

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAI 74	37-4B-D	HENRY	81	23 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Bench Marks: In NW corner (curb) of west bridge, Sta. 41+728.607, Elev. 207.935

Existing Structure: SN 037-0013, 0014 was built as part of FAI-74, Section 37-4B in 1966. The superstructure is 43.966 m long by 13.3 m wide on non-composite rolled steel beams. The substructure is cast in place concrete on piling. The existing structures shall be rehabilitated. Traffic will be maintained by using stage construction.

No Salvage.

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.

Painting of structural steel shall be done under a separate contract. All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1.

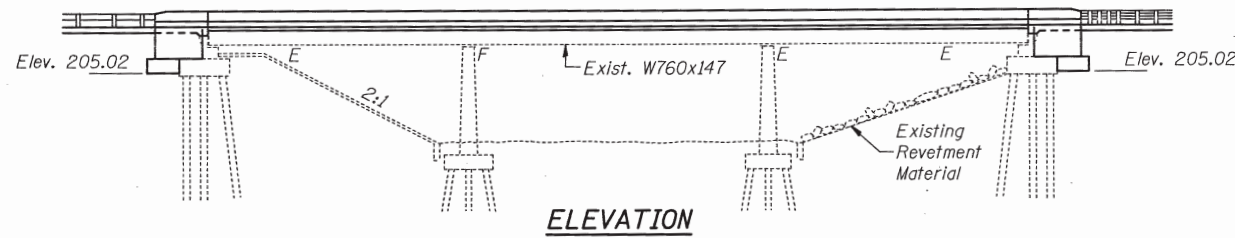
Clean and relocate existing name plate adjacent to new plate. Cost included with Name Plates.

Fasteners shall be high strength bolts. Bolts M20, open holes 22 mm diameter, unless otherwise noted.

Field welding of construction accessories will not be permitted to the bottom flange of beams 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.

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 work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

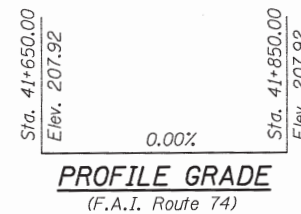
All dimensions are in millimeters (mm) except as noted. Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other loose, detrimental foreign material shall be removed from the portions of flanges of beams in contact with concrete. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-2 for hand tool cleaning. Cost shall be included with the cost for "Concrete Superstructure."



STATION 41+745.371
REBUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 - SECTION 37-4B-D
F.A. PROJECT:
LOADING MS18 & ALT.
STR. NO. 037-0013

STATION 41+745.371
REBUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 - SECTION 37-4B-D
F.A. PROJECT:
LOADING MS18 & ALT.
STR. NO. 037-0014

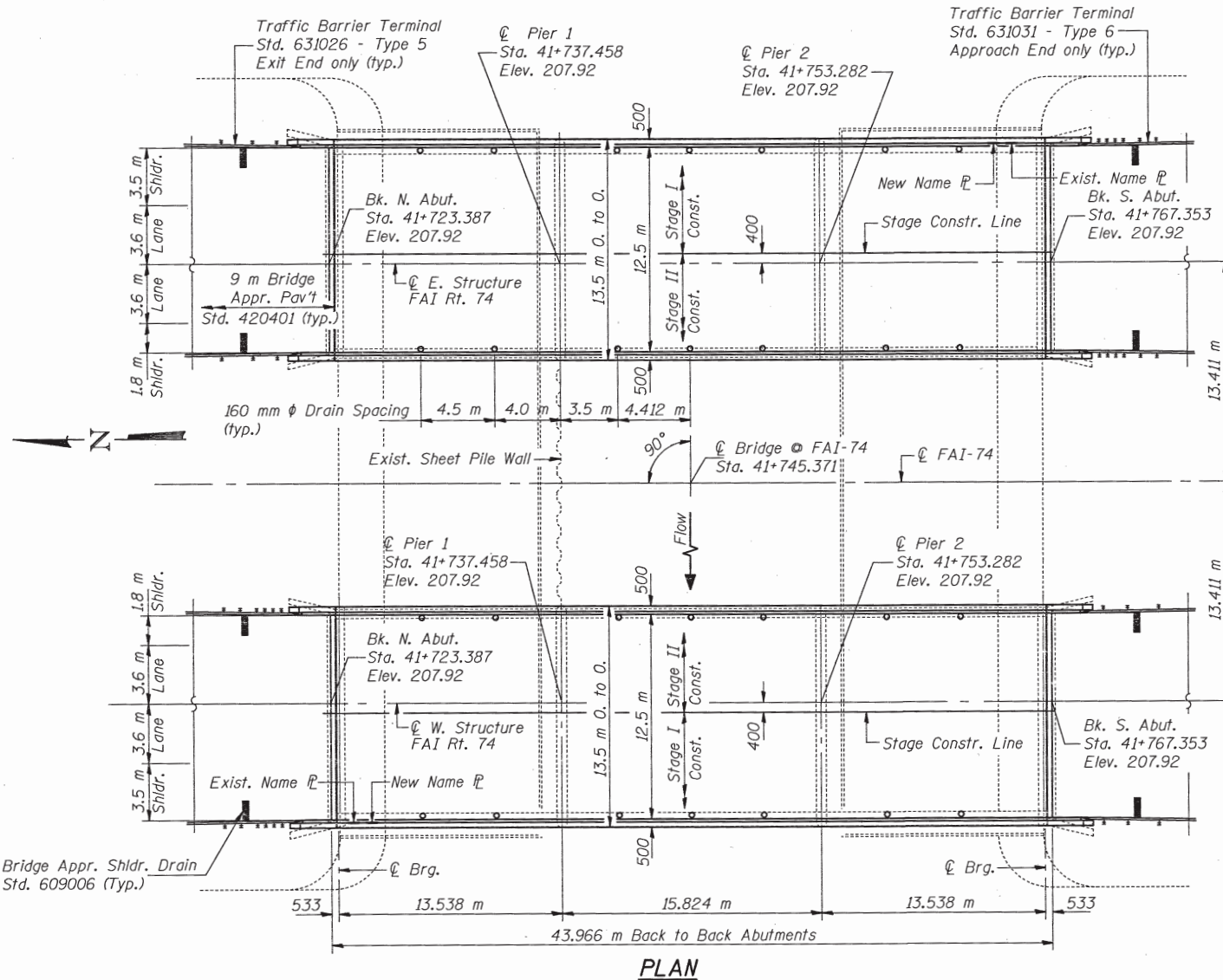
NAME PLATES
See Std. 515001



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	m ³		220.4	220.4
Concrete Structures	m ³		40.0	40.0
Concrete Superstructure	m ³	313.6		313.6
Furnishing and Erecting Structural Steel	kg	4900		4900
Reinforcement Bars, Epoxy Coated	kg	46670	4900	51570
Bar Splicers	Each	826	12	838
Name Plates	Each	2		2
Bridge Deck Grooving	m ²	1028		1028
Removal of Existing Concrete Deck	Each	2		2
Concrete Removal	m ³		23.2	23.2
Stud Shear Connectors	Each	5740		5740
Elastomeric Bearing Assembly, Type I	Each	14		14
Elastomeric Bearing Assembly, Type II	Each	14		14
Floor Drains	Each	28		28
Preformed Joint Seal 64 mm	m	27		27
Preformed Joint Seal 102 mm	m	27		27
Protective Coat	m ²	1292		1292
Jack and Remove Existing Bearings	Each	28		28
Formed Concrete Repair (Depth Less Than or Equal to 125 mm)	m ²		2	2

* Quantity includes deck surface and top and inside surfaces of parapets and end posts.



DESIGN STRESSES

FIELD UNITS

New Construction
f_c = 24 MPa
f_y = 400 MPa (Reinforcement)
f_y = 250 MPa

Existing Construction

f_c = 9.65 MPa
f_s = 138 MPa (Reinforcement)
f_y = 250 MPa (Structural Steel)

DESIGN SPECIFICATIONS

1996 AASHTO
Seismic Retrofitting Manual
for Highway Bridges (1995)

LOADING MS18 & ALT.

Allow 1.2 kN/m² for future wearing surface

SEISMIC DATA

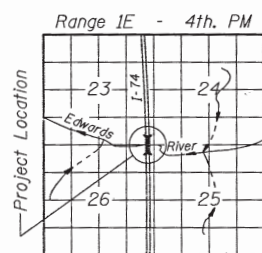
Seismic Performance Category (SPC) = A
Bedrock Acceleration Coeff. (A) = 0.034g
Site Coeff. (S) = 1.2

DESIGNED	<i>Ralph E. Anderson</i>
CHECKED	<i>John A. Elmer</i>
DRAWN	E. VERN TAYLOR R.D.
CHECKED	DGV

October 21, 1997
EXAMINED *John J. Kassar*
PASSED *Ralph E. Anderson*



EXPIRES 11-30-98



LOCATION SKETCH

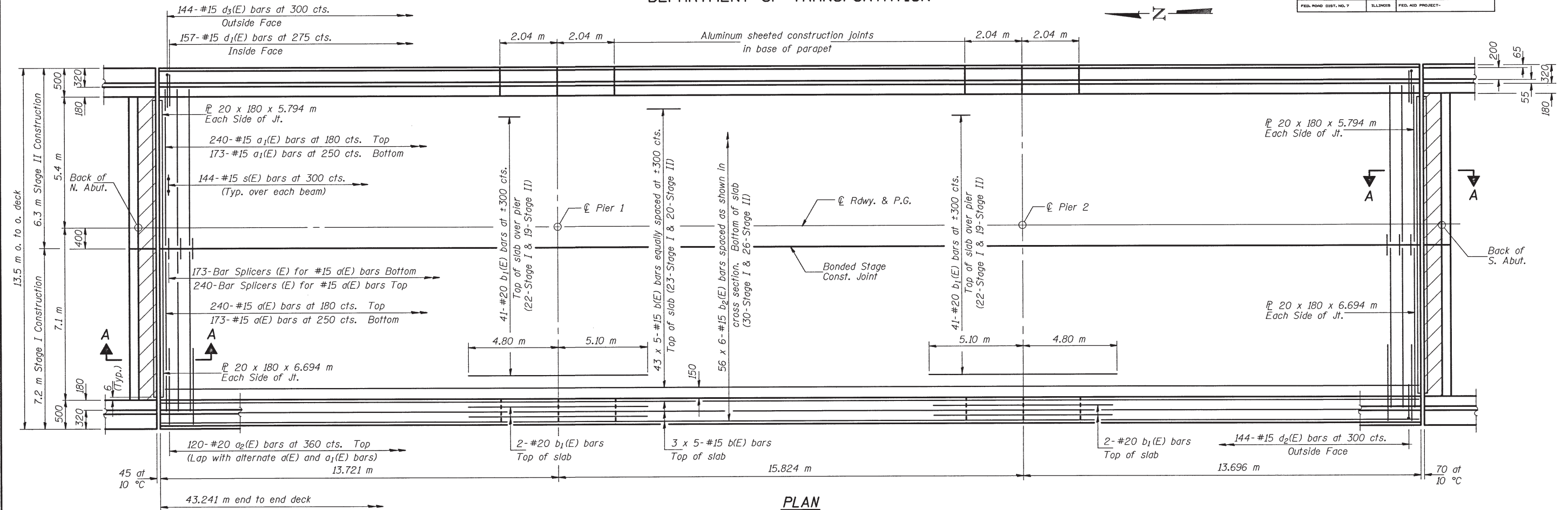
BUILT ACCORDING TO PLAN

GENERAL PLAN
I-74 OVER EDWARDS RIVER
F.A.I. ROUTE 74 - SECTION 37-4B-D
HENRY COUNTY
STATION 41+745.371
STRUCTURE NO. 037-0013 (W. STRUCT.)
037-0014 (E. STRUCT.)

FOR INFORMATION ONLY

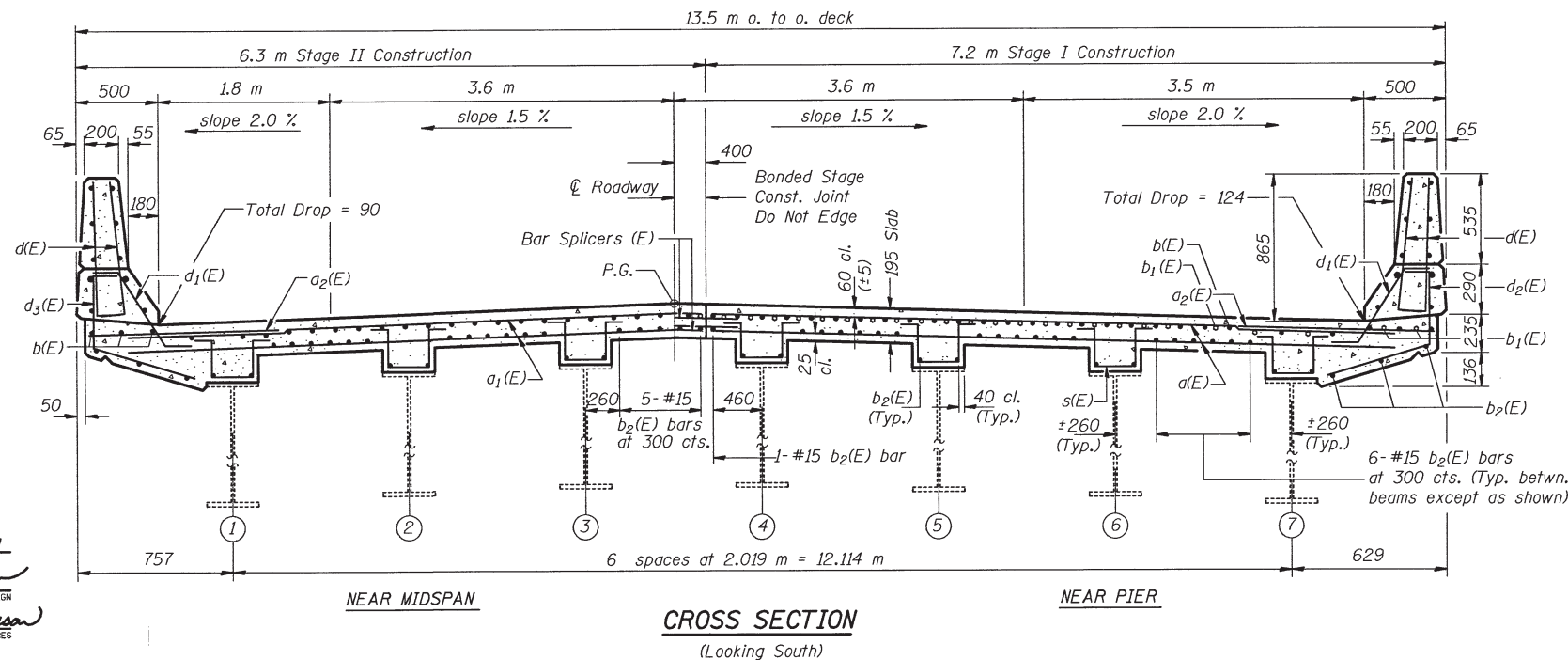
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	SHEET	SHEET NO. 9
FAI 74	37-4B-D	HENRY	89	23 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		



PLAN

MIN. BAR LAP
#15 bar = 510



CROSS SECTION
(Looking South)

Notes: See sheet #10 of 23 for superstructure details, parapet reinforcement and Bill of Material.
See sheet #11 of 23 for Section A-A.
Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
See sheet #12 of 23 for bar splicer details.
All dimensions are in millimeters (mm) except as noted.
Hatched areas to be poured after superstructure forms have been removed. Quantity of concrete included with "Concrete Superstructure" on sheet #10 of 23.

**SUPERSTRUCTURE
WEST STRUCTURE**
F.A.I. ROUTE 74 - SECTION 37-4B-D
HENRY COUNTY
STATION 41+ 745.371

DESIGNED	<i>Derik J. Vahlstedt</i>
CHECKED	<i>Eric A. Olson</i>
DRAWN	E. VERN TAYLOR R.D.
CHECKED	DGV

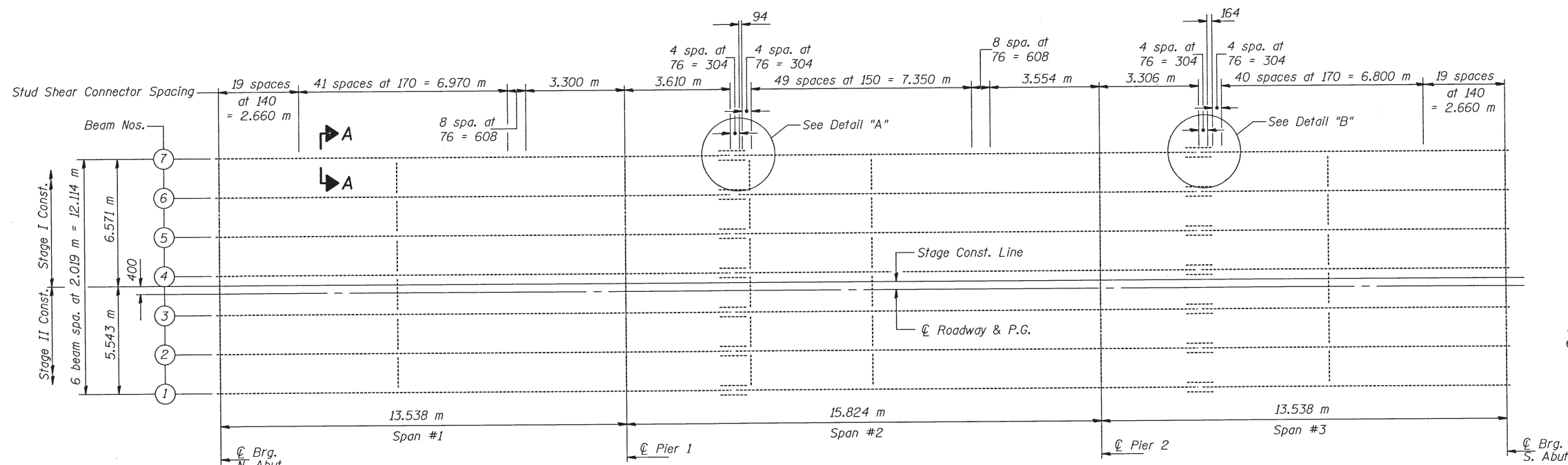
October 21, 1997
EXAMINED <i>Dr. Raji Q. Kaspar</i>
PASSED <i>Ralph E. Anderson</i>

S-1-0 (M) 4-30-97

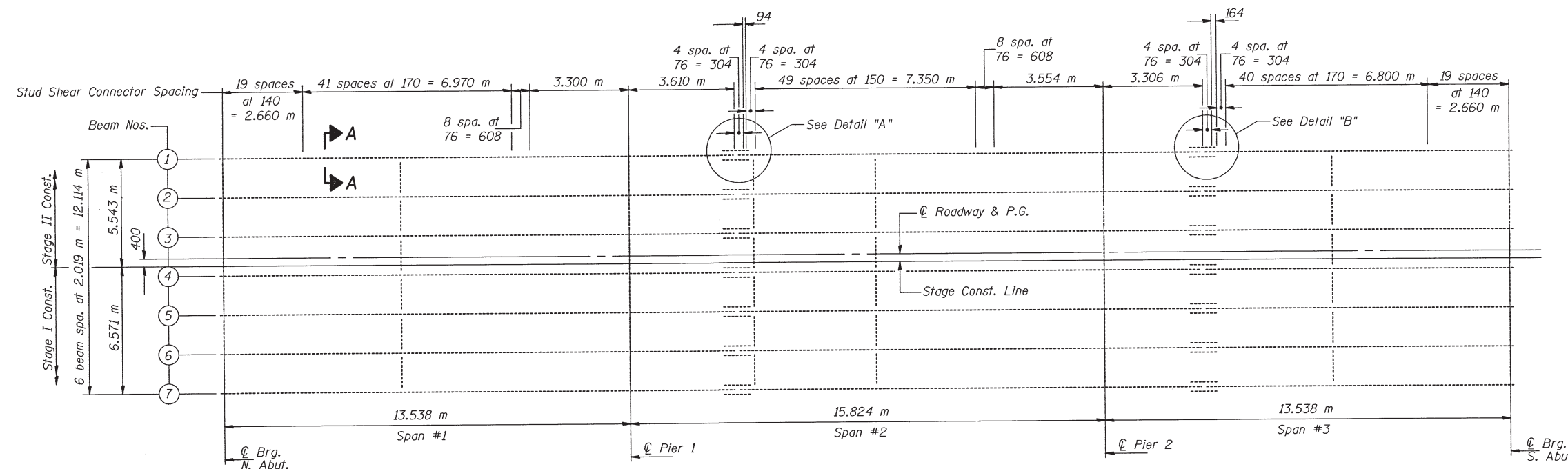
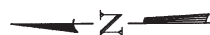
FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

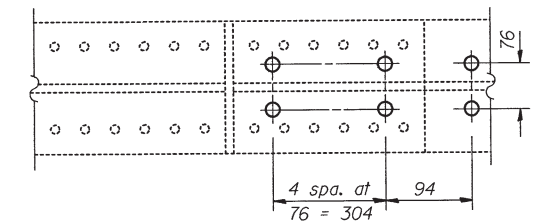
ROUTE NO.	SECTION	COUNTY	DATE SHEETS	SHEET NO.	SHEET NO. 13 23 SHEETS
FAI 74	37-4B-D	HENRY		93	
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-			



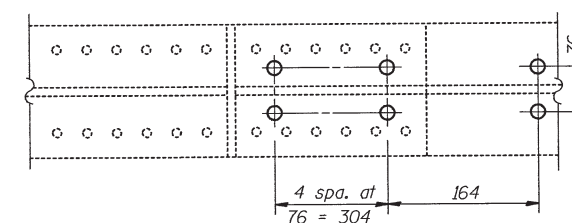
FRAMING PLAN - EAST STRUCTURE



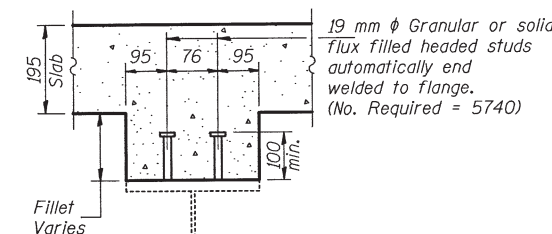
FRAMING PLAN - WEST STRUCTURE



DETAIL "A"



DETAIL "B"



SECTION A-A

DESIGNED	<i>Rud A. ...</i>
CHECKED	<i>Jack A. Ehn</i>
DRAWN	E. VERN TAYLOR R.D.
CHECKED	DGV

October 21, 1997
 EXAMINED *Raj D. Kaspar*
 ENGINEER OF BRIDGE DESIGN
 PASSED *Ralph E. Anderson*
 ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
 F.A.I. ROUTE 74 - SECTION 37-4B-D
 HENRY COUNTY
 STATION 41+ 745.371

FOR INFORMATION ONLY

Bench Marks: In NW corner (curb) of west bridge, Sta. 41+728.607, Elev. 207.935

Existing Structure: SN 037-0013, 0014 was built as part of FAI-74, Section 37-4B in 1966. The superstructure is 43.966 m long by 13.3 m wide on non-composite rolled steel beams. The substructure is cast in place concrete on piling. The existing structures shall be rehabilitated. Traffic will be maintained by using stage construction.

No Salvage.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOWNSHIP	SHEET	SHEET NO. 1
FAI 74	37-4B-D	HENRY		81	23 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.

Painting of structural steel shall be done under a separate contract. All new structural steel shall be shop painted with the inorganic zinc rich primer per AASHTO M300, Type 1.

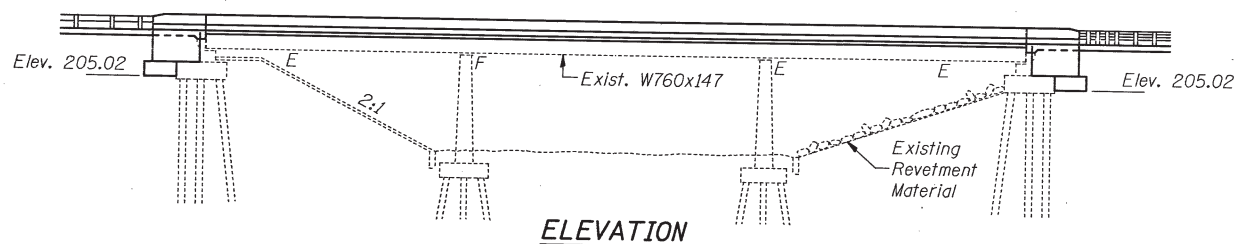
Clean and relocate existing name plate adjacent to new plate. Cost included with Name Plates.

Fasteners shall be high strength bolts. Bolts M20, open holes 22 mm diameter, unless otherwise noted.

Field welding of construction accessories will not be permitted to the bottom flange of beams 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.

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 work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

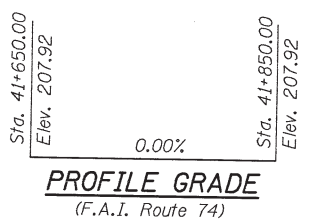
All dimensions are in millimeters (mm) except as noted. Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other loose, detrimental foreign material shall be removed from the portions of flanges of beams in contact with concrete. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-2 for hand tool cleaning. Cost shall be included with the cost for "Concrete Superstructure."



STATION 41+745.371
REBUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 - SECTION 37-4B-D
F.A. PROJECT:
LOADING MS18 & ALT.
STR. NO. 037-0013

STATION 41+745.371
REBUILT BY
STATE OF ILLINOIS
F.A.I. RT. 74 - SECTION 37-4B-D
F.A. PROJECT:
LOADING MS18 & ALT.
STR. NO. 037-0014

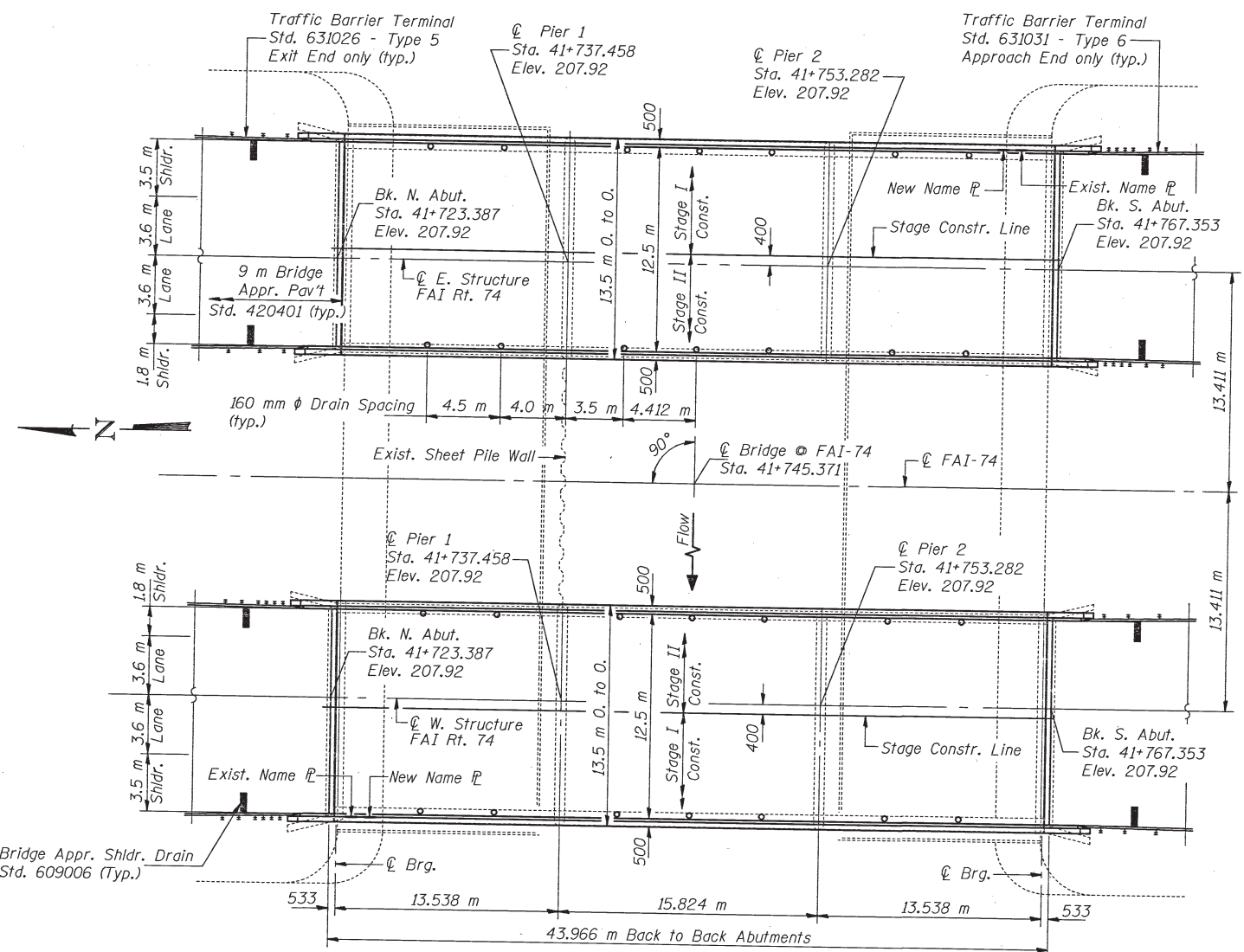
NAME PLATES
See Std. 515001



TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	m ³		220.4	220.4
Concrete Structures	m ³		40.0	40.0
Concrete Superstructure	m ³	313.6		313.6
Furnishing and Erecting Structural Steel	kg	4900		4900
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Name Plates	Each	2		2
Bridge Deck Grooving	m ²	1028		1028
Removal of Existing Concrete Deck	Each	2		2
Concrete Removal	m ³		23.2	23.2
Stud Shear Connectors	Each	5740		5740
Elastomeric Bearing Assembly, Type I	Each	14		14
Elastomeric Bearing Assembly, Type II	Each	14		14
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Preformed Joint Seal 64 mm	m	27		27
Preformed Joint Seal 102 mm	m	27		27
Protective Coat	m ²	1292		1292
Jack and Remove Existing Bearings	Each	28		28
Formed Concrete Repair (Depth Less Than or Equal to 125 mm)	m ²		2	2

* Quantity includes deck surface and top and inside surfaces of parapets and end posts.



DESIGN STRESSES

FIELD UNITS
New Construction
f'c = 24 MPa
fy = 400 MPa (Reinforcement)
fy = 250 MPa
Existing Construction
Tc = 9.65 MPa
fs = 138 MPa (Reinforcement)
fy = 250 MPa (Structural Steel)

DESIGN SPECIFICATIONS

1996 AASHTO
Seismic Retrofitting Manual
for Highway Bridges (1995)

LOADING MS18 & ALT.

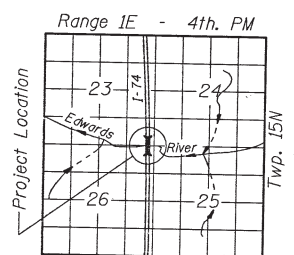
Allow 1.2 kN/m² for future wearing surface

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coeff. (A) = 0.034g
Site Coeff. (S) = 1.2

DESIGNED	<i>Rach V. Verhulst</i>
CHECKED	<i>S. A. Elmer</i>
DRAWN	E. VERN TAYLOR R.D.
CHECKED	DGV

October 21, 1997
EXAMINED *Sam J. Kassar*
ENGINEER OF BRIDGE DESIGN
PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES



LOCATION SKETCH

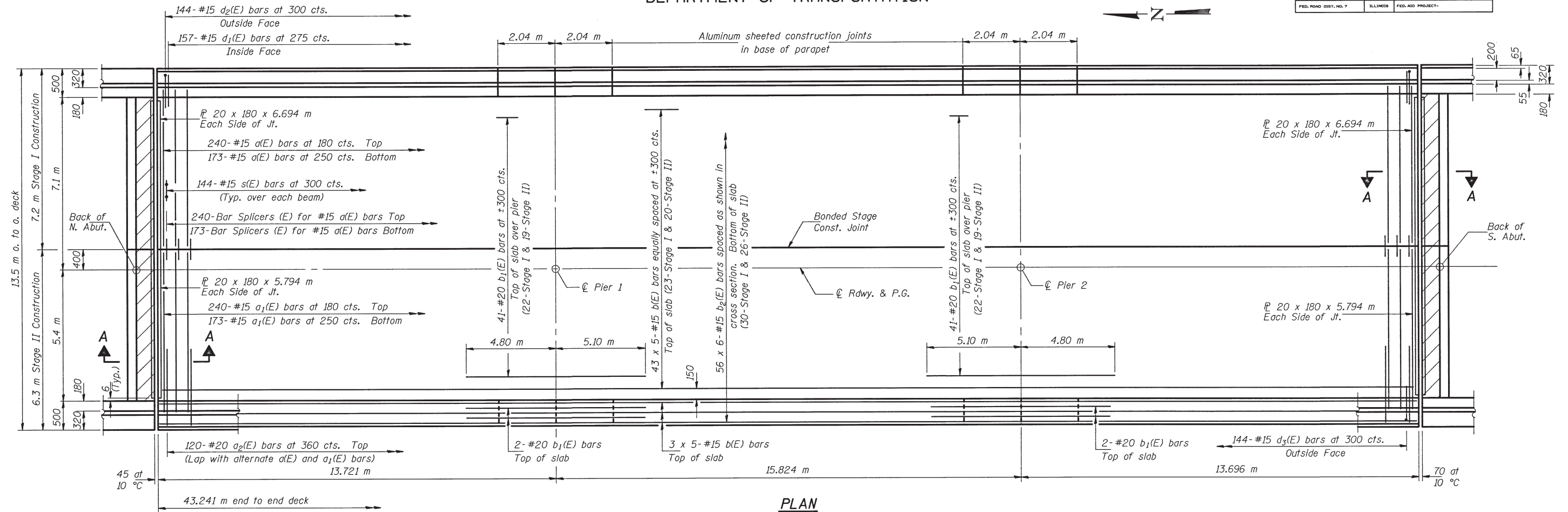
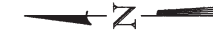
BUILT ACCORDING TO PLAN

GENERAL PLAN
I-74 OVER EDWARDS RIVER
F.A.I. ROUTE 74 - SECTION 37-4B-D
HENRY COUNTY
STATION 41+745.371
STRUCTURE NO. 037-0013 (W. STRUCT.)
037-0014 (E. STRUCT.)

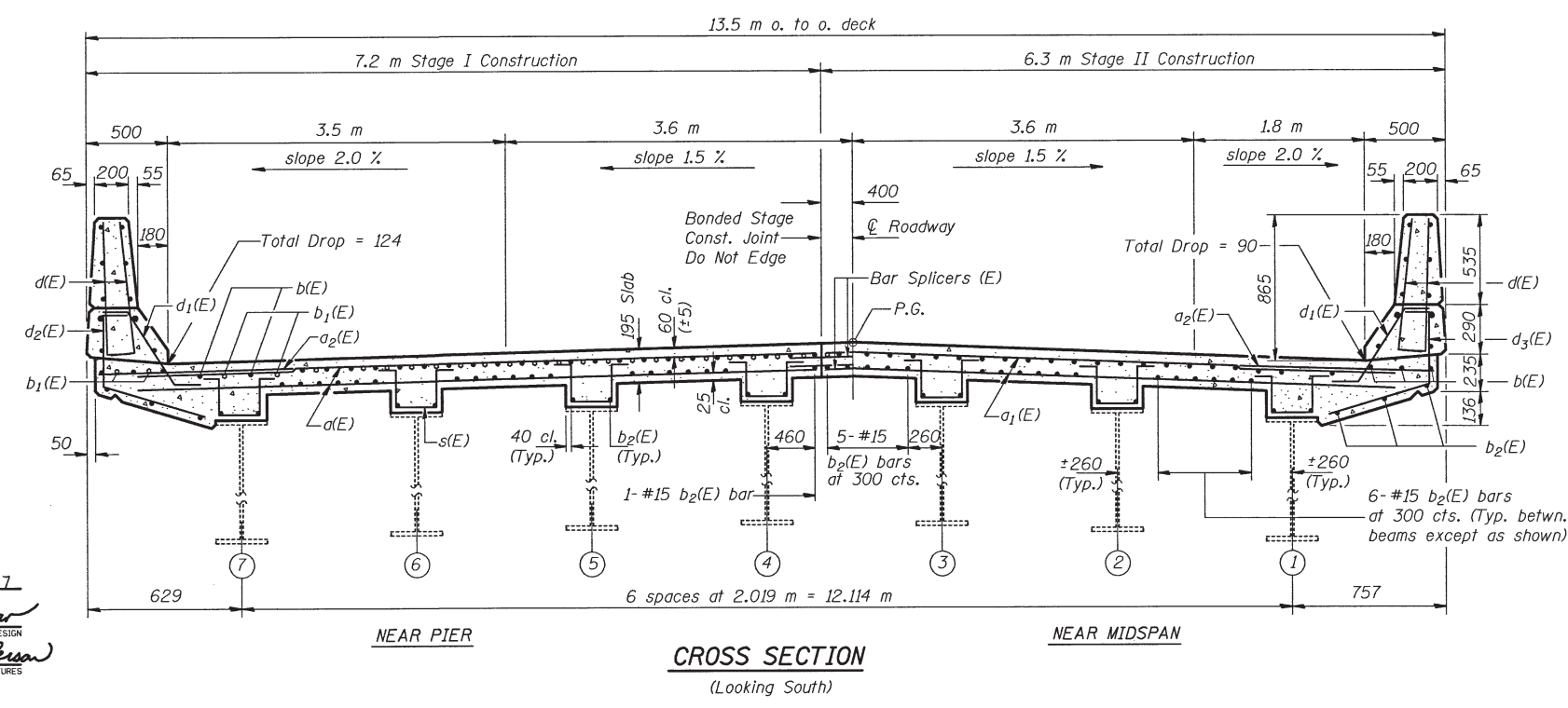
FOR INFORMATION ONLY

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO. 8
FAI 74	37-4B-D	HENRY		88	23 SHEETS
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			



MIN. BAR LAP
#15 bar = 510



Notes: See sheet #10 of 23 for superstructure details, parapet reinforcement and Bill of Material.
See sheet #11 of 23 for Section A-A. Reinforcement bars designated (E) shall be epoxy coated.
Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.
See sheet #12 of 23 for bar splicer details. All dimensions are in millimeters (mm) except as noted.
Hatched areas to be poured after superstructure forms have been removed. Quantity of concrete included with "Concrete Superstructure" on sheet #10 of 23.

**SUPERSTRUCTURE
EAST STRUCTURE**
F.A.I. ROUTE 74 - SECTION 37-4B-D
HENRY COUNTY
STATION 41+ 745.371

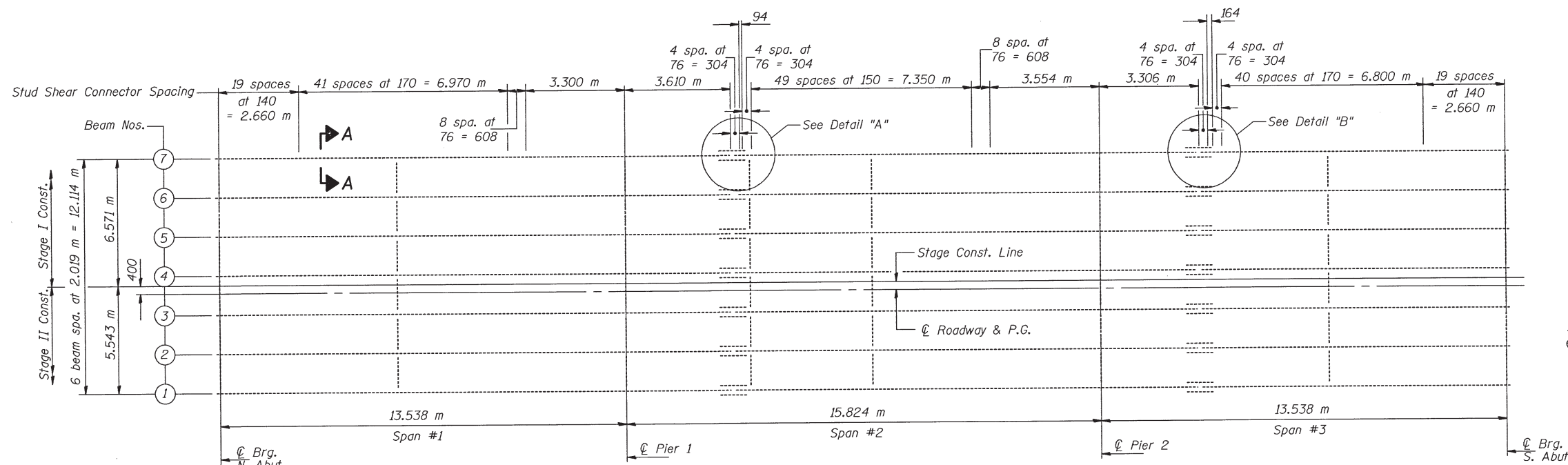
DESIGNED *Ralph E. Anderson*
CHECKED *Jul A. Etkin*
DRAWN *E. VERN TAYLOR R.D.*
CHECKED *DGV*
October 21, 1997
EXAMINED *Ralph E. Anderson*
PASSED *Ralph E. Anderson*
S-1-0 (M) 4-30-97

FOR INFORMATION ONLY

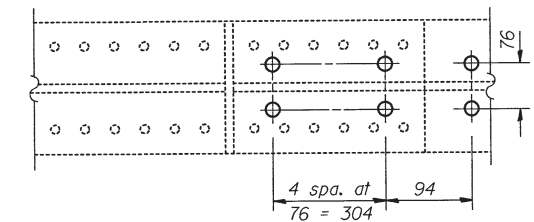
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	DATE SHEETS	SHEET NO.
FAI 74	37-4B-D	HENRY		93
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

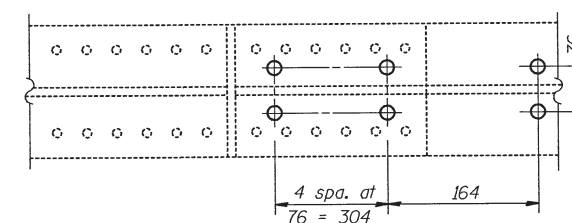
SHEET NO. 13
23 SHEETS



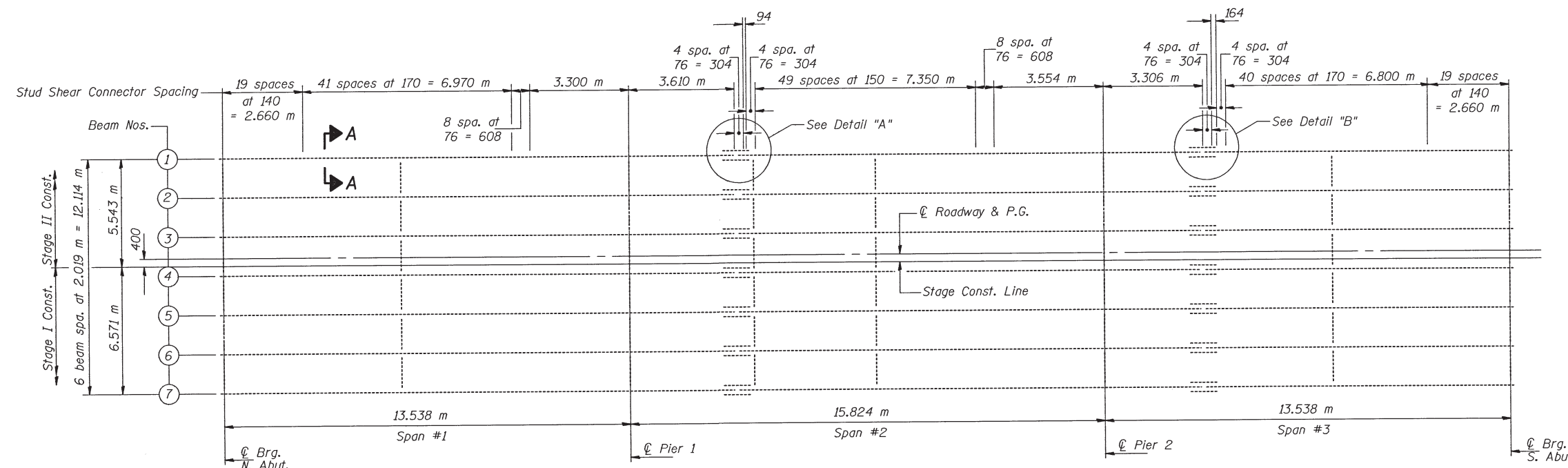
FRAMING PLAN - EAST STRUCTURE



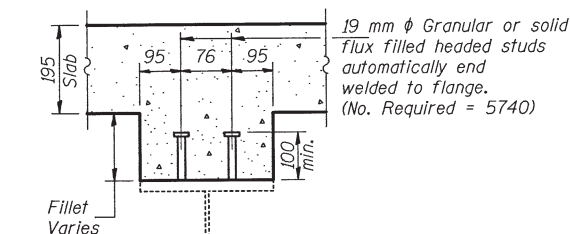
DETAIL "A"



DETAIL "B"



FRAMING PLAN - WEST STRUCTURE



SECTION A-A

DESIGNED	<i>Rud A. ...</i>
CHECKED	<i>Jack A. ...</i>
DRAWN	E. VERN TAYLOR R.D.
CHECKED	DGV

October 21, 1997

EXAMINED *Raj D. Kaspar*
ENGINEER OF BRIDGE DESIGN

PASSED *Ralph E. Anderson*
ENGINEER OF BRIDGES AND STRUCTURES

STRUCTURAL STEEL DETAILS
F.A.I. ROUTE 74 - SECTION 37-4B-D
HENRY COUNTY
STATION 41+ 745.371

FOR INFORMATION ONLY