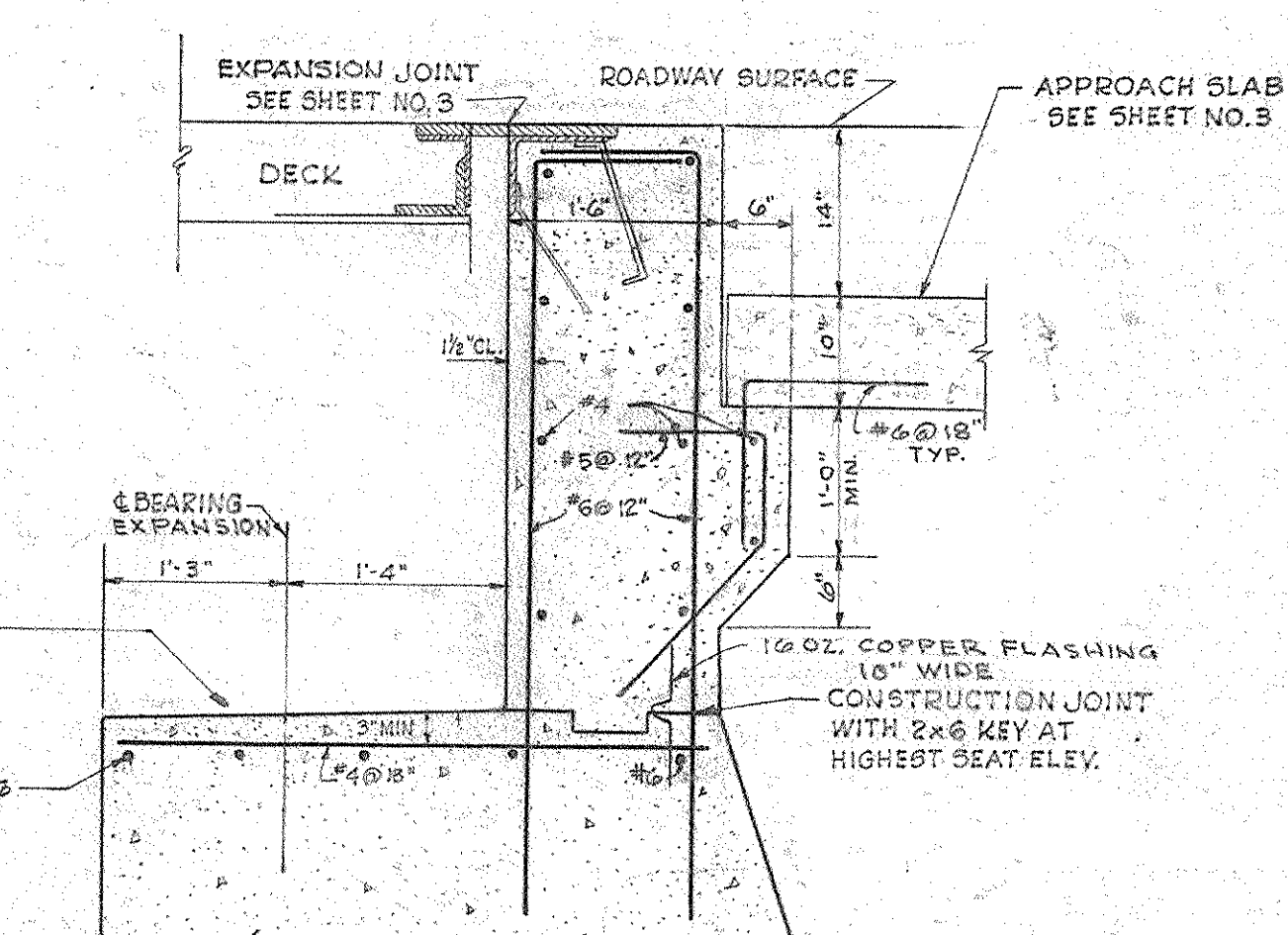
WEST WING WALL ELEVATION

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



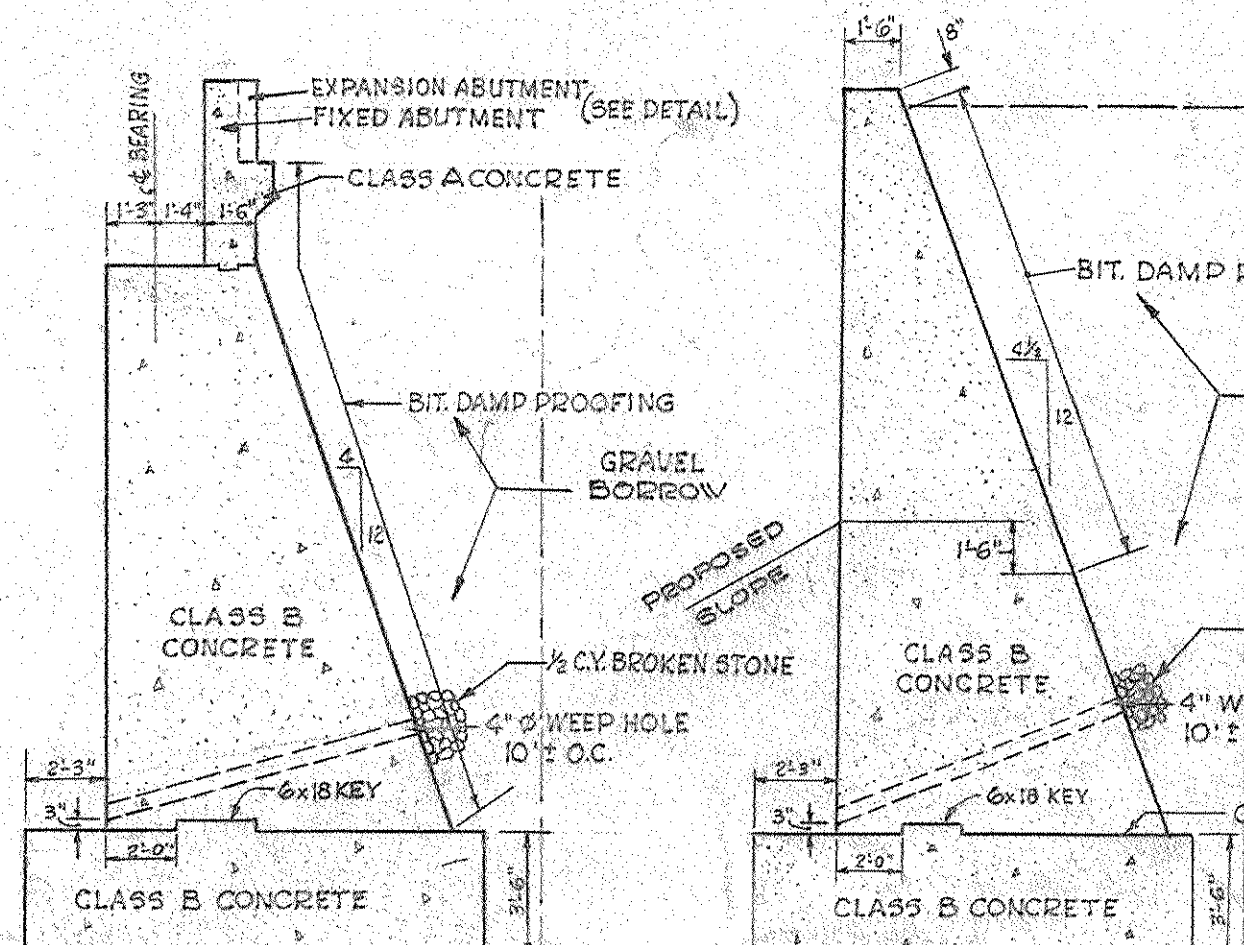
DETAIL NORTH ABUTMENT

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



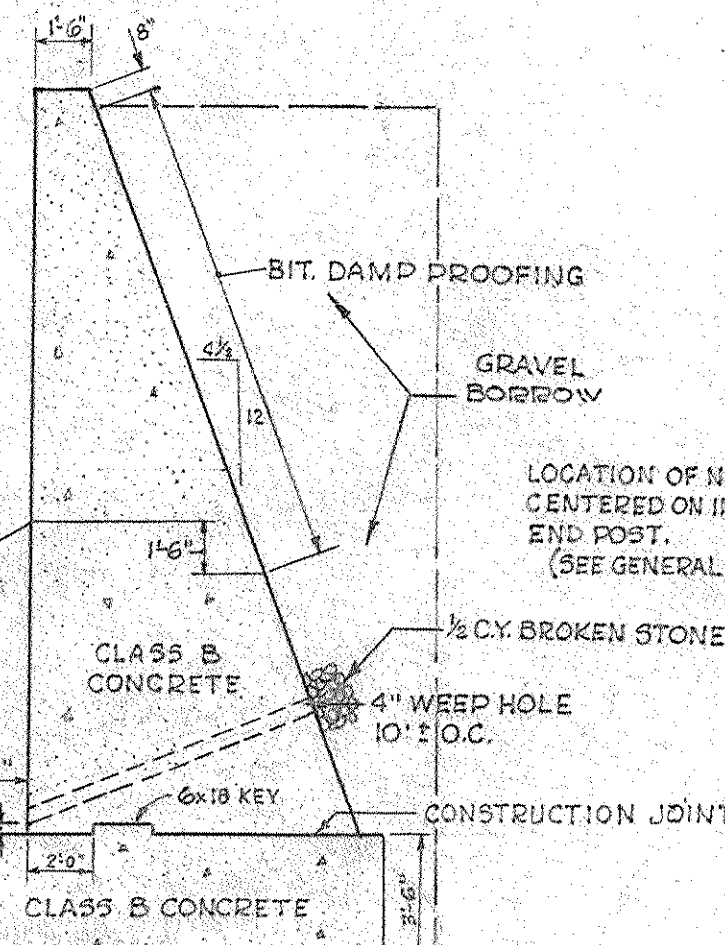
DETAIL SOUTH ABUTMENT

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



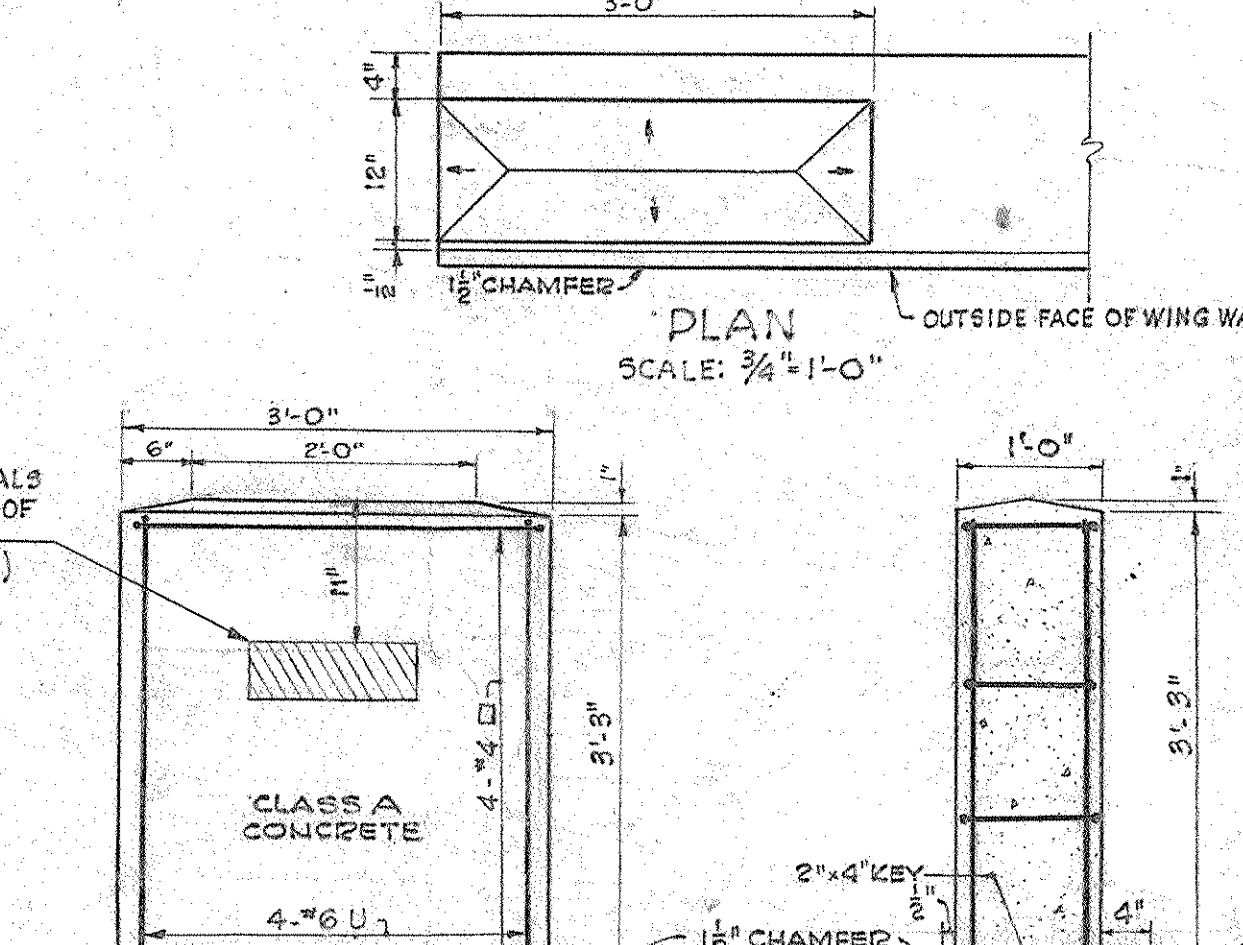
TYPICAL SECTION ABUTMENT

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



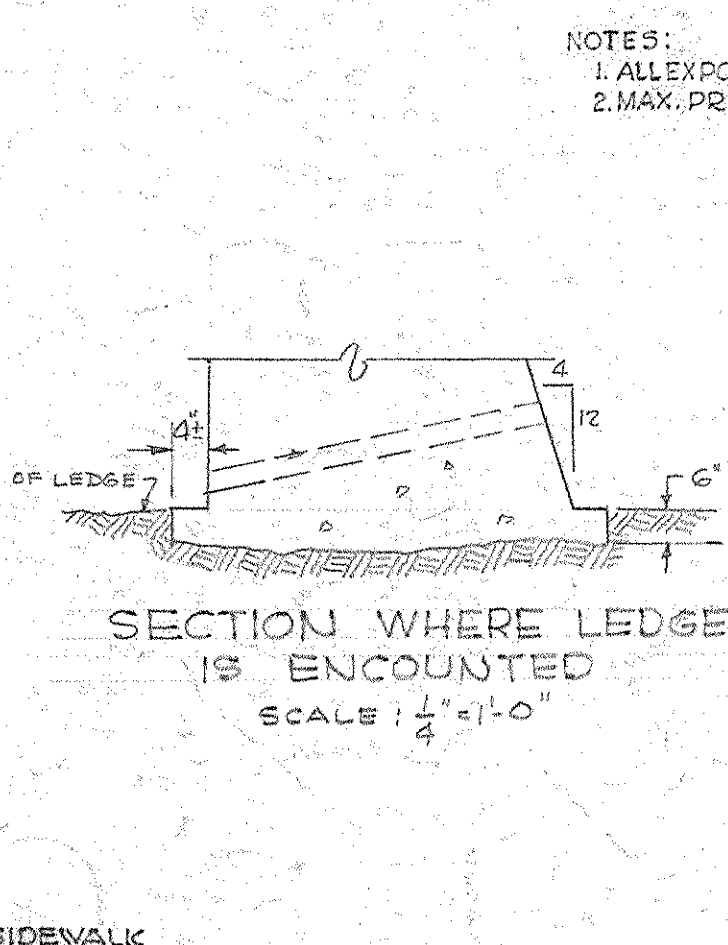
TYPICAL SECTION WING WALL

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



DETAILS OF END POST

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



SECTION WHERE LEDGE IS ENCOUNTERED

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

NOTES:
1. ALL EXPOSED CORNERS TO HAVE A 3/4" CHAMFER
2. MAX. PRESSURE UNDER FOOTING EQUALS 3.7 TON PER S.F.

EAST WING WALL ELEVATION - AS SHOWN

WEST WING WALL ELEVATION - OPPOSITE HAND

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

ELEV. OF ABUTMENT

ELEV. OF WING

DETAILS OF CONSTRUCTION JOINT

SCHEMATIC

END POST

SEE DETAILS

CONSTRUCTION JOINT

(SEE DETAILS)

PROPOSED SLOPE

12" R.C. PIPE

6" PROJ.

3'-0" BRICKED UP UTILITY OPENING

EL. 492.08

EL. 489.0

EL. 489.51

EL. 489.80

EL. 490.76

CONSTRUCTION JOINTS WITH KEYS

16 OZ. COPPER FLASHING

(12" WIDE)

EL. 489.51

EL. 489.80

EL. 490.76

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(12" WIDE)

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EL. 489.80

EL. 490.76

CONSTRUCTION JOINT WITH KEYS

16 OZ. COPPER FLASHING

(12" WIDE)

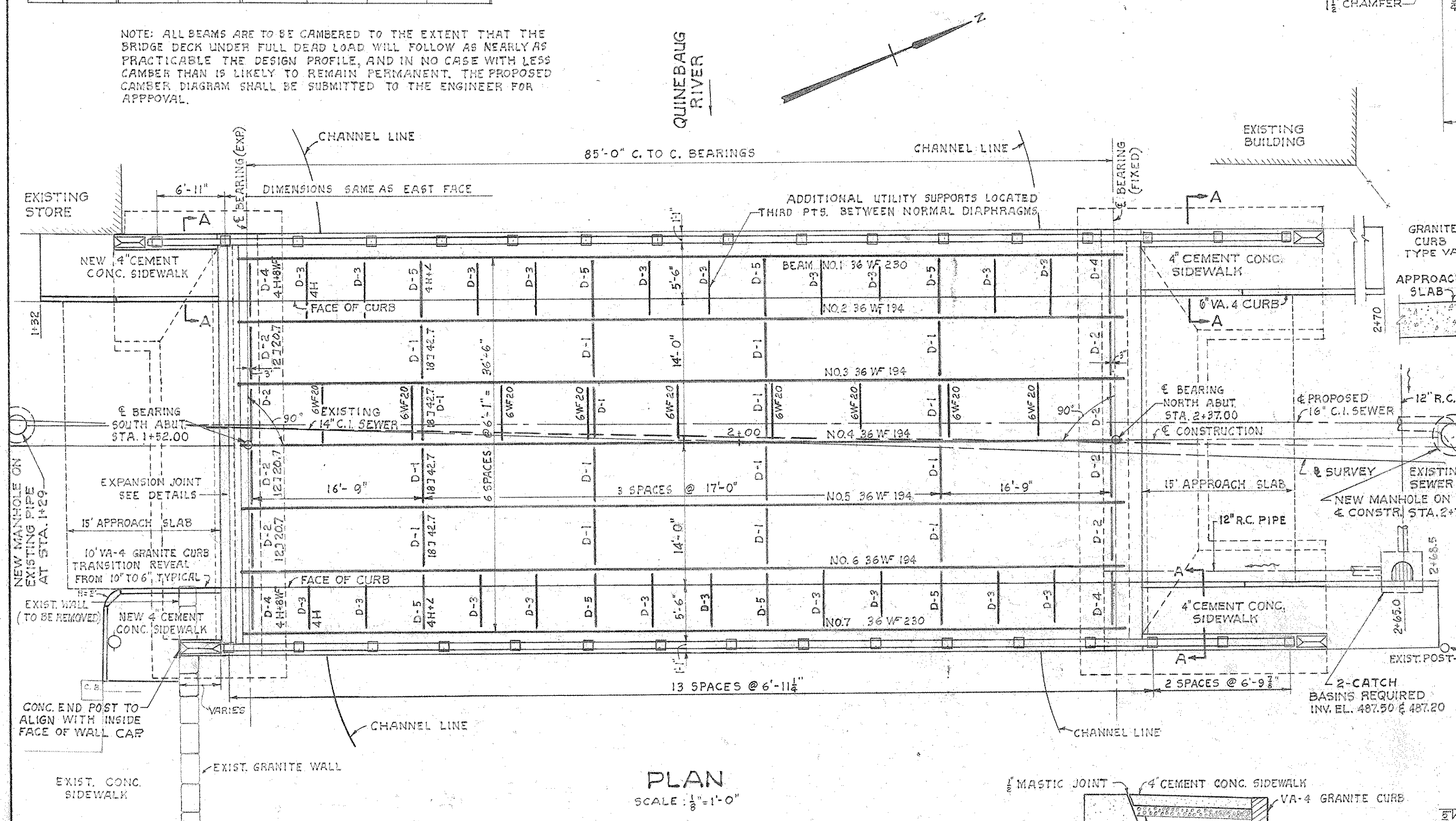
EL. 489.51

EL. 489.80

BEAMS		COVER PLATES		SPIRAL REINFORCEMENT			
NO.	SIZE	SIZE	L.P.	SPIRAL "Y"		SPIRAL "Z"	
				LENGTH	PITCH	LENGTH	PITCH
1	36 WF 230	14" x 1"	60'-0"	21'-0"	6"	43'-0"	12"
2	36 WF 194	10" x 1 1/4"	61'-0"	21'-0"	6"	43'-0"	12"
3	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
4	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
5	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
6	36 WF 194	10" x 1 1/4"	61'-0"	21'-0"	6"	43'-0"	12"
7	36 WF 230	14" x 1"	60'-0"	21'-0"	6"	43'-0"	12"

BEAMS		COVER PLATES		SPIRAL REINFORCEMENT			
NO.	SIZE	SIZE	L.R.	SPIRAL "Y"		SPIRAL "Z"	
				LENGTH	PITCH	LENGTH	PITCH
1	36 WF 230	14" x 1"	60'-0"	21'-0"	6"	43'-0"	12"
2	36 WF 194	10" x 1 1/2"	61'-0"	21'-0"	6"	43'-0"	12"
3	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
4	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
5	36 WF 194	10" x 1"	59'-0"	21'-0"	6"	43'-0"	12"
6	36 WF 194	10" x 1 1/2"	61'-0"	21'-0"	6"	43'-0"	12"
7	36 WF 230	14" x 1"	60'-0"	21'-0"	6"	43'-0"	12"

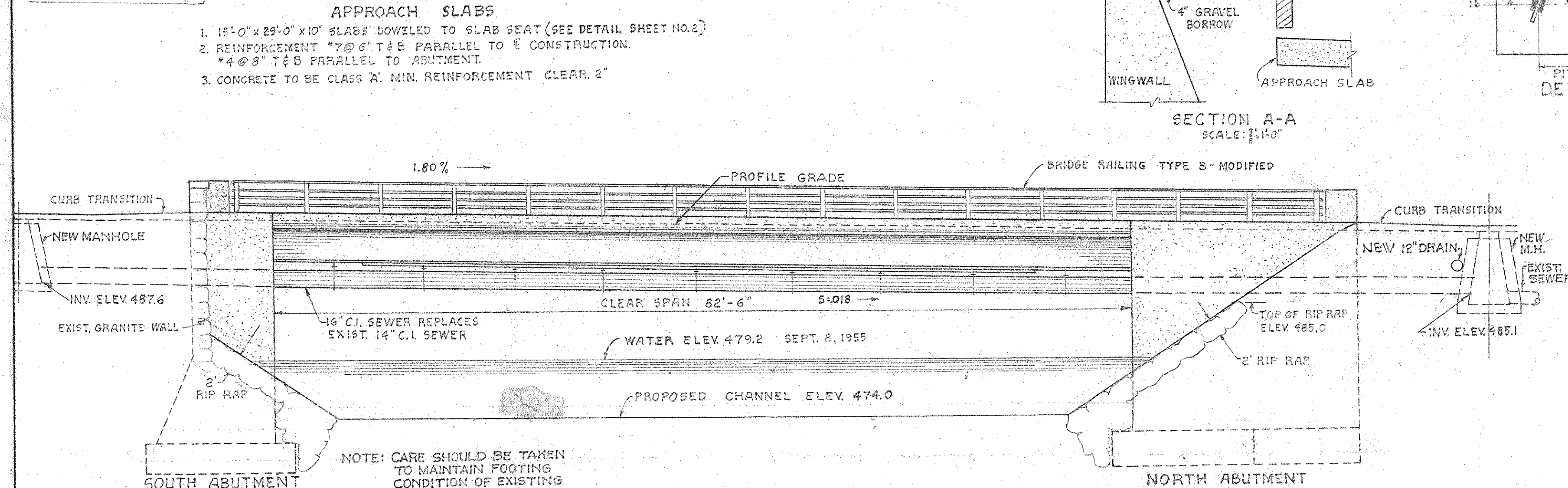
NOTE: ALL BEAMS ARE TO BE CAMBERED TO THE EXTENT THAT THE BRIDGE DECK UNDER FULL DEAD LOAD WILL FOLLOW AS NEARLY AS PRACTICABLE THE DESIGN PROFILE, AND IN NO CASE WITH LESS CAMBER THAN IS LIKELY TO REMAIN PERMANENT. THE PROPOSED CAMBER DIAGRAM SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.



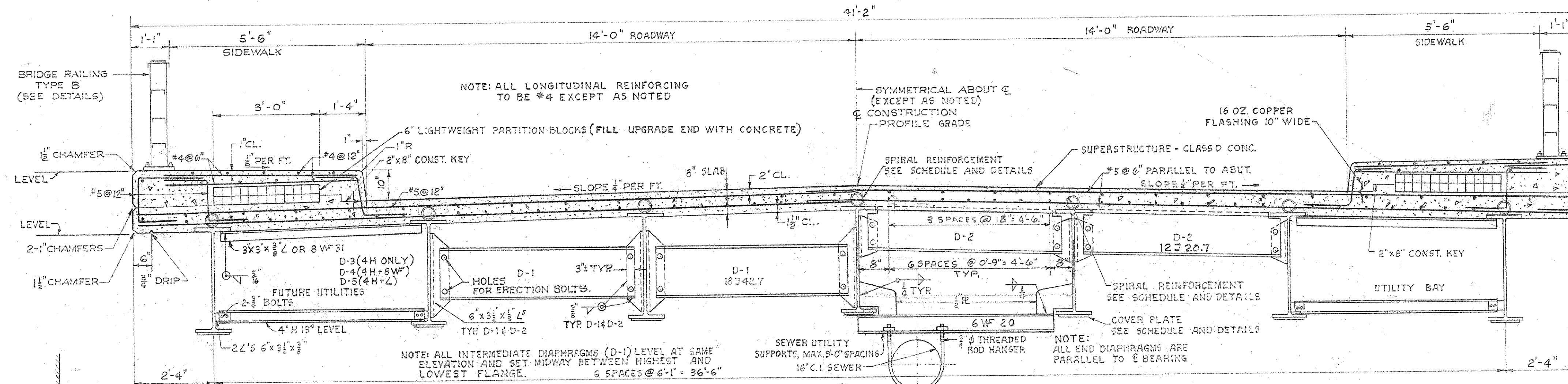
PLAN
SCALE: $\frac{1}{8}" = 1'-0"$

APPROACH SLABS

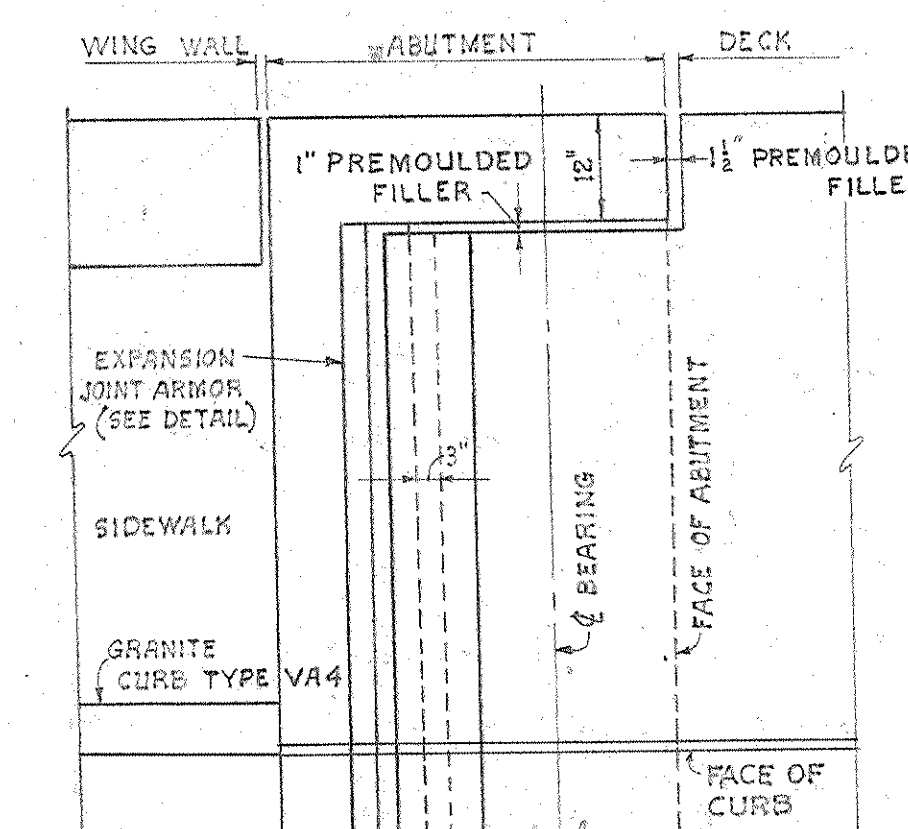
1. 15'-0" X 29'-0" X 10" SLAB DOWELED TO SLAB BEAT (SEE DETAIL SHEET NO. 2)
2. REINFORCEMENT "7 @ 6" T & B PARALLEL TO E CONSTRUCTION.
"4 @ 8" T & B PARALLEL TO ABUTMENT.
3. CONCRETE TO BE CLASS 'A' MIN. REINFORCEMENT CLEAR 2"



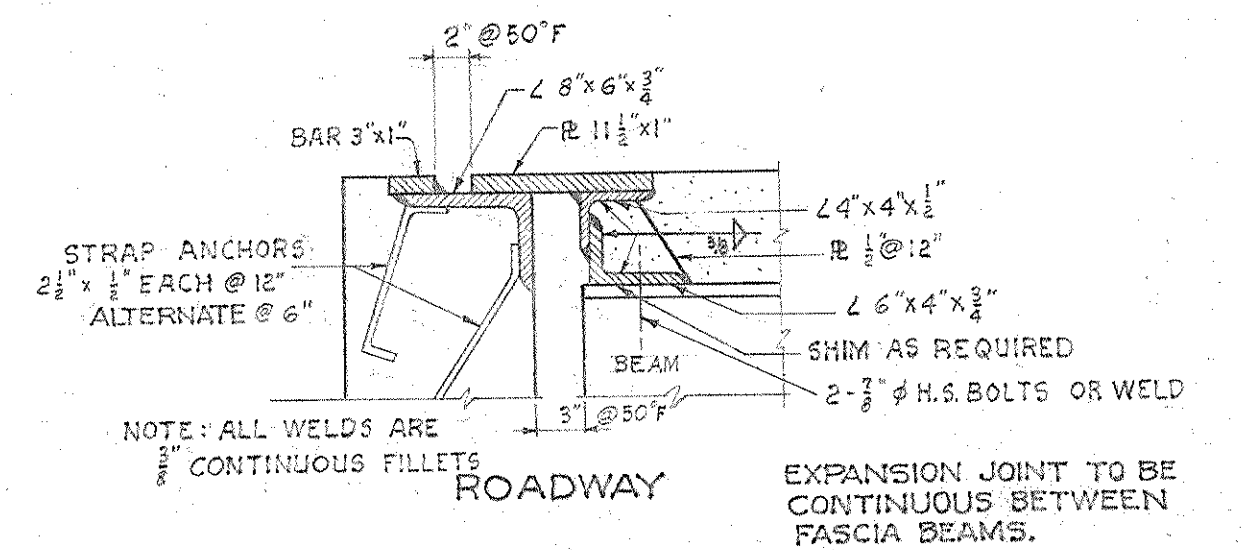
ELEVATION
SCALE: $\frac{1}{8}'' = 1'-0''$



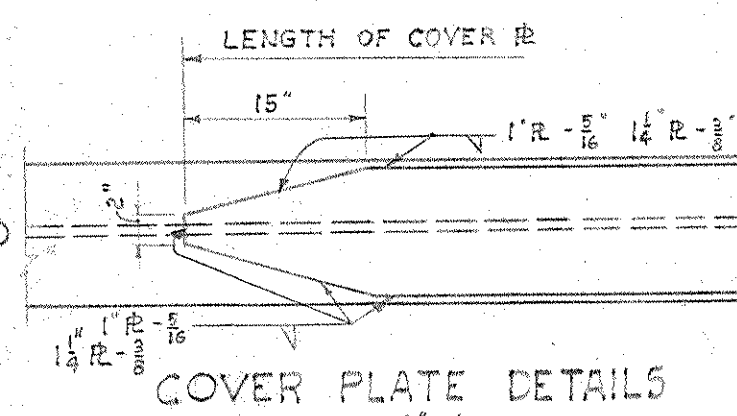
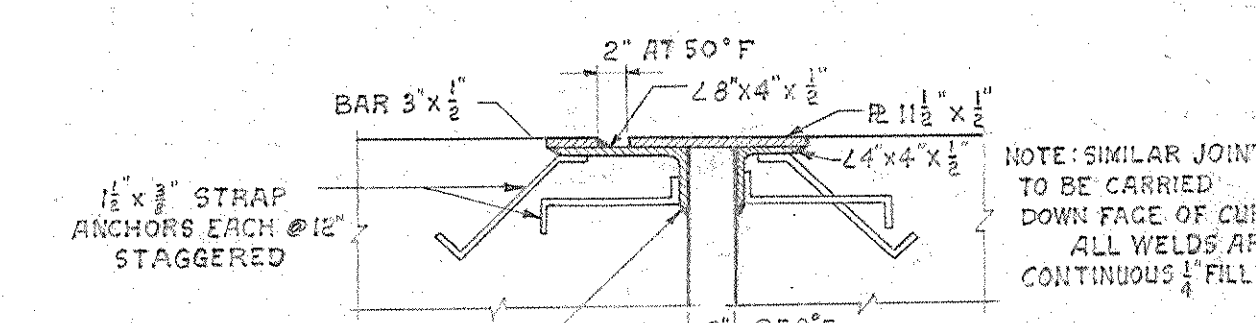
DECK SECTION
SCALE: $\frac{1}{2}" = 1'-0"$



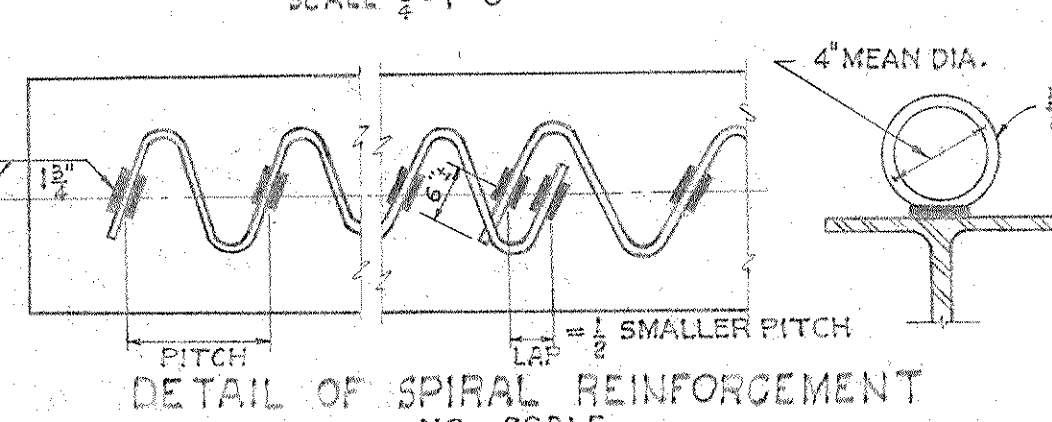
PLAN OF DECK CORNER
ON EXPANSION ABUTMENT



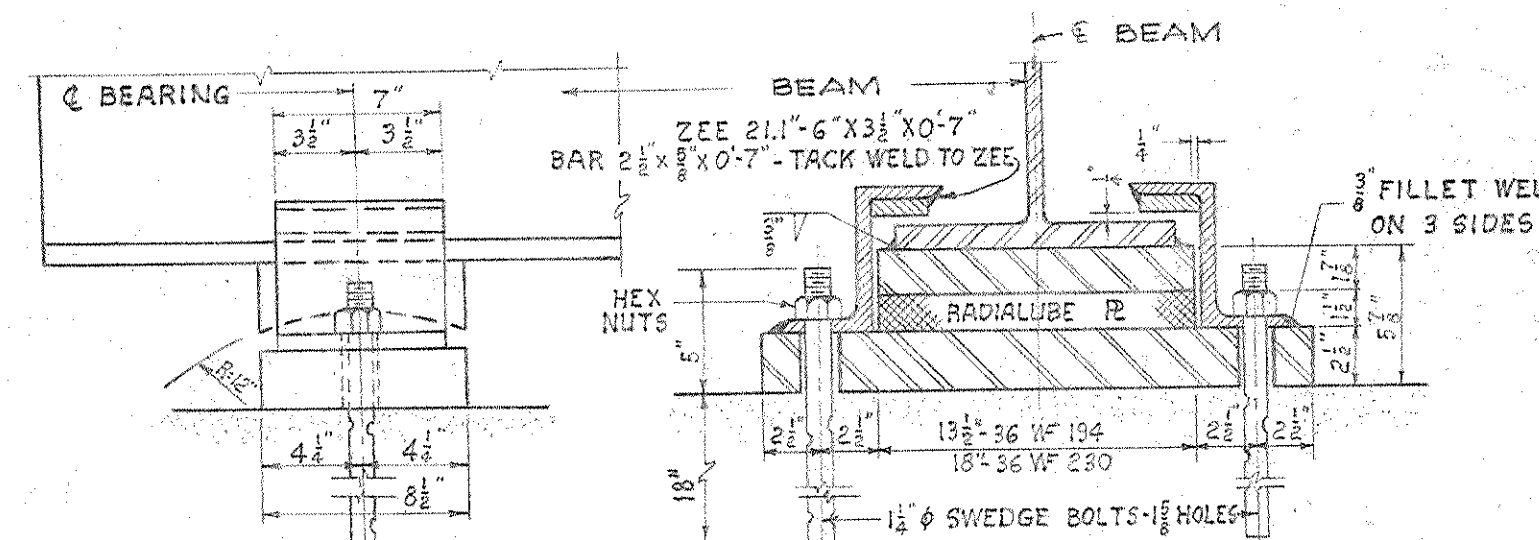
SIDEWALK OR SAFETY CURB
EXPANSION JOINT DETAILS
SCALE: 1"=1'-0"



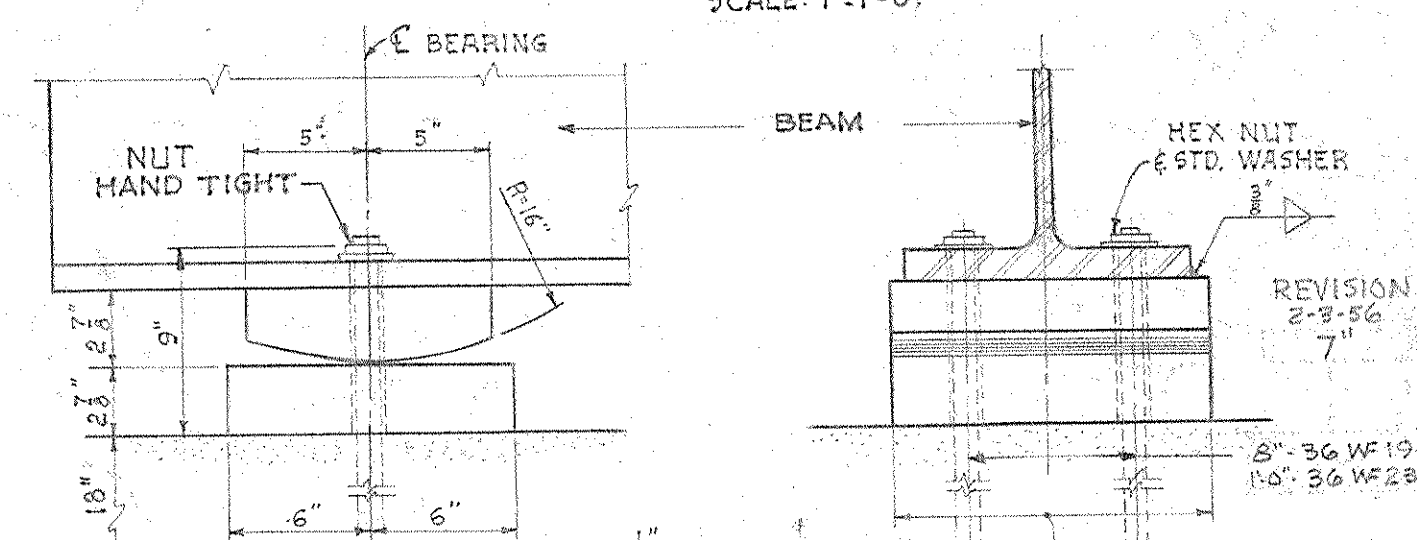
COVER PLATE DETAILS
SCALE 3/4" = 1'-0"



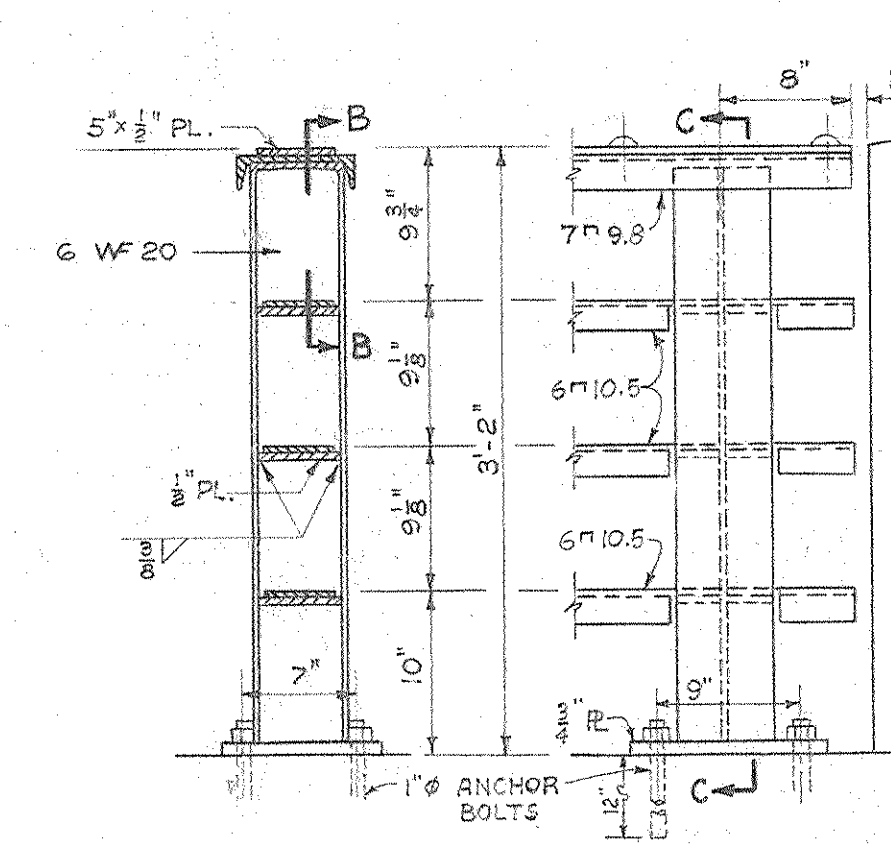
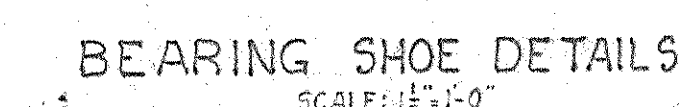
DETAIL OF SPIRAL REINFORCEMENT
NO SCALE



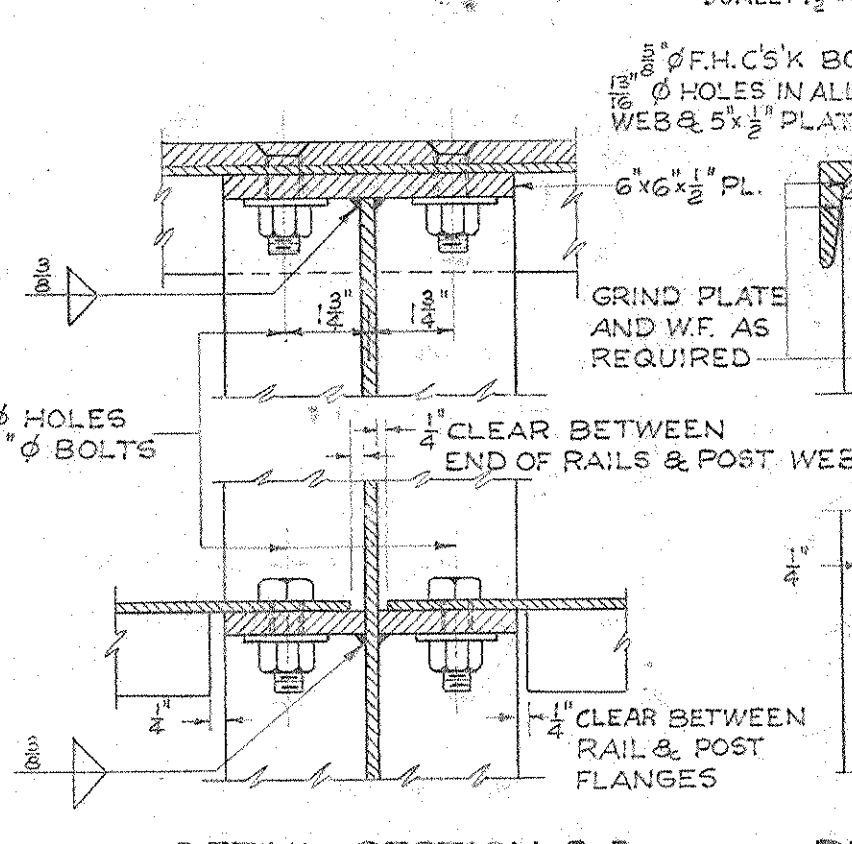
EXPANSION BEARING



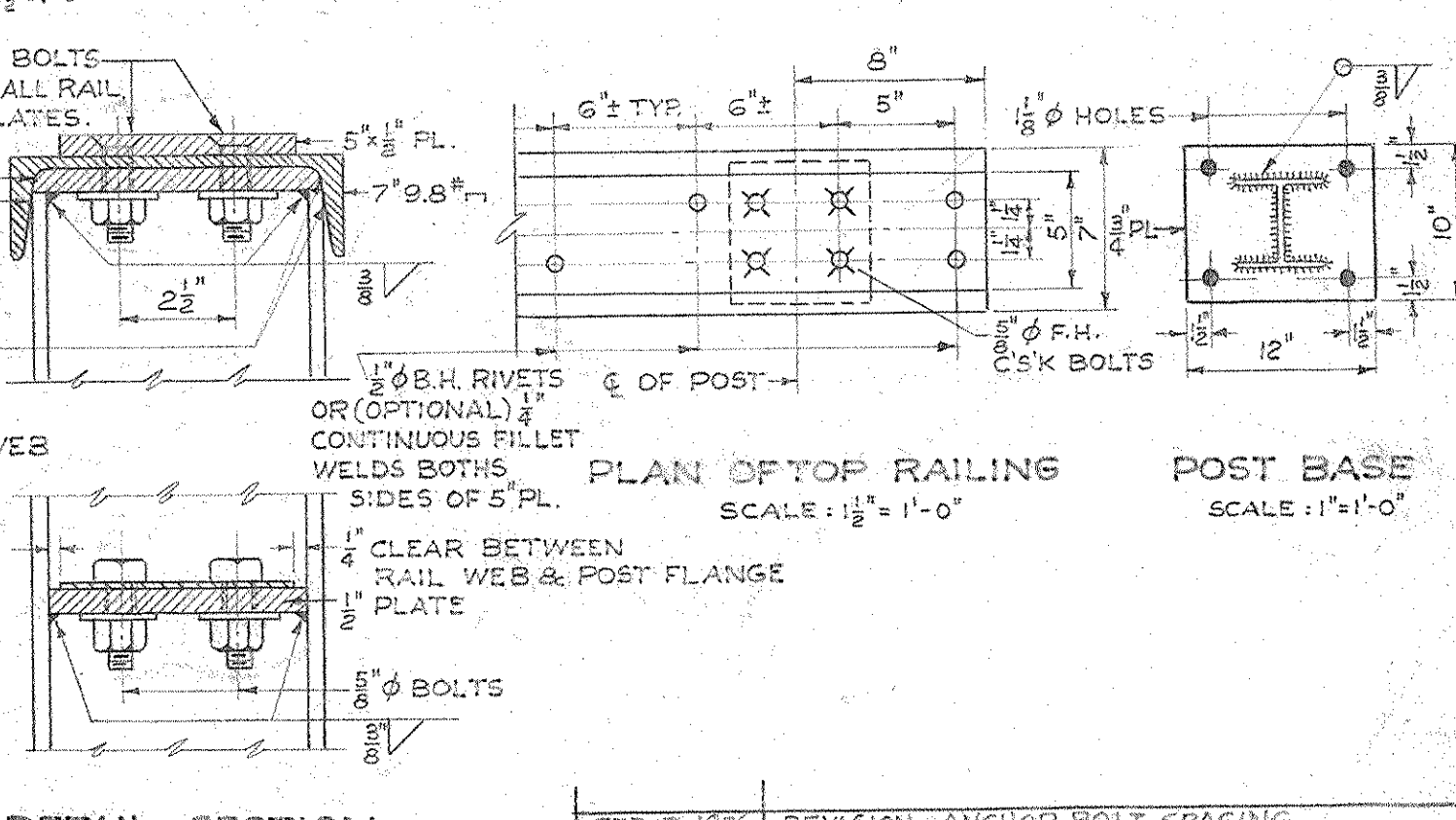
FIXED BEARING



SECTION C-C SINGLE POST
SCALE 1/2"=1'-0"



DETAIL SECTION B-B



PLAN OF TOP RAILING
SCALE: 1" = 1'-0"

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

NOTE: ALL MATERIAL STRUCTURAL GRADE STEEL.
ALL POSTS PLUMB WHEN RAILS ARE
OVER A BRIDGE EXPANSION JOINT HOLES
IN ONE END OF RAILS SHALL BE SLOTTED $\frac{13}{16} \times 1\frac{1}{2}$
BOTTOM OF POSTS TO BE CUT TO FOLLOW GRADE.

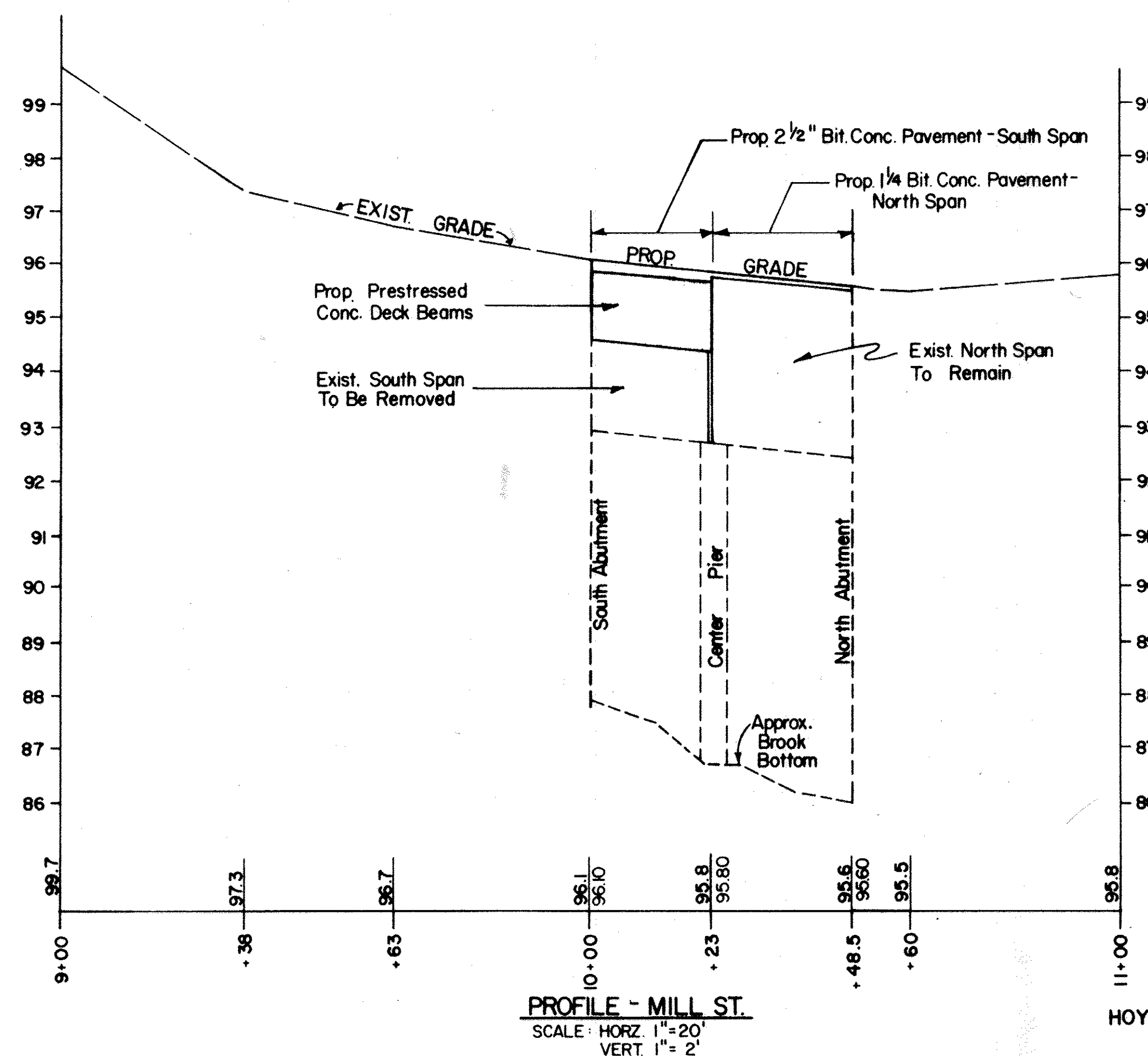
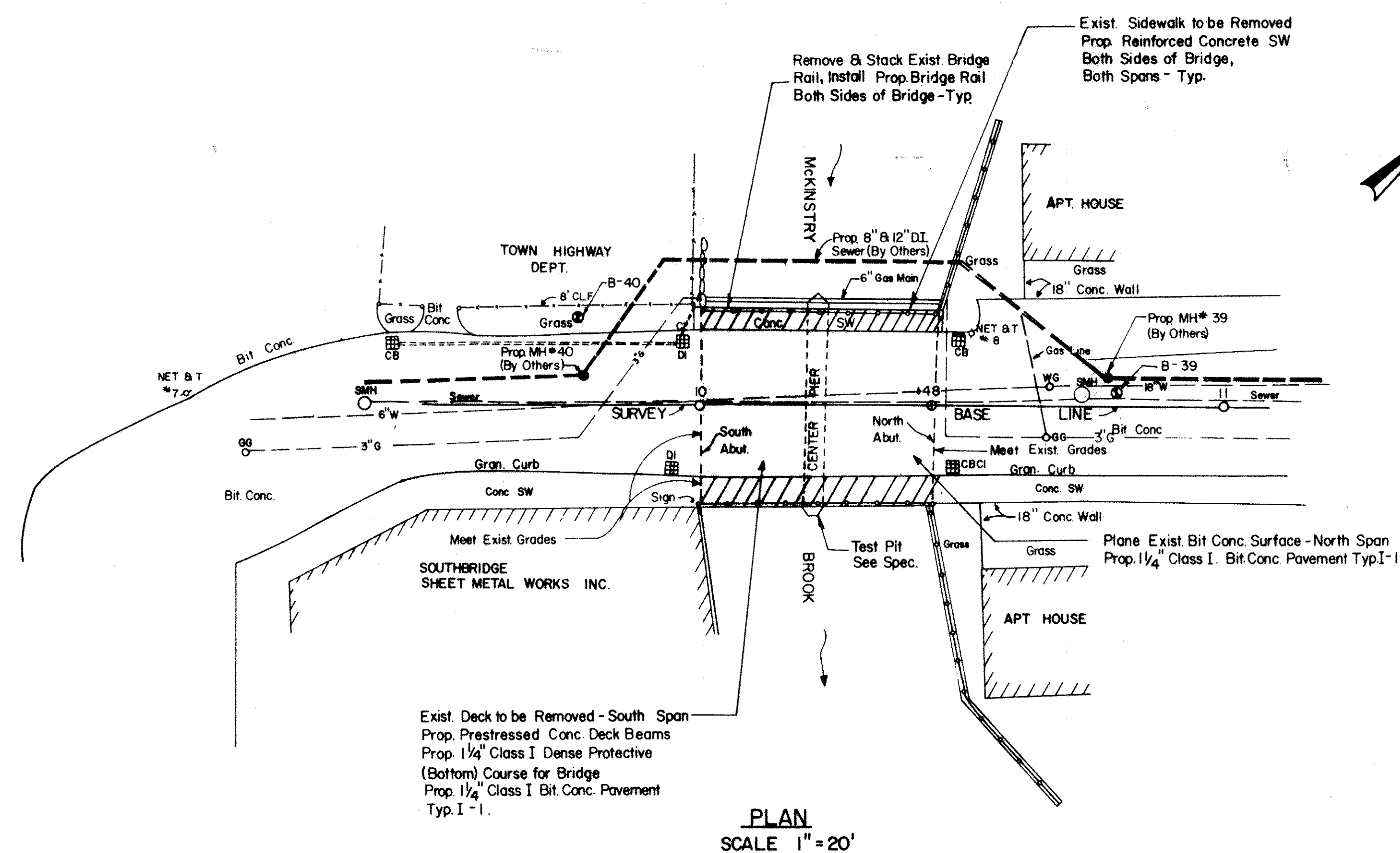
BRIDGE RAILING TYPE B-MODIFIED

SHEET 3 OF 3 SHEETS BRIDGE NO S-21-3

Vm-14



<u>ITEM</u>	<u>ESTIMATED</u>	<u>QUANTITIES</u>
CEMENT MORTAR FOR PATCHING	100	SF
CONCRETE EXCAVATION	1	LS
BRIDGE PAVEMENT EXCAVATION	215	SY
TEST PIT	1	EA
CLASS I BIT. CONC. PAVEMENT TYPE I-I	15	TON
CLASS I DENSE PROTECTIVE (BOTTOM) COURSE FOR BRIDGES	6	TON
METAL BRIDGE RAIL	96	LF
ENGINEER'S FIELD OFFICE AND EQUIPMENT (TYPE A)	2	MO
SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS	1	LS
SAFETY SIGNING FOR CONSTRUCTION OPERATIONS	100	SF
CLASS A CEMENT CONCRETE MASONRY	5	CY
CLASS DE CEMENT CONCRETE MASONRY	15	CY
STEEL REINFORCEMENT FOR STRUCTURES	1000	POUND
PRESTRESSED CONCRETE DECK BEAMS	1	LS
MEMBRANE WATERPROOFING	80	SY
METAL BRIDGE RAILING R & S	96	LF
DUMPED RIPRAP	5	TON



HOYLE, TANNER & ASSOCIATES, INC.
engineers/architects/planners
Burlington, Massachusetts

SOUTHBRIDGE

PUB. RD. DIV. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOT. SHEET
1	MASS		1985	1	3

GENERAL NOTES

BENCH MARK: Assumed Elevation 100.00, Nail in NET & T Pole #7

SPECIFICATIONS: A.A.S.H.T.O. Standard Specifications for Highway Bridges, 1977 with 1978, 1979, 1980, 1981 and 1982 Interim Specifications; The Commonwealth of Massachusetts 1973 Specifications; and the 1977 Construction Standards.

DESIGN LOAD H2OS

DECK South Span Bridge Deck Shall be Prestressed Concrete Deck Beams Type SII - 48 per Mass. D.P.W. Bridge Manual Drawing No. H-1.

CONCRETE All Cast-In-Place Concrete Shall Develop A Minimum Ultimate Compressive Strength of 3000 psi. at 28 Days.

REINFORCING All Reinforcing Steel Shall Conform to ASTM A615-60.

UTILITIES Location of all Utilities Shall be Verified by the Contractor Prior to Commencing Construction.

Written Notice Shall be Given by the Contractor to all Public Service Corporations or Officials Owning or Having Charge of Publicly or Privately Owned Utilities of His Intention to Commence Operations Affecting Such Utilities at Least One Week in Advance of the Commencement of Such Operation, and the Contractor Shall at the Same Time File A Copy of Such Notice With the Engineer.

Special Attention is Called to the 6" Gas Main that Spans the Brook on the North Side of the Bridge. This Line Shall be Protected and Maintained at all Times.

 Denotes Boring Location. See Sheet 3 of 3 for Boring Logs.

ISSUED FOR CONSTRUCTION

THE COMMONWEALTH OF MASSACHUSETTS

PROPOSED BRIDGE
SOUTHBRIDGE
MILL STREET BRIDGE
OVER
McKINSTRY BROOK

SCALES AS NOTED
 OFFICE OF
 DEPARTMENT OF PUBLIC WORKS
 10 PARK PLAZA BOSTON, MASS

BRIDGE ENGINEER AUGUST, 1984

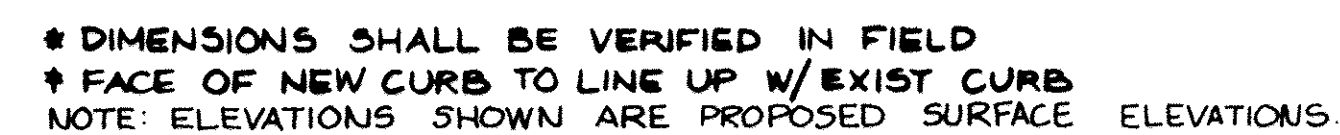
CHIEF ENGINEER

SHEET 1 OF 3 SHEETS BRIDGE NO. S-21-9

PUB RD DIV NO	STATE	FED AID PROJ NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
1	MASS		1985	2	3



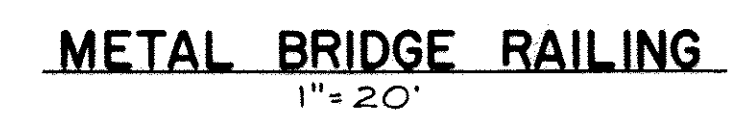
SECTION 
3/4" = 1'-0"



MILL ST BRIDGE - PLAN
1/8" = 1'-0"



SECTION 2
 $\frac{3}{4}" = 1'-0"$



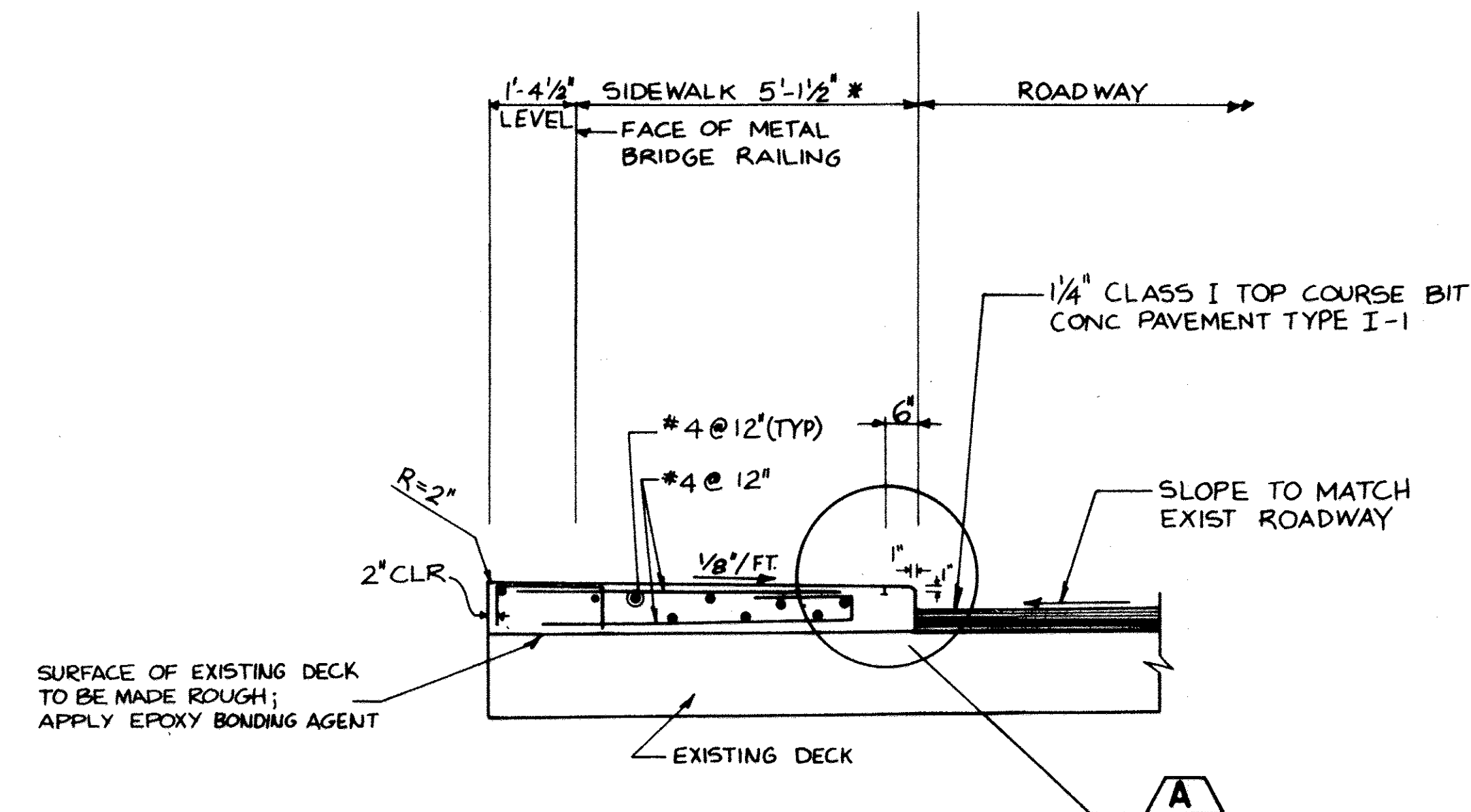
*DIMENSIONS SHALL BE
VERIFIED IN FIELD.



	ISSUED FOR CONSTRUCTION
DATE	DESCRIPTION
USE ONLY PRINTS OF LATEST DATE	

SOUTHBIDGE

PUB. NO. DIV. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MASS		1985	3	3



*DIMENSIONS SHALL BE
VERIFIED IN FIELD.

PROP. SIDEWALK ON NORTH SPAN - DETAIL C 1/2\" = 1'-0"

TEST BORING NO. 39 GROUND SURFACE - MILL ST. NORTH OF BRIDGE		TEST BORING NO. 40 GROUND SURFACE - MILL ST. SOUTH OF BRIDGE	
0'0"	0'3"	0'0"	0'3"
0'3"	1'9"	0'3"	1'9"
5'0"	6'6"	5'0"	6'6"
10'10"	11'6"	10'10"	11'6"
12'0"	14'6"	12'0"	14'6"
16'0"		16'0"	

- BORING NOTES**
- BORINGS WERE TAKEN BY OTHERS FOR PURPOSE OF DESIGN OF A PROPOSED SEWER SYSTEM IN THE AREA AND SHOW CONDITIONS AT BORING POINTS ONLY, AND DO NOT NECESSARILY SHOW THE NATURE OF MATERIALS TO BE ENCOUNTERED DURING CONSTRUCTION. FOR THIS PROJECT, THESE BORINGS WERE USED FOR PRELIMINARY ANALYSIS OF SUBSURFACE CONDITIONS.
 - FIGURES IN THE RIGHT COLUMN INDICATE NUMBER OF BLOWS TO DRIVE A 2" SPLIT SPOON SAMPLER 6" WITH A 140 LB WEIGHT FALLING 30" UNLESS OTHERWISE SPECIFIED.
 - BORINGS WERE TAKEN IN OCTOBER, 1983 BY SOIL EXPLORATION COMPANY OF STOW, MASSACHUSETTS.
 - WATER LEVEL SHOWN ON THE BORING LOGS WERE OBSERVED AT THE COMPLETION OF EACH HOLE AND DO NOT NECESSARILY SHOW THE TRUE GROUND LEVEL.

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