

- 1 - TITLE SHEET
- 2-4 - SUMMARY OF QUANTITIES
- 5-6 - TYPICAL SECTIONS
- 7 - DETAILS AND GENERAL NOTES
- 8 - QUANTITY SCHEDULES
- 9 - PLAN & PROFILE
- 10-26 - STRUCTURE PLANS
- 27-40 - ROADWAY CROSS SECTIONS

PLANS FOR PROPOSED SURFACE TRANSPORTATION PROGRAM – BRIDGE

**F.A.S. 1577 (C.H. 4) OVER COX CREEK
SECTION 18-00080-00-BR
PROJECT SNJ3(991)
CASS COUNTY
C-96-001-20**

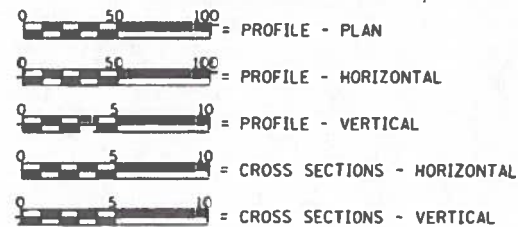
HIGHWAY STANDARDS

- STANDARD 001001-02
- STANDARD 280001-07
- STANDARD 515001-04
- STANDARD 630001-12
- STANDARD 630301-09
- STANDARD 666001-01
- STANDARD 701901-08
- STANDARD BLR21-9
- STANDARD BLR27-1

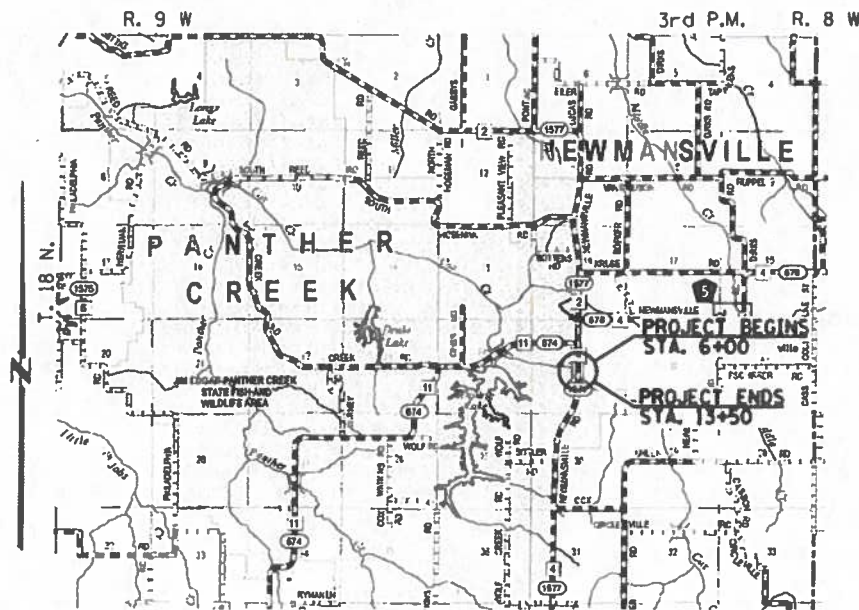
LIST OF UTILITIES

- CASS COMMUNICATIONS
100 REDBUD ROAD
VIRGINIA, ILLINOIS 62691
800-252-1799
- MENARD ELECTRIC COOPERATIVE
14300 STATE HIGHWAY 97
PETERSBURG, ILLINOIS 62675
217-632-7746
- AT&T
529 SOUTH 7TH STREET
SPRINGFIELD, ILLINOIS 62721
217-789-8367
CONTACT: JEFF GOAD
- CASS RURAL WATER DISTRICT 1
2723 PANTHER GROVE ROAD
ASHLAND, ILLINOIS 62612
217-452-3794

SCALE IN FEET



LAND SECTION - 19
 LAND QUARTER SECTION - S.W.
 FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR
 A.D.T. - 350 (2018)
 A.D.T. - 400 (2032)
 40 M.P.H. DESIGN SPEED



EXISTING STRUCTURE: THREE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAM BRIDGE ON SPILL THROUGH CONCRETE ABUTMENTS AND PILE BENT PIERS, 30'-0" OUT.-OUT. BRIDGE DECK WIDTH, 105'-10 3/4" BK.-BK. ABUTMENTS, 22° 37' 12" SKEW LEFT FORWARD. EXISTING STRUCTURE NO. 009-3017

PROPOSED STRUCTURE: SINGLE SPAN CAST IN PLACE CONCRETE DECK ON STEEL I BEAM BRIDGE ON INTEGRAL CONCRETE ABUTMENTS AND SOLID CONCRETE PIERS. PIERS 30'-0" OUT.-OUT. BRIDGE DECK WIDTH, 96'-0" BK.-BK. ABUTMENTS. TYPE S1 STEEL RAILING 20° SKEW LEFT FORWARD. PROPOSED STRUCTURE NO. 009-3116

STATE OF ILLINOIS
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

APPROVED **FEB 24 2023**

 COUNTY ENGINEER

PASSED **March 14, 2023**

 DISTRICT SIX ENGINEER OF
 LOCAL ROADS & STREETS

Relocating For
 Old Based on
 Limited Review **March 14, 2023**

 REGION FOUR ENGINEER



Christopher P. Kollman 2/24/23
 EXPIRATION: 11/30/2023

TOLL FREE
 "JOINT UTILITY LOCATION INFORMATION FOR EXCAVATORS"
 (J.U.L.I.) TELEPHONE NUMBER
 1-800-892-0123 (811)

	USER NAME	DESIGNED	REVISED		VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	TITLE SHEET		C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	
	PLOT SCALE	CHECKED	REVISED			SCALE: NONE	SHEET NO. ___ OF ___ SHEETS	STA. _____ TO STA. _____	4	18-00080-00-BR	CASS	40	1
	PLOT DATE	DRAWN	REVISED						STR. NO.				CONTRACT NO. 93804
		CHECKED	REVISED								ILLINOIS FED. AID PROJECT		

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0004 S.N.	0010 009-3116
+ 20100500	TREE REMOVAL, ACRES	ACRE	0.25	0.25	
20200100	EARTH EXCAVATION	CU YD	174	174	
20300100	CHANNEL EXCAVATION	CU YD	385	385	
20400800	FURNISHED EXCAVATION	CU YD	898	898	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	100	100	
28100809	STONE DUMPED RIPRAP, CLASS A5	TON	1285	1285	
28200200	FILTER FABRIC	SQ YD	1155	1155	
28300400	AGGREGATE DITCH	TON	73	73	
35100100	AGGREGATE BASE COURSE, TYPE A	TON	46	46	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	888	816	72
40600982	HOT-MIX ASPHALT SURFACE REMOVAL - BUTT JOINT	SQ YD	268	268	
40604000	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5FG, MIX "C", N50	TON	427	391	36
48101500	AGGREGATE SHOULDERS, TYPE B 6"	SQ YD	447	447	
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1		1

+ - SPECIALTY ITEMS

USER NAME = _____	DESIGNED - _____	REVISED - _____		VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	SUMMARY OF QUANTITIES			C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = _____	CHECKED - _____	REVISED - _____						4	18-00080-00-BR	CASS	40	2
PLOT DATE = _____	DRAWN - _____	REVISED - _____			SCALE: _____	SHEET NO. 1 OF 3 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 93804			ILLINOIS FED. AID PROJECT	

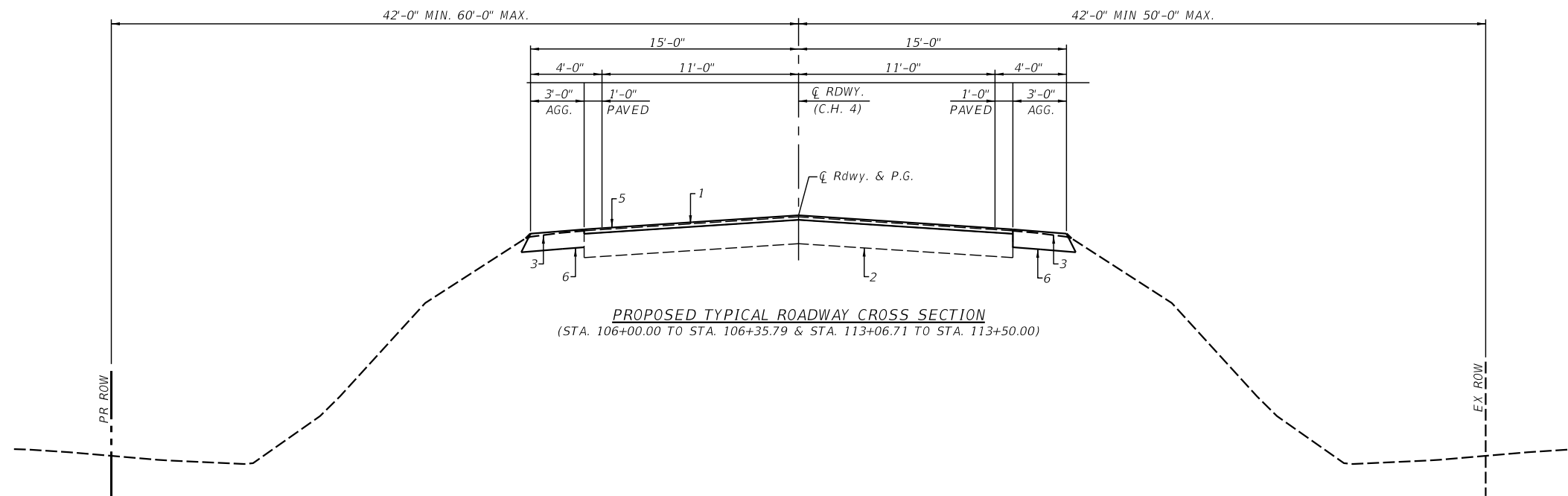
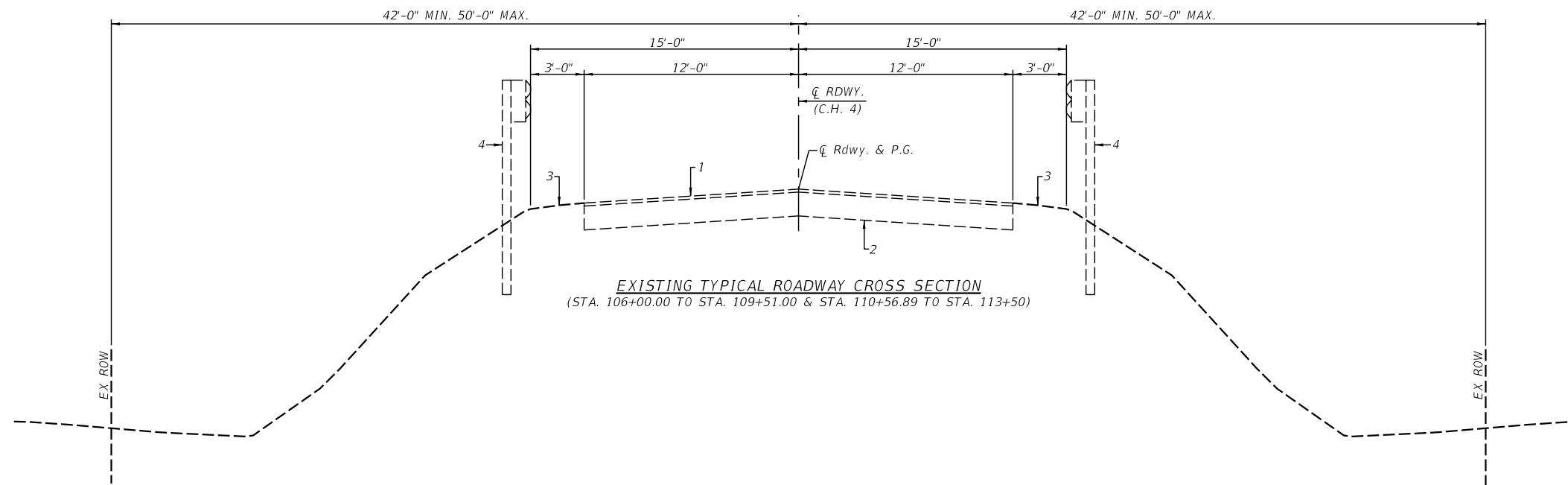
CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0004 S.N.	0010 009-3116
50105220	PIPE CULVERT REMOVAL	FOOT	32	32	
50200100	STRUCTURE EXCAVATION	CU YD	174		174
50300225	CONCRETE STRUCTURES	CU YD	61.0		61.0
50300255	CONCRETE SUPERSTRUCTURE	CU YD	111.0		111.0
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1
50500505	STUD SHEAR CONNECTORS	EACH	1128		1128
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	36180		36180
+ 50900205	STEEL RAILING, TYPE S1	FOOT	192		192
51200959	FURNISHING METAL SHELL PILES 14" X 0.312"	FOOT	320		320
51202305	DRIVING PILES	FOOT	320		320
51203200	TEST PILE METAL SHELLS	EACH	2		2
51500100	NAME PLATES	EACH	1		1
52100520	ANCHOR BOLTS, 1"	EACH	24		24
542D0229	PIPE CULVERTS, CLASS D, TYPE 1 24"	FOOT	38	38	

+ - SPECIALTY ITEMS

USER NAME = _____	DESIGNED - _____	REVISED - _____	 VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	SUMMARY OF QUANTITIES			C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLDT SCALE = _____	CHECKED - _____	REVISED - _____					4	18-00080-00-BR	CASS	40	3
PLDT DATE = _____	DRAWN - _____	REVISED - _____		SCALE: _____	SHEET NO. 2 OF 3 SHEETS	STA. _____ TO STA. _____	CONTRACT NO. 93804 [ILLINOIS] FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTRUCTION CODE	
				ROADWAY	BRIDGE
				0004 S.N.	0010 009-3116
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	320		320
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	124		124
+ 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	737.5	737.5	
+ 63100075	TRAFFIC BARRIER TERMINAL, TYPE 5A	EACH	4	4	
+ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4	4	
63200310	GUARDRAIL REMOVAL	FOOT	958	958	
67100100	MOBILIZATION	L SUM	1	1	
+ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4	4	
* X2501000	SEEDING, CLASS 2 (SPECIAL)	ACRE	1.0	1.0	
* X7011800	TRAFFIC CONTROL AND PROTECTION, STANDARD BLR 21	L SUM	1	1	
Δ Z0076600	TRAINEES	Hour	500		
* Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	
Δ Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	Hour	500		

* - SEE SPECIAL PROVISIONS
+ - SPECIALTY ITEMS
Δ - 0042



- LEGEND**
- 1 - EXIST. OIL & CHIP OVERLAYS
 - 2 - EXIST. AGGREGATE BASE
 - 3 - EXIST. AGG. SHOULDER
 - 4 - EXIST. GUARDRAIL
 - 5 - PROP. HMA SURFACE COURSE 2" MIN.
 - 6 - PROP. AGG. SHOULDERS 6"
 - 7 - PROP. EARTH SHOULDERS
 - 8 - PROP. GUARDRAIL

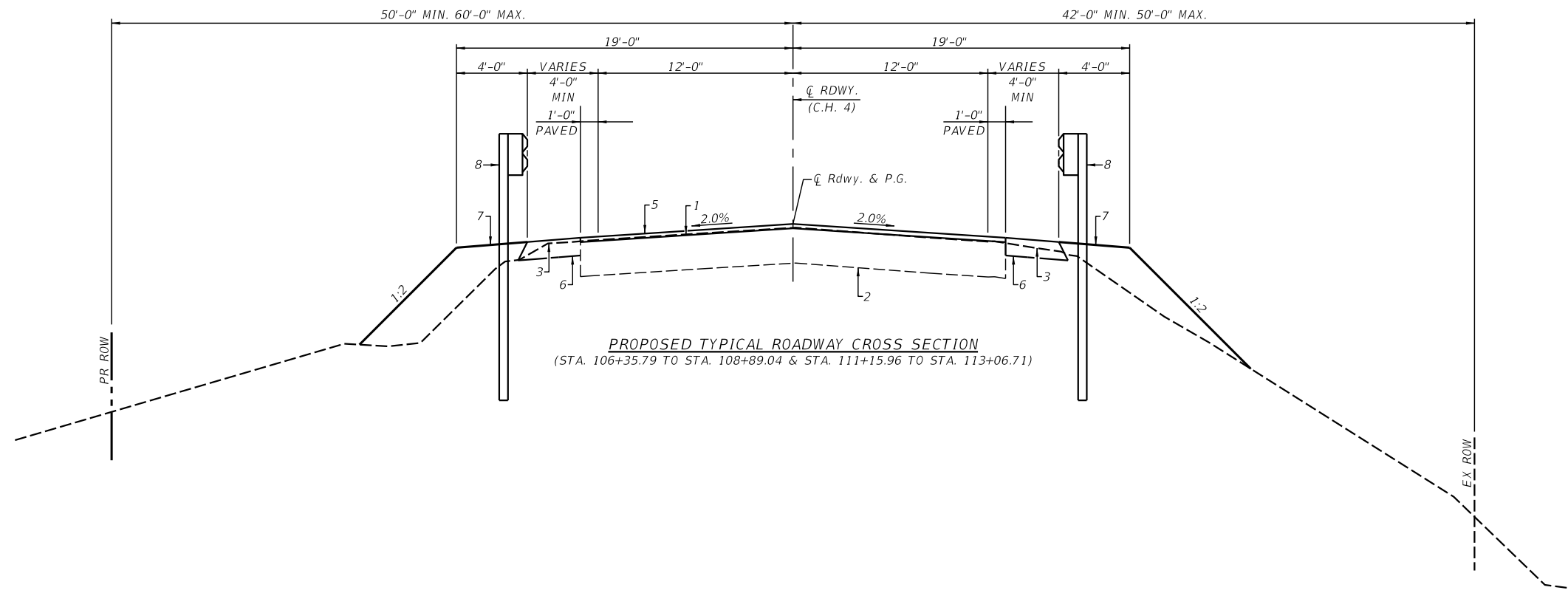
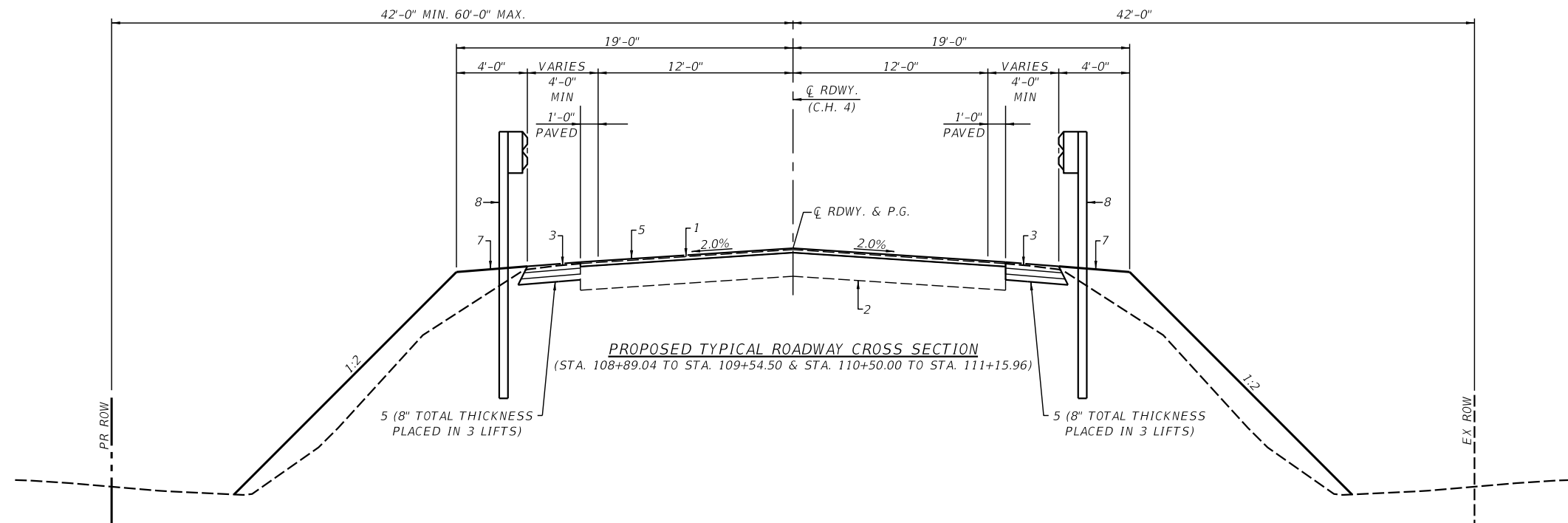
USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

TYPICAL SECTIONS		
SCALE: _____	SHEET NO. 2 OF 3 SHEETS	STA. _____ TO STA. _____

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	5
CONTRACT NO. 93804				
<small>ILLINOIS FED. AID PROJECT</small>				



- LEGEND**
- 1 - EXIST. OIL & CHIP OVERLAYS
 - 2 - EXIST. AGGREGATE BASE
 - 3 - EXIST. AGG. SHOULDER
 - 4 - EXIST. GUARDRAIL
 - 5 - PROP. HMA SURFACE COURSE 2" MIN.
 - 6 - PROP. AGG. SHOULDERS 6"
 - 7 - PROP. EARTH SHOULDERS
 - 8 - PROP. GUARDRAIL

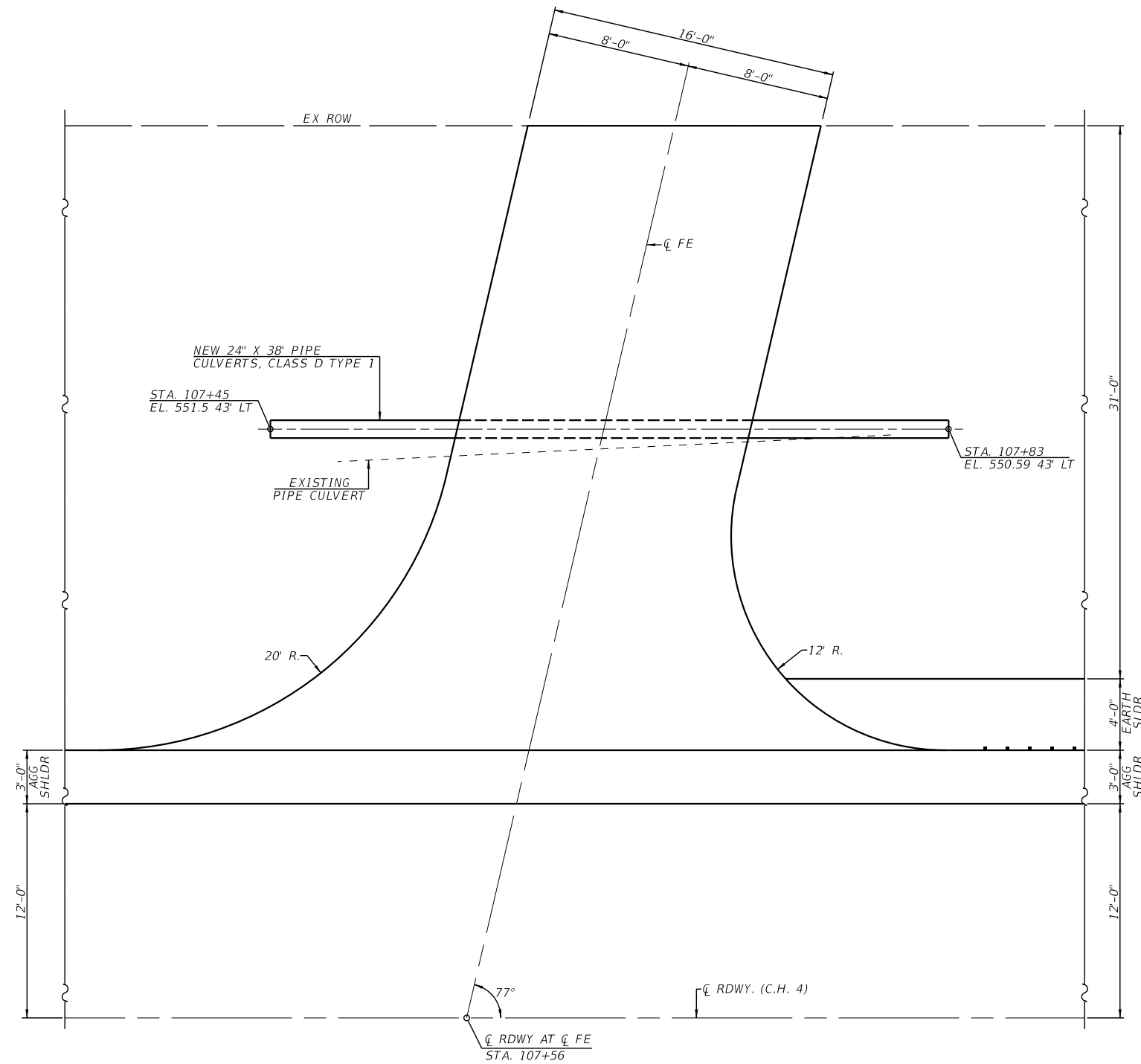
USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



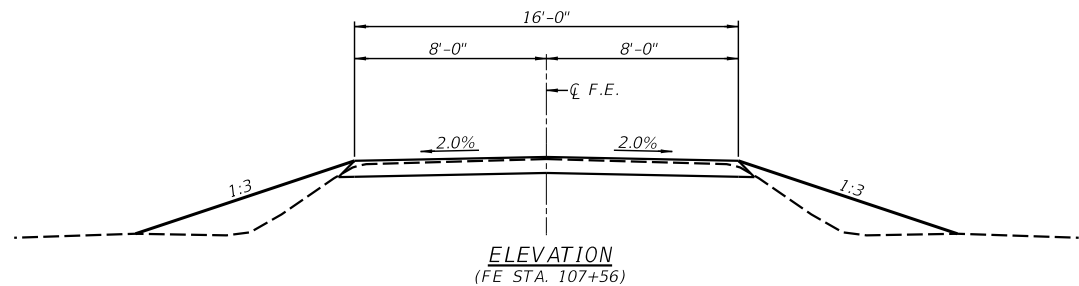
VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

TYPICAL SECTIONS		
SCALE: _____	SHEET NO. 3 OF 3 SHEETS	STA. _____ TO STA. _____

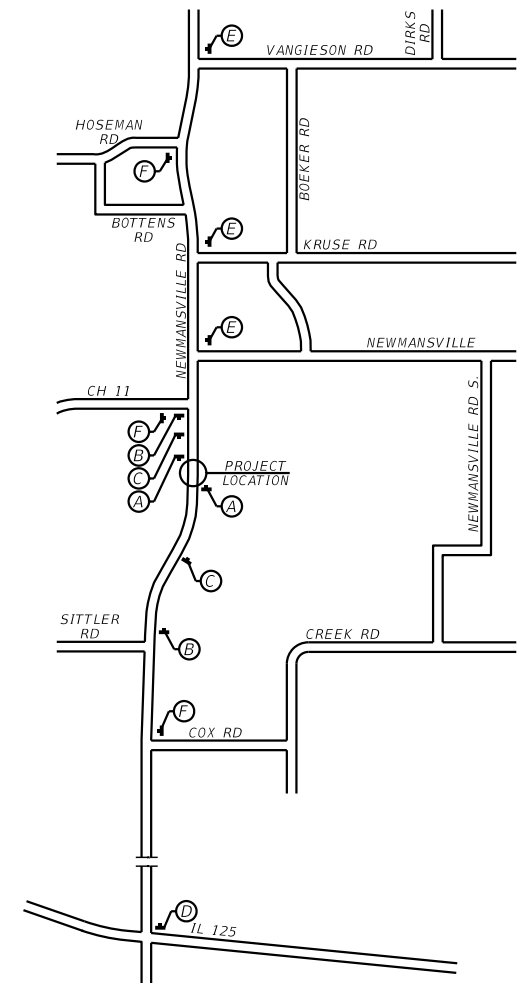
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	6
CONTRACT NO. 93804				
ILLINOIS FED. AID PROJECT				



ENTRANCE PLAN



ELEVATION
(FE STA. 107+56)



BARRICADE LOCATION PLAN

- (A) "ROAD CLOSED AHEAD"
- (B) TYPE III BARRICADE WITH "ROAD CLOSED" R11-2-4830
- (C) "ROAD CLOSED 500 FEET" W20-3(0) 4848
- (D) "ROAD CLOSED 6 MILES AHEAD" R-11-3A-6030
- (E) "ROAD CLOSED" R-11-2-4830 WITH W1-6L
- (F) "ROAD CLOSED" R-11-2-4830 WITH W1-6R

GENERAL NOTES

WHERE SECTION OR SUBSECTION STONES ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH STONES ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE OWNER, AUTHORIZED SURVEYOR, OR AGENT HAS WITNESSED OR REFERENCED THEIR LOCATION.

SEEDING: FERTILIZER NUTRIENTS SHALL BE APPLIED AT A RATIO OF 1:1:1 AND AT A RATE OF 90 POUNDS PER ACRE FOR EACH NUTRIENT.

MULCH SHALL BE APPLIED AT THE RATE OF 2 TONS PER ACRE.

AREAS TO BE SEEDED SHALL CONSIST OF ALL DISTURBED EARTH SURFACES WITHIN THE RIGHT OF WAY AS DIRECTED BY THE ENGINEER. ALL DISTURBED EARTH SURFACES BEYOND ROW IS THE RESPONSIBILITY OF AND COST TO THE CONTRACTOR.

PER NATURAL RESOURCES REVIEW DATED AUGUST 30, 2022 TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT WILL NOT BE CLEARED FROM APRIL 1 TO SEPTEMBER 30. NO COMMITMENTS.

THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED TO CALCULATE THE PLAN QUANTITIES.

HOT MIX ASPHALT, SURFACE COURSE	0.056 TON/INCH/SQ. YD.
BITUMINOUS MATERIALS (TACK COAT)	0.05 LB./SQ. FT.
AGGREGATE MATERIAL	1.9 TON/CU. YD.
RIPRAP	1.5 TON/CU. YD.
NITROGEN FERTILIZER NUTRIENT	90 LBS./ACRE
PHOSPHORUS FERTILIZER NUTRIENT	90 LBS./ACRE
POTASSIUM FERTILIZER NUTRIENT	90 LBS./ACRE

MIXTURE REQUIREMENTS

MIXTURE USE(S)	HOT MIX ASPHALT SURFACE COURSE, MIX "C", N50
AC/PG	PG 64-22
DESIGN AIR VOIDS	4.0% @ N DESIGN = 50
MIXTURE COMPOSITION	IL 9.5 FG
FRICTION AGGREGATE	MIX C
QMP	QC/QA

USER NAME =	DESIGNED -	REVISED -
CHECKED -	REVISIONS -	
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

DETAILS AND GENERAL NOTES

SCALE: VARIES SHEET NO. 1 OF 1 SHEETS STA. _____ TO STA. _____

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	7
CONTRACT NO. 93804				
ILLINOIS FED. AID PROJECT				

GUARDRAIL SCHEDULE					
LOCATION	63100167 TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	63000003 STEEL PLATE BEAM GUARDRAIL, TYPE A 9 FOOT POSTS	63100075 TRAFFIC BARRIER TERMINAL, TYPE 5A	72501000 TERMINAL MARKER DIRECT APPLIED	63200310 GUARDRAIL REMOVAL
	EACH	FOOT	EACH	EACH	FOOT
STA. 106+35.79 TO STA. 106+85.79 RT.	1				
STA. 106+85.79 TO STA. 109+35.79 RT.		250			
STA. 109+35.79 TO STA. 109+49.04 RT.			1		
STA. 107+84.21 TO STA. 108+34.21 LT.	1				
STA. 108+34.21 TO STA. 109+46.71 LT.		112.5			
STA. 109+46.71 TO STA. 109+59.96 LT.			1		
STA. 110+45.04 TO STA. 110+58.29 RT.			1		
STA. 110+58.29 TO STA. 112+45.79 RT.		187.5			
STA. 112+45.79 TO STA. 112+95.79 RT.	1				
STA. 110+55.96 TO STA. 110+69.21 LT.			1		
STA. 110+69.21 TO STA. 112+56.71 LT.		187.5			
STA. 112+56.71 TO STA. 113+06.71 LT.	1				
STA. 106+35.79 RT.				1	
STA. 107+84.21 LT.				1	
STA. 112+95.79 RT.				1	
STA. 113+06.71 LT.				1	
STA. 106+42 TO STA. 109+42 RT.					300
STA. 107+79 TO STA. 109+57 LT.					178
STA. 110+50 TO STA. 112+90 RT.					240
STA. 110+57 TO STA. 112+97 LT.					240
TOTAL	4	737.5	4	4	958

PIPE CULVERTS		
LOCATION	PIPE CULVERTS CLASS D, TYPE 1 24"	PIPE CULVERT REMOVAL
	FOOT	FOOT
STA. 107+45 43' LT. TO STA. 107+83 43' LT.	38	
STA. 107+48 TO STA. 107+80 LT.		32
TOTAL	38	32

48101500 AGGREGATE SHOULDERS	
LOCATION	AGGREGATE SHOULDERS, TYPE B 6"
	SQ. YD.
STA. 106+00 TO STA. 109+19 RT.	102
STA. 106+00 TO STA. 109+19 LT.	102
STA. 110+86 TO STA. 113+50 RT.	83
STA. 110+86 TO STA. 113+50 LT.	83
FE STA. 107+56 LT.	77
TOTAL	447

HOT MIX ASPHALT			
LOCATION	40600982 HMA SURFACE REMOVAL BUTT JOINT	40604000 HMA SURFACE COURSE IL-9.5 FG, MIX "C" N50	40600290 BITUMINOUS MATERIALS (TACK COAT)
	SQ YD	TON	POUND
AREA 1			
STA. 10+00 TO STA. 10+50	134		
STA. 113+00 TO STA. 113+50	134		
STA. 106+00 TO STA. 109+54.50		197	441
STA. 109+54.50 TO STA. 110+50.50		36	72
STA. 110+50.50 TO STA. 113+50		194	375
TOTAL	268	427	888

SEEDING		
LOCATION	X2501000 SEEDING, CLASS 2 (SPECIAL)	28000250 TEMPORARY EROSION CONTROL SEEDING
	ACRE	POUND
STA. 106+00 TO STA. 109+54.5 RT. TO ROW	0.27	27
STA. 106+00 TO STA. 109+54.5 LT. TO ROW	0.27	27
STA. 110+50.5 TO STA. 113+50 RT. TO ROW	0.22	22
STA. 110+50.5 TO STA. 113+50 LT. TO ROW	0.20	20.00
TOTAL	0.96	96

USE 1.0 ACRE PER BD USE 100 POUNDS

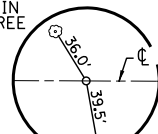
20100500 TREE REMOVAL	
LOCATION	TREE REMOVAL
	ACRE
STA. 106+63 TO STA. 109+73 24' RT. TO ROW	0.13
STA. 110+04 TO STA. 110+66 28' RT. TO ROW	0.01
STA. 112+03 TO STA. 112+35 32' LT. TO ROW	0.01
STA. 111+77 TO STA. 112+36 32' LT. TO ROW	0.01
TOTAL	0.16

SAY 0.25 ACRE PER BDE

EARTHWORK				
LOCATION	20200100 EARTH EXCAVATION	EARTH EXCAVATION ADJUSTED FOR SHRINKAGE	EMBANKMENT	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	CU YD	CU YD
STA. 106+00 TO STA. 109+54.50	162	121	548	-427
BRIDGE OMISSION STA. 109+54.5 TO STA. 110+50.50				
STA. 110+50.50 TO STA. 113+50	12	9	480	-471
TOTAL	174	130	1028	-898

28300400 AGGREGATE DITCH	
LOCATION	AGREGATE DITCH
	TON
STA. 106+25 TO STA. 107+45 LT.	48
STA. 112+50 TO STA. 113+25 LT.	25
TOTAL	73

PK N & W W/
FLAGGING IN
15" DIA. TREE



FIBER OPTIC
MARKER 5" DIA.
PLASTIC (CASSCOMM)

TIE #1
STA.
(#4 REBAR)

T.18N., R.8W., SECTION 19

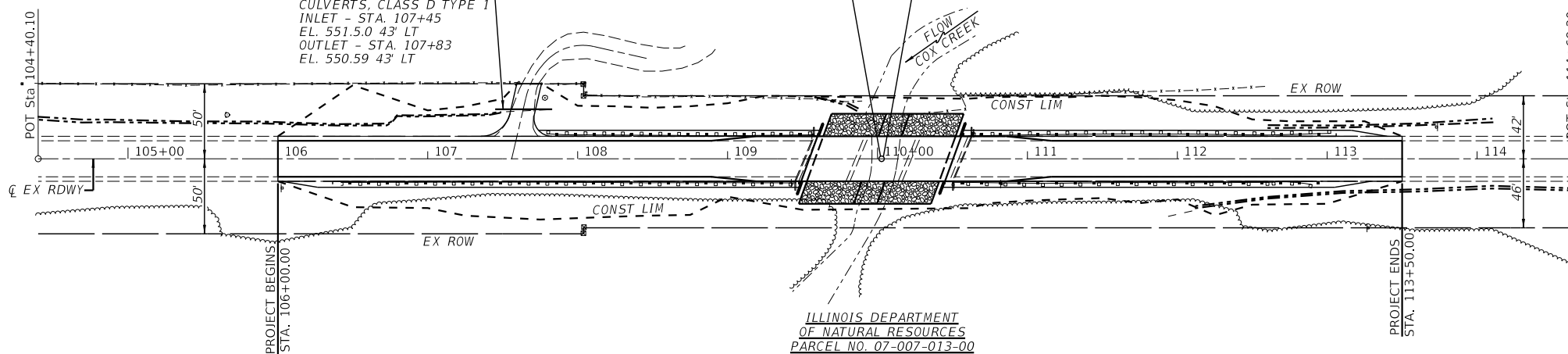


CARROLL SATORIUS ETUX
C/O BARBARA BAKER
PARCEL NO. 07-007-015-00

EX RDWY. AT EX STRUCTURE - STA. 110+02.50
PROPOSED STRUCTURE REPLACEMENT: SINGLE SPAN
POURED CONCRETE DECK ON STEEL I-BEAMS ON
PROPOSED OPEN ABUTMENTS, 96'-0" BK.-BK. ABUTMENTS,
30'-0" OUT-OUT DECK, STEEL RAILING TYPE S1,
20° SKEW LT. FWD. PROP. S.N. 009-3116.

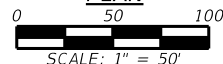
EXISTING STRUCTURE AT EX RDWY. - STA. 110+03.95
THREE SPAN PPC DECK BEAM BRIDGE WITH SOLID CONCRETE
PIERS AND OPEN ABUTMENTS, 105'-10" BK.-BK. ABUTMENTS,
30'-0" OUT-OUT DECK, STEEL RAILING TYPE S1,
22°-37'-12" SKEW LT. FWD. EXIST. S.N. 009-3017.

NEW 24" X 38" PIPE
CULVERTS, CLASS D TYPE 1
INLET - STA. 107+45
EL. 551.50 43' LT
OUTLET - STA. 107+83
EL. 550.59 43' LT

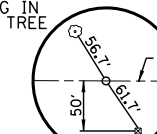


ILLINOIS DEPARTMENT
OF NATURAL RESOURCES
PARCEL NO. 07-007-013-00

PLAN



PK N & W W/
FLAGGING IN
26" DIA. TREE

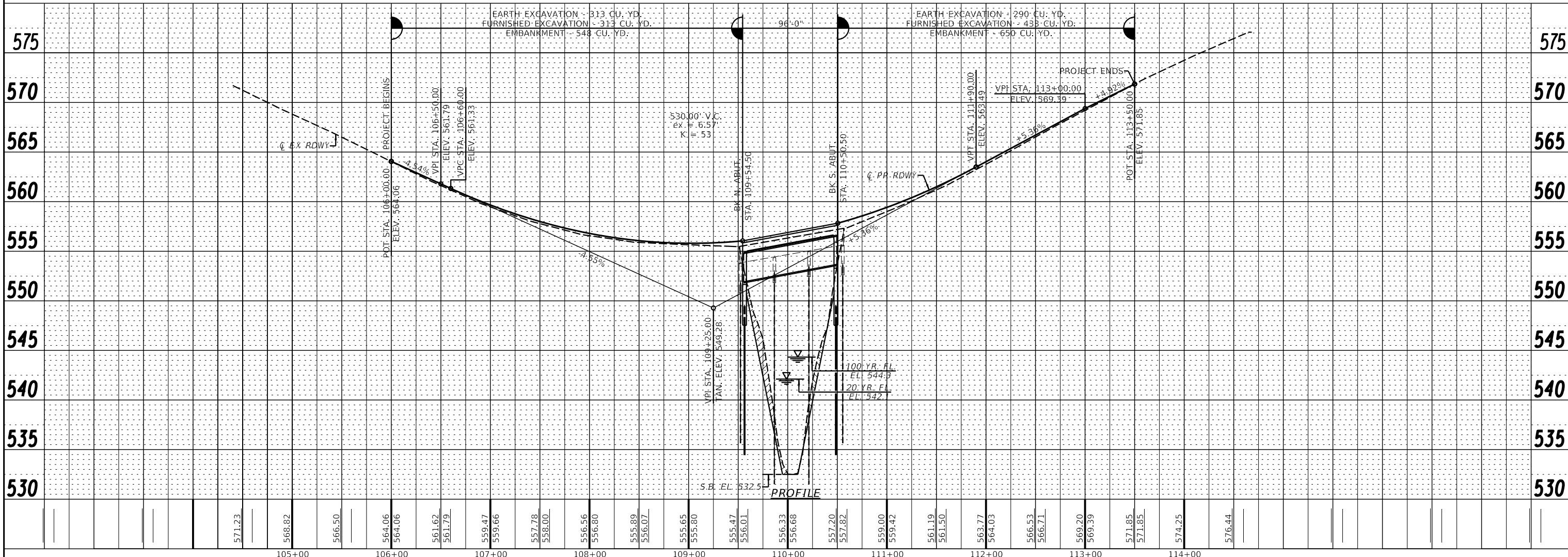


ROW MARKER

TIE #2
STA.
(#4 REBAR)

PLAN	SURVEYED	BY	DATE
	PLOTTED		
	NOTE BOOK		
	CHECKED		
	CADD FILE NAME		

PROFILE	SURVEYED	BY	DATE
	PLOTTED		
	GRADES CHECKED		
	STRUCTURE		
	NOTATIONS C/PAD		



575	570	565	560	555	550	545	540	535	530																											
571.23	568.82	566.50	564.06	564.06	561.62	561.79	559.47	559.66	557.78	558.00	556.56	556.80	555.89	556.07	555.65	555.80	555.47	556.01	556.33	556.68	557.20	557.82	559.00	559.42	561.19	561.50	563.77	564.03	566.63	566.71	569.20	569.39	571.85	571.85	574.25	576.44
105+00	106+00	107+00	108+00	109+00	110+00	111+00	112+00	113+00	114+00																											

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = *DATE*	DRAWN -	REVISED -
	CHECKED -	REVISED -



VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
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PLAN & PROFILE

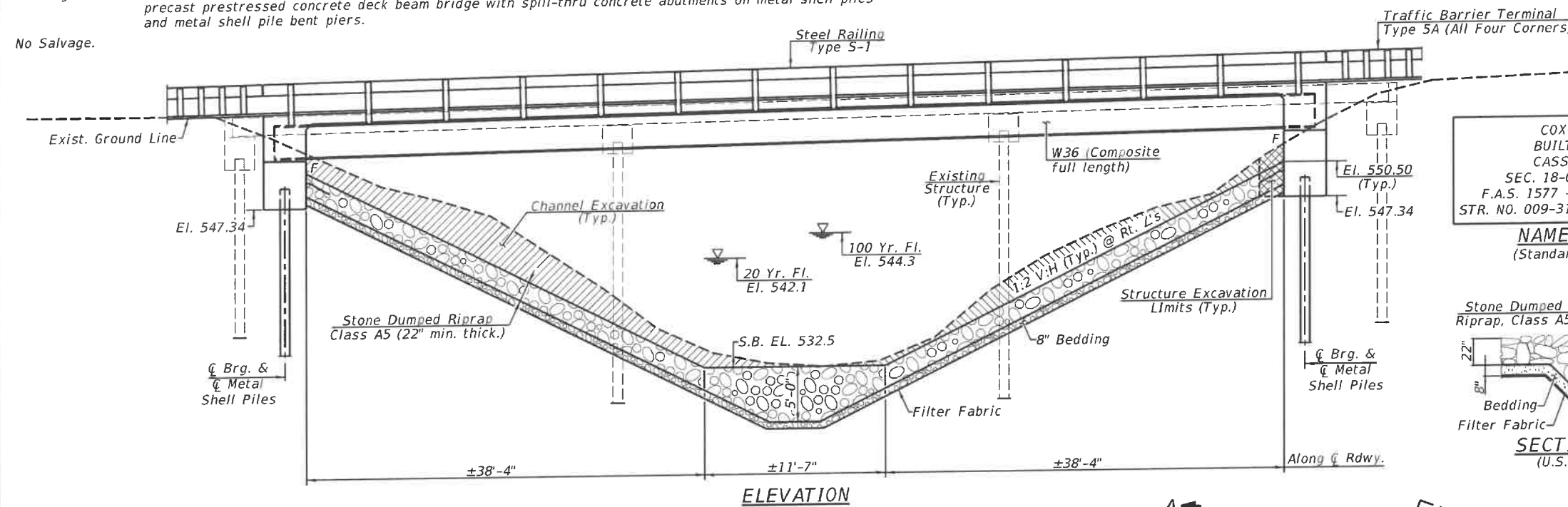
SCALE: 1" = 50' SHEET NO. 04 OF 04 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	9
CONTRACT NO. 93804				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

Benchmark: BM "A" - Chiseled "I" on top of northeast headwall. Elev. 555.03 (Assumed based on Lidar correction)

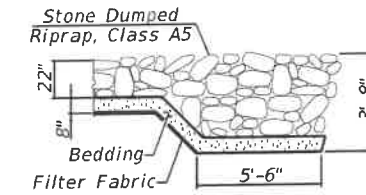
Existing Structure: Structure number 009-3017, built in 1982 under F.A.S. 1577 Section 77-00039-00-BR, is a three-span precast prestressed concrete deck beam bridge with spill-thru concrete abutments on metal shell piles and metal shell pile bent piers.

No Salvage.

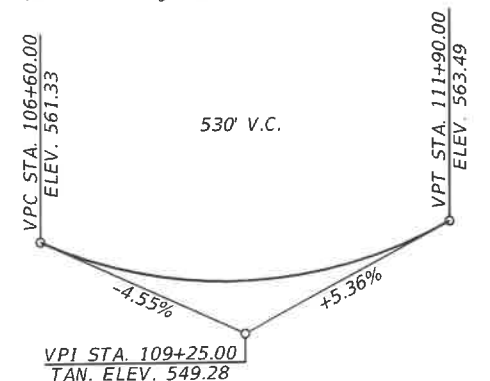


COX CREEK
BUILT 20 BY
CASS COUNTY
SEC. 18-00080-00-BR
F.A.S. 1577 - STA. 110+02.50
STR. NO. 009-3116 LOADING HL-93

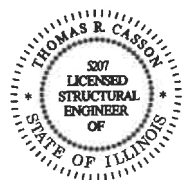
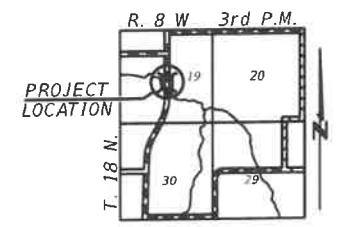
NAME PLATE
(Standard 515001)



SECTION A-A
(U.S. & D.S.)

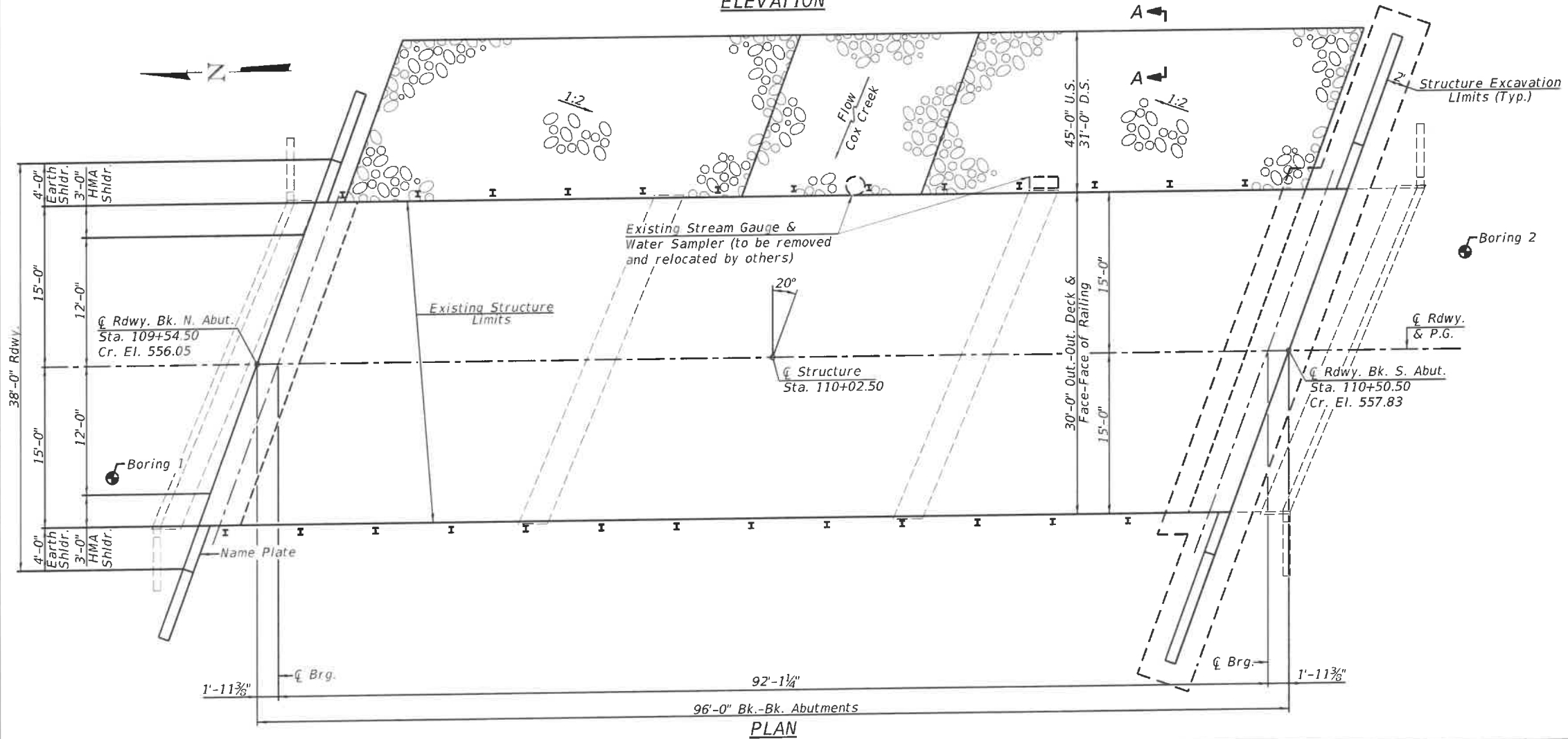


PROFILE GRADE
(Along C Rdwy.)



I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current "A.A.S.H.T.O. LRFD Bridge Design Specifications".

Thomas R. Casson 2-24-2023
Expiration Date 11/30/2024



PLAN

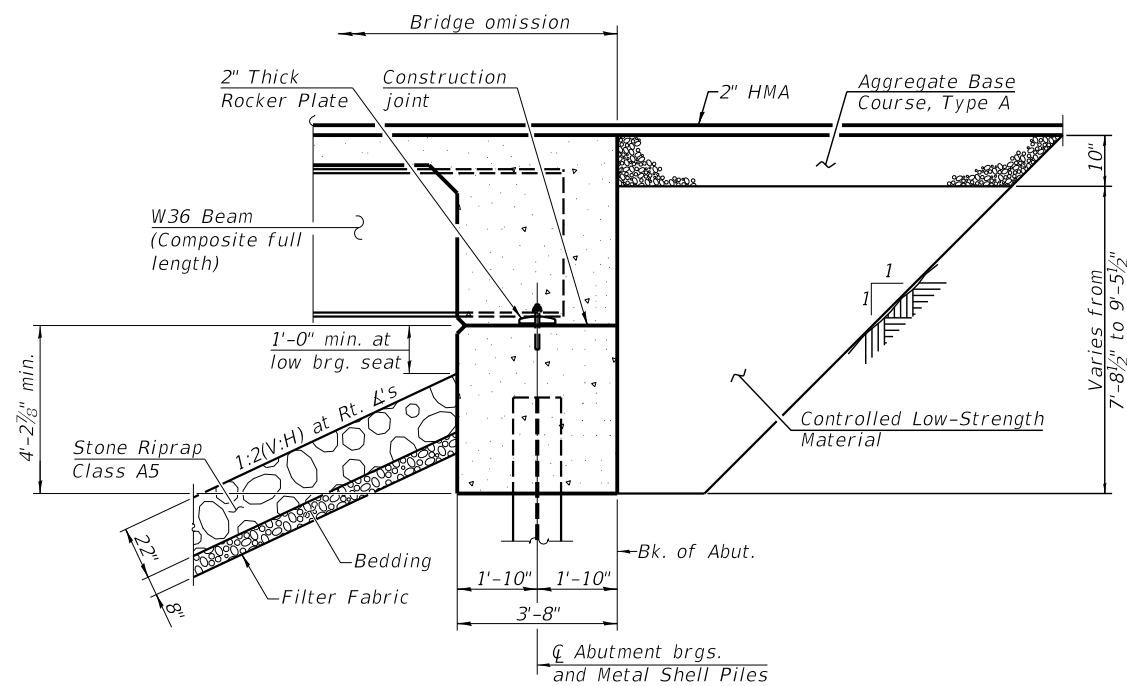
GENERAL PLAN & ELEVATION
F.A.S. 1577 (C.H. 4) OVER COX CREEK
SECTION 18-00080-00-BR
CASS COUNTY
STA. 110+02.50
STRUCTURE NO. 009-3116

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -

VK VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

GENERAL PLAN & ELEVATION
STRUCTURE NO. 009-3116
SHEET NO. 1 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	10
CONTRACT NO. 93804			ILLINOIS FED. AID PROJECT	



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

WATERWAY INFORMATION

		Exist. Overtopping Elev. 549.27 @ Sta. 109+51							
Drainage Area = 11.7 Sq. Mi.		Prop. Overtopping Elev. 549.28 @ Sta. 109+25							
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Natural H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	2050	271	265	542.1	0.5	0.2	542.6	542.3
Base	100	3080	376	370	544.3	0.7	0.3	545.0	544.6
Max. Calc.	500	4200	502	485	546.5	0.8	0.1	547.3	546.6

10 year velocity through existing bridge = 7.1 fps
10 year velocity through prop. bridge = 7.3 fps

DESIGN SCOUR ELEVATION TABLE

Design Scour Elevations (ft.) Item 113		
N. Abut.	S. Abut.	
547.34	547.34	8

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Channel Excavation	Cu. Yd.		385	385
Stone Riprap, Class A5	Ton		1285	1285
Filter Fabric	Sq. Yd.		1155	1155
Aggregate Base Course, Type A	Ton	46		46
Bituminous Materials (Tack Coat)	Pound	72		72
Hot-Mix Asphalt Surface Course, IL-9.5FG, Mix "C", N50	Ton	36		36
Removal of Existing Structures	Each	1		1
Structure Excavation	Cu. Yd.		174	174
Concrete Structures	Cu. Yd.		61.0	61.0
Concrete Superstructure	Cu. Yd.	111.0		111.0
Furnishing & Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	1128		1128
Reinforcement Bars, Epoxy Coated	Pound	21,950	14,230	36,180
Steel Railing, Type S1	Foot	192		192
Furnishing Metal Shell Piles 14"x0.312"	Foot		320	320
Driving Piles	Foot		320	320
Test Pile Metal Shells	Each		2	2
Name Plates	Each	1		1
Anchor Bolts, 1"	Each	24		24
Waterproofing Membrane System	Sq. Yd.	320		320
Controlled Low-Strength Material	Cu. Yd.		124	124

LOADING HL-93

Allow 25#/sq. ft. for initial wearing surface.
Allow 50#/sq. ft. for future wearing surface.

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications
9th Edition.

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f'_c = 5,000$ psi (Superstructure Concrete)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50W)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec (S_{D1}) = 0.097 g.
Design Spectral Acceleration at 0.2 sec (S_{D5}) = 0.169 g.
Soil Site Class = C

GENERAL NOTES

Fasteners shall be ASTM F3125 Grade A325 Type 1, mechanically galvanized bolts in painted areas and ASTM F3125 Grade A325 Type 3 weathering bolts in unpainted areas. Bolts 7/8" Ø, holes 1 5/16" Ø, unless otherwise noted.
Calculated weight of Structural Steel = 157,150 pounds, Grade 50W
All structural steel shall be AASHTO M270 Grade 50W (except bearings which shall be AASHTO M270 Grade 36).
No field welding is permitted except as specified in the contract documents.
Reinforcement bars designated (E) shall be epoxy coated.
Protective coat shall not be applied to surfaces to which waterproofing membrane is applied.
Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 inch (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
Structural steel shall only be painted for a distance equal to the depth of embedment into the concrete cap plus 1'-6". Painted areas shall be primed in the shop with a Department approved zinc rich primer. Field painting will not be required. The color of the final finish coat for the beam ends shall be Reddish Brown, Munsell No. 2.5 YR 3/4.
Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

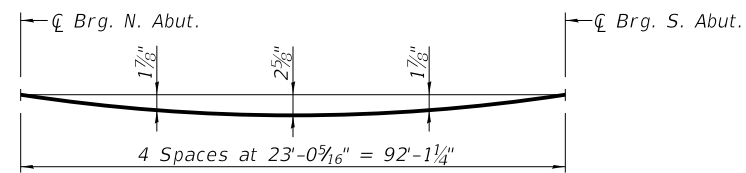
USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



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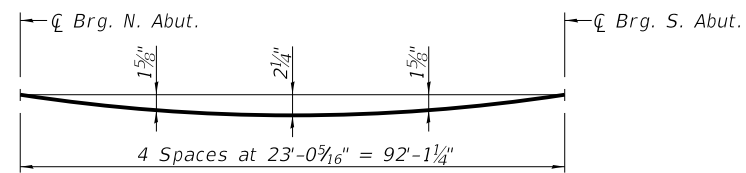
GENERAL DATA
STRUCTURE NO. 009-3116
SHEET NO. 2 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	11
CONTRACT NO. 93804				
ILLINOIS FED. AID PROJECT				



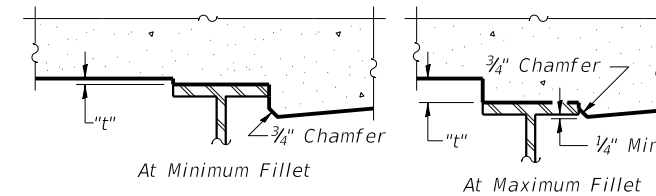
DEAD LOAD DEFLECTION DIAGRAM - EXTERIOR BEAM
(Includes weight of concrete and superimposed dead loads.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 4 of 17.



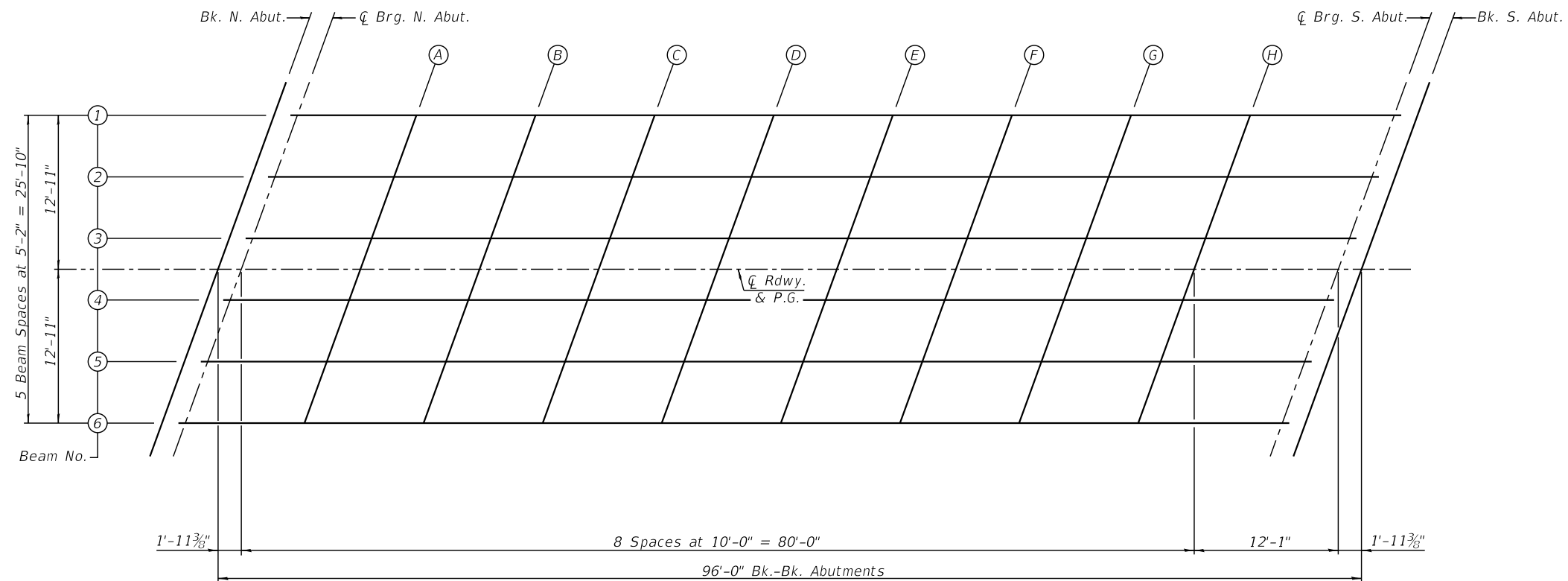
DEAD LOAD DEFLECTION DIAGRAM - INTERIOR BEAM
(Includes weight of concrete and superimposed dead loads.)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet 4 of 17.



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 17, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS



PLAN

E-S 2-17-2017

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CHECKED -	CHECKED -	REVISED -
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PLOT DATE =	CHECKED -	REVISED -



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TOP OF SLAB ELEVATIONS
STRUCTURE NO. 009-3116
SHEET NO. 3 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	12
CONTRACT NO. 93804				

ILLINOIS FED. AID PROJECT

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+59.20	-12.92	555.63	555.63
☒ Brg. N. Abut.	109+61.15	-12.92	555.65	555.65
A	109+71.15	-12.92	555.77	555.83
B	109+81.15	-12.92	555.90	556.01
C	109+91.15	-12.92	556.06	556.21
D	110+01.15	-12.92	556.23	556.41
E	110+11.15	-12.92	556.42	556.60
F	110+21.15	-12.92	556.63	556.79
G	110+31.15	-12.92	556.86	556.98
H	110+41.15	-12.92	557.11	557.18
☒ Brg. S. Abut.	110+53.25	-12.92	557.44	557.44
Bk. South Abut.	110+55.20	-12.92	557.49	557.49

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+57.32	-7.75	555.71	555.71
☒ Brg. N. Abut.	109+59.27	-7.75	555.73	555.73
A	109+69.27	-7.75	555.85	555.91
B	109+79.27	-7.75	555.98	556.09
C	109+89.27	-7.75	556.13	556.28
D	109+99.27	-7.75	556.30	556.48
E	110+09.27	-7.75	556.49	556.67
F	110+19.27	-7.75	556.70	556.86
G	110+29.27	-7.75	556.92	557.04
H	110+39.27	-7.75	557.17	557.24
☒ Brg. S. Abut.	110+51.37	-7.75	557.49	557.49
Bk. South Abut.	110+53.32	-7.75	557.54	557.54

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+55.44	-2.58	555.80	555.80
☒ Brg. N. Abut.	109+57.39	-2.58	555.82	555.82
A	109+67.39	-2.58	555.93	555.99
B	109+77.39	-2.58	556.06	556.17
C	109+87.39	-2.58	556.20	556.35
D	109+97.39	-2.58	556.37	556.55
E	110+07.39	-2.58	556.56	556.74
F	110+17.39	-2.58	556.76	556.92
G	110+27.39	-2.58	556.98	557.10
H	110+37.39	-2.58	557.22	557.29
☒ Brg. S. Abut.	110+49.49	-2.58	557.54	557.54
Bk. South Abut.	110+51.44	-2.58	557.59	557.59

CENTERLINE & PROFILE GRADE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+54.50	0.00	555.84	555.84
☒ Brg. N. Abut.	109+56.45	0.00	555.86	555.86
A	109+66.45	0.00	555.97	556.03
B	109+76.45	0.00	556.09	556.20
C	109+86.45	0.00	556.24	556.39
D	109+96.45	0.00	556.41	556.59
E	110+06.45	0.00	556.59	556.77
F	110+16.45	0.00	556.79	556.95
G	110+26.45	0.00	557.01	557.13
H	110+36.45	0.00	557.25	557.32
☒ Brg. S. Abut.	110+48.55	0.00	557.57	557.57
Bk. South Abut.	110+50.50	0.00	557.62	557.62

BEAM 4

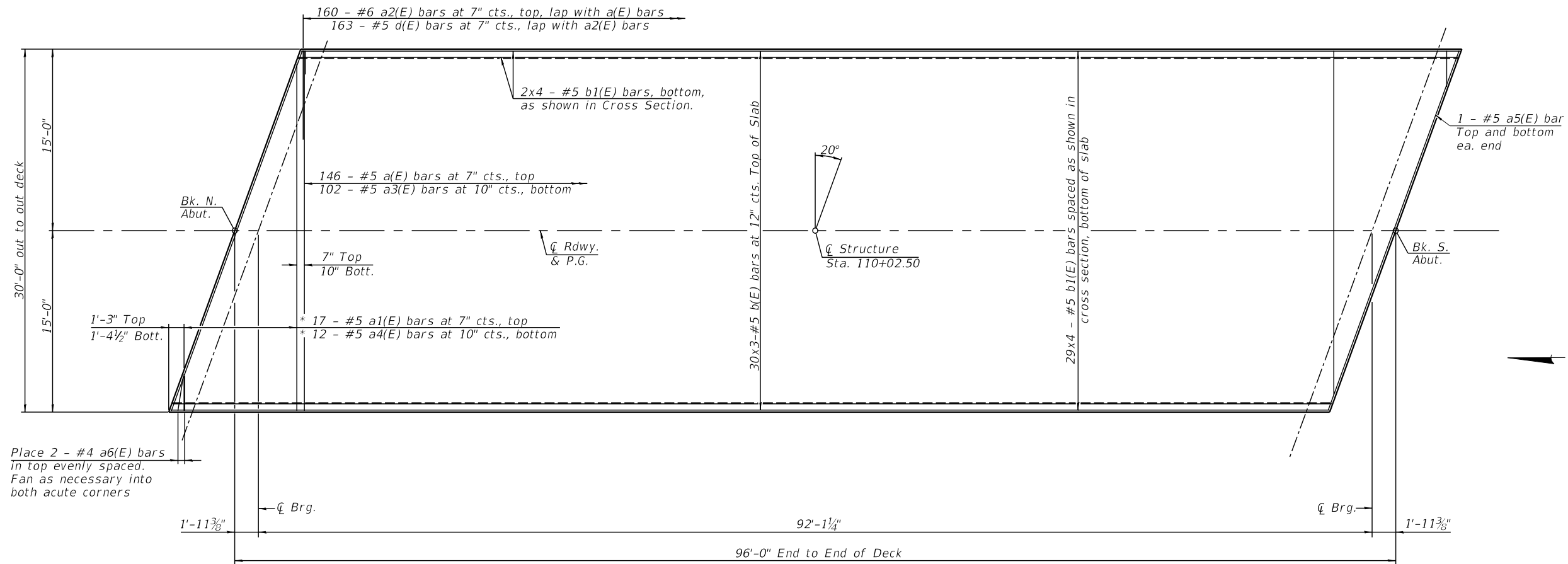
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+53.56	2.58	555.78	555.78
☒ Brg. N. Abut.	109+55.51	2.58	555.80	555.80
A	109+65.51	2.58	555.90	555.96
B	109+75.51	2.58	556.03	556.14
C	109+85.51	2.58	556.17	556.32
D	109+95.51	2.58	556.34	556.52
E	110+05.51	2.58	556.52	556.70
F	110+15.51	2.58	556.72	556.88
G	110+25.51	2.58	556.94	557.06
H	110+35.51	2.58	557.18	557.25
☒ Brg. S. Abut.	110+47.61	2.58	557.49	557.49
Bk. South Abut.	110+49.56	2.58	557.54	557.54

BEAM 5

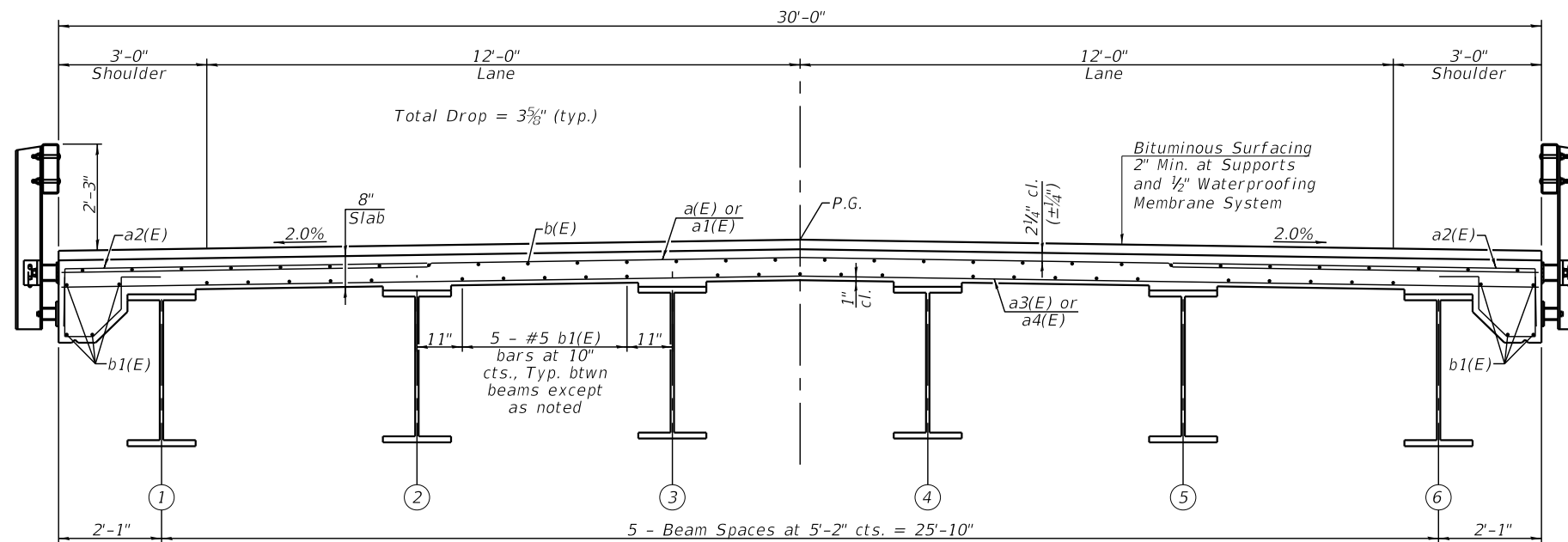
Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+51.68	7.75	555.66	555.66
☒ Brg. N. Abut.	109+53.63	7.75	555.67	555.67
A	109+63.63	7.75	555.78	555.84
B	109+73.63	7.75	555.90	556.01
C	109+83.63	7.75	556.04	556.19
D	109+93.63	7.75	556.20	556.38
E	110+03.63	7.75	556.38	556.56
F	110+13.63	7.75	556.58	556.74
G	110+23.63	7.75	556.79	556.91
H	110+33.63	7.75	557.03	557.10
☒ Brg. S. Abut.	110+45.73	7.75	557.34	557.34
Bk. South Abut.	110+47.68	7.75	557.39	557.39

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted for Dead Load Deflection
Bk. North Abut.	109+49.80	12.92	555.54	555.54
☒ Brg. N. Abut.	109+51.75	12.92	555.55	555.55
A	109+61.75	12.92	555.65	555.71
B	109+71.75	12.92	555.77	555.88
C	109+81.75	12.92	555.91	556.06
D	109+91.75	12.92	556.07	556.25
E	110+01.75	12.92	556.24	556.42
F	110+11.75	12.92	556.44	556.60
G	110+21.75	12.92	556.65	556.77
H	110+31.75	12.92	556.88	556.95
☒ Brg. S. Abut.	110+43.85	12.92	557.18	557.18
Bk. South Abut.	110.45+80	12.92	557.23	557.23



PLAN



PROPOSED CROSS SECTION
(Looking South)

MINIMUM BAR LAP
 #5 bar = 3'-6"
 #6 bar = 3'-7"

Notes:
 See Sheets 6 of 17 for superstructure details and Bill of Material.
 All edges shall have 3/4" chamfer.
 Bars indicated thus 29x4 - #5 etc. indicates 29 lines of bars with 4 lengths per line.

USER NAME =	DESIGNED -	REVISED -
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PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -

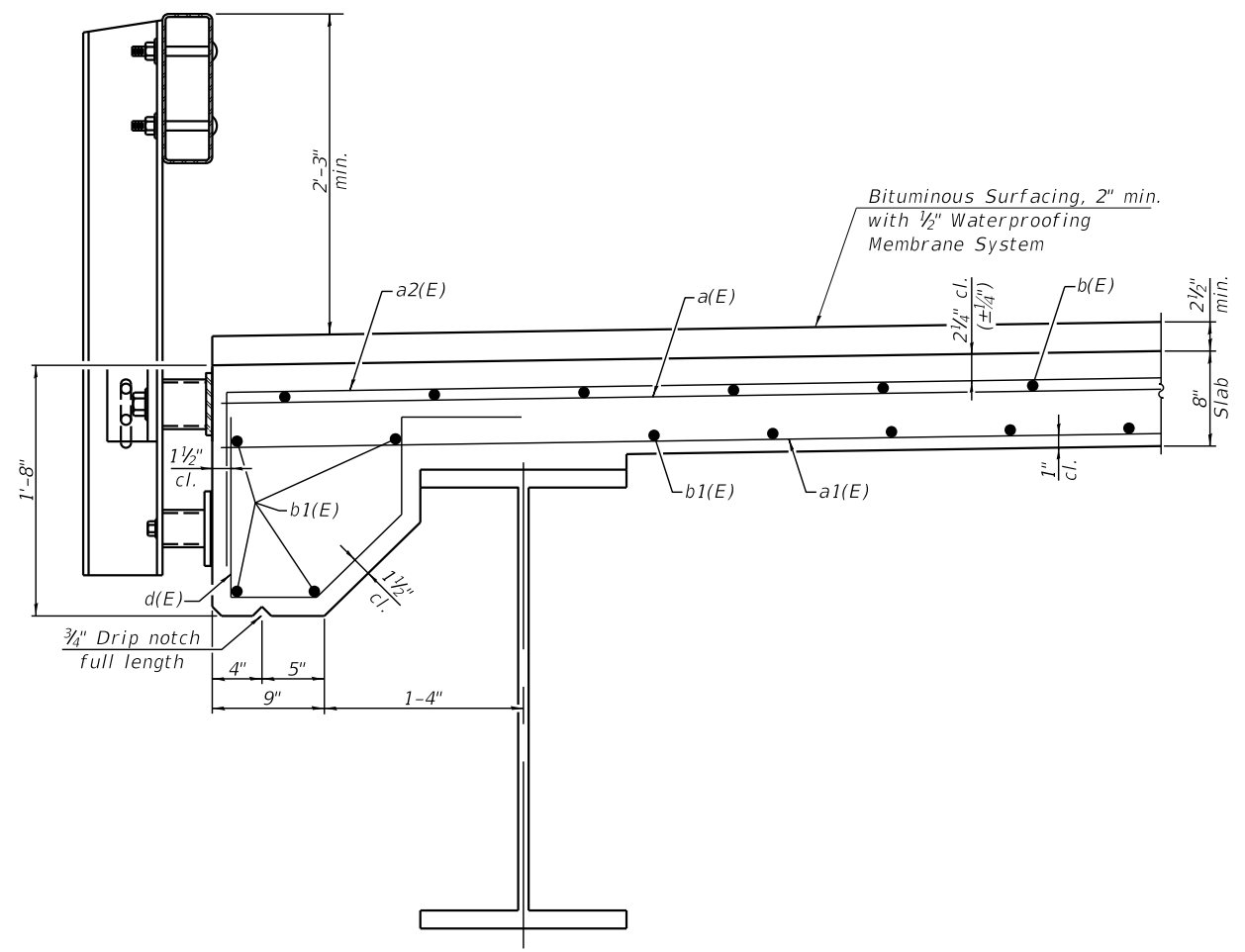


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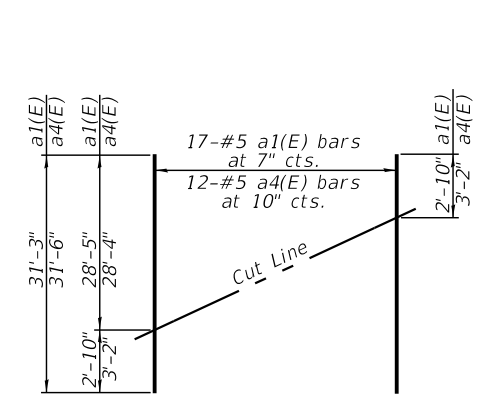
SUPERSTRUCTURE
STRUCTURE NO. 009-3116

SHEET NO. 5 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	14
CONTRACT NO. 93804				
<small>ILLINOIS FED. AID PROJECT</small>				

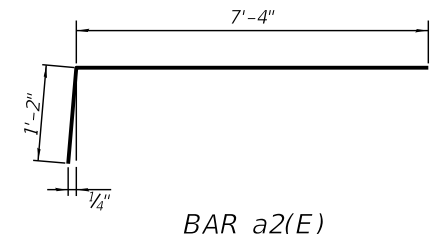


SECTION THRU DECK OVERHANG

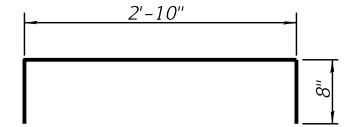


FIELD CUTTING DIAGRAM

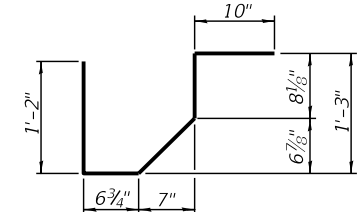
Order a1(E) and a4(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.



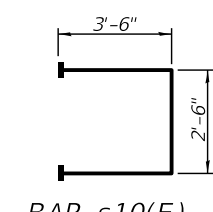
BAR a2(E)



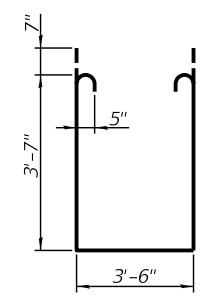
BAR a6(E)



BAR d(E)



BAR s10(E)
(Headed)



BAR s11(E)

SUPERSTRUCTURE
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1(E)	146	#5	29'-9"	—
a2(E)	17	#5	31'-3"	—
a3(E)	320	#5	8'-6"	┌
a4(E)	102	#5	29'-9"	—
a5(E)	12	#5	31'-6"	—
a6(E)	4	#5	31'-6"	—
b(E)	4	#4	4'-2"	┌
b1(E)	90	#5	34'-3"	—
b1(E)	132	#5	25'-8"	—
d(E)	326	#5	4'-1"	U
m10(E)	10	#6	31'-7"	—
m11(E)	40	#6	4'-10"	—
m12(E)	16	#6	1'-9"	—
s10(E)	62	#5	9'-6"	U
s11(E)	62	#5	11'-10"	U
Reinforcement Bars, Epoxy Coated			Lbs.	21,950
Concrete Superstructure			Cu. Yds.	111.0

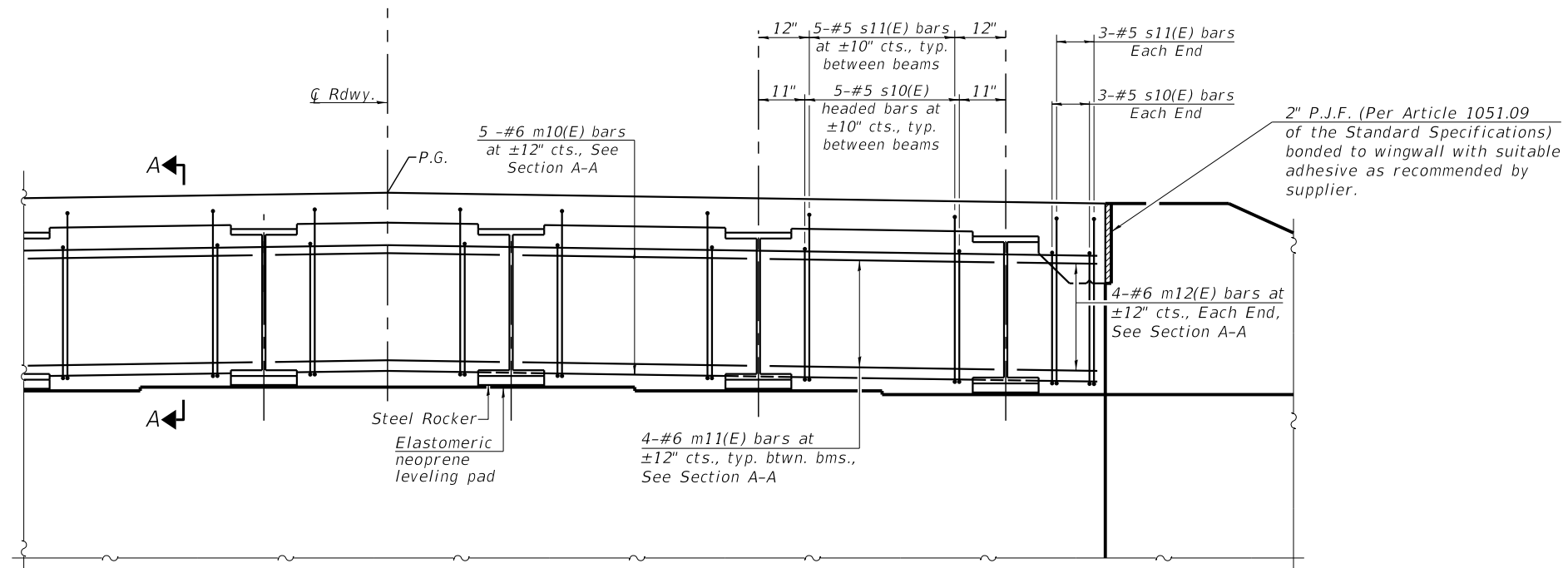
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PLOT SCALE =	CHECKED -	REVISED -
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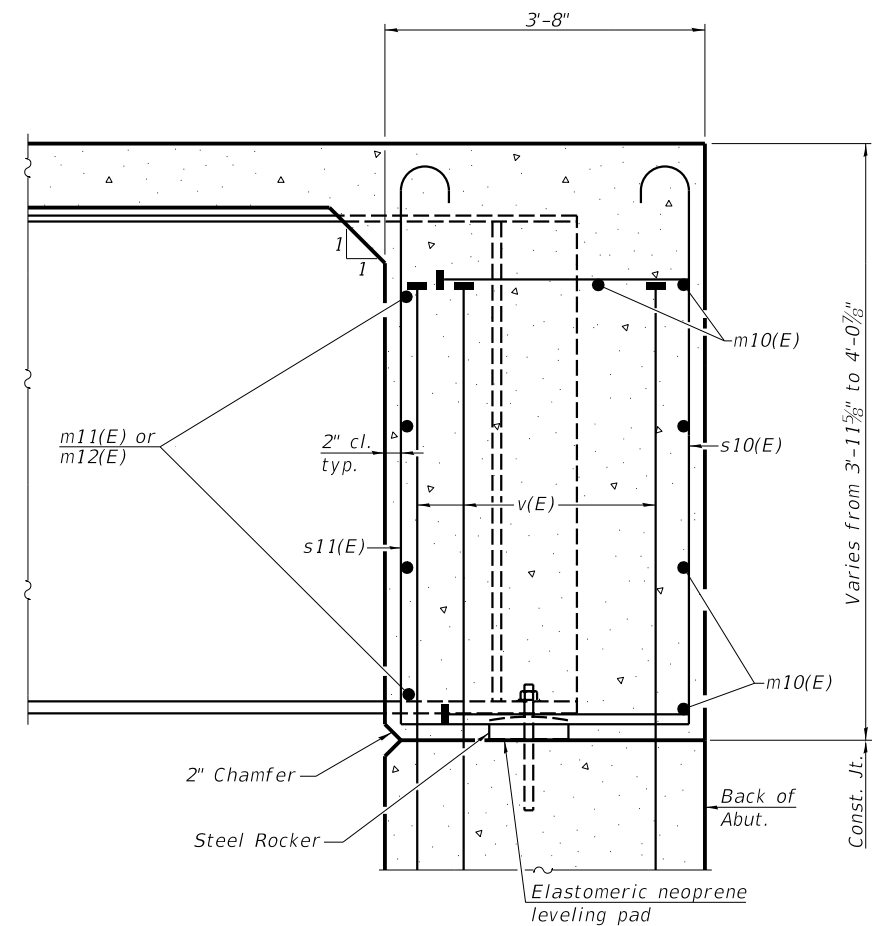
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IL. Design Firm No. 184-001939

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 009-3116
SHEET NO. 6 OF 17 SHEETS

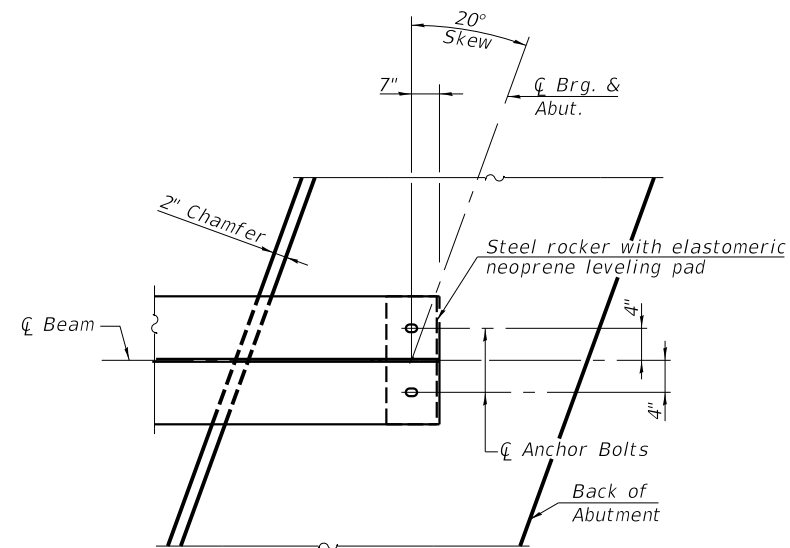
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	15
			CONTRACT NO. 93804	
ILLINOIS FED. AID PROJECT				



DIAPHRAGM ELEVATION AT NORTH ABUTMENT
Looking North (South Abutment similar)



SECTION A-A
(at Rt. L's)



PLAN AT ABUTMENT
(Showing bottom flange of beam)

Notes:
See sheets 6 of 17 for superstructure details and Bill of Material.
The s10(E) and s11(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

DIA-SB-R

06-15-2019

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	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



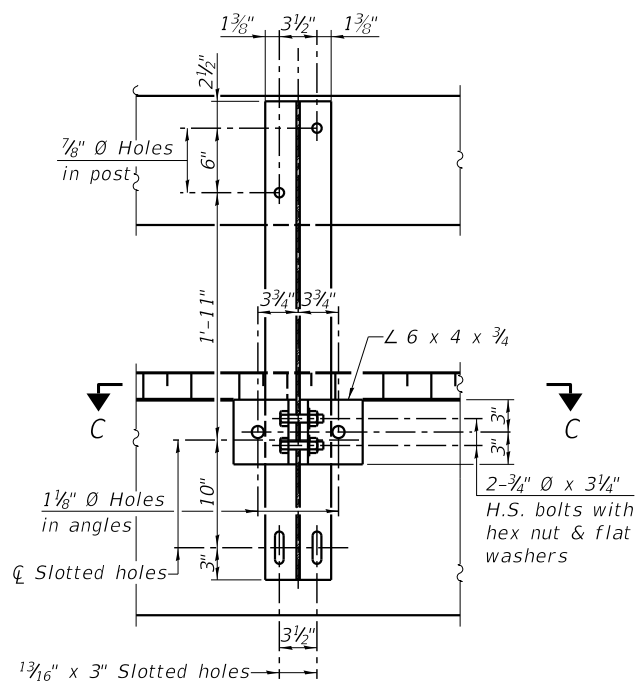
VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

INTEGRAL ABUTMENT DIAPHRAGM DETAILS
STRUCTURE NO. 009-3116

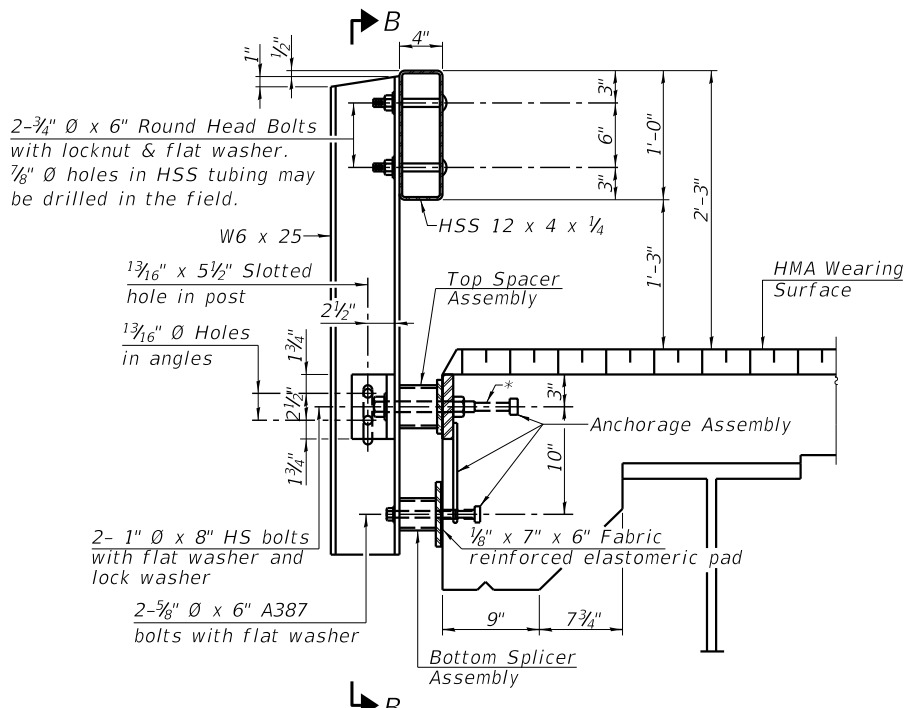
SHEET NO. 7 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	16
CONTRACT NO. 93804				

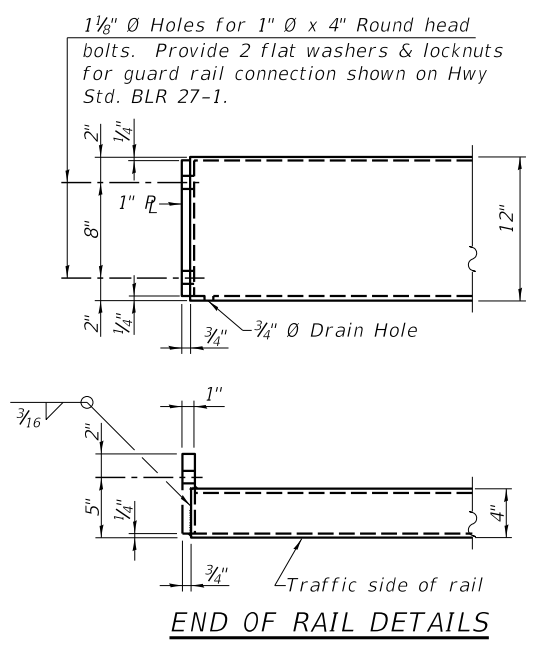
ILLINOIS FED. AID PROJECT



SECTION B-B

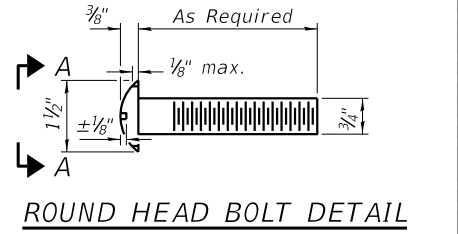


SECTION AT RAILING POST

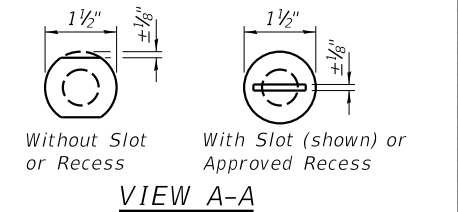


END OF RAIL DETAILS

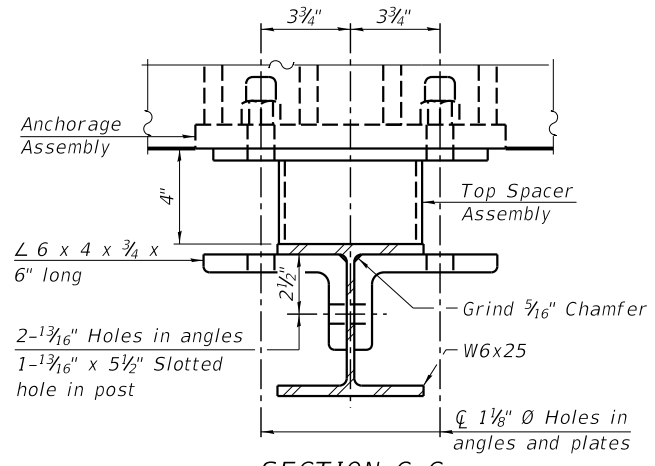
Notes:
 A sufficient number of shims of various thicknesses, sized to fit behind the top spacer assembly, 5" x 11 1/2", and bottom spacer assembly, 6" x 7", shall be provided to adjust posts for proper alignment. If the summation of shims is greater than 1/4" (top) or 1/2" (bottom), longer bolts are required. Cost included with Steel Railing, Type S1.
 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 - 3/8" 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

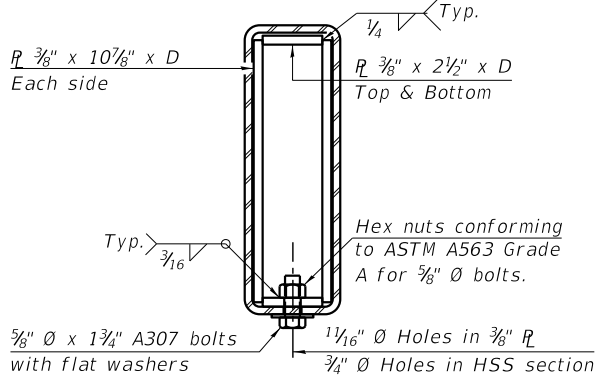


VIEW A-A

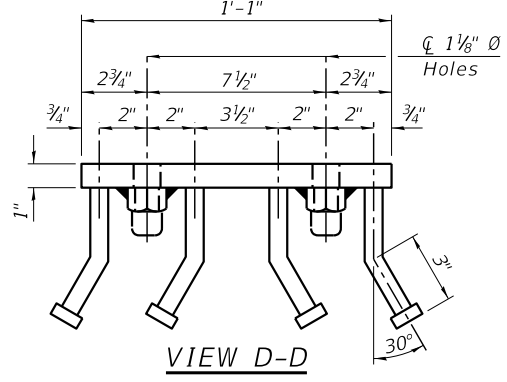


SECTION C-C

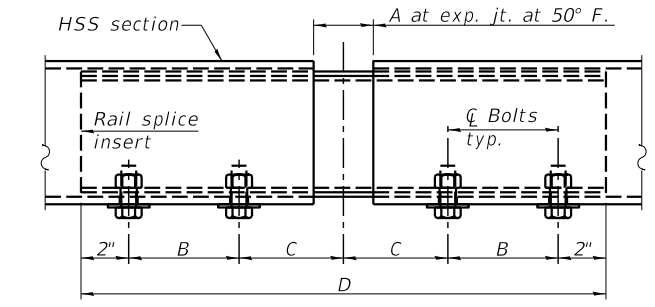
* The outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchorage assembly. The anchorage studs may be bent down 1/2" to accommodate the top reinforcement bar placement.



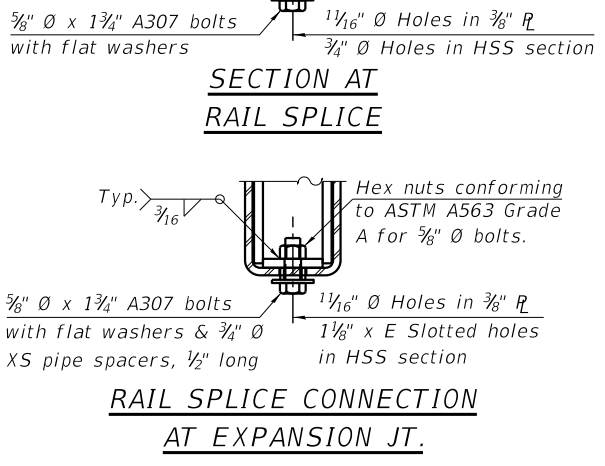
SECTION AT RAIL SPLICE



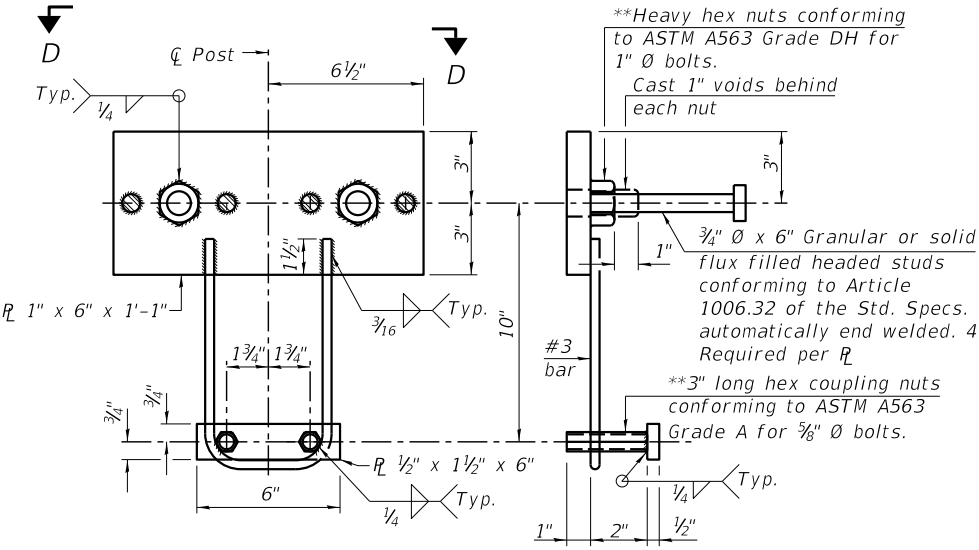
VIEW D-D



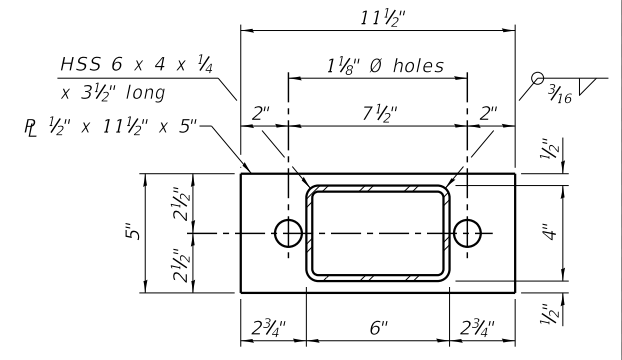
RAIL SPLICE ELEVATION



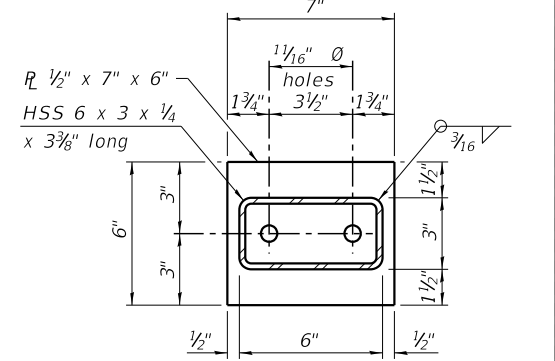
RAIL SPLICE CONNECTION AT EXPANSION JT.



ANCHORAGE ASSEMBLY



TOP SPACER ASSEMBLY



BOTTOM SPACER ASSEMBLY

RAILING CRITERIA

NCHRP 350 Test Level	2
Railing Weight (plf)	50
Max Post Spacing	10'-9"
HMA thickness range (in)	1 1/4 - 3 3/8

SPLICE DIMENSIONS

Location	T	A	B	C	D	E
All locs. not over exp. jts.	0	1/4"	4"	4"	1'-8"	-
Over Strip Seal Jt.	≤4"	2 1/2"	4 3/8"	4 3/8"	1'-10"	3 1/16"
Over Finger or Modular Jt.	≤9 1/2"	5 1/2"	7 3/8"	7 1/4"	2'-9 1/4"	5 1 3/16"
Over Finger or Modular Jt.	≤15"	8 1/4"	10 1/8"	10"	3'-8 1/4"	8 7/16"

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

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

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type S1	Foot	192

10-12-2021

USER NAME =	DESIGNED -	REVISD -
PLOT SCALE =	CHECKED -	REVISD -
PLOT DATE =	DRAWN -	REVISD -
	CHECKED -	REVISD -

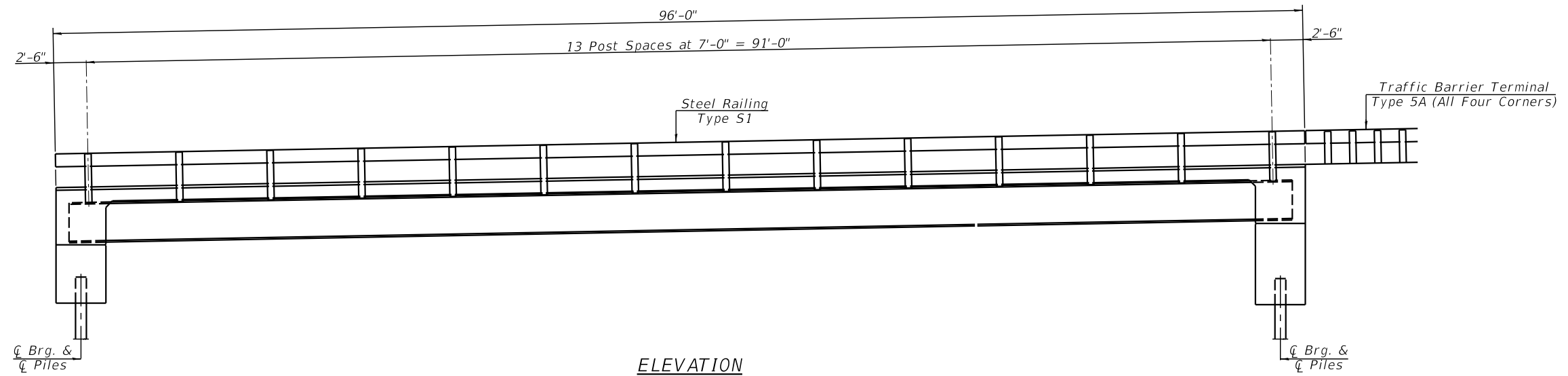


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 IL. Design Firm No. 184-001939

STEEL RAILING, TYPE S1
STRUCTURE NO. 009-3116

SHEET NO. 8 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	17
CONTRACT NO. 93804				
ILLINOIS FED. AID PROJECT				



USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



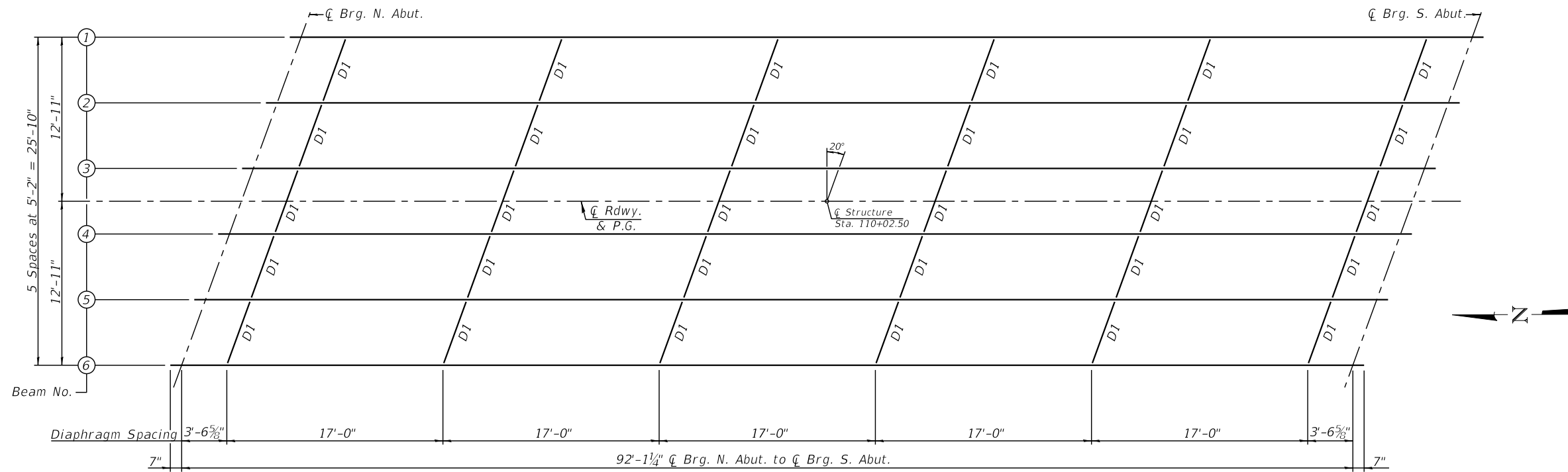
VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

STEEL RAILING, TYPE S1
STRUCTURE NO. 009-3116

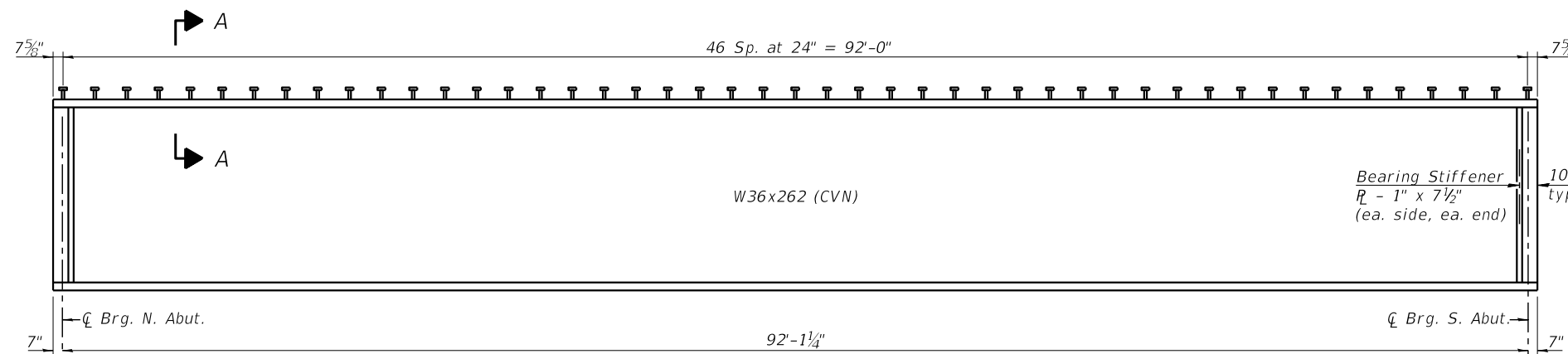
SHEET NO. 9 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	18
CONTRACT NO. 93804				

ILLINOIS FED. AID PROJECT

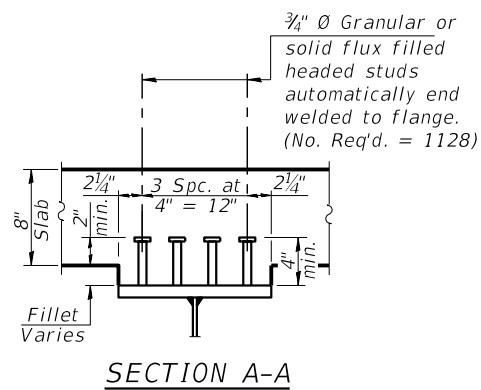


FRAMING PLAN

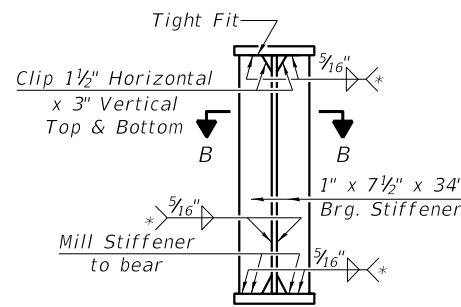


BEAM ELEVATION

"CVN" denotes Charpy-V-Notch impact energy requirements, Zone 2.

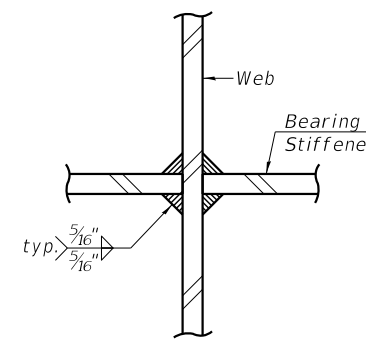


SECTION A-A



SECTION AT ABUTMENT

* Terminate 1/4" ($\pm 1/8$ ") from the end of plate intersects.



SECTION B-B

Notes:
 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.
 AASHTO M270 Grade 50W steel shall be used for bearing stiffeners and diaphragm connection plates.

G-1 2-17-2017

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



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STRUCTURAL STEEL
STRUCTURE NO. 009-3116

SHEET NO. 10 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	19
CONTRACT NO. 93804				

ILLINOIS FED. AID PROJECT

INTERIOR BEAM MOMENT TABLE		
0.5 Sp. 1		
Is	(in ⁴)	17900
Ic(n)	(in ⁴)	37185
Ic(3n)	(in ⁴)	27364
Ic(Cr)	(in ⁴)	---
Ss	(in ³)	972
Sc(n)	(in ³)	1266
Sc(3n)	(in ³)	1148
Sc(Cr)	(in ³)	---
DC1	(k/')	0.838
MDC1	('k)	889
DC2	(k/')	0.173
MDC2	('k)	183
DW	(k/')	0.250
MDW	('k)	265
LLDF		0.473
M _L + IM	('k)	1190
Mu (Strength I)	('k)	3820
Øf Mn	('k)	6905
fs DC1	(ksi)	11.0
fs DC2	(ksi)	1.9
fs DW	(ksi)	2.8
fs (L+IM)	(ksi)	11.3
fs(Service II)	(ksi)	30.3
0.95Rh Fyf	(ksi)	47.5
fs (Total)(Strength I)	(ksi)	40.0
Øf Fn	(ksi)	44.2
Vf	(k)	24.7

EXTERIOR BEAM MOMENT TABLE		
0.5 Sp. 1		
Is	(in ⁴)	17900
Ic(n)	(in ⁴)	36164
Ic(3n)	(in ⁴)	26649
Ic(Cr)	(in ⁴)	---
Ss	(in ³)	972
Sc(n)	(in ³)	1256
Sc(3n)	(in ³)	1138
Sc(Cr)	(in ³)	---
DC1	(k/')	0.945
MDC1	('k)	1002
DC2	(k/')	0.173
MDC2	('k)	183
DW	(k/')	0.250
MDW	('k)	265
LLDF		0.473
M _L + IM	('k)	1190
Mu (Strength I)	('k)	3961
Øf Mn	('k)	6905
fs DC1	(ksi)	12.4
fs DC2	(ksi)	1.9
fs DW	(ksi)	2.8
fs (L+IM)	(ksi)	11.4
fs(Service II)	(ksi)	31.9
0.95Rh Fyf	(ksi)	47.5
fs (Total)(Strength I)	(ksi)	42.0
Øf Fn	(ksi)	44.2
Vf	(k)	24.7

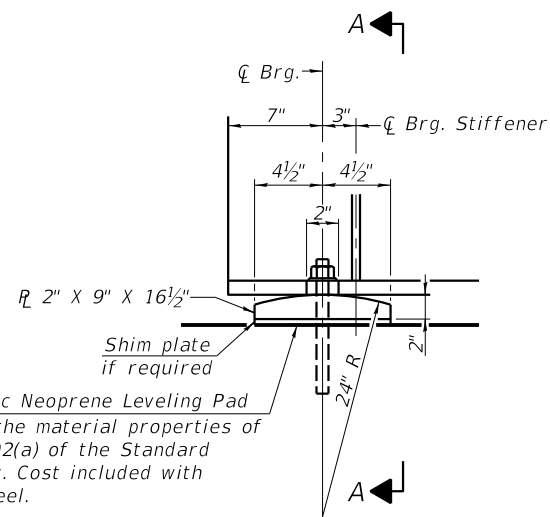
BEAM REACTION TABLE				
	N. Abut.		S. Abut.	
	Interior	Exterior	Interior	Exterior
LLDF	0.609	0.522	0.609	0.522
OCF	---	1.0706	---	1.0706
RDC1 (k)	38.6	43.4	38.6	43.4
RDC2 (k)	8.0	8.0	8.0	8.0
RDW (k)	11.5	11.5	11.5	11.5
R _L (k)	57.3	52.6	57.3	52.6
R _{IM} (k)	13.0	11.9	13.0	11.9
RTotal (k)	128.4	127.4	128.4	127.4

* TOP OF BEAM ELEVATIONS

Location	Q Brg. N. Abut.	Q Brg. S. Abut.
Beam 1	554.93	556.72
Beam 2	555.01	556.77
Beam 3	555.10	556.82
Beam 4	555.08	556.77
Beam 5	554.95	556.62
Beam 6	554.83	556.46

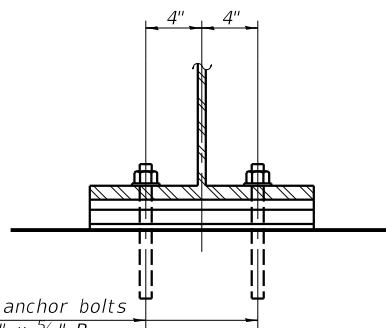
* For fabrication only

- 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) 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 section, due to both short-term composite live loads and long-term composite (superimposed) dead loads (in.⁴ and in.³).
- DC1: Un-factored non-composite dead load (kips/ft.).
- MDC1: 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.).
- MDC2: 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.).
- MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
- 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 (MDC1 + MDC2) + 1.5 MDW + 1.75 M_L + IM
- ØfMn: 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).
MDC1 / Ss
- fs DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
MDC2 / Sc(3n) or MDC2 / 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).
MDW / Sc(3n) or MDW / Sc(cr) as applicable.
- fs (L+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live 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 (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)
- Øf Fn: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
- Vf: Maximum factored shear range in composite portion of span computed according to Article 6.10.10.
- LLDF: Live load distribution factor for moment and shear
- OCF: Obtuse correction factor



1/8" Elastomeric Neoprene Leveling Pad according to the material properties of Article 1052.02(a) of the Standard Specifications. Cost included with Structural Steel.

ELEVATION



1" \varnothing x 12" All-Thread anchor bolts (Grade 55) with 2 1/4" x 2 1/4" x 7/16" R washers under nuts. 1 3/8" x 2" slotted holes in flange. 1 1/2" \varnothing holes in bearing plate.

SECTION A-A

FIXED BEARING AT ABUTMENT
(12 Required)

SHIM PLATES

Beam No.	North Abut.	South Abut.
1	0"	0"
2	0"	3/4"
3	3/8"	1 3/8"
4	0"	3/4"
5	0"	0"
6	0"	0"

Notes:

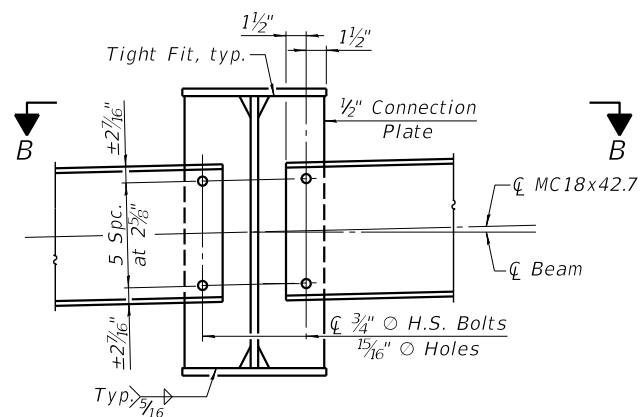
Anchor bolts shall be according to Article 521.06 of the Standard Specifications.

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

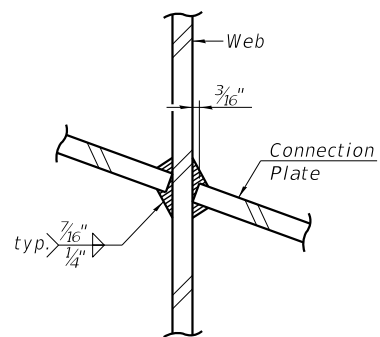
Anchor bolts at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.

Two 1/8" adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on the bearing details.

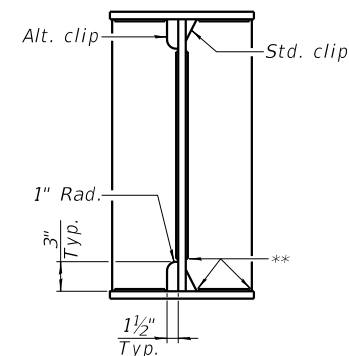
The structural steel plates of the Bearing Assembly shall conform to the requirements of AASHTO M 270 Grade 50W.



DIAPHRAGM D1

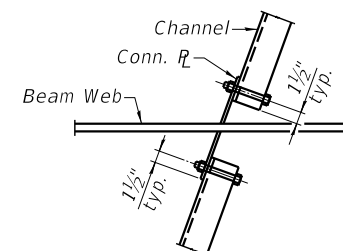


DIAPHRAGM D1 WELD DETAIL



WELD LIMITS AND CLIP DETAILS

** Stop welds 1/4" ($\pm 1/8$ ") from edges as shown. Typical.



SECTION B-B

Notes:

Two hardened washers required for each set of oversized holes.

Alternate channels of equal depth and larger weight are permitted to facilitate material acquisition. Alternate channels, if utilized shall be provided at no additional cost to the Department.

BILL OF MATERIAL

Item	Unit	Total
Anchor Bolts, 1"	Each	24

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -

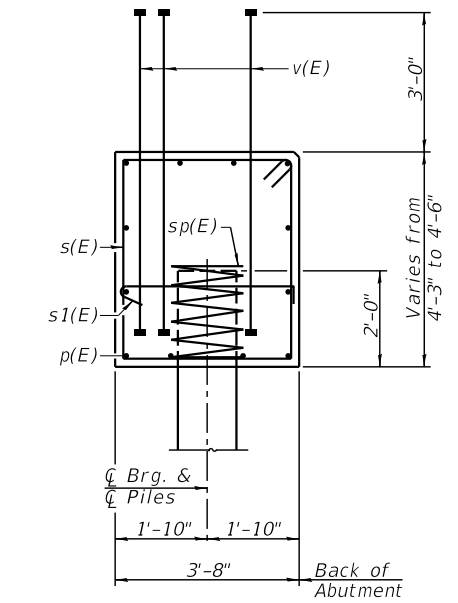
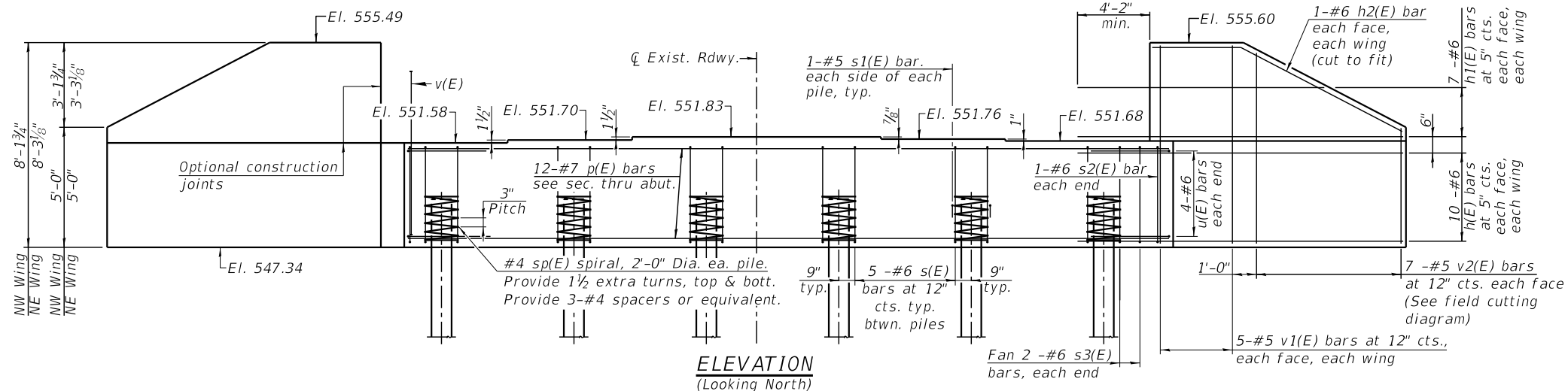


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STRUCTURAL STEEL DETAILS
STRUCTURE NO. 009-3116

SHEET NO. 12 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	21
CONTRACT NO. 93804				
ILLINOIS FED. AID PROJECT				

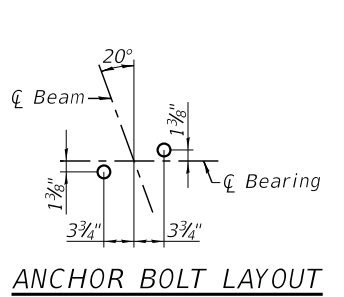


SEC. THRU ABUT.
Dimensions at right angles to abutment.

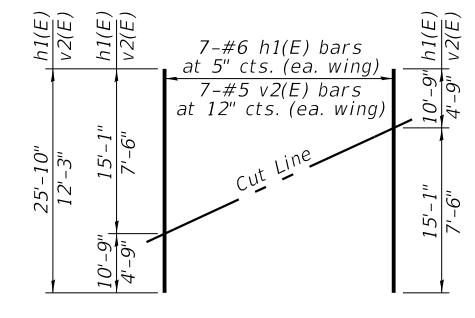
**BILL OF MATERIAL
NORTH ABUTMENT**

BAR	NO.	SIZE	LENGTH	SHAPE
h(E)	40	#6	15'-1"	—
h1(E)	14	#6	25'-10"	—
h2(E)	4	#6	11'-4"	—
p(E)	12	#7	31'-7"	—
s(E)	25	#6	15'-10"	□
s1(E)	12	#5	4'-4"	□
s2(E)	2	#6	16'-2"	□
s3(E)	4	#6	10'-7"	□
** sp(E)	6	#4	2'-0"	MMM
u(E)	8	#6	11'-0"	∩
v(E)	78	#8	6'-9"	—
v1(E)	20	#5	7'-10"	—
v2(E)	14	#5	12'-3"	—
Concrete Structures			Cu. Yd.	25.0
Reinforcement Bars, Epoxy Coated			Pound	5210
Furnishing Metal Shell Piles 14"x0.312"			Foot	145
Driving Piles			Foot	145
Test Pile Metal Shells			Each	1

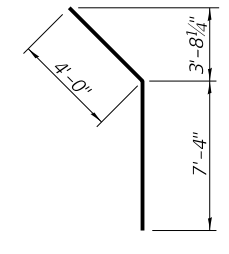
PILE DATA
Type: 14"x0.312" Metal Shell
Nominal Required Bearing: 454 kips
Factored Resistance Available: 250 kips
Est. Length: 29 foot
No. Production Piles: 5
No. Test Piles: 1



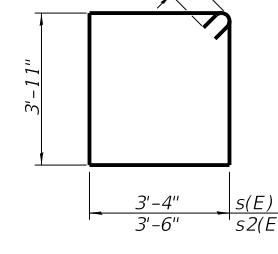
ANCHOR BOLT LAYOUT



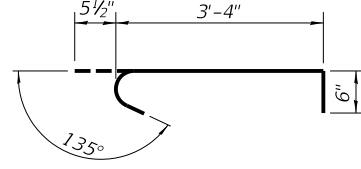
FIELD CUTTING DIAGRAM
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face.



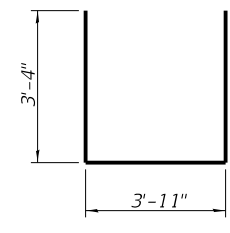
BAR h2(E)



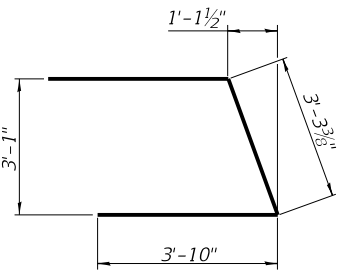
BAR s(E) & s2(E)



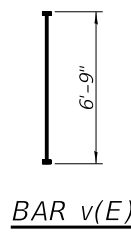
BAR s1(E)



BAR s3(E)



BAR u(E)



BAR v(E) (Headed)

Notes:
For details of piles see Sheet 15 of 17.
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachments Class HA and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
** Length is height of spiral.

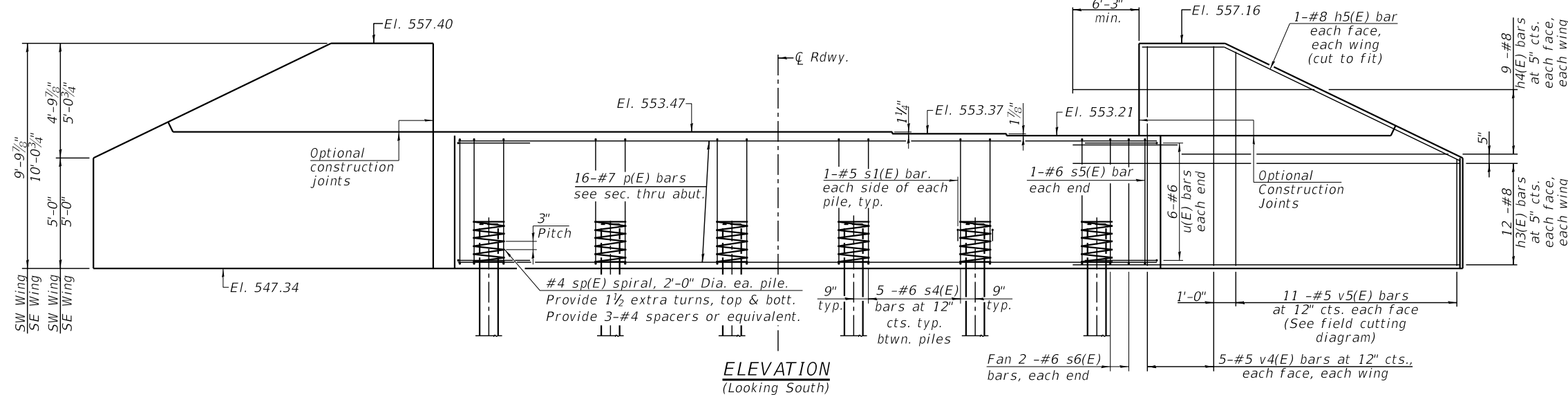
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CHECKED -	REVISD -	REVISD -
PLOT SCALE =	DRAWN -	REVISD -
PLOT DATE =	CHECKED -	REVISD -



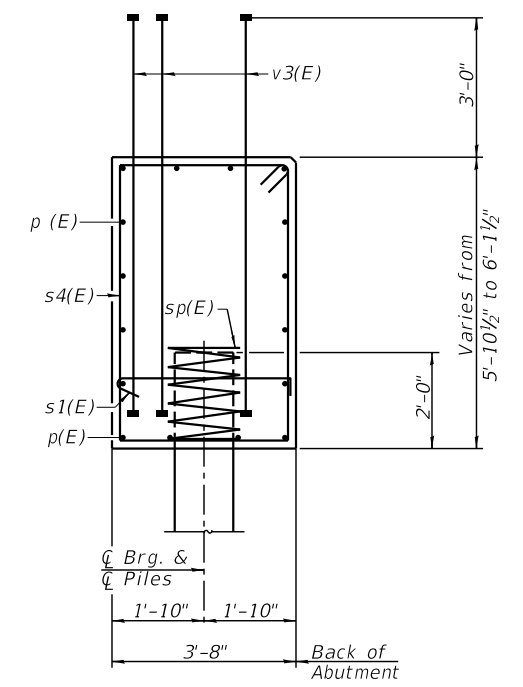
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**NORTH ABUTMENT
STRUCTURE NO. 009-3116**
SHEET NO. 13 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	22
CONTRACT NO. 93804				
<small>ILLINOIS FED. AID PROJECT</small>				



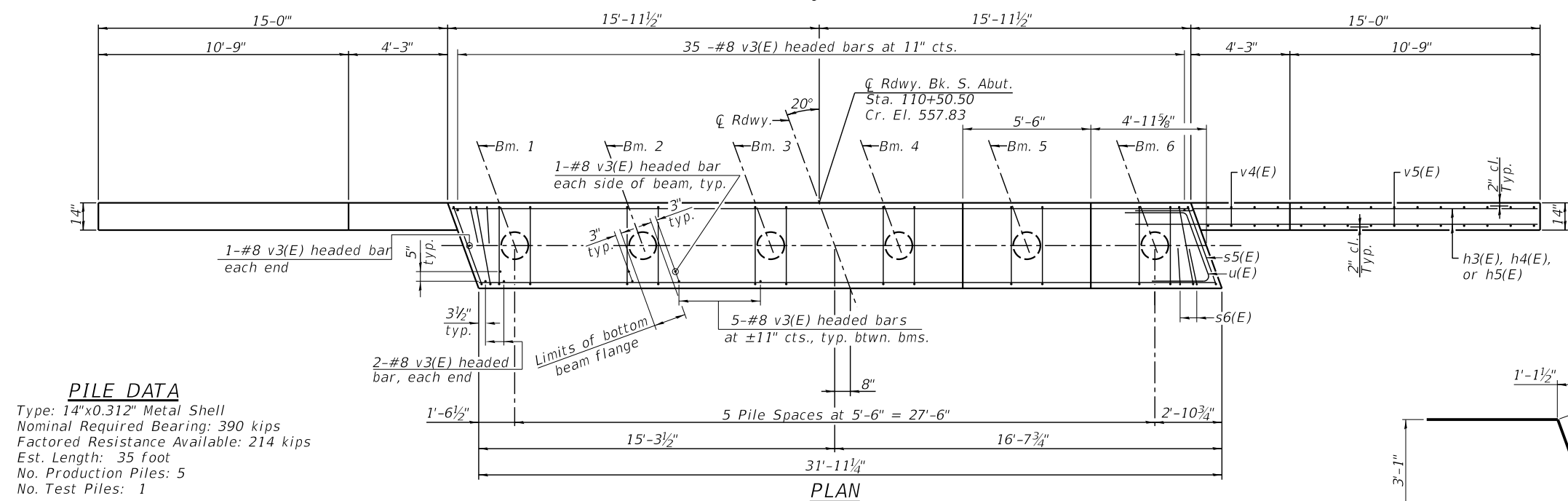
ELEVATION
(Looking South)



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

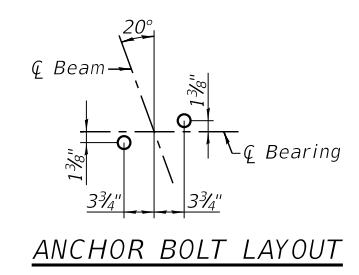
BILL OF MATERIAL
SOUTH ABUTMENT

BAR	NO.	SIZE	LENGTH	SHAPE
h3(E)	48	#8	21'-2"	—
h4(E)	16	#8	33'-3"	—
h5(E)	4	#8	15'-8"	—
p(E)	16	#7	31'-7"	—
s1(E)	12	#5	4'-4"	U
s4(E)	25	#6	18'-4"	U
s5(E)	2	#6	18'-8"	U
s6(E)	4	#6	11'-10"	U
sp(E)	6	#4	2'-0"	MMM
u(E)	12	#6	11'-0"	U
v3(E)	78	#8	8'-9"	—
v4(E)	20	#5	9'-6"	—
v5(E)	22	#5	13'-10"	—
Concrete Structures			Cu. Yd.	36.0
Reinforcement Bars, Epoxy Coated			Pound	9020
Furnishing Metal Shell Piles 14"x0.312"			Foot	175
Driving Piles			Foot	175
Test Pile Metal Shells			Each	1

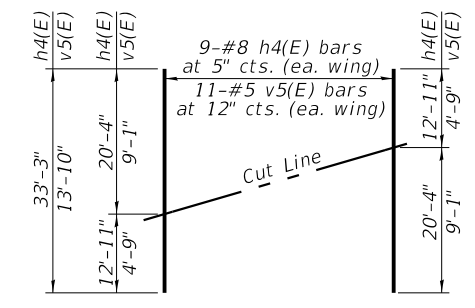


PLAN

PILE DATA
Type: 14"x0.312" Metal Shell
Nominal Required Bearing: 390 kips
Factored Resistance Available: 214 kips
Est. Length: 35 foot
No. Production Piles: 5
No. Test Piles: 1

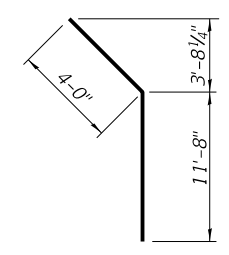


ANCHOR BOLT LAYOUT

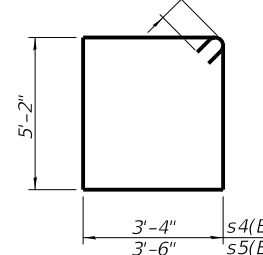


FIELD CUTTING DIAGRAM

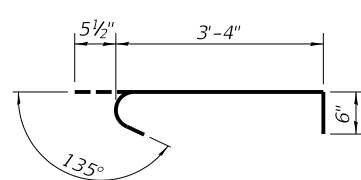
Order h4(E) and v5(E) full length. Cut as shown and use remainder of bars in opposite face.



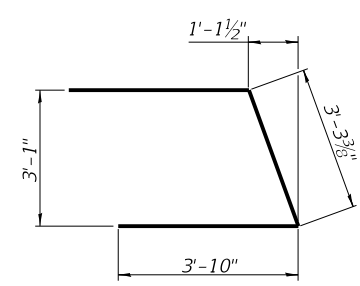
BAR h5(E)



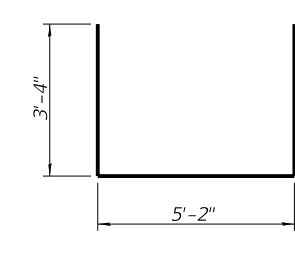
BAR s4(E) & s5(E)



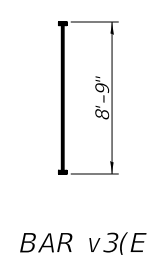
BAR s1(E)



BAR u(E)

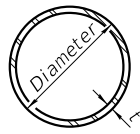


BAR s6(E)



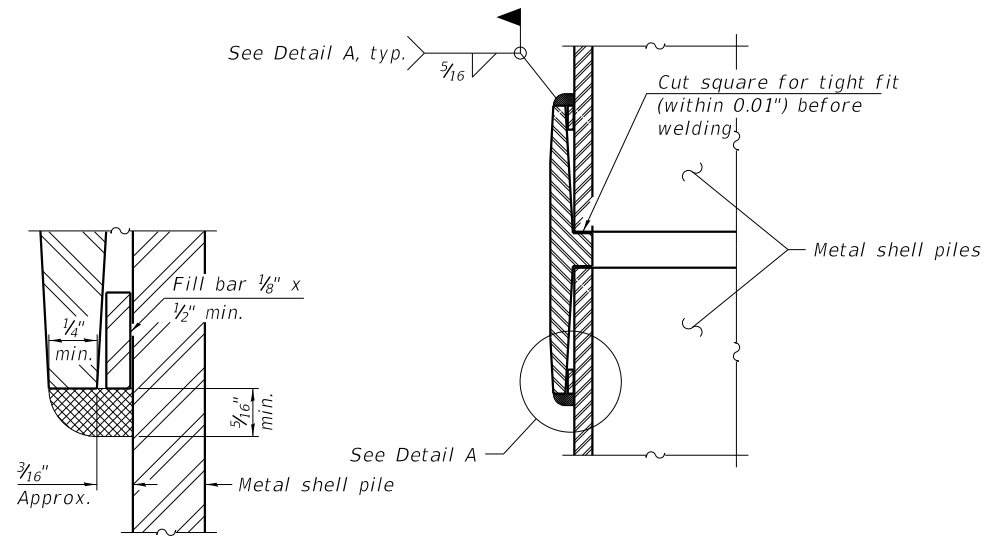
BAR v3(E) (Headed)

Notes:
For details of piles see Sheet 15 of 17.
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachments Class HA and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
** Length is height of spiral.

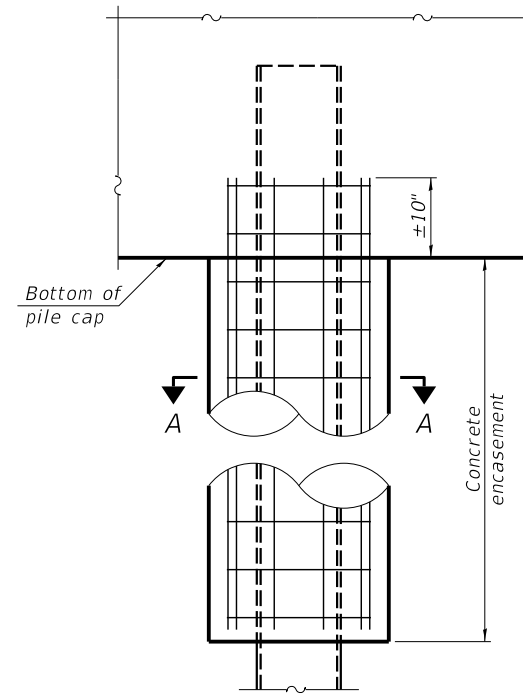


METAL SHELL PILE TABLE

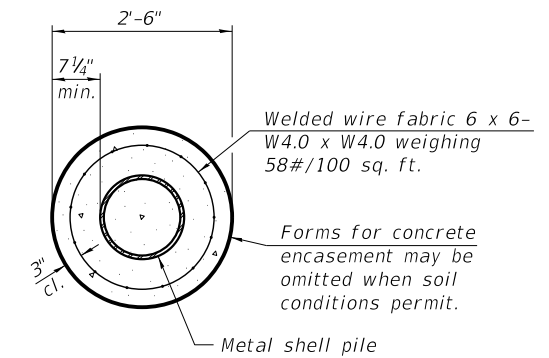
Designation and outside diameter	Wall thickness t	Weight per foot (Lbs./ft.)	Inside volume (yd. ³ /ft.)
PP12	0.250"	31.37	0.0267
PP14	0.250"	36.71	0.0368
PP14	0.312"	45.61	0.0361
PP16	0.312"	52.32	0.0478
PP16	0.375"	62.64	0.0470



DETAIL A

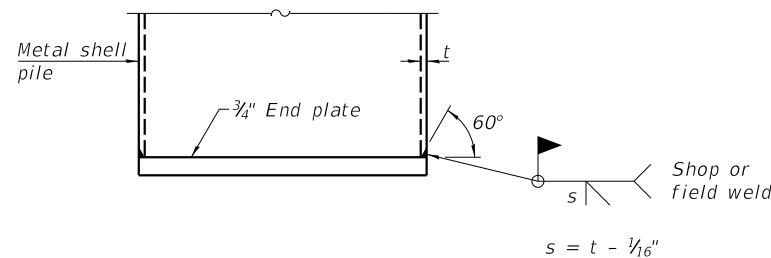


ELEVATION



SECTION A-A

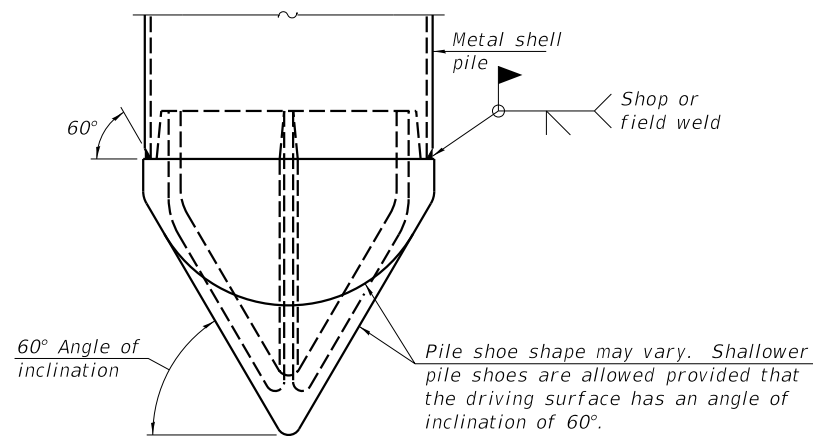
INDIVIDUAL PILE CONCRETE ENCASEMENT
(When specified)



END PLATE ATTACHMENT

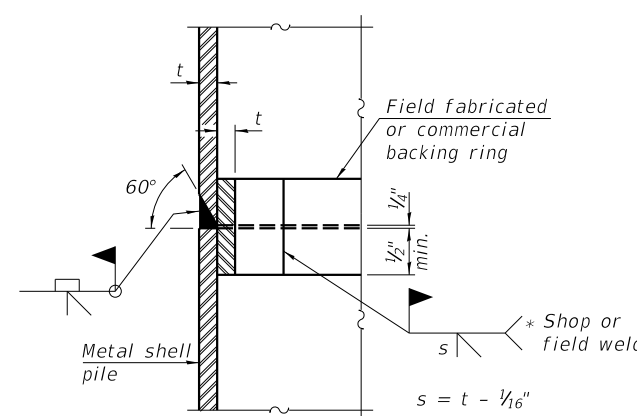
WELDED COMMERCIAL SPLICE

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



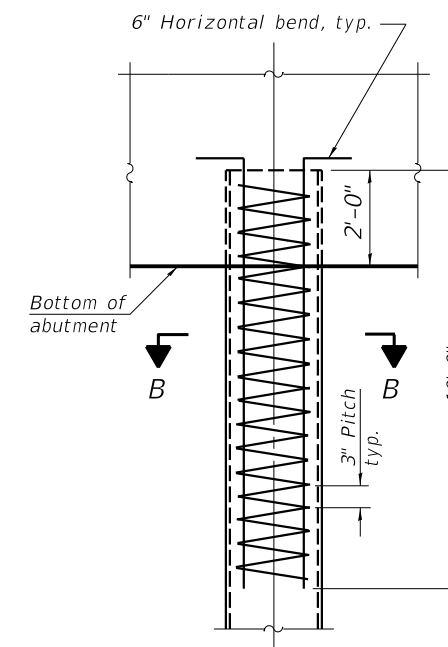
PILE SHOE ATTACHMENT

(When called for on the plans, the Contractor shall furnish metal shell pile shoes consisting of a single piece conical pile point as shown. The pile shoes shall be cast in one piece steel according to either ASTM A 148 Grade 80-50 or AASHTO M 103 Grade 65-35 and shall provide full bearing over the full circumference of the metal shell pile. The pile shoe shall have tapered leads to assure proper alignment and fitting and shall be secured to the pile with a circumferential weld).



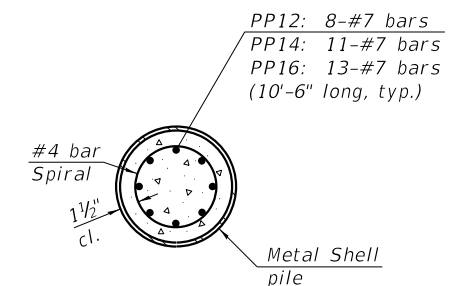
COMPLETE PENETRATION WELD SPLICE

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



ELEVATION

REINFORCEMENT AT ABUTMENTS REQUIRED



SECTION B-B

Note:
The metal shell piles shall be according to Article 1006.05 of the Standard Specifications.

USER NAME =	DESIGNED -	REVISED -		VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	METAL SHELL PILE DETAILS STRUCTURE NO. 009-3116 SHEET NO. 15 OF 17 SHEETS	C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE =	CHECKED -	REVISED -				4	18-00080-00-BR	CASS	40	24
PLOT DATE =	DRAWN -	REVISED -				CONTRACT NO. 93804				
	CHECKED -	REVISED -				ILLINOIS FED. AID PROJECT				

WES, INC
2665 Prairie College Jacksonville, IL 62650

RECORD OF SOIL EXPLORATION Page 1 of 2

Boring No. 2

Contracted With Veenstra & Kimm
Project Name Bridge Borings-Cass Co
Location 18-00080-00-BR
Boring Method 3.25" HSA
Weather & Temp Overcast, 60
Driller J. Green
Logged By T. Jachino
JULIE A3421815

Boring # SE Cmr. 10.0' from existing Abutment, 9.0' from Cl
Job # CH 4 over Fox Creek - Newmansville Rd.
Surface Elevation 557.588
Sampling Method Split Spoon
Water Depth BAR NA added water due to sand
AAR NA added water due to sand
Date:12/15/21 Start 1100
Finish 1430

Ground Elev. 557.59

STRATUM DEPTH	USCS	SOIL CLASSIFICATION	SAMPLE NUMBER	SAMPLE DEPTH		STD PENETRATION TEST BLOWS / 6 INCHES			POCKET PEN	MOISTURE CONTENT %	
				From	To	From	To	N			Qu-t/sf
From	To	0-6" - Oilchip surface									
6"	CL	Brown silty clay, trace fine sand, trace orange/brown mottling, dry	B2-1	1.0	2.5	4	3	9	1.63	1.00	13.60
	CL	Same as above	B2-2	3.5	5.0	3	2	5	1.79	1.00	17.50
	CL	Same as above	B2-3	6.0	7.5	2	2	4	0.81	0.50	18.30
	CL	Same as above - friable, trace dark brown mottling	B2-4	8.5	10.0	1	3	6	0.98	0.25	17.40
13.0	CL	Same as above - somewhat friable, moist	B2-5	11.0	12.5	2	3	6	0.65	0.25	18.70
13.0	CL	Dark brown silty clay, somewhat friable, trace fine sand, moist	B2-6	13.5	15.0	1	3	6	0.85	0.25	18.00
	CL	Same as above - trace iron staining	B2-7	16.0	17.5	2	2	5	1.11	0.75	20.90
19.0	CL	Same as above	B2-8	18.5	20.0	1	2	4	1.17	0.75	21.20
19.0	29.0	CL	B2-9	23.5	25.0	0	1	2	0.59	0.25	22.00
29.0	31.0	SM	B2-10	28.5	30.0	0	1	3	0.39	NR	16.60
31.0	SM	Grey medium coarse sand, 1/16-1/8" coarse rock, wet	B2-11	33.5	35.0	4	4	6	0.78	NR	12.00
38.0	SM	Same as above	B2-12	38.5	40.0	5	6	10	1.57	NR	16.90

WES, INC
2665 Prairie College Jacksonville, IL 62650

RECORD OF SOIL EXPLORATION Page 2 of 2

Contracted With Veenstra & Kimm
Project Name Bridge Borings-Cass Co
Location 18-00080-00-BR
Boring Method 3.25" HSA
Weather & Temp Overcast, 60
Driller J. Green
Logged By T. Jachino
JULIE A3421815

Boring # SE Cmr. 10.0' from existing Abutment, 9.0' from Cl
Job # CH 4 over Fox Creek - Newmansville Rd.
Surface Elevation
Sampling Method Split Spoon
Water Depth BAR NA added water due to sand
AAR NA added water due to sand
Date:12/15/21 Start 1100
Finish 1430

STRATUM DEPTH	USCS	SOIL CLASSIFICATION	SAMPLE NUMBER	SAMPLE DEPTH		STD PENETRATION TEST BLOWS / 6 INCHES			POCKET PEN	MOISTURE CONTENT %	
				From	To	From	To	N			Qu-t/sf
38.0	CL	Grey/brown clayey silt, very stiff, trace 1/16" coarse rock, dry	B2-13	43.5	45.0	7	15	37	7.33	4.5+	12.10
	CL	Same as above - 1/4-1/2" coarse rock	B2-15	48.5	50.0	10	20	50	8.47	4.5+	10.70
	CL	Same as above	B2-16	53.5	55.0	10	24	71	7.50	4.00	10.50
	CL	Same as above	B2-17	58.5	60.0	9	23	55	7.66	4.00	10.90
		End of Boring									

USER NAME =	DESIGNED -	REVISED -
	CHECKED -	REVISED -
PLOT SCALE =	DRAWN -	REVISED -
PLOT DATE =	CHECKED -	REVISED -



VEENSTRA & KIMM INC.
Springfield, IL. Phone: (217)544-8033
IL. Design Firm No. 184-001939

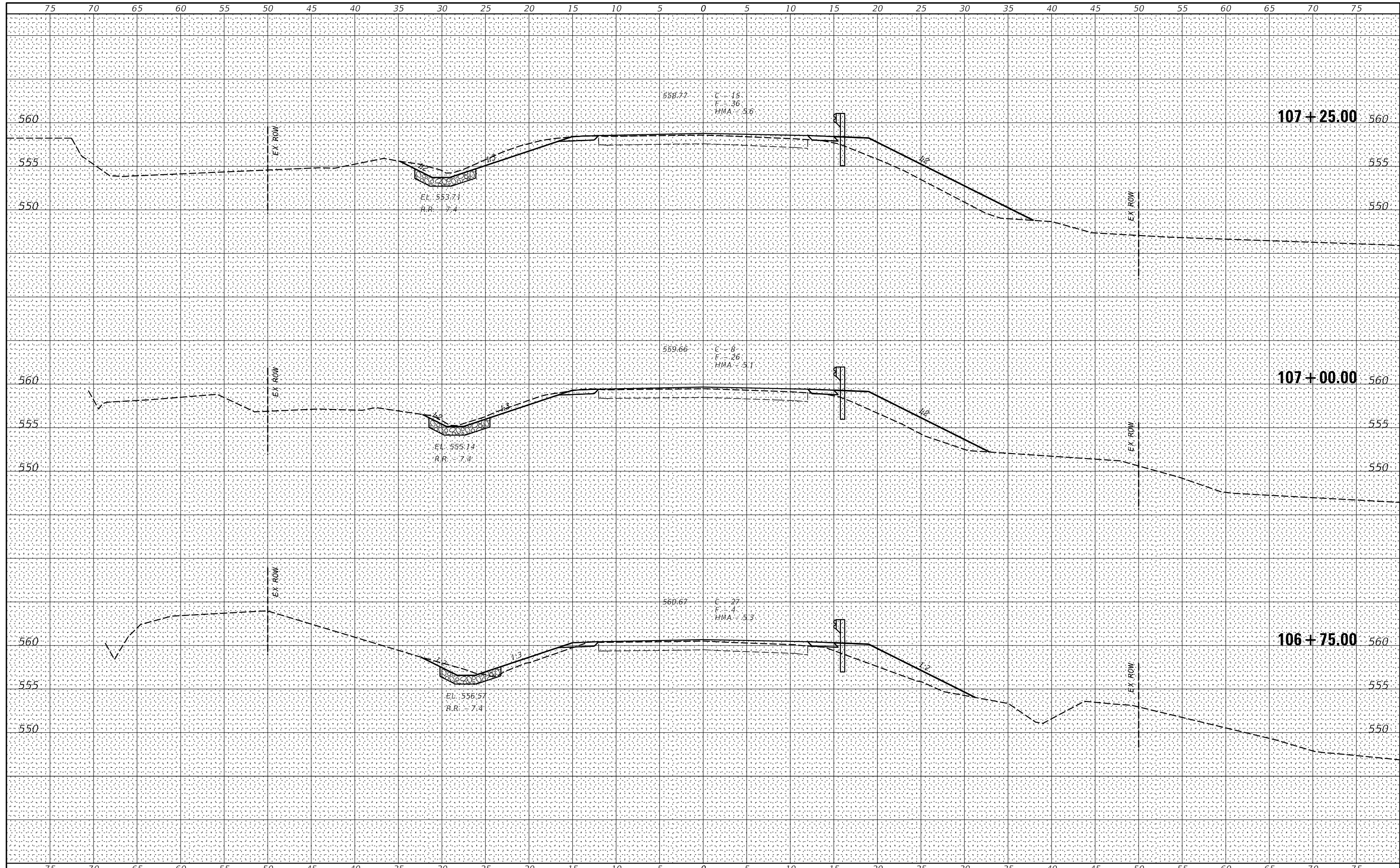
BORING DATA - 2
STRUCTURE NO. 009-3116

SHEET NO. 17 OF 17 SHEETS

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	26
			CONTRACT NO. 93804	
ILLINOIS FED. AID PROJECT				

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____
 ORIGINAL SURVEY NO. _____

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____
 ORIGINAL SURVEY NO. _____



USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



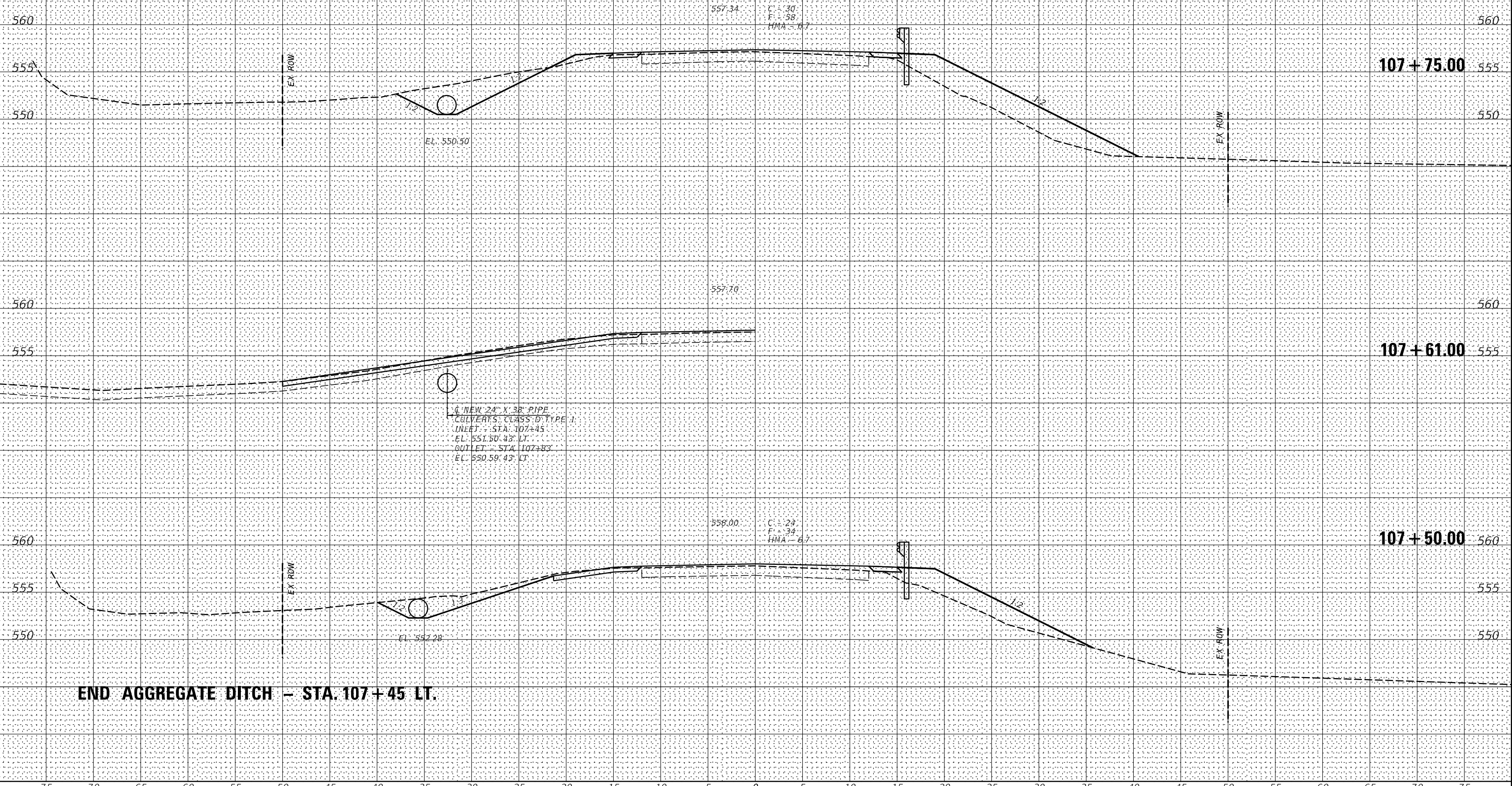
VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 3 OF 14 SHEETS STA. 106+75.00 TO STA. 107+25.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	29
CONTRACT NO. 93804				
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

**BEGIN TRAFFIC BARRIER TERMINAL TYPE 1
(SPECIAL) TANGENT AT STA. 107+84.2 LT.**



NEW 24" X 38" PIPE
 CULVERTS: CLASS-D TYPE 1
 INLET - STA. 107+45
 EL. 551.50 43' LT.
 OUTLET - STA. 107+83
 EL. 550.59 43' LT.

END AGGREGATE DITCH - STA. 107+45 LT.

DATE	
BY	
NO.	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	

DATE	
BY	
NO.	
ORIGINAL SURVEY	
NOTE BOOK	
AREAS CHECKED	

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



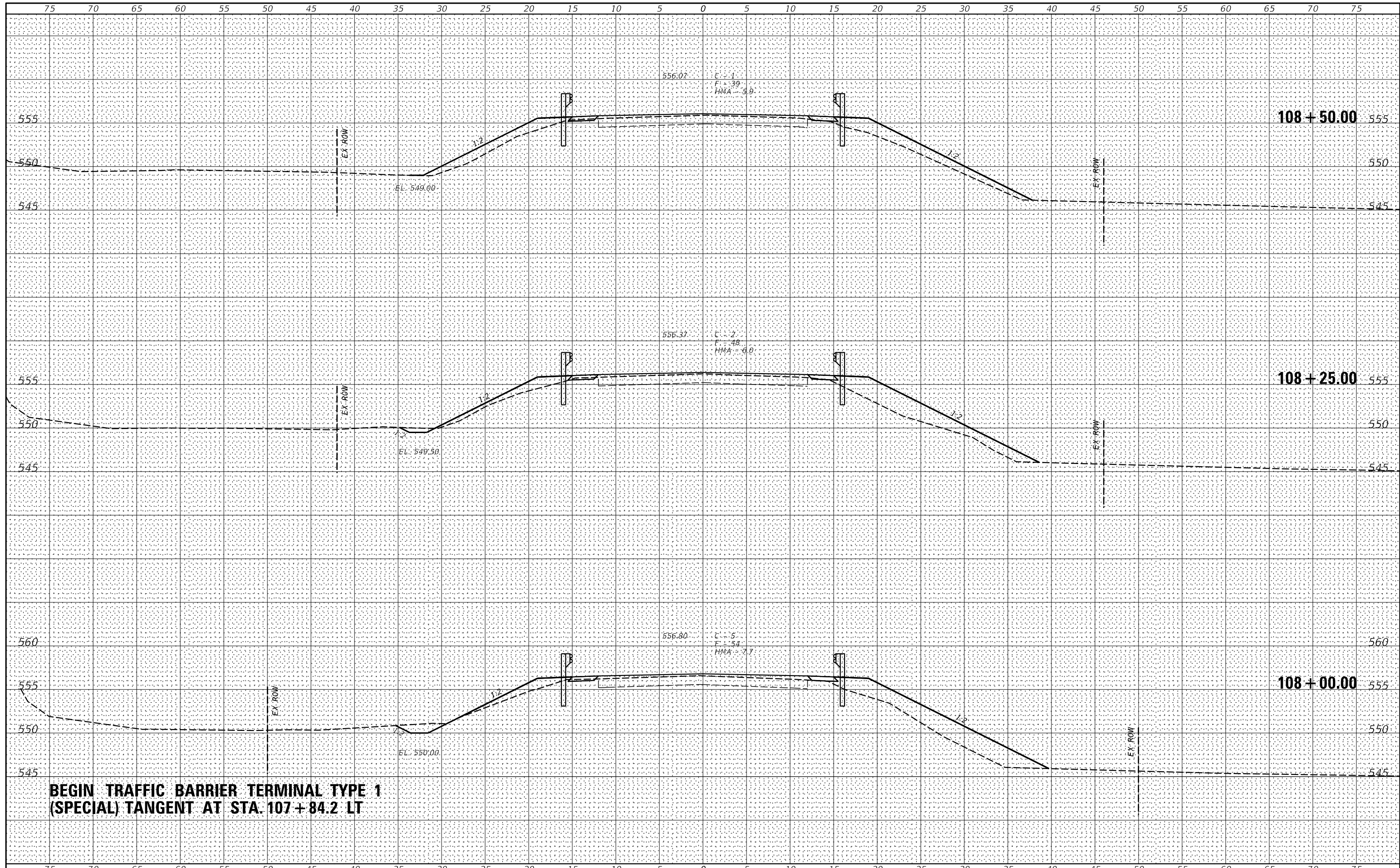
VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

CROSS SECTIONS	
SCALE: 1" = 5'	SHEET NO. 4 OF 14 SHEETS
STA. 107+50.00 TO STA. 107+75.00	

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	30
CONTRACT NO. 93804				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____
 NO. _____

DATE _____
 BY _____
 SURVEYED _____
 PLOTTED _____
 TEMPLATE _____
 AREAS CHECKED _____
 NO. _____



**BEGIN TRAFFIC BARRIER TERMINAL TYPE 1
 (SPECIAL) TANGENT AT STA. 107+84.2 LT**

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

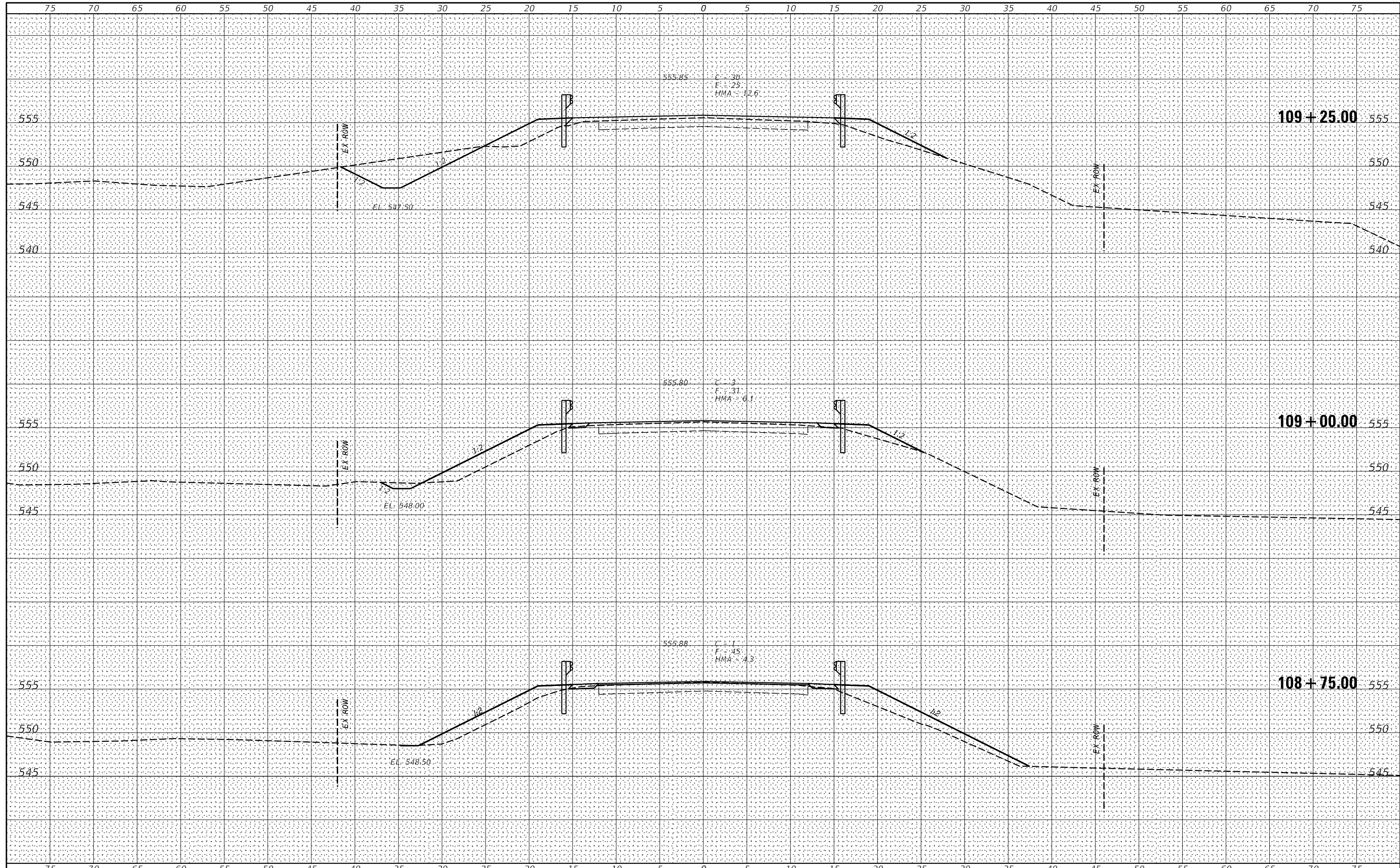
CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 5 OF 14 SHEETS STA. 108+00.00 TO STA. 108+50.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	31
CONTRACT NO. 93804				
FED. ROAD DIST. NO. _____ ILLINOIS FED. AID PROJECT				

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

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



USER NAME = *USER*	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = *DATE*	DATE -	REVISED -



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 IL. Design Firm No. 184-001939

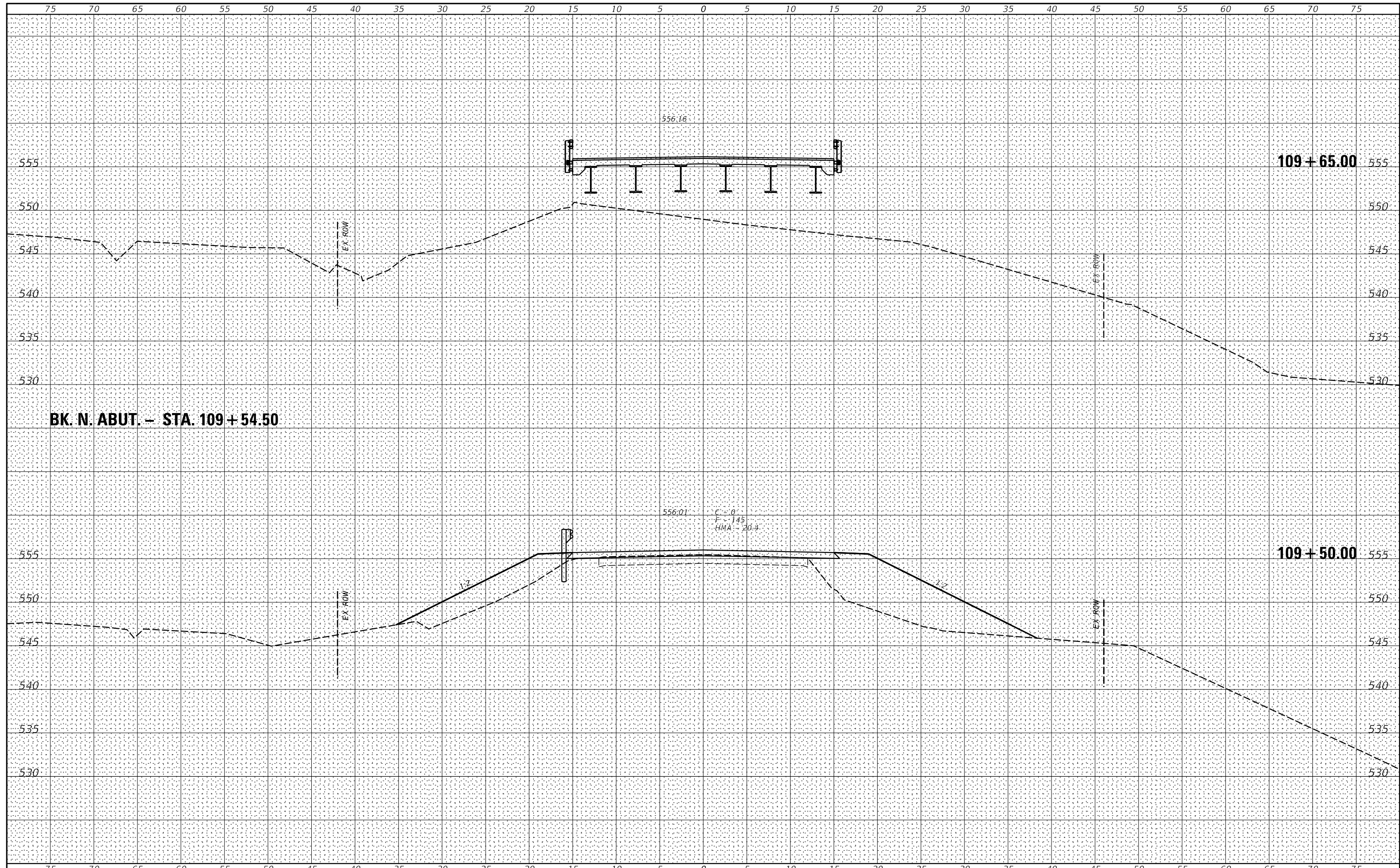
CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 6 OF 14 SHEETS STA. 108+75.00 TO STA. 109+25.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	32
CONTRACT NO. 93804				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				

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

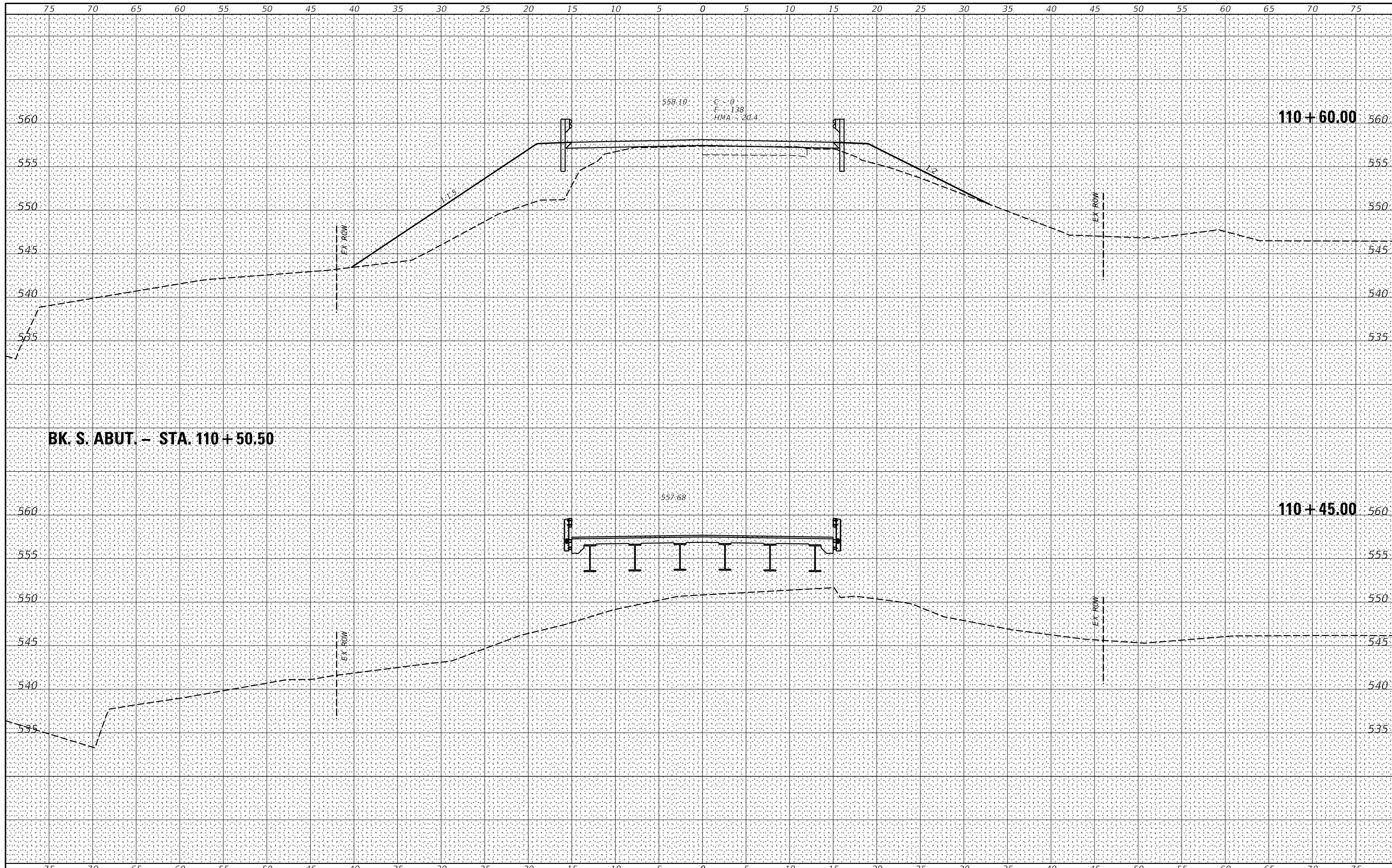
DATE	
BY	
ORIGINAL SURVEY NO.	
SURVEYED PLOTTED	
NOTE BOOK AREAS CHECKED	



USER NAME = *USER*	DESIGNED -	REVISIED -	VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	CROSS SECTIONS SCALE: 1" = 5' SHEET NO. 7 OF 14 SHEETS STA. 109+50.00 TO STA. 109+65.00			C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = *SCALE*	DRAWN -	REVISIED -					4	18-00080-00-BR	CASS	40	33
PLOT DATE = *DATE*	CHECKED -	REVISIED -		CONTRACT NO. 93804 FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT							

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

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



BK. S. ABUT. - STA. 110 + 50.50

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



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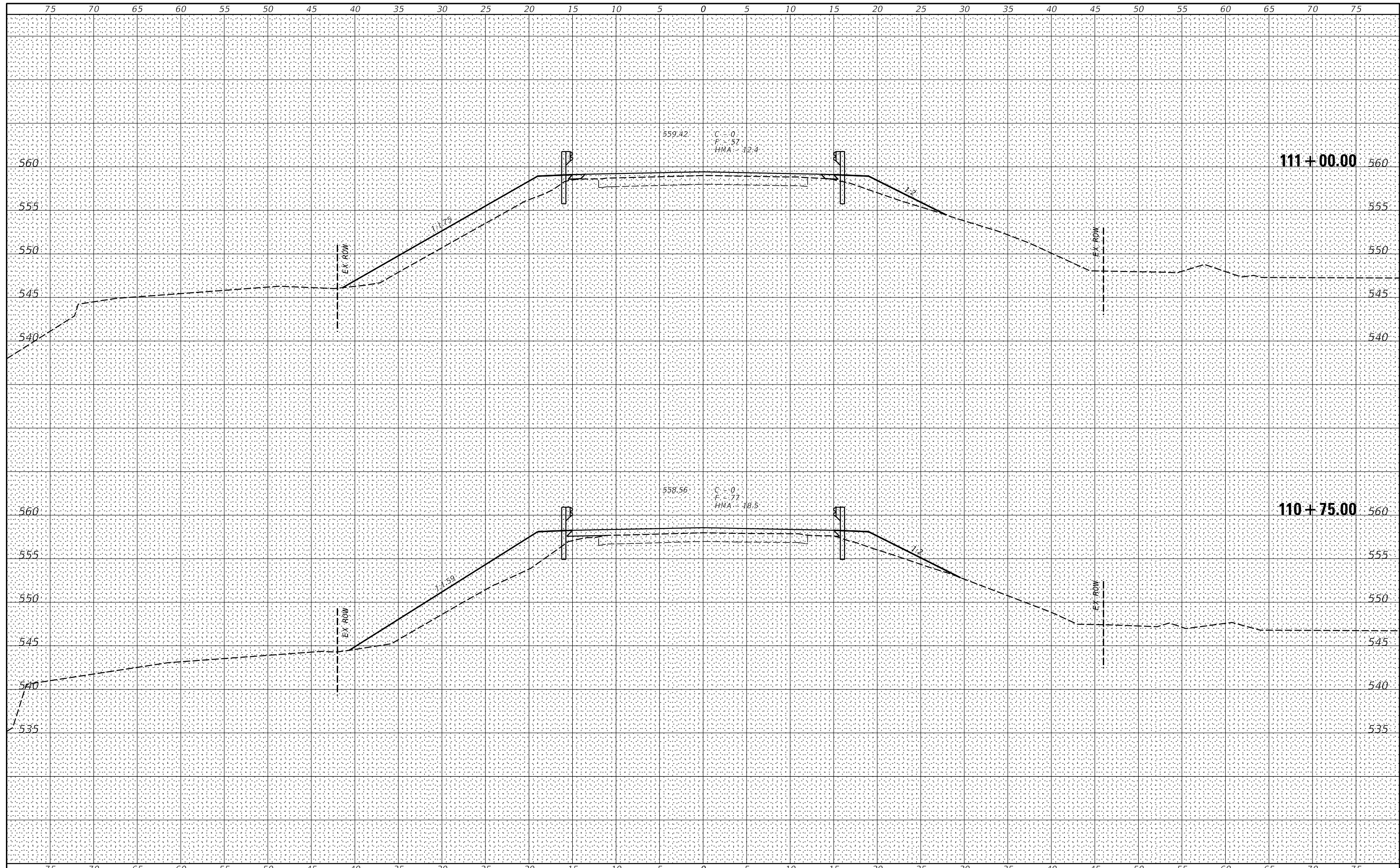
CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 8 OF 14 SHEETS STA. 110+45.00 TO STA. 110+60.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	34
CONTRACT NO. 93804				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINISHED SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
NOTE BOOK	
AREAS CHECKED	
NO.	



USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



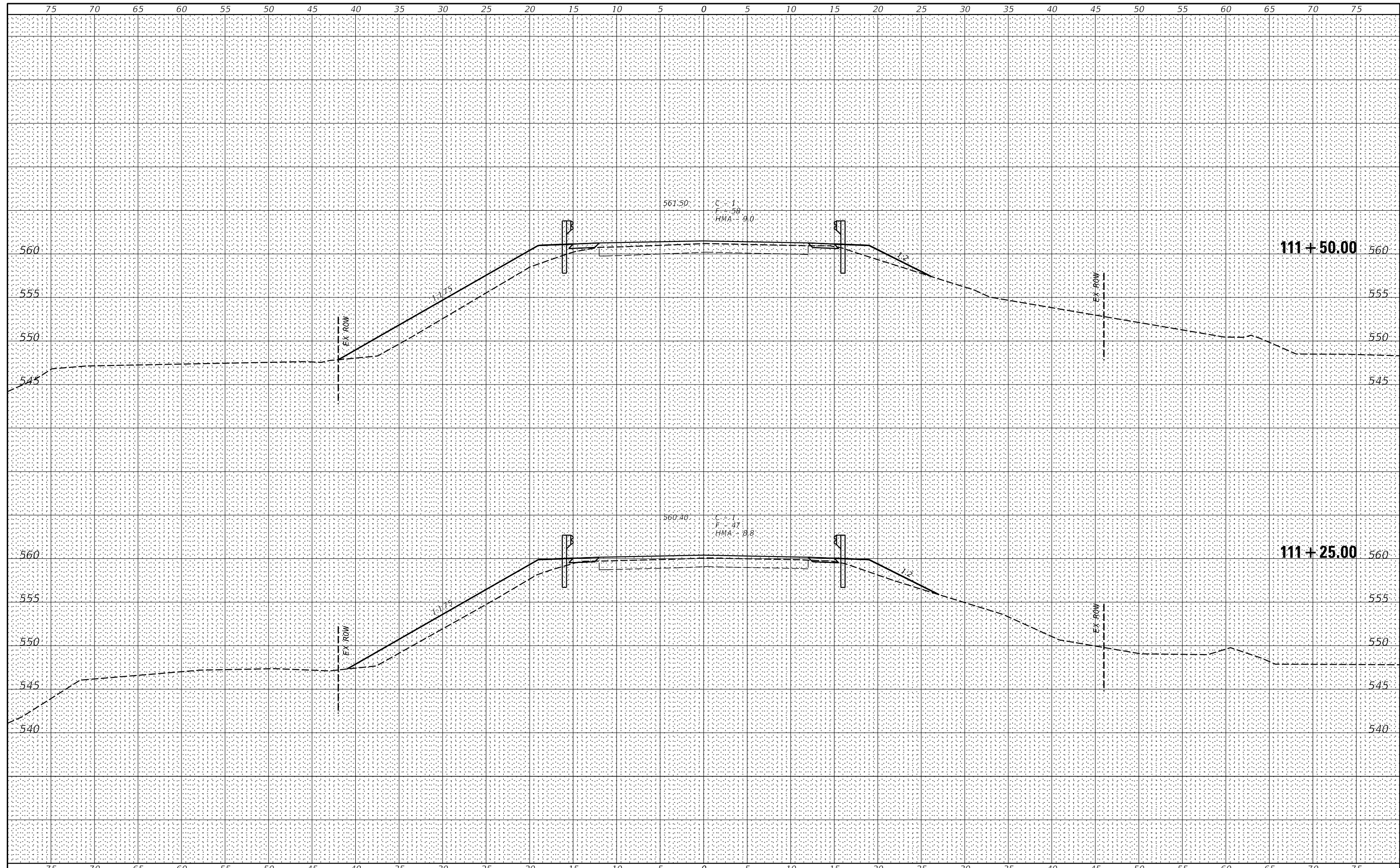
VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

CROSS SECTIONS
 SCALE: 1" = 5' SHEET NO. 9 OF 14 SHEETS STA. 110+75.00 TO STA. 111+00.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	35
CONTRACT NO. 93804				
FED. ROAD DIST. NO. - ILLINOIS FED. AID PROJECT				

DATE	
BY	
FINL SURVEY NO.	
SURVEY PLOTTED	
NOTE BOOK	
TEMPLATE AREAS CHECKED	

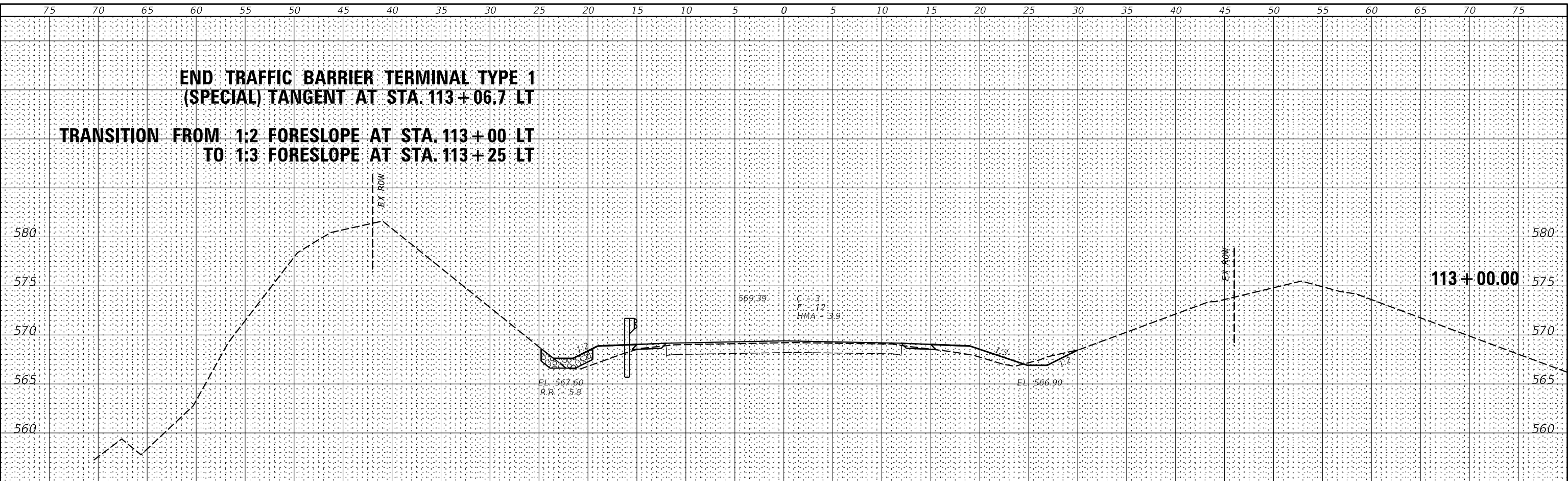
DATE	
BY	
ORIGINAL SURVEY NO.	
SURVEY PLOTTED	
NOTE BOOK	
TEMPLATE AREAS CHECKED	



USER NAME = *USER*	DESIGNED -	REVISED -	 VEENSTRA & KIMM INC. Springfield, IL. Phone: (217)544-8033 IL. Design Firm No. 184-001939	CROSS SECTIONS		C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
PLOT SCALE = *SCALE*	DRAWN -	REVISED -				4	18-00080-00-BR	CASS	40	36
PLOT DATE = *DATE*	CHECKED -	REVISED -		SCALE: 1" = 5'		SHEET NO. 10 OF 14 SHEETS		STA. 111+25.00 TO STA. 111+50.00		CONTRACT NO. 93804
	DATE -	REVISED -		FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT						

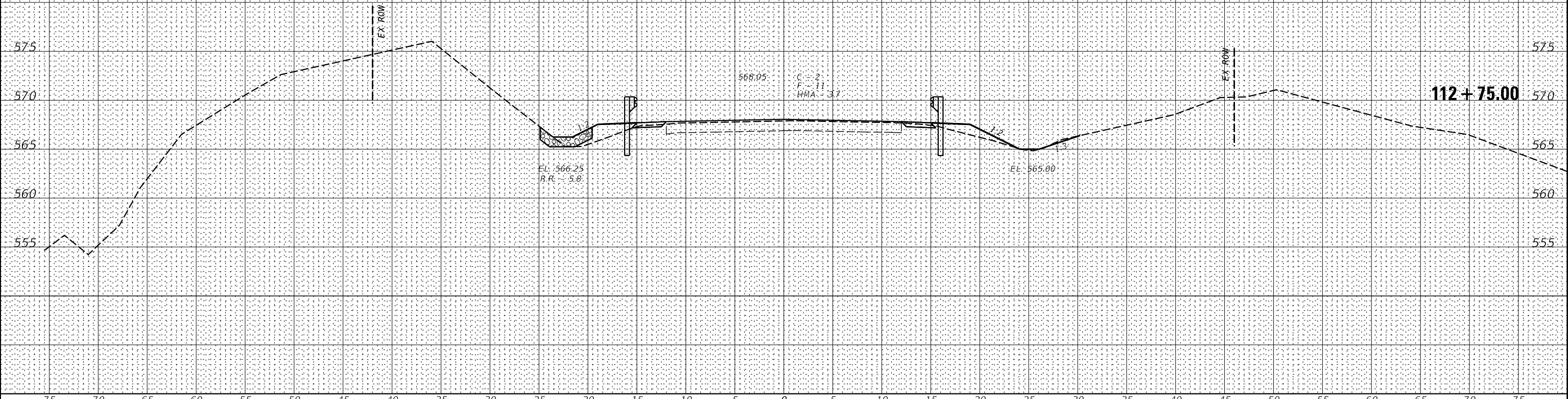
**END TRAFFIC BARRIER TERMINAL TYPE 1
(SPECIAL) TANGENT AT STA. 113+06.7 LT**

**TRANSITION FROM 1:2 FORESLOPE AT STA. 113+00 LT
TO 1:3 FORESLOPE AT STA. 113+25 LT**



**END TRAFFIC BARRIER TERMINAL TYPE 1
(SPECIAL) TANGENT AT STA. 112+95.8 RT**

**TRANSITION FROM 1:2 FORESLOPE AT STA. 112+75 RT
TO 1:3 FORESLOPE AT STA. 113+00 RT**



DATE	
BY	
FINISHED SURVEY	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

DATE	
BY	
ORIGINAL SURVEY	
PLOTTED	
TEMPLATE	
AREAS	
CHECKED	
NO.	

USER NAME = *USER*	DESIGNED -	REVISED -
PLOT SCALE = *SCALE*	DRAWN -	REVISED -
PLOT DATE = *DATE*	CHECKED -	REVISED -
	DATE -	REVISED -



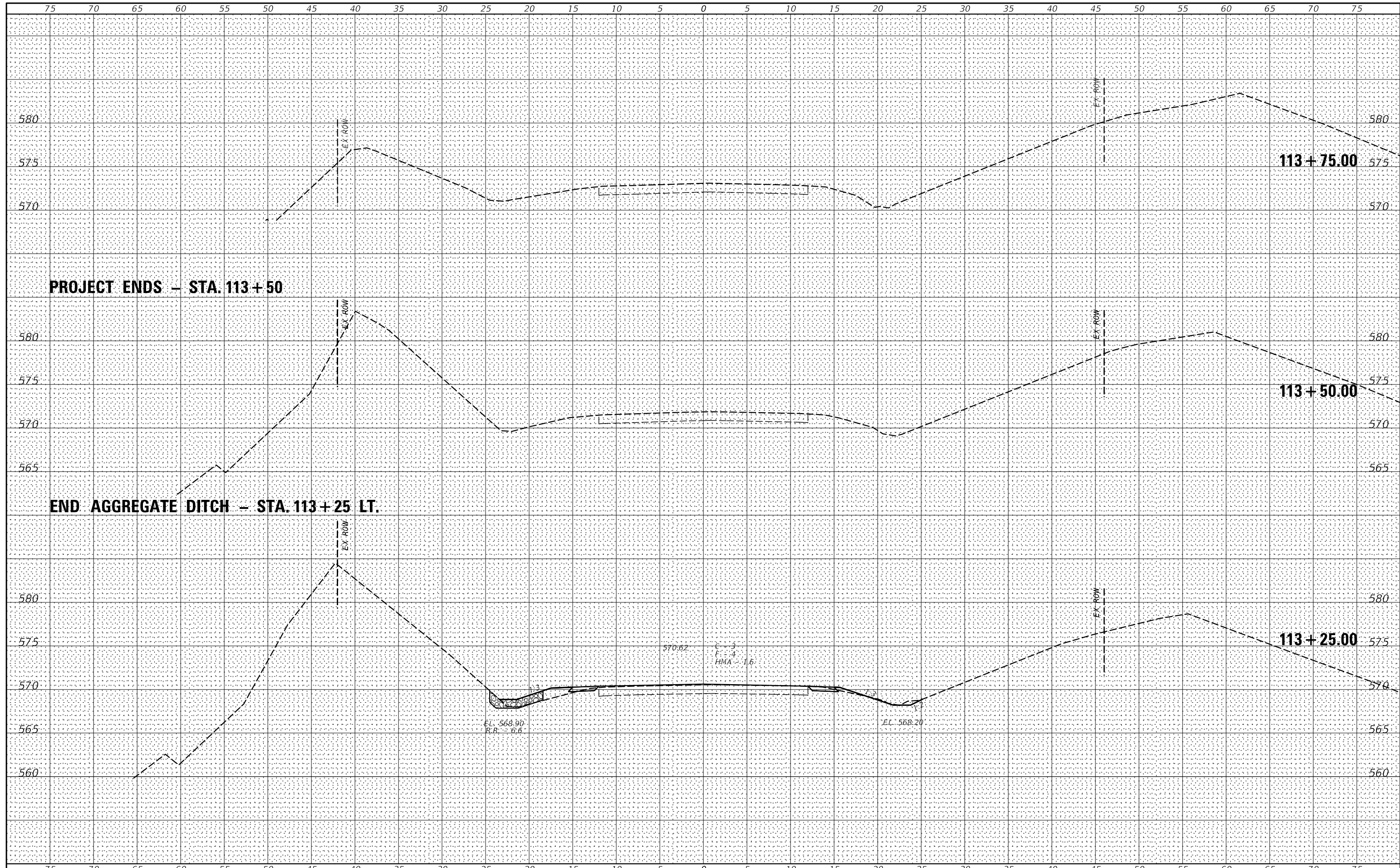
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IL. Design Firm No. 184-001939

CROSS SECTIONS
SCALE: 1" = 5'
SHEET NO. 13 OF 14 SHEETS
STA. 112+75.00 TO STA. 113+00.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	39
CONTRACT NO. 93804				
FED. ROAD DIST. NO. ILLINOIS FED. AID PROJECT				

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

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



USER NAME = *USER*	DESIGNED -	REVISED -
	DRAWN -	REVISED -
PLOT SCALE = *SCALE*	CHECKED -	REVISED -
PLOT DATE = *DATE*	DATE -	REVISED -



VEENSTRA & KIMM INC.
 Springfield, IL. Phone: (217)544-8033
 IL. Design Firm No. 184-001939

CROSS SECTIONS

SCALE: 1" = 5' SHEET NO. 14 OF 14 SHEETS STA. 113+25.00 TO STA. 113+50.00

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
4	18-00080-00-BR	CASS	40	40
CONTRACT NO. 93804				
FED. ROAD DIST. NO. [ILLINOIS] FED. AID PROJECT				