

LETTING DATE: JULY 21, 2026

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET 13.

SECTION 404 PERMIT AND CONDITIONS

281-1
10-18-16

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT 14, PERMIT NO. 2024-0985. 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.

PLANS OF PROPOSED IMPROVEMENT ON THE
FARM TO MARKET SYSTEM

MADISON COUNTY

PROJECT NO. BRS-C061(131)--60-61
RCB CULVERT REPLACEMENT-SINGLE BOX
ON R 35, OVER CLANTON CREEK, S12 T75 R26

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS.

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 A PART OF THESE CONTRACT DOCUMENTS. REFER TO SECTION 2602 OF THE STANDARD SPECIFICATIONS FOR ADDITIONAL INFORMATION.

MILEAGE SUMMARY:

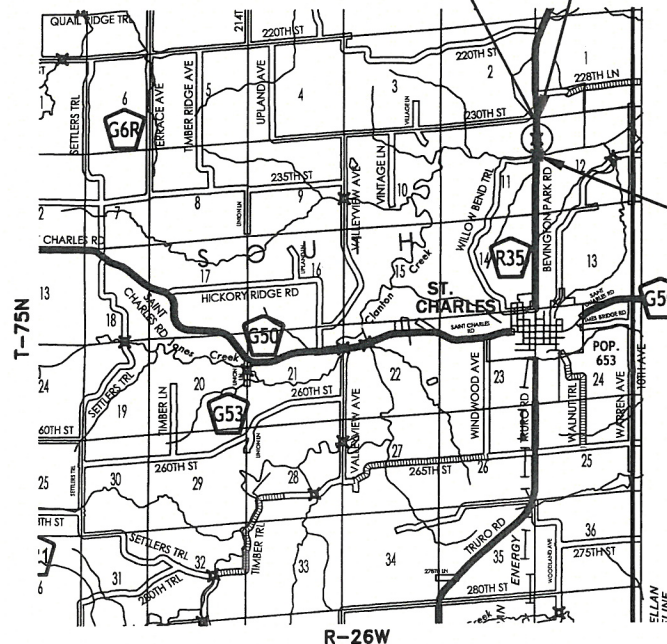
STA. 13+00.00 TO STA. 18+00.00 = 500.00 LIN.FT. = 0.0947 MILES

2022, TRAFFIC COUNT = 450 V.P.D.

UTILITY CONTACTS

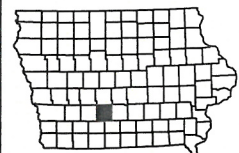
COMPANY	UTILITY	CONTACT	PHONE #	EMAIL
AUREON	COMMUNICATIONS	JEFF KLOCO	918-547-0147	jeff.kloco@aureon.com
MIDAMERICAN ENERGY	ELECTRIC	JAMIE NEER	515-252-6972	MECDSDDesignLocates@midamerican.com
OMNITEL COMMUNICATION	COMMUNICATIONS	DAN CHILDERS	877-366-8344	osevern@omniel.biz
WARREN WATER DISTRICT	WATER	STAN RIPPERGER	515-208-5352	wwd@warrenwaterdistrict.com

B.O.P. STA. 13+00.00
E.O.P. STA. 18+00.00
FHWA NO. 232830
STATION 15+50.00
PROPOSED SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT
52° SKEW, LT. AHEAD

E.O.P.
STA. 18+00.00B.O.P.
STA. 13+00.00

PROJECT LOCATION

1 MI. 0 1 MI. 2 MI.



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 CALHOUN-BURNS AND ASSOCIATES, FOR REVIEW AND APPROVAL.

ADDRESS : 6775 VISTA DRIVE
WEST DES MOINES, IOWA 50266
TELEPHONE : (515) 224-4344
FAX : (515) 224-1385

SHOP DRAWINGS SHALL BE INDEPENDENT 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.



PROJECT NO. BRS-C061(131)--60-61
FHWA NO. 232830
COUNTY BR. NO. 12B-500-120

INDEX OF SHEETS

1. TITLE SHEET
- 2.-3. QUANTITY SUMMARY
4. SITUATION PLAN
5. GENERAL PLAN
6. GENERAL NOTES & BACKFILL DETAILS
7. POLLUTION PREVENTION PLAN
- 8.-9. BENT CULVERT BARREL DETAILS
10. CULVERT DETAILS
- 11.-12. TYPICAL SECTIONS
- 13.-15. TABULATIONS
- 16.-17. TRAFFIC CONTROL PLANS
- 18.-22. CHANNEL CROSS SECTIONS
- 23.-28. ROAD CROSS SECTIONS

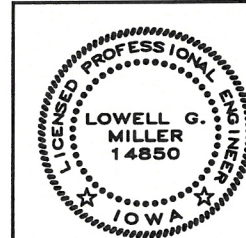
IOWA DEPARTMENT OF TRANSPORTATION
STANDARDS REQUIRED

STANDARD	LATEST REVISION
RCB G1-20	-
RCB G2-20	-
RCB G3-20	-
RCB 14-6-20	-
PWH 15-1-20	-
PWH 15-2-20	-
PWH 15-3-20	-
PWH 15-4-20	-
PWH 15-6-20	-
PWH 45-1-20	-
PWH 45-2-20	-
PWH 45-3-20	-
PWH 45-4-20	-
PWH 45-6-20	-

THESE SHEETS MAY BE OBTAINED AT THE ELECTRONIC
REFERENCE LIBRARY WEBSITE. <http://eri.iowadot.gov>

INDEX OF SEALS

SHEET NO.	NAME	TYPE
RCB STANDARDS	JAMES S. NELSON	STRUCTURAL DESIGN
16	MICHAEL J. HACKETT	TRAFFIC CONTROL



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.

DATE: 4-20-2026

LOWELL G. MILLER, P.E.

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2026.

PAGES OR SHEETS COVERED BY THIS SEAL:

1-28 of 28

APPROVED
MADISON COUNTY ENGINEER
DATE 8/26/2025

BOARD OF SUPERVISORS
DATE 8/24/2025

TOTAL ESTIMATED QUANTITIES: SINGLE 14' x 6' x 250'-0 R.C.B. CULVERT				
REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
1	2101-0850001	CLEARING AND GRUBBING	ACRE	1.0
2	2102-0425070	SPECIAL BACKFILL	TON	220
3	2102-2625000	EMBANKMENT-IN-PLACE	CY	2,350
4	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	4,804
5	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1,390
6	2105-8425015	TOPSOIL, STRIP, SALVAGE AND SPREAD	CY	1,800
7	2107-0425020	COMPACTING BACKFILL ADJACENT TO BRIDGES, CULVERTS OR STRUCTURES	CY	290
8	2111-8174100	GRANULAR SUBBASE	SY	2,333
9	2121-7425020	GRANULAR SHOULDERS, TYPE B	TON	325
10	2123-7450000	SHOULDER CONSTRUCTION, EARTH	STA	10.0
11	2301-1033080	STANDARD OR SLIP FORM PORTLAND CEMENT CONCRETE PAVEMENT, CLASS 3 DURABILITY, 8 IN.	SY	428
12	2303-1031750	HOT MIX ASPHALT STANDARD TRAFFIC, BASE COURSE, 3/4 IN. MIX	TON	333
13	2303-1032750	HOT MIX ASPHALT STANDARD TRAFFIC, INTERMEDIATE COURSE, 3/4 IN. MIX	TON	107
14	2303-1033750	HOT MIX ASPHALT STANDARD TRAFFIC, SURFACE COURSE, 3/4 IN. MIX, NO SPECIAL FRICTION REQUIREMENT	TON	107
15	2303-1258283	ASPHALT BINDER, PG 58-28S, STANDARD TRAFFIC	TON	32.9
16	2312-8260051	GRANULAR SURFACING ON ROAD, CLASS A CRUSHED STONE	TON	200
17	2401-6745625	REMOVAL OF EXISTING BRIDGE	LS	1
18	2402-0425040	FLOODED BACKFILL	CY	93
19	2402-0875150	COMPACTION WITH MOISTURE CONTROL (STRUCTURES)	CY	2,800
20	2402-2720000	EXCAVATION, CLASS 20	CY	4,815

REF. NO. ESTIMATE REFERENCE INFORMATION

1. SEE GENERAL PLAN, SHEET 5, FOR LIMITS.
2. INCLUDES COST OF 6 INCHES OF MATERIAL TO IMPROVE WET AND MUDDY CONDITIONS UNDER THE CULVERT, SEE SHEET 6 FOR DETAILS. THE QUANTITY FOR CLASS 20 EXCAVATION INCLUDES THE NECESSARY OVER EXCAVATION. MACADAM STONE MAY BE SUBSTITUTED FOR SPECIAL BACKFILL AT THE CONTRACTOR'S OPTION. IF MACADAM STONE IS SUBSTITUTED, BASE MATERIAL (I.D.O.T. STANDARD SPECIFICATION GRADATION NO. 13A) SHALL BE TOPPED WITH CHOKE STONE LAYER (MACADAM STONE GRADATION NO. 13B OR SPECIAL BACKFILL MATERIAL). NO ADDITIONAL PAYMENT WILL BE MADE FOR MATERIAL SUBSTITUTION.
3. SEE TABULATIONS CBA-100 AND CBA-101 ON SHEET 13 FOR BREAKDOWN OF EXCAVATION QUANTITIES. TYPE "A" COMPACTION WILL BE REQUIRED OUTSIDE THE LIMITS OF MOISTURE CONTROL. QUANTITY DOES NOT COMPENSATE FOR SHRINKAGE. AFTER ALL AVAILABLE ON SITE MATERIAL HAS BEEN DEPLETED, THE CONTRACTOR SHALL FURNISH ALL REMAINING MATERIAL REQUIRED. THE CONTRACTOR SHALL FURNISH HIS OWN BORROW MATERIAL FOR "EMBANKMENT-IN-PLACE". THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH PROVISIONS OF IOWA LAW AS IT APPLIES TO REMOVAL AND REPLACEMENT OF TOPSOIL ON BORROW AREAS.
4. SEE TABULATIONS CBA-100 AND CBA-101 ON SHEET 13 FOR BREAKDOWN OF EXCAVATION QUANTITIES. TYPE "A" COMPACTION WILL BE REQUIRED IN AREAS OUTSIDE LIMITS OF MOISTURE CONTROL. SEE CULVERT BACKFILL DETAILS ON SHEET 6.
5. SEE TABULATIONS CBA-100 AND CBA-101 ON SHEET 13 FOR BREAKDOWN OF EXCAVATION QUANTITIES. INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE "LONGITUDINAL SECTION ALONG CENTERLINE OF CULVERT" 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.
6. IN ORDER TO MEET NPDES PERMIT REQUIREMENTS TOPSOIL STRIP, SALVAGE AND SPREAD SHALL BE REQUIRED ON THIS PROJECT. QUANTITY PERTAINS TO WORK WITHIN THE PROJECT LIMITS. SIX INCHES OF TOPSOIL SHALL BE STRIPPED FROM WITHIN THE PROJECT LIMITS AND SPREAD UNIFORMLY (6" TARGET WITH 4" MIN. 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.
8. SEE TYPICAL SECTION CBA-615 ON SHEET 11 AND TYPICAL SECTION CBA-622 ON SHEET 12. THE EXCAVATION FROM THE SUBGRADE PREPARATION SHALL BE USED AS EARTH SHOULDER FILL. THE GRANULAR SUBBASE SHALL BE PERFORMED ACCORDING TO THE STANDARD SPECIFICATION 2111, AND WITH THE FOLLOWING MODIFICATIONS. THE MATERIAL USED FOR GRANULAR SUBBASE SHALL MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 4132. THE MATERIAL SHALL BE PLACED AND COMPACTED AS PER STANDARD SPECIFICATION SECTION 2107, TYPE A COMPACTION IS REQUIRED. HAULING EQUIPMENT WILL BE ALLOWED ON THE SUBGRADE AND SUBBASE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE COMPLETED SUBGRADE AND SUBBASE TO THE REQUIRED COMPACTION, CROSS SECTION, AND SMOOTH CONDITION FREE FROM LOOSE MATERIAL PRIOR TO AND DURING SUBSEQUENT CONSTRUCTION ACTIVITIES. STANDARD SPECIFICATION 211.03 PARAGRAPH B SHALL APPLY.
9. SEE TYPICAL SECTION CBA-641 ON SHEET 11 AND CBA-643 ON SHEET 12.
10. INCLUDES ALL WORK AND FILL MATERIAL NECESSARY TO CONSTRUCT AND SHAPE SHOULDER AREAS. SEE TYPICAL SECTION CBA-500 AND CBA-641 ON SHEET 11 AND CBA-643 ON SHEET 12.
11. SEE TYPICAL SECTIONS CBA-500 AND CBA-615 ON SHEET 11. CERTIFIED PLANT INSPECTION IS REQUIRED. ARTICLE 2317 REGARDING PAVEMENT SMOOTHNESS SHALL APPLY TO THIS PROJECT. QUANTITY IS FOR DOUBLE REINFORCED PAVEMENT OVER THE BOX CULVERT PER IDOT STANDARD ROAD PLAN PR-120.

12. – 14. SEE TYPICAL SECTIONS CBA-620, CBA-621, AND CBA-622 ON SHEET 12. NO RECLAIMED ASPHALT PAVEMENT (RAP) WILL BE ALLOWED. MIXTURE SHALL CONTAIN A MINIMUM OF 65% CRUSHED MATERIAL AND TYPE A AGGREGATES PER STANDARD SPECIFICATIONS. INCLUDES TACK COAT TO BE SPREAD AT A RATE OF 0.05 GAL/SY BETWEEN ALL HMA LIFTS.
15. ASPHALT BINDER TO BE 6.0% OF MIX QUANTITY FOR ESTIMATING PURPOSES ONLY.
16. DEPENDING ON THE TIMING OF PAVING OPERATION, TEMPORARY SURFACING MAY BE DIRECTED BY THE ENGINEER. ALL OR A PORTION OF THE BID ITEM MAY BE DELETED. SURFACING TO BE FURNISHED AND PLACED BY THE CONTRACTOR IN TWO PASSES (1400 AND 600 TONS/MILE). PREPARING THE SUBGRADE FOR PLACEMENT AND REMOVAL OF THE TEMPORARY SURFACING SHALL BE INCIDENTAL TO THE BID PRICE.
17. THE EXISTING BRIDGE AT STATION 15+62 IS A 125' x 24' STEEL I-BEAM BRIDGE WITH CONCRETE STUB ABUTMENTS, CONCRETE PEDESTAL PIERS AND A CONCRETE DECK WITH HMA OVERLAY BUILT IN 1932. AN INSPECTION FOR THE PRESENCE OF ASBESTOS 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. THE ITEMS LISTED ON TABULATION 110-13 ON SHEET 14 SHALL REMAIN THE PROPERTY OF THE COUNTY. THE CONTRACTOR SHALL CAREFULLY REMOVE AND NEATLY STACK THESE ITEMS WITHIN THE RIGHT-OF-WAY. ALL REMAINING 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. THE CONTRACTOR SHALL DISPOSE OF THE BROKEN CONCRETE OFF SITE AT A LOCATION PROVIDED BY THE CONTRACTOR AND NOTED TO THE ENGINEER. SEE HAZARDOUS MATERIALS NOTES ON SHEET 6 FOR PAINT SCRAPE SAMPLE RESULTS.
18. SEE TABULATION 104-4 ON SHEET 15 AND CULVERT BACKFILL DETAILS ON SHEET 6.
19. SEE TABULATION 104-4 ON SHEET 15 AND CULVERT BACKFILL DETAILS ON SHEET 6. QUANTITY DOES NOT COMPENSATE FOR SHRINKAGE.
20. 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 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 AS DEFINED BY ARTICLE 2102.02, D, 2 OF THE STANDARD SPECIFICATIONS.

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

QUANTITY SUMMARY

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA

TOTAL ESTIMATED QUANTITIES: SINGLE 14' x 6' x 250'-0 R.C.B. CULVERT				
REF. NO.	CODE NO.	ITEM	UNIT	TOTAL
21	2403-0100020	STRUCTURAL CONCRETE (RCB CULVERT)	CY	536.7
22	2404-7775000	REINFORCING STEEL	LB	104,852
23	2418-0000010	TEMPORARY STREAM DIVERSION	EACH	1
24	2501-5775000	PILES, STEEL SHEET	SF	480
25	2502-8221305	SUBDRAIN OUTLET, DR-305	EACH	2
26	2505-4008120	REMOVAL OF STEEL BEAM GUARDRAIL	LF	225
27	2507-3250005	ENGINEERING FABRIC	SY	1,520
28	2507-6800061	REVETMENT, CLASS E	TON	1,180
29	2510-6745850	REMOVAL OF PAVEMENT	SY	904.4
30	2528-2518000	SAFETY CLOSURE	EACH	4
31	2528-8445110	TRAFFIC CONTROL	LS	1
32	2533-4980005	MOBILIZATION	LS	1
33	2601-2634100	MULCHING	ACRE	4.4
34	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	2.2
35	2601-2642100	STABILIZING CROP - SEEDING AND FERTILIZING	ACRE	2.2
36	2602-0000020	SILT FENCE	LF	1,410
37	2602-0000030	SILT FENCE FOR DITCH CHECKS	LF	677
38	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECK	LF	2,087
39	2602-0000312	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 12 IN. DIA.	LF	230
40	2602-0000320	PERIMETER AND SLOPE SEDIMENT CONTROL DEVICE, 20 IN. DIA.	LF	300
41	2602-0010010	MOBILIZATIONS, EROSION CONTROL	EACH	1
42	2602-0010020	MOBILIZATIONS, EMERGENCY EROSION CONTROL	EACH	1

REF. NO. ESTIMATE REFERENCE INFORMATION

21.

CERTIFIED PLANT INSPECTION IS REQUIRED.
SEE "CONCRETE PLACEMENT QUANTITIES" ON SHEET 10.
COARSE AGGREGATE SHALL BE CLASS 3 OR BETTER.
22.

ALL REINFORCING SHALL BE GRADE 60.
SEE "REINFORCING STEEL SUMMARY" ON SHEET 10.
23.

SEE STANDARD ROAD PLAN EW-402.
24.

QUANTITY IS FOR TOE WALL DOWNSTREAM OF CULVERT OUTLET. SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5 FOR LOCATION AND DETAILS.
25.

INCLUDES THE COST TO ADJUST THE 6 AND 18 INCH FIELD TILE LINES ON THE WEST DITCH BACKSLOPE AND INSTALL A NEW DR-305 TYPE C OUTLET.
CONTRACTOR TO FIELD VERIFY SIZES.
SEE GENERAL PLAN, SHEET 5, FOR LOCATION.
26.

SEE TABULATION 110-7A ON SHEET 14.
THE STEEL BEAM GUARDRAIL SHALL REMAIN THE PROPERTY OF THE COUNTY AND THE CONTRACTOR SHALL CAREFULLY REMOVE AND NEATLY STACK THESE ITEMS WITHIN THE RIGHT-OF-WAY. ALL REMAINING SALVAGEABLE MATERIAL AND UNSALVAGEABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR.
27.

SEE SITUATION PLAN, SHEET 4, AND GENERAL PLAN, SHEET 5, FOR LIMITS.
SEE TABULATION 100-23, SHEET 15 FOR ROCK DITCHES.
ENGINEERING FABRIC SHALL BE LAPPED FOR FIELD SPLICING, 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.
28.

REVETMENT IS TO BE PLACED AT A THICKNESS OF 1'-6 ON STREAM BANKS, 3'-0 IN THE CHANNEL AT THE OUTLET OF THE CULVERT, AND 2'-0 FOR THE ROCK DITCHES. SEE SITUATION PLAN, SHEET 4, GENERAL PLAN, SHEET 5, AND TABULATION 100-23, SHEET 15, FOR LIMITS.
29.

SEE TABULATION 110-1 ON SHEET 14.
EXISTING PAVEMENT CONSISTS OF 5 TO 8 INCHES OF HMA.
IN ORDER TO AVOID ANY UNNECESSARY SURFACE BREAKS OR PREMATURE SPALLING, THE CONTRACTOR IS CAUTIONED TO EXERCISE EXTREME CARE WHEN PERFORMING ANY OF THE NECESSARY SAW CUTTING OPERATIONS FOR THE PROPOSED PAVEMENT REMOVAL. SAW CUTS ARE TO BE MADE AT THE STATION INDICATED OR AS DIRECTED BY THE ENGINEER.
30.

SEE TABULATION 108-13A ON SHEET 13.
31.

SEE TRAFFIC CONTROL PLAN ON SHEETS 16 - 17.
33. – 35.

THE CONTRACTOR IS TO RESHAPE, FERTILIZE, SEED AND MULCH ANY AREAS DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION. THIS SHALL BE INCLUDED IN THE PRICES BID FOR "MULCHING" AND "SEEDING AND FERTILIZING (RURAL)". SEE POLLUTION PREVENTION PLAN, SHEET 7 FOR STABILIZING CROP REQUIREMENT.
36. – 42.

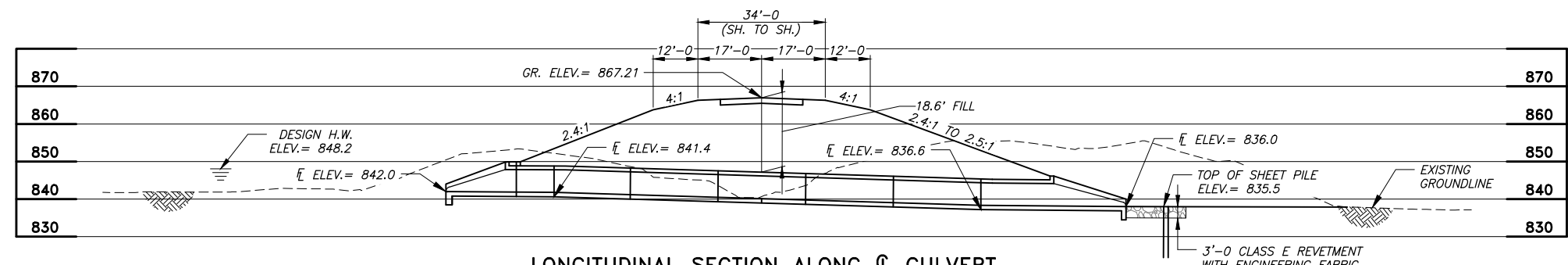
SEE POLLUTION PREVENTION PLAN, SHEET 7 AND TABULATIONS 100-17, 100-18, AND 100-19, ON SHEET 14.

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

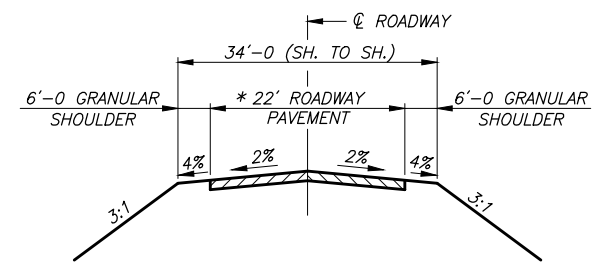
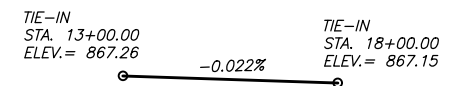
QUANTITY SUMMARY

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA



BENCH MARK: PT. #600, $\frac{1}{2}$ " REBAR, STA. 12+79, 75' LT. ELEV. = 859.97
 PT. #4000, MAG NAIL IN GR POST, STA. 16+32, 13' RT. ELEV. = 870.78



*SEE CBA 615, SHEET 13 AND CBA 622, SHEET 14 FOR LIMITS OF H.M.A. AND P.C.C. PAVING.

LOCATION

MADISON COUNTY
 T-75N, R-26W
 SECTION 12
 SOUTH TOWNSHIP
 OVER TRIBUTARY TO CLANTON CREEK

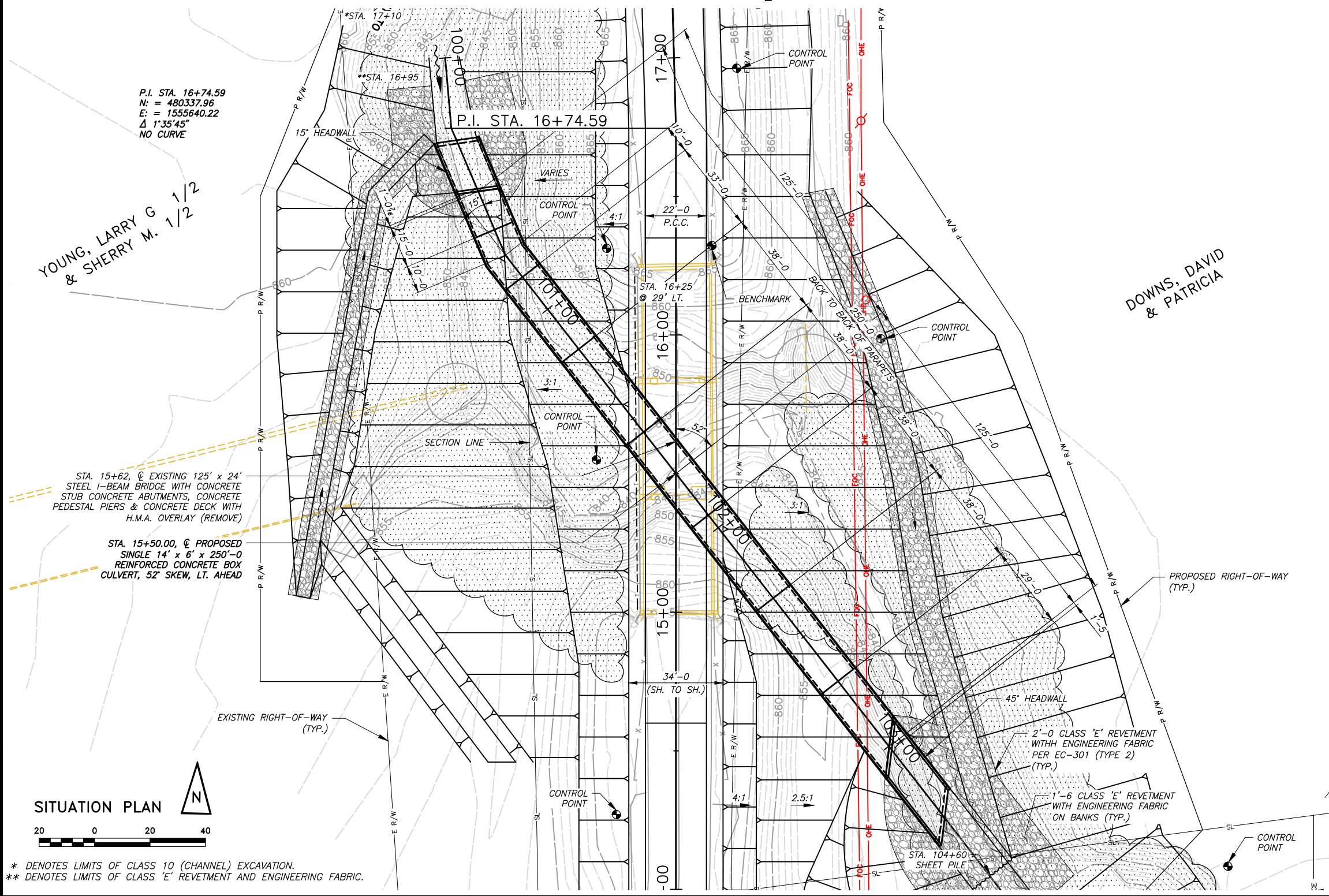
HYDRAULIC DATA

DRAINAGE AREA = 0.71 SQ. MI.
 DESIGN DISCHARGE = 600 C.F.S.
 DESIGN HIGH WATER ELEV. = 848.2
 BARREL SLOPE = 0.0100 FT./FT.
 (INLET & OUTLET) = 0.0259 FT./FT. (CENTER)
 STREAM SLOPE = 0.00838 FT./FT.
 Q25 = 500 C.F.S. STAGE ELEV. = 847.5
 Q50 = 600 C.F.S. STAGE ELEV. = 848.2 (DESIGN)
 Q100 = 750 C.F.S. STAGE ELEV. = 849.3
 Q200 = 800 C.F.S. STAGE ELEV. = 849.9
 Q500 = 1000 C.F.S. STAGE ELEV. = 852.7

SINGLE 14' x 6' x 250'-0 REINFORCED CONCRETE BOX CULVERT

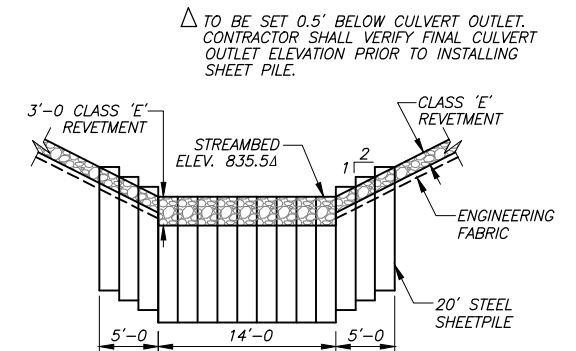
SITUATION PLAN

STATION 15+50.00
 MADISON COUNTY,
 52' SKEW, LT. AHEAD
 IOWA



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

BENCH MARK: PT. #600, 1/2" REBAR, STA. 12+79, 75' LT. ELEV. = 859.97
PT. #4000, MAG NAIL IN GR POST, STA. 16+32, 13' RT. ELEV. = 870.78



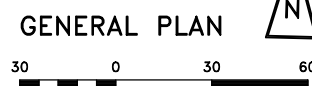
SECTION A-A

SHEET PILE SPECIFICATIONS
ASTM A328 OR A572 GRADE 50
MIN. THICKNESS = 3/8"
MIN. HEIGHT = 9"
MIN. SX = 18 IN.³ / FT.
ALL MATERIAL SHALL BE NEW

DOWNES, DAVID
& PATRICIA

YOUNG, LARRY G
& SHERRY M.

CHANNEL STATIONING			
	STA.	NORTHING	EASTING
B.O.P.	100+00.00	480364.80	1555557.44
P.I.	100+25.42	480339.44	1555559.15
P.I.	100+75.24	480293.26	1555572.85
P.I.	103+34.11	480086.43	1555733.53
E.O.P.	104+45.52	479997.04	1555800.01



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

B.O.P. & TIE-IN STA. 13+00.00
N: = 479963.42
E: = 1555633.53

B.O.P. & TIE-IN STA.: 13+00.00

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

GENERAL PLAN

STATION 15+50.00
MADISON COUNTY, IOWA

SPECIFICATIONS

DESIGN: AASHTO LRFD 8TH EDITION, 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.

DESIGN STRESSES

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION, SERIES 2017.
REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60.
CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5, F'C=4,000 PSI.

GENERAL NOTES

THIS DESIGN IS FOR A 14' x 6' REINFORCED CONCRETE BOX CULVERT ON R35 OVER A TRIBUTARY TO CLANTON CREEK IN MADISON COUNTY, IOWA.
THIS CULVERT IS DESIGNED FOR HL-93 LOADING AND 18.6 FEET OF FILL (DESIGN FILL HEIGHT OF 18 – 19 FEET). THE CULVERT SECTIONS ARE DESIGNED FOR CLASS 1 EXPOSURE CONDITION.
ACCESS SHALL BE MAINTAINED TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
THE ENGINEER WILL BE RESPONSIBLE FOR THE CONSTRUCTION SURVEY. THE CONTRACTOR IS RESPONSIBLE FOR CONDUCTING AN INDEPENDENT CHECK OF ALL CONSTRUCTION STAKES PLACED FOR THE PROJECT. THIS INDEPENDENT CHECK SHALL BE SUFFICIENT TO UNDERSTAND THE PLACEMENT AND INTENT OF THE STAKES.
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 DURING AND AFTER CONSTRUCTION AND 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>.
DURING CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR WILL BE REQUIRED TO COORDINATE THEIR OPERATIONS WITH THOSE OF OTHER CONTRACTORS WORKING WITHIN THE SAME AREA. OTHER WORK IN PROGRESS DURING THE SAME PERIOD OF TIME WILL INCLUDE, BUT IS NOT LIMITED TO, CONSTRUCTION OF THE FOLLOWING PROJECTS:
HDP-C061(130)–6B-61 REPLACEMENT OF BRIDGE 8B-530-485 (FHWA 233730)

UTILITY NOTES

SEE SECTION 1107.15 OF THE STANDARD SPECIFICATION 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 OR BROKEN CONCRETE) 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) CULTURALLY 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

AN INSPECTION FOR THE PRESENCE OF ASBESTOS CONTAINING MATERIALS WAS COMPLETED BY:
SCOTT BROWN OF IOWA ENVIRONMENTAL SERVICES
IA LICENSE NUMBER: 22-92351
DATE INSPECTED: 04/13/2023
PHONE: 515-279-8042

A SCRAPE SAMPLE OF THE EXISTING PAINT WAS TAKEN FROM AN AREA 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 THIS SAMPLE WAS 228,000 PART PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THIS SAMPLE WAS 514 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 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 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 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.
ALL EXPOSED CORNERS 90 DEGREES OR SHARPER ARE TO BE FILLETED WITH A 3/4" 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 THE VERTICAL.

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 FOOTING SHALL BE FORMED TO ENSURE CORRECT LINE AND GRADE.
THE PERMISSIBLE CONSTRUCTION JOINT AT THE TOP OF THE WALLS MAY BE LOWERED 3'-3 1/2 AT THE CONTRACTOR'S OPTION.
KEYWAYS IN CONSTRUCTION JOINTS ARE TO BE FORMED WITH BEVELED 2 X 4s UNLESS OTHERWISE NOTED.
BOTTOM OF FLOOR IS TO BE TAPERED 1" 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.
LONGITUDINAL REINFORCING SHALL NOT EXTEND THROUGH CONSTRUCTION JOINTS, EXCEPT FOR 5x1 SLAB DOWEL BARS.
CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.
WHEN DE-WATERING 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 DRAWNGS 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.

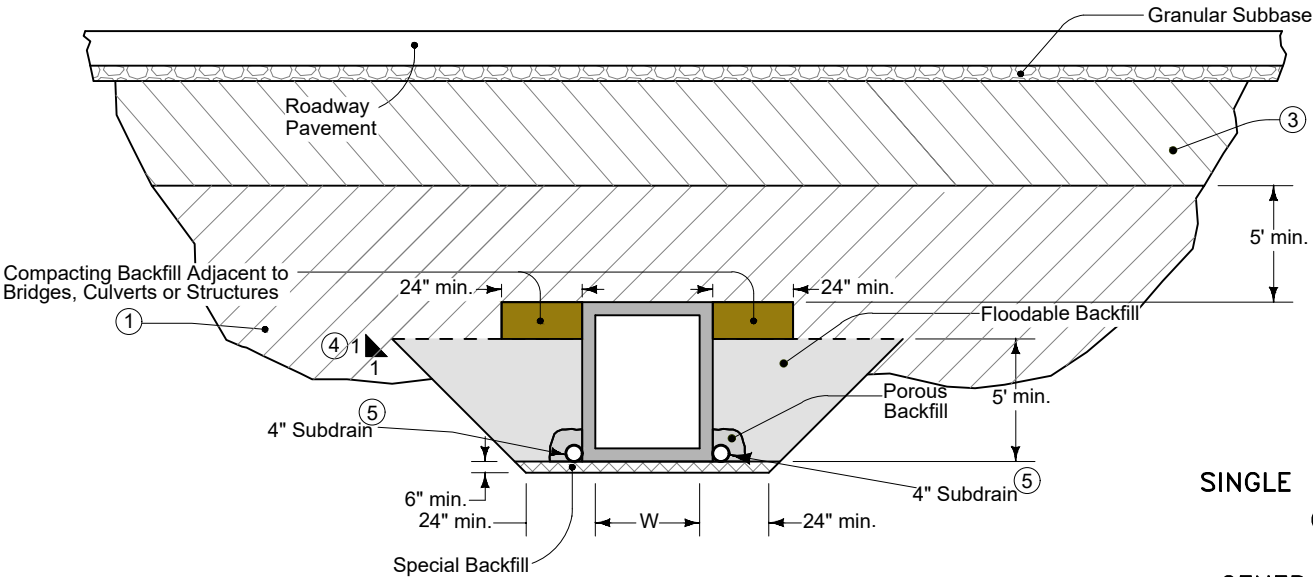
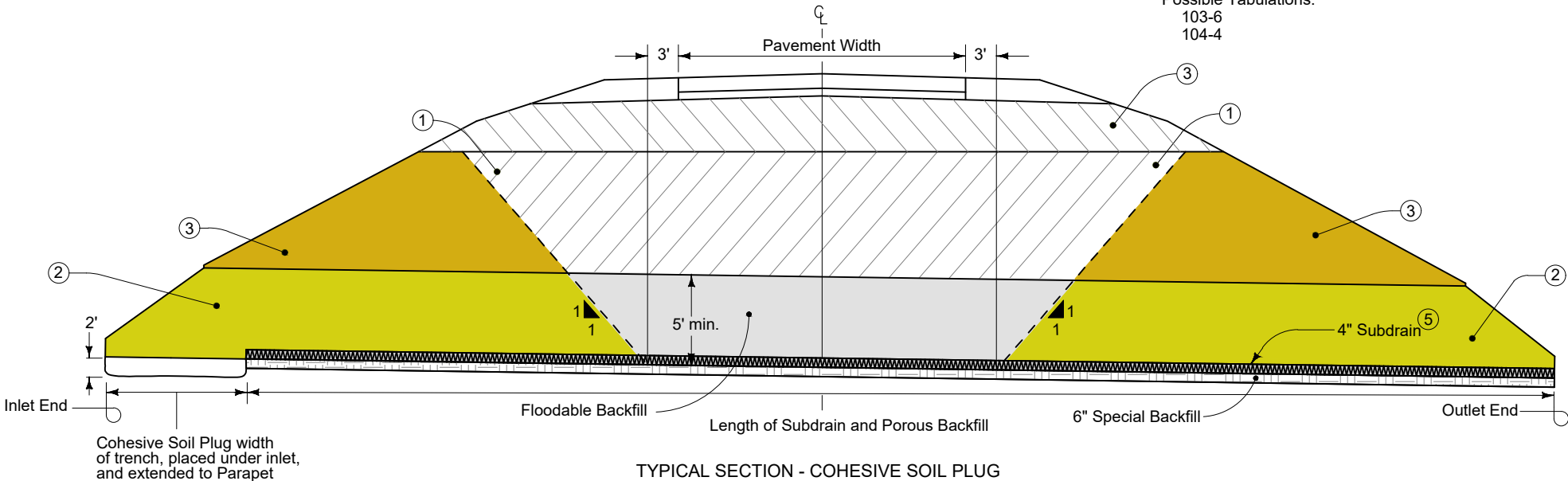
- ① Excavated material meeting the requirements of the Standard Specifications. Compact using moisture control. The Contractor has the option to use Floodable Backfill. No additional compensation will be provided if the Contractor elects to use Floodable Backfill in lieu of suitable soil.

② Prior to flooding, place a cohesive soil plug to the height of the floodable backfill at the inlet, outlet and sides of the culvert.

③ Excavated material meeting the requirements of the Standard Specifications. Type A compaction. If the option to use Floodable Backfill to the top of subgrade is used, extend the cohesive soil plug to the top of subgrade.
- ④ Quantity calculations for payment are based on a 1:1 slope and minimum trench dimension. Actual slope of trench may vary based upon Contractor's operations. No additional payment will be made for additional quantities resulting from use of flatter slopes.

⑤ Place at flowline elevation of culvert starting at parapet for inlet and outletting at end of outlet headwall wings. Cover with a minimum of 4 inches of Porous Backfill.
- Possible Contract Items:
Flooded Backfill
Excavation, Class 20
Compaction with Moisture Control
Compacting Backfill Adjacent to Bridges, Culverts or Structures

Possible Tabulations:
103-6
104-4



SINGLE 14' x 6' x 250'-0 REINFORCED CONCRETE BOX CULVERT

GENERAL NOTES & BACKFILL DETAILS

Denotes pay limits for flooded backfill

RCB INSTALLATION
CULVERT BACKFILL DETAILS

STATION 15+50.00
MADISON COUNTY,
52' SKEW, LT. AHEAD
IOWA

POLLUTION PREVENTION PLAN

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 RESPONSIBILITIES

- A. DESIGNER:
1. PREPARES BASE PPP INCLUDED IN THE PROJECT PLAN.
- B. OWNER
1. PREPARES NOTICE OF INTENT (NOI) SUBMITTED TO IOWA DNR.
 2. IS SIGNATURE AUTHORITY ON THE BASE PPP.
- C. 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 SPECIFICATIONS SECTION 2602 OF THE STANDARD SPECIFICATIONS.
 3. SUBMITS AN EROSION CONTROL IMPLEMENTATION PLAN (ECIP) AND ECIP UPDATES ACCORDING TO SPECIFICATIONS 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.
- D. 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 PERFORMING 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.
- E. RCE/PROJECT ENGINEER:
1. IS PROJECT STORM WATER MANAGER.
 2. 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.
 3. 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.
 4. SUPERVISES ALL WORK NECESSARY TO MEET STORM WATER REQUIREMENTS AT THE PROJECT, INCLUDING WORK PERFORMED BY CONTRACTORS AND SUBCONTRACTORS.
 5. 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.
 6. IS FAMILIAR WITH THE PROJECT PPP AND STORM WATER SITE MAP.
 7. IS THE POINT OF CONTACT FOR THE PROJECT FOR REGULATORY OFFICIALS, INSPECTOR, CONTRACTORS, AND SUBCONTRACTORS REGARDING STORM WATER REQUIREMENTS.
 8. IS SIGNATURE AUTHORITY ON NOTICE OF DISCONTINUATION.
 9. MAINTAINS AN UP-TO-DATE RECORD OF CONTRACTORS, SUBCONTRACTORS, AND SUBCONTRACTED WORK ITEMS THROUGH SUBCONTRACTOR REQUEST FORMS (FORM 830231).
 10. MAKES INFORMATION TO DETERMINE PERMIT COMPLIANCE AVAILABLE TO THE DNR UPON THEIR REQUEST.
- F. 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 14' X 6' REINFORCED CONCRETE BOX CULVERT ON HIGHWAY R35 OVER A TRIBUTARY TO CLANTON CREEK IN MADISON COUNTY, IOWA.
- B. THIS PPP COVERS APPROXIMATELY 3.1 ACRES WITH AN ESTIMATED 2.7 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 2.7 ACRES DISTURBED.
- C. THE PPP IS LOCATED IN AN AREA OF ONE SOIL ASSOCIATION(S) (SHARPSBURG – SHELBY - ADAIR). THE ESTIMATED WEIGHTED AVERAGE RUNOFF COEFFICIENT NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 0.27.
- D. STORM WATER SITE MAP - MULTIPLE SOURCES OF INFORMATION COMPRISE THE BASE STORM WATER SITE MAP INCLUDING:
1. DRAINAGE PATTERNS – SITUATION PLAN AND GENERAL PLAN.
 2. PROPOSED SLOPES – CROSS SECTIONS.
 3. AREAS OF SOIL DISTURBANCE – CONSTRUCTION LIMITS SHOWN ON SITUATION PLAN AND GENERAL PLAN.
 4. LOCATION OF STRUCTURAL CONTROLS – TABULATIONS.
 5. LOCATIONS OF NON-STRUCTURAL CONTROLS – TABULATIONS.
 6. LOCATIONS OF STABILIZATION PRACTICES – GENERALLY WITHIN CONSTRUCTION LIMITS SHOWN ON SITUATION PLAN AND GENERAL PLAN.

7. SURFACE WATERS (INCLUDING WETLANDS) – PROJECT LOCATION MAP AND SITUATION PLAN AND GENERAL PLAN.
 8. LOCATIONS WHERE STORM WATER IS DISCHARGED – SITUATION PLAN AND GENERAL PLAN.
- 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 WILL BE DOCUMENTED BY FIELDBOOK ENTRIES AND AMENDED PPP SITE MAP.
- F. RUNOFF FROM THIS WORK WILL FLOW INTO A TRIBUTARY TO CLANTON 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 ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION LOCATED IN THE PLANS. 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 LOCATED IN THE PLANS. ADDITIONAL INFORMATION MAY BE FOUND IN TABULATIONS OF THE PLANS OR IS REFERENCED IN STANDARD 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 ESTIMATED PROJECT QUANTITIES AND ESTIMATE REFERENCE INFORMATION, AS WELL AS ALL OTHER ITEM SPECIFIC TABULATIONS. TYPICAL DRAWINGS DETAILING CONSTRUCTION OF THE DEVICES TO BE USED ON THIS PROJECT CAN BE FOUND IN THE PLANS OR ARE REFERENCED IN THE STANDARD ROAD PLANS TABULATION.
- c. STORM WATER MANAGEMENT
- 1) 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 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
- a. 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 APPLICABLE LAWS, RULES OR REGULATIONS SHALL APPLY.
- 1) VEHICLE ENTRANCES AND EXITS - CONSTRUCT AND MAINTAIN ENTRANCES AND EXITS TO PREVENT TRACKING OF SEDIMENTS ONTO ROADWAYS.
 - 2) MATERIAL DELIVERY, STORAGE AND USE - IMPLEMENT PRACTICES TO PREVENT DISCHARGE OF CONSTRUCTION MATERIALS DURING DELIVERY, STORAGE, AND USE.
 - 3) STOCKPILE MANAGEMENT - INSTALL CONTROLS TO REDUCE OR ELIMINATE POLLUTION OF STORM WATER FROM STOCKPILES OF SOIL AND PAVING.
 - 4) WASTE DISPOSAL - DO NOT DISCHARGE ANY MATERIALS, INCLUDING BUILDING MATERIALS, INTO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
 - 5) 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.
 - 6) 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.
 - 7) 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.
 - 8) 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.
 - 9) 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.

- 10) 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 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.
 4. REVIEW OF EROSION AND SEDIMENT CONTROL MEASURES WITHIN DISTURBED AREAS FOR THE EFFECTIVENESS IN PREVENTING IMPACTS TO RECEIVING WATERS.
 5. MAJOR OBSERVATIONS RELATED TO THE IMPLEMENTATION OF THE PPP.
 6. 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

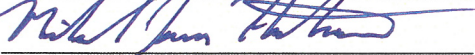
SILTS, SEDIMENT, AND OTHER FORMS OF POLLUTION MAY BE TRANSPORTED ONTO HIGHWAY RIGHT-OF-WAY (ROW) AS A RESULT OF A STORM EVENT. POTENTIAL SOURCES OF POLLUTION LOCATED OUTSIDE HIGHWAY ROW ARE BEYOND THE CONTROL OF THIS PPP. POLLUTION WITHIN HIGHWAY ROW WILL BE CONVEYED AND CONTROLLED PER THIS PPP.

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.



SIGNATURE

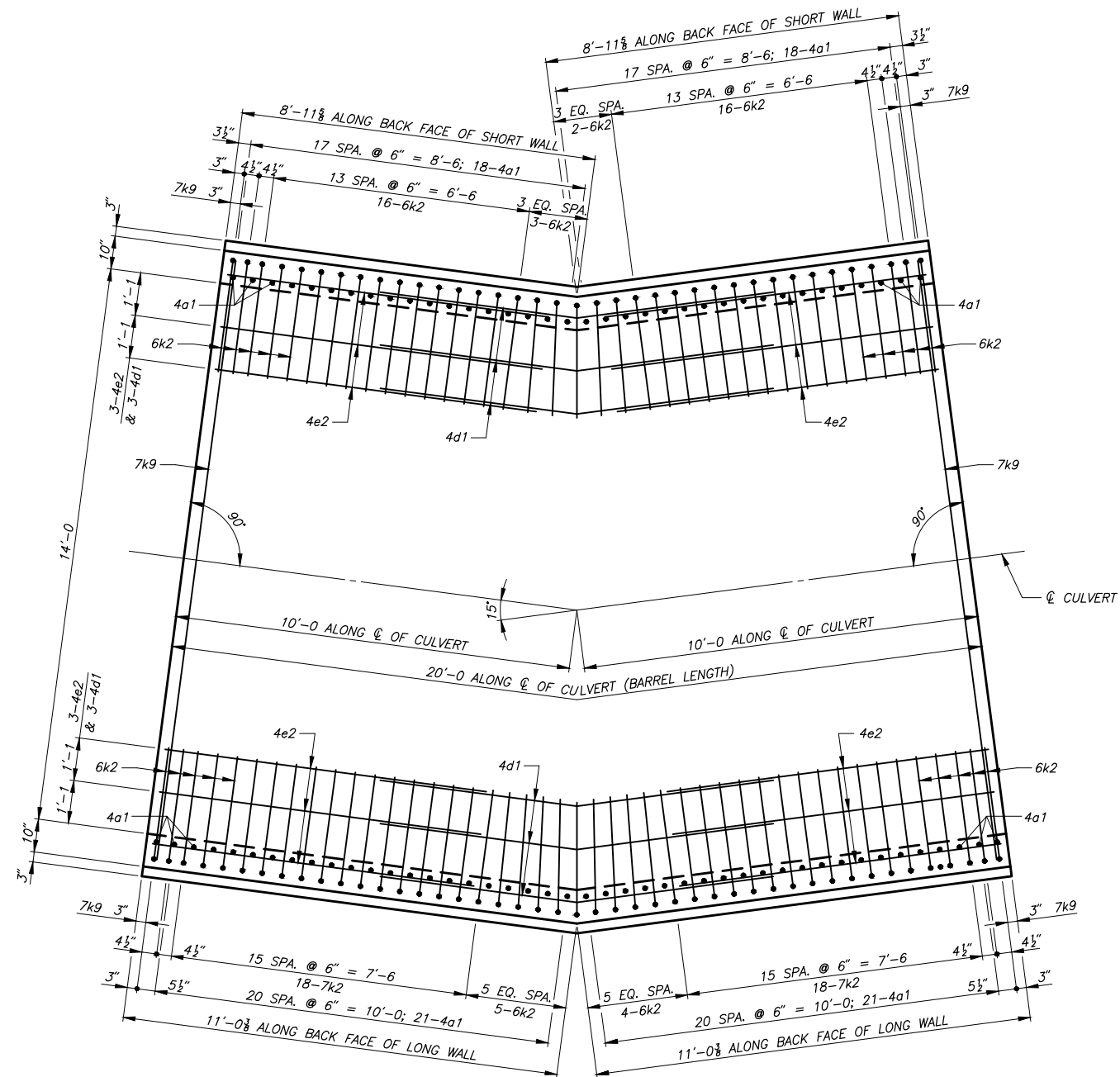

PRINTED OR TYPED NAME

POLLUTION PREVENTION PLAN

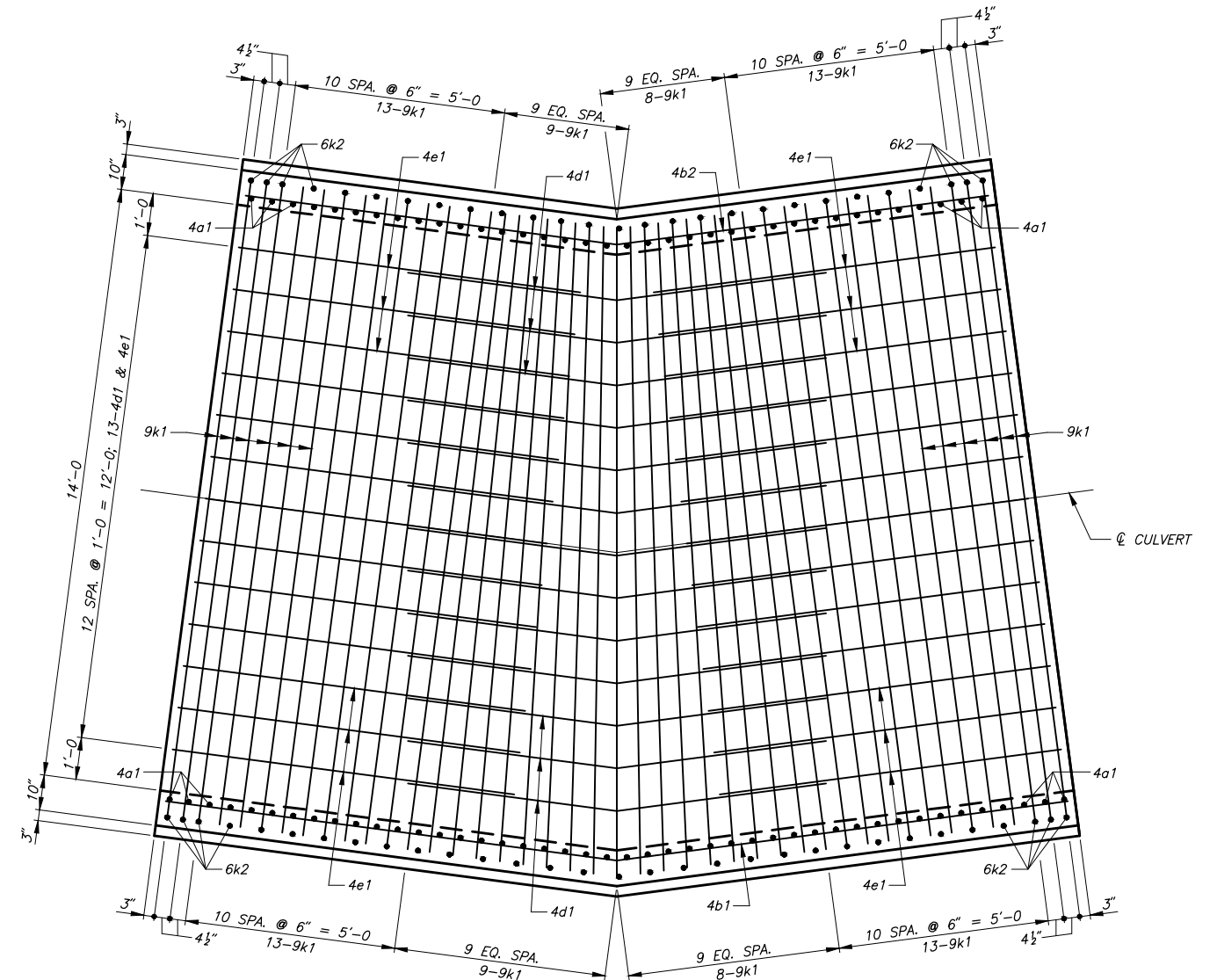
MADISON COUNTY,

IOWA





BENT SECTION - TOP OF SLAB



BENT SECTION - BOTTOM OF SLAB

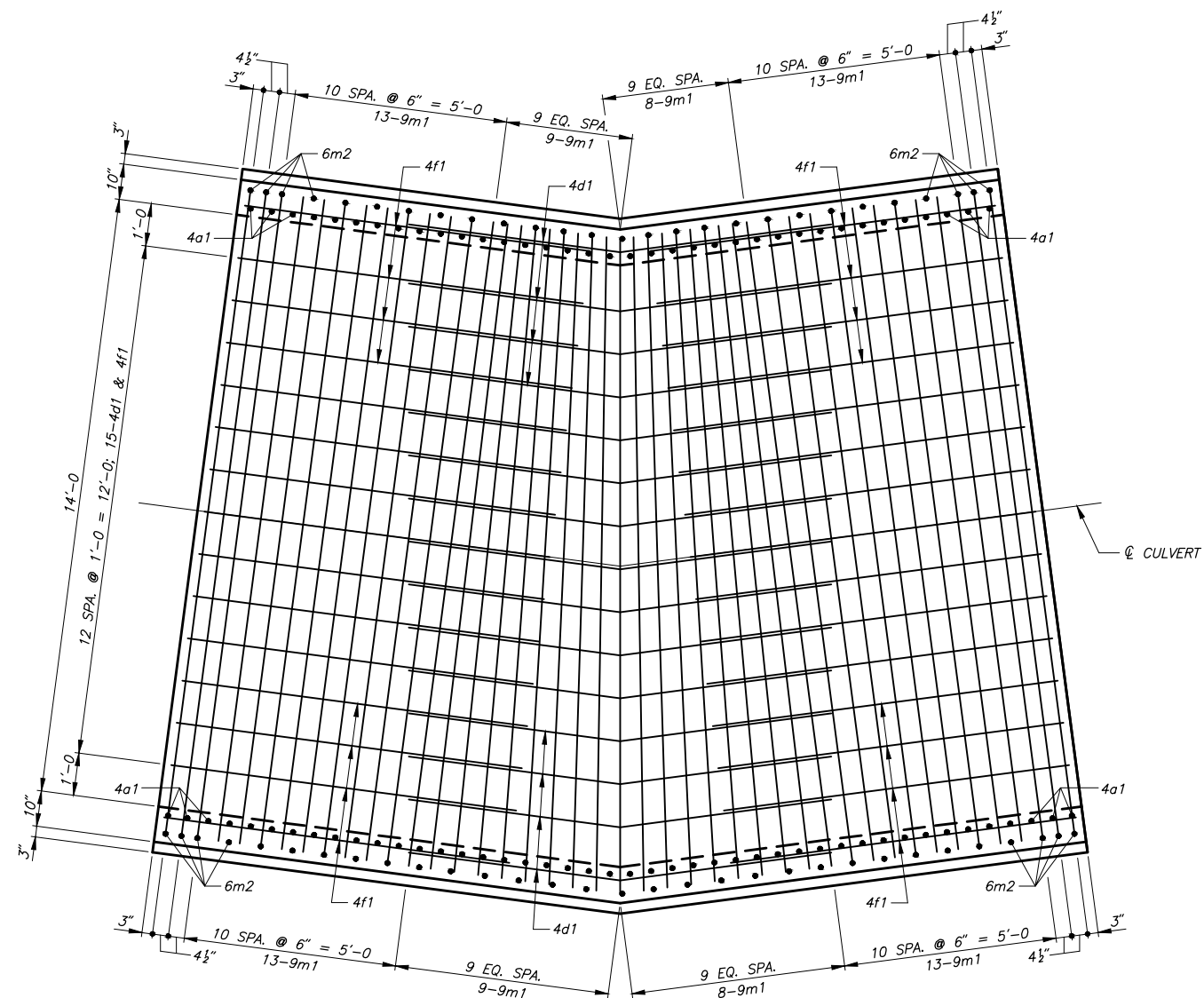


SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

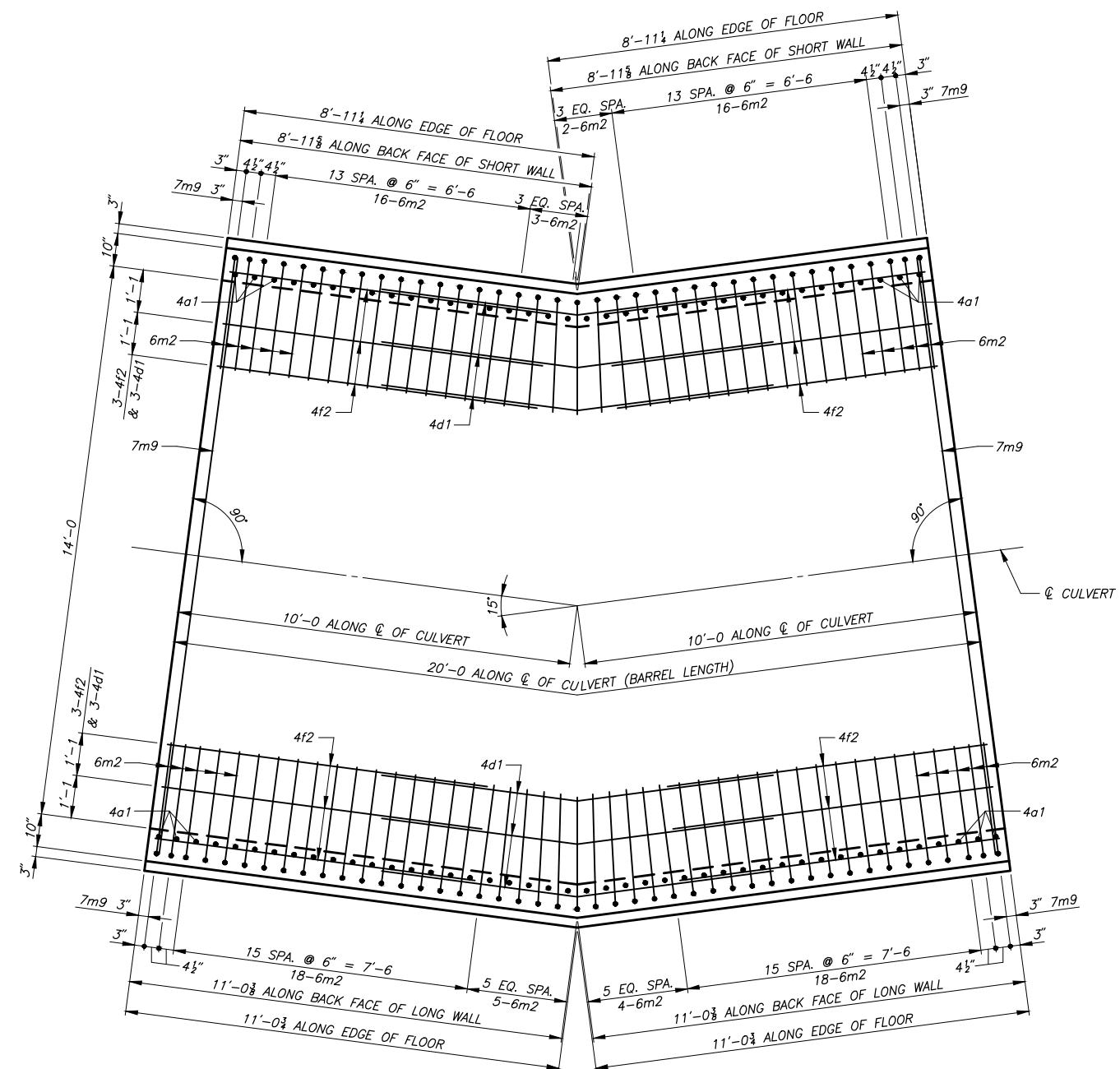
BENT BARREL CULVERT DETAILS

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA



BENT SECTION - TOP OF FLOOR



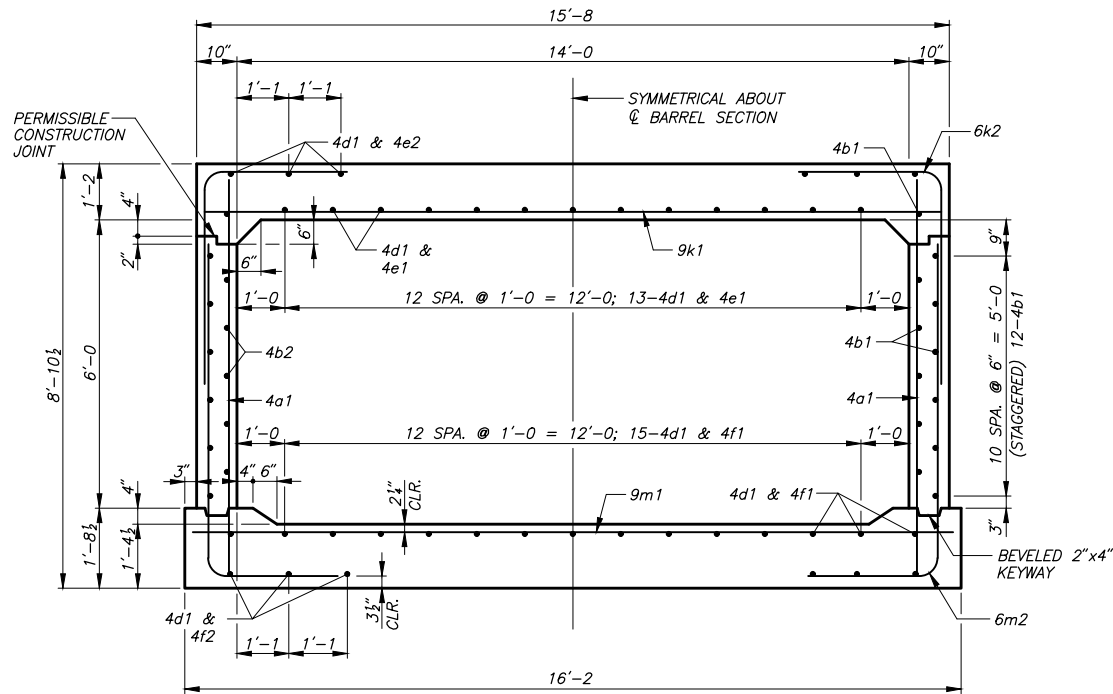
BENT SECTION - BOTTOM OF FLOOR

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

BENT BARREL CULVERT DETAILS

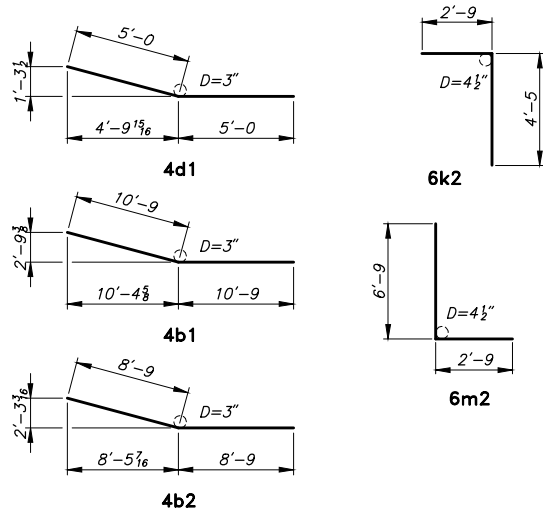
STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA



BENT BARREL SECTION
(LOOKING SOUTH)

BENT BAR DETAILS—BENT BARREL SECTION



ALL DIMENSIONS ARE OUT TO OUT. D = PIN DIAMETER

CONCRETE PLACEMENT QUANTITIES

ITEM	#INLET	*BARREL	#OUTLET	TOTAL
ΔSLAB (0.712 C.Y./FT.)	12.4	146.0	23.0	181.4
FLOOR (0.862 C.Y./FT.)	30.9	176.7	49.5	257.1
WALLS (0.347 C.Y./FT.)	10.2	71.1	16.9	98.2
TOTAL(CU.YDS.)	53.5	393.8	89.4	536.7

* ONE (1) 33' AND FOUR (4) 38' STANDARD SECTIONS AND 20' OF BEND.
Δ INCLUDES HEADWALLS ABOVE CONSTRUCTION JOINTS.
* BACK OF PARAPET TO CONSTRUCTION JOINT.
INCLUDES CONCRETE REQUIRED FOR ONE (1) HEADWALL. 15' HEADWALL AT INLET AND 45' HEADWALL AT OUTLET.

REINF. BAR LIST: 20'-0 BARREL BENT SECT.

BAR	LOCATION	SHAPE	NO.	LENGTH	WEIGHT
4a1	WALL, F.F.V., BOTH WALLS	—	78	8'-5	439
4b1	LONG WALL, F.F.H. & B.F.H.	—	12	21'-6	172
4b2	SHORT WALL, F.F.H. & B.F.H.	—	12	17'-6	140
4d1	SLAB & FLOOR, LONGIT., SPLICE	—	40	10'-0	267
4e1	SLAB, BOTTOM, LONGITUDINAL	—	26	8'-2	142
4e2	SLAB, TOP, LONGITUDINAL	—	12	8'-2	65
4f1	FLOOR, TOP, LONGITUDINAL	—	30	8'-2	142
4f2	FLOOR, BOTTOM, LONGITUDINAL	—	12	8'-2	65
9k1	SLAB, BOT., TRANSVERSE	—	43	15'-4	2,242
6k2	SLAB, TOP, CORNER	—	82	6'-9	831
7k9	SLAB, TOP, TRANSVERSE	—	2	15'-4	63
9m1	FLOOR, TOP, TRANSVERSE	—	43	15'-10	2,315
6m2	FLOOR, BOT., CORNER	—	82	9'-6	1,170
7m9	FLOOR, BOT., TRANSVERSE	—	2	15'-10	65
TOTAL (LBS.)					8,118

REINFORCING STEEL SUMMARY — BARRELS

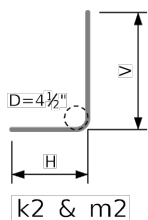
ITEM	TOTAL
± INLET (381.55 LB./FT.)	9,011
BEND	8,118
* BARREL (381.55 LB./FT.)	70,587
± OUTLET (381.55 LB./FT.)	16,751
5r1 (7 @ JOINTS @ 55 LBS.)	385
TOTAL (LBS.)	104,852

* ONE (1) 33' AND FOUR (4) 38' STANDARD SECTIONS.
± INCLUDES REINFORCING STEEL REQUIRED FOR ONE (1) HEADWALL AND ONE (1) END SECTION. 15' HEADWALL AT INLET AND 45' HEADWALL AT OUTLET.

Variable Dimensions and Quantities for 14' x 6' Barrel Sections

Dimensions							Bar List																												Quantities														
							a1		b1		e1		e2		f1		f2		k1		k2				k9		m1		m2				m9		Concrete (CY/FT)				Steel (LB/FT)										
Fill	S	H	A	B	C	D	Size	Sp.	L	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	No.	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Size	Sp.	L	H	V	Size	Sp.	L	Slab	Floor	Walls	Total					
0	14	6	14	14	9	9	4	9	8'-3	4	6	24	5	12	13	4	16	6	4	12	15	4	13	8	6	6	15'-2	6	9	7'-4	3'-4	4'-0	6	15'-2	7	9	15'-8	6	9	10'-7	4'-0	6'-7	6	15'-8	0.702	0.728	0.313	1.743	231.66
1	14	6	13.5	14	9	9	4	9	8'-2	4	6	24	5	12	13	4	17	6	4	12	15	4	13	8	6	6	15'-2	6	9	7'-5	3'-5	4'-0	6	15'-2	7	9	15'-8	6	9	10'-5	3'-10	6'-7	6	15'-8	0.678	0.728	0.313	1.719	231.13
2	14	6	9	10.5	9	9	4	12	7'-6	4	6	24	6	12	13	4	13	8	4	12	15	4	14	8	7	6	15'-2	6	6	8'-0	4'-0	4'-0	6	15'-2	7	6	15'-8	6	6	10'-5	4'-1	6'-4	6	15'-8	0.463	0.555	0.313	1.331	308.26
3-5	14	6	8.5	10.5	9	9	4	12	7'-6	4	6	24	4	12	13	4	13	8	4	12	15	4	13	8	7	6	15'-2	6	6	7'-10	3'-11	3'-11	6	15'-2	7	6	15'-8	6	6	10'-3	3'-11	6'-4	6	15'-8	0.439	0.555	0.313	1.307	295.53
6-8	14	6	9.5	12.5	9	9	4	12	7'-9	4	6	24	4	12	13	4	18	6	4	12	15	4	16	6	7	6	15'-2	6	6	7'-2	3'-7	3'-7	6	15'-2	7	6	15'-8	6	6	9'-9	3'-3	6'-6	6	15'-8	0.487	0.654	0.313	1.454	286.13
9-10	14	6	10	12.5	9	9	4	12	7'-9	4	6	24	4	12	13	4	12	8	4	12	15	4	15	6	8	6	15'-2	6	6	7'-4	3'-8	3'-8	6	15'-2	8	6	15'-8	6	6	9'-8	3'-2	6'-6	6	15'-8	0.511	0.654	0.313	1.478	327.05
11-13	14	6	11.5	14	9	9	4	12	8'-0	4	6	24	4	12	13	4	14	6	4	12	15	4	13	6	8	6	15'-2	6	6	6'-9	2'-11	3'-10	6	15'-2	8	6	15'-8	6	6	9'-4	2'-9	6'-7	6	15'-8	0.583	0.728	0.313	1.624	320.50
14-16	14	6	12.5	15	9.5	9	4	12	8'-2	4	6	24	4	12	13	4	13	6	4	12	15	4	12	6	8	6	15'-3	6	6	6'-9	2'-10	3'-11	6	15'-3	8	6	15'-9	6	6	9'-5	2'-9	6'-8	6	15'-9	0.635	0.782	0.330	1.747	322.13
18-19	14	6	14	16.5	10	6	4	6	8'-5	4	6	24	4	12	13	4	13	6	4	12	15	4	13	6	9	6	15'-4	6	6	6'-9	2'-9	4'-0	7	15'-4	9	6	15'-10	6	6	9'-6	2'-9	6'-9	7	15'-10	0.712	0.862	0.347	1.921	381.55

Bent Bar Detail



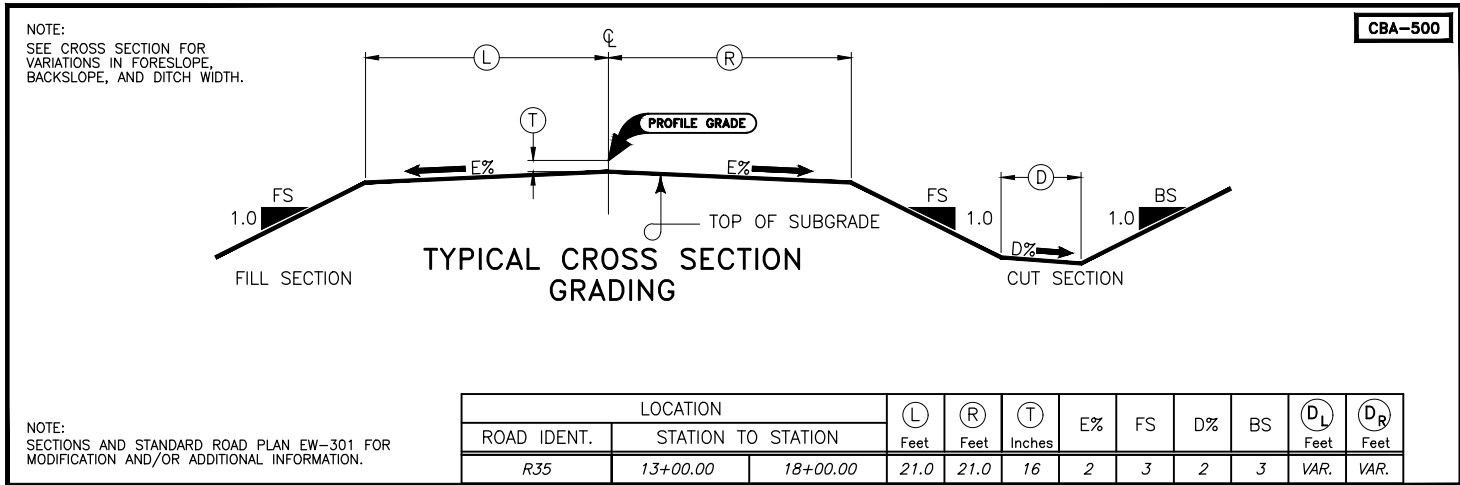
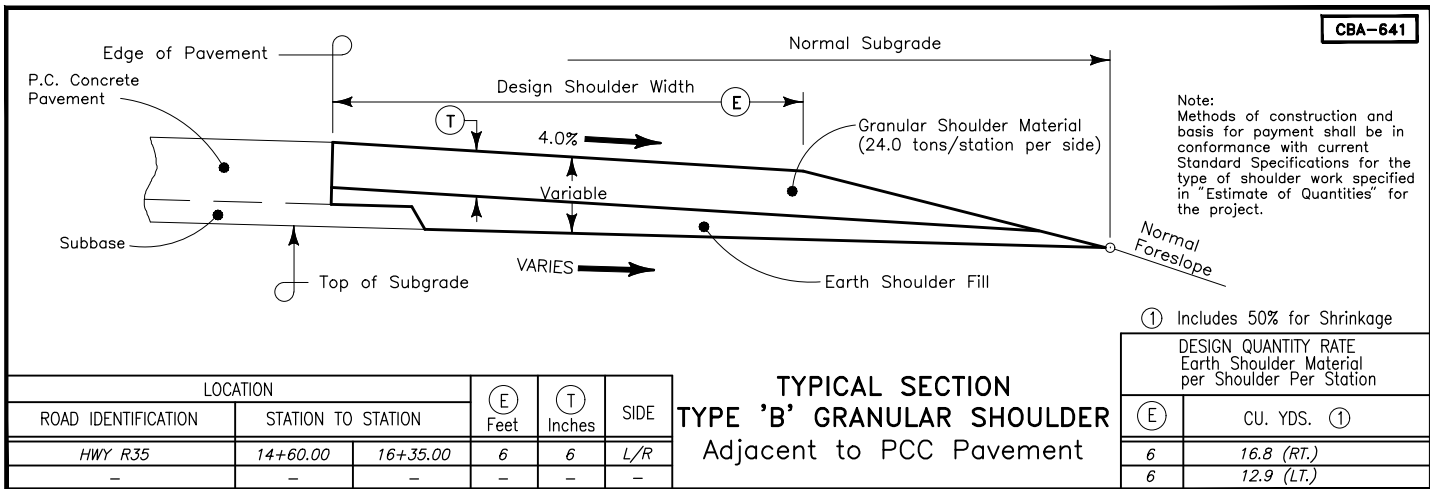
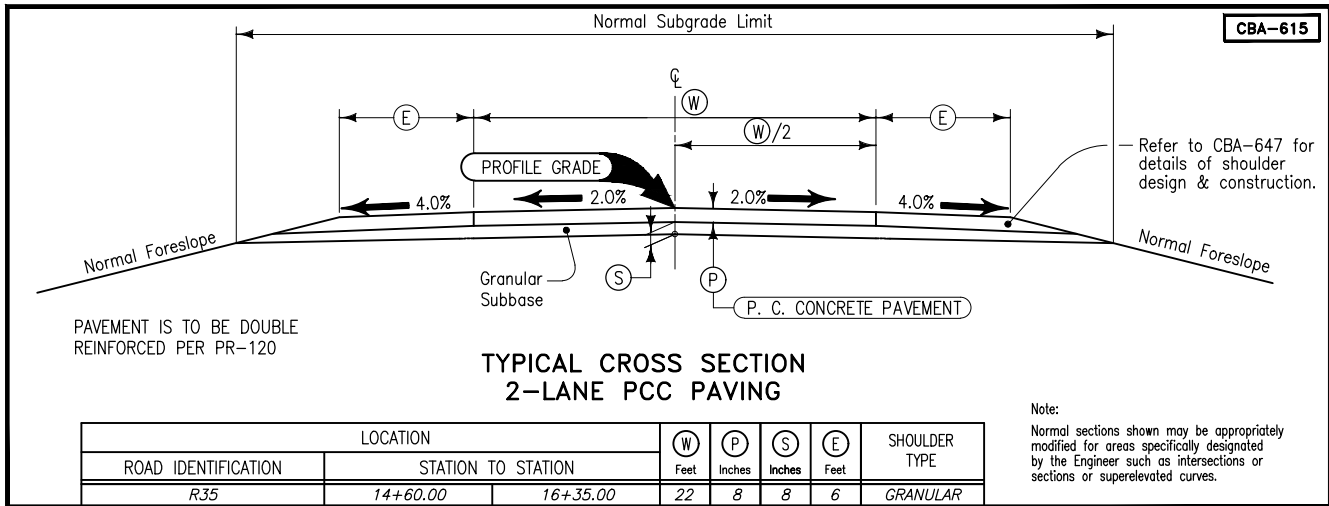
Note:
All dimensions are out to out.
D = pin diameter.

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

CULVERT DETAILS

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA

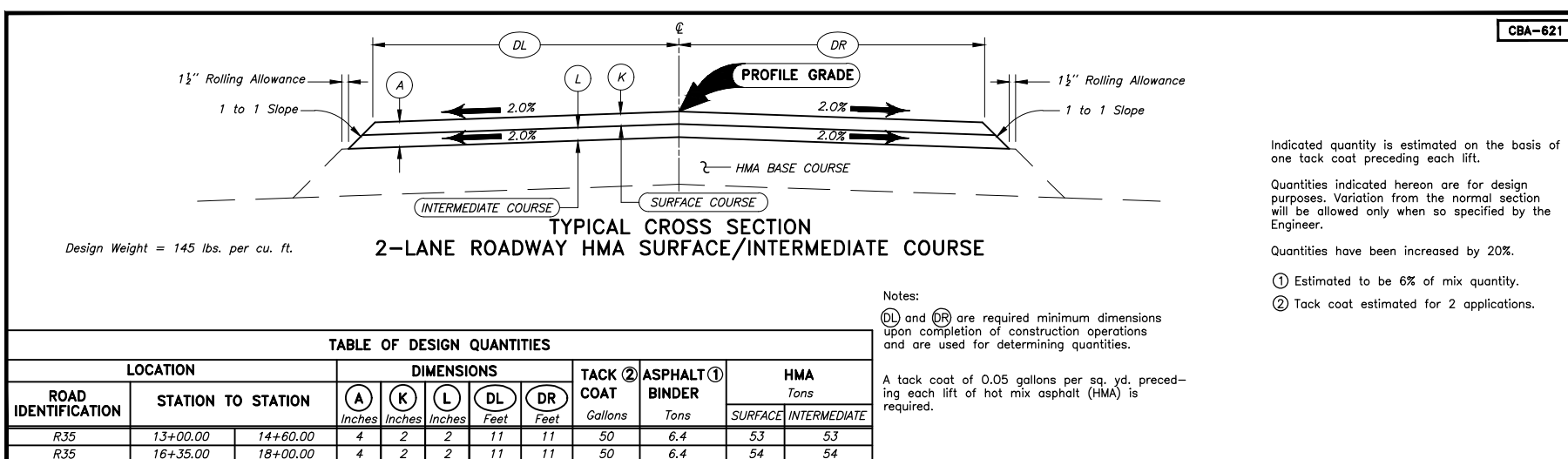
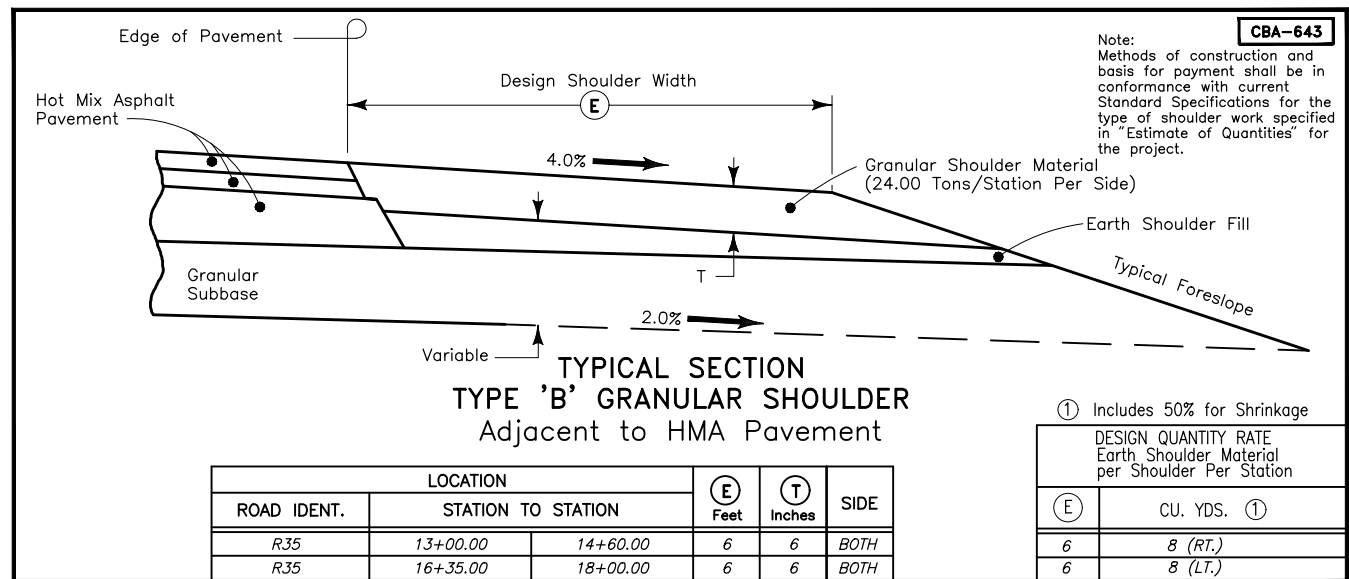


SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

TYPICAL SECTIONS

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA



TYPICAL SECTIONS

STATION 15+50.00 52' SKEW, LT. AHEAD
MADISON COUNTY, IOWA

105_04 10/21/25		
STANDARDS		
The following Standards apply to construction work on this project.		
Number	Date	Title
DR-111	04-17-18	Box Culvert (Backfill)
DR-303	10-17-17	Subdrains (Longitudinal)
DR-305	04-19-22	Subdrain Outlets (Standard Subdrain, Pressure Release and Special)
DR-306	10-17-23	Precast Concrete Headwall for Subdrain Outlets
EC-201	04-20-21	Silt Fence
EC-204	10-19-21	Perimeter, Slope and Ditch Check Sediment Control Devices
EC-301	10-18-22	Rock Erosion Control (REC)
EW-402	04-18-17	Temporary Stream Diversion
PR-120	04-21-20	Double Reinforced Pavement Over Box Culverts
PV-101	10-21-25	Joints
TC-252	10-21-25	Routes Closed to Traffic

CBA-100						
SUMMARY OF ROADWAY EXCAVATION						
STATION	AREAS		RAW VOLUMES			
	CUT	FILL	CUT	ADD'L CUT	FILL	ADD'L FILL
	SF	SF	CY	CY	CY	CY
13+00	0	0	134		23	
13+50	145	25	412		51	
14+00	300	30	657		46	
14+50	410	20	671	400	1,213	
15+00	315	1,290	523		3,287	
15+50	250	2,260	787		3,384	
16+00	600	1,395	810		1,468	
16+50	275	190	190		88	
16+75	135	0	90		5	
17+00	60	10	93		46	
17+50	40	40	37		37	
18+00	0	0				
	SUBTOTALS		4,404	400	9,648	0
	TOTALS		4,804		9,648	

NOTES: 1) SEE CROSS SECTIONS FOR ADDITIONAL INFORMATION.
2) FILL AREAS ADJUSTED TO ACCOUNT FOR MATERIAL REMOVED AS PART OF CLASS 20 EXCAVATION.

SURVEY CONTROL POINTS					
CBA-300					
Description	Northing	Easting	Approx. Station	Approx. Offset	Elevation
1⁄2 REBAR YPC 5041	481373.61	1555583.95	-13+51	0' RT.	857.47
BENCHMARK #600, 1⁄2" REBAR	479943.94	1555558.18	12+79	75' LT.	859.97
BENCHMARK #4000, MAG NAIL IN GR POST	480295.40	1555652.44	16+32	13' RT.	870.78
SW COR NW1⁄4 SEC 12, PK NAIL	477415.20	1555588.38	17+11	46' LT.	949.95
BENCHMARK #601, 1⁄2" REBAR	480523.18	1555709.06	18+59	71' RT.	860.53

108 13A 3/27/25			
SAFETY CLOSURES			
Refer to Section 2528 of the Standard Specifications			
Station	Road Closure Qty.	Hazard Closure Qty.	Remarks
10+00.00	1		
12+00.00		1	
19+00.00		1	
21+00.00	1		
Total:	2	2	

CBA-101							
SUMMARY OF EARTHWORK QUANTITIES							
EXCAVATION TYPE	RAW CUT CY	RAW FILL CY	WASTE ** CY	USABLE CUT CY	SHRINKAGE FACTOR	FILL +35% SHRINKAGE CY	PAYMENT QUANTITY CY
CLASS 10, ROADWAY AND BORROW	4,804	9,648	0	4,804	35%	13,025	4,804
CLASS 10, CHANNEL	1,390	0	140	1,250	35%	0	1,390
CLASS 20	4,815	575	240	4,575	35%	776	4,815
TOTALS			380	10,629		13,801	
EMBANKMENT IN PLACE (EIP)	EIP = (13801 - 10629) / 1.35 SHRINK =						2,350

** ASSUMES SOME MATERIAL WILL BE UNSUITABLE AND WILL NEED TO BE WASTED ON SITE.

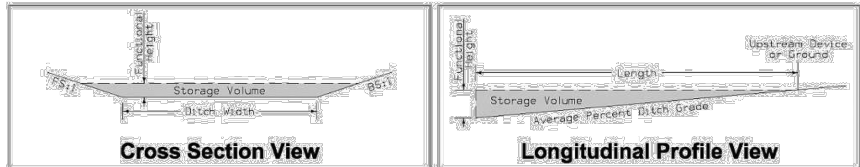
SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

TABULATIONS

STATION 15+50.00
MADISON COUNTY,
52' SKEW, LT. AHEAD
IOWA

100_18
8/15/22

Possible Standard: EC-201



* The functional height used in the volume equation is 85% of effective height. Effective height is 1.58 feet as shown on EC-201.

* Volume equation: $[0.5 \cdot \text{Spacing} \cdot (0.5 \cdot H^2 \cdot FS + DW \cdot H + 0.5 \cdot H^2 \cdot BS)]$

Line No.	Basin No.	Type	Station	Side	Installation (LF)	Maintenance (LF)	Removal (LF)	Foreslope (FS:1)	Backslope (BS:1)	Ditch Width (FT)	Avg. % Slope Ditch Grade	Volume (CF)	Remarks
1.0	1	Type 1	13+25.00	Right	17.0	17.0		3.0	3.0	10.0	6.0	179.38	SE DITCH
2.0	1	Type 1	13+50.00	Right	17.0	17.0		3.0	3.0	10.0	6.0	179.38	SE DITCH
3.0	1	Type 1	13+75.00	Right	17.0	17.0		3.0	3.0	10.0	6.0	179.38	SE DITCH
4.0	2	Type 1	14+40.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
5.0	2	Type 1	14+65.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
6.0	2	Type 1	14+90.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
7.0	2	Type 1	15+15.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
8.0	2	Type 1	15+40.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
9.0	2	Type 1	15+65.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
10.0	2	Type 1	15+90.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
11.0	2	Type 1	16+15.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
12.0	2	Type 1	16+40.00	Right	22.0	22.0		3.0	3.0	10.0	6.0	179.38	NE DITCH
13.0	2	Type 1	17+25.00	Right	17.0	17.0		3.0	3.0	5.0	1.5	515.52	NE DITCH
14.0	3	Type 1	14+60.00	Left	22.0	22.0		3.0	3.0	10.0	4.7	329.70	SW DITCH
15.0	3	Type 1	14+95.00	Left	22.0	22.0		3.0	3.0	10.0	4.7	329.70	SW DITCH
16.0	3	Type 1	15+30.00	Left	22.0	22.0		3.0	3.0	10.0	4.7	329.70	SW DITCH
17.0	4	Type 1	15+25.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
18.0	4	Type 1	15+50.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
19.0	4	Type 1	15+75.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
20.0	4	Type 1	16+00.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
21.0	4	Type 1	16+25.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
22.0	4	Type 1	16+50.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH
23.0	4	Type 1	16+75.00	Left	17.0	17.0		3.0	3.0	5.0	6.0	179.38	SW DITCH

Total:

$$BID\ QUANTITY = 451 \times 1.25 = 677$$

100_19
10/15/24

Possible Standards: EC-204

Line No.	Station From	Station To	Side	Sediment Control Device Type	Diameter Size	Length (LF)	Remarks
1.0	13+15.00	13+85.00	Right	Perimeter and Slope	12 inch	70.00	SW STREAM BANK
2.0	13+15.00	13+90.00	Right	Perimeter and Slope	12 inch	80.00	SE STREAM BANK
3.0	16+70.00	17+10.00	Left	Perimeter and Slope	12 inch	40.00	NW STREAM BANK
4.0	16+70.00	17+10.00	Left	Perimeter and Slope	12 inch	40.00	NE STREAM BANK
5.0	13+00.00	18+00.00		Perimeter and Slope	20 inch	300.00	(1)

Total:	
--------	--

① USE AS DITCH CHECKS IN LIEU OF SILT FENCE. IF NEEDED BASED ON SITE CONDITIONS.

110_13
8/15/22

Line No.	Item Description	Quantity	Quantity Units	Delivery Location	Contact Name	Contact Number	Remarks
1.0	STEEL BEAM GUARDRAIL	225	LF	STACK NEATLY ON SITE	MIKE HACKETT, PE & PLS	515-462-1136	
2.0	STEEL BRIDGE BEAMS	875	LF	STACK NEATLY ON SITE	MIKE HACKETT, PE & PLS	515-462-1136	
3.0	STEEL BRIDGE DIAPHRAGMS	36	EA	STACK NEATLY ON SITE	MIKE HACKETT, PE & PLS	515-462-1136	

100_17
8/15/22

Refer to EC-201

Line No.	Station From	Station To	Side	Length (FT)	Remarks
1.0	13+00.00	14+50.00	Left	170.00	TOE OF ROAD EMBANKMENT
2.0	14+40.00	16+50.00	Right	230.00	TOE OF ROAD EMBANKMENT
3.0	14+40.00	16+50.00	Right	230.00	TOE OF BACKSLOPE
4.0	15+15.00	16+65.00	Left	175.00	TOE OF BACKSLOPE
5.0	15+40.00	16+65.00	Left	150.00	TOE OF ROAD EMBANKMENT
6.0	16+50.00	18+00.00	Left	170.00	TOE OF ROAD EMBANKMENT

Total:

1125

$$BID\ QUANTITY = 1125 \times 1.25 = 1410$$

110_07A
8/15/22

(1) Lane(s) to which the installation is adjacent.

(2) Includes length of End Terminals and End Anchors.

Line No.	No.	Direction of Traffic (1)	Station From	Station To	Side	Removal of Guardrail (2) (LF)
1.0	1	NB	14+40.00	15+00.00	Right	56.3
2.0	2	SB	14+40.00	15+00.00	Left	56.2
3.0	3	NB	16+25.00	16+85.00	Right	56.2
4.0	4	SB	16+25.00	16+85.00	Left	56.3

Total:	
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225

110_01
4/5/24

Refer to Tabulation 102-5.

* Not a bid item.

Line No.	Station From	Station To	Side	Pavement Type	Area (SY)	Saw Cut* (LF)	Remarks
1.0	13+00.00	14+95.60	Both	HMA	478.1	22.0	
2.0	16+25.60	18+00.00	Both	HMA	426.3	22.0	

Total:

904.4

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

TABULATIONS

STATION 15+50.00

MADISON COUNTY,

52' SKEW. LT. AHEAD

IOWA

100 23
8/15/22

ROCK EROSION CONTROL
Refer to EC-301 and Detail 570-8

Line No.	Road Identification	Station From	Station To	Side	Length (FT)	Width (FT)	Rock Erosion Control Type	Engineering Fabric (SY)	Class E Revetment (TON)	Erosion Stone (TON)	Remarks
1.0	R35	14+25.00	16+50.00	Right	240.00	16.0	Type 2 - Rock Ditch	590.0	455.000		NE DITCH
2.0	R35	15+05.00	16+70.00	Left	180.00	11.0	Type 2 - Rock Ditch	330.0	235.000		SW DITCH
Total:								920	690		

104 04
8/15/22

ROADWAY ITEMS FOR DRAINAGE STRUCTURES INSTALLED BY CULVERT CONTRACTOR

* Not a Bid Item
(1) Backfill according to DR-111

Location	Design No.	Size	Kind	Dike Lt.	Dike Rt.	Dike Station	Dike Top Elevation	Dike Type	Compacting Backfill Adjacent (CY)	Compaction w/ Moisture Control (CY)	Compaction w/ Moisture and Density (CY)	Floodable Backfill* (A) (CY)	Porous Backfill* (B) (CY)	Flooded Backfill (1) (A+B) (CY)	Excavation Type	Excavation Quantity (CY)	Revetment Type	Revetment Quantity (TONS)	Engineering Fabric (SY)	Remarks
15+50.00		14' x 6'	RCB						290.0	1900.0		85.0	8.0	93.0	CLASS 20	4815.0				

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

TABULATIONS

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA

CBA
CALHOUN-BURNS & ASSOCIATES, CONSULTING ENGINEERS
WEST DES MOINES, IOWA 50266
(515) 224-4344

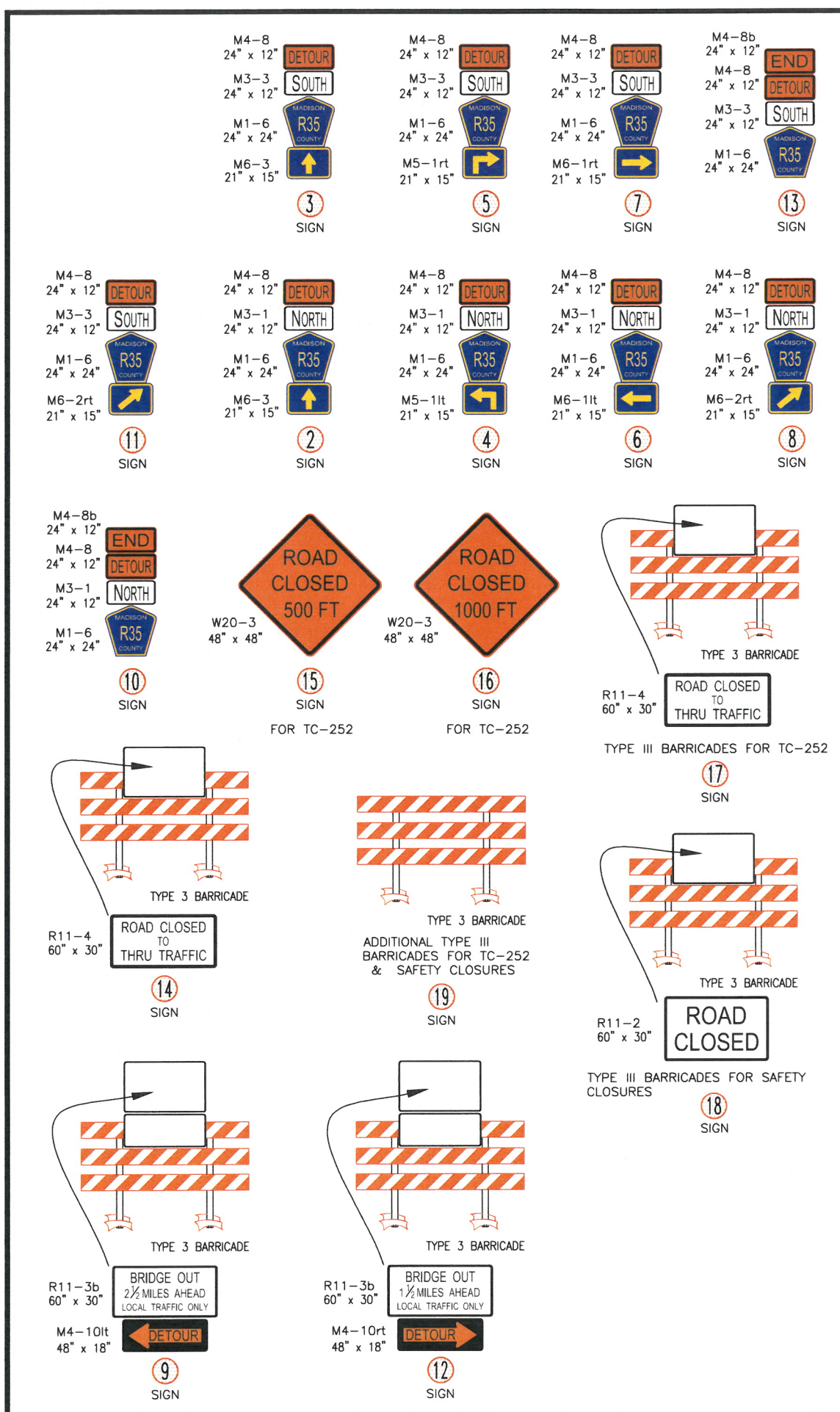
JOB NO. 2023146

DESIGNED BY : DJD
DRAWN BY : JML
CHECKED BY : LGM

MADISON COUNTY

PROJECT NO. BRS-C061(131)--60-61

SHEET 15 OF 28



SUMMARY OF TRAFFIC CONTROL SIGNS				
IA MUTCD	QUANTITY	DESCRIPTION	SIZE	REMARKS
DETOUR ROUTE				
M4-8	26	DETOUR	24" X 12"	
M1-6	26	R35	24" X 24"	
M3-1	13	NORTH	24" X 12"	
M3-3	13	SOUTH	24" X 12"	
M4-8b	2	END	24" X 12"	
M6-3	14	ARROW AHEAD	21" X 15"	ARROW AHEAD
M5-1rt	2	RT TURN ARROW	21" X 15"	RIGHT TURN ARROW
M5-1lt	2	LT TURN ARROW	21" X 15"	LEFT TURN ARROW
M6-1rt	2	RT ARROW	21" X 15"	RIGHT ARROW
M6-1lt	2	LT ARROW	21" X 15"	LEFT ARROW
M6-2rt	2	RT ARROW 45°	21" X 15"	RIGHT ARROW 45°
M4-10rt	1	DETOUR ARROW	48" X 18"	RIGHT ARROW
M4-10lt	1	DETOUR ARROW	48" X 18"	LEFT ARROW
R11-3b	1	BRIDGE OUT x MILES AHEAD	60" X 30"	BRIDGE OUT 2 1/2 MILES AHEAD
R11-3b	1	BRIDGE OUT x MILES AHEAD	60" X 30"	BRIDGE OUT 1 1/2 MILES AHEAD
R11-4	1	ROAD CLOSED	60" X 30"	ROAD CLOSED TO THRU TRAFFIC
TYPE 3	3	BARRICADE	8' X 5' MIN.	TYPE 3 BARRICADE
STANDARD ROAD PLAN TC-252 SITUATION 1 (RURAL)				
W20-3	4	ROAD CLOSED x FT	48" X 48"	1000 FT; SEE TC-252
W20-3	4	ROAD CLOSED x FT	48" X 48"	500 FT; SEE TC-252
R11-4	2	ROAD CLOSED THRU	60" X 30"	ROAD CLOSED TO THRU TRAFFIC
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3 BARRICADE; SEE TC-252
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3 BARRICADE; ADDITIONAL
SAFETY CLOSURES				
R11-2	2	ROAD CLOSED	60" X 30"	ROAD CLOSED; ROAD CLOSURES
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3; ROAD CLOSURES
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3; HAZARD CLOSURES
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3; ROAD CLOSURES ADDITIONAL
TYPE 3	2	BARRICADE	8' X 5' MIN.	TYPE 3; HAZARD CLOSURES ADDITIONAL

TRAFFIC CONTROL PLAN

THE ROUTE WILL BE CLOSED TO VEHICULAR AND PEDESTRIAN THROUGH TRAFFIC DURING CONSTRUCTION.

LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08 OF THE CURRENT STANDARD SPECIFICATIONS.

TRAFFIC CONTROL DEVICES, PROCEDURES, LAYOUTS, SIGNING, AND PAVEMENT MARKINGS INSTALLED WITHIN THE LIMITS OF THIS PROJECT SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPTER 130.

REFER TO THE "TC" ROAD STANDARD PLANS AND ITEM REFERENCE NOTES.

TRAFFIC CONTROL ON THE PROJECT SHALL BE IN ACCORDANCE WITH STANDARD ROAD PLAN TC-252. SEE STANDARD ROAD PLAN TC-252 FOR SITUATION 1. THIS PROJECT SHALL REQUIRE ALL TYPE III BARRICADES, SIGNS, AND WARNING LIGHTS SHOWN IN STANDARD ROAD PLAN TC-252. ADDITIONAL TYPE III BARRICADES SHALL BE REQUIRED.

THE ENGINEER MAY ADJUST THE LOCATION OF THE TYPE III BARRICADES AND SIGNS TO BETTER FIT THE FIELD CONDITIONS OF THE EXISTING ROADWAY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL TRAFFIC CONTROL REQUIRED BY THE PLANS.

AN OFFSITE DETOUR WILL BE UTILIZED TO MAINTAIN MADISON COUNTY R35 TRAFFIC.

SEE THE TRAFFIC CONTROL PLAN SHEETS FOR DETOUR ROUTE AND SIGNING.

TRAFFIC CONTROL REQUIRED FOR THE DETOUR SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ROAD CLOSURE BARRICADES AND DETOUR ROUTE SIGNING.

ADDITIONAL TYPE III BARRICADES SHALL BE REQUIRED AT THE SAFETY CLOSURES.

MADISON COUNTY SHALL SALVAGE THE EXISTING ROAD MARKERS AND SIGNS AFTER THE ROAD IS CLOSED.

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.

Signed *Michael James Hackett* Date *8/26/2025*
Michael James Hackett Iowa Lic. No. 14672

My license renewal date is 12/31/2026.
Pages covered by this seal: 16 and 17 of 28.

MICHAEL JAMES HACKETT
14672
LICENSED PROFESSIONAL ENGINEER & LAND SURVEYOR
STATE OF IOWA

SINGLE 14' x 6' x 250'-0 REINFORCED CONCRETE BOX CULVERT

TRAFFIC CONTROL PLAN

STATION 15+50.00 **52' SKEW, LT. AHEAD**
MADISON COUNTY, IOWA



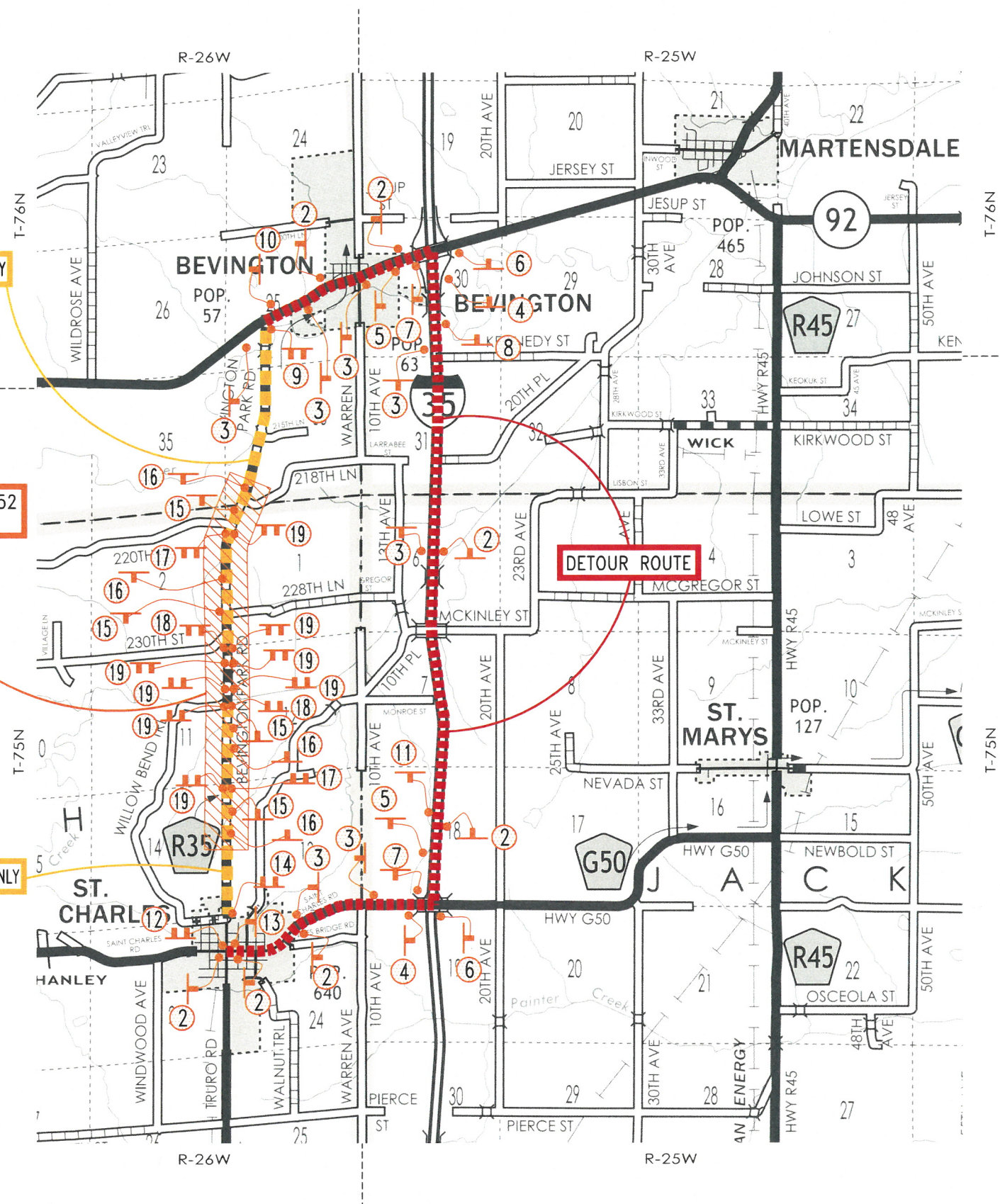
STANDARD ROAD PLAN TC-252
SITUATION 1

LOCAL TRAFFIC ONLY

LOCAL TRAFFIC ONLY

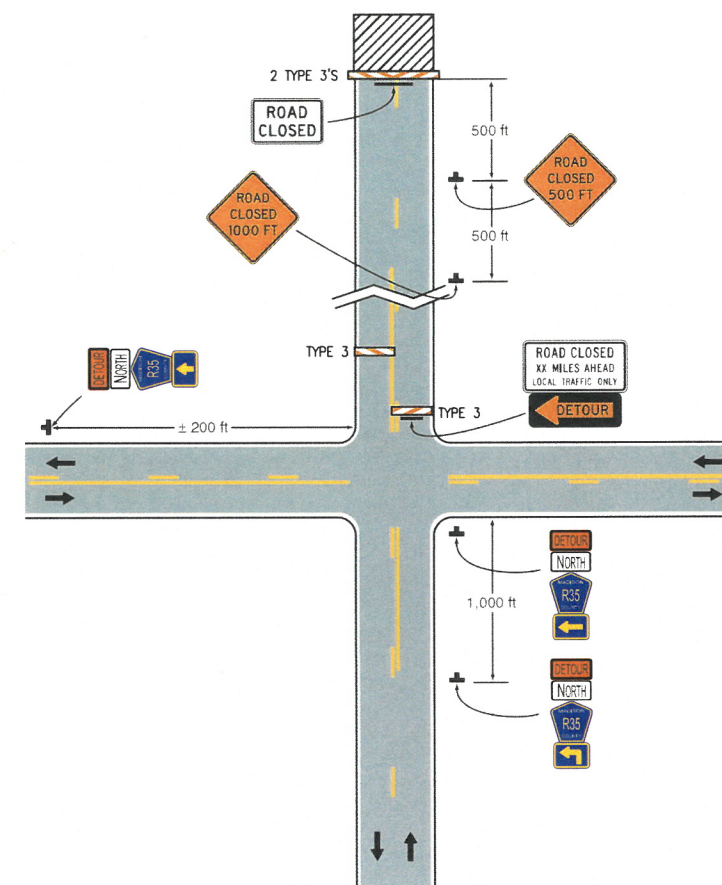
LEGEND

-  Traffic Sign
-  Type III Barricade
-  Standard Road Plan TC-252 Situation 1
-  Detour Route
-  Local Traffic Only



GENERAL LOCATION MAP

NOT TO SCALE



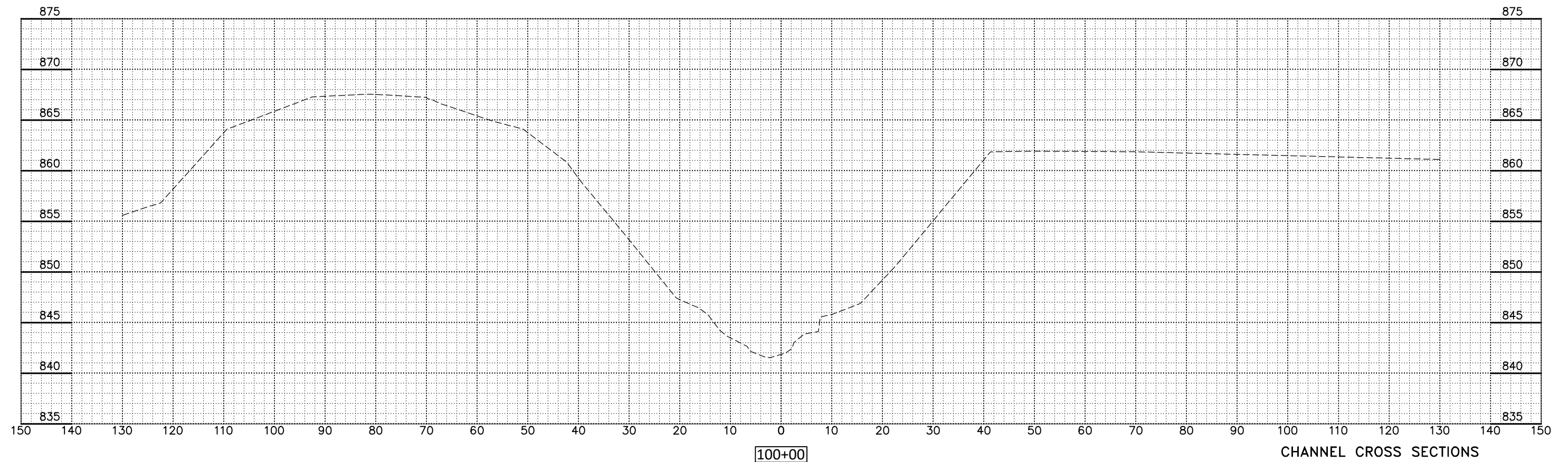
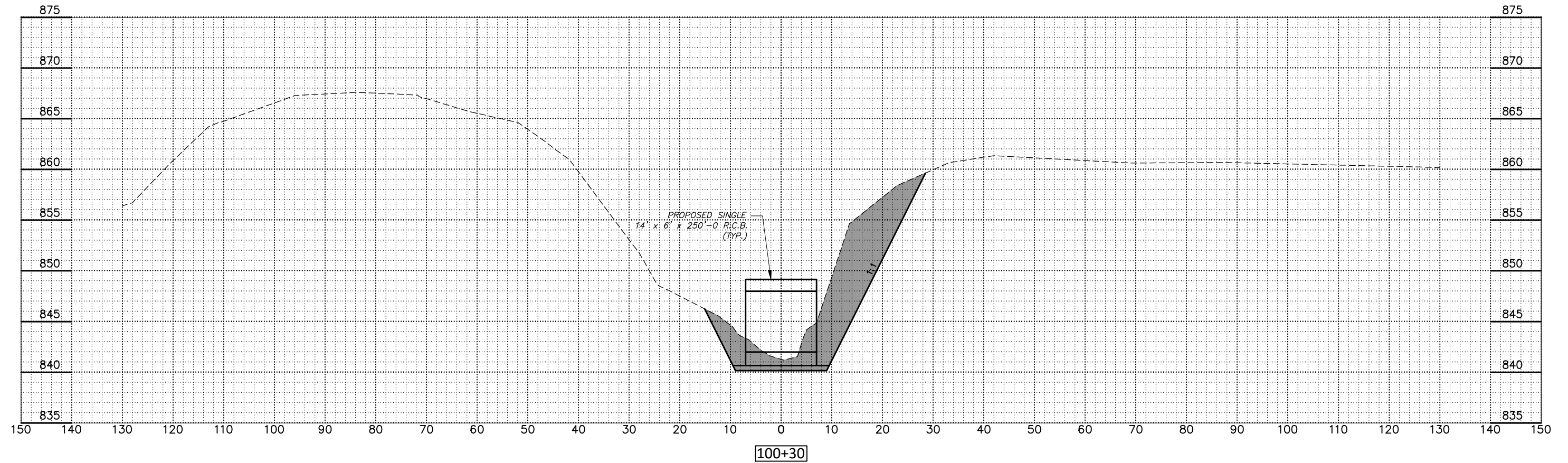
TYPICAL APPLICATION

SINGLE 14' x 6' x 250'-0 REINFORCED
CONCRETE BOX CULVERT

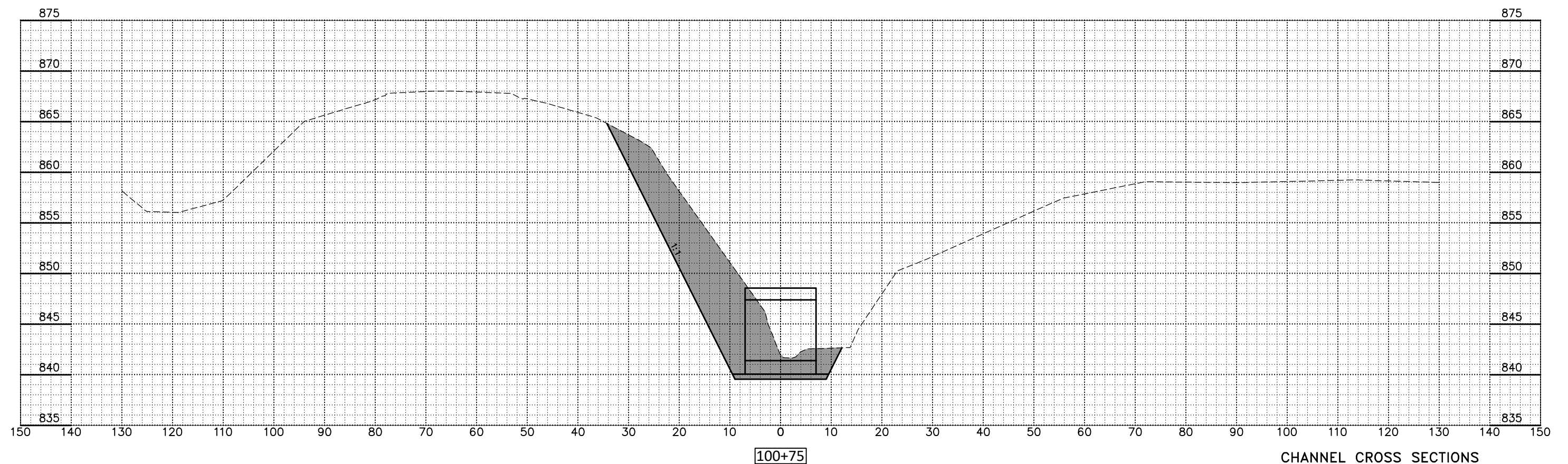
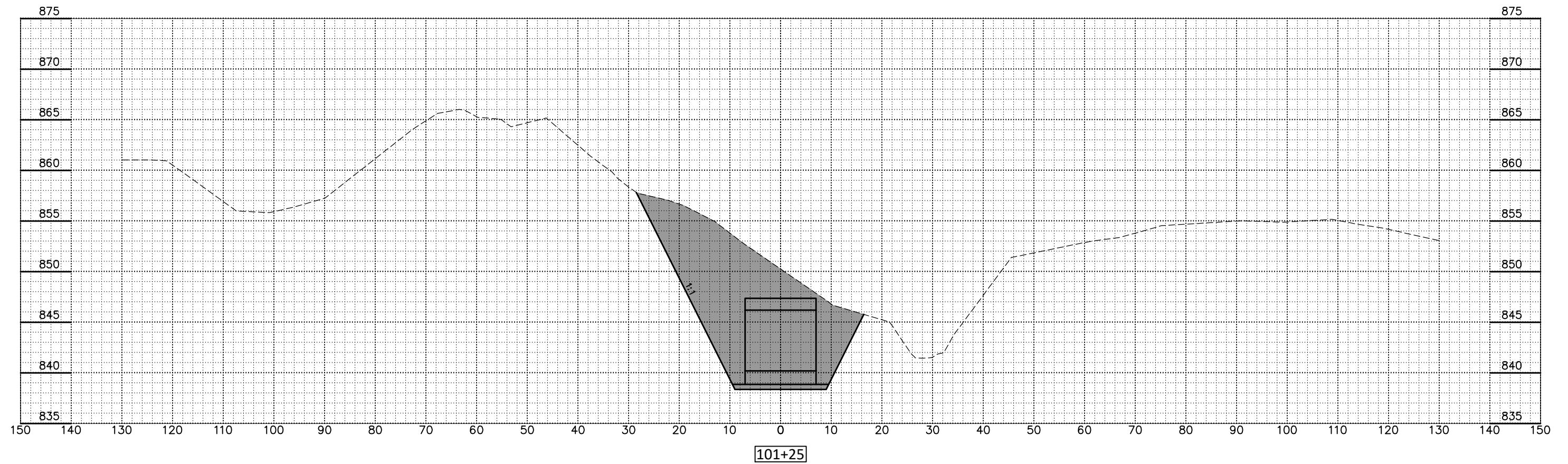
TRAFFIC CONTROL PLAN

STATION 15+50.00
MADISON COUNTY,

52' SKEW, LT. AHEAD
IOWA

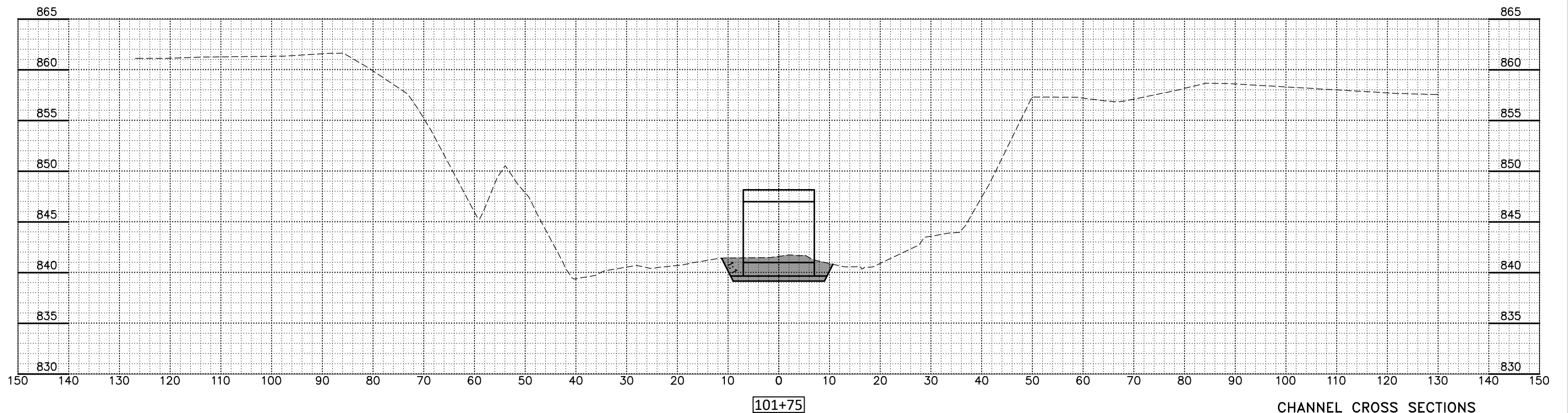
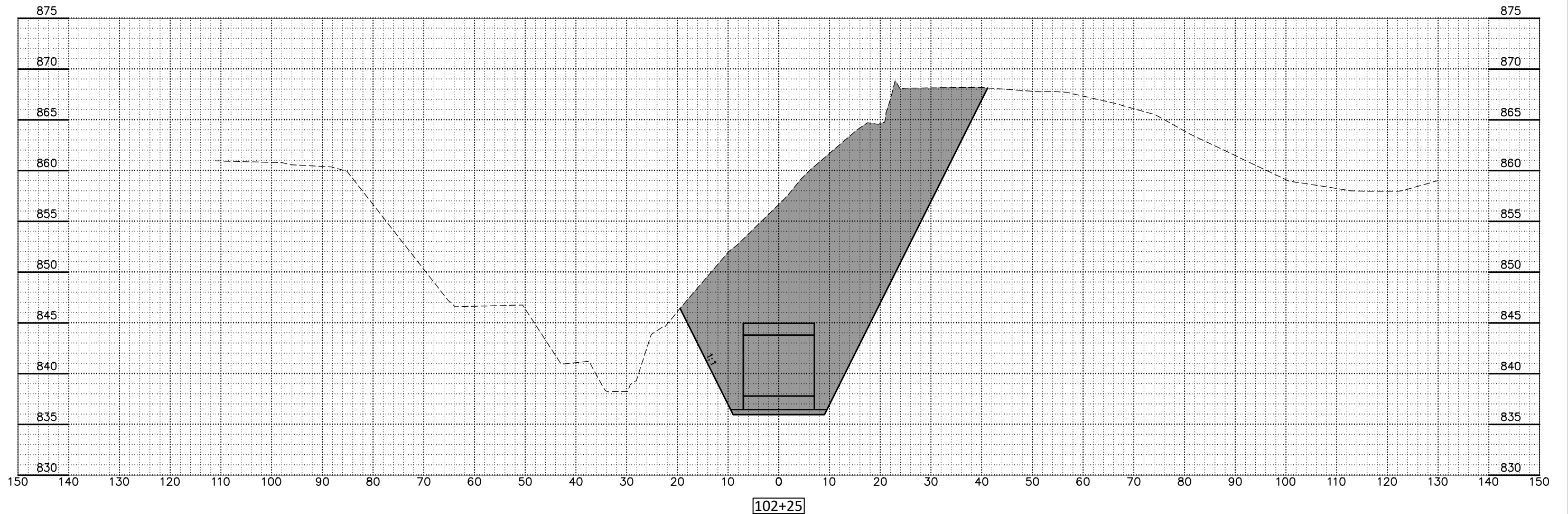


CHANNEL CROSS SECTIONS
 MADISON COUNTY, IOWA



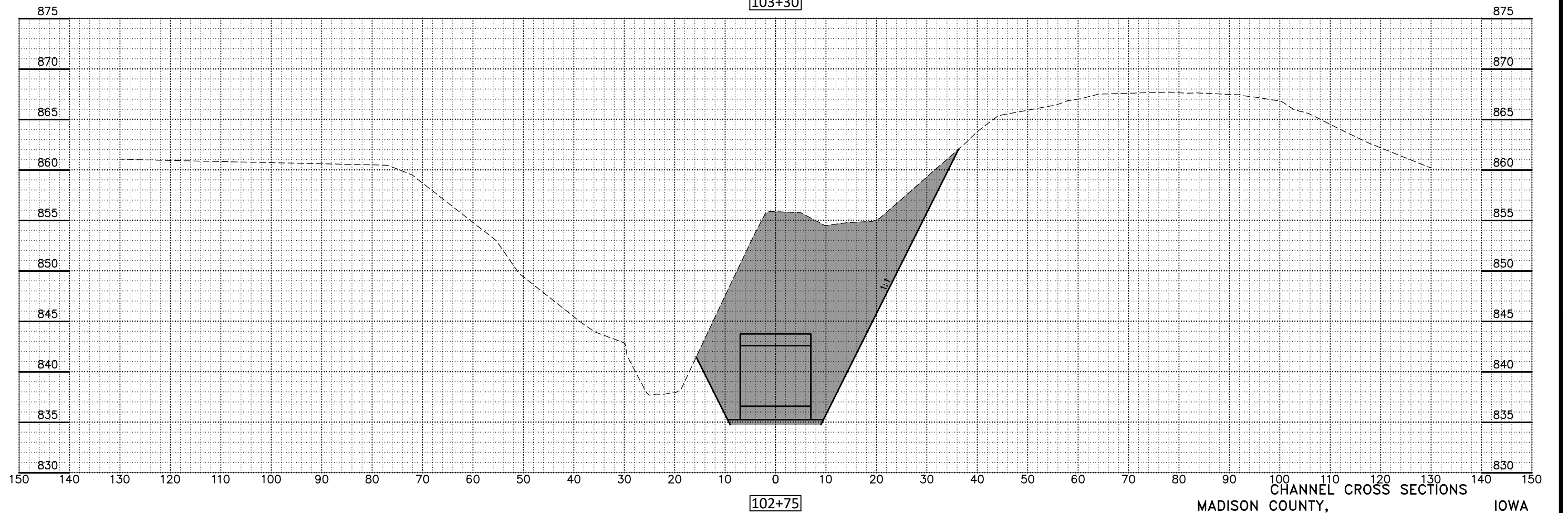
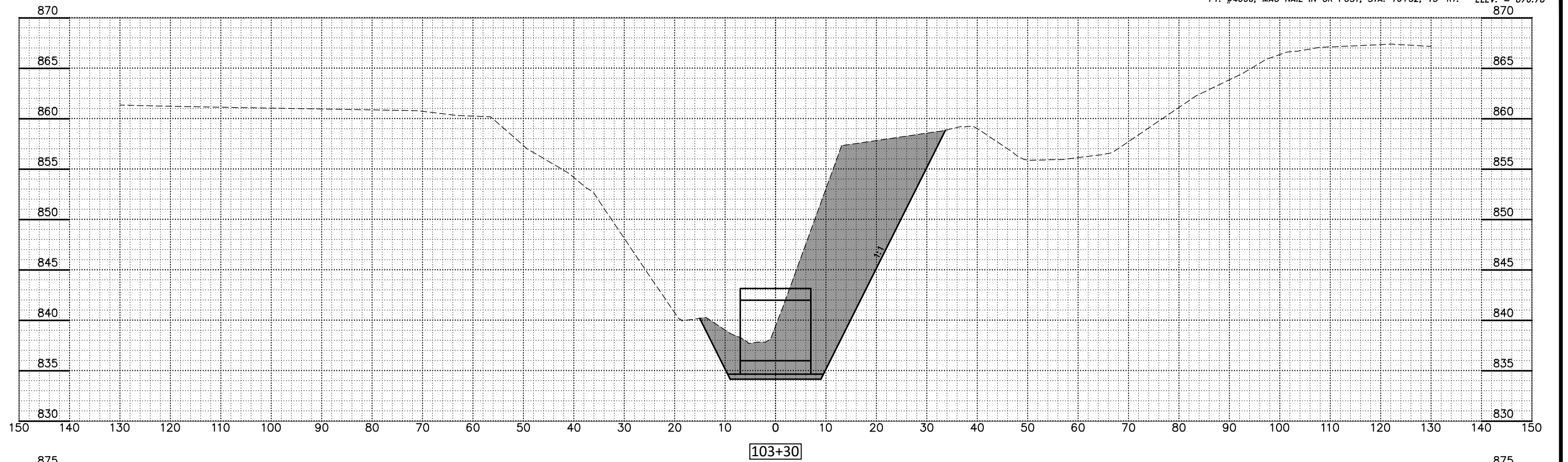
CHANNEL CROSS SECTIONS
 MADISON COUNTY, IOWA

BENCH MARK: PT. #600, 1/2" REBAR, STA. 12+79, 75' LT. ELEV. = 859.97
 PT. #4000, MAG NAIL IN GR POST, STA. 16+32, 13' RT. ELEV. = 870.78

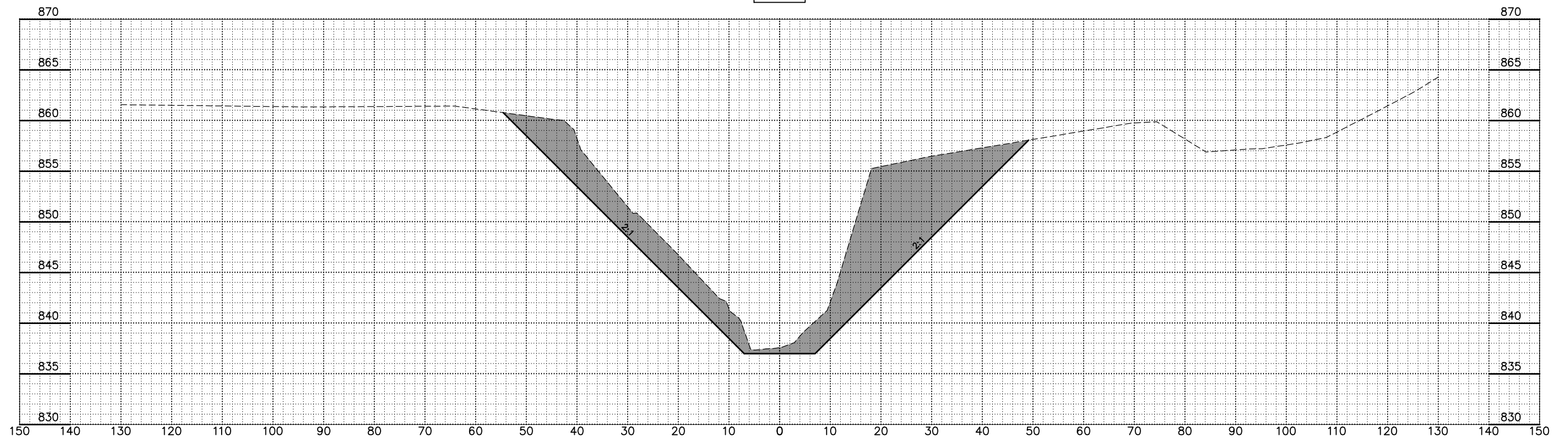
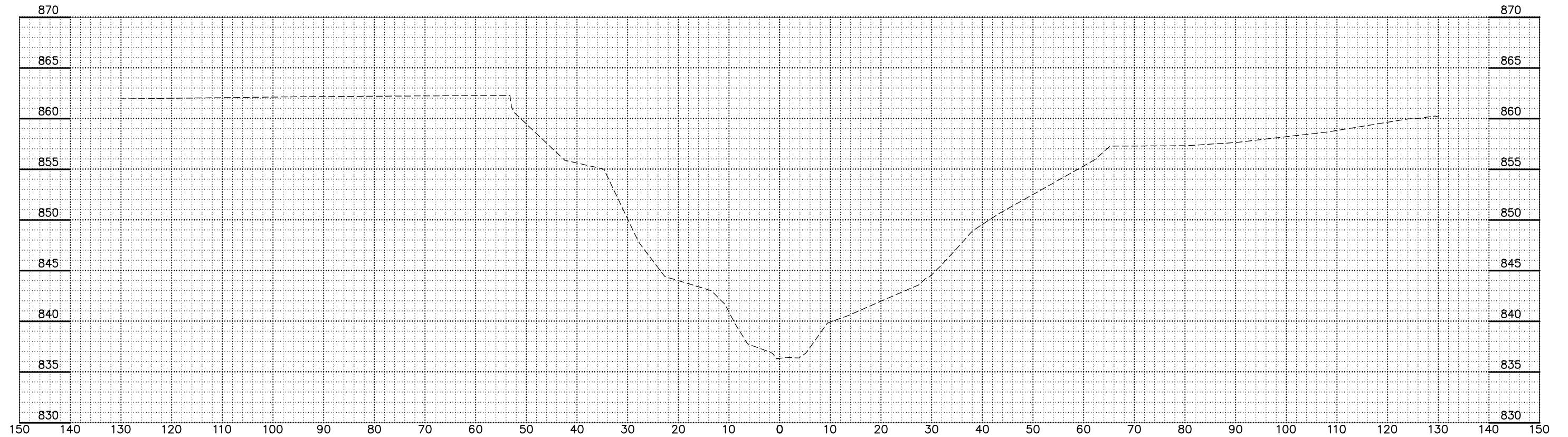


CHANNEL CROSS SECTIONS
 MADISON COUNTY, IOWA

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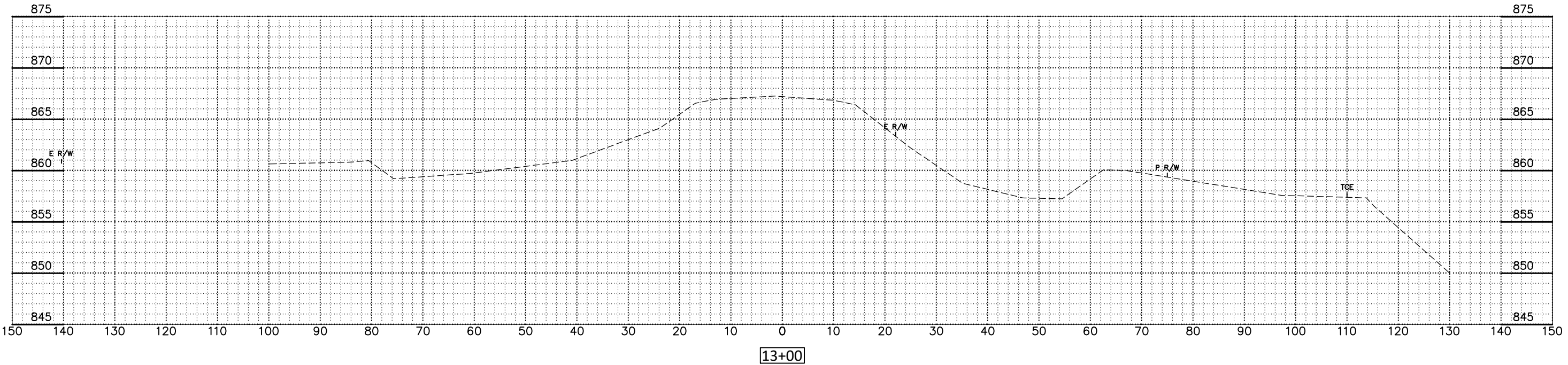
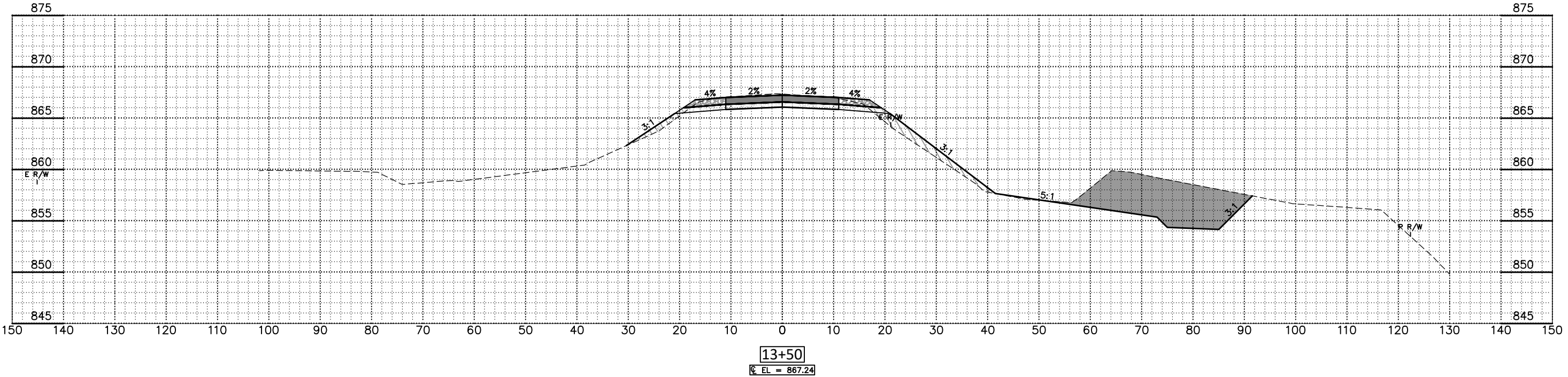


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CHANNEL CROSS SECTIONS
MADISON COUNTY, IOWA

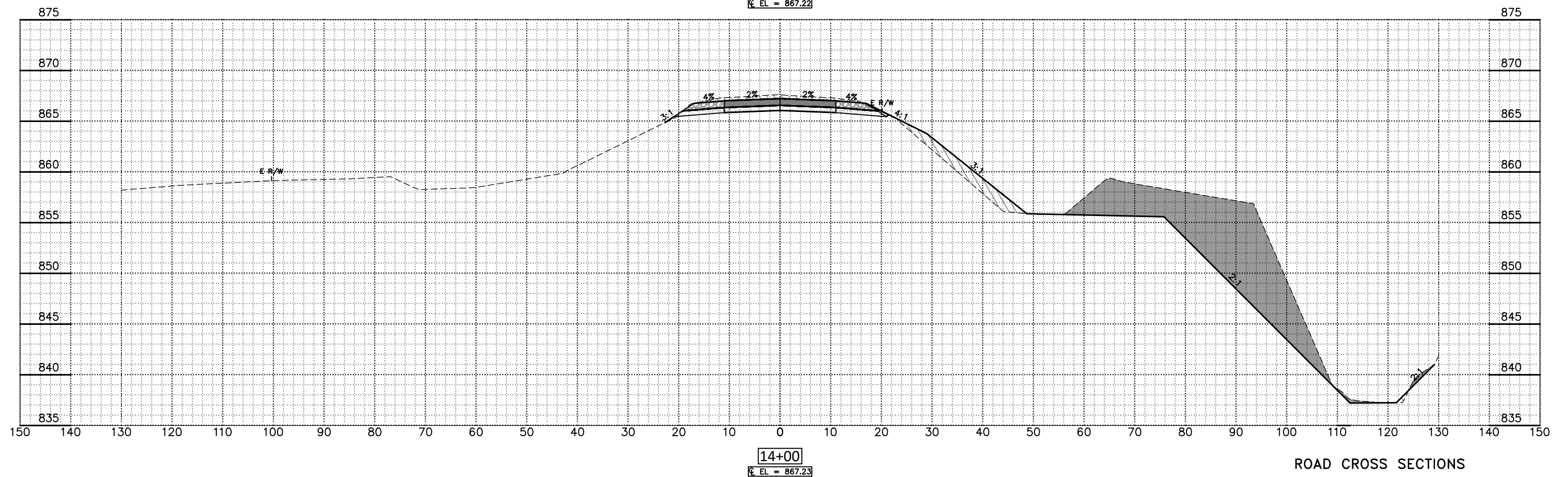
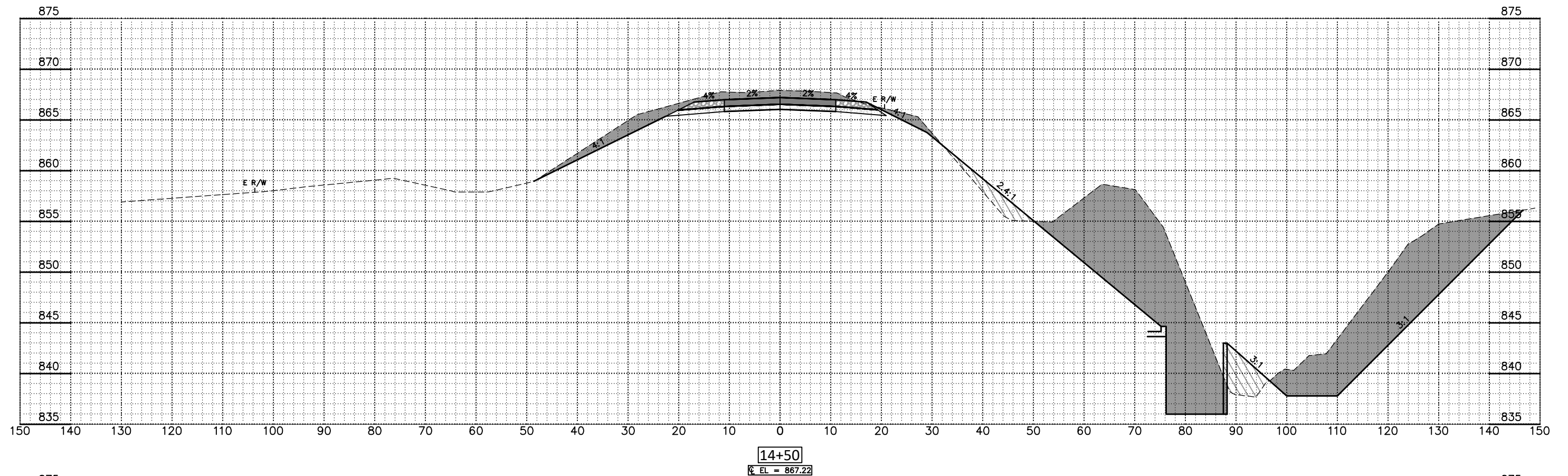
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ROAD CROSS SECTIONS

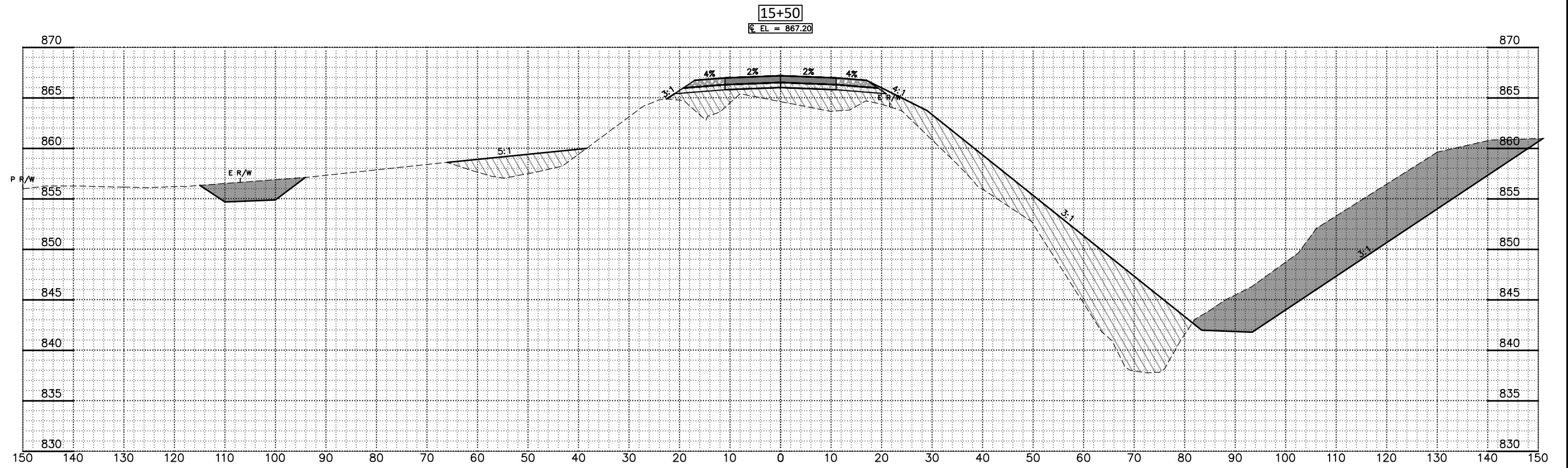
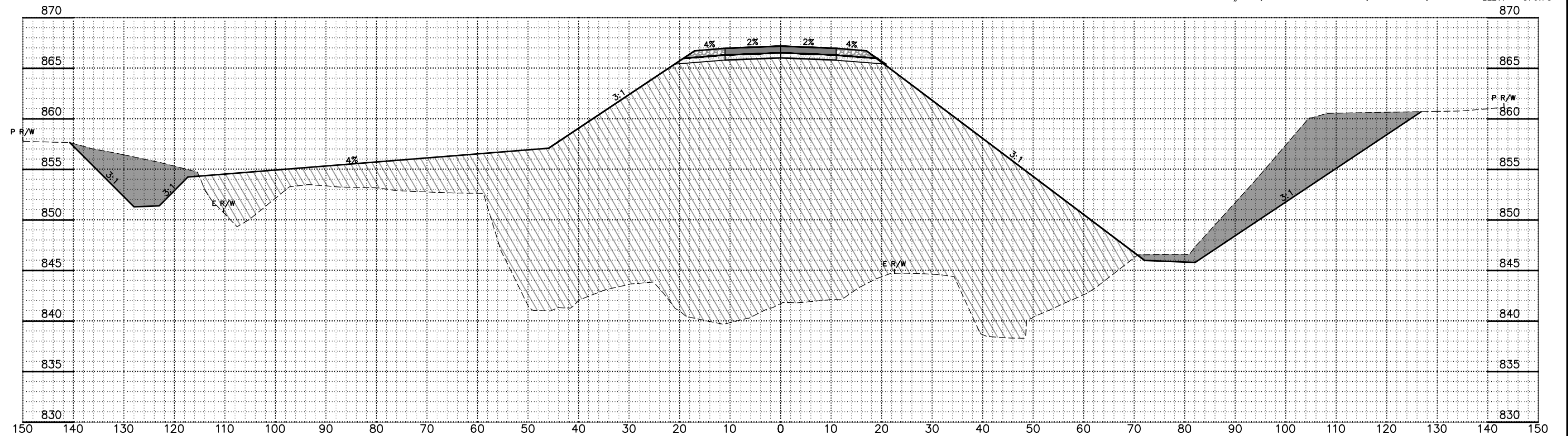
MADISON COUNTY, IOWA

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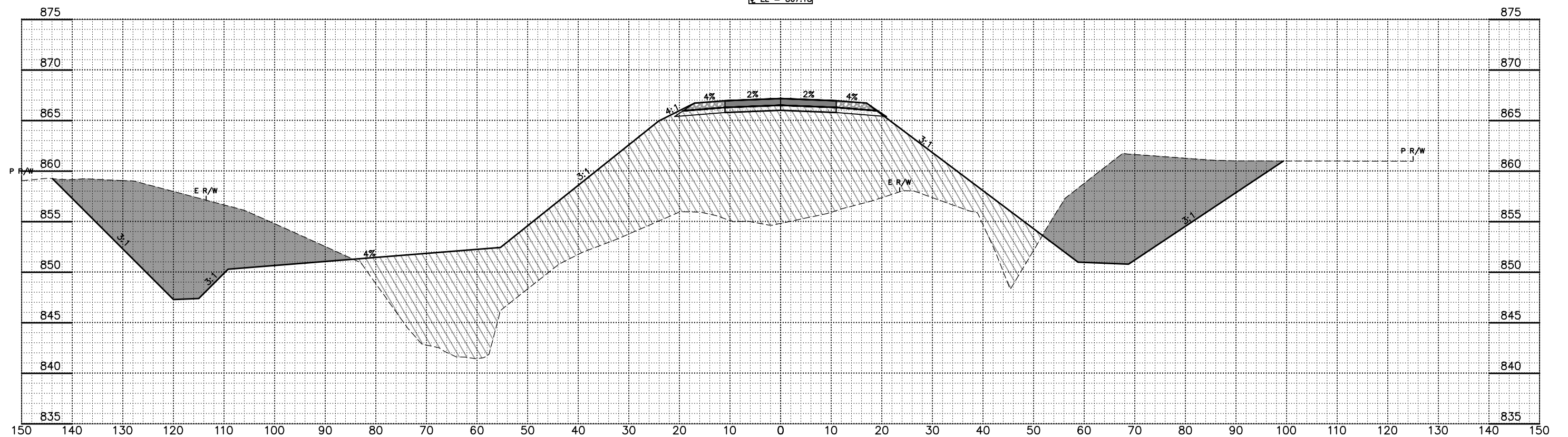
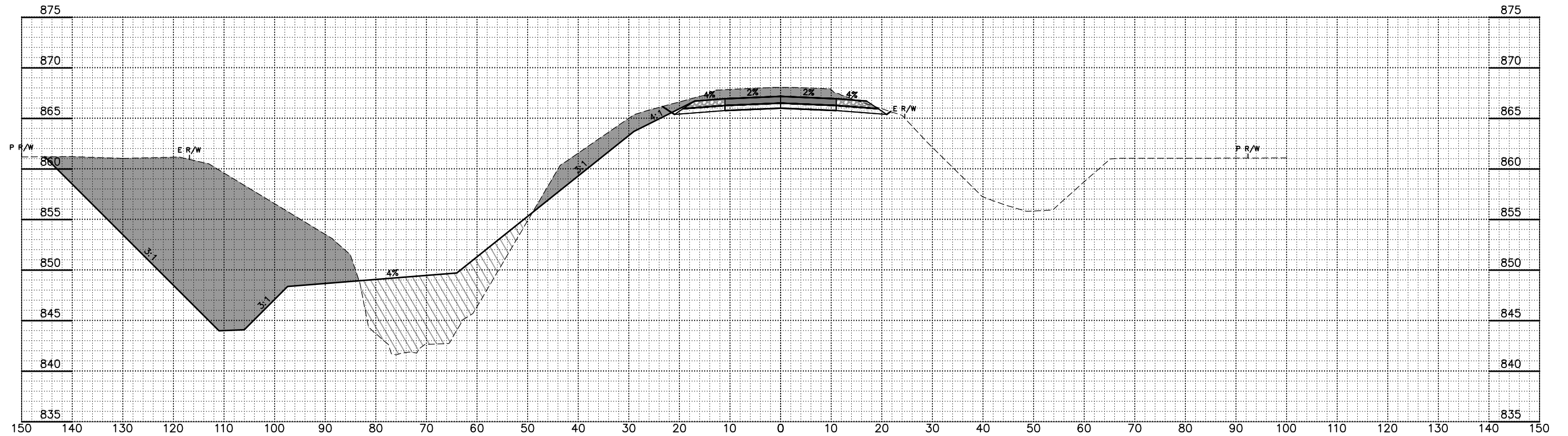
ROAD CROSS SECTIONS
 MADISON COUNTY, IOWA

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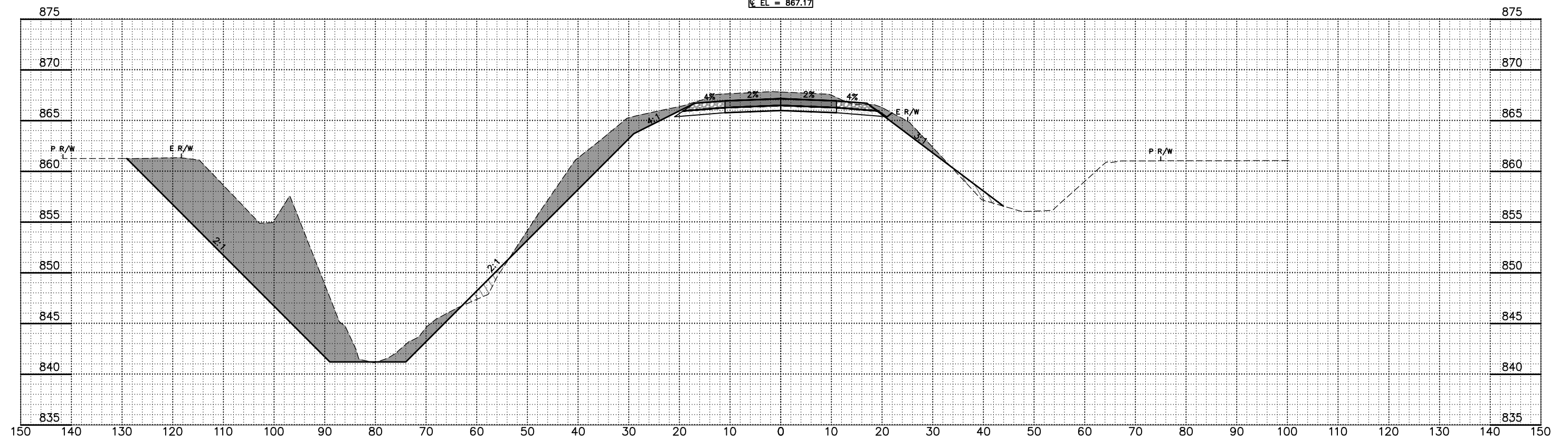
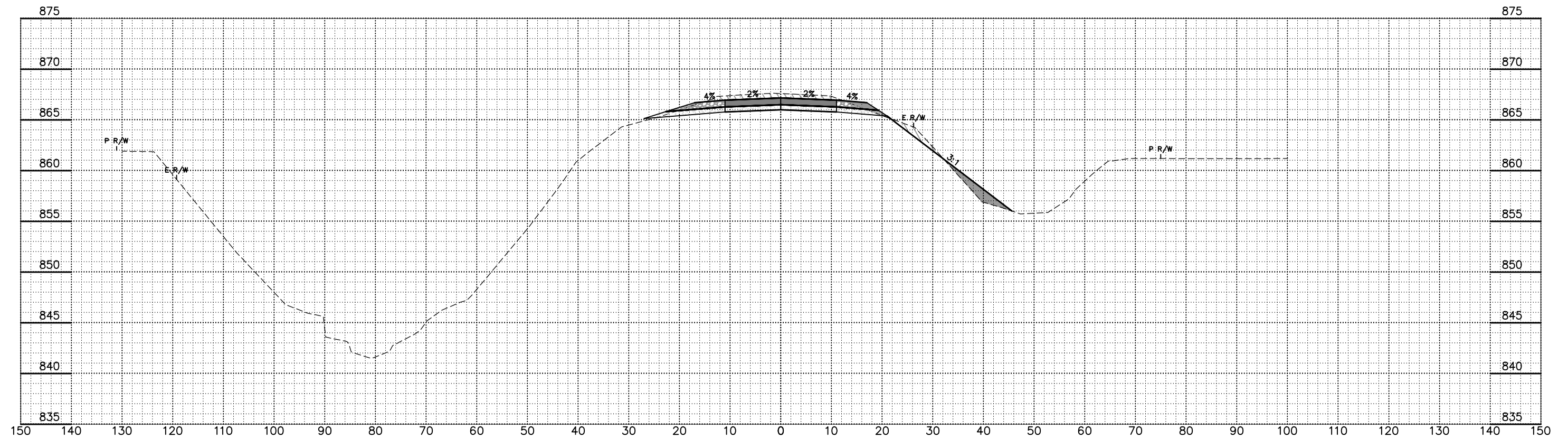
ROAD CROSS SECTIONS
 MADISON COUNTY, IOWA

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ROAD CROSS SECTIONS
 MADISON COUNTY, IOWA

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ROAD CROSS SECTIONS
 MADISON COUNTY, IOWA

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 PT. #4000, MAG NAIL IN GR POST, STA. 16+32, 13' RT. ELEV. = 870.78

