

BRF-561-4(5)--38-31
BRIDGES AND RETAINING WALLS

DUBUQUE COUNTY

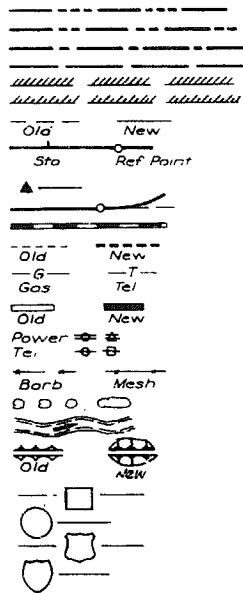
CONVENTIONAL SIGNS

State Line
Co. Line
Twp. Line
Sec. Line
Corp. Line
Urban Bdry
R.O.W. Lines
Survey Line

Sec. Corner
Profile Grade
Railroad
Field Tile
Underground Lines

Culverts
Utility Poles
Fences
Trees Or Brush
Stream
Dike

County Road No.
Primary Road No.
U. S. Road No.
Interstate Road No.



IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE
PRIMARY ROAD SYSTEM
DUBUQUE COUNTY

BRIDGES AND RETAINING WALLS
ON U.S. 561 IN DUBUQUE-- LAKE PEOSTA CHANNEL BRIDGE AND RETAINING WALLS;
AND IOWA APPROACH BRIDGE TO MISSISSIPPI RIVER BRIDGE
SCALES AS NOTED

THE STANDARD SPECIFICATIONS, SERIES OF 1977
OF THE IOWA DEPARTMENT OF TRANSPORTATION
SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT

(PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS)

DESIGN STRESSES:

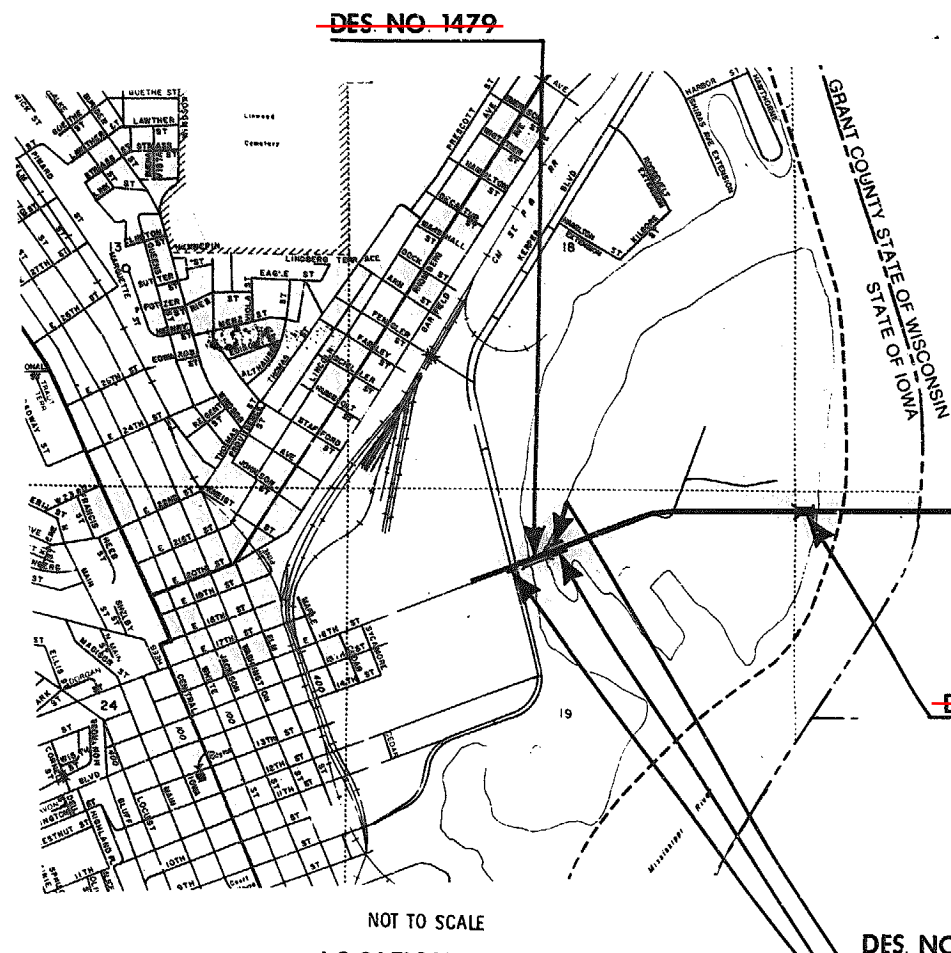
Design stresses for the following materials are in accordance with the
AASHTO Standard Specifications for Highway Bridges, Series of 1977.
Reinforcing Steel in accordance with Section 1.5, Grade 60
Concrete in accordance with Section 1.5, f'c = 3,500 psi.

Structural Steel in accordance with Section 1.7, ASTM A-588, Fatigue
stress cycles based on Case II.

WELDING:

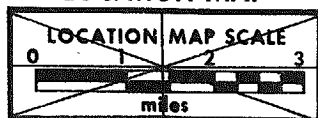
All welding shall conform to the Supplemental Specifications for
Structural Steel, April 1, 1980, Specification 860.

A complete penetration groove weld shall be used whenever the term
"Groove Weld" is used on the plans.



NOT TO SCALE

LOCATION MAP



PART OF THE CITY OF DUBUQUE
T-89N R-3E
DUBUQUE TWP.

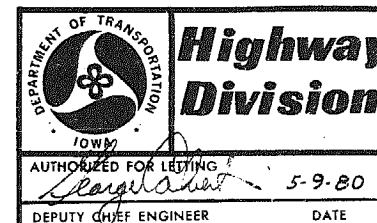
INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
1A	REVISION SHEET
2	ESTIMATE SHEET
3-24	BRIDGE DESIGN NO. 1479
25-32	RETAINING WALL DESIGN NO. 1779
33-41	BRIDGE DESIGN NO. 1579

DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION
STANDARDS REQUIRED (Available at Bridge Design Services)

STANDARD	ISSUED	REVISED
----------	--------	---------

REVISED

SEE FOLLOWING SHEET 1A



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED
UNDER MY SUPERVISION AND THAT ENGINEERING
DECISIONS WITH REGARD TO THE DESIGN WERE
MADE BY ME OR BY OTHER DULY REGISTERED
PROFESSIONAL ENGINEERS UNDER THE LAWS OF
THE STATE OF IOWA.

IOWA REGISTRATION NUMBER DATE

U.S. DEPT. TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
APPROVED
DIVISION ENGINEER DATE

LETTING DATE JUNE 17, 1980

STATE CONTROL SECTION NUMBER 31-1900 31-2000

FILE NO. 25896

DUBUQUE COUNTY

PROJECT NO. BRF-561-4(5)--38-31

SHEET NO. 1 OF 41

LISTING OF PROJECT REVISIONS

DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS	DATE	SHEET NUMBER	DESCRIPTION OF REVISIONS
7-28-80		Designs 1479 & 1579	3-30-81		Design 1479
	1A of 41	This sheet added (Revision Sheet).		14 of 41	The notes concerning tack weld nuts of hanger U-bolts after final setting are deleted. The deletions are marked by  .
	40 of 41	Reinforcing 6a66 & 5a54 are changed in dimensions. Total r-bar quantity for abut. is changed. All revisions are identified by  .			REASON: Change in plan detail. Tack welding on nut is detrimental to the galvanizing coating and may also inflict damage to the diaphragms; therefore, it is deleted. No change in quantities.
	35 of 41	Concrete quantities & backwall dimensions changed. All items revised are identified by  .			
	33 of 41	Reinforcing steel grade 60 & concrete quantities corrected. The revised quantities are identified by  .			
	22 of 41	This sheet (Design Sheet 20 of 21) is voided. Details shown on this sheet are to be superseded by that shown on sheet 22A of 41 (Design sheet 20A of 21).			
	22A of 41	This sheet (Design Sheet 20A of 21) added (Bar List). Details shown on this sheet supersede that shown on sheet 22 of 41 (Design sheet 20 of 21).			
	19 of 41	This sheet (Design Sheet 17 of 21) is voided. The details on this sheet are to be superseded by that shown on sheet 19A of 41 (Design sheet 17A of 21).			
	19A of 41	This sheet (Design sheet 17A of 21) is added (Deck Drains). Details on this sheet are to supersede that shown on sheet 19 of 41 (Design sheet 17 of 21).			
	10 of 41	This sheet (Design Sheet 8A of 21) is voided. Details on this sheet are to be superseded by that shown on sheet 10A of 41 (Design Sheet 8A of 21).			
	10A of 41	This sheet (Design Sheet 8A of 21) is added. Details on this sheet are to supersede that shown on sheet 10 of 41 (Design sheet 8 of 21). The main change is in vertical column bar pattern.			
	6 & 11 of 41	Concrete quantities & backwall dimensions are changed. All items revised are identified by  .			
	7 of 41	Dimensions in Section C-C changed as identified by  .			
	4 of 41	Concrete & r-bar quantities changed. All items revised are identified by  .			
	2 of 41	Designs 1479 & 1579--Concrete & Reinforcing quantities changed. All items revised are identified by  .			
	1 of 41	Sheets 1A, 10A, 19A & 22A added to and sheets 10, 19 & 22 deleted from "Index of Sheets".			
		REASON: Bar patterns for Piers 3 & 4 of Design 1479 changed to facilitate Construction. Grates of floor drain on Design 1479 protrude into travelling lane of roadway; therefore, they are relocated. Plan error in reinforcing bar table on Design 1579. Abutment backwall reinforcing cover changed from 2" to 3" per FHWA request.			
		MASTERS PRINTED			
12-9-80		Designs 1479 & 1579			
	35 of 41	Bridge Seat elevations corrected as marked by  .			
	17 of 41	Welding symbols added to expansion device in section A-A as marked by  .			
		REASON: Error in plan details. Bridge seat elevations were erroneously computed for Design 1579 and welding symbols erroneously omitted on Design 1479. No change in quantities.			
		MASTERS PRINTED			
2-25-81		Design 1579			
	35 of 41	All changes marked by  are related to telephone conduits.			
	38 of 41	All changes as marked by  are related to telephone conduits.			
		REASON: Contractor requested a change in the spacing of the telephone conduits for ease of installation. No change in quantities.			
		MASTERS PRINTED			
3-3-81		Design 1479			
	17 of 41	All changes as marked by  are related to expansion joint in Section A-A.			
		REASON: Expansion device modified as per FHWA's request. No change in quantities.			
		MASTERS PRINTED			

REVISION SHEET

FILE NO. 25896

DUBUQUE COUNTY

PROJECT NUMBER

BRF-561-4(5)--38-31

STATE

IOWA

FED. ROAD DIST. NO.

5

FISCAL YEAR

SHEET NO.

1-A

TOTAL SHEETS

41

IN LETTING OF June 17, 1980	DESIGN NO. 1479 OVER LAKE PEOSTA CHANNEL STA. 1549+22.80 DUBUQUE COUNTY			
	SECTION 19 T-89N R-3E DUBUQUE TWP.			
	DESIGN FOR			
	340' X 52' CONTINUOUS I-BEAM BRIDGE			
	ESTIMATE OF QUANTITIES			
	NO.	ITEM	UNIT	TOTAL
	1	Reinforcing Steel-Epoxy Coated	Lb.	85,440
	2	Reinforcing Steel-Grade 60	Lb.	261,440
	3	HP10x42 Steel Piles	Furnish Lin. Ft. Drive Lin. Ft.	3,126 3,016
	4	HP12x74 Steel Piles	Furnish Lin. Ft. Drive Lin. Ft.	6,540 6,364

260,790 Δ

1,798.2 Δ

ESTIMATE REFERENCE INFORMATION		100-4
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.		
ITEM NO.	DESCRIPTION	
11.	See Art. 16 of Special Provision SP-299	
17.	Pay Limit gutterline to gutterline (Final) Actual Length required to be placed shall be edge of slab to edge of slab with required curb section.	

IN LETTING OF June 17, 1980	DESIGN NO. 1779 AT LAKE PEOSTA CHANNEL DUBUQUE COUNTY			
	SECTION 19 T-89N R-3E DUBUQUE TWP.			
	RETAINING WALLS			
	ESTIMATE OF QUANTITIES			
	NO.	ITEM	UNIT	TOTAL
	1	Structural Concrete	Cu. Yds.	364.7
	2	Reinforcing Steel Grade 60	Lbs.	35,590
	3	Reinforcing Steel-Epoxy Coated	Lbs.	6,115
	4	Class 23 Excavation	Cu. Yd.	532.9
	5	Class 20 Excavation	Cu. Yd.	598.2

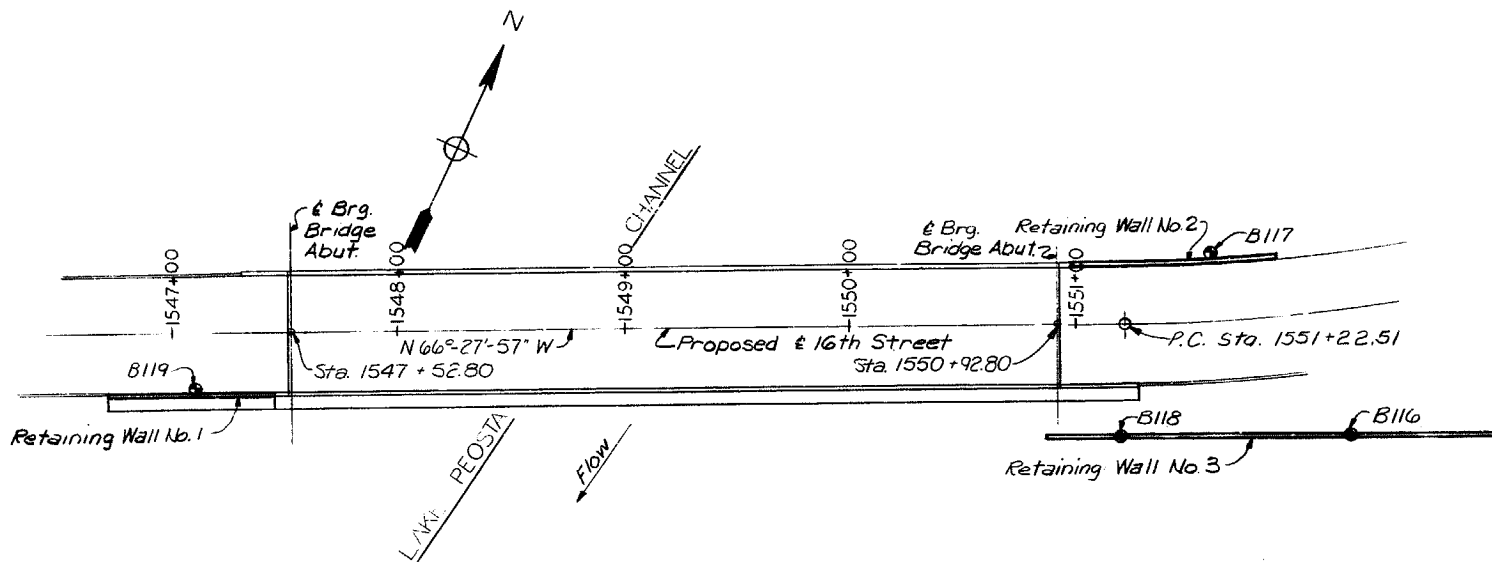
ESTIMATE REFERENCE INFORMATION		100-4
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.		
ITEM NO.	DESCRIPTION	

IN LETTING OF June 17, 1980	DESIGN NO. 1579 IOWA APPROACH TO CITY DUBUQUE COUNTY CITY ISLAND BRIDGE			
	SECTION 19 T-89N R-3E DUBUQUE TWP.			
	DESIGN FOR			
	116'-6" X VARI. SINGLE APPROACH SPAN			
	ESTIMATE OF QUANTITIES			
	NO.	ITEM	UNIT	TOTAL
	1	Structural Concrete	Cu. Yds.	275.5 179.0 Δ
	2	Reinforcing Steel Grade 60	Lb.	27,260 14,264 Δ
	3	Reinforcing Steel-Epoxy Coated	Lb.	1,100
	4	Class 20 Excavation	Cu. Yds.	256.4

ESTIMATE REFERENCE INFORMATION		100-4
Data listed below is for informational purposes only and shall not constitute a basis for any extra work orders.		
ITEM NO.	DESCRIPTION	
9	See Art. 13 of SP-300.	

Revised 7-28-80:
Designs 1479 & 1579 -- Concrete & reinforcing quantities changed. All items revised are identified by Δ .

ESTIMATE SHEET



VICINITY PLAN

BENCH MARK: Southwest Corner of the Concrete Platform of the Pumping Station on Kerper Blvd. between 16th Street and 12th Street. Elev. 615.91.

TABLE OF ESTIMATED QUANTITIES					
RETAINING WALLS					
	UNIT	1	2	3	TOTAL
Structural Concrete	Cu. Yd.	128.9	118	117.8	364.7
Reinforcing Steel Grade 60	Lbs.	11190	10530	13670	35390
Reinf. Steel Epoxy Coated	Lbs.	4275	1840	—	6115
Class 23 Excavation	Cu. Yd.	314.5	210.4	—	524.9
Class 20 Excavation	Cu. Yd.	—	—	598.2	598.2
Chain Link Fence (4')	Stas	0.74	—	—	0.74
Subdrain, Perforated					
4 inch. Dia.	Lin. Ft.	80	88	—	168
Compacted Foundation Material	Cu. Yd.	—	—	281.0	281.0
Steel Piles	Furnished	Lin. Ft.	1690	2178	3868
HP10x42	Driven	Lin. Ft.	1634	2106	3740

PILE AND FOOTING DATA				
RETAINING WALLS				
		1	2	3
STEEL PILES	Pile Type and Size	HP10x42	HP10x42	—
	Number	28	36	—
	Est. Pile Tip Elev.	550	550	—
	Average Estimated Length (Ft.)	—	—	—
	Design Bearing Tons/Pile	49.5	42.8	—
SOIL BEARING	Foundation Material	—	—	Fill*
	Design Bearing	—	—	1 Ton/sq. ft.

Fill*: Compacted Granular Backfill
See Des. Sh. No. 7

CONCRETE BREAKDOWN C.Y.				
	Wall 1	Wall 2	Wall 3	Total
Class C	96.4	109.9	117.8	324.1
Class D	32.5	8.1	—	40.6

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS:

IOWA DEPARTMENT OF TRANSPORTATION, SERIES OF 1977,
STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION,
CURRENT SUPPLEMENTAL SPECIFICATION AND SPECIAL PROVISIONS.

DESIGN SPECIFICATION:

THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES"
TWELFTH EDITION, 1977, AND THE 1978 AND 1979 INTERIM SPECIFICATIONS.

DESIGN LOADS:

WEIGHT OF MATERIAL AS FOLLOWS:

COMPACTED EARTH - - - - 120 PCF

CONCRETE - - - - - 150 PCF

ACTIVE PRESSURE OF RETAINED SOIL IS TAKEN AS 40 POUNDS PER SQUARE
FT. PER FT. OF HEIGHT.

LIVE LOADS:

SIDEWALK LIVE LOAD IS APPLIED IN ACCORDANCE WITH AASHTO ARTICLE 1.2:11

AN HS20-44 TRUCK LOADING IS APPLIED ON THE SIDEWALK AS A TEMPORARY

CONSTRUCTION CONDITION.

CONCRETE:

CONCRETE FOR THE RETAINING WALLS SHALL BE CLASS C.

CONCRETE FOR THE PARAPET BARRIERS AND SIDEWALK SHALL BE CLASS D.

ALL EXPOSED CORNERS OF 90° OR SHARPER ARE TO BE FORMED

WITH A 3/4" DRESSED AND BEVELED FILLET.

REINFORCEMENT:

REINFORCING BARS SHALL CONFORM TO ASTM A615, GRADE 60, ASTM A616 GRADE
60 OR ASTM A617, GRADE 60.

ALL TRANSVERSE AND LONGITUDINAL REINFORCEMENT IN THE TOP LAYER OF THE
SIDEWALK AND IN THE PARAPET BARRIERS IS TO BE EPOXY COATED.

ALL DIMENSIONS TO REINFORCING STEEL ON DETAIL DRAWINGS ARE TO CENTERLINE
OF BAR EXCEPT WHERE CLEAR DISTANCE IS NOTED FROM THE FACE OF CONCRETE. ALL
REINFORCING STEEL IS LAPPED IN ACCORDANCE WITH AASHTO SPECIFICATION 1.5.22
UNLESS OTHERWISE SHOWN OR NOTED.

DESIGN UNIT STRESSES FOR REINFORCED CONCRETE:

CLASS C AND CLASS D CONCRETE $F_c = 1,400$ PSI $N=10$

REINFORCING STEEL $F_s = 24,000$ PSI

125% OF NORMAL UNIT STRESSES ARE USED FOR CONSTRUCTION CONDITION LOADS.

PILING:

HP10x42-50 TONS MAXIMUM LOAD

CONSTRUCTION JOINTS:

ALL CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN SHALL

BE KEYED ONE THIRD OF THE DEPTH WITH A 2" PROJECTION.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

BORING NO. B-116		BORING NO. B-117		BORING NO. B-118		BORING NO. B-119	
Sta. 1552+20 55' Rt.		Sta. 1551+60 30' Lt.		Sta. 1551+20 50' Rt.		Sta. 1547+10 25' Rt.	
Elev.		Elev.		Elev.		Elev.	
610	610.7 609.7 Stiff sandy clay fill	610	615.1 614.1 Road metal	610	610.8 610.2 Stiff sandy clay fill	610	611.8 611.8 Rip Rap
600	Fine sand fill	600	Fine clayey sand fill with OCC boulders	600	Fine sand fill	600	Stiff sandy clay & boulder fill
590	596.3 590.7	590	594.5 592.1	590	593.2 590.8	590	594.4 593.8
580	Fine sand with OCC silty clay layers	580		580	Fine sand with OCC silty clay layers	580	579.8 Fine sand with OCC silty clay layers
570	568.7	570	Fine sand with OCC silty clay layers	570	569.8	570	
560		560	562.1	560		560	
550		550	Plan Pile Tip Elev.	550		550	Plan Pile Tip Elev.
540	Medium sand with OCC boulders	540	Medium sand with OCC boulders	540		540	Medium sand with OCC boulders
530		530		530		530	
520		520		520		520	
510	507.7	510	507.1	510	507.8	510	514.8
500		500		500		500	

▼ Denotes water elevation

BORING NOTE

Boring data is furnished
for information only and
may or may not represent
the actual conditions which
may be found when the
work is executed.

DESIGN
SHEET
NO
1

INDEX

TITLE

VICINITY PLAN, GENERAL NOTES, BORING LOGS,
QUANTITIES, PILE AND FOOTING DATA, AND INDEX
RETAINING WALL NO. 1
RETAINING WALL NO. 1 DETAILS
RETAINING WALL NO. 2
RETAINING WALL NO. 2 DETAILS
RETAINING WALL NO. 3
RETAINING WALL NO. 3 DETAILS
BAR LIST



I hereby certify that this plan, specification or report was
prepared by me or under my direct personal supervision
and that I am a duly registered Professional Engineer under
the laws of the State of Iowa.
Signed: Gordon E. Pennington Date: Apr 18, 1980
GORDON E. PENNINGTON, P.E. Iowa Reg. No. 5286

IOWA APPROACH MISSISSIPPI RIVER BRIDGE

RETAINING WALLS

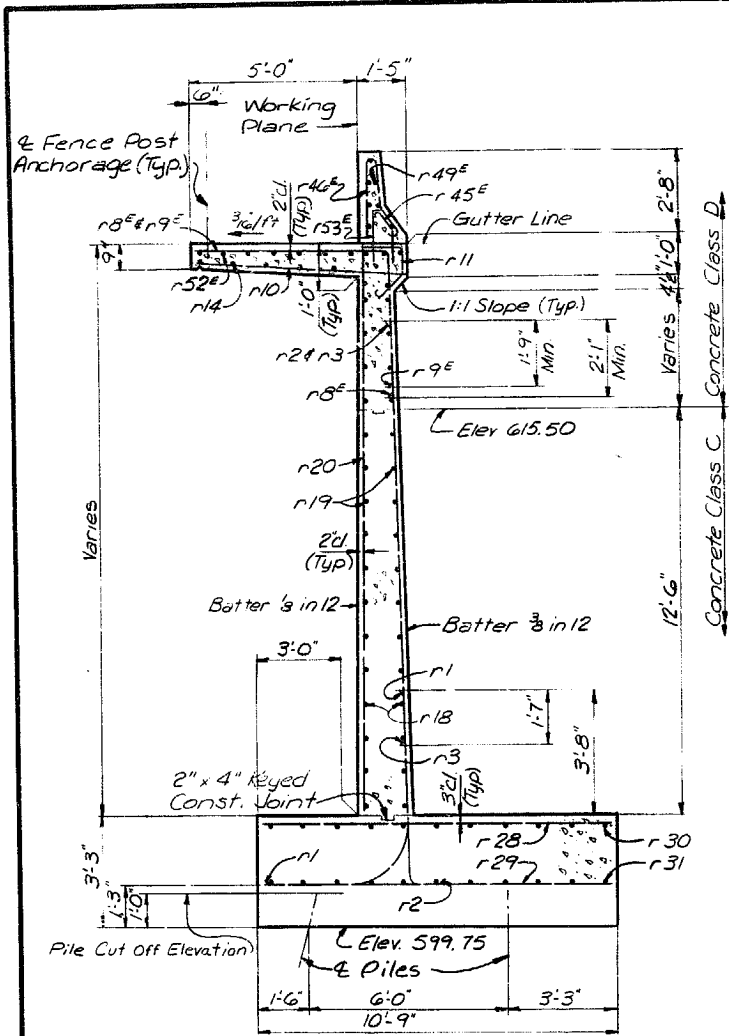
VICINITY PLAN, GENERAL NOTES, BORING LOGS,
QUANTITIES, PILE AND FOOTING DATA, AND INDEX
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN NO. 1779 FILE NO. 25896 DES. SH. NO. 1 OF 8
PROJECT BR-561-4(5)-38-31 PROJECT SH. NO. 25 OF 41

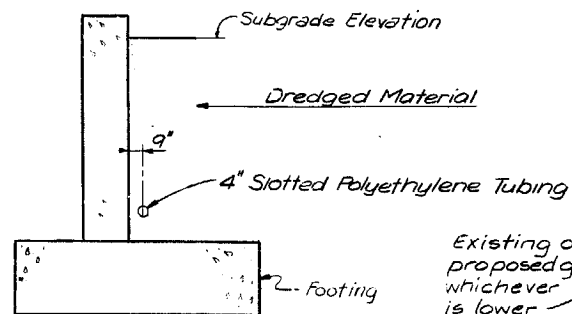
SP 299

DRAWN BY: R. Prescher Jan. 1980
CHECKED BY: R.D. Thumle 4/80
5618
80594

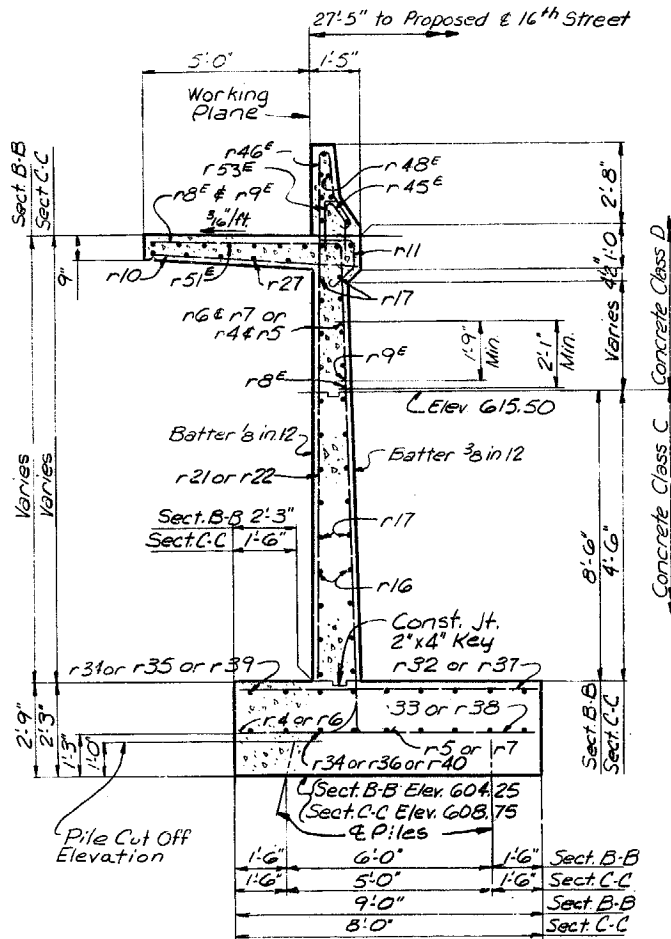


SECTION A-A

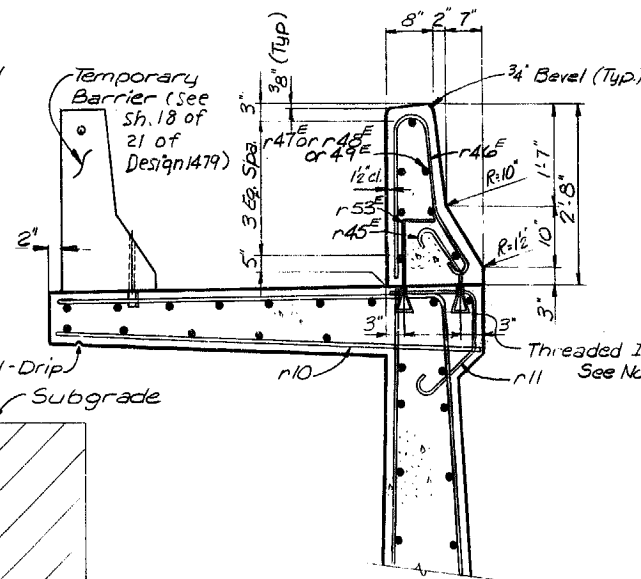
Note: Base of temporary barrier shall be blocked out to clear fence post anchor bolts.



SECTION THRU WALL SHOWING UNDERDRAIN



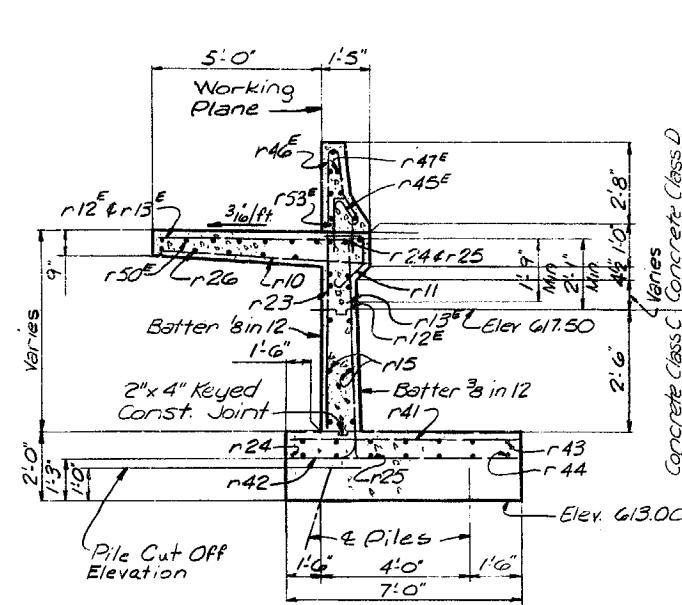
SECTION B-B
SECTION C-C



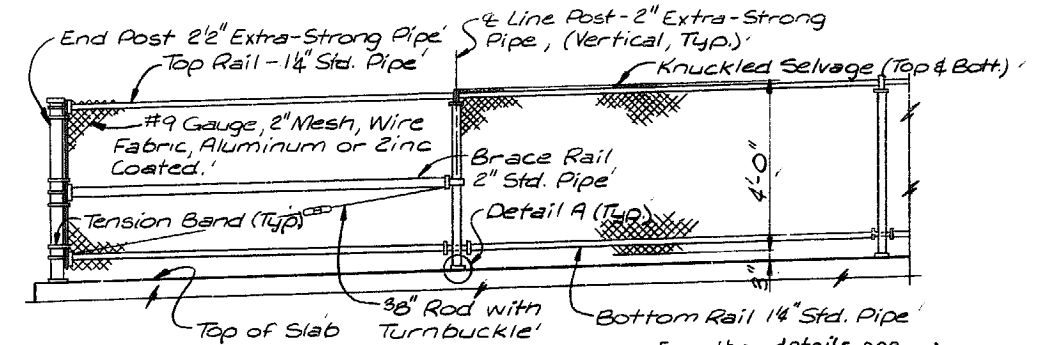
BARRIER DETAIL

Note: Concrete inserts shall be threaded (U.N.C.) for a 3/8" bolt and shall have a rated tension load capacity of 4,000 LBS, provided with temporary plugs. Length of threaded ends on reinforcement bars 5r45 & 5r53 to suit inserts.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



SECTION D-D



PART ELEVATION OF FENCE (For other details see Sh. 6 of 21 of Design 1479)

Note: Fasten wire fabric with wire ties or clips at about 1'-0" centers to line posts and about 2'-0" centers to rails.

NOTES

The chain link fence is to be bid on a station basis measured from E to E of end posts. The price bid for "Chain Link Fence, as per plan," shall be full compensation for furnishing all material, including concrete anchors, and all of the equipment and labor required to erect the fence in accordance with these plans and specifications.

The posts, braces, rails and special fittings shall be in accordance with Articles 4154.10 and 4154.11 of the Standard Construction Specifications unless otherwise noted.

ESTIMATED CONCRETE QUANTITIES

	CLASS C	CLASS D
Footings	71.3	—
Stems	25.1	—
Sidewalks	—	25.6
Barriers	—	6.9

PILING SCHEDULE

SECT.		DRIVE	FURNISH
D	4 (Vert.)	64.0	64.0
	4 (3:12)	66.0	68.0
	3 (Vert.)	60.0	62.0
C	3 (3:12)	62.0	64.0
	3 (Vert.)	55.0	57.0
B	3 (3:12)	57.0	59.0
	4 (Vert.)	51.0	53.0
A	4 (3:12)	52.0	54.0

For Steel Piles the "Furnish" length shown provides an allowance of 2 ft. per pile for overdriving.

IOWA APPROACH MISSISSIPPI RIVER BRIDGE

RETAINING WALL NO. 1 - DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

DESIGN NO. 1779 FILE NO. 25896 DES. SH. NO. 3 OF 5

PROJECT BR-561-4 (5)-3R-31 PROJECT SH. NO. 27 OF 41

DRAWN BY: S. J. G. 3/2/50
CHECKED BY: R. D. 3/25/50

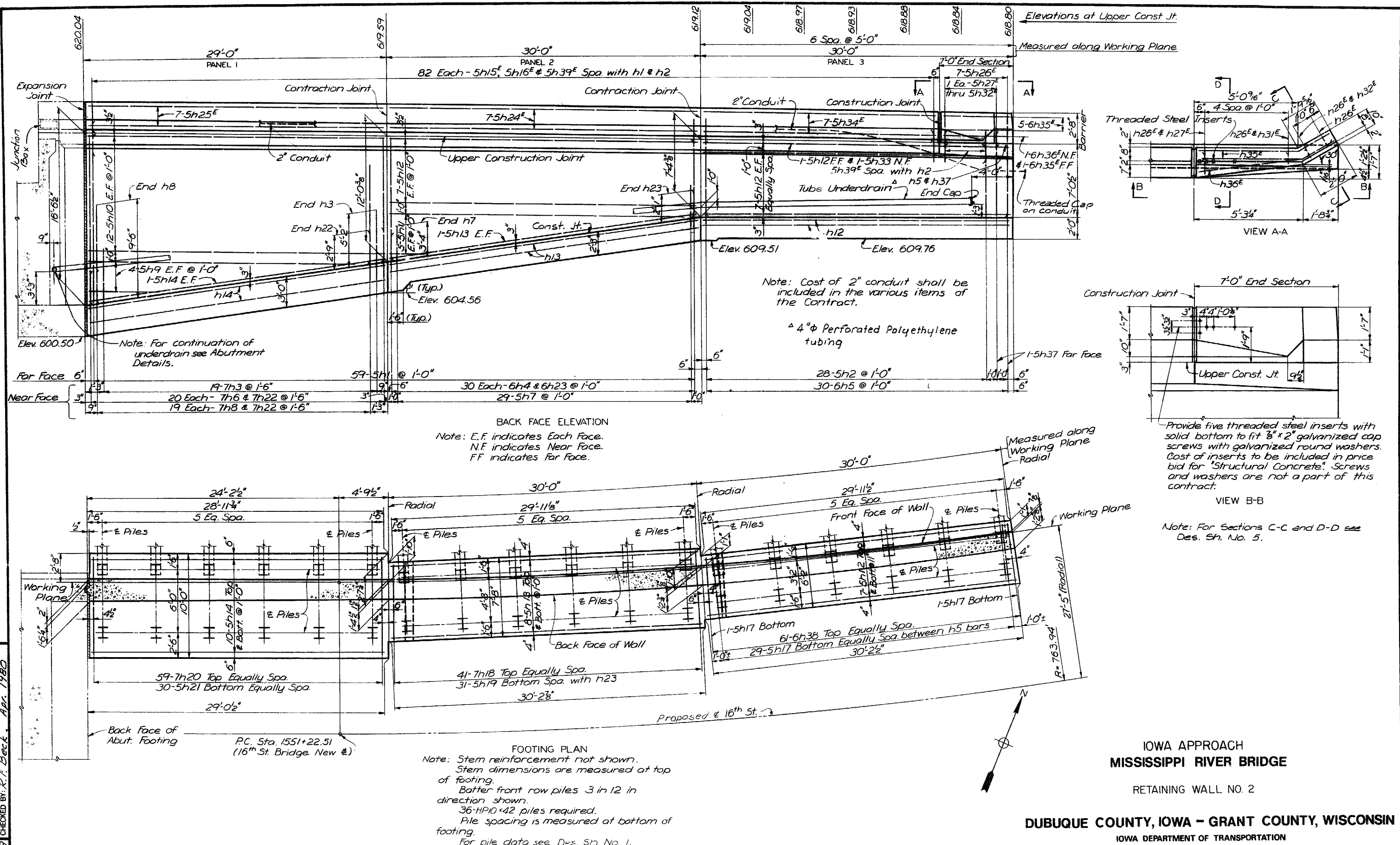
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

5818
 805/79
 DRAWN BY: M. Schoefer April 1980
 CHECKED BY: R.F. Beck, Apr. 1980

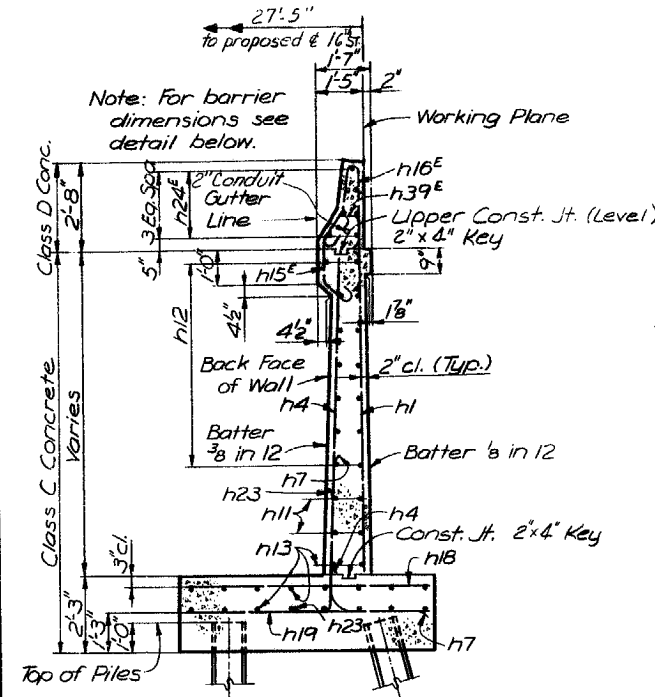
SVERDRUP & PARCEL AND ASSOCIATES, Inc.
 CONSULTING ENGINEERS
 ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

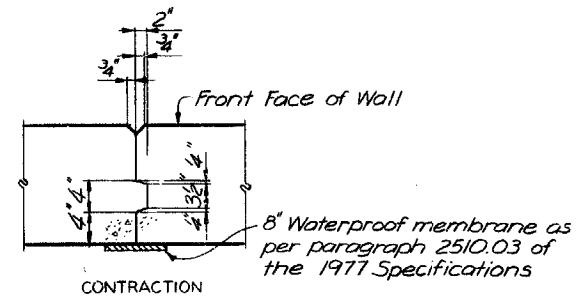
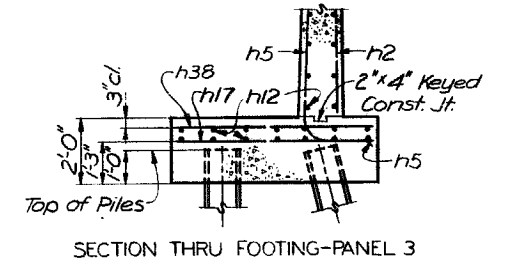
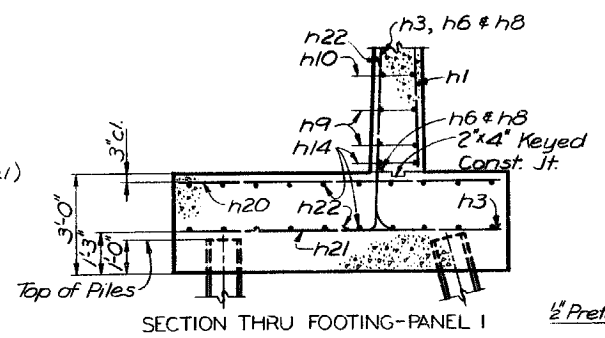
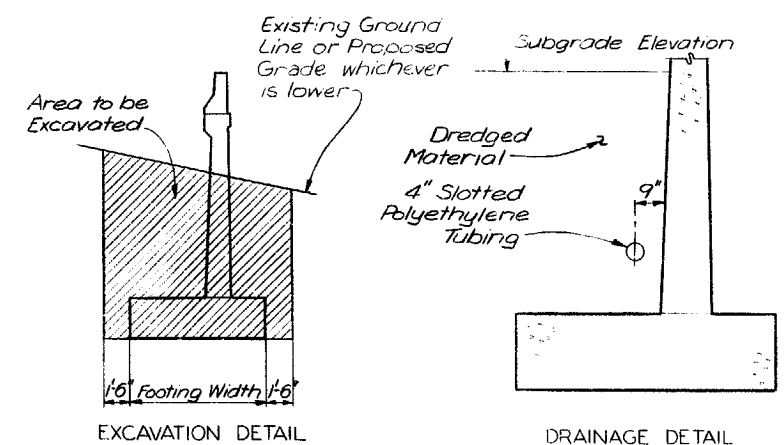
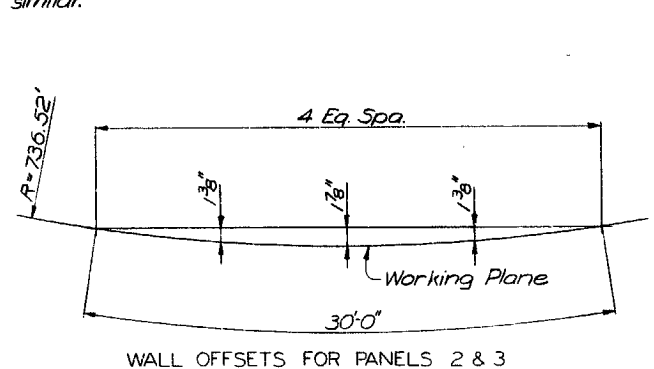
DESIGN NO. 1779 FILE NO. 25996 DES. SH. NO. 4 OF 5
 PROJECT BRP-561-4(5)-38-31 PROJECT SH. NO. 28 OF 41



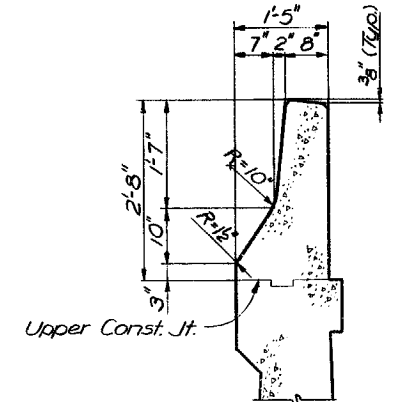
DRAWN BY: M. Schoefer, April 1980
 CHECKED BY: R.F. Beck, Apr. 1980
 5816
 805205



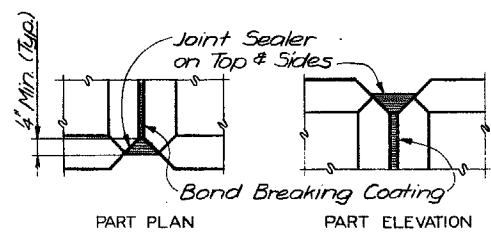
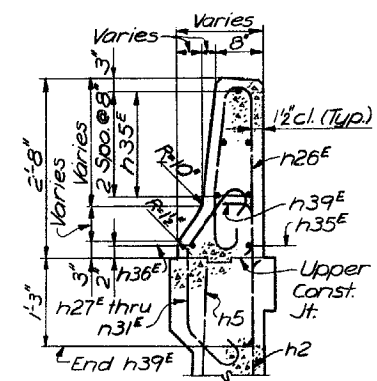
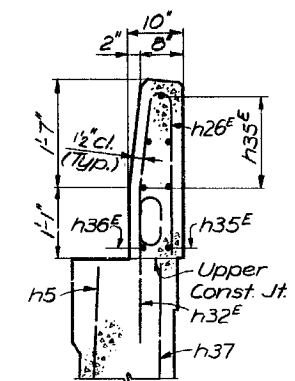
TYPICAL CROSS SECTION
 Note: Dimensions and reinforcing shown for Panel 2. Stem dimensions and reinforcing for Panels 1 & 3 similar.



JOINT DETAILS
 Note: Waterproof membrane shall extend from top of footing to upper construction joint.



TYPICAL SECTION THRU BARRIER
 Note: Reinforcement not shown.



BARRIER RAIL JOINT DETAILS AT CONSTRUCTION JOINT ADJACENT TO END SECTION

Note: The joint sealer shall conform to Fed Spec. TT-500230 or TT-500227 for Type II, Class A or B.

ESTIMATED CONCRETE QUANTITIES		
	CLASS C	CLASS D
Footings	65.7	—
Stem	44.2	—
Sidewalks	—	—
Barriers	—	8.1

For Steel Piles the "Furnish" length shown provides an allowance of 2 ft. per pile for overdriving.

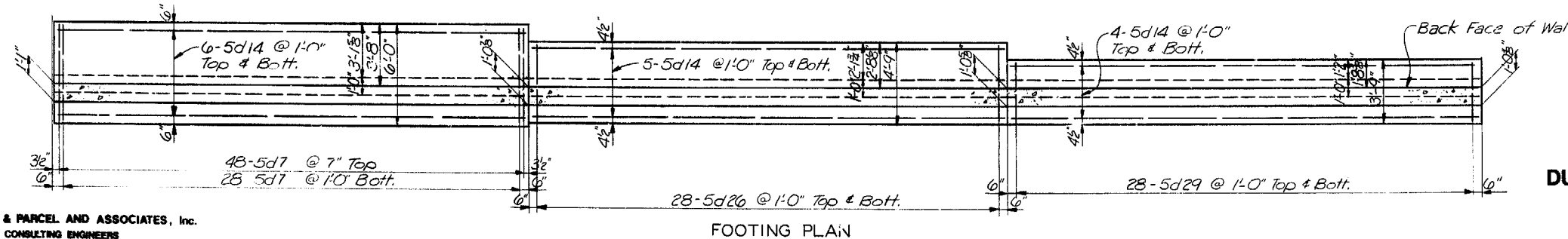
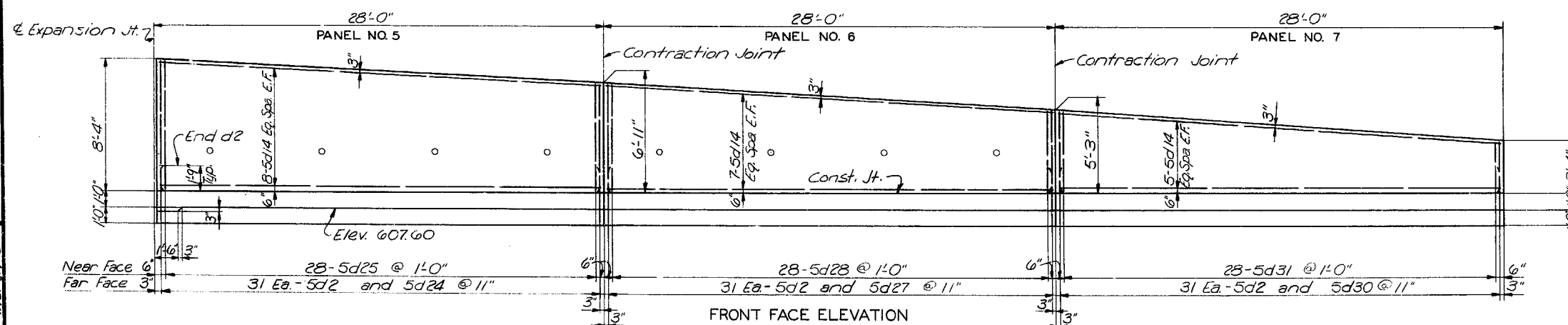
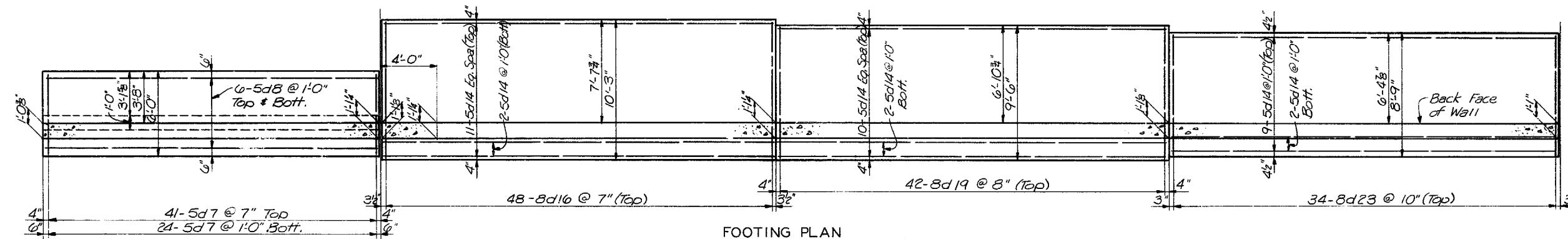
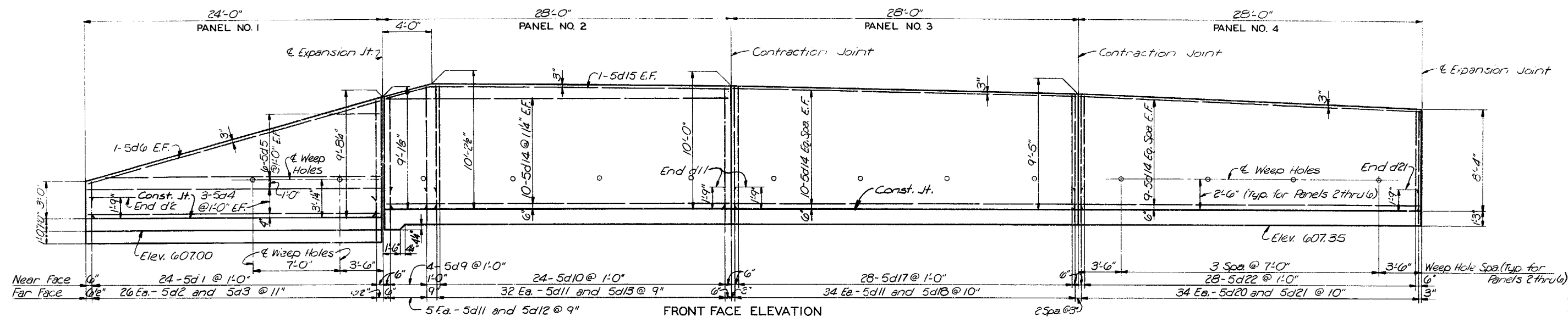
PILING SCHEDULE			
PANEL		DRIVE	FURNISH
1*	6 (Vert.)	54.0	56.0
	6 (3:12)	55.0	57.0
2*	6 (Vert.)	58.0	60.0
	6 (3:12)	60.0	62.0
3	6 (Vert.)	61.0	63.0
	6 (3:12)	63.0	65.0

* Footing is not level. Individual pile lengths vary.

IOWA APPROACH
 MISSISSIPPI RIVER BRIDGE
 RETAINING WALL NO. 2 - DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
 IOWA DEPARTMENT OF TRANSPORTATION

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.



NOTES
E.F. indicates each face.

ESTIMATED CONCRETE QUANTITIES		
	CLASS C	CLASS D
Footing	61.6	—
Stem	56.2	—
Side walks	—	—
Barriers	—	—

**IOWA APPROACH
MISSISSIPPI RIVER BRIDGE**

RETAINING WALL NO. 3

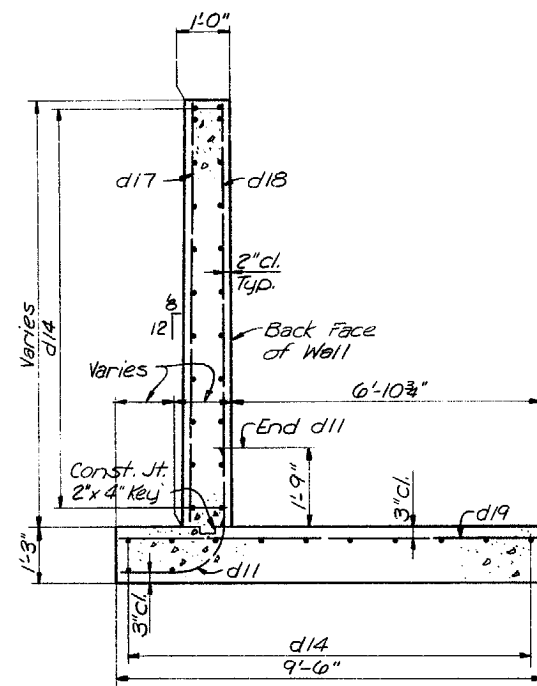
DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

5910	DRAWN BY: L. Mitchell	March '80
BOS/5/	CHECKED BY: R.F. Beck	March '80

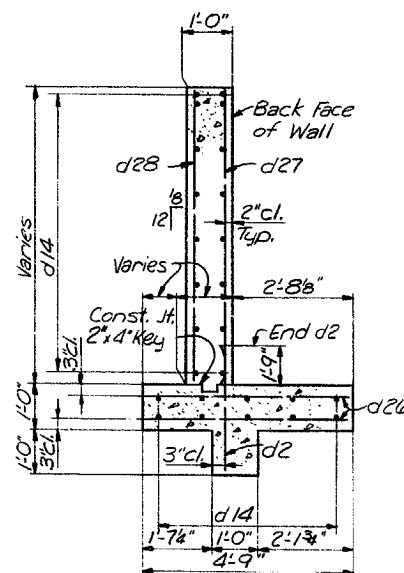
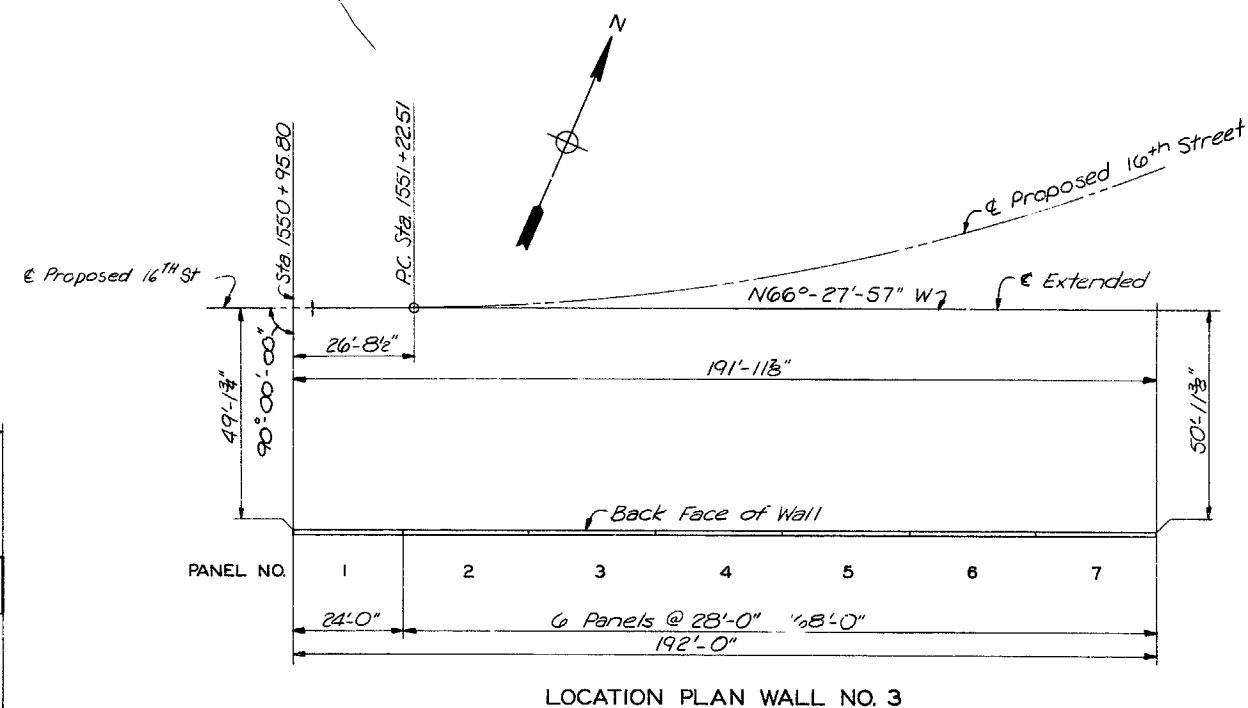
SVERDRUP & PARCEL AND ASSOCIATES, Inc
CONSULTING ENGINEERS
ST. LOUIS, MO.

NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS

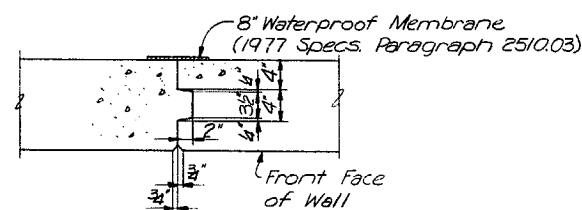
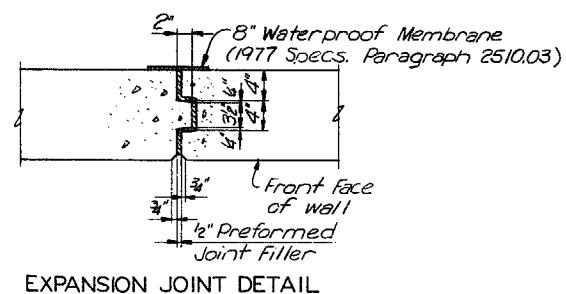
DESIGN NO. 1779 FILE NO. 25896 DES. SH. NO. 6 OF 8
PROJECT BRP-561-4(5)--38-31 PROJECT SH. NO. 30 OF 41



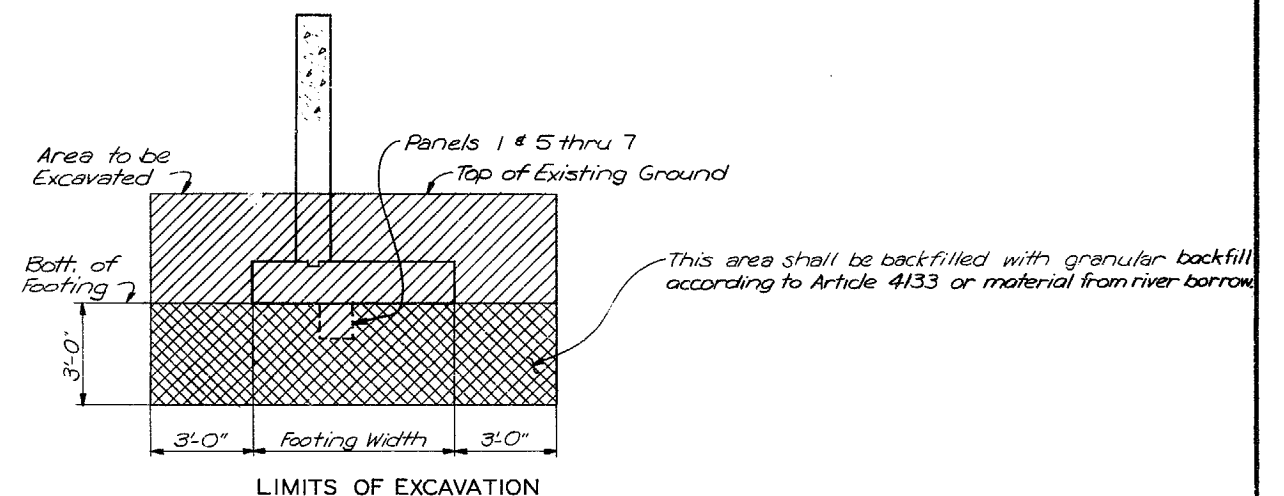
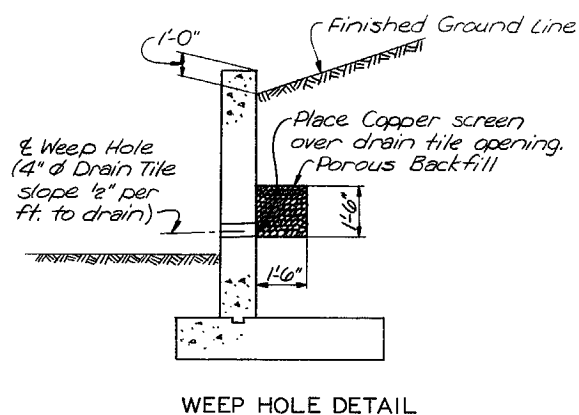
TYPICAL CROSS SECTION FOR PANELS 2 THRU 4



TYPICAL CROSS SECTION
FOR PANELS 1 AND 5 THRU 7



CONTRACTION JOINT DETAIL



Note: At the bottom of the excavation, all disturbed soil shall be removed. The contractor shall maintain the condition of the undisturbed soil so as to assure the approved soils capability of providing the required bearing capacity (Design Fdn. Pressure 1 Ton/sq. ft.)
Key on Panels 1 and 5 thru 7 only.

**IOWA APPROACH
MISSISSIPPI RIVER BRIDGE**

RETAINING WALL NO. 3 - DETAILS

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN
IOWA DEPARTMENT OF TRANSPORTATION

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.

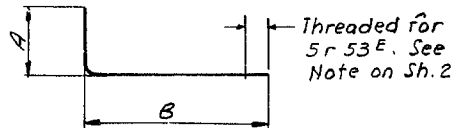
NOTE: DO NOT SCALE THIS DRAWING. FOLLOW DIMENSIONS.

DESIGN NO. 1779 FILE NO. 25896 DES. SH. NO. 7 OF 8

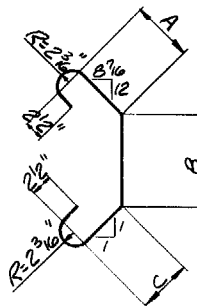
PROJECT BRF-561-4(5)-38-31 PROJECT SH. NO. 31 OF 41

5818	DRAWN BY: L. Mitchell	March '80
805162	CHECKED BY: R.F. Beck	Apr. 1980

RETAINING WALL 1						RETAINING WALL 2 CONT.						RETAINING WALL 3 CONT.					
BAR	LOCATION	SHAPE	LENGTH	NO.	WEIGHT	BAR	LOCATION	SHAPE	LENGTH	NO.	WEIGHT	BAR	LOCATION	SHAPE	LENGTH	NO.	WEIGHT
Br1	Footing	L	9'-3"	17	420	5h12	2 Series of 5 bars (3'-6" to 29'-3")	---	---	---	---	5d28	1 Series of 31 bars (5'-1" to 6'-9")	---	---	---	---
Br2	Do	---	18'-2"	17	825	5h13	Wall, Ftg.	---	29'-8"	43	1331	5d28	Wall	---	Varies	28	173
Gr3	Stem	---	12'-1"	17	309	5h14	Do	---	29'-11"	18	562	5d29	1 Series of 28 bars (6'-1" to 6'-9")	---	---	---	---
Gr4	Footing	L	15'-2"	17	527	5h15	Do	---	28'-11"	22	664	5d29	Footing	---	3'-3"	56	190
Gr5	Do	---	13'-2"	17	336	5h16	Barrier	---	4'-6"	82	385	5d30	Wall	---	Varies	31	133
Gr6	Do	---	9'-11"	17	176	5h17	Do	---	5'-3"	82	463	5d30	1 Series of 31 bars (3'-2" to 5'-1")	---	---	---	---
Gr7	Do	---	8'-7"	17	219	5h18	Footing	---	5'-3"	31	183	5d31	Do	---	Varies	28	120
Gr8	Sidewalk	---	9'-10"	51	753	7h18	Do	---	7'-2"	41	601	---	1 Series of 28 bars (3'-2" to 5'-1")	---	---	---	---
Gr9	Do	---	9'-7"	51	510	5h19	Do	---	7'-2"	31	232	---	---	---	---	---	---
Gr10	Do	---	6'-1"	75	476	7h20	Do	---	9'-6"	59	1146	---	---	---	---	---	---
Gr11	Do	---	3'-5"	75	267	5h21	Do	---	9'-6"	30	297	---	---	---	---	---	---
Gr12	Do	---	7'-8"	24	276	7h22	Wall	---	5'-6"	39	438	---	---	---	---	---	---
Gr13	Do	---	7'-5"	24	186	6h23	Do	---	3'-11"	30	176	---	---	---	---	---	---
Gr14	Do	---	24'-8"	5	129	5h24	Barrier	---	29'-8"	7	217	---	---	---	---	---	---
Gr15	Stem	---	23'-8"	10	247	5h25	Do	---	28'-8"	7	209	---	---	---	---	---	---
Gr16	Do	---	8'-8"	8	72	5h26	Do	---	5'-7"	7	41	---	---	---	---	---	---
Gr17	Do	---	25'-8"	18	482	5h27	Do	---	4'-11"	1	5	---	---	---	---	---	---
Gr18	Do	---	16'-8"	8	139	5h28	Do	---	4'-9"	1	5	---	---	---	---	---	---
Gr19	Do	---	24'-8"	26	669	5h29	Do	---	4'-5"	1	5	---	---	---	---	---	---
Gr20	Do	---	17'-2"	17	304	5h30	Do	---	4'-3"	1	4	---	---	---	---	---	---
Gr21	Do	---	13'-1"	17	232	5h31	Do	---	4'-1"	1	4	---	---	---	---	---	---
Gr22	Do	---	8'-11"	17	158	5h32	Do	---	3'-0"	1	3	---	---	---	---	---	---
Gr23	Do	---	4'-9"	24	119	5h33	Wall	---	29'-8"	1	31	---	---	---	---	---	---
Gr24	Footing	L	7'-7"	24	190	5h34	Barrier	---	22'-8"	7	165	---	---	---	---	---	---
Gr25	Do	---	6'-4"	24	228	6h35	Do	---	6'-7"	6	59	---	---	---	---	---	---
Gr26	Sidewalk	---	23'-8"	5	123	6h36	Do	---	6'-10"	1	10	---	---	---	---	---	---
Gr27	Do	---	25'-8"	5	134	5h37	Wall	---	6'-10"	2	14	---	---	---	---	---	---
Gr28	Footing	---	10'-3"	37	775	6h38	Footing	---	5'-8"	61	519	---	---	---	---	---	---
Gr29	Do	---	10'-3"	18	192	5h39	Barrier	---	2'-10"	87	257	---	---	---	---	---	---
Gr30	Do	---	24'-3"	11	278	---	---	---	---	---	---	---	---	---	---	---	---
Gr31	Do	---	18'-0"	11	207	---	---	---	---	---	---	---	---	---	---	---	---
Gr32	Do	---	3'-6"	37	643	---	---	---	---	---	---	---	---	---	---	---	---
Gr33	Do	---	8'-6"	18	160	---	---	---	---	---	---	---	---	---	---	---	---
Gr34	Do	---	10'-0"	18	188	---	---	---	---	---	---	---	---	---	---	---	---
Gr35	Do	---	11'-0"	9	103	---	---	---	---	---	---	---	---	---	---	---	---
Gr36	Do	---	7'-6"	9	70	---	---	---	---	---	---	---	---	---	---	---	---
Gr37	Do	---	7'-6"	23	587	5d1	Wall	---	Varies	24	133	---	---	---	---	---	---
Gr38	Do	---	7'-6"	17	133	5d2	1 Series of 24 bars (2'-11" to 9'-4")	---	---	---	---	---	---	---	---	---	---
Gr39	Do	---	20'-0"	8	167	5d3	Do	---	3'-6"	119	434	---	---	---	---	---	---
Gr40	Do	---	16'-0"	8	138	5d4	Do	---	Varies	26	166	---	---	---	---	---	---
Gr41	Do	---	6'-6"	24	417	5d5	1 Series of 26 bars (2'-11" to 9'-4")	---	---	---	---	---	---	---	---	---	---
Gr42	Do	---	6'-6"	24	163	5d6	Do	---	23'-8"	6	148	---	---	---	---	---	---
Gr43	Do	---	29'-0"	7	212	5d7	Do	---	Varies	12	163	---	---	---	---	---	---
Gr44	Do	---	23'-6"	7	172	5d8	2 Series of 6 bars (4'-1" to 22'-0")	---	---	---	---	---	---	---	---	---	---
Gr45	Barrier	---	1'-9"	75	137	5d9	Do	---	24'-6"	2	51	---	---	---	---	---	---
Gr46	Do	---	3'-5"	75	424	5d10	Footing	---	5'-6"	141	809	---	---	---	---	---	---
Gr47	Do	---	23'-8"	7	173	5d11	Do	---	23'-6"	12	294	---	---	---	---	---	---
Gr48	Do	---	25'-8"	7	187	5d12	Wall	---	Varies	4	40	---	---	---	---	---	---
Gr49	Do	---	24'-8"	7	180	5d13	1 Series of 4 bars (9'-1" to 9'-11")	---	---	---	---	---	---	---	---	---	---
Gr50	Sidewalk	---	23'-8"	10	247	5d14	Do	---	Varies	24	248	---	---	---	---	---	---
Gr51	Do	---	25'-8"	10	268	5d15	Do	---	4'-7"	71	339	---	---	---	---	---	---
Gr52	Do	---	24'-8"	10	257	5d16	Do	---	Varies	5	50	---	---	---	---	---	---
Gr53	Barrier	---	1'-4"	75	104	5d17	1 Series of 5 bars (9'-1" to 9'-11")	---	---	---	---	---	---	---	---	---	---
Gr54	Sidewalk	---	6'-11"	42	303	5d18	Do	---	Varies	32	331	---	---	---	---	---	---
Gr55	Do	---	5'-8"	12	71	5d19	1 Series of 32 bars (9'-10" to 10'-0")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d20	Wall, Ftg.	---	27'-8"	164	4732	---	---	---	---	---	---
---	---	---	---	---	---	5d21	Wall	---	27'-10"	2	58	---	---	---	---	---	---
---	---	---	---	---	---	5d22	Footing	---	9'-9"	48	1250	---	---	---	---	---	---
---	---	---	---	---	---	5d23	Wall	---	Varies	28	279	---	---	---	---	---	---
---	---	---	---	---	---	5d24	1 Series of 28 bars (9'-3" to 9'-10")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d25	Do	---	Varies	34	338	---	---	---	---	---	---
---	---	---	---	---	---	5d26	1 Series of 34 bars (9'-3" to 9'-10")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d27	Footing	---	9'-0"	42	1009	---	---	---	---	---	---
---	---	---	---	---	---	5d28	Wall	---	Varies	34	309	---	---	---	---	---	---
---	---	---	---	---	---	5d29	1 Series of 34 bars (8'-2" to 9'-3")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d30	Do	---	4'-2"	34	148	---	---	---	---	---	---
---	---	---	---	---	---	5d31	Do	---	Varies	23	254	---	---	---	---	---	---
---	---	---	---	---	---	5d32	1 Series of 28 bars (3'-2" to 9'-3")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d33	Footing	---	8'-3"	34	749	---	---	---	---	---	---
---	---	---	---	---	---	5d34	Wall	---	Varies	31	241	---	---	---	---	---	---
---	---	---	---	---	---	5d35	1 Series of 31 bars (6'-9" to 8'-2")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d36	Do	---	Varies	28	218	---	---	---	---	---	---
---	---	---	---	---	---	5d37	2 Series of 4 bars (6'-9" to 26'-1")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d38	1 Series of 28 bars (6'-9" to 8'-2")	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	5d39	Footing	---	4'-3"	56	243	---	---	---	---	---	---
---	---	---	---	---	---	5d40	Wall	---	Varies	31	191	---	---	---	---	---	---
Total (Lbs.) 15462						Total (Lbs.) 12364						Total (Lbs.) 13866					



Bar	A	B
5r30	6'-5"	10'-0"
5r35	3'-8"	7'-6"
5r39	3'-8"	16'-6"
5r43	5'-8"	28'-6"
5r58E	5"	1'-1"
7h22	1'-2"	4'-6"
6h23	1'-0"	3'-1"
5h39E	10"	2'-2"

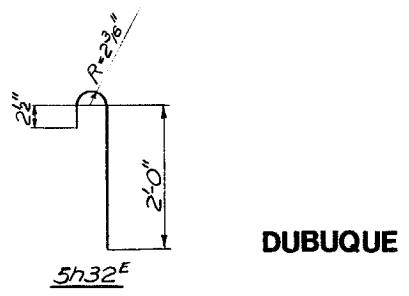
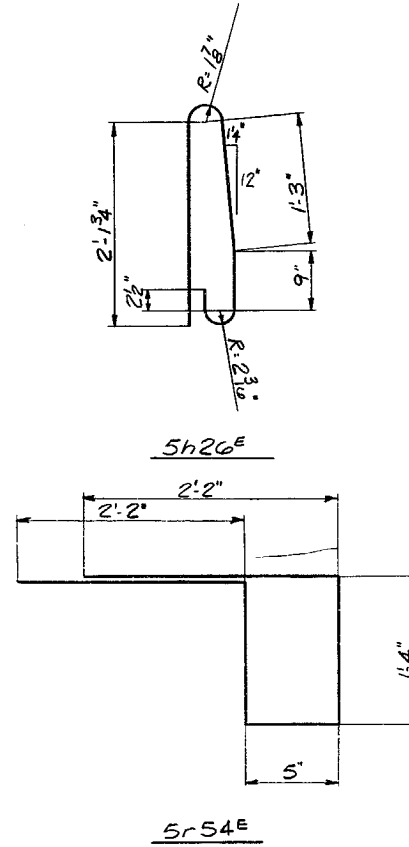
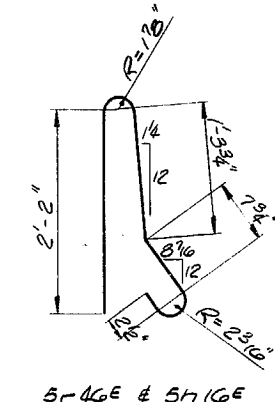
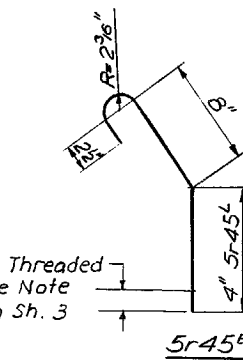
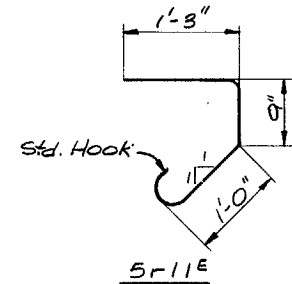


Bar	A	B	C
5h15E	8"	1'-12"	1'-0"
5h27E	1'-2"	1'-28"	11"
5h28E	1'-0"	1'-32"	96"
5h29E	9"	1'-48"	74"
5h30E	7"	1'-68"	53"
5h31E	5"	1'-72"	36"

Bar	A	B	C	D	R
Br1	3'-10"	2'-9"	2'-6"	13"	1'-8"
Gr4	11'-0"	1'-11"	2'-13"	46"	1'-2"
Gr6	7'-0"	1'-13"	1'-8"	2'-8"	8"
Gr24	4'-11"	10"	1'-8"	1'-6"	6"
7h3	6'-16"	1'-2"	2'-9"	2'-8"	8"
6h5	6'-10"	1'-2"	1'-12"	2'-2"	8"
5h7	3'-7"	1'-13"	1'-11"	1'-8"	8"
5d11	2'-0"	1'-12"	1'-5"	---	8"
5d21	2'-0"	1'-12"	1'-0"	---	8"

Bar	A	B	C	D
Br2	17'-0"	1'-4"	17'-0"	7'-8"
Gr5	12'-4"	1'-0"	12'-4"	6"
Gr7	7'-9"	1'-0"	7'-8"	2'-8"
Gr8E	4'-4"	5'-8"	4'-4"	13"
Gr9E	4'-0"	5'-8"	4'-0"	13"
Gr12E	2'-2"	5'-8"	2'-2"	34"
Gr13E	1'-10"	5'-8"	1'-10"	34"
Gr25	5'-6"	1'-0"	5'-6"	2"
5h33	6'-10"	22'-10"	4'-2"	6'-10"
6h36E	1'-8"	4'-11"	9'-8"	1'-5"
5d15	3'-11"	23'-10"	1'-0"	3'-10"

NOTE: Bars with 'E' designation @ end are to be epoxy coated.



NOTES
All dimensions are out to out.
All bends shown are bent around a standard mandrel of D=6db for #3 thru #8; D=8db for #9, #10, and #11, except as otherwise shown.
Dimensioning, bending and hooks for bent bars shall conform to recommendations indicated in A.C.I. "Manual of Standard Practice for Detailing Reinforced Concrete Structures", except as noted.
Bar lengths include deductions for bends.

IOWA APPROACH MISSISSIPPI RIVER BRIDGE RETAINING WALLS BAR LIST

DUBUQUE COUNTY, IOWA - GRANT COUNTY, WISCONSIN

IOWA DEPARTMENT OF TRANSPORTATION

SVERDRUP & PARCEL AND ASSOCIATES, Inc.
CONSULTING ENGINEERS
ST. LOUIS, MO.