

7a

Project Number: L-B(M299)--73-97

SECTION 404 PERMIT AND CONDITIONS

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF THE U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NO 14, CENVR-RO-2022-0318. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (http://enrpermits.iowadot.gov/) THE US ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

IOWA DEPARTMENT OF TRANSPORTATION

Highway Division

PLANS OF PROPOSED IMPROVEMENT ON THE

SECONDARY ROAD SYSTEM WOODBURY COUNTY

RCB CULVERT NEW PROJECT NO. L-B(M299)--73-97

The Iowa Department of Transportation Standard Specifications for Highway and Bridge Construction, series of 2015, plus current Supplemental Specifications and Special Provisions shall apply to construction work on this project.

Plus Current Special Provisions and Supplemental Specifications

On Taylor Ave. over stream from 230th St. North 0.8 miles in Section 2 T87N R42W

INDEX OF SHEETS

Table with 2 columns: No. and Description. Rows include: 1 TITLE SHEET, 2 LOCATION PLAN, 3 ESTIMATE OF QUANTITIES AND GENERAL INFORMATION, 4 PLAN VIEW, 5 PROFILE, 6 SITUATION PLAN. ROADWAY CROSS SECTIONS AVAILABLE AT THE WOODBURY COUNTY ENGINEERS OFFICE

ROAD STANDARD PLANS

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

Table with 6 columns: Identification, Date, Identification, Date, Identification, Date. Rows include: EW-101 (10-17-17), EW-402 (04-10-17), TC-252 (04-21-20)

RCB STANDARD PLANS

(May be obtained at Woodbury County Engineer Office)

Table with 6 columns: Standard, Date Issued, Date Revised, Standard, Date Issued, Date Revised. Rows include: RCB C1-20 (JULY, 2020), RCB C2-20 (JULY, 2020), RCB C3-20 (JULY, 2020), RCB 10-8-20 (JULY, 2020), FWH 45-1-21 (FEBRUARY, 2021), FWH 45-2-21 (FEBRUARY, 2021)

NEW RCB CULVERT

PROJECT NO: L-B(M299)--73-97

TRAFFIC CONTROL PLAN

THIS ROAD WILL BE CLOSED TO THROUGH TRAFFIC DURING CONSTRUCTION. TRAFFIC ROUTES ADJACENT TO 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 OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 701 OF THE IOWA ADMINISTRATION CODE (IAC) CHAPTER 133.

MAINTENANCE OF SIGNS AND BARRICADES AS STATED IN ARTICLE 1107.09 SHALL APPLY ON THIS PROJECT.

SIGNING ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ROAD STANDARD TC-252

Approval signature lines with handwritten signatures and a 'Board of Supervisors' label.



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. Mark J. Nahra 4/5/2022

Iowa Registration Number 11452 Expiration Date 12/31/2022

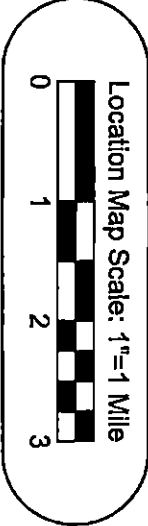
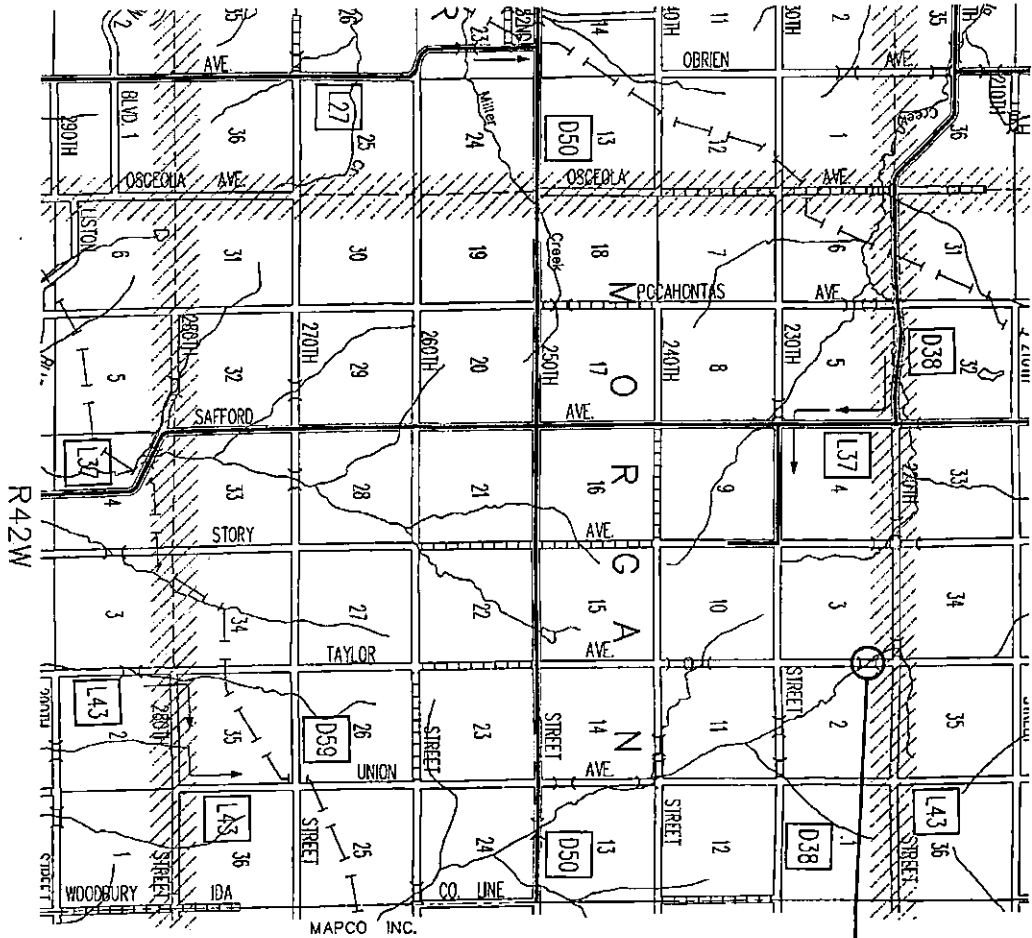
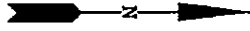
Pages or sheets covered by this seal: Pages 1 - 6

2019 AADT 5 V.P.D.

WOODBURY COUNTY

Letting Date MAY 03, 2022





T-87N

L-B(M299)-73-97  
BRIDGE REPLACEMENT

PROJECT NO. L-802981-73-97 SHEET 2	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON TAYLOR AVE. SEC. 2,3 T87N R42W MORGAN TOWNSHIP	DSSB DRAWN BY: _____ BK DESIGNED BY: _____ MJN APPROVED BY: _____ DATE: _____ REVISION: _____ DATE: _____	<b>WOODBURY COUNTY</b> ENGINEERS OFFICE
	SHEET DESCRIPTION: LOCATION MAP		

**GENERAL NOTES:**

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

A UTILITY ONE CALL (1-800-292-8989) WILL BE MADE BY THE CONTRACTOR WITHIN 30 DAYS OF RECEIVING A SIGNED CONTRACT AND NO LESS THEN 10 WORKING DAYS BEFORE BEGINNING THE PROJECT. THE CONTRACTOR WILL NOTIFY THE WOODBURY COUNTY ENGINEER'S OFFICE WITH THE ONE CALL UTILITY MEETING TIME.

CONTRACTOR IS RESPONSIBLE FOR CLEANING UP AREAS OF THE PROJECT AS WORK PROGRESSES. ALL RUBBISH, EXCESS MATERIALS, EQUIPMENT, DEBRIS, AND GRUBBED MATERIALS SHALL BE CLEANED UP AND REMOVED FROM THE WORK AREAS PRIOR TO ACCEPTANCE OF THE PROJECT.

**DESIGN STRESSES**

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2015. REINFORCING STEEL IN ACCORDANCE WITH SECTION 8, GRADE 80. CONCRETE IN ACCORDANCE WITH SECTION 8,  $f_c = 3,500$  psi.

**SPECIFICATIONS**

DESIGN: A.A.S.H.T.O. STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SERIES OF 2015, AND ALL CURRENT REVISIONS.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES OF 2015, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

**SCHEDULE OF OPERATION**

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO THE PRECONSTRUCTION CONFERENCE, A WRITTEN SCHEDULE FOR PERFORMANCE OF THE WORK ITEMS. THE SCHEDULE SHALL BE IN THE FORM OF A BAR GRAPH OR CHART SHOWING STARTING AND COMPLETION DATES FOR THE ITEMS. THE CONTRACTOR SHALL THEN MAKE EVERY EFFORT TO CONFORM TO THE ACCEPTED SCHEDULE.

**CULVERT GENERAL NOTES**

DESIGNED FOR A FILL HEIGHT OF 8'.

THE REINFORCEMENT SUPPLIED FOR THIS STRUCTURE SHALL BE GRADE 60 REINFORCING STEEL IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

METAL BAR CHAIRS SPACED AT NOT OVER 3'-0" C-C IN EITHER DIRECTION ARE TO BE USED TO SUPPORT ALL SLAB AND FLOOR STEEL AS OUTLINED IN THE STANDARD SPECIFICATIONS (ARTICLE 2404.07).

THE CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR EDGE OR END OF REINFORCING BAR SHALL BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

ALL REINFORCING STEEL SHALL BE SECURELY WREID IN PLACE BEFORE THE CONCRETE IS POURED (ARTICLE 2404.06).

FLOOR OF BARREL SHALL BE FINISHED SMOOTH. SIDE OF FOOTING SHALL BE FORMED TO INSURE CORRECT LINE AND GRADE.

ALL EXPOSED CORNERS 90 DEGREES OR SHARPER SHALL BE FILLETED WITH A 3/4" DRESSED AND BEVELED STRIP.

THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED.

**ESTIMATE REFERENCE INFORMATION**  
THE DATA BELOW IS FOR INFORMATIONAL PURPOSE ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS.

- THIS ITEM INCLUDES REMOVAL OF TREES AND WOODY PLANTS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL HAVE WRITTEN PERMISSION BEFORE BURNING GRUBBED MATERIALS ON PRIVATE PROPERTY. NO BURNING OF GRUBBED MATERIALS ON INSIDE PROJECT LIMITS ALLOWED.
- SEE TABULATION WOOD-100 ON THIS SHEET FOR BREAKDOWN OF CUT AND FILLS. TYPE "A" COMPACTION IS REQUIRED. AFTER ALL MATERIAL HAS BEEN DEPLETED, THE CONTRACTOR SHALL FURNISH HIS OWN BORROW MATERIAL FOR EMBANKMENT-IN-PLACE. NO PAYMENT FOR OVERHAUL SHALL BE MADE ON THIS PROJECT.
- GRANULAR SURFACING SHALL BE COMPACTED WITH SMOOTH DRUM ROLLER IN TWO (2) - 3" LIFTS. THE FIRST LIFT SHALL BE SCARIFIED INTO THE ROADWAY PRIOR TO COMPACTION.
- BID ITEM SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING THREE SPAN BRIDGE WITH W 16x40 I-BEAM MAIN SPAN AND TIMBER APPROACHES. THE STRUCTURE IS 71' LONG, 17.6' WIDE. BRIDGE CONSISTS OF A TIMBER PLANK DECK, SUBSTRUCTURE CONSISTS OF TIMBER PILES. ALL SUBSTRUCTURE ITEMS SHALL BE REMOVED TO A MINIMUM OF 2'-0" BELOW FINISHED GROUND. BRIDGE DECK PLANK AND STEEL I-BEAMS SHALL BE SALVAGED AND STOCK PILED ON SITE AND SHALL REMAIN THE PROPERTY OF WOODBURY COUNTY. REMAINING BRIDGE ITEMS THAT ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE PROJECT SITE ACCORDING TO APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
- GRANULAR BACKFILL SHALL BE PLACED UNDER THE REINFORCED BOX CULVERT 12" DEEP. THE MATERIAL SHALL BE COMPACTED WITH A SMOOTH DRUM ROLLER OR VIBRATING PLATE TO THE SATISFACTION OF THE ENGINEER. THE MATERIAL SHALL MEET THE SPECIFICATIONS OF GRADATION 14 AS SET FORTH BY THE IOWA DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION.
- THIS BID ITEM INCLUDES ALL MATERIAL EXCAVATED FOR THE PLACEMENT OF THE PROPOSED ROADWAY CULVERT. EXCAVATED MATERIAL MAY BE USED AS ROADWAY BORROW IF DEEMED SUITABLE BY THE ENGINEER. SEE TABULATION WOOD-100 ON THIS SHEET FOR BREAKDOWN OF CUT AND FILLS.
- AGGREGATE SHALL BE CLASS 2 DURABILITY. ITEMIZED CONCRETE PLACEMENT QUANTITIES ARE INDICATED BELOW THE ESTIMATED PROJECT QUANTITIES. CONCRETE SHALL BE CLASS "C-1".
- TEMPORARY STREAM DIVERSION AS PER STANDARD PLAN EW-402. STREAM SHALL BE DIVERTED BY PUMPING, NO DIVERSION OF THE CHANNEL WILL BE ALLOWED.
- THIS BID ITEM SHALL INCLUDE PROVIDING, INSTALLING, MAINTAINING AND REMOVING SAFETY CLOSURES ACCORDING TO IDOT STANDARD SPECIFICATIONS.
- THIS ITEM SHALL BE FULL COMPENSATION FOR PLACEMENT OF NEW 4 STRAND BARB WIRE FENCE. NEW FENCE SHALL BE INSTALLED ALTERNATING BETWEEN STEEL AND WOOD FENCE POSTS, FENCE TO BE INSTALLED BETWEEN STA. 9+00 AND STA. 10+00.
- THIS ITEM SHALL BE FULL COMPENSATION FOR CONSTRUCTION SIGNING ADJACENT TO ROADWAY
- 16,17. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER ALL AREAS TO BE SEEDD PRIOR TO COMMENCING ANY WORK ON THIS ITEM. IF SEEDING IS PROPOSED BY HYDRO SEEDING IN PLACE OF MECHANICALLY APPLIED SEED THE WORK (HYDROSEED) SHALL BE DONE AT CONTRACT PRICE AS BID.

ESTIMATED PROJECT QUANTITIES				
ITEM	ITEM CODE	DESCRIPTION	UNITS	TOTALS
1.	2101-0850001	CLEARING AND GRUBBING	AC.	0.22
2.	2102-2625000	EMBANKMENT-IN-PLACE	C.Y.	1,444
3.	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	C.Y.	22
4.	2104-2712020	EXCAVATION, CLASS 10, CHANNEL	C.Y.	1,641
5.	2312-8280310	GRANULAR SURFACE ON ROAD CRUSHED CONCRETE	TON	160
6.	2401-6745625	REMOVAL OF EXISTING BRIDGE	L.S.	1
7.	2402-0425030	GRANULAR BACKFILL	C.Y.	101
8.	2402-2720000	EXCAVATION, CLASS 20	C.Y.	1,595
9.	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	C.Y.	207.4
10.	2404-7775000	REINFORCING STEEL	LB.	31,642
11.	2518-0000010	TEMPORARY STREAM DIVERSION	EACH	1
12.	2518-6910000	SAFETY CLOSURE	EACH	2
13.	2519-3280000	FENCE, FIELD	L.F.	100
14.	2528-8445110	TRAFFIC CONTROL	L.S.	1
15.	2533-4080005	MOBILIZATION	L.S.	1
16.	2801-2634100	MULCHING	ACRES	0.60
17.	2801-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRES	0.60

**CONCRETE AND REINFORCING STEEL SUBTOTALS FOR A 10'x8'x93" RCB CULVERT**

LOCATION	CONCRETE QUANTITIES, C.Y.				REINFORCING STEEL LBS.
	FLOOR	WALLS	SLAB	TOTAL	
HEADWALLS	87.2	27.4	4.4	99.0	13,042
32' BARREL	13.8	13.6	10.1	37.3	8,400
32' BARREL	13.8	13.6	10.1	37.3	8,400
29' BARREL	12.3	12.3	8.2	33.8	5,800
<b>TOTALS</b>	<b>105.7</b>	<b>66.9</b>	<b>33.8</b>	<b>207.4</b>	<b>31,642</b>

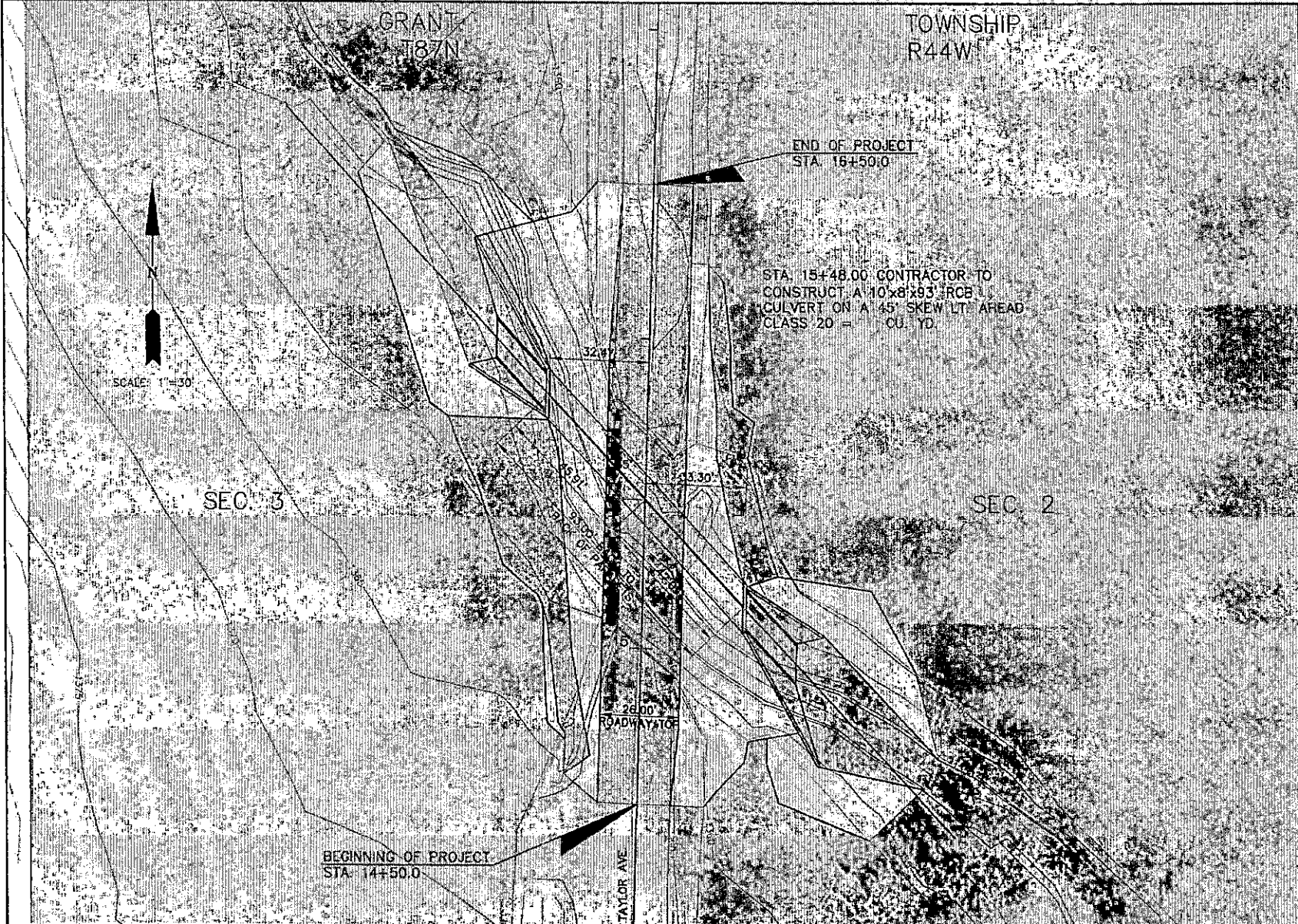
WOOD-100 SUMMARY OF EARTHWORK QUANTITIES							
EXCAVATION TYPE	RAW CUT	RAW FILL	WASTE *****	USABLE	SHRINKAGE FACTOR	FILL + 40% SHRINKAGE	PAYMENT QUANTITY
	CY	CY	CY	CY			
EXCAVATION 10 RDWY & BORROW	22	1,795	0	22	40%	2,513	22
EXCAVATION 10 CHANNEL	1,641	33	0	800	40%	49	1,641
EXCAVATION 20	1,695	1,291	0	1,200	40%	1,897	1,695
<b>TOTALS</b>				2022	40%	4,358	
EMBANKMENT IN PLACE (EIP)	EIP = (4,366-2,022)/1.4 SHRINK =						1,444

WOODBURY COUNTY  
ENGINEERS OFFICE

DATE: \_\_\_\_\_  
REASON: \_\_\_\_\_  
DATE: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_

BRIDGE REPLACEMENT ON TAYLOR AVE.  
SEC. 2, 3 T87N R42W MORGAN TOWNSHIP  
ESTIMATE OF QUANTITIES AND  
GENERAL INFORMATION

PROJECT NO. L-B(M200)-73-07  
SHEET  
3



WOODBURY COUNTY  
ENGINEERS OFFICE

DATE	REVISION

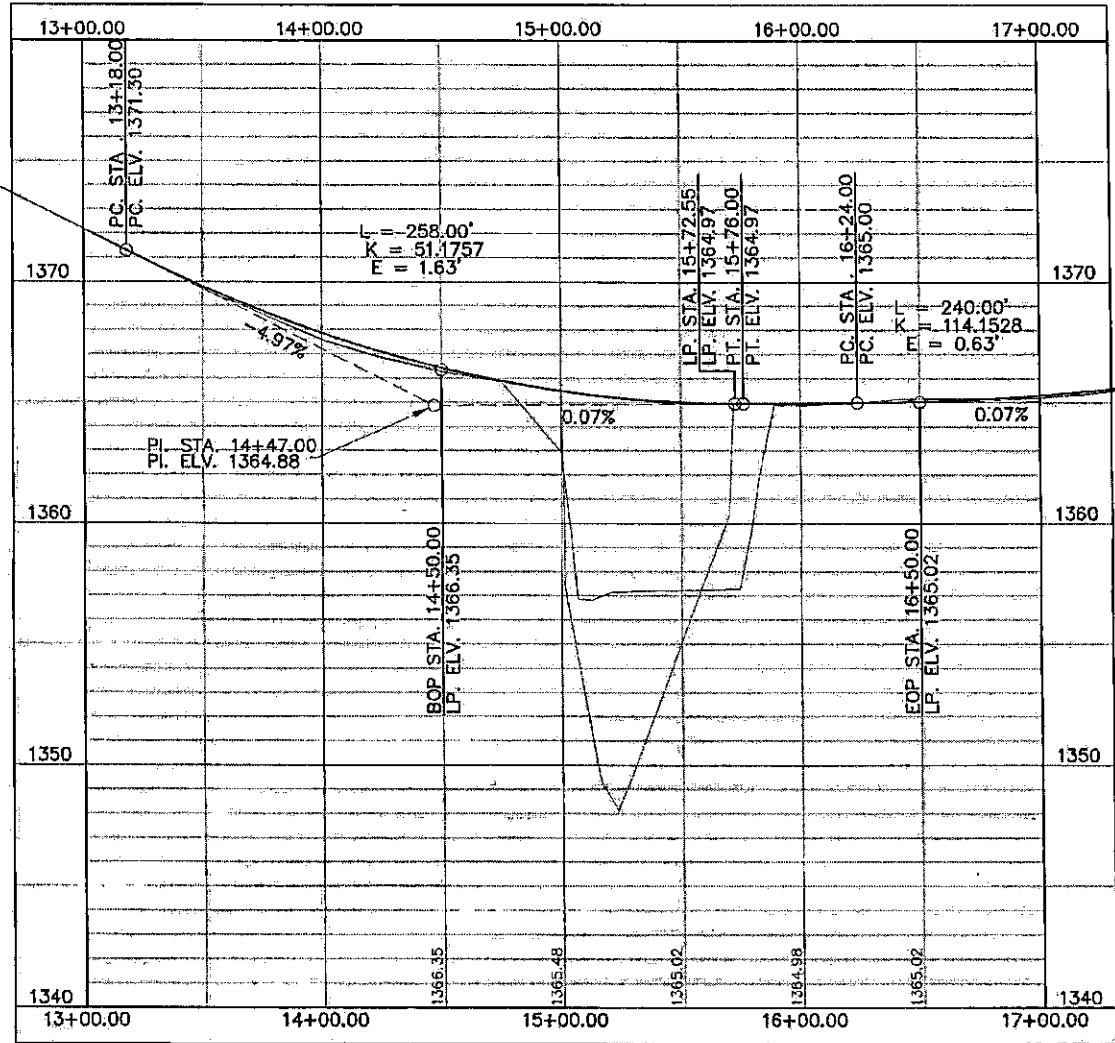
DESIGNED BY: M.S.K.  
APPROVED BY: [Signature]

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON TAYLOR AVE.  
SEC. 2, 3 T87N R44W MORGAN TOWNSHIP

SHEET DESCRIPTION: PLAN VIEW

PROJECT NO.  
L-6(M299)-73-97

SHEET  
4



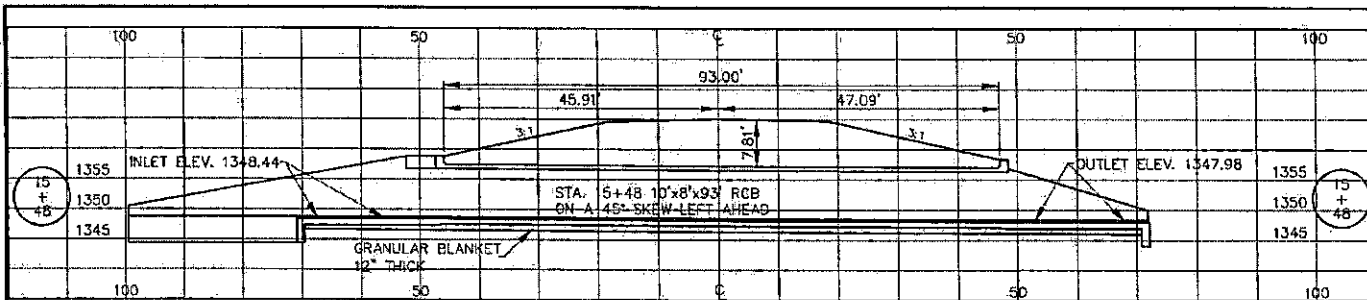
WOODBURY COUNTY  
ENGINEERS OFFICE

BSS	DATE
DRAWN BY:	REVISION
CHK	DATE
DESIGNED BY:	REVISION
MJK	DATE
APPROVED BY:	REVISION
DATE	DATE

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON TAYLOR AVE.  
SEC. 23 T87N R42W MORGAN TOWNSHIP

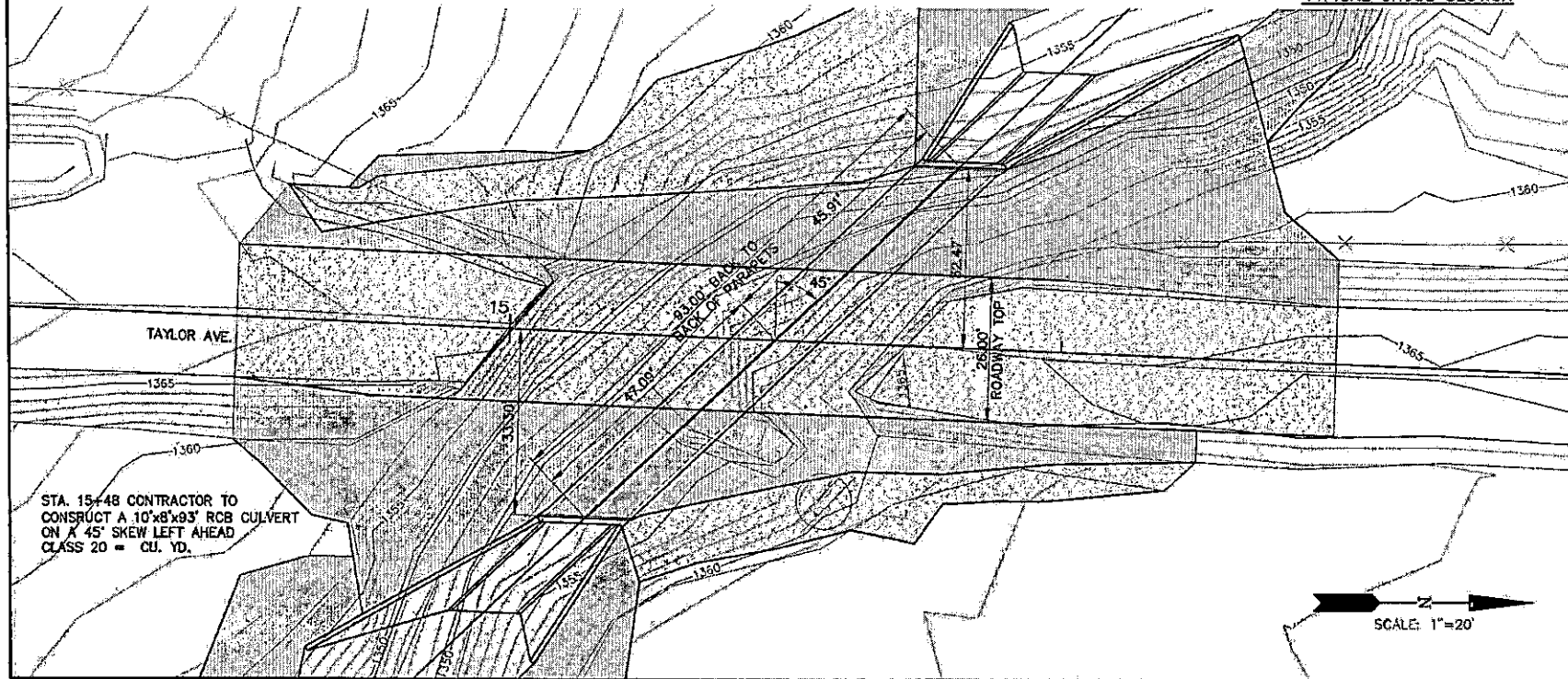
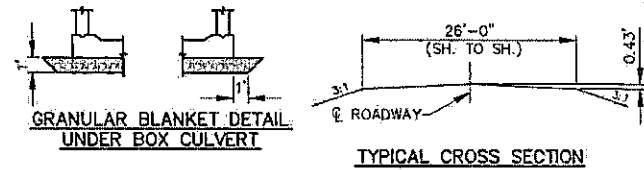
SHEET DESCRIPTION: PROFILE

PROJECT NO.  
Lb(m299)-73-97  
SHEET  
5



**LOCATION**  
 WOODBURY COUNTY  
 T87N, R42W, SECTION 2  
 MORGAN TOWNSHIP OVER UNNAMED STREAM  
**HYDRAULIC DATA**  
 DRAINAGE AREA = 0.95 SQ. MI.  
 STREAM SLOPE = 76.3 FT./MI.  
 Q10 = 551 CFS      Q25 = 659 CFS  
 Q50 = 1070 CFS      Q100 = 1280 CFS  
 STAGE = 1359.33

**LONGITUDINAL SECTION OF 10'x8' RCB  
 ON A 45° SKEW LT. AHEAD**  
 ALL DIMENSIONS ARE ALONG THE SKEW SCALE 1"=20'



**WOODBURY COUNTY  
 ENGINEERS OFFICE**

DRAWN BY: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_

**PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON TAYLOR AVE.  
 SEC. 2, 3 T87N R42W MORGAN TOWNSHIP**

**SHEET DESCRIPTION: SITUATION VIEW**

PROJECT NO. L-B(M280)-73-97  
 SHEET  
**6**