

PLANS FOR PROPOSED NON-MFT STRUCTURE REPLACEMENT

F.A.S. 172 (C.H. 11) SUYDAM ROAD

SECTION 05-00211-00-BR

DEKALB COUNTY

S.N. 019-3064

INDEX OF SHEETS

- COVER SHEET
- SUMMARY AND SCHEDULE OF QUANTITIES AND TYPICAL SECTIONS
- PLAN AND PROFILE
- ROADWAY CROSS SECTIONS
- GENERAL PLAN AND ELEVATION OF BRIDGE
- DECK ELEVATIONS
- 8-9. SUPERSTRUCTURE DETAILS
- STEEL RAILING, TYPE SM
- BEARING DETAILS
- STRUCTURAL STEEL DETAILS
- SUBSTRUCTURE - ABUTMENTS
- SUBSTRUCTURE DETAILS
- PILING DETAILS
- EROSION & SEDIMENT CONTROL PLAN

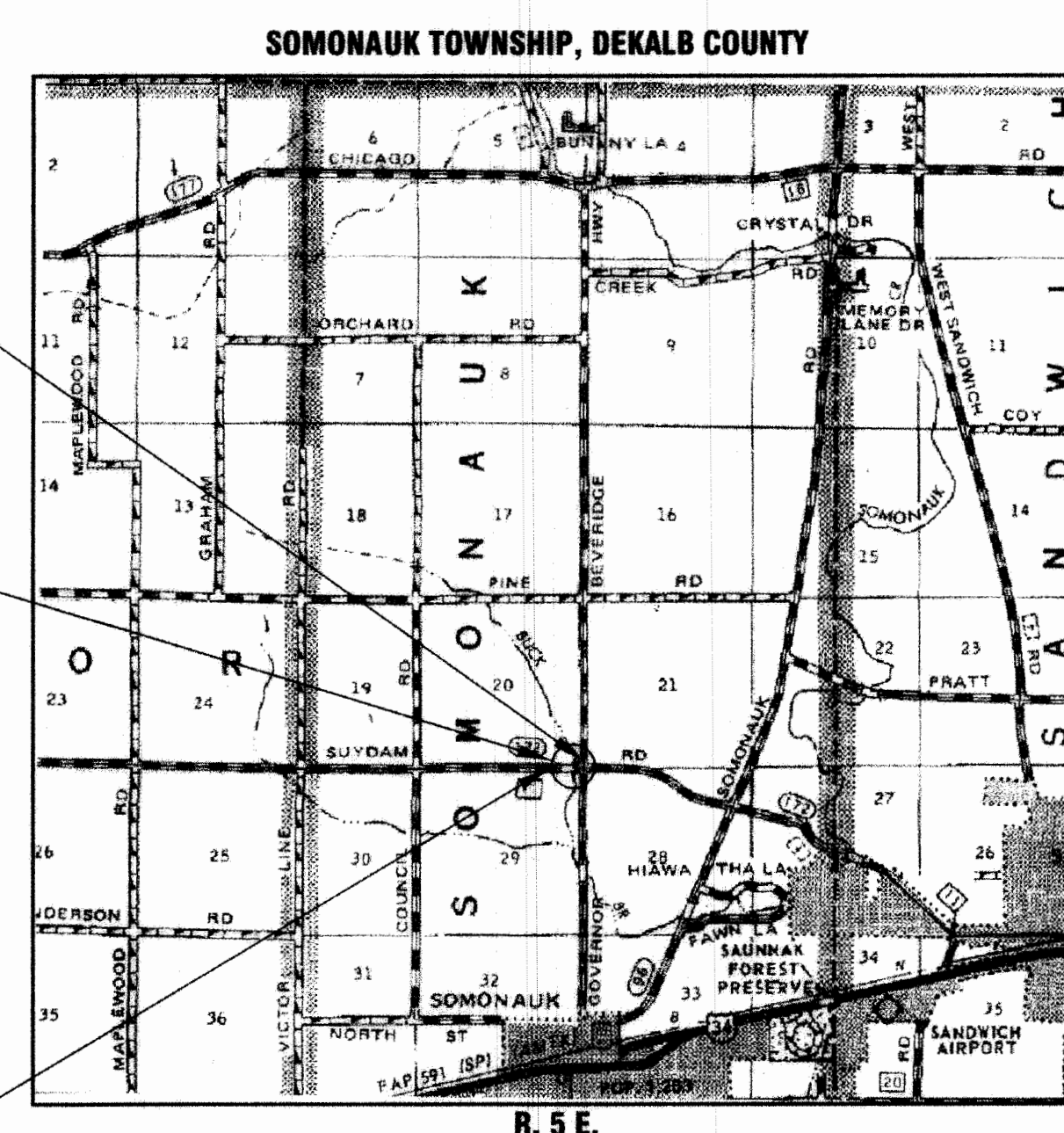
STANDARDS

- | | |
|-----------|--|
| 000001-06 | STANDARD SYMBOLS, ABBREVIATIONS, AND PATTERNS |
| 001001-02 | AREAS OF REINFORCEMENT BARS |
| 280001-07 | TEMPORARY EROSION CONTROL SYSTEMS |
| 515001-03 | NAME PLATE FOR BRIDGES |
| 630201-06 | PCC/HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAIL |
| 630301-06 | SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS |
| 635006-03 | REFLECTOR AND TERMINAL MARKER PLACEMENT |
| 635011-02 | REFLECTOR MARKER AND MOUNTING DETAILS |
| 701006-05 | OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE |
| 701306-03 | LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS >45MPH |
| 701201-04 | LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS >45MPH |
| 701301-04 | LANE CLOSURE, 2L, 2W, SHORT TERM OPERATIONS |
| 701901-04 | TRAFFIC CONTROL DEVICES |
| BLR 21-9 | TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES |
| BLR 23-4 | TRAFFIC BARRIER TERMINAL, TYPE 1 |
| BLR 26-3 | STEEL PLATE BEAM GUARD RAIL - 27½" HEIGHT |
| BLR 27-1 | TRAFFIC BARRIER TERMINAL, TYPE 5A |

SECTION 05-00211-00-BR
ENDS AT STA. 12+00

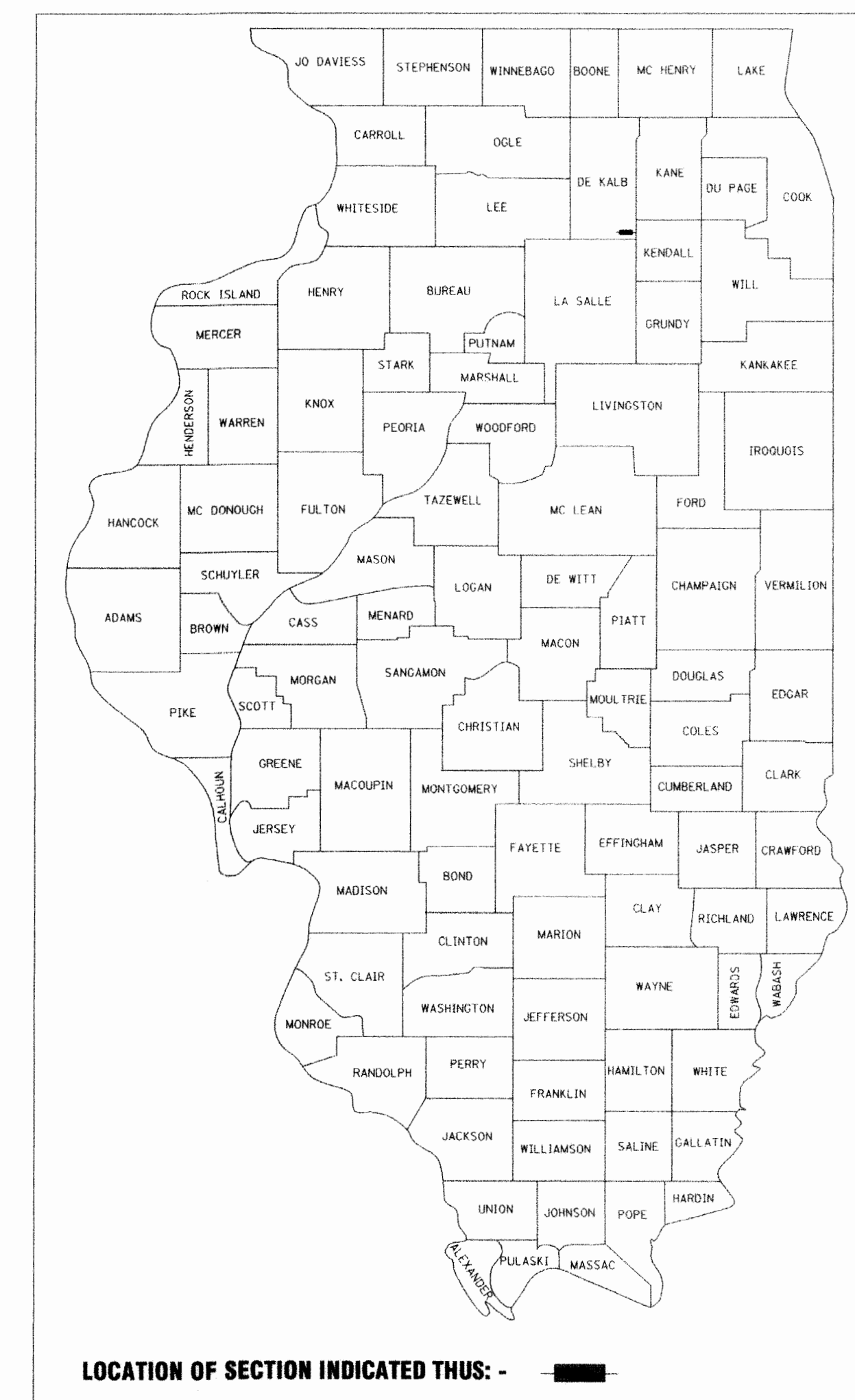
SECTION 05-00211-00-BR
INCLUDES THE REMOVAL OF AN
EXISTING SINGLE SPAN CONCRETE BRIDGE
(EXIST. SN 019-3016), AND REPLACEMENT
WITH A SINGLE SPAN REINFORCED
CONCRETE SLAB BRIDGE ON CLOSED PILE
BENT ABUTMENTS (PROP. SN 019-3064).
40'-6" BK.-BK. ABUTS.
ALSO INCLUDED IS NECESSARY ROADWAY
APPROACH WORK.

SECTION 05-00211-00-BR
BEGINS AT STA. 6+25



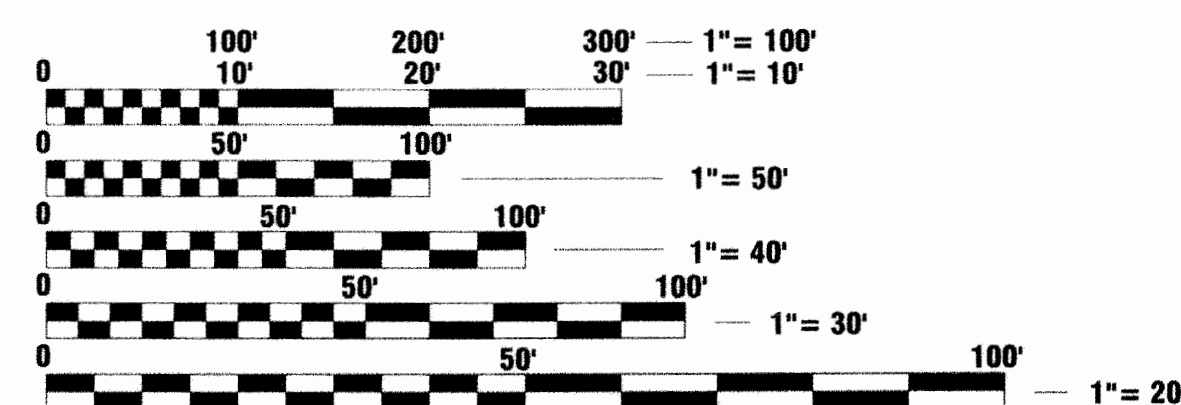
LOCATION MAP

GROSS LENGTH OF SECTION = 575 FEET (0.11 MILE)
NET LENGTH OF SECTION = 575 FEET (0.11 MILE)



DESIGN CRITERIA

ROADWAY	DESIGN CLASSIFICATION	ADT 2015	ADT 2035	DESIGN SPEED
SUYDAM	MAJOR COLLECTOR NON-URBAN	800	900	50



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



Scott A. Brown 3/10/15
DATE
SCOTT A. BROWN
DIXON, ILLINOIS
ILLINOIS LICENSED PROFESSIONAL
ENGINEER NO. 062-053649
EXPIRES 11-30-2015

wendler
GROUNDBREAKING SOLUTIONS
engineers - surveyors - scientists
www.wendlergs.com ph: 815.288.2261
Illinois Professional Design Firm No. 184-000848

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED March 10 2015
Wta Wtc
COUNTY ENGINEER

PASSED 3-13 2015
David B. E.
DISTRICT 3 ENGINEER OF LOCAL ROADS & STREETS

RELEASED FOR
BID BASED ON
LIMITED REVIEW 3-13 2015
Paul A. Witze
DEPUTY DIRECTOR OF HIGHWAYS, REGION 2 ENGINEER

PRINTED BY THE AUTHORITY
OF THE STATE OF ILLINOIS

SUMMARY OF QUANTITIES

CODE NUMBER	ITEM	UNIT	TOTAL QUANTITY
20400800	FURNISHED EXCAVATION	CU YD	100
* 25001000	SEEDING, CLASS 2 (SPECIAL)	ACRE	0.25
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	200
28000300	TEMPORARY DITCH CHECKS	EACH	4
28000400	PERIMETER EROSION BARRIER	FOOT	1007
35101400	AGGREGATE BASE COURSE, TYPE B	TON	591
40600200	BITUMINOUS MATERIALS (PRIME COAT)	TON	2
40603080	HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50	TON	342
40603310	HOT MIX ASPHALT SURFACE COURSE, MIX "C", N50	TON	333
48101200	AGGREGATE SHOULDERS, TYPE B	TON	85
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50300225	CONCRETE STRUCTURES	CU YD	18.7
50300255	CONCRETE SUPERSTRUCTURE	CU YD	46.8
50300260	BRIDGE DECK GROOVING	SQ YD	144
50300300	PROTECTIVE COAT	SQ YD	157
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	480
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	11,825
Δ 50901050	STEEL RAILING, TYPE SM	FOOT	82
51200957	FURNISHING METAL SHELL PILES 12" x 0.250"	FOOT	297
51202305	DRIVING PILES	FOOT	297
51203200	TEST PILE METAL SHELLS	EACH	1
51500100	NAME PLATES	EACH	1
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	5
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	35
Δ 63000002	STEEL PLATE BEAM GUARD RAIL, TYPE A, 6.75 FOOT POSTS	FOOT	275
Δ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4
Δ * 63100167	TRAFFIC BARRIER TERMINAL TYPE 1, SPECIAL (TANGENT)	EACH	3
* 63200305	STEEL PLATE BEAM GUARD RAIL REMOVAL	FOOT	802
67100100	MOBILIZATION	L SUM	1
Δ * 78200455	BIDIRECTIONAL GUARD RAIL REFLECTORS	EACH	8
Δ * 78201000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
* LR631020	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	1
* X2020410	EARTH EXCAVATION (SPECIAL)	CU YD	550
* X5121800	PERMANENT STEEL SHEET PILING	SQ FT	2120
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	L SUM	1
QUANTITY NOTES:			
Δ	SPECIALTY ITEMS		
*	SEE SPECIAL PROVISIONS		
PERIMETER EROSION BARRIER IS AN ESTIMATED QUANTITY. LOCATIONS ARE TO BE DETERMINED IN FIELD BY THE ENGINEER			

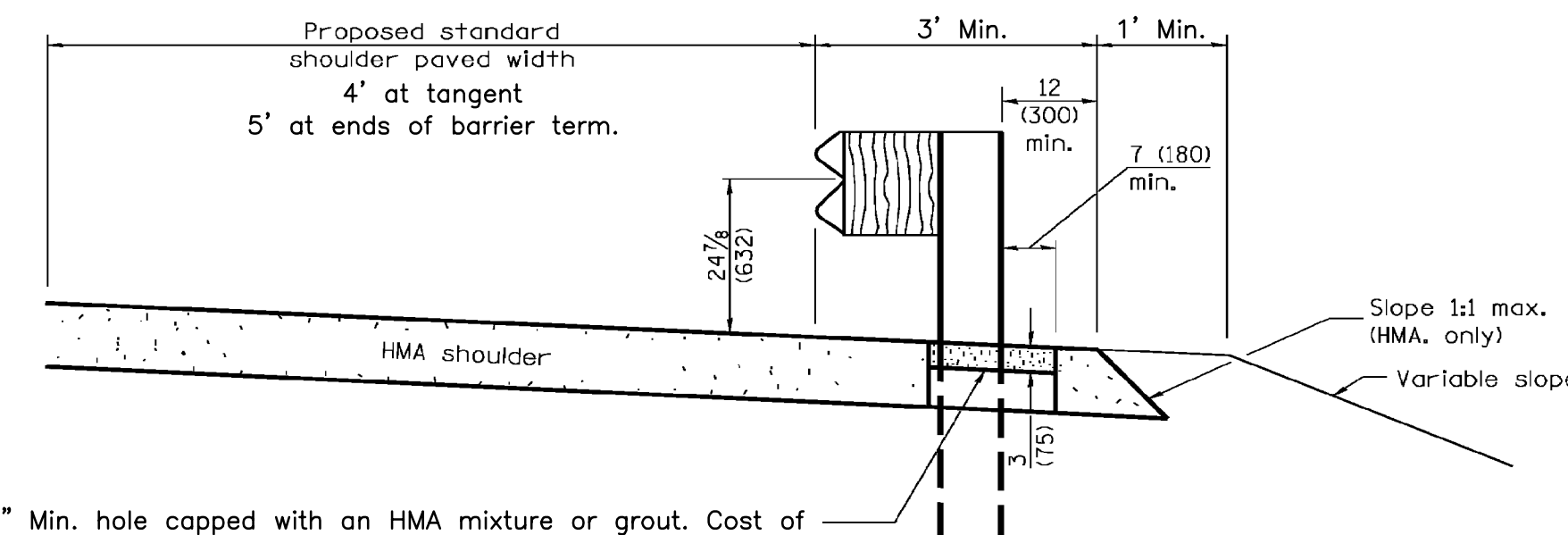
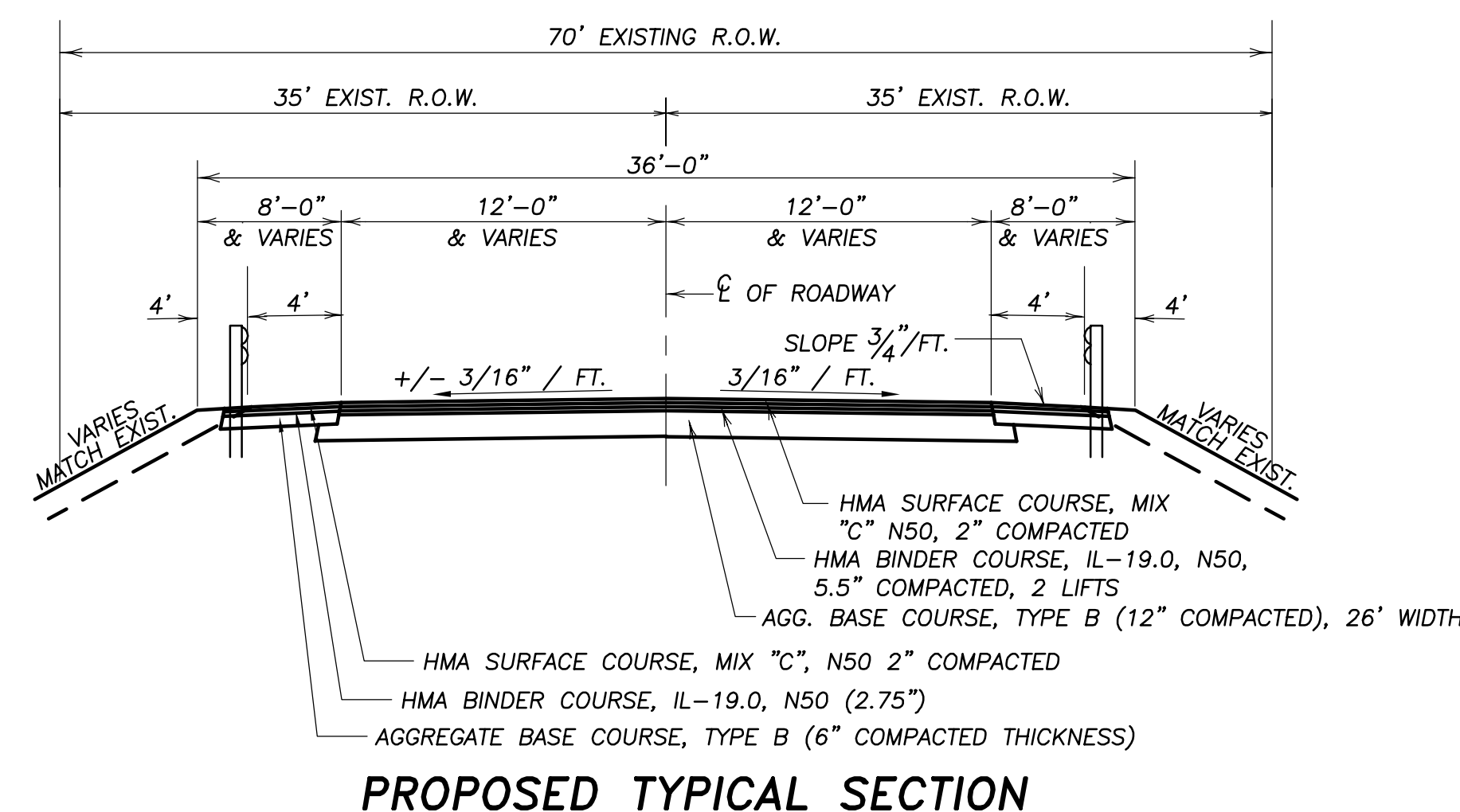
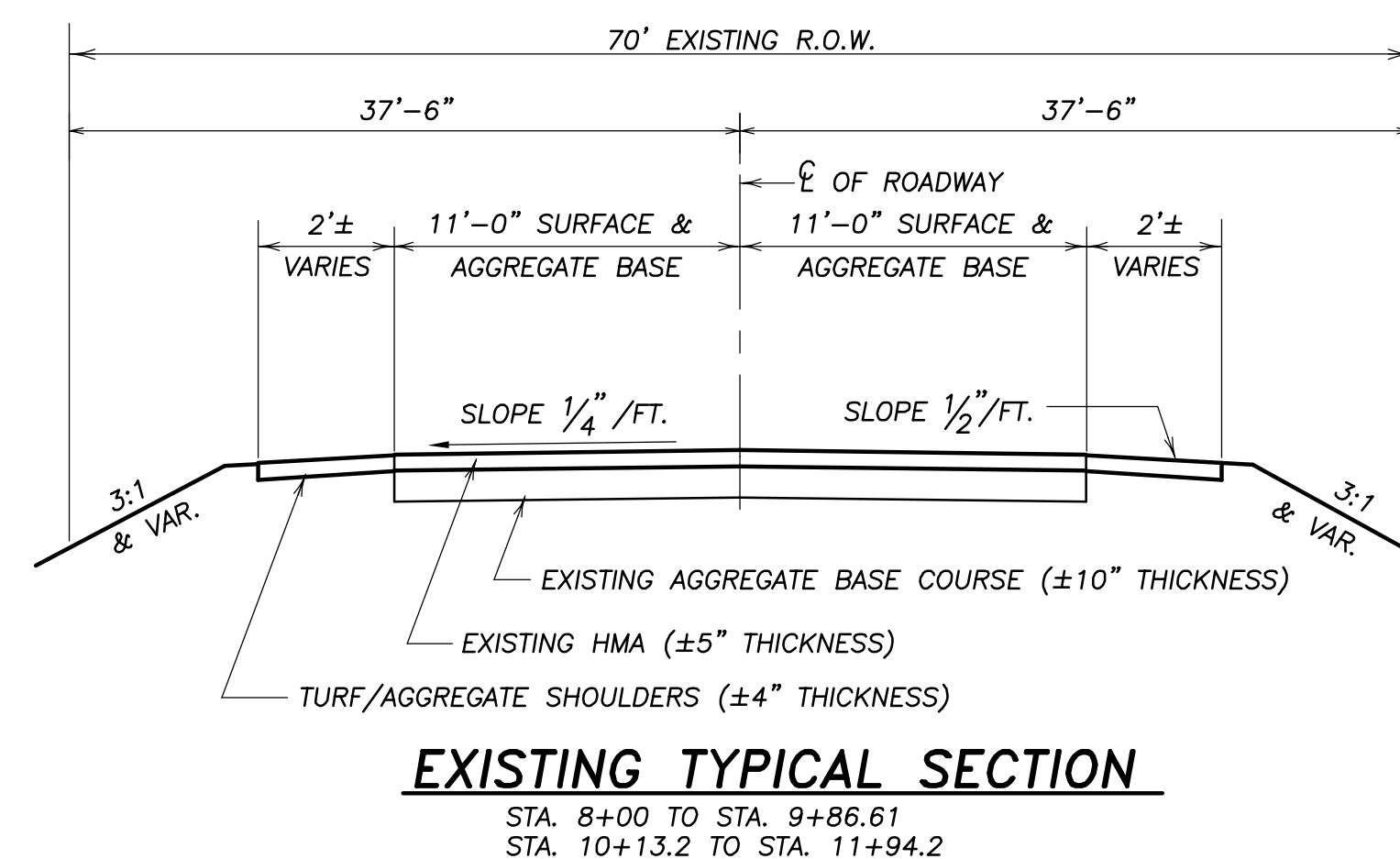
GENERAL NOTES:

- The final top four inches of soil in any right-of-way area disturbed by the Contractor must be capable of supporting vegetation. The soil must be from the A horizon (zero to 2' deep) of soil profiles of local soils. The cost of this work shall be included in the unit prices bid and no additional compensation will be allowed.
- All Borrow/Waste/Use sites must be approved by the Department prior to removing any material from the project or initiating any earthmoving activities, including temporary stockpiling outside the limits of construction.
- Fertilizer Nutrients shall be applied at the rate specified in Sections 250 and 252 of the Standard Specifications. This shall be included in the cost of the SEEDING or SODDING.
- All embankment constructed of cohesive soil shall be constructed with not more than 110% of optimum moisture content, determined by the standard proctor test. Cohesive soil shall be defined as any soil which contains greater than 10% particles by weight passing the #200 sieve. The 110% of optimum moisture limit may be waived in free-draining granular material when approved by the Engineer.
- The new number for this structure will be S.N. 019-3064
- Embankment quantities for the construction of the Traffic Barrier Terminals as shown in the plans are included in quantities for Furnished Excavation.
- Saw cuts shall be considered incidental to the pay item EARTH EXCAVATION (SPECIAL).
- The Contractor shall be responsible for protecting utility property during construction operations as outlined in Article 107.31 of the Standard Specifications. A minimum of 48 hours advance notice is required for non-emergency work. The JULIE number is 800-892-0123. The following listed utilities located within the project limits or immediately adjacent to the project construction limits are members of JULIE:

Ms. Nora Fernandez Commonwealth Edison Company 123 Energy Ave. Rockford, IL 61109 815-490-2335	Mr. Roger Kline Frontier 112 W Elm Street Sycamore, IL 60178 815-895-1515	Ms. Constance Lane NICOR Gas Company 1844 Ferry Road Naperville, IL 60563-9600 815-395-8977
--	---	---
- The applicable portions of Article 105.07 of the Standard Specification shall apply except for the following: The Contractor shall be responsible to locate the vertical depths of the underground utilities which may interfere with construction operations. This work will not be measured or paid for separately, but shall be considered as included in the unit bid price for the item of construction involved.

SCHEDULE OF QUANTITIES

STEEL PLATE BEAM GUARD RAIL, TYPE A	
LOCATION	FOOT
RT. STA. 8+16.25 TO RT. STA. 9+66.25	150
LT. STA. 10+33.75 TO LT. STA. 11+58.75	125
TOTAL	275
TRAFFIC BARRIER TERMINAL, TYPE 5A	
LOCATION	EACH
RT. STA. 9+66.25 TO RT. STA. 9+79.5	1
LT. STA. 9+66.25 TO LT. STA. 9+79.5	1
RT. STA. 10+20.5 TO RT. STA. 10+33.75	1
LT. STA. 10+20.5 TO LT. STA. 10+33.75	1
TOTAL	4
TRAFFIC BARRIER TERMINAL, TYPE 1 SPECIAL (TANGENT)	
LOCATION	EACH
RT. STA. 7+66.25 TO RT. STA. 8+16.25	1
LT. STA. 9+16.25 TO LT. STA. 9+66.25	1
RT. STA. 10+33.75 TO RT. STA. 10+83.75	1
TOTAL	3
TRAFFIC BARRIER TERMINAL, TYPE 1	
LOCATION	EACH
LT. STA. 11+58.75 TO LT. STA. 11+83.75	1
AGGREGATE BASE COURSE, TYPE B	
LOCATION	TON
STA. 8+00 - STA. 9+79.75	300
STA. 10+20.25 - STA. 11+94.22	291
TOTAL	591
HOT MIX ASPHALT SURFACE COURSE, MIX "C", N50	
LOCATION	TON
STA. 8+00 - STA. 9+79.75	72
STA. 10+20.25 - STA. 11+94.22	68
TOTAL	140
HOT MIX ASPHALT BINDER COURSE, IL-19.0, N50	
LOCATION	TON
STA. 8+00 - STA. 9+79.75	175
STA. 10+20.25 - STA. 11+94.22	167
TOTAL	342
TRAFFIC CONTROL & PROTECTION	
LOCATION	L. SUM
PROJECT	1
TOTAL	1



HOT-MIX ASPHALT CHART

	HMA SURFACE	HMA BINDER
PG GRADE	PG58-22	PG58-22
MAX % RAP ALLOWABLE**	30%	30%
DESIGN AIR VOIDS	4.0% @ N50	4.0% @ N50
MIXTURE COMPOSITION	IL 9.5L	IL 19.0
FRICTION AGGREGATE	MIXTURE C	N/A
DENSITY TEST METHOD	SEE SPECIAL PROVISIONS	SEE SPECIAL PROVISIONS

**IF RAP OPTION IS SELECTED, THE ASPHALT CEMENT GRADE MAY NEED TO BE ADJUSTED. THIS WILL BE DETERMINED BY THE ENGINEER.

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
172	*	DEKALB	16	2

ILLINOIS PROJECT ***-*****
05-00211-00-BR

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	DJV
DRAWING NAME:	SUM-SCHED
SURVEYED BY:	
BOOK NO.:	

wendler
GROUND-BREAKING SOLUTIONS
engineers - surveyors - scientists
www.wendlergs.com ph: 815.288.2261
Illinois Professional Design Firm No. 184-000848

SUMMARY AND SCHEDULE OF QUANTITIES OF SUYDAM ROAD BRIDGE REPLACEMENT FOR DEKALB COUNTY HIGHWAY

SHEET TITLE

SUMMARY

JOB NUMBER
2100002

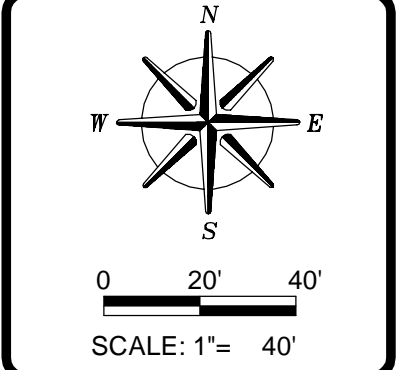
DATE
03/10/2015

SHEET NO.
2 of 16

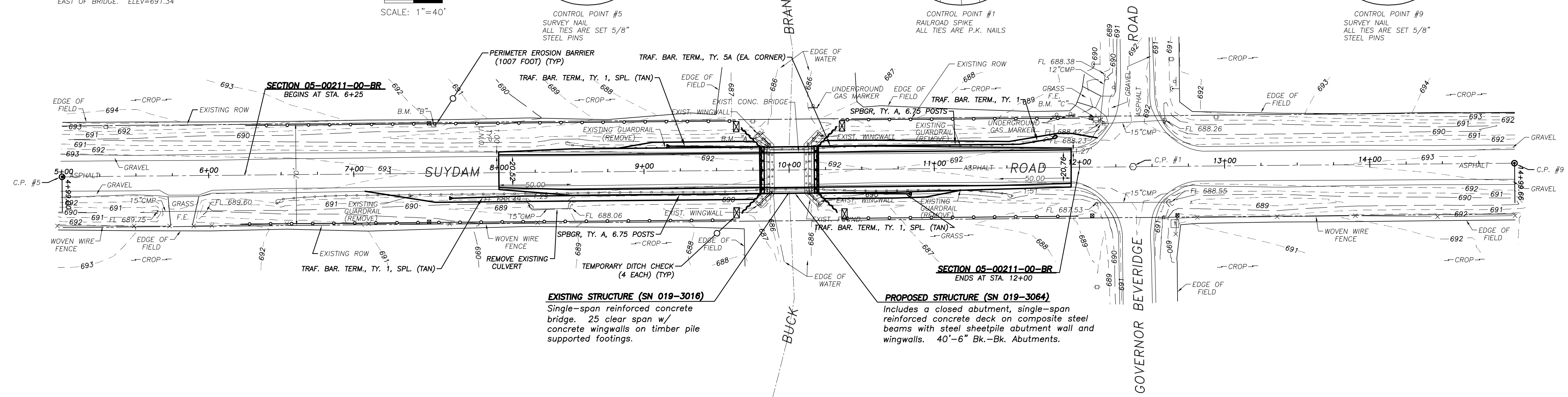
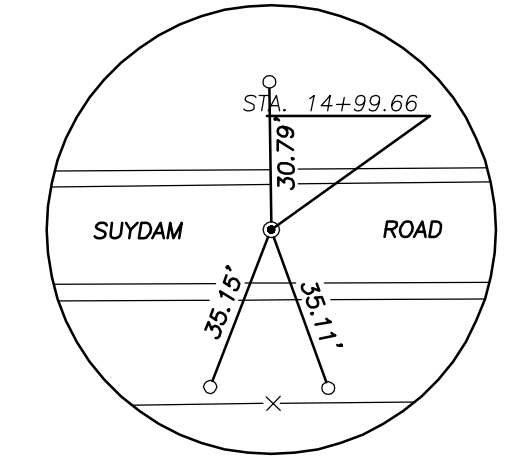
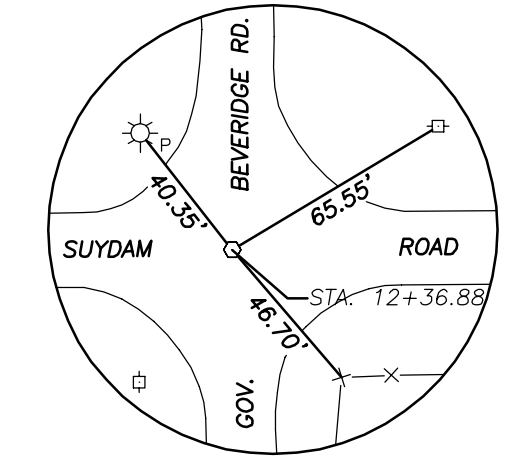
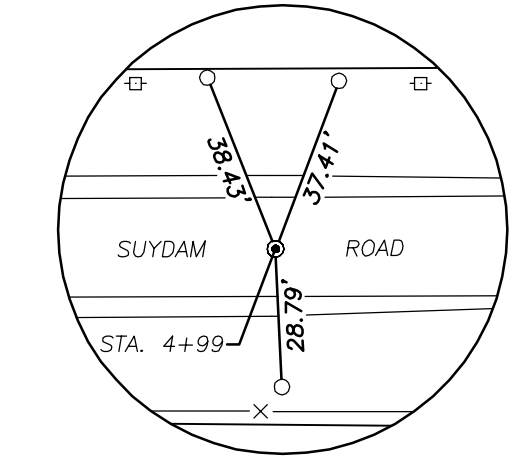
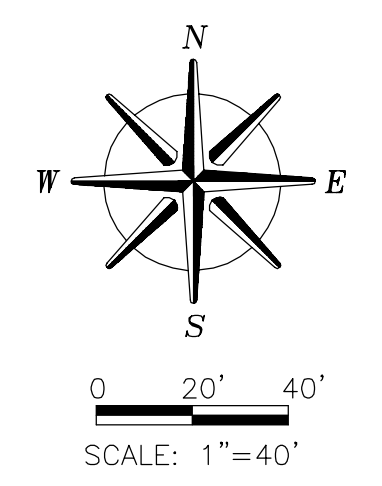
SUMMARY OF QUANTITIES
SECTION 05-00211-00-BR
SUYDAM ROAD
DEKALB COUNTY

FAS ROUTE NO	SEC	COUNTY	TOTAL SHEETS	SHEET NO
172	*	DEKALB	16	3

ILLINOIS PROJECT ***-****-****
 * 05-00211-00-BR



BENCHMARK INFORMATION
 B.M. "A" - SET CHISELED "□" ON N.W. CORNER OF BRIDGE ABUTMENT. BRIDGE OVER BUCK BRANCH ON SUYDAM ROAD. ELEV=692.16
 B.M. "B" - SET RAILROAD SPIKE IN N.E. SIDE OF 2ND. POWER POLE WEST OF BRIDGE. ELEV=692.81
 B.M. "C" - SET RAILROAD SPIKE IN NORTH SIDE OF 1ST. POWER POLE EAST OF BRIDGE. ELEV=691.34



EXISTING STRUCTURE (SN 019-3016)
 Single-span reinforced concrete bridge. 25 clear span w/ concrete wingwalls on timber pile supported footings.

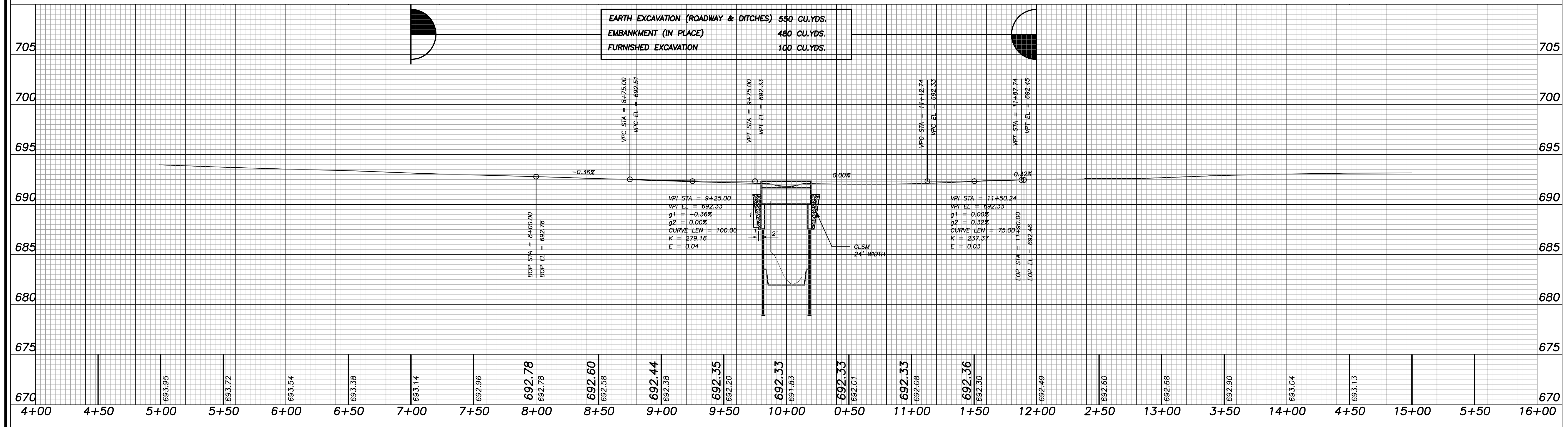
PROPOSED STRUCTURE (SN 019-3064)
 Includes a closed abutment, single-span reinforced concrete deck on composite steel beams with steel sheetpile abutment wall and wingwalls. 40'-6" Bk.-Bk. Abutments.

FURNISHED EXCAVATION QUANTITY IS AN IN-PLACE QUANTITY DETERMINED AS THE DIFFERENCE BETWEEN THE REQUIRED EMBANKMENT AND THE EXCAVATED MATERIALS WITH A 25% LOSS FACTOR APPLIED. AN ADDITIONAL 25 CU. YDS. WAS ADDED TO THE CALCULATED QUANTITY TO BE USED IN THE EVENT EXCAVATED MATERIALS ARE DEEMED UNSUITABLE FOR EMBANKMENT

THE EARTH EXCAVATION QUANTITY INCLUDES QUANTITY OF EXCAVATED MATERIAL FROM THE CONTROLLED LOW STRENGTH MATERIAL.

SCALES:
 1" = 40' HOR
 1" = 5' VER

EARTH EXCAVATION (ROADWAY & DITCHES)	550 CU.YDS.
EMBANKMENT (IN PLACE)	480 CU.YDS.
FURNISHED EXCAVATION	100 CU.YDS.



REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: RLR
 DRAWN BY: RLR, D.V.
 DRAWING NAME: RC01001
 SURVEYED BY:
 BOOK NO:

wendler engineering services, inc.
 1100 W. 11th Street
 Decatur, IL 62521
 www.wendlergs.com ph: 815.288.2261
 Illinois Professional Design Firm No. 184-000848

PLAN AND PROFILE
 OF
 SUYDAM ROAD BRIDGE
 FOR
 DEKALB COUNTY HIGHWAY

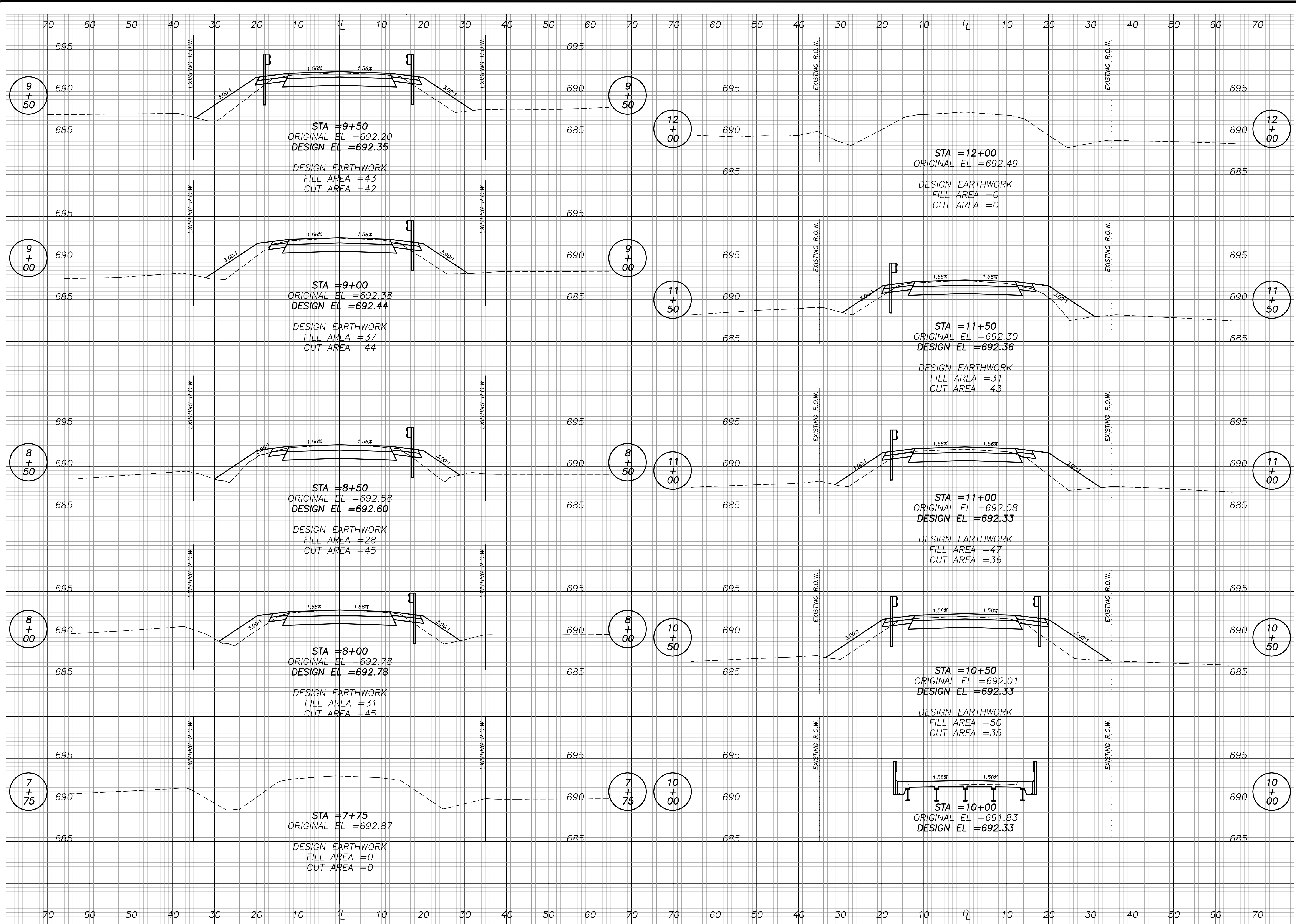
SHEET TITLE

PLAN & PROFILE

JOB NUMBER
2100002

DATE
03/11/2015

SHEET NO.
3 of 16



REVISIONS	DATE	REVISION

DESIGNED BY: RLR
 DRAWN BY: BS D.J.V.
 DRAWING NAME: rcd101001
 SURVEYED BY:
 BOOK NO:

wendler
 wendler engineering services, inc.
 geotechnical engineering services
 civil engineering services
 www.wendlergs.com ph: 815.268.2261
 Illinois Professional Design Firm No. 184-000848

CROSS SECTIONS
 OF
 SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
 DEKALB COUNTY HIGHWAY

SHEET TITLE
 CROSS SECTIONS

JOB NUMBER
 2100002

DATE
 03/06/2015

SHEET NO.
 4 of 16

F:\2010\0821\00002\DWG\rcd101001.dwg, 3/18/2015 2:07:21 PM, D.V.

BENCHMARK INFORMATION

B.M. "A" - SET CHISELED "□" ON N.W. CORNER OF BRIDGE ABUTMENT. BRIDGE OVER BUCK BRANCH ON SUYDAM ROAD. ELEV=692.16
 B.M. "B" - SET RAILROAD SPIKE IN N.E. SIDE OF 2ND. POWER POLE WEST OF BRIDGE. ELEV=692.81
 B.M. "C" - SET RAILROAD SPIKE IN NORTH SIDE OF 1ST. POWER POLE EAST OF BRIDGE. ELEV=691.34

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
172	*	DEKALB	16	5

ILLINOIS PROJECT ***-***(***)
 * 05-00211-00-BR

GENERAL NOTES

CALCULATED WEIGHT OF STRUCTURAL STEEL - 2980 POUNDS AASHTO M183 GRADE 36 END OF DECK PLATES, STUDS, CHANNELS, BEAM ANCHOR BOLTS, & MISC. STEEL. 15710 POUNDS AASHTO M270 GRADE 50W BEAMS, DIAPHRAGMS, AND FIXED BEARINGS.

FIELD WELDING OF CONSTRUCTION ACCESSORIES WILL NOT BE PERMITTED TO THE BOTTOM FLANGE OF BEAMS NOR TO THE TOP FLANGE FOR A DISTANCE EQUAL TO ONE-FOURTH THE SPAN LENGTH EACH WAY FROM THE CENTER OF THE BRIDGE. FIELD WELDING IN OTHER AREAS WILL BE PERMITTED ONLY WHEN APPROVED BY THE ENGINEER.

REINFORCEMENT BARS SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-31, M-42 OR M-53, GRADE 60.

FASTENERS SHALL BE HIGH STRENGTH BOLTS. BOLTS 3/4" DIAMETER, OPEN HOLES 13/16" DIAMETER UNLESS OTHERWISE NOTED.

TIGHTENING AND INSPECTION OF ALL HIGH STRENGTH BOLT CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST ISSUE OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 (M164) OR A490 (M253) BOLTS FOR SLIP-CRITICAL CONNECTIONS. EXCEPT TIGHTENING METHODS USING EITHER THE LOAD INDICATING WASHERS OR THE CALIBRATED WRENCH ARE NOT ALLOWED.

PROTECTIVE COAT HAS BEEN INCLUDED FOR THE TOP OF DECK AND THE NORTH AND SOUTH EDGES OF THE DECK TO THE DRIPNOTCH.

THE 3/4" STRUCTURAL STEEL PLATES AT EACH END OF THE DECK ARE INCLUDED FOR PAYMENT PER POUND OF FURNISHING AND ERECTING STRUCTURAL STEEL. AFTER FABRICATION, ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF PAINT SPECIFIED FOR STRUCTURAL STEEL.

THE MAIN LOAD CARRYING MEMBER COMPONENTS SUBJECT TO TENSILE STRESS SHALL CONFORM TO THE SUPPLEMENTAL REQUIREMENTS FOR NOTCH TOUGHNESS ZONE 2. THESE COMPONENTS ARE THE WIDE FLANGE BEAMS.

BEARING SEAT SURFACES SHALL BE CONSTRUCTED OR ADJUSTED TO THE DESIGNATED ELEVATIONS WITHIN A TOLERANCE OF 1/8". ADJUSTMENT SHALL BE MADE EITHER BY GRINDING THE SURFACE OR BY SHIMMING. TWO 1/8" ADJUSTING SHIMS, OF THE DIMENSIONS OF THE BOTTOM BEARING PLATE, SHALL BE PROVIDED FOR EACH BEARING IN ADDITION TO ALL OTHER PLATES OR SHIMS.

THE CONTRACTOR SHALL DRIVE ONE 12" METAL PILE SHELL TEST PILE IN A PERMANENT LOCATION AT THE WEST ABUTMENT AS DIRECTED BY THE ENGINEER BEFORE ORDERING THE REMAINDER OF PILES.

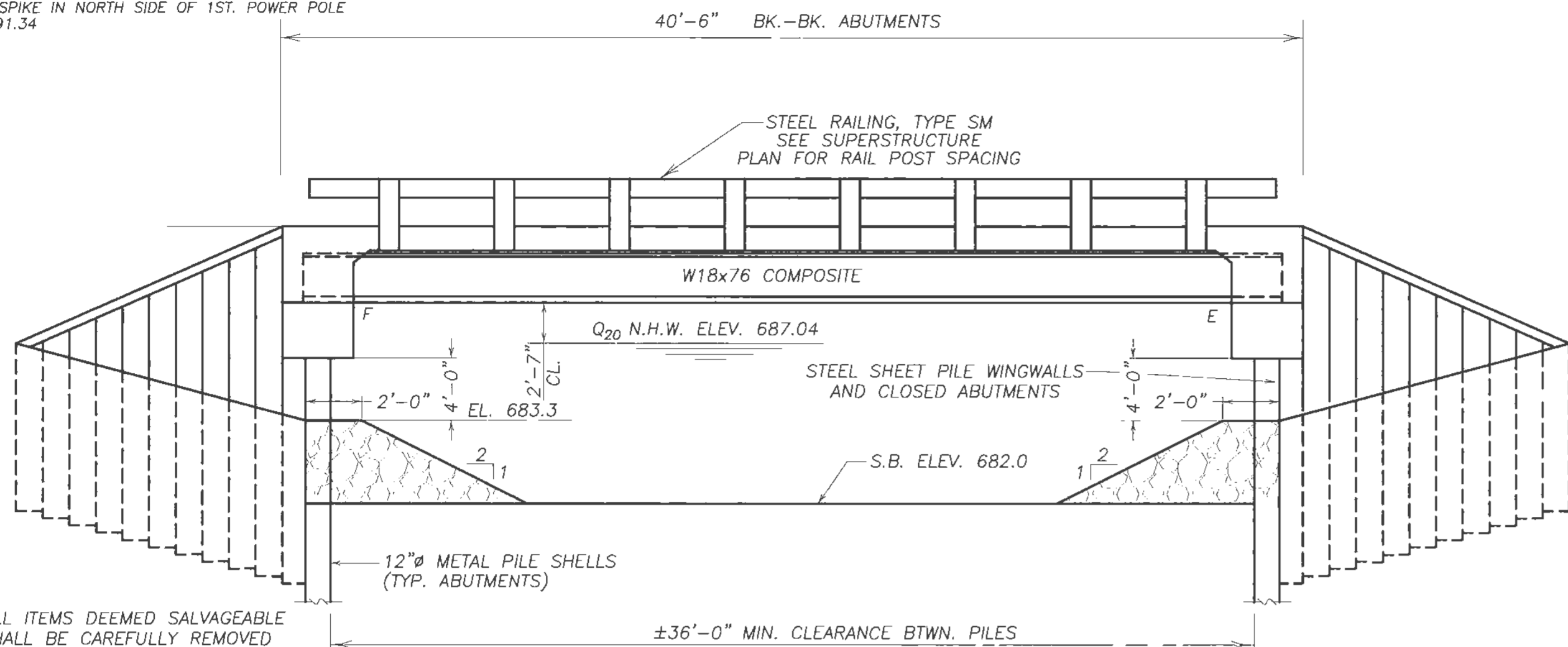
THE CONTRACTOR SHALL MAKE ALLOWANCE FOR THE DEFLECTION OF FORMS, SHRINKAGE AND SETTLEMENT OF FALSEWORK, IN ADDITION TO ALLOWANCE FOR DEAD LOAD DEFLECTION.

AASHTO M 270 GRADE 50W STRUCTURAL STEEL SHALL ONLY BE PAINTED, AT THE ENDS OF THE BEAMS, FOR A DISTANCE EQUAL TO THE DEPTH OF EMBEDMENT INTO THE CONCRETE CAP PLUS 3 INCHES. THOSE AREAS SHALL BE PRIMED IN THE SHOP WITH AN INORGANIC ZINC RICH PRIMER PER AASHTO M 300, TYPE I. NO FIELD PAINTING SHALL BE REQUIRED. ALL GRADE 50W STRUCTURAL STEEL SHALL BE CLEANED AS SPECIFIED IN THE SPECIAL PROVISION FOR "SURFACE PREPARATION AND PAINTING REQUIREMENTS FOR WEATHERING STEEL."

IF THE CONTRACTOR ELECTS TO USE CANTILEVER FORMING BRACKETS ON THE EXTERIOR BEAMS OR GIRDERS, THE BRACKETS SHALL BE PLACED AT THE SAME LOCATIONS AS REQUIRED FOR THE HARDWOOD BLOCKS IN ARTICLE 503.06(b) OF THE STANDARD SPECIFICATIONS. IF ADDITIONAL CANTILEVER FORMING BRACKETS ARE REQUIRED, HARDWOOD BLOCKING SHALL BE WEDGED BETWEEN THE EXTERIOR AND FIRST INTERIOR BEAM AT EACH OF THESE ADDITIONAL BRACKET LOCATIONS.

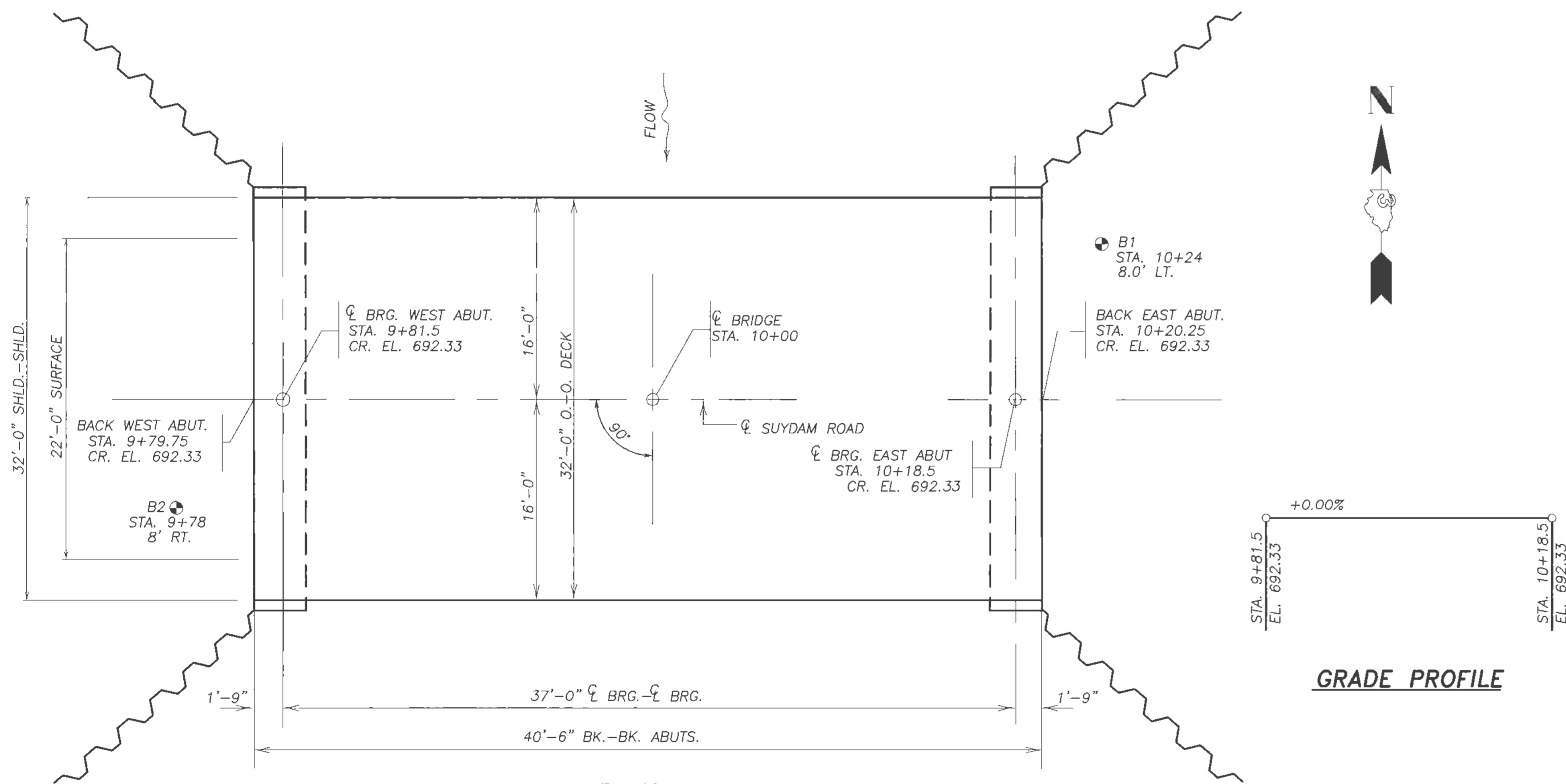
BILL OF MATERIAL BRIDGE

ITEM	UNIT	SUPERSTR.	SUBSTR.	TOTAL
CONCRETE SUPERSTRUCTURE	CU. YD.	46.8		46.8
CONCRETE STRUCTURES	CU. YD.		18.7	18.7
FURN. AND ERECTING STRUCTURAL STEEL	LUMP SUM	1		1
STUD SHEAR CONNECTORS	EACH	480		480
REINFORCEMENT BARS, EPOXY COATED	POUND	9723	2102	11825
PROTECTIVE COAT	SQ. YD.	157		157
NAME PLATES	EACH	1		1
STEEL RAILING, TYPE SM	FOOT	82		82
FURNISHING METAL SHELL PILES 12" x 0.250"	FOOT		297	297
DRIVING PILES	FOOT		297	297
TEST PILE METAL SHELLS	EACH		1	1
PERMANENT STEEL SHEET PILING	SQ. FT.		2120	2120
BRIDGE DECK GROOVING	SQ. YD.	144		144
ELASTOMERIC BEARING ASSEMBLY, TYPE 1	EACH	5		5



ELEVATION

SALVAGE : ALL ITEMS DEEMED SALVAGEABLE SHALL BE CAREFULLY REMOVED AND STOCKPILED ON THE RIGHT OF WAY FOR THE COUNTY TO PICK UP.



PLAN

GRADE PROFILE

WATERWAY INFORMATION

Drainage Area = 4.83 sq. miles Low Grade Elev. = 691.83 at Roadway Sta. 10+00

Flood Frequency Year	Q (cfs)	Opening Sq. Ft.		Natural H.W.E.	Head-Ft.		Headwater El.		
		Existing	Proposed		Existing	Proposed	Existing	Proposed	
Design	20	449	126	182	687.04	0.48	0.26	687.52	687.30
Base	100	631	152	197	687.33	0.75	0.43	688.08	687.76
Overtopping									
Max Calc.	500	797			687.55	1.04	0.60	688.59	688.15

DESIGN STRESSES

$f'_c = 3500$ P.S.I.
 $f_s = 60,000$ P.S.I. (REINFORCEMENT)
 $f_y = 36,000$ P.S.I. (STRUCTURAL STEEL, M183, GRADE 36)
 $f_y = 50,000$ P.S.I. (STRUCT. STEEL, M270, GRADE 50W)

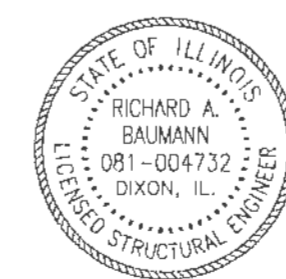
DESIGN SPECIFICATIONS AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 6TH. ADDITION (ALLOWED FOR 50 P.S.F. FOR FUTURE WEARING SURFACE.)

LOADING HL 93

BUCK BRANCH OF SOMONAUK CREEK BUILT 2011 BY DEKALB COUNTY SECTION 05-00211-00-BR STATION 10+00 FAS 172/CH 11 SN 019-3064 LOADING HL 93

LETTERING FOR NAME PLATE

SEE STD. 515001

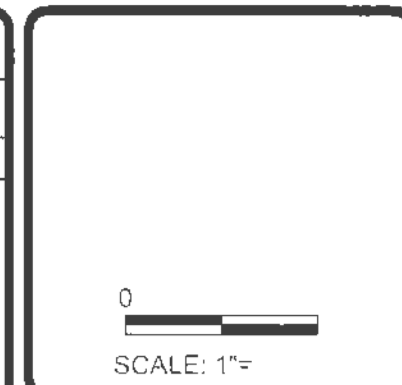


RICHARD A. BALMANN
 CIVIL ENGINEER
 LICENSE NO. 081-004732
 EXPIRES 11-30-2016

I CERTIFY THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THIS BRIDGE DESIGN IS STRUCTURALLY ADEQUATE FOR THE DESIGN LOADING SHOWN ON THE PLANS. THE DESIGN IS AN ECONOMICAL ONE FOR THE STYLE OF STRUCTURE AND COMPLIES WITH REQUIREMENTS OF THE CURRENT "AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES".

GENERAL PLAN AND ELEVATION SECTION 05-00211-00-BR SUYDAM ROAD DEKALB COUNTY SN 019-3064

DESIGNED:	RLR
DRAWN:	RLR,DJV
CHECKED:	DAB
DATE:	1/26/15



REVISIONS

NO.	DATE	DESCRIPTION

DESIGNED BY: RLR
 DRAWN BY: RLR,DJV
 CHECKED BY: DAB
 DATE: 1/26/15

wendler
 GROUND BREAKING SOLUTIONS
 engineers - surveyors - scientists
 www.wendlergs.com
 ph: 815.288.2261
 illinois Professional Design Firm No. 184-00848

GENERAL PLAN AND ELEVATION OF SUYDAM ROAD BRIDGE REPLACEMENT FOR DEKALB COUNTY HIGHWAY

SHEET TITLE
GPE

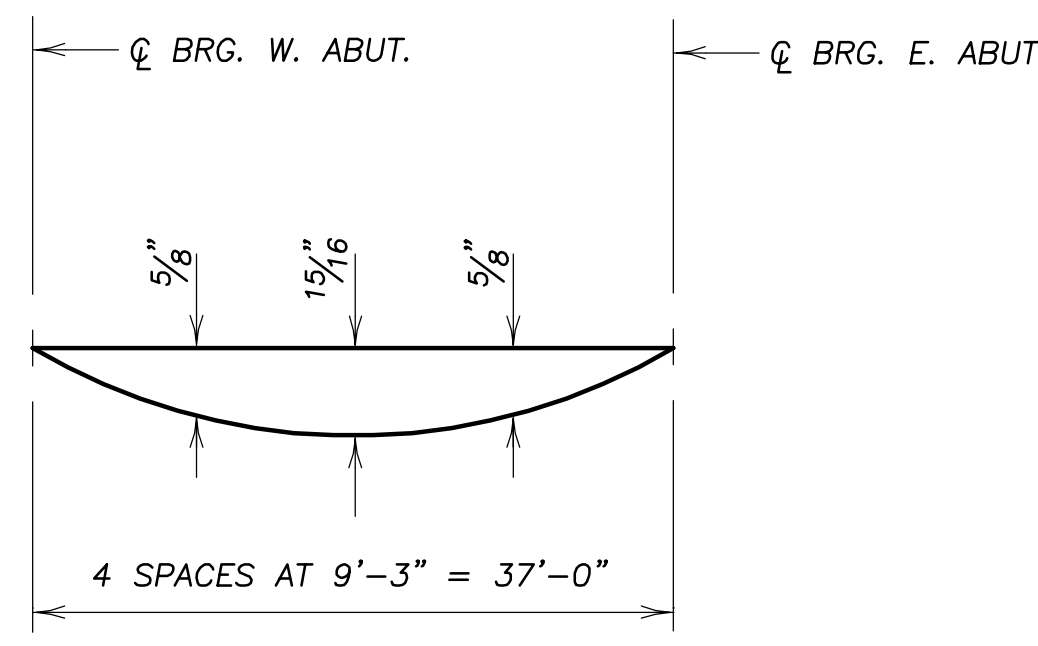
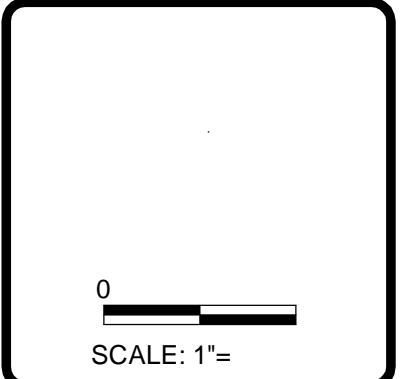
JOB NUMBER
 21000002

DATE
 03/10/2015

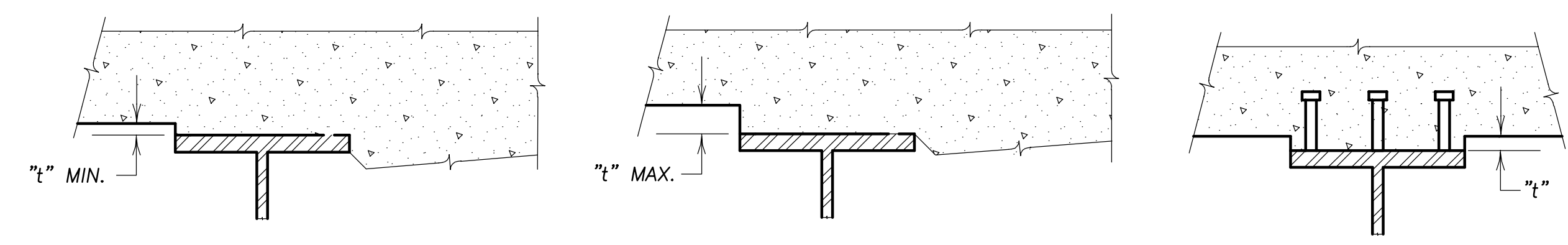
SHEET NO.
5 of 16

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
172	*	DEKALB	16	6

ILLINOIS PROJECT ***-****(****)
 * 05-00211-00-BR



DEAD LOAD DEFLECTION DIAGRAM
 (INCLUDES WEIGHT OF CONCRETE DECK AND ALL SUPERIMPOSED DEAD LOADS EXCEPT FUTURE WEARING SURFACE.)
 NOTE: THE ABOVE DEFLECTIONS ARE NOT TO BE USED IN THE FIELD IF THE ENGINEER IS WORKING FROM THE GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS AS SHOWN ON SHEET B.



FILLET HEIGHTS

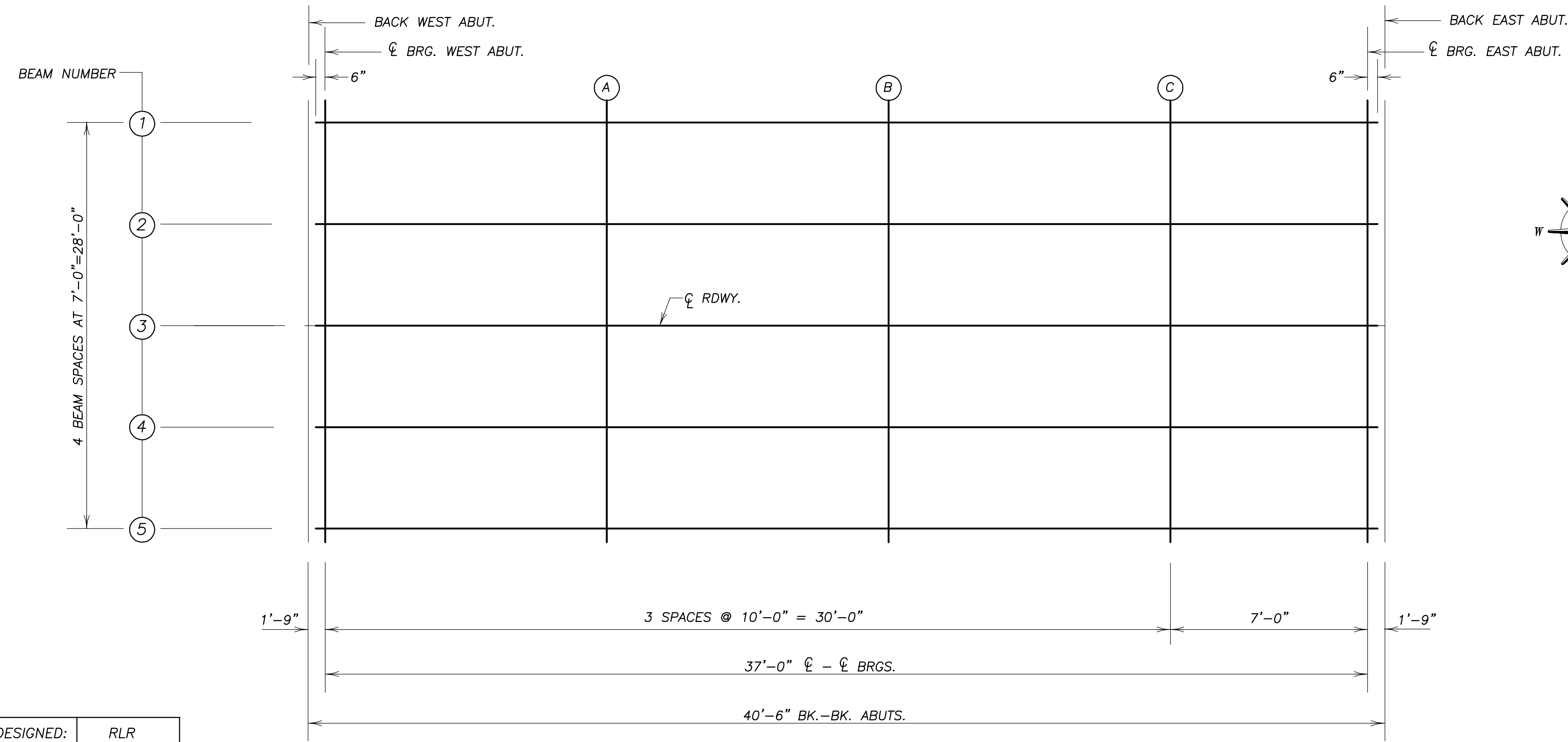
NOTE: TO DETERMINE "t" - AFTER ALL STRUCTURAL STEEL HAS BEEN ERECTED, ELEVATIONS OF TOP FLANGES OF THE BEAMS SHALL BE TAKEN AT THE STATIONS SHOWN ON BR. SHEET 7 OF 16. THESE ELEVATIONS SUBTRACTED FROM THE "THEORETICAL GRADE ELEVATIONS ADJUSTED FOR DEAD LOAD DEFLECTIONS" SHOWN ON THE SAME SHEET, MINUS FLOOR THICKNESS, EQUALS THE FILLET HEIGHTS ABOVE TOP FLANGE OF BEAMS.

FILLET HEIGHTS

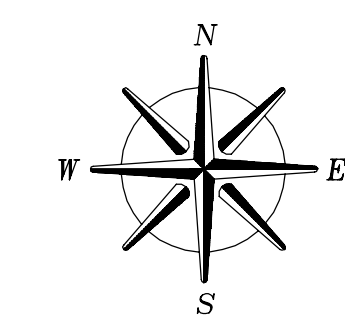
REVISIONS	DATE

DESIGNED BY: RLR	DRAWN BY: RLR, DJV
CHECKED BY: DAB	DATE: 1/26/15

wendler
 GROUND-BREAKING SOLUTIONS
 engineers - surveyors - scientists
 www.wendlergs.com ph: 815.288.2261
 Illinois Professional Design Firm No. 184-000848



PLAN



**DECK ELEVATIONS LAYOUT
 OF
 SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
 DEKALB COUNTY HIGHWAY**

DESIGNED:	RLR
DRAWN:	RLR, DJV
CHECKED:	DAB
DATE:	1/26/15

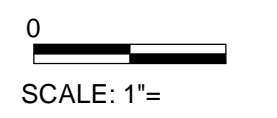
SHEET TITLE
DECK

JOB NUMBER	2100002
------------	---------

DATE	01/26/2015
------	------------

SHEET NO.	6 of 16
-----------	---------

DECK ELEVATIONS LAYOUT
 SECTION 05-00211-00-BR
 SUYDAM ROAD
 DEKALB COUNTY
 SN 019-3064



BEAM # 1				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT.	9+79.75	14.0	692.111	692.111
CL. BRG. W. ABUT.	9+81.5	14.0	692.111	692.111
A	9+91.5	14.0	692.111	692.169
B	10+01.5	14.0	692.111	692.187
C	10+11.5	14.0	692.111	692.154
CL. BRG. E. ABUT.	10+18.5	14.0	692.111	692.111
BK. E. ABUT.	10+20.25	14.0	692.111	692.111

BEAM # 4				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT.	9+79.75	7.0	692.221	692.221
CL. BRG. W. ABUT.	9+81.5	7.0	692.221	692.221
A	9+91.5	7.0	692.221	692.279
B	10+01.5	7.0	692.221	692.297
C	10+11.5	7.0	692.221	692.264
CL. BRG. E. ABUT.	10+18.5	7.0	692.221	692.221
BK. E. ABUT.	10+20.25	7.0	692.221	692.221

BEAM # 2				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT.	9+79.75	7.0	692.221	692.221
CL. BRG. W. ABUT.	9+81.5	7.0	692.221	692.221
A	9+91.5	7.0	692.221	692.279
B	10+01.5	7.0	692.221	692.297
C	10+11.5	7.0	692.221	692.264
CL. BRG. E. ABUT.	10+18.5	7.0	692.221	692.221
BK. E. ABUT.	10+20.25	7.0	692.221	692.221

BEAM # 5				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT.	9+79.75	14.0	692.111	692.111
CL. BRG. W. ABUT.	9+81.5	14.0	692.111	692.111
A	9+91.5	14.0	692.111	692.169
B	10+01.5	14.0	692.111	692.187
C	10+11.5	14.0	692.111	692.154
CL. BRG. E. ABUT.	10+18.5	14.0	692.111	692.111
BK. E. ABUT.	10+20.25	14.0	692.111	692.111

BEAM # 3				
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	THEORETICAL GRADE ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT.	9+79.75	0.0	692.330	692.330
CL. BRG. W. ABUT.	9+81.5	0.0	692.330	692.330
A	9+91.5	0.0	692.330	692.388
B	10+01.5	0.0	692.330	692.406
C	10+11.5	0.0	692.330	692.373
CL. BRG. E. ABUT.	10+18.5	0.0	692.330	692.330
BK. E. ABUT.	10+20.25	0.0	692.330	692.330

DESIGNED:	RLR
DRAWN:	RLR,DJV
CHECKED:	DAB
DATE:	1/26/15

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR,DJV
DRAWING NAME:	Deckelev-2
SURVEYED BY:	
BOOK NO.:	



DECK ELEVATIONS
 OF
SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
DEKALB COUNTY HIGHWAY

SHEET TITLE

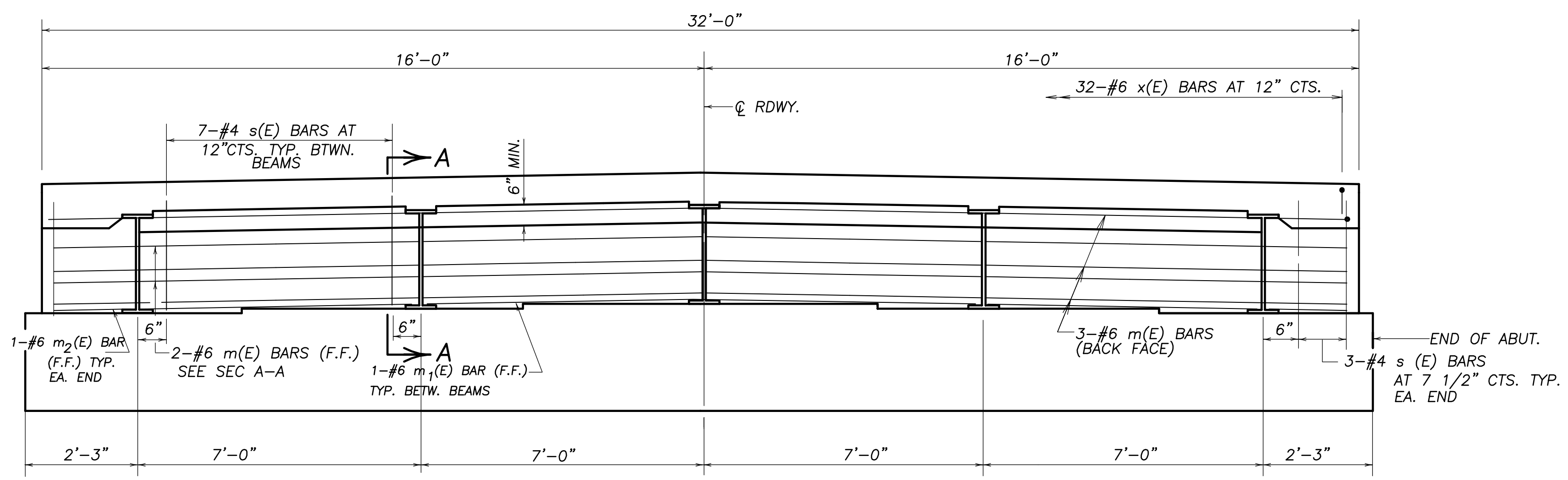
DECK

JOB NUMBER
2100002

DATE
01/26/2015

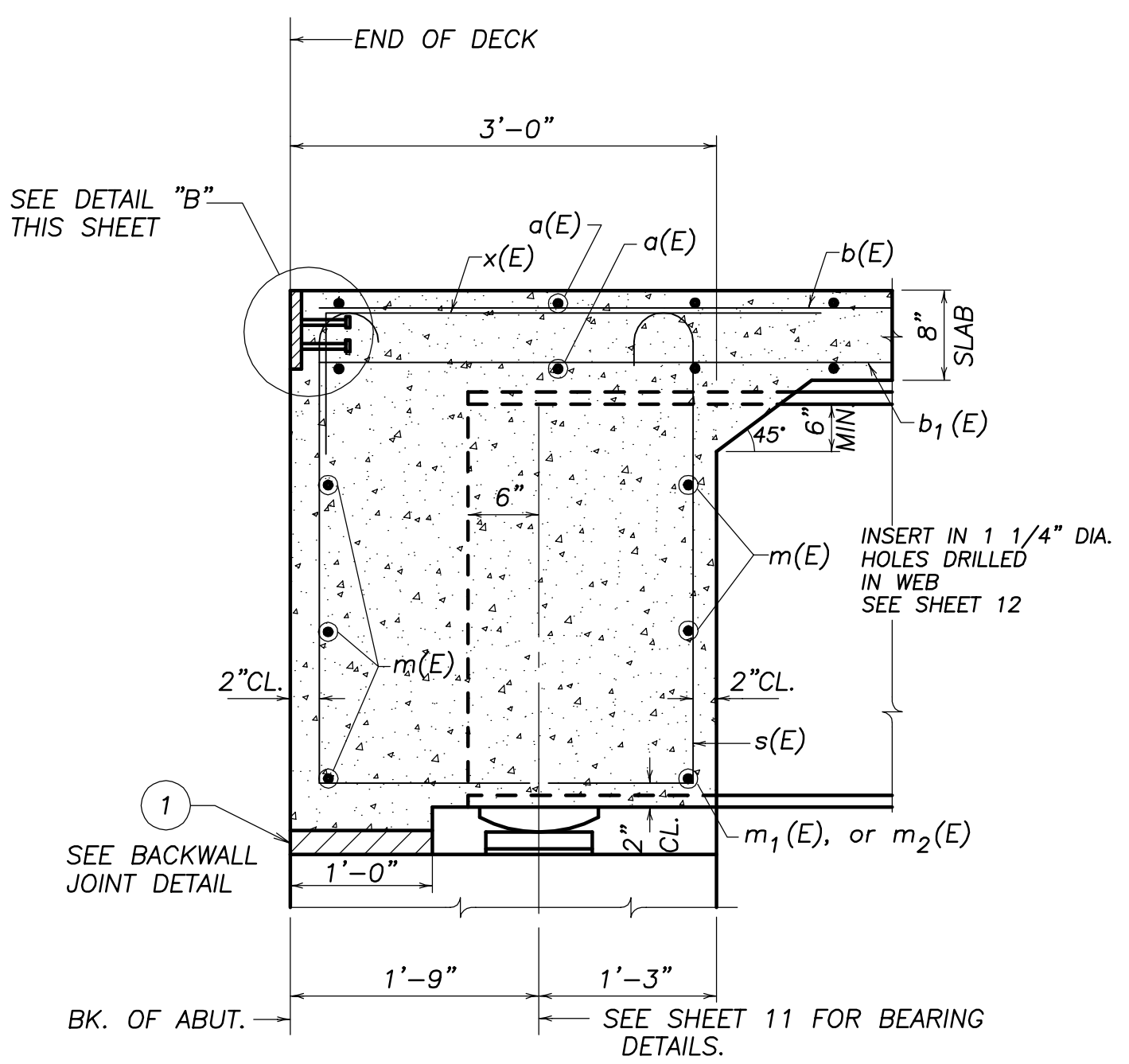
SHEET NO.
7 of 16

DECK ELEVATIONS
SECTION 05-00211-00-BR
SUYDAM ROAD
DEKALB COUNTY
SN 019-3064

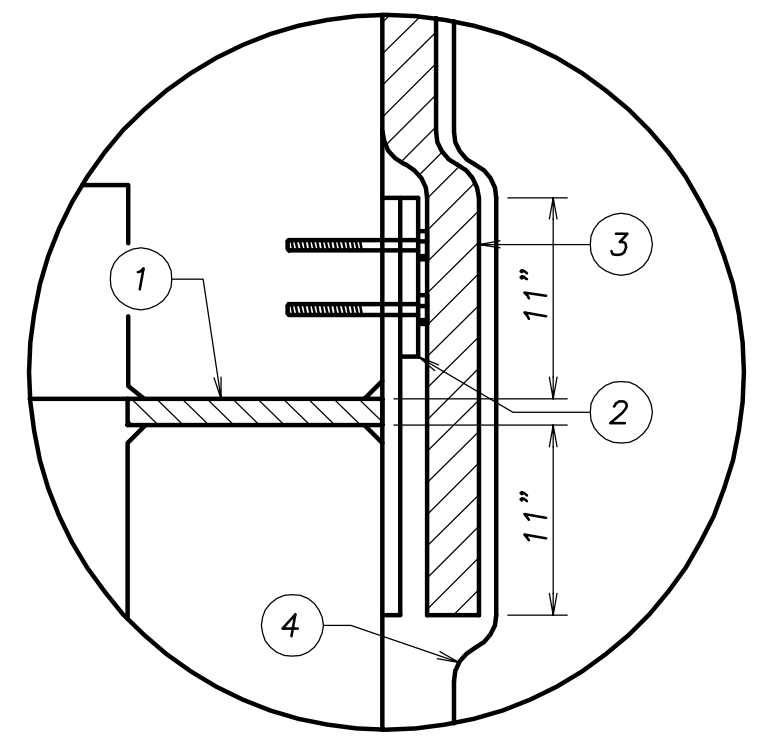


**BONDED CONSTRUCTION JOINT IN ACCORDANCE WITH ARTICLE 503.09 OF STD. SPEC'S.

TYPICAL ELEVATION OF DIAPHRAGM



SECTION A-A



BACKWALL JOINT DETAIL

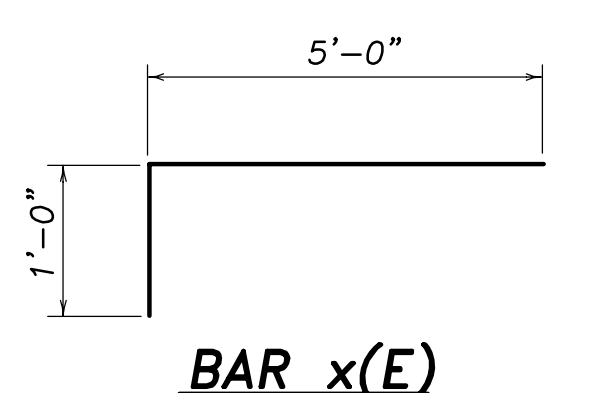
- 1 - 2" PREFORMED JOINT FILLER (ARTICLE 1051) BONDED TO ABUTMENT CAP WITH APPROVED ADHESIVE (FULL WIDTH OF CAP)
- 2 - 1/8" THICK REINFORCED ELASTOMERIC NEOPRENE MAT
- 3 - 2" PREFORMED JOINT FILLER (ARTICLE 1051) BONDED TO SUPERSTRUCTURE (FULL WIDTH OF CAP; 3'-0" WIDE)
- 4 - GEOCOMPOSITE WALL DRAIN (FULL WIDTH OF CAP PLUS EXTEND 3' MINIMUM ONTO WINGWALLS; 4'-0" WIDE)

ITEMS 1, 2, 3, & 4 SHALL BE INCLUDED IN THE COST OF CONCRETE SUPERSTRUCTURE.

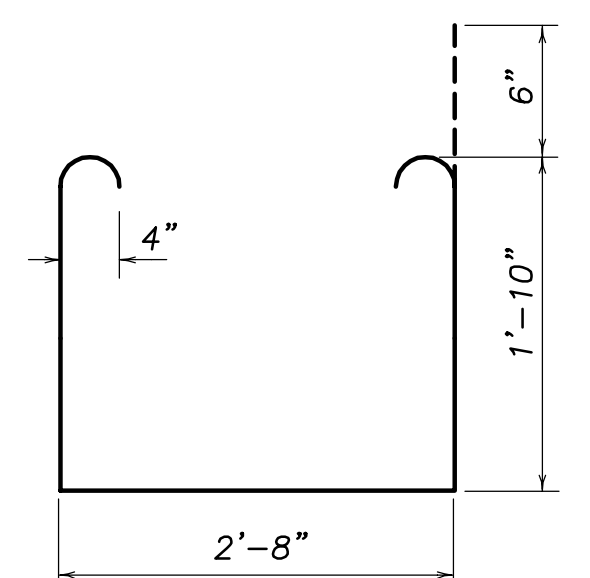
DESIGNED:	RLR
DRAWN:	RLR,DJV
CHECKED:	DAB
DATE:	1/26/15

BEAM MOMENT TABLE

	0.5 SPAN 1
Is (in ⁴)	1330
Ic (in ⁴)(n)	5210
Ic (in ⁴)(3n)	3901
Ss (in ³)	146
Sc (in ³)(n)	259
Sc (in ³)(3n)	231
DC1 (k/ft.)	0.85
MDC1 (ft.-k)	146
DC2 (k/ft.)	0.03
MDC2 (ft.-k)	5.1
DW (k/ft.)	0.35
MDW (ft.-k)	60
MLL+IM (ft.-k)	451
Mu (Str. I)(ft.-k)	1068
φ _f M _n (ft.-k)	1473
fs DC1 (ksi)	11.2
fs DC2 (ksi)	0.2
fs DW (ksi)	2.5
fs 1.3(LL+IM)(ksi)	27.2
fs (Service II)(ksi)	41.1
Vf (k)	18



BAR x(E)



BAR s(E)

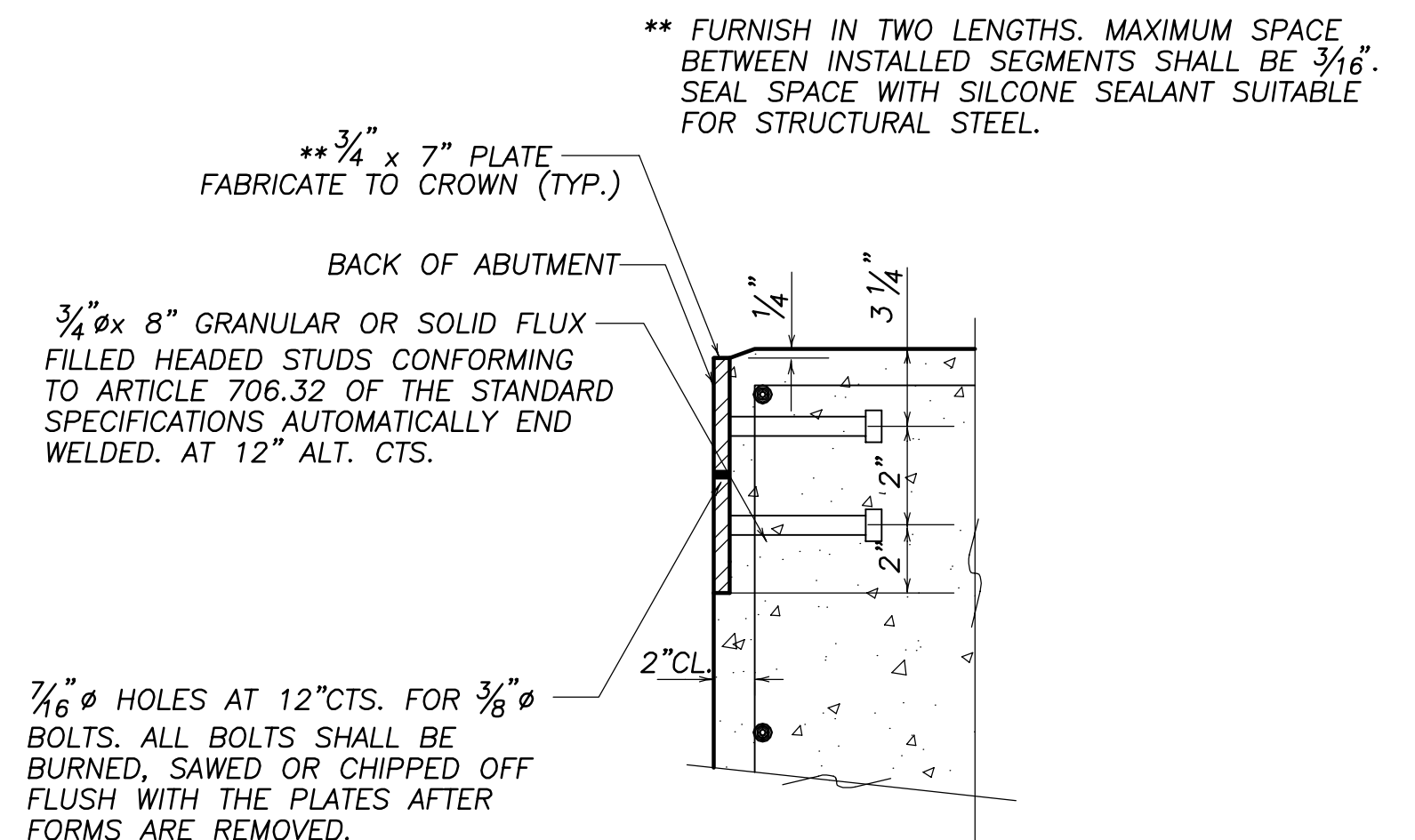
BEAM REACTION TABLE

	ABUTMENTS
R _{DC1} (k)	21.8
R _{DC2} (k)	0.6
R _{DW} (k)	6.5
R _{LL+IM} (k)	33.4
R _{TOTAL} (k)	62.3

BILL OF MATERIAL - SUPERSTRUCTURE

BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	132	#5	31'-8"	—
a ₁ (E)	78	#6	7'-6"	—
m(E)	10	#6	31'-8"	—
m ₁ (E)	8	#6	6'-2"	—
m ₂ (E)	4	#6	1'-9"	—
b(E)	96	#5	15'-0"	—
b ₁ (E)	68	#5	21'-4"	—
s(E)	68	#4	7'-4"	—
x(E)	64	#6	6'-0"	—
CONCRETE SUPERSTRUCTURE	CU. YD.		46.8	
REINFORCEMENT BARS, EPOXY COATED	LBS.		9723	
PROTECTIVE COAT	SQ. YD.		157	
BRIDGE DECK GROOVING	SQ. YD.		144	
FURNISHING AND ERECTING STRUCTURAL STEEL	L. SUM.		1	
STUD SHEAR CONNECTORS	EACH		480	

REINFORCEMENT BARS INDICATED (E) SHALL BE EPOXY COATED.



DETAIL "B"

NOTE: AFTER FABRICATION ALL SURFACES OF THE STEEL PLATES SHALL BE GIVEN ONE SHOP COAT OF PAINT SPECIFIED FOR STRUCTURAL STEEL. NO FIELD PAINTING REQUIRED.

SUPERSTRUCTURE DETAILS
 SECTION 05-00211-00-BR
 SUYDAM ROAD
 DEKALB COUNTY
 SN 019-3064

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR,DJV
CHECKED BY:	DAB
DATE:	1/26/15

SUPERSTRUCTURE DETAILS
 OF
 SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
 DEKALB COUNTY HIGHWAY

SHEET TITLE
SUPER

JOB NUMBER
 2100002

DATE
 01/26/2015

SHEET NO.
9 of 16

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR, DJV
DRAWING NAME:	Steel Det
SURVEYED BY:	
BOOK NO.:	

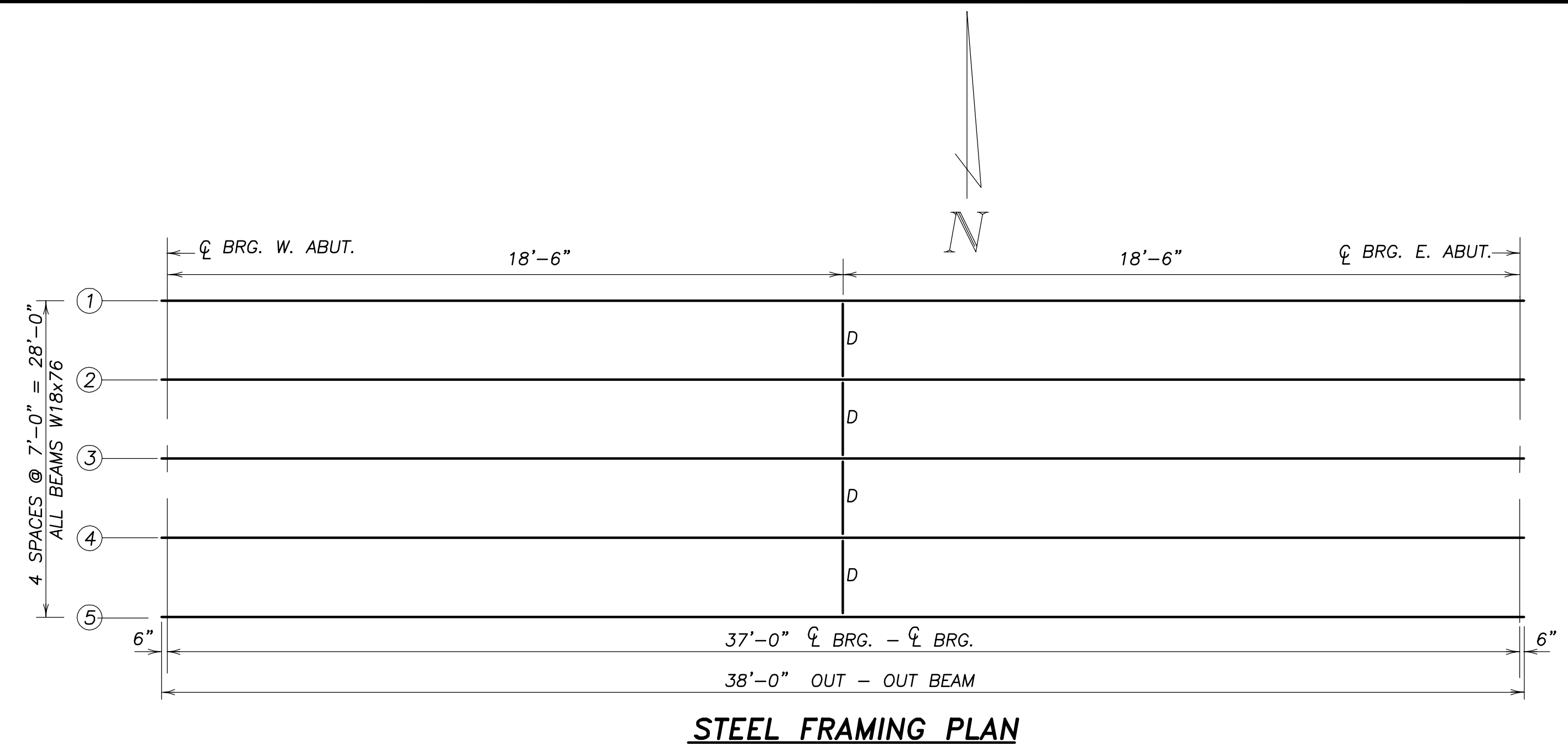
wendler
 GROUND-BREAKING SOLUTIONS
 engineers - surveyors - scientists
 www.wendlergs.com ph: 815.288.2261
 Illinois Professional Design Firm No. 184-000848

STRUCTURAL STEEL DETAILS
 OF
SHABBONA ROAD BRIDGE REPLACEMENT
 FOR
DEKALB COUNTY HIGHWAY

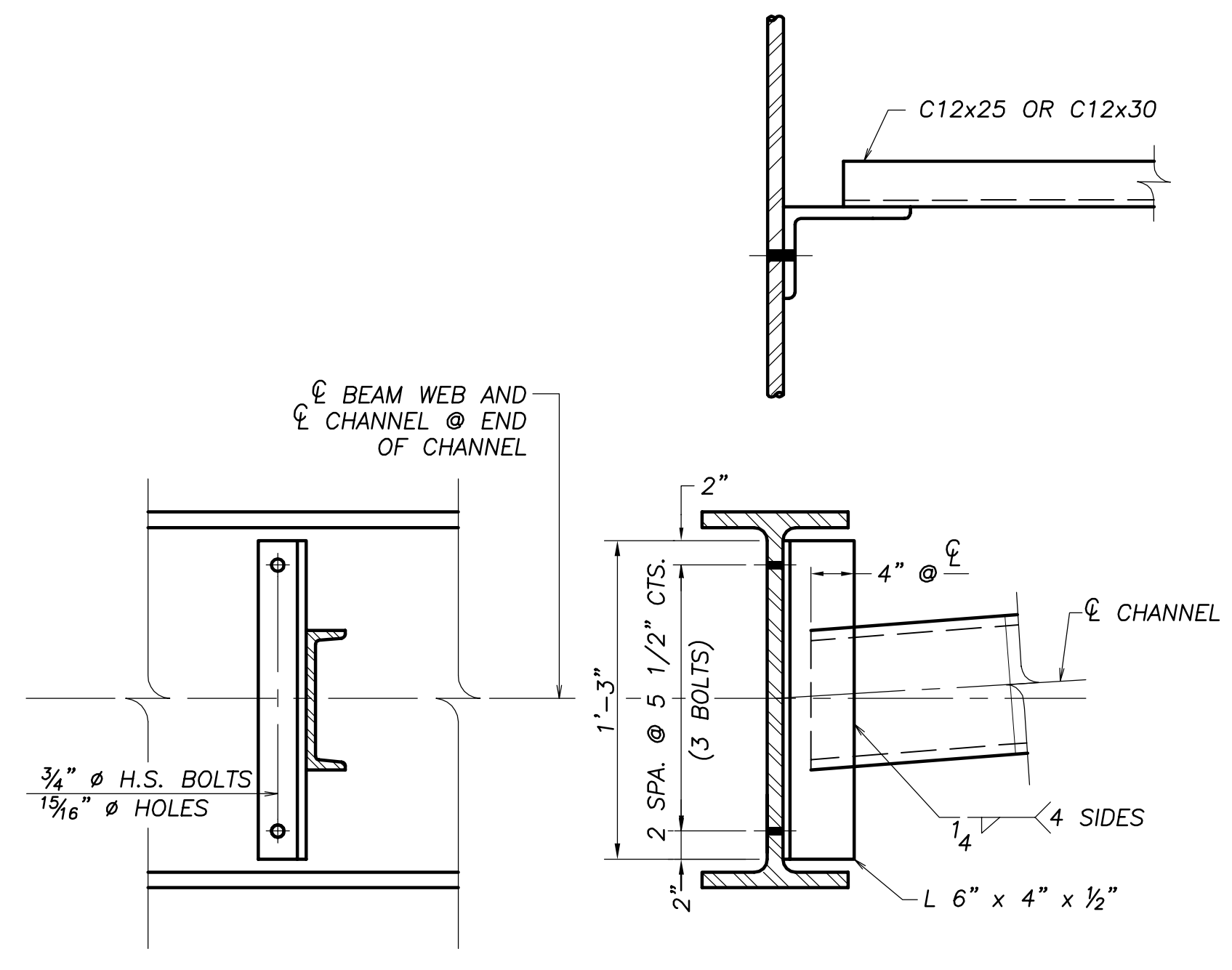
SHEET TITLE
STEEL DETAILS

JOB NUMBER
 2100002
 DATE
 03/06/2015

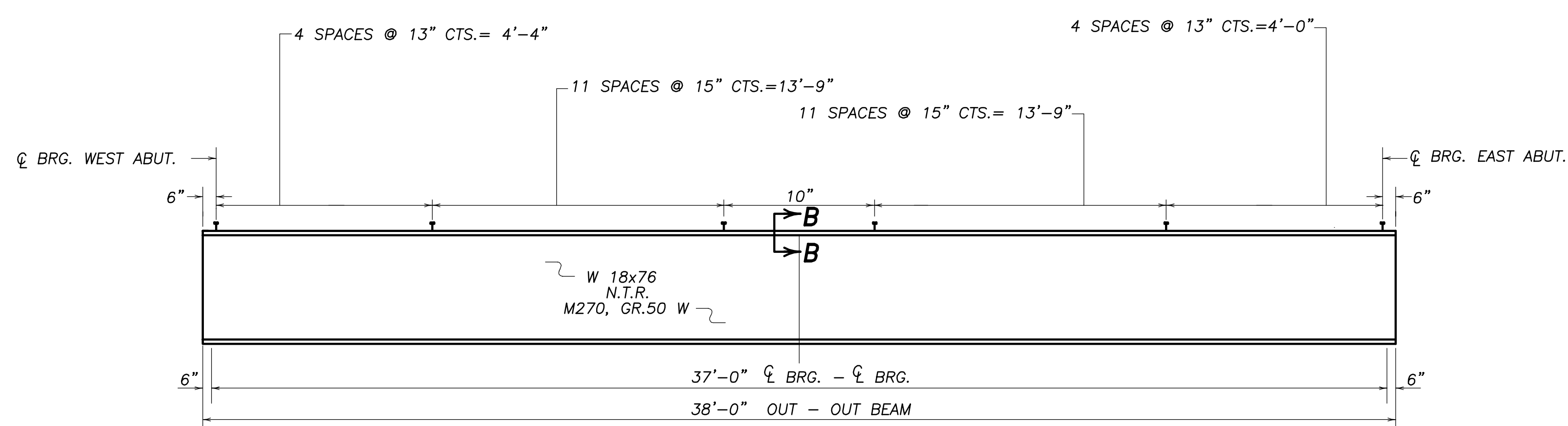
SHEET NO.
12 of 16



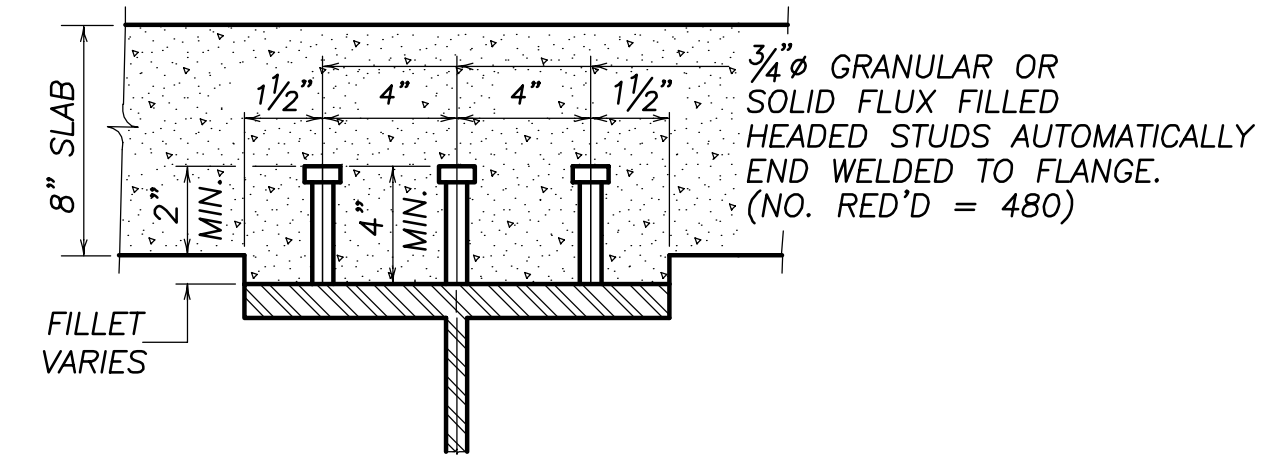
STEEL FRAMING PLAN



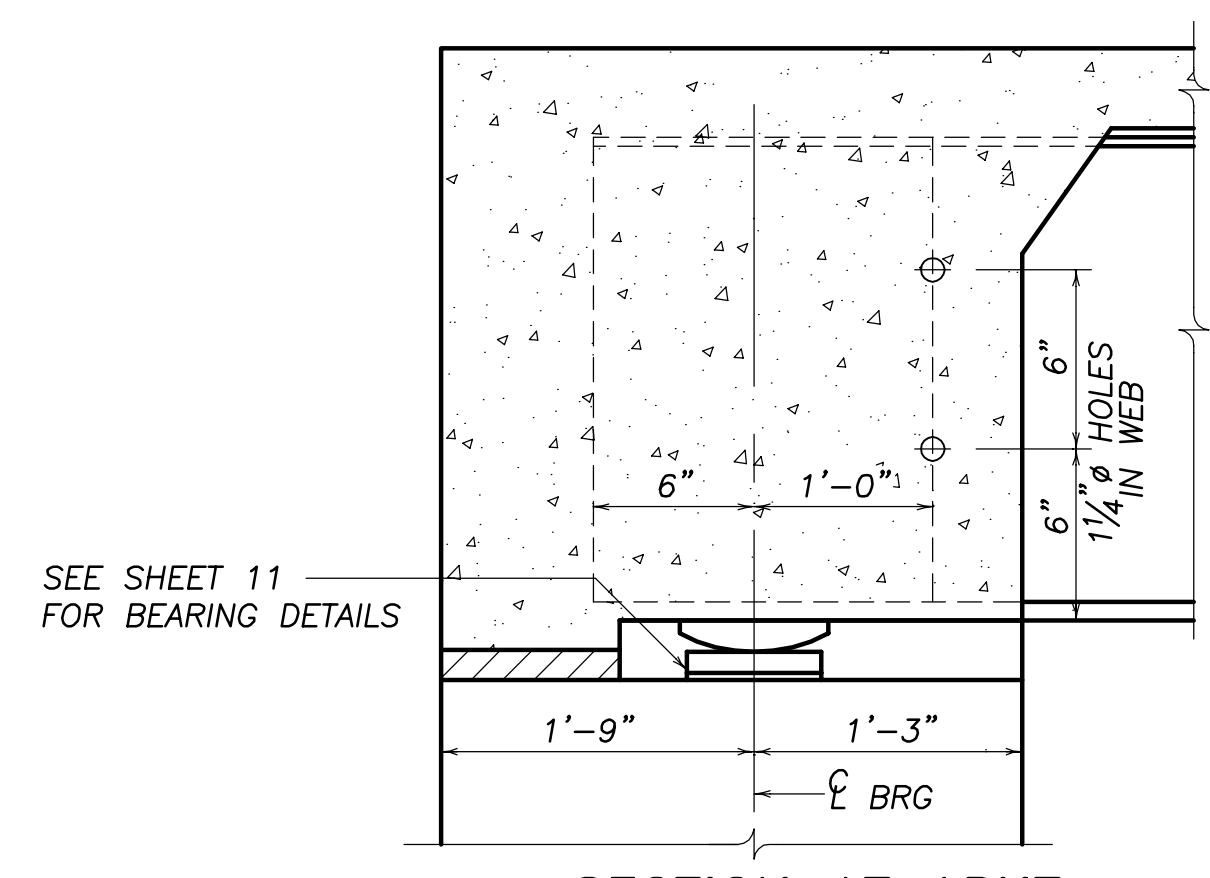
INTERIOR DIAPHRAGM



BEAM ELEVATION
 NOTCH TOUGHNESS REQUIREMENT = N.T.R.



SECTION B-B



SECTION AT ABUT.
 (ALONG BEAM CL)

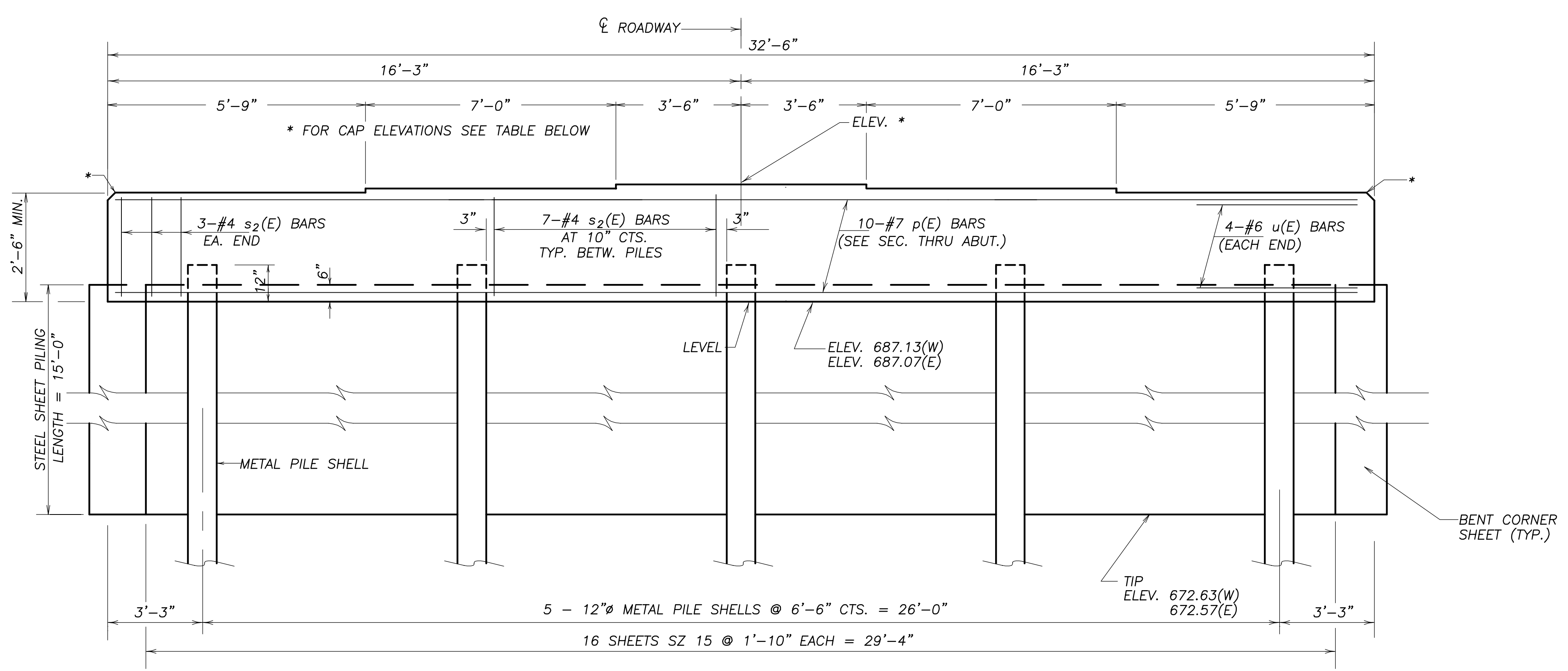
PROPOSED TOP OF BEAM ELEVATIONS *

LOCATION	BEAM No.	1	2	3	4	5
CL BRG. W. ABUT.		691.32	691.429	691.538	691.429	691.32
CL BRG. E. ABUT.		691.32	691.429	691.538	691.429	691.32

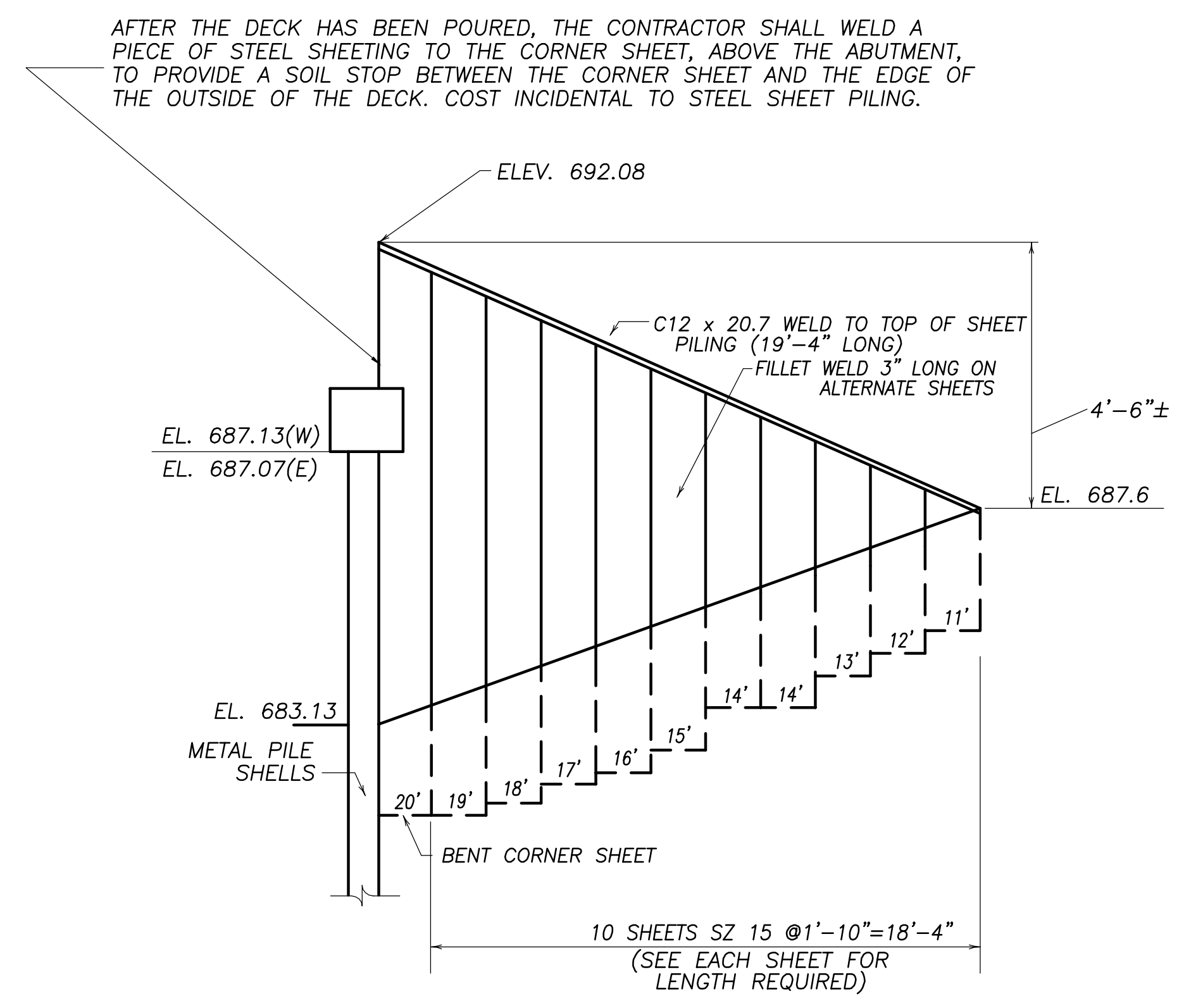
* ALLOW FOR 1 1/2" POSITIVE FILLET

DESIGNED:	RLR
DRAWN:	RLR, DJV
CHECKED:	DAB
DATE:	1/26/15

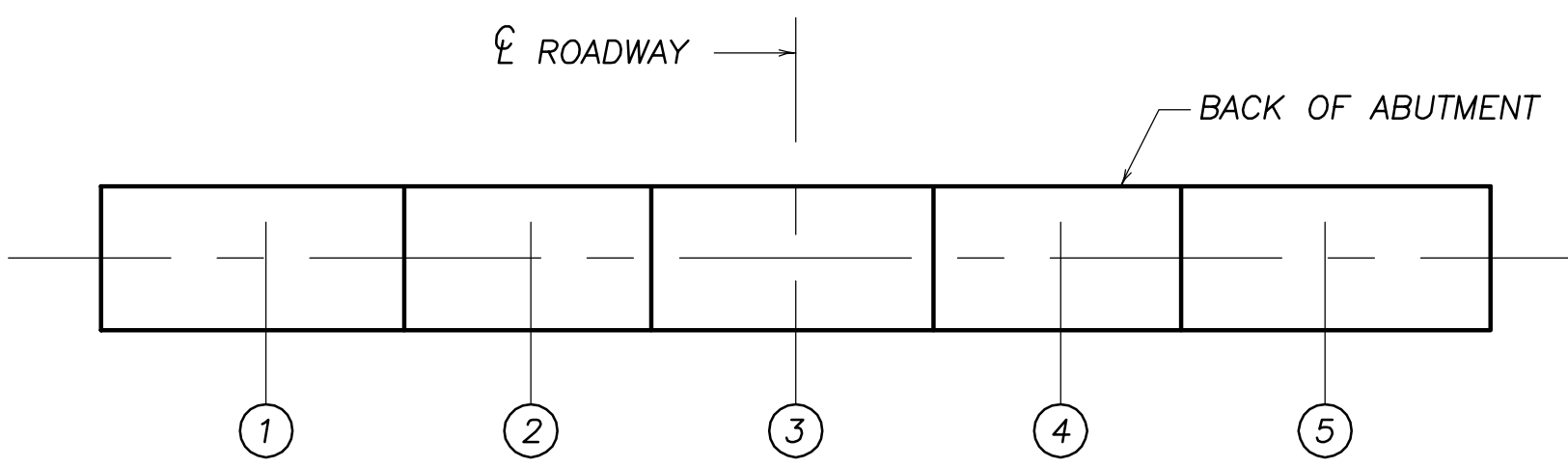
STRUCTURAL STEEL DETAILS
 SECTION 05-00211-00-BR
 SUYDAM ROAD
 DEKALB COUNTY
 SN 019-3064



ELEVATION
 ALL HORIZONTAL DIMENSIONS ARE ALONG CENTERLINE OF CAP
 *FOR CAP ELEVATIONS, SEE TABLE BELOW

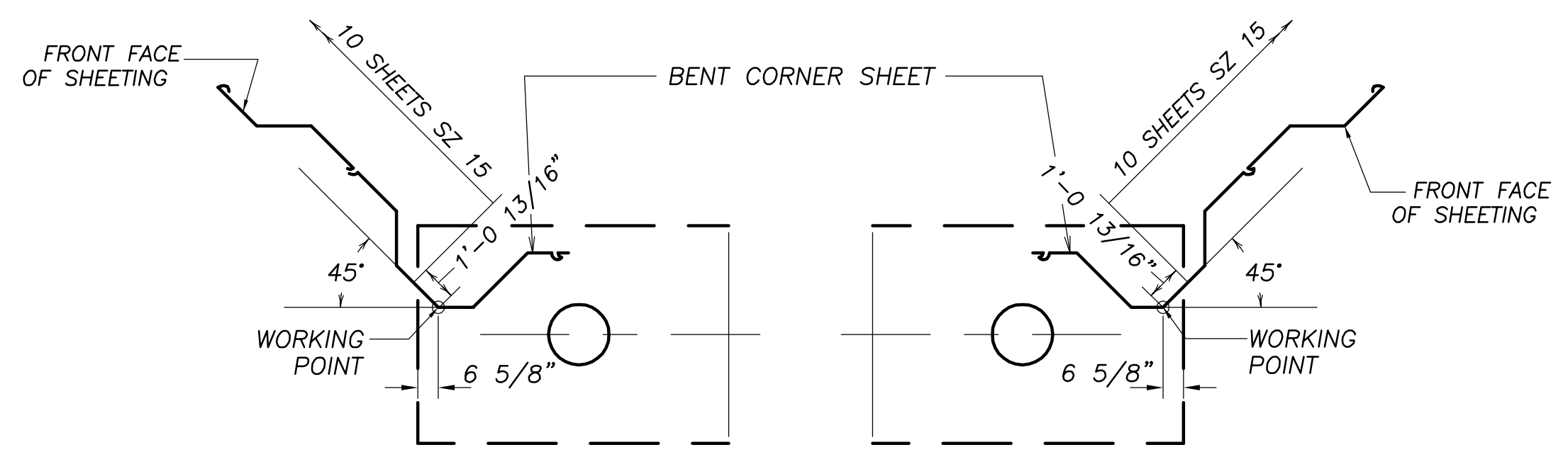


WINGWALL ELEVATION



LOCATION	ELEV.	1	2	3	4	5
WEST ABUT.		689.63	689.74	689.84	689.74	689.63
EAST ABUT.		689.57	689.68	689.79	689.68	689.57

ELEVATION TOP OF ABUTMENT CAP

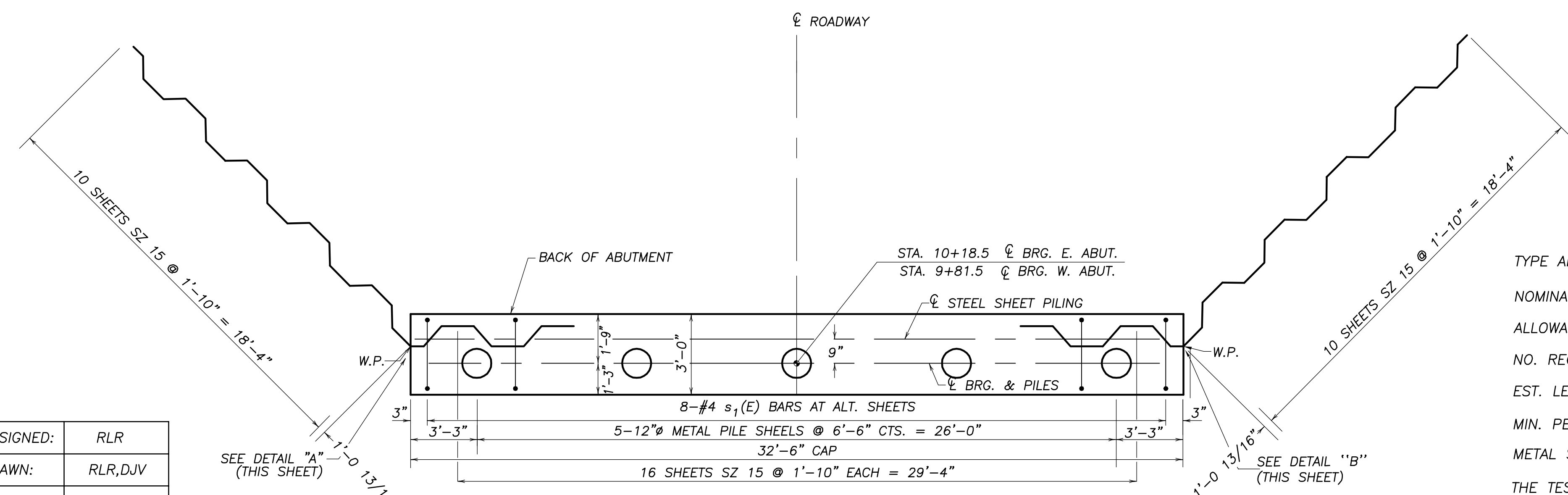


DETAIL "A" DETAIL "B"

BILL OF MATERIAL - ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE
p(E)	20	#7	32'-0"	—
s ₁ (E)	16	#4	6'-10"	⌋
s ₂ (E)	68	#4	9'-9"	⌋
u(E)	16	#6	11'-7"	⌋
CONCRETE STRUCTURES			CU. YD.	18.7
REINFORCEMENT BARS, EPOXY COATED			POUND	2102
FURNISHING METAL PILE SHELLS 12"x0.250"			FOOT	297
DRIVING PILES			FOOT	297
TEST PILE METAL SHELLS			EACH	1
PERMANENT STEEL SHEET PILING			SQ. FT.	2120

REINFORCEMENT BARS INDICATED (E) SHALL BE EPOXY COATED.



PLAN

PILE DATA INFORMATION

TYPE AND SIZE: METAL SHELL 12" DIA. x 0.25 IN. WALLS
 NOMINAL REQUIRED BEARING: 252 KIPS
 ALLOWABLE RESISTANCE AVAILABLE: 84 KIPS
 NO. REQUIRED : 9+1 TEST PILE (WEST ABUTMENT)
 EST. LENGTH: 33'
 MIN. PENETRATION 10' BELOW STREAMBED
 METAL SHELL PILES SHALL BE ACCORDING TO ASTM A252 GRADE 3.
 THE TEST PILES SHALL BE DRIVEN TO 110 PERCENT OF THE NOMINAL REQUIRED BEARING INDICATED IN THE PILE DATA INFORMATION.

DESIGNED:	RLR
DRAWN:	RLR,DJV
CHECKED:	DAB
DATE:	1/26/15

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR,DJV
CHECKED BY:	DAB
DATE:	1/26/15

PROJECT:	05-00211-00-BR
DATE:	1/26/15

SUBSTRUCTURE - ABUTMENTS OF SUYDAM ROAD BRIDGE REPLACEMENT FOR DEKALB COUNTY HIGHWAY

ABUTMENT DETAILS

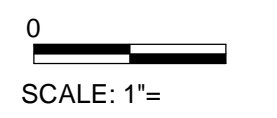
JOB NUMBER	2100002
------------	---------

DATE	01/26/2015
------	------------

SUBSTRUCTURE - ABUTMENTS SECTION 05-00211-00-BR SUYDAM ROAD DEKALB COUNTY S.N. 019-3064

FAS ROUTE NO.	SEC	COUNTY	TOTAL SHEETS	SHEET NO.
172	*	DEKALB	16	14

ILLINOIS PROJECT ***-****(****)
 * 05-00211-00-BR



SUBSTRUCTURE NOTES

AFTER THE ABUTMENT PILES ARE IN PLACE, THE CONTRACTOR SHALL START STEEL SHEET PILE DRIVING OPERATIONS WITH A BENT CORNER SHEET AT THE LOCATION SHOWN, OR BY MAKING AN ACCURATE LAYOUT OF THE WALL BEFORE STARTING, SO THAT ALL SHEETS, WALERS AND RODS WILL FIT AS PLANNED.

AFTER THE DECK HAS BEEN POURED, THE CONTRACTOR SHALL WELD A PIECE OF STEEL SHEETING TO THE CORNER SHEET, ABOVE THE ABUTMENT, TO PROVIDE A SOIL STOP BETWEEN THE CORNER SHEET AND THE EDGE OF THE OUTSIDE DECK. COST SHALL BE INCIDENTAL TO STEEL SHEET PILING.

CHANNEL SECTIONS ARE ALL INCLUDED FOR PAYMENT PER POUND OF FURNISHING AND ERECTING STRUCTURAL STEEL.

BACKFILL SHALL BE PLACED BEHIND THE ABUTMENT AFTER THE SUPERSTRUCTURE HAS BEEN POURED AND THE FALSEWORK REMOVED. SEE ARTICLE 502.10 OF THE STANDARD SPECIFICATIONS.

ALL EXPOSED CHANNELS AND HARDWARE SHALL BE PAINTED ACCORDING TO THE SPECIAL PROVISIONS FOR CLEANING AND PAINTING NEW METAL STRUCTURES. THE INTERMEDIATE COAT MAY BE APPLIED IN THE SHOP.

THE COLOR OF THE FINAL FINISH COAT SHALL BE REDDISH BROWN, MUNSELL NO. 25 TR 3/4 OR AS APPROVED BY THE ENGINEER.

STEEL SHEET PILING SHALL BE NEW SZ 15 OR APPROVED EQUAL PILING WITH AN EFFECTIVE SECTION MODULUS EQUAL TO OR GREATER THAN 10.9 IN.³/FT. SEE SPECIAL PROVISION FOR "PERMANENT STEEL SHEET PILING."

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR, DJV
DRAWING NAME:	Abutment Details
SURVEYED BY:	
BOOK NO.:	

wendler
 GROUND-BREAKING SOLUTIONS
 engineers - surveyors - scientists
 www.wendlergs.com ph: 815.288.2261
 Illinois Professional Design Firm No. 184-000848

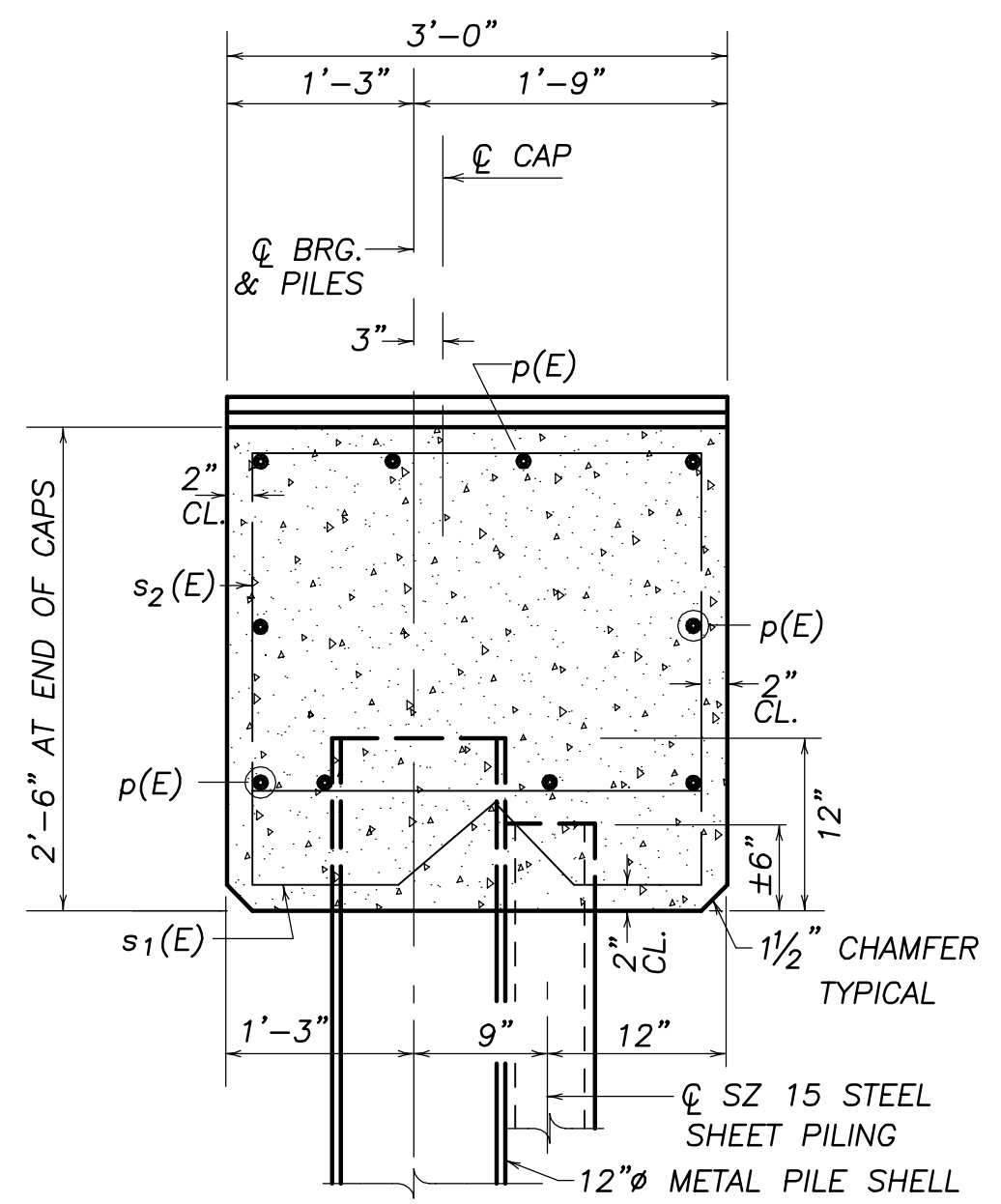
ABUTMENT DETAILS
 OF
 SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
 DEKALB COUNTY HIGHWAY

SHEET TITLE
 ABUTMENT

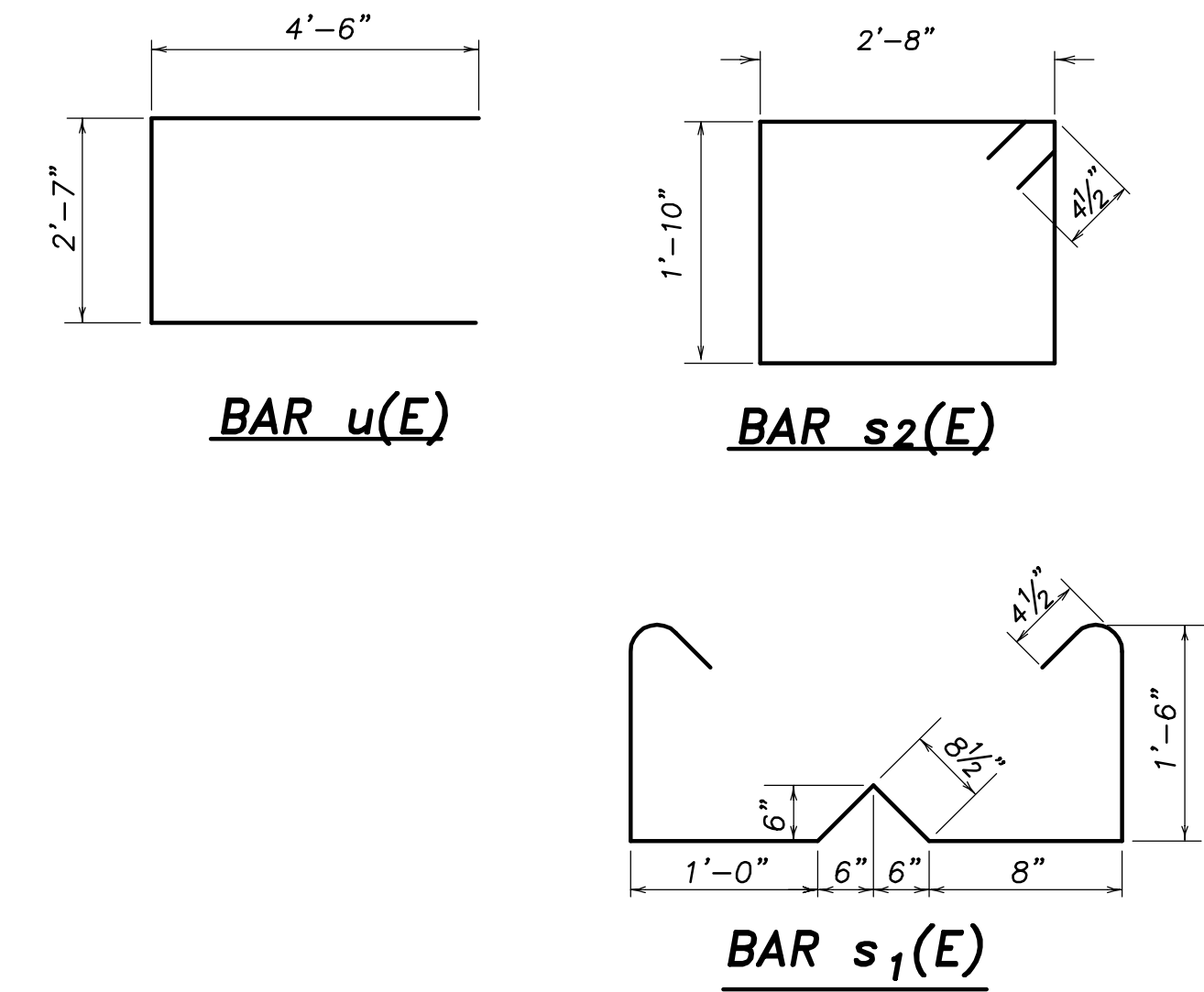
JOB NUMBER
 2100002

DATE
 01/26/2015

SHEET NO.
 14 of 16



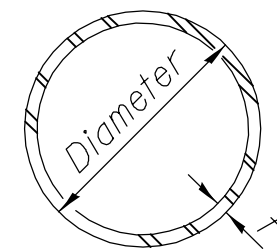
SEC. THRU ABUT.
 (AT RIGHT ANGLES)



ABUTMENT DETAILS
 SECTION 05-00211-00-BR
 SUYDAM ROAD
 DEKALB COUNTY
 SN 019-3064

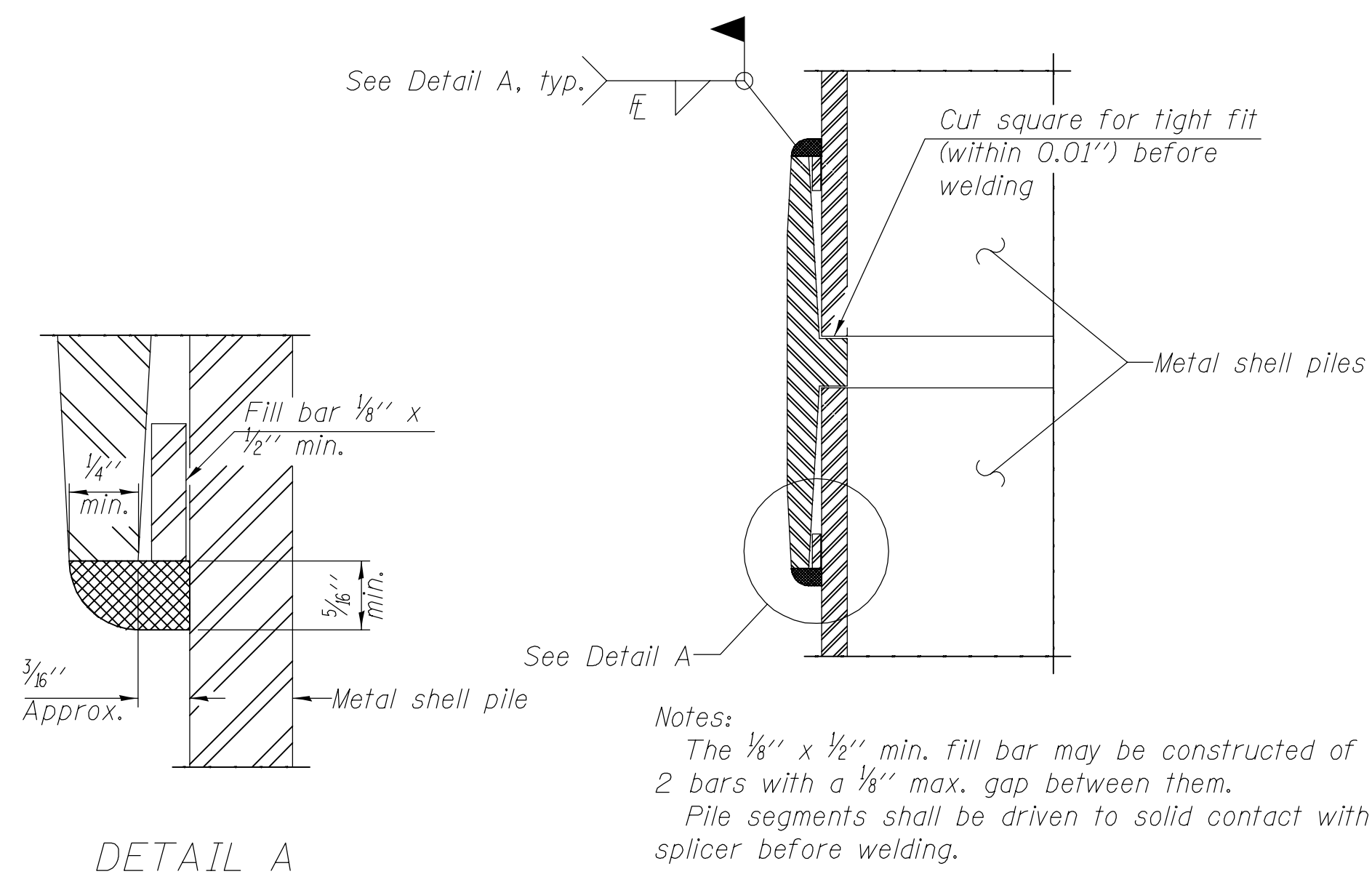
SB-43

DESIGNED:	RLR
DRAWN:	RLR, DJV
CHECKED:	DAB
DATE:	1/26/15



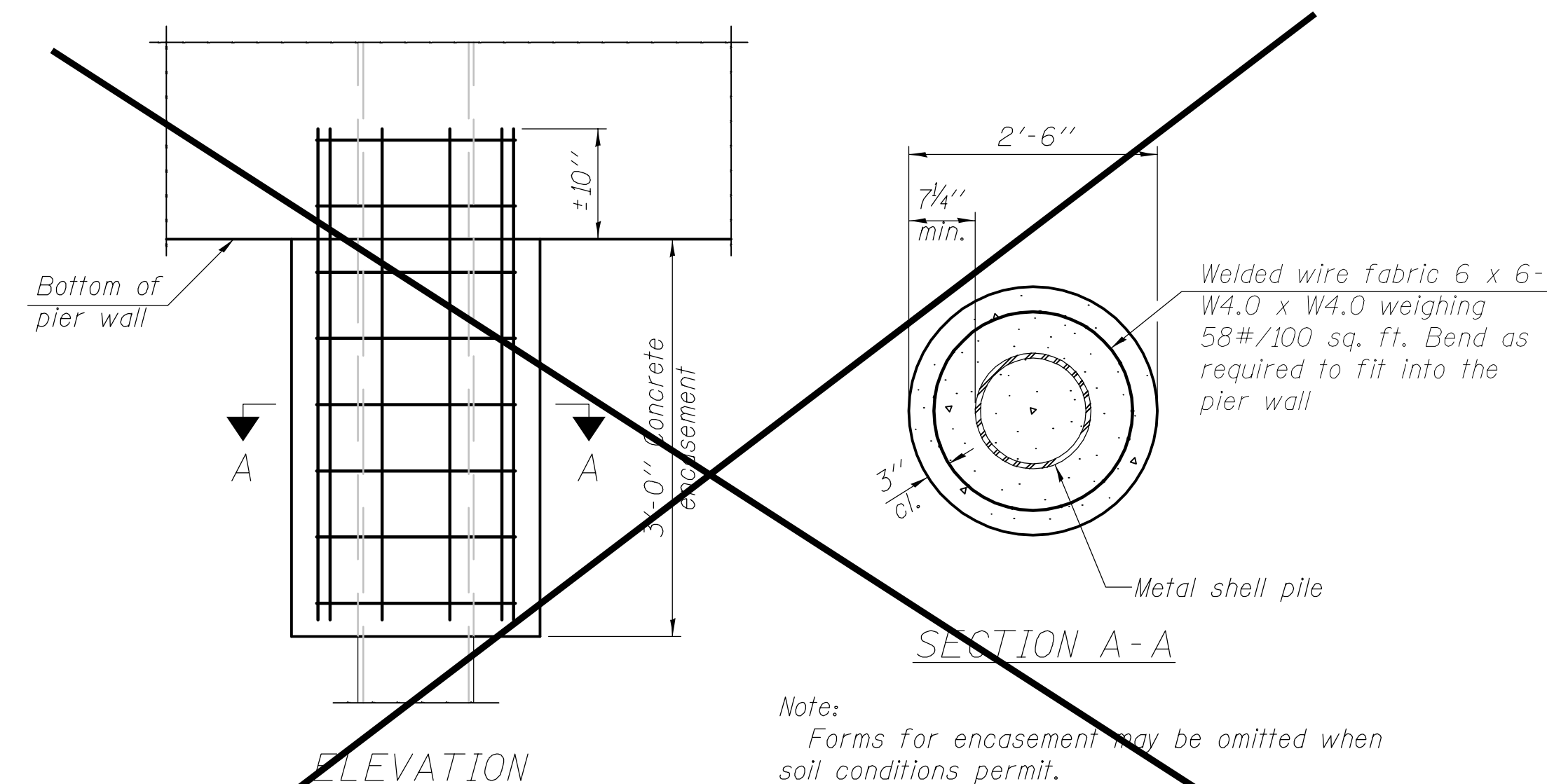
METAL SHELL PILE TABLE

Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd.3 /ft.)
PP12	0.179"	22.60	0.0274
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361



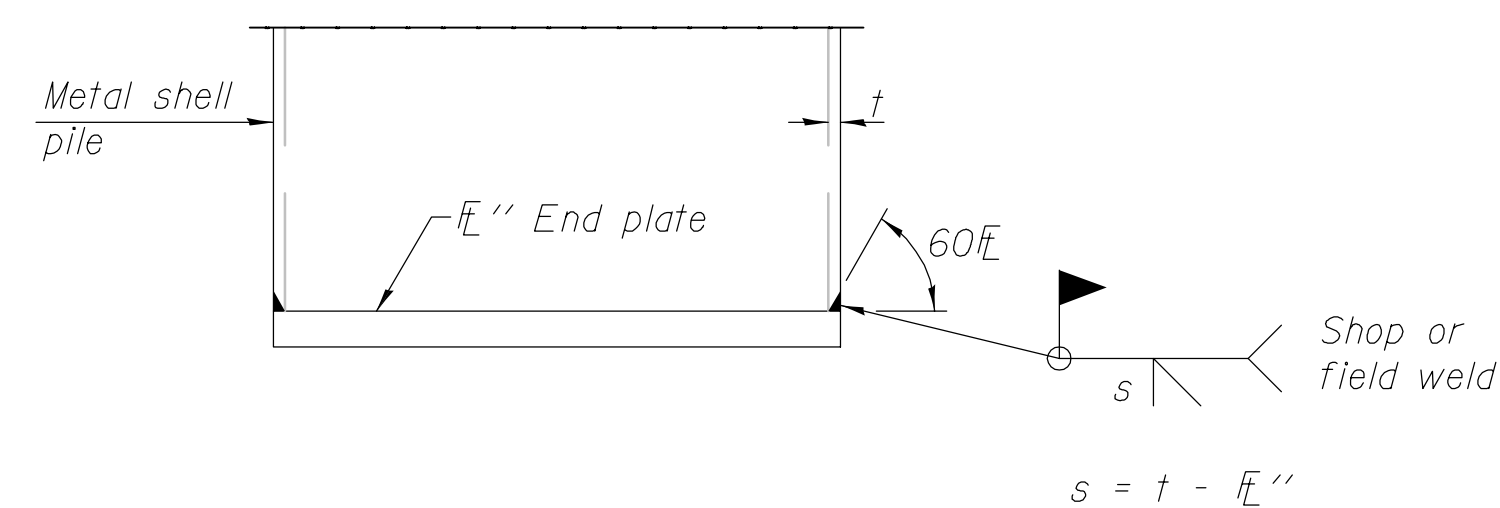
Notes:
 The 1/8" x 1/2" min. fill bar may be constructed of 2 bars with a 1/8" max. gap between them.
 Pile segments shall be driven to solid contact with splicer before welding.

WELDED COMMERCIAL SPLICE

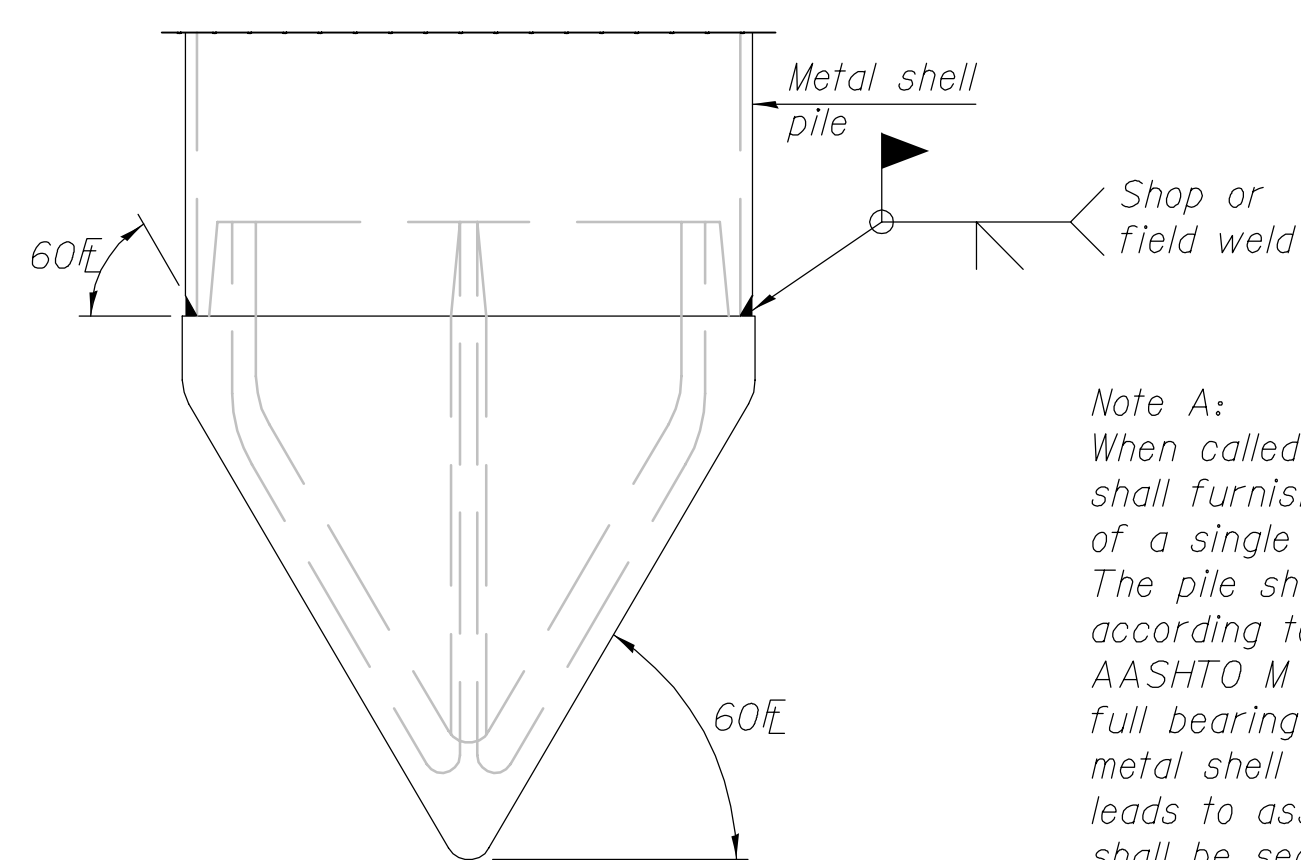


Note:
 Forms for encasement may be omitted when soil conditions permit.

CONCRETE ENCASEMENT AT PIERS



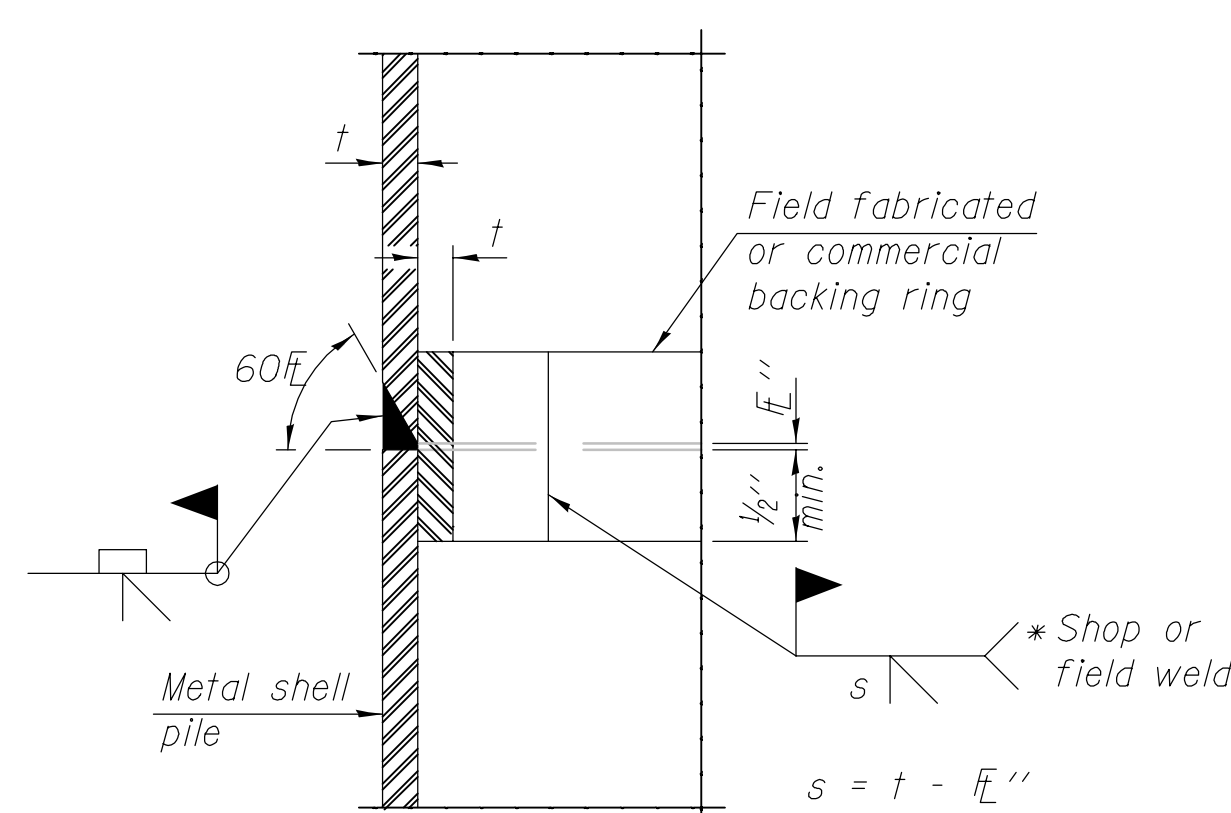
END PLATE ATTACHMENT



Note A:
 When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 90-60 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld.

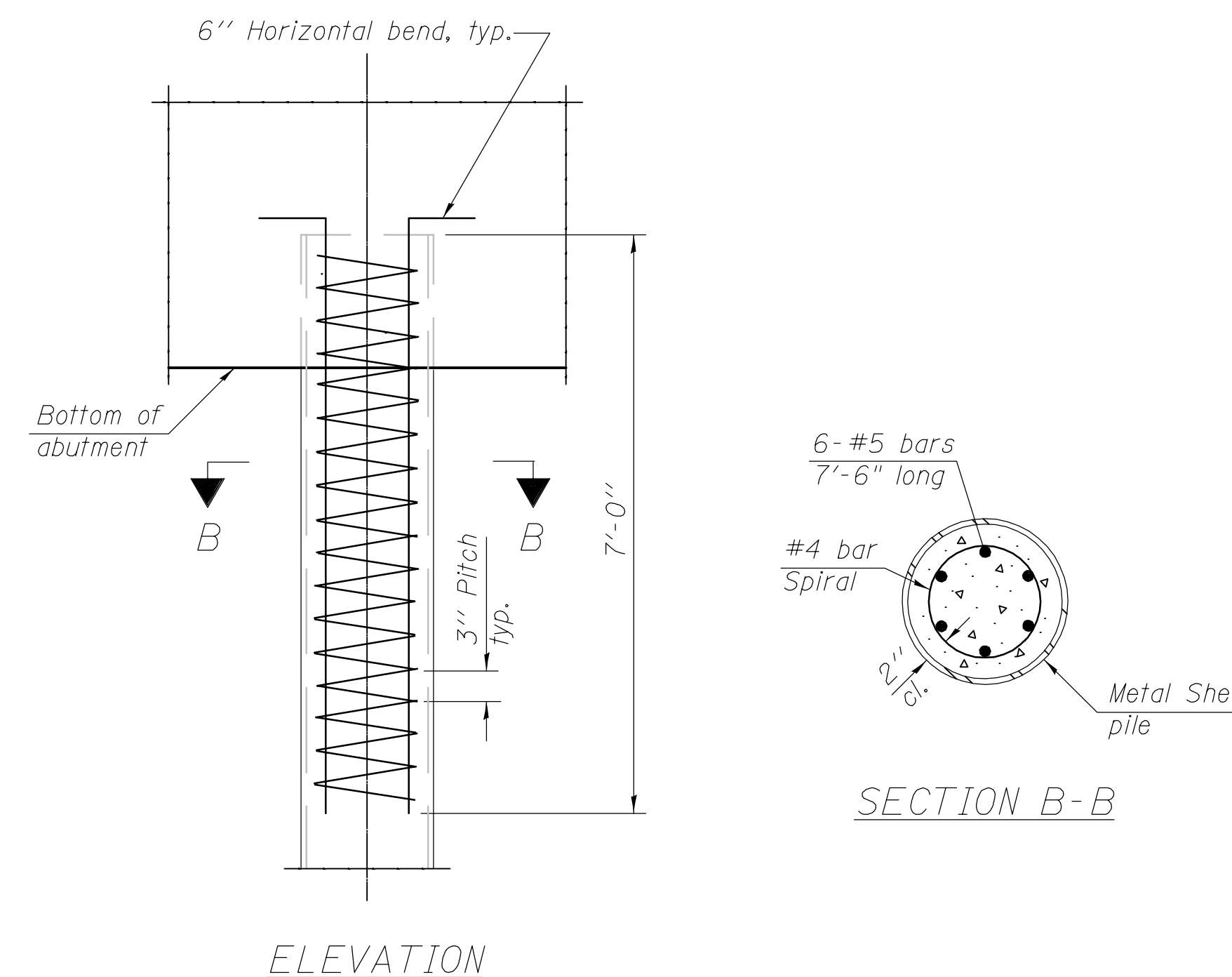
METAL SHELL PILE SHOE ATTACHMENT

(See Note A)



COMPLETE PENETRATION WELD SPLICE

* Field fabricated backing ring may be made from pile shell by removing segment to allow reducing circumference and vertically rejoin with partial joint penetration weld.



METAL SHELL REINFORCEMENT AT ABUTMENTS

Reinforcement shown shall be plain uncoated bar and not paid for separately but considered included in the price bid for Metal Shell Piles.

PILING DETAILS
SECTION 05-00211-00-BR
SUYDAM ROAD
DEKALB COUNTY
SN 019-3064

Note:
 The metal shell piles shall be according to ASTM A 252 Grade 3.

F-MS

7-1-10

DESIGNED:	RLR
DRAWN:	RLR,DJV
CHECKED:	DAB
DATE:	1/26/15

REVISIONS	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR,DJV
CHECKED BY:	DAB
DATE:	

wendler
 GROUND-BREAKING SOLUTIONS
 engineers - surveyors - scientists
 www.wendlergs.com ph: 815.288.2261
 Illinois Professional Design Firm No. 184-000848

PILE DETAILS
 OF
SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
DEKALB COUNTY HIGHWAY

SHEET TITLE

PILE DETAILS

JOB NUMBER
2100002

DATE
03/06/2015

SHEET NO.
15 of 16

I. Site Description:
A. Provide a description of the project location (include latitude and longitude):

SUYDAM ROAD, DEKALB COUNTY, IL
LAT: 41°39'35.63"N LONG: 88°40'52.37"W

B. Provide a description of the construction activity which is the subject of this plan:

BRIDGE REMOVAL & REPLACEMENT

C. Provide the estimated duration of this project:

SUMMER 2015

D. The total area of the construction site is estimated to be 0.75 acres. The total area of the site estimated to be disturbed by excavation, grading or other activities is 0.75 acres.

E. The following is a weighted average of the runoff coefficient for this project after construction activities are completed:

0.50

F. List all soils found within project boundaries. Include map unit name, slope information, and erosivity:

SOIL TYPES

ALL SLOPES WILL NOT EXCEED 5%, EXCEPT FOR DITCH FRONT & BACK SLOPES WHICH WILL NOT EXCEED 3:1.

G. Provide an aerial extent of wetland acreage at the site:

NO WETLANDS ARE LOCATED WITHIN PROJECT LIMITS

H. Provide a description of potentially erosive areas associated with this project:

FRONT & BACK SLOPES OF DITCH

I. The following is a description of soil disturbing activities by stages, their locations, and their erosive factors (e.g. steepness of slopes, length of slopes, etc.):

EXCAVATION FOR BASE (5%MAX), EXCAVATION FOR FRONT & BACK SLOPES OF DITCH (3:1MAX)

J. See the erosion control plans and/or drainage plans for this contract for information regarding drainage patterns, approximate slopes anticipated before and after major grading activities, locations where vehicles enter or exit the site and controls to prevent offsite sediment tracking (to be added after contractor identifies locations), areas of soil disturbance, the location of major structural and non-structural controls identified in the plan, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands) and locations where storm water is discharged to surface water including wetlands.

K. Identify who owns the drainage system (municipality or agency) this project will drain into:

DEKALB COUNTY

L. The following is a list of receiving water(s) and the ultimate receiving water(s) for this site. The location of the receiving waters can be found on the erosion and sediment control plans:

BUCK BRANCH OF SOMONAUK CREEK

M. Describe areas of the site that are to be protected or remain undisturbed. These areas may include steep slopes, highly erodible soils, streams, stream buffers, specimen trees, natural vegetation, nature preserves, etc.

Do not disturb areas outside of project limits.

N. The following sensitive environmental resources are associated with this project, and may have the potential to be impacted by the proposed development:

- Floodplain
- Wetland Riparian
- Threatened and Endangered Species
- Historic Preservation 303(d) Listed receiving waters for suspended solids, turbidity, or siltation
- Receiving waters with Total Maximum Daily Load (TMDL) for sediment, total suspended solids, turbidity or siltation
- Applicable Federal, Tribal, State or Local Programs
- Other

1. 303(c) Listed receiving waters (fill out this section if checked above):

- a. The name(s) of the listed water body, and identification of all pollutants causing impairment:
- b. Provide a description of how erosion and sediment control practices will prevent a discharge of sediment resulting from a storm event equal to or greater than a twenty-five (25) year, twenty-four (24) hour rainfall event:
- c. Provide a description of the location(s) of direct discharge from the project site to the 303(c) water body:
- d. Provide a description of the location(s) of any dewatering discharges to the MS4 and/or water body:

2. TMDL (fill out this section if checked above)

- a. The name(s) of the listed water body:
- b. Provide a description of the erosion and sediment control strategy that will be incorporated into the site design that is consistent with the assumptions and requirements of the TMDL:
- c. If a specific numeric waste load allocation has been established that would apply to the project's discharges, provide a description of the necessary steps to meet that allocation:

O. The following pollutants of concern will be associated with this construction project:

- Soil Sediment
- Concrete
- Concrete Truck Waste
- Concrete Curing Compounds
- Solid Waste Debris
- Paints
- Solvents
- Fertilizers / Pesticides
- Petroleum (gas, diesel, oil, kerosene, hydraulic oil / fluids)
- Antifreeze / Coolants
- Waste water from cleaning construction equipment
- Other (specify)
- Other (specify)
- Other (specify)
- Other (specify)
- Other (specify)

II. Controls:

This section of the plan addresses the controls that will be implemented for each of the major construction activities described in I.C. above and for all use areas, borrow sites, and waste sites. For each measure discussed, the Contractor will be responsible for its implementation as indicated. The Contractor shall provide to the Owner a plan for the implementation of the measures indicated. The Contractor, and subcontractors, will notify the Owner of any proposed changes, maintenance, or modifications to keep construction activities compliant with the Permit ILR10. Each such Contractor has signed the required certification on forms which are attached to, and are a part of, this plan:

A. Erosion and Sediment Controls

1. **Stabilized Practices:** Provided below is a description of interim and permanent stabilization practices, including site specific scheduling of the implementation of the practices. Site plans will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices may include but are not limited to: temporary seeding, permanent seeding, mulching, geotextiles, sodding, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Except as provided below in II(A)(1)(a) and II(A)(3), stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceases on all disturbed portions of the site where construction will not occur for a period of fourteen (14) or more calendar days. Where the initiation of stabilization measures by the seventh day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as practicable thereafter.

The following stabilization practices will be used for this project:

- Preservation of Mature Vegetation
- Vegetated Buffer Strips
- Protection of Trees
- Temporary Erosion Control Seeding
- Temporary Turf (Seeding, Class 7)
- Temporary Mulching
- Permanent Seeding
- Erosion Control Blanket / Mulching
- Sodding
- Geotextiles
- Other (specify)
- Other (specify)
- Other (specify)
- Other (specify)

Describe how the stabilization practices listed above will be utilized during construction:

The contractor will perform this work in accordance with the Standard Specifications for Road & Bridge construction, Adopted by IDOT and provisions included in NPDES Permit No. ILR10 issued by the IEPA for storm water discharges from construction site activity.

Describe how the stabilization practices listed above will be utilized after construction activities have been completed:

THE OWNER/DEVELOPER WILL CONTINUE TO MONITOR THE PROJECT LIMITS AND WILL PURSUE CORRECTIVE MEASURES, IF NECESSARY.

2. **Structural Practices:** Provided below is a description of structural practices that will be implemented, to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include but are not limited to: perimeter erosion barrier, earth dikes, drainage swales, sediment traps, ditch checks, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. The installation of these devices may be subject to Section 404 of the Clean Water Act.

The following structural practices will be used for this project:

- Perimeter Erosion Barrier
- Temporary Ditch Check
- Storm Drain Inlet Protection
- Sediment Trap
- Temporary Pipe Slope Drain
- Temporary Sediment Basin
- Temporary Stream Crossing
- Stabilized Construction Exits
- Turf Reinforcement Mats
- Permanent Check Dams
- Permanent Sediment Basin
- Aggregate Ditch
- Paved Ditch
- Rock Outlet Protection
- Riprap
- Gabions
- Slope Mattress
- Retaining Walls
- Slope Walls
- Concrete Revetment Mats
- Level Spreaders
- Other (specify)
- Other (specify)
- Other (specify)
- Other (specify)
- Other (specify)

Describe how the structural practices listed above will be utilized during construction:

THE CONTRACTOR WILL PERFORM THIS WORK IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, ADOPTED BY IDOT AND PROVISIONS INCLUDED IN THE STORM WATER RUNOFF PERMIT DURING CONSTRUCTION.

Describe how the structural practices listed above will be utilized after construction activities have been completed:

THE OWNER/DEVELOPER WILL CONTINUE TO MONITOR THE PROJECT LIMITS AND WILL PURSUE CORRECTIVE MEASURES, IF NECESSARY

3. **Storm Water Management:** Provided below is a description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

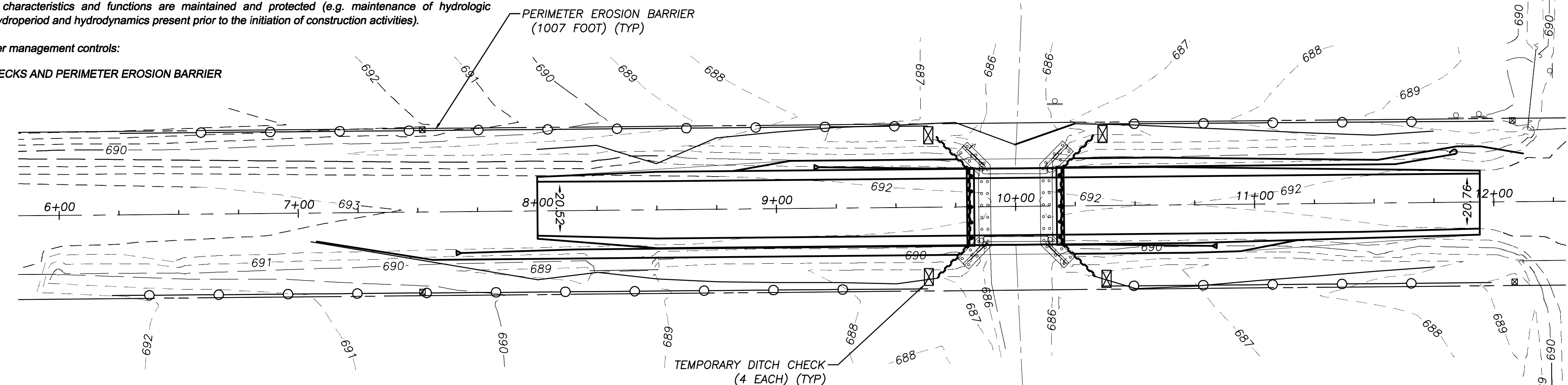
a. Such practices may include but are not limited to: storm water detention structures (including wet ponds), storm water retention structures, flow attenuation by use of open vegetated swales and natural depressions, infiltration of runoff on site, and sequential systems (which combine several practices).

The practices selected for implementation were determined on the basis of the technical guidance in Chapter 41 (Construction Site Storm Water Pollution Control) of the IDOT Bureau of Design and Environment Manual. If practices other than those discussed in Chapter 41 are selected for implementation or if practices are applied to situations different from those covered in Chapter 41, the technical basis for such decisions will be explained below.

b. Velocity dissipation devices will be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

Description of storm water management controls:

TEMPORARY DITCH CHECKS AND PERIMETER EROSION BARRIER



4. **Approved State or Local Laws:**
The management practices, controls and provisions contained in this plan will be in accordance with IDOT specifications, which are at least as protective as the requirements contained in the Illinois Environmental Protection Agency's Illinois Urban Manual. Procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials shall be described or incorporated by reference in the space provided below. Requirements specified in sediment and erosion site plans, site permits, storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are upon submittal of an NOI, to be authorized to discharge under the Permit ILR10 incorporated by reference and are enforceable under this permit even if they are not specifically included in the plan.

Description of procedures and requirements specified in applicable sediment and erosion site plans or storm water management plans approved by local officials:

5. **Contractor Required Submittals:** Prior to conducting any professional services at the site covered by this plan, the Contractor and each subcontractor responsible for compliance with the permit shall submit to the Owner a Contractor Certification Statement, BDE 2342a.

- a. The Contractor shall provide a construction schedule containing an adequate level of detail to show major activities with implementation of pollution prevention BMPs, including the following items:
 - Approximate duration of the project, including each stage of the project
 - Rainy season, dry season, and winter shutdown dates
 - Temporary stabilization measures to be employed by contract phases
 - Mobilization timeframe
 - Mass clearing and grubbing/roadside clearing dates
 - Deployment of Erosion Control Practices
 - Deployment of Sediment Control Practices (including stabilized construction entrances/exits)
 - Deployment of Construction Site Management Practices (including concrete washout facilities, chemical storage, refueling locations, etc.)
 - Paving, saw-cutting, and any other pavement related operations
 - Major planned stockpiling operations
 - Timeframe for other significant long-term operations or activities that may plan non-storm water discharges such as dewatering, grinding, etc.
 - Permanent stabilization activities for each area of the project

b. The Contractor and each subcontractor shall provide, as an attachment to their signed Contractor Certification Statement, a discussion of how they will comply with the requirements of the permit in regard to the following items and provide a graphical representation showing location and type of BMPs to be used when applicable:

- Vehicle Entrances and Exits - Identify type and location of stabilized construction entrances and exits to be used and how they will be maintained.
- Material Delivery, Storage and Use - Discuss where and how materials including chemicals, concrete curing compounds, petroleum products, etc. will be stored for this project.
- Stockpile Management - Discuss what BMPs will be used to prevent pollution of storm water from stockpiles.
- Waste Disposal - Discuss methods of waste disposal that will be used for this project.
- Spill Prevention and Control - Discuss steps that will be taken in the event of a material spill (chemicals, concrete curing compounds, petroleum, etc.)
- Concrete Residuals and Washout Wastes - Discuss the location and type of concrete washout facilities to be used on this project and how they will be signed and maintained.
- Litter Management - Discuss how litter will be maintained for this project (education of employees, number of dumpsters, frequency of dumpster pick-up, etc.).
- Vehicle and Equipment Fueling - Identify equipment fueling locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Vehicle and Equipment Cleaning and Maintenance - Identify where equipment cleaning and maintenance locations for this project and what BMPs will be used to ensure containment and spill prevention.
- Additional measures indicated in the plan.

III. Maintenance:

When requested by the Contractor, the Owner will provide general maintenance guides to the Contractor for the practices associated with this project. The following additional procedures will be used to maintain, in good and effective operating conditions, the vegetation, erosion and sediment control measures and other protective measures identified in this plan. It will be the Contractor's responsibility to attain maintenance guidelines for any manufactured BMPs which are to be installed and maintained per manufacture's specifications.

IV. Inspections:

Qualified personnel shall inspect disturbed areas of the construction site which have not yet been finally stabilized, structural control measures, and locations where vehicles and equipment enter and exit the site using IDOT Storm Water Pollution Prevention Plan Erosion Control Inspection Report (BC 2259). Such inspections shall be conducted at least once every seven (7) calendar days and within twenty-four (24) hours of the end of a storm that is 0.5 inch or greater or equivalent snowfall.

If any violation of the provisions of this plan is identified during the conduct of the construction work covered by this plan, the Owner shall notify the appropriate IEPA Field Operations Section office by email at: epa.smoncomp@illinois.gov, telephone or fax within twenty-four (24) hours of the incident. The Owner shall then complete and submit an "Incidence of Non-Compliance" (ION) report for the identified violation within five (5) days of the incident. The Owner shall use forms provided by IEPA and shall include specific information on the cause of non-compliance, actions which were taken to prevent any further causes of non-compliance, and a statement detailing any environmental impact which may have resulted from the non-compliance. All reports of non-compliance shall be signed by a responsible authority in accordance with Part VI. G of the Permit ILR10.

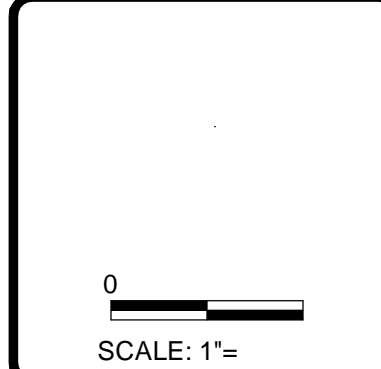
The Incidence of Non-Compliance shall be mailed to the following address: Illinois Environmental Protection Agency, Division of Water Pollution Control, Attn: Compliance Assurance Section, 1021 North Grand East, Post Office Box 19276, Springfield, Illinois 62794-9276

V. Failure to Comply:

Failure to comply with any provisions of this Storm Water Pollution Prevention Plan will result in the implementation of a National Pollutant Discharge Elimination System/Erosion and Sediment Control Deficiency Deduction against the Contractor and/or penalties under the Permit ILR10 which could be passed on to the Contractor.

FAS ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
172	*	DEKALB	16	16

ILLINOIS PROJECT ***-****(***)
* 05-00211-00-BR



REVISION	DATE

DESIGNED BY:	RLR
DRAWN BY:	RLR/DJV
DRAWING NAME:	2100002
SUBMITTED BY:	
BOOK NO.:	

wendler
GROUND-BREAKING SOLUTIONS
engineers - surveyors - scientists
www.wendlergs.com ph: 615.286.2261
Illinois Professional Design Firm No. 104-000946

EROSION & SEDIMENT CONTROL PLAN
 OF
SUYDAM ROAD BRIDGE REPLACEMENT
 FOR
DEKALB COUNTY HIGHWAY

SHEET TITLE

EROSION

JOB NUMBER
2100002

DATE
01/26/2015

SHEET NO.

16 of 16