

119

CULVERT REPLACEMENT

STRUCTURE NO: K-264

OCTOBER 27, 2020

Letting Date

WOODBURY COUNTY

**IOWA**  
**DEPARTMENT OF TRANSPORTATION**  
 Highway Division  
 PLANS OF PROPOSED IMPROVEMENT ON THE  
**SECONDARY ROAD SYSTEM**  
**WOODBURY COUNTY**  
**CULVERT REPLACEMENT**  
**STRUCTURE NO. K-264**

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 160TH ST, FROM MINNESOTA AVE EAST 0.25 MILES TO MICHIGAN AVE, SEC. 4-88-43 REPLACE EXISTING RCB CULVERT WITH CMP CULVERT

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, SIGNS, 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 284 OF THE IOWA ADMINISTRATION CODE (IAC) CHAPTER 130.

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

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

Approved
Board of Supervisors



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.

10/25/2020  
Date

Iowa Registration Number 11452  
Expiration Date 12/31/2020

Pages or sheets covered by this seal:  
Pages 1 - 9

2015 AADT 230 V.P.D.

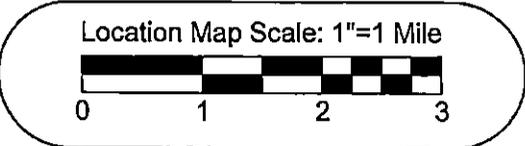
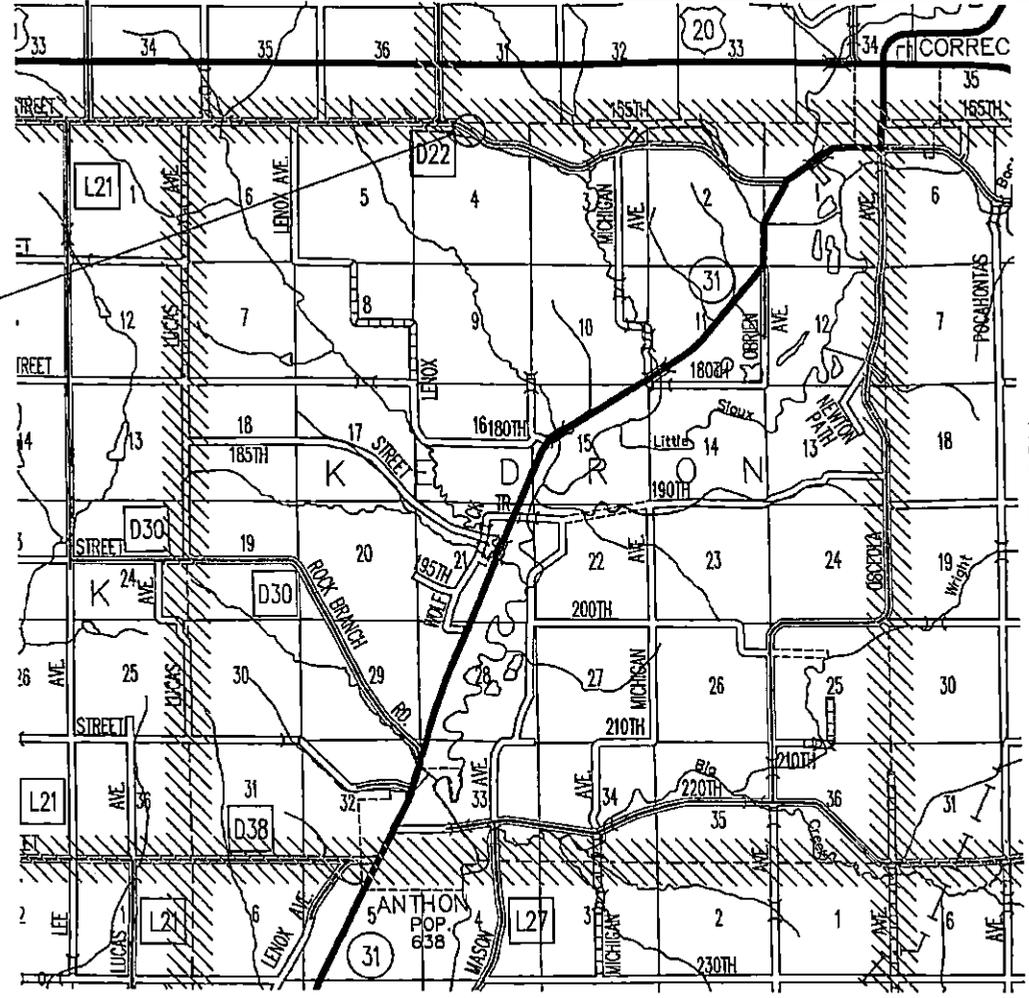
Structure Number: K-264

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4	PLAN VIEW
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6	OUTLET CURTAIN WALL DETAILS
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ROAD STANDARD PLANS					
The following Standard Plans are all to be considered applicable to construction work on this project.					
Identification	Date	Identification	Date	Identification	Date
EW-101	10-17-17				
EW-401	10-20-15				
EW-402	04-18-17				
TC-252	04-21-20				



STRUCTURE K-264  
CULVERT REPLACEMENT



WOODBURY COUNTY ENGINEERS OFFICE	
CDR	DATE
DOWN BY:	REVISION
DESIGNED BY:	
APPROVED BY:	
DATE:	
PROJECT DESCRIPTION: CULVERT REPLACEMENT ON D22 SEC. 4-T88N-R43W	
SHEET DESCRIPTION: LOCATION MAP	
STRUCTURE NO. K-264	
SHEET 2	

**ESTIMATE REFERENCE INFORMATION**

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

**WOODBURY COUNTY  
ENGINEERS OFFICE**

CUR: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 BK: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 MAIN: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 RATE: \_\_\_\_\_

PROJECT DESCRIPTION: **CULVERT REPLACEMENT  
SECTION 15-T86N-R43W OTO TOWNSHIP**  
 SHEET DESCRIPTION: **ESTIMATE OF QUANTITIES AND  
GENERAL INFORMATION**

STRUCTURE NO.  
K-264  
SHEET  
3

ESTIMATED PROJECT QUANTITIES				
ITEM	ITEM CODE	DESCRIPTION	UNITS	TOTALS
1.	2101-0850001	CLEARING AND GRUBBING	ACRE	0.25
2.	2102-2625000	EMBANKMENT-IN-PLACE	C.Y.	839
3.	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	C.Y.	11
4.	2312-8280310	GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE (PLACE ONLY)	TON	185
5.	2401-6745650	REMOVAL OF EXISTING STRUCTURE	L.S.	1
6.	2402-2720000	EXCAVATION, CLASS 20	C.Y.	3000
7.	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	C.Y.	1.9
8.	2404-7775000	REINFORCING STEEL	LB.	153
9.	2417-1080054	CULVERT, CORRUGATED METAL ROADWAY PIPE, 54" DIA. (PLACE ONLY)	L.F.	126
10.	2501-5775000	PILES, STEEL SHEET	S.F.	84
11.	2510-6745850	REMOVAL OF PAVEMENT	S.Y.	309.33
12.	2518-6910000	SAFETY CLOSURE	EACH	2
13.	2519-3280000	FENCE, FIELD	L.F.	300
14.	2519-3300400	FIELD FENCE BRACE PANELS	EACH	4
15.	2528-8445110	TRAFFIC CONTROL	L.S.	1
16.	2533-4980005	MOBILIZATION	L.S.	1
17.	2599-8999005	CORRUGATED METAL PIPE DROP INLET (PLACE ONLY)	EACH	1
18.	2601-2634100	MULCHING	ACRE	0.25
19.	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.25

2.3. No payment for overhaul will be allowed. Quantity includes an allowance of 40% for shrinkage. Payment shall be per quantity. Material from Items 3 & 6 may be used if inspected by Woodbury County and consent is given by the County Engineer. All material shall be compacted with a method approved by the Engineer. Final 2' of roadway shall be compacted with a vibratory roller.

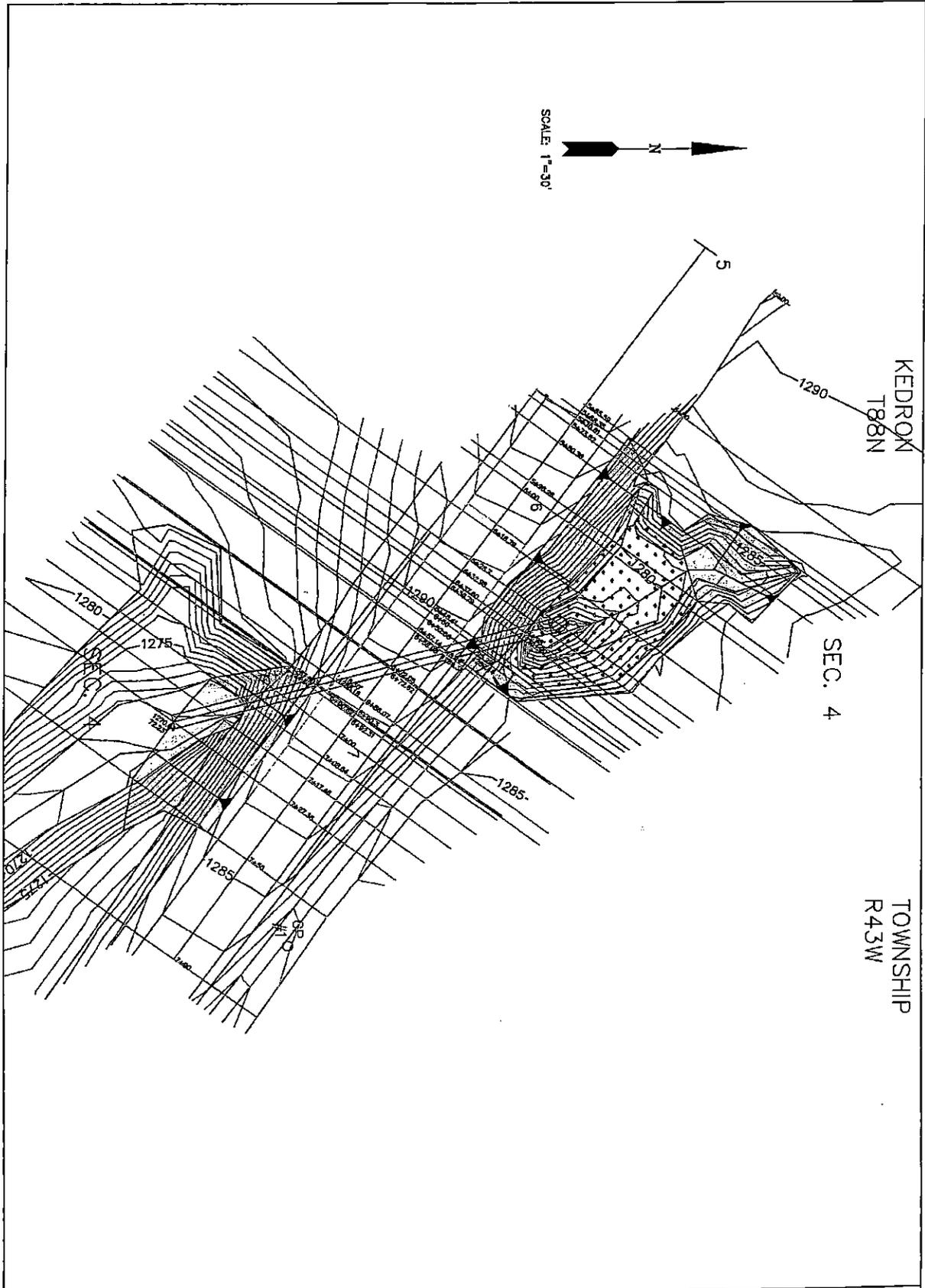
Summary of earthwork is as follows:

850 c.y. (fill +40%)  
 11 c.y. (cut)  
 839 c.y. (borrow)

Borrow shall be contractor furnished, stockpiled borrow material is available for contractor use at a County site in Section 23 in Union Township.

- Granular surfacing shall be provided by Woodbury County and shall be compacted with smooth drum roller in four (4) - 3" lifts.
- Bid item shall include the removal and disposal of the existing Concrete Box Culvert. The structure is a Reinforced Concrete Box Culvert that is 5' wide and 4' tall and 97' long from headwall to headwall. All 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.
- 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.
- Item is for C.M.P. Curtain wall. See sheet 6 for details.
- Item is for C.M.P. Curtain wall. See sheet 6 for details.
- See sheets 4 and 8 for placement details. This is a place only bid item. The CMP will be furnished and delivered to the project site by Woodbury County.
- This item shall consist of furnishing and installing curtain walls as illustrated on sheet 4. The minimum section modulus of 18.10 cu. inch per foot of length and a minimum wall thickness of 3/8" shall be required.
- Existing pavement includes 8" of PCC and 3" of asphalt treated base. Saw cuts are to be made as directed by Woodbury County. Saw cuts to be incidental to this bid item.
- This bid item shall include providing, installing, maintaining and removing safety closures according to IDOT Standard Specifications.
- This bid item shall be full compensation for construction signing as per IDOT Standard Road Plan TC-252
- This bid item shall include all transportation costs associated with the movement by the contractor and their equipment.
- See sheets 4 and 8 for placement details. Culvert Drop-Inlet shall have already been purchased and provided by Woodbury County.

CONCRETE AND REINFORCING STEEL SUBTOTALS FOR A 8'-0"x4'-9"x1'-6" CURTAIN WALL				
LOCATION	CONCRETE QUANTITIES, C.Y.			REINFORCING STEEL, LBS.
	FOOTING	WALL	TOTAL	
OUTLET 8'-0"x4'-9"x1'-6" CURTAIN WALL	1.05	0.85	1.90	153



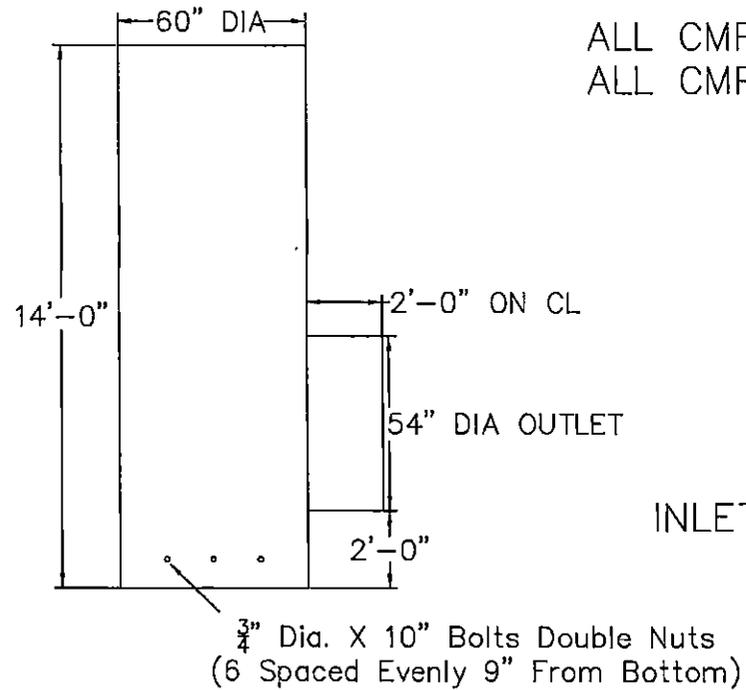
STRUCTURE NO.  
K-284  
SHEET  
4

PROJECT DESCRIPTION: RCB REPLACEMENT  
D22 SEC. 4, T88N, R43W KEDRON TOWNSHIP  
SHEET DESCRIPTION: PLAN VIEW

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

WOODBURY COUNTY  
ENGINEERS OFFICE

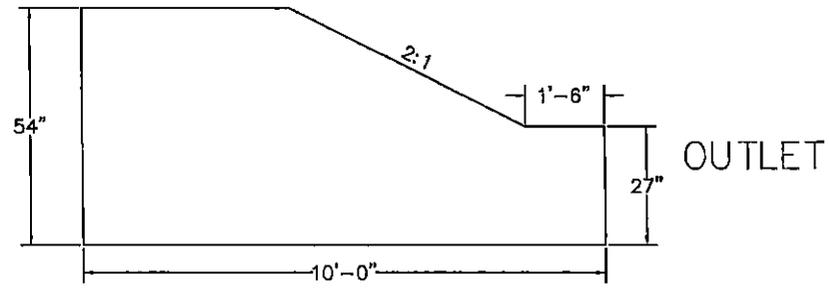
# DROP INTAKE



- REQUIRED CMP SECTIONS
- 1 60"X14' CMP DROP INTAKE
  - 5 54"X20' CMP SECTIONS
  - 1 54"X16' CMP SECTION
  - 1 54"X10' CMP TAPERED OUTLET END SECTION
  - 7 54" DIA. CMP CONNECTING BANDS WITH BOLTS

ALL CMP SECTIONS MUST BE ALUMINIZED  
ALL CMP SECTIONS MUST BE 12 GAUGE

# OUTLET END SECTION



WOODBURY COUNTY  
ENGINEERS OFFICE

DATE	
REVISION	
DATE	
APPROVED BY:	
MAN.	
DESIGNED BY:	
CHK.	
DRAWN BY:	
CHK.	

PROJECT DESCRIPTION: ROB REPLACEMENT  
D22 SEC. 4, T88N, R43W KEDRON TOWNSHIP

SHEET DESCRIPTION: REQUIRED CMP SECTIONS

STRUCTURE NO.  
K-284  
SHEET  
01

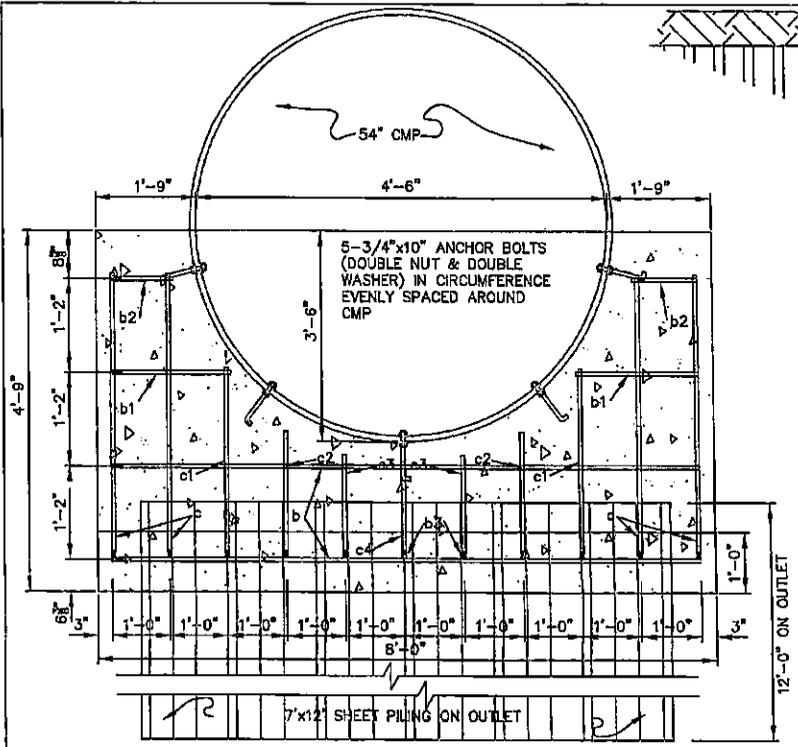
NO.	REVISION	DATE

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DRAWN BY:  
CHECKED BY:  
APPROVED BY:  
DATE:

PROJECT DESCRIPTION: CULVERT REPLACEMENT  
SECTION 4-T88N-R43W KEDRON TOWNSHIP

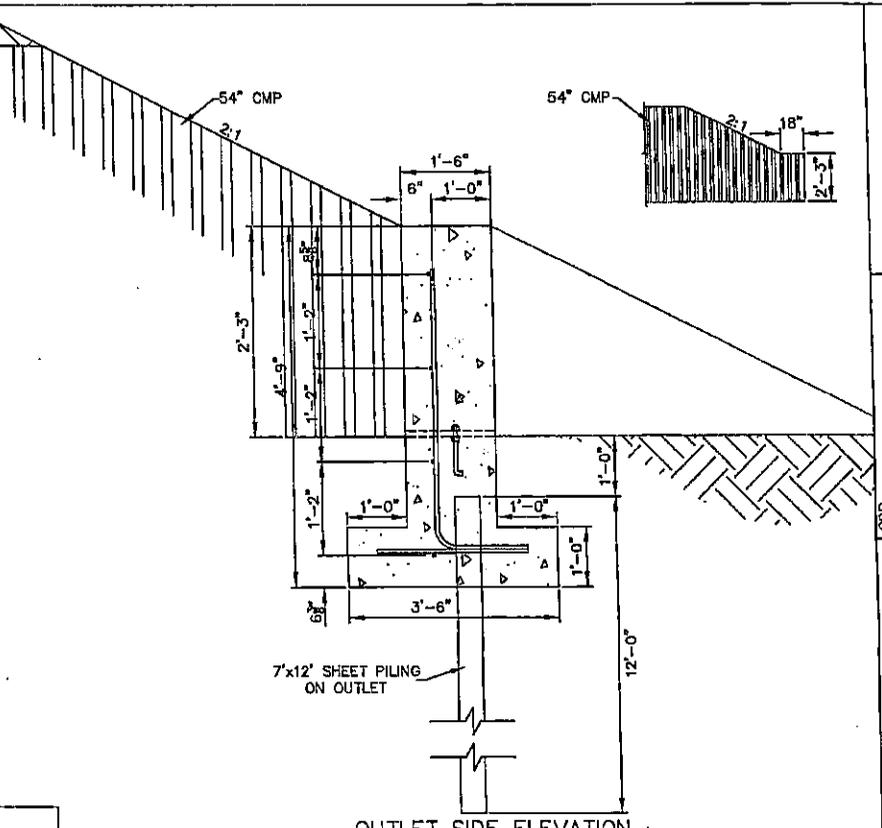
SHEET DESCRIPTION: OUTLET CURTAIN WALL DETAILS

STRUCTURE NO.  
K-284  
SHEET  
6



OUTLET END ELEVATION

REBAR LIST CURTAIN WALL							
BAR	LOCATION	SHAPE	SIZE	NO.	LENGTH	SPACING	WEIGHT
b	WALL HORIZONTAL	—	6	2	7'-6"	14"	23
b <sub>1</sub>	WALL HORIZONTAL	—	6	2	2'-6"	14"	8
b <sub>2</sub>	WALL HORIZONTAL	—	6	2	1'-1"	14"	4
b <sub>3</sub>	WALL HORIZONTAL	—	6	11	2'-6"	14"	42
c	WALL VERTICAL	—	8	4	5'-0 <sup>3</sup> / <sub>8</sub> "	9"	36
c <sub>1</sub>	WALL VERTICAL	—	6	2	3'-11 <sup>3</sup> / <sub>8</sub> "	9"	14
c <sub>2</sub>	WALL VERTICAL	—	6	2	3'-8 <sup>3</sup> / <sub>8</sub> "	9"	11
c <sub>3</sub>	WALL VERTICAL	—	6	2	3'-2 <sup>1</sup> / <sub>8</sub> "	9"	10
c <sub>4</sub>	WALL VERTICAL	—	6	1	3'-0 <sup>3</sup> / <sub>8</sub> "	9"	5
TOTAL							153 LBS.



OUTLET SIDE ELEVATION

