INDEX OF SHEETS					
Sheet Number	Sheet Title				
1	COVER				
2	INDEX OF SHEETS, GENERAL NOTES, AND SOQ				
3	TYPICAL SECTIONS				
4	BABLER ROAD PLAN AND PROFILE				
5	GRADING AND EROSION CONTROL PLAN				
6	BRIDGE PLAN AND ELEVATION				
7	SUPERSTRUCTURE DETAILS				
8	STEEL RAILING, TYPE S-1				
9	HP PILE DETAILS				
10	27 x 36 PPC DECK BEAM				
11	27 x 36 PPC DECK BEAM DETAILS				
12	WEST ABUTMENT DETAILS				
13	EAST ABUTMENT DETAILS				
14	BORING LOGS (1)				
15	BORING LOGS (2)				
16	BORING LOGS (3)				
17	BABLER ROAD CROSS-SECTIONS (1)				
18	BABLER ROAD CROSS-SECTIONS (2)				
19	BABLER ROAD CROSS-SECTIONS (3)				
20	BABLER ROAD CROSS-SECTIONS (4)				

#### **HIGHWAY STANDARDS**

DEVICES FOR CONSTRUCTION ON RURAL LOCAL

001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
515001-04	NAME PLATE FOR BRIDGES
631026-06	TRAFFIC BARRIER TERMINAL, TYPE 5
70101 <b>1</b> -04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701901-09	TRAFFIC CONTROL DEVICES
725001-01	OBJECT AND TERMINAL MARKERS
728001-01	TELESCOPING STEEL SIGN SUPPORT
729001-01	APPLICATIONS OF TYPES A & B METAL POSTS (FO
	SIGNS & MARKERS)
BLR 22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL

**HIGHWAYS** 

#### **GENERAL NOTES**

- 1. ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE DETAILS IN THE PLANS, THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS, THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (ADOPTED JANUARY 1, 2022 AND ALL REVISIONS AND SUPLLEMENTS THERETO), THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", THE "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ÎTEMS", THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAY", THE "MANUAL OF TEST PROCEDURES FOR MATERIALS". AND THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS"
- 2. BEFORE STARTING ANY EXCAVATION, THE CONTRACTOR SHALL CALL "J.U.L.I.E." AT 1-800-892-0123 FOR FIELD LOCATION OF BURIED ELECTRIC, TELEPHONE, GAS, WATER, SANITARY. STORM SEWER, AND OTHER FACILITIES AT LEAST 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION.
- 3. LOCATIONS OF PUBLIC OR PRIVATE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND THE COUNTY DOES NOT GUARANTEE THEIR ACCURACY. THE CONTRACTOR SHALL VERIFY THE DEPTHS OF EXISTING UTILITIES WHERE NECESSARY. FIELD VERIFICATIONS, RELOCATIONS, AND / OR LOWERING OF EXISTING UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR AS TO NOT IMPEDE PROJECT PROGRESS. THERE ARE NO KNOWN UNDERGROUND UTILITIES LOCATED WITHIN THE PROJECT AREA THAT WILL REQUIRE RELOCATION OR LOWERING AS PART OF THIS
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES, EVEN IF NOT SHOWN ON PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE UTILITY COMPANY AND THE ENGINEER.
- 5. THE CONTRACTOR SHALL NOTIFY THE COUNTY A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
- 6. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE ENGINEER.
- THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS OR PROPERTY OR REFERENCE MARKERS UNTIL A LICENSED LAND SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATIONS
- MAINTAINING DRAINAGE: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN POSITIVE DRAINAGE AT ALL TIMES DURING THE PERFORMANCE OF WORK. THE CONTRACTOR SHALL SUPPLY A PLAN AS A SUBMITTAL REVIEW THAT WILL MAINTAIN FLOW THAT MEETS ALL LOCAL, STATE, AND FEDERAL REGULATIONS, TO THE SATISFACTION OF THE COUNTY
- 8.1. THE PLAN SHALL NOT CAUSE ANY DAMAGE UPSTREAM, NOR TO ANY ADJACENT WATERSHED.
- 8.2. THE PLAN SHALL BE SUBMITTED TO THE COUNTY AND THE ENGINEER OF RECORD A MINIMUM OF TWO (2) WEEKS PRIOR TO THE
- THE COST OF MAINTAINING FLOW SHALL NOT BE PAID FOR SEPARATELY AND SHALL BE CONSIDERED AS INCLUDED IN THE VARIOUS PAY ITEMS IN THE CONTRACT
- 9. PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM FIELD MEASUREMENTS AND AS-BUILT PLANS. THE CONTRACTOR SHALL VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING OF THE MATERIALS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN PLAN AND FIELD CONDITIONS
- 10. ALL WORK SHALL BE COMPLETED WITHIN THE PUBLIC RIGHT-OF-WAY WITH NO EQUIPMENT OR MATERIALS STORAGE ON PRIVATE PROPERTY.
- 11. THE CONTRACTOR'S OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE WORK AREA AND/OR CONSTRUCTION LIMITS
- 12. COORDINATE ANY REQUIRED SIGN REMOVAL WITH THE COUNTY ONE (1) WEEK PRIOR TO THE COMMENCEMENT OF WORK
- 13. NO CHANNEL GRADING OR BRIDGE CONSTRUCTION ACTIVITIES WILL BE ALLOWED IN STANDING WATER OR DURING PERIODS OF HIGH FLOWS AND EXCESSIVE CHANNEL FLOW VELOCITIES.
- 14. THE FOLLOWING BMPS SHALL BE IMPLEMENTED TO CONTROL RESIDUAL CONCRETE, CONCRETE SEDIMENTS, AND RINSE WATER,
- 14.1. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED FOR RINSING OUT CONCRETE TRUCKS. SIGNS SHALL BE INSTALLED DIRECTING CONCRETE TRUCK DRIVERS WHERE DESIGNATED WASHOUT FACILITIES ARE LOCATED.
- 14.2. THE CONTRACTOR SHALL HAVE THE LOCATION OF TEMPORARY CONCRETE WASHOUT FACILITIES APPROVED BY THE RESIDENT ENGINEER.
- ALL TEMPORARY CONCRETE WASHOUT FACILITIES ARE TO BE INSPECTED BY THE CONTRACTOR AFTER EACH USE AND ALL SPILLS MUST BE 14.3. REPORTED TO THE RESIDENT ENGINEER AND CLEANED UP IMMEDIATELY
- 14.4. CONCRETE WASTE SOLIDS/LIQUIDS SHALL BE DISPOSED OF PROPERLY.
- 15. THE ADJACENT ROADWAY SHALL BE KEPT FREE OF MUD AND DEBRIS DURING CONSTRUCTION.
- 16. THE CONTRACTOR SHALL ASSUME MAINTENANCE RESPONSIBILITIES FOR A PERIOD OF THIRTY (30) DAYS FOR ALL SEEDED AREAS, INCLUDING: WATERING, WEEDING, RE-SEEDING (WASH-OFFS), REPLACEMENT (SOD), OR OTHER OPERATIONS NECESSARY TO OBTAIN A SATISFACTORY STRAIN OF GRASS. UPON FINAL ACCEPTANCE, OWNER SHALL ASSUME ALL MAINTENANCE RESPONSIBILITIES.

# 85748

	CONSTRUCTION TYPE CODE: 0010		
CODE NUMBER	PAY ITEM	UNIT	TOTAL
20100500	TREE REMOVAL, ACRES	ACRE	0.05
20300100	CHANNEL EXCAVATION	CU YD	129
20700220	POROUS GRANULAR EMBANKMENT	CU YD	99
21101615	TOPSOIL, FURNISH AND PLACE, 4"	SQ YD	344
25000200	SEEDING, CLASS 2	ACRE	0.07
25000400	NITROGEN FERTILIZER NUTRIENT	POUND	19
25000500	PHOSPHORUS FERTILIZER NUTRIENT	POUND	19
25000600	POTASSIUM FERTILIZER NUTRIENT	POUND	19
25100630	EROSION CONTROL BLANKET	SQ YD	344
28000400	PERIMETER EROSION BARRIER	FOOT	321
28200200	FILTER FABRIC	SQ YD	~452 <sub>~</sub>
40200900	AGGREGATE SURFACE COURSE, TYPE B	CU YD S	283
50100100	REMOVAL OF EXISTING STRUCTURES	EACH	<del>luji</del>
50200100	STRUCTURE EXCAVATION	CU YD	260
50300225	CONCRETE STRUCTURES	CU YD	24.1
50400505	PRECAST PRESTRESSED CONCRETE DECK BEAMS (27" DEPTH)	SQ FT	1720
50800105	REINFORCEMENT BARS	POUND	4260
50900205	STEEL RAILING, TYPE S1	FOOT	130
51201400	FURNISHING STEEL PILES HP10X42	FOOT	352
51202305	DRIVING PILES	FOOT	352
51203400	TEST PILE STEEL HP10X42	EACH	2
51204650	PILE SHOES	EACH	10
51500100	NAME PLATES	EACH	1
67100100	MOBILIZATION	LSUM	. 1
72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	4
XX004565	GROUTED RIPRAP	SQ YD	444
XX004566	CONCRETE CUT-OFF WALL	CU YD	8.6
XX006821	CONCRETE TRUCK WASHOUT	LSUM	1
X7010216	TRAFFIC CONTROL AND PROTECTION (SPECIAL)	LSUM	1
Z0013798	CONSTRUCTION LAYOUT	LSUM	1

# CONVERSION FACTORS FOR PLAN QUANTITY **CALCULATIONS**

-	ITEMS	RATE OF APPLICAITON
	RIPRAP	2.05 TONS / CU YD
	AGGREGATE BASE COURSE, TYPE B	2.05 TONS / CU YD

BENCHMARKS							
BENCHMARK#	DESCRIPTION	ELEVATION	NORTHING	EASTING			
400	COTTON SPINDLE IN NE SIDE OF PP	833.94	2103172.20	2441797.78			
401	401 SET   ON WINGWALL AT SW CORNER  OF BRIDGE		2103160.32	2442024.85			
402	COTTON SPINDLE IN N SIDE OF PP EAST OF BRIDGE	814.61	2103147.76	2442331.51			

EARTHWORK SCHEDULE							
LOCATION	EXCAVATION* (CY)	EMBANKMENT (CY)	NET = EMBANKMENT - EXCAVATION				
STA. 18+89 to 19+25	2.1	2.4	0.3				
STA. 19+25 to 19+50	3.6	5.1	1.5				
STA. 19+50 to 19+75	2.4	11.0	8.6				
STA. 19+75 to 19+90	0.2	13.4	13.2				
STA. 19+90 to 20+00	9.0	12.7	3.7				
STA. 20+00 to 20+25	66.6	16.9	-49.7				
STA. 20+25 to 20+50	44.3	7.5	-36.8				
STA. 20+50 to 20+55	0.1	4.4	4.3				
STA. 20+55 to 20+75	0.2	19.6	19.4				
STA. 20+75 to 20+90	0.1	6.1	6.0				
TOTAL (C.Y.)	128.7	99.2	-29.5				

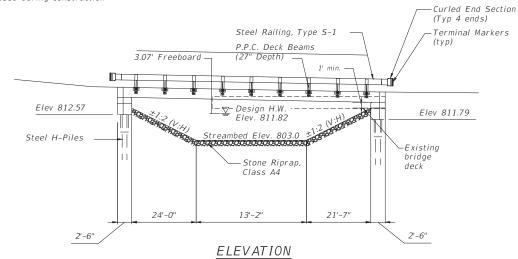
EXCAVATION AND EMBANKMENTS CALCULATED AS AVERAGE BETWEEN LISTED STATIONS EARTHWORK EXCLUDES STRUCTURE EXCAVATION AT ABUTMENTS EXCAVATION SHRINKAGE FACTOR ASSUMED TO BE 25%

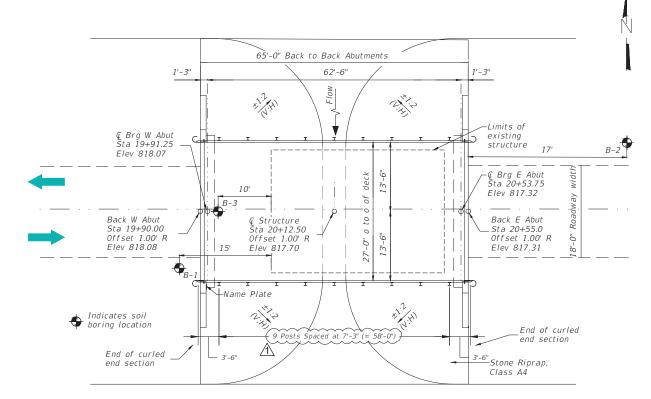
USER NAME = TREVOR LARSON, P.E., PTOE	DESIGNED -	TWL	REVISED — 2024/01/04 🚹
	DRAWN —	TWL	REVISED —
PLOT SCALE = ANSI FULL BLEED D (34.00 X 22.00 INCHES)	CHECKED —	TWO	REVISED —
PLOT DATE = October 26, 2023	DATE -	2023 10-25	REVISED -



	RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
DEX OF SHEETS, GENERAL NOTES, AND SOQ		20-01132-00-BR	STEPHENSON	20	2
			CONTRACT	NO. 8	35748
HEET NO. 2 OF 20 SHEETS STA TO STA	PROJ.	HYNE (852) [ILLINOIS]	STRUCTURE 0	89-329	9

Road to be closed during construction

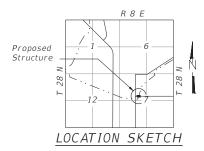




# PLANWATERWAY INFORMATION

Drainage Area = 7.93 sq mi											
Flood	, Freq. C		Opening Ft <sup>2</sup>		Nat.	Headwa	ater El.	Head	- Ft.		
F1000	Yr.	C.F.S.	Exist.	Prop.	H.W.E.	Exist.	Prop.	Exist.	Prop.		
Overtopping		7,200			816.30	821.48	818.82	5.18	2.52		
Design	15	1,750	421	421	121	600	811.17	812.19	811.82	1.02	0.65
Base	100	2,860			600	812.49	814.04	813.49	1.55	1.00	
Max Calc Scour	200	3,320			812.97	814.77	814.10	1.80	1.13		

15 Year Velocity Through Existing Bridge = 6.59 ft/s 15 Year Velocity Through Proposed Bridge = 5.75 ft/s



BRUSH CREEK TRIBUTARY BRIDGE BUILT 20 BY STEPHENSON COUNTY SEC. 21-01132-00-BR TR 59 STA. 20+12.50 STR. NO. 089-3299 LOADING HL-93

> NAME PLATE See Std. 515001

#### LOADING HL-93

## DESIGN SPECIFICATIONS

2018 AASHTO LRFD Bridge Design Specifications, 8th Edition with 2018 Interims

## DESIGN STRESSES

FIELD UNITS

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

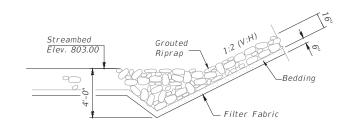
#### PRECAST PRESTRESSED UNITS

f'c = 6,000 psi f'ci = 5,000 psi

 $f's = 270,000 \text{ psi } (\frac{1}{2} \text{ 0 low-relaxation strands})$  $f'si = 202,000 \text{ psi } (\frac{1}{2} \emptyset \text{ low-relaxation strands})$ 

Seismic Performance Zone (SPZ) = 1 Design Spectral Acceleration at 1.0 sec  $(S_5) = 0.0985$ Design Spectral Acceleration at 0.2 sec  $(S_1) = 0.0519$ Soil Site Class = D

SEISMIC DATA



## STONE RIPRAP ANCHOR DETAIL



Keith E. Brandau, P.E., S.E. Expires 11/30/2024

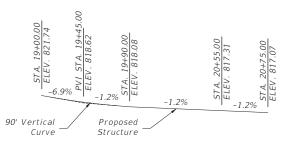
I certify that to the best of my knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO Bridge Design Specifications.

SCALE:

#### GENERAL NOTES:

Layout of slope protection system may be varied in the field to suit ground conditions as directed by the ENGINEER. All Construction joints shall be bonded.

See Roadway Plans for channel excavation limits and quantities. See Roadway Plans for additional riprap limits and quantities.



#### PROFILE GRADE

## DESIGN SCOUR ELEVATION TABLE

Event / Limit	Design Sc	our Elevatio	ns (ft.)
State	W. Abut.	Item 113	
Q100	812.57	811.79	
Q200	812.57	811.79	
Design	812.57	811.79	
Check	812.57	811.79	

#### TOTAL BILL OF MATERIAL

Item	Unit	Quantity
Removal of Existing Structures	Each	1
Structure Excavation	Cu Yd	260
Concrete Structures	Cu Yd	24.1
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq Ft	1720
Reinforcement Bars	Pound	4260
Steel Railing, Type S-1	Foot	130
Furnishing Steel Piles HP 10x42	Foot	352
Driving Steel Piles HP 10x42	Foot	352
Test Pile Steel HP 10x42	Each	2
Pile Shoes	Each	10
Name Plates	Each	1
Terminal Marker - Direct Applied	Each	4
Concrete Cut-off Wall	Cu Yd	8.6
Grouted Riprap	Sq Yd	444

USER NAME = TREVOR LARSON, P.E., PTOE	DESIGNED	_	I WL	REVISED	_	2024 01-04 /1
	DRAWN	_	TWL	REVISED	_	
PLOT SCALE = ANSI FULL BLEED D (34.00 X 22.00 INCHES)	CHECKED	_	TWO	REVISED	_	
PLOT DATE = January 8, 2024	DATE	_	2023 10-25	REVISED	_	



BRIDGE PLAN AND ELEVATION				RTE.	SECTION			COUNTY	TOTAL SHEETS	SHEET NO.
				TR59	20-01132-00-BR			STEPHENSON	20	6
								CONTRACT	NO. 8	35748
	SHEET NO. 6 OF 20 SHEETS	STA 1	TO STA	PROJ.	HYNE (852)	2) ILLINOIS		STRUCTURE 0	89-329	9