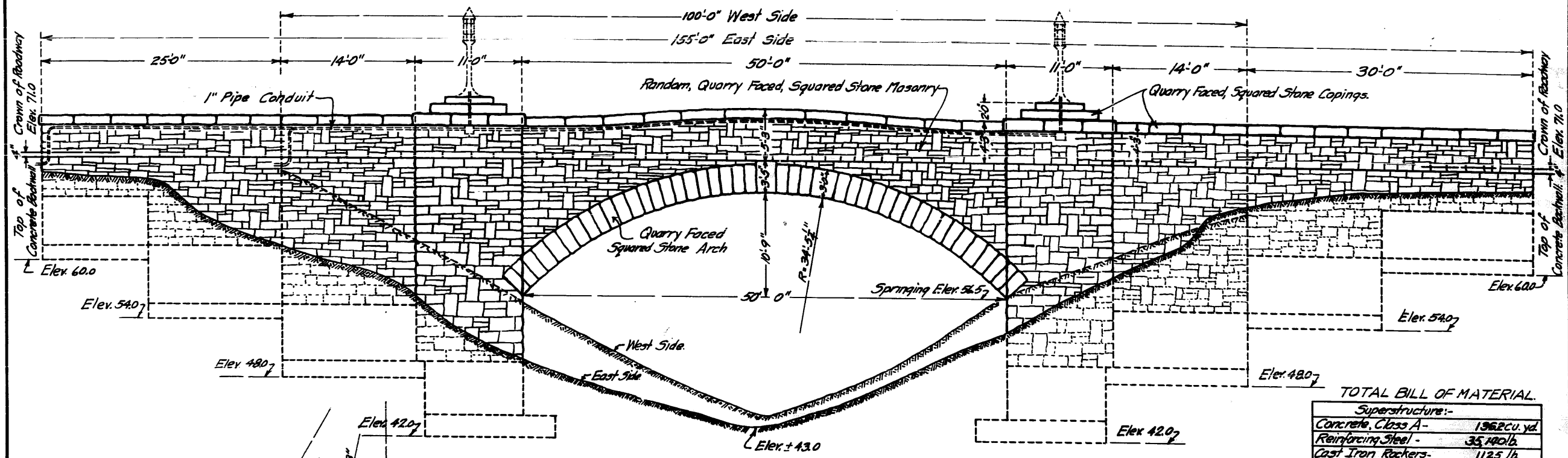


STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

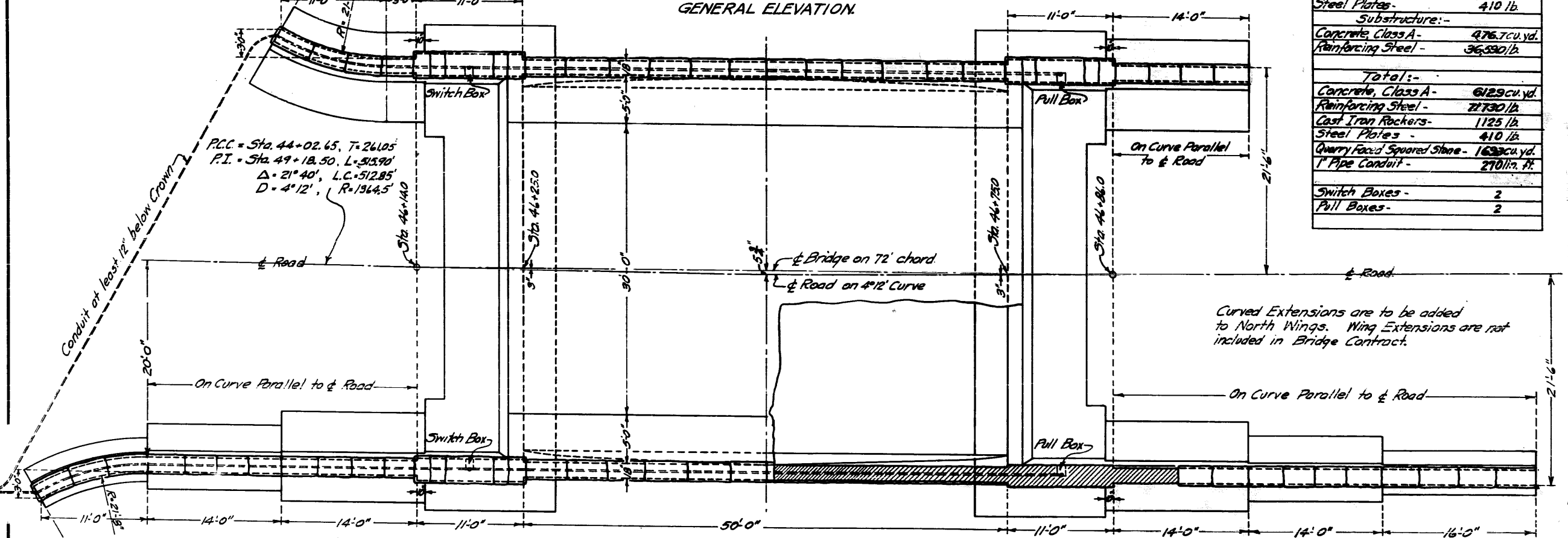
BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.	SHEET NO.
42	COOK	112	16	2	3

Note - Lamps, Lamp Fixtures and all wiring are not included in this contract. An opening shall be provided in each abutment for the existing 8" sewer pipe.



TOTAL BILL OF MATERIAL.

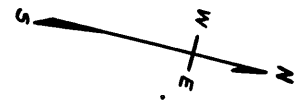
Superstructure:-	
Concrete, Class A-	1362 cu. yd.
Reinforcing Steel -	35,700 lb.
Cast Iron Rackers-	1125 lb.
Steel Plates-	410 lb.
Substructure:-	
Concrete, Class A-	476.7 cu. yd.
Reinforcing Steel -	36,590 lb.
Total:-	
Concrete, Class A-	6129 cu. yd.
Reinforcing Steel -	72,290 lb.
Cast Iron Rackers-	1125 lb.
Steel Plates -	410 lb.
Quarry Faced Squared Stone-	1629 cu. yd.
1" Pipe Conduit -	270 lin. ft.
Switch Boxes -	2
Pull Boxes -	2



COMPUTED - C.C. Wood
CHECKED - E.D.D.
DRAWN - C.C.W.
CHECKED - E.D.D.
SPECIAL ASSEMBLED
CHECKED

EXAMINED March 13 1923
J.F. Buehler BRIDGE ENGINEER
PASSED
E.D.D. ENGINEER OF DESIGN
APPROVED C. O'Leary CHIEF HIGHWAY ENGINEER

GENERAL PLAN.

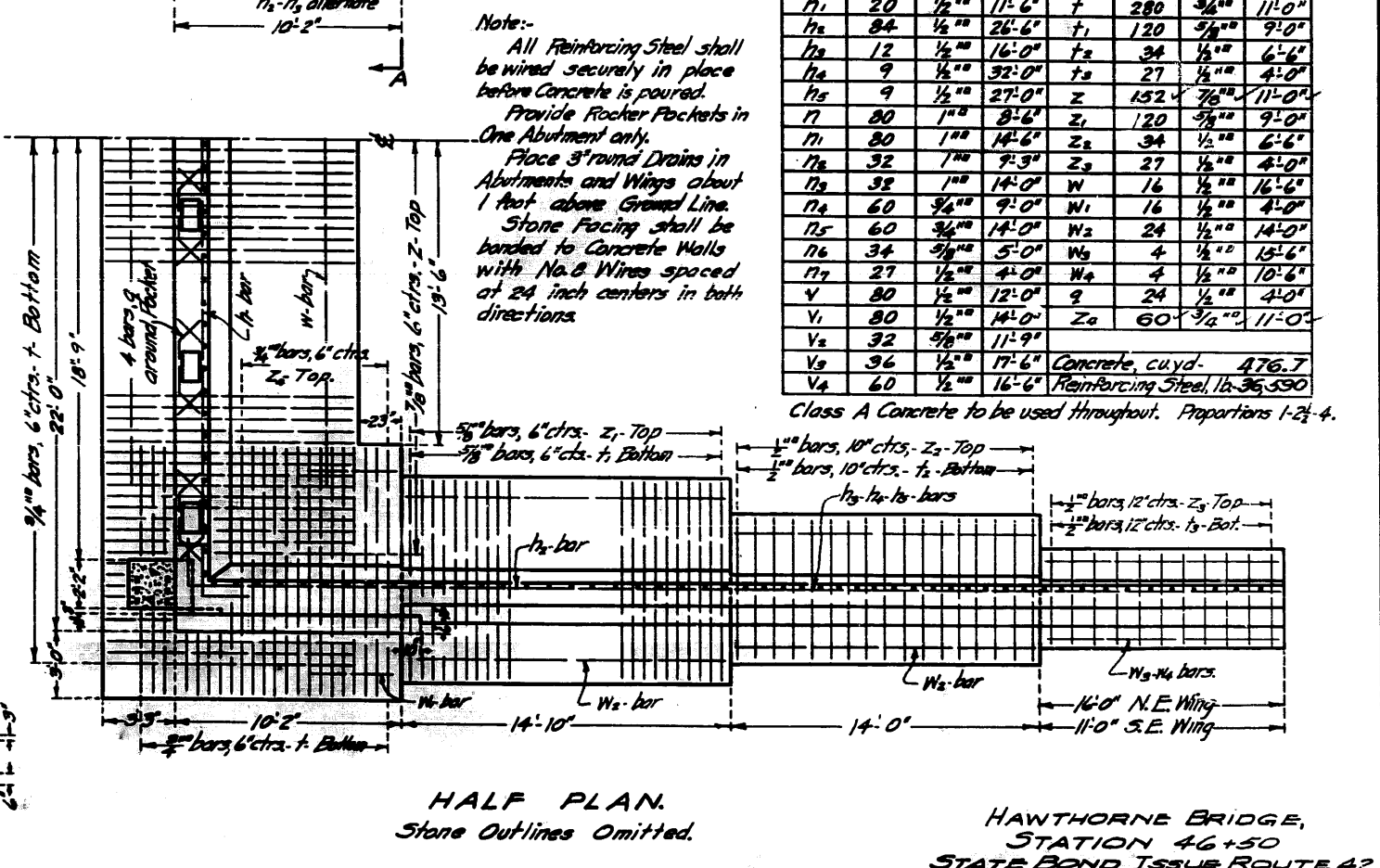
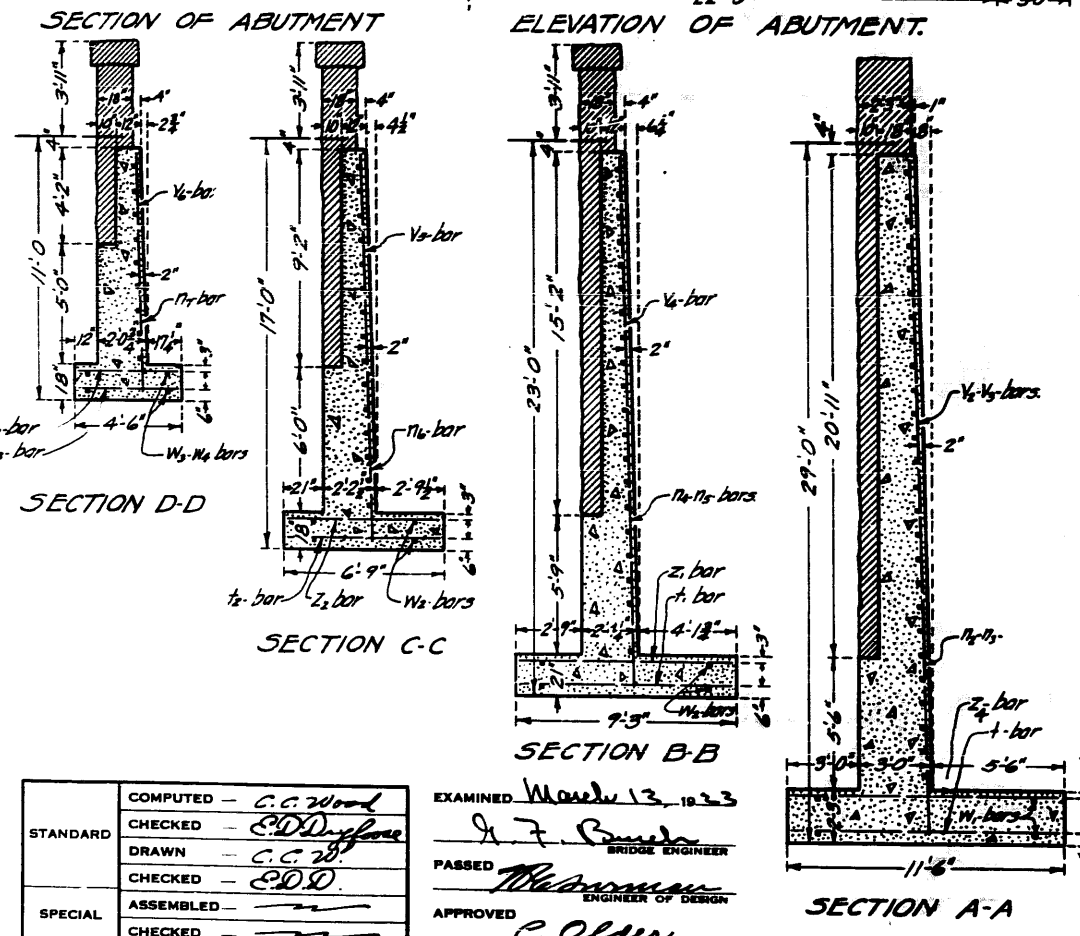
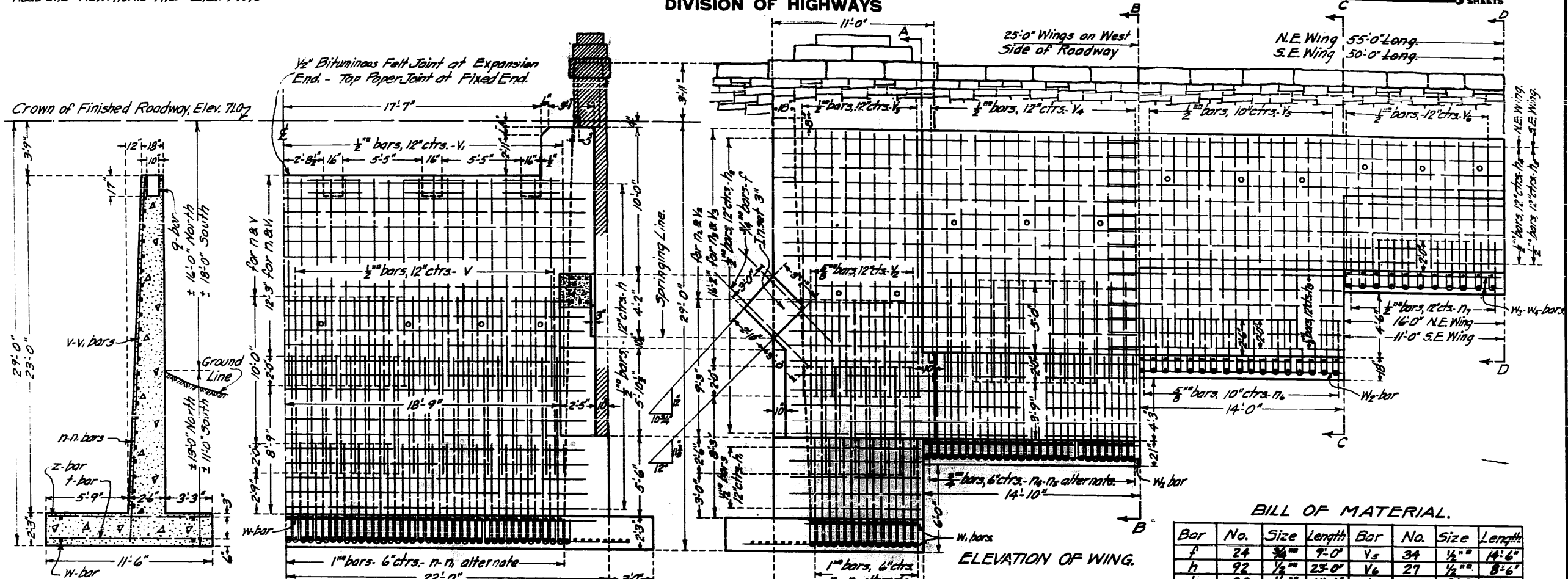


HAWTHORNE BRIDGE.
STATION 46+50,
STATE BOND ISSUE ROUTE 42,
SECTION 112, COOK COUNTY.

B.M. - East Bolt on Hydrant, Corner Sheridan Road and Hawthorne Ave. Elex 74.90

STATE OF ILLINOIS
DEPARTMENT OF PUBLIC WORKS & BUILDINGS
DIVISION OF HIGHWAYS

BOND ISSUE ROUTE NO.	COUNTY	SEC.	TOTAL SHEETS	SHEET NO.	SHEETS
42	COOK	112	16	4	3



BILL OF MATERIAL.

Bar	No.	Size	Length	Bar	No.	Size	Length
f	24	3/8"	9'-0"	v ₅	34	1/2"	14'-6"
h	92	1/2"	23'-0"	v ₆	27	1/2"	8'-6"
h ₁	20	1/2"	11'-6"	t	280	3/8"	11'-0"
h ₂	84	1/2"	26'-6"	t ₁	120	5/8"	9'-0"
h ₃	12	1/2"	16'-0"	t ₂	34	1/2"	6'-6"
h ₄	9	1/2"	32'-0"	t ₃	27	1/2"	4'-0"
h ₅	9	1/2"	27'-0"	z	152	7/8"	11'-0"
n	80	1"	8'-6"	z ₁	120	3/4"	9'-0"
n ₁	80	1"	14'-6"	z ₂	34	1/2"	6'-6"
n ₂	32	1"	7'-9"	z ₃	27	1/2"	4'-0"
n ₃	32	1"	14'-0"	w	16	1/2"	16'-6"
n ₄	60	3/4"	9'-0"	w ₁	16	1/2"	4'-0"
n ₅	60	3/4"	14'-0"	w ₂	24	1/2"	14'-0"
n ₆	34	3/8"	5'-0"	w ₃	4	1/2"	15'-6"
n ₇	27	1/2"	4'-0"	w ₄	4	1/2"	10'-6"
v	80	1/2"	12'-0"	q	24	1/2"	4'-0"
v ₁	80	1/2"	14'-0"	z ₀	60	3/4"	11'-0"
v ₂	32	5/8"	11'-9"				
v ₃	34	1/2"	17'-6"				
v ₄	60	1/2"	16'-6"				

Concrete, cu.yd. 476.7
 Reinforcing Steel, lb. 36,350

Class A Concrete to be used throughout. Proportions 1-2-4.

STANDARD	COMPUTED	- C.C. Wood
	CHECKED	- C.C. Wood
SPECIAL	DRAWN	- C.C. Wood
	CHECKED	- C.C. Wood
	ASSEMBLED	-
	CHECKED	-

EXAMINED March 13, 1923
 J. F. [Signature] BRIDGE ENGINEER
 PASSED [Signature] ENGINEER OF DESIGN
 APPROVED C. Older CHIEF HIGHWAY ENGINEER

HAWTHORNE BRIDGE,
STATION 46+50
STATE BOND ISSUE ROUTE 42,
SECTION 112, COOK CO.

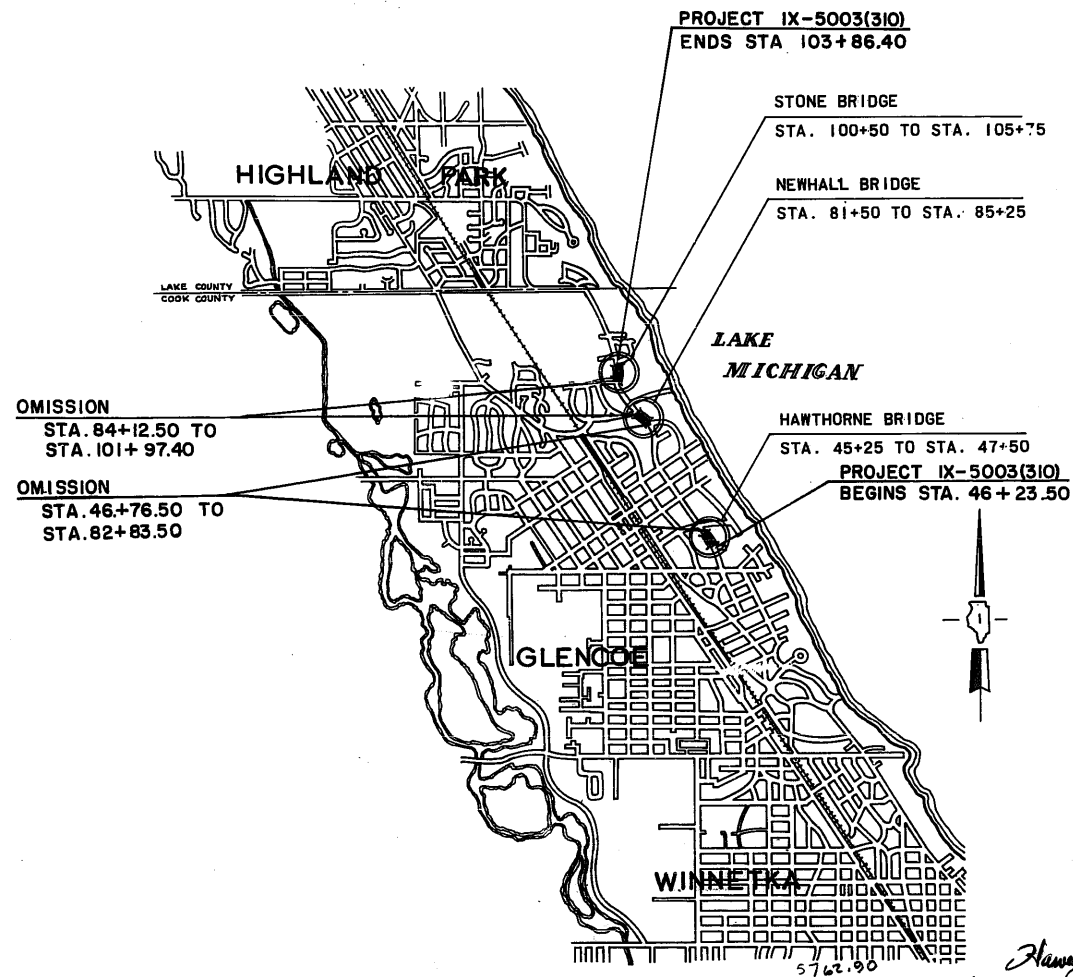
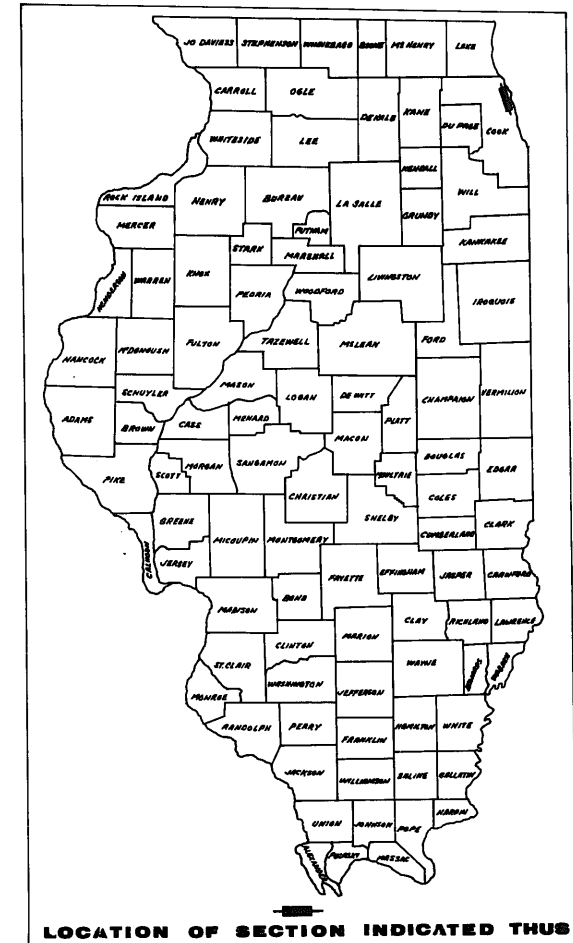
STATE OF ILLINOIS
ILLINOIS DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS DISTRICT 1
FEDERAL AID HIGHWAY

F.A.U. ROUTE 3509
SHERIDAN ROAD
SECTION 112 BR
PROJECT IX-5003(310)
COOK COUNTY
C-91-085-75

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FAU 3509	112-BR	COOK	45	1
FED. ROAD DIST. NO. 1 ILLINOIS PROJECT IX-5003(310)				

P-91-846-71

FOR INDEX SEE SHEET NO. 2



LENGTH OF PROJECT = 5762.90 FT. = 1.091 MI.

HAWTHORNE BRIDGE = 225 FEET = (0.045 MILES)
NEWHALL BRIDGE = 375 FEET = (0.071 MILES)
STONE BRIDGE = 625 FEET = (0.099 MILES)

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED MARCH 2 1978

EXAMINED APR 12 1978

PASSED APR 12 1978

APPROVED APR 12 1978

STATE ENGINEER
ENGINEER OF DESIGN
DIRECTOR, DIVISION OF HIGHWAYS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR

DATE

CONTRACT NO. 93120

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAUR 3500	112-88	COOK	45	2
FED. ROAD DIST. NO. 1		ILLINOIS	PROJECT	

GENERAL NOTES

- THIS SECTION WILL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JULY 1, 1976, THE SPECIAL PROVISIONS, AND THE "MIMEOGRAPHED SUPPLEMENTAL SPECIFICATIONS".
1. EQUIPMENT: ALL DISTRIBUTORS FOR BITUMINOUS PRIMING AND SEAL COATING OPERATIONS SHALL BE EQUIPPED WITH SHIELDS TO PREVENT CONTAMINATION OF ADJACENT HIGHWAY APPURTENANCES, SHIELDS SHALL MEET WITH THE ENGINEER'S APPROVAL.
 2. FLOURESCENT VESTS: ALL CONSTRUCTION PERSONNEL WILL BE REQUIRED TO WEAR FLOURESCENT ORANGE VESTS AT ALL TIMES WHILE ON THE CONSTRUCTION SITE. COMPLIANCE WITH THIS REQUIREMENT SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.
 3. CONCRETE BREAKER: WHEN REMOVING PAVEMENT, CURB & GUTTER, OR ANY OTHER STRUCTURES, THE USE OF ANY TYPE OF CONCRETE BREAKERS WHICH MIGHT DAMAGE THE UNDERGROUND PUBLIC OR PRIVATE UTILITIES WILL NOT BE PERMITTED. UNDER NO CIRCUMSTANCES WILL THE USE OF A FROST BALL BE PERMITTED.
 4. BARRICADES: THE CONTRACTOR SHALL PROVIDE AND INSTALL WEIGHTED SAND BAGS ON EACH BARRICADE USED.
 5. ALL GRASS AREAS DISTURBED BY EXCAVATION AND EMBANKMENT OPERATIONS AND OTHER AREAS DESIGNATED BY THE ENGINEER WILL RECEIVE TOPSOIL PLACEMENT AND SODDING AS SPECIFIED IN THE SPECIAL PROVISIONS.
 6. PROFILE GRADE ELEVATIONS FOR EACH FINISHED ROADWAY SHALL APPLY AT LOCATIONS SHOWN ON THE TYPICAL SECTIONS AND SPECIAL DETAILS.
 7. ALL TREES, SHRUBS AND BUSHES WITHIN THE LIMITS OF CONSTRUCTION SHALL BE REMOVED IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND AS DIRECTED BY THE ENGINEER. ALL TREES, SHRUBS & BUSHES SO DESIGNATED BY THE ENGINEER BETWEEN THE CONSTRUCTION LIMITS AND THE RIGHT-OF-WAY LINE SHALL BE SAVED.
 8. THE STANDARDS WITH THE REVISION NUMBER LISTED IN THE INDEX OF SHEETS SHALL APPLY TO THIS SECTION.
 9. ALL STATIONING IS ALONG CENTERLINE OF SURVEY EXCEPT AS OTHERWISE NOTED.

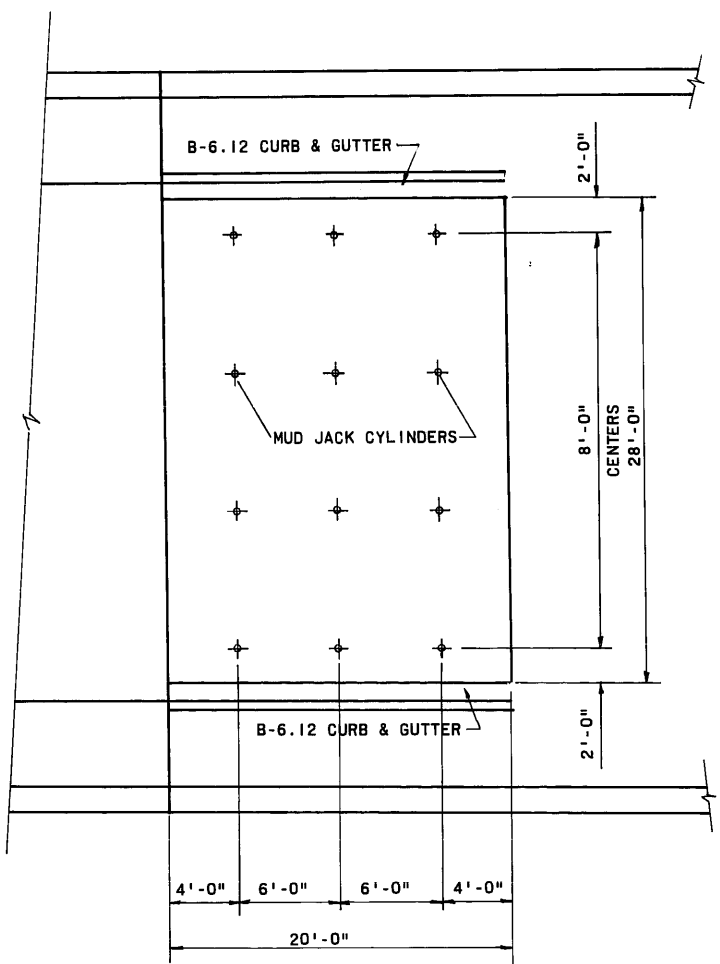
STANDARD DRAWINGS

STANDARD	1514-9
STANDARD	1527-8
STANDARD	1564
STANDARD	1683-4
STANDARD	1686-4 , 1766-7
STANDARD	1909-10
STANDARD	2113-1 , 2115-7 , 2117-1
STANDARD	2347-1 2319-3 , 2320-3 , 2323-3
STANDARD	2130-5
STANDARD	2179-9
STANDARD	2213-4 , 2298-4 , 2299-7 , 2300-1 , 2302-3 , 2304-4 , 2305-3 , 2306-4 , 2312-5 , 2314-3

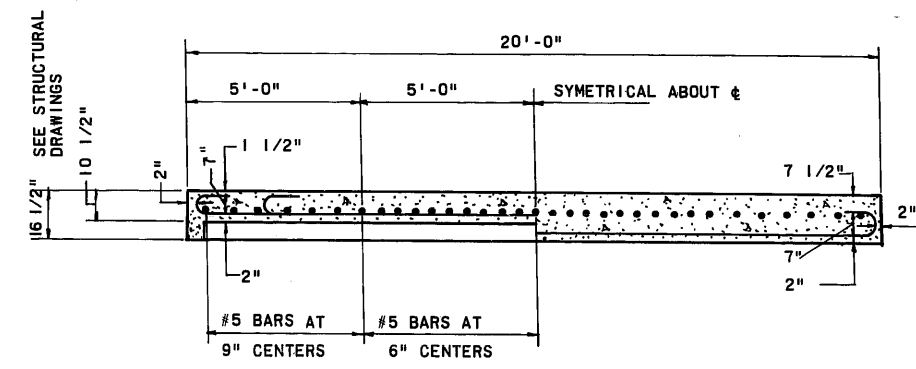
INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL NOTES AND INDEX OF DRAWINGS
3-5	SUMMARY OF QUANTITIES
6	TYPICAL ROADWAY SECTIONS - HAWTHORNE BRIDGE; TYPICAL PLAN AND SECTION - PRIVATE ENTRANCE
7	TYPICAL ROADWAY SECTIONS - NEWHALL BRIDGE
8	TYPICAL ROADWAY SECTIONS - STONE BRIDGE
9	PLAN AND PROFILE - HAWTHORNE BRIDGE
10	PLAN AND PROFILE - NEWHALL BRIDGE
11	PLAN AND PROFILE - STONE BRIDGE
12	CROSS SECTIONS - HAWTHORNE BRIDGE
13	CROSS SECTIONS - NEWHALL BRIDGE
14	CROSS SECTIONS - STONE BRIDGE
14A	DE TOUR PLAN
15	DETAILS APPROACH SLAB
15A	FRAME & GRATE TYPE 13-24
16	HAWTHORNE BRIDGE: - GENERAL PLAN AND ELEVATION
17	- GENERAL NOTES AND MISCELLANEOUS DETAILS
18	- TOP OF SLAB ELEVATIONS
19	- SUPERSTRUCTURE
20	- STRUCTURAL STEEL
21	- SOUTH ABUTMENT
22	- NORTH ABUTMENT
23	NEWHALL BRIDGE: - GENERAL PLAN AND ELEVATION
24	- GENERAL NOTES AND DETAILS
25	- TOP OF SLAB ELEVATIONS
26	- SUPERSTRUCTURE
27	- STRUCTURAL STEEL
28	- BEARING AND MISCELLANEOUS DETAILS
29	- PIERS NO.1 AND NO.2
30	- EAST ABUTMENT
31	- EAST ABUTMENT
32	- WEST ABUTMENT
33	- ARCH AT SPAN 1
34	- CONCRETE PILES STANDARD X-3
35	STONE BRIDGE: - GENERAL PLAN AND ELEVATION
36	- GENERAL NOTES AND DETAILS
37	- TOP OF SLAB ELEVATIONS
38	- TOP OF SLAB ELEVATIONS
39	- SUPERSTRUCTURE
40	- STRUCTURAL STEEL
41	- BEARING DETAILS
42	- PIERS NO.1 AND NO.2
43	- NORTH ABUTMENT
44	- SOUTH ABUTMENT
45	- MISCELLANEOUS DETAILS

GENERAL NOTES
INDEX OF DRAWINGS
STANDARD DRAWINGS

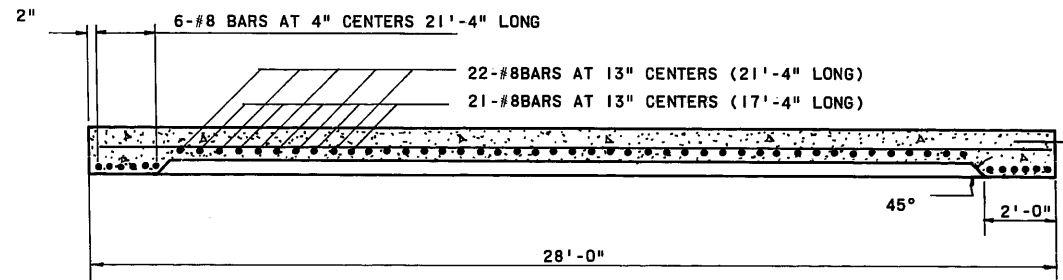


PLAN
METHOD I



LONGITUDINAL SECTION THRU
CENTER OF SLAB

LONGITUDINAL SECTION THRU
THICKENED EDGE OF SLAB



#4 TIE BARS AT 2'-6" CENTERS (2'-6" LONG)
COST OF THE TIE BARS INCLUDED IN CONTRACT
UNIT PRICE FOR CURB & GUTTER

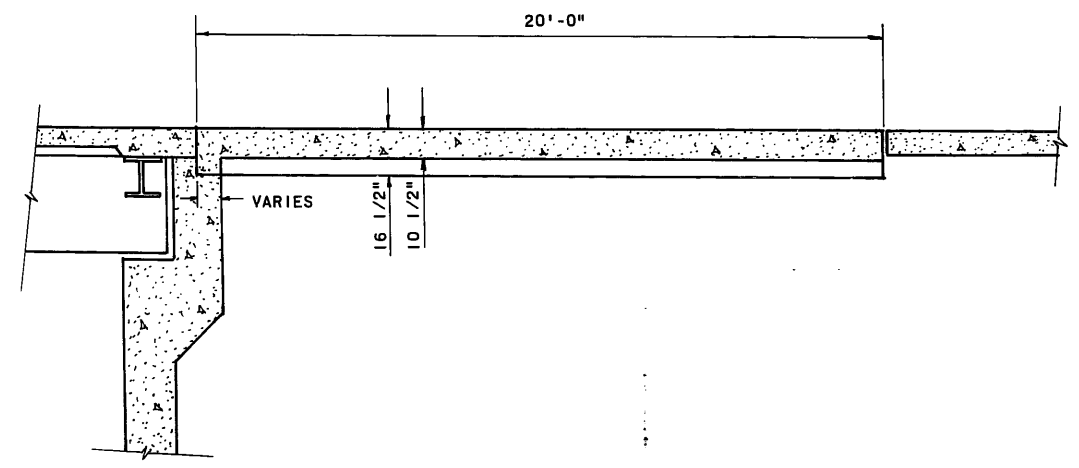
SECTIONAL VIEW OF CONCRETE SLAB

GENERAL NOTES

1. THE SLAB WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR PORTLAND CEMENT CONCRETE PAVEMENT (16 1/2"-10 1/2"-16 1/2")
2. ALL REINFORCEMENT BARS WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR REINFORCEMENT BARS, EXCEPT AS NOTED.
3. THE MUD JACK CYLINDERS, AND PREFORMED EXPANSION JOINT FILLER SHALL BE INCLUDED IN THE UNIT PRICE BID FOR PORTLAND CEMENT CONCRETE PAVEMENT (16 1/2"-10 1/2"-16 1/2")
4. PREFORMED EXPANSION JOINT FILLER SHALL CONFORM TO SECTION 715 OF THE STANDARD SPECIFICATION.
5. WIDTH OF BRIDGE APPROACH SLAB POURS SHALL BE DETERMINED BEFORE THE REINFORCEMENT BARS ARE FABRICATED.
6. THE CONTRACTOR SHALL, AFTER COMPLETION OF THE FINISHING OPERATIONS, MARK THE LOCATION OF THE MUD JACK CYLINDERS.
7. FOR FURTHER DETAILS SEE STANDARD 1909.

(QUANTITIES FOR ONE 28'-0" APPROACH AND SLAB STANDARD 1909 MODIFIED)

TRANSVERSE BARS #5 METHOD I		LONGITUDINAL BARS #8 METHOD I	TOTAL WEIGHT OF BARS METHOD I	PAVEMENT 16 1/2"-10 1/2"-16 1/2" METHOD I
NO.	LENGTH		POUNDS	SQ. YDS.
33	27'-6"	34 AT 21'-4" LONG 21 AT 17'-4" LONG	3855	62.2



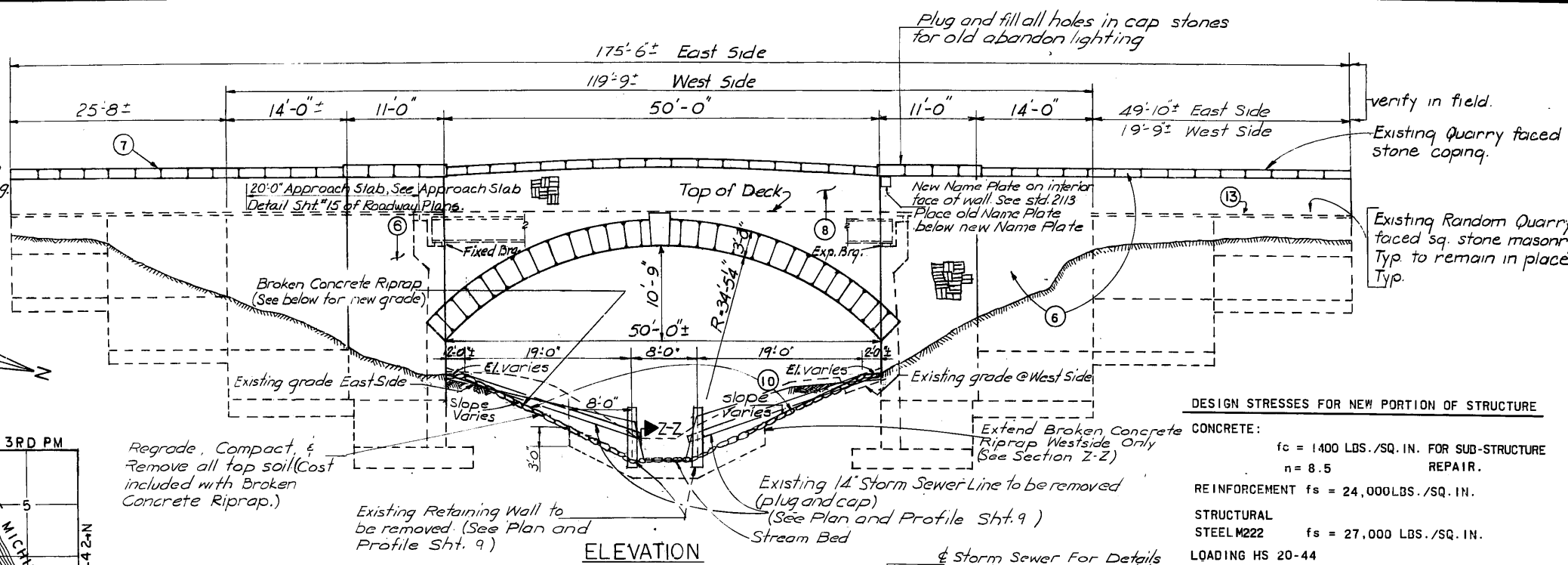
SECTIONAL VIEW
METHOD I

APPROACH SLAB DETAIL
HAWTHORNE BRIDGE
NEWHALL BRIDGE
STONE BRIDGE

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAUJ 3509	112-BR	COOK	45	16
FED. ROAD DIST. NO. 1	ILLI 315	PROJECT		

SHEET 1
OF 7 SHEETS

Bench mark elevation
656.62 NW. Flange bolt
on top flange of fire
hydrant at Sheridan Rd.
and Hawthorne streets.
Equals Elevation 77.10
for elevations as shown
in Old Existing drawing



- LEGEND OF CONSTRUCTION
- REMOVE EXISTING CONCRETE DECK & BEAMS.
 - PLACE NEW CONCRETE DECK & STEEL BEAMS.
 - PROVIDE EPOXY COATED BARS FOR CONCRETE DECK.
 - PROVIDE NEW PREFORMED JOINT SEALER
 - REPAIR PART OF ABUTMENT AND ADJUST TOP OF ABUTMENT WITH NEW CONSTRUCTION
 - TUCK POINT EXISTING MASONRY PARAPET, & WALLS AS PER ENGINEERS INSTRUCTIONS.
 - REPLACE STONE MASONRY COPING AS PER SPECIFICATIONS.
 - REMOVE & REPLACE STONE BELOW COPING AS PER ENG. INSTRUCTIONS
 - PROVIDE NEW CONCRETE APPROACH SLABS.
 - PLACE BROKEN CONCRETE RIP-RAP FROM BASE OF ABUTMENT TO EDGE OF CREEK, PROVIDE GENERAL CLEAN-UP OF AREA UNDER BRIDGE.
 - PROVIDE CLOSED JOINT AT FIXED BEARING.
 - PROVIDE FILL MATERIAL AT BASE OF WING WALLS SO AS TO CAUSE WATER TO FLOW AWAY FROM THE WING WALL. TYPICAL FOR ALL FOUR WING WALLS.
 - PROVIDE 4"x12" ALUMINUM FLOOR DRAINS SPACED AT 6'-0" ON CENTER
 - PROVIDE BROKEN CONCRETE RIP-RAP SLOPE PROTECTION TO LIMITS AS SHOWN.

DESIGN STRESSES FOR NEW PORTION OF STRUCTURE

CONCRETE:
 $f_c = 1400 \text{ LBS./SQ. IN. FOR SUB-STRUCTURE}$
 $n = 8.5$

REINFORCEMENT $f_s = 24,000 \text{ LBS./SQ. IN.}$

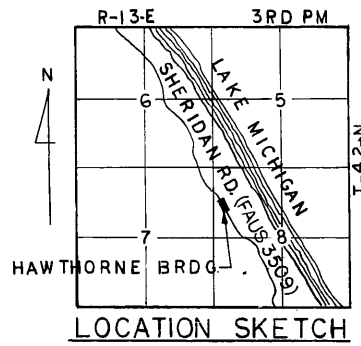
STRUCTURAL STEEL M222 $f_s = 27,000 \text{ LBS./SQ. IN.}$

LOADING HS 20-44

FUTURE WEARING SURFACE = 25 LBS./SQ.FT.

DESIGN SPECIFICATION: AASHTO -1973 AND INTERIM SPECIFICATIONS 1974, 1975 AND 1976 AS APPLICABLE

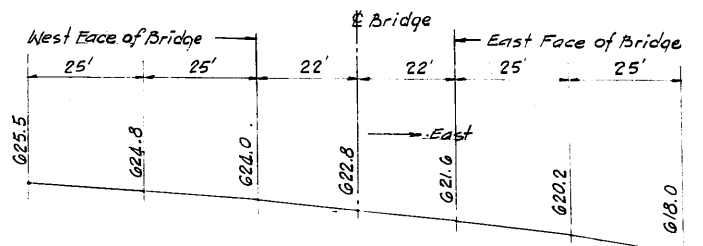
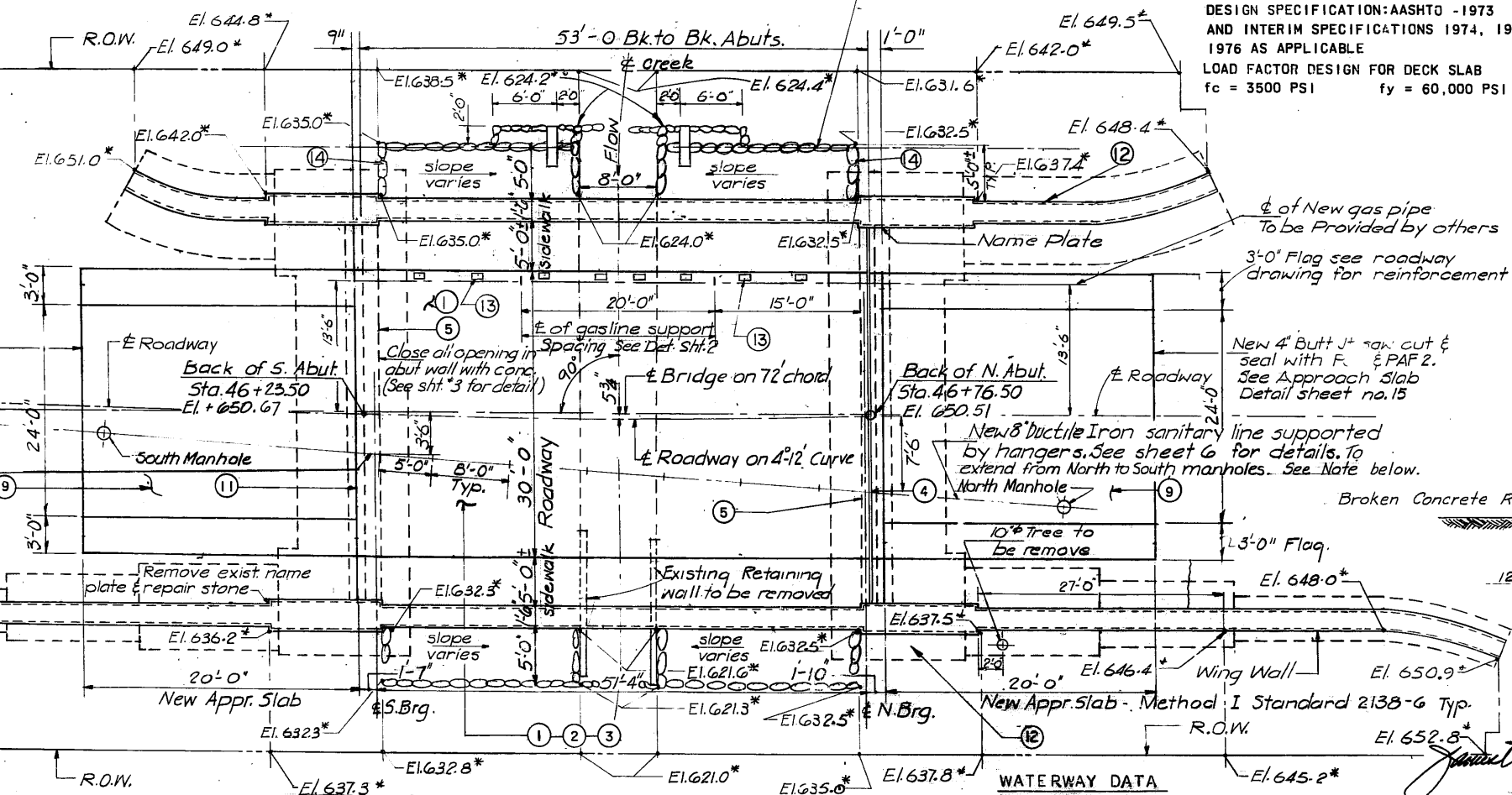
LOAD FACTOR DESIGN FOR DECK SLAB
 $f_c = 3500 \text{ PSI}$ $f_y = 60,000 \text{ PSI}$



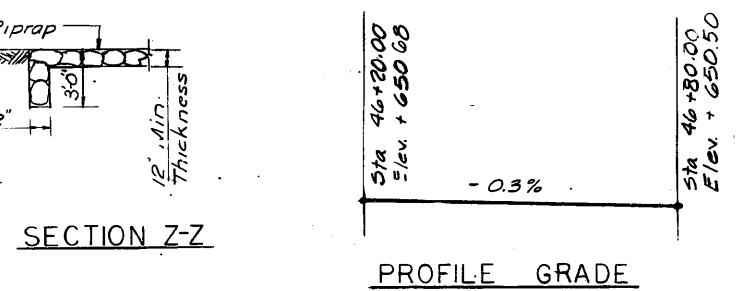
Regrade, Compact, & Remove all top soil (Cost included with Broken Concrete Riprap.)

Existing Retaining Wall to be removed (See Plan and Profile Sht. 9)

Existing 14" Storm Sewer Line to be removed (plug and cap) (See Plan and Profile Sht. 9)



STREAM BED PROFILE



PROFILE GRADE

DESIGNED	SCN
CHECKED	E.D.
DRAWN	AAS
CHECKED	E.D.

- Note:
- * indicates elevation of broken concrete riprap and surrounding terrain
 - Contractor shall provide grading from proposed edge of Riprap to existing grade at R.O.W. Line. Cost incidental to Special Excavation.
 - Cost of Removal of Existing Sanitary Pipe shall be incidental to 8" Sanitary Pipe.

APPROVED
FOR STRUCTURAL ANALYSIS ONLY

Drainage Area: 106 Acres
 Character: Pavement & Wooded Ravines
 Required Opening: 50 Sq. Ft.
 $Q_{50} = 475 \text{ C.F.S.}$
 $Q_{100} = 517 \text{ C.F.S.}$
 High Water (50 Year) Elev. 626.2
 High Water (100 Year) Elev. 626.3

HANSEN, SCHNEEMAN & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 223 West Jackson Blvd., Suite 703
 Chicago, Illinois - 60604

GENERAL PLAN AND ELEVATION
HAWTHORNE BRIDGE
 FAUJ. RTE. 3509 SHERIDAN ROAD
 SECTION COOK STATION
 112-BR COUNTY 46+50

STONE MASONRY REPAIR

	Stone Removal & Replacement Repair (Cu. Yds.)	New Stone Replacement (Cubic Yds.)	Tuckpointing (Lin. Ft.)
East Masonry Wall	Exterior Wall = 2.5 Interior Wall Parapet at deck = 4.3 Other = 0.8	Exterior Wall = 1.1 Interior Wall Parapet at deck = 2.1 Other = 0.5	Exterior Face Bridge & Wing Wall = 1152.0 Interior Face Bridge & Wing Wall = 1392.0
West Masonry Wall	Exterior Wall = 1.1 Interior Wall Parapet at deck = 3.0 Other = 0.5	Exterior Wall = 0.8 Interior Wall Parapet at deck = 1.5 Other = 0.2	Exterior Face Bridge & Wing Wall = 576.0 Interior Face Bridge & Wing Wall = 960.0
Total	12.2 cy.	6.2 cy.	4080 lin.ft.

GENERAL NOTES

CONTRACTOR SHALL USE CAUTION IN REMOVING EXISTING SUPERSTRUCTURE. SUGGESTED SEQUENCE OF SUPERSTRUCTURE REMOVAL: FIRST REMOVE DECK AND THEN BEAMS AND DIAPHRAGMS WITH CARE SO AS NOT TO DAMAGE EXISTING UTILITIES & CONCRETE SUB-STRUCTURE.

ALL REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 31 GRADE 60 OR M 53 GRADE 60

CALCULATED WEIGHT OF STRUCTURAL STEEL = 45,420 LBS.

NEW FIELD CONNECTIONS SHALL BE BOLTED USING HIGH STRENGTH BOLTS. BOLTS 3/4"φ. HOLES 13/16"φ UNLESS OTHERWISE NOTED. HIGH STRENGTH BOLTS SHALL BE ASTM 325, TYPE III

ALL STRUCTURAL STEEL SHALL BE A.A.S.H.T.O. M 222 UNPAINTED EXCEPT EXPANSION JOINT ANGLES WHICH SHALL BE A.A.S.H.T.O. M 183 AND SHOP PAINTED WITH TWO COATS OF BASIC LEAD SILICO CHROMATE PAINT.

FIELD WELDING OF CONSTRUCTION ACCESSORIES AND EXISTING PIPE LINE SUPPORTS WILL NOT BE PERMITTED IN BOTTOM OF FLANGE OF BEAMS. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

ANCHOR BOLTS SHALL BE SET BEFORE BOLTING DIAPHRAGMS OVER SUPPORTS.

SEE SPECIAL PROVISIONS FOR REPAIR OF EXISTING STONE PARAPET AND ARCH.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL DIMENSIONS AND CONDITIONS EXISTING IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

PROTECTIVE COAT SHALL BE APPLIED TO TOP SURFACES OF DECK, CURB AND SIDEWALK, & MASONRY WALLS - INTERIOR FACE

CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORTING ALL EXCEPT GAS LINE PIPES. GAS CO. SHALL BE RESPONSIBLE FOR THE SUPPORT OF ITS UTILITY LINE - SEE SPECIAL PROVISION

EXPANSION BOLTS SHALL CONSIST OF SELF DRILLING EXPANSION ANCHORS AND 3/4"φ x 12" HOOKED BOLTS.

LAYOUT OF RIP RAP SLOPE WALLS MAY BE VARIED IN THE FIELD TO SUIT GROUND CONDITIONS AS DIRECTED BY THE ENGINEER.

SEE SPECIAL PROVISIONS FOR REMOVAL OF EXISTING SUPER STRUCTURE, AND INSTALLATION OF RIP RAP SLOPE WALLS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAUS 3509	112-BR	COOK	45	17
FED. ROAD DIST. NO. 1		ILLINOIS		

SHEET NO. 2
OF 7 SHEETS

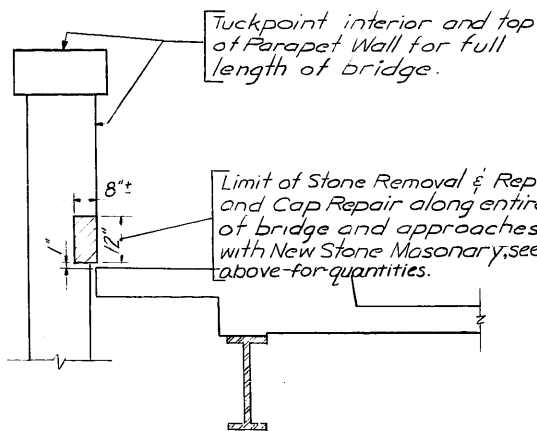
TOTAL BILL OF MATERIALS

ITEM	UNIT	SUPER	SUB	TOTAL
CONCRETE REMOVAL	CU. YDS.		18	18
STRUCTURE EXCAVATION	CU. YDS.		748.2	748.2
REMOVAL OF EXIST. SUPERSTRUCTURES NO. 1	EA.	1		1
BROKEN CONCRETE RIP-RAP	SQ. YDS.		325	325
EXPANSION BOLTS 3/4φ	EACH		82	82
REINFORCEMENT BARS	LBS.	5990	2950	8940
REINFORCEMENT BARS (EPOXY COATED)	LBS.	10,150	200	10,350
CLASS "X" CONCRETE	CU. YDS.	58.1	37.9	96
PREFORMED JOINT SEALER (2 1/2")	LIN. FT.	41.5		41.5
FURNISHING & ERECTING STRUCT. STEEL	LUMP SUM	1		1
STUD SHEAR CONNECTORS	EACH	990		990
PROTECTIVE COAT	SQ. YDS.	248		248
TUCKPOINTING	LIN. FT.	4080		4080
NEW STONE REPLACEMENT	CU. YDS.	6.2		6.2
POROUS GRANULAR EMBANKMENT	CU. YDS.		597.2	597.2
NAME PLATE	EACH	1		1
STONE REMOVAL & REPLACEMENT AND CAP REPAIR	CU. YDS.	12.2		12.2
SPECIAL EXCAVATION	CU. YDS.		199	199
TREE REMOVAL (6" TO 15" INCH DIA.)	IN. DIA.		10"	10"
8" SANITARY PIPE	LIN. FT.	106		106
SANITARY PIPE HANGERS	EACH	6		6
GAS PIPE HANGERS	EACH	2		2
REPAIR CONCRETE STRUCTURE	SQ. YDS.		55	55
CONC JT SEALER W/ BACKER ROD	LIN. FT.	108		108

CURVE DATA
P.I. = STA. 46+63.70 R = 1364.185'
P.C. = STA. 44+02.65 T = 261.05'
D = 4°12'30" L = 515.87'
Δ = 21°40'00" S.E. = 0.018 FT./FT.

TRANSITION FOR S.E. SOUTH OF THE BRIDGE STARTS AT THE BEGINNING OF CONSTRUCTION AT STA. 45+25.00 AND CONTINUES TO STA. 46+22.50 WHERE FULL S.E. IS ATTAINED.

TRANSITION FROM FULL S.E. NORTH OF THE BRIDGE STARTS AT STA. 46+77.60 AND CONTINUES TO THE END OF CONSTRUCTION AT STA. 47+50.00

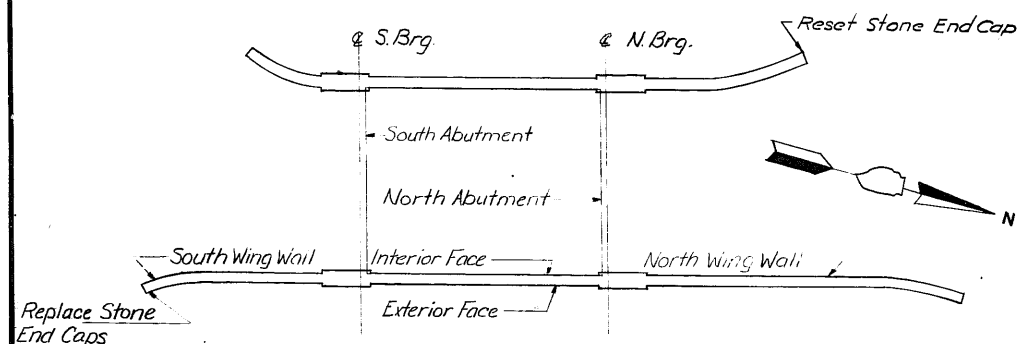


STATION 46+50
RECONSTRUCTED 197
FAUS RTE. 3509, SEC. 112-BR
F.A. PROJ. IX-5003(310)
LOADING HS 20
STR. NO. 016-0619

NAME PLATE
See Standard 2113

STONE PARAPET REPAIR DETAIL

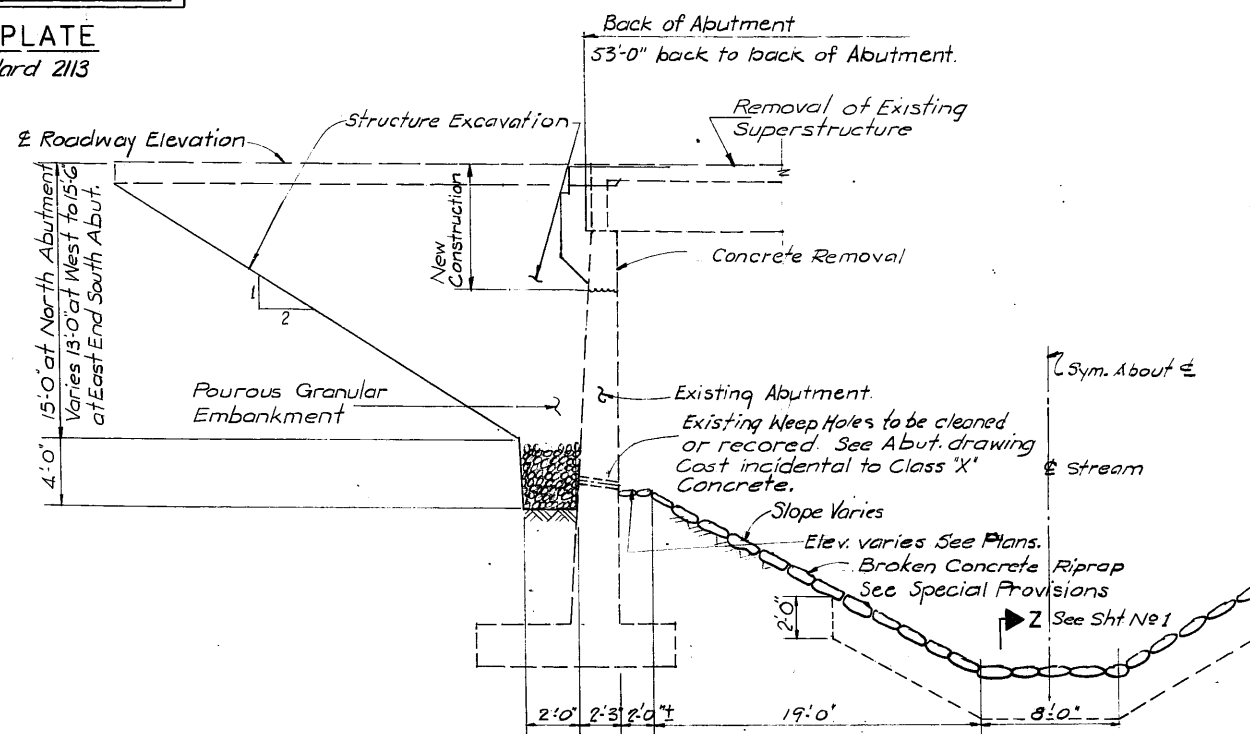
See chart above for location & quantities



PLAN

See chart above for location & quantities of Stone Masonry Repair.

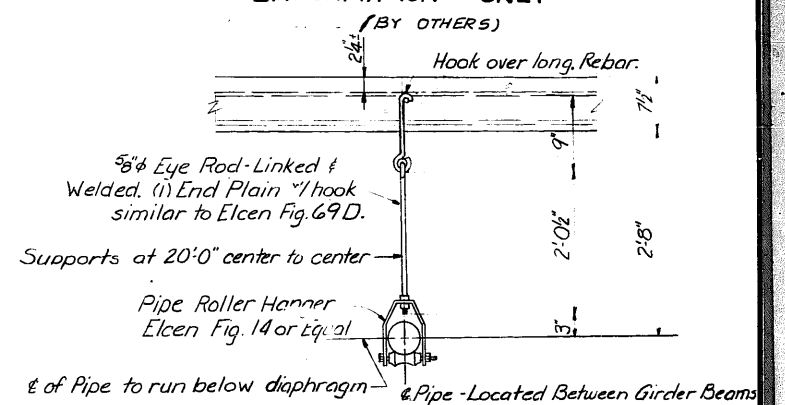
DESIGNED	A.S.
CHECKED	E.D.
DRAWN	A.S.
CHECKED	E.D.



CROSS SECTION

SHOWING EXCAVATION, CONCRETE REMOVAL ETC.

FOR INFORMATION ONLY



SUPPORT FOR GAS PIPE

GENERAL NOTES & MISC. DETAILS

HAWTHORNE BRIDGE

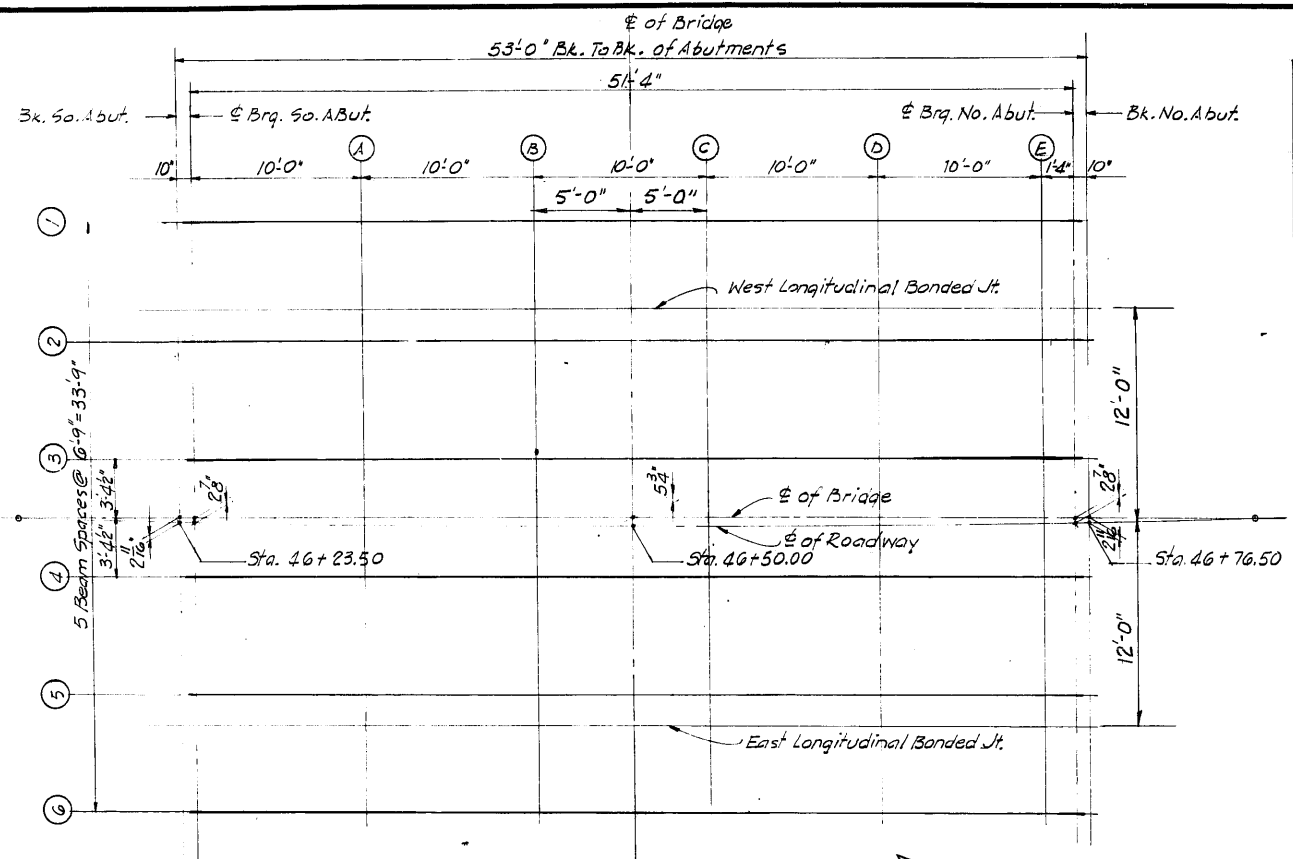
FAUS. RTE. 3509 SHERIDAN ROAD

SECTION 112-BR
COUNTY COOK
STATION 46+50

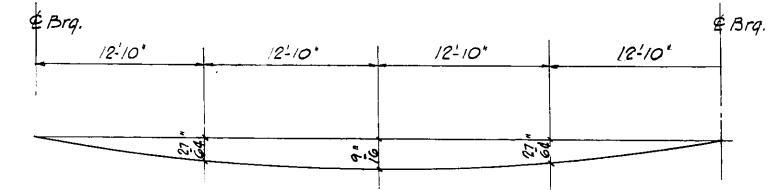
HANSEN, SCHNEEMAN & ASSOCIATES, INC.
CONSULTING ENGINEERS
223 West Jackson Blvd., Suite 703
Chicago, Illinois - 60604

Rev. 4/17/75 N.M.D.

Rev. 4-19-78

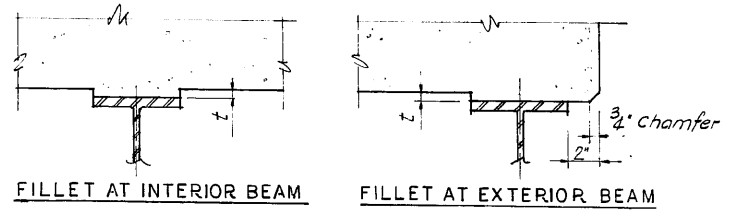


BEAM LAYOUT



DEAD LOAD DEFLECTION DIAGRAM

Note: Includes only weight of concrete deck and sidewalk. These deflections are not to be used in the field if the Engineer is working from the Grade Elevations. Adjusted for Dead Load Deflections as shown.

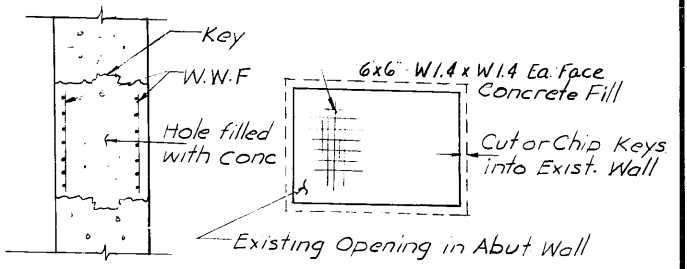


FILLET HEIGHTS

Note: To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown above. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown above minus slab thickness, equals the fillet height "t" above top flange of beams.

DESIGNED A.S.
CHECKED E.D.
DRAWN A.S.
CHECKED E.D.

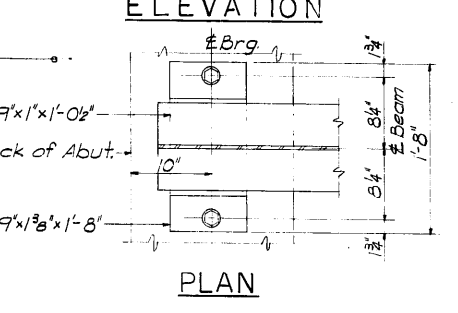
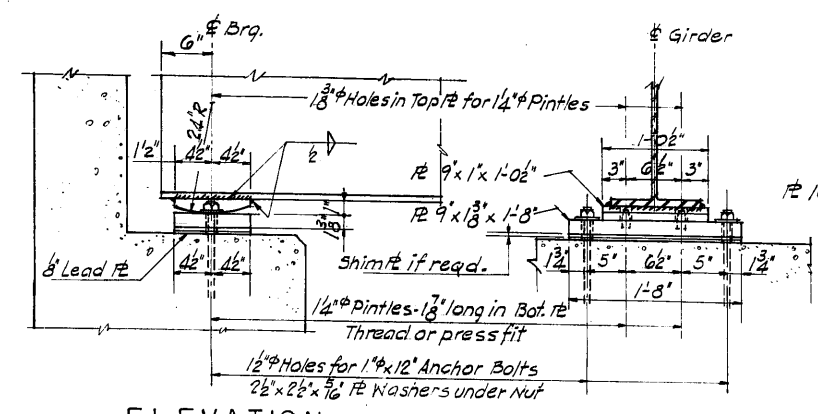
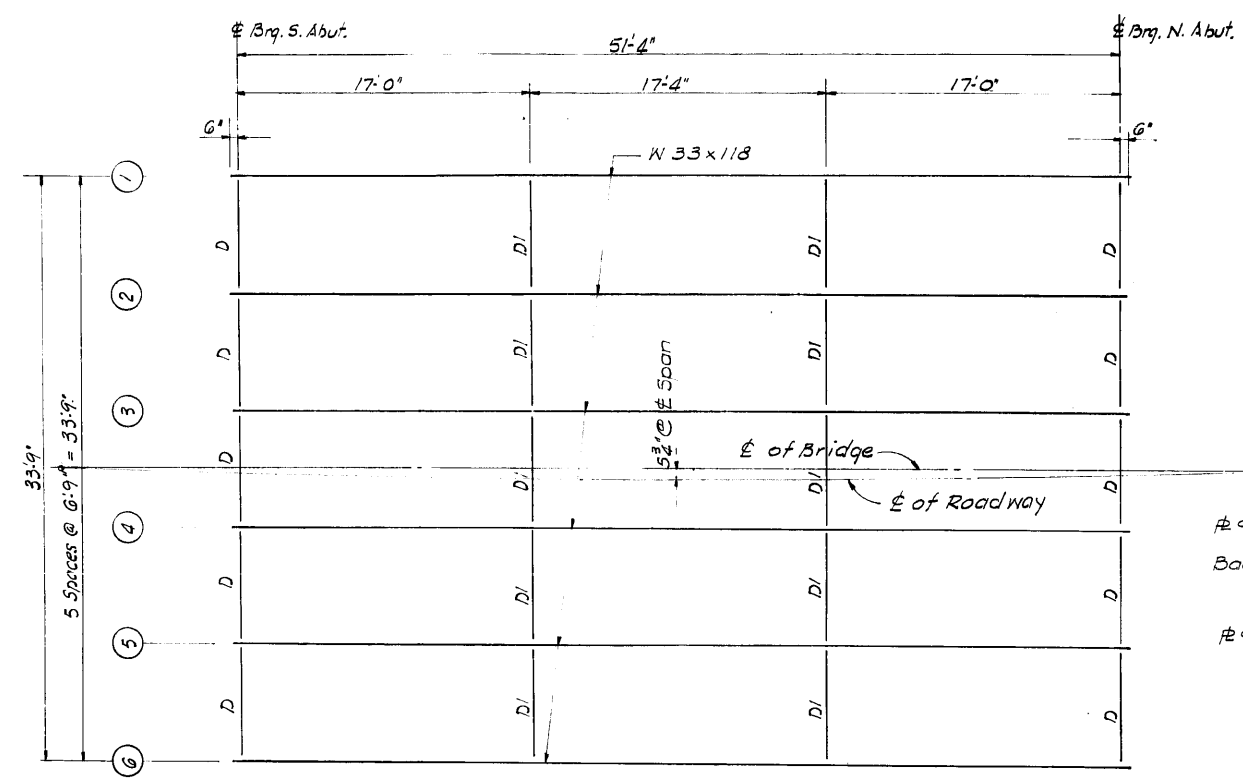
BEAM OR JOINT	LOCATION	STATION	RADIAL OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ELEV. ADJUSTED FOR DEAD LOAD DEFLECTION
GIRDER 1	BK. S. ABUT.	4623.1637	-17.0935	650.3633	650.3633
	⊕ BRG. S. ABUT.	4624.0074	-17.1097	650.3605	650.3605
	A	4634.1338	-17.2631	650.3274	650.3568
	B	4644.2620	-17.3423	650.2956	650.3420
	C	4654.3908	-17.3472	650.2651	650.3107
	D	4664.5191	-17.2779	650.2359	650.2682
	E	4674.6458	-17.1344	650.2081	650.2128
	⊕ BRG. N. ABUT.	4675.9959	-17.1097	650.2045	650.2045
	BK. N. ABUT.	4676.8397	-17.0935	650.2023	650.2023
	W. LONG. BONDED JT.	BK. S. ABUT.	4623.2604	-12.2195	650.4508
⊕ BRG. S. ABUT.		4624.1011	-12.2355	650.4480	650.4480
A		4634.1910	-12.3884	650.4149	650.4443
B		4644.2827	-12.4673	650.3832	650.4278
C		4654.3750	-12.4723	650.3529	650.3985
D		4664.4668	-12.4032	650.3238	650.3561
E		4674.5570	-12.2602	650.2961	650.3008
⊕ BRG. N. ABUT.		4675.9022	-12.2355	650.2926	650.2926
BK. N. ABUT.		4676.7429	-12.2195	650.2903	650.2903
GIRDER 2		BK. S. ABUT.	4623.2975	-10.3448	650.4844
	⊕ BRG. S. ABUT.	4624.1370	-10.3609	650.4816	650.4816
	A	4634.2129	-10.5136	650.4486	650.4780
	B	4644.2906	-10.5924	650.4170	650.4616
	C	4654.3689	-10.5873	650.3866	650.4322
	D	4664.4467	-10.5283	650.3576	650.3899
	E	4674.5230	-10.3855	650.3300	650.3347
	⊕ BRG. N. ABUT.	4675.8663	-10.3609	650.3264	650.3264
	BK. N. ABUT.	4676.7059	-10.3448	650.3242	650.3242
	GIRDER 3	BK. S. ABUT.	4623.4299	-3.5961	650.6055
⊕ BRG. S. ABUT.		4624.2653	-3.6121	650.6027	650.6027
A		4634.2913	-3.7640	650.5699	650.5993
B		4644.3189	-3.8424	650.5384	650.5830
C		4654.3472	-3.8473	650.5082	650.5538
D		4664.3750	-3.7787	650.4794	650.5117
E		4674.4013	-3.6366	650.4518	650.4565
⊕ BRG. N. ABUT.		4675.7380	-3.6121	650.4483	650.4483
BK. N. ABUT.		4676.5734	-3.5961	650.4460	650.4460
⊕ BRIDGE DECK		BK. S. ABUT.	4623.4957	-0.2218	650.6660
	⊕ BRG. S. ABUT.	4624.3290	-0.2377	650.6632	650.6632
	A	4634.3302	-0.3882	650.6305	650.6599
	B	4644.3330	-0.4674	650.5991	650.6437
	C	4654.3365	-0.4723	650.5690	650.6140
	D	4664.3395	-0.4039	650.5402	650.5725
	E	4674.3409	-0.2621	650.5128	650.5175
	⊕ BRG. N. ABUT.	4675.6794	-0.2377	650.5092	650.5092
	BK. N. ABUT.	4676.5076	-0.2218	650.5070	650.5070
	⊕ ROADWAY	BK. S. ABUT.	4623.5000	0.0000	650.6700
⊕ BRG. S. ABUT.		4624.3335	0.0000	650.6675	650.6675
A		4634.3335	0.0000	650.6375	650.6669
B		4644.3335	0.0000	650.6075	650.6521
C		4654.3335	0.0000	650.5775	650.6231
D		4664.3335	0.0000	650.5475	650.5798
E		4674.3335	0.0000	650.5175	650.5222
⊕ BRG. N. ABUT.		4675.6699	0.0000	650.5135	650.5135
BK. N. ABUT.		4676.5033	0.0000	650.5110	650.5110
GIRDER 4		BK. S. ABUT.	4623.5611	3.1526	650.7226
	⊕ BRG. S. ABUT.	4624.3923	3.1367	650.7238	650.7238
	A	4634.3688	2.9856	650.6911	650.7205
	B	4644.3470	2.9075	650.6598	650.7044
	C	4654.3259	2.9027	650.6298	650.6754
	D	4664.3041	2.9709	650.6011	650.6334
	E	4674.2809	3.1123	650.5737	650.5784
	⊕ BRG. N. ABUT.	4675.6110	3.1367	650.5701	650.5701
	BK. N. ABUT.	4676.4422	3.1526	650.5679	650.5679
	GIRDER 5	BK. S. ABUT.	4623.6910	9.9004	650.8476
⊕ BRG. S. ABUT.		4624.5181	9.8846	650.8449	650.8449
A		4634.4456	9.7342	650.8124	650.8418
B		4644.3748	9.6566	650.7812	650.8258
C		4654.3045	9.6517	650.7513	650.7969
D		4664.2338	9.7197	650.7228	650.7551
E		4674.1616	9.8604	650.6955	650.7002
⊕ BRG. N. ABUT.		4675.4852	9.8846	650.6920	650.6920
BK. N. ABUT.		4676.3124	9.9004	650.6898	650.6898
E. LONG. BONDED JT.		BK. S. ABUT.	4623.7268	11.7760	650.8813
	⊕ BRG. S. ABUT.	4624.5529	11.7602	650.8785	650.8785
	A	4634.4668	11.6100	650.8461	650.8755
	B	4644.3825	11.5325	650.8149	650.8595
	C	4654.2987	11.5276	650.7851	650.8307
	D	4664.2144	11.5955	650.7566	650.7889
	E	4674.1287	11.7360	650.7294	650.7341
	⊕ BRG. N. ABUT.	4675.4505	11.7602	650.7258	650.7258
	BK. N. ABUT.	4676.2765	11.7760	650.7236	650.7236
	GIRDER 6	BK. S. ABUT.	4623.8196	16.6492	650.9687
⊕ BRG. S. ABUT.		4624.6427	16.6335	650.9660	650.9660
A		4634.5217	16.4838	650.9336	650.9630
B		4644.4023	16.4065	650.9026	650.9472
C		4654.2835	16.4017	650.8729	650.9185
D		4664.1642	16.4693	650.8445	650.8768
E		4674.0435	16.6093	650.8173	650.8220
⊕ BRG. N. ABUT.		4675.3606	16.6335	650.8138	650.8138
BK. N. ABUT.		4676.1838	16.6492	650.8116	650.8116



SECTION ELEVATION
DETAIL FOR FILLING HOLES IN
ABUTMENT WALL

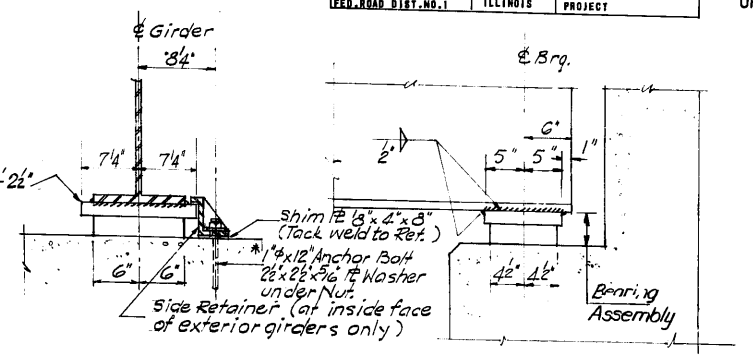
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CONSULTING ENGINEERS
223 West Jackson Blvd., Suite 703
Chicago, Illinois - 60604

TOP OF SLAB ELEVATIONS
HAWTHORNE BRIDGE
F.A.U.S. RTE. 3509 SHERIDAN ROAD
SECTION 112- BR
COOK COUNTY
STATION 46+50

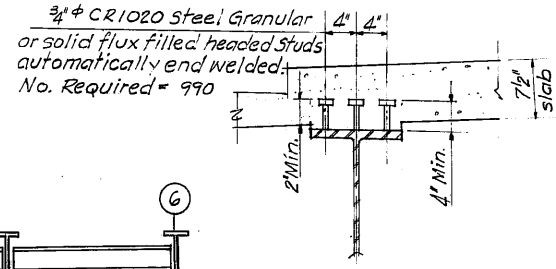
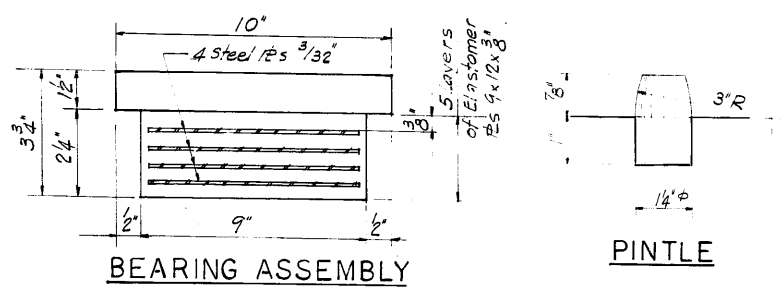


*** Note:**
After beams have been erected holes at expansion bearings shall be drilled and anchor bolts grouted in place. Anchor bolts at fixed bearings may be built into the concrete

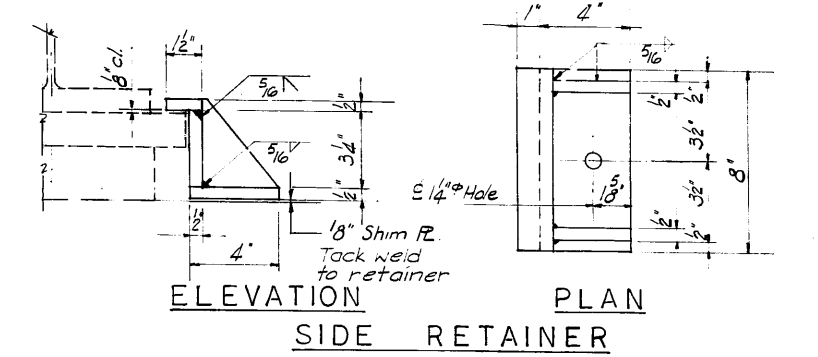
FIXED BEARING (S. ABUTMENT)



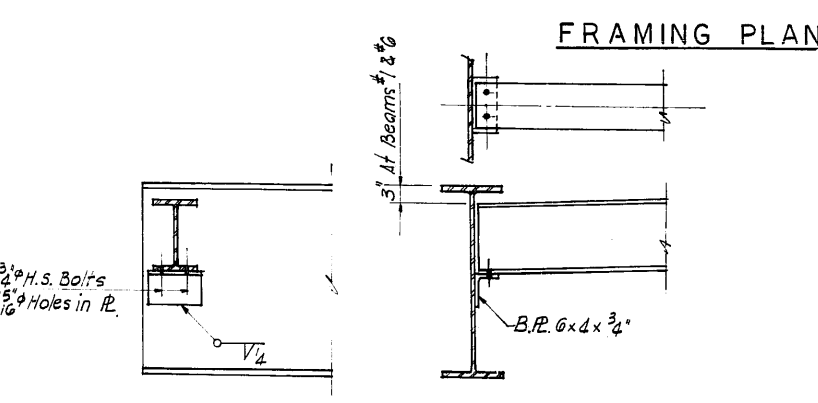
SECTION ELEVATION
TYPE I ELASTOMERIC EXP BRG. (N. ABUTMENT)



SECTION A-A

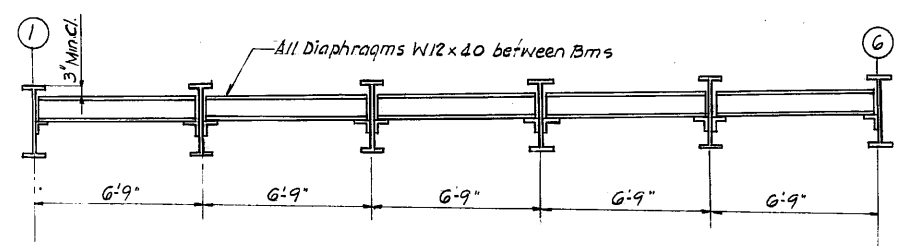


ELEVATION PLAN
SIDE RETAINER

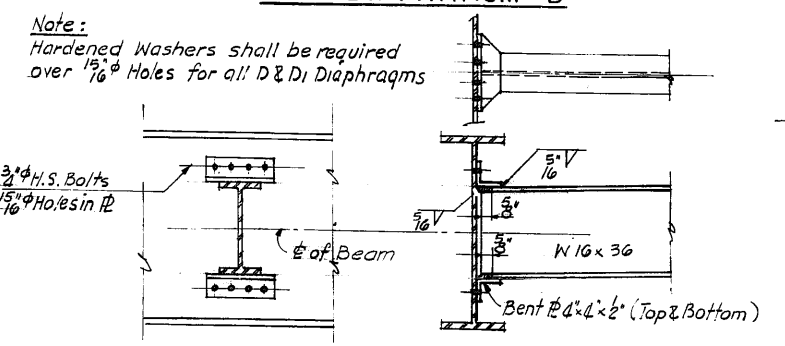


FRAMING PLAN

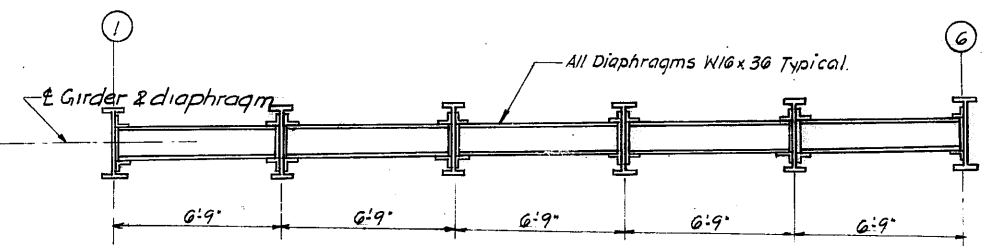
END DIAPHRAGM D



END DIAPHRAGM D'



INTERIOR DIAPHRAGM D1



INTERIOR DIAPHRAGM D1'

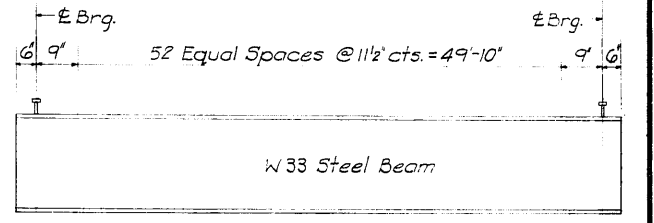
Note:
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the tension flanges and webs of the wide flange beams.

*** Note:**
Includes weight of future wearing surface

INTERIOR GIRDER MOMENT TABLE	
	0.5 Span
I_s (in ⁴)	5900
I_c (in ⁴)	15362
S_s (in ³)	359
S_c (in ³)	519
D (ksf)	0.790
M_D (FK)	260
$f_s D$ (ksi)	8.69
$*S_D$ (ksf)	0.358
$M_s D$ (FK)	118
M_L (FK)	399.9
M_{imp} (FK)	113.4
Total M (FK)	891.3
$f_{sL} + I * S_D$ (ksi)	14.6
f_s total (ksi)	23.29
V_R (k)	46.4

INTERIOR GIRDER REACTION TABLE	
	Abutments
R_D (k)	29.5
R_L (k)	36.1
Impact (k)	10.3
R_{total} (k)	75.9

TOP OF BEAM ELEV.		
Beam No.	S. Abut.	N. Abut.
1	649.69	649.54
2	649.81	649.66
3	649.94	649.78
4	650.06	649.90
5	650.18	650.03
6	650.30	650.15



SHEAR STUD SPACING

Item	Unit	Total
Structural Steel	Lbs.	44140

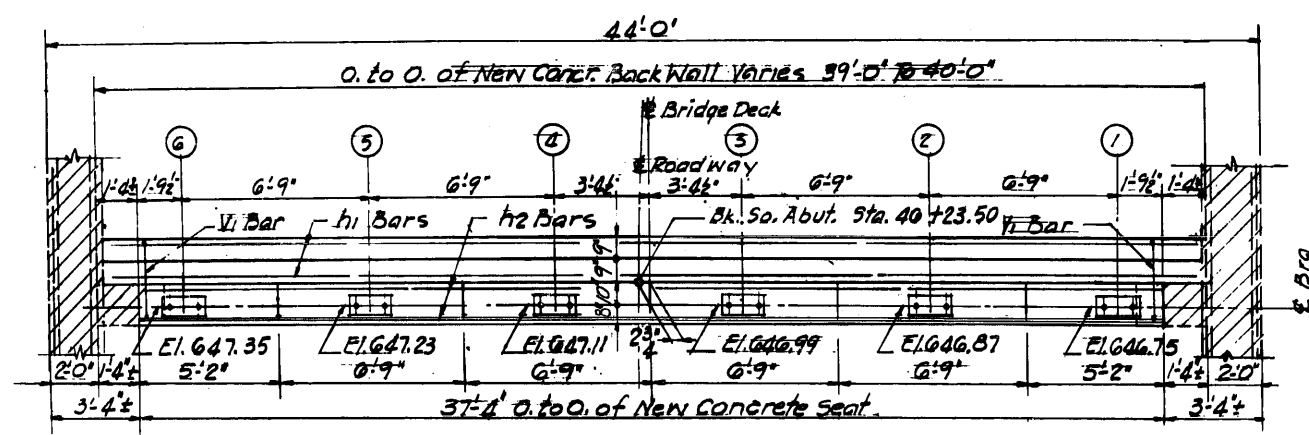
Includes weight of Steel Brg. Assemblies. Approx wt of Fixed Bearing Assembly = 160 lbs. Quantity Elastomeric Expansion Brg. = 6

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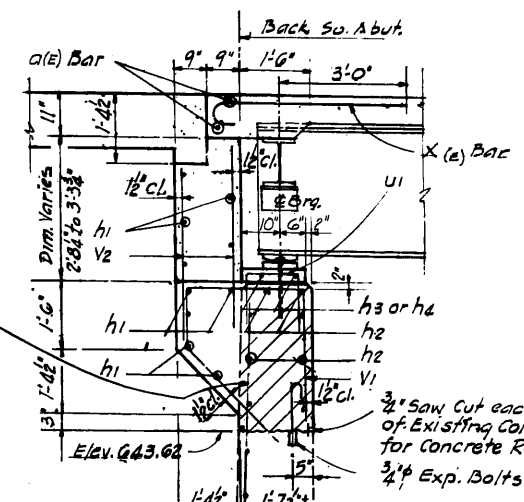
**STRUCTURAL STEEL
HAWTHORNE BRIDGE**
FAUS. RTE 3509 SHERIDAN ROAD

SECTION 112-BR
COUNTY COOK
STATION 46 + 50

DESIGNED	A.S.
CHECKED	E.D.
DRAWN	A.S.
CHECKED	E.D.



PLAN SOUTH ABUTMENT

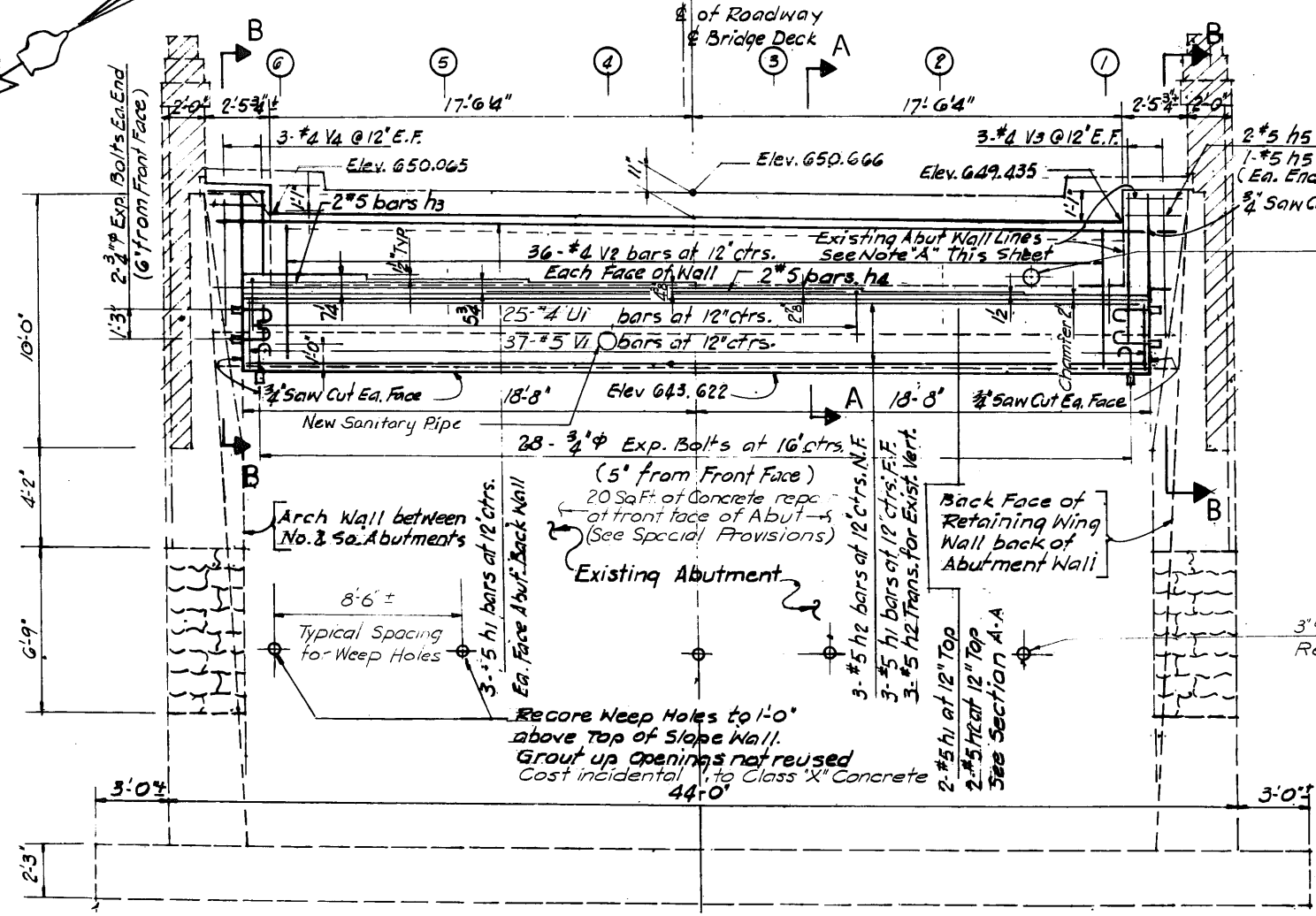


SECTION A A

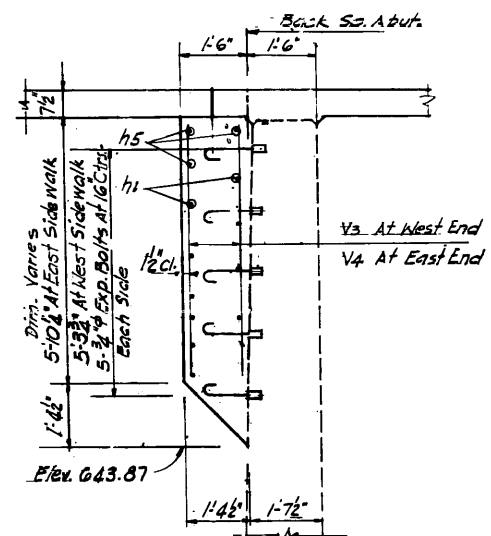
Note:
Clean Existing Reinf. Bars and incorporate into New Concrete

BILL OF MATERIAL SO. ABIJT.

Bar No.	Size	Length	Shape
h1	#5	39'-0"	
h2	#5	37'-0"	
h3	#5	11'-6"	
h4	#5	15'-4"	
h5	#5	2'-2"	
V1	#5	9'-2"	
V2	#4	4'-0"	
V3	#4	5'-1"	
V4	#4	5'-8"	
U1	#4	3'-5"	
Reinforcement		Lbs.	1360
Class 'X' Concrete		Cu. Yds.	18.3
Concrete Removal		Cu. Yds.	9
3/4" Expansion Bolts		Each	42
Structure Excavation		Cu. Yds.	357.2
Porous Granular Embank.		Cu. Yds.	283.2
Repair Conc. Structure		Sq. Ft.	20
Sanitary Pipe Hangers		Each	6
8" Sanitary Pipe		Lin. Ft.	54

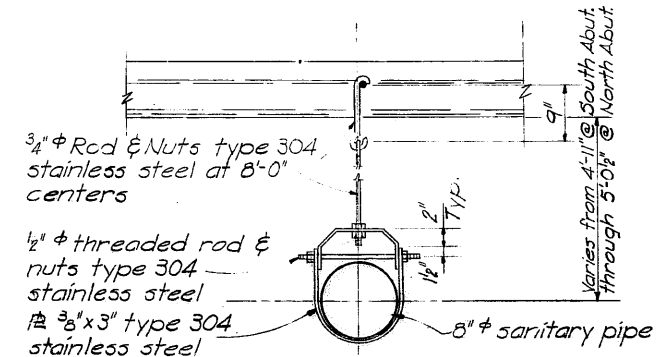
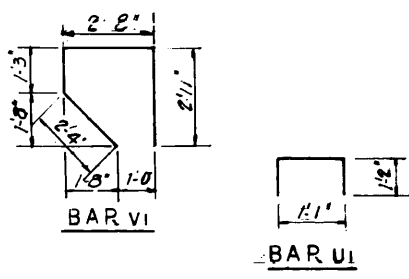


SOUTH ABUTMENT ELEVATION



SECTION B-B

Note:
Bond joint between new and existing concrete in accordance with Article 504.13 (a) (2)



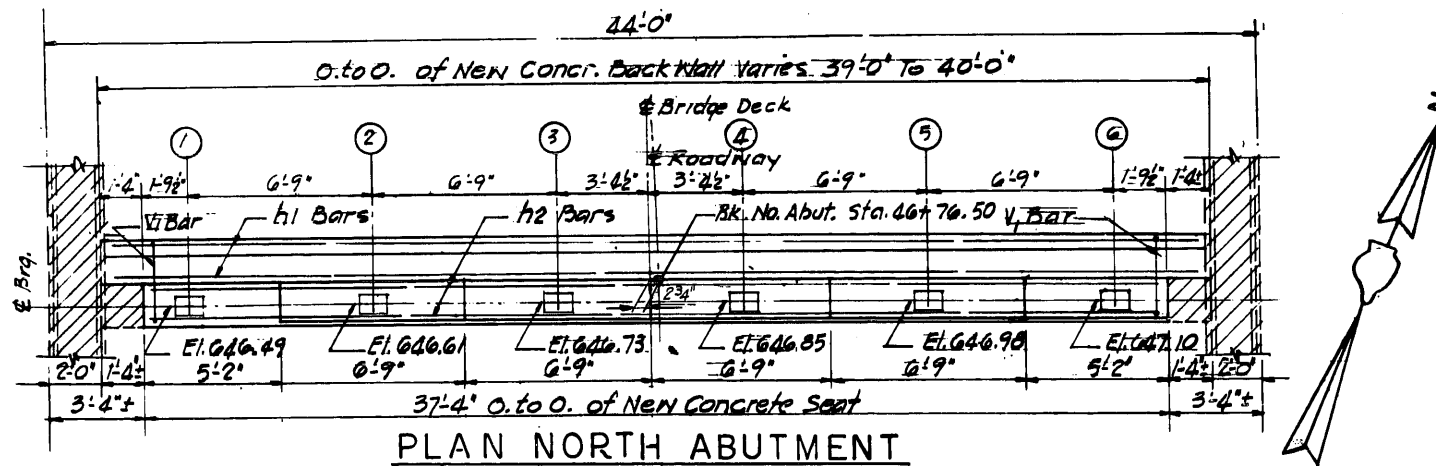
SUPPORT FOR SANITARY PIPE LINE

DESIGNED	A.S.
CHECKED	E.D.
DRAWN	A.S.
CHECKED	E.D.

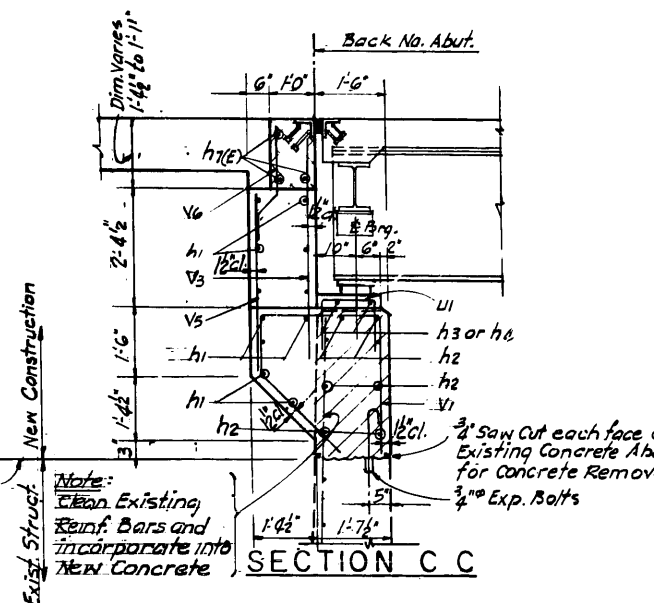
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CONSULTING ENGINEERS
223 West Jackson Blvd., Suite 703
Chicago, Illinois - 60604

**SOUTH ABUTMENT
HAWTHORNE BRIDGE**

FAUS. RTE. 3509 SHERIDAN ROAD
SECTION 112-BR
COOK COUNTY
STATION 46+50



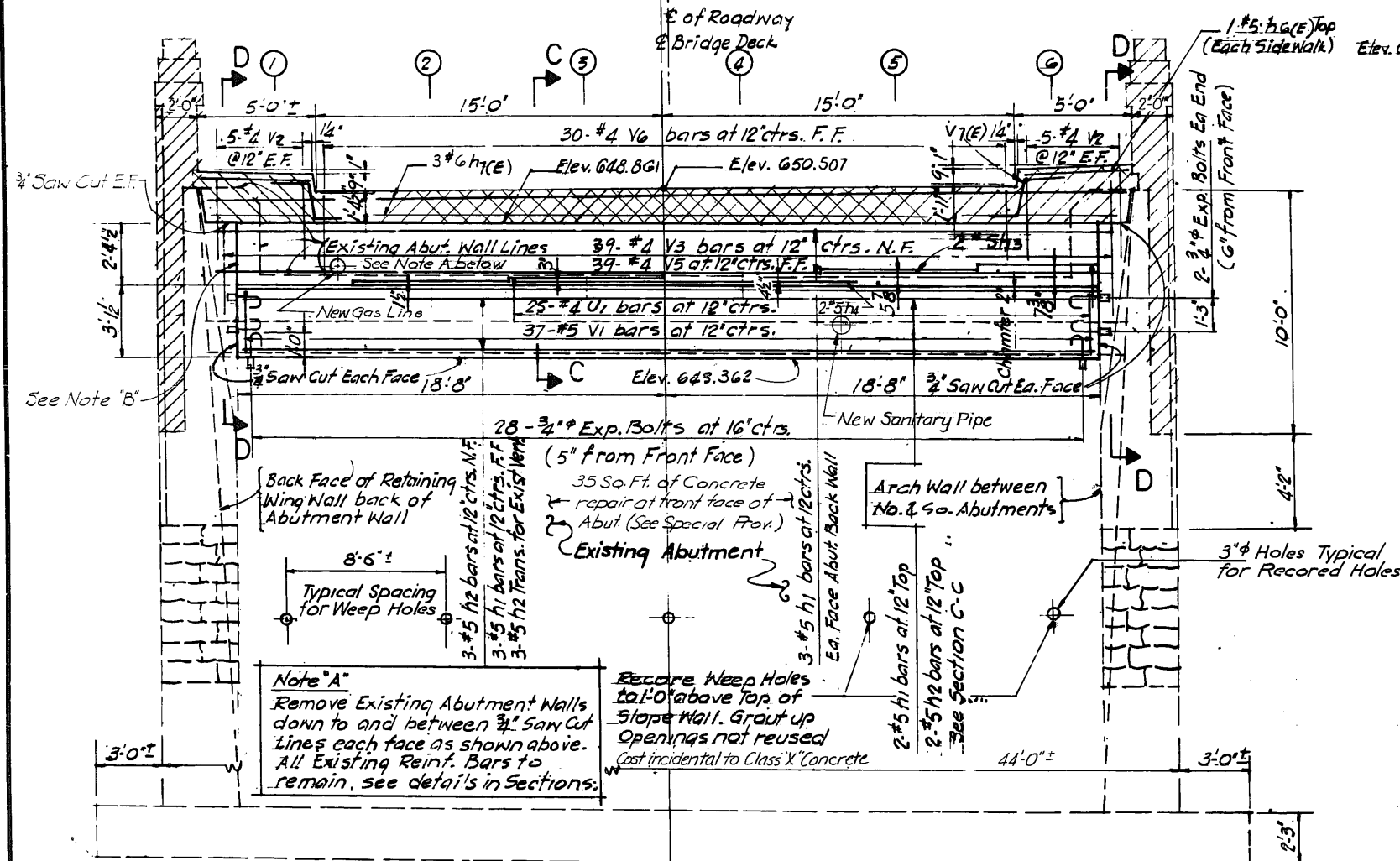
PLAN NORTH ABUTMENT



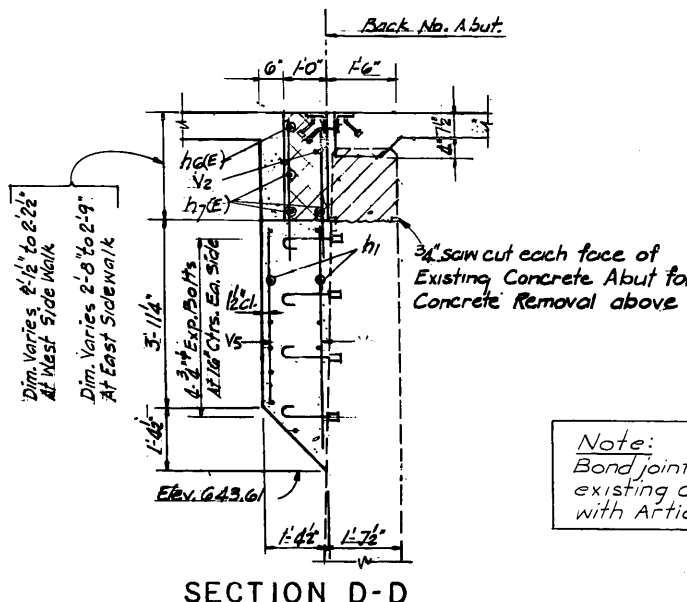
SECTION C-C

BILL OF MATERIAL NO. ABUT.

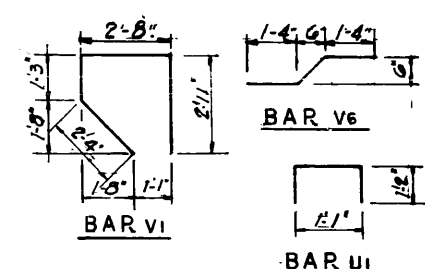
Bar No.	Size	Length	Shape
h1	#5	39'-0"	—
h2	#5	37'-0"	—
h3	#5	11'-6"	—
h4	#5	15'-4"	—
h7(E)	#5	4'-8"	—
h7(E)	#6	39'-0"	—
V1	#5	9'-2"	□
V2	#4	4'-0"	—
V3	#4	5'-1"	—
V5	#4	3'-8"	—
V6	#4	3'-4"	—
V7(E)	#4	5'-11"	—
U1	#4	3'-5"	□
Reinforcement	Lbs	1590	
Class X Concrete	Cu. Yds.	19.6	
Concrete Removal	Cu. Yds.	9.0	
2" Expansion Bolts	Each	40	
Structure Excavation	Cu. Yds.	391	
Porous Granular Embankment	Cu. Yds.	314	
Reinf. Epoxy Coated	Lbs	800	
Repair Conc. Structure	Sq. Ft.	35	



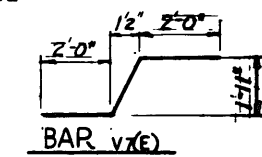
NORTH ABUTMENT ELEVATION



SECTION D-D



Note:
All bars noted thus (E) shall be Epoxy Coated.



Note:
Bond joint between new and existing concrete in accordance with Article 504.13 (a)(2).

DESIGNED	A.S.
CHECKED	E.D.
DRAWN	A.S.
CHECKED	E.D.

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**NORTH ABUTMENT
HAWTHORNE BRIDGE**

FA.U.S. RTE. 3509 SHERIDAN ROAD
SECTION 112-BR
COOK COUNTY
STATION 46+50