BRIDGE REPLACEMENT - CCS

PROJECT NO. BROS-C024(51)--8J-24

CRAWFORD COUNTY

LETTING DATE : JULY 11, 2000

PROJECT NO. BROS-C024(51)--8J-24
FHWA NO. 130080

IOWA
DEPARTMENT OF TRANSPORTATION
Project Development Division

PLANS OF PROPOSED IMPROVEMENT ON THE

SECONDARY ROADS SYSTEM

CRAWFORD COUNTY

BRIDGE REPLACEMENT - CCS

OVER OTTER CREEK, ¼ MILE EAST OF KIRON

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES OF 1997, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

DIVISION I - BRIDGE
DIVISION II - GRADING

STANDARD ROAD PLANS

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

IDENT.	DATE	IDENT.	DATE	IDENT.	DATE
RC-16A	10-27-98	RE-68	04-27-99	RL-1B	12-03-96
RC-16B	09-21-99	RE-69A	04-27-99	RL-7	12-03-96
		RE-76	01-12-99	RL-14	01-12-99
RE-2B	10-22-93				
RE-12A	04-27-99	RF-30A	03-28-95	RS-26A	10-28-97
RE-12B	04-27-99	RF-30B	01-12-99		
RE-47	10-28-97	RF-32	03-28-95		
RE-48A	12-08-95				
RE-65A	01-12-99	RL-1A	12-03-96		

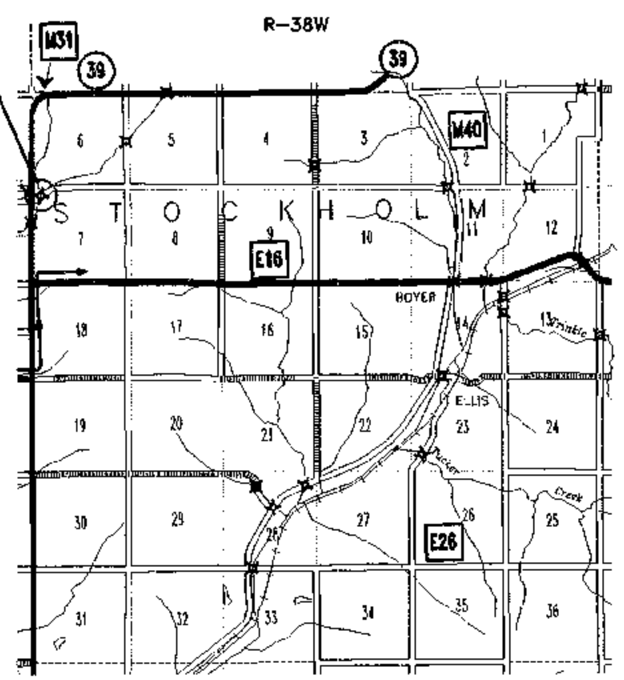
PROJECT TRAFFIC CONTROL PLAN

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 SHALL BE AS PER PART VI OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REVISION 3, DATED SEPTEMBER 3, 1993.

THIS PROJECT (COE # 381880) IS COVERED BY THE CORPS OF ENGINEERS NATIONWIDE 404 PERMIT NO. 14.

STATION 5+75.00
PROPOSED 87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE
0° SKEW

T-85N



PROJECT LOCATION

1 MI 0 1 MI 2 MI

N

333
SRC

INDEX OF SHEETS

MILEAGE SUMMARY

DIV.	LOCATION	LIN.FT.	MILES
	STA. 1+00 TO STA. 10+00	900.00	0.1704
I	BRIDGE AT STA. 5+75	90.50	0.0171
II	TOTAL NET LENGTH OF GRADING	809.50	0.1533

DRAWING APPROVAL

ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY CALHOUN-BURNS AND ASSOCIATES, INC.

ADDRESS : 1801 FULLER ROAD, P.O. BOX 65859
WEST DES MOINES, IOWA 50265
TELEPHONE : (515) 224-4344

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

-150-

1988, TRAFFIC COUNT = 55 V.P.D.

IOWA DEPARTMENT OF TRANSPORTATION STANDARDS REQUIRED

STANDARD	DATE ISSUED	LATEST REVISION
J30C-87	JUNE, 1987	JANUARY, 1989
J30C-2-87	JUNE, 1987	-
J30C-6-87	JUNE, 1987	-
J30C-7-87	JUNE, 1987	-
J30C-11-87	JUNE, 1987	-
J30C-17-87	JUNE, 1987	-
J30C-22-87	JUNE, 1987	JUNE, 1989
P10A	AUGUST, 1988	AUGUST, 1996

THESE SHEETS MAY BE OBTAINED AT BRIDGE DESIGN SERVICES.

LICENSED PROFESSIONAL ENGINEER
LOWELL G. MILLER
14850
IOWA

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.

Lowell G. Miller DATE: 3-17-00
LOWELL G. MILLER, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2000.

PAGES OR SHEETS COVERED BY THIS SEAL:
1 THROUGH 12 OF 12

APPROVED
CRAWFORD CO. ENGINEER DATE

John P. Lawler 3-21-00
BOARD OF SUPERVISORS DATE

Iowa Department of Transportation

Project Development Division

ACCEPTED FOR LETTING
6/12/00
SECONDARY ROADS ENGINEER DATE

CALHOUN-BURNS & ASSOCIATES, INC. CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50265 (515)224-4344

JOB NO. 97190

DESIGNED BY : CNP
DRAWN BY : BJH
CHECKED BY : LGM

CRAWFORD COUNTY

PROJECT NO. BROS-C024(51)--8J-24

TOTAL ESTIMATED QUANTITIES : DIVISION I
87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

REF. NO.	CODE NO.	ITEM	UNIT	2 ABUTS.	2 PIERS	SUPER.	TOTAL
1	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CU.YDS.	–	–	–	1,560
2	2401-6745650	REMOVAL OF EXISTING STRUCTURES	L.S.	–	–	–	1
3	2402-2720000	EXCAVATION, CLASS 20	CU.YDS.	79	–	–	79
4	2403-0100010	CONCRETE, STRUCTURAL (BRIDGE)	CU.YDS.	22.2	–	170.1	192.3
5	2404-7775000	REINFORCING STEEL	LBS.	2,974	–	40,079	43,053
6	2414-6424120	CONCRETE OPEN RAIL	LIN.FT.	–	–	197.0	197.0
7	2501-5425042	PILES, DRIVE, STEEL BEARING, HP 10x42, 10 @ 45', 14 @ 65'	LIN.FT.	450	910	–	1,360
8	2501-5475042	CONCRETE ENCASEMENT OF STEEL H PILES, HP 10x42 (P10A TYPE 3), 14 @ 18'	LIN.FT.	–	252	–	252
9	2501-5550042	PILES, FURNISH, STEEL BEARING, HP 10x42, 10 @ 45', 14 @ 65'	LIN.FT.	450	910	–	1,360
10	2507-3250005	ENGINEERING FABRIC	SQ.YDS.	–	–	–	475
11	2507-6800060	REVETMENT, CLASS 'E', RIPRAP	TONS	–	–	–	350
12	2533-4980005	MOBILIZATION	L.S.	–	–	–	1

REF. NO. — ESTIMATE REFERENCE INFORMATION

1. & 3. SUITABLE MATERIAL SHALL BE USED TO CONSTRUCT APPROACHES, GUARDRAIL BLISTERS, AND ENTRANCE. EXCESS OR UNSUITABLE MATERIAL TO BE WASTED ON SITE.

2. INCLUDES THE COST OF REMOVING AND DISPOSING OF THE EXISTING BROKEN CONCRETE IN AREAS SHOWN ON "SITUATION PLAN" SHEET 3, AND AS DIRECTED BY THE ENGINEER. INCLUDES REMOVAL OF EXISTING BRIDGE, SEE "GENRAL NOTES", SHEET 5

8. SEE STANDARD P10A REVISED AUGUST 1, 1996 FOR TYPE 3 DETAILS FOR PILES.

10. & 11. SEE "SITUATION PLAN", SHEET 3 FOR LIMITS.

11. RIPRAP TO BE PLACED AT 1'-6 THICKNESS.

TOTAL ESTIMATED QUANTITIES : DIVISION II
GRADING

REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
13	2101-0650002	CLEARING AND GRUBBING	UNITS	8.0
14	2102-2710070	EXCAVATION, CLASS 10 ROADWAY AND BORROW	CU.YDS.	2,614
15	2312-8260051	GRANULAR SURFACING ON ROAD CLASS 'A' CRUSHED STONE	TON	320
16	2417-1040024	CULVERTS, CORRUGATED METAL, ENTRANCE PIPE, 24 IN. DIA.	LIN.FT.	48
17	2505-4020251	GUARDRAIL, FORMED STEEL THRIE BEAM	LIN.FT.	125
18	2505-4020400	GUARDRAIL, POSTS, BEAM	EACH	24
19	2505-4021690	GUARDRAIL, END ANCHORAGE, BEAM, RE-69	EACH	4
20	2505-4021760	GUARDRAIL, TERMINAL, BEAM, RE-76	EACH	4
21	2505-5110300	OBJECT MARKER, TYPE 3	EACH	4
22	2518-6910000	SAFETY CLOSURE	EACH	4
23	2525-2638031	SILT FENCE FOR DITCH CHECK	LIN.FT.	80
24	2528-8445110	TRAFFIC CONTROL	L.S.	1
25	2601-2634100	MULCHING	ACRE	1.5
26	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	1.5

REF. NO. — ESTIMATE REFERENCE INFORMATION

13. QUANTITIES SHOWN ARE APPROXIMATIONS. ACTUAL MEASUREMENTS WILL BE TAKEN AT THE TIME OF CONSTRUCTION. SEE "PLAN AND PROFILE", SHEET 8, FOR LOCATIONS.

14. ROADWAY CONSTRUCTION REQUIRES 3,839 C.Y. OF FILL MATERIAL, OF THIS, 1,159 C. Y. IS AVAILABLE FROM DITCH CUTS, AND 1,225 C. Y. IS AVAILABLE FROM, AND WILL BE PAID AS, "CLASS 10, CHANNEL EXCAVATION". THE REMAINING 1,455 C. Y. IS TO BE FURNISHED AS BORROW. TYPE "A" COMPACTION WILL BE REQUIRED. SEE "TABULATIONS" SHEET, AND "PLAN AND PROFILE" SHEET, FOR BREAKDOWN OF EXCAVATION QUANTITIES. INCLUDES MATERIAL FOR BRIDGE APPROACHES, GUARDRAIL BERMS, AND ENTRANCES. NO PAYMENT WILL BE MADE FOR OVERHAUL. THE CONTRACTOR IS TO PROVIDE HIS OWN BORROW AREA OF MATERIAL AS APPROVED BY THE ENGINEER. HE IS TO FAMILIARIZE HIMSELF WITH IOWA LAW AS IT PERTAINS TO REMOVAL AND REPLACEMENT OF TOPSOIL ON BORROW AREAS.

15. SURFACING SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1,400 AND 600 TONS/MILE). INCLUDES 7 TONS FOR DRIVE.

16. SEE TABULATIONS, SHEET 7. ALL PIPES ARE TO BE STANDARD CORRUGATIONS. NO HELICALLY CORRUGATED PIPE WILL BE ALLOWED. ALL CONNECTING BANDS ARE TO BE 24" WIDE.

17.-23. SEE "TABULATIONS", SHEET 7.

24. SEE SHEETS 1 AND 7.

87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
26'-9 END SPANS

MONOLITHIC P10A PIERS
34'-0 INTERIOR SPAN

QUANTITY SUMMARY

STATION 5+75.00
CRAWFORD COUNTY,

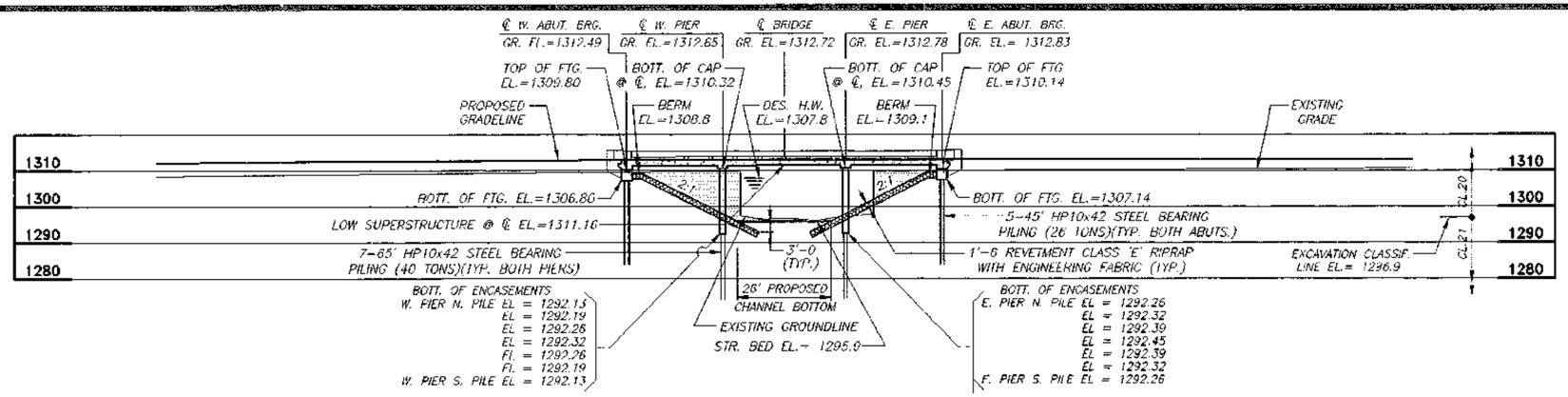
0° SKEW
IOWA

CALHOUN-BURNS & ASSOCIATES, INC. CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50265 (515)224-4344

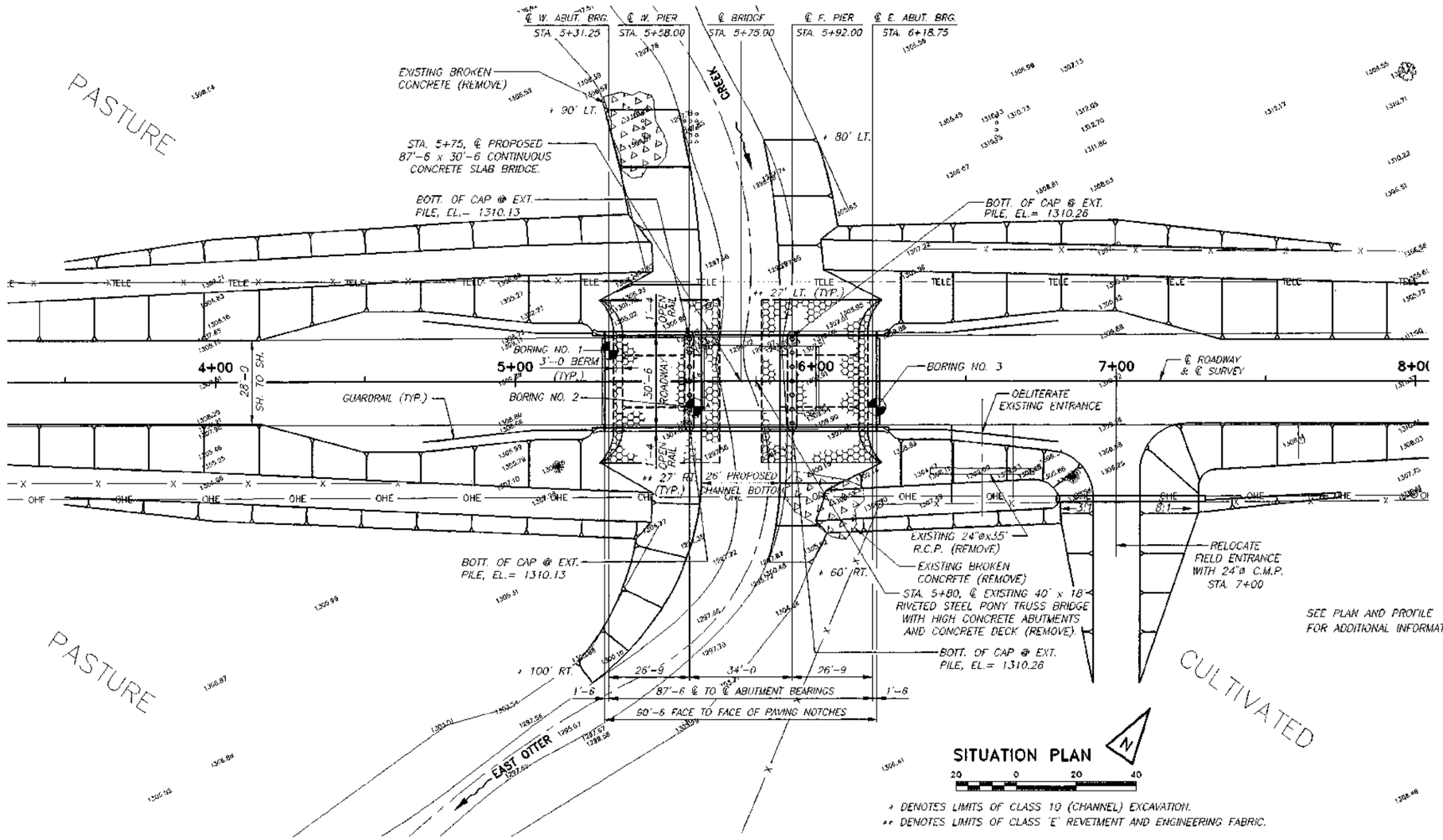
JOB NO. 97190

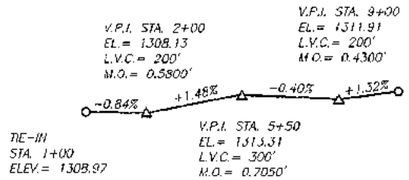
DESIGNED BY : DHP
DRAWN BY : BJH
CHECKED BY : DCM

BENCH MARK : 60d SPIKE IN BRACE POST, STA. 2+40 ±, 40' LT., EL.= 1308.04

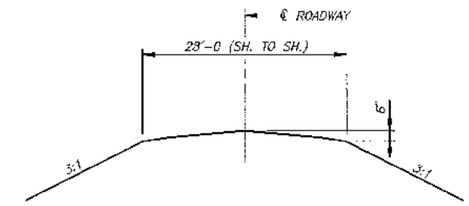


LONGITUDINAL SECTION ALONG ℄ ROADWAY





PROPOSED GRADE



TYPICAL APPROACH SECTION

LOCATION

CRAWFORD COUNTY
T-85N, R-38W
SECTION 7
STOCKHOLM TOWNSHIP
OVER EAST OTTER CREEK

HYDRAULIC DATA

DRAINAGE AREA = 15.4 SQ. MI.
DESIGN DISCHARGE = 3,050 C.F.S.
DESIGN HIGH WATER EL. = 1307.8
MANNING SLOPE = 0.00215 FT./FT.
BRIDGE WATERWAY AREA = 560 SQ. FT.
DESIGN VELOCITY = 5.4 F.P.S.
Q25 = 2,500 C.F.S. STAGE EL. = 1307.1
Q50 = 3,050 C.F.S. STAGE EL. = 1307.8 (DESIGN)
Q100 = 3,600 C.F.S. STAGE EL. = 1308.4
Q500 = 4,800 C.F.S. STAGE EL. = 1309.5
EXT. H.W. EL. = 1307.6
ANTICIPATED SCOUR EL. = 1289.6

SEE PLAN AND PROFILE FOR ADDITIONAL INFORMATION

SITUATION PLAN

+ DENOTES LIMITS OF CLASS 10 (CHANNEL) EXCAVATION.
** DENOTES LIMITS OF CLASS 'E' REVETMENT AND ENGINEERING FABRIC.

87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS
26'-9 END SPANS

MONOLITHIC P10A PIERS
34'-0 INTERIOR SPAN

SITUATION PLAN

STATION 5+75.00
CRAWFORD COUNTY,

0° SKEW
IOWA

SHEET 3 OF 12

BENCH MARK : 60d SPIKE IN BRACE POST, STA. 2+40±, 10' LT., EL.= 1308.04

BORING LOG NO. 1 STATION 5+31 10' LT Project No.: 001122

Project: Bridge Over East Otter Creek, Sec. 7, T85N, R38W, Stockholm Twp., Crawford Co., Ia
Client: Calhoun-Burns & Associates, Inc., 1801 Fuller Road, West Des Moines, Iowa 50265
Surface Elevation: 1309.5' Datum: Site BM = 1308.04'
Date Drilled: 2-7-00 Drilling Depth, ft.: 60 Drilling Method: 4" CFA 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							GRAVEL ROAD		CL		.58
		1	ST		27.4	94	4680	Dark brown and brown mixed lean clay, moist FILL		CL-ML		1308.92 4
		2	ST		24.4	83	1100	Dark gray silty clay, very moist Fine sand content below 8.5' COHESIVE ALLUVIUM (Soft Silty Clay)		ML		305.5
296		3	ST		30.6	91	900	Interbedded sand seams noted below 14'			▼	16.5
										SP		1293
	24							Brown poorly graded medium to coarse sand with gravel, saturated GRANULAR ALLUVIUM (Coarse Sand)				25.5
										CL-CH		1284
272								Yellow brown-gray sandy lean to fat clay, trace gravel, moist to very moist PRE-ILLINOIAN GLACIAL TILL (Very Firm Sandy Glacial Clay)				00
248	48							End of Boring				249.5
	72											

The stratification lines represent the approximate boundary lines between material types; in-situ, the transition may be gradual.
Water Level Observation: Time of completion ___ hrs ___ days; Depth to water: 14 ft. ▼ ___ ft. ▼ ___ ft. ▼
ALLENDER BUTZKE ENGINEERS, INC. Geotechnical • Environmental • Construction Q.C.

BORING LOG NO. 2 STATION 5+58 9' RT Project No.: 001122

Project: Bridge Over East Otter Creek, Sec. 7, T85N, R38W, Stockholm Twp., Crawford Co., Ia
Client: Calhoun-Burns & Associates, Inc., 1801 Fuller Road, West Des Moines, Iowa 50265
Surface Elevation: 1309.8' Datum: Site BM = 1308.04'
Date Drilled: 2-7-00 Drilling Depth, ft.: 61 Drilling Method: 2.25" HSA 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							GRAVEL ROAD		CL		.58
		1	SS	9	31.5			Dark brown and brown mixed lean clay, moist FILL		CL-ML		1309.22 6
		2	SS	8	29.4			Dark gray to gray silty clay, very moist COHESIVE ALLUVIUM (Soft Silty Clay)		ML		303.8
296		3	SS	4	28.6						▼	16
		4	SS	25				Brown poorly graded medium to coarse sand with gravel, saturated Choppy drilling GRANULAR ALLUVIUM (Coarse Sand)		SP		293.8
	24	5	SS	33								25.5
		6	SS	28						CL-CH		284.3
		7	SS	19	19.7			Yellow brown-gray sandy lean to fat clay, trace gravel, moist to very moist				
272		8	SS	20	20.3			PRE-ILLINOIAN GLACIAL TILL (Very Firm Sandy Glacial Clay) Possible interbedded sand seams noted below 46.5'				
	48	9	SS	26								
		10	SS	29	24.2							
		11	SS	42	18.4							
248		12	SS	45	19.7							
	72							End of Boring				61 248.8

The stratification lines represent the approximate boundary lines between material types; in-situ, the transition may be gradual.
Water Level Observation: Time of completion ___ hrs. ___ days; Depth to water: 12.5 ft. ▼ ___ ft. ▼ ___ ft. ▼
ALLENDER BUTZKE ENGINEERS, INC. Geotechnical • Environmental • Construction Q.C.

BORING LOG NO. 3 STATION 6+19 9' RT Project No.: 001122

Project: Bridge Over East Otter Creek, Sec. 7, T85N, R38W, Stockholm Twp., Crawford Co., Ia
Client: Calhoun-Burns & Associates, Inc., 1801 Fuller Road, West Des Moines, Iowa 50265
Surface Elevation: 1311.0' Datum: Site BM = 1308.04'
Date Drilled: 2-7-00 Drilling Depth, ft.: 60 Drilling Method: 4" CFA Page: 1 of 1

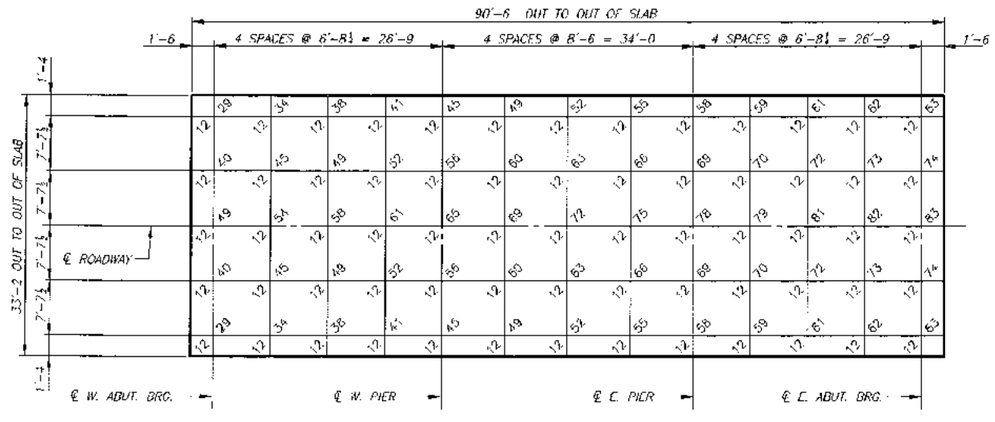
Elevation ft.	Depth ft.	Sample No.	Type	SPT bpf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description	Graphic Log	USCS	Water Level	Depth / Elevation ft.
	0							GRAVEL ROAD		CL		.5
		1	ST		31.0	76	2140	Dark gray and dark brown mixed lean clay, moist FILL		CL-ML		309.5 3
		2	ST		30.3	86	1940	Dark gray silty clay, very moist COHESIVE ALLUVIUM (Soft Silty Clay)		ML		1307
296		3	ST		30.5	89	690	Gray with interbedded sand seams noted below 13.5'			▼	17
										SP		1293
	24							Brown poorly graded medium to coarse sand with gravel, saturated GRANULAR ALLUVIUM (Coarse Sand)				25
										CL-CH		1285
272								Yellow brown-gray sandy lean to fat clay, trace gravel, moist to very moist PRE-ILLINOIAN GLACIAL TILL (Very Firm Sandy Glacial Clay)				
	48											
248								End of Boring				00 1250
	72											

The stratification lines represent the approximate boundary lines between material types; in-situ, the transition may be gradual.
Water Level Observation: Time of completion ___ hrs. ___ days; Depth to water: 13.5 ft. ▼ ___ ft. ▼ ___ ft. ▼
ALLENDER BUTZKE ENGINEERS, INC. Geotechnical • Environmental • Construction Q.C.

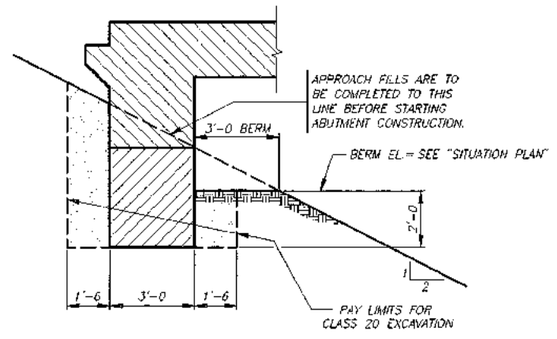
SOUNDING DATA

(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 2-15-00, COMPLETE WITH THE LICENSED ENGINEER'S SEAL AND CERTIFICATION, IS AVAILABLE FOR VIEWING AT CALHOUN-BURNS AND ASSOCIATES, INC., 1801 FULLER ROAD, WEST DES MOINES, IOWA, OR AT THE OFFICE OF THE CRAWFORD COUNTY ENGINEER.



TOP OF SLAB ELEVATIONS
(ADD 1300 TO ELEVATIONS SHOWN)



ABUTMENT EXCAVATION DETAIL

87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS — MONOLITHIC P10A PIERS
26'-9 END SPANS — 34'-0 INTERIOR SPAN

SOUNDING DATA & MISC. DETAILS

STATION 5+75.00 — 0° SKEW
CRAWFORD COUNTY, — IOWA

SHEET 4 OF 12

SPECIFICATIONS

DESIGN: AASHTO SERIES OF 1983, PLUS INTERIM SPECIFICATIONS

CONSTRUCTION: STANDARD SPECIFICATION OF THE IOWA DEPARTMENT OF TRANSPORTATION, PROJECT DEVELOPMENT DIVISION, SERIES OF 1997, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 1983, PLUS INTERIM SPECIFICATIONS.

CONCRETE IN ACCORDANCE WITH SECTION 8 f'c = 3500 PSI.

REINFORCING STEEL IN ACCORDANCE WITH SECTION 8 fs = 24,000 PSI (GRADE 60).

GENERAL NOTES

THIS DESIGN IS FOR A 87'-6 x 30'-6 REINFORCED CONCRETE SLAB BRIDGE OVER EAST 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.

THE EXISTING BRIDGE IS A 40' x 18' STEEL PONY TRUSS BRIDGE WITH HIGH CONCRETE ABUTMENTS. THE STRUCTURE HAS A CONCRETE DECK.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. THE EXISTING STRUCTURE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. THE EXISTING STRUCTURE SHALL BE REMOVED TO AN ELEVATION AT LEAST 1' ± BELOW FINISHED GROUNDLINE AND TO THE EXTENT THAT IT WILL NOT INTERFERE WITH THE NEW CONSTRUCTION.

SCRAPE SAMPLES OF PAINT FROM THIS BRIDGE WERE TAKEN TO GET AN INDICATION OF THE EXISTENCE OF AND LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. THE ANALYSIS OF TOTAL CHROMIUM IN THESE SAMPLES WAS 183 PARTS PER MILLION (PPM). THE ANALYSIS OF TOTAL LEAD IN THESE SAMPLES WAS 56,300 PPM. THE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. THE LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER SUBSTANCES WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE CONTRACTING AUTHORITY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

ALL UNSALVAGEABLE MATERIAL AND RUBBLE, INCLUDING THE EXISTING BROKEN CONCRETE, FROM THIS PROJECT SHALL BE REMOVED FROM THE HIGHWAY RIGHT-OF-WAY TO A WASTE AREA PROVIDED BY THE CONTRACTOR IN ACCORDANCE WITH CURRENT LAWS AND RESTRICTIONS. THE WASTED MATERIAL MUST NOT CREATE AN UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS. THE COST OF WASTING THIS MATERIAL IS TO BE INCLUDED IN THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES." NO PAYMENT WILL BE MADE FOR OVERHAUL.

GENERAL NOTES (CONTINUED)

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. THE CONTRACTOR IS REQUIRED TO REMOVE ALL FILL-MATERIAL USED AS A TEMPORARY CROSSING TO AN UPLAND, NON-WETLAND SITE, TO SEED ALL DISTURBED AREAS WITH NATIVE GRASSES, AND TO IMPLEMENT APPROPRIATE MEASURES TO INSURE SEDIMENTS ARE NOT INTRODUCED INTO WATERS OF THE UNITED STATES DURING CONSTRUCTION OF THIS PROJECT. IF CLEAN EARTH IS USED AS FILL IN A TEMPORARY CROSSING, THE UPSTREAM FACE SHALL BE ARMORED. THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF TEMPORARY CROSSINGS, INCLUDING CULVERTS, SHALL BE INCIDENTAL TO THE PROJECT.

SUITABLE CLASS 10 (CHANNEL) EXCAVATION AND CLASS 20 EXCAVATION, AS DIRECTED BY THE ENGINEER, SHALL BE USED FOR CONSTRUCTION OF APPROACH FILLS AND GUARDRAIL BUSTERS. COST OF PLACEMENT SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE BID ITEM. ANY UNSUITABLE AND/OR EXCESS MATERIAL SHALL BE WASTED ON SITE. NO PAYMENT FOR OVERHAUL WILL BE MADE.

THE CONTRACTOR IS 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." THIS WORK WILL BE PAID FOR AS "EXCAVATION, CLASS 10, CHANNEL."

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.

CLASS 20 EXCAVATION FOR THE ABUTMENTS IS BASED ON THE ASSUMPTION THAT THE CHANNEL EXCAVATION AND THE NECESSARY BERM CONSTRUCTION HAS BEEN COMPLETED.

MINIMUM BEARING CAPACITY IS TO BE 40 TONS PER PILE AT PIERS AND 26 TONS PER PILE AT ABUTMENTS.

THE PIER PILES ARE TO BE P10A TYPE 3 (HP10X42). SUPERSTRUCTURE CONCRETE QUANTITY HAS BEEN INCREASED BY 0.4 C.Y. OVER QUANTITY SHOWN ON I.D.O.T. STANDARD J30C-2-87 DUE TO SUBSTITUTION OF P10A TYPE 3 PILING IN MONOLITHIC PIER BENTS. 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. CAP STEEL IS REQUIRED.

THE UNIT PRICE BID FOR "REVETMENT, CLASS E, RIP-RAP" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVETMENT STONE ON BOTH BANKS OF THE CHANNEL TO THE EXTENT SHOWN ON SHEET 3 AND IN ACCORDANCE WITH SECTION 4130 OF THE STANDARD SPECIFICATIONS.

ALL REINFORCING SHALL BE GRADE 60.

GENERAL NOTES (CONTINUED)

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.

TOP AND BOTTOM REINFORCING STEEL IS TO BE SUPPORTED AS NOTED ON STANDARD J30C-2-87.

ALL STRUCTURAL CONCRETE FOR THE BRIDGE DECK IS TO BE CLASS "C"; SUBSTITUTION OF CLASS "D" CONCRETE IS NOT ALLOWED.

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

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

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. 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.

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 MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO.

UTILITY COMPANIES WHOSE FACILITIES ARE KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.

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. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK. THE STRUCTURAL CONCRETE AND REINFORCING STEEL QUANTITIES HAVE BEEN REDUCED BY 1.0 CU. YDS. AND 30 LBS., RESPECTIVELY FOR THE ELIMINATION OF THE PAVING BLOCKS.

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 FERTILIZING (RURAL)" AND "MULCHING" BID ITEM. 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.

IF ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING THE CONSTRUCTION PHASE OF THE PROJECT, THE OFFICE OF PROJECT PLANNING (IDOT) MUST BE CONTACTED IMMEDIATELY SO THE PROPER AUTHORITIES CAN BE NOTIFIED ACCORDING TO THE EXISTING FEDERAL REGULATIONS AND STATE PROCEDURES. ADDITIONALLY, IT SHOULD BE NOTED THAT FINDINGS AND RECOMMENDATIONS FOR CLEARANCE OR FURTHER TESTING CANNOT BE CONSIDERED FINAL UNTIL CONCURRENCE IS RECEIVED FROM THE STATE HISTORICAL PRESERVATION OFFICER. PHONE: OFFICE OF PROJECT PLANNING 515-239-1225.

THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THIS SHALL BE INCLUDED IN THE PRICE BID FOR "SEEDING AND FERTILIZING (RURAL)" AND "MULCHING."

87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS — **MONOLITHIC P10A PIERS**

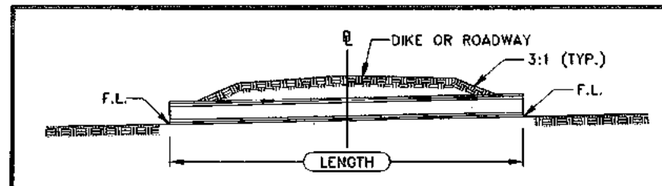
26'-9 END SPANS — **34'-0 INTERIOR SPAN**

GENERAL NOTES

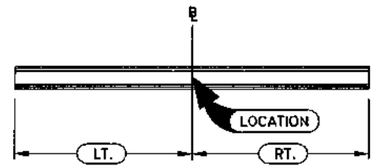
STATION 5+75.00 — **0° SKEW**

CRAWFORD COUNTY, — **IOWA**

SHEET 5 OF 12



SECTION



PLAN

NOTES:

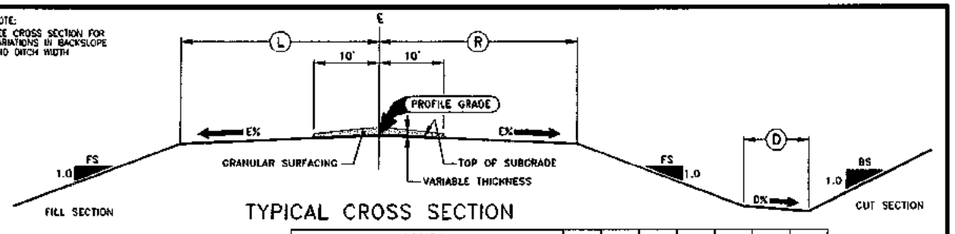
℄ SHALL BE ℄ OF ROADWAY, DIKE, SURVEY, OR OTHER; AS DETAILED ON PLANS.

SKEW ANGLE IS THE ANGLE WHICH ONE END OF THE PIPE IS AHEAD (BY STATIONING) OF LINE PERPENDICULAR TO THE ℄ (EXAMPLE SKEW RT. AHEAD 30°).

REFER TO TABULAR LISTING AND OTHER PLANS FOR ADDITIONAL INFORMATION.

ENTRANCE
PIPE CULVERT

NOTE:
SEE CROSS SECTION FOR VARIATIONS IN BACKSLOPE AND DITCH WIDTH



TYPICAL CROSS SECTION

LOCATION			Ⓛ	Ⓡ	E%	FS	0%	BS	Ⓓ
ROAD IDENT.	STATION TO STATION								
MAIN LINE	1+00	1+60		TRANSITION FROM EXISTING					
MAIN LINE	1+60	5+29.75	14	14	3.57	3	2	3	10
BRIDGE									
MAIN LINE	6+20.25	9+00	14	14	3.57	3	2	3	10
MAIN LINE	9+00	10+00		TRANSITION TO EXISTING					

NOTE:
NORMAL SECTIONS SHOWN MAY BE MODIFIED APPROPRIATELY IN AREAS OF SUPERELEVATION CURVES OR OTHER LOCATIONS SPECIFICALLY DESIGNATED BY THE ENGINEER.

GRADING NOTES

PLAN AND PROFILE SHEETS INCLUDED IN THE PROJECT ARE FOR PURPOSE OF ALIGNMENT, LOCATION AND SPECIAL DIRECTION FOR THE WORK TO BE PERFORMED UNDER THIS CONTRACT. IRRELEVANT DATA ON THESE SHEETS IS NOT TO BE CONSIDERED A PART OF THIS CONTRACT.

ACCESS SHALL BE MAINTAINED 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, AN ALTERNATE ACCESS SHALL BE PROVIDED AND MAINTAINED. THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE PROJECT.

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. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY ENGINEER.

WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION. ACCESS SHALL BE AFFORDED TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES, AND THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT'S POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR INTERFERENCE, OR DELAY CAUSED BY SUCH WORK.

UTILITY RELOCATIONS SHALL BE COORDINATED WITH WORK ON THIS PROJECT. BOTH REMOVAL AND RELOCATION WILL REQUIRE ASSISTANCE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER WORK ON THIS PROJECT.

DUE CAUTION IS TO BE USED IN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN THE TILE LINE DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT HIS EXPENSE WITHOUT COST TO THE OWNER. ANY TILE LINES BROKEN OR DISTURBED BY OUR CUT LINES WILL BE REPLACED AS DIRECTED BY THE ENGINEER IN CHARGE OF CONSTRUCTION AND AT THE OWNER'S EXPENSE.

EXCEPT WHERE NOTED OTHERWISE ON THE PLANS, ALL ENTRANCE AND ROADWAY CULVERTS SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AS PART OF "EXCAVATION, CLASS 10, ROADWAY AND BORROW".

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

THE CONTRACTOR IS TO PROVIDE HIS OWN BORROW FOR "CLASS 10, ROADWAY AND BORROW, EXCAVATION." NO PAYMENT FOR OVERHAUL WILL BE MADE. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH PROVISIONS OF IOWA LAW AS IT APPLIES TO REMOVAL AND REPLACEMENT OF TOPSOIL ON BORROW AREAS.

ALL PROPOSED DRIVES AND FIELD ENTRANCES SHALL BE CONSTRUCTED WITH A 20' TOP AND 3:1 SLOPES, UNLESS NOTED OTHERWISE.

THE EXISTING ROADWAY SHALL BE SCARIFIED TO A DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF THE FILL.

NO PAYMENT FOR OVERHAUL SHALL BE MADE ON THIS PROJECT.

TYPICAL SECTIONS AND GRADING NOTES

CRAWFORD COUNTY IOWA

TABULATION OF STEEL BEAM GUARDRAIL AT BRIDGE END POST, CONCRETE BARRIER AND RAILROAD SIGNALS

108-8A
09-21-99

① Lane(s) to which the obstacle is adjacent.
② Applies to Standard Road Plan RE-63 only.
Refer to Standard Road Plan RE-63, RE-65A and RE-65B
③ Each STS includes 2-12.5' Thrie Beam Sections and 1-6.25' "W" to Thrie Beam Transition Section

LOCATION						CASE		LAYOUT LENGTHS										BID ITEMS								
								Approach Side Ⓐ					Trailing Side Ⓣ					Rail Elements		Posts		Anchorage and Terminal Systems				
NO.	① DIRECTION OF TRAFFIC	STATION	SIDE	STANDARD ROAD PLAN	② L2	Ⓐ	Ⓣ	STS ③ (18.75')	VT	VF	Terminal (37.5')	Total	STS ③ (18.75')	VT	VF	Terminal (37.5')	Total	W-Beam Ⓐ + Ⓣ − STS(s) − Terminal Section(s)	③ Thrie Beam (31.25' or 62.5') (STS)	with 8" x 8" Spacer Blocks		RE-33B	RE-69A	RE-69B	RE-76	REMARKS
					Feet	F or S	F or S	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	Lin.Ft.	8"x8"x8' No.	10"x10"x6' No.	No.	No.	No.	No.	
1	E	5+75.00	RT.	RE-65A	–	S	–	18.75	–	–	37.50	56.25	–	–	–	–	–	–	31.25	3	3	–	1	–	1	WEST END, RT.
2	W	5+75.00	LT.	RE-65A	–	–	S	–	–	–	–	–	18.75	–	–	37.50	56.25	–	31.25	3	3	–	1	–	1	WEST END, LT.
3	E	5+75.00	RT.	RE-65A	–	–	S	–	–	–	–	–	18.75	–	–	37.50	56.25	–	31.25	3	3	–	1	–	1	EAST END, RT.
4	W	5+75.00	LT.	RE-65A	–	S	–	18.75	–	–	37.50	56.25	–	–	–	–	–	–	31.25	3	3	–	1	–	1	EAST END, LT.

TABULATION OF GRADING FOR GUARDRAIL INSTALLATIONS

107-23
01-12-99

① Lane(s) to which the installation is adjacent.
② Refer to Standard Road Plans RL-12, RL-14, and Typicals 4303 or 4306

LOCATION POINT				DIMENSIONS ②					PIPE			
No.	① DIRECTION OF TRAFFIC	Station	TYPE	Ⓐ/Ⓣ Lin.Ft.	(BY) Lin.Ft.	Ⓩ Lin.Ft.	CLASS 10 EXCAV.△ Cu.Yds.	EMBANK. IN PLACE Cu.Yds.	Size Inches	Type	Length Lin.Ft.	REMARKS
1	E	4+72.04	1	56.25	9.1	54	139	–	–	–	–	W. END RT.
2	W	4+72.04	1	56.25	9.1	54	112	–	–	–	–	W. END LT.
3	E	6+77.96	1	56.25	9.1	54	112	–	–	–	–	E. END RT.
4	W	6+77.96	1	56.25	9.1	54	112	–	–	–	–	E. END LT.

△ INCLUDES 35% FOR SHRINKAGE

TABULATION OF DELINEATORS AND OBJECT MARKERS

108-17
04-28-98

Refer to Standard Road Plan RE-48A-B* and RE-29C **Not a Bid Item

LOCATION		DELINEATOR	OBJECT MARKER				
				TYPE 3			
STATION	TYPE*	SINGLE WHITE D-1W	TYPE 2 OM2-3YV	OM-3L	OM-3R	OFFSET BRACKETS **	REMARKS
		Number	Number	Number	Number	Number	
5+75.00	3	–	–	1	1	–	WEST END
5+75.00	3	–	–	1	1	–	EAST END

TRAFFIC CONTROL PLAN

THE PROJECT ROUTE WILL BE CLOSED TO TRAFFIC. TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS SHALL BE AS PER PART VI OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REVISION 3, DATED SEPTEMBER 3, 1993.

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-11-2, 48" x 30") SHALL BE PLACED ON EACH TYPE III BARRICADE ALONG WITH TWO TYPE "A" LOW INTENSITY FLASHING WARNING LIGHTS.

THE CRAWFORD COUNTY MAINTENANCE SHALL SALVAGE ALL ROAD MARKERS AFTER 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.

THE GUARDRAIL INSTALLATION MUST BE COMPLETED BEFORE THE ROAD IS OPENED TO TRAFFIC.

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 SILT FENCES FOR DITCH CHECKS

100-18
11-10-83

LOCATION STATION	SIDE	LIN. FT.	LOCATION STATION	SIDE	LIN. FT.
5+00	LT	20	4+00	RT	20
7+00	LT	20	7+50	RT	20

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+80	1	–	WEST END
4+75	–	1	WEST END
6+75	–	1	EAST END
11+50	1		EAST END

REMOVAL OF EXISTING STRUCTURES

110-2
10-13-72

LOCATION	DESCRIPTION	REMARKS
5+80	EXISTING BRIDGE *	–
6+55, 30' RT.	24" R.C.P.	①

* SEE "GENERAL NOTES"
① INCIDENTAL TO CLASS 10 ROADWAY & BORROW

SUMMARY OF EARTHWORK

STATION	AREAS IN SQ. FT. CUT	AREAS IN SQ. FT. FILL	VOLUMES IN CU. YDS. CUT	ADD'L CUT	FILL	ADD'L FILL	FILL+35%	ORDINATE
1+00	0	0	14		4		5	9
1+60	13	3	27		12		16	20
2+00	24	13	18		14		19	19
2+25	14	18	58		118		159	−82
3+00	28	67	225		361		487	−344
4+00	94	128	386	*111	541	186	731	−689
5+00	115	164	101	1,024	159	60	466	−943
5+25	104	180		317		54	81	0
BRIDGE				*1,344		166	73	2,404
6+25	34	161	114		400	320	764	938
7+00	48	177	88		533		882	144
8+00	0	53	6		107		144	6
9+00	3	5	6		9		12	0
10+00	0	0						
TOTALS			1,043	2,796	2,058	786	3,839	

* BORROW

POINTS OF ACCESS (RL-7)

102-1
03-26-96

Refer to Detail Cross Sections

LOCATION (RL-7)				PIPE CULVERT (RF-30A or RF-30B)						APRONS NO.	SURFACE MATERIAL TONS
STATION	SIDE	(W)	TYPE	(H)	SIZE (LIN.FT.) 18"	24"	48"	LT.	RT.		
1+60	LT.	U.A.C.	–	–	–	U.A.C.	–	–	–	–	7
2+25	LT.	U.A.C.	–	–	–	U.A.C.	–	–	–	–	–
7+00	RT.	20	C	2.6	–	48	–	23	25	–	–

87'-6 x 30'-6 CONTINUOUS CONCRETE SLAB BRIDGE

INTEGRAL ABUTMENTS — MONOLITHIC P10A PIERS
26'-9 END SPANS — 34'-0 INTERIOR SPAN

TABULATIONS

STATION 5+75.00 — 0° SKEW
CRAWFORD COUNTY, — IOWA

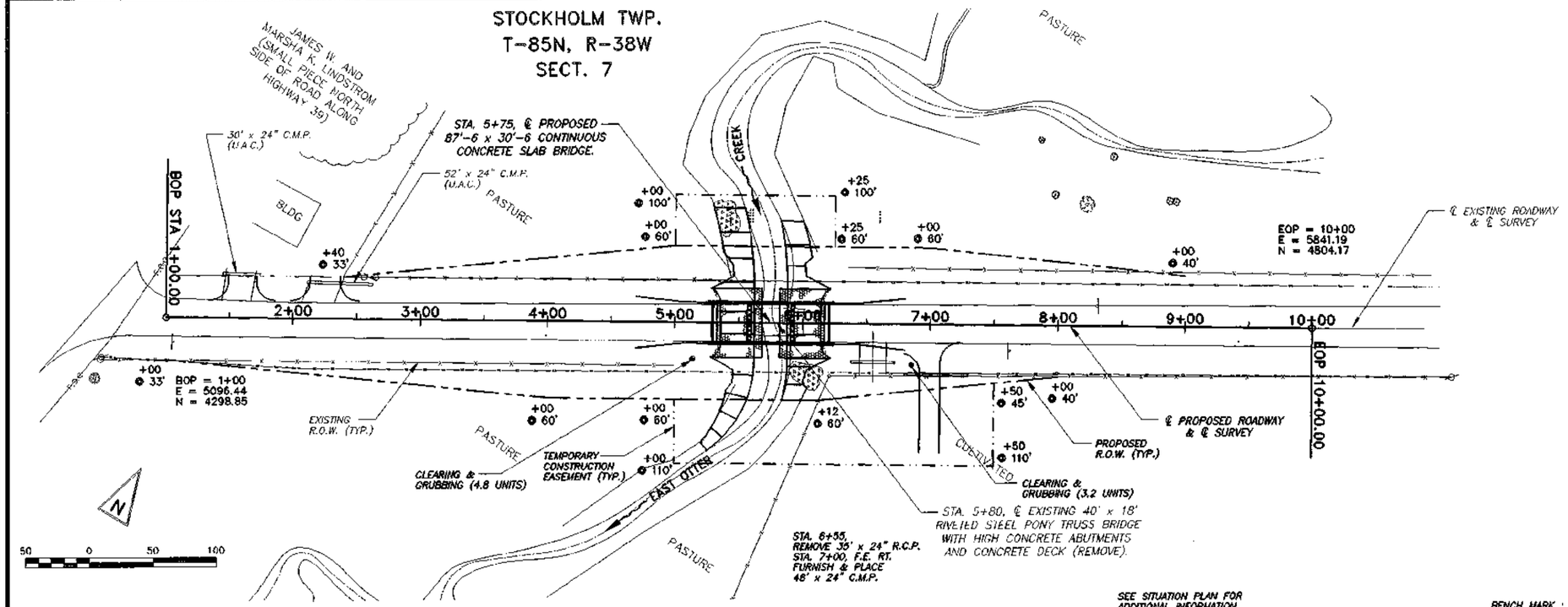
CALHOUN-BURNS & ASSOCIATES, INC. CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50265 (515)224-4344

JOB NO. 97190

DESIGNED BY : CHP
DRAWN BY : BJH
CHECKED BY : DSM

CRAWFORD COUNTY

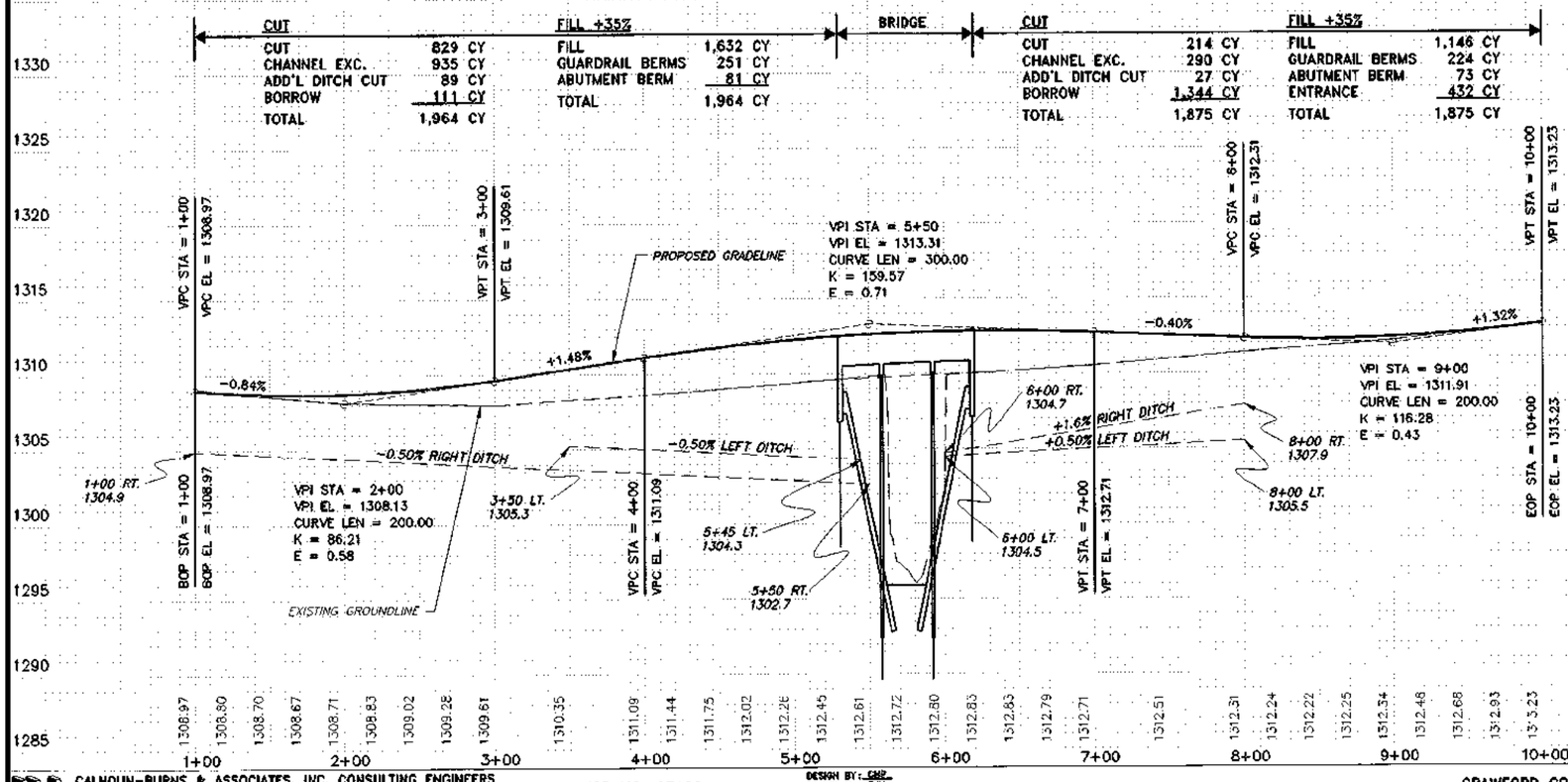
STOCKHOLM TWP.
T-85N, R-38W
SECT. 7



SEE SITUATION PLAN FOR ADDITIONAL INFORMATION

BENCH MARK : 60d SPIKE IN BRACE POST, STA. 2+40 ±, 40' LT., EL.= 1308.04

CUT		FILL +35%		BRIDGE	CUT		FILL +35%	
CUT	829 CY	FILL	1,632 CY		CUT	214 CY	FILL	1,146 CY
CHANNEL EXC.	935 CY	GUARDRAIL BERMS	251 CY		CHANNEL EXC.	290 CY	GUARDRAIL BERMS	224 CY
ADD'L DITCH CUT	89 CY	ABUTMENT BERM	81 CY		ADD'L DITCH CUT	27 CY	ABUTMENT BERM	73 CY
BORROW	111 CY	TOTAL	1,964 CY		BORROW	1,344 CY	ENTRANCE	432 CY
TOTAL	1,964 CY				TOTAL	1,875 CY	TOTAL	1,875 CY



PLAN AND PROFILE

CRAWFORD COUNTY, IOWA

CBA CALHOUN-BURNS & ASSOCIATES, INC. CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50265 (515)224-4344

JOB NO. 97190

DESIGN BY: GMP
DRAWN BY: BJH
CHECK BY: MJH

CRAWFORD COUNTY

SHEET 8 OF 12

PLAN: SURVEYED; PLOTTED; CROSS SECTIONED; NOTE BOOK; NO.; CHECKED; R.W. NOTED; RT. OF WAY CHKD.; BY:; DATE

PROFILE: SURVEYED; PLOTTED; CROSS SECTIONED; NOTE BOOK; NO.; CHECKED; R.W. NOTED; STR. NOTATIONS CHKD.; BY:; DATE

STA. 2+25 FIELD ENT. LT.
MATCH EXISTING

R/W — 33.00
5.0%
1309.83
44.25 — R/W
3.00:1
-23.16,1307.87
40.39,1305.89

STA = 2+25
FILL AREA = 18 (SF)
CUT AREA = 14 (SF)
VF = 1 (CY)
VC = 8 (CY)

STA. 1+60 DRIVE LT.
MATCH EXISTING

BUILDING
R/W — 33.00
50.00:1
1308.71
42.00 — R/W
3.00:1
-24.27,1305.96
41.39,1306.59

STA = 2+00
FILL AREA = 13 (SF)
CUT AREA = 24 (SF)
VF = 12 (CY)
VC = 27 (CY)

BUILDING
R/W — 33.00
2.0%
1309.67
38.40 — R/W
3.00:1
-29.45,1308.48
8' DITCH
38.05,1306.57

STA = 1+60
FILL AREA = 3 (SF)
CUT AREA = 13 (SF)
VF = 4 (CY)
VC = 14 (CY)

BEGIN TYPICAL SECTION

R/W — 33.00
33.00 — R/W

STA = 1+00
FILL AREA = 0 (SF)
CUT AREA = 0 (SF)
VF = 0 (CY)
VC = 0 (CY)

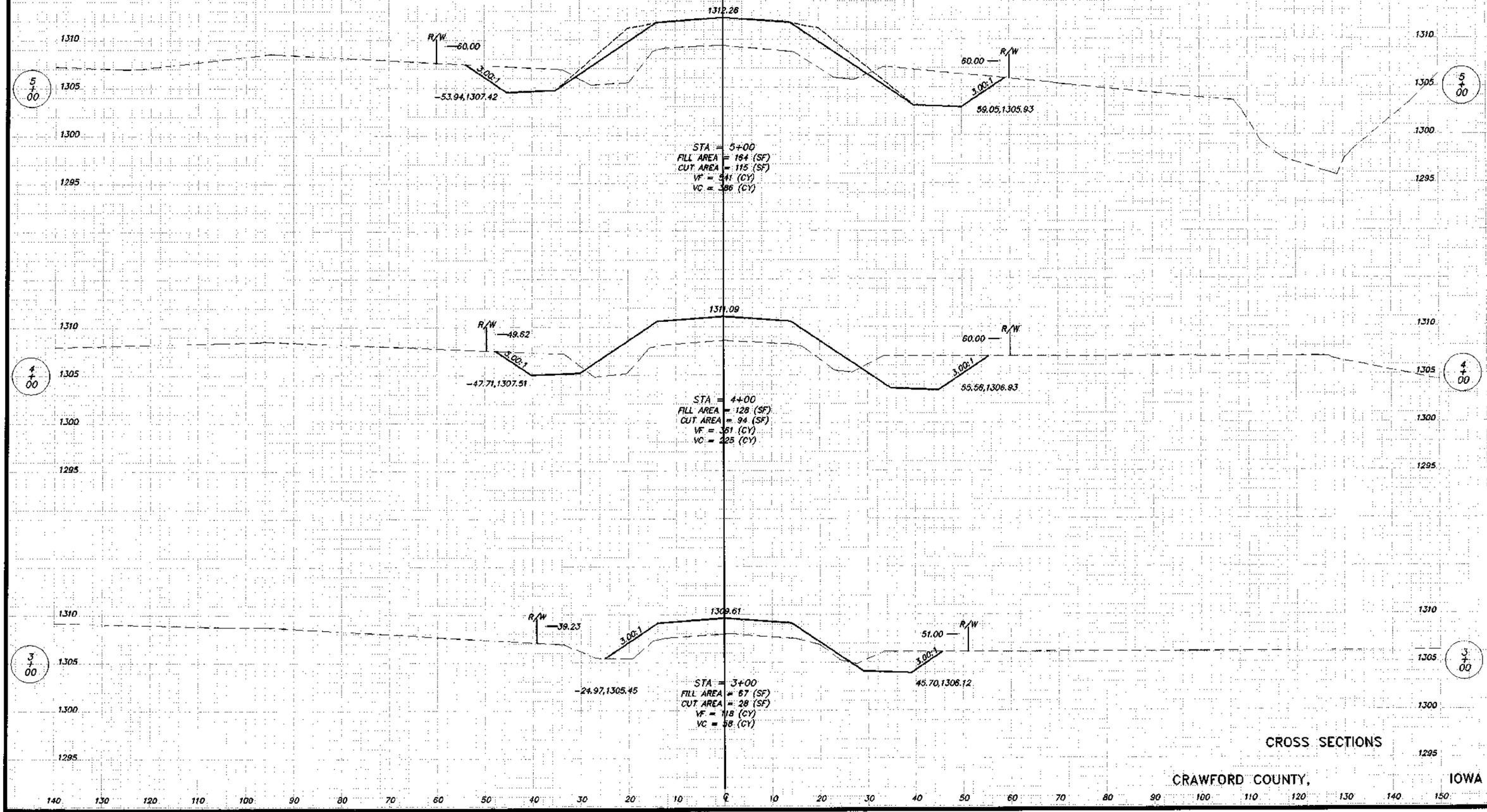
BEGIN AVERAGE END AREA (A.E.A.) QUANTITIES
BEGIN TRANSITION TO TYPICAL SECTION

CROSS SECTIONS

CRAWFORD COUNTY, IOWA

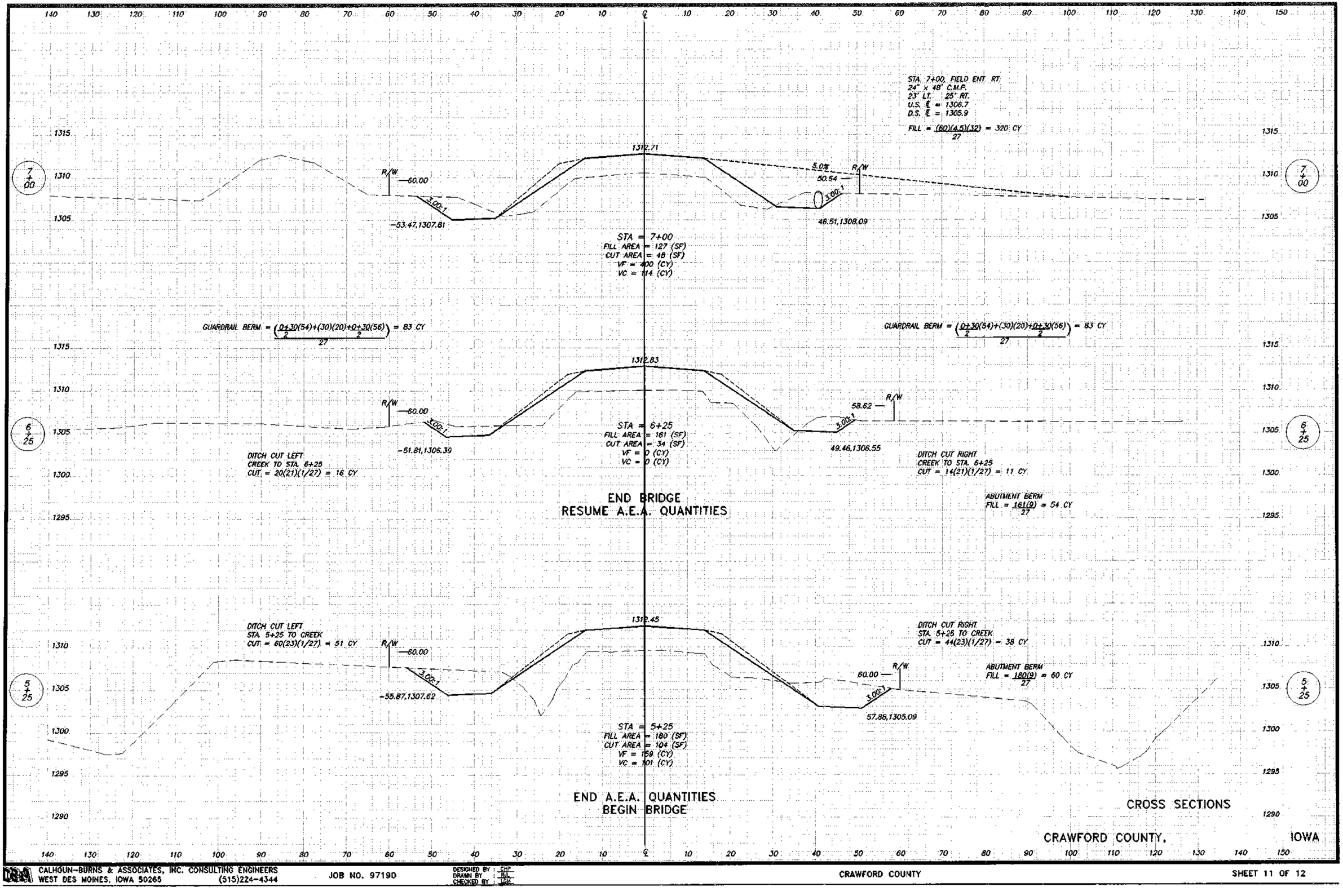
GUARDRAIL BERM = $\left(\frac{\frac{0+30(54)+(30)(20)+0+30(56)}{2}}{27}\right)$ = 83 CY

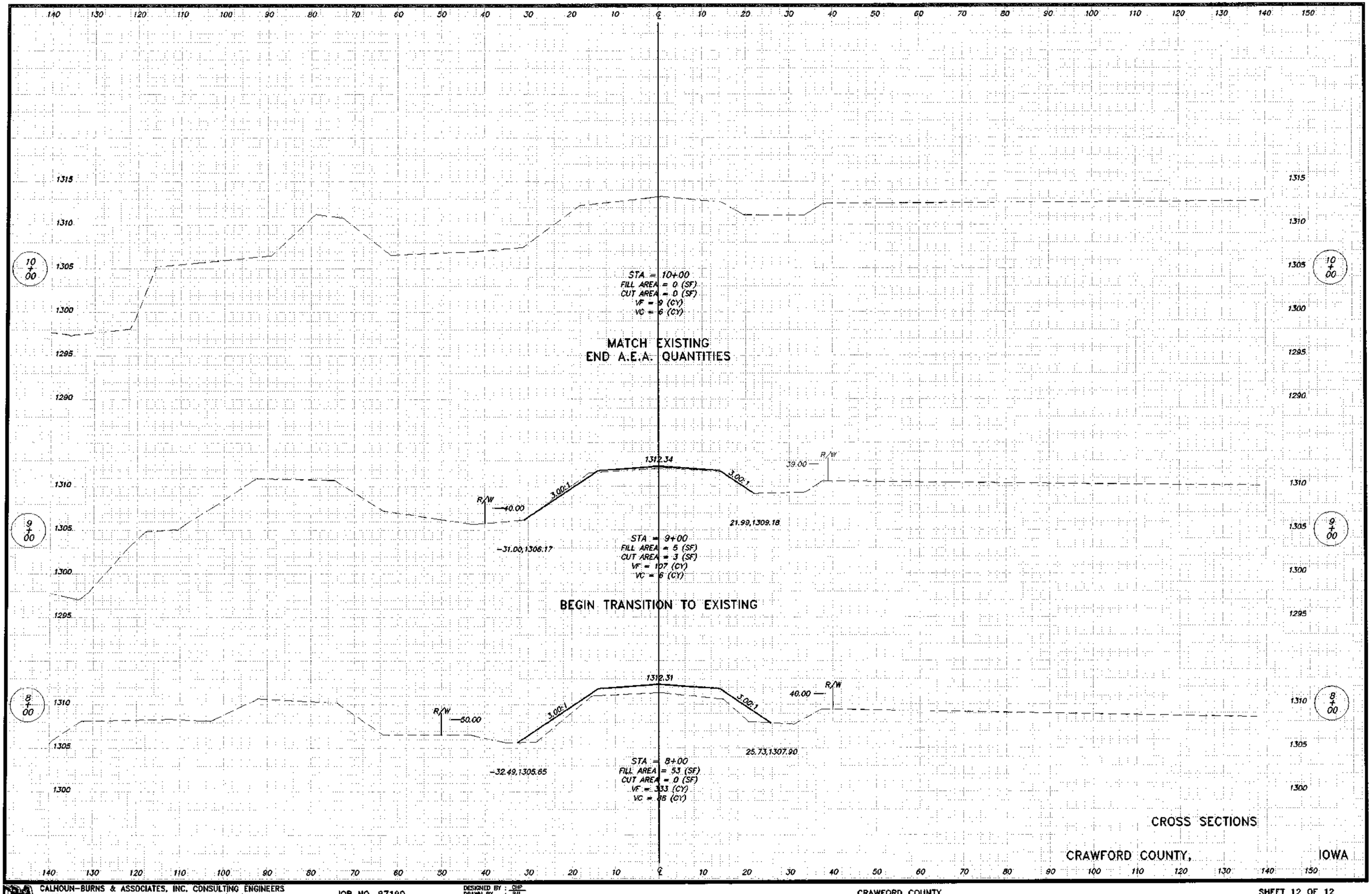
GUARDRAIL BERM = $\left(\frac{\frac{0+37(54)+(37)(20)+0+37(56)}{2}}{27}\right)$ = 103 CY



CROSS SECTIONS

CRAWFORD COUNTY, IOWA


STA 7+00, FIELD ENT RT.
24" x 48' C.M.P.
23' LT. 25' RT.
U.S. ℄ = 1306.7
D.S. ℄ = 1305.9
FILL = (60)(4.5)(32)/27 = 320 CY
1312.71
R/W
60.00
3.00:1
5.0%
50.54
R/W
3.00:1
53.47,1307.81
46.51,1308.09
STA = 7+00
FILL AREA = 127 (SF)
CUT AREA = 48 (SF)
VF = 400 (CY)
VC = 114 (CY)
GUARDRAIL BERM = ((0+30(54)+(30)(20)+0+30(56))/2)/27 = 83 CY
GUARDRAIL BERM = ((0+30(54)+(30)(20)+0+30(56))/2)/27 = 83 CY
1312.83
R/W
60.00
3.00:1
58.62
R/W
3.00:1
51.81,1306.39
49.46,1306.55
STA = 6+25
FILL AREA = 161 (SF)
CUT AREA = 34 (SF)
VF = 0 (CY)
VC = 0 (CY)
DITCH CUT LEFT
CREEK TO STA. 6+25
CUT = 20(21)(1/27) = 16 CY
DITCH CUT RIGHT
CREEK TO STA. 6+25
CUT = 14(21)(1/27) = 11 CY
END BRIDGE
RESUME A.E.A. QUANTITIES
ABUTMENT BERM
FILL = 161(9)/27 = 54 CY
1312.45
DITCH CUT LEFT
STA. 5+25 TO CREEK
CUT = 60(23)(1/27) = 51 CY
R/W
60.00
3.00:1
DITCH CUT RIGHT
STA. 5+25 TO CREEK
CUT = 44(23)(1/27) = 38 CY
60.00
R/W
3.00:1
ABUTMENT BERM
FILL = 160(9)/27 = 60 CY
55.87,1307.62
57.88,1305.09
STA = 5+25
FILL AREA = 180 (SF)
CUT AREA = 104 (SF)
VF = 159 (CY)
VC = 101 (CY)
END A.E.A. QUANTITIES
BEGIN BRIDGE
CROSS SECTIONS
CRAWFORD COUNTY, IOWA
7+00
6+25
5+25
1315
1310
1305
1300
1295
1290
140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150


140 130 120 110 100 90 80 70 60 50 40 30 20 10 ℄ 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150
1315
1310
1305
1300
1295
1290
10 + 00
STA = 10+00
FILL AREA = 0 (SF)
CUT AREA = 0 (SF)
VF = 9 (CY)
VC = 6 (CY)
MATCH EXISTING
END A.E.A. QUANTITIES
1312.34
3.00:1
3.00:1
R/W
40.00
39.00
R/W
21.99,1309.18
-31.00,1306.17
9 + 00
STA = 9+00
FILL AREA = 5 (SF)
CUT AREA = 3 (SF)
VF = 107 (CY)
VC = 6 (CY)
BEGIN TRANSITION TO EXISTING
1312.31
3.00:1
3.00:1
R/W
50.00
40.00
R/W
25.73,1307.90
-32.49,1305.85
8 + 00
STA = 8+00
FILL AREA = 53 (SF)
CUT AREA = 0 (SF)
VF = 333 (CY)
VC = 88 (CY)
CROSS SECTIONS
CRAWFORD COUNTY, IOWA