



Iowa Department of Transportation
Highway Division

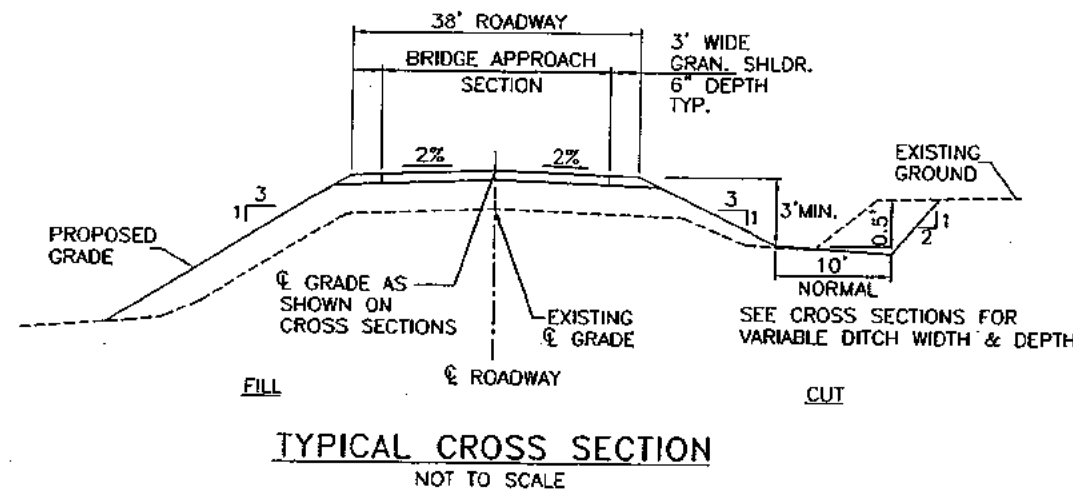
PLANS OF PROPOSED IMPROVEMENTS ON THE

**FARM-TO-MARKET SYSTEM
CRAWFORD COUNTY**

PROJECT NO. BRS-C024(87)--60-24
BRIDGE AND APPROACHES - CCS
ON MAPLE STREET (150TH STREET) OVER
MIDDLE SOLDIER RIVER

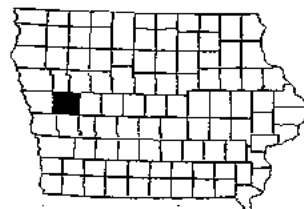
SCALES: AS NOTED

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series 2001, plus General Supplemental Specifications; and applicable Supplemental Specifications, Developmental Specifications, and Special Provisions, shall apply to construction on this project.



STA. 3+41.35
PROPOSED
130'-0" x 30' CCS BRIDGE
SKEW 0°
B.O.P. STA. 2+54.85
E.O.P. STA. 4+27.85

IOWA ONE CALL
Call Before You Dig! 1.800.292.8989
Call the toll-free number at least 48 hours prior to ALL excavations in Iowa.



| DESIGN DATA RURAL | | |
|--------------------|-----|--------|
| 2004 AADT | 590 | V.P.D. |
| 2028 AADT | 800 | V.P.D. |
| 201X DHV | X | V.P.H. |
| TRUCKS | X | % |
| TOTAL DESIGN ESALs | | |

Approved
Robert Lohrmann
John P. Lawler
BOARD OF SUPERVISORS

Approved
[Signature]
CRAWFORD COUNTY ENGINEER
DATE: 10/16/07

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.
[Signature] 10/11/07
TROY J. GROTH, P.E. #14450
DATE: 10/11/07
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2007.
PAGES OR SHEETS COVERED BY THIS SEAL:
ALL SHEETS

LETTING DATE
01-16-08

BRIDGE REPLACEMENT - CCS
BRS-C024(87)--60-24

#009910

CRAWFORD COUNTY

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."

PERMITS

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 14, PERMIT NO. CEMVR-00-P-2007-1343. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT OFFICE OF CONTRACTS UPON REQUEST. THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

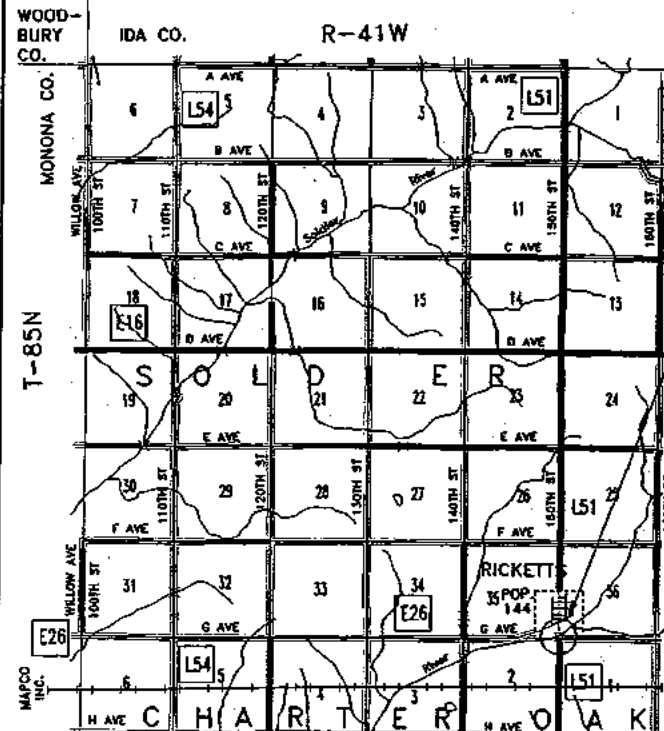
THIS PROJECT IS COVERED BY IOWA DNR FLOODPLAIN CONSTRUCTION PERMIT NO. FP 2007-213.

DRAWING APPROVAL

ALL SHOP DRAWINGS THAT REQUIRE APPROVAL SHALL BE APPROVED BY SUNDQUIST ENGINEERING, P.C.

ADDRESS: 120 SOUTH MAIN, P.O. BOX 220
DENISON, IOWA 51442-0220
TELEPHONE: (712)263-8118

THESE SHOP DRAWINGS SHALL NOT BE SENT TO IOWA D.O.T. OFFICE OF BRIDGE DESIGN.



LOCATION MAP SCALE



SUNDQUIST ENGINEERING, P.C.
CONSULTING ENGINEERS
HIGHWAYS • MUNICIPAL • PLANNING • SURVEYING
120 S. MAIN, P.O. BOX 220, DENISON, IOWA 51442-0220
PHONE: (712)263-8118 FAX: (712)263-2181

DESIGN TEAM: T.JG/SAS/TKK

ENGLISH

SE PROJECT NO. : 06106

DATE: 09/07

FHWA NO. 009910

CRAWFORD COUNTY

PROJECT NUMBER BRS-C024(87)--60-24

SHEET NUMBER A1

TOTAL SHEETS
13

PROJECT NUMBER

BRS-C024(87)--60-24

R.O.W. PROJECT NUMBER

PROJECT IDENTIFICATION NUMBER

FHWA STRUCTURE NO. 009910

INDEX OF SHEETS

| NO. | DESCRIPTION |
|------|--|
| A1 | TITLE SHEET |
| B1-2 | ESTIMATE OF QUANTITIES AND GENERAL INFORMATION |
| C1 | TABULATIONS, TYPICALS |
| Q1-2 | SOILS SHEETS |
| U1-2 | SPECIAL DETAILS |
| V1 | BRIDGE SITUATION PLAN |
| W1-2 | CROSS SECTIONS - ROADWAY |
| Z1-2 | CROSS SECTIONS - CHANNEL |

STANDARD BRIDGE PLANS

| STANDARD | ISSUED | REVISED |
|------------|----------------|---------|
| J30-01-06 | NOVEMBER, 2006 | |
| J30-14E-06 | NOVEMBER, 2006 | |
| J30-15E-06 | NOVEMBER, 2006 | |
| J30-20-06 | NOVEMBER, 2006 | |
| J30-21-06 | NOVEMBER, 2006 | |
| J30-23-06 | NOVEMBER, 2006 | |
| J30-24-06 | NOVEMBER, 2006 | |
| J30-34-06 | NOVEMBER, 2006 | |
| J30-39-06 | NOVEMBER, 2006 | |
| J30-43-06 | NOVEMBER, 2006 | |
| J30-44-06 | NOVEMBER, 2006 | |
| J30-45-06 | NOVEMBER, 2006 | |
| J30-46-06 | NOVEMBER, 2006 | |
| P10A | AUGUST, 1988 | 09-06 |

MILEAGE SUMMARY

| LOCATION | LIN. FT. | MILES |
|--------------------------------------|----------|-------|
| BOP STA. 2+54.85 TO EOP STA. 4+27.85 | 173.00 | |
| DEDUCT BRIDGE AT STA. 3+41.35 | 133.00 | |
| NET LENGTH OF ROADWAY | 40.00 | 0.008 |

ESTIMATE REFERENCE INFORMATION

DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS.

2102-2710070 EXCAVATION, CLASS 10, ROADWAY AND BORROW
TYPE A COMPACTION WILL BE REQUIRED. REFER TO PLAN SHEET C1 FOR TABULATION OF EARTHWORK QUANTITIES.

SUITABLE MATERIAL FROM CHANNEL EXCAVATION AND CLASS 20 EXCAVATION MAY BE USED FOR EMBANKMENT MATERIAL. ADDITIONAL NECESSARY BORROW SHALL BE PROVIDED BY THE CONTRACTOR. THE CONTRACTOR-SELECTED BORROW SITE AND MATERIAL SHALL BE APPROVED BY THE ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING CLEARANCES FOR BORROW SITES IN ACCORDANCE WITH ARTICLE 2102.06.

OVERHAUL IS INCIDENTAL TO THE PRICE BID FOR THIS ITEM. THE HAUL ROUTE DESIGNATION SHALL BE IN ACCORDANCE WITH ARTICLE 1105.13 EXCEPT THE CONTRACTOR SHALL SUBMIT THE HAUL ROAD REQUEST TO THE ENGINEER.

FILL MATERIALS SHALL CONTAIN NO SOD, BRUSH, ROOTS OR OTHER PERISHABLE MATERIALS. FILL SHALL NOT BE PLACED UPON A FROZEN SURFACE, NOR SHALL SNOW, ICE OR FROZEN MATERIAL BE INCORPORATED IN THE FILL.

FILL PLACEMENT SHALL TAKE PLACE ON NEAR HORIZONTAL SURFACES. THE EXISTING SURFACES SHALL BE BENCHED PRIOR TO PLACEMENT OF FILL UPON THEM. NEAR VERTICAL BENCHES AT 3 TO 5 FEET IN HEIGHT SHALL BE REQUIRED IN ORDER TO EFFECT A GOOD BOND BETWEEN THE FILL AND THE EXISTING SURFACES. NO SEPARATE PAYMENT WILL BE MADE FOR BENCHING OF THE EXISTING SURFACES. SUCH BENCHING SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

PAYMENT SHALL BE BASED ON PLAN QUANTITY ADJUSTED FOR OBVIOUS ERRORS. CROSS SECTIONS SHALL NOT BE TAKEN AFTER EXCAVATION FOR THE PURPOSE OF DETERMINING ACTUAL QUANTITIES.

2104-2710020 EXCAVATION, CLASS 10, CHANNEL

EXCESS MATERIAL AND UNSUITABLE MATERIAL NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE HAULED FROM THE SITE. THE COST OF HAULING AND DISPOSING OF THIS MATERIAL SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR CLASS 10 CHANNEL EXCAVATION. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED.

AT CONTRACTOR'S OPTION, EXISTING BROKEN CONCRETE MAY BE DISPOSED OF ON THE CHANNEL SLOPES AS DIRECTED BY THE ENGINEER OR DISPOSED OF OFF SITE IN ACCORDANCE WITH DISPOSAL REQUIREMENTS FOR EXCESS MATERIAL.

QUANTITY INCLUDES EXCAVATION REQUIRED TO INSTALL THE SPECIAL REVETMENT FOR BANK STABILIZATION. ITEM INCLUDES PLACEMENT OF 12 CY (9 X 1.35) OF FILL ON THE CHANNEL BANKS.

PAYMENT SHALL BE BASED ON PLAN QUANTITY ADJUSTED FOR OBVIOUS ERRORS. CROSS SECTIONS SHALL NOT BE TAKEN AFTER EXCAVATION FOR THE PURPOSE OF DETERMINING ACTUAL QUANTITIES.

2123-7450020 SHOULDER FINISHING, EARTH

SEE TABULATION ON PLAN SHEET C1 FOR LOCATIONS. QUANTITIES OF EXCAVATION AND FILL REQUIRED ARE INCLUDED IN PLAN QUANTITY FOR CLASS 10 ROADWAY AND BORROW EXCAVATION.

2301-0690190 BRIDGE APPROACH SECTION, RK-19

REFER TO TABULATION ON PLAN SHEET C1 AND STANDARD ROAD PLAN RK-19. STANDARD ROAD PLAN RH-50 TYPE 'RT' JOINT SHALL BE REQUIRED WHERE THE NEW PAVEMENT ABUTS THE EXISTING PAVEMENT.

NATURAL SUBGRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 2109 INCLUDING ARTICLE 2109.04 EXCEPT THAT ALL RECOMPACTION SHALL MEET REQUIREMENTS OF ARTICLE 2107.05. NO PONDING OF WATER SHALL BE ALLOWED DUE TO THE PLACEMENT OF MATERIALS TRIMMED DURING CONSTRUCTION OF NATURAL SUBGRADE.

ITEM INCLUDES CERTIFIED PCC PLANT INSPECTION IN ACCORDANCE WITH SECTION 2521.

TRANSITION CROSS SLOPE OF PROPOSED BRIDGE APPROACH SECTION TO MATCH PROPOSED BRIDGE DECK CROSS SLOPE AND EXISTING ABUTTING PAVEMENT CROSS SLOPE.

ESTIMATED PROJECT QUANTITIES

| ITEM NUMBER | ITEM CODE | ITEM | UNIT | TOTAL | AS BUILT QUAN. |
|-------------|--------------|--|------|-------|----------------|
| 1 | 2102-2710070 | EXCAVATION, CLASS 10, ROADWAY AND BORROW | CY | 831 | |
| 2 | 2104-2710020 | EXCAVATION, CLASS 10, CHANNEL | CY | 1852 | |
| 3 | 2109-8225100 | SPECIAL COMPACTION OF SUBGRADE | STA | 0.375 | |
| 4 | 2121-7425010 | GRANULAR SHOULDER, TYPE A | TON | 11 | |
| 5 | 2123-7450020 | SHOULDER FINISHING, EARTH | STA | 0.64 | |
| 6 | 2301-0690190 | BRIDGE APPROACH, RK-19 | SY | 142.4 | |
| 7 | 2401-6745625 | REMOVAL OF EXISTING BRIDGE | LS | 1 | |
| 8 | 2402-2720000 | EXCAVATION, CLASS 20 | CY | 77 | |
| 9 | 2403-0100010 | STRUCTURAL CONCRETE (BRIDGE) | CY | 339.2 | |
| 10 | 2404-7775005 | REINFORCING STEEL, EPOXY COATED | LB | 78315 | |
| 11 | 2414-6424124 | CONCRETE OPEN RAILING, TL-4 | LF | 282 | |
| 12 | 2501-0201042 | PILES, STEEL, HP 10 X 42 | LF | 720 | |
| 13 | 2501-0201253 | PILES, STEEL, HP 12 X 53 | LF | 1485 | |
| 14 | 2501-5475053 | CONCRETE ENCASEMENT OF STEEL H PILES, HP 12 X 53 (P10A TYPE 3) | LF | 506 | |
| 15 | 2502-8215148 | SUBDRAIN, CORRUGATED METAL PIPE, 48 IN. DIA. | LF | 40 | |
| 16 | 2507-3250005 | ENGINEERING FABRIC | SY | 724 | |
| 17 | 2507-4011100 | CONCRETE GROUT FOR REVETMENT OR GABION | CY | 53 | |
| 18 | 2507-6850053 | REVETMENT, SPECIAL | TON | 587 | |
| 19 | 2507-6875002 | REVETMENT, REMOVE AND REPLACE | CY | 119 | |
| 20 | 2510-6745850 | REMOVAL OF PAVEMENT | SY | 275 | |
| 21 | 2518-6910000 | SAFETY CLOSURE | EACH | 4 | |
| 22 | 2524-9100030 | OBJECT MARKER, TYPE 3 | EACH | 4 | |
| 23 | 2527-9263109 | PAINTED PAVEMENT MARKING, WATERBORNE OR SOLVENT-BASED | STA | 6.960 | |
| 24 | 2528-8445110 | TRAFFIC CONTROL | LS | 1 | |
| 25 | 2529-8200200 | PRESSURE RELIEF JOINT, CF | LF | 44 | |
| 26 | 2533-4980005 | MOBILIZATION | LS | 1 | |
| 27 | 2547-0000100 | TEMPORARY STREAM ACCESS | LS | 1 | |
| 28 | 2601-2634100 | MULCHING | ACRE | 0.4 | |
| 29 | 2601-2636043 | SEEDING AND FERTILIZING (RURAL) | ACRE | 0.4 | |
| 30 | 2602-0000020 | SILT FENCE | LF | 176 | |
| 31 | 2602-0000030 | SILT FENCE FOR DITCH CHECKS | LF | 74 | |

2401-6745625 REMOVAL OF EXISTING BRIDGE

THE EXISTING BRIDGE IS A 53' X 22' SINGLE-SPAN STEEL BEAM BRIDGE WITH TIMBER HIGH ABUTMENTS AND PCC DECK WITH A HMA OVERLAY.

2403-0100010 STRUCTURAL CONCRETE (BRIDGE)

REFER TO TABULATION ON PLAN SHEET C1. ALL STRUCTURAL CONCRETE SHALL BE CLASS C. CLASS D WILL NOT BE ALLOWED. ITEM INCLUDES CERTIFIED PCC PLANT INSPECTION IN ACCORDANCE WITH SECTION 2521.

NO HEAVY CONSTRUCTION EQUIPMENT WILL BE PERMITTED ON THE NEWLY-CONSTRUCTED BRIDGE UNLESS LOADED ON A LEGAL TRAILER.

ENGINEERING FABRIC SHALL BE PLACED ON THE TOP, BOTTOM, ENDS AND SIDES OF THE POROUS BACKFILL FOR THE ABUTMENT SUBDRAINS. MATERIAL SHALL CONFORM TO IOWA DOT MATERIALS IM 496.01 APPENDIX A, SUB-SURFACE DRAINAGE (SPECIFICATION 4196.01B). THE COST OF FURNISHING AND PLACING ENGINEERING FABRIC FOR THIS PURPOSE IS TO BE INCLUDED IN THE PRICE BID FOR THIS ITEM.

2404-7775005 REINFORCING STEEL, EPOXY COATED

REFER TO TABULATION ON PLAN SHEET C1.

2501-0201042 PILES, STEEL, HP 10 X 42

2501-0201253 PILES, STEEL, HP 12 X 53
THE REQUIRED DESIGN BEARING FOR THE HP 10 X 42 ABUTMENT PILES IS 33 TONS. THE REQUIRED DESIGN BEARING FOR THE HP 12 X 53 P10A TYPE 3 PIER PILES IS 33 TONS. WAVE EQUATION ANALYSIS WILL BE USED AT THE TIME OF PILE DRIVING TO DETERMINE PILE BEARING. THE CONTRACTOR SHALL SUBMIT ADEQUATE HAMMER INFORMATION SO THAT PROPER ANALYSIS CAN BE PERFORMED.

2501-5475053 CONCRETE ENCASEMENT OF STEEL H PILES, HP 12X53 (P10A TYPE 3)

PRICE BID FOR ENCASEMENT SHALL BE FULL PAYMENT FOR NECESSARY DEWATERING.

2502-8215148 SUBDRAIN, CORRUGATED METAL PIPE, 48 IN. DIA.

ALL CORRUGATED METAL PIPE LARGER THAN 12 INCHES IN DIAMETER SHALL BE ANNULAR, RIVETED PIPE. "SPIRAL" PIPE WILL NOT BE ALLOWED FOR PIPE DIAMETERS LARGER THAN 12 INCHES.

ALL BANDS SHALL HAVE ANNULAR CORRUGATIONS AND SHALL BE THE SAME THICKNESS AS THE PIPE. BANDWIDTHS SHALL BE IN ACCORDANCE WITH MATERIALS I.M. 441 EXCEPT THAT NO BAND SHALL BE LESS THAN 24 INCHES IN WIDTH.

STANDARD ROAD PLANS

105-4
10-16-07

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

| NUMBER | DATE | SHEETS | TITLE |
|--------|----------|--------|---|
| RC-17 | 10-16-07 | 2 | SILT FENCE |
| RF-19E | 10-16-07 | 1 | OUTLETS FOR LONGITUDINAL, TRANSVERSE AND BACKSLOPE SUBDRAINS |
| RF-30A | 10-16-07 | 1 | CULVERT (BEDDING AND BACKFILL) |
| RF-30B | 10-17-06 | 1 | PIPE CULVERT (COVER AND CAMBER) |
| RF-30C | 04-30-02 | 1 | PIPE CULVERT (INSTALLATION DETAILS) |
| RF-32 | 10-16-07 | 2 | DEPTH OF COVER TABLES FOR CORRUGATED PIPE |
| RH-37D | 04-03-01 | 1 | TYPE 'A' OR 'B' GRANULAR SHOULDER |
| RH-50 | 04-17-07 | 1 | JOINTS (TRANSVERSE CONTRACTION) |
| RH-51 | 10-17-06 | 1 | JOINTS (LONGITUDINAL CONTRACTION) |
| RH-52 | 04-17-07 | 1 | JOINTS (EXPANSION) |
| RK-19A | 10-18-05 | 1 | BRIDGE APPROACH SECTION (GENERAL DETAILS) |
| RK-19C | 10-18-05 | 1 | BRIDGE APPROACH SECTION (TWO LANE FOR BRIDGE RECONSTRUCTION, P.C.C. PAVEMENT) |
| RL-16 | 10-16-07 | 1 | TEMPORARY STREAM CROSSING OR CAUSEWAY |
| TC-252 | 10-17-06 | 2 | ROAD CLOSURE |

2507-3250005 ENGINEERING FABRIC

MATERIAL SHALL CONFORM TO IOWA DOT MATERIALS I.M. 496.01 APPENDIX A, EMBANKMENT EROSION CONTROL (ARTICLE 4196.01, C). MATERIAL SHALL BE JOINED BY OVERLAPPING A MINIMUM OF 18 INCHES. REFER TO DETAILS ON PLAN SHEET U2.

MATERIAL SHALL BE JOINED BY OVER LAPPING A MINIMUM OF 18 INCHES. THE QUANTITY OF ENGINEERING FABRIC FOR WHICH PAYMENT WILL BE MADE, WHEN PLACED AS SHOWN IN THE CONTRACT DOCUMENTS, WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS IN SQUARE YARDS. MATERIAL FOR LAPS IS NOT INCLUDED IN THE PLAN QUANTITY.

ESTIMATED PROJECT QUANTITIES AND GENERAL INFORMATION

GENERAL NOTES

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL NECESSARY ARRANGEMENTS WITH ADJACENT PROPERTY OCCUPANTS FOR RESTRAINING LIVESTOCK FROM ENTERING THE RIGHT-OF-WAY DURING CONSTRUCTION.

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

ALL BORROW AREAS, STOCKPILE AREAS, HAUL ROADS AND AREAS FOR MANEUVERING EQUIPMENT ON THIS PROJECT WILL REQUIRE SUBSOIL TILLAGE TO AN AVERAGE DEPTH OF 18 TO 24 INCHES. SUCH TILLAGE SHALL BE ACCOMPLISHED ON MAXIMUM OF THREE FOOT CENTERS. SUCH AREAS SHALL BE DESIGNATED BY THE 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 ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND 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. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

CONTRACTOR SHALL NOTIFY ONE-CALL (1-800-292-8989) FOR UTILITY LOCATES LOCATES PRIOR TO COMMENCING WORK.

CONSTRUCTION STAKING SHALL BE PROVIDED BY THE OWNER IN ACCORDANCE WITH ARTICLE 1105.06 OF THE CURRENT STANDARD SPECIFICATIONS.

01-20-84 212-1
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.

10-16-07 213-1
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. THESE AREAS SHALL NOT IMPACT CULTURAL RESOURCES, WETLANDS OR "WATERS OF THE U.S." U.S. ARMY CORPS OF ENGINEERS' (COE) REGULATIONS PROHIBIT PLACEMENT OF MATERIAL ON STREAM BANKS BELOW THE "ORDINARY HIGH WATER MARK" WITHOUT AN APPROVED COE 404 PERMIT.

WHEN A DISPOSAL SITE IS SELECTED OUTSIDE OF THE PROJECT LIMITS, IT IS RECOMMENDED THAT THE CONTRACTOR CONTACT THE OFFICE OF THE STATE ARCHAEOLOGIST (OSA) AND STATE HISTORIC PRESERVATION OFFICE (SHPO) TO REQUEST AN HISTORIC SITE SEARCH AND A RECOMMENDATION OF SUITABILITY FOR THE PURPOSE INTENDED. IF OSA AND SHPO ARE CONTACTED, PROVIDE A COPY OF THEIR RESPONSE TO THE CONTRACTING AUTHORITY AND THE OFFICE OF LOCATION AND ENVIRONMENT.

NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT-OF-WAY, UNLESS SPECIFICALLY STATED IN THE PLANS.

10-27-98 213-4
THE CONTRACTOR SHALL APPLY NECESSARY MOISTURE TO THE CONSTRUCTION AREA AND HAUL ROADS TO PREVENT THE SPREAD OF DUST. REFER TO ARTICLE 1107.07 OF THE CURRENT STANDARD SPECIFICATIONS FOR ADDITIONAL DETAILS.

01-19-88 251-1
THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ACCESS TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION.

RELOCATED ACCESS SHALL BE COMPLETED TO INDIVIDUAL PROPERTIES PRIOR TO REMOVAL OF EXISTING ACCESS.

IF THE PERMANENT ACCESS CANNOT BE COMPLETED PRIOR TO REMOVAL OF THE EXISTING ACCESS, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN ALTERNATE ACCESS. TEMPORARY GRANULAR SURFACING WILL BE PAID FOR AS A CONTRACT ITEM OR BY EXTRA WORK.

09-27-94 271-9
A SCRAPE SAMPLE WAS TAKEN FROM ONE AREA OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WAS 2,280 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 18,300 PPM. THESE ANALYSES SHOW THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. LEVELS INDICATED BY THESE TESTS COULD CREATE CONDITIONS ABOVE REGULATORY LIMITS FOR HEALTH AND SAFETY REQUIREMENTS. NO OTHER CONSTITUENTS WERE ANALYZED. THE BIDDER SHOULD NOT RELY ON THE CONTRACTING AUTHORITY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

ESTIMATE REFERENCE INFORMATION (CONTINUED)

2507-4011100 CONCRETE GROUT FOR REVETMENT OR GABION
GROUTING OPERATION SHALL NOT BE PERFORMED EXCEPT IN THE PRESENCE OF THE ENGINEER.

THE AVERAGE RATE OF GROUT APPLICATION SHALL BE 5.4 CUBIC FEET OF GROUT PER SQUARE YARD OF SURFACE AREA.

THE GROUT SHALL BE CONSOLIDATED INTO THE VOIDS WITH THE USE OF A CONCRETE VIBRATOR.

METHOD OF MEASUREMENT: THE ENGINEER WILL COMPUTE TO THE NEAREST 0.1 CUBIC YARD THE VOLUME OF CONCRETE GROUT FOR REVETMENT OR GABION FURNISHED AND ACCEPTABLY PLACED WITHIN THE SPECIFIED LIMITS, FROM THE NOMINAL VOLUME OF EACH BATCH AND A COUNT OF BATCHES. GROUT UNUSED OR WASTED, INCLUDING ANY PARTIAL BATCH REMAINING AT THE COMPLETION OF THE OPERATION, WILL BE ESTIMATED AND DEDUCTED BY THE ENGINEER. METHOD OF MEASUREMENT IN THE CURRENT STANDARD SPECIFICATIONS SHALL NOT APPLY.

2507-6850053 REVETMENT, SPECIAL
THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING REVETMENT STONE, COMPLETE IN PLACE AS SHOWN ON THE DRAWINGS. REFER TO DETAILS ON PLAN SHEET U2.

MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 4130 FOR CLASS B REVETMENT ON PRIMARY PROJECTS.

DEWATERING REQUIRED TO INSTALL REVETMENT SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.

RIPRAP WILL NOT BE ALLOWED TO BE DUMPED OVER THE RAILING OF THE NEWLY CONSTRUCTED BRIDGE.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF ALL REMNANTS OF RIPRAP STOCKPILES FROM FARM FIELDS UTILIZED BY CONTRACTOR IN THE PROJECT AREA. THIS WORK SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.

SPECIAL REVETMENT PLACED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS WILL BE MEASURED IN TONS TO THE NEAREST 0.1 TON. FOR THE QUANTITY OF SPECIAL REVETMENT FURNISHED AND PLACED, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER TON.

2507-6875002 RIPRAP, REMOVE AND REPLACE
ITEM INCLUDES REMOVING EXISTING CHANNEL BANK REVETMENT TO THE EXTENT NECESSARY TO COMPLETE INSTALLATION OF THE PROPOSED IMPROVEMENTS AND IN ACCORDANCE WITH DETAILS SHOWN IN THE PLANS. REVETMENT SHALL BE STOCKPILED AND REPLACED ON THE PROPOSED CHANNEL SLOPE. REMOVAL AND DISPOSAL OF EXISTING ENGINEERING FABRIC SHALL BE CONSIDERED INCIDENTAL TO THIS ITEM.

THE QUANTITY OF RIPRAP, REMOVE AND REPLACE FOR WHICH PAVEMENT WILL BE MADE, WHEN PLACED AS SHOWN IN THE CONTRACT DOCUMENTS, WILL BE THE QUANTITY SHOWN IN THE CONTRACT DOCUMENTS IN CUBIC YARDS.

FOR RIPRAP, REMOVE AND REPLACE THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER CUBIC YARD. THIS PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR AND FOR PERFORMANCE OF ALL WORK NECESSARY FOR REMOVING AND STOCKPILING THE EXISTING RIPRAP REVETMENT AND REPLACEMENT OF THE REVETMENT.

2510-6745850 REMOVAL OF PAVEMENT
EXISTING PAVEMENT CONSISTS OF 7 INCH PCC WITH 4 INCH HMA OVERLAY. FULL DEPTH SAW CUTS SHALL BE REQUIRED AT ALL BREAKOUT LINES. ACTUAL LOCATION OF BREAKOUT LINES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

2518-6910000 SAFETY CLOSURE
REFER TO TABULATION ON PLAN SHEET C1.

2524-9100030 OBJECT MARKER, TYPE 3
REFER TO TABULATION ON PLAN SHEET C1.

2528-8445110 TRAFFIC CONTROL
"G" AVENUE SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES DURING THE PROJECT. THE CONTRACTOR SHALL COORDINATE TRAFFIC CONTROL WITH THE COUNTY.

2529-8200200 PRESSURE RELIEF JOINT, CF
MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH DETAILS ON STANDARD ROAD PLAN RH-52. CONTRACTOR SHALL INSTALL ONE "CF-4" JOINT 80 FEET FROM EACH END OF BRIDGE. FINAL LOCATION TO BE DETERMINED BY THE ENGINEER IN THE FIELD.

THE LENGTH IN LINEAR FEET OF PRESSURE RELIEF JOINTS INSTALLED WILL BE MEASURED BY THE ENGINEER FROM END TO END OF JOINT. FOR THE NUMBER OF LINEAR FEET OF PRESSURE RELIEF JOINTS SATISFACTORILY INSTALLED, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE. THIS PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THE WORK IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.

2602-0000020 SILT FENCE
REFER TO STANDARD ROAD PLAN RC-17 AND TABULATION ON PLAN SHEET C1 FOR DETAILS.

SILT FENCE MAY BE PLACED UP TO A MAXIMUM SEGMENT LENGTH OF 200 FEET. FOR EVERY SEGMENT OF SILT FENCE PLACED, A 20-FOOT SEGMENT SHALL BE PLACED AT THE LOWER END SKEWED TOWARDS THE FORESLOPE TO INTERCEPT RUNOFF.

2602-0000030 SILT FENCE FOR DITCH CHECKS
REFER TO STANDARD ROAD PLAN RC-17 AND TABULATION ON PLAN SHEET C1 FOR DETAILS.

QUANTITY INCLUDES SILT FENCE AT CULVERT INLETS AS DETAILED ON PLAN SHEET C1. MAXIMUM SPACING OF STEEL POSTS FOR SILT FENCE AT CULVERT INLETS SHALL BE 5 FEET.

ESTIMATED PROJECT QUANTITIES
AND GENERAL INFORMATION

TABULATION OF EROSION CONTROL FEATURES

100-19
MODIFIED

| LOCATION LOCATION STATION OR STATION TO STATION (Exact location to be determined by the Engineer) | SIDE L or R | TYPE OF WORK FOR DITCH CHECK | | | | REMARKS |
|--|----------------|---------------------------------|------------------|--------------------------|--------------------------|---------------|
| | | NO. | SPACING (Ft.) | SILT FENCE (Lin. Ft.) | SILT FENCE (Lin. Ft.) | |
| 1+87 - 2+75 | L | | | | 108 | |
| 3+20 | R | 1 | | 20 | | |
| 3+90 | R | 1 | | 20 | | |
| 4+07 | L | | | | 68 | |
| 4+95 | L | 1 | | 34 | | CULVERT INLET |
| TOTAL | | | | 74 | 176 | |

TABULATION OF PAVEMENT MARKINGS

108-22
MODIFIED

② Broken Center Line (Yellow) ③ Double Center Line (Yellow) ⑤ No-Passing Zone Line (Yellow) ⑦ EDGE LINE RIGHT (White)

| ROAD IDENTIFICATION | LOCATION STATION TO STATION | SIDE | | LENGTH (In Stations) | | | | REMARKS |
|-------------------------|--------------------------------|------|---|----------------------|-------|---|-------|--------------------|
| | | L | R | ② | ③ | ⑤ | ⑦ | |
| MAPLE ST | 2+54 - 4+28 | X | X | | 1,740 | | 3,480 | |
| LENGTH SUBTOTALS | | | | | | | 3,480 | |
| QUANTITY FACTORS | | | | | .25 | 2 | 1 | 1 |
| TOTALS | | | | | 3,480 | | 3,480 | TOTAL = 6,960 STA. |

**PLACEMENT OF QUANTITIES
130'-0 x 30' CCS BRIDGE**

| ITEM | UNIT | PIERS | SUPERSTRUCTURE & ABUTMENTS | TOTAL |
|---------------------------------|------|-------|----------------------------|-------|
| STRUCTURAL CONCRETE (BRIDGE) | CY | - | 339.2 | 339.2 |
| REINFORCING STEEL, EPOXY COATED | LB | - | 78315 | 78315 |

TABULATION OF BRIDGE APPROACH SECTION

Refer to the RK-Series Standard Road Plans.

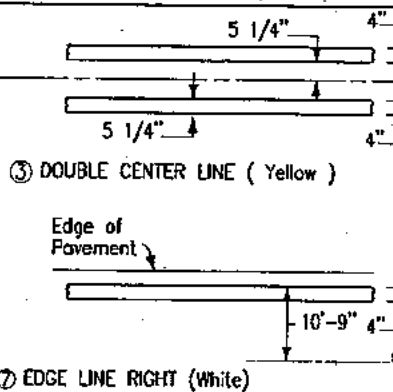
112-6
MODIFIED

① Not a bid item

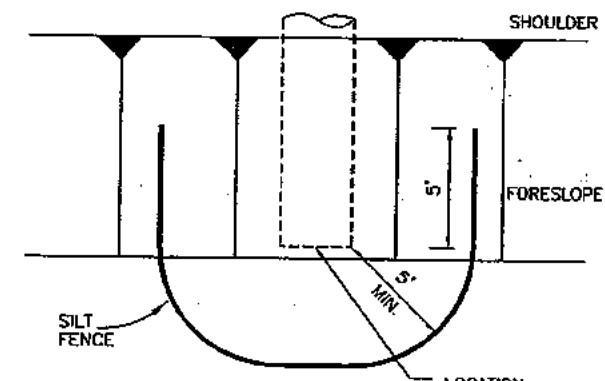
| Bridge Station | End | ① Thickness Inches | Pay Length Feet | APPROACH PAVEMENT | | Fixed or Movable Abutment F or M | Perforated Subdrain 4" ① Lin.Ft. | SUBDRAIN | | | | APPROACH SUBGRADE | | REMARKS | |
|----------------|-----|-----------------------|--------------------|-------------------------------------|-------------------------------------|-------------------------------------|--|---------------------------------|------|---------------------------------|---|------------------------------------|-------------------------------|---------|------------------------------|
| | | | | Non-Reinf. Pavement Area Sq.Yds. | Reinforced Pavement Area Sq.Yds. | | | Subdrain Outlet ① Station | Side | Porous Backfill ① Cu.Yds. | Granular Compacted Backfill ① Cu.Yds. | Engineering Fabric ① Sq.Yds. | Modified Subbase ① Tons | | Polymer Grid ① Sq.Yds. |
| 3+41.35 | N | 10 | 20 | - | 71.2 | M | 54 | 2+74 | B | 4.3 | 9.7 | 31 | 99 | 78 | |
| 3+41.35 | S | 10 | 20 | - | 71.2 | M | 54 | 4+08 | B | 4.3 | 9.7 | 31 | 99 | 78 | |
| TOTAL | | | | | 142.4 | | 108 | | | 8.6 | 19.4 | 62 | 198 | 156 | |

TABULATION OF EARTHWORK QUANTITIES

| STA. | CUT | ADD. CUT | FILL +35% | ADD. FILL | TOTAL CUT | TOTAL FILL+35% | BALANCE |
|--------------|-----|----------|-----------|-----------|-----------|----------------|---------|
| 2+00 | | | | | | | |
| 2+54.85 | 0 | | 206 | | 0 | 206 | |
| 2+74.85 | 0 | | 168 | | 0 | 168 | |
| 4+07.85 | | | | | | | |
| 4+27.85 | 25 | | 155 | | 25 | 155 | |
| 4+55.09 | 35 | | 175 | | 35 | 175 | |
| 5+00 | 25 | | 127 | | 25 | 127 | |
| TOTAL | | | | | 85 | 831 | |



9001
MODIFIED



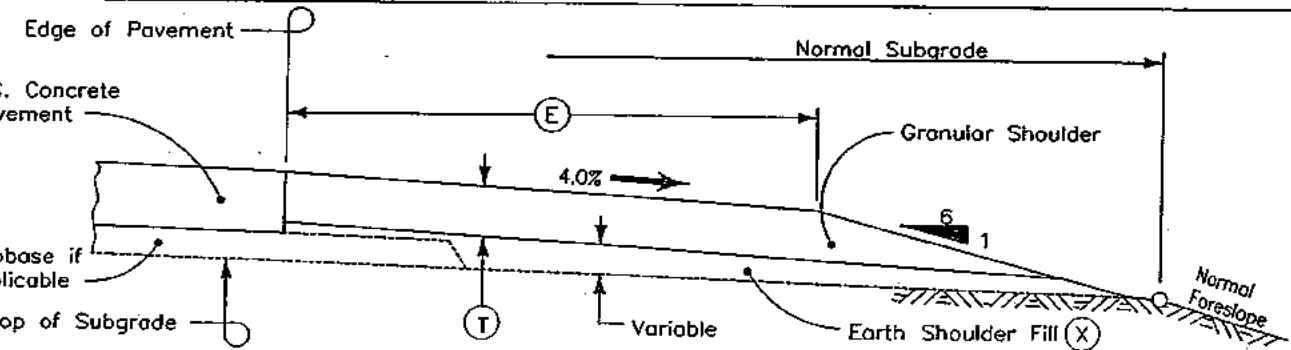
DETAILS OF SILT FENCE AT CULVERT INLETS
NO SCALE

TABULATION OF DELINEATORS AND OBJECT MARKERS

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

108-17
04-28-92

| LOCATION | STATION | DELINEATOR Type* | OBJECT MARKER | | | | REMARKS |
|----------|---------|---------------------|-----------------------------|--------------------------|------------------------|------------------------|-----------|
| | | | Single White D-1W Number | Type 2 OM2-3YV Number | Type 3 OM-3L Number | Type 3 OM-3R Number | |
| | 3+41.35 | - | - | - | 1 | 1 | SOUTH END |
| | 3+41.35 | - | - | - | 1 | 1 | NORTH END |



7110
04-19-05

**TYPICAL SECTION
TYPE 'A' OR 'B' GRANULAR SHOULDER
Adjacent to PCC Pavement**

| ROAD IDENTIFICATION | LOCATION STATION TO STATION | ⑤ Feet | ⑥ Inches | SIDE | ⑦ Cu.Yds. |
|---------------------|--------------------------------|--------|----------|------|-----------|
| MAPLE STREET | 2+54.85 - 2+74.85 | 3 | 6 | B | 8.5 |
| MAPLE STREET | 4+07.85 - 4+27.85 | 3 | 6 | B | 8.5 |

See Standard Road Plan RH-37D.
Earth Shoulder fill requires approximately ⑦ cubic yards of excavation, including 35% for shrinkage, per shoulder per station.

TABULATION OF SAFETY CLOSURES

108-13A
10-28-97

Refer to Section 2518 of the S'c Specifications

| STATION | CLOSURE TYPE | | REMARKS |
|---------|--------------|-------------|---------|
| | Road Qty. | Hazard Qty. | |
| 2+00 | 1 | - | S. END |
| 2+40 | - | 1 | S. END |
| 5+50 | - | 1 | N. END |
| 9+80 | 1 | - | N. END |

TABLATIONS, TYPICALS

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G2033 Boring No.: B-1
 Project: Rickel's Bridge Replacement Boring Location: North Abutment
 Date Started: 8/6/07 Drill Type: HOLLOW STEM
 Date Completed: 8/6/07 Ground Elev.: 1305.7

| Depth In Feet | Graphic Log | Sample Type | USCS | | | Blow Counts SPT (N) Blows/Feet | Moisture Content, % | Dry Density (PCF) | X Subarrols | Hard Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Possibly Index % | Other Tests |
|---------------|---|-------------|-------------|----------------------|------------------|--------------------------------|---------------------|-------------------|-------------|-------------------------|---------------------------------|----------------|-----------------|------------------|-------------|
| | | | Shelby Tube | Standard Split Spoon | Water Level ATD | | | | | | | | | | |
| 0-4.25 | 4.25 INCH ASPHALT LAYER | | | | | | | | | | | | | | |
| 4.25-5 | 8 INCH CONCRETE LAYER | | | | | | | | | | | | | | |
| 5-10 | FILL, Firm Silty Clay, Dark Brown, Moist | | | | 2-4-6 N=10 | 21 | | | | | | | | | |
| 10-15 | STIFF SILTY CLAY, Dark Brown, Moist, Alluvium | | | | 3-4-5 N=9 | 29 | | | | | | | | | |
| 15-20 | | | | | 2-3-4 N=7 | 25 | | | | | | | | | |
| 20-25 | | | | | 1-1-1 N=2 | 19 | | | | | | | | | |
| 25-30 | COARSE SAND, Yellow Brown, Wet | | | | 4-7-8 N=13 | 29 | 89 | 88 | 1.50 | | | | | | |
| 30-35 | | | | | 8-12-9 N=21 | 25 | | | | | | | | | |
| 35-40 | FIRM-VERY FIRM GLACIAL CLAY, Dark Brown, Moist | | | | 2-3-6 N=9 | 17 | | | | | | | | | |
| 40-45 | | | | | 3-6-7 N=13 | 18 | | | | | | | | | |
| 45-50 | | | | | 6-8-12 N=20 | 16 | | | | | | | | | |
| 50-55 | | | | | 3-6-9 N=15 | 19 | | | | | | | | | |
| 55-60 | VERY FIRM GLACIAL CLAY, Dark Brown, Moist | | | | 5-9-12 N=21 | 19 | | | | | | | | | |
| 60-65 | | | | | 10-11-17 N=28 | 16 | | | | | | | | | |
| 65-70 | | | | | 8-13-18 N=31 | 17 | | | | | | | | | |
| 70-75 | | | | | 8-11-14 N=25 | 17 | | | | | | | | | |
| 75 | END OF BORING AT 75 FEET FREE GROUNDWATER WAS ENCOUNTERED AT 23 FEET AT THE TIME OF DRILLING | | | | | | | | | | | | | | |

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G2033 Boring No.: B-2
 Project: Rickel's Bridge Replacement Boring Location: North Pier
 Date Started: 8/7/07 Drill Type: HOLLOW STEM
 Date Completed: 8/7/07 Ground Elev.: 1305.9

| Depth In Feet | Graphic Log | Sample Type | USCS | | | Blow Counts SPT (N) Blows/Feet | Moisture Content, % | Dry Density (PCF) | X Subarrols | Hard Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Possibly Index % | Other Tests |
|---------------|---|-------------|-------------|----------------------|-----------------|--------------------------------|---------------------|-------------------|-------------|-------------------------|---------------------------------|----------------|-----------------|------------------|-------------|
| | | | Shelby Tube | Standard Split Spoon | Water Level ATD | | | | | | | | | | |
| 0-4.75 | 4.75 INCH ASPHALT | | | | | | | | | | | | | | |
| 4.75-5 | 9.5 INCH CONCRETE LAYER | | | | | | | | | | | | | | |
| 5-10 | FILL, Firm Silty Clay, Reddish Brown, Very Moist | | | | 2-4-6 N=10 | 24 | | | | | | | | | |
| 10-15 | FIRM SILTY CLAY, Gray Brown, Moist | | | | 3-3-2 N=8 | 30 | | | | | | | | | |
| 15-20 | SOFT SILTY CLAY, Dark Brown, Moist, Alluvium | | | | 1-1-2 N=3 | 31 | | | | | | | | | |
| 20-25 | | | | | 1-1-2 N=3 | 34 | 80 | 83 | 1.50 | | | | | | |
| 25-30 | COARSE SAND, Yellow Brown, Wet | | | | 1-1-5 N=6 | 21 | | | | | | | | | |
| 30-35 | | | | | 5-9-12 N=21 | 21 | | | | | | | | | |
| 35-40 | | | | | 8-10-12 N=22 | 22 | | | | | | | | | |
| 40-45 | FIRM GLACIAL CLAY, Dark Brown, Moist | | | | 3-3-3 N=9 | 18 | | | | | | | | | |
| 45-50 | | | | | 3-5-7 N=12 | 20 | | | | | | | | | |
| 50-55 | | | | | 6-6-8 N=14 | 20 | | | | | | | | | |
| 55-60 | VERY FIRM GLACIAL CLAY, Dark Brown, Moist | | | | 8-10-11 N=21 | 10 | | | | | | | | | |
| 60-65 | | | | | 7-10-15 N=25 | 23 | | | | | | | | | |
| 65-70 | | | | | 7-15-20 N=35 | 15 | | | | | | | | | |
| 70-75 | | | | | 7-10-12 N=22 | 17 | | | | | | | | | |
| 75 | END OF BORING AT 75 FEET FREE GROUNDWATER WAS ENCOUNTERED AT 24 FEET AT THE TIME OF DRILLING | | | | | | | | | | | | | | |

GEOTECHNICAL INFORMATION PROVIDED HERewith IS THE SOLE RESPONSIBILITY OF CERTIFIED TESTING SERVICES, INC., WHOSE GEOTECHNICAL REPORT DATED AUGUST 22, 2007, COMPLETE WITH THE LICENSED ENGINEER'S SEAL AND CERTIFICATION, IS AVAILABLE FROM THE OFFICE OF CONTRACTS.

SOUNDING DATA

NOTE: THESE SOUNDINGS WERE MADE FOR DESIGN PURPOSES AND ARE NOT GUARANTEED FOR CONSTRUCTION.
 SOUNDINGS WERE TAKEN AUGUST 6-7, 2007.
 SEE SHEET V1 FOR BORING LOCATIONS.

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G2033 Boring No.: B-3
 Project: Ricketts Bridge Replacement Boring Location: South Pier
 Date Started: 8/8/07 Drill Type: HOLLOW STEM
 Date Completed: 8/8/07 Ground Elev.: 1305.5

| Depth in Feet | Graphic Log | Sample Type | USCS | Blow Counts SPT (N) Blows/foot | Moisture Content, % | Dry Density (pcf) | X Saturation | Hand Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Plasticity Index % | Other Tests | SOIL DESCRIPTION | | | | | |
|---------------|-------------|-------------|------|--------------------------------|---------------------|-------------------|--------------|-------------------------|---------------------------------|----------------|-----------------|--------------------|-------------|------------------|----------------------|-----------------|--|--|--|
| | | | | | | | | | | | | | | Shelby Tube | Standard Split Spoon | Water Level ATD | | | |
| 0-1 | | | | | | | | | | | | | | | | | | | |
| 1-5 | | | CL | 1-3-5 N=8 | 24 | | | | | | | | | | | | | | |
| 5-10 | | | CL | 1-1-5 N=6 | 26 | | | | | | | | | | | | | | |
| 10-15 | | | CL | 1-3-5 N=8 | 26 | 83 | 91 | 1.50 | | | | | | | | | | | |
| 15-20 | | | CL | 1-3-5 N=8 | 26 | | | | | | | | | | | | | | |
| 20-25 | | | CL | 1-5-7 N=12 | 35 | | | | | | | | | | | | | | |
| 25-30 | | | CL | 2-2-1 N=3 | 33 | | | | | | | | | | | | | | |
| 30-38 | | | SW | 25-37 N=74 | | | | | | | | | | | | | | | |
| 38-45 | | | CL | 9-6-8 N=14 | 17 | | | | | | | | | | | | | | |
| 45-50 | | | CL | 6-9-17 N=26 | 19 | | | | | | | | | | | | | | |
| 50-55 | | | CL | 7-9-12 N=21 | 21 | | | | | | | | | | | | | | |
| 55-60 | | | CL | 3-11-15 N=26 | 18 | | | | | | | | | | | | | | |
| 60-65 | | | CL | 7-15-20 N=35 | 14 | | | | | | | | | | | | | | |
| 65-70 | | | CL | 7-8-17 N=25 | 21 | | | | | | | | | | | | | | |
| 70-75 | | | CL | 6-11-19 N=30 | 20 | | | | | | | | | | | | | | |
| 75 | | | | | | | | | | | | | | | | | | | |

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: G2033 Boring No.: B-4
 Project: Ricketts Bridge Replacement Boring Location: South Abutment
 Date Started: 8/9/07 Drill Type: HOLLOW STEM
 Date Completed: 8/9/07 Ground Elev.: 1305.1

| Depth in Feet | Graphic Log | Sample Type | USCS | Blow Counts SPT (N) Blows/foot | Moisture Content, % | Dry Density (pcf) | X Saturation | Hand Penetrometer (TSF) | Unconfined Comp. Strength (TSF) | Liquid Limit % | Plastic Limit % | Plasticity Index % | Other Tests | SOIL DESCRIPTION | | | | | |
|---------------|-------------|-------------|------|--------------------------------|---------------------|-------------------|--------------|-------------------------|---------------------------------|----------------|-----------------|--------------------|-------------|------------------|----------------------|-----------------|--|--|--|
| | | | | | | | | | | | | | | Shelby Tube | Standard Split Spoon | Water Level ATD | | | |
| 0-1 | | | | | | | | | | | | | | | | | | | |
| 1-5 | | | CL | 1-2-3 N=6 | 21 | 103 | 91 | 2.00 | | | | | | | | | | | |
| 5-10 | | | CL | 1-2-3 N=6 | 20 | | | | | | | | | | | | | | |
| 10-15 | | | CL | 3-9-11 N=20 | 6 | 102 | 84 | 2.50 | | | | | | | | | | | |
| 15-20 | | | CL | 3-9-11 N=20 | 6 | | | | | | | | | | | | | | |
| 20-25 | | | CL | 2-2-2 N=4 | 34 | | | | | | | | | | | | | | |
| 25-30 | | | CL | 1-2-2 N=4 | 20 | | | | | | | | | | | | | | |
| 30-35 | | | SW | 2-9-14 N=23 | | | | | | | | | | | | | | | |
| 35-40 | | | CL | 7-15-19 N=34 | | | | | | | | | | | | | | | |
| 40-45 | | | CL | 6-12-9 N=21 | | | | | | | | | | | | | | | |
| 45-50 | | | CL | 5-8-10 N=18 | 14 | | | | | | | | | | | | | | |
| 50-55 | | | CL | 2-4-6 N=10 | 18 | | | | | | | | | | | | | | |
| 55-60 | | | CL | 2-3-5 N=8 | 10 | | | | | | | | | | | | | | |
| 60-65 | | | CL | 5-8-13 N=21 | 16 | | | | | | | | | | | | | | |
| 65-70 | | | CL | 10-17-15 N=32 | 14 | | | | | | | | | | | | | | |
| 70-75 | | | CL | 5-12-15 N=25 | 15 | | | | | | | | | | | | | | |
| 75 | | | CL | 3-6-8 N=15 | 13 | | | | | | | | | | | | | | |

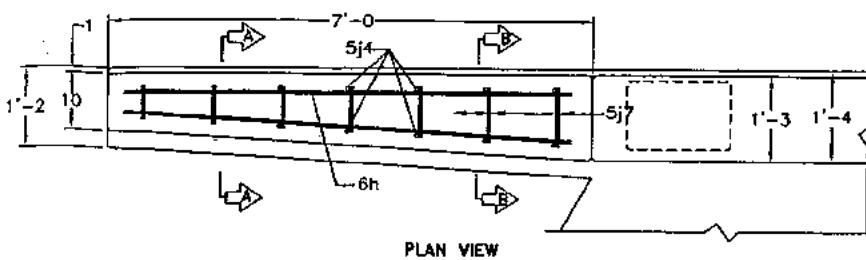
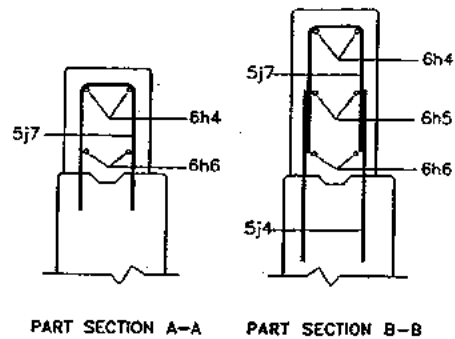
GEOTECHNICAL INFORMATION PROVIDED HERewith IS THE SOLE RESPONSIBILITY OF CERTIFIED TESTING SERVICES, INC., WHOSE GEOTECHNICAL REPORT DATED AUGUST 22, 2007, COMPLETE WITH THE LICENSED ENGINEER'S SEAL AND CERTIFICATION, IS AVAILABLE FROM THE OFFICE OF CONTRACTS.

SOUNDING DATA

NOTE: THESE SOUNDINGS WERE MADE FOR DESIGN PURPOSES AND ARE NOT GUARANTEED FOR CONSTRUCTION.

SOUNDINGS WERE TAKEN AUGUST 8-9, 2007.

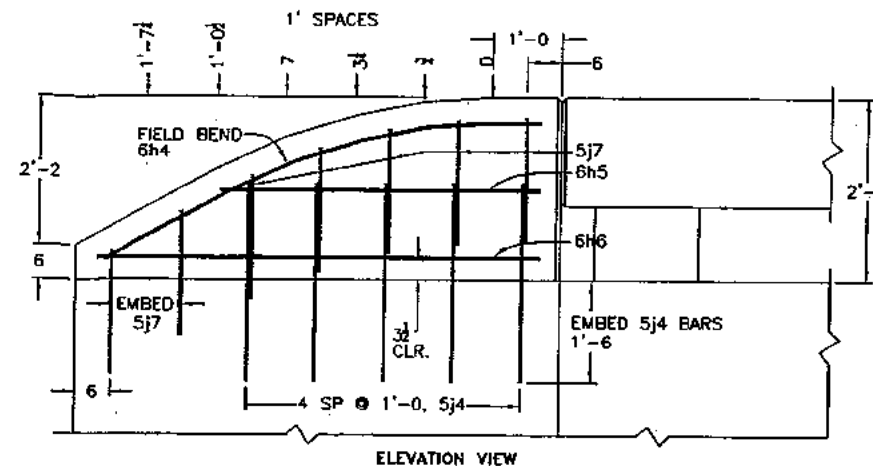
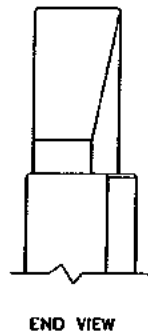
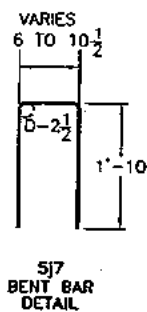
SEE SHEET V1 FOR BORING LOCATIONS.



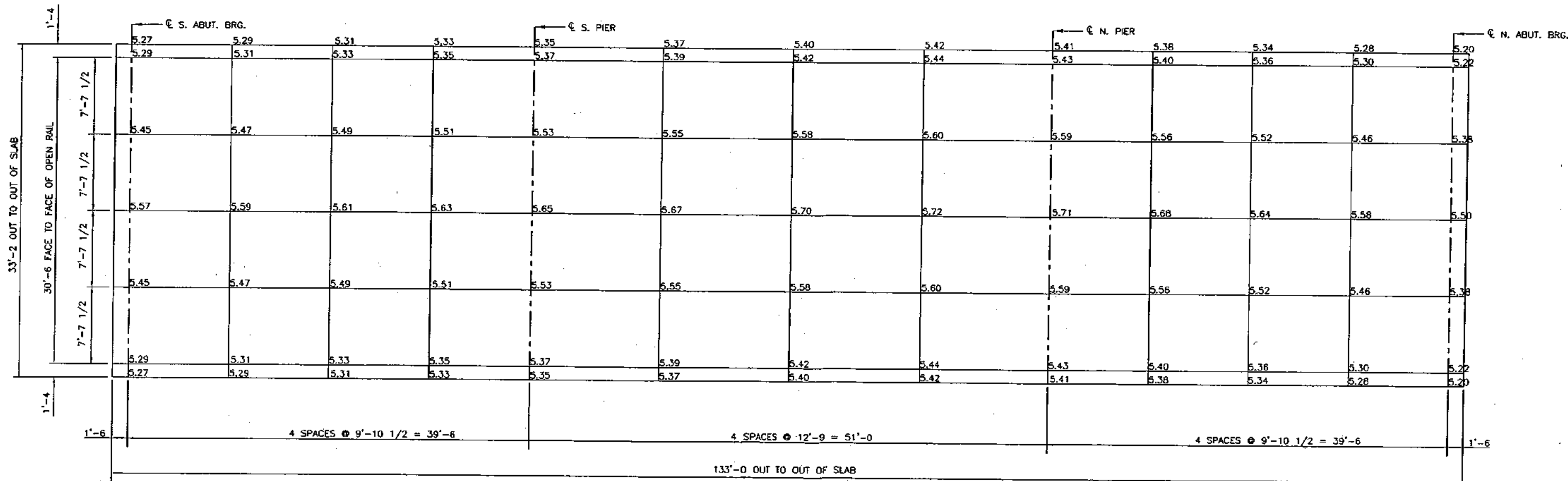
| REIN. BAR LIST - ONE SPECIAL END SECTION | | | | |
|--|-------|-----|------------------|--------|
| BAR LOCATION | SHAPE | NO. | LENGTH | WEIGHT |
| 5j4 ANCH. TO SLAB | --- | 10 | 2'-11 | 31 |
| 5j7 VERTICAL | --- | 7 | 4'-2 TO 4'-6 1/2 | 32 |
| 6h4 LONGITUDINAL | --- | 2 | 6'-9 | 21 |
| 6h5 LONGITUDINAL | --- | 2 | 4'-8 | 14 |
| 6h6 LONGITUDINAL | --- | 2 | 6'-5 | 20 |
| TOTAL - ONE END SECTION | | | | 118 |
| TOTAL - ONE BRIDGE | | | | 472 |

TOTAL CONCRETE PER END SECT. 0.55 CY
 TOTAL CONCRETE (x4) 2.2 CY

NOTE:
 SPECIAL BRIDGE END SECTION AS DETAILED ON THIS SHEET SHALL BE USED INSTEAD OF END SECTION SHOWN ON STD. SH. J30-43-06. THE FOLLOWING BARS DETAILED ON STD. SH. J30-43-06 SHALL NOT BE USED: 4c1, 4c2, 5c3, 5d1 AND 5d2.



OPEN RAIL ROUNDED END POST DETAILS
 NOT TO SCALE



TOP OF SLAB ELEVATIONS
 (ADD 1300' TO ABOVE ELEVATIONS)

REV.:

SUNDQUIST ENGINEERING, P.C.
 CONSULTING ENGINEERS

HIGHWAYS • MUNICIPAL • MAPPING • SURVEYING
 120 S. MAIN, P.O. BOX 220, DENISON, IOWA 51442
 PHONE: (712)263-8118 FAX: (712)263-2181

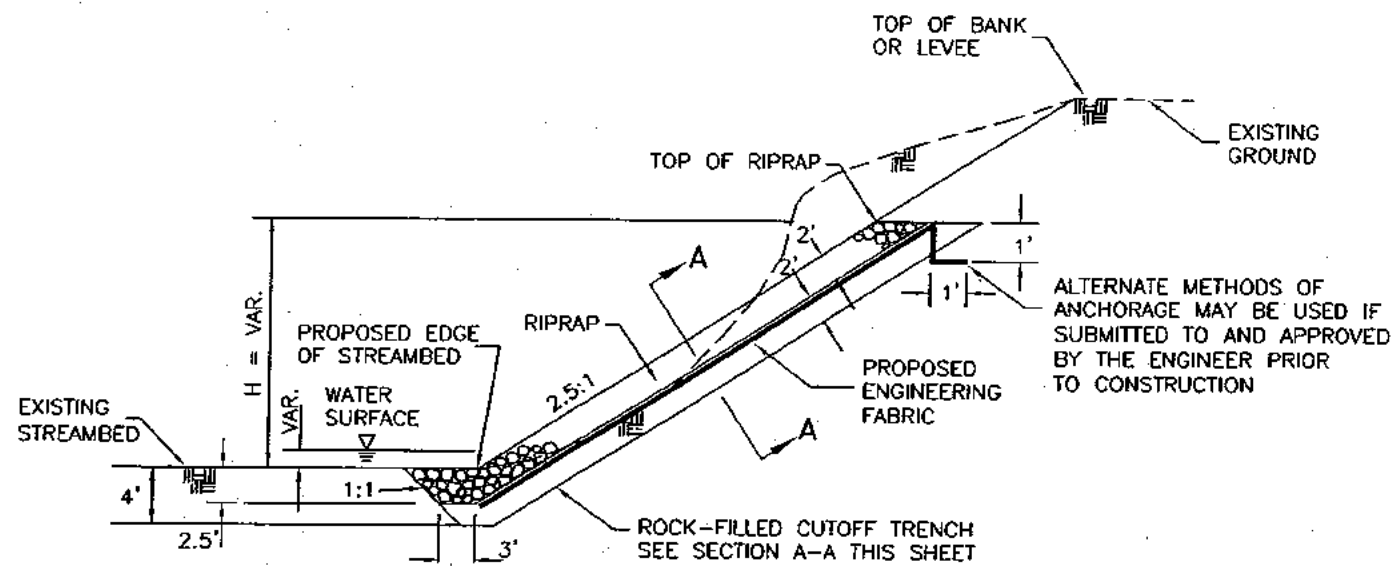
SE PROJECT NO.: 06106 DATE: 09/07 DRAWN BY: DRD REVIEWED BY: SAS APPROVED BY: TJG

DESIGN NO. .

FILE NO. .

CRAWFORD COUNTY PROJECT NO. BRS-C024(87)-60-24

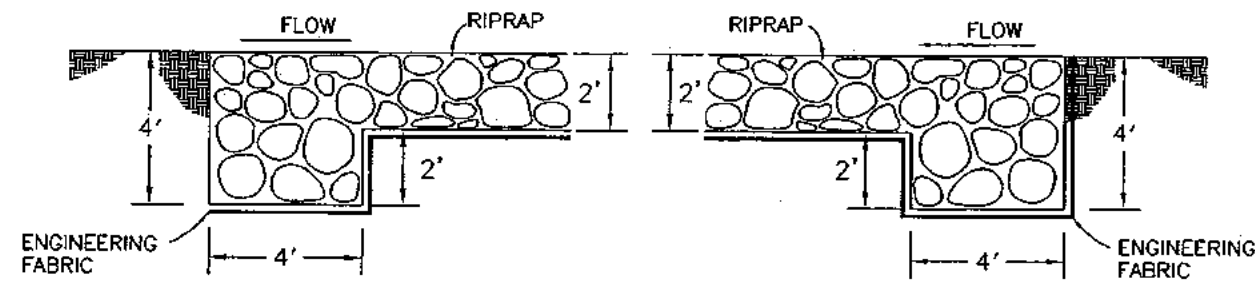
SHEET UI



TYPICAL HALF-CHANNEL BANK STABILIZATION SECTION

NOT TO SCALE
FOR TOP OF RIPRAP ELEVATIONS SEE CHANNEL CROSS SECTIONS

ALTERNATE METHODS OF ANCHORAGE MAY BE USED IF SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION

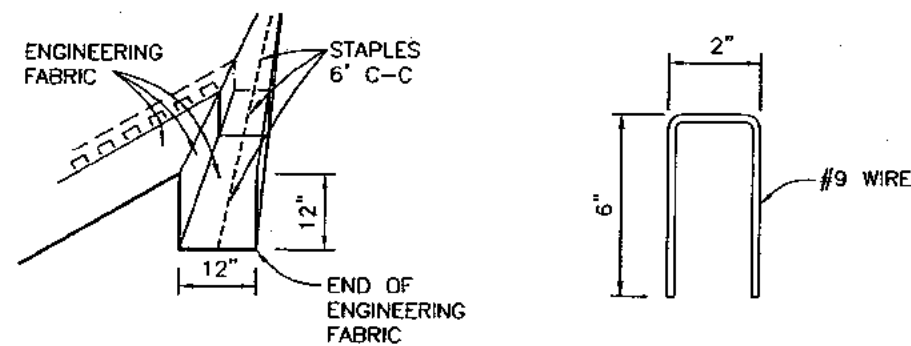


TYPICAL DOWNSTREAM

TYPICAL UPSTREAM

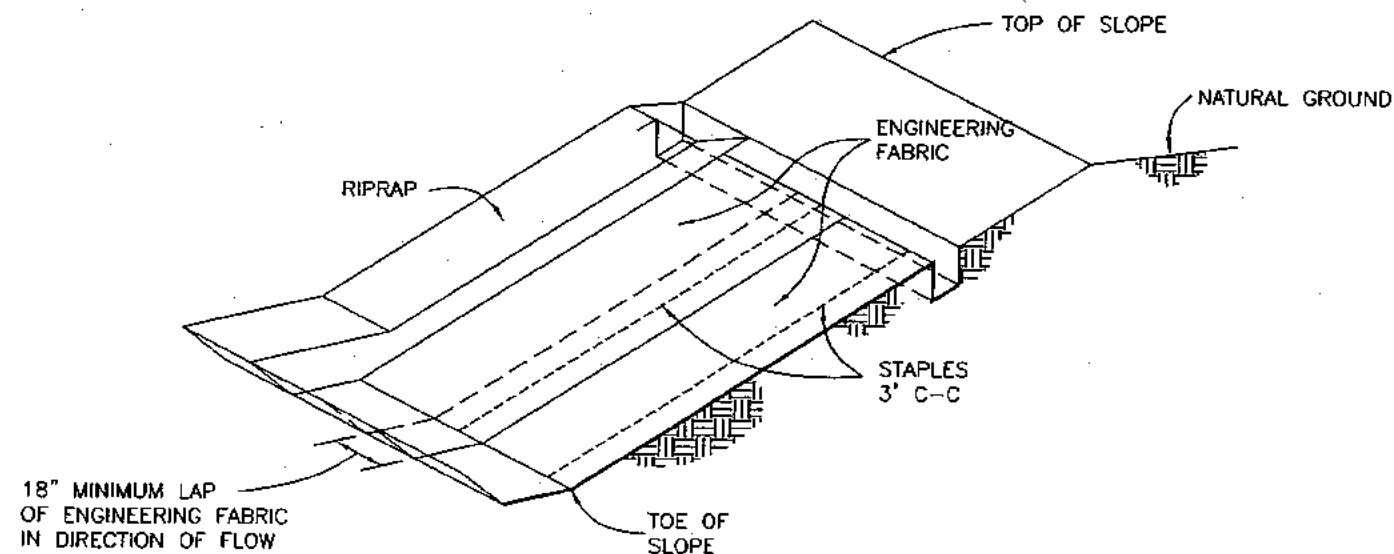
**SECTION A-A
ROCK-FILLED CUTOFF TRENCH DETAILS**

NOT TO SCALE



DETAIL OF TRENCH

STAPLE

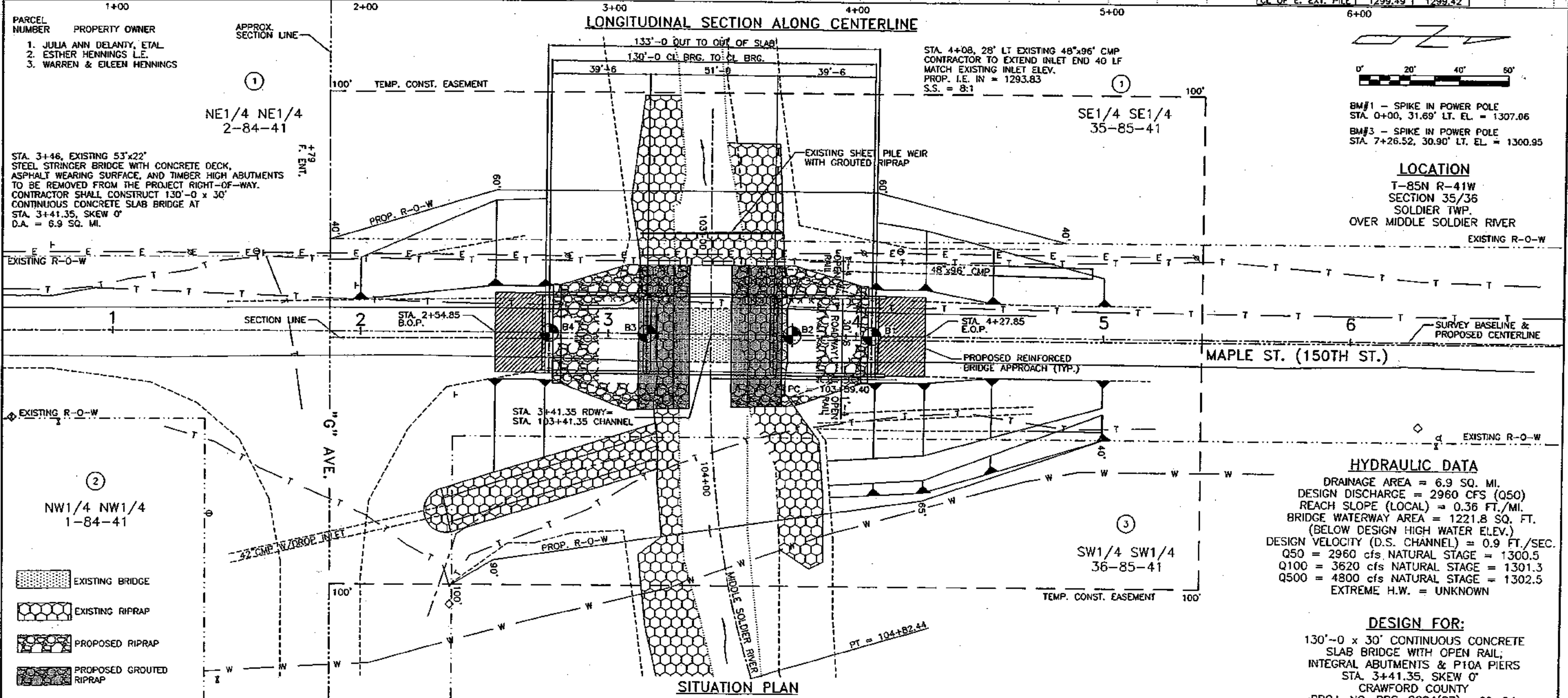
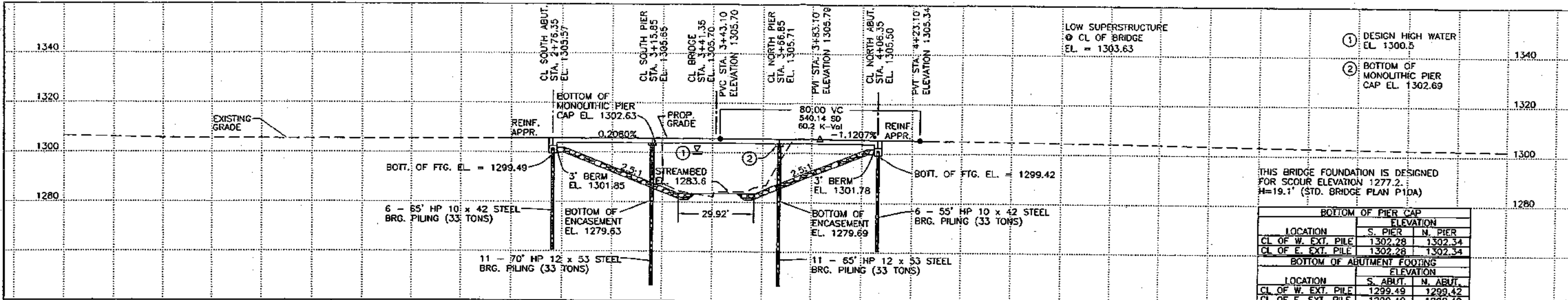


EXCAVATE 12"x12" TRENCH ALONG TOP OF RIPRAP. PLACE END OF ENGINEERING FABRIC STRIPS INTO TRENCH WITH STAPLES AS SHOWN. BACKFILL WITH THE EXCAVATED MATERIAL AND COMPACT. THE ENGINEER MAY PERMIT THE USE OF THE WHEELS OF PNEUMATIC-TIRED EQUIPMENT FOR CONSOLIDATING THE TRENCH BACKFILL MATERIAL.

DETAILS OF PLACEMENT OF ENGINEERING FABRIC

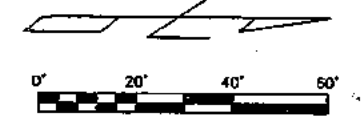
NOT TO SCALE

REV. 2



| BOTTOM OF PIER CAP ELEVATION | | |
|------------------------------|---------|---------|
| LOCATION | S. PIER | N. PIER |
| CL OF W. EXT. PILE | 1302.28 | 1302.34 |
| CL OF E. EXT. PILE | 1302.28 | 1302.34 |

| BOTTOM OF ABUTMENT FOOTING ELEVATION | | |
|--------------------------------------|----------|----------|
| LOCATION | S. ABUT. | N. ABUT. |
| CL OF W. EXT. PILE | 1299.49 | 1299.42 |
| CL OF E. EXT. PILE | 1299.49 | 1299.42 |

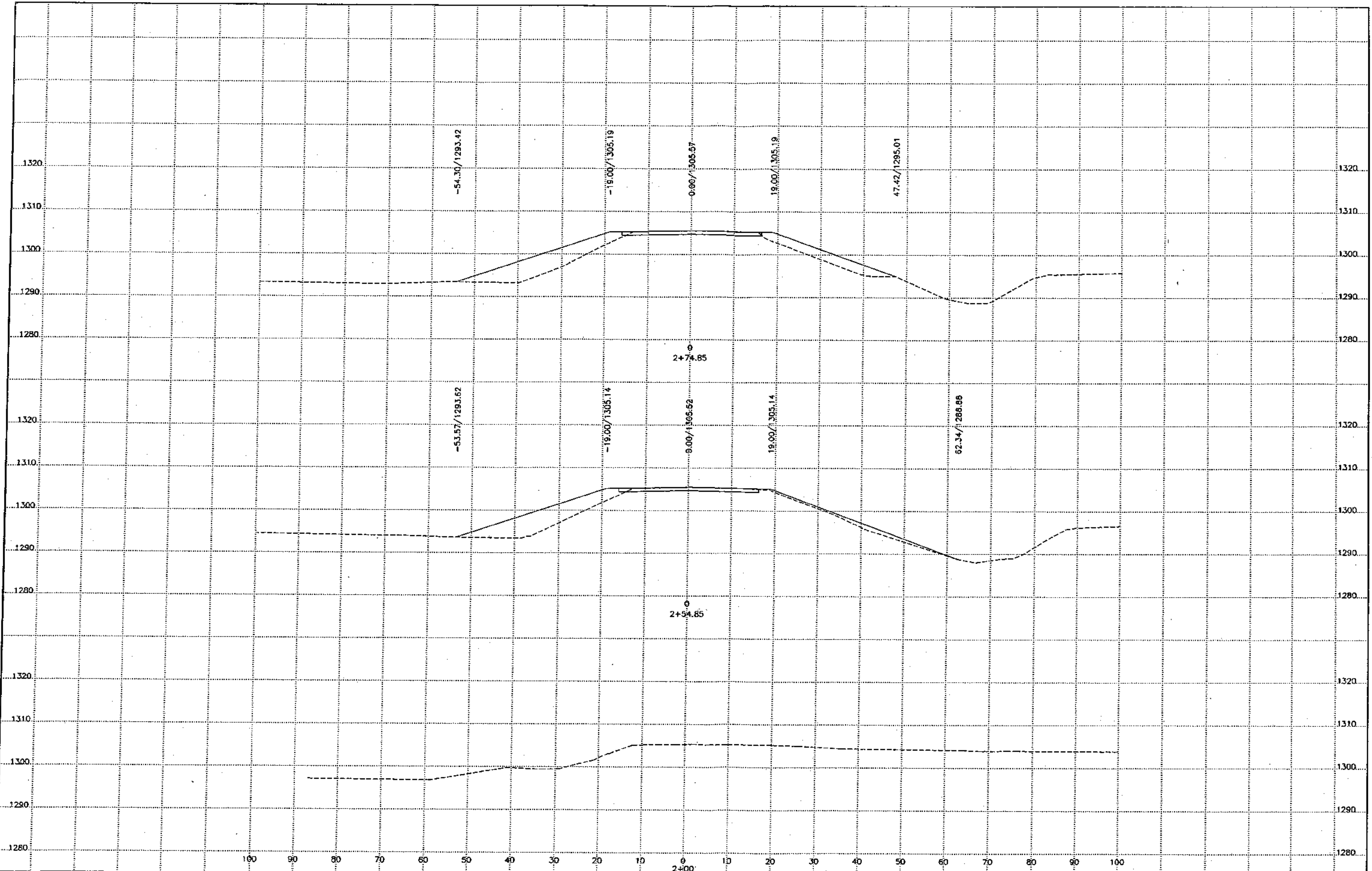


BM#1 - SPIKE IN POWER POLE
 STA. 0+00, 31.69' LT. EL. = 1307.06
 BM#3 - SPIKE IN POWER POLE
 STA. 7+26.52, 30.90' LT. EL. = 1300.95

LOCATION
 T-85N R-41W
 SECTION 35/36
 SOLDIER TWP.
 OVER MIDDLE SOLDIER RIVER
 EXISTING R-O-W

HYDRAULIC DATA
 DRAINAGE AREA = 6.9 SQ. MI.
 DESIGN DISCHARGE = 2960 CFS (Q50)
 REACH SLOPE (LOCAL) = 0.36 FT./MI.
 BRIDGE WATERWAY AREA = 1221.8 SQ. FT.
 (BELOW DESIGN HIGH WATER ELEV.)
 DESIGN VELOCITY (D.S. CHANNEL) = 0.9 FT./SEC.
 Q50 = 2960 cfs NATURAL STAGE = 1300.5
 Q100 = 3620 cfs NATURAL STAGE = 1301.3
 Q500 = 4800 cfs NATURAL STAGE = 1302.5
 EXTREME H.W. = UNKNOWN

DESIGN FOR:
 130'-0" x 30' CONTINUOUS CONCRETE SLAB BRIDGE WITH OPEN RAIL;
 INTEGRAL ABUTMENTS & P10A PIERS
 STA. 3+41.35, SKEW 0°
 CRAWFORD COUNTY
 PROJ. NO. BRS-C024(87)-60-24



REV:

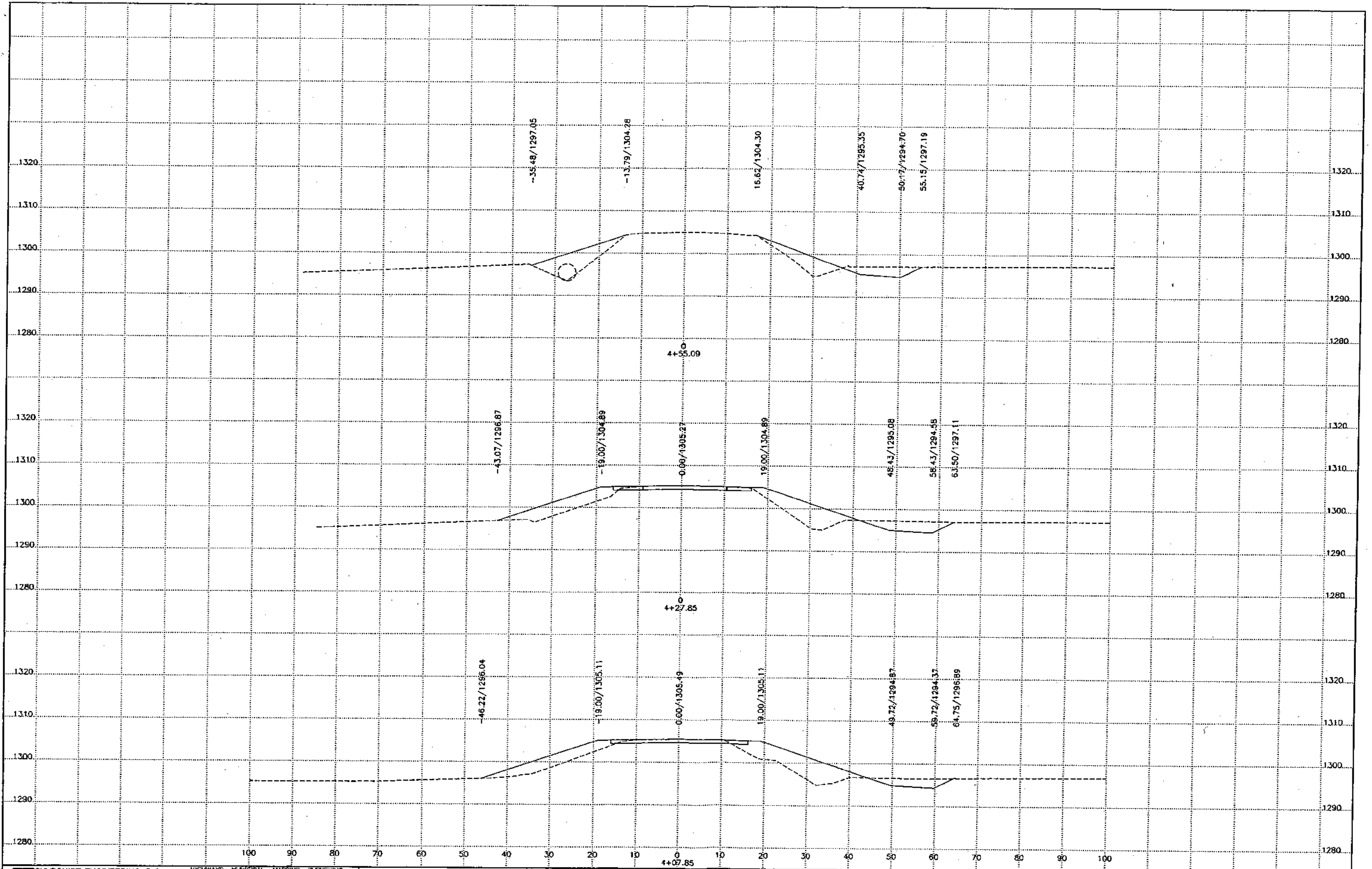
S SUNDQUIST ENGINEERING, P.C.
CONSULTING ENGINEERS

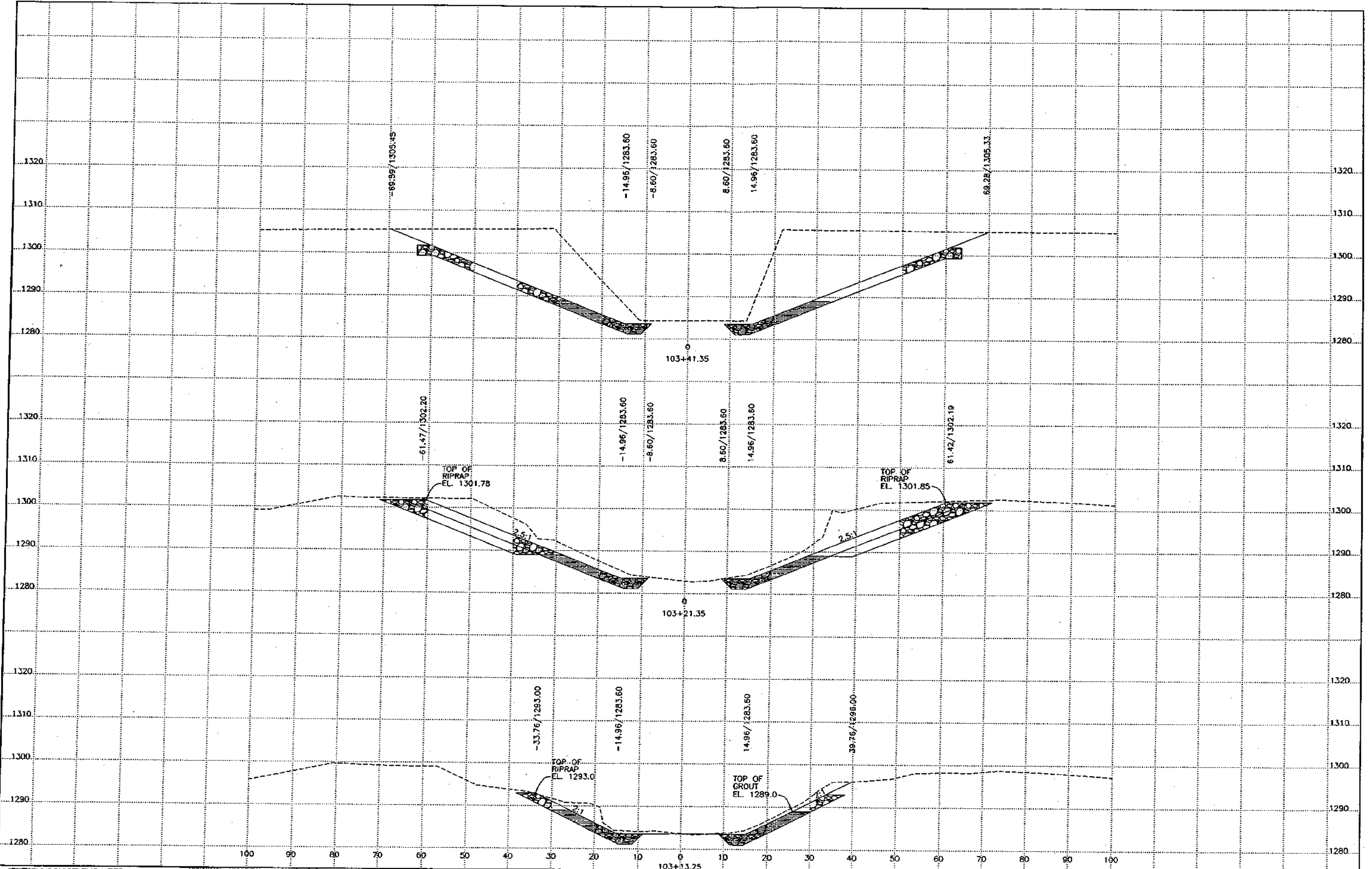
HIGHWAYS • MUNICIPAL • MAPPING • SURVEYING
120 S. MAIN, P.O. BOX 220, DENISON, IOWA 51442
PHONE: (712)263-8118 FAX: (712)263-2181

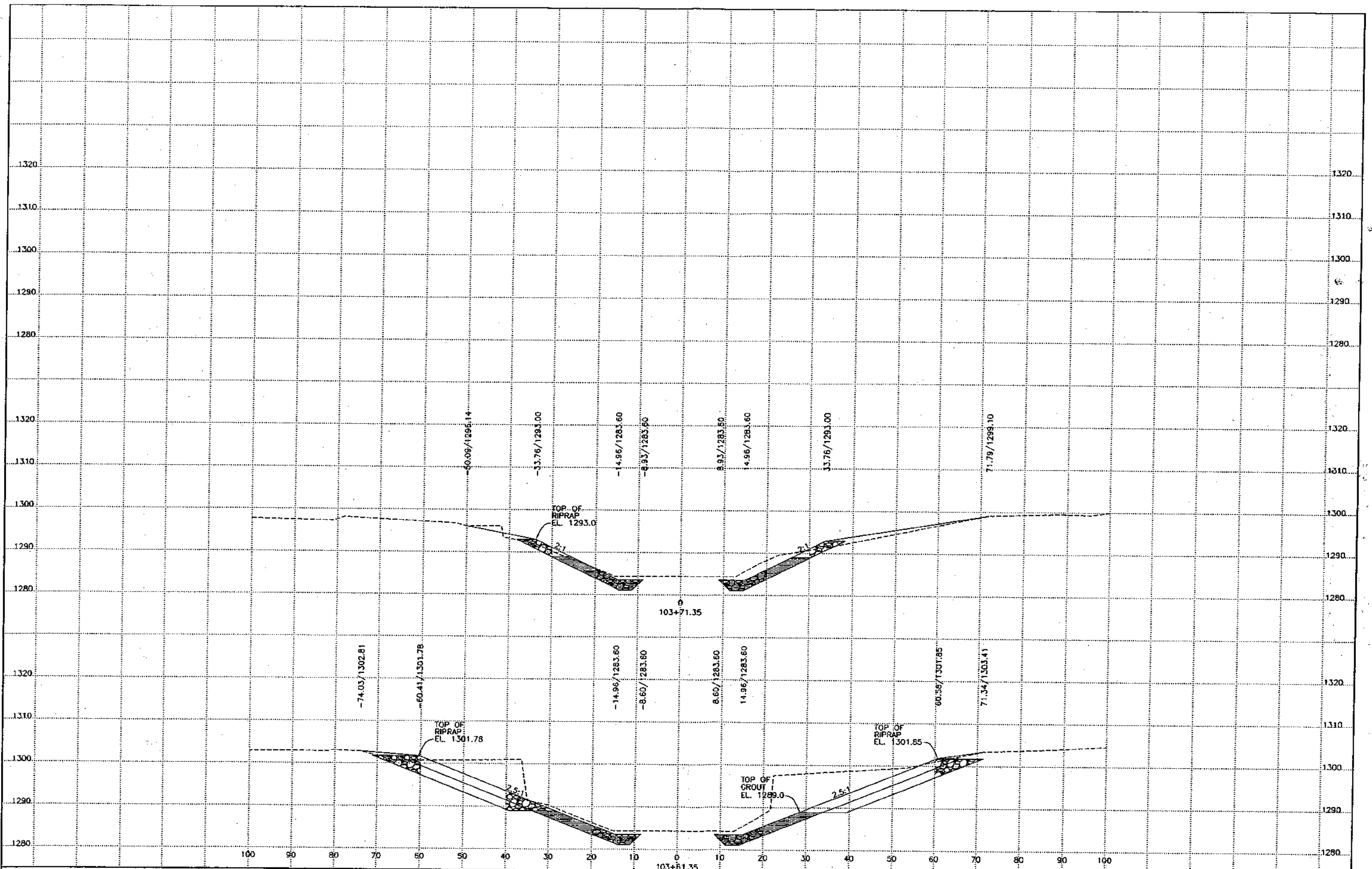
SE PROJECT NO. 06106 DATE: 09/07 DRAWN BY: DRD REVIEWED BY: SAS APPROVED BY: TJG

CRAWFORD COUNTY PROJECT NO. BRS-C024(87)-60-24

SHEET WI







Date Printed: 8/6/2012

* Sufficiency Rating 087 100

* Do Not Change Note

IDENTIFICATION COUNTY ENGR.

* COUNTY/CITY CRAWFORD RICKETTS
COUNTY ID SOLDIER-9911
* 8 STRUCTURE NO 009911
* 5 INVENTORY ROUTE 141000000
2 STATE AREA NO 3
6 FEATURES CROSSED MIDDLE SOLDIER RIVER
7 FACILITY CARRIED MAPLE ST
9 LOCATION 070000500
11 MILE POINT 0.000
98 BORDER BRIDGE CODE SHARE %
* 99 BORDER BRIDGE NO

INSPECTIONS

90 INSPECTION DATE 04/12
91 FREQUENCY 24 MO
92 CRITICAL FEATURE INSPECTION Y/N
93 CF DATE
A FRACTURE CRIT DETAIL N MO A MO YR
B UNDERWATER INSP N MO B MO YR
C OTHER SPECIAL INS N MO C MO YR
Inspected By: EDWARD M. SOWDER
Consulting Firm Name: CALHOUN-BURNS & ASSOC.

STRUCTURE TYPE AND MATERIAL

43 MAIN STRUCTURE TYPE 201
44 APPROACH TYPE NEAR 0 FAR 0
% OF SPANS - MAIN 3
% OF APPR SPAN NEAR 00 FAR 00
107 DECK TYPE 1
108 WEARING SURFACE/PROTECTIVE SYSTEM 1 0 1

CONDITION

RATING (8-0)
58 DECK 9
59 SUPER 9
60 SUB 9
61 CHAN & PROT WEIR 9 8
62 CULV N

AGE AND SERVICE

27 YEAR BUILT 2008
106 YEAR RECONST 0000
42 TYPE OF SERVICE 15
28 LANES ON 2 UNDER 0
* 29 EST AVE DAILY TRAFFIC 480
* 30 YEAR ADT 2008
* 109 TRUCK ADT 00 % (PRIMARY ONLY)
19 BYPASS, DETOUR LENGTH 4.000

LOAD RATING AND POSTING

31 DESIGN LOAD 5-A 64 OPERATING RATING 38.0 79.7 66 INVENTORY RATING 23.0
63 METHOD USED - OPERATING RATING 1 65 METHOD USED - INVENTORY RATING 1
70 BRIDGE POSTING 5 41 STRUCTURE OPEN, POSTED OR CLOSED A
POSTED
CALC OPER ----- 435 ----- 550 ----- 650
CALC INV ----- 428 ----- 540 ----- 640

GEOMETRIC DATA

48 LONGEST SPAN 51 112 NBIS BR 1
STRUCTURE LENGTH 133
% CURB OR SIDEWALK RT 0.0 LT 0.0
51 BR RDWY WIDTH C-C 30.5
52 DECK WIDTH O-O 30.5
32 APPR RDWY WIDTH (W/ SHOULDERS) 0 30
33 BRIDGE MEDIAN 0
34 SKE 0
35 STRUCTURE FLARED ----- 0
10 MIN VERT CLEAR 3m LANE 99 99
47 TOTAL HORIZ CLEAR RT 30.5 LT
53 VERT CLEAR OVER BR RDWY RT 99 99 LT
54 VERT UNDERCLEAR RT N 0 00
55 LAT UNDERCLEAR RT N 0 00
56 LAT UNDERCLEAR LT

APPRAISAL

RATING (8-0)
67 STRUC EVAL LEGAL 6 8
68 DECK GEO 6
69 UNDERCLEAR, VERT & HORI N
71 WATER ADQ 8
72 APP RDWY ALIG 8
36 TRAFFIC SAFETY FEATURES 1-1-1-1 1000 113 SCOUR CRIT BR 7

NAVIGATION DATA

38 NAVIGATION CONTROL 0
111 PIER PROTECTION
39 NAV VERT CLEARANC 0
116 VERT-LIFT BR NAV MIN VERT CLEAR 00.0
40 NAVIGATION HORIZ CLEAR 0
LAST RECORDED INSPECTION 4/2010 NO POSTING REQUIRED.

PROPOSED IMPROVEMENTS

75 TYPE OF WORK ----- 381 76 LENGTH OF STRUCT. IMPR 0----- 133
94 BRIDGE IMP. COST (1000's) 0----- 15 95 RDWY IMPROVE COST (1000's) 0----- 7
96 TOTAL PROJ. COST (1000's) ----- 22 97 YEAR IMPROVE ESTIMATE MADE 0----- 2012

CLASSIFICATION

101 PARALLEL HIGHWAY N 103 TEMPORARY STRUCTURE
102 DIRECTION OF TRAFFIC 2 * 26 FUNC CL 07 MAJ COLL
20 TOLL 3 21 MAINTAIN 02 22 OWNER 02