4-25-17
102

PATRICK F. GILL
WOODBURY COUNTY
AUDITOR & RECORDER &
COMM. OF ELECTIONS

2017 MAY 22 PM 2:28

FHWA STRUCTURE #350620

Project Number: L-B(W107)--73-97

PPCB BRIDGE REPLACEMENT

WOODBURY COUNTY

PROJECT NO: L-B(W107)--73-97

Letting Date MAY 16, 2017

Project Development Division

PLANS OF PROPOSED IMPROVEMENT ON THE

SECONDARY ROAD SYSTEM

WOODBURY COUNTY

80' x 30'-6" P.P.C.B. Bridge

PROJECT NO: L-B(W107)--73-97

OTO Township On 330th Street Sec. 26, T86N, R43W

INDEX OF SHEETS

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12	TOP OF SLAB DETAILS
	ROADWAY AND CHANNEL CROSS SECTIONS AVAILABLE AT COUNTY ENGINEERS OFFICE

ROAD STANDARD PLANS

The following Bridge Standards shall be considered applicable to construction work on this project.

Identification	Date	Identification	Date	Identification	Date
BA-200	10-18-16	EW-301	10-20-15		
BA-202	10-20-15	SI-173	04-19-16		
BA-221	04-18-17	SI-211	10-18-16		
BA-225	06-24-16	TC-252	04-19-16		
LS-635	10-18-16				

BRIDGE STANDARDS

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

Identification	Date	Identification	Date	Identification	Date
H30SI-01-12	05-13	H30SI-08-12	05-15	H30SI-38-12	04-12
H30SI-01A-12	05-13	H30SI-25-12	04-12	H30SI-40-12	04-12
H30SI-02-12	06-12	H30SI-26-12	04-12	H30SI-42-12	09-14
H30SI-04-12	05-13	H30SI-30-12	04-12	H30SI-45-12	09-14
H30SI-06-12	04-12	H30SI-34-12	04-12		
H30SI-07-12	05-13	H30SI-35-12	04-12		

UTILITY CONTACTS

WESTERN IOWA TELEPHONE – 712-870-1298
WOODBURY COUNTY REC – 712-870-1031

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, AND SIGNING 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.

ALL SAFETY CLOSURES SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR.

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

ROAD CLOSURES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ROAD STANDARD TC-252. GUARDRAIL INSTALLATION MUST BE COMPLETE BEFORE THE ROAD IS OPENED TO TRAFFIC.

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

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 14. PERMIT CEMVR-OD-P-2017-0274. 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.

Approved

Board of Supervisors

LICENSED PROFESSIONAL ENGINEER
MARK J. NAHRA
11452
IOWA

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Mark J. Nahra 4/25/2017
Date

Iowa Registration Number 11452
Expiration Date 12/31/2018

Pages or sheets covered by this seal:
Pages 1, thru 12

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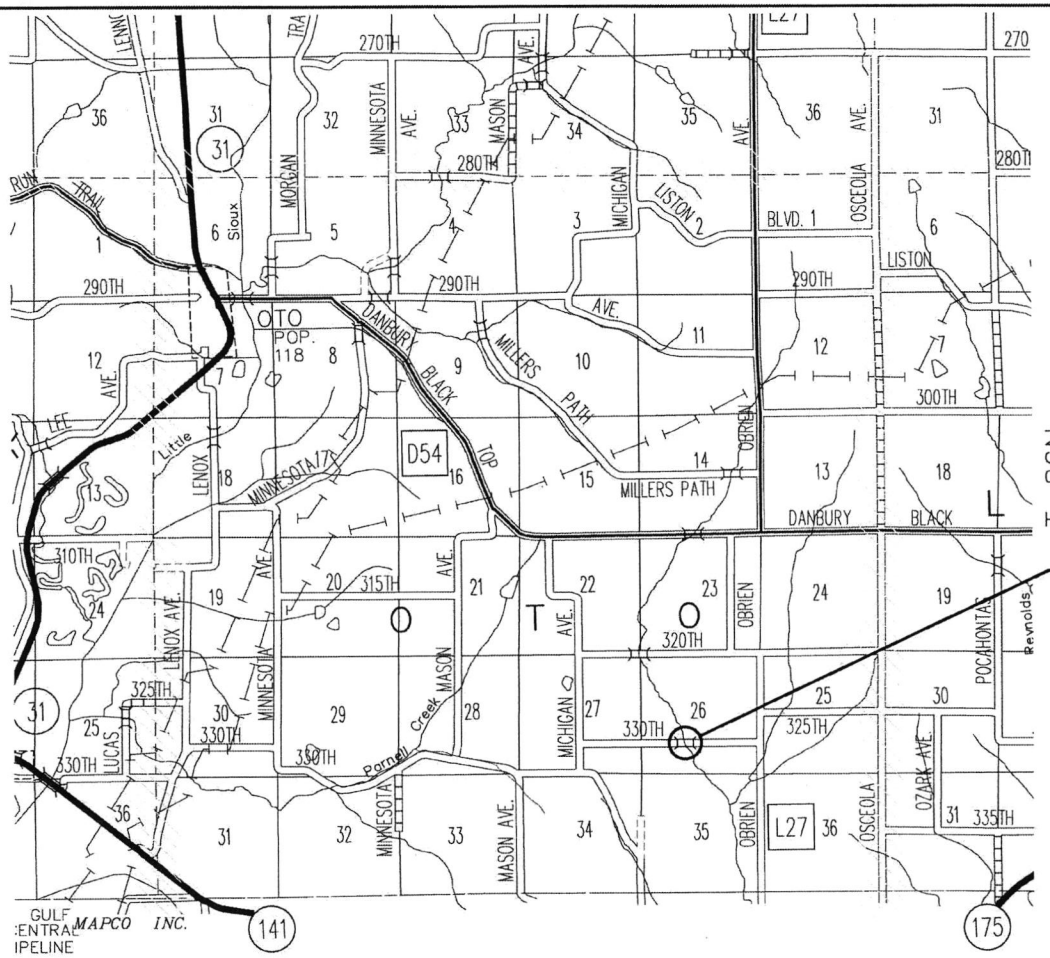
2015 AADT 5 V.P.D.



N

Location Map Scale: 1"=1 Mile

0 1 2 3

WOODBURY COUNTY
ENGINEERS OFFICE

DRAWN BY:	DESIGNED BY:	APPROVED BY:	DATE:	REVISION	DATE:
BSB	BK	MJN			

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: LOCATION MAP

PROJECT NO.
L-B(W107)--73-97
SHEET
2

ESTIMATED QUANTITIES

No.	ITEM CODE	ITEM	UNIT	TOTAL
1.	2101-0850001	CLEARING AND GRUBBING	ACRE	0.28
2.	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	C.Y.	794
3.	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	C.Y.	1,381
4.	2312-8260310	GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE	TON	120
5.	2401-6745625	REMOVAL OF EXISTING BRIDGE	LUMP SUM	1
6.	2402-2720000	EXCAVATION, CLASS 20	C.Y.	355
7.	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	C.Y.	158.7
8.	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB.	38,523
9.	2407-0551380	BEAMS, PRETENSIONED PRESTRESSED CONCRETE, C80	EACH	5
10.	2408-7800000	STRUCTURAL STEEL	LB.	1,180
11.	2414-6424124	CONCRETE OPEN RAILING, TL-4	LIN. FT.	214
12.	2501-0201057	PILES, STEEL, HP 10x57	LIN. FT.	1260
13.	2505-4008420	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-221	EACH	4
14.	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4
15.	2505-4021722	STEEL BEAM GUARDRAIL FLARED END TERMINAL, BA-225	EACH	4
16.	2507-3250005	ENGINEERING FABRIC	S.Y.	800
17.	2507-6800061	REVETMENT, CLASS E	TON	651
18.	2518-6910000	SAFETY CLOSURE	EACH	2
19.	2528-8445110	TRAFFIC CONTROL	LUMP SUM	1
20.	2533-4980005	MOBILIZATION	LUMP SUM	1
21.	2601-2634100	MULCHING	ACRE	0.28
22.	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.28
23.	2602-0000020	SILT FENCE	LIN. FT.	200
24.	2602-0000030	SILT FENCE FOR DITCH CHECKS	LIN. FT.	72

SUMMARY OF BRIDGE QUANTITIES

ITEM	UNITS	SUPER STRUCTURE	ABUT. NO. 1 FOOTING	ABUT. NO. 2 FOOTING	TOTALS
EXCAVATION CLASS 20	C.Y.		172	183	355
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	*124.3	17.2	17.2	158.7
REINFORCING STEEL, EPOXY COATED	LBS	38,523			38,523
CONCRETE OPEN RAILING	LF	214			214
HP10x57 STEEL FRICTION PILING	LF		9 AT 70.0 =630	9 AT 70.0 =630	1260
BEAMS, PRETENSIONED PRESTRESSED CONCRETE, C80	EACH	5			5
STRUCTURAL STEEL	LB	1,180			1,180

* NOTE - INCLUDES ABUTMENT WINGS

WOODBURY COUNTY
ENGINEERS OFFICE

BSB,BK DRAWN BY:
BJK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: ESTIMATE OF QUANTITIES

PROJECT NO.
L-B(W107)--73-97

SHEET
3

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2101–0850001	**CLEARING AND GRUBBING** CLEAR AND GRUBB SHALL CONSIST OF REMOVAL OF ALL VEGETATION IN THE CONSTRUCTION LIMITS. ALL MATERIALS BRUSH, TREES, ETC. SHALL BE DISPOSED OF OFF OF THE PROJECTS LIMITS. NO BURNING WITHIN THE PROJECT LIMITS ALLOWED. IF THE CONTRACTOR WANTS TO BURN ON PRIVATE PROPERTY ADJACENT TO THE PROJECT THEY WILL SUPPLY THE PROJECT ENGINEER WITH A LETTER SIGNED BY THE LAND OWNER ALLOWING THE BURNING.
2	2102–2710070	**EXCAVATION CLASS 10, ROADWAY AND BORROW** MATERIAL SHALL BE FREE FROM FOREIGN MATERIAL AND HAVE ADEQUATE MOISTURE TO ALLOW COMPACTION AT THE CONTRACTOR'S EXPENSE IF NECESSARY TO COMPLETE COMPACTION. ROADWAY PORTION OF CLASS 10 SHALL BE COMPACTED USING A VIBRATORY ROLLER. FILL CALCULATIONS INCLUDE A 40% SHRINKAGE FACTOR, NO PAYMENT FOR OVERHAUL WILL BE ALLOWED. THE APPROACH BERMS SHALL BE BUILT TO THE CONSTRUCTION LIMITS PRIOR TO THE ABUTMENT PILE BEING PLACED. MATERIAL FROM ITEM 3 MAY BE USED FOR BORROW MATERIAL IF SUITABLE. 794 C.Y. (FILL+40%)– 206 C.Y. CUT = 588 C.Y. BORROW TO BE SUPPLIED BY THE CONTRACTOR.
3	2104–2710020	**EXCAVATION CLASS 10 CHANNEL** QUANTITY OF EXCAVATION IS 1381 C.Y. (CUT) AND 253 C.Y. (FILL + 40%). EXCESS MATERIAL MAY BE USED AS ROADWAY BORROW IF DEEMED SUITABLE BY THE ENGINEER. UNUSED MATERIAL SHALL BE DISPOSED OF OFF THE PROJECT SITE ACCORDING TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
4	2312–8260310	**GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE** GRANULAR SURFACING SHALL BE PLACED IN TWO (2), TWO (2) INCH LIFTS. THE FIRST LIFT SHALL BE SCARIFIED INTO THE ROADWAY AND ROLLED WITH A SMOOTH DRUM ROLLER. THE SECOND LIFT SHALL BE PLACED AND BLADED TO THE CORRECT CROWN.
5	2401–6745625	**REMOVAL OF EXISTING BRIDGE** BID ITEM SHALL INCLUDE THE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE (FHWA STR. NO. 350620). THE BRIDGE IS A 65' LONG AND 17.4' WIDE 3 SPAN I–BEAM BRIDGE WITH TIMBER PILE, BACKING PLANK AND PILE CAPS, APPROACH SPANS ARE TIMBER STRINGERS. THE SUBSTRUCTURE SHALL BE REMOVED TO A DEPTH OF 3 FEET BELOW STREAM BED. BRIDGE DECK PLANK AND STEEL I–BEAMS SALVAGED AND STOCK PILED ON SITE. ALL OTHER MATERIALS SHALL BE DISPOSED OF OFF OF THE PROJECT LIMITS ACCORDING TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. LABORATORY RESULTS SHOW NO TRACES OF ASBESTOS. TEST RESULTS FOR LEAD AND CHROMIUM CAN BE FOUND ON SHEET 5.. BRIDGE PLANK SHALL REMAIN THE PROPERTY OF WOODBURY COUNTY.
6	2402–2720000	**EXCAVATION, CLASS 20** BID ITEM IS FOR EXCAVATION REQUIRED FOR CONSTRUCTION OF THE ABUTMENT FOOTINGS. SEE "SUMMARY OF BRIDGE QUANTITIES" TABLE ON SHEET 3 FOR EXCAVATION QUANTITY AT EACH ABUTMENT.
10	2403–0100010	**STRUCTURAL CONCRETE (BRIDGE)** INCLUDES COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL AND POROUS BACKFILL AT ABUTMENTS. THE CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION FOR THE CONCRETE USED IN THE BRIDGE CONSTRUCTION. THE COST OF THIS INSPECTION SHALL BE INCIDENTAL TO THIS ITEM.
12	2501–0201057	**PILES, STEEL, HP 10x57** PILE POINTS TO BE ADDED TO PILES DUE TO SOIL CONDITIONS AT AN ELEVATION OF 1,171.0± AND ALL COSTS FOR FURNISHING AND ATTACHING PILE POINTS TO 18 ABUTMENT PILES TO BE INCIDENTAL TO THIS BID ITEM.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
16	2507–3250005	**ENGINEERING FABRIC** ENGINEERING FABRIC SHALL BE PLACED UNDERNEATH AND AT THE LIMITS OF THE CLASS "E" REVETMENT. SEE SHEET 7 FOR DETAILS.
17	2507–6800061	**REVETMENT, CLASS E** REVETMENT SHALL BE PLACED AT A THICKNESS OF APPROXIMATELY 2'. SEE THE PLAN VIEW ON SHEET 7 FOR PLACEMENT LIMITS.
18	2518–6910000	**SAFETY CLOSURE** THIS ITEM SHALL INCLUDE PROVIDING, INSTALLING, MAINTAINING AND REMOVING SAFETY CLOSURES ACCORDING TO IDOT STANDARD SPECIFICATIONS AT THE LOCATIONS INDICATED IN THE TABLE ON SHEET 6.
19	2528–8445110	**TRAFFIC CONTROL** THIS ITEM SHALL INCLUDE FURNISHING, INSTALLING, MAINTAINING AND REMOVING SIGNING AS PER THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPTER 130 AND STANDARD ROAD PLAN TC–252.
21	2601–2634100	**MULCHING** MULCHING AS PER I.D.O.T. STANDARD SPECIFICATION 2601.03 E.
22	2601–2636043	**SEEDING AND FERTILIZING (RURAL)** SEEDING SHALL MEET THE REQUIREMENTS SET FORTH IN IDOT 2015 STANDARD SPECIFICATIONS AND ANY APPLICABLE SUPPLEMENTAL SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER ALL AREAS TO BE SEEDED PRIOR TO COMMENCING ANY WORK ON THIS ITEM.
23	2602–0000020	**SILT FENCE** SILT FENCE SHALL BE PLACED AS DIRT WORK IS COMPLETED
24	2602–0000030	**SILT FENCE DITCH CHECKS** DITCH CHECKS SHALL BE PLACED ONCE THE DITCH CONSTRUCTED HAS BEEN COMPLETED.

WOODBURY COUNTY
ENGINEERS OFFICE

DRAWN BY: BSB,BK
DESIGNED BY: BK
APPROVED BY: MJN
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: ESTIMATE REFERENCE INFORMATION

PROJECT NO.
L-B(W107)–73-97

SHEET
4

GENERAL NOTES:

CONTRACTOR SHALL CONFINE WORK TO THE COUNTY R.O.W. AND TEMPORARY EASEMENT UNLESS PERMISSION FROM RESPECTIVE LANDOWNERS IS PROVIDED TO THE COUNTY IN WRITING.

THE ENGINEER MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. PRIOR TO COMMENCING WORK. THE CONTRACTOR SHALL CONTACT IOWA ONE-CALL AT 1-800-292-8989 FOR UTILITY RELOCATES.

THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES (PUBLIC AND PRIVATE) AT LEAST 20 DAYS IN ADVANCE OF THE ACTUAL STARTING DATE OF CONSTRUCTION. THE CONTRACTOR IS TO DETERMINE ACTUAL LOCATION OF UTILITIES IN THE FIELD. THE CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL UTILITY LINES. BREAKS IN THE UTILITY LINES DUE TO THE CONTRACTOR ARE TO BE REPAIRED OR REPLACED WITHOUT COST TO THE OWNER OR ENGINEER.

OTHER EXISTING UNDERGROUND INSTALLATIONS AND STRUCTURES ARE INDICATED ON THE DRAWINGS ACCORDING TO THE INFORMATION FURNISHED TO THE ENGINEER BY OTHERS. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF SUCH INFORMATION. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO LOCATE ALL EXISTING UNDERGROUND INSTALLATIONS AND STRUCTURES IN THE VICINITY OF THE WORK TO BE DONE BY PROSPECTING IN ADVANCE OF EXCAVATION.

ALL RUBBLE FROM THE REMOVAL OF EXISTING STRUCTURE SHALL BE DISPOSED OF BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS. RUBBLE SHALL BE REMOVED FROM THE PROJECT SITE.

SOUNDING AND TEST BORING DATA SHOWN ON THE PLANS WERE ACCUMULATED FOR DESIGNING AND ESTIMATING PURPOSES. THEIR APPEARANCE ON THE PLANS DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.

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.

232-8
10-18-11

EROSION CONTROL
(DISTURBED AREAS)

ENSURE THE TOP 6 INCHES OF THE DISTURBED AREAS ARE FREE OF ROCK AND DEBRIS AND ARE SUITABLE FOR THE ESTABLISHMENT OF VEGETATION, SUBJECT TO THE ENGINEER'S APPROVAL.

EROSION CONTROL
(RURAL SEEDING)

FOLLOWING THE COMPLETION OF WORK, PLACE SEED, FERTILIZER, AND MULCH ON THE PORTION OF THE AREA LYING WITHIN THE COUNTY RIGHT OF WAY AS FOLLOWS:

SEEDING:
PERMANENT SEEDING FOR RURAL AREA AS PER THE IDOT CURRENT SPECIFICATIONS.
FERTILIZER:
17 LBS. OF 13-13-13 (OR EQUIVALENT) COMMERCIAL FERTILIZER PER 1000 SQ. FT.

MULCH:
70 LBS. OF DRY CEREAL STRAW PER 1000 SQ. FT. CONSOLIDATE ALL MULCH INTO THE SOIL USING A MULCH STABILIZER.

PREPARING THE SEEDBED AND FURNISHING AND APPLYING SEED, FERTILIZER, AND MULCH IS INCIDENTAL TO MOBILIZATION. NO EXTRA COMPENSATION WILL BE ALLOWED.

271-9
09-27-94

DEMOLITION
(BRIDGE REMOVAL)

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 220,000 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 180,000 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 DEPARTMENT'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. AN ASBESTOS INSPECTION WAS CONDUCTED AND THE RESULTS WERE NEGATIVE.

WOODBURY COUNTY
ENGINEERS OFFICE

BSB DRAWN BY:
BK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: GENERAL NOTES

PROJECT NO.
L-B(W107)-73-97

SHEET
5

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

108–8A
Modified

Possible Standards: BA–200, BA–201, BA–202, BA–205, BA–206, BA–211, BA–221, BA–225, BA–250, BA–260, LS–625, LS–626, LS–630, LS–635, SI–172, SI–173 and SI–211.

① Lane(s) to which the obstacle is adjacent.
② Not a bid item. Incidental to guardrail installation.

Location					Layout Lengths				Long–Span System		Delineators and Object Markers ②				Bid Items											
					BA–250, BA–260, LS–630, OR LS–635														BA–250 or LS–630					BA–260 or LS–635		
No.	① Direction of Traffic	Side O = Outside M = Median	Station	Offset	(VT1)	(VF)	(VT2)	(ET)	BA–211		SI–211	Delineator SI–172	Object Marker SI–173			Bolted End Anchor		Post Adapter	Steel Beam Guardrail	Barrier Transition Section	End Terminal				Barrier Transition Section	End Terminal
												Type 1	Type 2	Type 3							Tangent	Flared	Tangent	Flared		Tangent
												White	OM2–2	OM–3L	OM–3R	BA–202		BA–210	BA–200	BA–201	BA–205	BA–206	LS–625	LS–626	BA–221	BA–225
				Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Station	Type	Type	Each	Each	Each	Each	Type	Each	Each	Lin. Ft.	Each	Each	Each	Each	Each	Each	Each
1	W	O	6+60.00	15.62' LT.	25.00	–	–	35.17	–	–	–	–	–	1	–	A	1	–	–	–	–	–	–	–	1	1
2	E	O	6+60.00	15.62' RT.	25.00	–	–	35.17	–	–	–	–	–	–	1	A	1	–	–	–	–	–	–	–	1	1
3	W	O	7+40.00	15.62' LT.	25.00	–	–	35.17	–	–	–	–	–	1	–	A	1	–	–	–	–	–	–	–	1	1
4	E	O	7+40.00	15.62' RT.	25.00	–	–	35.17	–	–	–	–	–	–	1	A	1	–	–	–	–	–	–	–	1	1

Remarks

SILT FENCES FOR DITCH CHECKS

Refer to EC–201

100–17
04–20–10

Basin No.	Type	Location Station	Location Side	BID ITEMS Installation Lin. Ft.	Maintenance Lin. Ft.	Removal Lin. Ft.	
		6+30	LT.	12			
		6+30	RT.	12			
		6+00	LT.	12			
		6+00	RT.	12			
		5+50	LT.	12			
		5+50	RT.	12			

TABULATION OF SILT FENCES

Refer to EC–201

100–17
04–20–10

Location Station to Station		Side	Length (Lin. Ft.)	Remarks
6+35	6+50	LT.	50	Fence installed along bank
6+30	6+50	RT.	50	Fence installed along bank
7+50	8+50	RT.	100	
7+50	6+50	RT.	100	

TABULATION OF SAFETY CLOSURES

108–13A
10–28–97

Refer to Section 2518 of the Standard Specifications

Station	Closure Type Road Quantity	Closure Type Hazard Quantity	Remarks
5+00	1.0		
9+00	1.0		
Totals	2.0		

WOODBURY COUNTY
ENGINEERS OFFICE

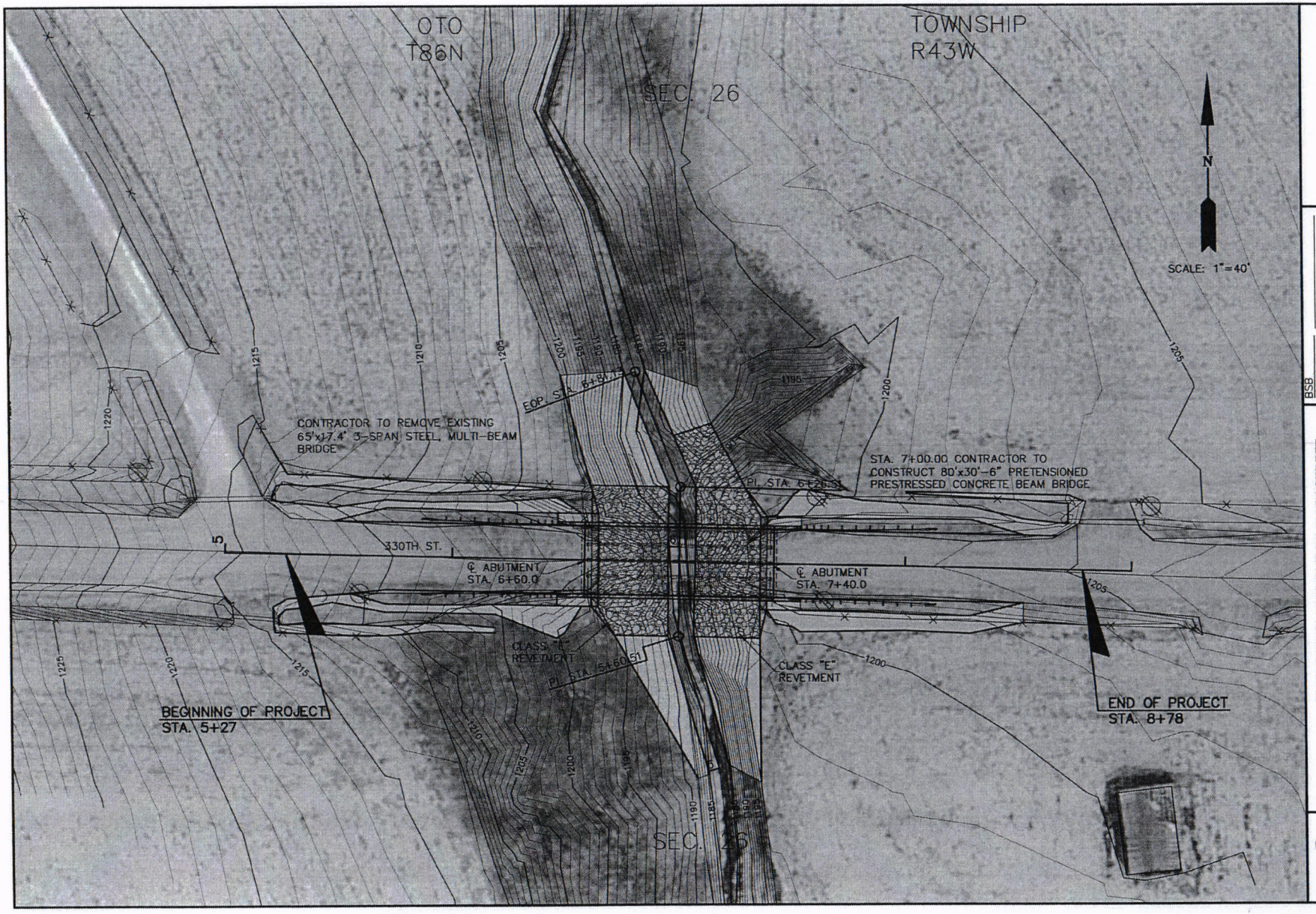
BSB,BK DRAWN BY:
BK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: TABULATIONS

PROJECT NO.
L-B(W107)--73-97

SHEET
6



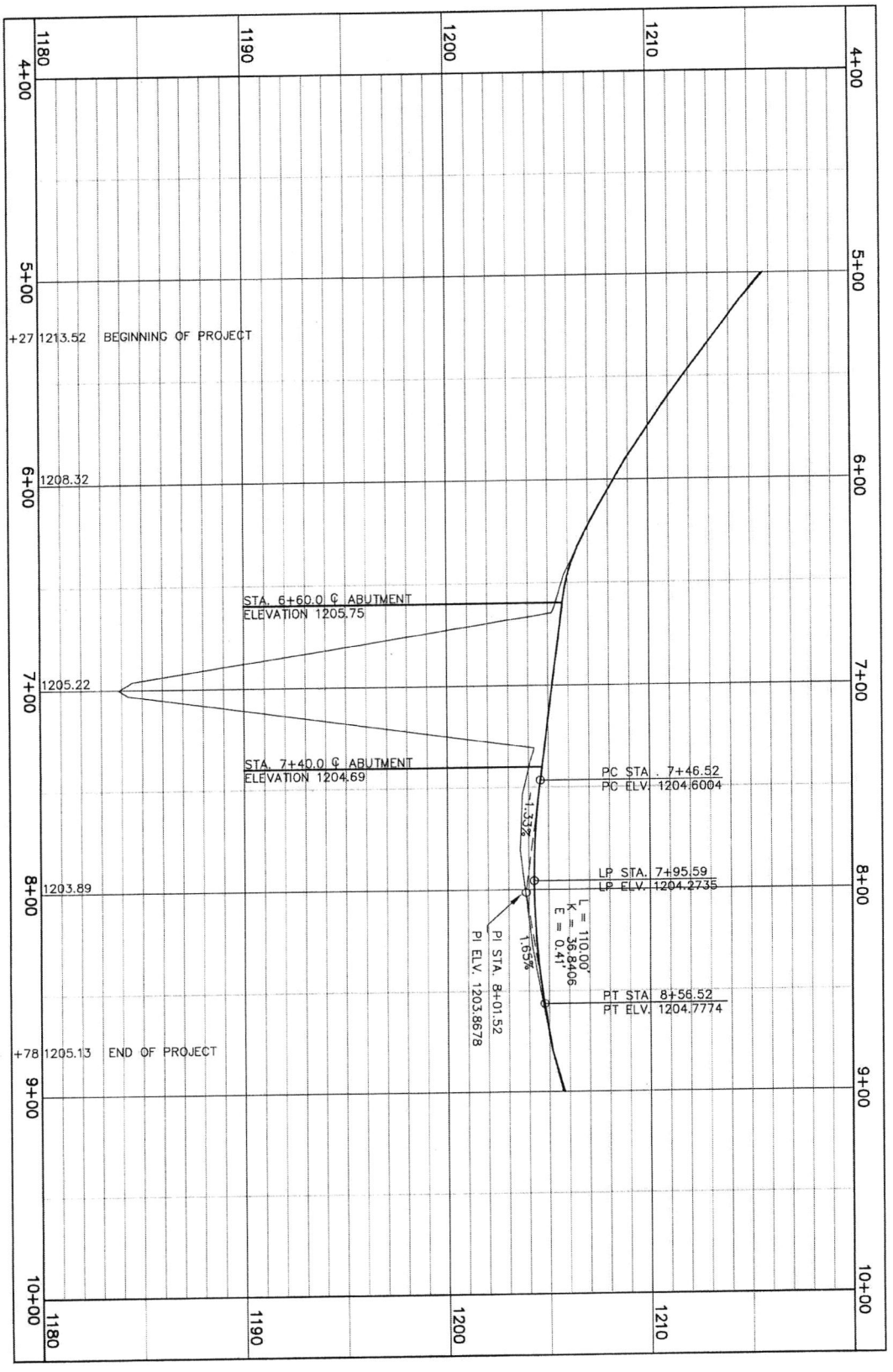
WOODBURY COUNTY
ENGINEERS OFFICE

DRAWN BY:	BSB
DESIGNED BY:	BK
APPROVED BY:	MJN
DATE:	REVISION / DATE

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: PLAN VIEW

PROJECT NO.
L-8(W107)--73-97
SHEET
7



PROJECT NO. L-B(W107)--73-97
SHEET 8

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: PROFILE VIEW

BSB DRAWN BY:
BK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

WOODBURY COUNTY
ENGINEERS OFFICE

LOG OF EXPLORATORY BORING

Sheet 1 of 1

WEST ABUTMENT

Job Number: G4989
Project: Bridge L-B(W107)--73-97
Boring No.: B-1
Boring Location: Woodbury County, IA
Drill Type: Hollow Stem
Date Started: 2/20/17
Date Completed: 2/20/17
Ground Elev.: 1204.7

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows per 1-3/4")
0			GRAVELLY SAND, Grayish Yellow Brown, Fill		9-21-16 N= 37									
5			STIFF SILTY CLAY, Yellow Brown and Dark Gray Brown, Fill		5-3-3 N= 6									
10			(Gravel)		2-2-3 N= 5									
			(Gray Brown)											
15			FIRM SILTY CLAY, Gray and Yellow Brown		2-4-5 N= 9									
20			STIFF SILTY CLAY, Dark Gray	CL	1-3-3 N= 6									
25			(Sand Lenses, Wood)		1-3-4 N= 7									
30			GRAVELLY SAND, Grayish Yellow Brown	SP	25-17-15 N= 32									
35			FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-8-8 N= 16									
40			VERY FIRM GLACIAL CLAY, Dark Gray	CL	4-12-10 N= 22									
45					4-9-11 N= 20									
50					5-12-13 N= 25									
55					5-11-12 N= 23									
60					5-10-10 N= 20									
65					4-10-12 N= 22									
70					5-9-12 N= 21									
75					5-9-12 N= 21									
80					6-13-13 N= 26									
			END OF BORING AT 80 FEET FREE WATER WAS ENCOUNTERED AT 19.4 FEET 24-HOURS AFTER DRILLING											

LOG OF BORING C4989.GPJ CERTIFIED TESTING.GDT 3/13/17

LOG OF EXPLORATORY BORING

Sheet 1 of 1

EAST ABUTMENT

Job Number: G4989
Project: Bridge L-B(W107)--73-97
Boring No.: B-2
Boring Location: Woodbury County, IA
Drill Type: Hollow Stem
Date Started: 2/20/17
Date Completed: 2/20/17
Ground Elev.: 1203.6

Shelby Tube | Standard Split Spoon | Water Level ATD
Modified California | Grab Sample | Water Level After 24-Hours

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts SPT (N) Blows/Foot	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Cone Penetrometer (Blows per 1-3/4")
0			GRAVEL LAYER		3-13-8 N= 21									
			FIRM SILTY CLAY, Yellow Brown and Medium Brown, Fill											
5			STIFF SILTY CLAY, Medium Brown and Medium Yellow Brown, Fill		8-3-3 N= 6									
10					1-2-2 N= 4									
15			STIFF SILTY CLAY, Dark Gray Brown, Oxidized	CL	2-2-3 N= 5									
20			SOFT SILTY CLAY, Yellow Brown, Oxidized	CL	2-1-2 N= 3									
25			GRANULAR MATERIAL, Grayish Yellow Brown	SP	30-48-41 N= 89									
30			GRAVELLY SAND, Grayish Yellow Brown	SP	9-7-9 N= 16									
35			VERY FIRM GLACIAL CLAY, Dark Gray	CL	5-13-11 N= 24									
40					6-12-12 N= 24									
45					5-8-9 N= 17									
50					6-9-10 N= 19									
55			FIRM - VERY FIRM GLACIAL CLAY, Dark Gray	CL	3-7-8 N= 15									
60					5-7-8 N= 15									
65			FIRM GLACIAL CLAY, Dark Gray	CL	4-3-6 N= 9									
70					5-6-8 N= 14									
75			VERY FIRM GLACIAL CLAY, Dark Gray	CL	10-12-15 N= 27									
80					5-12-10 N= 22									
			END OF BORING AT 80 FEET FREE WATER WAS ENCOUNTERED AT 18 FEET 24-HOURS AFTER DRILLING											

LOG OF BORING C4989.GPJ CERTIFIED TESTING.GDT 3/13/17

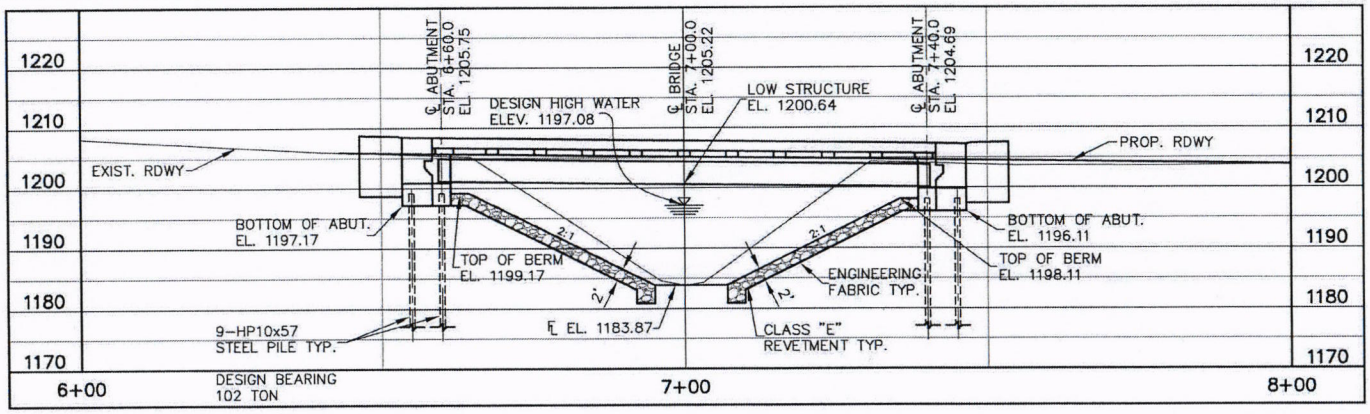
WOODBURY COUNTY
ENGINEERS OFFICE

BSB DRAWN BY:
BK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: BORING LOGS

PROJECT NO.
L-B(W107)--73-97
SHEET
9

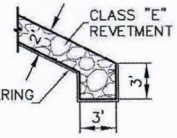


HYDRAULIC DATA

FWHA #350620

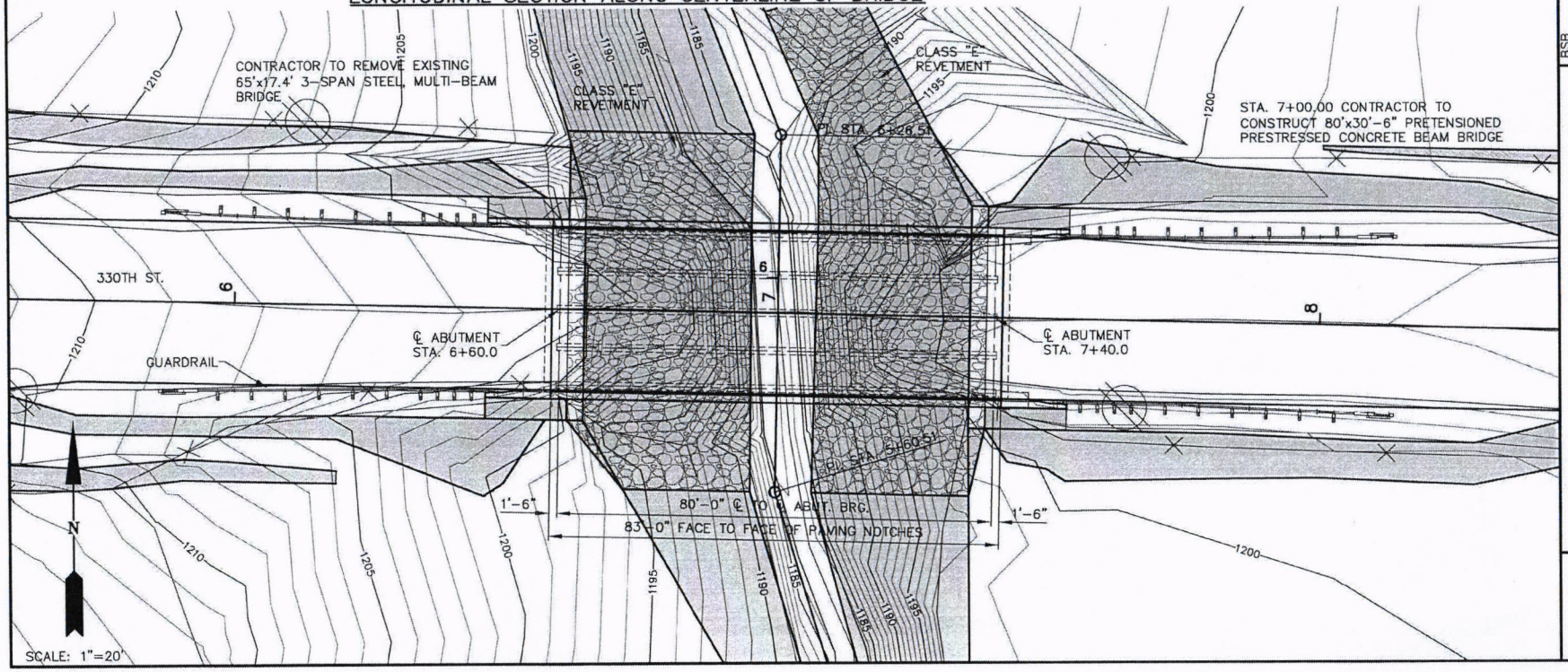
Q25	2,020	STAGE ELEV. 1195.49
Q50	2,480	STAGE ELEV. 1196.34
Q100	2,930	STAGE ELEV. 1197.08
Q500	4,150	STAGE ELEV. 1198.75

BRIDGE VELOCITY: 5.36 FT./SEC.
FREEBOARD: 3.26'
DRAINAGE AREA: 5.60 SQUARE MILES



REVETMENT TOE DETAIL

LONGITUDINAL SECTION ALONG CENTERLINE OF BRIDGE



WOODBURY COUNTY
ENGINEERS OFFICE

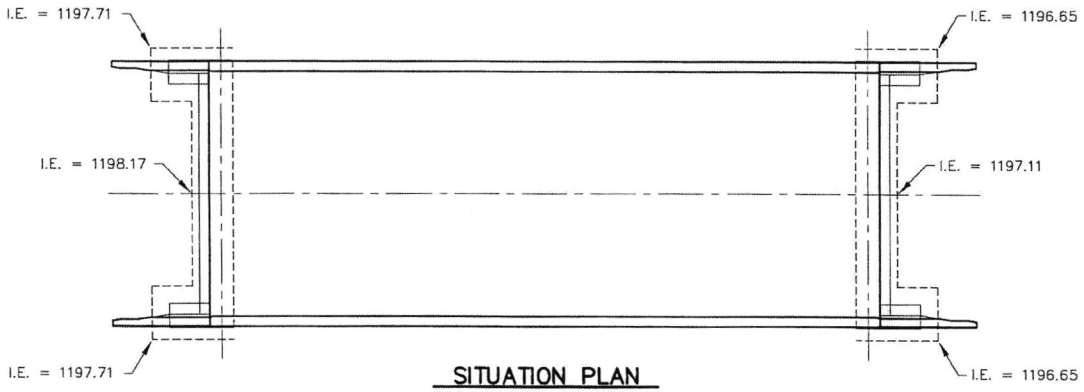
BSB	DRAWN BY:		
BK	DESIGNED BY:		
MJN	APPROVED BY:		
DATE:		REVISION	DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

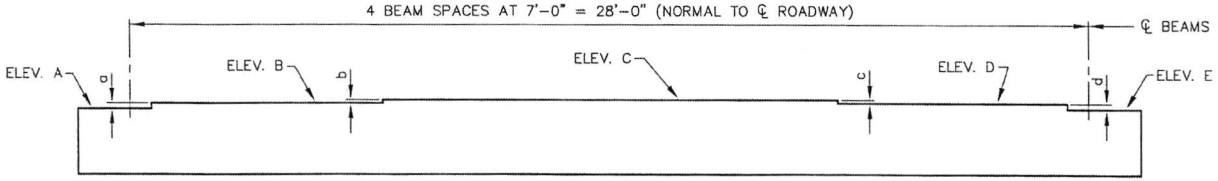
SHEET DESCRIPTION: PLAN VIEW

PROJECT NO.
L-B(W107)--73-97

SHEET
10



SITUATION PLAN
SHOWING SUBDRAIN LOCATION



ABUTMENT AND PIER STEP DIAGRAM

(LOOKING UPSTREAM)
NO SCALE
(BEAM LINE LABEL CORRESPONDS WITH ELEVATION POINT LABEL. REFER TO "TABLE OF ABUTMENT AND PIER SEAT ELEVATIONS" FOR ELEVATION POINT VALUES.)

ABUTMENT WING ELEVATIONS

LOCATION	ELEVATION "A"	ELEVATION "B"	ELEVATION "C"
NW ABUTMENT	1205.46	1205.58	1205.71
SW ABUTMENT	1205.46	1205.58	1205.71
NE ABUTMENT	1204.44	1204.33	1204.22
SE ABUTMENT	1204.44	1204.33	1204.22

TABLE OF ABUTMENT AND PIER SEAT ELEVATIONS

LOCATION	ELEVATION "A" BEAM A	ELEVATION "B" BEAM B	ELEVATION "C" BEAM C	ELEVATION "D" BEAM D	ELEVATION "E" BEAM E
ABUTMENT NO. 1	1200.67	1200.81	1200.92	1200.81	1200.67
ABUTMENT NO. 2	1199.61	1199.75	1199.86	1199.75	1199.61

WOODBURY COUNTY
ENGINEERS OFFICE

BSB DRAWN BY:
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MJN APPROVED BY:
DATE: REVISION DATE:

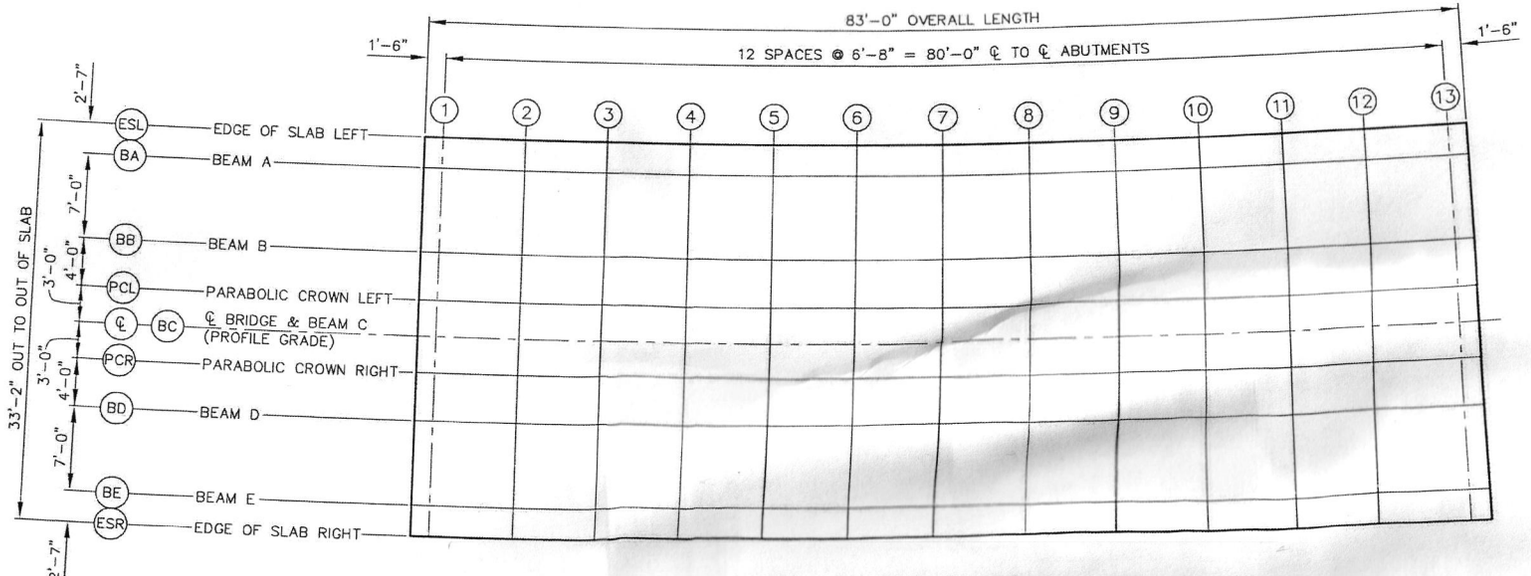
PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: BRIDGE DETAILS

PROJECT NO.
L-B(W107)--73-97
SHEET
11

TOP OF SLAB ELEVATIONS

LOCATION	℄ SOUTH ABUTMENT BEARING												℄ NORTH ABUTMENT BEARING
	LINE 1	LINE 2	LINE 3	LINE 4	LINE 5	LINE 6	LINE 7	LINE 8	LINE 9	LINE 10	LINE 11	LINE 12	LINE 13
ESL (EDGE OF SLAB LEFT)	1205.45	1205.36	1205.27	1205.18	1205.10	1205.01	1204.92	1204.83	1204.74	1204.65	1204.57	1204.48	1204.39
BA (BEAM A)	1205.50	1205.41	1205.32	1205.24	1205.15	1205.06	1204.97	1204.88	1204.79	1204.71	1204.62	1204.53	1204.44
BB (BEAM B)	1205.64	1205.55	1205.46	1205.38	1205.29	1205.20	1205.11	1205.02	1204.93	1204.85	1204.76	1204.67	1204.58
PCL (PARABOLIC CROWN LEFT)	1205.72	1205.63	1205.54	1205.46	1205.37	1205.28	1205.19	1205.10	1205.01	1204.93	1204.84	1204.75	1204.66
℄ & BC (℄ BRIDGE & BEAM C)	1205.75	1205.66	1205.58	1205.49	1205.40	1205.31	1205.22	1205.13	1205.05	1204.96	1204.87	1204.78	1204.69
PCR (PARABOLIC CROWN RIGHT)	1205.72	1205.63	1205.54	1205.46	1205.37	1205.28	1205.19	1205.10	1205.01	1204.93	1204.84	1204.75	1204.66
BD (BEAM D)	1205.64	1205.55	1205.46	1205.38	1205.29	1205.20	1205.11	1205.02	1204.93	1204.85	1204.76	1204.67	1204.58
BE (BEAM E)	1205.50	1205.41	1205.32	1205.24	1205.15	1205.06	1204.97	1204.88	1204.79	1204.71	1204.62	1204.53	1204.44
ESR (EDGE OF SLAB RIGHT)	1205.45	1205.36	1205.27	1205.18	1205.10	1205.01	1204.92	1204.83	1204.74	1204.65	1204.57	1204.48	1204.39



LOCATIONS FOR TOP OF SLAB ELEVATIONS

WOODBURY COUNTY
ENGINEERS OFFICE

BSB DRAWN BY:
BK DESIGNED BY:
MJN APPROVED BY:
DATE: REVISION DATE:

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON 330TH STREET
SECTION 26-T86N-R43W OTO TOWNSHIP

SHEET DESCRIPTION: TOP OF SLAB ELEVATIONS

PROJECT NO.
L-B(W107)--73-97
SHEET
12