

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327/42	14-12HB-P, 112BR-2-P	CLINTON	11	1
		ILLINOIS	CONTRACT NO. 76T40	

D-98-007-24



FOR INDEX OF SHEETS, SEE SHEET NO. 2

TRAFFIC DATA

SN: 014-0063
2023 ADT = 3150 (ACTUAL)
2024 ADT = 3200 (ESTIMATED)
2044 ADT = 3700 (ESTIMATED)
SU = 3.8% MU = 14.3%

SN: 014-0050
2023 ADT = 6850 (ACTUAL)
2024 ADT = 6900 (ESTIMATED)
2044 ADT = 8100 (ESTIMATED)
SU = 4.0% MU = 10.2%

**PROPOSED
HIGHWAY PLANS**

**FAP ROUTE 327/42 (US 050/ IL 127)
SECTION 14-12HB-P, 112BR-2-P
PROJECT NHPP-STP-2LRS(437)
BRIDGE PAINTING
CLINTON COUNTY**

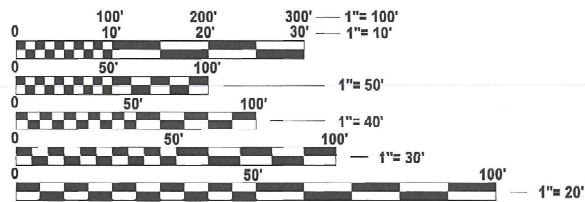
C-98-158-24

PROJECT LOCATION

US 50 UNDER SCHUMACHER RD
SN: 014-0050
LAT: 38.615204
LONG: -89.594149

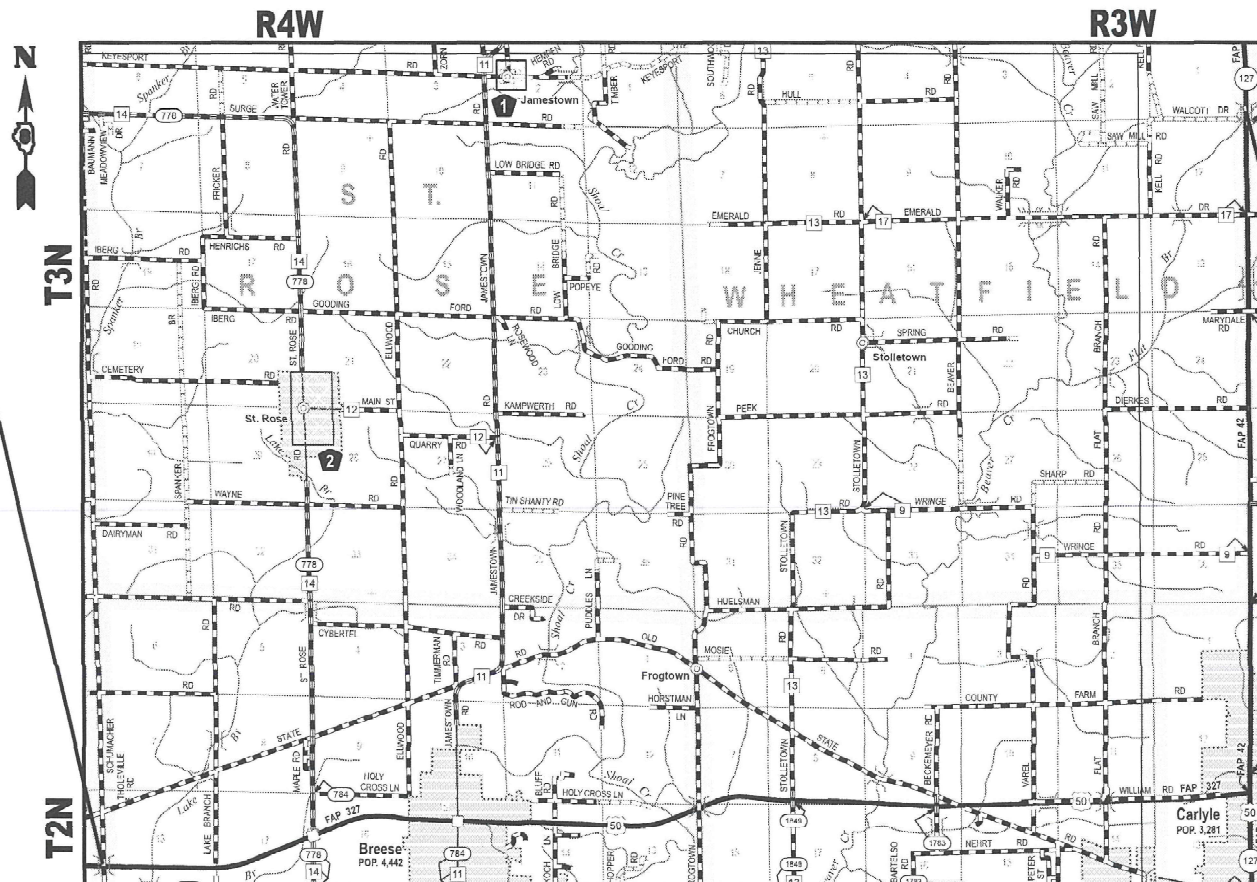
PROJECT LOCATION

IL 127 OVER FLAT BRANCH CREEK
SN: 014-0063
LAT: 38.727010
LONG: -89.371936



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 EXCAVATION
1-800-892-0123
OR 811



NOT TO SCALE

GROSS/NET LENGTH = 418 FT. = 0.079 MILE

PROJECT ENGINEER : BILLIE OWEN
PROJECT MANAGER : MEIWU AN

CONTRACT NO. 76T40

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED February 1, 2024
Billie Owen
REGIONAL ENGINEER

March 22, 2024
[Signature]
ENGINEER OF DESIGN AND ENVIRONMENT

March 22, 2024
[Signature]
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

**PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS**

INDEX OF SHEETS

- 1 COVER SHEET
- 2 INDEX OF SHEETS, STANDARDS, GENERAL NOTES, AND COMMITMENTS
- 3 SUMMARY OF QUANTITIES
- 4 SCHEDULE OF QUANTITIES
- 5 TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 (SPECIAL) FOR SN: 014-0063
- 6-8 STRUCTURE DETAILS 014-0050
- 9-11 STRUCTURE DETAILS 014-0063

HIGHWAY STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 701001-02 OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' (4.5 m) AWAY
- 701006-05 OFF-RD OPERATIONS, 2L, 2W, 15' (4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
- 701321-18 LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
- 701901-09 TRAFFIC CONTROL DEVICES
- 704001-08 TEMPORARY CONCRETE BARRIER
- 782006-01 GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

GENERAL NOTES

1. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

UTILITY	ABOVE GROUND	BELOW GROUND
AT&T ILLINOIS (COMMUNICATIONS)	X	X
METRO (COMMUNICATIONS)	X	X

2. THE RESIDENT ENGINEER SHALL VERIFY THE EXISTENCE OF HIGHWAY LIGHTING, INTELLIGENT TRANSPORTATION SYSTEMS (I.T.S.) UTILITIES, AND/OR ELECTRICAL CABLES ASSOCIATED WITH TRAFFIC SIGNALS WITHIN THE PROJECT LIMITS. IF ANY OF THESE EXIST WITHIN THE PROJECT LIMITS, AND IF THESE ITEMS REQUIRE LOCATING, THE CONTRACTOR SHALL BE DIRECTED TO DO SO ACCORDING TO SECTION 803 OF THE STANDARD SPECIFICATIONS. THIS WORK SHALL BE PAID FOR ACCORDING TO ARTICLE 109.04 OF THE STANDARD SPECIFICATIONS.

- 3. TWO CHANGEABLE MESSAGE SIGNS SHALL BE REQUIRED FOR THIS PROJECT. THEY SHALL BE PLACED TWO WEEKS PRIOR TO ANY LANE CLOSURE AND SHALL REMAIN UP FOR THE DURATION OF THE PROJECT. THE CHANGEABLE MESSAGE SIGNS SHALL BE PLACED ALONG IL-127 AND US 50 OR AT THE DIRECTION OF THE ENGINEER.
- 4. ALL TURF AREAS DISTURBED BY THE CONTRACTOR SHALL BE SEEDED WITH THE APPROPRIATE EROSION CONTROL, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
- 5. THE SSPC-QP1 AND QP-2 CERTIFICATIONS WILL BE REQUIRED FOR THESE BRIDGES.
- 6. FOR LOCATION 1 (SN 014-0063), CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES." ALL EXISTING STEEL WITHIN 10 FEET OF THE EXISTING DECK JOINTS (MEASURED ALONG THE BEAM), AND THE EXTERIOR SURFACES AND BOTTOM OF THE BOTTOM FLANGES OF THE FASCIA BEAMS SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1-OZ/EU. FOR LOCATION 1, THE COLOR OF THE FINAL COAT FOR ALL SURFACES SHALL BE BROWN, FED STD 595C 30045. GALVANIZED BEARINGS AND DIAPHRAGMS ARE EXEMPT FROM CLEANING AND PAINTING. IF DAMAGE OCCURS TO THE GALVANIZED BEARINGS OR DIAPHRAGMS, THE CONTRACTOR SHALL REPAIR TO THE SATISFACTION OF THE RESIDENT ENGINEER, AND NO FURTHER COMPENSATION WILL BE ALLOWED.
- 7. FOR LOCATION 2 (SN 014-0050), CLEANING AND PAINTING OF THE EXISTING STRUCTURAL STEEL SHALL BE AS SPECIFIED IN THE SPECIAL PROVISION FOR "CLEANING AND PAINTING EXISTING STEEL STRUCTURES." ALL EXISTING STEEL SHALL BE CLEANED PER NEAR WHITE BLAST CLEANING - SSPC-SP10. ALL EXISTING STEEL CLEANED PER NEAR WHITE BLAST CLEANING SHALL BE PAINTED ACCORDING TO THE REQUIREMENTS OF PAINT SYSTEM 1-OZ/EU. FOR LOCATION 2, THE COLOR OF THE FINAL FINISH COAT FOR ALL SURFACES SHALL BE GRAY (MUNSELL NO 5B 7/1).
- 8. FOR LOCATION 2, A MINIMUM OF TWO AIR MONITORS WILL BE REQUIRED TO MONITOR ABRASIVE BLAST OPERATIONS AT THIS SITE. SEE SPECIAL PROVISION FOR "CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES."
- 9. NO SURVEY WAS PERFORMED FOR THIS PROJECT AND THE PLANS WERE CREATED USING MICROFILM AND FIELD MEASUREMENTS.

COMMITMENTS

NONE

REV. - MS

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	DRAWN -	REVISED -
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PLOT DATE = 1/25/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**INDEX OF SHEETS, HIGHWAY STANDARDS,
GENERAL NOTES, AND COMMITMENTS**

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327/42	14-12HB-P, 112BR-2-P	CLINTON	11	2
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				

80% FED 20% STATE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				STP RURAL	NHPP RURAL
				BRIDGE 0047	BRIDGE 0047
				014-0063	014-0050
67100100	MOBILIZATION	L SUM	1	0.5	0.5
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	0	1
70106500	TEMPORARY BRIDGE TRAFFIC SIGNALS	EACH	2	1	1
70106700	TEMPORARY RUMBLE STRIPS	EACH	12	6	6
70107005	PAVEMENT MARKING BLACKOUT TAPE, 5"	FOOT	2756	1541	1215
70107025	CHANGEABLE MESSAGE SIGN	CAL DA	138	69	69
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	1148	642	506
70400100	TEMPORARY CONCRETE BARRIER	FOOT	612.5	375	237.5
70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	237.5	0	237.5
70600250	IMPACT ATTENUATORS, TEMPORARY (NON- REDIRECTIVE), TEST LEVEL 3	EACH	4	2	2
70600350	IMPACT ATTENUATORS, RELOCATE (NON- REDIRECTIVE), TEST LEVEL 3	EACH	2	0	2
X5060601	CONTAINMENT AND DISPOSAL OF NON-LEAD PAINT CLEANING RESIDUES NO. 1	L SUM	1	1	0
X7010202	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321 (SPECIAL)	EACH	1	1	0
Z0007102	CONTAINMENT AND DISPOSAL OF LEAD PAINT CLEANING RESIDUES NO. 2	L SUM	1	0	1

80% FED 20% STATE

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				STP RURAL	NHPP RURAL
				BRIDGE 0047	BRIDGE 0047
				014-0063	014-0050
Z0010501	CLEANING AND PAINTING STEEL BRIDGE NO. 1	L SUM	1	1	0
Z0010502	CLEANING AND PAINTING STEEL BRIDGE NO. 2	L SUM	1	0	1

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	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

SUMMARY OF QUANTITIES

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

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327/42	14-12HB-P, 112BR-2-P	CLINTON	11	3
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				

WORK ZONE TRAFFIC CONTROL SCHEDULE

LOCATION	LENGTH	TEMPORARY BRIDGE TRAFFIC SIGNALS	TEMPORARY RUMBLE STRIPS	PAVEMENT MARKING BLACKOUT TAPE, 5"	SHORT TERM PAVEMENT MARKING REMOVAL	TEMPORARY CONCRETE BARRIER	RELOCATE TEMPORARY CONCRETE BARRIER	IMPACT ATTENUATORS, TEMPORARY (NON-REDIRECTIVE), TEST LEVEL 3	IMPACT ATTENUATORS, RELOCATE (NON-REDIRECTIVE), TEST LEVEL 3
ROUTE & STRUCTURE NUMBER	FOOT	EACH	EACH	FOOT	SQFT	FOOT	FOOT	EACH	EACH
US 50									
US 50 UNDER SCHUMACHER RD									
SN 014-0050	540	1	6	1215	506	237.5	237.5	2	2
IL 127 OVER FLAT BRANCH RD									
SN 014-0063	685	1	6	1541	642	375	0	2	0
TOTAL		2	12	2756	1148	612.5	237.5	4	2

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PLOT DATE = 2/1/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

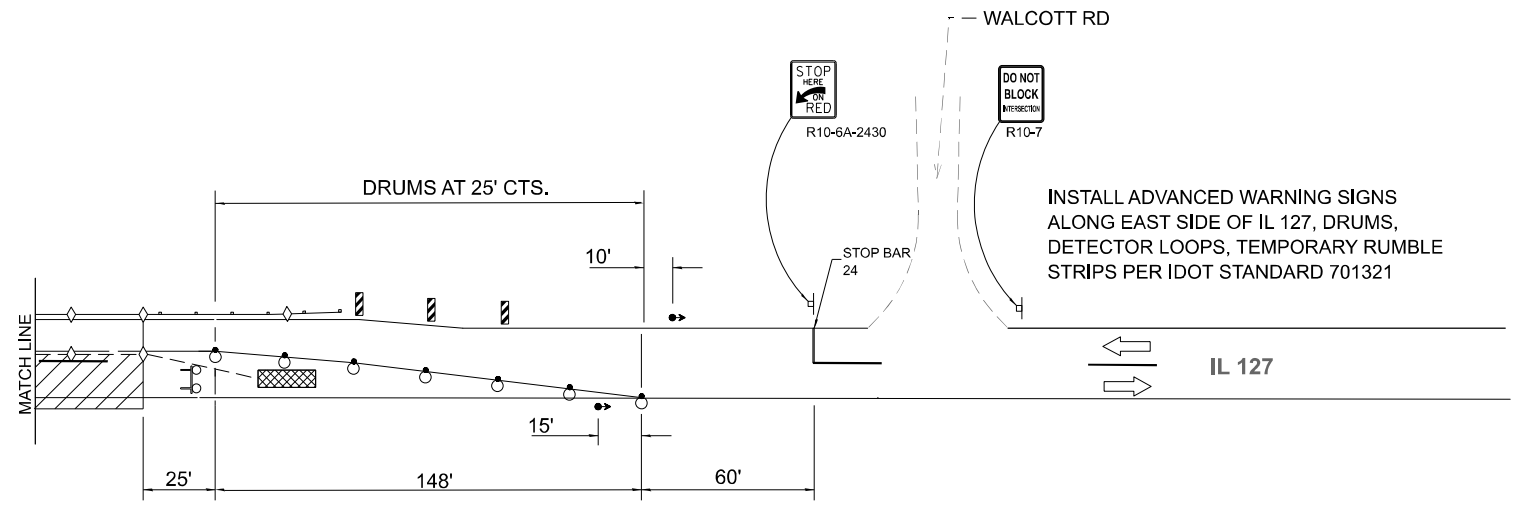
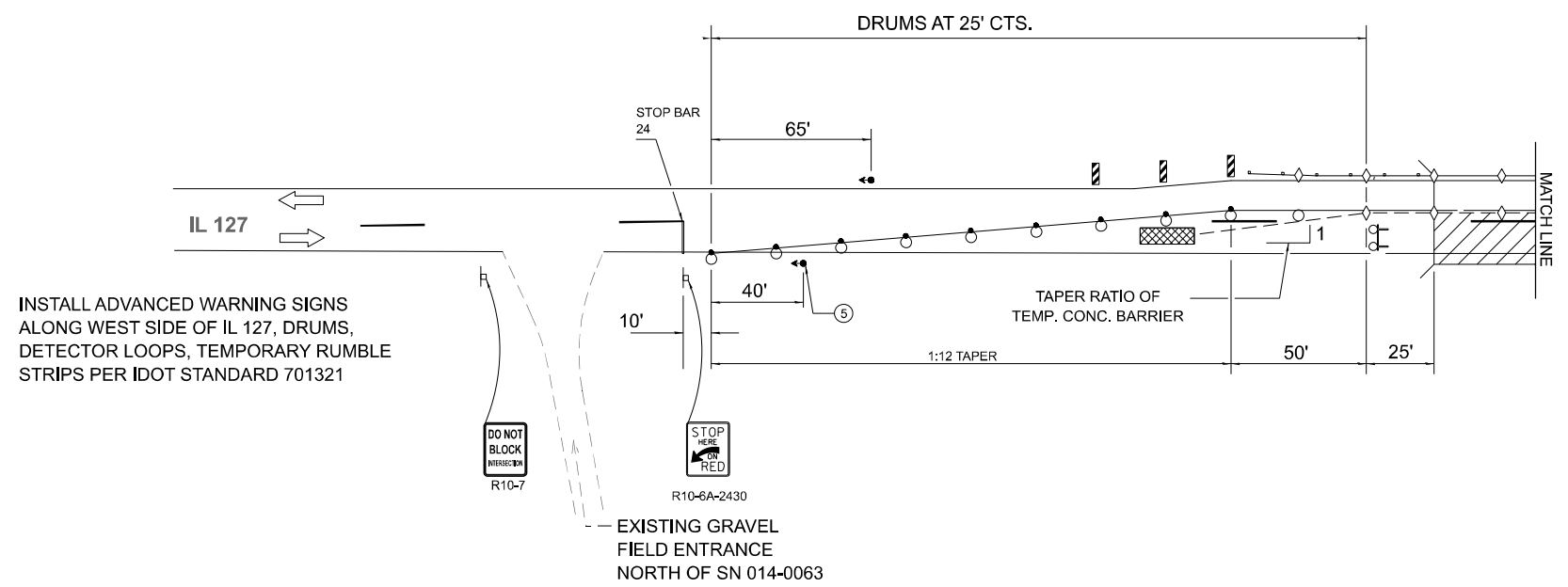
SCHEDULE OF QUANTITIES

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

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327/42	14-12HB-P, 112BR-2-P	CLINTON	11	4
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				



- NOTES**
1. THE TRAFFIC CONTROL LAYOUT SHALL FOLLOW IDOT HIGHWAY STANDARD 701321 FOR DETAILS NOT SHOWN ON THIS TRAFFIC CONTROL PLAN
 2. THE CONTRACTOR SHALL EXERCISE CARE WHEN PLACING TEMPORARY CONCRETE BARRIER TO ENSURE THAT THE SPACE BETWEEN PARAPET WALL/GUARDRAIL AND THE TEMPORARY CONCRETE BARRIER SHALL NOT BE LESS THAN 17'-6" FOR TRAVELING PUBLIC



SYMBOLS

- WORK AREA
- SIGN
- TYPE III BARRICADE WITH FLASHING LIGHTS
- TRAFFIC SIGNAL
- IMPACT ATTENUATOR
- DRUM WITH STEADY BURNING BI-DIRECTIONAL LIGHT
- TEMPORARY CONCRETE BARRIER
- DOUBLE VERTICAL PANEL (SEE DETAIL)
- CRYSTAL, BIDIRECTIONAL GUARDRAIL/BARRIER WALL REFLECTOR
- DRUM

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PLOT DATE = 1/30/2024	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**TRAFFIC CONTROL PLAN
FOR SN: 014-0063**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327/42	14-12HB-P, 112BR-2-P	CLINTON	11	5
CONTRACT NO. 76T40				
		ILLINOIS	FED. AID PROJECT	

LOW 409M. Elev 401.16 Top of head of rail spike in West side of P.R. D9-40 in Southeast corner U.S. 50 & T.R. 48 (22 East Sta 0+40.) No Existing Structure.

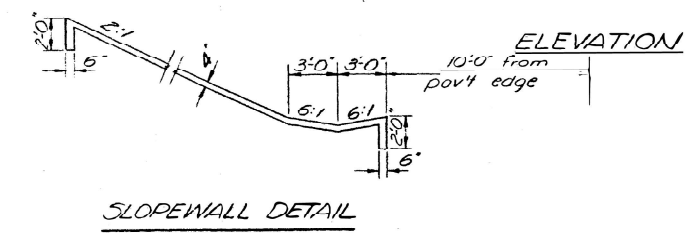
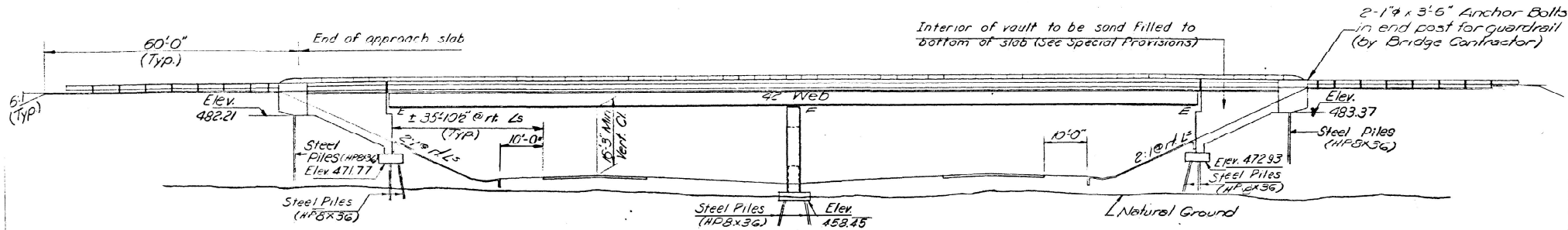
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
409	14-12HB-3	CLINTON	27	7
FED. ROAD DIST. NO. 7	ILLINOIS	PER. AUTHORITY EBF-409-1(2)		

SHEET NO. 1
12 SHEETS

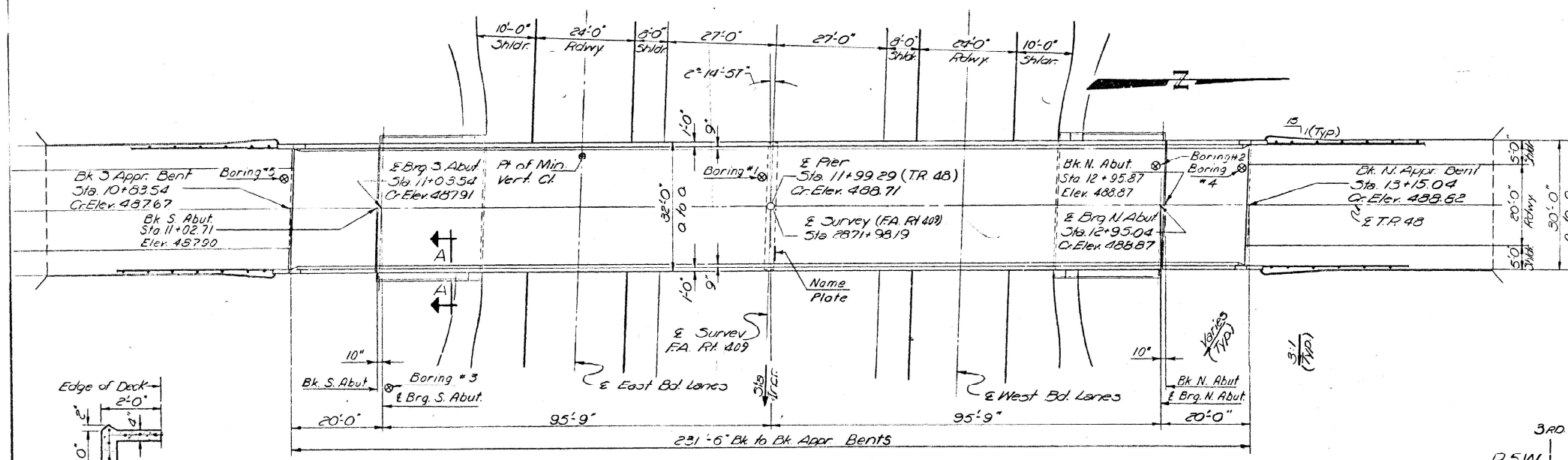
GENERAL NOTES

All reinforcement bars shall be lapped 24 diameters unless otherwise shown.
Fasteners shall be high strength bolts. Bolts 3/4"; open holes 13/16", unless otherwise noted.
The Basic Lead Silico Chromate paint system shall be used for shop and field painting of structural steel.
Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.
Anchor bolts shall be set before fastening diaphragms over supports.
Slope wall shall be reinforced with welded wire fabric 6"x6" mesh, weighing 58 pounds per 100 sq. ft.
The contractor shall drive one steel test pile at South Abutment and one steel test pile at pier. All test piles in a permanent location as directed by the Engineer before ordering the remainder of piles.
The concrete rail section above the mandatory construction joint at the top of the slab shall be constructed of Class X Concrete, except the aggregates shall conform to the requirements of Handrail Concrete.
The embankment configuration shown shall be the minimum embankment that must be constructed prior to construction of the abutments.



STA. 2871+9819
BUILT 19 BY
STATE OF ILLINOIS
FA RTE 409 SEC. 14-12HB-3
PROJECT EBF-409-1(2)
LOADING HS 15

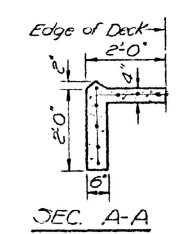
NAME PLATE
(Std. 2113)



TOTAL BILL of MATERIAL

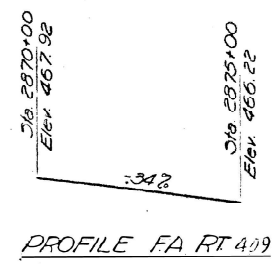
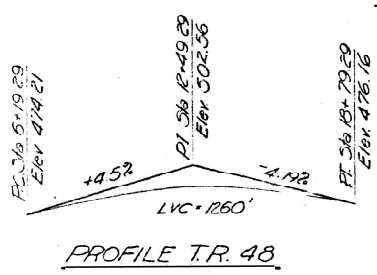
Item	Unit	Super	Sub	Total
STRUCTURE Excavation	Cu Yds.		30	30
Protective Coat	Sq. Yds.	943		943
Class X Concrete	Cu Yds.	237.8	161.8	400.2
Structural Steel	L.S.			L.S.
Stud Shear Connectors	Each	1230		1230
Aluminum Railing	Lin Ft.	477		477
Reinforcement Bars	Lbs.	51980	20920	72900
Steel Piles (HP8x36)	Lin Ft.		1543	1543
Test Pile Steel (HP8x36)	Each		2	2
Preformed Joint Sealer	Lin Ft.	64		64
Name Plates	Each		1	1
Slope Walls (4")	Sq. Yds.		282	282
Sand Backfill	Cu Yds.		220	220

* Calculated Plan Weight of Structural Steel = 182,160 Pounds.



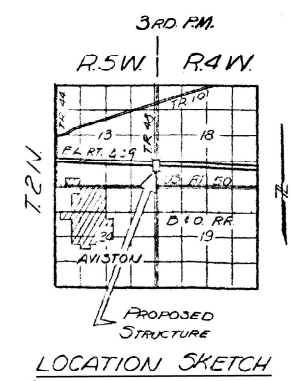
DESIGNED	B. F. Johnson
CHECKED	J. M. Patel
DRAWN	G. M. Ritchie
CHECKED	J. M. P.

MARCH 2 1970
EXAMINED
PASSED
APPROVED
Richard H. Glattemann
CHIEF HIGHWAY ENGINEER



DESIGN STRESSES
FIELD UNITS

Fc = 1200psi (Deck Slab)
Ft = 1400psi (Curb, Parapet, Sub)
Fs = 20,000psi (Heint.)
Fb = 20,000psi (Struct.)
Kc = 75psi (Figs)
Kd = 10
Allowable 4 Deflection 4/200



GENERAL PLAN & ELEVATION
T.R. 48 OVER FA. RT. 409
PROJ. EBF-409-1(2)
FA. RT. 409 SEC. 14-12HB-3
CLINTON COUNTY
STA. 2871+9819
STA. 11+99.29 (T.R. 48)

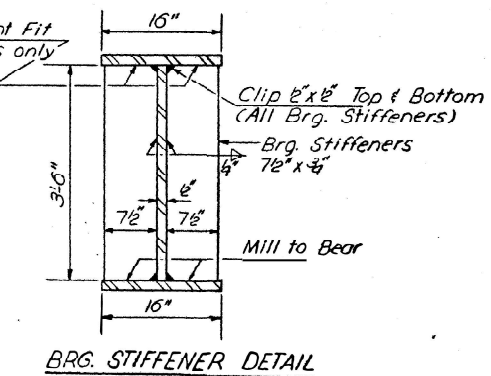
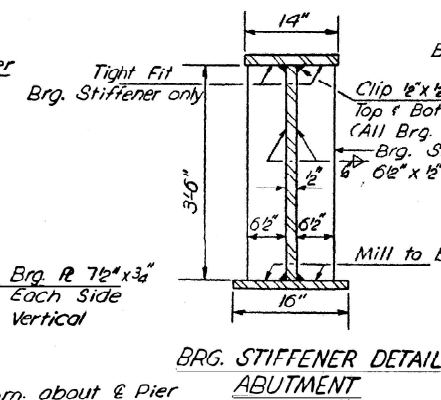
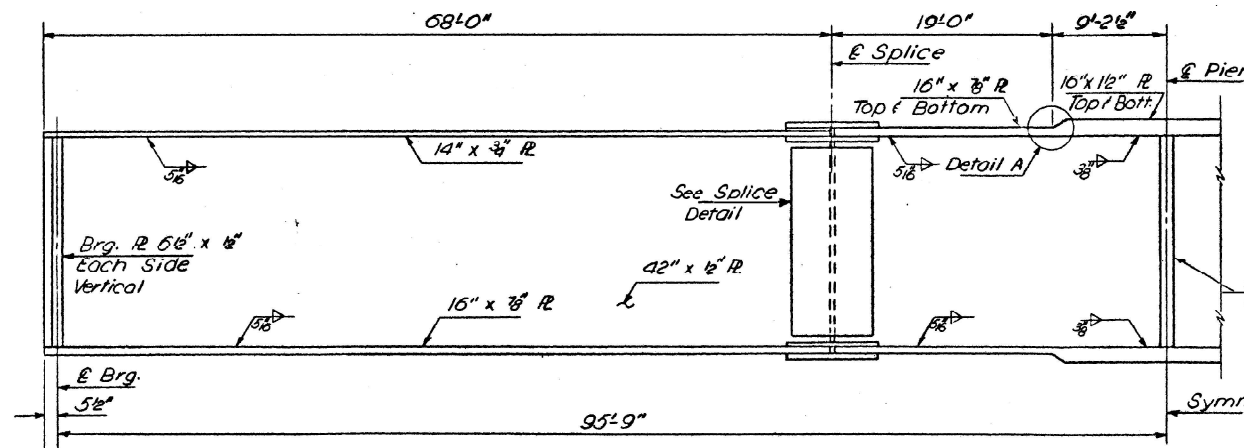
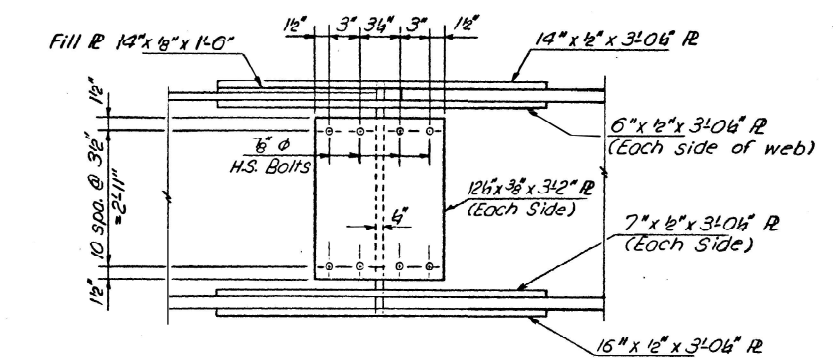
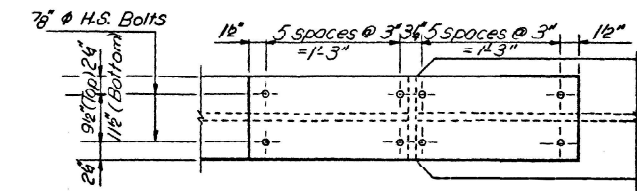
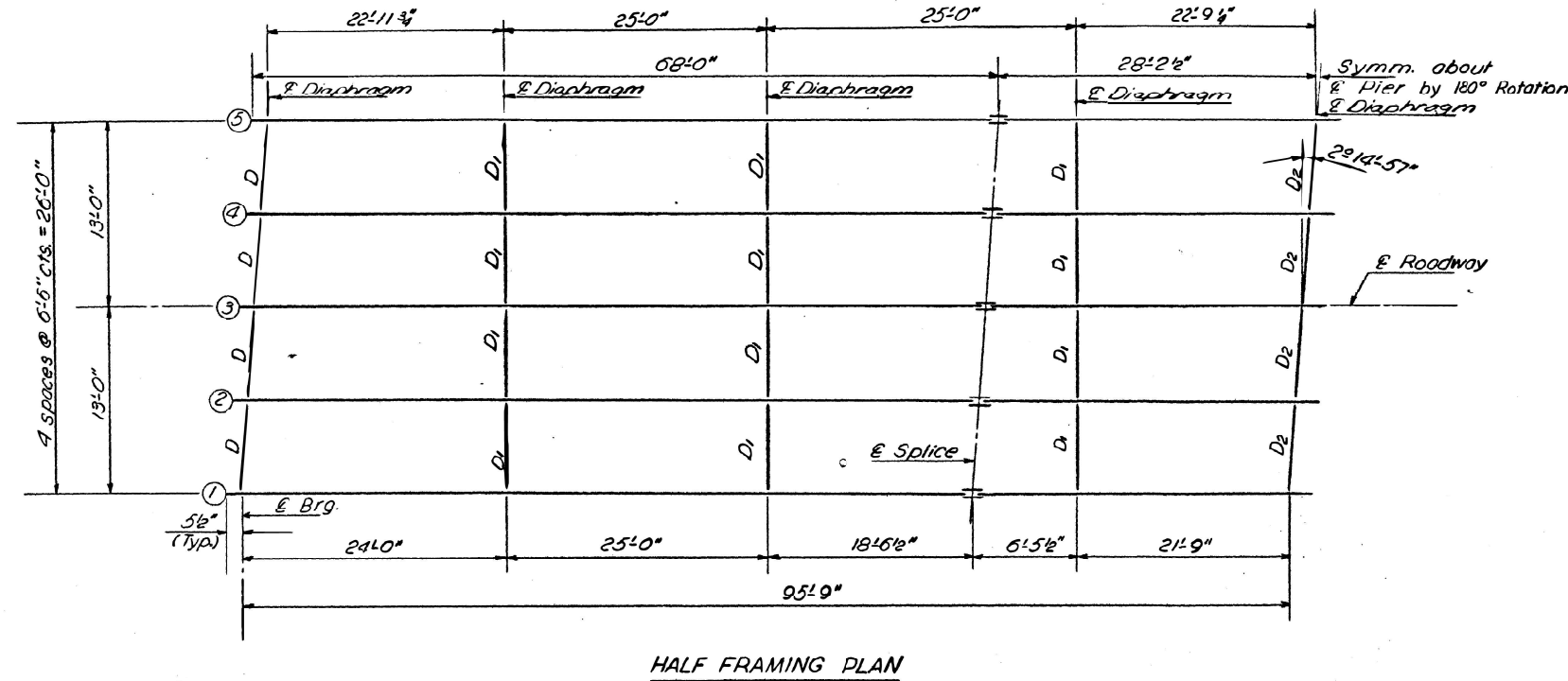
FOR INFORMATION ONLY

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PLOT SCALE = 0.16666833 / in.	DRAWN -	REVISED -	SCALE:	SHEET OF SHEETS	STA.	TO STA.	ILLINOIS FED. AID PROJECT		
PLOT DATE = 1/25/2024	CHECKED -	REVISED -				CONTRACT NO. 76140			

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
14-1243	-3	CLINTON	27	13
SHEET NO. 7				
12 SHEETS				

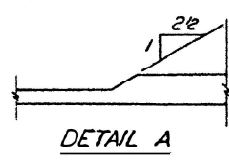


MOMENT TABLE PIER
Symmetrical Composite 2 Span
(Composite in Positive Moment Areas Only)

INTERIOR GIRDER MOMENT TABLE		PIER	
C/A Sp. 1		Pier	
I_s (in ⁴)	14,192.7		25,794
I_c (in ⁴)	31,421.3		
S_c (in ³)	102.3		1,146.4
S_c (in ³)	97.1		
Q (ft)	0.782		1.099
M_e (k)	455.40		1341.40
$f_s e$ (ksi)	7.8		14.15
S_e (ft)	0.317		
M_{S_e} (k)	217.11		
M_e (k)	531.83		426.22
M_{IMP} (k)	120.49		96.56
TOTAL (k)	869.48		522.78
$f_s e$ (ksi)	11.37		5.45
f_s TOTAL (ksi)	19.17		19.6
V_R (k)	36.77		37.77

INTERIOR GIRDER REACTION TABLE		
	Abut.	Pier
RP (k)	38.61	133.25
RE (k)	28.14	44.76
IMP. (k)	6.37	10.14
R TOTAL (k)	73.12	188.15

HALF GIRDER ELEVATION
Note: See sheet #8 for Shear Connector Spacing.



DESIGNED	B. R. Jhalor
CHECKED	J. M. Patel
DRAWN	R. Doty
CHECKED	J. M. P.

EXAMINED	MARCH 2 2020
PASSED	Richard J. Galtman
APPROVED	Richard J. Galtman

FRAMING PLAN
I.R. 48 OVER FA. RT. 409
FA. RT. 409 SEC. 14-1243-3
CLINTON COUNTY
STA. 11+99.29 (I.R. 48)

*VR is the maximum & + Impact shear range.

FOR INFORMATION ONLY

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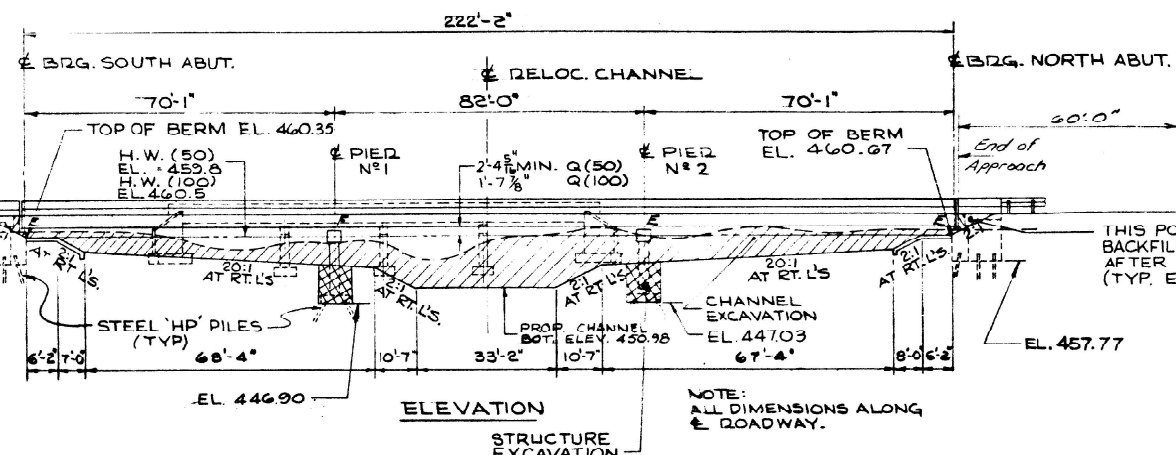
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PLOT SCALE = 0.16666633 / in.	DRAWN -	REVISED -	SCALE:	SHEET OF SHEETS	STA. TO STA.	CONTRACT NO. 76T40			
PLOT DATE = 1/25/2024	CHECKED -	REVISED -	ILLINOIS FED. AID PROJECT						

B.M. 128 D.Q. SPIKE IN 2" OAK EAST OF RTE. 127, RTE. STA. 424+00 EL. 459.65.

EXISTING STRUCTURE: NO. 014-0012 STA. 425+00 S.B.I. RTE. 127, SEC. 112-1B-2 BUILT IN 1927. SUPERSTRUCTURE - D.C. SLAB, SUBSTRUCTURE - CLOSED ABUTS., SOLID PIERS, D.C. PILED FOOTINGS. ENTIRE NORTH ABUT. AND PORTIONS OF PIERS AND SOUTH ABUT. 1'-0" BELOW SUBGRADE TO BE REMOVED BY CONTRACTOR, NO SALVAGE. CONTRACTOR SHALL REMOVE SUBSTRUCTURE TO 1' BELOW PROPOSED GROUND AND AS NECESSARY TO CLEAR NEW FTGS.

GUARD RAIL AND POSTS BY BRIDGE CONTRACTOR

TEMPORARY DETOUR RUN-AROUND TO EAST OF EXISTING STRUCTURE TO PROVIDE A MINIMUM WATERWAY OPENING OF 215.0 SQ. FT. BELOW EL. 456.0

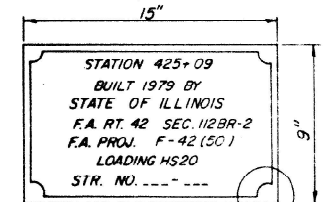
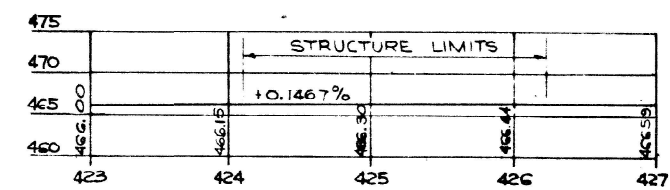
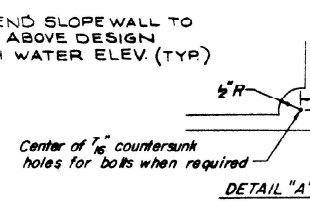
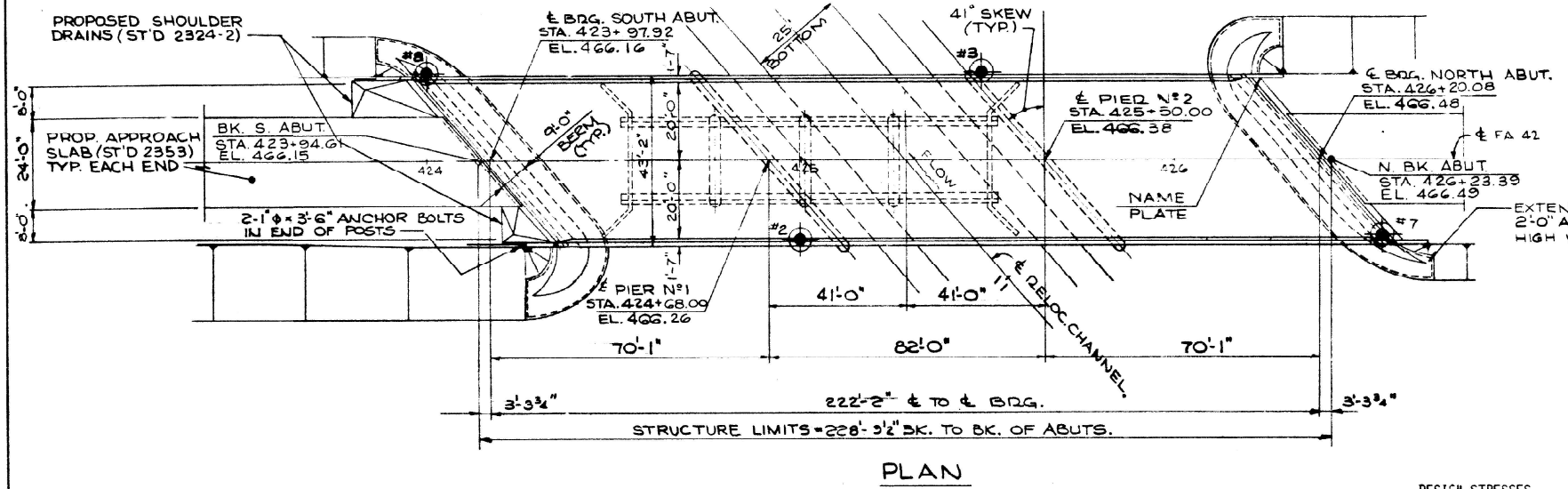


ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FA 42	112BR-2	CLINTON	43	15
FED. ROAD DIST. NO. 7 ILLINOIS FED. AID PROJECT				

SHEET NO. 1
SHEETS 11

TOTAL BILL OF MATERIALS

ITEM	UNITS	SUPER.	SUB	TOTAL
Removal of Existing Structure	Each			1
Structure Excavation	Cu. Yds.		333	333
Protective Coat	Sq. Yds.	1200		1200
Class 'X' Concrete	Cu. Yds.	267.0	271.0	538.0
Structural Steel	L. Sup.	1		1
Reinforcement Bars	Lbs.	32100	25900	58000
Reinforcement Bars, Epoxy Coated	Lbs.	46510		46510
Steel Piles, HP 10x42	Lin Ft.		2154	2154
Test Piles Steel, HP 10x42	Each		2	2
Name Plates	Each	1		1
Slope wall (6")	Sq. Yds.		325	325
Neoprene Expansion Joint, 2"	Lin ft.	111		111
Stud Shear Connectors	Each	3708		3708
Temporary Bridge Complete	Each			1



PROFILE FA. 42

ROADWAY DATA

CLASS: MAJOR
D.H.V. (1995): 1950 (ONE WAY)
A.D.T.T. (1995): 890
DESIGN SPEED: 70 M.P.H.

NOTE: Structure number to be supplied by the district.

DESIGN STRESSES

SUPERSTRUCTURE:
F_c = 3,500 P.S.I. - CONCRETE
F_y = 60,000 P.S.I. - REINFORCEMENT
F_s = 27,000 P.S.I. - STRUCTURAL STEEL

LOAD FACTOR DESIGN

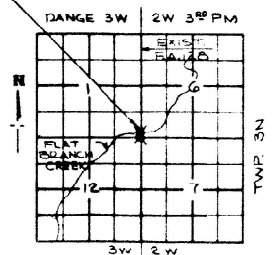
SUBSTRUCTURE:
F_c = 1,400 P.S.I. - CONCRETE
F_s = 20,000 P.S.I. - REINFORCEMENT
V_c = 56.2 P.S.I.
n = 9

ALLOWABLE LIVE LOAD DEFLECTION:
AS REQUIRED BY 1977 AASHTO SPECIFICATIONS, ART. 1.7.6.

LOADING:
LIVE LOAD: HS20-44,
FUTURE W.S.: 25 LBS./SQ. FT.

DESIGN SPECIFICATIONS:
1977 AASHTO SPECIFICATIONS AND 1978 INTERIM SPECIFICATIONS.

APPROVED
FOR STRUCTURAL ADEQUACY



GENERAL PLAN & ELEVATIONS
F.A. RTE. 42 OVER
FLAT BRANCH CREEK
SECTION 112BR-2
CLINTON COUNTY
STA. 425+09.00
DALTON · DALTON · LITTLE · NEWPORT
CONSULTING ENGINEERS - AKRON, OHIO

NOTE: INDICATES SOIL BORING LOCATIONS

WATERWAY INFORMATION

DRAINAGE AREA: 11.86 SQ. MILES
CHARACTER: FLAT, CULTIVATED, WOODED.
PRESENT OPENING: 352 SQ. FT.
RECOMMENDED OPENING: 665 SQ. FT.
PROPOSED OPENING: 665 SQ. FT.
Q(50) = 2,630 C.F.S. Q(100) = 3,300 C.F.S.
CREATED HEAD = 0.8 Q(50) FT.
- 1.1 Q(100) FT.



Robert T. Sablotny

FOR INFORMATION ONLY

DESIGNED	RER.
CHECKED	H.G.S.
DRAWN	RER.
CHECKED	KI

USER NAME = Joseph.Artean	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = 0.16666633 / in.	CHECKED -	REVISED -
PLOT DATE = 1/25/2024	DATE -	REVISED -

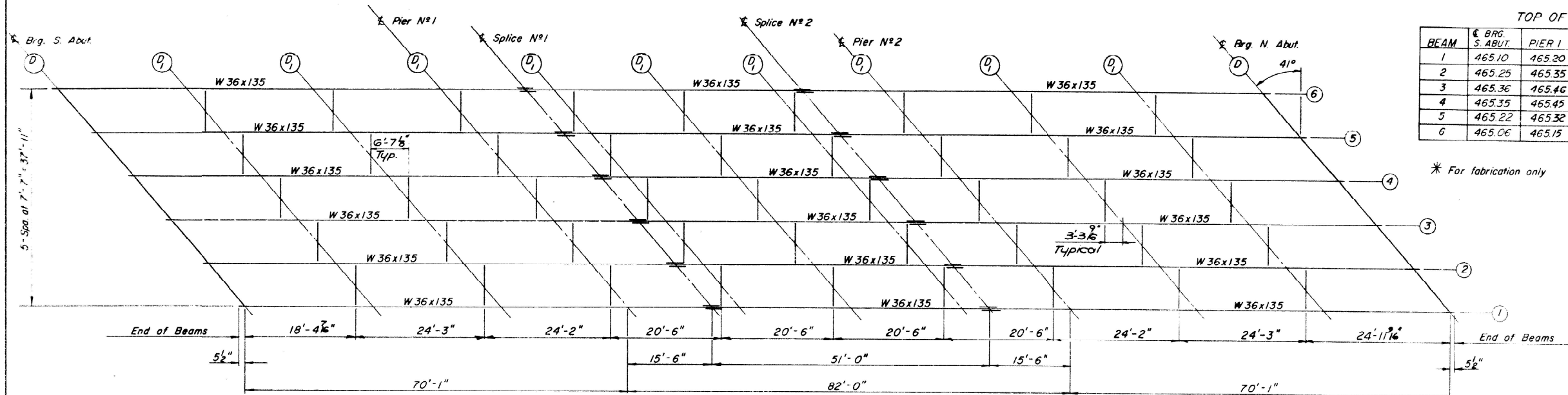
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS
014-0063

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327142	14-12HB-P, 112BR-2-P	CLINTON	11	9
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				

MODEL: Structure Details 014-0063 (Sheet)
FILE NAME: c:\p\work\1412hb\1412hb-plan.dgn



TOP OF BEAM ELEVATIONS *

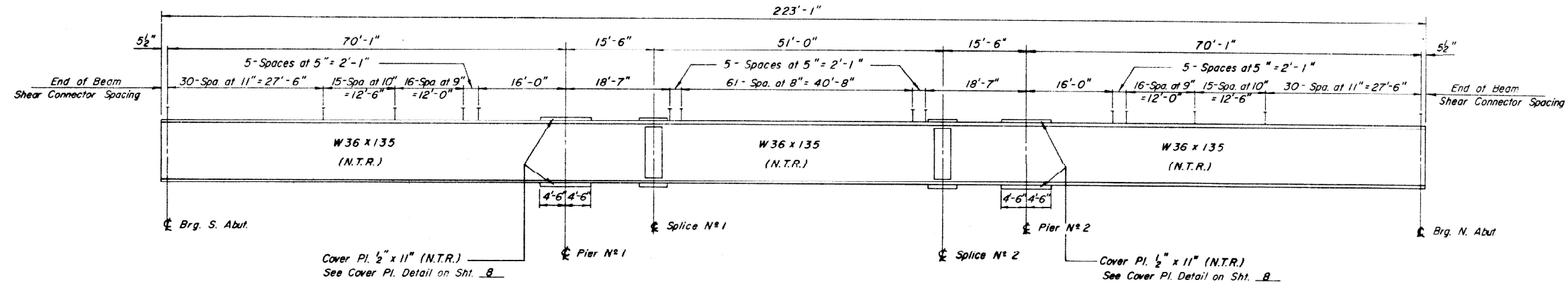
BEAM	€ BRG. S. ABUT.	PIER 1	SPLICE 1	SPLICE 2	PIER 2	€ BRG. N. ABUT.
1	465.10	465.20	465.22	465.30	465.32	465.43
2	465.25	465.35	465.37	465.45	465.47	465.58
3	465.36	465.46	465.48	465.56	465.58	465.69
4	465.35	465.45	465.47	465.55	465.57	465.68
5	465.22	465.32	465.34	465.42	465.44	465.55
6	465.06	465.15	465.17	465.25	465.27	465.38

* For fabrication only

NOTE: All elevations given are to the top of WF beams at € Bearing & € Splice. These elevations are for fabrication only.

FRAMING PLAN

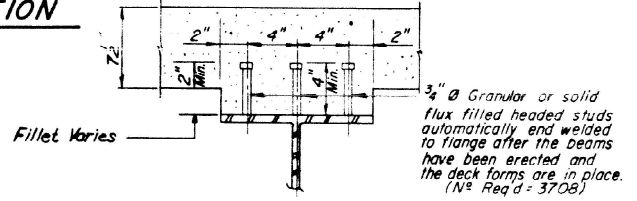
NOTE: "N.T.R." indicates that the designated member shall conform to the Supplemental Requirement for notch toughness (Zone 2). These members include all main beams, cover plates and splice plates.



Cover Pl. 1/2" x 11" (N.T.R.) See Cover Pl. Detail on Sht. 8

Cover Pl. 1/2" x 11" (N.T.R.) See Cover Pl. Detail on Sht. 8

BEAM ELEVATION



TYPICAL SHEAR CONNECTOR ROW

NOTE: 6/8 Shear stud connectors required per beam. Total for 6 beams = 3708.

FOR INFORMATION ONLY

DESIGNED	REER
CHECKED	HSS
DRAWN	REER
CHECKED	HSS

STRUCTURAL STEEL FRAMING & DETAIL
 F.A. RTE. 42 OVER
 FLAT BRANCH CREEK
 SECTION 112BR-2
 CLINTON COUNTY
 STA. 425 + 09.00
 DALTON · DALTON · LITTLE · NEWPORT
 CONSULTING ENGINEERS - AKRON, OHIO

MODEL: Structure Details 01-464 (Sheet) FILE NAME: c:\p\work\clinton\res\p\10952325\08761740-shh-plan.dgn

USER NAME = Joseph.Arteen	DESIGNED -	REVISED -
PLOT SCALE = 0.16666633 / in.	DRAWN -	REVISED -
PLOT DATE = 1/25/2024	CHECKED -	REVISED -
	DATE -	REVISED -

**STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION**

**STRUCTURE DETAILS
014-0063**

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
327142	14-12HB-P, 112BR-2-P	CLINTON	11	10
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				

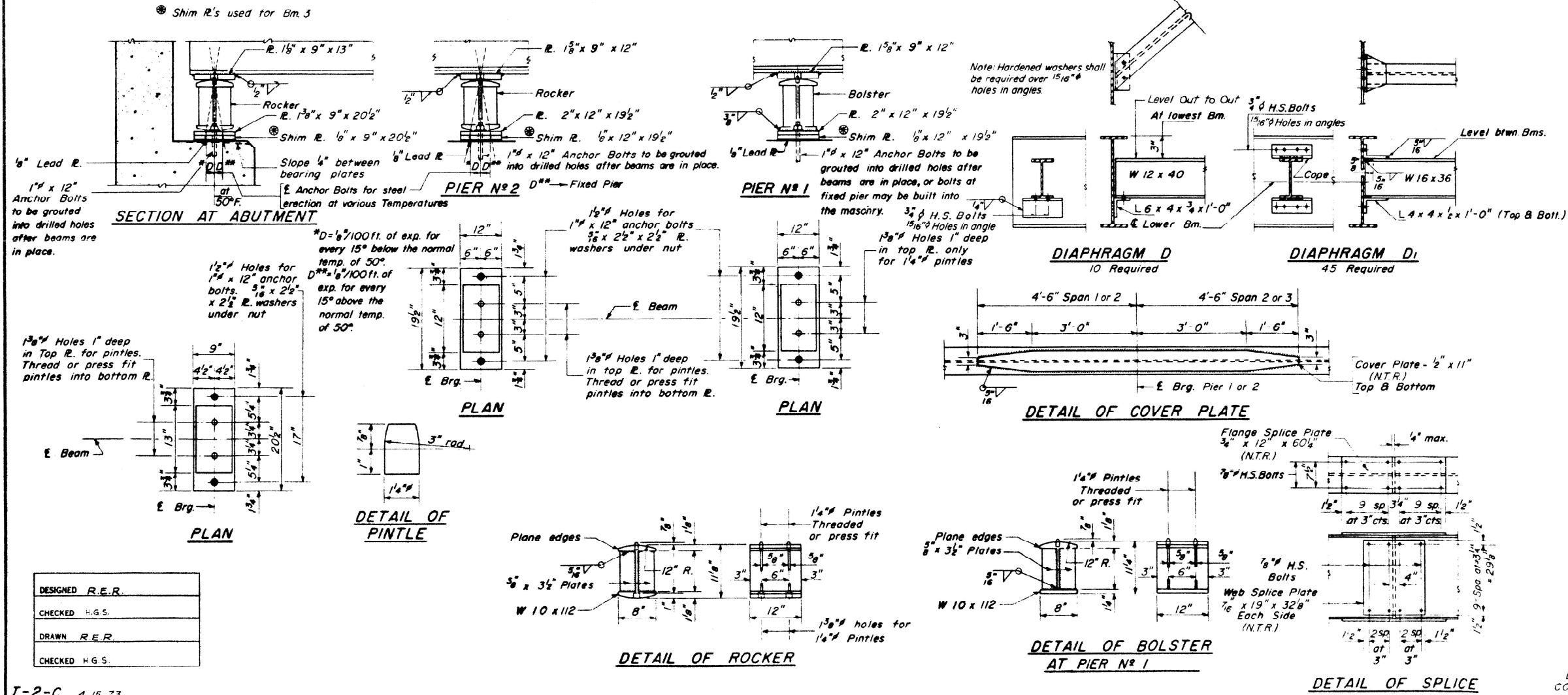
	0.4 Sp. 1 or 3	Pier 1 or 2	0.5 Sp. 2
I_s (in ⁴)	7800	11374	7800
I_c (in ⁴)	19773	—	19773
S_s (in ³)	439	622	439
S_c (in ³)	631	—	631
R (k/ft)	0.885	0.922	0.885
M_e (k)	306	539	206
f_s -non-comp (ksi)	8.4	10.4	5.6
S_R (k/ft)	0.298	0.298	0.298
M_{se} (k)	120	147	108
M_k (k)	577	372	578
M_{imp} (k)	149	89	140
TOTAL (k)	846	608	826
f_s -comp (ksi)	16.1	11.7	15.7
f_s TOTAL (ksi)	24.5	22.1	21.3
VR (k)	58	—	49

	Abut.	Pier	—
R_e (k)	31.5	100.4	—
R_k (k)	42.0	56.6	—
$Imp.$ (k)	10.7	13.7	—
R_{TOTAL} (k)	84.2	170.7	—

I_s and S_s are the moment of inertia and section modulus of the steel section used in computing f_s TOTAL.
 I_c and S_c are the moment of inertia and section modulus of the composite section used in computing f_s TOTAL.
VR is the maximum I_k + Impact shear range in span used to determine shear connector spacing.

3 - Span Symmetrical Structure.
Composite in Positive Moment Areas.

FOR INFORMATION ONLY



DESIGNED	R.E.R.
CHECKED	H.G.S.
DRAWN	R.E.R.
CHECKED	H.G.S.

I-2-C 4-15-73

STRUCTURAL STEEL DETAILS
& STRESS TABLES
FA. RTE. 42 OVER
FLAT BRANCH CREEK
SECTION 112BR-2
CLINTON COUNTY
STA. 425 + 09.00
DALTON DALTON LITTLE NEWPORT
CONSULTING ENGINEERS - AKRON, OHIO

MODEL: Structure Details 014465 (Sheet)
FILE NAME: c:\p\work\clinton\clint014465\sh-1-plan.dgn

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		DRAWN	-	REVISED	-
PLOT SCALE	= 0.16666633 / in.	CHECKED	-	REVISED	-
PLOT DATE	= 1/25/2024	DATE	-	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURE DETAILS
014-0063

SCALE: SHEET OF SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3271/42	14-12HB-P, 112BR-2-P	CLINTON	11	11
CONTRACT NO. 76T40				
ILLINOIS FED. AID PROJECT				