11-06-2020 LETTING ITEM 039

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	1
	ILLINOIS	CONTRACT NO. 72L86		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

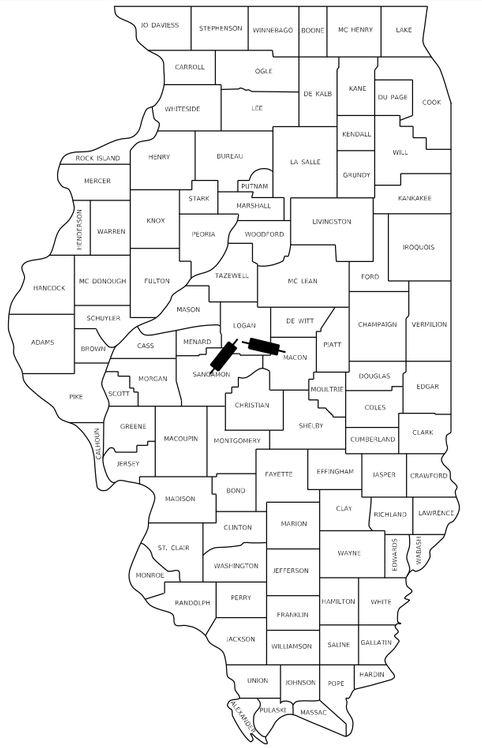
FOR INDEX OF SHEETS, SEE SHEET NO. 2

PROPOSED HIGHWAY PLANS

FAI 55, FAP 320 (I–55, IL 121)
SECTION (84–1–2, 134) BP
PROJECT NHPP–ZJ9M(800)
BRIDGE PAINTING
SANGAMON & LOGAN COUNTIES

C–96–083–20

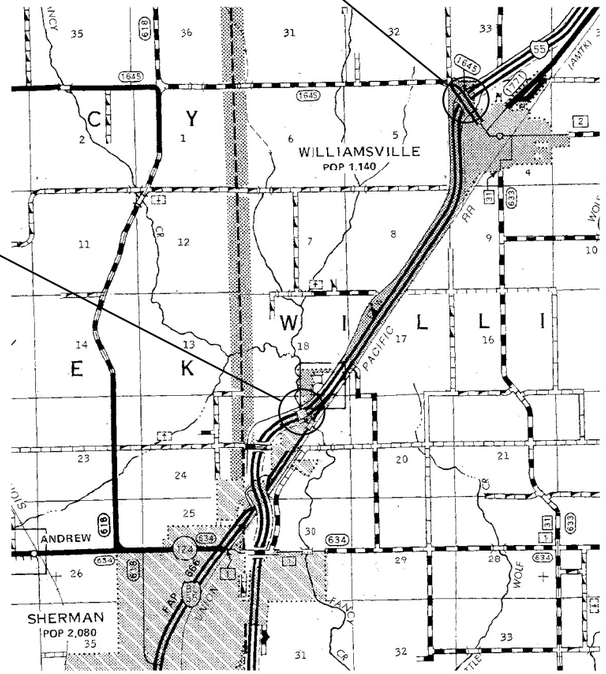
D-96-052-20



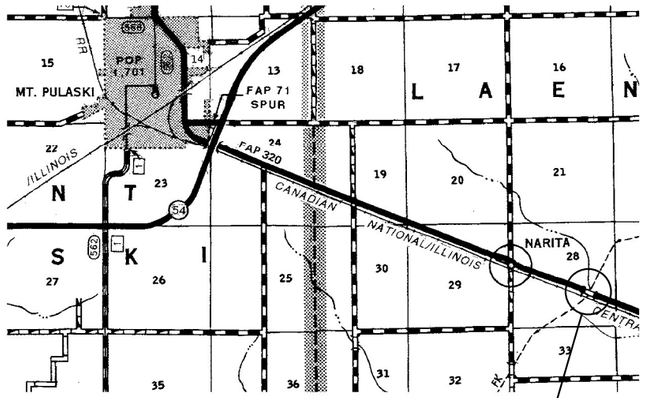
LOCATION OF SECTION INDICATED THUS: –

LOCATION #1
SN 084-0171
IL 123 OVER I-55
WILLIAMSVILLE INT.

LOCATIONS #2 & #3
SN 084-0022 & 0023
I-55 NB & SB OVER FANCY CR.
1 MI N SHERMAN INT.



SANGAMON COUNTY



LOGAN COUNTY

LOCATION #4
SN 054-0022
IL 121 OVER
N BRANCH LAKE FORK
3.9 MI E MT. PULASKI

N

100′ 200′ 300′ — 1″ = 100′
10′ 20′ 30′ — 1″ = 10′
50′ 100′ — 1″ = 50′
50′ 100′ — 1″ = 40′
50′ 100′ — 1″ = 30′
50′ 100′ — 1″ = 20′

FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS
1–800–892–0123
OR 811

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 12 20 20
REGIONAL ENGINEER
October 2, 2020
ENGINEER OF DESIGN AND ENVIRONMENT
October 2, 2020
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

BRIDGE MAINTENANCE ENGINEER: BRANDON DUDLEY – (217) 785–9290

GROSS LENGTH = x.xx FT. = x.xxx MILE
NET LENGTH = x.xx FT. = x.xxx MILE

CONTRACT NO. 72L86

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

INDEX OF SHEETS

HIGHWAY STANDARDS

000001-07
001006
701001-02
701006-05
701101-05
701106-02
701316-13
701400-09
701402-12
701411-09
701428-01
701446-10
701901-08

GENERAL NOTES:

1. WORK SHALL CONSIST OF BLASTING AND PAINTING STRUCTURAL STEEL AT LOCATIONS DESCRIBED IN THE SPECIAL PROVISIONS. CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISIONS FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES". ALL AREAS TO BE PAINTED SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING PER SSPC SP 10. ALL EXISTING STEEL CLEANED SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1 - OZ/E/U. THE COLOR OF THE FINAL FINISH COATS SHALL BE AS DESCRIBED IN THE SPECIAL PROVISIONS.

2 THE USE OF AIR MONITORS WILL BE REQUIRED AT LOCATIONS AS CALLED OUT IN THE SPECIAL PROVISIONS.

3. THE SSPC-QP-1 AND SSPC-QP2 PAINTING CONTRACTOR CERTIFICATIONS WILL BE REQUIRED.

4. CARE SHALL BE TAKEN NOT TO DAMAGE RUBBER BEARING OR JOINT COMPONENTS DURING BLASTING AND CLEANING OPERATIONS. ANY DAMAGE TO THESE COMPONENTS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. RUBBER COMPONENTS SHALL NOT BE PAINTED.

5. UPON COMPLETION OF PAINTING OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL DEBRIS FROM PIER OR ABUTMENT CAPS UPON WHICH PAINTING OPERATIONS TOOK PLACE. FINAL CLEANUP SHALL BE CONSIDERED INCIDENTAL TO THE PAINT PAY ITEM FOR THE RESPECTIVE LOCATION. THE ENGINEER SHALL HAVE THE RIGHT TO WITHOLD PAYMENT UNTIL SATISFACTORY CLEANUP IS ACHIEVED.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
DISTRICT 6

EXAMINED August 6 20 20
ENGINEER OF OPERATIONS

EXAMINED August 4 20 20
ENGINEER OF PROJECT IMPLEMENTATION

EXAMINED August 4 20 20
ENGINEER OF PROGRAM DEVELOPMENT

REV. - MS

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PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

INDEX OF SHEETS, STANDARDS, GENERAL NOTES, & SIGNATURES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	2
		CONTRACT NO. 72L86		
	ILLINOIS FED. AID PROJECT			

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	0-01374-6002 NHPP 90/10 SN 084-0171 0047-RURAL SANGAMON	0-01374-6003 NHPP 90/10 SN 084-0022 0047-URBAN SANGAMON	0-01374-6003 NHPP 90/10 SN 084-0023 0047-URBAN SANGAMON	0-01374-6004 NHPP 80/20 SN 054-0022 0047-RURAL LOGAN
67100100	MOBILIZATION	L SUM	1	0.25	0.25	0.25	0.25
70100100	TRAFFIC CONTROL AND PROTECTION, STANDARD 701316	EACH	1	0	0	0	1
70100207	TRAFFIC CONTROL AND PROTECTION, STANDARD 701402	EACH	3	2	0	1	0
70100420	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411	EACH	2	2	0	0	0
70100815	TRAFFIC CONTROL AND PROTECTION, STANDARD 701446	L SUM	1	1	0	0	0
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	1	0	0	0	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	6	0	0	0	6
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	60	30	0	15	15
70400100	TEMPORARY CONCRETE BARRIER	FOOT	1000	600	0	400	0
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	600	600	0	0	0
70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	3	2	0	1	0
70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2	0	0	0

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PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	3
		CONTRACT NO. 72L86		
		ILLINOIS	FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	0-01374-6002 NHPP 90/10 SN 084-0171 0047-URBAN SANGAMON	0-01374-6003 NHPP 90/10 SN 084-0022 0047-RURAL SANGAMON	0-01374-6003 NHPP 90/10 SN 084-0023 0047-RURAL SANGAMON	0-01374-6004 NHPP 80/20 SN 054-0022 0047-RURAL LOGAN
X5060604	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 4	L SUM	1	0	0	0	1
Z0007101	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	0	0	0
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	0	1	0	0
Z0007103	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 3	L SUM	1	0	0	1	0
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	0	0	0
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	0	1	0	0
Z0010503	CLEANING AND PAINTING STEEL BRIDGE NO. 3	L SUM	1	0	0	1	0
Z0010504	CLEANING AND PAINTING STEEL BRIDGE NO. 4	L SUM	1	0	0	0	1

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

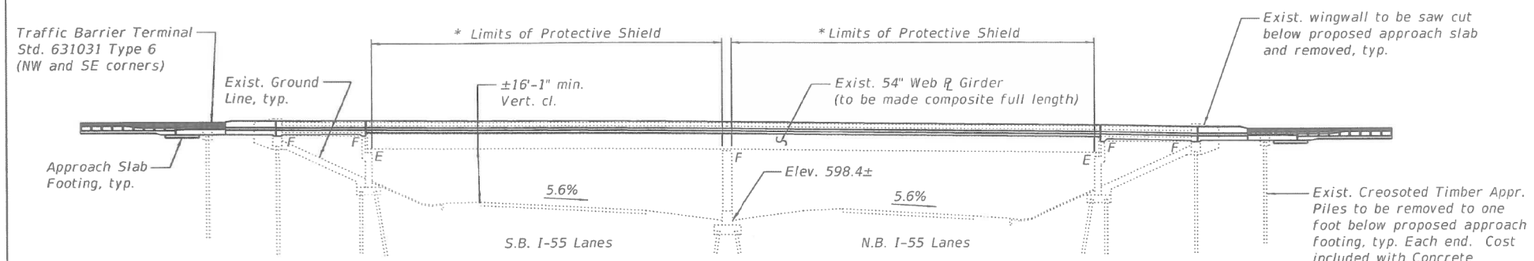
SCALE: | SHEET OF SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	4
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

Bench Mark: Chiseled "□" on southeast corner of concrete handrail of SN 084-0171. Elev. 627.74.

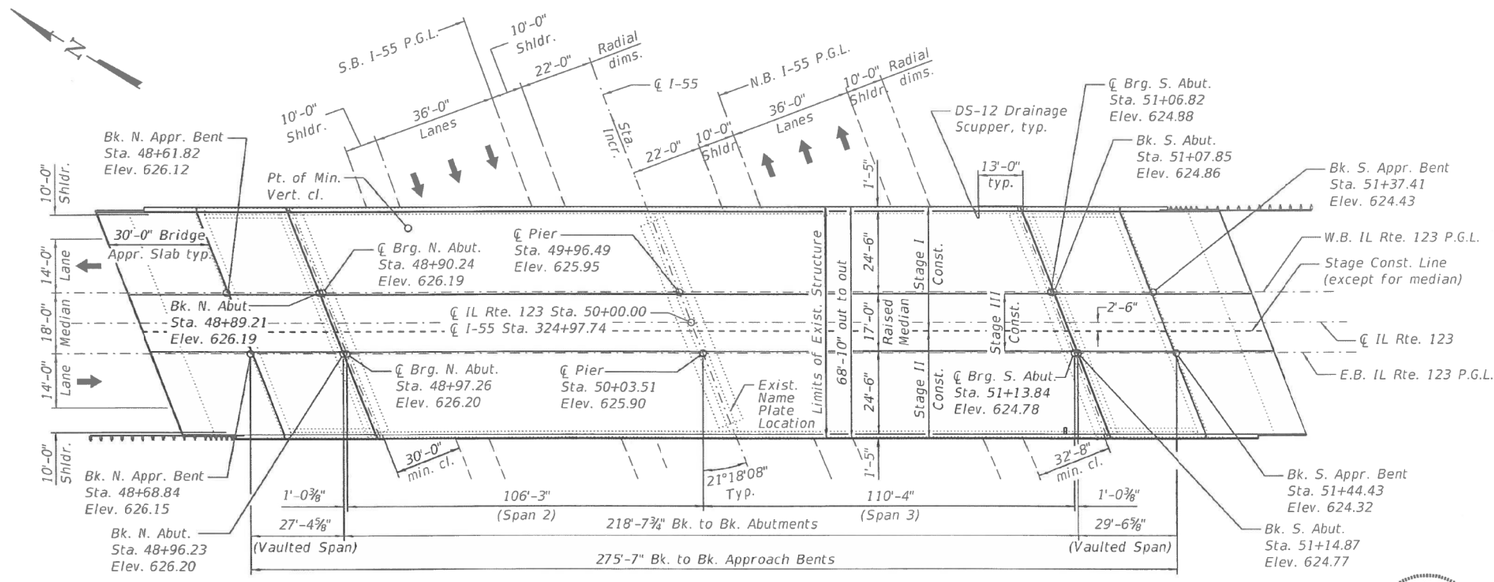
Existing Structure: S.N. 084-0171, built in 1974 as FAI Route 55, Section 84-1HB at Station 324+97.95. The structure is a two span continuous steel girder bridge composite in positive moment regions, supported on sand-filled vaulted abutments and a multi-column pier. 275'-7" back to back approach bents and 68'-0" out to out deck. Concrete deck and slab over vaulted abutment to be removed and replaced using Stage Construction, while maintaining one lane of traffic in each direction at all times.

No Salvage.



ELEVATION

* Transverse limit shall be out to out of superstructure.



PLAN

SCOPE OF WORK

1. Remove and replace existing concrete deck utilizing stage construction, while providing protective shield over live traffic.
2. Provide new expansion joints at abutments.
3. Make new deck composite full length.
4. Remove and replace each vaulted span slab.
5. Remove approach pavement and provide bridge approach slabs.
6. Perform concrete repair at each abutment and pier as required.
7. Repair damaged sections of concrete slope walls as required.
8. Raise existing pier crash wall to 5'-0" above ground elevation.
9. Remove and replace existing approach guardrails.
10. Clean and paint existing structural steel under separate "Paint Only" contract.

INDEX OF SHEETS

DESIGN STRESSES

FIELD UNITS (New Construction)

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)

FIELD UNITS (Exist. Construction)

f'c = 3,000 psi (Deck Slab Spans 2 & 3)
f'c = 3,500 psi (All other concrete)
fy = 36,000 psi (Reinforcement)
fy = 36,000 psi (Structural Steel)

LOCATION SKETCH

DESIGN SPECIFICATIONS

(New Construction)

2002 AASHTO Standard Specifications for Highway Bridges

LOADING HS20-44

(New Construction)

Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.047g
Site Coefficient (S) = 1.0

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

ENGINEER OF BRIDGES AND STRUCTURES

LICENSED STRUCTURAL ENGINEER
MICHAEL T. HALEY
81-5991
CHATHAM
STATE OF ILLINOIS

Michael T. Haley 8-16-2019
Michael T. Haley — Date
Licensed Structural Engineer
State of Illinois No. 81-5991
Expires 11/30/2020

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 123 OVER I-55
F.A.I. RTE. 55 - SEC. (84-1)D, (150)RS-2
SANGAMON COUNTY
STATION 324+97.74
STRUCTURE NO. 084-0171

LIN ENGINEERING, LTD. Consulting Engineers Springfield Illinois	USER NAME =	DESIGNED - HZT	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - DAS	REVISED -
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 084-0171
SHEET 1 OF 26 SHEETS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	(84-1)D, (150)RS-2	SANGAMON	63	38
		CONTRACT NO. 72K07		
	ILLINOIS	FED. AID PROJECT		

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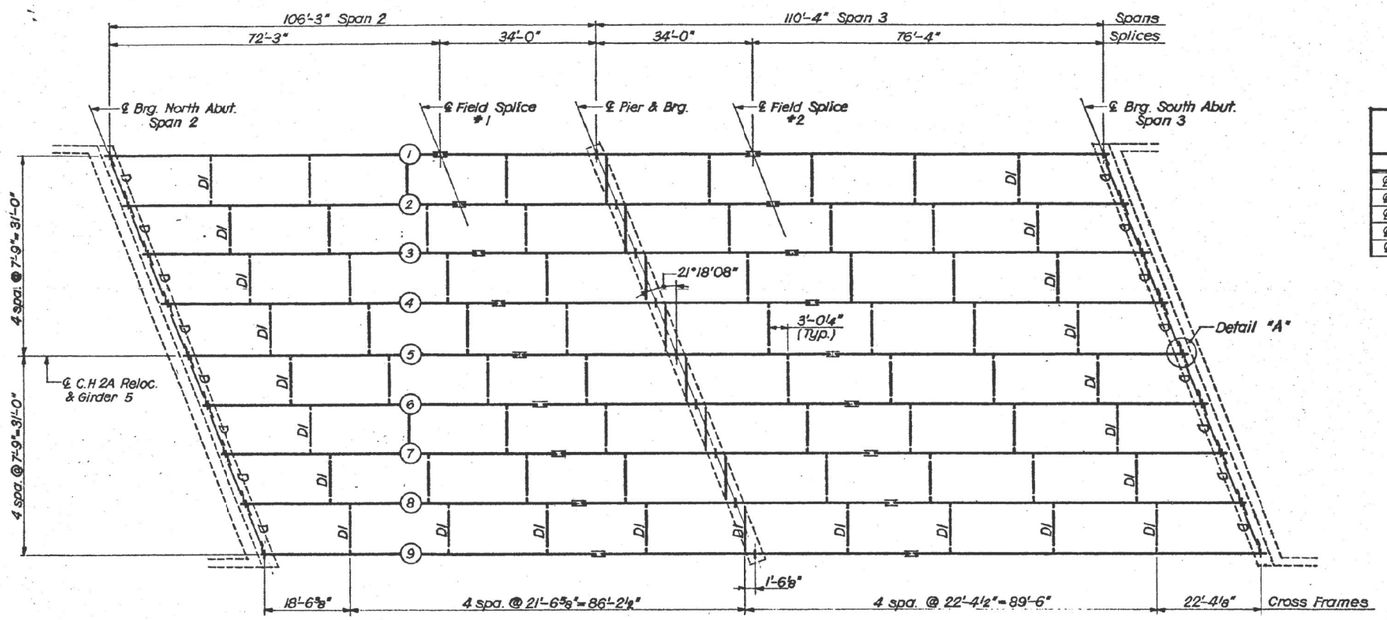
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0171
(FOR INFORMATION ONLY)

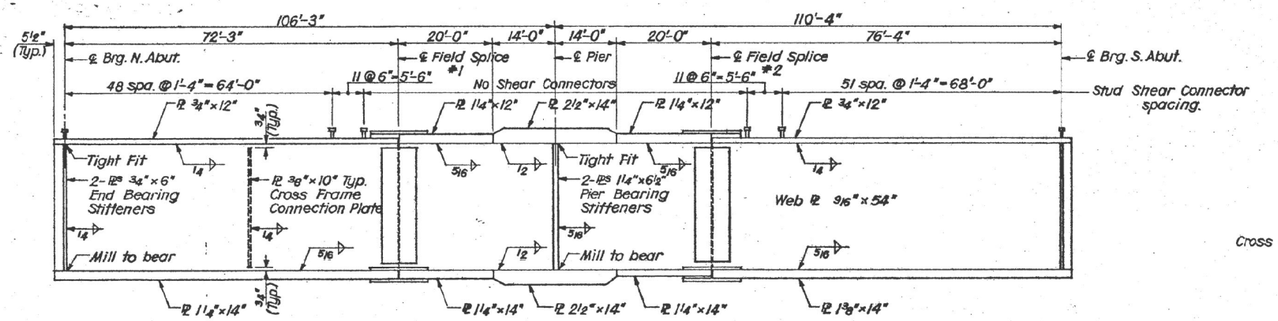
SCALE: | SHEET 1 OF 4 SHEETS | STA. | TO STA.

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	5
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RT. 55	84-1HB	SANGAMON	187	93
FED. ROAD DIV. NO. 7		ILLINOIS	PROJECT	



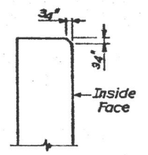
FRAMING PLAN



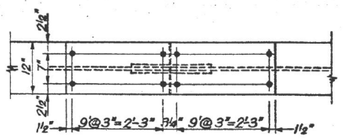
GIRDER ELEVATION

TOP OF GIRDER WEB ELEVATION FOR FABRICATION
(DEFLECTION NOT INCLUDED)

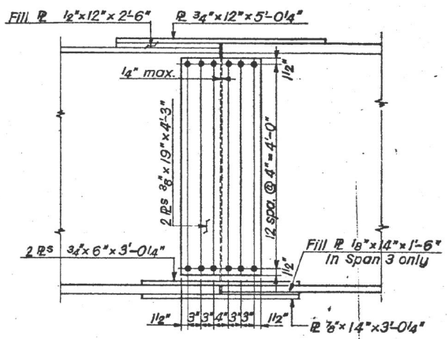
Location	Girder 1	Girder 2	Girder 3	Girder 4	Girder 5	Girder 6	Girder 7	Girder 8	Girder 9
℄ Brg. N. Abut.	625.331	625.456	625.581	625.706	625.831	625.716	625.602	625.477	625.361
℄ Splice #1	625.186	625.294	625.406	625.517	625.629	625.500	625.360	625.233	625.099
℄ Brg. Pier	625.001	625.105	625.209	625.313	625.418	625.282	625.136	625.001	624.855
℄ Splice #2	624.818	624.915	625.013	625.109	625.207	625.064	624.910	624.769	624.621
℄ Brg. S. Abut.	624.135	624.219	624.302	624.375	624.458	624.292	624.135	623.969	623.802



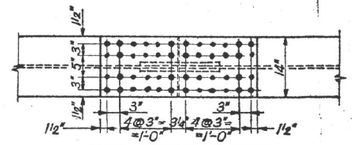
TYP. STIFFENER CUT



PLAN TOP FLANGE

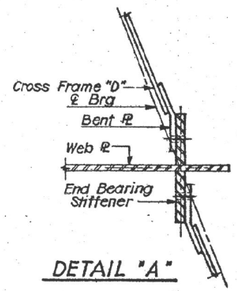


ELEVATION



PLAN BOTTOM FLANGE

FIELD SPLICE #1 & #2
(All connections ⅞" ϕ H.S. Bolts)



DETAIL "A"

DESIGNED BY H.N.
DRAWN BY B.B.
CHECKED BY H.N.

STATE OF ILLINOIS

FRAMING PLAN

C.H. 2A RELOCATED OVER F.A.I. RT. 55

STATION 324+97.95

F.A.I. RT. 55 SANGAMON COUNTY SECTION 84-1HB

H. W. LOCHNER, INC.
ENGINEERS
CHICAGO, ILLINOIS

SHEET 6 OF 12

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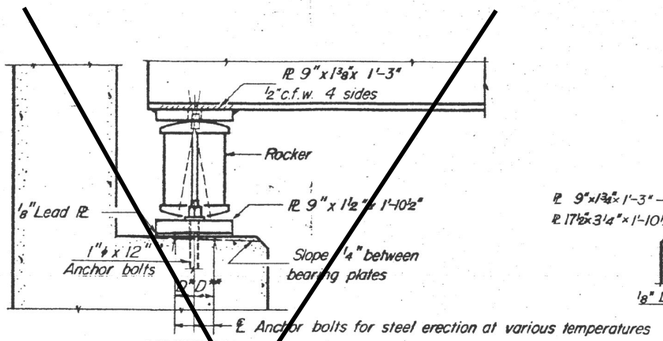
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0171
(FOR INFORMATION ONLY)

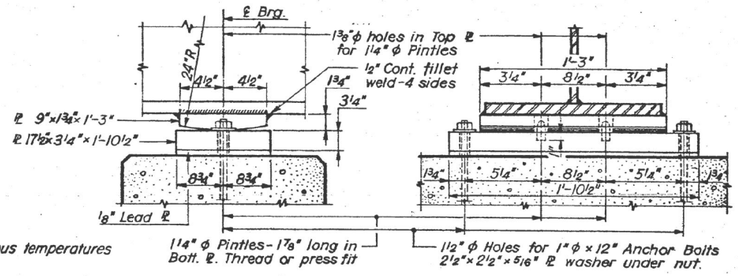
SCALE: | SHEET 2 OF 4 SHEETS | STA. | TO STA.

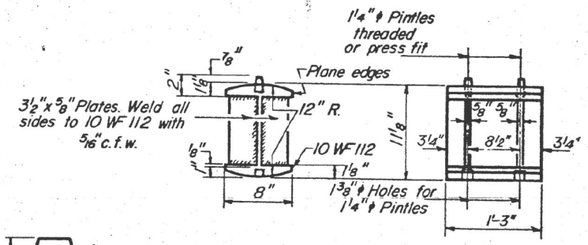
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	6
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. RT. 55	84-IHB	SANGAMON	187	94
FED. ROAD DIV. NO. 7	ILLINOIS	PROJECT		

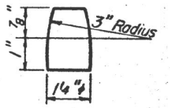


SECTION

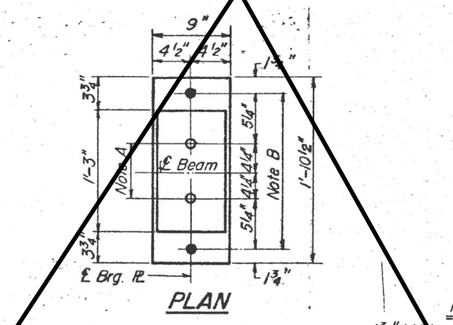




ROCKER



PINTLE

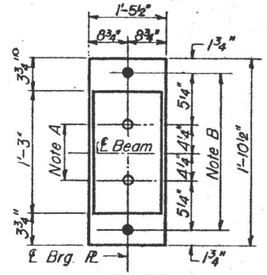


PLAN

AT ABUTMENTS

NOTE A

1 3/8"ϕ Holes – 1" deep in top PL. for pintles. Thread or press fit pintles into bottom PL.



PLAN

AT PIER

NOTE B

1 1/2"ϕ Holes for 1"ϕ anchor bolts. 2 1/2" x 2 1/2" x 5/16" PL. Washers under nut.

INTERIOR GIRDER MOMENT TABLE

	0.4 Sp.2	Pier	0.6 Sp.3
Is (in⁴)	26495	63283	27484
Ic (in⁴)	67860		71254
Ss (in³)	1100	2145	1170
Sc (in³)	1533		1626
DL (k)	1.052	1.452	1.052
M DL (ik)	666	2462	777
fs DL (ksi)	7.27	13.77	7.97
SIDL (k)	0.400		0.400
Ms IDL (ik)	317		359
M LL (ik)	951	891	988
M imp (ik)	206	191	210
TOTAL (ik)	1474	1082	1557
fs LL (ksi)	11.54	6.05	11.49
fs TOTAL (ksi)	18.81	19.82	19.46
VR + (k)	60.9		60.3

INTERIOR GIRDER REACTION TABLE

	N. Abut.	Pier	S. Abut.
R DL (k)	53.9	202.5	57.7
R LL (k)	45.3	78.9	45.5
R imp. (k)	9.8	16.9	9.7
R TOTAL (k)	109.0	298.3	112.9

Is and Ss are the moment of interia and section modulus of the steel section.

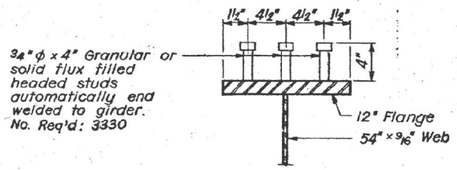
Ic and Sc are the moment of interia and section modulus of the composite section used in computing fs.

VR is the maximum LL + impact shear range in span.

NOTES ON SETTING OF ANCHOR BOLTS AT EXP. BRGS.

a) D* (Side of brg. away from fixed brg.)
D* = 1/8" per each 100' of expansion for every 15° fall below the normal temp. of 50°F.
D** (Side of brg. toward fixed brg.)
D** = 1/8" per each 100' of expansion for every 15° rise above the normal temp. of 50°F.

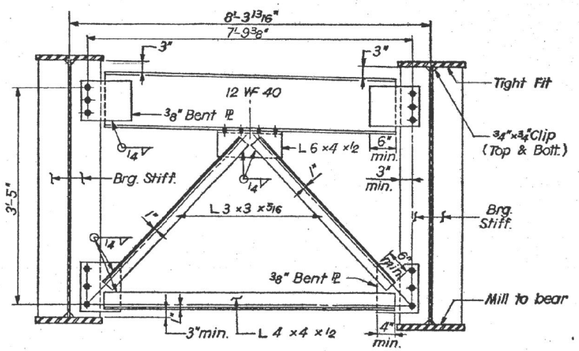
b) After beams have been erected and dimensions D* or D** determined, holes shall be drilled and anchor bolts shall be grouted in place. All fixed anchor bolts may be built into the masonry.



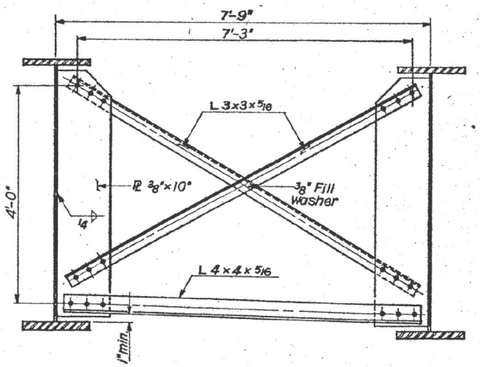
SHEAR CONNECTOR DETAIL

DESIGNED BY H.N.
DRAWN BY B.B.
CHECKED BY H.N.

BEARING ASSEMBLY DETAIL



END CROSS FRAME-D



INTERIOR CROSS FRAME-DI

STATE OF ILLINOIS

BEARING DETAILS

C.H. 2A RELOCATED OVER F.A.I. RT. 55

STATION 324+97.95

F.A.I. RT. 55 SANGAMON COUNTY SECTION 84-IHB

H. W. LOCHNER, INC. ENGINEERS CHICAGO, ILLINOIS

SHEET 7 OF 12

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	DRAWN -	REVISED -
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PLOT DATE = 8/13/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

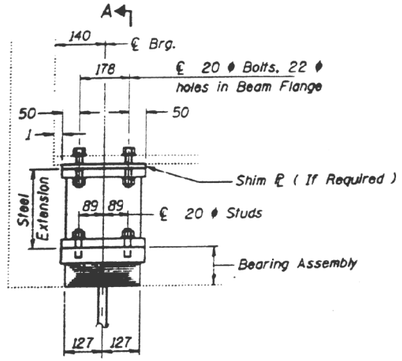
EXISTING BRIDGE PLANS, SN 084-0171
(FOR INFORMATION ONLY)

SCALE: | SHEET 3 OF 4 SHEETS | STA. | TO STA.

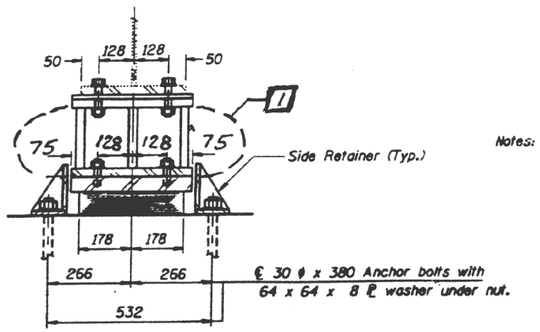
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	7
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	84-1-2RS	SANGAMON	91	71
STA.		TO STA.		
FED. ROAD DIST. NO. 5	ILLINOIS	FED. AID PROJECT		

SN 084-0171
SHEET 10 OF 15



ELEVATION AT SOUTH ABUTMENT
(NORTH ABUT. SIMILAR)



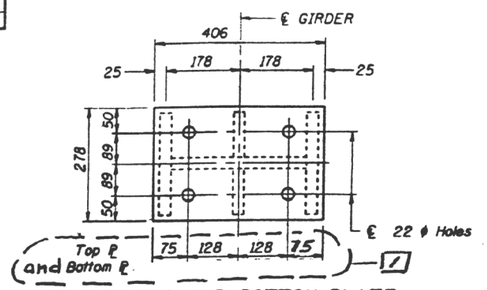
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

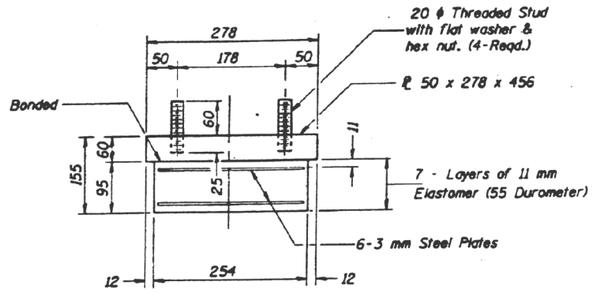
GIRDER REACTIONS

		N. ABUT	S. ABUT
R℄	(KN)	240	257
R℄	(KN)	202	202
Imp.	(KN)	44	43
R (Total)	(KN)	485	502

Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost is incidental to "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel". See sheet 11 for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.



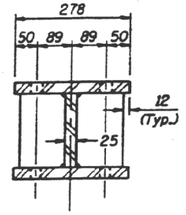
PLAN TOP AND BOTTOM PLATE



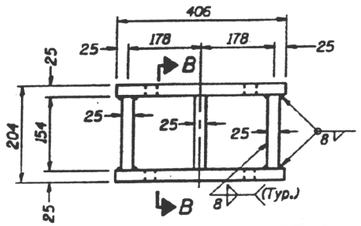
BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

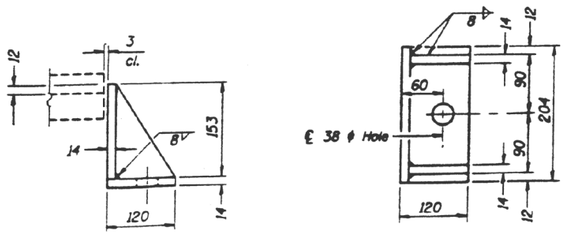
: Bearing replacement at the North and South abutments only.



SECTION B-B

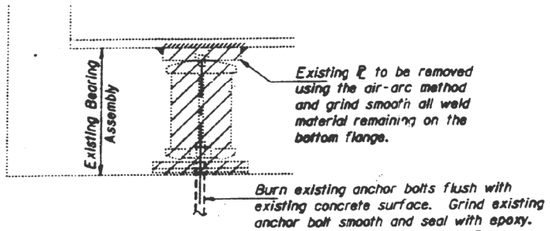


STEEL EXTENSION DETAIL



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



EXISTING BEARING REMOVAL DETAIL

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18
Jack and Remove Existing Bearings	Each	18

NOTE:
UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS.

NOT TO SCALE

REVISIONS	
NAME	DATE
EC	04/02/97
EC	05/04/97

ILLINOIS DEPARTMENT OF TRANSPORTATION
BEARING REPLACEMENT DETAILS
S.N. 084-0171
CH 2A OVER F.A.I.-55
SANGAMON COUNTY

DRAWN BY CAD-RG
DATE 03/05/97
CHECKED BY

PROJECT: ms1993 FILE:ms1993sol.DGN

MODEL: Default
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	DRAWN -	REVISED -	
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PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0171
(FOR INFORMATION ONLY)

SCALE: | SHEET 4 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	8
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

SHEET 1 OF 29	F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	55	84-2BR-2	SANGAMON	218	120
	FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

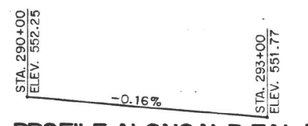
BENCHMARK:

CHISELED "L" ON NORTHEAST CORNER OF NORTHWEST WINGWALL OF NORTHBOUND BRIDGE, STA. 290+39, ELEVATION = 552.67

DESCRIPTION OF EXISTING STRUCTURE:

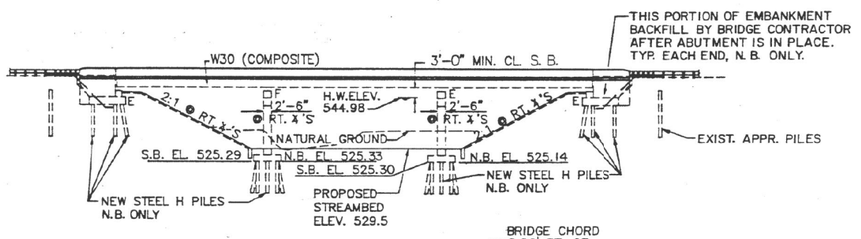
STA. 291+20.00, F.A.I. 55. BUILT IN 1962 AS SECTION 84-2B-1. STRUCTURE NUMBER 084-0022(N.B.) REHABILITATED IN 1976 WITH PARTIAL-DEPTH DECK REPAIRS, WATERPROOFING MEMBRANE SYSTEM, AND SEALED EXPANSION JOINTS. SUPERSTRUCTURE CAST IN PLACE CONCRETE DECK ON WIDE FLANGE STEEL BEAMS, SUBSTRUCTURE PILE BENT ABUTMENTS AND SOLID REINFORCED CONCRETE PIERS. HORIZONTAL CLEARANCE 30.1 FEET. TOTAL LENGTH 150.5 FEET BACK TO BACK OF ABUTMENTS. DECK TO BE REMOVED AND STRUCTURE WIDENED, REUSING STRUCTURAL STEEL. TRAFFIC TO BE MAINTAINED UTILIZING MEDIAN CROSSOVER DETOURS.
SALVAGE: NONE

STA. 291+20.00, F.A.I. 55. BUILT IN 1962 AS SECTION 84-2B-1. STRUCTURE NUMBER 084-0023(S.B.) RECONSTRUCTED IN 1974 TO WIDEN THE STRUCTURE TO THREE LANES, AND TO ADD A WATERPROOFING MEMBRANE SYSTEM, CLASS I WEARING SURFACE, AND SEALED EXPANSION JOINTS. SUPERSTRUCTURE CAST IN PLACE CONCRETE DECK ON WIDE FLANGE BEAMS, SUBSTRUCTURE PILE BENT ABUTMENTS AND SOLID REINFORCED CONCRETE PIERS. HORIZONTAL CLEARANCE 54.5 FEET. TOTAL LENGTH 150.6 FEET BACK TO BACK OF ABUTMENTS. DECK TO BE REMOVED AND WIDENED, REUSING STRUCTURAL STEEL. TRAFFIC TO BE MAINTAINED UTILIZING STAGE CONSTRUCTION.
SALVAGE: THE ALUMINUM HANDRAIL ON THE S.B. BRIDGE AND THE INSIDE STEEL GUARDRAIL ON THE N.B. BRIDGE. THE ORIGINAL STEEL RAILING ON THE OUTSIDE OF THE STEEL GUARDRAIL ON N.B. BRIDGE SHALL NOT BE SALVAGED.

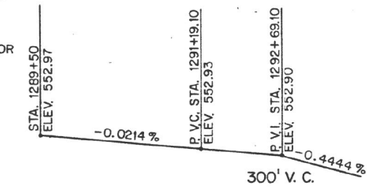


PROFILE ALONG N. B. FAI-55

PROFILE GRADE IS AT MEDIAN EDGE OF ROADWAY PAVEMENT

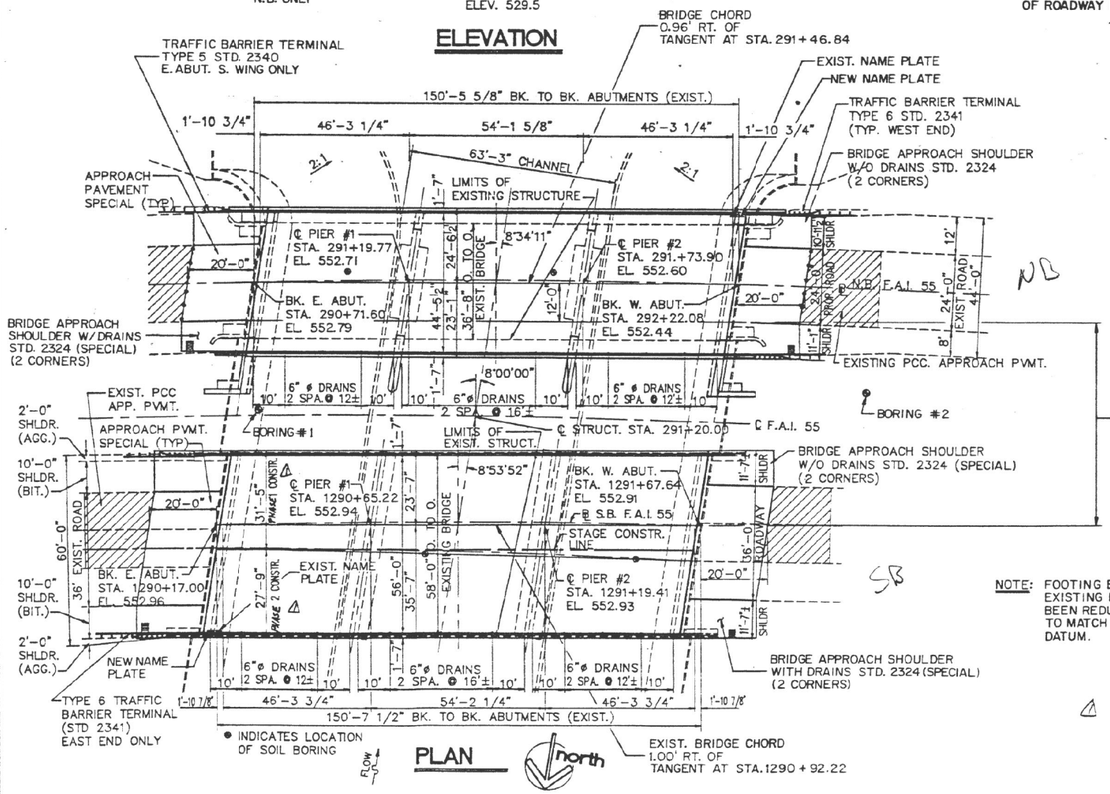


ELEVATION



PROFILE ALONG S. B. FAI-55

PROFILE GRADE IS AT MEDIAN EDGE OF ROADWAY PAVEMENT



PLAN

NOTE: FOOTING ELEVATIONS FROM EXISTING BRIDGE PLANS HAVE BEEN REDUCED BY 0.22 FEET TO MATCH NEW BENCH MARK DATUM.

NOTES:
ALL WORK ON NORTHBOUND STRUCTURE SHALL BE PERFORMED UNDER **STAGE 2**.
ALL WORK ON SOUTHBOUND STRUCTURE SHALL BE PERFORMED IN STAGE CONSTRUCTION UNDER **STAGE 1, PHASE 1 AND 2**.

DESIGN SPECIFICATIONS

1989 AASHTO, 1990 AND 1991 INTERIM, SEISMIC RETROFITTING GUIDELINES FOR HIGHWAY BRIDGES (REPORT NO. FHWA/RD-83/007)

LOADING HS 20-44, AND ALTERNATE LOADING

ALLOW 25#/SQ. FT. FOR FUTURE WEARING SURFACE

DESIGN STRESSES

f'c = 3,500 psi (CLASS X CONCRETE)
fy = 60,000 psi (REINFORCEMENT)
fs = 20,000 psi (M270 GR. 36 NEW STRUCTURAL STEEL)
fs = 18,000 & 20,000 psi (EXISTING STRUCTURAL STEEL)

CURVE DATA

℄ S.B.
Δ = 35°49'59"
D = 2°01'52"
T = 912.03'
L = 1764.21'
R = 2820.91'
P.C. STA. 1274+71.23
P.I. STA. 1283+83.26
P.T. STA. 1292+35.44 ℄ S.B. = 32' RT. OF STA. 292+58.71 ℄ SURVEY
E = 141.16'
EXIST. S.E. = 0.052' PER FOOT OF WIDTH, IN 250' FROM STA. 1273.05 TO STA. 1275+55, AND VARIES FROM 0.052'/FT. TO 0.032'/FT. IN 100' FROM STA. 1289+17.5 TO STA. 1290+17.5"
EXIST. S.E. = 0.032' PER FOOT OF WIDTH, IN 196' CENTERED ABOUT P.T.
PROP. S.E. = 0.052' PER FOOT OF WIDTH, ATTAINED IN 250' FROM STA. 1273+05 TO STA. 1275+55 AND FROM STA. 1291+68.44 (℄ S.B.) TO STA. 294+41.69 (67' ON CURVE, 183' OFF CURVE)

STATION EQUATIONS
P.T. STA. 1292+35.44 ℄ S.B. = 12' LEFT OF STA. 292+36.15 ℄ S.B. BACK (OUTSIDE TWO LANES). NOTE: STA. 292+36.15 BACK = STA. 292+58.69 AHEAD.

STA. 292+35.81 ℄ S.B. BACK (OUTSIDE TWO LANES) = STA. 292+58.35 ℄ S.B. AHEAD (OUTSIDE TWO LANES)

℄ N.B.
Δ = 35°49'59"
D = 1°56'08"(CHORD DEF.)
T = 957.10'
L = 1851.30'
R = 2960.32'
P.C. STA. 274+29.59
P.I. STA. 283+86.69
P.T. STA. 292+80.89 ℄ N.B. = STA. 292+58.35 ℄ SURVEY
E = 150.88'
EXIST. S.E. = 0.032' PER FOOT WIDTH, ATTAINED IN 183', 1/2 ON CURVE, 1/2 OFF CURVE
PROP. S.E. = 0.054' PER FOOT WIDTH, ATTAINED IN 285', 1/3 ON CURVE, 2/3 OFF CURVE

℄ SURVEY
Δ = 35°49'59"
D = 2°00'00" (CHORD DEF.)
T = 926.26'
L = 1791.65'
R = 2864.93'
P.C. STA. 274+29.59
P.I. STA. 283+55.85
P.T. STA. 292+21.24
E = 148.03'

WATERWAY INFORMATION

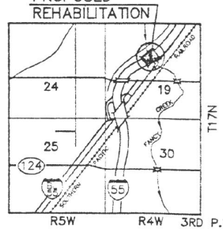
DRAINAGE AREA = 35.0 SQ. MI. LOW GRADE ELEV. = 550.5 ℄ STA. 302+00 (EXIST.)

FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ. FT. EXIST.	OPENING SQ. FT. PROP.	NAT. H.W.E.	HEAD – FT. EXIST.	HEAD – FT. PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
DESIGN	50	4070	1270	1360	544.5	0.5	0.5	545.0	545.0
BASE	100	4690	1450	1550	546.0	0.5	0.5	546.5	546.5
OVERTOPPING			———	———	———	———	———	———	———
MAX. CALC.	500	6190	1725	1840	549.2	0.6	0.6	549.8	549.8

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
J. M. Tyawoth
Licensed Structural Engineer
3241

ROBERT B. QUISENBERRY 81-4147 REGISTERED STRUCTURAL ENGINEER STATE OF ILLINOIS
Robert B. Quisenberry
DATE: 6/2/92
EXP: 11/30/92

PROPOSED REHABILITATION



LOCATION MAP

Johnson, Depp & Quisenberry
Consulting Engineers Springfield, Illinois

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN
I-55 OVER FANCY CREEK
F. A. I. RTE. 55 SECTION 84-2BR-2
SANGAMON COUNTY
STATION 291+20.00
STRUCTURE NOS. 084-0022, 084-0023

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/13/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0022 & 0023
(FOR INFORMATION ONLY)

SCALE: | SHEET 1 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	9
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

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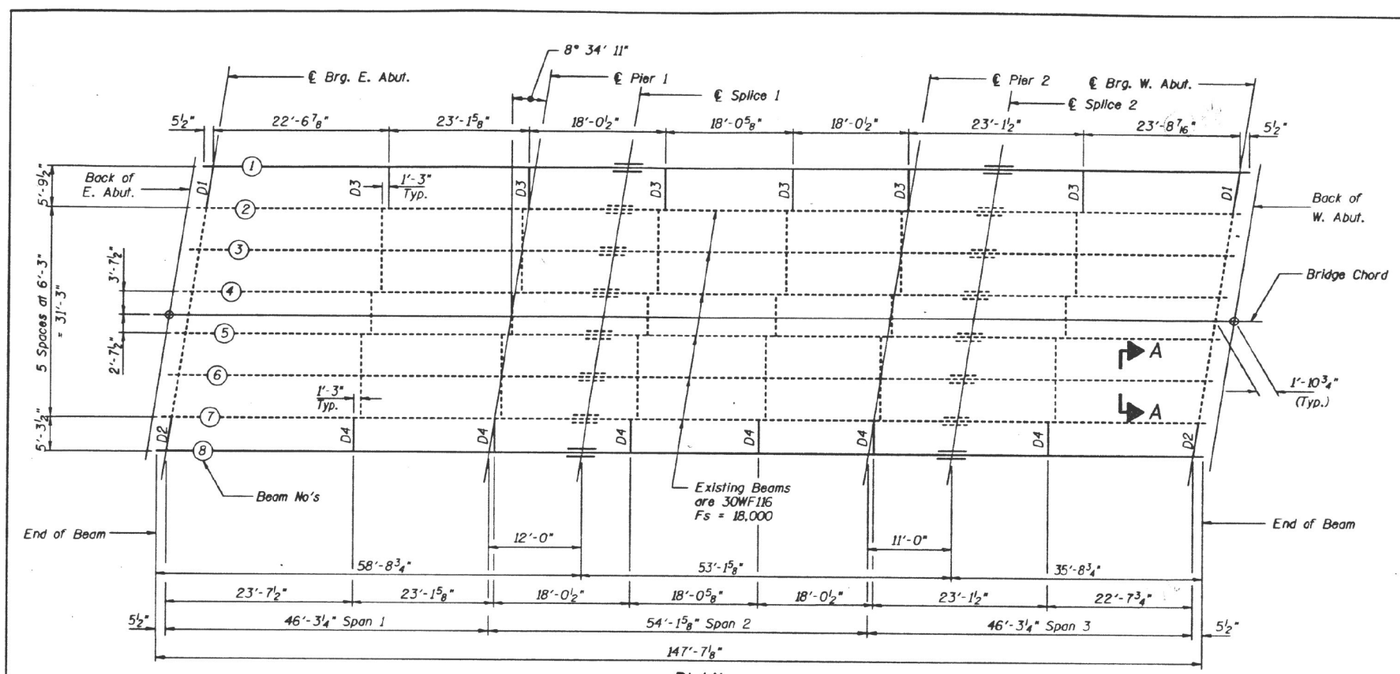
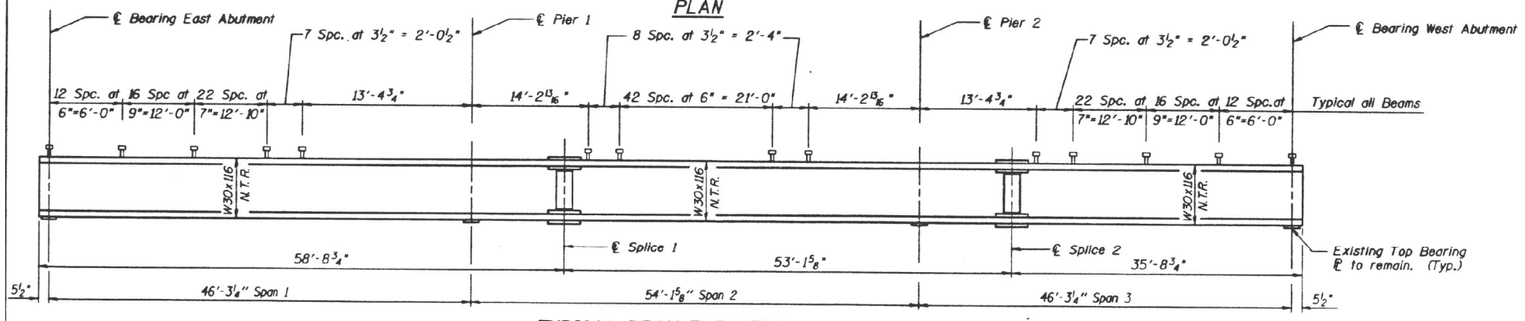
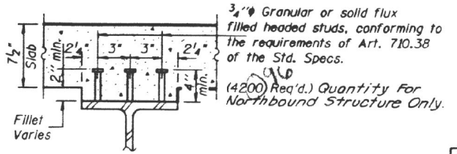
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	84-2BR-2	SANGAMON	218	132
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJ.		



PLAN



TYPICAL BEAM ELEVATION

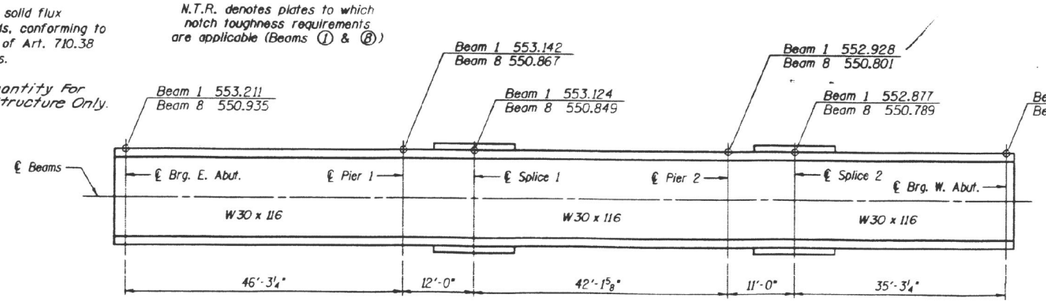


¾"ø Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs.

(4200) Req'd.) Quantity For Northbound Structure Only.

SECTION A-A
(Typ. for all Beams)

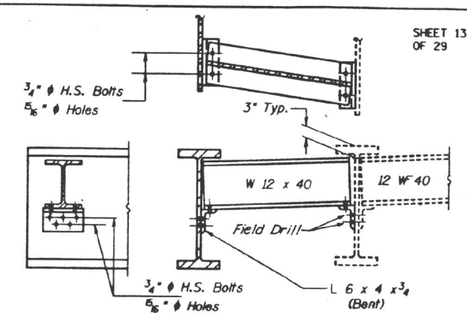
N.T.R. denotes plates to which notch toughness requirements are applicable (Beams Ⓘ & Ⓑ)



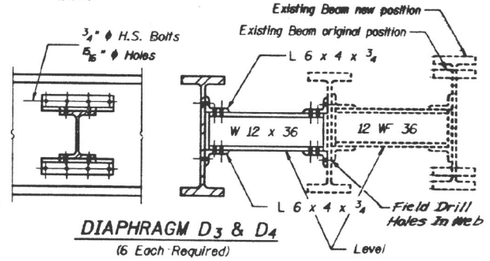
ELEVATION OF TOP OF BEAMS *

* For Fabrication only

Notes:
For top of beam elevations after jacking, dimensions beams are to be raised, recommended jacking sequence and temporary support system, see Sheet #3 of 29.
For Table of Mom., Stresses and Reactions, etc. for new and existing beams, see Sheet #16 of 29.
All exposed and unused diaphragm bolt holes are to be filled with ¾"ø High Strength Bolts. Cost Included To Structural Steel.



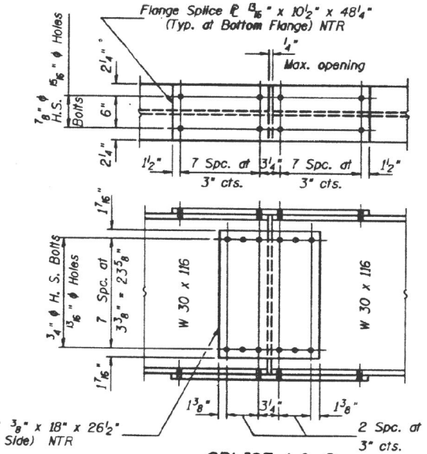
DIAPHRAGM D1 & D2
(2 Each Required)



NOTE: Existing Diaphragms To Be Dismantled, Repositioned And 13/16" Ø Holes Redrilled, Using Angle As Template To Accommodate Increase In Superelevation. Cost Incidental To Jack & Remove Existing Bearings.

Replace Bolts With ¾"Ø H.S. Bolts. Cost Included In Structural Steel.

DIAPHRAGM D3 & D4
(6 Each Required)



SPLICE 1 & 2
Beams Ⓘ or Ⓑ
(4 Required)

DESIGNED	PLH
CHECKED	RBO
DRAWN	P. Ray
CHECKED	RBO

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE N.B. I-55
I-55 OVER FANCY CREEK
F.A.I. RTE. 55 SECTION 84-2BR-2
SANGAMON COUNTY
STATION 291+20.00
STRUCTURE NOS. 084-0022, 084-0023

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PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

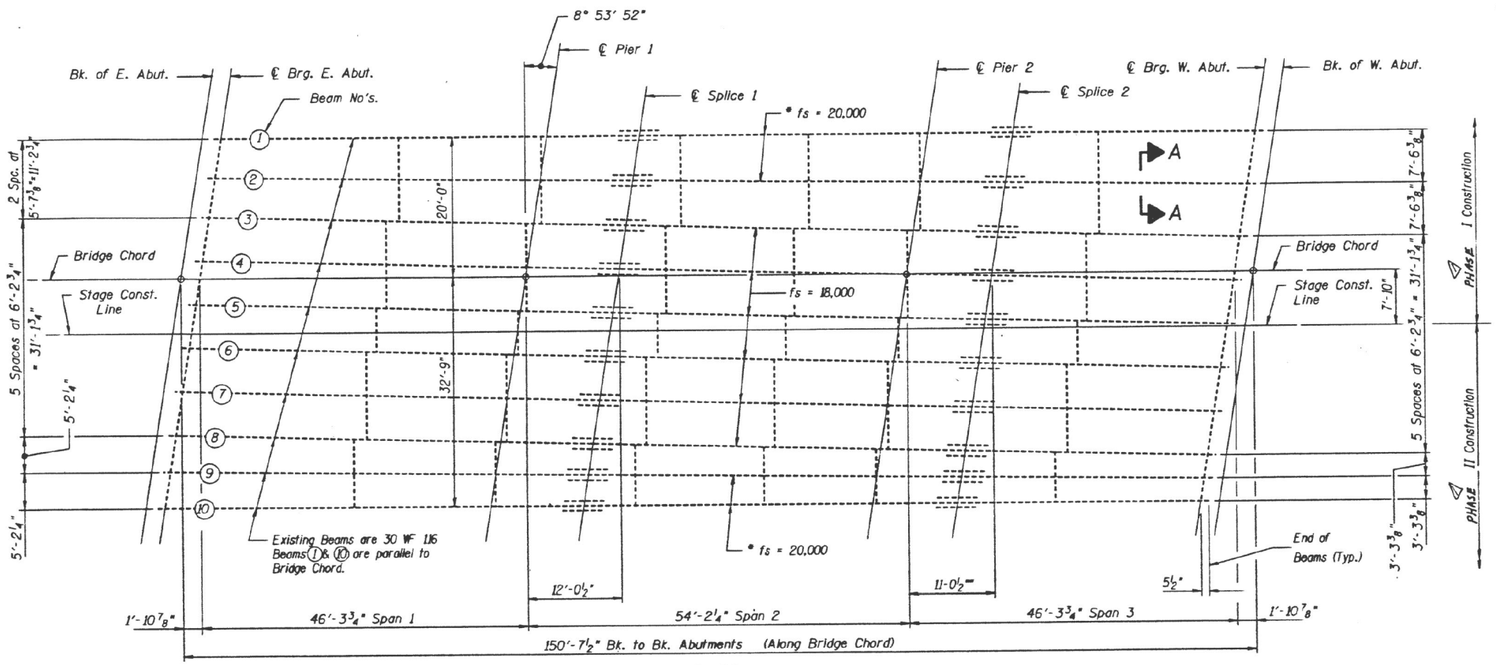
EXISTING BRIDGE PLANS, SN 084-0022 & 0023
(FOR INFORMATION ONLY)

SCALE: | SHEET 2 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	10
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

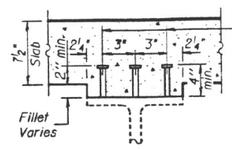
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	84-2BR-2	SANGAMON	218	135
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJ.		

.153" F.i.i. 1-0



PLAN

* Beams added 1974



SECTION A-A

¾" ϕ Granular or solid flux filled headed studs, conforming to the requirements of Art. 710.38 of the Std. Specs. Automatically end welded to flange. (5250 Req'd.) S.B. Structure only

BEAM REACTIONS (KIPS)

SPANS 1, 2 & 3

LD. \ LOC.	E. ABUT.	PIER 1	PIER 2	W. ABUT.
R Dead Ld.	17.2	53.5	53.5	17.2
R Live Ld.	35.6	38.1	38.1	35.6
Impact	10.3	11.0	11.0	10.3
R Total	63.1	102.6	102.6	63.1

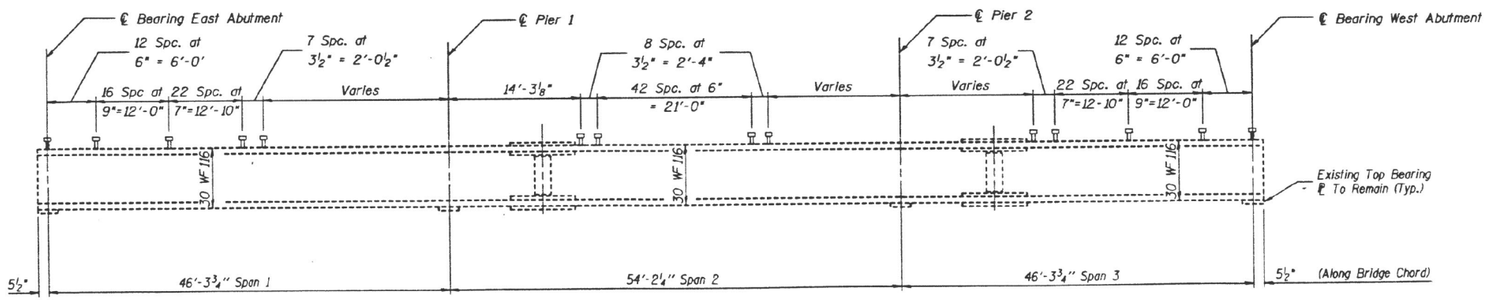
(EXISTING) BEAM MOMENT TABLES

SPANS 1, 2 & 3 (SYMMETRICAL)

		0.4 Sp. 1	℄ Pier 1	0.5 Sp. 2
Is	(in. 4)	4919	4919	4919
Ic	(in. 4)	12547	-----	12547
Ss	(in. 3)	328	328	328
Sc	(in. 3)	471	-----	471
w	(k/')	0.700	0.922	0.700
M w	('k)	112.8	235.7	82.3
fs non-comp(k.s.i.)		4.13	8.6	3.01
S w	(k/')	0.222	-----	0.222
Ms w	('k)	40.7	-----	35.5
M L	('k)	269.9	153.4	273.6
Mimp	('k)	78.3	44.5	79.4
Total	('k)	388.9	197.9	388.5
fs comp	(k.s.i.)	10.02	7.2	10.00
fs total	(k.s.i.)	14.15	15.87	13.01
VR	(K)	49.7	-----	47.6

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).
Ic and Sc are the moment of inertia and section modulus of the composite section used in computing fs (Total).
VR is the maximum L + Impact shear range in span.
Structure is composite in positive moment regions only.

Tables are for N.B. and S.B. Structures all beams.



TYPICAL BEAM ELEVATION

Notes:
Existing Diaphragms are to be dismantled, repositioned and holes drilled as shown on Sheet#13 of 29 to accommodate increase in superelevation.
For top of beam elevations after jacking, dimensions beams are to be raised, recommended jacking sequence and temporary support system, see Sheet#3 of 25.
All exposed and unused diaphram bolt holes are to be filled with ¾"ϕ High Strength Bolts. Cost Incidental To Structural Steel.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE S.B. I-55
I-55 OVER FANCY CREEK
F.A.I. RTE. 55 SECTION 84-2BR-2
SANGAMON COUNTY
STATION 291+20.00
STRUCTURE NOS. 084-0022, 084-0023

DESIGNED	PLH
CHECKED	RBQ
DRAWN	P. Roy
CHECKED	RBQ

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PLOT DATE = 8/13/2020	DATE -	REVISED -

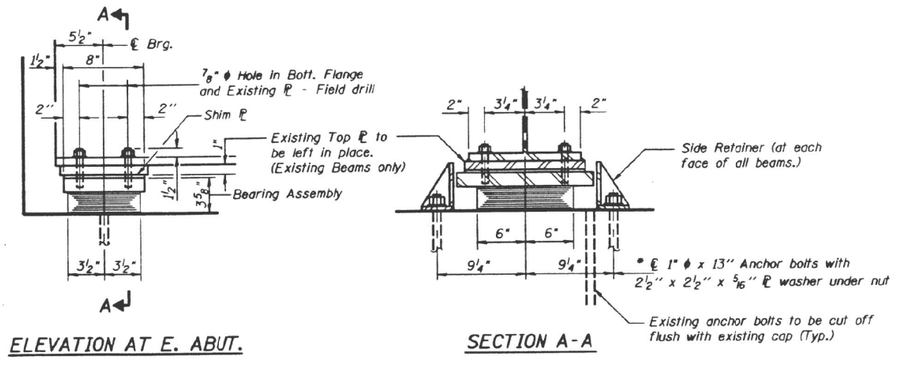
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0022 & 0023
(FOR INFORMATION ONLY)

SCALE: | SHEET 3 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	11
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

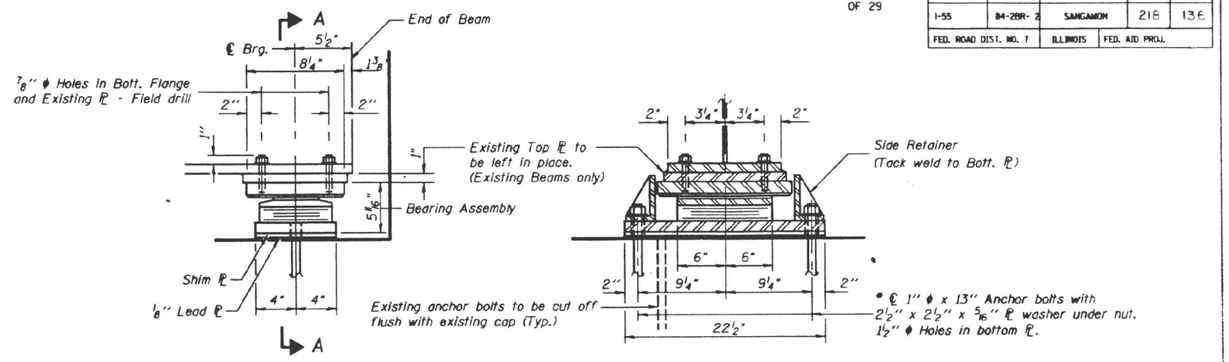
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	84-2BR-2	SANGAMON	218	136
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJ.		



ELEVATION AT E. ABUT. SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.

Used at E. Abutments (Both Structures) - 18 Required

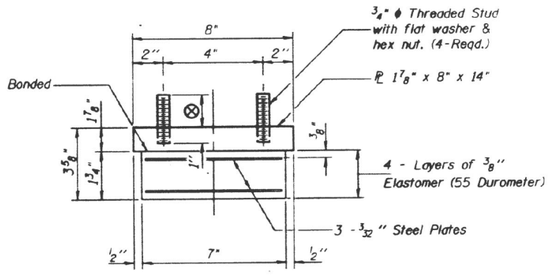


ELEVATION AT W. ABUT. SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

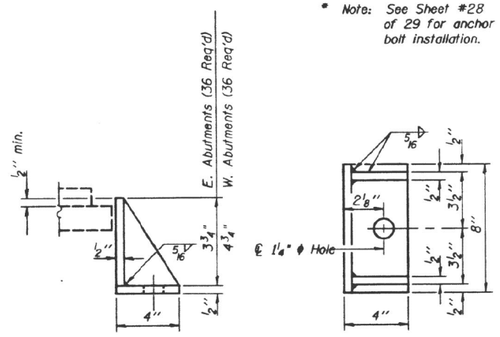
Used at W. Abutments (Both Structures) - 18 Required

⊗ $2\frac{3}{8}$" at 2 Assemblies (New Beams)
$3\frac{3}{8}$" at 16 Assemblies (Existing Beams)



BEARING ASSEMBLY

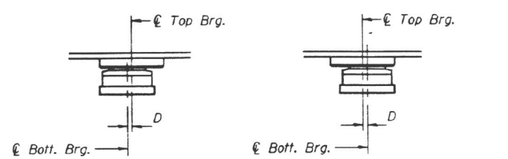
Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

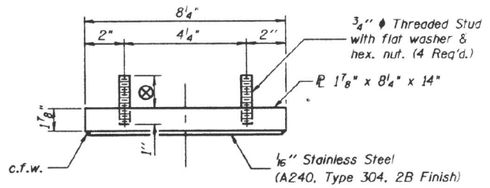
* Note: See Sheet #28 of 29 for anchor bolt installation.



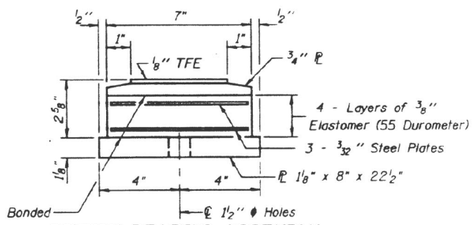
SETTING ANCHOR BOLTS AT EXP. BRG.

D = ⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

⊗ $1\frac{7}{8}$" at 2 Assemblies (New Beams)
$2\frac{7}{8}$" at 16 Assemblies (Existing Beams)



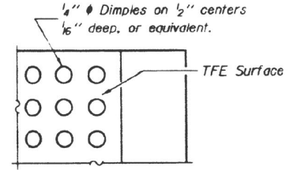
TOP BEARING ASSEMBLY



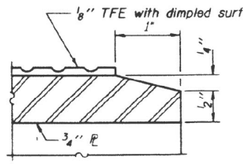
BOTTOM BEARING ASSEMBLY

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



PLAN-TFE SURFACE



SECTION THRU TFE

Note:
Quantities shown are totals for both structures.
See Sheet #18 of 29 for Bill of Material.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING ASSEMBLY
EAST & WEST ABUTMENTS
I-55 S.B./N.B. OVER FANCY CREEK
F.A.I. RTE. 55 SECTION 84-2BR-2
SANGAMON COUNTY
STATION 291+20.00
STRUCTURE NOS. 084-0022, 084-0023

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CHECKED	RBO
DRAWN	HGT
CHECKED	RBO

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PLOT DATE = 8/13/2020	DATE -	REVISED -	

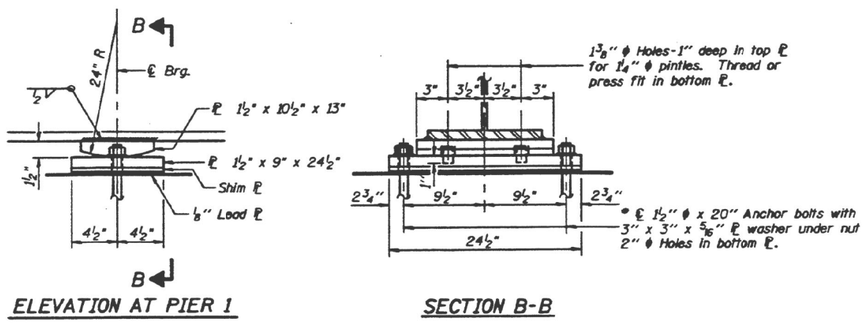
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0022 & 0023
(FOR INFORMATION ONLY)

SCALE: | SHEET 4 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	12
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
I-55	84-2BR-2	SANGAMON	218	137A
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJ.		



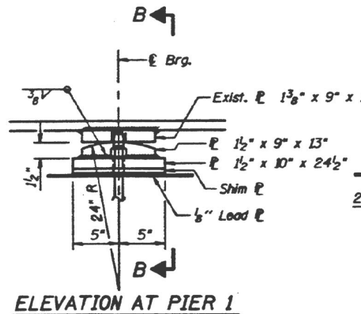
ELEVATION AT PIER 1

SECTION B-B

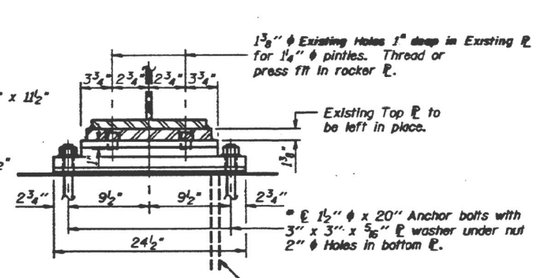
FIXED BEARING

Used at Pier 1 (N.B. Structure, New Beams) - 2 Req'd

* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #28 for Anchor Bolt installation.



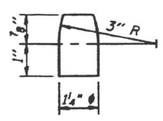
ELEVATION AT PIER 1



SECTION B-B

FIXED BEARING

Used at Pier 1 (Both Structures, Exist. Beams) - 16 Req'd



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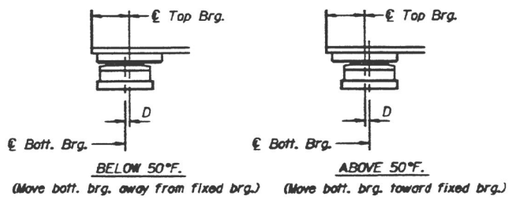
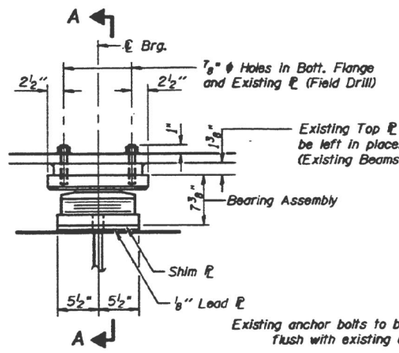


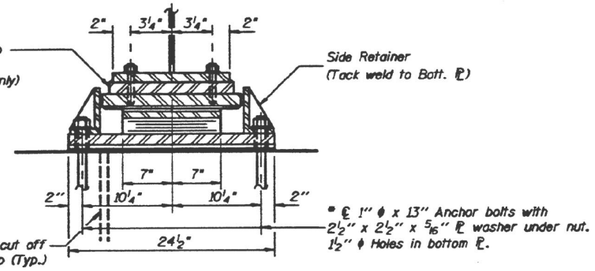
SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	PLH
CHECKED	RBQ
DRAWN	HGT
CHECKED	RBQ



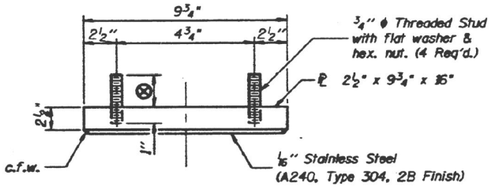
ELEVATION AT PIER 2



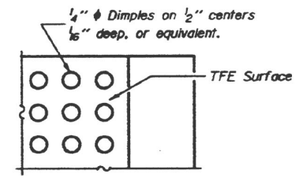
SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

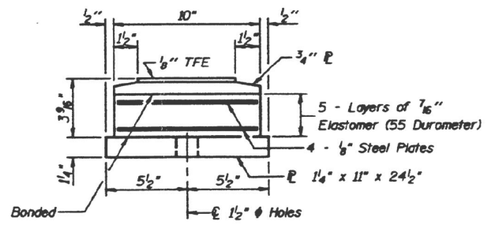
Used at Pier 2 (Both Structures) - 18 Req'd



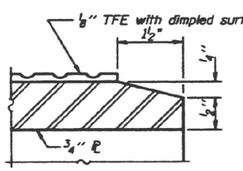
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

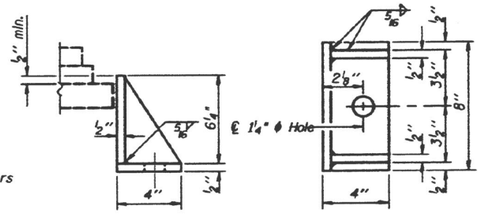


BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

⊗ 1⅞" at 2 Assemblies (New Beams)
3¼" at 16 Assemblies (Existing Beams)



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates. (36 Required)

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	18
Elastomeric Bearing Assembly Type II	Each	36

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.

AS REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BEARING ASSEMBLY
PIERS 1 AND 2
I-55 S.B./N.B. OVER FANCY CREEK
F.A.I. RTE. 55 SECTION 84-2BR-2
SANGAMON COUNTY
STATION 291+20.00
STRUCTURE NOS. 084-0022, 084-0023

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	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 084-0022 & 0023
(FOR INFORMATION ONLY)

SCALE: | SHEET 5 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	13
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

FEDERAL-AID ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
FA 706	134BR	LOGAN	28	8
FED. ROAD DIV. NO.	ILLINOIS	PROJECT		

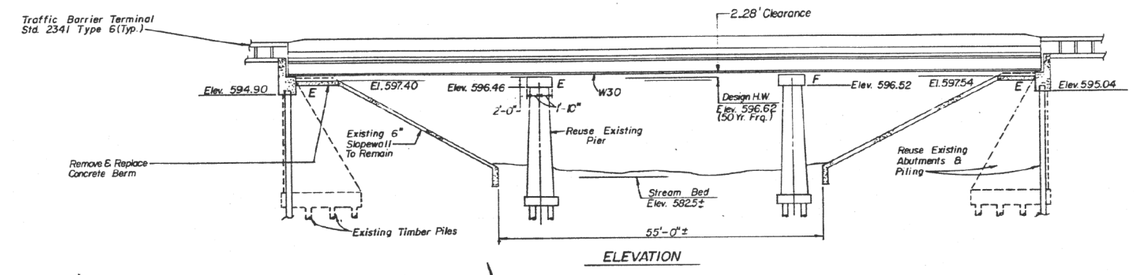
Sheet 1 of 17

BENCH MARK: B.M.#4A – CHISELED □ ON NORTHEAST WINGWALL OF EXISTING BRIDGE AT STATION 251+72.3, 18.2' LT. ℄ ROADWAY, ELEV. 602.30

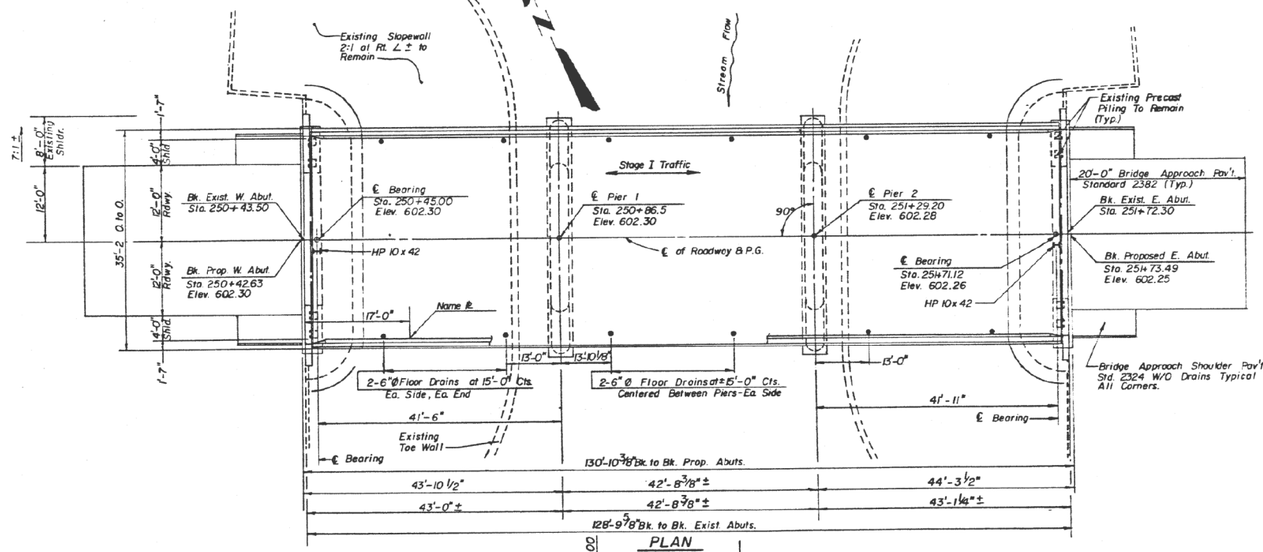
EXISTING STRUCTURE: 054-0022 – THE EXISTING THREE SIMPLE SPAN REINFORCED CONCRETE DECK GIRDER (T-BEAM) BRIDGE MEASURES 129'-0" BACK TO BACK OF ABUTMENTS AND HAS A ROADWAY OF 30'-0". THIS STRUCTURE WAS BUILT S.B.I. ROUTE 121, SECTION 134-BR IN 1931. IN 1958, THE SUBSTRUCTURE & SUPERSTRUCTURE WERE WIDENED TO THE PRESENT 30'-0". THE EXISTING SUPERSTRUCTURE AND CAPS OF THE SUBSTRUCTURE SHALL BE REMOVED AND REPLACED. PROPOSED STRUCTURE SHALL BE 130-10 3/8" OUT TO OUT THREE SPAN CONTINUOUS STEEL BEAM BRIDGE. ROADWAY ALIGNMENT SHALL REMAIN THE SAME. EXISTING WEST BOUND TRAFFIC SHALL MAINTAIN ONE LANE STAGE I TRAFFIC. STAGE II TRAFFIC SHALL BE MAINTAINED BY SOUTH HALF OF PROPOSED SUPERSTRUCTURE.

NO SALVAGE

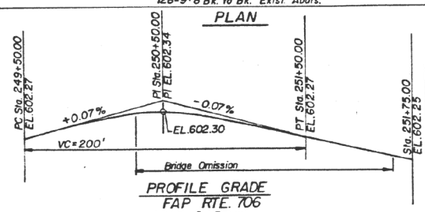
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



ELEVATION



PLAN



PROFILE GRADE
FAP RTE. 706
Along ℄ Rdwy.

DESIGN SPECIFICATIONS

AASHTO (1983 & 1984-86 INTERIM), New Construction

LOADING HS 20-44

25 lbs./sq.ft. allowance for future wearing surface.

DESIGN STRESSES

f'c = 3,500 p.s.i.
fy = 60,000 p.s.i. (Reinf.)

fy = 36,000 p.s.i. (Structural Stl.) (M 183)

INDEX OF SHEETS

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUB-STRUCTURE	SUPER-STRUCTURE	TOTAL
STRUCTURE EXCAVATION	CU. YD	77.3	—	77.3
FLOOR DRAINS	EACH	—	12	12
PROTECTIVE COAT	SQ. YD.	—	557	557
CLASS X CONCRETE	CU. YD.	65.5	—	65.5
STRUCTURAL STEEL	LUMP SUM	—	1	1
REINFORCEMENT BARS	POUND	7280	—	7280
REINFORCEMENT BARS (EPOXY CTD.)	POUND	—	31,060	31,060
SLOPE WALL (6")	SQ. YD.	70	—	70
PREFORMED JOINT SEAL, 2 1/2"	LIN. FT.	—	35	35
PREFORMED JOINT SEAL, 4"	LIN. FT.	—	35	35
ELASTOMERIC BEARING ASSEMBLY TY. I	EACH	—	12	12
ELASTOMERIC BEARING ASSEMBLY TY. II	EACH	—	6	6
TEMPORARY BRIDGE RAIL	LIN. FT.	—	131	131
CONCRETE REMOVAL	CU. YD.	50.0	—	50.0
REMOVAL OF EXISTING SUPERSTRUCTURE	LUMP SUM	—	1	1
NAME PLATES	EACH	—	1	1
Class X Concrete Superstructure	CU. YD.	—	142.0	142.0
EXPANSION BOLTS, 3/4" ϕ	EACH	—	148	148
FURNISHING STEEL PILES(HP 10x42)	LIN. FT.	—	36	36

FOR QUANTITY AND LOCATION OF TEMPORARY CONCRETE BARRIER, SEE ROADWAY PLANS.

*INCLUDES BRIDGE DECK SURFACE PROJ. BHF-706(12)

STATION 251+08.06
REBUILT 198_ BY
STATE OF ILLINOIS
F.A.P. RTE. 706 SEC. 134 BR
LOADING HS 20
STR. NO. 054-0022

NAME PLATE (SEE STD. 2113)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
James I. Kayburn
Engineer of Bridges and Structures

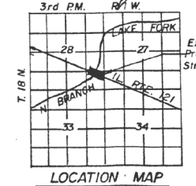
LARRY L. VIELEY 81-4056 REGISTERED STRUCTURAL ENGINEER OF ILLINOIS

DATE: 10/21/87

WATERWAY INFORMATION

Drainage Area 77.7 Sq. Mi. Low Grade Elev. 601.91 At Sta. 254+00

	Freq.	Q	Opening Sq. Ft.		Nat.	Head — Ft.		Headwater Elev.	
FLOOD	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.
DESIGN	50	5775	856	856	596.62	1.8	1.8	598.4	598.4
BASE	100	6578	907	907	597.12	2.0	2.0	599.1	599.1
OVERTOPPING									
MAX. CALC.	500	8415	1012	1012	598.13	2.7	2.7	600.8	600.8



LOCATION MAP

F.A.P ROUTE 706
SECTION 134 BR
LOGAN COUNTY
STATION 251+08.06

ILLINOIS ROUTE 121 over
N. BRANCH OF LAKE FORK

GENERAL PLAN & ELEVATION

STRUCTURE NO.- 054-0022

DESIGNED	L.L.VIELEY
CHECKED	
DRAWN	C.SNEDDEN
CHECKED	

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121) / LAKE FORK CREEK

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	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 054-0022
(FOR INFORMATION ONLY)

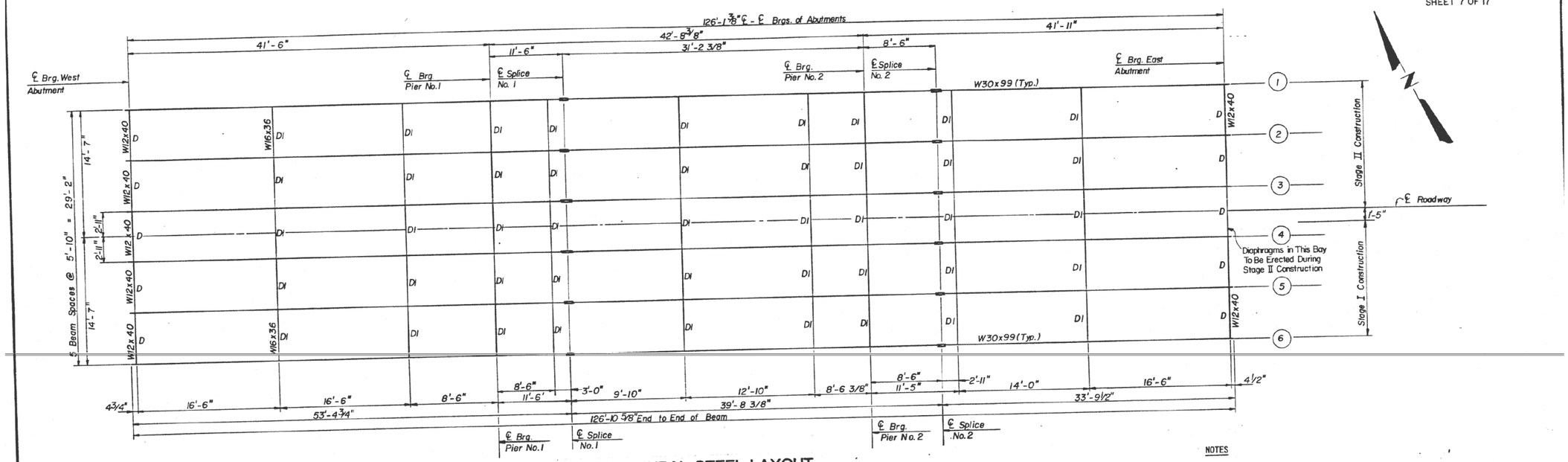
SCALE: | SHEET 1 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	14
		CONTRACT NO. 72L86		
	ILLINOIS FED. AID PROJECT			

* *	*	LOGAN	28	14
FED. ROAD DIV. NO.		ILLINOIS PROJECT		

*-134 BR
**-F.A. ROUTE 706

SHEET 7 OF 17



STRUCTURAL STEEL LAYOUT

See Sheet 8 of 17 for Beam, Diaphragm, and Splice Details.

NOTES

I_S AND S_S ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED IN COMPUTING F_S (TOTAL AND OVERLOAD).

VR IS THE MAXIMUM ℄ + IMPACT SHEAR RANGE IN SPAN.

F_S (TOTAL) IS THE SUM OF THE STRESSES DUE TO $1.3\ [M^D_L + \frac{5}{3}(M^L_L + I)]$.

F_S (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO $M^D_L + \frac{5}{3}(M^L_L + I)$.

M_A (APPLIED MOMENT) $= 1.3\ [M^D_L + M^D_S + \frac{5}{3}(M^L_L + I)]$.

M^D_L - MOMENT DUE TO DEAD LOAD.

M^D_S - MOMENT DUE TO DEAD LOAD.

M^L_L - MOMENT DUE TO LIVE LOAD.

I - LIVE LOAD IMPACT.

INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1 or 3	Pier 1 or 2	0.5 Sp. 2
Is	(in^4)	3990	3990	3990
Ss	(in^3)	269	269	269
Dead Load	(k/ft.)	0.67	057	0.67
M Dead Load	(ft.-k)	93.9	120.5	33.9
S Dead Load	(k/ft.)	0.28	0.28	0.28
Ms Dead Load	(ft.-k)	39.0	50.1	14.1
M Live Load	(ft.-k)	201.3	143.6	164.8
M L.L+I	(ft.-k)	261.7	186.7	214.3
Ma	(ft.-k)	739.8	626.3	526.7
fs D.L.	(ksi)	5.9	7.6	2.1
fs 5/3 (LL+I)	(ksi)	19.5	13.9	15.9
fs Overload	(ksi)	25.4	21.5	18.0
fs Total	(ksi)	33.0	28.0	23.4
Vr	(k)	37.2	——	40.6

ELEVATION OF TOP OF BEAM FOR FABRICATION ONLY

Beam No.	℄ Brg. W. Abut.	℄ Brg. Pier No.1	℄ Splice No.1	℄ Brg. Pier No.2	℄ Splice No. 2	℄ Brg. E. Abut.
1	601.35	601.29	601.27	601.27	601.27	601.31
2	601.45	601.39	601.37	601.37	601.37	601.41
3	601.54	601.48	601.46	601.46	601.46	601.50
4	601.54	601.48	601.46	601.46	601.46	601.50
5	601.45	601.39	601.37	601.37	601.37	601.41
6	601.35	601.29	601.27	601.27	601.27	601.31

INTERIOR REACTION TABLE

		Abutment	Pier 1 or 2
R. Dead Load	(kips)	16.0	44.9
R. Live Load	(kips)	32.0	39.3
Impact	(kips)	9.6	11.8
R. Total w/o Imp.	(kips)	48.0	84.2
R. Total w/ Imp.	(kips)	57.6	96.0

DESIGNED	L.L.VIELEY
CHECKED	
DRAWN	S.H.GRUBER
CHECKED	

F.A.P. ROUTE 706
SECTION 134 BR
LOGAN COUNTY
STATION 251+08.06

DECK FRAMING PLAN

F.A. ROUTE 706 (ILL. 121) / LAKE FORK CREEK

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	DRAWN -	REVISED -	
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -	
PLOT DATE = 8/13/2020	DATE -	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 054-0022
(FOR INFORMATION ONLY)

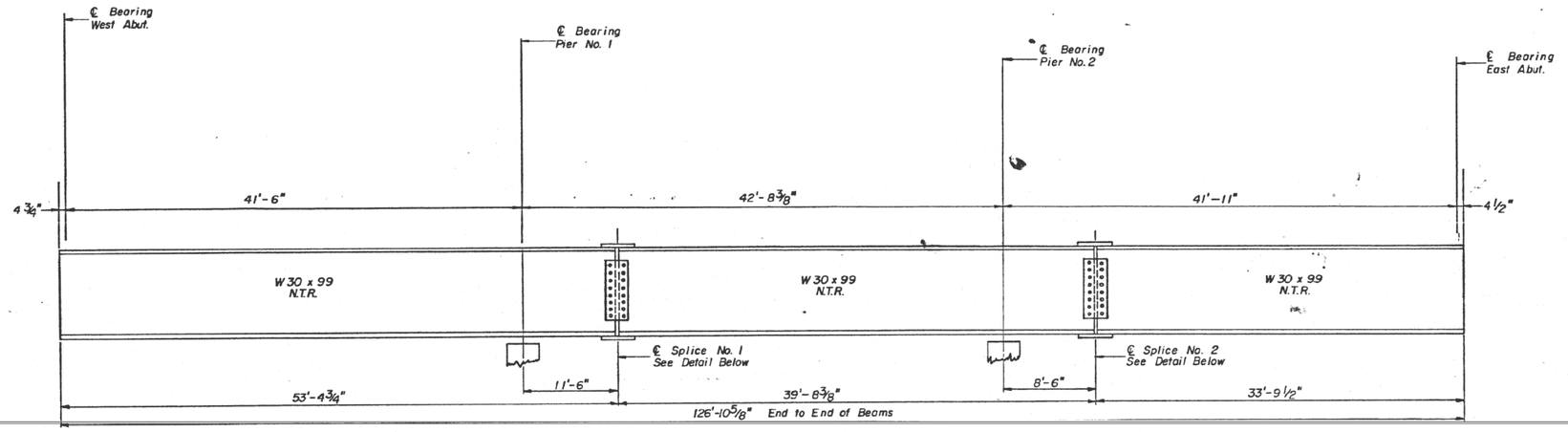
SCALE: | SHEET 2 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	15
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

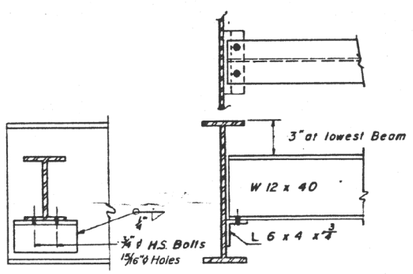
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.P. 706	134 BR	LOGAN	28	15
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

SHEET NO. 8 of 17 SHEETS

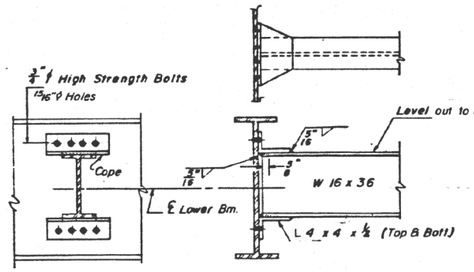


BEAMS

See Sheet 7 for Structural Steel Layout and Elevations.
N.T.R.– Notch Toughness Requirements – Zone 2

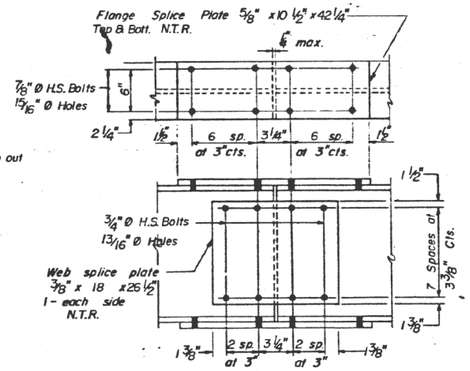


DIAPHRAGM D
(10 Required)



DIAPHRAGM D1
(45 Required)

Note : Two hardened washers shall be required over all holes in diaphragm connections



SPLICE NO. 1 & NO. 2.

All structural steel fabricators performing work on the main load carrying components of steel structures shall be certified under Category I (AISC) of the Quality Certification Program.

DESIGNED	L VICLEY
CHECKED	
DRAWN	S.H.GRUBER
CHECKED	LVJ

I-2-D 8-30-80

F.A.P. ROUTE 706
SECTION 134 BR
LOGAN COUNTY
STATION 251+08.06

SPLICE & DIAPHRAGM DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121) / LAKE FORK CREEK

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/13/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 054-0022
(FOR INFORMATION ONLY)

SCALE: | SHEET 3 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	16
		CONTRACT NO. 72L86		
		ILLINOIS	FED. AID PROJECT	

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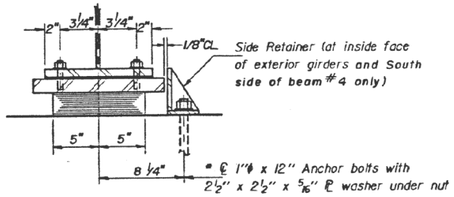
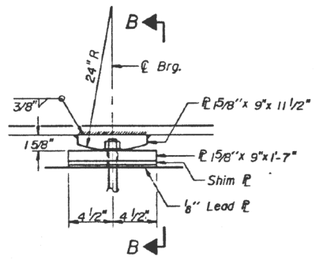
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
M. R. L. F. A. 706	134 BR	LOGAN	28	16
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT -		

SHEET NO. 9 of 17 SHEETS

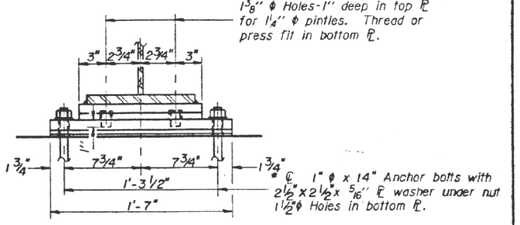
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



SECTION A-A



ELEVATION AT PIER #2
(6 Req'd.)

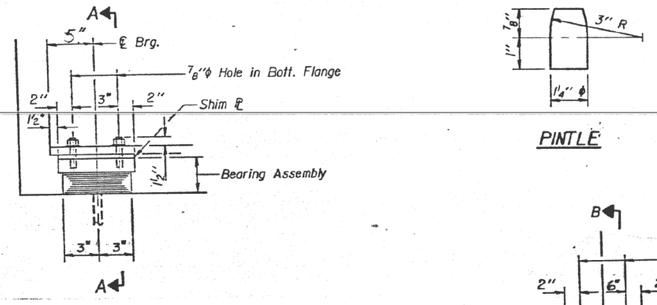


SECTION B-B

TYPE I ELASTOMERIC EXP. BRG.

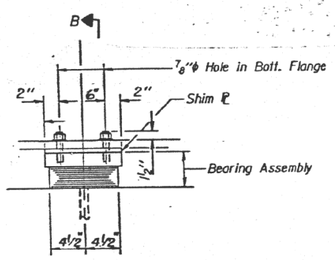
* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #12 for Anchor Bolt installation.

FIXED BEARING



ELEVATION AT EAST ABUT.
(6 Req'd.)

PINTLE



ELEVATION AT PIER #1
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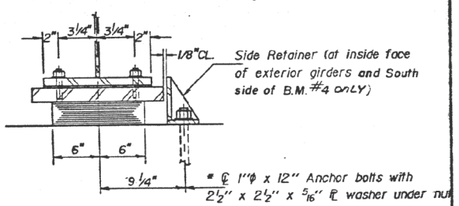
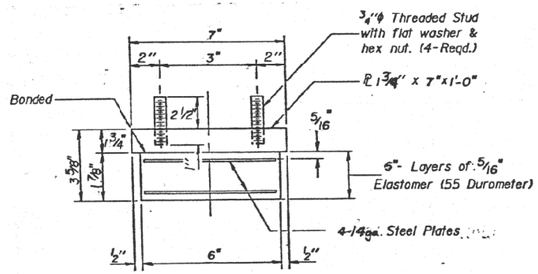


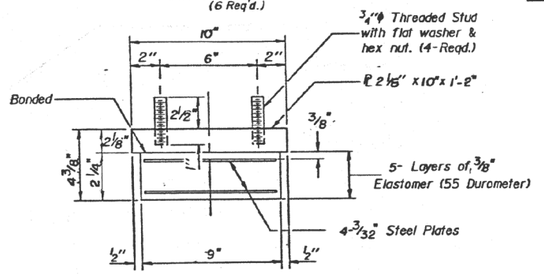
SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.

SECTION B-B

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	12

F.A.P. ROUTE 706
SECTION 134 BR
LOGAN COUNTY
STATION 251+0806

BEARING DETAILS

DESIGNED	L.L.VIELEY
CHECKED	-
DRAWN	C.D.S.
CHECKED	

I-2-EI 12-1-83

B.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121) / LAKE FORK CREEK

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/13/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 054-0022
(FOR INFORMATION ONLY)

SCALE: | SHEET 4 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55.320	(84-1-2, 134) BP	SANG, LOGAN	18	17
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

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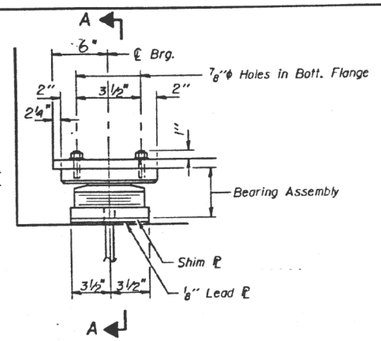
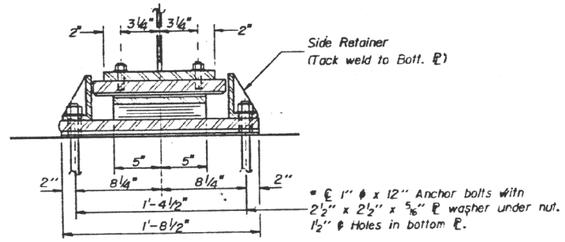
F.A.P. 706	134 BR	LOGAN	28	17
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

SHEET NO. 10 of 17 SHEETS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



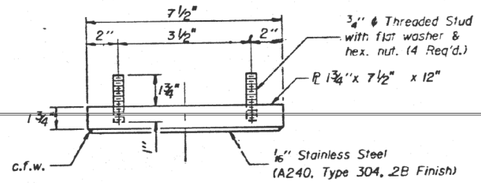
ELEVATION AT WEST ABUT.



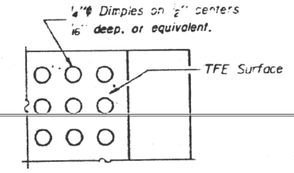
SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG.

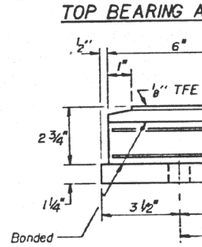
* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #12 for Anchor Bolt installation.



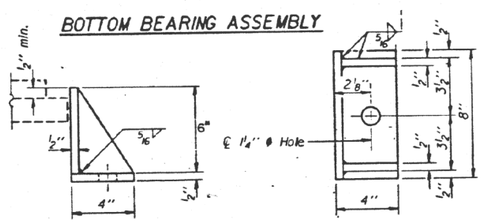
TOP BEARING ASSEMBLY



PLAN-TFE SURFACE

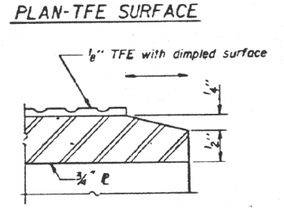


BOTTOM BEARING ASSEMBLY



SIDE RETAINER

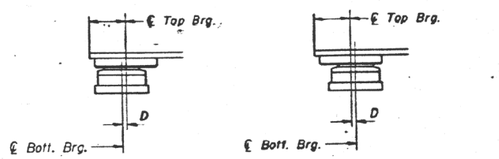
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



SECTION THRU TFE

Note: The ⅛" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of ⅛" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SETTING ANCHOR BOLTS AT EXP. BRG.

D=⅛" per each 100 of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	6

DESIGNED	L.L. VIELEY
CHECKED	L.L.V.
DRAWN	C.D. SUTPHEN
CHECKED	L.L. VIELEY

12-1-83

F.A.P. ROUTE 706
SECTION 134 BR
LOGAN COUNTY
STATION 251+08.06

BEARING DETAILS

R.A.N. CONSULTANTS, INC.

F.A. ROUTE 706 (ILL. 121) / LAKE FORK CREEK

USER NAME = dudleybm	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 100.0000 ' / in.	CHECKED -	REVISED -
PLOT DATE = 8/13/2020	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXISTING BRIDGE PLANS, SN 054-0022
(FOR INFORMATION ONLY)

SCALE: | SHEET 5 OF 5 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55,320	(84-1-2, 134) BP	SANG, LOGAN	18	18
		CONTRACT NO. 72L86		
	ILLINOIS	FED. AID PROJECT		

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