RCB CULVERT REPLACEMENT - TWIN BOX

LETTING DATE: NOVEMBER 17, 2026

PROJECT NO. BRS-C080(88)--60-80

RINGGOLD COUNTY

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET 10.

SECTION 404 PERMIT AND CONDITIONS

281-01
09-28-22

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF THE U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 14, PERMIT NO. 2026-0351. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (http://www.envpermits.iowadot.gov/). THE U.S. ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

STORM WATER PERMIT

THIS PROJECT IS COVERED BY THE IOWA DEPARTMENT OF NATURAL RESOURCES NPDES GENERAL PERMIT NO. 2. THE CONTRACTOR SHALL CARRY OUT THE TERMS AND CONDITIONS OF GENERAL PERMIT NO. 2 AND THE STORM WATER POLLUTION PREVENTION PLAN WHICH IS PART OF THESE CONTRACT DOCUMENTS. REFER TO SECTION 2602 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION.

UTILITY CONTACTS

COMPANY	UTILITY	CONTACT	PHONE #
CLARKE ELECTRIC COOPERATIVE	ELECTRIC	DON LANGE	641-342-2173
WINDSTREAM	TELECOMMUNICATIONS	WESLEY DORSETT	641-745-9387
GRAND RIVER MUTAL	TELECOMMUNICATIONS	MICHAEL JORDISON	641-446-1105
SIRWA	WATER	CHAD MAHAN	641-782-5744

IOWA DOT

Highway Divison

PLANS OF PROPOSED IMPROVEMENT ON THE

FARM TO MARKET ROAD SYSTEM

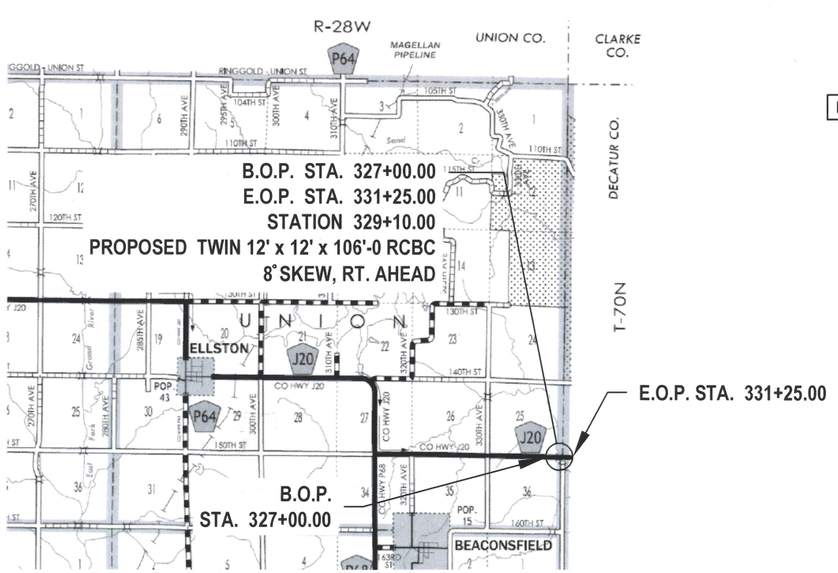
RINGGOLD COUNTY

PROJECT NO. BRS-C080(88)--60-80

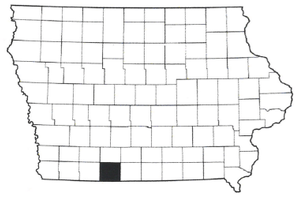
RCB CULVERT REPLACEMENT - TWIN BOX

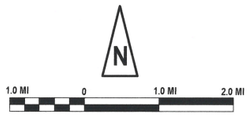
ON J20, OVER ELK CREEK, S36 T70 R28

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS.



PROJECT LOCATION





MILEAGE SUMMARY

STA. 327+00.00 TO STA. 331+25.00 = 425 LIN. FT. = .0805 MILES

2024, TRAFFIC COUNT = 460 V.P.D.

IOWA ONE CALL℠

1-800-292-8989

www.iowaonecall.com

811 Know what's below. Call before you dig.

DRAWING APPROVAL

ALL SHOP DRAWINGS AND FALSEWORK DRAWINGS THAT REQUIRE APPROVAL SHALL BE SUBMITTED TO AND APPROVED BY THE CONTRACTOR, WHO SHALL STAMP, CERTIFY OR PROVIDE OTHER SUCH EVIDENCE ON THE DRAWINGS THAT THEY HAVE RECEIVED CONTRACTOR APPROVAL. THE APPROVED DRAWINGS SHALL THEN BE SUBMITTED TO RINGGOLD COUNTY ENGINEERS OFFICE, FOR REVIEW AND APPROVAL.

ADDRESS: 707 SOUTH HENDERSON DRIVE
MOUNT AYR, IA 50954
TELEPHONE: 641-464-3232
FAX: 641-464-0620

SHOP DRAWINGS SHALL BE INDEPENDANT DRAWINGS WITH ADEQUATE DIMENSIONING FOR FABRICATION OF INDIVIDUAL PIECES OF EACH COMPONENT. PHOTOCOPIES OF PLAN DRAWINGS AND NON-CONTRACTOR APPROVED PLANS WILL BE REJECTED.

THESE DRAWINGS SHALL NOT BE SENT TO IOWA D.O.T. OFFICE OF BRIDGES AND STRUCTURES.

TOTAL SHEETS
10

PROJECT NO. BRS-C080(88)--60-80
FHWA NO. 297840
COUNTY BR. NO. UNION 13

INDEX OF SHEETS

1. TITLE SHEET
2-3. QUANTITY SUMMARY
4. SITUATION PLAN
5. GENERAL PLAN
6. GENERAL NOTES AND BACKFILL DETAILS
7. POLLUTION PREVENTION PLAN
8. TRAFFIC CONTROL PLAN
9. TYPICAL SECTIONS AND TABULATIONS
10. TABULATIONS

IOWA DEPARTMENT OF TRANSPORTATION STANDARDS REQUIRED	
STANDARD	LATEST REVISION
TWRCB G1-20	-
TWRCB G2-20	-
TWRCB G3-20	-
TWRCB 12-12-20	-
TWFWH G1-21	-
TWFWH 0-1-21	-
TWFWH 0-2-21	-
TWFWH 0-3-21	-
TWFWH 0-4-21	-

THESE SHEETS MAY BE OBTAINED AT THE ELECTRONIC REFERENCE LIBRARY WEBSITE. https://erl.iowadot.gov/

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
-	-	-

LICENSED PROFESSIONAL ENGINEER
JARED ALAN JOHNSON 26387
IOWA

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

JJJ DATE: 8-17-26

JARED ALAN JOHNSON, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2027

PAGES OR SHEETS COVERED BY THIS SEAL:
1-10 of 10

APPROVED

JJJ 8-17-26

RINGGOLD COUNTY ENGINEER DATE

Cathy Taylor 8-24-26

Steve Gray 8-24-26

Randy Taylor 8-24-26

RINGGOLD COUNTY BOARD OF SUPERVISORS DATE

RINGGOLD COUNTY
SECONDARY ROADS DEPARTMENT

DESIGNED BY: JAJ
DRAFTED BY: JAJ
CHECKED BY: JAJ

JOB NUMBER: UNION 13

PROJECT NUMBER: BRS-C080(88)--60-80

TOTAL ESTIMATED QUANTITIES:
TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
1	2101-0850001	CLEARING AND GRUBBING	ACRE	1.15
2	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	810
3	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	2755
4	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1500
5	2107-0425020	COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES	CY	305
6	2107-0875000	COMPACTION WITH MOISTURE AND DENSITY CONTROL	CY	2020
7	2113-0001100	SUBGRADE STABILIZATION MATERIAL, POLYMER GRID	SY	1156
8	2115-0100000	MODIFIED SUBBASE	CY	289
9	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	145
10	2123-7450020	SHOULDER FINISHING, EARTH	STA	8.0
11	2301-1033090	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9 IN.	SY	1067

1. SEE GENERAL PLAN, SHEET 5, FOR LIMITS.
SELECTIVE CLEARING WILL BE REQUIRED ON THIS PROJECT. ALL DESIRABLE TREES OUTSIDE THE CONSTRUCTION AREA WILL BE SAVED. TREES AND SHRUBS WITHIN THE CONSTRUCTION LIMITS THAT DO NOT HINDER CONSTRUCTION SHALL BE SAVED UNLESS DIRECTED BY THE ENGINEER TO BE REMOVED.
ANY LIVING, DEAD, CUT OR FALLEN MATERIAL OF THE ASH (FRAXINUS SPP.) INCLUDING TREES, NURSERY STOCK, LOGS, FIREWOOD, STUMPS, ROOTS, BRANCHES, AND COMPOSTED OR UNCOMPOSTED ASH CHIPS CAN BE FREELY MOVED WITHIN THE YELLOW AREAS OF THE MOST RECENT FEDERAL EAB QUARANTINE AND AUTHORIZED TRANSIT. http://www.aphis.usda.gov/planthealth/plantpestinfo/emeraldashb/downloads/eabquarantinemap.pdf
OBTAIN COMPLIANCE AGREEMENTS FROM USDA APHIS PPQ PRIOR TO MOVING ANY OF THE ABOVE LISTED ASH ARTICLES TO AREAS OUTSIDE THE YELLOW ZONE ON THE MAP.
FOR QUESTIONS, CONCERNS, AND GENERAL ASSISTANCE, CONTACT:
USDA APHIS PPQ, IOWA OFFICE, 515-414-3295 OR
IOWA DEPARTMENT OF AGRICULTURE AND LAND STEWARDSHIP, 515-725-1470, Entomology@IowaAgriculture.gov
IF FOR REASONS BEYOND THE CONTRACTOR'S CONTROL, TREES CANNONT BE CLEARED BETWEEN SEPTEMBER 30 AND APRIL 1 THE CONTRACTING AUTHORTITY, AT NO COST TO THE CONTRACTOR, WILL CUT DOWN TREES WITHIN THE CLEARING AND GRUBBING LIMITS DUE TO THE POTENTIAL OF THESE TREES BEING INHABITED BY STATE AND FEDERAL LISTED THREATENED/ENDANGERED BAT SPECIES. THE CONTRACTOR WILL BE REQUIRED TO REMOVE THE DOWN TREES AND TO GRUB THE STUMPS.

2. SEE TABULATION "RINGGOLD 102" ON SHEET 10 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
TYPE "A" COMPACTION WILL BE REQUIRED. QUANTITY DOES NOT COMPENSATE FOR SHRINKAGE.
QUANTITY INCLUDES MATERIAL TO BACKFILL THE CULVERT EXCAVATION TO FINISHED GROUND LINE OUTSIDE THE LIMITS OF "GRANULAR BACKFILL".
QUANTITY INCLUDES MATERIAL FOR "COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES."
QUANTITY INCLUDES MATERIAL FOR CONSTRUCTION OF COHESIVE SOIL PLUG AT CULVERT INLET AND OUTLET. COHESIVE SOIL PLUG TO ENCOMPASS THE CLASS 20 EXCAVATION TRENCH LIMITS AND LENGTH SHOWN ON THE LONGITUDINAL SECTION ALONG CENTERLINE OF CULVERT. SEE CULVERT BACKFILL DETAILS, SHEET 6, FOR DETAILS AND LIMITS.
NO PAYMENT FOR OVERHAUL SHALL BE MADE ON THIS PROJECT.
SEE TYPICAL SECTION "RINGGOLD 117" AND "RINGGOLD 120" ON SHEET 9, SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR EXCAVATION LIMITS AND DETAILS.
UNSUITABLE MATERIAL SHALL BE WASTED ON SITE AS DIRECTED BY THE ENGINEER AT NOT ADDITIONAL COST TO THE CONTRACTING AUTHORITY. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS.

3. SEE TABULATION "RINGGOLD 102" ON SHEET 10 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
QUANTITY DOES NOT COMPENSATE FOR SHRINKAGE.
INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE "LONGITUDINAL SECTION ALONG CENTERLINE OF ROADWAY" AND THE LIMITS SHOWN ON THE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5.
INCLUDES COST OF USING SUITABLE MATERIAL FOR CONSTRUCTION ELSEWHERE ON THIS PROJECT. SUITABLE SOILS SHALL BE AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS.
UNSUITABLE MATERAL SHALL BE WASTED ON SITE AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

4. IN ORDER TO MEET NPDES PERMIT REQUIREMENTS TOPSOIL STRIP, SALVAGE, AND SPREAD SHALL BE REQUIRED ON THIS PROJECT. QUANTITY PERTAINS TO WORK WITHN THE PROJECT LIMITS. TOPSOIL SHALL BE STRIPPED FROM WITHIN THE PROJECT LIMITS AND SPREAD UNIFORMLY (MIN. 6" DEPTH) OVER ALL AREAS THAT ARE NOT COVERED BY PAVEMENT OR GRANULAR MATERIAL. AREAS SHALL BE UNDERCUT PRIOR TO PLACING TOPSOIL. CROSS-SECTIONS SHOW FINISHED GRADELINE. THE CONTRACTOR IS TO FAMILIARIZE HIM OR HERSELF WITH IOWA LAW AS IT PERTAINS TO REMOVAL AND REPLACEMENT OF TOPSOIL WITHIN THE PROJECT AREA.

5. BID ITEM IS FOR USE WITH THE REINFORCED CONCRETE BOX CULVERT. SEE TABULATION "RINGGOLD 121" ON SHEET 10 AND "CULVERT BACKFILL DETAIL" ON SHEET 6 FOR DETAILS, LIMITS, AND MATERIAL TYPES.
PRICE BID SHALL INCLUDE ALL EQUIPMENT, LABOR, AND MATERIALS NECESSARY TO COMPACT THE BACKFILL MATERIAL. BACKFILL MATERIAL SHALL BE FURNISHED, PLACED, AND PAID AS EITHER "GRANULAR BACKFILL" OR "EXCAVATION, CLASS 10, ROADWAY AND BORROW".
EARTHEN OR GRANULAR BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED EIGHT (8) INCHES.

6. QUANTITY IS BASED ON MATERIAL FROM TOP OF CULVERT TO BOTTOM OF SUBGRADE WITHIN THE CLASS 20 EXCAVATION LIMITS. SEE "CULVERT BACKFILL DETAIL" ON SHEET 6 FOR LIMITS.
PRICE BID SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIAL NECESSARY FOR COMPACTING MATERIAL. EARTHEN MATERIAL WILL BE FURNISHED, PLACED AND PAID AS "EXCAVATION, CLASS 10, ROADWAY AND BORROW".
QUANTITY DOES NOT INCLUDE SHRINKAGE.
MATERIAL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED EIGHT INCHES.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MOISTURE AND DENSITY PROCESS CONTROL SAMPLING, TESTING, AND INSPECTION. THE CONTRACTING AUTHORITY SHALL DETERMINE TESTING LOCATIONS AND BE PROVIDED WITH INSPECTION AND TESTING REPORTS.
ROADWAY EMBANKMENT OUTSIDE THE CLASS 20 EXCAVATION LIMITS DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR COMPACTION WITH MOISTURE AND DENSITY CONTROL AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

7. SEE TYPICAL SECTION "RINGGOLD 117" ON SHEET 9 FOR DETAILS AND LIMITS.
TRIAXIAL POLYMER GRID REQUIRED.

8. MATERIAL SHALL BE PLACED AT A THICKNESS OF NINE INCHES. SEE TYPICAL SECTION "RINGGOLD 117" ON SHEET 9 FOR DETAILS AND LIMITS.
SUBBASE DAMAGE BY CONSTRUCTION TRAFFIC SHALL BE REPAIRED PRIOR TO PAVING AS DIRECTED BY THE ENGINEER AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

9. SEE TYPICAL SECTION "RINGGOLD 107" ON SHEET 9.

10. INCLULDES ALL WORK NECESSARY TO CONSTRUCT AND SHAPE SHOULDER AREAS. SEE TYPICAL SECTION "RINGGOLD 107" ON SHEET 9.
MATERIAL REQUIRED IS PAID AS "EXCAVATION, CLASS 10, ROADWAY AND BORROW". SEE TABULATION "RINGGOLD 102" ON SHEET 10 FOR BREAKDOWN OF EXCAVATION QUANTITIES.
MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 2123.03,B,3 OF THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
TOPSOIL PLACEMENT WITHIN THE LIMITS OF THE GRANULAR SHOULDER WILL NOT BE REQUIRED.

11. SEE TYPICAL SECTION "RINGGOLD 117" ON SHEET 9.
UNLESS OTHERWISE NOTED IN THE PLANS, TRANSVERSE JOINTS SHALL BE SPACED AT 11 FOOT INTERVALS. CENTERLINE JOINT IS REQUIRED.
PRICE BID FOR "STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9 IN." SHALL INCLUDE ALL LABOR, EQUIPMENT, AND MATERIALS NECESSARY TO CONSTRUCT THE SINGLE REINFORCED PAVEMENT AS SHOWN IN THE CONTRACT DOCUMENTS. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR THE SINGLE REINFORCED PAVEMENT LIMITS AND DETAILS. TRANSVERSE AND LONGITUDINAL JOINTS WITHIN THE LIMITS OF THE SINGLE REINFORCED PAVEMENT SECTION SHALL BE TYPE "C." EPOXY COATED REINFORCING STEEL AND SUPPORTS REQUIRED.
PAVEMENT JOINTS OUTSIDE OF THE SINGLE REINFORCED LIMITS SHALL BE AS FOLLOWS. TRANSVERSE JOINTS SHALL BE TYPE "CD" AND THE LONGITUDINAL CENTERLINE JOINT SHALL BE TYPE L-2.
PAVEMENT JOINTS AT TIE-IN LOCATIONS SHALL BE TYPE "RD".
ALL LABOR, EQUIPMENT, AND MATERIALS REQUIRED FOR JOINT MATERIAL SHALL BE INCLUDED IN THE PRICE BID FOR "STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS C, CLASS 3 DURABILITY, 9 IN."
CERTIFIED PLANT INSPECTION IS REQUIRED.
PAVEMENT SMOOTHNESS INCENTIVE SHALL APPLY.

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

QUANTITY SUMMARY

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

TOTAL ESTIMATED QUANTITIES:
TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
12	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1
13	2402-0425031	GRANULAR BACKFILL	TON	1170
14	2402-2720000	EXCAVATION, CLASS 20	CY	3115
15	2402-2725005	FOUNDATION TREATMENT MATERIAL	TON	185
16	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	572.7
17	2404-7775000	REINFORCING STEEL	LB	77882
18	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1
19	2507-3250005	ENGINEERING FABRIC	SY	1670
20	2507-6800061	REVETMENT, CLASS E	TON	1180
21	2510-6745850	REMOVAL OF PAVEMENT	SY	950
22	2526-8285040	CONSTRUCTION SURVEY, LOCATION SURVEY	LS	1
23	2527-9263209	PAINTED PAVEMENT MARKINGS, WATERBORNE OR SOLVENT-BASED	STA	8.72
24	2528-2518000	SAFETY CLOSURE	EACH	2
25	2528-8445110	TRAFFIC CONTROL	LS	1
26	2533-4980005	MOBILIZATION	LS	1
27	2601-2634100	MULCHING	ACRE	3.8
28	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	1.9
29	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	1.9
30	2602-0000020	SILT FENCE	LF	700
31	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	700
32	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	500
33	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1
34	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1

12. THE EXISTING BRIDGE AT STATION 329+09 IS A 44' x 28' STEEL I-BEAM BRIDGE WITH HIGH TIMBER ABUTMENTS, CONCRETE CAPS, AND CONCRETE DECK.
AN INSPECTION FOR THE PRESENCE OF ABSESTOS CONTAINING MATERIALS WAS COMPLETED AND NO SUSPECT MATERIALS WERE FOUND. IF ADDITIONAL MATERIALS SUSPECTED OF CONTAINING ASBESTOS ARE DISCOVERED DURING DEMOLITION OF THE BRIDGE, WORK SHALL BE STOPPED IMMEDIATELY AND THE ENGINEER NOTIFIED.
THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE REMOVAL AND DISPOSAL OF THE EXISTING STRUCTURE. ALL SALVAGEABLE MATERIAL AND UNSALVAGEABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR. THE EXISTING STRUCTURE SHALL BE REMOVED TO AN ELEVATION AT LEAST 1 FOOT BELOW FINISHED GROUNDLINE AND TO THE EXTENT THAT IT WILL NOT INTERFERE WITH THE NEW CONSTRUCTION.
BROKEN CONCRETE FROM THE EXISTING STRUCTURE WITH SIMILAR GRADATION TO CLASS 'E' REVETMENT MAY BE PLACED ON THE CHANNEL BANKS OUTSIDE THE LIMITS SHOWN FOR CLASS 'E' REVETMENT, AS DIRECTED BY THE ENGINEER. ALL REINFORCING SHALL BE CUT OFF FLUSH WITH THE CONCRETE. H.M.A. MATERIAL IS SPECIFICALLY EXCLUDED. ALTERNATELY, THE CONTRACTOR MAY DISPOSE OF THE BROKEN CONCRETE OFF SITE AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER.
SEE HAZARDOUS MATERIAL NOTES ON SHEET 6 FOR PAINT SCRAPE SAMPLE RESULTS.

13. PRICE BID SHALL INCLUDE ALL EQUIPMENT, LABOR, AND MATERIAL NECESSARY TO FURNISH, PLACE, AND COMPACT "GRANUALR BACKFILL."
MATERIAL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED EIGHT INCHES.
SEE CULVERT BACKFILL DETAIL, SHEET 6, FOR LIMITS.
GRANULAR BACKFILL MATERIAL SHALL MEET REQUIREMENTS OF SECTION 4133 OR 4132 OF THE STANDARD SPECIFICATIONS. USE OF RECLAIMED HMA WILL NOT BE PERMITTED.
ADDITIONAL COMPENSATION IS PROVIDED WHEN COMPACTING AGAINST THE STRUCTURE AS "COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES". THIS PAYMENT IS ONLY FOR THE LABOR, EQUIPMENT, AND MATERIALS REQUIRED TO COMPACT THE MATERIAL.

14. INCLUDES ALL LABOR, EQUIPMENT, AND INCIDENTALS REQUIRED FOR THE EXCAVATION RELATING TO CULVERT CONSTRUCTION. THE QUANTITY SHOWN IS BASED ON EXISTING UNDISTURBED CONDITIONS
INCLUDES COSTS OF USING SUITABLE CLASS 20 EXCAVATION MATERIAL TO BACKFILL THE CULVERT IN ACCORDANCE WITH SECTION 2107 OF THE STANDARD SPECIFICATIONS AND/OR FOR CONSTRUCTION ELSEWHERE ON THIS PROJECT. SUITABLE SOILS SHALL BE DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS. UNSUITABLE MATERIALS SHALL BE WASTED ON SITE AS DIRECTED BY THE ENGINEER.
SEE TABULATION "RINGGOLD 102", SHEET 10, FOR BREAKDOWN OF EXCAVATION QUANTITIES.

15. INCLUDES MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS ALONG THE BOTTOM OF THE EXCAVATION. QUANTITY IS BASED ON A SIX INCH THICKNESS. THE ACTUAL THICKNESS SHALL BE DETERMINED BY THE ENGINEER BASED ON SITE CONDITIONS AT THE TIME OF CONSTRUCTION. MATERIAL SHALL BE PLACED IN LAYERS NOT EXCEEDING SIX INCHES IN THICKNESS AND SHALL BE THOROUGHLY TAMPED WITH MECHANICAL TAMPERS. PRICE BID FOR "FOUNDATION TREATMENT MATERIAL" SHALL INCLUDE THE COST FOR ANY NECESSARY OVER EXCAVATION. GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF 1 ½ INCH CLEAN STONE.

16. NO ADDITIONAL PAYMENT WILL BE ALLOWED FOR HEATING AND PROTECTION OF CONCRETE, IF NECESSARY.
CERTIFIED PLANT INSPECTION IS REQUIRED.

17. ALL REINFORCING SHALL BE GRADE 60.

18. SEE STANDARD ROAD PLAN EW-402.

19. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.
IF THE ENGINEERING FABRIC IS LAPPED, THE LAPS SHALL BE A MINIMUM OF TWO FEET IN LENGTH, SHINGLE FASHION WITH UP SLOPE LAP PIECE ON TOP. THE CONTRACTOR SHALL PROVIDE A MEANS TO SECURE THE LAP DURING THE PLACEMENT OF THE REVETMENT.

20. REVETMENT IS TO BE PLACE AT A THICKNESS OF 1'-6 UNLESS OTHERWISE NOTED IN THE PLANS. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.

21. SEE TABULATION "RINGGOLD 124" ON SHEET 10.
EXISTING PAVEMENT CONSISTS OF 8" PCC OVER 5" OF GRANULAR BASE MATERIAL.
IN ORDER TO AVOID ANY UNNECASSARY SURFACE BREAKS OR PREMATURE SPALLING, THE CONTRACTOR IS CAUTIONED TO EXERCISE EXTREME CARE WHEN PERFORMING AND OF THE NECESSARY SAW CUTTING OPERATIONS FOR THE PROPOSED PAVEMENT REMOVAL. SAW CUTS ARE TO BE MADE AT THE STATION INDICATED OR AT THE NEAREST TRANSVERSE PAVEMENT JOINT, AS DIRECTED BY THE ENGINEER.

22. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING AN INDEPENDENT CHECK OF ALL CONSTRUCTION STAKES PLACED FOR THIS PROJECT. THIS INDEPENDENT CHECK SHALL BE SUFFICIENT TO UNDERSTAND THE PLACEMENT AND INTENT OF THE STAKES.
SEE TABULATION "RINGGOLD 111" ON SHEET 10, FOR FIELD TIES TO THE SITE SURVEY.

23. SEE TABULATION "RINGGOLD 122" ON SHEET 10.
ON ALL NEW OR RECONSTRUCTED PAVEMENTS, THE LOCATION OF "NO PASSING" ZONE LINES SHALL BE LOCATED IN THE FIELD. THE LOCATIONS OF THE PROPOSED "NO PASSING" ZONE LINES SHOWN ON THE PAVEMENT MARKING TABULATION IS FOR ESTIMATING QUANTITIES ONLY.

24. SEE TABULATION "RINGGOLD 127" ON SHEET 10 AND TRAFFIC CONTROL PLAN ON SHEET 8.

25. SEE TRAFFIC CONTROL PLAN ON SHEET 8.

27. - 29. THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED, AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THE CONTRACTOR SHALL RIP TO A DEPTH OF 2'-0 ALL HAUL ROADS AND STOCK PILE AREAS PRIOR TO RESHAPING THE SITE TO ITS ORIGINAL CONDITION. THESE SHALL BE INCLUDED IN THE PRICES BID FOR "MULCHING" AND "SEEDING AND FERTILIZING (RURAL)". SEE POLLUTION PREVENTION PLAN, SHEET 7, FOR STABILIZING CROP REQUIREMENT.

30. – 32. SEE POLLUTION PREVENTION PLAN, SHEET 7, AND TABULATIONS "RINGGOLD 125" AND "RINGGOLD 126" ON SHEET 10.

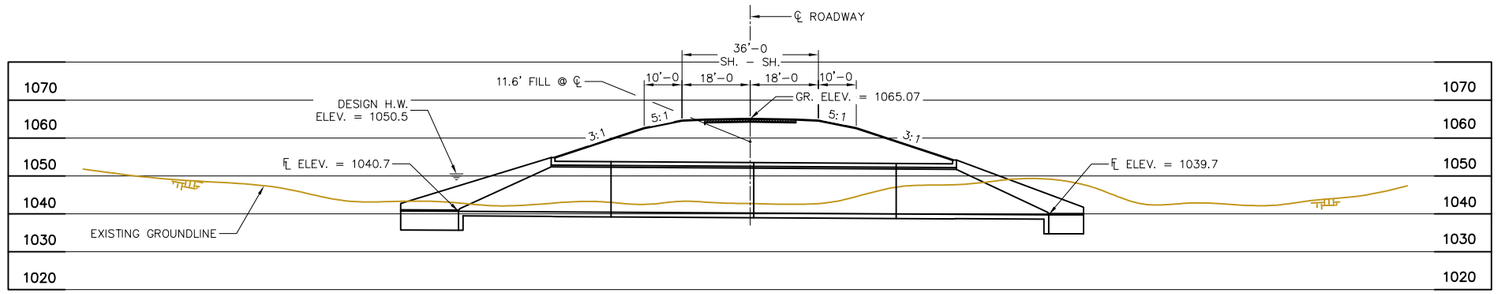
TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

QUANTITY SUMMARY

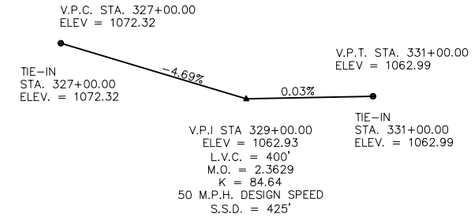
8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

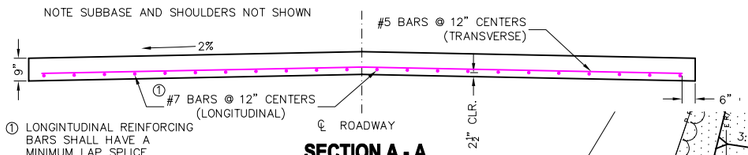
BENCHMARK: PK NAIL SET IN POWER POLE, STATION 331+978, 164' RT., ELEV. 1058.34



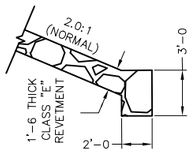
LONGITUDINAL SECTION ALONG ℄ CULVERT



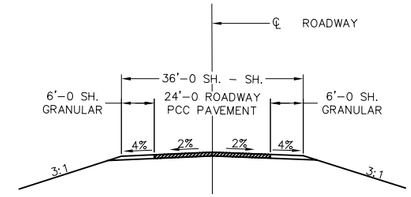
PROPOSED GRADE AT CULVERT



SECTION A - A
SINGLE REINFORCED PAVEMENT DETAILS



TYPICAL REVETMENT KEYWAY DETAIL



TYPICAL APPROACH SECTION

LOCATION

RINGGOLD COUNTY
T-70N, R-28W
SECTION 36
UNION TOWNSHIP
OVER ELK CREEK

HYDRAULIC DATA

DRAINAGE AREA = 7.3 SQ. MI.
DESIGN DISCHARGE = 2040 C.F.S.
DESIGN HIGH WATER ELEV. = 1050.5
MANNING SLOPE = .00187 FT./FT.
BARREL SLOPE = .00636 FT./FT.
DESIGN OUTLET VELOCITY = 8.9 F.P.S.
Q25 = 1660 C.F.S. STAGE ELEV. = 1049.2
Q50 = 2040 C.F.S. STAGE ELEV. = 1050.5 (DESIGN)
Q100 = 2450 C.F.S. STAGE ELEV. = 1051.8
Q500 = 3280 C.F.S. STAGE ELEV. = 1054.4
EXT. H.W. ELEV. = UNKNOWN

TWIN 12' x 12' X 106'-0 REINFORCED CONCRETE BOX CULVERT

SITUATION PLAN

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

BENCHMARK: PK NAIL SET IN POWER POLE, STATION 331+98, 164' RT., ELEV. 1058.34

E.O.P. STA. = 331+25.00

TIE-IN STA. = 331+00.00

TIE-IN STA. 331+00.00
N: 6166763.14
E: 22426506.48

'RD' JOINT (TYP)

STA 331+10 @ EXISTING

STA 330+99 @ EXISTING

STA 330+78 @ EXISTING

EXISTING RIGHT-OF-WAY (TYP)

NOTE: CONTRACTOR TO VERIFIY ALL UTILITY LOCATIONS.

SECTION LINE

STA 330+55 @ 155' RT.

NEESSEN, MICHAEL R. & CONSTANCE

DELINEATED EMERGENT WETLANDS (NO IMPACT)

STA 330+35 @ 85' LT.

PI: E: 22426428.2034, N: 6166764.4618
DELTA: 0°19'23.88" LT.

PI: 330+21.72

STA 330+25 @ EXISTING

CLEARING AND GRUBBING (0.33 AC.)

STA. 329+85.00
END REINFORCED CONCRETE PAVEMENT

MAYER LIVING TRUST

106'-0"

BACK-TO-BACK OF PARAPET

1'-0"

CLEARING AND GRUBBING (0.28 AC.)

54'-0"

52'-0"

38'-0"

15'-0"

CONSTRUCTION JOINTS

STA 329+85 @ 125' RT.

*170' RT.

STA 329+80 @ 190' RT.

1'-6 THICK CLASS "E" REVETMENT WITH ENGINEERING FABRIC ON CHANNEL BANKS (TYP)

STA 329+40 @ 140' LT.

**120' RT.

CREEK

**155' RT.

*175' RT.

STA 329+00 @ 190' LT.

EXISTING FEATURES (TYP)

STA 329+00 @ 190' RT.

*190' LT. (TYP)

**160' LT.

**175' LT.

STA. 329+09, ℄ EXISTING 44' x 28' SINGLE SPAN STEEL I-BEAM BRIDGE, WITH HIGH TIMBER ABUTMENTS, AND CONCRETE DECK, 0° SKEW

STA. 329+10.00, ℄ PROPOSED TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT, 0° SKEW HEADWALL, CULVERT TO BE LAYED AT 8° SKEW, RT. AHEAD

STA 328+65 @ 125' RT.

℄ ALIGNMENT

NEESSEN, MICHAEL R. & CONSTANCE

STA. 328+35.00
BEGIN REINFORCED CONCRETE PAVEMENT

PI: E: 22426208.4006, N: 6166769.4256
DELTA: 0°05'55.65" LT.

PROPOSED RIGHT-OF-WAY (TYP)

PI: 328+01.87

MAYER LIVING TRUST

CLEARING AND GRUBBING (0.10 AC.)

STA 327+70 @ 190' LT.

CLEARING AND GRUBBING (0.44 AC.)

STA 327+65 @ EXISTING

STA 327+65 @ EXISTING

STA 327+70 @ 110' RT.

TEMPORARY CONSTRUCTION EASEMENT (TYP)

CO HWY J20

STA 327+25 @ 110' RT.

PI: 327+15.93

B.O.P. & TIE-IN
STA. = 327+00.00

PI: E: 22426122.4911, N: 6166771.5138
DELTA: 0°07'33.51" LT.

STA 327+25 @ EXISTING

TIE-IN STA. 327+00.00
N: 6166771.87
E: 22426106.56

STA 327+00 @ EXISTING

SAW CUT (TYP)

STREAMBED IMPACTED AS RESULT OF CULVERT CONSTR. (0.046 ACRES)

DELINEATED EMERGENT WETLANDS – NO CONSTRUCTION IMPACTS

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

GENERAL PLAN

GENERAL PLAN

25 0 25 50

* DENOTES LIMITS OF CLASS 10 (CHANNEL) EXCAVATION
** DENOTES LIMITS OF CLASS 'E' REVETMENT AND ENGINEERING FABRIC

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

RINGGOLD COUNTY
SECONDARY ROADS DEPARTMENT

DESIGNED BY: JAJ
CHECKED BY: JAJ
DRAFTED BY: JAJ

JOB NUMBER: UNION 13

PROJECT NUMBER: BRS-C080(88)--60-80

SPECIFICATIONS

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017

CONSTRUCTION: THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2023, PLUS GENERAL SUPPLEMENTAL SPECIFICATIONS; AND APPLICABLE SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, AND SPECIAL PROVISIONS, SHALL APPLY TO THE CONSTRUCTION ON THIS PROJECT UNLESS NOTED OTHERWISE.

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH ED., SERIES OF 2017.

REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.

CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, f'c = 4000 PSI,

GENERAL NOTES

THIS DESIGN IS FOR A TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT OVER A ELK CREEK, FHWA NO 297840, LOCATED IN SECTION 36, T-70N, R-28W.

THIS CULVERT IS DESIGNED FOR HL-93 LOADING AND 11.6 FEET OF FILL. THE CULVERT SECTIONS ARE DESIGNED FOR CLASS 1 EXPOSURE. EV = 0.120 kcf. HORIZONTAL EARTH PRESSURE, EHmax = .060 kcf max, EHmin = 0.030 kcf min.

ACCESS SHALL BE MAINTAINED TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.

THE PRIME CONTRACTOR SHALL EMPLOY CONTROLS TO REDUCE THE EROSIVENESS OF LAND ADJACENT TO SURFACE WATERS AND WETLANDS, INCLUDING ESTABLISHMENT AND MAINTENANCE OF EROSION CONTROL DEVICES DURING AND AFTER CONSTRUCTION AND THE REVEGETATION OF ALL DISTURBED AREAS UPON PROJECT COMPLETION. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF ALL EROSION CONTROL MEASURES.

STANDARD ROAD PLANS ARE AVAILABLE FROM THE IOWA DEPARTMENT OF TRANSPORTATION WEBSITE: http://www.iowadot.gov/erl/index.html.

UTILITY NOTES

SEE SECTION 1107.15 OF THE STANDARD SPECIFICATIONS REGARDING UTILITY COORDINATION.

WASTE AND DISPOSAL NOTES

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT AREAS (INCLUDING HAUL ROADS) SELECTED FOR WASTE OR DISPOSAL NOT IMPACT 1) CULTURALY SENSITIVE SITES OR GRAVES OR 2) WETLANDS OR "WATERS OF THE U.S.", INCLUDING STREAMS OR STREAM BANKS BELOW THE "ORDINARY HIGH WATER MARK", WITHOUT AN APPROVED U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT. 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 OR APPROVED BY THE ENGINEER.

HAZARDOUS MATERIALS NOTES

A SCRAPE SAMPLE OF THE EXISTING PAINT WAS TAKEN FROM A SHORING PLATE AND BEAM PLATE OF THE SUPERSTRUCTURE OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE AND OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THESE SAMPLES WAS A MAXIMUM OF 120,000 PART PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THESE SAMPLE WAS A MAXIMUM OF 4,900 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 COUNTY'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS.

THE CONTRACTOR SHALL CONDUCT THEIR OPERATIONS IN SUCH A MANNER THAT ANY PAINT REMOVED DURING REMOVAL IS CONTAINED, COLLECTED, AND DISPOSED OF IN ACCORDANCE WITH SECTION 2508 OF THE STANDARD SPECIFICATIONS.

BEFORE DELIVERY OF ANY SCRAP STEEL THE CONTRACTOR SHALL PROVIDE A WRITTEN NOTICE TO THE RECEIVING FACILITY. THIS NOTICE SHALL AT A MINIMUM INCLUDE:

1. A NOTICE THAT THE SCRAP STEEL IS COATED WITH PAINT THAT HAS REGULATED MATERIALS AT LEVELS THAT COULD BE HAZARDOUS TO EMPLOYEES OR THE ENVIRONMENT.
2. A COPY OF THE SCRAPE SAMPLE RESULTS PROVIDED IN THE CONTRACT DOCUMENTS.
3. A SIGNATURE BLOCK FOR THE RECEIVING FACILITY TO CONFIRM THEIR RECEIPT OF THIS INFORMATION.

A COPY OF THIS NOTICE, SIGNED BY THE RECEIVING FACILITY, SHALL BE RETURNED TO THE ENGINEER BEFORE ANY SCRAP STEEL IS REMOVED FROM THE PROJECT.

ALL COSTS ASSOCIATED WITH COMPLIANCE WITH THE ABOVE REMOVAL AND DISPOSAL REQUIREMENTS WILL BE INCIDENTAL TO "REMOVAL OF EXISTING BRIDGE."

CONCRETE AND REINFORCING STEEL NOTES

ALL STRUCTURAL REINFORCING STEEL SHALL BE SECURELY WIRED IN PLACE BEFORE CONCRETE IS PLACED. BAR CHAIRS SPACED AT NOT MORE THAN 3'-0 CENTERS IN EITHER DIRECTION SHALL BE USED TO SUPPORT ALL STRUCTURAL REINFORCING IN ACCORDANCE WITH THE SECTION 2404 OF THE STANDARD SPECIFICATIONS.

CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

EDGE CLEARANCES: 2" EXCEPT
TOP OF FLOOR: 2 ¼" TO NEAR TRANSVERSE REINFORCING BAR
BOTTOM OF FLOOR: 3 ½" TO NEAR TRANSVERSE REINFORCING BAR

END CLEARANCES:
VERTICAL TOP: 2"
VERTICAL BOTTOM: 3" OR 3 ½" IF THE OVERALL HEIGHT OF THE CULVERT IS NOT TO A FULL INCH

TRANSVERSE: 2"

ALL EXPOSED CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH ¾" DRESSED AND BEVELED STRIP.

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

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL. KEYWAY SIZE SHALL BE 2" x 4" EXCEPT AS FOLLOWS: KEYWAY BETWEEN THE FLOOR AND WALL SHALL BE 2" x 6" WHEN THE WALL THICKNESS IS GREATER THAN 10 INCHES WIDE.

CULVERT NOTES

THE CONTRACTOR SHALL SUBMIT A PLAN FOR TEMPORARY STREAM DIVERSION PRIOR TO CONSTRUCTION OF THE CULVERT. THE PLAN IS TO BE REVIEWED AND APPROVED BY THE ENGINEER. ANY TEMPORARY STREAM CROSSINGS SHALL HAVE PIPE CULVERTS TO ACCOMMODATE LOW FLOWS.

THE CULVERT FLOOR SHALL BE FINISHED SMOOTH. SIDES OF THE FOOTINGS SHALL BE FORMED TO ENSURE CORRECT LINE AND GRADE.

THE PERMISSIBLE CONTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED 1'-11 AT THE CONTRACTORS OPTION.

BOTTOM OF FLOOR IS TO BE TAPERED 1 ½" IN 12" TO ACCOMMODATE DIFFERENCE IN FLOOR THICKNESS BETWEEN BARREL FLOOR AND APRON OF HEADWALL. TAPER IS TO BE DIRECTLY BELOW AND PARALLEL TO PARAPET.

THE VERTICAL BARS IN THE WALLS MAY BE SPLICED ABOVE THE FOOTING AT THE CONTRACTOR'S OPTION AS FOLLOWS:

BAR SIZE NUMBER	4	5	6	7	8	9
MINIMUM SPLICE LENGTH	20"	24"	29"	34"	38"	47"

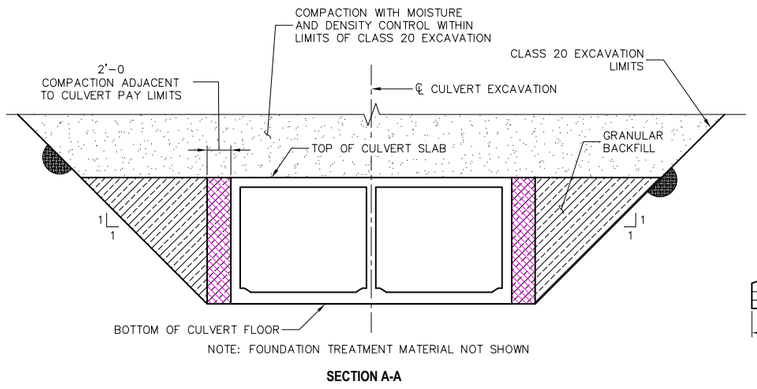
THIS SPLICE, IF USED, WILL BE AT THE CONTRACTOR'S EXPENSE.

LONGITUDINAL REINFORCING SHALL NOT EXTEND THROUGH CONSTRUCTION JOINTS, EXCEPT FOR 5r1 SLAB DOWEL BARS.

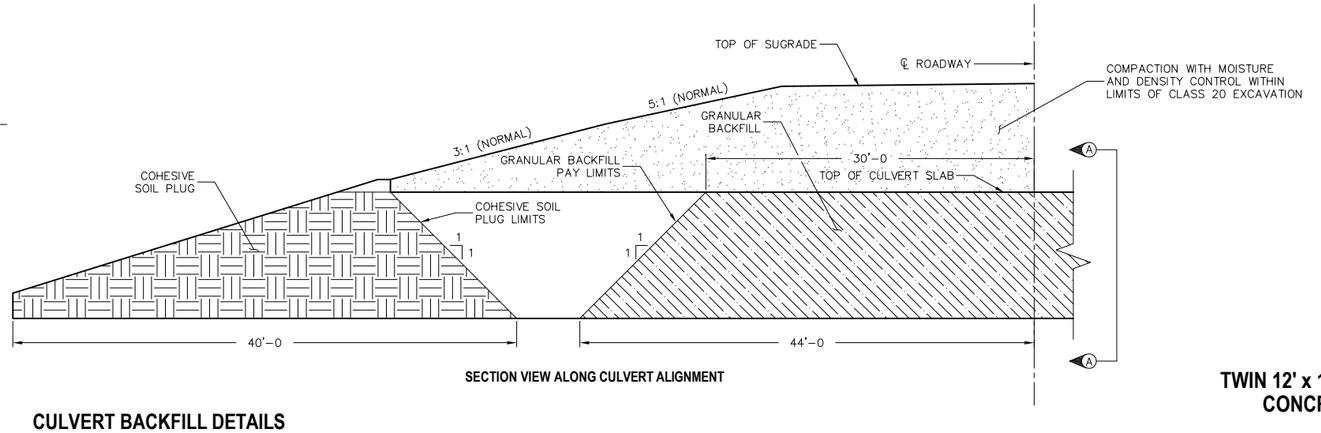
WHEN DEWATERING PRESENTS A PROBLEM FOR PLACING THE CURTAIN WALLS AS DETAILED, ALTERNATE METHODS SUCH AS STEEL SHEET PILE AND PRECAST CONCRETE WALLS MAY BE APPROVED BUT AT NO ADDITIONAL COST. THE CULVERT CONTRACTOR IS TO SUBMIT TO THE ENGINEER FOR APPROVAL, COMPLETE DRAWINGS OF THE PROPOSED CURTAIN WALL ALTERNATE BEFORE BEGINNING CONSTRUCTION.

CONTRACTOR'S WORK AREA

THE CONTRACTOR'S WORK AND MATERIAL STORAGE AREA SHALL BE DEFINED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. THE CONTRACTOR SHALL SHAPE, FERTILIZE, AND SEED THIS CONTRACTOR'S AREA IN ORDER TO RETURN IT TO ITS ORIGINAL CONDITION. PAYMENT FOR THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR "SEEDING AND FERTILIZING (RURAL)" AND "MULCHING" BID ITEMS. AREAS OUTSIDE THE CONTRACTOR'S AREA DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION, AS DETERMINED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE AUTHORIZED FOR THIS WORK.



SECTION A-A



SECTION VIEW ALONG CULVERT ALIGNMENT

CULVERT BACKFILL DETAILS

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

GENERAL NOTES & BACKFILL DETAILS

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

THIS PROJECT IS REGULATED BY THE REQUIREMENTS OF THE IOWA DEPARTMENT OF NATURAL RESOURCES (DNR) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT NO. 2 OR AN IOWA DEPARTMENT OF NATURAL RESOURCES (DNR) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) INDIVIDUAL STORM WATER PERMIT. THE CONTRACTOR SHALL CARRY OUT THE TERMS AND CONDITIONS OF THIS PERMIT AND THE POLLUTION PREVENTION PLAN (PPP).

THIS BASE PPP INCLUDES INFORMATION ON ROLES AND RESPONSIBILITIES, PROJECT SITE DESCRIPTION, CONTROLS, MAINTENANCE PROCEDURES, INSPECTION REQUIREMENTS, NON-STORM WATER CONTROLS, POTENTIAL SOURCES OF OFF RIGHT-OF-WAY POLLUTION, AND DEFINITIONS. THIS PLAN REFERENCES OTHER DOCUMENTS RATHER THAN REPEATING THE INFORMATION CONTAINED IN THE DOCUMENTS. A COPY OF THIS BASE POLLUTION PREVENTION PLAN, AMENDED AS NEEDED DURING CONSTRUCTION, WILL BE READILY AVAILABLE FOR REVIEW.

ALL CONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER THAT CONTROLS POLLUTANTS, MINIMIZES EROSION, AND PREVENTS SEDIMENTS FROM ENTERING WATERS OF THE STATE AND LEAVING THE HIGHWAY RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE AND IMPLEMENTATION OF THE PPP FOR THEIR ENTIRE CONTRACT. THIS RESPONSIBILITY SHALL BE FURTHER SHARED WITH SUBCONTRACTORS WHOSE WORK IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THIS PPP.

I. ROLES AND RESPONSIBILITES
- A. DESIGNER:
  1. PREPARES BASE PPP INCLUDED IN THE PROJECT PLAN.
  2. PREPARES NOTICE OF INTENT (NOI) SUBMITTED TO IOWA DNR.
  3. IS SIGNATURE AUTHORITY ON THE BASE PPP. IF CONSULTANT DESIGNED, SIGNATURE FROM CONTRACTING AUTHORITY IS ALSO REQUIRED.
- B. CONTRACTOR:
  1. SIGNS A CO-PERMITTEE CERTIFICATION STATEMENT ADHERING TO THE REQUIREMENTS OF THE NPDES PERMIT AND THIS PPP. ALL CO-PERMITTEES ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE IOWA ADMINISTRATIVE CODE TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PPP.
  2. DESIGNATES A WATER POLLUTION CONTROL MANAGER (WPCM), WHO HAS THE DUTIES AND RESPONSIBILITIES AS DEFINED IN SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  3. SUBMITS AN EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND ECIP UPDATES ACCORDING TO SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  4. INSTALLS AND MAINTAINS APPROPRIATE CONTROLS. THIS WORK MAY BE SUBCONTRACTED AS DOCUMENTED THROUGH SUBCONTRACTOR REQUEST FORMS (FORM 830231).
  5. SUPERVISES AND IMPLEMENTS GOOD HOUSEKEEPING PRACTICES ACCORDING TO PARAGRAPH III, C, 2.
  6. CONDUCTS JOINT REQUIRED INSPECTIONS OF THE SITE WITH INSPECTION STAFF. WHEN CONTRACTOR IS NOT MOBILIZED ON SITE, CONTRACTOR MAY DELEGATE THIS RESPONSIBILITY TO A TRAINED OR CERTIFIED SUBCONTRACTOR. CONTRACTING AUTHORITY ALSO MAY WAIVE JOINT INSPECTION REQUIREMENT DURING WINTER SHUTDOWN. IN BOTH CIRCUMSTANCES, WPCM (OR TRAINED OR CERTIFIED DELEGATE FROM THE CONTRACTOR) IS STILL RESPONSIBLE TO REVIEW AND SIGN INSPECTION REPORTS.
  7. COMPLIES WITH TRAINING AND CERTIFICATION REQUIREMENTS OF SECTION 2602 OF THE STANDARD SPECIFICATIONS.
  8. SUBMITS AMENDED PPP SITE MAP ACCORDING TO SECTION 2602 OF THE STANDARD SPECIFICATIONS.
- C. SUBCONTRACTORS:
  1. SIGN A CO-PERMITTEE CERTIFICATION STATEMENT ADHERING TO THE REQUIREMENTS OF THE NPDES PERMIT AND THIS PPP IF: RESPONSIBLE FOR SEDIMENT OR EROSION CONTROLS; INVOLVED IN LAND DISTURBING ACTIVITIES; OR PERORMING WORK THAT IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THIS PPP. SUBCONTRACTED WORK ITEMS ARE IDENTIFIED IN SUBCONTRACTOR REQUEST FORMS (FORM 830231). ALL CO-PERMITTEES ARE LEGALLY REQUIRED UNDER THE CLEAN WATER ACT AND THE IOWA ADMINISTRATIVE CODE TO ENSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PPP.
  2. IMPLEMENT GOOD HOUSEKEEPING PRACTICES ACCORDING TO PARAGRAPH III, C, 2.
- D. RCE/PROJECT ENGINEER:
  1. IS PROJECT STORM WATER MANAGER.
  2. ON PROJECTS WHERE DOT IS THE CONTRACTING AUTHORITY, IS CURRENT WITH EROSION CONTROL TRAINING OR CERTIFICATION.
  3. TAKES ACTIONS NECESSARY TO ENSURE COMPLIANCE WITH STORM WATER REQUIREMENTS INCLUDING, WHERE APPROPRIATE, ISSUING STOP WORK ORDERS, AND DIRECTING ADDITIONAL INSPECTIONS AT CONSTRUCTION PROJECT SITES THAT ARE EXPERIENCING PROBLEMS WITH ACHIEVING PERMIT COMPLIANCE.
  4. ORDERS THE TAKING OF MEASURES TO CEASE, CORRECT, PREVENT, OR MINIMIZE THE CONSEQUENCES OF NON-COMPLIANCE WITH THE STORM WATER REQUIREMENTS OF THE APPLICABLE PERMIT.
  5. SUPERVISES ALL WORK NECESSARY TO MEET STORM WATER REQUIREMENTS AT THE PROJECT, INCLUDING WORK PERFORMED BY CONTRACTORS AND SUBCONTRACTORS.
  6. REQUIRES EMPLOYEES, CONTRACTORS, AND SUBCONTRACTORS TO TAKE APPROPRIATE RESPONSIVE ACTION TO COMPLY WITH STORM WATER REQUIREMENTS, INCLUDING REQUIRING ANY SUCH PERSON TO CEASE OR CORRECT A VIOLATION OF STORM WATER REQUIREMENTS, AND TO ORDER OR RECOMMEND SUCH OTHER ACTIONS AS NECESSARY TO MEET STORM WATER REQUIREMENTS.
  7. IS FAMILIAR WITH THE PROJECT PPP AND STORM WATER SITE MAP.
  8. ON PROJECTS WHERE DOT IS CONTRACTING AUTHORITY, IS RESPONSIBLE FOR PERIODICALLY MONITORING INSPECTION REPORTS TO DETERMINE WHETHER DEFICIENCIES IDENTIFIED IN INSPECTION REPORTS WERE ADEQUATELY AND TIMELY ADDRESSED, AND IF NOT, HAS THE AUTHORITY AND RESPONSIBILITY TO DIRECT IMMEDIATE ACTIONS TO CORRECT THE DEFICIENCIES.
  9. IS THE POINT OF CONTACT FOR THE PROJECT FOR REGULATORY OFFICIALS, INSPECTOR, CONTRACTORS, AND SUBCONTRACTORS REGARDING STORM WATER REQUIREMENTS.
  10. IS SIGNATURE AUTHORITY ON NOTICE OF DISCONTINUATION.
  11. MAINTAINS AN UP-TO-DATE RECORD OF CONTRACTORS, SUBCONTRACTORS, AND SUBCONTRACTED WORK ITEMS THROUGH SUBCONTRACTOR REQUEST FORMS (FORM 830231).
  12. MAKES INFORMATION TO DETERMINE PERMIT COMPLIANCE AVAILABLE TO THE DNR UPON THEIR REQUEST.
- E. INSPECTOR:
  1. UPDATES PPP THROUGH FIELDBOOK ENTRIES AND STORM WATER SITE INSPECTION REPORTS IF THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE WHICH HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS FROM THE PROJECT.
  2. MAKES INFORMATION TO DETERMINE PERMIT COMPLIANCE AVAILABLE TO THE DNR UPON THEIR REQUEST.
  3. CONDUCTS JOINT REQUIRED INSPECTIONS OF THE SITE WITH THE CONTRACTOR/SUBCONTRACTOR.
  4. COMPLETES AN INSPECTION REPORT AFTER EACH INSPECTION.
  5. IS SIGNATURE AUTHORITY ON STORM WATER INSPECTION REPORTS.

II. PROJECT SITE DESCRIPTION
- A. THIS POLLUTION PREVENTION PLAN (PPP) IS FOR THE CONSTRUCTION OF A TWIN 12' x 12' x 106'-0 RCB CULVERT.
- B. THIS PPP COVERS APPROXIMATELY 2.82 ACRES WITH AN ESTIMATED 2.82 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 2.82 ACRES DISTURBED.
- C. THE PPP IS LOCATED IN AN AREA OF ONE (1) SOIL ASSOCIATION (GRUNDY – HAIG – ARISPIE – GARA, C – C/D – C – C). THE ESTIMATED WEIGHTED AVERAGE RUNOFF COEFFICIENT NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 0.36.
- D. STORM WATER SITE MAP IS LOCATED IN THE SITUATION AND GENERAL PLAN. PROPOSED SLOPES ARE SHOWN IN CROSS SECTIONS, DETAILS, OR STANDARD ROAD PLANS. SUPPLEMENTAL INFORMATION IS LOCATED IN THE TABULATIONS.
- E. THE BASE STORM WATER SITE MAP IS AMENDED BY CONTRACT MODIFICATIONS AND PROGRESS PAYMENTS (FIELDBOOK ENTRIES) OF COMPLETED EROSION CONTROL WORK. ALSO, DUE TO PROJECT PHASING, EROSION AND SEDIMENT CONTROLS SHOWN ON PROJECT PLANS MAY NOT BE INSTALLED UNTIL NEEDED, BASED ON SITE CONDITIONS. FOR EXAMPLE, SILT FENCE DITCH CHECKS WILL TYPICALLY NOT BE INSTALLED UNTIL THE DITCH HAS BEEN INSTALLED. INSTALLED LOCATIONS MAY ALSO BE MODIFIED FROM TABULATION LOCATIONS BY FIELD STAFF. INSTALLED LOCATIONS WILL BE DOCUMENTED BY FIELDBOOK ENTRIES AND AMENDED PPP SITE MAP.
- F. RUNOFF FROM THIS WORK WILL FLOW INTO ELK CREEK.

III. CONTROLS
- A. THE CONTRACTOR'S ECIP SPECIFIED IN ARTICLE 2602.03 OF THE STANDARD SPECIFICATIONS FOR ACCOMPLISHMENT OF STORM WATER CONTROLS SHOULD CLEARLY DESCRIBE THE INTENDED SEQUENCE OF MAJOR ACTIVITIES, AND FOR EACH ACTIVITY DEFINE THE CONTROL MEASURE AND THE TIMING DURING THE CONSTRUCTION PROCESS THAT THE MEASURE WILL BE IMPLEMENTED.
- B. PRESERVE VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION.
- C. SECTIONS 2601 AND 2602 OF THE STANDARD SPECIFICATIONS DEFINE REQUIREMENTS TO IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES. ACTUAL QUANTITIES USED AND INSTALLED LOCATIONS MAY VARY FROM THE BASE PPP AND AMENDMENT OF THE PLAN WILL BE DOCUMENTED VIA FIELDBOOK ENTRIES, AMENDED PPP SITE MAP, OR BY CONTRACT MODIFICATION. ADDITIONAL EROSION AND SEDIMENT CONTROL ITEMS MAY BE REQUIRED AS DETERMINED BY THE INSPECTOR AND/OR CONTRACTOR DURING STORM WATER SITE INSPECTIONS. IF THE WORK INVOLVED IS NOT APPLICABLE TO ANY CONTRACT ITEMS, THE WORK WILL BE PAID FOR ACCORDING TO ARTICLE 1109.03 PARAGRAPH B OF THE STANDARD SPECIFICATIONS.
  1. EROSION AND SEDIMENT CONTROLS
     - a. STABILIZATION PRACTICES
       1) SITE PLANS WILL ENSURE THAT EXISTING VEGETATION OR NATURAL BUFFERS ARE PRESERVED WHERE ATTAINABLE AND DISTURBED PORTIONS OF THE SITE WILL BE STABILIZED.
       2) INITIALIZE STABILIZATION OF DISTURBED AREAS IMMEDIATELY AFTER CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE:
          a) PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR
          b) TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
       3) STAGED PERMANENT AND/OR TEMPORARY STABILIZING SEEDING AND MULCHING SHALL BE COMPLETED AS THE DISTURBED AREAS ARE COMPLETED. INCOMPLETE AREAS SHALL BE STABILIZED ACCORDING TO PARAGRAPH III, C, 1, A, 2, B ABOVE.
       4) PERMANENT AND TEMPORARY STABILIZATION PRACTICES TO BE USED FOR THIS PROJECT ARE LOCATED IN THE STORM WATER SITE MAP, ESTIMATED PROJECT QUANTITIES, AND ESTIMATE REFERENCE INFORMATION. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE PRACTICES TO BE USED ON THIS PROJECT ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION.
       5) PRESERVATION OF EXISTING VEGETATION WITHIN RIGHT-OF-WAY OR EASEMENTS WILL ACT AS VEGETATIVE BUFFER STRIPS.
       6) PRESERVATION OF TOPSOIL BID ITEMS TO BE USED FOR THIS PROJECT ARE LOCATED IN THE ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION. ADDITIONAL INFORMATION MAY BE FOUND IN THE TABULATIONS, OR IS REFERENCED IN SECTION 2105 OF THE STANDARD SPECIFICATIONS.
     - b. STRUCTURAL PRACTICES
       1) STRUCTURAL PRACTICES WILL BE IMPLEMENTED TO DIVERT FLOWS FROM EXPOSED SOILS AND DETAIN OR OTHERWISE LIMIT RUNOFF AND THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. ADDITIONALLY, STRUCTURAL PRACTICES MAY INCLUDE: SILT BASINS THAT PROVIDE 3600 CUBIC FEET OF STORAGE PER ACRE DRAINED OR EQUIVALENT SEDIMENT CONTROLS, OUTLET STRUCTURES THAT WITHDRAW WATER FROM SURFACE WHEN DISCHARGING BASINS, AND CONTROLS TO DIRECT STORM WATER TO VEGETATED AREAS.
       2) STRUCTURAL PRACTICES TO BE USED FOR THIS PROJECT ARE LOCATED IN THE STORM WATER SITE MAP, ESTIMATED PROJECT QUANTITIES, AND ESTIMATE REFERENCE, AS WELL AS ALL OTHER ITEM SPECIFIC TABULATIONS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE DEVICES TO BE USED ON THIS PROJECT ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION.
     - c. STORM WATER MANAGEMENT
       MEASURES SHALL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER DISCHARGES THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. THIS MAY INCLUDE VELOCITY DISSIPATION DEVICES AT DISCHARGE LOCATIONS AND ALONG LENGTH OF OUTFALL CHANNEL AS NECESSARY TO PROVIDE A NON-EROSION VELOCITY FLOW FROM STRUCTURE TO WATER COURSE. IF INCLUDED WITH THIS PROJECT, THESE ITEMS ARE LOCATED IN THE STORM WATER SITE MAP AND ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION, AS WELL AS ALL OTHER ITEM SPECIFIC TABULATIONS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE PRACTICES TO BE USED ON THIS PROJECT ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION. THE INSTALLATION OF THESE DEVICES MAY BE SUBJECT TO SECTION 404 OF THE CLEAN WATER ACT.
  2. OTHER CONTROLS
     CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND CONSTRUCTION MATERIAL WASTES SHALL COMPLY WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC SYSTEM REGULATIONS. IN THE EVENT OF A CONFLICT WITH OTHER GOVERNMENTAL LAWS, RULES AND REGULATIONS, THE MORE RESTRICTIVE LAWS, RULES OR REGULATIONS SHALL APPLY.
     - a. VEHICLE ENTRANCES AND EXITS - CONSTRUCT AND MAINTAIN ENTRANCES AND EXITS TO PREVENT TRACKING OF SEDIMENTS ONTO ROADWAYS.
     - b. MATERIAL DELIVERY, STORAGE AND USE - IMPLEMENT PRACTICES TO PREVENT DISCHARGE OF CONSTRUCTION MATERIALS DURING DELIVERY, STORAGE, AND USE.
     - c. STOCKPILE MANAGEMENT - INSTALL CONTROLS TO REDUCE OR ELIMINATE POLLUTION OF STORM WATER FROM STOCKPILES OF SOIL AND PAVING.
     - d. WASTE DISPOSAL - DO NOT DISCHARGE ANY MATERIALS, INCLUDING BUILDING MATERIALS, INTO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
     - e. SPILL PREVENTION AND CONTROL - IMPLEMENT CHEMICAL SPILL AND LEAK PREVENTION AND RESPONSE PROCEDURES TO CONTAIN AND CLEAN UP SPILLS AND PREVENT MATERIAL DISCHARGES TO THE STORM DRAIN SYSTEM AND WATERS OF THE STATE.
     - f. CONCRETE RESIDUALS AND WASHOUT WASTES - WASTE SHALL NOT BE DISCHARGED TO A SURFACE WATER AND IS NOT ALLOWED TO ADVERSELY AFFECT A WATER OF THE STATE. DESIGNATE TEMPORARY CONCRETE WASHOUT FACILITIES FOR RINSING OUT CONCRETE TRUCKS. PROVIDE DIRECTIONS TO TRUCK DRIVERS WHERE DESIGNATED WASHOUT FACILITIES ARE LOCATED. DESIGNATED WASHOUT AREAS SHOULD BE LOCATED AT LEAST 50 FEET AWAY FROM STORM DRAINS, STREAMS OR OTHER WATER BODIES. CARE SHOULD BE TAKEN TO ENSURE THESE FACILITIES DO NOT OVERFLOW DURING STORM EVENTS.
     - g. CONCRETE GROOVING/GRINDING SLURRY – DO NOT DISCHARGE SLURRY TO A WATERBODY OR STORM DRAIN. SLURRY MAY BE APPLIED ON FORESLOPES OR REMOVED FROM THE PROJECT.
     - h. VEHICLE AND EQUIPMENT STORAGE AND MAINTENANCE AREAS - PERFORM ON SITE FUELING AND MAINTENANCE IN ACCORDANCE WITH ALL ENVIRONMENT LAWS SUCH AS PROPER STORAGE OF ONSITE FUELS AND PROPER DISPOSAL OF USED ENGINE OIL OR OTHER FLUIDS ON SITE. EMPLOY WASHING PRACTICES THAT PREVENT CONTAMINATION OF SURFACE AND GROUND WATER FROM WASH WATER. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
     - i. LITTER MANAGEMENT - ENSURE EMPLOYEES PROPERLY DISPOSE OF LITTER. MINIMIZE EXPOSURE OF TRASH IF EXPOSURE TO PRECIPITATION OR STORM WATER WOULD RESULT IN A DISCHARGE OF POLLUTANTS.
     - j. DEWATERING – PROPERLY TREAT WATER TO REMOVE SUSPENDED SEDIMENT BEFORE IT RE-ENTERS A WATERBODY OR DISCHARGES OFF-SITE. MEASURES ARE ALSO TO BE TAKEN TO PREVENT SCOUR EROSION AT DEWATERING DISCHARGE POINT.
  3. APPROVED STATE OR LOCAL PLANS DURING THE COURSE OF THIS CONSTRUCTION, IT IS POSSIBLE THAT SITUATIONS WILL ARISE WHERE UNKNOWN MATERIALS WILL BE ENCOUNTERED. WHEN SUCH SITUATIONS ARE ENCOUNTERED, THEY WILL BE HANDLED ACCORDING TO ALL FEDERAL, STATE, AND LOCAL REGULATIONS IN EFFECT AT THE TIME.

IV. MAINTENANCE PROCEDURES
THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN PROPER WORKING ORDER, INCLUDING CLEANING, REPAIRING, OR REPLACING THEM THROUGHOUT THE CONTRACT PERIOD. THIS SHALL BEGIN WHEN THE FEATURES HAVE LOST 50% OF THEIR CAPACITY.

V. INSPECTION REQUIREMENTS
- A. INSPECTIONS SHALL BE MADE JOINTLY BY THE CONTRACTOR AND THE CONTRACTING AUTHORITY'S INSPECTOR AT LEAST ONCE EVERY SEVEN CALENDAR DAYS. STORM WATER SITE INSPECTIONS WILL INCLUDE:
  1. DATE OF THE INSPECTION.
  2. SUMMARY OF THE SCOPE OF THE INSPECTION.
  3. NAME AND QUALIFICATIONS OF THE PERSONNEL MAKING THE INSPECTION.
  5. REVIEW OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN DISTURBED AREAS FOR THE EFFECTIVENESS IN PREVENTING IMPACTS TO RECEIVING WATERS.
  6. MAJOR OBSERVATIONS RELATED TO THE IMPLEMENTATION OF THE PPP.
  7. IDENTIFICATION OF CORRECTIVE ACTIONS REQUIRED TO MAINTAIN OR MODIFY EROSION AND SEDIMENT CONTROL MEASURES.
- B. INCLUDE STORM WATER SITE INSPECTION REPORTS IN THE AMENDED PPP. INCORPORATE ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES DETERMINED AS A RESULT OF THE INSPECTION. IMMEDIATELY BEGIN CORRECTIVE ACTIONS ON ALL DEFICIENCIES FOUND WITHIN 3 CALENDAR DAYS OF THE INSPECTION AND COMPLETE WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. IF IT IS DETERMINED THAT MAKING THE CORRECTIONS LESS THAN 72 HOURS AFTER THE INSPECTION IS IMPRACTICABLE, IT SHOULD BE DOCUMENTED WHY IT IS IMPRACTICABLE AND INDICATE AN ESTIMATED DATE BY WHICH THE CORRECTIONS WILL BE MADE.

VI. NON-STORM WATER DISCHARGES
THIS INCLUDES SUBSURFACE DRAINS (I.E. LONGITUDINAL AND STANDARD SUBDRAINS) AND SLOPE DRAINS. THE VELOCITY OF THE DISCHARGE FROM THESE FEATURES MAY BE CONTROLLED BY THE USE OF HEADWALLS OR BLOCKS, CLASS A STONE, EROSION STONE OR OTHER APPROPRIATE MATERIALS. THIS ALSO INCLUDES UNCONTAMINATED GROUNDWATER FROM DEWATERING OPERATIONS, WHICH WILL BE CONTROLLED AS DISCUSSED IN SECTION III OF THE PPP.

VII. POTENTIAL SOURCES OF OFF RIGHT-OF-WAY (ROW) POLLUTION
SILTS, SEDIMENT, AND OTHER FORMS OF POLLUTION MAY BE TRANSPORTED ONTO HIGHWAY RIGHT-OF-WAY (ROW) AS A RESULT OF A STORM EVENT. POTENTIAL SOURCES OF POLLUTION LOCATED OUTSIDE HIGHWAY ROW ARE BEYOND THE CONTROL OF THIS PPP. POLLUTION WITHIN HIGHWAY ROW WILL BE CONVEYED AND CONTROLLED PER THIS PPP.

VIII. DEFINITIONS
- A. BASE PPP - INITIAL POLLUTION PREVENTION PLAN.
- B. AMENDED PPP - BASE PPP AMENDED DURING CONSTRUCTION, MAY INCLUDE PLAN REVISIONS OR CONTRACT MODIFICATIONS FOR NEW ITEMS, STORM WATER SITE INSPECTION REPORTS, FIELDBOOK ENTRIES MADE BY THE INSPECTOR, AMENDED PPP SITE MAP BY THE CONTRACTOR, ECIP, NOI, CO-PERMITTEE CERTIFICATIONS, AND SUBCONTRACTOR REQUEST FORMS. ITEMS AMENDING THE PPP ARE STORED ELECTRONICALLY AND ARE READILY AVAILABLE UPON REQUEST.
- C. FIELDBOOK ENTRIES – THIS CONTAINS THE INSPECTOR'S DAILY DIARY AND BID ITEM POSTINGS.
- D. CONTROLS - METHODS, PRACTICES, OR MEASURES TO MINIMIZE OR PREVENT EROSION, CONTROL SEDIMENTATION, CONTROL STORM WATER, OR MINIMIZE CONTAMINANTS FROM OTHER TYPES OF WASTE OR MATERIALS. ALSO CALLED BEST MANAGEMENT PRACTICES (BMPS).
- E. SIGNATURE AUTHORITY - REPRESENTATIVE AUTHORIZED TO SIGN VARIOUS STORM WATER DOCUMENTS.

CERTIFICATION STATEMENT

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

Jared Johnson
PRINTED NAME

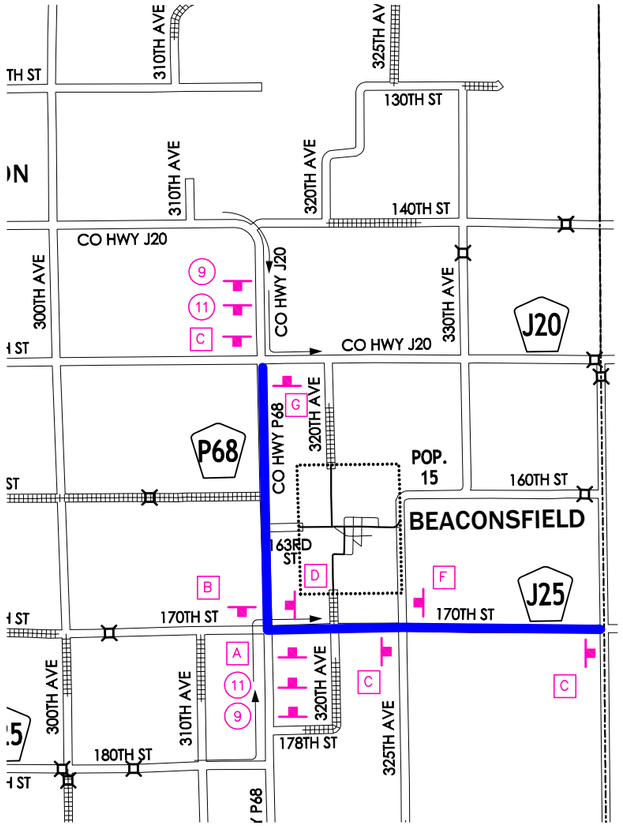
SIGNATURE

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

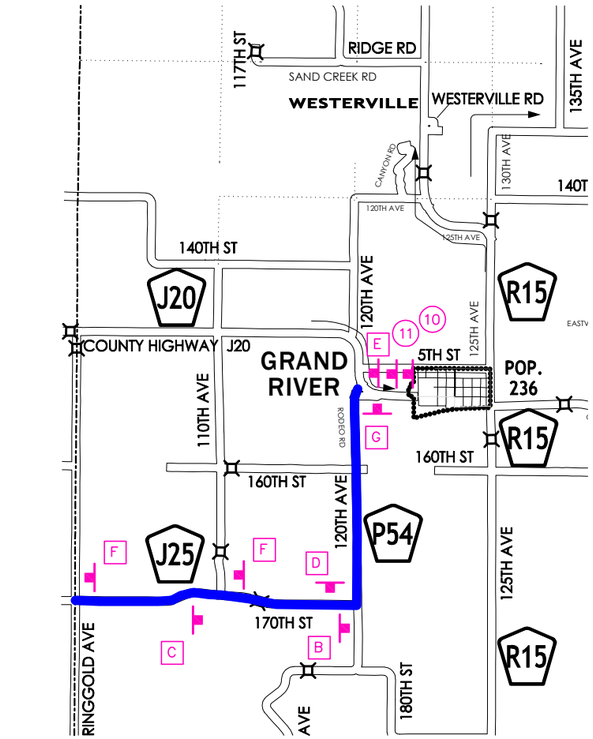
POLLUTION PREVENTION PLAN

8° SKEW, RT. AHEAD

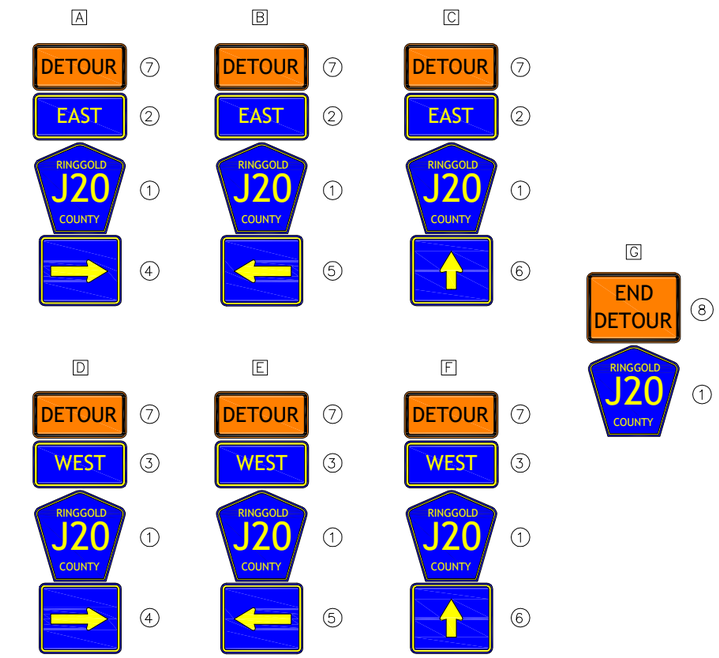
RINGGOLD COUNTY, IOWA



DETOUR ROUTE - RINGGOLD COUNTY
(NOT TO SCALE)



DETOUR ROUTE - DECATUR COUNTY
(NOT TO SCALE)



LEGEND

TRAFFIC SIGN

DETOUR ROUTE

GENERAL NOTES

THIS SHEET ILLUSTRATES THE TRAFFIC CONTROL NECESSARY FOR THE PROJECT ROUTE AND TO DETOUR THE PROJECT ROUTE.

THE PROJECT ROUTE WILL BE CLOSED TO THRU TRAFFIC DURING CONSTRUCTION.

ALL "STOP" OR OTHER REGULATORY SIGNS ON SIDE ROADS ARE NOT TO BE DISTURBED. IF A "STOP" OR OTHER REGULATORY SIGN MUST BE MOVED, IT WILL BE RELOCATED BY THE CONTRACTING AUTHORITY.

TABULATION OF DETOUR SIGNS

NO.	DESCRIPTION	TYPE	QUANTITY	SIZE
①	RINGGOLD COUNTY J20 (YELLOW ON BLUE)	M1-6	15	24" x 24"
②	EAST (YELLOW ON BLUE)	M3-1	7	24" x 12"
③	WEST (YELLOW ON BLUE)	M3-3	6	24" x 12"
④	⟶ (YELLOW ON BLUE)	M6-1R	3	21" x 15"
⑤	⟵ (YELLOW ON BLUE)	M6-1L	3	21" x 15"
⑥	↑ (YELLOW ON BLUE)	M6-3	7	21" x 15"
⑦	DETOUR (BLACK ON ORANGE)	M4-8	13	24" x 12"
⑧	DETOUR END (BLACK ON ORANGE)	M4-8a	2	24" x 18"
⑨	J20 - EAST CLOSED AHEAD LOCAL TRAFFIC ONLY (BLACK ON ORANGE)	R11-3a	2	60" x 30"
⑩	J20 - WEST CLOSED AHEAD LOCAL TRAFFIC ONLY (BLACK ON ORANGE)	R11-3a	1	60" x 30"
⑪	DETOUR AHEAD (BLACK ON ORANGE)	W20-2	3	36" x 36"

TRAFFIC CONTROL PLAN

1. TRAFFIC CONTROL ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN SHOWN IN THESE PLANS 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 ADMINISTRATIVE CODE (IAC) CHAPTER 130.
2. STANDARD ROAD PLAN TC-252, SITUATION 1 (RURAL), SHALL BE USED UTILIZED FOR THE ROAD CLOSURE AT THE PROJECT LOCATION. DYNAMIC MESSAGE BOARD IS NOT REQUIRED. ADVANCED WARNINGS AT THE LAST PUBLIC ROAD INTERSECTION WEST AND EAST OF THE PROJECT SHALL ONLY CONSIST OF A TYPE III BARRICADE AND MOUNTED SIGN "ROAD CLOSED XX MILES AHEAD LOCAL TRAFFIC ONLY". (WEST INTERSECTION XX = 2.4, EAST INTERSECTION XX = 1.1)
3. ROUTE WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN TRAFFIC DURING CONSTRUCTION. LOCAL TRAFFIC TO AND FROM PROPERTIES SHOULD BE EXPECTED AND WILL BE PERMITTED DURING CONSTRUCTION WHEN POSSIBLE.
4. THIS LAYOUT MAY NOT INCLUDE ALL BARRICADES AS MAY BE REQUIRED BY SECTION 2528 OF THE STANDARD SPECIFICATIONS OR ROAD STANDARD TC-252, HOWEVER, TRAFFIC CONTROL AT THE PROJECT LOCATION IS TO BE IN ACCORDANCE WITH SECTION 2528 OF THE STANDARD SPECIFICATIONS AND/OR ROAD STANDARD TC-252 AS REQUIRED.
5. CONTRACTOR SHALL UTILIZE APPLICABLE TRAFFIC CONTROL STANDARDS WHILE INSTALLING TRAFFIC CONTROL DEVICES AND SIGNAGE.
6. ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR. ALL SIGNS SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR. EXACT LOCATIONS MAY BE FIELD ADJUSTED, PER ENGINEER'S APPROVAL, TO FIT CONDITIONS.
7. ALL SIGNS SHALL BE POST MOUNTED UNLESS NOTED OR OTHERWISE APPROVED BY THE ENGINEER. ALL TYPE III BARRICADES SHALL HAVE A MINIMUM OF 4 SAND BAGS.
8. WHERE POSSIBLE, ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED A MINIMUM OF 10 FEET CLEAR OF ROADWAY.
9. PROPOSED SIGN SPACING MAY BE MODIFIED, AS APPROVED BY THE ENGINEER, TO MEET EXISTING FIELD RESTRICTIONS, OR PREVENT THE OBSTRUCTION OF THE MOTORISTS VIEW OF PERMANENT SIGNING.
10. PROPOSED CHANGES IN THE TRAFFIC CONTROL PLAN SHALL BE REVIEWED WITH THE ENGINEER BEFORE CHANGES ARE MADE.
11. DETOUR ROUTE SIGNAGE MAY BE INSTALLED PRIOR TO THE ROAD CLOSURE, HOWEVER, SHALL NOT BE MADE VISIBLE TO MOTORISTS UNTIL THE DAY OF THE ROADWAY CLOSURE.
12. SAFETY CLOSURES SHALL BE PLACED IN ACCORDANCE WITH SECTION 2528 OF THE STANDARD SPECIFICATIONS AT THE LOCATIONS SPECIFIED IN THE "SAFETY CLOSURES" TABULATION, 108-13A, SHEET 10.
13. 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.
14. 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 IS TO PROVIDE AN ALTERNATE POINT OF ACCESS APPROVED BY THE ENGINEER. ALL ALTERNATE ACCESS POINTS ARE INCIDENTAL TO THE BID ITEM "TRAFFIC CONTROL" AND MUST BE REMOVED AT THE END OF THE PROJECT.
15. RINGGOLD COUNTY MAINTENANCE SHALL SALVAGE EXISTING ROAD MARKERS, WITHIN THE PROJECT LIMITS, AFTER THE ROAD IS CLOSED.
16. A WORK IN THE RIGHT-OF-WAY PERMIT WILL BE REQUIRED FROM DECATUR COUNTY.

TRAFFIC CONTROL PLAN

RINGGOLD COUNTY, IOWA

RINGGOLD 123
12-27-23

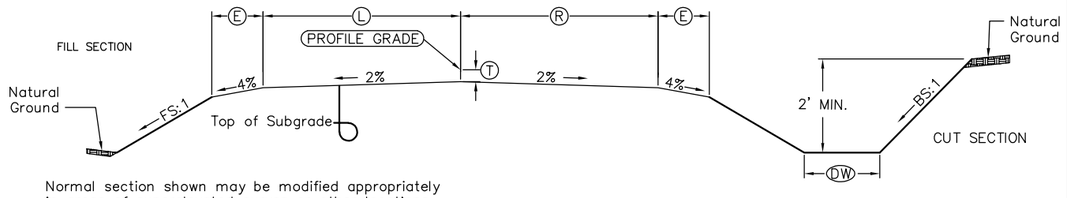
EXISTING PAVEMENT

NO.	LOCATION					YEAR	TYPE	PROJECT NUMBER	SURFACE		BASE		SUBBASE		REMOVAL		COARSE AGGREGATE			REINFORCEMENT	REMARKS
	COUNTY	ROUTE	DIR. OF TRAVEL	BEGIN REF. LOC. SIGN	END REF. LOC. SIGN				TYPE	DEPTH IN	TYPE	DEPTH IN	TYPE	DEPTH IN	TYPE	DEPTH IN	SOURCE	TYPE	DURABILITY CLASS	TYPE	
1	RINGGOLD	J20	EB/WB	–	–	–	PCC	–	PCC	8"	GRANULAR	5"	–	–	–	–	–	–	–	–	PCC

RINGGOLD 120
12-5-23

LOCATION			Ⓓ	Ⓛ	Ⓡ	Ⓔ	Ⓣ*	FS	BS
ROAD IDENTIFICATION	STATION TO STATION		FT	FT	FT	FT	FT		
J20	327+00.00	331+00.00	5	12	12	6	1.50	3	3

* Includes pavement and subbase thickness.



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

See plan & profile sheets and cross sections for additional details of ditches and backslopes.

TYPICAL SECTION – 2–LANE GRADING

RINGGOLD 127
02-16-24

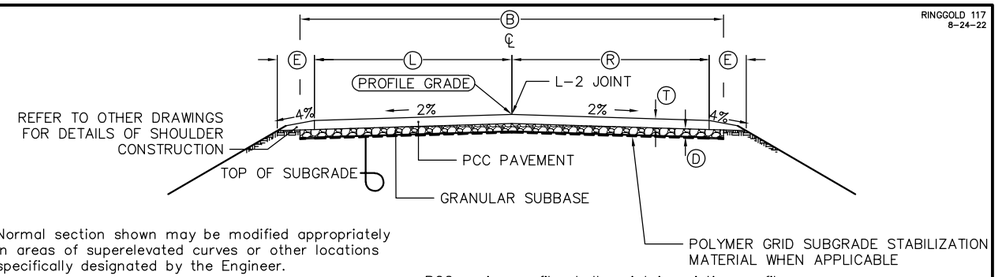
SAFETY CLOSURES

Refer to Section 2518 of the Standard Specifications

Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
327+00	1	–	WEST END
331+25	1	–	EAST END

RINGGOLD 117
8-24-22

LOCATION			Ⓛ	Ⓡ	Ⓔ	Ⓣ	Ⓓ	Ⓑ
ROAD IDENTIFICATION	STATION TO STATION		FT	FT	FT	FT	FT	FT
J20	327+00.00	331+00.00	12	12	6	0.75	0.75	26



Normal section shown may be modified appropriately in areas of superelevated curves or other locations specifically designated by the Engineer.

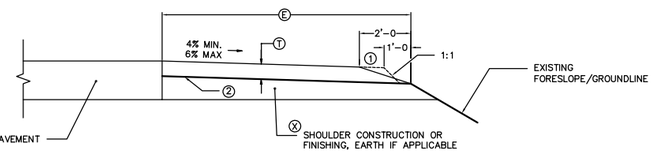
Transverse joints shall be type "CD" spaced at 11' unless otherwise noted. Transverse joint type and spacing may vary at intersections. See intersection details

PCC paving profile shall maintain existing profile.

TYPICAL SECTION – 2–LANE PCC PAVING

LOCATION				TONS ③	Ⓣ INCHES	Ⓔ FEET	Ⓧ C.Y.
ROAD IDENTIFICATION	STATION TO STATION		SIDE				
J20	327+00.00	331+00.00	BOTH	140	6	6	44

RINGGOLD 107
8-24-21



PER STATION PER SIDE DESIGN RATES		
Ⓣ INCHES	Ⓔ FEET	TONS/STA.
6	6	17.5

TYPICAL SECTION FOR TYPE 'B' GRANULAR SHOULDER

NOTE: QUANTITIES HAVE BEEN DETERMINED ON THE BASIS OF A DESIGN WEIGHT OF 140 pcf. EARTH SHOULDER FILL QUANTITY DOES NOT INCLUDE SHRINKAGE.

① PLACE AND COMPACT MATERIAL TO THE DASHED LINES; THEN BLADE AND SHAPE TO FORESLOPE/GROUNDLINE THAT PORTION ABOVE THE SOLID LINE IN THE OUTER 2' AND ROLL WITH LOADED TRUCK TIRE.

② EXISTING SHOULDER SURFACE TO BE SHAPED TO A UNIFORM CROSS SLOPE PRIOR TO PLACING GRANULAR SHOULDER MATERIAL.

③ TOTAL TONS BETWEEN STATIONS PER SIDE

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

TYPICAL SECTIONS AND TABULATIONS

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA

RINGGOLD 121
12-26-23

ROADWAY ITEMS FOR DRAINAGE STRUCTURES INSTALLED BY CULVERT CONTRACTOR

* NOT A BID ITEM
① BACKFILL ACCORDING TO DR-111

LOCATION	DESIGN NUMBER	SIZE	KIND	BY ROAD CONTRACTOR							GRANULAR BACKFILL	FLOODABLE* BACKFILL	POROUS* BACKFILL	FLOODED BACKFILL ①	EXCAVATION		REVETMENT		ENGINEERING FABRIC	REMARKS
				DIKE					COMPACTING BACKFILL ADJACENT	COMPACTION W/MOISTURE AND DENSITY										
				RT. / LT.		LOCATION STATION	TOP ELEV.	TYPE				(A)	(B)	(A+B)	TYPE	QUANTITY	TYPE	QUANTITY		
									CY	CY	TON	CY	CY	CY		CY		TONS	SY	
329+10.00	–	12'x12'x106'-0	RCBC	–	–	–	–	–	305	2020	1170	–	–	–	CLASS 20	3115	CLASS E	1180	1670	
																				–

RINGGOLD 122
12-27-23

PAVEMENT MARKING LINE TYPES

See PM-110

*BCY4 – Place on the same side of the roadway to match existing markings near the project
**NPY4 – For estimating purposes only. No Passing Zone Lines will be located in the field.
***MNY4 – Factor of 1.00 as value includes number of 4-inch passes to cover median nose area.
ELW4‡ – Contractor is to break edge lines at all intersections and entrances.

BCY4: Broken Centerline (Yellow) @ 0.17 DCY4: Double Centerline (Yellow) @ 1.34 NPY4: No Passing Zone Line (Yellow) @ 0.84 BLW4: Broken Lane Line (White) @ 0.17 ELW4: Edge Line Right (White) @ 0.67
ELY4: Edge Line Left (Yellow) @ 0.67

Location								Length by Line Type (Unfactored)													
Road ID	Station to Station		Dir. of Travel	Marking Type	L	C	R	BCY4*	DCY4	NPY4**	BLW4	ELW4‡	ELY4	SLW2								Remarks
								STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	STA	
J20	327+00	331+00	BOTH	WATERBORNE/SOLVENT PAINT		X		–	–	4.00	–		–	–								–
J20	327+00	331+00	EB	WATERBORNE/SOLVENT PAINT			X	–	–	–	–	4.00	–	–								–
J20	327+00	331+00	WB	WATERBORNE/SOLVENT PAINT	X			–	–	–	–	4.00	–	–								–
Length Subtotals								–	–	4.00	–	8.00	–	–								
Quantity Factors								–	–	.84	–	0.67	–	–								
Totals								–	–	3.36	–	5.36	–	–								

RINGGOLD 124
12-27-23

REMOVAL OF PAVEMENT

REFER TO TABULATION "RINGGOLD 123"

* NOT A BID ITEM

BEGIN STATION	END STATION	SIDE	PAVEMENT TYPE	AREA	SAW CUT*	REMARKS
				SY	LF	
327+00	331+00	WB & EB	PCC	950	48	8" PCC, BRIDGE AREA DEDUCTED

RINGGOLD 125
12-27-23

PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES

Possible Standards: EC-204

Location			Perimeter and Slope Length of Installation			Ditch Check Length of Installation		Remarks
Begin Station	End Station	Side	9 inch Dia	12 inch Dia	20 inch Dia	12 inch Dia	20 inch Dia	
			LF	LF	LF	LF	LF	
327+25	–	BOTH	–	50	–	–	–	DITCH CHECK
327+50	–	BOTH	–	50	–	–	–	DITCH CHECK
327+75	–	BOTH	–	50	–	–	–	DITCH CHECK
328+00	–	BOTH	–	50	–	–	–	DITCH CHECK
328+25	–	BOTH	–	50	–	–	–	DITCH CHECK
328+50	–	RT.	–	25	–	–	–	DITCH CHECK
329+50	–	LT.	–	25	–	–	–	DITCH CHECK
329+75	–	BOTH	–	50	–	–	–	DITCH CHECK
330+00	–	LT.	–	25	–	–	–	DITCH CHECK
330+25	–	BOTH	–	50	–	–	–	DITCH CHECK
330+50	–	BOTH	–	50	–	–	–	DITCH CHECK
330+75	–	LT.	–	25	–	–	–	DITCH CHECK
331+00	–	LT.	–	25	–	–	–	DITCH CHECK
		TOTAL		500				

105-4
04-16-24

STANDARDS

The following Standards apply to construction work on this project.

Number	Date	Title
EC-201	04-20-21	SILT FENCE
EC-204	10-19-21	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES
EW-402	04-18-17	TEMPORARY STREAM DIVERSION
PM-110	10-15-24	LINE TYPES
PV-101	10-20-26	JOINTS
TC-252	10-20-26	ROUTES CLOSED TO TRAFFIC

RINGGOLD 126
12-27-23

TABULATION OF SILT FENCES

Refer to EC-201

Location			Length	Remarks
Begin Station	End Station	Side	LF	
327+90, 170' LT.	328+95, 50' LT.	LT.	180	CHANNEL BANK @ NW
328+95, 50' LT.	329+50, 180' LT.	LT.	170	CHANNEL BANK @ NE
328+70, 170' RT.	329+15, 50' RT.	RT.	180	CHANNEL BANK @ SW
329+15, 50' RT.	329+95, 160' RT.	RT.	170	CHANNEL BANK @ SE
		TOTAL	700	

RINGGOLD 111
10-18-21

SURVEY CONTROL POINTS

Description	Northing	Easting	Station	Offset	Elevation
1/2" REBAR, CP1	6166604.80	22425724.58	322+78	175' RT.	1117.93
1/2" REBAR, CP2	6166817.16	22427534.33	341+26	77' LT.	1113.92
COTTON GIN SPIKE IN PP SE OF BRIDGE, BM1	6166597.96	22426601.19	331+98	164' RT.	1058.34

RINGGOLD 102
03-10-20

SUMMARY OF EARTHWORK QUANTITIES

EXCAVATION TYPE	RAW CUT	RAW FILL	WASTE **	USEABLE CUT ①	SHRINKAGE FACTOR	FILL +35% SHRINKAGE	PAYMENT QUANTITY
	CY	CY	CY	CY		CY	CY
CLASS 10, CHANNEL	2755	250	63	2692	35%	338	2755
CLASS 10, ROADWAY	810	4630	0	810	35%	6251	810
CLASS 20	3115	0	28	3087	–	–	3115
TOTALS			91	6589		6589	
EMBANKMENT-IN-PLACE (EIP)	EIP = ROUNDUP[(0) / 1.35 SHRINK] =						0

** ASSUMES SOME MATERIAL WILL BE UNSUITABLE AND WILL NEED TO BE WASTED. UNSUITABLE MATERIAL SHALL BE WASTED ON SITE AS DIRECTED BY THE ENGINEER. NO ADDITIONAL PAYMENT WILL BE MADE FOR WASTED MATERIAL.

① MAY INCLUDE SOME UNSUITABLE MATERIAL TO BE PLACED AS DIRECTED BY THE ENGINEER.

TWIN 12' x 12' x 106'-0 REINFORCED CONCRETE BOX CULVERT

TABULATIONS

8° SKEW, RT. AHEAD

RINGGOLD COUNTY, IOWA