BUCHANAN COUNTY BRIDGE REPLACEMENT
Project Number: IBRC-C010(85)--8E-10 LETTING DATE OCT. 21, 2014

DRAWING APPROVAL
ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY THE CONTRACTOR, THEN ACCEPTED BY THE BUCHANAN COUNTY ENGINEER.

THESE SHOP DRAWINGS SHALL NOT BE SENT TO I.D.O.T. OFFICE OF BRIDGES AND STRUCTURES.

10-15-13 281-1

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATION WIDE PERMIT NO. 14. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (http://envpermits.iowadot.gov/CMEPortalENV/Home.aspx). THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

IOWA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
PLANS OF PROPOSED IMPROVEMENT ON THE
SECONDARY ROAD SYSTEM
BUCHANAN COUNTY
BRIDGE REPLACEMENT
52'-00" X 30'-00" STEEL PRESS BREAK GIRDER BRIDGE WITH A 0° SKEW

FHWA # 84260
Project Number: IBRC-C010(85)--8E-10

LOCATED ON DILLON AVENUE SOUTH OF 135TH STREET OVER UNNAMED CREEK IN SECTION 22 OF FAIRBANK TOWNSHIP T-90N, R-10W

" THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS, AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS, SHALL APPLY TO THE CONSTRUCTION ON THIS PROJECT."

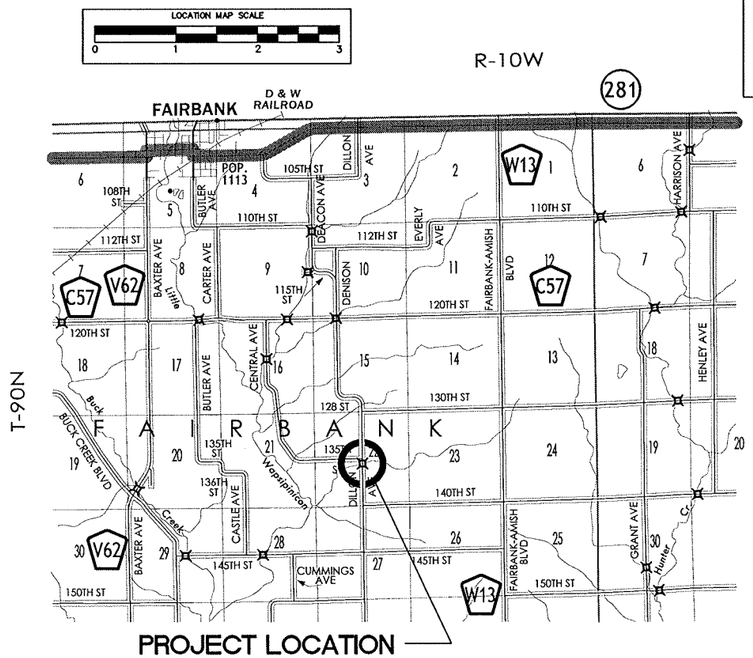
TRAFFIC CONTROL PLAN:

THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC BUT OPEN TO LOCAL TRAFFIC DURING CONSTRUCTION AS PROVIDED FOR IN ARTICLE 1107.08, 2012 STANDARD SPECIFICATIONS PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES, LAYOUTS, SIGNING AND PAVEMENT MARKINGS INSTALLED WITHIN THE LIMITS OF THIS PROJECT SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPTER 130."

MILEAGE SUMMARY

Div.	Location	Lin. Ft.	Miles
	FROM STA. 0+10 TO STA. 1+21.10	111.10	0.0210
	FROM STA. 1+21.10 TO STA. 1+76.26 (BRIDGE)	55.16	0.0104
	FROM STA. 1+76.26 TO STA. 2+89	112.74	0.0214
	TOTAL	279.00	0.0528

INDEX OF SHEETS



Scales: As Noted

2009 AVERAGE ANNUAL DAILY TRAFFIC: 110 VEHICLES PER DAY

IOWA ONE CALL 800 / 292-8989 TOLL FREE CALL - BEFORE - YOU - DIG

CHECK PLANS

I hereby certify that this plan was prepared by me or under my direct personal supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Iowa.

BRIAN KEIERLEBER, P.E. *Date*

My license renewal date is December 31, 2014

Pages or sheets covered by this seal:
All sheets in set

Official Seal

Approved BUCHANAN County Board of Supervisors

ESTIMATED PROJECT QUANTITIES - BASE BID ITEMS						
PROJECT NUMBER: IBRC-CO10(85)--8E-10						
52'-00"x30"-00" PRESS BREAK GIRDER BRIDGE						
REF.#	ITEM CODE	ITEM DESCRIPTION	UNIT	DIVISION I (IBRC FUNDS)	DIVISION II (HBP FUNDS)	TOTAL
1	2104-2713020	EXCAVATION CLASS 13, CHANNEL	C.Y.		604.00	604.00
2	2107-0425020	COMPACT BACKFILL ADJACENT TO BRIDGES, CULVERTS, OR STRUCTURES	C.Y.	190.33		190.33
3	2213-7100400	RELOCATION OF MAILBOXES	EACH		1.00	1.00
4	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON		263.40	263.40
5	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON		16.00	16.00
6	2401-6745625	REMOVAL OF EXISTING BRIDGE	L.S.		1.00	1.00
7	2402-0425030	GRANULAR BACKFILL	C.Y.	190.33		190.33
8	2402-2723000	EXCAVATION CLASS 23	C.Y.	243.00		243.00
9	2408-7800000	STRUCTURAL STEEL	L.B.	36800.00		36800.00
10	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA.	L.F.		190.00	190.00
11	2417-1060042	CULVERT, CORRUGATED METAL ROADWAY PIPE, 42 IN. DIA.	L.F.		60.00	60.00
12	2501-5775000	PILE, STEEL SHEET	S.F.	3027.25		3027.25
13	2502-8212204	SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA.	L.F.	191.67		191.67
14	2502-8213104	SUBDRAIN, PVC, STANDARD, NON-PERFORATED, 4 IN.	L.F.	64.00		64.00
15	2505-4021701	STEEL BEAM GUARDRAIL FLARED END TERMINAL	EACH		4.00	4.00
16	2507-3250005	ENGINEERING FABRIC	S.Y.	1319.40		1319.40
17	2507-6800061	REVETMENT, CLASS E	TON		58.90	58.90
18	2518-6910000	SAFETY CLOSURE	EACH		4.00	4.00
19	2528-8445110	TRAFFIC CONTROL	L.S.	0.80	0.20	1.00
20	2533-4980005	MOBILIZATION	L.S.	0.80	0.20	1.00
21	2599-9999010	CONSTRUCTION CAMERA MAINTENANCE	L.S.		1.00	1.00
22	2599-9999014	SHEET WICK DRAIN	S.F.	979.00		979.00
23	2601-2634100	MULCH	ACRE		0.38	0.38
24	2601-2636015	NATIVE GRASS SEEDING	ACRE		0.38	0.38
25	2602-0000020	SILT FENCE	L.F.		461.00	461.00
26	2602-0000030	SILT FENCE FOR DITCH CHECKS	L.F.		60.00	60.00

REF.#	ITEM CODE	DESCRIPTION
1	2104-2713020	EXCAVATION CLASS 13, CHANNEL Suitable excavation material shall be used in the construction of guardrail blisters.
2	2107-0425020	COMPACT BACKFILL ADJACENT TO BRIDGES, CULVERTS, OR STRUCTURES All compaction of granular backfill material layers shall meet class "A" compaction as stated by the Iowa DOT Standard Specifications
3	2213-7100400	RELOCATION OF MAILBOXES The mailbox at the Northwest house driveway belonging to Mrs. Rosie Schwartz shall be moved to the North edge of the proposed reconstructed 20 ft. house driveway and placed to the satisfaction of the land owner.
4	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE Rock has been figured at 140 lb per cf at a depth of 6 in. on road surface and 3 in. on guardrail blisters.
5	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE House driveway shall be surfaced with class "A" crushed stone.
6	2401-6745625	REMOVAL OF EXISTING BRIDGE See sheet C.03 for details.
7	2402-0425030	GRANULAR BACKFILL Granular backfill shall consist of class "A" crushed stone, other granular materials may be submitted to the project engineer for approval. Material has been figured with a 30% shrinkage factor from compaction.
8	2402-2723000	EXCAVATION CLASS 23 Suitable excavation material shall be used in the construction of guardrail blisters.
9	2408-7800000	STRUCTURAL STEEL All structural steel shall conform to AASHTO M270 (ASTM A709) 50W. All steel shall be galvanized in accordance to ASTM 123. This bid item shall include all manufacturing and handling costs associated with the Press Break Girders as shown on sheets U.04 and U.05
10	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA. Pipe shall be 14 guage and aluminized
11	2417-1060042	CULVERT, CORRUGATED METAL ROADWAY PIPE, 42 IN. DIA. Pipe shall be 14 guage and aluminized
12	2501-5775000	PILE, STEEL SHEET Sheet piling shall be guage 5 sheeting, and shall be hot dip galvanized in accordance to ASTM 123.
13	2502-8212204	SUBDRAIN, PERFORATED PLASTIC PIPE, 4 IN. DIA. Subdrain shall be placed at the base of each foundation, see sheet C.03 for details.
14	2502-8213104	SUBDRAIN, PVC, STANDARD, NON-PERFORATED, 4 IN. Item shall consist of an adaptor unit or combination drain to tie the sheet wick drain behind the abutment into it. For information please refer to the manufacturers listed under the Sheet Wick Drain bid item as well as sheets C.03 and U.01..
15	2505-4021701	STEEL BEAM GUARDRAIL FLARED END TERMINAL End terminal shall be constructed in accordance to Iowa DOT Standard Road Plan BA-206. Please refer to standard BA-206 and sheet C.04 for information
16	2507-3250005	ENGINEER FABRIC Engineering fabric is to be placed between each compacted layer of the foundation; payment will be based on all fabric for the project including any overlapped fabric as stated in the plans.
17	2507-6800061	REVETMENT, CLASS E Please refer to sheets C.03 and D.01 for placement details.
18	2518-6910000	SAFETY CLOSURE See table on sheet C.03 for information.
19	2528-8445110	TRAFFIC CONTROL This item shall only include costs associated with constructing the base bid items
20	2533-4980005	MOBILIZATION This item shall only include costs associated with constructing the base bid items
21	2599-9999010	CONSTRUCTION CAMERA MAINTENANCE Construction camera will be mounted on the REC power pole on the East side of the bridge; it is the contractors responsibility to ensure that there is power to that camera 24 hours per day, 7 days per week. Measurement of this item is based on a Lump Sum payment for successfully keeping the camera powered. Payment shall be based on successfully keeping the camera powered during the duration of construction at the site. This payment shall include all materials, equipment, tools, and labor necessary to keep the camera powered.
22	2599-9999014	SHEET WICK DRAIN Sheet wick drains are to be installed along the face of each foundation as well as behind abutments to the top of fabric layers (See sheet U.01). The wick drain fabric must have a minimum tear strength of 4,800 lb/ft and minimum permeability of 30 gal/min/sf. Method of measurement will be determined as follows: the engineer will measure the number of square footage of sheet wick drains successfully installed. Successful installation includes the attachment of the sheet wick drains to the subdrains. Basis of Payment will be for the number of square feet of sheet wick drains successfully installed, the contractor will be paid the bid unit price per square foot. Payment shall include all materials, equipment, labor and tools necessary to successfully install the sheet wick drains as shown in the plans. Suppliers include but are not limited to American Wick Drain SITEDRAIN Sheet 90 Series, GSI Amerdrain Geocomposit Soil Sheet Drains, and MEL-DRAIN by W.R. Meadows. The QR codes below provide links to the listed manufacturers websites. AMERICAN WICK DRAIN GSI AMERDRAIN W.R. MEADOWS
23	2601-2634100	MULCH
24	2601-2636015	NATIVE GRASS SEEDING
25	2602-0000020	SILT FENCE See table on sheet C.03.
26	2602-0000030	SILT FENCE See table on sheet C.03.

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Avenue over Unnamed Creek

ABUTMENTS; STUB PIERS; NA

52'-00" SPAN

ESTIMATE OF BASE ITEM QUANTITIES

STATION; 1+48.68 SKEW: 0°

BUCHANAN COUNTY, IOWA FHWA # 84260

GENERAL NOTES & INFORMATION

DATA LISTED BELOW IS FOR INFORMATION PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS

THIS PROJECT UTILIZES BASE BID PLUS ALTERNATIVE BIDDING FOR A PRECAST OR CAST IN PLACE DECK OPTION. FOR DETAILS AND PROJECT QUANTITIES PLEASE REFER TO SHEET C.01 FOR BASE BID QUANTITIES, SHEET X.02 FOR PRECAST DECK MODULE ALTERNATIVE BID ITEMS, AND SHEET Y.02 FOR CAST IN PLACE DECK ALTERNATIVE BID ITEMS.

CONTRACTOR IS TO USE DUE CAUTION WHEN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN THE TILE LINE DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT THEIR EXPENSE WITHOUT COST TO BUCHANAN COUNTY. ANY TILE BROKEN OR DISTURBED BY OUR CUT LINES WILL BE REPLACED AS DIRECTED BY THE ENGINEER

UTILITY COORDINATION SHALL BE PER ARTICLE 1107.15 OF THE STANDARD SPECIFICATIONS.

FINAL CLEANUP OF THE CONSTRUCTION AREA SHALL BE IN ACCORDANCE WITH SECTION 1104.08 OF I.D.O.T. STANDARD SPECIFICATIONS

A PRE CONSTRUCTION CONFERENCE WITH THE SUCCESSFULL BIDDER WILL BE HELD NO LESS THAN THREE WEEKS BEFORE STARTING THE PROJECT AND SHALL INCLUDE THE CONTRACTOR'S JOB SUPERINTENDENT.

CONTRACTOR IS TO USE DUE CAUTION WHEN WORKING AROUND ROW PINS AND SURVEY CONTROL POINTS WHICH ARE MARKED WITH AN OAK HUB AND CROSSING LATH. ANY PINS DISTURBED BY THE CONTRACTOR WILL BE REPLACED AT THE CONTRACTORS EXPENSE.

CONTRACTOR IS TO FURNISH, ERECT, AND MAINTAIN ALL NECESSARY TRAFFIC CONTROL DEVICES ON A 24 HOUR PER DAY, 7 DAY A WEEK BASIS DURING THE CONSTRUCTION PERIOD. CONTRACTOR SHALL PROVIDE A 24 HOUR CALL NUMBER FOR REPAIR OF DEFICIENCIES AFTER HOURS. CONSTRUCTION WILL BE SUSPENDED IN THE EVENT THAT ANY OF THE REQUIRED TRAFFIC CONTROL DEVICES ARE NOT LEGIBLE AND/OR OPERATIONAL AND SHALL REMAIN SUSPENDED UNTIL SUCH DEFICIENCY IS CORRECTED

THERE HAVE BEEN TWO TEMPORARY EASEMENTS OBTAINED ON THIS PROJECT; A 100'–00" X 40'–00" EASEMENT ON THE WEST SIDE OF THE BRIDGE FROM MRS. ROSIE H. SCHWARTZ, AND A 120'–00" X 30'–00" EASEMENT ON THE EAST SIDE OF THE BRIDGE FROM MR. HENRY STUTZMAN (SEE SHEET D.01 FOR LOCATIONS AND DIMENSIONS). THESE TEMPORARY EASEMENTS ARE FOR RESHAPING DRIVEWAYS FOR THE RESPECTIVE LANDOWNERS. BEFORE CONSTRUCTION IS COMPLETE, THE CONTRACTOR SHALL RESTORE THE LAND WITHIN THE TEMPORARY EASEMENTS TO THE LANDOWNERS SATISFACTION. OUTSIDE OF THESE TEMPORARY EASEMENTS, THE CONTRACTOR IS TO RESPECT PRIVATE PROPERTY. BUCHANAN COUNTY WILL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO PRIVATE PROPERTY CAUSED BY THE CONTRACTOR. ANY DAMAGE TO PRIVATE PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE SATISFACTION OF THE LANDOWNER WITH NO COST TO BUCHANAN COUNTY

THE CONTRACTOR SHALL USE DUE CAUTION WHEN WORKING AROUND THE PEAR TREE LOCATED WITHIN THE EASEMENT ON MRS. SCHWARTZ'S PROPERTY. BUCHANAN COUNTY WILL NOT BE HELD RESPONSIBLE FOR ANY DAMAGE TO THE TREE.

THE ROAD WILL BE CLOSED IN THE AREA OF THE BRIDGE FOR ALL THROUGH TRAFFIC.

CONSTRUCTION STAKING TO BE DONE BY BUCHANAN COUNTY

CERTIFIED PLANT INSPECTION WILL BE REQUIRED ON THIS PROJECT

BUY AMERICA SHALL APPLY TO ALL ITEMS FOR THIS PROJECT

THERE WILL BE A CONSTRUCTION CAMERA ON SITE MOUNTED TO A POWER POLE. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THIS CAMERA HAS POWER 24 HOURS PER DAY, 7 DAYS PER WEEK FOR THE DURATION OF CONSTRUCTION.

GIRDERS WILL BE INSTRUMENTED BY WEST VIRGINIA UNIVERSITY, IOWA STATE UNIVERSITY, AND THE UNIVERSITY OF WYOMING. CONTRACTOR SHALL NOTIFY THE INDIVIDUALS LISTED BELOW NO LATER THAN TWO WEEKS PRIOR TO DECK CONSTRUCTION.

WEST VIRGINIA UNIVERSITY
KARL BARTH
Phone: (304) 293–9921
Email: Karl.Barth@mail.wvu.edu

IOWA STATE UNIVERSITY
BRENT PHARES
Phone: (515) 294–5879
Email: bphares@iastate.edu

UNIVERSITY OF WYOMING
MICHAEL BARKER
Phone: (307) 766–2916
Email: barker@uwyo.edu

STANDARD ROAD PLANS

NUMBER	DATE	SHEETS	TITLE
BA-200	10/18/2011	2	STEEL BEAM GUARDRAIL COMPONENTS
BA-206	10/18/2011	1	STEEL BEAM GUARDRAIL FLARED END TERMINAL FOR CABLE CONNECTION
EC-201	4/20/2010	3	SILT FENCE
EW-301	4/19/2011	5	GUARDRAIL GRADING
EW-401	4/15/2014	1	TEMPORARY STREAM CROSSING, CAUSEWAY, OR EQUIPMENT PAD
SI-211	10/19/2010	3	OBJECT MARKER AND DELINEATOR PLACEMENT WITH GUARDRAIL
TC-252	4/17/2012	3	ROUTES CLOSED TO TRAFFIC

CERTIFIED PLANT INSPECTION

CERTIFIED PLANT INSPECTION SHALL APPLY TO ALL ITEMS INVOLVING CONCRETE ON THIS PROJECT.

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Avenue over Unnamed Creek

ABUTMENTS; STUB PIERS; NA

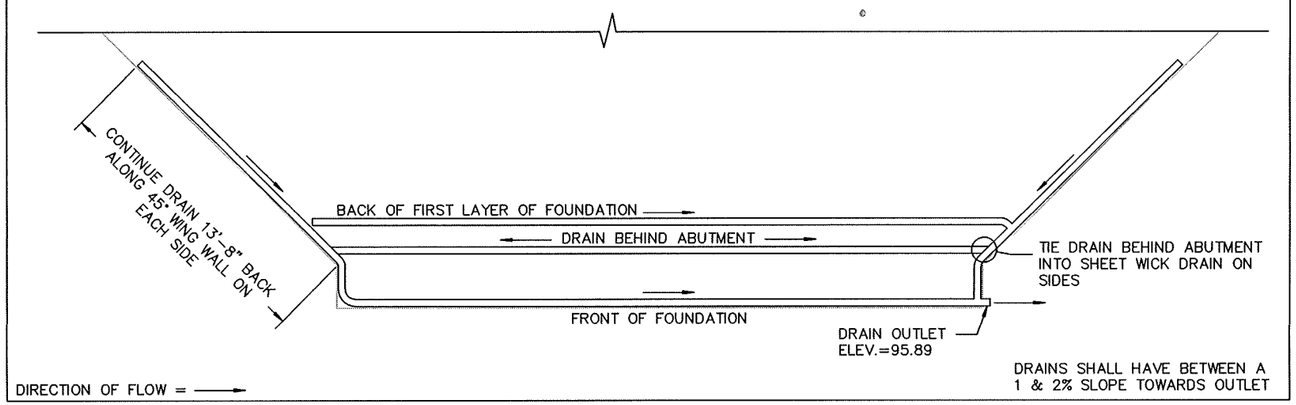
52'–00" SPAN

GENERAL NOTES, STD. ROAD PLAN TAB.

STATION; 1+48.68 SKEW: 0°

BUCHANAN COUNTY, IOWA FHWA # 84260

FOUNDATION DRAIN LAYOUT



TABULATION OF SILT FENCES

100-17
4-20-10

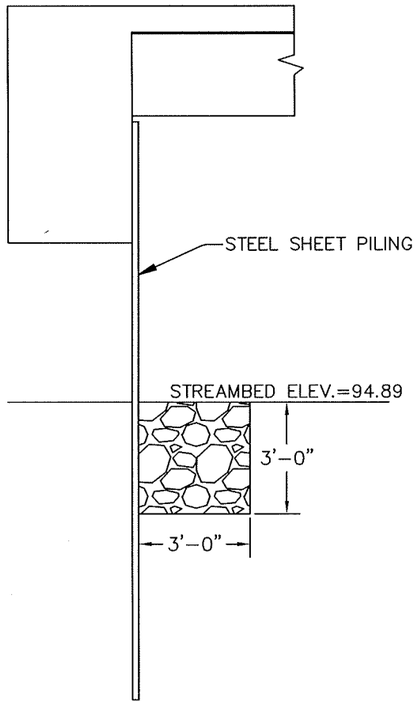
STATION TO STATION	SIDE	LIN. FT.	REMARKS
0+10 to 1+42	LEFT	132	AT R.O.W
1+61 to 2+19	LEFT	58	AT R.O.W
2+42 to 2+89	LEFT	47	AT R.O.W
0+10 to 0+57	RIGHT	47	AT R.O.W
0+80 to 1+46	RIGHT	66	AT R.O.W
1+78 to 2+89	RIGHT	111	AT R.O.W

TABULATION OF SILT FENCES FOR DITCH CHECKS

100-18
4-20-10

LOCATION STATION	SIDE	LENGTH LF	REMARKS
1+22.84	LEFT	15	DITCH CHECK
1+21.74	RIGHT	15	DITCH CHECK
1+72.47	LEFT	15	DITCH CHECK
1+86.15	RIGHT	15	DITCH CHECK

RIP RAP DETAIL



REMOVAL OF EXISTING BRIDGE

110-2
10-13-72

LOCATION	DESCRIPTION	DISPOSAL
1+48.68	24'x30' TIMBER BRIDGE	Contractor

Removal of the existing 24'x30' timber bridge with full concrete abutments and pier shall be removed in accordance to Iowa DOT standard specifications. All debris material removed by the contractor shall become property of the contractor and removed from the project area.

TABULATION OF SAFETY CLOSURES

108-13A
10-28-97

Refer to Section 2518 of the Standard Specifications

STATION	CLOSURE TYPE		REMARKS
	Road Qty.	Hazard Qty.	
0+10	1	—	South End of Project
1+10	—	1	South End of Bridge
1+87	—	1	North End of Bridge
2+89	1	—	North End of Project

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Avenue over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52'-00" SPAN

MISC. TABULATIONS BLOCKS

STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

① Lanes to which the installation is adjacent
A=Approach
T=Trailing

GRADING FOR GUARDRAIL INSTALLATION

REFER TO STANDARD EW-301

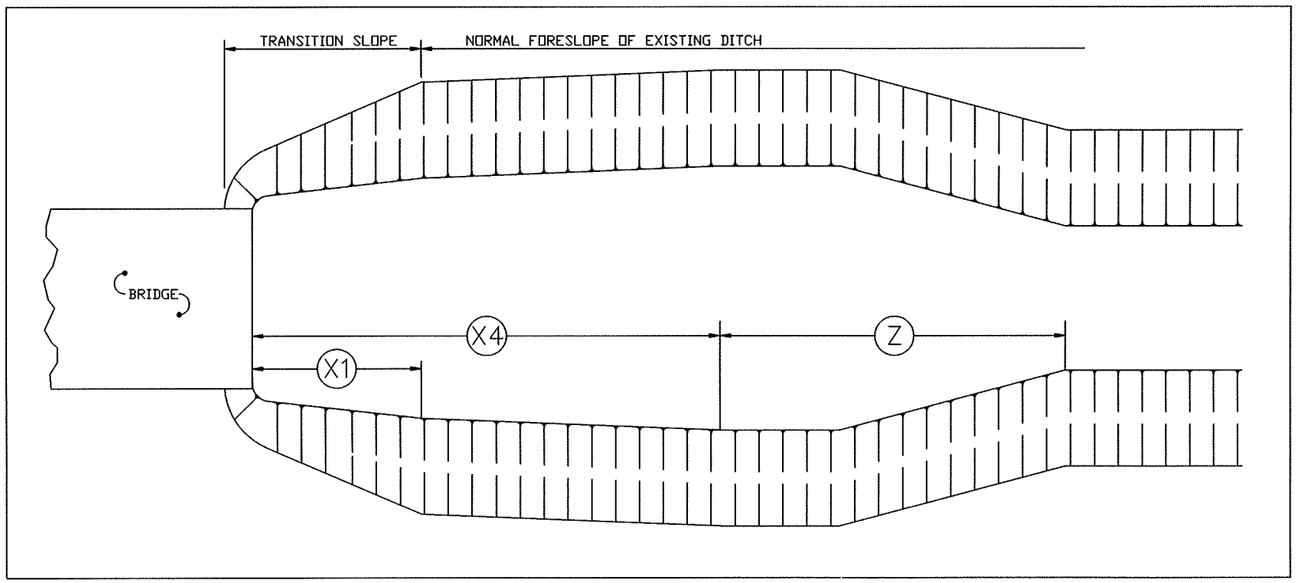
107-23
Modified

LOCATION				STANDARD OR TYPICAL NUMBER	FORESLOPE AT GUARDRAIL	DIMENSIONS (FEET)										SLOPE IN FRONT OF GUARDRAIL	EARTHWORK	REMARKS
NO.	DIRECTION OF ① TRAFFIC	STATION	SIDE			Z		X1	Y1	X2	Y2	X3	Y3	X4	Y4		EXCAVATION TOTAL FILL NEEDED	
						A	T											
																%	CY	
1	N	1+21.1	Right	EW-301	3:1	69.00	—	—	5'-3½"	—	—	—	—	57-6"	10	4	115.20	Suitable Class 13 channel and Class 23 excavation is to be used to construct guardrail blisters.
2	N	1+76.3	Right	EW-301	3:1	—	69.00	—	5'-3½"	—	—	—	—	57-6"	10	4	253.80	
3	S	1+21.1	Left	EW-301	3:1	69.00	—	—	5'-3½"	—	—	—	—	57-6"	10	4	145.10	
4	S	1+76.3	Left	EW-301	3:1	—	69.00	—	5'-3½"	—	—	—	—	57-6"	10	4	66.19	

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE END POST

REFER TO BA-200, BA-206, SI-172, SI-173

LOCATION POINT		LAYOUT LENGTHS				DELINEATORS AND OBJECT MARKERS					BID ITEMS ①				① See Standards for list of materials
		VT1	VF	VT2	ET Terminal (37.5')	TYPE	DELINEATOR	OBJECT MARKER			BARRIER TRANSITION SECTION	STEEL BEAM GUARDRAIL	BOLTED END ANCHOR	END TERMINAL	
							TYPE 1	TYPE 2	TYPE 3						
							WHITE	OM2-2V	OM-3L	OM-3R	BA-201	BA-200	BA-202	BA-206	
NO.	STATION AND OFFSET	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.		NO.	NO.	NO.	NO.	NO.	LIN. FT.	NO.	NO.	Remarks
1	1+20.6, 15.62'Lt.	0	0	0	40'-7½"		—	—	1	—	—	—	—	1	The end terminal post #7 as labeled in standard BA-206 shall have no block out spacer
2	1+20.6, 15.62'Rt.	0	0	0	40'-7½"		—	—	—	1	—	—	—	1	
3	1+76.8, 15.62'Lt.	0	0	0	40'-7½"		—	—	1	—	—	—	—	1	
4	1+76.8, 15.62'Rt.	0	0	0	40'-7½"		—	—	—	1	—	—	—	1	

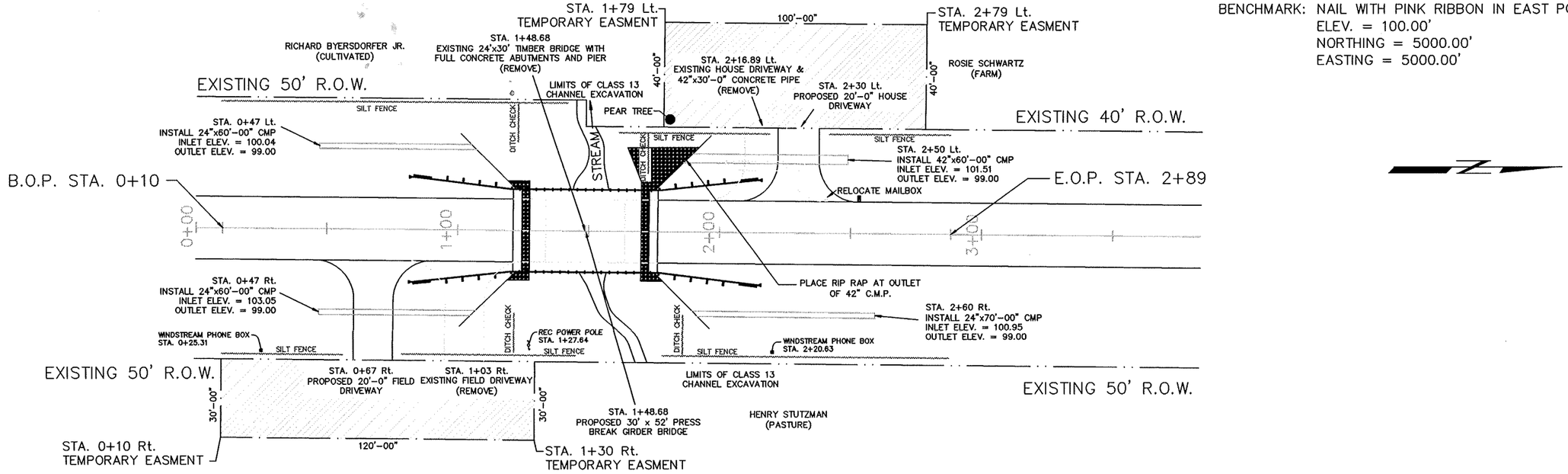


52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Avenue over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52'-00" SPAN

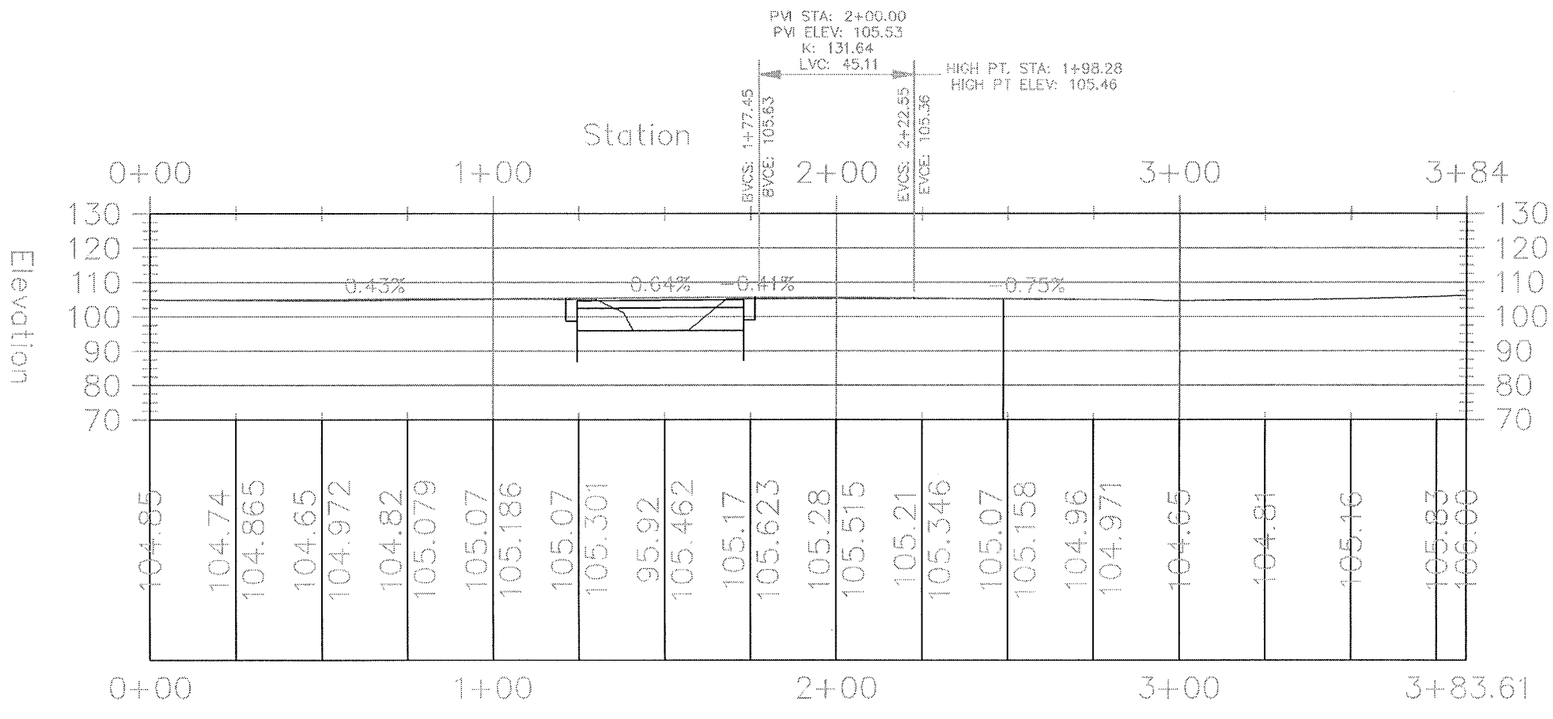
GUARDRAIL TABULATIONS

STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

BENCHMARK: NAIL WITH PINK RIBBON IN EAST POWER POLE
ELEV. = 100.00'
NORTHING = 5000.00'
EASTING = 5000.00'



DILLON AVENUE PLAN



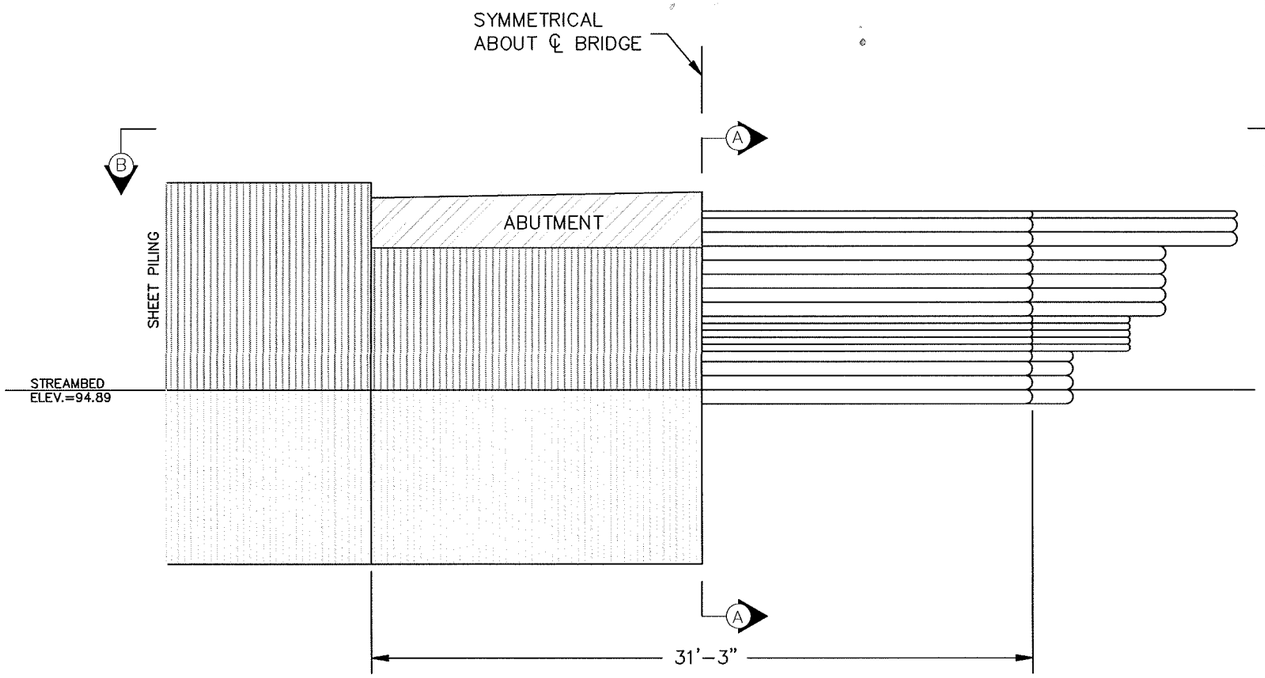
DILLON AVENUE PROFILE

SCALE 1"= 45'
20 0 40 80

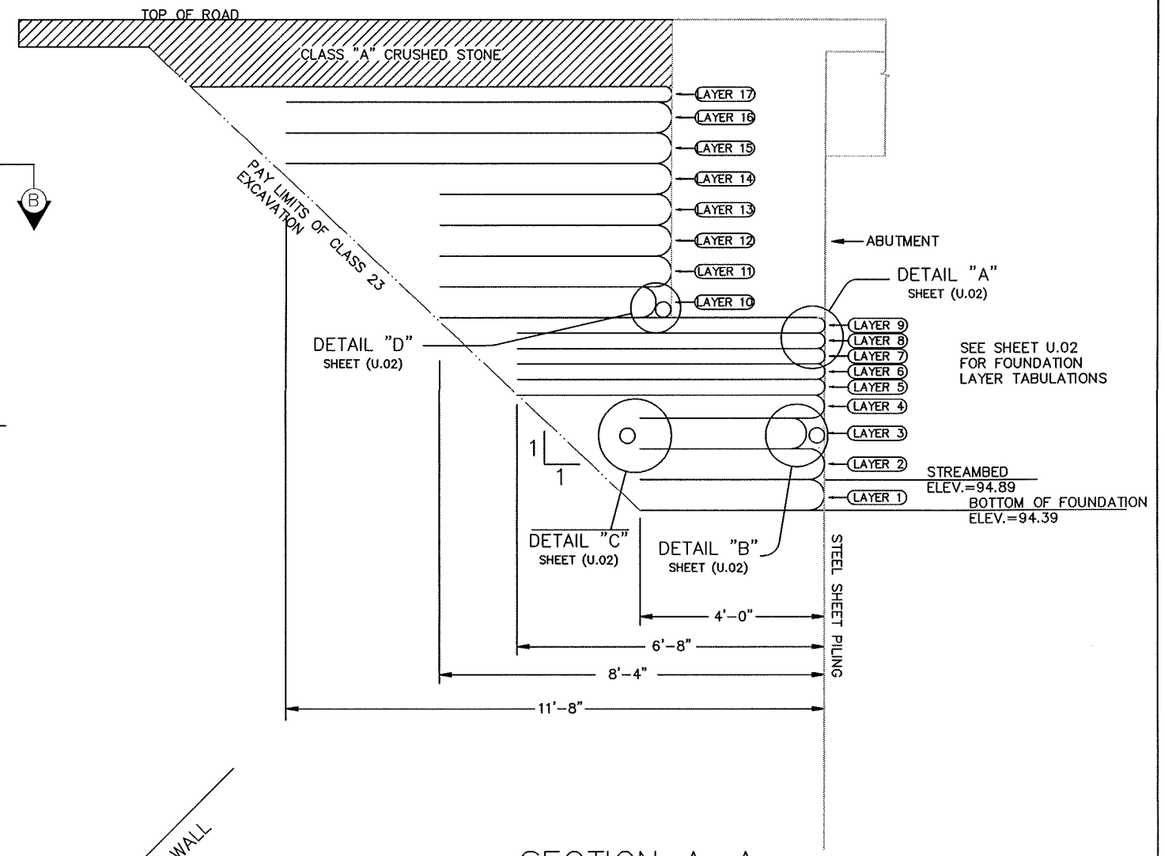
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN

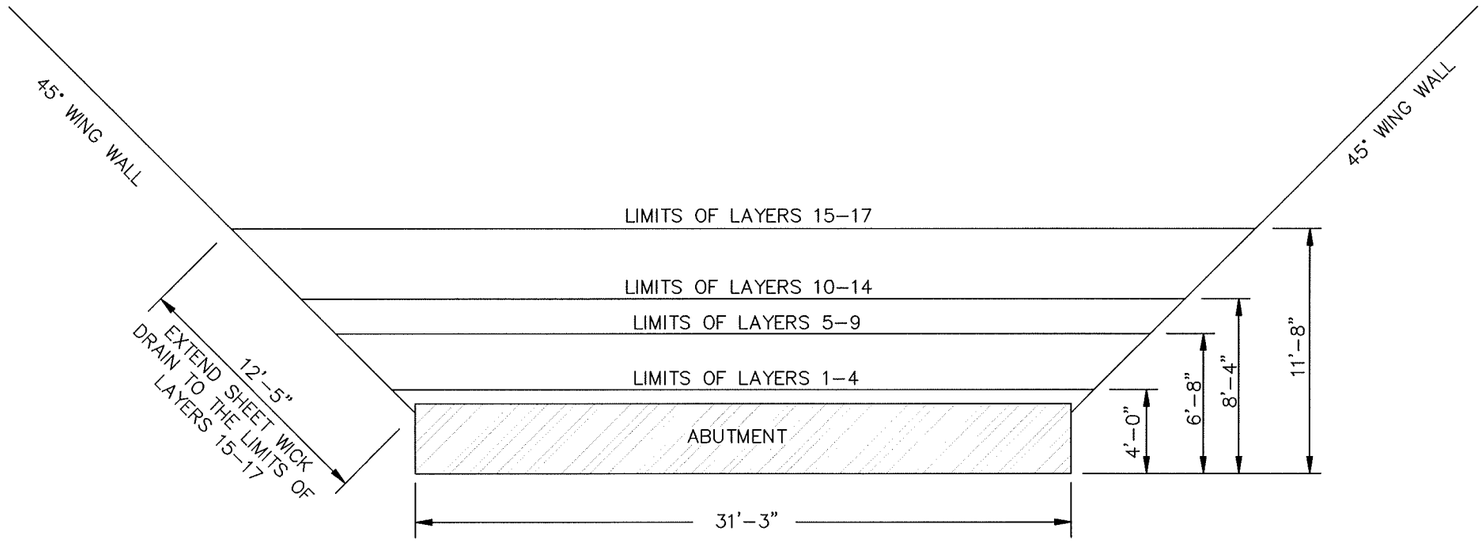
PLAN AND PROFILE

STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



FOUNDATION ELEVATION VIEW





SECTION B-B

SECTION A-A

NOTES:
ALL COMPACTION SHALL MEET THE REQUIREMENTS OF CLASS "A" COMPACTION AS STATED IN THE 2012 STANDARD SPECIFICATIONS.

SEE SHEET U.03 FOR SHEET PILING LAYOUT AND DETAILS

GRANULAR MATERIAL FOR THE GEOSYNTHETICLY REINFORCED FOUNDATIONS SHALL CONSIST OF CLASS "A" CRUSHED STONE, OTHER MATERIALS MAY BE SUBMITTED TO THE PROJECT ENGINEER FOR APPROVAL

THE POROUS BACKFILL LOCATED AROUND THE SUB DRAINS IS TO CONSIST OF GRADATION NO. 29, PER ARTICLE 4109.02

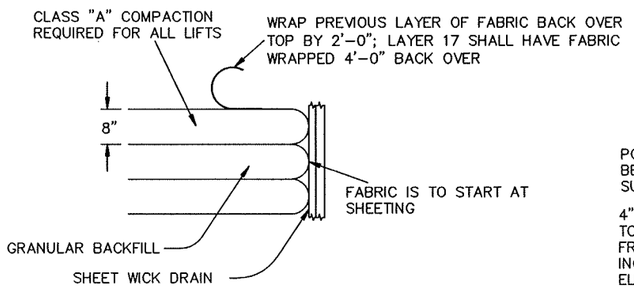
OUTLET OF SUBDRAIN SHALL BE 12 IN. ABOVE STREAMBED. SUBDRAIN SHALL HAVE A CONSTANT SLOPE OF 1-2% TOWARDS OUTLET

CONTINUE SHEET WICK DRAIN BEHIND ABUTMENT UP TO THE TOP OF LAYER 17.

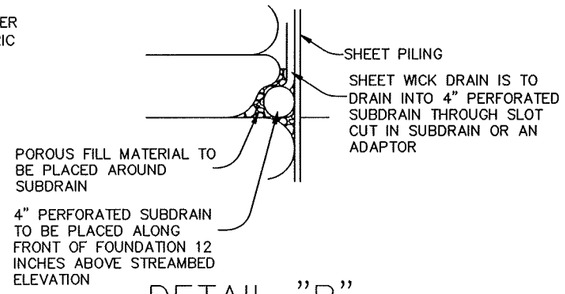
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
GEOSYNTHETICLY REINFORCED FOUNDATION DETAILS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

South Foundation Geosyntheticly Reinforced Layer Information				
Layer	Starting Elevation	Lift Thickness (INCHES)	Granular Backfill (CY)	Engineering Fabric (SY)
1	94.39	8	4.15	26.4
2	95.06	8	4.15	26.4
3	95.72	8	4.15	26.4
4	96.39	6	3.09	25.7
5	96.89	4	3.68	38.1
6	97.22	4	3.68	38.1
7	97.56	4	3.68	38.1
8	97.89	4	3.68	38.1
9	98.22	4	3.68	38.1
10	98.56	8	6.28	37.0
11	99.22	8	6.28	37.0
12	99.89	8	6.28	37.0
13	100.56	8	6.28	37.0
14	101.22	8	6.28	37.0
15	101.89	8	11.35	57.4
16	102.56	8	11.35	57.4
17	103.22	4	5.67	63.2
TOTAL			93.71	658.40

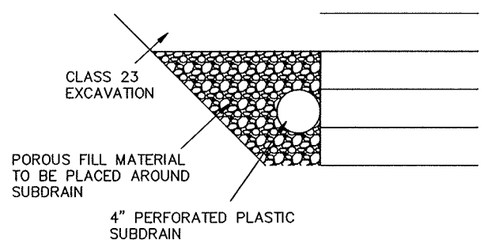
North Foundation Geosyntheticly Reinforced Layer Information				
Layer	Starting Elevation	Lift Thickness (INCHES)	Granular Backfill (CY)	Engineering Fabric (SY)
1	94.39	8	4.15	26.4
2	95.06	8	4.15	26.4
3	95.72	8	4.15	26.4
4	96.39	8	4.15	26.4
5	97.06	6	5.53	40.0
6	97.56	4	3.68	38.1
7	97.89	4	3.68	38.1
8	98.22	4	3.68	38.1
9	98.56	4	3.68	38.1
10	98.89	8	6.28	37.0
11	99.56	8	6.28	37.0
12	100.22	8	6.28	37.0
13	100.89	8	6.28	37.0
14	101.56	8	6.28	37.0
15	102.22	8	11.35	57.4
16	102.89	8	11.35	57.4
17	103.56	4	5.67	63.2
TOTAL			96.62	661.00



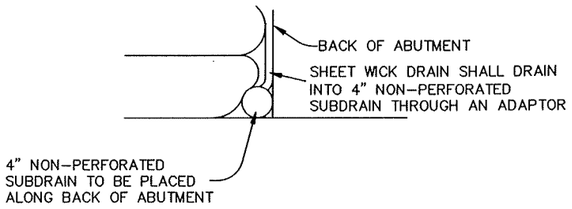
DETAIL "A"



DETAIL "B"



DETAIL "C"



DETAIL "D"

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

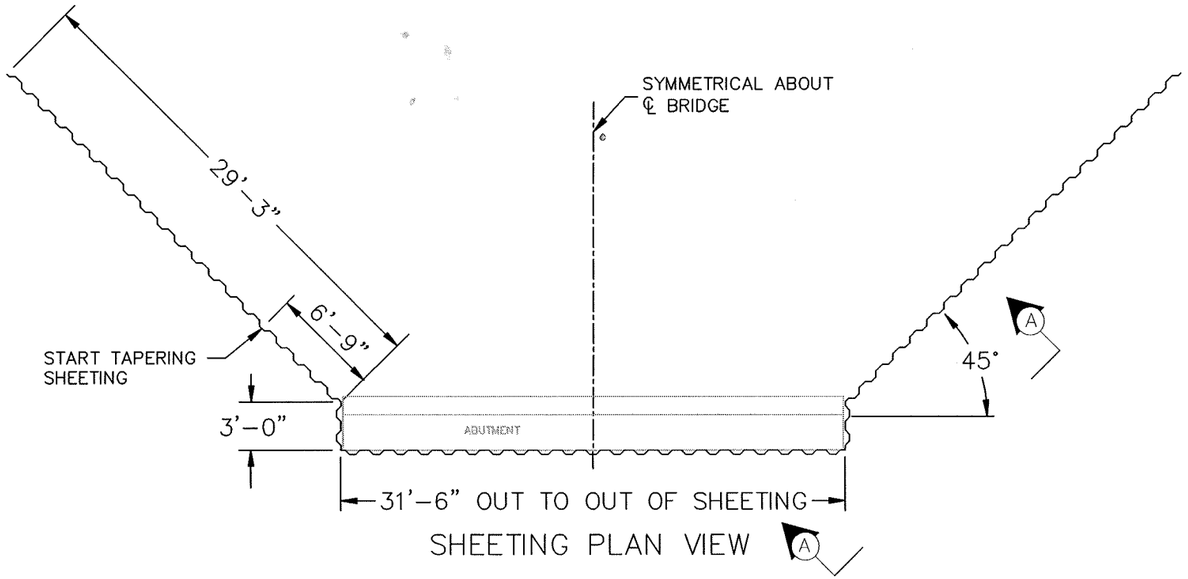
ABUTMENTS; STUB PIERS; NA

52' 00" SPAN

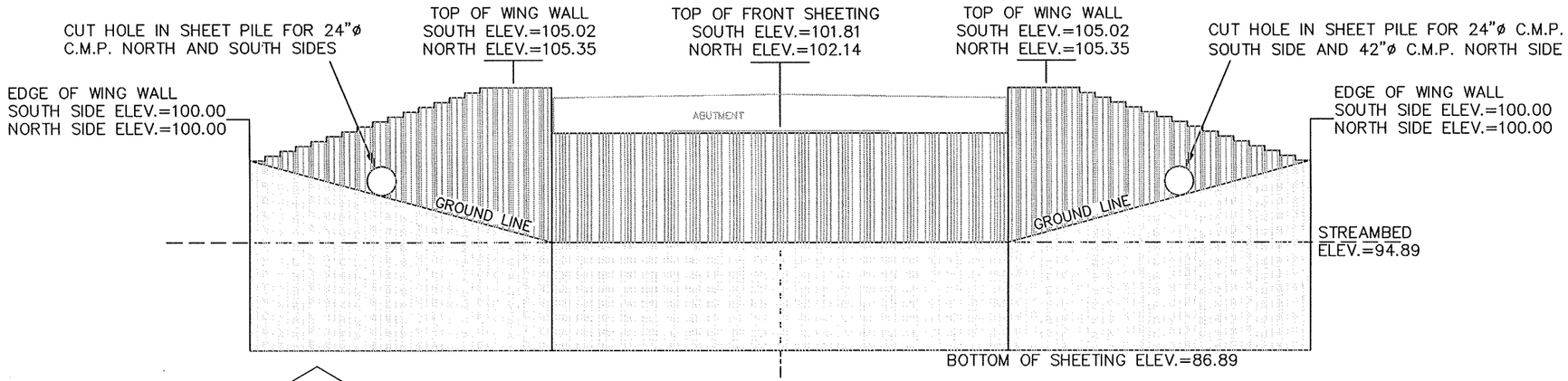
G.R.S. FOUNDATION DETAILS (CONTINUED)

STATION; 1+48.68 SKEW: 0°

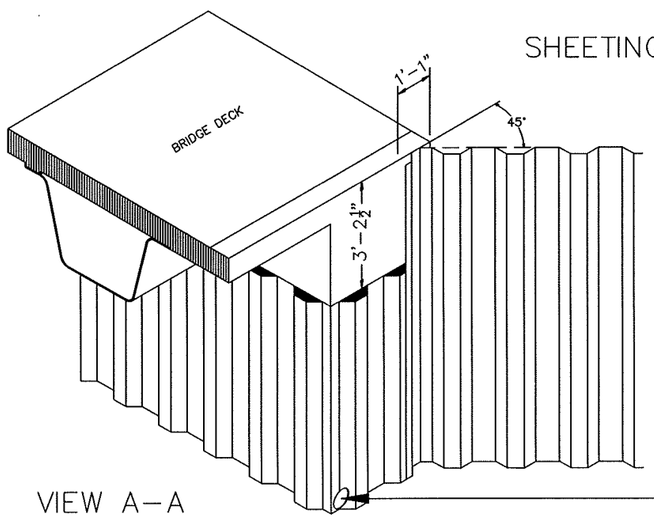
BUCHANAN COUNTY, IOWA FHWA # 84260



SHEETING PLAN VIEW



SHEETING ELEVATION VIEW



VIEW A–A

CUT 4" DIA. HOLE IN SHEETING AT FRONT OF THE COMPACTED FOUNDATION FOR PERFORATED DRAINAGE PIPE (DOWNSTREAM SIDE ONLY) (SEE SHEETS U.01 & C.03 FOR ADDITIONAL DETAILS REGARDING PIPE INSTALLATION)

Tabulation of Sheet Piles

South Abutment

Location	Quantity	Bend Angle	Length	Area (SF)
Front of Foundation	20	-	14'-11"	447.50
Foundation Front Corners	2	90°	14'-11"	44.75
Foundation Sides	2	-	14'-11"	44.75
Wingwall Corners	2	135°	18'-1"	54.25
Wingwalls	8	-	18'-1"	217.00
Wingwalls	2	-	17'-9"	53.25
Wingwalls	2	-	17'-5"	52.25
Wingwalls	2	-	17'-1"	51.25
Wingwalls	2	-	16'-9"	50.25
Wingwalls	2	-	16'-5"	49.25
Wingwalls	2	-	16'-1"	48.25
Wingwalls	2	-	15'-9"	47.25
Wingwalls	2	-	15'-5"	46.25
Wingwalls	2	-	15'-1"	45.25
Wingwalls	2	-	14'-9"	44.25
Wingwalls	2	-	14'-5"	43.25
Wingwalls	2	-	14'-1"	42.25
Wingwalls	2	-	13'-9"	41.25
Wingwalls	2	-	13'-5"	40.25
Wingwalls	2	-	13'-1"	39.25
TOTAL AREA				**1502.00**

Tabulation of Sheet Piles

North Abutment

Location	Quantity	Bend Angle	Length	Area (SF)
Front of Foundation	20	-	15'-3"	457.50
Foundation Front Corners	2	90°	15'-3"	45.75
Foundation Sides	2	-	15'-3"	45.75
Wingwall Corners	2	135°	18'-5"	55.25
Wingwalls	8	-	18'-5"	221.00
Wingwalls	2	-	18'-1"	53.50
Wingwalls	2	-	17'-8"	53.00
Wingwalls	2	-	17'-4"	52.00
Wingwalls	2	-	17'-0"	51.00
Wingwalls	2	-	16'-8"	50.00
Wingwalls	2	-	16'-3"	48.75
Wingwalls	2	-	15'-11"	47.75
Wingwalls	2	-	15'-7"	46.75
Wingwalls	2	-	15'-3"	45.75
Wingwalls	2	-	14'-10"	44.50
Wingwalls	2	-	14'-6"	43.50
Wingwalls	2	-	14'-2"	42.50
Wingwalls	2	-	13'-10"	41.50
Wingwalls	2	-	13'-5"	40.25
Wingwalls	2	-	13'-1"	39.25
TOTAL AREA				**1525.25**

ALL QUANTITIES ARE BASED OFF OF 18 IN. WIDE SHEET PILE.

52' 00" x 30' 00" P.B.G. Bridge

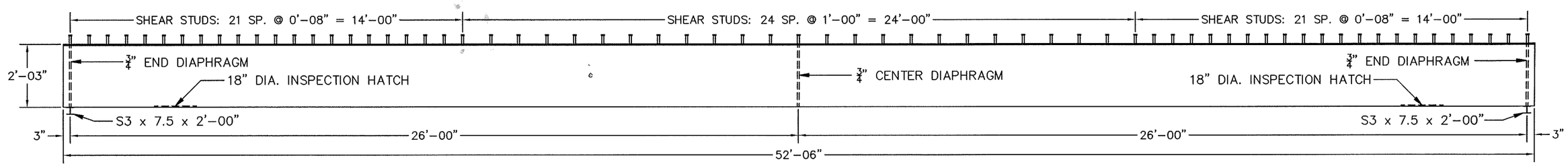
Located on Dillon Ave. over Unnamed Creek

52' 00" SPAN

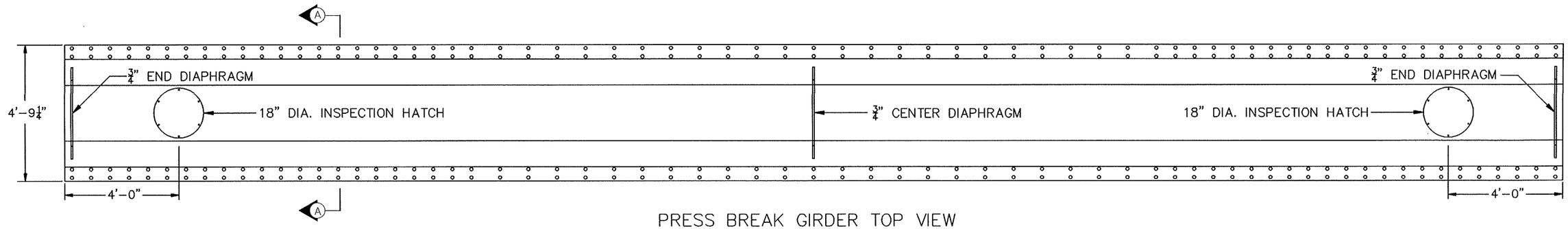
SHEET PILING LAYOUT

STATION; 1+48.68 SKEW: 0°

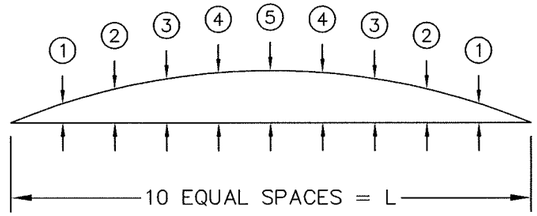
BUCHANAN COUNTY, IOWA FHWA # 84260



PRESS BREAK GIRDER ELEVATION VIEW



PRESS BREAK GIRDER TOP VIEW

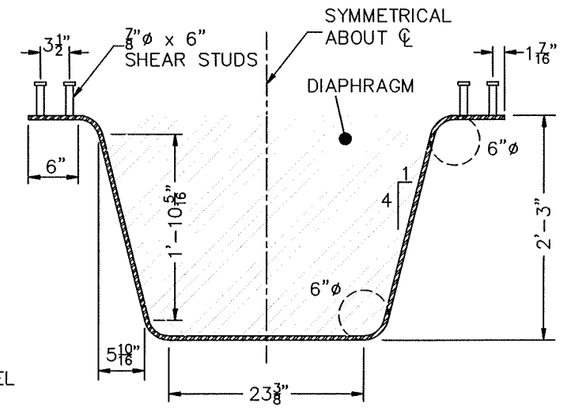


DEAD LOAD CAMBER DIAGRAM
(SEE TABLE BELOW)

	1	2	3	4	5
STEEL DEAD LOAD CAMBER (in.)	0.270	0.511	0.699	0.819	0.860

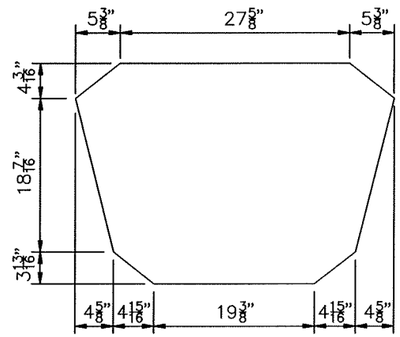
NOTES:

1. PRESS BREAK GIRDER IS TO BE MADE OUT OF A 96" WIDE BY ½" THICK PLATE OF STEEL
2. ALL WELDS ARE TO BE GROUND AND TESTED PER STATE SPECIFICATIONS.
3. DIAPHRAGMS SHALL BE WELDED TO GIRDERS WITH ¼" FILLET WELDS
4. THE CENTER DIAPHRAGM SHALL BE MILLED TO BEARING. FIT TO BEARING IS TO BE 50% IN CONTACT WITH FLANGE AND WITHIN 1/16" FOR REMAINDER.
5. TACK WELD 2'-0" S3 x 7.5 SHAPES TO BOTTOM OF GIRDERS 4" FROM ENDS
6. SEE SHEET U.05 FOR INSPECTION HATCH DETAILS
7. PRESS BREAK GIRDERS SHALL BE GALVANIZED IN ACCORDANCE TO ASTM 123
8. ALL WELDING ON GIRDER SHALL OCCUR PRIOR TO GALVANIZING.
9. IF CAST IN PLACE METHOD SHALL BE USED PLEASE REFER TO SHEET Y.04 FOR INFORMATION REGARDING INTERMEDIATE DIAPHRAGMS



*ALL DIAMETERS ARE OUT TO OUT

PART SECTION A–A



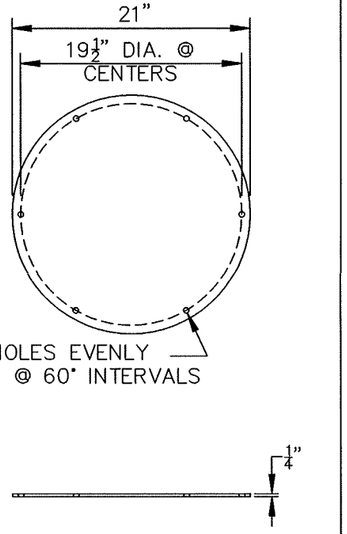
DIAPHRAGM DETAILS

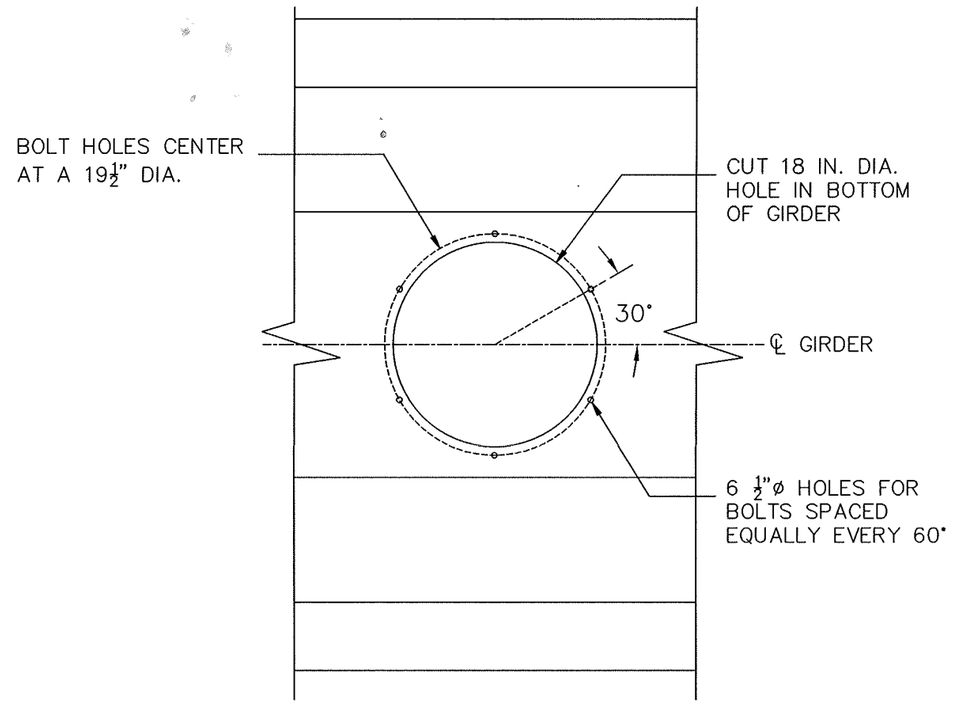
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN

PRESS BRAKE GIRDER DETAILS

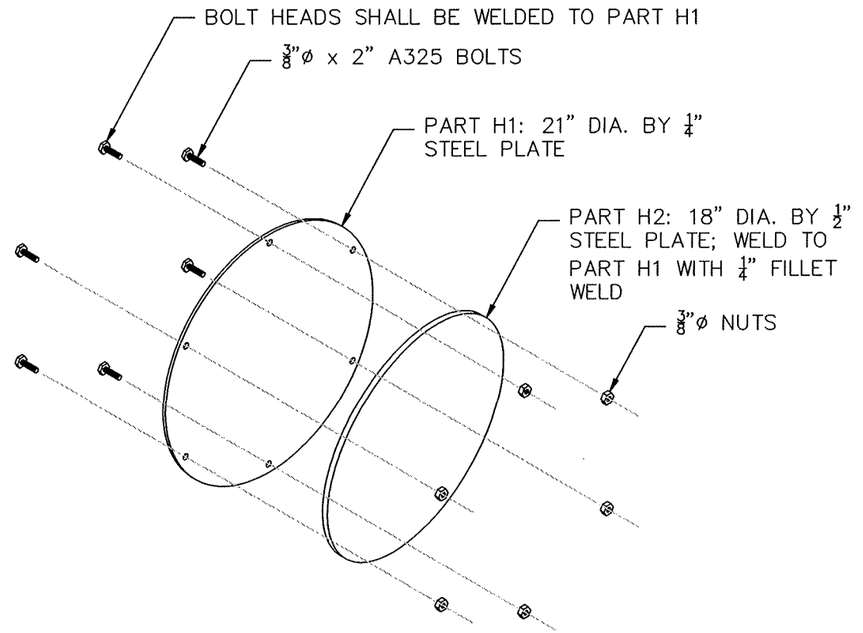
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

PART H1



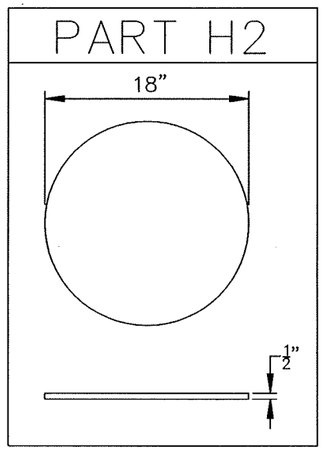


BOTTOM OF GIRDER AT INSPECTION HATCH

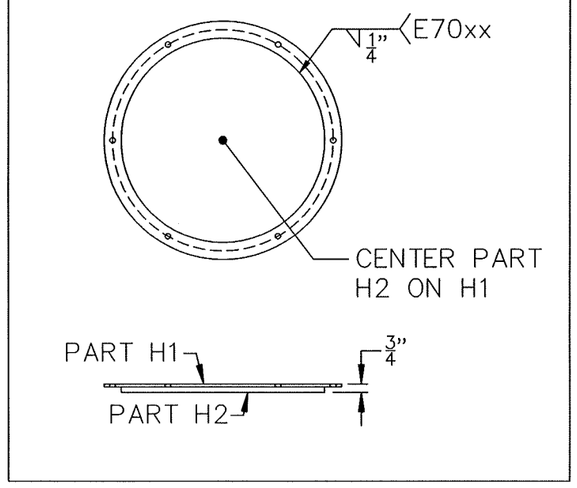


INSPECTION HATCH ASSEMBLY VIEW

PART H2



INSPECTION HATCH DETAILS



Inspection Hatch Part Tabulation		
Part	Quantity	Finish
H1	8	Galvanized
H2	8	Galvanized

Tabulation of Bolts for Inspection Hatch						
DIAMETER	LENGTH	DESCRIPTION	BOLTS		NUTS	WASHERS
			QUANTITY	CLASS	QUANTITY	QUANTITY
3/8"	2"		48	A325-1	48	0

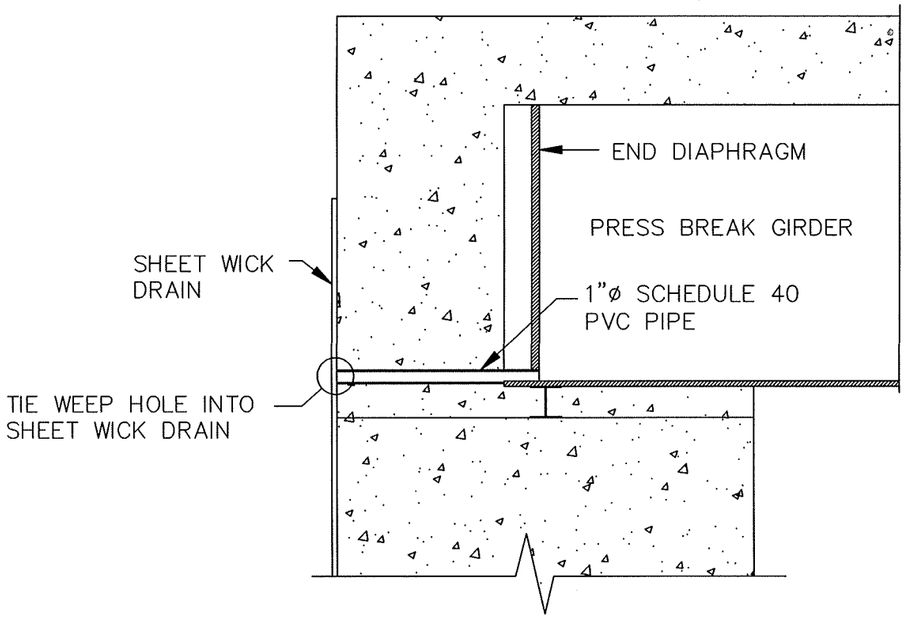
PART H2 SHALL BE WELDED TO PART H1 WITH A ¼" FILLET WELD

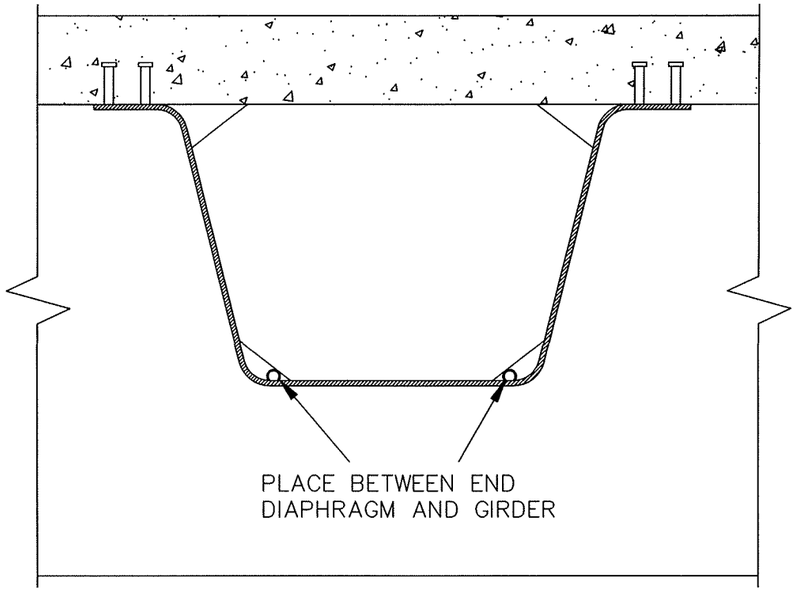
ALL PIECES OF THE HATCH SHALL BE GALVANIZED IN ACCORDANCE TO ASTM 123

HATCH SHALL BE ORIENTED ON THE BEAM SO THAT PART H2 FITS IN THE 18 IN. DIA. HOLE CUT IN THE GIRDER AND THE NUTS FOR THE BOLTS ARE TIGHTENED FROM UNDER THE GIRDER.

ALL WELDING ON HATCH SHALL BE DONE PRIOR TO GALVANIZING.

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
P.B.G. INSPECTION HATCH DETAILS & ASSEMBLY
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260





NOTES:

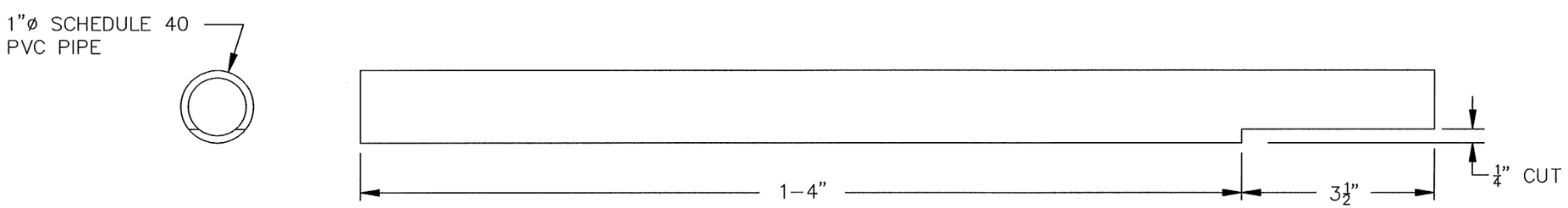
THERE SHALL BE TWO WEEP HOLES PLACED IN EACH GIRDER

WEEP HOLES SHALL ONLY BE PLACED IN THE SOUTH ABUTMENT

ALL WEEP HOLES SHALL BE CONSTRUCTED OUT OF SCHEDULE 40 PVC PIPE

ALL MATERIALS AND LABOR ASSOCIATED WITH CONSTRUCTING WEEP HOLES SHALL BE INCLUDED IN THE BID ITEM FOR STRUCTURAL CONCRETE (BRIDGE)

WEEP HOLE DETAILS

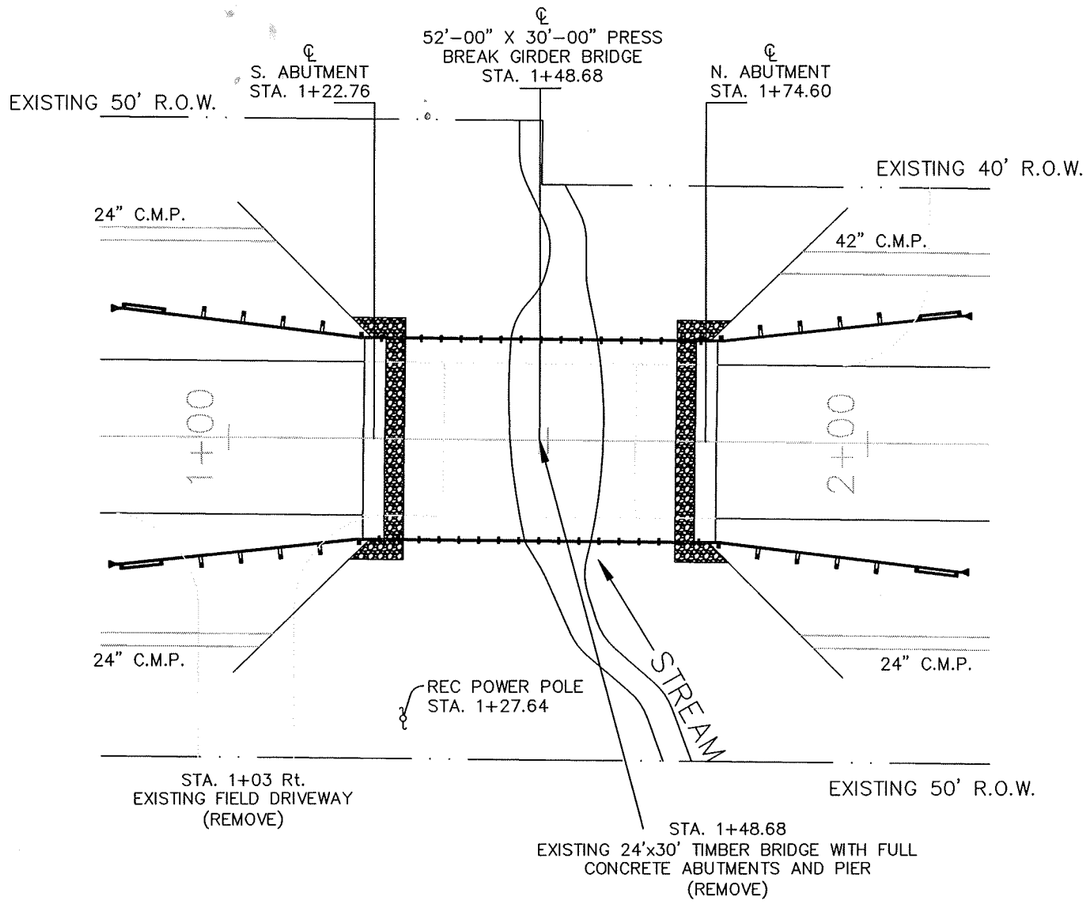


CUT 3½" AT END OF PVC PIPE TO FIT BETWEEN THE BOTTOM OF THE PRESS BREAK GIRDER AND THE END DIAPHRAGM

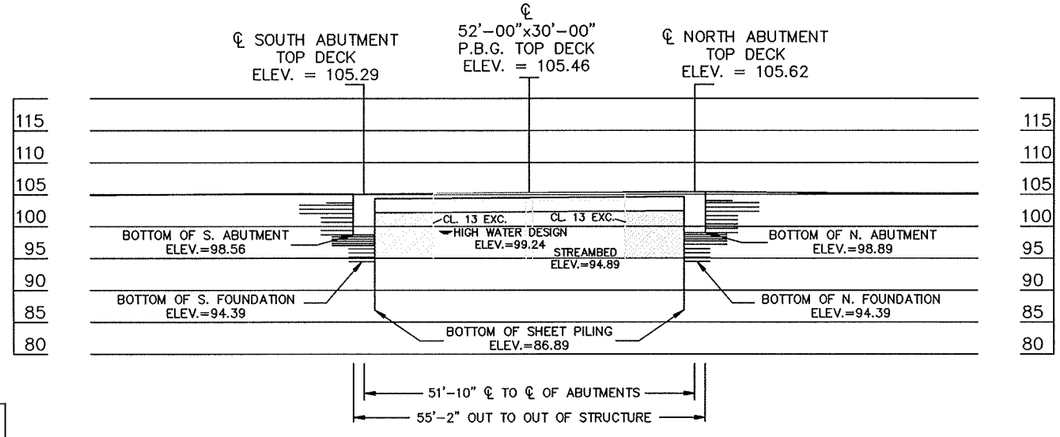
PVC PIPE DETAILS

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
WEEP HOLE DETAILS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

BENCHMARK: NAIL WITH PINK RIBBON IN EAST POWER POLE
ELEV. = 100.00'
NORTHING = 5000.00'
EASTING = 5000.00'



SITUATION PLAN



CENTERLINE PROFILE

HYDRAULIC DATA

DRAINAGE AREA = 2.21 SQ. MILES
DESIGN DISCHARGE = 1553 CFS
DISCHARGE THROUGH BRIDGE = 1553 CFS
ROAD GRADE OVERFLOW = 0.00 N/A
DESIGN HIGH WATER ELEV. = 99.24
MANNING SLOPE = 0.002 FT./FT.
BRIDGE WATERWAY AREA = S.F.
DESIGN VELOCITY = 5.00 F.P.S.
Q10 = 882 C.F.S.
Q25 = 1260 C.F.S.
Q50 = 1553 C.F.S.
Q100 = 1873 C.F.S.
EXT. H.W. EL. = NA
ANTICIPATED SCOUR EL. = NA

SCALE 1"= 25'
20 10 0 20 40

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN

SITUATION PLAN

STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

INDEX OF SHEETS	
No.	Description
X.01	TITLE SHEET
X.02	ESTIMATED QUANTITIES, GENERAL NOTES, & MISC. TABULATIONS
X.03	ABUTMENT DETAILS
X.04	MIDDLE PRECAST MODULE DETAILS
X.05	END PRECAST MODULE DETAILS
X.06	DECK CROSS SECTION
X.07	REINFORCING BAR LIST
X.08	GUARDRAIL DETAILS
X.09	GUARDRAIL BRACKET TOP ASSEMBLY
X.10	GUARDRAIL BRACKET BOTTOM ASSEMBLY
X.11	GUARDRAIL POST AND BOLT SLEEVE DETAILS

SECTION X

PRECAST DECK MODULES
BID ALTERNATIVE PLANS

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
TITLE SHEET
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

ESTIMATED PROJECT QUANTITIES - PRECAST BID OPTION						
PROJECT NUMBER: IBRC-CO10(85)--8E-10						
52'-00"x30"-00" PRESS BREAK GIRDER BRIDGE						
REF.#	ITEM CODE	ITEM DESCRIPTION	UNIT	DIVISION I (IBRC FUNDS)	DIVISION II (HBP FUNDS)	TOTAL
1	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	C.Y.	84.64		84.64
2	2403-7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE	C.Y.	2.71		2.71
3	2404-7775007	REINFORCING STEEL, GALVANIZED	L.B.	17122.80		17122.80
4	2505-4008300	STEEL BEAM GUARDRAIL	L.F.		100.00	100.00
5	2528-8445110	TRAFFIC CONTROL	L.S.	0.96	0.04	1.00
6	2533-4980005	MOBILIZATION	L.S.	0.96	0.04	1.00
7	2599-9999010	SUPER STRUCTURE, ERECT	L.S.	1.00		1.00

REF.#	ITEM CODE	DESCRIPTION
1	2403–0100010	STRUCTURAL CONCRETE BRIDGE All structural concrete shall consist of a Class "C" mix. Certified plant inspection shall apply to this bid item. This item shall also include all materials and labor for the stay in place form work that shall be placed over the top of the press break girder. This item shall also include all cost involved with precasting the modular sections of bridge deck.
2	2403–7000210	HIGH PERFORMANCE STRUCTURAL CONCRETE High performance concrete shall be used in closure pours between the precast slabs. This bid item shall include all labor and materials associated with the construction of the module closure pours.
3	2404–7775007	REINFORCING STEEL, GALVANIZED All reinforcing steel shall consist of grade 60 steel. All reinforcing steel shall be hot–dip galvanized in accordance to ASTM A 767. All wire ties and chairs shall be galvanized in accordance to ASTM 123.
4	2505–4008300	STEEL BEAM GUARDRAIL Item shall include all posts, brackets, and any additional hardware and labor for installation of guardrail on the bridge. Please refer to sheets X.08 through X.11 for information regarding this item.
5	2528–8445110	TRAFFIC CONTROL Item shall only include costs for constructing the alternative portion of the project.
6	2533–4980005	MOBILIZATION Item shall only include costs for constructing the alternative portion of the project.
7	2599–9999010	SUPER STRUCTURE, ERECT This item shall involve the placement of the precast module deck sections. Measurement of this item is based on a lump sum payment for the successful placement of the precast modules. Payment shall be based on the successful placement of all deck modules. This payment shall include all materials, equipment, tools, and labor necessary to successfully place the precast modules as detailed in the plans.

GENERAL NOTES & INFORMATION

DATA LISTED BELOW IS FOR INFORMATION PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS

CONTRACTOR SHALL CONSTRUCT THE PRECAST UNITS OFF SITE IN A CONTROLLED ENVIRONMENT TO MINIMIZE ERRORS OR DEFECTS IN THE FINISHED PRODUCT.

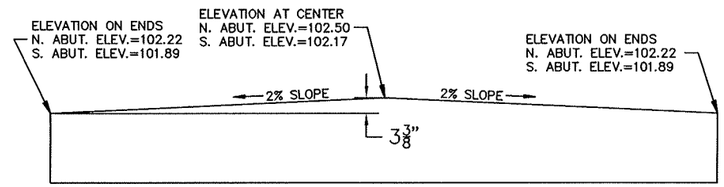
CONTRACTOR SHALL USE DUE CAUTION WHEN TRANSPORTING AND PLACING PRECAST MODULES. ANY DAMAGE TO THE PRECAST UNIT THAT MAY OCCUR FROM HANDLING SHALL BE ASSESSED BY THE PROJECT ENGINEER IN ORDER TO DETERMINE A REMEDIAL ACTION.

CERTIFIED PLANT INSPECTION SHALL APPLY TO ALL ITEMS INCLUDING CONCRETE. THIS INCLUDES CONCRETE USED FOR THE CONSTRUCTION OF THE PRECAST MODULES FOR THIS BID ALTERNATIVE.

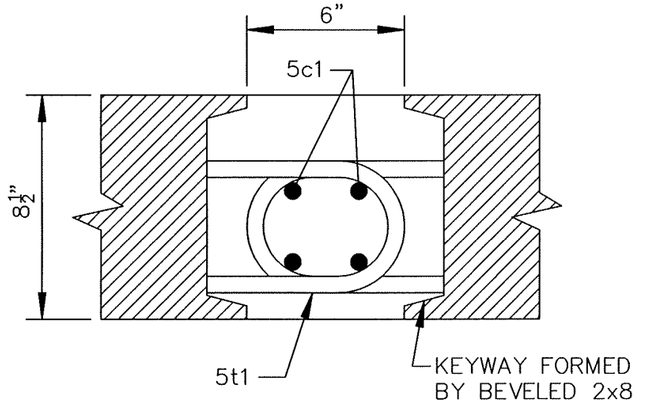
LOCATIONS AND TYPE OF LIFTING LOOPS ON THE PRECAST MODULES SHALL BE SELECTED AND PLACED AT THE DISCRETION OF THE CONTRACTOR. THERE SHALL BE A MINIMUM REQUIREMENT OF FOUR PICK POINTS FOR EACH MODULE. THE WEIGHT CAPACITY OF THE LIFTING LOOPS SHALL HAVE A MINIMUM FACTOR OF SAFETY OF TWO AS WELL. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF LIFTING LOOPS AND LOCATIONS TO THE PROJECT ENGINEER FOR APPROVAL.

MISC. TABULATIONS AND DETAILS

ABUTMENT STEP DIAGRAM

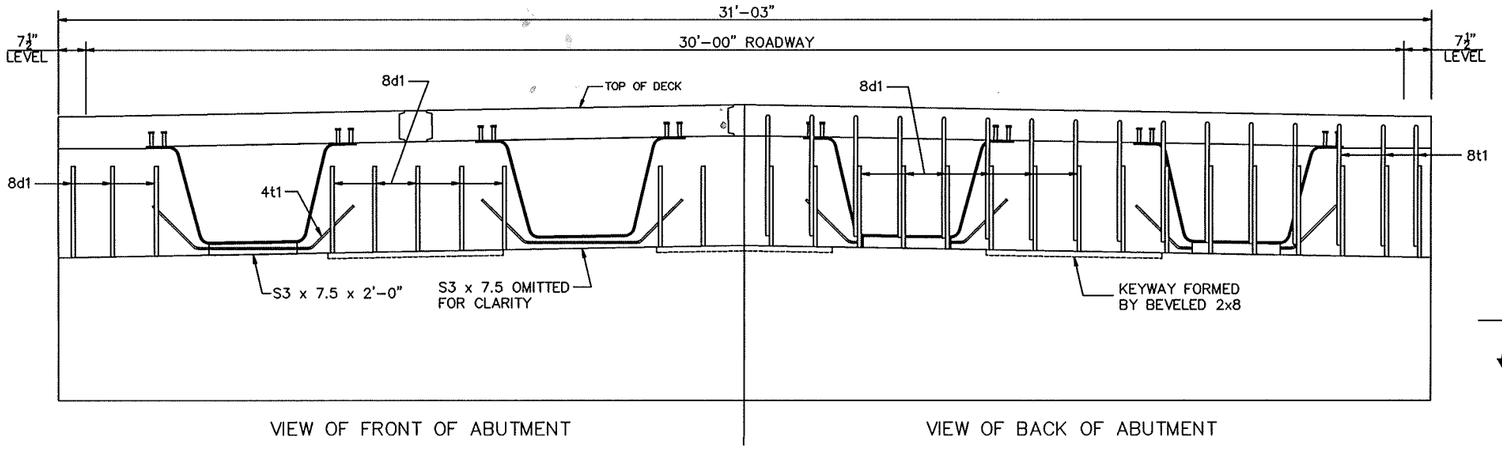


CLOSURE POUR DETAILS

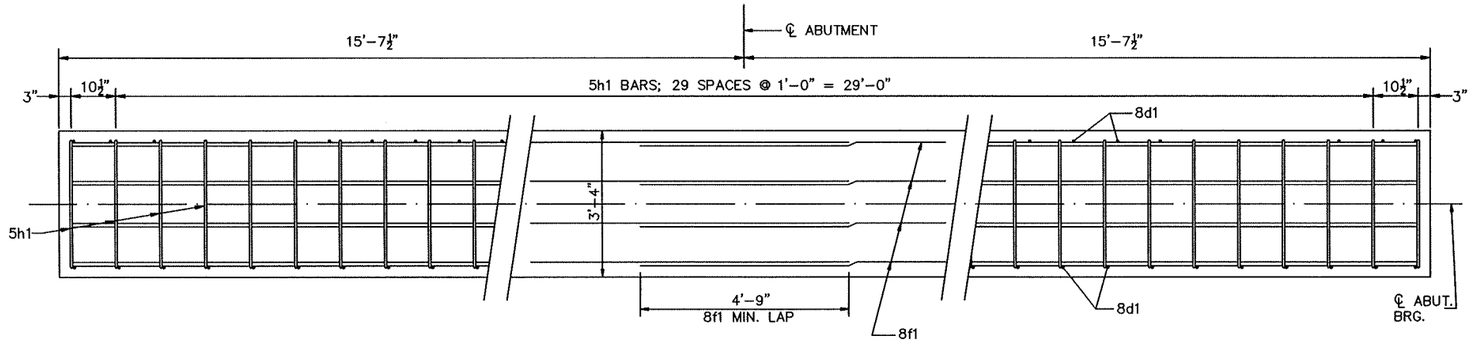


ULTRA HIGH PERFORMANCE CONCRETE
SHALL BE USED IN THE CLOSURE POURS

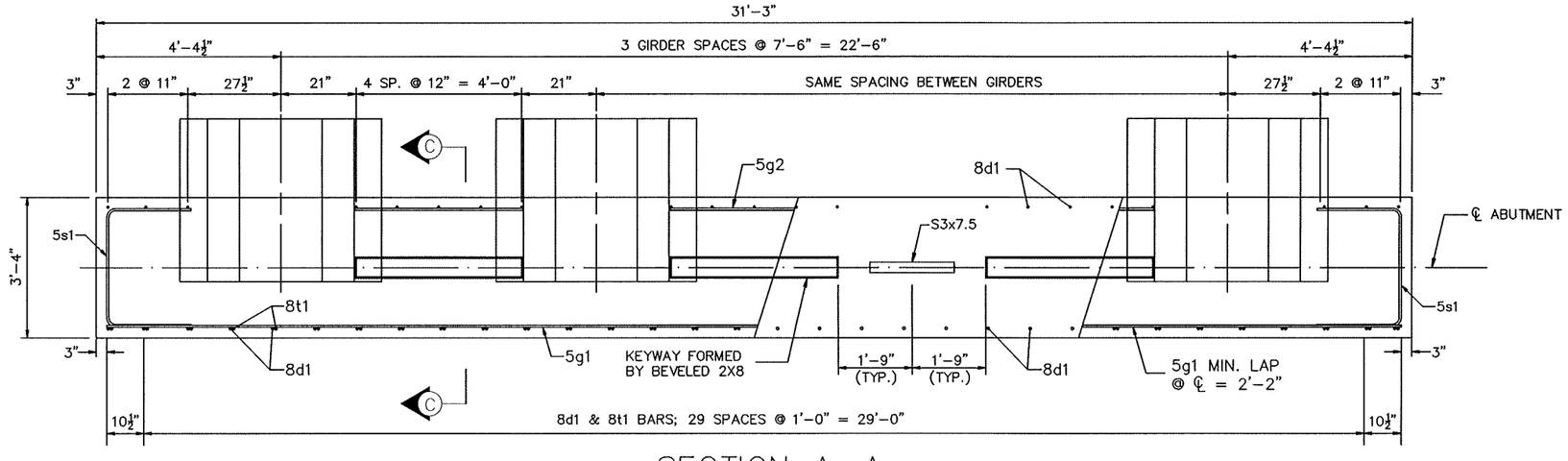
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Avenue over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52'–00" SPAN
ESTIMATED QUANTITIES, GEN. NOTES, & MISC. TABULATIONS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



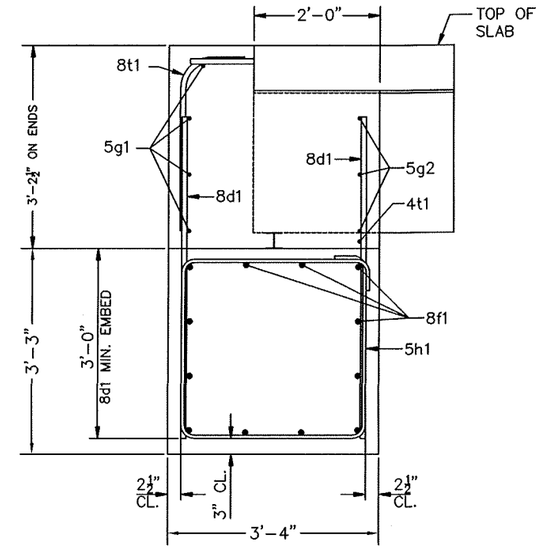
ELEVATION VIEW OF ABUTMENT



SECTION B–B



SECTION A–A



PART SECTION C–C

ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE COUNTY OR STATE.

FOR ABUTMENT STEP DIAGRAM PLEASE REFER TO SHEET X.02 FOR DETAILS

WEEP HOLES SHALL BE PLACED IN THE SOUTH ABUTMENT TO ALLOW WATER TO DRAIN FROM THE INTERIOR OF GIRDERS. PLEASE REFER TO SHEET U.06 FOR DETAILS.

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

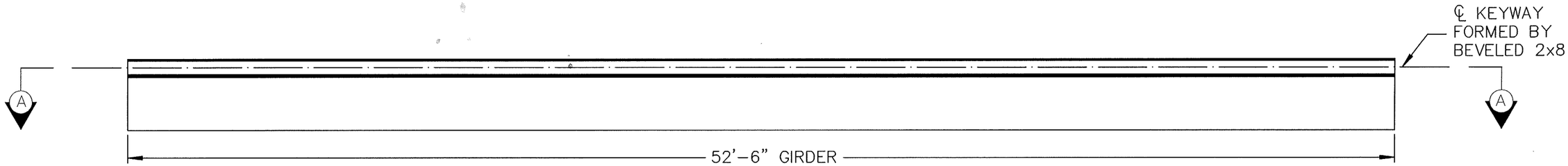
ABUTMENTS; STUB PIERS; NA

52' 00" SPAN

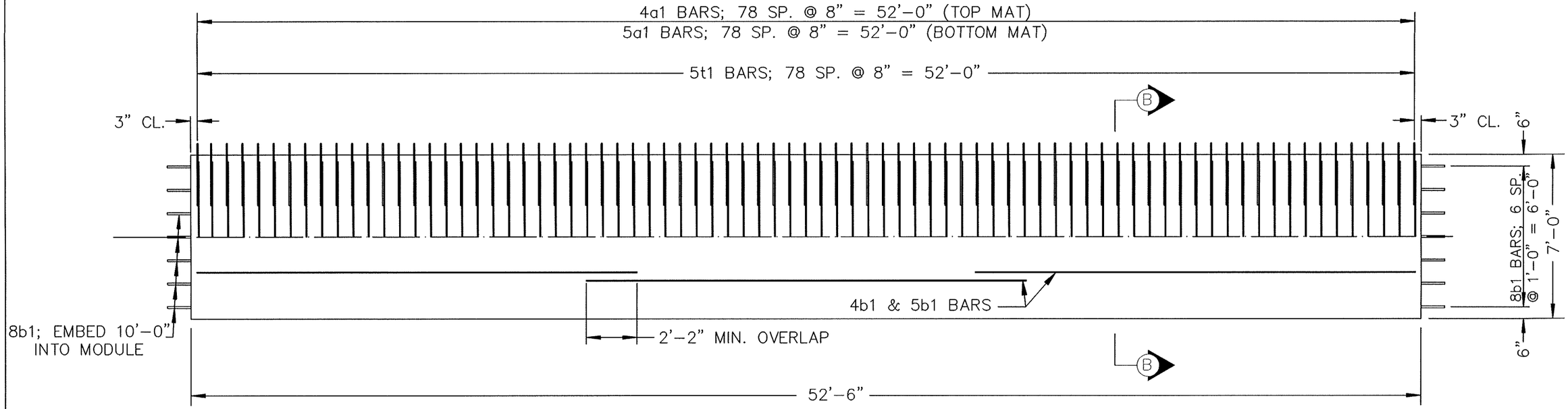
ABUTMENT DETAILS

STATION; 1+48.68 SKEW: 0°

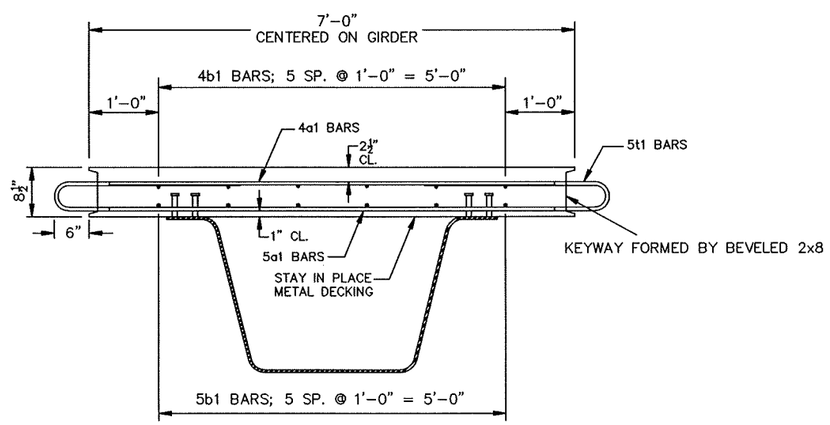
BUCHANAN COUNTY, IOWA FHWA # 84260



MIDDLE PRECAST UNIT ELEVATION VIEW



SECTION A–A



SECTION B–B

PRECAST UNIT NOTES:

THE FLOOR SLAB AS SHOWN INCLUDED ½" WEARING SURFACE.

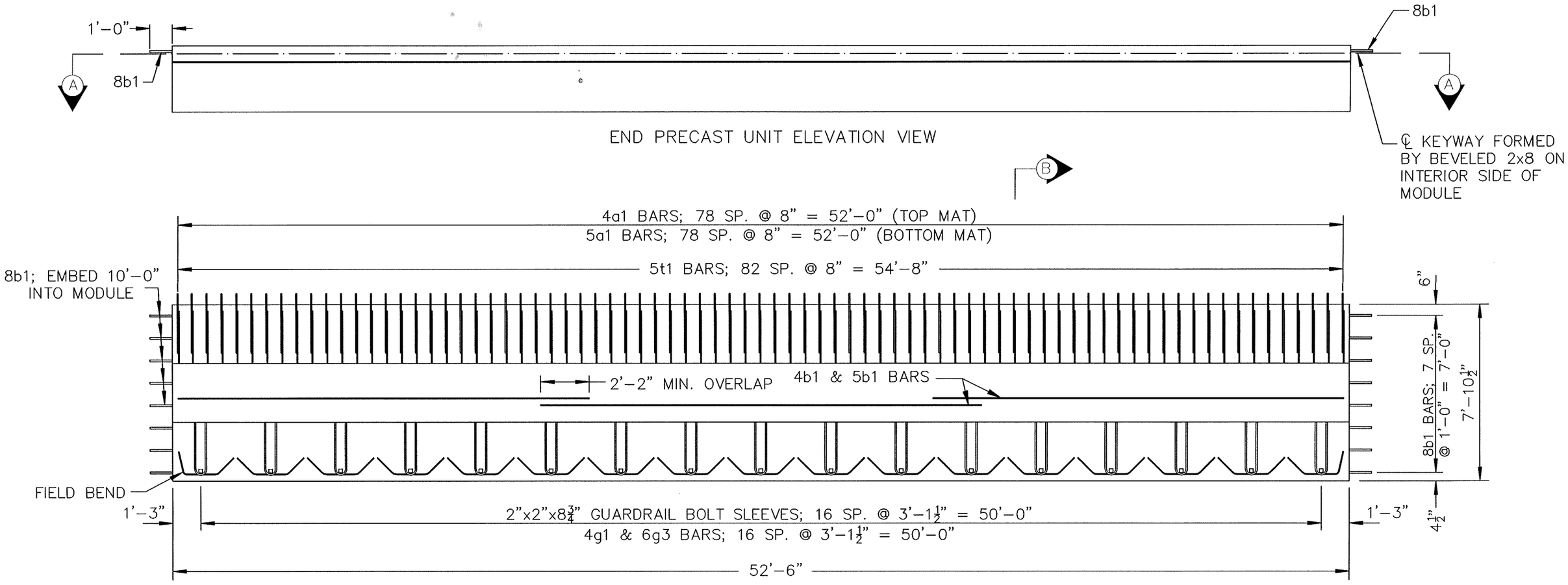
FORMS FOR THE PRECAST UNIT SHALL CONSIST OF REMOVABLE FORMS FOR ANY SECTION THAT OVERHANGS FROM THE GIRDER.

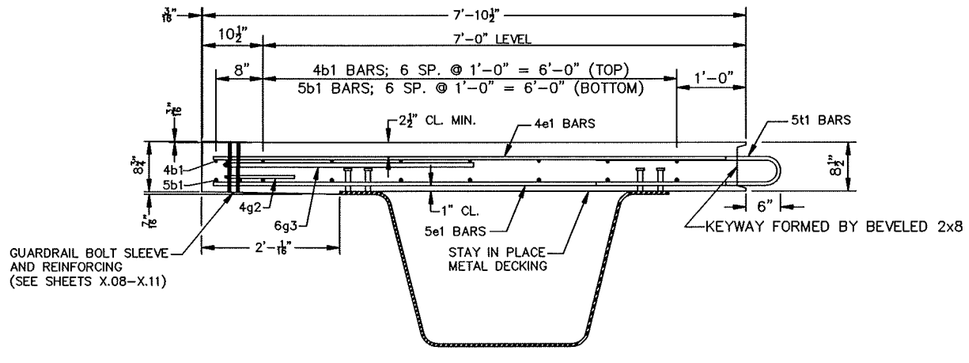
STAY IN PLACE METAL DECKING OR ANOTHER ALTERNATIVE CLEAR SPAN FORMING METHOD APPROVED BY THE PROJECT ENGINEER SHALL BE USED OVER THE GIRDER TO ALLOW FOR IN SERVICE INSPECTION OF THE INTERIOR OF THE GIRDER. IF ANY PIECES OF THE FORMS ARE TO BE WELDED TO THE GIRDERS, ITEMS SHALL BE WELDED TO THE GIRDERS BEFORE THE GIRDERS ARE GALVANIZED.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2 ½" CLEAR BELOW TOP OF SLAB. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF SLAB. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'–0" CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'–0" APART. IOWA DOT I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
MIDDLE PRECAST MODULE DETAILS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260





SECTION B-B

PRECAST UNIT NOTES:

THE FLOOR SLAB AS SHOWN INCLUDED ½" WEARING SURFACE.

FORMS FOR THE PRECAST UNIT SHALL CONSIST OF REMOVABLE FORMS FOR ANY SECTION THAT OVERHANGS FROM THE GIRDER.

STAY IN PLACE METAL DECKING OR ANOTHER ALTERNATIVE CLEAR SPAN FORMING METHOD APPROVED BY THE PROJECT ENGINEER SHALL BE USED OVER THE GIRDER TO ALLOW FOR IN SERVICE INSPECTION OF THE INTERIOR OF THE GIRDER. IF ANY PIECES OF THE FORMS ARE TO BE WELDED TO THE GIRDERS, ITEMS SHALL BE WELDED TO THE GIRDERS BEFORE THE GIRDERS ARE GALVANIZED.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2 ½" CLEAR BELOW TOP OF SLAB. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF SLAB. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'-0" CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'-0" APART. IOWA DOT I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
END PRECAST MODULE DETAILS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

SUPERSTRUCTURE NOTES:

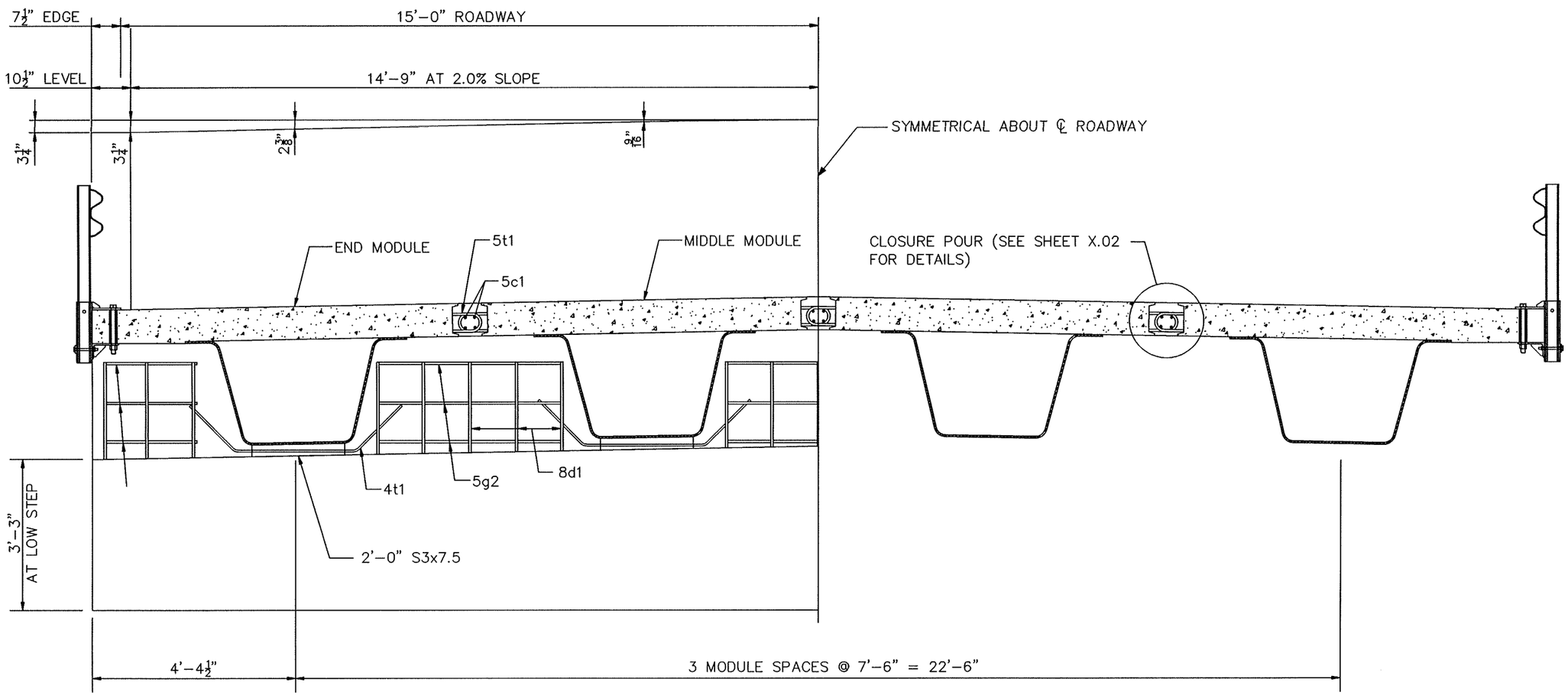
THE FLOOR SLAB AS SHOWN INCLUDED ½" WEARING SURFACE.

CONTRACTOR SHALL USE DUE CAUTION WHEN SETTING PRECAST MODULES AS TO NOT CAUSE ANY DAMAGE TO THEM.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

ULTRA HIGH PERFORMANCE CONCRETE SHALL BE UTILIZED IN THE CLOSURE POURS.

5c1 BARS IN CLOSURE POURS SHALL HAVE SAME LAP DISTANCE AS 4b1 & 5b1 BARS (REFER TO SHEETS X.04 AND X.05)



HALF SECTION NEAR ABUTMENT

HALF SECTION NEAR MIDSPAN

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
DECK CROSS SECTION
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

ABUTMENT REINFORCING BAR LIST

ONE ABUTMENT

BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
4t1		UNDER BEAMS AT ABUTMENT	4	5'–4⅝"	14.40
5g1		ABUTMENT LONGITUDINAL BACK TOP	8	16'–5½"	137.30
5g2		ABUTMENT LONGITUDINAL FRONT TOP	9	4'–0"	37.50
5h1		ABUTMENT HOOPS	32	12'–6"	417.20
5s1		ABUTMENT SIDES	6	6'–9⅞"	42.70
8d1		ABUTMENT VERTICAL	53	5'–1"	719.30
8f1		ABUTMENT LONGITUDINAL BOTTOM	24	17'–9"	1137.40
8t1		ABUTMENT PRECAST CONNECTOR TOP	30	3'–9"	300.40
REINFORCING STEEL, GALVANIZED (LBS)			TOTAL (LBS)		2806.20

PRECAST EDGE MODULE REINFORCING BAR LIST

ONE MODULE

BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
3g1		GUARDRAIL BOLT SLEEVE TACK WELDED	34	0'–10"	10.70
4b1		TOP LONGITUDINAL	24	18'–9½"	301.30
4e1		TOP TRAVERSE	79	7'–5"	391.40
4g2		GUARDRAIL BOLT SLEEVE	17	3'–7¼"	40.90
5b1		BOTTOM LONGITUDINAL	24	18'–9½"	470.40
5e1		BOTTOM TRAVERSE	79	7'–5"	611.10
5t1		SIDE TIE BARS	79	5'–9"	473.80
6g3		GUARDRAIL BOLT SLEEVE	17	7'–2½"	184.10
8b1		END CONNECTOR	16	11'–0"	469.90
REINFORCING STEEL, GALVANIZED (LBS)			TOTAL (LBS)		2953.60

CLOSURE POUR REINFORCING

ALL CLOSURE POUR LOCATIONS

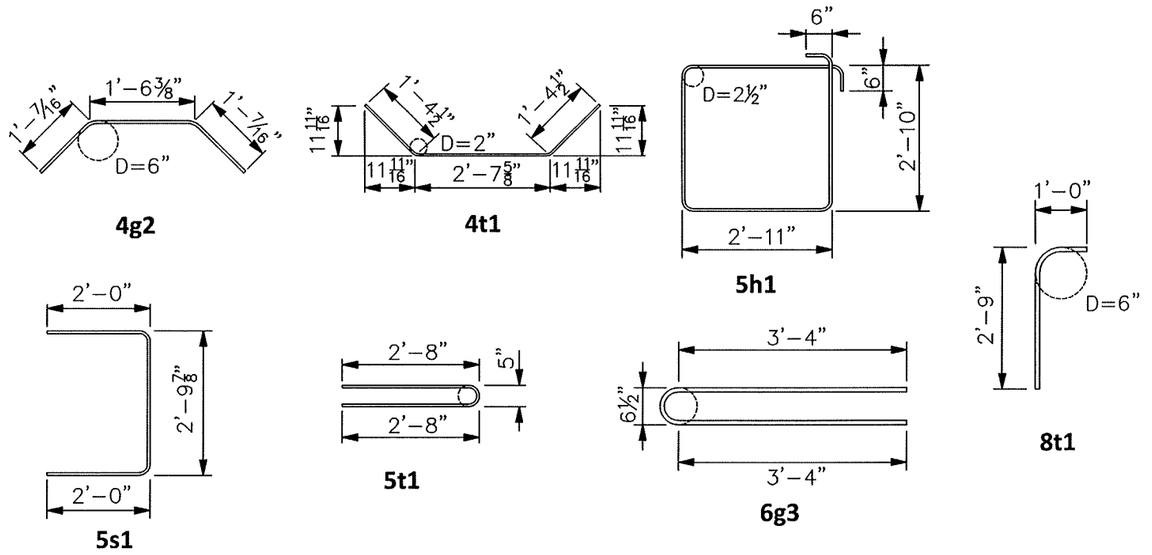
BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
5c1		CLOSURE POURS	36	19'–8"	738.40
REINFORCING STEEL, GALVANIZED (LBS)			TOTAL (LBS)		738.40

PRECAST MIDDLE MODULE REINFORCING BAR LIST

ONE MODULE

BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
4a1		TOP TRAVERSE	79	6'–5"	338.60
4b1		TOP LONGITUDINAL	18	18'–9½"	226.00
5a1		BOTTOM TRAVERSE	79	6'–5"	528.70
5b1		BOTTOM LONGITUDINAL	18	18'–9½"	352.80
5t1		SIDE TIE BARS	158	5'–9"	947.60
8b1		END CONNECTOR	14	11'–0"	411.20
REINFORCING STEEL, GALVANIZED (LBS)			TOTAL (LBS)		2804.90

BENT BAR DETAILS



52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

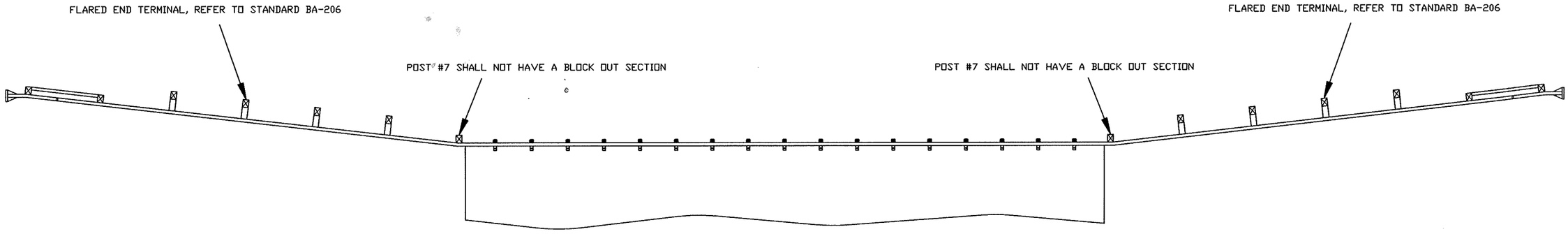
ABUTMENTS; STUB PIERS; NA

52' 00" SPAN

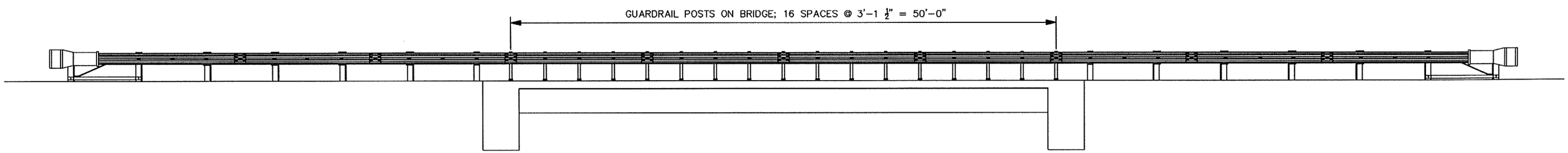
REINFORCING BAR LIST

STATION; 1+48.68 SKEW: 0°

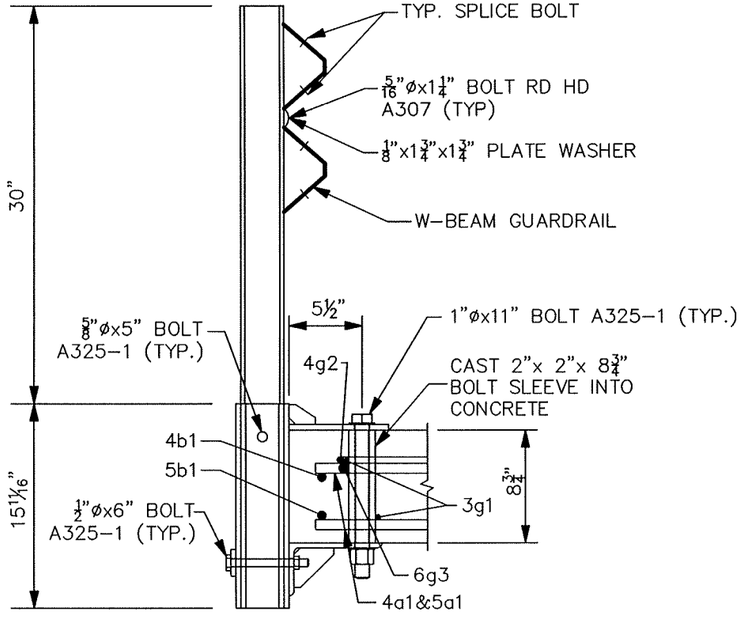
BUCHANAN COUNTY, IOWA FHWA # 84260



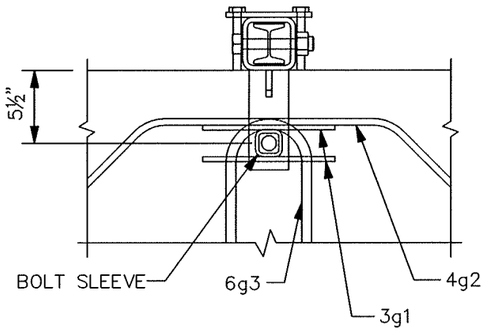
PLAN VIEW



TYPICAL SECTION AT BRIDGE



SIDE VIEW



TOP VIEW

MGS BRIDGE RAIL SYSTEM DETAILS

GUARDRAIL NOTES:

ALL BOLTS USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS TO THE REQUIREMENTS OF ASTM A563 GRADE A OR BETTER. ALL NUTS, BOLTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM 36, OR EQUIVALENT, AND BE GALVANIZED ACCORDING TO ASTM A123.

BAR NO. 3g1 SHALL BE TACK WELDED TO THE BOLT SLEEVE BEFORE GALVANIZATION (SEE REBAR LIST ON SHEET X.07 FOR BAR DETAILS)

FOR MATERIALS LIST AND OTHER INFORMATION REGURDING GUARDRAIL INSTALLATION REFER TO STANDARDS BA-200 & BA-206

ALL ITEMS REQUIRED FOR ASSEMBLY AND INSTALLATION OF THE GUARDRAIL BRACKETS SHALL BE INCLUDED IN THE BID ITEM FOR STEEL BEAM GUARDRAIL.

Estimated Guardrail Quantities		
Item	Unit	Quantity
Steel Beam Guardrail	L.F.	100
Steel Beam Guardrail Flared End Terminal	Each	4

Guardrail Bracket Part Tabulation		
Part	Quantity	Surface Finish
Top Bracket Assembly	34	Glavanized
Bottom Bracket Assembly	34	Glavanized
Bolt Sleeves	34	Glavanized
Post	34	Glavanized
1/8" x 1 3/4" x 1 3/4" Plate Washer	34	Glavanized

Tabulation of Bolts for Bracket						
DIAMETER	LENGTH	DESCRIPTION	BOLTS		NUTS	WASHERS
			QUANTITY	CLASS	QUANTITY	QUANTITY
1/2"	6"		68	A325-1	68	0
5/8"	5"		34	A325-1	34	0
1"	11"		34	A325-1	34	68
5/16"	1 1/4"	Round Head	34	A307	34	0

52' 00" x 30' 00" P.B.G. Bridge

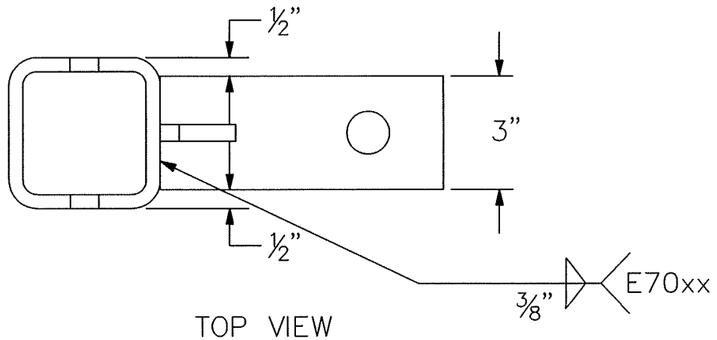
Located on Dillon Ave. over Unnamed Creek

52' 00" SPAN

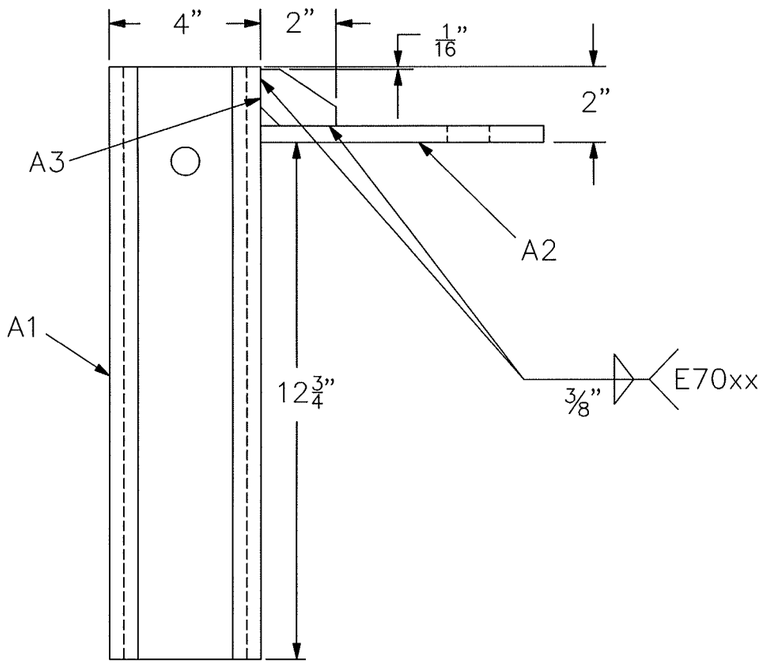
GUARDRAIL DETAILS

STATION; 1+48.68 SKEW: 0°

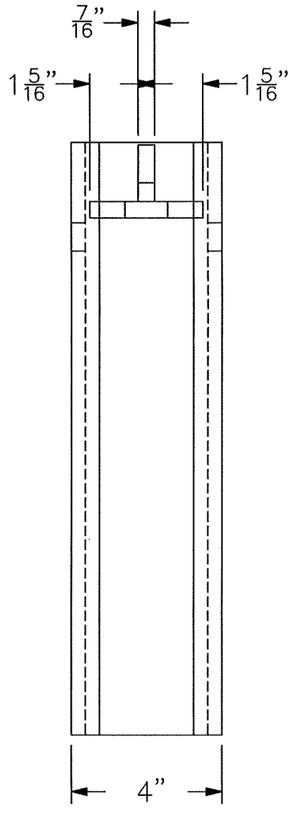
BUCHANAN COUNTY, IOWA FHWA # 84260



TOP VIEW

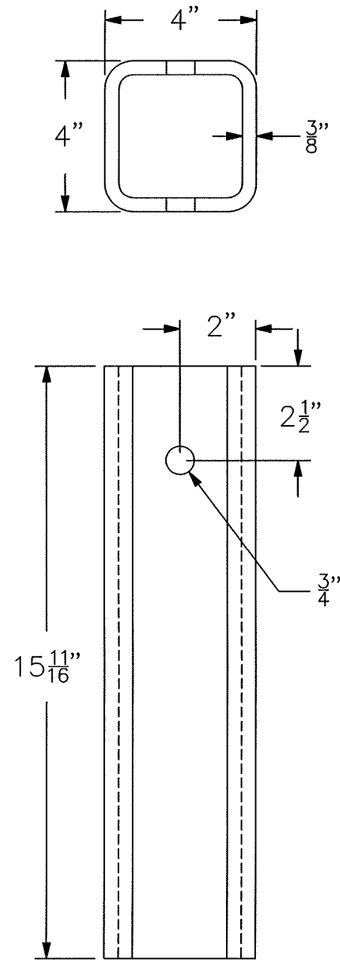


SIDE VIEW



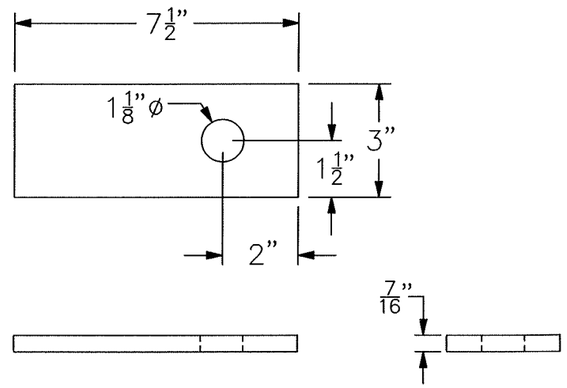
END VIEW

PART A1



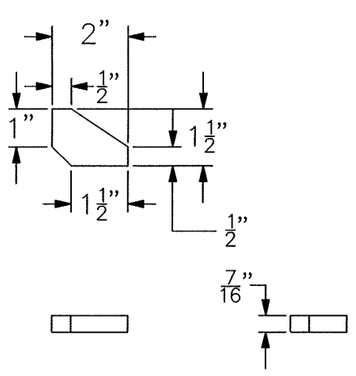
4x4x0.375
SQUARE TUBE

PART A2



TOP MOUNTING PLATE

PART A3

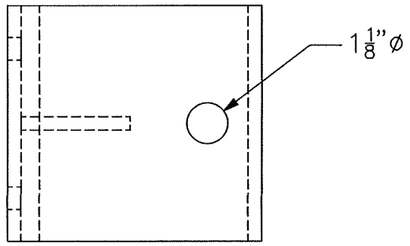


TOP MOUNTING PLATE
GUSSET

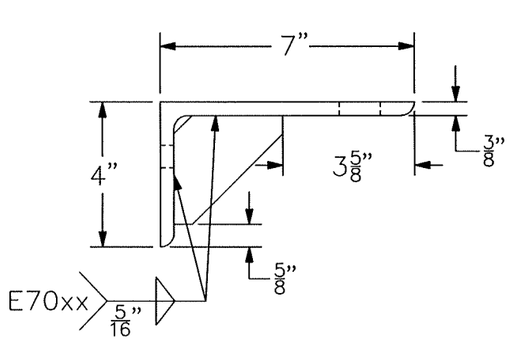
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
52' 00" SPAN

GUARDRAIL BRACKET TOP ASSEMBLY

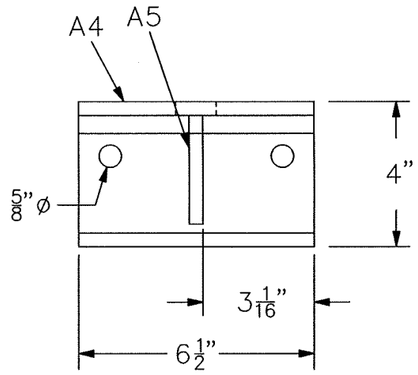
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



TOP VIEW

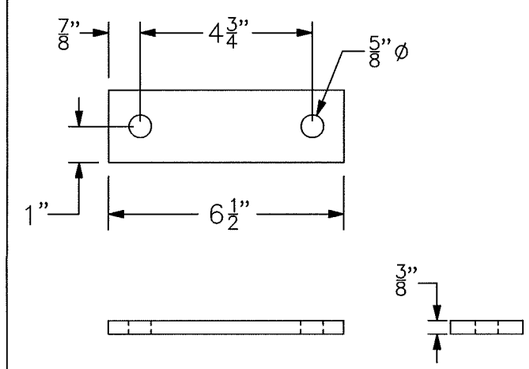


SIDE VIEW



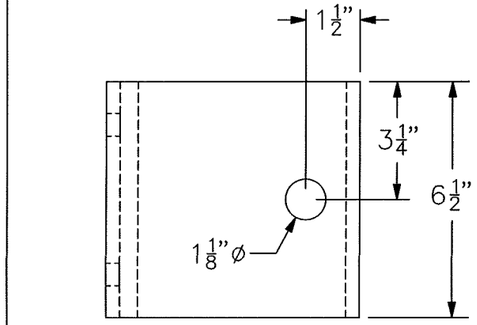
FRONT VIEW

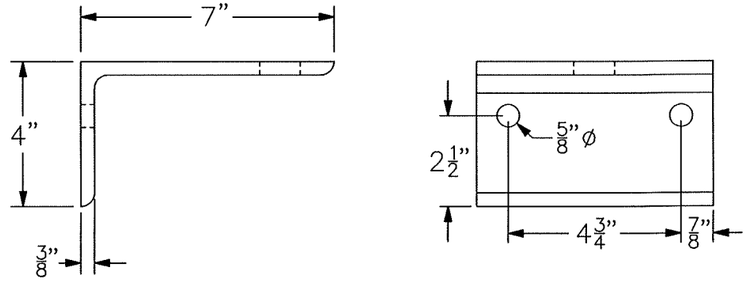
PART A6



BACKSIDE RETAINER PLATE

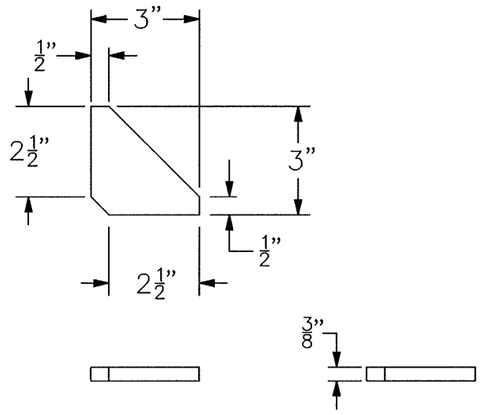
PART A4





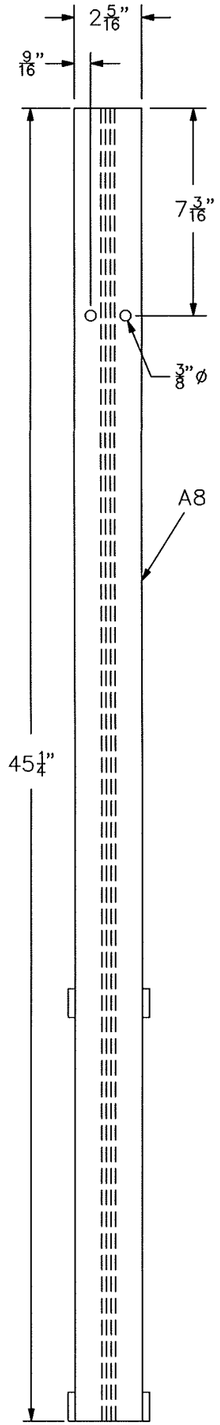
BOTTOM MOUNTING PLATE

PART A5

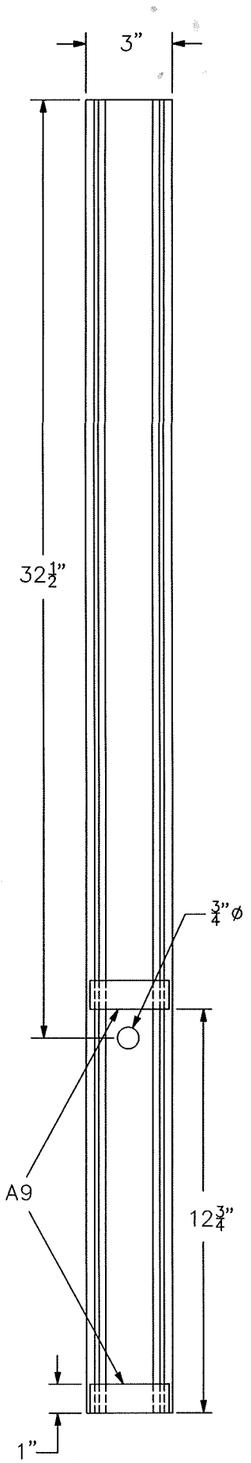


BOTTOM MOUNTING PLATE
GUSSET

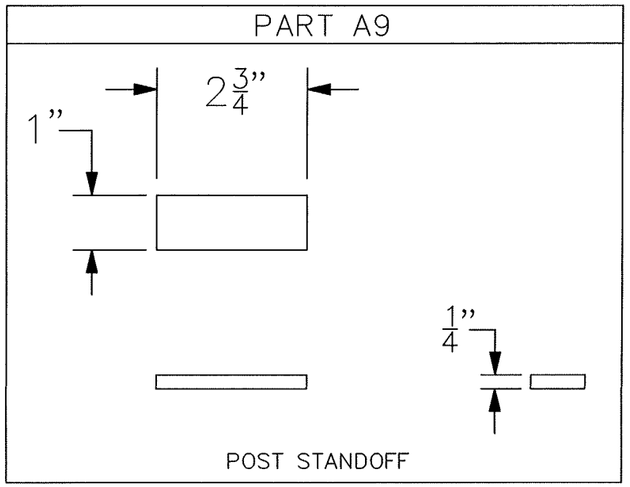
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
52' 00" SPAN
GUARDRAIL BRACKET BOTTOM ASSEMBLY
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

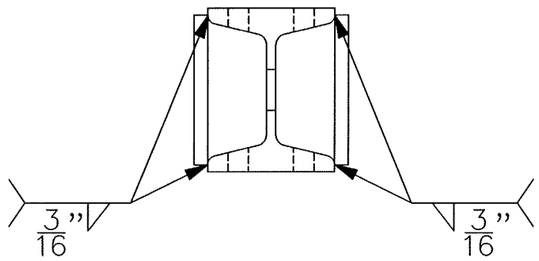


FRONT VIEW

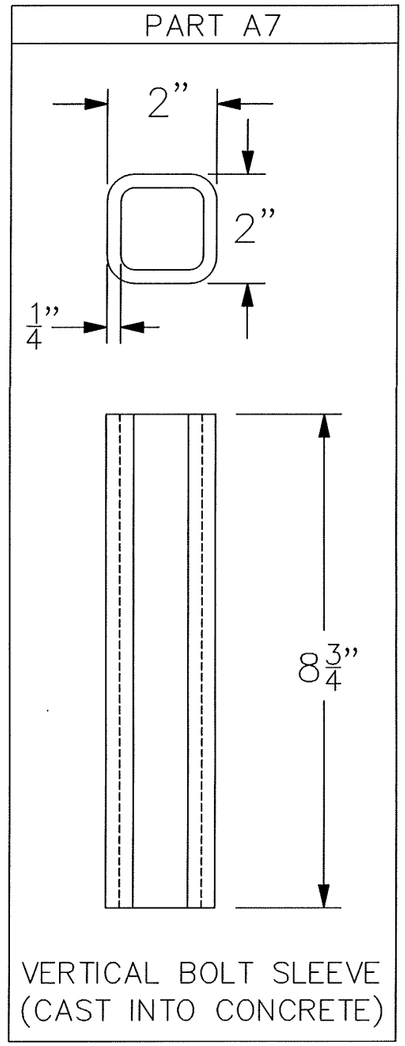


SIDE VIEW





TOP VIEW



52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

52' 00" SPAN

GUARDRAIL POST AND BOLT SLEEVE DETAILS

STATION; 1+48.68 SKEW: 0°

BUCHANAN COUNTY, IOWA FHWA # 84260

INDEX OF SHEETS	
No.	Description
Y.01	TITLE SHEET
Y.02	ESTIMATED QUANTITIES, GENERAL NOTES, & MISC. TABULATIONS
Y.03	ABUTMENT DETAILS
Y.04	FRAMING PLAN
Y.05	DECK CROSS SECTION
Y.06	DECK REINFORCING LAYOUT
Y.07	REINFORCING BAR LIST
Y.08	FINISHED DECK GRADES
Y.09	GUARDRAIL DETAILS
Y.10	GUARDRAIL BRACKET TOP ASSEMBLY
Y.11	GUARDRAIL BRACKET BOTTOM ASSEMBLY
Y.12	GUARDRAIL POST AND BOLT SLEEVE DETAILS

SECTION Y

CAST IN PLACE DECK

BID ALTERNATIVE PLANS

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
TITLE SHEET
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

ESTIMATED PROJECT QUANTITIES CAST IN PLACE BID OPTION						
PROJECT NUMBER: IBRC-CO10(85)--8E-10						
52'-00"x30"-00" PRESS BREAK GIRDER BRIDGE						
REF.#	ITEM CODE	ITEM DESCRIPTION	UNIT	DIVISION I (IBRC FUNDS)	DIVISION II (HBP FUNDS)	TOTAL
1	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	C.Y.	87.23		87.23
2	2404-7775007	REINFORCING STEEL, GALVANIZED	L.B.	15846.00		15846.00
3	2408-7800000	STRUCTURAL STEEL	L.B.	1049.00		1049.00
4	2505-4008300	STEEL BEAM GUARDRAIL	L.F.		100.00	100.00
5	2528-8445110	TRAFFIC CONTROL	L.S.	0.95	0.05	1.00
6	2533-4980005	MOBILIZATION	L.S.	0.95	0.05	1.00

REF.#	ITEM CODE	DESCRIPTION
1	2403–0100010	STRUCTURAL CONCRETE BRIDGE All structural concrete shall consist of a Class "C" mix. Certified plant inspection shall apply to this bid item. This item shall also include all materials and labor for the stay in place form work that shall be placed over the top of the press break girder.
2	2404–7775007	REINFORCING STEEL, GALVANIZED All reinforcing steel shall consist of grade 60 steel. All reinforcing steel shall be hot–dip galvanized in accordance to ASTM A 767. All wire ties and chairs shall be galvanized in accordance to ASTM 123.
2	2408–7800000	STRUCTURAL STEEL All structural steel shall conform to AASHTO M270 (ASTM A709) 50W. All steel shall be galvanized in accordance to ASTM 123. This bid item includes all work and materials associated with the diaphragms for the bridge. For further information please refer to sheet Y.04.
4	2505–4008300	STEEL BEAM GUARDRAIL Item shall include all posts, brackets, and any additional hardware and labor for installation of guardrail on the bridge. Please refer to sheets Y.09 through Y.12 for information regarding this item.
5	2528–8445110	TRAFFIC CONTROL Item shall only include costs of for constructing the alternative portion of the project.
6	2533–4980005	MOBILIZATION Item shall only include costs of for constructing the alternative portion of the project.

GENERAL NOTES & INFORMATION

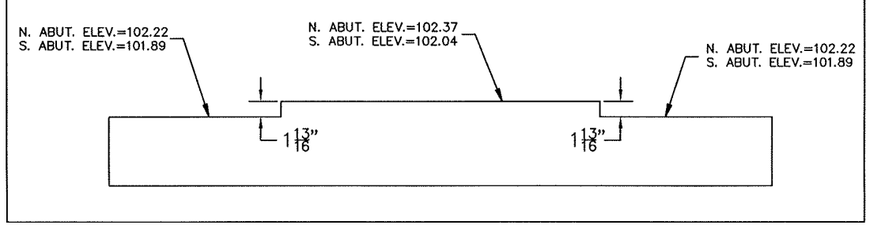
DATA LISTED BELOW IS FOR INFORMATION PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS

STAY IN PLACE METAL DECKING OR ANOTHER ALTERNATIVE CLEAR SPAN FORMING METHOD APPROVED BY THE PROJECT ENGINEER SHALL BE USED OVER THE TOP OF THE PRESS BREAK GIRDER TO ALLOW FOR IN–SERVICE INSPECTION OF THE INTERIOR OF THE GIRDER. ALL STEEL TO BE USED FOR THE STAY IN PLACE DECKING INCLUDING FORMS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE TO ASTM 123.

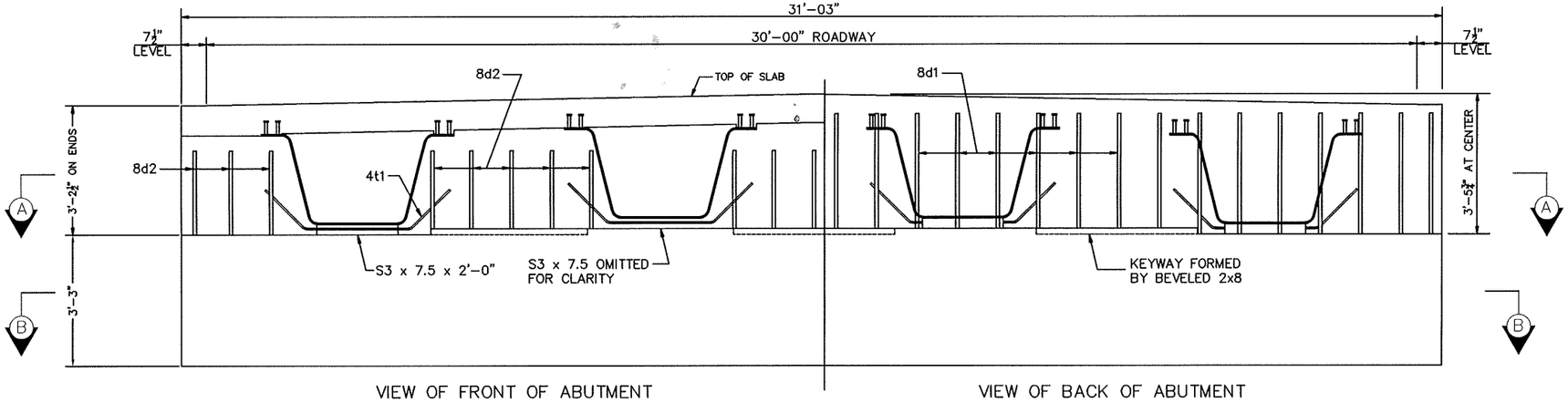
CERTIFIED PLANT INSPECTION SHALL APPLY TO ALL ITEMS INCLUDING CONCRETE.

MISC. TABULATIONS AND DETAILS

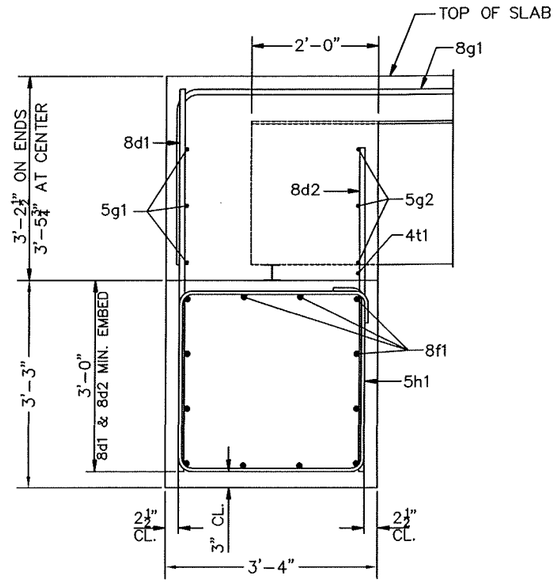
ABUTMENT STEP DIAGRAM



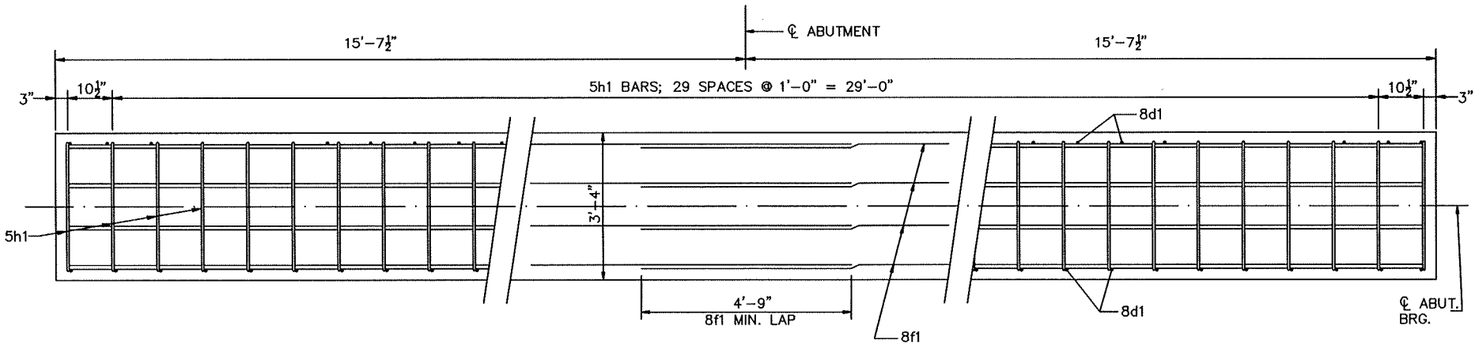
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Avenue over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52'–00" SPAN
ESTIMATED QUANTITIES, GEN. NOTES, & MISC. TABULATIONS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



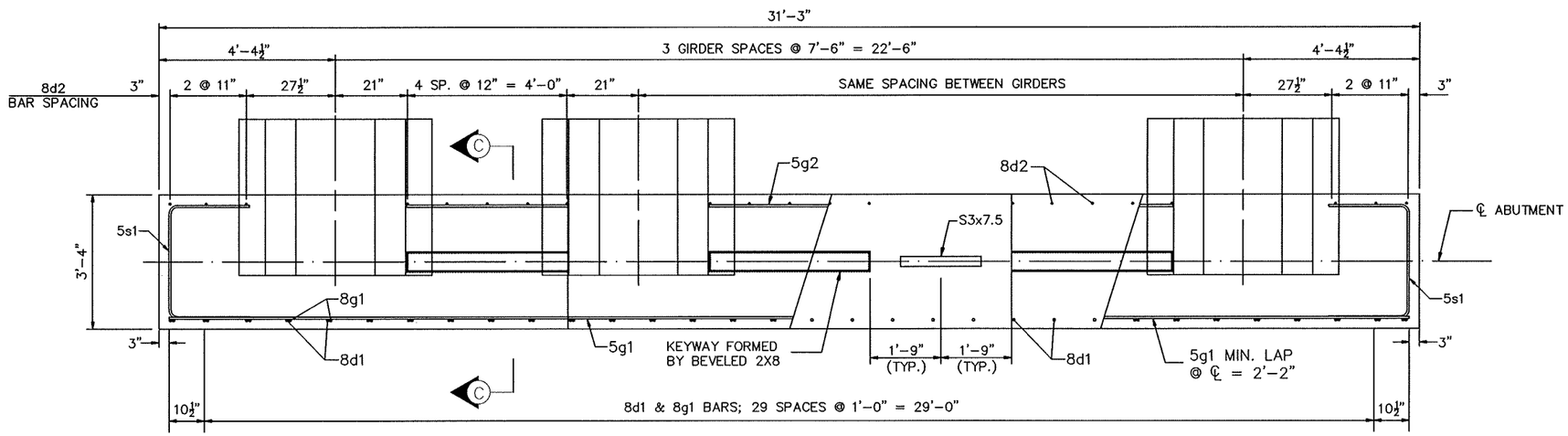
ELEVATION VIEW OF ABUTMENT



PART SECTION C–C



SECTION B–B



SECTION A–A

ABUTMENT NOTES:

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

IF NECESSARY TO PREVENT DAMAGE TO THE END OF THE BRIDGE DECK OR BACKWALL FROM CONSTRUCTION EQUIPMENT, AN APPROPRIATE METHOD OF PROTECTION APPROVED BY THE ENGINEER SHALL BE PROVIDED BY THE BRIDGE CONTRACTOR AT NO EXTRA COST TO THE COUNTY OR STATE.

FOR ABUTMENT STEP DIAGRAM PLEASE REFER TO SHEET Y.02 FOR DETAILS

WEEP HOLES SHALL BE PLACED IN THE SOUTH ABUTMENT TO ALLOW WATER TO DRAIN FROM THE INTERIOR OF GIRDERS. PLEASE REFER TO SHEET U.06 FOR DETAILS.

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

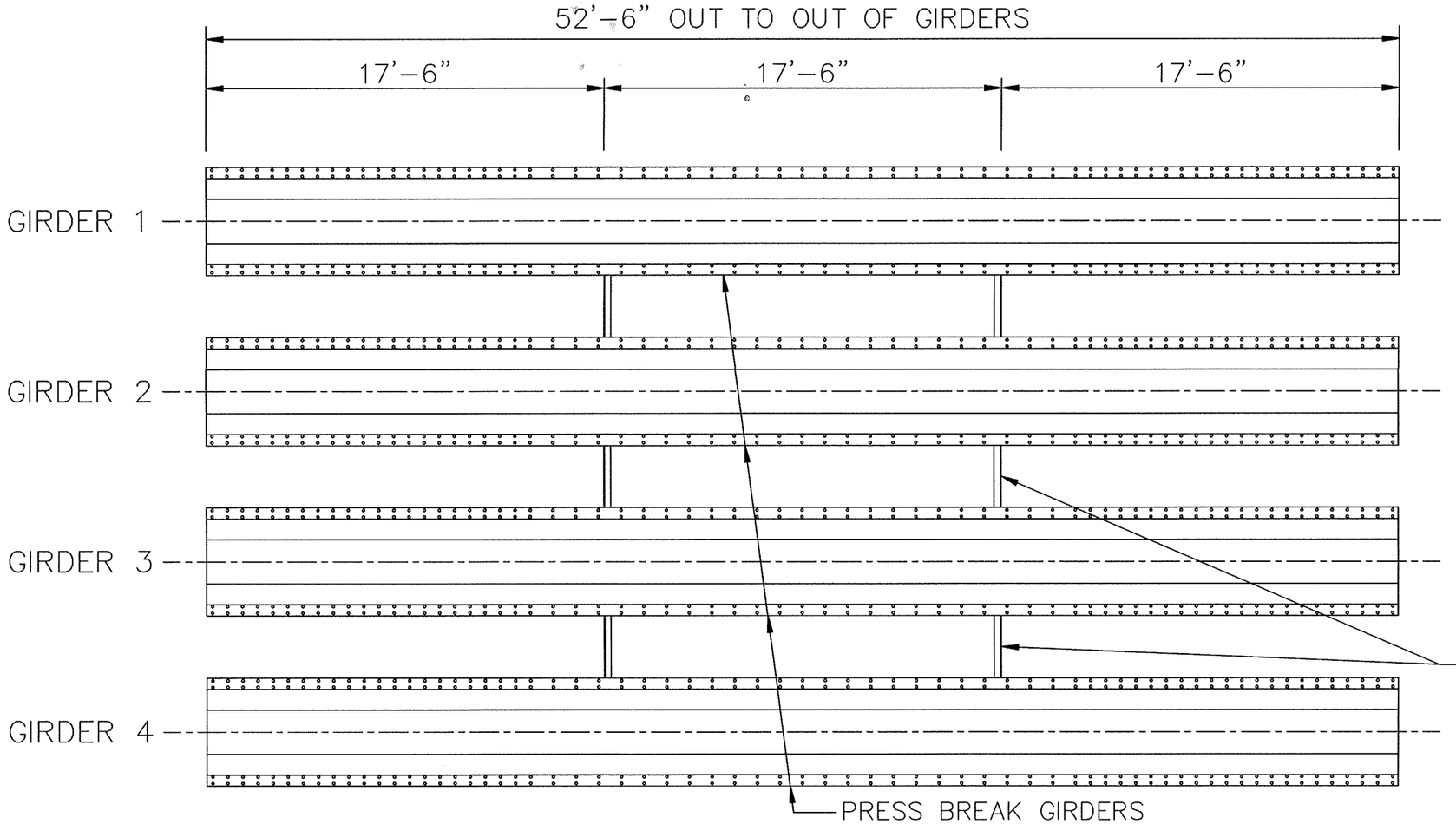
ABUTMENTS; STUB PIERS; NA

52' 00" SPAN

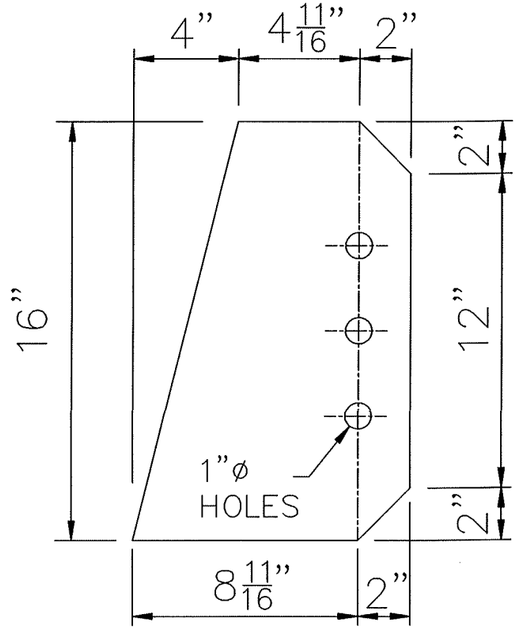
ABUTMENT DETAILS

STATION; 1+48.68 SKEW: 0°

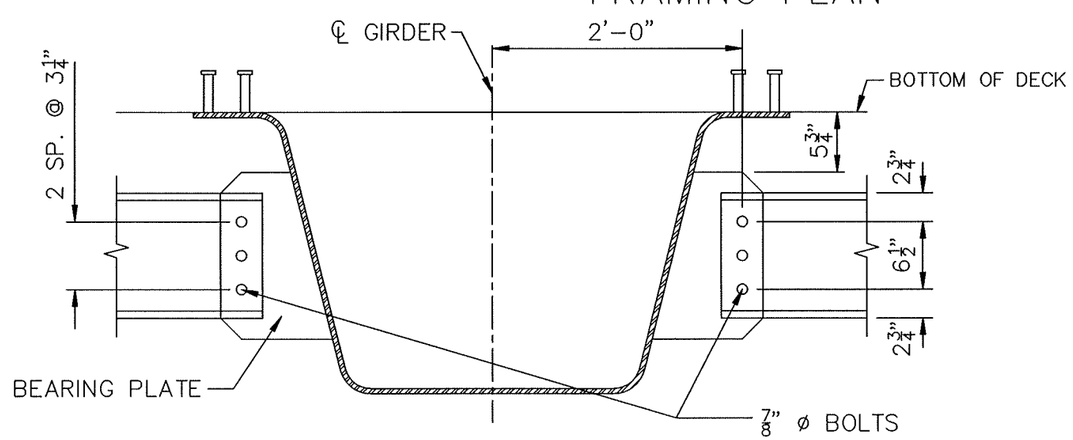
BUCHANAN COUNTY, IOWA FHWA # 84260



FRAMING PLAN



BEARING PLATE DETAILS



DIAPHRAGM CONNECTION DETAILS

BACK SIDE OF BEARING PLATES SHALL BE MILLED TO FIT THE SIDE OF THE BEAM.

BEARING PLATES SHALL BE WELDED TO PRESS BREAK GIRDERS ON BOTH SIDES WITH A 3/8" FILLET WELD.

BEARING PLATES SHALL BE CONSTRUCTED FROM 3/4" PLATE STEEL

ALL DIAPHRAGMS AND BEARING PLATES SHALL BE GALVANIZED IN ACCORDANCE TO ASTM 123.

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
FRAMING PLAN
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

SUPERSTRUCTURE NOTES:

THE FLOOR SLAB AS SHOWN INCLUDED ½" WEARING SURFACE.

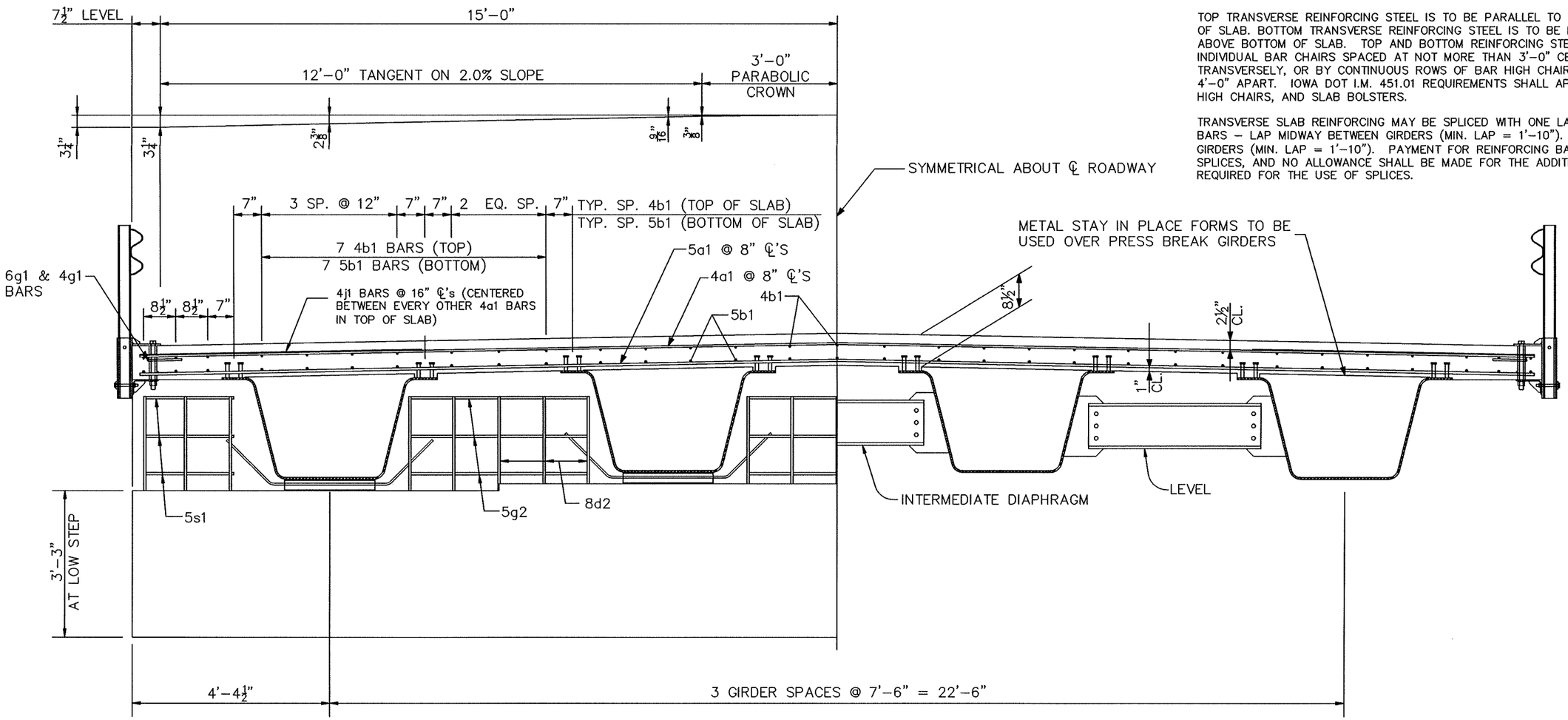
FORMS FOR THE SLAB ARE TO BE SUPPORTED BY THE GIRDERS.

METAL STAY IN PLACE FORMS OR ANOTHER ALTERNATIVE CLEAR SPAN FORMING METHOD APPROVED BY THE PROJECT ENGINEER SHALL BE USED OVER THE PRESS BREAK GIRDERS. ALL PIECES THAT ARE COMPOSED OF STEEL USED FOR THE FORMS SHALL BE GALVANIZED IN ACCORDANCE TO ASTM 123. IF ANY PIECES OF THE FORMS ARE TO BE WELDED TO THE GIRDERS, ITEMS SHALL BE WELDED TO THE GIRDERS BEFORE THE GIRDERS ARE GALVANIZED.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR SHALL BE 2 INCHES UNLESS OTHERWISE NOTED OR SHOWN.

TOP TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 2 ½" CLEAR BELOW TOP OF SLAB. BOTTOM TRANSVERSE REINFORCING STEEL IS TO BE PARALLEL TO AND 1" CLEAR ABOVE BOTTOM OF SLAB. TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED BY INDIVIDUAL BAR CHAIRS SPACED AT NOT MORE THAN 3'–0" CENTERS LONGITUDINALLY AND TRANSVERSELY, OR BY CONTINUOUS ROWS OF BAR HIGH CHAIRS OR SLAB BOLSTERS SPACED 4'–0" APART. IOWA DOT I.M. 451.01 REQUIREMENTS SHALL APPLY FOR BAR CHAIRS, BAR HIGH CHAIRS, AND SLAB BOLSTERS.

TRANSVERSE SLAB REINFORCING MAY BE SPLICED WITH ONE LAP LOCATED AS FOLLOWS: TOP BARS – LAP MIDWAY BETWEEN GIRDERS (MIN. LAP = 1'–10"). BOTTOM BARS – LAP OVER GIRDERS (MIN. LAP = 1'–10"). PAYMENT FOR REINFORCING BARS SHALL BE BASED ON NO SPLICES, AND NO ALLOWANCE SHALL BE MADE FOR THE ADDITIONAL LENGTH OF BAR REQUIRED FOR THE USE OF SPLICES.



HALF SECTION NEAR ABUTMENT

HALF SECTION NEAR MIDSPAN

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN

DECK CROSS SECTION

STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

℄ S. ABUTMENT

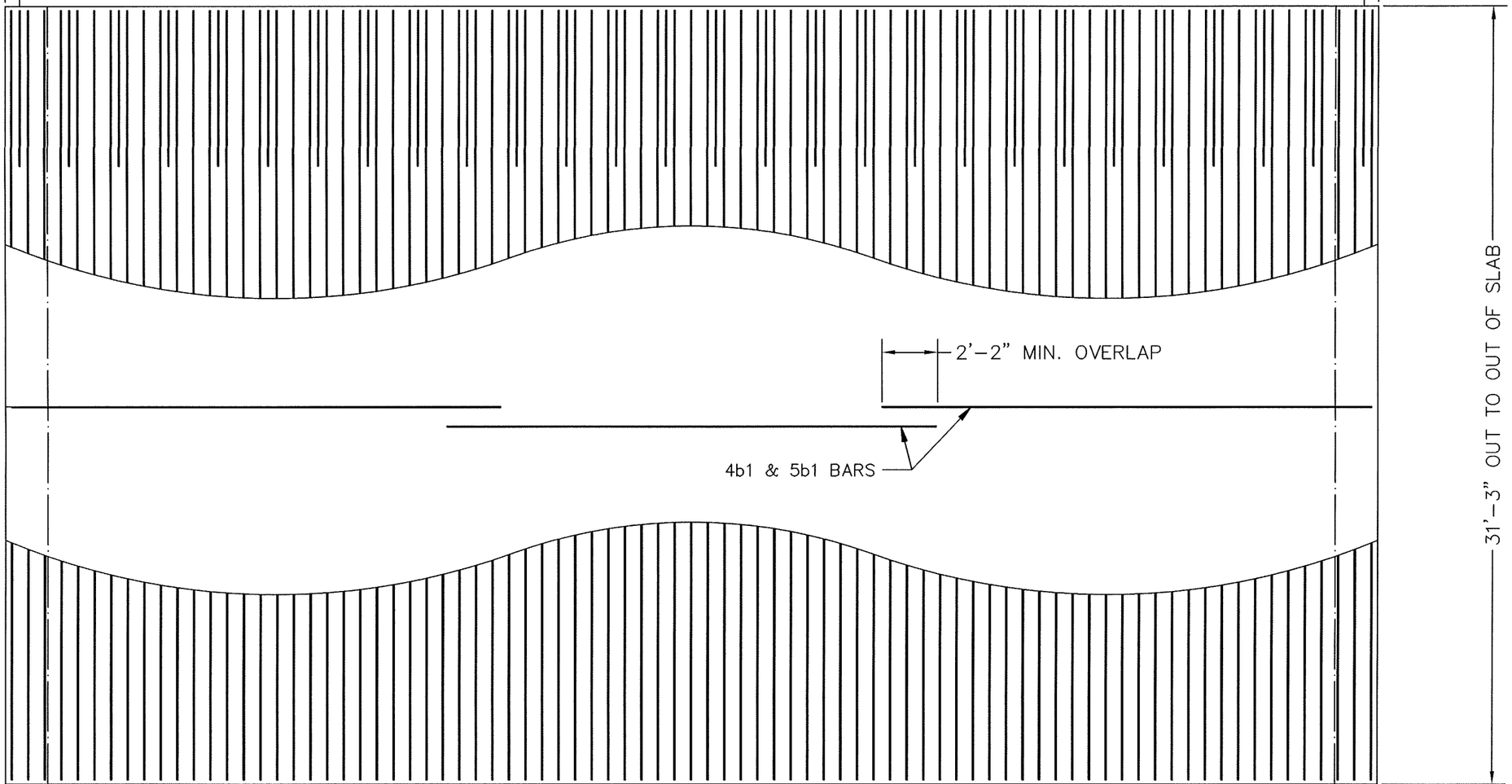
TOP MAT

℄ N. ABUTMENT

1'–8" — 51'–10" CENTER TO CENTER OF BEARING — 1'–8"

3" — 4a1 BARS; 82 SPACES @ 8" = 54'–8" — 3"

7" — 4j1 BARS; 27 SPACES @ 2'–0" = 54'–0" — 7"



3" — 5a1 BARS; 82 SPACES @ 8" = 54'–8" — 3"

55'–2" OUT TO OUT OF SLAB

BOTTOM MAT

52' 00" x 30' 00" P.B.G. Bridge

Located on Dillon Ave. over Unnamed Creek

ABUTMENTS; STUB PIERS; NA

52' 00" SPAN

DECK REINFORCING LAYOUT

STATION; 1+48.68 SKEW: 0°

BUCHANAN COUNTY, IOWA FHWA # 84260

ABUTMENT REINFORCING BAR LIST

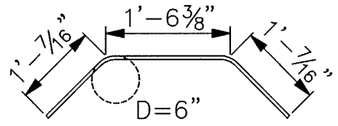
ONE ABUTMENT

BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
4t1		UNDER BEAMS AT ABUTMENT	4	5'–4⅝"	14.40
5g1		AUBTMENT LONGITUDINAL BACK TOP	6	16'–5½"	103.00
5g2		ABUTMENT LONGITUDINAL FRONT TOP	9	4'–0"	37.50
5h1		ABUTMENT HOOPS	32	12'–6"	417.20
5s1		ABUTMENT SIDES	6	6'–9⅞"	42.70
8d1		ABUTMENT VERTICAL BACK	32	6'–0"	512.60
8d2		ABUTMENT VERTICAL FRONT	21	5'–1"	285.00
8f1		ABUTMENT LONGITUDINAL BOTTOM	24	17'–9"	1137.40
8g1		ABUTMENT VERTICAL TOP	32	14'–9"	1260.20
REINFORCING STEEL, GALVANIZED (LBS)			TOTAL (LBS)		3810.00

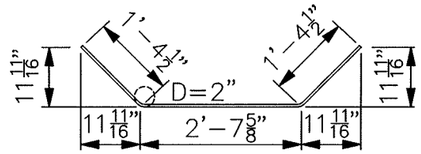
DECK REINFORCING BAR LIST

BAR	SHAPE	LOCATION	QUANTITY	LENGTH	WEIGHT
3g1		DECK, GUARDRAIL BOLT SLEEVES	68	0'–10"	22
4a1		DECK, TOP TRAVERSE	83	30'–11"	1,714
4b1		DECK, TOP LONGITUDINAL	93	19'–8"	1,222
4g2		DECK, GUARDRAIL BOLT SLEEVES	34	3'–7¼"	82
4j1		DECK, TOP OVERHANG TRAVERSE	56	6'–3"	234
5a1		DECK, BOTTOM TRAVERSE	83	30'–11"	2,676
5b1		DECK, BOTTOM LONGITUDINAL	93	19'–8"	1,908
6g3		DECK, TOP GUARDRAIL BOLT SLEEVES	34	7'–2½"	368
REINFORCING STEEL, BLACK (LBS)			TOTAL (LBS)		8,226

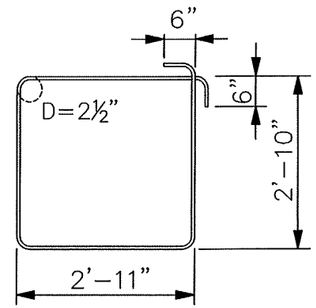
BENT BAR DETAILS



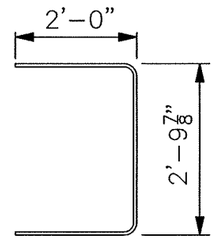
4g2



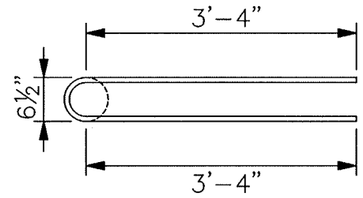
4t1



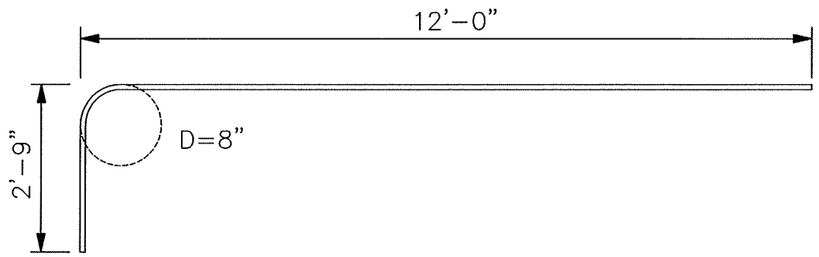
5h1



5s1

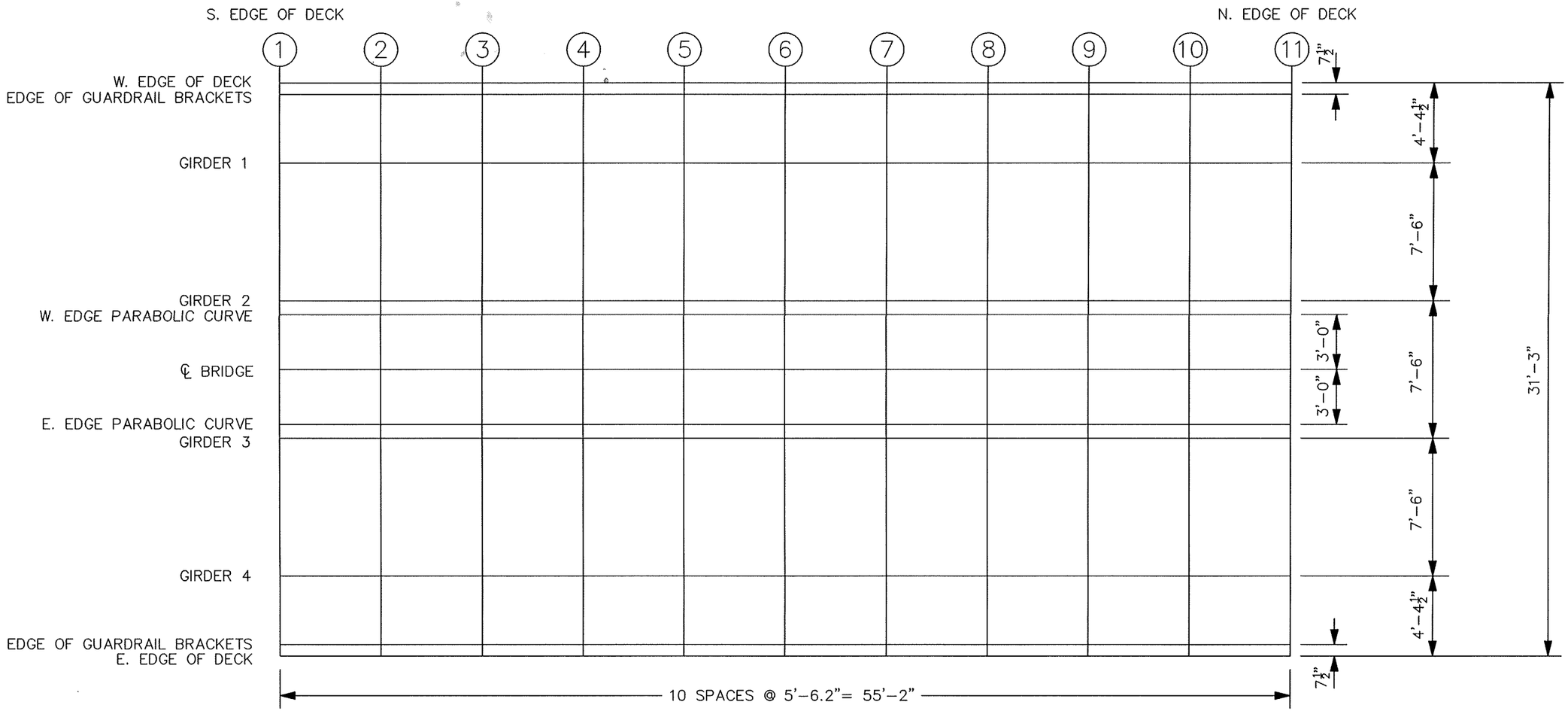


6g3



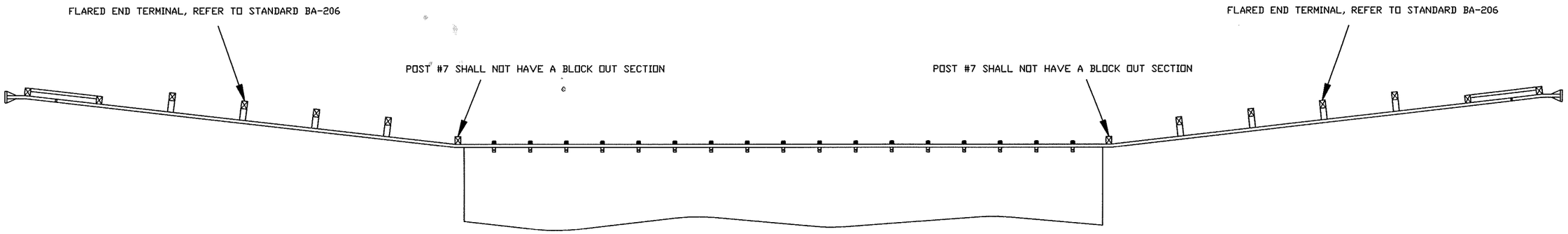
8g1

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
REINFORCING BAR LIST
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

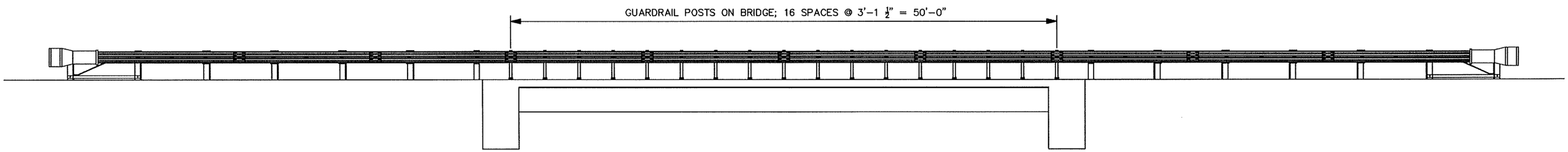


Finished Deck Grades											
Line	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**
W. EDGE OF DECK	105.01	105.04	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36
W. SIDE GUARDRAIL BRACKETS	105.01	105.04	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36
GIRDER 1	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36	105.40	105.44
GIRDER 2	105.23	105.27	105.30	105.34	105.37	105.41	105.44	105.48	105.52	105.55	105.59
W. EDGE PARABOLIC CROWN	105.25	105.28	105.32	105.35	105.39	105.43	105.46	105.50	105.53	105.57	105.60
CENTERLINE BRIDGE	105.28	105.32	105.35	105.39	105.42	105.46	105.49	105.53	105.56	105.60	105.63
E. EDGE PARABOLIC CROWN	105.25	105.28	105.32	105.35	105.39	105.43	105.46	105.50	105.53	105.57	105.60
GIRDER 3	105.23	105.27	105.30	105.34	105.37	105.41	105.44	105.48	105.52	105.55	105.59
GIRDER 4	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36	105.40	105.44
E. SIDE GUARDRAIL BRACKETS	105.01	105.04	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36
E. EDGE OF DECK	105.01	105.04	105.08	105.12	105.15	105.19	105.22	105.26	105.29	105.33	105.36

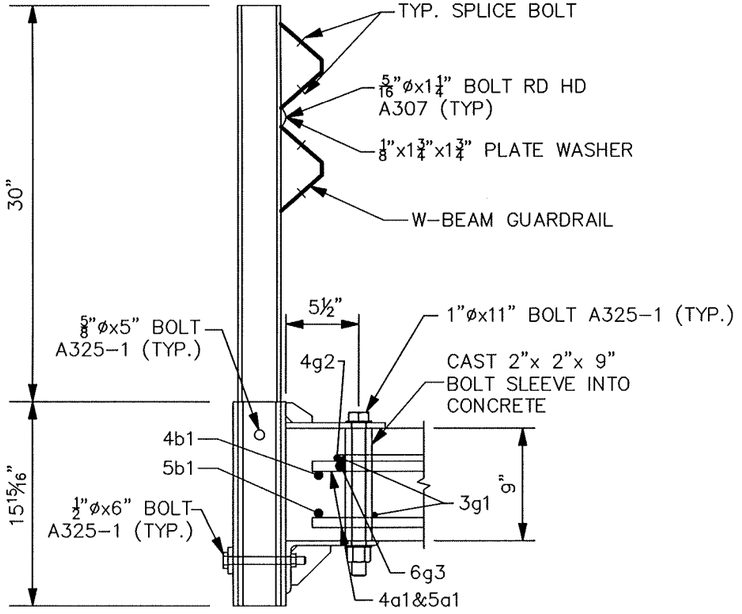
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Avenue. over Unnamed Creek
ABUTMENTS; STUB PIERS; NA
52' 00" SPAN
FINISHED DECK GRADES
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



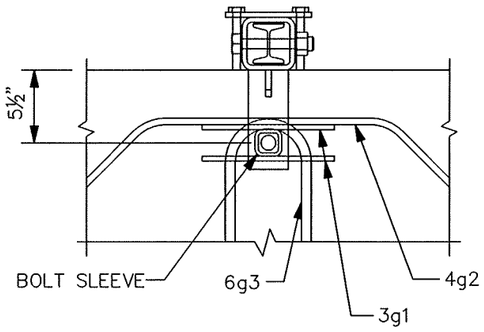
PLAN VIEW



TYPICAL SECTION AT BRIDGE



SIDE VIEW



TOP VIEW

MGS BRIDGE RAIL SYSTEM DETAILS

GUARDRAIL NOTES:

ALL BOLTS USED SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 AND NUTS TO THE REQUIREMENTS OF ASTM A563 GRADE A OR BETTER. ALL NUTS, BOLTS, AND WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153.

STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM 36, OR EQUIVALENT, AND BE GALVANIZED ACCORDING TO ASTM A123.

BAR NO. 3g1 SHALL BE TACK WELDED TO THE BOLT SLEEVE BEFORE GALVANIZATION (SEE REBAR LIST ON SHEET Y.07 FOR BAR DETAILS)

FOR MATERIALS LIST AND OTHER INFORMATION REGURDING GUARDRAIL INSTALLATION REFER TO STANDARDS BA-200 & BA-206

ALL ITEMS REQUIRED FOR ASSEMBLY AND INSTALLATION OF THE GUARDRAIL BRACKETS SHALL BE INCLUDED IN THE BID ITEM FOR STEEL BEAM GUARDRAIL.

Estimated Guardrail Quantities

Item	Unit	Quantity
Steel Beam Guardrail	L.F.	100
Steel Beam Guardrail Flared End Terminal	Each	4

Guardrail Bracket Part Tabulation

Part	Quantity	Surface Finish
Top Bracket Assembly	34	Glavanized
Bottom Bracket Assembly	34	Glavanized
Bolt Sleeves	34	Glavanized
Post	34	Glavanized
1/8" x 1 3/4" x 1 3/4" Plate Washer	34	Glavanized

Tabulation of Bolts for Bracket

DIAMETER	LENGTH	DESCRIPTION	BOLTS		NUTS	WASHERS
			QUANTITY	CLASS	QUANTITY	QUANTITY
1/2"	6"		68	A325-1	68	0
5/8"	5"		34	A325-1	34	0
1"	11"		34	A325-1	34	68
5/16"	1 1/4"	Round Head	34	A307	34	0

52' 00" x 30' 00" P.B.G. Bridge

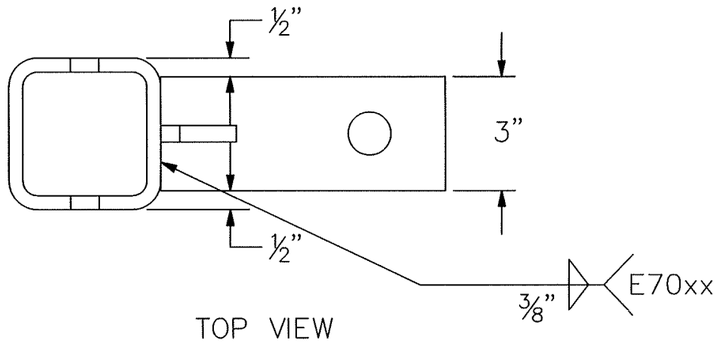
Located on Dillon Ave. over Unnamed Creek

52' 00" SPAN

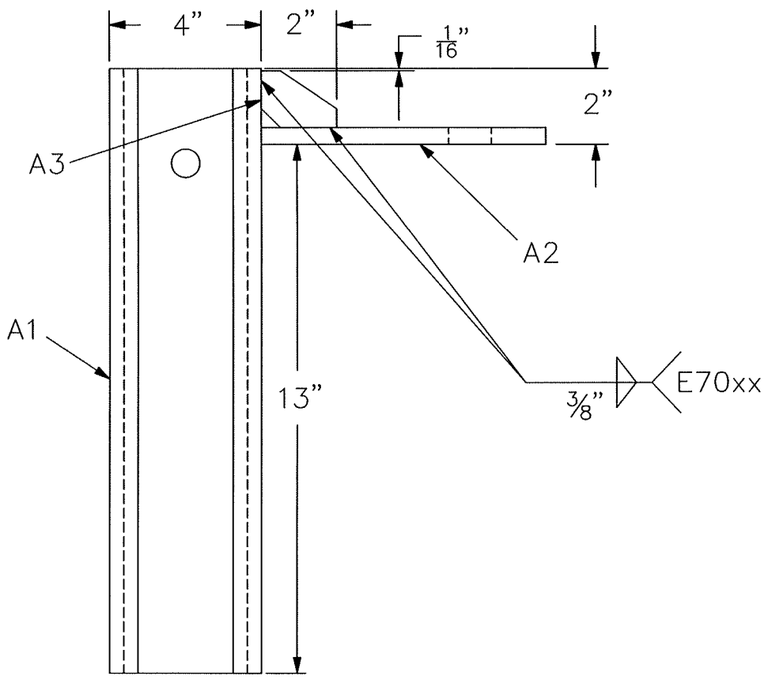
GUARDRAIL DETAILS

STATION; 1+48.68 SKEW: 0°

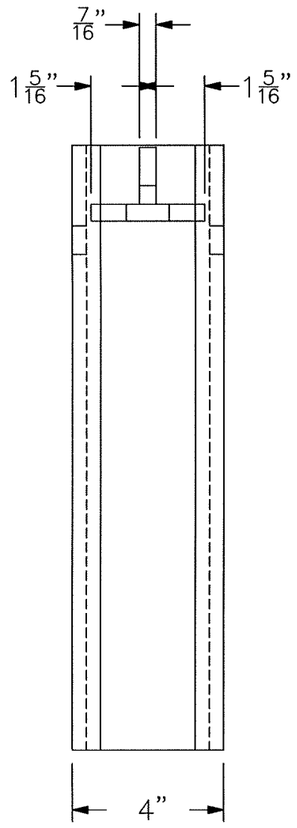
BUCHANAN COUNTY, IOWA FHWA # 84260



TOP VIEW

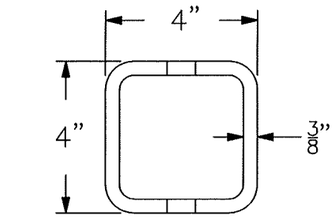


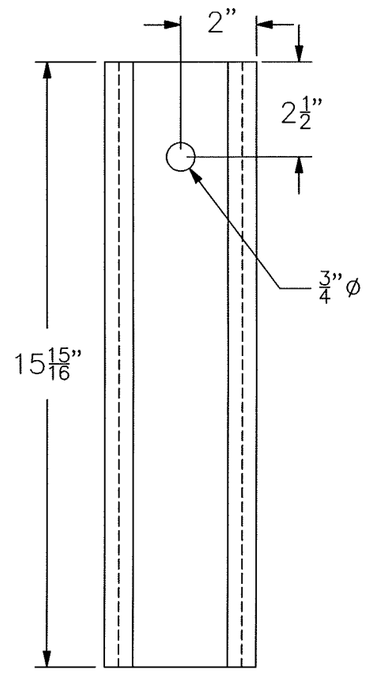
SIDE VIEW



END VIEW

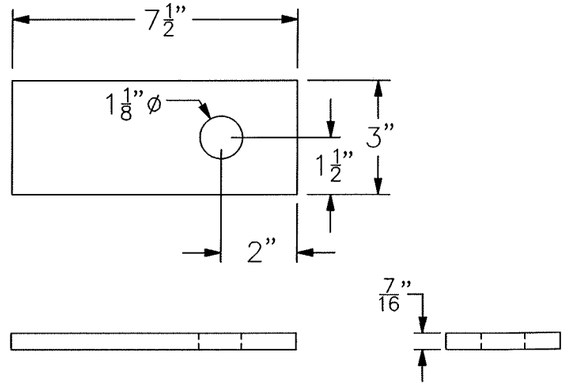
PART A1





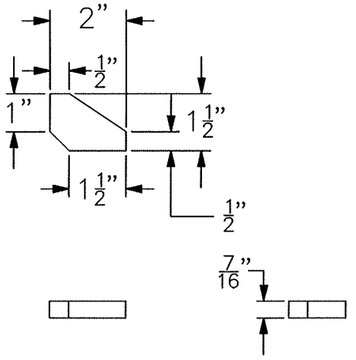
4x4x0.375
SQUARE TUBE

PART A2



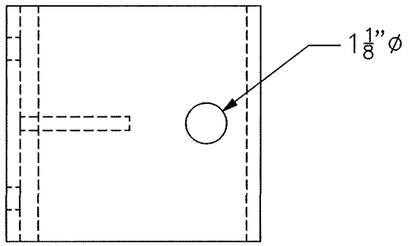
TOP MOUNTING PLATE

PART A3

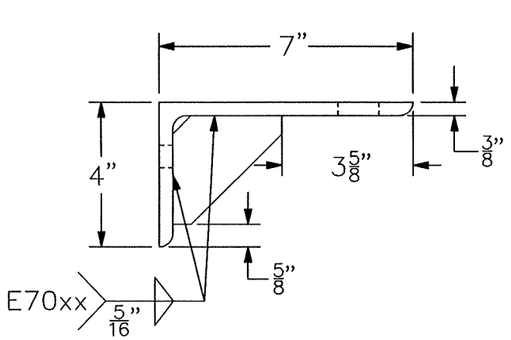


TOP MOUNTING PLATE
GUSSET

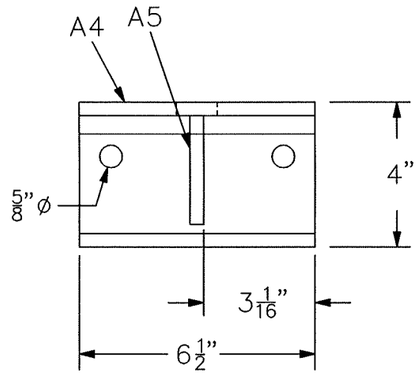
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
52' 00" SPAN
GUARDRAIL BRACKET TOP ASSEMBLY
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260



TOP VIEW

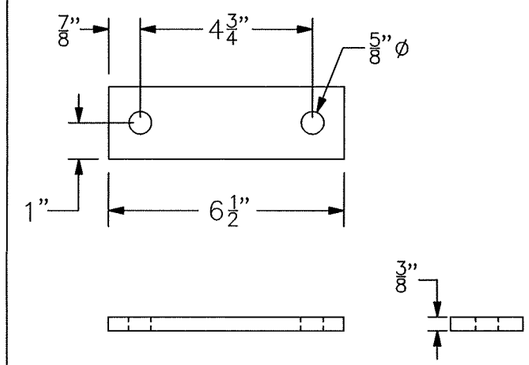


SIDE VIEW



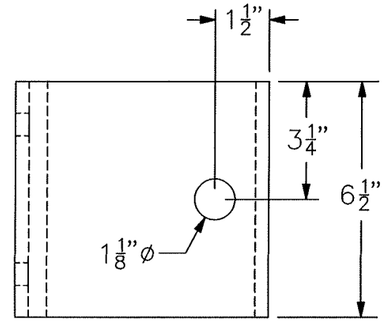
FRONT VIEW

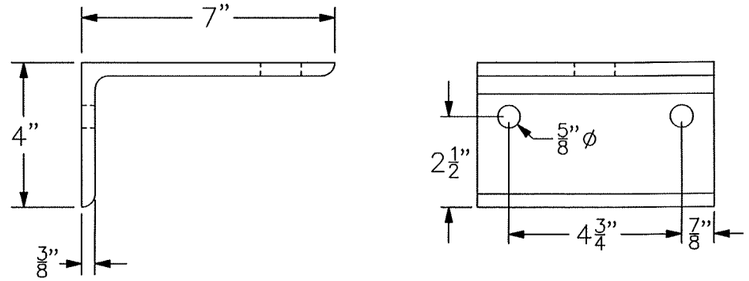
PART A6



BACKSIDE RETAINER PLATE

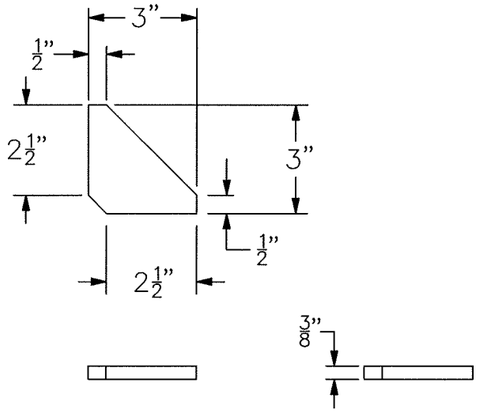
PART A4





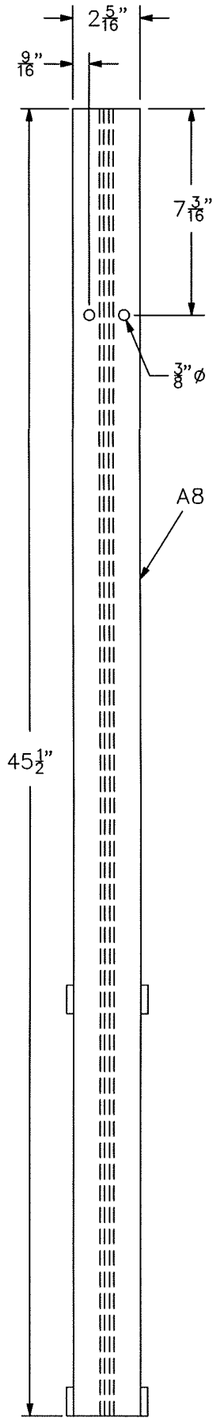
BOTTOM MOUNTING PLATE

PART A5

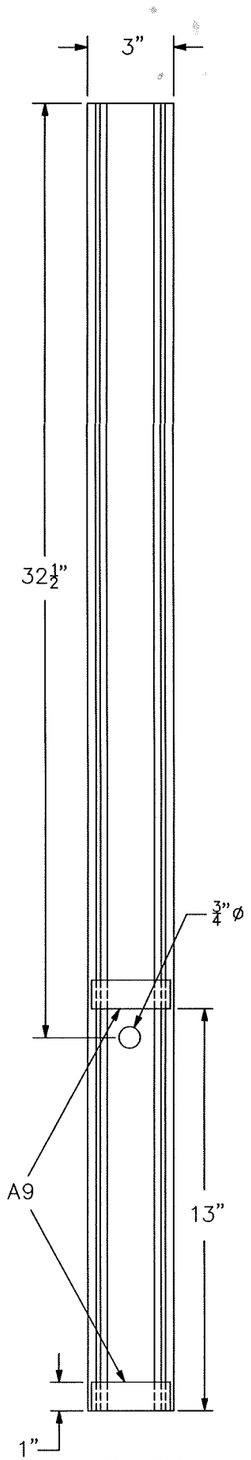


BOTTOM MOUNTING PLATE
GUSSET

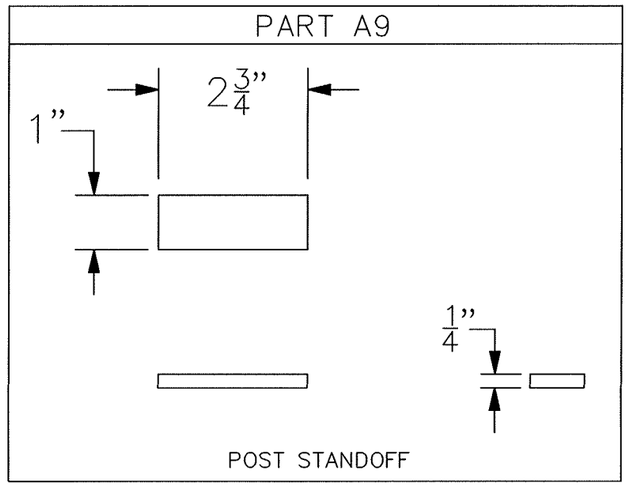
52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
52' 00" SPAN
GUARDRAIL BRACKET BOTTOM ASSEMBLY
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260

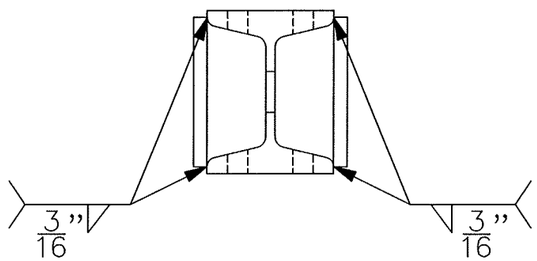


FRONT VIEW

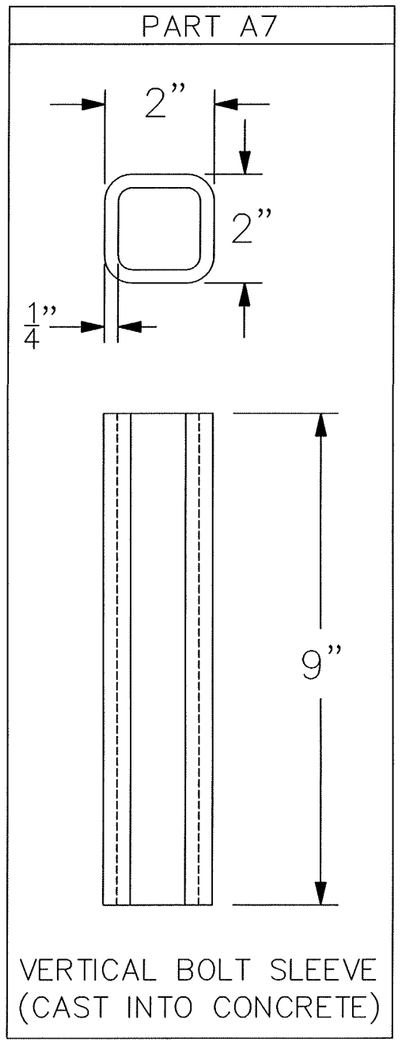


SIDE VIEW





TOP VIEW



VERTICAL BOLT SLEEVE
(CAST INTO CONCRETE)

52' 00" x 30' 00" P.B.G. Bridge
Located on Dillon Ave. over Unnamed Creek
52' 00" SPAN
GUARDRAIL POST AND BOLT SLEEVE DETAILS
STATION; 1+48.68 SKEW: 0°
BUCHANAN COUNTY, IOWA FHWA # 84260