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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
**PROPOSED
BRIDGE PLANS**
C.H. 20 (LAKE ROAD) OVER BOND BRANCH
SECTION 21-00110-00-BR
PROJECT BNA7(611)
BRIDGE IMPROVEMENT
CLINTON COUNTY
LOCAL BRIDGE FORMULA PROGRAM FUNDS

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
C.H. 20 (LAKE ROAD)	21-00110-00-BR	CLINTON	19	1
		ILLINOIS	CONTRACT 97867	

DESIGN CLASSIFICATION

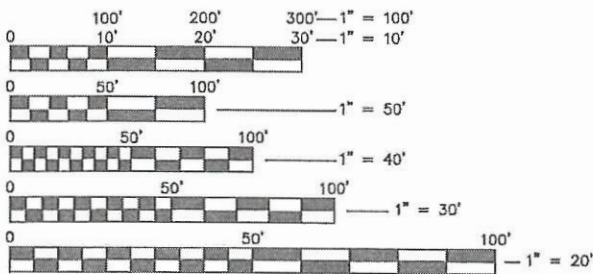
LOCAL ROAD
CURRENT A.D.T. = 950
DESIGN SPEED = 55 MPH
DESIGN A.D.T. = 950

PROJECT LOCATION:

EXISTING STRUCTURE NO. 014-3010, 3 SPANS CONSISTS OF PRECAST CONCRETE DECK WITH TIMBER AND CONCRETE PILING MEASURING 85'-5" BACK TO BACK ABUTMENTS AND 26'-0" OUT TO OUT DECK.

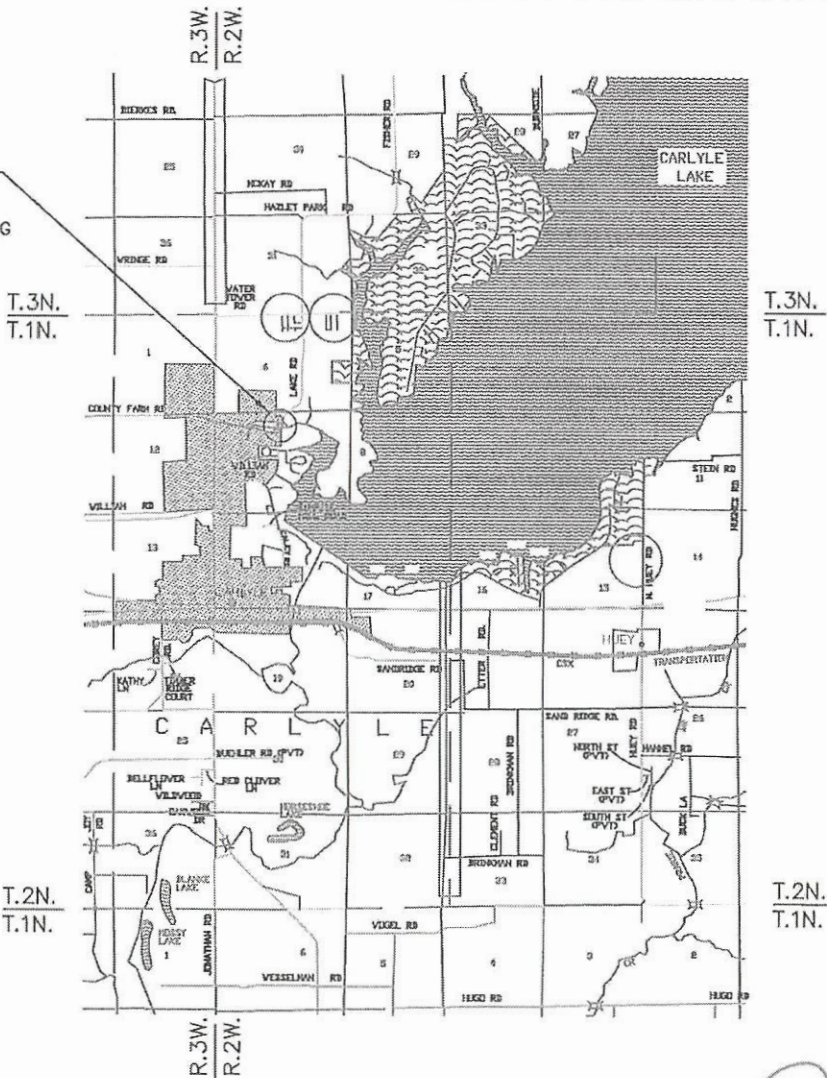
PROPOSED STRUCTURE (S.N. 014-5117) IS A SINGLE SPAN PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH) ON SPILL THROUGH STEEL "H" PILE BENT ABUTMENTS. MEASURING 80'-6" BACK TO BACK OF ABUTMENTS WITH 28'-0" ROADWAY WIDTH.

BEGIN CONSTRUCTION STA. 159+50
END CONSTRUCTION STA. 163+50



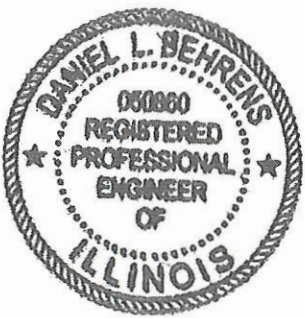
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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



LOCATION MAP

GROSS LENGTH = 400 FT = 0.07 MILES
NET LENGTH = 400 FT = 0.07 MILES



Daniel L. Behrens DATE 6-13-25
COUNTY ENGINEER
ILLINOIS P.E. # 62-50860 EXPIRES 11/30/25



LOCATION OF SECTION
INDICATED THUS: —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

APPROVED *June 13 2025*
Carl J. Behrens
COUNTY ENGINEER

PASSED *June 18 2025*
Roy Ziegler
DISTRICT 8 ENGINEER OF LOCAL ROADS & STREETS

Releasing for Bid
Based on Limited Review *June 18 2025*
Don Meyer
REGION FIVE ENGINEER

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

PLAN	DESIGNED	BY	DATE
	CHECKED		
	DATE		
	NOTE BOOK		

GENERAL NOTES

- ALL ELEVATIONS REFER TO U.S.G.S. MEAN SEA LEVEL DATUM (NAV88)
- THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SUB-CONTRACTED WORK, REGARDLESS OF FUNDING SOURCE, THE SPECIAL PROVISIONS, SPECIFICATIONS, AND STANDARD SPECIFICATIONS SHALL GOVERN CONTRACTUAL REQUIREMENTS FOR SAID ARRANGEMENTS, THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC CONTROL AND PROTECTION.
- ALL ADVANCED WARNING SIGNS SHALL BE 48" FLUORESCENT ORANGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING TRAFFIC CONTROL DEVICES SO THESE ARE NOT HAZARDS TO TRAFFIC, AT ALL TIMES OF THE DAY AND NIGHT.
- UNDERGROUND UTILITIES ARE SHOWN IN ACCORDANCE WITH THE BEST AVAILABLE RECORDS AND THEIR ACTUAL LOCATION IS NOT GUARANTEED TO BE AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING J.U.L.I.E. IN ALL AREAS TO BE DISTURBED WHETHER WITHIN PROJECT LIMITS OR NOT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING POSITIVE DRAINAGE IN THE DISTURBED AREAS, TO THE SATISFACTION OF THE ENGINEER.
- ALL AREAS THAT ARE DISTURBED BEYOND THE CONSTRUCTION LIMITS SHALL BE GRADED, SEEDED, AND HAVE EROSION CONTROLS PLACED, BY THE CONTRACTOR AT HIS/HER EXPENSE, IN THE SAME MANNER AS FINAL GRADING WORK PER THE SPECIFICATION, TO THE SATISFACTION OF THE ENGINEER.
- ANY LIMIT OF DEPICTED REMOVAL AREAS SHALL BE SAWN AND THIS WORK SHALL BE INCLUDED IN THE CONTRACT UNIT PRICES FOR REMOVAL WORK UNLESS PROVIDED FOR VIA A SEPARATE UNIT PAY ITEM.
- ALL MATERIAL NOT UTILIZED, INCLUDING EARTH MATERIAL EXCAVATED IN ORDER TO ACHIEVE THE PROPOSED GROUND AND BASE ELEVATIONS SHOWN IN THE PLANS, OR INCORPORATED INTO THE PROJECT, SHALL BE REMOVED FROM THE SITE AT THE EXPENSE OF THE CONTRACTOR IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REQUIREMENTS.
- THE CONTRACTOR SHALL CONTACT THE LOCAL POST OFFICE, AND ANY OTHER OWNERS OF MAILBOXES, WITHIN PROJECT LIMITS TO ARRANGE MODIFIED MAIL DELIVERY WITHIN THE PROJECT LIMITS.
- TEMPORARY SEEDING AND FINAL SEEDING OF DISTURBED AREAS WITHIN THE CONSTRUCTION LIMITS SHALL BE DONE BY OTHERS.
- FOR TEST BARS WITH MULTIPLE HEAT NUMBERS, A TEST BAR SHALL BE PROVIDED WITH EACH HEAT NUMBER FOR EACH BAR SIZE.
- ALL STRIPING WILL BE DONE BY OTHERS.
- THE FOLLOWING RATES OF APPLICATION HAVE BEEN USED IN CALCULATING PLAN QUANTITIES.

APPLICATION RATES

AGGREGATE MATERIALS
GRANULAR MATERIALS
AGGREGATE (PRIME COAT); (SAND)

2.05 TONS/CU YD
2.05 TONS/CU YD
5 LBS/SQ YD (AGGREGATE SURFACE) OR
3 LBS/SQ YD (CONCRETE OR BITUMINOUS SURFACE)

BITUMINOUS CONCRETE SURFACE & BINDER COURSE
BITUMINOUS PRIME COAT

112 LBS/SQ YD/INCH OR 2.016 TONS/CU YD
RESIDUAL ASPHALT RATE = 0.25 LBS/SQ FT (ON AGGREGATE SURFACE), OR
RESIDUAL ASPHALT RATE = 0.05 LBS/SQ FT (ON MILLED SURFACES), OR
RESIDUAL ASPHALT RATE = 0.025LBS/SQ FT (BETWEEN LIFTS OF ASPHALT)

FOR SEEDING AREAS
NITROGEN FERTILIZER NUTRIENT
PHOSPHORUS FERTILIZER NUTRIENT
POTASSIUM FERTILIZER NUTRIENT
AGRICULTURAL GROUND LIMESTONE
TEMPORARY EROSION CONTROL SEEDING

90 LBS/ACRE
90 LBS/ACRE
90 LBS/ACRE
2 TONS/ACRE
100 LBS/ACRE

EXTRA BARS FOR TEST SAMPLES
BILL OF MATERIALS

BAR	NO.	SIZE	LENGTH	SHAPE
v1(o)	1	#5	27'-11"	—
u(o)	1	#6	10'-0"	—
h1(o)	1	#7	28'-11"	—

100 LBS OF TEST BARS

LIST OF HIGHWAY STANDARDS

001001-02 AREAS OF REINFORCEMENT BARS
515001-04 NAME PLATE FOR BRIDGES
630001-13 STEEL PLATE BEAM GUARDRAIL
630301-09 SHOULDER WIDENING FOR TYPE 1
(SPECIAL) GUARDRAIL TERMINALS
631032-10 TRAFFIC BARRIER TERMINAL, TYPE 6A
701901-10 TRAFFIC CONTROL DEVICES
725001-01 OBJECT AND TERMINAL MARKERS
BLR 21-9 TYP APPLICATION OF
TRAF CONTROL DEVICES
FOR CONST ON RUAL
LOCAL HIGHWAYS

KNOWN UTILITY COMPANIES

ELECTRIC:

CITY OF CARLYE
ANDY HENNERSTROM
PHONE: (618) 594-3321
(618) 795-5764

WATER:

CLINTON COUNTY EAST PUB. WATER
JASON GREEN
PHONE: (618) 292-7622
(618) 532-8569

COMMITMENTS

AN EXCLUSIONARY BARRIER IN THE FORM OF SILT FENCING
SHALL BE PLACED ALONG THE PERIMETER OF THE PROJECT
AREA FROM STATION 163+50 RT AND LT TO STATION 159+50
RT AND LT ON OR BEFORE JULY 31 OF ANY GIVEN YEAR.

MIXTURE USE	SURFACE	BINDER
AC/PG	PG 64-22	PG 64-22
RAP % (MAX)	See Sp. Prov.	See Sp. Prov.
DESIGN AIR VOIDS	4.0% @ Ndes=50	4.0% @ Ndes=50
MIX COMPOSITION (GRADUATION MIXTURE)	IL 9.5	IL 9.5 FG
FRICTION AGG	MIXTURE C	N/A

USER NAME =	DESIGNED -	REVISED -
PLLOT SCALE =	DRAWN - WRK	REVISED -
PLLOT DATE =	CHECKED - DLB	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL NOTES, STANDARDS
APPLICATION RATES, UTILITIES & COMMITMENTS

SCALE: SHEET 2 OF 19 SHEETS STA. 159+50 TO STA. 163+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 4	21-00110-00-BR	CLINTON	19	2
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY
20300100	CHANNEL EXCAVATION	CU YD	280
28000400	PERIMETER EROSION BARRIER	FOOT	760
28100205	STONE RIPRAP, CLASS A3	TON	710
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	432
40602965	HOT-MIX ASPHALT BINDER COURSE, IL- 9.5 FG, N50	TON	210
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	94
48102100	AGGREGATE WEDGE SHOULDER, TYPE B	TON	300
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	1
50200100	STRUCTURE EXCAVATION	CU YD	81
50300225	CONCRETE STRUCTURES	CU YD	31
50300260	CONCRETE ENCASEMENT	CU YD	3.5
50400605	PRECAST PRESTRESSED CONCRETE DECK BEAMS (33" DEPTH)	SQ FT	2217
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	4320
* 50901050	STEEL RAILING, TYPE SM	FOOT	161
51201400	FURNISHING STEEL PILES HP10X42	FOOT	210
51265001	DRILLING AND SETTING PILES (IN SOIL)	CU FT	323
51265002	DRILLING AND SETTING PILES (IN ROCK)	CU FT	157
51500100	NAME PLATES	EACH	1
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	246

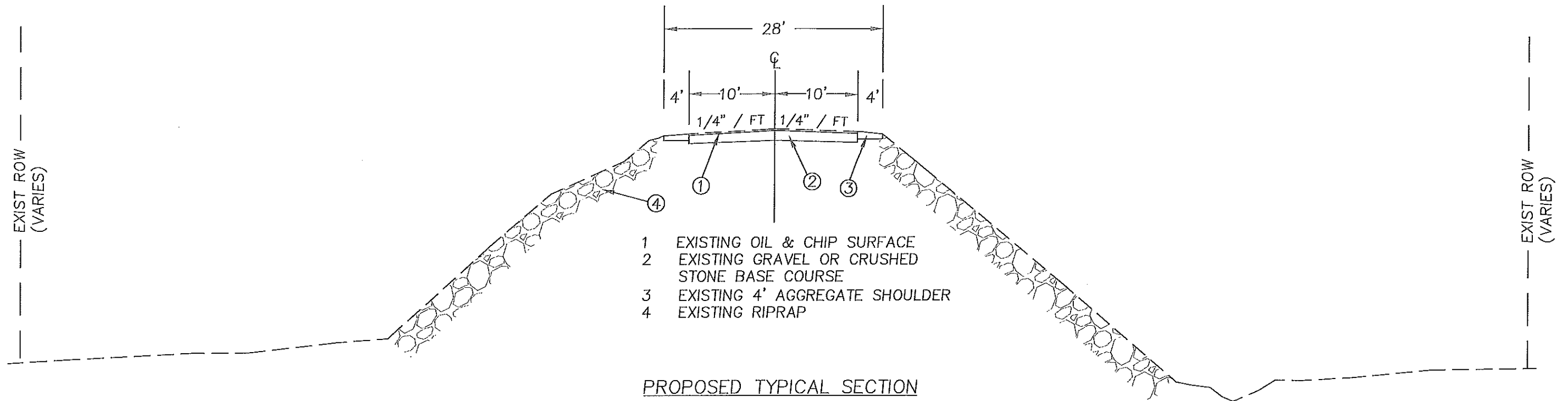
CODE NO.	ITEM	UNIT	TOTAL QUANTITY
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	475
59300100	CONTROLLED LOW-STRENGTH MATERIAL	CU YD	48.2
* 63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4
* 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4
63200310	GUARDRAIL REMOVAL	FOOT	164
67100100	MOBILIZATION	L SUM	1
* 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
X2810708	STONE DUMPED RIPRAP, CLASS A4 (SPECIAL)	SQ YD	491
X7010216	TRAFFIC CONTROL & PROTECTION, SPECIAL	L SUM	1

* SPECIALTY ITEM

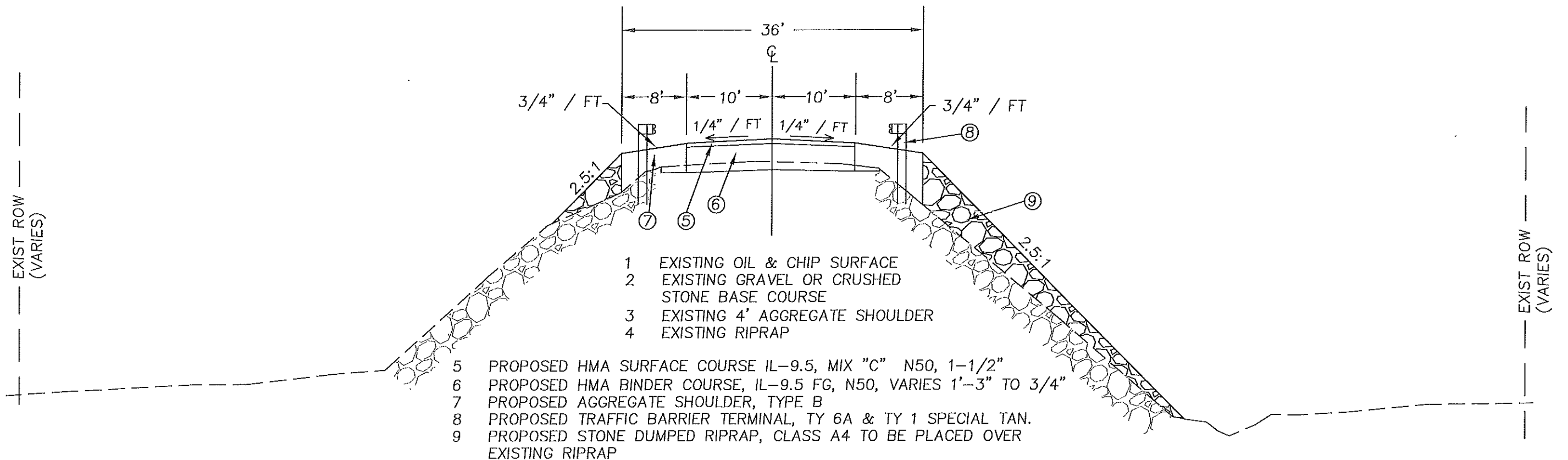
PLAN	DATE
BY	
CHECKED	
DESIGNED	
NOTED	
NO.	

PROFILE	DATE
BY	
CHECKED	
DESIGNED	
NOTED	
NO.	

EXISTING TYPICAL SECTION
C.H. 20 (LAKE ROAD)
STATION 159+50 TO STATION 163+50



PROPOSED TYPICAL SECTION
C.H. 20 (LAKE ROAD)
STATION 159+50 TO STATION 163+50



USER NAME	DESIGNED	REVISED
PLUT SCALE	DRAWN - WRK	REVISED
PLUT DATE	CHECKED - DLB	REVISED
	DATE	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTIONS

SCALE: SHEET 4 OF 19 SHEETS STA. 159+50 TO STA. 163+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 4	21-00110-00-BR	CLINTON	19	4
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				

EARTHWORK SCHEDULE

LOCATION	CHANNEL EXCAVATION	STRUCTURE EXCAVATION	EARTHWORK BALANCE WASTE (+) OR SHORTAGE (-)
	CU YD	CU YD	
STA 161+50	280		280
NORTH & SOUTH ABUTMENTS		81	81
TOTAL	280	81	361

PAY ITEMS

CHANNEL EXCAVATION = 280 CU YD
STRUCTURE EXCAVATION = 81 CU YD

HOT-MIX ASPHALT SURFACE COURSE
IL-9.5 MIX C, N50

LOCATION/STATION	TON
STA 159+85 TO 163+30	94
TOTAL	94

HOT-MIX ASPHALT BINDER COURSE,
IL-9.5 FG, N50

LOCATION/STATION	TON
STA. 160+05 TO 161+10	100
STA. 161+90 TO 163+10	110
TOTAL	210

BITUMINOUS MATERIAL (TACK COAT)

LOCATION/STATION	POUND
STA 163+10 TO 161+90 @ .05 lb/ft	128
STA 161+10 TO 160+05 @ .05 lb/ft	110
STA 163+30 TO 161+90 @ .025 lb/ft	74
STA 161+90 TO 161+10 @ .025 lb/ft	56
STA 161+10 TO 159+85 @ .025 lb/ft	66
TOTAL	432

STONE DUMPED
RIPRAP, CLASS A4 (SPECIAL)

LOCATION/STATION	SQ YD
AT EXCAVATED CHANNEL STA. 616+11 TO 161+89	491
TOTAL	491

STONE RIPRAP,
CLASS A3

LOCATION/STATION	TON
STA. 159+50 TO 161+05 RT.	160
STA. 159+50 TO 161+05 LT.	67
STA. 161+95 TO 163+50 RT.	218
STA. 161+95 TO 163+50 LT.	265
TOTAL	710

AGGRAGATE WEDGE
SHOULDER, TYPE B

LOCATION/STATION	TON
STA. 159+50 TO 161+05 RT.	60
STA. 159+50 TO 161+05 LT.	62
STA. 161+95 TO 163+50 RT.	91
STA. 161+95 TO 163+50 LT.	87
TOTAL	300

PERIMETER EROSION BARRIER

LOCATION/STATION	FOOT
STA 163+50 TO 161+60 52' ± LT	190
STA 161+40 TO 159+50 52' ± LT	190
STA 163+50 TO 161+70 53' ± RT	160
STA 161+50 TO 159+50 53' ± RT	200
TOTAL	760

GUARDRAIL SCHEDULE

LOCATION	TRAFFIC BARRIER TERMINAL, TYPE 1, (SPECIAL) TANGENT	TERMINAL MARKER DIRECT APPLIED	TRAFFIC BARRIER TERMINAL TYPE 6A	STEEL RAILING TYPE SM
	EACH	EACH	EACH	FEET
160+71.75 TO 161+09.75 LT & RT			2	
161+90.25 TO 162+28.25 LT & RT			2	
160+12.75 LT & RT		2		
162+87.25 LT & RT		2		
160+12.75 TO 160+71.75 LT & RT	2			
162+28.25 TO 162+87.25 LT & RT	2			
161+09.75 TO 161+90.25 LT (BRIDGE)				80.5
161+09.75 TO 161+90.25 RT (BRIDGE)				80.5
TOTALS	4	4	4	161

GUARDRAIL REMOVAL

LOCATION/STATION	FEET
STA 160+67 TO 161+08 RT	41
STA 160+67 TO 161+08 LT	41
STA 161+92 TO 162+33 LT	41
STA 161+92 TO 162+33 RT	41
TOTAL	164

DRILLING AND SETTING PILES IN
ROCK

LOCATION/STATION	TON
NORTH ABUTMENT	78.5
SOUTH ABUTMENT	78.5
TOTAL	157

DRILLING AND SETTING PILES IN
SOIL

LOCATION/STATION	TON
NORTH ABUTMENT	142
SOUTH ABUTMENT	181
TOTAL	323

USER NAME ==	DESIGNED ==	REVISED ==
	DRAWN == WRK	REVISED ==
PLOT SCALE == 1 = 10	CHECKED == DLB	REVISED ==
PLOT DATE ==	DATE ==	REVISED ==

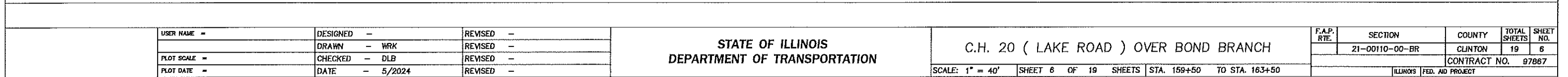
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

SCALE: SHEET 5 OF 19 SHEETS STA. 159+50 TO STA. 163+50

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	21-00110-00-BR	CLINTON	19	5
CONTRACT NO. 97887				
ILLINOIS FED. AID PROJECT				

PROFILE		BY	DATE
SURVEYED	_____		
PLOTTED	_____		
GRAPHS CHECKED	_____		
FILE NOTED	_____		
STRUCTURE NOTATIONS OK'D	_____		



BENCHMARK: TBM Cut Square on NW Hub Rail
Sta 161+09, 13' Lt
El 458.73

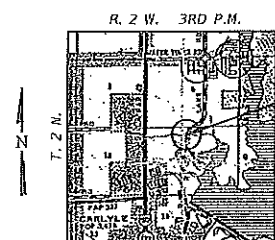
EXISTING STRUCTURE: SN 014-3010

The existing structure, built in 1963, consists of a three-span precast concrete deck beam bridge on spill through concrete abutments and concrete piers with timber and concrete piles. The existing structure measures 85'-5" back to back of abutments and 28'-0" out to out of bridge deck.

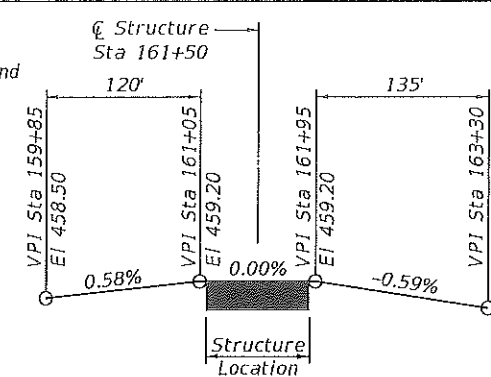
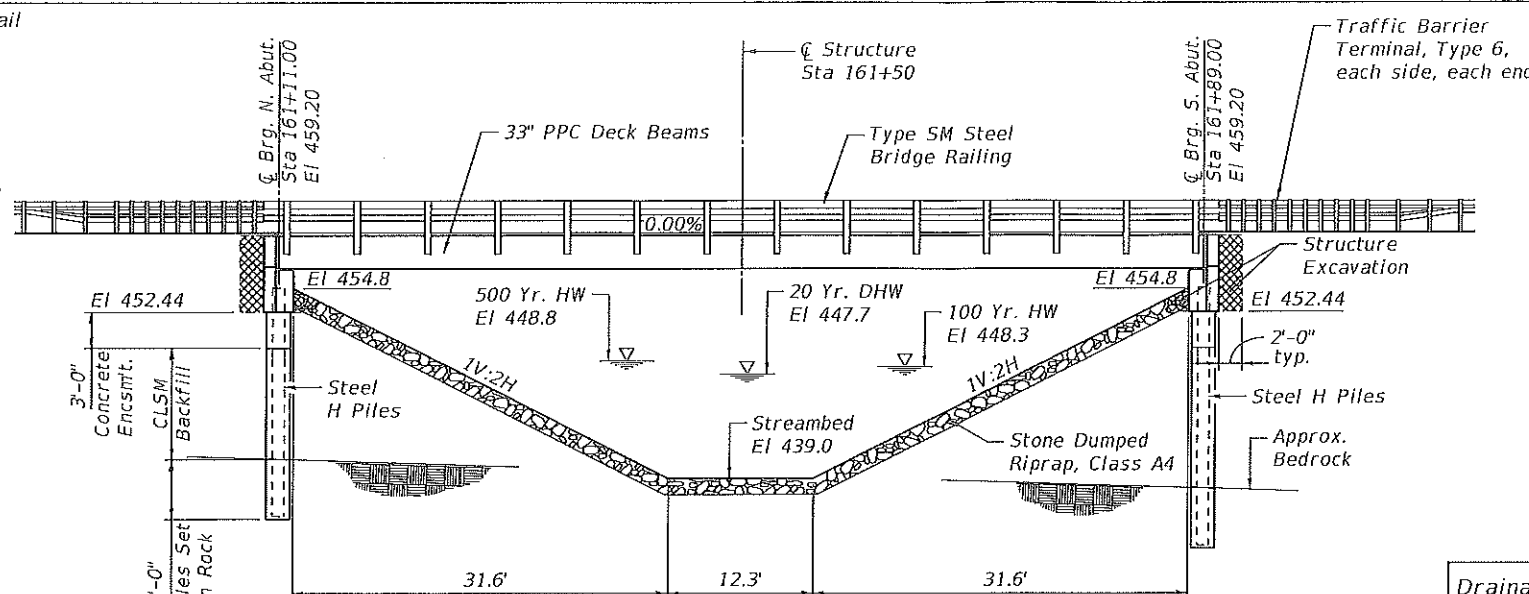
The Contractor shall remove and dispose of the existing structure in accordance with Section 501 of the Standard Specifications.

The existing roadway will be closed to traffic during the construction period.

SALVAGE: No salvage



LOCATION SKETCH



PROFILE GRADE - CH 20 (LAKE RD.)

WATERWAY INFORMATION

Drainage Area = 1.99 Sq. Mi.			Low Grade El = 458.0			@ Sta 169+00			
Flood	Freq. Yr.	Q C.F.S.	Opening Sq Ft		Nat. HWE	Head - Ft		Headwater El	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	20	840	248	258	447.7	0.1	0.1	447.8	447.8
Base	100	1,220	277	287	448.3	0.2	0.2	448.5	448.5
Overtopping	Overtopping is controlled by Calyle Lake Pool Elevation								
Max. Calc.	500	1,660	301	313	448.8	0.5	0.4	449.3	449.2

SCOUR TABLE

Event/Limit State	Design Scour Elevation (Ft)		Item 113
	S. Abut.	N. Abut.	
Q100	452.44	452.44	8B
Q200	452.44	452.44	
Design	452.44	452.44	
Check	452.44	452.44	

DESIGN SPECIFICATIONS
2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

LOADING HL-93
Allow 50 p.s.f. for future wearing surface
DESIGN STRESSES

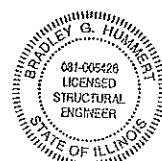
PRECAST PRESTRESSED UNITS	FIELD UNITS
f'c = 6,000 psi	f'c = 3,500 psi
f'ci = 5,000 psi	fy = 60,000 psi (reinf.)
f's = 270,000 psi	fy = 50,000 psi
(1/2" Strands)	(M270 Gr. 50)
f'si = 201,960 psi	
(1/2" Strands)	

SEISMIC DATA
Seismic Performance Zone (SPZ): 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.258 g
Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.599 g
Soil Site Class = D

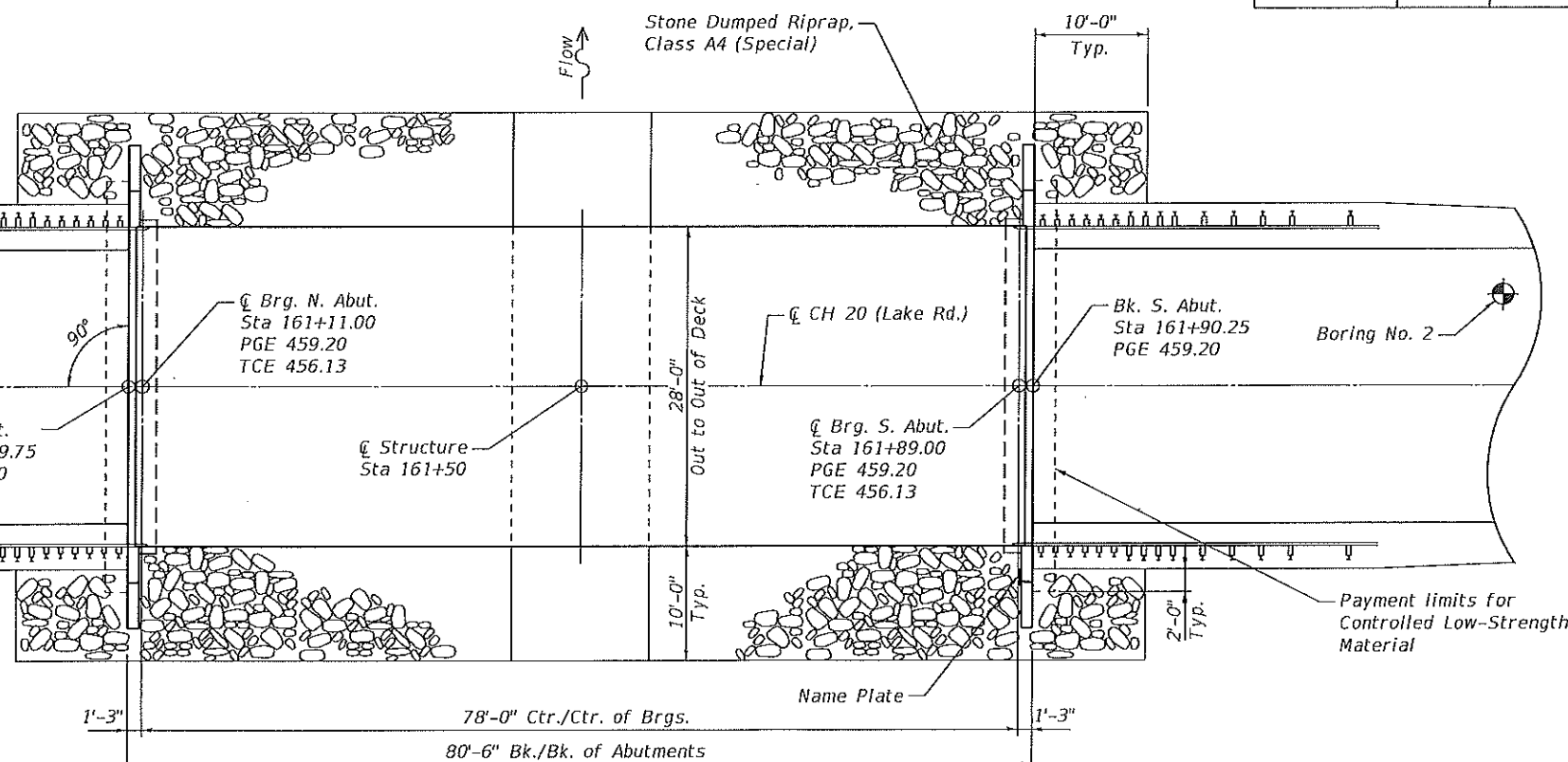
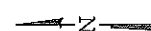
"I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO LRFD Bridge Design Specifications'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

Bradley G. Hummert
Licensed Structural Engineer
in Illinois No. 081-005428

Expires: November 30, 2026



PLAN



HMG
ENGINEERS
IL PROF DESIGN FIRM 184.000899

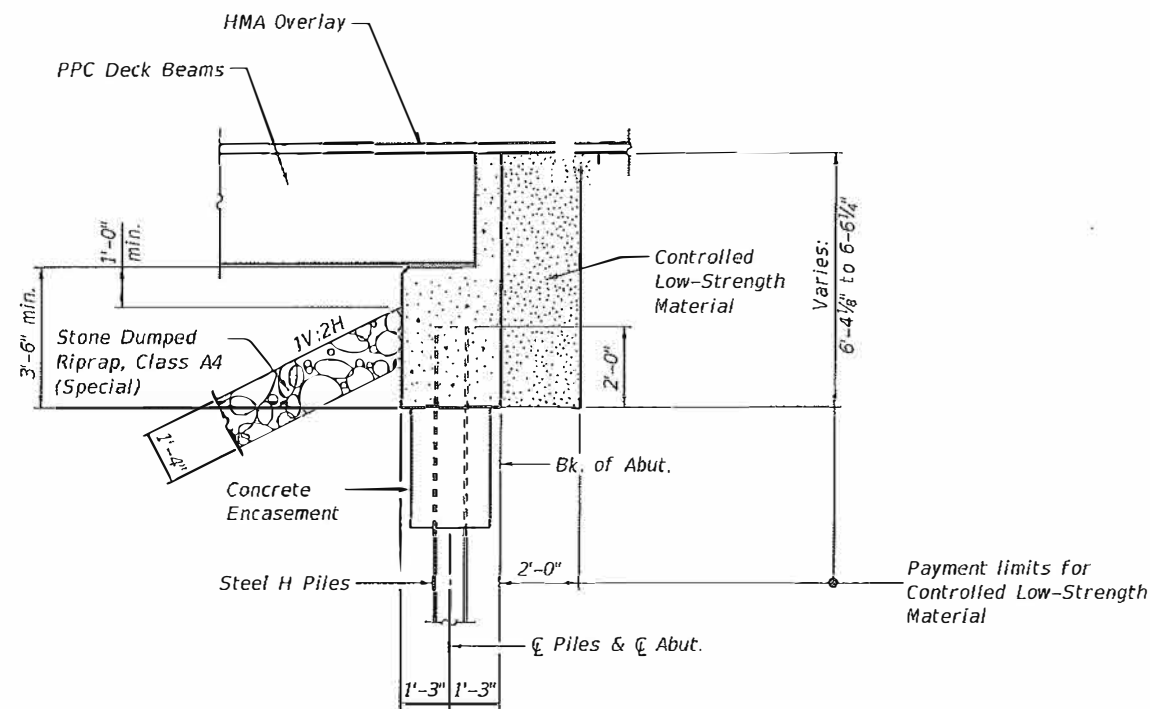
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PLOT SCALE = 2.0000' / 1"	DRAWN -	REVISED -
PLOT DATE = 3/4/2025	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL PLAN & ELEVATION

SCALE: SHEET 1 OF 9 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	7
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				



SECTION THRU ABUTMENT

BOND BRANCH
BUILT 202 BY
CLINTON COUNTY
SECTION 21-00110-00-BR
FAS RT. 1781 STA 161+50
S.N. 014-5117
LOADING HL-93

NAME PLATE

Locate Name Plate as shown in
Plan View. See Std. 515001.

GENERAL NOTES

1. Reinforcement bars designated (E) shall be epoxy coated.
2. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER.	SUB.	TOTAL
Channel Excavation	Cu. Yd.	—	280	280
Stone Dumped Riprap, Class A4 (Special)	Sq. Yd.	—	491	491
Hot-Mix Asphalt Surface Course, IL-9.5, Mix "C", N50	Ton	51	—	51
Removal of Existing Structures	Each	—	—	1
Structure Excavation	Cu. Yd.	—	81.0	81.0
Concrete Structures	Cu. Yd.	—	31.0	31.0
Concrete Encasement	Cu. Yd.	—	3.5	3.5
Precast Prestressed Concrete Deck Beams (33")	Sq. Ft.	2,217	—	2,217
Reinforcement Bars, Epoxy Coated	Pound	—	4,320	4,320
Steel Railing, Type SM	Foot	161	—	161
Furnishing Steel Piles HP 10x42	Foot	—	210	210
Drilling and Setting Piles in Soil	Cu. Ft.	—	323	323
Drilling and Setting Piles in Rock	Cu. Ft.	—	157	157
Name Plates	Each	—	—	1
Waterproofing Membrane System	Sq. Yd.	246	—	246
Portland Cement Mortar Fairing Course	Foot	475	—	475
Controlled Low-Strength Material	Cu. Yd.	—	48.2	48.2

MODEL: D03010
FILE NAME: H:\5584-Clinton Co Lake Road Bridge\CAD Sheets\0145117-001-03a.dwg

HMG
ENGINEERS
ILLINOIS PROFESSIONAL DESIGN FIRM 184.000899

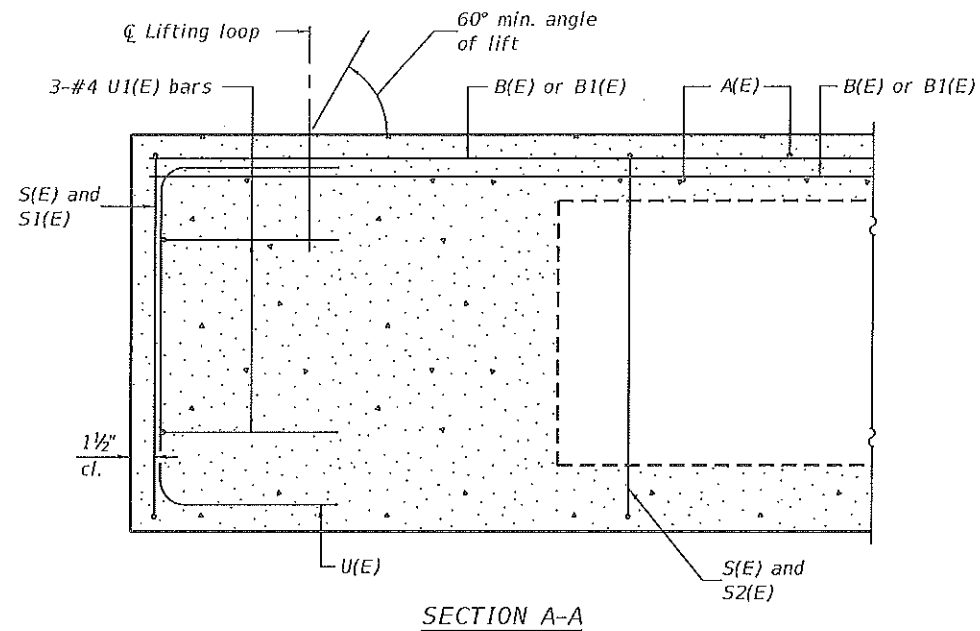
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PLOT SCALE = 2.0000' / 1"	DRAWN -	REVISED -
PLOT DATE = 3/4/2025	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

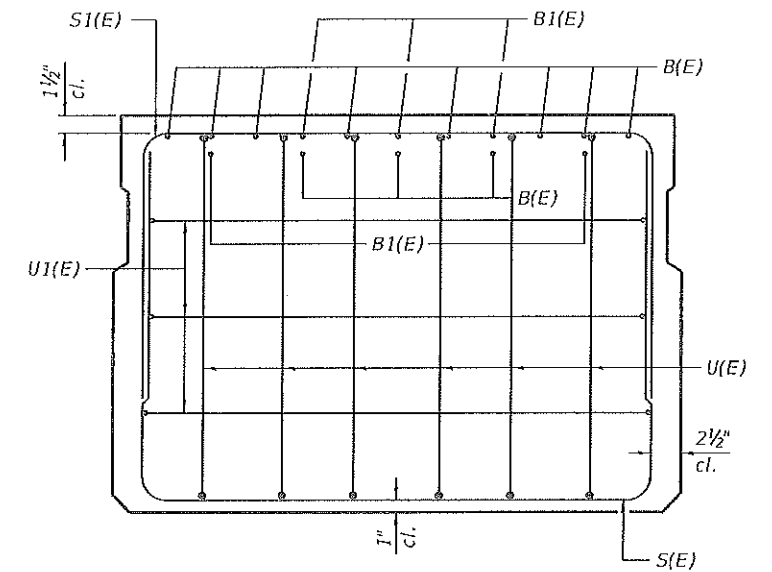
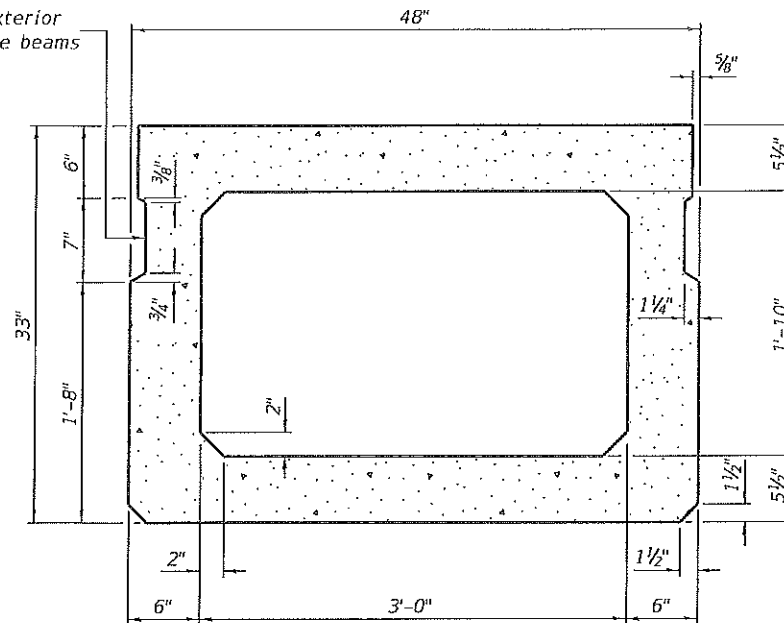
GENERAL DATA
STRUCTURE NO. 014-5117

SCALE: SHEET 2 OF 9 SHEETS STA. TO STA.

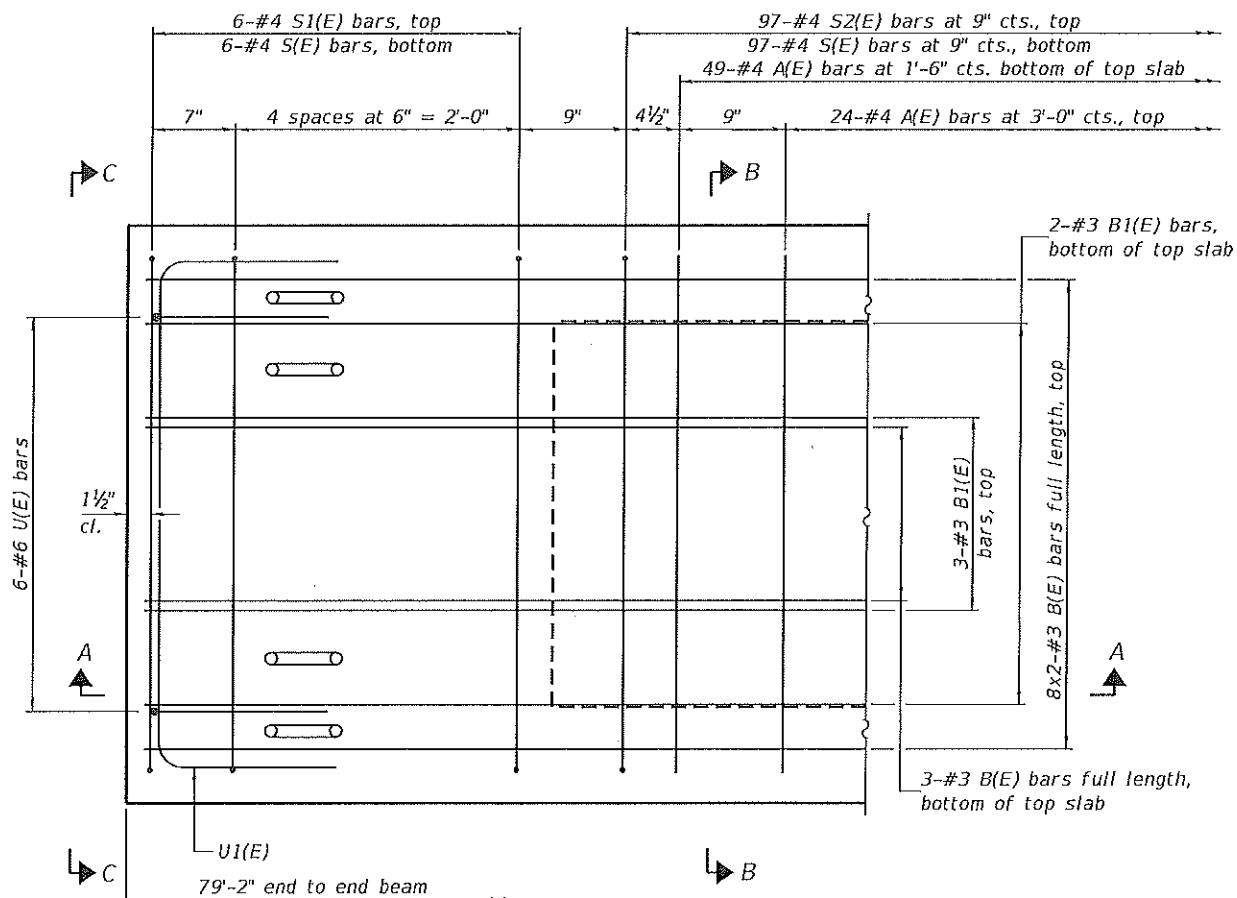
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	8
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				



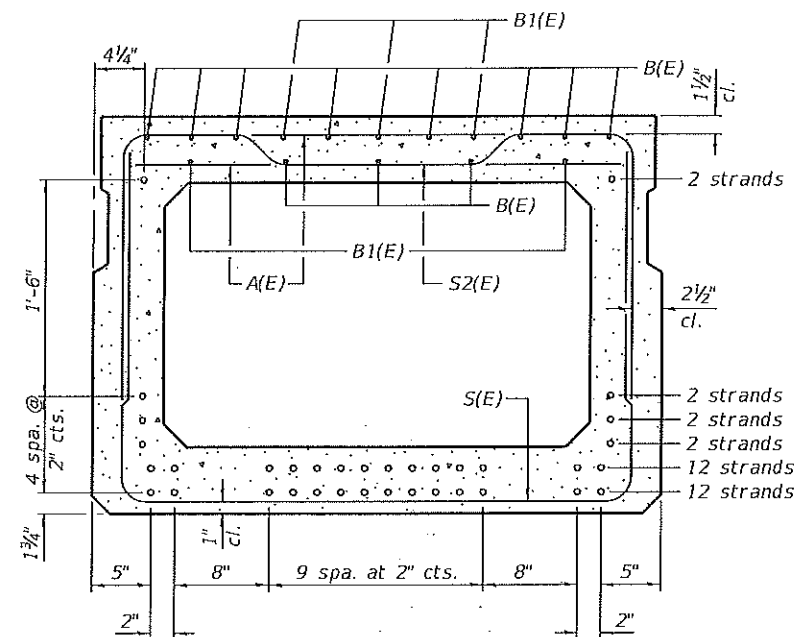
Omit key on exterior face of outside beams



SECTION B-B
(Showing dimensions)



PLAN VIEW



SECTION B-B

(Showing reinforcement and permissible strand locations)

(12 strands 1 3/4\"/>

Note:
Place the number of strands specified in each row symmetrically about the centerline of beam in the permissible strand locations shown.

BAR LIST
ONE BEAM ONLY
(For information only)

Bar	No.	Size	Length	Shape
A(E)	73	#4	3'-7"	—
B(E)	22	#3	40'-2"	—
B1(E)	10	#3	10'-0"	—
S(E)	109	#4	8'-8"	U
S1(E)	12	#4	7'-5"	U
S2(E)	97	#4	7'-8"	U
U(E)	12	#6	5'-0"	U
U1(E)	6	#4	6'-0"	U

Note:
See sheet 5 of 9 for additional details and Bill of Material.

MINIMUM BAR LAP
#3 bar = 1'-6"

Note:
Spacing of S(E) and S2(E) bars may be adjusted up to 4\"/>

PD-3348-0

5-15-2023

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USER NAME: m.klaux
DESIGNED: —
DRAWN: —
PLOT SCALE: 1/8\"/>

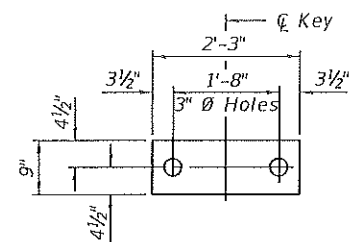
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DATE: —
REVIS: —
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REVIS: —

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

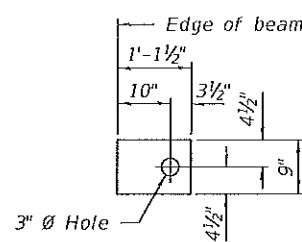
33" x 48" PPC DECK BEAM
STRUCTURE NO. 014-5117

SCALE: SHEET 4 OF 9 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	10
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				



FABRIC BEARING PAD
(Interior)

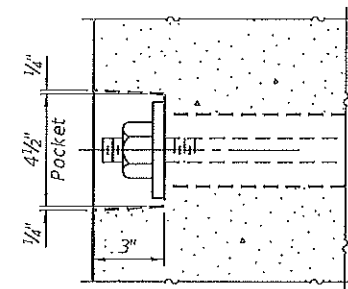


FABRIC BEARING PAD
(Exterior)

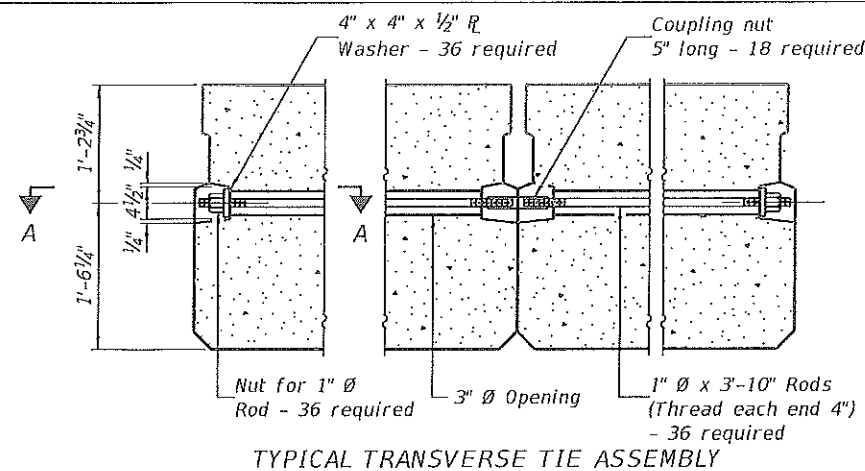
FIXED

Notes:

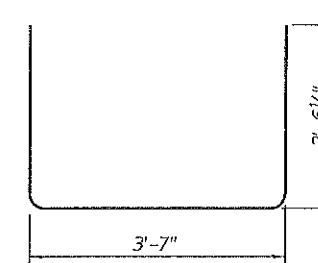
All bearing pads shall be 1" thick.
Omit holes when using expansion bearings.
Expansion bearing pads shall be bonded to the substructure.



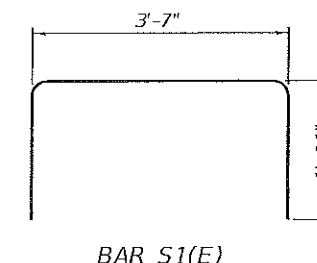
SECTION A-A



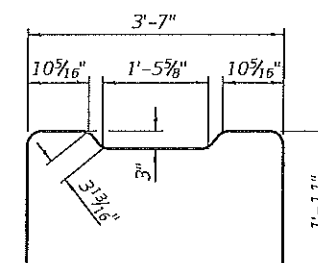
TYPICAL TRANSVERSE TIE ASSEMBLY



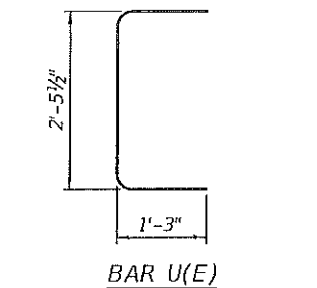
BAR S(E)



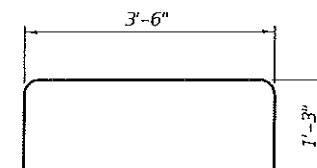
BAR S1(E)



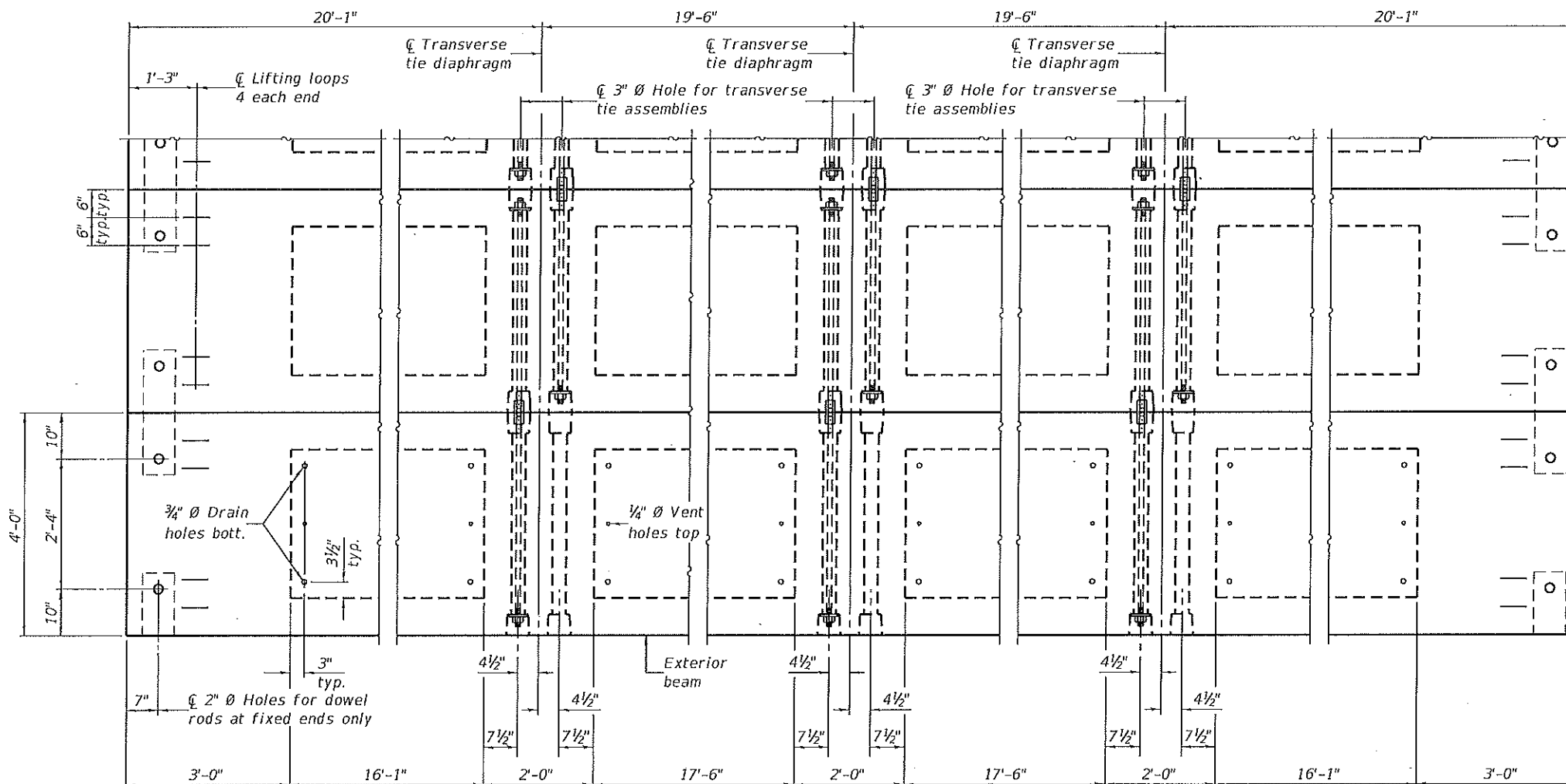
BAR S2(E)



BAR U(E)



BAR U1(E)



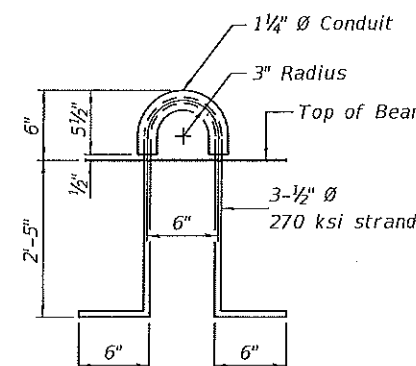
PLAN VIEW

NOTES

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter shall be 1/2" and the nominal cross-sectional area shall be 0.153 sq. in. The 1" rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place. Two 1/8" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. A minimum 2 1/2" diameter lifting pin shall be used to engage the lifting loops during handling. Corrosion Inhibitor, per Article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for precast prestressed concrete deck beams. Compressive strength of prestressed concrete, f'c, shall be 6000 psi. Compressive strength of prestressed concrete at release, f'ci, shall be 5000 psi.

Note:

Connect beams in pairs with the transverse tie configuration shown.



LIFTING LOOP DETAIL

BILL OF MATERIAL

Precast Prestressed Conc. Deck Bms. (33" depth)	Sq. Ft.	2,217
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PDD-3348-0

5-15-2023

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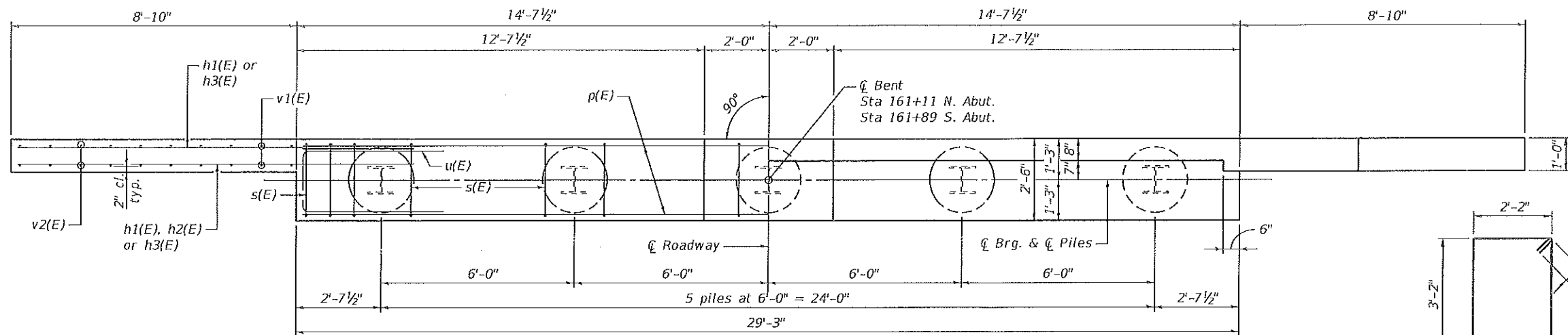
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PLOT DATE = 3/4/2025	CHECKED -	REVISED -
	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

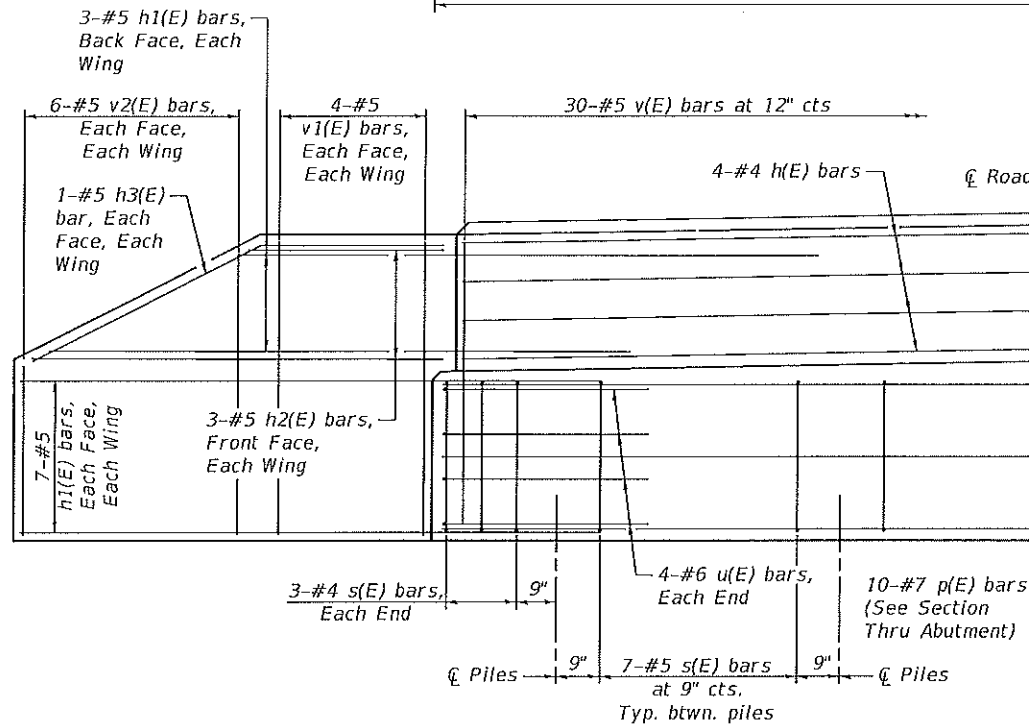
33" x 48" PPC DECK BEAM DETAILS
STRUCTURE NO. 014-5117

SCALE: SHEET 5 OF 9 SHEETS STA. TO STA.

CH. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	11
ILLINOIS FED. AID PROJECT				

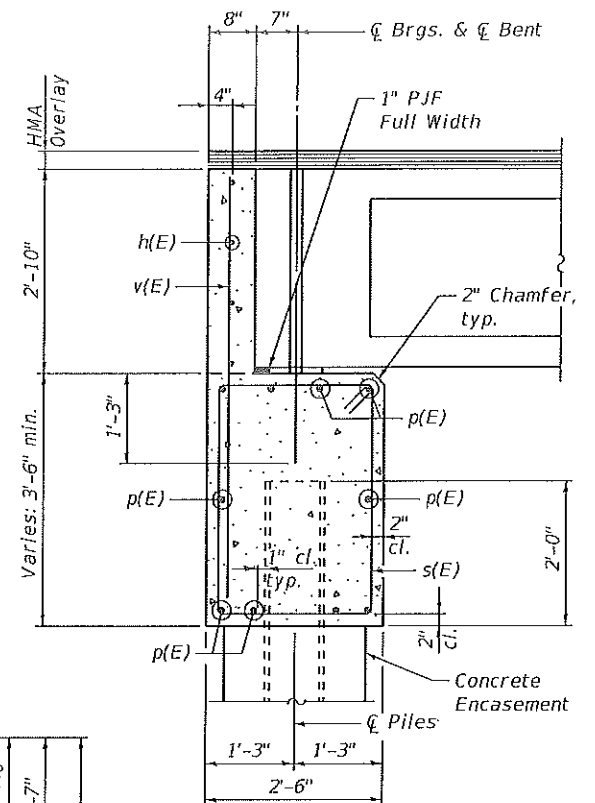


PLAN



ELEVATION

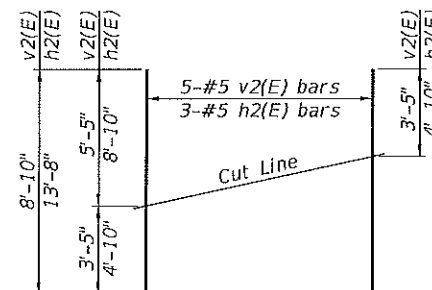
BAR s(E)



SECTION THRU ABUTMENT
(At Rt. L's)

BILL OF MATERIAL
FOR TWO ABUTMENTS

Bar	No.	Size	Length	Shape
h(E)	8	#5	27'-11"	—
h1(E)	60	#5	12'-3"	—
h2(E)	6	#5	13'-8"	—
h3(E)	8	#5	9'-7"	—
p(E)	20	#7	28'-11"	—
s(E)	68	#5	11'-7"	□
u(E)	16	#6	10'-9"	□
v(E)	58	#5	5'-10"	—
v1(E)	40	#5	6'-0"	—
v2(E)	20	#5	8'-10"	—
Structure Excavation			Cu. Yd.	81.0
Concrete Structures			Cu. Yd.	15.5
Concrete Encasement			Cu. Yd.	3.5
Reinforcement Bars, Epoxy Coated			Pound	4,220
Furnishing Steel Piles HP 10x42			Foot	210
Drilling and Setting Piles in Soil			Cu. Ft.	323
Drilling and Setting Piles in Rock			Cu. Ft.	157
Controlled Low-Strength Material			Cu. Yd.	12.0



FIELD CUTTING DIAGRAM

Order v2(E) and h2(E) bars full length.
Cut as shown and use remainder of bars
in opposite face or wing respectively.

PILE DATA

	S. ABUT.	N. ABUT.
Type	HP 10x42	HP 10x42
Nominal Required Bearing	Set in Rock	Set in Rock
Factored Resistance Available	184 Kips	184 Kips
Estimated Length	22 Feet	20 Feet
No. Production Piles	5	5

NOTES:

- The Backwall and the portion of the Wingwalls above the bonded construction joint shall be cast against the in-place beams.
- Space reinforcement in cap to miss dowel rods.
- For details of piles and Concrete Encasement see sheet 8 of 9.
- The diameter for Drilling and Setting Piles in Soil and Rock shall match the diameter of the Concrete Encasement.

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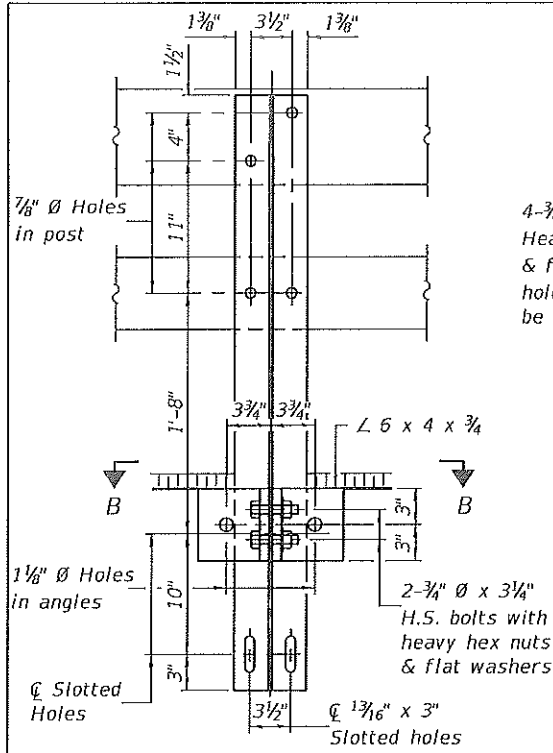
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	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

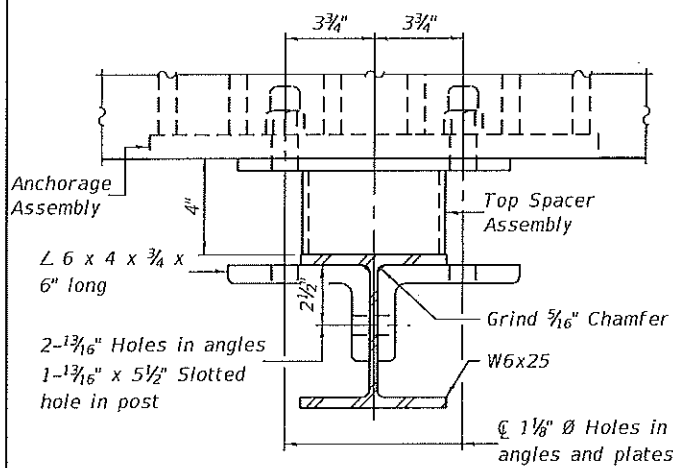
ABUTMENT
STRUCTURE NO. 014-5117

SCALE: SHEET 6 OF 9 SHEETS STA. TO STA.

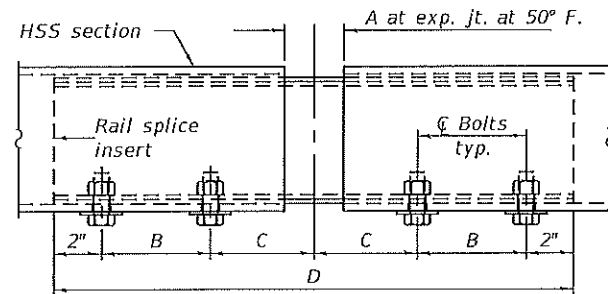
C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	12
CONTRACT NO. 97857				
ILLINOIS FED. AID PROJECT				



SECTION A-A



SECTION B-B

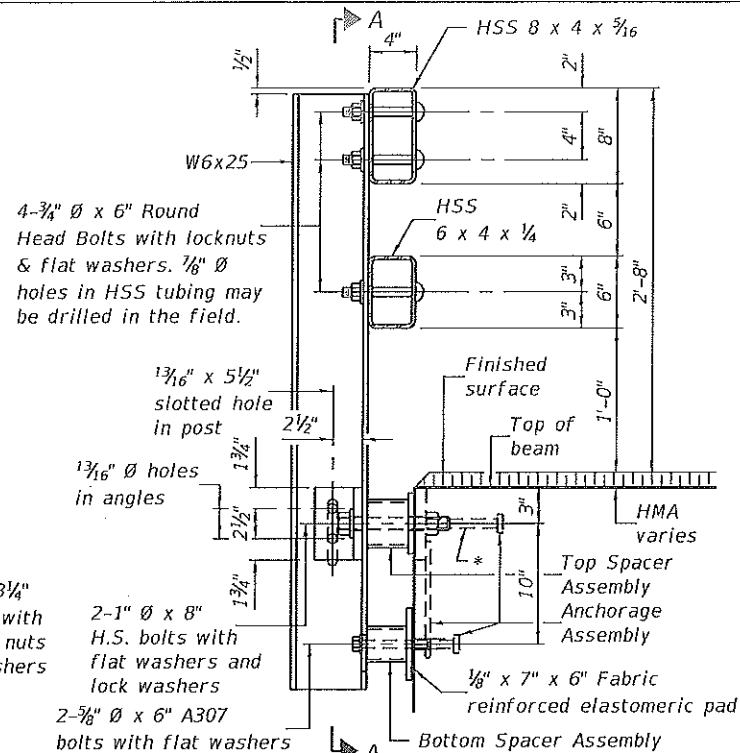


RAILING CRITERIA

MASH 2016 Test Level	2
Railing Weight (plf)	90
Min F _c (psi)	5,000
Max Post Spacing	6'-3"
HMA thickness range (in)	1 1/4" - 3 1/8"

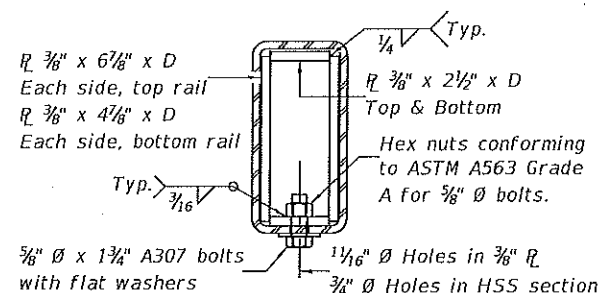
R-34HMAWS

10-27-2023

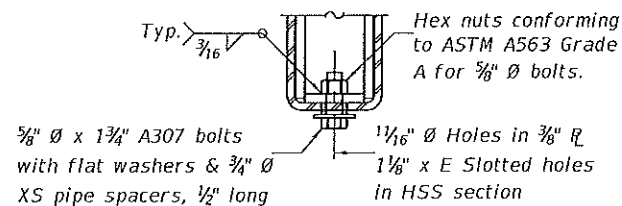


SECTION AT RAIL POST

* 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

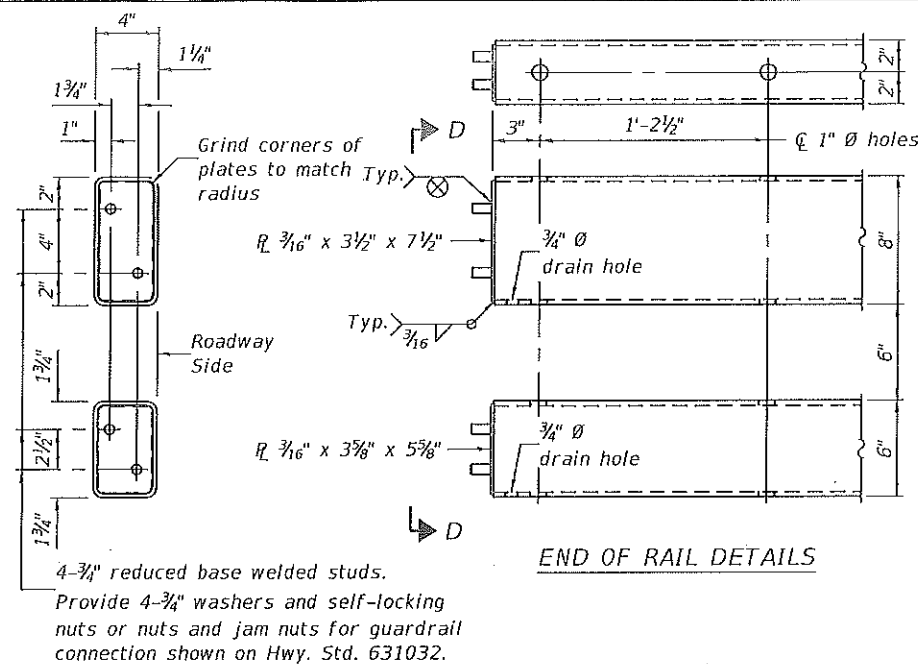


RAIL SPLICE CONNECTION AT EXPANSION JT.

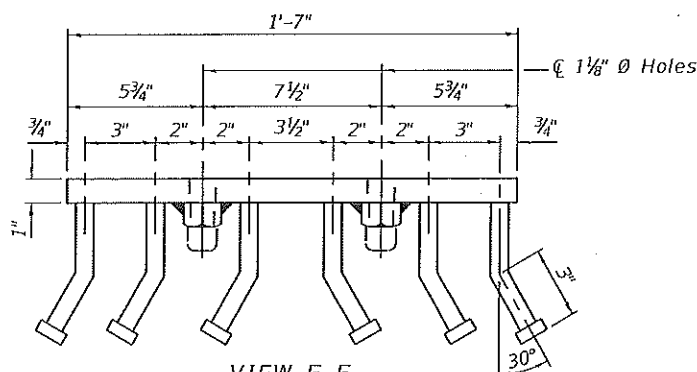
SPLICE DIMENSIONS

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 3/4"	10 1/8"	10"	3'-8 1/4"	8 7/16"

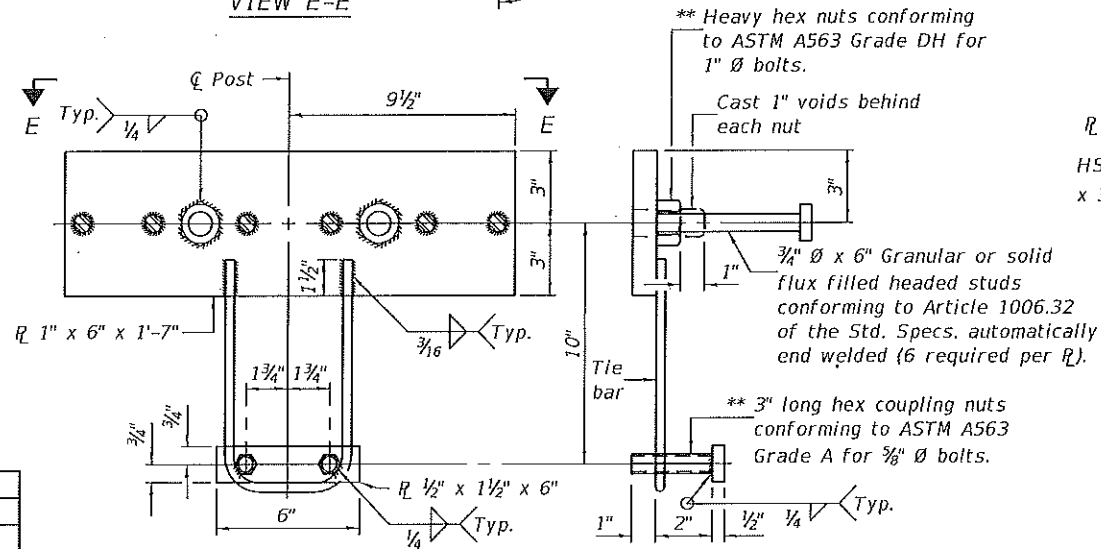
T = ; total movement along centerline of roadway at expansion joint.



VIEW D-D



VIEW E-E



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

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 SM.

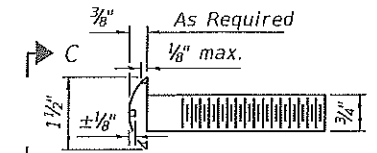
All steel rail elements including shims shall be galvanized according to Article 509.05 of the Standard Specifications.

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

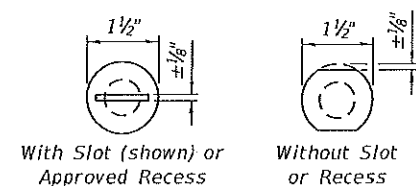
Rail splice inserts may be built out of 2 - 3/8" bent plates in lieu of the 4 plate rail splice inserts shown, provided the outside dimensions are matched.

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

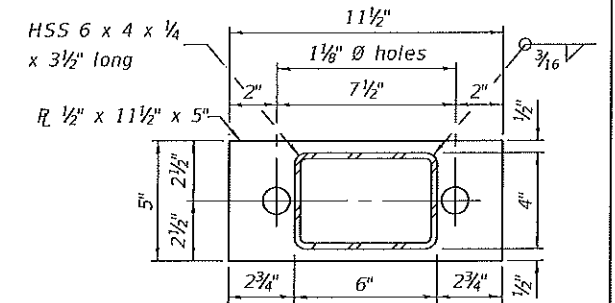
Tie bars shall be #4 reinforcement bar or 1/2" Ø ASTM F1554-55 round bar.



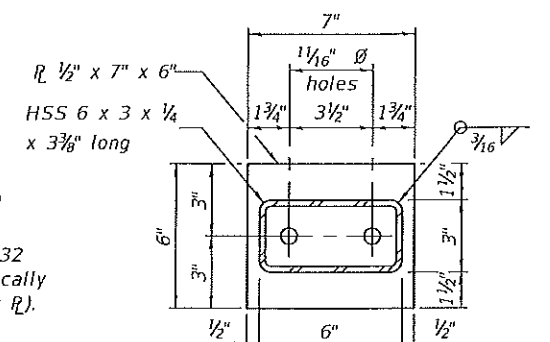
ROUND HEAD BOLT DETAIL



VIEW C-C



TOP SPACER ASSEMBLY



BOTTOM SPACER ASSEMBLY

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	161

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STEEL RAILING, TYPE SM
STRUCTURE NO. 014-5117

SCALE: SHEET 7 OF 9 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	13
				CONTRACT NO. 97867
				ILLINOIS FED. AID PROJECT

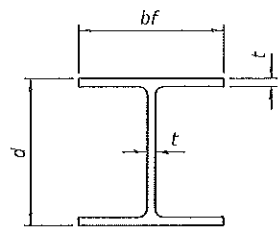
MODEL: D:\cruit
FILE NAME: HMAWS
DATE: 10/27/2023
DRAWN: HMAWS
CHECKED: HMAWS
DATE: 10/27/2023

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ILLINOIS PROFESSIONAL DESIGN FIRM 184.000899

USER NAME	= HMAWS
DESIGNED	-
DRAWN	-
CHECKED	-
DATE	-

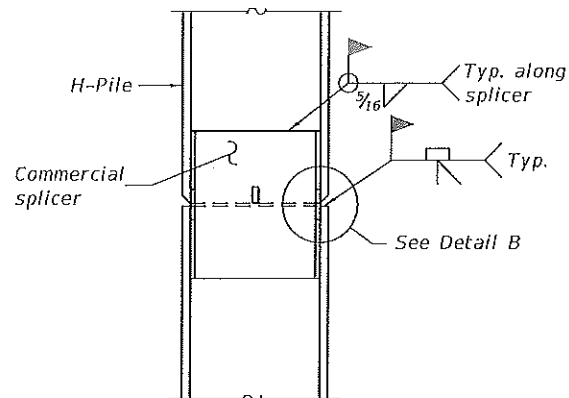
DESIGNED	-
DRAWN	-
CHECKED	-
DATE	-

DESIGNED	-
DRAWN	-
CHECKED	-
DATE	-

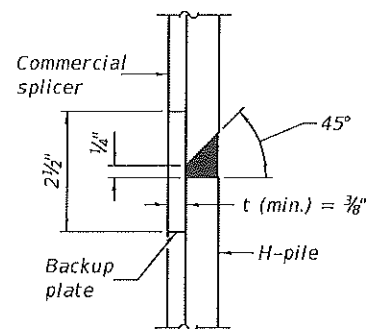


STEEL PILE TABLE

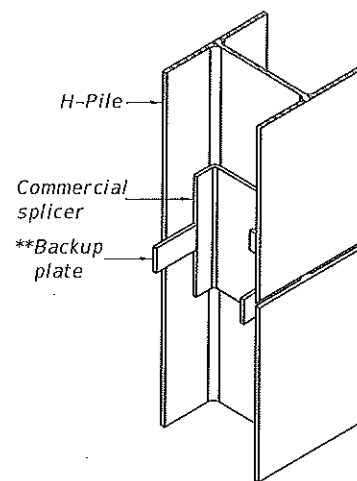
Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 18x181	18	18	1	36"
x157	17 3/4"	17 7/8"	7/8"	36"
x135	17 1/2"	17 3/4"	3/4"	36"
HP 16x183	16 1/2"	16 1/2"	1 1/8"	36"
x162	16 1/4"	16 1/8"	1"	36"
x141	16	16	7/8"	36"
x121	15 3/4"	15 7/8"	3/4"	36"
HP 14x117	14 1/4"	14 7/8"	1 3/16"	30"
x102	14"	14 3/4"	1 1/16"	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"	1 1/16"	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"	5/16"	24"
x42	9 3/4"	10 1/8"	7/16"	24"
HP 8x36	8"	8 1/8"	7/16"	18"



ELEVATION

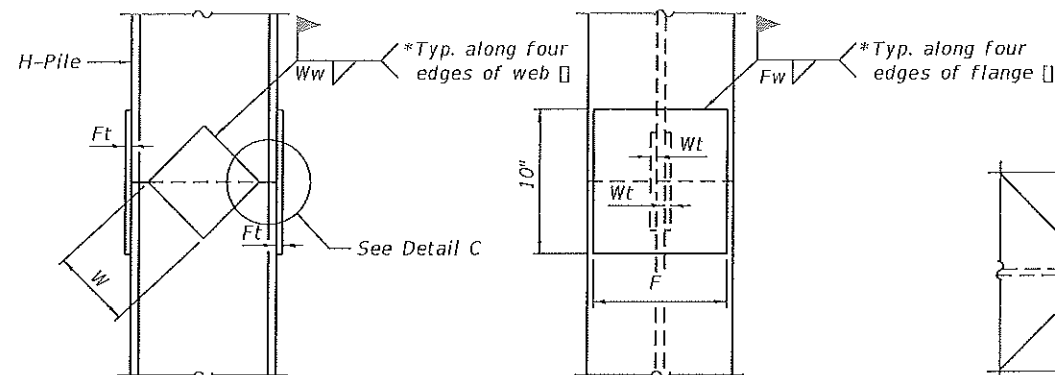


DETAIL B



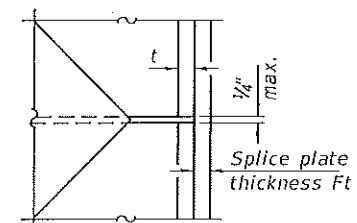
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



ELEVATION

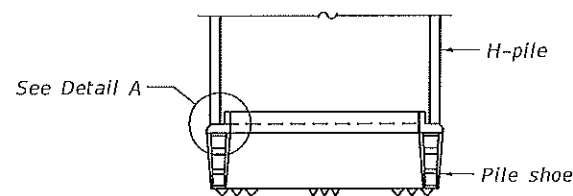
END VIEW



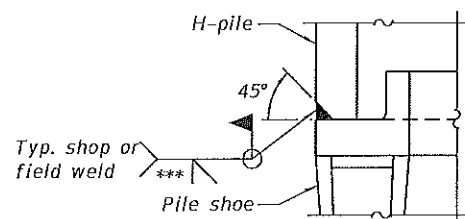
DETAIL C

Designation	F	Ft	Fw	W	Wt	Ww
HP 18x181	15 1/2"	1 1/2"	1"	9 1/2"	7/8"	3/4"
x157	15 1/4"	1 1/4"	1"	9 1/2"	7/8"	3/4"
x135	15 1/4"	1 1/4"	1"	9 1/2"	7/8"	3/4"
HP 16x183	13 3/4"	1 1/2"	1"	8 1/4"	7/8"	3/4"
x162	13 1/2"	1 1/2"	1"	8 1/4"	3/4"	5/8"
x141	13 1/2"	1 1/4"	7/8"	8 1/4"	3/4"	5/8"
x121	13 1/2"	1 1/4"	7/8"	8 1/4"	3/4"	5/8"
HP 14x117	12 1/2"	1 1/4"	7/8"	7 3/4"	5/8"	1/2"
x102	12 1/2"	1"	3/4"	7 3/4"	5/8"	1/2"
x89	12 1/2"	7/8"	1 1/16"	7 3/4"	5/8"	1/2"
x73	12 1/2"	3/4"	9/16"	7 3/4"	5/8"	1/2"
HP 12x84	10"	1"	1 1/16"	6 1/2"	5/8"	1/2"
x74	10"	7/8"	1 1/16"	6 1/2"	5/8"	1/2"
x63	10"	3/4"	1/2"	6 1/2"	1/2"	3/8"
x53	10"	3/4"	1/2"	6 1/2"	1/2"	3/8"
HP 10x57	8"	7/8"	9/16"	5 1/4"	1/2"	3/8"
x42	8"	3/4"	9/16"	5 1/4"	1/2"	3/8"
HP 8x36	6 3/4"	5/8"	7/16"	4"	1/2"	3/8"

WELDED PLATE FIELD SPLICE

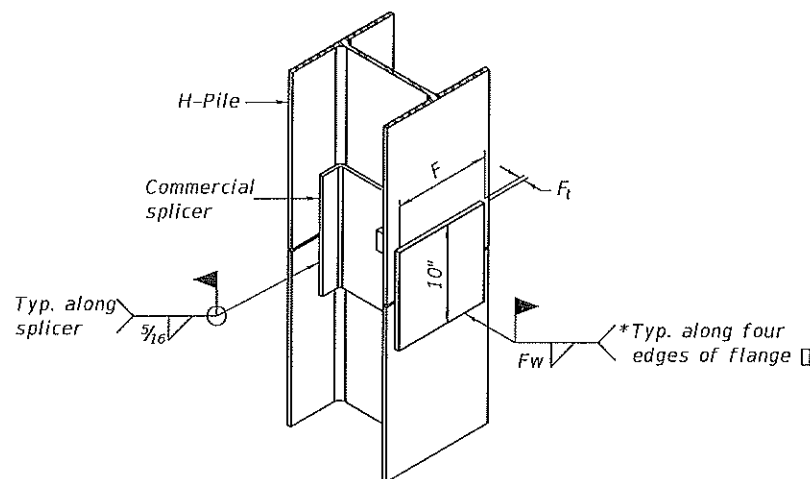


ELEVATION



DETAIL A

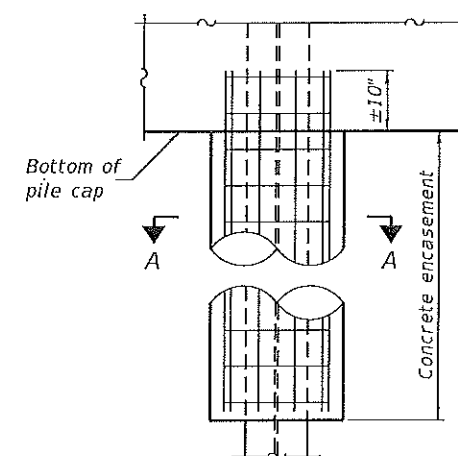
SHOE ATTACHMENT



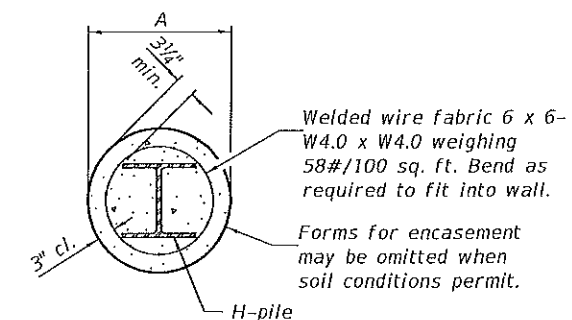
ISOMETRIC VIEW

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 (3/16" min.).



ELEVATION



SECTION A-A

INDIVIDUAL PILE
CONCRETE ENCASEMENT
(when specified)

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

F-HP

10-27-2023

HMG
ENGINEERS
ILL. PROF. DESIGN FIRM 184.000899

USER NAME = klauk
DESIGNED -
DRAWN -
PLOT SCALE = 2,0000' / in.
CHECKED -
PLOT DATE = 3/4/2025
DATE -

DESIGNED -
DRAWN -
CHECKED -
DATE -

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 014-5117

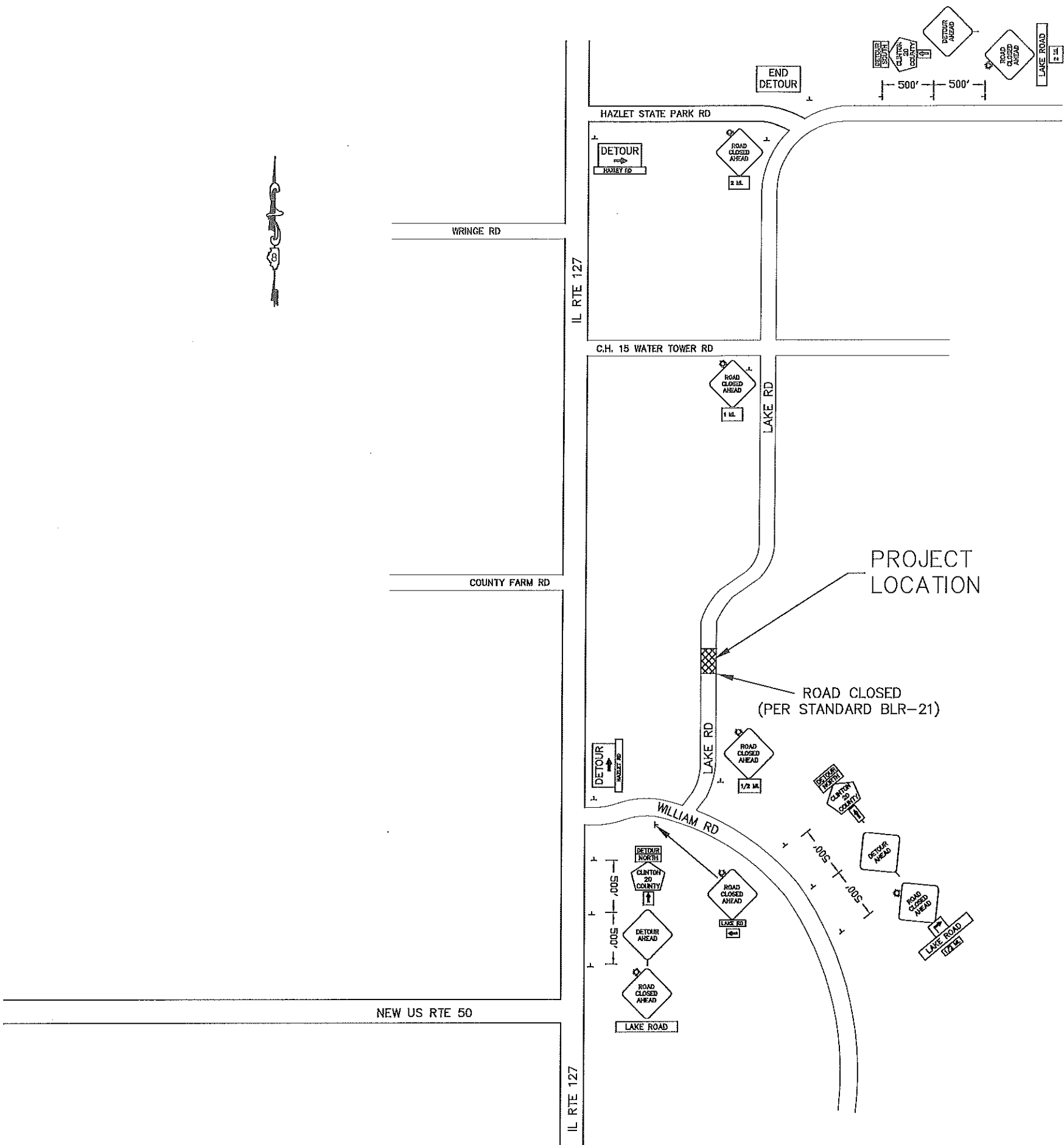
SCALE: SHEET 8 OF 9 SHEETS STA. TO STA.

C.H. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
20	21-00110-00-BR	CLINTON	19	14
CONTRACT NO. 97867				

MODEL: Default
FILE NAME: H:\058a-Clinton Co. Lake Road Bridge\CAD Sheets\0145117-008-piles.dgn

PLAN	DATE
DESIGNED	BY
DRAWN	BY
CHECKED	BY
NOTED	BY
FILED	DATE

PROFILE	DATE
DESIGNED	BY
DRAWN	BY
CHECKED	BY
NOTED	BY
FILED	DATE



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

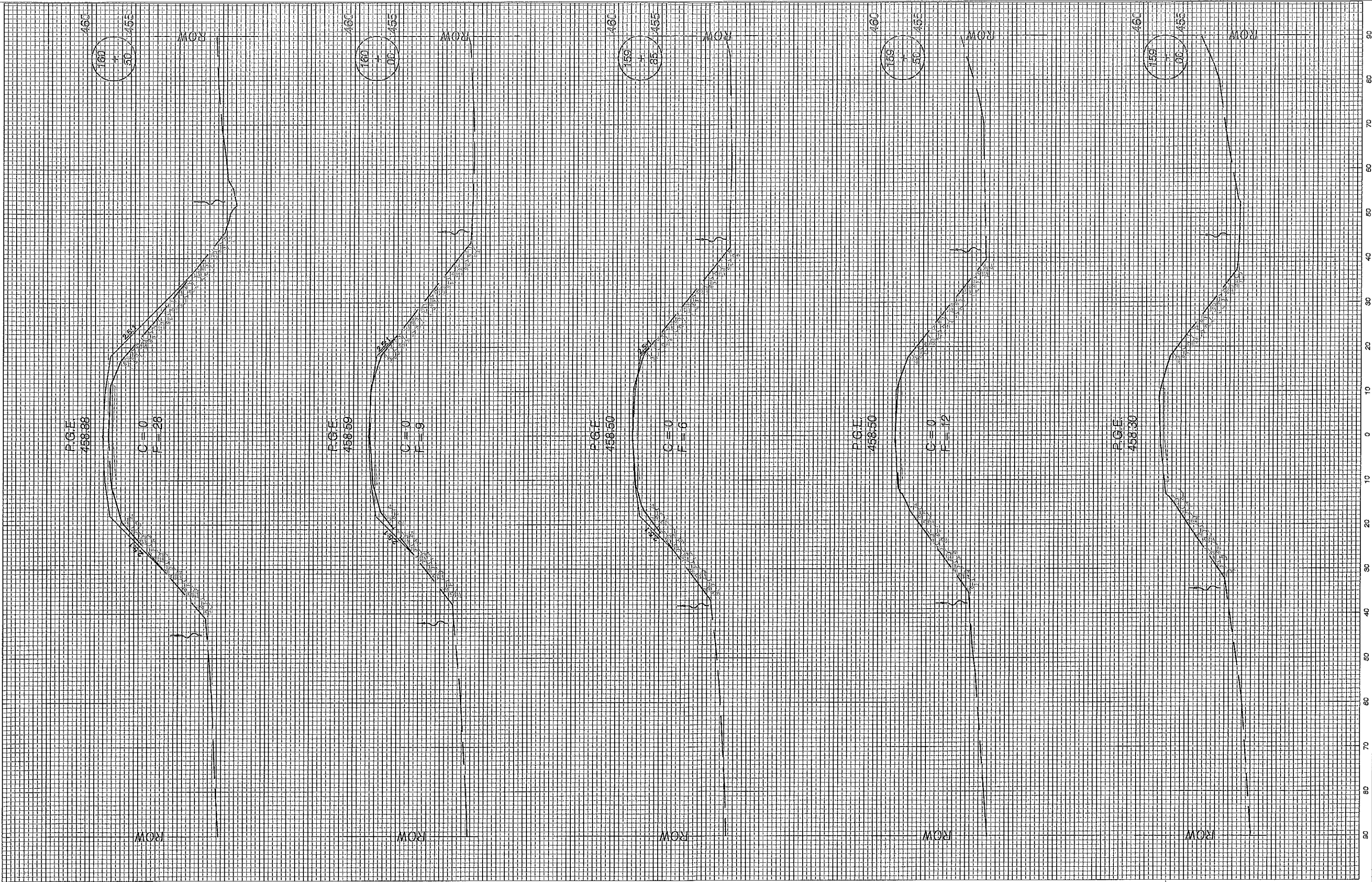
DETOUR ROUTE

SCALE: SHEET 15 OF 19 SHEETS STA. TO STA.

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
CH 20	21-00110-00-BR	CLINTON	19	15
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				

PLAN	DESIGNED	BY	DATE
NOTE BOOK NO.	NOTED		
	IT, IF BY DESIGNED		
	CARD FILE NAME		

PROFILE	DESIGNED	BY	DATE
NOTE BOOK NO.	NOTED		
	IT, IF BY DESIGNED		
	STRUCTURE NOTATIONS CHD		



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

C.H. 20 (LAKE ROAD)
CROSS SECTIONS

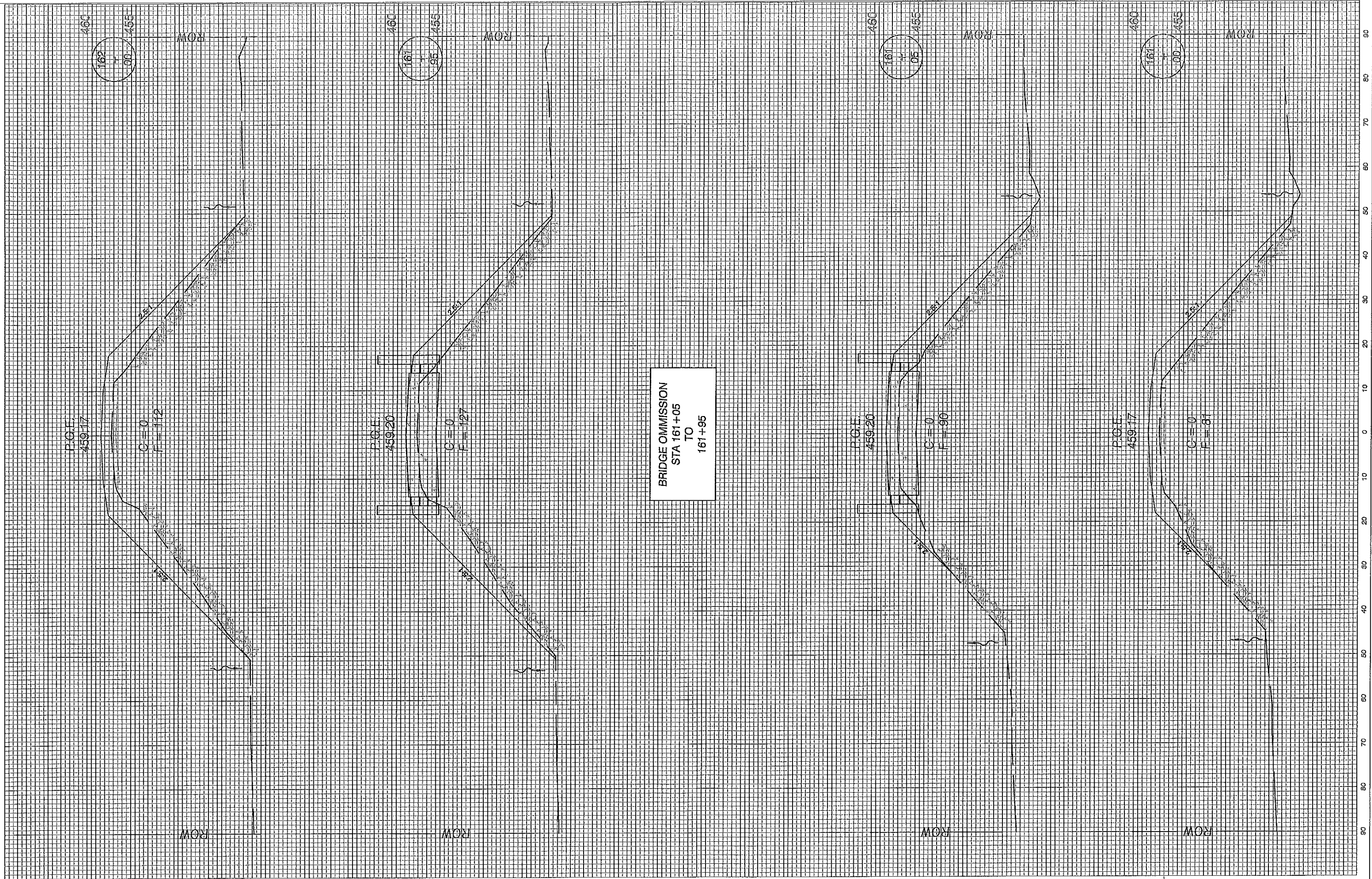
SCALE: 1" = 10' SHEET 17 OF 19 SHEETS STA. 159+50 TO STA. 164+00

F.A.P. R.T.E.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	21-00110-00-BR	CLINTON	19	17
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				

USER NAME	DESIGNED	REVISED
	DRAWN - WRK	REVISED -
PLOT SCALE	CHECKED - DLB	REVISED -
PLOT DATE	DATE	REVISED -

PLAN	DESIGNED	BY	DATE
	NOTED		
NOTE BOOK	NOTED		
	NOTED		
NO.	NOTED		
	NOTED		

PROFILE	DESIGNED	BY	DATE
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NOTE BOOK	NOTED		
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	NOTED		



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

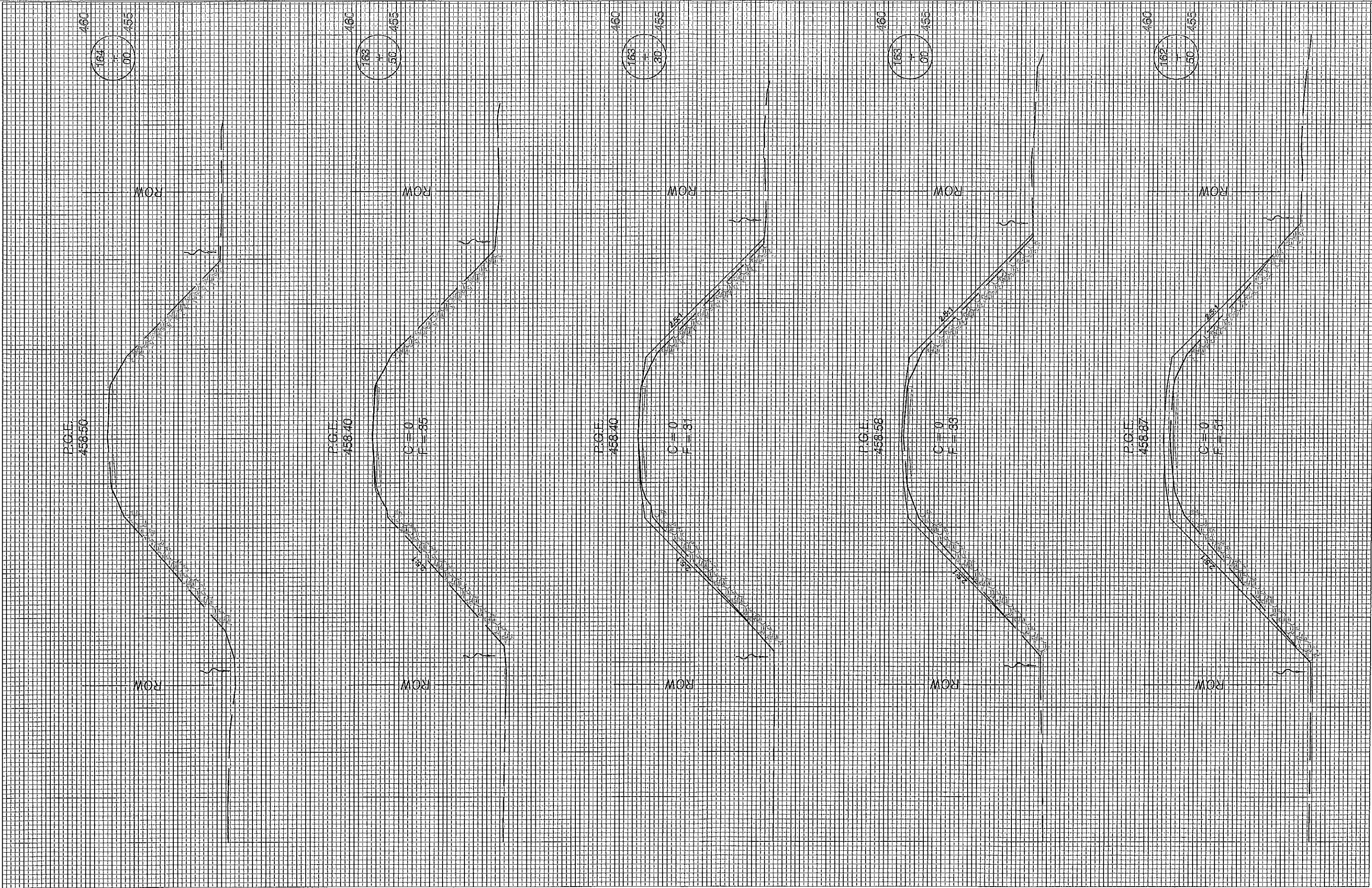
C.H. 20 (LAKE ROAD)
CROSS SECTIONS

SCALE: 1" = 10' SHEET 18 OF 19 SHEETS STA. 159+50 TO STA. 164+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	21-00110-00-BR	CLINTON	19	18
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				

PLAN	DESIGNED	BY	DATE
	NOTED		
NOTE BOOK	NO. OF PAGES		
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NO.	NO.		
	NO.		

PROFILE	DESIGNED	BY	DATE
	NOTED		
NOTE BOOK	NO. OF PAGES		
	NO. OF PAGES		
NO.	NO.		
	NO.		



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

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

C.H. 20 (LAKE ROAD)
CROSS SECTIONS

SCALE: 1" = 10' SHEET 19 OF 19 SHEETS STA. 159+50 TO STA. 164+00

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	21-00110-00-BR	CLINTON	19	19
CONTRACT NO. 97867				
ILLINOIS FED. AID PROJECT				