

FHWA REGION	STATE	FEDERAL AID		STATE		SHEET NO.
		ROUTE	PROJECT	ROUTE	PROJECT	
3	VA.			0000	0000-116-8001	

GENERAL NOTES:

Specifications:
 Construction - Virginia Department of Highways and Transportation Road and Bridge Specifications, 1982.

These plans are incomplete unless accompanied by the Supplemental Specifications and Special Provisions included in the contract documents.

All existing square head nuts and bolts and all rivets in members to be repaired shall be replaced with 3/4" ϕ high strength bolts. All holes in new steel members shall be 13/16" ϕ .

Concrete in footings shall be Class A4 with No. 7 aggregate.

Removal of all existing concrete shall be done with a lightweight jackhammer (30 lb. max.).

Deformed reinforcing bars shall conform to ASTM A615, Grade 60. All reinforcing bar dimensions on the detailed drawings are to centers of bars except as noted.

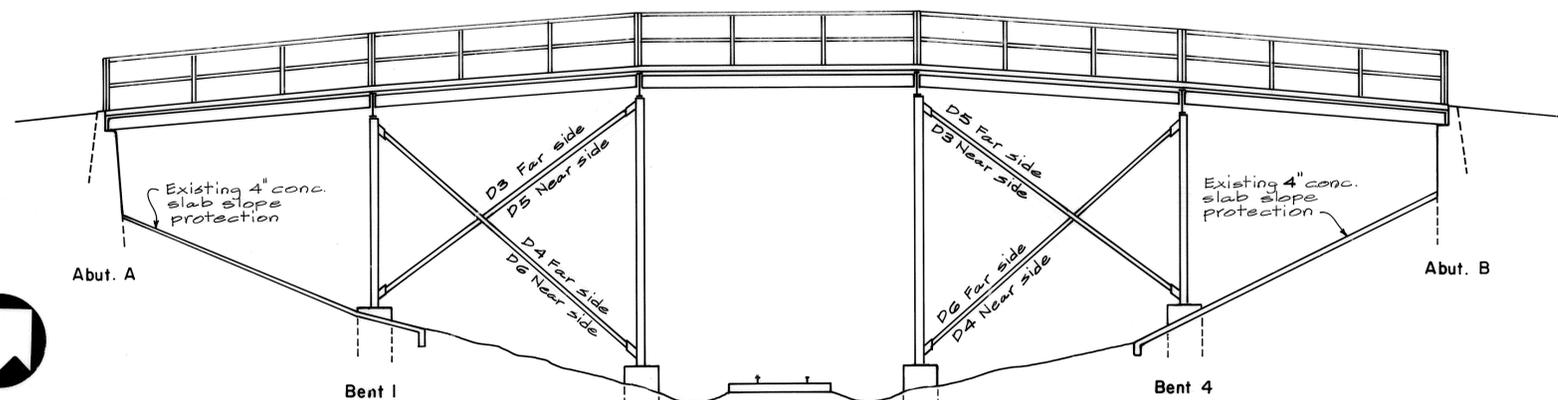
Paint new steel & existing steel as shown on sheet 6 of 6.

Bridge No. of existing structure is 8001. Plan No. is 252-19 & 252-19A.

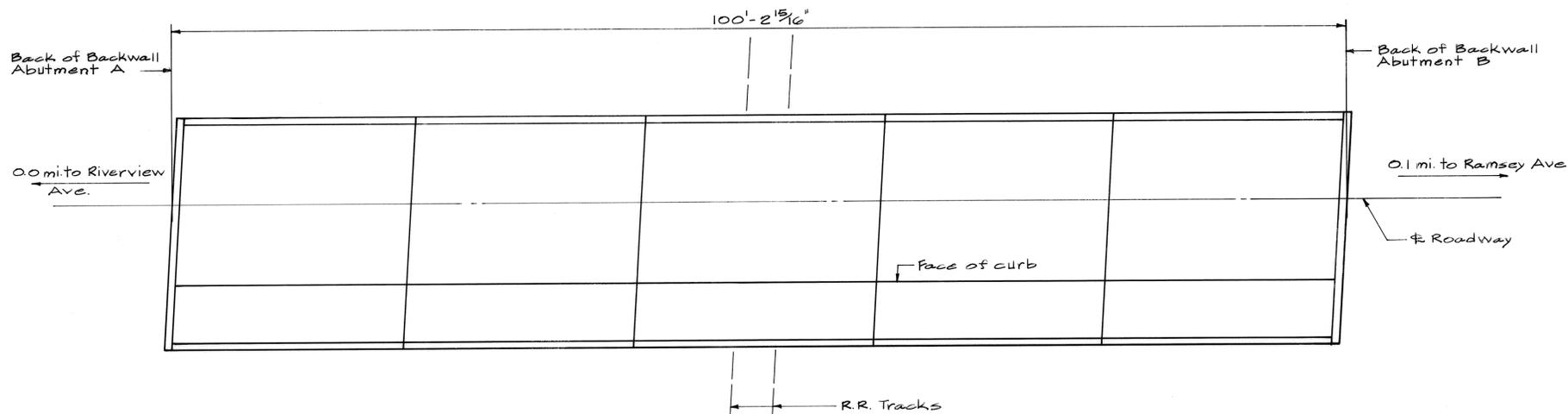
Maintenance of Traffic: The bridge will be closed during repairs.

A field check shall be made by the contractor to determine the consistency between dimensions before removal of any existing steel or installation of any new steel.

Note:
 There are numerous repairs to be made to the substructure. The contractor shall submit, for approval of the Engineer, his method of supporting Bents 1, 2, 3 & 4.



ELEVATION



PLAN

ESTIMATED		QUANTITIES	
Structural Steel	Reinforcing Steel	Concrete Class A4	Structure Excavation
Lbs.	Lbs.	Cu. Yds.	Sq. Yds.
5200 *	370	2.1	5

Quantities shown are for estimating purposes only. Proposed bridge repair shall be paid on the basis of Lump Sum. Payment for proposed bridge repair shall be full compensation for removal of existing structural steel, fabrication and erection of new structural steel, structure excavation, new class A4 concrete and reinforcing steel, painting as indicated and labor, materials, tools, equipment and incidentals necessary to complete this work.

* Includes 3/4" ϕ H.S. bolts


COMMONWEALTH OF VIRGINIA
DEPARTMENT OF
HIGHWAYS AND TRANSPORTATION
PROPOSED BRIDGE REPAIR
EAST BROADWAY ST. OVER N. & W. RAILWAY
0.0 MI. E. OF RIVERVIEW AVE. - CITY OF HOPEWELL
PROJ.: 0000 - 116 - 8001

Recommended For Approval: *J. H. Sutherland* 9-18-84
 Bridge Engineer

Recommended For Approval: *J. S. Hodge* 9-18-84
 Assistant Chief Engineer

Approved: *John M. Stoney* 9-18-84
 Chief Engineer

Date August 27, 1984

84-10

252-19B
 Sheet 1 of 6

RICHMOND DISTRICT
 SUPERVISED BY: J.A. Taverner
 DESIGNED BY: J.A.T.
 DRAWN BY: T.B.B.
 CHECKED BY: L.L.W.

ACCOUNTS RECEIVABLE:
 CITY OF HOPEWELL
 0216-4202

Not To Scale

X141

STRUCTURAL STEEL NEEDED			
MARK	NO.	SIZE	NOTES
D1	4	∠3 1/2 x 3 1/2 x 5/16 x 21'-4 1/2"	Bents 1 & 4
D2	4	∠3 1/2 x 3 1/2 x 5/16 x 25'-11 1/4"	Bents 2 & 3
D5	1	∠3 1/2 x 3 1/2 x 5/16 x 23'-6"	@ P1 to P3
D4	1	∠3 1/2 x 3 1/2 x 5/16 x 25'-3 1/8"	@ P2 to P4
D6	1	∠3 1/2 x 3 1/2 x 5/16 x 25'-6 1/2"	@ P1 to P3
SI	2	∠3 1/2 x 3 1/2 x 5/16 x 19'-8 5/8"	Bents 1 & 4
ca	3	∠ 1/2 x 12 x 1'-6"	
ga	2	∠ 3/8 x 14 x 1'-3 1/4"	
gb	4	∠ 3/8 x 1-3 x 1'-3 1/2"	
gd	1	∠ 3/8 x 12 x 1'-1 1/2"	
gg	3	∠ 3/8 x 1-3 x 1'-2 1/2"	
cb	2	∠ 1/2 x 8 x 1'-6"	
gm	1	∠ 3/8 x 14 x 1'-5 3/4"	
gk	1	∠ 3/8 x 13 x 1'-1"	
AA	9	∠ 5/8 x 12 x 9 1/2"	Beams Abut. B
hb	3	∠ 6 x 4 x 3/8 x 1'-0"	Bent
ha	3	∠ 6 x 4 x 3/8 x 1'-0"	Bent
aal	8	∠ 6 x 3 1/2 x 3/8 x 6 1/8"	Sloped Left
aar	8	∠ 6 x 3 1/2 x 3/8 x 6 1/8"	Sloped Right
hc	14	∠ 3 x 3 x 5/16 x 1'-3"	Bent
ma	6	∠ 3 1/2 x 3 x 5/16 x 1'-3"	
hk	3	∠ 6 x 4 x 3/8 x 8"	Bent
hm	3	∠ 6 x 4 x 3/8 x 8"	Bent
mb	6	∠ 3 1/2 x 3 x 5/16 x 1'-0"	
HP8x36	2	HP8x36 x 14'-9 3/8"	Fin. 2 Ends
HP8x36	1	HP8x36 x 20'-11 11/16"	Fin. 2 Ends

SCOPE OF WORK :

BENT - 1

P1 - P2 = Replace 2-D1 members and 1-SI member.

P2 = Replace :

- * 1-HP8x36 4-hc 2-mb
- 1-ca 2-ma 1-cb
- 1-hb 1-ga 1-gg
- 1-ha 1-gb
- 2-aal 1-hk
- 2-aar 1-hm

P2 = Recast 1'-6" x 2'-6" x 2'-6" of concrete footing and cast new 1" φ swedged anchor bolts as shown on sheet 6 of 6.

* 14'-9 3/8"

BENT - 2

P3 - P4 = Replace 2-D2 members .

P3 = Replace :

- * 1-HP8x36 4-hc 1-hk
- 1-ca 2-ma 1-hm
- 2-aar 1-gm 2-mb
- 2-aal 1-gg 1-gk
- 1-ha 1-cb 1-gb
- 1-hb

P3 - P4 = Recast 1'-6" x 2'-6" x 2'-6" of each concrete footing and cast new 1" φ swedged anchor bolts as shown on sheet 6 of 6.

* 20'-11 11/16"

BENT - 3

P5 - P6 = Replace 2-D2 members .

P6 = Replace :

- Top of member -
- 1-aal 1-aar
- 1-gb 2-hc

Base of member -

- 1-aal 1-aar

P5 - P6 = Recast 1'-6" x 2'-6" x 2'-6" of each concrete footing and cast new 1" φ swedged anchor bolts as shown on sheet 6 of 6.

BENT - 4

P7 - P8 = Replace 2-D1 members and 1-SI member.

P8 = Replace :

- * 1-HP8x36 2-aar 1-hk
- 1-ca 4-hc 1-hm
- 1-hb 2-ma 2-mb
- 1-ha 1-ga 1-gd
- 2-aal 1-gb 1-gg
- 1-cb

P8 = Recast 1'-6" x 2'-6" x 2'-6" of concrete footing and cast new 1" φ swedged anchor bolts as shown on sheet 6 of 6.

* 14'-9 3/8"

ABUT. B

Install 5/8 x 12 x 9 1/2 R's to beams as shown on sheet 6 of 6.

P1 - P3 = Replace members D5 & D6 .

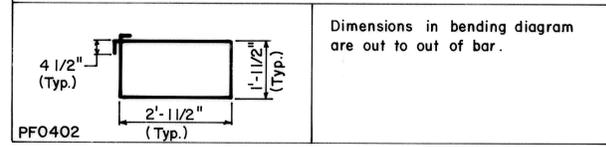
P2 - P4 = Replace member D4 .

All new structural steel and existing structural steel damaged during erection shall be painted as indicated on sheet 6 of 6.

BENT FOOTING REINFORCING STEEL SCHEDULE

MARK	SIZE	NO.	LENGTH	PIN φ	LOCATION
PFO401	4	48	2'-1"	—	Footing
PFO402	4	24	6'-9 1/2"	2"	Footing
DOWELS	6	54	1'-6"	—	Footing

BENDING DIAGRAM

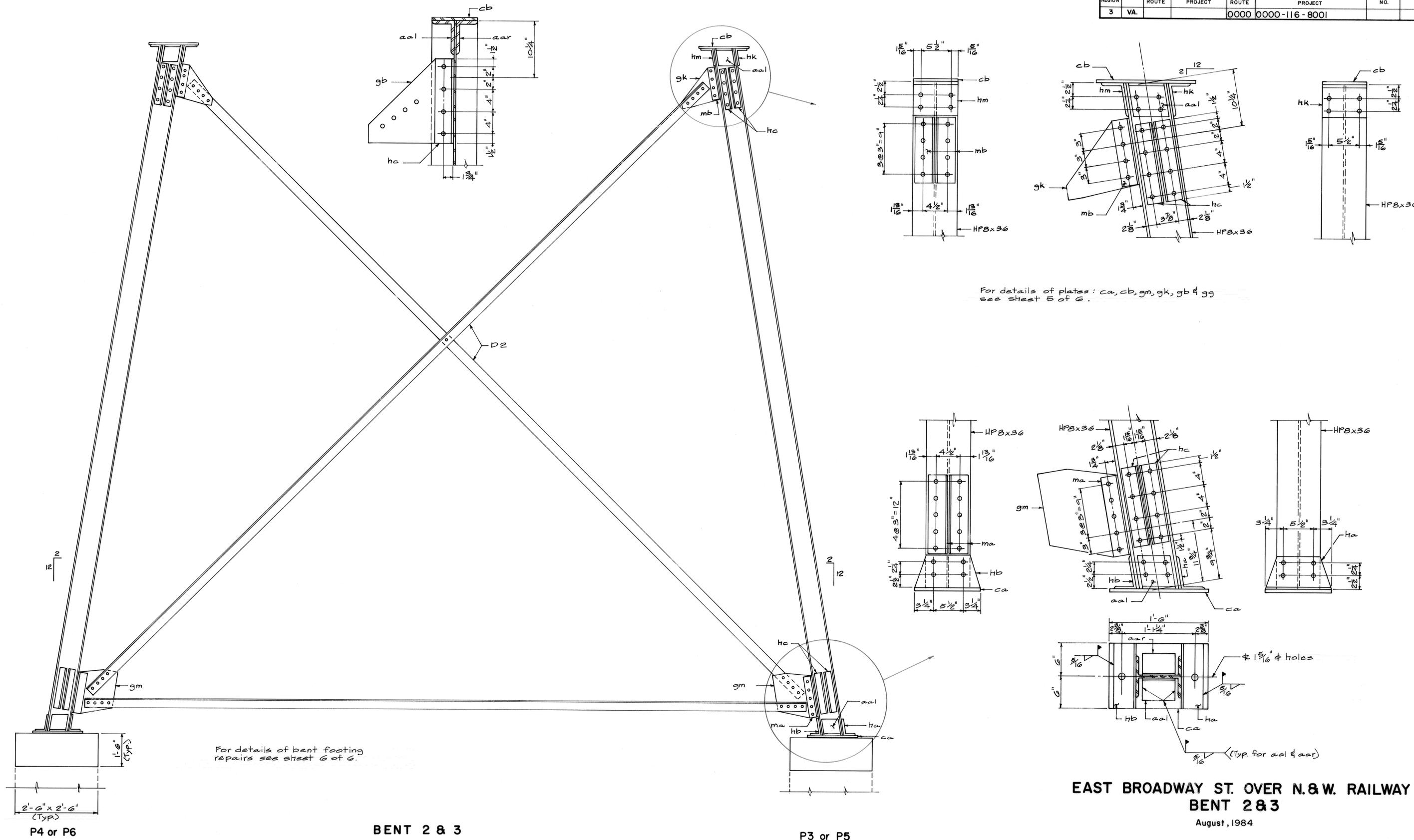


**EAST BROADWAY ST. OVER N.&W. RAILWAY
SCOPE OF WORK & STEEL SCHEDULES**

August, 1984

No.	Description	Date
Revisions		

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For details of plates: ca, cb, gm, gk, gb & gg see sheet 5 of 6.

For details of bent footing repairs see sheet 6 of 6.

**EAST BROADWAY ST. OVER N.&W. RAILWAY
BENT 2 & 3**

August, 1984

DESIGNED BY: J.A.T.
DRAWN BY: T.B.B.
CHECKED BY: L.L.W.

Not To Scale

ACCOUNTS RECEIVABLE:
CITY OF HOPEWELL
0216-4202

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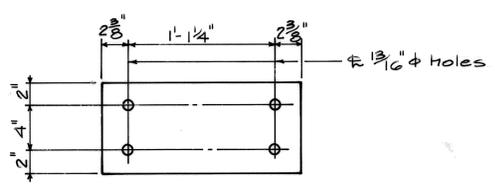
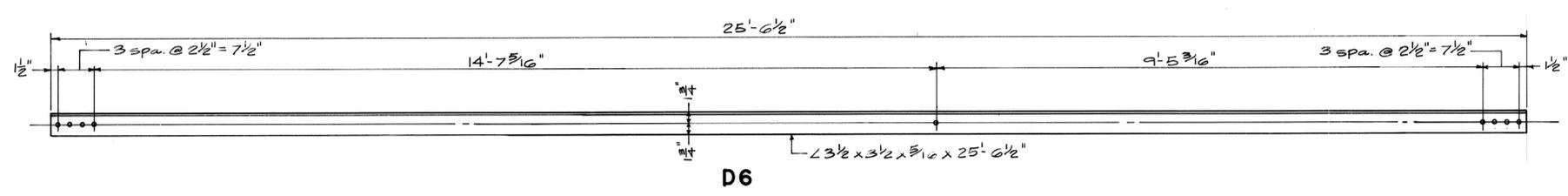
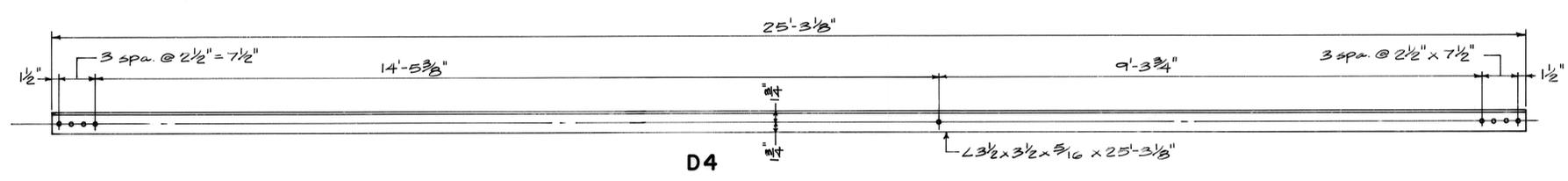
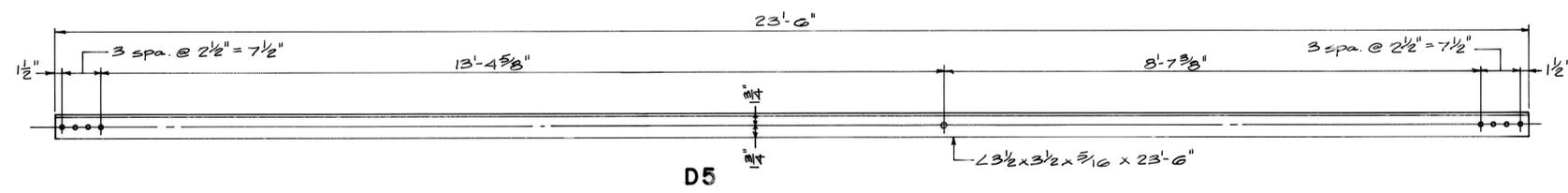
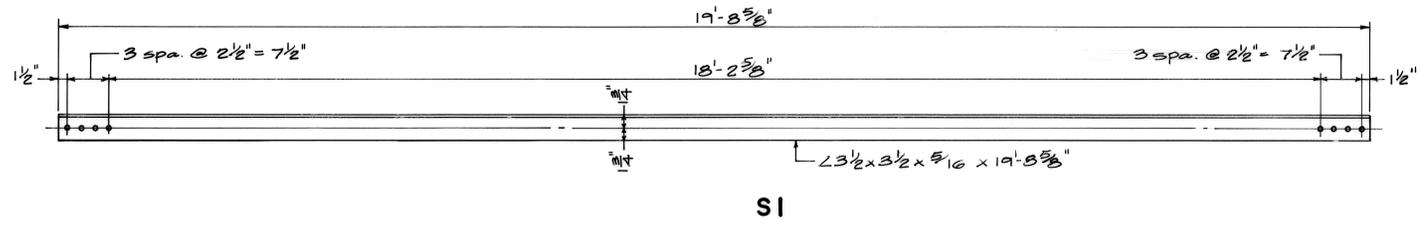
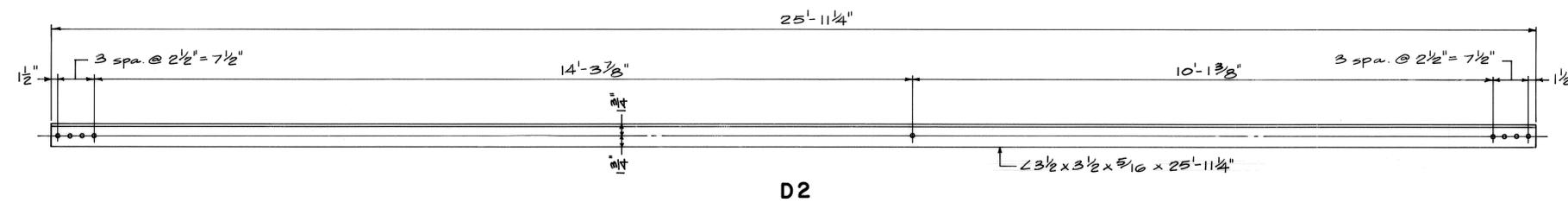


PLATE cb

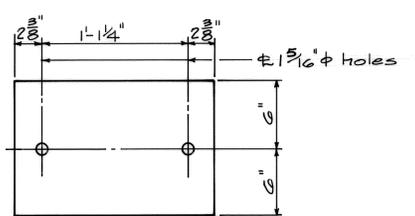


PLATE ca

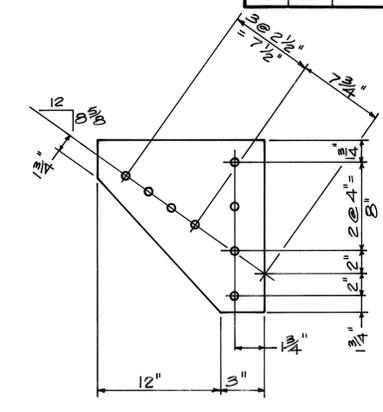


PLATE - gb

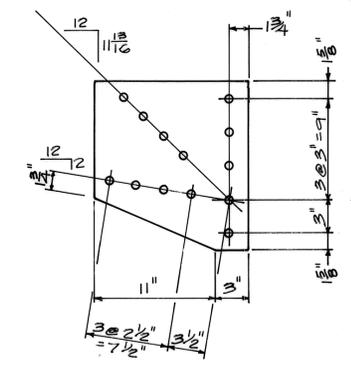


PLATE - ga

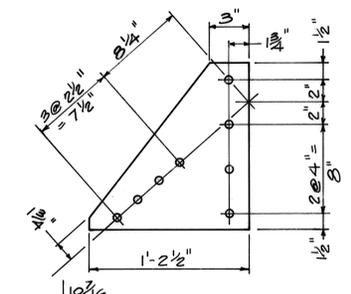


PLATE - gg

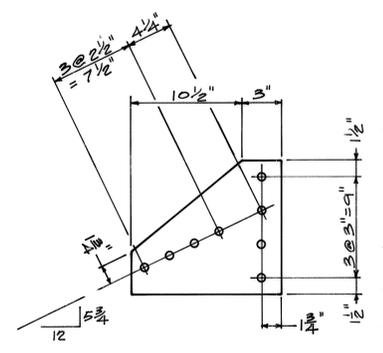


PLATE - gd

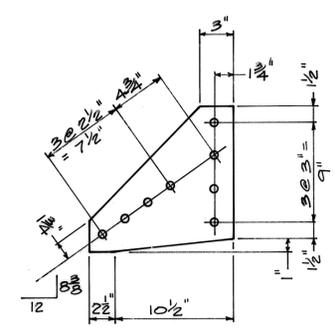


PLATE - gk

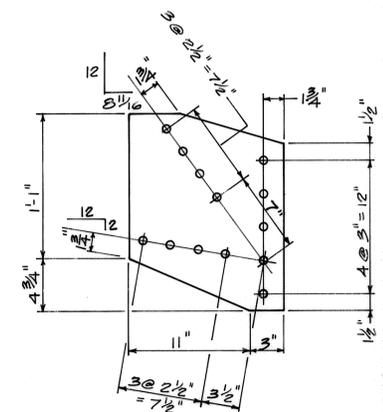


PLATE - gm

**EAST BROADWAY ST. OVER N.&W. RAILWAY
STRUCTURAL STEEL**

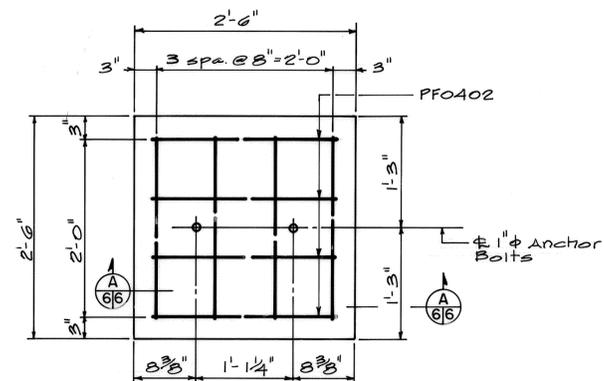
August, 1984

DESIGNED BY: J.A.T.
DRAWN BY: T.B.B.
CHECKED BY: L.L.W.

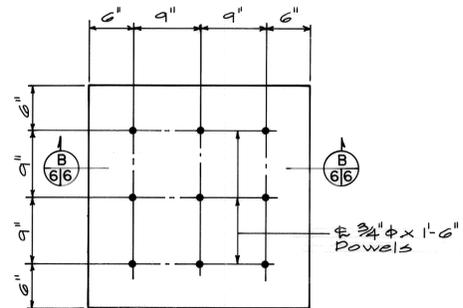
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CITY OF HOPEWELL
0216-4202

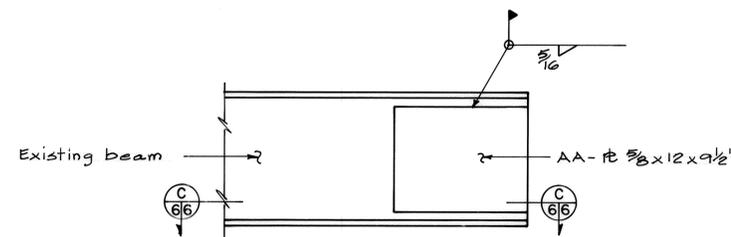
No.	Description	Date
Revisions		



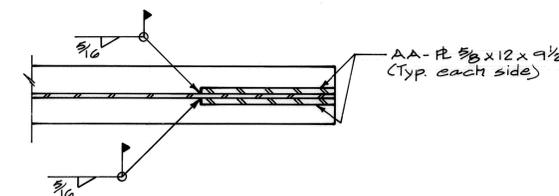
PLAN



PLAN



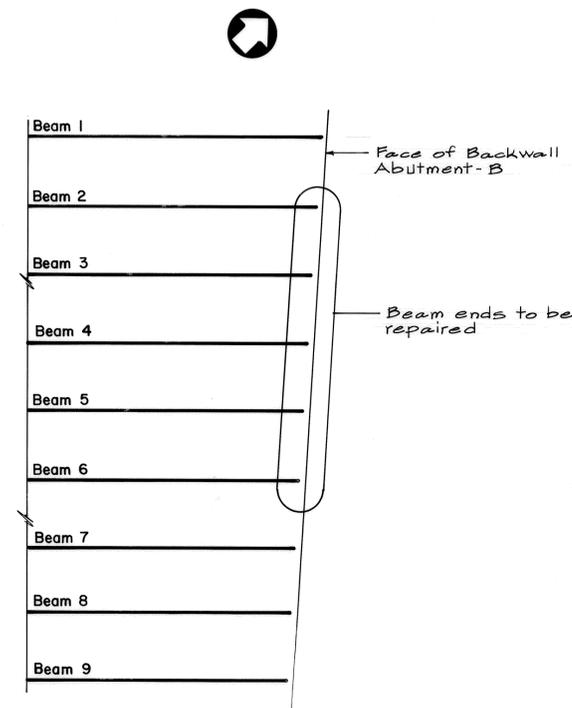
ELEVATION



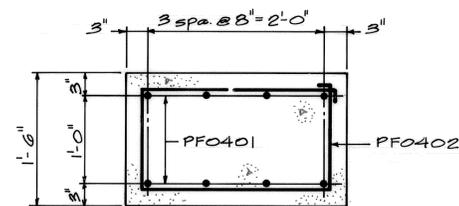
SECTION C-C

BEAM END REPAIRS

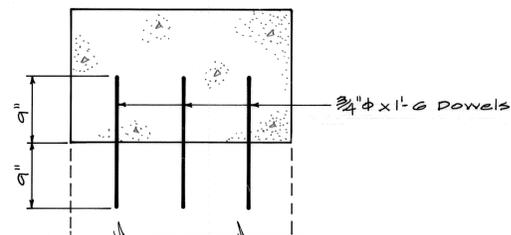
Beams 2,3,5 & 6 to have plates on each side of web. Beam 4 to get one plate on side not previously repaired.



PART FRAMING PLAN



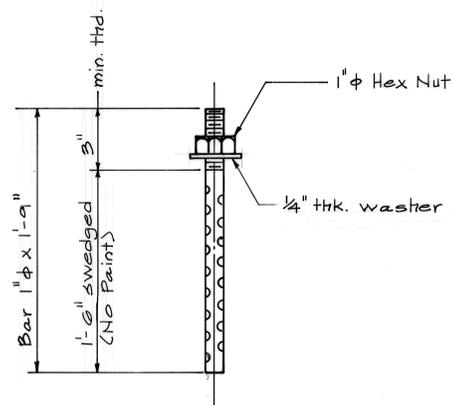
SECTION A-A



SECTION B-B

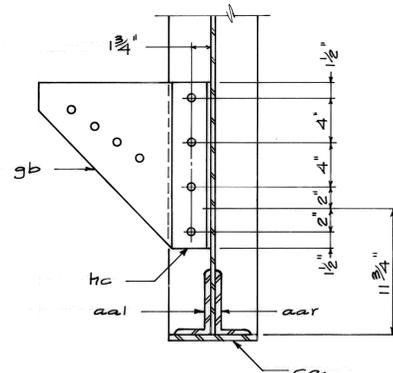
TYP. BENT FOOTING REPAIR - P2, P3, P4, P5, P6 & P8

- Notes:
1. Remove existing concrete with a lightweight jackhammer (30lb max).
 2. Exposed concrete to be cleaned by sandblasting.
 3. Bond new Class A4 conc. with No. 7 aggregate to existing conc. with epoxy bonding compound, EP-4.

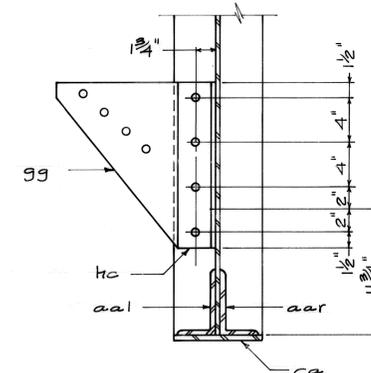


1" φ SWEDGED ANCHOR BOLTS

12 - Required



DETAIL @ P2 & P7



DETAIL @ P3

PAINTING SPECIFICATIONS

① Existing Structural Steel		Min. Dry Film Thickness
1 - Prime coat	No. 1 Zinc Oxide Oil Alkyd	2 mils
1 - Field coat	No. 1 Zinc Oxide Oil Alkyd w/ 1/4 oz. lampblack added per gal	2 mils
1 - Finish coat	No. 8 Green #595-24227	5 mils
② New Structural Steel		
1 - Shop coat	No. 4 Inorganic Zinc Silicate	3 mils
1 - Intermediate coat	No. 15 conform to Mil-P-15328D	0.3 mils
1 - Finish coat	No. 6 Green #595-24227	3 mils

- ① All painted areas damaged during erection of new steel shall be painted as indicated.
- ② All New Structural Steel shall be painted as indicated.

EAST BROADWAY ST. OVER N.&W. RAILWAY MISCELLANEOUS DETAILS

August, 1984

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