

CRAWFORD COUNTY PROJECT NO. BROS-C024(76)--5F-24 RCB CULVERT REPLACEMENT - TWIN BOX LETTING DATE: APRIL 19, 2005

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	RL-16	10-19-04		
RC-16B	04-20-04				
		RS-27	10-28-97		
RF-5	10-03-00				
RF-30A	03-28-95				
RF-32	03-28-95				
RL-1A	10-03-00				
RL-1B	10-03-00				
RL-7	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, 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 #2004-228) IS COVERED BY U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT #14.

IOWA
DEPARTMENT OF TRANSPORTATION
Highway Division
 PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET SYSTEM
CRAWFORD COUNTY
 PROJECT NO. BROS-C024(76)--5F-24
RCB CULVERT REPLACEMENT - TWIN BOX
 ON COUNTY ROUTE M38 OVER ROCKY RUN CREEK
 APPROXIMATELY 3 1/2 MILES WEST OF VAIL

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.

PROJECT NO. BROS-C024(76)--5F-24
 FHWA NO. 128910

INDEX OF SHEETS

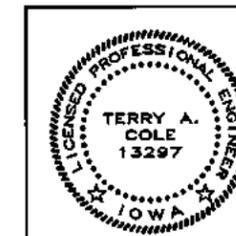
1. TITLE SHEET
2. QUANTITY SUMMARY AND MISCELLANEOUS DETAILS
3. SITUATION PLAN
4. GENERAL PLAN
5. GENERAL NOTES
6. CULVERT DETAILS
7. CULVERT DETAILS
8. CULVERT DETAILS
9. CULVERT DETAILS
10. CULVERT DETAILS
11. TABULATIONS AND POLLUTION PREVENTION PLAN

MILEAGE SUMMARY:

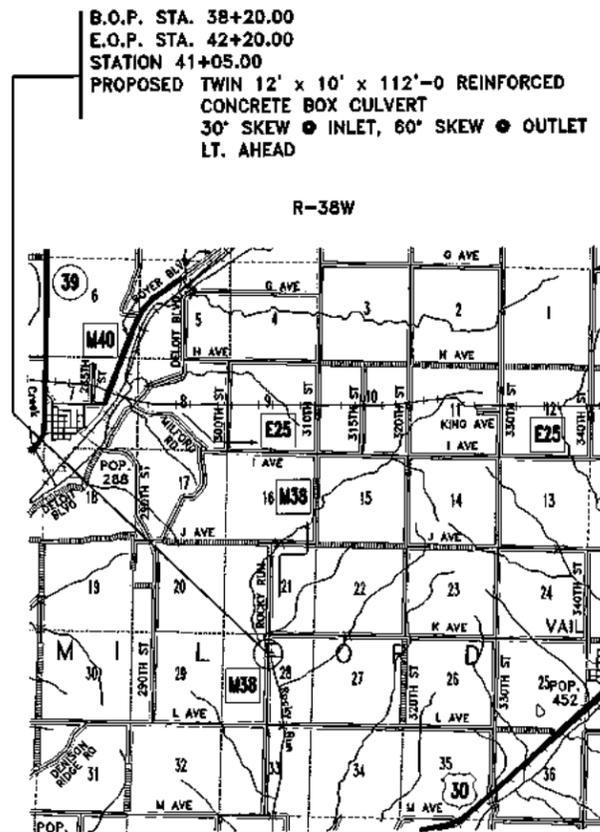
STA. 38+20 TO STA. 42+20 = 400 LIN.FT. = 0.0758 MILES

IOWA DEPARTMENT OF TRANSPORTATION BRIDGE AND CULVERT STANDARDS REQUIRED		
STANDARD	DATE ISSUED	LATEST REVISION
TWRCB-01-87	JULY, 1987	04-02
TWRCB 12-10-87	JULY, 1987	12-5-96
TWH 30-1-87	JULY, 1987	12-5-96
TWH 30-2-87	JULY, 1987	-
TWH 30-3-87	JULY, 1987	1-1-98
TWH 30-4-87	JULY, 1987	-
TWH 30-5-87	JULY, 1987	1-1-98
TWH 45-1-87	JULY, 1987	12-5-96
TWH 45-2-87	JULY, 1987	-
TWH 45-3-87	JULY, 1987	-
TWH 45-4-87	JULY, 1987	1-1-98
TWH 45-5-87	JULY, 1987	-
TWH 45-6-87	JULY, 1987	1-1-98

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.
 Terry A. Cole, P.E. DATE: 11/22/04
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2004.
 PAGES OR SHEETS COVERED BY THIS SEAL:
 1-11 OF 11



PROJECT LOCATION



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.

APPROVED: *[Signature]* 10/19/04
 CRAWFORD COUNTY ENGINEER DATE

[Signatures]
 BOARD OF SUPERVISORS DATE

Iowa Department of Transportation

Highway Division
 ACCEPTED FOR LETTING

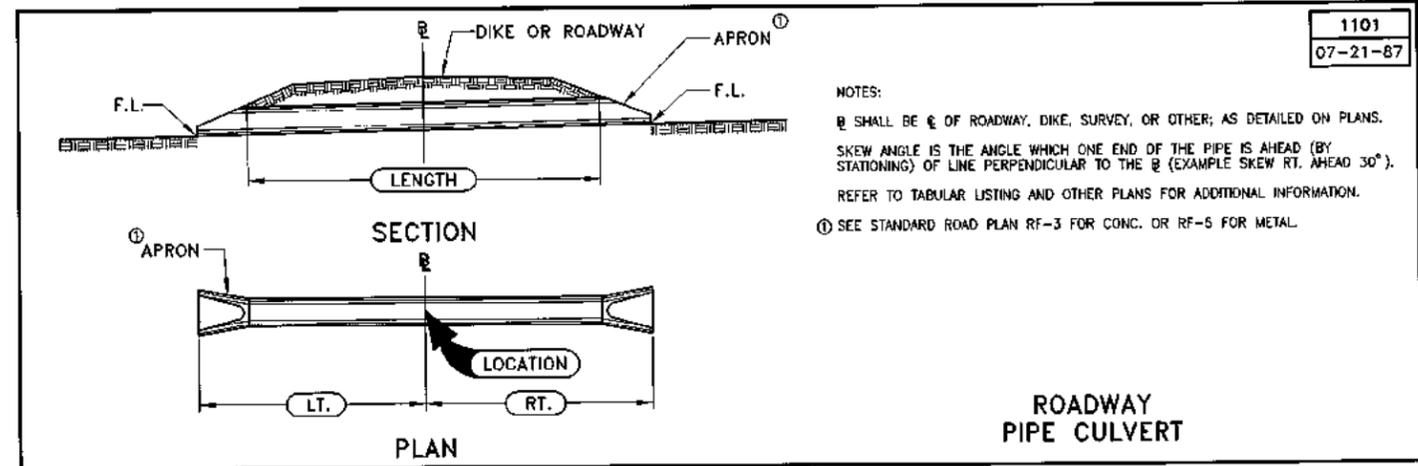
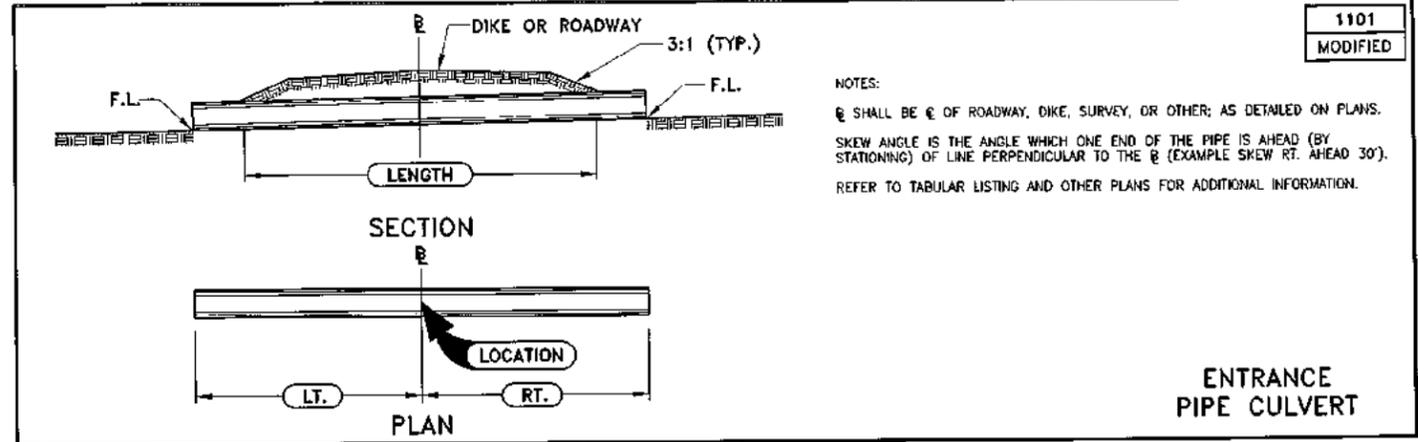
[Signature] 1/28/05
 DISTRICT LOCAL SYSTEMS ENGINEER DATE

128911

TOTAL ESTIMATED QUANTITIES				
REF. NO.	CODE NO.	ITEM	UNIT	QUANTITY
1	2101-0850002	CLEARING AND GRUBBING	UNITS	20.2
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CU.YDS.	8,670
3	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CU.YDS.	1,430
4	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS 'A' CRUSHED STONE	TONS	175
5	2401-6745650	REMOVAL OF EXISTING STRUCTURES	L.S.	1
6	2402-0425031	GRANULAR BACKFILL	TONS	202
7	2402-2720000	EXCAVATION, CLASS 20	CU.YDS.	2,208
8	2402-2720100	EXCAVATION, CLASS 20, FOR ROADWAY PIPE CULVERT	CU.YDS.	73
9	2403-0100020	STRUCTURAL CONCRETE (R.C.B. CULVERT)	CU.YDS.	466.9
10	2404-7775000	REINFORCING STEEL	LBS.	69,109
11	2417-0225030	APRONS, METAL, 30 INCH DIA.	EACH	1
12	2417-1040024	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 24 INCH DIA.	LIN.FT.	42
13	2417-1040030	CULVERT, CORRUGATED METAL ENTRANCE PIPE, 30 INCH DIA.	LIN.FT.	32
14	2417-1060030	CULVERT, CORRUGATED METAL ROADWAY PIPE, 30 INCH DIA.	LIN.FT.	56
15	2507-3250005	ENGINEERING FABRIC	SQ.YDS.	750
16	2507-6800061	REVTMENT, CLASS E	TONS	540
17	2518-6910000	SAFETY CLOSURE	EACH	4
18	2528-8445110	TRAFFIC CONTROL	L.S.	1
19	2533-4980005	MOBILIZATION	L.S.	1
20	2601-2634100	MULCHING	ACRE	1.4
21	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	1.4
22	2602-0000020	SILT FENCE	LIN.FT.	170
23	2602-0000090	CLEANOUT OF SILT FENCE	LIN.FT.	170

REF. NO. ESTIMATE REFERENCE INFORMATION

- SEE GENERAL PLAN, SHEET 4 FOR LIMITS.
- ROADWAY CONSTRUCTION AND FILLING THE EXISTING CHANNEL REQUIRES 11,100 C.Y. OF FILL MATERIAL. OF THIS, 1,430 C.Y. IS AVAILABLE FROM, AND WILL BE PAID AS, "EXCAVATION, CLASS 10, CHANNEL" AND 1,000 C.Y. IS AVAILABLE FROM AND WILL BE PAID AS "EXCAVATION, CLASS 20". THE REMAINING 8,670 C.Y. IS TO BE FURNISHED AS BORROW. TYPE "A" COMPACTION WILL BE REQUIRED. INCLUDES MATERIAL FOR APPROACHES AND ENTRANCES. THE QUANTITY INCLUDES AN ADDITIONAL 35% TO COMPENSATE FOR SHRINKAGE. THE CONTRACTOR IS TO PROVIDE 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".
- INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE "LONGITUDINAL SECTION ALONG CENTERLINE OF CULVERT" AND THE LIMITS SHOWN ON THE "SITUATION PLAN". INCLUDES COST OF USING APPROXIMATELY 1,430 C.Y. OF SUITABLE MATERIAL FOR CONSTRUCTION OF ROADWAY AND FILLING IN THE EXISTING CHANNEL IN ACCORDANCE WITH I.D.O.T. ROAD STANDARD RL-1A OR RL-1B. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.06 PARAGRAPH A2 OF THE STANDARD SPECIFICATIONS. UNSUITABLE OR EXCESS MATERIAL SHALL BE WASTED ON SITE.
- SURFACING TO BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1400 AND 600 TONS /MILE). INCLUDES 20 TONS FOR DRIVE STA. 43+90 RT.
- SEE TABULATION, SHEET 11 AND GENERAL NOTES, SHEET 5. THE EXISTING BRIDGE IS A 100' X 22' STEEL I-BEAM BRIDGE WITH HIGH TIMBER ABUTMENTS AND H-PILE BENTS. THE STRUCTURE HAS A TIMBER DECK. THE LUMP SUM BID FOR "REMOVAL OF EXISTING STRUCTURES" SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE. THE STEEL I-BEAMS AND TIMBER DECK PLANK SHALL REMAIN THE PROPERTY OF THE COUNTY AND THE CONTRACTOR SHALL CAREFULLY REMOVE AND LOAD THE BEAMS AND DECK PLANK ONTO COUNTY FURNISHED TRUCKS. ALL REMAINING SALVAGEABLE MATERIAL AND UNSALVAGEABLE MATERIAL 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 2,825 PARTS PER MILLION (PPM). THE ANALYSIS OF TOTAL LEAD IN THESE SAMPLES WAS 68,375 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.
- INCLUDES THE COST OF MATERIAL, LABOR, AND EQUIPMENT REQUIRED TO CONSTRUCT A 1'-0" THICK GRANULAR WORKING BLANKET IN THE EXISTING CHANNEL. THE GRANULAR MATERIAL SHALL BE CONSTRUCTED ACCORDING TO SECTION 2107.11 OF THE STANDARD SPECIFICATIONS AND SHALL PROVIDE A UNIFORM BASE IN THE EXISTING STREAM BED CHANNEL PRIOR TO BACKFILLING. SEE SITUATION PLAN, SHEET 3.



REF. NO. ESTIMATE REFERENCE INFORMATION

- INCLUDES ALL LABOR, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE EXCAVATION RELATING TO CULVERT CONSTRUCTION. THE QUANTITY SHOWN IS BASED ON EXISTING UNDISTURBED CONDITIONS. INCLUDES COSTS OF USING SUITABLE CLASS 20 EXCAVATION TO BACKFILL THE CULVERT, FILL IN THE EXISTING CHANNEL AND/OR CONSTRUCT APPROACH FILLS IN ACCORDANCE WITH I.D.O.T. ROAD STANDARD RL-1A OR RL-1B.
- INCLUDES ALL COSTS TO FURNISH AND PLACE A GRANULAR SURFACING MATERIAL LISTED IN SPECIFICATION SECTION 4120 OR OTHER SUITABLE MATERIAL APPROVED BY THE ENGINEER TO IMPROVE WET AND MUDDY CONDITIONS ALONG THE BOTTOM OF EXCAVATION. CERTIFIED PLANT INSPECTION IS REQUIRED.
- ALL REINFORCING SHALL BE GRADE 60.
- SEE TABULATION, SHEET 11.
- ALL PIPE SHALL BE STANDARD CORRUGATIONS. NO HELICALLY CORRUGATED PIPE WILL BE ALLOWED. ALL CONNECTING BANDS SHALL BE 24" WIDE.
- SEE SITUATION PLAN, SHEET 3, AND GENERAL PLAN, SHEET 4, FOR LIMITS.
- REVTMENT IS TO BE PLACED AT A THICKNESS OF 1'-6". SEE SITUATION PLAN, SHEET 3, AND GENERAL PLAN, SHEET 4, FOR LIMITS. THE UNIT PRICE BID FOR "REVTMENT, CLASS E" SHALL INCLUDE COST OF LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO PLACE CLASS E REVTMENT STONE ON CHANNEL BANKS IN ACCORDANCE WITH SECTION 2507 OF THE STANDARD SPECIFICATIONS.
- SEE TABULATION, SHEET 11.
- SEE SHEETS 1 AND 11.
- THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THIS SHALL BE INCLUDED IN THE PRICES BID FOR SEEDING AND FERTILIZING (RURAL) AND "MULCHING."
- SEE TABULATION, SHEET 11 AND POLLUTION PREVENTION PLAN, SHEET 11.

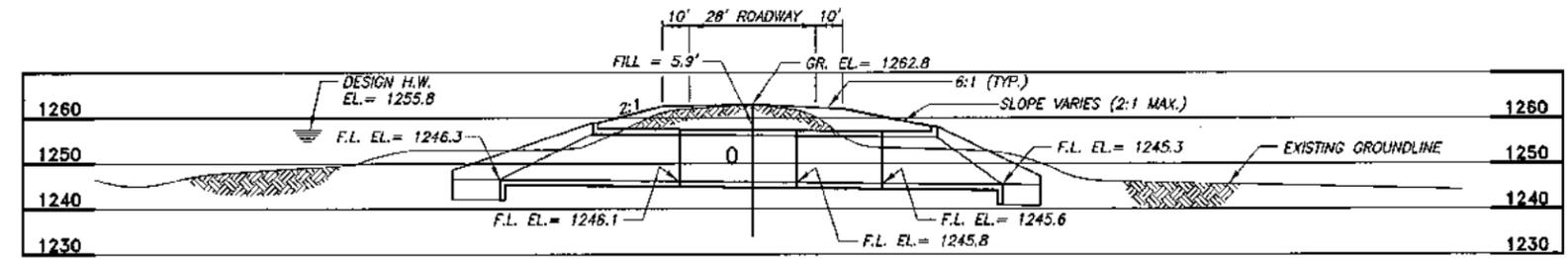
**TWIN 12' x 10' x 112'-0 REINFORCED
CONCRETE BOX CULVERT**

QUANTITY SUMMARY AND MISCELLANEOUS DETAILS

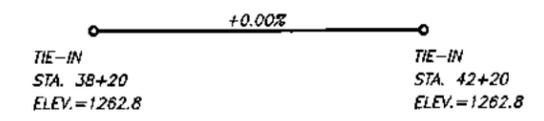
STATION 41+05.00
CRAWFORD COUNTY, IOWA

30° SKEW, @ INLET
60° SKEW, @ OUTLET

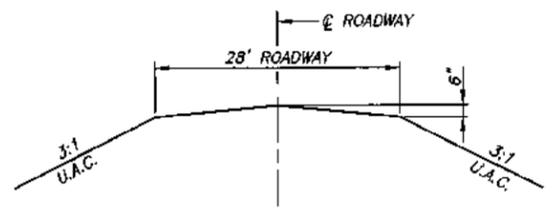
BENCH MARK: R.R. SPIKE IN S.E. FENCE OF N. GATE POST 2.5' ABOVE GROUND ON WEST SIDE OF ROAD 200± SOUTH OF S.W. CORNER OF BRIDGE, ELEV. = 1265.07



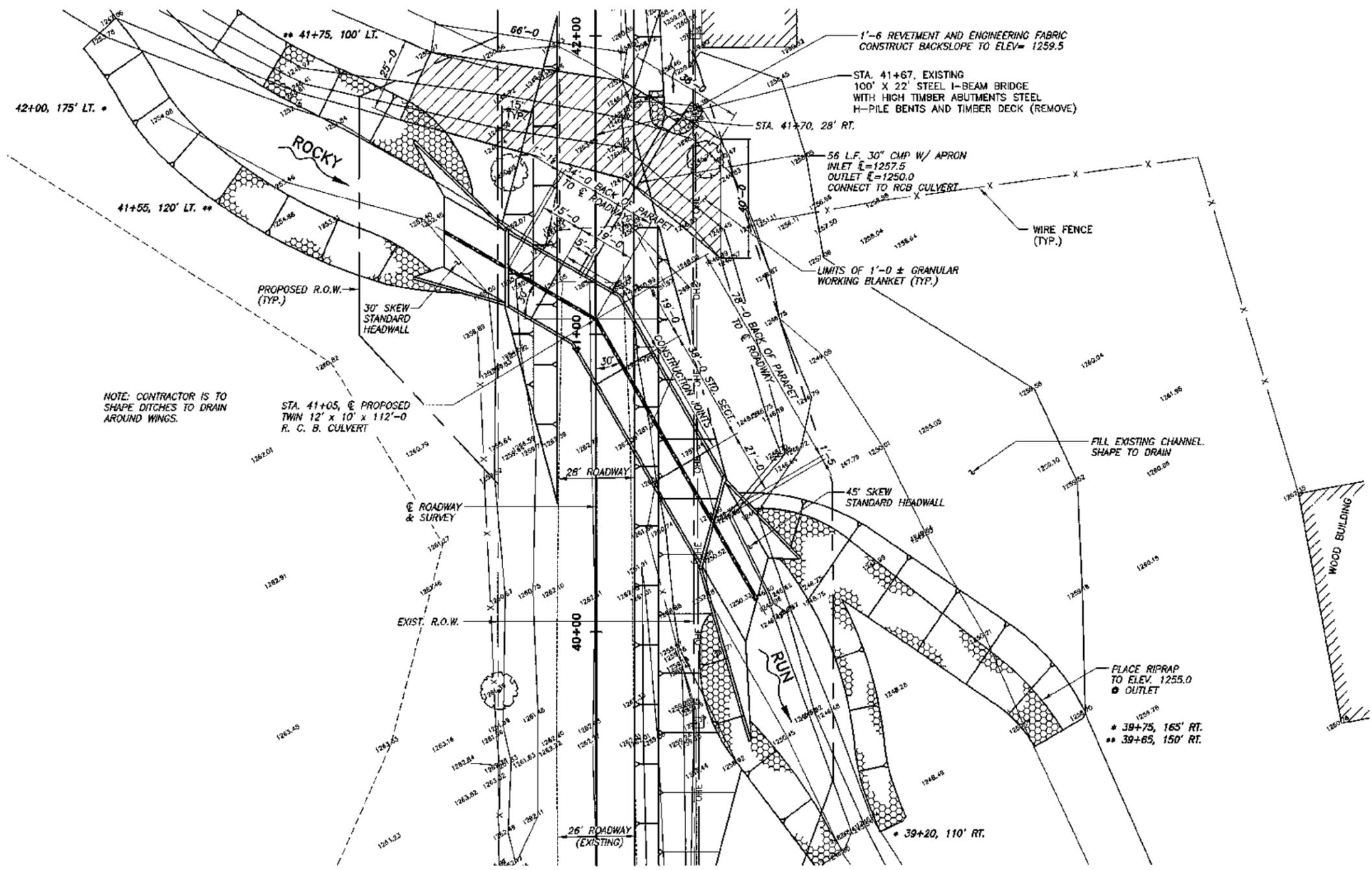
LONGITUDINAL SECTION ALONG Q CULVERT



PROPOSED GRADE



TYPICAL APPROACH SECTION



SITUATION PLAN

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

SEE GENERAL PLAN FOR ADDITIONAL INFORMATION.

LOCATION

CRAWFORD COUNTY
 T-84N, R-38W
 SECTION 28
 MILFORD TOWNSHIP
 OVER ROCKY RUN

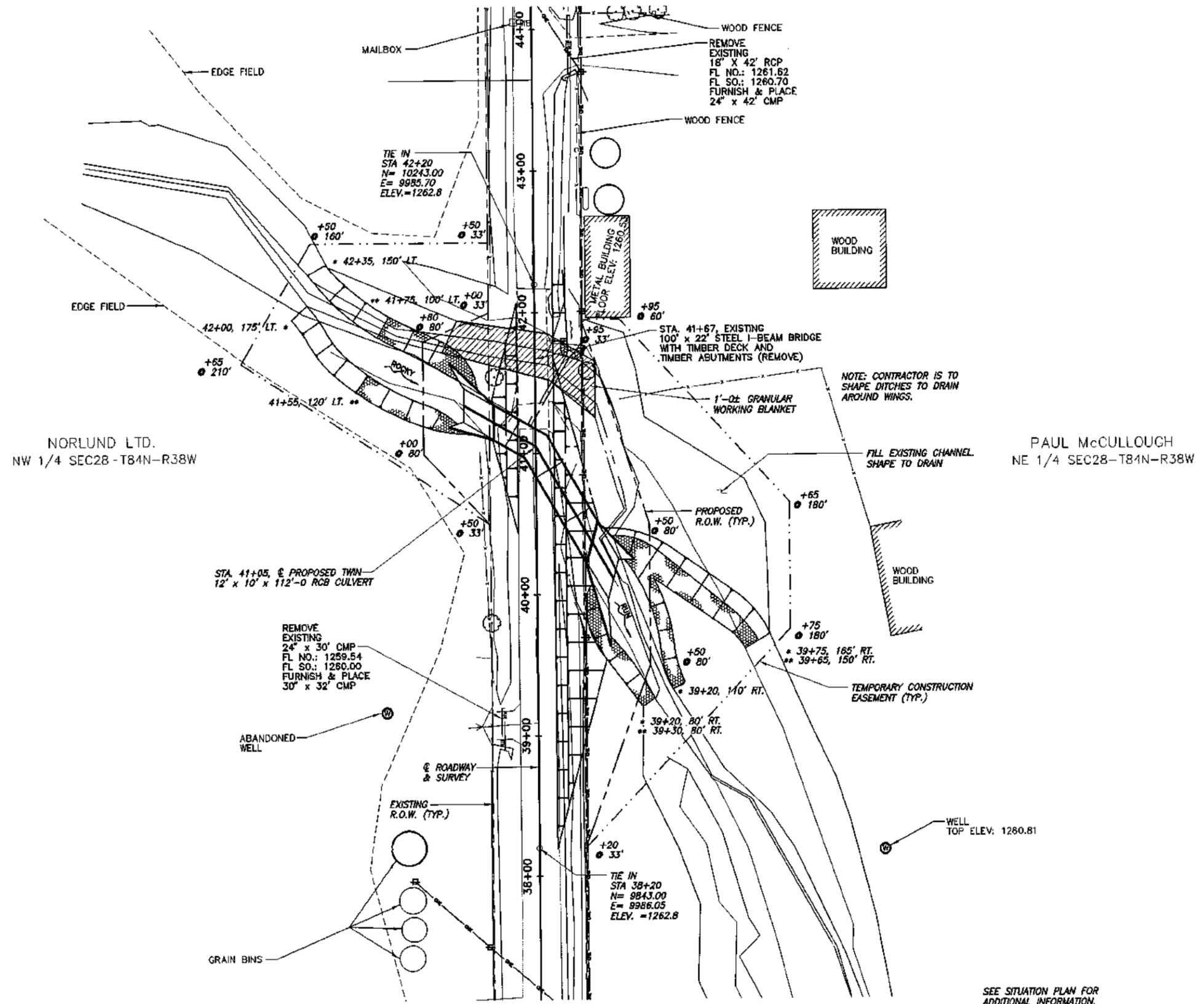
HYDRAULIC DATA

DRAINAGE AREA = 6.2 SQ. MILES
 DESIGN DISCHARGE = 1,800 C.F.S.
 DESIGN HIGH WATER EL. = 1255.8
 BARREL SLOPE = 0.00595 FT./FT.
 Q25 = 1,800 C.F.S. STAGE EL. = 1255.8 (DESIGN)
 Q50 = 2,200 C.F.S. STAGE EL. = 1257.3
 Q100 = 2,700 C.F.S. STAGE EL. = 1259.3
 Q500 = 3,500 C.F.S. STAGE EL. = 1262.3
 EXT. H.W. EL. = 1261, YEAR UNKNOWN

TWIN 12' x 10' x 112'-0" REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN

STATION 41+05.00
 CRAWFORD COUNTY, IOWA
 30' SKEW, @ INLET
 60' SKEW, @ OUTLET



NORLUND LTD.
NW 1/4 SEC28-T84N-R38W

PAUL McCULLOUGH
NE 1/4 SEC28-T84N-R38W

GENERAL PLAN



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

SEE SITUATION PLAN FOR ADDITIONAL INFORMATION.

TWIN 12' x 10' x 112'-0 REINFORCED CONCRETE BOX CULVERT

GENERAL PLAN

STATION 41+05.00
CRAWFORD COUNTY, IOWA
30' SKEW, @ INLET
60' SKEW, @ OUTLET

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

GENERAL NOTES

THIS CULVERT IS DESIGNED FOR HS20-44 LOADING AND 5.9' OF FILL. VERTICAL EARTH LOAD IS ASSUMED AS 140 P.C.F. AND LATERAL EARTH LOADS AS AN EQUIVALENT FLUID PRESSURE OF 36 PSF/FT. $Z = 170$ FOR CRACK CONTROL.

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

THE ENGINEER WILL BE RESPONSIBLE FOR THE CONSTRUCTION SURVEY. 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.

THIS PROJECT IS TO BE BUILT UNDER THE CONDITIONS OF ARMY CORPS OF ENGINEERS 404 PERMIT NUMBER 2004-228. 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.

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

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 UNSIGHTLY CONDITION WHEN VIEWED FROM PUBLIC HIGHWAYS, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER.

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.

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.

CULVERT NOTES

THE CONTRACTOR SHALL SUBMIT A PLAN FOR TEMPORARY STREAM DIVERSION PRIOR TO CONSTRUCTION OF THE CULVERT. THE PLAN IS TO BE REVIEWED AND APPROVED BY THE ENGINEER. ANY TEMPORARY STREAM CROSSINGS SHALL HAVE PIPE CULVERTS TO ACCOMMODATE LOW FLOWS.

THE CULVERT FLOOR SHALL BE FINISHED SMOOTH. SIDES OF THE FOOTING SHALL BE FORMED TO ENSURE CORRECT LINE AND GRADE.

THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED 2'-4" AT THE CONTRACTOR'S OPTION.

KEYWAYS IN CONSTRUCTION JOINTS ARE TO BE FORMED WITH BEVELED 2 X 4s UNLESS OTHERWISE NOTED.

BOTTOM OF FLOOR IS TO BE TAPERED 3 1/2" IN 12" TO ACCOMMODATE DIFFERENCE IN FLOOR THICKNESS BETWEEN BARREL FLOOR AND APRON OF HEADWALL. TAPER IS TO BE DIRECTLY BELOW AND PARALLEL TO PARAPET.

THE VERTICAL BARS IN THE WALLS MAY BE SPLICED ABOVE THE FOOTING AT THE CONTRACTOR'S OPTION AS FOLLOWS:

BAR SIZE NUMBER	4	5	6	7	8
MINIMUM SPLICE LENGTH	21"	26"	31"	43"	55"

THIS SPLICE, IF USED, WILL BE AT THE CONTRACTOR'S EXPENSE.
LONGITUDINAL REINFORCING SHALL NOT EXTEND THROUGH CONSTRUCTION JOINTS, EXCEPT FOR 5r1 SLAB DOWEL BARS.

WHEN DE-WATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL, COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

BACKFILL NOTES

AFTER THE EXISTING STRUCTURE IS REMOVED AND THE GRANULAR WORKING BLANKET IS PLACED, THE CONTRACTOR IS TO CONSTRUCT THE ROAD FILL TO THE PROPOSED GRADELINE AND TO THE FORESLOPES SHOWN. THE CONTRACTOR IS TO CONSTRUCT THE FILL AS "EXCAVATION, CLASS 10, ROADWAY AND BORROW" IN ACCORDANCE WITH ARTICLE 2107 OF THE STANDARD SPECIFICATIONS. SUITABLE CLASS 10 (CHANNEL) EXCAVATION AND CLASS 20 EXCAVATION MAY BE USED IN THE FILL IN ACCORDANCE WITH I.D.O.T. ROAD STANDARD RL-1A OR RL-1B, PLACED IN THE OLD CHANNEL OR WASTED ON SITE AS DIRECTED BY THE ENGINEER. IF ADDITIONAL MATERIAL IS REQUIRED THE CONTRACTOR WILL BE REQUIRED TO PROVIDE HIS OWN BORROW SITE.

SUITABLE CLASS 10 CHANNEL EXCAVATION AND CLASS 20 EXCAVATION, AS DIRECTED BY THE ENGINEER, SHALL BE USED TO FILL THE EXISTING CHANNEL. 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 AS DIRECTED BY THE ENGINEER.

BORROW AND EXCAVATION NOTES

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 PROPOSED 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. THE DRIVE AT STATION 43+90 RT. SHALL BE CONSTRUCTED WITH A 40' TOP.

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

CONTRACTOR'S WORK AREA

THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE DEFINED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE, AND SEED THIS CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR "SEEDING AND FERTILIZING, (RURAL)" 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**

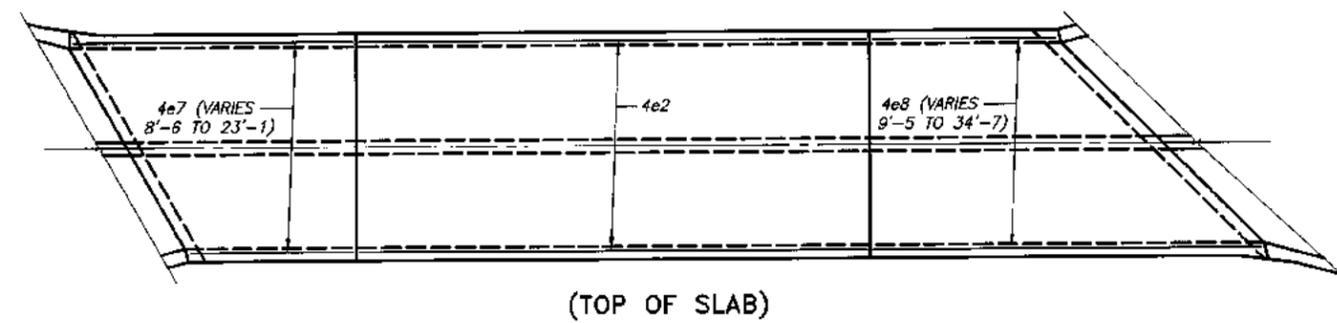
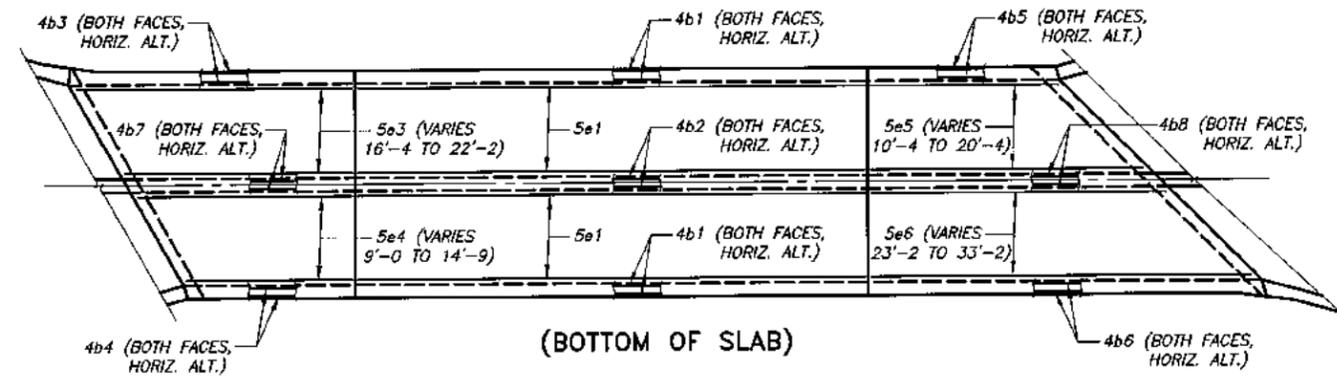
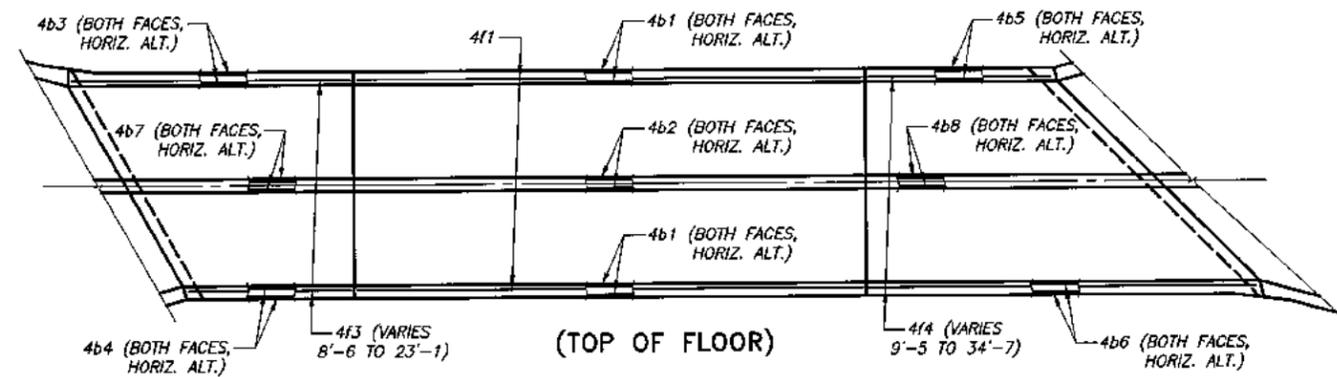
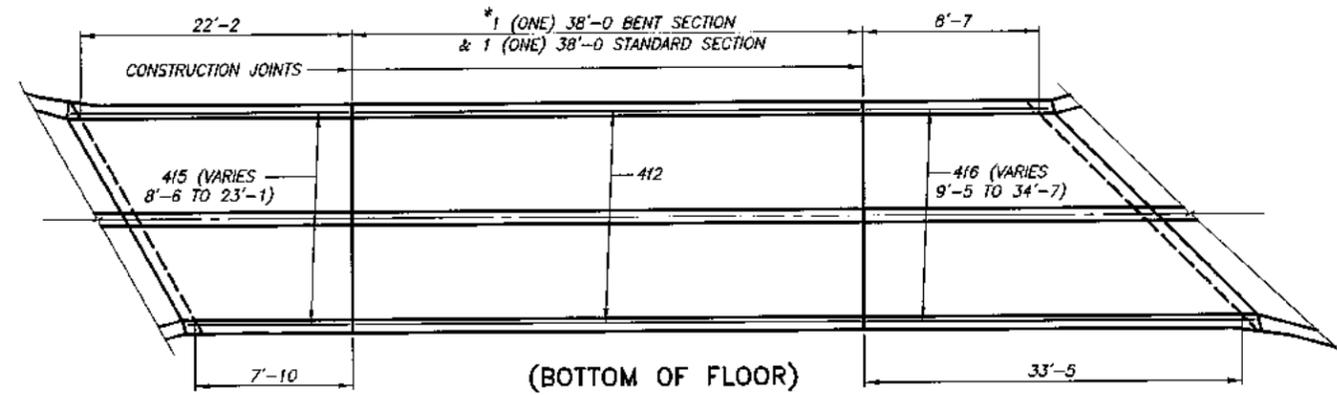
Request Utility Locate 48 Hours In Advance

TWIN 12' x 10' x 112'-0 REINFORCED
CONCRETE BOX CULVERT

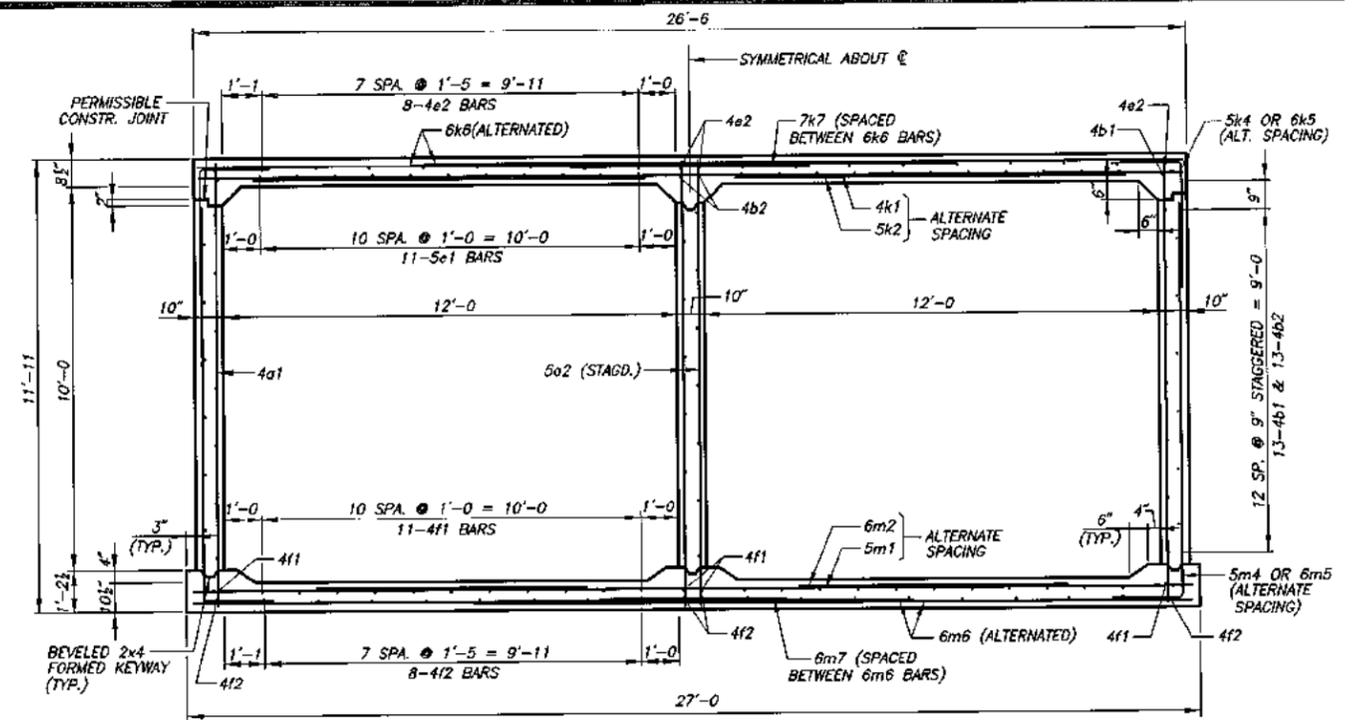
GENERAL NOTES

STATION 41+05.00
CRAWFORD COUNTY,

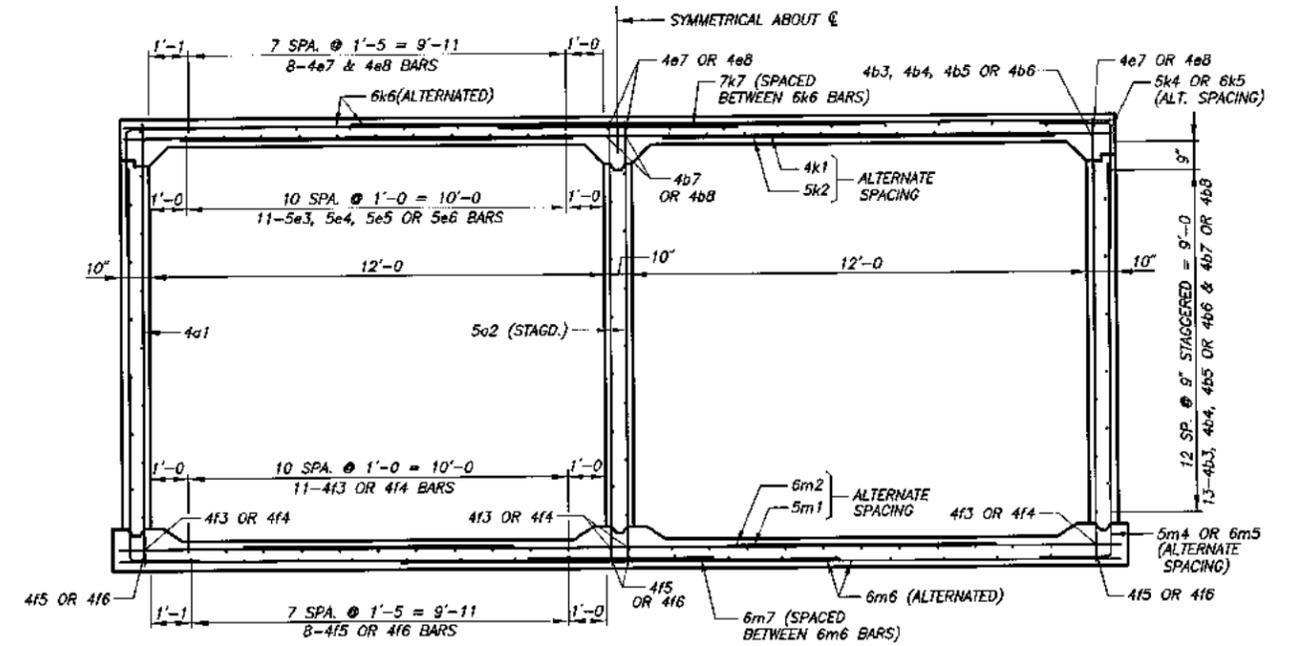
30' SKEW, @ INLET
60' SKEW, @ OUTLET
IOWA



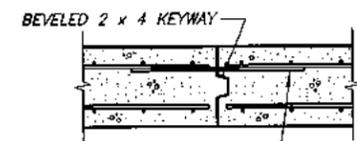
PLANS OF LONGITUDINAL REINFORCING BARS
(END SECTIONS AND STANDARD SECTION SHOWN.)
* SEE SHEETS 8 & 9 FOR BENT SECTION PLAN AND DETAILS.



STANDARD BARREL SECTION



END BARREL SECTION



ONE SET OF 5x1 x 3'-6 DOWEL BARS @ 1'-0 SPACING REQUIRED IN SLAB AT ALL CULVERT BARREL JOINTS, 5r1 BARS REQUIRED=26/JT., TOTAL WEIGHT=95 LBS./JT.

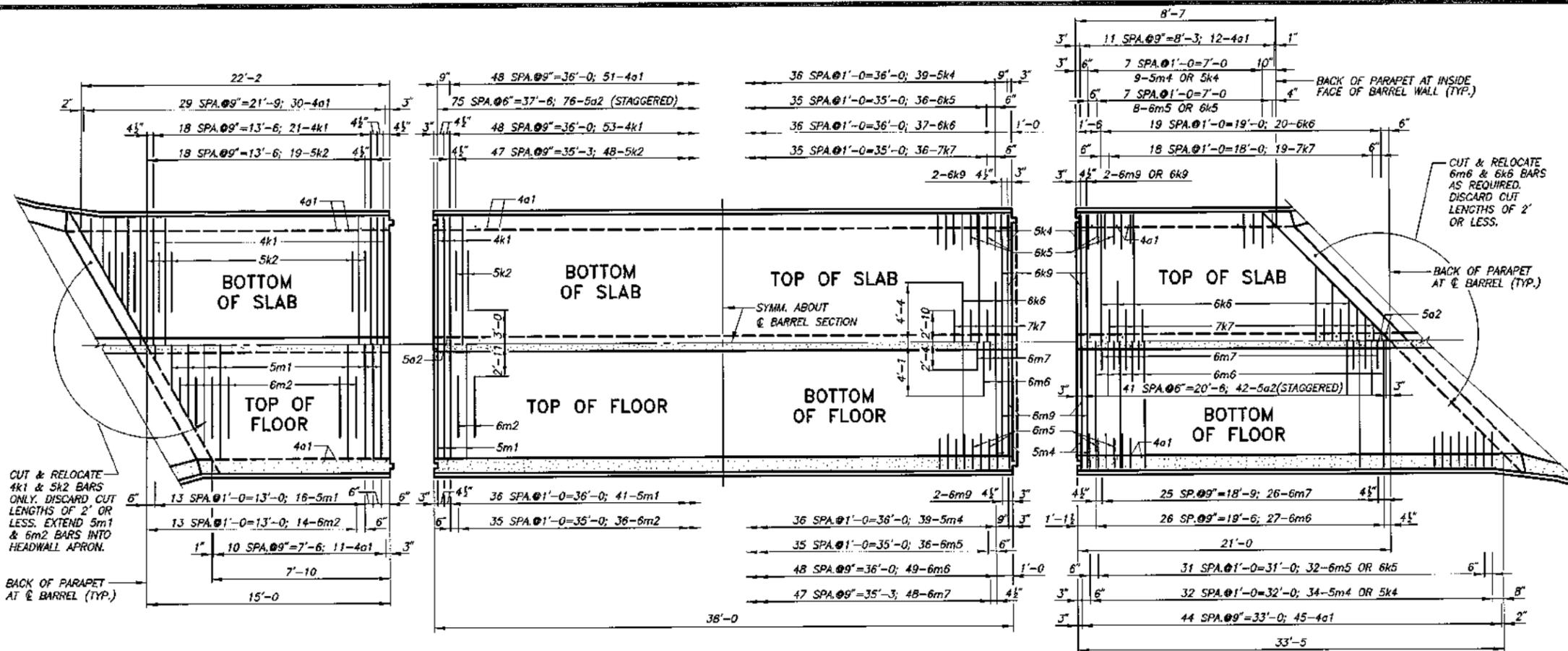
TOP SLAB CONSTRUCTION JOINT DETAIL

TWIN 12' x 10' x 112'-0 REINFORCED CONCRETE BOX CULVERT

CULVERT DETAILS

STATION 41+05.00
CRAWFORD COUNTY,

30' SKEW, @ INLET
60' SKEW, @ OUTLET
IOWA

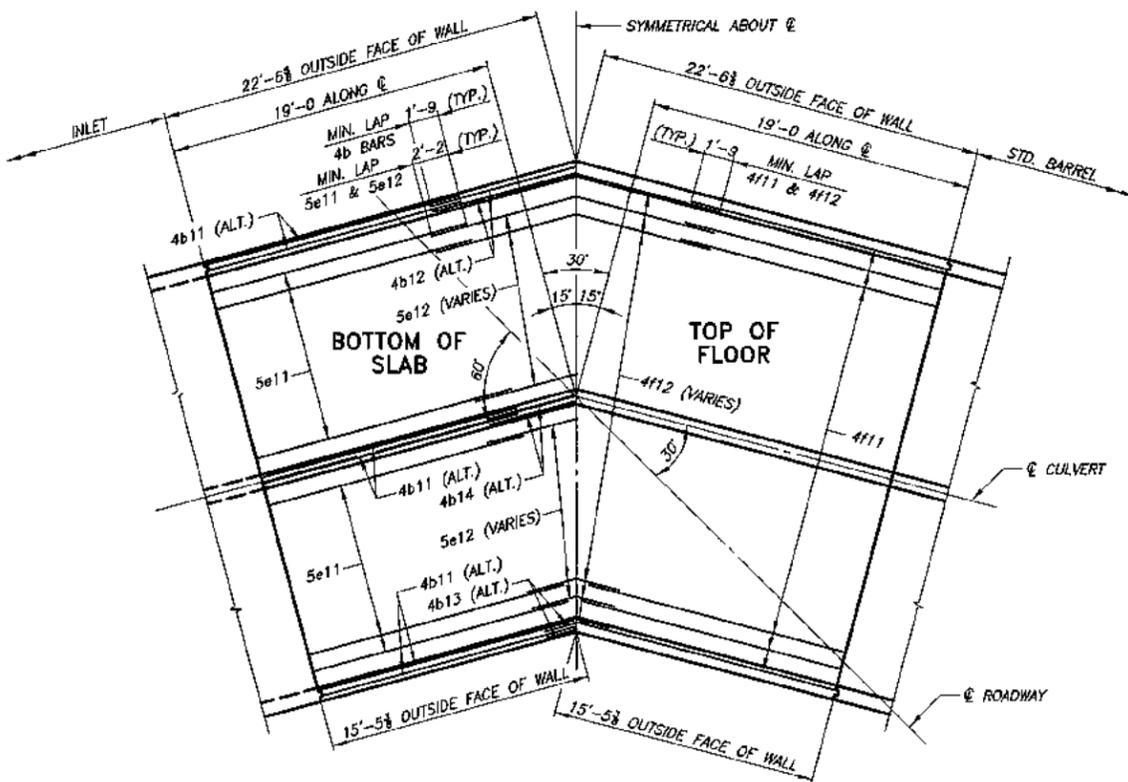
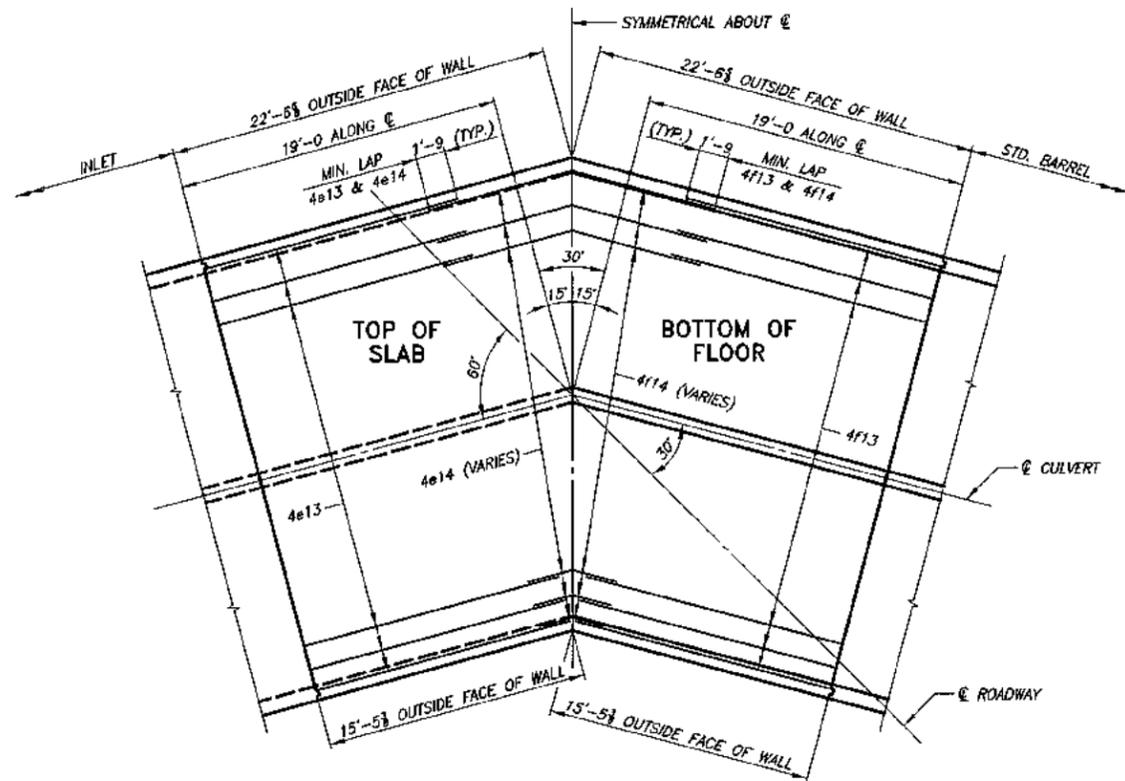


TWIN 12' x 10' x 112'-0 REINFORCED CONCRETE BOX CULVERT

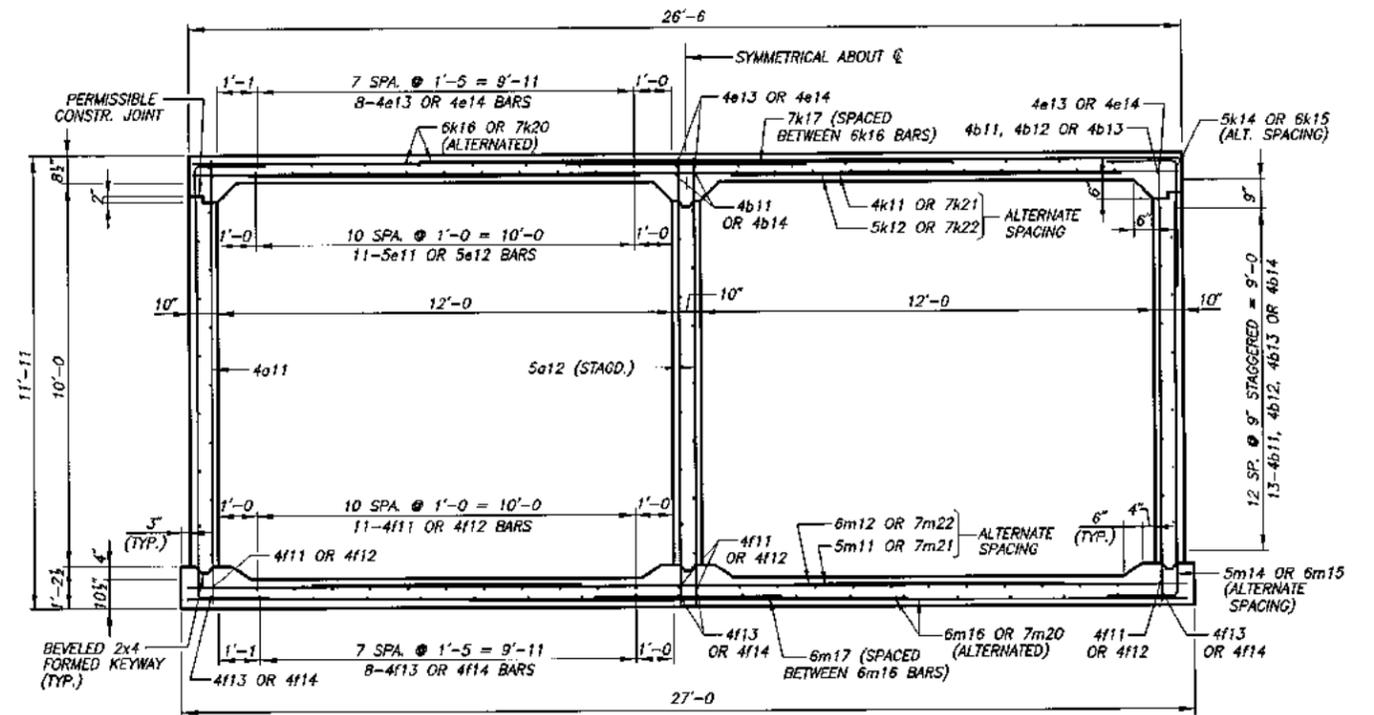
CULVERT DETAILS

STATION 41+05.00
CRAWFORD COUNTY,

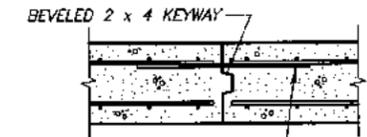
30° SKEW, @ INLET
60° SKEW, @ OUTLET
IOWA



PLANS OF LONGITUDINAL REINFORCING BARS

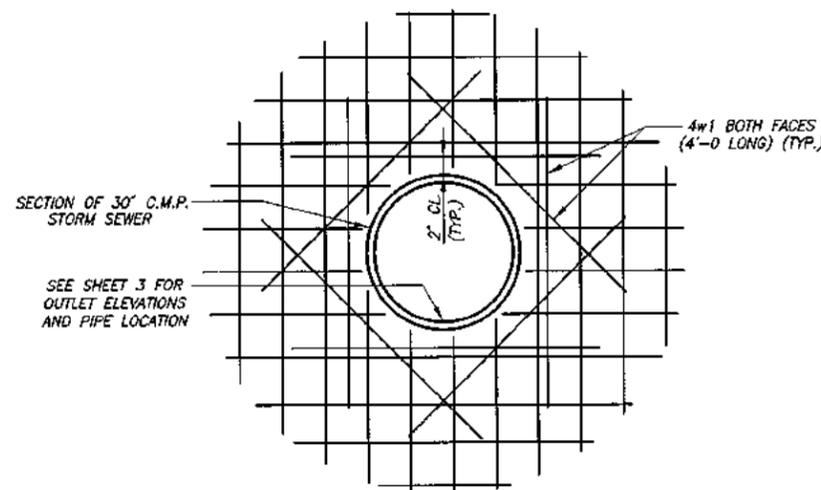


BENT BARREL SECTION



ONE SET OF 5r1 x 3'-6\"/>

TOP SLAB CONSTRUCTION JOINT DETAIL



STORM SEWER OUTLET DETAIL
30" DIA. C.M.P.

NOTE: 1. WALL REINFORCING IS TO BE CUT 2" FROM OUTSIDE FACE OF PIPE WALLS.
2. PIPE IS TO BE FLUSH WITH INSIDE FACE OF BARREL WALL.

TWIN 12' x 10' x 112'-0" REINFORCED CONCRETE BOX CULVERT
CULVERT DETAILS

STATION 41+05.00
CRAWFORD COUNTY,

30' SKEW, @ INLET
60' SKEW, @ OUTLET
IOWA

REINFORCING BAR LIST-STD. & END BARRELS

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4a1	EXTERIOR WALLS, FRONT FACE, VERT.	—	200	11'-6"	1,536
5a2	INTERIOR WALLS, BOTH FACES, VERT.	—	148	11'-6"	1,775
4b1	EXT. WALLS, B.F., HORIZ., STD. SECT.	—	28	37'-8"	705
4b2	INT. WALLS, B.F., HORIZ., STD. SECT.	—	15	37'-8"	377
4b3	EXT. WALLS, B.F., HORIZ., END SECT.	—	14	23'-1"	216
4b4	EXT. WALLS, B.F., HORIZ., END SECT.	—	14	8'-6"	79
4b5	EXT. WALLS, B.F., HORIZ., END SECT.	—	14	9'-5"	88
4b6	EXT. WALLS, B.F., HORIZ., END SECT.	—	14	34'-7"	323
4b7	INT. WALLS, B.F., HORIZ., END SECT.	—	15	15'-9"	158
4b8	INT. WALLS, B.F., HORIZ., END SECT.	—	15	22'-0"	220
5e1	SLAB, BOTTOM, LONGIT., STD. SECT.	—	22	37'-8"	864
4e2	SLAB, TOP, LONGIT., STD. SECT.	—	20	37'-8"	503
5e3	SLAB, BOTTOM, LONGIT., END SECT.	—	11	VARIES	221
5e4	SLAB, BOTTOM, LONGIT., END SECT.	—	11	VARIES	136
5e5	SLAB, BOTTOM, LONGIT., END SECT.	—	11	VARIES	176
5e6	SLAB, BOTTOM, LONGIT., END SECT.	—	11	VARIES	323
4e7	SLAB, TOP, LONGIT., END SECT.	—	20	VARIES	211
4e8	SLAB, TOP, LONGIT., END SECT.	—	20	VARIES	294
4f1	FLOOR, TOP, LONGIT., STD. SECT.	—	26	37'-8"	654
4f2	FLOOR, BOTTOM, LONGIT., STD. SECT.	—	20	37'-8"	503
4f3	FLOOR, TOP, LONGIT., END SECT.	—	26	VARIES	274
4f4	FLOOR, TOP, LONGIT., END SECT.	—	26	VARIES	382
4f5	FLOOR, BOTTOM, LONGIT., END SECT.	—	20	VARIES	211
4f6	FLOOR, BOTTOM, LONGIT., END SECT.	—	20	VARIES	294
4k1	SLAB, BOTTOM, TRANSVERSE	—	103	26'-2"	1,801
5k2	SLAB, BOTTOM, TRANSVERSE	—	188	8'-1"	1,585
5k4	SLAB, TOP, CORNER	—	153	5'-5"	865
6k5	SLAB, TOP, CORNER	—	140	5'-2"	1,087
6k6	SLAB, TOP, TRANSVERSE	—	71	17'-5"	1,858
7k7	SLAB, TOP, TRANSVERSE	—	68	5'-9"	799
6k9	SLAB, TOP, TRANSVERSE	—	8	26'-2"	314
5m1	FLOOR, TOP, TRANSVERSE	—	78	26'-8"	2,170
5m2	FLOOR, TOP, TRANSVERSE	—	140	8'-3"	1,735
5m4	FLOOR, BOTTOM, CORNER	—	153	12'-4"	1,968
6m5	FLOOR, BOTTOM, CORNER	—	140	12'-2"	2,559
6m6	FLOOR, BOTTOM, TRANSVERSE	—	95	17'-5"	2,486
6m7	FLOOR, BOTTOM, TRANSVERSE	—	92	4'-8"	645
6m9	FLOOR, BOTTOM, TRANSVERSE	—	8	26'-8"	320
5r1	SLAB DOWELS, CONSTR. JOINT	—	52	3'-6"	190
TWO HEADWALLS - SEE SHEETS					
TWH 30-5-87 AND TWH 45-6-87					20,797
TOTAL (LBS.)					51,702

CONCRETE PLACEMENT QUANTITIES

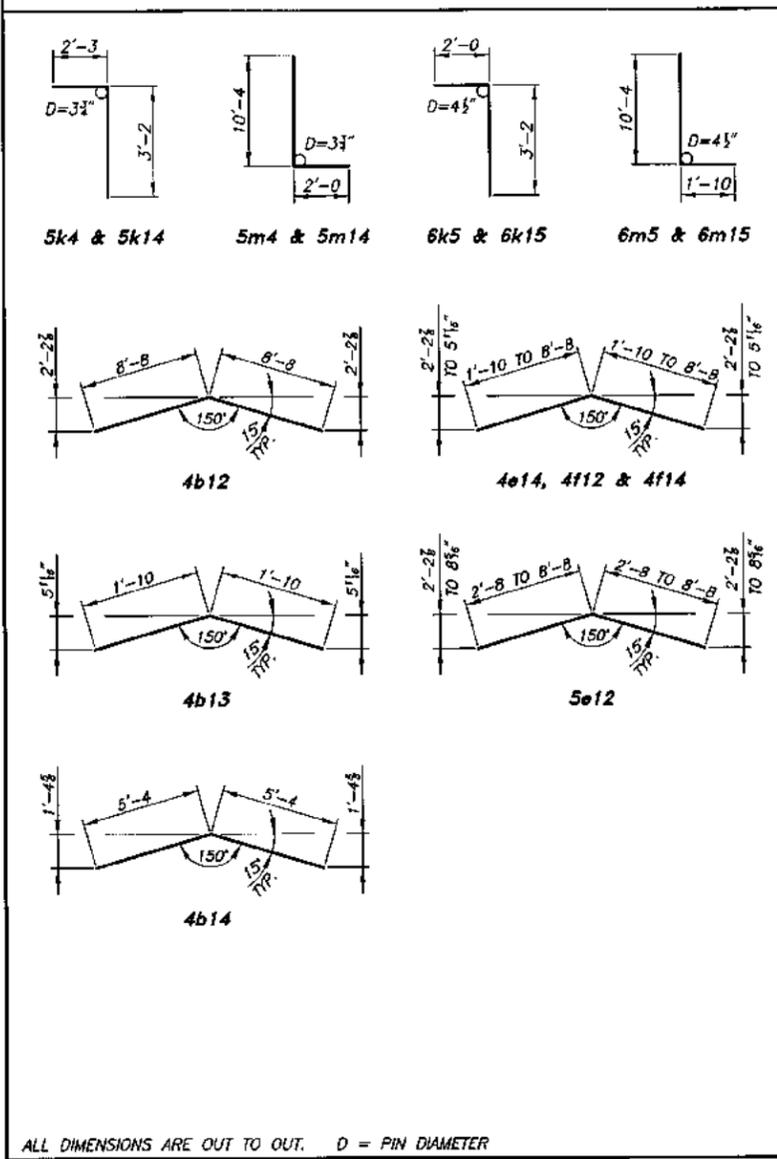
ITEM	± INLET	* BARREL	± OUTLET	TOTAL
FLOOR (0.935 C.Y./FT.)	68.3	71.1	91.2	230.6
△ SLAB (0.757 C.Y./FT.)	14.4	57.5	19.6	91.5
WALLS (0.889 C.Y./FT.)	33.3	67.6	43.9	144.8
TOTAL (CU. YDS.)	116.0	196.2	154.7	466.9

- * ONE (1) STANDARD 36" BARREL SECTION & ONE (1) BENT 36" BARREL SECTION.
- △ INCLUDES HEADWALL ABOVE CONSTRUCTION JOINTS.
- ± BACK OF PARAPET TO CONSTRUCTION JOINT.
INCLUDES CONCRETE REQUIRED FOR ONE(1) HEADWALL.

REINFORCING BAR LIST - BENT BARREL

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4a11	EXTERIOR WALLS, FRONT FACE, VERT.	—	102	11'-6"	784
5a12	INTERIOR WALLS, BOTH FACES, VERT.	—	76	11'-6"	912
4b11	INT. & EXT. WALLS, B.F., HORIZONTAL	—	86	15'-3"	876
4b12	EXT. WALLS, B.F., HORIZONTAL	—	14	17'-4"	162
4b13	EXT. WALLS, B.F., HORIZONTAL	—	14	3'-8"	34
4b14	INT. WALLS, B.F., HORIZONTAL	—	15	10'-8"	107
5e11	SLAB, BOTTOM, LONGITUDINAL	—	44	15'-3"	700
5e12	SLAB, BOTTOM, LONGITUDINAL	—	22	VARIES	260
4e13	SLAB, TOP, LONGITUDINAL	—	40	15'-3"	407
4e14	SLAB, TOP, LONGITUDINAL	—	20	VARIES	140
4f11	FLOOR, TOP, LONGITUDINAL	—	52	15'-3"	530
4f12	FLOOR, TOP, LONGITUDINAL	—	26	VARIES	182
4f13	FLOOR, BOTTOM, LONGITUDINAL	—	40	15'-3"	407
4f14	FLOOR, BOTTOM, LONGITUDINAL	—	20	VARIES	140
4k11	SLAB, BOTTOM, TRANSVERSE	—	44	26'-2"	769
5k12	SLAB, BOTTOM, TRANSVERSE	—	78	8'-1"	641
5k14	SLAB, TOP, CORNER	—	78	5'-5"	441
6k15	SLAB, TOP, CORNER	—	74	5'-2"	575
6k16	SLAB, TOP, TRANSVERSE	—	30	17'-5"	785
7k17	SLAB, TOP, TRANSVERSE	—	30	5'-9"	353
6k19	SLAB, TOP, TRANSVERSE	—	4	26'-2"	157
7k20	SLAB, TOP, TRANSVERSE	—	17	17'-11"	623
7k21	SLAB, BOTTOM, TRANSVERSE	—	7	24'-3"	347
7k22	SLAB, BOTTOM, TRANSVERSE	—	8	10'-6"	172
5m11	FLOOR, TOP, TRANSVERSE	—	34	26'-8"	946
6m12	FLOOR, TOP, TRANSVERSE	—	56	8'-3"	694
5m14	FLOOR, BOTTOM, CORNER	—	78	12'-4"	1,003
6m15	FLOOR, BOTTOM, CORNER	—	74	12'-2"	1,353
6m16	FLOOR, BOTTOM, TRANSVERSE	—	40	17'-5"	1,047
6m17	FLOOR, BOTTOM, TRANSVERSE	—	38	4'-8"	267
6m19	FLOOR, BOTTOM, TRANSVERSE	—	4	26'-8"	160
7m20	FLOOR, BOTTOM, TRANSVERSE	—	17	17'-11"	623
7m21	FLOOR, TOP, TRANSVERSE	—	9	24'-6"	451
7m22	FLOOR, TOP, TRANSVERSE	—	10	10'-10"	221
5r1	SLAB DOWELS, CONSTR. JOINT	—	26	3'-6"	95
4w1	STORM SEWER OUTLET, BOTH FACES	—	16	4'-0"	43
TOTAL (LBS.)					17,407

BENT BAR DETAILS



TWIN 12' x 10' x 112'-0 REINFORCED CONCRETE BOX CULVERT

CULVERT DETAILS

STATION 41+05.00
CRAWFORD COUNTY, IOWA
30° SKEW, ● INLET
60° SKEW, ● OUTLET

DRAINAGE STRUCTURE BY ROAD CONTRACTOR

104-3
D4-30-02
* NOT A BID ITEM

LOCATION	TYPE	SIZE Inches	KIND OF PIPE	LENGTH NEW CONSTR. Lin. Ft.	BEDDING CLASS	DESIGN COVER (H) DESIGN COVER (H)	CAMBER Ft.	APRON NO.		"D" SECTION*			ADAPTORS* RF-2	CONNECTED PIPE JOINT * RF-14	POLYMER* GRID	FLOW LINE ELEVATIONS			DIMENSIONS Lin.Ft.				SKEW AHEAD		DIKE				CLASS 20 Cu. Yds.	EMBANKMENT IN PLACE Cu. Yds.	REMARKS						
								Inlet	Outlet	No.	Length	Side				Type	No.	Type	Lt.	Rt.	Other	Lt.	Rt.	Other	Lt.	Rt.	Lt.	Rt.				Degrees	Lt.	Rt.	Location Station	Top Elevation	Type
41+20	1101	30	CMP	56	C	10.3	-	1	-	-	-	-	-	-	-	1250.0	1257.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

POLLUTION PREVENTION PLAN

110-12A
10-29-02

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 TWIN 12' X 10' X 112'-0 R.C.B. IN CRAWFORD COUNTY APPROXIMATELY 3.5 MILES WEST OF VAIL.

THIS PPP COVERS APPROXIMATELY 1.4 ACRES WITH AN ESTIMATED 1.4 ACRES BEING DISTURBED.

THE PPP IS LOCATED IN AN AREA OF MARSHALL SOIL ASSOCIATIONS. THE ESTIMATED AVERAGE NRCS RUNOFF CURVE NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 69.

REFER TO THE PROJECT PLANS (BROS-C024(76)-5F-24) FOR LOCATIONS OF TYPICAL SLOPES, DITCH GRADES, AND MAJOR STRUCTURAL AND NON-STRUCTURAL CONTROLS. A COPY OF THIS PLAN WILL BE ON FILE AT THE PROJECT ENGINEER'S OFFICE. RUNOFF FROM THIS WORK WILL FLOW INTO ROCKY RUN CREEK.

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.

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, SOO 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 SILT BASINS, SILT DIKES 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 PATO BLOCKS, CLASS A STONE OR EROSION STONE.

TABULATION OF EROSION CONTROL FEATURES

100-19
11-10-83

LOCATION LOCATION STATION OR STATION TO STATION (EXACT LOCATION TO BE DETERMINED BY THE ENGINEER)	SIDE L OR R	TYPE OF WORK						REMARKS
		FOR DITCH CHECK		SILT BASIN (NO.)	SILT DIKE (LIN.FT.)	SILT DITCH (LIN.FT.)	SILT FENCE (LIN.FT.)	
		SILT FENCE (LIN.FT.)						
38+00	39+50	RT.	-	-	-	-	170	SOUTHEAST CORNER

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	LENGTH		APRON	SURFACE MATERIAL		
STATION	SIDE			LT.	RT.				
39+06	LT.	20	C	1.0	30	16	16	-	-
43+90	RT.	40	C	1.0	24	21	21	-	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.	
37+50	1	-	SOUTH END
40+25	-	1	SOUTH END
42+25	-	1	NORTH END
43+50	1	-	NORTH END

REMOVAL OF EXISTING STRUCTURES

110-2
10-13-72

LOCATION	DESCRIPTION	DISPOSAL
39+06, 25' LT.	24" C.M.P.	CONTRACTOR *
41+67	100' x 22' STEEL I-BEAM BRIDGE	CONTRACTOR Δ
43+90, 27' RT.	18" R.C.P.	CONTRACTOR *

* INCIDENTAL TO CLASS 10 ROADWAY & BORROW
Δ STEEL BEAMS AND DECK PLANKS TO REMAIN PROPERTY OF THE COUNTY

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.

SAFETY CLOSURES SHALL BE PLACED IN ACCORDANCE WITH SECTION 2518 OF THE STANDARD SPECIFICATIONS AT THE LOCATIONS SPECIFIED IN THE "TABULATION OF SAFETY CLOSURES".

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.

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.

TWIN 12' x 10' x 112'-0 REINFORCED
CONCRETE BOX CULVERT

TABULATIONS AND POLLUTION PREVENTION PLAN

STATION 41+05.00

CRAWFORD COUNTY,

30° SKEW, ⊙ INLET

60° SKEW, ⊙ OUTLET

IOWA