

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	1
ILLINOIS				

# STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION PLANS FOR PROPOSED DRAINAGE IMPROVEMENTS

**FAS 61 (McCONNELL RD) CH 19  
OVER CEDAR CREEK  
STEPHENSON COUNTY  
DAKOTA TOWNSHIP  
SECTION 19-00187-00-BR  
PROJECT NO.: ODW3(724)  
JOB NO. C-92-045-21  
CONTRACT NO. 85717**

### INDEX OF SHEETS

- 1 COVER SHEET
- 2 GENERAL NOTES, SUMMARY OF QUANTITIES AND RATES OF APPLICATION
- 3 TYPICAL SECTIONS
- 4 PLAN AND PROFILE
- 5 GENERAL PLAN AND ELEVATION
- 6 CULVERT DETAILS
- 7 CROSS SECTIONS

### UTILITIES

ENERGY:  
ComEd  
PUBLIC RELOCATION DEPT 630-437-4855  
ILLINOIS DAMAGE: ILLINOISDAMAGE@USICLLC.COM

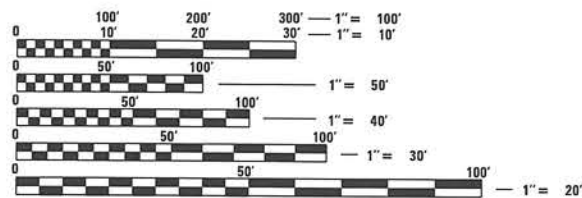
COMMUNICATIONS:  
FRONTIER TEL  
KALIN HINSHAW 815-895-1515

### HIGHWAY STANDARDS

- 000001-08 STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
- 001006 DECIMAL OF AN INCH AND OF A FOOT
- 280001-07 TEMPORARY EROSION CONTROL SYSTEMS
- 515001-04 NAME PLATE FOR BRIDGES
- 630111-01 WEAK POST GUARDRAIL ATTACHED TO CULVERT
- 701006-05 OFF-RD OPERATIONS, 2L, 2W, 15'(4.5 m) TO 24" (600 mm) FROM PAVEMENT EDGE
- 701306-04 LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS >45 MPH
- 701901-08 TRAFFIC CONTROL DEVICES
- 720011-01 METAL POSTS FOR SIGNS, MARKERS & DELINEATORS
- 728001-01 TELESCOPING STEEL SIGN SUPPORT
- 729001-01 APPLICATIONS OF A & B METAL POSTS (FOR SIGNS & MARKERS)
- B.L.R. 21-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES FOR CONSTRUCTION ON RURAL LOCAL HIGHWAYS

### TRAFFIC DATA

FAS 61 (McCONNELL ROAD) CH 19  
FUNCTIONAL CLASSIFICATION - MAJOR COLLECTOR  
2021 ADT = 700 (8.5% TRUCKS)  
DESIGN SPEED = 50 MPH



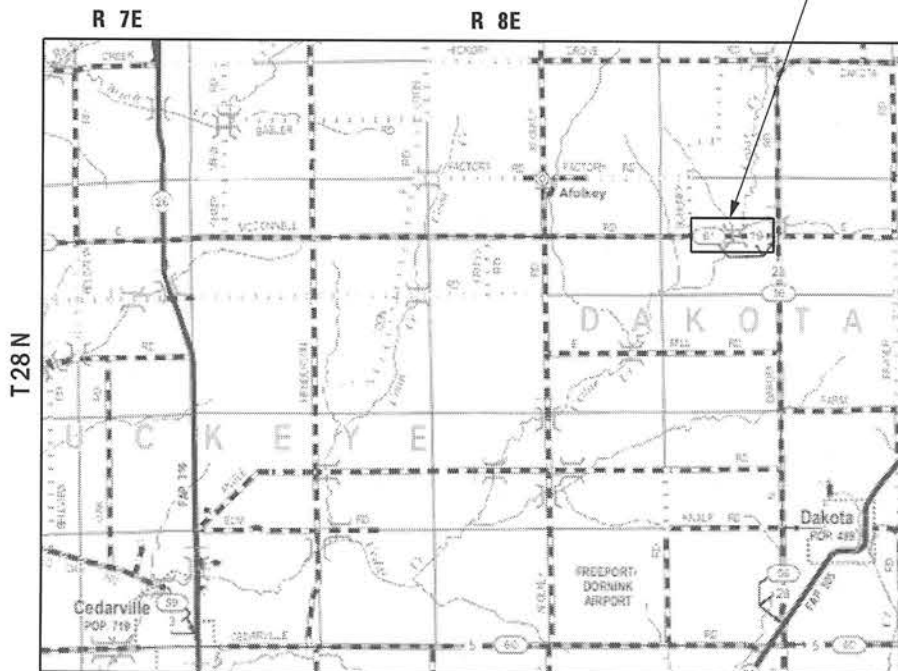
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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

HLC PROJECT NO. 7812  
HLC FIELD BOOK NO. XXX



*Anthony R. Fortin* 9/9/2021  
ANTHONY R FORTIN, P E DATE  
LICENSE EXPIRES 2/28/22



LOCATION MAP

TOTAL LENGTH = 264 FT. = 0.050 MILE

PROJECT LOCATION  
STA 16+11 TO STA 18+75.34



APPROVED	<i>[Signature]</i>	20 21
	COUNTY ENGINEER	
PASSED	November 4	20 21
	<i>[Signature]</i>	
	DISTRICT TWO ENGINEER OF LOCAL ROADS AND STREETS	
Releasing For Bid Based on Limited Review	November 4	20 21
	<i>[Signature]</i>	
	DEPUTY DIRECTOR OF HIGHWAYS REGION TWO ENGINEER	
	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	

**CHASTAIN & ASSOCIATES, LLC**  
CONSULTING ENGINEERS  
DECATUR (217) 422-8544  
SCHAUMBURG (773) 714-0050  
ROCKFORD (815) 489-0050  
184-001397

THE PROPOSED IMPROVEMENT CONSISTS OF THE REPLACEMENT OF A R.C. BOX CULVERT (SN 089-5007) UNDER MCCONNELL ROAD LOCATED 1.75 MILES EAST OF AFOLKY ROAD AND 2 1/2 MILES NORTH OF DAKOTA, IL.

**GENERAL NOTES**

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE DETAILS IN THE PLANS, THE SPECIAL PROVISIONS INCLUDED IN THE CONTRACT DOCUMENTS, AND THE LATEST EDITION OF THE STATE OF ILLINOIS "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS", THE STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS, THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", THE "MANUAL OF TEST PROCEDURES FOR MATERIALS", AND THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS".
- 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 AND OTHER FACILITIES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.
- LOCATIONS OF PUBLIC OR PRIVATE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND THE COUNTY DOES NOT GUARANTEE THEIR ACCURACY. THE CONTRACTOR SHALL HAVE THE RESPECTIVE UTILITY COMPANIES FIELD LOCATE ALL THEIR FACILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL ALSO VERIFY THE DEPTHS OF THE EXISTING UTILITIES IF NECESSARY. ANY RELOCATION OR LOWERING OF UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR IN SUCH A MANNER TO NOT IMPEDE PROJECT PROGRESS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UNDERGROUND OR SURFACE UTILITIES EVEN THOUGH THEY MAY NOT BE SHOWN ON THE PLANS. ANY UTILITY THAT IS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST 48 HOURS IN ADVANCE OF BEGINNING WORK AND COORDINATE ALL CONSTRUCTION OPERATIONS WITH THE ENGINEER.
- THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL SECTION OR SUBSECTION MONUMENTS OR PROPERTY OR REFERENCE MARKERS UNTIL THE OWNERS, HIS AGENT OR AN AUTHORIZED SURVEYOR HAS WITNESSED OR OTHERWISE REFERENCED THE LOCATIONS.
- MAINTAINING DRAINAGE: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN DRAINAGE FLOWS AT ALL TIMES DURING THE PERFORMANCE OF THE WORK. THE CONTRACTOR SHALL SUPPLY A PLAN AS A SUBMITTAL REVIEW FOR EACH LOCATION THAT WILL MAINTAIN FLOWS THAT MEET ALL LOCAL, STATE AND FEDERAL REGULATIONS AND NOT CAUSE ANY DAMAGE UPSTREAM OR TO ANY ADJACENT DRAINAGE WATERSHED. THE PLAN SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF ILLINOIS. THE PLAN MUST BE SUBMITTED AT LEAST TWO WEEKS PRIOR TO START OF ANY CULVERT WORK. COST OF MAINTAINING DRAINAGE FLOWS SHALL BE INCIDENTAL TO THE CONTRACT.
- CONTRACTOR SHALL NOT SCALE DIMENSIONS FROM THE CONTRACT PLANS FOR CONSTRUCTION PURPOSES. SCALES, IF SHOWN ARE FOR INFORMATION ONLY.
- THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, THE PROPOSED CONCRETE TRUCK WASHOUT LOCATION. RUNOFF FROM WASH AREAS SHALL BE CONTAINED IN DESIGNATED AREAS SO THAT RUNOFF DOES NOT REACH THE DITCH OR DRAINAGE SYSTEMS.
- PLAN DIMENSIONS AND DETAILS RELATIVE TO EXISTING STRUCTURES HAVE BEEN TAKEN FROM FIELD MEASUREMENTS AND AS-BUILT PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY SUCH DIMENSIONS AND DETAILS IN THE FIELD AND MAKE NECESSARY APPROVED ADJUSTMENTS PRIOR TO CONSTRUCTION OR ORDERING THE MATERIALS.
- ALL WORK SHALL BE COMPLETED WITHIN COUNTY RIGHT-OF-WAY WITH NO EQUIPMENT OR MATERIAL STORAGE ON PRIVATE PROPERTY.
- THE CONTRACTOR'S OPERATIONS AND TEMPORARY STORAGE ACTIVITIES SHALL BE LIMITED TO THE WORK AREA AND/OR CONSTRUCTION LIMITS.
- COORDINATE ANY REQUIRED SIGN REMOVAL WITH THE VILLAGE ONE (1) WEEK PRIOR TO CONSTRUCTION.
- NO CHANNEL GRADING OR CULVERT CONSTRUCTION ACTIVITIES WILL BE ALLOWED IN STANDING WATER OR DURING PERIODS OF HIGH FLOWS AND EXCESSIVE CHANNEL FLOW VELOCITIES.
- SAW CUTTING SHALL BE PERFORMED AT LOCATIONS DESIGNATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER, AND SHALL BE CONSIDERED INCLUDED IN THE COST OF APPLICABLE PAY ITEMS. CLEANING AND REMOVAL OF ANY AND ALL SAW CUT DEBRIS SHALL ALSO BE INCLUDED. TRAFFIC IS TO BE MAINTAINED FOR THE DURATION OF THE PROJECT.
- THE FOLLOWING BMPS SHALL BE IMPLEMENTED TO CONTROL RESIDUAL CONCRETE, CONCRETE SEDIMENTS, AND RINSE WATER:
  - 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.
  - 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 REPORTED TO THE RESIDENT ENGINEER AND CLEANED UP IMMEDIATELY.
  - CONCRETE WASTE SOLIDS/LIQUIDS SHALL BE DISPOSED OF PROPERLY.

**SUMMARY OF QUANTITIES**

CONSTRUCTION TYPE CODE: 0010

Code Number	Pay Item	Unit	Total
20200100	Earth Excavation	Cu. Yd.	224
20700220	Porous Granular Embankment	Cu. Yd.	259
25000200	Seeding, Class 2	Acre	0.2
25000400	Nitrogen Fertilizer Nutrient	Pound	18
25000500	Phosphorus Fertilizer Nutrient	Pound	18
25000600	Potassium Fertilizer Nutrient	Pound	18
25100630	Erosion Control Blanket	Sq. Yd.	385
28000305	Temporary Ditch Checks	Foot	90
28000400	Perimeter Erosion Barrier	Foot	512
28100107	Stone Riprap, Class A4	Sq. Yd.	91
28200200	Filter Fabric	Sq. Yd.	91
35101400	Aggregate Base Course, Type B	Ton	324
40600275	Bituminous Materials (Prime Coat)	Pound	2012
40600290	Bituminous Materials (Tack Coat)	Pound	110
40603080	Hot-mix Asphalt Binder Course, IL-19.0, N50	Ton	111
40604050	Hot-mix Asphalt Surface Course, IL-9.5, Mix "C", N50	Ton	83
48101200	Aggregate Shoulders, Type B	Ton	62
50100100	Removal of Existing Structures	Each	1
50200100	Structure Excavation	Cu. Yd.	200
50800105	Reinforcement Bars	Pound	79510
50800205	Reinforcement Bars, Epoxy Coated	Pound	1110
51500100	Name Plates	Each	1
54003000	Concrete Box Culverts	Cu. Yd.	322
Δ 63000001	Steel Plate Beam Guardrail, Type A, 6 Foot Posts	Foot	162.5
Δ 63000054	Weak Post Guardrail Attached to Culvert Case 5	Foot	124
Δ 63100167	Traffic Barrier Terminal Type 1 (Special) Tangent	Each	4
63200310	Guardrail Removal	Foot	450
67100100	Mobilization	L Sum	1
Δ 72501000	Terminal Marker-Direct Applied	Each	4
X0900064	Membrane Waterproofing System For Buried Structures	Sq. Yd.	244
X7010216	Traffic Control And Protection (Special)	L Sum	1
Z0013798	Construction Layout	L Sum	1

Δ SPECIALTY ITEMS

**RATES OF APPLICATION**

ITEMS	RATE OF APPLICATION
AGGREGATE BASE COURSE	= 2.05 TONS/ CU YD
RIPRAP	= 1.5 TONS/ CU YD
PORTLAND CEMENT	= 8% BY WEIGHT
BITUMINOUS MATERIALS (TACK COAT)	= 0.025 LB/SO FT
BITUMINOUS MATERIALS (PRIME COAT)	= 0.25 TO 0.50 GAL/SO YD AT 8.2 TO 8.35 LB/GAL

**GUARDRAIL SCHEDULE**

ITEM NO.	DESCRIPTION	LOCATION	QUANTITY
63000001	STEEL PLATE BEAM GUARDRAIL, TYPE A, 6 FOOT POSTS	STA 16+82.7 RT TO STA 17+32.7 RT	50.0 FT
		STA 18+24.8 LT TO STA 19+37.3 LT	112.5 FT
		TOTAL	162.5 FT
63000054	WEAK POST GUARDRAIL ATTACHED TO CULVERT CASE V	STA 17+32.7 RT TO STA 17+94.4 RT	62 FT
		STA 17+62.73 LT TO STA 18+24.37 LT	62 FT
		TOTAL	124 FT
63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	STA 16+45.00 RT	1 EACH
		STA 17+15.42 LT	1 EACH
		STA 18+41.80 RT	1 EACH
		STA 19+87.28 LT	1 EACH
		TOTAL	4 EACH

FILES

USER NAME =	DESIGNED - TO	REVISED -
DRAWN - ORG	REVISIONS -	
PLOT SCALE =	CHECKED - TO	REVISED -
PLOT DATE =	DATE - 07/23/2020	REVISED -



DECATUR (217) 422-8544  
 SCHAUMBURG (773) 714-0050  
 ROCKFORD (815) 489-0050  
 184-091397

**GENERAL NOTES, SUMMARY OF QUANTITIES AND RATES OF APPLICATION**

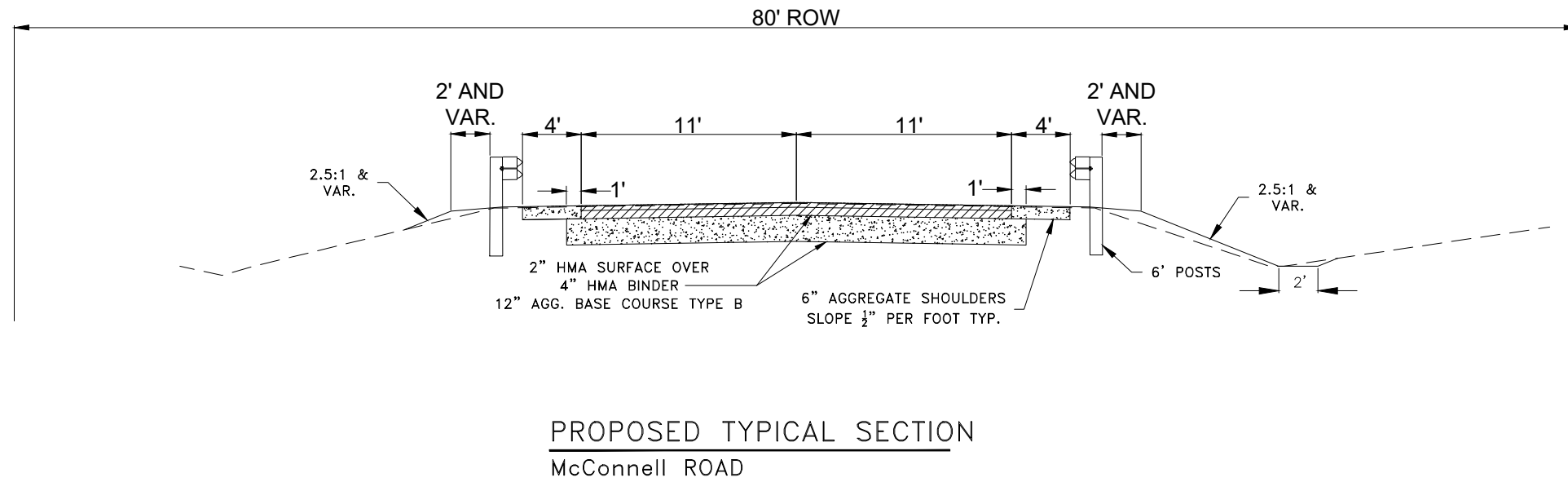
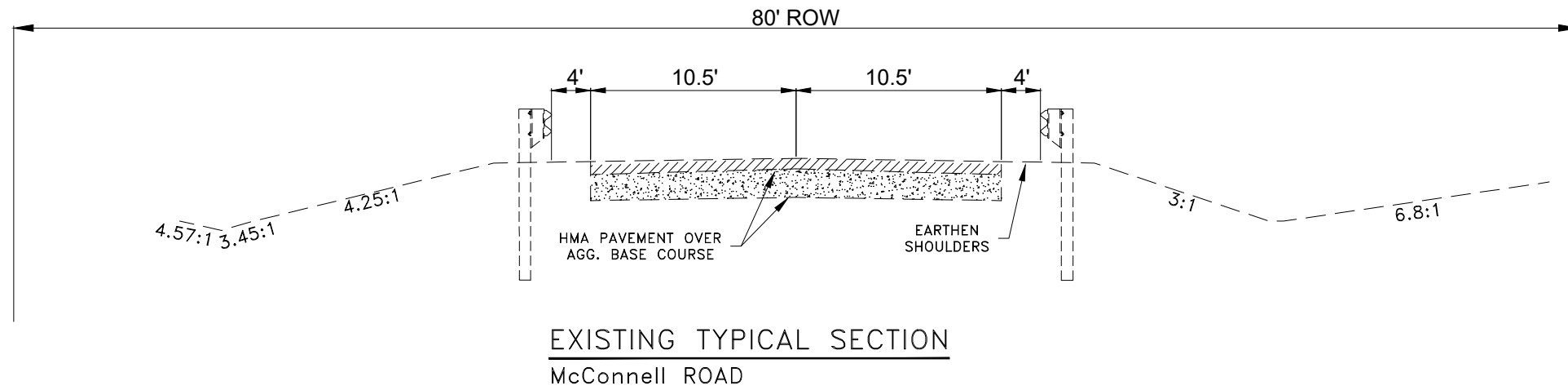
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-8R	STEPHENSON	7	2
PROJECT ILLINOIS			CONTRACT NO. 85717	

PLAN	SURVEYED	DATE
	BLULLED	
	ALIGNED & CHECKED	
	BY FILE NAME	
NOTE BOOK NO.		

PROFILE	SURVEYED	DATE
	BLULLED	
	GRADINGS CHECKED	
	STRUCTURE NOTATIONS CHECKED	
NOTE BOOK NO.		

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**MIXTURE TABLE**

MIXTURE USE:	4.0" HMA BINDER	2.0" HMA SURFACE
PG	PG 64-22	PG 64-22
DESIGN AIR VOIDS	4.0% @ N50	4.0% @ N50
MIX COMP (GRADATION)	IL 19.0	IL 9.5
FRICTION AGGREGATE		MIX C
QUALITY MANAGEMENT PROGRAM	QC/QA	QC/QA

DESIGNED -	REVISIONS	DATE
DRAWN -	REVISIONS	DATE
CHECKED -	REVISIONS	DATE
DATE -	REVISIONS	DATE

**CHASTAIN & ASSOCIATES LLC**  
 CONSULTING ENGINEERS

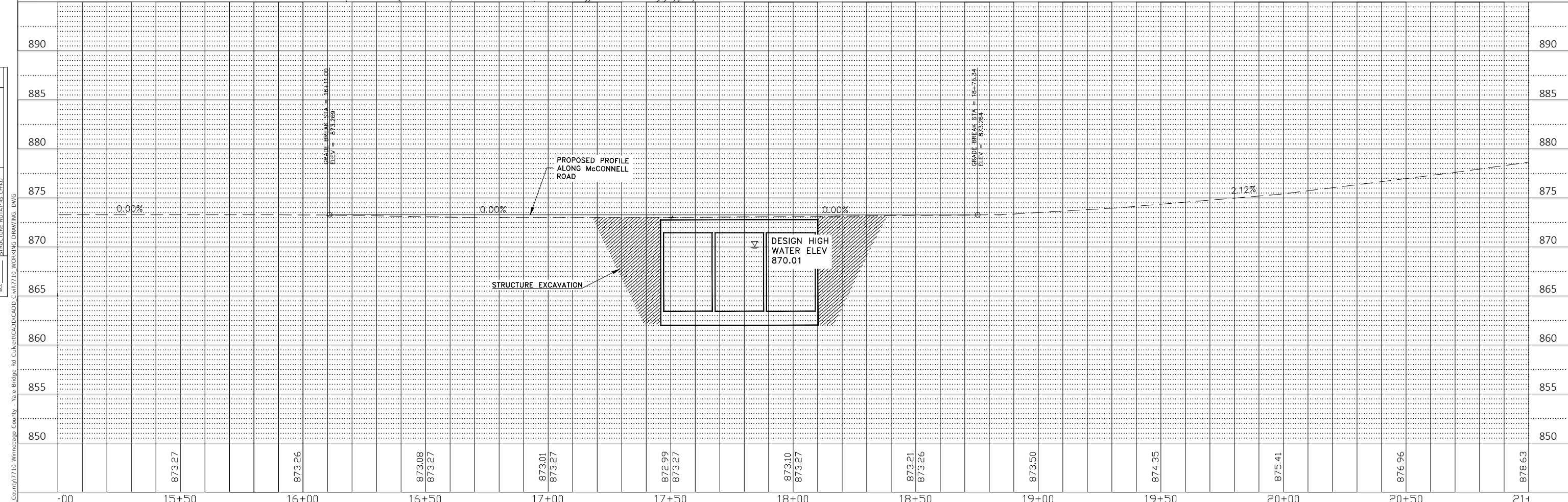
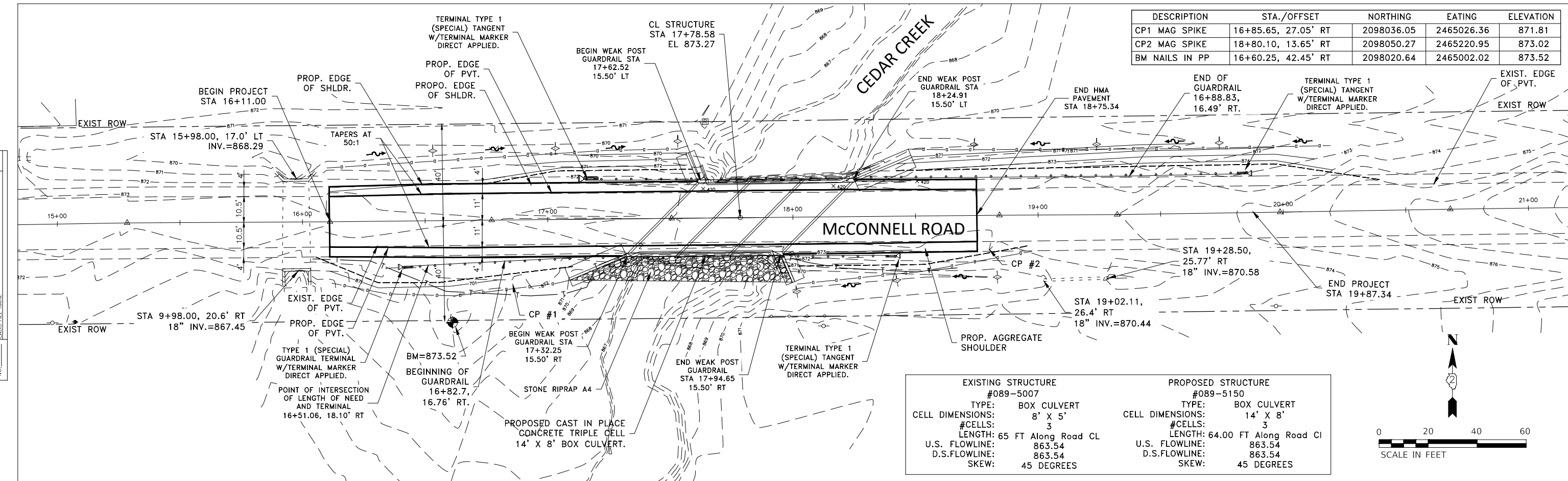
6832 STALTER DRIVE, SUITE 100  
 ROCKFORD, IL 61108  
 PHONE: 815-489-0050  
 FAX: 815-489-0050  
 WWW.CHASTAINENGINEERS.COM

TYPICAL SECTIONS MCCONNELL ROAD			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	3
				CONTRACT NO. 85717
				ILLINOIS FED. AID PROJECT

DATE	
BY	
PLAN	SURVEYED
	DESIGNED
	DRAWN
	CHECKED
	NOTED
	DATE

DATE	
BY	
PROFILE	SURVEYED
	DESIGNED
	DRAWN
	CHECKED
	NOTED
	DATE



873.27	873.26	873.08	873.27	873.01	873.27	872.99	873.27	873.10	873.27	873.21	873.26	873.50	874.35	875.41	876.96	878.63
-00	15+50	16+00	16+50	17+00	17+50	18+00	18+50	19+00	19+50	20+00	20+50	21				

DESIGNED -	REVISIONS -
DRAWN -	REVISIONS -
CHECKED -	REVISIONS -
DATE -	REVISIONS -

SCALE = 40,000'/in	DATE = 2/15/2021
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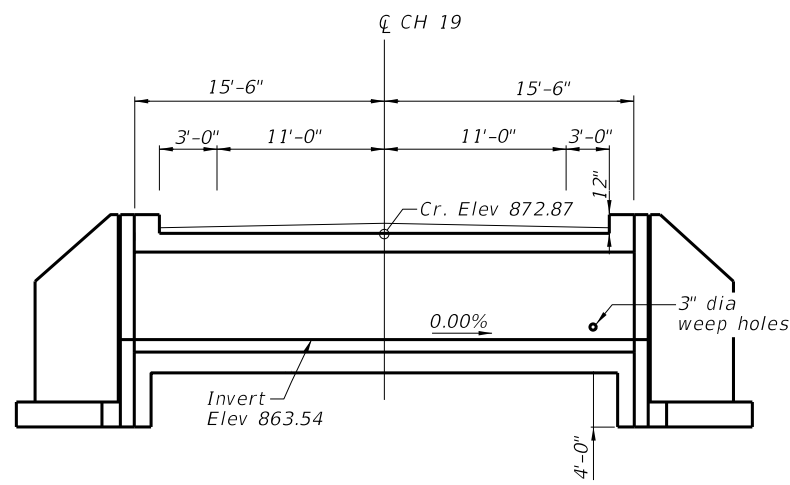
**CHASTAIN & ASSOCIATES LLC**  
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6832 STALTER DRIVE, SUITE 100  
ROCKFORD, IL 61108  
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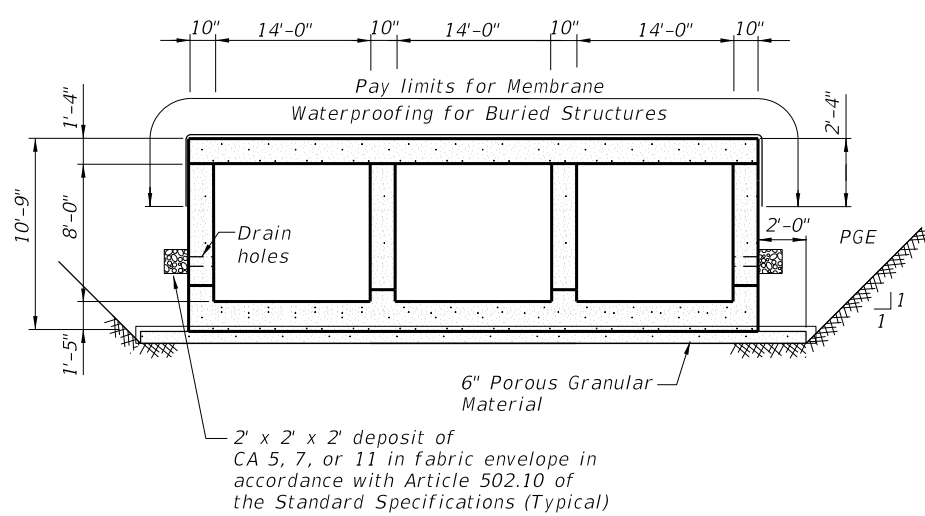
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F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	4
CONTRACT NO. 85717				

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**LONGITUDINAL SECTION**



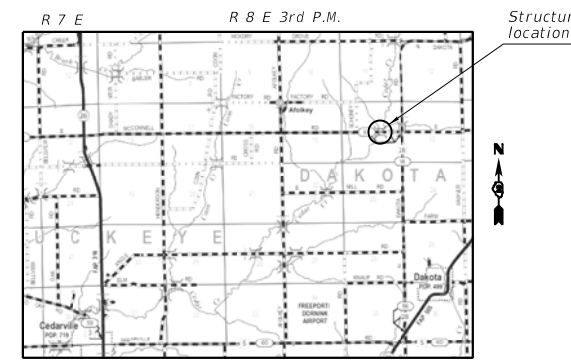
**SECTION THRU BARRELS**

**GENERAL NOTES**

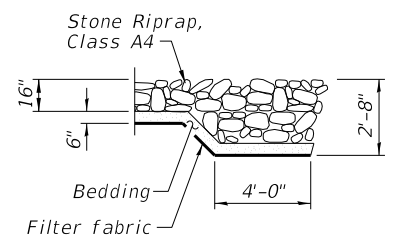
The design fill height for this box is 0.5 ft.  
 Plan dimensions and details relative to existing plans are subject to nominal construction variations. The CONTRACTOR shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the CONTRACTOR will be paid for the quantity actually furnished at the unit price bid for the work.

**CEDAR CREEK CULVERT**  
 BUILT 2022 BY  
 STEPHENSON COUNTY  
 SEC. 19-00187-00-BR  
 CH-19,FAS-61 STA. 17+78.58  
 STR. NO 089-5150 LOADING HL-93

**NAME PLATE**  
 See Std. 515001



**LOCATION SKETCH**



**RIPRAP FLANK DETAIL**

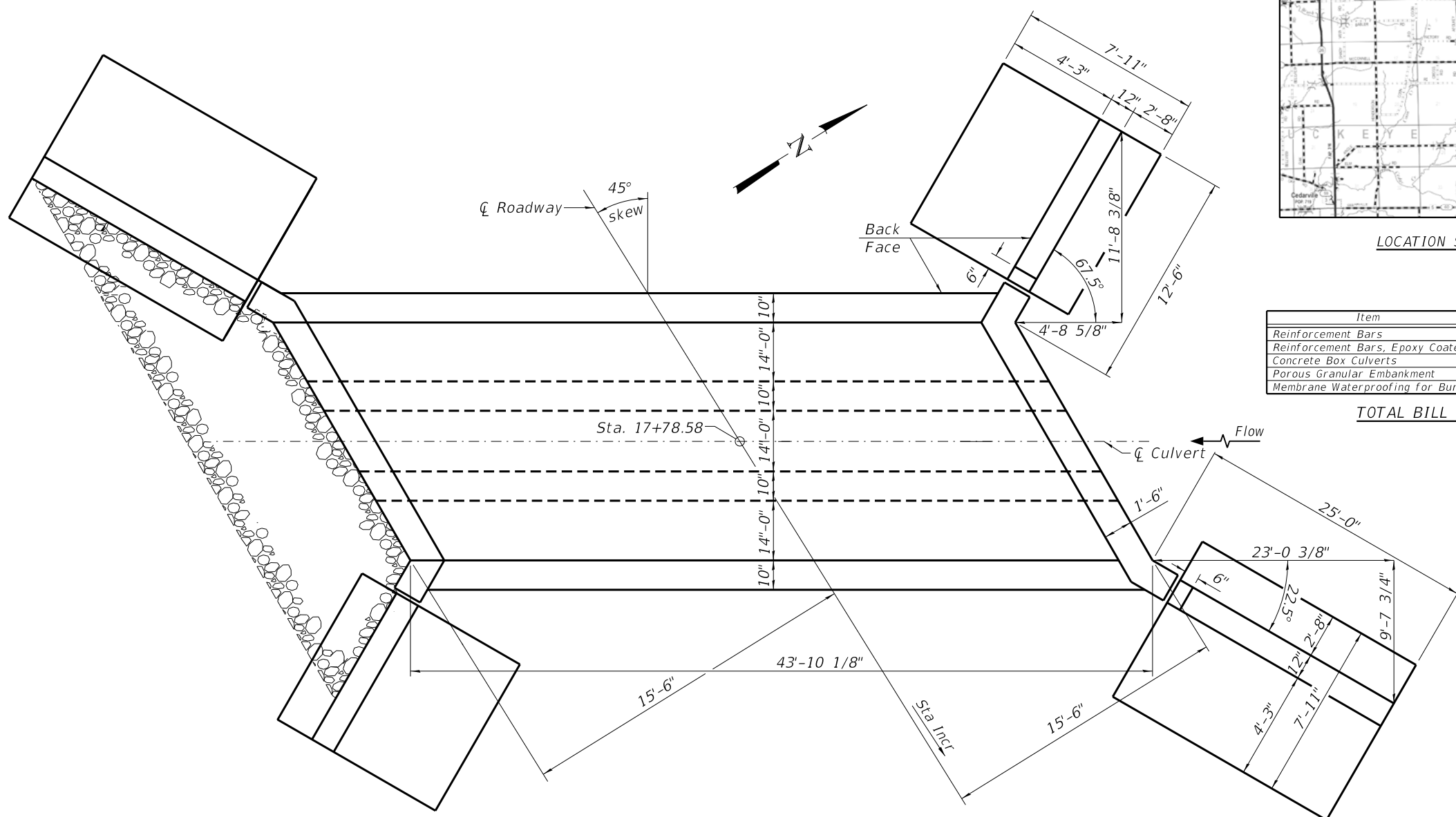
**DESIGN SPECIFICATIONS**  
 AASHTO LRFD Bridge Design Specifications  
 8th Edition with 2018 Interims

**DESIGN STRESSES**  
 FIELD UNITS  
 $f'_c = 3,500 \text{ psi}$   
 $f_y = 60,000 \text{ psi (Reinforcement)}$

**LOADING HL-93**  
 Allow 50#/sq. Ft. for future wearing surface.

Item	Unit	Quantity
Reinforcement Bars	Pound	79,510
Reinforcement Bars, Epoxy Coated	Pound	1,110
Concrete Box Culverts	Cu Yd	322
Porous Granular Embankment	Cu Yd	259
Membrane Waterproofing for Buried Structures	Sq Yd	244

**TOTAL BILL OF MATERIAL**



**PLAN**



I certify that to the best of my knowledge, information and belief, this bridge/box culvert 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 Standard Specifications for Highway Bridges'.

*Keith E. Brandau* 8/30/21  
 KEITH E BRANDAU, S.E., Date  
 License Expires 2/28/22

SFILES

USER NAME =	DESIGNED - TO	REVISED -
PLOT SCALE =	DRAWN - ORG	REVISED -
PLOT DATE =	CHECKED - TO	REVISED -
	DATE - 07/23/2020	REVISED -

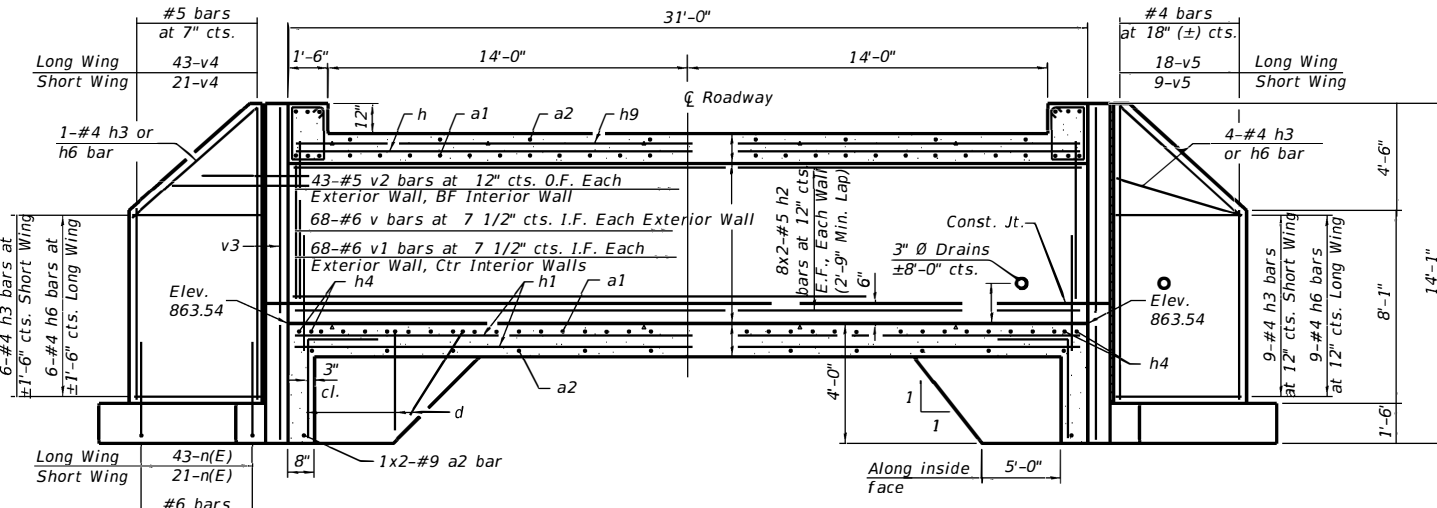
**CHASTAIN & ASSOCIATES LLC**  
 CONSULTING ENGINEERS

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 SCHAUMBURG (773) 714-0050  
 ROCKFORD (815) 489-0050  
 184-001397

**GENERAL PLAN AND ELEVATION**

SCALE: SHEET NO. OF SHEETS STA. TO STA.

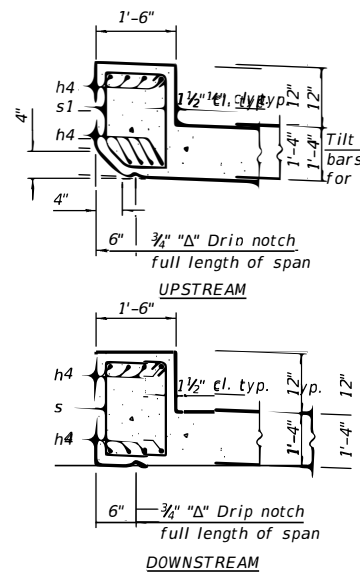
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	5
<b>CONTRACT NO.</b>			-----	



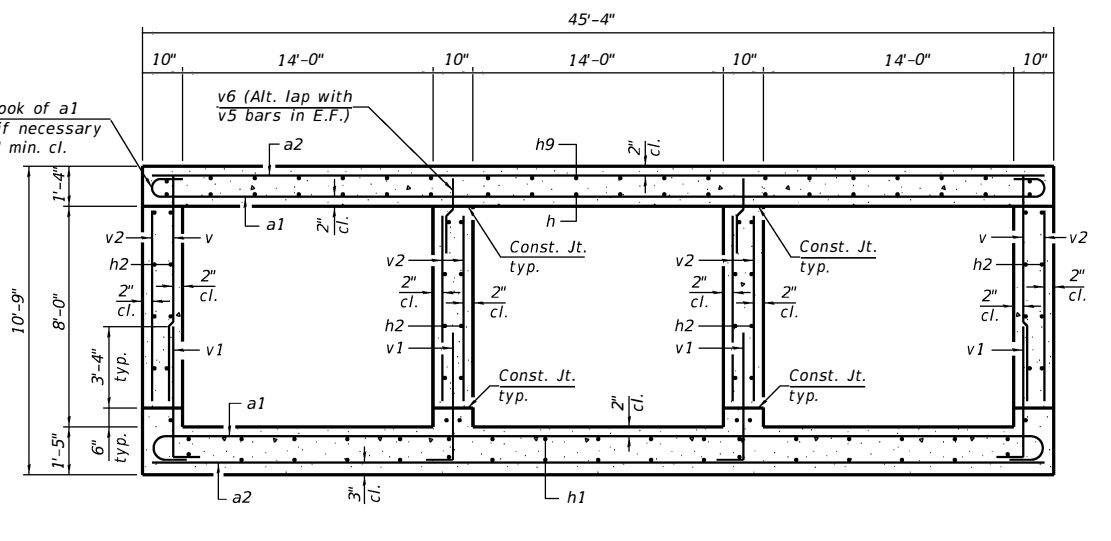
REINF. - BACK FACE

LONGITUDINAL SECTION  
(Dimensions at Rt. L's to C Roadway)

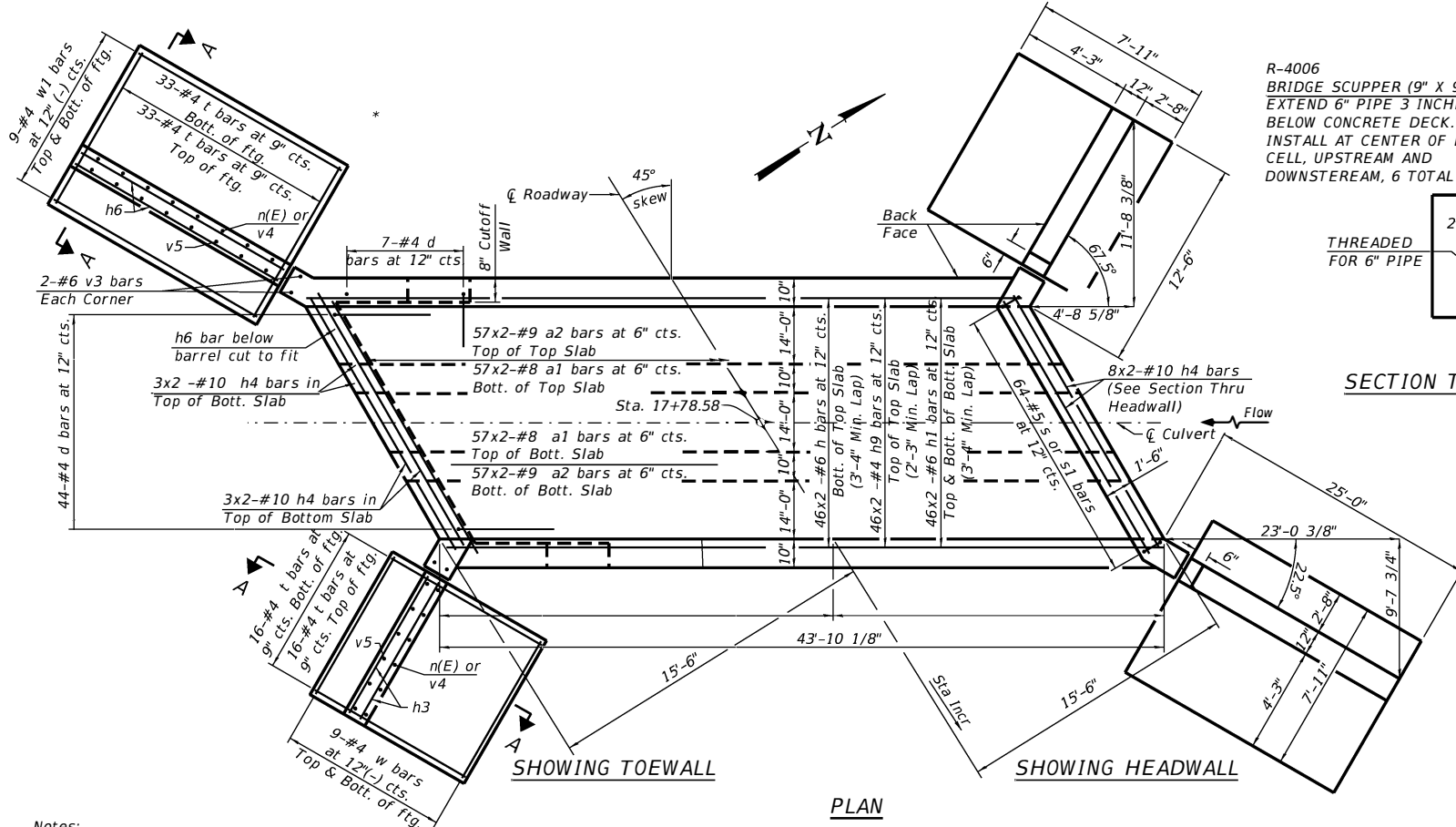
REINF. - FRONT FACE



SECTION THRU HEADWALL

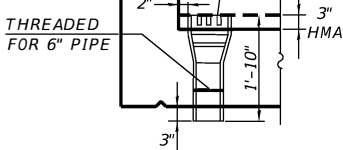


SECTION THRU BARREL

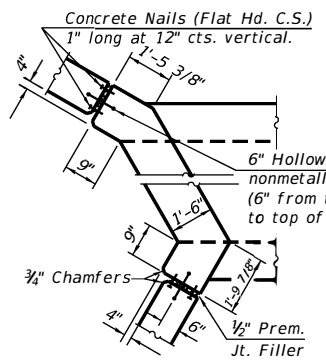


PLAN

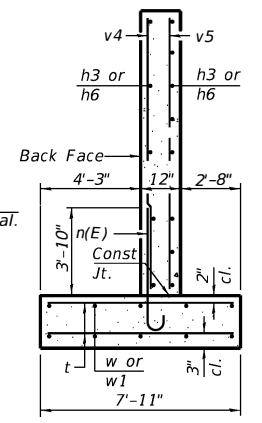
R-4006  
BRIDGE SCUPPER (9" X 9.5" GRATE)  
EXTEND 6" PIPE 3 INCHES  
BELOW CONCRETE DECK.  
INSTALL AT CENTER OF EACH  
CELL, UPSTREAM AND  
DOWNSTREAM, 6 TOTAL



SECTION THRU SCUPPER

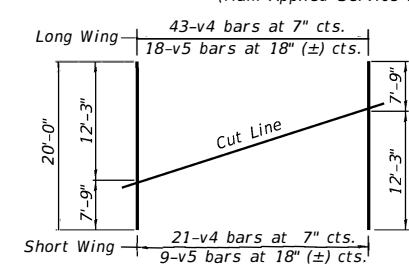


CORNER DETAIL



SECTION A-A

(Max. Applied Service Bearing Pressure = 2500 psf)



FIELD CUTTING DIAGRAM

Order bars shown full length. Cut as shown  
and use remainder of bars in opposite wingwall.

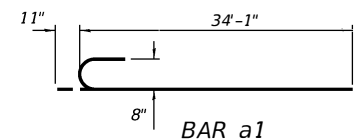
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a1	228	#8	35'-0"	┌
a2	232	#9	34'-8"	┌
d	116	#4	5'-5"	└
h	92	#6	23'-0"	┌
h1	184	#6	23'-0"	┌
h2	128	#5	22'-6"	┌
h3	40	#4	11'-5"	┌
h4	48	#10	24'-5"	┌
h9	92	#4	22'-3"	┌
n(E)	128	#6	5'-9"	┌
s	64	#5	7'-7"	┌
s1	64	#5	7'-6"	┌
t	196	#4	7'-8"	┌
v	136	#6	8'-6"	┌
v1	272	#6	5'-7"	┌
v2	258	#5	7'-3"	┌
v3	8	#6	13'-9"	┌
v4	64	#5	20'-0"	┌
v5	27	#4	20'-0"	┌
w	36	#5	11'-5"	┌
w1	36	#5	24'-5"	┌
Concrete Box Culverts	Cu. Yd.		322.0	
Reinforcement Bars	Pound		79,510	
Reinforcement Bars, Epoxy Coated	Pound		1,110	

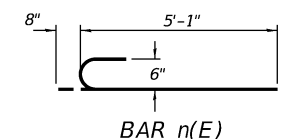
Notes:  
Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.  
At the Contractor's option, a longer v1 bar may be ordered to replace the v bar.  
No reduction in quantities shall be made for this substitution.

TSA-SB-TT-LS 2-17-2017

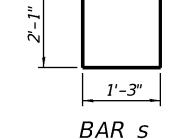
NOTE: LAP a1 bars at straight ends with hooked ends at exterior walls



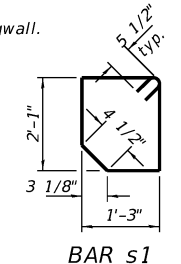
BAR a1



BAR n(E)



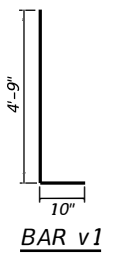
BAR s



BAR s1

BAR LAPS

BAR	LAP
#4	2'-3"
#5	2'-9"
#6	3'-4"
#8	4'-5"
#9	5'-5"
#10	6'-8"



BAR v1

5 FILES

USER NAME =	DESIGNED - TO	REVISED -
DRAWN - ORG	REVISED -	
PLOT SCALE =	CHECKED - TO	REVISED -
PLOT DATE =	DATE - 07/23/2020	REVISED -

**CHASTAIN & ASSOCIATES LLC**  
CONSULTING ENGINEERS

DECATUR (217) 422-8544  
SCHAUMBURG (773) 714-0050  
ROCKFORD (815) 489-0050  
184-001397

CULVERT DETAILS  
STRUCTURE NO.

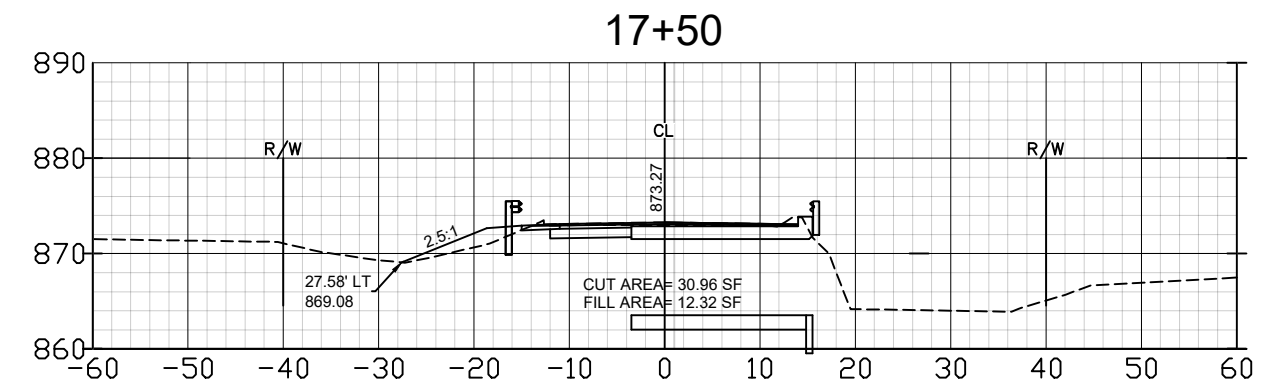
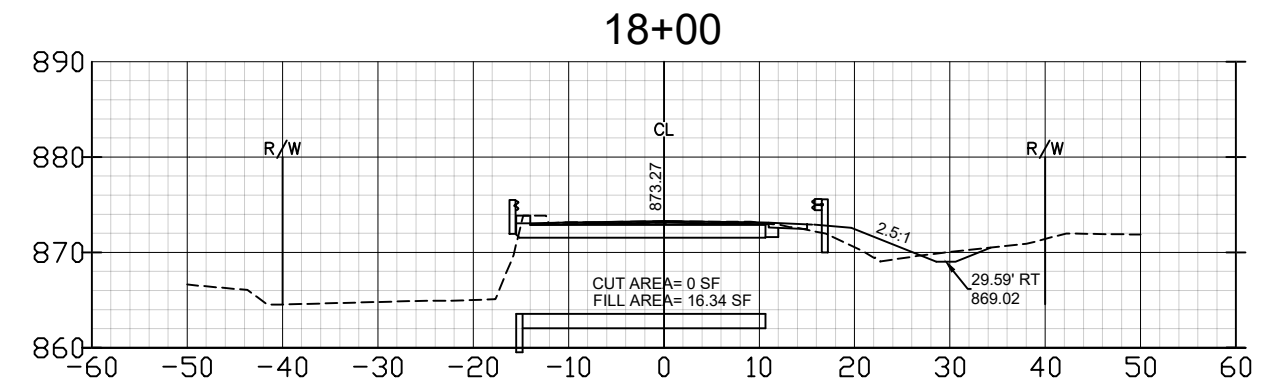
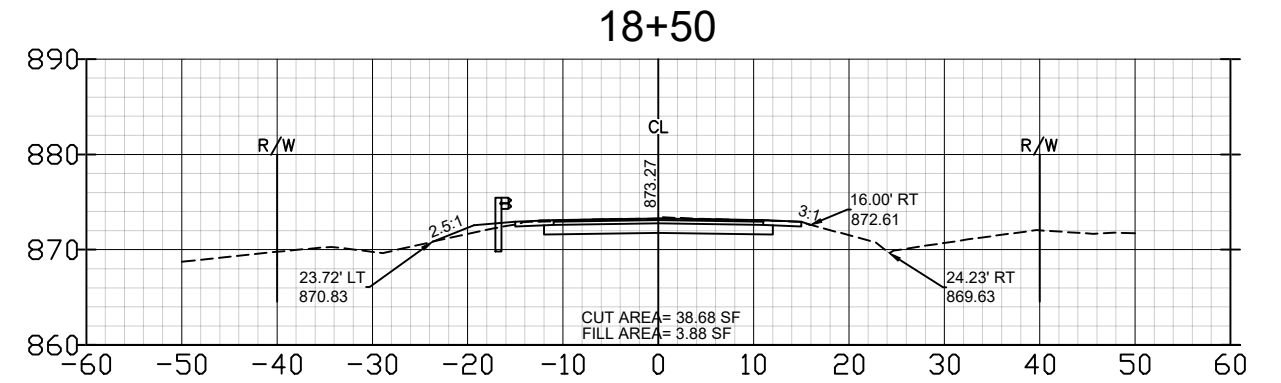
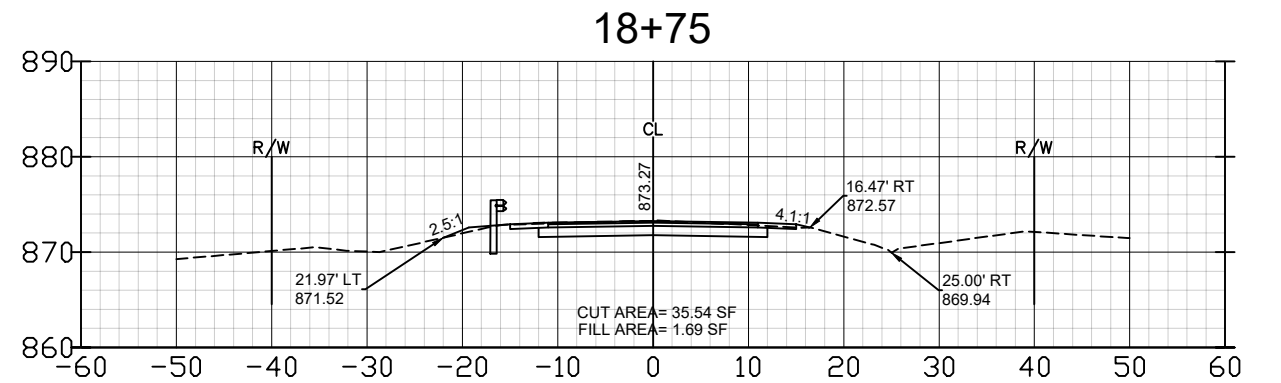
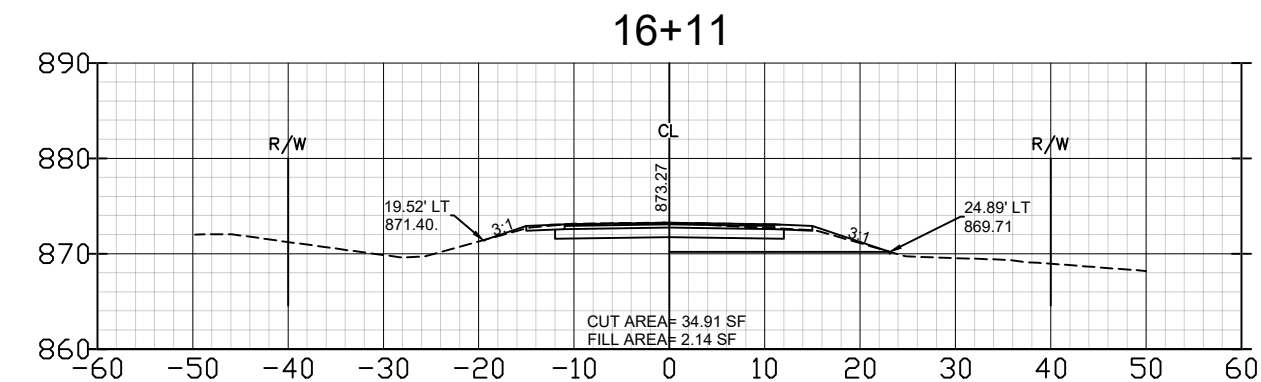
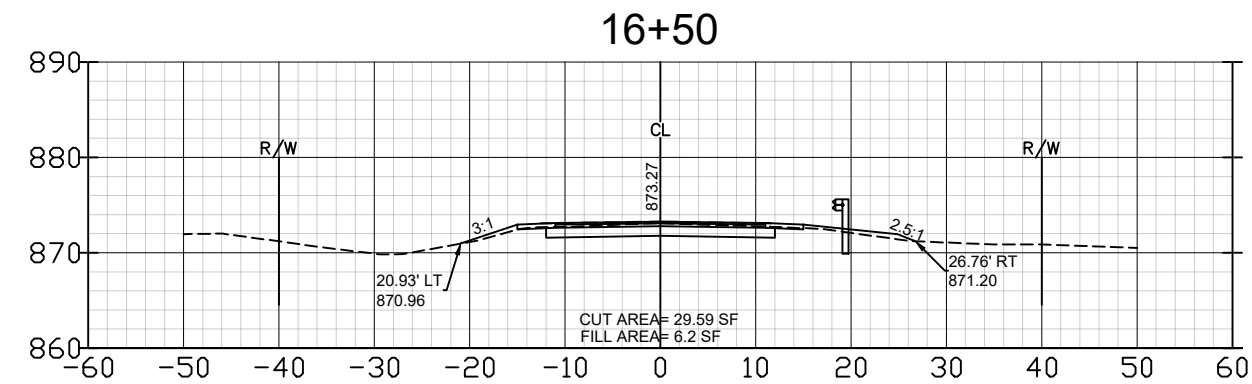
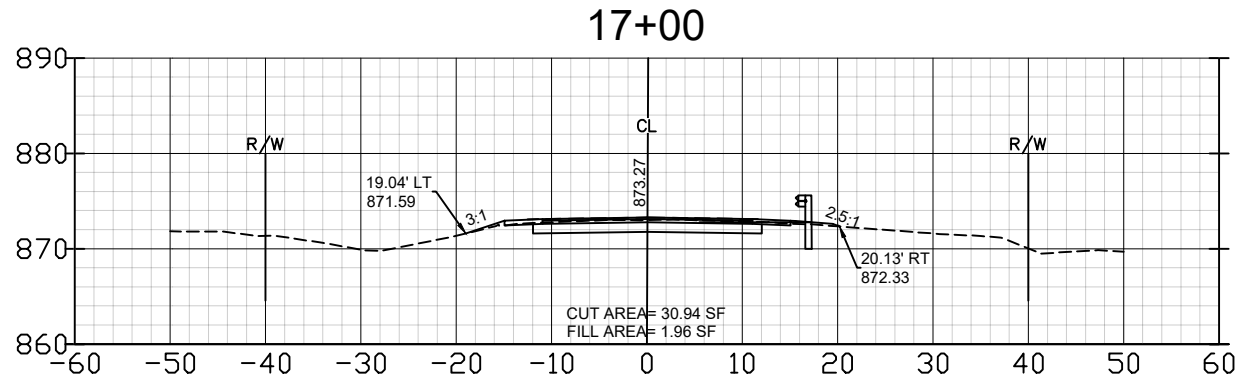
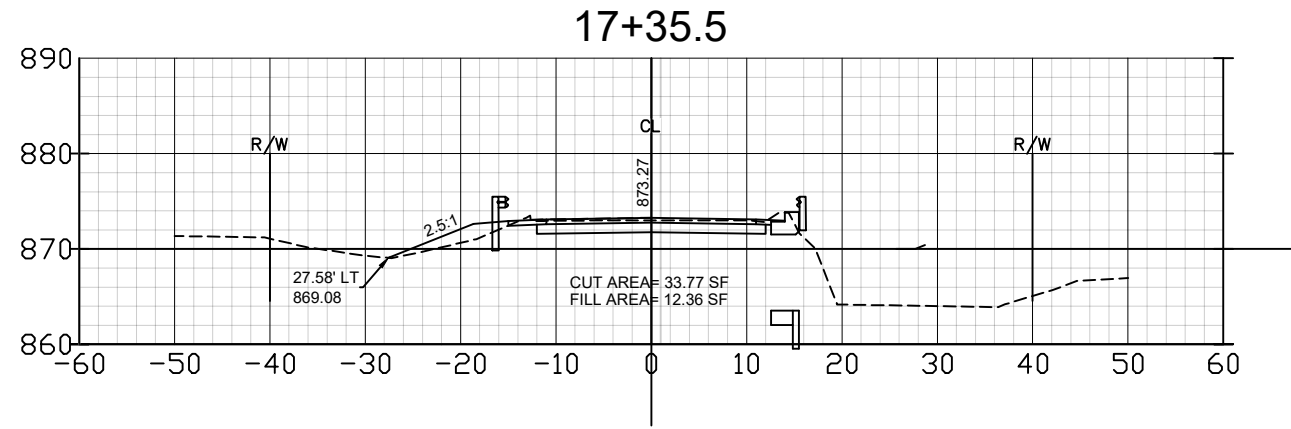
SCALE: SHEET NO. OF SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	6
PROJECT ILLINOIS			CONTRACT NO. 85717	

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

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

MODEL:Default  
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DESIGNED -	REVISIONS -
DRAWN -	REVISIONS -
CHECKED -	REVISIONS -
DATE -	REVISIONS -

**CHASTAIN & ASSOCIATES LLC**  
 CONSULTING ENGINEERS

6832 STALTER DRIVE, SUITE 100  
 ROCKFORD, IL 61108  
 PHONE: 815-489-0059  
 FAX: 815-489-0059  
 WWW.CHASTAINENGINEERS.COM

CROSS SECTIONS			
SCALE:	SHEET	OF SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
61	19-00187-00-BR	STEPHENSON	7	7
				CONTRACT NO. 85717
				ILLINOIS FED. AID PROJECT