

BRIDGE REPLACEMENT-CCS

LETTING DATE 02-20-07

BROS-CO24(83)--5F-24

CRAWFORD COUNTY

FA1370613706-1.dwg, 11/13/2006 3:20:10 PM, db

CONVENTIONAL SIGNS

	DIVIDED HIGHWAY
	PAVED ROAD
	BITUMINOUS ROAD
	GRAVEL ROAD
	EARTH ROAD
	INTERSTATE HIGHWAY
	UNITED STATES HIGHWAY
	STATE HIGHWAY
	COUNTY HIGHWAY
	RAILROAD
	PIPLINE
	AIRPORT
	HYDROLOGY
	BRIDGE
	STATE BOUNDARY
	COUNTY BOUNDARY
	CORPORATE LIMIT LINE
	TOWNSHIP LINE
	SECTION LINE

IOWA
 DEPARTMENT OF TRANSPORTATION
 Highway Division
 PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET
CRAWFORD COUNTY

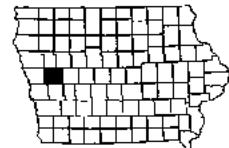
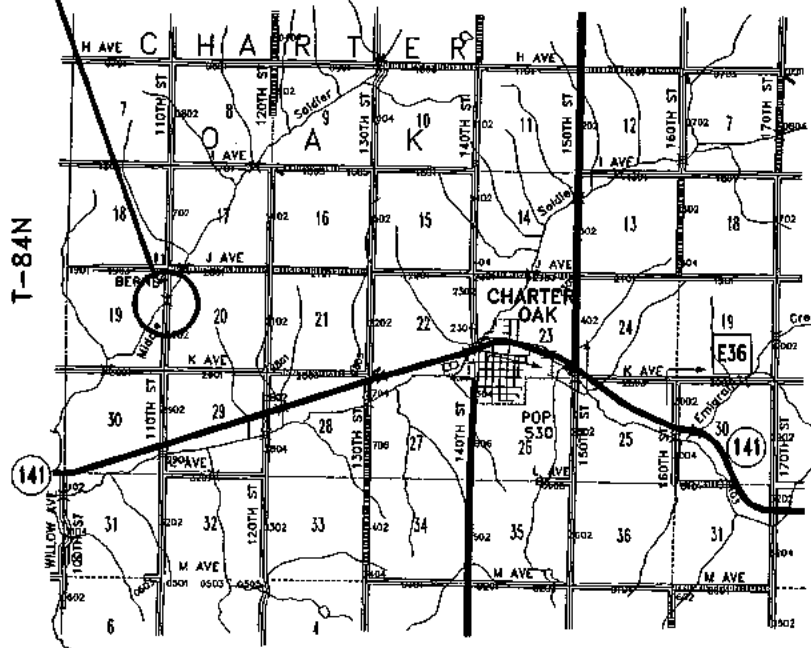
BROS-CO24(83)--5F-24
BRIDGE REPLACEMENT-CCS
 COUNTY ROAD 110TH STREET OVER MIDDLE SOLDIER RIVER
 APPROXIMATELY 3 MILES WEST OF CHARTER OAK

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

VALUE ENGINEERING SAVES. REFER TO GENERAL NOTES SHEET

THIS STRUCTURE IS TO BE BUILT UNDER THE CONDITIONS OF ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 404 NO. 14. 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 STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION.

PROPOSED: BRIDGE REPLACEMENT FOR 125'-0" X 30'-6"
 CONTINUOUS CONCRETE SLAB BRIDGE
 STATION: 8+23.00
 FHWA # 129690
 B.O.P. STA. 6+85.00
 E.O.P. STA. 9+40.00



PROJECT LOCATION
 NOT TO SCALE

MILEAGE SUMMARY

DIV.	LOCATION	LIN. FT.	MILES
1.	B.O.P. STATION 6+85.00 TO ☉ OF SOUTH ABUTMENT	75.5	0.01
2.	BRIDGE AT STATION 8+23.00	125.0	0.02
1.	☉ OF NORTH ABUTMENT TO E.O.P. STATION 9+40.00	54.5	0.01
TOTAL LENGTH OF PROJECT		255.0	0.05

[Signature]
 CRAWFORD COUNTY ENGINEER DATE

[Signature]
[Signature]
[Signature]
 BOARD OF SUPERVISORS DATE

TOTAL SHEETS	
20	
PROJECT NUMBER	
BROS-CO24(83)--5F-24	
R.O.W. PROJECT NUMBER	
PROJECT IDENTIFICATION NUMBER	
INDEX OF SHEETS	
NO.	DESCRIPTION
A.01	TITLE SHEET
B.01	TYPICAL CROSS SECTION
C.01	NOTES AND QUANTITIES
C.02	ROADWAY QUANTITIES
C.03	TABULATIONS
C.04	POLLUTION PREVENTION PLAN
D.01	PLAN AND PROFILE
Q.01-Q.02	SOIL BORING LOGS
V.01	SITUATION PLAN
V.02	TOP OF SLAB ELEVATIONS
V.03	SUBDRAIN DETAILS
V.04	GROUTED FLUME DETAILS
X.01-X.07	CROSS SECTIONS

TRAFFIC CONTROL PLAN
 THE ROADWAY WILL BE CLOSED TO THROUGH TRAFFIC. REFER TO TRAFFIC CONTROL PLAN ON THE ROAD PLANS IN THESE PLANS.

DRAWING APPROVAL
 ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO:
 SHUCK-BRITSON INC.
 2409 GRAND AVENUE
 DES MOINES, IOWA 50312-5309

STANDARD BRIDGE PLANS
 THE FOLLOWING STANDARD PLANS SHALL BE CONSIDERED APPLICABLE TO CONSTRUCTION WORK ON THIS PROJECT

STANDARD	ISSUED	REVISED
J30C-87	JUNE 1987	
J30C-5-87	JUNE 1987	
J30C-6-87	JUNE 1987	
J30C-7-87	JUNE 1987	
J30C-11-87	JUNE 1987	
J30C-18-87	JUNE 1987	
J30C-22-87	JUNE 1987	JANUARY 1989
P10A	AUGUST 1988	SEPT. 2006

STANDARD ROAD PLANS
 NOTE: SEE SHEET C.02 FOR STANDARD ROAD PLANS.

DESIGN DATA RURAL

2004 AADT	140	V.P.D.
2024 AADT	210	V.P.D.
201X DHV	-	V.P.H.
TRUCKS	0	%
ESALs per day	-	

REVISIONS

NO.	DESCRIPTION

INDEX OF SEALS

SHEET NO.	NAME	TYPE
A.01	STEVEN M. KUNZ	STRUCTURAL DESIGN
B.01	DAVID N. MOELLER	ROADWAY DESIGN
Q.01	DAVID LOGEMANN	GEOTECHNICAL

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

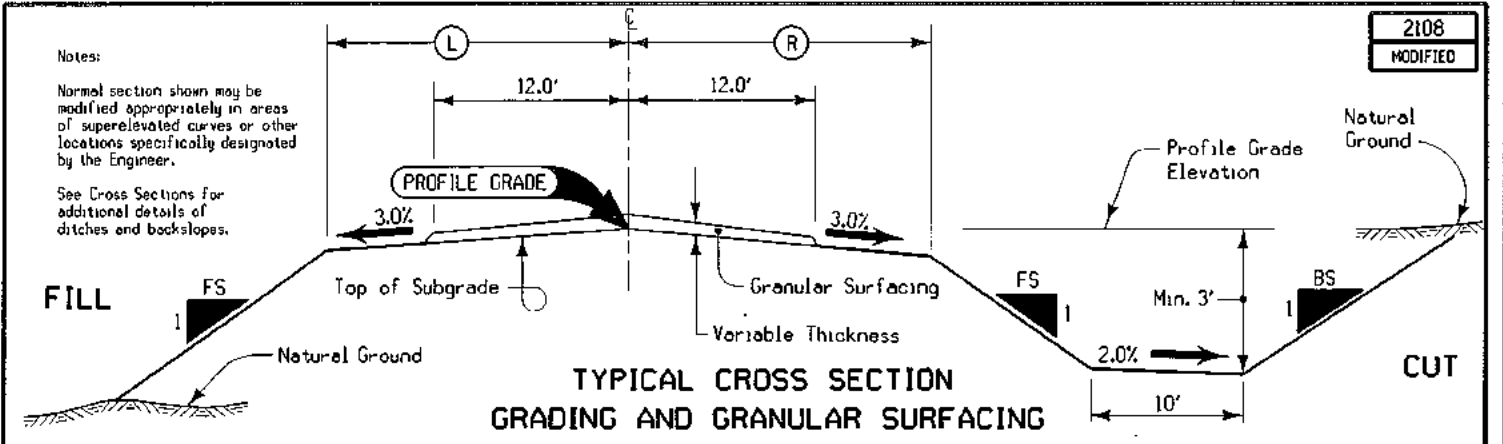
[Signature]
 SIGNATURE DATE

STEVEN M. KUNZ IOWA REG. NO. 14321
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2007

PAGES OR SHEETS COVERED BY THIS SEAL A.01, C.01, V.01, V.02

129691

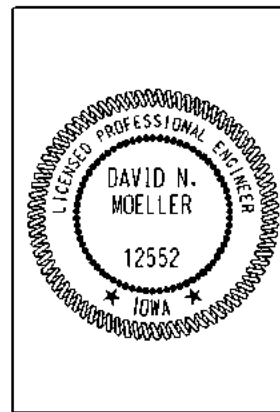
Notes:
Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.
See Cross Sections for additional details of ditches and backstops.



**TYPICAL CROSS SECTION
GRADING AND GRANULAR SURFACING**

Granular Surfacing shall be placed as follows:
Stage 1 (Grading) Design application rate is 1,600 tons per mile.

ROAD IDENTIFICATION	LOCATION		DIMENSIONS		SLOPES	
	STATION TO STATION		(L)	(R)	FS	BS
110TH STREET	6+85.00	9+40.00	15'	15'	3	2.5



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 N. Moeller November 17, 2006
Date
David N. Moeller, P.E.
License Number 12552
My License Renewal Date is December 31, 2006
Pages or sheets covered by this seal:
B.01, C.02-C.04, D.01, X.01-X.07.

ESTIMATED BRIDGE QUANTITIES

NO.	ITEM CODE	ITEM	UNIT	TOTALS	AS BUILT
1.	2104-2710020	CLASS 10, CHANNEL EXCAVATION	CU. YDS.	900	
2.	2401-6745625	REMOVAL OF EXISTING BRIDGE	LUMP SUM	1	
3.	2402-2720000	CLASS 20 EXCAVATION	CU. YDS.	93.6	
4.	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CU. YDS.	312.1	
5.	2404-7775000	REINFORCING STEEL	LB.	72,860	
6.	2414-6424120	CONCRETE OPEN RAIL	LIN. FT.	272.2	
7.	2501-0201042	PILE STEEL HP10 x 42	LIN. FT.	600	
8.	2501-0201253	PILE STEEL HP12 x 53	LIN. FT.	1300	
9.	2501-5475053	CONC. ENCASE. OF STEEL H PILES HP12x53 P10A, TYPE 3	LIN. FT.	560	
10.	2507-3250005	ENGINEERING FABRIC	SQ. YDS.	2,300	
11.	2507-4011100	CONCRETE GROUT FOR REVETMENT OR GABION	CU. YDS.	136.0	
12.	2507-6800061	REVETMENT CLASS E	TON	3600	
13.	2533-4980005	MOBILIZATION	LUMP SUM	1	
		SEE SHEET C.02 FOR ROADWAY ITEMS			

ESTIMATE REFERENCE INFORMATION

- INCLUDES ALL COSTS ASSOCIATED WITH EXCAVATION REQUIRED TO PLACE SLOPE STABILIZATION REVETMENT AND GROUTED FLUMES AS SHOWN IN THESE PLANS.
- SUITABLE CLASS 10 CHANNEL OR CLASS 20 EXCAVATION MAY BE USED TO CONSTRUCT THE ABUTMENT BERM, AND GUARDRAIL BLISTERS, OR MAY BE WASTED ON TWO APPROACH ROADWAY FORESLOPES AS DIRECTED BY THE ENGINEER. SUITABLE EXCAVATION SHALL BE AS DESIGNATED IN SECTION 2102.06 OF THE STANDARD SPECIFICATIONS.
- REMOVALS SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS 2401, EXCEPT THE EXISTING APPROACH SPAN DECK PLANKS AND STRINGERS SHALL REMAIN THE PROPERTY OF THE COUNTY. THE CONTRACTOR SHALL STORE THESE ITEMS AT A LOCATION ON SITE AS DIRECTED BY THE ENGINEER. THE COUNTY WILL REMOVE THESE ITEMS FROM THE SITE.
INCLUDES ALL COSTS ASSOCIATED WITH REMOVAL OF EXISTING TIMBER JETTIES, DROP STRUCTURE WITH TIMBER HEADWALLS, AND CMP.
- QUANTITIES ASSUME CLASS 10 CHANNEL EXCAVATION IS COMPLETE.
- ALL STRUCTURAL CONCRETE TO BE CLASS "C". CERTIFIED PLANT INSPECTION IS REQUIRED AND INCLUDED IN COST OF THIS ITEM. INCLUDES ALL PREFORMED EXPANSION JOINT FILLER REQUIRED. INCLUDES COST OF SUBDRAINS & SUBDRAIN OUTLETS. INCLUDES 22.8 C.Y. FOR THE ABUTMENTS AND 289.3 C.Y. FOR THE SUPERSTRUCTURE.
- INCLUDES 3,016 LBS. FOR THE ABUTMENTS AND 69,644 LBS. FOR THE SUPERSTRUCTURE.
- CONCRETE FOR OPEN RAIL IS TO BE CLASS "C". CERTIFIED PLANT INSPECTION IS REQUIRED AND IS INCLUDED IN COST OF THIS ITEM.
- INCLUDES 5 PILES AT 60'-0 FOR EACH ABUTMENT.
- INCLUDES 10 PILES AT 65'-0 FOR EACH PIER.
- INCLUDES 6 FT. OF ENCASEMENT FOR EACH PILE BELOW STREAMBED ELEVATION.
- MATERIAL SHALL BE PLACED UNDER ALL AREAS TO RECEIVE REVETMENT.
- CONCRETE GROUT FOR REVETMENT GROUTING OPERATION SHALL NOT BE PERFORMED EXCEPT IN THE PRESENCE OF THE ENGINEER.
THE AVERAGE RATE OF GROUT APPLICATION SHALL BE 5.4 CUBIC FEET OF GROUT PER SQUARE YARD OF SURFACE AREA. THE GROUT SHALL BE CONSOLIDATED INTO THE VOIDS WITH THE USE OF A CONCRETE VIBRATOR.
METHOD OF MEASUREMENT: THE ENGINEER WILL COMPUTE TO THE NEAREST 0.1 CUBIC YARD THE VOLUME OF CONCRETE GROUT FOR REVETMENT FURNISHED AND ACCEPTABLY PLACED WITHIN THE SPECIFIED LIMITS, FROM THE NOMINAL VOLUME OF EACH BATCH AND A COUNT OF BATCHES. GROUT UNUSED OR WASTED, INCLUDING ANY PARTIAL BATCH REMAINING AT THE COMPLETION OF THE OPERATION, WILL BE ESTIMATED AND DEDUCTED BY THE ENGINEER. METHOD OF MEASUREMENT IN THE CURRENT STANDARD SPECIFICATIONS SHALL NOT APPLY.
- THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING REVETMENT STONE AS RIP RAP ON BERM SLOPES, SLOPE STABILIZATION REVETMENT, AND FOR GROUTED FLUMES COMPLETE IN PLACE AS SHOWN ON THE DRAWINGS. REFER TO DETAILS ON SHEET V.04. THE LIMITS INTENDED FOR SLOPE STABILIZATION REVETMENT ARE LOCATIONS BELOW OR ADJACENT TO BRIDGE ABUTMENTS WHERE THE SLOPE IS 2.4:1 (MEASURED NORMAL TO SLOPE) OR STEEPER. THE ACTUAL LIMITS OF SLOPE STABILIZATION REVETMENT SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF CONSTRUCTION. DEWATERING REQUIRED TO INSTALL REVETMENT SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.
RIPRAP WILL NOT BE ALLOWED TO BE DUMPED OVER THE RAILING OF THE NEWLY CONSTRUCTED BRIDGE. THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF ALL REMNANTS OF RIPRAP STOCKPILES FROM FARM FIELDS UTILIZED BY CONTRACTOR IN THE PROJECT AREA. THIS WORK WILL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.
- INCLUDES ALL COSTS ASSOCIATED WITH MOBILIZATION FOR ENTIRE PROJECT, INCLUDES ALL BRIDGE AND ROADWAY WORK.

SPECIFICATIONS

DESIGN: AASHTO SERIES OF 1983
CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2001, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS.

GENERAL NOTES

THE "ENGINEER", AS REFERENCED IN THESE PLANS, IS THE CRAWFORD COUNTY ENGINEER OR A DESIGNATED REPRESENTATIVE.

THE BRIDGE 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.

THE CONTRACTOR SHALL SUBMIT A DETAILED CONSTRUCTION SEQUENCE AND CONSTRUCTION SCHEDULE. NO WORK SHALL BE PERMITTED ON THE PROJECT UNTIL THE CONSTRUCTION SEQUENCE AND SCHEDULE IS APPROVED BY THE ENGINEER.

THE CONTRACTOR IS TO VISIT THE SITE TO ENSURE HE OR SHE IS FAMILIAR WITH THE EXISTING SITE CONDITIONS. UTILITIES ARE INDICATED ON THE DRAWINGS TO PROVIDE GENERAL LOCATION INFORMATION ONLY. THE CONTRACTOR WILL BE RESPONSIBLE FOR ACCURATELY LOCATING ALL UTILITIES WITHIN THE WORK AREA PRIOR TO COMMENCING WORK. ALL UTILITIES TO REMAIN SHALL BE PROTECTED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF THE PROJECT. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE ANY AND ALL UTILITIES. IF OTHER UTILITIES ARE DISCOVERED IN THE AREA OR NOT INSTALLED AS PLOTTED OR SHOWN, THE FACILITIES ARE TO BE PROTECTED AND THE ENGINEER NOTIFIED IMMEDIATELY.

THE COUNTY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE AND SUBSEQUENT WORK IN THE AREA. THE CONTRACTOR SHALL CALL ONE CALL AT LEAST 48 HOURS PRIOR TO BEGINNING WORK. ONE CALL: 1-800-292-8989.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES OUTSIDE OF RIGHT-OF-WAY FOR EXCESS MATERIAL WHICH IS NOT DESIRABLE TO BE INCORPORATED IN THE WORK INVOLVED IN THIS PROJECT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.

THE CONTRACTOR SHALL SUPPLY AND OBTAIN APPROVAL OF THE ENGINEER FOR BORROW MATERIAL HAULED ONTO THE JOB SITE.
CLASS 20 EXCAVATION INCLUDES THE EXCAVATION NECESSARY TO CONSTRUCT THE NEW ABUTMENTS, AND TO SHAPE THE BERM IN FRONT OF THE ABUTMENT AS SHOWN ON THE BACKFILL DETAIL AND LONGITUDINAL SECTION ALONG CENTERLINE ROADWAY.

PILES SHALL BE FURNISHED AND DRIVEN IN ACCORDANCE WITH SECTION 2501 OF THE STANDARD SPECIFICATIONS.

THE COUNTY WILL PROVIDE CONSTRUCTION SURVEY REQUIRED FOR ALL BRIDGE AND ROADWAY WORK ON THIS PROJECT.

TRAFFIC CONTROL: THE ROAD WILL BE CLOSED TO TRAFFIC DURING CONSTRUCTION.

ALL CONCRETE FOR THE BRIDGE DECK IS TO BE CLASS "C". AGGREGATE SHALL BE CRUSHED LIMESTONE WITH CLASS II DURABILITY. SUBSTITUTION OF CLASS "D" CONCRETE IS NOT ALLOWED.

SURFACE FINISH OF ALL FLATWORK SHALL BE AS SPECIFIED IN SECTION 2403 OF THE STANDARD SPECIFICATIONS.
ALL CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A DRESSED AND BEVELED 3/4" STRIP.

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

ALL REINFORCING STEEL IS TO BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED.

ALL BENDING DIMENSIONS ARE "OUT TO OUT" OF BARS, HOOKS AND BENDS UNLESS OTHERWISE SHOWN, SHALL BE IN ACCORDANCE WITH THE ACI CODE OF STANDARD PRACTICE.

BAR SIZES ARE DESIGNATED ON THE PLANS BY NUMBERS. THE DIGIT OR DIGITS BEFORE THE LETTER IN THE BAR MARK INDICATES THE SIZE OF THE BAR.

THE EXISTING BRIDGE IS 131'-0" x 21'-0", INCLUDING A 90'-0" STEEL TRUSS WITH CONCRETE DECK, AND A 41'-0" APPROACH SPAN WITH STEEL STRINGERS AND TIMBER DECK. BRIDGE INCLUDES STEEL RAIL, TIMBER BACKWALLS, AND TIMBER, CONCRETE, AND STEEL SUBSTRUCTURES.

SCRAPE SAMPLES WERE TAKEN FROM AREAS OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THESE SAMPLES WERE 76,400 (APPROACH STRINGER), 84,300 (BRIDGE RAILING) (238 mg/L LEACHABLE), AND 79,700 (BRIDGE TRUSS) (330 mg/L LEACHABLE) PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THESE SAMPLES WERE 2,640 (APPROACH STRINGER), 7,730 (BRIDGE RAILING) (0.326 mg/L LEACHABLE), AND 10,600 (BRIDGE TRUSS) (0.164 mg/L LEACHABLE). THESE ANALYSES SHOW 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 THE COUNTY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

ALL BRIDGE CONCRETE INCORPORATED INTO THIS PROJECT SHALL REQUIRE IOWA DOT CERTIFIED PLANT INSPECTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY AN IOWA DOT CERTIFIED PLANT INSPECTOR FOR THESE ACTIVITIES. THE CERTIFIED PLANT INSPECTOR SHALL COORDINATE HIS OR HER ACTIVITIES WITH THE GRADE INSPECTOR AND THE PROJECT ENGINEER.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

THE BRIDGE CONTRACTOR WILL BE THE ONLY CONTRACTOR AT THE SITE AND IS RESPONSIBLE FOR THE COMPLETION OF ALL WORK AS DETAILED AND NOTED IN THESE BRIDGE PLANS AND THE ROADWAY PLANS.

THE CONTRACTOR IS ALERTED TO THE PRESENCE OF A CONDUIT ON THE WEST SIDE OF THE BRIDGE.

DESIGN FOR 15° SKEW (R.A.)
**125'-0" X 30'-6" CONTINUOUS
CONCRETE SLAB BRIDGE**

38'-0" END SPANS

MONOLITHIC PIERS
49'-0" INTERIOR SPAN

GENERAL NOTES & QUANTITIES

STA. 8+23.00

NOVEMBER 2006

CRAWFORD COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____

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01-20-84 203-1
Plan and profile sheets included in the project are for the purpose of alignment, location and specific directions for the work to be performed under this contract. Irrelevant data on these sheets is not to be considered a part of this contract.

01-20-84 204-2
All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

10-29-02 213-1
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, unless specifically stated in the plans.

01-09-90 213-2
The contractor's attention is directed to the following consideration in regard to removal and replacement of topsoil in borrow areas: Quantities estimated for topsoil are calculated on the basis of a uniform removal of topsoil to a depth of 12 inches. The material removed is to be spread uniformly to a minimum depth of 8 inches over the borrow area upon completion of excavation work.

01-20-84 232-5
The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service areas) will be subject to the approval of the resident engineer.

01-19-88 251-1
The contractor shall be responsible to maintain access to individual properties during construction.
Relocated access shall be completed to individual properties prior to removal of existing access.
If the permanent access cannot be completed prior to removal of the existing access, the contractor shall provide and maintain an alternate access. Temporary Granular Surfacing will be paid for as a contract item or by extra work.

ESTIMATED ROADWAY QUANTITIES

100-0A
10-28-97

Item No.	Item Code	Item	Unit	Total	As Buit Qun.
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.38	
2	2102-2710070	EXCAVATION, CLASS 10 ROADWAY AND BORROW	CY	1,443.00	
3	2105-8425015	TOPSOIL, STRIP, SALVAGE, AND SPREAD	CY	1,191.00	
4	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	109.20	
5	2315-8275025	SURFACING, DRIVEWAY, CLASS A CRUSHED STONE	TON	102.90	
6	2417-0225060	APRON, METAL, 60"	EACH	2.00	
7	2417-1040060	CULVERT, CMP ENTRANCE PIPE, 60"	LF	44.00	
8	2505-4008200	INSTALLATION OF GUARDRAIL	LF	250.00	
9	2505-4021690	GUARDRAIL END ANCHORAGE, BEAM, RE-69	EACH	4.00	
10	2505-4021762	GUARDRAIL TERMINAL, BEAM, FLARED, RE-76	EACH	4.00	
11	2518-6910000	SAFETY CLOSURE	EACH	2.00	
12	2528-8445110	TRAFFIC CONTROL	LS	1.00	
13	2601-2636041	SEEDING AND FERTILIZING	ACRE	0.74	
14	2602-0000020	SILT FENCE	LF	695.00	
15	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	40.00	

ESTIMATE REFERENCE INFORMATION

100-4A
10-29-02

Item No.	Item Code	Description
		NOTE: The limits of construction extend beyond the beginning and end construction locations as indicated on Sheet D.01.
1	2101-0850001	CLEARING AND GRUBBING Clear and grub all trees within the permanent easement and temporary easement areas.
2	2102-2710070	EXCAVATION, CLASS 10 ROADWAY AND BORROW Quantity includes grading for guardrail blisters. Refer to Tab. 107-26, Sheet C.03. Includes 228 CY cut and 1,443 CY fill plus shrink. Contractor shall furnish required fill not available on-site. No payment shall be made for overhaul.
8	2505-4008200	INSTALLATION OF GUARDRAIL
9	2505-4021690	GUARDRAIL END ANCHORAGE, BEAM, RE-69
10	2505-4021762	GUARDRAIL TERMINAL, BEAM, FLARED, RE-76 Refer to Tab. 108-8a, Sheet C.03 for further information.
14	2602-0000020	SILT FENCE Place silt fence at fill slopes, Sta. 6+35 - south abutment LT, at both the south and north abutments, and the north abutment to Sta. 10+40 LT and RT.
15	2602-0000030	SILT FENCE FOR DITCH CHECKS Place 20' ditch checks at Sta. 5+67 RT and 7+41 RT (prior to culvert and flume).

STANDARD ROAD PLANS

105-4
12-03-96

The Following Standard Road Plans shall be considered applicable to construction work on this project.

Number	Date	Number	Date	Number	Date
RE-12A	10-19-04	RE-69A	10-19-04	RF-32	4-18-06
RE-12B	10-19-04	RE-76	4-19-05	RF-33	3-28-95
RE-47	10-19-04	RF-5	10-3-00	RL-7	12-3-96
RE-48A	10-19-04	RF-30A	10-17-06	RL-14A	10-17-06
RE-64A	4-19-05	RF-30B	10-17-06	TC-252	10-17-06
RE-68	10-19-04	RF-30C	4-30-02		

TRAFFIC CONTROL PLAN

108-23
04-04-89

- 110th Street will be closed to traffic during construction.
- Access to individual properties within the project area shall be maintained at all times.
- Traffic control devices, procedures, layouts, and signing installed within the limits of this project shall conform with the Manual on Uniform Traffic Control Devices for Streets and Highways as adopted by the Department of Transportation per 761 of the Iowa Administrative Code (IAC) chapter 130. For additional complimentary information, refer to the TC series of Standard Road Plans as referenced and current Standard and Supplementary Specifications.
- Road closures and safety closures shall be installed as per TC-252.

STEEL BEAM GUARDRAIL AT BRIDGE END POST AND CONCRETE BARRIER

Refer to Standard Road Plans RE-48A, RE-64A, RE-64B, and RE-65B

108-8A
04-19-05

No.	Location			Case	Standard Road Plan	Layout Lengths					Materials Required					Delineators and Object Markers				Bid Items				Remarks							
	Direction of Traffic	End	Side			Station	STS (18.75')	VT1	VF	VT2	ET (37.5')	STS		"W" Beam (VT1) + (VF) + (VT2) + (ET)	Posts 6" x 8" x 7" with 6" x 8" Spacer Blocks	Posts 6" x 8" x 6" with 6" x 8" Spacer Blocks	CRT Posts 6" x 8" x 6" with 6" x 8" Spacer Blocks	Type	Object Marker			Installation of Guardrail (STS) + (VT1) + (VF) + (VT2) + (ET)	Anchorage and Terminal Systems								
												Thrie Beam (25.0')	Transition Section (6.25')						Lin. Ft.	No.	No.		No.		Type 2	Type 3	RE-69A	RE-69B	RE-69C	RE-76	
1	NB	A	O	8+23.00	A	RE-64A	18.75	-	12.50	-	37.50	25.00	6.25	50.00	7	3	5				1	68.75	1								
2	NB	T	O	8+23.00	A	RE-64A	18.75	-	-	-	37.50	25.00	6.25	37.50	7	1	5					1	56.25	1							
3	SB	A	O	8+23.00	A	RE-64A	18.75	-	12.50	-	37.50	25.00	6.25	50.00	7	3	5						1	68.75	1						
4	SB	T	O	8+23.00	A	RE-64A	18.75	-	-	-	37.50	25.00	6.25	37.50	7	1	5					1	56.25	1							

- ① Lane(s) to which the obstacle is adjacent.
- ② Includes (1) special 12.5' section of 'W' Beam, see RE-76.
- ③ (6) 6" x 8" x 7' posts required when RE-69C is specified.
- ④ The last two posts of the RE-76 Terminal section are included as part of that bid item.

TABULATION OF TEMPLATE QUANTITIES					107-26 11-10-83
STA. TO STA.	CUT	FILL	F+30%	BALANCE	+
5+00.00	13	0	0		
5+50.00	10	314	408		
6+00.00	0	374	486		
6+50.00	5	66	86		
6+85.00	8	22	29		
7+00.00	144	132	172	C=228 CY	
7+50.00	23	51	66	F=1,443 CY	
7+58.95	0	22	29	BAL=	
8+00.00	0	0	0	-1,215 CY	
8+50.00	0	15	20		
8+87.05	6	18	23		
9+00.00	17	37	48		
9+40.00	2	11	14		
9+50.00	0	41	53		
9+85.00	0	7	9		
10+00.00					

GRADING FOR GUARDRAIL INSTALLATIONS															107-23 04-19-05							
Refer to Standard Road Plans RL-12, RL-14A(1), RL-14A(2), RL-14B, and Typical 4303																						
Location					Dimensions (Feet)										Class 10 Excavation Cu. Yds.	Embankment In Place Cu. Yds.	Pipe			Remarks		
No.	Direction of Traffic	Station	Side	Type	BY		Z		X1	Y1	X2	Y2	X3	Y3			X4	Y4	Size Inches		Type	Length Lin. Ft.
					A	T	A	T														
1	NB	8+89.73	R	2	9.58		55.75		18.75	4.25					68.46	9.58						① GUARDRAIL GRADING INCLUDED IN TEMPLATE QUANTITIES
2	NB	9+52.03	R	2	8.25		50.79		18.75	4.25					56.04	8.25						
3	SB	9+56.27	L	2	9.58		55.75		18.75	4.25					68.46	9.58						
4	SB	8+93.97	L	2			8.25		18.75	4.25					56.04	8.25						

POINTS OF ACCESS (RL-7)										102-1 10-21-03
Refer to Detail Cross-Sections. For Pipe Culvert Details Refer to RF-30A, RF-30B, and RF-30C.										
Location (RL-7)					Type	Size (Inches)	Length		Apron (No.)	Surface Material (Tons)
Station	Side	W	H	LT (Lin. Ft.)			RT (Lin. Ft.)			
5+88.00	R	30'	C		60	21	23	2	102.9	

POLLUTION PREVENTION PLAN

110-12A

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 and 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 bridge and associated roadway improvements on 110th Street over the Middle Soldier River.

This PPP covers approximately 1.2 acres with an estimated 1.14 acres being disturbed. The portion of the PPP covered by this contract has 1.14 disturbed.

The PPP is located in an area of Kennebec-Colo-McPaul soil association. The estimated average SCS runoff curve number for this PPP after completion will be 73.

Refer to the project plans 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 the Middle Soldier 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.

POLLUTION PREVENTION PLAN

110-12A

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.

BORING LOG NO. <u>1</u>		STATION <u>8+88 7' R</u>		Project No.: <u>061266</u>								
Project: <u>Bridge Over Middle Soldier River</u> <u>T-84N, R-41W, Sec. 20, Charter Oak Twp.</u> <u>Crawford County, Iowa</u>			Client: <u>Shuck-Britson, Inc.</u> <u>2409 Grand Avenue</u> <u>Des Moines, Iowa 50312</u>									
Surface Elevation: <u>1208.6'</u>		Date Drilled: <u>8/25/2006</u>		Drilling Method: <u>HSA</u>								
Datum: <u>CL Existing Bridge (Elevation = 1208.05')</u>		Drilling Depth, ft.: <u>71</u>		Page: <u>1</u> of <u>1</u>								
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 (4" ±)		CL	0.3	
								Brown lean clay, moist FILL (Soft Silty Clay)		CL	1208.3	
		1	SSA	4	27.0			Brown lean clay, moist to very moist Silty clay after 7'		CL-ML	1204.6	
1199	11	2	SSA	5	25.4			Dark gray with interbedded sand seams after 12' COHESIVE ALLUVIUM (Soft Silty Clay) Very moist after 17'				
		3	SSA	7	23.9							
		4	SSA	3	33.0							
1188	22	5	SSA	5	25.0			Gray clayey fine to medium sand, saturated GRANULAR ALLUVIUM (Silty sand)		SC	1183.6	
		6	SSA	3	33.9			Dark gray silty clay, very moist COHESIVE ALLUVIUM (Soft Silty Clay)		CL-ML	1180.6	
1177	33	7	SSA	37				Brown-gray fine to medium sand, trace gravel, saturated GRANULAR ALLUVIUM (Coarse Sand)		SP	1176.1	
		8	SSA	48				Light gray-brown fat clay with sand, moist GLACIAL TILL (Very Firm Glacial Clay)				
1166	44	9	SSA	14	27.2						CH	1166.6
		10	SSA	18	26.3							
1155	55	11	SSA	13	30.2							
		12	SSA	25	19.8							
1144	66	13	SSA	31	17.6							
		14	SSA	19	22.9							
1133	77							End of Boring			1137.6	

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

Water Level Observation		ALLENDER BUTZKE ENGINEERS INC. Geotechnical Environmental Construction Q.C.
Time: at completion	hrs. _____ days _____	
Depth to water:	23 ft. ∇ _____ ft. ∇ _____ ft. ∇	


BORING LOG NO. <u>2</u>		STATION <u>8+47 2' L</u>		Project No.: <u>061266</u>								
Project: <u>Bridge Over Middle Soldier River</u> <u>T-84N, R-41W, Sec. 20, Charter Oak Twp.</u> <u>Crawford County, Iowa</u>			Client: <u>Shuck-Britson, Inc.</u> <u>2409 Grand Avenue</u> <u>Des Moines, Iowa 50312</u>									
Surface Elevation: <u>1208.4'</u>		Date Drilled: <u>8/28/2006</u>		Drilling Method: <u>4" CFA</u>								
Datum: <u>CL Existing Bridge (Elevation = 1208.05')</u>		Drilling Depth, ft.: <u>70</u>		Page: <u>1</u> of <u>1</u>								
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 & SPAN				
1199	11											
1188	22								Dark gray clayey fine to medium sand, saturated		SC	1188.4
									GRANULAR ALLUVIUM (Silty Sand)			
1177	33								Dark gray-brown medium to coarse sand with gravel, saturated Possible cobbles after 36'		SP	1176.4
									GRANULAR ALLUVIUM (Coarse Sand)			
1166	44								Light gray-brown fat clay with sand, moist		CH	1166.4
									GLACIAL TILL (Very Firm Glacial Clay)			
1155	55											
1144	66											
1133	77							End of Boring			1138.4	

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

Water Level Observation		ALLENDER BUTZKE ENGINEERS INC. Geotechnical Environmental Construction Q.C.
Time: at completion	hrs. _____ days _____	
Depth to water:	21 ft. ∇ _____ ft. ∇ _____ ft. ∇	

GEOTECHNICAL

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 DATE 10/16/06

DAVID LOGEMANN IOWA REG. NO. 12394
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2007

PAGES OR SHEETS COVERED BY THIS SEAL 0.01 & 0.02

DESIGN FOR 15° SKEW (R.A.)

125'-0" X 30'-6" CONTINUOUS CONCRETE SLAB BRIDGE

38'-0" END SPANS MONOLITHIC PIERS
 49'-0" INTERIOR SPAN

SOIL BORINGS

STA. 8+23.00 OCTOBER 2006
CRAWFORD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____

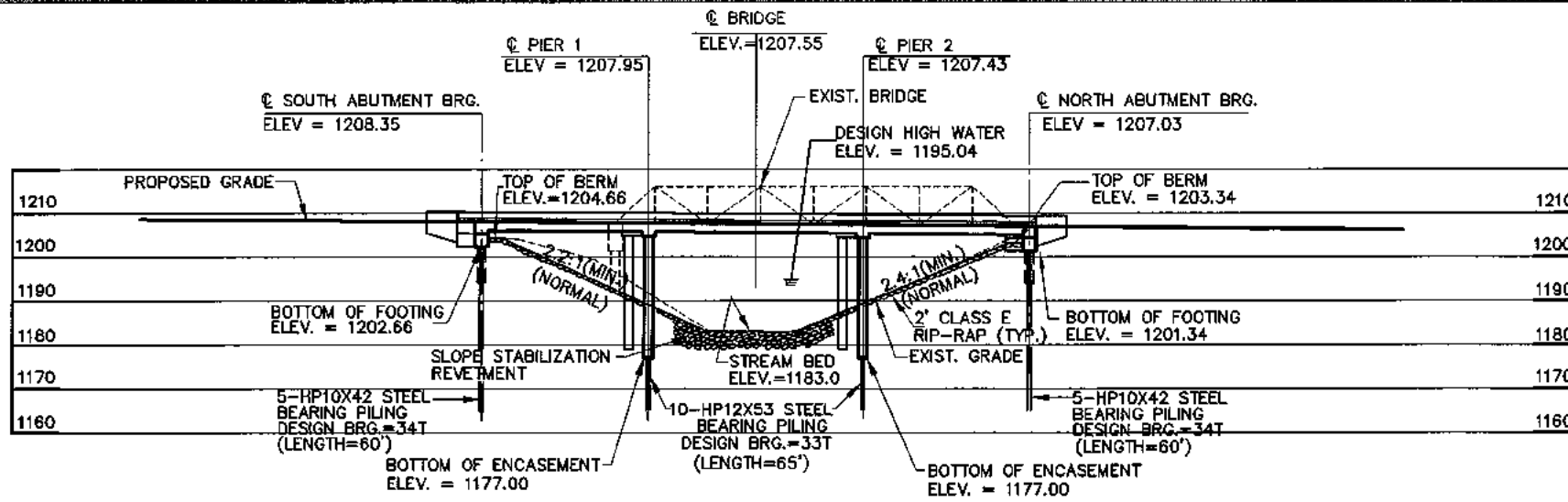
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BORING LOG NO. 3		STATION 7+90 5' R		Project No.: 061266							
Project: Bridge Over Middle Soldier River T-84N, R-41W, Sec. 20, Charter Oak Twp. Crawford County, Iowa		Client: Shuck-Britson, Inc. 2409 Grand Avenue Des Moines, Iowa 50312									
Surface Elevation: 1207.8'		Date Drilled: 8/28/2006		Drilling Method: 4" CFA							
Datum: CL Existing Bridge (Elevation = 1208.05')		Drilling Depth, ft.: 70		Page: 1 of 1							
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 & SPAN			
1199	11							Dark gray lean clay with very fine sand, very moist		CL	10.3 1197.5
								COHESIVE ALLUVIUM (Soft Silty Clay)			
1188	22							Gray clayey fine to medium sand, saturated		SC	22 1185.8
								GRANULAR ALLUVIUM (Silty Sand)			
1177	33							Gray-brown medium to coarse sand with gravel, saturated Possible cobbles after 36'		SP	32 1175.8
								GRANULAR ALLUVIUM (Coarse Sand)			
1166	44							Light gray-brown fat clay with sand, moist		CH	42 1165.8
								GLACIAL TILL (Very Firm Glacial Clay)			
								End of Boring			70 1137.8
1133	77										
*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 ft. @ _____ ft. @ _____ ft. @											
ALLENDER BUTZKE ENGINEERS INC. Geotechnical Environmental Construction Q.C.											

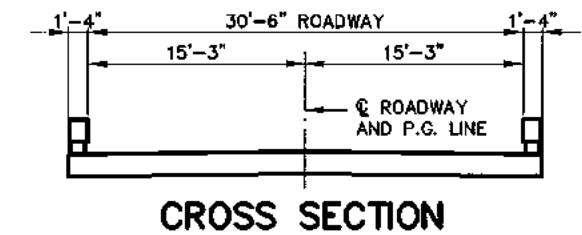
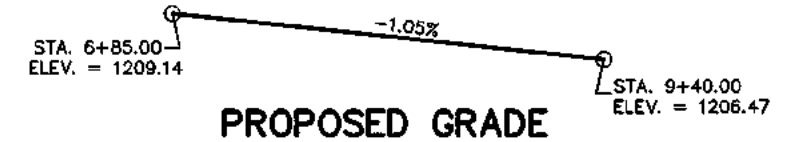
BORING LOG NO. 4		STATION 7+61 4' L		Project No.: 061266							
Project: Bridge Over Middle Soldier River T-84N, R-41W, Sec. 20, Charter Oak Twp. Crawford County, Iowa		Client: Shuck-Britson, Inc. 2409 Grand Avenue Des Moines, Iowa 50312									
Surface Elevation: 1207.1'		Date Drilled: 8/25/2006		Drilling Method: HISA							
Datum: CL Existing Bridge (Elevation = 1208.05')		Drilling Depth, ft.: 71		Page: 1 of 1							
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 (18" ±)			1.5
		1	SSA	5	20.4			Brown lean clay, moist		CL	1205.6
								FILL (Stiff Silty Clay)			
1199	11	2	SSA	6	28.5			Dark gray-brown silty clay, moist to very moist		CL-ML	9.5 1197.6
		3	SSA	6	32.8			COHESIVE ALLUVIUM (Stiff Silty Clay)			
1188	22	4	SSA	6	31.8			Gray, very moist after 20'			23
		5	SSA	18				Brown-gray fine to medium sand, saturated		SP	1184.1
								GRANULAR ALLUVIUM (Fine sand)			28
1177	33	6	SSA	8				Brown-gray well graded sand, trace gravel, saturated		SW	1179.1
		7	SSA	15				GRANULAR ALLUVIUM (Coarse Sand)			
1166	44	8	SSA	37				Sand with medium to large gravel after 41'		CH	42 1165.1
		9	SSA	14	26.7			Light gray-brown fat clay with sand, moist			
		10	SSA	14	24.3			GLACIAL TILL (Very Firm Glacial Clay)			
1155	55	11	SSA	17	22.1						
		12	SSA	20	18.7						
1144	66	13	SSA	17	20.2						
		14	SSA	27	20.2						
								End of Boring			71 1136.1
1133	77										
*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 ft. @ _____ ft. @ _____ ft. @											
ALLENDER BUTZKE ENGINEERS INC. Geotechnical Environmental Construction Q.C.											

DESIGN FOR 15° SKEW (R.A.)
125'-0" X 30'-6" CONTINUOUS CONCRETE SLAB BRIDGE
 38'-0" END SPANS MONOLITHIC PIERS
 49'-0" INTERIOR SPAN
SOIL BORINGS
 STA. 8+23.00 OCTOBER 2006
CRAWFORD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____

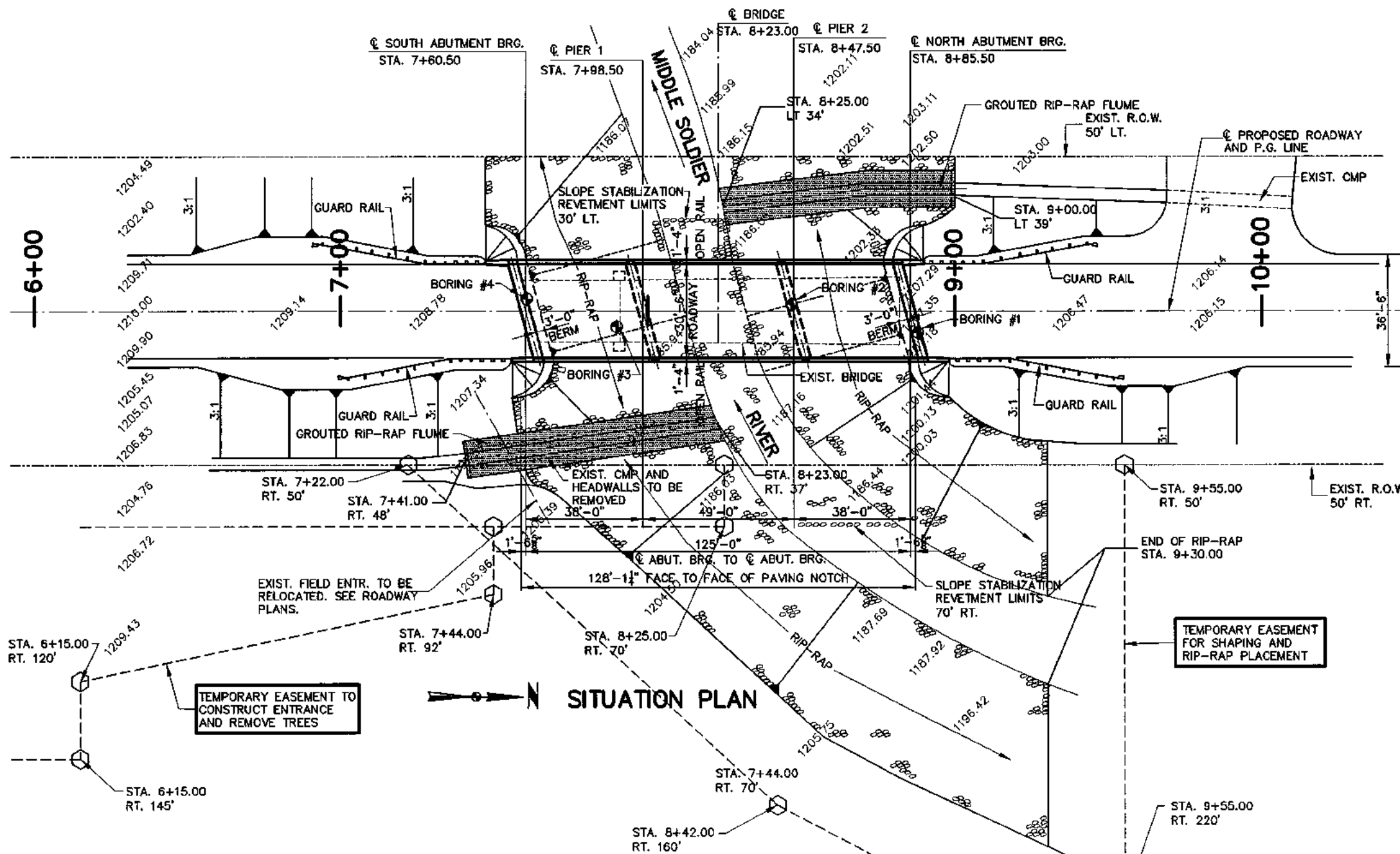
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LONGITUDINAL SECTION AT C OF ROADWAY



CROSS SECTION



SITUATION PLAN

TYPICAL APPROACH SECTION

LOCATION

COUNTY ROAD 110TH STREET OVER MIDDLE SOLDIER RIVER
T-84N, R-41W
SECTION 20
CHARTER OAK TOWNSHIP
CRAWFORD COUNTY

HYDRAULICS

DRAINAGE AREA	22.7 SQ. MI.
STREAM SLOPE	11.9 FT./MI.
BRIDGE WATERWAY AREA	1440 S.F.
DESIGN VELOCITY	7.4 FPS
Q50	5310 CFS
FREEBOARD	10.8 FT.
MAX BACKWATER DEPTH	0.11 FT.
NATURAL STAGE AT BRIDGE	1195.04
Q100	6440 CFS
MAX BACKWATER DEPTH	0.12 FT.
NATURAL STAGE AT BRIDGE	1196.20
CALCULATED SCOUR	5.5 FT.
Q500	8650 CFS
NATURAL STAGE	1198.22

NOTE: ALL DIMENSIONS IN FEET UNLESS NOTED OTHERWISE.
P10A CAP STEEL IS INDICATED ON STANDARD PLAN SHEET.
SEE ROADWAY PLANS FOR GUARDRAIL DETAILS.

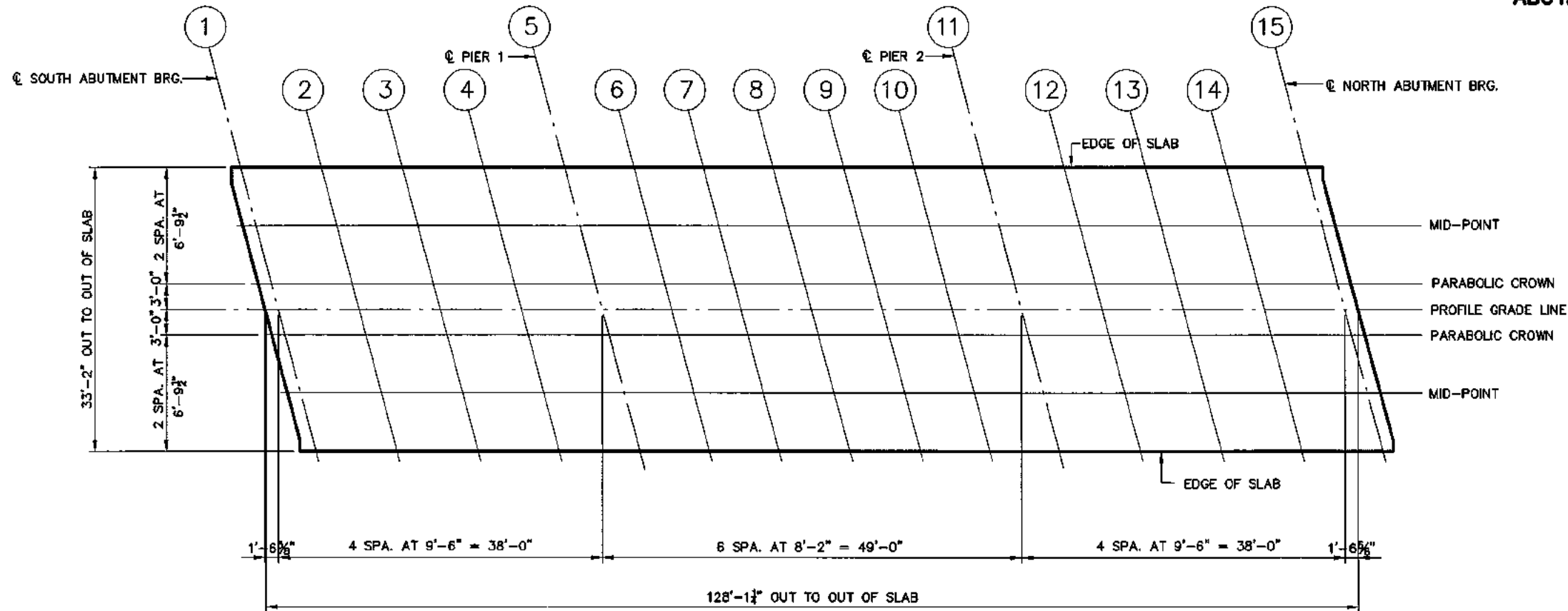
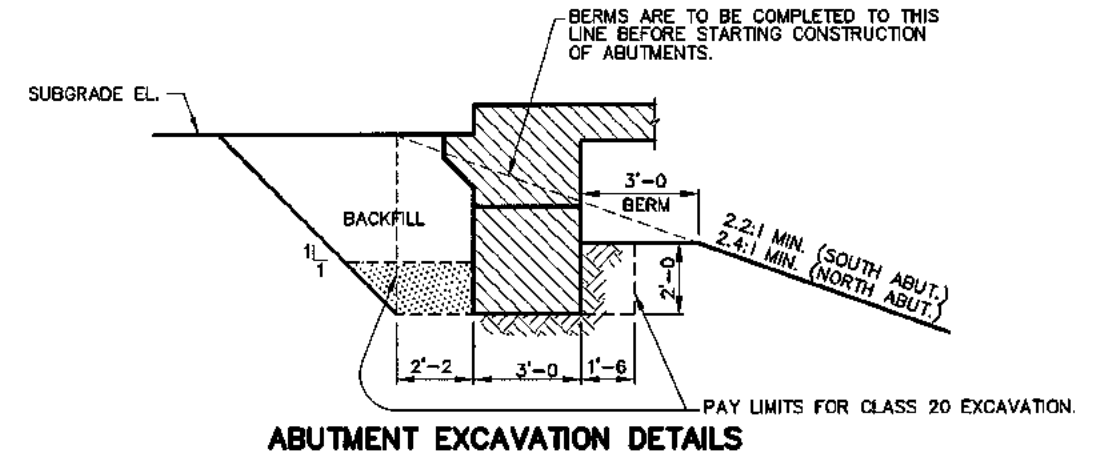
DESIGN FOR 15' SKEW (R.A.)
125'-0" X 30'-6" CONTINUOUS CONCRETE SLAB BRIDGE

38'-0" END SPANS
MONOLITHIC PIERS
49'-0" INTERIOR SPAN
SITUATION PLAN
STA. 8+23.00
CRAWFORD COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____

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TOP OF SLAB ELEVATIONS

LOCATION	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13	LINE 14	LINE 15
EDGE OF SLAB	1208.17	1208.07	1207.97	1207.87	1207.77	1207.69	1207.60	1207.51	1207.43	1207.34	1207.26	1207.16	1207.06	1206.96	1206.86
MID-POINT	1208.25	1208.15	1208.05	1207.95	1207.85	1207.77	1207.68	1207.60	1207.51	1207.42	1207.34	1207.24	1207.14	1207.04	1206.94
PARABOLIC CROWN	1208.33	1208.24	1208.14	1208.04	1207.94	1207.85	1207.76	1207.68	1207.59	1207.51	1207.42	1207.32	1207.22	1207.12	1207.02
PROFILE GRADE LINE	1208.35	1208.25	1208.15	1208.05	1207.95	1207.86	1207.78	1207.69	1207.61	1207.52	1207.43	1207.33	1207.23	1207.13	1207.03
PARABOLIC CROWN	1208.32	1208.22	1208.12	1208.02	1207.92	1207.83	1207.75	1207.66	1207.58	1207.49	1207.40	1207.30	1207.20	1207.11	1207.01
MID-POINT	1208.20	1208.10	1208.00	1207.90	1207.80	1207.71	1207.63	1207.54	1207.46	1207.37	1207.28	1207.18	1207.08	1206.98	1206.88
EDGE OF SLAB	1208.08	1207.98	1207.88	1207.78	1207.68	1207.59	1207.51	1207.42	1207.33	1207.25	1207.16	1207.06	1206.96	1206.86	1206.76



DESIGN FOR 15° SKEW (R.A.)

125'-0" X 30'-6" CONTINUOUS CONCRETE SLAB BRIDGE

MONOLITHIC PIERS
38'-0" END SPANS 49'-0" INTERIOR SPAN

TOP OF SLAB ELEVATIONS

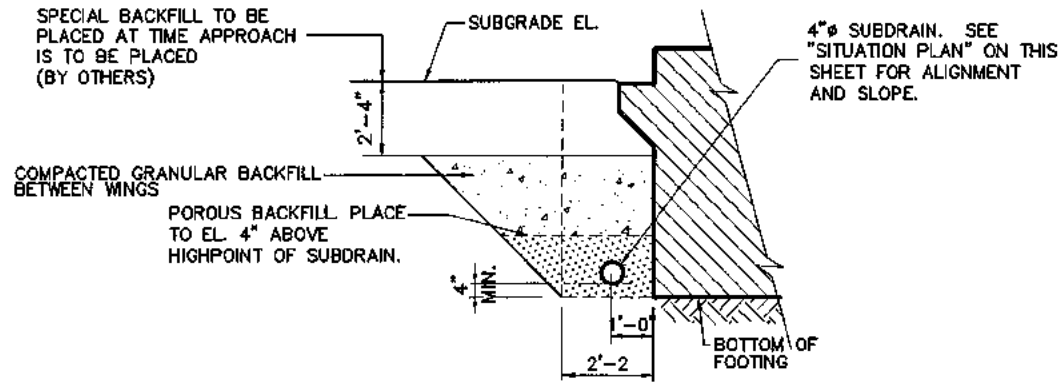
STA. 8+23.00 NOVEMBER 2006

CRAWFORD COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

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SECTION A-A

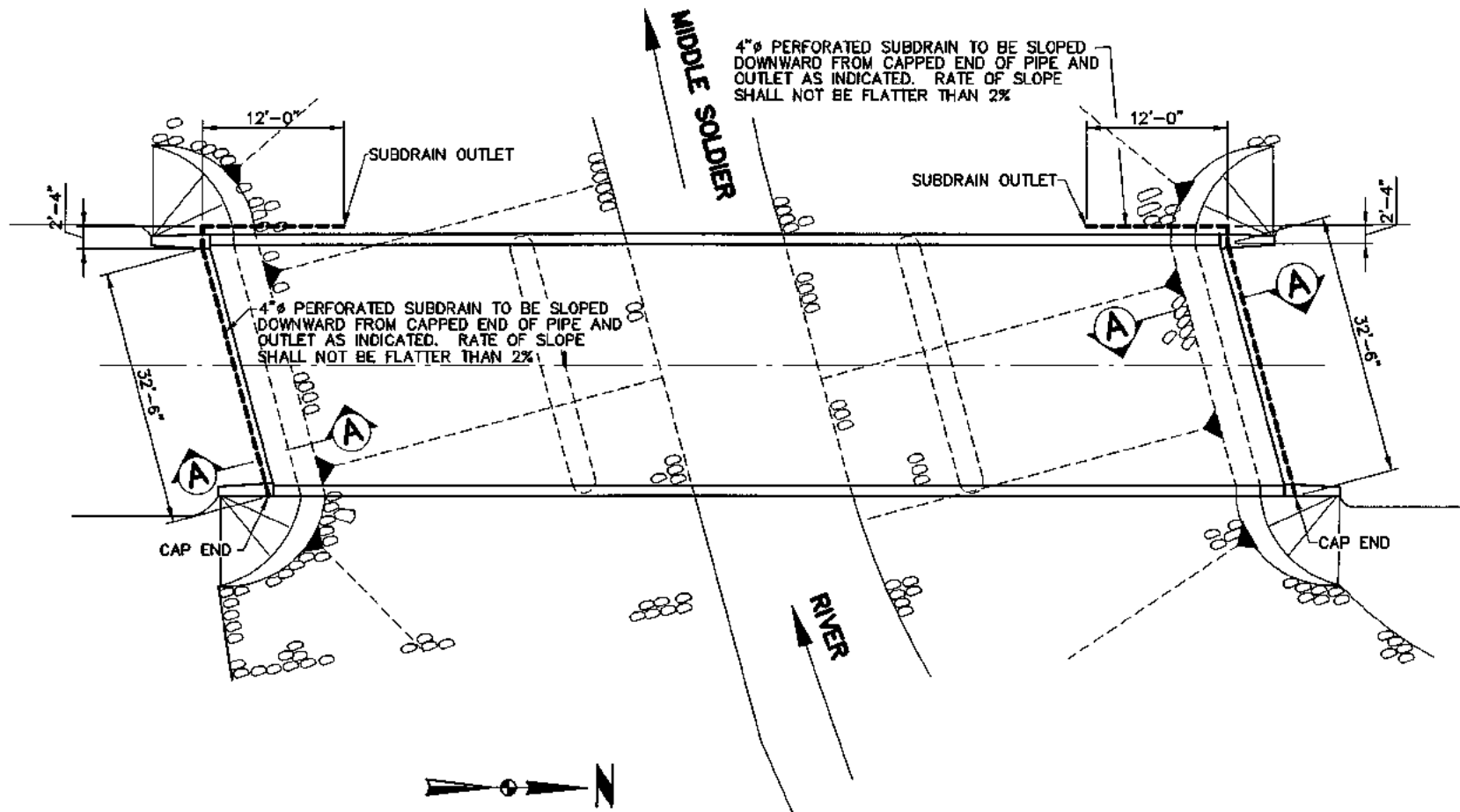
NOTE: SPECIAL BACKFILL MAY BE SUBSTITUTED FOR GRANULAR BACKFILL

GRANULAR BACKFILL DETAILS

SUBDRAIN OUTLET ELEVATIONS	
LOCATION	ELEVATION
SOUTH ABUTMENT	1202.8
NORTH ABUTMENT	1201.4

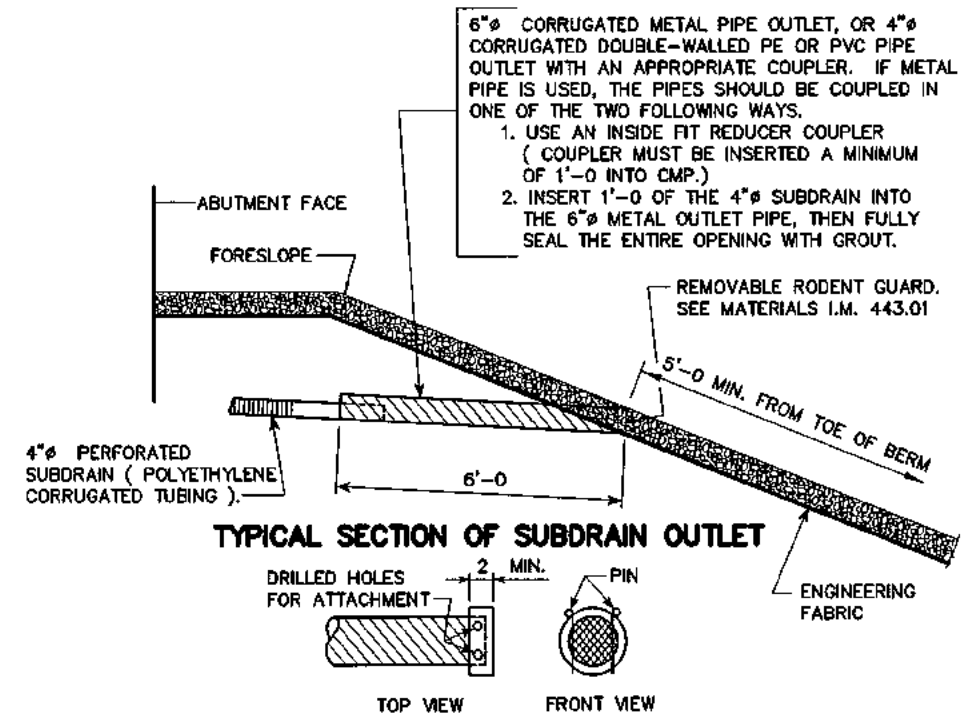
SUBDRAIN NOTES :

THIS PLAN SHEET SHOWS DETAILS FOR PLACING ALL SUBDRAINS AND SUBDRAIN OUTLETS REQUIRED FOR THIS STRUCTURE.
 THE BRIDGE CONTRACTOR IS TO INSTALL SUBDRAINS BEHIND THE ABUTMENT AS DETAILED ON THIS SHEET. THE SUBDRAINS SHALL BE 4" IN DIAMETER AND MEET THE REQUIREMENTS OF SECTION 4143.01 B OF THE CURRENT I.A. D.O.T. STANDARD SPECIFICATION. THE SUBDRAIN OUTLET SHALL CONSIST OF A 6'-0" LENGTH OF PIPE WITH A REMOVABLE RODENT GUARD AS DETAILED ON THIS SHEET.
 THE COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, POROUS BACKFILL, AND SUBDRAIN OUTLET IS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL CONCRETE (BRIDGE)". NO EXTRA PAYMENT WILL BE MADE.
 THE DIMENSIONS SHOWN FOR THE PROPOSED SUBDRAINS ARE BASED ON THE PROPOSED GRADING LAYOUT OF BRIDGE BERMS. THE DIMENSIONS SHOWN ARE FOR ESTIMATING ONLY. REQUIRED LENGTHS AND GENERAL LOCATIONS OF SUBDRAINS ARE SUBJECT TO CHANGE DUE TO FIELD ADJUSTMENTS OF THE GRADING LAYOUT.



PARTIAL SITUATION PLAN

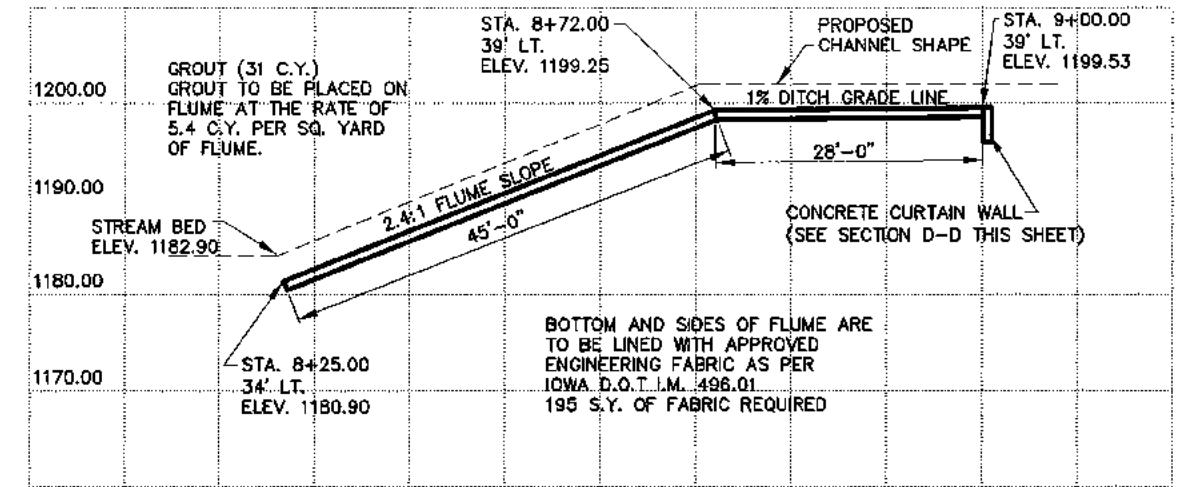
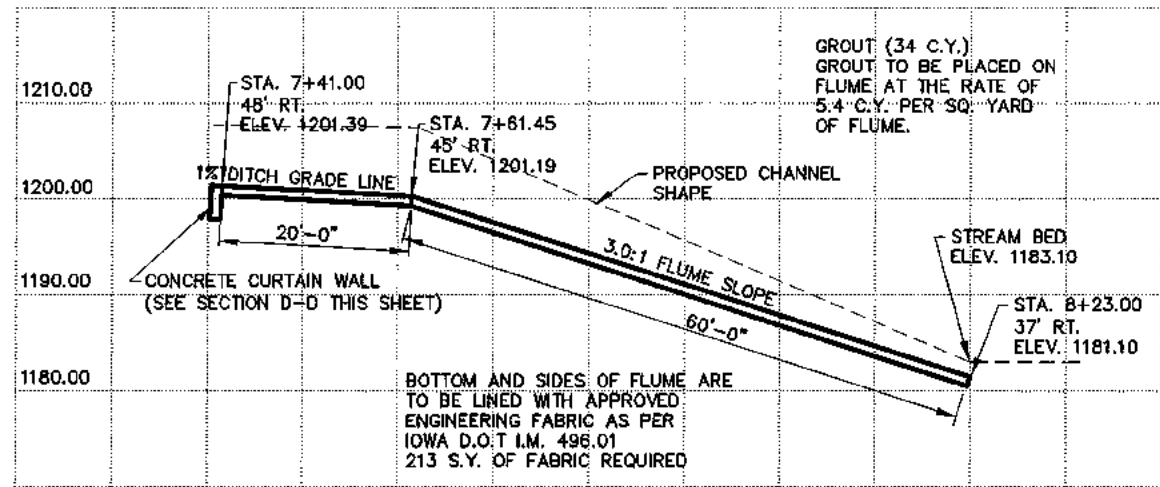
SHOWING SUBDRAIN LOCATIONS



**REMOVABLE RODENT GUARD DETAILS
OUTLET DETAILS**

DESIGN FOR 15° SKEW (R.A.)
125'-0" X 30'-6" CONTINUOUS CONCRETE SLAB BRIDGE
 MONOLITHIC PIERS
 38'-0" END SPANS 49'-0" INTERIOR SPAN
SUBDRAIN DETAILS
 STA. 8+23.00 NOVEMBER 2006
CRAWFORD COUNTY
 IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
 DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____

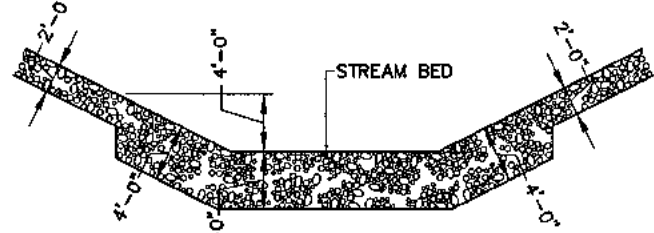
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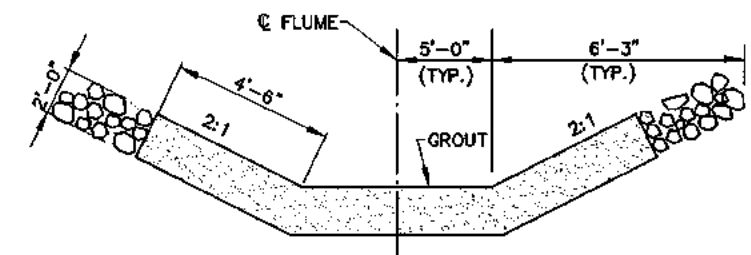
7+20 7+40 7+60 7+80 8+00 8+20 8+40 8+00 8+20 8+40 8+60 8+80 9+00 9+20

SECTION A-A
GROUTED FLUME ALONG CENTERLINE

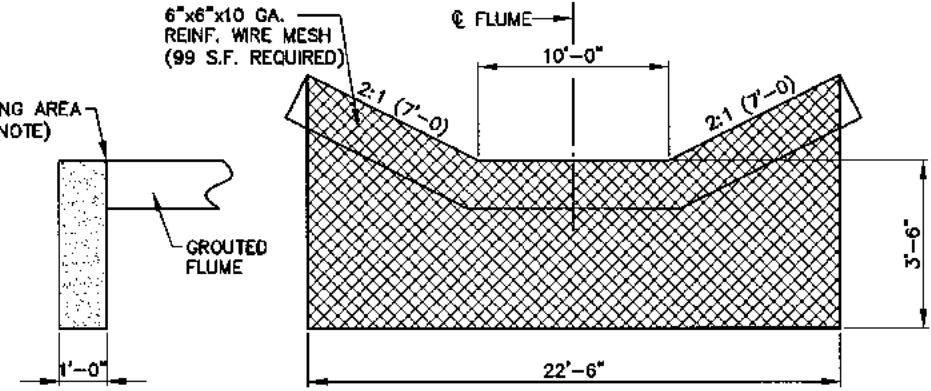
SECTION B-B
GROUTED FLUME ALONG CENTERLINE



SECTION E-E
SLOPE STABILIZATION REVETMENT DETAIL



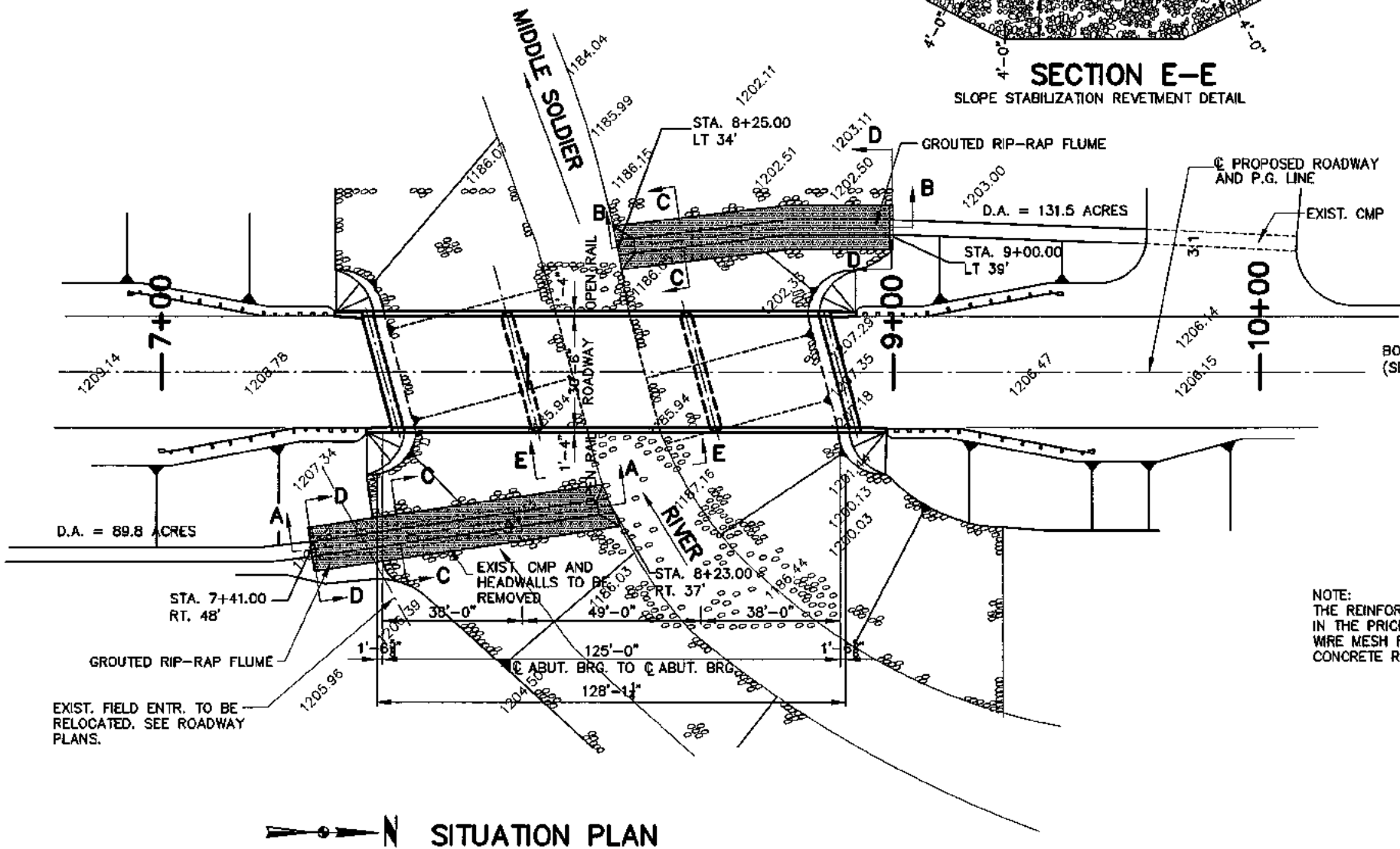
SECTION C-C
SECTION PERPENDICULAR TO CENTERLINE OF
GROUTED FLUME



SECTION D-D
SECTION PERPENDICULAR TO CENTERLINE OF
GROUTED FLUME

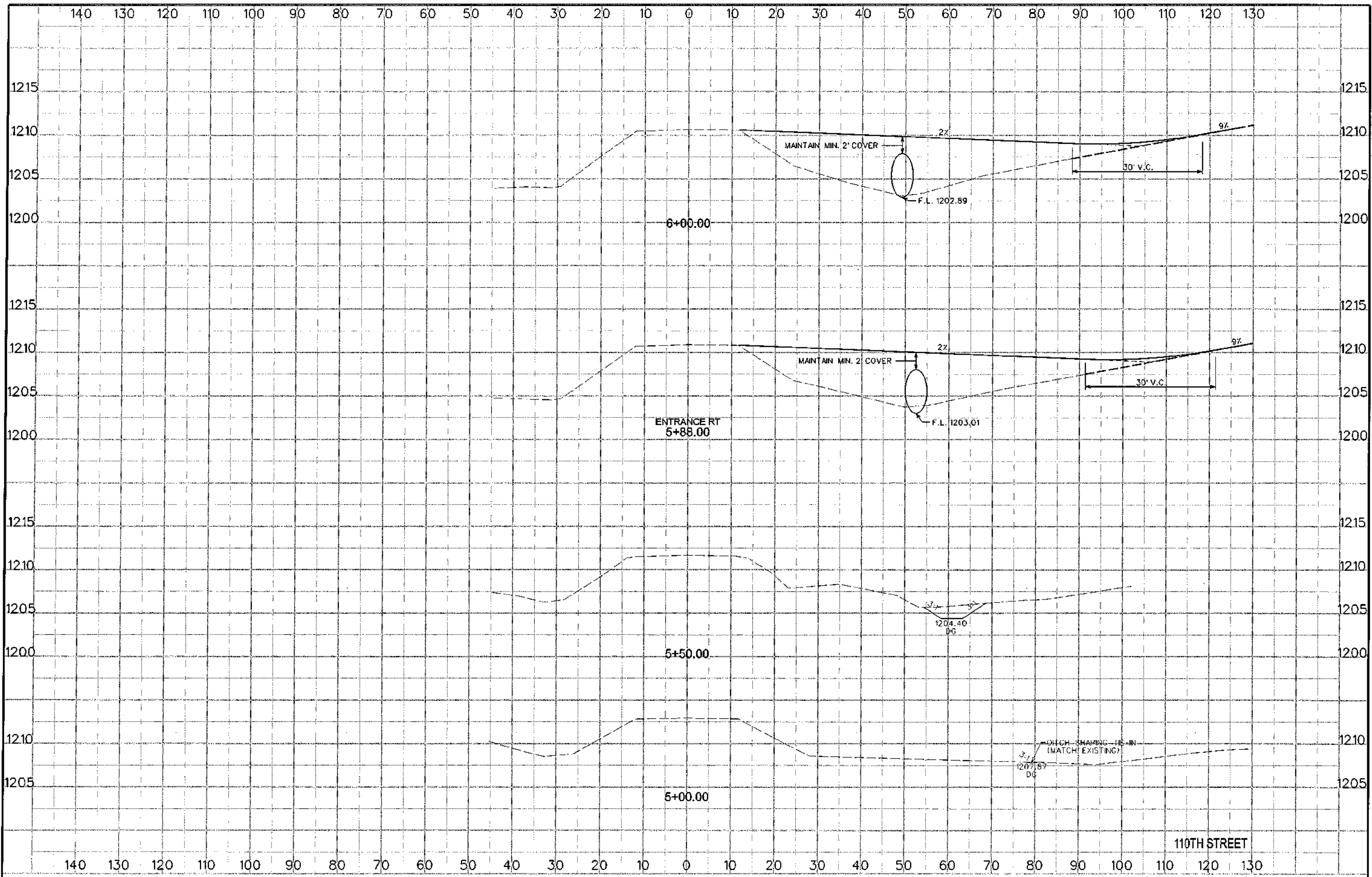
NOTE:
THE REINFORCING WIRE MESH IS TO BE INCLUDED
IN THE PRICE BID FOR THE CONCRETE.
WIRE MESH REQUIRED = 99 S.F. PER FLUME
CONCRETE REQUIRED = 3.8 C.Y. PER FLUME

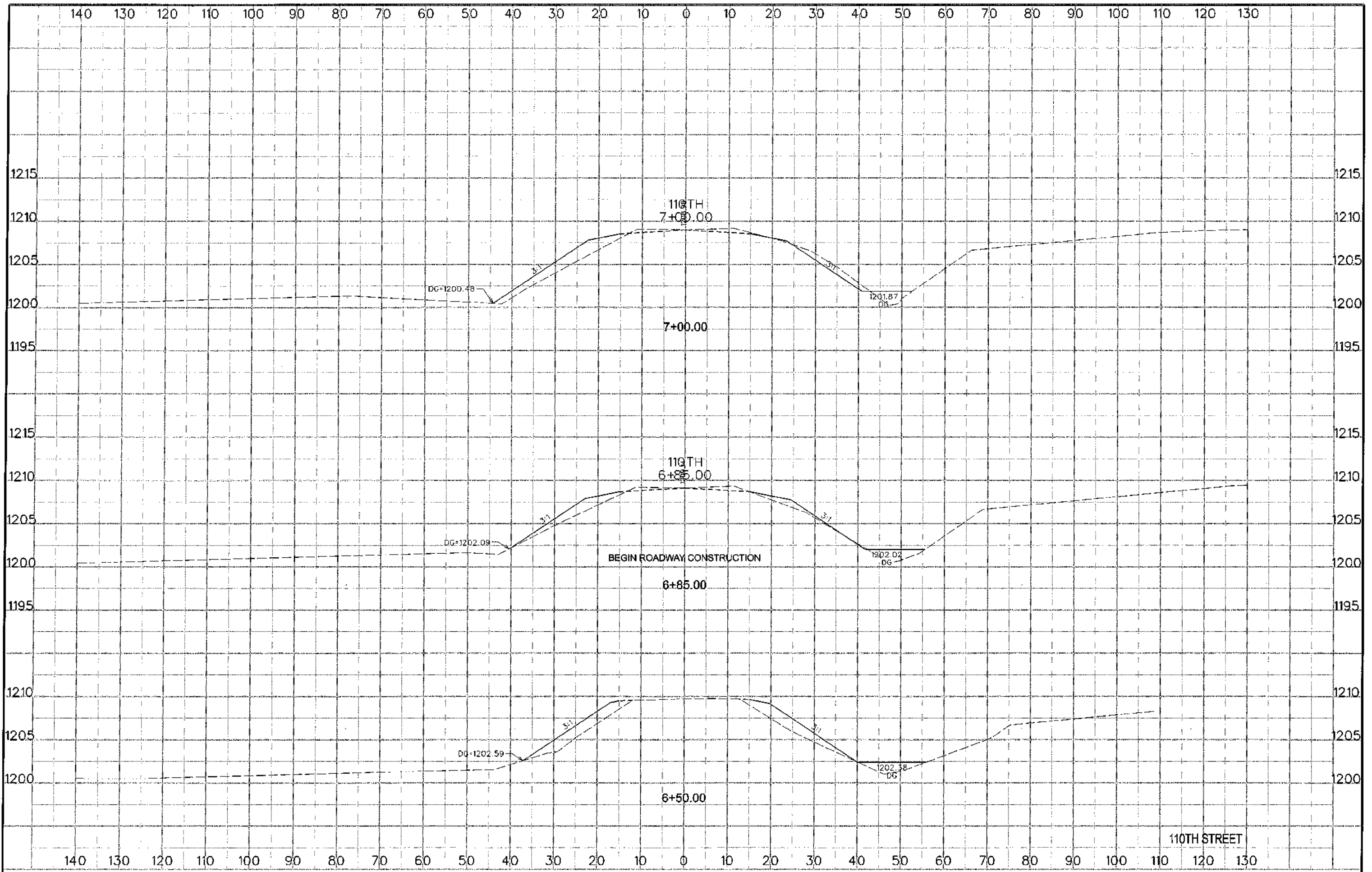
DESIGN FOR 15° SKEW (R.A.)
**125'-0" X 30'-6" CONTINUOUS
CONCRETE SLAB BRIDGE**
MONOLITHIC PIERS
38'-0" END SPANS
49'-0" INTERIOR SPAN
GROUTED FLUME DETAILS
STA. 8+23.00
NOVEMBER 2006
CRAWFORD COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION
DESIGN SHEET NO. _____ OF _____ FILE NO. _____ DESIGN NO. _____



SITUATION PLAN

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110TH STREET

ENGLISH	IOWA DOT	DESIGN TEAM	SNYDER & ASSOCIATES	CRAWFORD	COUNTY	PROJECT NUMBER	BROS-C024(83)--5F-24	SHEET NUMBER	X.02
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