

LEGEND

- Property corner markers
- Electrical Box
- Light pole
- Man Hole
- Signal Light
- Power Pole
- Fire Hyd.
- Sanitary Sewer
- Storm Sewer
- Chain Link Fence
- Storm Sewer Intake
- Steam Line

CITY OF MASON CITY

PROPOSED IMPROVEMENT OF

FOURTH STREET SOUTHEAST

FROM SOUTH FEDERAL TO DELAWARE

BRIDGE OVER WILLOW CREEK

INDEX OF SHEETS

1. Title Sheet
2. Situation Plan
3. South Abutment
4. South Abutment
5. South Pier
6. North Pier
7. North Abutment
8. North Abutment
9. Superstructure
10. "
11. "
12. "
13. "
14. "
15. Bearings
16. Handrail
17. Miscellaneous Details
18. Lighting
19. Retaining Wall & Intake
20. Manhole Cover

D

20-sided

SPECIFICATIONS

Design: AASHTO (1965) and current Interim Specifications

Construction: Materials and workmanship shall conform to the Iowa State Highway Commission Standard Specifications for construction on Primary, Farm to Market and Secondary Roads and Maintenance work on the Primary Road System (Series of 1964), the supplemental specifications and the special provisions.

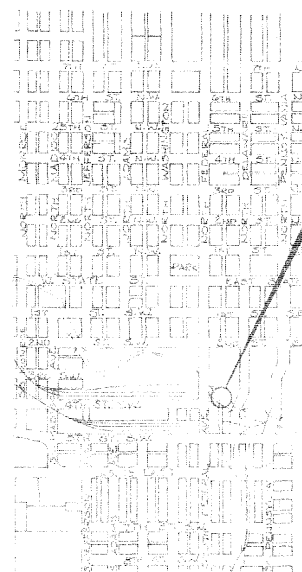
GENERAL NOTES

Concrete work adjacent to existing structures shall conform to current ISHC "Supplemental Specifications for Bridge Remodeling Projects".
Cost for furnishing and placing of preformed joint filler and sealer shall be included in the price bid for Structural Concrete.

196' x 44' CONTINUOUS WELDED GIRDER BRIDGE

TOTAL ESTIMATED QUANTITIES					
ITEM	UNIT	2 ABUTS.	2 PIERS	SUPERSTR.	TOTAL
Structural Concrete	Cu Yds.	**405.2	256.4	342.7	1004.3
Structural Steel	Lb.			233,707	233,707
Reinforcing Steel	Lb.	36,216	13,471	110,536	160,223
Class 20 Excavation	Cu Yds.	197	46		243
Class 23 Excavation	Cu Yds.	493	290		783
Steel Bearing	Furnish Lin. Ft.	9@19' 4" @ 23			263
Piling IOBP42, Drive	Lin. Ft.	9@19' 4" @ 23			263
Class 24 Excavation	Cu Yds.				2200
Building Removal	L.S.				Lump Sum
Removal of Existing Structures	L.S.				Lump Sum
Clearing and Grubbing	L.S.				Lump Sum
Granular Backfill	Cu Yds.	374			374
Porous Backfill	Cu Yds.	8			8
Aluminum Handrail	Lin. Ft.				430.1
Chain Link Fence, 36 in.	Lin. Ft.	36			36
Standard PCC Pavement, 8 in.	Sq. Yds.				40
24" dia. 1500 D. Storm Sewer	Lin. Ft.				84
Concrete Slope Protection	Sq. Yds.	184			184
Pavement Removal	Sq. Yds.				73
Sidewalk Removal	Sq. Yds.				155
Roadway Lighting	L.S.				Lump Sum
4" x 4" Tile Subdrain	Lin. Ft.	115			115
Dampproofing	Sq.	12.1			12.1
Concrete Pavement Sealer	Sq.			116.3	116.3
Manhole Cover	Ea.				1
12" Clay Storm Sewer	Lin. Ft.				14

- △ * 658.4 Cu Yds. Class "C"
- △ * 345.9 Cu Yds. Class "D"
- ** Includes Retaining Wall & Intake



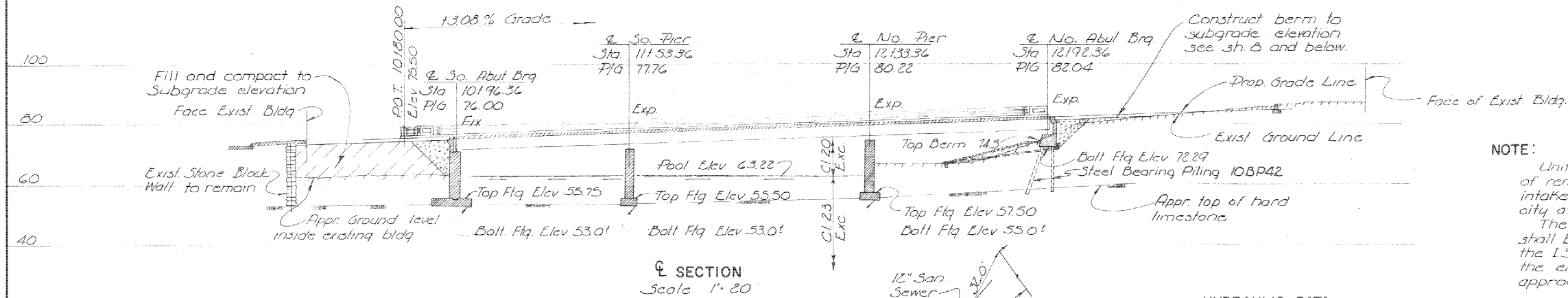
VICINITY MAP
SCALE 1 INCH = 1000 FEET

WALLACE HOLLAND KASTLER AND SCHMITZ
CONSULTING ENGINEERS
MASON CITY, IOWA

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.
Gene E. Kautzke
Date 1-24-69 Reg. No. 3050

RECOMMENDED FOR APPROVAL	
<i>Frank Schmitz</i>	1-24-69
PARTNER	DATE
WALLACE HOLLAND KASTLER & SCHMITZ	
APPROVED	
<i>Donovan L. Boell</i>	5-21-69
CITY ENGINEER	DATE
CITY OF MASON CITY	
APPROVED	
<i>Geo. E. Menden</i>	5-21-69
MAYOR	DATE
CITY OF MASON CITY	

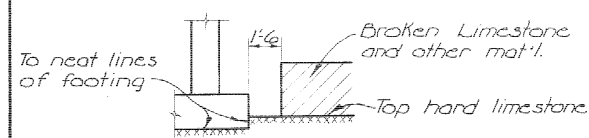
Bench Mark #3 Arrow head on hydrant, N.W. Cor. So. Federal & 4th St. Elev. 75.82
Bench Mark #6 "X" in conc. base of light post, 125' Rt. of Sta. 13+37 Elev. 67.96



NOTE:

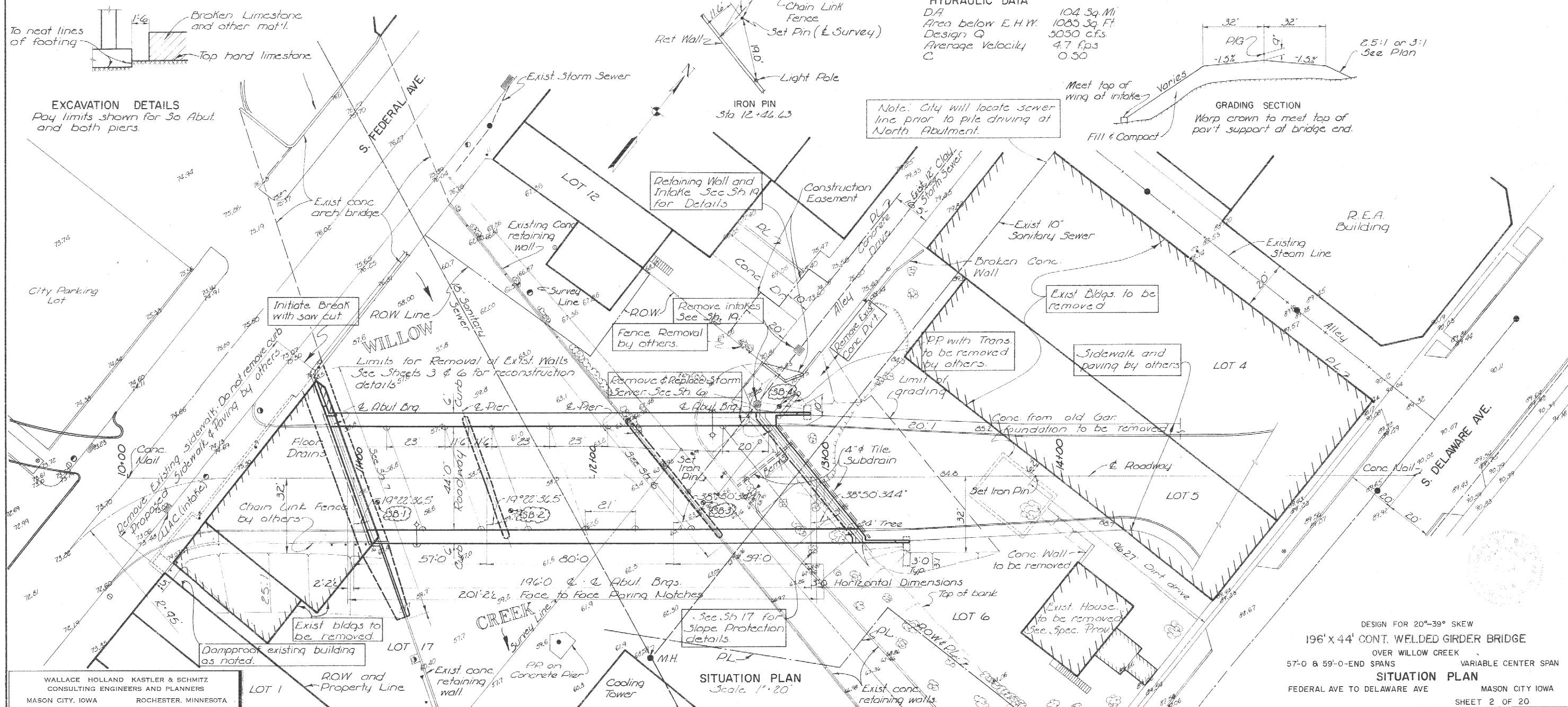
Unit price bid for 24" storm sewer shall also include cost of removal of existing 12" sewer line and the two concrete intakes and disposal thereof in areas designated by the city at Highland Park Golf Course.

The North face of the existing building Rt. of Sta 10+30 shall be dampproofed as stipulated by Art 2510.04 of the I.S.H.C. Std Specs. The dampproofing shall extend from the existing ground line to the finished surface of the approach fill.



EXCAVATION DETAILS

Pay limits shown for So. Abut.
and both piers.



HYDRAULIC DATA

D.A.	104 Sq. Mi.
Area below E.H.W.	1085 Sq. Ft.
Design Q	5050 c.f.s.
Average Velocity	4.7 f.p.s.
C	0.50

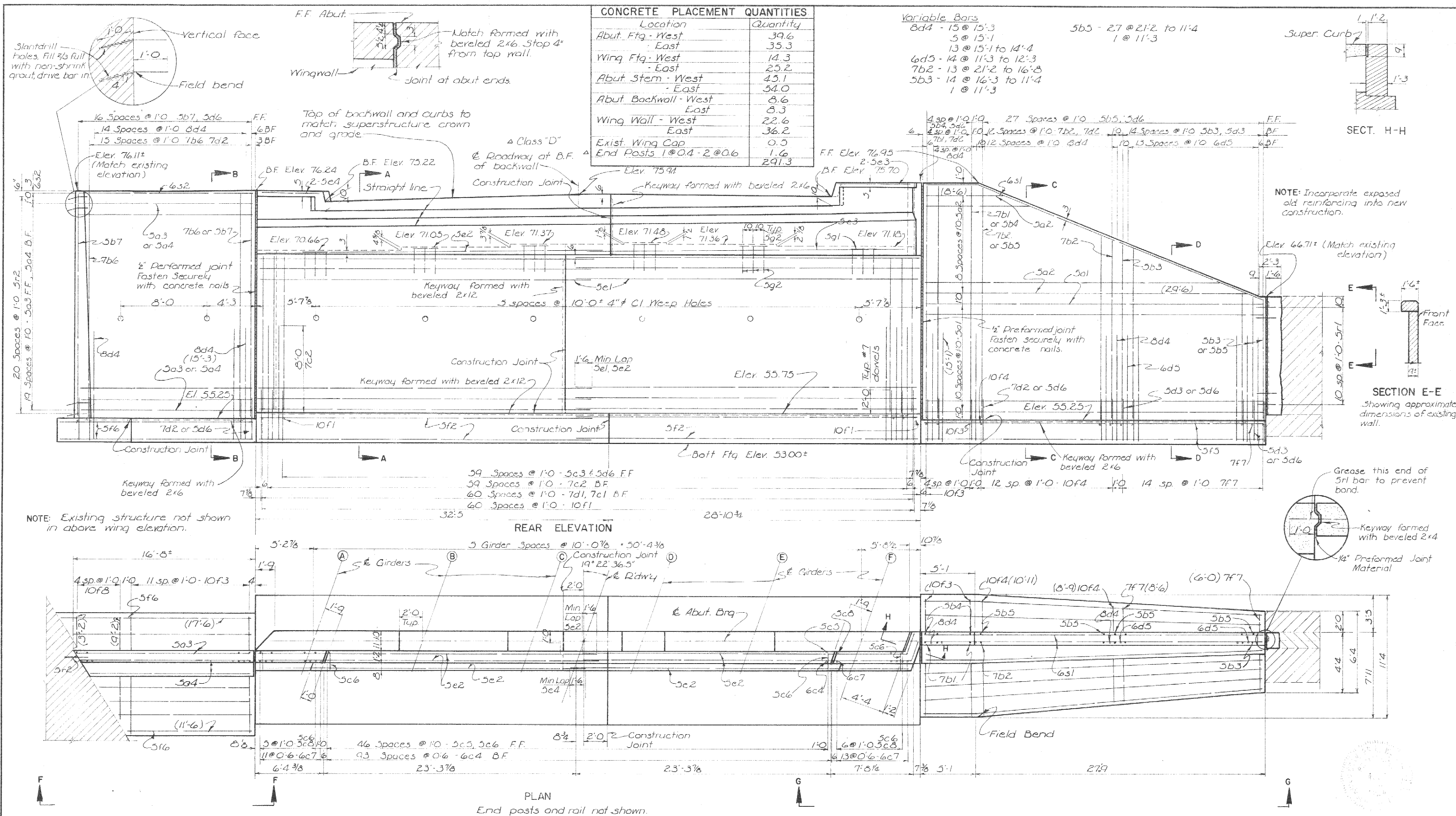
Note: City will locate sewer line prior to pile driving on North Abutment.

GRADING SECTION

Warp crown to meet top of
pav't support at bridge end.

WALLACE HOLLAND KASTLER & SCHMITZ
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MASON CITY, IOWA ROCHESTER, MINNESOTA

DESIGN FOR 20°-39° SKEW
196' x 44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0"-END SPANS VARIABLE CENTER SPAN
SITUATION PLAN
FEDERAL AVE TO DELAWARE AVE MASON CITY IOWA
SHEET 2 OF 20



NOTE: Existing structure not shown in above wing elevation.

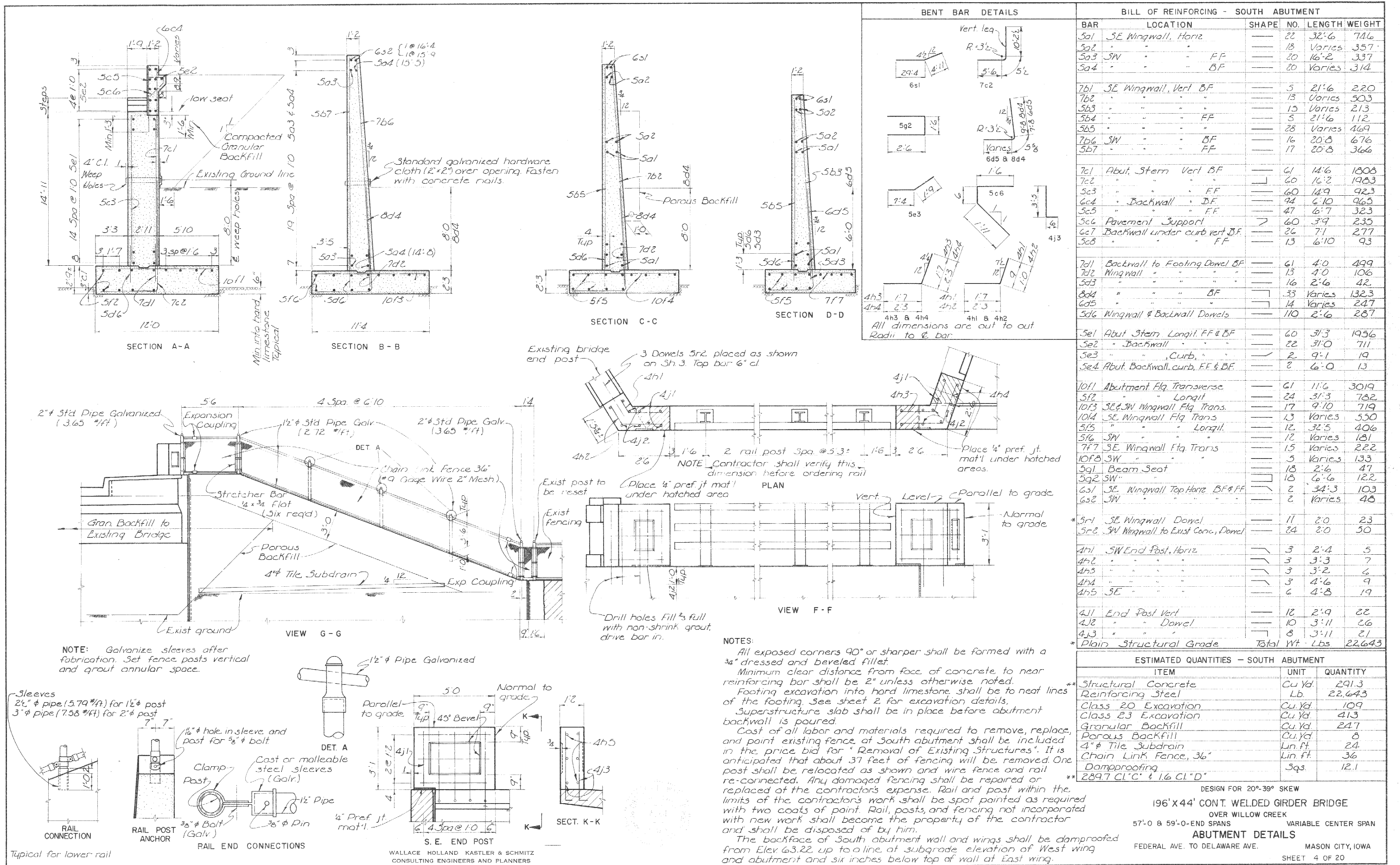
NOTE: Incorporate exposed old reinforcing into new construction.

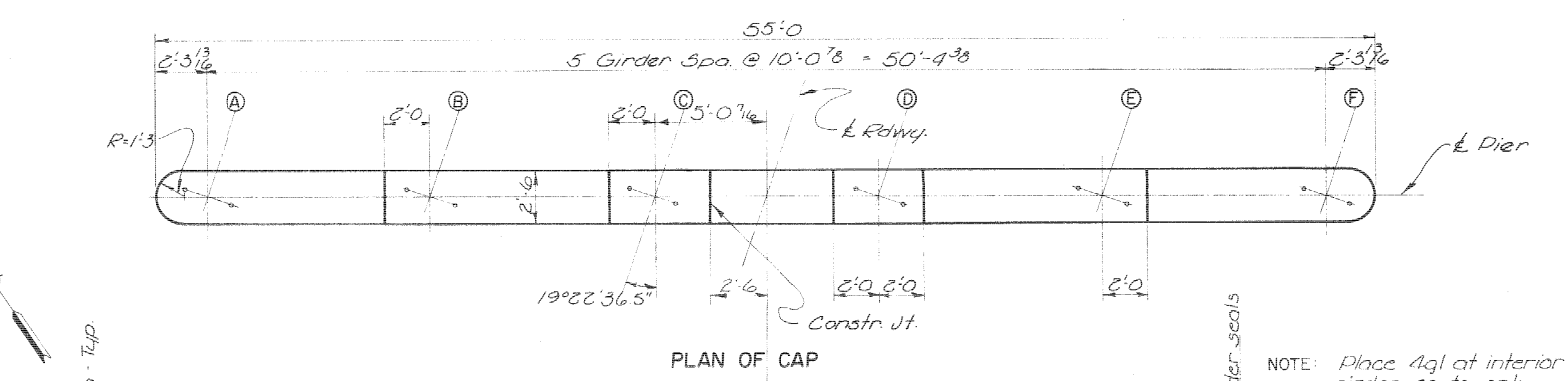
Grease this end of 5rl bar to prevent bond.

NOTE: See Sh. 4 of 20 for Sections A-A, B-B, C-C & D-D, also for Railing and End Post Details.

DESIGN FOR 20°-39° SKEW
 196'x44' CONT. WELDED GIRDER BRIDGE
 OVER WILLOW CREEK
 57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
 SOUTH ABUTMENT
 FEDERAL AVE. TO DELAWARE AVE. MASON CITY IOWA
 SHEET 3 OF 20

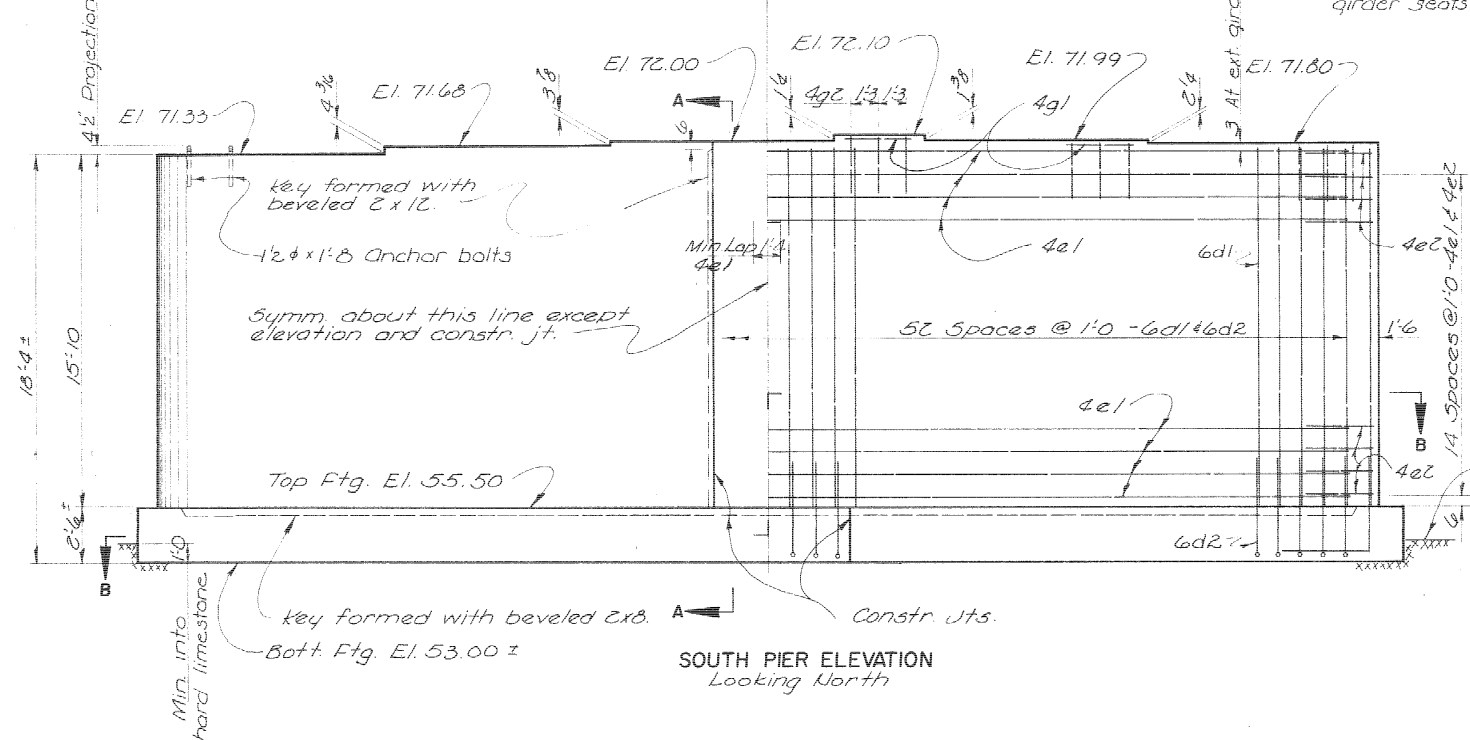
WALLACE HOLLAND KASTLER & SCHMITZ
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 MASON CITY, IOWA ROCHESTER, MINNESOTA



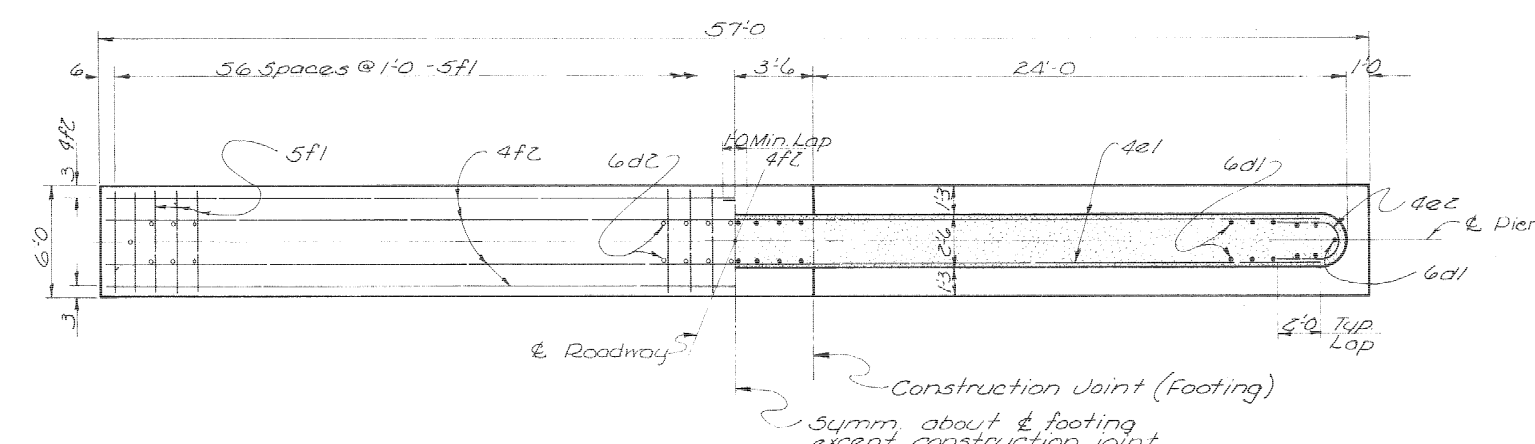


PLAN OF CAP

NOTE: Place 4g1 at interior girder seats only.



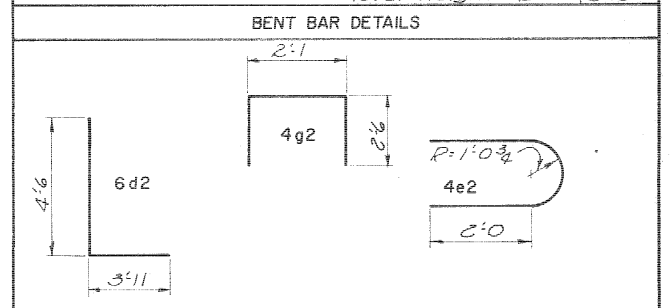
SOUTH PIER ELEVATION
Looking North



SECTION B-B

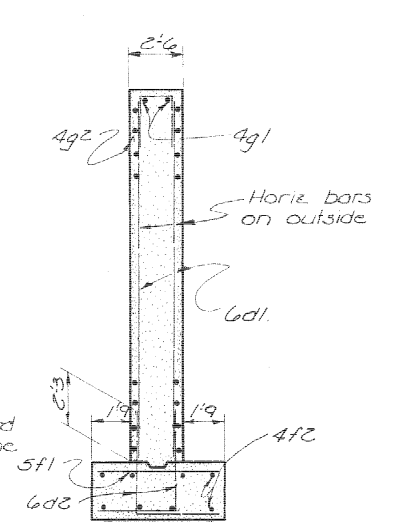
CONCRETE PLACEMENT QUANTITIES	
Footing, East	13.9
Footing, West	17.8
Shaft, East	45.3
Shaft, West	36.9
Total - Cu. Yds.	113.9

BILL OF REINFORCING - SOUTH PIER					
Bar	Location	Shape	No.	Length	Weight
6d1	Pier Shaft, Vertical	—	108	15'-8"	2541
6d2	Footing Dowels	—	108	8'-5"	1365
4e1	Pier Shaft, Horizontal	—	64	26'-11"	1151
4e2	" " " , Ends	—	32	7'-4"	157
5f1	Footing, Trans.	—	57	5'-8"	337
4f2	" " " , Longit.	—	16	28'-10"	308
4g1	Beam Seat	—	8	3'-0"	16
4g2	" " " ,	—	18	7'-1"	85
Total Weight - Lbs.				5960	



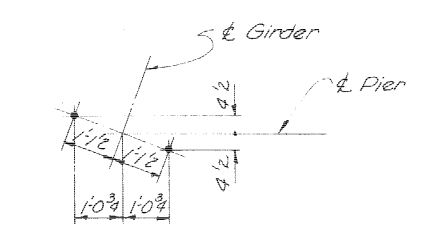
All dimensions are out to out. Radii to & bars.

ESTIMATED QUANTITIES		
Item	Unit	Quantity
Structural Concrete, Cl. "C"	Cu. Yd.	113.9
Reinforcing Steel	Lb.	5960
Class 23 Excavation	Cu. Yd.	115

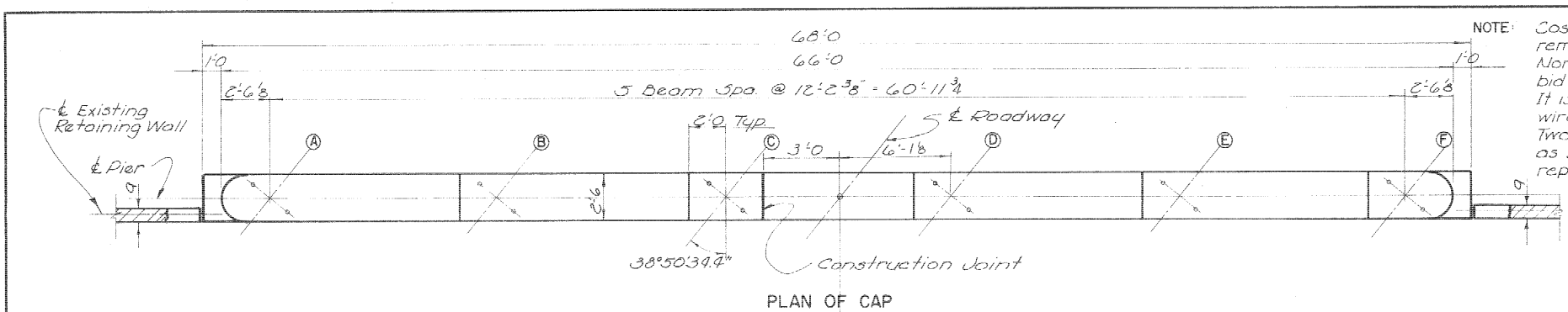


SECTION A-A

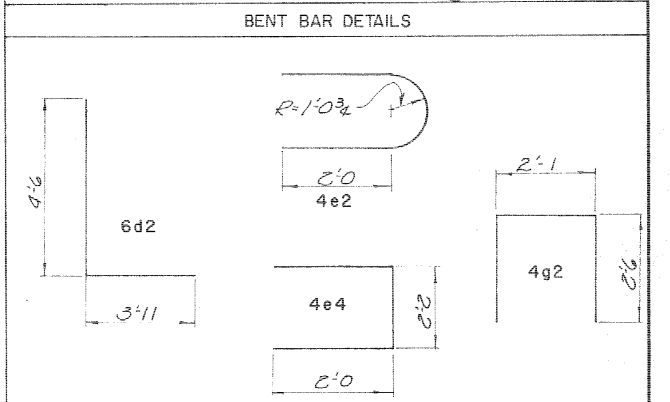
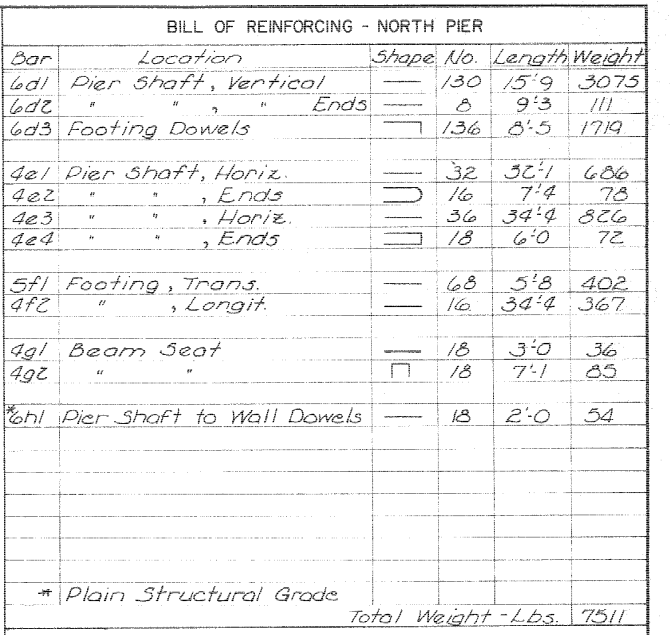
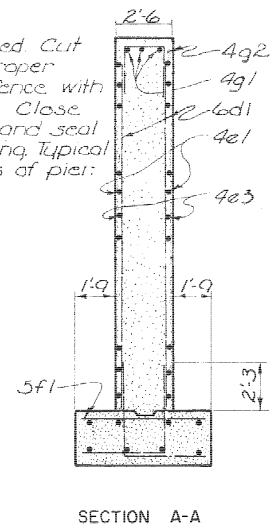
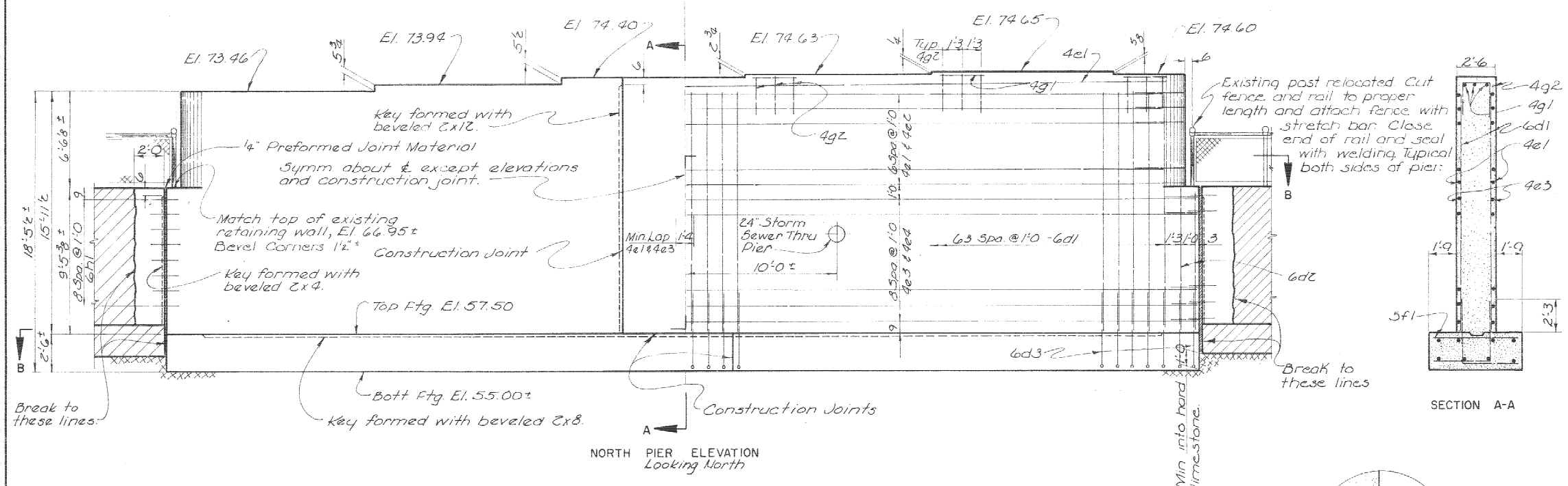
NOTE:
All exposed corners 90° or sharper shall be formed with a 3/4" dressed and beveled fillet.
Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted.
Footing excavation into hard limestone shall be to neat lines of the footing. See Sheet 2 for excavation details.
Preset anchor bolts as shown. Anchor bolts are included in superstructure quantities.



ANCHOR BOLT SETTING

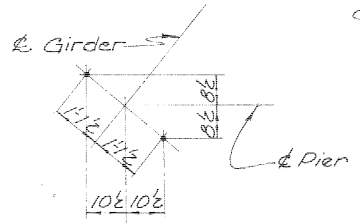
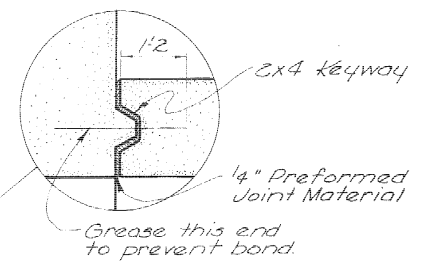
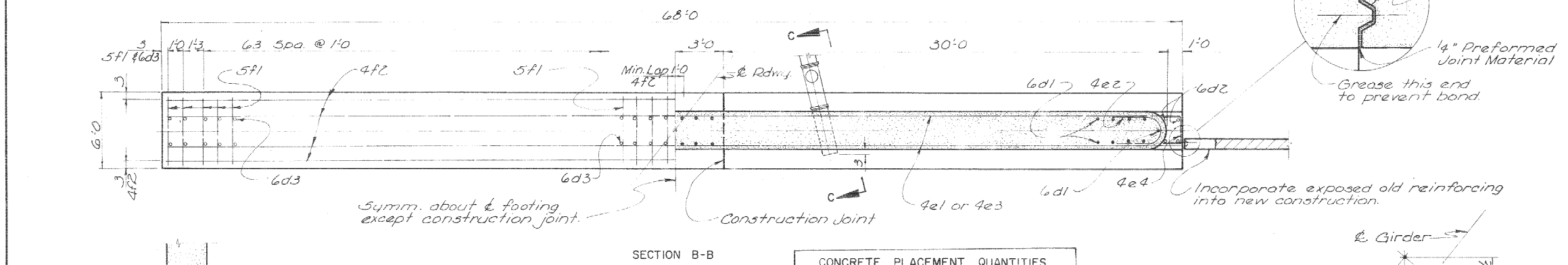


NOTE: Cost of all labor and materials required to remove, replace, and paint existing fence at North Pier shall be included in the price bid for "Removal of Existing Structures". It is anticipated that about 46 feet of rail and wire fence and three posts will be removed. Two posts shall be relocated on pier ends as shown. Any damaged fencing shall be repaired or replaced at the Contractor's expense. Rail and post within the limits of the Contractor's work shall be spot painted as required with two coats of paint. Rail, posts, and fencing not incorporated with new work shall become the property of the contractor and shall be disposed of by him.

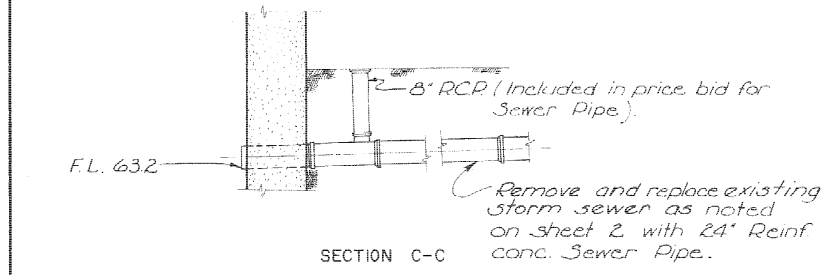


QUANTITIES		
Item	Unit	Quantity
Structural Concrete, Class "C"	Cu Yd.	142.5
Reinforcing Steel	Lb.	7511
Class 20 Excavation	Cu. Yd.	46
Class 2.3 Excavation	Cu. Yd.	175

NOTE:
All exposed corners 90° or sharper shall be formed with a $\frac{3}{4}$ " dressed and beveled fillet, except as shown.
Minimum clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted.
Footing excavation into hard limestone shall be to neat lines of the footing. See sheet 2 for excavation details.
Preset anchor bolts as shown. Anchor bolts are included in superstructure quantities.

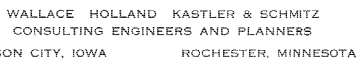


CONCRETE PLACEMENT QUANTITIES		
Footing	- East	172
Footing	- West	206
Shaft	- East	57.7
Shaft	- West	46.0
Retaining Wall	2 @ 0.5	1.0
Total - Cu Yds		142.5

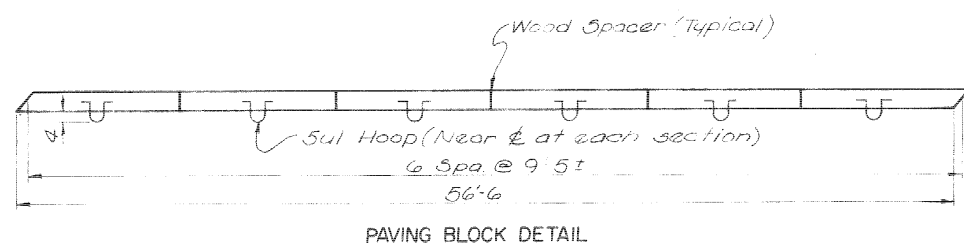
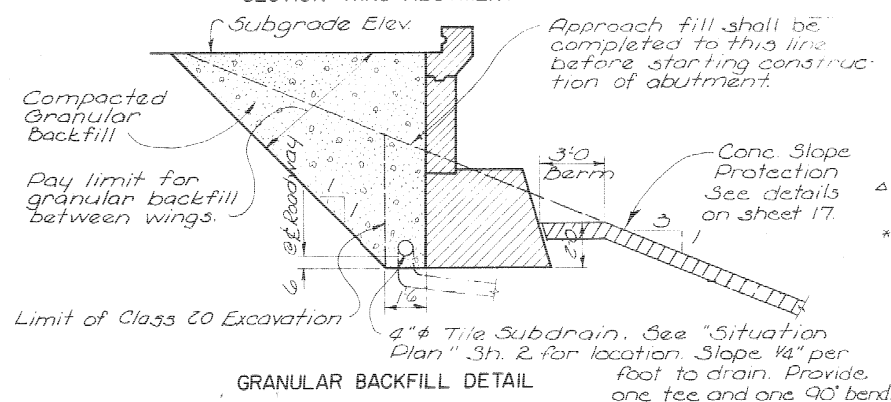
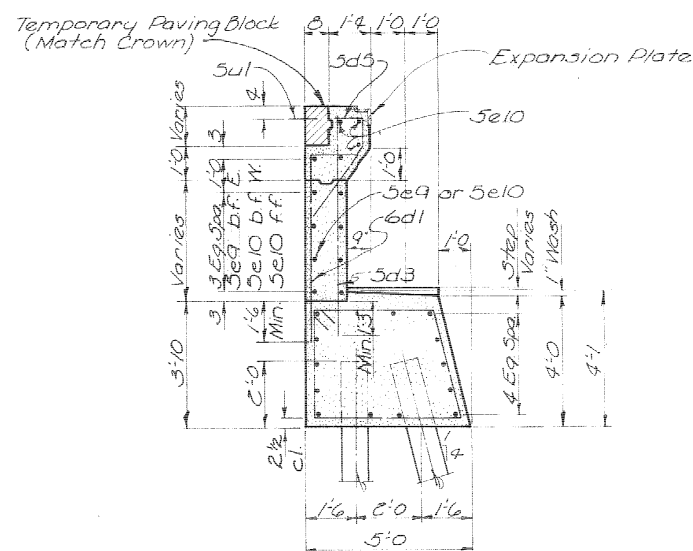
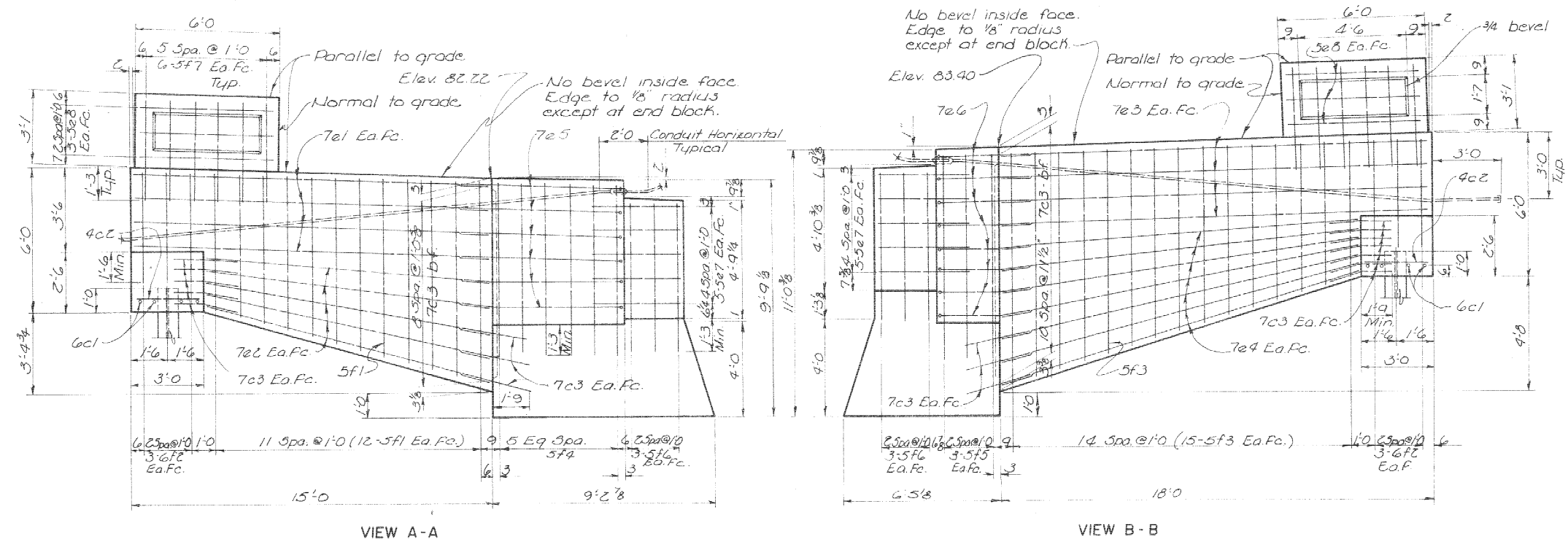


WALLACE HOLLAND KASTLER & SCHMITZ
CONSULTING ENGINEERS AND PLANNERS
MASON CITY, IOWA ROCHESTER, MINNESOTA

DESIGN FOR 20°-39° SKEW
196'x44' CONT. WELDED GIRDER BRIDGE
 OVER WILLOW CREEK
 57'-0 & 59'-0-END SPANS VARIABLE CENTER SPAN
NORTH PIER DETAILS
 FEDERAL AVE TO DELAWARE AVE MASON CITY IOWA
 SHEET 6 OF 20



DESIGN FOR 20°-39° SKEW
196'x44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
ABUTMENT DETAILS
FEDERAL AVE. TO DELAWARE AVE. MASON CITY, IOWA
AUGUST 1968 SHEET 7 OF 20



CONCRETE PLACEMENT - NORTH ABUTMENT	
Location	Quantity
Footling, East	26.7
West	24.6
Backwall, East (Below Constr. II.)	7.1
" West (" ")	7.3
Backwall East (Above Constr. II.)	4.6
" West (" ")	6.0
Maskwalls, @ 0.6	1.2
Wingwall Footings @ 17	3.4
Wingwall East	5.7
Wingwall West	4.3
End Posts @ 0.8	1.6
Total C&G Vol.	92.5

ESTIMATED QUANTITIES - NORTH ABUTMENT			
	Item	Unit	Quantity
A	Structural Concrete	Cu. Yd.	92.5
	Reinforcing Steel	Lb.	10,804
X	Steel Bearing	Furn. $9 \times 19 \frac{1}{2}$	263
	Piling 10BP42	Drive $9 \times 19 \frac{1}{2}$	263
	Class 80 Excavation	Cu. Yd.	88
	Granular Backfill	Cu. Yd.	127
	4" Tile Subdrain	Lin. Ft.	91
	Concrete Slope Protection	Sq. Yd.	184

ABUTMENT NOTES :

ABUTMENT NOTES

All exposed corners of 90° or sharper shall be filleted with a 3/4" dressed and beveled strip.

Reinforcing steel shall be securely wired in place before concrete is poured.

Clear distance from face of concrete to near reinforcing bar shall be 2" unless otherwise noted or shown.

All backfill behind the abutment between wings is to be granular backfill. The remainder of the abutment excavation shall be backfilled with soil.

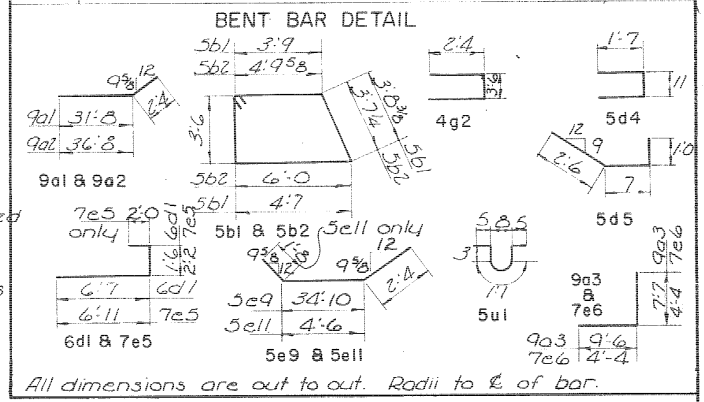
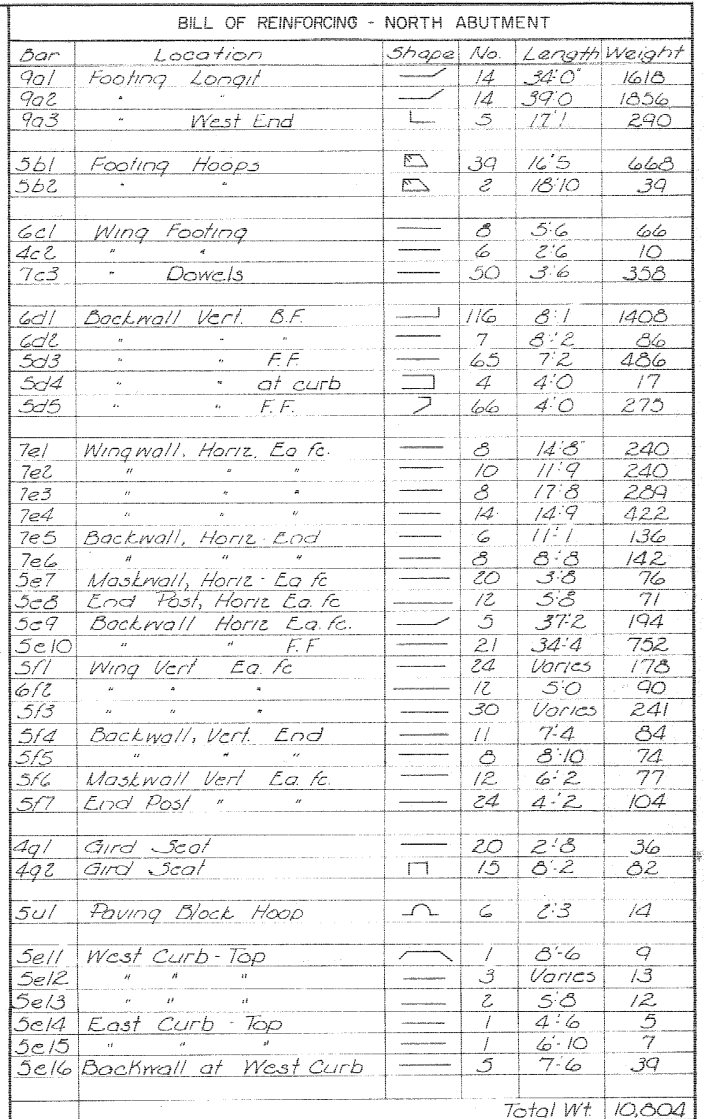
The portion of the backwall containing the abutment anchorage of the expansion plate shall be poured after the bridge floor is placed.

The cost of furnishing and installing Preformed Expansion Joint Filler shall be considered as incidental to the cost of Structural Concrete, Class C.

The backwall is to be placed after the girders are erected and the masonry plates are properly aligned.

Piles are to be driven to full penetration if practicable, but to not less than 55 tons bearing.

Price bid for 4" Tile Subdrain includes excavation necessary for installation.

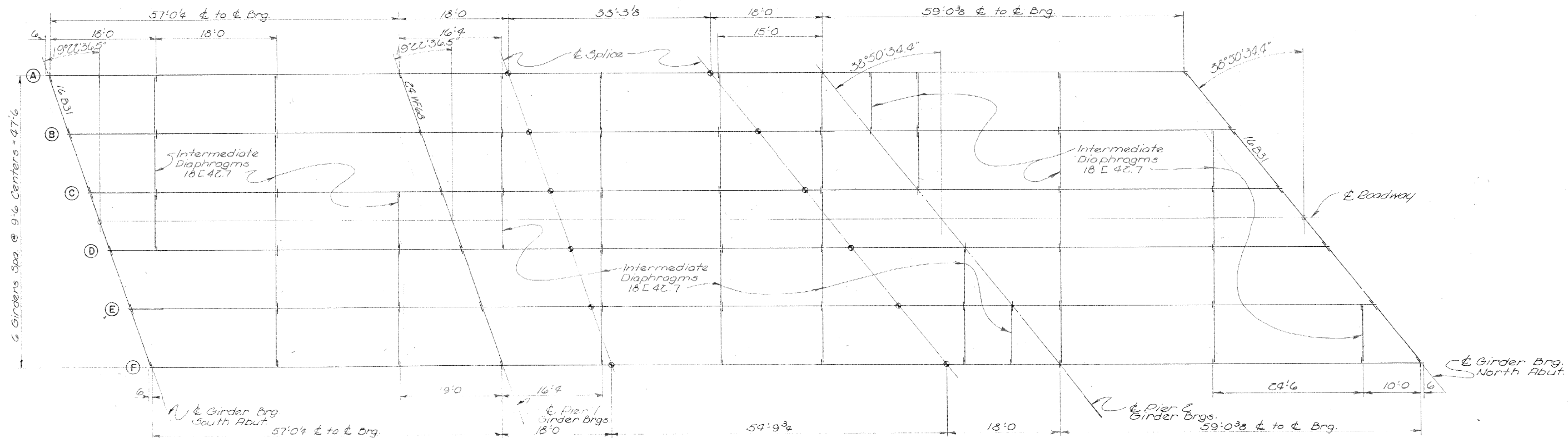


All dimensions are out to out. Radii to ϕ of bar.

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CONSULTING ENGINEERS AND PLANNERS
MASON CITY, IOWA ROCHESTER, MINNESOTA

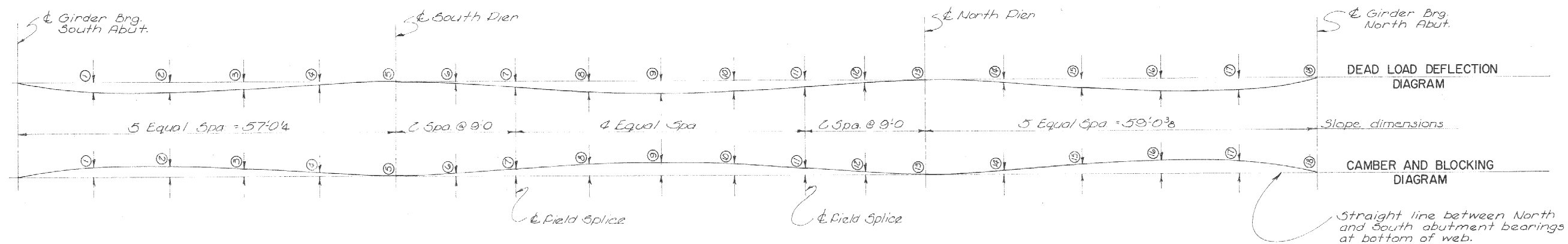
* Use 23' pile lengths in wing footings.
 Δ 90.9 Cu. Yds. Cl. "C" & 1.6 Cu. Yds Cl. "D"

DESIGN FOR 20°-39° SKEW
196'x44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
NORTH ABUTMENT DETAILS
FEDERAL AVE. TO DELAWARE AVE. MASON CITY, IOWA
AUGUST 1968 SHEET 8 OF 20



STRUCTURAL STEEL LAYOUT

Dimensions shown are slope dimensions.
All stiffeners shall be normal to
girder flanges.

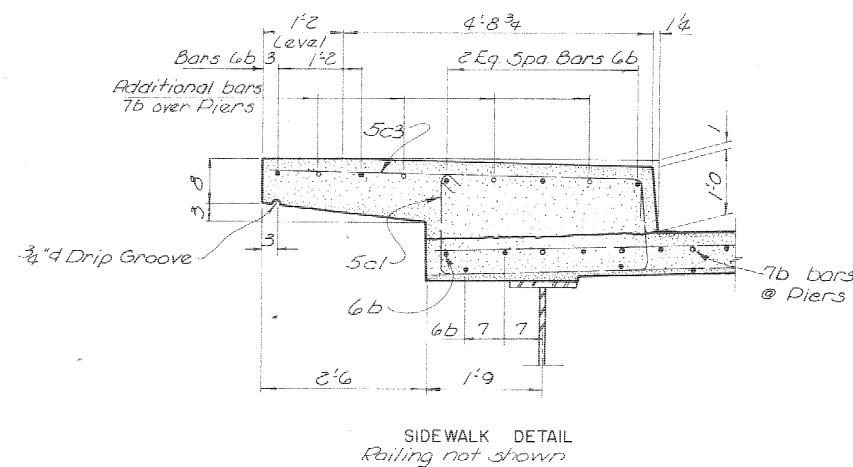


NOTES:

Defl. figures at right for each girder indicate anticipated deflection due to concrete only. No slab thickening or thinning is anticipated. These figures are not guaranteed for construction.

DIAGRAM DIMENSIONS						
Pt.	A	B	C	D	E	F
1	4	4	4	4	3/16	1/8
2	3/8	3/8	5/16	5/16	1/4	1/8
3	5/16	5/16	1/4	3/16	1/8	1/16
4	1/8	1/8	1/16	1/16	0	0
5	0	0	0	0	0	0
6	1/16	1/16	1/8	1/8	3/16	3/16
7	3/16	1/4	5/16	3/8	1/2	9/16
8	1/4	3/8	1/2	5/8	13/16	15/16
9	5/16	1/16	5/8	3/4	1	1 1/16
10	1/4	5/16	1/2	5/8	13/16	15/16
11	3/16	3/16	5/16	3/8	1/2	9/16
12	1/16	1/16	1/8	1/8	3/16	3/16
13	0	0	0	0	0	0
14	3/16	1/8	1/8	1/16	0	0
15	3/8	3/8	5/16	1/4	3/16	1/8
16	7/16	7/16	3/8	3/8	5/16	3/16
17	5/16	5/16	5/16	1/4	1/4	3/16
18	0	0	0	0	0	0





SUPERSTRUCTURE NOTES:

This bridge is designed for HS20-44 loading, plus 19 lbs per square foot of roadway for future wearing surface.

The floor slab as shown includes $\frac{1}{2}$ " of wearing surface.

All field connections shall be bolted using "High Tensile Strength Bolts" Unless otherwise noted all open holes shall be $1\frac{1}{2}\phi$ and all bolts shall be $7\frac{1}{8}\phi$

The girder splices shall be supported by falsework or other approved means as directed by the Engineer, and adjusted as closely as possible to the dimensions shown on the "fabricated and erected" diagram before bolting is completed.

Bottom flanges shall be perpendicular to webs at the reaction points.

All paint shall be omitted on tops of top flanges and on other steel surfaces in contact with concrete. Parts inaccessible after erection shall be given three coats of paint in the shop.

Forms for the slab and sidewalk shall be supported by the girders.

Masonry plates shall be set in paint and carves.
Bearing surfaces of unfinished masonry plates shall
be flat and true.

Flame cutting shall be in accordance with Article 8408.14 of the Standard Specifications except that edges of flame cut plates shall have their corners rounded to $\frac{1}{16}$ " radius by grinding after flame cutting.

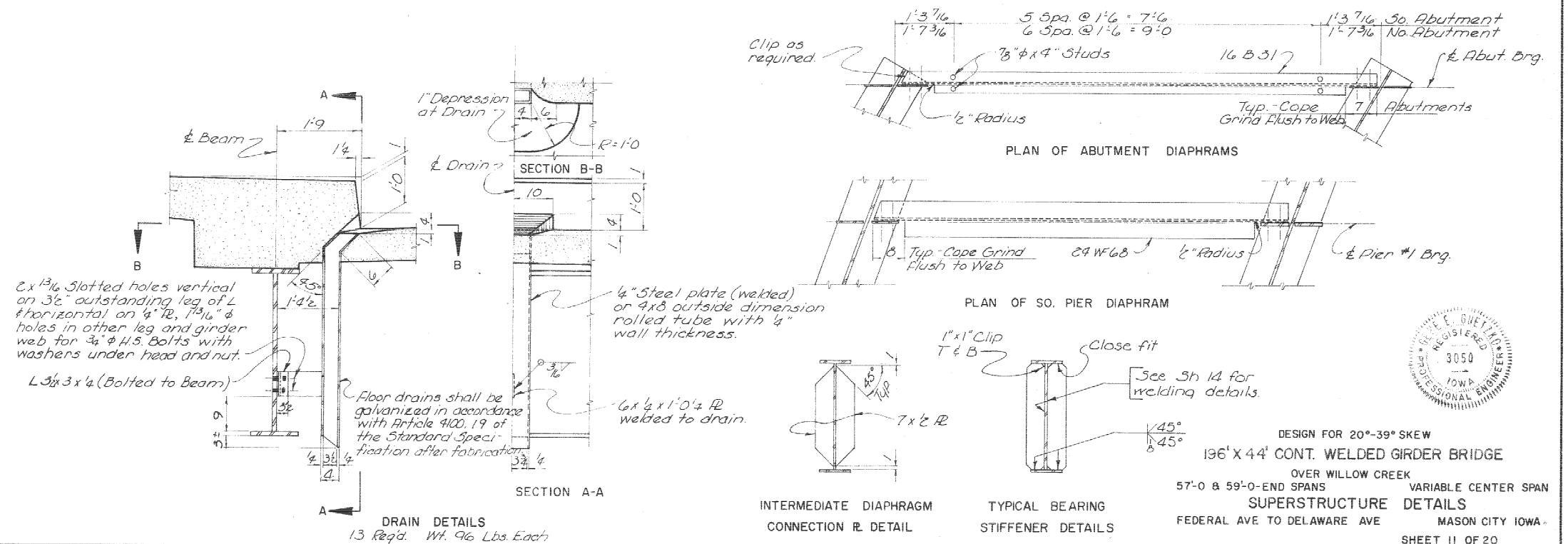
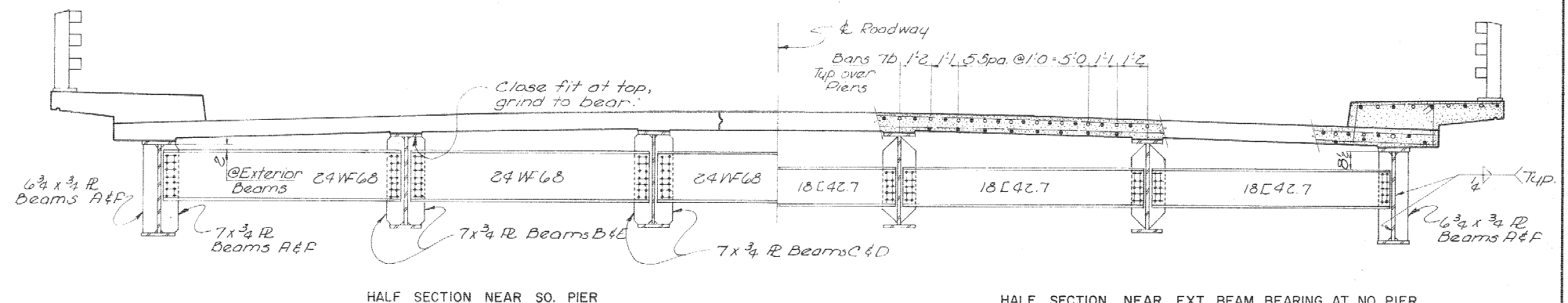
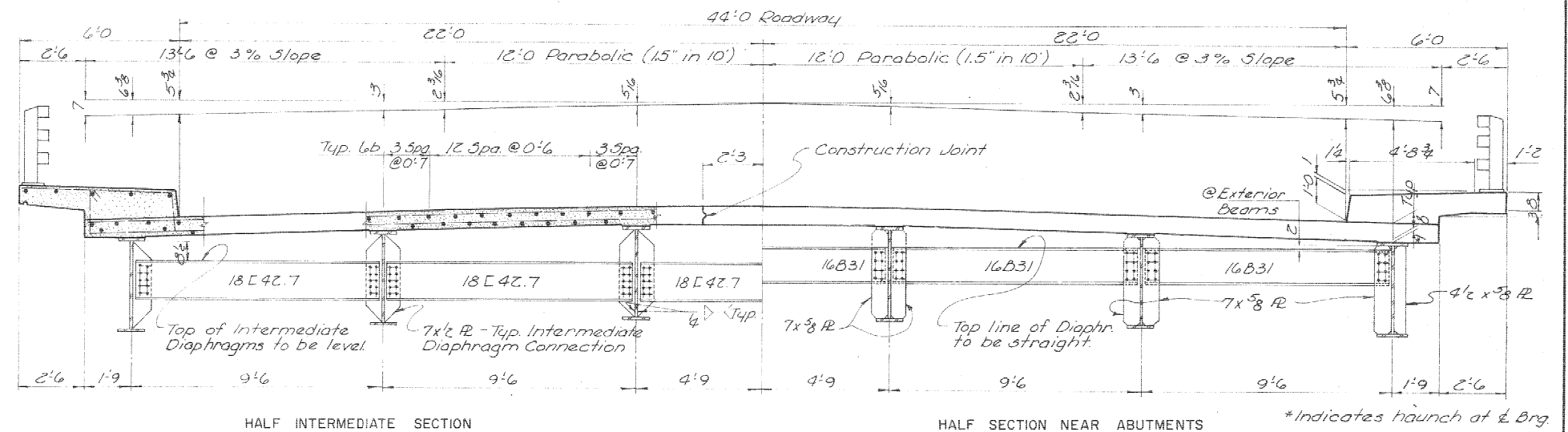
Fill thicknesses shown on plans are based on nominal girder dimensions. These thicknesses shall be verified or adjusted during fabrication to secure a close fit. Each fill plate shall fit to the nearest 1/4 in thickness and single plates are required at any fill location. Girders shall be truly square at splice points with flanges perpendicular to the webs.

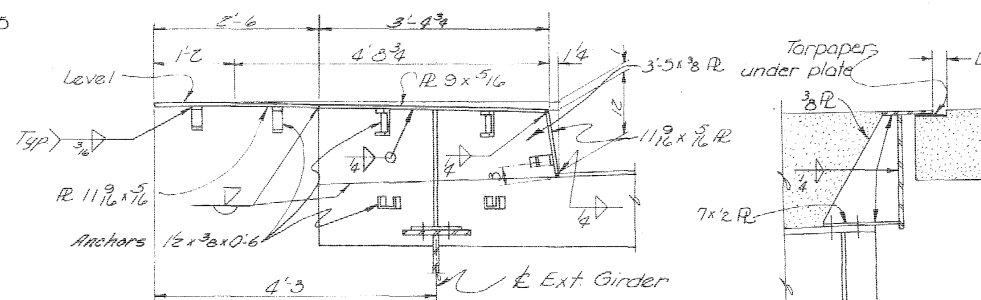
The design drawings indicate AWS qualified welded joints, and unless otherwise noted the design joint details are for manual shielded arc welding. Alternate joint details may be submitted for approval.

The stiffener to flange welds are not to intersect the longitudinal flange to web welds.

Magnetic particle inspection of welds, in accordance with Article 2408.15 of the Standard Specifications, will be required for the web to flange welds and the bearing stiffener welds of the main girders.

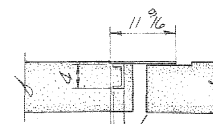
All structural steel shall be A.S.T.M. A36 unless otherwise shown. Lubricated bronze bearing plates shall be fabricated in accordance with Art. 4190.06 of the Std. Specs.



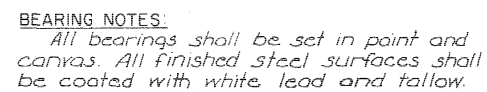


SECTION A-A

SECTION B-B

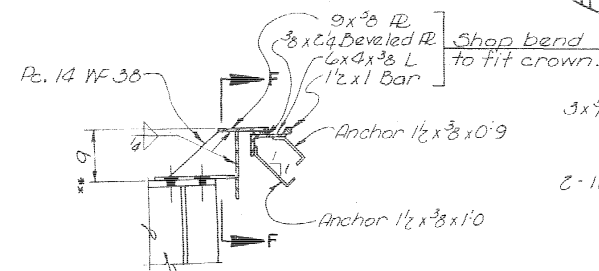


SECTION E-E



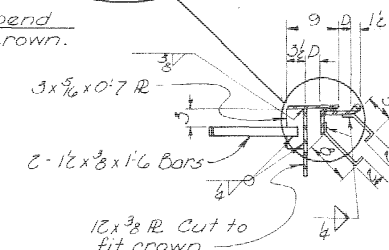
BEARING NOTES:

BEARING NOTES:
All bearings shall be set in paint and canvas. All finished steel surfaces shall be coated with white lead and tallow.

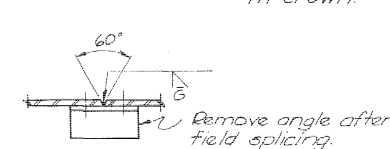


SECTION C-C

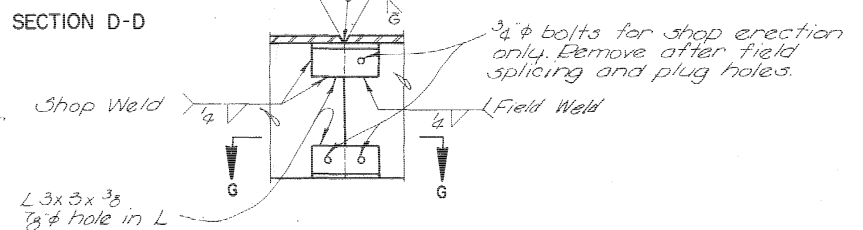
**/includes 2-6³/₄ x 6 shims
(Furnish 4 shims for each
WF support)



SECTION D-D

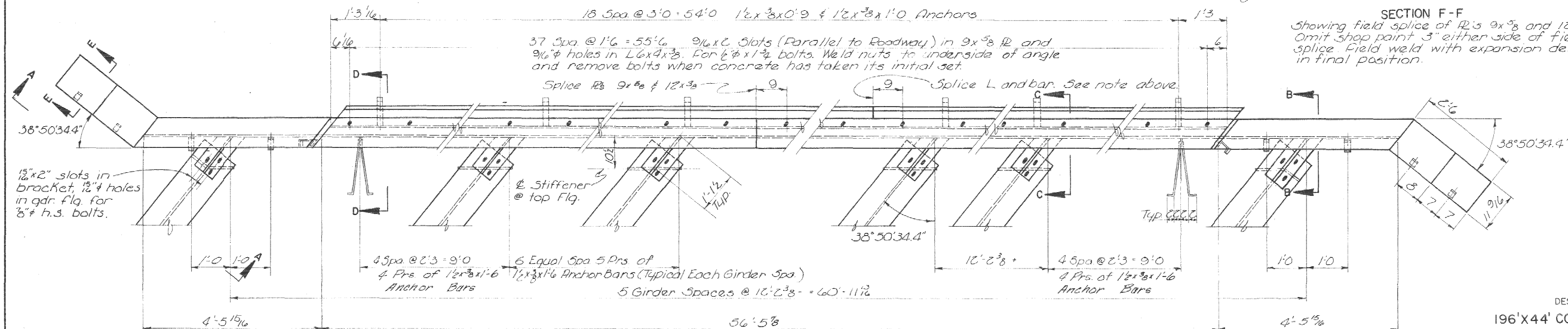


SECTION G-G



SECTION F - F

Showing field splice of R's 9x8 and 12x8.
Omit shop paint 3" either side of field
splice. Field weld with expansion device
in final position.



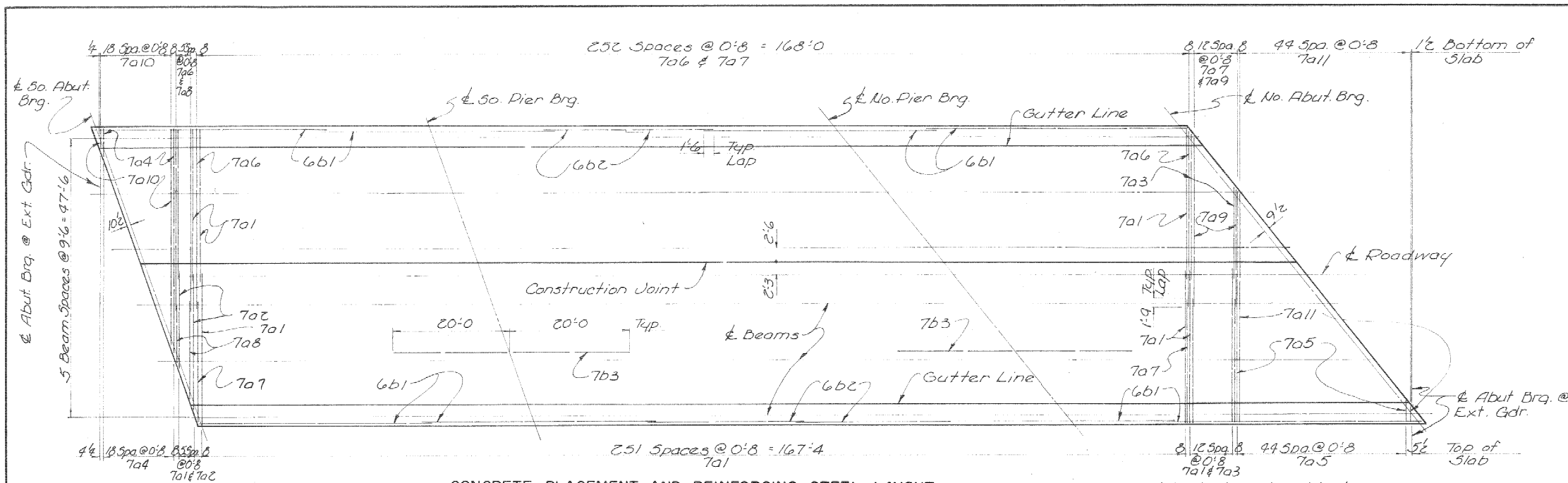
EXPANSION PLATE

One required at No. end of bridge. wt = 3948 lbs.

WALLACE HOLLAND KASTLER & SCHMITZ
CONSULTING ENGINEERS AND PLANNERS
MASON CITY, IOWA ROCHESTER, MINNESOTA

DESIGN FOR 20°-39° SKEW
196'x44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
SUPERSTRUCTURE DETAILS
FEDERAL AVE. TO DELAWARE AVE. MASON CITY, IOWA
AUGUST 1968 SHEET 13 OF 20





CONCRETE PLACEMENT AND REINFORCING STEEL LAYOUT
All dimensions are horizontal.

NOTE: Roadway slab shall be placed in two continuous sections, one right and one left of the indicated longitudinal construction joint. Side walks may be placed continuously. All slab reinforcing steel is to be in place before either section is poured. Alternate procedures for placing concrete may be submitted for approval, together with a statement of the proposed method, and evidence that the Contractor possesses the necessary equipment and facilities to accomplish the required result. The cost of all required changes resulting from an alternate procedure shall be borne by the Contractor.

VARIABLE BAR LENGTHS			
Bar	No.	Shortest	Longest
7a2	6	16'4"	25'10"
7a3	13	16'1"	26'0"
7a4	19	4'7"	38'8"
7a5	45	3'2"	39'7"
7a6	6	10'7"	20'1"
7a9	13	20'5"	30'4"
7a10	19	3'8"	37'9"
7a11	45	2'9"	39'2"
6b2	202	16'9"	28'8"

BILL OF REINFORCING - SUPERSTRUCTURE					
Bar	Location	Shape	No.	Length	Weight
7a1	Slab Transverse, Top		523	2'6"3	28,062
7a2	"	"	6	Varies	259
7a3	"	"	13	Varies	559
7a4	"	"	19	Varies	340
7a5	"	"	45	Varies	1966
7a6	"	"	259	31'0"	16,411
7a7	"	"	266	21'6"	11,690
7a8	"	"	6	Varies	188
7a9	"	"	13	Varies	674
7a10	"	"	19	Varies	804
7a11	"	"	45	Varies	1928
6b1	Slab Longil, Top & Bolt		404	40'0"	24,272
6b2	"	"	202	Varies	6,890
7b3	Slab & Sidewalk Long @ Piers		108	40'0"	8,830
5c1	Slab to Sidewalk Hoops		316	10'0"	3,296
6c2	Rail Post Anchors		52	11'2"	872
5c3	Sidewalk, Transverse		316	6'2"	2,032
5d1	Abut, Diaphragm Hoops		30	2'9"	86
5d2	"	"	45	3'3"	153
5d3	Abut, Diaphragm Longil. Sp		2	27'10"	58
5d4	"	"	2	26'1"	54
5d5	"	"	5	9'7"	50
5d6	"	"	2	33'7"	70
5d7	"	"	2	31'4"	65
5d8	"	"	5	11'8"	61
*Total Weight - Lbs.					110,536

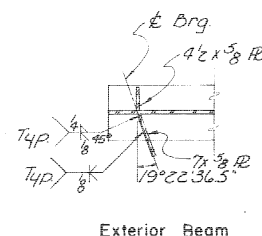
* BENT BAR DETAILS			
5c1	5'7"	3'2"	1'4"
6c2	5'0"	1'2"	1'2"
5d1 & 5d2	10'	4'4"	4'4"
5d3	11'	0'	0'

* Quantity includes reinforcing in light pole bases. See Sh. 18

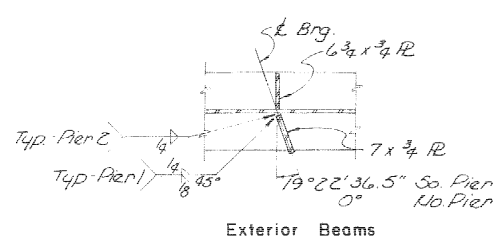
All dimensions are out to out.

CONCRETE PLACEMENT QUANTITIES - CU. YDS.		Quantity
Location		
Slab, East		143.2
Slab, West		113.4
Sidewalk, East		44.2
Sidewalk, West		39.6
Light Pole Base	2 @ 1.15	2.3
Total Cu Yds		342.7

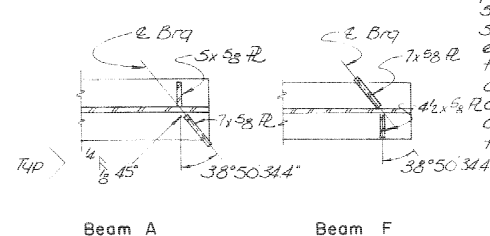
ESTIMATED QUANTITIES - SUPERSTRUCTURE		
Item	Unit	Quantity
Structural Concrete, Cl. "D"	Cu. Yds	342.7
Reinforcing Steel	Lbs.	110,536
Structural Steel	Lbs.	233,707



Exterior Beam

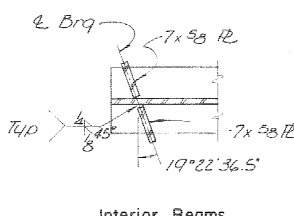


Exterior Beams

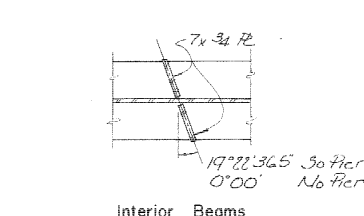


Beam A

Beam F

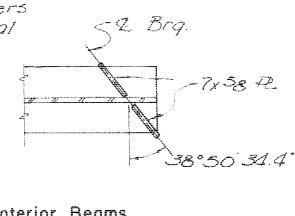


Interior Beams



Interior Beams

Note: Bearing stiffeners shall be placed normal to beam flanges



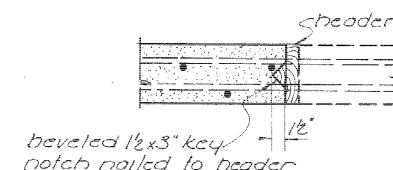
Interior Beams

SOUTH ABUTMENT

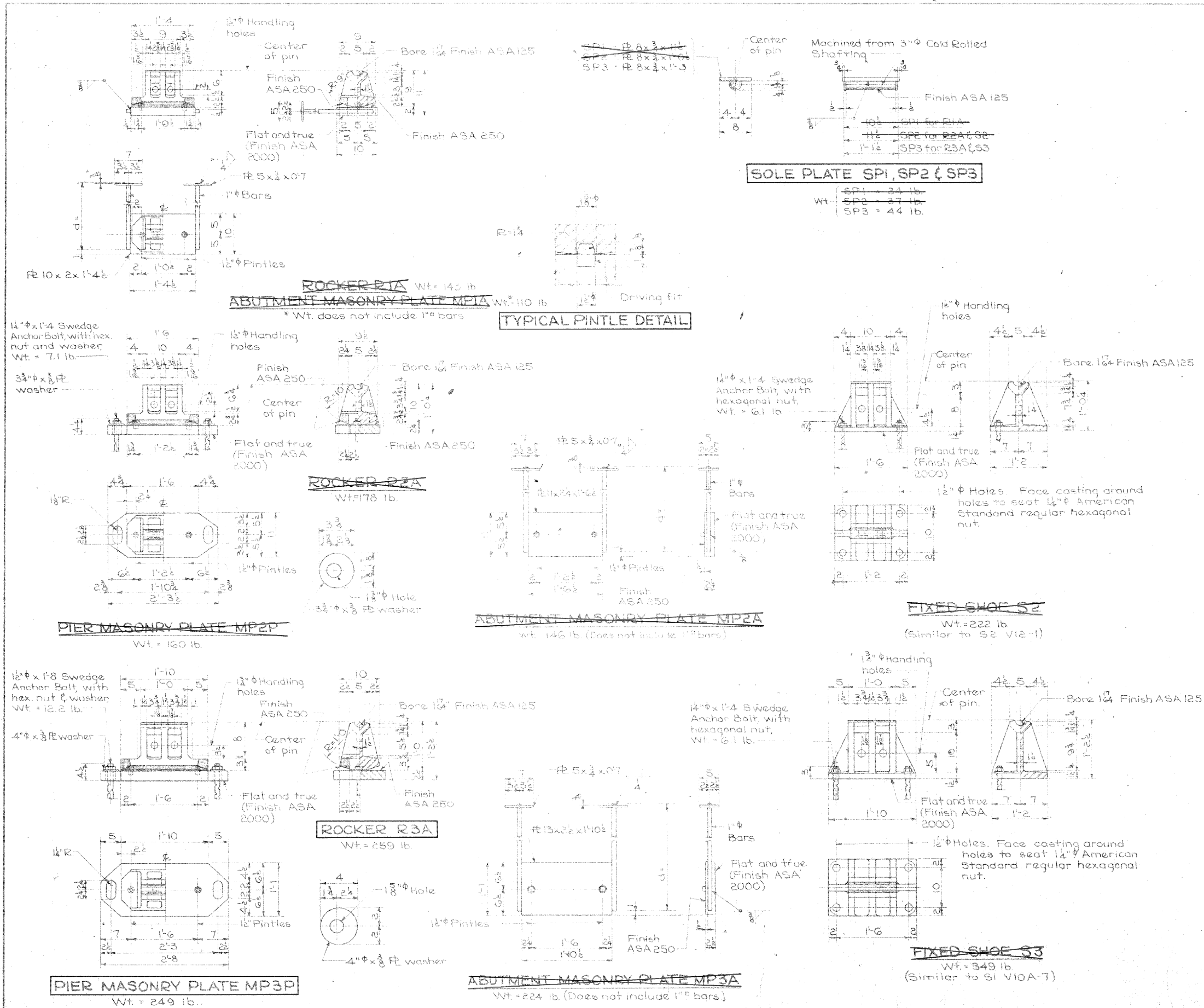
PIERS

NORTH ABUTMENT

BEARING STIFFENER DETAILS



LONGITUDINAL CONSTRUCTION JOINT DETAIL



BEARING NOTES:

The casting of R1A, R2A, S2, R3A and S3 shall comply with Article 4153.04 of the I.H.C. Standard Specifications.

The masonry plates marked MP1A, MP2A, MP2P, MP3A and MP3P shall comply with the requirements of ASTM A-36 steel.

The pins shall comply with Article 4153.02 of the I.N.C. Standard Specifications and with the requirements of ASTM A-108 steel.

All bearings are to be set in paint and canvas.

Anchor bolts shall be set in accordance with Article 2408.47 of the I.H.C. Standard Specifications.

After masonry plates, rockers and shoes are in correct location, pour mortar around anchor bolts to fill the slotted holes.

The weight of bearings shown does not include the weight of paint.

Surfaces finished with an ASA 125 finish shall be shop coated with an application of white lead and tallow as soon as the surfacing process is done. The shop coated surfaces are to be wiped clean and then a field coat of white lead and tallow is to be applied just before the erection of structural steel in the field.

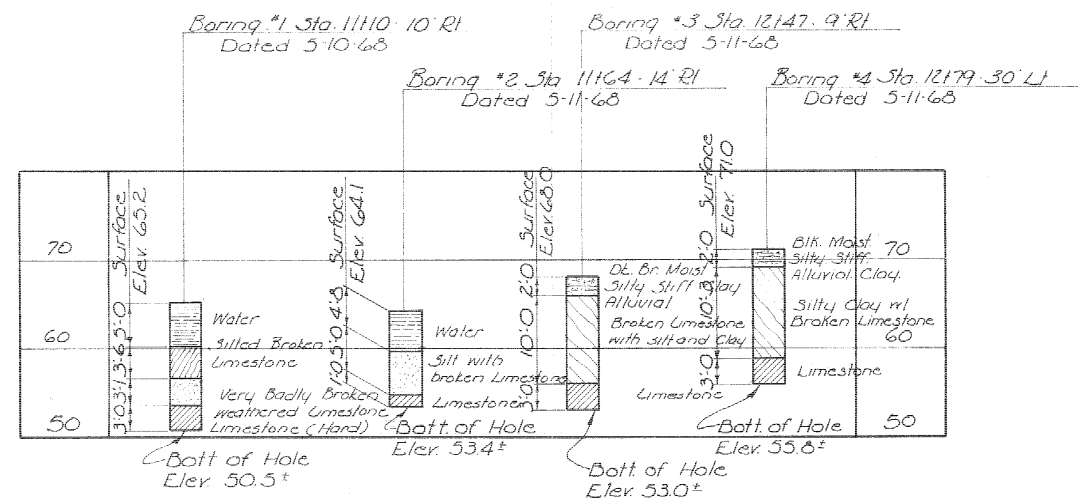
Use Sole Plate SP3, Rocker R3A, Masonry Plate, MP3P. Other details shown on this sheet shall not be used.

DISTANCE FROM TOP OF SOLE PLATE TO BRIDGE SEAT	
Rockers & Fixed Shoes	
R1A	1-4 1/16
R2A & 52	1-5 1/16
R3A & 53	1-4 3/16

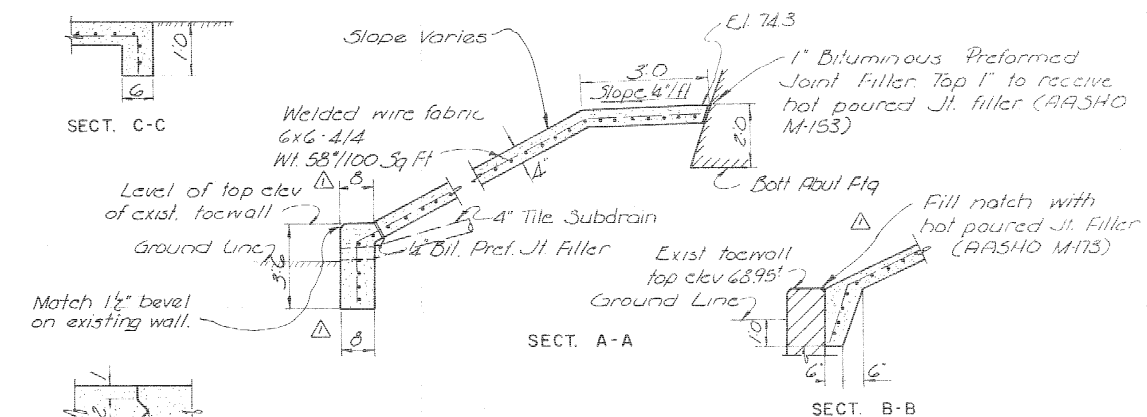
* Including 16" point and canvas.

MAXIMUM REACTION (In Kips)		
R1A	R2A S2	R3A S3
R1B	R1C	263

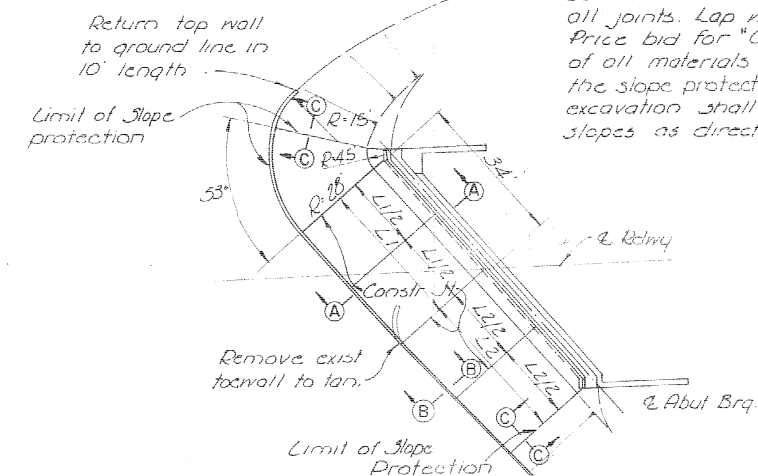
DESIGN FOR 20°-39° SKEW
196'x 44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0"-END SPANS VARIABLE CENTER SPAN
BEARING DETAILS
FEDERAL AVE. TO DELAWARE AVE. MASON CITY, IOWA
SHEET 15 OF 20



BORING LOGS

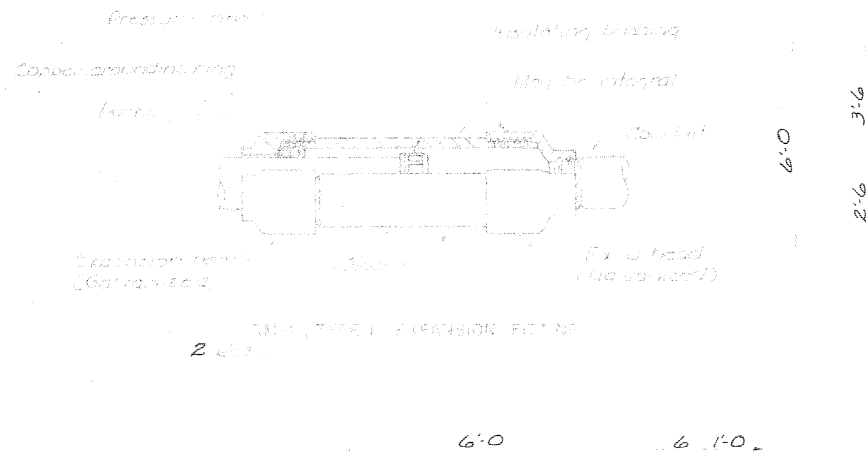


CONSTRUCT JOINT KEY

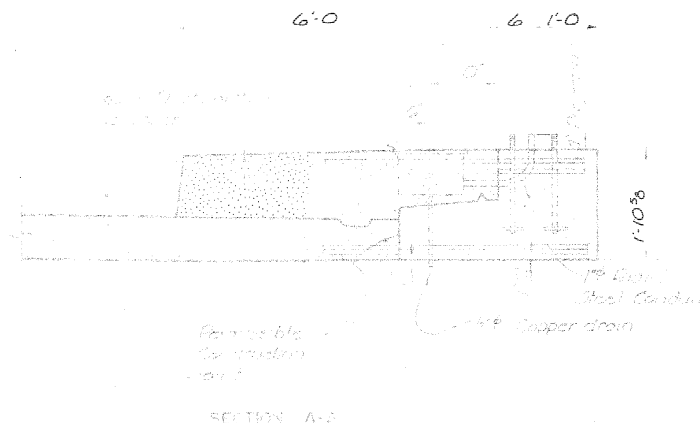


PLAN OF CONCRETE SLOPE PROTECTION
North Abutment

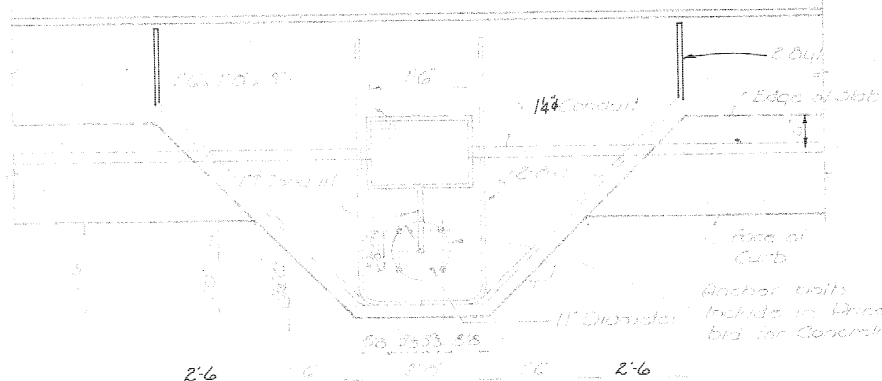
Notes: Pour slope wall concrete in all sections. Welded wire fabric to extend through all joints. Lap wire fabric min. 2 bar spaces. Price bid for "Conc. Slope Protection" includes cost of all materials and labor required to install the slope protection as shown or noted. Excess excavation shall be wasted on approach for slopes as directed by the Engineer.



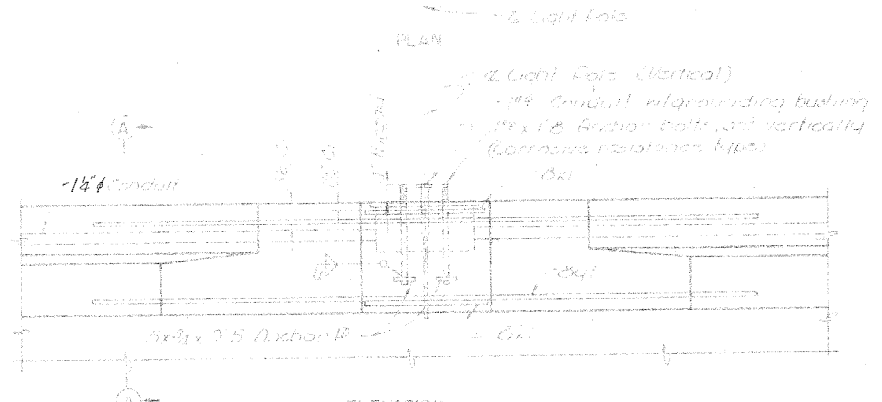
EXPANSION FITTING
2-#8 in 1 1/2" R.G.S.C.



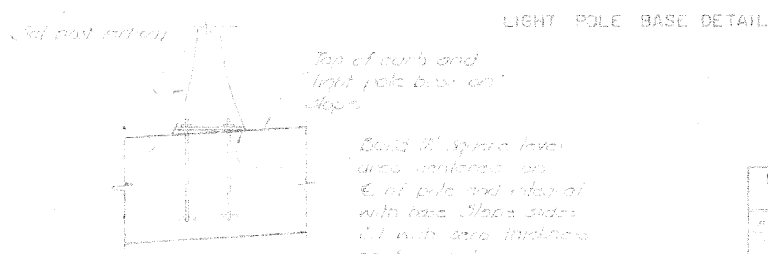
SECTION A-A



2-#8 in 1 1/2" R.G.S.C.



ELEVATION

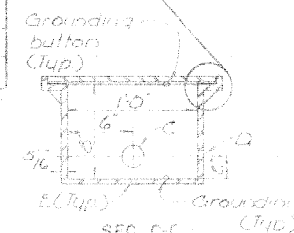
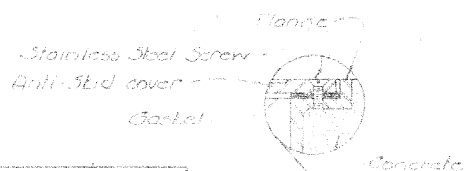


LIGHT POLE BASE DETAILS

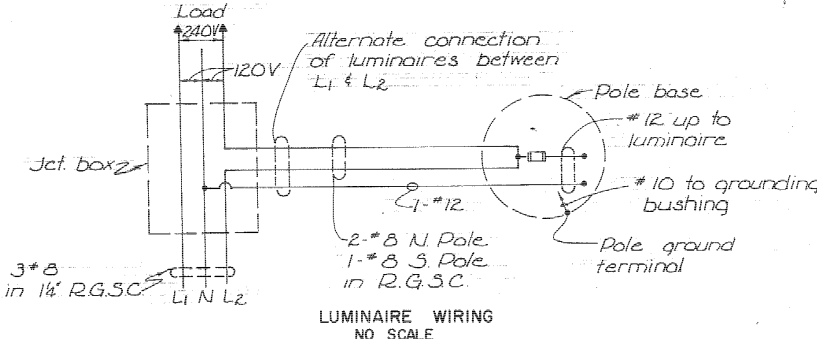
Approximate location of power pole (by others)

BOSSED FOR	HOLE	FOR CONDUIT SIZE
Chrome	C	1 1/2" Rigid Steel
None	D	1" Rigid Steel
None	E	1 1/2" (Copper Pipe)

NOTE: The grounding buttons are to be blind drilled and tapped for 3/8" x 3 1/2" Dia bolts.



RM-8, TYPE JUNCTION BOX
Rain Tight, Cast Iron, Flush Mount
3 Req'd



LIGHTING NOTES

Conduits shall contain all wiring for the bridge lighting system. Conduits shall be installed in accordance with the current National Electrical Code and applicable local regulations for lighting systems.

Anchor bolts shall be minimum 1/2" diameter type A steel bolts. Anchor bolts shall be installed on both sides of the bridge.

After conduit runs have been installed, a stiff, pressure rating, brass or bronze ball or weight should be inserted into the conduit to make certain that the conduit is properly seated and remains in a straight position. The ball or weight should be placed in the conduit at the end of the conduit and the conduit should be supported by the bridge structure. The conduit should be supported by the bridge structure and not by the bridge deck.

Expansion fittings shall be used in accordance with the manufacturer's instructions.

Conduits shall be installed in a straight line and shall be supported by the bridge structure. Conduits shall be installed in a straight line and shall be supported by the bridge structure.

Conduits shall be installed in a straight line and shall be supported by the bridge structure. Conduits shall be installed in a straight line and shall be supported by the bridge structure.

REINFORCING BAR LIST				ONE BASE
Bar	Quantity	Shape	No. (Length)	Weight
1	10	10	10-10	85
2	10	10	10-10	85
3	10	10	10-10	85
4	10	10	10-10	85
5	10	10	10-10	85
6	10	10	10-10	85
7	10	10	10-10	85
8	10	10	10-10	85
9	10	10	10-10	85
10	10	10	10-10	85

TOTAL ESTIMATED QUANTITIES

Item	Quantity	Unit	Amount
Reinforcing Steel	10	lb	366

Reinforcing Steel 2 Light pole bases on bridge
Reinforcing steel and structural concrete required are included in superstructure quantities on sheet 14.

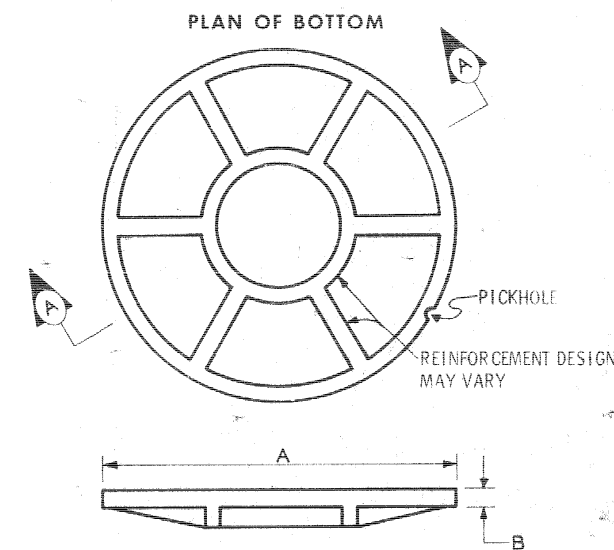
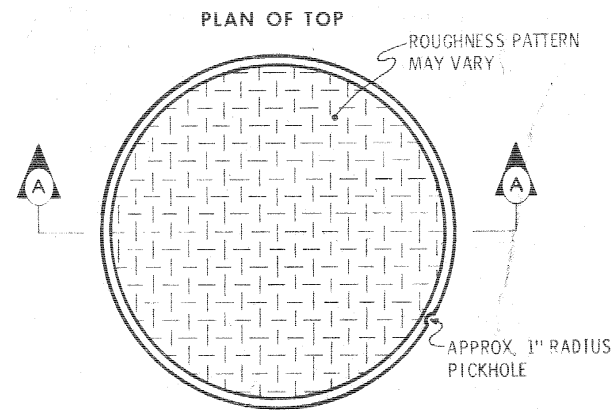


DESIGN FOR 20°-39° SKEW
196'X44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
LIGHTING DETAILS
FEDERAL AVE. TO DELAWARE AVE., MASON CITY, IOWA
SHEET 18 OF 20

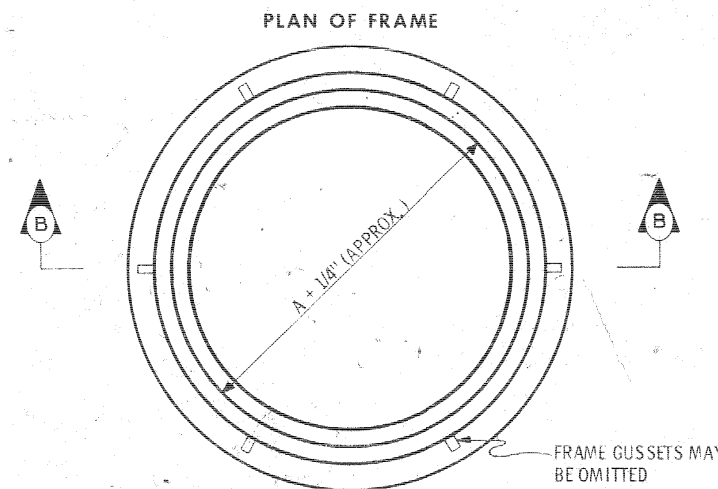
DESIGN FOR 20°-39° SKEW
196'x44' CONT. WELDED GIRDER BRIDGE
OVER WILLOW CREEK
57'-0" & 59'-0" END SPANS VARIABLE CENTER SPAN
RETAINING WALL & INTAKE
FEDERAL AVE. TO DELAWARE AVE. MASON CITY, IOWA
AUGUST 1968 SHEET 19 OF 20

IRON CASTING FOR MANHOLE COVERS

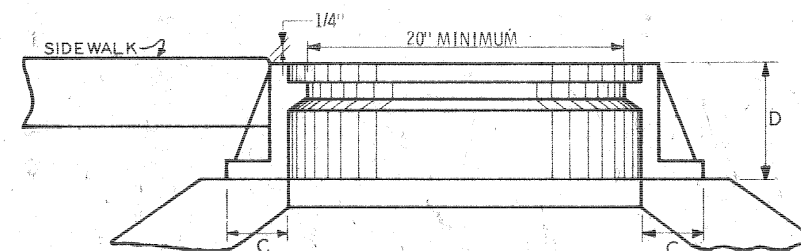
- 1) All castings shall be class 30 gray iron castings complying with current Iowa State Highway Commission Standard Specifications. Finish of casting shall be smooth and free of defects. Painting of castings is not required, however if used, paints shall be evenly applied and neither sticky nor brittle when dry.
- 2) An identifiable trade name or mark may be imprinted on the casting.
- 3) Lightweight manhole covers as described hereon shall be used with appropriate frames of either slab type or neck-bearing type wherever manholes are not subject to roadway traffic.



SECTION A-A
COVER DETAILS



SECTION C-C



TYPE-2 FRAME

Neck Bearing Type For Built Up Manholes

THIS STANDARD SHEET ADOPTED BY WHK & S
WILLOW CR. BRIDGE - FEDERAL AVE. TO DELAWARE
MASON CITY, IOWA

TYPE 2 MANHOLE COVER MINIMUM DIMENSIONS			
A	B	C	D
21"	1 1/2"	2 1/2"	4"

MINIMUM WEIGHTS	
Frame	Cover
85 lbs.	60 lbs.

New / Issue	LAST REVISION	IOWA HIGHWAY COMMISSION	
		STANDARD ROAD PLAN	
		RA-27	
		DATE	
New / Issue	LAST REVISION	RECOMMENDED	DATE
		APPROVED	DATE
		CAST MANHOLE COVERS (LIGHT)	DATE

STATE	FED. ROAD DIST. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
IOWA	5		20	20

COUNTY PROJECT NUMBER

TYPE 1 MANHOLE COVER MINIMUM DIMENSIONS			
A	B	C	D
21"	1 1/2"	2"	2 1/2"

MINIMUM WEIGHTS	
Frame	Cover
70 lbs.	60 lbs.

TYPE-1 FRAME

Slab Type For Cast Manholes

