

129071

BRIDGE REPLACEMENT - PPCB
BROS-C024(89)--8J-24

CRAWFORD COUNTY

STANDARD ROAD PLANS	
STANDARD	DATE
RC-17	10/16/07
RL-1A	10/03/00
RL-1B	10/17/06
RL-9	4/17/07
RL-16	4/15/08
TC-252	4/15/08

Iowa Department of Transportation
Highway Division

PLANS OF PROPOSED IMPROVEMENTS ON THE

**SECONDARY ROAD SYSTEM
CRAWFORD COUNTY**

PROJECT NO. BROS-C024(89)--8J-24

BRIDGE REPLACEMENT - PPCB
ON H AVE. OVER OTTER CREEK
APPROX. 1 MILE NORTHWEST OF DELOIT

ENGLISH STANDARD
BRIDGE PLANS

STANDARD	ISSUED	REVISED
H24-01-06	12/06	3/07
H24-02-06	12/06	
H24-03-06	12/06	
H24-04-06	12/06	
H24-11-06	12/06	
H24-13-06	12/06	
H24-15-06	12/06	
H24-16-06	12/06	
H24-17-06	12/06	
H24-32-06	12/06	
H24-33-06	12/06	
H24-38-06	12/06	
H24-39-06	12/06	
H24-40-06	12/06	
H24-41-06	12/06	
H24-43-06	12/06	
H24-67-06	12/06	
PI0-A		9/06

TOTAL SHEETS	8
PROJECT NUMBER	BROS-C024(89)--8J-24
F.H.W.A. NUMBER	129070
PROJECT IDENTIFICATION NUMBER	

INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	QUANTITY SUMMARY
3	SITUATION PLAN
4	GENERAL NOTES
5	SOUNDING DATA
6	SUPERSTRUCTURE DETAILS
7	SUPERSTRUCTURE DETAILS
8	TABULATIONS AND POLLUTION PREVENTION PLAN

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS, AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS SHALL APPLY TO THE CONSTRUCTION ON THIS PROJECT.

VALUE ENGINEERING SAVES. REFER TO THE GENERAL NOTES IN THESE PLANS.

This project is covered by the Iowa Department of Natural Resources NPDES General Permit No. 2. The contractor shall carry out the terms and conditions of General Permit No. 2 and the storm water pollution prevention plan which is a part of these contract documents. Refer to Section 2602 of the Iowa DOT Standard Specifications for additional information.

PROJECT TRAFFIC CONTROL PLAN:
THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08 OF THE CURRENT STANDARD SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES, AND 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.

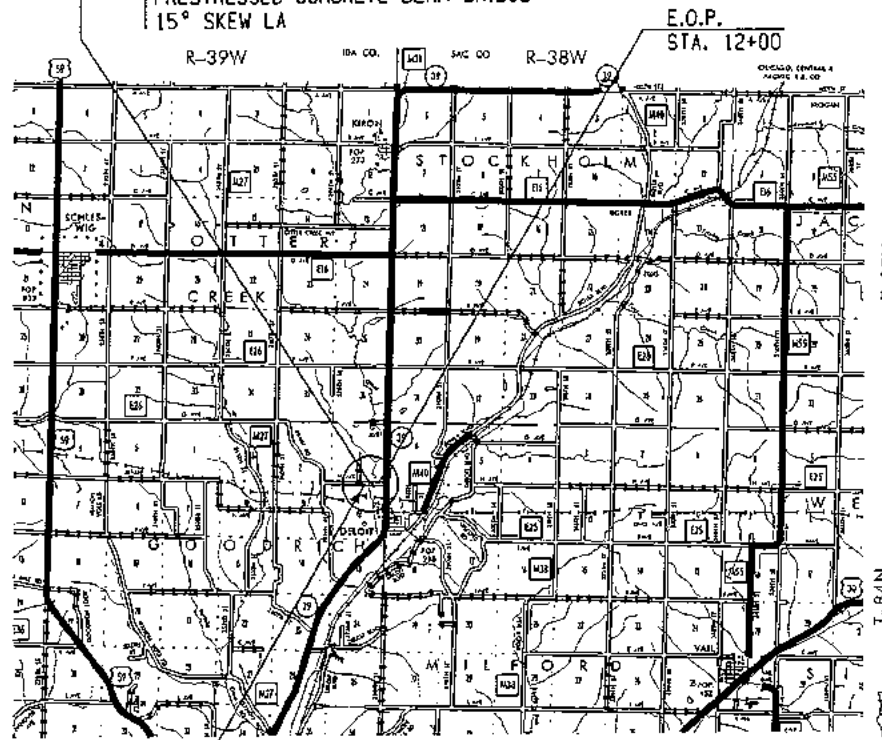
REVISIONS

THIS PROJECT (COE # CEMVR-00-P-2008-389) IS COVERED BY THE CORPS OF ENGINEERS NATIONWIDE 404 PERMIT # 14.

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
1	STEVEN B. RENEKER	STRUCTURAL DESIGN
5	DAVID LOGEMANN	GEOTECHNICAL DESIGN

DESIGN DATA RURAL			
2004	AADT	30	V.P.D.
2028	AADT	48	V.P.D.

STATION: 9+90
PROPOSED 138'-10" x 24'-6" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
15° SKEW LA



MILEAGE SUMMARY		
LOCATION	LIN. FT.	MILES
STA. 7+50 TO STA. 12+00	450.00	0.0852
BRIDGE AT STA. 9+90	141.94	0.0269
TOTAL NET LENGTH OF PROJECT	308.06	0.0583



APPROVAL
[Signature] 10/21/08
CRAWFORD COUNTY ENGINEER DATE

[Signatures]
BOARD OF SUPERVISORS DATE

Drawing Approval
ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY KIRKHAM MICHAEL.
ADDRESS:
11021 AURORA AVENUE
URBANDALE, IA 50322
TELEPHONE: (515) 270-0848
THESE SHOP DRAWINGS SHALL NOT NOT BE SENT TO IOWA D.O.T. OFFICE OF BRIDGE AND STRUCTURES.

STRUCTURAL DESIGN
I hereby certify that this engineering document 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.
[Signature] 10/21/08
Signature STEVEN B. RENEKER
Printed or Typed Name
My license renewal date is December 31, 2008.
Pages or sheets covered by this seal: 1-4, 6-8

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM CODE	ITEM DESCRIPTION	UNIT	2 ABUT.	2 PIER	SUPER.	TOTAL
			ACRES				0.35
1	2101-0850001	CLEARING AND GRUBBING	CY				614
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY				3125
3	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	TON				120
4	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	LS				1
5	2401-6745625	REMOVAL OF EXISTING BRIDGE	CY				73
6	2402-2720000	EXCAVATION, CLASS 20	CY	22.4	78.4	142.6	183.4
7	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	LBS	3579	2862	36341	44782
8	2404-7775000	REINFORCING STEEL	EACH				8
9	2407-0551142	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, A42	EACH				4
10	2407-0551150	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, A50	LBS			2555	2555
11	2408-7800000	STRUCTURAL STEEL	LF			311.9	311.9
12	2414-6424120	CONCRETE OPEN RAILING	LF	640			640
13	2501-0201057	PILES, STEEL, HP 10X57 (8 @ 80')	LF		960		960
14	2501-0201253	PILES, STEEL, HP 12X53 (12 @ 80')	LF	264			264
15	2501-5476057	CONCRETE ENCASEMENT OF STEEL H-PILES, HP 10x57 (P10A TYPE 3) (12 @ 22')	LF	80			80
16	2501-6335010	PREBORED HOLES (8 @ 10')	SY				1040
17	2507-3250005	ENGINEERING FABRIC	TON				807
18	2507-6800061	REVTMENT, CLASS E	EACH				4
19	2518-6910000	SAFETY CLOSURE	LS				1
20	2528-8445110	TRAFFIC CONTROL	LS				1
21	2533-4980005	MOBILIZATION	LS				1
22	2547-0000100	TEMPORARY STREAM ACCESS	ACRES				1.6
23	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRES				1.6
24	2601-2634100	MULCHING	LF				720
25	2602-0000020	SILT FENCE	LF				600
26	2602-0000090	CLEAN-OUT OF SILT FENCE					

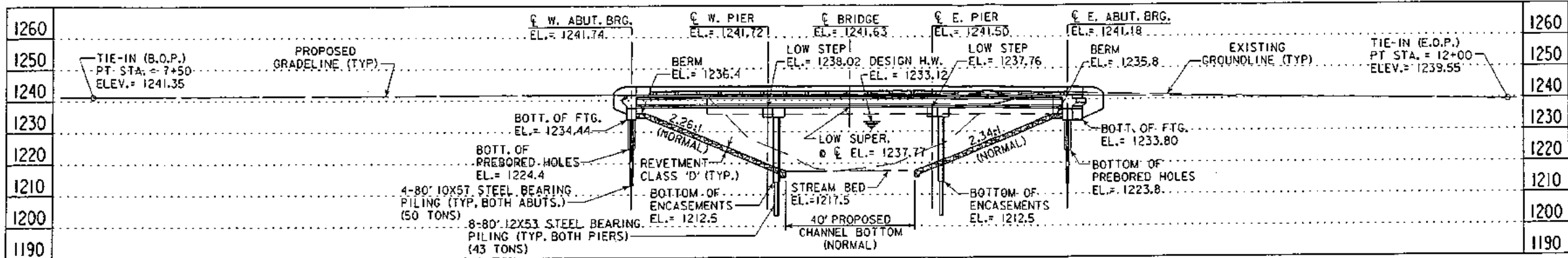
ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
1	SEE SITUATION PLAN FOR LIMITS. SELECTIVE CLEARING WILL BE REQUIRED ON THIS PROJECT. ALL DESIRABLE TREES OUTSIDE THE CONSTRUCTION AREA WILL BE SAVED. TREES AND SHRUBS WITHIN THE CONSTRUCTION LIMITS THAT DO NOT HINDER CONSTRUCTION SHALL BE SAVED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED.
2	THE APPROACH BERMS SHALL BE BUILT TO THE CONSTRUCTION LIMITS SHOWN AND SHALL BE IN PLACE BEFORE ABUTMENT PILES ARE DRIVEN. THE CONTRACTOR SHALL LEVEL AND SHAPE THE BERMS TO THE ELEVATIONS AND DIMENSIONS SHOWN ON THE SITUATION PLAN. DRESSING OF SLOPES OUTSIDE THE BRIDGE AREA NOT DISTURBED BY THE CONTRACTOR WILL BE PAID FOR AS EXTRA WORK. ROADWAY CONSTRUCTION REQUIRES 614 C.Y. OF FILL MATERIAL. SUITABLE MATERIAL FROM "EXCAVATION, CLASS 10, CHANNEL" MAY BE USED IN ACCORDANCE WITH I.D.O.T. ROAD STANDARD RL-1A OR RL-1B. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.06 PARAGRAPH A2 OF THE STANDARD SPECIFICATIONS. TYPE "A" COMPACTION WILL BE REQUIRED. THE QUANTITY INCLUDES AN ADDITIONAL 30% TO COMPENSATE FOR SHRINKAGE. NO PAYMENT FOR OVERHAUL SHALL BE MADE ON THIS PROJECT. PAY QUANTITY WILL BE PLAN QUANTITY ADJUSTED FOR OBVIOUS ERRORS, PLAN REVISIONS OR CHANGE ORDERS.
3	INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE "LONGITUDINAL SECTION ALONG CENTERLINE OF ROADWAY" AND THE LIMITS SHOWN ON THE "SITUATION PLAN." UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED TO A SITE PROVIDED BY THE CONTRACTOR.
4	SURFACING TO BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1400 AND 600 TONS/MILE).
5	THE EXISTING BRIDGE IS A 75' X 20' STEEL PONY TRUSS BRIDGE WITH TIMBER ABUTMENTS AND TIMBER PILE PIER. THE STRUCTURE HAS A STEEL BEAM APPROACH SPAN AND A TIMBER DECK. APPROACH SPAN STEEL BEAMS AND TIMBER DECK PLANK ARE TO REMAIN THE PROPERTY OF THE COUNTY AND WILL BE REMOVED FROM THE BRIDGE AND HAULED OFF-SITE BY THE COUNTY. THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THIS WORK. AN INSPECTION FOR THE PRESENCE OF ASBESTOS CONTAINING MATERIALS WAS COMPLETED AND NO SUSPECT MATERIALS WERE FOUND. IF MATERIALS SUSPECTED OF CONTAINING ASBESTOS ARE DISCOVERED DURING DEMOLITION OF THE BRIDGE, WORK SHALL BE STOPPED IMMEDIATELY AND THE ENGINEER NOTIFIED. SEE HAZARDOUS MATERIALS NOTES, SHEET 4, FOR PAINT SCRAPE SAMPLE RESULTS.
6	UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED TO A SITE PROVIDED BY THE CONTRACTOR. QUANTITY IS BASED ON THE ASSUMPTION THAT CHANNEL EXCAVATION AND NECESSARY BERM CONSTRUCTION HAVE BEEN COMPLETED.

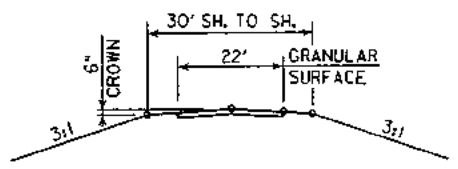
ESTIMATE REFERENCE INFORMATION

ITEM NO.	DESCRIPTION
7	ALL STRUCTURAL CONCRETE FOR THE BRIDGE DECK IS TO BE CLASS "C"; SUBSTITUTION OF CLASS "D" CONCRETE IS NOT ALLOWED. 0.8 C.Y. WAS DEDUCTED FROM THE STANDARD QUANTITY DUE TO THE USE OF ROUNDED END POST. INCLUDES COST OF TAR PAPER AND PREFORMED JOINT MATERIAL. INCLUDES COST OF MACADAM WING ARMORING AT ABUTMENTS. NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY. CERTIFIED PLANT INSPECTION IS REQUIRED.
8	ALL REINFORCING SHALL BE GRADE 60. 314 POUNDS WAS DEDUCTED FROM THE STANDARD QUANTITY DUE TO THE USE OF ROUNDED END POST.
9-10	INCLUDES COST OF BEARING MATERIAL, COIL TIES AND COIL RODS. COARSE AGGREGATE FOR PRESTRESSED CONCRETE BRIDGE UNITS SHALL MEET THE REQUIREMENTS OF SECTION 4115 CLASS III DURABILITY. GRADATION OF THE COARSE AGGREGATE SHALL MEET THE REQUIREMENTS OF SECTION 2407.02A.
11	INCLUDES COST OF STEEL DIAPHRAGMS, SEE STANDARD SHEET H24-36-06.
12	CERTIFIED PLANT INSPECTION IS REQUIRED.
15	ALL STRUCTURAL CONCRETE FOR THE RAIL IS TO BE CLASS C; SUBSTITUTION OF CLASS D CONCRETE IS NOT ALLOWED. THE PILING ENCASEMENTS ARE TO EXTEND DOWN TO THE ELEVATIONS SHOWN ON THE PLANS, SHEET 3. THE UNIT PRICE BID FOR ENCASEMENT SHALL BE FULL PAYMENT FOR FURNISHING AND PLACING MATERIAL AND, WHERE NECESSARY, EXCAVATION. SEE STANDARD P10A REVISED 9-06 FOR DETAILS.
16	THE CONTRACTOR SHALL PREBORE HOLES FOR ABUTMENT PILES. MINIMUM DIAMETER OF THE HOLES SHALL BE 18 INCHES. HOLES SHALL BE BORED TO ELEVATIONS SHOWN ON THE "LONGITUDINAL SECTION ALONG CENTERLINE" ON THE "SITUATION PLAN" SHEET. HOLES SHALL BE FILLED WITH A NATURAL BENTONITE SLURRY. PILES SHALL BE DRIVEN THROUGH THE HOLES TO AT LEAST THE SPECIFIED DESIGN BEARING. FOR HOLES DRILLED IN NONCOLLAPSING SOILS THE BENTONITE SLURRY MAY BE PLACED AFTER PILES ARE DRIVEN; IN COLLAPSING SOILS THE BENTONITE SLURRY SHALL BE PLACED AT THE TIME THE HOLE IS DRILLED. INCLUDES ALL LABOR AND MATERIALS FOR FURNISHING AND PLACING THE BENTONITE SLURRY.
17	SEE "SITUATION PLAN" FOR LIMITS.
18	REVTMENT IS TO BE PLACED AT A THICKNESS OF 1'-6". SEE "SITUATION PLAN", FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVTMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS.
19	SEE TABULATION, SHEET 8.
20	SEE SHEETS 1 AND 8.
22	TEMPORARY STREAM CROSSING SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD ROAD PLAN RL-16. INCLUDES THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY CROSSING, INCLUDING CULVERTS.
23-24	THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THIS SHALL BE INCLUDED IN THE PRICES BID FOR "SEEDING AND FERTILIZING (RURAL)" AND "MULCHING."
25-26	SEE TABULATIONS, SHEET 8 AND POLLUTION PREVENTION PLAN, SHEET 8.

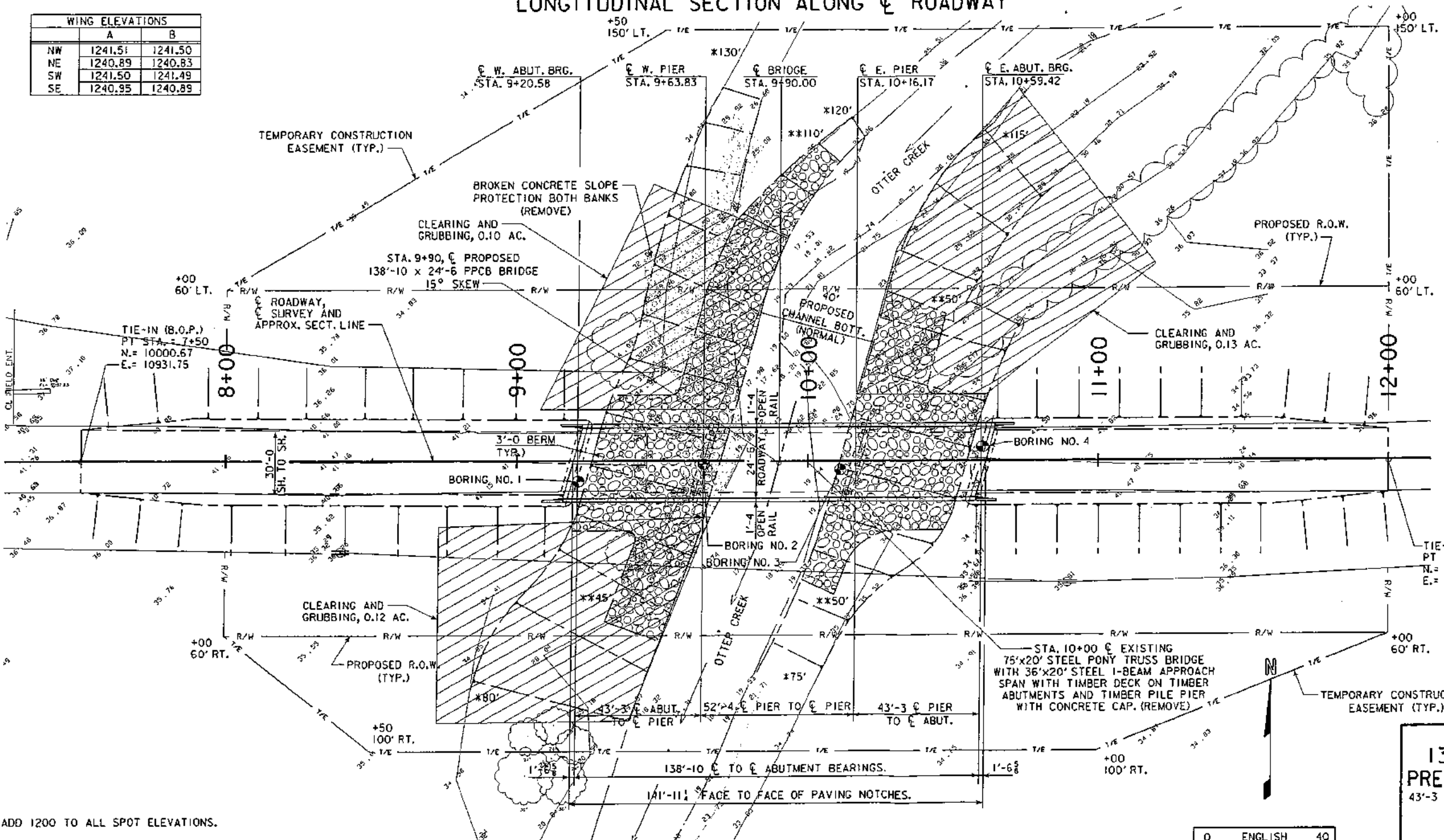
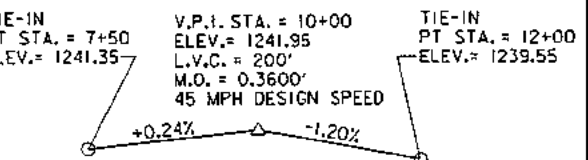
DESIGN SKEW 15° (L.A.)
**138'-10 x 24'-6 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 43'-3 END SPANS P10A PIERS 52'-4 INTERIOR SPAN
QUANTITY SUMMARY
 STA. 9+90 CRAWFORD COUNTY JAN. 2009



BENCH MARKS:
 #2. PK NAIL IN SOUTHWEST CORNER OF BRIDGE WINGWALL. ELEV. = 1241.75
 #3. SPIKE IN FENCE POST, SOUTH AND EAST OF BRIDGE. ELEV. = 1237.21



WING ELEVATIONS		
	A	B
NW	1241.51	1241.50
NE	1240.89	1240.83
SW	1241.50	1241.49
SE	1240.95	1240.89



LOCATION
 BRIDGE OVER OTTER CREEK
 T-84 N R-39 W
 SECTION 12
 GOODRICH TOWNSHIP
 CRAWFORD COUNTY

HYDRAULIC DATA

DRAINAGE AREA = 44.0 SQ. MI.
 MANNING SLOPE = 0.00157 FT./FT.

Q₂₅ = 6200 CFS (DESIGN)
 NATURAL STAGE AT BRIDGE = 1233.1

Q₅₀ = 7500 CFS
 NATURAL STAGE AT BRIDGE = 1234.3

Q₁₀₀ = 9000 CFS
 NATURAL STAGE AT BRIDGE = 1235.2
 CALCULATED SCOUR = ?

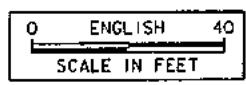
Q₅₀₀ = 12150 CFS
 NATURAL STAGE = 1236.6

Q OVERTOPPING = > Q₅₀₀

AVG. LOW WATER STAGE = 1219.5
 EXTREME HW STAGE = 1238.0
 DATE = UNKNOWN

SITUATION PLAN
 CRAWFORD COUNTY JAN. 2009

ADD 1200 TO ALL SPOT ELEVATIONS.
 * DENOTES LIMITS OF CLASS 10 (CHANNEL) EXCAVATION.
 ** DENOTES LIMITS OF CLASS 'E' REVELTMENT AND ENGINEERING FABRIC.



SPECIFICATIONS

DESIGN:

DECK AND SUBSTRUCTURE: AASHTO SERIES OF 2002, PLUS INTERIM SPECIFICATIONS.
PRESTRESSED BEAMS: AASHTO LRFD, SERIES OF 2004, WITH INTERIM 2005.

CONSTRUCTION:

STANDARD SPECIFICATION OF THE IOWA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, SERIES OF 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2002, PLUS INTERIM SPECIFICATIONS.

CONCRETE	SECTION 8	f'c = 3,500 PSI
REINFORCING STEEL	SECTION 8	
ASTM A615	GRADE 60,	f _s = 24,000 PSI
PRESTRESSING STEEL	SEE H24-32-06	
PRESTRESSED CONCRETE	SEE H24-32-06	
STRUCTURAL STEEL	SECTION 10	
ASTM A36		f _s = 20,000 PSI

404 PERMIT NOTE

THIS PROJECT IS TO BE BUILT UNDER THE CONDITIONS OF ARMY CORPS OF ENGINEERS 404 PERMIT NUMBER CEMVR-00-P-2008-389. THIS IS A NATIONWIDE PERMIT AND MAY CONTAIN SPECIAL CONDITIONS. WORK REQUIRED UNDER THIS PERMIT IS CONSIDERED INCIDENTAL TO OTHER WORK. A COPY OF THE PERMIT IS AVAILABLE AT THE COUNTY ENGINEER'S OFFICE. THE ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

GENERAL NOTES

THIS DESIGN IS FOR A 138' - 10" x 24' - 6" PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON H AVE. OVER THE OTTER CREEK IN CRAWFORD COUNTY, IOWA.

THIS BRIDGE IS DESIGNED FOR HS20-44 LOADING PLUS 20 LBS. PER SQ. FT. OF ROADWAY FOR FUTURE WEARING SURFACE.

ACCESS SHALL BE MAINTAINED TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

THE PRIME CONTRACTOR SHALL EMPLOY CONTROLS TO REDUCE THE EROSIVENESS OF LAND ADJACENT TO SURFACE WATERS AND WETLANDS, INCLUDING ESTABLISHMENT AND MAINTENANCE OF EROSION CONTROL DURING AND AFTER CONSTRUCTION AND REVEGETATION OF ALL DISTURBED AREAS UPON PROJECT COMPLETION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL EROSION CONTROL MEASURES.

THE CONTRACTOR IS ENCOURAGED TO TAKE FULL ADVANTAGE OF SPECIFICATION 1105.15-VALUE ENGINEERING INCENTIVE PROPOSAL, A PAMPHLET AND CONCEPTUAL PROPOSAL FORM WILL BE AVAILABLE AT THE PRECONSTRUCTION CONFERENCE.

STANDARD ROAD PLANS ARE AVAILABLE FROM THE IOWA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, AMES, IOWA.

ARTICLE 2317 REGARDING BRIDGE DECK SMOOTHNESS DOES NOT APPLY TO THIS PROJECT.

UTILITY NOTES

THE CONTRACTOR SHALL VISIT THE CONSTRUCTION SITE TO ENSURE THAT HE IS FAMILIAR WITH THE EXISTING SITE CONDITIONS. THE CONTRACTOR WILL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF ALL UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. ACCESS SHALL BE AFFORDED TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE ARE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN OR SHOWN. SHOULD ANY UTILITIES BE FOUND, THEY SHALL BE PROTECTED IN PLACE AND THE ENGINEER IMMEDIATELY NOTIFIED. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.

NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR INTERFERENCE, OR DELAY CAUSED BY UTILITY COORDINATION OR RELOCATION WORK.

WASTE AND DISPOSAL NOTE

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. THESE AREAS SHALL NOT IMPACT WETLANDS OR "WATERS OF THE U.S." NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY AND SHALL NOT CREATE AN UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER.

HAZARDOUS MATERIALS NOTES

A SCRAPE SAMPLE OF THE EXISTING PAINT WAS TAKEN TO GET AN INDICATION OF THE EXISTENCE AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. SAMPLE ANALYSIS OF TOTAL LEAD ON THE SAMPLE TAKEN FROM THE TRUSS WAS 46900 MG/KG AND TOTAL CHROMIUM ON THIS SAMPLE WAS 116000 MG/KG. SAMPLE ANALYSIS OF TOTAL LEAD ON THE SAMPLE TAKEN FROM THE BEAMS WAS 46000 MG/KG AND TOTAL CHROMIUM ON THIS SAMPLE WAS 54600 MG/KG. THIS ANALYSIS SHOWS THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THIS TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER THAT ANY PAINT REMOVED DURING REMOVAL IS CONTAINED, COLLECTED, AND DISPOSED OF IN ACCORDANCE WITH ALL FEDERAL AND STATE REGULATIONS.

BEFORE DELIVERY OF ANY SCRAP STEEL THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE RECEIVING FACILITY. THIS NOTICE SHALL AT A MINIMUM INCLUDE:

1. A NOTICE THAT THE SCRAP STEEL IS COATED WITH PAINT THAT HAS REGULATED MATERIALS AT LEVELS THAT COULD BE HAZARDOUS TO EMPLOYEES OR THE ENVIRONMENT.
2. A COPY OF THE SCRAPE SAMPLE PROVIDED IN THE CONTRACT DOCUMENTS.
3. A SIGNATURE BLOCK FOR THE RECEIVING FACILITY TO CONFIRM THEIR RECEIPT OF THIS INFORMATION.

A COPY OF THIS NOTICE, SIGNED BY THE RECEIVING FACILITY, SHALL BE RETURNED TO THE ENGINEER BEFORE ANY SCRAP STEEL IS REMOVED FROM THE PROJECT.

ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THE ABOVE REMOVAL AND DISPOSAL REQUIREMENTS WILL BE INCIDENTAL TO "REMOVAL OF EXISTING BRIDGE."

STREAM CROSSING NOTES

THE CONTRACTOR IS ENCOURAGED TO CONDUCT CONSTRUCTION ACTIVITIES DURING A PERIOD OF LOW FLOW. ANY TEMPORARY CROSSINGS SHALL INCLUDE ENOUGH CULVERTS TO ACCOMMODATE LOW FLOWS AND MUST BE REMOVED AFTER COMPLETION OF WORK ON THIS PROJECT. TEMPORARY STREAM CROSSINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD ROAD PLAN RL-16. THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY CROSSINGS, INCLUDING CULVERTS, SHALL BE INCLUDED IN THE PRICE BID FOR "TEMPORARY STREAM ACCESS".

EQUIPMENT FOR HANDLING AND CONVEYING MATERIALS DURING CONSTRUCTION SHALL BE OPERATED TO PREVENT DUMPING OR SPILLING THE MATERIAL INTO WATERBODIES, STREAMS OR WETLANDS EXCEPT AS APPROVED HEREIN.

CARE SHALL BE TAKEN TO PREVENT ANY PETROLEUM PRODUCTS, CHEMICALS, OR OTHER DELETERIOUS MATERIALS FROM ENTERING WATERBODIES, STREAMS OR WETLANDS.

CONSTRUCTION EQUIPMENT, ACTIVITIES, AND MATERIALS SHALL BE KEPT OUT OF THE STREAMS AND WETLANDS TO THE MAXIMUM EXTENT POSSIBLE.

PILE NOTES

SOUNDING AND TEST BORING DATA SHOWN ON PLANS WERE ACCUMULATED FOR DESIGNING AND ESTIMATING PURPOSES. THEIR APPEARANCE ON THE PLAN DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.

MINIMUM BEARING CAPACITY IS TO BE 43 TONS PER PILE AT PIERS AND 50 TONS PER PILE AT ABUTMENTS. ALL PILES ARE TO BE DRIVEN TO FULL PENETRATION, WHERE PRACTICABLE.

CONCRETE AND REINFORCING STEEL NOTES

ALL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED. BAR CHAIRS SPACED AT NOT MORE THAN 3'-0" CENTERS IN EITHER DIRECTION SHALL BE USED TO SUPPORT ALL REINFORCING IN ACCORDANCE WITH THE SECTION 2404 OF THE STANDARD SPECIFICATIONS.

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

ALL EXPOSED CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.

CONCRETE PAVING BLOCKS ARE NOT REQUIRED, HOWEVER, IF IT BECOMES 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. ANY DAMAGE TO THE DECK OR BACKWALL SHALL BE REPAIRED BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.

BACKFILL NOTE

ALL BACKFILL BEHIND THE ABUTMENT BETWEEN THE WINGS SHALL BE POROUS AND GRANULAR BACKFILL AS SHOWN. THE REMAINDER OF THE ABUTMENT EXCAVATION SHALL BE BACKFILLED WITH SOIL.

CONTRACTOR'S WORK AREA

THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE DEFINED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE, AND SEED THIS CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR SEEDING AND MULCHING BID ITEMS. AREAS OUTSIDE THE CONTRACTOR'S AREA DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION, AS DETERMINED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.



DESIGN SKEW 15° (L.A.)
138'-10" x 24'-6" PRETENSIONED
PRESTRESSED CONCRETE BEAM BRIDGE
43'-3" END SPANS P10A PIERS 52'-4" INTERIOR SPAN
GENERAL NOTES
STA. 9+90 CRAWFORD COUNTY JAN. 2009

BENCH MARKS:
 #2. PK NAIL IN SOUTHWEST CORNER OF BRIDGE WINGWALL.
 ELEV. = 1241.75
 #3. SPIKE IN FENCE POST, SOUTH AND EAST OF BRIDGE.
 ELEV. = 1237.21

BORING LOG NO. 1		STATION 9+21.7 RT		Project No.: 081229								
Project: Bridge Replacement Over Otter Creek Sec. 12, T-84N, R-39W Goodrich Township, Crawford County		Client: Kirkham Michael Consulting Engineers 11021 Aurora Avenue Des Moines, Iowa 50322										
Surface Elevation: 1242.7'		Date Drilled: 5-13-08		Drilling Method: HSA								
Datum: Spike in Fence Post SE of Bridge		Drilling Depth, ft.: 81		Page: 1 of ??								
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description	Graphic Log	USCS	Water Level Depth	Elevation ft.
0								Crushed Rock (8")		CL		0.8
1232		1	SSA	6	26.3			Dark brown and brown mixed lean to fat clay, moist to very moist FILL (Silt Sandy Clay)		CH		1241.9
		2	SSA	4	18.4					CL		1232.7
		3	SSA	3	26.1			Brown-gray sandy lean clay, trace gravel, moist to very moist		SC		19
		4	SSA	3	26.4			COHESIVE ALLUVIUM (Soft Silty Clay)		CL		24.5
1216		5	SSA	7	28.8			Dark brown clayey fine to medium sand, saturated		CL		1218.2
		6	SSA	8	21.8			Creek Water Level Elevation = 1220.8' With gravel after 21'		CL		27
		7	SSA	9	21.8			GRANULAR ALLUVIUM (Silty Sand)		CL		1215.7
1200		8	SSA	8	20.6			Gray lean clay, trace organics, very moist				
		9	SSA	8	21.1			COHESIVE ALLUVIUM (Silt Silty Clay)				
		10	SSA	11	20.5			Dark gray sandy lean clay, trace gravel, moist				
		11	SSA	10	20.2			GLACIAL TILL (Firm Sandy Glacial Clay)				
1184		12	SSA	12	20.9							
		13	SSA	13	20.1							
		14	SSA	14	19.7							
1168		15	SSA	26	20.9							
		16	SSA	19	19.4							
80								End of Boring				1161.7
1152												
96												

The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
 Time: at completion _____ hrs. _____ days
 Depth to water: 19.5 ft. @ 81 ft. depth

ALLENDER BUTZKE ENGINEERS, INC.
 Geotechnical - Environmental - Construction Q.C.

BORING LOG NO. 2		STATION 9+64.1 RT		Project No.: 081229								
Project: Bridge Replacement Over Otter Creek Sec. 12, T-84N, R-39W Goodrich Township, Crawford County		Client: Kirkham Michael Consulting Engineers 11021 Aurora Avenue Des Moines, Iowa 50322										
Surface Elevation: 1242.8'		Date Drilled: 5-14-08		Drilling Method: 4" CFA								
Datum: Spike in Fence Post SE of Bridge		Drilling Depth, ft.: 80		Page: 1 of ??								
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description	Graphic Log	USCS	Water Level Depth	Elevation ft.
0								Bridge Deck to Ground				
1232												
								Dark brown fine to coarse sand, trace gravel, with concrete and rebar, saturated FILL (Silty Sand)		SW		18.5
								Dark brown fine to coarse sand with gravel, saturated		SW		1224.4
1216								GRANULAR ALLUVIUM (Coarse Sand)		CL		23.5
								Dark gray sandy lean clay, trace gravel, moist				27
								GLACIAL TILL (Firm Sandy Glacial Clay)				1215.9
1200												
1184												
1168												
80								End of Boring				1162.9
1152												
96												

The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
 Time: at completion _____ hrs. _____ days
 Depth to water: 19 ft. @ 80 ft. depth

ALLENDER BUTZKE ENGINEERS, INC.
 Geotechnical - Environmental - Construction Q.C.

BORING LOG NO. 3		STATION 10+16.3 RT		Project No.: 081229								
Project: Bridge Replacement Over Otter Creek Sec. 12, T-84N, R-39W Goodrich Township, Crawford County		Client: Kirkham Michael Consulting Engineers 11021 Aurora Avenue Des Moines, Iowa 50322										
Surface Elevation: 1242.9'		Date Drilled: 5-14-08		Drilling Method: HSA								
Datum: Spike in Fence Post SE of Bridge		Drilling Depth, ft.: 81		Page: 1 of ??								
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description	Graphic Log	USCS	Water Level Depth	Elevation ft.
0								Bridge Deck to Ground				
1232												
								Creek Water Level Elevation = 1220.8'				
		1	SSA	4				Dark brown clayey fine to medium sand, very moist to saturated		SC		19.5
		2	SSA	12	19.1			GRANULAR ALLUVIUM (Silty Sand)		CL		1223.4
		3	SSA	9	20.6			With gravel after 26'				27.5
		4	SSA	9	20.7							
1216		5	SSA	8	24.9							1215.4
		6	SSA	11	21.7							
		7	SSA	10	21.3							
		8	SSA	18	22.4							
		9	SSA	13	19.9							
		10	SSA	17	21.1							
		11	SSA	15	21.1							
		12	SSA	18	20.9							
1200												
1184												
1168												
80								End of Boring				1161.9
1152												
96												

The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
 Time: at completion _____ hrs. _____ days
 Depth to water: 19 ft. @ 81 ft. depth

ALLENDER BUTZKE ENGINEERS, INC.
 Geotechnical - Environmental - Construction Q.C.

BORING LOG NO. 4		STATION 10+60.5 LT		Project No.: 081229								
Project: Bridge Replacement Over Otter Creek Sec. 12, T-84N, R-39W Goodrich Township, Crawford County		Client: Kirkham Michael Consulting Engineers 11021 Aurora Avenue Des Moines, Iowa 50322										
Surface Elevation: 1243.2'		Date Drilled: 5-14-08		Drilling Method: 4" CFA								
Datum: Spike in Fence Post SE of Bridge		Drilling Depth, ft.: 80		Page: 1 of ??								
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description	Graphic Log	USCS	Water Level Depth	Elevation ft.
0								Gravel (10%)		CL		0.9
1232		1	ST	15.9	104	2940		Dark brown and brown mixed lean to fat clay, damp to moist		CH		1242.3
		2	ST	28.6	83	2530		Brown and gray mixed after 3.5' FILL (Firm Silty Clay)		CL		12
		3	ST	21.1	101	3840		Dark brown silty clay after 8'		CL		1231.2
		4	SSA	4	18.4			Dark brown lean clay, moist				20.5
		5	SSA	7				With sand after 15' COHESIVE ALLUVIUM (Soft Silty Clay)		SC		1222.7
1216								Creek Water Level Elevation = 1220.8'				28.5
								Dark brown-gray clayey fine to medium sand, trace gravel, saturated				
								GRANULAR ALLUVIUM (Silty Sand)				
								With gravel after 27'				
								Dark gray sandy lean clay, trace gravel, moist				
								GLACIAL TILL (Firm Sandy Glacial Clay)				1214.7
1200												
1184												
1168												
80								End of Boring				1163.2
1152												
96												

The stratification lines represent the approximate boundary lines between material types: in-situ, the transition may be gradual.

Water Level Observation
 Time: at completion _____ hrs. _____ days
 Depth to water: 22.5 ft. @ 80 ft. depth

ALLENDER BUTZKE ENGINEERS, INC.
 Geotechnical - Environmental - Construction Q.C.

SOUNDING DATA

(SEE "SITUATION PLAN", SHEET 3 FOR BORING LOCATIONS)

GEOTECHNICAL INFORMATION PROVIDED HERewith IS THE SOLE RESPONSIBILITY OF ALLENDER BUTZKE ENGINEERS, INC., WHOSE GEOTECHNICAL REPORT DATED 5/30/08, COMPLETE WITH THE LICENSED ENGINEER'S SEAL AND CERTIFICATION, IS AVAILABLE FOR VIEWING.

GEOTECHNICAL DESIGN

I hereby certify that this engineering document 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.

David Logemann 10/15/08
 Signature Date

DAVID LOGEMANN
 Printed or Typed Name

My license renewal date is December 31, _____

Pages or sheets covered by this seal: 5

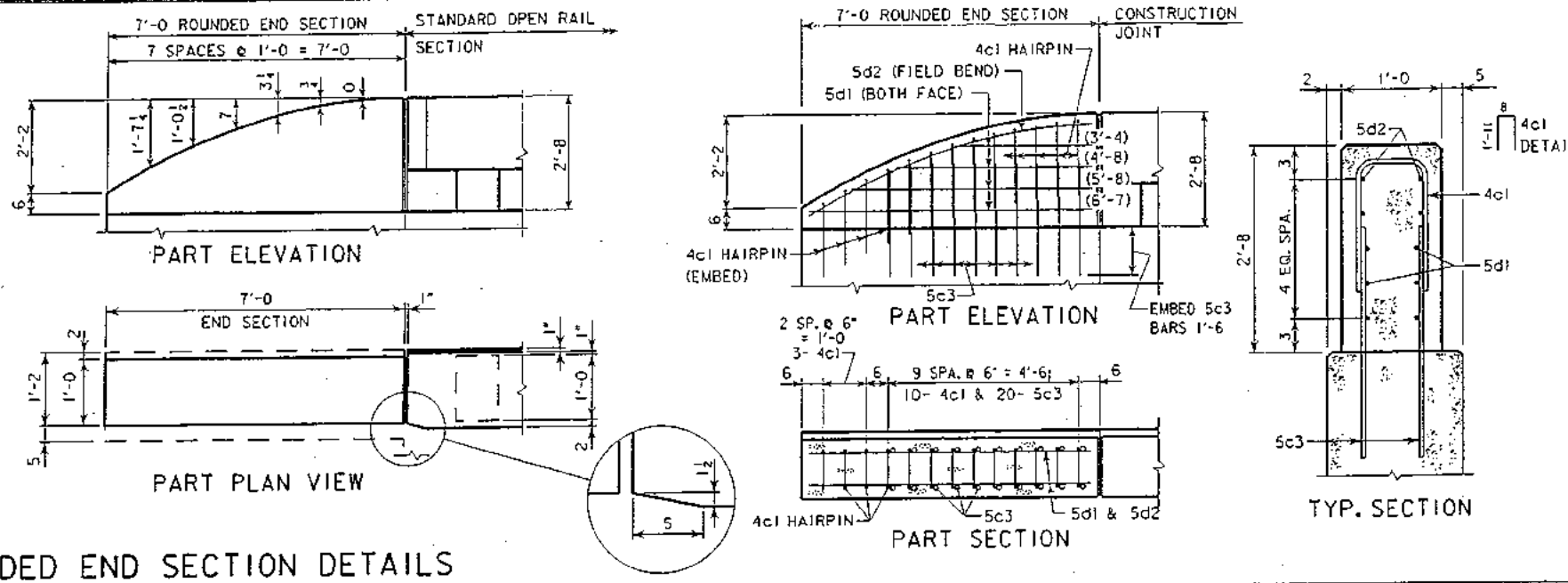
DESIGN SKEW 15° (L.A.)

**138'-10 x 24'-6 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**

43'-3 END SPANS P10A PIERS 52'-4 INTERIOR SPAN

SOUNDING DATA

STA. 9+90 CRAWFORD COUNTY JAN. 2009



**REINFORCING BAR LIST
ONE ROUNDED END SECTION**

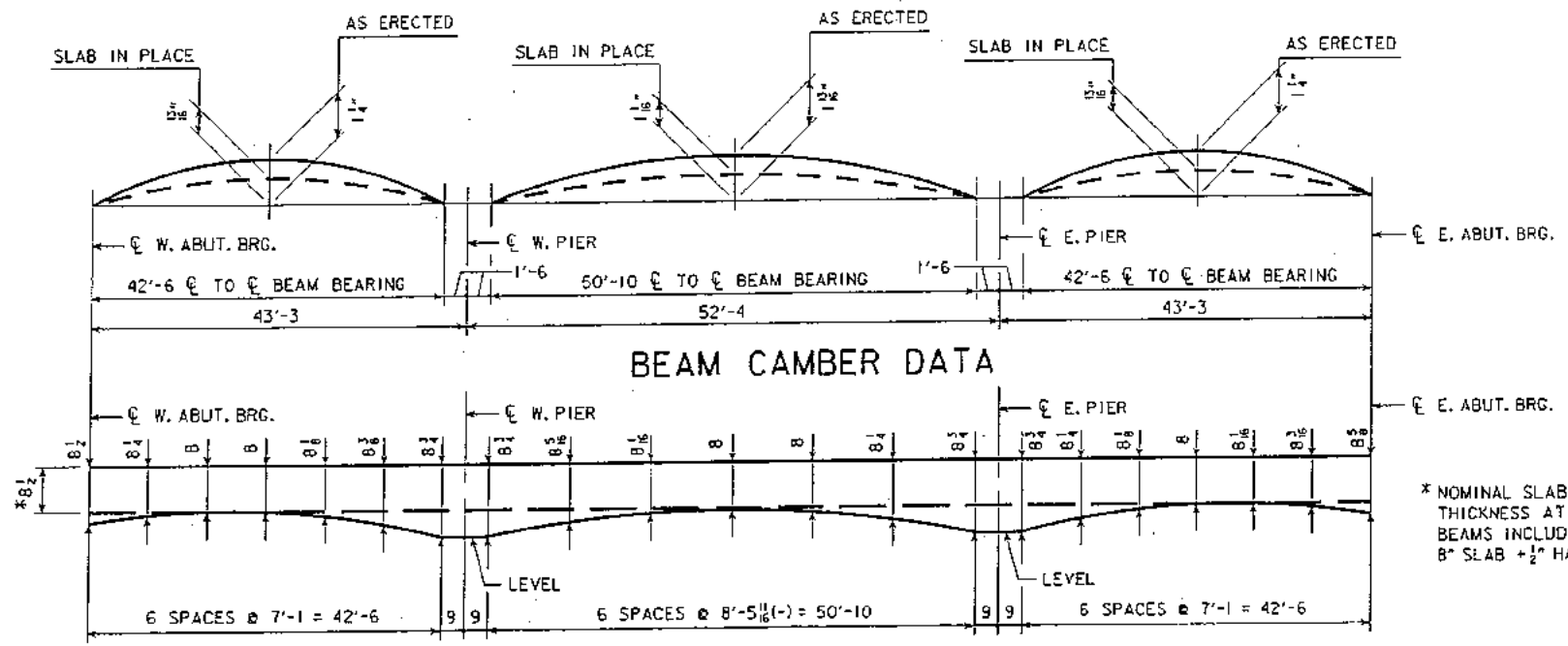
BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4c1	VERTICAL HAIRPIN	U	13	4'-6	40
5c3	ANCHOR TO SLAB	—	20	2'-11	61
5d1	LONGITUDINAL	—	8	VARIABLE	43
5d2	TOP LONGITUDINAL	—	2	6'-9	14
TOTAL - ONE ROUNDED END SECTION					158
TOTAL - ONE BRIDGE					632
TOTAL - CONCRETE PER ROUNDED END SECTION					0.55 CY
TOTAL - CONCRETE (x4)					2.2 CY

NOTE: SPECIAL BRIDGE ROUNDED END SECTION AS DETAILED ON THIS SHEET SHALL BE USED INSTEAD OF END SECTION ON STD. SHEET H24-39-06 AND H24-40-06. THE FOLLOWING BARS DETAILED ON STD. SHEET H24-40-06 BE REPLACED WITH THE BAR LIST SHOWN.

REINFORCEMENT STEEL ADJUSTMENT:
 TOTAL WT. OF BARS ELIMINATED = 946 LBS
 TOTAL WT. OF BARS ADDED = 632 LBS
 TOTAL REDUCTION = 314 LBS

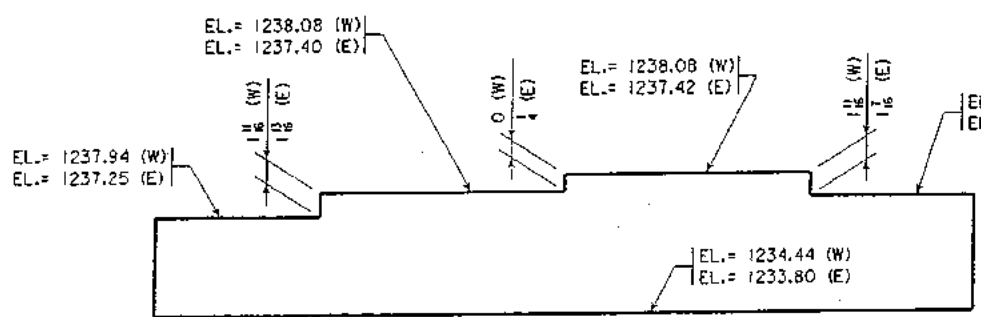
STRUCTURAL CONCRETE ADJUSTMENT:
 VOLUME OF CONC. ELIMINATED = 3.0 CY
 VOLUME OF CONC. ADDED = 2.2 CY
 TOTAL REDUCTION = 0.8 CY

ROUNDED END SECTION DETAILS

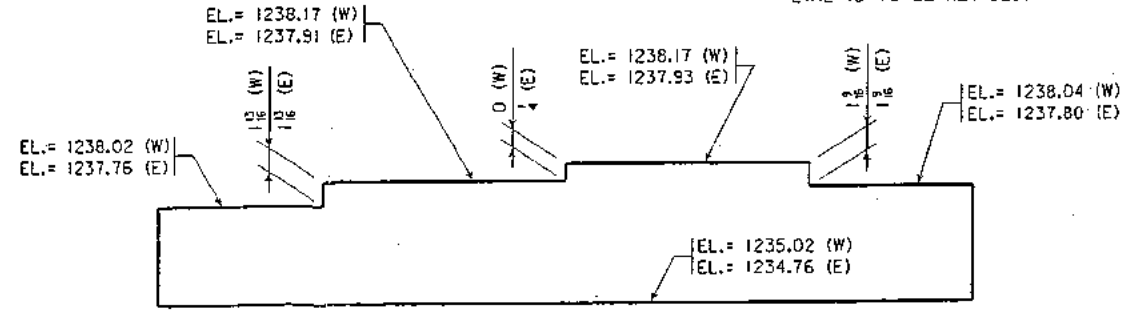


HAUNCH DIAGRAM AND SLAB THICKNESS AT BEAMS (T)

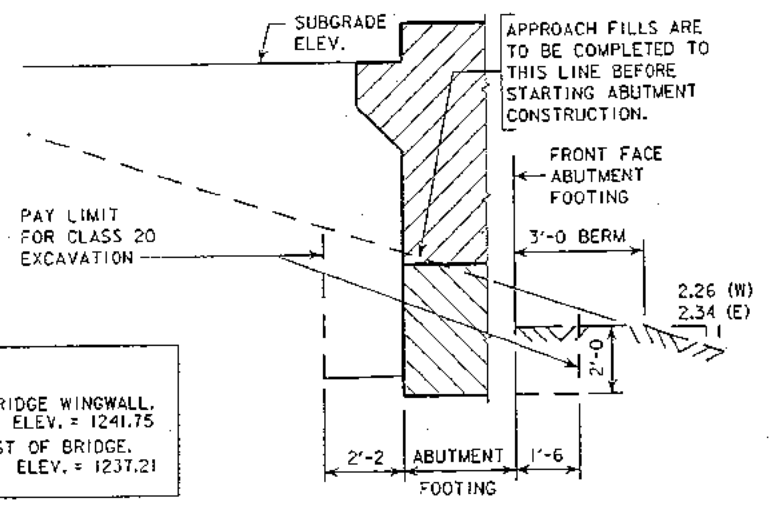
NOTE: HAUNCH THICKNESS ARE SHOWN FOR ESTIMATING ONLY AND ARE NOT GUARANTEED FOR CONSTRUCTION.



**ABUTMENT STEP DIAGRAM
LOOKING UPSTATION (EAST)**

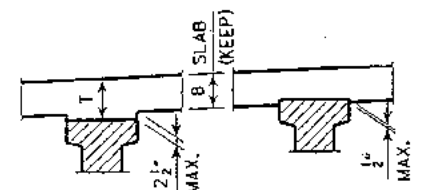


**PIER STEP DIAGRAM
LOOKING UPSTATION (EAST)**



BENCH MARKS:
 #2. PK NAIL IN SOUTHWEST CORNER OF BRIDGE WINGWALL, ELEV. = 1241.75
 #3. SPIKE IN FENCE POST, SOUTH AND EAST OF BRIDGE, ELEV. = 1237.21

ABUTMENT EXCAVATION DETAILS



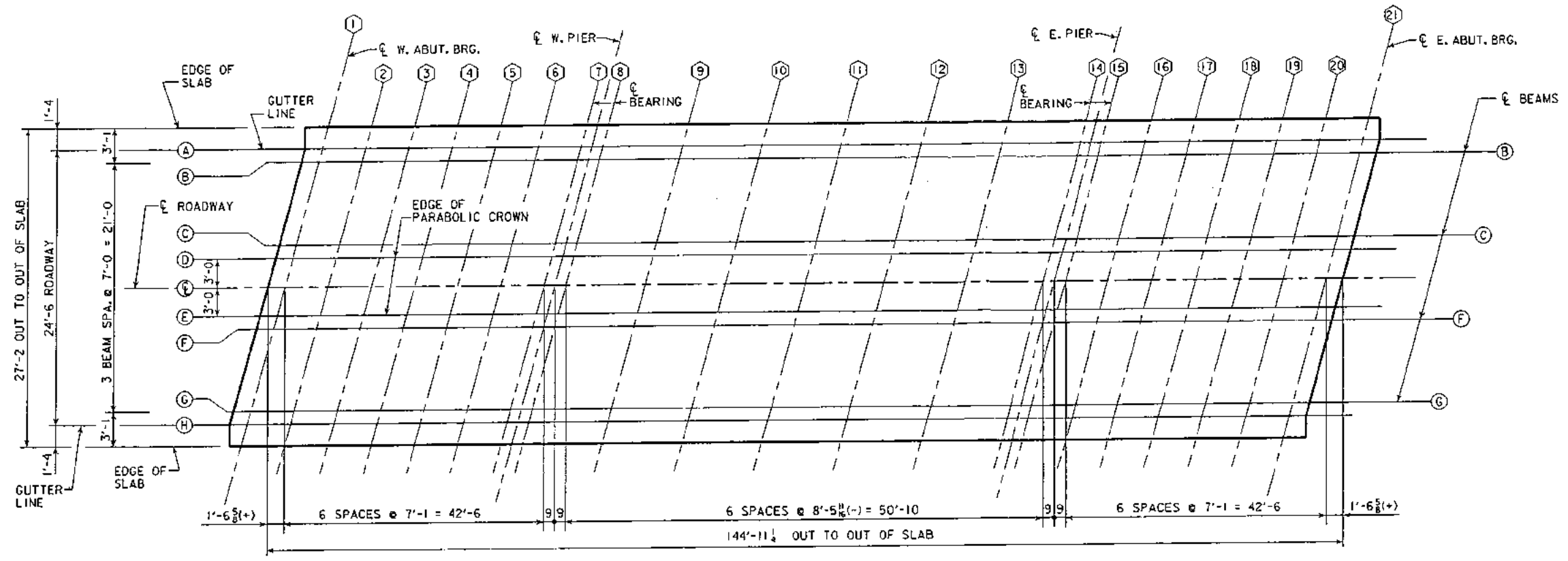
SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT THE BEAMS, (8" SLAB PLUS HAUNCH) IS BASED ON THE ANTICIPATED BEAM CAMBER REMAINING AFTER PLACING THE SLAB, BUT IS NOT GUARANTEED FOR CONSTRUCTION. IF BEAM IS UNDER CAMBERED INCREASE THE HAUNCH THICKNESS OVER THE BEAM AT THE MIDPOINT OF THE SPANS (POINTS B, D AND F). IF THE BEAM IS OVER CAMBERED DECREASE THE HAUNCH THICKNESS OVER THE BEAM AT THE MIDPOINT OF THE SPANS (POINTS B, D AND F) TO A MAXIMUM OF 1/2" EMBEDMENT IN THE SLAB. IF MORE THAN 1/2" EMBEDMENT IS REQUIRED OR IF THE HAUNCH EXCEEDS 2 1/2" THE GRADE LINE IS TO BE REVISED.

DESIGN SKEW 15° (L.A.)
**138'-10 x 24'-6 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 43'-3 END SPANS P10A PIERS 52'-4 INTERIOR SPAN
SUPERSTRUCTURE DETAILS

STA. 9+90 CRAWFORD COUNTY JAN. 2009

BENCH MARKS:
 #2. PK NAIL IN SOUTHWEST CORNER OF BRIDGE WINGWALL.
 ELEV. = 1241.75
 #3. SPIKE IN FENCE POST, SOUTH AND EAST OF BRIDGE.
 ELEV. = 1237.21



TOP OF SLAB ELEVATION LOCATIONS

SLAB ELEVATIONS																							
LOCATION	W. ABUT. BEARING	SPAN 1						W. PIER BEARINGS	SPAN 2						E. PIER BEARINGS	SPAN 3						E. ABUT. BEARING	LOCATION
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
GUTTER LINE (A)	41.51	41.51	41.50	41.49	41.48	41.46	41.44	41.44	41.41	41.37	41.33	41.29	41.24	41.18	41.17	41.12	41.06	41.00	40.94	40.88	40.81	GUTTER LINE (A)	
BEAM LINE (B)	41.57	41.57	41.56	41.55	41.54	41.52	41.50	41.50	41.47	41.44	41.40	41.35	41.30	41.25	41.24	41.18	41.13	41.07	41.01	40.94	40.88	BEAM LINE (B)	
BEAM LINE (C)	41.71	41.71	41.70	41.70	41.68	41.67	41.65	41.65	41.62	41.58	41.55	41.50	41.45	41.40	41.39	41.34	41.28	41.23	41.17	41.10	41.03	BEAM LINE (C)	
PARAB. CROWN (D)	41.72	41.72	41.71	41.71	41.69	41.68	41.66	41.66	41.63	41.59	41.56	41.51	41.46	41.41	41.40	41.35	41.30	41.24	41.18	41.11	41.05	PARAB. CROWN (D)	
ROADWAY	41.75	41.75	41.74	41.73	41.71	41.69	41.69	41.66	41.63	41.59	41.55	41.50	41.44	41.43	41.39	41.33	41.28	41.21	41.15	41.08	41.01	ROADWAY	
PARAB. CROWN (E)	41.72	41.72	41.72	41.71	41.70	41.68	41.67	41.66	41.63	41.60	41.56	41.52	41.47	41.42	41.41	41.36	41.31	41.25	41.19	41.13	41.06	PARAB. CROWN (E)	
BEAM LINE (F)	41.71	41.71	41.71	41.70	41.69	41.67	41.66	41.65	41.62	41.59	41.55	41.51	41.46	41.41	41.40	41.35	41.30	41.24	41.18	41.12	41.05	BEAM LINE (F)	
BEAM LINE (G)	41.57	41.57	41.57	41.56	41.55	41.54	41.52	41.52	41.49	41.46	41.42	41.38	41.33	41.28	41.27	41.23	41.17	41.12	41.06	41.00	40.93	BEAM LINE (G)	
GUTTER LINE (H)	41.51	41.51	41.51	41.50	41.49	41.48	41.46	41.46	41.43	41.40	41.37	41.33	41.28	41.23	41.22	41.17	41.12	41.06	41.01	40.94	40.88	GUTTER LINE (H)	

NOTE: ADD 1200 TO ALL TABLE ELEVATIONS.

TABLE OF BEAM LINE HAUNCH ELEVATIONS																							
LOCATION	W. ABUT. BEARING	SPAN 1						W. PIER BEARINGS	SPAN 2						E. PIER BEARINGS	SPAN 3						E. ABUT. BEARING	LOCATION
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		
BEAM LINE (B)	40.90	40.91	40.92	40.92	40.89	40.86	40.84	40.83	40.81	40.80	40.79	40.72	40.64	40.58	40.57	40.52	40.48	40.44	40.36	40.28	40.21	BEAM LINE (B)	
BEAM LINE (C)	41.04	41.05	41.06	41.07	41.04	41.01	40.98	40.98	40.96	40.95	40.94	40.87	40.79	40.73	40.72	40.68	40.64	40.60	40.52	40.44	40.37	BEAM LINE (C)	
BEAM LINE (F)	41.04	41.05	41.06	41.07	41.04	41.01	40.99	40.98	40.96	40.95	40.88	40.80	40.74	40.73	40.69	40.65	40.61	40.54	40.46	40.39	40.32	BEAM LINE (F)	
BEAM LINE (G)	40.90	40.91	40.92	40.93	40.90	40.88	40.85	40.85	40.83	40.83	40.82	40.75	40.68	40.62	40.61	40.56	40.53	40.49	40.41	40.33	40.26	BEAM LINE (G)	

NOTE: ADD 1200 TO ALL TABLE ELEVATIONS.

DESIGN SKEW 15° (L.A.)
**138'-10 x 24'-6 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 43'-3 END SPANS 100A PIERS 52'-4 INTERIOR SPAN
SUPERSTRUCTURE DETAILS
 STA. 9+90 CRAWFORD COUNTY JAN. 2009

POLLUTION PREVENTION PLAN

110-12

All contractors/subcontractors shall conduct their operations in a manner that minimizes erosion and prevents sediments from leaving the highway right-of-way. The prime contractor shall be responsible for compliance or implementation of the Pollution Prevention Plan (PPP) for their entire contract. This responsibility shall be further shared with subcontractors whose work is a source of potential pollution as defined in this PPP.

1. SITE DESCRIPTION

This Pollution Prevention Plan (PPP) is for the construction of a 138'-10 x 24'-6 P.P.C.B. bridge over Otter Creek in Crawford County, approximately 1 mile northwest of Deloit. This PPP covers approximately 2.1 acres with an estimated 1.7 acres being disturbed. The portion of the PPP covered by this contract has 1.7 acres disturbed.

The PPP is located in an area of Marshall soil association. The estimated average SCS runoff curve number for this PPP after completion will be 61.

Refer to the plans (BROS-C024(89)--8J-24 for locations of typical slopes, ditch grades, and major structural and non-structural controls. A copy of this plan will be on file at the project engineer's office. Runoff from this work will flow into Otter Creek a tributary to Boyer River.

POTENTIAL SOURCES OF POLLUTION:

Site sources of pollution generated as a result of this work relate to silts and sediment which may be transported as a result of a storm event. However, this PPP provides conveyance for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this PPP. Potentially this runoff can contain various pollutants related to site-specific land uses. Examples are:

Rural Agricultural Activities:

Runoff from agricultural land use can potentially contain chemicals including herbicides, pesticides, fungicides and fertilizers.

Commercial and Industrial Activities:

Runoff from commercial, industrial, and commerce land use may contain constituents associated with the specific operation. Such operations are subject to potential leaks and spills which could be commingled with run-off from the facility. Pollutants associated with commercial and industrial activities are not readily available since they are typically proprietary.

2. CONTROLS

At locations where runoff can move offsite, silt fence shall be placed along the perimeter of the areas to be disturbed prior to beginning grading, excavation or clearing and grubbing operations. Vegetation in areas not needed for construction shall be preserved. As areas reach their final grade, additional silt fences, silt basins, intercepting ditches, sod flumes, letdowns, bridge end drains, and earth dikes shall be installed as specified in the plans and/or as required by the project engineer. This will include using silt fence as ditch checks and to protect intakes. Temporary stabilizing seeding shall be completed as the disturbed areas are constructed. If construction activity is not planned to occur in a disturbed area for at least 21 days, the area shall be stabilized by temporary seeding or mulching within 14 days. Other stabilizing methods shall be used outside the seeding time period.

This work shall be done in accordance with Section 2602 of the Standard Specification. If the work involved is not applicable to any contract items, the work shall be paid for according to Article 1109.03 paragraph B.

As the work progresses, additional erosion control items may be required as determined by the contractor after field investigation. The contractor will complete the construction with the establishment of permanent perennial vegetation of all disturbed areas.

3. OTHER CONTROLS

Contractor disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules or regulations shall apply.

APPROVED STATE OR LOCAL PLANS:

During the course of this construction, it is possible that situations will arise where unknown materials will be encountered. When such situations are encountered, they will be handled according to all federal, state, and local regulations in effect at the time.

4. MAINTENANCE

The contractor is required to maintain all temporary erosion control measures in proper working order, including cleaning, repairing, or replacing them throughout the contract period. Cleaning of silt control devices shall begin when the features have lost 50% of their capacity.

5. INSPECTIONS

Inspections shall be made jointly by the contractor and the contracting authority every seven calendar days and after each rain event that is 1/2" or greater. The contractor shall immediately begin corrective action on all deficiencies found. The findings of this inspection shall be recorded in the project diary. This PPP may be revised based on the findings of the inspection. The contractor shall implement all revisions. All corrective actions shall be completed within 3 calendar days of the inspection.

6. NON-STORM DISCHARGES

This includes subsurface drains (i.e. longitudinal and standard subdrains), slope drains and bridge end drains. The velocity of the discharge from these features may be controlled by the use of patio blocks, Class A stone or erosion stone.

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.	
6+50	1	---	WEST END
13+00	---	---	EAST END
9+00	---	1	WEST END
11+00	---	1	EAST END

TRAFFIC CONTROL PLAN

THE PROJECT ROUTE WILL BE CLOSED TO TRAFFIC. 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.

PLASTIC SAFETY FENCE SHALL BE PLACED ON BOTH SIDES OF THE BRIDGE SITE. IN ADDITION, A TYPE III BARRICADE SHALL BE PLACED IN ADVANCE OF THE PLASTIC SAFETY FENCE. A "ROAD CLOSED" SIGN (R-11, 48" x 30") SHALL BE PLACED ON EACH TYPE III BARRICADE ALONG WITH TWO TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS.

CRAWFORD COUNTY MAINTENANCE SHALL SALVAGE ALL ROAD MARKERS AFTER THE ROAD IS CLOSED.

THE BID ITEM "TRAFFIC CONTROL" SHALL INCLUDE THE COST FOR ALL TRAFFIC CONTROL MEASURES REQUIRED OF THE CONTRACTOR EXCEPT FOR THOSE WHICH ARE SEPARATE BID ITEMS OR ARE INCIDENTAL TO OTHER BID ITEMS.

ALL CONTRACTOR FURNISHED TRAFFIC CONTROL SIGNS USED ON THIS PROJECT SHALL BE SHEETED WITH ENCAPSULATED LENS SHEETING.

TYPE "C" STEADY BURN WARNING LIGHTS ARE NOT REQUIRED FOR VERTICAL PANELS, BARRICADES AND DRUMS WHEN THESE TRAFFIC CONTROL DEVICES ARE SHEETED WITH ENCAPSULATED LENS SHEETING.

TABULATION OF EROSION CONTROL FEATURES

100-19
04-17-07

Location		Side L or R	For Ditch Check		Type of Work					Remarks
Location Station	Station to Station (Exact location to be determined by the engineer)		Silt Fence (Lin. Ft.)		Silt Basin (No.)	Silt Dike (Lin. Ft.)	Silt Ditch (Lin. Ft.)	Silt Fence (Lin. Ft.)	Silt Dike Intercepting (Lin. Ft.)	
7+40	9+40	LT.	---		---	---	---	200	---	
7+40	9+40	RT.	---		---	---	---	170	---	
10+60	12+20	LT.	---		---	---	---	160	---	
10+30	12+20	RT.	---		---	---	---	190	---	
								720		

DESIGN SKEW 15° (L.A.)
**138'-10 x 24'-6 PRETENSIONED
 PRESTRESSED CONCRETE BEAM BRIDGE**
 43'-3 END SPANS P10A PIERS 52'-4 INTERIOR SPAN
**TABULATIONS AND POLLUTION
 PREVENTION PLAN**
 STA. 9+90 CRAWFORD COUNTY JAN. 2009

BROS-C024(89)--8J-24

12/2/07