

STATE OF ILLINOIS

KANE COUNTY DIVISION OF TRANSPORTATION

PLANS FOR PROPOSED

HARMONY ROAD CULVERT IMPROVEMENTS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	1

COUNTY HIGHWAY No. 36
SECTION No. 14-00413-02-BR

CULVERT #3 – STRUCTURE No. 045-5543
OVER HARMONY CREEK

CULVERT #4 – STRUCTURE No. 045-5544
OVER TRIBUTARY TO HAMPSHIRE CREEK

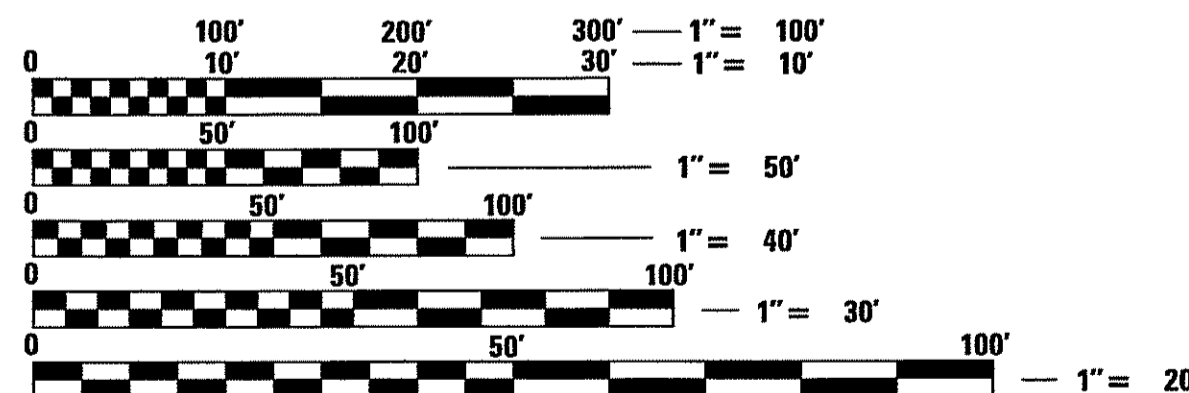
NON-MFT

INDEX OF SHEETS

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- 2 GENERAL NOTES AND SOQ
- 3 TYPICAL SECTION (CULVERT #3)
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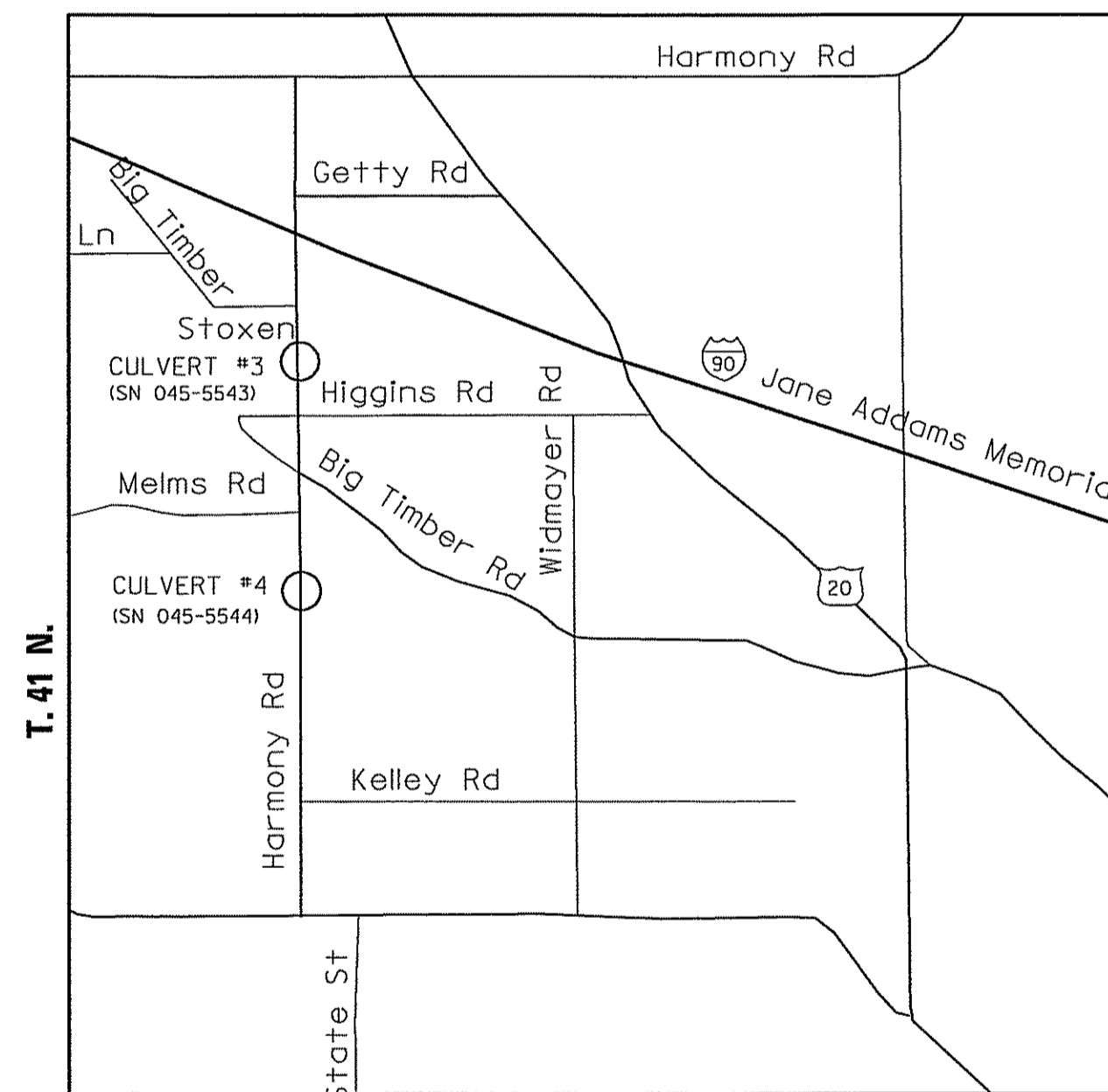
HIGHWAY STANDARDS

- 000001-06 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001001-02 AREAS OF REINFORCEMENT BARS
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
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- B.L.R. 17-4 TRAFFIC CONTROL DEVICES-DAY LABOR CONSTRUCTION
- B.L.R. 21-9 TYPICAL APPLICATION OF TRAFFIC DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS



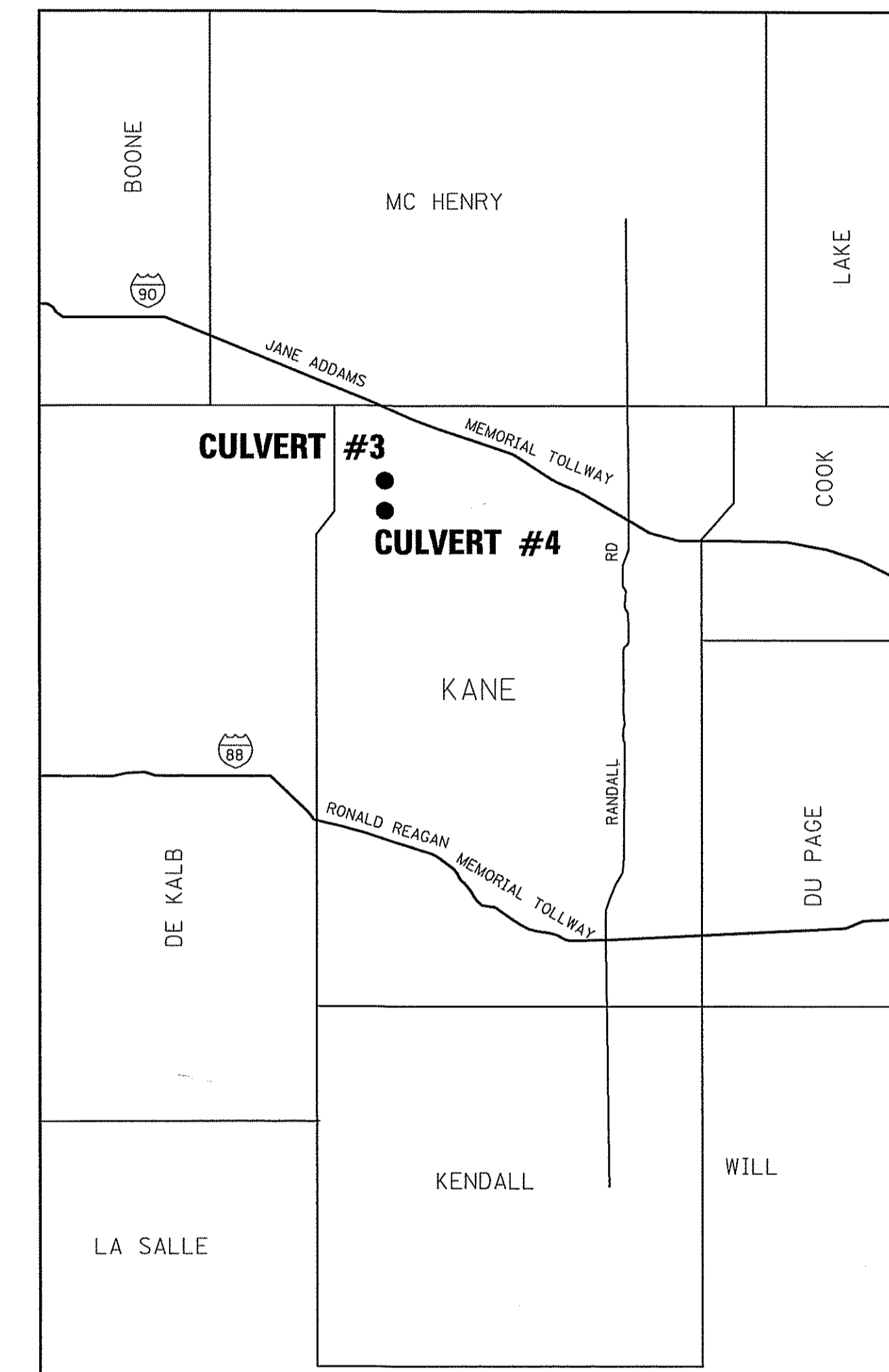
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

J.U.L.I.E.
JOINT UTILITY LOCATION INFORMATION FOR EXCAVATION
1-800-892-0123
OR 811



R. 6 E. LOCATION MAP

HAMPSHIRE TOWNSHIP
SCALE: 1" = APPROX. 1 MILE
CULVERT #3 - LENGTH OF IMPROVEMENT = 514 LIN. FT.
CULVERT #4 - LENGTH OF IMPROVEMENT = 521 LIN. FT.



● PROJECT LOCATION



NAME: Jason T. Stoll DATE: 5/9/14

APPROVED: Jason T. Stoll 5.9.14
COUNTY ENGINEER
KANE COUNTY DIVISION OF TRANSPORTATION

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE DETAILS IN THE PLANS, THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS, AND THE LATEST EDITION OF THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS", THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", THE "MANUAL OF TEST PROCEDURES FOR MATERIALS", THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS" AND KANE COUNTY STORM WATER ORDINANCE.
2. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E" AT 1-800-892-0123 FOR FIELD LOCATION OF BURIED ELECTRIC, TELEPHONE, GAS AND OTHER FACILITIES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
3. LOCATIONS OF PUBLIC OR PRIVATE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND THE COUNTY DOES NOT GUARANTEE THEIR ACCURACY. THE CONTRACTOR SHALL HAVE THE RESPECTIVE UTILITY COMPANIES FIELD LOCATE ALL THEIR FACILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL ALSO VERIFY THE DEPTHS OF THE EXISTING UTILITIES IF NECESSARY. ANY RELOCATION OR LOWERING OF UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR IN SUCH MANNER TO NOT IMPEDE PROJECT PROGRESS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.
5. THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS IN ADVANCE OF BEGINNING WORK AND COORDINATE ALL CONSTRUCTION OPERATIONS WITH THE ENGINEER.
6. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS OR PROPERTY OR REFERENCE MARKERS UNTIL THE OWNERS, HIS AGENT OR AN AUTHORIZED SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATIONS.
7. MAINTAINING DRAINAGE: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN DRAINAGE FLOWS AT ALL TIMES DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL SUPPLY A PLAN AS A SUBMITTAL REVIEW FOR EACH LOCATION PROVIDING A PLAN THAT WILL MAINTAIN FLOWS THAT MEET ALL LOCAL, STATE AND FEDERAL REGULATIONS AND NOT CAUSE ANY DAMAGES UPSTREAM OR TO ANY ADJACENT DRAINAGE WATERSHED. THE PLAN SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF ILLINOIS. THE PLAN MUST BE SUBMITTED AT LEAST TWO WEEKS PRIOR TO START OF ANY CULVERT WORK.
8. CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES, IF SHOWN ARE FOR INFORMATION ONLY.
9. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, THE PROPOSED CONCRETE TRUCK WASHOUT LOCATIONS. RUNOFF FROM WASH AREAS SHALL BE CONTAINED IN DESIGNATED AREAS SO THAT RUNOFF DOES NOT REACH THE DITCH OR DRAINAGE SYSTEMS. FOR CULVERTS BEING LINED, THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A GROUTING OVERFLOW CAPTURE PLAN IN ACCORDANCE WITH CONCRETE WASHOUT REQUIREMENTS FOR CONSTRUCTION SITES.
10. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURE HAVE BEEN TAKEN FROM FIELD MEASUREMENTS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING THE MATERIALS.
11. ALL PRECAST AND CAST-IN-PLACE CONCRETE SHALL BE "CLASS SI" WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI.
12. ACCESS TO PRIVATE DRIVEWAYS SHALL BE PROVIDED AT ALL TIMES EXCEPT DURING ACTUAL CONSTRUCTION ADJACENT THERE TO. TEMPORARY RAMPS SHALL BE CONSTRUCTED AS NEEDED TO PROVIDE SUCH ACCESS., UTILIZING CRUSHED STONE OR CRUSHED GRAVEL. CONSTRUCTION AND MAINTENANCE OF TEMPORARY RAMPS AND ACCESS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE UNIT PRICE PAID FOR SHOULDER AND PAVEMENT WORK.
13. ALL WORK SHALL BE COMPLETED WITHIN KANE COUNTY RIGHT-OF-WAY WITH NO EQUIPMENT OR MATERIAL STORAGE ON PRIVATE PROPERTY.
14. THE CONTRACTOR'S OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE WORK AREA AND/OR CONSTRUCTION LIMITS.
15. ALL PROPOSED STEEL PLATE BEAM GUARDRAIL, TYPE A AND ALL PROPOSED TRAFFIC BARRIER TERMINALS, FOR THE TYPE SPECIFIED SHALL HAVE GUARDRAIL DELINEATION INSTALLED AND PAID FOR ACCORDING TO THE SPECIAL PROVISION GUARDRAIL DELINEATION.
16. COORDINATE ANY REQUIRED SIGN REMOVAL WITH THE DIVISION OF TRANSPORTATION ONE (1) WEEK PRIOR TO CONSTRUCTION.
17. NO CHANNEL GRADING OR CULVERT CONSTRUCTION ACTIVITIES WILL BE ALLOWED IN STANDING WATER OR DURING PERIODS OF HIGH FLOWS AND EXCESSIVE CHANNEL FLOW VELOCITIES.
18. FOR STEEL BAR CERTIFICATION, CONTACT IDOT BUREAU OF MATERIALS.
19. ALL REBAR THAT HAS BEEN SANDBLASTED ENOUGH TO REMOVE THE MILL PATTERN AND COATING SHALL HAVE ALL OF THE SHINY EXPOSED METAL PAINTED WITH A RUST INHIBITING PAINT, IF BLACK BAR AND AN EPOXY PAINT IF ORIGINALLY EPOXY COATED, TO INHIBIT FUTURE OXIDATION. CARE SHOULD BE TAKEN NOT TO APPLY TOO THICK OF A LAYER OF PAINT AS IT WILL INTERFERE WITH BONDING TO NEW CONCRETE.

Item Number	Pay Item	Unit	Total Quantity	Culvert #3 Quantity	Culvert #4 Quantity
1	EARTH EXCAVATION	CU YD	143	70	73
2	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	343	189	154
3	FURNISHED EXCAVATION	CU YD	326	124	202
4	POROUS GRANULAR EMBANKMENT	CU YD	99	85	14
5	TOPSOIL FURNISH AND PLACE, 4"	SQ YD	2308	1030	1278
6	SEEDING, CLASS 2	ACRE	0.41	0.18	0.23
7	SEEDING, CLASS 4	ACRE	0.06	0.03	0.03
8	SEEDING, CLASS 4B	ACRE	0.02	0.01	0.01
9	NITROGEN FERTILIZER NUTRIENT	POUND	44	20	24
10	PHOSPHORUS FERTILIZER NUTRIENT	POUND	44	20	24
11	POTASSIUM FERTILIZER NUTRIENT	POUND	44	20	24
12	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	1772	494	1278
13	TURF REINFORCEMENT MAT	SQ YD	572	572	
14	TEMPORARY EROSION CONTROL SEEDING	POUND	98	44	54
15	TEMPORARY DITCH CHECKS	FOOT	100	50	50
16	PERIMETER EROSION BARRIER	FOOT	1711	1030	681
17	TEMPORARY EROSION CONTROL BLANKET	SQ YD	4616	2060	2556
18	STONE RIPRAP, CLASS B4	SQ YD	33		33
19	FILTER FABRIC	SQ YD	33		33
20	AGGREGATE BASE COURSE, TYPE B 6"	SQ YD	1308	570	738
21	HOT-MIX ASPHALT BASE COURSE, 10"	SQ YD	159		159
22	BITUMINOUS MATERIALS (PRIME COAT)	GALLON	1202	532	670
23	LEVELING BINDER (MACHINE METHOD), N50	TON	169	84	85
24	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	52	26	26
25	HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	439	218	221
26	PAVEMENT REMOVAL	SQ YD	159		159
27	HOT-MIX ASPHALT SURFACE REMOVAL, 3"	SQ YD	2832	1485	1347
28	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	443	218	225
29	HOT-MIX ASPHALT SHOULDERS, 4"	SQ YD	890	442	448
30	REMOVAL OF EXISTING STRUCTURES NO. 4	EACH	1		1
31	CONCRETE REMOVAL	CU YD	11.8	11.8	
32	REINFORCEMENT BARS, EPOXY COATED	POUND	25360	5750	19610
33	EXPANSION BOLTS 3/4 INCH	EACH	44	44	
34	CONCRETE BOX CULVERTS	CU YD	124.0	35.0	89.0
35	EPOXY CRACK INJECTION	FOOT	71	71	
36	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	250	125	125
37	LONG -SPAN GUARDRAIL OVER CULVERT, 18 FT 9 IN SPAN	FOOT	337.5	337.5	
38	LONG -SPAN GUARDRAIL OVER CULVERT, 25 FT SPAN	FOOT	350		350
39	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	8	4	4
40	GUARDRAIL REMOVAL	FOOT	527	276	251
41	MOBILIZATION	L SUM	1	0.5	0.5
42	MODIFIED URETHANE PAVEMENT MARKING - LINE 4"	FOOT	4140	2056	2084
43	GUARDRAIL MARKERS, TYPE A	EACH	24	12	12
44	TERMINAL MARKER - DIRECT APPLIED	EACH	8	4	4
45	EXPLORATION TRENCH, SPECIAL	FOOT	40	20	20
46	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	0.5	0.5
47	CONSTRUCTION LAYOUT	L SUM	1	0.5	0.5
48	DEWATERING	L SUM	1	0.5	0.5
49	ITEMS ORDERED BY THE ENGINEER	DOLLARS	60000	30000	30000

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USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 5-12-14	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

**SUMMARY OF QUANTITIES
AND GENERAL NOTES**

SCALE: N/A SHEET NO. 1 OF 1 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	2
SN 045-5543 & SN 045-5544			CONTRACT NO.	
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
MIXTURE	DESIGN AIR VOIDS
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	4% @ 50 GYR.
LEVELLING BINDER (MACHINE METHOD), N50	4% @ 50 GYR.
HOT-MIX ASPHALT SHOULDER, (HMA BINDER IL-19)	4% @ 50 GYR.

NOTES:

THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURES QUANTITIES IS 112 LBS/SQ YD/IN

THE "AC TYPE" FOR NON-POLYMERIZED HMA SHALL BE "PG 64-22" UNLESS MODIFIED BY SPECIAL PROVISIONS.

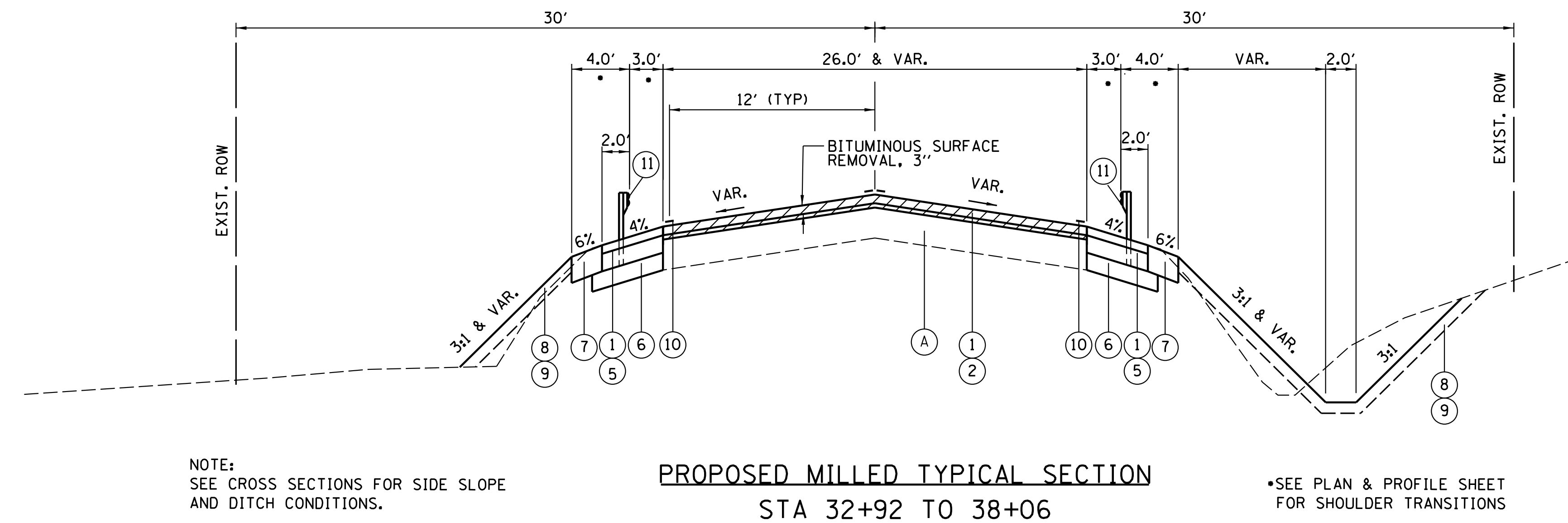
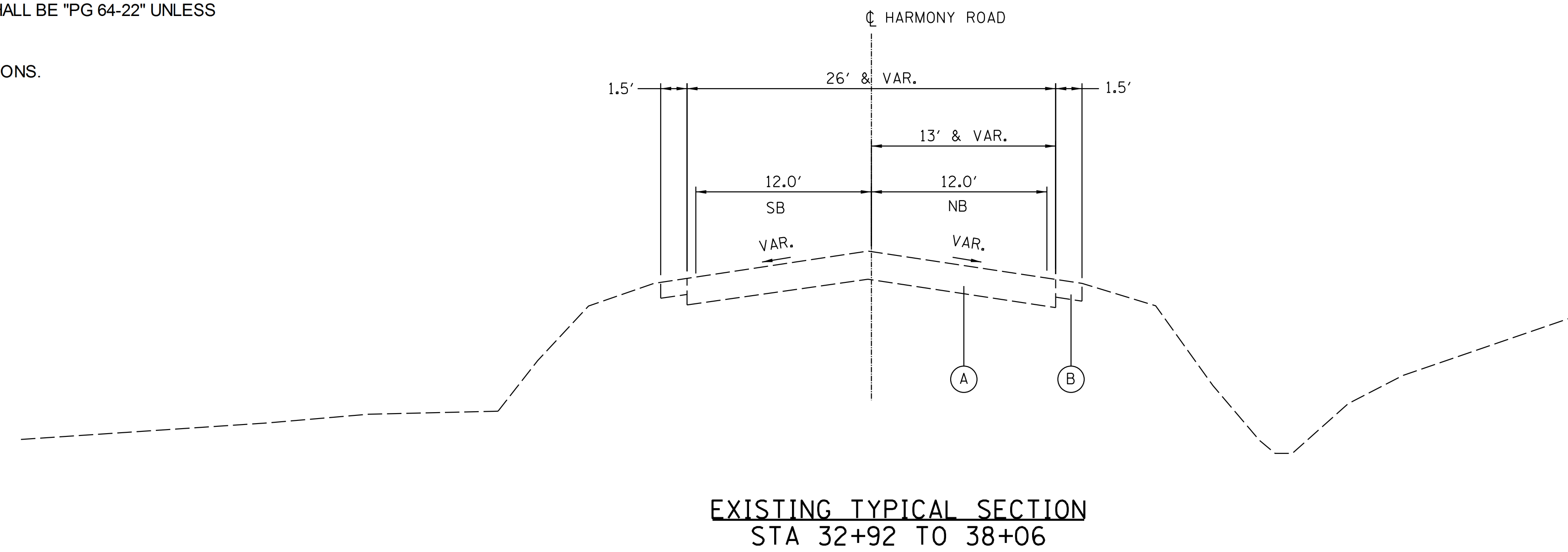
FOR "PERCENT OF RAP", SEE SPECIAL PROVISIONS.

EXISTING LEGEND

- (A) EXISTING HMA PAVEMENT (8" & VAR.)
- (B) EXISTING AGGREGATE SHOULDER

PROPOSED LEGEND

- (1) HOT - MIX ASPHALT SURFACE COURSE, MIX "C", N50 - 2"
- (2) LEVELING BINDER (MACHINE METHOD), N50 - 1" (VARIES)
- (3) NOT USED
- (4) NOT USED
- (5) HOT - MIX ASPHALT SHOULDERS, 4"
- (6) AGGREGATE BASE COURSE, TYPE B, 6"
- (7) AGGREGATE SHOULDER, TYPE B, 6"
- (8) TOPSOIL FURNISH AND PLACE, 4"
- (9) SEEDING, CLASS 2A / HD EROSION CONTROL BLANKET
- (10) MODIFIED URETHANE PAVEMENT MARKING - LINE, 4"
- (11) STEEL PLATE BEAM GUARDRAIL, TY A



NOTE:
SEE CROSS SECTIONS FOR SIDE SLOPE
AND DITCH CONDITIONS.

•SEE PLAN & PROFILE SHEET
FOR SHOULDER TRANSITIONS

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	DRAWN - KWK	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

**HARMONY ROAD TYPICAL SECTION
CULVERT #3**

SCALE: 1" = 20' SHEET NO. 1 OF 2 SHEETS STA. 32+92.00 TO STA. 38+06.00

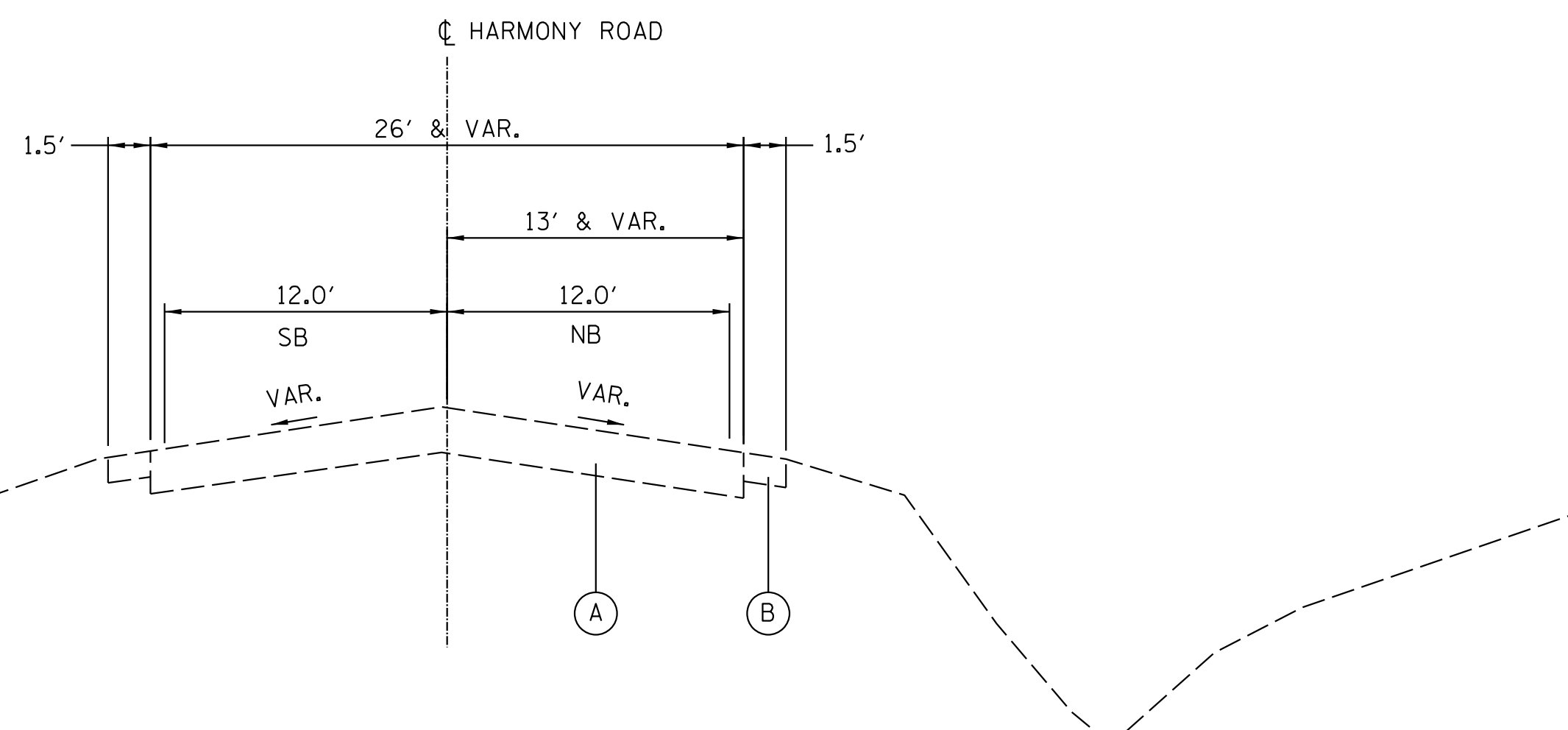
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	3
SN 045-5543		CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

HOT-MIX ASPHALT MIXTURE REQUIREMENTS	
MIXTURE	DESIGN AIR VOIDS
HOT-MIX ASPHALT SURFACE COURSE, MIX "C", N50	4% @ 50 GYR.
LEVELLING BINDER (MACHINE METHOD), N50	4% @ 50 GYR.
HOT-MIX ASPHALT BASE COURSE, (HMA BINDER IL-19)	4% @ 50 GYR.
HOT-MIX ASPHALT SHOULDER, (HMA BINDER IL-19)	4% @ 50 GYR.

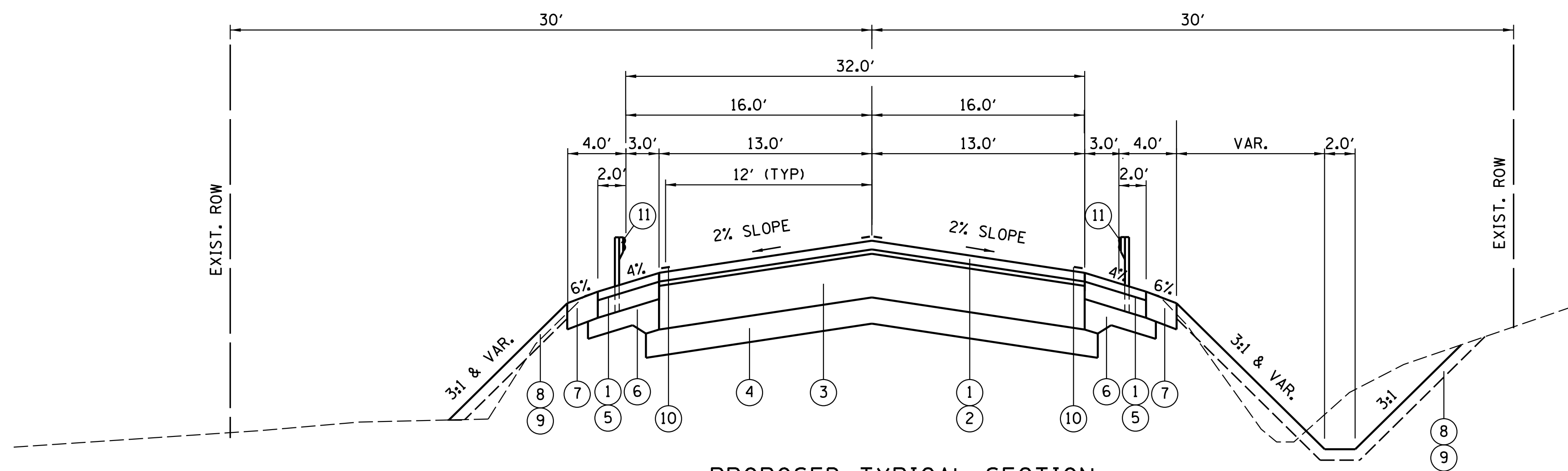
NOTES:
THE UNIT WEIGHT USED TO CALCULATE ALL HMA SURFACE MIXTURES QUANTITIES IS 112 LBS/SQ YD/IN

THE "AC TYPE" FOR NON-POLYMERIZED HMA SHALL BE "PG 64-22" UNLESS MODIFIED BY SPECIAL PROVISIONS.

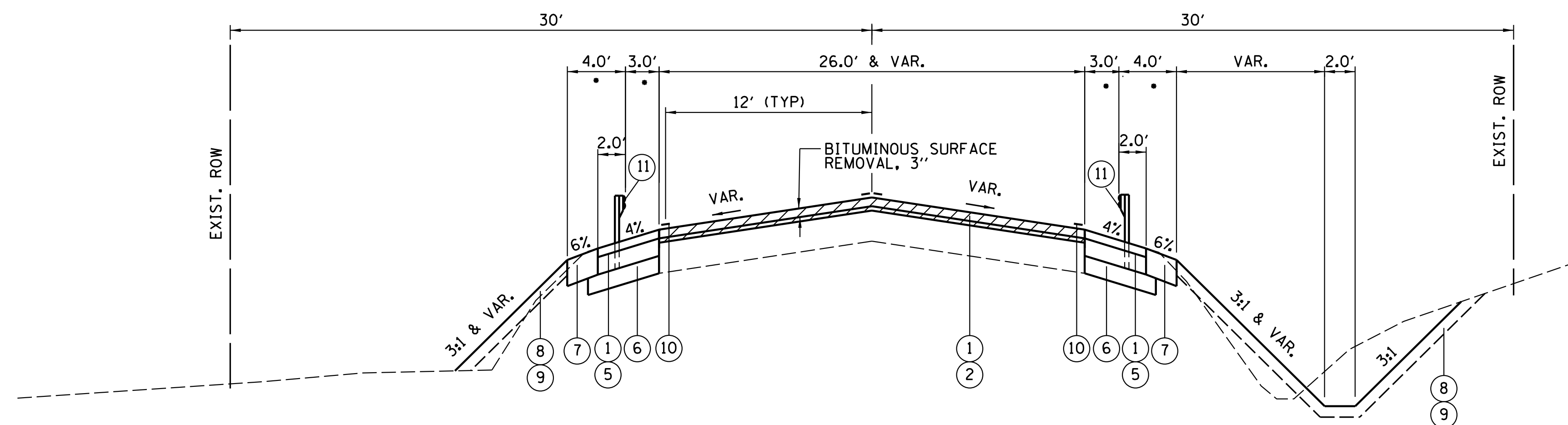
FOR "PERCENT OF RAP", SEE SPECIAL PROVISIONS.



EXISTING TYPICAL SECTION
STA 39+87 TO 45+08



PROPOSED TYPICAL SECTION
STA 42+20 TO 42+75



PROPOSED MILLED TYPICAL SECTION
STA 39+87 TO 42+20
STA 42+75 TO 45+08

NOTE:
SEE CROSS SECTIONS FOR SIDE SLOPE AND DITCH CONDITIONS.

•SEE PLAN & PROFILE SHEET FOR SHOULDER TRANSITIONS

EXISTING LEGEND

- (A) EXISTING HMA PAVEMENT (10" & VAR.)
- (B) EXISTING AGGREGATE SHOULDER

PROPOSED LEGEND

- (1) HOT - MIX ASPHALT SURFACE COURSE, MIX "C", N50 - 2"
- (2) LEVELING BINDER (MACHINE METHOD), N50 - 1" (VARIES)
- (3) HOT - MIX ASPHALT BASE COURSE, IL-19, N50 - 10"
- (4) AGGREGATE BASE COURSE, TYPE B, 6"
- (5) HOT - MIX ASPHALT SHOULDERS, 4"
- (6) AGGREGATE BASE COURSE, TYPE B, 6"
- (7) AGGREGATE SHOULDER, TYPE B, 6"
- (8) TOPSOIL FURNISH AND PLACE, 4"
- (9) SEEDING, CLASS 2A / HD EROSION CONTROL BLANKET
- (10) MODIFIED URETHANE PAVEMENT MARKING - LINE, 4"
- (11) STEEL PLATE BEAM GUARDRAIL, TYPE A

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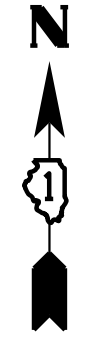
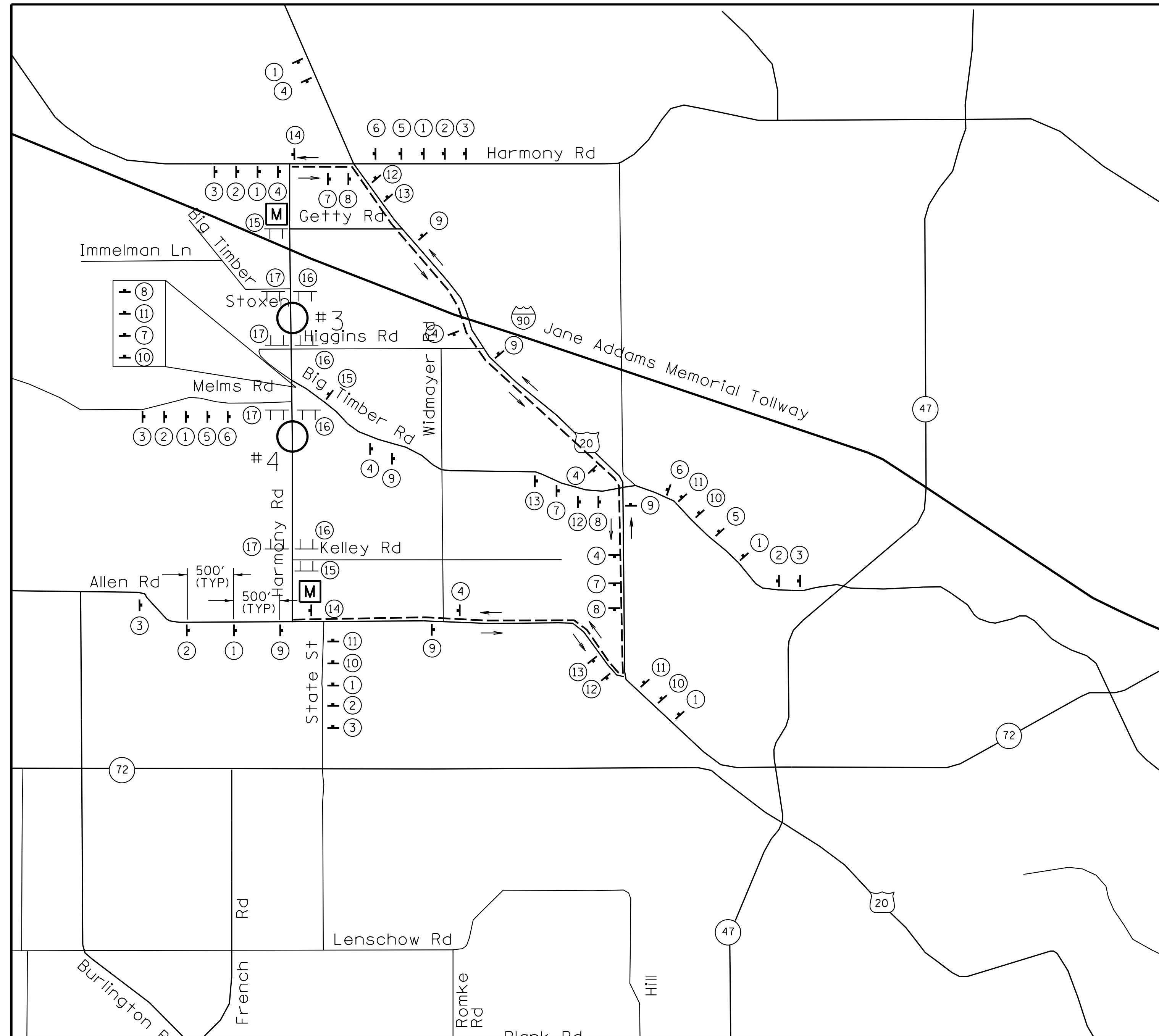
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PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

KANE COUNTY
DIVISION OF TRANSPORTATION

HARMONY ROAD TYPICAL SECTION
CULVERT #4

SCALE: 1" = 20' SHEET NO. 2 OF 2 SHEETS STA. 39+87.00 TO STA. 45+08.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	4
SN 045-5544		CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		



CONSTRUCTION STAGING

DETOUR SHALL NOT BE ESTABLISHED UNTIL TOLLWAY'S HARMONY ROAD DETOUR IS REMOVED.

STAGE I – LOCATE AND SET CHANGEABLE MESSAGE SIGNS 2 WEEKS PRIOR TO ESTABLISHING DETOUR ROUTE, INSTALL DETOUR ROUTE SIGNAGE, SET TYPE III BARRICADES FOR THROUGH TRAFFIC CLOSURE AND CLOSE FIRST OF TWO CULVERT IMPROVEMENTS. LOCAL TRAFFIC, EMERGENCY VEHICLE AND PROPERTY ACCESS MUST BE MAINTAINED FROM BOTH DIRECTIONS UP TO FULL CLOSURE LOCATION. IF DETOUR SIGNAGE IS INSTALLED PRIOR TO CLOSURE, SIGNS SHALL BE COVERED UNTIL NECESSARY.

STAGE II – REMOVE EXISTING PAVEMENT, CULVERT STRUCTURE, AND GUARDRAIL. INSTALL NEW CULVERT, COMPLETE EMBANKMENT GRADING, CONSTRUCT NEW SHOULDERS, COMPLETE PAVEMENT RESURFACING AND INSTALL NEW GUARDRAIL.

STAGE III – INSTALL FINAL PAVEMENT MARKING, EMBANKMENT SEEDING, PLACE EROSION BLANKET AND PROVIDE FINAL CLEAN-UP. CONTRACTOR SHALL INSTALL AND MAINTAIN EROSION CONTROL MEASURES AFTER FINAL SEEDING. MAINTENANCE OF EROSION CONTROL MEASURES IS REQUIRED UNTIL VEGETATION IS ESTABLISHED.

FINAL SEEDING AND EROSION CONTROL BLANKET MUST BE PLACED WITHIN 7 DAYS OF FINAL GRADING.

TRAFFIC CONTROL NOTES

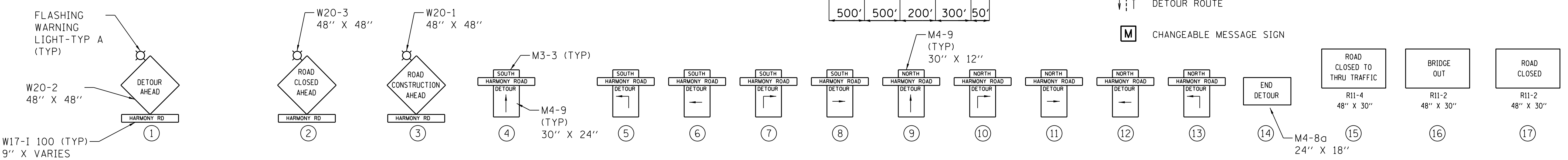
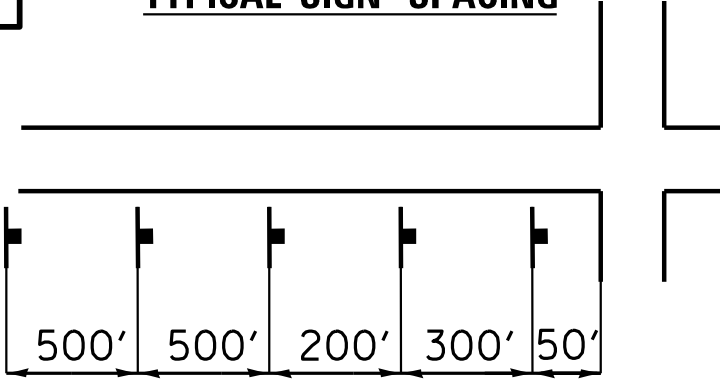
1. DETOUR ROUTE SHALL BE ESTABLISHED FOR A MAXIMUM OF 60 CALENDAR DAYS.
2. SEE THE PLAN AND PROFILE SHEETS FOR LOCATION OF TYPE III BARRICADES WITH "ROAD CLOSED" SIGNAGE FOR FULL CLOSURE.
3. FULL CLOSURE OF BOTH CULVERT SITES WILL NOT BE PERMITTED. LOCAL ACCESS TO AGRICULTURAL, RESIDENTIAL, AND COMMERCIAL PROPERTY BETWEEN CULVERTS MUST BE MAINTAINED FROM ONE DIRECTION AT ALL TIMES.
4. CONTRACTOR SHALL COMPLETE ALL STAGES OF CONSTRUCTION FOR BOTH CULVERTS WITHIN THE 60 CALENDAR DAY ESTABLISHED DETOUR LIMIT.
5. ALL TRAFFIC CONTROL SIGNS PLACED IN MCHENERY COUNTY SHALL BE SET BACK 12 FEET FROM WHITE EDGE LINE.

A TRAFFIC CONTROL AUTHORIZATION REQUEST (IDOT FORM OPER 725) MUST BE SUBMITTED TO ANDREW SCHUETZE AT Andrew.Shuetze@illinois.gov OR FAX 847-705-4198 NO LESS THAN FIVE (5) BUSINESS DAYS PRIOR TO THE INSTALLATION OF THE DETOUR SIGNS. THE FORM MUST LIST THE CONTACT INFORMATION FOR, AT A MINIMUM, THE RESIDENT ENGINEER FOR THE CONTRACT AND THE TRAFFIC CONTROL COMPANY RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF THE SIGNS AND BARRICADES.

TRAFFIC CONTROL LEGEND

- || INDICATES TYPE III BARRICADE WITH SIGN UNLESS OTHERWISE NOTED PER STANDARD 701901. (WITH TWO WARNING LIGHTS EACH BARRICADE)
- INDICATES DESIGNATED SIGN POST-MOUNTED IN GROUND PER ARTICLE 701.14 & STANDARD 701901 (SEE SIGN DETAIL BELOW)
- ⇄ DETOUR ROUTE
- M CHANGEABLE MESSAGE SIGN

TYPICAL SIGN SPACING



P2detour route.dgn



USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN - KWK	REVISED -
PLOT DATE = 5/12/2014	CHECKED - SPF	REVISED -
	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

**DETOUR ROUTE AND
CONSTRUCTION STAGING**

SCALE: 1" = 20'

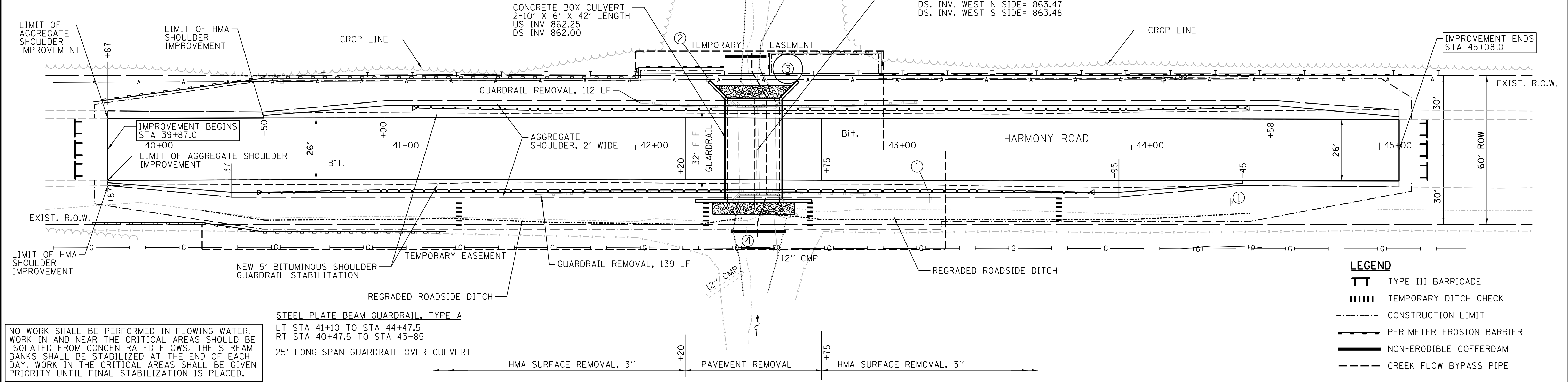
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	5
SN 045-5543 & SN 045-5544		CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

- ① EXISTING SIGN PANEL TO BE REMOVED AND REPLACED. (BY OTHERS)
- ② EXISTING UTILITY POLE TO BE RELOCATED BY COMED
- ③ DEWATERING FILTRATION SITE
- ④ BYPASS INTAKE



PLAN	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	

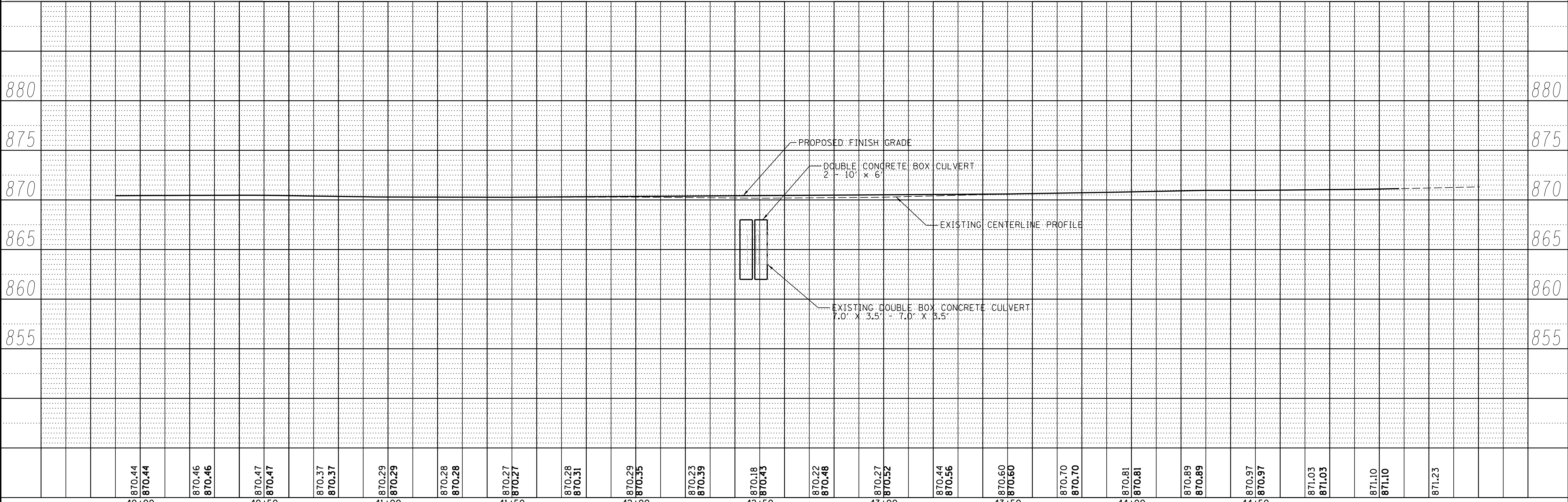


NO WORK SHALL BE PERFORMED IN FLOWING WATER. WORK IN AND NEAR THE CRITICAL AREAS SHOULD BE ISOLATED FROM CONCENTRATED FLOWS. THE STREAM BANKS SHALL BE STABILIZED AT THE END OF EACH DAY. WORK IN THE CRITICAL AREAS SHALL BE GIVEN PRIORITY UNTIL FINAL STABILIZATION IS PLACED.

STEEL PLATE BEAM GUARDRAIL, TYPE A
 LT STA 41+10 TO STA 44+47.5
 RT STA 40+47.5 TO STA 43+85
 25' LONG-SPAN GUARDRAIL OVER CULVERT

LEGEND

	TYPE III BARRICADE
	TEMPORARY DITCH CHECK
	CONSTRUCTION LIMIT
	PERIMETER EROSION BARRIER
	NON-ERODIBLE COFFERDAM
	CREEK FLOW BYPASS PIPE



870.44 870.44	870.46 870.46	870.47 870.47	870.37 870.37	870.29 870.29	870.28 870.28	870.27 870.27	870.28 870.31	870.29 870.35	870.23 870.39	870.18 870.43	870.22 870.48	870.27 870.52	870.44 870.56	870.60 870.60	870.70 870.70	870.81 870.81	870.89 870.89	870.97 870.97	871.03 871.03	871.10 871.10	871.23
40+00	40+50	41+00	41+50	42+00	42+50	43+00	43+50	44+00	44+50												

HOMER L. CHASTAIN & ASSOCIATES, LLP
 CONSULTING ENGINEERS

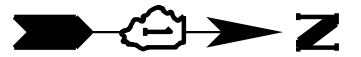
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	DRAWN - KWK	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

KANE COUNTY
 DIVISION OF TRANSPORTATION

HARMONY ROAD OVER HARMONY CREEK
 PLAN & PROFILE
 CULVERT #4

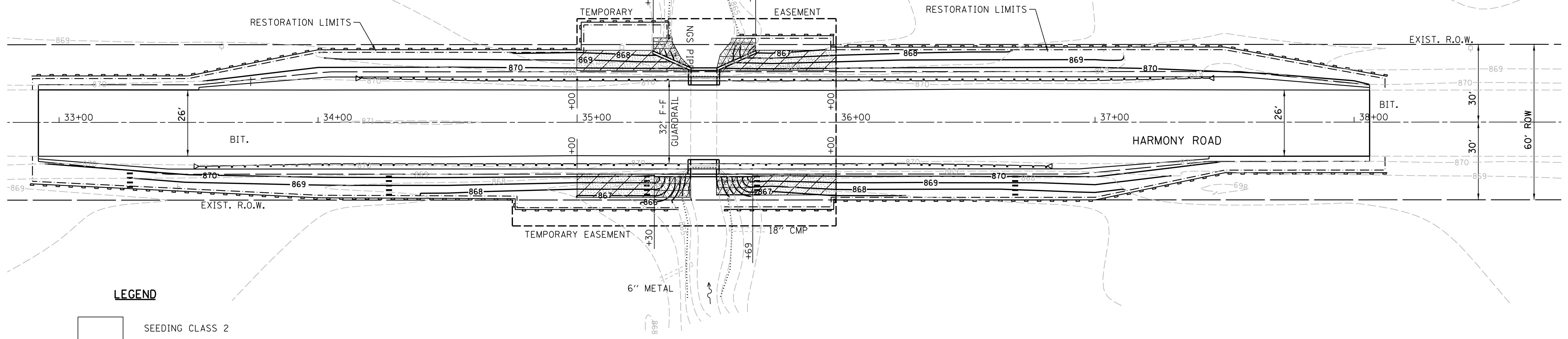
SCALE: 1" = 20' SHEET NO. 2 OF 2 SHEETS STA. 39+87.00 TO STA. 45+08.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	7
	SN 045-5544	CONTRACT NO.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		



PLAN	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	AT	
	BY	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	CHECKED	
	AT	
	BY	
	NO.	

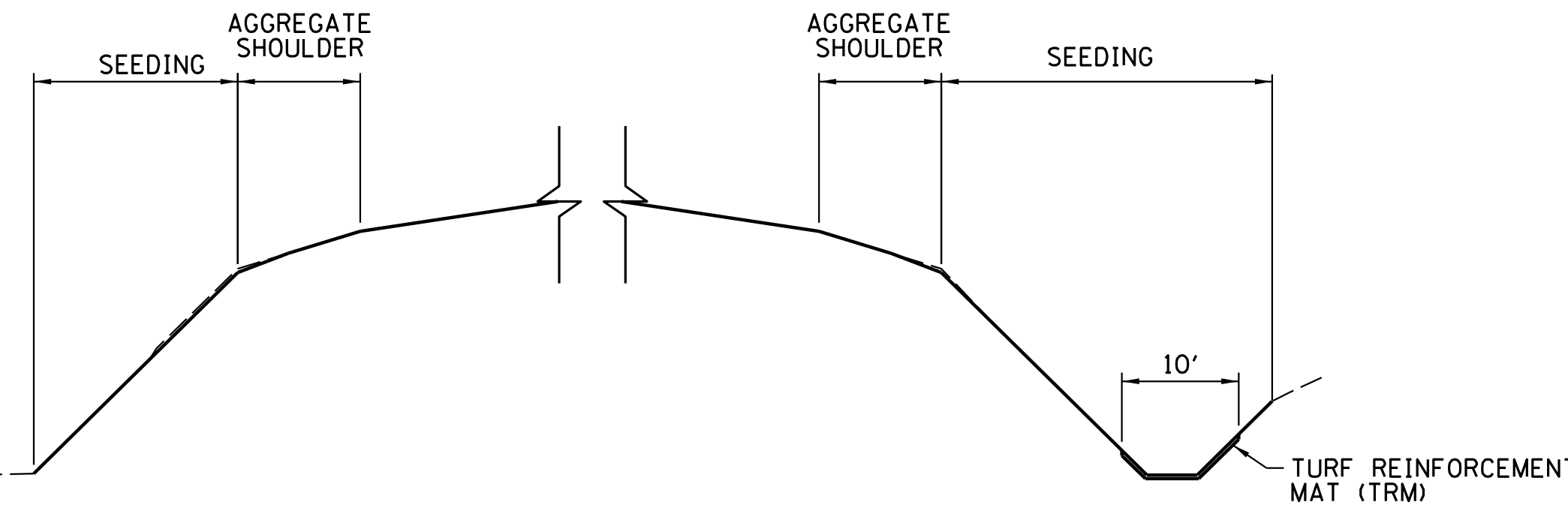


LEGEND

- SEEDING CLASS 2
- SEEDING CLASS 4
- SEEDING CLASS 4B
- TEMPORARY DITCH CHECK

EROSION CONTROL NOTES

1. STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL, (LATEST EDITION). EROSION AND SEDIMENT CONTROL PLANNING SHALL BE IN ACCORDANCE WITH THE PROCEDURES AND STANDARDS FOR URBAN SOIL EROSION AND SEDIMENTATION CONTROL IN ILLINOIS, (REVISED, JULY, 1988) BY THE URBAN COMMITTEE OF THE ASSOCIATION OF ILLINOIS SOIL AND WATER CONSERVATION DISTRICTS (THE GREEN BOOK), CHAPTERS 1-5. WHERE THE ILLINOIS URBAN MANUAL CONFLICTS WITH THE GREEN BOOK, THE ILLINOIS URBAN MANUAL SHALL PREVAIL.
2. THE RUNOFF FROM DISTURBED AREAS SHALL NOT LEAVE THE SITE WITHOUT FIRST PASSING THROUGH SEDIMENT CONTROL MEASURES OR DEVICES. THIS REQUIREMENT SHALL APPLY TO ALL PHASES OF CONSTRUCTION AND SHALL INCLUDE AN ONGOING PROCESS OF IMPLEMENTATION OF MEASURE AND MAINTENANCE OF THOSE MEASURES DURING BOTH THE CONSTRUCTION SEASON AND ANY CONSTRUCTION SHUTDOWN PERIODS.
3. AS A MINIMUM ALL EROSION AND SEDIMENT CONTROL MEASURES ON SITE SHALL BE INSPECTED WEEKLY OR AFTER A ONE-HALF INCH OR GREATER RAINFALL EVENT AND ANY REQUIRED REPAIRS SHALL BE MADE TO KEEP THESE MEASURES FUNCTIONAL AS DESIGNED.
4. STOCKPILES OF SOIL AND OTHER BUILDING MATERIALS (SAND, LIMESTONE, ETC.) SHALL NOT BE LOCATED IN SPECIAL MANAGEMENT AREAS, STREAM BANKS, IN THE STREAM, OR REQUIRED BUFFERS. IF A STOCKPILE IS TO REMAIN IN PLACE FOR MORE THAN THREE DAYS, PERIMETER EROSION BARRIER SHALL BE PROVIDED. IF A STOCKPILE IS TO REMAIN IN PLACE FOR 30 DAYS OR MORE IT SHALL RECEIVE TEMPORARY SEEDING.
5. IN AREAS WHERE WORK HAS BEEN COMPLETED, PERMANENT STABILIZATION SHALL OCCUR WITH 7 DAYS. IN AREAS WHERE WORK HAS CEASED FOR 7 DAYS OR MORE, TEMPORARY STABILIZATION SHALL OCCUR BY THE 7TH DAY AFTER WORK HAS CEASED.
6. ASPHALT, BITUMINOUS MATERIAL AND CONCRETE WITH PROTRUDING MATERIAL SUCH AS REINFORCING BAR OR MESH SHALL NOT BE 1) USED FOR BACKFILL, 2) PLACED ON SHORELINES/STREAM BANKS, OR 3) PLACED IN WATERS OF THE STATE.
7. SILT FENCE AND DITCH CHECKS FOR EXISTING CONDITIONS SHALL BE INSTALLED PRIOR TO THE START OF ANY WORK AT THE SITE.
8. PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO, ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED TO THE OWNER AND KDSWCD FOR REVIEW.
9. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE OWNER AND THE KDSWCD.
10. DURING DEWATERING OPERATIONS, WATER SHALL BE PUMPED INTO SEDIMENT BASINS, SILT TRAPS OR FILTERED THROUGH A BAG PRIOR TO DISCHARGE INTO THE CREEK. DEWATERING OPERATIONS THAT TAKE PLACE INSIDE THE WORK AREA MUST HAVE ADEQUATE FILTERING MECHANISMS TO PREVENT SEDIMENT LADEN WATER FROM ENTERING THE CREEK. DEWATERING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
11. ANY SPOIL MATERIAL EXCAVATED, DREDGED OR OTHERWISE PRODUCED BY CONSTRUCTION WILL NOT BE RETURNED TO THE WATERWAY. THE MATERIAL SHALL BE DEPOSITED IN A SELF CONTAINED AREA THAT IS IN COMPLIANCE WITH ALL STATE STATUTES, REGULATIONS AND PERMIT REQUIREMENTS OR REMOVED FROM SITE. THERE SHALL BE NO DISCHARGE TO WATERS OF THE STATE UNLESS A PERMIT HAS BEEN ISSUED BY THE IEPA. ANY BACKFILLING SHALL BE DONE WITH CLEAN MATERIAL AS APPROVED BY THE ENGINEER AND PLACED IN A MANNER TO PREVENT VIOLATION OF APPLICABLE WATER QUALITY STANDARDS.
12. HEAVY DUTY EROSION CONTROL BLANKET FOR PERMANENT STABILIZATION SHALL BE INSTALLED ON ALL SLOPES IMMEDIATELY UPON FINAL GRADING.
13. IF FLOW IS ENCOUNTERED DURING THE CULVERT WORK, FLOW SHALL BE BLOCKED USING A NON-ERODIBLE COFFERDAM (SHEET STEEL, SANDBAGS, PLASTIC LINER AND ROCK, ETC.) AND FLOWS BY-PASS PUMPED IF NECESSARY. UNDER NO CIRCUMSTANCES WILL WORK BE ALLOWED TO TAKE PLACE IN FLOWING OR STANDING WATER. IF BY-PASS PUMPING IS NECESSARY, FLOWS SHOULD BE PUMPED FROM A SUMP PIT TO A NON-ERODIBLE, ENERGY DISSIPATING SURFACE AND FILTERED. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AT THE PRECONSTRUCTION MEETING WITH THE COUNTY FOR REVIEW AND APPROVAL.
14. ALL ADJACENT ROADWAYS MUST BE KEPT CLEAN OF DEBRIS, INSPECTED AND CLEANED DAILY AND AS ORDERED BY THE ENGINEER.
15. DURING WORK ON THE BANKS OF THE CREEK, WORK MUST BE TIMED TO TAKE PLACE DURING LOW OR NO-FLOW CONDITIONS.
16. THE SIDE SLOPES MUST BE RESEEDED AND STABILIZED WITH THE SPECIFIED EROSION CONTROL BLANKET PRIOR TO ACCEPTING FLOWS. THE BOTTOM OF THE CREEK MUST BE BROUGHT BACK TO ITS ORIGINAL GRADE AND STABLE ENOUGH TO ACCEPT FLOWS AS PER THE APPROVAL OF THE ENGINEER.
17. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFORM ANY SUB-CRONTACTOR(S) WHO MAY PERFORM WORK ON THIS PROJECT, OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING EROSION CONTROL MEASURES.
18. A COPY OF THE APPROVED EROSION SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
19. THE KANE-DUPAGE SOIL & WATER CONSERVATION DISTRICT (KDSWCD) MUST BE NOTIFIED ONE WEEK PRIOR TO THE PRE-CONSTRUCTION CONFERENCE, ONE WEEK PRIOR TO THE START OF LAND DISTURBING ACTIVITIES AND ONE WEEK PRIOR TO THE FINAL INSPECTION.



RESTORATION TYPICAL SECTION

- NOTES:**
- ALL DISTURBED AREAS MUST BE SEEDDED AND COVERED WITH HEAVY DUTY EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT WITHIN 7 DAYS OF FINAL GRADING.
 - ALL DISTURBED AREAS GET CLASS 2 SEEDING UNLESS OTHERWISE NOTED.
 - SEE RESTORATION PLAN FOR CULVERT 4 FOR ADDITIONAL INFORMATION

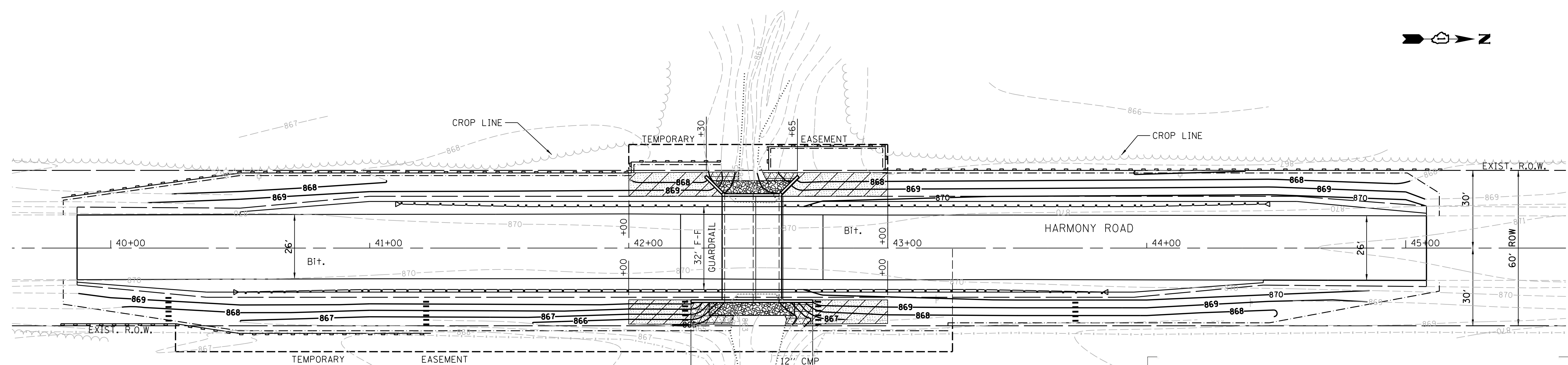
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	DRAWN - KWK	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

HARMONY ROAD OVER HARMONY CREEK RESTORATION PLAN CULVERT #3		
SCALE: 1" = 20'	SHEET NO. 1 OF 2 SHEETS	STA. 32+92.00 TO STA. 38+06.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	8
	SN 045-5543	CONTRACT NO.		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Seed Plan: cul3.dgn

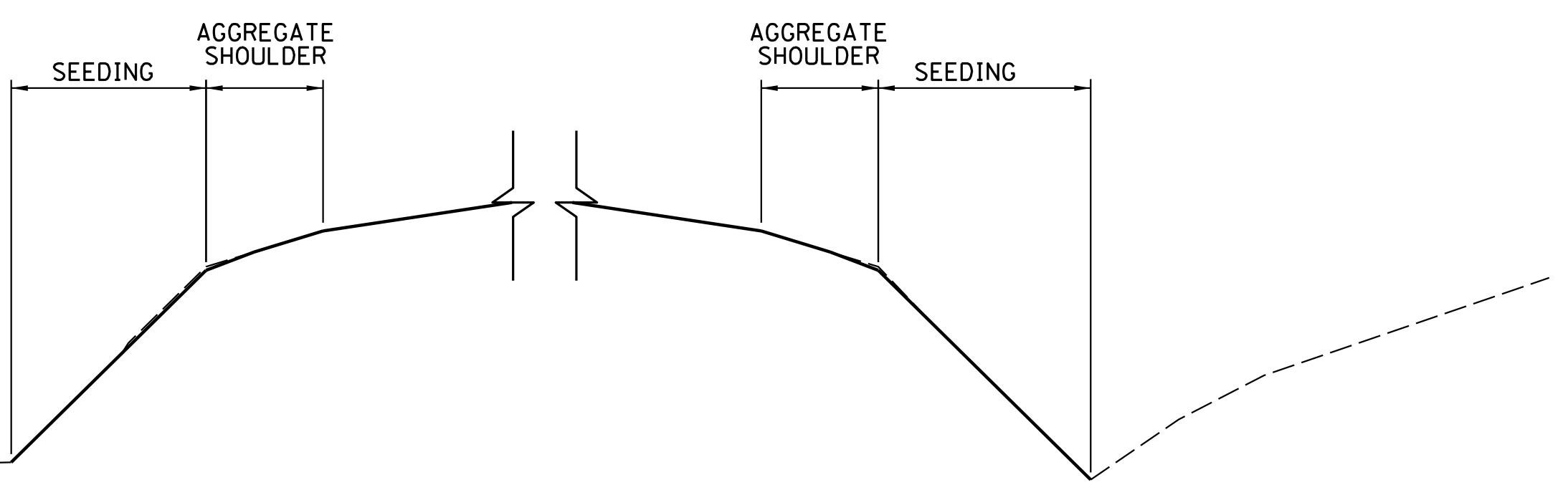


PLAN	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	ALIGNED		
	FILED		
	NO.		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	CHECKED		
	GRADES		
	STRUCTURE		
	NOTATIONS		
	CHKD		
	NO.		

LEGEND

- SEEDING CLASS 2
- SEEDING CLASS 4
- SEEDING CLASS 4B
- RIPRAP, CLASS 4B
- TEMPORARY DITCH CHECK



RESTORATION TYPICAL SECTION

- NOTES:**
- ALL DISTURBED AREAS MUST BE SEEDED AND COVERED WITH HEAVY DUTY EROSION CONTROL BLANKET WITHIN 7 DAYS OF FINAL GRADING.
 - ALL DISTURBED AREAS GET CLASS 2 SEEDING UNLESS OTHERWISE NOTED.
 - SEE RESTORATION PLAN FOR CULVERT 3 FOR ADDITIONAL INFORMATION

NOTES:

1. Staples shall be placed in a diamond pattern at 2 per s.y. for stitched blankets. Non-stitched shall use 4 staples per s.y. of material. This equates to 200 staples with stitched blanket and 400 staples with non-stitched blanket per 100 s.y. of material.
2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
4. All anchor slots shall be stapled at approximately 12" intervals.

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

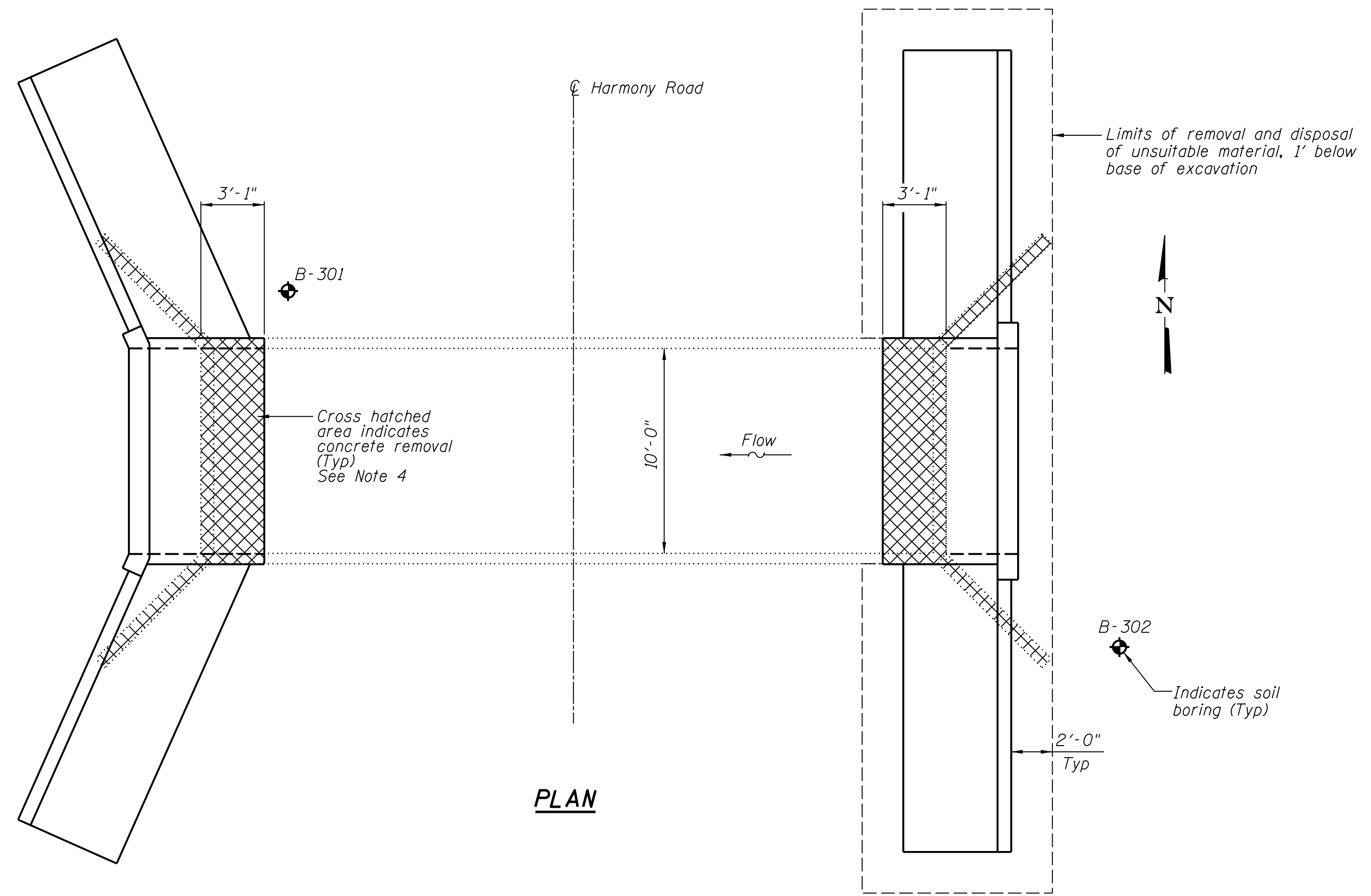
**KANE COUNTY
DIVISION OF TRANSPORTATION**

**HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK
RESTORATION PLAN
CULVERT #4**

SCALE: 1" = 20' SHEET NO. 2 OF 2 SHEETS STA. 39+87.00 TO STA. 45+08.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	9
	SN 045-5544	CONTRACT NO.		
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Seed Plan cul4.dgn

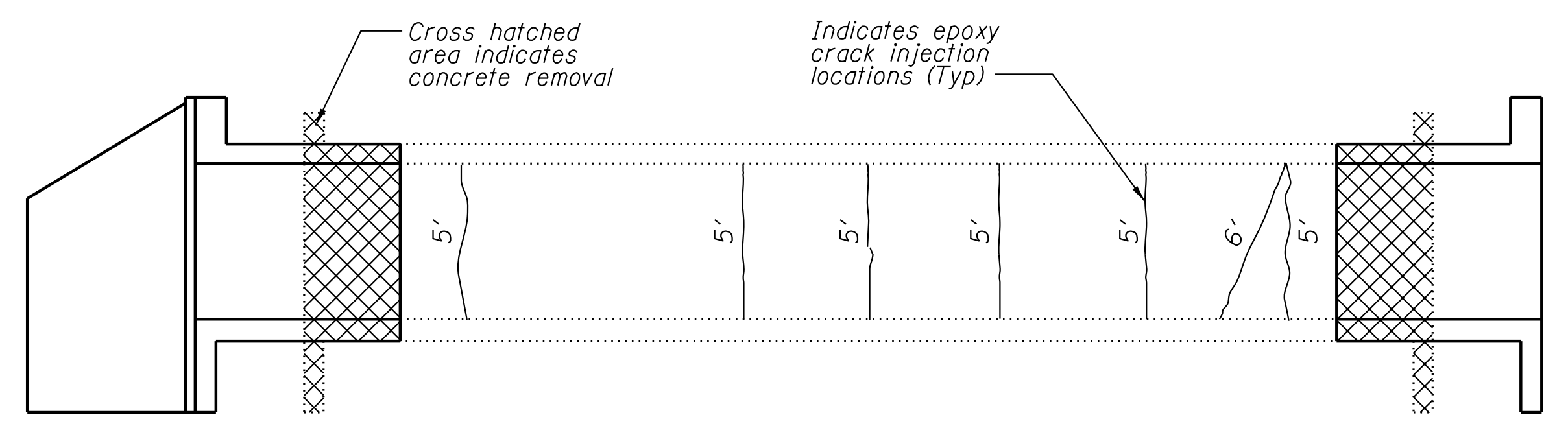


GENERAL NOTES

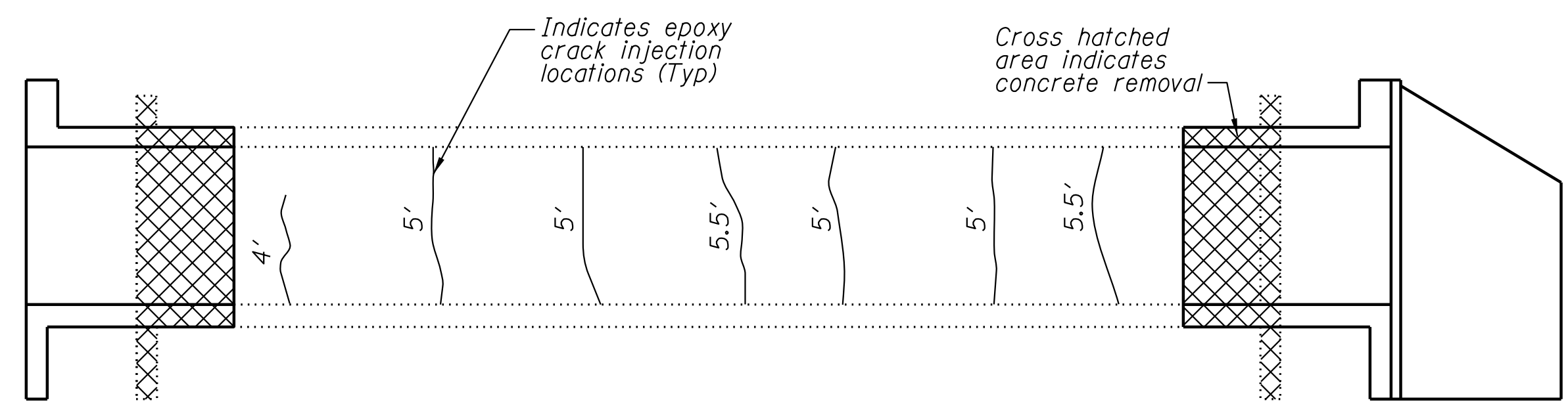
1. Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
2. Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60.
3. Reinforcement bars designated (E) shall be epoxy coated.
4. Existing reinforcement bars extending into the removal area in culvert top slab, bottom slab, and side walls shall be cleaned, straightened, and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with approved bar splices or an anchorage system. Reinforcement bars shall be cleaned according to Article 501.05 of the Standard Specifications and to the satisfaction of the Engineer. Cost included with Concrete Removal.
5. Expansion bolts shall be according to Standard Specification Article 1006.09.
6. Removal of existing wing walls during construction shall be completed according to Section 501.05 of the Standard Specifications.

TOTAL BILL OF MATERIAL

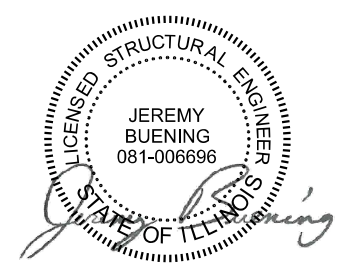
ITEM	UNIT	QUANTITY
Concrete Box Culverts	Cu Yd	35.0
Reinforcement Bars, Epoxy Coated	Pound	5750
Epoxy Crack Injection	Foot	71
Concrete Removal	Cu Yd	11.8
Removal & Disposal of Unsuitable Material	Cu Yd	115
Expansion Bolts 3/4 Inch	Each	44
Porous Granular Embankment	Cu Yd	75



LEFT WALL (SOUTH WALL) PROFILE VIEW



RIGHT WALL (NORTH WALL) PROFILE VIEW



Jeremy Buening, P.E., S.E. Date 5/7/14
Expires 11/30/2014

USER NAME = dwozniarski	DESIGNED ACB	REVISED -
DRAWN RLK	CHECKED JMB	REVISED -
PLOT SCALE = 4.0000' / 1"	DATE	REVISED -
PLOT DATE = 5/12/2014		

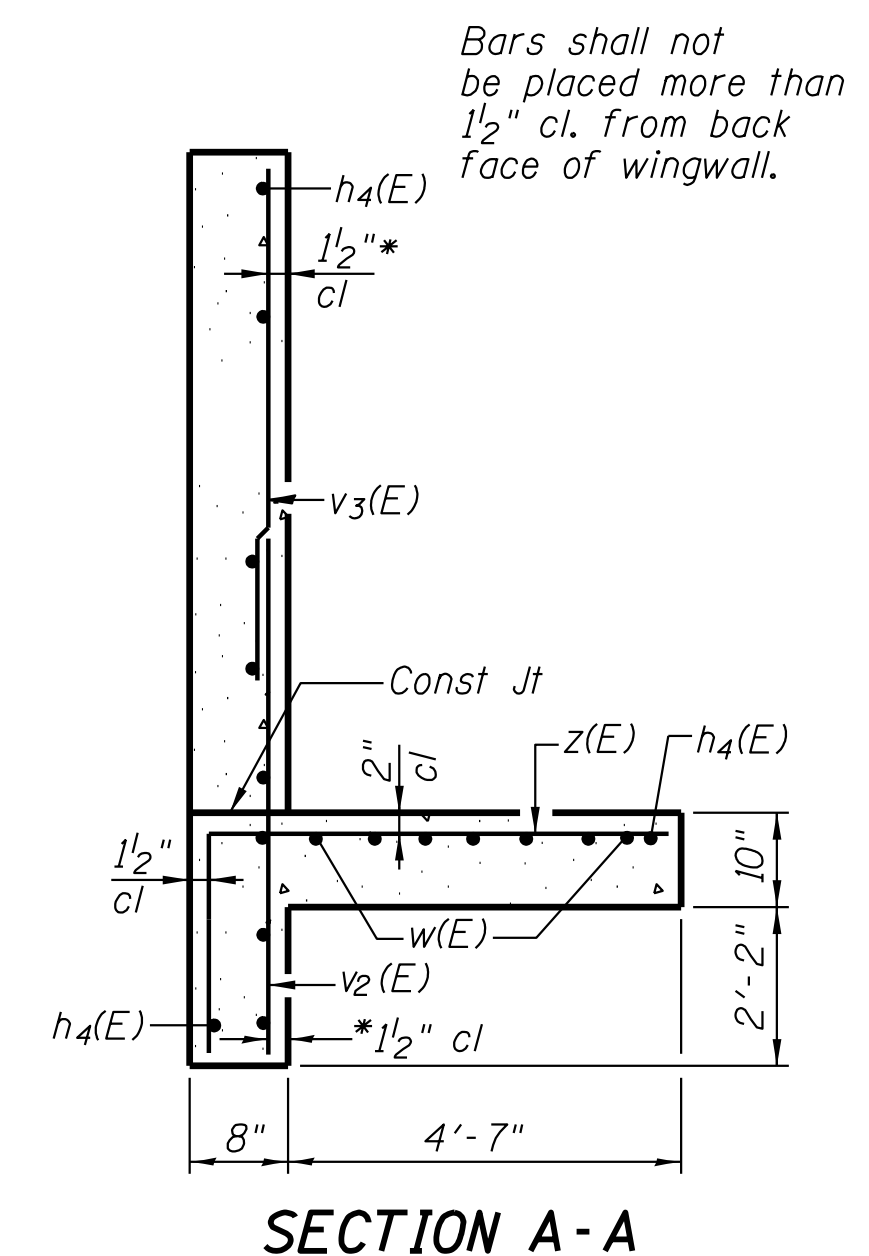
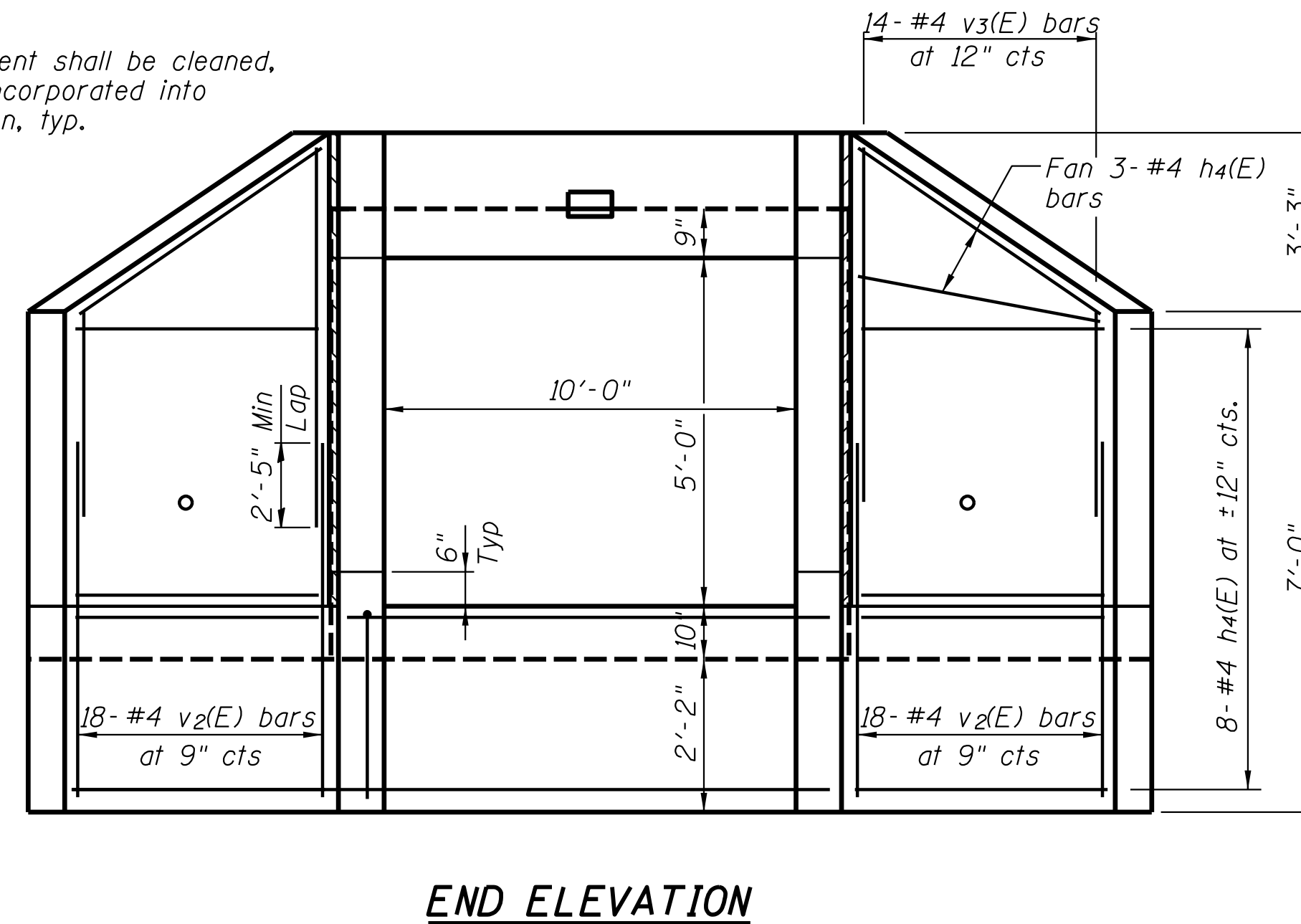
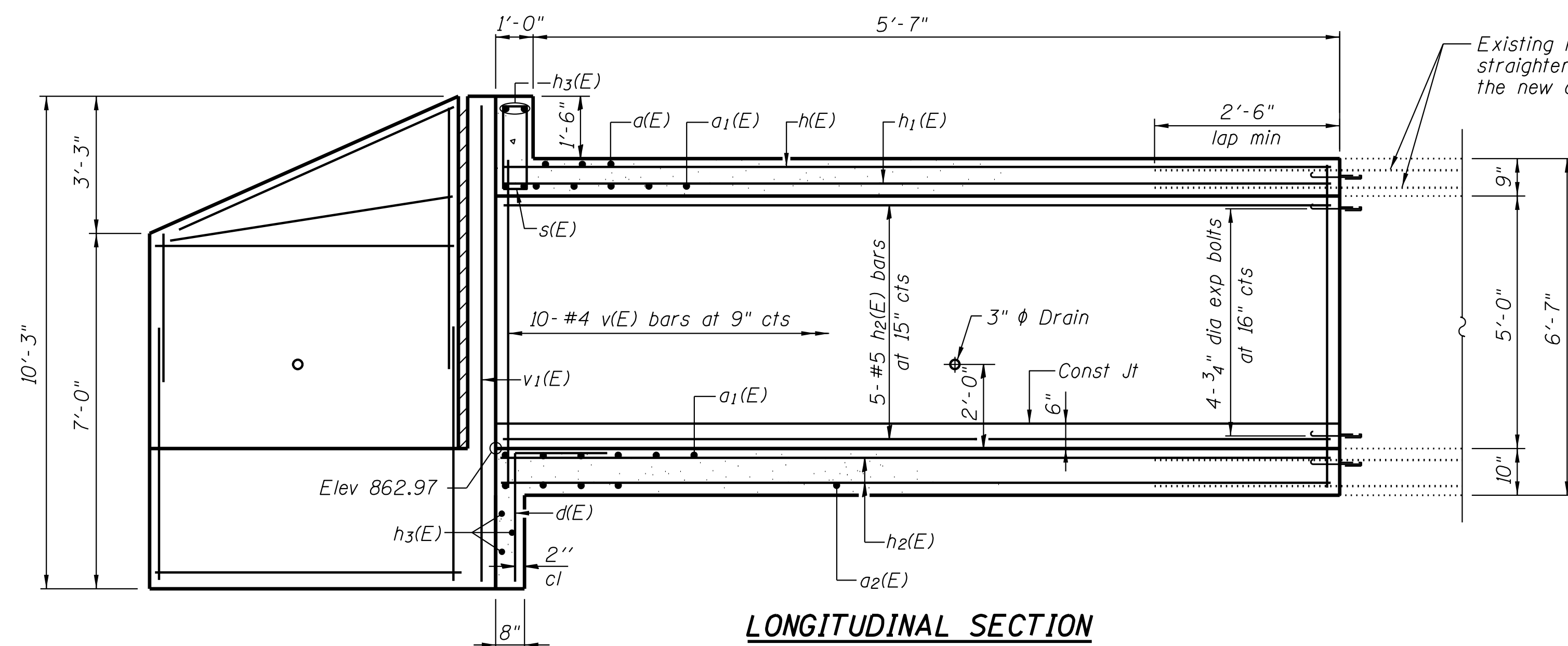
**KANE COUNTY
DIVISION OF TRANSPORTATION**

**HARMONY ROAD OVER HARMONY CREEK
CULVERT DETAILS
CULVERT #3**

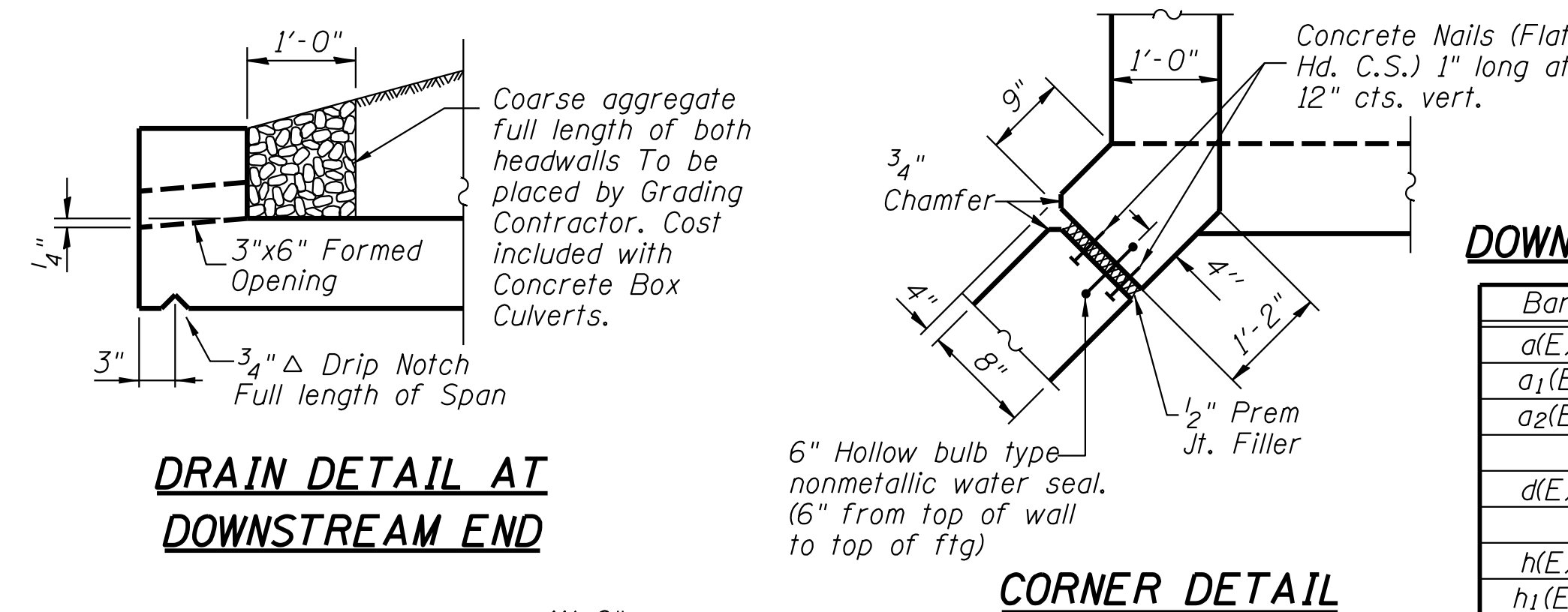
SCALE: SHEET NO. 1 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 36	14-00413-02-BR	KANE	23	10
SN 045-5543		CONTRACT NO.		
ILLINOIS FED. AID PROJECT				

sht.gpe cul3.dgn

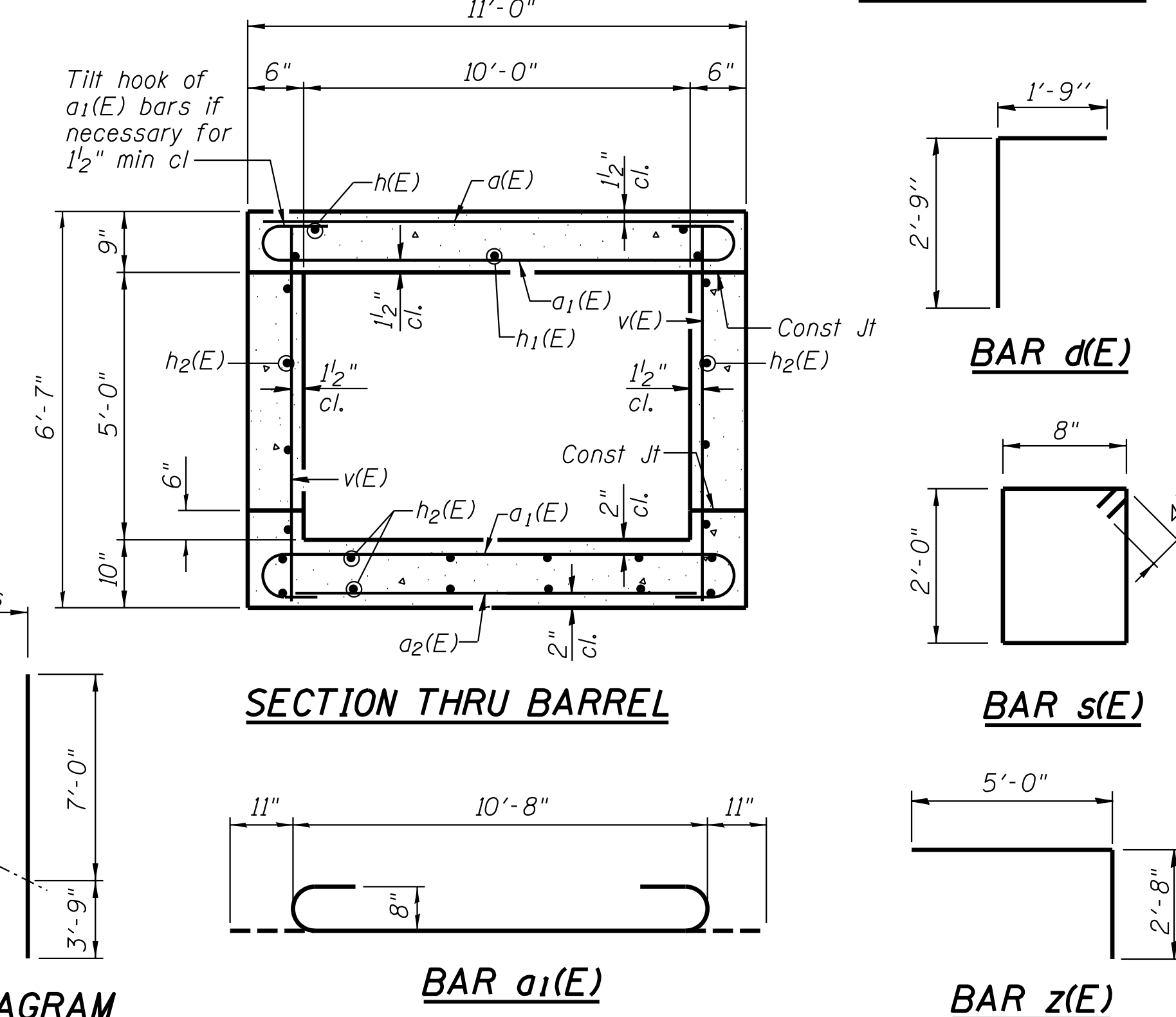
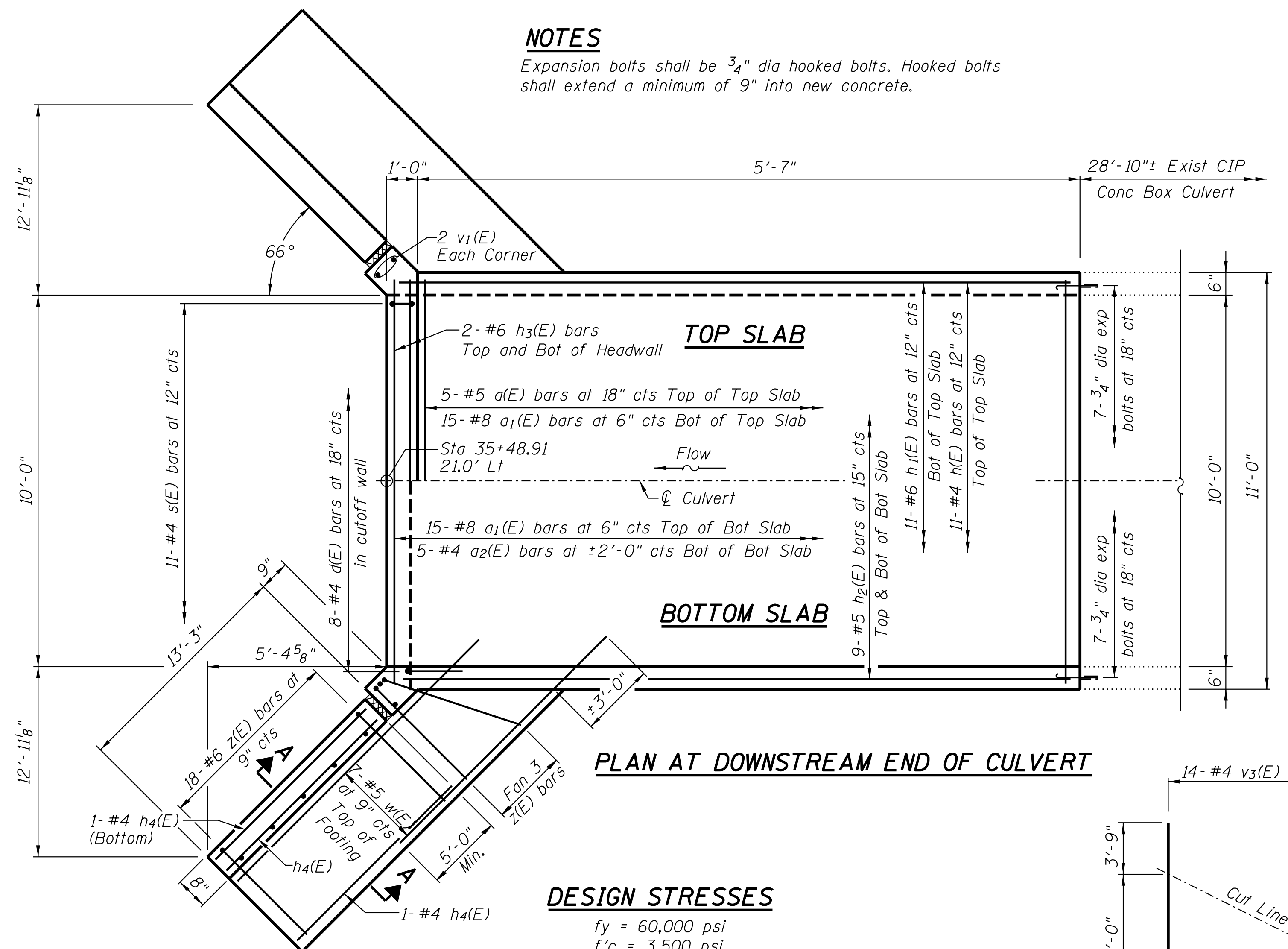


NOTES
Expansion bolts shall be 3/4" dia hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.



**BILL OF MATERIAL
DOWNSTREAM CIP END SECTION**

Bar	No.	Size	Length	Shape
a(E)	5	#5	10'-3"	—
a1(E)	30	#8	12'-6"	U
a2(E)	5	#4	10'-3"	—
d(E)	8	#4	4'-6"	J
h(E)	11	#4	6'-4"	—
h1(E)	11	#6	6'-4"	—
h2(E)	28	#5	6'-4"	—
h3(E)	7	#6	10'-6"	—
h4(E)	26	#4	12'-11"	—
s(E)	11	#4	6'-1"	□
v(E)	20	#4	6'-3"	—
v1(E)	4	#4	9'-10"	—
v2(E)	36	#4	5'-5"	—
v3(E)	14	#4	10'-9"	—
w(E)	14	#5	16'-0"	—
z(E)	42	#6	7'-8"	J
Concrete Box Culverts	Cu. Yd.		17.1	
Reinforcement Bars, Epoxy Coated	Pound		2870	
Expansion Bolts 3/4 Inch	Each		22	



BAR CUTTING DIAGRAM

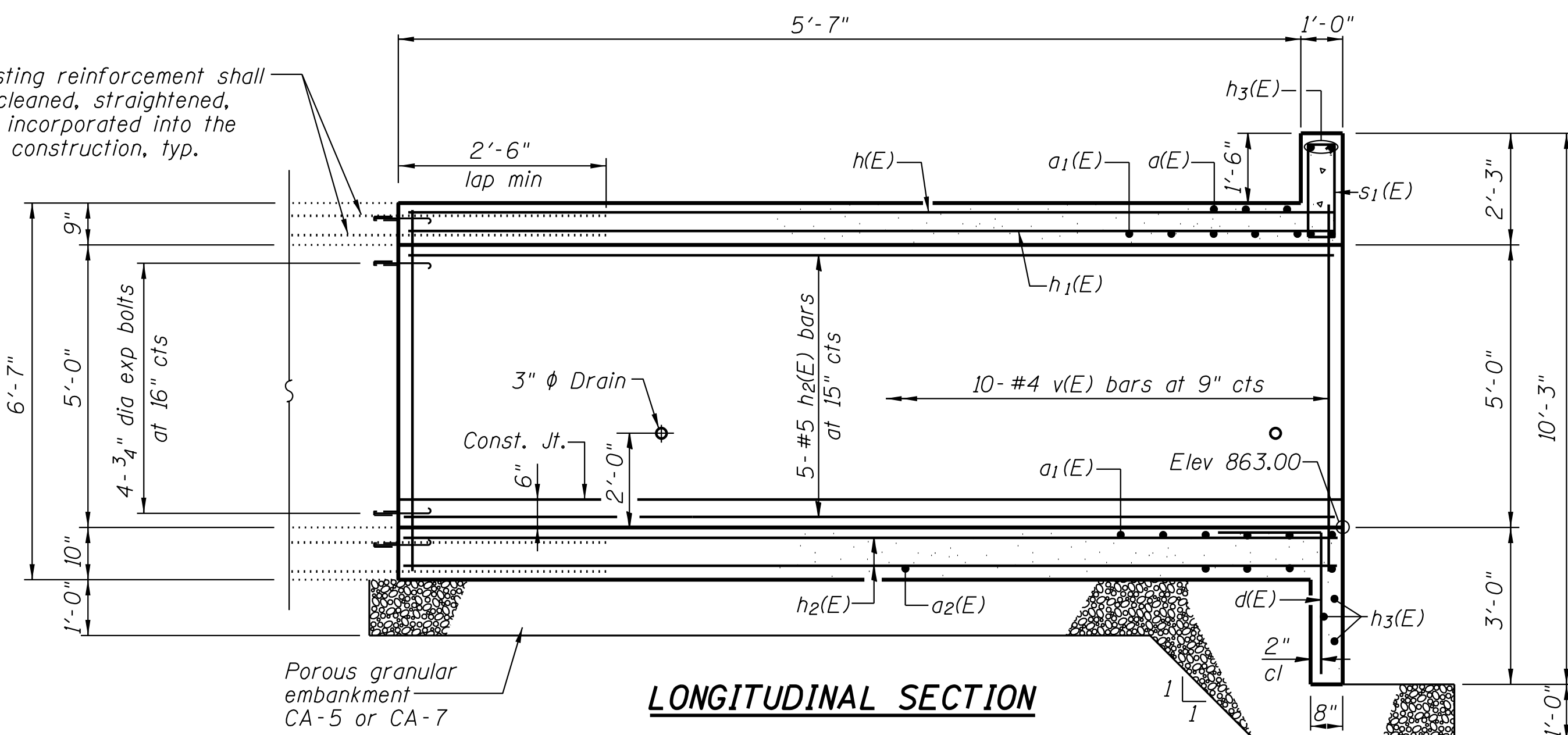
**KANE COUNTY
DIVISION OF TRANSPORTATION**

**HARMONY ROAD OVER HARMONY CREEK
CULVERT #3**

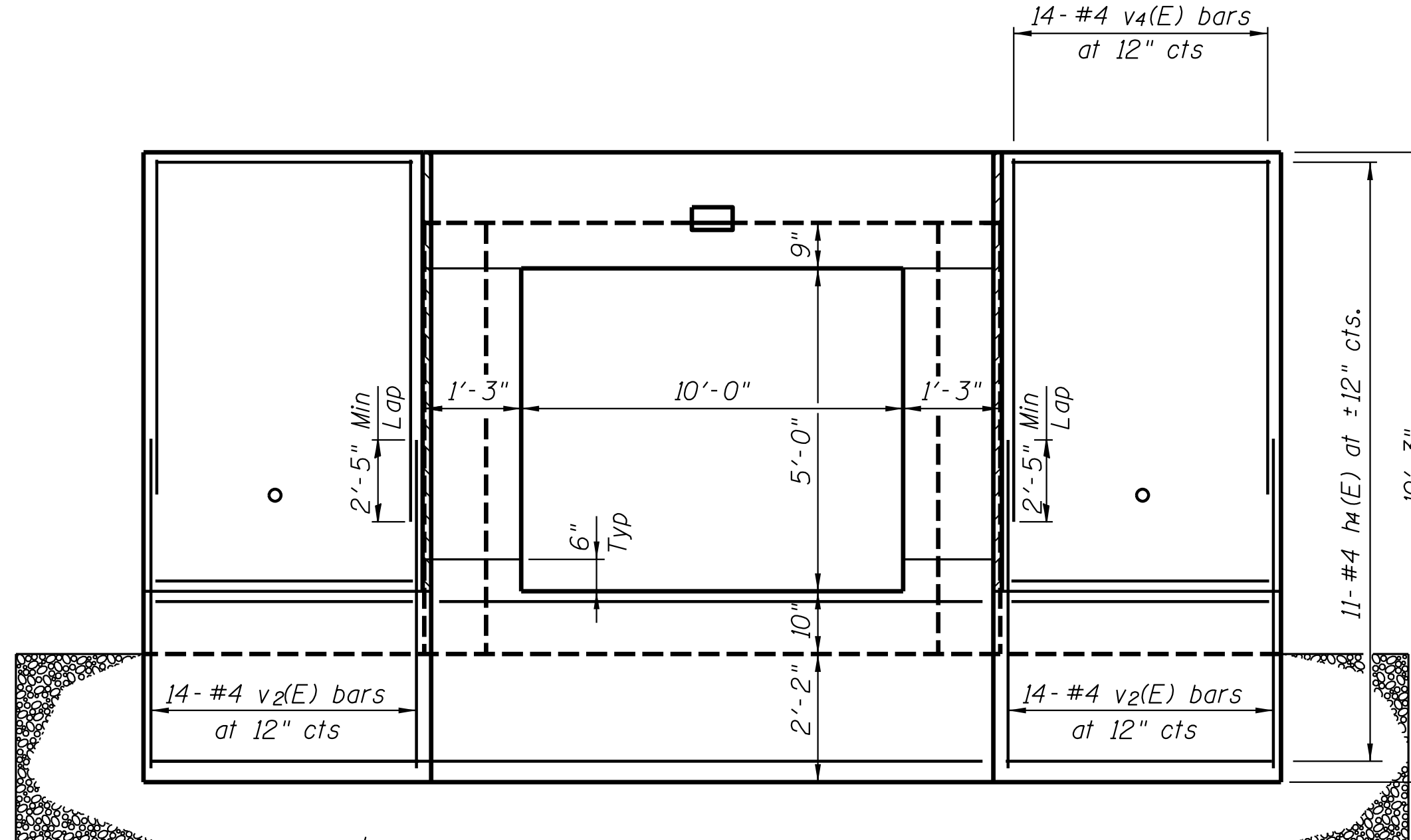
F.A.S. RTE. CH 36	SECTION 14-00413-02-BR SN 045-5543	COUNTY KANE	TOTAL SHEETS 23	SHEET NO. 11
SCALE: NONE			SHEET NO. 2 OF 3 SHEETS	
STA. TO STA.			ILLINOIS FED. AID PROJECT	

sht details cul3.dgn

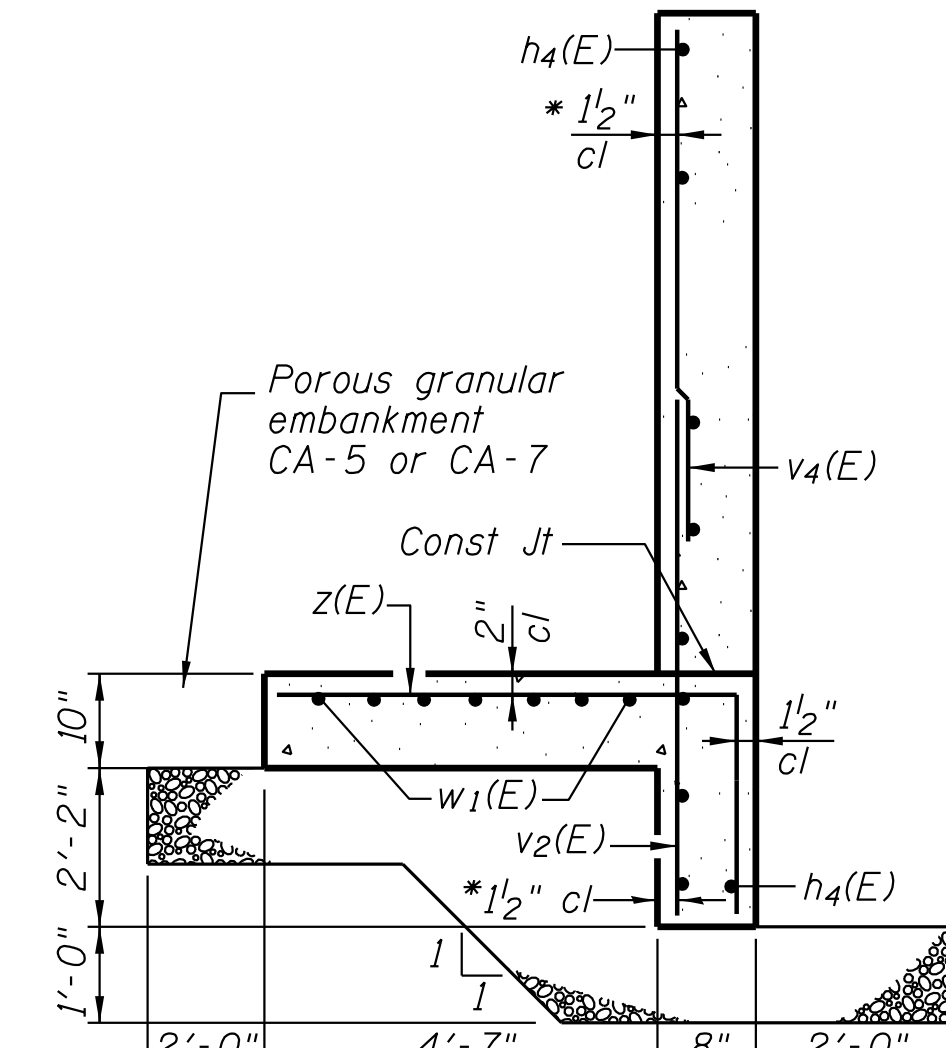
Existing reinforcement shall be cleaned, straightened, and incorporated into the new construction, typ.



LONGITUDINAL SECTION

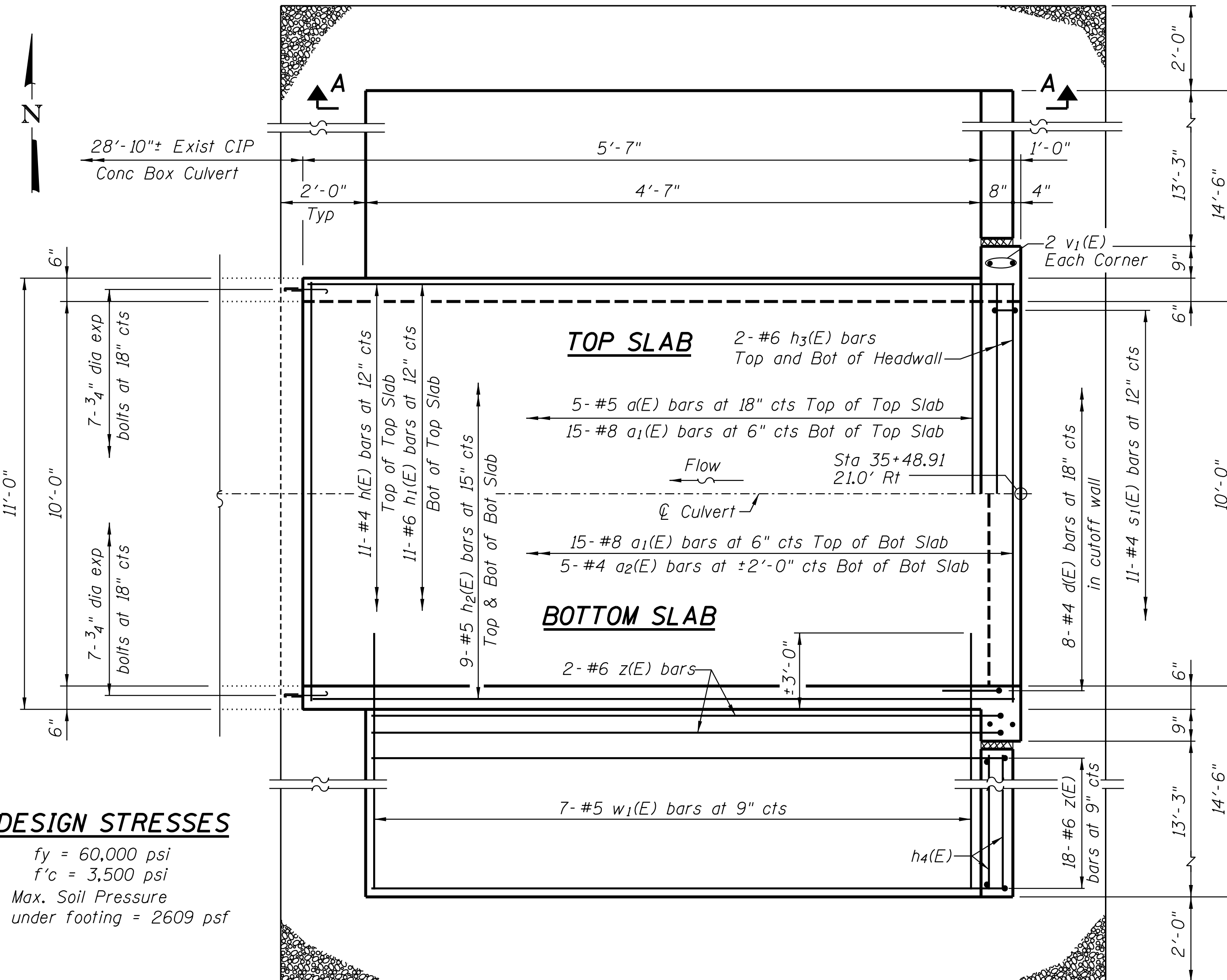


END ELEVATION



SECTION A-A

* v bars shall not be placed more than 1/2" cl. from back face of wingwall.



PLAN AT UPSTREAM END OF CULVERT

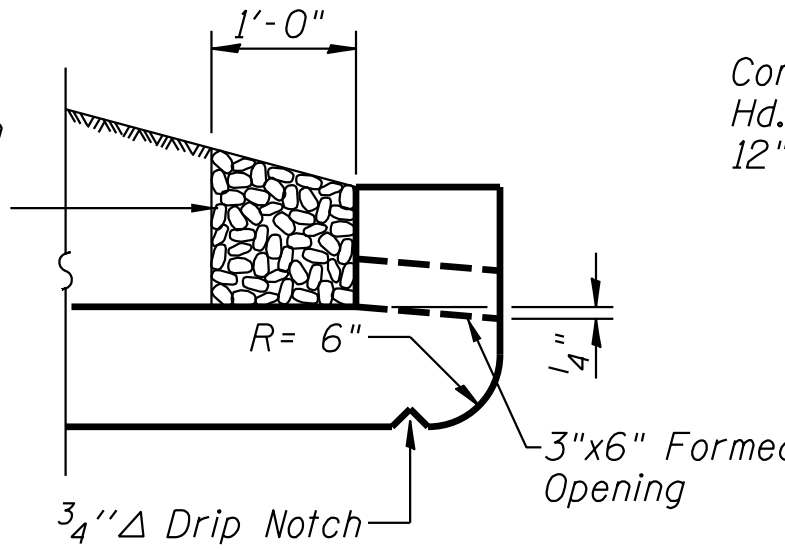
DESIGN STRESSES

$f_y = 60,000 \text{ psi}$
 $f'_c = 3,500 \text{ psi}$
 Max. Soil Pressure under footing = 2609 psf

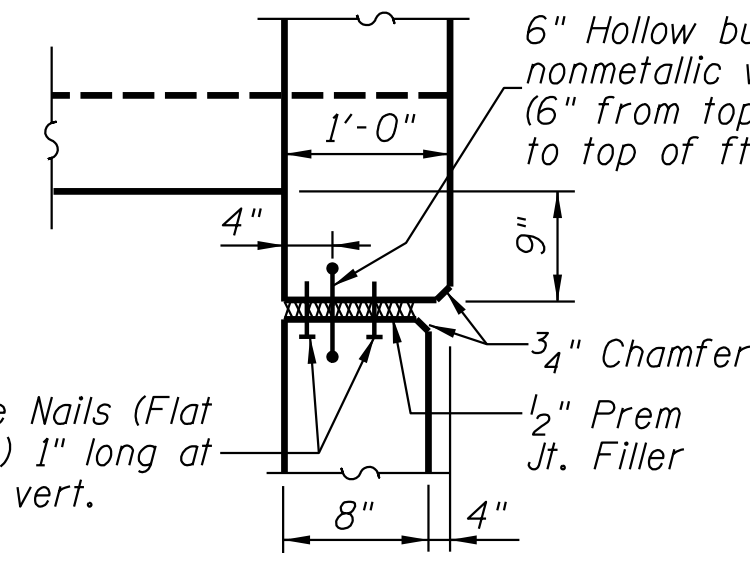
NOTES

Expansion bolts shall be 3/4" dia hooked bolts. Hooked bolts shall extend a minimum of 9" into new concrete.

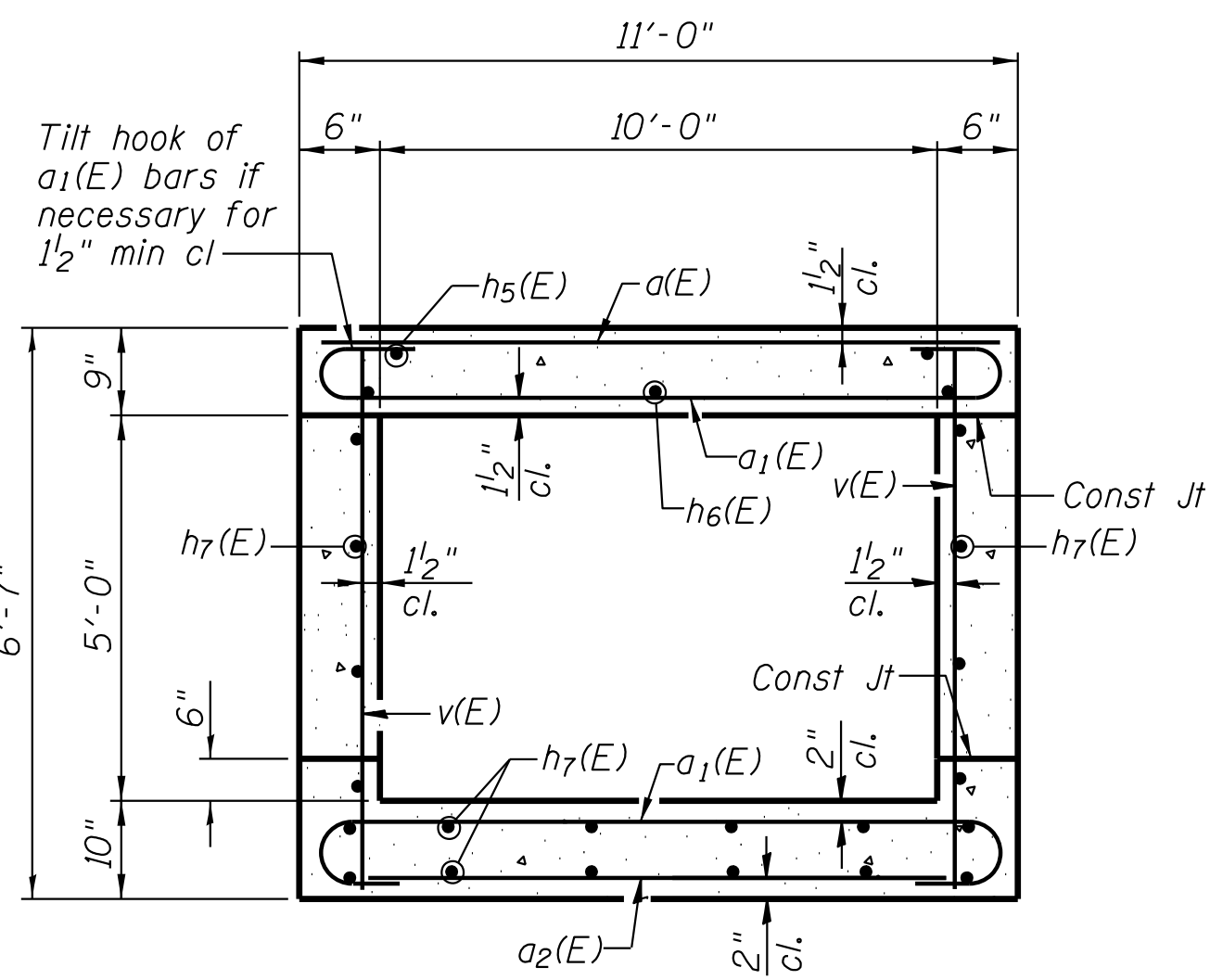
Coarse aggregate full length of both headwalls To be placed by Grading Contractor. Cost included with Concrete Box Culverts.



DRAIN DETAIL AT UPSTREAM END

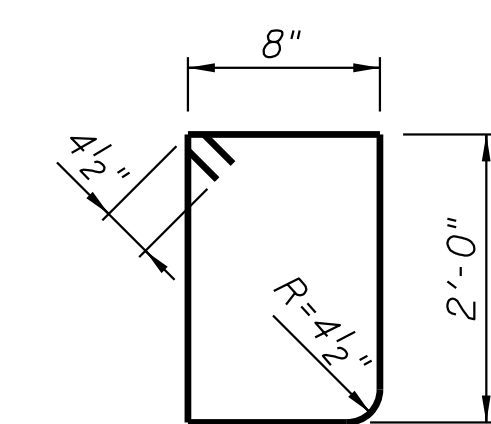


CORNER DETAIL

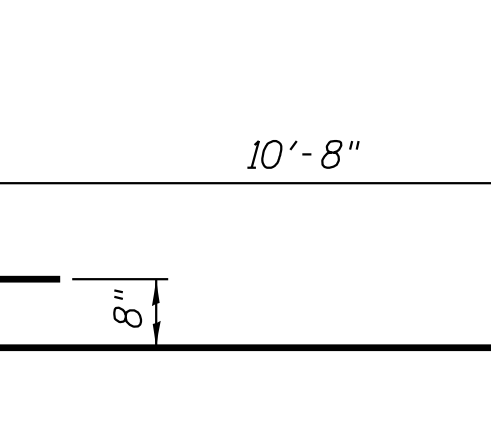


SECTION THRU BARREL

BAR d(E)



BAR s1(E)



BAR a1(E)

BILL OF MATERIAL UPSTREAM CIP END SECTION

Bar	No.	Size	Length	Shape
a(E)	5	#5	10'-3"	
a1(E)	30	#8	12'-6"	
a2(E)	5	#4	10'-3"	
d(E)	8	#4	4'-6"	
h(E)	11	#4	6'-4"	
h1(E)	11	#6	6'-4"	
h2(E)	28	#5	6'-4"	
h3(E)	7	#6	10'-6"	
h4(E)	24	#4	12'-11"	
s1(E)	11	#4	6'-0"	
v(E)	20	#4	6'-3"	
v1(E)	4	#4	9'-10"	
v2(E)	28	#4	4'-9"	
v4(E)	28	#4	7'-0"	
w1(E)	14	#5	17'-0"	
z(E)	40	#6	7'-8"	
Concrete Box Culverts		Cu. Yd.	17.9	
Reinforcement Bars, Epoxy Coated		Pound	2880	
Expansion Bolts 3/4 Inch		Each	22	
Removal & Disposal of Unsuitable Material		Cu. Yd.	115	
Porous Granular Embankment		Cu. Yd.	75	

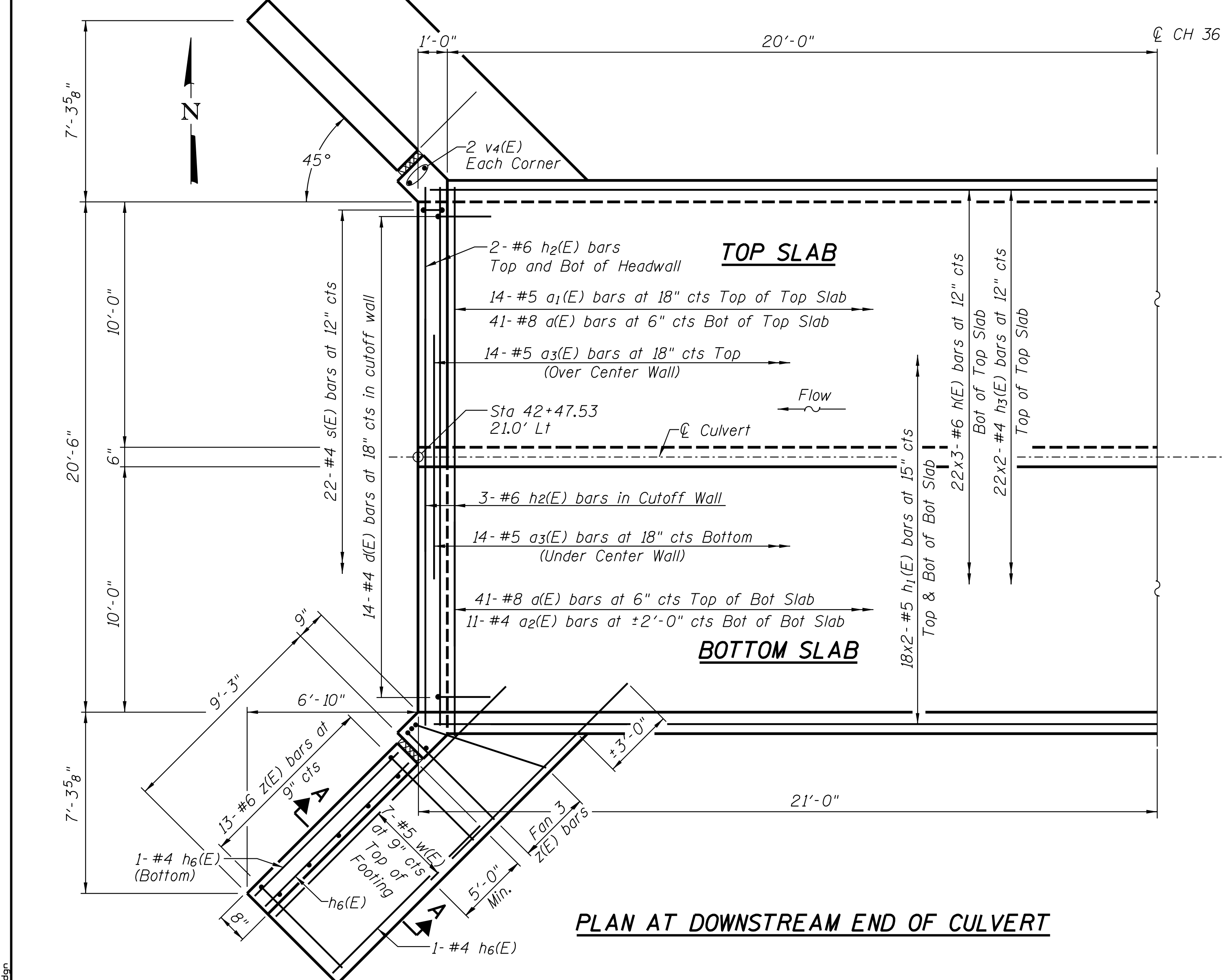
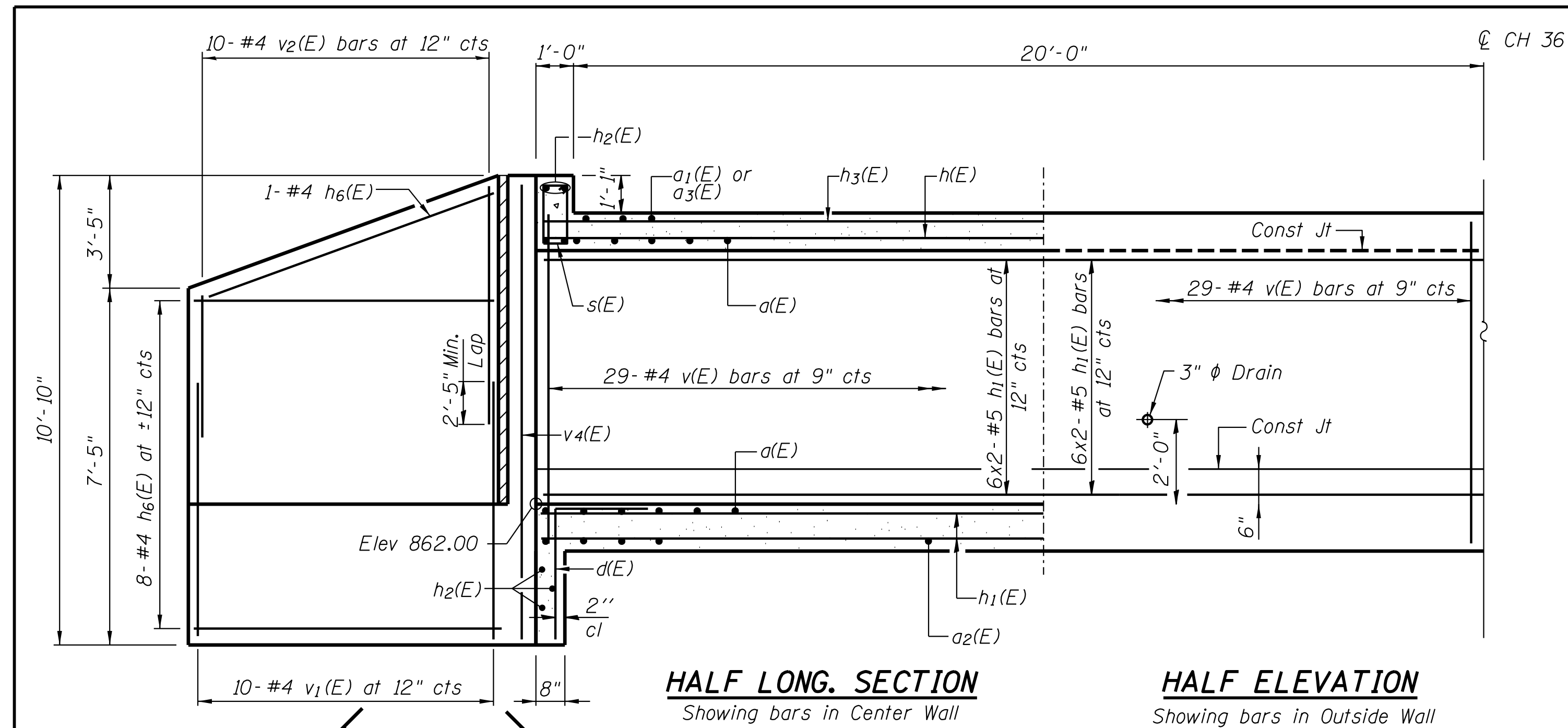
LOADING HS 20-44 & ALT.

KANE COUNTY DIVISION OF TRANSPORTATION

HARMONY ROAD OVER HARMONY CREEK CULVERT #3

F.A.S. RTE. CH 36	SECTION 14-00413-02-BR SN 045-5543	COUNTY KANE	TOTAL SHEETS 23	SHEET NO. 12
CONTRACT NO.			ILLINOIS FED. AID PROJECT	

sht details cul3.dgn



DESIGN STRESSES

$f_y = 60,000 \text{ psi}$
 $f'_c = 3,500 \text{ psi}$

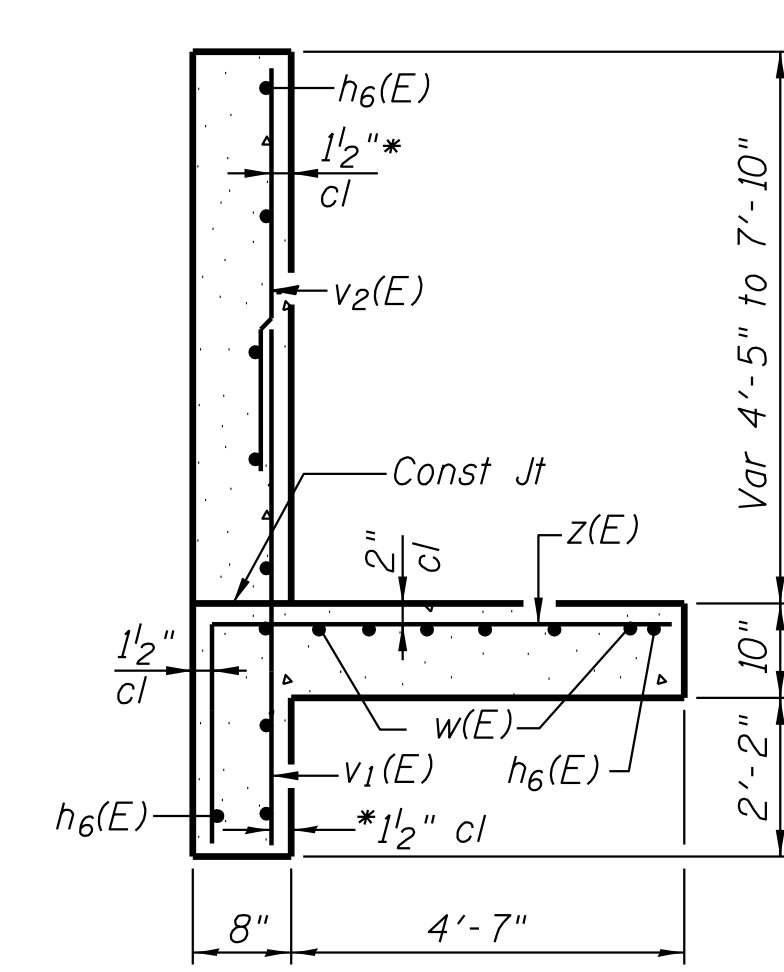
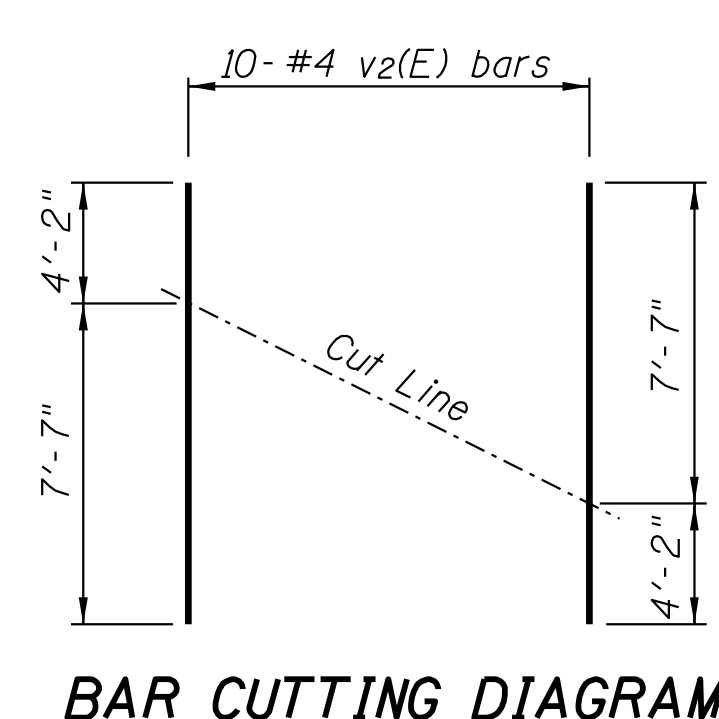
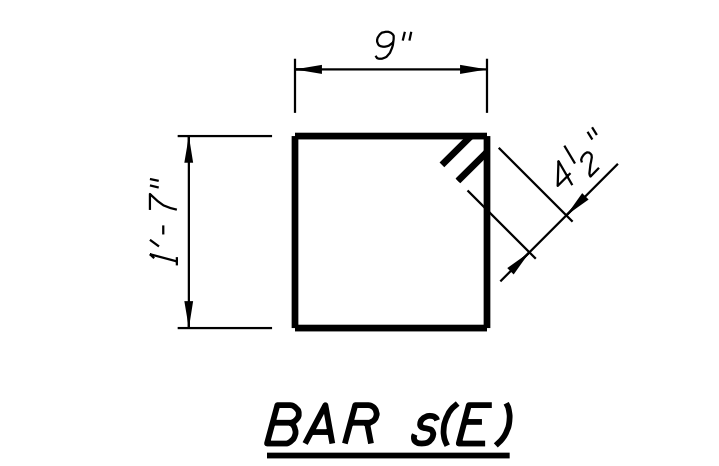
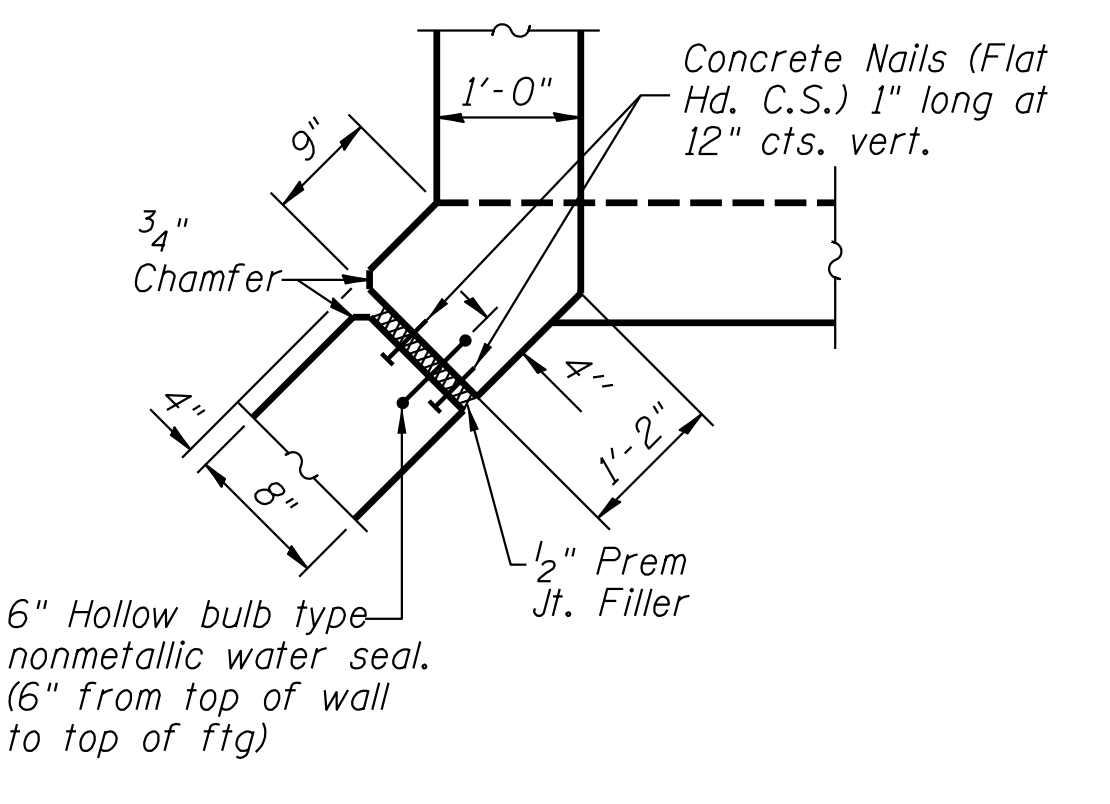
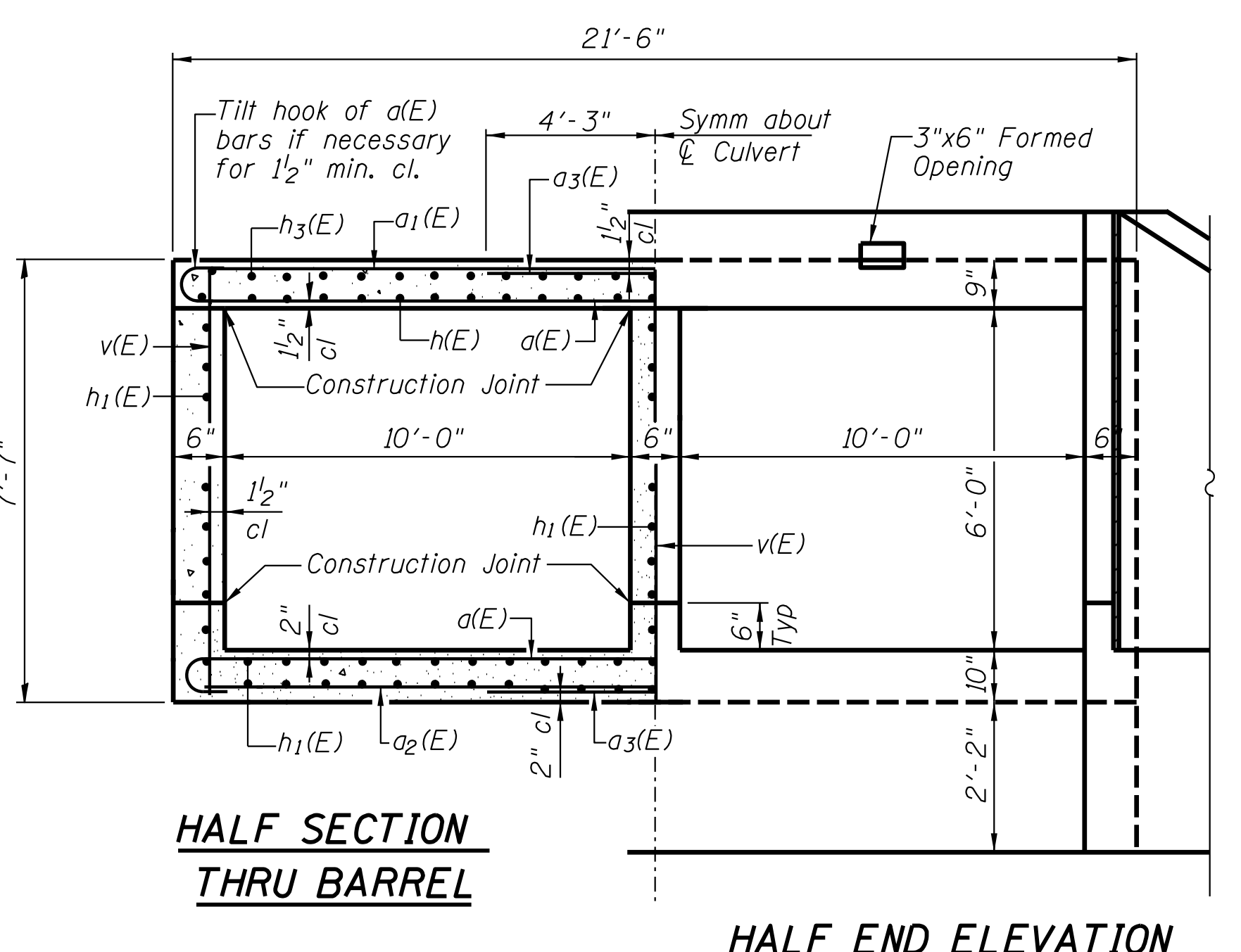
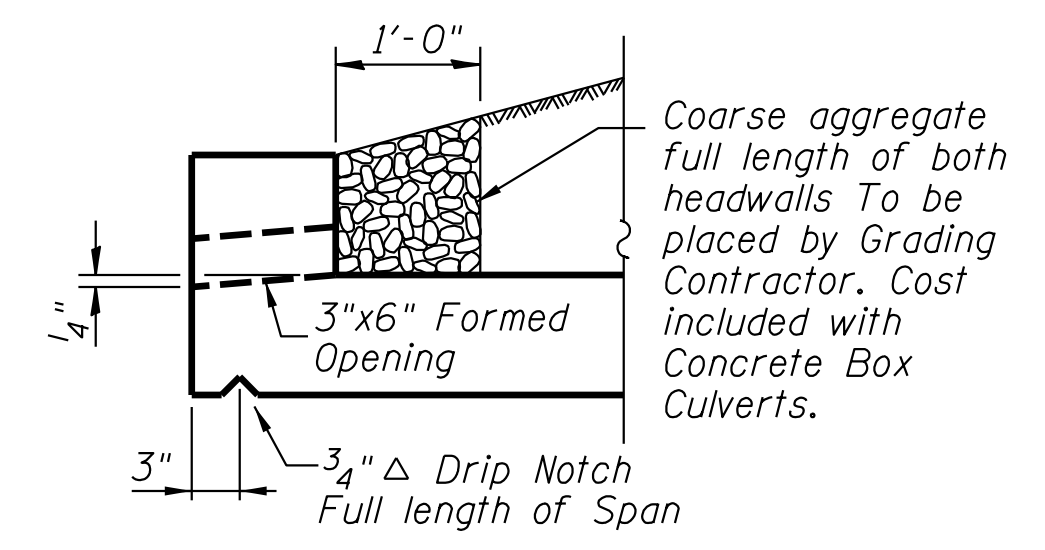
Max. Soil Pressure under footing = 2609 psf

LOADING HS 20-44 & ALT.

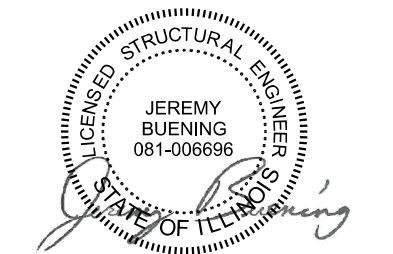
MINIMUM BAR LAP

(Barrel)

#4 bar = 1'-10"
 #5 bar = 2'-3"
 #6 bar = 2'-9"



* $v_2(E)$ bars shall not be placed more than $1\frac{1}{2}$ " cl. from back face of wingwall.



Jeremy Buening, P.E., S.E. Date 4/7/14
 Expires 11/30/2014

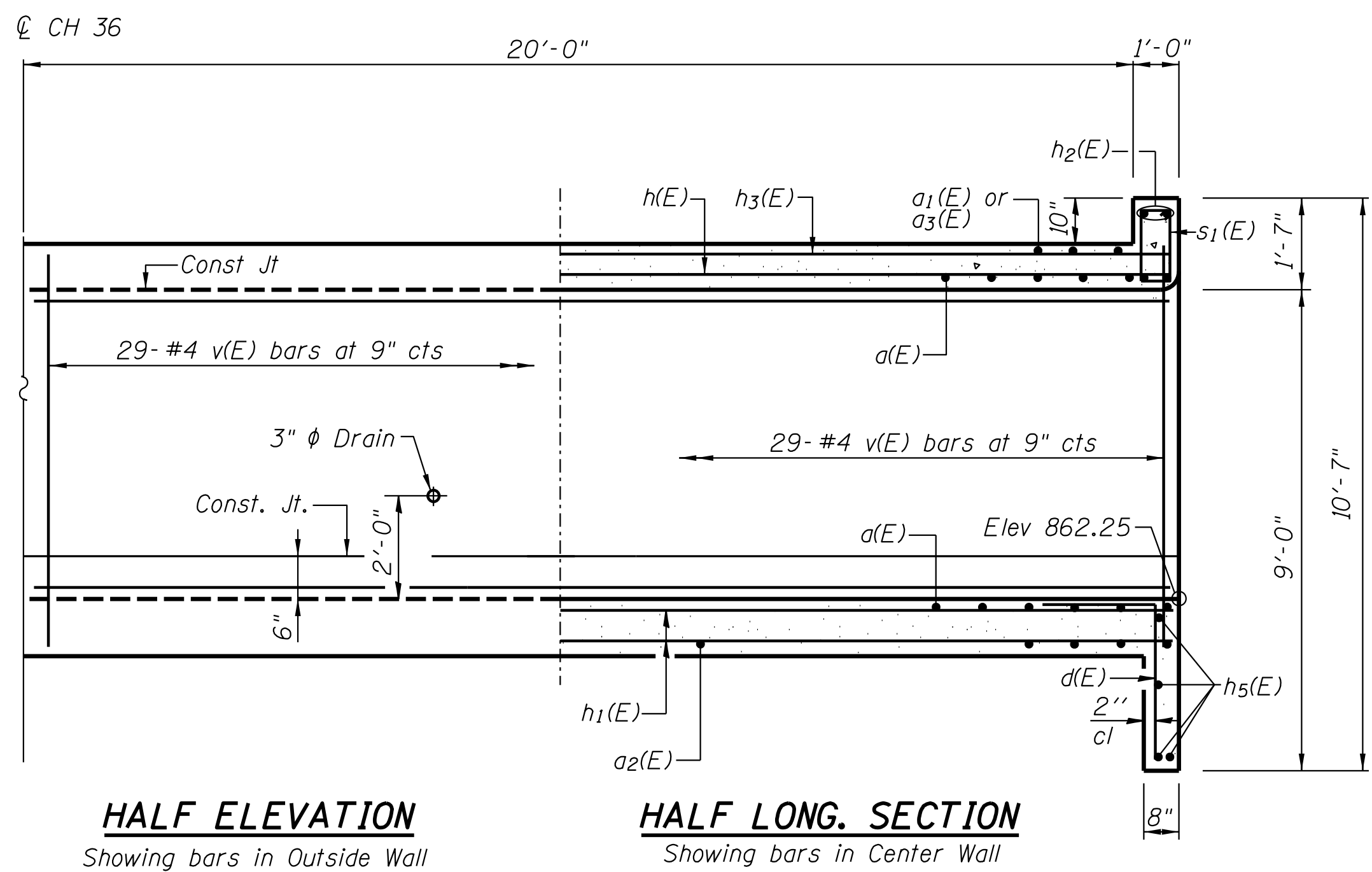
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DRAWN RLK	REVISOR -	
PLOT SCALE = 2.0000' / 1"	CHECKED JMB	REVISOR -
PLOT DATE = 5/12/2014	DATE	REVISOR -

KANE COUNTY
DIVISION OF TRANSPORTATION

HARMONY ROAD OVER HARMONY CREEK
CULVERT DETAILS
CULVERT #4

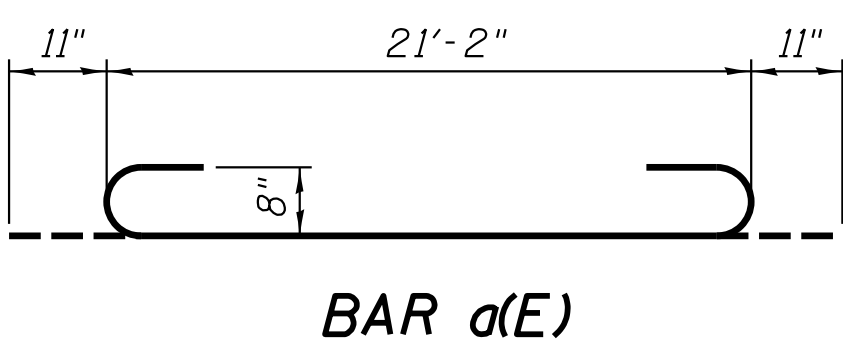
SCALE: NONE SHEET NO. 1 OF 2 SHEETS STA. TO STA.

F.A.S. RTE. CH 36	SECTION 14-00413-02-BR SN 045-5544	COUNTY KANE	TOTAL SHEETS 23	SHEET NO. 13
ILLINOIS FED. AID PROJECT			CONTRACT NO.	

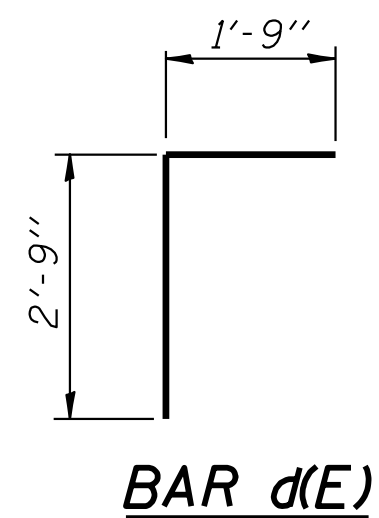


HALF ELEVATION
Showing bars in Outside Wall

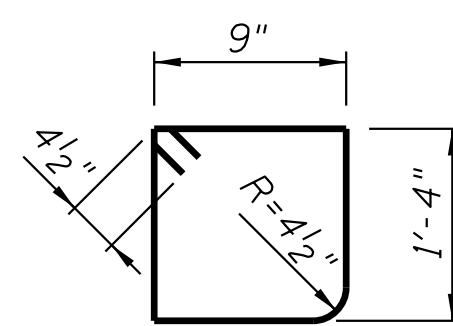
HALF LONG. SECTION
Showing bars in Center Wall



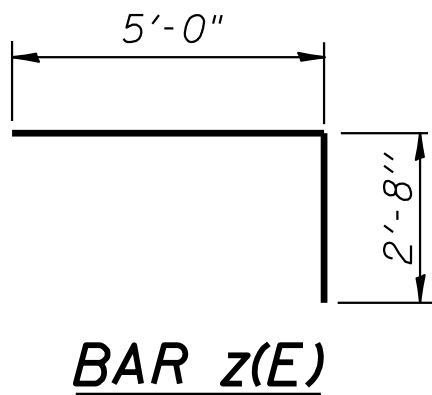
BAR a(E)



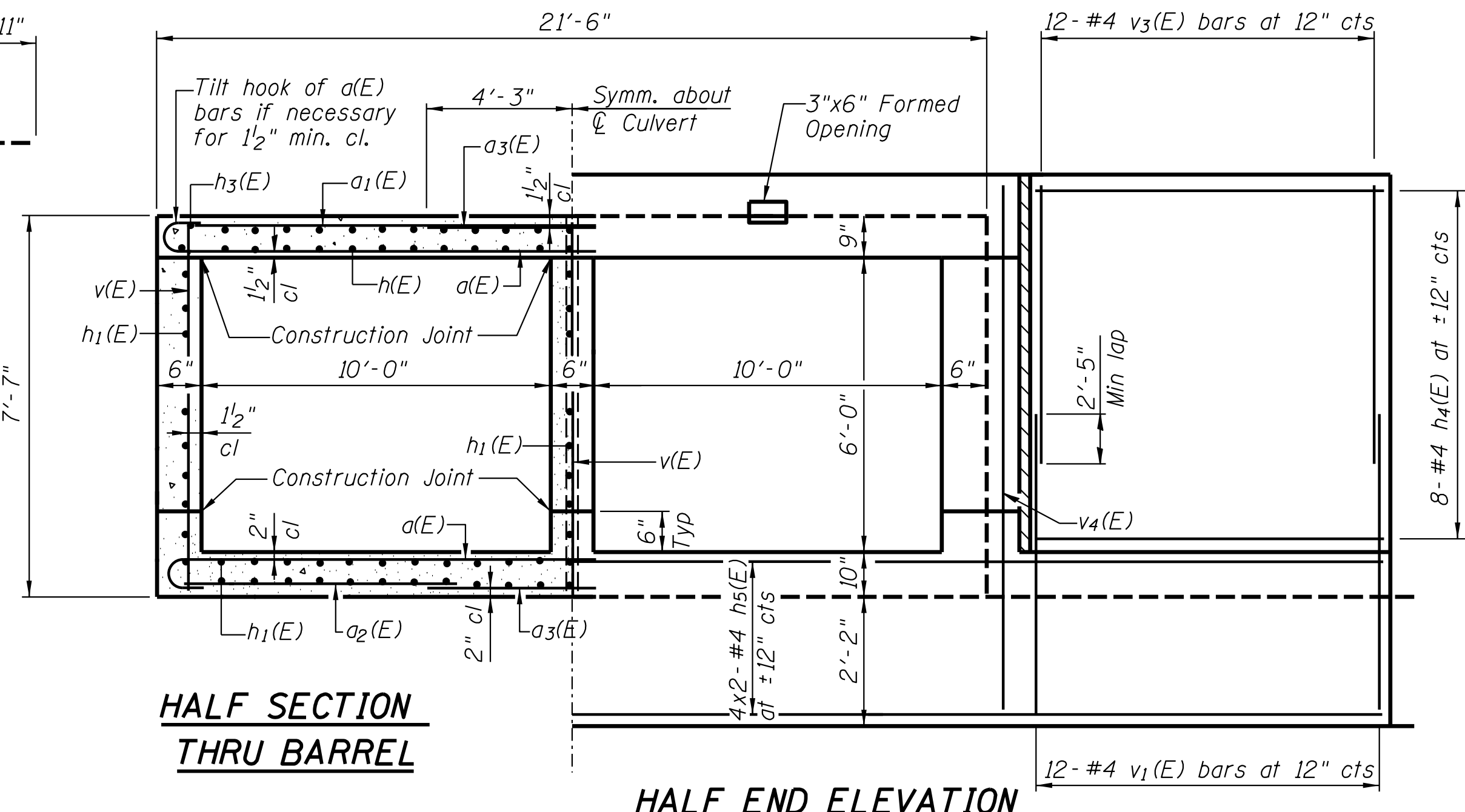
BAR d(E)



BAR s1(E)

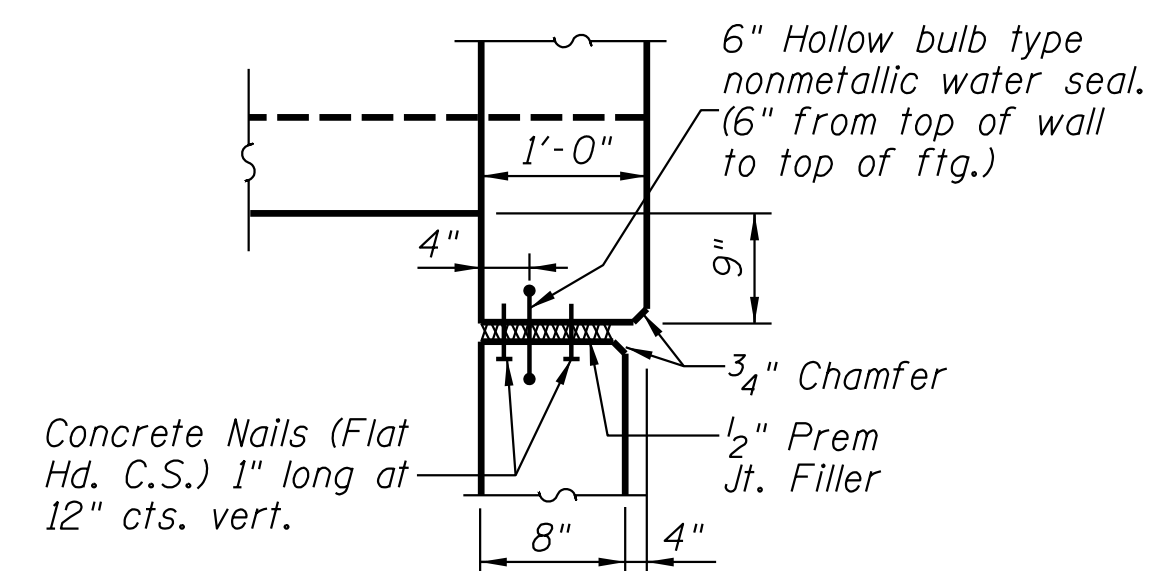


BAR z(E)

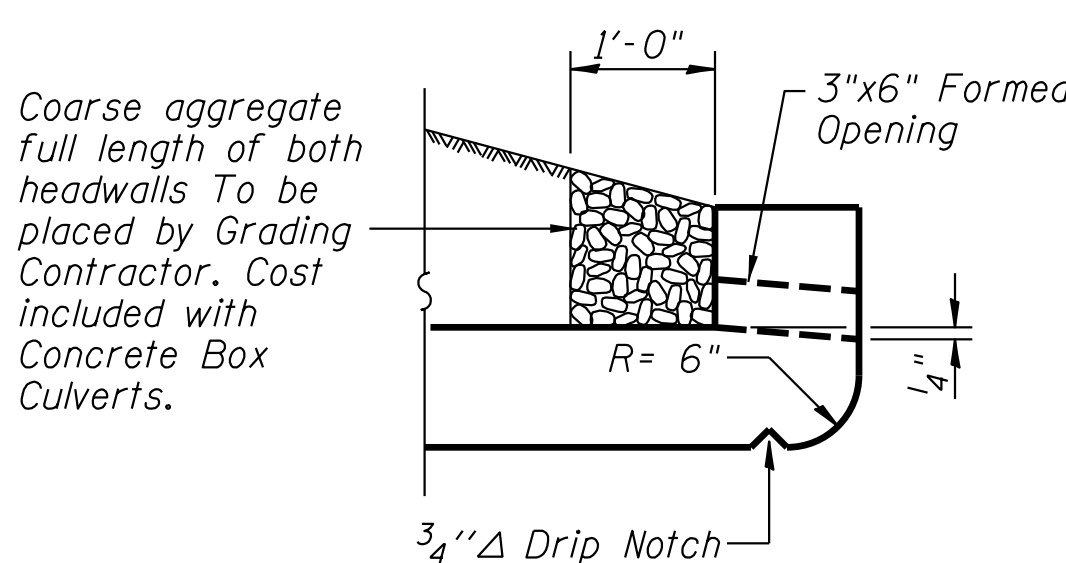


HALF SECTION THRU BARREL

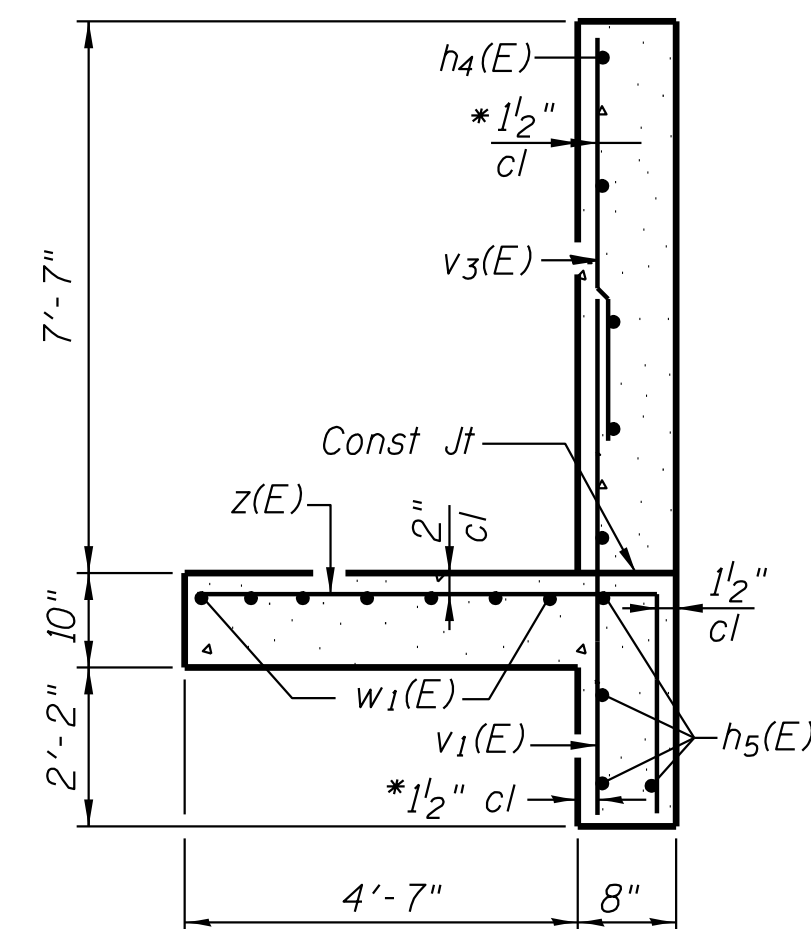
HALF END ELEVATION



CORNER DETAIL



DRAIN DETAIL AT UPSTREAM END



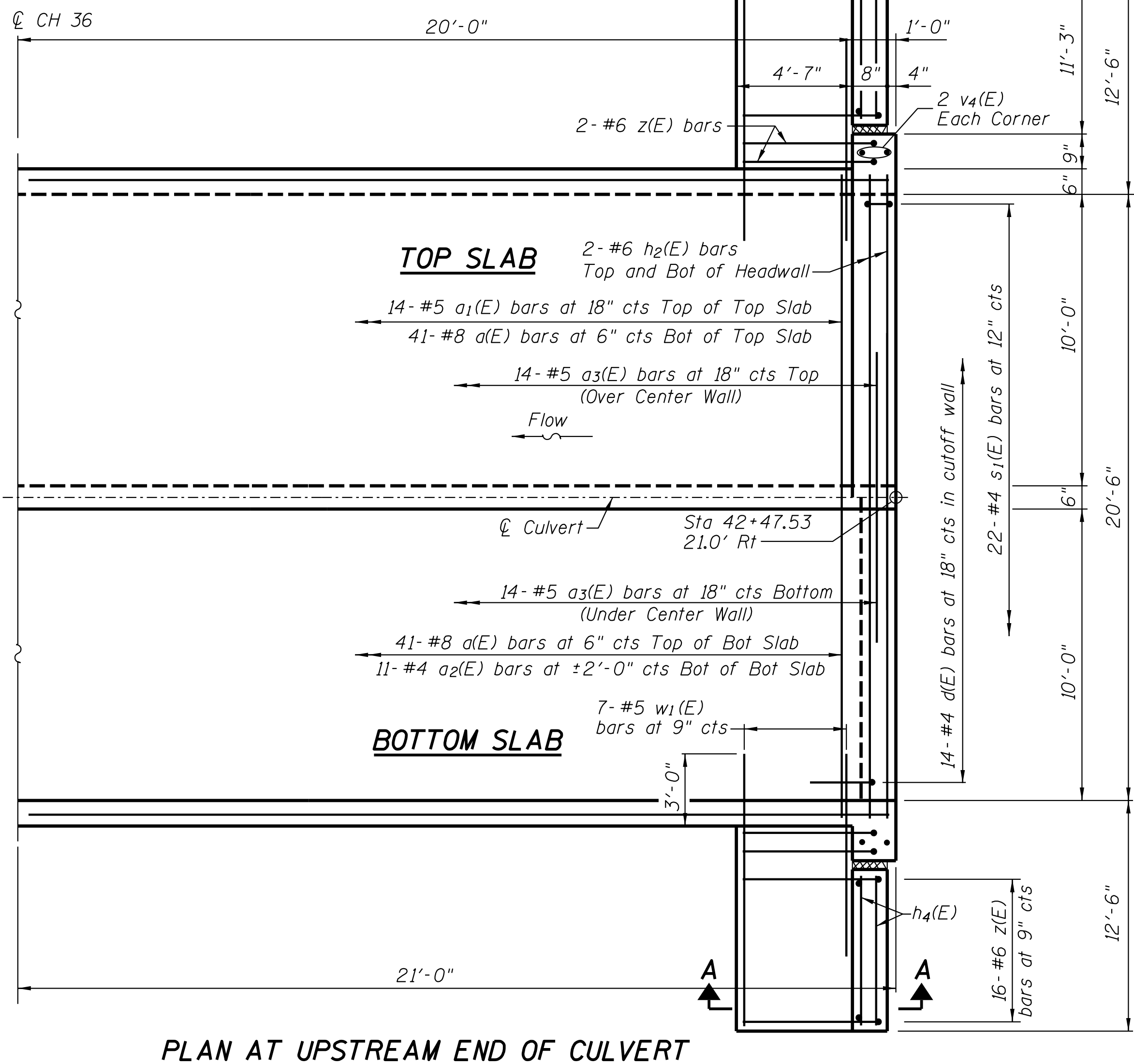
SECTION A-A

* v bars shall not be placed more than 1 1/2 inch cl. from back face of wingwall.

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	164	#8	23'-0"	
a1(E)	28	#5	21'-3"	
a2(E)	22	#4	21'-3"	
a3(E)	56	#5	8'-6"	
d(E)	28	#4	4'-6"	
h(E)	66	#6	15'-9"	
h1(E)	108	#5	22'-0"	
h2(E)	11	#6	21'-3"	
h3(E)	44	#4	21'-9"	
h4(E)	16	#4	11'-0"	
h5(E)	8	#4	23'-6"	
h6(E)	22	#4	9'-0"	
s(E)	22	#4	5'-5"	
s1(E)	22	#4	4'-10"	
v(E)	174	#4	7'-4"	
v1(E)	24	#4	5'-3"	
v2(E)	20	#4	11'-9"	
v3(E)	24	#4	7'-4"	
v4(E)	8	#4	10'-4"	
w(E)	14	#5	13'-4"	
w1(E)	14	#5	15'-0"	
z(E)	68	#6	7'-8"	
Concrete Box Culverts		Cu. Yd.		89.0
Reinforcement Bars, Epoxy Coated		Pound		19,610

Bars indicated thus, 12 x 4 - #5 etc. indicates 12 lines of bars with 4 lengths per line.



PLAN AT UPSTREAM END OF CULVERT

USER NAME = dwoznierski	DESIGNED ACB	REVISED -
PLOT SCALE = 2,0000' / 1"	DRAWN RLK	REVISED -
PLOT DATE = 5/12/2014	CHECKED JMB	REVISED -
	DATE	REVISED -

KANE COUNTY DIVISION OF TRANSPORTATION

HARMONY ROAD OVER HARMONY CREEK CULVERT DETAILS CULVERT #4

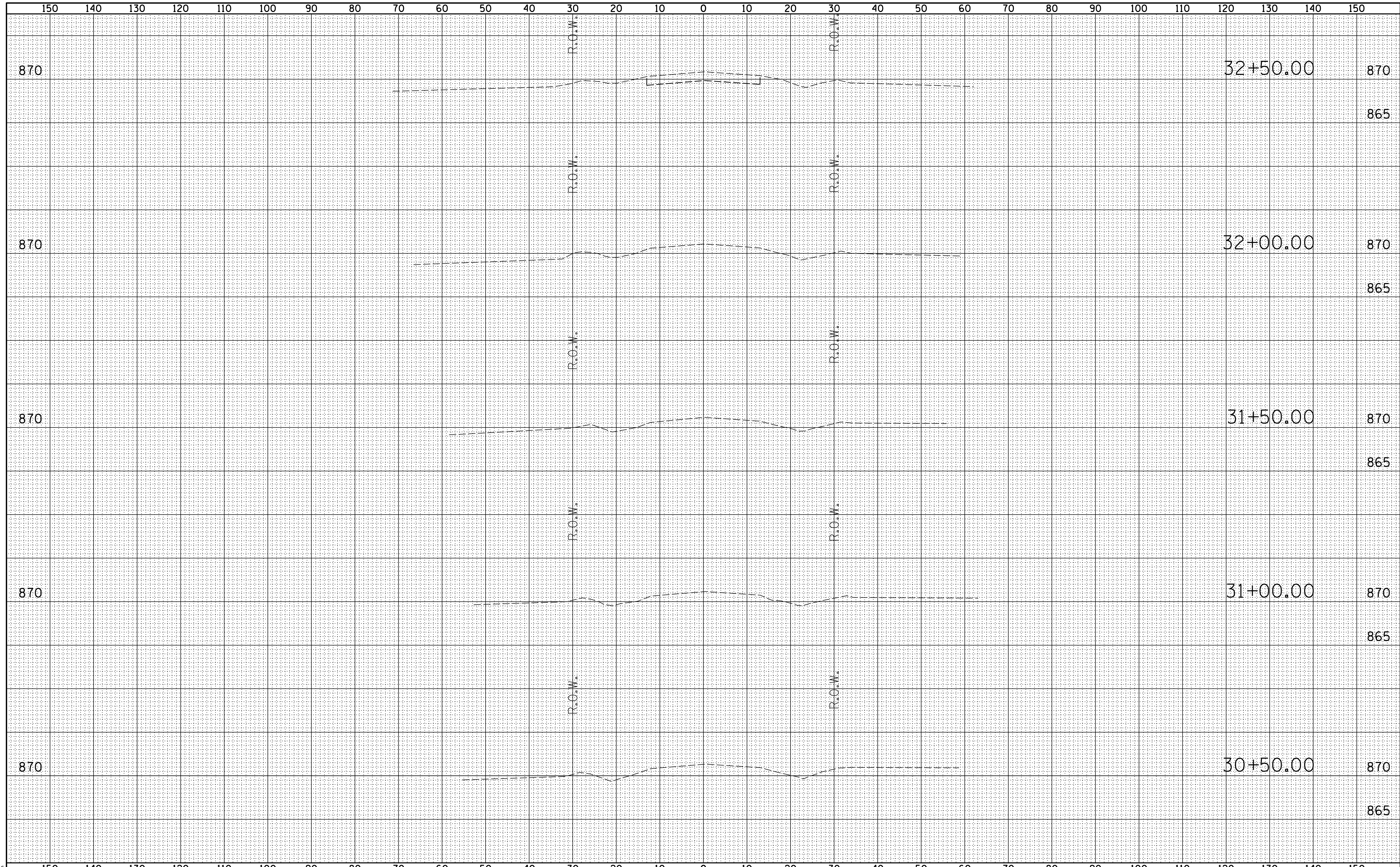
SCALE: NONE SHEET NO. 2 OF 2 SHEETS STA. TO STA.

F.A.S. RTE. CH 36	SECTION 14-00413-02-BR SN 045-5544	COUNTY KANE	TOTAL SHEETS 23	SHEET NO. 14
CONTRACT NO.			ILLINOIS FED. AID PROJECT	

sht_details cul4.dgn

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS		
	CHECKED		



rs-shh-cv13.dgn

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

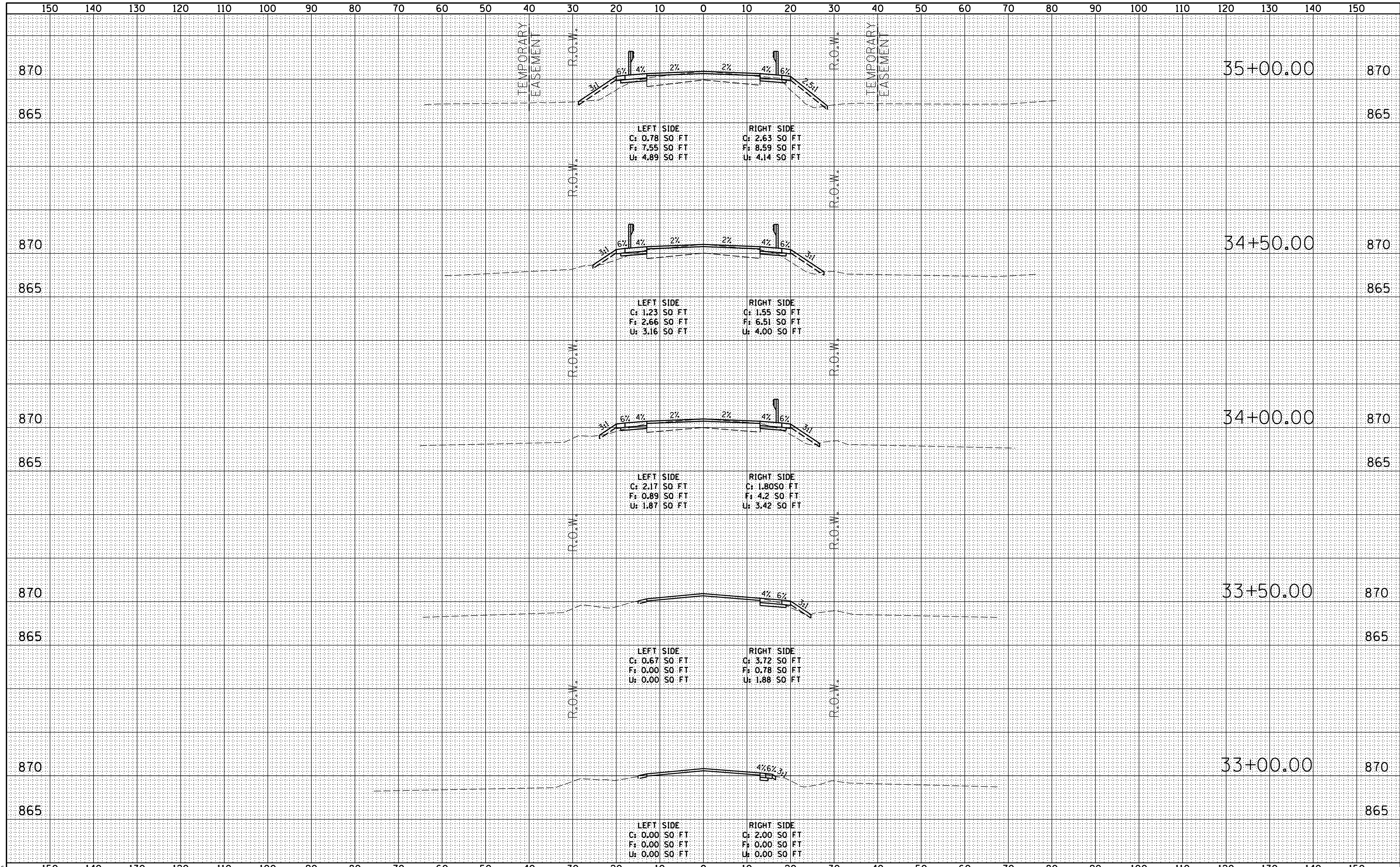
**HARMONY ROAD OVER HARMONY CREEK
CROSS SECTIONS
CULVERT #3**

SCALE: SHEET NO. 1 OF 4 SHEETS STA. 30+50.00 TO STA. 32+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	15
SN 045-5543		CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



rs-shk-cul3.dgn

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
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PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

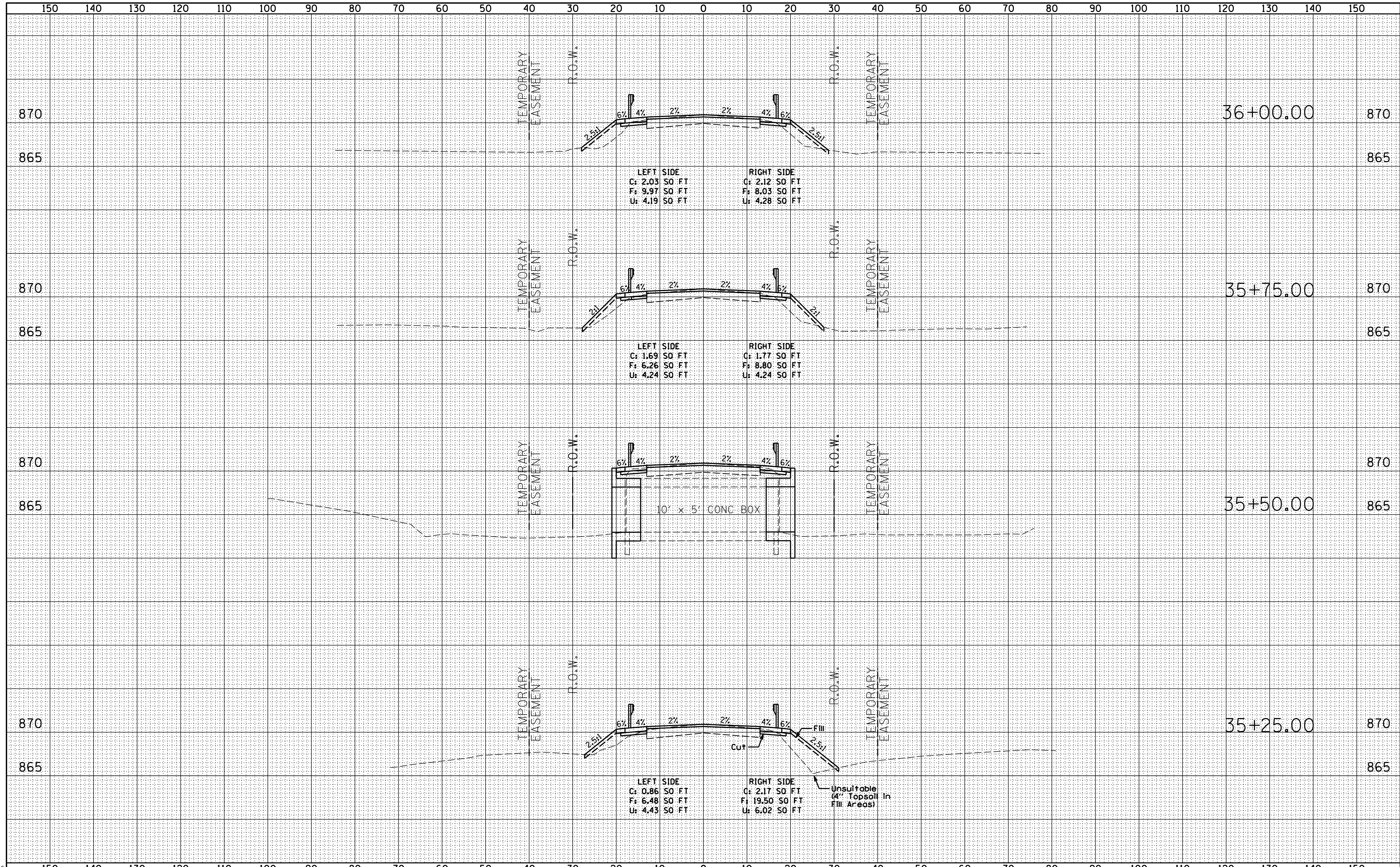
**KANE COUNTY
DIVISION OF TRANSPORTATION**

HARMONY ROAD OVER HARMONY CREEK	
CROSS SECTIONS	
CULVERT #3	
SCALE:	SHEET NO. 2 OF 4 SHEETS
	STA. 33+00.00 TO STA. 35+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	16
	SN 045-5543	CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
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DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



rs-shh-cv13.dgn

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
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PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

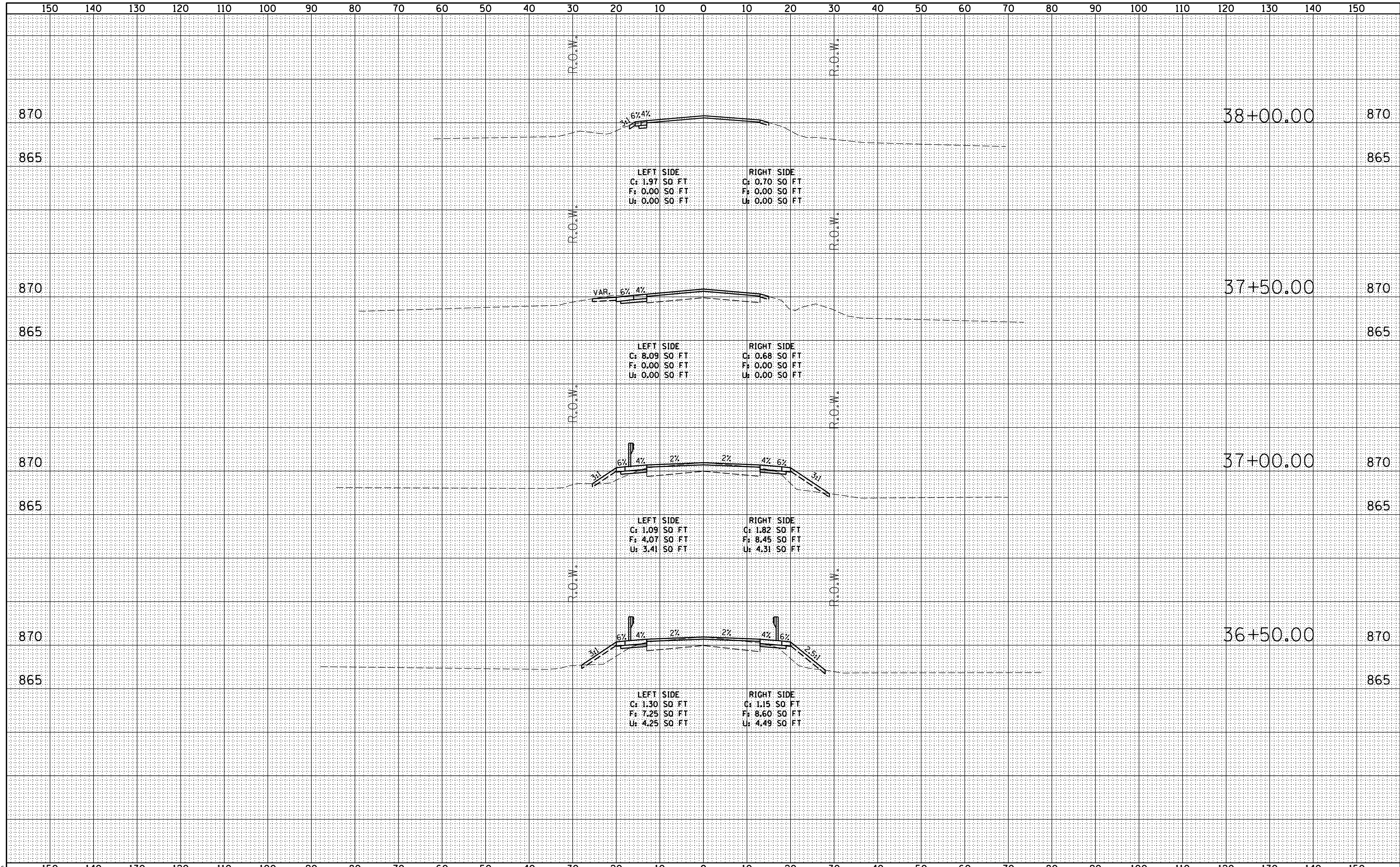
**HARMONY ROAD OVER HARMONY CREEK
CROSS SECTIONS
CULVERT #3**

SCALE: SHEET NO. 3 OF 4 SHEETS STA. 35+50.00 TO STA. 37+00.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	17
SN 045-5543			CONTRACT NO.	
FED. ROAD DIST. NO.			ILLINOIS FED. AID PROJECT	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
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DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
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USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
PLOT SCALE = 10.0000' / in.	CHECKED - SPF	REVISED -
PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

**KANE COUNTY
DIVISION OF TRANSPORTATION**

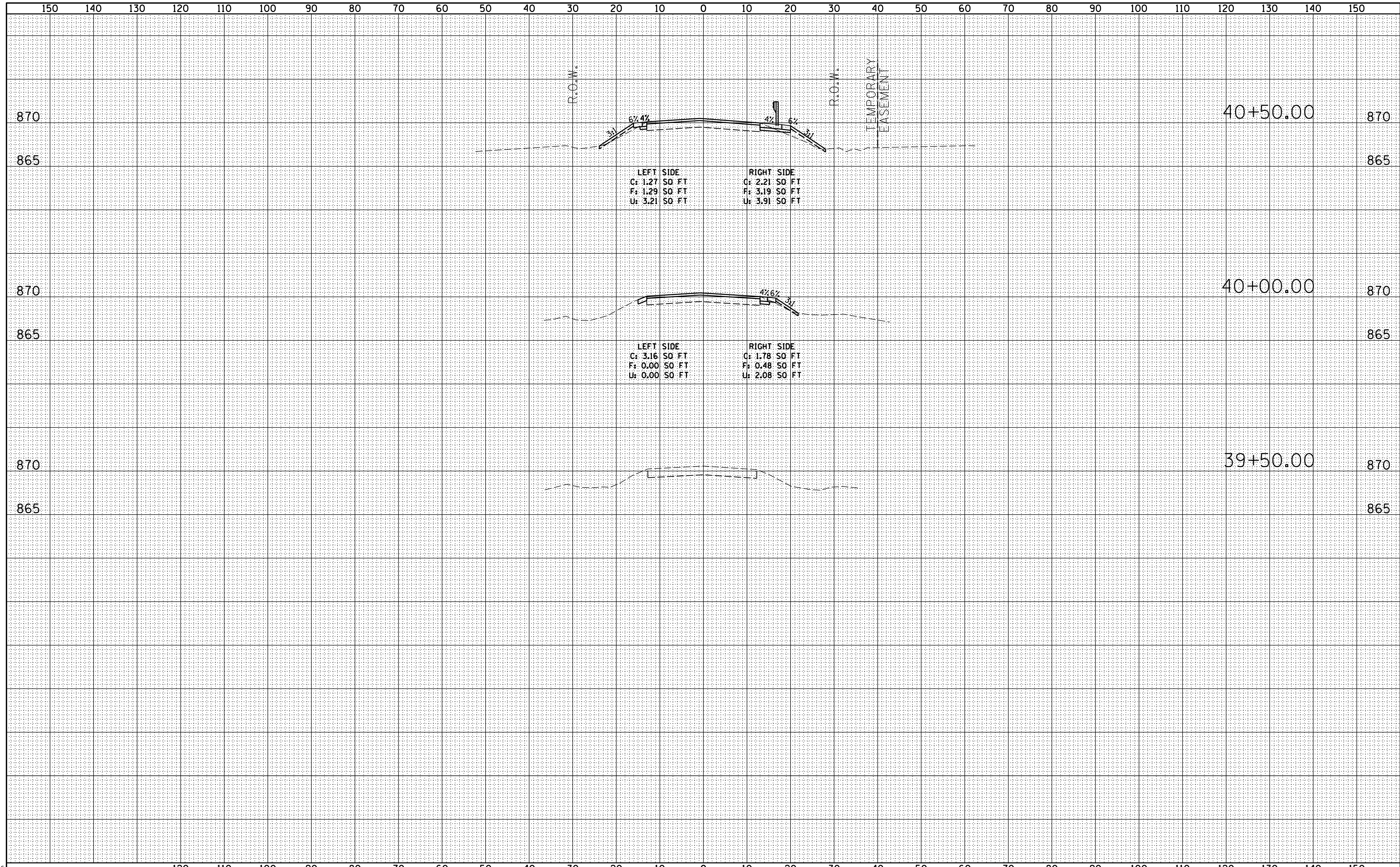
**HARMONY ROAD OVER HARMONY CREEK
CROSS SECTIONS
CULVERT #3**

SCALE: SHEET NO. 4 OF 4 SHEETS STA. 37+50.00 TO STA. 39+50.00

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	18
	SN 045-5543			CONTRACT NO.
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

DATE	
BY	
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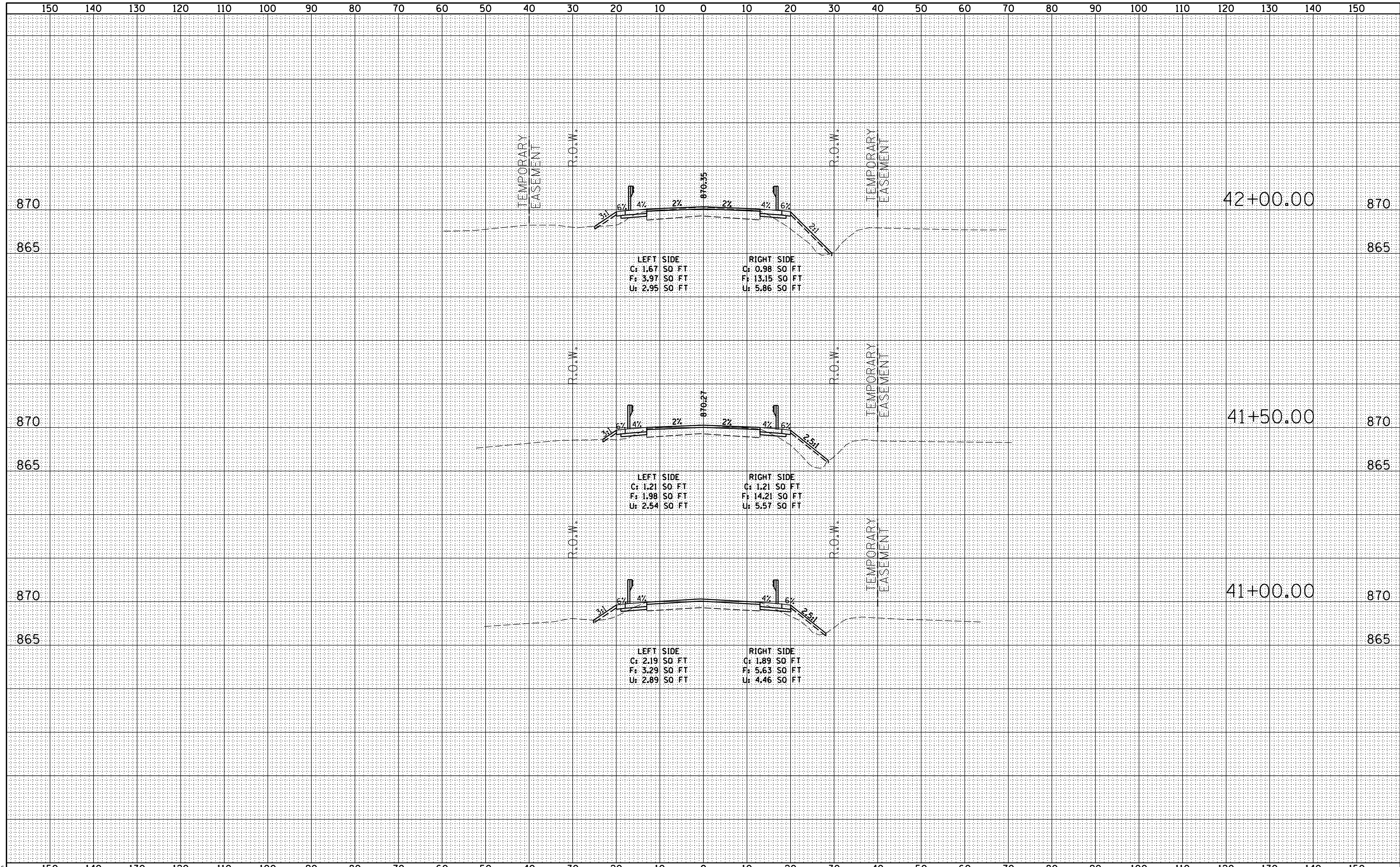
DATE	
BY	
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AREAS	
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USER NAME = dwozniarski	DESIGNED - SPF	REVISED -	KANE COUNTY DIVISION OF TRANSPORTATION	HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK				F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = 10.000000' / in.	DRAWN - KWK	REVISED -		CROSS SECTIONS CULVERT #4				14-00413-02-BR	KANE	23	19	
PLOT DATE = 5/12/2014	CHECKED - SPF	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA. 40+50.00	TO STA. 42+00.00	CONTRACT NO.		
	DATE - 10-21-11	REVISED -		FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT								

DATE	
BY	
FINAL SURVEY	
SURVEYED	
NOTE BOOK	
NO.	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	

DATE	
BY	
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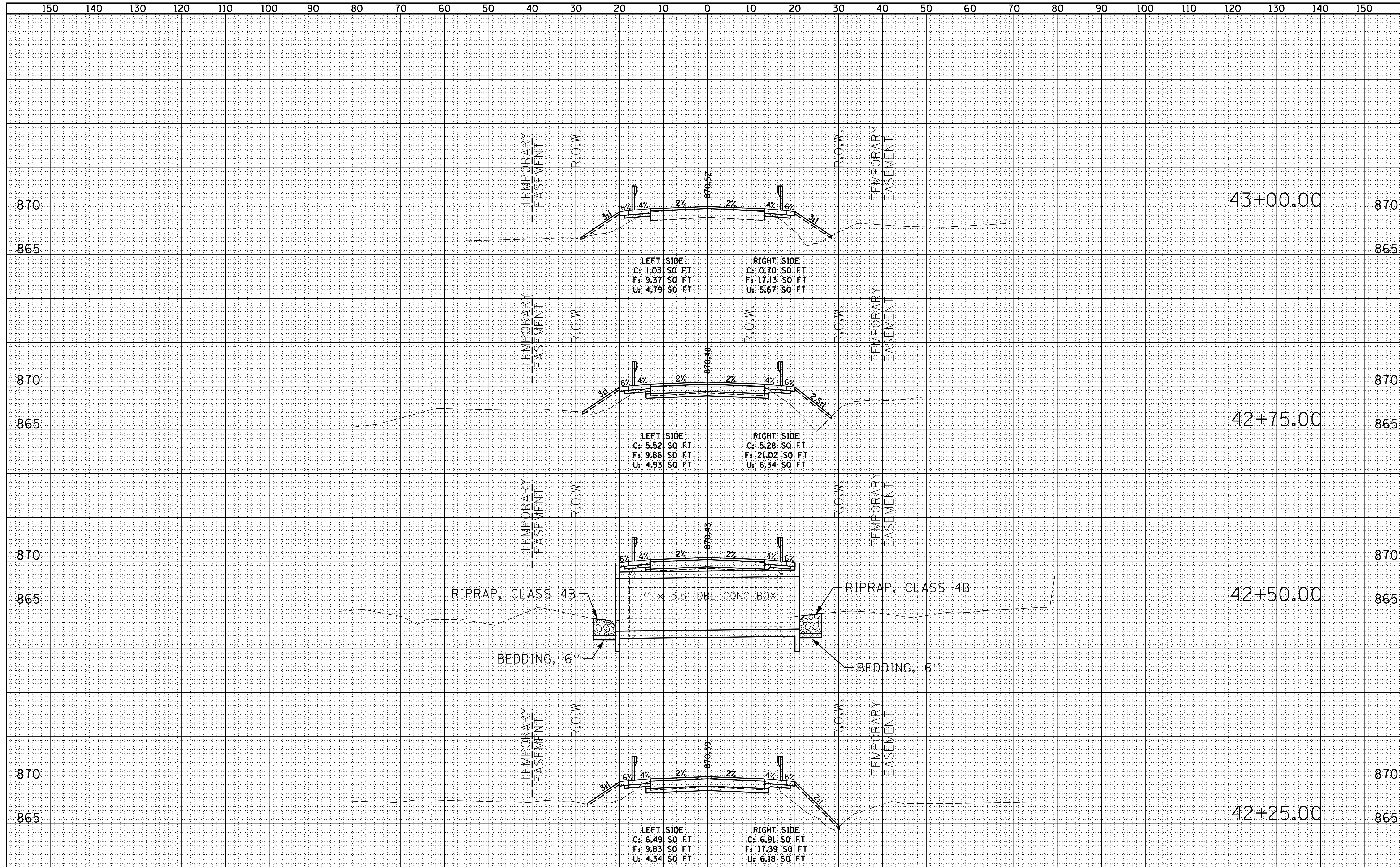


rs-shh-culv.dgn

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -	KANE COUNTY DIVISION OF TRANSPORTATION	HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK CROSS SECTIONS CULVERT #4				F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
PLOT SCALE = 10.000000' / in.	DRAWN - KWK	REVISED -		SCALE:	SHEET NO.	OF	SHEETS	STA. 40+50.00	TO STA. 42+00.00	14-00413-02-BR	KANE	23	20
PLOT DATE = 5/12/2014	CHECKED - SPF	REVISED -								SN 045-5544			
	DATE - 10-21-11	REVISED -								CONTRACT NO. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT			

DATE	
BY	
FINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED

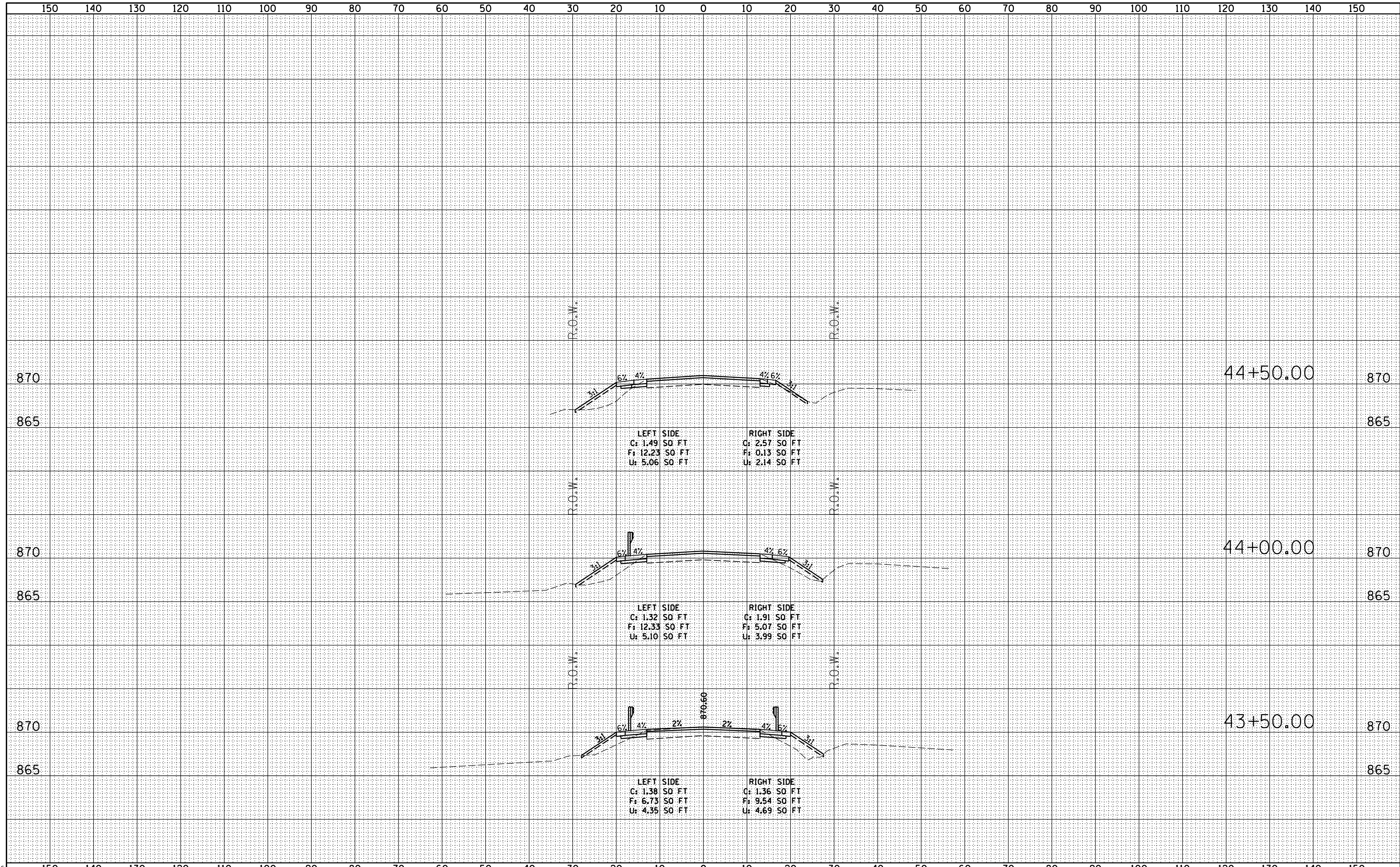
DATE	
BY	
ORIGINAL SURVEY	SURVEYED
NOTE BOOK	PLOTTED
NO.	TEMPLATE
	AREAS
	CHECKED



USER NAME = dwozniarski DESIGNED - SPF DRAWN - KWK CHECKED - SPF DATE - 10-21-11	REVISED - REVISED - REVISED - REVISED -	KANE COUNTY DIVISION OF TRANSPORTATION	HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK CROSS SECTIONS CULVERT #4	SCALE: SHEET NO. OF SHEETS STA. 42+50.00 TO STA. 44+00.00	F.A. RTE. SECTION COUNTY TOTAL SHEETS SHEET NO. 14-00413-02-BR KANE 23 21 SN 045-5544 CONTRACT NO. FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT
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DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
SURVEYED	
PLOTTED	
TEMPLATE	
NOTE BOOK	
AREAS CHECKED	
NO.	



rs-shh-culv4.dgn

USER NAME = dwozniarski	DESIGNED - SPF	REVISED -
	DRAWN - KWK	REVISED -
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PLOT DATE = 5/12/2014	DATE - 10-21-11	REVISED -

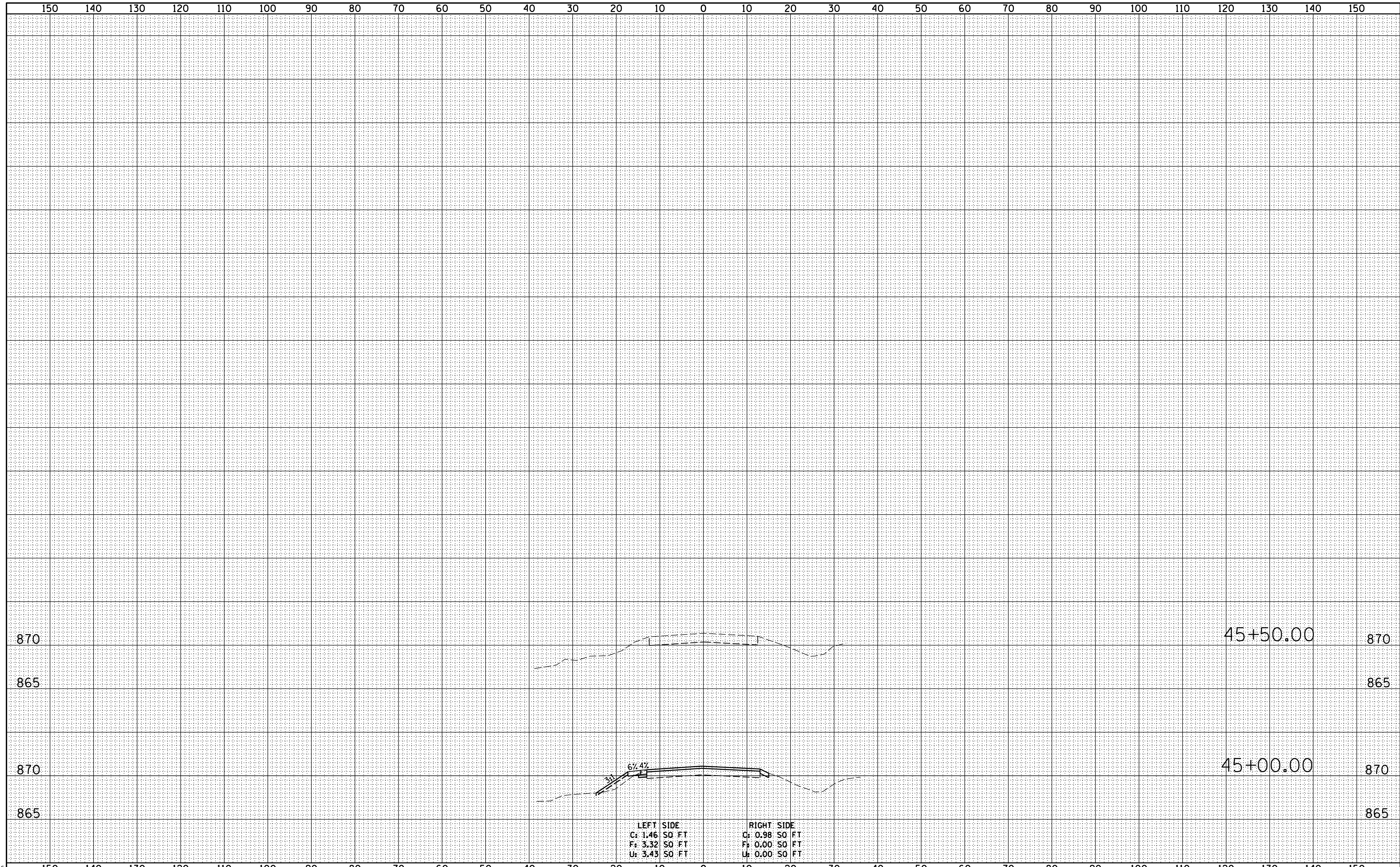
**KANE COUNTY
DIVISION OF TRANSPORTATION**

HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK			
CROSS SECTIONS			
CULVERT #4			
SCALE:	SHEET NO.	OF SHEETS	STA. 44+46.90 TO STA. 44+46.90

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	14-00413-02-BR	KANE	23	22
SN 045-5544		CONTRACT NO.		
FED. ROAD DIST. NO.		ILLINOIS FED. AID PROJECT		

FINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
NO.	TEMPLATE	
	AREAS	
	CHECKED	

ORIGINAL SURVEY	SURVEYED	DATE
NOTE BOOK	PLOTTED	BY
NO.	TEMPLATE	
	AREAS	
	CHECKED	



LEFT SIDE
 C: 1.46 SO FT
 F: 3.32 SO FT
 U: 3.43 SO FT

RIGHT SIDE
 C: 0.98 SO FT
 F: 0.00 SO FT
 U: 0.00 SO FT

KANE COUNTY DIVISION OF TRANSPORTATION	HARMONY ROAD OVER TRIBUTARY TO HARMONY CREEK		F.A. RTÉ.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CROSS SECTIONS CULVERT #4		14-00413-02-BR	KANE	23	23	
SCALE:	SHEET NO.	OF SHEETS	STA. 44+46.90	TO STA. 44+46.90	FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT		
USER NAME = dwozniarski	DESIGNED - SPF	REVISÉD -					
PLOT SCALE = 10.000000" / 1in.	DRAWN - KWK	REVISÉD -					
PLOT DATE = 5/12/2014	CHECKED - SPF	REVISÉD -					
	DATE - 10-21-11	REVISÉD -					