

APPENDIX A

30% DRAWINGS

8/31/2021

BRIDGE REPLACEMENT LETTING DATE
STP-009-9(84)--2C-03 07-25-2023

ALLAMAKEE COUNTY - DESIGN 124, 224, 324

LEGEND

INTERSTATE HIGHWAY	
PRIMARY HIGHWAY-DIVIDED	
PRIMARY HIGHWAY	
PORTLAND CEMENT CONCRETE ROAD	
ASPHALT ROAD	
BITUMINOUS ROAD	
GRAVEL ROAD	
EARTHEN ROAD	
INTERSTATE HIGHWAY	
UNITED STATES HIGHWAY	
STATE HIGHWAY	
COUNTY HIGHWAY	
RAILROAD	
PIPELINE	
AIRPORT	
HYDROLOGY	
BRIDGE	
STATE BOUNDARY	
COUNTY BOUNDARY	
CORPORATE BOUNDARY	
TOWNSHIP LINE	
SECTION LINE	
ROAD NAMES	
UNINCORPORATED PLACE	
ABBAY ROAD	
ELWOOD	



TRANSPORTATION DEVELOPMENT DIVISION
PLANS OF PROPOSED IMPROVEMENTS ON THE

PRIMARY ROAD SYSTEM
ALLAMAKEE COUNTY
BRIDGE REPLACEMENT - OTHER
MISSISSIPPI RIVER BRIDGE IN LANSING

FRA NO. 376210E

THE IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT.

ENGLISH STANDARD BRIDGE PLANS		
STANDARD	ISSUED	REVISED

PRELIMINARY
NOT FOR CONSTRUCTION

REVISIONS

TOTAL SHEETS
PROJECT NUMBER
STP-009-9(84)--2C-03
R.O.W. PROJECT NUMBER
PROJECT IDENTIFICATION NUMBER
16-03-009-010

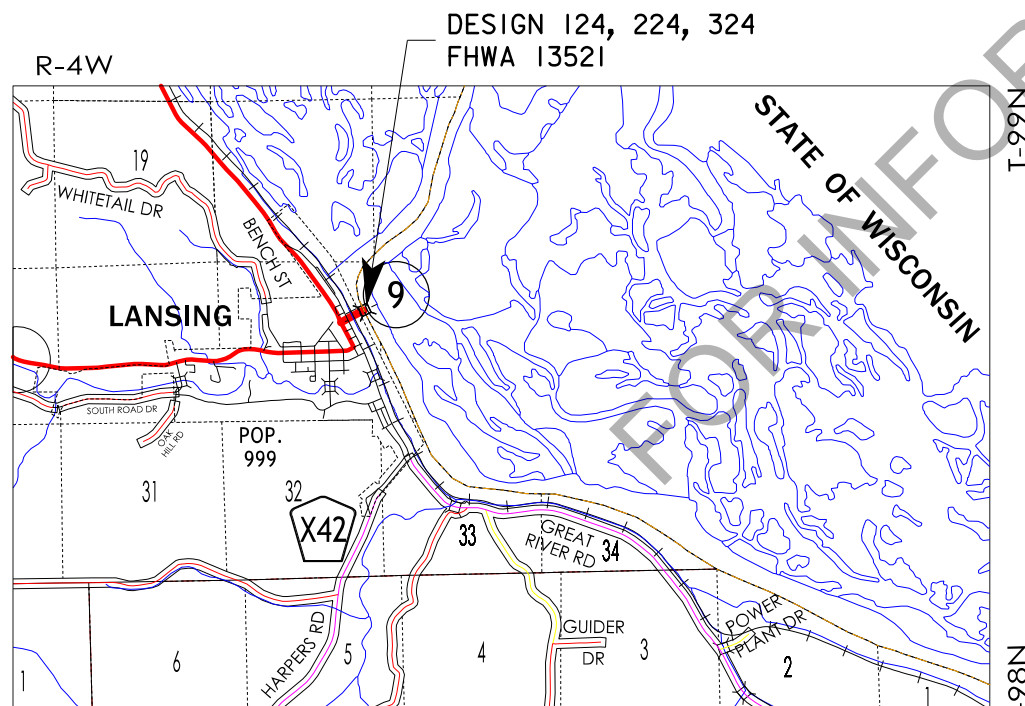
INDEX OF SHEETS	
NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATE SHEET - 124
2-?	DESIGN 124
X	ESTIMATE SHEET - DESIGN 224
X-X	DESIGN 224
X	ESTIMATE SHEET - DESIGN 324
X-X	DESIGN 324
?	SOIL PROFILE SHEET
?	ESTIMATE SHEET FOR ROADWAY
?	ROADWAY SHEETS



1-800-292-8989
www.iowaonecall.com



REVISIONS TO THIS DESIGN PLAN AND/OR PROJECT SPECIFICATIONS SHOULD BE SUBMITTED BY _____



LOCATION MAP

DESIGN DATA RURAL
REFER TO INDIVIDUAL SITUATION PLANS FOR TRAFFIC DATA INFORMATION

STANDARD ROAD PLANS
STANDARD ROAD PLANS ARE LISTED ON SHEET NUMBER _____

DESIGN DATA RURAL			
200?	AADT	2900	V.P.D.
20??	AADT	3000	V.P.D.
20??	DHV	310	V.P.H.
	TRUCKS	9	%
Total	Design ESALs	1,400	

INDEX OF SEALS		
SHEET NO.	NAME	TYPE
BRIDGE STANDARDS	JAMES S. NELSON	STRUCTURAL DESIGN

HYDRAULIC DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature John C. Sample Date _____
Printed or Typed Name
My license renewal date is December 31, _____

Pages or sheets covered by this seal: _____

STRUCTURAL DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature _____ Date _____
Printed or Typed Name
My license renewal date is December 31, 2020

Pages or sheets covered by this seal: SHEETS 1 THRU XX

PROJECT DIRECTORY NAME: 0300901016

GENERAL NOTES:

- THIS DESIGN IS FOR A NEW 1350'-10X40'-0 STEEL THROUGH-TRUSS BRIDGE ON IA 9 OVER N. FRONT ST., CANADIAN PACIFIC RAILROAD AND THE MISSISSIPPI RIVER. DESIGN INCLUDES CONSTRUCTION OF PIERS 1-3, WEST ABUTMENT, AND SUPERSTRUCTURE SPANS 1-3.
- WORK UNDER THIS DESIGN SHALL INCLUDE REMOVAL OF EXISTING 31'-4 1/4 DIA. STEEL SHEET PILE DOLPHIN, ALLAMAKEE COUNTY DESIGN NO. 512, AND REMOVAL OF EXISTING 38'-8 DIA STEEL SHEET PILE DOLPHIN, ALLAMAKEE COUNTY DESIGN NO. 412. REMOVALS SHALL BE IN ACCORDANCE WITH SECTION 2401 OF THE STANDARD SPECIFICATIONS. ANY DAMAGE TO OTHER PORTIONS OF THE EXISTING STRUCTURE NOT NOTED FOR REMOVAL SHALL BE THE RESPONSIBILITY OF THE BRIDGE CONTRACTOR AND SHALL BE REPAIRED AT NO EXTRA COST TO THE STATE.
- SOVEREIGN LANDS CONSTRUCTION PERMIT ---- SHALL APPLY TO WORK ON THIS PROJECT. THE IOWA DNR CONSERVATION OFFICER FOR THE AREA SHALL BE CONTACTED. AT LEAST 48 HOURS PRIOR TO COMMENCING WORK CONTACT ---- AT ----.
- 404 PERMIT INFORMATION AND THE POLLUTION PREVENTION PLAN ARE INCLUDED IN THE TIED ROAD PLANS, PROJECT NO. ?.
- FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.
- KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM OF 10 DEGREES FROM VERTICAL.
- THE CITY AND UTILITY COMPANIES WHOSE FACILITIES ARE SHOWN ON THE PLANS OR KNOWN TO BE WITHIN THE CONSTRUCTION LIMITS SHALL BE NOTIFIED BY THE BRIDGE CONTRACTOR OF THE CONSTRUCTION STARTING DATE.
- THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS. PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.
- THE BRIDGE CONTRACTOR SHALL WORK IN SUCH A MANNER THAT EQUIPMENT AND MATERIALS SHALL NOT BE ALLOWED TO INTERFERE WITH TRAIN TRAFFIC OR BE ALLOWED TO FALL ON THE RAILROAD TRACKS. INTERFERENCE ABOVE THE RAILROAD TRACK AREA SHALL BE COORDINATED WITH THE RAILROAD IN ACCORDANCE WITH DEVELOPMENTAL SPECIFICATIONS FOR CONSTRUCTION OR MAINTENANCE WORK ON RAILROAD RIGHT-OF-WAY (DAKOTA, MINNESOTA, & EASTERN RAILROAD CORPORATION dba CANADIAN PACIFIC).
- IT SHALL BE THE BRIDGE CONTRACTOR'S RESPONSIBILITY TO PROVIDE SITES FOR EXCESS EXCAVATED MATERIAL. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.
- ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.
- STAINLESS STEEL REBAR SHALL BE SHIPPED, HANDLED, AND PLACED SUCH THAT CARBON STEEL DOES NOT COME IN CONTACT WITH THE STAINLESS STEEL REBAR. PADDING SHALL BE USED TO SEPARATE CARBON STEEL BUNDLING BARS OR LIFTING DEVICES FROM THE STAINLESS STEEL REINFORCING. COVER STAINLESS STEEL REBAR WITH TARPS DURING OUTSIDE STORAGE. USE WOODEN SPACERS TO SEPARATE BUNDLES OF STAINLESS STEEL REBAR FROM OTHER TYPES OF REBAR. USE WOODEN SUPPORTS TO STORE STAINLESS STEEL REBAR OFF THE GROUND OR SHOP FLOOR.
- THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION (5A1 IS 5/8 INCH DIAMETER BAR). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36
- ALL COARSE AGGREGATE FOR STRUCTURAL CONCRETE SHALL BE CRUSHED LIMESTONE.
- PAINTING REQUIREMENTS FOR THIS STRUCTURE SHALL BE IN ACCORDANCE WITH ARTICLE 2408.02, Q, OF THE STANDARD SPECIFICATIONS.
- THE BRIDGE CONTRACTOR MAY SHOP DRILL ANY CONNECTION IF APPROVED BY EOR THAT IS SHOWN AS FIELD DRILLED IF PERTINENT DIMENSIONS ARE ACCURATELY FIELD MEASURED AND THE BRIDGE CONTRACTOR CAN ENSURE PROPER FIT BETWEEN NEW AND EXISTING STRUCTURAL STEEL.
- IN ACCORDANCE WITH IOWA DOT STANDARD SPECIFICATIONS SECTION 1105, THE CONTRACTOR SHALL SUBMIT A GIRDER ERECTION PLAN (GEP) CONSISTING OF ERECTION PLANS, ERECTION PROCEDURES, AND ERECTION ENGINEERING CALCULATIONS TO THE ENGINEER ACCORDING TO DEVELOPMENTAL SPECIFICATIONS FOR "GIRDER ERECTION PLAN".
- THE SUGGESTED STEEL TRUSS ERECTION SEQUENCE SHOWN IN THESE PLANS IS INTENDED FOR PRELIMINARY SCHEMATIC PURPOSES ONLY AND DOES NOT SUPPLANT THE CONTRACTOR'S RESPONSIBILITY FOR THE FABRICATION, ERECTION, AND CONSTRUCTION OF ANY PART OF THE BRIDGE. THE CONTRACTOR MAY CHOOSE AN ALTERNATIVE STEEL TRUSS ERECTION SEQUENCE TO THAT PRESENTED IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE STABILITY OF STEEL TRUSS DURING ALL PHASES OF ERECTION AS NOTED IN THE SPECIAL PROVISION SP-XX-XX "STEEL TRUSS ERECTION PLAN".

BRIDGE DECK DIMENSIONS TABLE

	ITEM	UNITS	QUANTITY
1	DECK LENGTH	L.F.	1,350.8
2	MINIMUM DECK WIDTH	L.F.	43.3
3	MAXIMUM DECK WIDTH	L.F.	43.3
4	DECK AREA	S.F.	58,536

- DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
- DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
- DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

TRAFFIC CONTROL PLAN

THIS STRUCTURE IS BEING BUILT ON A NEW ALIGNMENT. THE ROAD WILL NOT BE OPEN TO TRAFFIC UNTIL AFTER COMPLETION OF CONSTRUCTION. REFER TO TRAFFIC CONTROL PLAN SHOWN IN PROJECT NO. xxxxxxxx.

NOTE:
POLLUTION PREVENTION PLAN SHOWN ELSEWHERE IN THESE PLANS.

SHOP DRAWING SUBMITTALS

SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS SHOWN IN THE TABLE BELOW. (NOTE ADDITIONAL SHOP DRAWINGS MAY BE REQUIRED IN ACCORDANCE WITH ARTICLE 1105.03 OF THE STANDARD SPECIFICATIONS.)

SUBMITTAL REQUIREMENTS FOR SHOP DRAWINGS SHOULD BE IN ACCORDANCE WITH ARTICLE 1105.03, OF THE STANDARD SPECIFICATIONS, FOR HIGHWAY AND BRIDGE CONSTRUCTION OF THE IOWA DEPARTMENT OF TRANSPORTATION.

SHOP DRAWINGS SHALL BE SUBMITTED WITH THE FOLLOWING NAMING CONVENTION:
(Paren) County_DesignNumber_SubmittalDescription.pdf
Example: (090)_BlackHawk_Design915_DeckDrains.pdf

1	?
2	?
3	?
4	?
?	?

CONCRETE BARRIER RAILS, SLIPFORM METHOD, CONCRETE CLASS:

SLIPFORMING OF THE BARRIER RAILS IS NOT PERMITTED. CAST-IN-PLACE BARRIER RAILS SHALL USE CLASS C MIX. CLASS D CONCRETE IS NOT PERMITTED FOR CONCRETE BARRIER RAILS.

STEEL BEAMS, TEMPORARY BRACING:

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE SUFFICIENT TEMPORARY BRACING TO MINIMIZE LATERAL DEFLECTION AND ROTATION OF EXTERIOR STEEL BEAMS DURING DECK PLACEMENT. LATERAL DEFLECTION AND ROTATION OF EXTERIOR BEAMS MAY RESULT IN THIN DECKS AND AN UPWARDS SHIFT IN BAR MATS WHICH CAN DECREASE CONCRETE COVER. PARTIALLY OR FULLY INSTALLED PERMANENT BRACING AS SHOWN IN THESE DESIGN PLANS SHALL NOT BE ASSUMED SUFFICIENT TO MINIMIZE LATERAL DEFLECTION AND ROTATION OF EXTERIOR BEAMS DURING DECK PLACEMENT. TEMPORARY BRACING SHALL NOT BE WELDED TO THE STEEL BEAMS OR ITS ATTACHMENTS INCLUDING THE STUDS.

SPECIFICATIONS:

DESIGN: AASHTO LRFD 9TH ED, SERIES OF 2020, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

CONSTRUCTION: IOWA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2015, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT INCLUDING:

DEVELOPMENTAL SPECIFICATIONS FOR:
HIGH PERFORMANCE CONCRETE FOR STRUCTURES
MASS CONCRETE -CONTROL OF HEAT OF HYDRATION
STRUCTURAL CONCRETE (4500 PSI OR GREATER)
CONSTRUCTION PROGRESS SCHEDULE
GIRDER ERECTION PLAN
CONSTRUCTION OR MAINTENANCE WORK ON RAILROAD RIGHT-OF-WAY (DAKOTA, MINNESOTA, & EASTERN RAILROAD CORPORATION dba CANADIAN PACIFIC)

SPECIAL PROVISIONS FOR:
POST-TENSIONING BARS (IF USED)
THERMAL INTEGRITY PROFILING AND SQUID DEMONSTRATION
MODULAR EXPANSION JOINT ASSEMBLY
E-BUILDER
STEEL TRUSS ERECTION PLAN

ALL SUPERSTRUCTURE ELEMENTS SHALL BE LOCATED BEYOND THE ZONE OF INTRUSION FOR PENNDOT PA TL-5 BARRIER (4'-4 BEYOND TRAFFIC FACE OF BARRIER).

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 9TH ED, SERIES OF 2020, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 FOR EPOXY COATED AND NON-COATED, AND GRADE 60 OR 75 FOR STAINLESS.

CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c = 4.0 KSI, EXCEPT AS NOTED.

PRESTRESSING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, TYPE 2, DEFORMED, GRADE 150.

BRIDGE DECK CONCRETE f'c = 4.0 KSI

COLUMN FROM TOP OF DRILLED SHAFTS f'c = X.X KSI

DRILLED SHAFT CONCRETE f'c = X.X KSI

STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W) EXCEPT AS NOTED.

FATIGUE DESIGN BASED ON FATIGUE I LOAD COMBINATION AND INFINITE LIFE.

FUTURE JACKING NOTES:

PROVISIONS FOR JACKING HAVE BEEN INCLUDED IN THIS DESIGN TO ALLOW FOR FUTURE BEARING MAINTENANCE.

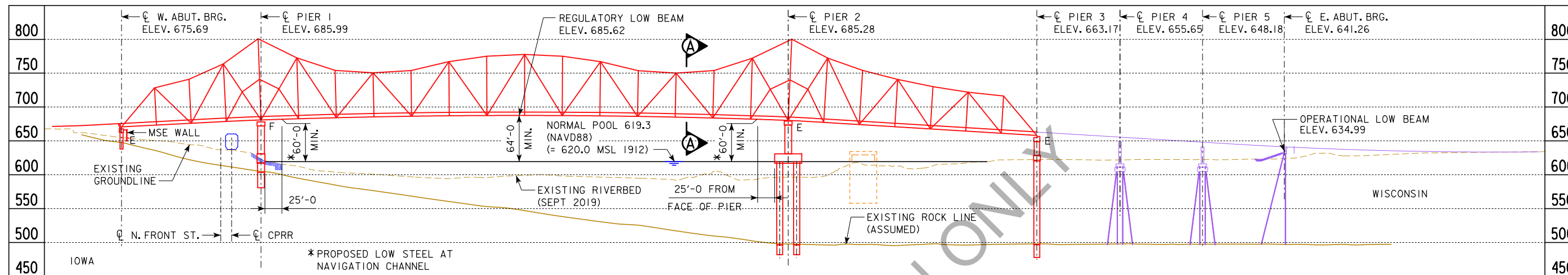
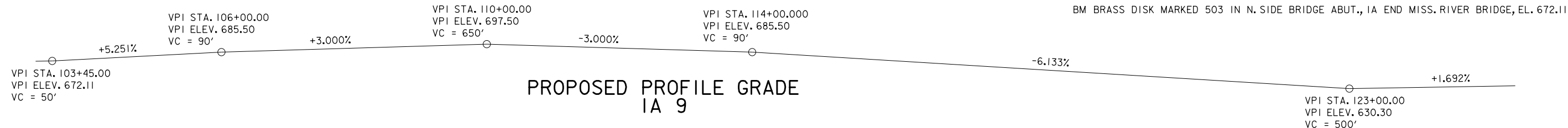
GENERAL NOTES FOR TEXTURED CONCRETE FORM LINERS:

TO BE ADDED IF SUBSTRUCTURE REQUIRES AESTHETIC TREATMENT.

GENERAL NOTES FOR CONCRETE RUSTIFICATION:

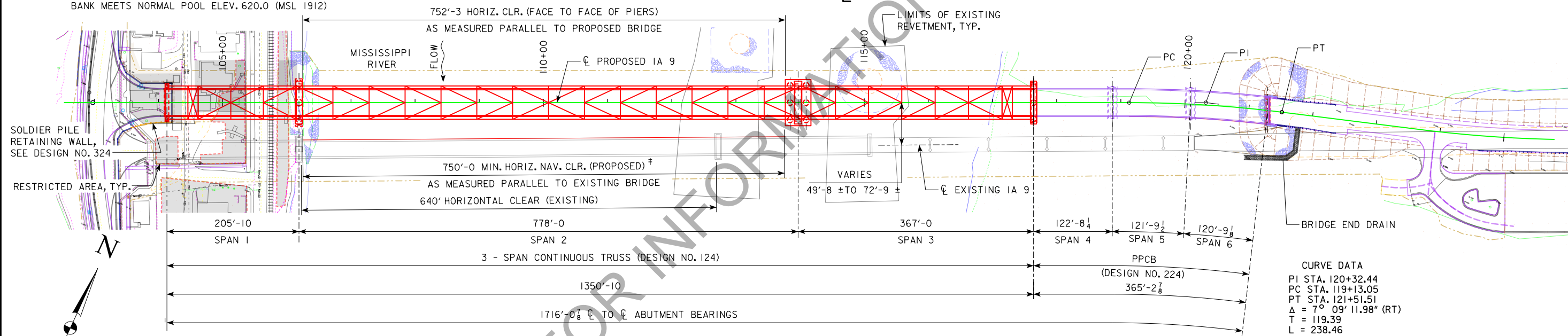
TO BE ADDED IF SUBSTRUCTURE REQUIRES AESTHETIC TREATMENT

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
GENERAL NOTES - I
IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
DESIGN SHEET NO. 3 OF 119 FILE NO. 31473 DESIGN NO. 124



† HORIZ. CLR. FOR NAVIGATION BEGINS WHERE IOWA BANK MEETS NORMAL POOL ELEV. 620.0 (MSL 1912)

LONGITUDINAL SECTION ALONG CL IA 9



GENERAL PLAN

CURVE DATA
 PI STA. 120+32.44
 PC STA. 119+13.05
 PT STA. 121+51.51
 $\Delta = 7^\circ 09' 11.98''$ (RT)
 T = 119.39
 L = 238.46
 R = 1,910.00
 E = 3.73
 e = 3.4%
 L = 70
 x = 41
 D.S. = 40 mph

TRAFFIC ESTIMATE

2025 AADT	2900	V.P.D.
2045 AADT	3000	V.P.D.
TRUCKS	9	%

LOCATION

IA 9 OVER MISSISSIPPI RIVER
 T-99N R-3W
 SECTION 29
 LANSING TOWNSHIP
 ALLAMAKEE COUNTY, IA
 CRAWFORD COUNTY, WI
 CITY OF LANSING
 FRA NO. 376210E
 LATITUDE: 43.36569° N
 LONGITUDE: 91.21400° W
 FHWA NO. 13521
 BRIDGE MAINT. NO. 0361.IS009

PLAN NOTES:

- ALL UNITS ARE IN FEET UNLESS NOTED OTHERWISE.
- TOP OF DECK ELEVATIONS AT CL ARE 0.03' LOWER THAN THE PGL TO ACCOUNT FOR CROWN ROUNDING.
- VERTICAL DATUM NAVD 88.
- CLASS E REVETMENT STONE IS EMBEDDED.
- THE BRIDGE WILL BE DESIGNED TO WITHSTAND THE APPLICABLE EFFECTS OF ICE AND THE HORIZONTAL STREAM LOADS ASSOCIATED WITH THE Q100. (BDM 3.2.2.4)
- FOR LOCATIONS OF DECK DRAINS, SEE DESIGN SHEET XX.

HYDRAULIC DATA

DRAINAGE AREA = 65130 SQ. MI.
 STREAM SLOPE = 0.249 FT./MI.
 AVG. LOW WATER STAGE = 619.3

Q₂₅ = 197,200 CFS
 STAGE = 629.7

Q₅₀ = 225,200 CFS
 STAGE = 631.2
 REGULATORY LOW BEAM = 685.62
 BACKWATER = 0.1 FT.

Q₁₀₀ = 250,100 CFS
 STAGE = 632.6
 OPERATIONAL LOW BEAM = 635.0
 BACKWATER = 0.1 FT.
 AVG. BRIDGE VELOCITY = 4.0 FPS

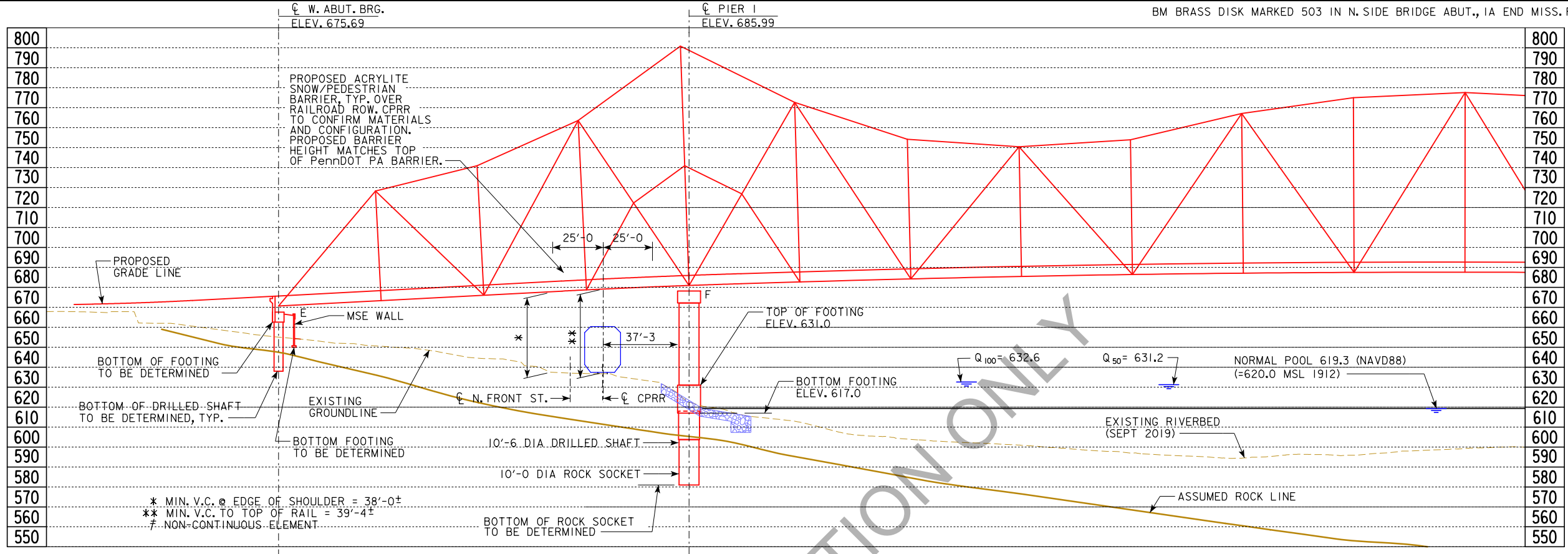
Q₂₀₀ = 272,900 CFS
 STAGE = 633.7

Q₅₀₀ = 307,900 CFS
 STAGE = 635.3
 AVG. BRIDGE VELOCITY = 4.4 FPS

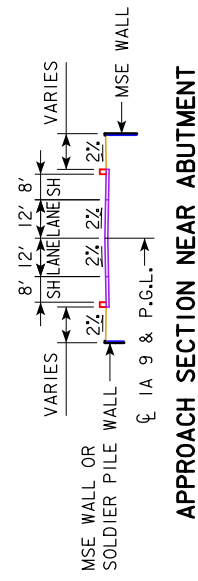
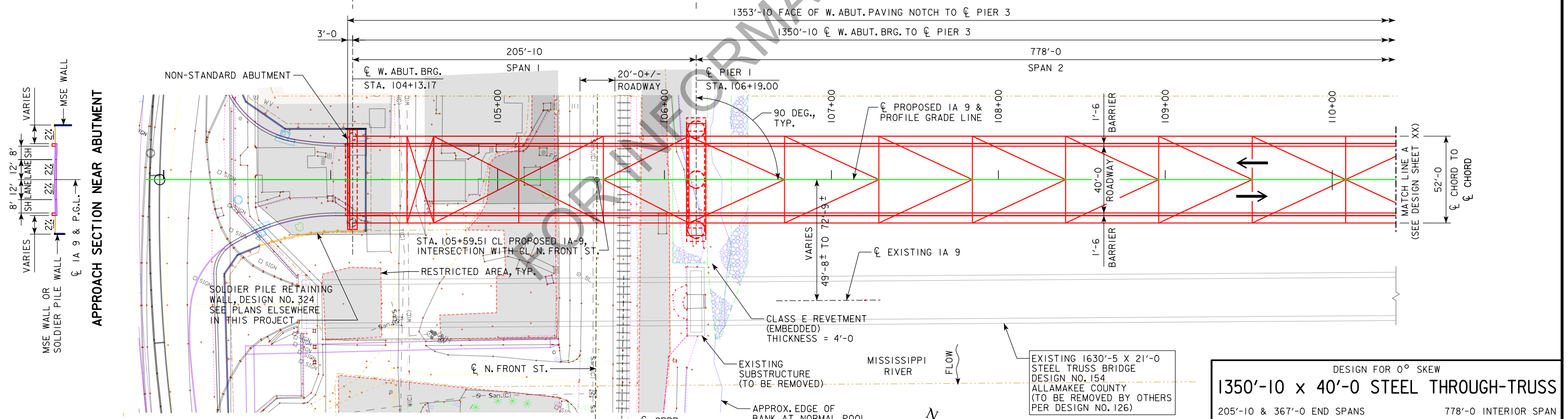
ROADWAY OVERTOP ELEV 634.03
 STA. 124+41.87

EXTREME HW STAGE = 634.1
 DATE = 04/24/1965

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
SITUATION PLAN - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 6 OF 119 FILE NO. 31473 DESIGN NO. 124



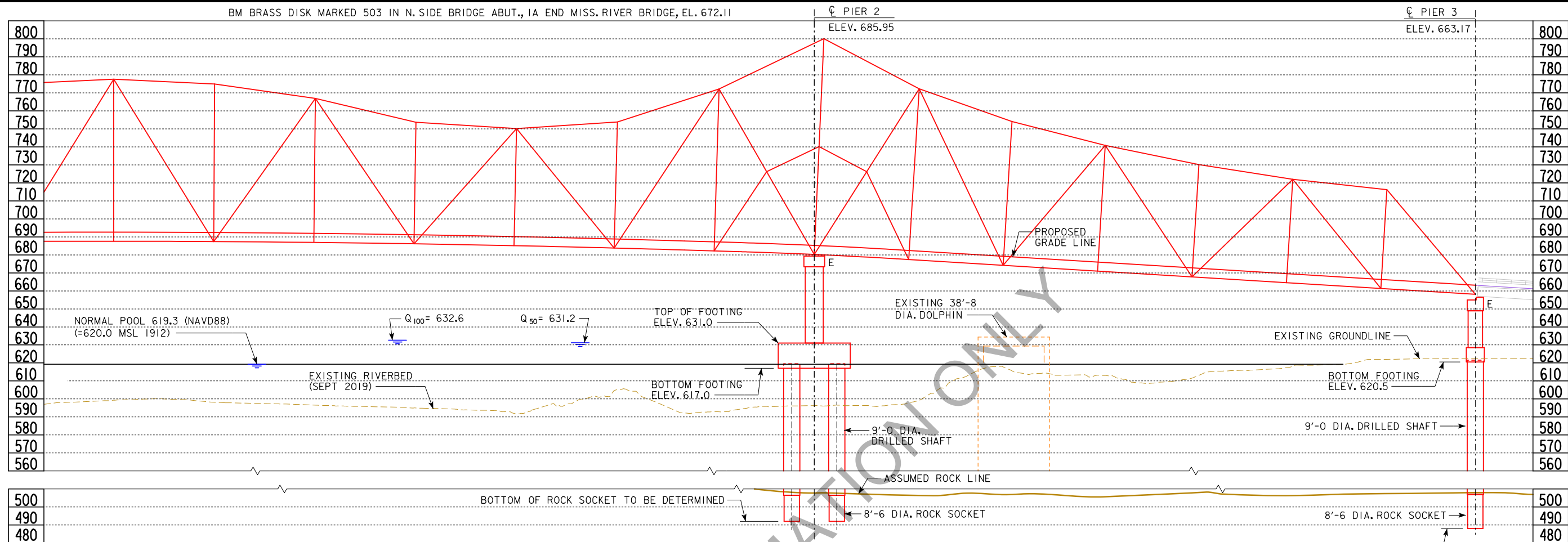
LONGITUDINAL SECTION ALONG CL IA 9



- UTILITIES LEGEND:**
- TV(C) — TV
 - TIC(C) — TELEPHONE
 - EIC(C) — ELECTRIC
 - W(C) — WATER
 - S(C) — SANITARY SEWER
- ROW LEGEND:**
- ROW PERMANENT ACQUISITION
 - ROW TEMPORARY EASEMENT

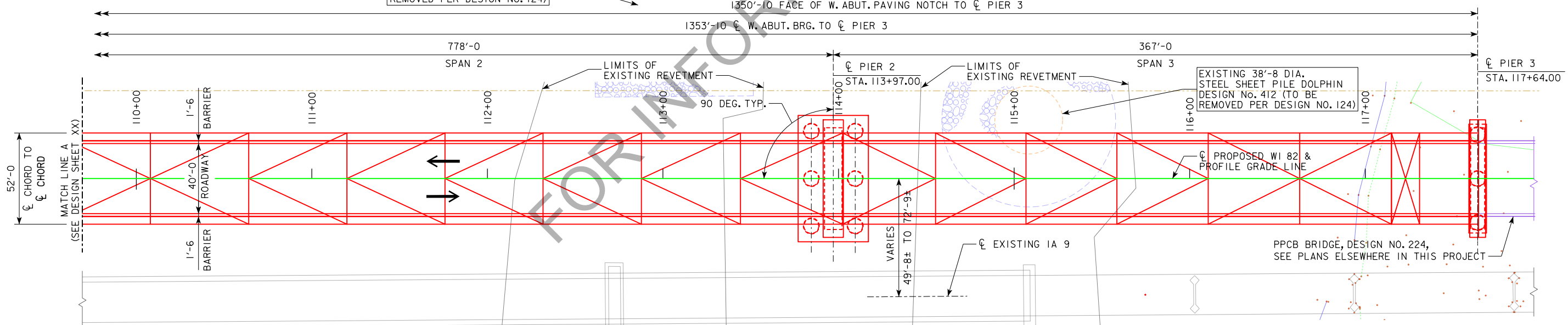
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
SITUATION PLAN - 2
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 7 OF 119 FILE NO. 31473 DESIGN NO. 124

BM BRASS DISK MARKED 503 IN N. SIDE BRIDGE ABUT., IA END MISS. RIVER BRIDGE, EL. 672.11



LONGITUDINAL SECTION ALONG ζ IA 9

1350'-10 FACE OF W. ABUT. PAVING NOTCH TO ζ PIER 3
 1353'-10 ζ W. ABUT. BRG. TO ζ PIER 3



SITUATION PLAN

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
SITUATION PLAN - 3
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 8 OF 13 FILE NO. 31473 DESIGN NO. 124

BM BRASS DISK MARKED 503 IN N. SIDE BRIDGE ABUT., IA END MISS. RIVER BRIDGE, EL. 672.11

THE RESTRICTED AREAS SHALL BE MARKED OFF WITH ORANGE SNOW FENCE AND NO GROUND DISTURBANCE IS PERMISSIBLE WITHIN THESE AREAS. IF THE CONTRACTOR HAS QUESTIONS THEY CAN CONTACT THE CONSTRUCTION ENGINEER OR IOWA DOT LOCATION AND ENVIRONMENT STAFFER BRENNAN DOLAN AT (515) 239-1795.

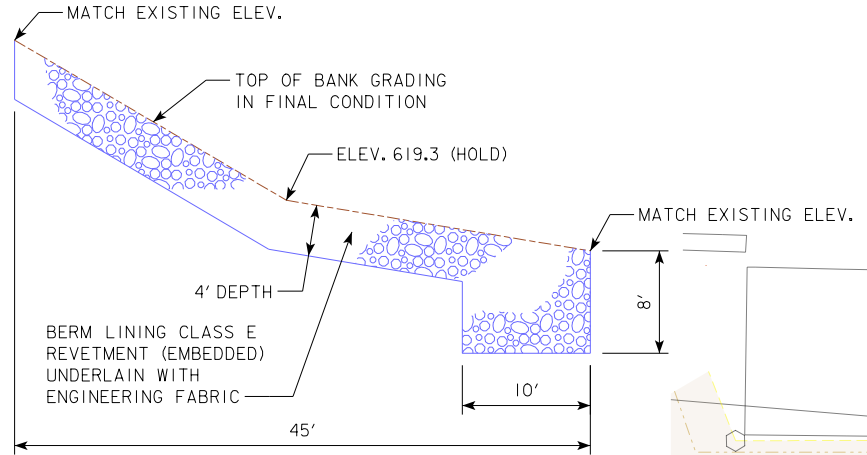
BANK STABILIZATION LOCATION TABLE

POINTS	STATION	OFFSET	ELEVATION
R1	106+30.45	95.56' RT.	619.30
R2	106+25.75	50.00' RT.	619.30
R3	106+25.75	80.00' LT.	619.30
R4	106+05.00	50.00' RT.	633.00
R5	106+05.00	80.00' LT.	626.30

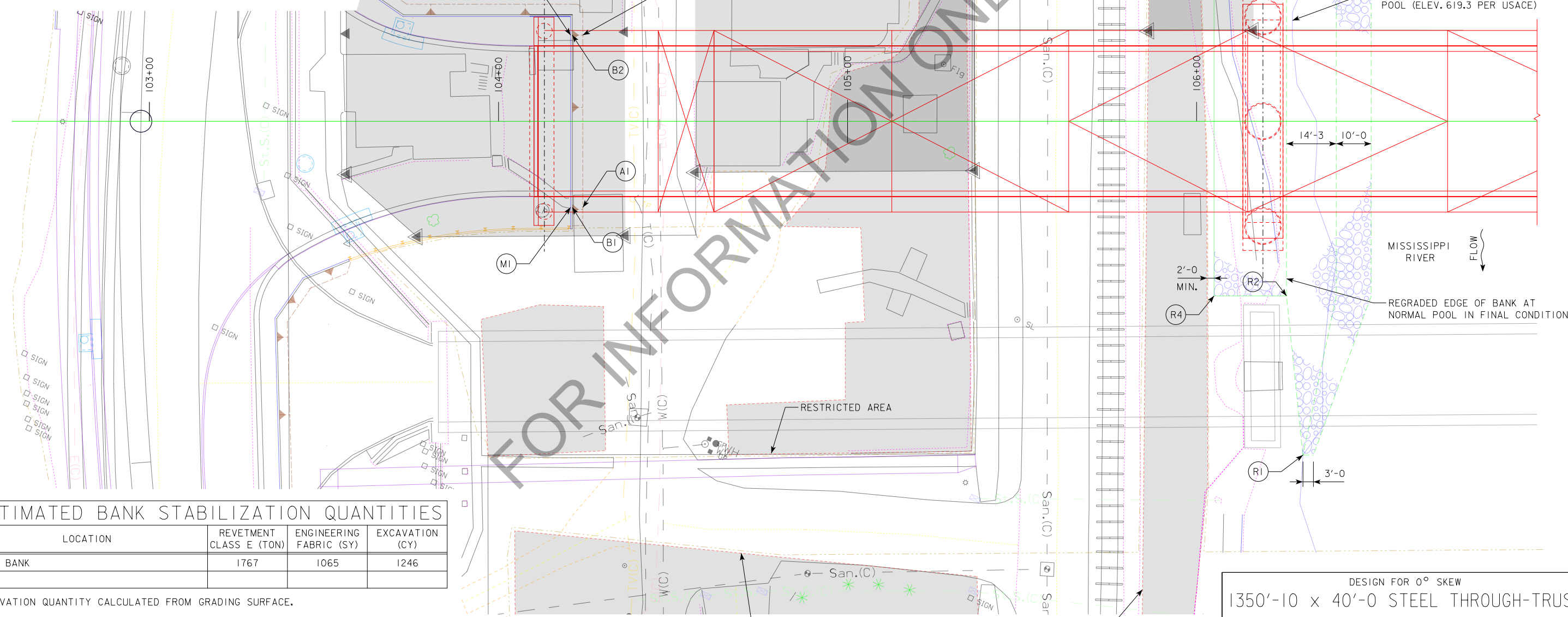
BERM SLOPE LOCATION TABLE

POINTS	STATION	OFFSET	ELEVATION
A1	104+24.17	24.67' RT.	653.10
A2	104+24.17	24.67' LT.	654.70
B1	104+21.17	24.67' RT.	653.40
B2	104+21.17	24.67' LT.	655.00
M1	104+20.67	24.67' RT.	668.00
M2	104+20.67	24.67' LT.	668.00

BERM SLOPE ELEVATIONS REFLECT THE GRADING SURFACE



SECTION THRU EMBEDDED REVETMENT BANK STABILIZATION @ PIER 1



ESTIMATED BANK STABILIZATION QUANTITIES

LOCATION	REVTMENT CLASS E (TON)	ENGINEERING FABRIC (SY)	EXCAVATION (CY)
IOWA BANK	1767	1065	1246

EXCAVATION QUANTITY CALCULATED FROM GRADING SURFACE.

ROW LEGEND:

- ROW PERMANENT ACQUISITION
- ROW TEMPORARY EASEMENT

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

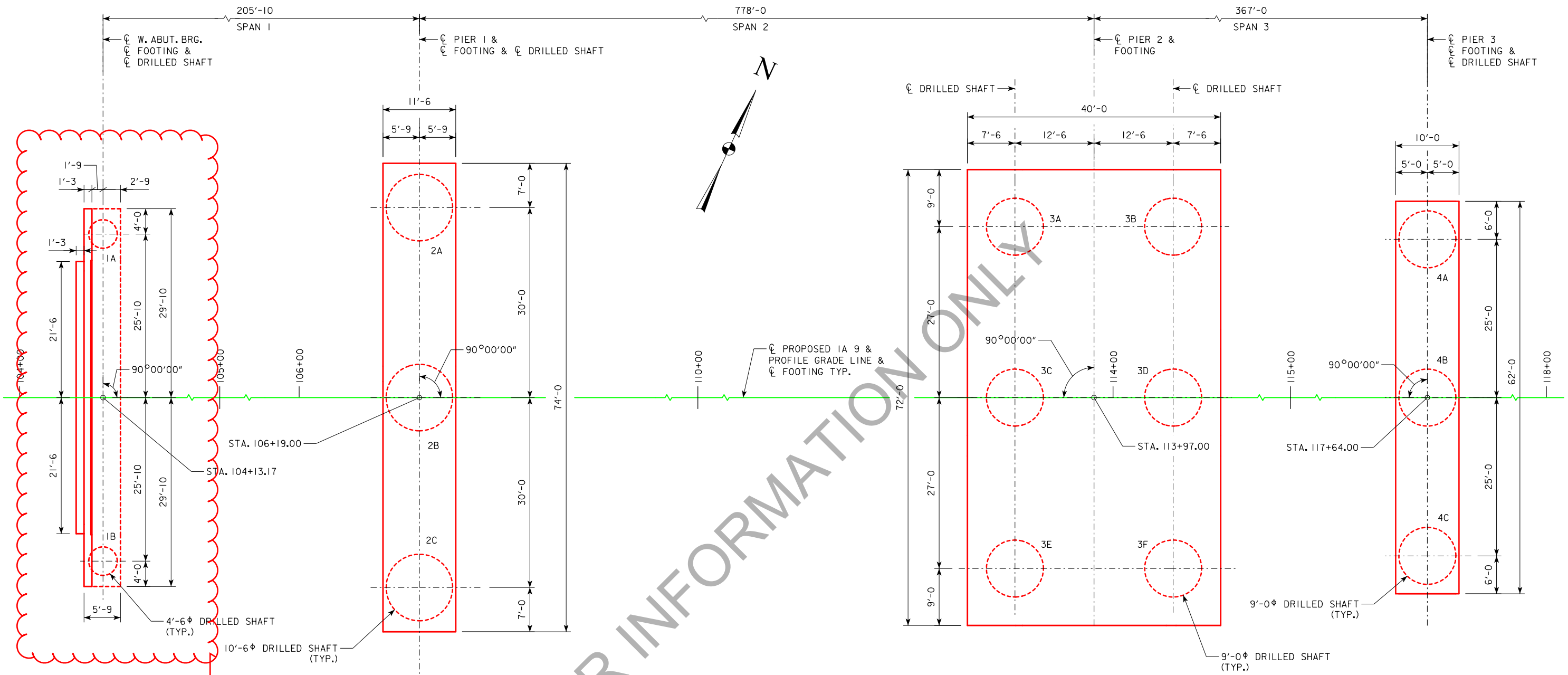
SITUATION PLAN - SITE

IA 9 STA. 112+72.71 MONTH, 202X

ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 9 OF 119 FILE NO. 31473 DESIGN NO. 124



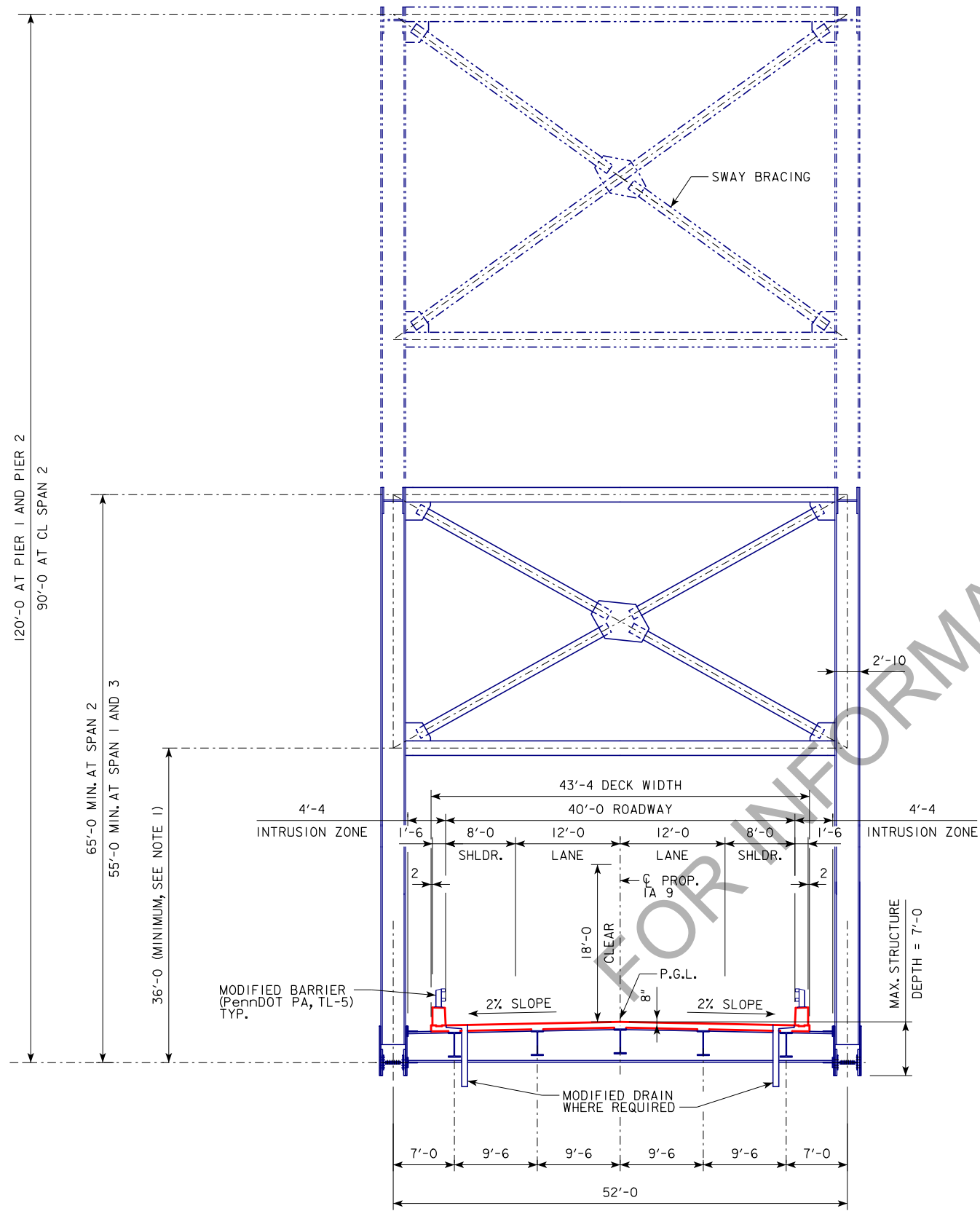
West Abutment shown is carry-over from D3 plans

SUBSTRUCTURE LAYOUT

BRIDGE COORDINATES				
LOCATION	CL W. ABUT. BRG	CL PIER 1	CL PIER 2	CL PIER 3
LEFT EDGE OF DECK	E=13495488.870 N=9435062.603	E=13495675.960 N=9435148.419	E=13496383.117 N=9435472.783	E=13496716.699 N=9435625.793
CL PRO. IA 9	E=13495497.903 N=9435042.909	E=13495684.993 N=9435128.725	E=13496392.151 N=9435453.090	E=13496725.733 N=9435606.100
RIGHT EDGE OF DECK	E=13495506.936 N=9435023.215	E=13495694.027 N=9435109.031	E=13496401.184 N=9435433.396	E=13496734.766 N=9435586.406

NOTES: AN ELECTRONIC FILE CONTAINING THE BRIDGE COORDINATE DATA IS AVAILABLE AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY THESE COORDINATES WITH THE PROJECT HORIZONTAL CONTROL INFORMATION PROVIDED IN THE ROAD PLANS.

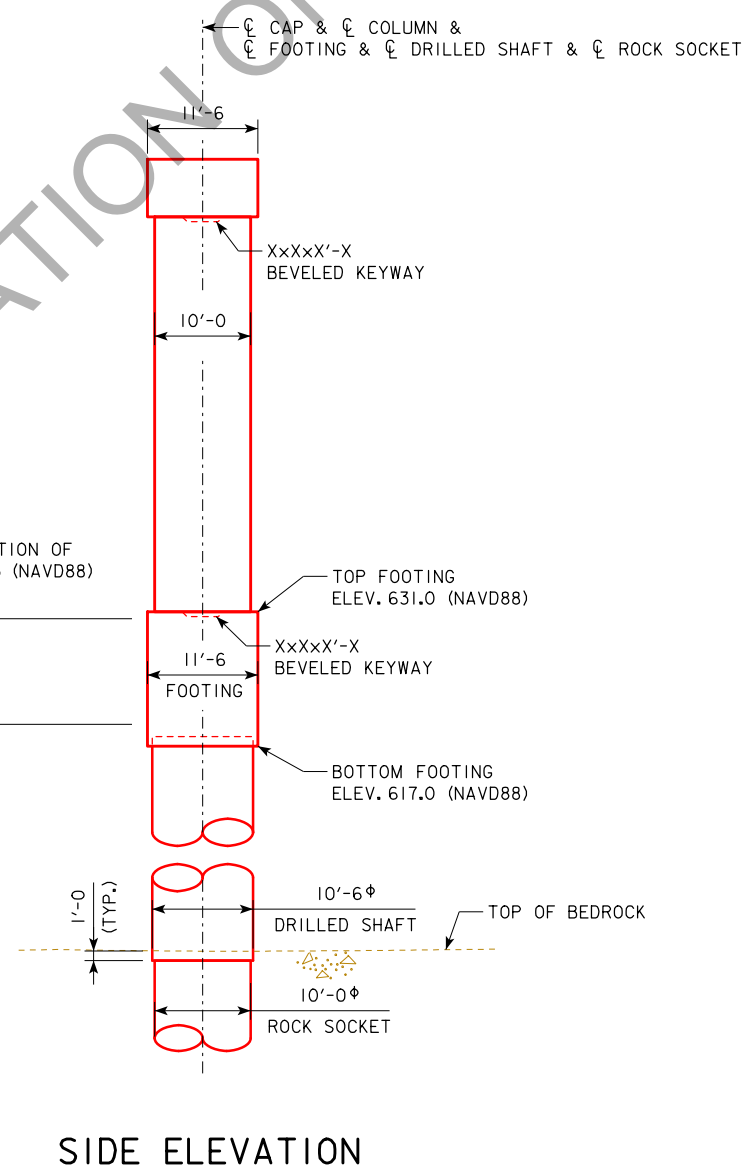
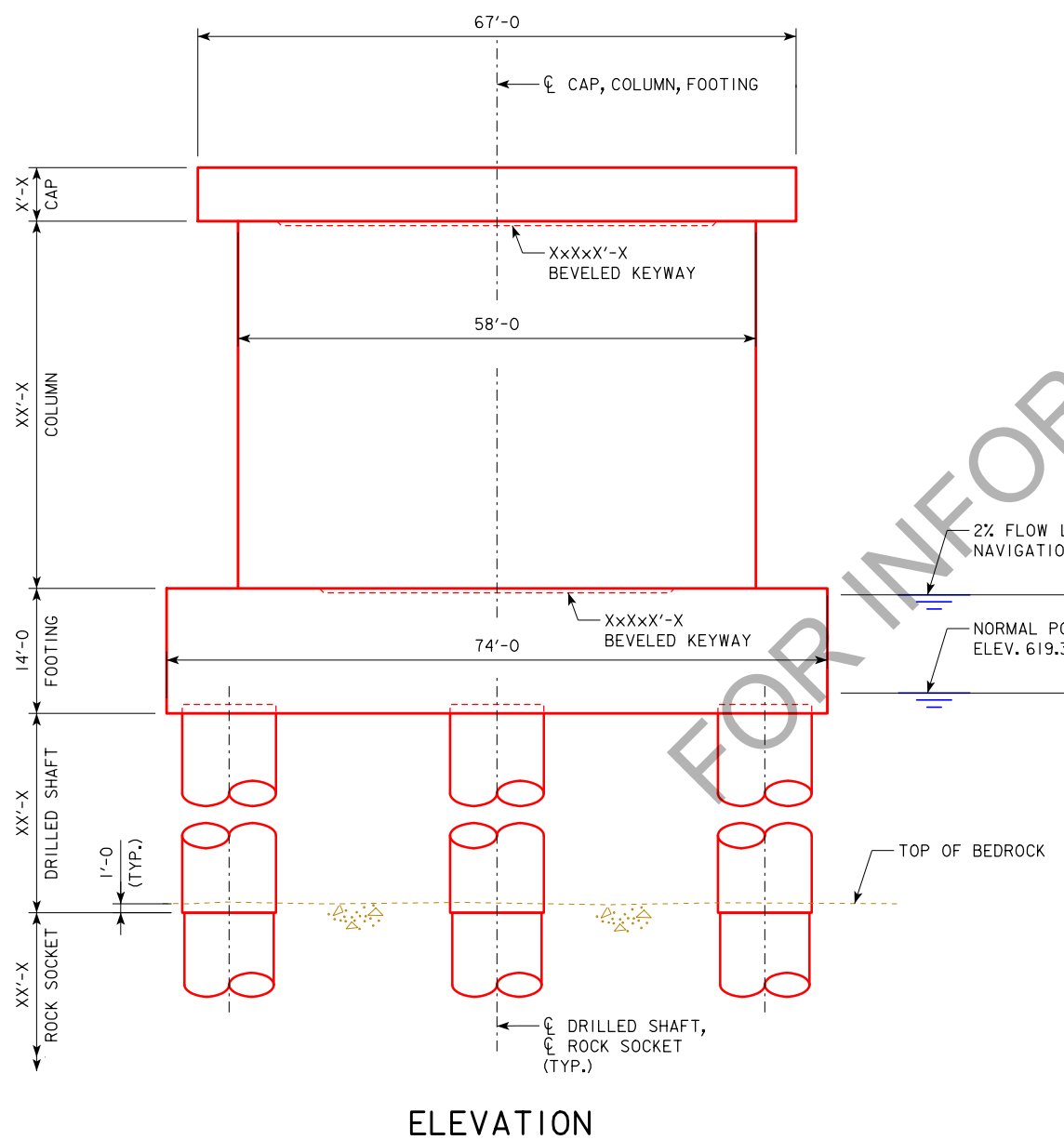
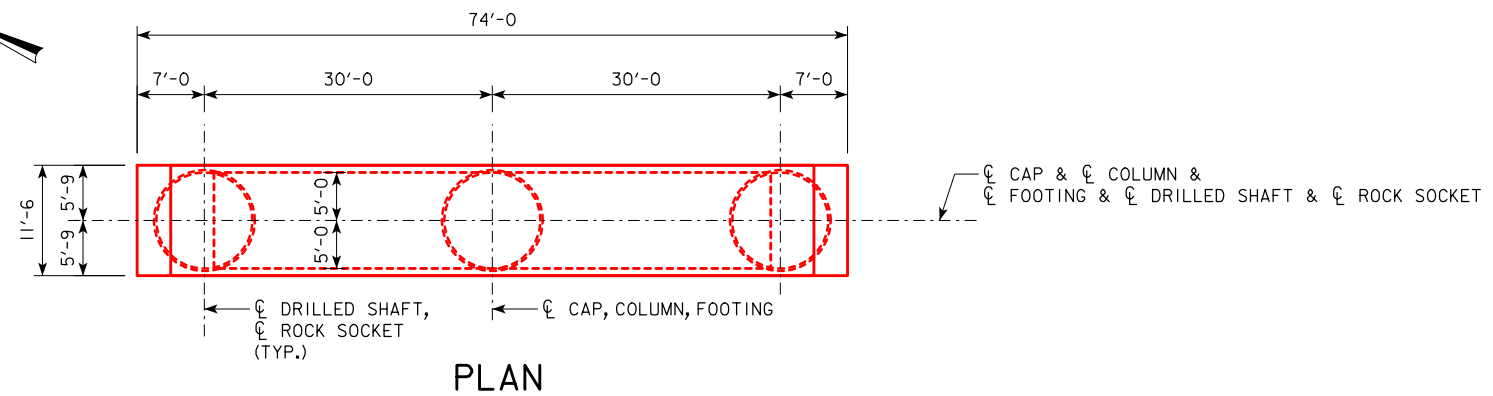
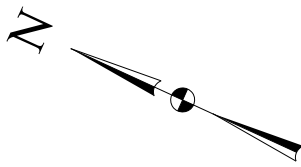
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
SUBSTRUCTURE LAYOUT - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 10 OF 119 FILE NO. 31473 DESIGN NO. 124



TRUSS SECTION A-A
(LOOKING UPSTATION)

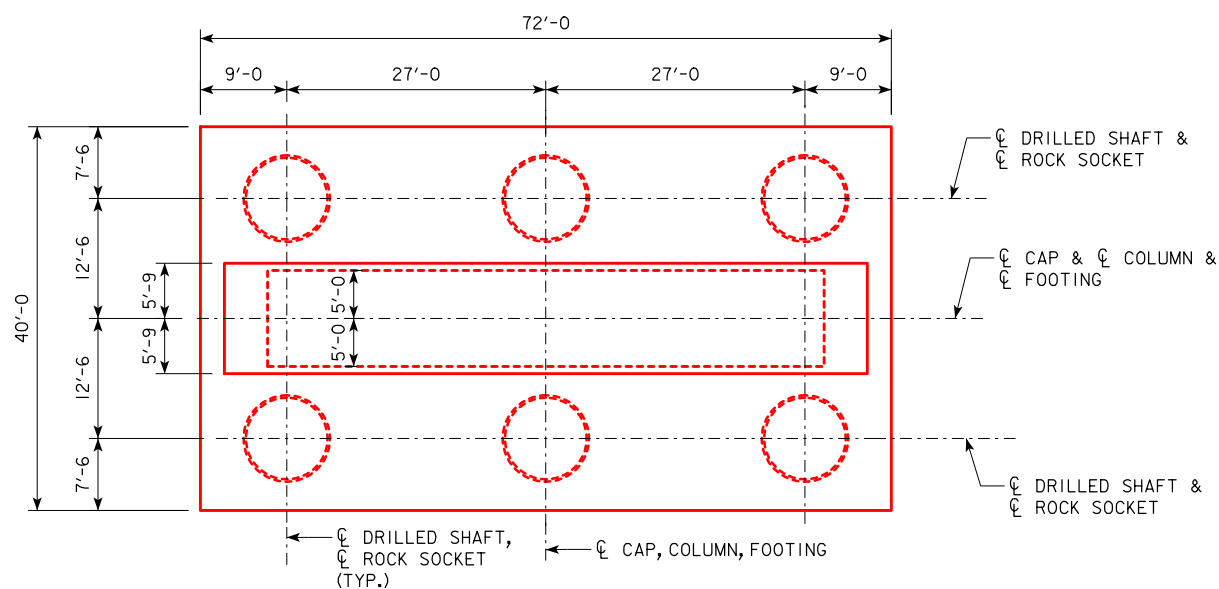
NOTES:
1. SEE TRUSS GEOMETRY 1 SHEET FOR THE LOCATIONS OF SWAY STRUTS.

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS TYPICAL SECTION
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 12 OF 119 FILE NO. 3173 DESIGN NO. 124

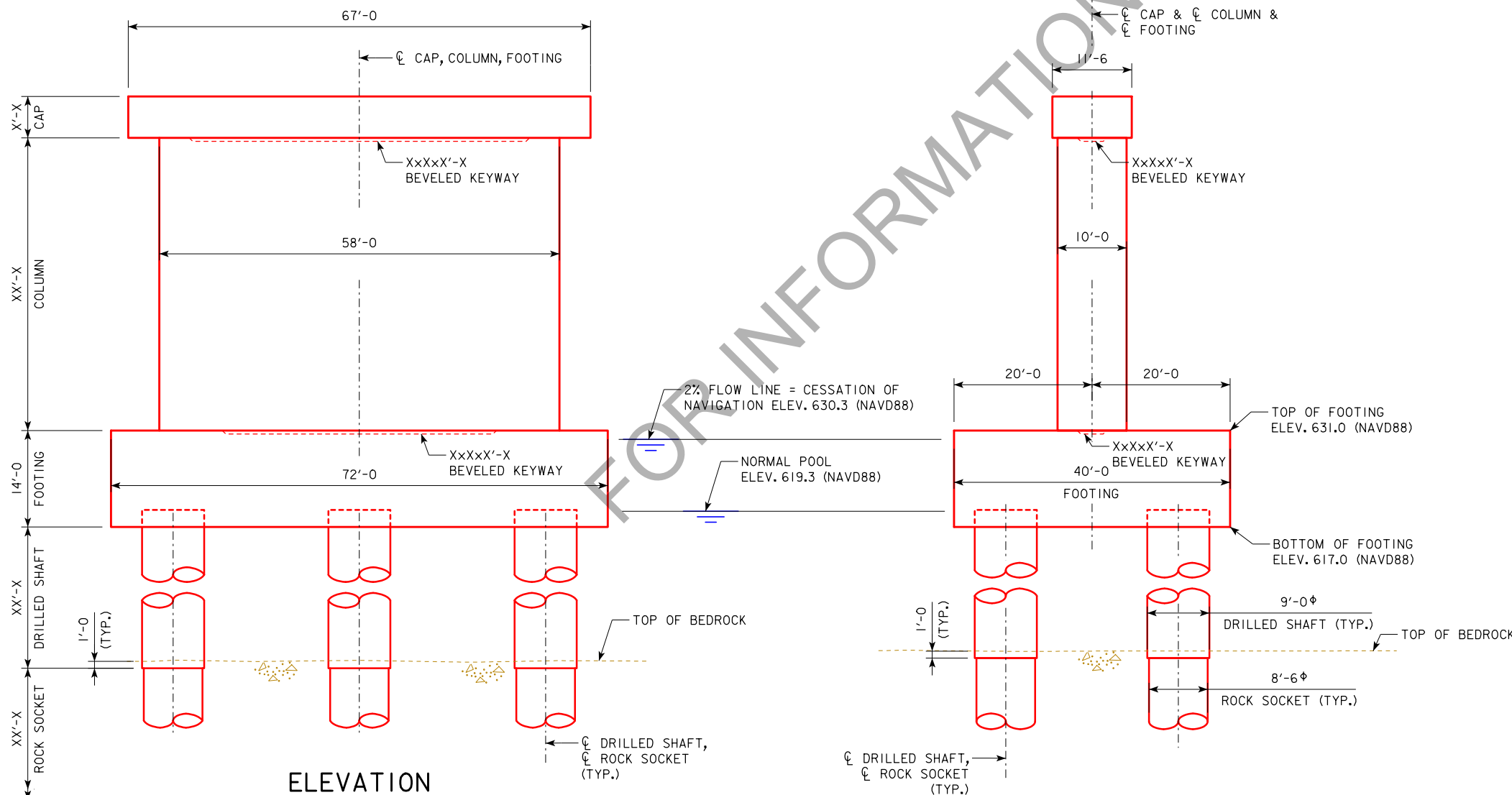


FOR INFORMATION ONLY

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
PIER I DETAILS
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 18 OF 119 FILE NO. 31473 DESIGN NO. 124



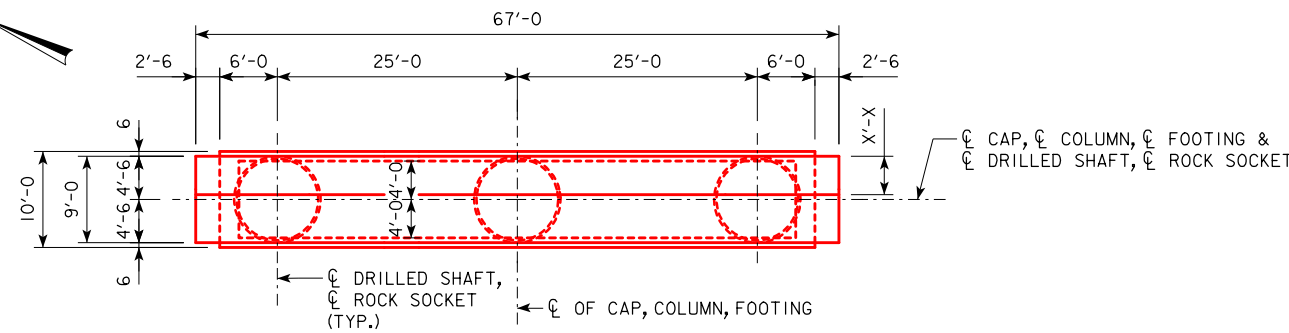
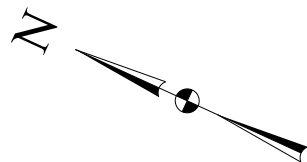
PLAN



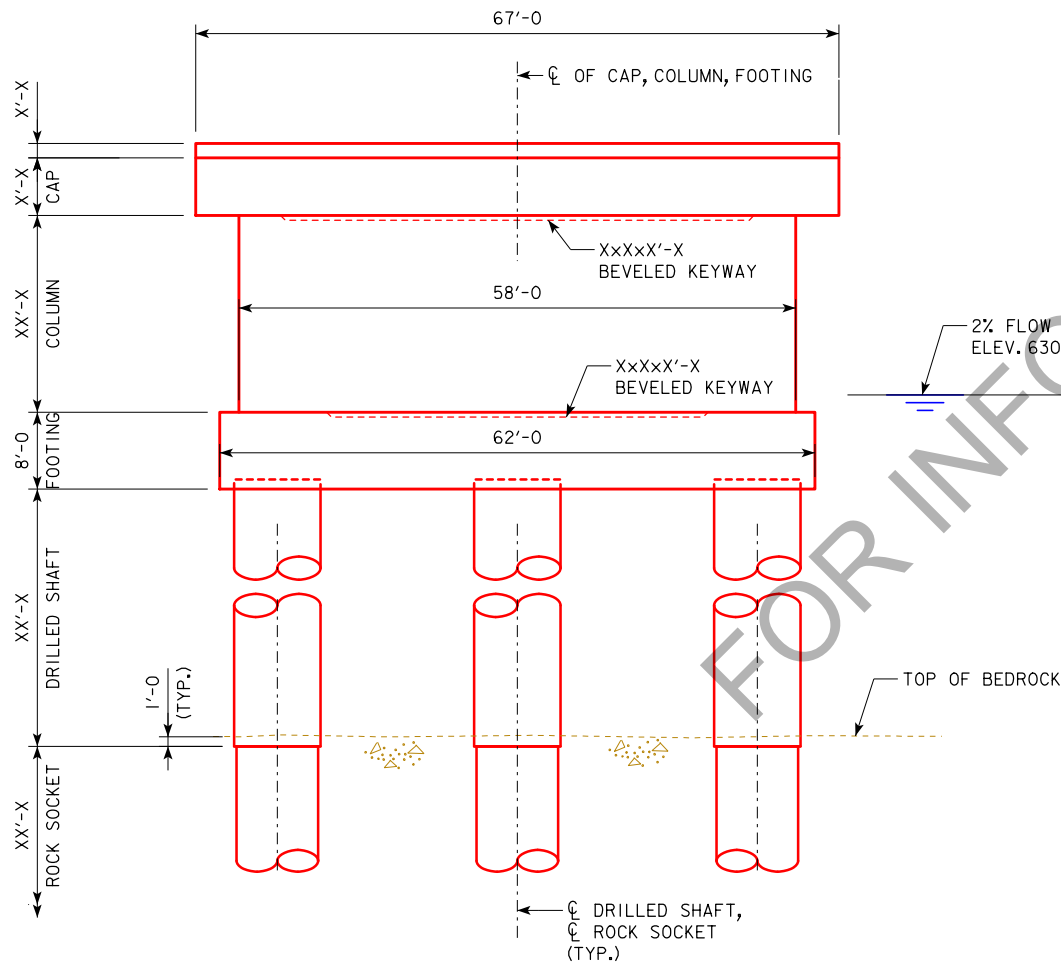
ELEVATION

SIDE ELEVATION

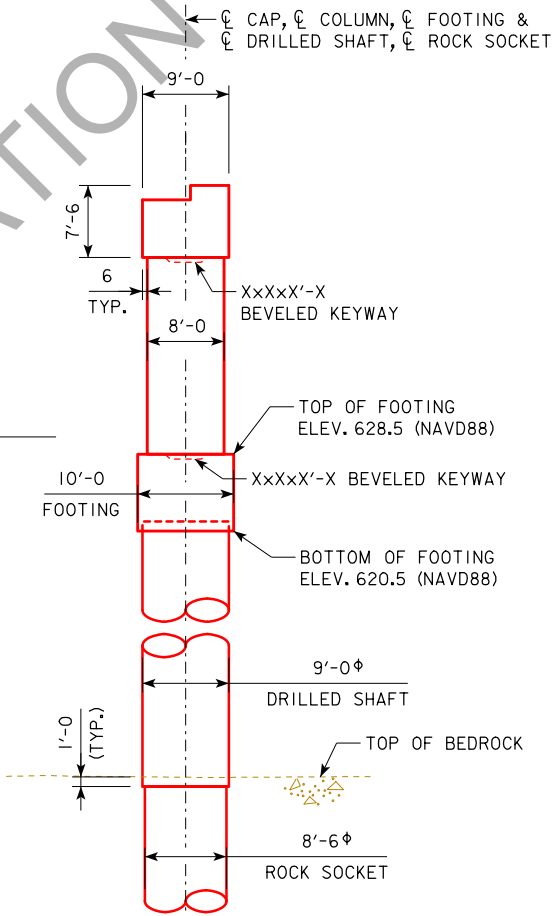
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
PIER 2 DETAILS
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 24 OF 119 FILE NO. 31473 DESIGN NO. 124



PLAN



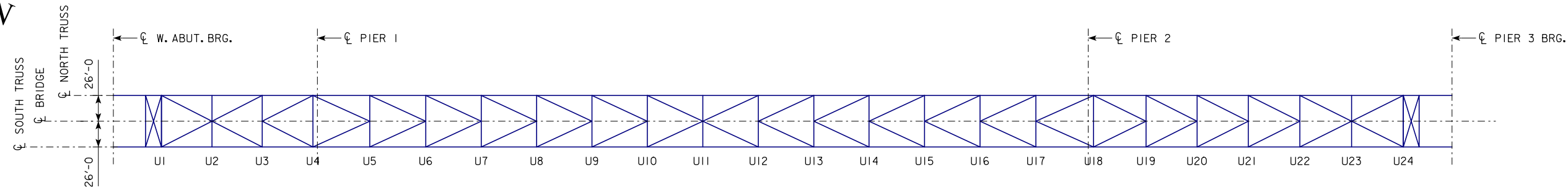
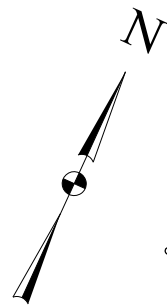
ELEVATION



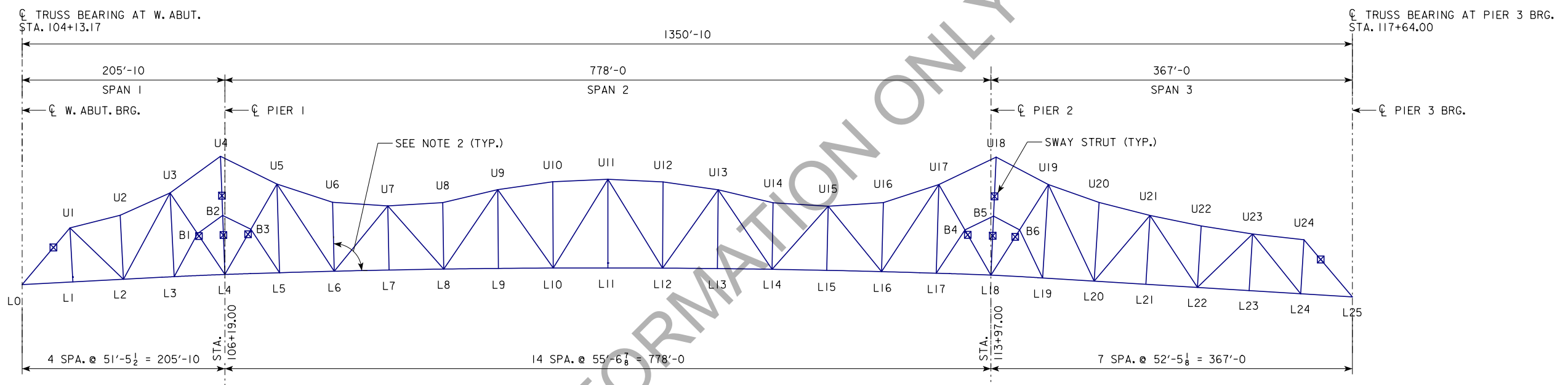
SIDE ELEVATION

FOR INFORMATION ONLY

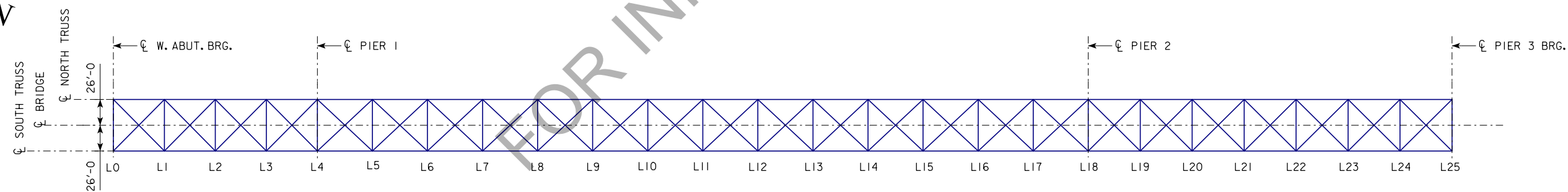
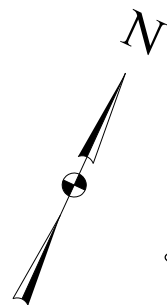
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
PIER 3 DETAILS
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 30 OF 119 FILE NO. 31473 DESIGN NO. 124



UPPER LATERAL BRACING PLAN



TRUSS ELEVATION

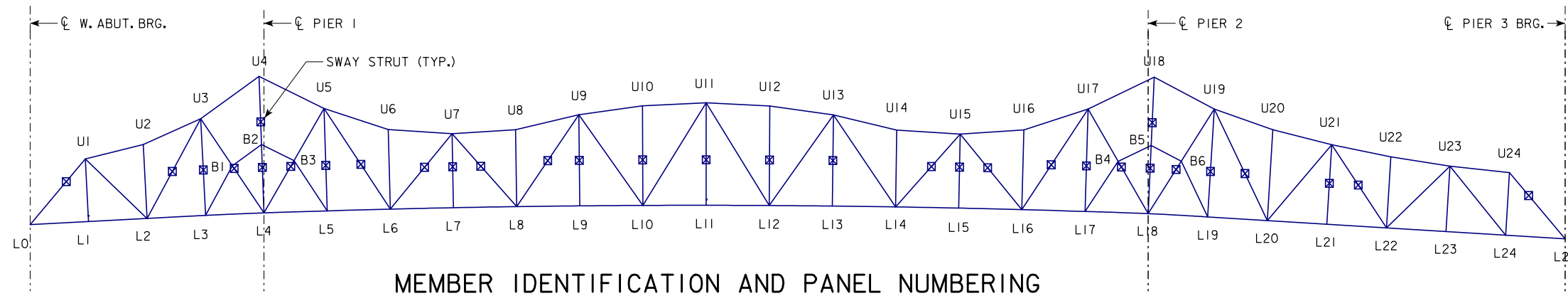


LOWER LATERAL BRACING PLAN

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL, UNLESS NOTED OTHERWISE.
2. THE TRUSS VERTICALS ARE PERPENDICULAR TO PROFILE GRADE.
3. L3-B1, B1-B2, B2-B3, B3-L5, L17-B4, B4-B5, B5-B6, B6-L19 ARE SECONDARY MEMBERS.

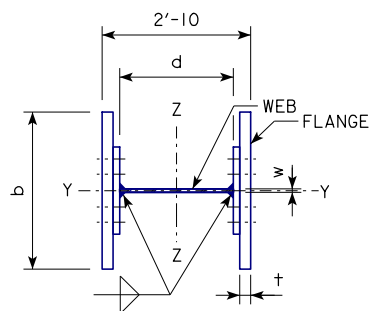
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS GEOMETRY - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 39 OF 119 FILE NO. 31473 DESIGN NO. 124



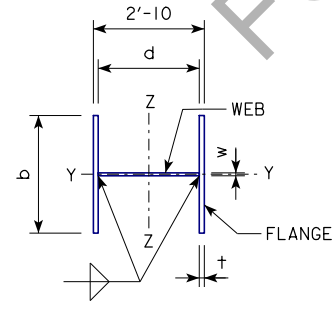
- NOTES:
1. ALL DIMENSIONS SHOWN ARE HORIZONTAL, UNLESS NOTED OTHERWISE.
 2. TRUSS MEMBER LENGTHS SHOWN ARE FROM PANEL POINT TO PANEL POINT WITHOUT CAMBER OR TEMPERATURE CORRECTIONS.
 3. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

MEMBER IDENTIFICATION AND PANEL NUMBERING

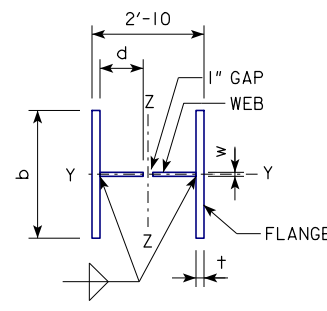
LOWER CHORD									UPPER CHORD									VERTICALS									DIAGONALS								
MEMBER	TYPE	MATERIAL GRADE	SRM/IRM	LENGTH (ft)	WEB		FLANGE		MEMBER	TYPE	MATERIAL GRADE	SRM/IRM	LENGTH (ft)	WEB		FLANGE		MEMBER	TYPE	MATERIAL GRADE	SRM/IRM	LENGTH (ft)	WEB		FLANGE		MEMBER	TYPE	MATERIAL GRADE	SRM/IRM	LENGTH (ft)	WEB		FLANGE	
					d (in)	w (in)	b (in)	t (in)						d (in)	w (in)	b (in)	t (in)						d (in)	w (in)	b (in)	t (in)						d (in)	w (in)	b (in)	t (in)
L0 - L1	H*	-	IRM	51.53	-	-	-	-	U1 - U2	H*	-	IRM	52.49	-	-	-	-	L1 - U1	II T	-	SRM	55.00	-	-	-	-	L0 - U1	H	-	-	75.37	-	-	-	-
L1 - L2	H*	-	IRM	51.53	-	-	-	-	U2 - U3	H*	-	IRM	55.51	-	-	-	-	L2 - U2	H*	-	IRM	65.00	-	-	-	-	U1 - L2	H*	-	IRM	75.37	-	-	-	-
L2 - L3	H*	-	IRM	51.53	-	-	-	-	U3 - U4	II T	-	SRM	63.37	-	-	-	-	L3 - U3	II T	-	SRM	85.00	-	-	-	-	L2 - U3	II T	-	SRM	99.52	-	-	-	-
L3 - L4	H*	-	IRM	51.51	-	-	-	-	U4 - U5	II T	-	SRM	63.82	-	-	-	-	L4 - U4	H	-	-	120.00	-	-	-	-	U3 - L4	H	-	-	99.67	-	-	-	-
L4 - L5	H*	-	IRM	55.60	-	-	-	-	U5 - U6	H	-	-	59.46	-	-	-	-	L5 - U5	II T	-	SRM	90.00	-	-	-	-	L4 - U5	H	-	-	105.86	-	-	-	-
L5 - L6	H*	-	IRM	55.59	-	-	-	-	U6 - U7	H	-	-	56.15	-	-	-	-	L6 - U6	H	-	-	70.00	-	-	-	-	U5 - L6	II T**	-	SRM	105.90	-	-	-	-
L6 - L7	H*	-	IRM	55.59	-	-	-	-	U7 - U8	H	-	-	55.98	-	-	-	-	L7 - U7	II T	-	SRM	65.00	-	-	-	-	L6 - U7	H	-	-	85.63	-	-	-	-
L7 - L8	H*	-	IRM	55.58	-	-	-	-	U8 - U9	H	-	-	57.33	-	-	-	-	L8 - U8	H	-	-	67.50	-	-	-	-	U7 - L8	II T	-	SRM	85.63	-	-	-	-
L8 - L9	H*	-	IRM	55.58	-	-	-	-	U9 - U10	H	-	-	56.50	-	-	-	-	L9 - U9	II T	-	SRM	80.00	-	-	-	-	L8 - U9	II T	-	SRM	97.53	-	-	-	-
L9 - L10	H*	-	IRM	55.57	-	-	-	-	U10 - U11	H	-	-	56.08	-	-	-	-	L10 - U10	II T	-	SRM	87.50	-	-	-	-	U9 - L10	H*	-	IRM	97.52	-	-	-	-
L10 - L11	H*	-	IRM	55.57	-	-	-	-	U11 - U12	H	-	-	56.08	-	-	-	-	L11 - U11	II T	-	SRM	90.00	-	-	-	-	L10 - U11	H*	-	IRM	105.90	-	-	-	-
L11 - L12	H*	-	IRM	55.57	-	-	-	-	U12 - U13	H	-	-	56.50	-	-	-	-	L12 - U12	II T	-	SRM	87.50	-	-	-	-	U11 - L12	H*	-	IRM	105.90	-	-	-	-
L12 - L13	H*	-	IRM	55.57	-	-	-	-	U13 - U14	H	-	-	57.33	-	-	-	-	L13 - U13	II T	-	SRM	80.00	-	-	-	-	L12 - U13	H*	-	IRM	97.53	-	-	-	-
L13 - L14	H*	-	IRM	55.58	-	-	-	-	U14 - U15	H	-	-	55.98	-	-	-	-	L14 - U14	H	-	-	67.50	-	-	-	-	U13 - L14	H*	-	IRM	97.53	-	-	-	-
L14 - L15	H*	-	IRM	55.58	-	-	-	-	U15 - U16	H	-	-	56.16	-	-	-	-	L15 - U15	II T	-	SRM	65.00	-	-	-	-	L14 - U15	II T**	-	SRM	85.63	-	-	-	-
L15 - L16	H*	-	IRM	55.59	-	-	-	-	U16 - U17	H	-	-	59.34	-	-	-	-	L16 - U16	H	-	-	70.00	-	-	-	-	U15 - L16	H	-	-	85.64	-	-	-	-
L16 - L17	H*	-	IRM	55.59	-	-	-	-	U17 - U18	II T	-	SRM	64.58	-	-	-	-	L17 - U17	II T	-	SRM	90.00	-	-	-	-	L16 - U17	II T**	-	SRM	105.85	-	-	-	-
L17 - L18	H*	-	IRM	55.61	-	-	-	-	U18 - U19	II T	-	SRM	59.79	-	-	-	-	L18 - U18	H	-	-	120.00	-	-	-	-	U17 - L18	H	-	-	106.06	-	-	-	-
L18 - L19	H*	-	-	52.50	-	-	-	-	U19 - U20	H*	-	IRM	54.63	-	-	-	-	L19 - U19	II T	-	SRM	95.00	-	-	-	-	L18 - U19	H	-	-	108.89	-	-	-	-
L19 - L20	H*	-	-	52.53	-	-	-	-	U20 - U21	H*	-	IRM	53.47	-	-	-	-	L20 - U20	H*	-	IRM	80.00	-	-	-	-	U19 - L20	II T	-	SRM	108.55	-	-	-	-
L20 - L21	H*	-	IRM	52.53	-	-	-	-	U21 - U22	H	-	-	53.06	-	-	-	-	L21 - U21	II T	-	SRM	70.00	-	-	-	-	L20 - U21	H	-	-	87.52	-	-	-	-
L21 - L22	H*	-	IRM	52.53	-	-	-	-	U22 - U23	H	-	-	52.76	-	-	-	-	L22 - U22	H	-	-	62.50	-	-	-	-	U21 - L22	II T	-	SRM	87.52	-	-	-	-
L22 - L23	H*	-	IRM	52.53	-	-	-	-	U23 - U24	H	-	-	52.59	-	-	-	-	L23 - U23	II T	-	SRM	57.50	-	-	-	-	L22 - U23	H*	-	IRM	77.88	-	-	-	-
L23 - L24	H*	-	IRM	52.53	-	-	-	-										L24 - U24	II T	-	SRM	55.00	-	-	-	-	U23 - L24	H	-	-	77.88	-	-	-	-
L24 - L25	H*	-	IRM	52.53	-	-	-	-																		U24 - L25	H	-	-	76.05	-	-	-	-	



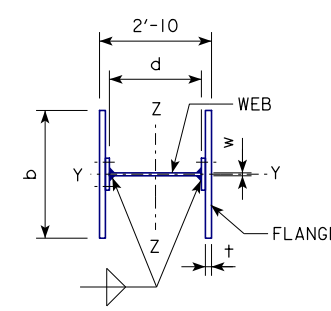
TYP. LOWER CHORD MEMBER BUILT-UP H SECTION



TYP. COMPRESSION MEMBER H SECTION



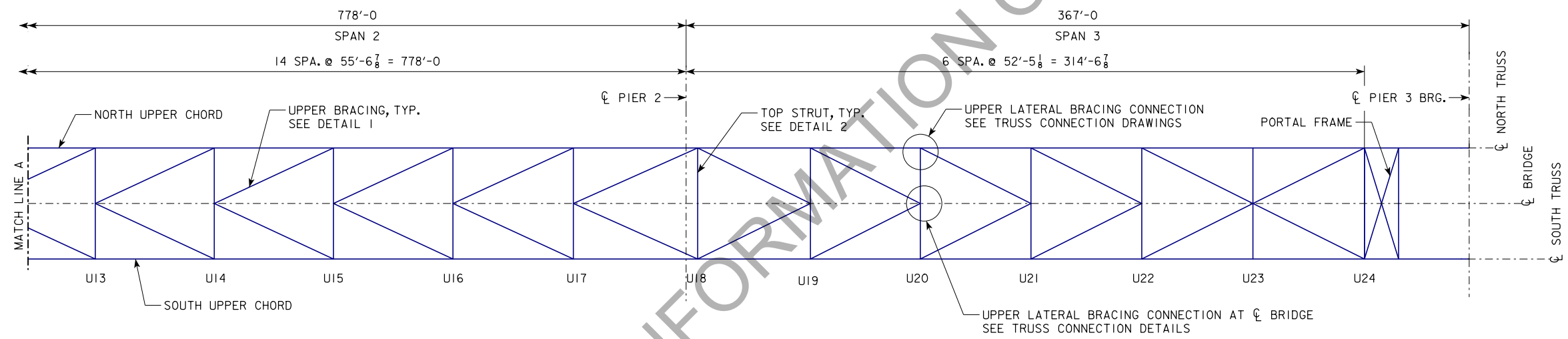
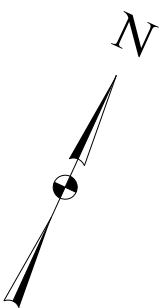
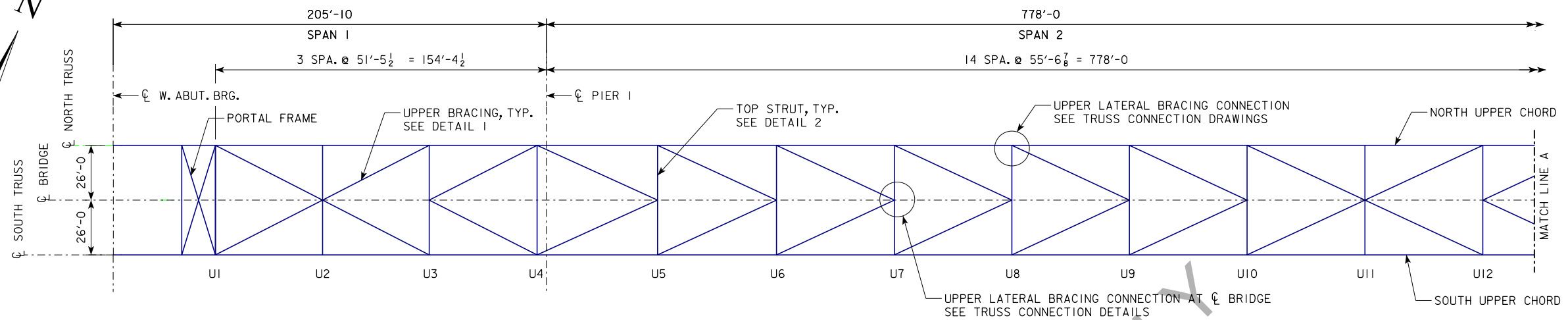
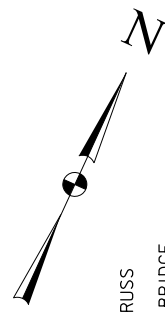
TYP. TENSION MEMBER II T SECTIONS



TYP. MEMBER WITH STRESS REVERSAL BUILT-UP H SECTION

II T - PARALLEL T SECTIONS.
* BOLTED BUILT-UP H SECTION
** PARALLEL T SECTIONS WITH PT BARS

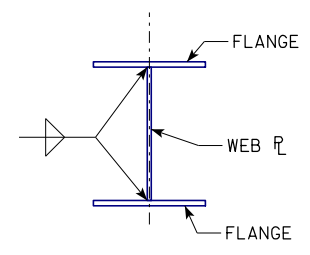
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS GEOMETRY - 2A
 (REDUNDANCY CONCEPTS)
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 40A OF 119 FILE NO. 31473 DESIGN NO. 124



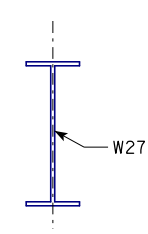
UPPER LATERAL BRACING PLAN

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL, UNLESS NOTED OTHERWISE.
2. DESIGN IS GOVERNED BY THE FOLLOWING CONCURRENT LOADS:
 - WIND LOADING;
 - FORCE EFFECTS DUE TO ASYMMETRY OF THE TRUSS DEAD LOAD
 - FORCE EFFECTS TO PROVIDE BRACING TO UPPER TRUSS CHORDS (DEFINED AS 1% OF THE MAXIMUM COMPRESSIVE LOAD IN THE UPPER TRUSS CHORDS)



DETAIL 1



DETAIL 2

DESIGN FOR 0° SKEW

1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

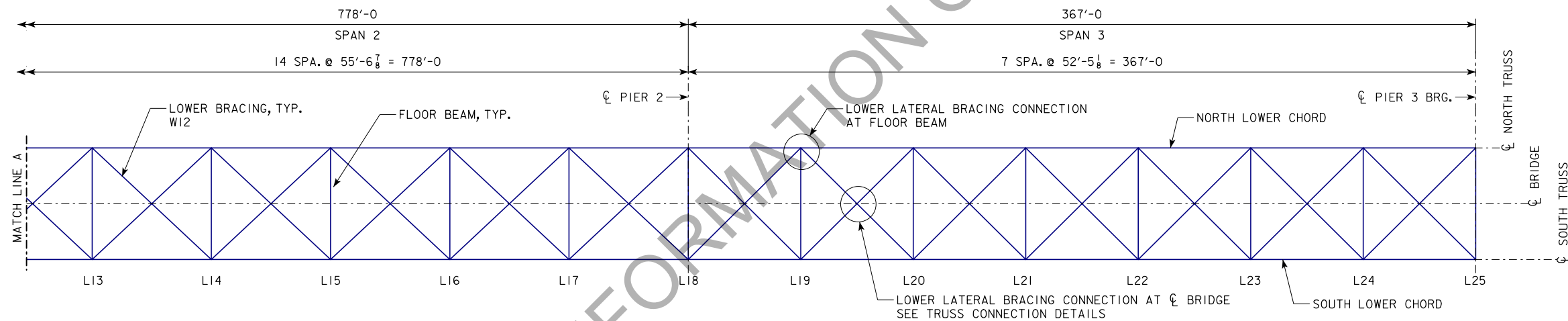
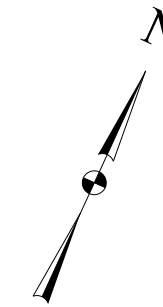
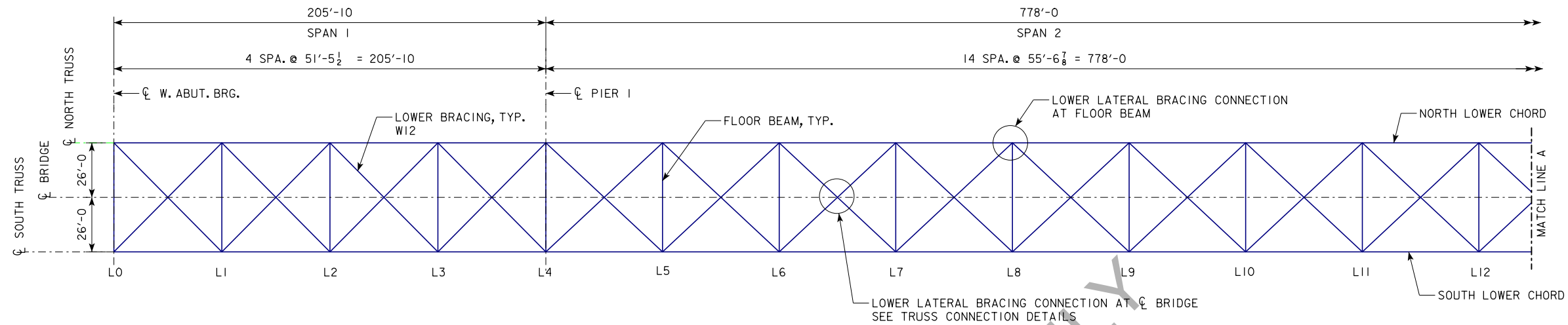
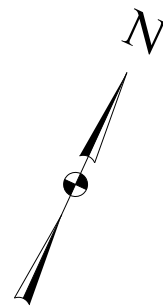
UPPER LATERAL BRACING PLAN

IA 9 STA. 112+72.71 MONTH, 202X

ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

DESIGN SHEET NO. 43 OF 119 FILE NO. 31473 DESIGN NO. 124



LOWER LATERAL BRACING PLAN

FOR INFORMATION ONLY

NOTES:

1. ALL DIMENSIONS SHOWN ARE HORIZONTAL, UNLESS NOTED OTHERWISE.
2. DESIGN IS GOVERNED BY THE FOLLOWING CONCURRENT LOADS:
 - WIND LOADING:
 - FORCE EFFECTS DUE TO ASYMMETRY OF THE TRUSS DEAD LOAD
 - FORCE EFFECTS TO PROVIDE BRACING TO LOWER TRUSS CHORDS (DEFINED AS 1% OF THE MAXIMUM COMPRESSIVE LOAD IN THE LOWER TRUSS CHORDS)
3. SERVICE LIMIT STATE CONNECTION DESIGN FORCE IS AS PER AASHTO LRFD CL.6I3.2.11.

DESIGN FOR 0° SKEW

1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

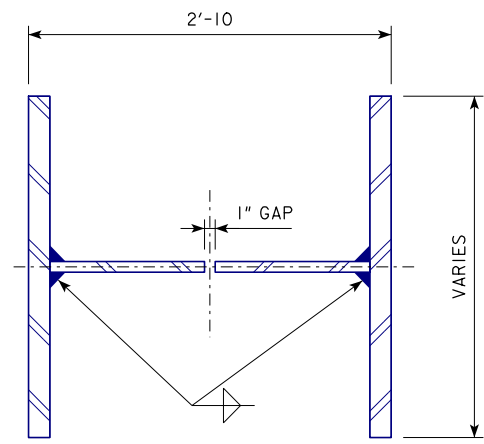
LOWER LATERAL BRACING PLAN

IA 9 STA. 112+72.71 MONTH, 202X

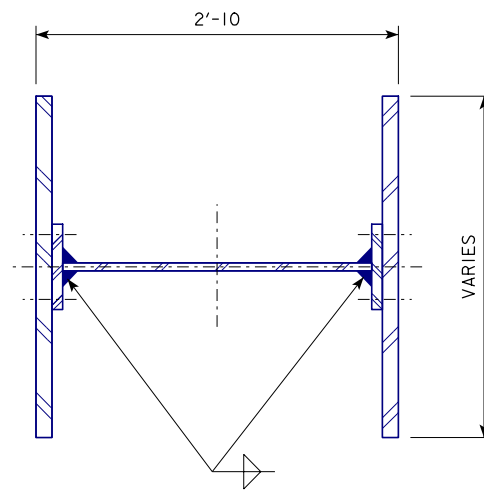
ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

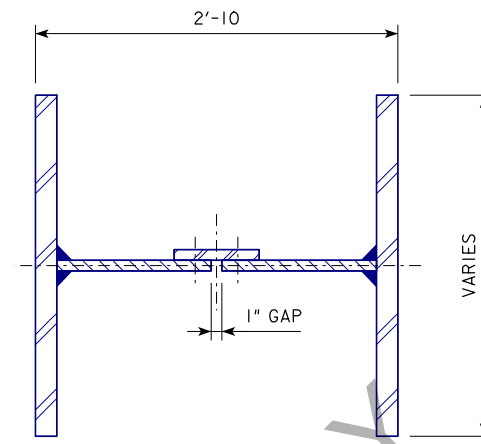
DESIGN SHEET NO. 44 OF 119 FILE NO. 31473 DESIGN NO. 124



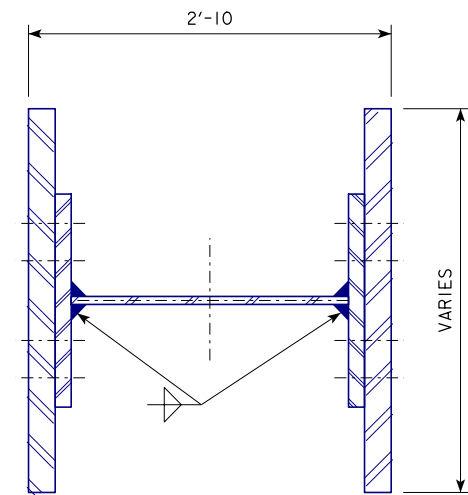
TYPICAL TENSION MEMBER
II T SECTIONS



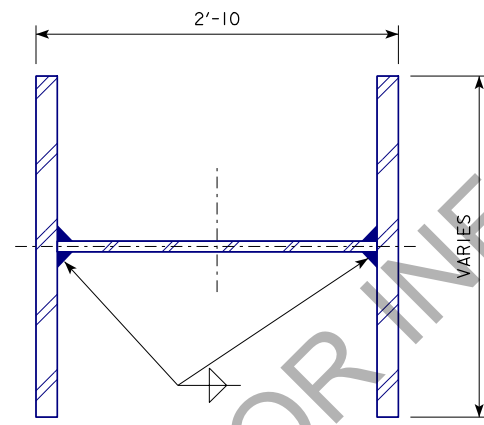
TYPICAL MEMBER WITH
STRESS REVERSALS
BUILT-UP H SECTION



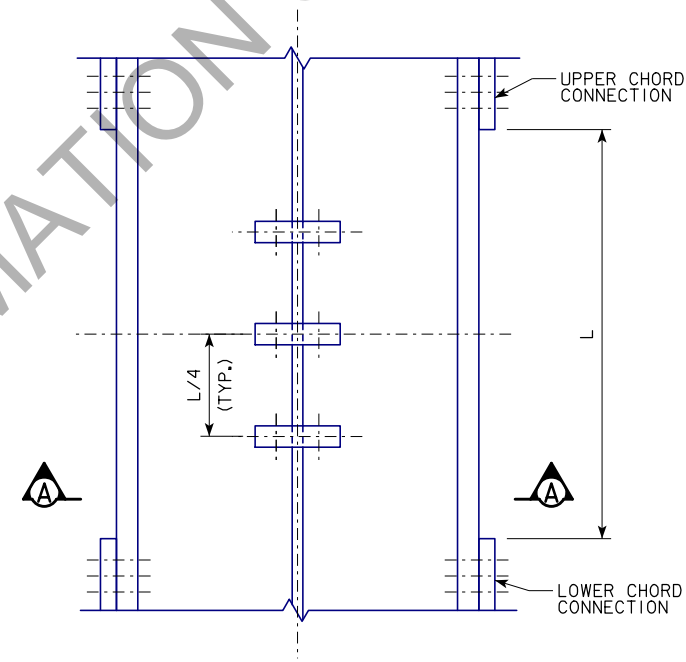
SECTION A-A



TYPICAL LOWER CHORD MEMBER
BUILT-UP H SECTION



TYPICAL COMPRESSION MEMBER
H SECTION

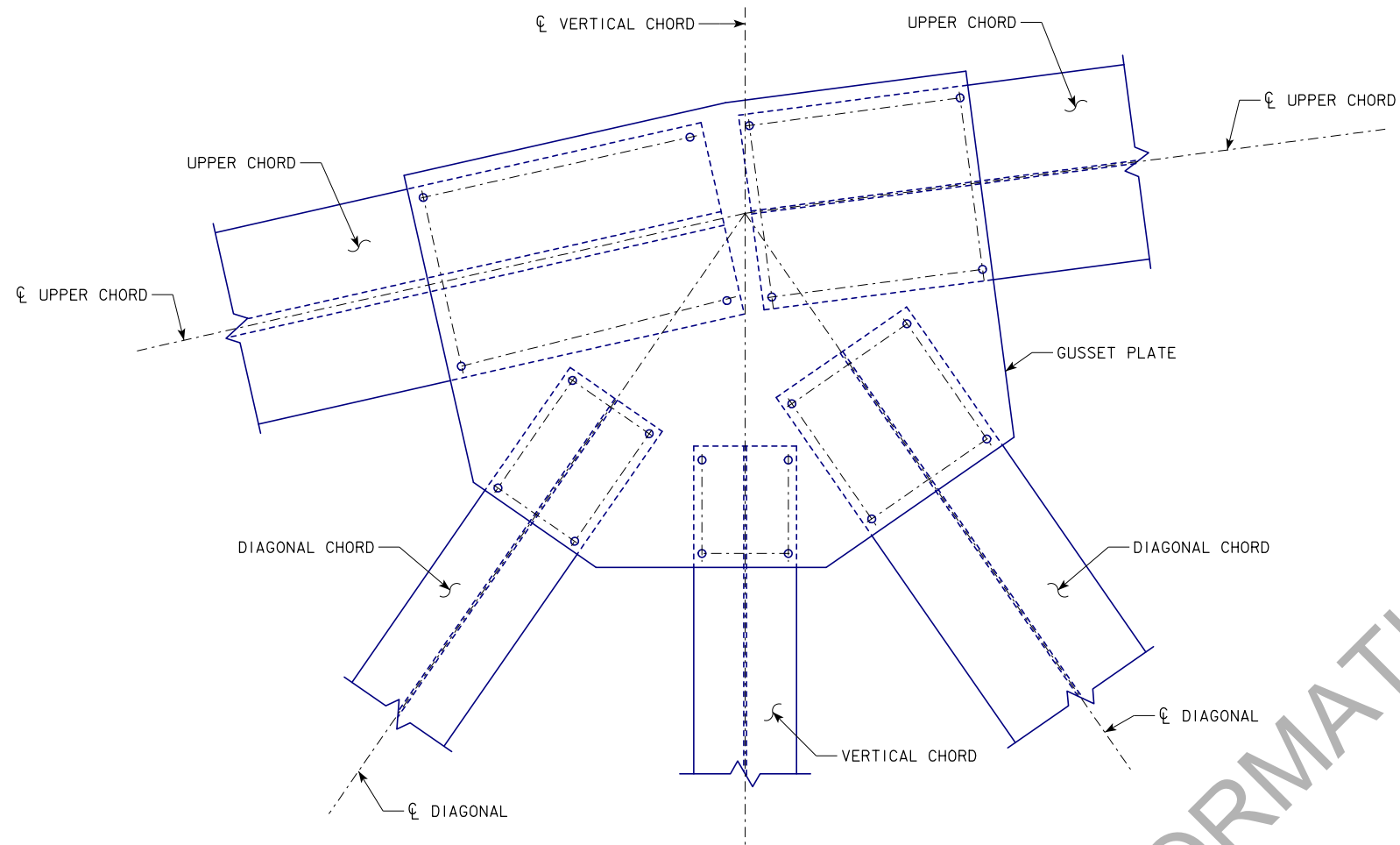


TYPICAL II T SECTION
BRACING

NOTES:

1. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS MEMBER DETAILS - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 48 OF 119 FILE NO. 31473 DESIGN NO. 124



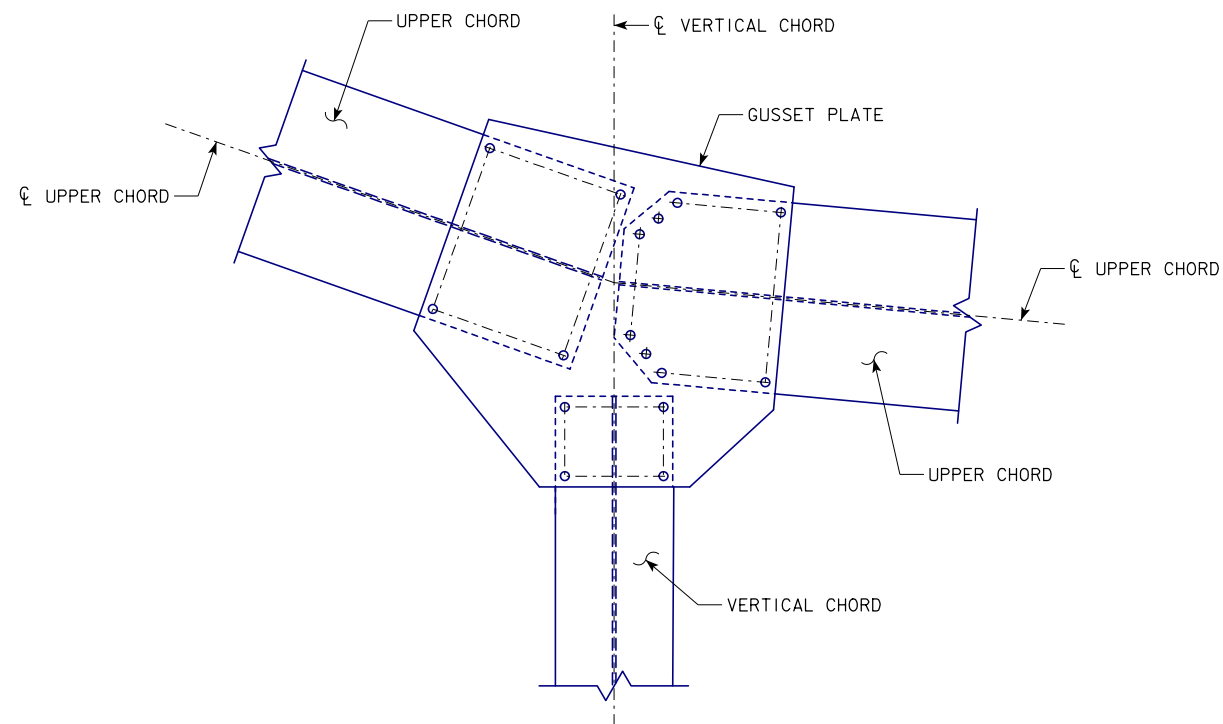
ELEVATION VIEW - UPPER CONNECTION
 (U9 SHOWN, ALL OTHER TYPICAL CONNECTIONS WITH VERTICAL AND DIAGONAL CHORDS SIMILAR)

FOR INFORMATION ONLY

NOTES:

1. FOR TRUSS GEOMETRY ON TYPE, GEOMETRY AND SIZES OF THE DIAGONALS, VERTICAL AND UPPER CHORDS, SEE SHEET 40.
2. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE $\frac{1}{16}$ INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
3. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.
4. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

DESIGN FOR 0° SKEW	
1350'-10 x 40'-0 STEEL THROUGH-TRUSS	
205'-10 & 367'-0 END SPANS	778'-0 INTERIOR SPAN
TRUSS JOINT UPPER NODE - I	
IA 9 STA. 112+72.71	MONTH, 202X
ALLAMAKEE COUNTY	
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION	
DESIGN SHEET NO. <u>53</u> OF <u>119</u>	FILE NO. <u>31473</u> DESIGN NO. <u>124</u>



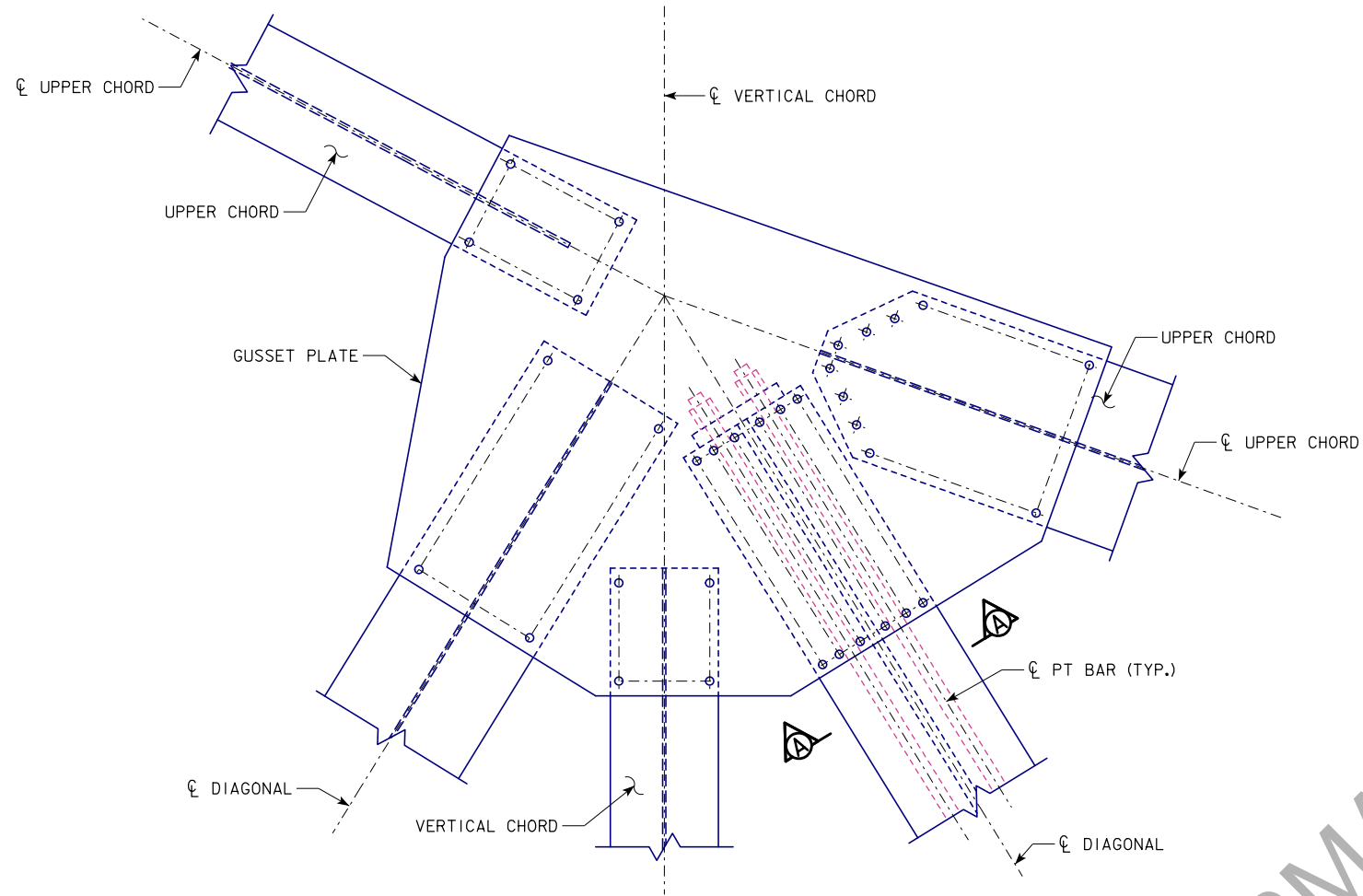
ELEVATION VIEW - UPPER CONNECTION
 (U6 SHOWN, ALL OTHER TYPICAL CONNECTIONS WITH VERTICAL CHORD SIMILAR)

FOR INFORMATION ONLY

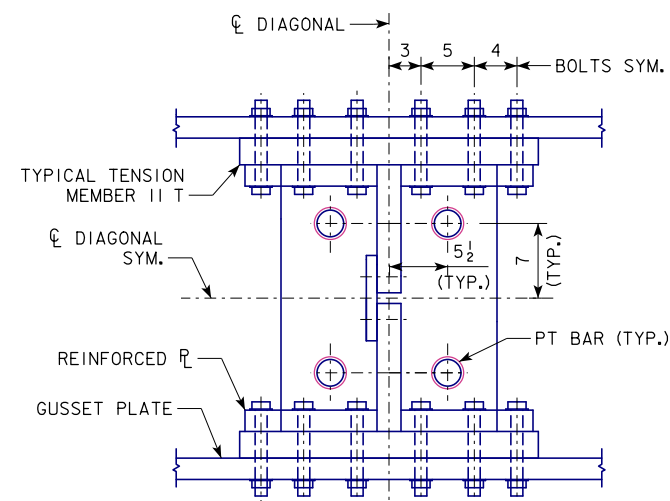
NOTES:

1. SEE TRUSS GEOMETRY FOR TYPE, GEOMETRY AND SIZES OF THE DIAGONALS, VERTICAL AND UPPER CHORDS.
2. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE $\frac{1}{16}$ INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
3. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.
4. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

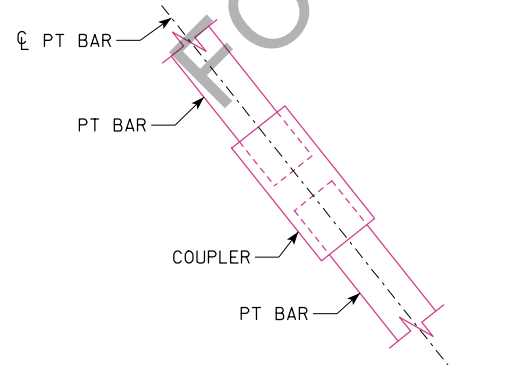
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS JOINT UPPER NODE - 2
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 54 OF 119 FILE NO. 31473 DESIGN NO. 124



ELEVATION VIEW - UPPER CONNECTION
(U5 SHOWN, U15 AND U17 SIMILAR)



SECTION A-A



COUPLER DETAIL

NOTES:

1. SEE TRUSS GEOMETRY FOR TYPE, GEOMETRY AND SIZES OF THE DIAGONALS, VERTICAL AND UPPER CHORDS.
2. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE $\frac{1}{16}$ INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
3. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.
4. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

DESIGN FOR 0° SKEW

1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

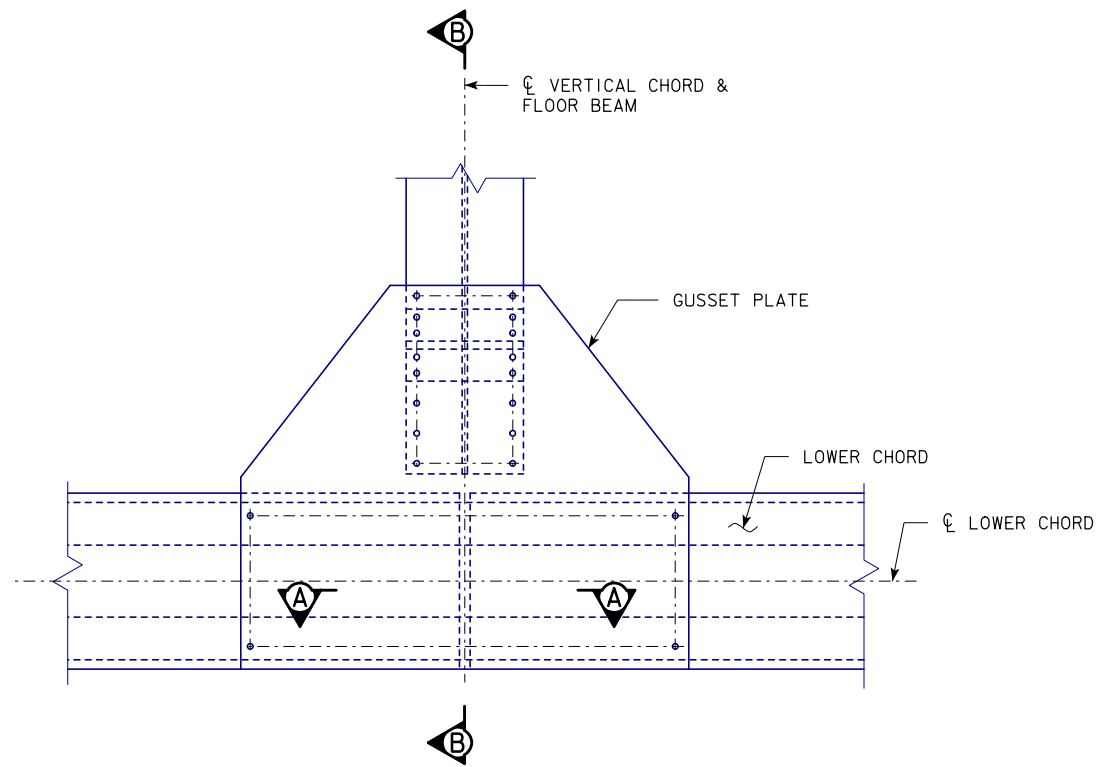
TRUSS JOINT UPPER NODE - 3

IA 9 STA. 112+72.71 MONTH, 202X

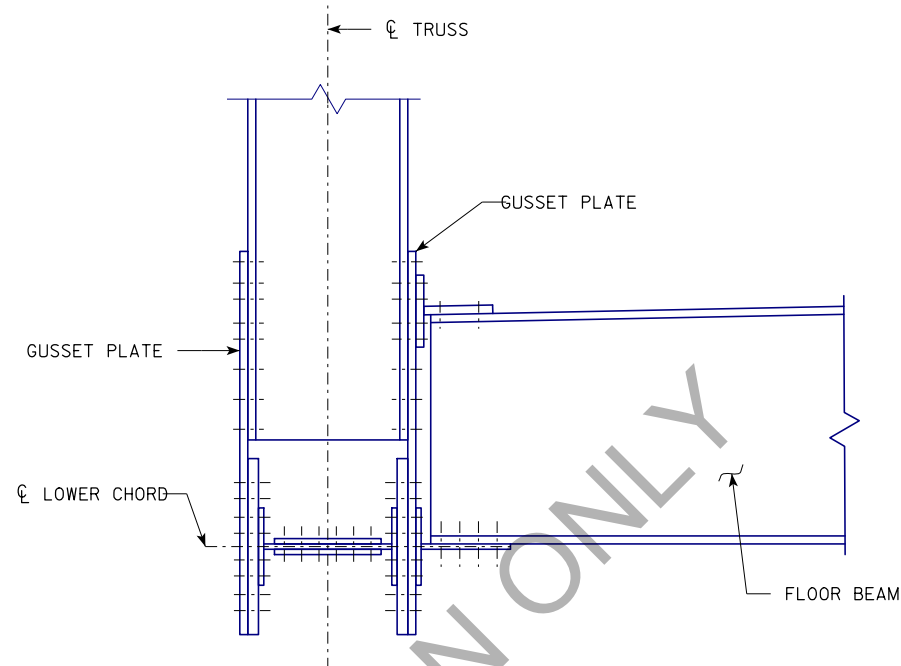
ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

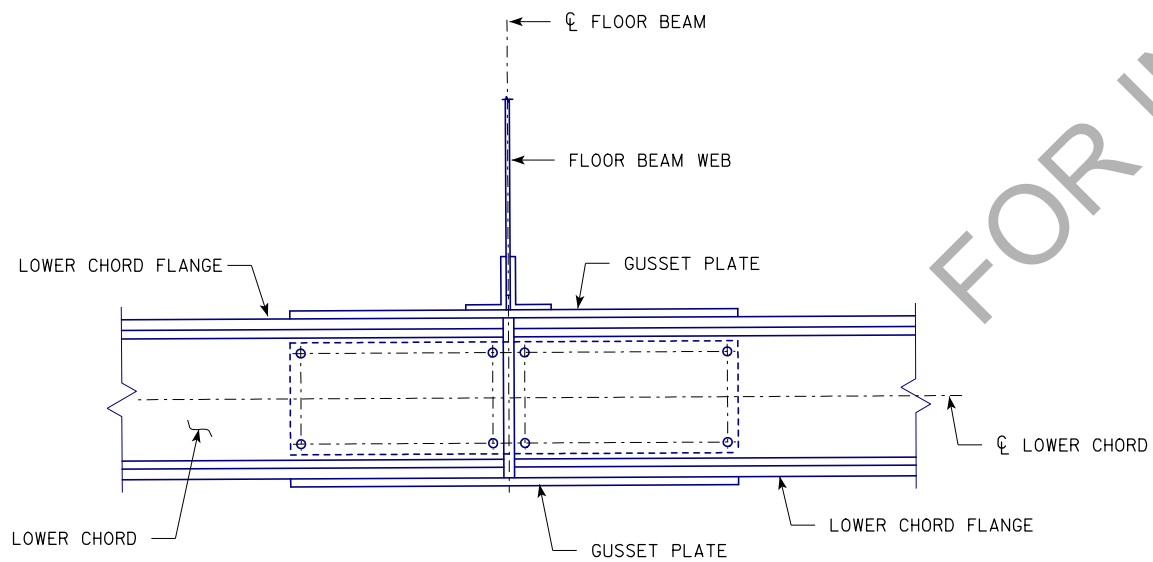
DESIGN SHEET NO. 55 OF 119 FILE NO. 31473 DESIGN NO. 124



ELEVATION VIEW - LOWER CONNECTION
(TYPICAL CONNECTION AT VERTICAL CHORD)



SECTION B-B



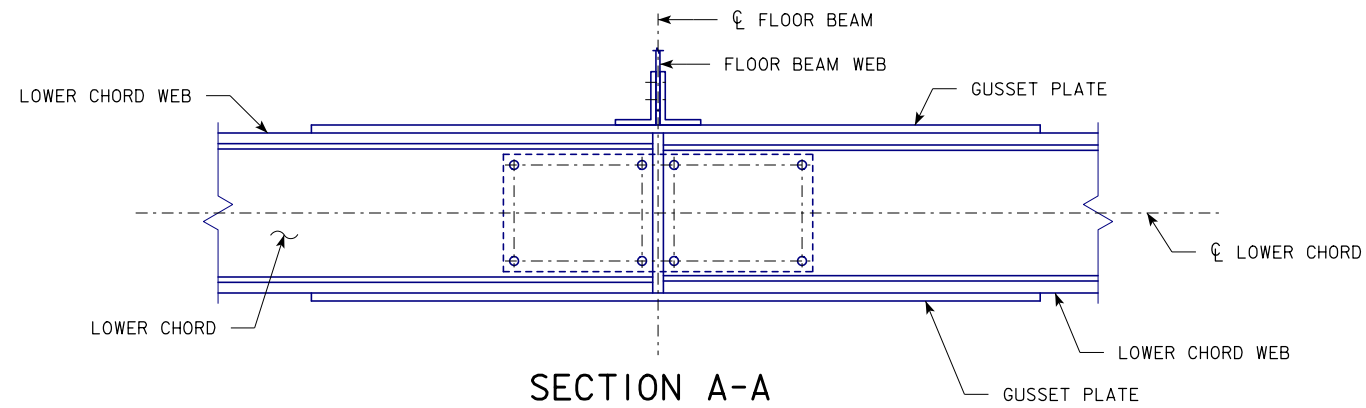
SECTION A-A

NOTES:

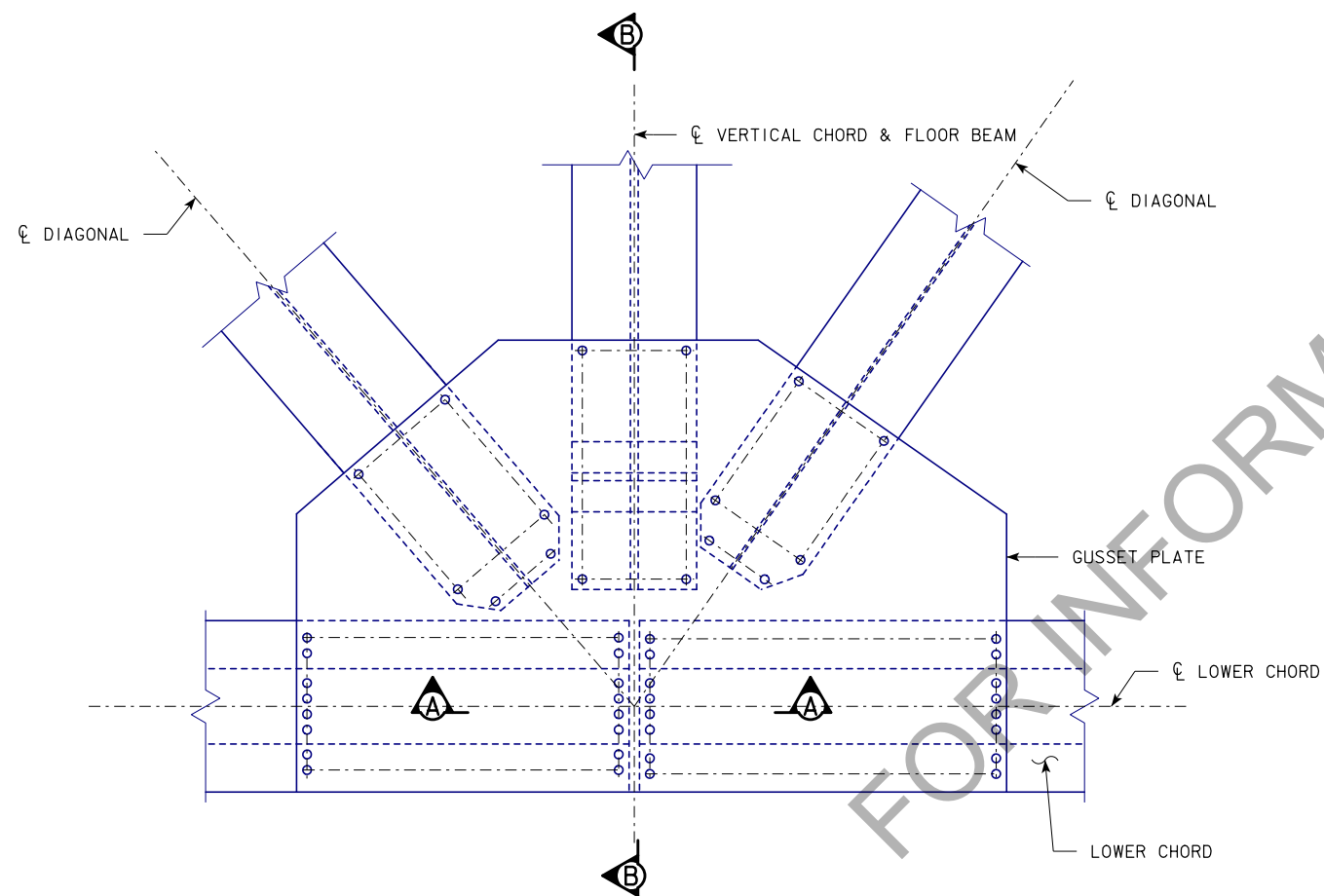
1. SEE TRUSS GEOMETRY FOR DIAGONAL TYPE, GEOMETRY, AND SIZES.
2. SEE TRUSS MEMBER DETAILS - I FOR TYPICAL MEMBER SECTIONS.
3. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE $\frac{1}{16}$ INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
4. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.
5. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS JOINT LOWER NODE - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 67 OF 119 FILE NO. 31473 DESIGN NO. 124

FOR INFORMATION ONLY

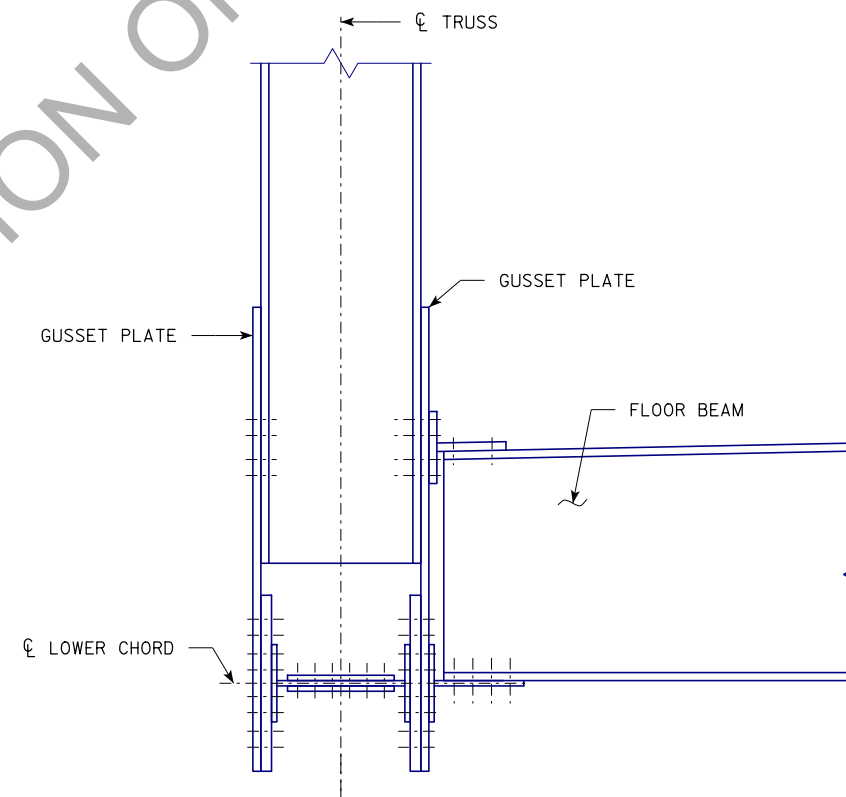


SECTION A-A



ELEVATION VIEW - LOWER CONNECTION

(AT TYPICAL LOCATIONS)

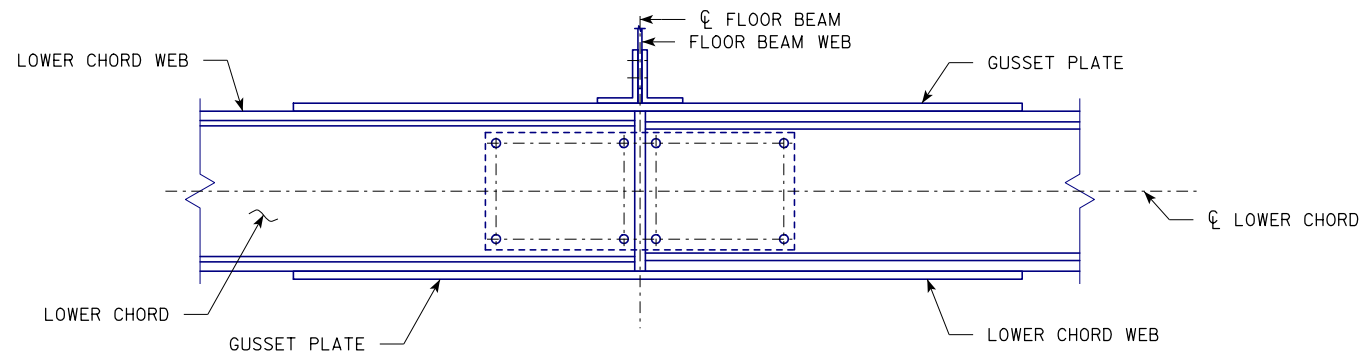


SECTION B-B

NOTES:

1. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN..
2. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE 1/16 INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
3. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.

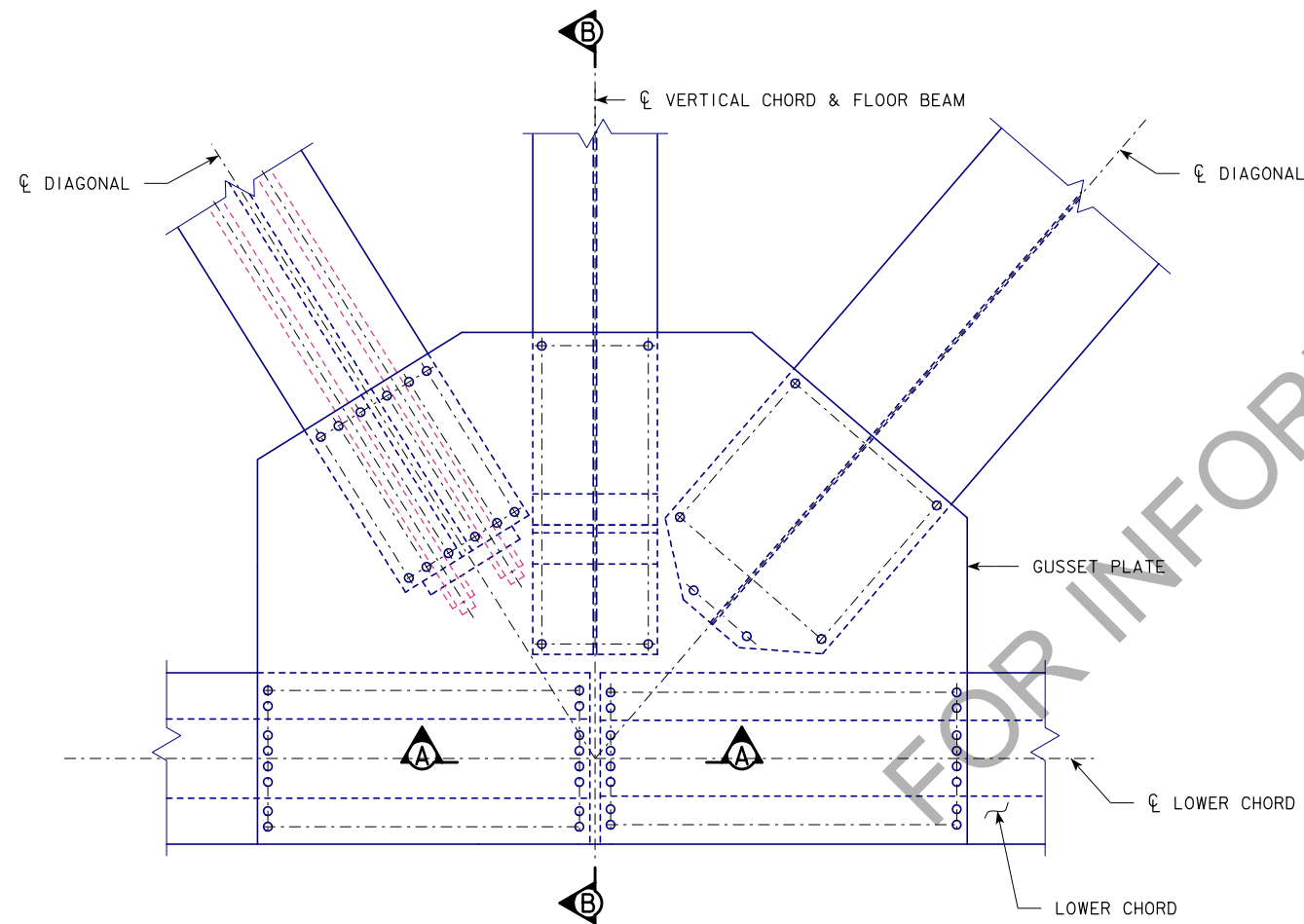
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS JOINT LOWER NODE - 2
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 68 OF 119 FILE NO. 31473 DESIGN NO. 124



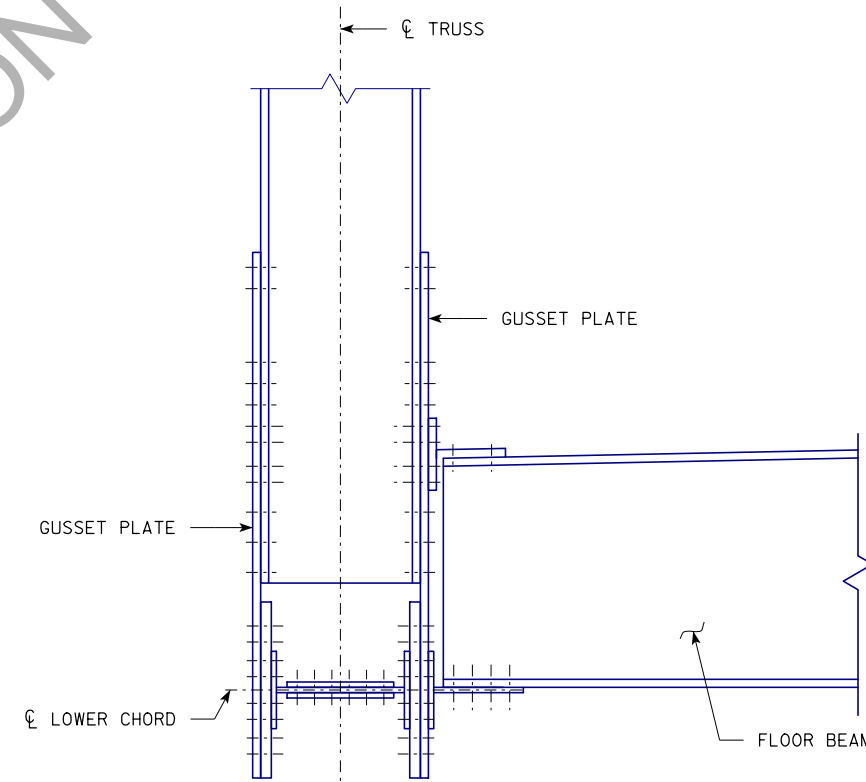
SECTION A-A

NOTES:

1. SEE TRUSS GEOMETRY FOR DIAGONAL TYPE, GEOMETRY, AND SIZES.
2. SEE TRUSS MEMBER DETAILS - I FOR TYPICAL MEMBER SECTIONS.
3. BOLTED CONNECTIONS SHALL BE 1 INCH DIAMETER GRADE A325 HIGH STRENGTH BOLTS WITH A563 NUTS AND F436 WASHERS. HOLES SHALL BE $\frac{1}{16}$ INCH LARGER THAN THE NOMINAL DIAMETER OF THE BOLTS.
4. SLIP-CRITICAL CONNECTIONS ARE DESIGNED FOR CLASS B SURFACE CONDITIONS IN ACCORDANCE WITH ARTICLE 6.13.2.8 OF THE AASHTO LRFD SPECIFICATIONS.
5. PARALLEL MEMBER AND BOLTED BUILT-UP MEMBER DETAILS ARE SHOWN FOR INFORMATION ONLY TO DEMONSTRATE FABRICATION AND CONSTRUCTION ASPECTS IN CASE IRM/SRM MEMBERS ARE UTILIZED IN FINAL DESIGN.

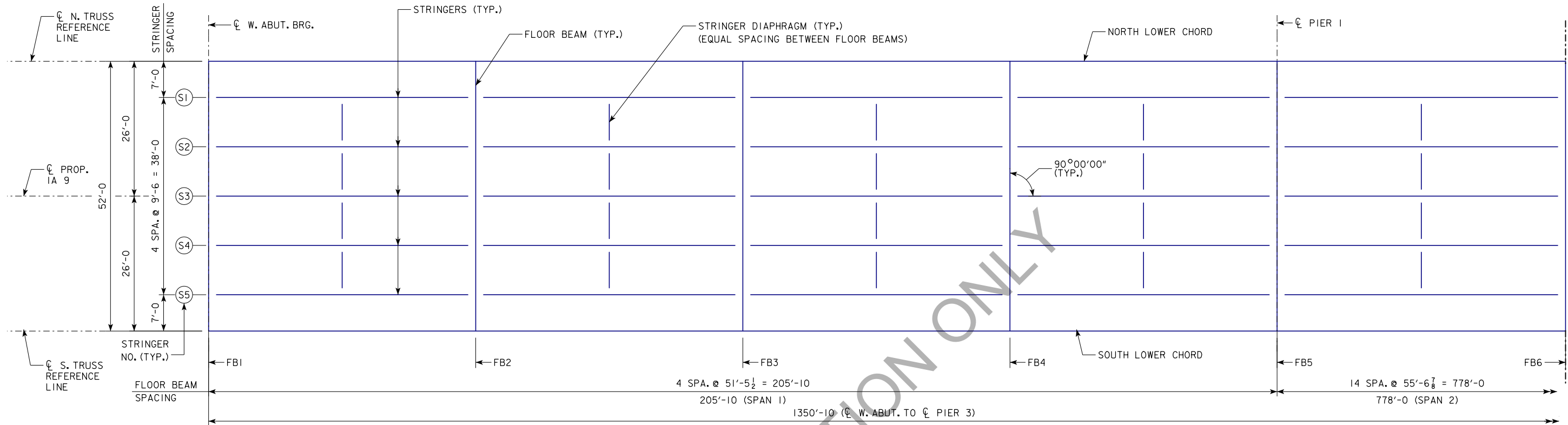


ELEVATION VIEW - LOWER CONNECTION
(L6 SHOWN, L14 AND L16 SIMILAR)

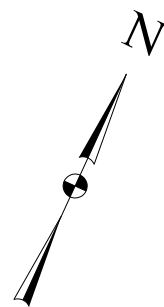


SECTION B-B

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
TRUSS JOINT LOWER NODE - 3
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 69 OF 119 FILE NO. 31473 DESIGN NO. 124



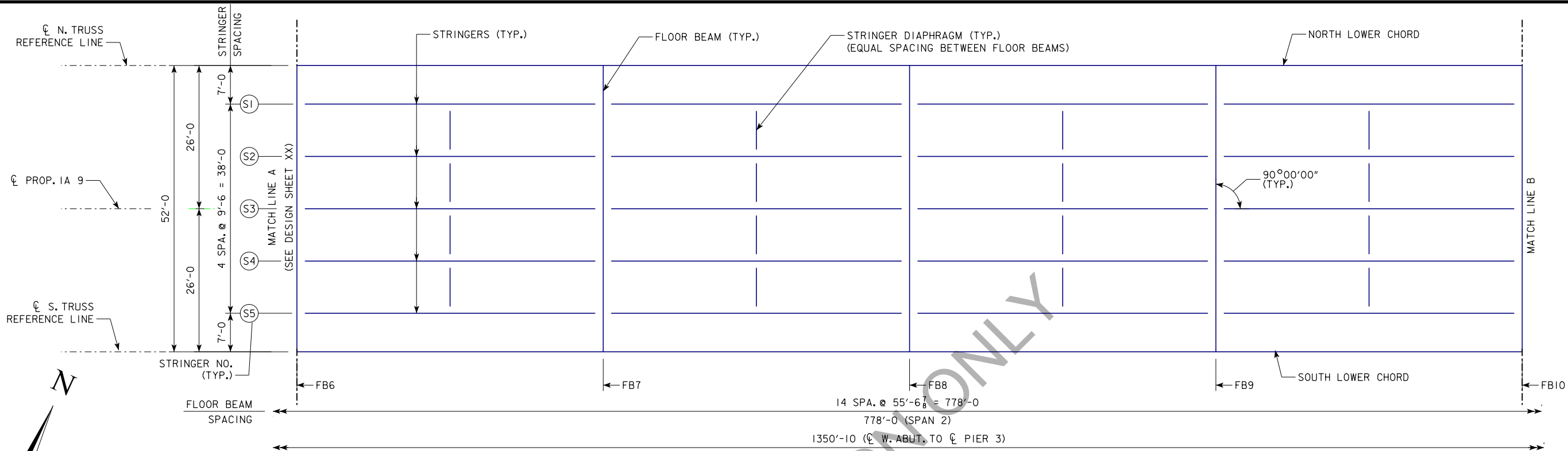
FLOOR SYSTEM FRAMING PLAN



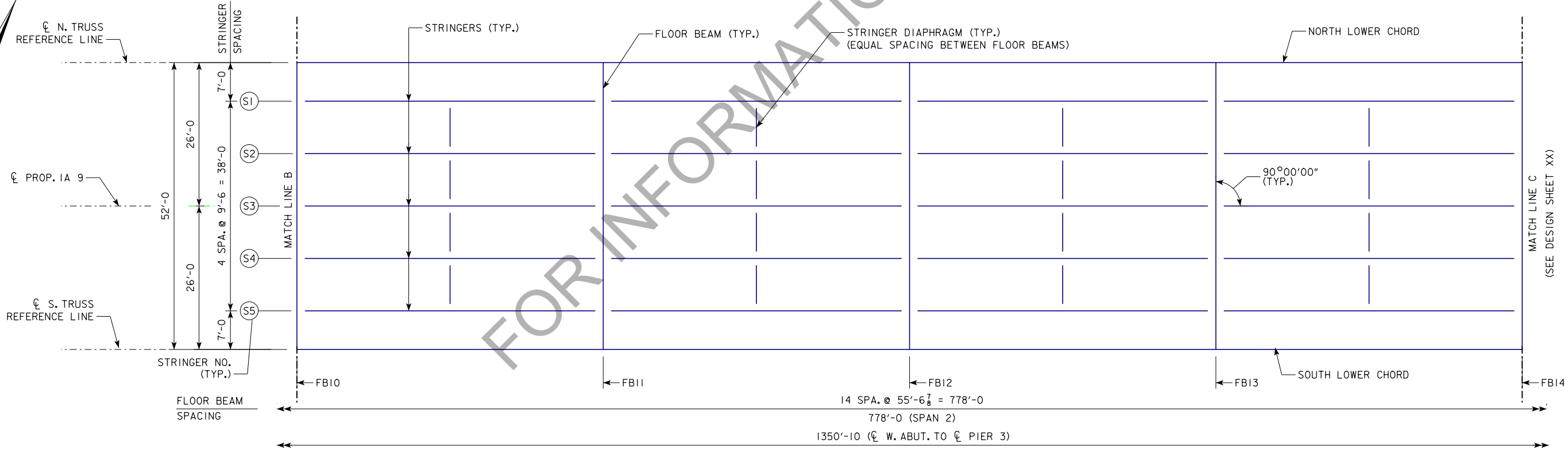
FOR INFORMATION ONLY

NOTES:
 FOR LONGITUDINAL STRINGER DETAILS, SEE SHEET XXX.
 FOR FLOOR BEAM DETAILS, SEE SHEET XX THRU XXX.
 FOR LOWER LATERAL BRACING LAYOUT AND DETAILS, SEE SHEETS XX AND XX.
 FOR UTILITY CONDUIT LAYOUT AND DETAILS, SEE SHEETS XX THRU XX.
 FOR LOWER CHORD CONNECTION DETAILS, SEE SHEET XX.

DESIGN FOR 0° SKEW	
1350'-10 x 40'-0 STEEL THROUGH-TRUSS	
205'-10 & 367'-0 END SPANS	778'-0 INTERIOR SPAN
FLOOR SYSTEM FRAMING PLAN - I	
IA 9 STA. 112+72.71	MONTH, 202X
ALLAMAKEE COUNTY	
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION	
DESIGN SHEET NO. 76 OF 119	FILE NO. 31473
DESIGN NO. 124	

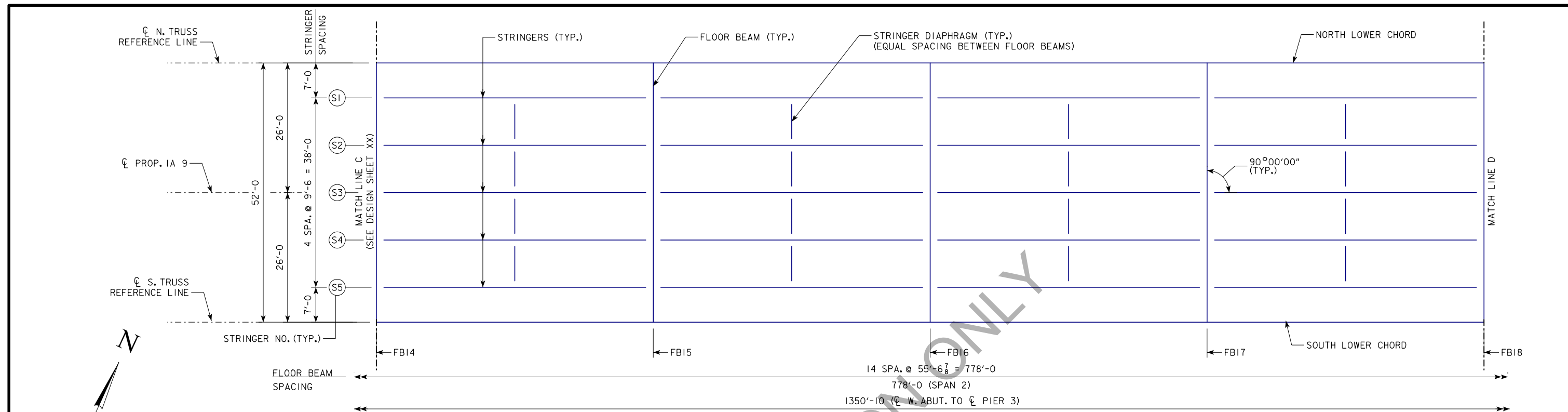


FLOOR SYSTEM FRAMING PLAN

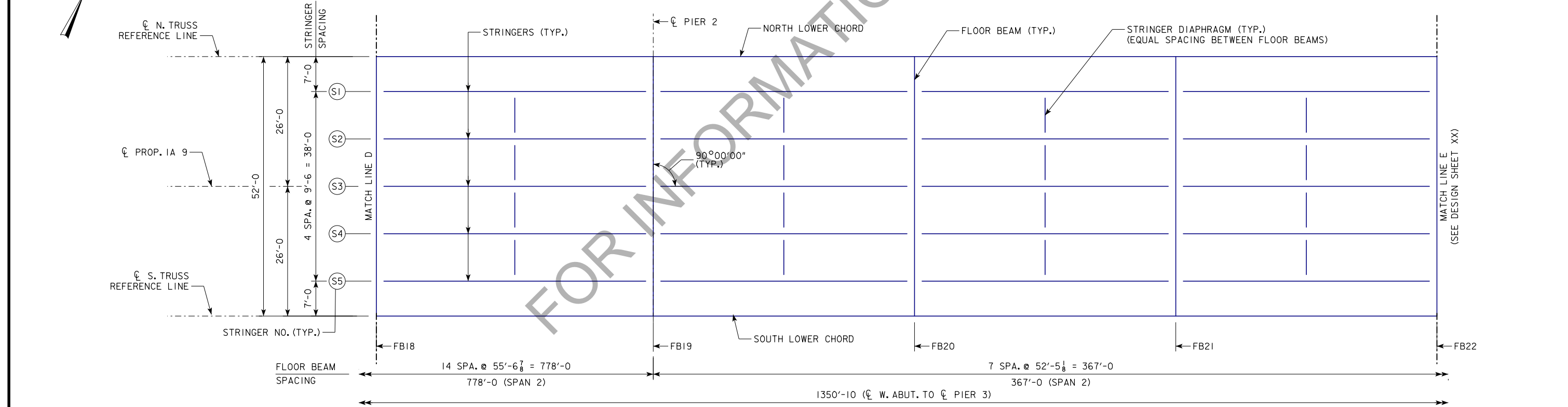


FLOOR SYSTEM FRAMING PLAN

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
FLOOR SYSTEM FRAMING PLAN - 2
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 77 OF 119 FILE NO. 31473 DESIGN NO. 124

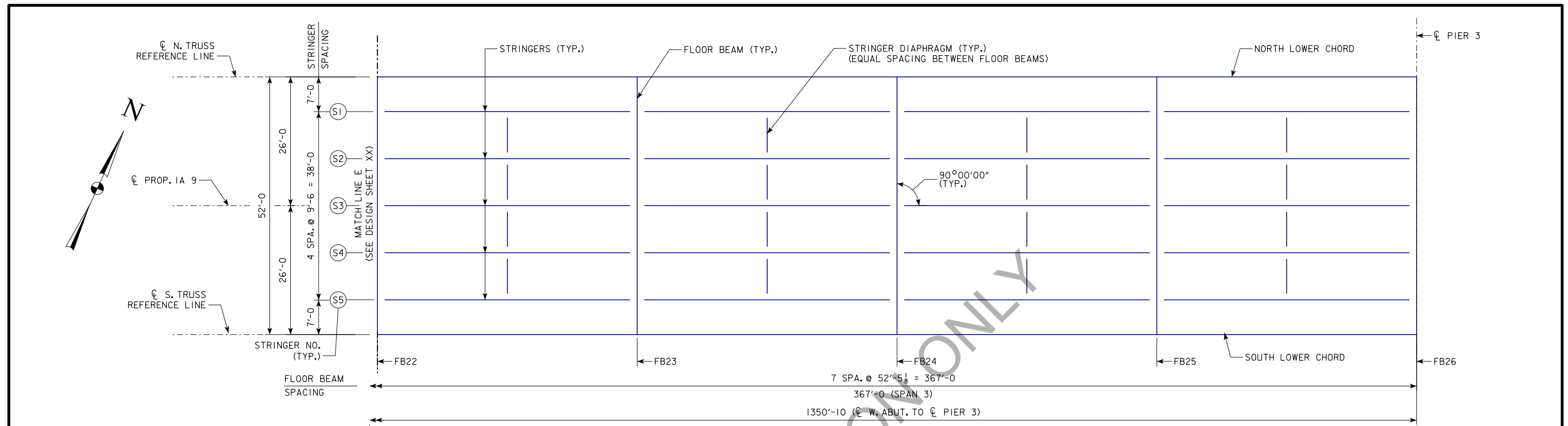


FLOOR SYSTEM FRAMING PLAN



FLOOR SYSTEM FRAMING PLAN

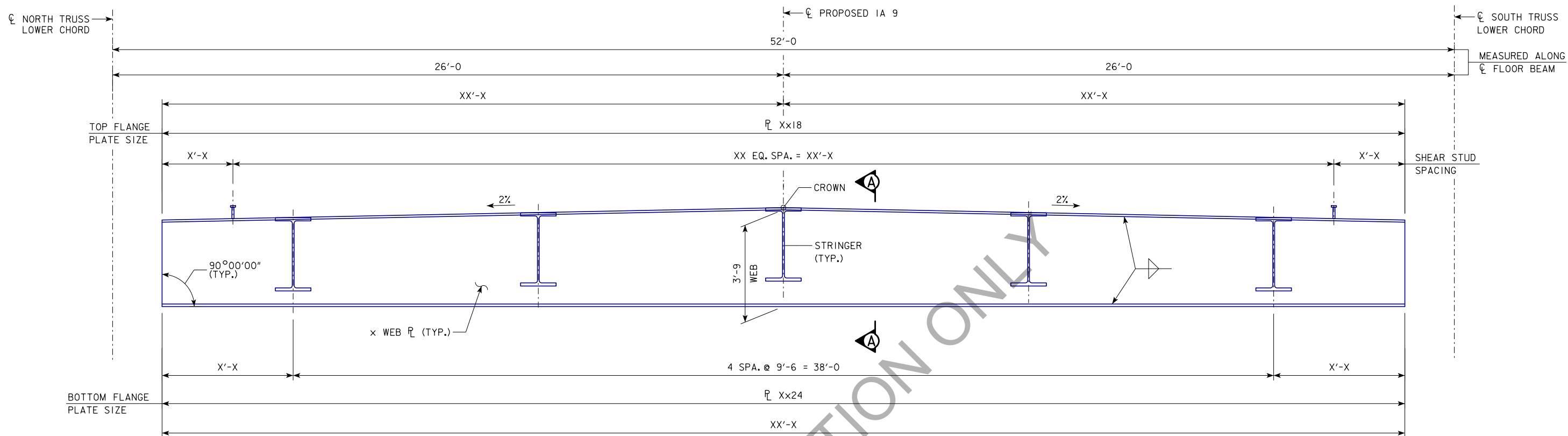
DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
FLOOR SYSTEM FRAMING PLAN - 3
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 78 OF 119 FILE NO. 31473 DESIGN NO. 124



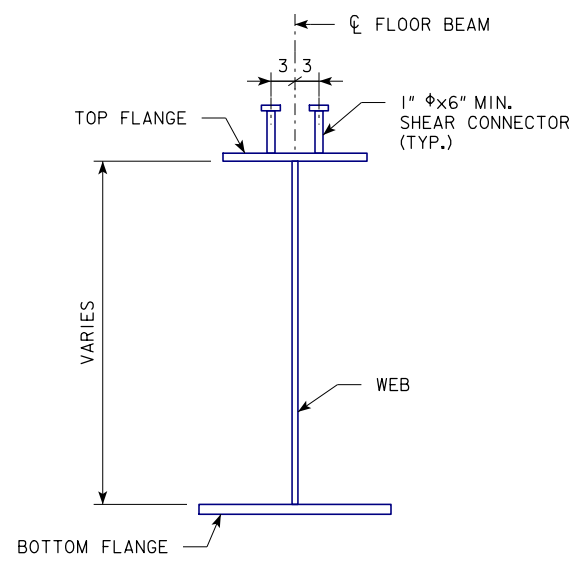
FLOOR SYSTEM FRAMING PLAN

FOR INFORMATION ONLY

DESIGN FOR 0° SKEW	
1350'-10 x 40'-0 STEEL THROUGH-TRUSS	
205'-10 & 367'-0 END SPANS	778'-0 INTERIOR SPAN
FLOOR SYSTEM FRAMING PLAN - 4	
IA 9 STA. 112+72.71	MONTH, 202X
ALLAMAKEE COUNTY	
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION	
DESIGN SHEET NO. 79 OF 119	FILE NO. 31473 DESIGN NO. 124



FLOOR BEAM ELEVATION



SECTION A-A

NOTES:

- SRM = SYSTEM REDUNDANT MEMBER, SEE GENERAL NOTES FOR ADDITIONAL NOTES.
- FLOOR BEAM PLATES SHALL BE FURNISHED IN AVAILABLE MILL LENGTHS AND WIDTHS WITH A MINIMUM NUMBER OF SPLICES. LOCATION OF SPLICES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
- SHEAR STUDS ON THE TOP FLANGE OF THE FLOOR BEAMS SHALL BE INSTALLED IN THE FIELD.
- ROWS OF SHEAR CONNECTORS SHALL BE ALIGNED PARALLEL TO THE LONGITUDINAL SLAB REINFORCEMENT BARS.
- SHEAR CONNECTORS TO PROJECT A MINIMUM OF 2" INTO DECK STRUCTURAL SLAB. IN NO CASE SHALL SHEAR CONNECTORS PROJECT CLOSER THAN 3" TO TOP OF DECK STRUCTURAL SLAB. ENGINEER TO FIELD VERIFY FLOOR BEAM ELEVATIONS AND AUTHORIZE STUD LENGTH.
- FOR LOWER LATERAL BRACING AND LONGITUDINAL STRINGERS, SEE SHEET XXX.
- FOR FLOOR BEAM DEFLECTION AND CAMBER DIAGRAM, SEE SHEET XXX.
- FOR DETAIL x AND x, SEE SHEET XXX.

DESIGN FOR 0° SKEW

1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

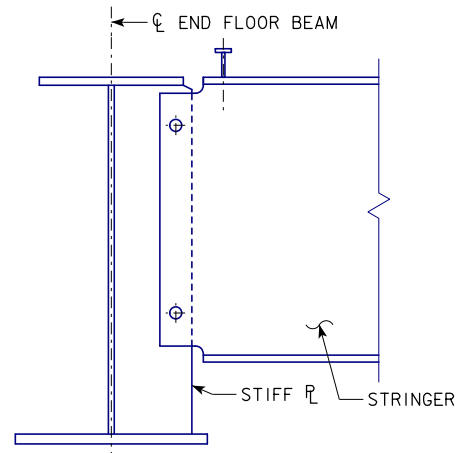
FLOOR BEAM - I

IA 9 STA. 112+72.71 MONTH, 202X

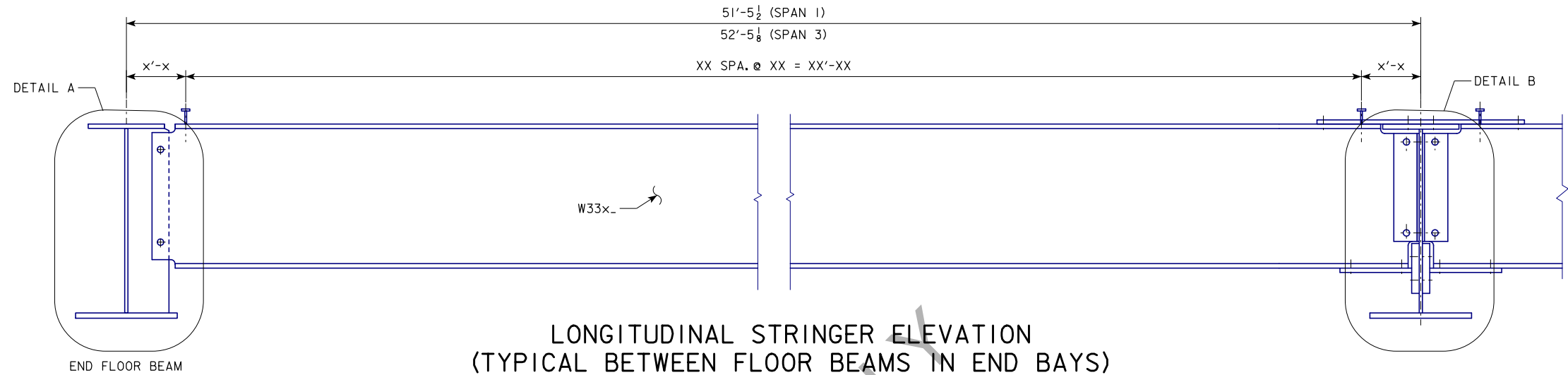
ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

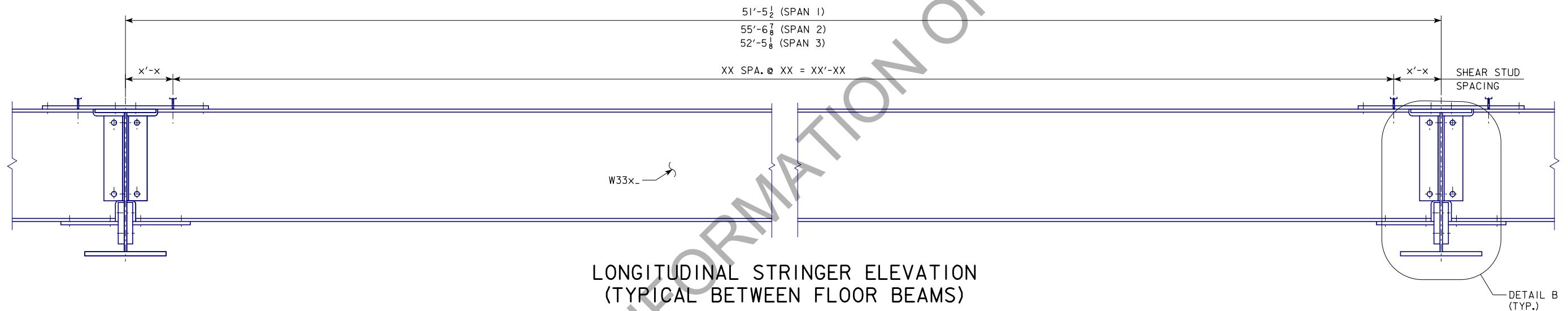
DESIGN SHEET NO. 80 OF 119 FILE NO. 31473 DESIGN NO. 124



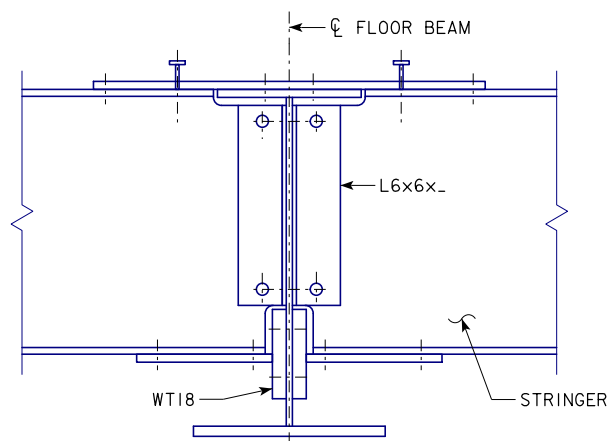
DETAIL A



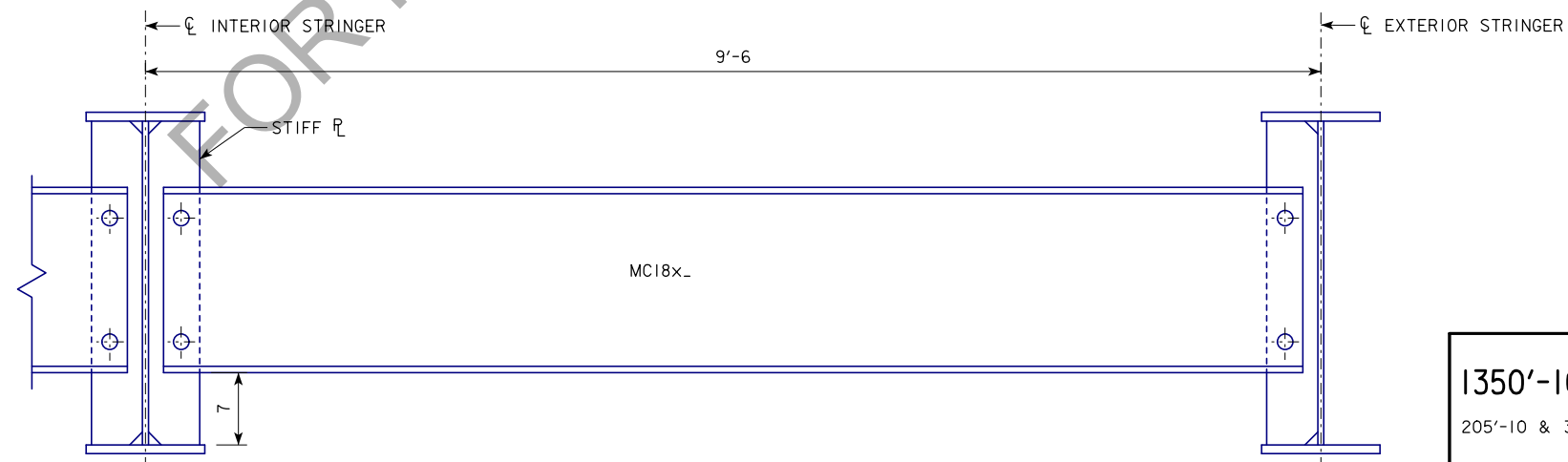
LONGITUDINAL STRINGER ELEVATION
(TYPICAL BETWEEN FLOOR BEAMS IN END BAYS)



LONGITUDINAL STRINGER ELEVATION
(TYPICAL BETWEEN FLOOR BEAMS)

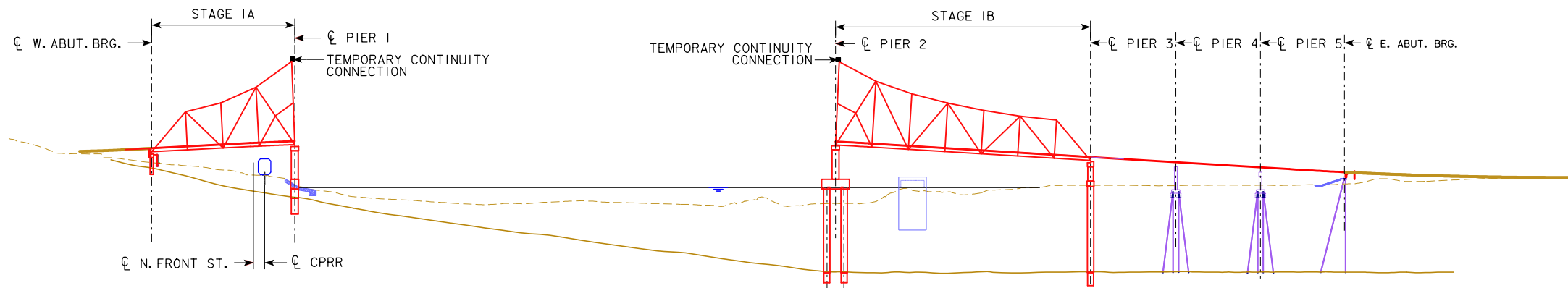


DETAIL B



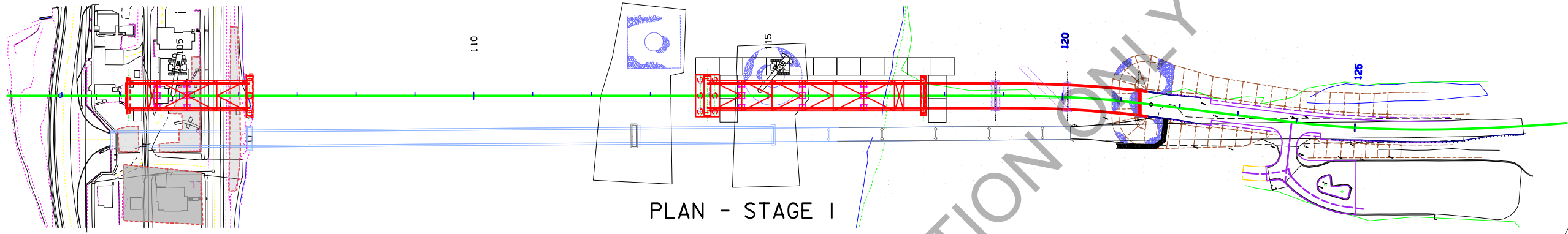
TYPICAL INTERMEDIATE DIAPHRAGM

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
STRINGER DETAILS - I
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 85 OF 119 FILE NO. 31473 DESIGN NO. 124

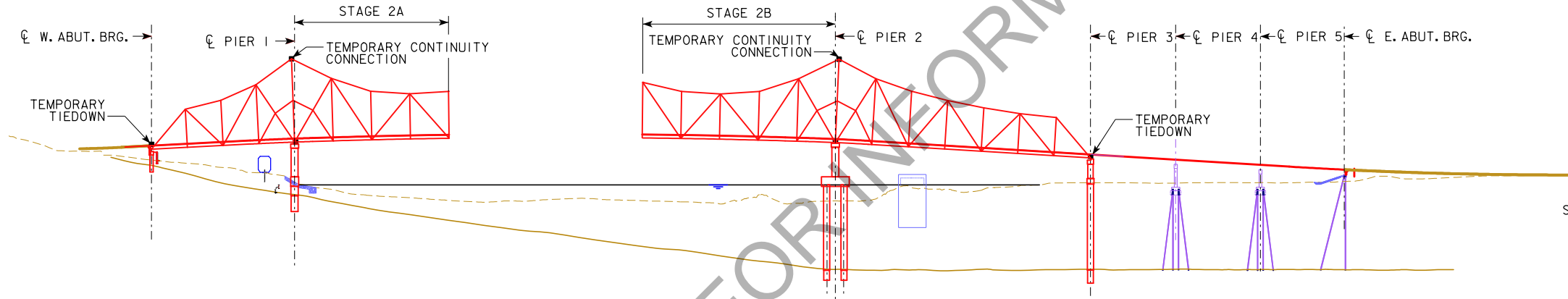


ELEVATION - STAGE 1

- STEEL ERECTION SEQUENCE (STAGES 1A AND 1B CAN BE DONE CONCURRENTLY)
- STAGE 1A (LAND BASED CRANE)
1. ERECT SHORE TOWERS FOR SPAN 1.
 2. ERECT SPAN 1 TRUSS STEEL, INCLUDING FLOOR BEAMS, LONGITUDINAL STRINGERS, AND BRACING.
 3. INSTALL TEMPORARY CONTINUITY CONNECTIONS.
 4. UNLOAD TOWERS AND PLACE LOAD ON PERMANENT BEARING AT PIER 1.
- STAGE 1B (TRESTLE BASED CRANE)
1. INSTALL SHORE TOWERS FOR SPAN 3.
 2. ERECT SPAN 3 TRUSS STEEL, INCLUDING FLOOR BEAMS, LONGITUDINAL STRINGERS, AND BRACING.
 3. INSTALL TEMPORARY CONTINUITY CONNECTION.
 4. UNLOAD TEMPORARY TOWERS AND PLACE LOAD ON PERMANENT BEARINGS AT PIER 2.

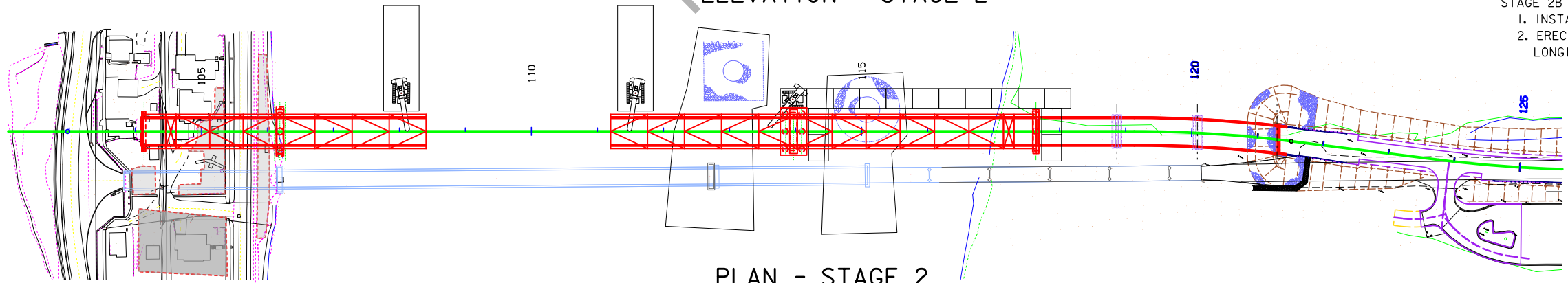


PLAN - STAGE 1



ELEVATION - STAGE 2

- STEEL ERECTION SEQUENCE (STAGES 2A AND 2B CAN BE DONE CONCURRENTLY)
- STAGE 2A (WATER BASED CRANE)
1. INSTALL TEMPORARY TIEDOWNS AT WEST ABUTMENT.
 2. ERECT CANTILEVER TRUSS STEEL (4 PANELS), INCLUDING FLOOR BEAMS, LONGITUDINAL STRINGERS, AND BRACING.
- STAGE 2B (WATER BASED CRANE)
1. INSTALL TEMPORARY TIEDOWNS AT PIER 3.
 2. ERECT CANTILEVER TRUSS STEEL (5 PANELS), INCLUDING FLOOR BEAMS, LONGITUDINAL STRINGERS, AND BRACING.



PLAN - STAGE 2

DESIGN FOR 0° SKEW

1350'-10 x 40'-0 STEEL THROUGH-TRUSS

205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN

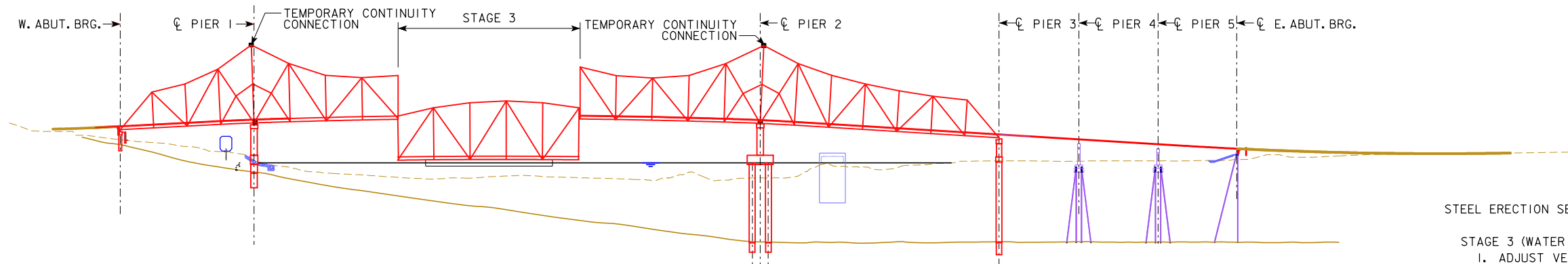
SUGGESTED ERECTION SEQUENCE - 1

IA 9 STA. 112+72.71 MONTH, 202X

ALLAMAKEE COUNTY

IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION

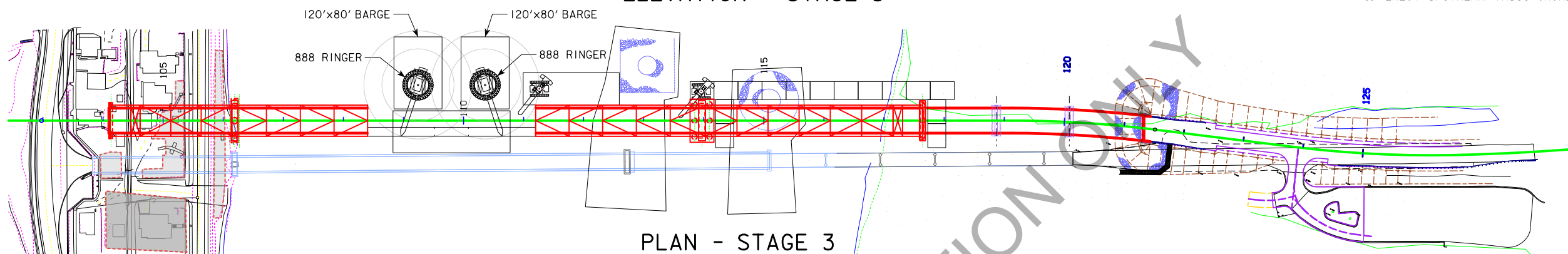
DESIGN SHEET NO. 91 OF 119 FILE NO. 31473 DESIGN NO. 124



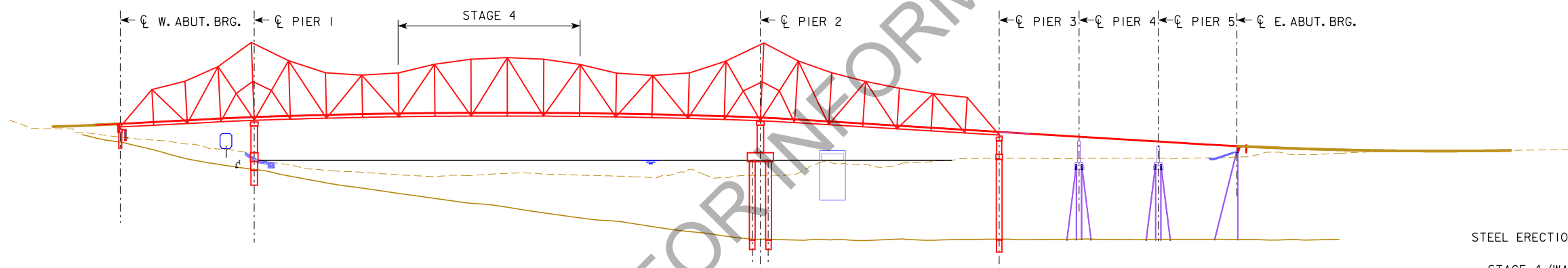
ELEVATION - STAGE 3

STEEL ERECTION SEQUENCE

- STAGE 3 (WATER BASED CRANE(S))
1. ADJUST VERTICAL ALIGNMENT AT CANTILEVER TIPS AS NECESSARY.
 2. ERECT DOWNSTREAM TRUSS CHORD (APPROXIMATELY 750 KIPS PICK).
 3. ERECT UPSTREAM TRUSS CHORD.



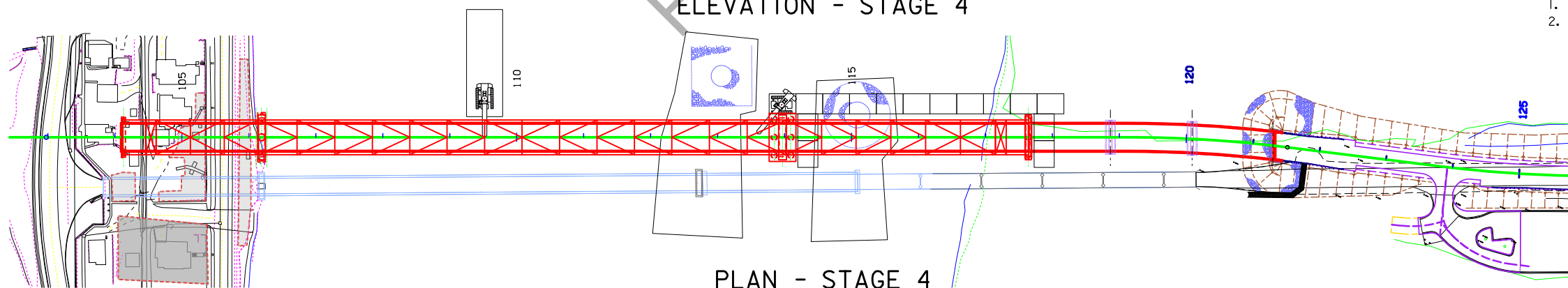
PLAN - STAGE 3



ELEVATION - STAGE 4

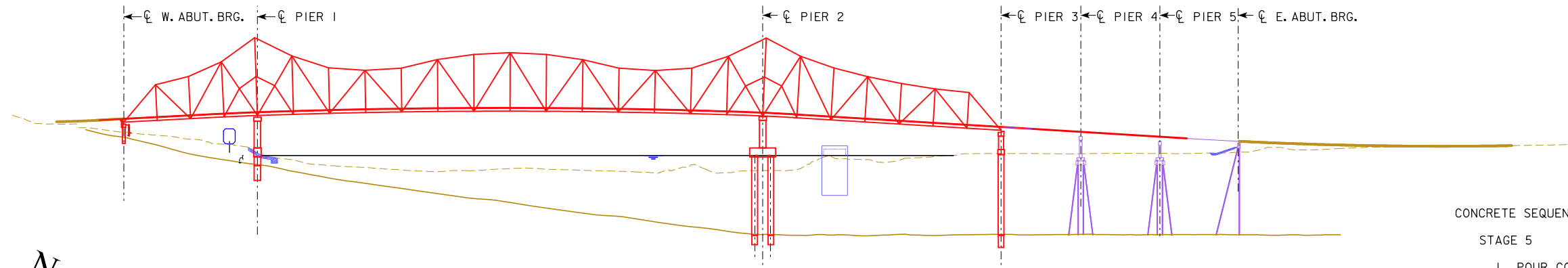
STEEL ERECTION SEQUENCE

- STAGE 4 (WATER BASED CRANE(S))
1. FILL IN REMAINING LATERALS AND FLOORBEAMS FOR STAGE 3.
 2. REMOVE TEMPORARY CONTINUITY CONNECTIONS.



PLAN - STAGE 4

DESIGN FOR 0° SKEW
1350'-10 x 40'-0 STEEL THROUGH-TRUSS
 205'-10 & 367'-0 END SPANS 778'-0 INTERIOR SPAN
SUGGESTED ERECTION SEQUENCE - 2
 IA 9 STA. 112+72.71 MONTH, 202X
ALLAMAKEE COUNTY
 IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION
 DESIGN SHEET NO. 92 OF 119 FILE NO. 31473 DESIGN NO. 124

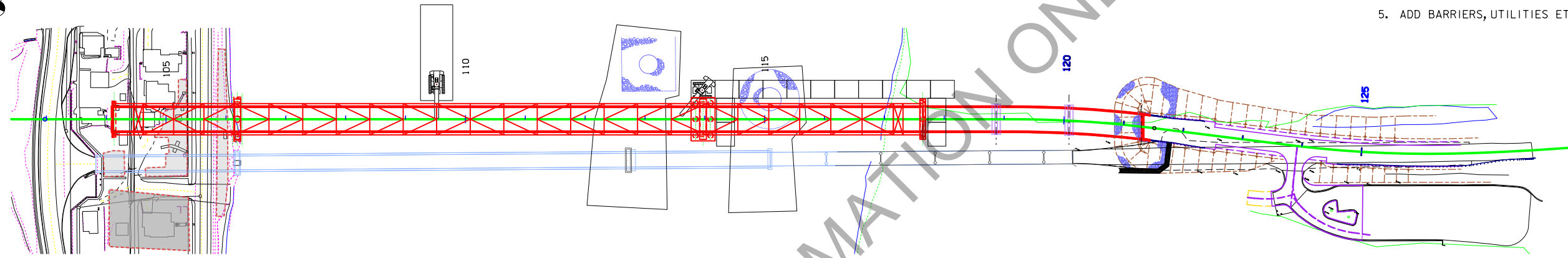


ELEVATION - STAGE 5

CONCRETE SEQUENCE

STAGE 5

1. POUR CONCRETE DECK IN SPAN 1 AND SPAN 3.
2. INSTALL PERMANENT CONTINUITY AT TOP OF PIER 2.
3. POUR CONCRETE DECK IN SPAN 2.
4. INSTALL PERMANENT CONTINUITY AT TOP OF PIER 1.
5. ADD BARRIERS, UTILITIES ETC.



PLAN - STAGE 5

FOR INFORMATION ONLY

DESIGN FOR 0° SKEW	
1350'-10 x 40'-0 STEEL THROUGH-TRUSS	
205'-10 & 367'-0 END SPANS	778'-0 INTERIOR SPAN
SUGGESTED ERECTION SEQUENCE - 3	
IA 9 STA. 112+72.71	MONTH, 202X
ALLAMAKEE COUNTY	
IOWA DOT - TRANSPORTATION DEVELOPMENT DIVISION	
DESIGN SHEET NO. <u>93</u> OF <u>119</u>	FILE NO. <u>31473</u> DESIGN NO. <u>124</u>