

* (38-5)RS-1

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other loose, detrimental foreign material shall be removed from the portions of flanges of beams or girders in contact with concrete. The removal shall be accomplished with appropriate power hand tools. Cost shall be included in "Concrete Removal."

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

All Structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type 1. The cost shall be included in "Furnishing and Erecting Structural Steel."

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 degrees Fahrenheit.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, OR M-53 grade 60.

Existing longitudinal and transverse reinforcement, extending into the removal area, shall be cut 2 feet from the removal line, cleaned and straightened. New longitudinal reinforcement bars shall be lapped with existing reinforcement.

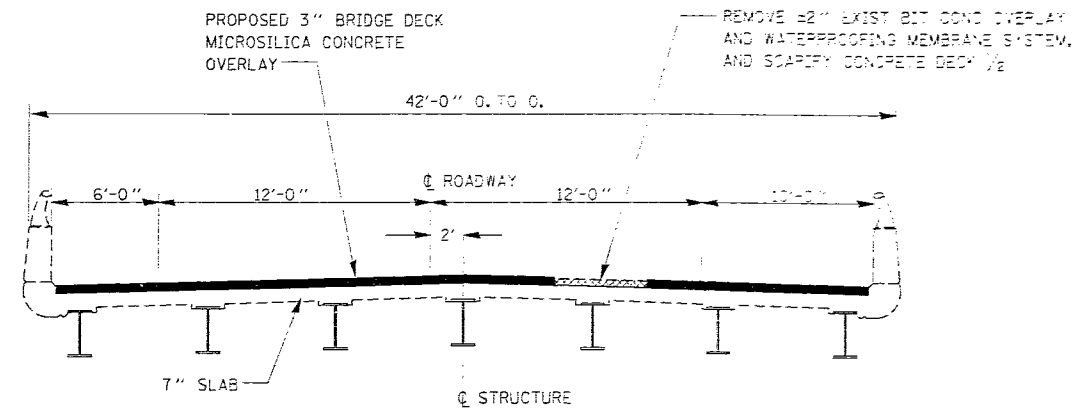
Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. This work shall be included in the cost of "Concrete Removal."

Removal of existing expansion angles shall be included in the cost of "Concrete Removal."

The limits of all concrete removal shall be saw cut prior to removal. The depth of saw cut shall be 3/4" unless shown elsewhere in the plans.

Sloped wall shall be reinforced with welded wire fabric, 6"x6" W4.0xW4.0, weighing 58 lbs. per 100 sq. ft.

Existing structural steel shall only be cleaned as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures."



CROSS SECTION

LOOKING SOUTH
SN 038-0003

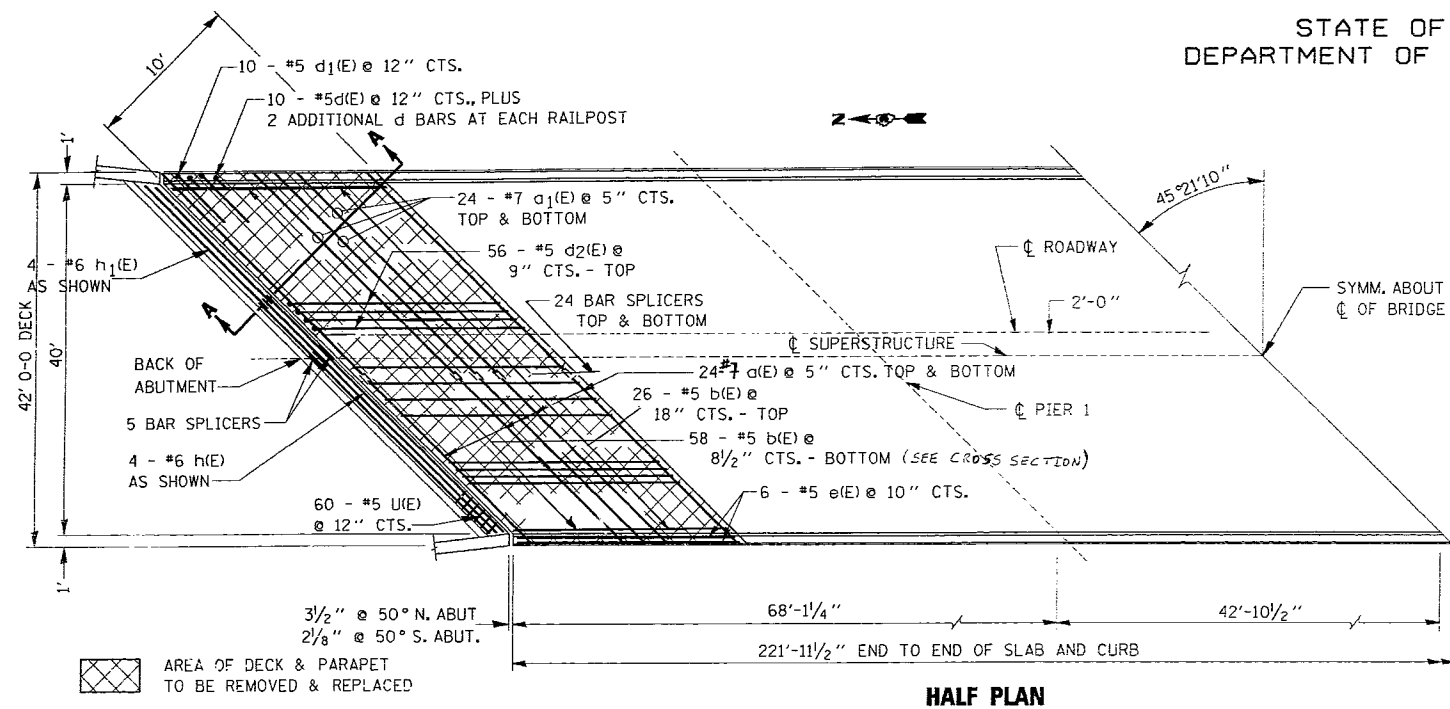
TOTAL BILL OF MATERIALS	
ITEM	QUANTITY
BRIDGE DECK GROOVING	990 SQ YD
BIT CONC REMOVAL (DECK)	990 SQ YD
CONC BR DECK SCARIFICATION (1/2 INCH)	990 SQ YD
BRIDGE DECK MICROSILICA CONC OVERLAY	990 SQ YD
DECK SLAB REPAIR (PARTIAL DEPTH)	10 SQ YD
DECK SLAB REPAIR (FULL DEPTH, TYPE 1)	5 SQ YD
FORMED CONC REPAIR (DEPTH ≤ 5")	40 SQ FT
EPOXY CRACK SEALING	88 FOOT
SLOPEWALL REMOVAL	70 SQ YD
SLOPEWALL 6 INCH	70 SQ YD
CONCRETE REMOVAL	31 CU YD
CONCRETE SUPERSTRUCTURE	31 CU YD
REINF BARS, EPOXY COATED	15,855 LBS
BAR SPLICERS	102 EACH
SLOPEWALL SLURRY PUMPING	60 CU YD
FLOOR DRAIN EXTENSIONS	20 EACH
JACK AND REMOVE EXISTING BEARINGS	14 EACH
ELASTOMERIC BEARING ASSEMBLY, TY 2	7 EACH
SILICONE JOINT SEALER	120 FOOT
FURNISHING & ERECTING STRUCTURAL STEEL	2800 LBS
PLUG EXISTING DECK DRAINS	20 EACH
STUD SHEAR CONNECTORS	568 EACH
ELASTOMERIC BEARING ASSEMBLY, TY 1	7 EACH
PROTECTIVE COAT	990 SQ YD

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0003
STA. 604 + 54.72

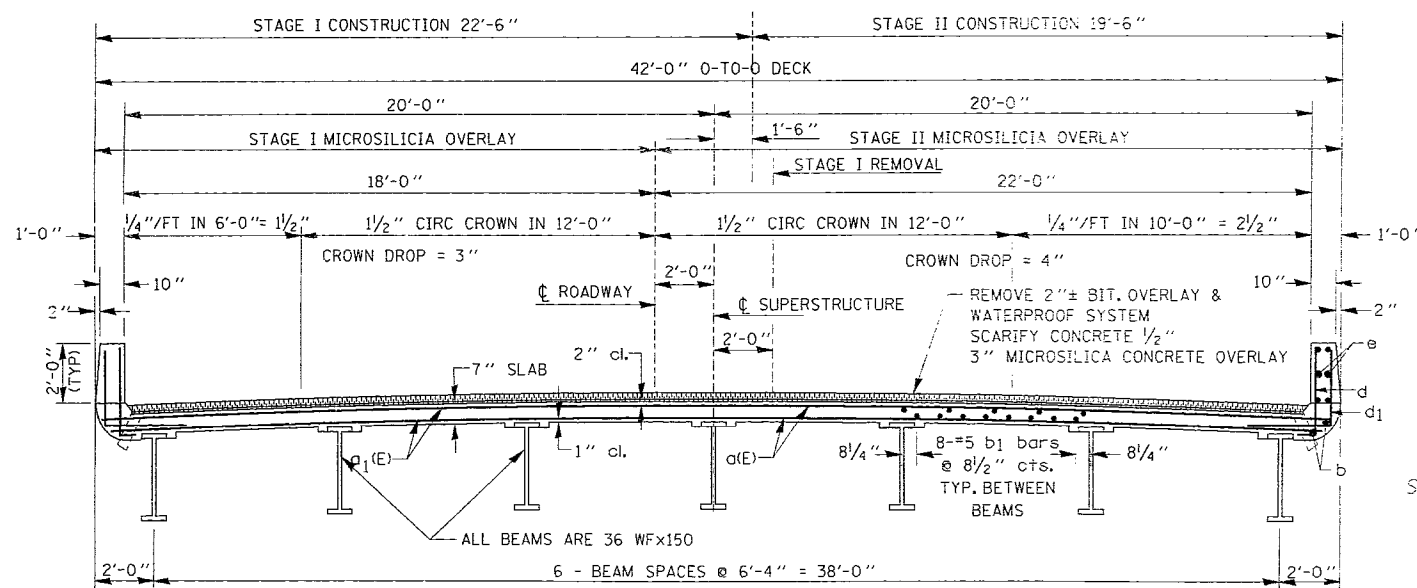
DESIGNED	19
CHECKED	EXAMINED
DRAWN	ENGINEER OF BRIDGE DESIGN
CHECKED	PASSED
	ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	DATE	BY	CHECKED	SHEET NO. 2
57	*	1/20/00	CLS	61	2 OF 2
PROJECT NO. 038-5RS-1					



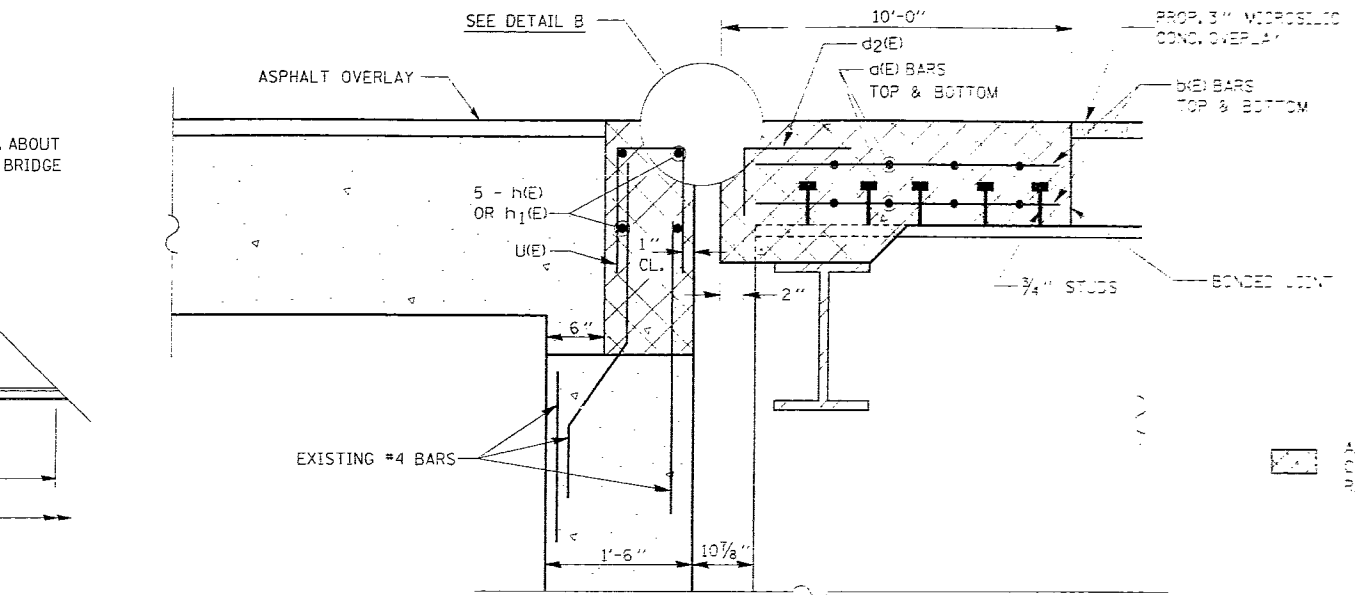
HALF PLAN



CROSS SECTION

NEAR MIDSPAN

(LOOKING SOUTH)

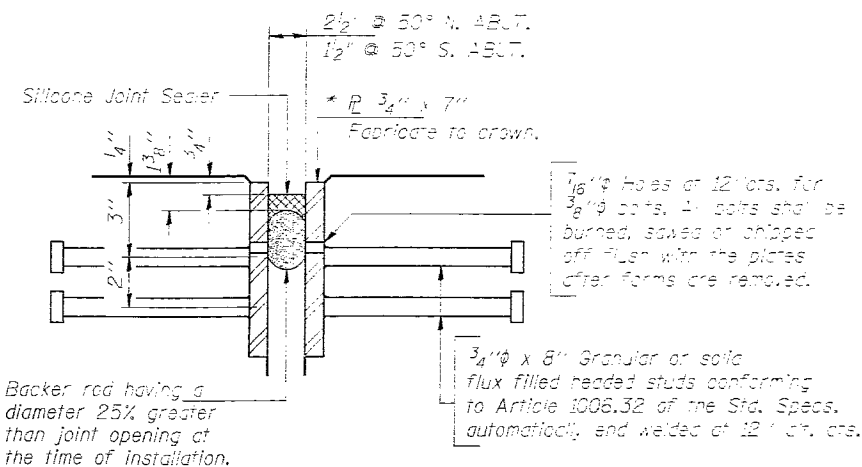


SECTION A-A

BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
d1(E)	92	#7	27'-5"	
d2(E)	92	#7	31'-7"	
b1(E)	168	#5	14'-0"	
b2(E)	168	#5	14'-0"	
h1(E)	62	#5	3'-0"	
h2(E)	40	#5	3'-6"	
d2(E)	112	#5	4'-0"	
U1(E)	24	#5	14'-0"	
U2(E)	6	#5	28'-5"	
h1(E)	6	#5	30'-7"	
U1(E)	120	#5	3'-0"	
CONCRETE REMOVAL				31 CU YD
REINFORCEMENT BARS, EPOXY COATED				15,858 LBS
CONCRETE SUPERSTRUCTURE				31 CU YD
SILICONE JOINT SEALER				120 FOOT
STUD SHEAR CONNECTORS				585 EACH
BAR SPICERS				102 EACH

NOTE: REINFORCEMENT BARS DESIGNATED "E" SHALL BE EPOXY COATED.



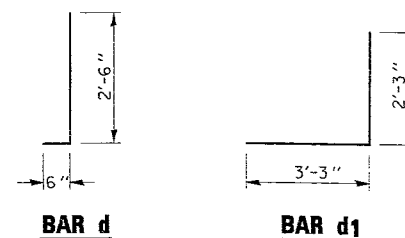
DETAIL B

Note: After fabrication all surfaces of the steel plates shall be given one shop coat of paint specified for Structural Steel. No field painting required.

* Furnish in segments of 20 ft. maximum length. Maximum space between installed segments shall be 3/8". Each space with Silicone Sealant suitable for Structural Steel.

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0003
STA. 604 + 54.72

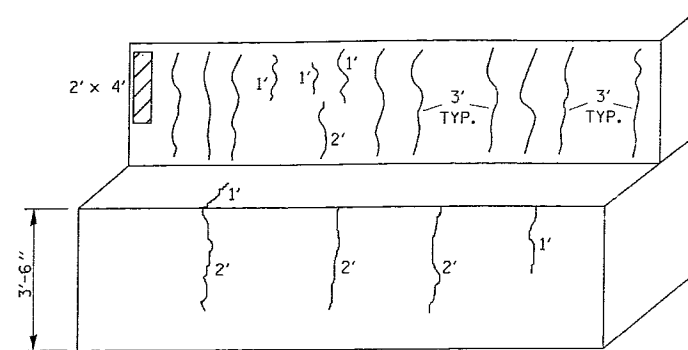
DESIGNED	19
CHECKED	ENGINEER OF BRIDGE DESIGN
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

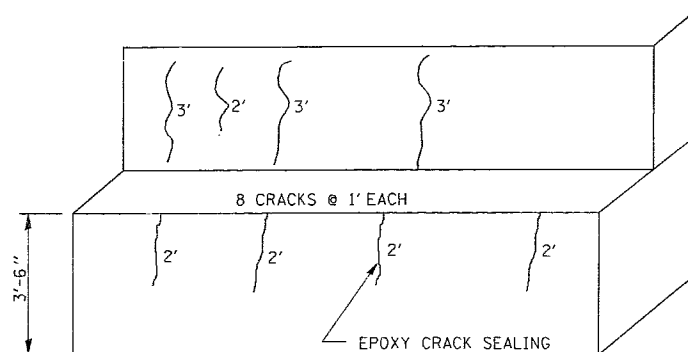
ROUTE NO.	SECTION	COUNT	DATE	SHEET NO.
57	*	ILLINOIS 127	63	3 SHEETS

* (38-5)RS-1



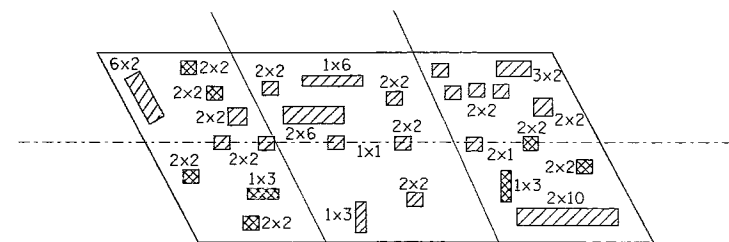
SOUTH ABUTMENT & BACKWALL

FORMED CONCRETE REPAIR $\leq 5''$ = 8 SQ FT
EPOXY CRACK SEALING = 40'



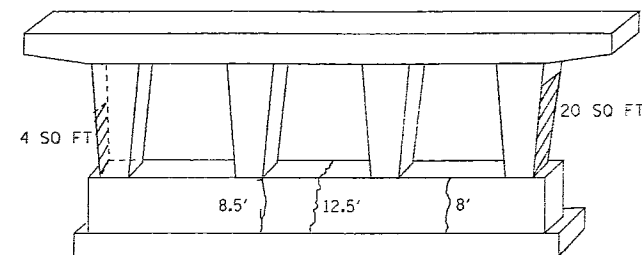
NORTH ABUTMENT & BACKWALL

EPOXY CRACK SEALING = 19'



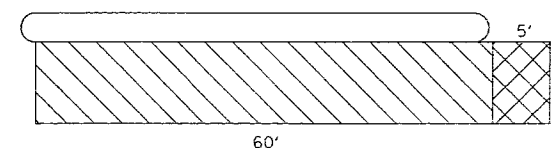
TOP OF DECK

DECK SLAB REPAIR (PARTIAL DEPTH) = 10 SQ YD
DECK SLAB REPAIR (FULL DEPTH, TYPE I) = 5 SQ YD



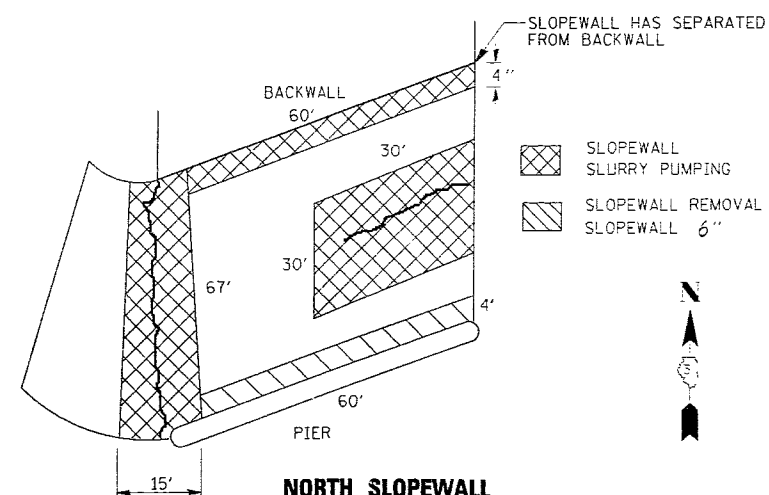
SOUTH PIER

FORMED CONCRETE REPAIR $\leq 5''$ = 24 SQ FT
EPOXY CRACK SEALING = 29'



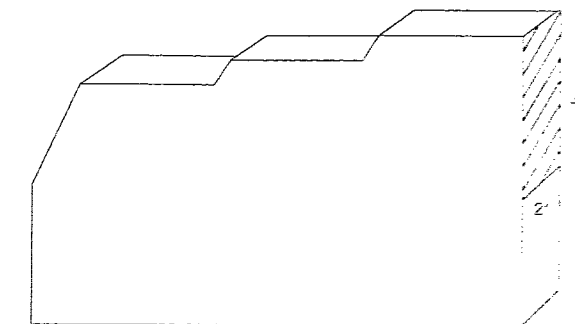
SOUTH SLOPEWALL

SLOPEWALL SLURRY PUMPING = 10 CU YD
SLOPEWALL REMOVAL = 40 SQ YD
SLOPEWALL 6" = 40 SQ YD



NORTH SLOPEWALL

SLOPEWALL HAS SEPARATED FROM BACKWALL
SLOPEWALL SLURRY PUMPING = 70 CU YD
SLOPEWALL REMOVAL = 30 SQ YD
SLOPEWALL 6" = 30 SQ YD



NORTHWEST WINGWALL

FORMED CONCRETE REPAIR $\leq 5''$ = 8 S.F.

S.N. 038-0003

BILL OF MATERIALS

ITEM	QUANTITY
DECK SLAB REPAIR (PARTIAL DEPTH)	10 SQ YD
DECK SLAB REPAIR (FULL DEPTH, TYPE I)	5 SQ YD
EPOXY CRACK SEALING	88 FEET
FORMED CONC REPAIR $\leq 5''$	40 SQ FT
SLOPEWALL SLURRY PUMPING	80 CU YD
SLOPEWALL REMOVAL	70 SQ YD
SLOPEWALL 6 INCH	70 SQ YD

STRUCTURE REHABILITATION

FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0003
STA. 604+54.72

NOTE

Areas of deck repairs shown are estimated. The Engineer shall show actual locations of deck repairs in "As Built" plans.

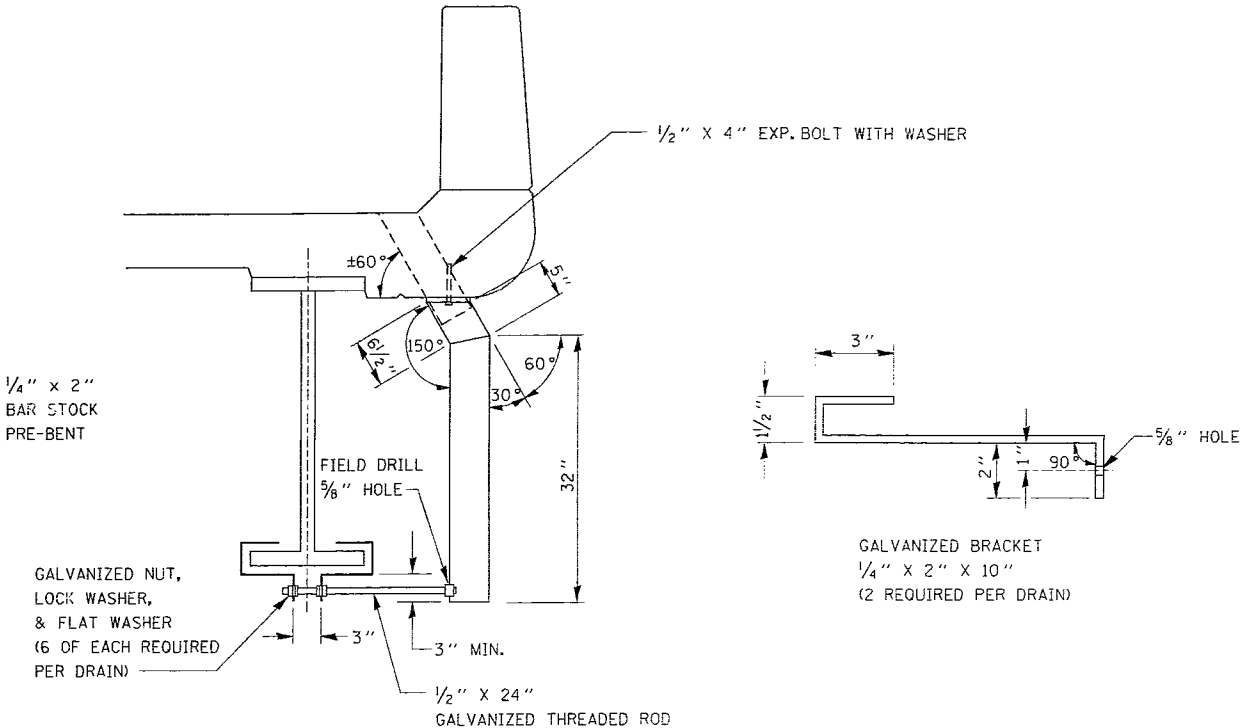
DATE OF SURVEY 01-10-00

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

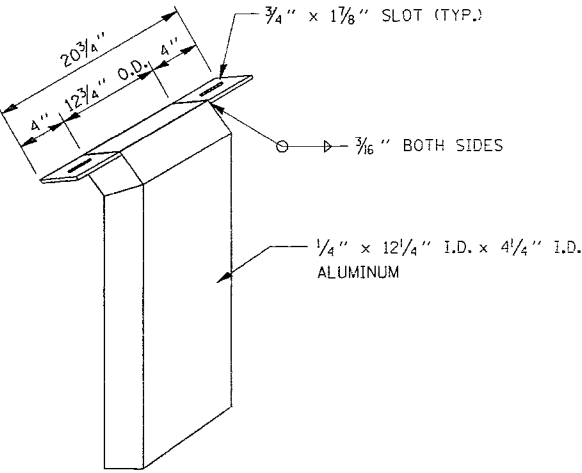
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	SECTY	LEAVE	POST	SHEET NO.
57	*	IP00-001S	127	64	5
SHEETS					9

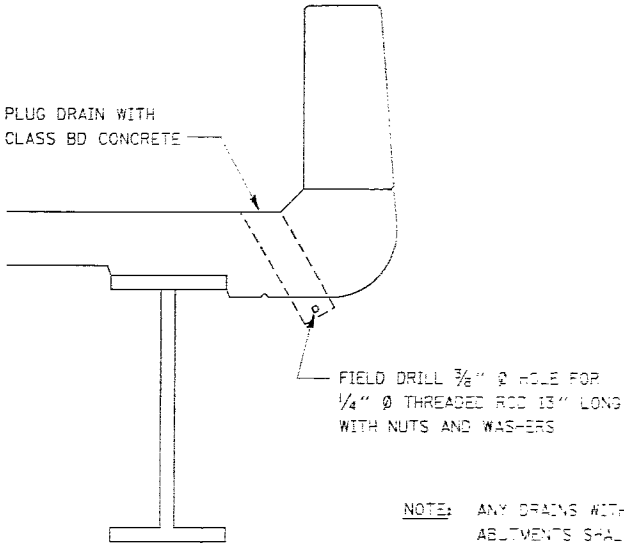
*(38-5)RS-1



BRACKET DETAIL



DECK DRAIN EXTENSION



NOTE: ANY DRAINS WITHIN 30" OF THE PIERS AND ABUTMENTS SHALL BE ELIMINATED. SPACING BETWEEN DRAINS SHALL BE DOUBLED BY PLUGGING EVERY OTHER EXISTING DRAIN.

**SECTION AT DRAIN
DRAIN ELIMINATION DETAIL**

BILL OF MATERIAL

ITEM	QTY	TOTAL
FLOOR DRAIN EXTENSIONS	EA	20
PLUG EXISTING DECK DRAINS	EA	20

DESIGNED
CHECKED
DRAWN
CHECKED

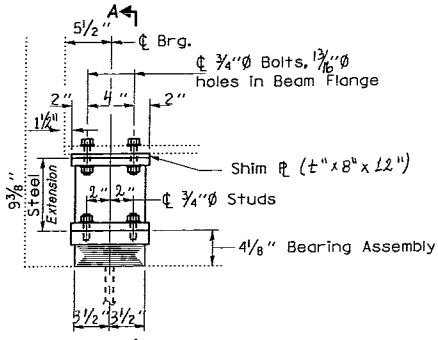
19
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0003
STA. 604 + 54.72

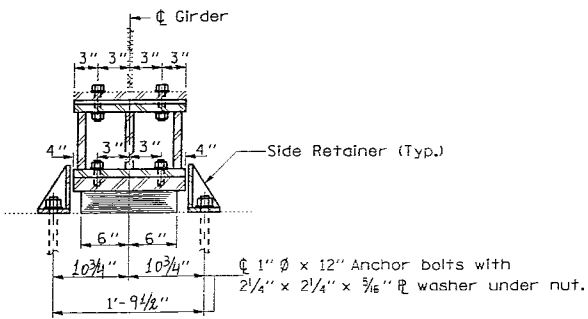
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	DATE	DESIGNER	SHEET NO. 6
57	*	1000-01-15	127 65	9 SHEETS
* 138-5-PS-1				

GIRDER REACTIONS		
R ₀	(K)	25.5
R ₁	(K)	34.4
Imp.	(K)	9.0
R (Total)	(K)	68.9

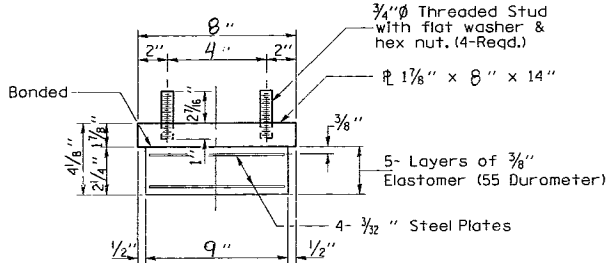


ELEVATION AT
SOUTH ABUTMENT



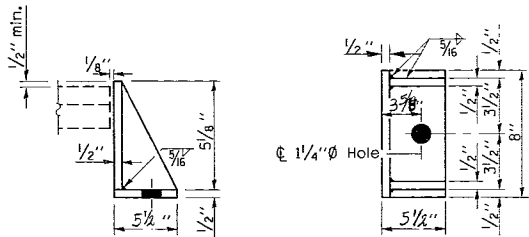
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



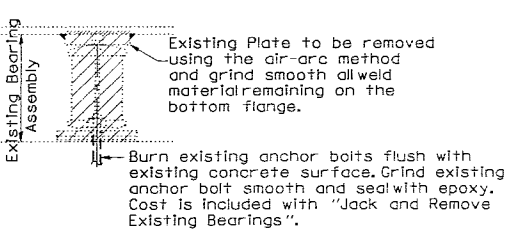
BEARING ASSEMBLY

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



SIDE RETAINER

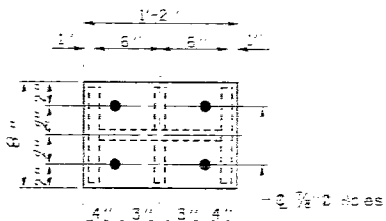
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



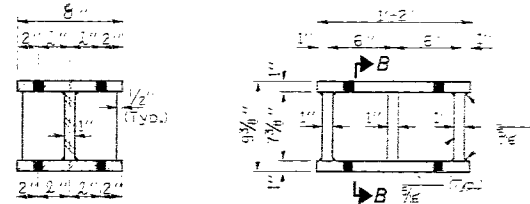
EXISTING BEARING REMOVAL DETAIL

Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, shim P's, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel".
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. Jack capacity = 36 Tons.
Two 1/8" shims of the dimensions of the top extension plate shall be provided for each bearing in addition to all other plates or shims.

See Sheet 9 of 9 for Anchor Bolt Installation.

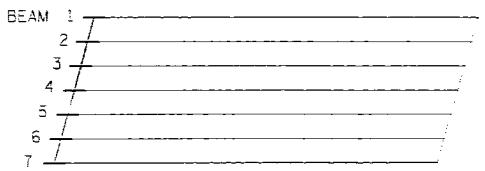


PLAN TOP AND BOTTOM PLATE



ADDITIONAL SOLID 1 PIECE SHIMS REQUIRED

	Beam #1	2	3	4	5	6	7
t	0	0	1/4"	1/4"	0	0	0



BILL OF MATERIAL		
Item	Unit	Total
Elastomeric Bearing		
Assembly Type I	Each	7
Furnishing & Erecting		
Structural Steel	lb.	1500
Jack & Remove		
Exist. Bearings	Each	7

TYPE I
BEARING REPLACEMENT
SOUTH ABUTMENT
S.N. 038-0003
STA. 604 + 54.72

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

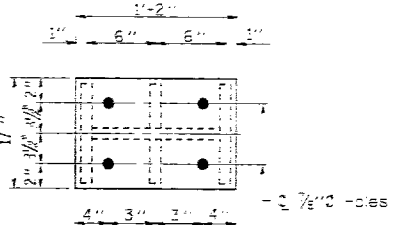
ROUTE NO.	SECTION	COUNT	SHEETS	SHEET NO. 7
57	*	IPC00015	127 66	9 SHEETS
FED. ROAD DIST. NO.	CLINCH	FED. ROAD PROJECT		

* (38-5)RS-1

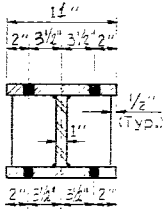
GIRDER REACTIONS

	ABUTMENTS
R ₁	(K) 25.5
R ₂	(K) 34.4
Imp.	(K) 9.0
R (Total)	(K) 68.9

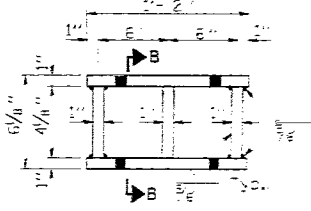
Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, shim plates, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel".
See Sheet 9 of 9 for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 36 Tons.
Two 1/8" shims of the dimensions of the bottom bearing plate shall be provided for each bearing in addition to all other plates or shims.



PLAN TOP AND BOTTOM PLATE



SECTION B-B



STEEL EXTENSION DETAIL

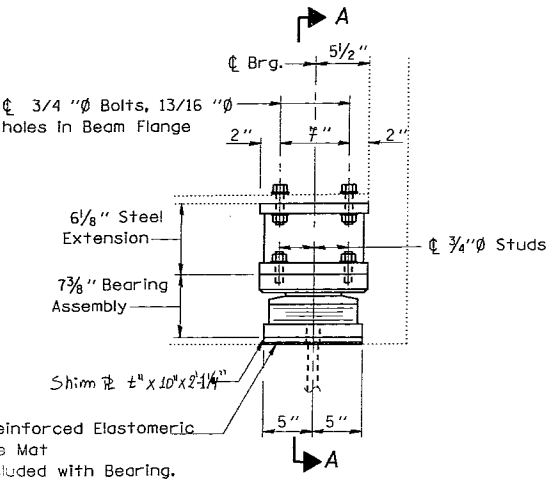
ADDITIONAL SOLID 1 PIECE SHIMS REQUIRED

	Beam #1	2	3	4	5	6	7
'E'	0	0	1/4"	1/4"	0	0	0

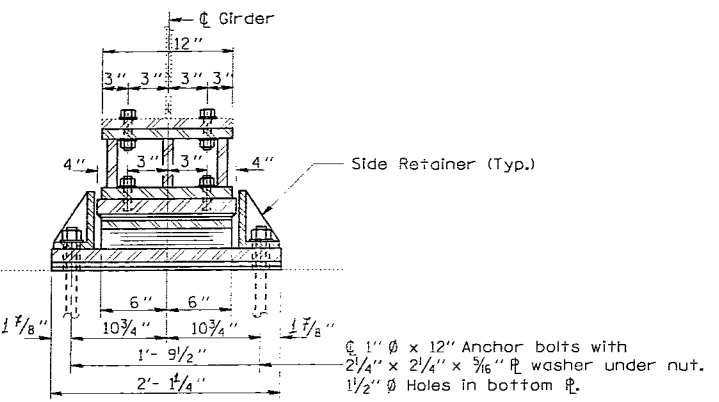
BEAM 1	
2	
3	
4	
5	
6	
7	

BILL OF MATERIAL		
Item	Unit	Total
Elastomeric Bearing Assembly Type II	EACH	-
Furnishing & Erecting Structural Steel	SQ.	1300
Jack & Remove Exist. Bearings	EACH	1

TYPE II
BEARING REPLACEMENT
NORTH ABUTMENT
S.N. 038-0003
STA. 604 + 54.72

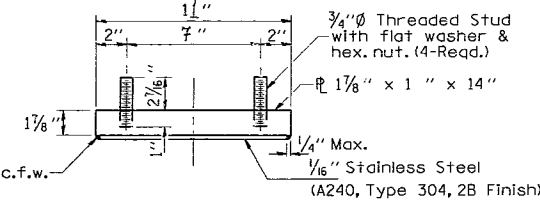


ELEVATION AT NORTH ABUTMENT

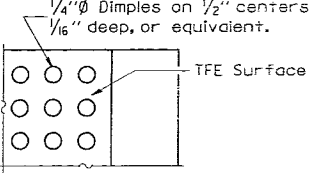


SECTION A-A

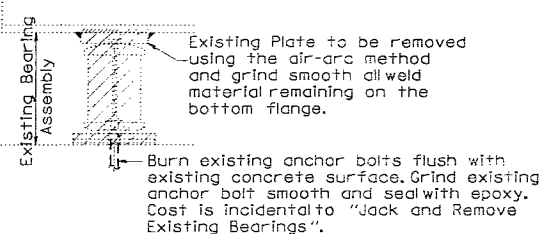
TYPE II TFE ELASTOMERIC EXP. BRG.



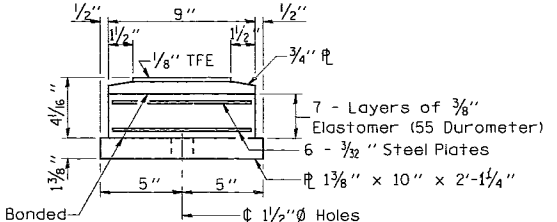
TOP BEARING ASSEMBLY



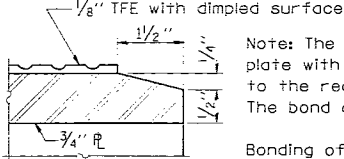
PLAN-TFE SURFACE



EXISTING BEARING REMOVAL DETAIL

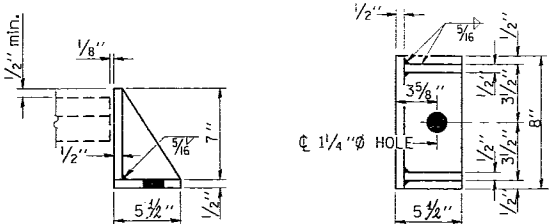


BOTTOM BEARING ASSEMBLY



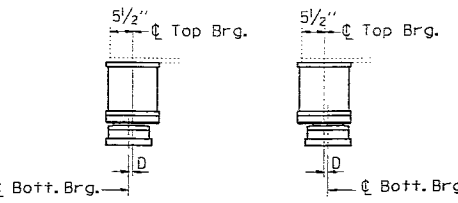
SECTION THRU TFE

Note: The 1/8" 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 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

BELOW 50°F.
(Move bott. brg. away from fixed brg.)
ABOVE 50°F.
(Move bott. brg. toward fixed brg.)

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

EXAMINED	19
PASSED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEET NO.
57	*	IROQUOIS	127	67
FED. ROAD DIST. NO. 7				9 SHEETS

*(38-5)RS-1
NOTES

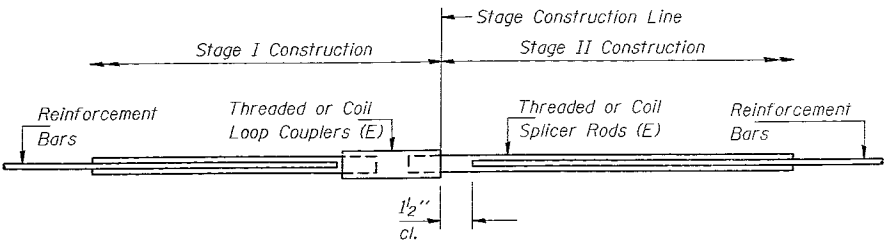
Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 80 ksi yield strength, threaded or rolled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

- ① Minimum Capacity = $1.25 \times f_y \times A_s$
(Tension in kips)
- ② Minimum *Pull-out Strength = $1.25 \times f_{spdw} \times A_s$
(Tension in kips)

Where f_y = Yield strength of lapped reinforcement bars in ksi.
 f_{spdw} = Allowable tensile stress in lapped reinforcement bars in ksi. Service Load
 A_s = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kips - tension	Min. Pull-out Strength kips - tension
#5	2'-0"	23.0	9.2
#6	2'-7"	33.2	13.3
#7	3'-5"	45.0	18.0
#8	4'-6"	59.0	23.8

Bar splicer assemblies shall be according to Section 808 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price specified for BAR SPLICERS.



SPLICER DETAIL

Bar Size	No. Assemblies Required	Location
#7	102	EXPANSION JOINT & END OF DECK

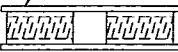
The diameter of this part is the same as the diameter of the bar spliced.
The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

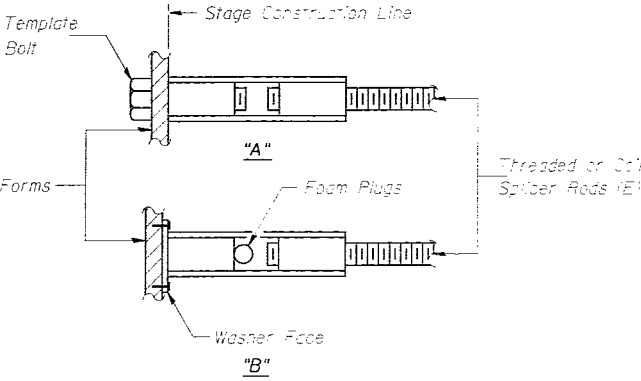
Wire Connector



WELDED SECTIONS

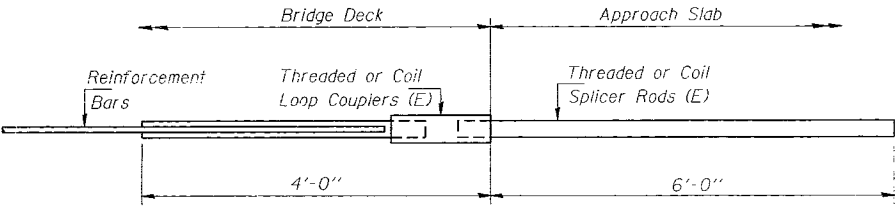
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

BSD-1 4-30-99

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY

BAR SPLICER ASSEMBLY DETAILS

S.N. 038-0003
STA. 604 + 54.72

The Illinois Coil-Lock Anchor Bolt is a proprietary item which is the property of the Illinois Department of Transportation. Use, reproduction or disclosure without express written permission is prohibited and protected under Federal copyright laws. The production and the fabrication of this bolt for use on highway projects in the State of Illinois shall be permitted and there shall be no incurred charges or fees to the manufacturer or the fabricator for producing or fabricating this bolt.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

MATERIALS FOR ILLINOIS COIL-LOCK
ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A 519, Grade 1026, CW and supplied with hexagonal nuts and flat washers.
The coil wire shall be made of any suitable soft steel wire.
The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.
The epoxy grout shall be a two-component, epoxy resin bonding system conforming to ASTM C 881, Type I, Grade I and of a Class suitable for the temperature at installation.

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or according to the manufacturer's recommendation after beams or girders have been erected and aligned.
Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.
The anchor bolts, furnished and installed including the epoxy grout or capsules shall not be paid for separately, but shall be included in the unit bid price for "Footing and Bearing Structure Steel".

INSTALLATION PROCEDURE for the ILLINOIS
COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bar shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bar shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes according to the manufacturer's recommendations and procedures.
The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:
1. A threaded rod stud with nut and washer of the type specified.
2. A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.

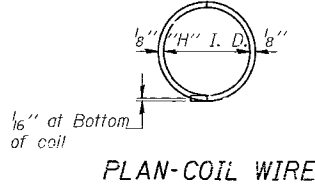
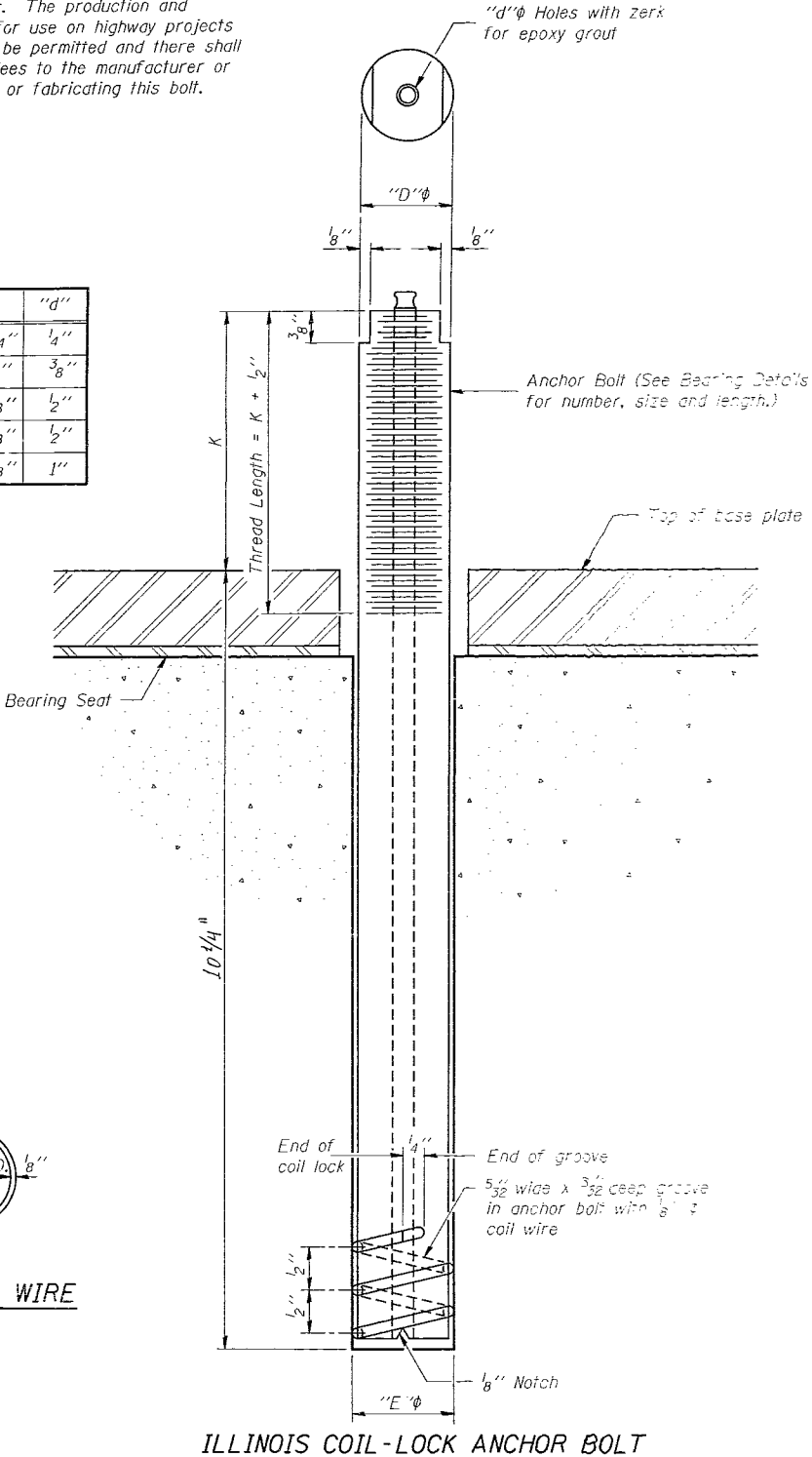
Location	Type
ABUTMENT	A307

ASTM F 1554 Grade 105, ASTM A 442 and AASHTO M 514 Grade 105 anchor bolts may be substituted for the anchor bolts shown above.

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
ANCHOR BOLT DETAILS
FOR BEARINGS

S.N. 038-0003
STA. 604 + 54.72

D	E	H	K	"d"
1"	1 1/8"	3 1/16"	1 3/4"	1/4"
1 1/4"	1 3/8"	1 1/2"	2"	3/8"
1 1/2"	1 5/8"	1 5/16"	2 1/8"	1/2"
2"	2 1/8"	1 3/16"	2 7/8"	1/2"
2 1/2"	2 5/8"	2 5/16"	3 3/8"	1"



DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	

ABB-1 4-30-99

FEB. 10, 2000
XEP02095, BRIDGEDET, DDN

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO.	SECTION	DATE	BY	CHECKED
57	* IROQUOIS	127	69	
SHEET NO. 1				
8 SHEETS				

*(38-5)RS-1

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 36 unless otherwise noted.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other loose, detrimental foreign material shall be removed from the portions of flanges of beams or girders in contact with concrete. The removal shall be accomplished with appropriate power hand tools. Cost shall be included in "Concrete Removal."

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.

All Structural steel shall be shop painted with inorganic zinc rich primer per AASHTO M300, Type 1. The cost shall be included in "Furnishing and Erecting Structural Steel."

Joint openings shall be adjusted according to Article 503.10(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50 degrees Fahrenheit.

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42, OR M-53 grade 60.

Existing longitudinal reinforcement extending into the removed area shall be cleaned, straightened, and incorporated into the new construction. Existing transverse reinforcement extending from the deck into removed area shall be cut allowing 2'-0" to extend into the removed area. These bars shall be cleaned, straightened, and incorporated into the new construction.

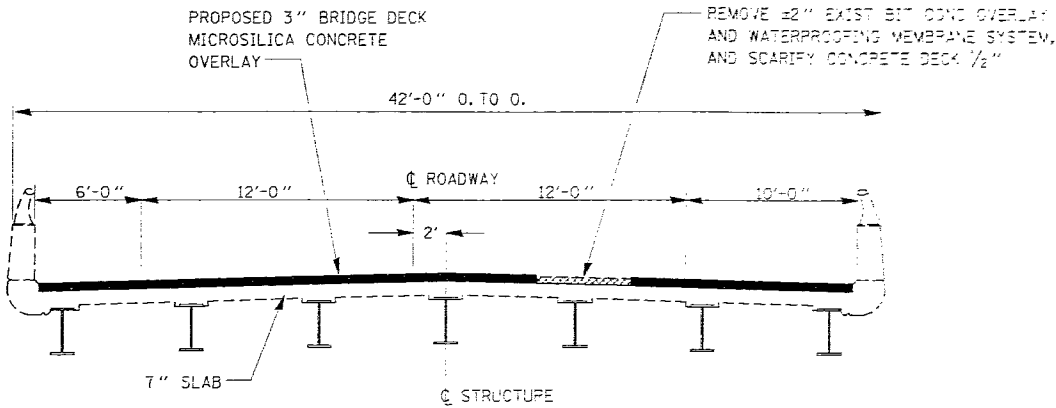
Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. This work shall be included in the cost of "Concrete Removal."

Removal of existing expansion angles shall be included in the cost of "Concrete Removal."

The limits of all concrete removal shall be saw cut prior to removal. The depth of saw cut shall be 3/4" unless shown elsewhere in the plans.

Sloped wall shall be reinforced with welded wire fabric, 6"x6" W4.0xW4.0, weighing 58 lbs. per 100 sq. ft.

Existing structural steel shall only be cleaned as required by the Special Provision "Cleaning and Painting Adjacent Areas of Existing Steel Structures."



CROSS SECTION

LOOKING NORTH
SN 038-0004

TOTAL BILL OF MATERIALS	
ITEM	QUANTITY
BRIDGE DECK GROOVING	990 SQ YD
BIT CONC REMOVAL (DECK)	990 SQ YD
CONC BR DECK SCARIFICATION (1/2 INCH)	990 SQ YD
BRIDGE DECK MICROSILICA CONC OVERLAY	990 SQ YD
DECK SLAB REPAIR (PARTIAL DEPTH)	40 SQ YD
DECK SLAB REPAIR (FULL DEPTH, TYPE 1)	5 SQ YD
FILTER FABRIC FOR USE WITH RIPRAP	20 SQ YD
FORMED CONC REPAIR (DEPTH ≤ 5")	39 SQ FT
EPOXY CRACK SEALING	67 FOOT
SLOPEWALL REMOVAL	190 SQ YD
SLOPEWALL 6 INCH	190 SQ YD
STONE DUMPED RIPRAP, CLASS A4	20 SQ YD
CONCRETE REMOVAL	13 CU YD
CONCRETE SUPERSTRUCTURE	13 CU YD
REINF BARS, EPOXY COATED	3,761 LBS
BAR SPLICERS	24 EACH
SLOPEWALL SLURRY PUMPING	50 CU YD
FLOOR DRAIN EXTENSIONS	16 EACH
JACK AND REMOVE EXISTING BEARINGS	14 EACH
ELASTOMERIC BEARING ASSEMBLY, TY 2	7 EACH
SILICONE JOINT SEALER	120 FOOT
FURNISHING & ERECTING STRUCTURAL STEEL	2800 LBS
ELASTOMERIC BEARING ASSEMBLY, TY 1	7 EACH
PLUG EXISTING DECK DRAINS	20 EACH
PROTECTIVE COAT	990 SQ YD

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0004
STA. 604 + 54.72

DESIGNED	19
CHECKED	EXAMINED
DRAWN	PASSED
CHECKED	ENGINEER OF BRIDGES AND STRUCTURES

PLATE NO.	SECTION	SHEET	DATE
S.A. 57	* IROQUOIS	127	71
FED. ROAD DIST. NO. 7		CONTRACT	PERM. PROJECT

8-SHEET NO. 3
6-SHEETS

A 3D perspective drawing of a rectangular prism. The top horizontal edge is labeled $3'-9''$. The front horizontal edge is labeled $3'-6''$. The top surface is divided into sections labeled $1'$, 2×3 , 2×2 , and $3'$ TYP. The front face is divided into four vertical sections, each labeled $2'$.

NORTH PIER

10 SO FT

DESIGNED
CHECKED
DRAWN
CHECKED

Diagram illustrating the layout of the top of a deck, showing various rectangular and square tiles with dimensions and patterns. The tiles are arranged in a grid-like fashion, with some tiles having diagonal hatching or cross-hatching patterns. The dimensions of the tiles are labeled as follows:

- Top left: 2×2 (cross-hatched)
- Below top left: 2×2 (cross-hatched)
- Below top left: 1×1 (cross-hatched)
- Below top left: 1×1 (cross-hatched)
- Below top left: 1×1 (cross-hatched)
- Below top left: 5×5 (diagonal hatching)
- Below top left: 1.5×3 (cross-hatched)
- Below top left: 2×30 (diagonal hatching)
- Below top left: 5×6 (diagonal hatching)
- Below top left: 4×18 (diagonal hatching)
- Below top left: 3×20 (diagonal hatching)
- Below top left: 1×4 (diagonal hatching)
- Below top left: 2×2 (cross-hatched)
- Below top left: 5×10 (diagonal hatching)
- Below top left: 1×3 (diagonal hatching)
- Below top left: 1×1 (cross-hatched)
- Below top left: 1×2 (cross-hatched)

The diagram is labeled "TOP OF DECK" at the bottom.

4 SQ FT

Diagram illustrating the plan view of a proposed pier and backwall structure. The structure is shown in relation to existing structures and a channel.

Key dimensions and labels:

- BACKWALL**: 60' (top section), 60' (bottom section)
- PIER**: 6' x 10' (central structure)
- BETWEEN STRUCTURES**: 45' (width of the gap)
- Channel Width**: 70' (indicated by arrows)
- Channel Depth**: 9' (indicated by a vertical line)
- Channel Slope**: 2' (indicated by a vertical line)
- Channel Angle**: 70' (indicated by an arc)
- Channel Angle**: 90' (indicated by an arc)

Legend:

- Pier
- Backwall

BILL OF MATERIALS	
ITEM	QUANTITY
DECK SLAB REPAIR (PARTIAL DEPTH)	40 SQ YD
DECK SLAB REPAIR (FULL DEPTH, TYPE I)	5 SQ YD
EPOXY CRACK SEALING	67 FOOT
FORMED CONC REPAIR $\leq$ 5"	39 SQ FT
STONE DUMPED RIPRAP, CLASS A4	20 SQ YD
FILTER FABRIC FOR USE WITH RIPRAP	20 SQ YD
SLOPEWALL SLURRY PUMPING	50 CU YD
SLOPEWALL REMOVAL	190 SQ YD
SLOPEWALL 6 INCH	190 SQ YD

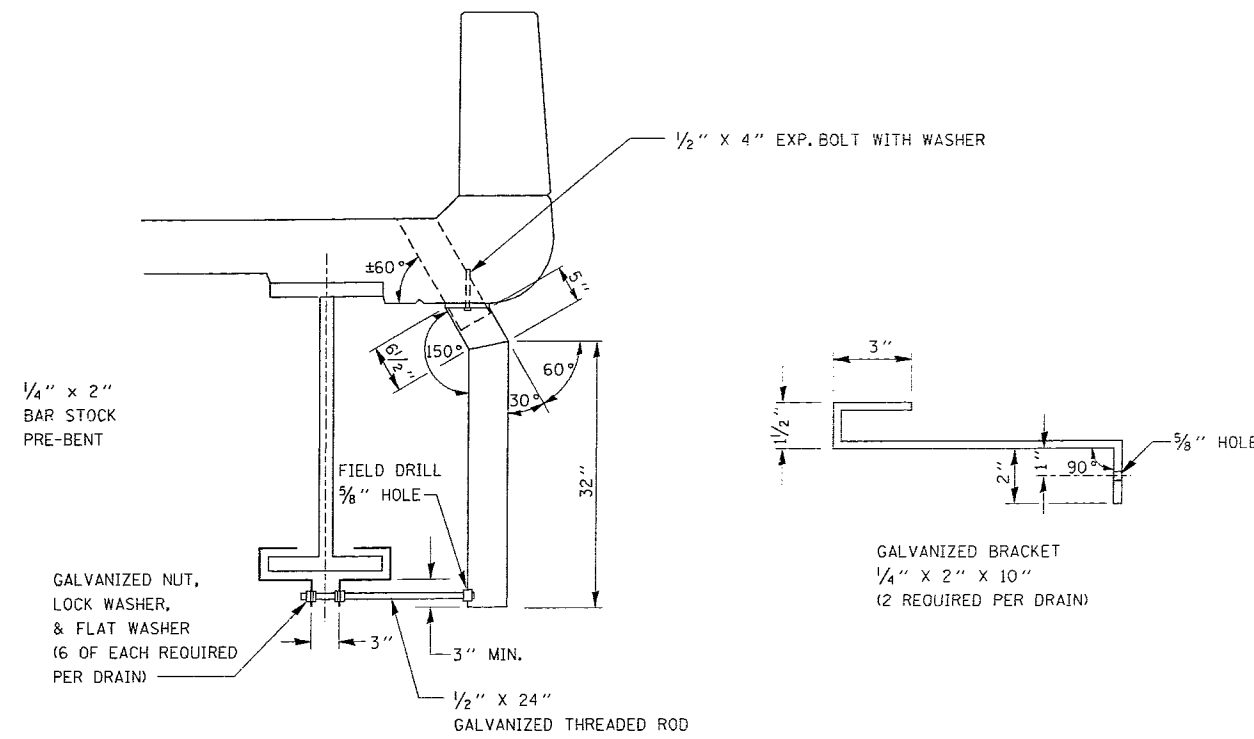
NOTE

Areas of deck repairs shown are estimated. The Engineer shall show correct locations of deck repairs in "As Built" plans.

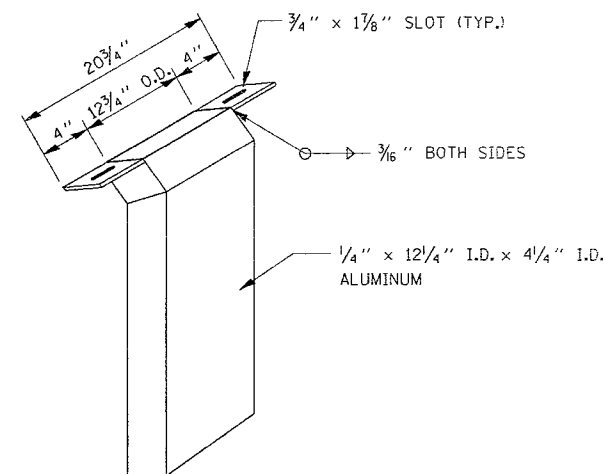
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	DATE	REV.	SHEET NO.
57	*	12/01/03	127	72
SHEETS				

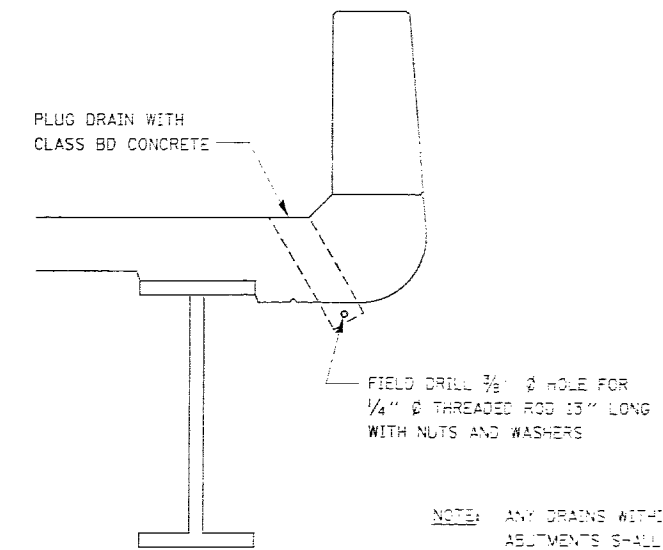
*(38-5)RS-1



BRACKET DETAIL



DECK DRAIN EXTENSION



NOTE: ANY DRAINS WITHIN 10' OF THE PIERS AND ABUTMENTS SHALL BE ELIMINATED. SPACING BETWEEN DRAINS SHALL BE DOUBLED BY PLUGGING EVERY OTHER EXISTING DRAIN.

**SECTION AT DRAIN
DRAIN ELIMINATION DETAIL**

BILL OF MATERIAL

ITEM	QTY	TOTAL
FLOOR DRAIN EXTENSIONS	EA	16
PLUG EXISTING DECK DRAINS	EA	20

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

EXAMINED	19
PASSED	ENGINEER OF BRIDGE DESIGN
	ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
S.N. 038-0004
STA. 604 + 54.72

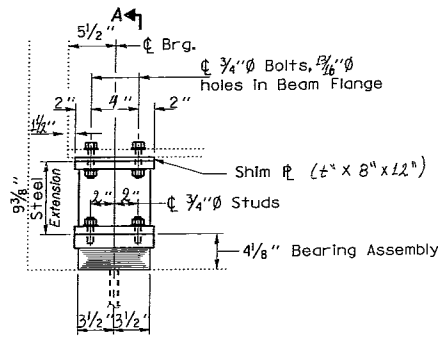
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SHEET NO.	DATE	BY	CHECKED
57	127	73		
SHEET NO. 5				
8 SHEETS				

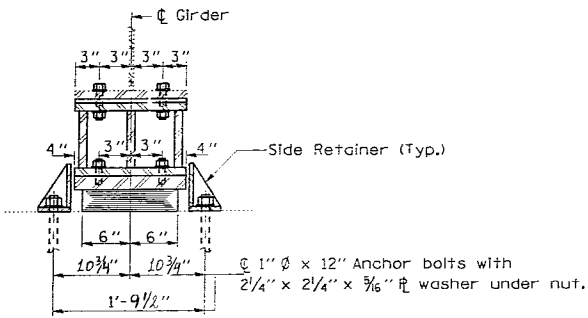
GIRDER REACTIONS

RE	(K)	25.5
FL	(K)	34.4
Imp.	(K)	9.0
R (Total)	(K)	68.9

* (38-5)RS-1

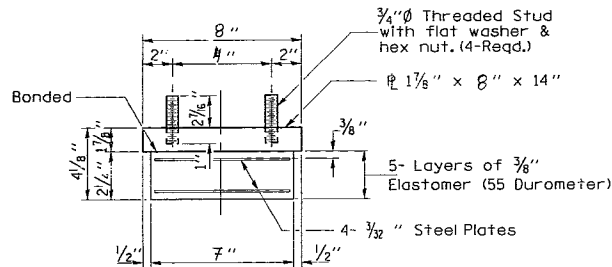


ELEVATION AT
SOUTH ABUTMENT



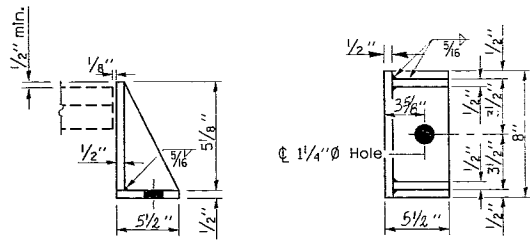
SECTION A-A

TYPE I ELASTOMERIC EXP. BRG.



BEARING ASSEMBLY

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

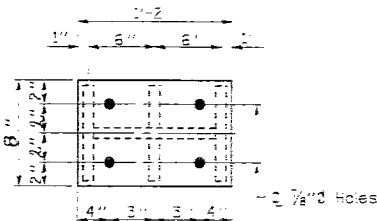


SIDE RETAINER

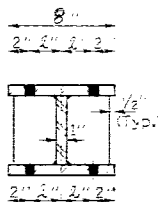
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel". New steel extensions, side retainers, shim P's, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel". Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions. Min. jack capacity = 36 Tons. Two 1/8" shims of the dimensions of the top extension plate shall be provided for each bearing in addition to all other plates or shims.

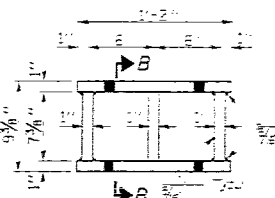
See Sheet 9 of 9 for Anchor Bolt Installation.



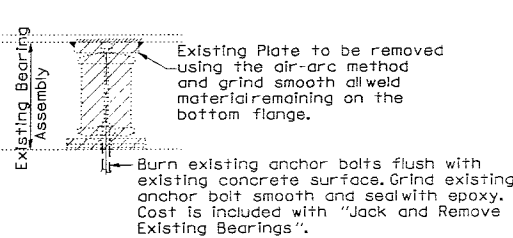
PLAN TOP AND BOTTOM PLATE



SECTION B-B



STEEL EXTENSION DETAIL



EXISTING BEARING REMOVAL DETAIL

ADDITIONAL SOLID 1 PIECE SHIMS REQUIRED

	Beam #1	2	3	4	5	6	7
1	0	0	0	1/8"	0	0	0

BEAM	1	2	3	4	5	6	7
1							

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	1
Furnishing & Erecting Structural Steel	lb.	1000
Jack & Remove	Each	1
Exist. Bearings	Each	1

TYPE I
BEARING REPLACEMENT
SOUTH ABUTMENT
S.N. 038-0004
STA. 604 + 54.72

DESIGNED	19
CHECKED	
DRAWN	
CHECKED	

EXAMINED	ENGINEER OF BRIDGE DESIGN
PASSED	ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

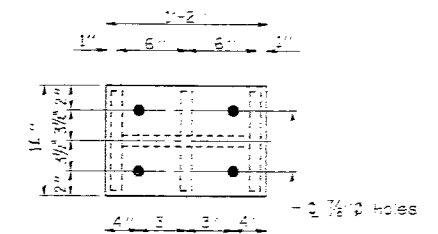
PROJECT NO.	SECTION	DATE	REV.	SHEET NO. 6
57	*	PROJ. 127	74	8 SHEETS
FILE NO.	CLINCH	FILE NO.	FILE NO.	

* (38-5)PS-1

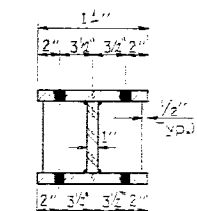
GIRDER REACTIONS

	ABUTMENTS
R _L (K)	25.5
R _R (K)	34.4
Imp. (K)	9.0
R (Total) (K)	68.9

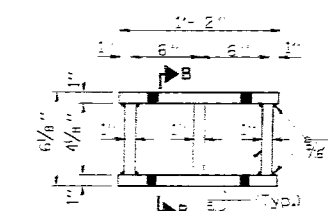
Notes: Diaphragm removal and replacement may be required to facilitate drilling holes. Cost shall be included in the cost of "Furnishing and Erecting Structural Steel".
New steel extensions, side retainers, shim R's, connection bolts, and anchor bolts are included in "Furnishing and Erecting Structural Steel".
See Sheet of for Anchor Bolt Installation.
Prior to ordering any material, the Contractor shall verify in the field all bearing height and shim thickness dimensions.
Min. jack capacity = 36 Tons
Two 1/8" shims of the dimensions of the bottom bearing plate shall be provided for each bearing in addition to all other plates or shims.



PLAN TOP AND BOTTOM PLATE



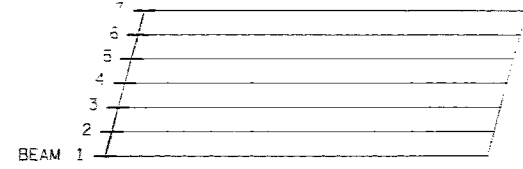
SECTION B-B



STEEL EXTENSION DETAIL

ADDITIONAL SOLID 1 PIECE SHIMS REQUIRED

Beam #1	2	3	4	5	6	7
0	0	0	1/8"	0	0	0

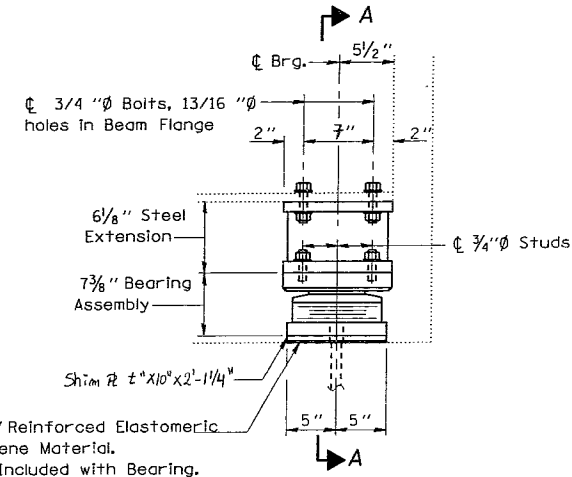


BEAM 1

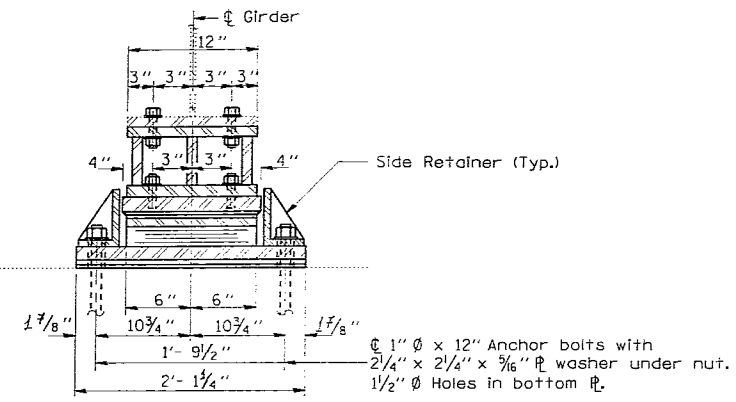
BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type II	Each	-
Furnishing & Erecting Structural Steel	Sq. Ft.	1300
Jack & Remove Exist. Bearings	Each	-

TYPE II
BEARING REPLACEMENT
NORTH ABUTMENT
S.N. 038-0004
STA. 604 + 54.72

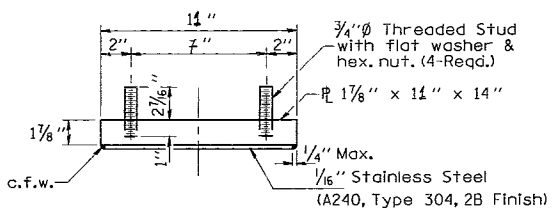


ELEVATION AT NORTH ABUTMENT

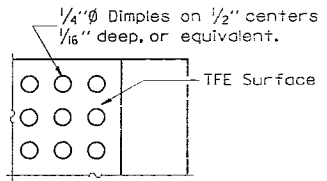


SECTION A-A

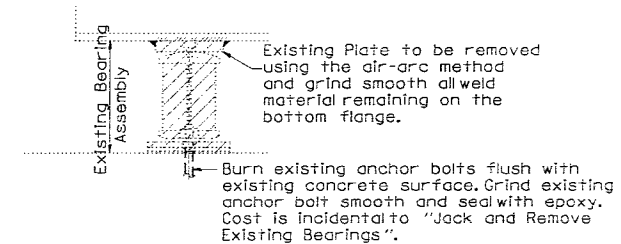
TYPE II TFE ELASTOMERIC EXP. BRG.



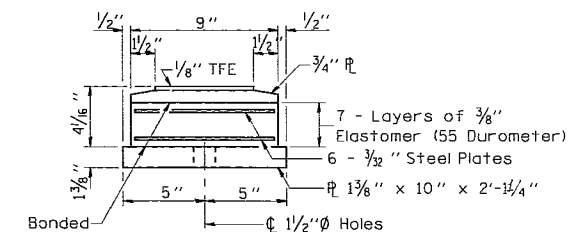
TOP BEARING ASSEMBLY



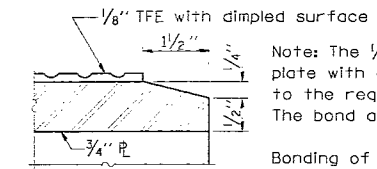
PLAN-TFE SURFACE



EXISTING BEARING REMOVAL DETAIL



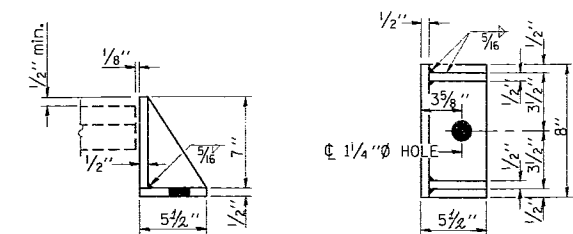
BOTTOM BEARING ASSEMBLY



SECTION THRU TFE

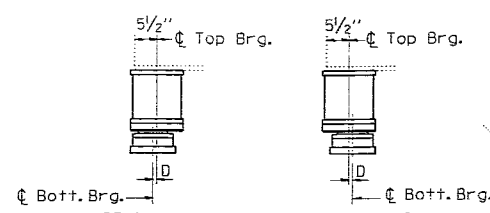
Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SIDE RETAINER

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



SETTING ANCHOR BOLTS AT EXP. BRG.

D=1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

DESIGNED	19
CHECKED	
DRAWN	
CHECKED	

EXAMINED	ENGINEER OF BRIDGE DESIGN
PASSED	ENGINEER OF BRIDGES AND STRUCTURES

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO.
FA 57	*	IROQUOIS	127 75	8
FEED ROAD DIST. (M.I.)	BLIND	FEED ROAD PROJECT		

*(38-5)RS-1
NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.
Splicer rods shall be of minimum 60 ksi yield strength, threaded or rolled full length.
All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.
Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory, and the proposed bar splicer assembly satisfies the following requirements:

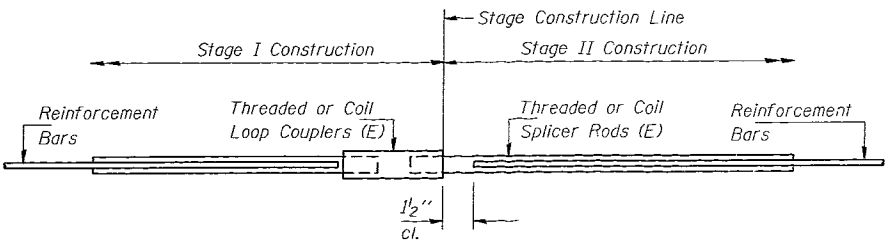
① Minimum Capacity (Tension in kips) = $1.25 \times f_y \times A_l$

② Minimum Pull-out Strength (Tension in kips) = $1.25 \times f_{sew} \times A_l$

Where f_y = Yield strength of lapped reinforcement bars in ksi;
 f_{sew} = Allowable tensile stress in lapped reinforcement bars in ksi (Service Load)
 A_l = Tensile stress area of lapped reinforcement bars.
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity (kips - tension)	Min. Pull-out Strength (kips - tension)
#5	2'-0"	23.0	9.2
#6	2'-7"	35.1	13.5
#7	3'-5"	48.1	18.0
#8	4'-6"	66.9	25.6

Bar splicer assemblies shall be according to Section 608 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS".



SPLICER DETAIL

Bar Size	No. Assemblies Required	Location
#7	24	EXPANSION JOINT & END OF DECK

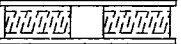
The diameter of this part is equal or larger than the diameter of bar spliced.

ROLLED THREAD DOWEL BAR



**** ONE PIECE**

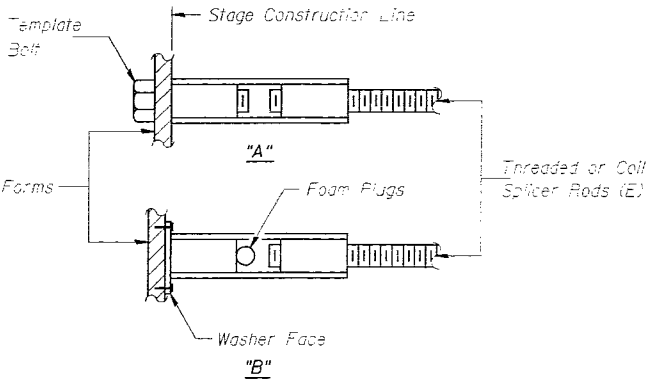
Wire Connector



WELDED SECTIONS

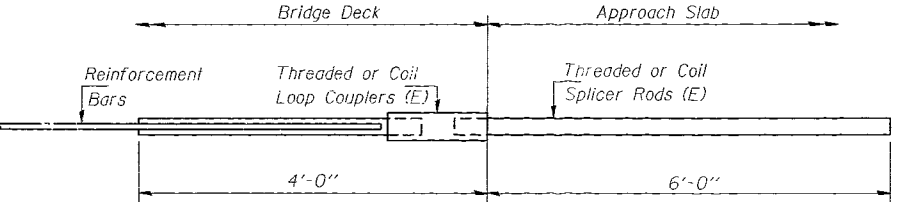
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



**INTEGRAL ABUTMENT
BAR SPLICER ASSEMBLY DETAIL
FOR #5 BAR**

Min. Capacity = 23.0 kips - tension
Min. Pull-out Strength = 9.2 kips - tension
No. Required =

DESIGNED
CHECKED
DRAWN
CHECKED

BSD-1 4-30-99

19
EXAMINED
ENGINEER OF BRIDGE DESIGN
PASSED
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURE REHABILITATION
FAI 57 (RTE 57)
SECTION (38-5)RS-1
IROQUOIS COUNTY
BAR SPLICER ASSEMBLY DETAILS

S.N. 038-0004
STA. 604 + 54.72