	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0003 80% FED 20% STATE URBAN	STRUCTURE REPLACMENT S.N. #016-1018 0010 80% FED 20% STATE URBAN	TRAFFIC SIGNALS 0021 80% FED 20% STATE URBAN	STREET LIGHTING 0021 80% FED 20% STATE URBAN	AESTHETIC IMPROVEMENTS 0031 100% LOCAL ROLLING MEADOWS URBAN	EVP 0021 100% LOCAL ROLLING MEADOWS URBAN
	20101000	TEMPORARY FENCE	FOOT	4,141	4,141					
+	20101700	SUPPLEMENTAL WATERING	UNIT	198	198					
	20200100	EARTH EXCAVATION	CU YD	2,659	2,659					
	20201200	REMOVAL AND DISPOSAL OF UNSUITABLE MATERIAL	CU YD	400	400					
	20800150	TRENCH BACKFILL	CU YD	20	20					
	21001000	GEOTECHNICAL FABRIC FOR GROUND STABILIZATION	SQ YD	1,200	1,200					
	21101505	TOPSOIL EXCAVATION AND PLACEMENT	CU YD	2,086	2,086					
	21101625	TOPSOIL FURNISH AND PLACE 6"	SQ YD	10,252	10,252	1				
+	25000210	SEEDING, CLASS 2A	ACRE	1.00	1.00					
+	25000300	SEEDING, CLASS 3	ACRE	.50	.50					
+	25000400	NITROGEN FERTILIZER NUTRIENT	POUND	270	270					
+	25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	270	270					
+	25000750	MOWING	ACRE	20.00	20.00					
+	25100630	EROSION CONTROL BLANKET	SQ YD	7,468	7,468					
+	25100635	HEAVY DUTY EROSION CONTROL BLANKET	SQ YD	2,785	2,785					
+	28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	192	192					

+ INDICATES SPECIALTY ITEM

1 REVISED SHEET 10/28/2024

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STRAND ASSOCIATES®
1170 SOUTH HOUBOLT ROAD
JOLIET, ILLINOIS 60431
(815) 744-4200

USER NAME = StevenB	DESIGNED - SRB	REVISED -	
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PLOT SCALE = 2.0000 ' / in.	CHECKED - MAG	REVISED -	
PLOT DATE = 9/11/2024	DATE - 8/16/2024	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 1 OF 13 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	5
		CONTRACT NO. 62W30		
		ILLINOIS FED. AID PROJECT		

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0003 80% FED 20% STATE URBAN	STRUCTURE REPLACMENT S.N. #016-1018 0010 80% FED 20% STATE URBAN	TRAFFIC SIGNALS 0021 80% FED 20% STATE URBAN	STREET LIGHTING 0021 80% FED 20% STATE URBAN	AESTHETIC IMPROVEMENTS 0031 100% LOCAL ROLLING MEADOWS URBAN	EVP 0021 100% LOCAL ROLLING MEADOWS URBAN
50200100	STRUCTURE EXCAVATION	CU YD	384		384				
50300225	CONCRETE STRUCTURES	CU YD	228.0		227.7			.3	
50300255	CONCRETE SUPERSTRUCTURE	CU YD	853.5		836.7			16.8	
50300260	BRIDGE DECK GROOVING	SQ YD	2,468		2,468				
50300300	PROTECTIVE COAT	SQ YD	3,432		3,432				
50301350	CONCRETE SUPERSTRUCTURE (APPROACH SLAB)	CU YD	267.4		266.4			1.0	
50500105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1		1				
50500505	STUD SHEAR CONNECTORS	EACH	14,532		14,532				
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	355,240		352,980	1		2,260	
50800515	BAR SPLICERS	EACH	2,484		2,484				
50800530	MECHANICAL SPLICERS	EACH	34		34				
51100100	SLOPE WALL 4 INCH	SQ YD	986		986				
51500100	NAME PLATES	EACH	1		1				
52000030	PREFORMED JOINT SEAL 2 1/2"	FOOT	311		311				
52100010	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	56		56				

+ INDICATES SPECIALTY ITEM

1 REVISED SHEET 10/28/2024

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 4 OF 13 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	8
		CONTRACT NO. 62W30		
		ILLINOIS	FED. AID PROJECT	

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	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0003 80% FED 20% STATE URBAN	STRUCTURE REPLACMENT S.N. #016-1018 0010 80% FED 20% STATE URBAN	TRAFFIC SIGNALS 0021 80% FED 20% STATE URBAN	STREET LIGHTING 0021 80% FED 20% STATE URBAN	AESTHETIC IMPROVEMENTS 0031 100% LOCAL ROLLING MEADOWS URBAN	EVP 0021 100% LOCAL ROLLING MEADOWS URBAN
	60146304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	296		296				
	60236200	INLETS, TYPE A, TYPE 8 GRATE	EACH	3	3					
	60500060	REMOVING INLETS	EACH	3	3					
	60618390	CONCRETE MEDIAN SURFACE, CORRUGATED	SQ FT	1,200	1,200					
	61000050	CONCRETE THRUST BLOCKS	EACH	2	2					
	61000115	TYPE E INLET BOX, STANDARD 610001	EACH	2	2					
+	63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	FOOT	1,314	1,314					
+	63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	4	4					
+	63100070	TRAFFIC BARRIER TERMINAL, TYPE 5	EACH	2	2					
+	63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4	4					
+	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	6	6					
	63200310	GUARDRAIL REMOVAL	FOOT	1,497	1,497					
	66201120	CONCRETE SHOULDER CURB	FOOT	30	30					
+	66900200	NON-SPECIAL WASTE DISPOSAL	CU YD	2,305	2,305	1				
+	66900530	SOIL DISPOSAL ANALYSIS	EACH	3	3					

+ INDICATES SPECIALTY ITEM

1 REVISED SHEET 10/28/2024

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 6 OF 13 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	10
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0003 80% FED 20% STATE URBAN	STRUCTURE REPLACMENT S.N. #016-1018 0010 80% FED 20% STATE URBAN	TRAFFIC SIGNALS 0021 80% FED 20% STATE URBAN	STREET LIGHTING 0021 80% FED 20% STATE URBAN	AESTHETIC IMPROVEMENTS 0031 100% LOCAL ROLLING MEADOWS URBAN	EVP 0021 100% LOCAL ROLLING MEADOWS URBAN	
+	89501400	RELOCATE EXISTING EMERGENCY VEHICLE PRIORITY SYSTEM, DETECTOR UNIT	EACH	2						2	
+	A2002916	TREE, CELTIS OCCIDENTALIS (COMMON HACKBERRY), 2" CALIPER, BALLED AND BURLAPPED	EACH	3	3						
+	A2005040	TREE, GYMNOCLADUS DIOICUS ESPRESSO-JFS (ESPRESSO KENTUCKY COFFEETREE), 2-1/2" CALIPER, BALLED AND BURLAPPED	EACH	3	3						
+	A2006516	TREE, QUERCUS BICOLOR (SWAMP WHITE OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	3	3						
+	A2006616	TREE, QUERCUS IMBRICARIA (SHINGLE OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	4	4						
+	A2006716	TREE, QUERCUS MACROCARPA (BUR OAK), 2" CALIPER, BALLED AND BURLAPPED	EACH	3	3						
+	C3005924	SHRUB, RHUS GLABRA (SMOOTH SUMAC), 2' HEIGHT, BARE ROOT	EACH	100	100						
+	C3006024	SHRUB, RHUS TYPHINA (STAGHORN SUMAC), 2' HEIGHT, BARE ROOT	EACH	100	100						
+	K0029629	WEED CONTROL, BROADLEAF IN TURF	POUND	1	1						
+	X8301802	REMOVE TEMPORARY WOOD POLE	EACH	4				4			
+	X8302161	TEMPORARY WOOD POLE, 60 FT., CLASS 4	EACH	4.00				4			
	X0338320	CONCRETE COLOR ADDITIVE	CU YD	85,1					85,1		1
+	X1400341	REMOVAL OF LUMINAIRE, SALVAGE	EACH	91				91			
	X5030282	FORM LINER TEXTURED SURFACE, SPECIAL	SQ FT	1,730					1,730		
+	X2502014	SEEDING, CLASS 4A (MODIFIED)	ACRE	1.00	1.00						

+ INDICATES SPECIALTY ITEM

1 REVISED SHEET 10/28/2024

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JOLIET, ILLINOIS 60431
(815) 744-4200

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 11 OF 13 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	15
		CONTRACT NO. 62W30		
		ILLINOIS	FED. AID PROJECT	

REV-SEP

	CODE NO.	ITEM	UNIT	TOTAL QUANTITY	ROADWAY 0003 80% FED 20% STATE URBAN	STRUCTURE REPLACMENT S.N. #016-1018 0010 80% FED 20% STATE URBAN	TRAFFIC SIGNALS 0021 80% FED 20% STATE URBAN	STREET LIGHTING 0021 80% FED 20% STATE URBAN	AESTHETIC IMPROVEMENTS 0031 100% LOCAL ROLLING MEADOWS URBAN	EVP 0021 100% LOCAL ROLLING MEADOWS URBAN
	X5080530	BAR TERMINATORS	EACH	1,266		1,266				
	X5091755	PARAPET RAILING (SPECIAL)	FOOT	498					498	
+	X6050700	REMOVE INLET BOX	EACH	2	2					
	X6700407	ENGINEER'S FIELD OFFICE, TYPE A (D1)	CAL MO	11	11					
	X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1					
	X7011015	TRAFFIC CONTROL AND PROTECTION, (EXPRESSWAYS)	L SUM	1	1					
	X7830050	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REMOVAL	EACH	42	42					
+	X7013820	TRAFFIC CONTROL SURVEILLANCE, EXPRESSWAYS	CAL DA	145	145	1				
+	X7830052	RAISED REFLECTIVE PAVEMENT MARKER, REFLECTOR REPLACEMENT	EACH	42	42					
+	X8211008	TEMPORARY LUMINAIRE, LED, ROADWAY, OUTPUT DESIGNATION H	EACH	2				2		
+	X8420111	REMOVAL OF UNDERPASS LIGHTING UNIT, NO SALVAGE	EACH	12				12		
+	X8500104	MAINTENANCE OF EXISTING TRAFFIC SIGNAL INSTALLATION (SPECIAL)	EACH	1			1			
+	X8870510	CONFIRMATION BEACON	EACH	2						2
	X0325496	ARCHITECTURAL FORM LINER	SQ YD	8					8	
	Z0004552	APPROACH SLAB REMOVAL	SQ YD	640		640				

+ INDICATES SPECIALTY ITEM

1 REVISED SHEET 10/28/2024

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(815) 744-4200

USER NAME = StevenB	DESIGNED - SRB	REVISED -
	DRAWN - DJW	REVISED -
PLOT SCALE = 2.0000 ' / in.	CHECKED - MAG	REVISED -
PLOT DATE = 9/11/2024	DATE - 8/16/2024	REVISED -

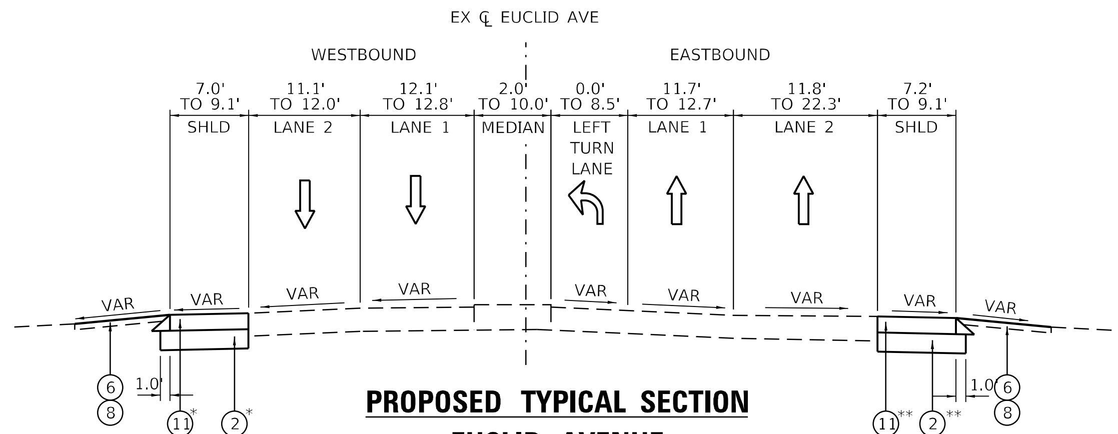
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: | SHEET 12 OF 13 SHEETS | STA. | TO STA.

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	16
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		

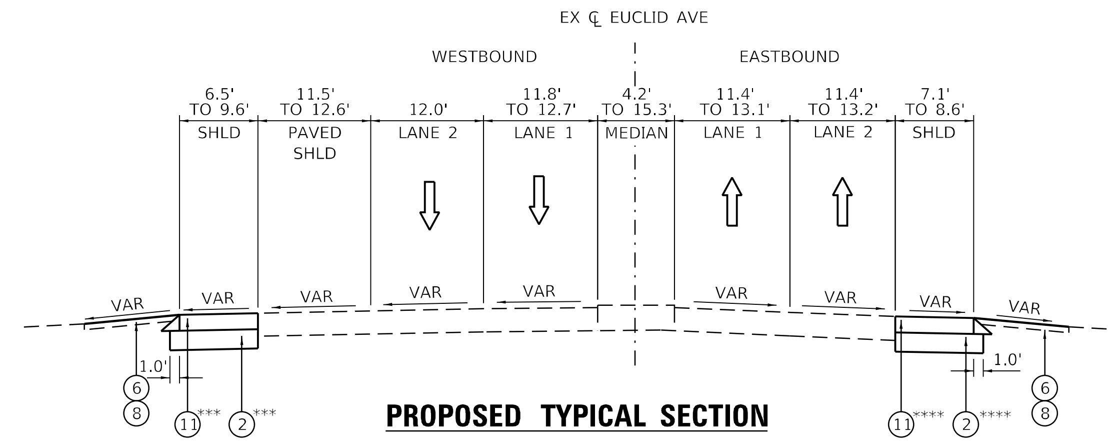
REV-SEP



PROPOSED TYPICAL SECTION
EUCLID AVENUE

STA. 406+56.00 TO STA. 408+32.60

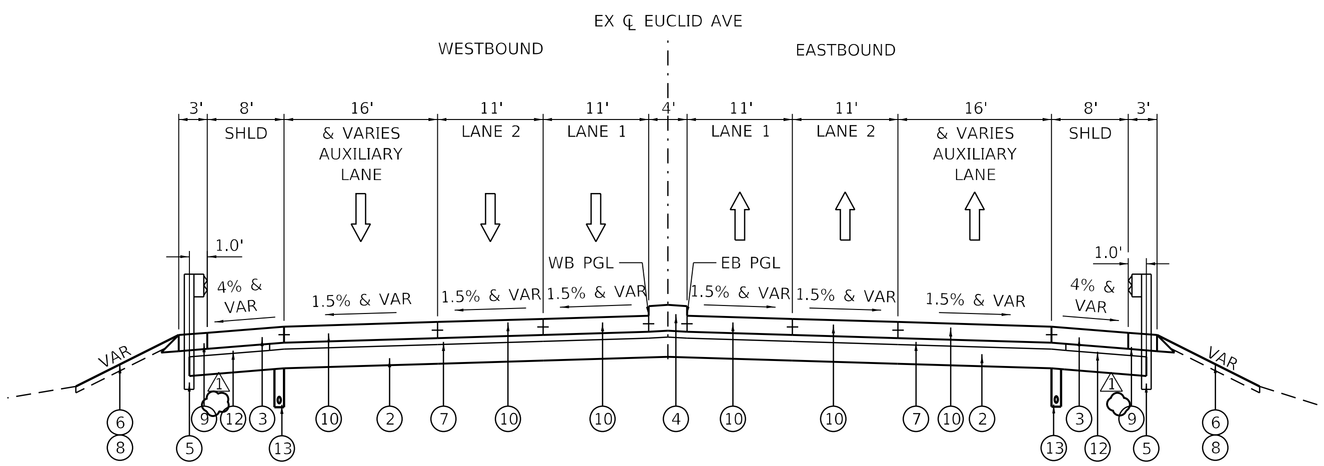
* STA. 406+56.00 TO STA. 407+73.69
** STA. 405+82.00 TO STA. 408+32.60



PROPOSED TYPICAL SECTION
EUCLID AVENUE

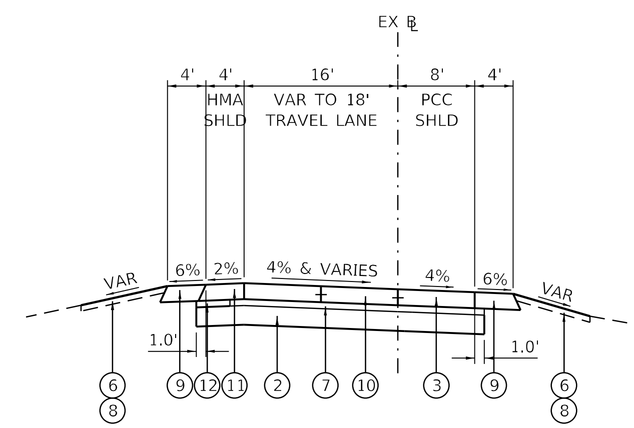
STA. 413+80.68 TO STA. 417+07.00

*** STA. 413+80.68 TO STA. 417+07.00
**** STA. 414+15.59 TO STA. 415+87.00



PROPOSED TYPICAL SECTION
EUCLID AVENUE AT IL 53

STA. 408+32.60 TO STA. 409+65.66
STA. 412+14.31 TO STA. 414+37.60
(BRIDGE OMISSION STA. 409+65.66 TO STA. 412+14.31)



PROPOSED RAMP TYPICAL SECTION
EUCLID AVENUE

RAMP A: STA. 712+01.73 TO STA. 712+64.50
RAMP B: STA. 743+79.93 TO STA. 744+33.48
RAMP C: STA. 762+54.25 TO STA. 763+16.12
RAMP D: STA. 770+73.83 TO STA. 771+59.00

PROPOSED LEGEND:

1. BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)
2. AGGREGATE SUBGRADE IMPROVEMENT 12"
3. PORTLAND CEMENT CONCRETE SHOULDER, 10"
4. CONCRETE MEDIAN SURFACE, CORRUGATED
5. STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS
6. SEEDING (SEE PLANS FOR TYPE)
7. STABILIZED SUBBASE HOT-MIX ASPHALT, 4"
8. 4" TOPSOIL
9. AGGREGATE SHOULDERS, TYPE B, 10"
10. PCC PAVEMENT 10" (JOINTED)
11. HOT-MIX ASPHALT SHOULDERS, 10"
12. SUBBASE GRANULAR MATERIAL, TYPE B 4"
13. PIPE UNDERDRAIN, TYPE 2, 4"

1 REVISED SHEET 10/28/2024

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SA STRAND ASSOCIATES® 1170 SOUTH HOUBOLT ROAD JOLIET, ILLINOIS 60431 (815) 744-4200	USER NAME = StevenB	DESIGNED - SRB	REVISED - 1 10/29/2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	EUCLID AVENUE PROPOSED TYPICAL SECTIONS
		DRAWN - DJW	REVISED -		
	PLOT SCALE = 20.0000 ' / in.	CHECKED - MAG	REVISED -		
	PLOT DATE = 10/28/2024	DATE - 8/16/2024	REVISED -		SCALE: NA SHEET 1 OF 1 SHEETS STA. 408+32.60 TO STA. 412+14.31

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1292	(531-2-HB)BR 23	COOK	187	19
		CONTRACT NO. 62W30		
		ILLINOIS FED. AID PROJECT		

Benchmark: TBM 09 – Cut cross on the southwest anchor bolt for the first light pole south of Euclid Avenue and on the east side of IL Route 53, Elev. 901.77.

Existing Structure: Structure 016-1018, built in 1963 F.A. Route 61, Section 531-2-HB, is a 4 span wide flange structure with hinge pins in the east span supporting a RC slab on RC piers with crashwall on footings supported by creosoted timber piles & RC abutments supported on concrete piles. The structure has an overall length of 250'-8" back to back of abutment and a width of 95'-11" out to out of deck. The superstructure and deck are to be replaced. The abutments are to be converted to semi-integral. The piers are to be repaired.

Traffic to be maintained using stage construction. Ramps of interchange to be temporarily reconfigured and remain open during construction.

No salvage

IL 53 CURVE DATA

SB PG	℄ IL 53	NB PG
P.I. Sta. = 3216+90.84	P.I. Sta. = 1216+94.24	P.I. Sta. = 2216+97.63
Δ = 28° 03' 08" (RT)	Δ = 28° 03' 07"	Δ = 28° 03' 07" (RT)
D = 0° 56' 56"	D = 0° 57' 18"	D = 0° 57' 40"
R = 6,038.00'	R = 6000.00'	R = 5,962.00'
T = 1,508.36'	T = 1,498.86'	T = 1,489.36'
L = 2,956.21'	L = 2,937.60'	L = 2,918.99'
E = 185.55'	E = 184.38'	E = 183.21'
e = .02'/'	e = .02'/'	e = .02'/'
P.C. Sta. = 3201+82.48	P.C. Sta. = 1201+95.38	P.C. Sta. = 2202+08.27
P.T. Sta. = 3231+38.69	P.T. Sta. = 1231+32.97	P.T. Sta. = 2231+27.26

SEISMIC DATA

Seismic Retrofit Category (SRC) = A
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.083g
Design Spectral Acceleration at 0.2 sec. (SDS) =0.143g
Soil Site Class = D
Performance Level = PL 1

LOADING HL-93

No Future Wearing Surface Allowed

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
2020 AASHTO LRFD Bridge Design Specifications, 9th Edition
EXISTING CONSTRUCTION
2002 AASHTO Standard Specifications for Highway Bridges, 17th Edition
2006 FHWA Seismic Retrofitting Manual for Highway Structures

DESIGN STRESSES

FIELD UNITS (NEW CONSTRUCTION)
f'c = 4,000 psi (Superstructure)
f'c = 3,500 psi (Substructure)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (M270 Grade 50)
fy = 36,000 psi (M270 Grade 36)

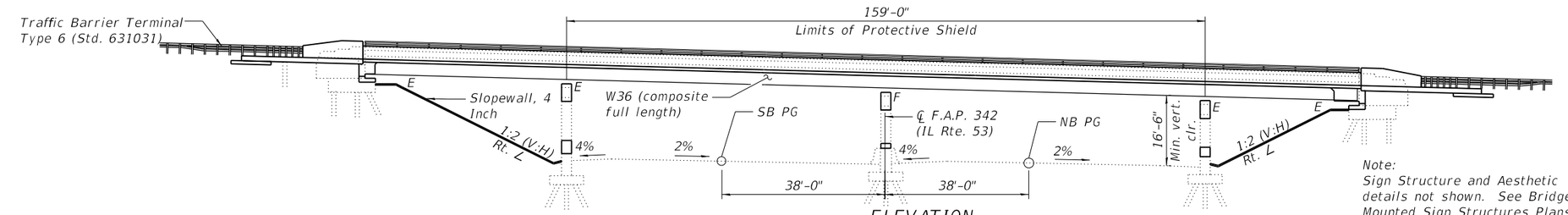
FIELD UNITS (EXISTING CONSTRUCTION)
fc = 1,400 psi
fs = 20,000 psi (Reinforcement)
fs = 20,000 psi (Structural A36)

SCOPE OF WORK

1. *Remove existing superstructure, bearings, approach slabs, and slopewalls.*
2. *Modify existing abutments to semi-integral configurations and reconstruct wingwalls.*
3. *Reconstruct bearing seats at piers and extend tops of crashwalls to 5'-0" above shoulders.*
4. *Construct new bearings and superstructure consisting of galvanized steel beams and concrete deck slab.*
5. *Construct new approach slabs.*
6. *Repair abutments, and piers, with formed concrete repairs and epoxy crack sealing.*
7. *Construct new slopewalls.*

Notes:
All structural steel shall be galvanized.

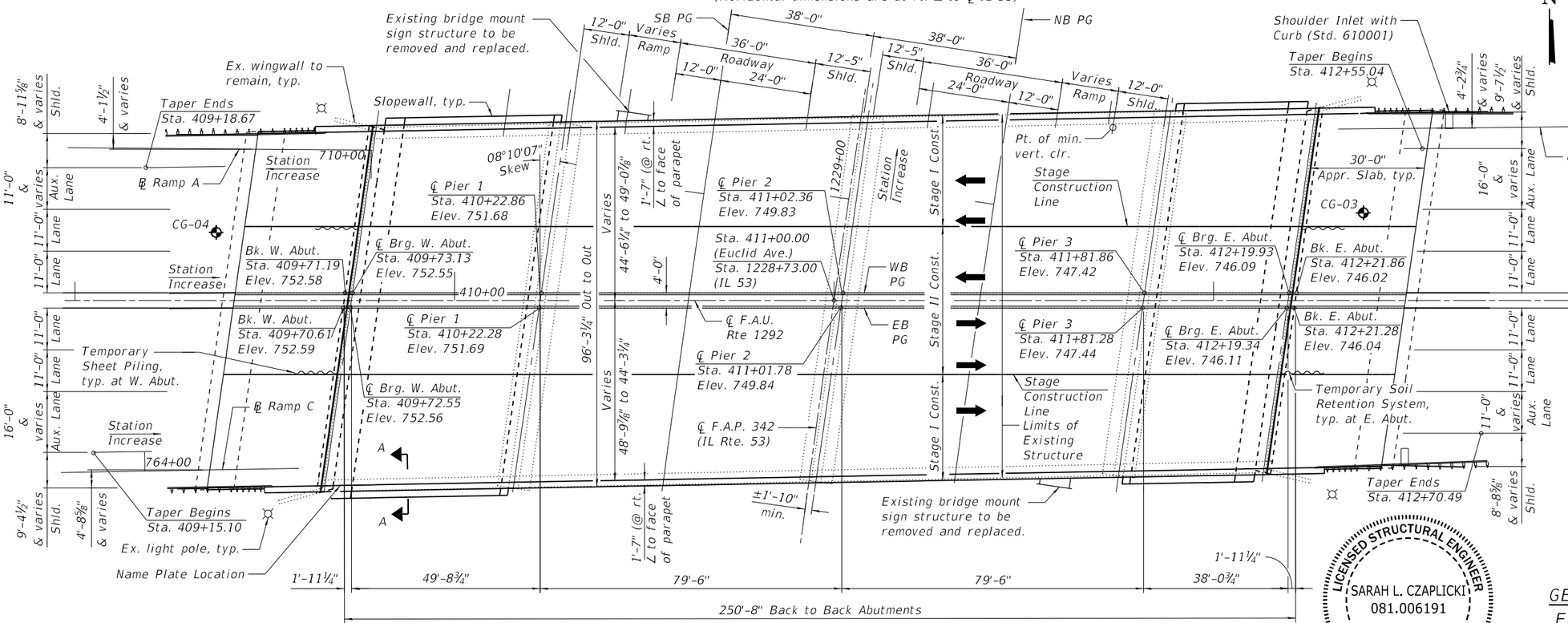
See Sheet 2 for Section A-A.



ELEVATION

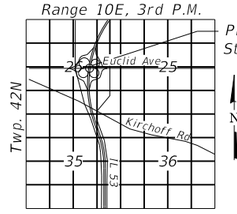
(Horizontal dimensions are at rt. ℄ to ℄ IL 53)

Note:
Sign Structure and Aesthetic details not shown. See Bridge Mounted Sign Structures Plans and Bridge Aesthetic Plans.



PLAN

(Transverse dimensions are measured along rt. ∠'s to ℄ Euclid Ave., unless noted otherwise)



LOCATION SKETCH

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

LICENSED STRUCTURAL ENGINEER
SARAH L. CZAPLICKI
081.006191
STATE OF ILLINOIS
09/20/2024

Sarah L. Czaplicki, PE, SE
Expires: November 30, 2024

GENERAL PLAN AND ELEVATION
EUCLID AVE. OVER IL RTE. 53
F.A.U. RTE. 1292 - SEC. (531-2-HB) BR 23
COOK COUNTY
STATION 411+00.00
STRUCTURE NO. 016-1018

1 REVISED ENTIRE SHEET 10/29/2024

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184.008135

USER NAME =	DESIGNED - HP	REVISED -	
	CHECKED - CSP	REVISED -	
PLOT SCALE =	DRAWN - PAF	REVISED -	
PLOT DATE =	CHECKED - HP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 45 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	97
		CONTRACT NO. 62W30		
	ILLINOIS FED. AID PROJECT			

INDEX OF SHEETS

GENERAL NOTES

1. Fasteners shall be ASTM F 3125 Grade A325 Type 1. Fasteners shall be hot dip galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel." Bolt $\frac{7}{8}$ in. diameter, holes $\frac{15}{16}$ in. diameter, unless otherwise noted.
2. Calculated weight of Structural Steel = 603,060 lbs. (M270 Grade 50)
   70,230 lbs. (M270 Grade 36)
3. All new structural steel shall be galvanized. See Special Provision for "Hot Dip Galvanizing for Structural Steel."
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within tolerance of $\frac{1}{8}$ in. (0.01ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
7. Concrete Sealer shall be applied to all surfaces of only new substructure concrete and shall be applied before bearing and beam erection. A penetrating sealer from the Department's qualified product list shall be used for all vertical surfaces.
8. Plan dimensions and details relative to the existing structure have been taken from existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
9. The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to address the presence of lead on this project.
10. Pinning of the Temporary Concrete Barrier in the top of the new bridge deck and approach slabs is not allowed.

STA. 411+00.00
BUILT 20 BY
STATE OF ILLINOIS
F.A.U. RTE. 1292 - SEC. (531-2-HB) BR 23
LOADING HL-93
STR. NO. 016-1018

NAME PLATE

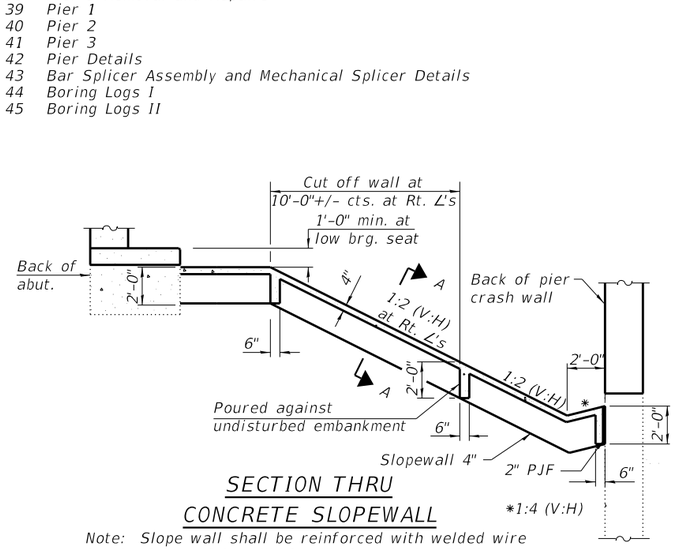
See Std. 515001

Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.

TOTAL BILL OF MATERIAL

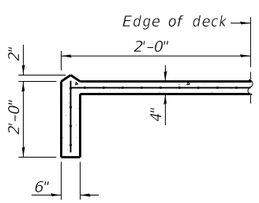
ITEM	UNIT	SUPER	SUB	TOTAL
Removal Of Existing Superstructures	Each	1	-	1
Concrete Removal	Cu. Yd.	-	96.8	96.8
Protective Shield	Sq. Yd.	3,400	-	3,400
Bridge Rail Removal	Foot	501	-	501
Slopewall Removal	Sq. Yd.	-	983	983
Structure Excavation	Cu. Yd.	-	384	384
Concrete Structures	Cu. Yd.	59.0	169.0	228.0
Concrete Superstructure	Cu. Yd.	853.5	-	853.5
Bridge Deck Grooving	Sq. Yd.	2,468	-	2,468
Protective Coat	Sq. Yd.	3,432	-	3,432
Concrete Superstructure (Approach Slab)	Cu. Yd.	267.4	-	267.4
Furnishing And Erecting Structural Steel	L. Sum	1	-	1
Stud Shear Connectors	Each	14,532	-	14,532
Reinforcement Bars, Epoxy Coated	Pound	326,290	28,950	355,240
Bar Splicers	Each	2,370	114	2,484
Mechanical Splicers	Each	34	-	34
Slopewall 4 Inch	Sq. Yd.	-	986	986
Name Plates	Each	1	-	1
Preformed Joint Seal 2 1/2"	Foot	311		311
Elastomeric Bearing Assembly, Type I	Each	56	-	56
Anchor Bolts, 1 1/4"	Each	84	-	84
Anchor Bolts, 1 1/2"	Each	56	-	56
Temporary Sheet Piling	Sq. Ft.	-	178	178
Temporary Soil Retention System	Sq. Ft.	-	61	61
Granular Backfill For Structures	Cu. Yd.	-	615	615
Concrete Sealer	Sq. Ft.	-	1,606	1,606
Epoxy Crack Injection	Foot	-	98	98
Geocomposite Wall Drain	Sq. Yd.	-	172	172
Pipe Underdrains For Structures 4"	Foot	-	296	296
Concrete Color Additive	Cu. Yd.	85.1		85.1
Form Liner Textured Surface (Special)	Sq. Ft.	1,730	-	1,730
Bar Terminators	Each	1,266		1,266
Parapet Railing (Special)	Foot	498	-	498
Architectural Form Liner	Sq. Yd.	8	-	8
Concrete Sealant, Special	Sq. Yd.	137	-	137
Approach Slab Removal	Sq. Yd.	640	-	640
Structural Repair Of Concrete (Depth Equal To Or Less Than 5 Inches)	Sq. Ft.	-	75	75

1 REVISED SHEET 10/28/2024

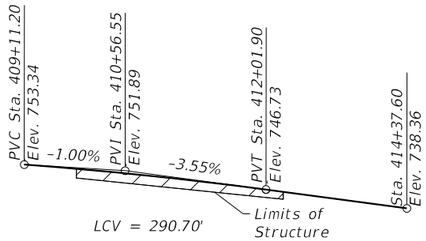


SECTION THRU CONCRETE SLOPEWALL

Note: Slope wall shall be reinforced with welded wire fabric, 6 in. x 6 in. - W4.0 x W4.0, weighing 58 lbs. per 100 sq. ft. Filling voids below existing slopewall shall be paid for as Granular Backfill for Structures.

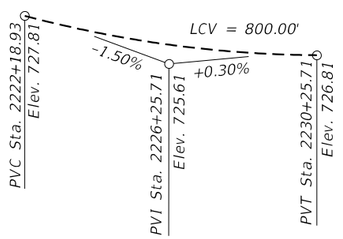


SECTION A-A

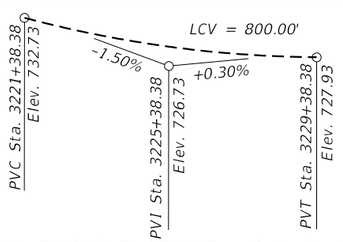


PROFILE GRADE - EUCLID AVE.

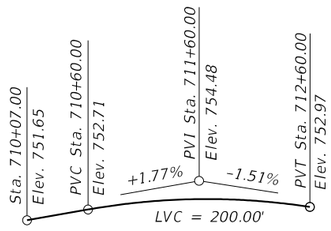
(Along EB PG and WB PB along edges of median)



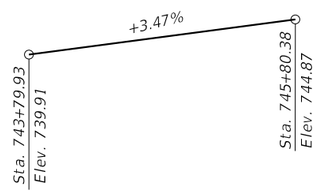
EX. PROFILE GRADE - N.B. IL 53



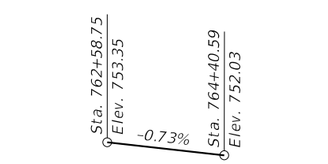
EX. PROFILE GRADE - S.B. IL 53



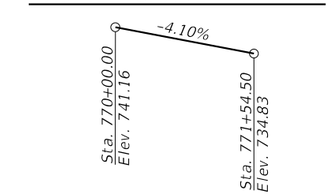
PROFILE GRADE - RAMP A



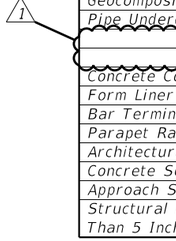
PROFILE GRADE - RAMP B



PROFILE GRADE - RAMP C



PROFILE GRADE - RAMP D



SECTION THRU SEMI-INTEGRAL ABUTMENT

(Horiz. dim. at Rt. ℄'s)

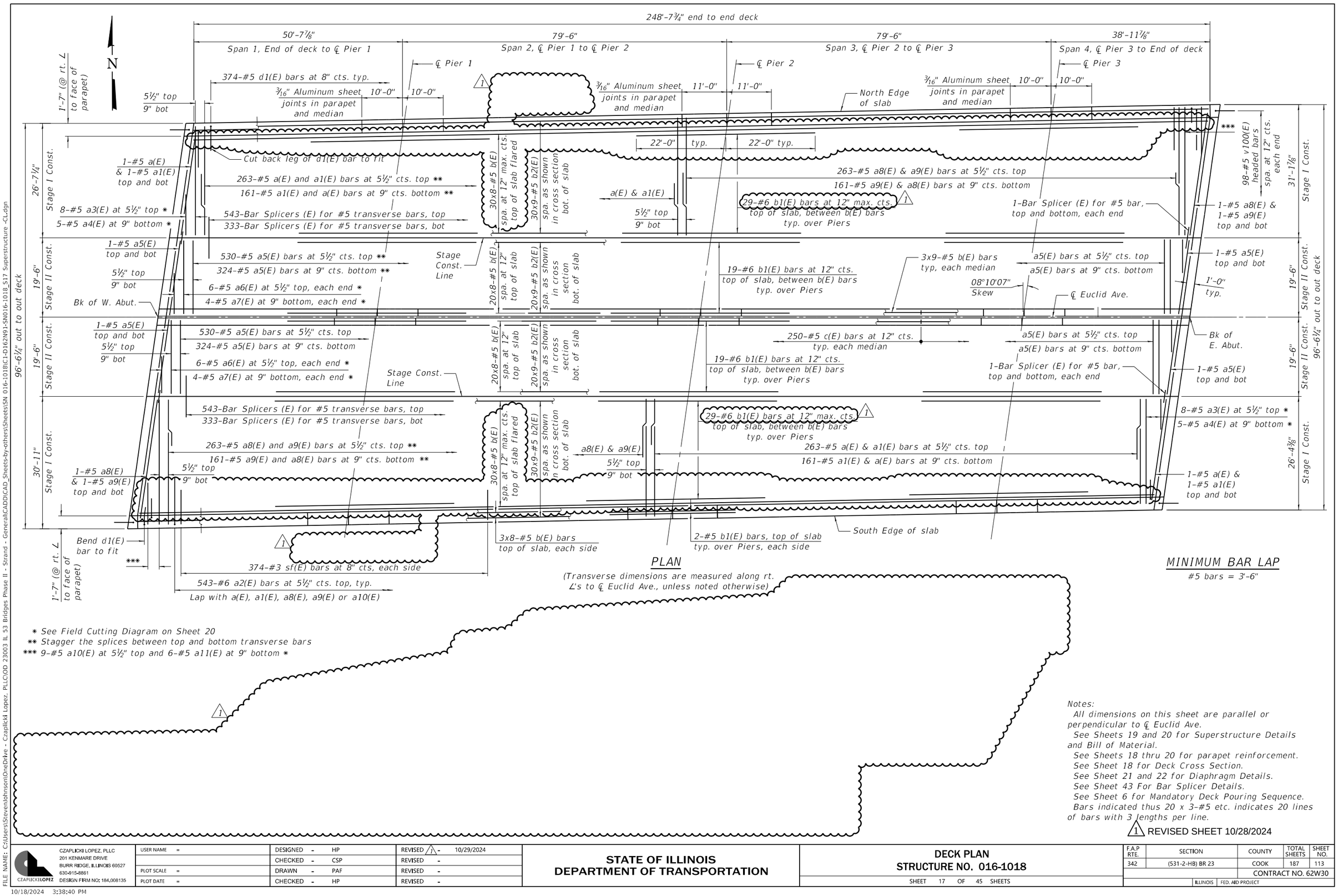
*Included in the cost of Pipe Underdrains for Structures. (See Special Provisions)

Note:
All drainage system components shall extend to 2'-0" from the end of each wingwall except an outlet pipe shall extend until intersecting with the side slopes. The pipes shall drain into concrete headwalls. (See Article 601.05 of the Standard Specifications and Highway Standard 601101).

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184,008135

USER NAME =		DESIGNED - HP	REVISED 1 - 10/29/2024	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL DATA STRUCTURE NO. 016-1018
		CHECKED - CSP	REVISED -		
PLOT SCALE =		DRAWN - PAF	REVISED -		SHEET 2 OF 45 SHEETS
PLOT DATE =		CHECKED - HP	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	98
		CONTRACT NO. 62W30		
	ILLINOIS FED. AID PROJECT			



PLAN

(Transverse dimensions are measured along rt. ∠'s to ℄ Euclid Ave., unless noted otherwise)

MINIMUM BAR LAP

#5 bars = 3'-6"

* See Field Cutting Diagram on Sheet 20
** Stagger the splices between top and bottom transverse bars
*** 9-#5 a10(E) at 5½" top and 6-#5 a11(E) at 9" bottom *

Notes:
All dimensions on this sheet are parallel or perpendicular to ℄ Euclid Ave.
See Sheets 19 and 20 for Superstructure Details and Bill of Material.
See Sheets 18 thru 20 for parapet reinforcement.
See Sheet 18 for Deck Cross Section.
See Sheet 21 and 22 for Diaphragm Details.
See Sheet 43 For Bar Splicer Details.
See Sheet 6 for Mandatory Deck Pouring Sequence.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.

1 REVISED SHEET 10/28/2024

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184.008135

USER NAME =		DESIGNED -	HP	REVISED 1 -	10/29/2024
		CHECKED -	CSP	REVISED -	
PLOT SCALE =		DRAWN -	PAF	REVISED -	
PLOT DATE =		CHECKED -	HP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DECK PLAN
STRUCTURE NO. 016-1018
SHEET 17 OF 45 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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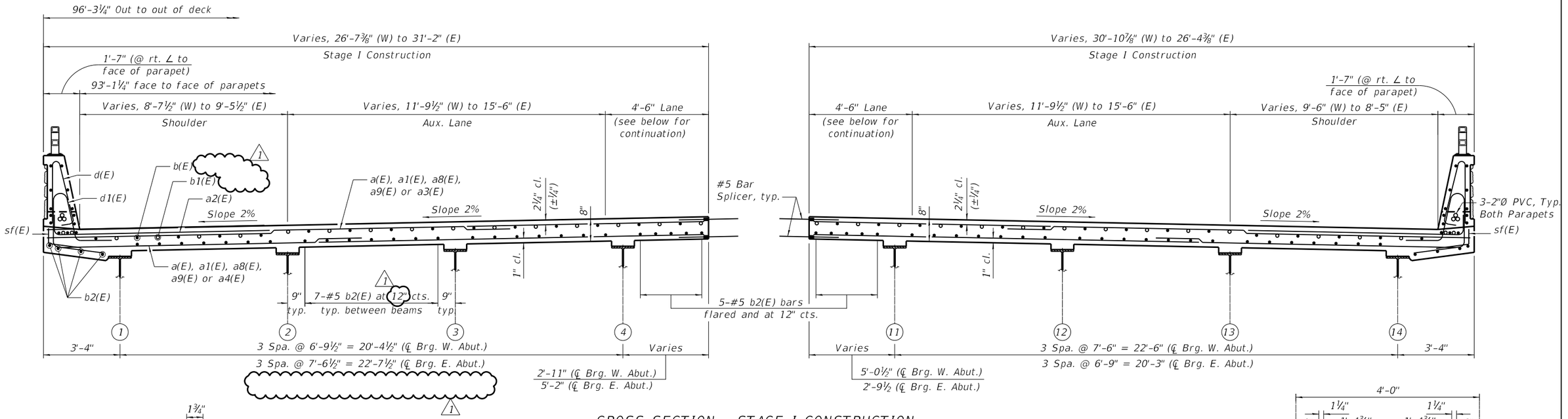
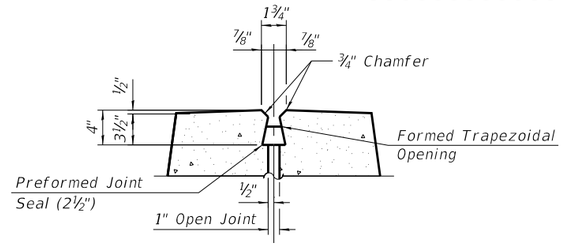
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		

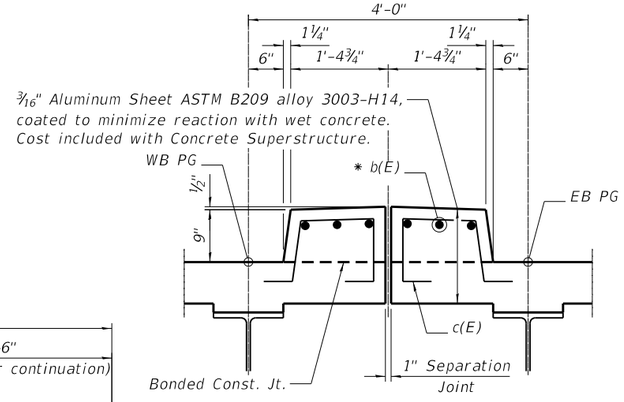


CROSS SECTION - STAGE I CONSTRUCTION

(Looking East)
(Transverse dimensions are measured along rt. ∠'s to ℄ Euclid Ave., unless noted otherwise)

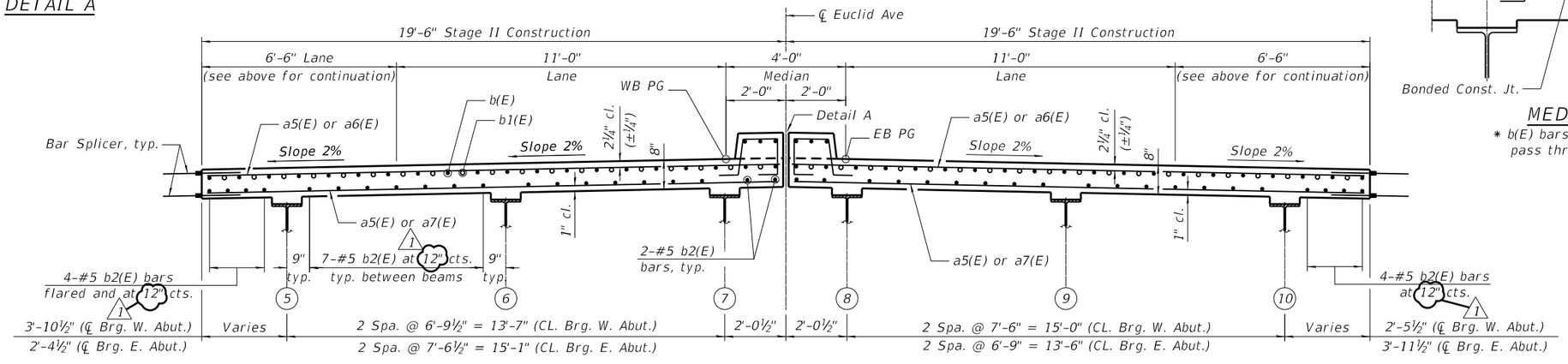


DETAIL A



MEDIAN DETAIL

* b(E) bars in median shall not pass thru aluminum sheet.



CROSS SECTION - STAGE II CONSTRUCTION

(Looking East)
(Transverse dimensions are measured along rt. ∠'s to ℄ Euclid Ave., unless noted otherwise)

1 REVISED SHEET 10/28/2024

CZAPLICKI LOPEZ, PLLC 201 KENMARE DRIVE BURR RIDGE, ILLINOIS 60527 630-915-8861 DESIGN FIRM NO: 184.008135	USER NAME =	DESIGNED - HP	REVISED 1 - 10/29/2024	**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**	**DECK CROSS SECTION STRUCTURE NO. 016-1018**
		CHECKED - CSP	REVISED -		
	PLOT SCALE =	DRAWN - PAF	REVISED -		SHEET 18 OF 45 SHEETS
	PLOT DATE =	CHECKED - HP	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	114
		CONTRACT NO. 62W30		
		ILLINOIS	FED. AID PROJECT	

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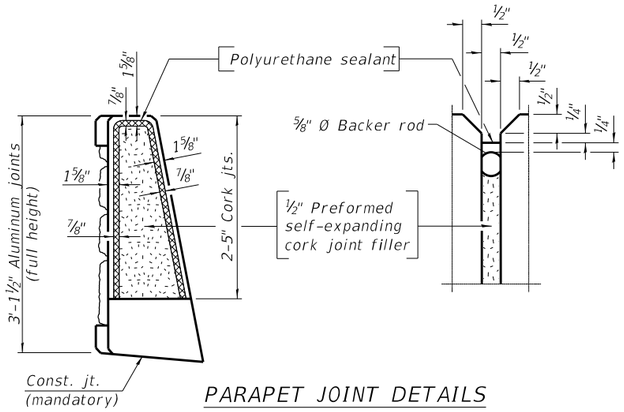
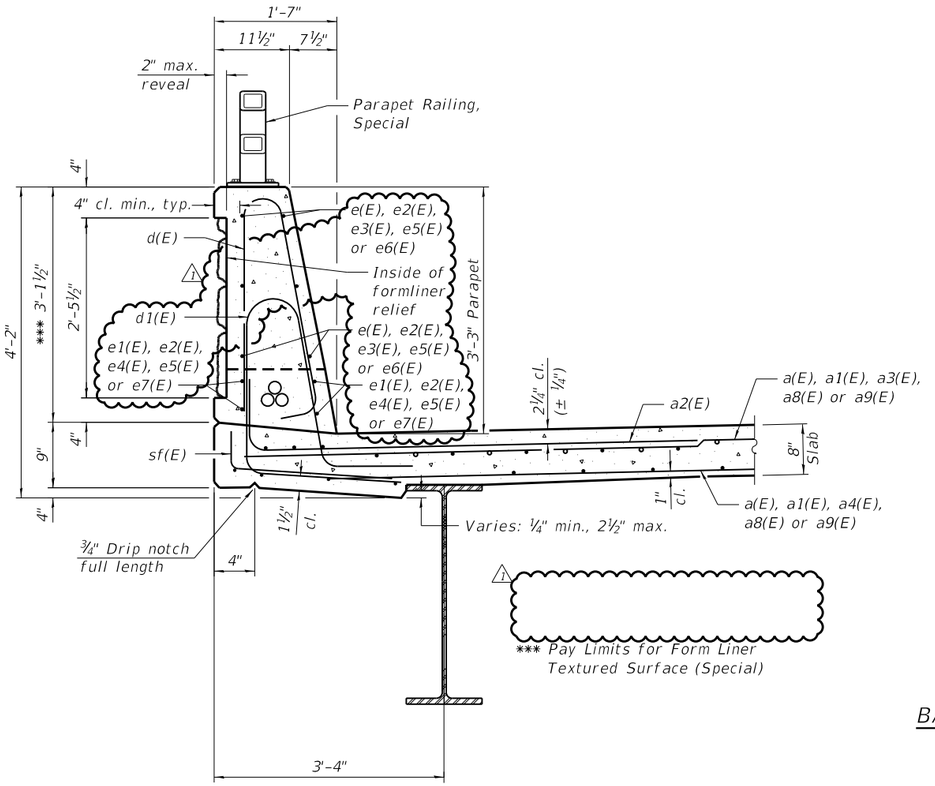
FILE NAME: C:\Users\StevenJohnson\OneDrive - Czaplicki Lopez, PLLC\OD 23003 IL 53 Bridges Phase II - Strand - General\CADD\CAD_Sheets-by-others\Sheets\SN 016-1018\C1-D162N91-SN016-1018_S18 Superstructure Cross Section - CL.dgn

10/18/2024 2:20:47 PM



PARAPET JOINT DETAILS



SECTION THRU PARAPET

For Bridge Aesthetics plan and details not shown in Structure Plans, See Bridge Aesthetic Plans.

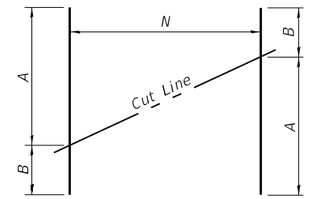
Notes:

The 3/16" min. aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated with 5 mils of either bitumen paint or epoxy paint to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

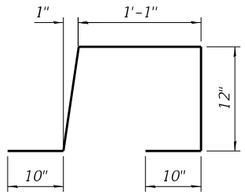
Bar terminators, paid for separately. See Total Bill of Material.

Bar	A	B	N
a3(E)	26'-0"	3'-0"	8
a4(E)	26'-0"	3'-0"	5
a6(E)	19'-2"	3'-0"	6
a7(E)	19'-2"	3'-0"	4
a10(E)	30'-5"	3'-0"	9
a11(E)	30'-5"	3'-0"	6

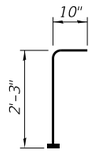


FIELD CUTTING DIAGRAM

Order a3(E), a4(E), a6(E), a7(E), a10(E), and a11(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.

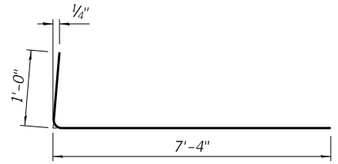


BAR c(E)

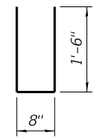


BAR v100(E)

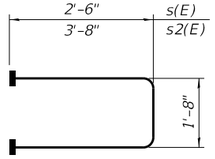
(Headed. 196 - #5 Bar terminators)



BAR a2(E)

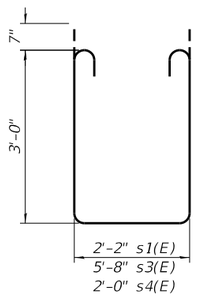


BAR u(E)

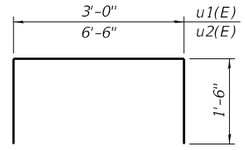


BARS s(E) & s2(E)

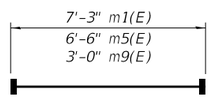
(Headed. 784 - #5 Bar terminators)



BARS s1(E), s3(E) & s4(E)

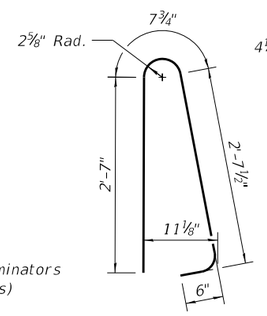


BARS u1(E) & u2(E)

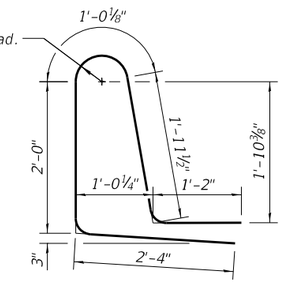


BAR m1(E), m5(E), & m9(E)

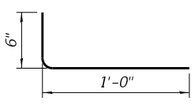
(m1(E) and m5(E) - Headed. 264 - #6 Bar terminators
m9(E) - Headed. 22 -#6 Bar Terminators)



BAR d(E)



BAR d1(E)



BAR sf(E)

1 REVISED SHEET 10/28/2024

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	864	#5	21'-0"	
a1(E)	864	#5	11'-0"	
a2(E)	1084	#6	8'-4"	
a3(E)	8	#5	29'-0"	
a4(E)	5	#5	29'-0"	
a5(E)	1728	#5	19'-1"	
a6(E)	12	#5	22'-2"	
a7(E)	8	#5	22'-2"	
a8(E)	864	#5	22'-6"	
a9(E)	864	#5	12'-0"	
a10(E)	9	#5	33'-5"	
a11(E)	6	#5	33'-5"	
b(E)	848	#5	34'-2"	
b1(E)	300	#6	44'-0"	
b2(E)	900	#5	30'-9"	
c(E)	500	#5	4'-9"	
d(E)	748	#5	6'-5"	
d1(E)	748	#5	8'-6"	
e(E)	12	#4	20'-0"	
e1(E)	8	#4	21'-6"	
e2(E)	40	#4	9'-8"	
e3(E)	36	#4	19'-2"	
e4(E)	16	#4	30'-4"	
e5(E)	20	#4	10'-8"	
e6(E)	12	#4	14'-2"	
e7(E)	4	#4	28'-8"	
m(E)	12	#6	30'-10"	
m1(E)	66	#6	7'-3"	
m2(E)	36	#6	7'-3"	
m3(E)	8	#4	30'-10"	
m4(E)	12	#6	26'-6"	
m5(E)	66	#6	6'-6"	
m6(E)	36	#6	6'-6"	
m7(E)	8	#4	26'-6"	
m8(E)	24	#6	19'-6"	
m9(E)	22	#6	3'-0"	
m10(E)	12	#6	3'-0"	
m11(E)	8	#4	19'-6"	
s(E)	196	#5	6'-8"	
s1(E)	196	#5	9'-4"	
s2(E)	196	#5	9'-0"	
s3(E)	196	#5	12'-10"	
s4(E)	196	#5	9'-2"	
sf(E)	748	#3	1'-6"	
u(E)	196	#4	3'-8"	
u1(E)	8	#5	6'-0"	
u2(E)	8	#5	9'-6"	
v100(E)	196	#5	3'-1"	

Concrete Superstructure	Cu. Yd.	837.5
Reinforcement Bars, Epoxy Coated	Pound	219,620
Concrete Color Additive	Cu. Yd.	74.1
Form Liner Textured Surface (Special)	Sq. Ft.	1490
Architectural Form Liner	Sq. Yd.	8
Concrete Sealant, Special	Sq. Yd.	116

Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184.008135

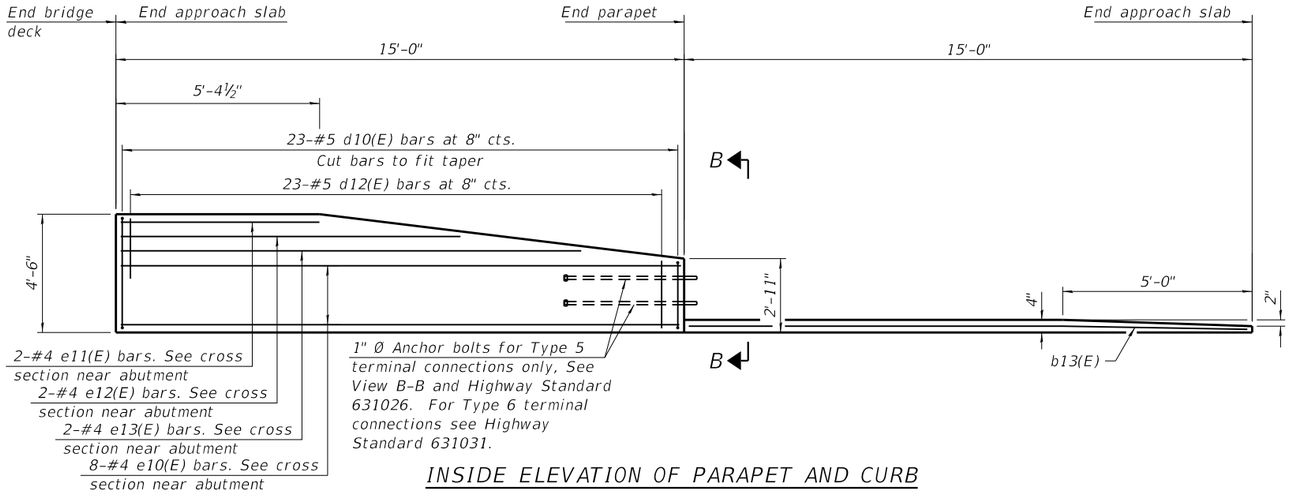
USER NAME =		DESIGNED -	HP	REVISED 1 -	10/29/2024
		CHECKED -	CSP	REVISED -	
PLOT SCALE =		DRAWN -	PAF	REVISED -	
PLOT DATE =		CHECKED -	HP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

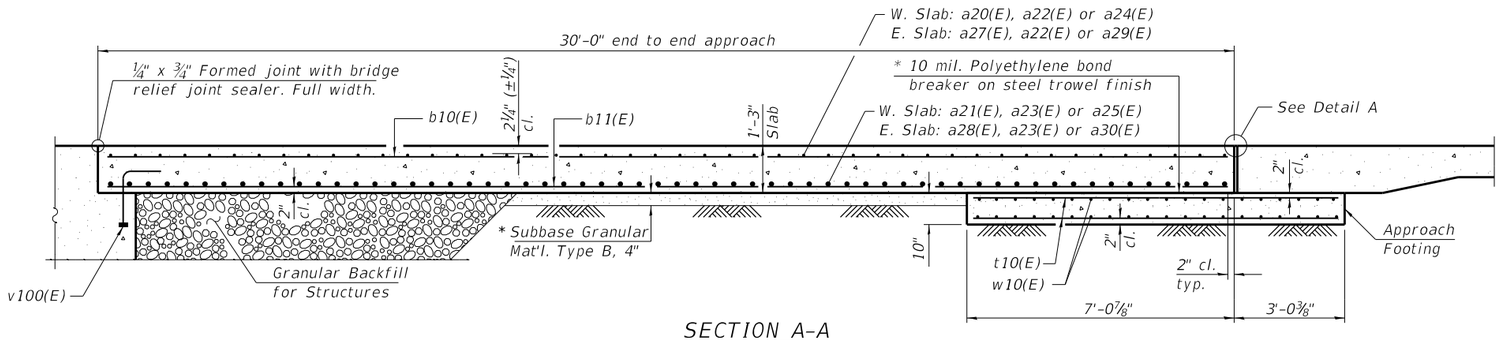
SUPERSTRUCTURE DETAILS II
STRUCTURE NO. 016-1018

SHEET 20 OF 45 SHEETS

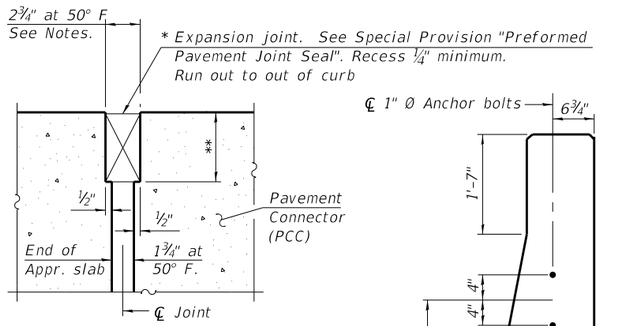
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	116
		CONTRACT NO. 62W30		
	ILLINOIS FED. AID PROJECT			



INSIDE ELEVATION OF PARAPET AND CURB



SECTION A-A

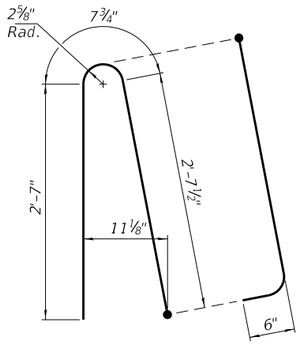


DETAIL A
(at Rt. L's)

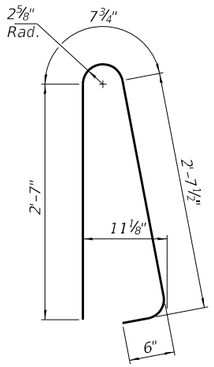
* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations

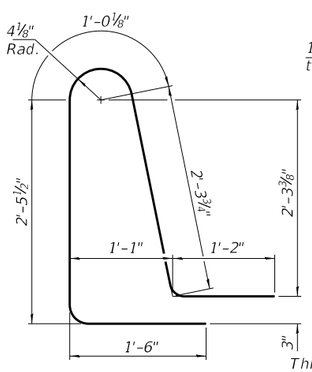
VIEW B-B



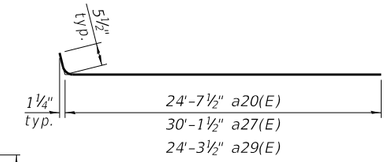
ALTERNATE BAR d10(E)
(When conduit is present)



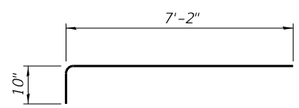
BAR d10(E)



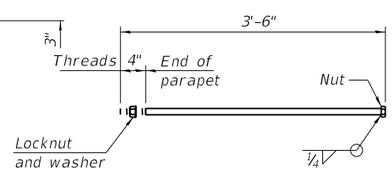
BAR d11(E)



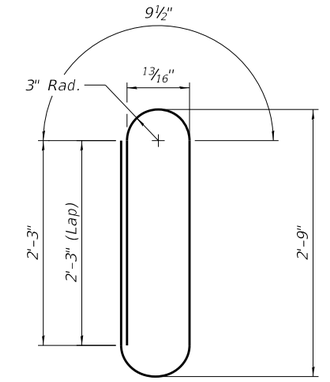
BARS a20(E), a27(E) & a29(E)



BAR a26(E)



*1" Ø ANCHOR BOLT
(Anchor bolt assemblies shall be galvanized according to Article 1006.09 of the Standard Specifications)



BAR d12(E)

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

Parapet concrete shall be paid for as Concrete Superstructure.

Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 45.

TWO APPROACHES BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a20(E)	46	#5	25'-1"	
a21(E)	60	#8	24'-9"	
a22(E)	184	#5	19'-4"	
a23(E)	240	#8	19'-4"	
a24(E)	46	#5	30'-0"	
a25(E)	60	#8	30'-0"	
a26(E)	92	#5	8'-0"	
a27(E)	46	#5	30'-7"	
a28(E)	60	#8	30'-4"	
a29(E)	46	#5	24'-9"	
a30(E)	60	#8	24'-5"	
b10(E)	290	#5	29'-8"	
b11(E)	458	#9	29'-8"	
b12(E)	16	#5	14'-8"	
b13(E)	4	#4	14'-8"	
d10(E)	92	#5	6'-5"	
d11(E)	92	#5	8'-6"	
d12(E)	92	#5	8'-4"	
e10(E)	32	#4	14'-8"	
e11(E)	8	#4	5'-0"	
e12(E)	8	#4	8'-3"	
e13(E)	8	#4	11'-5"	
t10(E)	388	#4	9'-8"	
w10(E)	40	#5	24'-9"	
w11(E)	80	#5	21'-1"	
w12(E)	40	#5	30'-0"	
w13(E)	40	#5	30'-4"	
w14(E)	40	#5	24'-5"	
Concrete Structures		Cu. Yd.	59.0	
Concrete Superstructure		Cu. Yd.	16.0	
Concrete Superstructure (Approach Slab)		Cu. Yd.	267.4	
Reinforcement Bars, Epoxy Coated		Pound	106,670	
Concrete Color Additive		Cu. Yd.	11.0	1
Form Liner Textured Surface (Special)		Sq. Ft.	240	
Concrete Sealant, Special		Sq. Yd.	21	
Approach Slab Removal		Sq. Yd.	640	

1 REVISED SHEET 10/28/2024

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184.008135

USER NAME	=	DESIGNED	- HP	REVISED 1	- 10/29/2024
		CHECKED	- CSP	REVISED	-
PLOT SCALE	=	DRAWN	- PAF	REVISED	-
PLOT DATE	=	CHECKED	- HP	REVISED	-

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS III
STRUCTURE NO. 016-1018

SHEET 25 OF 45 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	121
		CONTRACT NO. 62W30		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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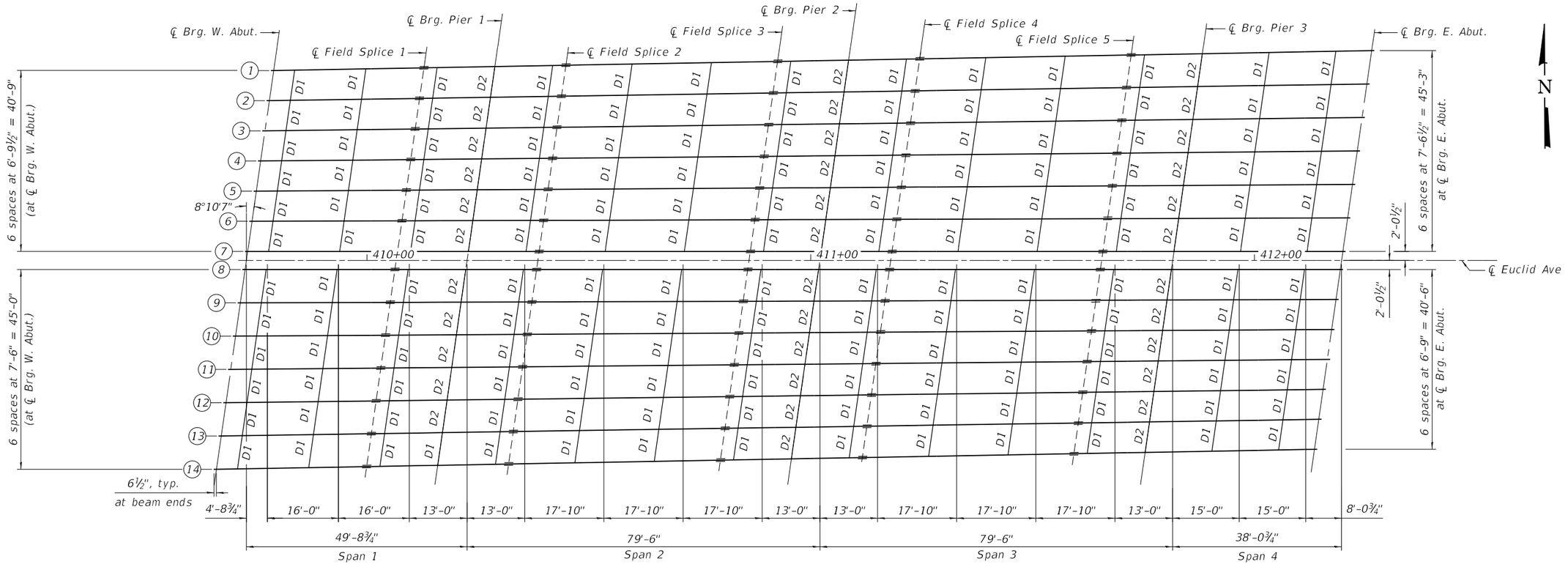
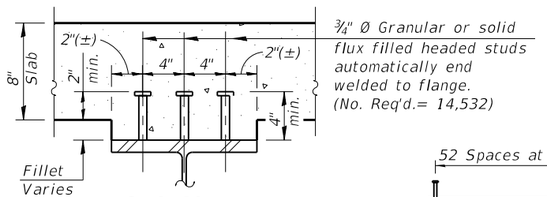
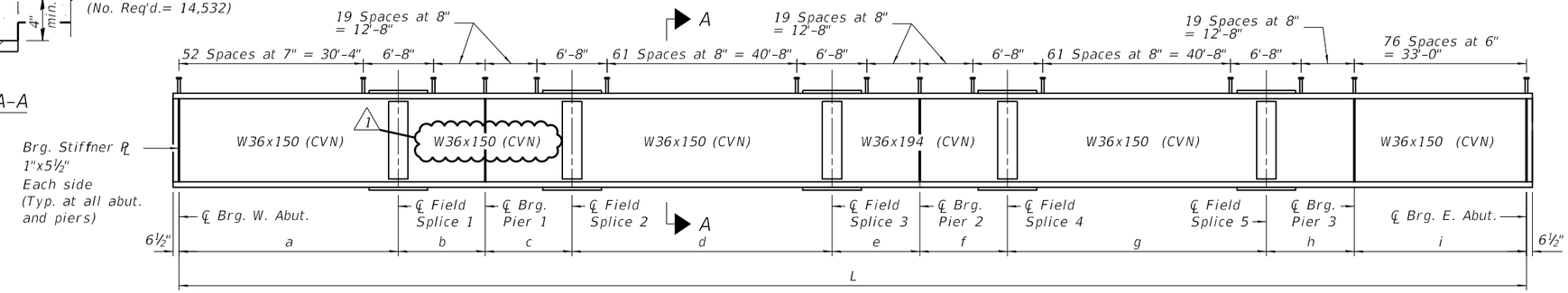


FRAMING PLAN



¾" Ø Granular or solid flux filled headed studs automatically end welded to flange. (No. Req'd.= 14,532)

SECTION A-A



BEAM ELEVATION

BEAM DIMENSIONS

(Measured along ℄ Beam)

Beam	a	b	c	d	e	f	g	h	i	L
1/14	33'-9⅞"	16'-0⁹⁄₁₆"	16'-0⁹⁄₁₆"	47'-7⁹⁄₁₆"	16'-0⁹⁄₁₆"	16'-0⁹⁄₁₆"	47'-7⁹⁄₁₆"	16'-0⁹⁄₁₆"	38'-2"	247'-5¹³⁄₁₆"
2/13	33'-9¹¹⁄₁₆"	16'-0⁷⁄₁₆"	16'-0⁷⁄₁₆"	47'-7⁵⁄₁₆"	16'-0⁷⁄₁₆"	16'-0⁷⁄₁₆"	47'-7⁵⁄₁₆"	16'-0⁷⁄₁₆"	38'-1¹³⁄₁₆"	247'-4⁵⁄₁₆"
3/12	33'-9½"	16'-0⅜"	16'-0⅜"	47'-7¹⁄₁₆"	16'-0⅜"	16'-0⅜"	47'-7¹⁄₁₆"	16'-0⅜"	38'-1⁹⁄₁₆"	247'-3¹⁄₁₆"
4/11	33'-9⁵⁄₁₆"	16'-0¼"	16'-0¼"	47'-6¾"	16'-0¼"	16'-0¼"	47'-6¾"	16'-0¼"	38'-1⅜"	247'-1⁷⁄₁₆"
5/10	33'-9⅛"	16'-0³⁄₁₆"	16'-0³⁄₁₆"	47'-6½"	16'-0³⁄₁₆"	16'-0³⁄₁₆"	47'-6½"	16'-0³⁄₁₆"	38'-1³⁄₁₆"	247'-0¼"
6/9	33'-8¹⁵⁄₁₆"	16'-0¹⁄₁₆"	16'-0¹⁄₁₆"	47'-6¼"	16'-0¹⁄₁₆"	16'-0¹⁄₁₆"	47'-6¼"	16'-0¹⁄₁₆"	38'-0¹⁵⁄₁₆"	246'-10¹¹⁄₁₆"
7/8	33'-8¾"	16'-0"	16'-0"	47'-6"	16'-0"	16'-0"	47'-6"	16'-0"	38'-0¾"	246'-9½"

Notes:
All dimensions noted are either parallel or perpendicular to ℄ Euclid Ave, unless noted otherwise.
Load carrying components designated "CVN" shall conform to the Charpy-V-Notch Impact Energy Requirements, Zone 2.
All diaphragms shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames and diaphragms at supports may be temporarily disconnected to install bearing anchor bolts.
All beams, splice plates and bearing stiffeners shall be AASHTO M270, Grade 50.
See sheet 27 of 45 for additional notes and Detail A.

1 REVISED SHEET 10/28/2024

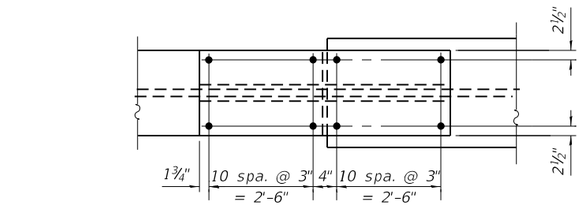
CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184,008135

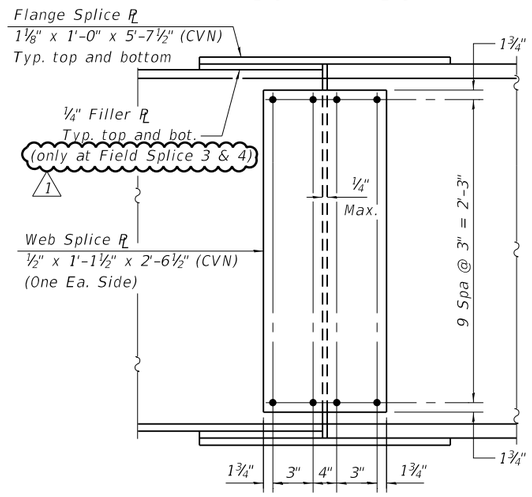
USER NAME =	DESIGNED - HP	REVISED 1 - 10/29/2024	
	CHECKED - CSP	REVISED -	
PLOT SCALE =	DRAWN - PAF	REVISED -	
PLOT DATE =	CHECKED - HP	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING PLAN AND BEAM ELEVATION
STRUCTURE NO. 016-1018
SHEET 26 OF 45 SHEETS

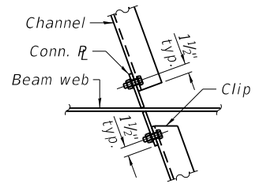
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	122
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		





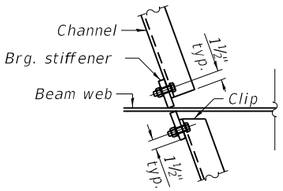
FIELD SPLICE DETAIL

(70 Required)



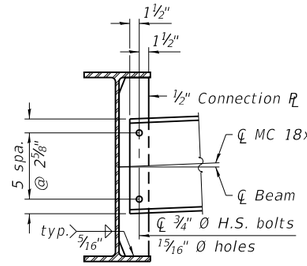
DETAIL A

Clip channel as necessary for ease of installation of diaphragms on skews.

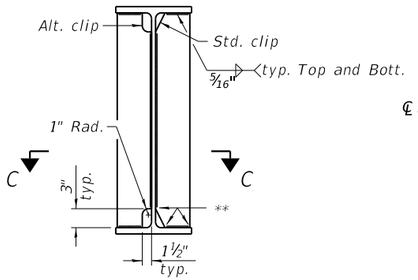


DETAIL A

Clip channel as necessary for ease of installation of diaphragms on skews.

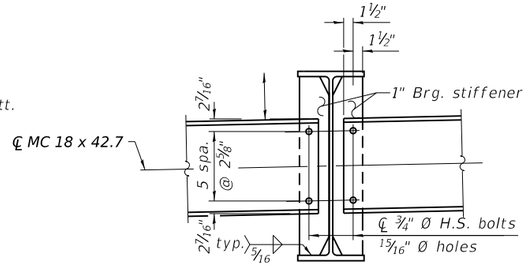


INTERIOR DIAPHRAGM – D1



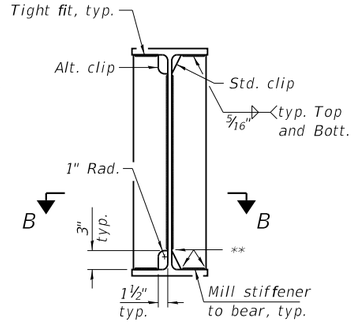
CONNECTION PLATES

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



PIER DIAPHRAGMS – D2

1



BEARING STIFFENERS

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

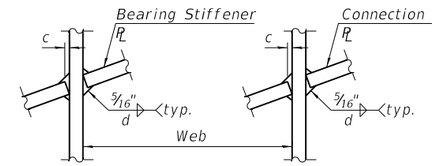
1

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.

All diaphragms and connecting plates shall be AASHTO M270, Grade 36.



SECTION B-B

SECTION C-C

WEB WELD DETAIL

$d = \frac{5}{16} + c$

1 REVISED SHEET 10/28/2024

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CZAPLICKI LOPEZ, PLLC 201 KENMARE DRIVE BURR RIDGE, ILLINOIS 60527 630-915-8861 DESIGN FIRM NO: 184.008135	USER NAME =	DESIGNED - HP	REVISED 1 - 10/29/2024	**STATE OF ILLINOIS** **DEPARTMENT OF TRANSPORTATION**	**STRUCTURAL STEEL DETAILS I** **STRUCTURE NO. 016-1018**
		CHECKED - CSP	REVISED -		
	PLOT SCALE =	DRAWN - PAF	REVISED -		SHEET 27 OF 45 SHEETS
	PLOT DATE =	CHECKED - HP	REVISED -		

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	123
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		

INTERIOR BEAM MOMENT TABLE								
		0.4 Span 1	Pier 1	0.5 Span 2	Pier 2	0.5 Span 3	Pier 3	0.6 Span 4
I_s	(in^4)	9040	9040	9040	12100	9040	9040	9040
I_c (n)	(in^4)	23640	--	23794	--	23964	--	24094
I_c (3n)	(in^4)	17701	--	17859	--	18038	--	18175
I_c (cr)	(in^4)	--	11361	--	14530	--	11361	--
S_s	(in^3)	504	504	504	664	504	504	504
S_c (n)	(in^3)	722	--	724	--	726	--	727
S_c (3n)	(in^3)	658	--	660	--	663	--	664
S_c (cr)	(in^3)	--	558	--	719	--	558	--
S_x	(in^3)	--	--	--	--	--	--	--
DC1	(k/')	0.88	0.89	0.90	0.96	0.92	0.94	0.94
M_{DC1}	('k)	115	361	234	584	258	351	22
DC2	(k/')	0.26	0.26	0.26	0.26	0.26	0.26	0.26
M_{DC2}	('k)	15	47	31	71	32	43	2
DW	(k/')	0	0	0	0	0	0	0
M_{DW}	('k)	0	0	0	0	0	0	0
LLDF		0.64	0.62	0.60	0.61	0.62	0.66	0.71
M_{L+IM}	('k)	540	617	702	853	674	680	426
f_f (Strength I)	(ksi)	--	--	--	--	--	--	--
$M_u + {}^1/_3 f_f S_x$	('k)	1107	1589	1560	2311	1543	1683	775
$\Phi_f M_n$	('k)	3761	--	3751	--	3743	--	3761
f_s DC1	(ksi)	2.74	8.58	5.57	10.55	6.15	8.36	0.53
f_s DC2	(ksi)	0.27	1.01	0.56	1.18	0.58	0.93	0.03
f_s DW	(ksi)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
f_s (L+IM)	(ksi)	8.98	13.27	11.64	14.24	11.14	14.62	7.03
f_f (Service II)	(ksi)	--	--	--	--	--	--	--
$f_s + {}^{ff}/_2$ (Service II)	(ksi)	14.68	26.84	21.26	30.24	21.22	28.31	9.70
Service II Resistance	(ksi)	47.50	47.50	47.50	47.50	47.50	47.50	47.50
$f_s + {}^{ff}/_3$ (Strength I)	(ksi)	19.47	35.21	28.04	39.58	27.92	37.21	13.00
$\Phi_f F_n$	(ksi)	--	50.0	--	50.0	--	50.0	--
V_f	(k)	30.33	38.72	23.65	35.74	24.00	38.69	30.35

INTERIOR BEAM REACTION TABLE						
		W. Abut.	Pier 1	Pier 2	Pier 3	E. Abut.
LLDF		0.73	0.74	0.76	0.77	0.78
OCF		1.03	1.03	1.03	1.03	1.03
R_{DC1}	(k)	49.6	68.3	78.3	61.5	54.5
R_{DC2}	(k)	1.8	7.8	9.3	7.3	1.0
R_{DW}	(k)	0.0	0.0	0.0	0.0	0.0
R_L	(k)	52.0	88.9	101.4	93.2	50.4
R_{Im}	(k)	13.5	17.1	19.3	18.6	13.3
R_{Total} (Strength I)(Impact)	(k)	178.8	280.6	320.7	281.6	180.9
R_{Total} (Strength I)(No Impact)	(k)	155.3	250.6	286.8	249.0	157.5

TOP OF BEAM ELEVATIONS (FOR FABRICATION ONLY)									
Location	℄ Bearing W. Abut.	℄ Splice 1	℄ Bearing Pier 1	℄ Splice 2	℄ Splice 3	℄ Bearing Pier 2	℄ Splice 4	℄ Splice 5	℄ Bearing Pier 3	℄ Bearing E. Abut.
Beam 1	750.92	750.22	749.89	749.56	748.41	747.96	747.52	746.03	745.50	744.22
Beam 2	751.07	750.38	750.05	749.72	748.57	748.13	747.69	746.21	745.68	744.41
Beam 3	751.22	750.53	750.21	749.88	748.74	748.30	747.87	746.40	745.87	744.60
Beam 4	751.37	750.69	750.37	750.04	748.91	748.48	748.04	746.58	746.05	744.79
Beam 5	751.52	750.85	750.52	750.20	749.08	748.65	748.21	746.76	746.23	744.98
Beam 6	751.67	751.00	750.68	750.36	749.25	748.82	748.39	746.94	746.42	745.17
Beam 7	751.82	751.16	750.84	750.52	749.42	748.99	748.56	747.13	746.60	745.36
Beam 8	751.83	751.17	750.85	750.54	749.43	749.01	748.58	747.14	746.62	745.38
Beam 9	751.70	751.04	750.73	750.41	749.32	748.89	748.47	747.04	746.52	745.28
Beam 10	751.56	750.91	750.60	750.29	749.20	748.78	748.35	746.93	746.41	745.18
Beam 11	751.43	750.78	750.47	750.17	749.08	748.66	748.24	746.83	746.31	745.08
Beam 12	751.30	750.65	750.35	750.04	748.96	748.55	748.13	746.72	746.20	744.98
Beam 13	751.16	750.53	750.22	749.92	748.85	748.43	748.01	746.61	746.10	744.88
Beam 14	751.03	750.40	750.09	749.79	748.73	748.32	747.90	746.51	745.99	744.78

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

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

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

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

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

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

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

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

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

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

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

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

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

M_u: Strength I load combination of factored design moments (kip-ft.). $1.25\,(M_{DC1} + M_{DC2}) + 1.5\,M_{DW} + 1.75\,M_{L+IM}$

f_f: Factored calculated flange lateral bending stress as calculated using Article 6.10.1.6 and as further simplified by IDOT provisions (ksi).

$\Phi_f M_n$: Factored nominal flexural resistance of the section determined as specified in Article 6.10.7.1 or A6 as applicable (kip-ft.).

f_sDC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi). M_{DC1} / S_s

f_sDC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi). M_{DC2} / S_c (3n) or M_{DC2} / S_c (cr) as applicable.

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

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

$f_s + f_f / 2$ (Service II): Sum of stresses as computed below (ksi). f_s DC1 + f_s DC2 + f_s DW + 1.3 f_s (L+ IM) + f_f /2

Service II Resistance: Composite ($0.95R_hF_{yf}$) or noncomposite ($0.80R_hF_{yf}$) stress capacity according to Article 6.10.4.2 (ksi).

$f_s + f_f / 3$ (Strength I): Sum of stresses as computed below on non-compact sections (ksi). $1.25\,(f_s$ DC1 + f_s DC2) + 1.5 f_s DW + 1.75 f_s (L+ IM) + f_f /3

$\Phi_f F_n$: Factored nominal flexural resistance of the section as specified in Article 6.10.7.2 or 6.10.8 as applicable (ksi).

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

OCF: Obtuse Correction Factor according to Article 4.6.2.2.3c or as further simplified by IDOT provisions.

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

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

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

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

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

R_{Total} (Strength I)(Impact): Strength I load combination of factored design reactions (kip). $1.25\,(R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75\,(R_L + R_{IM})$

R_{Total} (Strength I)(No Impact): Strength I load combination of factored design reactions, not including dynamic load allowance (Impact) (kip). $1.25\,(R_{DC1} + R_{DC2}) + 1.5R_{DW} + 1.75\,(R_L)$

1 REVISED SHEET 10/28/2024

CZAPLICKI LOPEZ, PLLC
201 KENMARE DRIVE
BURR RIDGE, ILLINOIS 60527
630-915-8861
DESIGN FIRM NO: 184.008135

USER NAME =		DESIGNED - HP		REVISED 1 - 10/29/2024	
		CHECKED - CSP		REVISED -	
PLOT SCALE =		DRAWN - PAF		REVISED -	
PLOT DATE =		CHECKED - HP		REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

STRUCTURAL STEEL DETAILS II
STRUCTURE NO. 016-1018

SHEET 28 OF 45 SHEETS

F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
342	(531-2-HB) BR 23	COOK	187	124
		CONTRACT NO. 62W30		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: C:\Users\StevenJohnson\OneDrive - Czaplicki Lopez, PLLC\OD 23003 IL 53 Bridges Phase II - Strand - General\CADD\CAD_Sheets-by-others\Sheets\SN 016-1018\C1-D162N91-SN016-1018_S28 Interior Moment and Reaction Tables - CL.dgn

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