06-16-2023 LETTING ITEM 200

T.R.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	1
	ILLINOIS	CONTRACT NO. 97713		

INDEX OF SHEETS

HIGHWAY STANDARDS

000001–08
001001–02
001006
280001–07
420401-13
515001–04
601101–02
630001–12
630301–09
631032–10
701901–08
725001–01
782006–01
BLR 21–9

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
PROPOSED
HIGHWAY PLANS

ENGELKE BRIDGE
T.R. 101 (SILVER CREEK ROAD)
SECTION 16-18113-00-BR
STPBR FUNDS
PROJECT NO. 8LLP(842)
MADISON COUNTY
OLIVE R.D.
C-98-351-16

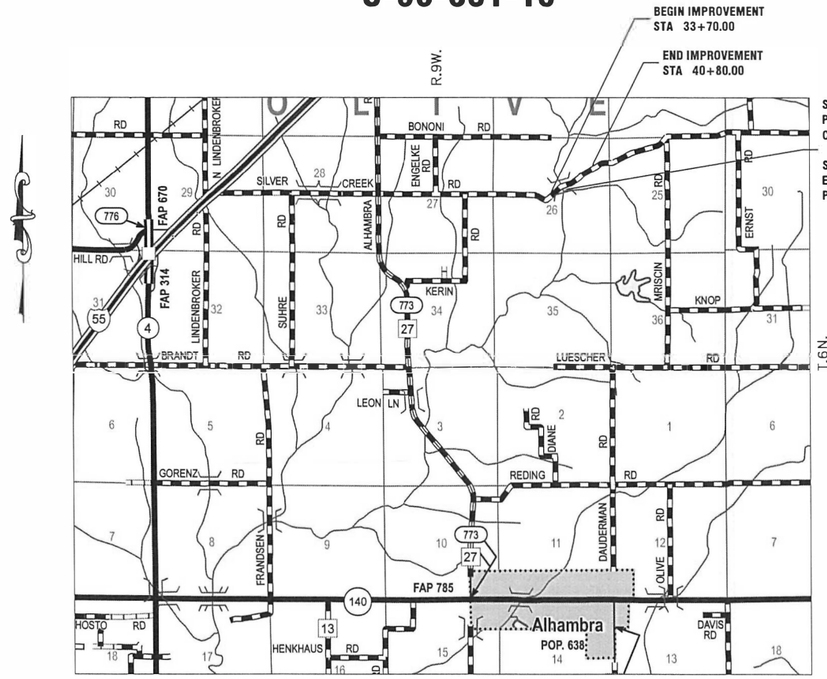
LOCATION OF SECTION INDICATED THUS: ▬

BEGIN IMPROVEMENT
STA 33+70.00

END IMPROVEMENT
STA 40+80.00

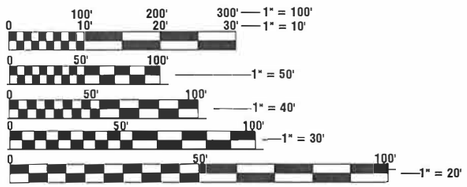
STRUCTURE IS A WIDE FLANGE STEEL BEAM BRIDGE WITH A POURED CONCRETE DECK ON PILE BENTS CARRYING SILVER CREEK ROAD(TR 101) OVER A BRANCH OF SILVER CREEK

STATION 37+26.88
EXIST SN 060-3076
PROP SN 060-3367



LOCATION MAP
NOT TO SCALE

GROSS LENGTH = 710 FT. (0.134 MI)
NET LENGTH = 710 FT. (0.134 MI)



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

FUNCTIONAL CLASSIFICATION = RURAL LOCAL
2022 ADT = 125
DESIGN SPEED = 30 mph

THESE PLANS WERE PREPARED BY ME OR A FULL-TIME MEMBER OF MY STAFF WORKING UNDER MY PERSONAL SUPERVISION

LICENSED PROFESSIONAL ENGINEER
ADAM J. WALDEN
062-062714
STATE OF ILLINOIS

ADAM J. WALDEN, P.E.
MADISON COUNTY ENGINEER
8-9-2022
LICENSE EXPIRES 11-30-2023

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED Robert J. Hill 8-9-22
DATE
HIGHWAY COMMISIONER

APPROVED 8-9-2022
Adam Walden
DATE
MADISON COUNTY ENGINEER

PASSED 9-1-2022
DATE
DISTRICT 8 ENGINEER OF LOCAL ROADS AND STREETS

RELEASING FOR BID BASED ON LIMITED REVIEW 9-1-2022
DATE
REGION 5 ENGINEER

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

GENERAL NOTES

1. ANY FACILITY OR APPURTENANCES WHICH ARE THE PROPERTY OF ANY PUBLIC UTILITY LOCATED WITHIN THE LIMITS OF CONSTRUCTION, SHALL BE LOCATED OR ADJUSTED BY THEIR RESPECTIVE OWNERS. THE CONTRACTOR SHALL NOTIFY AND COOPERATE WITH OWNERS OF ANY SUCH FACILITY IN THEIR REMOVAL AND REARRANGEMENT OPERATIONS IN ORDER THAT THESE OPERATIONS AND THE CONSTRUCTION OF THIS PROJECT MAY PROGRESS IN A REASONABLE MANNER.

2. THE FOLLOWING UTILITY COMPANIES MAY HAVE FACILITIES LOCATED WITHIN THE LIMITS OF CONSTRUCTION WHICH MAY REQUIRE ADJUSTMENT, RELOCATION, OR REMOVAL. ALL ARE MEMBERS OF J.U.L.I.E. UNLESS NOTED OTHERWISE.

SOUTHWESTERN ELECTRIC COOPERATIVE, INC. 525 U.S. ROUTE 40 GREENVILLE, IL 62246	MADISON COMMUNICATIONS 21668 DOUBLE ARCH ROAD STAUNTON, IL 62088

3. THE CONTRACTOR SHALL BE REQUIRED TO COMPLY WITH THE PROVISIONS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) STORM WATER PERMIT AND IMPLEMENT THE EROSION CONTROL PLAN INCLUDED IN THESE PLANS, AS SPECIFIED IN ARTICLE 107.23, THE ENGINEER MUST GIVE PRIOR APPROVAL BEFORE DISTURBANCE OF ANY AREA CAN BEGIN.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.39 OF THE STANDARD SPECIFICATION, THE J.U.L.I.E. NUMBER IS 1-800-892-0123. THE LOCATION OF ALL UTILITIES ARE BASED ON INFORMATION PROVIDED BY OTHERS AND ARE INTENDED TO BE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE HIS CONSTRUCTION ACTIVITIES WITH THE VARIOUS UTILITY OWNERS. ALL POTENTIAL CONFLICTS SHALL BE INVESTIGATED AND REMEDIAL ACTION TAKEN PRIOR TO INTERRUPTION OF THE CONTRACTOR'S PROGRESS. ALL UTILITY FACILITIES THAT REQUIRE RELOCATION WITHIN COUNTY R.O.W. SHALL BE COMPLETED BY THE UTILITY COMPANY UNLESS OTHERWISE SHOWN ON THE PLANS.

5. IN ADDITION TO FIELD SURVEYS, PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING FACILITIES HAVE BEEN TAKEN FROM EXISTING PLANS AND ARE SUBJECT TO CONSTRUCTION VARIATIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD. SUCH VARIATIONS SHALL NOT BE CAUSE FOR ADDITIONAL COMPENSATION DUE TO A CHANGE IN THE SCOPE OF WORK. HOWEVER, THE CONTRACTOR WILL BE PAID FOR THE QUANTITY ACTUALLY FURNISHED AT THE UNIT PRICE BID FOR THE WORK.

6. ALL STATION AND OFFSET REFERENCES ARE TO PROPOSED ROADWAY CENTERLINE, UNLESS OTHERWISE NOTED. THE STATE PLANE COORDINATE SYSTEM HAS BEEN USED FOR THE HORIZONTAL CONTROL.

7. ALL ELEVATIONS SHOWN ON THE PLANS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988(NAVD 88)

8. ANY REFERENCE WITHIN THESE PLANS TO A STANDARD SHALL BE INTERPRETED TO MEAN THE EDITION INDICATED BY THE SUB-NUMBER LISTED ON THE COVER SHEET OR THE COPY INCLUDED IN THESE PLANS.

9. CONTRACTOR SHALL ENSURE THAT POSITIVE DRAINAGE IS MAINTAINED FROM THE ROADWAY DITCHES TO THE CHANNEL. ANY EXTRA REQUIRED GRADING SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

10. GRADING SHALL BE DONE BY HAND AROUND LIGHT POLES, UTILITY POLES, SIGN POSTS, SHRUBS, TREES OR OTHER NATURAL OR MAN-MADE OBJECTS WHERE SHALLOW FILLS OR CUTS ARE ADJACENT TO THE ITEMS. IT IS THE INTENT THAT THE LIMITS OF CONSTRUCTION BE SUCH AS TO PRESERVE, IN THE ORIGINAL STATE, AS MUCH AREA AS POSSIBLE. THE DECISION AS TO ITEMS TO REMAIN IN PLACE SHALL BE DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCLUDED IN THE CONTRACT UNIT PRICE PER CUBIC YARD FOR EARTH EXCAVATION, AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

11. REMOVAL OF AGGREGATE MATERIAL AND OIL & CHIP BITUMINOUS MATERIAL SHALL NOT BE PAID FOR SEPARATELY, BUT WILL BE INCLUDED IN THE CONTRACT UNIT PRICE FOR EARTH EXCAVATION AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

12. THE CONTRACTOR SHALL FERTILIZE, SEED AND MULCH ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION OPERATIONS AS DIRECTED BY THE ENGINEER. SEEDING SHALL BE PAID FOR ONLY WITHIN THE PROPOSED RIGHT-OF-WAY OR EASEMENT LIMITS. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE SEEDED, AS DIRECTED BY THE ENGINEER, AT THE CONTRACTOR'S EXPENSE. SEEDING WILL NOT BE PERMITTED AT ANY TIME WHEN THE GROUND IS FROZEN, WET OR IN AN UNTILLABLE CONDITION.

13. FACTORS USED FOR ESTIMATING PLAN QUANTITIES ARE AS FOLLOWS AND SHALL NOT BE USED FOR THE BASIS OF FINAL QUANTITIES:

2.05 TONS / CU YD	AGGREGATE SURFACE COURSE, TYPE A
90:90:90 LBS / ACRE	SEEDING FERTILIZER RATIO (NIT:PHOS:POT)
100 LBS / ACRE	TEMPORARY EROSION CONTROL SEEDING

14. ONLY THOSE TREES APPROVED FOR REMOVAL BY THE ENGINEER SHALL BE REMOVED. THE CONTRACTOR SHALL PROTECT ALL REMAINING TREES, PLANTS, AND WETLANDS FROM DAMAGE. ALL TREES AND STUMPS INDICATED ON THE PLANS FOR REMOVAL SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.

15. CHANNEL EXCAVATION WILL BE MEASURED AND PAID FOR AS EARTH EXCAVATION.

16. ALL GUARDRAIL AND BRIDGE RAIL REFLECTORS SHALL BE BI-DIRECTIONAL.

17. THE CONTRACTOR SHALL PROVIDE SOIL TEST RESULTS FOR PROPOSED EARTH EMBANKMENT. THE SOIL SHALL MEET THE REQUIREMENTS OF ARTICLE 1009.04 AND SECTION 205 OF THE STANDARD SPECIFICATIONS. THIS SHALL BE INCLUDED IN THE PAY ITEM FOR FURNISHED EXCAVATION.

COMMITMENTS:

1. TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT SHALL NOT BE CLEARED FROM APRIL 1 THROUGH SEPTEMBER 30 OF ANY GIVEN YEAR.

2. THE ROAD WILL BE TREATED WITH A SEAL COAT SURFACE DONE BY OTHERS UPON COMPLETION OF THE PROJECT.

3. THE WOOD RUNNING BOARDS ON THE EXISTING BRIDGE SHALL BE REMOVED AND RETURNED TO OLIVE TOWNSHIP.

4. THE WALNUT TREE AT STA. 37+53.92, 26.83' RT TO BE REMOVED SHALL BE PLACED AT 11460 SILVER CREEK ROAD AS DIRECTED BY THE ENGINEER.

INTERNAL PROJECT NUMBER: A-271-00	USER NAME Zachary R. Friederich	DESIGNED Z.R.F.	REVISED –
	PLOT SCALE 0.5:1	DRAWN Z.R.F	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 GN, SoQ, Sch, Details.dwg	PLOT DATE 10-Feb-23	CHECKED –	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

GENERAL NOTES AND COMMITMENTS

SCALE: – | SHEET NO. 1 OF 1 SHEETS | STA. – | TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	2
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
**	20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	63
**	20100210	TREE REMOVAL (OVER 15 UNITS DIAMETER)	UNIT	153
	20200100	EARTH EXCAVATION	CU YD	720
	20400800	FURNISHED EXCAVATION	CU YD	1874
	25000210	SEEDING, CLASS 2A	ACRE	0.5
	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	49
	25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	49
	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	49
	25100115	MULCH, METHOD 2	ACRE	1.0
	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	108
	28000305	TEMPORARY DITCH CHECKS	FOOT	20
	28000400	PERIMETER EROSION BARRIER	FOOT	625
	28000500	INLET AND PIPE PROTECTION	EACH	1
	28100205	STONE RIPRAP, CLASS A3	TON	21

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
28100207	STONE RIPRAP, CLASS A4	TON	287
28200200	FILTER FABRIC	SQ YD	482
40200100	AGGREGATE SURFACE COURSE, TYPE A	TON	623
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50105220	PIPE CULVERT REMOVAL	FOOT	120
50200100	STRUCTURE EXCAVATION	CU YD	223
50300225	CONCRETE STRUCTURES	CU YD	72.3
50300255	CONCRETE SUPERSTRUCTURE	CU YD	89.3
50300260	BRIDGE DECK GROOVING	SQ YD	409
50300300	PROTECTIVE COAT	SQ YD	473
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	83.4
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1
50500505	STUD SHEAR CONNECTORS	EACH	1296
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	62290

* SPECIAL PROVISION
** SPECIALTY ITEM

INTERNAL PROJECT NUMBER: A-271-00	USER NAME Zachary R. Friederich	DESIGNED Z.R.F.	REVISED –
	PLOT SCALE 0.5:1	DRAWN Z.R.F.	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 GN, SoQ, Sch, Details.dwg	PLOT DATE 10-Feb-23	CHECKED –	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

SUMMARY OF QUANTITIES

SCALE: – SHEET NO. 1 OF 2 SHEETS STA. – TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	3
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		

SUMMARY OF QUANTITIES

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
**	50901050	STEEL RAILING, TYPE SM	FOOT	144
	51201600	FURNISHING STEEL PILES HP12X53	FOOT	450
	51202305	DRIVING PILES	FOOT	450
	51203600	TEST PILE STEEL HP12X53	EACH	2
	51204650	PILE SHOES	EACH	12
	51500100	NAME PLATES	EACH	1
	52100520	ANCHOR BOLTS, 1"	EACH	24
	542C5521	PIPE CULVERT, CLASS C, TYPE 1 EQUIVALENT ROUND-SIZE 66"	FOOT	80
	58600101	GRANULAR BACKFILL FOR STRUCTURES	CU YD	150
	59100100	GEOCOMPOSITE WALL DRAIN	SQ YD	70
	60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	140
**	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
**	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
	67100100	MOBILIZATION	L SUM	1

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY
**	72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
**	78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	4
**	78200011	BARRIER WALL REFLECTORS, TYPE C	EACH	2
*	X1700063	CONCRETE HEADWALL (SPECIAL)	EACH	1
*	X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1

* SPECIAL PROVISION
** SPECIALTY ITEM

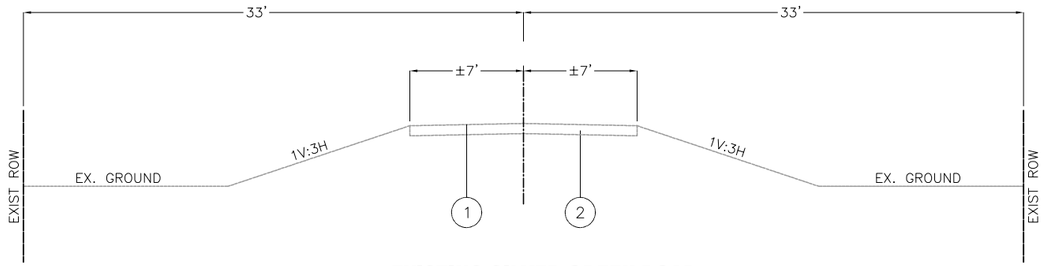
INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED Z.R.F.	REVISED -
	PLOT SCALE 0.5:1	DRAWN Z.R.F.	REVISED -
	PLOT DATE 4-Aug-22	CHECKED -	REVISED -
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 GN, SoQ, Sch, Details.dwg			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

SUMMARY OF QUANTITIES

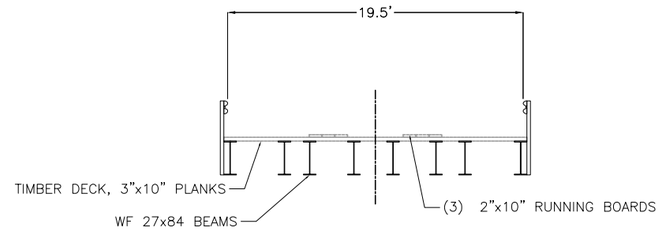
SCALE: - | SHEET NO. 2 OF 2 SHEETS | STA. - | TO STA. -

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	4
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
	OLIVE ILLINOIS	FEDERAL AID PROJECT		



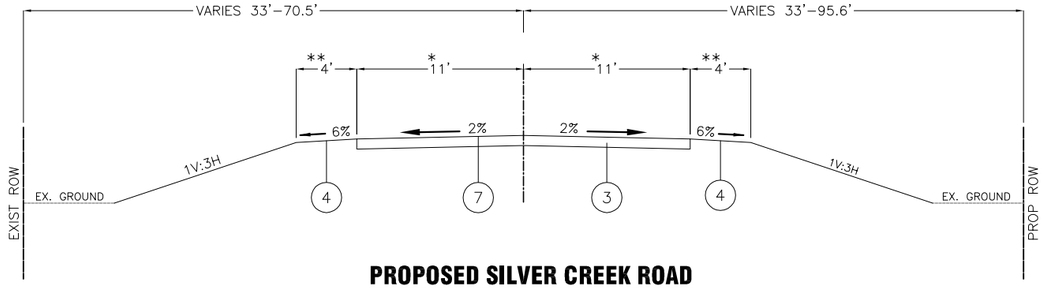
EXISTING SILVER CREEK ROAD

STA. 33+70.00 TO STA. 37+03.32
STA. 37+54.63 TO STA. 40+80.00



EXISTING SILVER CREEK ROAD BRIDGE SECTION

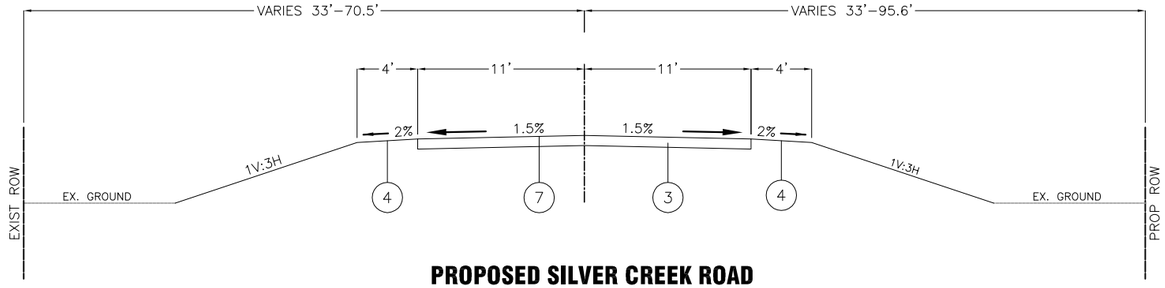
STA. 37+03.32 TO STA. 37+54.63



PROPOSED SILVER CREEK ROAD

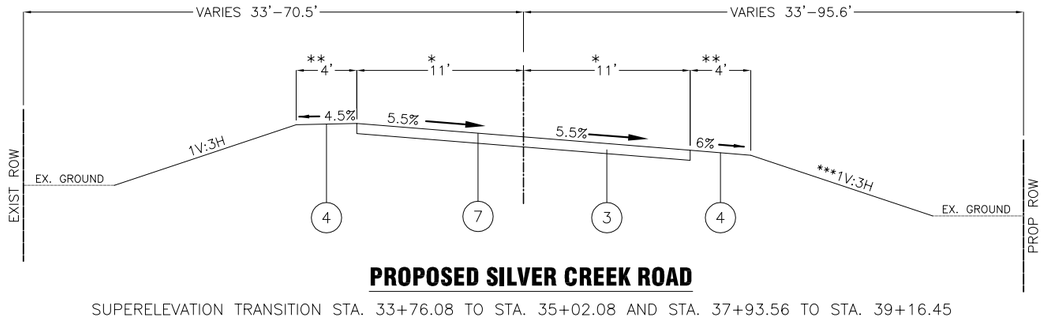
STA. 33+70.00 TO STA. 33+76.08
STA. 40+47.54 TO STA. 40+80.00

*LANE WIDTH VARIES ±7'–11' FROM STA. 33+70.00 TO STA. 34+25.00, AND FROM STA. 40+20.00 TO STA. 40+80.00
**SHOULDER WIDTH VARIES 0'–4' FROM STA. 33+70.00 TO STA. 34+25.00 AND FROM STA. 40+20.00 TO STA. 40+80.00



PROPOSED SILVER CREEK ROAD

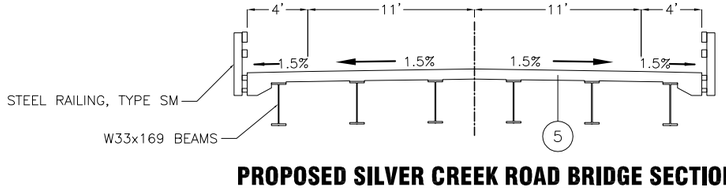
STA. 36+46.79 TO STA. 36+60.19



PROPOSED SILVER CREEK ROAD

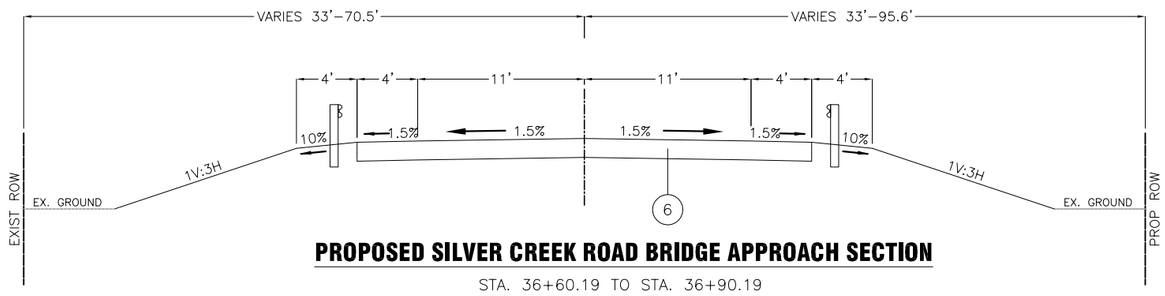
SUPERELEVATION TRANSITION STA. 33+76.08 TO STA. 35+02.08 AND STA. 37+93.56 TO STA. 39+16.45
FULL SUPERELEVATION STA. 35+02.08 TO STA. 35+23.61 AND STA. 39+16.45 TO STA. 39+30.54
SUPERELEVATION TRANSITION STA. 35+23.61 TO STA. 36+46.79 AND STA. 39+30.54 TO STA. 40+47.54

*LANE WIDTH VARIES ±7'–11' FROM STA. 33+70.00 TO STA. 34+25.00, AND FROM STA. 40+20.00 TO STA. 40+80.00
**SHOULDER WIDTH VARIES 0'–4' FROM STA. 33+70.00 TO STA. 34+25.00 AND FROM STA. 40+20.00 TO STA. 40+80.00
***1V:5H SLOPE FROM STA. 38+25 TO STA. 38+50 RT



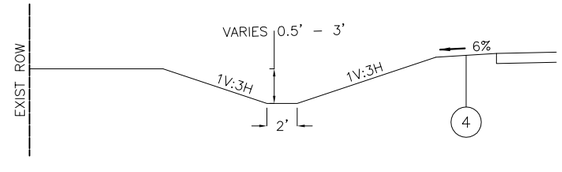
PROPOSED SILVER CREEK ROAD BRIDGE SECTION

STA. 36+90.19 TO STA. 37+63.56



PROPOSED SILVER CREEK ROAD BRIDGE APPROACH SECTION

STA. 36+60.19 TO STA. 36+90.19
STA. 37+63.56 TO STA. 37+93.56



SPECIAL DITCH LEFT

STA. 35+37.50 TO STA. 37+24.00

TYPICAL SECTION LEGEND

1. EXISTING AGGREGATE OIL & CHIP SURFACE
2. EXISTING AGGREGATE BASE COURSE
3. PROPOSED AGGREGATE SURFACE COURSE, TY A, 8"
4. PROPOSED TURF SHOULDER
5. CONCRETE SUPERSTRUCTURE
6. CONCRETE SUPERSTRUCTURE (APPROACH SLAB)
7. PROPOSED SEAL COAT (BY OTHERS)

INTERNAL PROJECT NUMBER: A–271–00	USER NAME Matt J. Kitzmiller	DESIGNED ####	REVISED –
	PLOT SCALE 0.5:1	DRAWN ####	REVISED –
FILE NAME: W:\Civil 3D Projects\A–271–00 Engelke Bridge\A–271–00 Typical Sections.dwg	PLOT DATE 4–Aug–22	CHECKED ####	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

TYPICAL SECTIONS

SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. – | TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16–18113–00–BR	MADISON	34	5
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		

EROSION CONTROL SCHEDULE

LOCATION	PERIMETER EROSION BARRIER (FOOT)	INLET AND PIPE PROTECTION (EACH)	TEMPORARY DITCH CHECK (FOOT)	*TEMPORARY EROSION CONTROL SEEDING (POUND)
STA. 33+70 RT TO STA. 36+60 RT	286			
STA. 37+37 RT TO STA. 40+80 RT	339			
STA. 39+23.67, 28.17' LT		1		
STA. 36+13 LT			10	
STA. 36+93 LT			10	
STA. 33+70 LT TO STA. 37+18 LT				36
STA. 33+70 RT TO STA. 36+85 RT				16
STA. 37+55 LT TO STA. 40+80 LT				28
STA. 37+37 RT TO STA. 40+80 RT				28
TOTAL	625	1	20	108

* TEMPORARY EROSION CONTROL SEEDING QUANTITY ASSUMES TWO SEPARATE APPLICATIONS AT A RATE OF 100 LBS/ACRE.

SEEDING SCHEDULE

LOCATION	SEEDING, CLASS 2A (ACRE)	NITROGEN FERTILIZER NUTRIENT (POUND)	PHOSPHORUS FERTILIZER NUTRIENT (POUND)	POTASSIUM FERTILIZER NUTRIENT (POUND)	MULCH, METHOD 2 (ACRE)
STA. 33+70 LT TO STA. 37+18 LT	0.18	16	16	16	0.18
STA. 33+70 RT TO STA. 36+85 RT	0.08	7	7	7	0.08
STA. 37+55 LT TO STA. 40+80 LT	0.14	13	13	13	0.14
STA. 37+37 RT TO STA. 40+80 RT	0.14	13	13	13	0.14
SUBTOTAL	0.5	49	49	49	0.5
TOTAL	0.5	49	49	49	1.0

*APPLY APPLICATION OF MULCH, METHOD 2 IF TEMPORARY EROSION CONTROL SEEDING IS UTILIZED

EARTHWORK SCHEDULE

LOCATION	EARTH EXCAVATION (CU YD)	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE (CU YD)	EMBANKMENT (CU YD)	EARTHWORK BALANCE WASTE(+), SHORTAGE (-) (CU YD)
STA. 33+70 TO STA. 40+80	720	540	2414	-1874
TOTAL	720	540	2414	-1874

GUARDRAIL AND MARKER SCHEDULE

LOCATION	TRAFFIC BARR TERMINAL, TYPE 1, (SP.) TANGENT (EACH)	TRAFFIC BARRIER TERMINAL, TYPE 6A (EACH)	TERMINAL MARKER - DIRECT APPLIED (EACH)	GUARDRAIL REFLECTORS, TYPE A (EACH)	BARRIER WALL REFLECTORS, TYPE C (EACH)
STA. 36+08.2 LT TO STA. 36+58.2 LT	1		1		
STA. 35+94.2 RT TO STA. 36+44.2 RT	1		1		
STA. 36+58.2 LT TO STA. 36+97.2 LT		1		1	
STA. 36+44.2 RT TO STA. 36+83.2 RT		1		1	
STA. 36+96.8 LT TO STA. 37+78.0 LT					1
STA. 36+75.8 RT TO STA. 37+57.0 RT					1
STA. 37+70.6 LT TO STA. 38+09.6 LT		1		1	
STA. 37+56.6 RT TO STA. 37+95.6 RT		1		1	
STA. 38+09.6 LT TO STA. 38+59.6 LT	1		1		
STA. 37+95.6 RT TO STA. 38+45.6 RT	1		1		
TOTAL	4	4	4	4	2

PIPE CULVERT SCHEDULE

LOCATION	PIPE CULVERTS CLASS C, TYPE 1 EQRS 66" (FOOT)	PIPE CULVERT REMOVAL (FOOT)
STA. 38+74.90, 35.54' RT TO STA. 39+23.67, -28.17' LT	80	
STA. 38+84.88, 11.78' RT TO STA. 39+17.70, -19.85' LT		120

TREE REMOVAL SCHEDULE

LOCATION	OFFSET (FEET)		6 TO 15 UNIT	OVER 15 UNIT
36+59	29	RT		17
36+69	32	RT	7	
36+71	27	RT		22
36+73	27	RT	11	
36+75	27	RT		21
36+75	31	RT		25
37+54	27	RT		27
38+34	46	RT	6	
38+35	44	RT	12	
38+81	40	RT		41
38+81	46	RT	15	
38+82	47	RT	12	
TOTAL			63	153

PAVEMENT SCHEDULE

LOCATION	AGGREGATE SURFACE COURSE, TYPE A (TON)
STA. 33+70 TO STA. 36+66.33 LT	315
STA. 37+87.43 RT TO STA. 40+80	308
TOTAL	623

RIPRAP SCHEDULE

LOCATION	CLASS A3 RIPRAP (TON)	CLASS A4 RIPRAP (TON)	FILTER FABRIC (SQ YD)
STA. 36+60.26 RT TO STA. 37+93.49 LT		287	440
STA. 36+99 TO STA. 37+24	10		19
STA. 38+74.90, 35.54' RT	11		23
TOTAL	21	287	482

INTERNAL PROJECT NUMBER: A-271-00

FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 GN, SoQ, Sch, Details.dwg

USER NAME Zachary R. Friederich | PLOT SCALE 0.5:1 | PLOT DATE 10-Feb-23

DESIGNED ZRF | DRAWN ZRF | CHECKED –

REVISED – | REVISED – | REVISED – | REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

SCHEDULE OF QUANTITIES

SCALE: – | SHEET NO. 1 OF 1 SHEETS | STA. – TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	6
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		

P.I. STA. 35+13.21
Δ = 13°58'17.64"
D = 9°28'52.29"
R = 605.00
T = 74.13
L = 147.53
P.C. STA 34+39.08
P.T. STA 35+86.61
e = 5.5%
T.R. = 25'
S.E. RUN = 92'

EXIST. STR.
NO. 060-3076
TO BE REMOVED
MULTI-BEAM BRIDGE W/ TIMBER DECK
19.3' WIDE x 56' BK-BK ABUT.

FL SILVER CREEK

PROP. STR.
NO. 060-3367
STA. 37+26.88
SKEW 25°, L.A.

120 FT PIPE
CULVERT REMOVAL

+23.67, 28.17' LT
INV. 533.00

P.I. STA. 39+19.86
Δ = 9°48'40"
D = 9°28'52.29"
R = 605.00
T = 51.93
L = 103.60
P.C. STA 38+67.94
P.T. STA 39+71.54
e = 5.5%
T.R. = 25'
S.E. RUN = 92'

REMOVE EXISTING PAVEMENT

PT: 35+86.61

PC: 38+67.94

PT: 39+71.54

PROP. CONCRETE
HEADWALL (SPECIAL)

30' BR.
APPR.
PVMT.

TRAFF BARR
TERM T 6A

TRAFF BARR
TERM T 6A

EXIST ROW

PROP. CONSTRUCTION LIMITS

BEGIN CONSTRUCTION
STA. 33+70

EXISTING PAVEMENT
14.96' WIDE

EXIST. PAVEMENT
14.27' WIDE

END CONSTRUCTION
STA. 40+80

EXIST ROW (66' WIDE)

SILVER CREEK ROAD

TRAFF BARR
TERM. T 1
(SP.) TANGENT

TRAFF BARR
TERM T 1
(SP.) TANGENT

+90.19
BK. OF W. ABUT.

+97.92
50.00' RT

+63.56
BK. OF E. ABUT.

+74.90, 35.54' RT
INV. 532.60

+71.54
33.32' RT

+67.94
50.00' RT

STA. 39+03.73
80 FOOT
P CUL CL C 1 EQRS 66

+18.03
31.49' RT

+48.40
95.63' RT

PROP ROW

PROP ROW

PROP ROW

PC: 34+39.08

PC: 41+33.54

S LINE, NE 1/4, SEC 26, T6N, R6W

VILLAGE OF LIVINGSTON
08-1-05-26-00-000-013.

PAUL, LEAH M.
08-1-05-26-00-000-011.003

LEGEND
X = TREE TO BE REMOVED

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 INCH = 60 FT.

PVI STA: 34+85.00
PVI ELEV: 535.60
K: 38.97
LVC: 180.00

PVI STA: 36+25.00
PVI ELEV: 542.18
K: 21.28
LVC: 100.00

PVI STA: 38+15.00
PVI ELEV: 542.18
K: 22.87
LVC: 90.00

PVI STA: 39+70.00
PVI ELEV: 536.08
K: 37.17
LVC: 220.00

HIGH PT. STA: 37+70.00
HIGH PT. ELEV: 542.18

LOW PT. STA: 40+06.28
LOW PT. ELEV: 537.53

BVCS: 33+95.00 EVCE: 535.53
BVCS: 35+75.00 EVCE: 539.83
EVCS: 36+75.00 EVCE: 542.18
BVCS: 37+70.00 EVCE: 542.18
EVCS: 38+60.00 EVCE: 540.41
EVCS: 40+80.00 EVCE: 538.26

0.08%
0.00%
-0.88%

BEGIN CONSTRUCTION
STA. 33+70

END CONSTRUCTION
STA. 40+80

Station=35+50.00
elev = 534.500

SPECIAL DITCH LEFT

Station=37+20.00
elev = 533.000

Station=37+26.88
elev = 528.900

15 YR. D.H.W.
ELEV. 537.4

P CUL CL C 1 EQRS 66

570 565 560 555 550 545 540 535 530 525 520

535.3 535.5 535.5 535.51 535.5 535.53 535.5 535.67 535.5 535.96 535.5 536.41 535.6 537.03 535.6 537.80 535.5 538.74 535.4 INFINITY 535.9 540.86 536.1 541.59 536.8 542.03 537.0 542.18 536.3 542.18 529.8 542.18 536.3 542.18 537.1 542.17 537.4 541.98 537.1 541.52 537.1 540.78 537.0 539.85 536.9 539.05 536.6 538.42 536.5 537.96 536.4 537.66 536.7 537.54 537.2 537.58 537.6 537.79 538.1 538.17 538.9 540.0 541.5 543.4

33+50 34+00 34+50 35+00 35+50 36+00 36+50 37+00 37+50 38+00 38+50 39+00 39+50 40+00 40+50 41+00 41+50

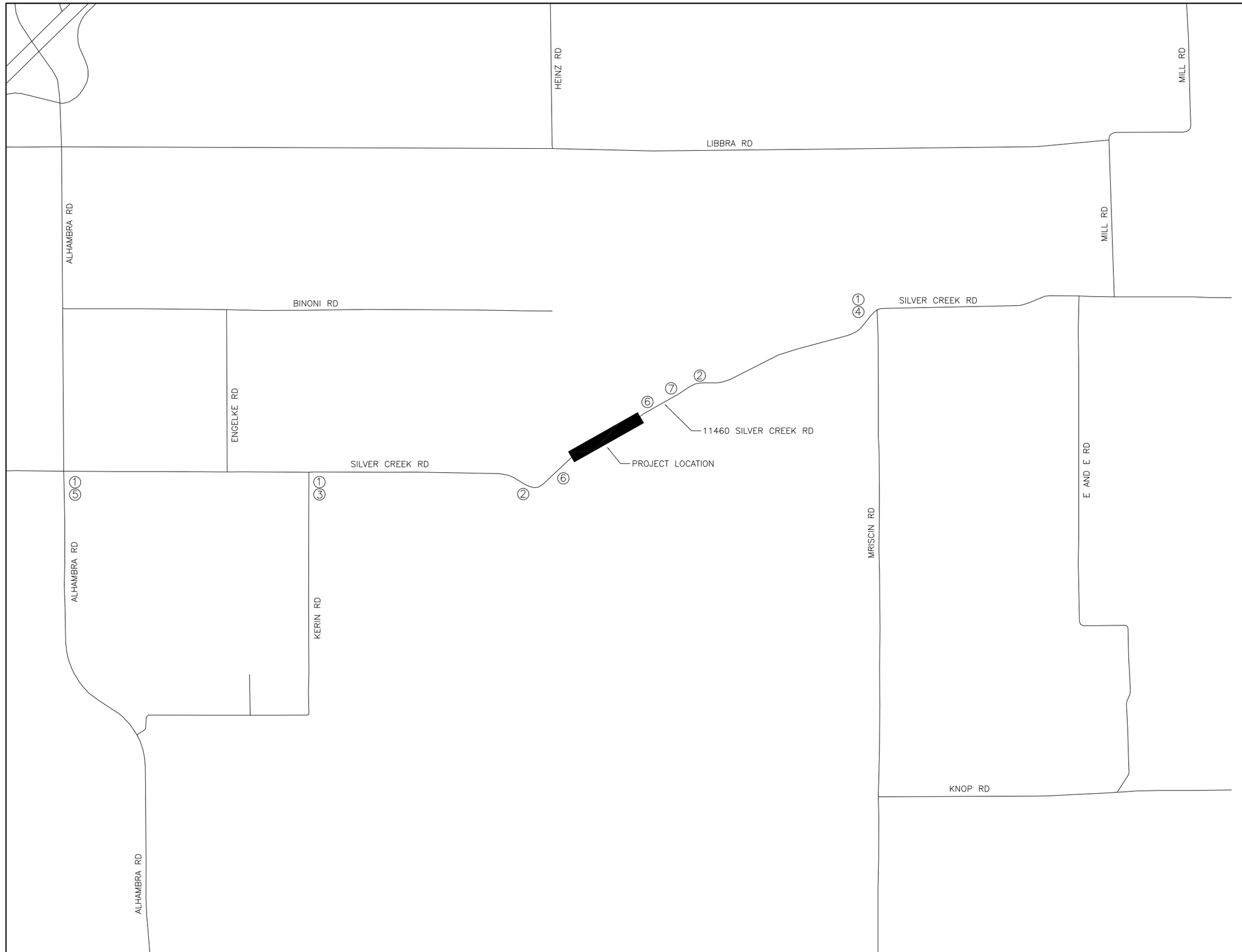
INTERNAL PROJECT NUMBER: A-271-00	USER NAME Zachary R. Friederich	DESIGNED ####	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 Design 30 mph.dwg	PLOT SCALE 0.5:1	DRAWN ####	REVISED –
	PLOT DATE 10-Feb-23	CHECKED ####	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

PLAN & PROFILE

SCALE: 1"=60' | SHEET NO. 1 OF 1 SHEETS | STA. 33+00 TO STA. 42+00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	7
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		



LEGEND

① ROAD CLOSED AHEAD
W20-3(O)-48
SIGN DIMENSIONS: 48" x 48"

② ROAD CLOSED 500 FT.
W20-3(O)-48
SIGN DIMENSIONS: 48" x 48"

③ 0.9 MILE
W16-3aP
SIGN DIMENSIONS: 30" x 12"

④ 1.0 MILE
W16-3aP
SIGN DIMENSIONS: 30" x 12"

⑤ 1.7 MILE
W16-3aP
SIGN DIMENSIONS: 30" x 12"

⑥ TYPE III BARRICADES

⑦ 2 STAGGERED TYPE III BARRICADES TO BE PLACED EAST OF 11460 SILVER CREEK ROAD

DRAWING IS NOT TO SCALE

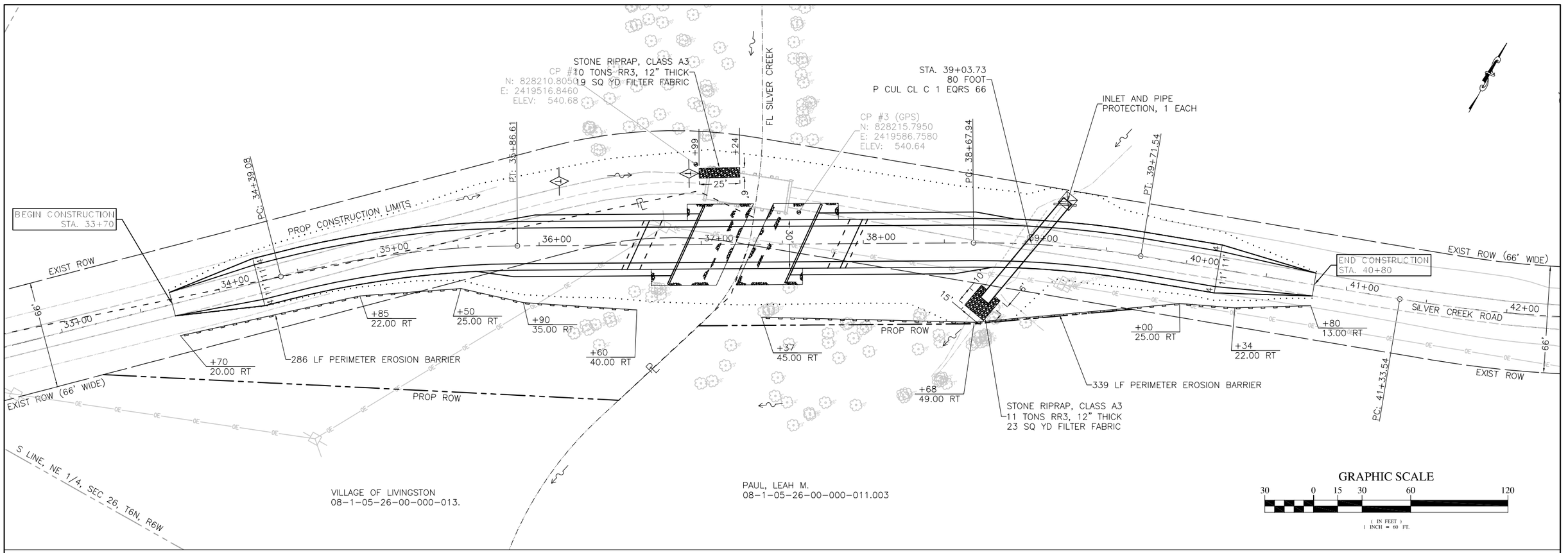
INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED Z.R.F.	REVISED –
	PLOT SCALE 0.5:1	DRAWN Z.R.F.	REVISED –
	PLOT DATE 8-Sep-22	CHECKED ####	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00-Traffic Control Plan.dwg			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

TRAFFIC CONTROL PLAN

SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. – | TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	8
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE TOWNSHIP	ILLINOIS	FEDERAL AID PROJECT		



EROSION CONTROL LEGEND

CONSTRUCTION LIMITS	PERIMETER EROSION BARRIER
TEMPORARY DITCH CHECK	INLET AND PIPE PROTECTION

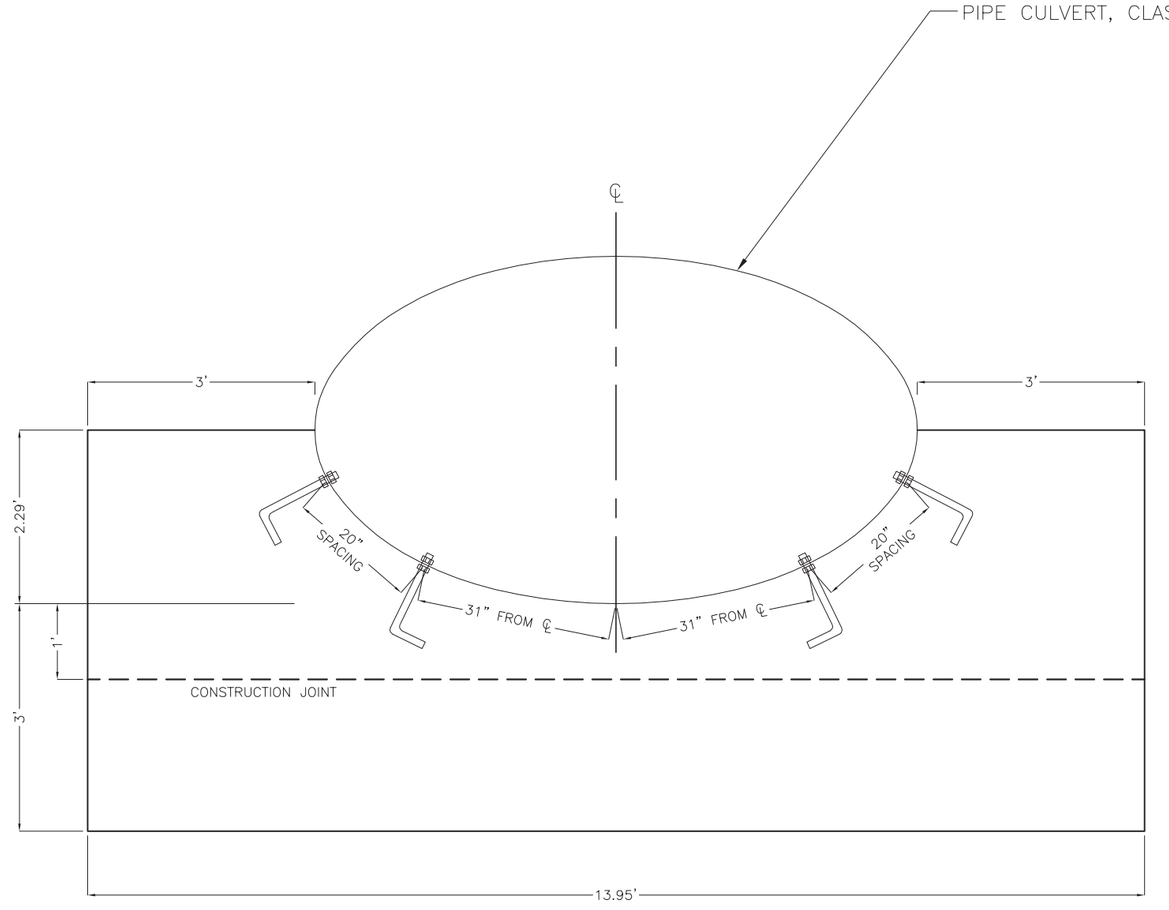
INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ZRF	REVISED –
	PLOT SCALE 0.5:1	DRAWN ZRF	REVISED –
	PLOT DATE 9-Aug-22	CHECKED ####	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 EC Plan.dwg			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

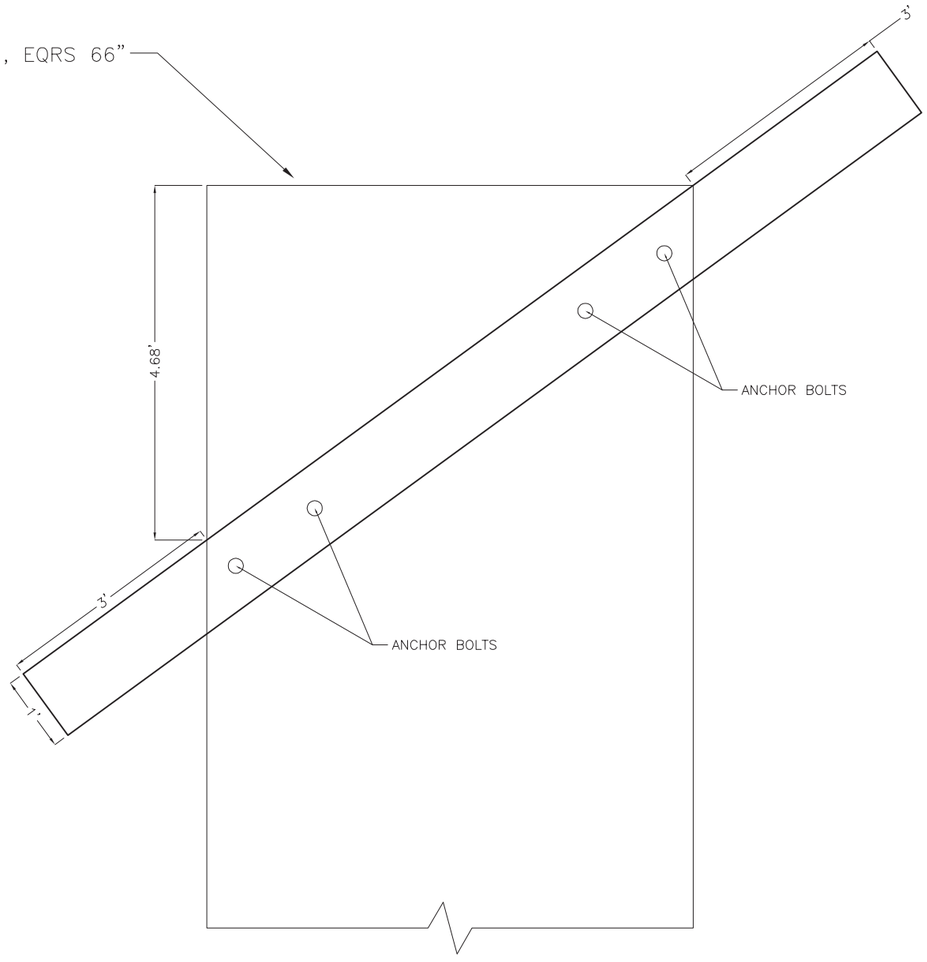
EROSION CONTROL

SCALE: – | SHEET NO. 1 OF 1 SHEETS | STA. – | TO STA. –

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	9
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FEDERAL AID PROJECT		



UPSTREAM END VIEW



UPSTREAM TOP VIEW

CONCRETE HEADWALL (SPECIAL)

*DETAILS AND SPECIFICATIONS FOR HOOK BOLT, NUTS, WASHERS IN ACCORDANCE WITH ARTICLES 521.06 & 1006.09 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION." THESE WILL NOT BE PAID FOR SEPERATELY, BUT WILL BE INCLUDED IN THE PAY ITEM "CONCRETE HEADWALL (SPECIAL)".

DETAILS AND SPECIFICATIONS FOR OPTIONAL CONSTRUCTION JOINT IN ACCORDANCE WITH ARTICLE 503.09 OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION."

INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ZRF	REVISED –
	PLOT SCALE 0.5:1	DRAWN ZRF	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 Design 30 mph.dwg	PLOT DATE 17-Jun-22	CHECKED ####	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

DETAILS

SCALE: N.T.S. | SHEET NO. 1 OF 1 SHEETS | STA. – | TO STA. –

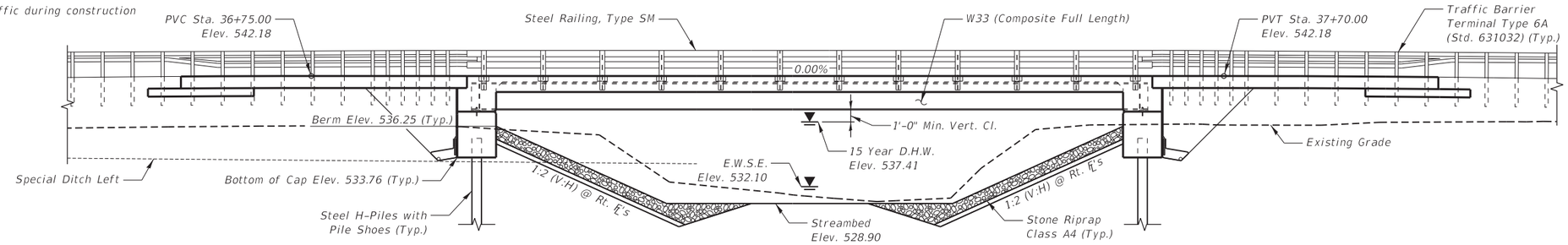
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	10
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		

Bench Mark: CP#1 (GPS) N:827875.6270 E:2419185.5540 Iron Bar Sta. 32+33.22, 12.72' Rt., Elev. 534.84
CP#2 (GPS) N: 828210.8050 E:2419516.8460 Sta. 36+96.97, 49.55' Lt., Elev. 540.68
CP#3 (GPS) N: 828215.7950 E: 2419586.7580 Sta. 37+60.34, 19.59' Lt., Elev. 540.64

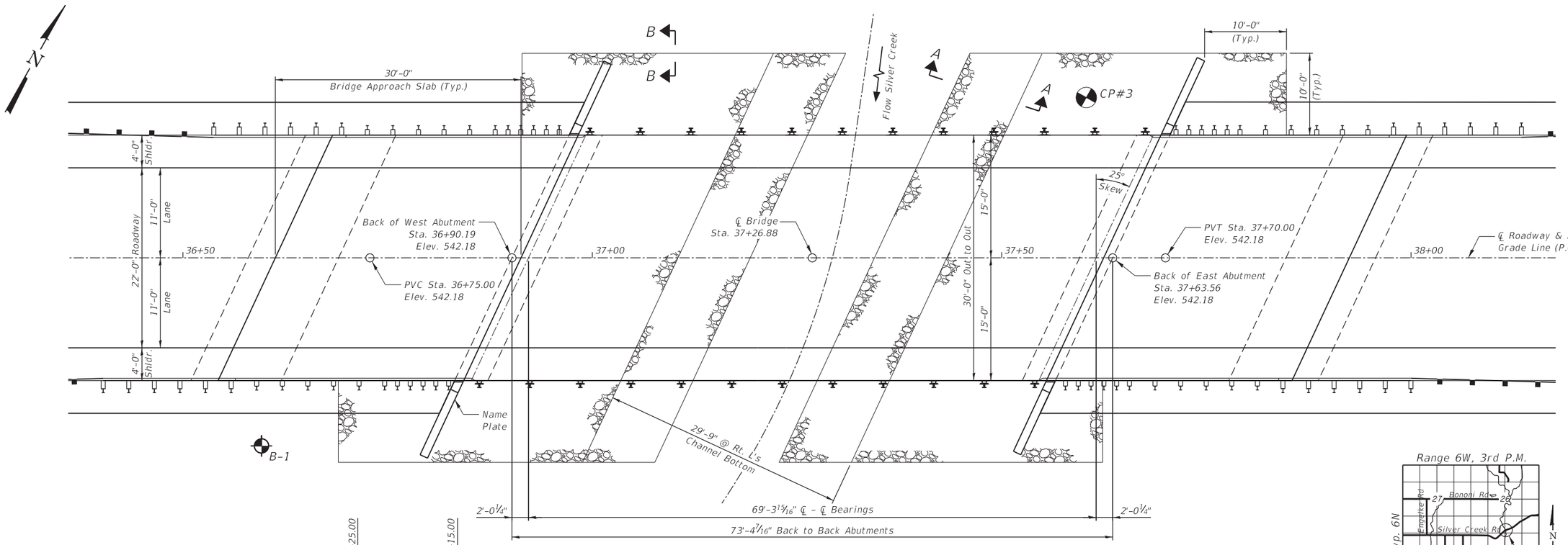
Existing Structure: S.N. 060-3076 was originally constructed in 1983 as a perched single span multi-beam bridge with closed concrete abutment and a timber deck 56'-0" bk. to bk. abutments. 19'-4" out to out deck.

Structure will be closed to traffic during construction

No Salvage

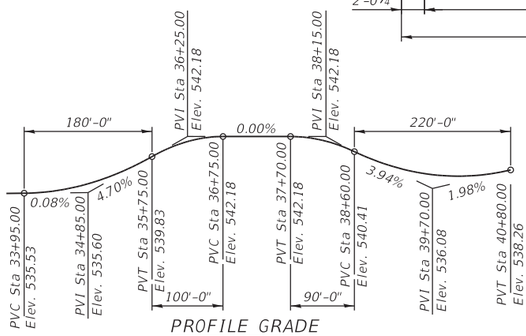


ELEVATION

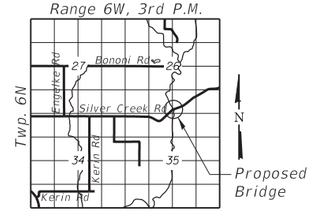


PLAN

INDEX OF SHEETS



PROFILE GRADE
(Along ℄ Roadway)



LOCATION SKETCH

B-2

I certify that to the best of 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 LRFD Specifcations".

WESLEY W. HERNDON 4923 STATE OF ILLINOIS EDWARDSVILLE, IL LICENSED STRUCTURAL ENGINEER

Expires 11-30-22

Wesley W. Herndon 08/04/2022

WESLEY W. HERNDON, S.E. DATE

GENERAL PLAN AND ELEVATION
SILVER CREEK ROAD (TR 101) OVER SILVER CREEK
SECTION 16-18113-00-BR
MADISON COUNTY
STATION 37+26.88
STRUCTURE NO. 060-3367

MODEL: Plan and Elevation
FILE NAME: S:\Projects\STRUCTS\187902 - ENGELKE BRIDGE - MADISON COUNTY HWY\02.11.22 - Engleke Bridge Redesign\Drawings\01_Plan & Elevation.dgn

8/4/2022 2:15:06 PM

JUNEAU ENGINEERING & LAND SURVEYING
Registered Professional Service Corporation License No. 184-003389

USER NAME =	eroth	DESIGNED -	RS	REVISED -	
		CHECKED -	WWH	REVISED -	
PLOT SCALE =	1:6.66668	DRAWN -	EER	REVISED -	
PLOT DATE =	8/4/2022	CHECKED -	WWH	REVISED -	

ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

GENERAL PLAN AND ELEVATION
STRUCTURE NO. 060-3367
SHEET 1 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	11
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FED. AID PROJECT		

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Ton		287	287
Filter Fabric	Sq. Yd.		440	440
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		223	223
Concrete Structures	Cu. Yd.		72.3	72.3
Concrete Superstructure	Cu. Yd.	89.3		89.3
Bridge Deck Grooving	Sq. Yd.	409		409
Protective Coat	Sq. Yd.	473		473
Concrete Superstructure (Approach Slab)	Cu. Yd.	83.4		83.4
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1296		1296
Reinforcement Bars, Epoxy Coated	Pound	47880	14410	62290
Steel Railing, Type SM	Foot	144		144
Furnishing Steel Piles HP 12x53	Foot		450	450
Driving Piles	Foot		450	450
Test Pile Steel HP 12x53	Each		2	2
Pile Shoes	Each		12	12
Name Plates	Each		1	1
Anchor Bolts, 1"	Each	24		24
Granular Backfill for Structures	Cu. Yd.		150	150
Geocomposite Wall Drain	Sq. Yd.		70	70
Pipe Underdrain for Structures 4"	Foot		140	140

GENERAL NOTES

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts (in painted areas and ASTM A325 Type 3 in unpainted areas). Bolts ¾ in. Ø, holes $1\frac{3}{16}$ in. Ø, unless otherwise noted.

Calculated weight of Structural Steel = 73,340 lbs (M270 Grade 50)
Calculated weight of Structural Steel = 3,850 lbs (M270 Grade 36)

No Field welding is permitted except as specified in the contract documents.

Reinforcement bars designated (E) shall be epoxy coated.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ⅛ inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

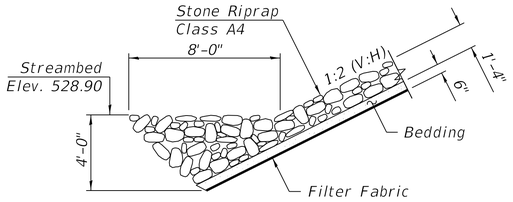
The Organic Zinc Rich Primer / Epoxy / Urethane Paint System shall be used for painting of new structural steel except where otherwise noted. The entire system shall be shop applied, with the exception of the exterior surface and the bottom of the bottom flange of fascia beams, masked off connection surfaces, field installed fasteners and damaged areas shall be touched up in the Field. The color of the final finish coat for all interior steel surfaces shall be Gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Gray, Munsell No. 5B 7/1.

Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

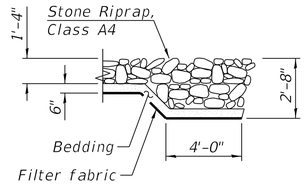
The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.

Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

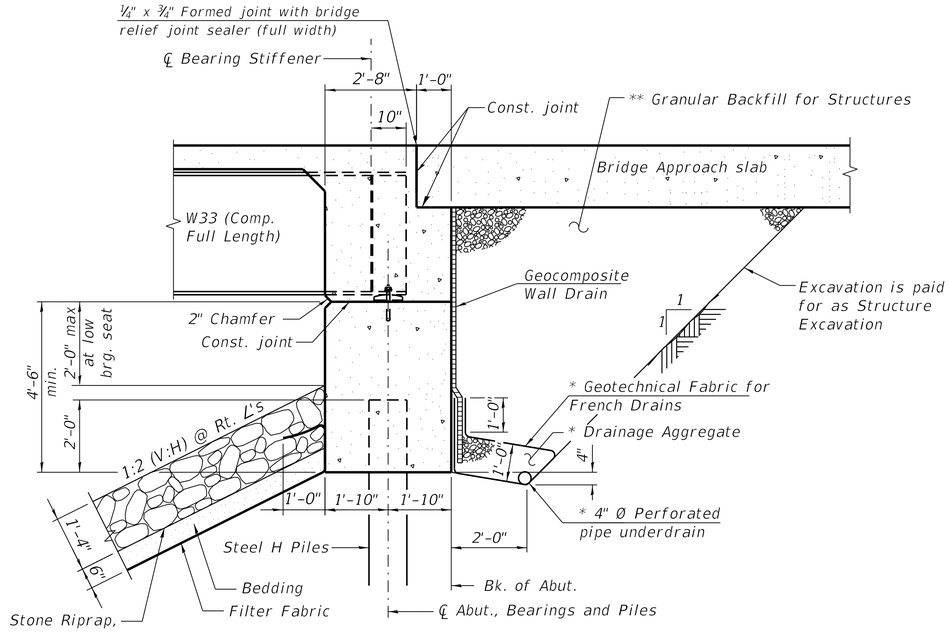
Structural steel shall be painted for a distance equal to the depth of the embedment into the concrete cap plus 18 in. Painted areas shall be primed in the shop with a Department-approved zinc rich primer. Field painting will not be required.



SECTION A-A



SECTION B-B



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)

* Include in the cost of Pipe Underdrains for Structures.

** Granular Backfill for Structures shall follow Std. Spec. 586 except the coarse aggregate shall be Grade CA7, CA11, or CA14. Granular backfill behind the abutments shall be compacted according to Article 205.06 of the Standard Specifications.

Note:

All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend toward the creek until intersecting with the slope. The pipes shall drain into concrete headwalls. These headwalls shall be located within the riprap slope protection system and directed perpendicular to the channel. Use of elbows or other fittings may be required to redirect the drainage system around the wingwall. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

DESIGN SPECIFICATIONS

2017 AASHTO LRFD Bridge Design Specifications, 8th Edition

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 5,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)
fy = 36,000 psi (M270 Grade 36)

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.16g
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.38g
Soil Site Class = D

SILVER CREEK
BUILT 202_ BY
MADISON COUNTY
SECTION 16-18113-00-BR
T.R. 101 STA. 37+26.88
STRUCTURE NO. 060-3367
LOADING HL-93

NAME PLATE

See Std. 515001

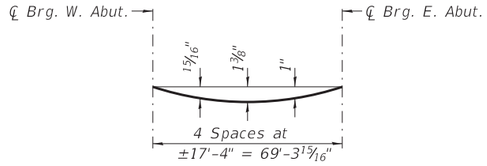
DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)		
	W. Abut.	E. Abut.	Item 113
Q100	533.76	533.76	8
Q200	533.76	533.76	
Design	533.76	533.76	
Check	533.76	533.76	

WATERWAY INFORMATION

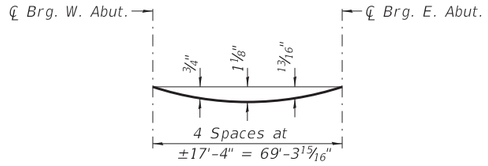
Drainage Area = 35.1 sq. mi. Low Grade Elev. 535.07 @ Sta. 32+13.08 Prop. Low Grade Elev. 535.39 @ Sta. 31+16.30

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	4656	362	535	537.2	0.3	0.5	537.5	537.7
Design	15	5426	371	550	537.4	0.3	0.5	537.7	537.9
Base	100	8573	408	606	538.2	0.3	0.4	538.5	538.6
	200	9738	421	626	538.5	0.3	0.4	538.8	538.9
Overtopping									
Max. Calc.	500	11285	435	651	538.8	0.3	0.4	539.1	539.2



DEAD LOAD DEFLECTION DIAGRAM
EXTERIOR GIRDER

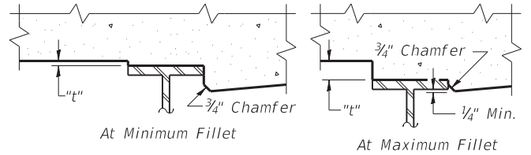
(Includes weight of concrete deck & steel railing only.)



DEAD LOAD DEFLECTION DIAGRAM
INTERIOR GIRDER

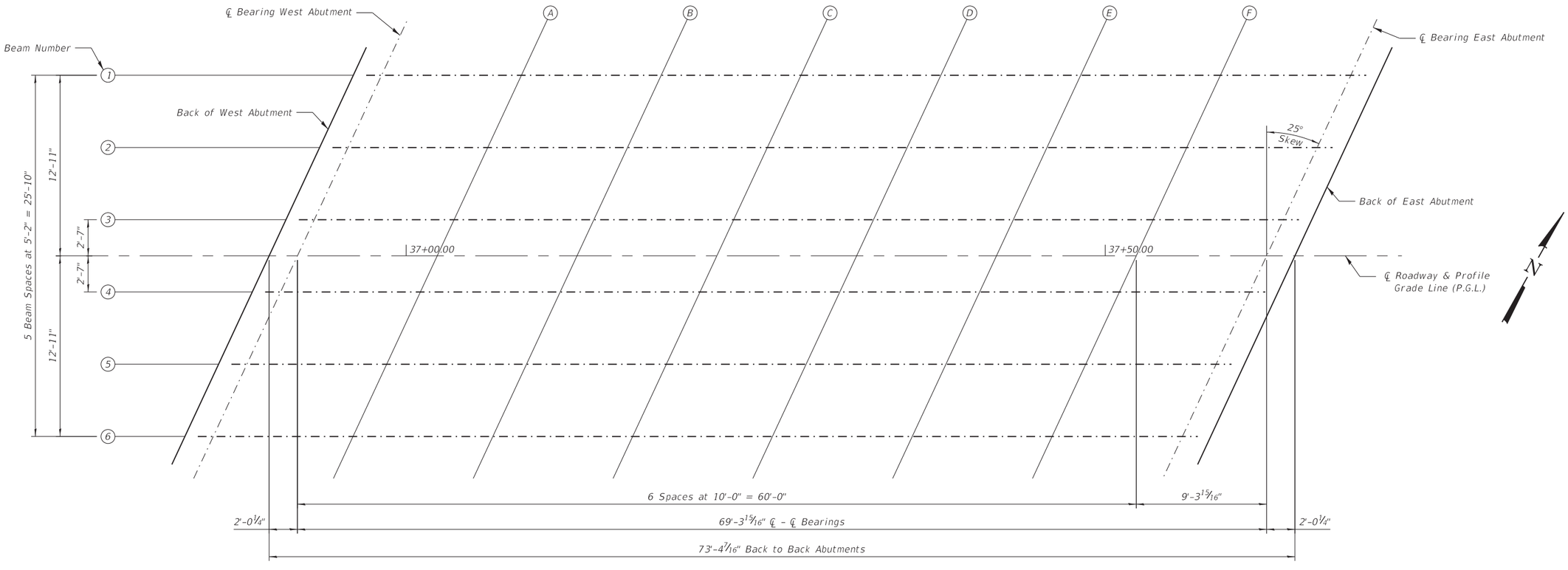
(Includes weight of concrete deck & steel railing only.)

Note:
The above defections 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 4 of 19.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on Sheet 4 of 19, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



(Sheet 1 of 2)

MODEL: Top of Slab Elevations
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PLOT DATE = 8/4/2022		CHECKED - WWH		REVISED - ____	

ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 060-3367
SHEET 3 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	13
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+96.21	-12.92	541.99	541.99
℄ Brg. West Abutment	36+98.24	-12.92	541.99	541.99
A	37+08.24	-12.92	541.99	542.03
B	37+18.24	-12.92	541.99	542.07
C	37+28.24	-12.92	541.99	542.10
D	37+38.24	-12.92	541.99	542.09
E	37+48.24	-12.92	541.99	542.07
F	37+58.24	-12.92	541.99	542.03
℄ Brg. East Abutment	37+67.56	-12.92	541.99	541.99
Bk. East Abutment	37+69.58	-12.92	541.99	541.99

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+93.80	-7.75	542.06	542.06
℄ Brg. West Abutment	36+95.83	-7.75	542.06	542.06
A	37+05.83	-7.75	542.06	542.10
B	37+15.83	-7.75	542.06	542.14
C	37+25.83	-7.75	542.06	542.15
D	37+35.83	-7.75	542.06	542.15
E	37+45.83	-7.75	542.06	542.14
F	37+55.83	-7.75	542.06	542.10
℄ Brg. East Abutment	37+65.15	-7.75	542.06	542.06
Bk. East Abutment	37+67.17	-7.75	542.06	542.06

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+91.39	-2.58	542.14	542.14
℄ Brg. West Abutment	36+93.42	-2.58	542.14	542.14
A	37+03.42	-2.58	542.14	542.18
B	37+13.42	-2.58	542.14	542.21
C	37+23.42	-2.58	542.14	542.23
D	37+33.42	-2.58	542.14	542.23
E	37+43.42	-2.58	542.14	542.21
F	37+53.42	-2.58	542.14	542.18
℄ Brg. East Abutment	37+62.74	-2.58	542.14	542.14
Bk. East Abutment	37+64.76	-2.58	542.14	542.14

℄ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+90.19	0.00	542.18	542.18
℄ Brg. West Abutment	36+92.21	0.00	542.18	542.18
A	37+02.21	0.00	542.18	542.22
B	37+12.21	0.00	542.18	542.25
C	37+22.21	0.00	542.18	542.27
D	37+32.21	0.00	542.18	542.27
E	37+42.21	0.00	542.18	542.25
F	37+52.21	0.00	542.18	542.22
℄ Brg. East Abutment	37+61.54	0.00	542.18	542.18
Bk. East Abutment	37+63.56	0.00	542.18	542.18

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+88.99	2.58	542.14	542.14
℄ Brg. West Abutment	36+91.01	2.58	542.14	542.14
A	37+01.01	2.58	542.14	542.18
B	37+11.01	2.58	542.14	542.21
C	37+21.01	2.58	542.14	542.23
D	37+31.01	2.58	542.14	542.23
E	37+41.01	2.58	542.14	542.21
F	37+51.01	2.58	542.14	542.18
℄ Brg. East Abutment	37+60.33	2.58	542.14	542.14
Bk. East Abutment	37+62.36	2.58	542.14	542.14

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+86.58	7.75	542.06	542.06
℄ Brg. West Abutment	36+88.60	7.75	542.06	542.06
A	36+98.60	7.75	542.06	542.10
B	37+08.60	7.75	542.06	542.14
C	37+18.60	7.75	542.06	542.15
D	37+28.60	7.75	542.06	542.15
E	37+38.60	7.75	542.06	542.14
F	37+48.60	7.75	542.06	542.10
℄ Brg. East Abutment	37+57.92	7.75	542.06	542.06
Bk. East Abutment	37+59.95	7.75	542.06	542.06

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abutment	36+84.17	12.92	541.99	541.99
℄ Brg. West Abutment	36+86.19	12.92	541.99	541.99
A	36+96.19	12.92	541.99	542.03
B	37+06.19	12.92	541.99	542.07
C	37+16.19	12.92	541.99	542.10
D	37+26.19	12.92	541.99	542.09
E	37+36.19	12.92	541.99	542.07
F	37+46.19	12.92	541.99	542.03
℄ Brg. East Abutment	37+55.51	12.92	541.99	541.99
Bk. East Abutment	37+57.54	12.92	541.99	541.99

MODEL: Top of Slab Elevations
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ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 060-3367
SHEET 4 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	14
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

NORTH EDGE OF SHOULDER

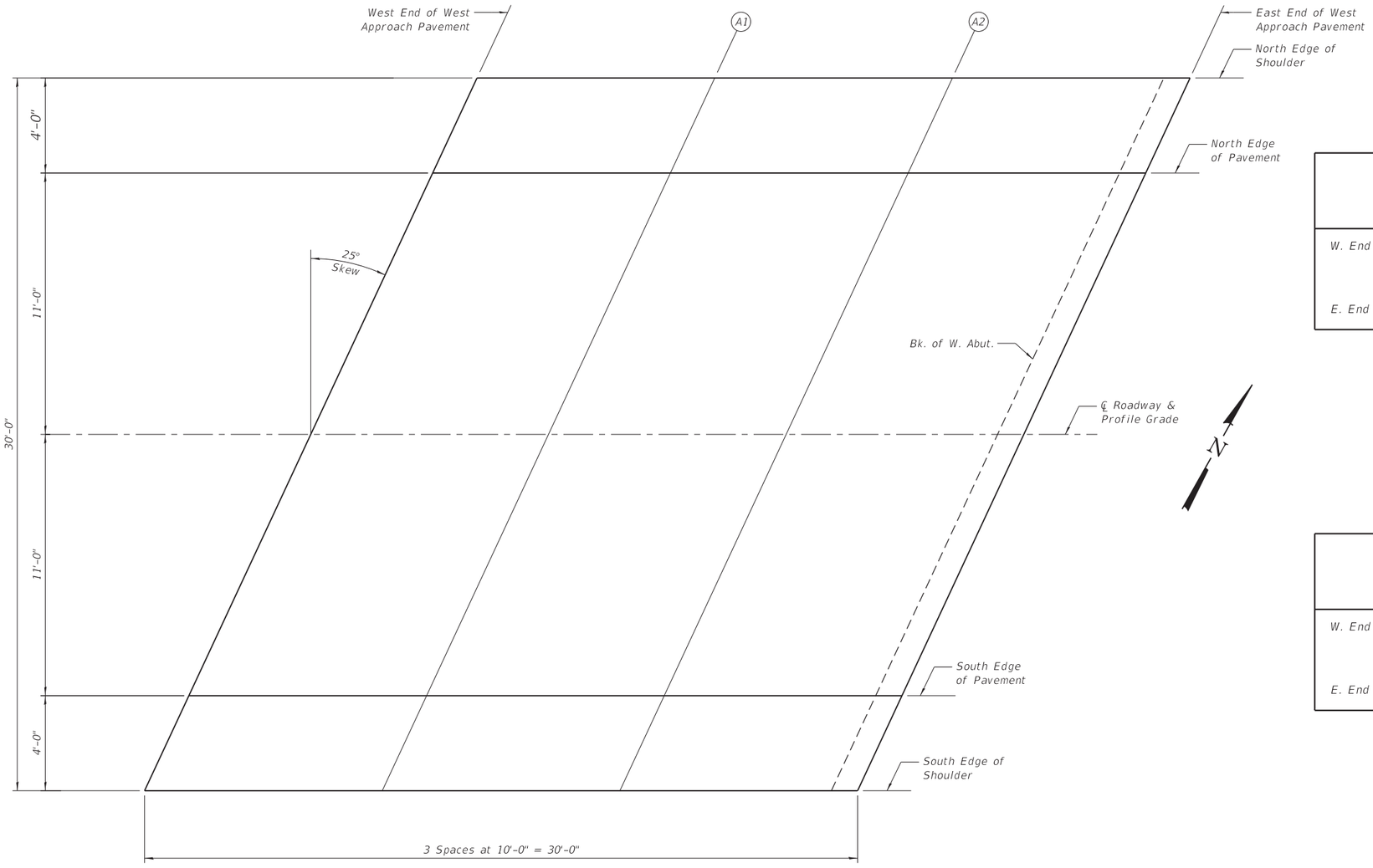
Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Pav't.	36+68.29	-15.00	541.94
A1	36+78.29	-15.00	541.96
A2	36+88.29	-15.00	541.96
E. End West Appr. Pav't.	36+98.29	-15.00	541.96

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Pav't.	36+66.42	-11.00	542.00
A1	36+76.42	-11.00	542.02
A2	36+86.42	-11.00	542.02
E. End West Appr. Pav't.	36+96.42	-11.00	542.02

℄ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Pav't.	36+61.29	0.00	542.14
A1	36+71.29	0.00	542.18
A2	36+81.29	0.00	542.18
E. End West Appr. Pav't.	36+91.29	0.00	542.18



PLAN
(West Approach)

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Pav't.	36+56.16	11.00	541.93
A1	36+66.16	11.00	542.00
A2	36+76.16	11.00	542.02
E. End West Appr. Pav't.	36+86.16	11.00	542.02

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End West Appr. Pav't.	36+54.30	15.00	541.85
A1	36+64.30	15.00	541.93
A2	36+74.30	15.00	541.95
E. End West Appr. Pav't.	36+84.30	15.00	541.96

MODEL: Top of West Approach Slab Elevations
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ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

TOP OF WEST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 060-3367
SHEET 5 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	15
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

NORTH EDGE OF SHOULDER

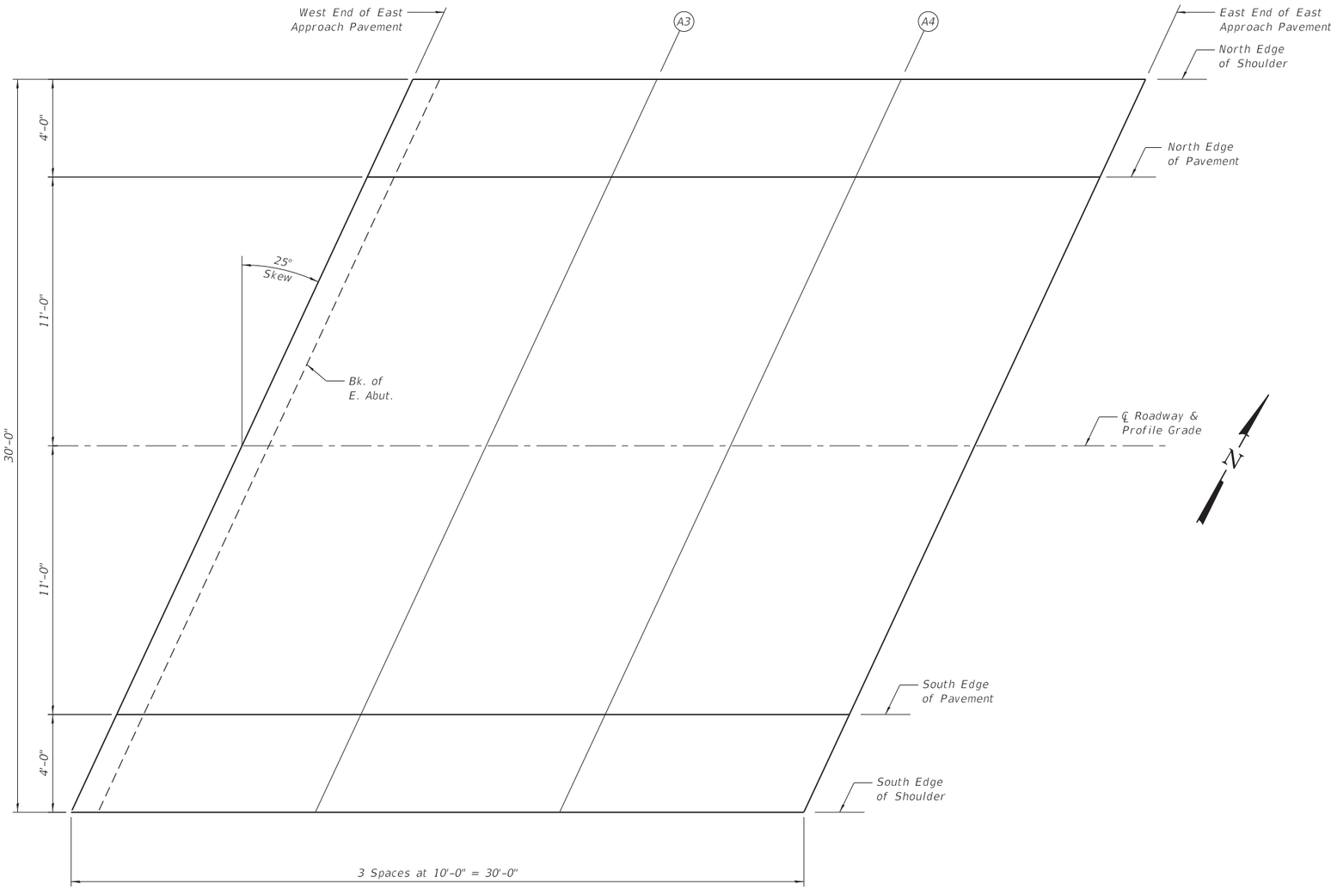
Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Pav't.	37+69.45	-15.00	541.96
A3	37+79.45	-15.00	541.94
A4	37+89.45	-15.00	541.87
E. End East Appr. Pav't.	37+99.45	-15.00	541.77

NORTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Pav't.	37+67.59	-11.00	542.02
A3	37+77.59	-11.00	542.00
A4	37+87.59	-11.00	541.95
E. End East Appr. Pav't.	37+97.59	-11.00	541.85

℄ ROADWAY & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Pav't.	37+62.46	0.00	542.18
A3	37+72.46	0.00	542.18
A4	37+82.46	0.00	542.15
E. End East Appr. Pav't.	37+92.46	0.00	542.07



PLAN
(East Approach)

SOUTH EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Pav't.	37+57.33	11.00	542.02
A3	37+67.33	11.00	542.02
A4	37+77.33	11.00	542.00
E. End East Appr. Pav't.	37+87.33	11.00	541.95

SOUTH EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
W. End East Appr. Pav't.	37+55.46	15.00	541.96
A3	37+65.46	15.00	541.96
A4	37+75.46	15.00	541.95
E. End East Appr. Pav't.	37+85.46	15.00	541.90

MODEL: Top of East Approach Slab Elevations
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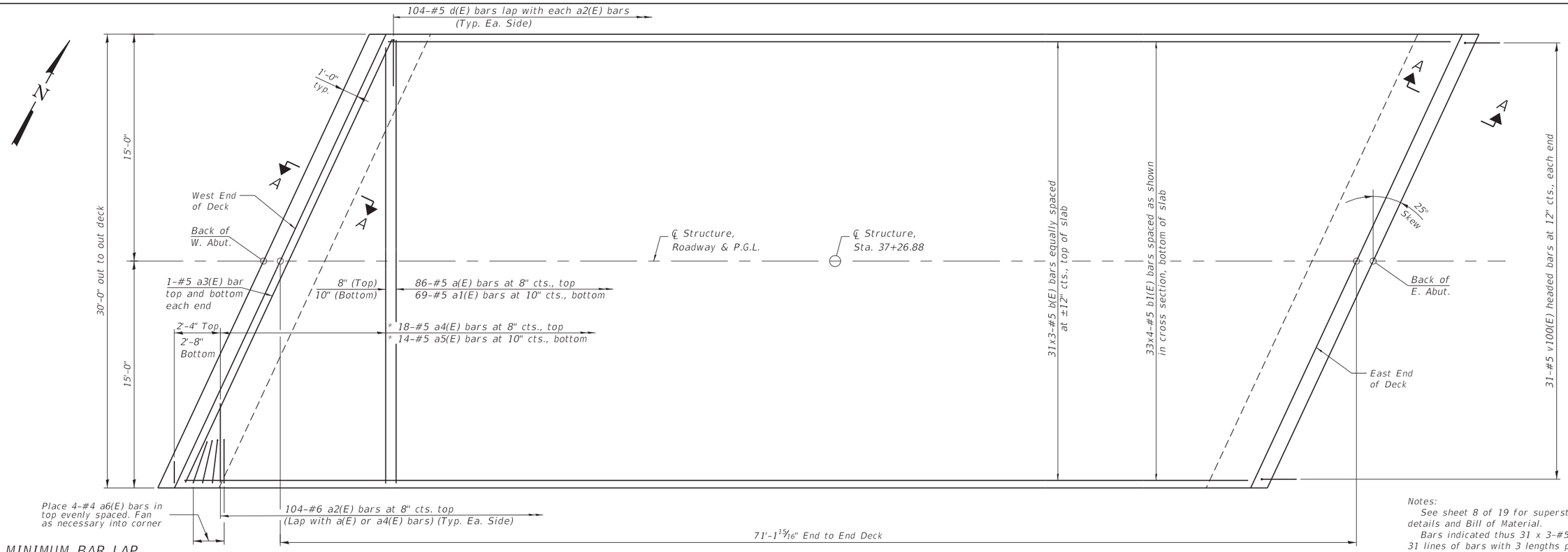
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

TOP OF EAST APPROACH SLAB ELEVATIONS
STRUCTURE NO. 060-3367
SHEET 6 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	16
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



MINIMUM BAR LAP

#5 bar = 3'-6"

PLAN

* See Field Cutting Diagram on sheet 8 of 19.

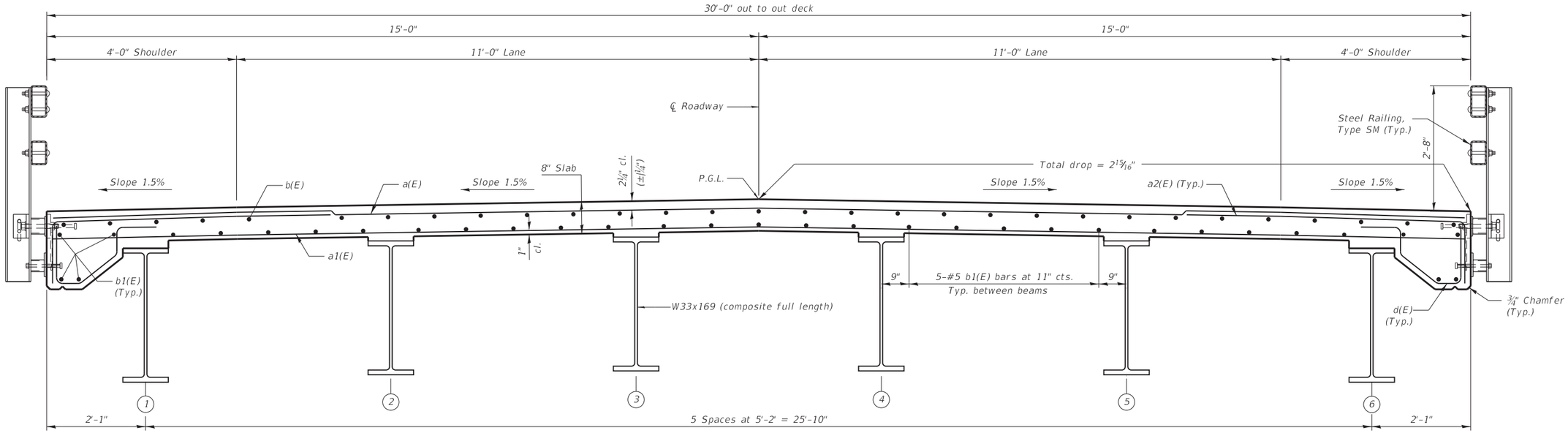
Notes:

See sheet 8 of 19 for superstructure details and Bill of Material.

Bars indicated thus 31 x 3-#5 etc. indicates 31 lines of bars with 3 lengths per line.

See sheet 9 of 19 for Diaphragm Details.

Protective coat shall be applied to the top surface of the deck, approach slab and the top and inside surface of the wingwalls.



CROSS SECTION

(Looking East)

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MODEL: Superstructure
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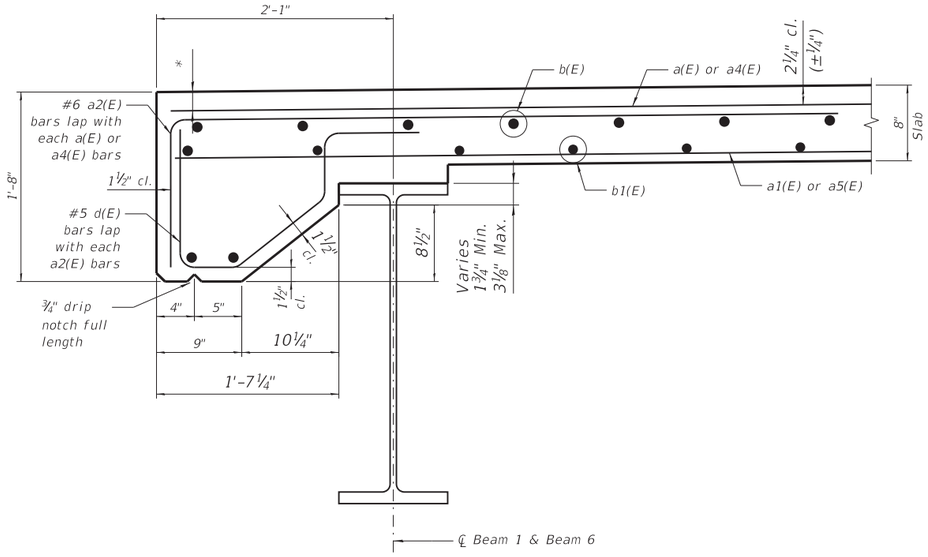
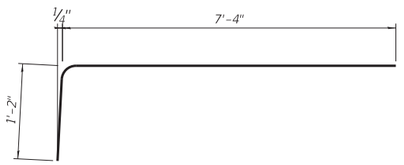
* Reinforcement bars in the deck shall be placed with a 2" minimum clearance in the area of the rail post anchor devices. The studs of the anchor devices shall be placed below the top reinforcement bars and outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device.

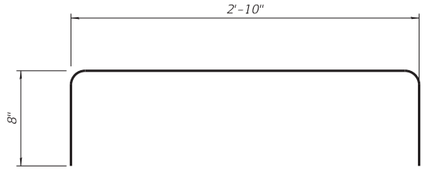


SECTION THRU EDGE OF SLAB

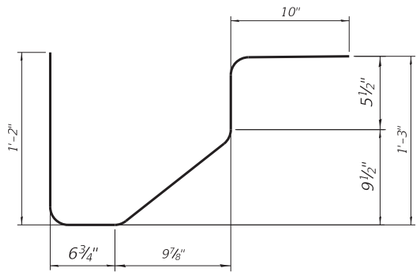
(Railing not shown for clairity)



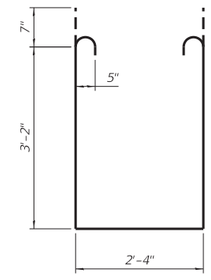
BAR a2(E)



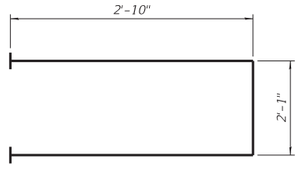
BAR a6(E)



BAR d(E)

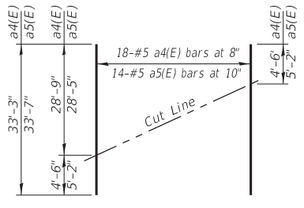


BAR s1(E)



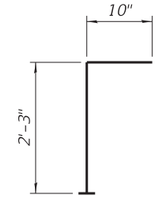
BAR s(E)

(Headed)



FIELD CUTTING DIAGRAM

Order a4(E) and a5(E) full length. Cut as shown and use remainder of bars in opposite face.



BAR v100(E)

(Headed)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	86	#5	29'-8"	——
a1(E)	69	#5	29'-8"	——
a2(E)	208	#6	8'-6"	⌐
a3(E)	4	#5	32'-9"	——
a4(E)	18	#5	33'-3"	——
a5(E)	14	#5	33'-7"	——
a6(E)	8	#4	4'-2"	⌐
b(E)	93	#5	26'-0"	——
b1(E)	132	#5	20'-4"	——
d(E)	208	#5	4'-2"	⊔
m(E)	8	#6	32'-9"	——
m1(E)	30	#6	5'-3"	——
m2(E)	12	#6	1'-11"	——
s(E)	48	#5	7'-9"	⊓
s1(E)	48	#5	9'-10"	⊓
v100(E)	62	#5	3'-1"	⌐
Reinforcement Bars, Epoxy Coated		Lbs.	16700	
Concrete Superstructure		Cu. Yds.	89.3	

Notes:

All edges shall have ¾" chamfer.

MODEL: Superstructure Details
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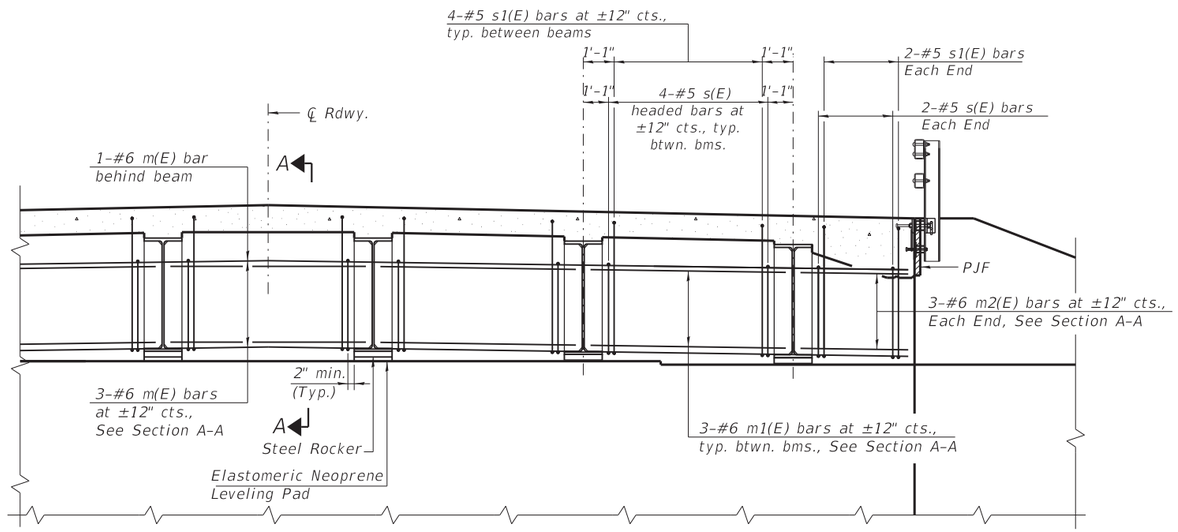
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

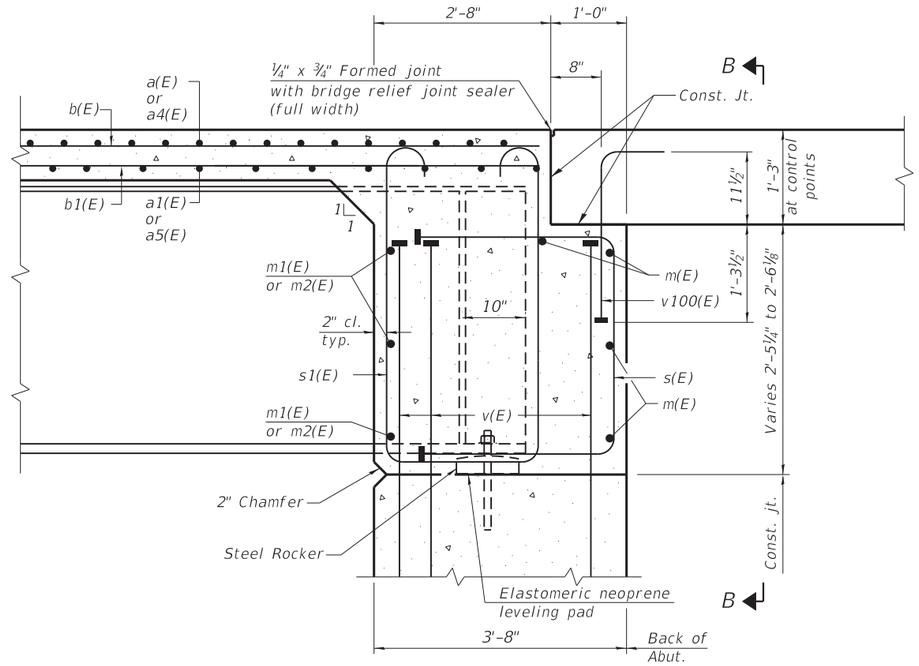
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 060-3367
SHEET 8 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	18
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



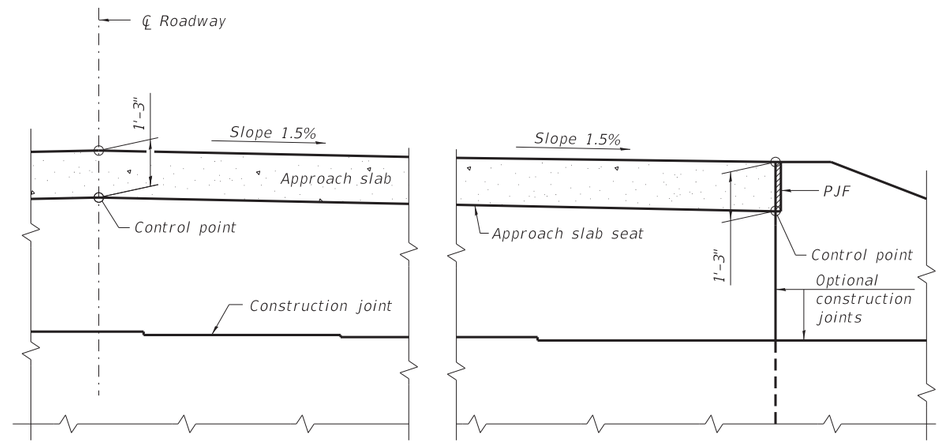
DIAPHRAGM AT ABUTMENT

(West Diaphragm Shown – Looking West, East Diaphragm Similar)

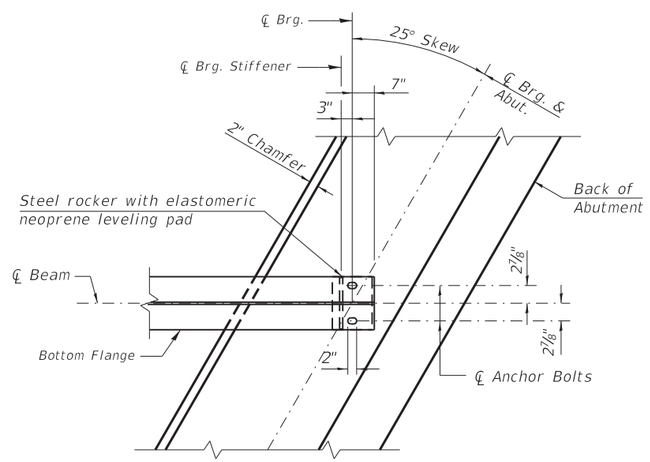


SECTION A–A

(at Rt. ℄'s)



VIEW B–B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

Notes:

See sheet 8 of 19 for superstructure details and Bill of Material.
See sheet 10 of 19 for PJF details.
The s(E) and s1(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.
Reinforcement bars in diaphragm are billed with superstructure on sheet 8 of 19 .
Concrete in diaphragm is included with Concrete Superstructure on sheet 8 of 19.
For details of bars s(E), s1(E) and v100(E), see sheet 8 of 19.
For bearing details, see sheet 15 of 19.
Beams shall be braced for stability during erection and remain braced until deck is poured and cured.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

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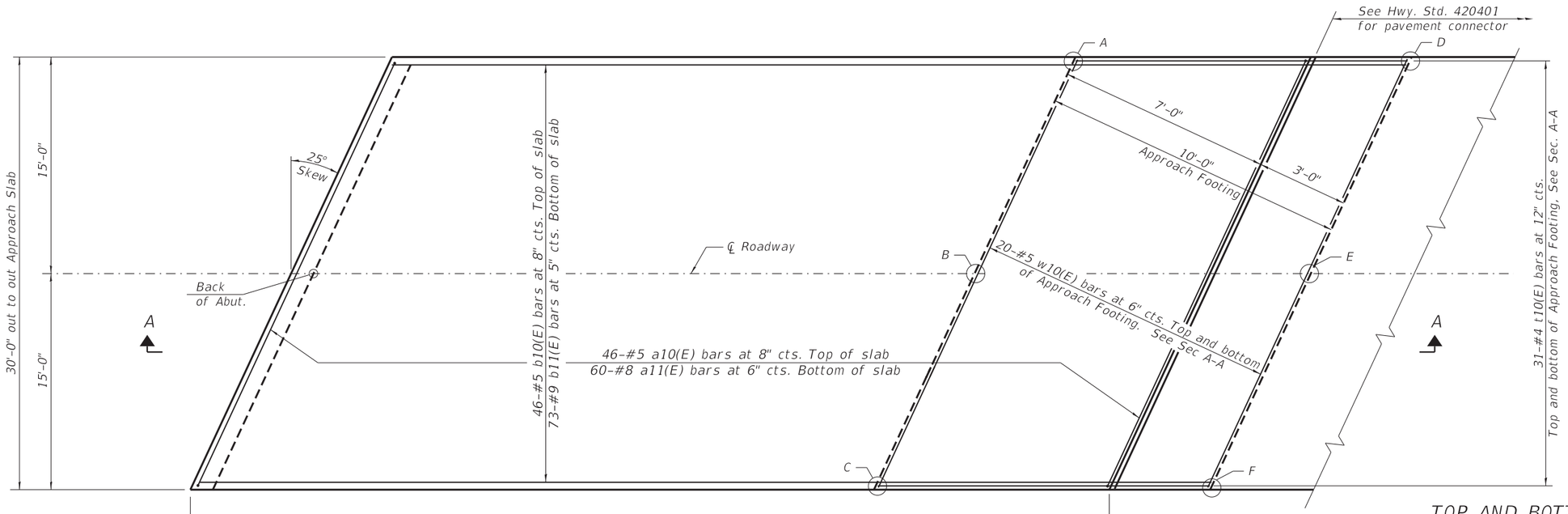
USER NAME = eroth	DESIGNED - RS	REVISED - ____	ENGELKE BRIDGE MADISON COUNTY, ILLINOIS	DIAPHRAGM DETAILS STRUCTURE NO. 060-3367	TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	CHECKED - WWH	REVISED - ____			101	16-18113-00-BR	MADISON	34	19
PLOT SCALE = 1:0.0833335	DRAWN - EER	REVISED - ____			PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
PLOT DATE = 8/4/2022	CHECKED - WWH	REVISED - ____		SHEET 9 OF 19 SHEETS	OLIVE	ILLINOIS	FED. AID PROJECT		

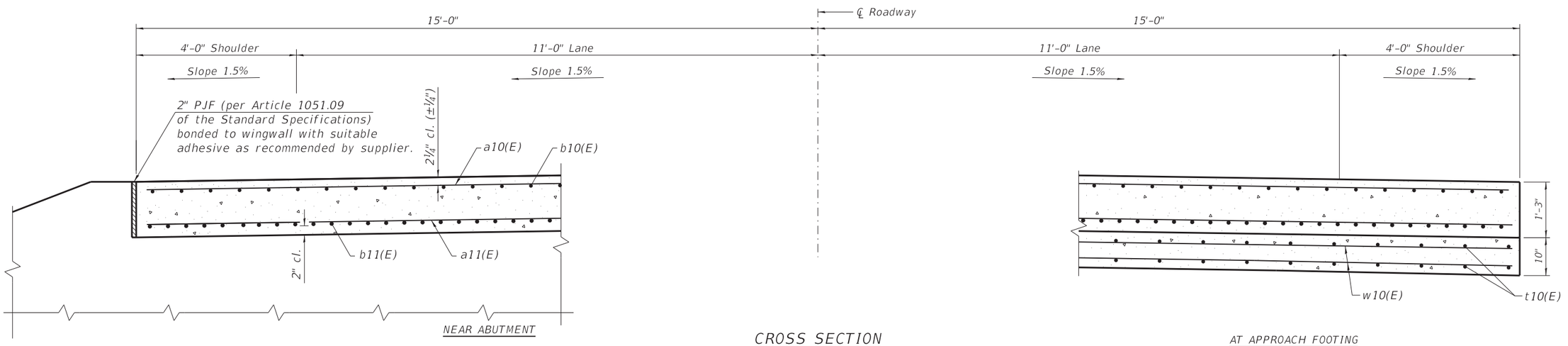


PLAN

(East Approach Shown, West Approach Similar by 180° Rotation)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

East Approach			West Approach		
Point	Top	Bottom	Point	Top	Bottom
A	540.60	539.77	A	540.71	539.87
B	540.66	539.82	B	540.70	539.86
C	540.69	539.86	C	540.67	539.83
D	540.47	539.64	D	540.68	539.85
E	540.56	539.73	E	540.64	539.80
F	540.63	539.79	F	540.57	539.74



CROSS SECTION

(Looking East)

AT APPROACH FOOTING

(Sheet 1 of 2)

MODEL: Bridge Approach Slab Details
FILE NAME: S:\Projects\STRUCTS\187902 - ENGELKE BRIDGE - MADISON COUNTY HWY\02.11.22 - Engleke Bridge Redesign\Drawings\10_Bridge Approach Slab Details.dgn

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Registered Professional Service Corporation License No. 184-003389

USER NAME = eroth		DESIGNED - RS		REVISED -	
		CHECKED - WWH		REVISED -	
PLOT SCALE = 1:2		DRAWN - EER		REVISED -	
PLOT DATE = 8/4/2022		CHECKED - WWH		REVISED -	

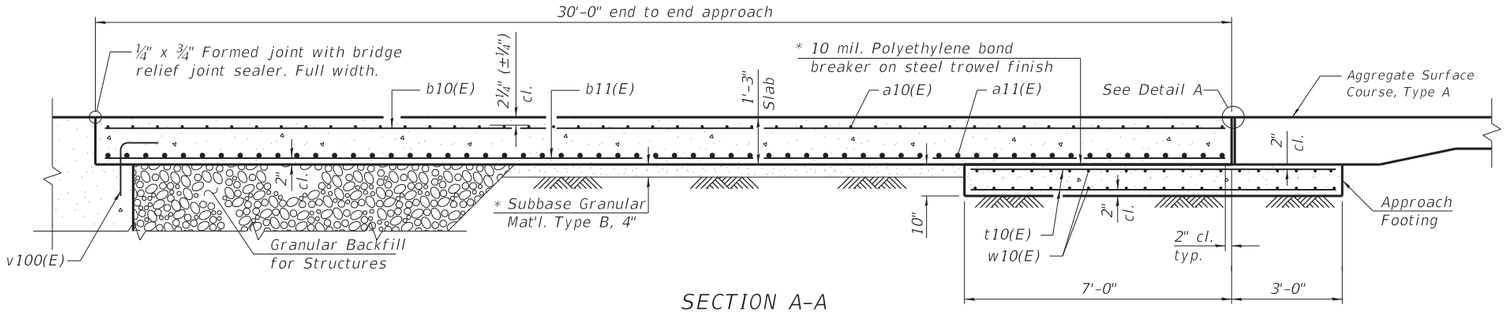
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 060-3367
SHEET 10 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	20
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

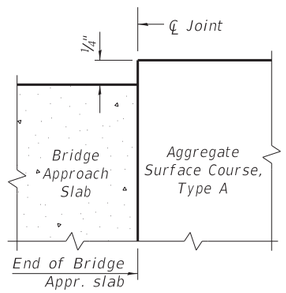
Notes:

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).
Approach footing concrete shall be paid for as Concrete Structures.
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.
Cost of excavation for approach footing included with Concrete Structures.
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 19.
For railing details, see sheet 12 of 19.
For v100(E) bar details, see sheet 8 of 19.
Reinforcement shall be paid for as Reinforcement Bars, Epoxy Coated.



SECTION A-A

* Cost included with Concrete Superstructure (Approach Slab).



DETAIL A
(@ Rt. L's)

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	92	#5	32'-8"	———
a11(E)	120	#8	32'-8"	———
b10(E)	92	#5	29'-8"	———
b11(E)	146	#9	29'-8"	———
t10(E)	124	#4	10'-8"	———
w10(E)	80	#5	32'-8"	———
Concrete Superstructure (Approach Slab)			Cu. Yd.	83.4
Concrete Structures			Cu. Yd.	20.5
Reinforcement Bars, Epoxy Coated			Pound	34790

MODEL: Approach Slab Details
FILE NAME: S:\Projects\STRUCTS\187902 - ENGELKE BRIDGE - MADISON COUNTY HWY\02.11.22 - Engleke Bridge Redesign\Drawings\11_Approach Slab Details.dgn

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		CHECKED - WWH	REVISED - ____		
PLOT SCALE = 1:0.0833335		DRAWN - EER	REVISED - ____		
PLOT DATE = 8/4/2022		CHECKED - WWH	REVISED - ____		

ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 060-3367
SHEET 11 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	21
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

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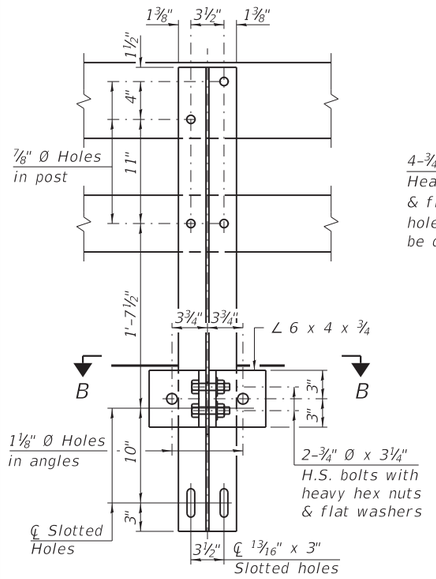
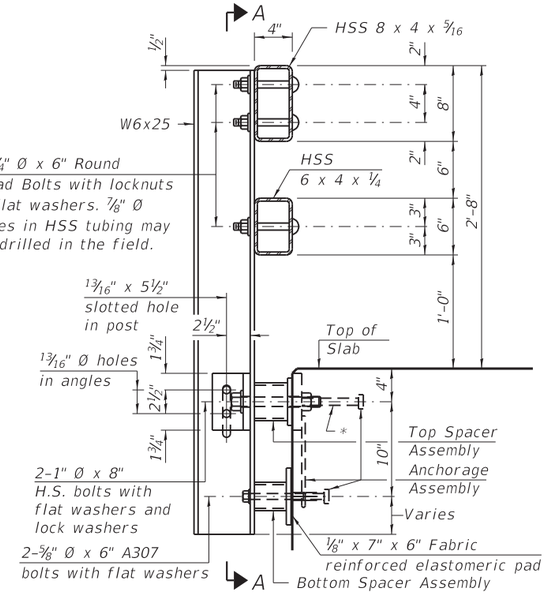
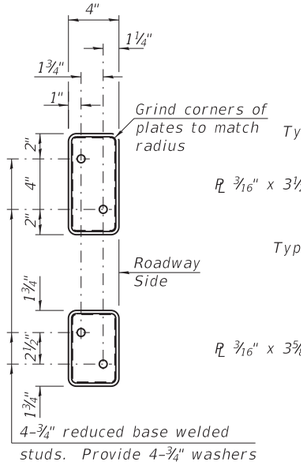


SECTION A-A

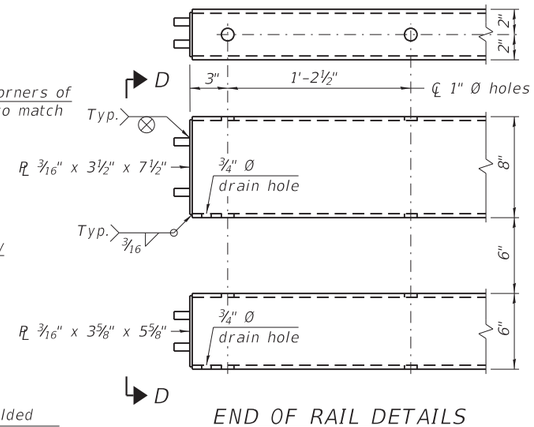


SECTION AT RAIL POST

* The outermost longitudinal reinforcement bar and 3 transverse reinforcement bars shall be placed directly above the studs of the rail post anchorage assembly as shown in the superstructure details.



VIEW D-D



END OF RAIL DETAILS

Notes:

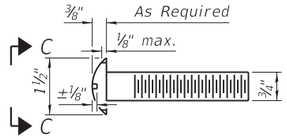
A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11½", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than ¼" (top) or ½" (bottom), longer bolts are required. Cost included with Steel Railing, Type SM.

All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.

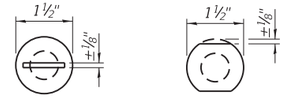
All HSS tubing serving as railing shall be CVN tested according to Article 1006.34(b) of the Standard Specifications.

Rail splice inserts may be built out of 2 -⅜" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

All round head bolts shall be ASTM A307 with locknuts according to ASTM A563 grade A.



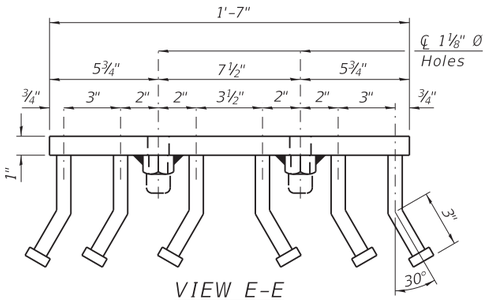
ROUND HEAD BOLT DETAIL



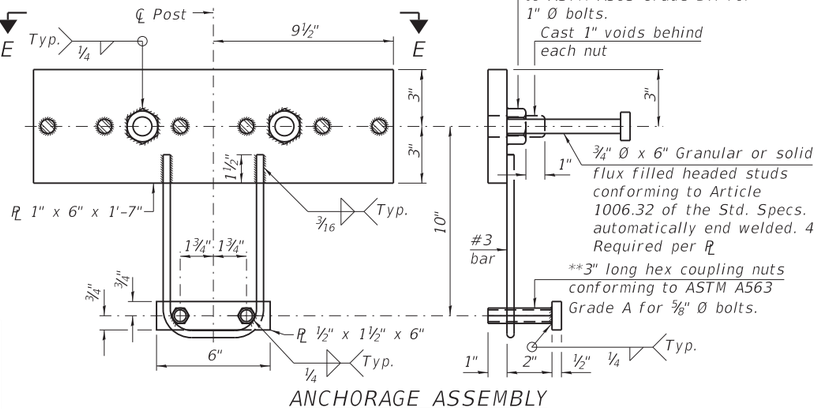
With Slot (shown) or Approved Recess

Without Slot or Recess

VIEW C-C

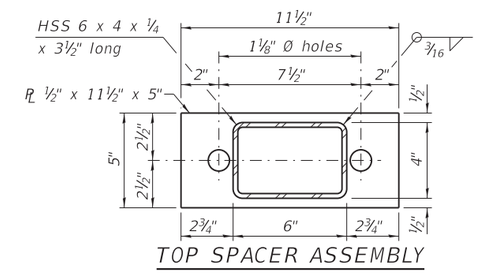


VIEW E-E

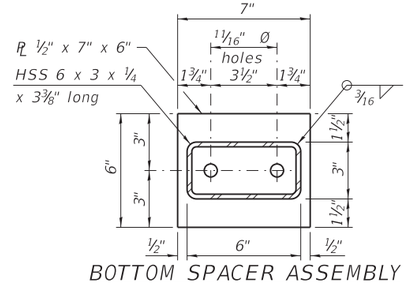


ANCHORAGE ASSEMBLY

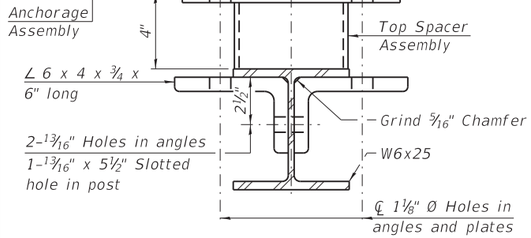
** Threaded areas shall be plugged or blocked off during casting of concrete.



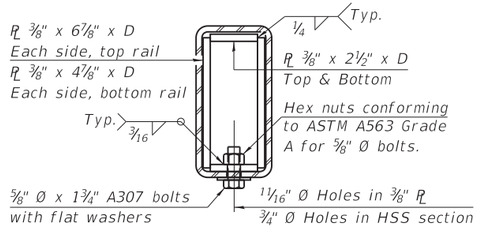
TOP SPACER ASSEMBLY



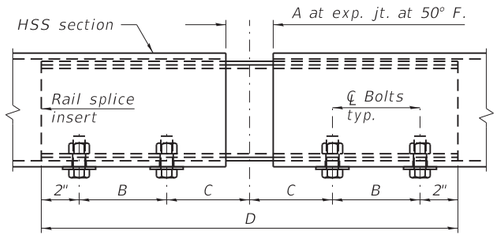
BOTTOM SPACER ASSEMBLY



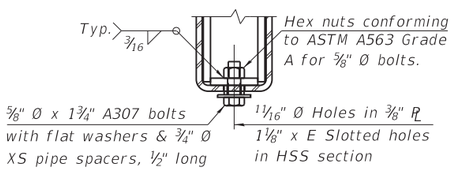
SECTION B-B



SECTION AT RAIL SPLICE



RAIL SPLICE ELEVATION



RAIL SPLICE CONNECTION AT EXPANSION JT.

RAILING CRITERIA

MASH 2016 Test Level	2
Railing Weight (plf)	90
Min f'c (psi)	5,000
Max Post Spacing	6'-3"
CWS thickness range (in)	5 - 7⅛

SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	¼"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2½"	4⅝"	4⅜"	1'-10"	3¹⁄16"
Over Finger or Modular Jt.	≤9½"	5½"	7⅜"	7¼"	2'-9¼"	5¹³⁄16"
Over Finger or Modular Jt.	≤15"	8¼"	10⅛"	10"	3'-8¼"	8⁹⁄16"

T = ; total movement along centerline of roadway at expansion joint.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	144

MODEL: Steel Railing Type SM
FILE NAME: S:\Projects\STRUCTS\187902 - ENGELKE BRIDGE - MADISON COUNTY HWY\02.11.22 - Engleke Bridge Redesign\Drawings\12_Steel Railing Type SM.dgn

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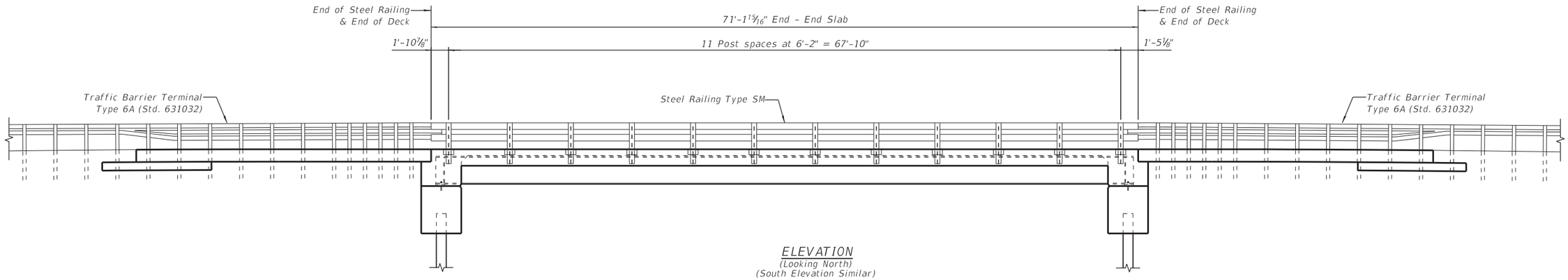
PLOT DATE = 8/4/2022		CHECKED - WWH		REVISED -	

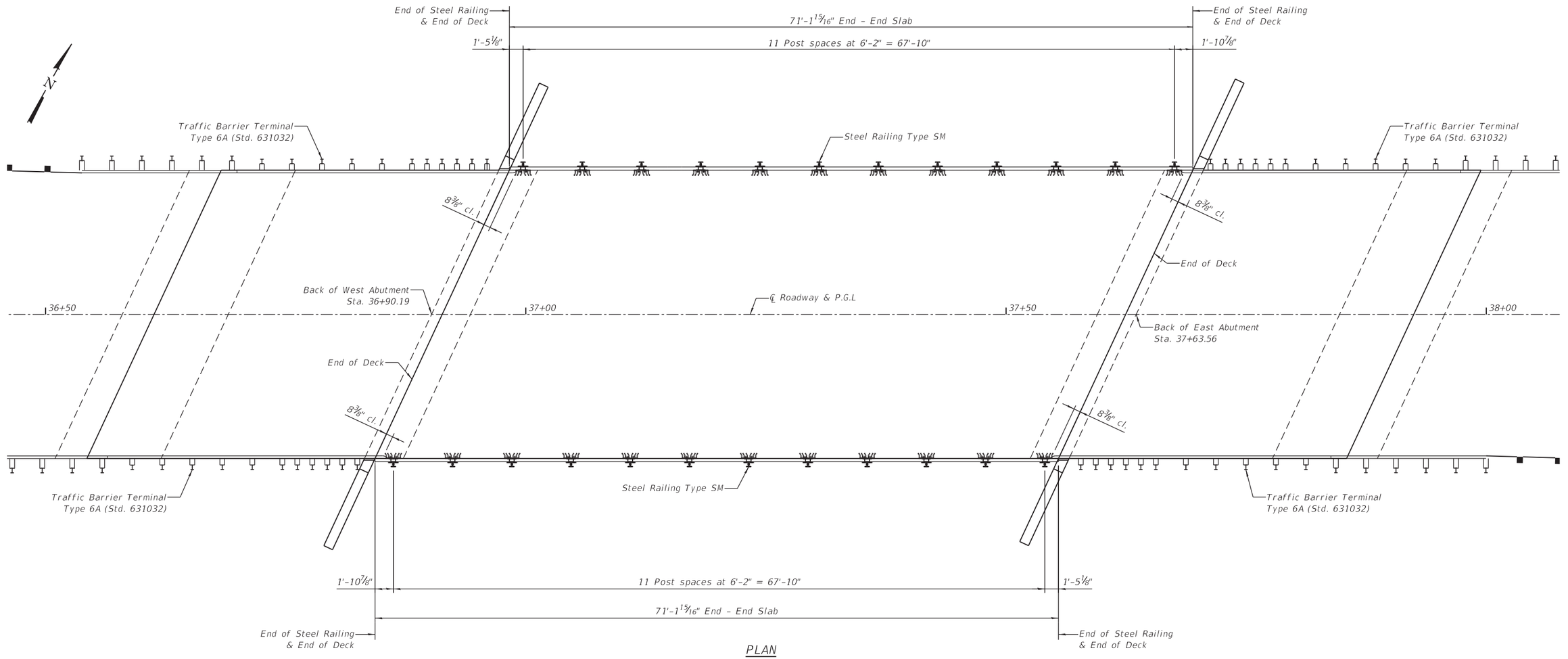
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

STEEL RAILING, TYPE SM
STRUCTURE NO.
SHEET 12 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	22
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



ELEVATION
(Looking North)
(South Elevation Similar)



PLAN

MODEL: Rail Post Spacing
FILE NAME: S:\Projects\STRUCTS\187902 - ENGELKE BRIDGE - MADISON COUNTY HWY\02.11.22 - Engleke Bridge Redesign\Drawings\13_Rail Post Spacing.dgn
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Registered Professional Service Corporation License No. 184-003389

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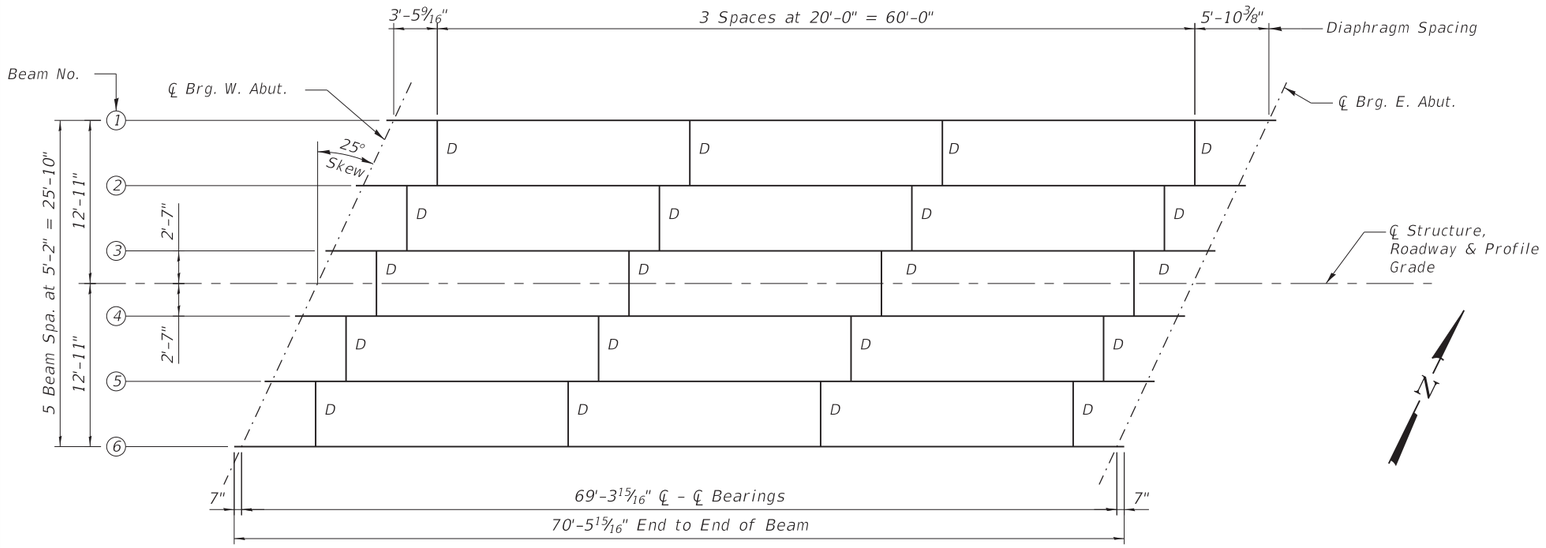
PLOT DATE = 8/4/2022		CHECKED - WWH		REVISED -	

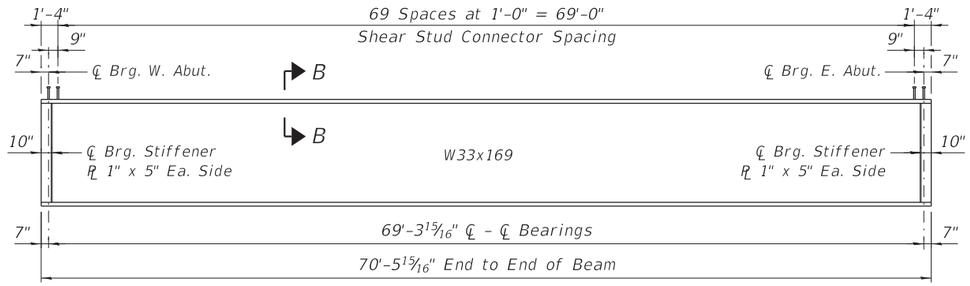
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

RAIL POST SPACING
STRUCTURE NO. 060-3367
SHEET 13 OF 19 SHEETS

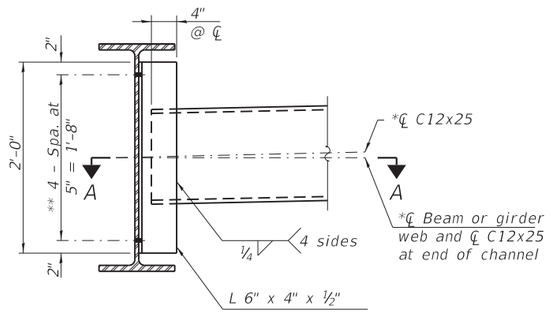
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	23
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



FRAMING PLAN

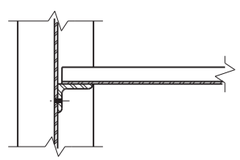


BEAM ELEVATION



INTERIOR DIAPHRAGM D

(20 Required)



SECTION A-A

Notes:

Two hardened washers required for each set of oversized holes.
* Alternate channels are permitted to facilitate material acquisition. Calculated weight of structural steel is based on the lighter section. The alternate, if utilized, shall be provided at no additional cost to the Department.
** ¾" Ø HS bolts, 15/16" Ø holes

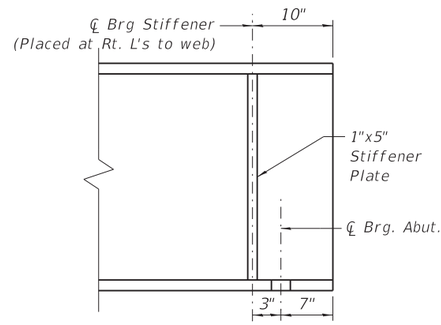
*** TOP OF BEAM ELEVATIONS

Location	℄ Brg. W. Abut.	℄ Brg. E. Abut.
Beam 1	541.26	541.26
Beam 2	541.33	541.33
Beam 3	541.41	541.41
Beam 4	541.41	541.41
Beam 5	541.33	541.33
Beam 6	541.26	541.26

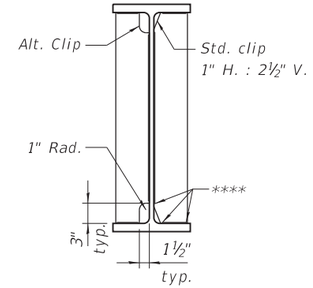
*** For Fabrication only

Load carrying components designated "NTR" shall conform to the Impact Testing Requirement, Zone 2.

All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual diaphragms at supports may be temporarily disconnected to install bearing anchor rods.

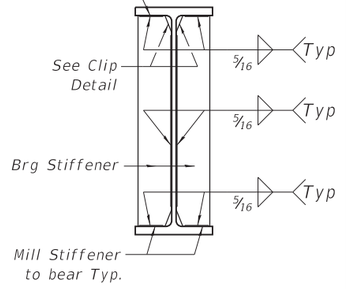


TYPICAL END ELEVATION

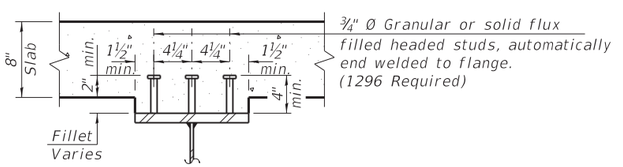


WELD LIMITS & CLIP DETAILS

**** Stop welds ¼" (⅛"±) from edges as shown Typical



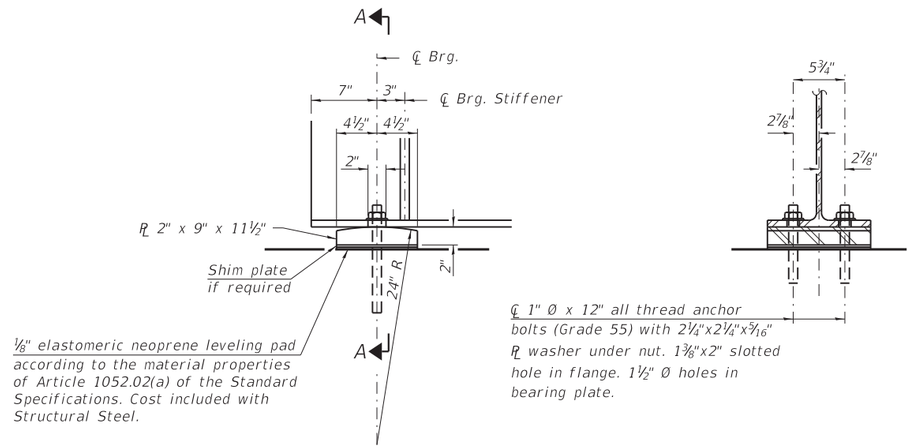
BEARING STIFFENER DETAIL



SECTION B-B

(Typical Each Beam)

PINTLE



ELEVATION AT ABUTMENT

SECTION A-A

FIXED BEARING
(12 Required)

BEAM MOMENT TABLE			
		0.5 Sp. 1	
		Interior	Exterior
I_s	(in^4)	9,290	9,290
$I_c(n)$	(in^4)	23,576	22,957
$I_c(3n)$	(in^4)	17,054	16,532
$I_c(cr)$	(in^4)	-----	-----
S_s	(in^3)	550	550
$S_c(n)$	(in^3)	792	785
$S_c(3n)$	(in^3)	711	703
$S_c(cr)$	(in^3)	-----	-----
S_{xc}	(in^3)	858	844
DC1	(k/')	0.751	0.871
M_{DC1}	('k)	451	523
DC2	(k/')	0.030	0.030
M_{DC2}	('k)	18	18
DW	(k/')	0.250	0.250
M_{DW}	('k)	150	150
M_{L+IM}	('k)	836	999
LLDF		0.4961	0.6096
f_f (Strength I)	('k)	0.00	0.00
$M_u + \frac{1}{3} f_f S_{xc}$	('k)	2,274	2,650
$\phi_f M_n$	('k)	2,942	2,930
f_s DC1	(ksi)	9.85	11.42
f_s DC2	(ksi)	0.30	0.31
f_s DW	(ksi)	2.53	2.56
f_s (L+IM)	(ksi)	12.67	15.26
f_f (Service II)	(ksi)	0.00	0.00
$f_s + f_f/2$ (Service II)	(ksi)	29.15	34.13
$0.95 R_h F_{yf}$	(ksi)	47.50	47.50
$fs + {}^{ff}/_{3}$ (Total)(Strength I)		38.65	45.20
$\phi_f F_n$	(ksi)	50.00	50.00
V_f	(k)	18.72	22.36

BEAM REACTION TABLE			
		Abutments	
		Interior	Exterior
LLDF		0.6096	0.6096
OCF		1.112	1.112
R_{DC1}	(k)	26.7	31.0
R_{DC2}	(k)	1.1	1.1
R_{DW}	(k)	8.7	8.8
R_L	(k)	41.7	51.6
R_{IM}	(k)	10.1	12.4
R_{Total}	(k)	88.2	104.9

Notes:

Anchor bolts shall be according to Article 521.06 of the Standard Specifications.

Beams shall be braced for stability during erection and remain braced until deck is poured and cured.

Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Two ⅛" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.

Anchor bolts shall be ASTM F1554 all-thread (or an Engineer-approved alternate material) of the grade and diameter specified. The corresponding specified grade of AASHTO M314 anchor bolts may be used in lieu of ASTM F1554.

Anchor bolts at fixed bearings may be either cast in place or installed in holes drilled after the supported member is in place.

All steel plates of the bearing assembly shall be M270 Grade 50.

Is, Ss: Non-composite moment of inertia and section modulus of the steel section used for computing fs(Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).

Ic(n), Sc(n): Composite moment of inertia and section modulus of the steel and deck based upon the modular ratio, "n", used for computing fs(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads ($in.^4$ and $in.^3$).

Ic(3n), Sc(3n): Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing fs(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

Ic(cr), Sc(cr): Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing fs (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).

Sxc: Section modulus about the major axis of section to the controlling flange, tension or compression, taken as yield moment with respect to the controlling flange over the yield strength of the controlling flange ($in.^3$).

DC1: Un-factored non-composite dead load (kips/ft.).

M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).

DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).

M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).

DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).

M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).

LLDF: Live Load Distribution Factor for moment and shear computed according to Article 4.6.2.2 and further IDOT provisions.

M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).

Mu (Strength I): Factored design moment (kip-ft.).
$1.25 (M_{DC1} + M_{DC2}) + 1.5 MDW + 1.75 M_{L+IM}$

f_f: Factored calculated normal stress at edge of flange for controlling flange plate due to lateral bending, Strength I or Service II as applicable (kip-ft.).

$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).

fs DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / Snc

fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
M_{DC2} / Sc(3n) or M_{DC2} / Sc(cr) as applicable.

fs DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
M_{DW} / Sc(3n) or M_{DW} / Sc(cr) as applicable.

fs (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
M_{L+IM} / Sc(n) or M_{L+IM} / Sc(cr) as applicable.

fs (Service II): Sum of stresses as computed below (ksi).
fsDC1 + fsDC2 + fsDW + 1.3 $fs_{(L+IM)}$

0.95RhFyf: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).

$fs + {}^{ff}/_{3}$ (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
1.25 (fsDC1 + fsDC2) + 1.5 fsDW + 1.75 $fs_{(L+IM)}$

$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).

V_f: Maximum factored shear range in span computed according to Article 6.10.10.

OCF: Obtuse Correction Factor applied to non-continuous exterior beam ends and computed according to Article 4.6.2.2.3c-1 or as further simplified by IDOT provisions.

R_{DC1}: Un-factored reaction due to non-composite dead load (kip).

R_{DC2}: Un-factored reaction due to long-term composite (superimposed excluding future wearing surface only) dead load (kip).

R_{DW}: Un-factored reaction due to long-term composite (superimposed future wearing surface only) dead load (kip).

R_L: Un-factored live load reaction (kip).

R_{IM}: Un-factored dynamic load allowance (impact) (kip).

MODEL: Bearing Details
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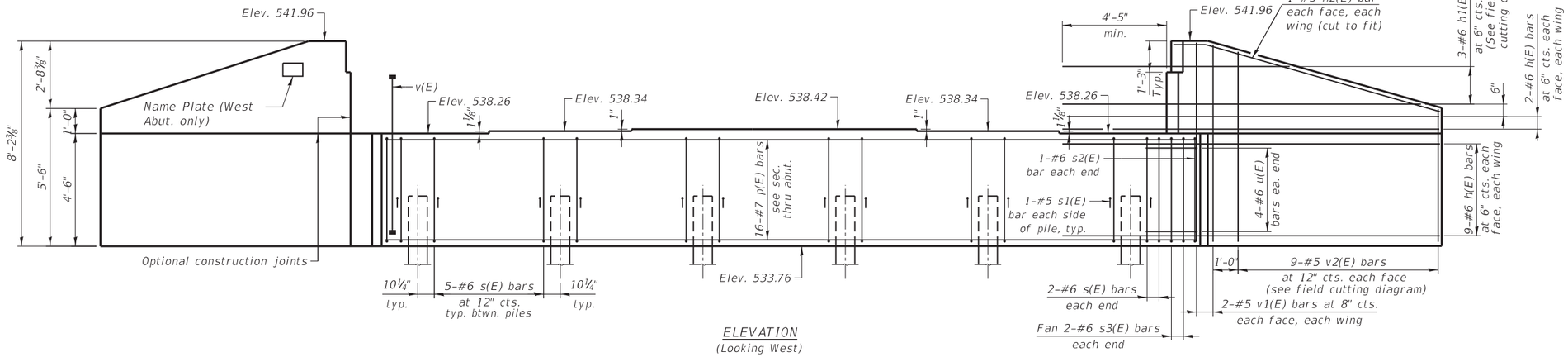
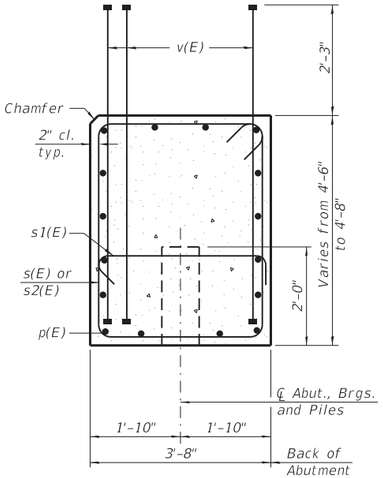
ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

BEARING DETAILS
STRUCTURE 060-3367
SHEET 15 OF 19 SHEETS

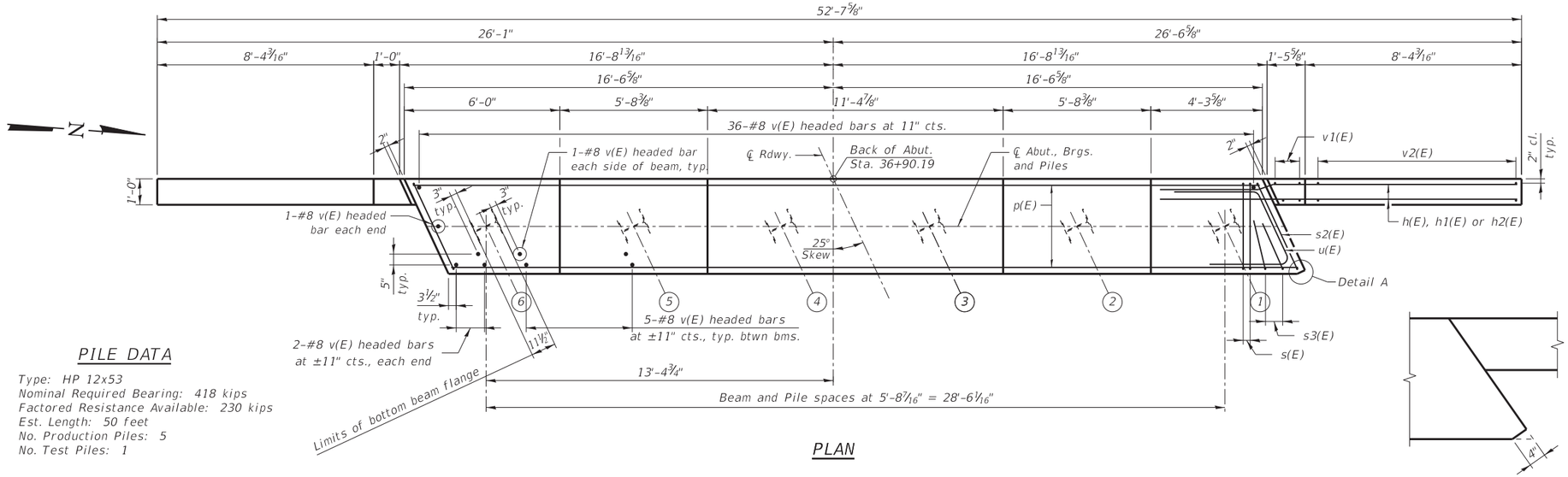
TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	25
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



ELEVATION
(Looking West)



SEC. THRU ABUT.
Dimensions at right angles to abutment.



PLAN

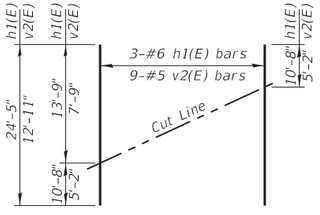
PILE DATA

Type: HP 12x53
Nominal Required Bearing: 418 kips
Factored Resistance Available: 230 kips
Est. Length: 50 feet
No. Production Piles: 5
No. Test Piles: 1

DETAIL A
Block out sharp corner of abutment cap and diaphragm as shown.

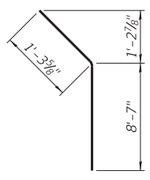
WEST ABUTMENT BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	44	#6	14'-3"	
h1(E)	12	#6	24'-5"	
h2(E)	4	#5	9'-11"	
p(E)	16	#7	32'-9"	
s(E)	29	#6	16'-4"	
s1(E)	12	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	4	#6	9'-2"	
u(E)	8	#6	12'-1"	
v(E)	79	#8	6'-4"	
v1(E)	8	#5	7'-10"	
v2(E)	36	#5	12'-11"	
Structure Excavation	Cu. Yd.		98.5	
Concrete Structures	Cu. Yd.		25.9	
Reinforcement Bars, Epoxy Coated	Pound		5400	
Furnishing Steel Piles, HP 12x53	Foot		250	
Driving Piles	Foot		250	
Test Pile, Steel HP 12x53	Each		1	
Pile Shoes	Each		6	
Name Plate	Each		1	

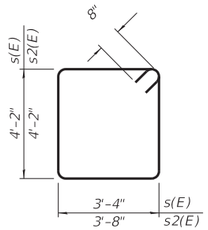


FIELD CUTTING DIAGRAM
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.

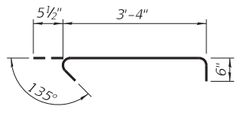
BAR v(E)
(Headed)



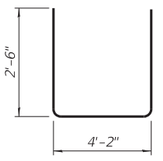
BAR h2(E)



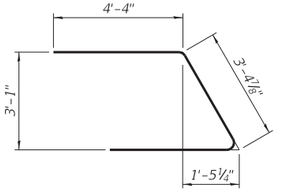
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

Notes:

Pour steps monolithically with cap.

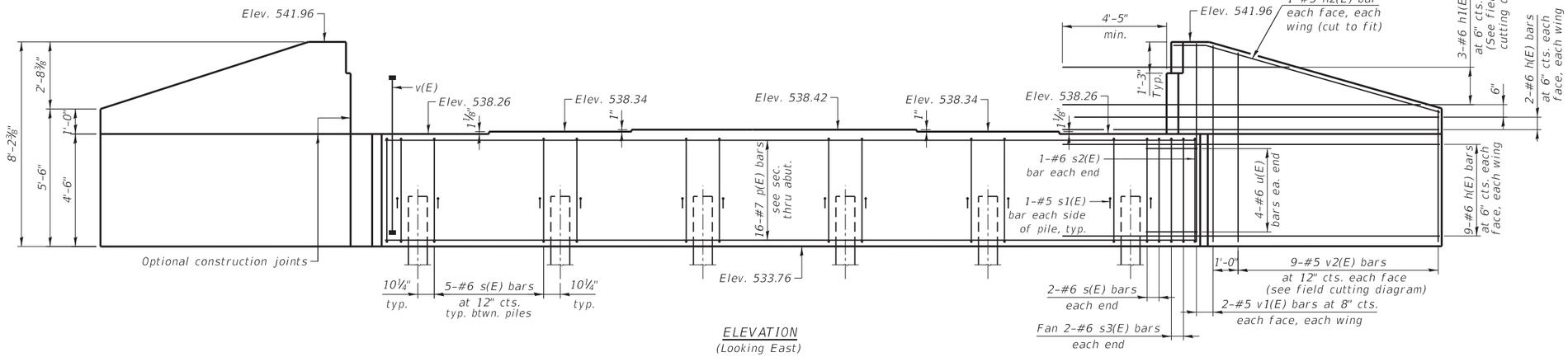
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

For Details of Piles, see Sheet 18 of 19.

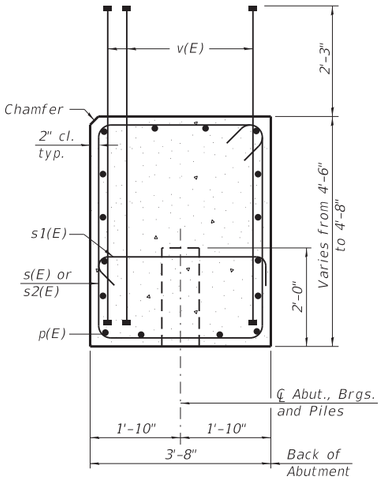
Space reinforcement in cap to miss anchor bolts.

For Bearing details, see Sheet 15 of 19.

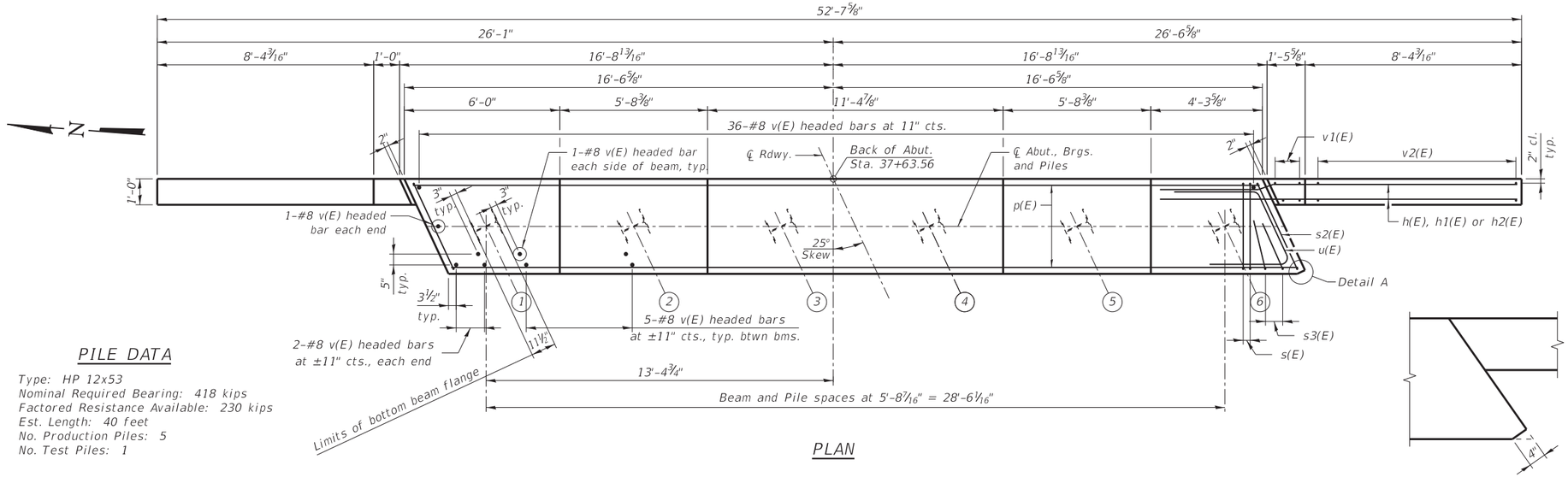
Corrosion inhibitor per Article 1020.05(b) and Section 1021 of the Standard Specifications shall be added to the entire quantity of Concrete Structures utilized in the abutments. Cost included with Concrete Structures.



ELEVATION
(Looking East)



SEC. THRU ABUT.
Dimensions at right angles to abutment.



PLAN

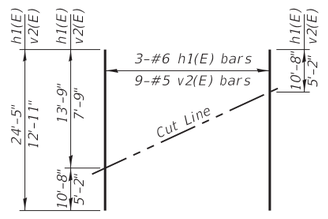
PILE DATA

Type: HP 12x53
Nominal Required Bearing: 418 kips
Factored Resistance Available: 230 kips
Est. Length: 40 feet
No. Production Piles: 5
No. Test Piles: 1

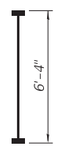
DETAIL A
Block out sharp corner of abutment cap and diaphragm as shown.

EAST ABUTMENT BILL OF MATERIAL

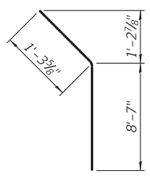
Bar	No.	Size	Length	Shape
h(E)	44	#6	14'-3"	
h1(E)	12	#6	24'-5"	
h2(E)	4	#5	9'-11"	
p(E)	16	#7	32'-9"	
s(E)	29	#6	16'-4"	
s1(E)	12	#5	4'-4"	
s2(E)	2	#6	17'-0"	
s3(E)	4	#6	9'-2"	
u(E)	8	#6	12'-1"	
v(E)	79	#8	6'-4"	
v1(E)	8	#5	7'-10"	
v2(E)	36	#5	12'-11"	
Structure Excavation		Cu. Yd.	98.5	
Concrete Structures		Cu. Yd.	25.9	
Reinforcement Bars, Epoxy Coated		Pound	5400	
Furnishing Steel Piles, HP 12x53		Foot	200	
Driving Piles		Foot	200	
Test Pile, Steel HP 12x53		Each	1	
Pile Shoes		Each	6	



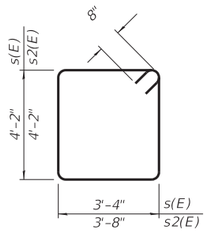
FIELD CUTTING DIAGRAM
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



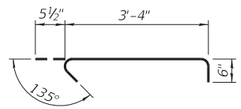
BAR v(E)
(Headed)



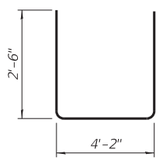
BAR h2(E)



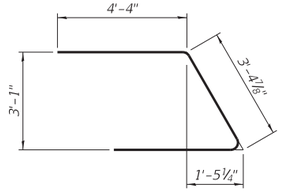
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

Notes:

Pour steps monolithically with cap.

Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

For Details of Piles, see Sheet 18 of 19.

Space reinforcement in cap to miss anchor bolts.

For Bearing details, see Sheet 15 of 19.

Corrosion inhibitor per Article 1020.05(b) and Section 1021 of the Standard Specifications shall be added to the entire quantity of Concrete Structures utilized in the abutments. Cost included with Concrete Structures.

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ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

EAST ABUTMENT
STRUCTURE NO. 060-3367
SHEET 17 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	27
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

MODEL: West Abutment
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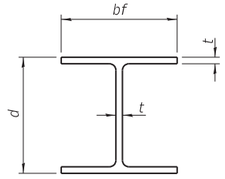
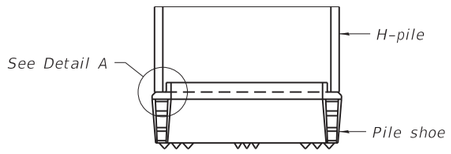


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14 1/4"	14 7/8"	13/16"	30"
x102	14"	14 3/4"	11/16"	30"
x89	13 7/8"	14 3/4"	5/8"	30"
x73	13 5/8"	14 5/8"	1/2"	30"
HP 12x84	12 1/4"	12 1/4"	11/16"	24"
x74	12 1/8"	12 1/4"	5/8"	24"
x63	12"	12 1/8"	1/2"	24"
x53	11 3/4"	12"	7/16"	24"
HP 10x57	10"	10 1/4"	9/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



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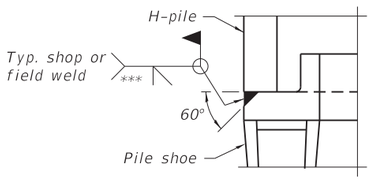
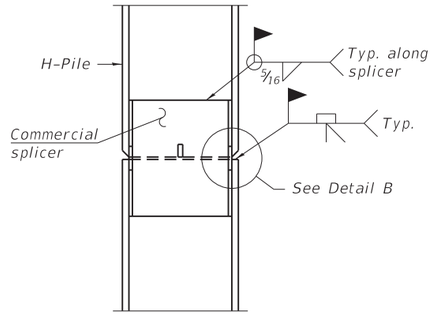


DETAIL A

SHOE ATTACHMENT

Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



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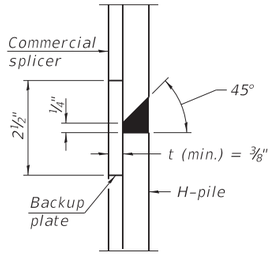
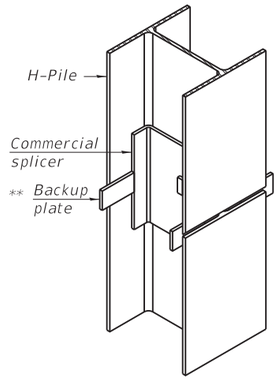
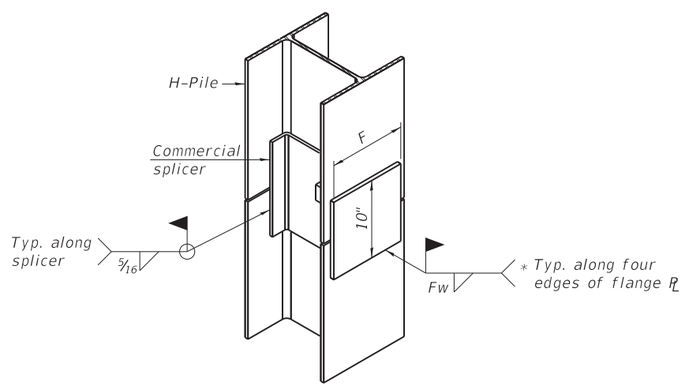


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



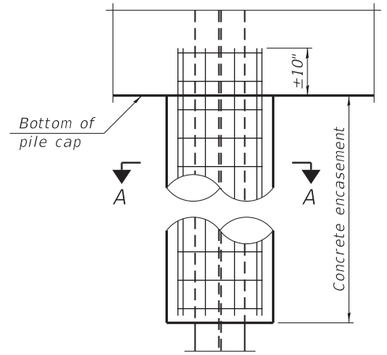
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

* Interrupt welds 1/4" from end of web and/or each flange.

** Remove portions of backup plates that extend outside the flanges.

*** Weld size per pile shoe manufacturer (5/16" min.).



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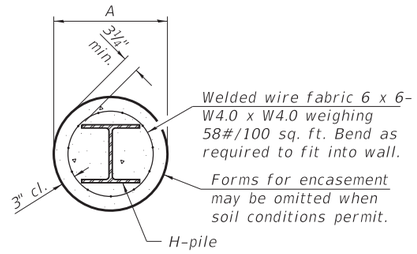
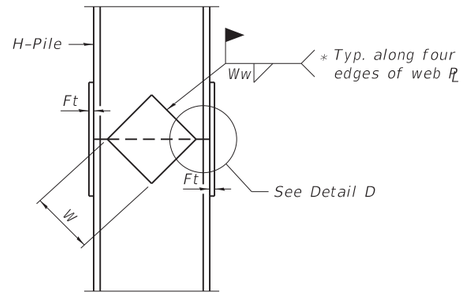


SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(when specified)



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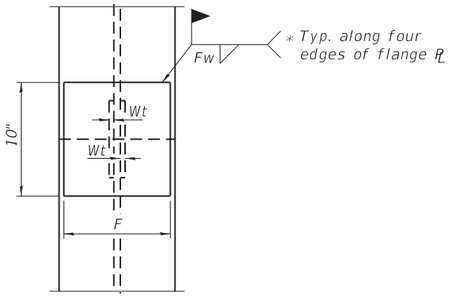
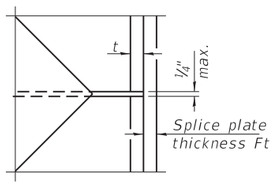


END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12 1/2"	1"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	7/8"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	3/4"	11/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	5/8"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	11/16"	6 1/2"	5/8"	1/2"
x63	10"	5/8"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	3/8"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	5/8"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	7"	5/8"	7/16"	4 1/4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

F-HP 1-1-2020

JUNEAU ENGINEERING & LAND SURVEYING
Registered Professional Service Corporation License No. 184-003389

USER NAME = eroth		DESIGNED - RS		REVISED - ____	
		CHECKED - WWH		REVISED - ____	
PLOT SCALE = 1:0.0833335		DRAWN - EER		REVISED - ____	
PLOT DATE = 8/4/2022		CHECKED - WWH		REVISED - ____	

ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

HP PILE DETAILS
STRUCTURE NO. 060-3367
SHEET 18 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	28
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		

MODEL: HP Pile Details
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Quality Testing and Engineering, Inc.
QTE Project No.18-0296-G2

Soil Boring Log

Route: TR 101 Structure No.: Proposed: 060-3367 Date: 6/12/2018 Page: 1 of 2
Section: 16-18113-00-BR Description: West Abutment
County: Madison Drilling Method: CME 550, HSA, Mud Rotary Hammer Type: Automatic SPT Hammer
Boring No.: B-1 Logged by: Quality Testing and Engineering, Inc. (WKS)
Station: 36+53.69
Offset: 23.16 LT
Latitude: 38.940168
Longitude: -89.734459
Ground Surface El.: 536.9 ft
Surface Water Elev.: N/A ft
Groundwater Elev.
First Encounter: 10.0 ft
Upon Completion: N/A ft
After N/A Hours N/A ft

Soil Type, Description & Observations	ELEV. (ft)	DEPTH (ft)	BLOWS /6 in.	U.C.S. Qu (tsf)	MOIST. (%)
TOPSOIL – 3 Inches					
Brown, SANDY LOAM, A-2			3		
			2	N/A	12
			2		
Brown, SILTY LOAM, A-4			2		
			1	2.0	23
		-5	2	P	
Brown and gray, CLAY LOAM, A-6					
trace roots			1		
			WOH	0.5	31
			WOH	P	
Becomes dark gray		-10	WOH	0.5	27
				P	
Brown, fine-grained, SAND, A-3			3		
			3	N/A	21
			4		
			3		
		-15	3	N/A	20
			3		
Becomes gray			3		
			4	N/A	16
			4		
Gray, fine-grained, SAND, A-2					
Trace gravel and wood fragments			3		
			4	N/A	30
		-20	5		
Gray, fine-grained SAND, trace gravel, A-2 (cont.)					
			5		
			5	N/A	12
			6		
			7		
			7	N/A	18
		-25	5		
With gravel			6		
			8	N/A	11
			9		
			5		
			6	N/A	19
		-30	11		
Tan, CLAYEY SHALE			8		
			10	2.6	18
		-35	13	S	
			13		
			22	3.2	17
		-40	37	B	

The U.C.S. Qu column represents the Unconfined Compressive Strength using either the IDOT Rimac Test Procedure or AASHTO 208.
The Qu failure mode is indicated by B for Bulge or S for Shear. P is shown when sample disturbance only allows Penetrometer testing.
The Standard Penetration Test (SPT) N value is the sum of the second and third Blows /6 in. values in each sample using AASHTO T 206.

File Name: BBS 137.docx Printed: 12/5/2018 10:34 AM BBS 137 (Rev. 01/04/2012)

Quality Testing and Engineering, Inc.
QTE Project No.18-0296-G2

Soil Boring Log

Route: TR 101 Structure Proposed: 060-3367 Date: 6/12/2018 Page: 2 of 2
Section: 16-18113-00-BR Description: West Abutment
County: Madison Drilling Method: CME 550, HSA, Mud Rotary Hammer Type: Automatic SPT Hammer
Boring No.: B-1 Logged by: Quality Testing and Engineering, Inc. (WKS)
Station: 36+53.69
Offset: 23.16 LT
Latitude: 38.940168
Longitude: -89.734459
Ground Surface El.: 536.9 ft
Surface Water Elev.: N/A ft
Groundwater Elev.
First Encounter: 10.0 ft
Upon Completion: N/A ft
After N/A Hours N/A ft

Soil Type, Description & Observations	ELEV. (ft)	DEPTH (ft)	BLOWS /6 in.	U.C.S. Qu (tsf)	MOIST. (%)
Tan, CLAYEY SHALE (cont.)					
Becomes gray			15		
			20	4.5+	22
LIMESTONE: Gray, Hard		-45	50/.5	P	
Auger refusal at 45 ft, switched to Tri-cone rock rotary bit					
			50/0	N/A	
			50/1	N/A	
Boring Terminated at 48.6 ft.					
Split-spoon sampler broke off.		-50			
		-55			
		-60			

The U.C.S. Qu column represents the Unconfined Compressive Strength using either the IDOT Rimac Test Procedure or AASHTO 208.
The Qu failure mode is indicated by B for Bulge or S for Shear. P is shown when sample disturbance only allows Penetrometer testing.
The Standard Penetration Test (SPT) N value is the sum of the second and third Blows /6 in. values in each sample using AASHTO T 206.

File Name: BBS 137.docx Printed: 12/5/2018 10:35 AM BBS 137 (Rev. 01/04/2012)

Quality Testing and Engineering, Inc.
Project No.18-0296-G2

Soil Boring Log

Route: TR 101 Structure No.: Proposed: 060-3367 Date: 6/12/2018 Page: 1 of 1
Section: 16-18113-00-BR Description: East Abutment
County: Madison Drilling Method: CME 550, HSA, Mud Rotary Hammer Type: Automatic SPT Hammer
Boring No.: B-2 Logged by: Quality Testing and Engineering, Inc. (WKS)
Station: 37+37.89
Offset: 13.50 RT
Latitude: 38.940177
Longitude: -89.734123
Ground Surface El.: 537.1 ft
Surface Water Elev.: N/A ft
Groundwater Elev.
First Encounter: 6.0 ft
Upon Completion: N/A ft
After N/A Hours N/A ft

Soil Type, Description & Observations	ELEV. (ft)	DEPTH (ft)	BLOWS /6 in.	U.C.S. Qu (tsf)	MOIST. (%)
TOPSOIL – 3 inches					
Dark gray, SANDY LOAM, A-2			2		
			3	N/A	42
			4		
Brown, CLAY LOAM, A-6			2		
			2	1.0	26
		-5	3	P	
Brown, fine-grained, SANDY LOAM, A-2					
			4		
			WOH	N/A	19
			1		
		-10	WOH	N/A	17
			2		
			1		
			2	N/A	17
			3		
Brown and Gray, CLAY, A-7					
Trace iron stains			2		
			2	1.1	23
		-15	3	B	
			2		
			2	0.5	24
			3	B	
			1		
Becomes gray			2	0.5	25
		-20	2	P	
Gray, CLAY, A-7 (cont.)					
Gray, CLAY LOAM, A-7			1		
			2	0.8	22
			3	B	
Gray, fine-to-coarse grained, SAND, A-2					
Trace gravel			3		
			4	N/A	19
		-25	5		
			4		
			6	N/A	22
			7		
			7		
			3	N/A	4
		-30	4		
Tan, CLAYEY SHALE					
			9		
Tan, SHALE			34	4.5+	17
		-35	50/4	P	
			50/5	4.5+	
				P	15
Becomes gray			30	4.5+	
			50/5	P	14
Boring Terminated 39.42 feet.		-40			

The U.C.S. Qu column represents the Unconfined Compressive Strength using either the IDOT Rimac Test Procedure or AASHTO 208.
The Qu failure mode is indicated by B for Bulge or S for Shear. P is shown when sample disturbance only allows Penetrometer testing.
The Standard Penetration Test (SPT) N value is the sum of the second and third Blows /6 in. values in each sample using AASHTO T 206.

File Name: BBS 137.docx Printed: 12/5/2018 10:35 AM BBS 137 (Rev. 01/04/2012)

MODEL: Boring Logs
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	CHECKED - WWH	REVISED - ____
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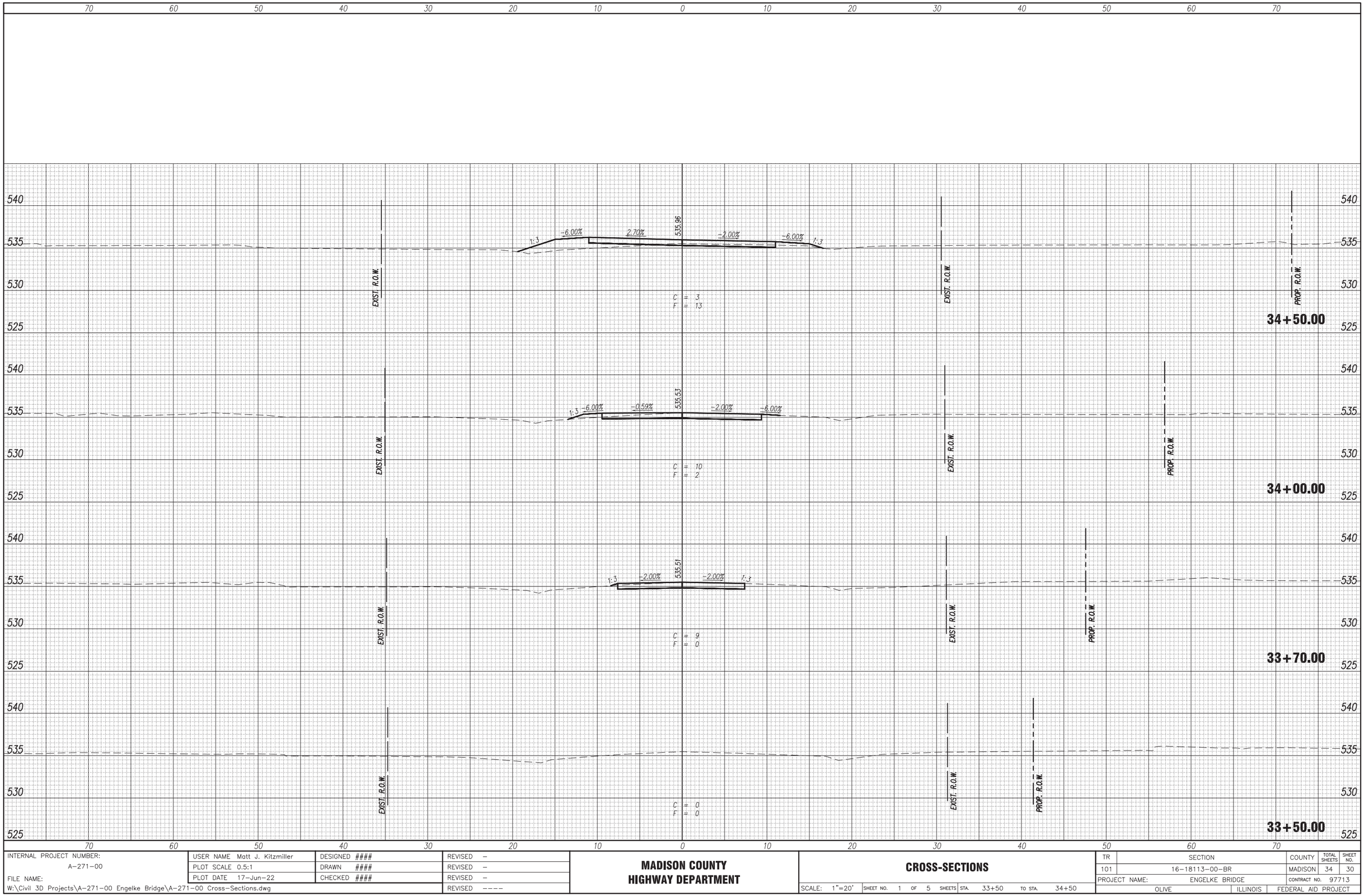
PLOT DATE = 8/4/2022	CHECKED - WWH	REVISED - ____

ENGELKE BRIDGE
MADISON COUNTY, ILLINOIS

SOIL BORING LOGS
STRUCTURE NO. 060-3367
SHEET 19 OF 19 SHEETS

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	29
PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
OLIVE	ILLINOIS	FED. AID PROJECT		



INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ####	REVISED –	**MADISON COUNTY HIGHWAY DEPARTMENT**	**CROSS-SECTIONS**
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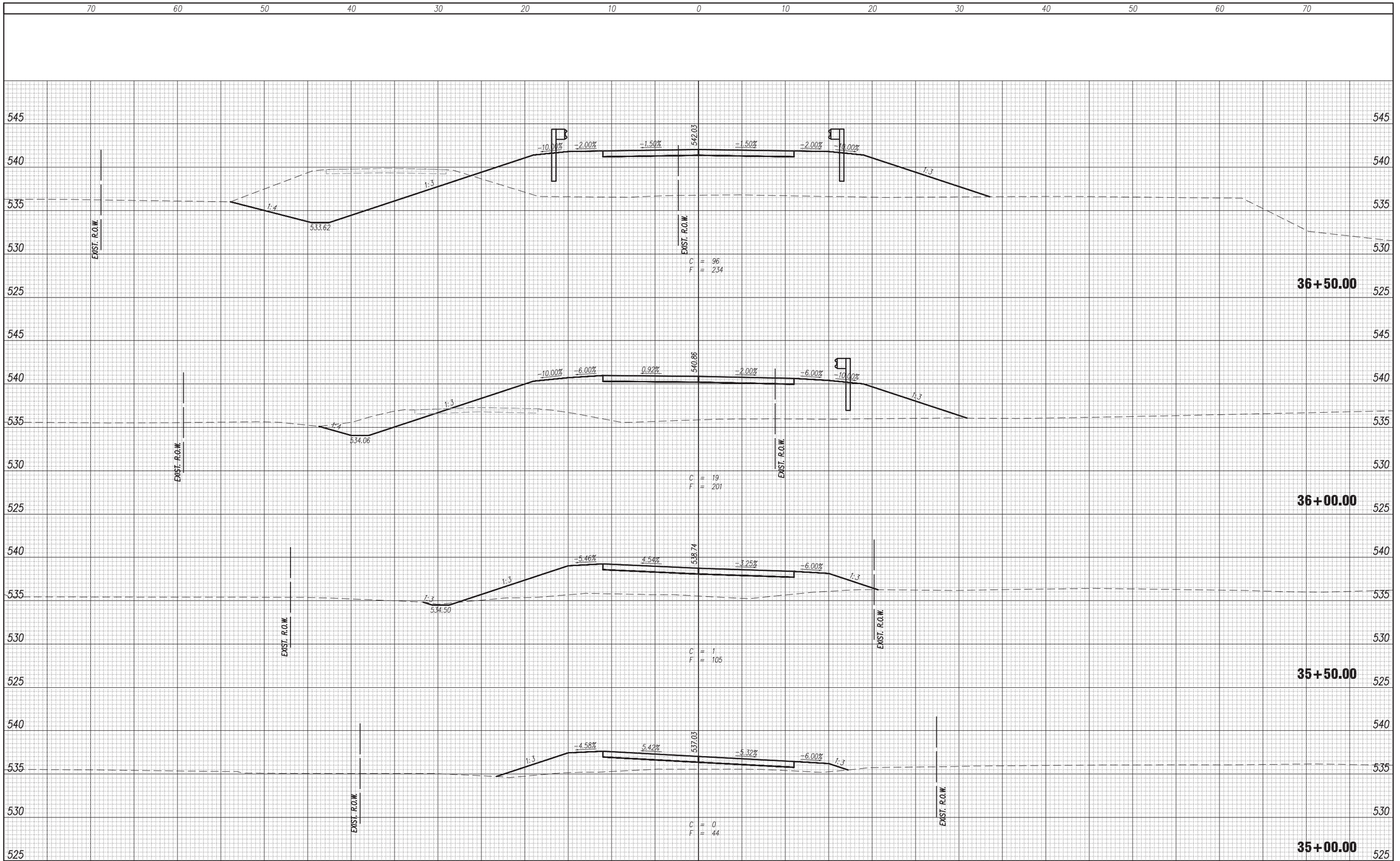
	PLOT DATE 17-Jun-22	CHECKED ####	REVISED –		
			REVISED ----		

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	30
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		



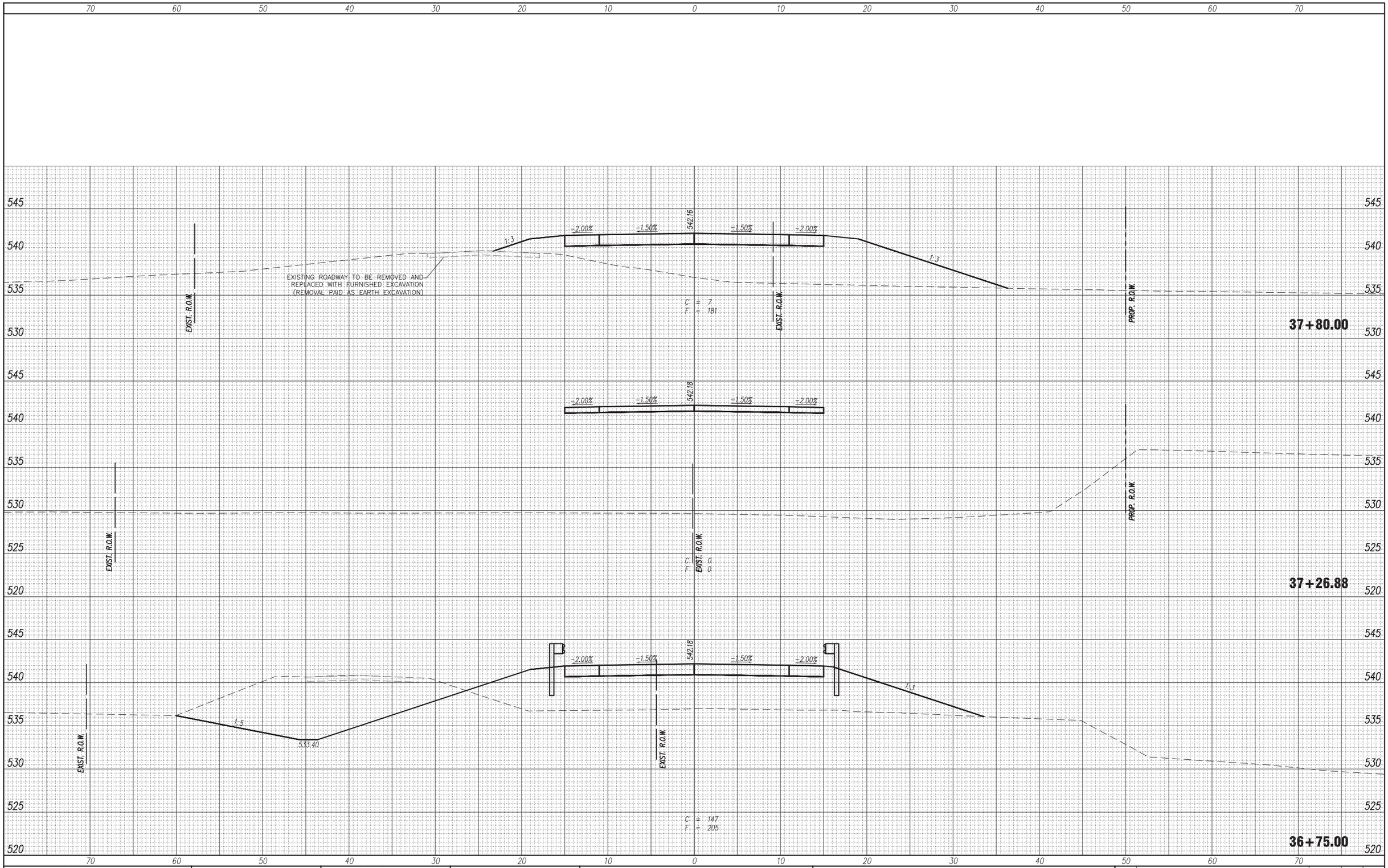
INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ####	REVISED –
	PLOT SCALE 0.5:1	DRAWN ####	REVISED –
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 Cross-Sections.dwg	PLOT DATE 17-Jun-22	CHECKED ####	REVISED –
			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

CROSS-SECTIONS

SCALE: 1"=20' | SHEET NO. 2 OF 5 SHEETS | STA. 35+00 TO STA. 36+50

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	31
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		



INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ####	REVISED –	**MADISON COUNTY HIGHWAY DEPARTMENT**	**CROSS-SECTIONS**			TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE 0.5:1	DRAWN ####	REVISED –					101	16-18113-00-BR	MADISON	34	32
FILE NAME: W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 Cross-Sections.dwg	PLOT DATE 17-Jun-22	CHECKED ####	REVISED –		SCALE: 1"=20'	SHEET NO. 3 OF 5 SHEETS	STA. 36+75 TO STA. 37+80	PROJECT NAME: ENGELKE BRIDGE		CONTRACT NO. 97713		
			REVISED ----					OLIVE	ILLINOIS	FEDERAL AID PROJECT		

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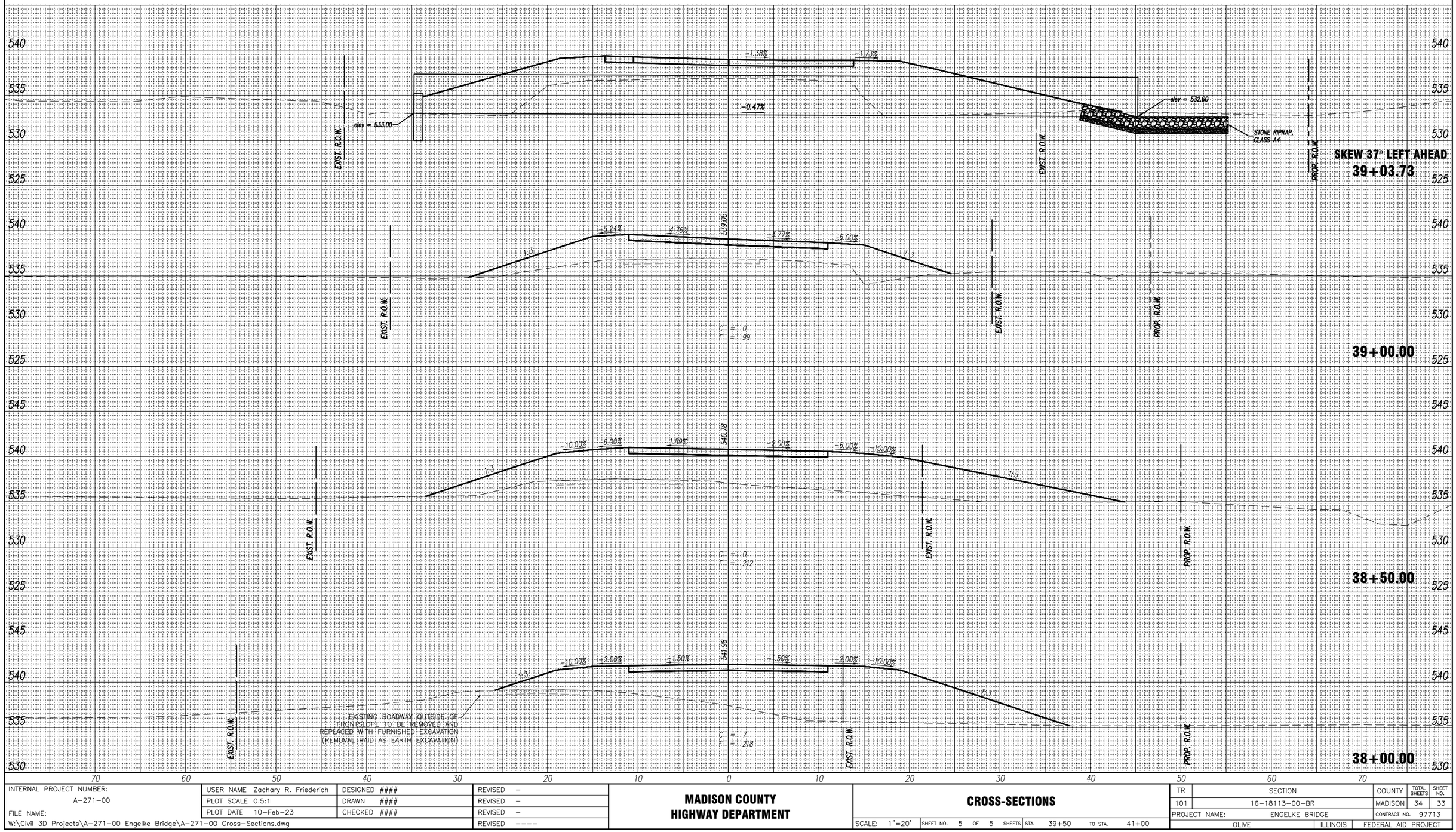

INTERNAL PROJECT NUMBER: A-271-00	USER NAME Zachary R. Friederich	DESIGNED ####	REVISED –	**MADISON COUNTY HIGHWAY DEPARTMENT**	**CROSS-SECTIONS**			TR 101	SECTION 16-18113-00-BR	COUNTY MADISON	TOTAL SHEETS 34	SHEET NO. 33
	PLOT SCALE 0.5:1	DRAWN ####	REVISED –					PROJECT NAME: ENGELKE BRIDGE			CONTRACT NO. 97713	
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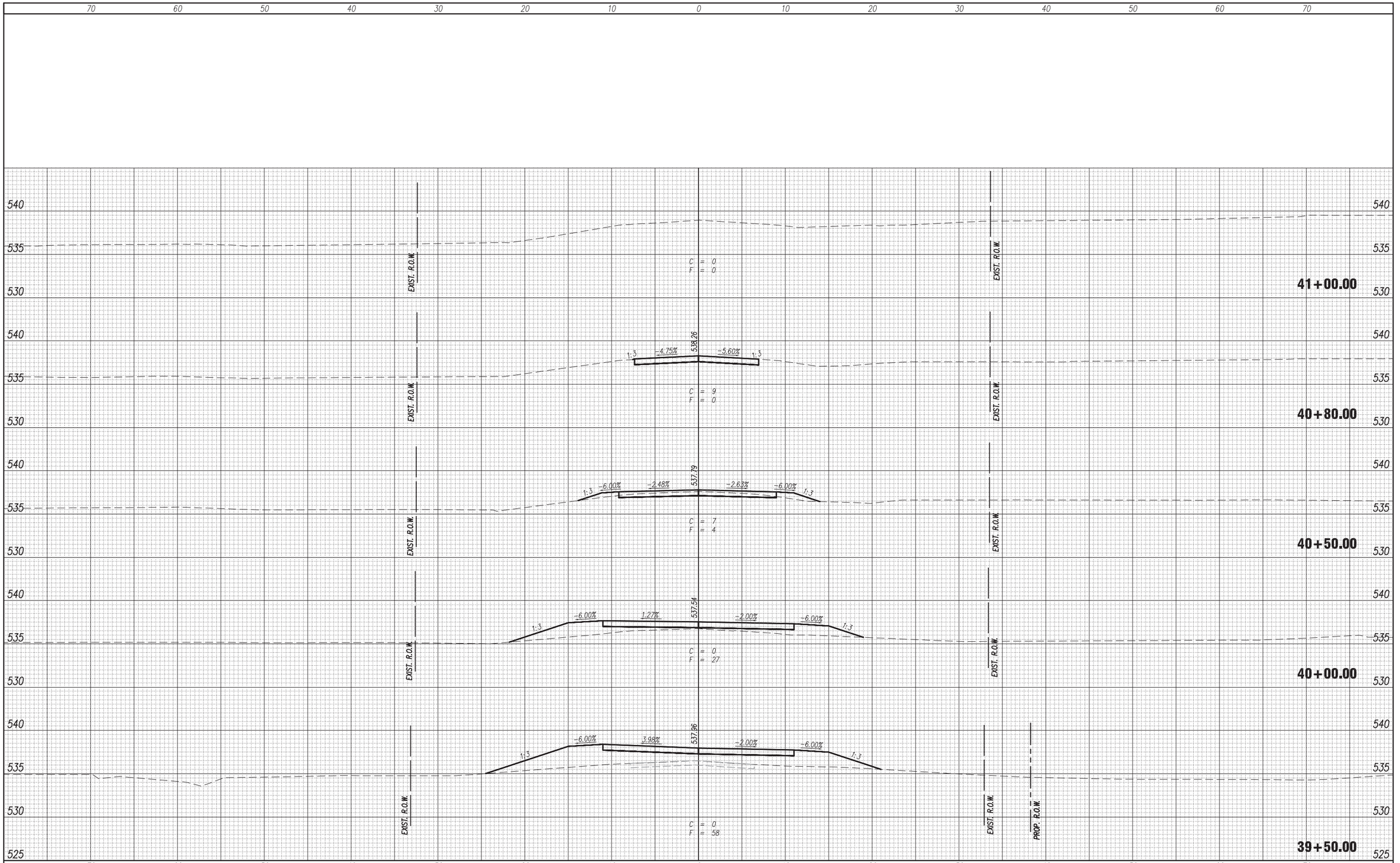
			REVISED ----									



INTERNAL PROJECT NUMBER: A-271-00	USER NAME Matt J. Kitzmiller	DESIGNED ####	REVISED –
	PLOT SCALE 0.5:1	DRAWN ####	REVISED –
FILE NAME:	PLOT DATE 17-Jun-22	CHECKED ####	REVISED –
W:\Civil 3D Projects\A-271-00 Engelke Bridge\A-271-00 Cross-Sections.dwg			REVISED ----

MADISON COUNTY HIGHWAY DEPARTMENT

CROSS-SECTIONS

SCALE: 1"=20' | SHEET NO. 5 OF 5 SHEETS | STA. 39+50 TO STA. 41+00

TR	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
101	16-18113-00-BR	MADISON	34	34
PROJECT NAME:	ENGELKE BRIDGE	CONTRACT NO.	97713	
OLIVE	ILLINOIS	FEDERAL AID PROJECT		