

BRIDGE AND APPROACHES - PPCB
LETTING DATE: NOVEMBER 16, 2004

PROJECT NO. BROS-C024(66)--5F-24

CRAWFORD COUNTY

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	04-20-04	RE-64B	10-19-04	RL-1A	10-03-00
RC-16B	04-20-04	RE-68	10-19-04	RL-1B	10-03-00
		RE-69C	10-19-04	RL-7	12-03-96
		RE-76	10-21-03	RL-14	01-12-99
RE-2B	04-03-01			RL-16	10-19-04
RE-7	04-15-03	RF-5	10-03-00		
RE-12A	10-19-04	RF-30A	03-28-95	RS-26A	10-28-97
RE-12B	10-19-04	RF-32	03-28-95		
RE-47	10-19-04	RF-33	03-28-95		
RE-48A	10-19-04				

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, 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.

THIS PROJECT (COE #2004-712) IS COVERED BY U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT #s 13, 14 & 33.

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET SYSTEM
CRAWFORD COUNTY
PROJECT NO. BROS-C024(66)--5F-24
BRIDGE AND APPROACHES - PPCB
APPROXIMATELY 9 MILES WEST OF DENISON ON
COUNTY ROAD E46 OVER A SMALL STREAM

THE 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.

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.

DIVISION I - BRIDGE
DIVISION II - GRADING

PROJECT NO. BROS-C024(66)--5F-24
FHWA NO. 128090

INDEX OF SHEETS

- TITLE SHEET
- QUANTITY SUMMARY - DIVISION I
- QUANTITY SUMMARY - DIVISION II

DIVISION I - 151'-4 x 24'-6 P.P.C.B. BRIDGE

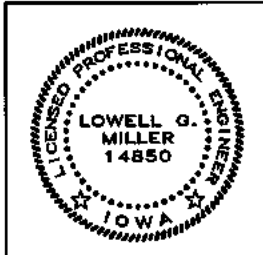
- SITUATION PLAN
- GENERAL NOTES AND POLLUTION PREVENTION PLAN
- SOUNDING DATA
- SUPERSTRUCTURE DETAILS
- SUBSTRUCTURE DETAILS AND STAKING DIAGRAM

DIVISION II - GRADING

- GRADING NOTES AND TYPICAL SECTIONS
- TABULATIONS
- PLAN AND PROFILE
- CROSS SECTIONS

IOWA DEPARTMENT OF TRANSPORTATION STANDARDS REQUIRED		
STANDARD	DATE ISSUED	LATEST REVISION
H24-87	JANUARY, 1987	-
H24-1-87	JANUARY, 1987	1-1-88
H24-2-87	JANUARY, 1987	-
H24-3-87	JANUARY, 1987	1-1-89
H24-13-87	JANUARY, 1987	1-1-89
H24-15-87	JANUARY, 1987	6-89
H24-16-87	JANUARY, 1987	-
H30-14-94	JANUARY, 1994	-
H30-15-94	JANUARY, 1994	-
P10A	AUGUST, 1998	8-1-96

THESE SHEETS MAY BE OBTAINED AT THE OFFICE OF LOCAL SYSTEMS.

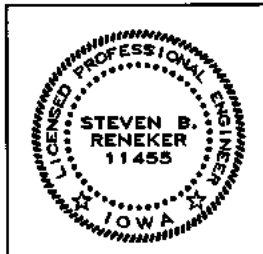


I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

Lowell G. Miller DATE: 7-23-04
LOWELL G. MILLER, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2004.

PAGES OR SHEETS COVERED BY THIS SEAL:
1, 2, 4-8 of 15



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.

Steven B. Reneker DATE: 7/23/04
STEVEN B. RENEKER, P.E.

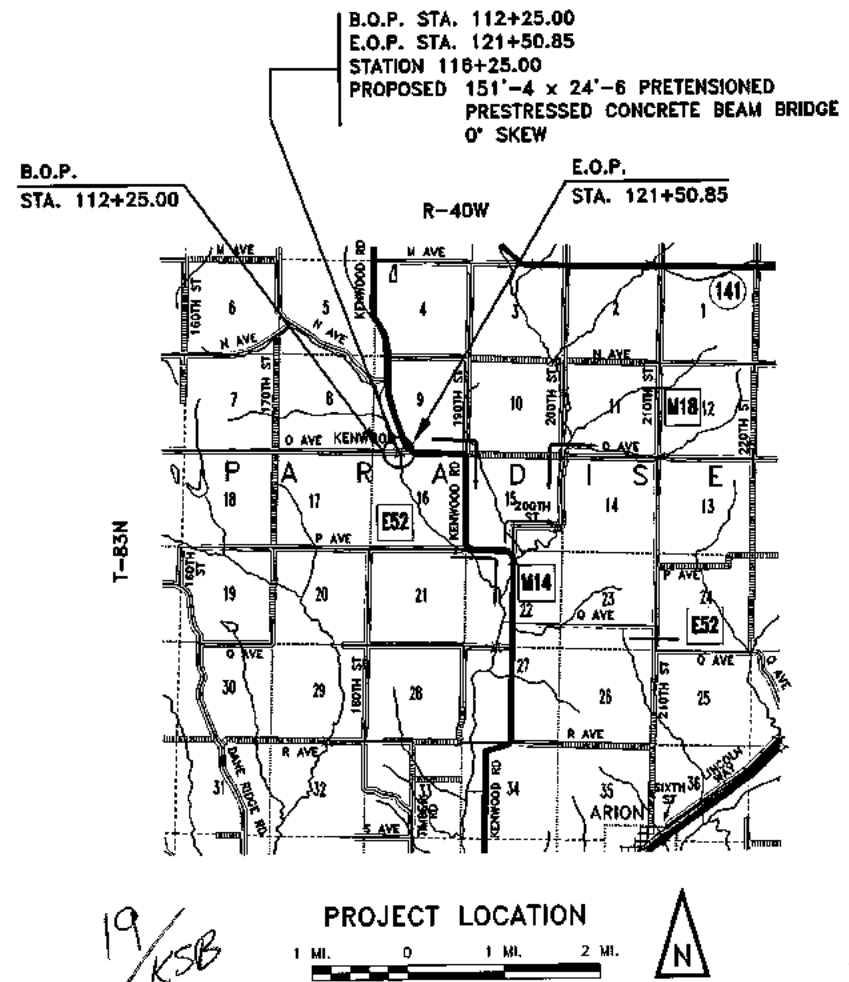
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2004.

PAGES OR SHEETS COVERED BY THIS SEAL:
3, 9-15

APPROVED
[Signature] 4/17/04
CRAWFORD COUNTY ENGINEER DATE

[Signatures]
BOARD OF SUPERVISORS DATE

Iowa Department of Transportation
Highway Division
ACCEPTED FOR LETTING
[Signature] 8/31/04
DISTRICT LOCAL SYSTEMS ENGINEER DATE



MILEAGE SUMMARY			
DIV.	LOCATION	LIN. FT.	MILES
	STA. 112+25.00 TO STA. 121+50.85	925.85	0.1754
I	BRIDGE AT STA. 118+25.00	154.33	0.0292
II	TOTAL NET LENGTH OF PROJECT (GRADING)	771.52	0.1461

2000, TRAFFIC COUNT = 50 V.P.D.

DRAWING APPROVAL

ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO AND APPROVED BY THE CONTRACTOR, WHO SHALL THEN SUBMIT THEM TO CALHOUN-BURNS AND ASSOCIATES, INC., FOR REVIEW AND APPROVAL.

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.

128091

**TOTAL ESTIMATED QUANTITIES : DIVISION II
GRADING**

REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
19	2101-0850001	CLEARING AND GRUBBING	ACRES	0.21
20	2101-0850002	CLEARING AND GRUBBING	UNITS	40
21	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CU.YDS.	14,568
22	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS 'A' CRUSHED STONE	TONS	320
23	2417-0225024	APRONS, METAL, 24 IN. DIA.	EACH	2
24	2417-0225030	APRONS, METAL, 30 IN. DIA.	EACH	2
25	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 IN. DIA.	LIN.FT.	32
26	2417-1040030	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 30 IN. DIA.	LIN.FT.	30
27	2505-4008200	INSTALLATION OF GUARDRAIL	LIN.FT.	275
28	2505-4021690	GUARDRAIL, END ANCHORAGE, BEAM, RE-69	EACH	4
29	2505-4021762	GUARDRAIL TERMINAL, BEAM, FLARED RE-76	EACH	4
30	2518-6910000	SAFETY CLOSURE	EACH	4
31	2528-8445110	TRAFFIC CONTROL	L.S.	1
32	2601-2632110	FERTILIZING	ACRE	2.45
33	2601-2634100	MULCHING	ACRE	2.45
34	2601-2636015	NATIVE GRASS SEEDING	ACRE	2.45
35	2602-0000020	SILT FENCE	LIN.FT.	820
36	2602-0000030	SILT FENCE FOR DITCH CHECKS	LIN.FT.	80
37	2602-0000090	CLEAN-OUT OF SILT FENCE	LIN.FT.	700
38	2602-0000100	CLEAN-OUT OF SILT FENCE FOR DITCH CHECKS	LIN.FT.	80

REF. NO. ESTIMATE REFERENCE INFORMATION

- 19-20. SEE PLAN AND PROFILE SHEET FOR LIMITS AND LOCATIONS. UNIT MEASUREMENTS WILL BE MADE AT THE TIME OF CONSTRUCTION.
SELECTIVE CLEARING WILL BE REQUIRED ON THIS PROJECT. ALL DESIRABLE TREES OUTSIDE THE CONSTRUCTION AREA WILL BE SAVED.
21. 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 16,308 C.Y. OF FILL MATERIAL. OF THIS, 1,520 C.Y. IS AVAILABLE FROM DITCH CUTS AND 1,740 C.Y. IS AVAILABLE FROM, AND WILL BE PAID AS, "EXCAVATION, CLASS 10, CHANNEL". THE REMAINING 13,048 C.Y. IS TO BE FURNISHED AS BORROW. TYPE "A" COMPACTION WILL BE REQUIRED. SEE TABULATIONS AND PLAN AND PROFILE SHEETS FOR BREAKDOWN OF EXCAVATION QUANTITIES. INCLUDES MATERIAL FOR INTERSECTIONS, BRIDGE APPROACHES AND ENTRANCES. THE QUANTITY INCLUDES AN ADDITIONAL 35% TO COMPENSATE FOR SHRINKAGE.
THE CONTRACTOR IS TO PROVIDE HIS OWN BORROW FOR "CLASS 10, ROADWAY AND BORROW, EXCAVATION. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH PROVISIONS OF IOWA LAW AS IT APPLIES TO REMOVAL AND REPLACEMENT OF TOPSOIL ON BORROW AREAS.
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.
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".
MOISTURE SHALL BE APPLIED, AS NECESSARY, TO THE CONSTRUCTION AREA TO PREVENT THE SPREAD OF DUST NEAR RESIDENTIAL AREAS AND INDIVIDUAL HOMES. REFER TO ARTICLE 1107.07 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.
22. SURFACING TO BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1400 AND 600 TONS /MILE). INCLUDES 10 TONS FOR DRIVES AND 15 TONS FOR INTERSECTION.
- 23-24. SEE TABULATIONS, SHEET 10.
- 25-26. SEE TABULATIONS, SHEET 10.
ALL PIPE SHALL BE STANDARD CORRUGATIONS, NO HELICALLY CORRUGATED PIPE WILL BE ALLOWED. ALL CONNECTING BANDS SHALL BE 24" WIDE.
- 27-29. SEE TABULATIONS, SHEET 10 AND STANDARD ROAD PLANS.
30. SEE TABULATIONS, SHEET 10
31. SEE SHEETS 1 AND 10.
- 32-34. 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 "NATIVE GRASS SEEDING", "FERTILIZING" AND "MULCHING."
- 35-38. SEE TABULATIONS, SHEET 10.

**151'-4 x 24'-6 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE**

INTERGAL ABUTMENTS P10A PIERS
47'-5 END SPANS 56'-6 INTERIOR SPAN

QUANTITY SUMMARY - DIVISION II

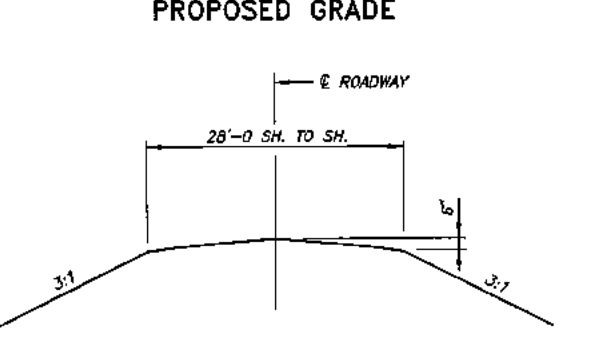
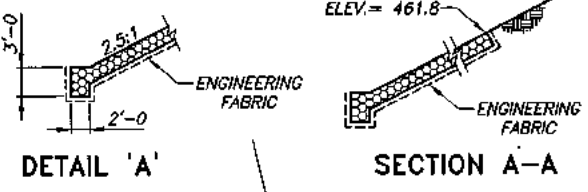
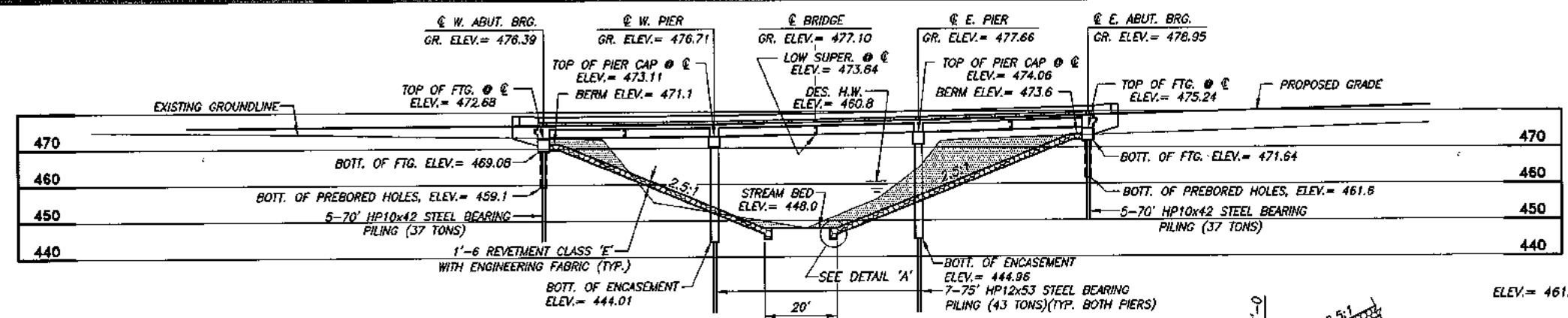
STATION 116+25.00 0' SKEW
CRAWFORD COUNTY, IOWA

BENCH MARK #1: 80d SPIKE IN GATE POST, SOUTH SIDE OF O AVENUE ROAD, OPPOSITE FARM DRIVE ENTRANCE TO HOUSE. 112+86, 34' RT., ELEV.= 482.31
 BENCH MARK #2: RAILROAD SPIKE IN POWER POLE, 1st. POLE EAST OF BRIDGE, NORTH SIDE OF O AVENUE ROAD. 118+21, 34' LT., ELEV.= 471.73

V.P.I. STA. 115+50.00
 ELEV.= 465.93
 L.V.C.= 650'
 K= 0.5047
 M.O.= 10.4650
 35 MPH DESIGN

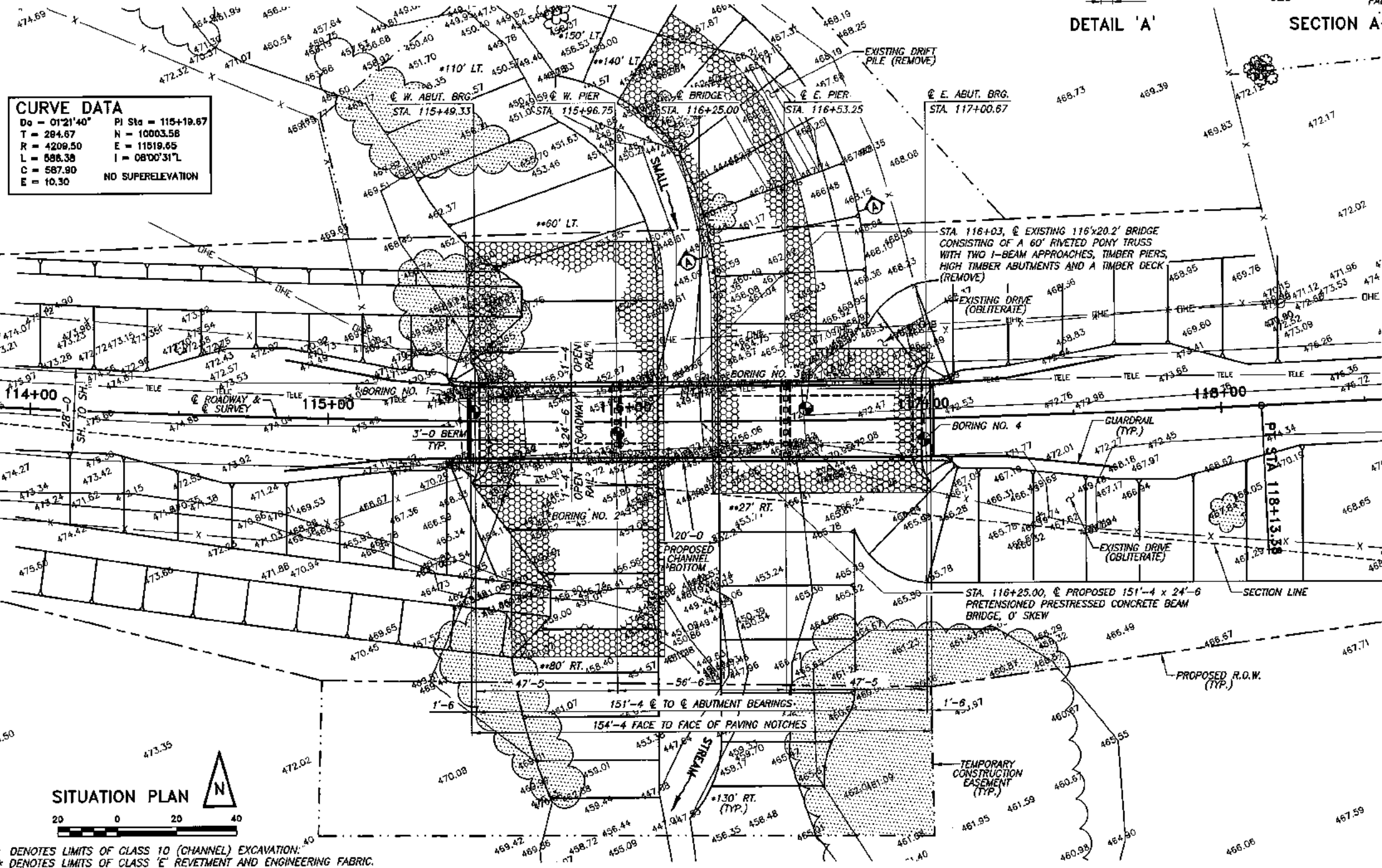
EOP TIE-IN
 STA. 121+50.65
 ELEV.= 501.82

V.P.I. STA. 120+75.00
 ELEV.= 500.79
 L.V.C.= 150'
 K= 0.2841
 M.O.= 0.9900
 29 MPH DESIGN



CURVE DATA

D _c = 01'21"40"	PI Sta = 115+19.67
T = 284.67	N = 10003.58
R = 4209.50	E = 11519.65
L = 886.38	I = 08'00"31"
C = 587.90	
E = 10.30	NO SUPERELEVATION



LOCATION

CRAWFORD COUNTY
 T-83N, R-40W
 SECTION 16
 PARADISE TOWNSHIP
 OVER SMALL STREAM

HYDRAULIC DATA

DRAINAGE AREA = 5.9 SQ. MI.
 DESIGN DISCHARGE = 3,000 C.F.S.
 DESIGN HIGH WATER ELEV. = 460.8
 MANNING SLOPE = 0.00497 FT./FT.
 BRIDGE WATERWAY AREA = 643.6 SQ. FT.
 DESIGN VELOCITY = 4.7 F.P.S.
 Q25 = 3,000 C.F.S. STAGE ELEV. = 460.8 (DESIGN)
 Q50 = 3,800 C.F.S. STAGE ELEV. = 461.7
 Q100 = 4,700 C.F.S. STAGE ELEV. = 462.6
 Q500 = 6,900 C.F.S. STAGE ELEV. = 464.4
 EXT. H.W. ELEV. = UNKNOWN
 ANTICIPATED SCOUR ELEV. = 443.0

151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERGAL ABUTMENTS
 47'-5 END SPANS

P10A PIERS
 56'-6 INTERIOR SPAN

SITUATION PLAN

STATION 116+25.00
 CRAWFORD COUNTY, IOWA

0° SKEW
 IOWA

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

SPECIFICATIONS

DESIGN: AASHTO SERIES OF 1983, PLUS INTERIM SPECIFICATIONS.
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 1983, 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 SHEETS H30-14-94			
PRESTRESSED CONCRETE	SEE SHEETS H30-14-94			
STRUCTURAL STEEL	SECTION 10			
ASTM A36		f_s	=	20,000 PSI

GENERAL NOTES

THIS DESIGN IS FOR A 151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON COUNTY ROAD E-46 OVER A SMALL STREAM 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 CONTRACTOR IS RESPONSIBLE FOR CONDUCTING AN INDEPENDENT CHECK OF ALL CONSTRUCTION STAKES PLACED FOR THE PROJECT. THIS INDEPENDENT CHECK SHALL BE SUFFICIENT TO UNDERSTAND THE PLACEMENT AND INTENT OF THE STAKES.

THE CONTRACTOR SHALL NOTE THAT THIS IS A STRAIGHT BRIDGE LOCATED ON A HORIZONTAL CURVE. SEE SHEET 8 FOR STAKING DIADRAGM.

THIS PROJECT IS TO BE BUILT UNDER THE CONDITIONS OF ARMY CORPS OF ENGINEERS 404 PERMIT NUMBER 2004-712. 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.

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 NOTES

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

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 THIS SAMPLE WAS 1,440 MG/KG AND TOTAL CHROMIUM ON THIS SAMPLE WAS 30,000 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 THE DEPARTMENT'S 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 SCRAPE 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 STRUCTURES".

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 INCIDENTAL TO THE PROJECT.

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

MINIMUM BEARING CAPACITY IS TO BE 43 TONS PER PILE AT PIERS AND 37 TONS PER PILE AT ABUTMENTS.

ALL PILES ARE TO BE DRIVEN TO FULL PENETRATION, WHERE PRACTICABLE. 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.

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 REQUIRED AND ARE TO REMAIN IN PLACE AFTER CONSTRUCTION.

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 "NATIVE GRASS SEEDING", FERTILIZING" 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.



Remember to
Call Before You Dig!
1-800-292-8989

Request Utility Locate 48 Hours In Advance

DESIGNED BY : J.S.J.
DRAWN BY : J.S.J.
CHECKED BY : J.S.J.

POLLUTION PREVENTION PLAN

110-12A
10-29-02

POLLUTION PREVENTION PLAN

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 151'-4 X 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE ON COUNTY ROAD E-46 OVER A SMALL STREAM IN CRAWFORD COUNTY, IOWA.

THIS PPP COVERS APPROXIMATELY 3.49 ACRES WITH AN ESTIMATED 3.49 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 3.49 ACRES DISTURBED.

THE PPP IS LOCATED IN AN AREA OF MONONA-IDA-HAMBURG SOIL ASSOCIATION. THE ESTIMATED AVERAGE NRCS RUNOFF CURVE NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 51.

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 COUNTY ENGINEER'S OFFICE. RUNOFF FROM THIS WORK WILL FLOW INTO A SMALL STREAM.

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 AND INDUSTRIAL LAND USE MAY CONTAIN CONSTITUENTS ASSOCIATED WITH THE SPECIFIC OPERATION. SUCH OPERATIONS ARE SUBJECT TO POTENTIAL LEAKS AND SPILLS WHICH COULD BE COMINGLED 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 SPECIFICATIONS. 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 ENGINEER AFTER FIELD INVESTIGATION. THESE MAY BE ITEMS SUCH AS LETDOWN STRUCTURES, SOIL STABILIZATION MATS AND OTHER APPROPRIATE MEASURES SHALL BE INSTALLED BY CONTRACTOR, AS DIRECTED BY THE ENGINEER. 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 ONE HALF INCH 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.

151'-4 x 24'-6 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

INTERGAL ABUTMENTS P10A PIERS
47'-5 END SPANS 56'-6 INTERIOR SPAN

GENERAL NOTES AND
POLLUTION PREVENTION PLAN

STATION 116+25.00 0' SKEW
CRAWFORD COUNTY, IOWA

BENCH MARK #1: 804 SPIKE IN GATE POST, SOUTH SIDE OF O AVENUE ROAD, OPPOSITE FARM DRIVE ENTRANCE TO HOUSE. 112+86, 34' RT., ELEV.= 482.31
 BENCH MARK #2: RAILROAD SPIKE IN POWER POLE, 1st. POLE EAST OF BRIDGE, NORTH SIDE OF O AVENUE ROAD. 118+21, 34' LT., ELEV.= 471.73

BORING LOG NO. 1		STATION 115+49.3' LT		Project No.: 041343								
Project: Bridge Over Small Stream Sec. 16, T8N, R40W, Paradise Twp. Crawford County, Iowa		Client: Calhoun-Burns and Associates, Inc. 1801 Paler Road West Des Moines, Iowa 50265		Date Drilled: 7-1-04 Drilling Method: 4" CFA Page: 1 of 1								
Surface Elevation: 471.8' Datum: BME 2 = 471.73'		Date Drilled: 7-1-04 Drilling Method: 4" CFA Page: 1 of 1		Date Drilled: 7-1-04 Drilling Method: HSA Page: 1 of 1								
Elevation ft.	Depth ft.	Sample No.	Type	SPT blf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth Elevation
0								1" GRAVEL SURFACING				472
		1	ST	17.8		3870		FILL (Firm Silty Clay)		CL		472
464		2	ST	21.8	104	5300		Very dark brown silty lean clay, moist		CL		462
		3	ST	19.8	94	2450		COHESIVE ALLUVIUM (Stiff Silty Clay)		CL		457.5
448		4	ST	35.7	77	830		Very dark gray silty clay, very moist		CL		457.5
		5	ST	28.8	94	2580		Light gray-brown near 21'-24.5' Clay below 24.5'		CL		457.5
								COHESIVE ALLUVIUM (Soft Silty Clay)		CL		457.5
								Clay fine to coarse sand, with gravel, saturated		SP		443
								GRANULAR ALLUVIUM (Gravelly Sand)		SP		443
								Dark gray sandy lean clay, trace gravel, moist to very moist		CL		437.5
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		437.5
								Gray silty fine sand, saturated		SM		427
								GLACIAL OUTWASH (Silty Sand)		SM		427
								Dark gray sandy lean clay, tr. gravel, moist		CL		423
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		423
								End of Boring				408

BORING LOG NO. 2		STATION 115+97.4' RT		Project No.: 041343								
Project: Bridge Over Small Stream Sec. 16, T8N, R40W, Paradise Twp. Crawford County, Iowa		Client: Calhoun-Burns and Associates, Inc. 1801 Paler Road West Des Moines, Iowa 50265		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1								
Surface Elevation: 472.5' Datum: BME 2 = 471.73'		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1								
Elevation ft.	Depth ft.	Sample No.	Type	SPT blf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth Elevation
0								3" GRAVEL SURFACING 3" WOOD DECK				472
								BRIDGE DECK TO GROUND				472
464								Brown fine to coarse sand, trace gravel, wet		SP		453.25
								GRANULAR ALLUVIUM (Coarse Sand)		SP		453.25
		1	SS	4	11.6	27.5		Very dark gray silty clay, very moist to wet		CL		447
		2	SS	18				COHESIVE ALLUVIUM (Soft Silty Clay)		CL		447
		3	SS	9	20.1			Dark gray sandy lean clay, trace gravel, moist to very moist		CL		438.5
		4	SS	13	17.7			GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		438.5
		5	SS	15	17.3			Gray silty fine sand, saturated		SM		428.5
		6	SS	22	16.4			GLACIAL OUTWASH (Silty Sand)		SM		428.5
		7	SS	20	15.8			Dark gray sandy lean clay, tr. gravel, moist		CL		421.5
		8	SS	22	15.6			GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		421.5
		9	SS	31	17.4			Yellow brown-gray sandy fat clay, trace gravel, damp to moist		CH		407.5
		10	SS	26	18.5			GLACIAL TILL (Very Firm Glacial Clay)		CH		407.5
		11	SS	28	19.4			End of Boring				391.5
		12	SS	22	20.3							391.5

BORING LOG NO. 3		STATION 116+60.4' LT		Project No.: 041343								
Project: Bridge Over Small Stream Sec. 16, T8N, R40W, Paradise Twp. Crawford County, Iowa		Client: Calhoun-Burns and Associates, Inc. 1801 Paler Road West Des Moines, Iowa 50265		Date Drilled: 7-1-04 Drilling Method: 4" CFA Page: 1 of 1								
Surface Elevation: 472.4' Datum: BME 2 = 471.73'		Date Drilled: 7-1-04 Drilling Method: 4" CFA Page: 1 of 1		Date Drilled: 7-1-04 Drilling Method: HSA Page: 1 of 1								
Elevation ft.	Depth ft.	Sample No.	Type	SPT blf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth Elevation
0								30" GRAVEL SURFACING				2.5
								Dark brown and brown mixed silty lean clay, damp to moist		CL		469.9
464								FILL (Firm Silty Clay)		CL		469.9
								Wood noted near 11' Brown and dark brown mixed below 13.5'		CL		469.9
								Very dark gray silty clay, very moist		CL		454.4
								COHESIVE ALLUVIUM (Soft Silty Clay)		CL		454.4
								Dark gray fine to coarse sand, with gravel, saturated		SP		443.4
								GRANULAR ALLUVIUM (Gravelly Sand)		SP		443.4
								Dark gray sandy lean clay, trace gravel, moist to very moist		CL		435.4
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		435.4
								Gray silty fine sand, saturated		SM		418.4
								GLACIAL OUTWASH (Silty Sand)		SM		418.4
								Dark gray sandy lean clay, trace gravel, moist		CL		415.4
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		415.4
								Yellow brown-gray sandy fat clay, trace gravel, damp to moist		CH		402.4
								GLACIAL TILL (Very Firm Glacial Clay)		CH		402.4
								End of Boring				397.4

BORING LOG NO. 4		STATION 117+00.7' RT		Project No.: 041343								
Project: Bridge Over Small Stream Sec. 16, T8N, R40W, Paradise Twp. Crawford County, Iowa		Client: Calhoun-Burns and Associates, Inc. 1801 Paler Road West Des Moines, Iowa 50265		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1								
Surface Elevation: 472.3' Datum: BME 2 = 471.73'		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1		Date Drilled: 6-30-04 Drilling Method: HSA Page: 1 of 1								
Elevation ft.	Depth ft.	Sample No.	Type	SPT blf	Moisture Content, %	Dry Density pcf	Unconfined Compressive Strength psf	Material Description*	Graphic Log	USCS	Water Level	Depth Elevation
0								1" GRAVEL SURFACING				471.2
								Dark brown, dark gray and brown mixed silty lean clay, damp		CL		471.2
								FILL (Firm Silty Clay)		CL		466.2
								Very dark brown silty lean clay, moist to very moist		CL		466.2
								COHESIVE ALLUVIUM (Stiff Silty Clay)		CL		463.2
								Very dark gray silty clay, very moist		CL		463.2
								Light gray-brown with fine sand content below 17'		CL		463.2
								COHESIVE ALLUVIUM (Soft Silty Clay)		CL		463.2
								Brown-gray fine to coarse sand, with gravel, saturated		SP		446.2
								GRANULAR ALLUVIUM (Gravelly Sand)		SP		446.2
								Dark gray sandy lean clay, trace gravel, moist to very moist		CL		439.2
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		439.2
								Interbedded silty fine sand seams near 45'-57'		CL		439.2
								GLACIAL TILL (Very Firm Sandy Glacial Clay)		CL		439.2
								Light gray with higher clay content below 70'		CL		439.2
								End of Boring				401.2

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 06-06-04, COMPLETE WITH THE LICENSED ENGINEER'S SEAL AND CERTIFICATION, IS AVAILABLE FOR VIEWING.

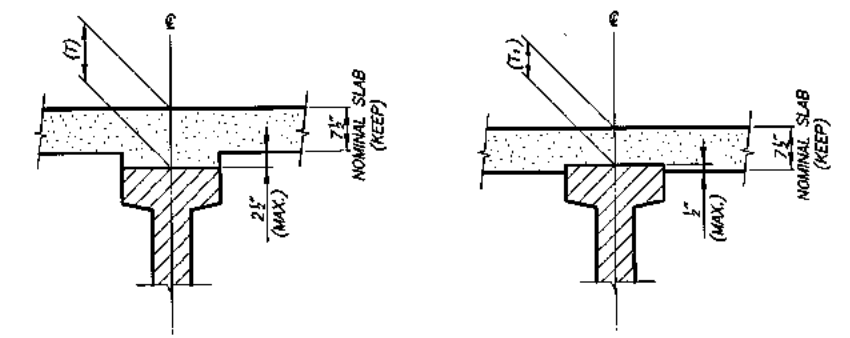
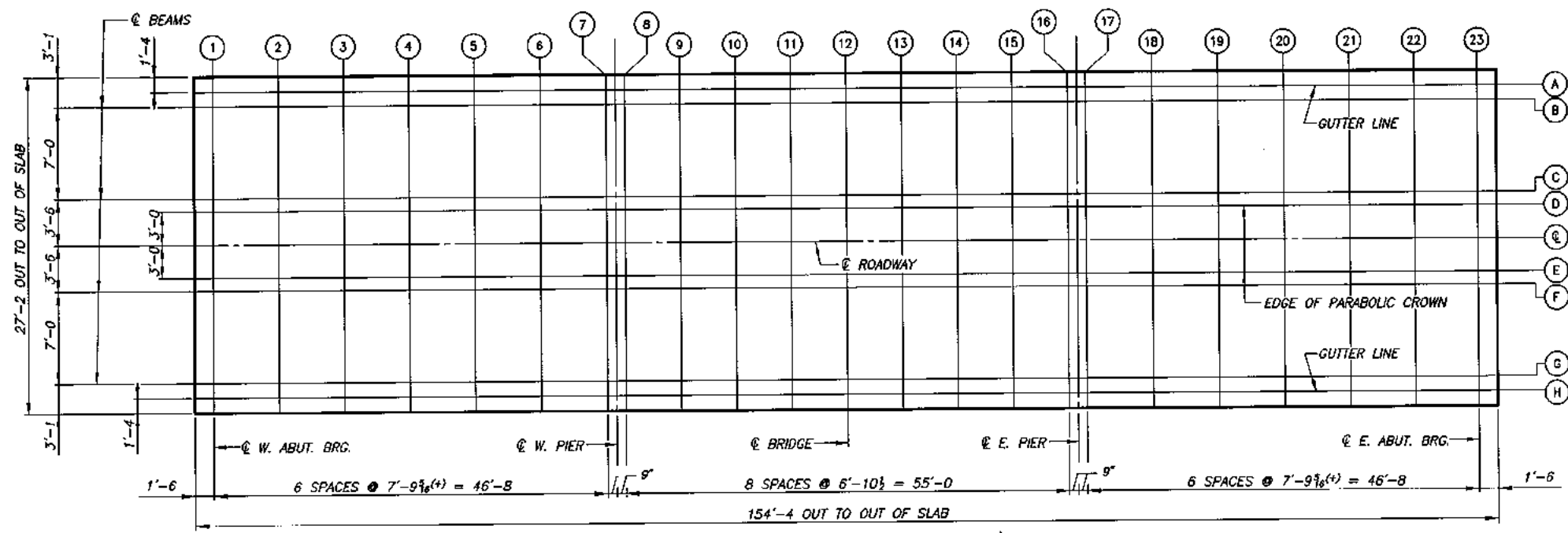
151'-4 x 24'-6 PRETENSIONED PRESTRESSED
CONCRETE BEAM BRIDGE

INTERAL ABUTMENTS P10A PIERS
47'-5 END SPANS 56'-6 INTERIOR SPAN

SOUNDING DATA

STATION 116+25.00 0° SKEW
CRAWFORD COUNTY, IOWA

BENCH MARK #1: 60d SPIKE IN GATE POST, SOUTH SIDE OF O AVENUE ROAD, OPPOSITE FARM DRIVE ENTRANCE TO HOUSE, 112+86, 34' RT., ELEV.= 482.31
 BENCH MARK #2: RAILROAD SPIKE IN POWER POLE, 1st. POLE EAST OF BRIDGE, NORTH SIDE OF O AVENUE ROAD, 116+21, 34' LT., ELEV.= 471.73

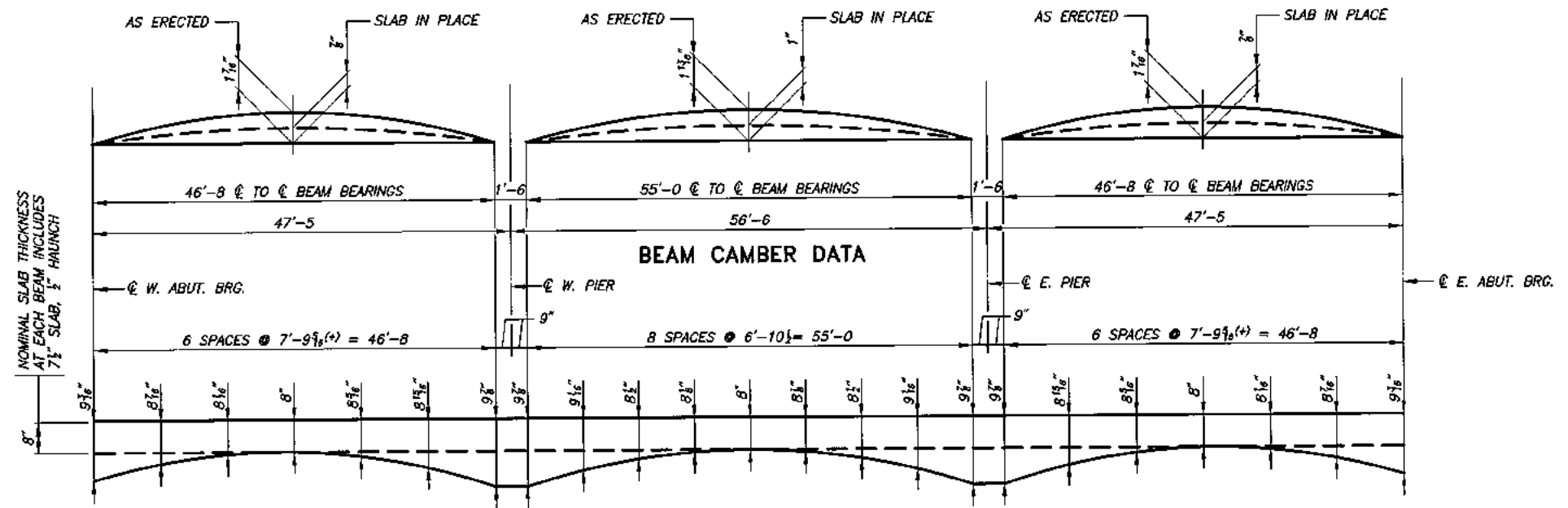


SLAB THICKNESS DETAILS

NOTE: THE SLAB THICKNESS (T) AT BEAMS IS BASED ON THE ANTICIPATED BEAM CAMBER REMAINING AFTER PLACING THE SLAB, BUT IS NOT GUARANTEED FOR CONSTRUCTION. IF BEAM IS UNDER CAMBERED, INCREASE SLAB THICKNESS (T) AT BEAMS TO COMPENSATE. IF BEAM IS OVER CAMBERED, THE SLAB THICKNESS (T) MAY BE DECREASED A MAXIMUM OF 1/2" EMBEDMENT AT THE BEAM (T1). IF MORE THAN 1/2" EMBEDMENT IS REQUIRED, OR IF THE HAUNCH EXCEEDS 2 1/2", THE GRADE LINE IS TO BE REVISED. THE ABOVE DIAGRAMS DO NOT APPLY TO THE CANTILEVERED SLAB SIDE OF THE EXTERIOR BEAM.

TOP OF SLAB ELEVATIONS

LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	LOCATION
A	476.23	476.25	476.29	476.33	476.39	476.46	476.54	476.55	476.64	476.73	476.83	476.94	477.06	477.19	477.33	477.48	477.51	477.70	477.89	478.10	478.31	478.54	478.79	A
B	476.26	476.28	476.32	476.36	476.42	476.49	476.57	476.58	476.67	476.76	476.86	476.97	477.09	477.22	477.36	477.51	477.54	477.73	477.92	478.13	478.34	478.57	478.82	B
C	476.36	476.38	476.42	476.46	476.52	476.59	476.67	476.68	476.77	476.86	476.96	477.07	477.19	477.32	477.46	477.61	477.64	477.83	478.02	478.23	478.44	478.67	478.92	C
D	476.37	476.39	476.43	476.47	476.53	476.60	476.68	476.69	476.78	476.87	476.97	477.08	477.20	477.33	477.47	477.62	477.65	477.84	478.03	478.24	478.45	478.68	478.93	D
E	476.39	476.41	476.45	476.49	476.55	476.62	476.70	476.71	476.80	476.89	476.99	477.10	477.22	477.35	477.49	477.64	477.67	477.86	478.05	478.26	478.47	478.70	478.95	E
F	476.37	476.39	476.43	476.47	476.53	476.60	476.68	476.69	476.78	476.87	476.97	477.08	477.20	477.33	477.47	477.62	477.65	477.84	478.03	478.24	478.45	478.68	478.93	F
G	476.36	476.38	476.42	476.46	476.52	476.59	476.67	476.68	476.77	476.86	476.96	477.07	477.19	477.32	477.46	477.61	477.64	477.83	478.02	478.23	478.44	478.67	478.92	G
H	476.26	476.28	476.32	476.36	476.42	476.49	476.57	476.58	476.67	476.76	476.86	476.97	477.09	477.22	477.36	477.51	477.54	477.73	477.92	478.13	478.34	478.57	478.82	H



HAUNCH DIAGRAM AND SLAB THICKNESS AT BEAM (T)

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

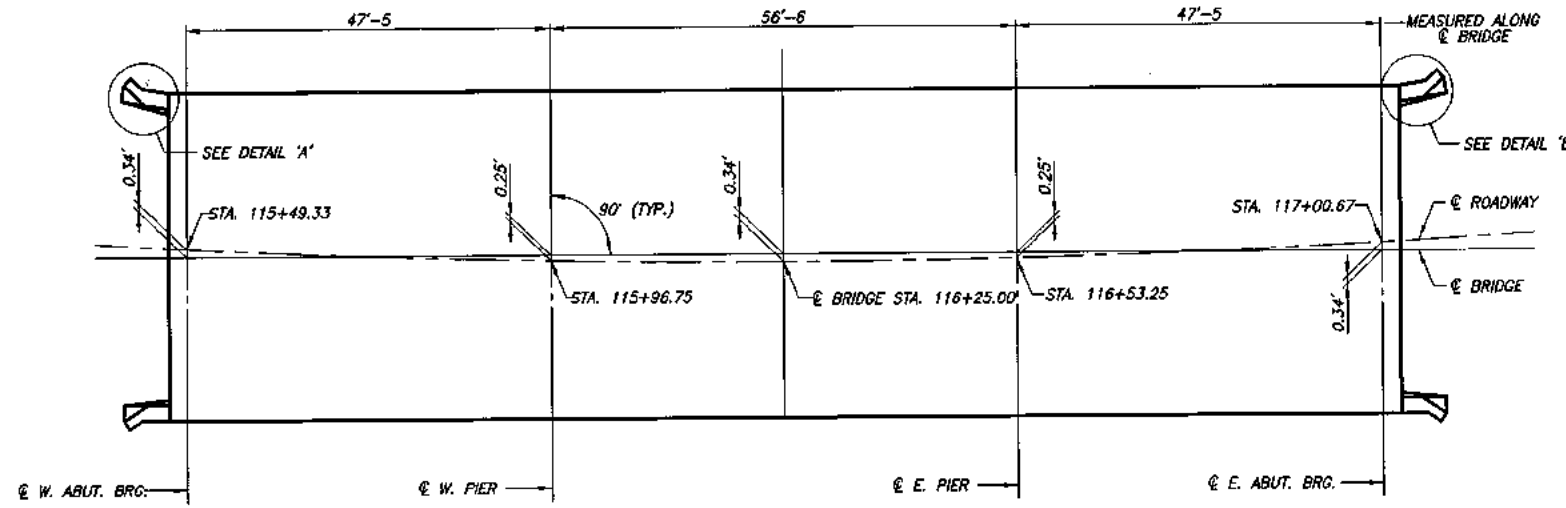
151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERGAL ABUTMENTS 47'-5 END SPANS P10A PIERS 56'-6 INTERIOR SPAN

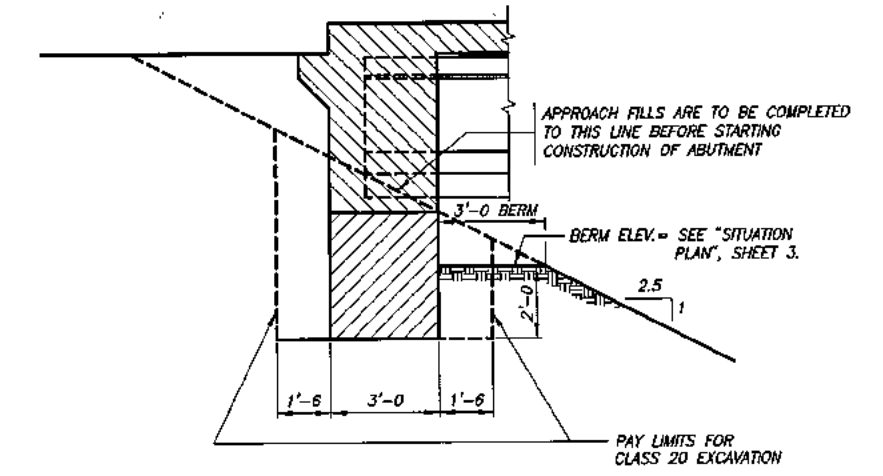
SUPERSTRUCTURE DETAILS

STATION 116+25.00 CRAWFORD COUNTY, IOWA 0° SKEW

BENCH MARK #1: 60d SPIKE IN GATE POST, SOUTH SIDE OF O AVENUE ROAD, OPPOSITE FARM DRIVE ENTRANCE TO HOUSE, 112+86, 34' RT., ELEV. = 482.31
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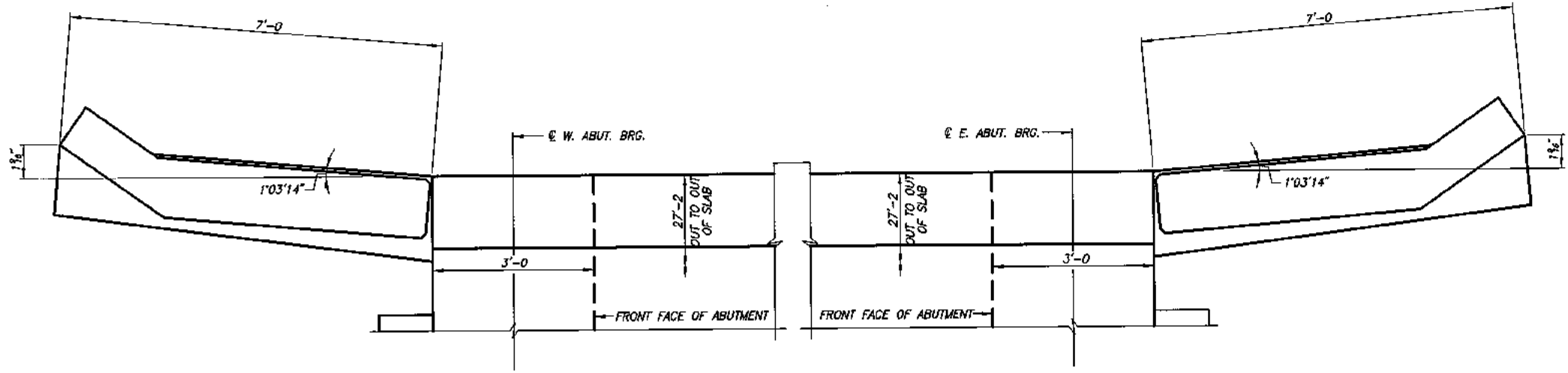


CURVE DATA	
PI Sta =	115+97.67
N =	10003.58
E =	11519.65
L =	08°00'31" L
CIRCULAR	
Dc =	01°21'40"
T =	294.67
R =	4208.50
L =	588.38
C =	587.90
E =	10.30



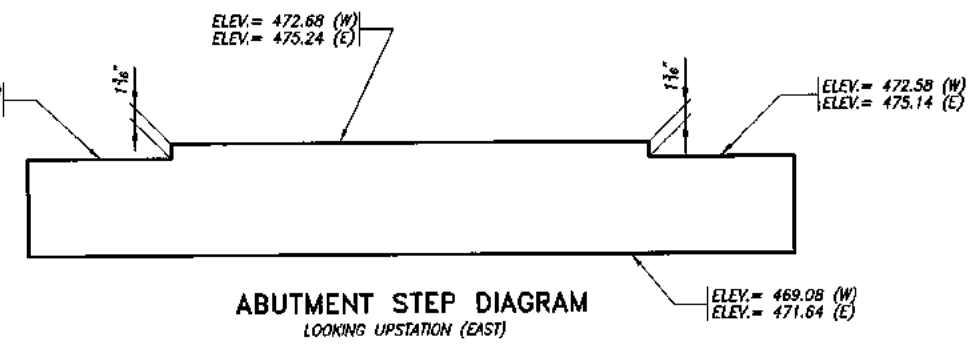
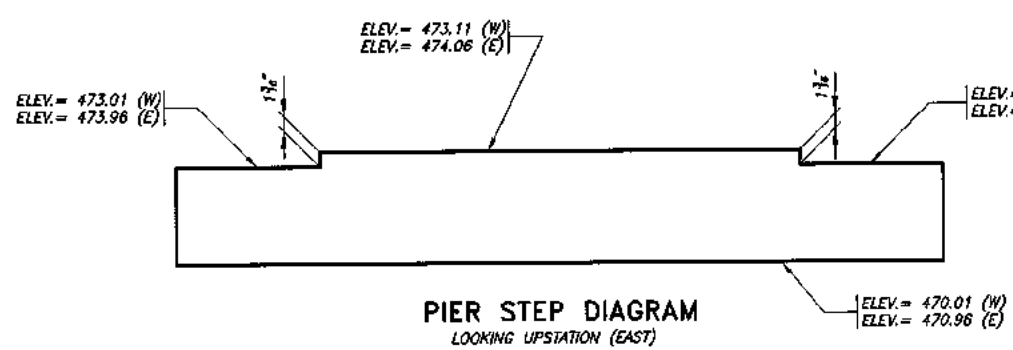
STAKING DIAGRAM

ABUTMENT EXCAVATION DETAIL



DETAIL 'A'

DETAIL 'B'



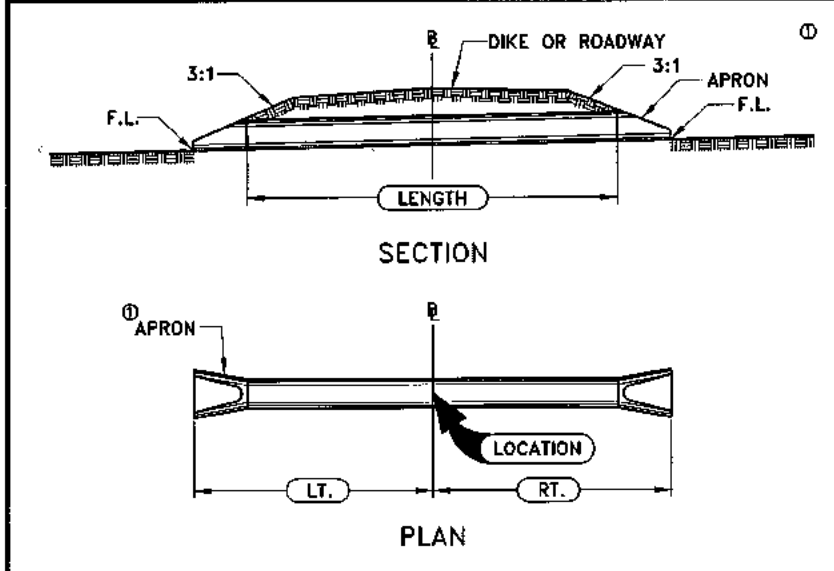
151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERGAL ABUTMENTS 47'-5 END SPANS P10A PIERS 56'-6 INTERIOR SPAN

SUBSTRUCTURE DETAILS & STAKING DIAGRAM

STATION 116+25.00 0° SKEW
 CRAWFORD COUNTY, IOWA

1101
07-21-87



NOTES:
 C SHALL BE C 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 C (EXAMPLE SKEW RT. AHEAD 30°).
 REFER TO TABULAR LISTING AND OTHER PLANS FOR ADDITIONAL INFORMATION.
 ① SEE STANDARD ROAD PLAN RF-3 FOR CONC. OR RF-5 FOR METAL.

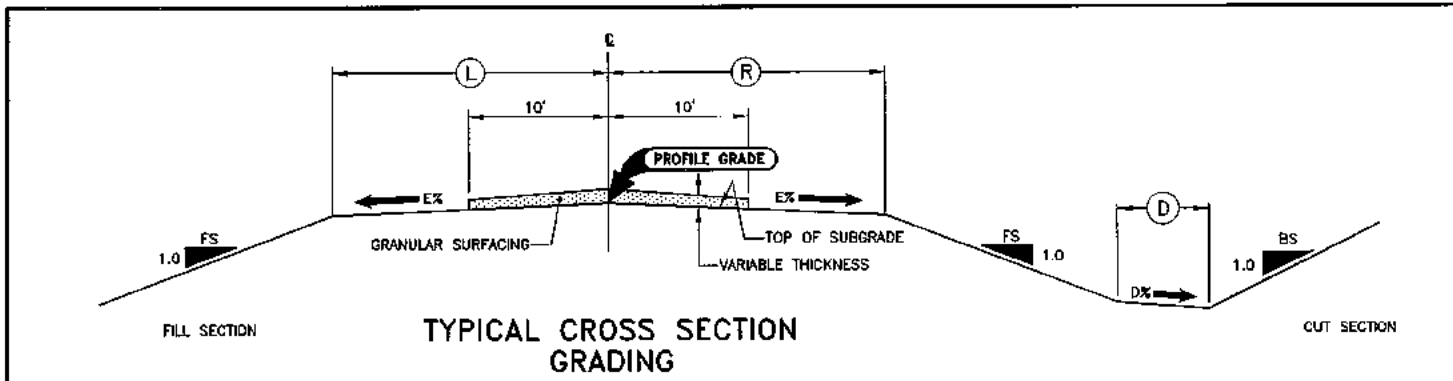
PIPE CULVERT

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.
 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, AN ALTERNATE ACCESS SHALL BE PROVIDED AND MAINTAINED. THIS WORK WILL BE CONSIDERED INCIDENTAL TO THE PROJECT.
 STANDARD ROAD PLANS ARE AVAILABLE FROM THE IOWA DEPARTMENT OF TRANSPORTATION, HIGHWAY DIVISION, AMES, IOWA.

EXCAVATION AND BORROW

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



TYPICAL CROSS SECTION GRADING

NOTE:
 NORMAL SECTION SHOWN MAY BE MODIFIED APPROPRIATELY IN LOCATIONS SPECIFICALLY DESIGNED BY THE ENGINEER.
 SEE CROSS SECTION FOR VARIATIONS

LOCATION		L	R	EX	FS	D%	BS	D	
ROAD IDENT.	STATION TO STATION								
TRANSITION FROM EXISTING									
MAINLINE	112+25.00	114+00.00							
MAINLINE	114+00.00	BRIDGE	14.0'	14.0'	3.57	3	2	3	
MAINLINE	BRIDGE	120+65.00	14.0'	14.0'	3.57	3	2	3	
MAINLINE	120+65.00	121+50.85	INTERSECTION						

* UNLESS NOTED OTHERWISE, SEE CROSS SECTIONS FOR VARIATIONS.

151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERGAL ABUTMENTS
 47'-5 END SPANS

P10A PIERS
 56'-6 INTERIOR SPAN

GRADING NOTES AND TYPICAL SECTIONS

STATION 116+25.00
 CRAWFORD COUNTY, IOWA

0' SKEW
 IOWA

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

Refer to Standard Road Plans RE-48A-B, RE-63, RE-64A(1), RE-64A(2), and RE-65B

108-8A
10-19-04

NO.	LOCATION			STANDARD ROAD PLAN	Feet	LAYOUT LENGTHS					MATERIALS REQUIRED			DELINEATORS AND OBJECT MARKERS			BID ITEMS					REMARKS													
	DIRECTION OF TRAFFIC	End	Side			STATION	STS (18.75')	VT1	VF	VT2	ET Terminal (37.5')	STS		W' Beam (VT1+VF)+ (VT2+ET)	Posts 6"x 8"x 7" with 6"x 8" Spacer Blocks (6 or 7)	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 (5)	Delineator Type	Object Marker				Installation of Guardrail (STS+VT1+VF)+ (VT2+ET)	Anchorage and Terminal Systems											
												Thrie Beam (25.0')	Transition Section (6.25')						No.	No.	No.			No.	No.	No.	No.	RE-33B	RE-69A	RE-69B	RE-69C	RE-78			
1	E.	A	O	116+25.00	RE-64B	-	18.75	-	12.5	-	37.5	25.0	6.25	50.0	6	3	5	1	-	2	-	1	1	1	1	1	1	1	1	1	1	1	1	WEST END, RT.	
2	W.	T	O	116+25.00	RE-64B	-	18.75	-	12.5	-	37.5	25.0	6.25	50.0	6	3	5	1	-	2	1	-	1	1	1	1	1	1	1	1	1	1	1	WEST END, LT. Δ	
3	W.	A	D	116+25.00	RE-64B	-	18.75	-	12.5	-	37.5	25.0	6.25	50.0	6	3	5	1	-	2	-	1	1	1	1	1	1	1	1	1	1	1	1	EAST END, LT. Δ	
4	E.	T	O	116+25.00	RE-64B	-	18.75	-	12.5	-	37.5	25.0	6.25	50.0	6	3	5	1	-	2	1	-	1	1	1	1	1	1	1	1	1	1	1	1	EAST END, RT.

* NOT A BID ITEM
Δ DEFLECT INSTALLATION LINE 1'3" AT END OF OPEN RAIL/BEGINNING OF END POST.

107-23
04-27-99

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

TABULATION OF GRADING FOR GUARDRAIL INSTALLATIONS

No.	DIRECTION OF TRAFFIC	Station	SIDE	TYPE	DIMENSIONS				CLASS 10 EXCAV. Δ	EMBANK. IN PLACE	PIPE			REMARKS
					BY		Z				Size	Type	Length	
					Feet	Feet	Feet	Feet						
1	E.	114+75.39	-	1	10.1	-	58	-	153	-	-	-	-	W. END RT.
2	W.	114+74.18	-	1	7.4	-	48	-	75	-	-	-	-	W. END LT.
3	W.	117+75.82	-	1	7.4	-	48	-	139	-	-	-	-	E. END LT.
4	E.	117+74.61	-	1	10.1	-	58	-	238	-	-	-	-	E. END RT.

Δ INCLUDES 35% FOR SHRINKAGE

SUMMARY OF EARTHWORK

STATION	AREAS IN SQ. FT.		VOLUMES IN CU. YDS.				
	CUT	FILL	CUT	ADD'L CUT	FILL	ADD'L FILL	FILL+35%
112+25.00	0	0	105	14	19	19	19
112+75.00	113	15	69	25	153	240	240
113+00.00	35	40	287	237	320	320	320
114+00.00	120	88	455	438	591	591	591
115+00.00	125	148	101	87	198	169	496
115+30.00	57	208					
BRIDGE				Δ235	146	197	
117+20.00	0	563		+524	417	563	
117+20.00	0	563	0	+12,524	2,005	2,707	
118+00.00	0	790	0	Δ1,505	2,810	278	4,170
119+00.00	0	727	0		681	919	
119+30.00	0	499	0		1,302	1,519	3,808
120+00.00	0	505	276		1,359	1,835	
121+00.00	149	229	140		216	112	443
121+50.85	0	0					
TOTAL			1,433	14,875	9,285	2,795	16,308

* BORROW
Δ CLASS 10 CHANNEL.

102-1
10-21-03

Refer to Detail Cross Sections. For Pipe Culvert, Details Refer to RF-30A, RF-30B, and RF-30C.

POINTS OF ACCESS (RL-7)

STATION	SIDE	W	TYPE	H	SIZE (INCHES)	LENGTH (LIN. FT.)		APRON (NO.)	SURFACE MATERIAL (TONS)
						LT.	RT.		
112+75.00	LT.	20	C	2.0	24	15.5	23.5	2	10
112+75.00	RT.	20	C	1.5	30	22.4	16.4	2	-
119+30.00	LT.	20	C	-	-	-	-	-	-
119+30.00	RT.	20	C	-	-	-	-	-	-

100-19
11-10-83

TABULATION OF EROSION CONTROL FEATURES

LOCATION STATION OR STATION TO STATION (EXACT LOCATION TO BE DETERMINED BY THE ENGINEER)	SIDE	TYPE OF WORK					REMARKS	
		FOR DITCH CHECK		SILT BASIN (NO.)	SILT DIKE (LIN. FT.)	SILT DITCH (LIN. FT.)		SILT FENCE (LIN. FT.)
		SILT FENCE (UN. FT.)						
113+40.00	-	R/L	20/20	-	-	-	-	-
115+40.00	-	R/L	20/20	-	-	-	-	-
116+80.00	118+70.00	R	-	-	-	-	210	-
116+80.00	118+90.00	L	-	-	-	-	230	-
119+60.00	121+20.00	L	-	-	-	-	180	-
119+60.00	121+40.00	R	-	-	-	-	200	-

110-2
10-13-72

REMOVAL OF EXISTING STRUCTURES

LOCATION	DESCRIPTION	DISPOSAL
112+75.00, 25' RT.	30' x 30' C.M.P. *	CONTRACTOR
112+75.00, 28' LT.	24' x 25' R.C.P. *	CONTRACTOR
116+03.00	116' x 20.2' PONY TRUSS WITH 1-BEAM APPROACHES	CONTRACTOR

* INCIDENTAL TO CLASS 10 ROADWAY & BORROW

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-11-2, 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.

108-13A
10-28-97

Refer to Section 251B of the Standard Specifications

TABULATION OF SAFETY CLOSURES

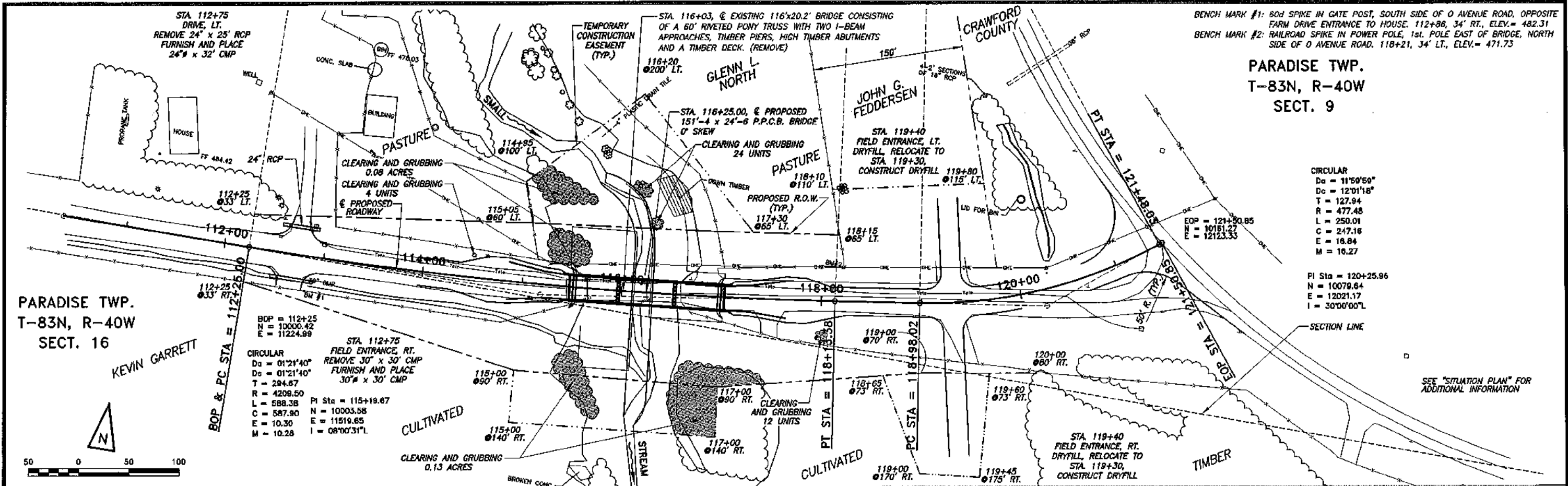
STATION	CLOSURE TYPE		REMARKS
	Road Qty.	Hazard Qty.	
111+00	1	-	WEST END
114+50	-	1	WEST END
117+50	-	1	EAST END
121+00	1	-	EAST END

151'-4 x 24'-6 PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

INTERAL ABUTMENTS 47'-5 END SPANS P10A PIERS 56'-6 INTERIOR SPAN

TABULATIONS

STATION 116+25.00 0' SKEW
CRAWFORD COUNTY, IOWA



BENCH MARK #1: 60d SPIKE IN GATE POST, SOUTH SIDE OF O AVENUE ROAD, OPPOSITE FARM DRIVE ENTRANCE TO HOUSE. 112+86, 34' RT., ELEV. = 482.31
 BENCH MARK #2: RAILROAD SPIKE IN POWER POLE, 1st. POLE EAST OF BRIDGE, NORTH SIDE OF O AVENUE ROAD. 118+21, 34' LT., ELEV. = 471.73

PARADISE TWP.
 T-83N, R-40W
 SECT. 9

PARADISE TWP.
 T-83N, R-40W
 SECT. 16

KEVIN GARRETT

CIRCULAR
 Da = 11°50'59"
 Dc = 12°01'18"
 T = 127.94
 R = 477.48
 L = 250.01
 C = 247.16
 E = 16.84
 M = 16.27

PI Sta = 120+25.96
 N = 10079.84
 E = 12021.17
 I = 30°00'00"L

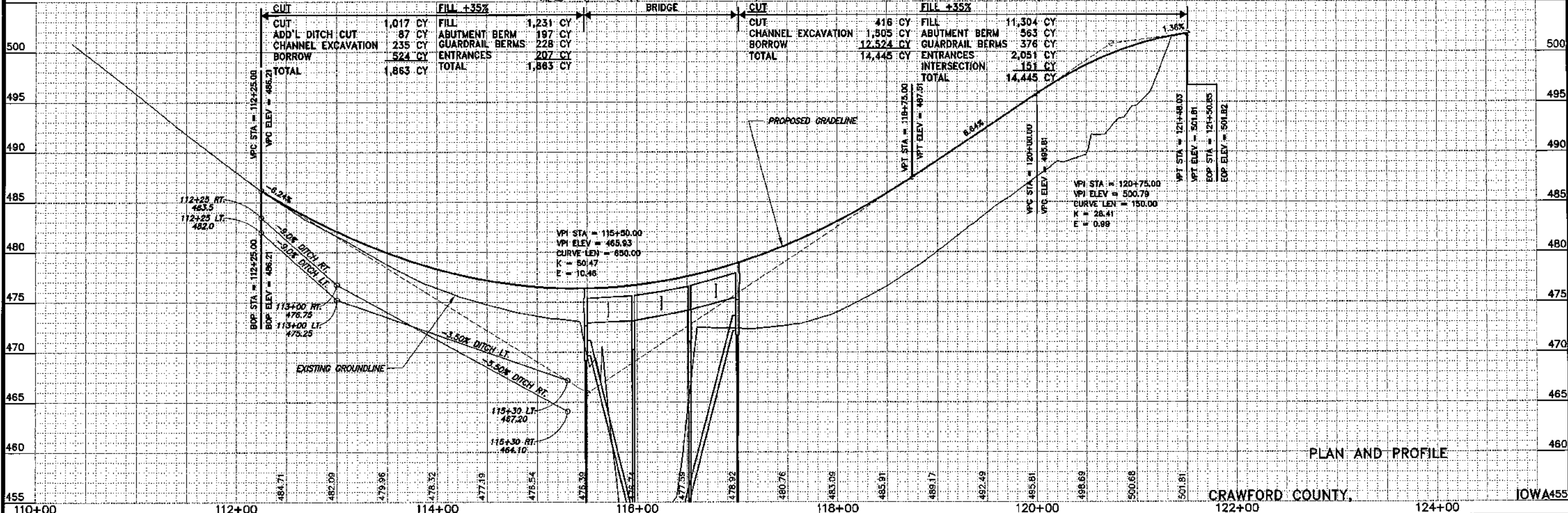
BOP = 112+25
 N = 10000.42
 E = 11224.99

CIRCULAR
 Da = 01°21'40"
 Dc = 01°21'40"
 T = 294.67
 R = 4209.50
 L = 588.38
 C = 587.90
 E = 10.30
 M = 10.28

PI Sta = 115+19.87
 N = 10003.58
 E = 11519.65
 I = 08°00'31"L



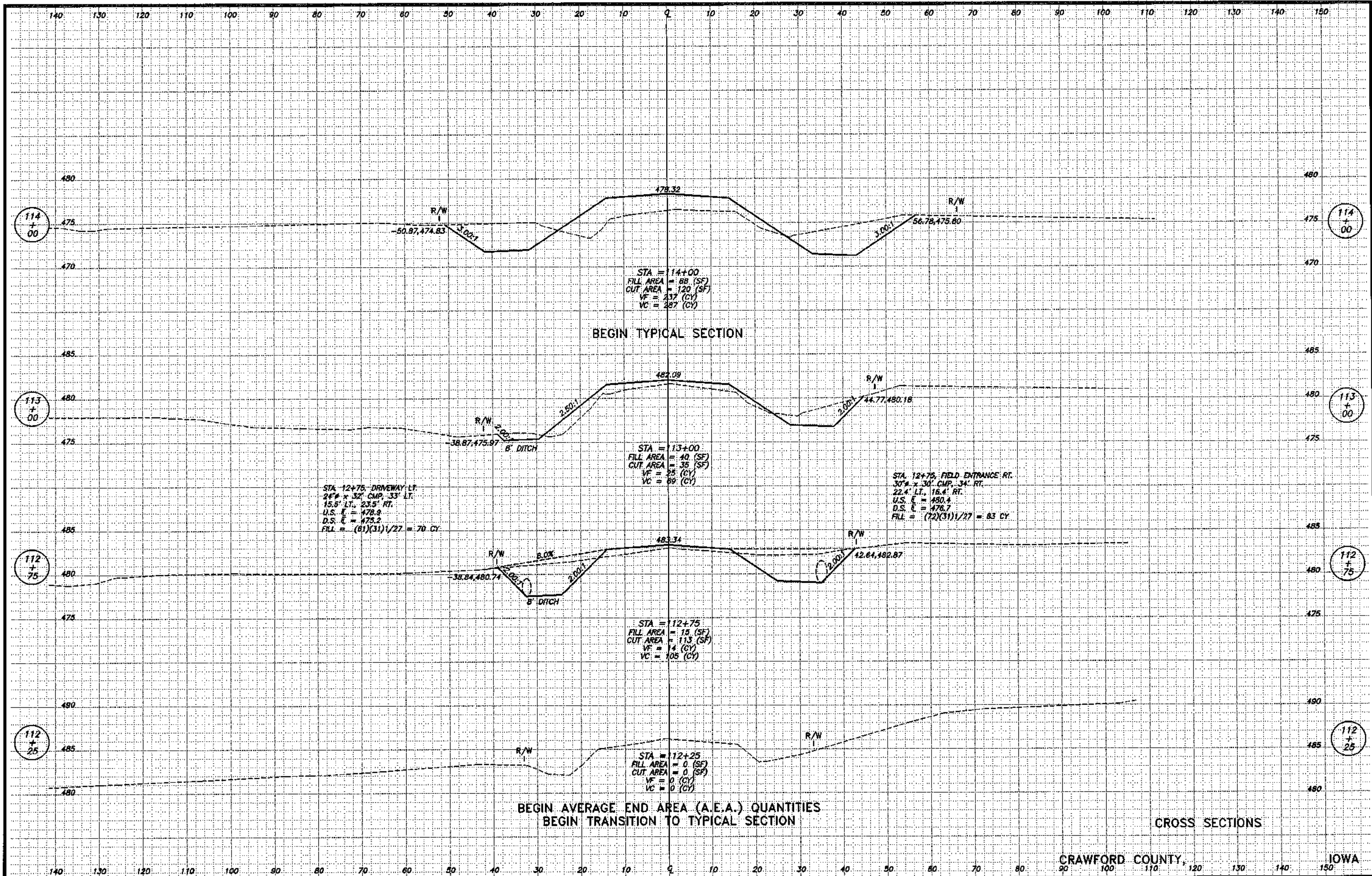
SEE "SITUATION PLAN" FOR ADDITIONAL INFORMATION



CUT		FILL +35%		BRIDGE		CUT		FILL +35%	
CUT	1,017 CY	FILL	1,231 CY			CUT	418 CY	FILL	11,304 CY
ADD'L DITCH CUT	87 CY	ABUTMENT BERM	197 CY			CHANNEL EXCAVATION	1,505 CY	ABUTMENT BERM	563 CY
CHANNEL EXCAVATION	235 CY	GUARDRAIL BERMS	228 CY			BORROW	12,524 CY	GUARDRAIL BERMS	376 CY
BORROW	524 CY	ENTRANCES	207 CY			TOTAL	14,445 CY	ENTRANCES	2,051 CY
TOTAL	1,863 CY	TOTAL	1,863 CY					INTERSECTION	151 CY
								TOTAL	14,445 CY

PLAN AND PROFILE

CRAWFORD COUNTY, IOWA 455



BEGIN TYPICAL SECTION

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

CROSS SECTIONS

