64H58

JO DAVIESS

11–5–2021 LETTING ITEM 022

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	1
	ILLINOIS	CONTRACT NO. 64H58		

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

PROPOSED
HIGHWAY PLANS

FAP ROUTE 642 (IL 78)
SECTION 10BR–5
PROJECT STP–7KJM(024)
BRIDGE REPLACEMENT OVER PLUM RIVER
JO DAVIESS COUNTY

C–92–023–21

FOR INDEX OF SHEETS AND
HIGHWAY STANDARDS, SEE SHEET NO. 2

TRAFFIC DATA

	2022 ADT	2032 ADT
IL 78	925	975
	DESIGN SPEED	POSTED SPEED
IL 78	60 MPH	55 MPH

DESIGN DESIGNATION

FUNCTIONAL CLASSIFICATION

MAJOR COLLECTOR

P.V. = 87.2% S.U. = 4.6% M.U. = 8.2%

D-92-030-12

LOCATION OF SECTION INDICATED THUS: –

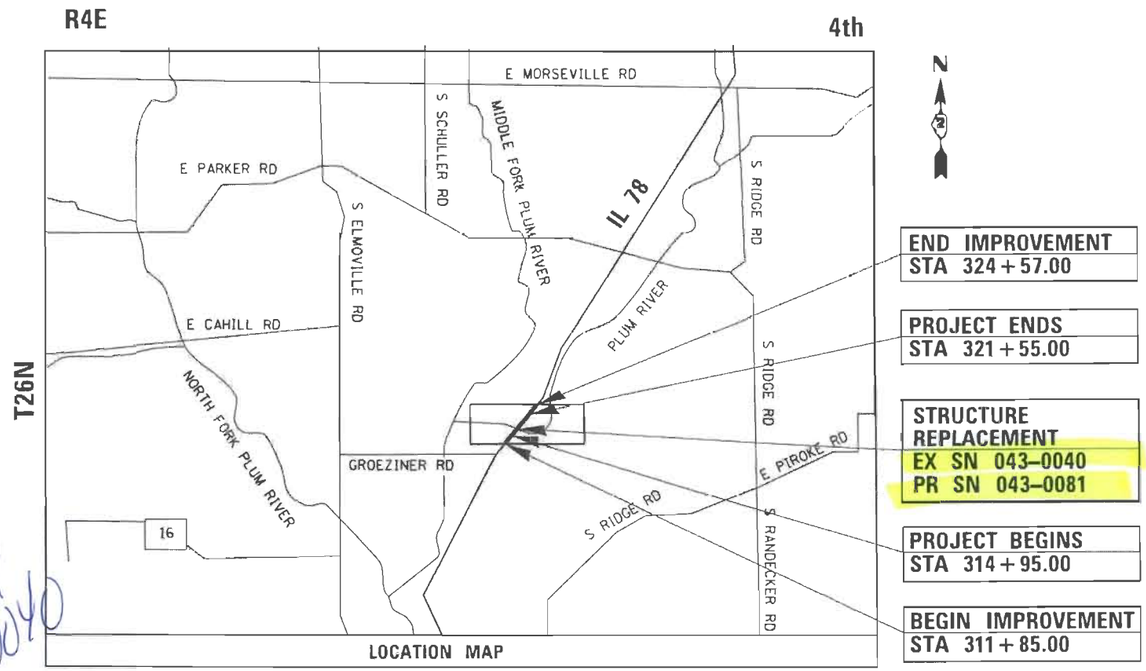
Globetrotters®
Engineering Corporation
ENGINEERS ARCHITECTS
300 South Wacker Drive
Chicago, Illinois 60606
(312) 922–6400

100' 200' 300' — 1" = 100'
10' 20' 30' — 1" = 10'
50' 100' — 1" = 50'
50' 100' — 1" = 40'
50' 100' — 1" = 30'
50' 100' — 1" = 20'

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

Replaced 043-0040



LOCATION MAP

END IMPROVEMENT
STA 324 + 57.00

PROJECT ENDS
STA 321 + 55.00

STRUCTURE REPLACEMENT
EX SN 043–0040
PR SN 043–0081

PROJECT BEGINS
STA 314 + 95.00

BEGIN IMPROVEMENT
STA 311 + 85.00

GROSS LENGTH = 660 FT. = 0.13 MILE
NET LENGTH = 660 FT. = 0.13 MILE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SUBMITTED August 11, 20 21
Mohammad Ahmad
REGIONAL ENGINEER

October 1, 20 21
ENGINEER OF DESIGN AND ENVIRONMENT

October 2, 20 21
Stephen M Travis
DIRECTOR OF HIGHWAYS PROJECT IMPLEMENTATION

PRINTED BY THE AUTHORITY OF THE STATE OF ILLINOIS

PROJECT ENGINEER: STEVE ROBERY
PROJECT MANAGER: COREY CONDERMAN (815) 284–5936
EMAIL: Corey.Conderman@Illinois.gov

CONTRACT NO. 64H58

C-00

REV. 9/14/21

INDEX OF SHEETS

1	COVER SHEET
2	INDEX OF SHEETS & HIGHWAY STANDARDS
3	GENERAL NOTES
4 - 11	SUMMARY OF QUANTITIES
12	TYPICAL SECTIONS
13 - 15	SCHEDULE OF QUANTITIES
16	PAVEMENT SCHEDULE
17 - 18	HORIZONTAL AND VERTICAL CONTROL
19	ROADWAY PLAN AND PROFILE
20	REMOVAL PLAN
21 - 23	MAINTENANCE OF TRAFFIC
24	EROSION CONTROL PLAN
25 - 28	STREAMBANK STABILIZATION PLAN
29	DRAINAGE PLAN
30	PAVEMENT MARKING AND SIGNING PLAN
31	RIGHT-OF-WAY PLAT
32	TEMPORARY EASEMENT PLAT
33 - 38	EXISTING STRUCTURE PLANS
39 - 63	BRIDGE PLANS
64 - 66	SOIL BORING LOGS
67	RIPRAP AT END SECTIONS (DIST STD 19.4)
67	HOT-MIX ASPHALT SHOULDER (DIST STD 22.4)
67	DETAIL OF HOT-MIX ASPHALT SHOULDER AT GUARDRAIL (DIST STD 23.4)
67	DELINEATOR AND POST ORIENTATION (DIST STD 37.4)
68	TYPICAL BENCHING ON EXISTING EMBANKMENT (DIST STD 50.4)
68	DRAIN FOR AGGREGATE BASE COURSE (DIST STD 96.4)
68	PERMANENT SURVEY MARKERS, TYPE II (DIST STD 66.2)
69 - 72	WORK ZONE SIGN DETAILS (DIST STD 34.1)
73 - 75	TYPICAL PAVEMENT MARKINGS (DIST STD 41.1)
76	GUARDRAIL REFLECTORS, TYPE C (SPECIAL) (DIST STD)
77 - 85	CROSS SECTIONS - IL 78
86 - 98	CROSS SECTIONS - PLUM RIVER

STATE OF ILLINOIS
CHRISTOPHER B. WINE
ILLINOIS
062.047129
LICENSED PROFESSIONAL ENGINEER

8/9/21

Christopher B. Wine
Licensed Professional Engineer
State of Illinois, No. 062-047129
Expires 11/30/2021

FOR SHEETS 1-38 AND 67-98

HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001001-02	AREAS OF REINFORCEMENT BARS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
420001-09	PAVEMENT JOINTS
420401-13	PAVEMENT CONNECTOR (PCC) FOR BRIDGE APPROACH SLAB
515001-04	NAME PLATE FOR BRIDGES
542401-04	METAL FLARED END SECTION FOR PIPE CULVERTS
601101-02	CONCRETE HEADWALL FOR PIPE UNDERDRAINS
610001-09	SHOULDER INLET WITH CURB
630001-12	STEEL PLATE BEAM GUARDRAIL
630201-07	PCC/HMA STABILIZATION AT STEEL PLATE BEAM GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
631031-17	TRAFFIC BARRIER TERMINAL, TYPE 6
635001-02	DELINEATORS
666001-01	RIGHT OF WAY MARKERS
701001-02	OFF-ROAD OPERATIONS 2L,2W, MORE THAN 15'(4.5M) AWAY
701006.05	OPERATIONS 2L, 2W, 15' (4.5m) TO 24" (600mm) FROM PAVEMENT EDGE
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701306-04	LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS, DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701321-18	LANE CLOSURE, 2L, 2W, BRIDGE REPAIR WITH BARRIER
701326-04	LANE CLOSURE, 2L, 2W, PAVEMENT WIDENING, FOR SPEEDS ≥ 45 MPH
701901-08	TRAFFIC CONTROL DEVICES
704001-08	TEMPORARY CONCRETE BARRIER
720001-01	SIGN PANEL MOUNTING DETAILS
720006-04	SIGN PANEL ERECTION DETAILS
720011-01	METAL POSTS FOR SIGNS, MARKERS AND DELINEATORS
725001-01	OBJECT AND TERMINAL MARKERS
728001-01	TELESCOPING STEEL SIGN SUPPORTS
729001-01	APPLICATIONS OF TYPES A AND B METAL POSTS (FOR SIGNS & MARKERS)
780001-05	TYPICAL PAVEMENT MARKINGS
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS

APPLICATION RATES

AGG BASE COURSE TYPE B - 2.05 TONS/CU YD
HMA MATERIALS - 112 LBS/SQ YD/IN
BITUMINOUS MATERIAL (PRIME COAT)(ON AGGREGATE) - 0.25 LBS/SQ FT
BITUMINOUS MATERIAL (TACK COAT)(ON EXISTING SURFACE) - 0.05 LBS/SQ FT
BITUMINOUS MATERIAL (TACK COAT)(BETWEEN LIFTS) - 0.025 LBS/ SQ FT

GENERAL NOTES

7. THE CONTRACTOR SHALL SEED ALL DISTURBED AREAS WITHIN THE PROJECT LIMITS. SEEDING CLASS 4 OR 2A SHALL BE USED, EXCEPT IN FRONT OF PROPERTIES WHERE THE GRASS WILL BE MOWED, THEN USE SEEDING, CLASS 1A. CLASS 2A SHALL BE USED ON FRONT SLOPES AND DITCH BOTTOMS. CLASS 4 SHALL BE USED BEHIND TYPE A GUTTER, ON ALL BACKSLOPES AND AREAS BEHIND THE BACKSLOPE, AND BEYOND THE TOE OF FRONT SLOPE ON FILL SECTIONS WITHOUT DITCHES.

10. FERTILIZER NUTRIENTS SHALL BE APPLIED AT THE RATE SPECIFIED IN SECTIONS 250 AND 525 OF THE STANDARD SPECIFICATIONS. THIS SHALL BE INCLUDED IN THE COST OF THE SEEDING OR SODDING.

11. PREVIOUSLY PUGMILLED STOCKPILES OF "TYPE A" OLDER THAN 1 MONTH WILL NOT BE APPROVED FOR USE UNTIL A MOISTURE CHECK IS RUN TO VERIFY MOISTURE CONTENT. MATERIAL SHIPPED TO PROJECTS WITHOUT BEING TESTED WILL NOT BE ACCEPTED.

25. THE FOLLOWING MIXTURE REQUIREMENTS ARE APPLICABLE FOR THIS PROJECT:

	LOCATION:	PAVEMENT		SHOULDERS	
	MIXTURE USE(S):	SURFACE	BINDER	SURFACE	LOWER LIFTS
	LIFT THICKNESS:	1½"	1¼"	2¾"	5¼"
	PG:	PG 58-28	PG 58-28	PG 58-28	PG 58-28
	DESIGN AIR VOIDS:	4.0 @ N50	4.0 @ N50	4.0 @ N50	4.0 @ N50
	MIXTURE COMPOSITION (MIXTURE GRADATION):	IL 9.5	IL 9.5, OR 9.5FG	IL 9.5, OR 9.5FG	IL 9.5, OR 9.5FG
	FRICTION AGGREGATE:	C	N/A	C	N/A
	MIXTURE WEIGHT:	112 lbs/sy/in	N/A	112 lbs/sy/in	N/A
	QUALITY MANAGEMENT PROGRAM:	QC/QA	QC/QA	QC/QA	QC/QA
	SUBLOT SIZE:	N/A	N/A	N/A	N/A
*	NUMBER OR ROLLER PASSES:	N/A	N/A	N/A	N/A

* WHEN A NUMBER OF ROLLER PASSES IS SPECIFIED, THE CONTRACTOR MAY OPT TO USE INTELLIGENT COMPACTION IN LIEU OF DENSITY TESTING UNDER THE QUALITY CONTROL FOR PERFORMANCE (QCP) PROGRAM.

31. ON FULL DEPTH PAVEMENT, SHOULDER WIDTHS OF 6 FT. OR LESS MAY BE PLACED, AT THE CONTRACTOR'S OPTION, SIMULTANEOUSLY WITH THE ADJACENT TRAFFIC LANE FOR BOTH THE BINDER AND SURFACE COURSES, PROVIDED THE CROSS SLOPE OF BOTH THE PAVEMENT AND SHOULDER CAN BE SATISFACTORILY OBTAINED. THE SHOULDER WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER SQUARE YARD FOR HOT-MIX ASPHALT SHOULDERS OF THE THICKNESS SPECIFIED ON THE PLANS.

37. THE NEW NUMBER FOR THIS STRUCTURE WILL BE 043-0081.

46a. BRIDGE FLOWS MUST BE MAINTAINED THROUGHOUT THE PROJECT. NORMAL FLOW SHALL BE ALLOWED TO PASS AT THE RATE IT ENTERS THE JOBSITE. HIGH FLOWS SHALL BE ALLOWED TO PASS WITHOUT CAUSING DAMAGE TO UPSTREAM PROPERTIES.

80. THE CONTRACTOR SHALL SUPPLY THE RESIDENT ENGINEER WITH THE MANUFACTURER'S INSTALLATION REQUIREMENTS FOR THE TYPE OF STEEL PLATE BEAM GUARDRAIL TERMINAL TYPE 1 SPECIAL (TANGENT) OR STEEL PLATE BEAM GUARDRAIL TERMINAL TYPE I SPECIAL (FLARED).

83. DELINEATORS SHALL BE INSTALLED AS SHOWN IN STANDARD 635001, EXCEPT THAT THE POST SHALL BE ROTATED 180 AND ONLY METAL-BACKED DELINEATORS SHALL BE PERMITTED. DELINEATORS SHALL BE PLACED AT THE ENDS OF APPROACH GUARDRAIL TERMINAL SECTIONS. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR DELINEATORS.

84. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COLLECTING AND MAINTAINING AN ELECTRONIC LOG OF ALL STAKEOUT SURVEY THAT IS PERFORMED ON THE JOB, EITHER BY HIM/HER OR ANY SUB-CONTRACTOR PERFORMING THE STAKEOUT. UPON REQUEST, ALL LOGS SHALL BE SUBMITTED TO THE DEPARTMENT. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THIS WORK, BUT SHALL BE CONSIDERED INCLUDED IN THE COST FOR CONSTRUCTION LAYOUT.

88. PAVEMENT MARKING SHALL BE DONE ACCORDING TO STANDARD 780001, EXCEPT AS FOLLOWS:

1. ALL WORDS, SUCH AS ONLY, SHALL BE 8 FEET HIGH
2. ALL NON-FREEWAY ARROWS SHALL BE THE LARGE SIZE
3. THE DISTANCE BETWEEN YELLOW NO PASSING LINES SHALL BE 8 INCHES, NOT 7 INCHES, AS SHOWN IN THE DETAIL OF TYPICAL LANE AND EDGE LINES.
4. CENTERLINE SKIP DASH PAVEMENT MARKING ON MULTI-LANE DIVIDED, MULTI-LANE UNDIVIDED, AND ONE-WAY ROADWAY SHALL BE ACCORDING TO DISTRICT STANDARD 41.1

89. PERMANENT SURVEY MARKERS, TYPE II, SHALL BE SET AT INTERVALS OF 1 MILE OR AS DIRECTED BY THE ENGINEER. BRIDGE OR CULVERT PROJECTS SHALL HAVE ONE SURVEY MARKER PLACED NEAR THE STRUCTURE. ESTIMATED: 1 EACH.

91. PERMANENT SURVEY MARKERS, TYPE II SHALL BE CAST-IN-PLACE AS SHOWN ON DISTRICT STANDARD 66.2, OR ANOTHER OPTION WOULD BE TO INSTALL A VAULTED STYLE MONUMENT AS DESCRIBED BY NGS AS A 3D MONUMENT (TOP SECURITY SLEEVE ROD MONUMENT), WITH INSTALLATION INSTRUCTIONS PROVIDED BY THE DISTRICT CHIEF OF SURVEYS. IF POURED IN PLACE, THE BOTTOM OF THE MARKER SHALL BE 5'-0" BELOW THE GROUND SURFACE.

92. THE PERMANENT SURVEY MARKERS, IF POSSIBLE, SHALL BE INSTALLED AT THE BEGINNING OF THE JOB AND PROTECTED THROUGHOUT.

93. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER A DESCRIPTION OF LOCATION, ELEVATION, AND COORDINATES FOR EACH PERMANENT SURVEY MARKER. THE HORIZONTAL COORDINATES MUST BE DERIVED BY GPS AND THE ELEVATION DERIVED USING AN ELECTRONIC LEVEL. THE META DATA, SUCH AS THE GEOID USED, (NGS ADJUSTMENT ie: 97 HARN, 03, 07), AND THE BASE POINT(S) NAME OR NUMBER SHALL BE SUBMITTED ALONG WITH A COMPLETE COLLECTION LOG. IF COLLECTED USING RTK METHOD, IT WILL REQUIRE EITHER 3 COLLECTIONS (AVERAGED) FROM 2 DIFFERENT BASES, OR A MINIMUM OF 3 COLLECTIONS (AVERAGED), AT LEAST 2 HOURS APART, FROM THE SAME BASE. IF USING A CORS TYPE NETWORK, THE COLLECTION PROCEDURE SHALL INCLUDE LOCALIZING WITH CHECK SHOTS ON AT LEAST 2 DIFFERENT HARN MONUMENTS BOTH BEFORE AND AFTER COLLECTION. THE LEVEL CIRCUIT SHALL BE RUN FROM FURNISHED MARK TO FURNISHED MARK AND THEN ADJUSTED. THE ERROR OF CLOSURE SHALL BE SUBMITTED WITH THE ELECTRONIC LEVEL NOTES IN A RECOGNIZED FORMAT APPROVED BY THE ENGINEER AND/OR THE CHIEF OF SURVEYS. THE ENGINEER SHALL SUBMIT THIS INFORMATION TO THE DISTRICT CHIEF OF SURVEYS.

98. RIGHT-OF-WAY MARKERS WILL BE ERECTED PER HIGHWAY STANDARD 666001 WITH THE BACK FACE OF THE MARKER ON THE RIGHT-OF-WAY LINE, UNLESS THE NEW RIGHT-OF-WAY LINE HAS BEEN SURVEYED AND PINNED, IN WHICH INSTANCE THE RIGHT-OF-WAY MARKERS WILL BE ERECTED 12 INCHES INSIDE THE NEW RIGHT-OF-WAY LINE. THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER.

102. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING UTILITY PROPERTY DURING CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.39 OF THE STANDARD SPECIFICATIONS. THE FOLLOWING LISTED UTILITIES LOCATED WITHIN THE PROJECT LIMITS OR IMMEDIATELY ADJACENT TO THE PROJECT CONSTRUCTION LIMITS ARE MEMBERS OF JULIE:

COMMONWEALTH EDISION	(815) 490-2869
FRONTIER	(815) 544-6171

IDOT IS NOT A MEMBER OF JULIE. IF YOU ARE NEAR ANY OVERHEAD LIGHTING, INTERSECTION LIGHTING OR TRAFFIC SIGNALS, CONTACT THE IDOT TRAFFIC OFFICE AT 815/284-5469 AT LEAST 48 HOURS PRIOR TO WORK.

106. RELOCATE TEMPORARY IMPACT ATTENUATORS SHALL INCLUDE STORAGE AND TRANSPORTATION TO AND FROM STORAGE, WHEN THE DEVICE IS NOT NEEDED FOR A TIME, AS SHOWN ON THE STAGING PLANS. THIS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER EACH FOR IMPACT ATTENUATORS, RELOCATE OF THE TYPE SPECIFIED.

107. WHEN RELOCATE TEMPORARY CONCRETE BARRIER IS SPECIFIED, THE WALL SHALL BE REMOVED, STORAGE AND TRANSPORTATION TO AND FROM STORAGE, WHEN THE WALL IS NOT NEEDED FOR A TIME AS SHOWN ON THE STAGING PLANS, RELOCATED AND REINSTATED AT THE NEW LOCATION. THE REINSTALLATION REQUIREMENTS SHALL BE THE SAME AS THOSE FOR A NEW INSTALLATION. THIS SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER FOOT FOR RELOCATE TEMPORARY CONCRETE BARRIER.

108. THE TEMPORARY CONCRETE BARRIER SHALL BE PINNED TO THE PAVEMENT WITH 3 ANCHOR PINS PER SECTION ON THE TRAFFIC SIDE OF THE BARRIER WALL AT THE FOLLOWING LOCATIONS:

ON THE EXISTING BRIDGE FOR STAGE I TRAFFIC ONLY. SEE BRIDGE PLANS FOR DETAILS.

ON THE ROADWAY AT THE ENDS OF THE BARRIERS FOR STAGES 1 AND 2.

THE BARRIER UNIT AT EACH END SHALL BE ANCHORED AS SPECIFIED IN ARTICLE 704.04. ALL ANCHORING AND PINNING HOLES SHALL BE CORE DRILLED. THE PINNING OF TEMPORARY CONCRETE BARRIER WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED FOR PAYMENT AS PART OF THE ITEM TEMPORARY CONCRETE BARRIER.

COMMITMENTS

TREES THREE (3) INCHES OR GREATER IN DIAMETER AT BREAST HEIGHT WILL NOT BE CLEARED FROM APRIL 1 THROUGH SEPTEMBER 30.

MODEL: $MODELNAME$
FILE NAME: P:\projects\2021\002\CiGADD\CADsheets\D203012-sht-gennote.dgn

USER NAME = BS	DESIGNED -	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
	DRAWN -	REVISED -	
PLOT SCALE = $SCALE$	CHECKED -	REVISED -	
PLOT DATE = 8/9/2021	DATE -	REVISED -	

GENERAL NOTES
IL 78 OVER PLUM RIVER

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

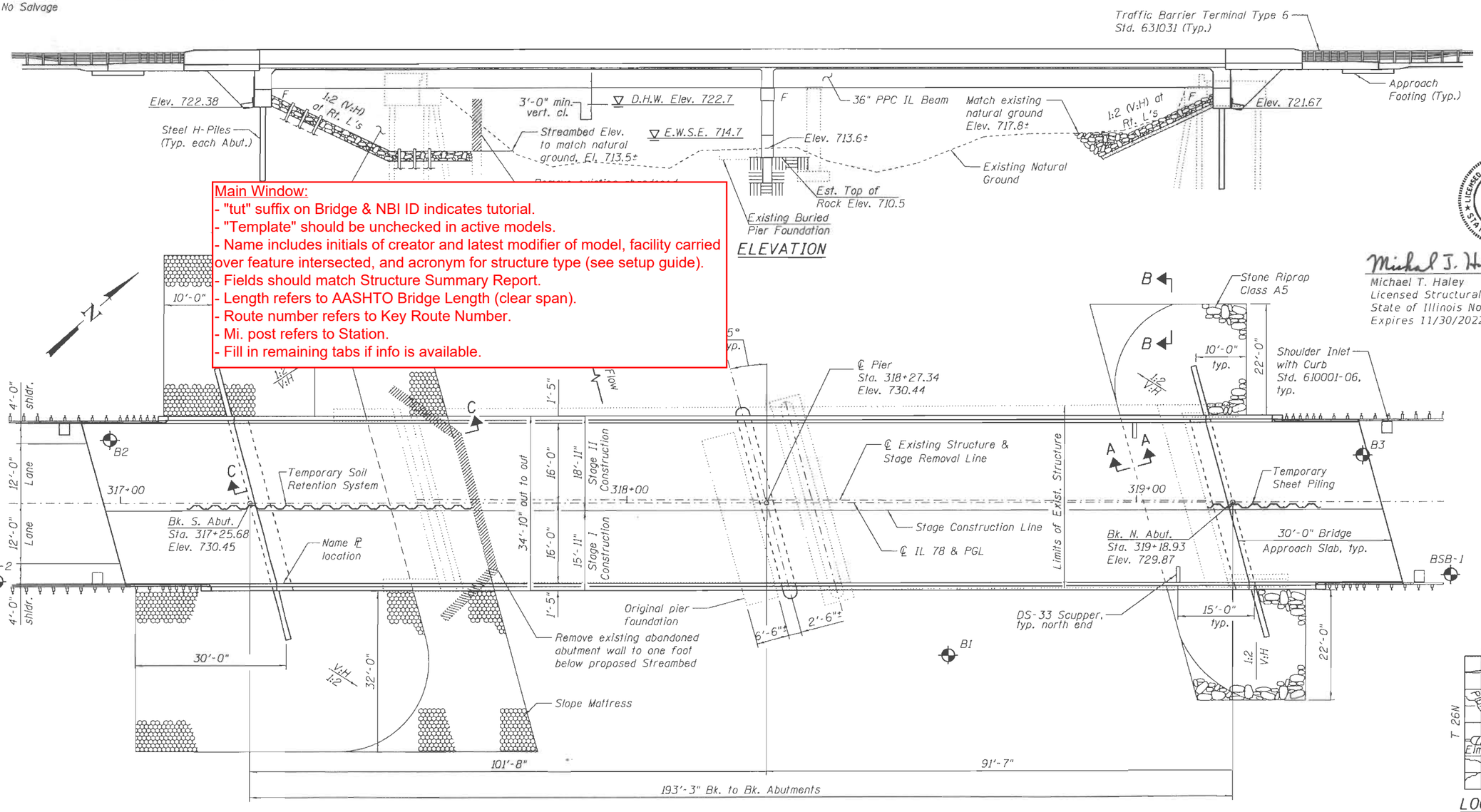
F.A.P RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	3
		CONTRACT NO.		
	ILLINOIS	FED. AID PROJECT		

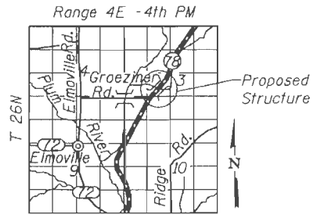
Benchmark: Metal disc at Station 326+53.34, 29.94' Left, Elevation 732.93. Metal disc at Station 311+71.76, 26.90' Right, Elevation 730.10.

Existing Structure: S.N. 043-0040 was originally built in 1925 as SBI Route 40, Section 10B. The original structure was a two-span reinforced concrete girder and deck supported by closed concrete abutments and a solid wall pier founded on spread footings. In 1982 the original structure was removed and replaced as F.A.P. Route 642 Section 10 BR-3 with a two-span PPC Deck Beam superstructure founded on pile-supported stub-type abutments and a solid wall pier on a spread footing. The existing structure is 155'-6" bk to bk of abutments and 36'-0" wide out to out of deck. The structure is to be removed and replaced utilizing stage construction.

No Salvage

Notes:
1. See Roadway Plans for river training and bank stabilization details.
2. See Sheet 2 of 28 for Sections A-A through C-C.





LOCATION SKETCH

MICHAEL T. HALEY 081-005991 CHATHAM LICENSED STRUCTURAL ENGINEER STATE OF ILLINOIS

Michael J. Haley 9/29/2021
Michael T. Haley — Date
Licensed Structural Engineer
State of Illinois No. 081-005991
Expires 11/30/2022

APPROVED
For Structural Adequacy Only
Engineer of Bridges & Structures

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
f'c = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)

PRECAST PRESTRESSED UNITS

f'c = 8,500 psi
f'ci = 6,500 psi
fpu = 270,000 psi (0.6" ϕ Low Relaxation Strands)
fpbt = 202,300 psi (0.6" ϕ Low Relaxation Strands)

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition.

LOADING HL-93

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

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.074g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.111g
Soil Site Class = D

GENERAL PLAN & ELEVATION
ILLINOIS ROUTE 78 OVER PLUM RIVER
F.A.P. ROUTE 642 - SECTION 10BR-5
JO DAVIESS COUNTY
STATION 318+27.34
STRUCTURE NO. 043-0081

LIN ENGINEERING, LTD. Consulting Engineers, Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 2:31:33 PM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET 1 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	39
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: E:\2017-2\Struct4. Final Design\CADD\CADD_Sheets\043008I-64H58-001-GPE.DGN
9/29/2021 2:31:33 PM

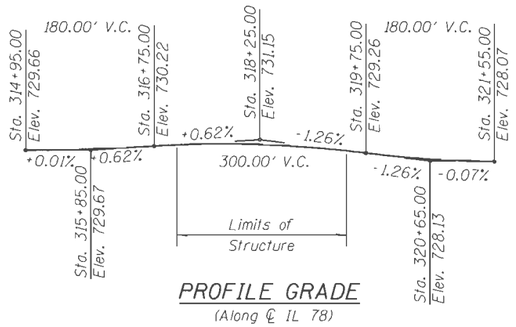
GENERAL NOTES

Reinforcement bars designated (E) shall be epoxy coated.

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

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

No slipforming of the parapets will be allowed.



PROFILE GRADE
(Along ℄ IL 78)

INDEX OF SHEETS

STATION 318+27.34
BUILT 20__ BY
STATE OF ILLINOIS
F.A.P. RT. 642 - SEC. 10BR-5
LOADING HL-93
STRUCTURE NO. 043-0081

NAME PLATE
See Std. 515001

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A5	Sq. Yd.	-	364	364
Filter Fabric	Sq. Yd.	-	364	364
Slope Mattress 6"	Sq. Yd.	-	610	610
Protective Coat	Sq. Yd.	1105	-	1105
Removal of Existing Structures	Each	1	-	1
Structure Excavation	Cu. Yd.	-	273	273
Concrete Structures	Cu. Yd.	-	117.5	117.5
Concrete Superstructure	Cu. Yd.	274.0	-	274.0
Bridge Deck Grooving	Sq. Yd.	845	-	845
Concrete Superstructure (Approach Slab)	Cu. Yd.	94.6	-	94.6
Furnishing and Erecting Precast Prestressed Concrete Beams, IL 36N	Foot	1,137	-	1,137
Reinforcement Bars	Pound	-	1,090	1,090
Reinforcement Bars, Epoxy Coated	Pound	107,010	26,030	133,040
Bar Splicers	Each	732	200	932
Furnishing Steel Piles HP14x89	Foot	-	205	205
Driving Piles	Foot	-	205	205
Test Pile Steel HP14x89	Each	-	2	2
Pile Shoes	Each	-	12	12
Name Plates	Each	1	-	1
Drilled Shaft in Soil	Cu. Yd.	-	5.5	5.5
Drilled Shaft in Rock	Cu. Yd.	-	8.8	8.8
Temporary Sheet Piling	Sq. Ft.	-	328	328
Temporary Soil Retention System	Sq. Ft.	-	657	657
Granular Backfill for Structures	Cu. Yd.	-	153.0	153.0
Geocomposite Wall Drain	Sq. Yd.	-	737	737
Drainage Scuppers, DS-33	Each	2	-	2
Pipe Underdrains for Structures 4"	Foot	-	146	146

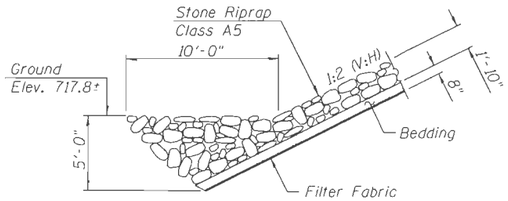
WATERWAY INFORMATION

Drainage Area = 13.8 sq. mi. Low Grade Elev. 728.1 @ Sta. 321+00

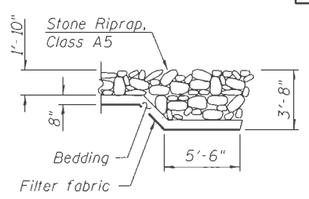
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	10	2270	613	636	722.0	2.0	2.0	724.0	724.0
Design	50	3710	706	737	722.7	3.0	2.9	725.7	725.6
Base	100	4380	747	781	723.0	4.3	3.2	727.3	726.2
Overtopping	200	4800	774	811	723.2	4.9	4.9	728.1	728.1
Max. Calc.	-	-	-	-	-				

DESIGN SCOUR ELEVATION TABLE

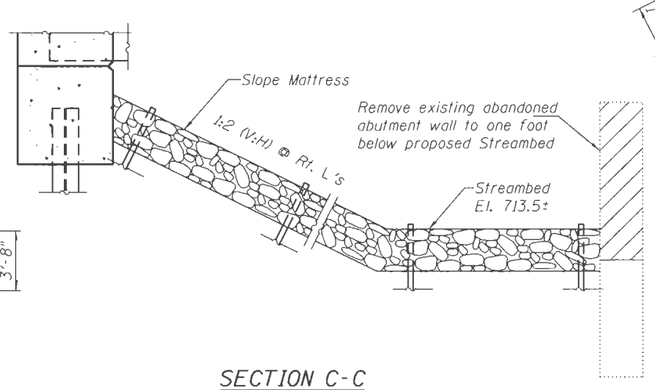
	S. Abut.	Pier	N. Abut.	Item 113
Q100	722.38	710.50	721.67	8
Q200	722.38	710.50	721.67	
Design	722.38	710.50	721.67	
Check	722.38	710.50	721.67	



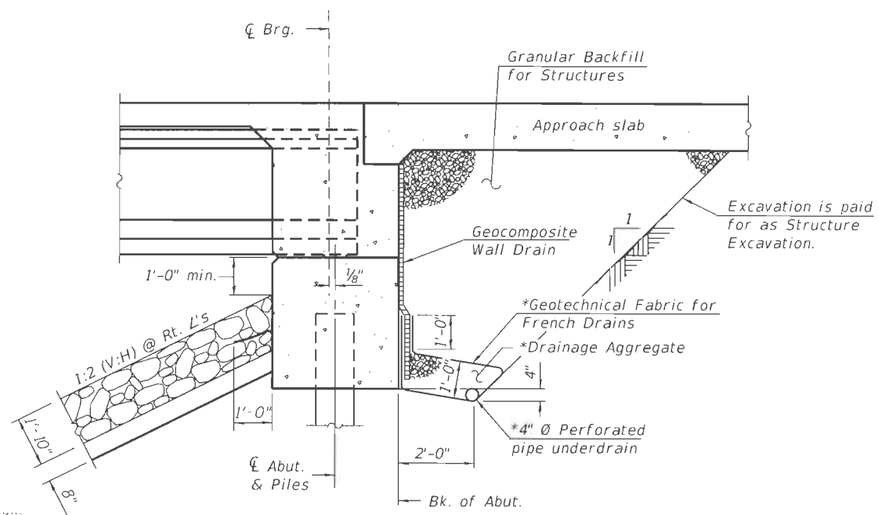
SECTION A-A



SECTION B-B



SECTION C-C
(Horiz. dim. @ Rt. L's)



SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)
N. Abut. shown, S. Abut. similar except as noted.
See Section C-C for slope protection at S. Abut.

*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).

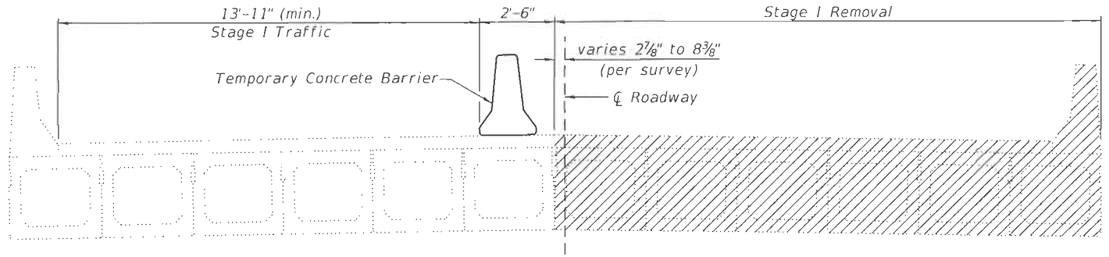
MODEL: Default
FILE NAME: P:\projects\20012\0023\S\CADD\CAD_Sheets\0430081-64H58-002-General Data.dgn
8/9/2021 11:47:34 AM

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
	PLOT SCALE =	DRAWN - AJF	REVISED -
	PLOT DATE = 11:47:34 AM	CHECKED - MTH	REVISED -

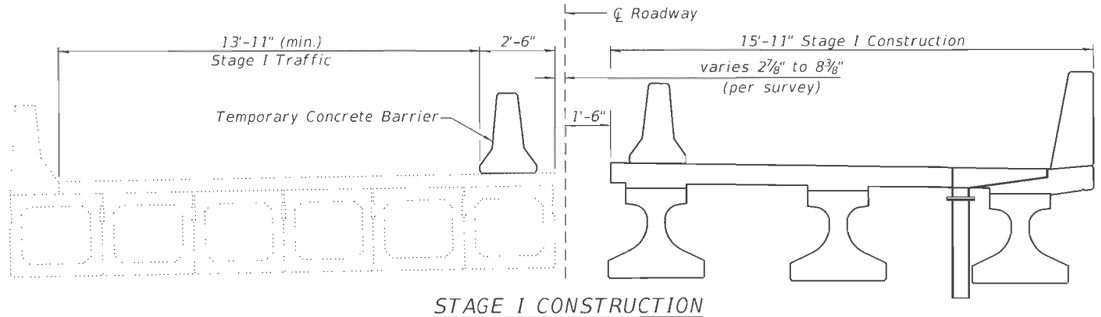
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

GENERAL DATA
STRUCTURE NO. 043-0081
SHEET 2 OF 28 SHEETS

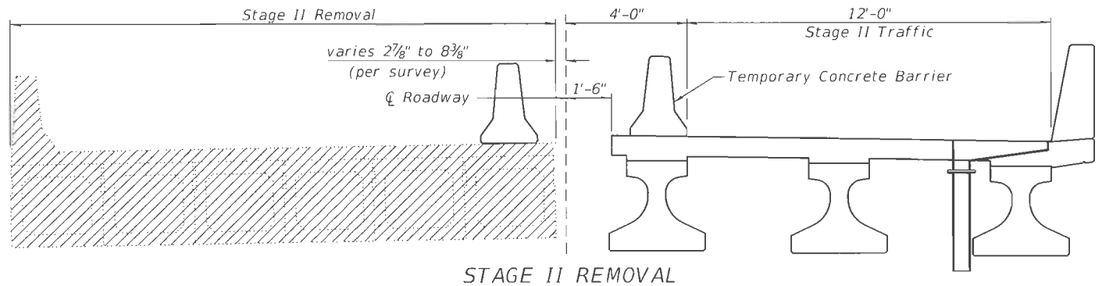
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	40
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



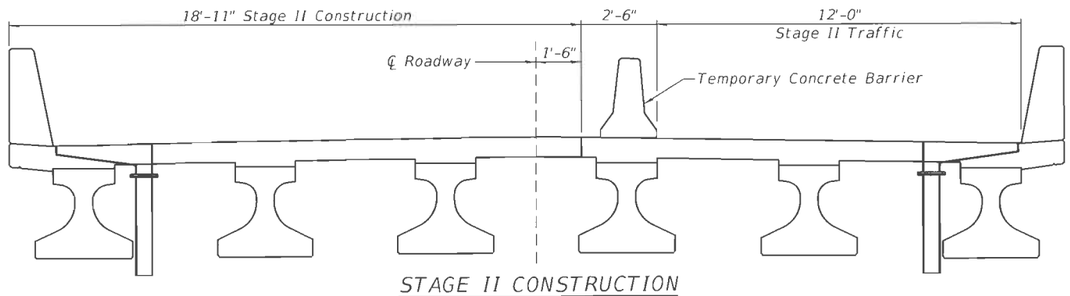
STAGE I REMOVAL



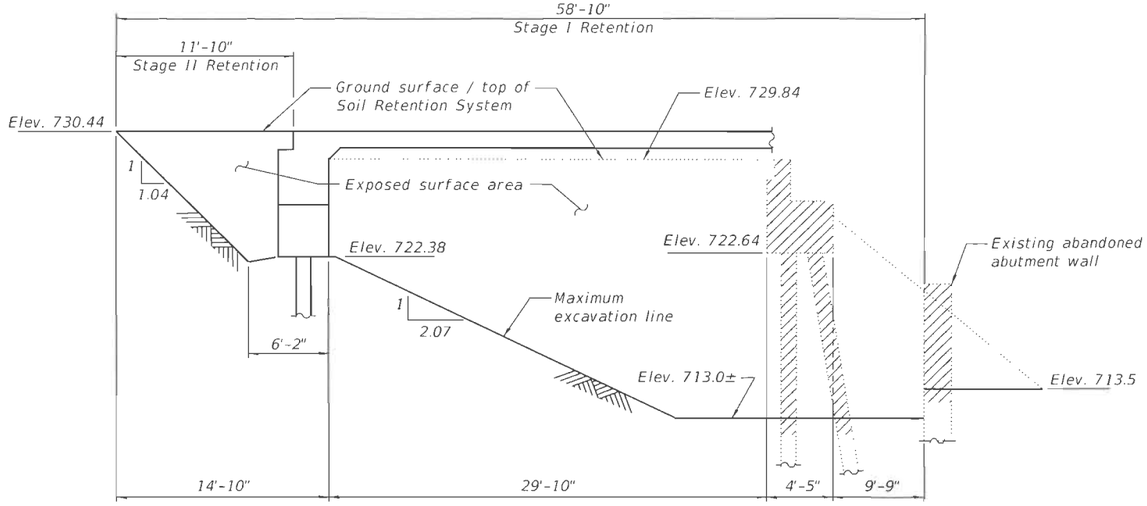
STAGE I CONSTRUCTION



STAGE II REMOVAL

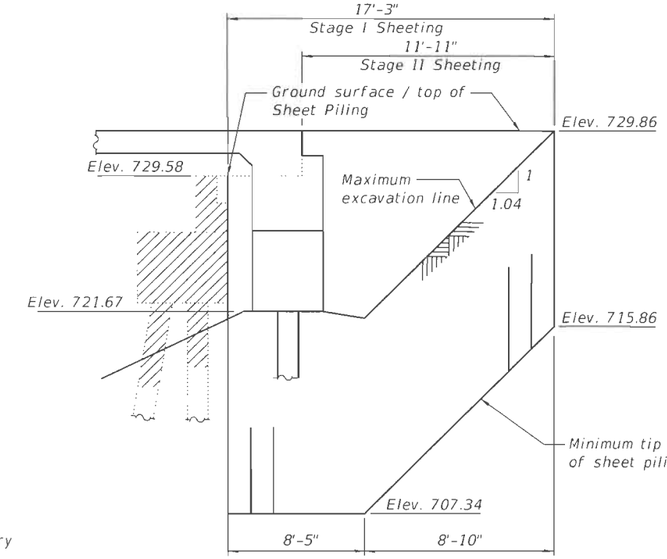


STAGE II CONSTRUCTION



TEMPORARY SOIL RETENTION SYSTEM AT SOUTH ABUTMENT

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.



TEMPORARY SHEET PILING AT NORTH ABUTMENT

Min. Section Modulus for Sheeting = 10.66 in³/ft

If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans, a design submittal including plan details and calculations will be required for review and acceptance by the Engineer.

Notes:

All sections are looking north.

Hatching represents limits of Removal of Existing Structures.

See roadway plans for quantity of Temporary Concrete Barrier.

See Sheet 4 of 28 for details of Temporary Concrete Barrier.

See Sheets 21 thru 23 of 28 for location of Stage Construction line for substructure units.

MODEL: Default
FILE NAME: P:\projects\20012\002\S\CADD\CAD_Sheets\043008I-64H58-003-Stage Const Details.DGN

8/9/2021 11:47:36 AM

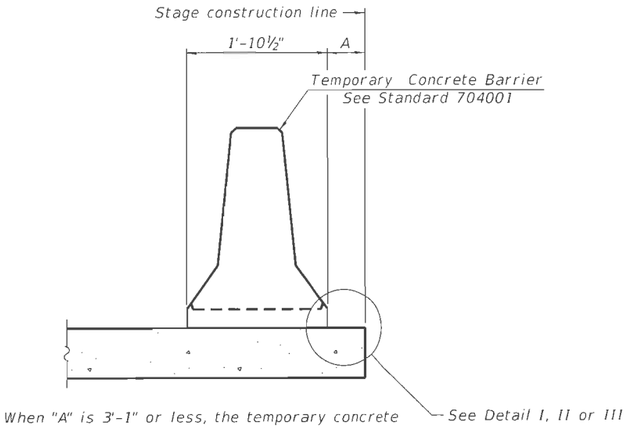
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:36 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

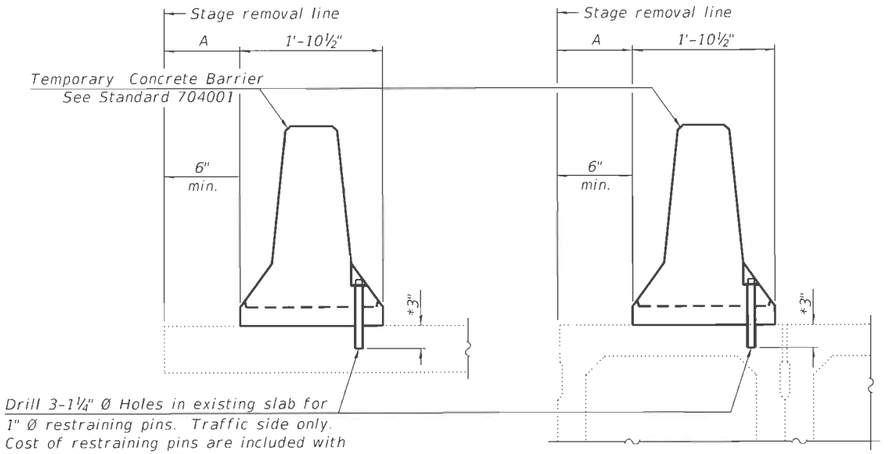
STAGE CONSTRUCTION DETAILS
STRUCTURE NO. 043-0081
SHEET 3 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	41
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		



When "A" is 3'-1" or less, the temporary concrete barrier shall be restrained to the new slab according to Detail I, II or III. No restraint is required when "A" is greater than 3'-1".

NEW SLAB OR NEW DECK BEAM



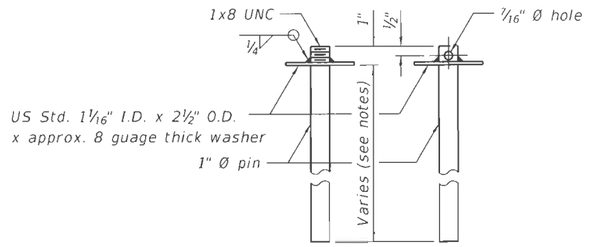
Drill 3-1¼" Ø Holes in existing slab for 1" Ø restraining pins. Traffic side only. Cost of restraining pins are included with Temporary Concrete Barrier. No restraint is required when "A" is greater than 3'-1".

EXISTING SLAB

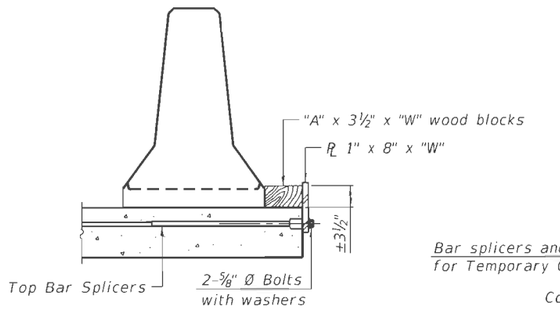
* When hot-mix asphalt wearng surface is present, embedment shall be 3" plus the wearing surface depth.

EXISTING DECK BEAM

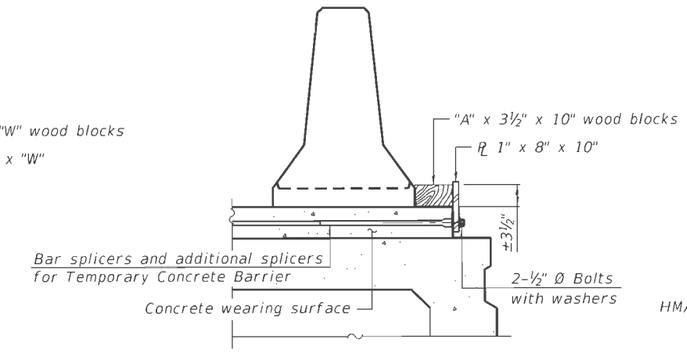
SECTIONS THRU SLAB OR DECK BEAM



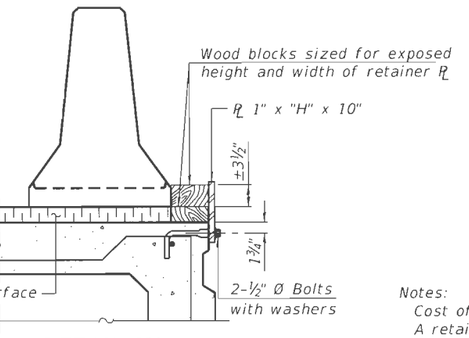
RESTRAINING PIN



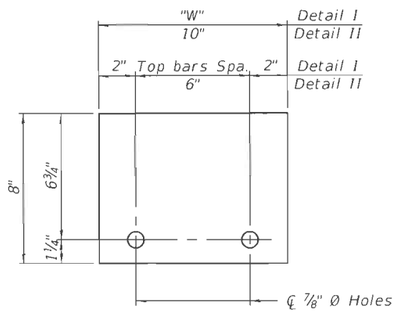
DETAIL I



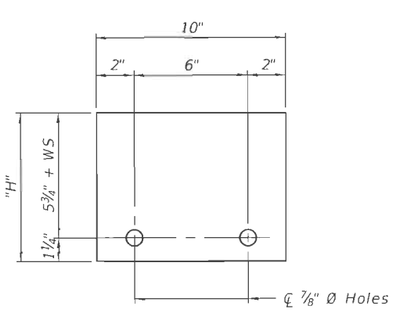
DETAIL II



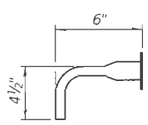
DETAIL III



STEEL RETAINER ℄ 1" x 8" x "W"
(Detail I and II)



STEEL RETAINER ℄ 1" x "H" x 10"
(Detail III)



BAR SPLICER FOR #4 BAR - DETAIL III

Notes:

Cost of retainer assembly is included with Temporary Concrete Barrier.

A retainer assembly shall be located at the approximate ℄ of each temporary concrete barrier.

The retainer plate shall not be removed until the concrete on the adjacent stage is ready to be poured. For Detail III applications the retainer plate shall not be removed until just prior to placing the adjacent beam.

When the 'A' dimension is less than 1½", the wood block shall be omitted and the barrier shall be placed in direct contact with the steel retainer plate. For deck beam applications the minimum required 'A' distance is 6" to accommodate the shear key clamping device.

Detail I - Installation for a new bridge deck or bridge slab.

Detail II - Installation for a new deck beam with an initial concrete wearing surface. Additional bar splicers shall be provided at 6'-0" centers and paired with the bar splicers of the concrete wearing surface reinforcement to accommodate the installation of the retainer assemblies. The cost of the additional bar splicers is included with the concrete wearing surface.

Detail III - Installation for a new deck beam with no initial wearing surface or with an initial hot-mix asphalt (HMA) wearing surface present. The deck beam directly beneath the temporary concrete barrier shall be fabricated with bar splicer inserts in the side of the beam, as detailed, to accommodate the installation of the retainer assemblies. A pair of bar splicers, 6" apart, shall be placed at 6'-0" centers along the length of the beam. The cost of the bar splicers is included with the deck beam.

R-27

2-17-2017

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:37 AM	CHECKED - MTH	REVISED -	

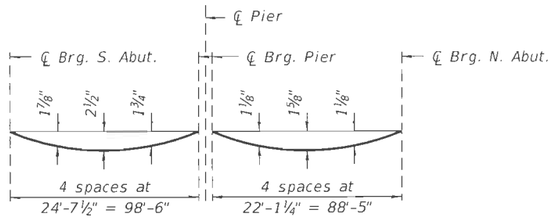
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TEMPORARY CONCRETE BARRIER FOR STAGE CONSTRUCTION
STRUCTURE NO. 043-0081
SHEET 4 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	42
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: P:\projects\20012\002\5\CADD\CAD_Sheets\043008I-64H58-004-Temp Conc Barrier.DGN

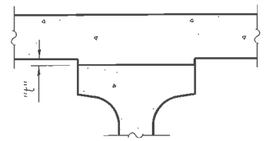
8/9/2021 11:47:37 AM



DEAD LOAD DEFLECTION DIAGRAM

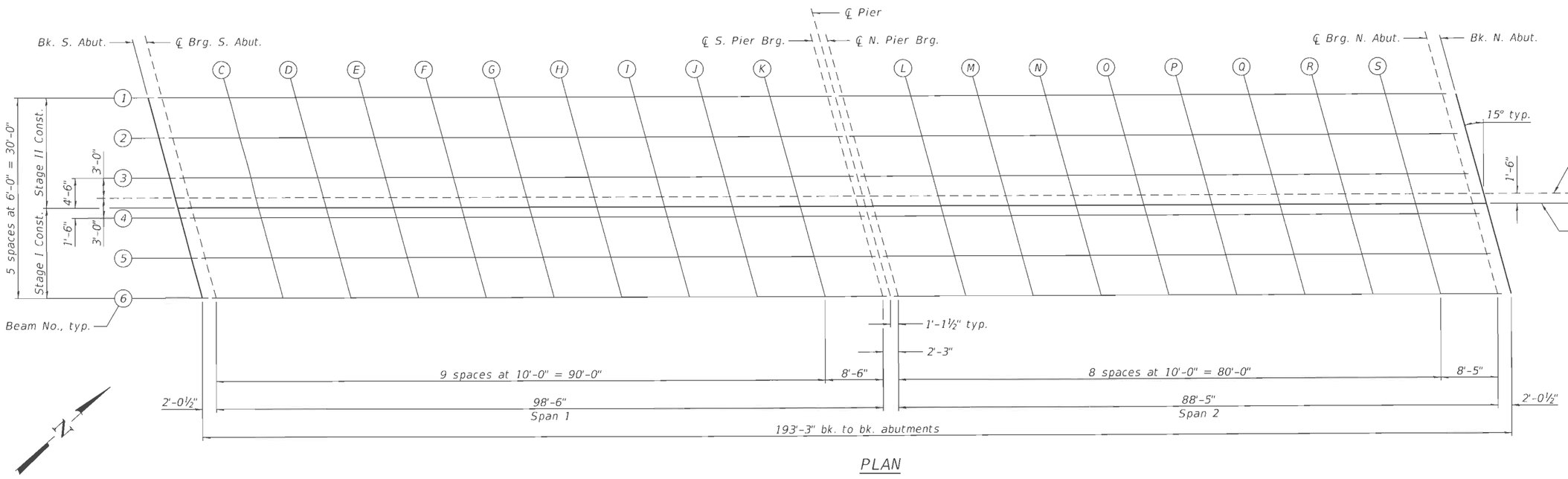
(Includes weight of concrete, excluding beams)

Note:
The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 6 and 7 of 28.



To determine "t": After all precast prestressed beams have been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflections" shown on sheets 6 and 7 of 28, minus slab thickness, equals the fillet heights "t" above top flanges of beams.

FILLET HEIGHTS



PLAN

MODEL: Default
FILE NAME: P:\projects\2001\2002\SI\CADD\CAD_Sheets\043008I-64H58-005-Top of Slab Elevs.DGN

8/9/2021 11:47:38 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:38 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-0081

SHEET 5 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	43
		CONTRACT NO. 64H58		
	ILLINOIS FED. AID PROJECT			

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+21.66	-15.00	730.20	730.20
℄ Brg. S. Abut.	317+23.70	-15.00	730.21	730.21
C	317+33.70	-15.00	730.24	730.30
D	317+43.70	-15.00	730.26	730.37
E	317+53.70	-15.00	730.27	730.43
F	317+63.70	-15.00	730.28	730.47
G	317+73.70	-15.00	730.29	730.48
H	317+83.70	-15.00	730.28	730.46
I	317+93.70	-15.00	730.27	730.43
J	318+03.70	-15.00	730.26	730.37
K	318+13.70	-15.00	730.24	730.29
℄ S. Pier Brg.	318+22.20	-15.00	730.21	730.21
℄ Pier	318+23.33	-15.00	730.21	730.21
℄ N. Pier Brg.	318+24.45	-15.00	730.21	730.21
L	318+34.45	-15.00	730.17	730.21
M	318+44.45	-15.00	730.13	730.21
N	318+54.45	-15.00	730.08	730.19
O	318+64.45	-15.00	730.03	730.15
P	318+74.45	-15.00	729.97	730.09
Q	318+84.45	-15.00	729.90	730.01
R	318+94.45	-15.00	729.83	729.91
S	319+04.45	-15.00	729.75	729.79
℄ Brg. N. Abut.	319+12.87	-15.00	729.68	729.68
Bk. N. Abut.	319+14.91	-15.00	729.66	729.66

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+23.27	-9.00	730.31	730.31
℄ Brg. S. Abut.	317+25.31	-9.00	730.32	730.32
C	317+35.31	-9.00	730.34	730.41
D	317+45.31	-9.00	730.37	730.49
E	317+55.31	-9.00	730.38	730.56
F	317+65.31	-9.00	730.39	730.59
G	317+75.31	-9.00	730.39	730.60
H	317+85.31	-9.00	730.39	730.59
I	317+95.31	-9.00	730.38	730.54
J	318+05.31	-9.00	730.36	730.48
K	318+15.31	-9.00	730.34	730.39
℄ S. Pier Brg.	318+23.81	-9.00	730.31	730.31
℄ Pier	318+24.94	-9.00	730.31	730.31
℄ N. Pier Brg.	318+26.06	-9.00	730.31	730.31
L	318+36.06	-9.00	730.27	730.32
M	318+46.06	-9.00	730.23	730.32
N	318+56.06	-9.00	730.18	730.30
O	318+66.06	-9.00	730.13	730.26
P	318+76.06	-9.00	730.06	730.20
Q	318+86.06	-9.00	730.00	730.11
R	318+96.06	-9.00	729.92	730.01
S	319+06.06	-9.00	729.84	729.89
℄ Brg. N. Abut.	319+14.48	-9.00	729.77	729.77
Bk. N. Abut.	319+16.52	-9.00	729.75	729.75

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+24.88	-3.00	730.41	730.41
℄ Brg. S. Abut.	317+26.92	-3.00	730.41	730.41
C	317+36.92	-3.00	730.44	730.51
D	317+46.92	-3.00	730.46	730.59
E	317+56.92	-3.00	730.47	730.65
F	317+66.92	-3.00	730.48	730.68
G	317+76.92	-3.00	730.48	730.69
H	317+86.92	-3.00	730.48	730.67
I	317+96.92	-3.00	730.47	730.63
J	318+06.92	-3.00	730.45	730.56
K	318+16.92	-3.00	730.42	730.48
℄ S. Pier Brg.	318+25.42	-3.00	730.40	730.40
℄ Pier	318+26.54	-3.00	730.39	730.39
℄ N. Pier Brg.	318+27.67	-3.00	730.39	730.39
L	318+37.67	-3.00	730.35	730.40
M	318+47.67	-3.00	730.31	730.40
N	318+57.67	-3.00	730.26	730.38
O	318+67.67	-3.00	730.21	730.34
P	318+77.67	-3.00	730.14	730.28
Q	318+87.67	-3.00	730.08	730.19
R	318+97.67	-3.00	730.00	730.09
S	319+07.67	-3.00	729.92	729.96
℄ Brg. N. Abut.	319+16.08	-3.00	729.85	729.85
Bk. N. Abut.	319+18.13	-3.00	729.83	729.83

℄ ROADWAY & PGL

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+25.68	0.000	730.45	730.45
℄ Brg. S. Abut.	317+27.72	0.000	730.46	730.46
C	317+37.72	0.000	730.49	730.55
D	317+47.72	0.000	730.51	730.63
E	317+57.72	0.000	730.52	730.69
F	317+67.72	0.000	730.53	730.73
G	317+77.72	0.000	730.53	730.74
H	317+87.72	0.000	730.52	730.72
I	317+97.72	0.000	730.51	730.67
J	318+07.72	0.000	730.49	730.61
K	318+17.72	0.000	730.47	730.52
℄ S. Pier Brg.	318+26.22	0.000	730.44	730.44
℄ Pier	318+27.35	0.000	730.44	730.44
℄ N. Pier Brg.	318+28.47	0.000	730.43	730.43
L	318+38.47	0.000	730.40	730.44
M	318+48.47	0.000	730.35	730.44
N	318+58.47	0.000	730.30	730.42
O	318+68.47	0.000	730.25	730.38
P	318+78.47	0.000	730.18	730.32
Q	318+88.47	0.000	730.12	730.23
R	318+98.47	0.000	730.04	730.12
S	319+08.47	0.000	729.96	730.00
℄ Brg. N. Abut.	319+16.89	0.000	729.89	729.89
Bk. N. Abut.	319+18.93	0.000	729.87	729.87

Note:
Offsets measured from ℄ roadway.

MODEL: Default
FILE NAME: P:\projects\20012\002\S\CADD\CAD_Sheets\043O081-64H58-006-Top of Slab Elevs.DGN

8/9/2021 11:47:40 AM

LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:40 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-0081
SHEET 6 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	44
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

STAGE CONST. LINE

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+26.08	1.50	730.43	730.43
℄ Brg. S. Abut.	317+28.12	1.50	730.44	730.44
C	317+38.12	1.50	730.46	730.53
D	317+48.12	1.50	730.48	730.61
E	317+58.12	1.50	730.50	730.67
F	317+68.12	1.50	730.50	730.71
G	317+78.12	1.50	730.50	730.71
H	317+88.12	1.50	730.50	730.70
I	317+98.12	1.50	730.49	730.65
J	318+08.12	1.50	730.47	730.58
K	318+18.12	1.50	730.44	730.50
℄ S. Pier Brg.	318+26.62	1.50	730.42	730.42
℄ Pier	318+27.75	1.50	730.41	730.41
℄ N. Pier Brg.	318+28.87	1.50	730.41	730.41
L	318+38.87	1.50	730.37	730.42
M	318+48.87	1.50	730.33	730.42
N	318+58.87	1.50	730.28	730.40
O	318+68.87	1.50	730.22	730.36
P	318+78.87	1.50	730.16	730.29
Q	318+88.87	1.50	730.09	730.21
R	318+98.87	1.50	730.02	730.10
S	319+08.87	1.50	729.93	729.97
℄ Brg. N. Abut.	319+17.29	1.50	729.86	729.86
Bk. N. Abut.	319+19.33	1.50	729.84	729.84

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+26.48	3.00	730.41	730.41
℄ Brg. S. Abut.	317+28.53	3.00	730.42	730.42
C	317+38.53	3.00	730.44	730.51
D	317+48.53	3.00	730.46	730.59
E	317+58.53	3.00	730.47	730.65
F	317+68.53	3.00	730.48	730.68
G	317+78.53	3.00	730.48	730.69
H	317+88.53	3.00	730.48	730.67
I	317+98.53	3.00	730.46	730.63
J	318+08.53	3.00	730.44	730.56
K	318+18.53	3.00	730.42	730.47
℄ S. Pier Brg.	318+27.03	3.00	730.39	730.39
℄ Pier	318+28.15	3.00	730.39	730.39
℄ N. Pier Brg.	318+29.28	3.00	730.39	730.39
L	318+39.28	3.00	730.35	730.40
M	318+49.28	3.00	730.30	730.39
N	318+59.28	3.00	730.25	730.37
O	318+69.28	3.00	730.20	730.33
P	318+79.28	3.00	730.13	730.27
Q	318+89.28	3.00	730.06	730.18
R	318+99.28	3.00	729.99	730.07
S	319+09.28	3.00	729.91	729.95
℄ Brg. N. Abut.	319+17.69	3.00	729.83	729.83
Bk. N. Abut.	319+19.73	3.00	729.82	729.82

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+28.09	9.00	730.33	730.33
℄ Brg. S. Abut.	317+30.13	9.00	730.33	730.33
C	317+40.13	9.00	730.36	730.42
D	317+50.13	9.00	730.37	730.50
E	317+60.13	9.00	730.39	730.56
F	317+70.13	9.00	730.39	730.59
G	317+80.13	9.00	730.39	730.60
H	317+90.13	9.00	730.38	730.58
I	318+00.13	9.00	730.37	730.54
J	318+10.13	9.00	730.35	730.47
K	318+20.13	9.00	730.32	730.38
℄ S. Pier Brg.	318+28.63	9.00	730.30	730.30
℄ Pier	318+29.76	9.00	730.29	730.29
℄ N. Pier Brg.	318+30.88	9.00	730.29	730.29
L	318+40.88	9.00	730.25	730.30
M	318+50.88	9.00	730.21	730.29
N	318+60.88	9.00	730.15	730.27
O	318+70.88	9.00	730.10	730.23
P	318+80.88	9.00	730.03	730.17
Q	318+90.88	9.00	729.96	730.08
R	319+00.88	9.00	729.89	729.97
S	319+10.88	9.00	729.80	729.84
℄ Brg. N. Abut.	319+19.30	9.00	729.73	729.73
Bk. N. Abut.	319+21.34	9.00	729.71	729.71

BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. S. Abut.	317+29.70	15.00	730.23	730.23
℄ Brg. S. Abut.	317+31.74	15.00	730.23	730.23
C	317+41.74	15.00	730.25	730.32
D	317+51.74	15.00	730.27	730.39
E	317+61.74	15.00	730.28	730.44
F	317+71.74	15.00	730.29	730.47
G	317+81.74	15.00	730.28	730.48
H	317+91.74	15.00	730.28	730.46
I	318+01.74	15.00	730.26	730.41
J	318+11.74	15.00	730.24	730.35
K	318+21.74	15.00	730.22	730.26
℄ S. Pier Brg.	318+30.24	15.00	730.19	730.19
℄ Pier	318+31.37	15.00	730.18	730.18
℄ N. Pier Brg.	318+32.49	15.00	730.18	730.18
L	318+42.49	15.00	730.14	730.18
M	318+52.49	15.00	730.09	730.17
N	318+62.49	15.00	730.04	730.15
O	318+72.49	15.00	729.98	730.10
P	318+82.49	15.00	729.92	730.04
Q	318+92.49	15.00	729.85	729.95
R	319+02.49	15.00	729.77	729.85
S	319+12.49	15.00	729.69	729.72
℄ Brg. N. Abut.	319+20.91	15.00	729.61	729.61
Bk. N. Abut.	319+22.95	15.00	729.59	729.59

Note:
Offsets measured from ℄ roadway.

MODEL: Default
FILE NAME: P:\projects\20012002\S\CADD\CAD_Sheets\04300081-64H58-007-Top of Slab Elevs.DGN
8/9/2021 11:47:41 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME = | PLOT SCALE = | PLOT DATE = 11:47:41 AM

DESIGNED - AML | CHECKED - MTH | DRAWN - AJF | CHECKED - MTH

REVISED - | REVISED - | REVISED - | REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF SLAB ELEVATIONS
STRUCTURE NO. 043-0081
SHEET 7 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	45
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

WEST EDGE OF SHOULDER

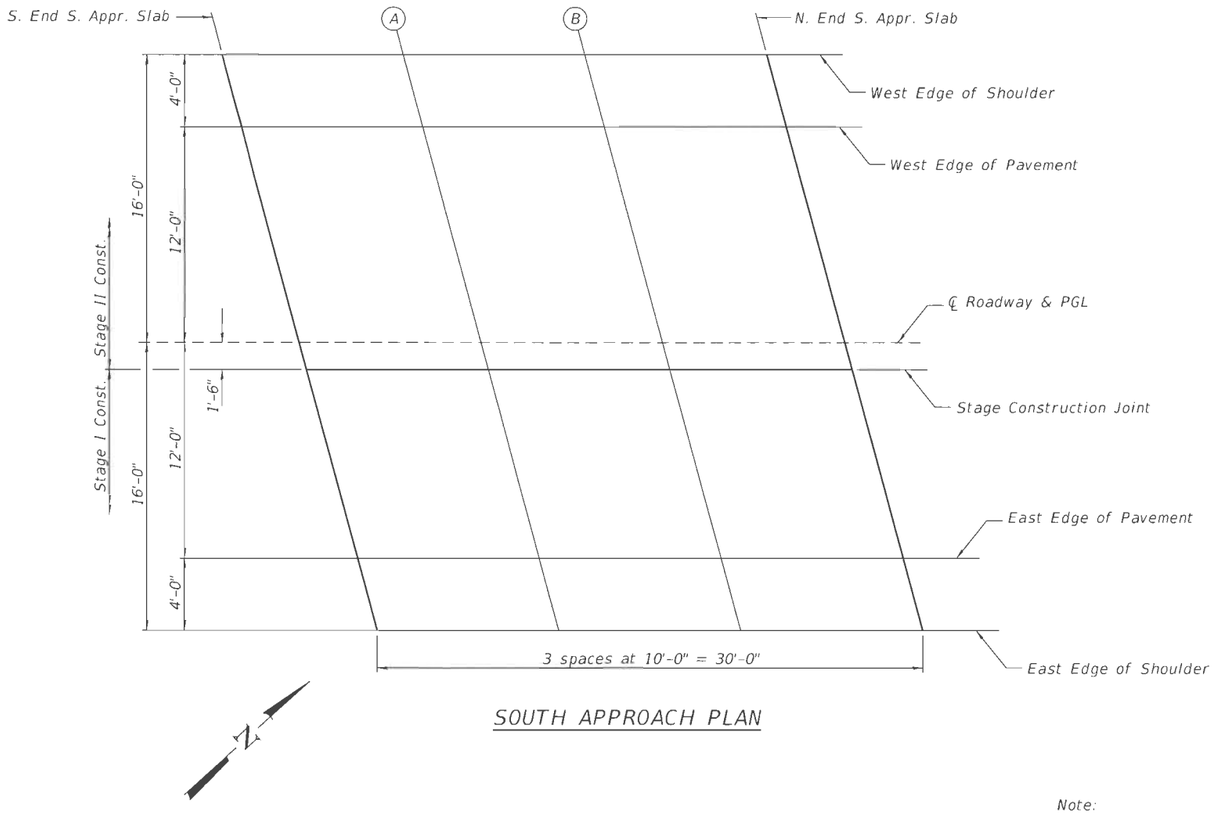
Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	316+92.43	-16.00	730.06
A	317+02.43	-16.00	730.11
B	317+12.43	-16.00	730.15
N. End S. Appr. Slab	317+22.43	-16.00	730.18

WEST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	316+93.50	-12.00	730.14
A	317+03.50	-12.00	730.19
B	317+13.50	-12.00	730.23
N. End S. Appr. Slab	317+23.50	-12.00	730.27

℄ ROADWAY & PGL

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	316+96.72	0.000	730.34
A	317+06.72	0.000	730.39
B	317+16.72	0.000	730.42
N. End S. Appr. Slab	317+26.72	0.000	730.46



SOUTH APPROACH PLAN

Note:
Offsets measured from ℄ roadway.

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	316+97.12	1.50	730.32
A	317+07.12	1.50	730.36
B	317+17.12	1.50	730.40
N. End S. Appr. Slab	317+27.12	1.50	730.44

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	316+99.93	12.00	730.18
A	317+09.93	12.00	730.22
B	317+19.93	12.00	730.26
N. End S. Appr. Slab	317+29.93	12.00	730.29

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End S. Appr. Slab	317+01.00	16.00	730.10
A	317+11.00	16.00	730.14
B	317+21.00	16.00	730.18
N. End S. Appr. Slab	317+31.00	16.00	730.21

MODEL: Default
FILE NAME: P:\projects\2001210021S\CADD\CAD_Sheets\043008I-64H58-008-Top of Approach Elevs.DGN
8/9/2021 11:47:42 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:42 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 043-0081
SHEET 8 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	46
		CONTRACT NO. 64H58		
		ILLINOIS FED. AID PROJECT		

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+13.61	-16.00	729.66
T	319+23.61	-16.00	729.56
U	319+33.61	-16.00	729.47
N. End N. Appr. Slab	319+43.61	-16.00	729.36

WEST EDGE OF PAVEMENT

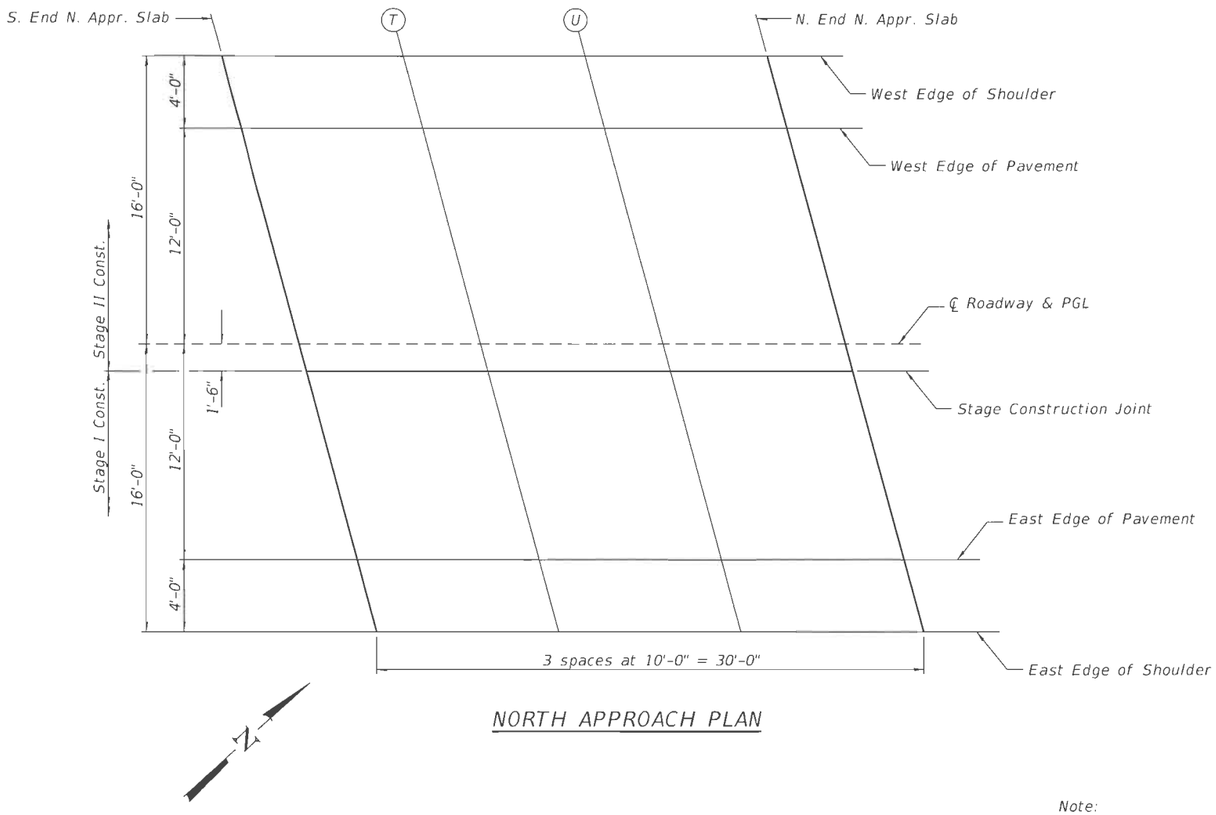
Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+14.68	-12.00	729.73
T	319+24.68	-12.00	729.63
U	319+34.68	-12.00	729.54
N. End N. Appr. Slab	319+44.68	-12.00	729.43

℄ ROADWAY & PGL

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+17.89	0.000	729.88
T	319+27.89	0.000	729.78
U	319+37.89	0.000	729.68
N. End N. Appr. Slab	319+47.89	0.000	729.58

STAGE CONSTRUCTION JOINT

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+18.30	1.50	729.85
T	319+28.30	1.50	729.76
U	319+38.30	1.50	729.66
N. End N. Appr. Slab	319+48.30	1.50	729.55



NORTH APPROACH PLAN

EAST EDGE OF PAVEMENT

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+21.11	12.00	729.67
T	319+31.11	12.00	729.57
U	319+41.11	12.00	729.47
N. End N. Appr. Slab	319+51.11	12.00	729.36

EAST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
S. End N. Appr. Slab	319+22.18	16.00	729.58
T	319+32.18	16.00	729.48
U	319+42.18	16.00	729.38
N. End N. Appr. Slab	319+52.18	16.00	729.27

Note:
Offsets measured from ℄ roadway.

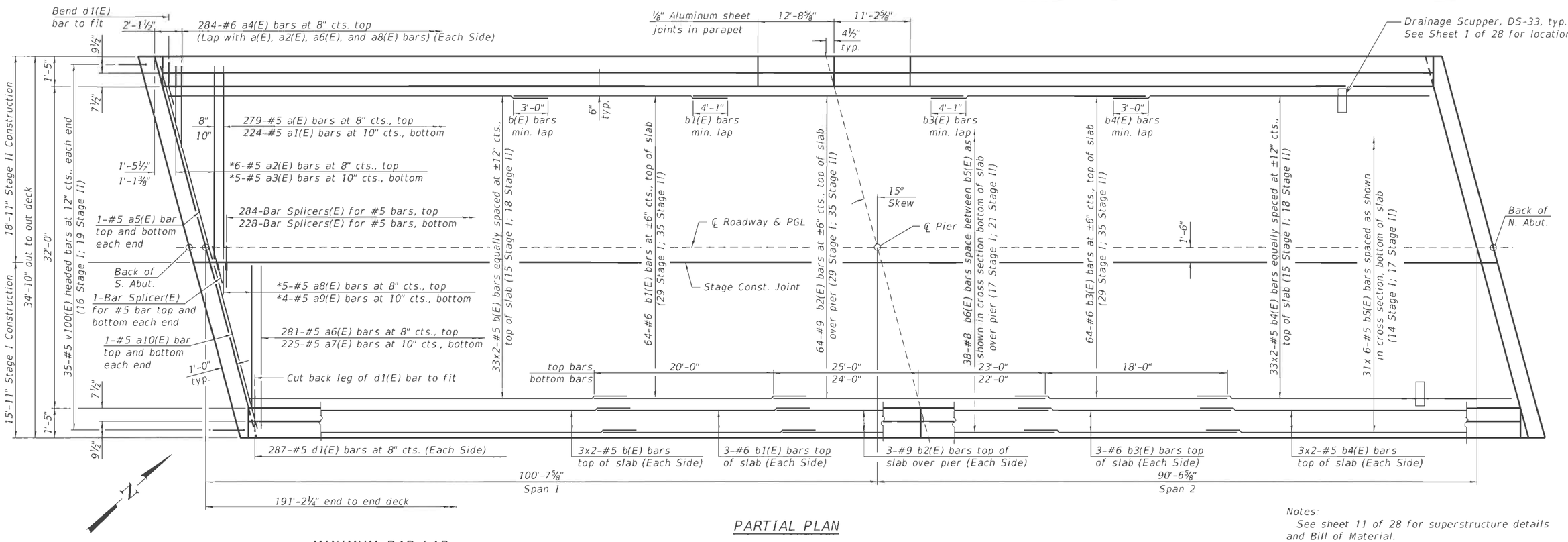
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =		DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
PLOT SCALE =		DRAWN - AJF	REVISED -
PLOT DATE =	11:47:43 AM	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TOP OF APPROACH SLAB ELEVATIONS
STRUCTURE NO. 043-0081
SHEET 9 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	47
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		



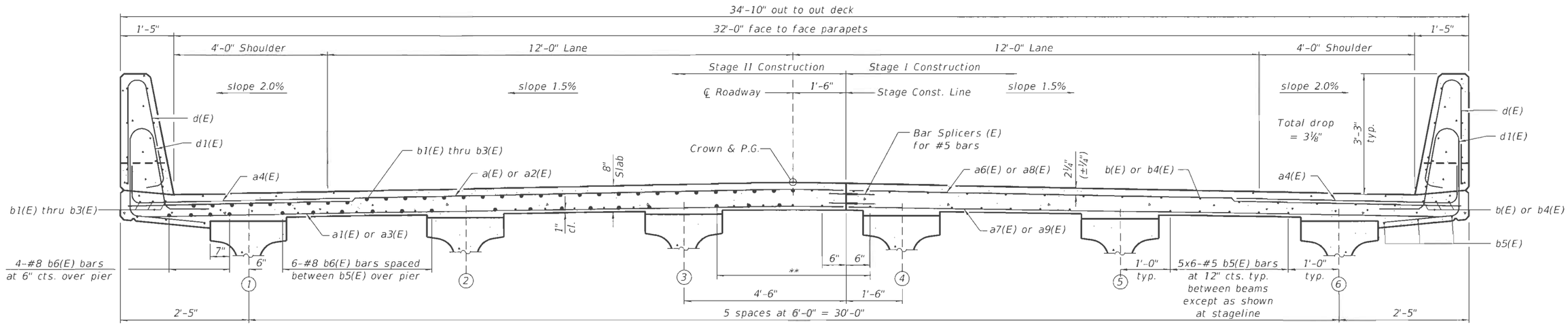
PARTIAL PLAN

* See Field Cutting Diagram on sheet 11 of 28.

MINIMUM BAR LAP

#5 bar = 3'-6"

Notes:
See sheet 11 of 28 for superstructure details and Bill of Material.
Bars indicated thus 20 x 3-#5 etc. indicates 20 lines of bars with 3 lengths per line.



NEAR PIER

CROSS SECTION

(Looking North)

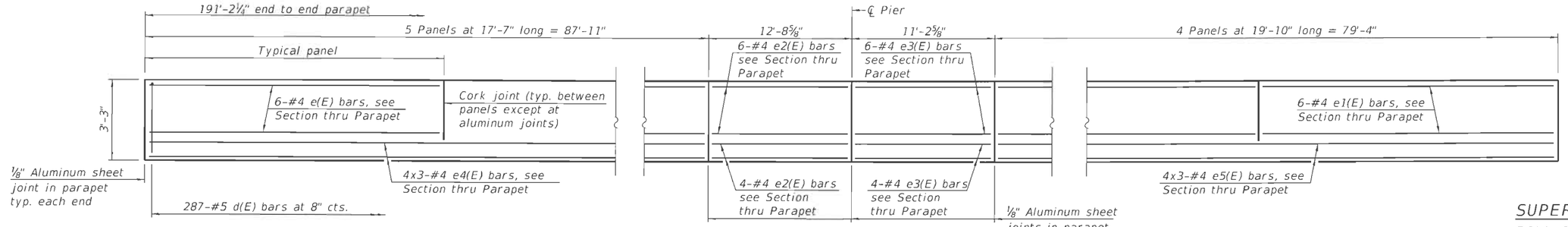
**5x6-#5 b5(E) bars at 12" cts. (1 stage I; 4 stage II)
6-#8 b6(E) bars spaced between b5(E) over pier (1 stage I; 5 stage II)

NEAR MIDSPAN

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	SUPERSTRUCTURE STRUCTURE NO. 043-0081
	PLOT SCALE =	CHECKED - MTH	REVISED -		SHEET 10 OF 28 SHEETS
	PLOT DATE = 1:47:57 PM	DRAWN - AJF	REVISED -		
		CHECKED - MTH	REVISED -		

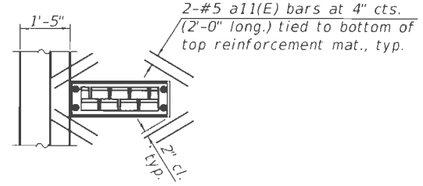
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	48
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

MODFI: Default
FILE NAME: E:\2017-2\Struct\4. Final Design\CADD\CADD_Sheets\043008J-64H58-010-Superstructure.DGN
9/13/2021 1:47:57 PM



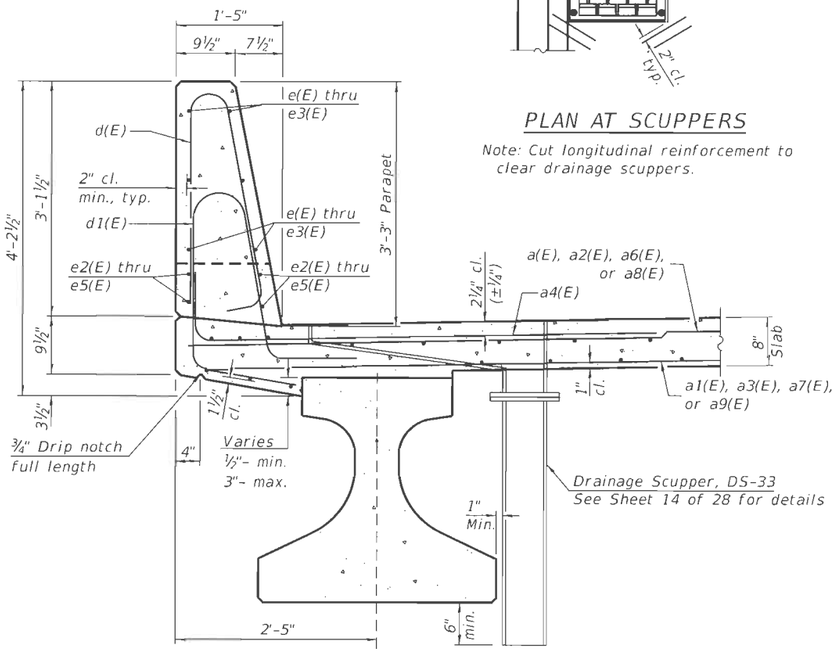
INSIDE ELEVATION OF PARAPET

(Looking West at West Parapet; East Parapet mirror image)

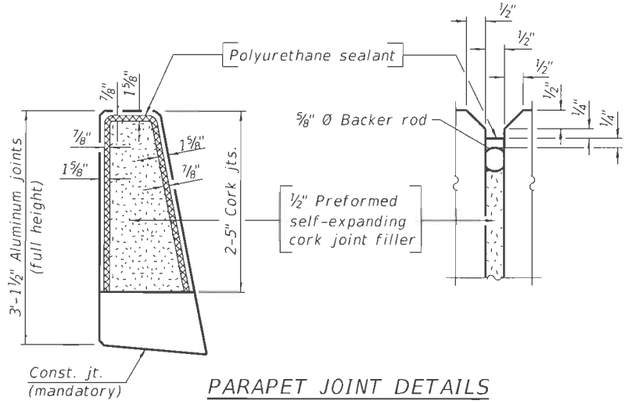


PLAN AT SCUPPERS

Note: Cut longitudinal reinforcement to clear drainage scuppers.



SECTION THRU PARAPET



PARAPET JOINT DETAILS

Notes:

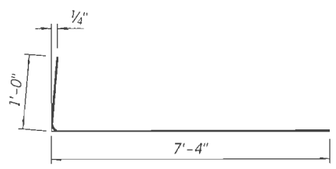
The ⅛" Aluminum sheet shall be ASTM B 209 alloy 3003-H14 and coated to minimize reaction with wet concrete. Cost included with Concrete Superstructure.

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

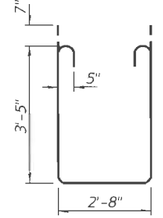
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.

MINIMUM BAR LAP

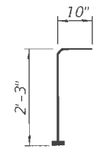
#4 bar = 2'-5"



BAR a4(E)



BAR s11(E)



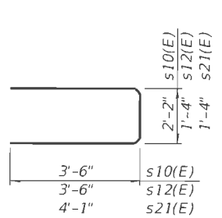
BAR v100(E)

(Headed)

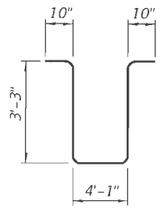
SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	279	#5	18'-7"	
a1(E)	224	#5	18'-3"	
a2(E)	6	#5	21'-9"	
a3(E)	5	#5	18'-5"	
a4(E)	568	#6	8'-4"	
a5(E)	4	#5	19'-2"	
a6(E)	281	#5	15'-7"	
a7(E)	225	#5	15'-3"	
a8(E)	5	#5	16'-3"	
a9(E)	4	#5	15'-3"	
a10(E)	4	#5	16'-1"	
a11(E)	16	#5	2'-0"	
b(E)	78	#5	30'-9"	
b1(E)	70	#6	24'-1"	
b2(E)	70	#9	48'-0"	
b3(E)	70	#6	22'-1"	
b4(E)	78	#5	27'-9"	
b5(E)	186	#5	34'-10"	
b6(E)	38	#8	46'-0"	
d(E)	574	#5	6'-5"	
d1(E)	574	#5	7'-3"	
e(E)	60	#4	17'-3"	
e1(E)	48	#4	19'-6"	
e2(E)	20	#4	12'-5"	
e3(E)	20	#4	10'-11"	
e4(E)	24	#4	30'-10"	
e5(E)	24	#4	28'-0"	
m10(E)	8	#6	16'-1"	
m11(E)	16	#6	4'-10"	
m12(E)	8	#6	1'-7"	
m13(E)	10	#6	2'-6"	
m14(E)	4	#6	6"	
m15(E)	24	#5	4'-0"	
m17(E)	4	#6	3'-9"	
m18(E)	8	#6	19'-3"	
m20(E)	10	#6	2'-7"	
m21(E)	16	#6	4'-10"	
m22(E)	12	#5	4'-0"	
m24(E)	4	#6	3'-9"	
s10(E)	48	#5	9'-0"	
s11(E)	48	#5	10'-8"	
s12(E)	48	#5	8'-4"	
s20(E)	20	#5	12'-3"	
s21(E)	20	#5	9'-6"	
v100(E)	70	#5	3'-1"	
Reinforcement Bars, Epoxy Coated		Lbs.	71,740	
Concrete Superstructure		Cu. Yds.	266.2	

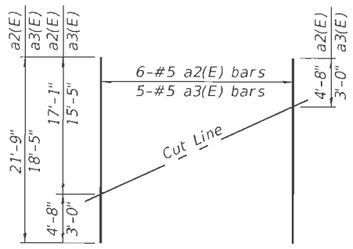
Bars indicated thus 1 x 2-#4 etc. indicates 1 line of bars with 2 lengths per line.



BARS s10(E), s12(E) & s21(E)

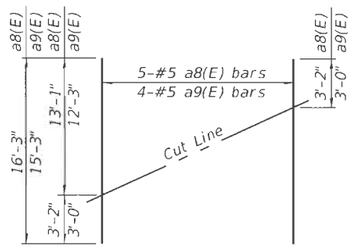


BARS s20(E)



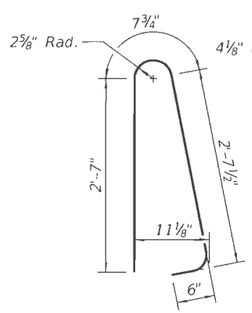
FIELD CUTTING DIAGRAM

Order a2(E) and a3(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.

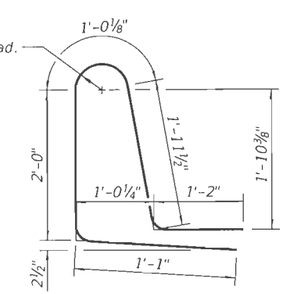


FIELD CUTTING DIAGRAM

Order a8(E) and a9(E) bars full length. Cut as shown and use remainder of bars in opposite end of deck.



BAR d(E)



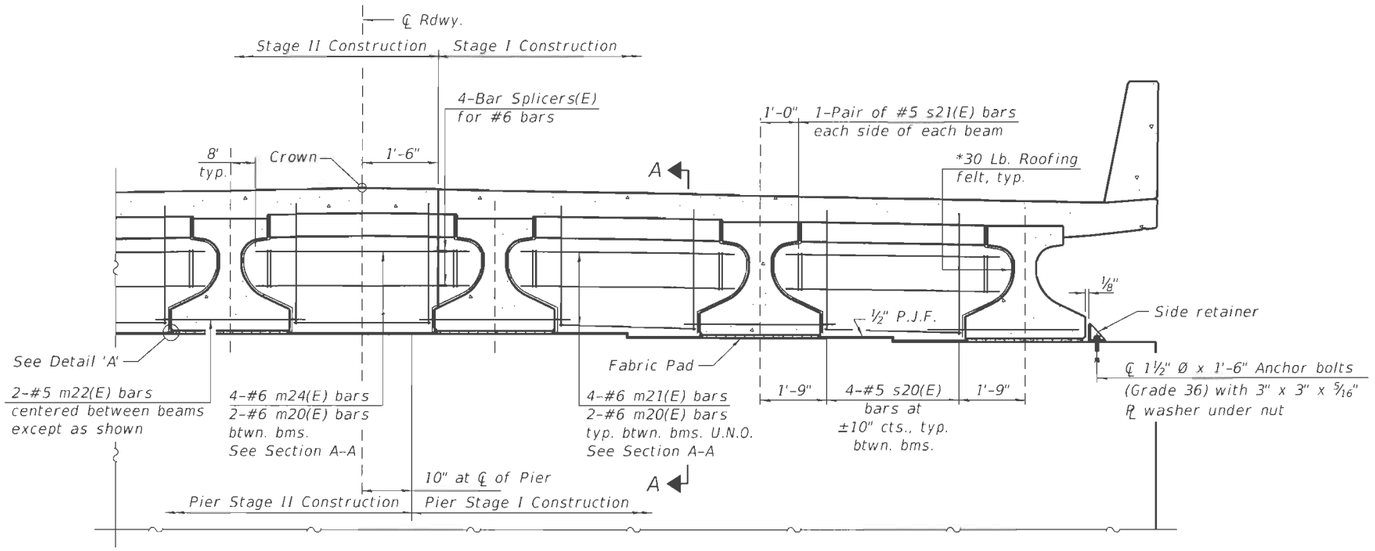
BAR d1(E)

MODEL: Default
FILE NAME: P:\projects\2021\002\SICADD\CAD_Sheets\043008\-64H58-011-Super Details.DGN
8/9/2021 11:47:46 AM

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - MTH	REVISED -	
	PLOT SCALE =	DRAWN - AJF	REVISED -	
	PLOT DATE = 11:47:46 AM	CHECKED - MTH	REVISED -	

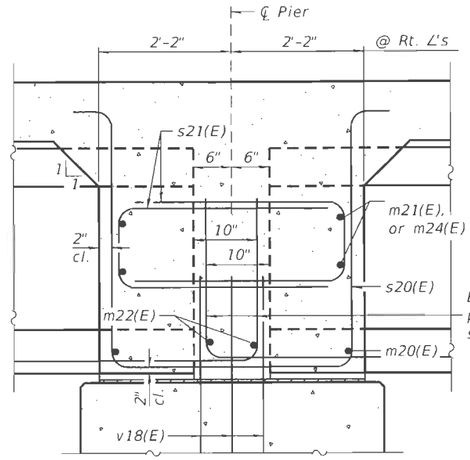
SUPERSTRUCTURE DETAILS
STRUCTURE NO. 043-0081
SHEET 11 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	49
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



DIAPHRAGM AT PIER

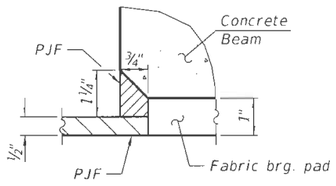
*Bonded to sides of beams embedded into diaphragm.
(Looking North)



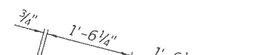
SECTION A-A

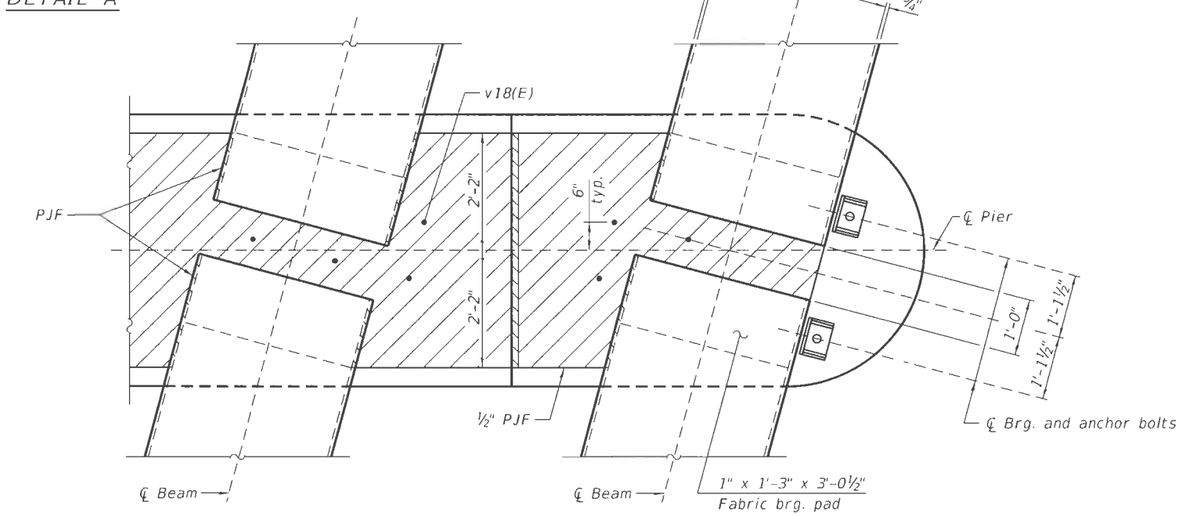
(Dimensions along ℄ of beam except as shown)

Diaphragm defined at supports to reflect concrete diaphragm, but weight is not entered since the substructure seat supports it over the full length.



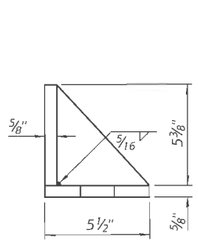
DETAIL 'A'

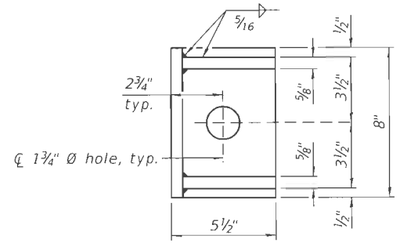




PLAN AT PIER

(Showing bearing pads and PJF details)





SIDE RETAINER

(2 required each side of pier).
Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

Notes:
See sheet 11 of 28 for superstructure details and Bill of Material.
Cost of 30 Lb. roofing felt is included with Concrete Superstructure.
Cost of side retainer and anchor bolts shall be included with Concrete Structures.
The s20(E) and s21(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
Anchor bolts and side retainers shall be according to Article 521.06 of the Standard Specifications. Side retainers shall be hot dip galvanized.
Anchor bolts and side retainers shall be installed as each exterior beam is erected unless an equivalent temporary means of lateral restraint is used.

MODEL: Default
FILE NAME: P:\projects\20012\0021\SCADD\CAD_Sheets\043081-64H58-012-Diaphragm Details.DGN
8/9/2021 11:47:48 AM

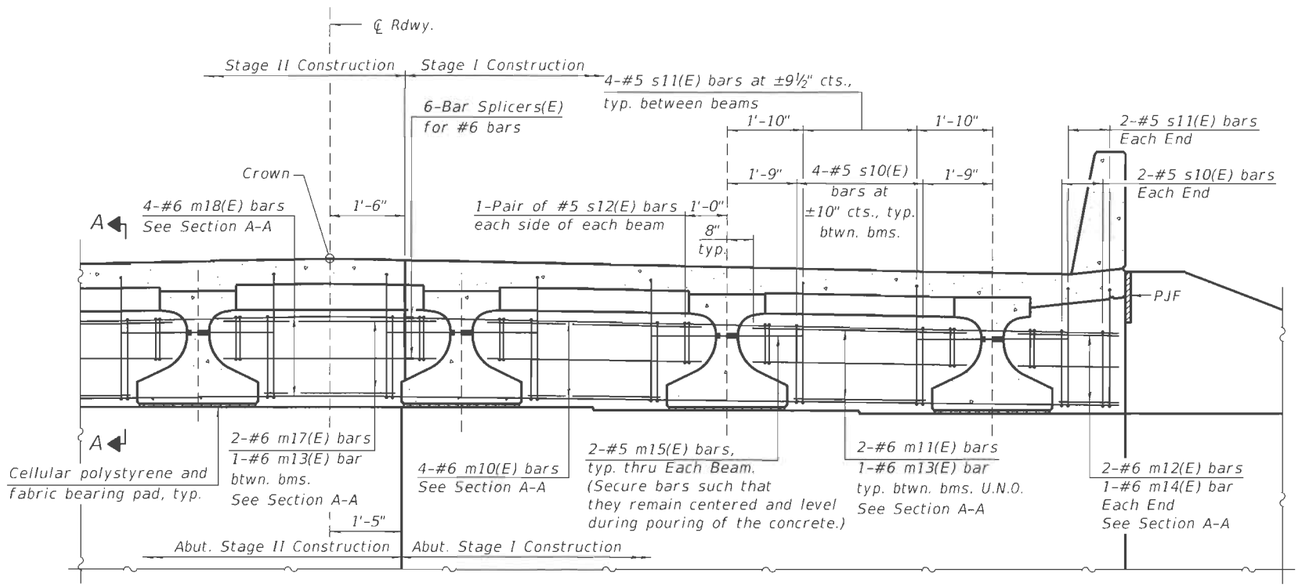
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:48 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

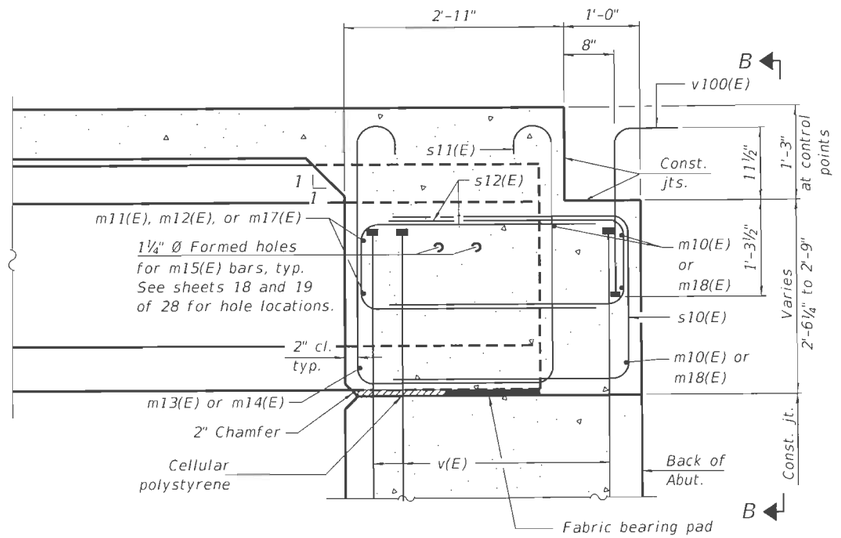
DIAPHRAGM DETAILS
STRUCTURE NO. 043-0081
SHEET 12 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	50
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



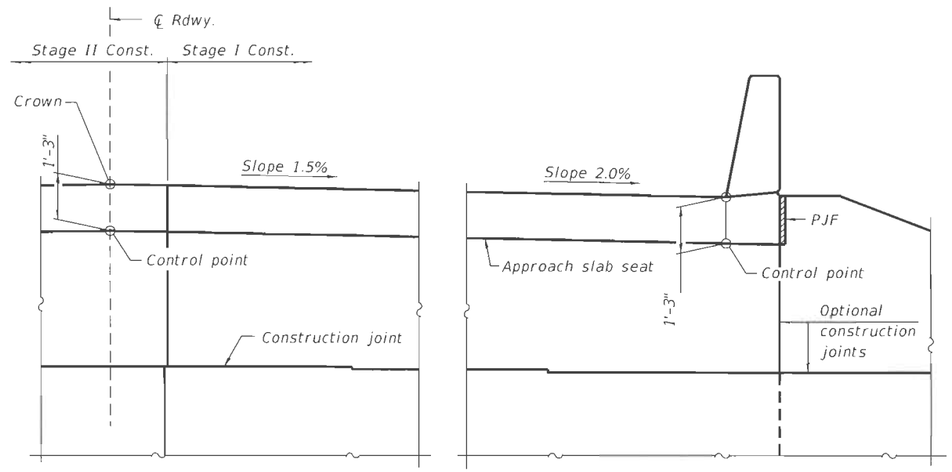
DIAPHRAGM AT ABUTMENT

(North Abutment looking North; South Abutment similar)
(All horizontal dimensions at right angles to ℄ roadway)



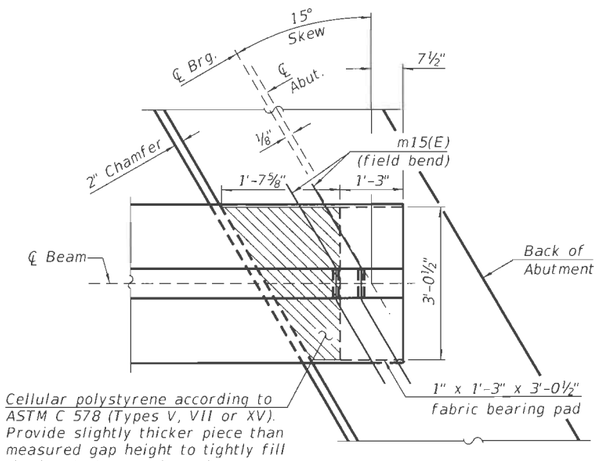
SECTION A-A

(at Rt. ℄'s)



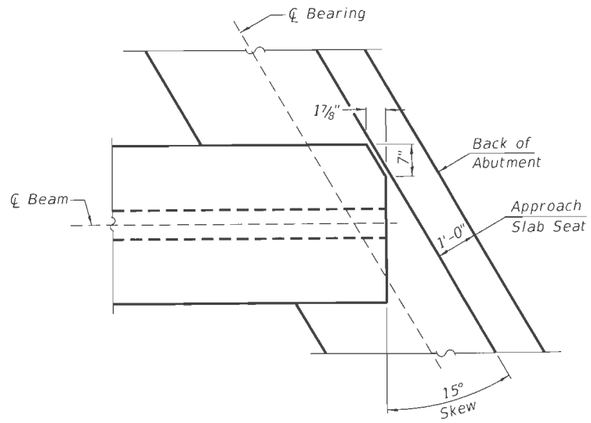
VIEW B-B

(South Abutment looking North; North Abutment similar)



PLAN AT ABUTMENT

(Showing bottom flange of beam)



TOP FLANGE CLIPPING DETAIL

Notes:
See sheet 11 of 28 for superstructure details and Bill of Material.
See sheet 15 of 28 for PJF details.
The s10(E), s11(E) and s12(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.
The approach slab seat shall have a constant slope determined from the control points shown.
Cost of cellular polystyrene is included with Concrete Superstructure.

MODEL: Default
FILE NAME: E:\2017-2\Structv4. Final Design\CADD\CADD_Sheets\0430081-64H58-013-Diaphragm Details.DGN
8/9/2021 2:27:20 PM

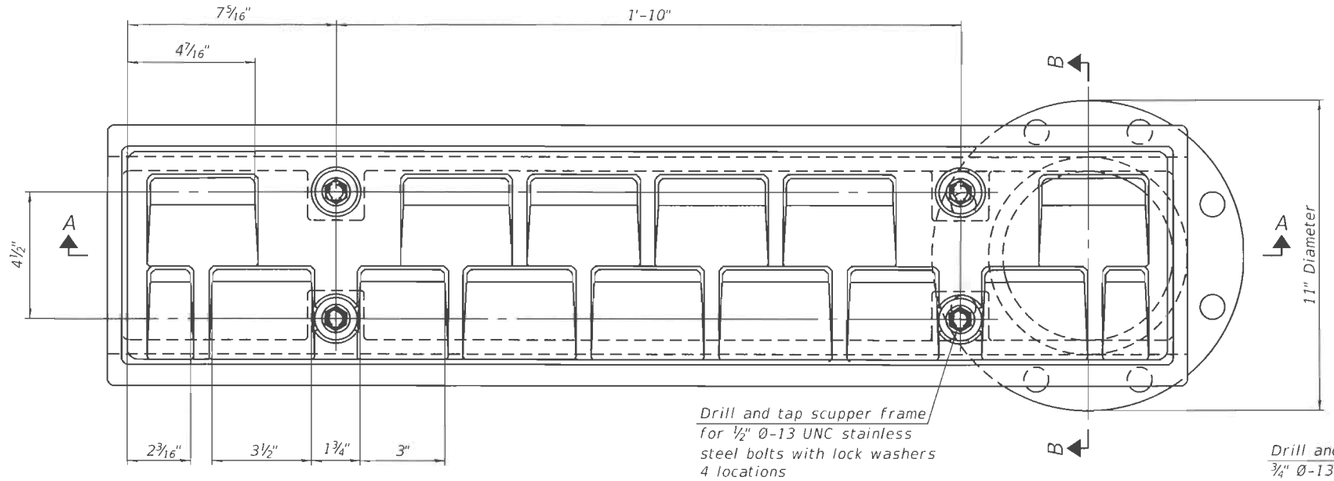
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 2:27:20 PM	CHECKED - MTH	REVISED -	

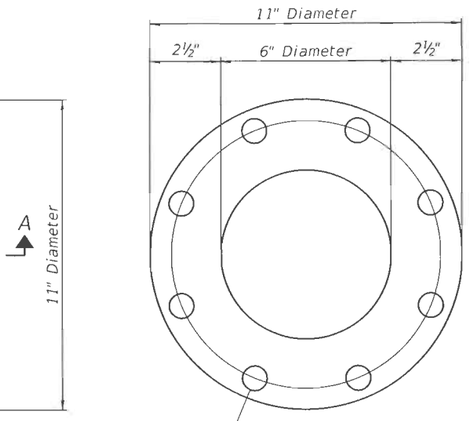
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

DIAPHRAGM DETAILS
STRUCTURE NO. 043-0081
SHEET 13 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	51
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



PLAN



BOTTOM VIEW OF FLANGE ONLY

Notes:

All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 35B and AASHTO M306.

Bolts, nuts and washers shall be according to ASTM A307 and shall be galvanized according to AASHTO M232. As an alternate stainless steel may be used.

Stainless steel hardware shall be according to Article 1006.29(d) of the Standard Specifications.

Structural steel weldments of equal sections and of the same configuration may be substituted for the cast iron scupper frames and downspouts; however, the scupper grates shall remain cast iron. Fillet or full penetration welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

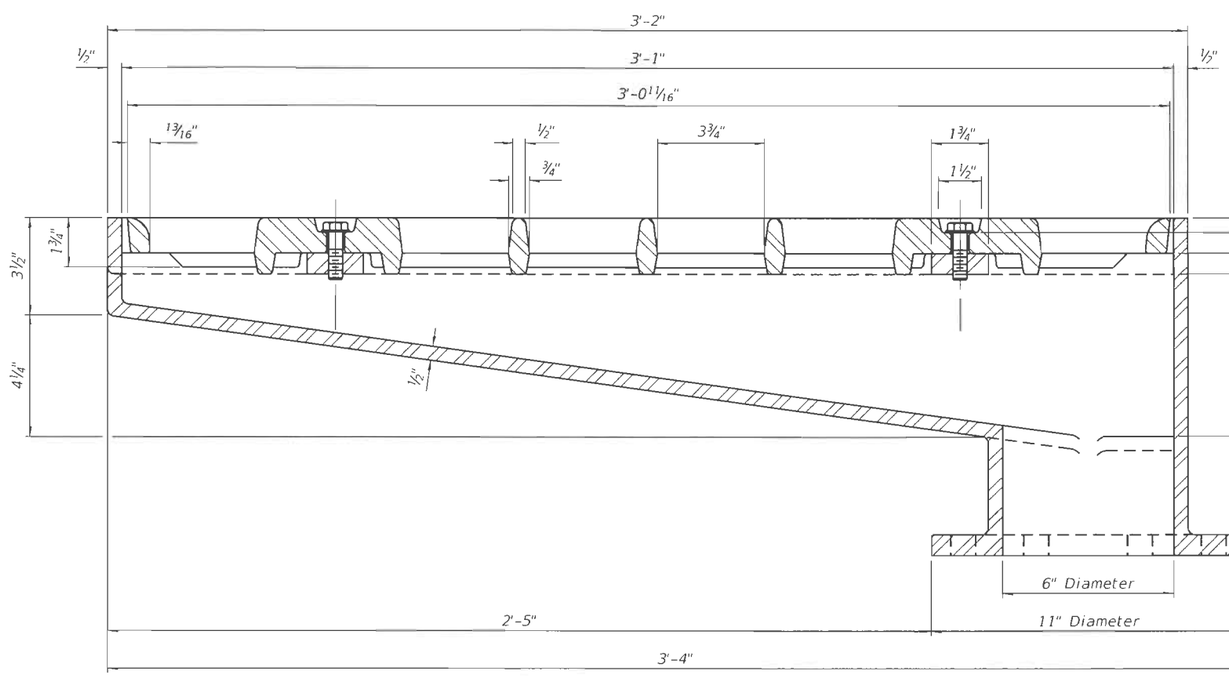
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

As an alternate, fiberglass may be used for downspouts according to ASTM D2996 with a short-time rupture strength hoop tensile stress of 30,000 psi min. in lieu of the cast iron or structural steel.

Exterior surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck shall be pigmented by the manufacturer with a color that matches the concrete.

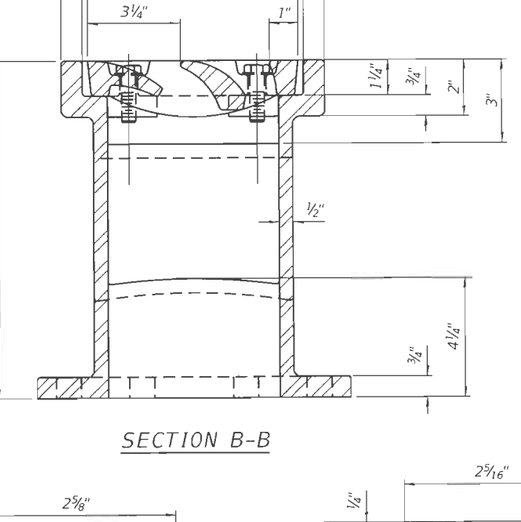
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame, downspout, nuts and washers including complete installation of the scupper shall be paid for at the contract unit price for Drainage Scupper, DS-33.

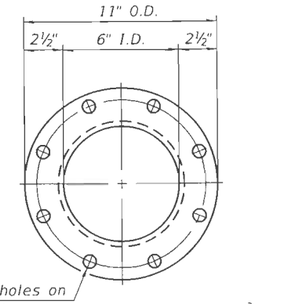


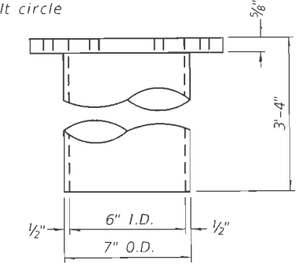
SECTION A-A

See sheet 11 of 28 for scupper location relative to parapet.



SECTION B-B

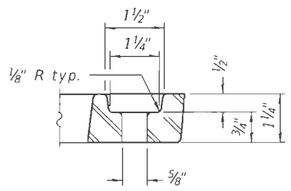




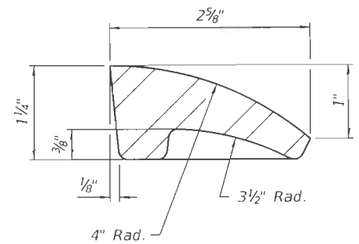
DOWNSPOUT

BILL OF MATERIAL

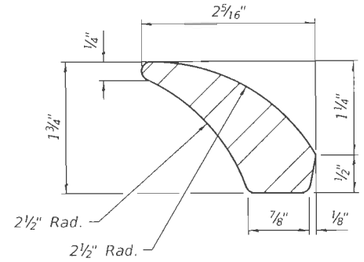
ITEM	UNIT	QUANTITY
Drainage Scupper, DS-33	Each	2



GRATE BOLT HOLE DETAIL



FIRST VANE DETAIL



SECOND VANE DETAIL

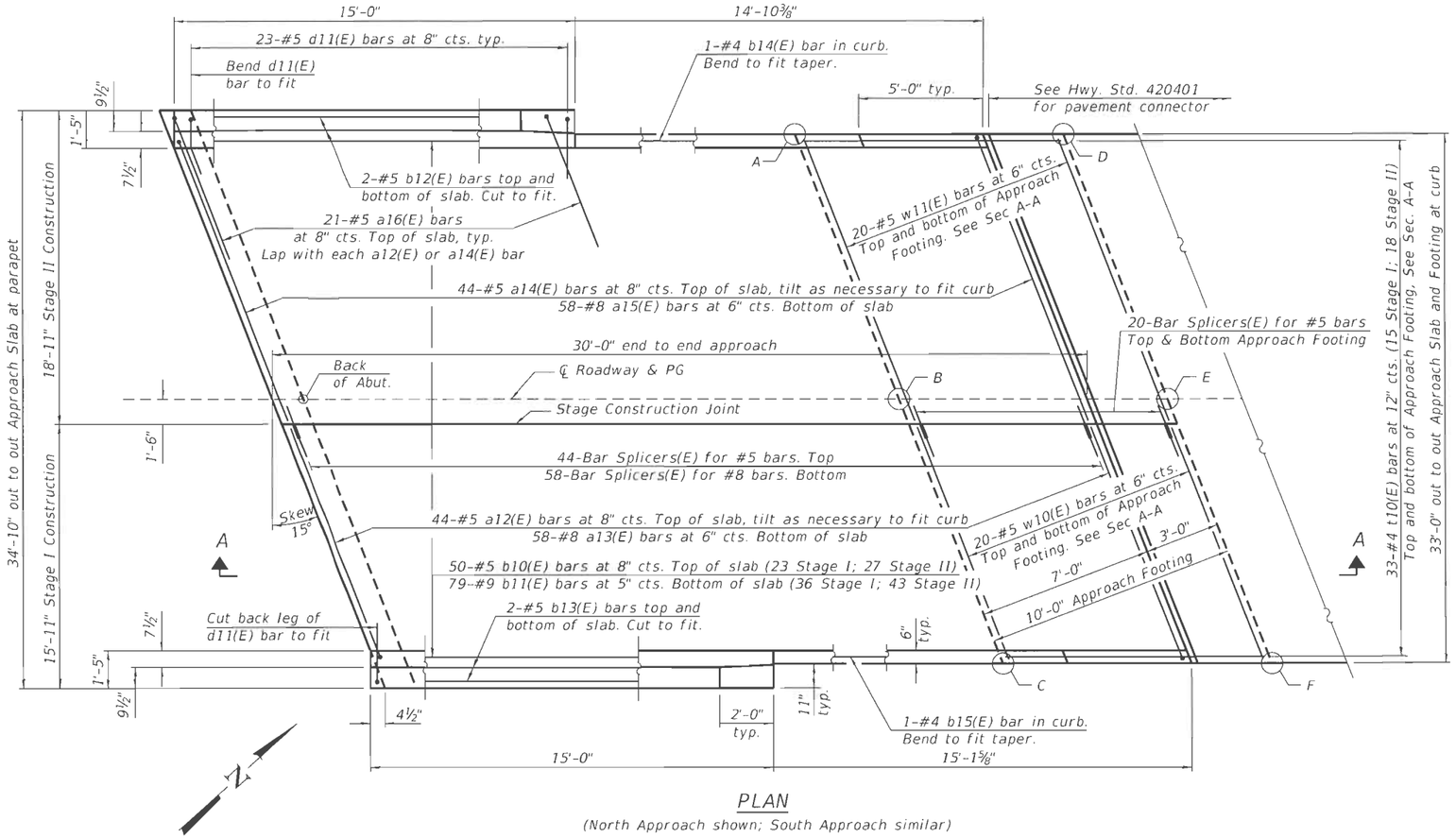
DS-33 1-1-2020

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - MTH	REVISED -	
	PLOT SCALE =	DRAWN - AJF	REVISED -	
	PLOT DATE = 11:47:51 AM	CHECKED - MTH	REVISED -	

DRAINAGE SCUPPER, DS-33
STRUCTURE NO. 043-0081
SHEET 14 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	52
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: P:\projects\2001210021\SCADD\CAD_Sheets\043008I-64H58-014-Scupper.DGN
8/9/2021 11:47:51 AM



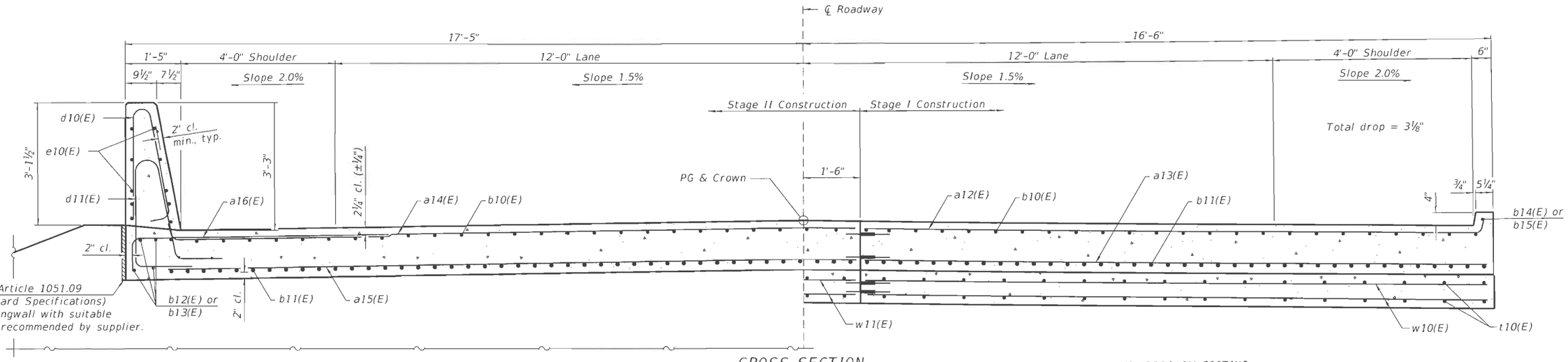
PLAN

(North Approach shown; South Approach similar)

TOP AND BOTTOM ELEVATIONS FOR APPROACH FOOTING

	South Approach		North Approach	
Point	Top	Bottom	Top	Bottom
A	728.83	728.00	728.18	727.35
B	729.12	728.29	728.41	727.57
C	728.87	728.04	728.09	727.26
D	728.78	727.95	728.07	727.24
E	729.07	728.24	728.29	727.46
F	728.83	727.99	727.97	727.14

Note:
Points A thru C are along edge of footing closest to the bridge while points D thru E are along edge of footing furthest from bridge.



NEAR ABUTMENT

CROSS SECTION

(Looking North)

AT APPROACH FOOTING

MODEL: Default
FILE NAME: P:\projects\2001\2002\S\CADD\CAD_Sheets\043008I-64H58-015-Approach Details.DGN
8/9/2021 11:47:52 AM

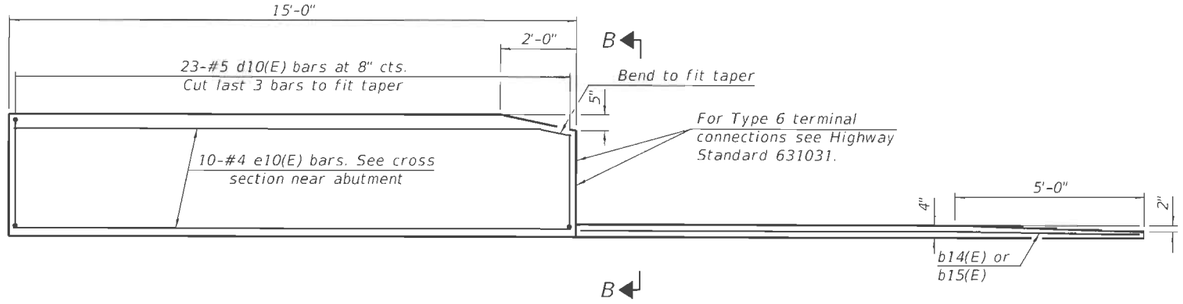
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =		DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
PLOT SCALE =		DRAWN - AJF	REVISED -
PLOT DATE =	11:47:52 AM	CHECKED - MTH	REVISED -

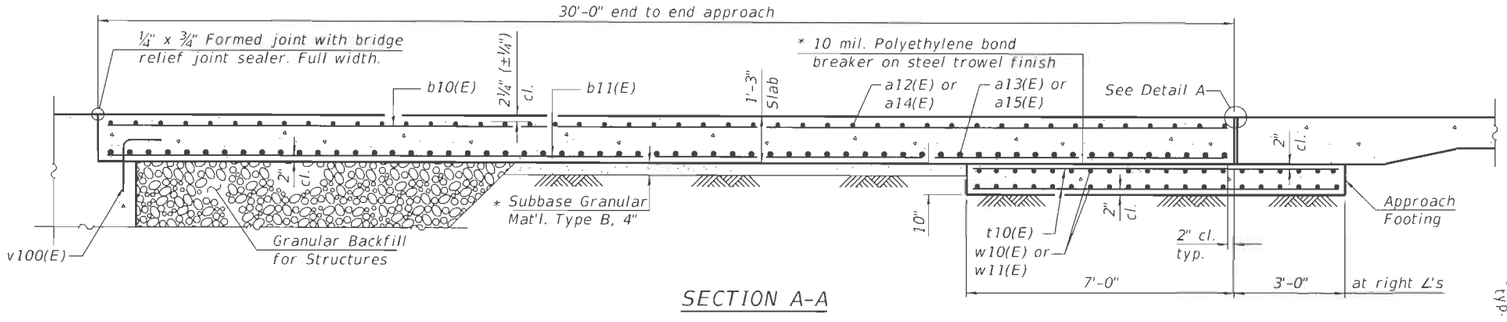
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 043-0081
SHEET 15 OF 28 SHEETS

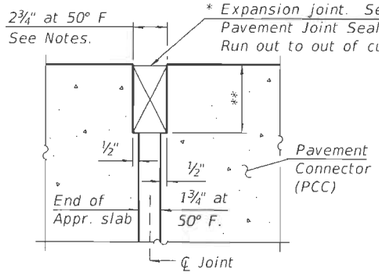
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	53
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		



INSIDE ELEVATION OF PARAPET AND CURB



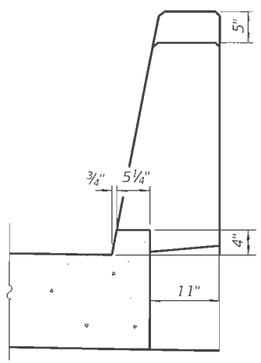
SECTION A-A



DETAIL A
(@ Rt. ℄'s)

* Cost included with Concrete Superstructure (Approach Slab).

** Per manufacturer recommendations



VIEW B-B

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.

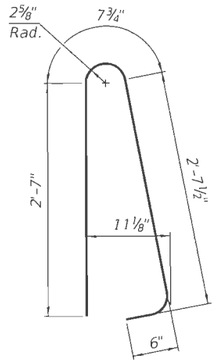
Approach slab shall be paid for as Concrete Superstructure (Approach Slab).

Approach footing concrete shall be paid for as Concrete Structures.

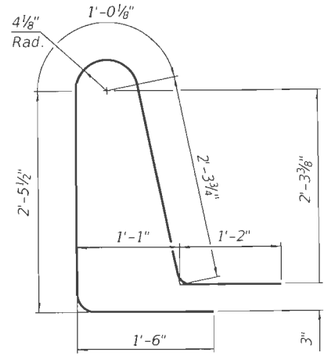
The approach footing maximum applied service bearing pressure (Qmax) = 2.0 ksf.

Cost of excavation for approach footing included with Concrete Structures.

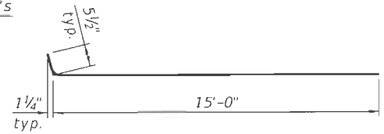
For Granular Backfill for Structures and drainage treatment details, see sheet 2 of 28.



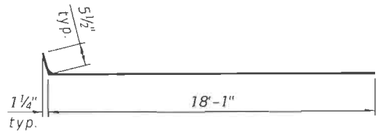
BAR d10(E)



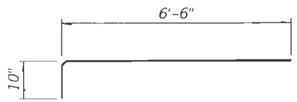
BAR d11(E)



BAR a12(E)



BAR a14(E)



BAR a16(E)

TWO APPROACHES
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a12(E)	88	#5	15'-6"	
a13(E)	116	#8	15'-2"	
a14(E)	88	#5	18'-7"	
a15(E)	116	#8	18'-3"	
a16(E)	84	#5	7'-4"	
b10(E)	100	#5	29'-8"	
b11(E)	158	#9	29'-8"	
b12(E)	8	#5	15'-0"	
b13(E)	8	#5	14'-8"	
b14(E)	2	#4	14'-6"	
b15(E)	2	#4	14'-10"	
d10(E)	92	#5	6'-5"	
d11(E)	92	#5	8'-6"	
e10(E)	40	#4	14'-8"	
t10(E)	132	#4	10'-0"	
w10(E)	80	#5	15'-2"	
w11(E)	80	#5	18'-3"	
Concrete Superstructure		Cu. Yd.	7.8	
Concrete Superstructure (Approach Slab)		Cu. Yd.	94.6	
Concrete Structures		Cu. Yd.	20.4	
Reinforcement Bars, Epoxy Coated		Pound	38,950	

MODEL: Default
FILE NAME: P:\projects\2001\2002\SICADD\CAD_Sheets\043008I-64H58-016-Approach Details.DGN
8/9/2021 11:47:53 AM

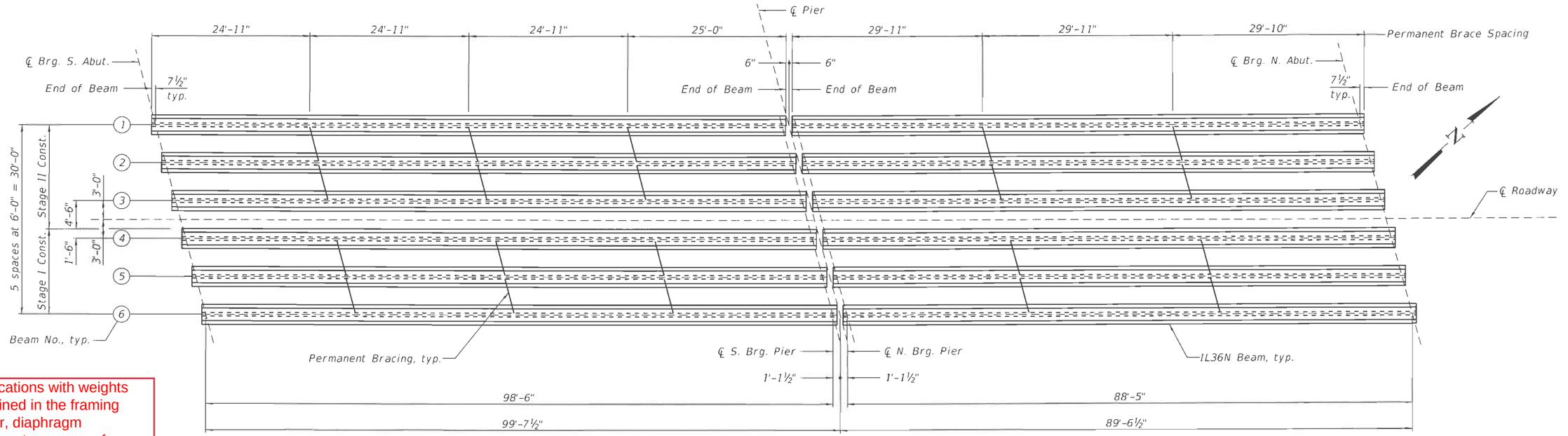
LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =		DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
PLOT SCALE =		DRAWN - AJF	REVISED -
PLOT DATE =	11:47:53 AM	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BRIDGE APPROACH SLAB DETAILS
STRUCTURE NO. 043-0081
SHEET 16 OF 28 SHEETS

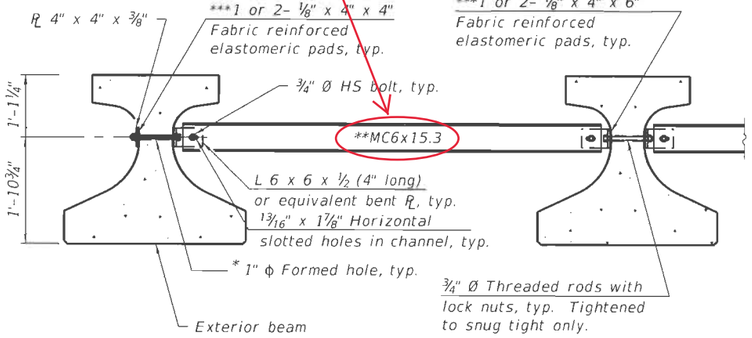
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	54
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		



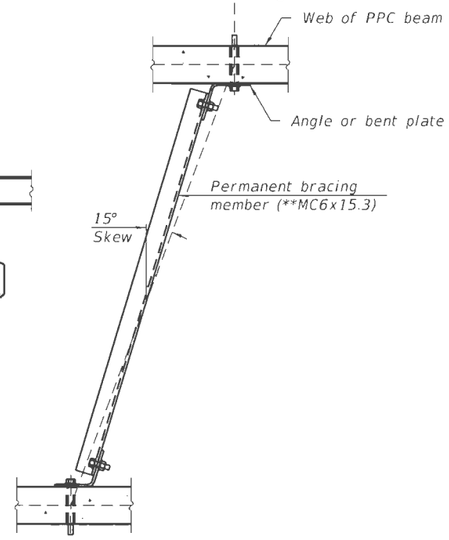
FRAMING PLAN

Diaphragm locations with weights should be defined in the framing plan. However, diaphragm definitions are not necessary for non-curved bridges since they are a secondary member that is not included in the rating.

* Member(s) that controls the overall load rating should have " - X" as a suffix in the Member Name and both the "Existing" and "Current" boxes should be checked in the Member window. Non-controlling members should only have the "Current" box checked.



PERMANENT BRACING DETAILS



PLAN

Notes:

All material for bracing shall be hot dip galvanized according to AASHTO M111 unless otherwise noted.

Two hardened washers are required for each set of oversized holes.

All holes shall be 15⁄16" Ø unless otherwise noted.

5⁄16" x 3" x 3" plate washers are required over all slotted holes.

All bolts, threaded rods, and hardware shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Bracing shall be installed as beams are erected and tightened as soon as possible during erection.

Permanent bracing shall not be paid for separately, but shall be included in the cost of Furnishing and Erecting Precast Prestressed Concrete Beams.

* Fabricator shall locate to miss strands within permissible tolerances.

** Alternate MC6x18 channels are permitted to facilitate material acquisition.

*** Place pads as necessary to provide a flat mounting surface between the steel and concrete.

INTERIOR BEAM MOMENT TABLE

		0.4 Sp. 1	Pier	0.6 Sp. 2
I	(in^4)	100433	100433	100433
I'	(in^4)	280629	280629	280629
Sb	(in^3)	6832	6832	6832
Sb'	(in^3)	11525	11525	11525
St	(in^3)	4715	4715	4715
St'	(in^3)	24088	24088	24088
DC1	(k/')	1.386	1.386	1.386
MDC1	('k)	1612	0	1298
DC2	(k/')	0.188	0.188	0.188
MDC2	('k)	144	-207	99
DW	(k/')	0.300	0.300	0.300
MDW	('k)	204	-311	141
LLDF		0.515	0.522	0.529
M_{L+IM}	('k)	1127	-1255	1018

INTERIOR BEAM REACTION TABLE

		S. Abut.	Pier Span 1	Pier Span 2	N. Abut.
LLDF		0.671	0.671	0.671	0.671
RDC1	(k)	74.9	73.4	66.3	67.8
⊛ RDC2	(k)	7.2	11.1	11.1	6.0
⊛ RDW	(k)	10.6	16.9	16.9	8.9
⊛ R_{L+IM}	(k)	75.3	67.7	67.7	73.0
RTotal	(k)	168.0	169.1	162.0	155.8

⊛ At continuous pier, reactions from composite loads are assumed to be equally distributed to each bearing line.

I: Non-composite moment of inertia of beam section ($in.^4$).
I': Composite moment of inertia of beam section ($in.^4$).
Sb: Non-composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
Sb': Composite section modulus for the bottom fiber of the prestressed beam ($in.^3$).
St: Non-composite section modulus for the top fiber of the prestressed beam ($in.^3$).
St': Composite section modulus for the top fiber of the prestressed beam ($in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
MDC1: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
MDC2: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
MDW: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft).
M_{L+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
LLDF: Live Load Distribution Factor.

MODEL: Default
FILE NAME: P:\projects\2001210021\SICADD\CAD_Sheets\043008I-64H58-017-Framing Details.DGN
8/9/2021 11:47:55 AM

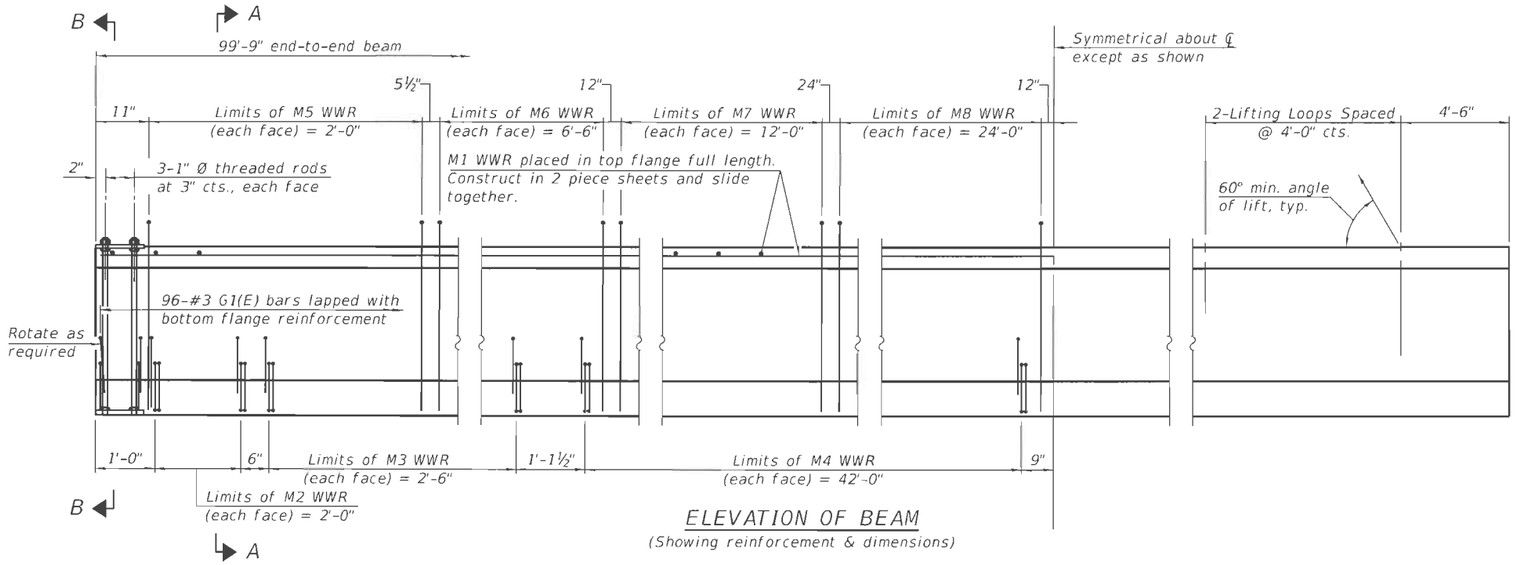
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =		DESIGNED -	AML	REVISED -	
		CHECKED -	MTH	REVISED -	
PLOT SCALE =		DRAWN -	AJF	REVISED -	
PLOT DATE =	11:47:55 AM	CHECKED -	MTH	REVISED -	

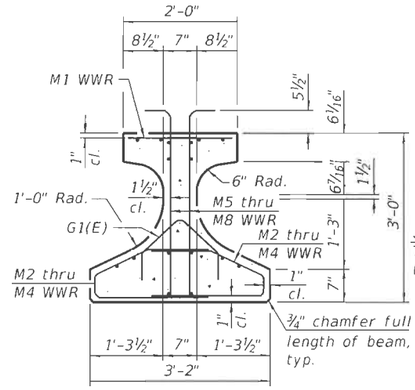
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FRAMING DETAILS
STRUCTURE NO. 043-0081
SHEET 17 OF 28 SHEETS

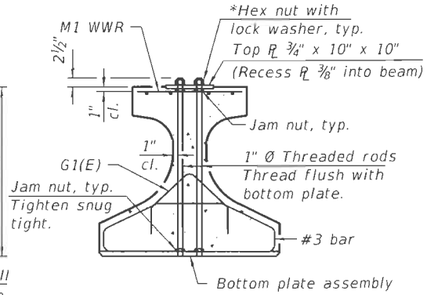
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	55
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



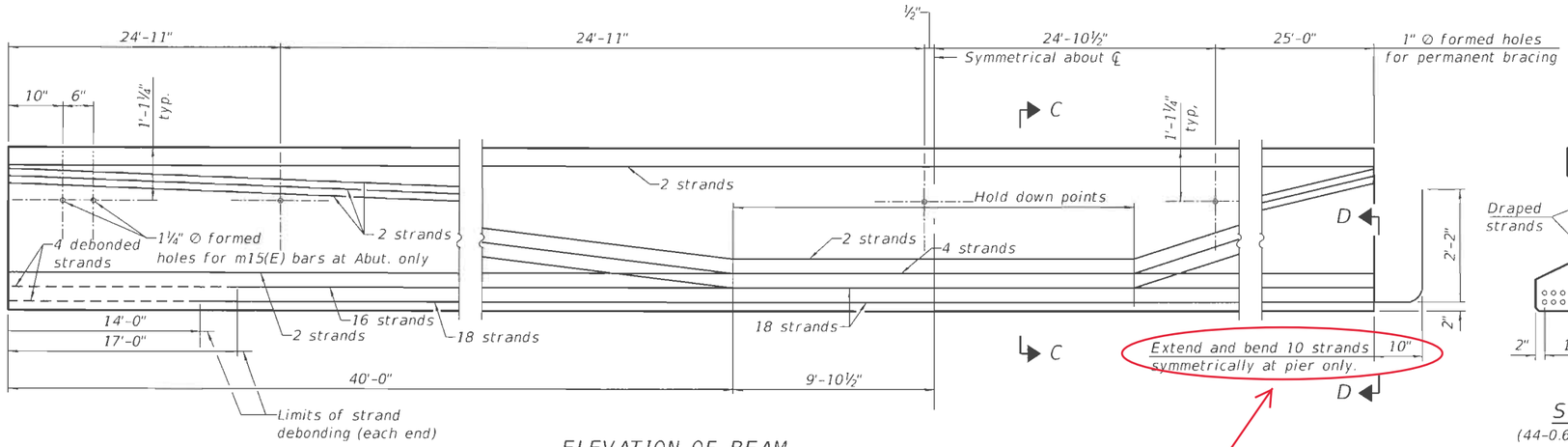
ELEVATION OF BEAM
(Showing reinforcement & dimensions)



SECTION A-A

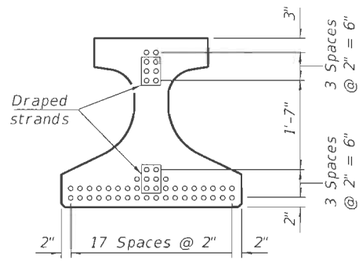


SECTION B-B
*Only tighten sufficiently to compress lock washers

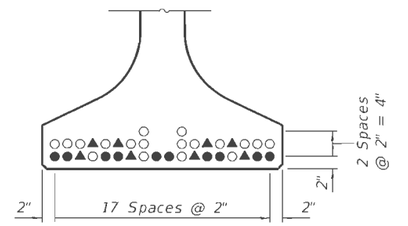


ELEVATION OF BEAM
(Showing prestressing steel)

Conservatively use Gr. 60 material since AASHTOWare doesn't allow prestress material for this reinforcement.



SECTION C-C
(44-0.6" Ø 270 ksi strands)



VIEW D-D

- ○ Fully bonded strand
- ▲ Partially debonded strand
- ● Extended and bent strand (at pier only)

SPAN 1
IL36-2438 Beam
Strand Pattern = 42B-2T-8db-6d

Note:
See sheet 20 of 28 for additional details and Bill of Material.

MODEL: Default
FILE NAME: P:\projects\20012\0021S\CADD\CAD_Sheets\043008\64H58-018-IL 36 Beam.DGN
8/9/2021 11:47:56 AM

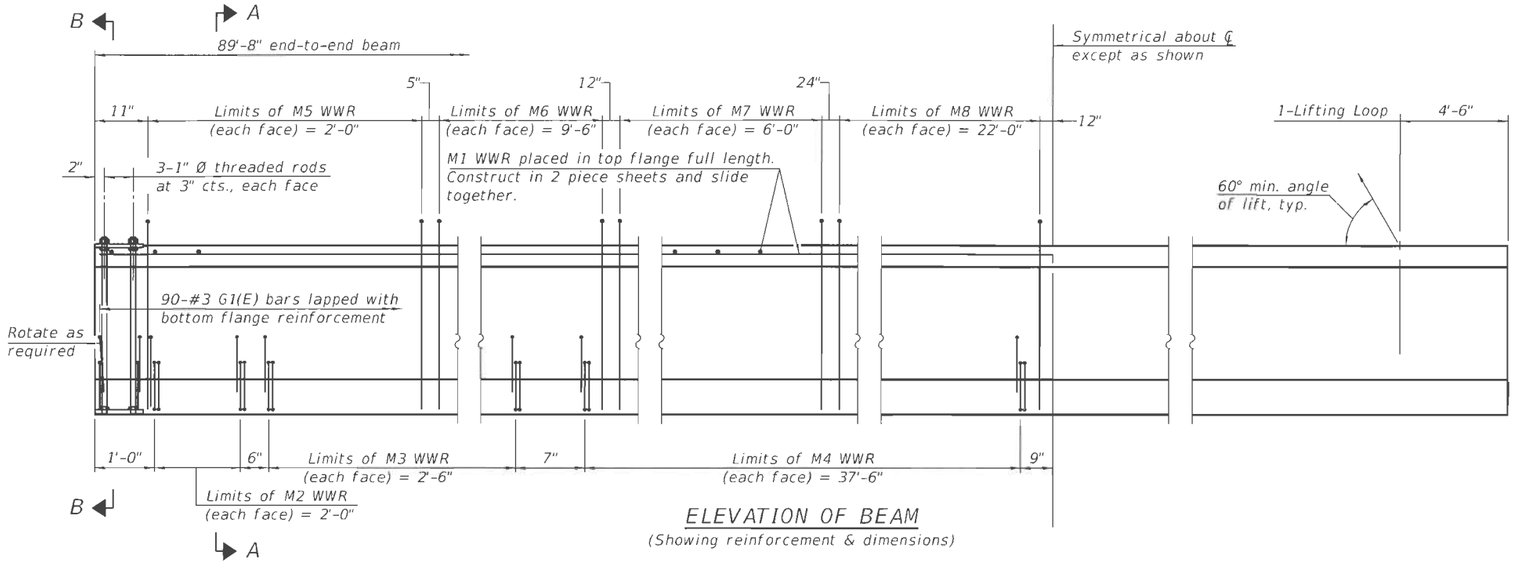
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:47:56 AM	CHECKED - MTH	REVISED -	

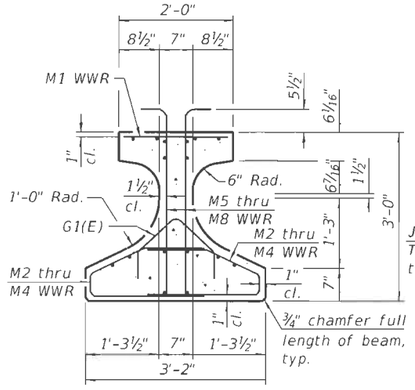
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

IL36N BEAM (SPAN 1)
STRUCTURE NO. 043-0081
SHEET 18 OF 28 SHEETS

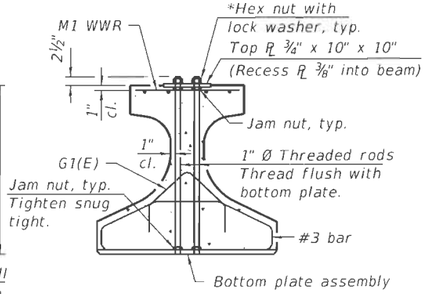
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	56
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



ELEVATION OF BEAM
(Showing reinforcement & dimensions)

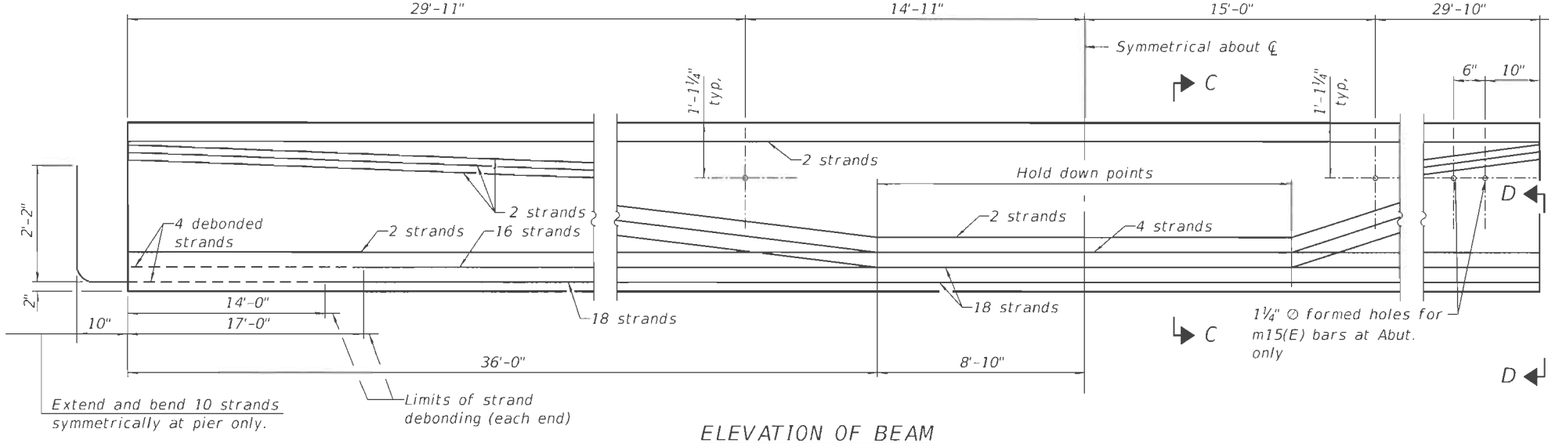


SECTION A-A

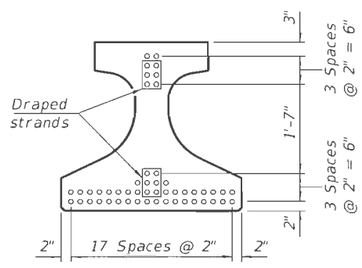


SECTION B-B

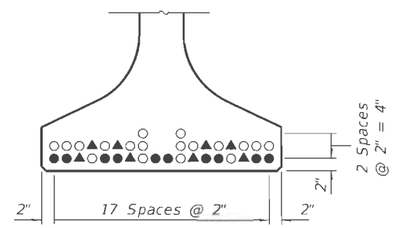
*Only tighten sufficiently to
compress lock washers



ELEVATION OF BEAM
(Showing prestressing steel)



SECTION C-C
(44-0.6" Ø 270 ksi strands)



VIEW D-D

- ○ Fully bonded strand
- ▲ Partially debonded strand
- ● Extended and bent strand (at pier only)

SPAN 2
IL36-2438 Beam
Strand Pattern = 42B-2T-8db-6d

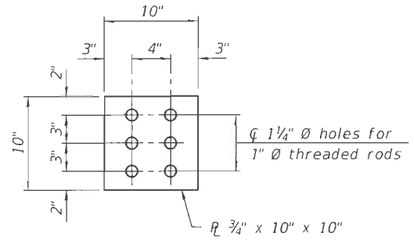
Note:
See sheet 20 of 28 for additional details and Bill of Material.

MODEL: Default
FILE NAME: P:\projects\2001\2002\SCADD\CAD_Sheets\043008I-64H58-0I9-IL 36 Beam.DGN
8/9/2021 11:47:58 AM

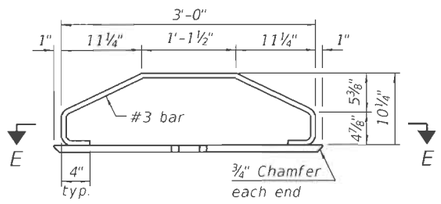
LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - MTH	REVISED -	
	PLOT SCALE =	DRAWN - AJF	REVISED -	
	PLOT DATE = 11:47:58 AM	CHECKED - MTH	REVISED -	

IL36N BEAM (SPAN 2)
STRUCTURE NO. 043-0081
SHEET 19 OF 28 SHEETS

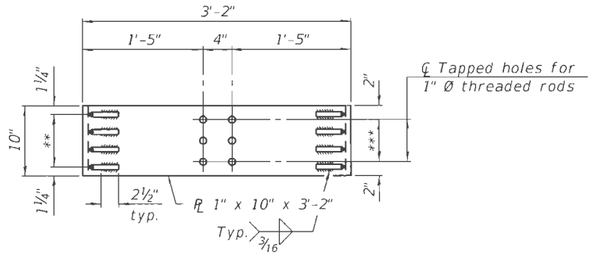
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	57
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	



PLAN - TOP PLATE



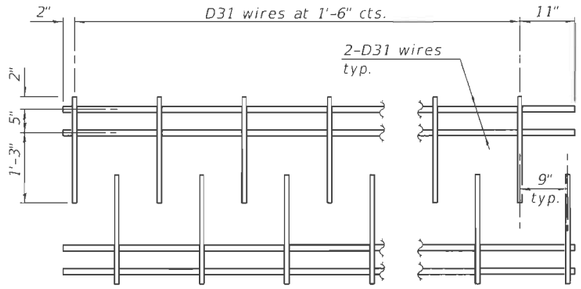
ELEVATION - BOTTOM PLATE ASSEMBLY



SECTION E-E

** 3 Spaces at 2½" = 7½"

*** 2 Spaces at 3" = 6"



M1 WWR DETAIL

When multiple sheets of M1 WWR are required along the beam length, #5(E) bars (5'-0" long) shall be used to splice the longitudinal D31 wires together (Min. Lap 2'-2").

NOTES

Inserts for ¾" Ø threaded dowel rods, when specified, are to be two strut, ferrule type for interior beams and single ferrule, flared loop type for exterior beams.

Prestressing steel shall be uncoated high strength, low relaxation 7-wire strand, Grade 270. The nominal diameter for beam strands shall be 0.6" and the nominal cross-sectional area shall be 0.217 sq. in. The nominal diameter for lifting loops shall be ½" and the nominal cross sectional area shall be 0.153 sq. in.

The beams shall have a final concrete compressive strength, f'c, of 8500 psi and a release concrete compressive strength, f'ci, of 6500 psi.

A minimum 2½" Ø lifting pin shall be used to engage the lifting loops during handling.

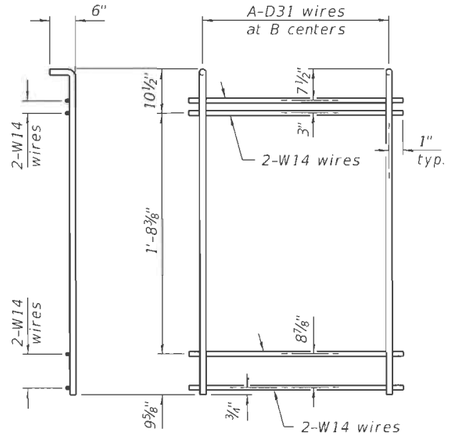
Bend the extended strands inward on the fascia beams to maintain 1½" clearance inside the pier diaphragm.

The top and bottom plates shall be AASHTO M270 Grade 50.

The top plates and bottom plate assemblies shall be galvanized according to AASHTO M111. The threaded rods, nuts and washers shall be galvanized according to AASHTO M232.

Threaded rods shall be ASTM F 1554 Grade 55.

Welded Wire Reinforcement (WWR) shall conform to ASTM A884 with a Class A, Type 1 epoxy coating or ASTM A1060, Table 3 galvanized coating.



M5 THRU M8 WWR DETAIL

(See Table of Dimensions)

TABLE OF DIMENSIONS

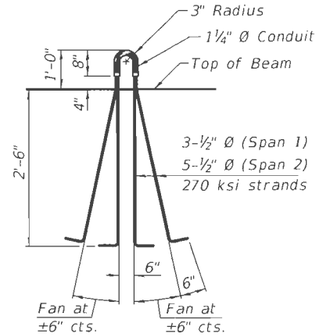
(WWR tables are based on Grade 60.)

SPAN 1

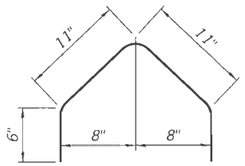
WWR	A	B
M2	9	3"
M3	6	6"
M4	29	1'-6"
M5	9	3"
M6	14	6"
M7	13	1'-0"
M8	13	2'-0"

SPAN 2

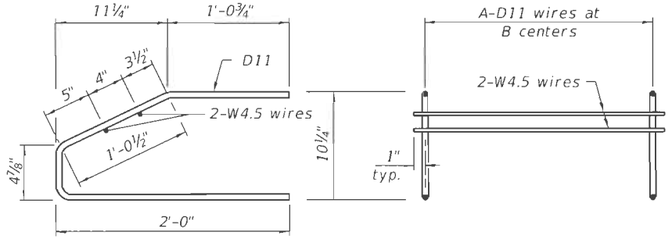
WWR	A	B
M2	9	3"
M3	6	6"
M4	26	1'-6"
M5	9	3"
M6	20	6"
M7	7	1'-0"
M8	12	2'-0"



LIFTING LOOP DETAIL



BAR G1(E)



M2 THRU M4 WWR DETAIL

(See Table of Dimensions)

BILL OF MATERIAL

Item	Unit	Total
Furnishing and Erecting Precast Prestressed Concrete Beams, IL36N	Ft.	1137

IL36-2438D 2-25-2019

LIN ENGINEERING, LTD. Consulting Engineers Springfield, Illinois	USER NAME =	DESIGNED - AML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION
		CHECKED - MTH	REVISED -	
	PLOT SCALE =	DRAWN - AJF	REVISED -	
	PLOT DATE = 11:47:59 AM	CHECKED - MTH	REVISED -	

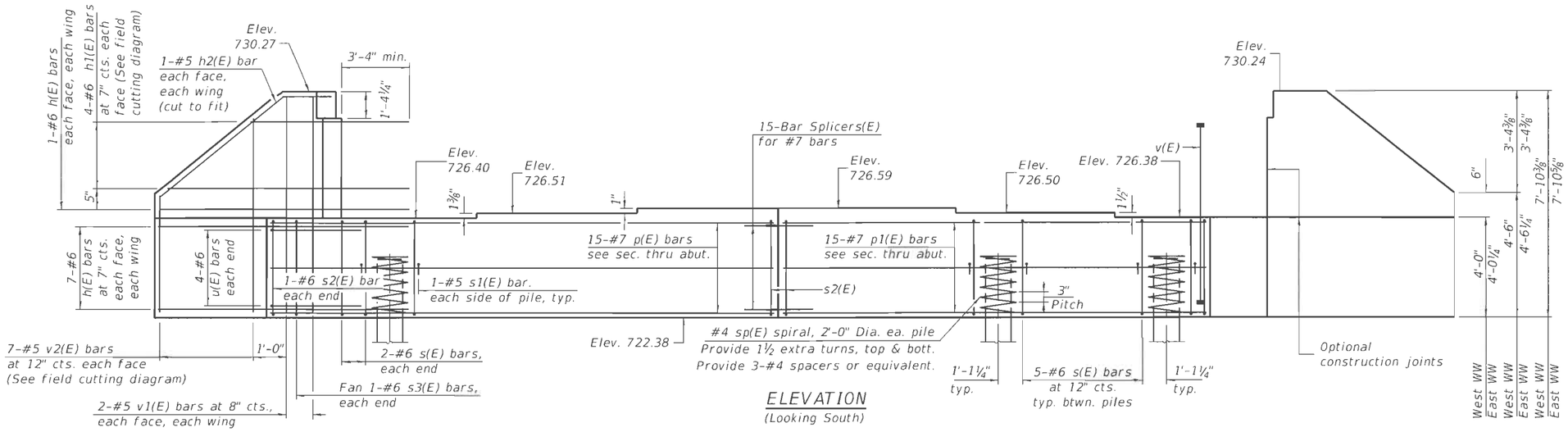
IL36N BEAM DETAILS
STRUCTURE NO. 043-0081

SHEET 20 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	58
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

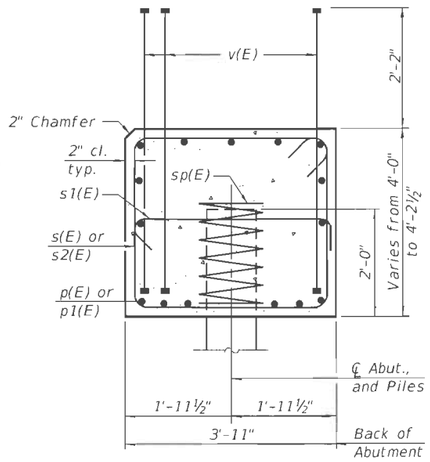
MODEL: Default
FILE NAME: P:\projects\20012\0002\SICADD\CAD_Sheets\043008I-64H58-029-IL 36 Beam Details.DGN

8/9/2021 11:47:59 AM



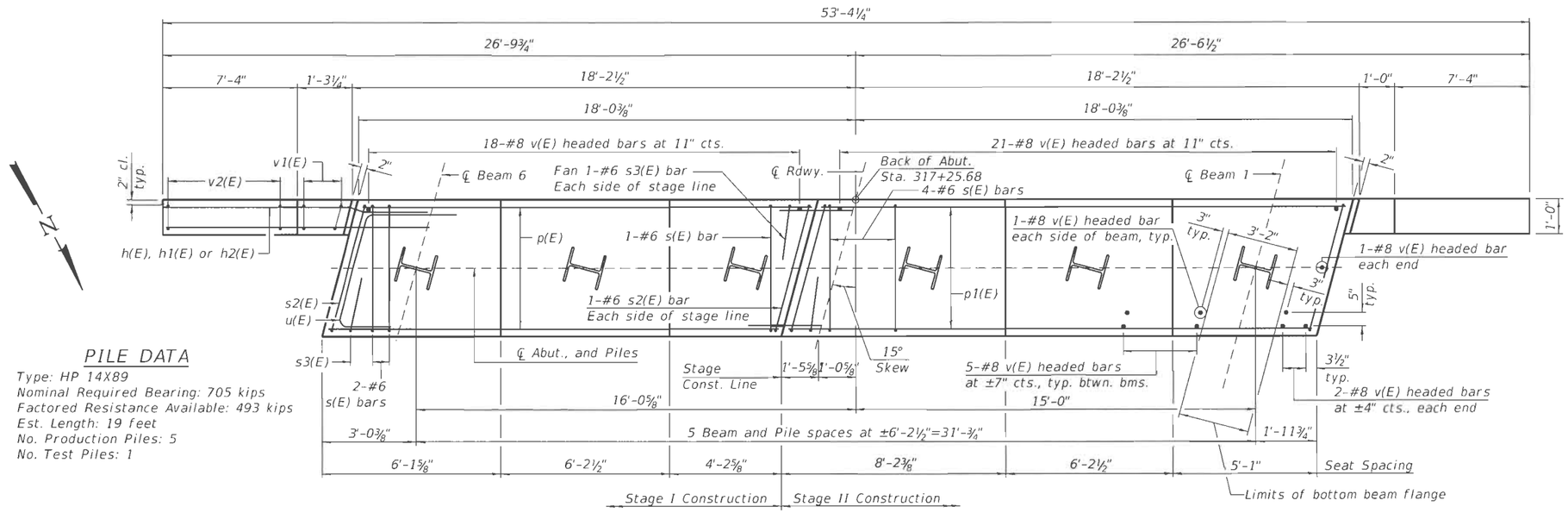
ELEVATION

(Looking South)



SEC. THRU ABUT.

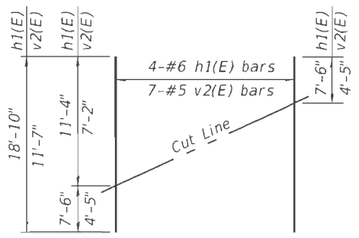
Dimensions at right angles to abutment.



PLAN

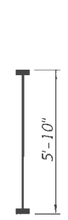
PILE DATA

Type: HP 14X89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 493 kips
Est. Length: 19 feet
No. Production Piles: 5
No. Test Piles: 1

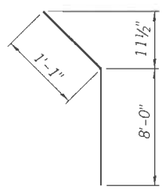


FIELD CUTTING DIAGRAM

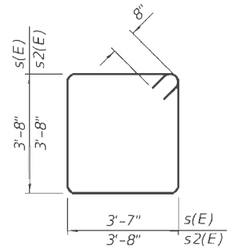
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face of wing.



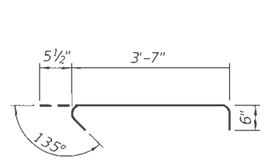
BAR v(E)
(Headed)



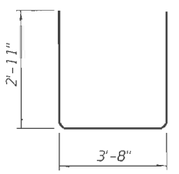
BAR h2(E)



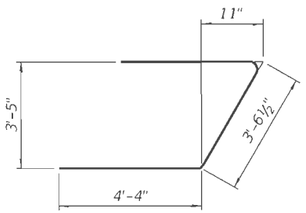
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-9"	
h1(E)	8	#6	18'-10"	
h2(E)	4	#5	9'-1"	
p(E)	15	#7	16'-3"	
p1(E)	15	#7	19'-2"	
s(E)	29	#6	15'-10"	
s1(E)	12	#5	4'-7"	
s2(E)	4	#6	16'-0"	
s3(E)	4	#6	9'-6"	
* sp(E)	6	#4	2'-0"	
u(E)	8	#6	12'-3"	
v(E)	82	#8	5'-10"	
v1(E)	8	#5	7'-7"	
v2(E)	14	#5	11'-7"	
Structure Excavation	Cu. Yd.		115	
Concrete Structures	Cu. Yd.		25.8	
Reinforcement Bars, Epoxy Coated	Pound		4,310	
Furnishing Steel Piles, HP14x89	Foot		95	
Driving Piles	Foot		95	
Test Pile, Steel HP14x89	Each		1	
Pile Shoes	Each		6	

* Length is height of spiral

Notes:
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
For details of piles see sheet 24 of 28.
See sheet 25 of 28 for Bar Splicer details.
See sheet 2 of 28 for drainage details.

MODEL: Default
FILE NAME: P:\projects\2012002\S\CADD\CAD_Sheets\043008I-54H58-021-South Abutment.DGN
8/9/2021 11:48:01 AM

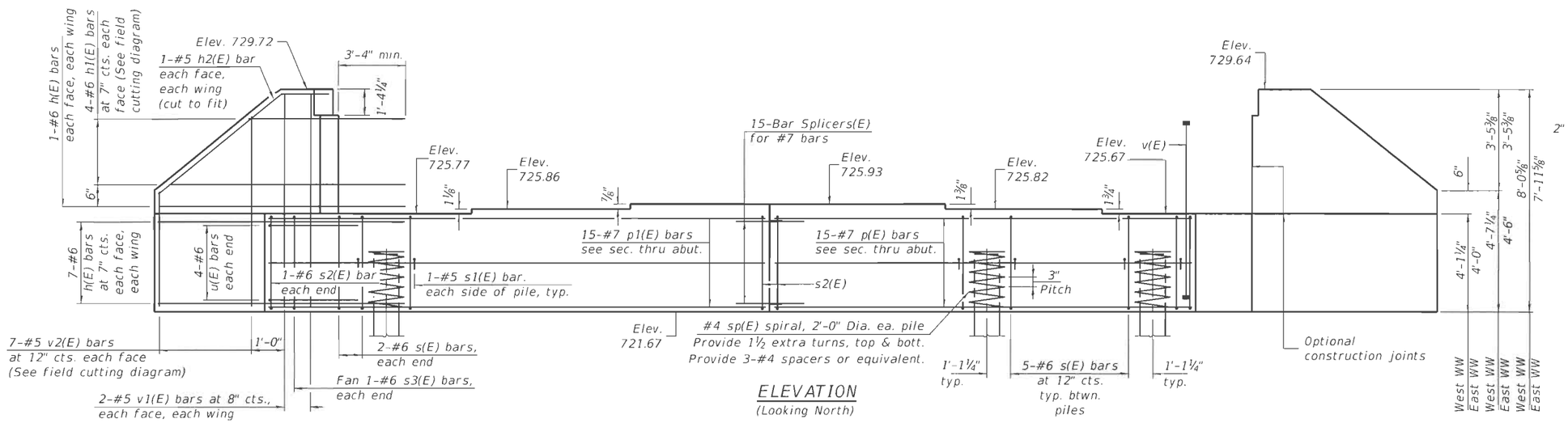
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:48:01 AM	CHECKED - MTH	REVISED -	

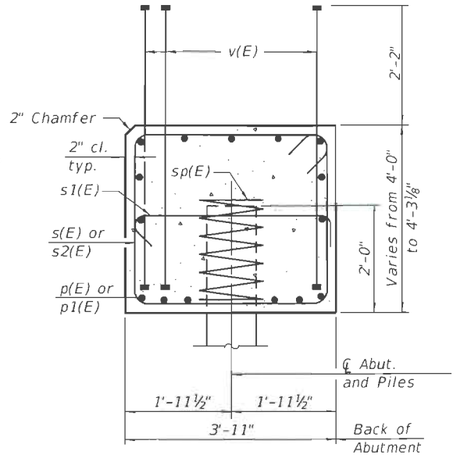
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOUTH ABUTMENT
STRUCTURE NO. 043-0081
SHEET 21 OF 28 SHEETS

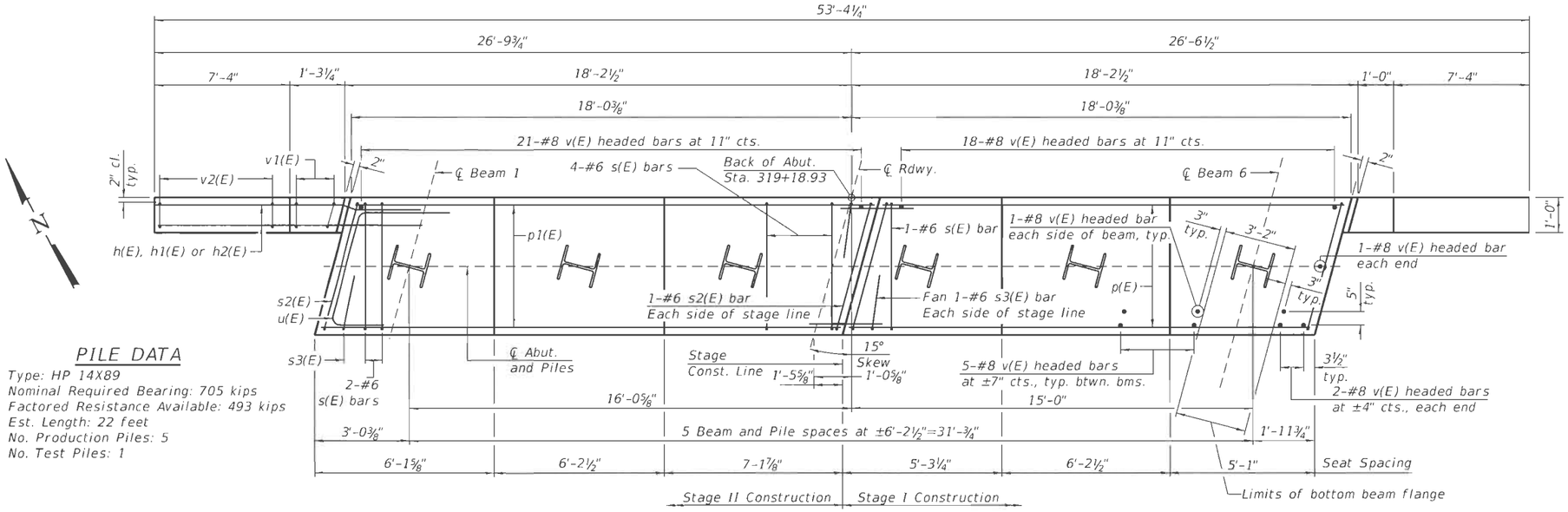
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	59
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		



ELEVATION
(Looking North)

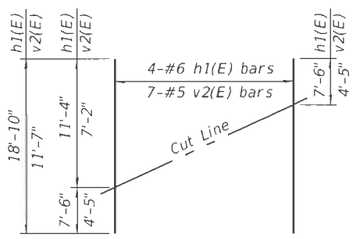


SEC. THRU ABUT.
Dimensions at right angles to abutment.

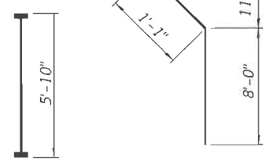


PLAN

PILE DATA
Type: HP 14X89
Nominal Required Bearing: 705 kips
Factored Resistance Available: 493 kips
Est. Length: 22 feet
No. Production Piles: 5
No. Test Piles: 1

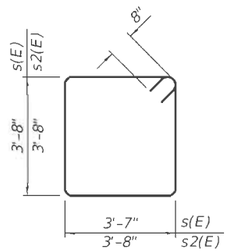


FIELD CUTTING DIAGRAM
Order h1(E) and v2(E) full length. Cut as shown and use remainder of bars in opposite face of wing.

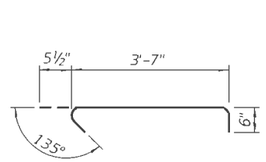


BAR v(E)
(Headed)

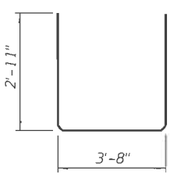
BAR h2(E)



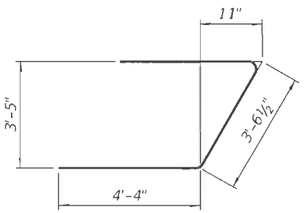
BAR s(E) & s2(E)



BAR s1(E)



BAR s3(E)



BAR u(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	32	#6	11'-9"	
h1(E)	8	#6	18'-10"	
h2(E)	4	#5	9'-1"	
p(E)	15	#7	16'-3"	
p1(E)	15	#7	19'-2"	
s(E)	29	#6	15'-10"	
s1(E)	12	#5	4'-7"	
s2(E)	4	#6	16'-0"	
s3(E)	4	#6	9'-6"	
* sp(E)	6	#4	2'-0"	
u(E)	8	#6	12'-3"	
v(E)	82	#8	5'-10"	
v1(E)	8	#5	7'-7"	
v2(E)	14	#5	11'-7"	
Structure Excavation	Cu. Yd.	118		
Concrete Structures	Cu. Yd.	26.0		
Reinforcement Bars, Epoxy Coated	Pound	4,310		
Furnishing Steel Piles, HP14x89	Foot	110		
Driving Piles	Foot	110		
Test Pile, Steel HP14x89	Each	1		
Pile Shoes	Each	6		

* Length is height of spiral

Notes:
Pour steps monolithically with cap.
Headed bars shall conform to ASTM A970 with threaded attachment; Class HA; and reinforcement bars conforming to ASTM A706. Cost included with Reinforcement Bars, Epoxy Coated.
For details of piles see sheet 24 of 28.
See sheet 25 of 28 for Bar Splicer details.
See sheet 2 of 28 for drainage details.

MODEL: Default
FILE NAME: P:\projects\2001200250\CADD\CAD_Sheets\043008I-64H58-022-North Abutment.DGN
8/9/2021 11:48:02 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

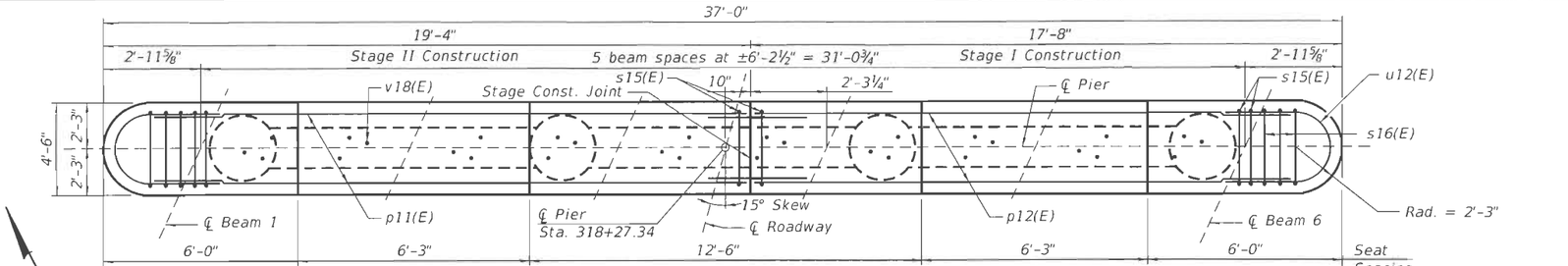
USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:48:02 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

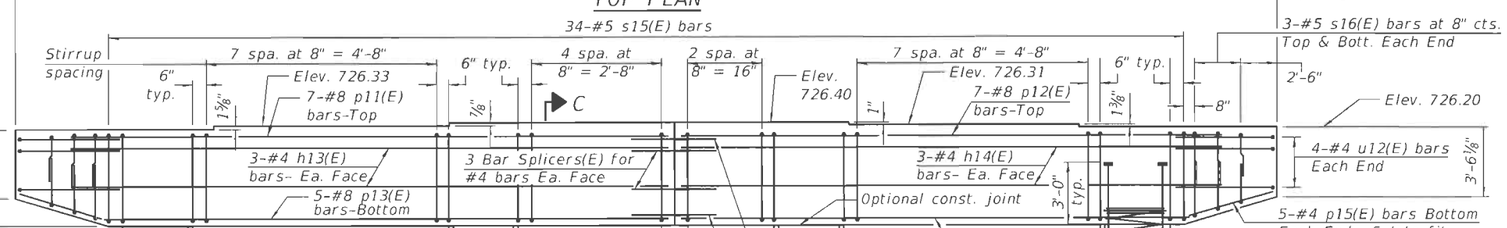
NORTH ABUTMENT
STRUCTURE NO. 043-0081
SHEET 22 OF 28 SHEETS

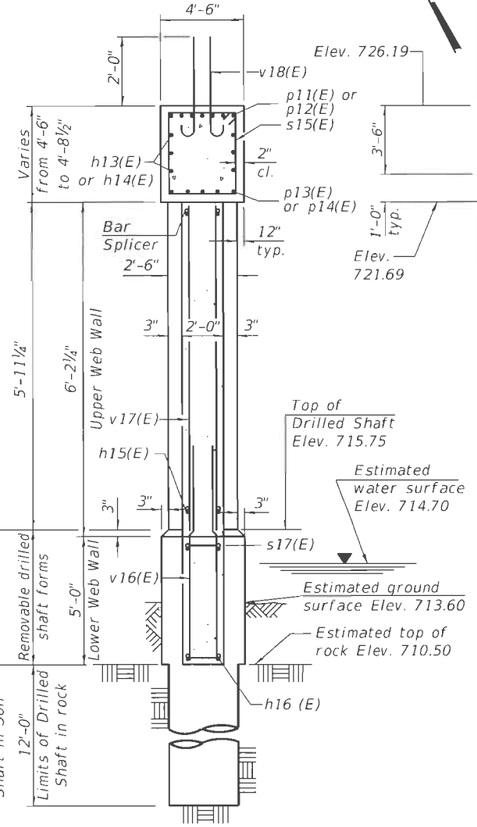
F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	60
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

Notes:
If a portion of the drilled shaft web walls is under water, reinforcement may be placed underwater into forms. Concrete shall be tremied according to Article 503.08 of the Standard Specifications to an elevation of 1'-0" above the water line at the time of construction.
Cast steps monolithically with cap.
Space cap reinforcement to miss anchor bolts.
Minimum lap for spirals = 3'-9"

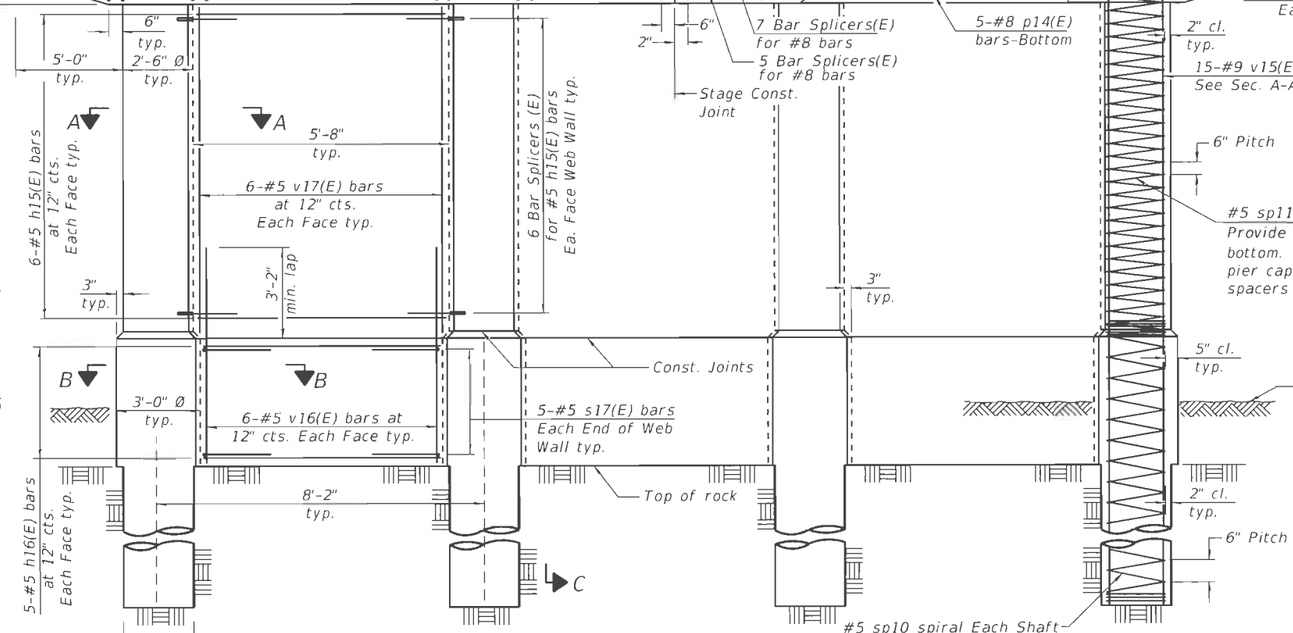


TOP PLAN





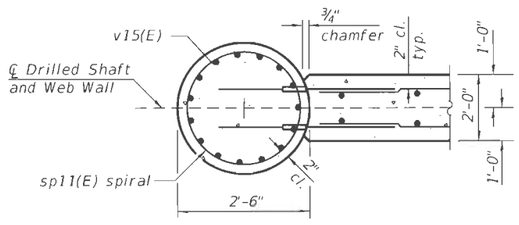
SECTION C-C



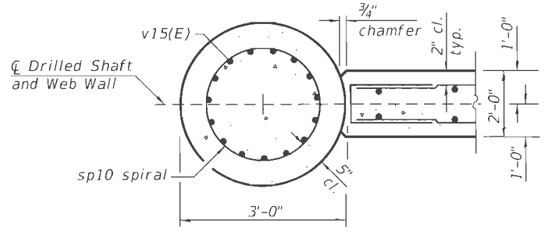
ELEVATION
(Looking North)

Construction Sequence for Web Wall:

1. Excavate between shafts to elevation of web wall base and set lower web wall forms through water to bear on the circular edge of drilled shafts. Secure in place with fill, struts or tie forms together as required.
2. Place the lower web wall reinforcement cage into the forms using spacers to maintain proper clearances.
3. If the forms can be sealed against the shafts and streambed to allow dewatering, the reinforcement and the concrete placement may be completed in the dry. Alternatively, the rebar cage can be lowered into position through water and the concrete discharged at the base of the excavation through a tremie pipe or pump hose, displacing water, sediment, and tainted concrete out the top of the forms.
4. Construct Columns.
5. Construct upper web walls.
6. Construct the center web walls during stage II construction prior the pouring of the pier cap.



SECTION A-A



SECTION B-B

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h13(E)	6	#4	16'-11"	—
h14(E)	6	#4	15'-3"	—
h15(E)	36	#5	5'-11"	—
h16(E)	30	#5	4'-10"	—
p11(E)	7	#8	16'-11"	—
p12(E)	7	#8	15'-3"	—
p13(E)	5	#8	14'-8"	—
p14(E)	5	#8	13'-0"	—
p15(E)	10	#4	4'-6"	—
s15(E)	34	#5	17'-7"	⊐
s16(E)	12	#5	11'-4"	⊔
s17(E)	30	#5	8'-0"	⊔
** sp10	4	#5	17'-3"	∿∿∿
** sp11(E)	4	#5	6'-2"	∿∿∿
u12(E)	8	#4	12'-3"	⊃
v15(E)	60	#9	26'-3"	—
v16(E)	36	#5	8'-3"	—
v17(E)	36	#5	5'-10"	—
v18(E)	30	#8	4'-2"	⊃
Structure Excavation		Cu. Yd.	40	
Concrete Structures		Cu. Yd.	45.3	
Reinforcement Bars		Pound	1,090	
Reinforcement Bars, Epoxy Coated		Pound	13,730	
Drilled Shaft in Soil		Cu. Yd.	5.5	
Drilled Shaft in Rock		Cu. Yd.	8.8	

** Length is height of spiral.

BAR v15(E)
(Headed)

BARS s16(E) & s17(E)

BAR v18(E)

BAR s15(E)

BAR u12(E)

* If the prevailing water surface elevation during construction is consistently different than estimated on the plans, the contractor may propose an adjustment to the top of the drilled shaft elevation as part of their installation procedure. The top of all drilled shafts within a substructure unit shall be constructed to the same elevation and extend above the prevailing water surface. The quantities and reinforcement detailing are based on the top of shaft and the estimated elevations shown and may change based on the actual elevations encountered at each shaft and the final top of shaft elevation.

MODEL: Default
FILE NAME: E:\2017-2\Struct\4. Final Design\CADD\CADD_Sheets\043008I-64H58-023-Pier Details.DGN
9/13/2021 1:48:24 PM

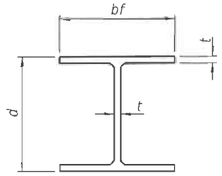
LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 1:48:24 PM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

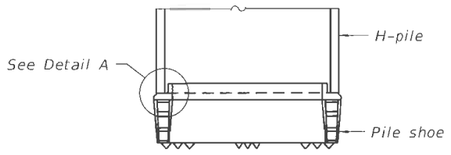
PIER DETAILS
STRUCTURE NO. 043-0081
SHEET 23 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	61
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

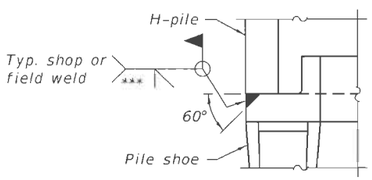


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	11/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	11/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



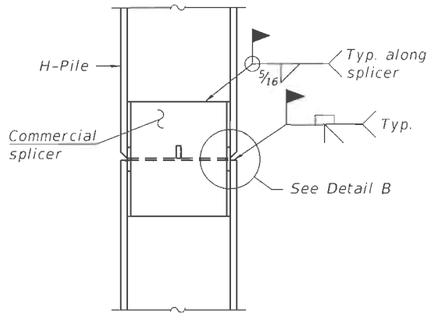
ELEVATION



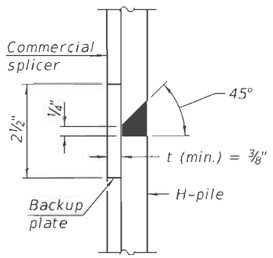
DETAIL A

SHOE ATTACHMENT

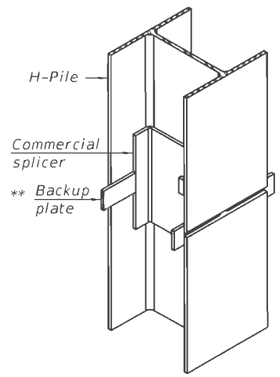
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

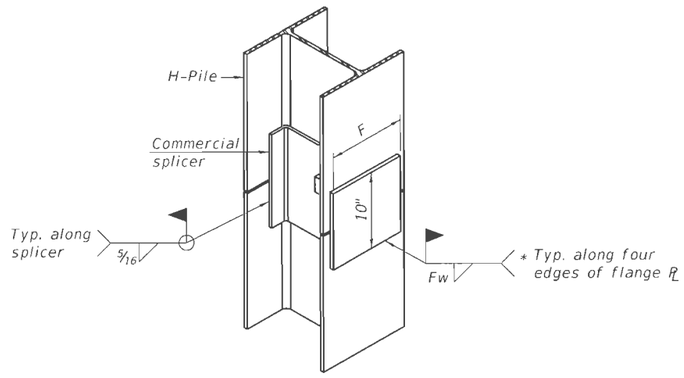


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



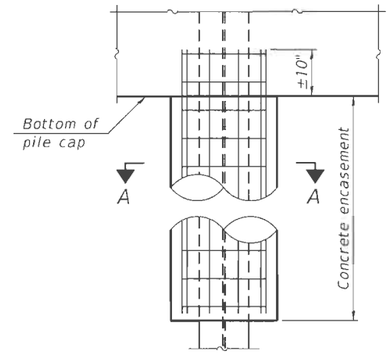
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

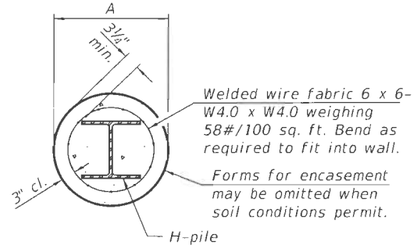
* Interrupt welds ¼" from end of web and/or each flange.

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

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



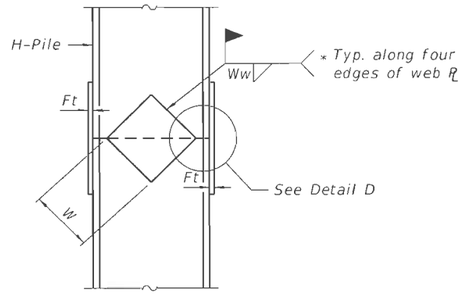
ELEVATION



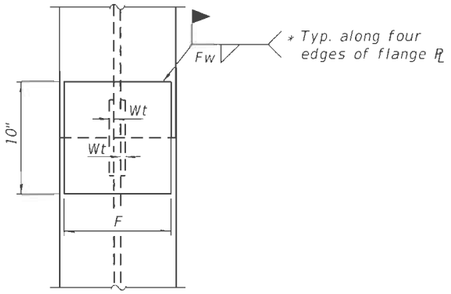
SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

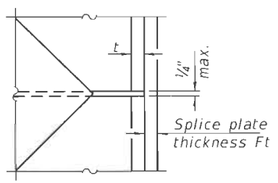
(when specified)



ELEVATION



END VIEW



DETAIL D

Designation	F	Ft	Fw	W	Wt	Ww
HP 14x117	12½"	1"	⅞"	7¾"	⅝"	½"
x102	12½"	⅞"	¾"	7¾"	⅝"	½"
x89	12½"	¾"	11/16"	7¾"	⅝"	½"
x73	12½"	⅝"	9/16"	7¾"	⅝"	½"
HP 12x84	10"	⅞"	11/16"	6½"	⅝"	½"
x74	10"	⅞"	11/16"	6½"	⅝"	½"
x63	10"	⅝"	½"	6½"	½"	⅜"
x53	10"	⅝"	½"	6½"	½"	⅜"
HP 10x57	8"	¾"	9/16"	5¼"	½"	⅜"
x42	8"	⅝"	9/16"	5¼"	½"	⅜"
HP 8x36	7"	⅝"	7/16"	4¼"	½"	⅜"

WELDED PLATE FIELD SPLICE

F-HP 1-1-2020

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

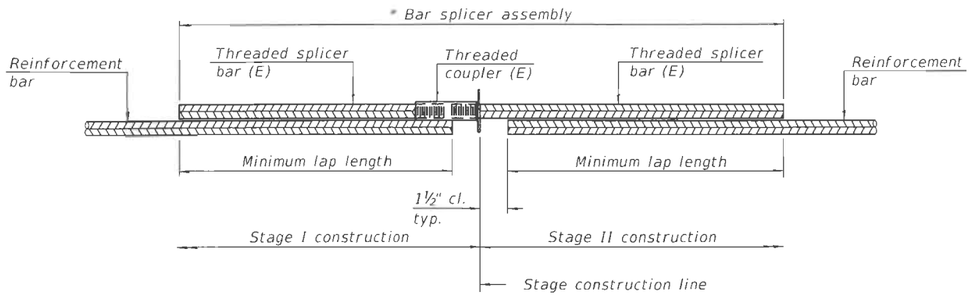
USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:48:05 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

HP PILE DETAILS
STRUCTURE NO. 043-0081
SHEET 24 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	62
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
FILE NAME: P:\projects\20012\002\S\CADD\CAD_Sheets\043008I-64H58-024-HP Pile Details.DGN
8/9/2021 11:48:05 AM



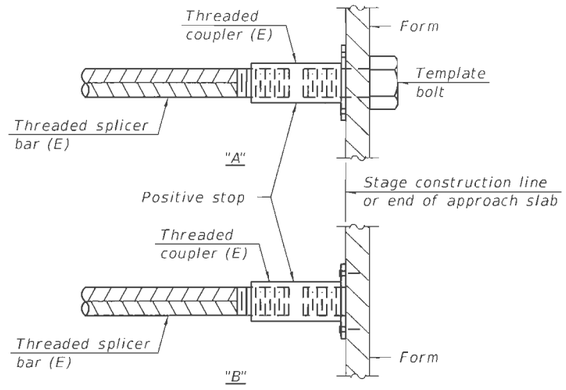
STANDARD BAR SPLICER ASSEMBLY PLAN

(All components shall be provided from one supplier)

Threaded splicer bar length = min. lap length + 1½" + thread length

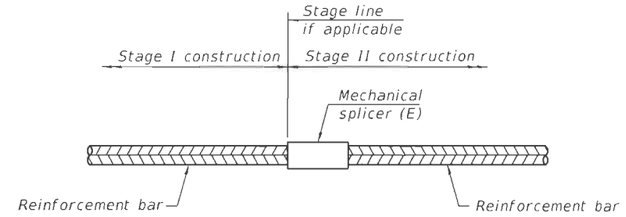
** Epoxy not required on Bar Splicer Assembly components used in conjunction with black bars.*

Location	Bar size	No. assemblies required	Minimum lap length
Deck	#5	512	3'-6"
Approach	#5	168	3'-6"
Approach	#8	116	4'-9"
Pier Diaphragm	#6	4	4'-0"
Abut. Diaphragm	#6	12	4'-0"
South Abutment	#7	15	5'-6"
North Abutment	#7	15	5'-6"
Pier	#8	12	5'-9"
Pier	#5	72	3'-7"
Pier	#4	6	2'-7"



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



STANDARD MECHANICAL SPLICER

Location	Bar size	No. assemblies required

Notes:
Splicer bars shall be deformed with threaded ends and have a minimum 60 ksi yield strength.
All reinforcement shall be lapped and tied to the splicer bars.
Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars. See Section 508 of the Standard Specifications.
See approved list of bar splicer assemblies and mechanical splicers for alternatives.

BSD-1 1-1-2020

LIN ENGINEERING,LTD. Consulting Engineers Springfield, Illinois

USER NAME =		DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
PLOT SCALE =		DRAWN - AJF	REVISED -
PLOT DATE =	11:48:06 AM	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

BAR SPLICER ASSEMBLY DETAILS
STRUCTURE NO. 043-0081
SHEET 25 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	63
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: P:\projects\20012\0021\CADD\CAD_Sheets\043008I-64H58-025-Bar Splicer Details.DGN
8/9/2021 11:48:06 AM

Illinois Department of Transportation
Division of Highways
GSG Consultants, Inc

SOIL BORING LOG

Page 1 of 1

Date 10/9/20

ROUTE IL Route 78 DESCRIPTION IL Route 78 over Plum River LOGGED BY MH

SECTION FAP Route 642 (IL 78) LOCATION Stockton, IL, SEC., TWP., RNG.,
Latitude 42.274684, Longitude -90.029938

COUNTY Jo Daviess DRILLING METHOD MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. SN 043-0081
Station 318+24.75

BORING NO. BSB-1
Station 319+76
Offset 15.30ft SE
Ground Surface Elev. 728.53 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter None ft
Upon Completion N/A ft
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				Brown, Moist FILL: SAND, with gravel
727.03	2			
	3	1.5	24	Dark Gray, Moist to Very Moist FILL: SILTY CLAY, trace sand
	4	P		
	2			
-5	2	1.0	29	
723.03	2	P		
	2			Brown, Gray and Black, Very Moist FILL: CLAYEY SILT, with fine sand, trace organics
	2	0.8	29	
	2	B		
	2			
-10	2	0.5	46	
718.03	3	P		
	1			Stiff Gray and Brown, Very Moist SILTY CLAY, trace sand (CL/ML)
	1	1.0	45	
	2	B		
715.53				
	4			Medium Dense to Loose Dark Gray and Brown, Wet to Moist SAND, with gravel, little silt (SP)
	6		20	
-15	8			
	2			
	2		23	
	8			Clay seam at 17 feet
	2			Gravel seam at 18.5 feet
	3		13	
-20	7			

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
707.53				WEATHERED LIMESTONE Top of Rock at 21 feet
706.53				LIMESTONE, Gray and Brown, Moderately Weathered, Highly Fractured, Some Vugs Run 1: 22 to 29 feet Recovery: 100% RQD: 36%
-25				
699.53				LIMESTONE, Gray, Slightly Weathered, Moderately Fractured, Some Vugs Run 2: 29 to 37 feet Recovery: 100% RQD: 75%
-30				
-35				
691.53				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
GSG Consultants, Inc.

SOIL BORING LOG

Page 1 of 1

Date 10/8/20

ROUTE IL Route 78 DESCRIPTION IL Route 78 over Plum River LOGGED BY MH

SECTION FAP Route 642 (IL 78) LOCATION Stockton, IL, SEC., TWP., RNG.,
Latitude 42.274101, Longitude -90.030644

COUNTY Jo Daviess DRILLING METHOD MUD ROTARY HAMMER TYPE AUTO

STRUCT. NO. SN 043-0081
Station 318+24.75

BORING NO. BSB-2
Station 316+61
Offset 15.40ft SE
Ground Surface Elev. 729.16 ft

Surface Water Elev. N/A ft
Stream Bed Elev. N/A ft

Groundwater Elev.:
First Encounter None ft
Upon Completion N/A ft
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				14 inches of Asphalt
727.99	3			
	2			Dark Gray, Very Moist FILL: SILTY CLAY, trace sand
	2			
	1			
-5	1	0.3	35	
	2	P		
	2			
	2	0.3	28	
721.16	2	P		
	3			Brown, Gray and Black, Very Moist FILL: SILTY CLAY, trace sand
	3	1.0	27	
-10	5	P		
718.66				
	1			Medium Stiff Brown, Moist SILTY CLAY, trace sand (CL)
	1	0.8	20	
	1	B		
716.16				
	2			Loose to Extremely Dense Gray and Brown, Wet to Moist SAND, with silt, trace gravel (SP)
	2		26	
-15	4			
	12			
	21		13	
	20			
	3			
-20	50/3		18	Rock Fragments at 19 feet

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
708.66				Top of Rock at 20.5 feet
707.66				LIMESTONE, Gray and Brown, Moderately Weathered and Fractured, Run 1: 21.5 to 31.5 feet Recovery: 91% RQD: 61% 2-inch Brown Sand seam at 24.5 feet
-25				
				Compressive Strength at 26-27 feet: 11,800 psi
-30				
697.66				LIMESTONE, Gray, Moderately Weathered and Fractured, Some Vugs Run 2: 31.5 to 36.5 feet Recovery: 100% RQD: 70%
-35				
692.66				End of Boring
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 5/22/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC., TWP. 26N, RNG. 4E

COUNTY Jo Daviess DRILLING METHOD Hollow Stem Auger HAMMER TYPE B-53 Diedrich Automatic

STRUCT. NO. 043-0040
Station 318+37

BORING NO. B-1
Station 318+64
Offset 31.00ft Rt CL
Ground Surface Elev. 721.0 ft

Surface Water Elev. 716.0 ft
Stream Bed Elev. 712.0 ft

Groundwater Elev.:
First Encounter ft
Upon Completion ft
After Hrs. ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	
				-90.030302 42.274548
		2.1	21	VERY STIFF brown SILTY CLAY LOAM
718.50		P		
	2			MEDIUM brown SANDY LOAM
	3	0.6	29	
716.50	6	P		
-5				
	3			MEDIUM tan dirty weathered LIMESTONE
	10		17	
714.00	9			
	6			DENSE tan dirty weathered LIMESTONE
	13			
712.00	21			
-10				
710.50	100/2"			VERY DENSE tan weathered LIMESTONE Auger Refusal @ 10.5'
				Borehole continued with rock coring.
-15				
-20				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

MODEL: Default
FILE NAME: P:\projects\20012\0021\S\CADD\CAD_Sheets\0430081-64H58-026-Soil Borings.DGN

8/9/2021 11:48:08 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =	DESIGNED - AML	REVISED -	
	CHECKED - MTH	REVISED -	
PLOT SCALE =	DRAWN - AJF	REVISED -	
PLOT DATE = 11:48:08 AM	CHECKED - MTH	REVISED -	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING DATA
STRUCTURE NO. 043-0081
SHEET 26 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	64
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

ROCK CORE LOG

Page 1 of 1

Date 5/22/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC. , TWP. 26N, RNG. 4E

COUNTY Jo Daviess CORING METHOD

STRUCT. NO. 043-0040
Station 316+37

CORING BARREL TYPE & SIZE
Core Diameter 2 in
Top of Rock Elev. 714.00 ft
Begin Core Elev. 710.50 ft

BORING NO. B-1
Station 318+64
Offset 31.00ft Rt CL
Ground Surface Elev. 721.0 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	RQD (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Dolomite: tan-buff, aphanitic, dense, vuggy, displaying minor laminations and vertical fracturing. t.s.f.: 707.7 to 707.2	710.50	1	100	32	3.4	963
	-15					
	705.50					
Dolomite: as above. t.s.f.: 702.7 to 702.2		2	100	48	2.4	1156
	-20					
	700.50					
Dolomite: as above. t.s.f.: 698.2 to 697.7		3	100	57	2.4	1390
	-25					
	695.50					
End of Boring						
	-30					

Color pictures of the cores
Cores will be stored for examination until
The "Strength" column represents the unlaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Page 1 of 1

Date 5/23/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC. , TWP. 26N, RNG. 4E

COUNTY Jo Daviess DRILLING METHOD Hollow Stem Auger HAMMER TYPE B-53 Diedrich Automatic

STRUCT. NO. 043-0040
Station 318+37

BORING NO. B-2
Station 317+18
Offset 12.00ft Lt CL
Ground Surface Elev. 728.9 ft

Surface Water Elev. 716.0 ft
Stream Bed Elev. 712.0 ft

Groundwater Elev.:
First Encounter 711.4 ft ▼
Upon Completion ft
After Hrs. ft

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-80.030694 42.274212 3.5" Asphalt 7.5" Concrete			0.6 P	21
MEDIUM black SILTY CLAY LOAM	726.40	3		
MEDIUM dark gray SILTY CLAY LOAM		2	0.5 P	28
	724.90	8		
	-5			
SOFT gray SILTY LOAM		2		
		2	0.4 P	35
	722.40	3		
STIFF black SILTY LOAM with 16% ORGANICS		2		
		3	1.1 P	49
	719.90	6		
	-10			
STIFF light brown SILTY CLAY LOAM		5		
		4	1.3 B	24
	717.40	5		
SOFT tan LOAM with LIMESTONE fragments		1		
		2	0.3 B	32
	714.40	2		
	-15			
MEDIUM tan moist weathered LIMESTONE		4		
		4		
	712.40	8		
	▼			
MEDIUM tan weathered LIMESTONE		4		
		7		
	709.90	8		
	-20			

	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
VERY DENSE tan weathered LIMESTONE Auger Refusal @ 21.5'	707.40	18 100/8"		
Borehole continued with rock coring.				
	-25			
	-30			
	-35			
	-40			

The Unconfined Compressive Strength (UCS) Failure Mode is Indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

ROCK CORE LOG

Page 1 of 1

Date 5/23/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC. , TWP. 26N, RNG. 4E

COUNTY Jo Daviess CORING METHOD

STRUCT. NO. 043-0040
Station 318+37

CORING BARREL TYPE & SIZE
Core Diameter 2 in
Top of Rock Elev. 714.40 ft
Begin Core Elev. 707.40 ft

BORING NO. B-2
Station 317+18
Offset 12.00ft Lt CL
Ground Surface Elev. 728.9 ft

	DEPTH (ft)	CORE (#)	RECOVERY (%)	RQD (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Dolomite: tan-buff, vuggy, fractured and laminated with no testable segments.	707.40	1	90	10	8.4	
	-20					
	702.40					
Dolomite: as above, with minor laminations and vertical fractures. t.s.f.: 699.3 to 698.8		2	100	75	2.8	1195
	-30					
	697.40					
Dolomite: as above. t.s.f.: 695.3 to 694.8		3	100	55	2.8	1062
	-35					
	692.40					
End of Boring						
	-40					

Color pictures of the cores
Cores will be stored for examination until
The "Strength" column represents the unlaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

MODEL: Default
FILE NAME: P:\projects\20012\0021\5\CADD\CAD_Sheets\04300081-64H58-027-Soil Borings.DGN

8/9/2021 11:48:14 AM

LIN ENGINEERING,LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =		DESIGNED - AML	REVISED -
		CHECKED - MTH	REVISED -
PLOT SCALE =		DRAWN - AJF	REVISED -
PLOT DATE =	11:48:14 AM	CHECKED - MTH	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING DATA
STRUCTURE NO. 043-0081
SHEET 27 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	65
		CONTRACT NO. 64H58		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

SOIL BORING LOG

Date 5/24/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC. , TWP. 26N, RNG. 4E

COUNTY Jo Daviess DRILLING METHOD Hollow Stem Auger HAMMER TYPE B-53 Diedrich Automatic

STRUCT. NO. 043-0040
Station 318+37

BORING NO. B-3
Station 319+45
Offset 9.00ft L1 CL
Ground Surface Elev. 728.9 ft

Surface Water Elev. ____ ft
Stream Bed Elev. ____ ft

Groundwater Elev.:
First Encounter ____ ft
Upon Completion ____ ft
After ____ Hrs. ____ ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
-90.030220 42.274843 10.3" Asphalt, 9.5" Concrete				VERY DENSE tan weathered LIMESTONE	9 11 100/3"		
726.40				707.40			
MEDIUM black SILTY CLAY LOAM	1 2 2	0.5 P	35	Borehole continued with rock coring.			
724.90							
-5				-25			
MEDIUM brown SILTY LOAM	1 2 3	0.7 P	31				
722.40							
STIFF brown SILTY LOAM	2 3 4	1.0 P	35				
719.00							
-10				-30			
MEDIUM dark brown SILTY CLAY LOAM	2 2 4	0.8 P	34				
717.40							
SOFT brown/tan LOAM with LIMESTONE fragments with 10% ORGANICS	2 4 11	0.3 P	35				
714.40							
-15				-35			
MEDIUM brown/tan dirty weathered LIMESTONE	5 6 6						
712.40							
STIFF olive-green CLAY LOAM with LIMESTONE fragments	8 6 10	2.0 P	16				
709.90							
-20				-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
The SPT (N value) is the sum of the last two blow values in each sampling zone (AASHTO T206)

BBS, from 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
Illinois Department of Transportation

ROCK CORE LOG

Date 5/24/12

ROUTE FA 642 DESCRIPTION 043-0040 IL 78 Bridge over Plum River, .2 m. N. of Groeziner Road LOGGED BY W. Garza

SECTION 10 BR-3 LOCATION Pleasant Valley - 3SW, SEC. , TWP. 26N, RNG. 4E

COUNTY Jo Daviess CORING METHOD

STRUCT. NO. 043-0040
Station 318+37

CORING BARREL TYPE & SIZE

Core Diameter 2 in
Top of Rock Elev. 714.40 ft
Begin Core Elev. 707.40 ft

BORING NO. B-3
Station 319+45
Offset 9.00ft L1 CL
Ground Surface Elev. 728.9 ft

DEPTH (ft)	CORE (#)	RECOVERY (%)	R.Q.D. (%)	CORE TIME (min/ft)	STRENGTH (tsf)
Dolomite: tan-buff, dense, vuggy with some fracturing. t.s.f.: 705.4 to 705.0	1	100	22	1.8	967
702.40					
-25					
Dolomite: as above. t.s.f.: 697.8 to 697.4	2	100	53	2.4	944
-30					
697.40					
Dolomite: as above, though more massively bedded. t.s.f.: 695.9 to 695.4	3	80	43	3.6	1181
-35					
692.40					
End of Boring					
-40					

Color pictures of the cores ____
Cores will be stored for examination until ____
The "Strength" column represents the unlaxial compressive strength of the core sample (ASTM D-2938)

BBS, form 138 (Rev. 8-99)

MODEL: Default
FILE NAME: P:\projects\20012\002\s\CADD\CAD_Sheets\043008l-64H58-028-Soil Borings.DGN

8/9/2021 11:48:21 AM

LIN ENGINEERING, LTD.
Consulting Engineers
Springfield, Illinois

USER NAME =
PLOT SCALE =
PLOT DATE = 11:48:21 AM

DESIGNED - AML
CHECKED - MTH
DRAWN - AJF
CHECKED - MTH

REVISED -
REVISED -
REVISED -
REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SOIL BORING DATA
STRUCTURE NO. 043-0081
SHEET 28 OF 28 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
642	10BR-5	JO DAVIESS	98	66
		CONTRACT NO. 64H58		
		ILLINOIS	FED. AID PROJECT	

IDOT CONTRACT: 64H58
STRUCTURE NO: 043-0081
IL36N PRESTRESSED BEAM

SHEET INDEX	
SHEET NO.	TITLE
1	COVER
2	NOTES, HARDWARE & BILL OF MATERIALS
3	PLATE ASSEMBLY
4	FRAMING PLAN
5	REBAR DETAILS
6	TYPICAL DETAILS
7	REBAR LAYOUT ELEVATION, BEAMS G1-G6
8	REBAR LAYOUT ELEVATION, BEAMS G7-G12
9	INSERTS BEAMS G1, G6
10	INSERTS BEAMS G2, G3
11	INSERTS BEAMS G4, G5
12	INSERTS BEAMS G7, G12
13	INSERTS BEAMS G8, G9
14	INSERTS BEAMS G10, G11
15	STRAND PATTERN

BEAM SCHEDULE							
MARK	SPAN	QTY	BEAM SIZE	NUMBER OF STRANDS	LENGTH	CUBIC YARDS PER BEAM	APPROX. CALCULATED WEIGHT PER BEAM
G1-G6	1	6	IL36W	44	99'-9"	18.7	81,500
G7-G12	2	6	IL36W	44	89'-8"	16.8	73,000

CUBIC YARDS ARE CALCULATED USING THE CAST LENGTH OF THE BEAM (SEE REBAR ELEVATION SHEETS), WEIGHT USES 160# PER CUBIC FOOT TO ACCOUNT FOR CONCRETE AND REBAR WEIGHT.

When shop plans are available for precast prestressed concrete beams, they should be used for the model definition. If unavailable, the beams can be modeled using the design plans.

NOTE:
- 0.6"ø STRANDS, 8 DEBONDED EACH END, PIER END PROJECTIONS.
- TOP FLANGE NOTCH, ABUTMENT END ONLY, ALL BEAMS.
- THE (PR-TIE) HOLES AS INDICATED ON THE INSERT LAYOUT SHEET(s) ARE BEING CAST IN BY THE PRODUCER TO AID IN TRANSPORTATION OF THE BEAMS.
- CONTRACTOR REQUESTED INSERTS (CR-) ARE INSERTS REQUESTED BY THE CONTRACTOR TO BE CAST IN THE BEAM(s) BY CMC, FOR THEIR USE IN THE FIELD. CR-HANGERS G1, G6, G7, G12

TOTAL HARDWARE FOR ERECTION		
DESCRIPTION	SIZE	QTY
FABRIC BEARING PAD	1" x 1'-3" x 3'-0½"	24

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL
PAY QUANT. = 1737 L.F. OF IL36N I-BEAMS

REVISIONS			
NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

COVER

DRAWN BY MH	CHKD. GC / BR
SCALE NONE	JOB NO. 65-328-22
DATE 2-23-22	SHEET 1 OF 15

GENERAL NOTES

1. "FABRICATION MANUAL" REFERS TO IDOT'S "MANUAL FOR FABRICATION OF PRECAST PRESTRESSED CONCRETE PRODUCTS" 2017 EDITION WITH 2019 ADDENDUM.
2. TOP OF BEAM INITIALLY FINISHED WITH A HAND FLOAT AND THEN PER THE TYPICAL SECTION SHOWN ON SHEET 5.
3. A CONCRETE PROTECTIVE COAT MEETING THE REQUIREMENTS OF SECTION 1023 OF THE STANDARD SPECIFICATIONS SHALL BE APPLIED IN ACCORDANCE WITH SECTION 3.4.2 OF THE FABRICATION MANUAL.
4. FOR SURFACES THAT WILL BE EXPOSED TO VIEW IN THE FINISHED STRUCTURE (FASCIA BEAMS), THE FINISH SHALL BE IN ACCORDANCE WITH SECTION 3.4 OF THE FABRICATION MANUAL.
5. ALL METAL HARDWARE CAST IN THE BEAM SHALL BE IN ACCORDANCE WITH SECTION 4.3 OF THE FABRICATION MANUAL, UNLESS NOTED OTHERWISE. EXCLUDING THE LIFT LOOPS WHICH SHALL NOT BE COATED.
6. CONCRETE TO BE PER THE APPROVED MIX DESIGN, WITH F'c= 8,500 PSI F'ci= 6,500 PSI.
7. REINFORCEMENT BARS SHALL BE ASTM A706, GRADE 60 AND EPOXY COATED PER ASTM A775. WELDED WIRE REINFORCEMENT (WWR) SHALL CONFORM TO AASHTO M55 OR M221 AND SHALL BE EPOXY COATED ACCORDING TO ASTM A884 WITH A CLASS A, TYPE 1 EPOXY COATING.
8. HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH ACI 315 MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES STIRRUP AND TIE DIMENSIONS.
9. CLEARANCE TO REINFORCEMENT SHALL BE 1", UNLESS NOTED OTHERWISE.
10. ALL DIMENSIONS ARE OUT TO OUT
11. ACTUAL DIMENSIONS ARE MEASURED ALONG CENTERLINE OF BAR TO NEAREST INCH.
12. PRESTRESSING TENDONS SHALL BE UNCOATED, HIGH STRENGTH, SEVEN-WIRE LOW RELAXATION 0.6"ø CONFORMING TO AASHTO M203, GRADE 270. STRANDS SHALL BE CUT WITHIN ⅛" OF THE BEAM END, AND THE ENDS OF THE STRANDS SHALL BE GIVEN A COAT OF POLYURETHANE SEALANT MEETING TYPE S, GRADE NS, CLASS 25, USE T OR NT OF ASTM C 920 OR TWO COATS OF A ZINC DUST SPRAY OR PAINT MEETING THE REQUIREMENTS OF ASTM A 780.
13. LIFT LOOPS SHALL BE MADE OF 0.5"ø – 270 KSI STRANDS TIED AND SHAPED TO FORM LOOPS. SEE LIFT LOOP DETAIL FOR NUMBER OF STRANDS TO BE USED PER LOOP. A MINIMUM 2½"ø LIFTING PIN SHALL BE USED TO ENGAGE THE LIFTING LOOPS DURING HANDLING.
14. FABRIC BEARING PADS SHALL CONFORM WITH ARTICLE 1082.01 OF IDOT'S STANDARD SPECIFICATIONS.
15. ALL CONTRACTOR REQUESTED INSERTS (CR) HAVE A ±3" (LONGITUDINAL) LOCATION TOLERANCE UNLESS SPECIFIED OTHERWISE. REQUESTED INSERTS SHALL NOT INTERFERE WITH ANY REINFORCEMENT OR STRUCTURAL COMPONENT DETAILS SHOWN ON THE CONTRACT PLANS.
16. BEAMS MAY BE SHIPPED WHEN THE 28-DAY STRENGTH AND 45th CALENDAR DAY AGE HAVE BEEN ATTAINED. AGE IS MEASURED FROM THE LAST "WET" YARD OF CONCRETE.
17. THIS JOB IS STATE INSPECTED.

EMBEDDED MATERIAL SCHEDULE

	ITEM	DESCRIPTION	TOTAL
	ANCHOR RB1	1" x 10" x 3'-2"	24
	TOP PLATE	¾" x 10" x 10"	24
	THREADED ROD	1"ø x 3'-2½"	144
	HOLES (PR-TIE)	1½" I.D. x 7"	48
	HOLES (END)	1¼" I.D. x 7"	24
	HOLES (BRACE)	1" I.D. x 7"	36
	LIFT LOOP	3 – 0.5"ø x 3'-6" (a)	48
	HOLD DOWN	10 STRANDS	24
CONTRACTOR REQUESTED INSERTS, TO BE SUPPLIED BY CONTRACTOR.	CR-45HANG	C24 45°, 4-APR, 12" ARM (b)	114
	CR-90HANG	C24 90°, 4-PR, 12" ARM (b)	348

FOOTNOTE:
a. OVERALL HEIGHT OF LOOP.
b. WITH BEARING PLATE.

APPROVED
For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

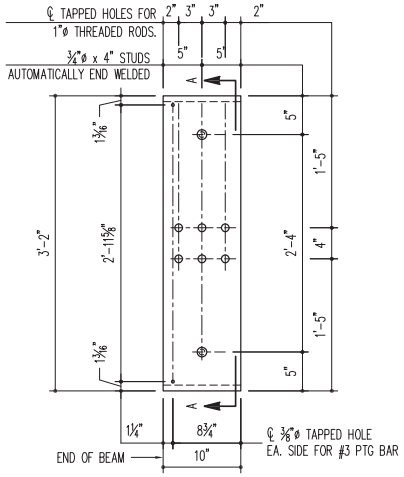
REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

NOTES, HARDWARE, BILL OF MATERIALS

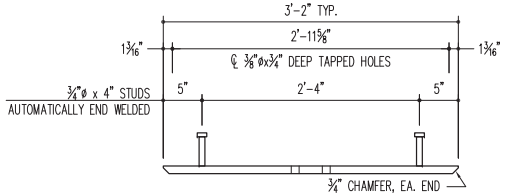
DRAWN BY MH	CHKD. GC / BR
SCALE NONE	JOB NO. 65-328-22
DATE 2-23-22	SHEET 2 OF 15

NOTES:
1. THE TOP AND BOTTOM PLATES SHALL BE AASHTO M270 GRADE 50.
2. THE TOP PLATE AND BOTTOM PLATE ASSEMBLY SHALL BE GALVANIZED ACCORDING TO AASHTO M111.
3. THREADED RODS, NUTS AND WASHERS SHALL BE GALVANIZED ACCORDING TO AASHTO M232.
4. THREADED RODS SHALL BE ASTM F 1554, GRADE 55.
5. STUDS SHALL MEET THE REQUIREMENTS OF SECTION 1006.32 OF THE STANDARD SPECIFICATIONS, AND WELDED ON ACCORDING TO THE BRIDGE WELDING CODE.

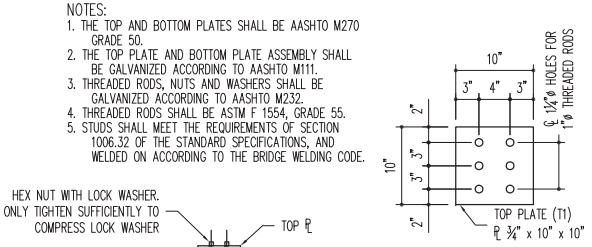


PLAN – TYPICAL BOTTOM PLATE

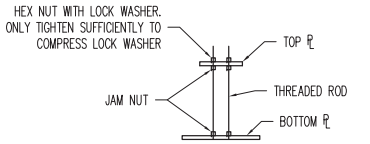
SHOWING STUDS, ⅜"ø AND 1"ø TAPPED HOLES
PLB1 1" x 10" x 3'-2"
12 REQ'D (STAGE 1)
12 REQ'D (STAGE 2)



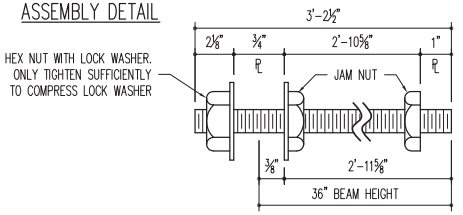
SECTION A–A
TYPICAL ALL PLATES



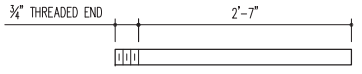
PLAN – TOP PLATE T1
12 REQ'D (STAGE 1)
12 REQ'D (STAGE 2)



ASSEMBLY DETAIL



1"ø THREADED ROD ASSEMBLY
72 REQ'D (STAGE 1)
72 REQ'D (STAGE 2)



⅜"ø PTG BAR
GALVANIZED
24 REQ'D (STAGE 1)
24 REQ'D (STAGE 2)

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608–373–0950 FAX 373–0903

CONTRACTOR SJOSTROM

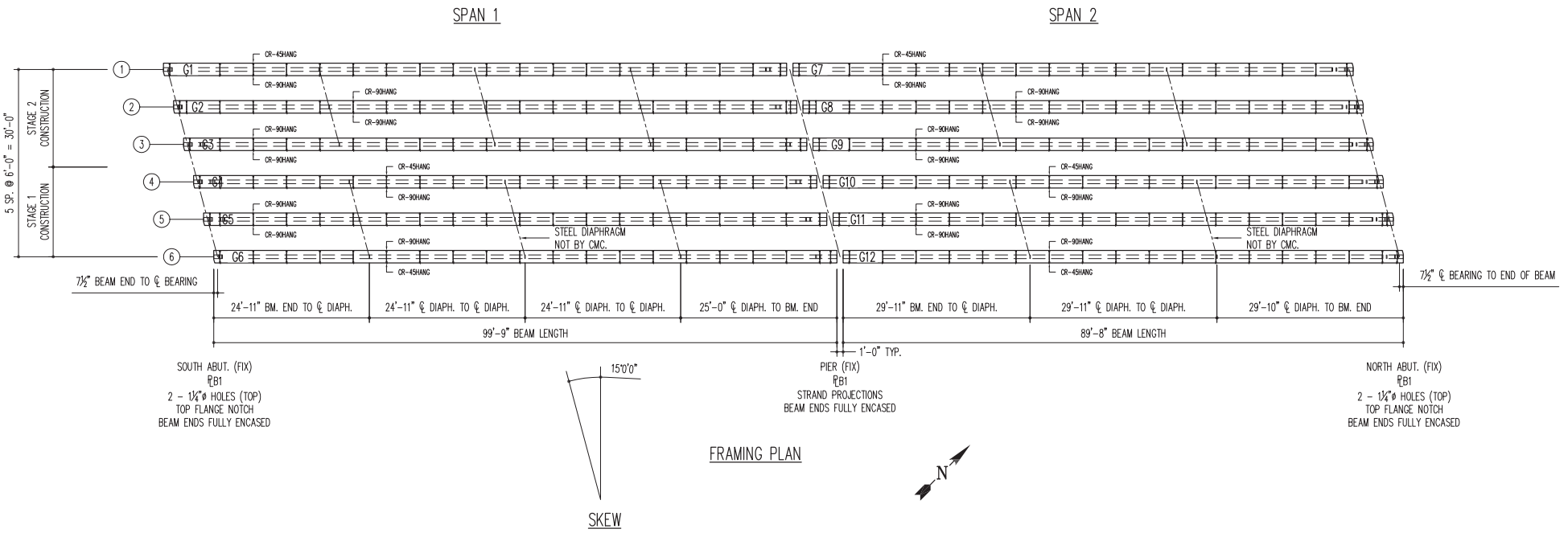
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043–0081 PROJECT NO. STP–7KJM(024)
SECTION NO. 10BR–5
CONTRACT NO. 64H58 STATE JOB. C–92–023–21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

PLATE ASSEMBLY

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65–328–22
DATE 2–23–22	SHEET 3 OF 15



FRAMING PLAN

APPROVED
For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

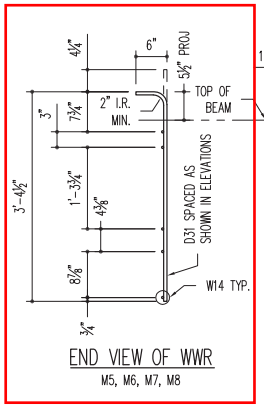
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

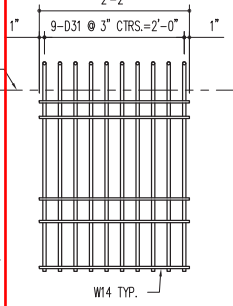
FRAMING PLAN

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 4 OF 15



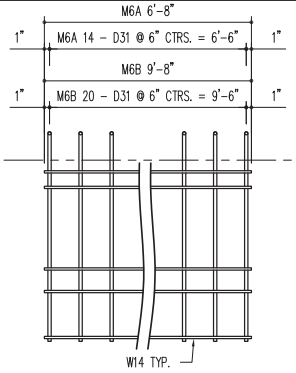
END VIEW OF WWR

M5, M6, M7, M8



ELEVATION OF M5

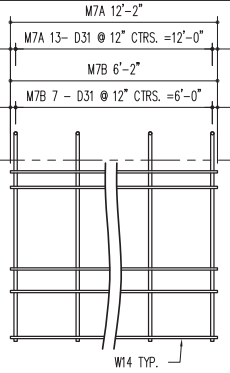
M5 48 REQ'D



ELEVATION OF M6

M6A 24 REQ'D

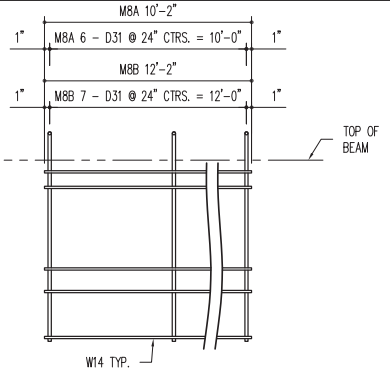
M6B 24 REQ'D



ELEVATION OF M7

M7A 24 REQ'D

M7B 24 REQ'D



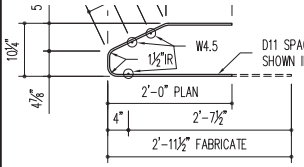
ELEVATION OF M8

M8A 72 REQ'D

M8B 24 REQ'D

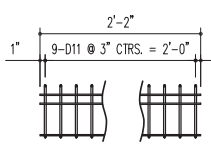
EPOXY COATED REINFORCEMENT - ALL BEAMS						
	BAR	SIZE	LENGTH	SHAPE	REQ'D	LBS.
WWR UNITS	M1A	D31	19'-10"	—	12	1355
	M1B	D31	19'-10"	—	12	1355
	M1C	D31	19'-10"	—	33	3791
	M2	D11	2'-2"	⊔	48	931
	M3	D11	2'-6"	⊔	48	648
	M4A	D11	9'-2"	⊔	144	2668
	M4B	D11	10'-8"	⊔	24	510
	M4C	D11	6'-2"	⊔	24	313
	M5	D31	2'-2"	Γ	48	2012
	M6A	D31	6'-8"	Γ	24	1753
	M6B	D31	9'-8"	Γ	24	2513
	M7A	D31	12'-2"	Γ	24	1969
	M7B	D31	6'-2"	Γ	24	1038
	M8A	D31	10'-2"	Γ	72	3507
	M8B	D31	12'-2"	Γ	24	1381
				TOTAL WWR WEIGHT		24363
LOOSE REBAR	M506E	#5	5'-6"	—	168	964
	M4000E	#5	40'-0"	—	24	1001
	M1900E	#5	19'-0"	—	6	119
	M1800E	#5	18'-0"	—	6	113
	M110E	#5	1'-10"	—	24	46
	M2LE	#3	5'-5 5/8"	⊔	144	296
	G1E	#3	2'-10"	∩	1116	1189
	G13E	#4	4'-0"	—	144	385
				TOTAL LOOSE BAR WEIGHT		4112

Mesh configurations are limited in AASHTOWare. Therefore, it's acceptable to define applicable types of rebar with a spacing adjusted to meet the equivalent areas specified in the shop plans.



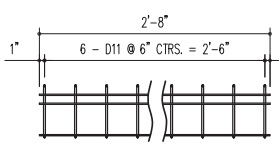
END VIEW OF WWR

M2, M3, M4



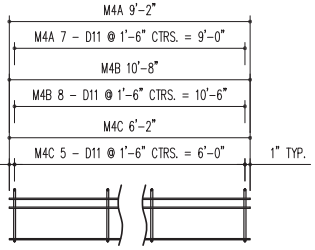
ELEVATION OF M2

48 REQ'D



ELEVATION OF M3

48 REQ'D

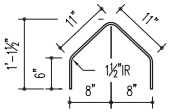


ELEVATION OF M4

M4A 144 REQ'D

M4B 24 REQ'D

M4C 24 REQ'D



#3 G1E BAR

1116 TOTAL REQUIRED

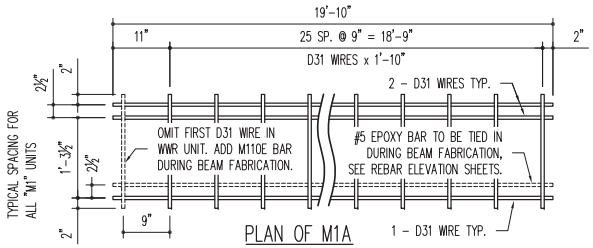
EPOXY COATED

#3 M2LE BAR

BAR ONLY, NO W4.5

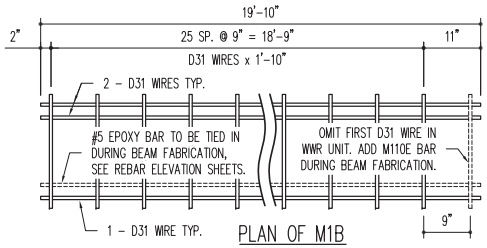
144 REQ'D #3 M2L

WHEN MULTIPLE SHEETS OF M1 WWR ARE REQUIRED ALONG THE BEAM LENGTH, #5(E) BARS x 5'-6" (M506E) SHALL BE USED TO SPLICE THE LONGITUDINAL D31 WIRE TOGETHER (MIN. LAP 2'-2").



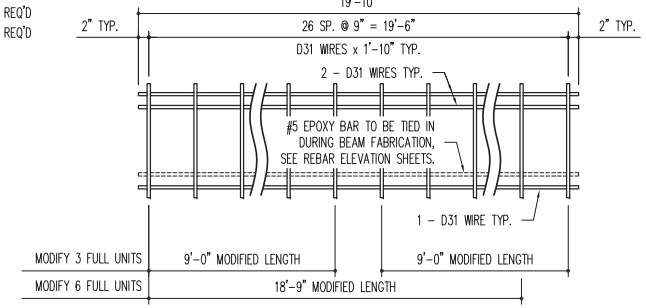
PLAN OF M1A

12 REQ'D



PLAN OF M1B

12 REQ'D



PLAN OF M1C

33 REQ'D

APPROVED

For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES

DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

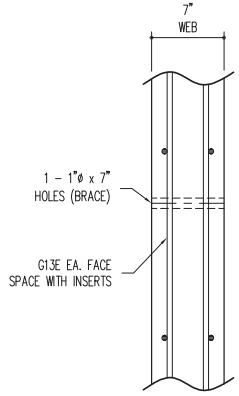
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

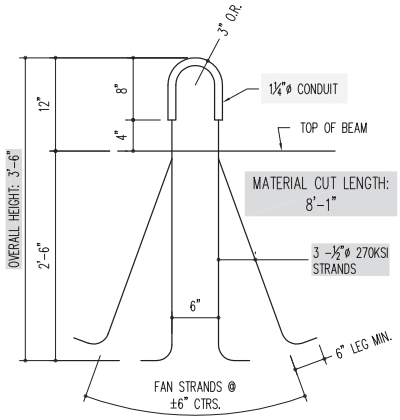
REBAR DETAILS

DRAWN BY MH	CHKD. GC / BR
SCALE ½"=1'-0"	JOB NO. 65-328-22
DATE 2-23-22	SHEET 5 OF 15



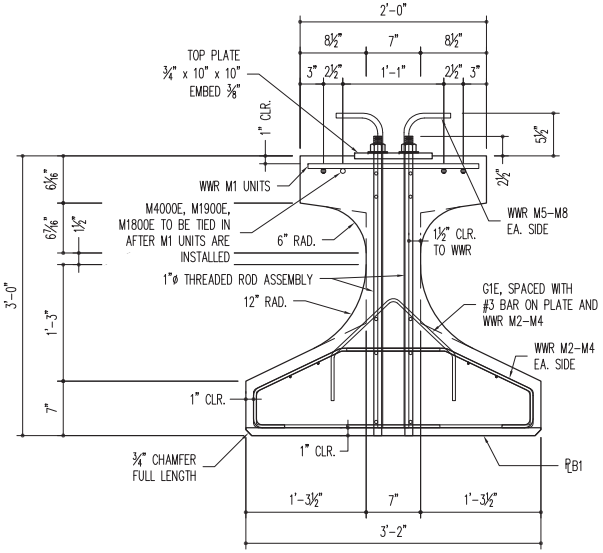
PLAN - BRACE HOLE DETAIL

SHOWING ADDITIONAL REINFORCEMENT



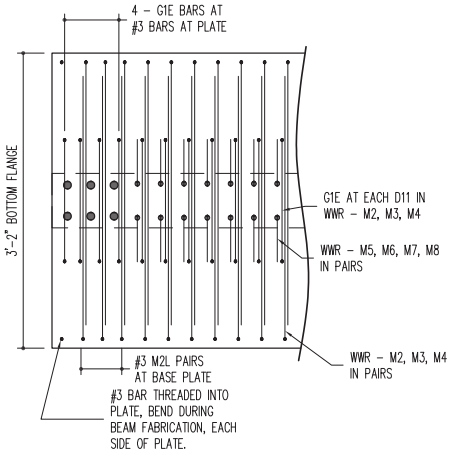
TYPICAL LIFT LOOP DETAIL

THE SAME LIFT LOOP CONFIGURATION IS TO BE USED ON ALL BEAMS.
2 LOOPS w/3 STRANDS AT EACH BEAM END, CAPACITY PER ABD 15.2 = 83,100 LBS.



TYPICAL SECTION THRU BEAM

NEAR END OF BEAM
HOLES & INSERTS NOT SHOWN
B.A. = 5.0561 S.F.



TYPICAL BOTTOM FLANGE DETAIL

APPROVED
For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

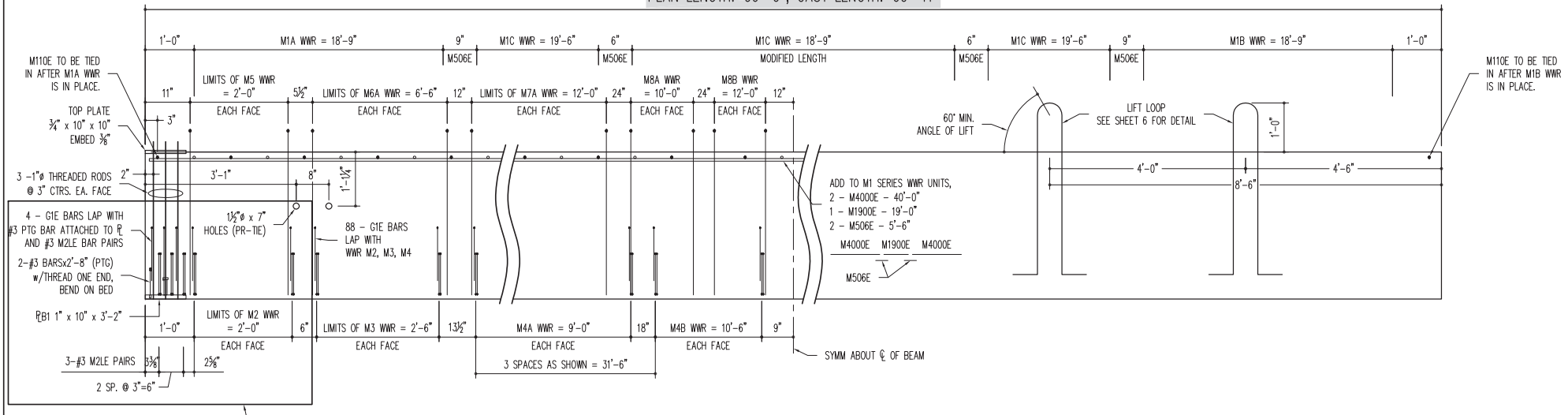
REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

TYPICAL DETAILS

DRAWN BY MH	CHKD. GC / BR
SCALE NONE	JOB NO. 65-328-22
DATE 2-23-22	SHEET 6 OF 15

PLAN LENGTH: 99'-9", CAST LENGTH: 99'-11"



MARK END
SOUTH ABUT. END

BOTH BEAM ENDS.
BEARING REVISED PER APRIL 2020 REVISION TO THE MANUAL FOR FABRICATION OF PRECAST PRESTRESSED CONCRETE PRODUCTS.

SIDE VIEW - BEAM ENDS

BEAMS G1-G6

EPOXY COATED REINFORCEMENT - PER BEAM				
BAR	SIZE	LENGTH	SHAPE	QTY
M1A	D31	18'-9"	——	1
M1B	D31	18'-9"	——	1
M1C	D31	19'-6"	——	3
M2	D11	2'-0"	⌙	4
M3	D11	2'-6"	⌙	4
M4A	D11	9'-0"	⌙	12
M4B	D11	10'-6"	⌙	4
M5	D31	2'-0"	Γ	4
M6A	D31	6'-6"	Γ	4
M7A	D31	12'-0"	Γ	4
M8A	D31	10'-0"	Γ	4
M8B	D31	12'-0"	Γ	4

EPOXY COATED REINFORCEMENT - PER BEAM				
BAR	SIZE	LENGTH	SHAPE	QTY
G1E	#3	2'-10"	⌒	96
M2LE	#3	5'-6"	⌙	12
M110E	#5	1'-10"	——	2
M4000E	#5	40'-0"	——	2
M1900E	#5	19'-0"	——	1
M506E	#5	5'-6"	——	14
G13E	#4	4'-0"	——	6

FOOTNOTE:
a. OVERALL HEIGHT OF LOOP.
b. WITH BEARING PLATE.

EMBEDDED HARDWARE (excluding rebar)							
ITEM	DESCRIPTION	G1	G2	G3	G4	G5	G6
ANCHOR ℄B1	1" x 10" x 3'-2"	2	2	2	2	2	2
TOP PLATE	¾" x 10" x 10"	2	2	2	2	2	2
THREADED ROD	1"ø x 3'-2½"	12	12	12	12	12	12
HOLES (PR-TIE)	1½" I.D. x 7"	4	4	4	4	4	4
HOLES (END)	1¼" I.D. x 7"	2	2	2	2	2	2
HOLES (BRACE)	1" I.D. x 7"	3	3	3	3	3	3
LIFT LOOP	3 - 0.5"ø x 3'-6" (a)	4	4	4	4	4	4
HOLD DOWN	10 STRAND	2	2	2	2	2	2
"CR" INSERTS	CR-45HANG C24 45°, 4-APR, 12" ARM (b)	20	NONE	NONE	20	NONE	20
	CR-90HANG C24 90°, 4-PR, 12" ARM (b)	20	42	40	20	40	20

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

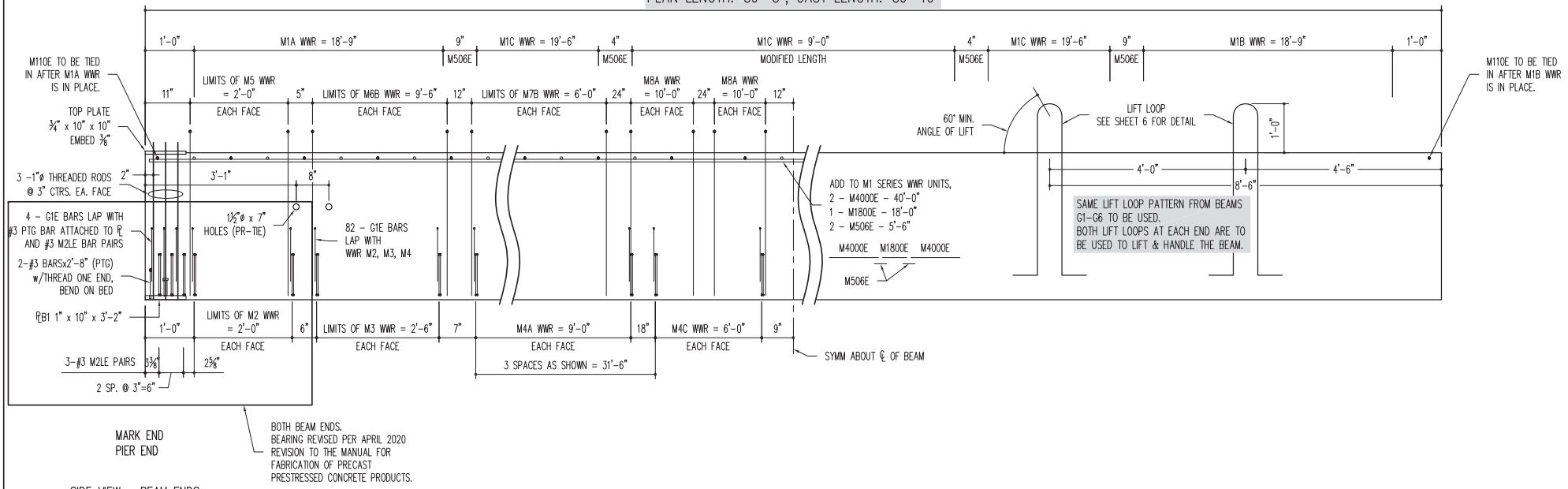
REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

REBAR LAYOUT ELEVATION, BEAMS G1-G6

DRAWN BY MH	CHKD. GC / BR
SCALE NONE	JOB NO. 65-328-22
DATE 2-23-22	SHEET 7 OF 15

PLAN LENGTH: 89'-8", CAST LENGTH: 89'-10"



SIDE VIEW - BEAM ENDS

BEAMS G7-G12

EPOXY COATED REINFORCEMENT - PER BEAM				
BAR	SIZE	LENGTH	SHAPE	QTY
M1A	D31	18'-9"	——	1
M1B	D31	18'-9"	——	1
M1C	D31	19'-6"	——	3
M2	D11	2'-0"	⌙	4
M3	D11	2'-6"	⌙	4
M4A	D11	9'-0"	⌙	12
M4C	D11	6'-0"	⌙	4
M5	D31	2'-0"	Γ	4
M6B	D31	9'-6"	Γ	4
M7B	D31	6'-0"	Γ	4
M8A	D31	10'-0"	Γ	8

EPOXY COATED REINFORCEMENT - PER BEAM				
BAR	SIZE	LENGTH	SHAPE	QTY
G1E	#3	2'-10"	⌒	90
M2LE	#3	5'-6"	⌙	12
M110E	#5	1'-10"	——	2
M4000E	#5	40'-0"	——	2
M1800E	#5	18'-0"	——	1
M506E	#5	5'-6"	——	14
G13E	#4	4'-0"	——	6

FOOTNOTE:
a. OVERALL HEIGHT OF LOOP.
b. WITH BEARING PLATE.

EMBEDDED HARDWARE (excluding rebar)							
ITEM	DESCRIPTION	G7	G8	G9	G10	G11	G12
ANCHOR PLB1	1" x 10" x 3'-2"	2	2	2	2	2	2
TOP PLATE	¾" x 10" x 10"	2	2	2	2	2	2
THREADED ROD	1"ø x 3'-2½"	12	12	12	12	12	12
HOLES (PR-TIE)	1½" I.D. x 7"	4	4	4	4	4	4
HOLES (END)	1¼" I.D. x 7"	2	2	2	2	2	2
HOLES (BRACE)	1" I.D. x 7"	3	3	3	3	3	3
LIFT LOOP	3 - 0.5"ø x 3'-6" (a)	4	4	4	4	4	4
HOLD DOWN	10 STRAND	2	2	2	2	2	2
"CR" INSERTS	CR-45HANG C24 45°, 4-APR, 12" ARM (b)	18	NONE	NONE	18	NONE	18
	CR-90HANG C24 90°, 4-PR, 12" ARM (b)	18	38	36	18	38	18

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

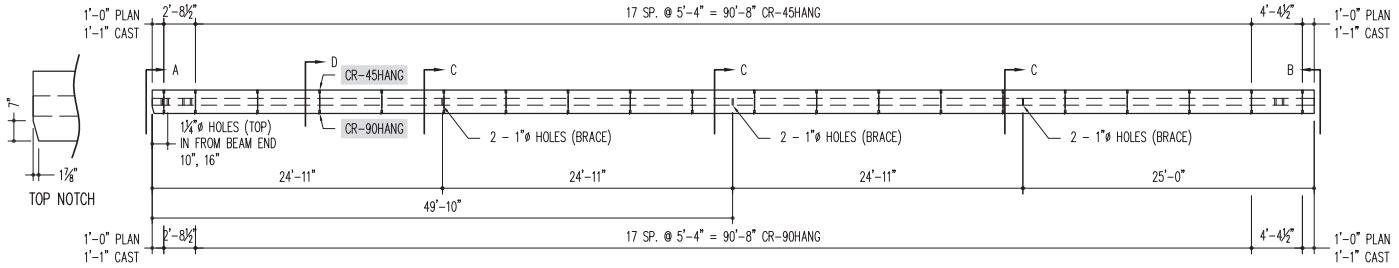
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

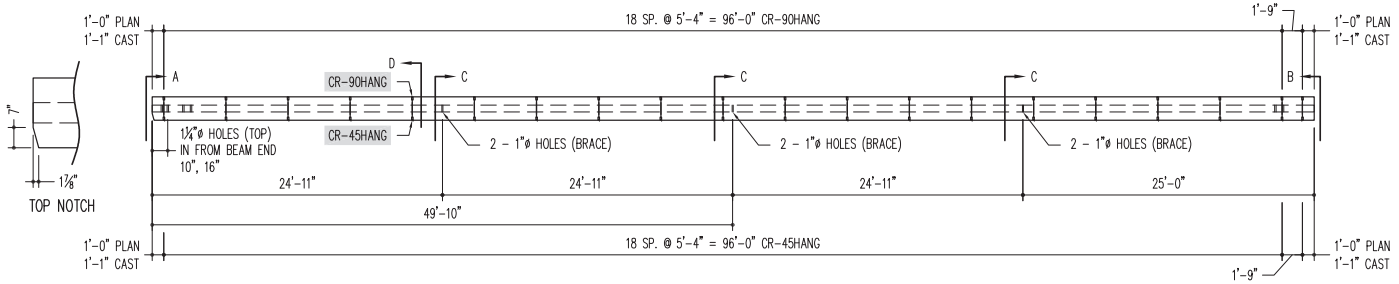
REBAR LAYOUT ELEVATION, BEAMS G7-G12

DRAWN BY MH	CHKD. GC / BR
SCALE NONE	JOB NO. 65-328-22
DATE 2-23-22	SHEET 8 OF 15



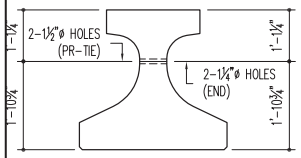
MARK END
SOUTH ABUT. END

PLAN BEAM G1
SCALE 3/32" = 1'-0"

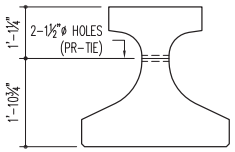


MARK END
SOUTH ABUT. END

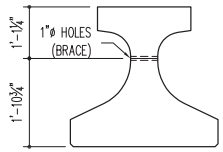
PLAN BEAM G6
SCALE 3/32" = 1'-0"



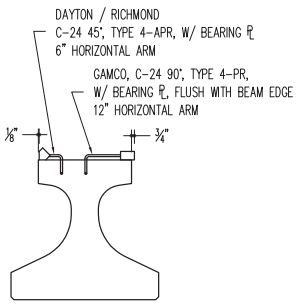
SECTION A
SCALE 3/8"=1'-0"



SECTION B
SCALE 3/8"=1'-0"



SECTION C
SCALE 3/8"=1'-0"



SECTION D
SCALE 3/8"=1'-0"

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

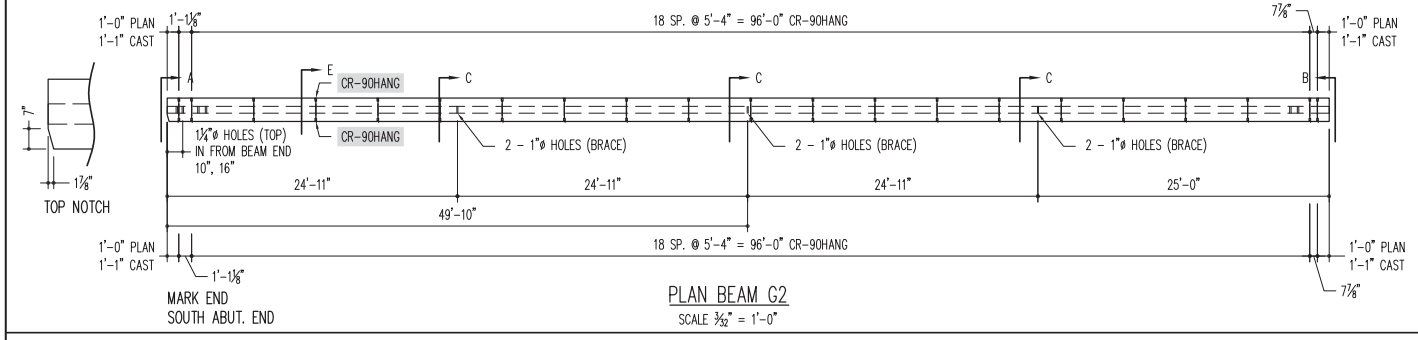
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

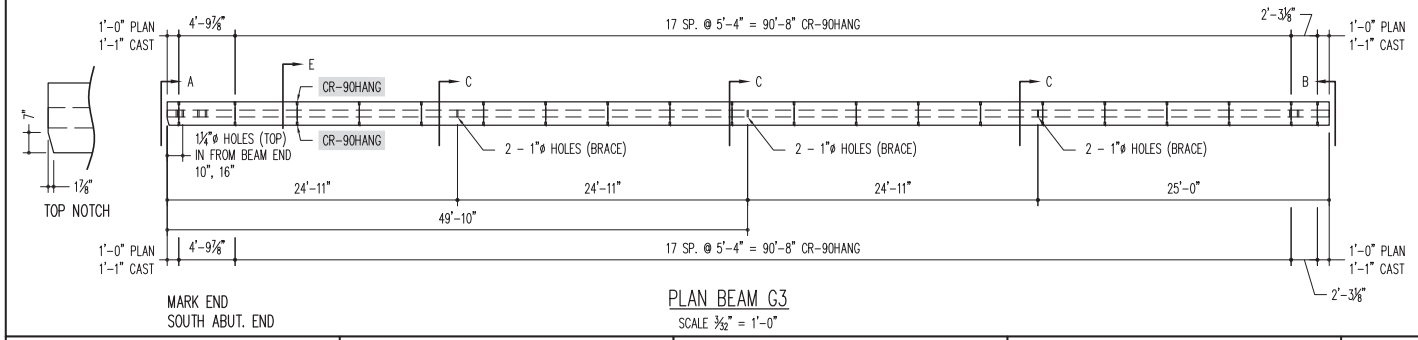
INSERTS BEAMS G1, G6

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 9 OF 15



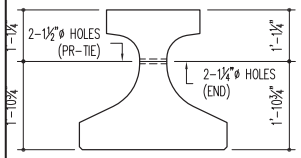
PLAN BEAM G2

SCALE ³⁄₃₂" = 1'-0"



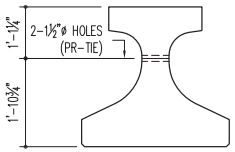
PLAN BEAM G3

SCALE ³⁄₃₂" = 1'-0"



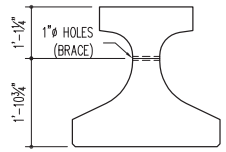
SECTION A

SCALE ⅜"=1'-0"



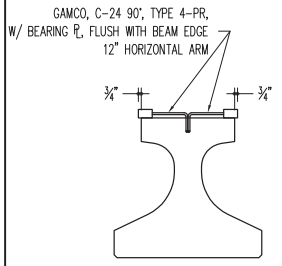
SECTION B

SCALE ⅜"=1'-0"



SECTION C

SCALE ⅜"=1'-0"



SECTION E

SCALE ⅜"=1'-0"

APPROVED

For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES

DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

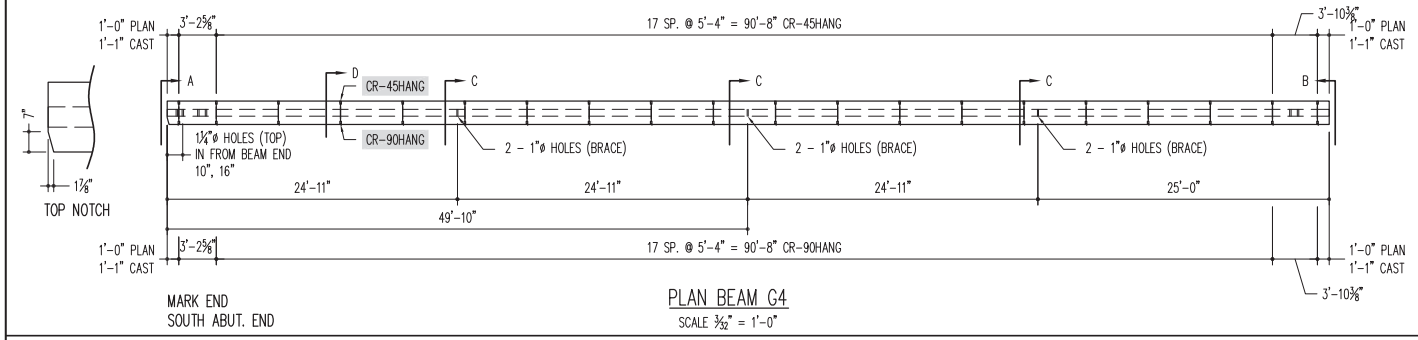
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

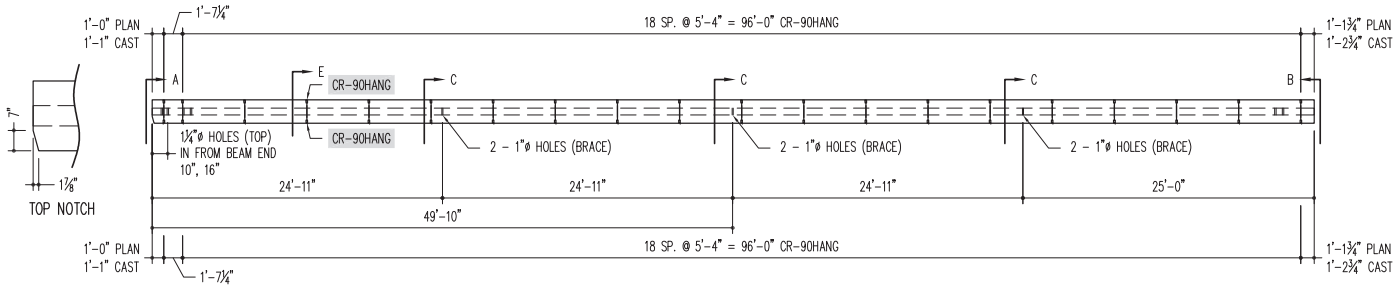
INSERTS BEAMS G2, G3

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 10 OF 15



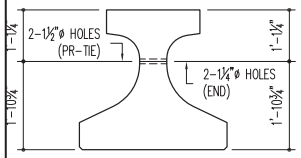
PLAN BEAM G4

SCALE ³⁄₃₂" = 1'-0"



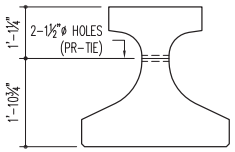
PLAN BEAM G5

SCALE ³⁄₃₂" = 1'-0"



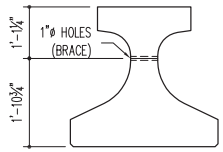
SECTION A

SCALE ⅜"=1'-0"



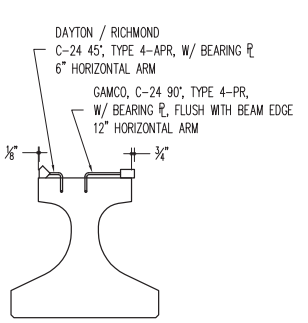
SECTION B

SCALE ⅜"=1'-0"



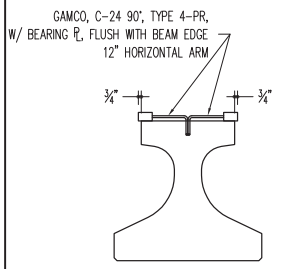
SECTION C

SCALE ⅜"=1'-0"



SECTION D

SCALE ⅜"=1'-0"



SECTION E

SCALE ⅜"=1'-0"

APPROVED

For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES

DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

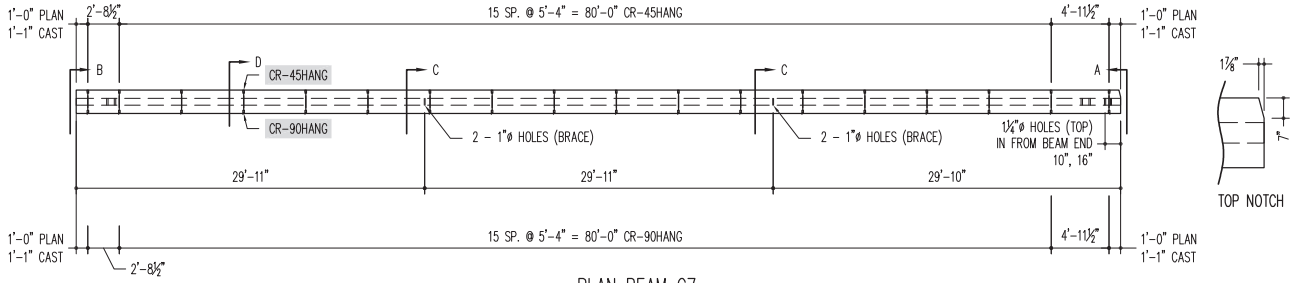
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

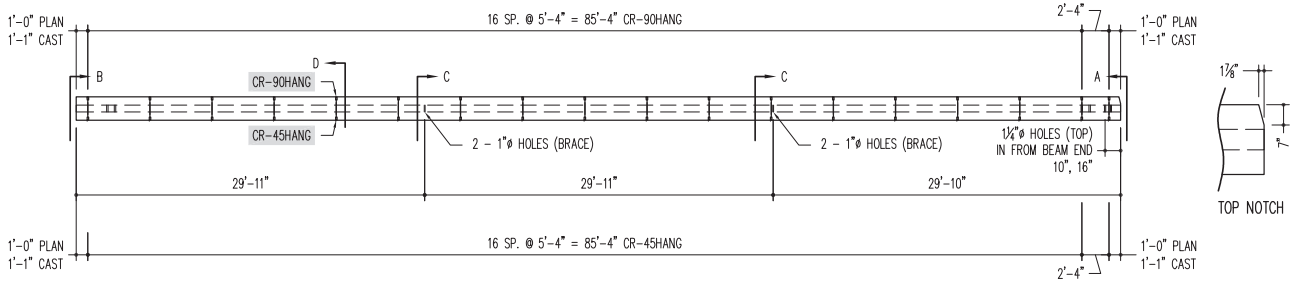
INSERTS BEAMS G4, G5

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 11 OF 15



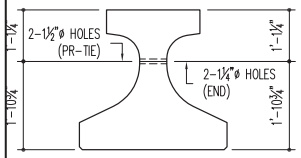
PLAN BEAM G7

SCALE ³/₃₂" = 1'-0"



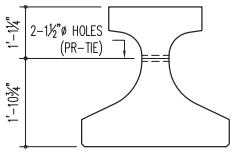
PLAN BEAM G12

SCALE ³/₃₂" = 1'-0"



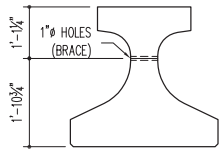
SECTION A

SCALE ⅜"=1'-0"



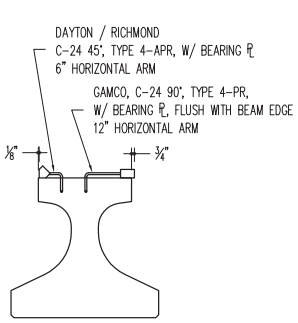
SECTION B

SCALE ⅜"=1'-0"



SECTION C

SCALE ⅜"=1'-0"



SECTION D

SCALE ⅜"=1'-0"

APPROVED

For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES

DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

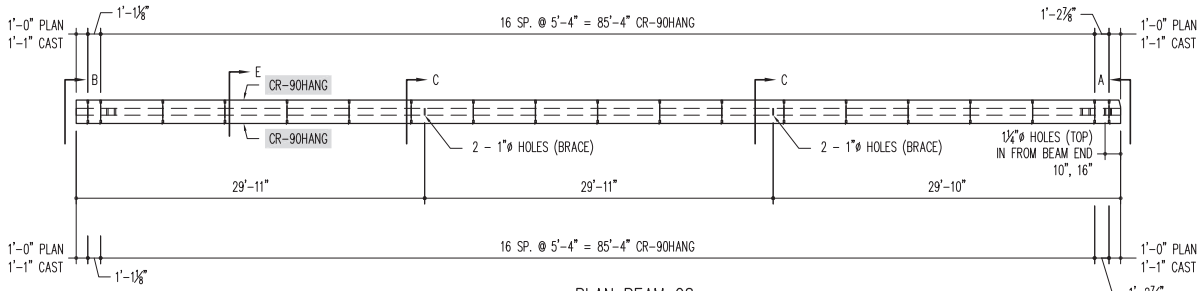
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

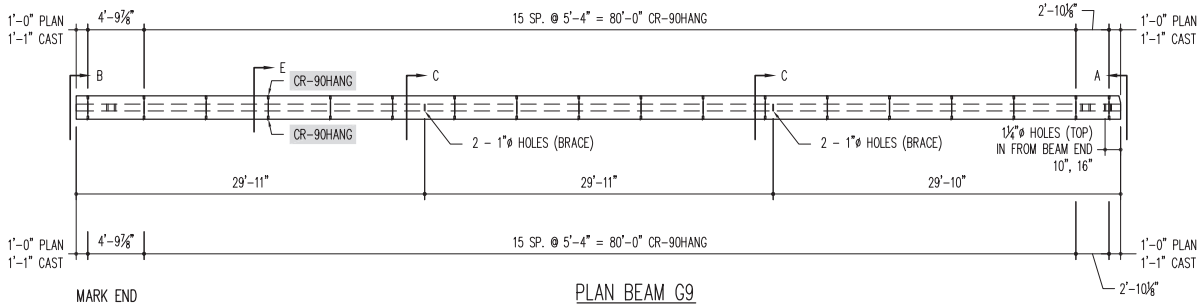
NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

INSERTS BEAMS G7, G12

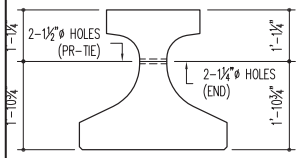
DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 12 OF 15



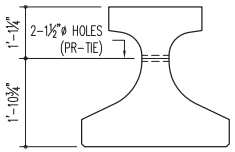
PLAN BEAM G8
SCALE 3/32" = 1'-0"



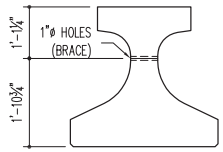
PLAN BEAM G9
SCALE 3/32" = 1'-0"



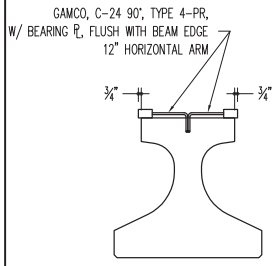
SECTION A
SCALE ⅜"=1'-0"



SECTION B
SCALE ⅜"=1'-0"



SECTION C
SCALE ⅜"=1'-0"



SECTION E
SCALE ⅜"=1'-0"

APPROVED
For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

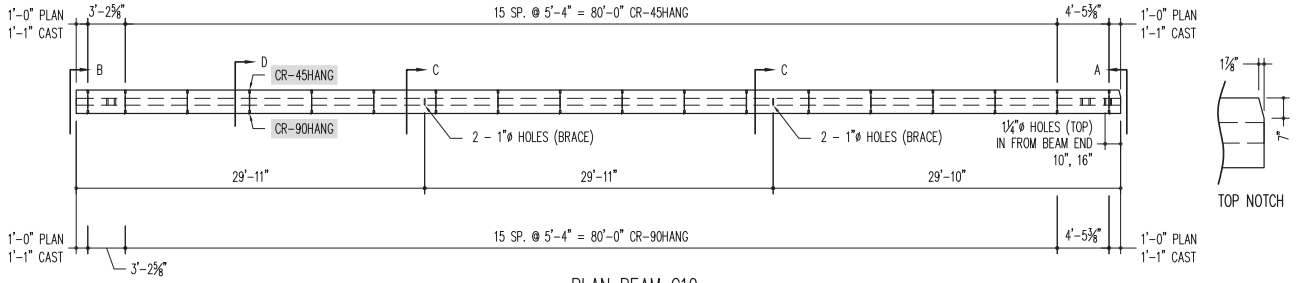
ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

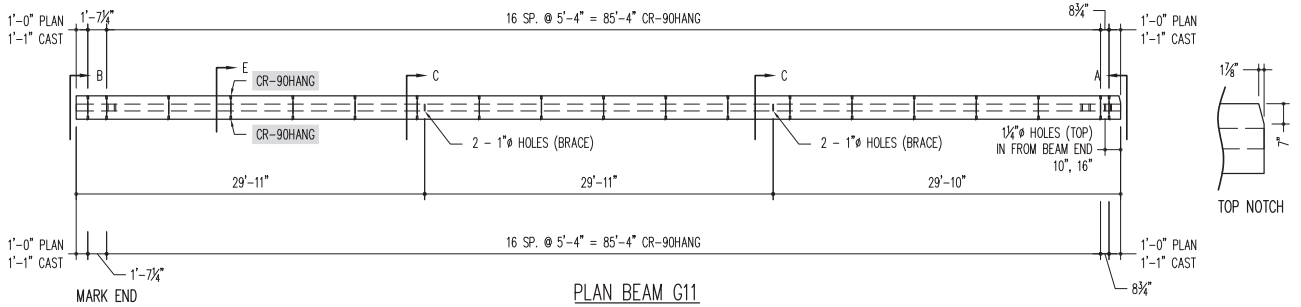
INSERTS BEAMS G8, G9

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 13 OF 15



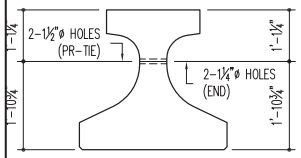
PLAN BEAM G10

SCALE 3/32" = 1'-0"



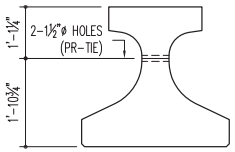
PLAN BEAM G11

SCALE 3/32" = 1'-0"



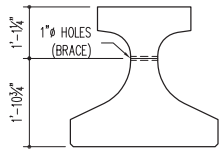
SECTION A

SCALE 3/8"=1'-0"



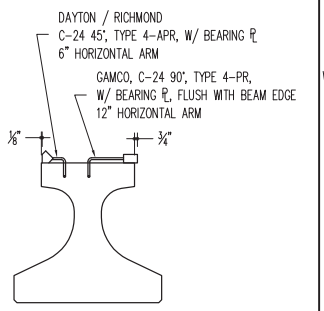
SECTION B

SCALE 3/8"=1'-0"



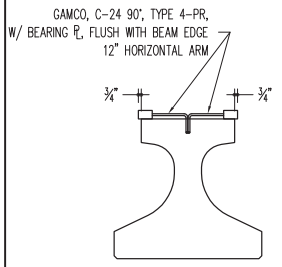
SECTION C

SCALE 3/8"=1'-0"



SECTION D

SCALE 3/8"=1'-0"



SECTION E

SCALE 3/8"=1'-0"

APPROVED

For Main Dimensions and Materials Only

February 28, 2022

ENGINEER OF BRIDGES & STRUCTURES

DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608-373-0950 FAX 373-0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043-0081 PROJECT NO. STP-7KJM(024)
SECTION NO. 10BR-5
CONTRACT NO. 64H58 STATE JOB. C-92-023-21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

INSERTS BEAMS G10, G11

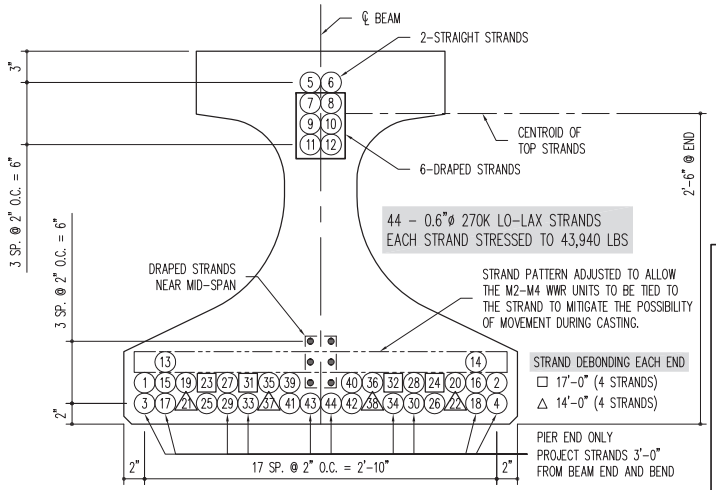
DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65-328-22
DATE 2-23-22	SHEET 14 OF 15

44 – 0.6"ø 270 K STRANDS PER GIRDER
INITIAL TENSION EACH STRAND TO 4000#
AREA OF STRAND – .217 IN. SQ.

F'CI = 6,500 PSI
F'C = 8,000 PSI

BEAMS: G1–G6, SPAN 1
LENGTH: 99'–9" PLAN, 99'–11" CAST
APROX. WEIGHT: 81,500
CONCRETE: 18.7 C.Y.

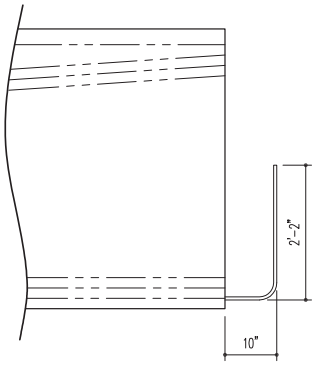
BEAMS: G7–G12, SPAN 2
LENGTH: 89'–8" PLAN, 89'–10" CAST
APROX. WEIGHT: 73,000
CONCRETE: 16.8 C.Y.



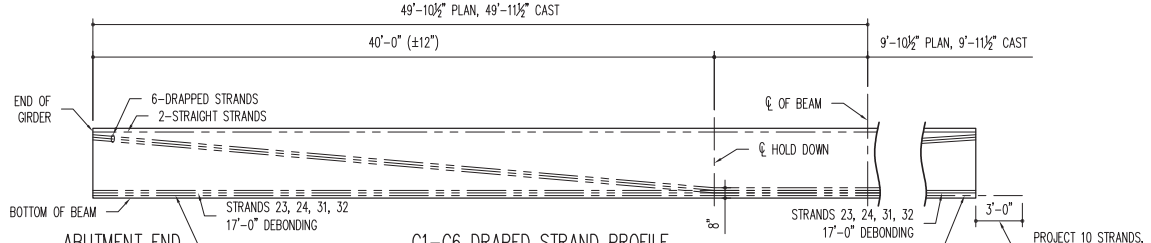
DESIGN STRAND PATTERN & RELEASE SEQUENCE

LOOKING AT BEAM END
SCALE: 1" = 1'–0"

NOTE: FINAL ELONGATIONS TO BE CALCULATED AT PLANT BY QUALITY CONTROL.



PIER END BENDING DETAIL

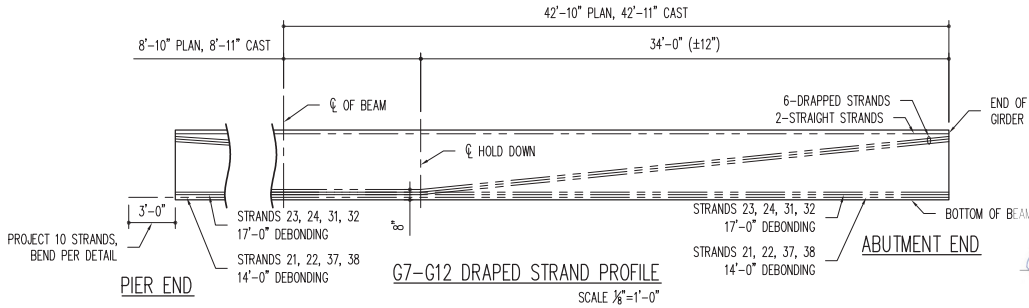


ABUTMENT END

G1–G6 DRAPED STRAND PROFILE

SCALE ⅛"=1'–0"

PIER END



PIER END

G7–G12 DRAPED STRAND PROFILE

SCALE ⅛"=1'–0"

ABUTMENT END

APPROVED
For Main Dimensions and Materials Only
February 28, 2022
ENGINEER OF BRIDGES & STRUCTURES
DISTRIBUTION DRAWING

COUNTY MATERIALS CORPORATION
1104 E. LT TOWNLINE RD JANESVILLE, WI. 53546
608–373–0950 FAX 373–0903

CONTRACTOR SJOSTROM

ROUTE IL. RTE. 78 (FAP 642) OVER PLUM RIVER
S.N. 043–0081 PROJECT NO. STP–7KJM(024)
SECTION NO. 10BR–5
CONTRACT NO. 64H58 STATE JOB. C–92–023–21
COUNTY JO DAVIESS, IL

REVISIONS

NO.	DESCRIPTIONS	DATE	BY
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

STRAND PATTERN

DRAWN BY MH	CHKD. GC / BR
SCALE AS SHOWN	JOB NO. 65–328–22
DATE 2–23–22	SHEET 15 OF 15