

HAMILTON COUNTY
RCB CULVERT REPLACEMENT -
TWIN BOX

Project No.: BROS-C040(118)--5F-40
Letting Date: June 16th, 2026

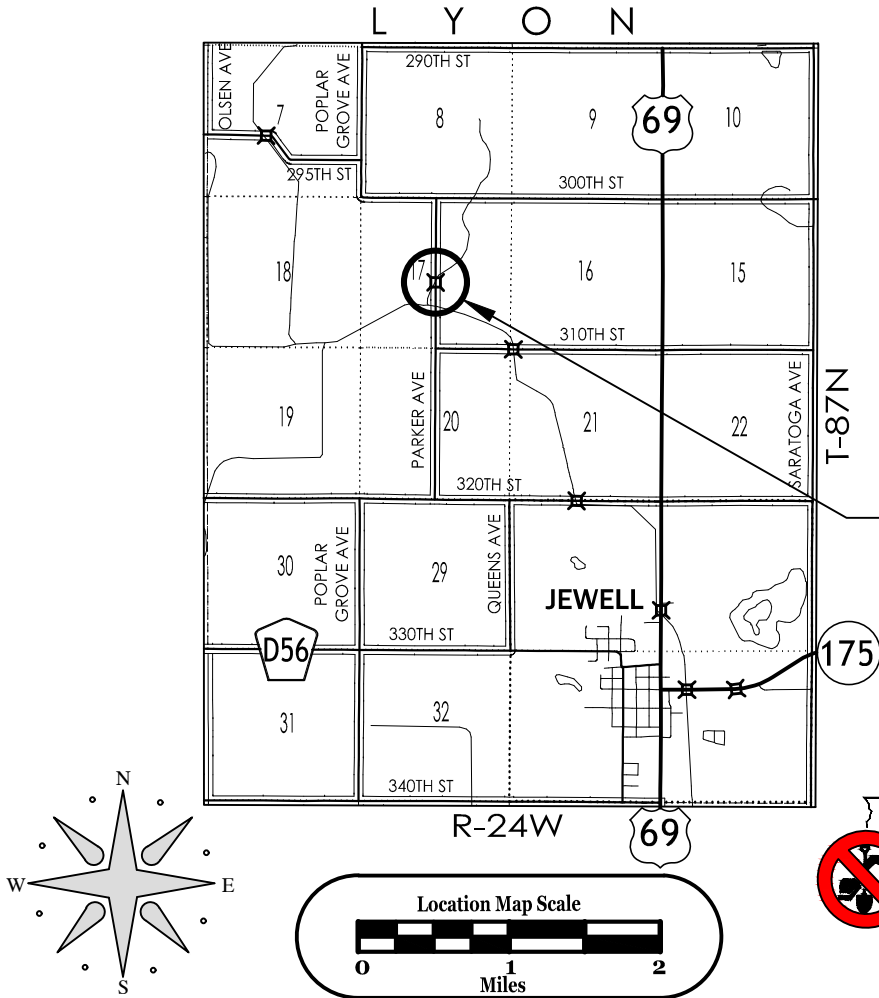
PROJECT LENGTH SUMMARY		
Location	Lin. Ft.	Miles
1+50 - 6+00	450	0.09
Total:	450	0.09

STANDARD ROAD PLANS					
(The following Standard Plans shall be considered applicable to construction work on this project)					
Identification	Date	Identification	Date	Identification	Date
EW-402	04/18/17				
TC-252	10/21/25				
DR-305	04/19/22				

STANDARD PRECAST BOX CULVERT PLANS					
(The following plans shall be considered applicable to construction work on this project)					
Standard	Issued	Revised	Standard	Issued	Revised
PRCB G1-20	12/2020				
PRCB G2-20	01/2023				

SHOP DRAWINGS

Any Shop Drawing required shall be submitted to the Hamilton County Engineer's Office:
2300 Superior Street, Suite 4
Webster City, IA 50595
Office: (515) 832-9520
Fax: (515) 832-9525
Email: rweidemann@hamiltoncounty.org



STA: 3+29.72
Construct Twin
14' x 16' x 88' RCB
County No: L17.4
FHWA No: 171330



IOWA
DEPARTMENT OF TRANSPORTATION
HIGHWAY DIVISION
PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET SYSTEM
HAMILTON COUNTY
RCB CULVERT REPLACEMENT - TWIN BOX
PROJECT NO.:
BROS-C040(118)--5F-40
On Parker Avenue, Over Drainage Ditch, S17-T87-R24
Refer to the Proposal Form for list of applicable specifications.

PROJECT TRAFFIC CONTROL PLAN

This road will be closed to through vehicular and pedestrian traffic during construction. Local traffic to adjacent properties will be maintained as provided for in article 1107.08 of the current standard specifications plus current supplemental specifications. Traffic control devices, procedures, and layouts shall conform to the "Manual of Uniform Traffic Control Devices" as adopted by the department per 761 of the Iowa Administrative Code (IAC) Chapter 130.

Section 404 Permit and Conditions

Construct this project according to the requirements of U.S. Army Corps of Engineers Nationwide Permit No 14. A copy of this permit is available from the Iowa DOT website (<http://www.envpermits.iowadot.gov/>). The Army Corps of Engineers reserves the right to visit the site without prior notice.

Project Number: BROS-C040(118)--5F-40

INDEX OF SHEETS	
SHEET	CONTENT
A.1	Title Sheet
B.1	Estimated Quantities & Reference Information
C.1,2	Typical Cross Sections, Details, & Tabulations
D.1,2	Situation Plan, Plan & Profile
J.1	Detour Plan
U.1	Precast Culvert Standard 1081P Modified

APPROVED

RICK YOUNG, CHAIRMAN

APRIL ELY

MARY CLAUSEN

BOARD OF SUPERVISORS

2/24/26

COUNTY ENGINEER

DATE

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.

Ryan J. Weidemann
Date: 2/24/26 License #: 21150
My licence renewal date is December 31, 2027
Pages or sheets covered by this seal: A.1 - U.1

ESTIMATED PROJECT QUANTITIES				
ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL
1	2102-2625000	EMBANKMENT-IN-PLACE	CY	2539.0
2	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1.00
3	2402-0425032	GRANULAR BACKFILL	TON	292.10
4	2402-2720000	EXCAVATION, CLASS 20	CY	3117.0
5	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS)	CY	61.5
6	2415-2100000	PRECAST CONCRETE BOX CULVERT, 14 FT. X 16 FT.	LF	176.0
7	2415-2200000	PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION, 14 FT. X 16 FT.	EACH	4
8	2418-0000010	TEMPORARY STREAM DIVERSION	LS	1.00
9	2507-3250005	ENGINEERING FABRIC	SY	122.1
10	2507-6800061	REVTMENT, CLASS E	TON	122.30
11	2528-2518000	SAFETY CLOSURE	EACH	2.0
12	2528-8445110	TRAFFIC CONTROL	LS	1.00
13	2533-4980005	MOBILIZATION	LS	1.00
14	2602-0000312	PERIMETER AND SEDIMENT CONTROL DEVICE, 12 IN. DIA	LF	400.00

ESTIMATE REFERENCE INFORMATION					
ITEM NO.	ITEM CODE	DESCRIPTION	ITEM NO.	ITEM CODE	DESCRIPTION
1	2102-2625000	EMBANKMENT-IN-PLACE	6	2415-2100000	PRECAST CONCRETE BOX CULVERT, 14 FT. X 16 FT.
4	2402-2720000	EXCAVATION, CLASS 20 The Contractor is to construct culvert approaches from 2+88.12 to 3+73.96. The Contractor shall shape the culvert approaches and culvert berm to the elevations and dimensions shown on the plans. Raw volumes within the project corridor are estimated at 3117 cubic yards of cut, and 4565 cubic yards of fill. Design compaction factor used for mass quantities is 35%. The Contractor shall be responsible for providing the estimated 2539 cubic yards of borrow material. Any unsuitable material, as designated by the Engineer, shall be wasted. The Contractor shall be responsible for providing disposal sites outside of the right of way for wasted material. The contractor is responsible for all costs associated with alternate borrow locations. Pay quantity for Class 20 Excavation will be plan quantity adjusted for obvious errors, plan revisions, or change orders.	7	2415-2200000	PRECAST CONCRETE BOX CULVERT, STRAIGHT END SECTIONS, 14 FT. X 16 FT. Includes material and labor associated with providing and installing the culvert ties, lifting hole plugs, engineering fabric, joint material, and grout as required. The precast concrete box barrel and end sections shall meet the requirements of Materials I.M. 445.02.
2	2401-6745625	REMOVAL OF EXISTING BRIDGE The Contractor shall remove the existing 42' x 18' single span concrete girder bridge at Station 3+30. The entire existing bridge shall become property of the Contractor and shall be removed from the project site. No part of the existing structure shall be buried within the road right of way. Scrape samples of existing structure were not taken due to the existing structure not having any steel or wood present. The bidder should not rely on the contracting authority's observation not to obtain testing and analysis for any purpose other than an indication of the existence of these two substances.	7	2415-2200000	PRECAST CONCRETE BOX CULVERT, STRAIGHT END SECTIONS, 14 FT. X 16 FT. Includes 4 precast end sections, 4 precast lintel beams, and 4 precast curtain walls. End sections shall be 2:1 sloped end sections.
3	2402-0425031	GRANULAR BACKFILL The Contractor shall place a 9" layer of granular bedding material below the concrete box culvert. Method of Measurement shall be plan quantity. The Basis of Payment will be at the contract unit price per ton.	8	2418-0000010	TEMPORARY STREAM DIVERSION This bid item shall be for the construction of a temporary stream diversion in accordance with Standard Road Plan EW-402
5	2403-0100000	STRUCTURAL CONCRETE (MISCELLANEOUS) This bid item shall be used to fill the 9" gap between the two box culvert barrels and end sections. Max slump for the concrete shall be 4". Method of Measurement and Basis of Payment shall be plan quantity. Certified Plant Inspection shall be provided by the Contractor. Type of concrete to be Class C.	9	2507-3250005	ENGINEERING FABRIC
			10	2507-6800061	REVTMENT, CLASS E The Contractor shall place Engineering Fabric under all Class E Revetment. Class E Revetment shall be placed by the Contractor in a layer 2'-0" thick. Location and extent of Engineering Fabric and Class E Revetment are shown on Situation Plan on Sheet D.1. The Contractor shall furnish and install Engineering Fabric and Class E Revetment. There is some existing rip-rap that will need to be removed to place new culvert. It will be up to the Contractors discretion to dispose of, or set aside to be placed in new proposed Class E Revetment locations.
			11	2528-2518000	SAFETY CLOSURE
			12	2528-8445110	TRAFFIC CONTROL See Traffic Control Plan on Sheet A.1 and tabulation on Sheet C.1 for Safety Closures. The Contractor shall be responsible for furnishing, erecting, and maintaining all signs relating to the road closure.
			14	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA The Contractor shall place Perimeter and Slope Sediment Control Devices on any exposed soil along the top of bank. See the Situation Plan on Sheet D.1 for details

General Notes

The Contractor is to note that the box culvert end sections shall be 2:1 sloped end sections with inlet and outlet end sections height to be 4.5'. See profile view on this sheet for reference.

The Contractor shall submit details of the proposed precast box sections and detailed load rating calculations to the Engineer for approval. The details shall include the following:

- a. A situation plan drawing showing the back-to-back parapet dimension for the line of the culvert sections. Also include the number of precast sections and section lengths.
- b. A detail of the precast culvert barrel sections showing a cross section view of the section, steel locations, dimensions, etc.
- c. A detail of the precast culvert end section showing a cross section view of the sections, steel locations, dimensions, etc., similar to the end section details shown in this plan.
- d. A detail of the parapet showing a cross section with dimensions and a detail of how it is attached to the headwall.
- e. A detail of the curtain wall showing a cross section with the dimensions and a detail of how it is attached to the headwall.
- f. Detailed rating calculations providing inventory and operating ratings for HL-93 and the five Iowa rating vehicles (type 4, 3S3A, 3-3, 3S3B and 4S3). The ratings shall be completed in load factor.

Example barrel and end section submittal show drawing sheets are available at the Iowa D.O.T. Bridge website at:
<http://www.iowadot.gov/bridge/v8preculstd.htm>

The above details and rating calculations shall be certified by an engineer licensed in the state of Iowa. The Contractor shall allow thirty days for the Engineer's review.

To be completed by Hamilton County:

Construction survey.

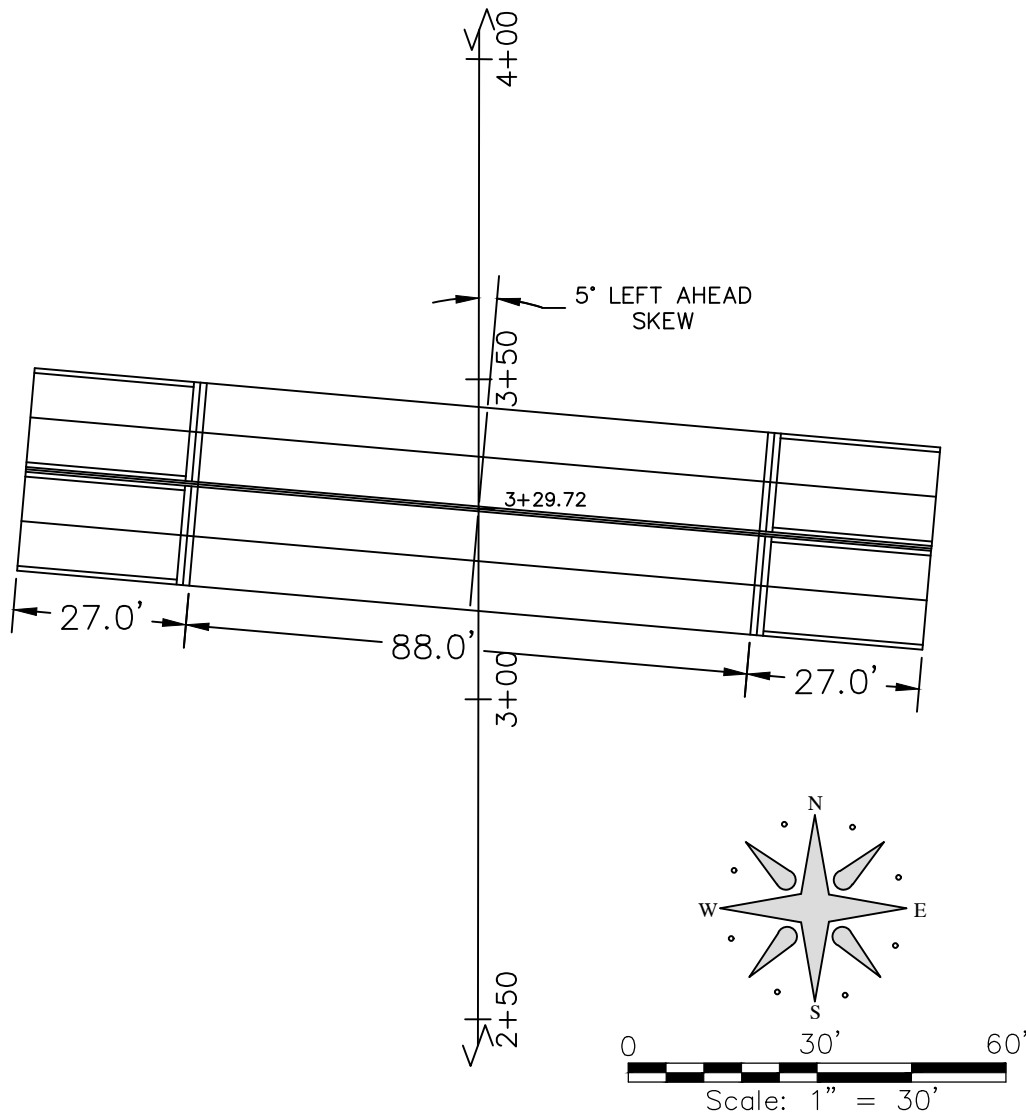
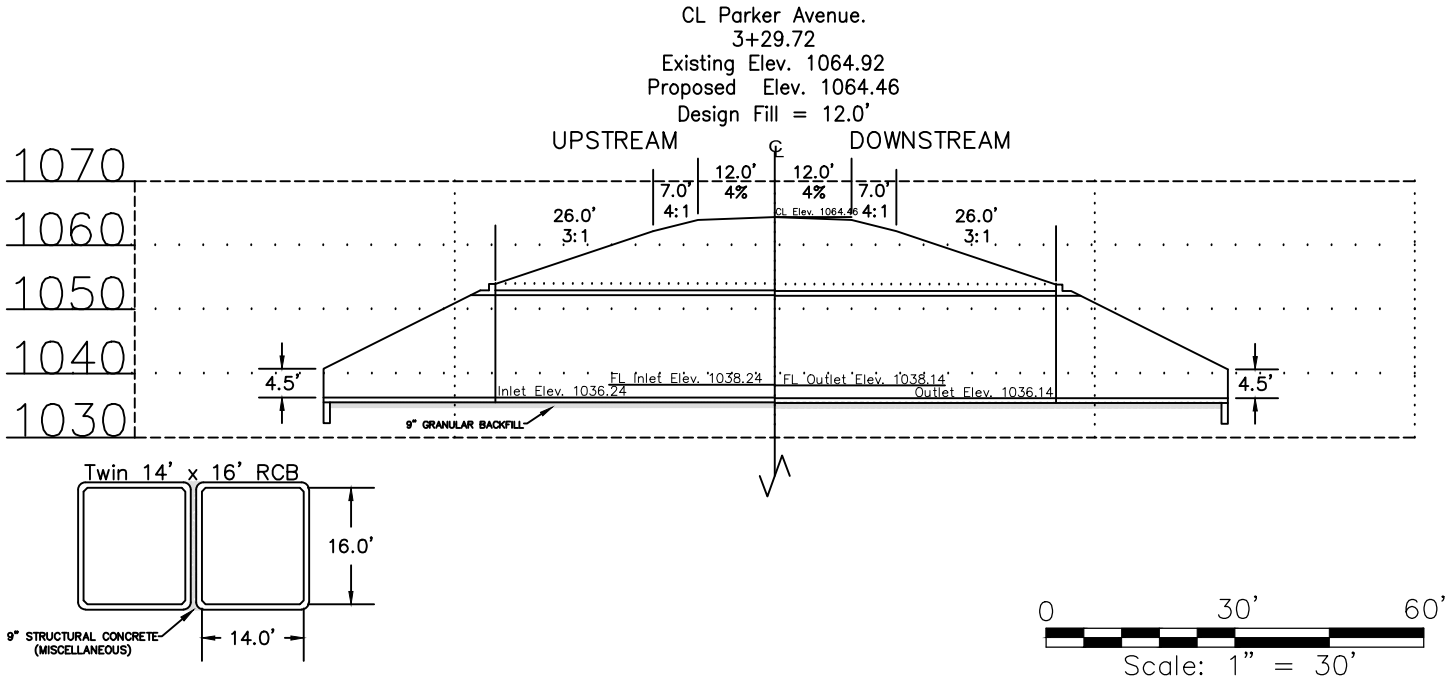
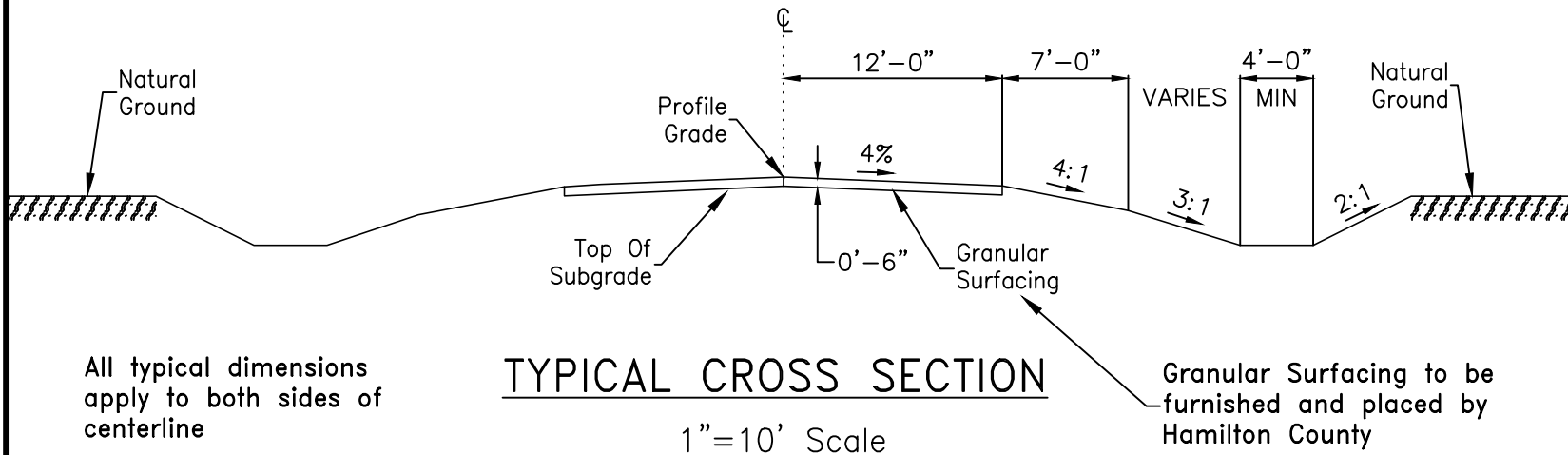
Granular resurfacing of road.

Hydro Seeding.

The Contractor is to visit the site to ensure that he is familiar with existing site conditions. Utilities are located on the drawings to provide a general location only. The Contractor shall be responsible for accurately locating all utilities within the work area. If other utilities are discovered, they are to be protected and the Engineer is to be notified immediately. The Contractor shall call Iowa One Call at least 48 hours prior to beginning work. (1-800-292-8989)

Contact information for utilities known to be in the vicinity:

Aureon Network Services	Jeff Klocko	(515) 830-0445
CenturyLink	Sadie Hull	(918) 470-0147
Midland Power Cooperative	Eng Dept	(515) 386-4111
Xeinia Water District	Laird VanDec	(515) 676-2117



HYDRAULIC DATA			
Drainage Area	60.3 Sq. Mi	Q Design HW	2898 CFS
Stream Slope	-5.28 ft/mi	Design HW Elev.	1048.63
Bridge WW Area	-	Design Velocity	11.51 ft/s
Q10	2081 CFS	Scour Design Flood	Q50
Nat Stage Elev.	1047.45	Scour Design Elev.	1049.58
Q25	2898 CFS	Scour Check Flood	Q100
Nat Stage Elev.	1048.63	Scour Check Elev.	1050.71
Q50	3510 CFS		
Nat Stage Elev.	1049.58		
Q100	4169 CFS		
Nat Stage Elev.	1050.71		

108-13A HAMILTON 5/25/19			
SAFETY CLOSURES			
Refer to Section 2518 of the Standard Specifications			
Location or Station	Closure Type		Remarks
	Road Qty.	Hazard Qty.	
2+00	1	0	On Parker Ave. near BOP
4+50	1	0	On Parker Ave. near EOP
Total	2	0	

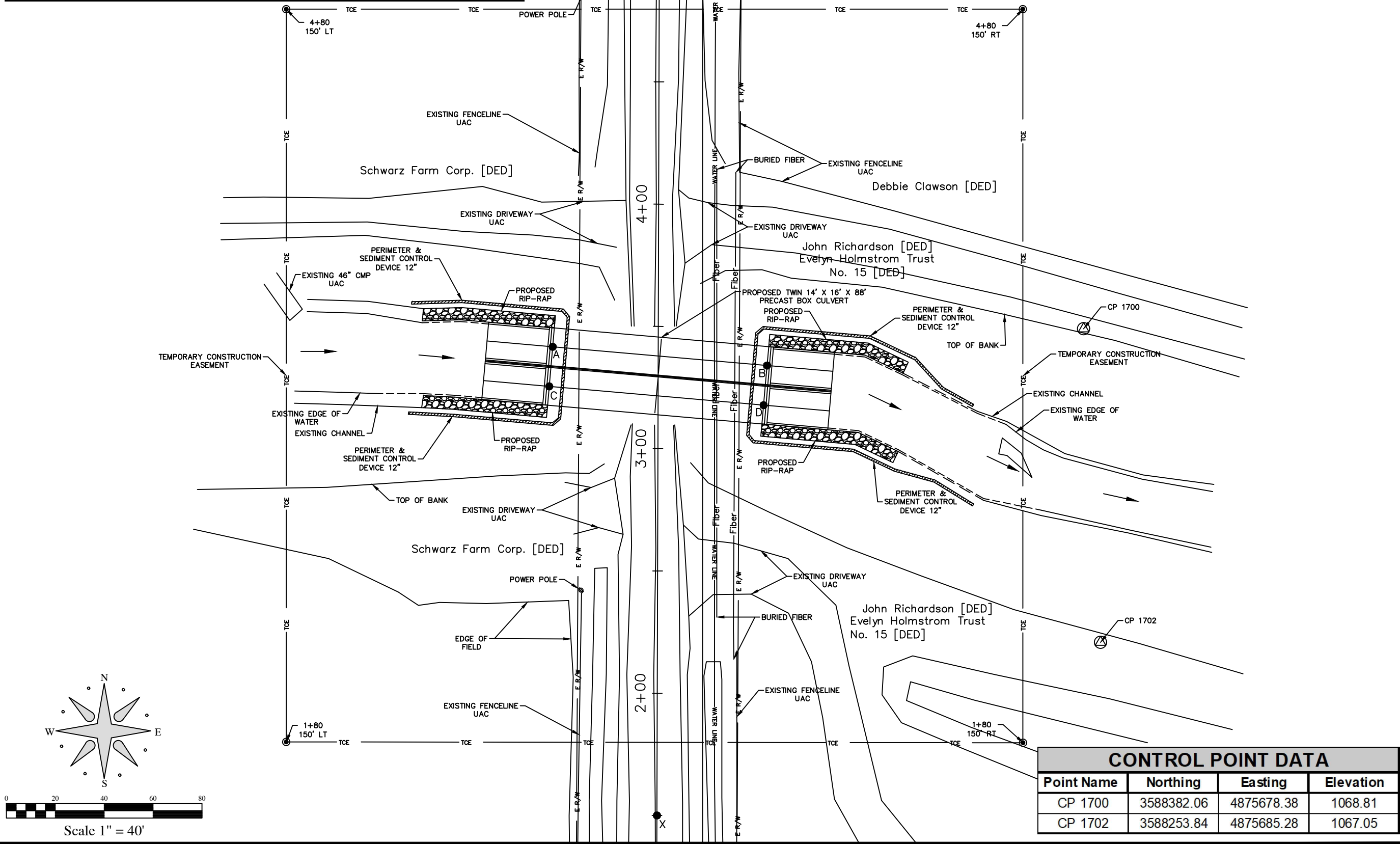
UTILITY CONTACT INFO	
AUREON NETWORK SERVICES Contact Name : Jeff Klocko Contact Phone: (515) 830-0445 Contact Email: jeff.klocko@aureon.com	MIDLAND POWER COOPERATIVE Contact Name : ENG DEPT. Contact Phone: (515) 386-4111 Contact Email: ENG@MIDLANDPOWER.COOP
CENTURYLINK Contact Name : Sadie Hull Contact Phone: (918) 470-0147 Contact Email: sadie.hull@lumen.com	XEINIA RURAL WATER DISTRICT Contact Name: Laird VanDee Contact Phone: (515) 676-2117 Contact Email: lvandee@xeiniawater.org

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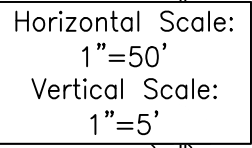
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POINTS FOR BOX CULVERT ALIGNMENT			
Point Name	Northing	Easting	Remarks
A	3588374.67	4875461.21	West End of Barrel Section North Box
B	3588367.00	4875548.87	East End of Barrel Section North Box
C	3588358.49	4875459.79	West End of Barrel Section South Box
D	3588350.82	4875547.46	East End of Barrel Section South Box

ROAD CENTERLINE ALIGNMENT			
Point Name	Northing	Easting	Remarks
X	3588183.02	4875503.84	South CL - STA 1+50
Y	3588533.02	4875504.79	North CL - STA 5+00
Road Alignment Follows Section Line			



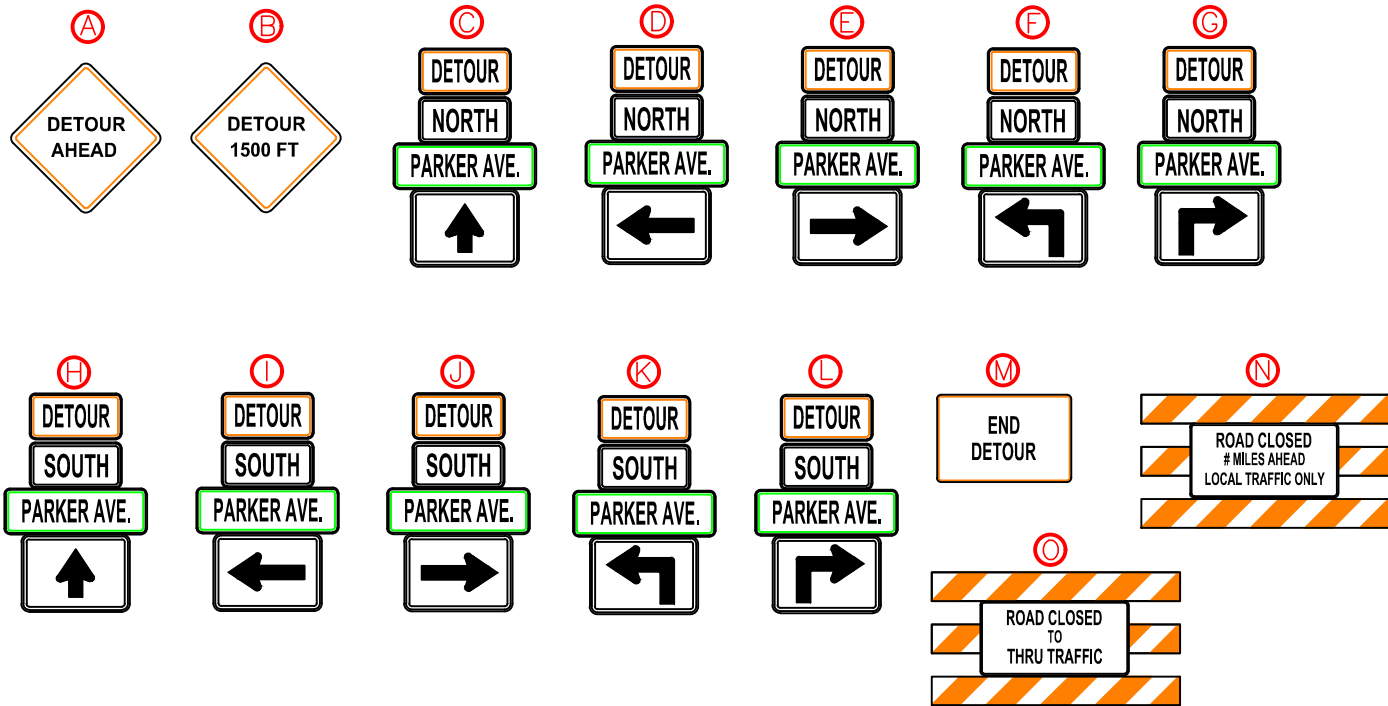
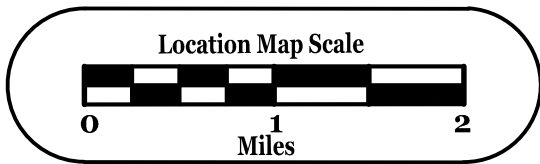
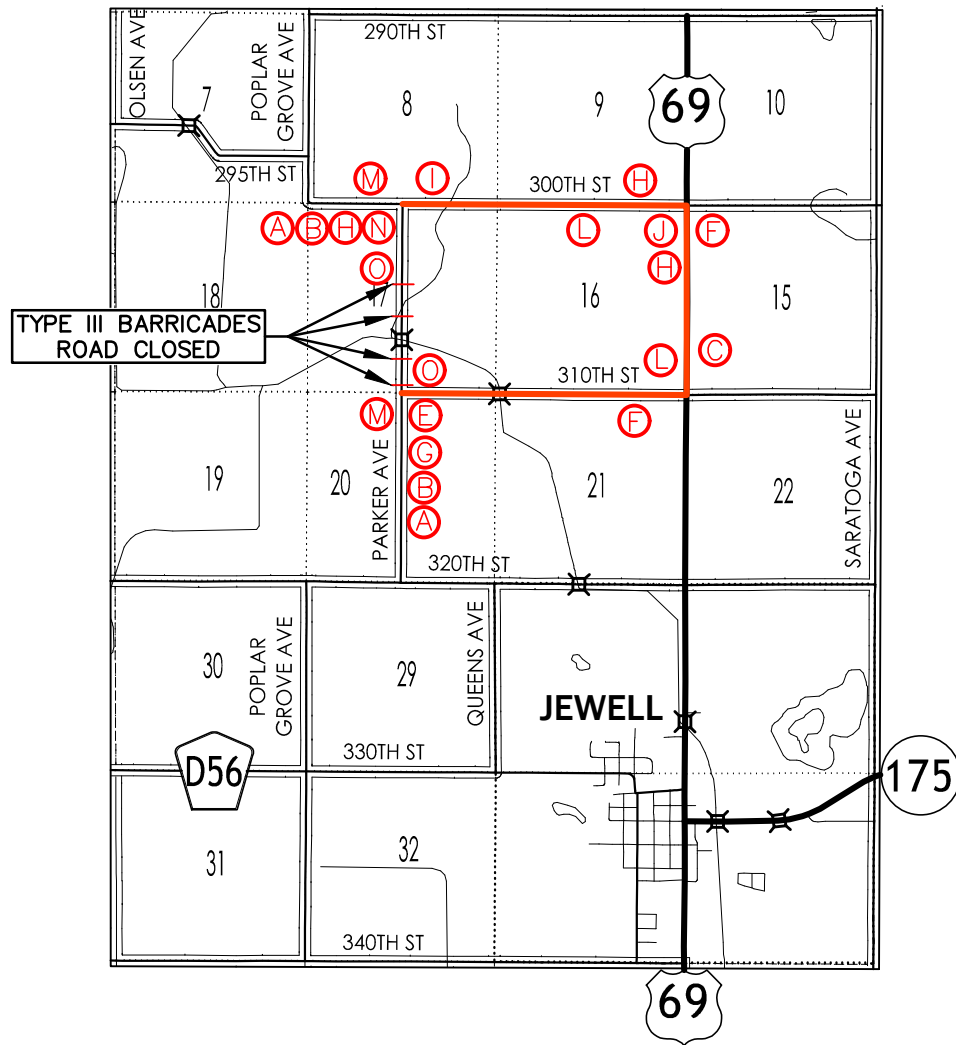
CONTROL POINT DATA			
Point Name	Northing	Easting	Elevation
CP 1700	3588382.06	4875678.38	1068.81
CP 1702	3588253.84	4875685.28	1067.05



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DETOUR ROUTE



TRAFFIC CONTROL PLAN

1. TRAFFIC CONTROL ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE DETOUR ROUTE SHOWN ON THIS SHEET AND STANDARD ROAD PLAN TC-252. THE PROJECT ROUTE WILL BE CLOSED TO TRAFFIC. TRAFFIC CONTROL DEVICES, PROCEDURES, AND LAYOUTS SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATION CODE (IAC) CHAPTER 130.
2. ROUTE WILL BE CLOSED TO THROUGH VEHICULAR TRAFFIC DURING CONSTRUCTION.
3. THIS LAYOUT MAY NOT INCLUDE ALL BARRICADES THAT MAY BE REQUIRED BY SECTION 2518 OF THE STANDARD SPECIFICATIONS OR ROAD STANDARD TC-252, HOWEVER, TRAFFIC CONTROL AT THE PROJECT LOCATION SHALL BE IN ACCORDANCE WITH SECTION 2518 OF THE STANDARD SPECIFICATIONS AND/OR ROAD STANDARD TC-252 AS REQUIRED.
4. ALL TRAFFIC CONTROL DEVICES AND SIGNS SHALL BE FURNISHED, ERECTED, MAINTAINED AND REMOVED BY THE CONTRACTOR. EXACT LOCATIONS MAY BE FIELD ADJUSTED, PER ENGINEER'S APPROVAL, TO FIT CONDITIONS.
5. ALL SIGNS SHALL BE POST MOUNTED UNLESS NOTED OR OTHERWISE APPROVED BY THE ENGINEER. ALL TYPE III BARRICADES SHALL HAVE A MINIMUM OF 6 SAND BAGS OR 4 RUBBER BASES.
6. WHERE POSSIBLE, ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED A MINIMUM OF 10 FEET CLEAR OF THE ROADWAY.
7. PROPOSED SIGN SPACING MAY BE MODIFIED, AS APPROVED BY THE ENGINEER, TO MEET EXISTING FIELD RESTRICTIONS, OR TO PREVENT OBSTRUCTION OF THE MOTORISTS VIEW OF PERMANENT SIGNING.
8. PROPOSED CHANGES IN THE TRAFFIC CONTROL PLAN SHALL BE REVIEWED WITH THE ENGINEER BEFORE CHANGES ARE MADE.
9. SAFETY CLOSURES SHALL BE PLACED IN ACCORDANCE WITH SECTION 2518 OF THE STANDARD SPECIFICATIONS.
10. THE BID ITEM "TRAFFIC CONTROL" SHALL INCLUDE THE COST FOR ALL TRAFFIC CONTROL MEASURES REQUIRED OF THE CONTRACTOR EXCEPT FOR THOSE WHICH ARE SEPARATE BID ITEMS OR ARE INCIDENTAL TO OTHER BID ITEMS.
11. POINTS OF ACCESS LOCATED WITHIN THE PROJECT LIMITS SHALL REMAIN ACCESSIBLE THROUGHOUT THE PROJECT. IF DUE TO CONSTRUCTION A POINT OF ACCESS MUST BE BLOCKED THE CONTRACTOR SHALL PROVIDE AN ALTERNATE POINT OF ACCESS APPROVED BY THE ENGINEER. ALL ALTERNATE ACCESS POINTS ARE INCIDENTAL TO THE BID ITEM "TRAFFIC CONTROL"

GENERAL NOTES:

THE PRECAST R.C.B. CULVERT SECTIONS ARE DESIGNED FOR HL-93 LIVE LOAD AND EARTH FILLS OF SHOWN ELSEWHERE ON THE PLANS.

THE PRECAST R.C.B. BARREL AND END SECTIONS SHALL CONFORM TO IOWA D.O.T. SINGLE PRECAST R.C.B. CULVERT STANDARDS. AT THE CONTRACTOR'S OPTION, PRECAST BARREL SECTIONS MAY CONFORM TO ASTM C1577.

EXCESS CLASS 20 EXCAVATION MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED AT THE CONSTRUCTION SITE, AS DIRECTED BY THE ENGINEER.

THE LENGTH IN LINEAR FEET OF PRECAST REINFORCED CONCRETE BOX CULVERT WILL BE BASED ON THE PLAN QUANTITY. FOR THE NUMBER OF LINEAR FEET GIVEN ON THE PLAN, THE CONTRACTOR WILL BE PAID THE CONTRACT UNIT PRICE PER LINEAR FOOT. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL, LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

FOR EACH PRECAST CONCRETE BOX CULVERT STRAIGHT END SECTION INSTALLED THE CONTRACTOR WILL BE PAID THE CONTRACT PRICE PER EACH. THE PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING ALL MATERIAL (INCLUDING LINTEL BEAMS AND CURTAIN WALLS), LABOR AND EQUIPMENT NECESSARY TO COMPLETE THE WORK EXCEPT FOR BID ITEMS "PRECAST CONCRETE BOX CULVERT", "CLASS 20 EXCAVATION", "CLASS E REVETMENT", AND "SPECIAL BACKFILL".

THE CURTAIN WALL AND THE TYPE 3 LINTEL BEAM OR TYPE 1 PARAPET SHALL BE PRECAST.

THE CONTRACTOR SHALL FURNISH AND INSTALL CULVERT TIES FOR ALL JOINTS. THE MAIN SECTION JOINTS WILL HAVE ONE TIE ON EACH SIDE OF THE BARREL AND THE LAST BARREL SECTION WILL BE ATTACHED TO THE END SECTIONS WITH TWO TIES PER SIDE. THE END SECTION JOINTS WILL HAVE TWO TIES PER SIDE.

CULVERT TIES SHALL BE INCLUDED IN THE COST FOR PRECAST CONCRETE BOX CULVERT. TIE RODS WILL BE 1 INCH DIAMETER STEEL AND SHALL MEET REQUIREMENTS OF ASTM A709 GRADE 36 OR EQUAL.

CULVERT TIE ASSEMBLIES SHALL BE GALVANIZED AFTER FABRICATION.

THE LIMITS FOR EXCAVATION FOR THE PRECAST CONCRETE BOX CULVERT SHALL BE AS SHOWN ON THE "SPECIAL BACKFILL BEDDING DETAIL".

A MINIMUM OF 9 INCHES OF SPECIAL BACKFILL WITH A MAXIMUM AGGREGATE SIZE OF 1.5 INCH SHALL BE USED AS BEDDING FOR THE PRECAST BOX CULVERT. THE BEDDING SHALL BE SHAPED TO A FLAT BASE USING A TEMPLATE.

THE CONTRACTOR SHALL SUBMIT DETAILS OF THE PROPOSED PRECAST CONCRETE BOX SECTIONS FOR THIS PROJECT. THE DETAILS SHALL INCLUDE THE FOLLOWING INFORMATION AS FOUND ON THE "SUBMITTAL SHOP DRAWING" STANDARD SHEET:

- A. A SITUATION PLAN DRAWING SHOWING THE BACK TO BACK PARAPET DIMENSION FOR THE LINE OF THE CULVERT SECTIONS.
- B. DIMENSION THE NUMBER OF PRECAST SECTIONS AND SECTION LENGTHS.
- C. A DETAIL OF THE PRECAST BARREL SECTIONS SHOWING A CROSS SECTION VIEW OF THE SECTION, STEEL LOCATIONS, DIMENSIONS, ETC.
- D. A DETAIL OF THE PRECAST CONCRETE CULVERT END SECTION SHOWING A CROSS SECTION VIEW OF THE SECTIONS, STEEL LOCATIONS, DIMENSIONS, ETC. SIMILAR TO THE END SECTION DETAILS SHOWN IN THE IDOT STANDARDS.

THE CONTRACTOR SHALL PROVIDE ALL INFORMATION SHOWN ON THE SUBMITTAL SHOP DRAWING SHEET REGARDLESS OF WHICH PRECAST CONCRETE BOX OPTION IS SELECTED.

APPROVAL OF DETAILS IS NOT REQUIRED FOR PROJECTS CONFORMING TO "ASTM C1577" AND "IDOT STANDARDS" PRECAST CONCRETE BOX OPTIONS WITH END SECTIONS CONFORMING TO "IDOT STANDARDS." HOWEVER, THE DETAILS SHALL BE RECEIVED BY THE HAMILTON COUNTY ENGINEER PRIOR TO THE START OF FABRICATION.

APPROVAL OF DETAILS IS REQUIRED FOR "NONSTANDARD" PRECAST CONCRETE BOX OPTIONS AND "NONSTANDARD" END SECTION OPTIONS. BOXES AND END SECTIONS REQUIRING OPENINGS OR ATTACHMENTS SHALL BE CONSIDERED NONSTANDARD. THE CONTRACTOR SHALL ALLOW THIRTY WORKING DAYS FOR THE ENGINEER'S REVIEW PRIOR TO THE START OF FABRICATION.

DETAILS REQUIRING APPROVAL SHALL BE DESIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY REGISTERED IN THE STATE OF IOWA. BOXCAR SOFTWARE VERSION 3.1 OR LATER, OR OTHER EQUIVALENT SOFTWARE, CAN BE USED TO DESIGN THE PRECAST CONCRETE BOX CULVERT BARREL SECTIONS; PROVIDING THE ANALYSIS MEETS THE MINIMUM REQUIREMENTS ESTABLISHED FOR THE IDOT STANDARDS AS FOUND IN THE IDOT BRIDGE DESIGN MANUAL. THE MINIMUM REQUIREMENTS INCLUDE REINFORCEMENT CLEARANCE REQUIREMENTS USED IN THE "IDOT STANDARDS."

INSTALLATION NOTES:

PRECAST CONCRETE BOX CULVERT SECTIONS SHALL BE LAID WITH THE GROOVE END OF EACH SECTION UP-GRADE, AND THE SECTIONS SHALL BE TIGHTLY JOINED. CONCRETE TIES TO BE USED ONLY TO HOLD BOX SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT. JOINT OPENINGS BETWEEN SECTIONS SHOULD BE AS TIGHT AS PRACTICABLE AND LIMITED TO A MAXIMUM OF 3/4 INCH OPENINGS. THE JOINT ON THE BOTTOM OF THE CULVERT SHALL BE SEALED WITH A FLEXIBLE WATER TIGHT 1 INCH BUTYL ROPE GASKET AS PER MATERIALS I.M. 491.09.

BUTYL ROPE GASKET SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND SHALL EXTEND VERTICALLY 6 INCHES ABOVE THE BOTTOM FILLET. ALL JOINTS SHALL BE TRIMMED CLEAN ON THE INSIDE AFTER SEALING.

THE CONTRACTOR SHALL PLACE A 2 FOOT WIDE PIECE OF ENGINEERING FABRIC AROUND THE TOP AND SIDES OF EACH PRECAST JOINT. THE FABRIC SHALL BE CENTERED WITH 1 FOOT ON EACH SIDE OF THE JOINT, THE FABRIC SHALL BE ATTACHED TO THE WALLS AND TOP OF EACH SECTION TO PREVENT THE FABRIC FROM SLIPPING OFF THE JOINT DURING BACKFILLING OPERATIONS. ATTACHMENT METHODS SHALL BE APPROVED BY THE ENGINEER. ALL COSTS INCLUDING MATERIAL AND LABOR ASSOCIATED WITH PROVIDING THE ENGINEERING FABRIC AND INSTALLING IT AS REQUIRED SHALL BE INCLUDED IN THE BID ITEMS "PRECAST CONCRETE BOX CULVERT" AND "PRECAST BOX CULVERT STRAIGHT END SECTION". THE ENGINEERING FABRIC SHALL BE IN ACCORDANCE WITH ARTICLE 4196.01, B, 3, OF THE STANDARD SPECIFICATIONS.

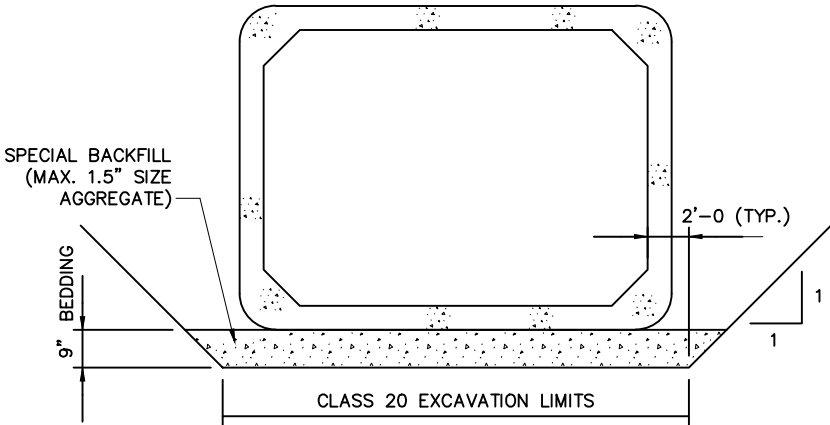
CLASS E REVETMENT WILL BE PLACED AROUND BOTH PRECAST CONCRETE BOX CULVERT END SECTIONS, AS SHOWN IN THESE PLANS.

DURING BACKFILLING THE COMPACTION ADJACENT TO THE BOTTOM CORNER RADII OR CHAMFER SHALL BE ACCOMPLISHED WITH A MECHANICAL HAND COMPACTOR.

THE CONTRACTOR SHALL FURNISH AND INSTALL LIFTING HOLE PLUGS FOR EACH SECTION. LIFTING HOLES SHALL BE PLUGGED WITH A PRECAST CONCRETE PLUG OR PLASTIC PLUG APPROVED BY THE ENGINEER, SEALED AND COVERED WITH A 2'-0 x 2'-0 PIECE OF ENGINEERING FABRIC CENTERED OVER THE HOLE AND ATTACHED TO THE SECTION TO PREVENT THE FABRIC FROM SLIPPING.

SINCE PRECAST CONCRETE BOX CULVERT END SECTIONS HAVE THE FORESLOPE LOCATED AT THE BOTTOM OF THE PARAPET INSTEAD OF THE TOP (AS IN THE CASE OF CAST IN PLACE RCB CULVERTS) THE MAIN BARREL SECTION HAS BEEN LENGTHENED.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN



SPECIAL BACKFILL BEDDING DETAIL

SPECIAL BACKFILL SHALL TERMINATE 3'-0 SHORT OF THE PRECAST CURTAIN WALL.

DESIGN FOR

PRECAST REINFORCED
CONCRETE BOX CULVERT

GENERAL NOTES & QUANTITIES

HAMILTON COUNTY

IOWA DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION