

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	1
		ILLINOIS	CONTRACT NO. 93791	

INDEX OF SHEETS

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PROPOSED  
HIGHWAY PLANS

TARP /RBI/LOCAL FUNDS  
FAS ROUTE 310 (MURRAYVILLE RD)  
SECTION 19-00108-00-RS  
PROJECT R2XA(262)  
RESURFACING AND CULVERT REPLACEMENTS  
MORGAN COUNTY

C-96-076-21

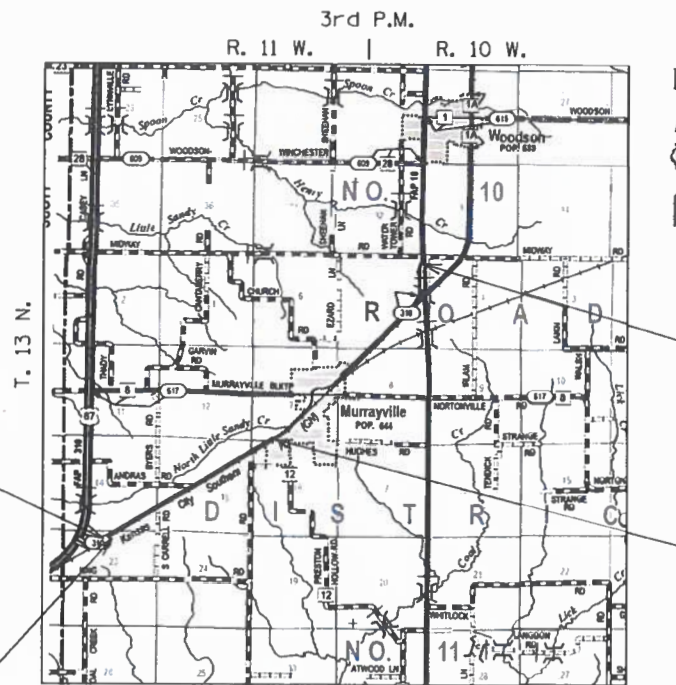


MURRAYVILLE RD

FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR

US 267 TO NORTONVILLE RD  
2019 ADT (ACTUAL): 1100

NORTONVILLE RD TO US 67  
2019 ADT (ACTUAL): 450

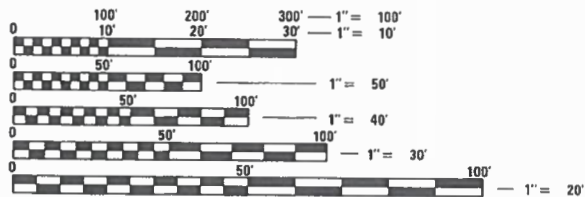


END IMPROVEMENTS  
SECTION 19-00108-00-RS  
STATION 1602 + 21.80

BEGIN IMPROVEMENTS  
SECTION 19-00108-00-RS  
STATION 402 + 61.73

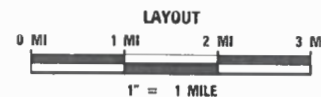
STATION EQUATION  
STA 535 + 41.86 BK =  
STA. 539 + 19.74 AH

STATION EQUATION  
STA. 665 + 47.94 BK =  
STA. 1613 + 50.00 AH

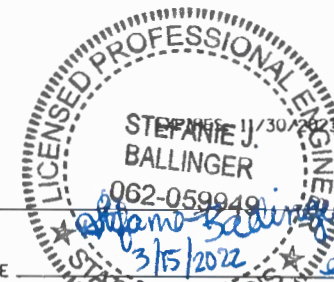


FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD ENGINEERING SCALES. REDUCED SIZED PLANS WILL NOT CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

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



GROSS LENGTH = 26,036.53 FT. = 4.931 MILE  
NET LENGTH = 26,036.53 FT. = 4.931 MILE



BY: [Signature]  
DATE: 3/15/2022 exp. 1/30/23

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

APPROVED: MARCH 15, 2022  
[Signature]  
MORGAN COUNTY / COUNTY ENGINEER

PASSED: April 7, 2022  
[Signature]  
DISTRICT 6 ENGINEER OF LOCAL ROADS & STREETS

Releasing For Bid Based on Limited Review: April 7, 2022  
[Signature]  
REGIONAL ENGINEER

### GENERAL NOTES

- 1. THIS SECTION SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PLANS, THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" ADOPTED JANUARY 1, 2022, THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", THE "SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS" CURRENT AT TIME OF BID, AND THE SPECIAL PROVISIONS INCLUDED IN THE PROPOSAL. THE IDOT HIGHWAY STANDARDS LATEST REVISION NUMBERS SHALL APPLY TO THIS PROJECT.
- 2. WHERE SECTION OR SUB-SECTION MONUMENTS ARE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED BEFORE SUCH MONUMENTS ARE REMOVED. THE CONTRACTOR SHALL PROTECT AND CAREFULLY PRESERVE ALL PROPERTY MARKERS AND MONUMENTS UNTIL THE CITY AND AUTHORIZED SURVEYOR OR AGENT HAS WITNESSED OR OTHERWISE REFERENCED THEIR LOCATION.
- 3. ALL AREAS THAT ARE DISTURBED BY CONSTRUCTION OPERATIONS FOR ANY REASON SHALL BE PERMANENTLY SEEDED AS DIRECTED BY THE ENGINEER. ALL AREAS DISTURBED BY THE CONTRACTOR OUTSIDE THE PROPOSED CONSTRUCTION LIMITS SHALL BE SEEDED AT THE CONTRACTOR'S EXPENSE.
- 4. THE EXCAVATION AND/OR BEDDING THAT MAY BE REQUIRED FOR THE VARIOUS CLASSES OF STONE RIPRAP AS SPECIFIED IN SECTION 281 OF THE STANDARD SPECIFICATIONS WILL NOT BE PAID FOR SEPARATELY, BUT CONSIDERED AS INCLUDED IN THE PAY ITEM STONE RIPRAP OF THE CLASS SPECIFIED.
- 5. DITCH CHECKS ARE NOT REQUIRED AT RIPRAP AREAS, HOWEVER, IF CONSTRUCTION OF DRAINAGE STRUCTURES AND ROADSIDE DITCHES ARE NOT IMMEDIATELY FOLLOWED BY THE PLACEMENT OF RIPRAP, DITCH CHECKS SHALL BE PLACED AS DIRECTED BY THE ENGINEER. COST FOR THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST FOR THE RIPRAP.
- 6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN EXISTING FIELD CONDITIONS BEFORE BIDDING ON THIS PROJECT, SPECIFICALLY AS THEY RELATE TO THE LUMP SUM PAY ITEMS.
- 7. THE CONTRACTOR SHALL USE ALL NECESSARY PRECAUTIONS AND PROTECTIVE MEASURES REQUIRED TO MAINTAIN EXISTING UTILITIES AND APPURTENANCES THAT MUST BE KEPT IN OPERATION. IN PARTICULAR, THE CONTRACTOR WILL TAKE ADEQUATE MEASURES TO PREVENT THE UNDERMINING OF UTILITIES WHICH ARE STILL IN SERVICE.
- 8. EXISTING PAVEMENT, DAMAGED DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.
- 9. DURING CONSTRUCTION OPERATIONS, IF ANY LOOSE MATERIAL IS DEPOSITED IN THE FLOW LINE OF DITCHES OR DRAINAGE STRUCTURES SO THAT THE NATURAL FLOW OF WATER IS OBSTRUCTED, IT SHALL BE REMOVED AT THE CLOSE OF EACH WORKING DAY. AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE STRUCTURES SO AFFECTED SHALL BE FREE FROM ALL DEBRIS. THIS WORK SHALL BE INCLUDED WITH THE COST OF THE PROJECT.
- 10. EXISTING END SECTIONS, HEADWALLS, RETAINING WALLS, AND APPURTENANCES AT EXISTING CULVERTS DESIGNATED TO BE REMOVED SHALL ALSO BE REMOVED AND CONSIDERED AS INCLUDED IN THE COST FOR THE CULVERT REMOVAL.
- 11. THE COST NECESSARY TO REMOVE EXISTING GRAVEL, CRUSHED STONE BASE COURSE, OR OIL AND CHIP SURFACE, SHALL BE INCLUDED IN THE COST FOR THE PRECAST CONCRETE BOX CULVERT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ADDITIONAL LABOR OR EQUIPMENT REQUIRED.
- 12. BEFORE REMOVAL OF THE EXISTING HOT-MIX ASPHALT SURFACE, THE CONTRACTOR SHALL SAW CUT ACROSS THE SURFACE ON EACH SIDE OF THE BOX CULVERT AT THE LOCATIONS SHOWN IN THE PLANS.
- 13. ABANDONED UNDERGROUND UTILITIES THAT CONFLICT WITH CONSTRUCTION SHALL BE DISPOSED OUTSIDE THE LIMITS OF RIGHT OF WAY ACCORDING TO ARTICLE 202.03 OF THE STANDARD SPECIFICATIONS AND AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCLUDED IN THE COST OF THE PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
- 14. MULCH, METHOD 2 CAN BE APPLIED AT 2 TONS PER ACRE ON SLOPES THAT ARE GREATER THAN 1:3.
- 15. POROUS GRANULAR MATERIAL PLACED UNDER PRECAST CONCRETE BOX CULVERTS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST FOR THE PRECAST CONCRETE BOX CULVERT.
- 16. ENGINEER WILL NOT BE RESPONSIBLE FOR CONTRACTOR'S MEANS, METHODS, TECHNIQUES, SEQUENCE OR PROCEDURES OF CONSTRUCTION OR THE SAFETY PRECAUTIONS AND PROGRAMS INCIDENT THERETO, AND ENGINEER WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO PERFORM OR FURNISH THE WORK IN ACCORDANCE WITH THE SPECIFICATIONS.
- 17. BOX CULVERT INVERTS SHOWN ON THE PLANS HAVE BEEN CALCULATED TO THE ENDS OF THE CULVERT. THE BOX CULVERT SLOPES SHOWN ON THE PLANS IS THE PERCENT GRADE FROM END TO END OF CULVERT.
- 18. THE CONTRACTOR MAY BE REQUIRED TO CONDUCT SOME OF HIS GRADING OPERATIONS AROUND TRANSMISSION POLES AND UNDER TRANSMISSION LINES. THE ADDED COST OF SO DOING SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- 19. THE PAVEMENT MARKINGS SHALL MATCH THE LOCATIONS OF THE EXISTING PAVEMENT MARKING, AS DIRECTED BY THE ENGINEER.
- 20. ONLY SHORT-TERM PAVEMENT MARKING FROM THE FINAL SURFACE SHALL BE PAID FOR AS "SHORT TERM PAVEMENT MARKING REMOVAL".
- 21. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO CONSTRUCTION AND ORDERING OF MATERIALS.

### TRAFFIC CONTROL

- 1. ALL EXCAVATION ADJACENT TO THE EDGE OF PAVEMENT SHALL BE PROTECTED WITH BARRICADES AND APPROPRIATE LIGHTS.
- 2. "ROAD CONSTRUCTION AHEAD" SIGNS SHALL BE PLACED AT THE BEGINNING AND END OF THE PROJECT AND ON THE INTERSECTING SIDE ROADS, AND WILL BE INCLUDED IN THE TRAFFIC CONTROL PAY ITEMS. ALL CONSTRUCTION SIGNS SHALL BE FLUORESCENT ORANGE AND 48" x 48" IN SIZE.
- 3. THE CONTRACTOR SHALL FURNISH AND INSTALL WOOD SIGN POST SUPPORTS.
- 4. FOR STABILIZATION, ALL TYPE III BARRICADES SHALL REQUIRE A MINIMUM OF SIXTEEN SANDBAGS PER BARRICADE.

### UTILITY COORDINATION

- 1. THE LOCATION OF UNDERGROUND UTILITIES SHOWN ON THE PLANS REPRESENTS THE BEST KNOWLEDGE OF THE OWNER AND THE INDICATED ADJUSTMENTS ARE CONSIDERED TO BE REASONABLY ACCURATE. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO VERIFY LOCATIONS OF UNDERGROUND INSTALLATIONS BEFORE STARTING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL INDEMNIFY THE COUNTY, ITS OFFICERS, AND EMPLOYEES AGAINST ALL CLAIMS DUE TO DAMAGE TO CORPORATE OR PRIVATE PROPERTY RESULTING FROM HIS CONSTRUCTION OPERATIONS AS DESCRIBED IN ARTICLE 107.20 AND 107.26 OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- 2. ALL EXISTING PUBLIC AND MUNICIPAL OWNED UTILITIES REQUIRING ADJUSTMENT WILL BE MADE BY THE UTILITY OWNED INVOLVED UNLESS OTHERWISE NOTED. WHERE NO PROVISIONS HAVE BEEN MADE FOR ADJUSTMENT ON THE PLANS, NO ADDITIONAL COMPENSATION WILL BE ALLOWED DUE TO DELAYS OR INCONVENIENCES CAUSED BY THE SAID UTILITY ADJUSTMENTS.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING UTILITY PROPERTY FROM CONSTRUCTION OPERATIONS AS OUTLINED IN ARTICLE 107.39 OF THE STANDARD SPECIFICATIONS. ILLINOIS STATE LAW REQUIRES A 48 HOUR NOTICE BE GIVEN TO ALL UTILITIES BEFORE DIGGING. FIELD MARKING OF FACILITIES MAY BE OBTAINED BY CONTACTING J.U.L.I.E., OR FOR NON-MEMBERS, THE UTILITY COMPANY DIRECTLY. AGENCIES KNOWN TO HAVE FACILITIES WITHIN THE PROJECT AREA ARE AS FOLLOWS:

- \*AMEREN ILLINOIS - GAS & ELECTRIC
- \*PANHANDLE - GLENARM LINE - GAS
- \*TALLGRASS ENERGY/ROCKES EXP. - GAS
- \*SUNCO-ENERGY TRANSFER - GAS
- \*METRO COMMUNICATIONS - TELEPHONE
- \*CASS CO TELEPHONE & CABLE - TELEPHONE
- \*SCOTT-MORGAN-GREENE WATER COOP - WATER
- \*MURRAYVILLE-WOODSON WATER - WATER

- 4. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION FURNISHED BY THE UTILITY OWNERS AND MUST BE CONSIDERED APPROXIMATE. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. MEMBERS OF J.U.L.I.E. (800-892-0113 OR 811) ARE INDICATED BY AN \*. NON-J.U.L.I.E. MEMBERS MUST BE NOTIFIED INDIVIDUALLY.

### HIGHWAY STANDARDS

000001-08	STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS
001006	DECIMAL OF AN INCH AND OF A FOOT
280001-07	TEMPORARY EROSION CONTROL SYSTEMS
406201-01	MAILBOX TURNOUT
420001-10	PAVEMENT JOINTS
442101-09	CLASS B PATCHES
630001-12	STEEL PLATE BEAM GUARDRAIL
630301-09	SHOULDER WIDENING FOR TYPE 1 (SPECIAL) GUARDRAIL TERMINALS
701001-02	OFF-RD OPERATIONS, 2L, 2W, MORE THAN 15' AWAY
701006-05	OFF-RD OPERATIONS, 2L, 2W, 15' TO 24" FROM PAVEMENT EDGE
701011-04	OFF-RD MOVING OPERATIONS, 2L, 2W, DAY ONLY
701201-05	LANE CLOSURE, 2L, 2W, DAY ONLY FOR SPEEDS ≥
701301-04	LANE CLOSURE, 2L, 2W, SHORT TIME OPERATIONS
701306-04	LANE CLOSURE, 2L, 2W, SLOW MOVING OPERATIONS DAY ONLY, FOR SPEEDS ≥ 45 MPH
701311-03	LANE CLOSURE, 2L, 2W, MOVING OPERATIONS - DAY ONLY
701336-07	LANE CLOSURE, 2L, 2W, WORK AREAS IN SERIES, FOR SPEEDS ≥ 45 MPH
701901-08	TRAFFIC CONTROL DEVICES
782006-01	GUARDRAIL AND BARRIER WALL REFLECTOR MOUNTING DETAILS
BLR21-9	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON RURAL LOCAL
BLR22-7	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES ON RURAL LOCAL HIGHWAYS (TWO-LANE TWO WAY RURAL TRAFFIC) (ROAD CLOSED TO THRU TRAFFIC)

### COMMITMENTS

A NATIVE PRAIRIE REMNANT (BOTANICAL SITE #31#30 IN INHS 2011 BOTANICAL REPORT) OCCURS WITHIN THE SOUTHERN LIMITS OF THE PROPOSED IMPROVEMENT. IN ORDER TO PROTECT THE PRAIRIE, NO PARKING OF VEHICLES OR STORAGE OF EQUIPMENT OR MATERIALS SHOULD OCCUR WITHIN THE RIGHT-OF-WAY OF MURRAYVILLE ROAD ADJOINING THE RAILROAD RIGHT-OF-WAY BEGINNING AT STA. 511+11.00 AND ENDING AT STA 1602+21.80. AFTER CONSTRUCTION, ANY DISTURBED AREA SHOULD BE SEEDED WITH A NATIVE MIX (CLASS 4 AND 5A) IN ACCORDANCE WITH SECTION 250 (SEEDING) OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

### MIXTURE REQUIREMENTS

MIXTURE USE	SURFACE	PARTIAL DEPTH PATCHING	
		LOWER LIFTS	TOP LIFT
AC/PG	PG 64-22	PG 64-22	PG 64-22
DESIGN AIT VOIDS	4.0% @ Ndes=50	4.0% @ Ndes=50	4.0% @ Ndes=50
MIX COMPOSITION (GRADATION)	IL 9.5	IL 9.5	IL 9.5
FRICTION AGG	MIXTURE "C"		MIXTURE "C"
QUALITY MGMT PROGRAM	QC/QA	QC/QA	QC/QA

MODEL: D:\e\it...  
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PLOT SCALE	= 100,0000 ' / in.	CHECKED	W. SLEEMAN	REVISED	-
PLOT DATE	= 3/18/2022	DATE	03/2022	REVISED	-

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**GENERAL NOTES, HIGHWAY STANDARDS,  
MIXTURE REQUIREMENTS, AND COMMITMENTS**

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	2
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				ROADWAY	
				0005	RURAL
20200100	EARTH EXCAVATION	CU YD	90	90	
20400800	FURNISHED EXCAVATION	CU YD	1700	1700	
20700220	POROUS GRANULAR EMBANKMENT	CU YD	894	894	
28000250	TEMPORARY EROSION CONTROL SEEDING	POUND	259	259	
28000400	PERIMETER EROSION BARRIER	FOOT	2099	2099	
28000500	INLET AND PIPE PROTECTION	EACH	10	10	
28100805	STONE DUMPED RIPRAP, CLASS A3	TON	336	336	
28100807	STONE DUMPED RIPRAP, CLASS A4	TON	134	134	
28200200	FILTER FABRIC	SQ YD	201	201	
40200800	AGGREGATE SURFACE COURSE, TYPE B	TON	5	5	
40600290	BITUMINOUS MATERIALS (TACK COAT)	POUND	36981	36981	
40600990	TEMPORARY RAMP	SQ YD	329	329	
40604050	HOT-MIX ASPHALT SURFACE COURSE, IL-9.5, MIX "C", N50	TON	9204	9204	
40800029	BITUMINOUS MATERIALS (TACK COAT)	POUND	376	376	

△ SPECIALTY ITEMS

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				ROADWAY	
				0005	RURAL
40800050	INCIDENTAL HOT-MIX ASPHALT SURFACING	TON	94	94	
42400100	PORTLAND CEMENT CONCRETE SIDEWALK 4 INCH	SQ FT	451	451	
42400800	DETECTABLE WARNINGS	SQ FT	88	88	
44000157	HOT-MIX ASPHALT SURFACE REMOVAL, 2"	SQ YD	83015	83015	
44000600	SIDEWALK REMOVAL	SQ FT	425	425	
44201000	CLASS B PATCHES, TYPE IV, 12 INCH	SQ YD	492	492	
44201294	CLASS B PATCH - EXPANSION JOINT	FOOT	200	200	
44201298	DOWEL BARS 1 1/4"	EACH	160	160	
44213000	PATCHING REINFORCEMENT	SQ YD	492	492	
44213200	SAW CUTS	FOOT	1008	1008	
44213204	TIE BARS 3/4"	EACH	112	112	
48203029	HOT-MIX ASPHALT SHOULDERS, 8"	SQ YD	121	121	
50100300	REMOVAL OF EXISTING STRUCTURES NO. 1	EACH	1	1	
50100400	REMOVAL OF EXISTING STRUCTURES NO. 2	EACH	1	1	

△ SPECIALTY ITEMS

MODEL: M0001MAY05  
FILE NAME: SFILES

**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS - LAND SURVEYORS  
1970 WEST LAUREL AVE.  
JACKSONVILLE, IL 62539  
PHONE: 217-228-1130 FAX: 217-228-1110  
IL DESIGN FIRM REGISTRATION NO. 184022832

USER NAME = SUSERS	DESIGNED - SJB	REVISED -
	DRAWN - SJB	REVISED -
PLOT SCALE = SSCALES	CHECKED - DSR	REVISED -
PLOT DATE = SDATES	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	3
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				ROADWAY	
				0005	RURAL
50100500	REMOVAL OF EXISTING STRUCTURES NO. 3	EACH	1	1	
50100600	REMOVAL OF EXISTING STRUCTURES NO. 4	EACH	1	1	
50102400	CONCRETE REMOVAL	CU YD	3.9	3.9	
50105220	PIPE CULVERT REMOVAL	FOOT	42	42	
50300225	CONCRETE STRUCTURES	CU YD	53	53	
54001001	BOX CULVERT END SECTIONS, CULVERT NO. 1	EACH	1	1	
54001002	BOX CULVERT END SECTIONS, CULVERT NO. 2	EACH	2	2	
54001003	BOX CULVERT END SECTIONS, CULVERT NO. 3	EACH	1	1	
54001004	BOX CULVERT END SECTIONS, CULVERT NO. 4	EACH	1	1	
54003000	CONCRETE BOX CULVERTS	CU YD	11	11	
54010404	PRECAST CONCRETE BOX CULVERTS 4' X 4'	FOOT	180	180	
54010505	PRECAST CONCRETE BOX CULVERTS 5' X 5'	FOOT	76	76	
542A0220	PIPE CULVERTS, CLASS A, TYPE 1 15"	FOOT	42	42	
54213660	PRECAST REINFORCED CONCRETE FLARED END SECTIONS 15"	EACH	2	2	
Δ 63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	875	875	

Δ SPECIALTY ITEMS

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				ROADWAY	
				0005	RURAL
Δ 63000350	LONG-SPAN GUARDRAIL OVER CULVERT, 12 FT 6 IN SPAN	FOOT	38	38	
Δ 63000360	LONG-SPAN GUARDRAIL OVER CULVERT, 18 FT 9 IN SPAN	FOOT	132	132	
Δ 63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	6	6	
Δ 63100169	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	EACH	2	2	
63200310	GUARDRAIL REMOVAL	FOOT	1868	1868	
67100100	MOBILIZATION	L SUM	1	1	
70300100	SHORT TERM PAVEMENT MARKING	FOOT	4682	4682	
70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	780	780	
Δ 72501000	TERMINAL MARKER - DIRECT APPLIED	EACH	8	8	
Δ 78001110	PAINT PAVEMENT MARKING - LINE 4"	FOOT	74442	74442	
Δ 78001150	PAINT PAVEMENT MARKING - LINE 12"	FOOT	382	382	
Δ 78200005	GUARDRAIL REFLECTORS, TYPE A	EACH	20	20	
K1005421	SEEDING (SPECIAL)	ACRE	0.75	0.75	
Δ X2200020	FENCE REMOVAL AND REINSTALLATION	FOOT	230	230	

Δ SPECIALTY ITEMS

MODEL: MODELNAME  
FILE NAME: \$FILEL

**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
315 WEST WASHINGTON AVE.  
MORGANVILLE, IL 62550  
PHONE: 219-244-1200 FAX: 219-244-1133  
IL DESIGN FIRM REGISTRATION NO. 034-032932

USER NAME = SUSERS	DESIGNED - SJB	REVISED -
PLOT SCALE = 55CALES	DRAWN - SJB	REVISED -
PLOT DATE = 5DATES	CHECKED - DSR	REVISED -
	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	4
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	

CODE NO.	ITEM	UNIT	TOTAL QUANTITY	CONSTR. CODE	
				ROADWAY	
				0005	RURAL
X4406260	PARTIAL DEPTH REMOVAL, TYPE II, 6"	SQ YD	366	366	
X4406460	PARTIAL DEPTH REMOVAL, TYPE III, 6"	SQ YD	88	88	
X4406660	PARTIAL DEPTH REMOVAL, TYPE IV, 6"	SQ YD	340	340	
X4421000	PARTIAL DEPTH PATCHING	TON	267	267	
# Z0076600	TRAINEES	HR	1,500		
X7010216	TRAFFIC CONTROL AND PROTECTION, (SPECIAL)	L SUM	1	1	
# Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HR	1,500		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1	1	

Δ SPECIALTY ITEMS

# 0042

MODEL: MODELNAME  
FILE NAME: \$FILE\$

**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS - LEAD ENGINEERS  
1970 WEST LEFAYETTE AVE.  
JACKSONVILLE, IL 62522  
PHONE: 217-228-4300 FAX: 217-228-3140  
IL DESIGN FIRM REGISTRATION NO. 164-02882

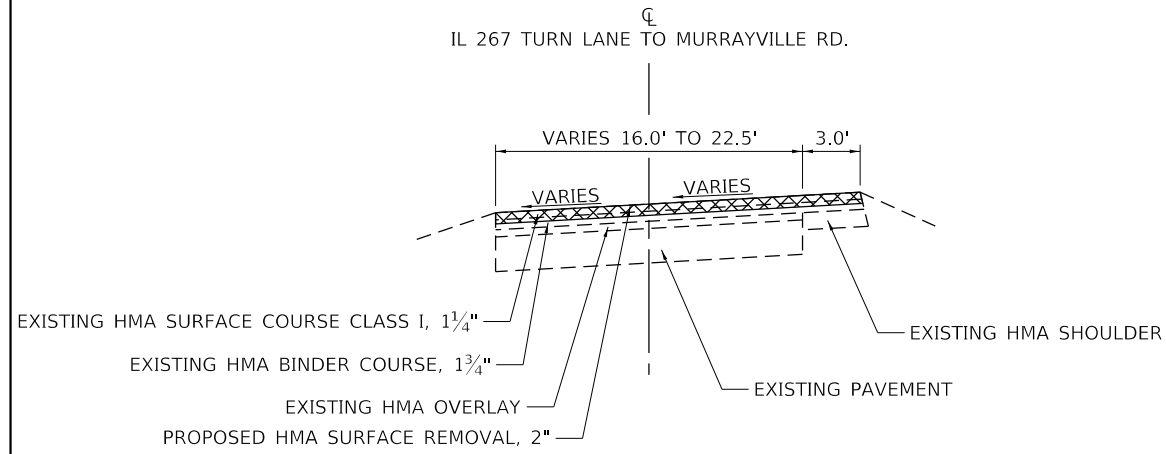
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PLOT SCALE = SCALES	DRAWN - SJB	REVISED -
PLOT DATE = SDATES	CHECKED - DSR	REVISED -
	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SUMMARY OF QUANTITIES

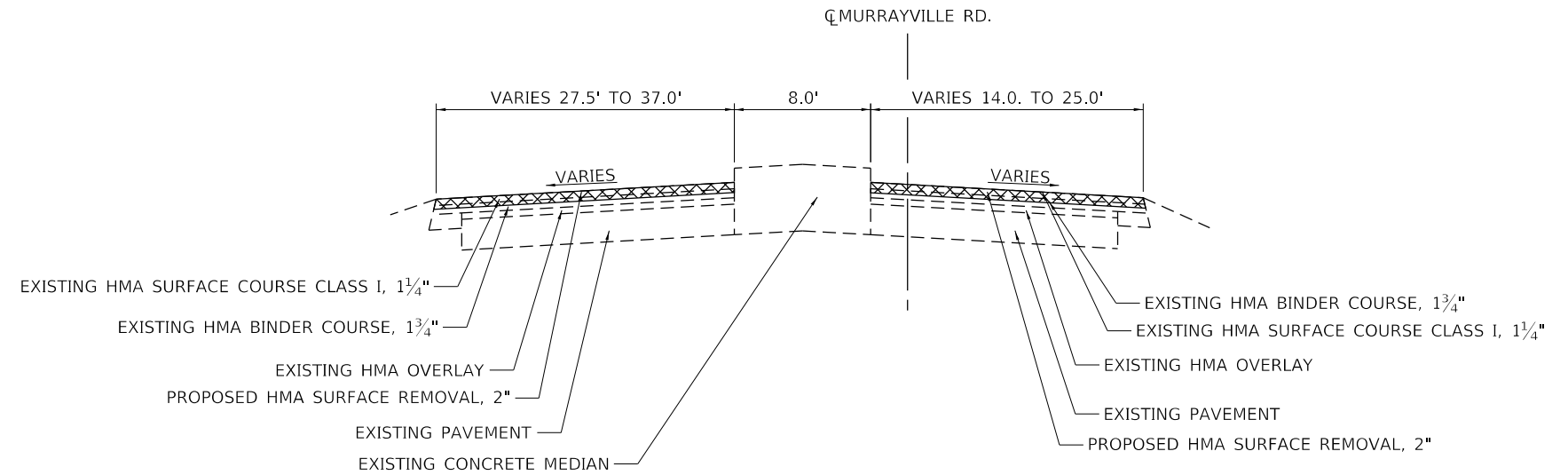
SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	5
				CONTRACT NO. 93791
ILLINOIS FED. AID PROJECT				



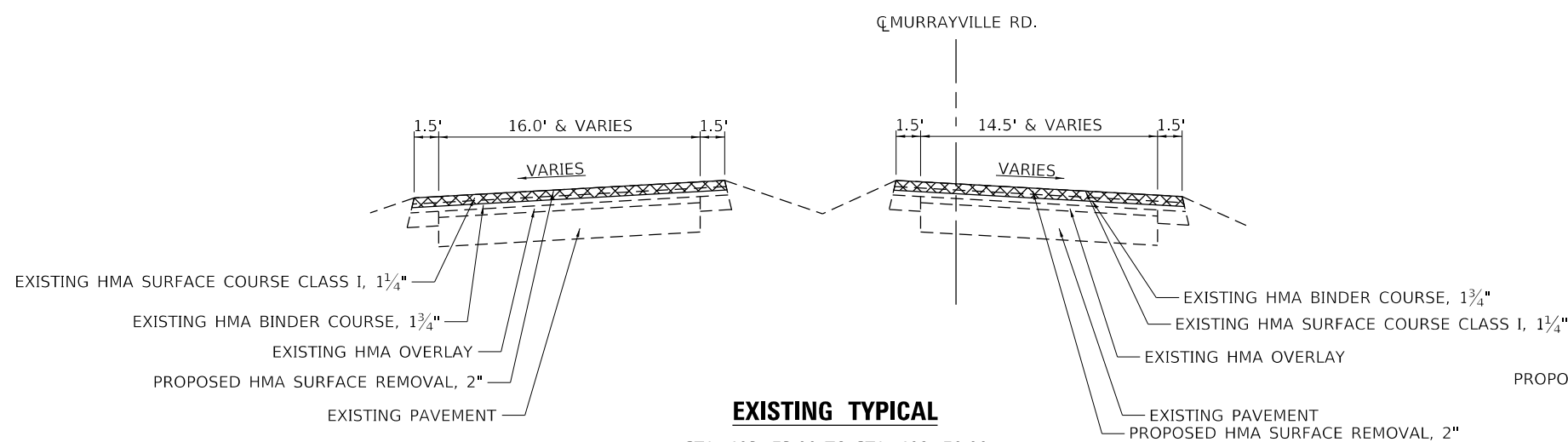
**EXISTING TYPICAL**

STA. 101+37.39 TO STA. 105+44.81



**EXISTING TYPICAL**

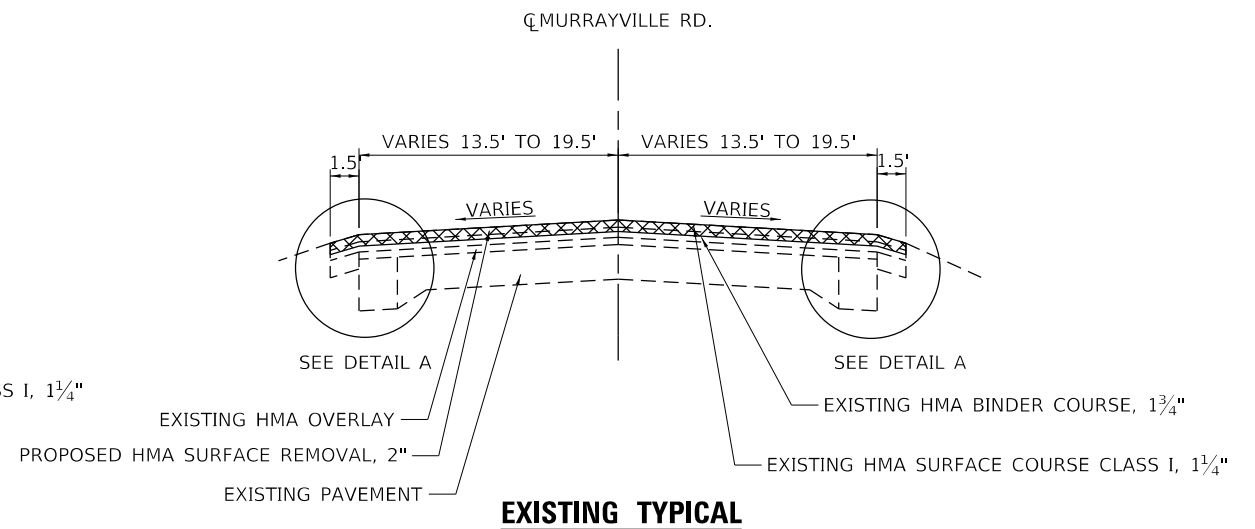
STA. 401+84.89 TO STA. 402+73.00



**EXISTING TYPICAL**

STA. 402+73.00 TO STA. 409+70.00

\*\*\* STA. 402+73 TO 403+93  
 LT PAVEMENT VARIES 16' TO 27.5'  
 RT PAVEMENT VARIES 14.5' TO 17.



**EXISTING TYPICAL**

STA. 409+70.00 TO STA. 411+30.00

NOTE: SUPERELEVATION SECTIONS ARE NOT SHOWN IN THE TYPICAL SECTIONS.  
 SEE THE ALIGNMENT SHEETS FOR THE LOCATION OF EXISTING CURVES.  
 MATCH EXISTING CROSS SLOPES IN ALL EXISTING CURVES.

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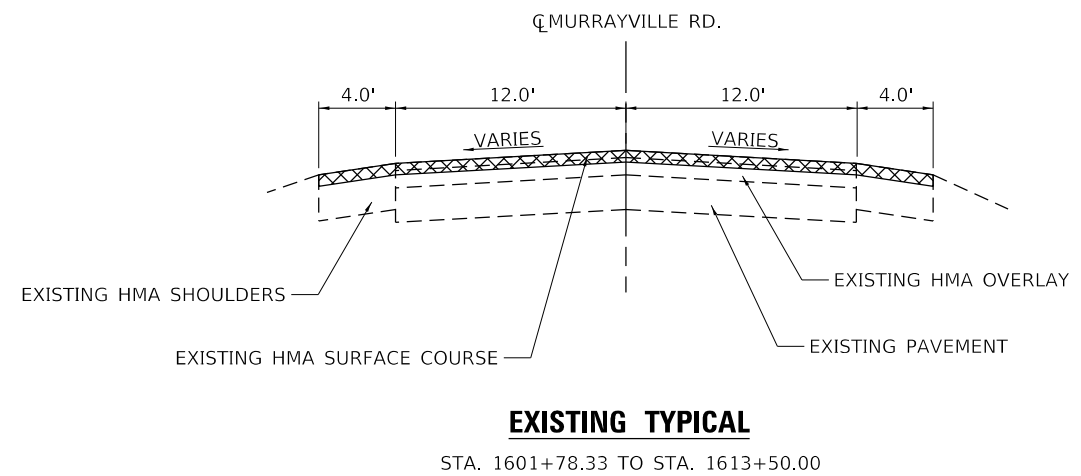
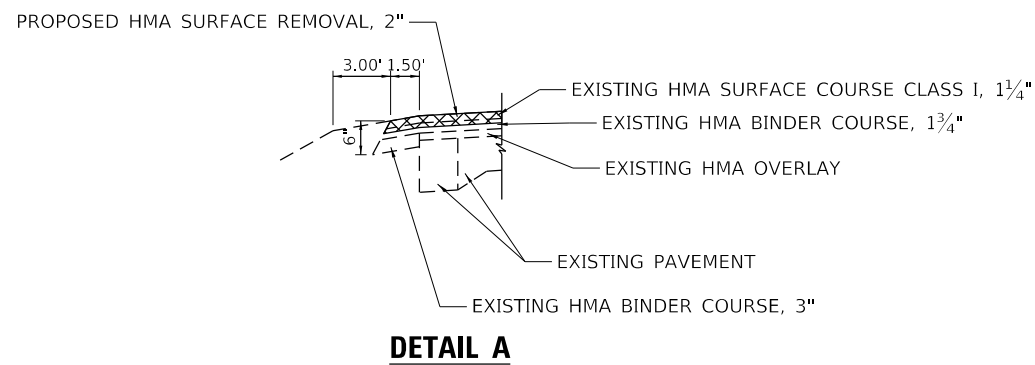
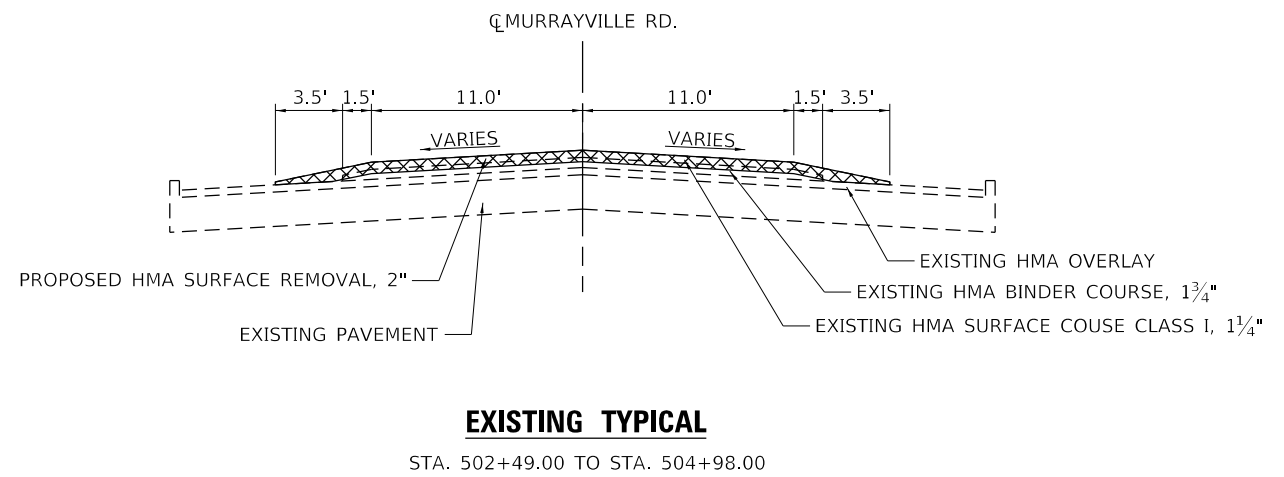
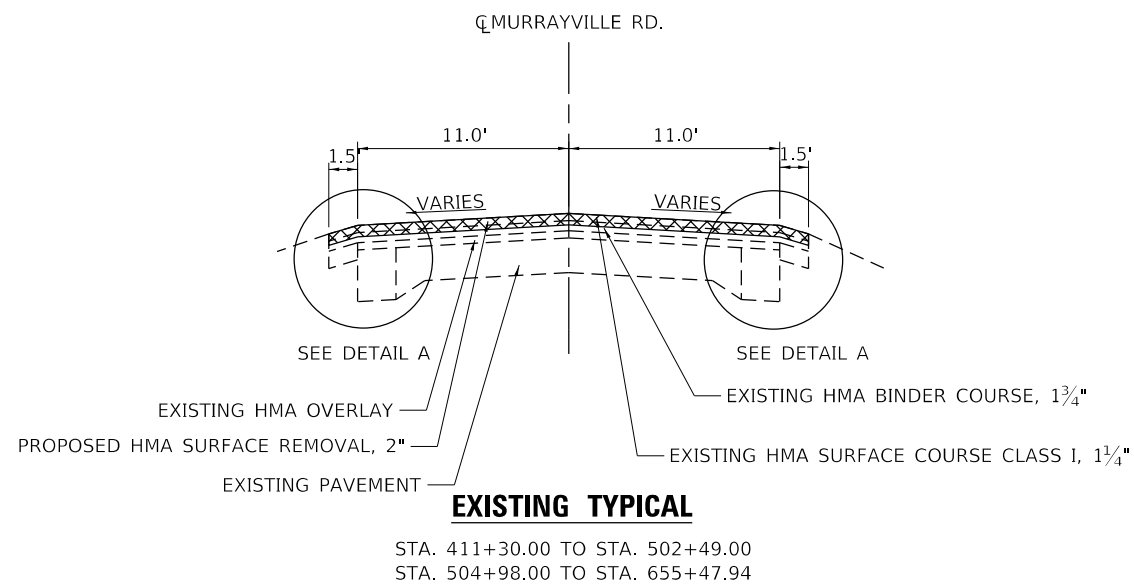


USER NAME = drunoll	DESIGNED - S. BALLINGER	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION (MURRAYVILLE RD.)			
SCALE:	SHEET 1 OF 5 SHEETS	STA.	TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	6
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



NOTE: SUPERELEVATION SECTIONS ARE NOT SHOWN IN THE TYPICAL SECTIONS.  
SEE THE ALIGNMENT SHEETS FOR THE LOCATION OF EXISTING CURVES.  
MATCH EXISTING CROSS SLOPES IN ALL EXISTING CURVES.

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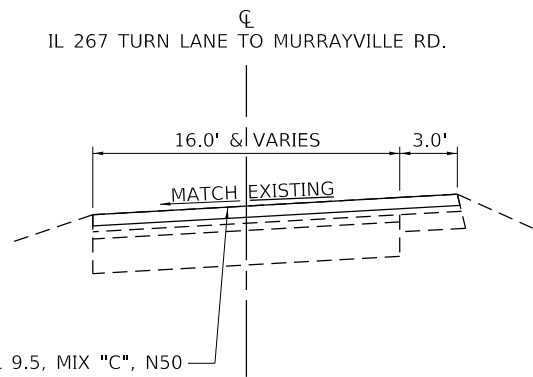
**BA**  
BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1910 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 62550  
PHONE: 217-245-4160 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000832

USER NAME = drunoll	DESIGNED - S. BALLINGER	REVISED -
	DRAWN - D. RUHOLL	REVISED -
PLOT SCALE = 100,0000 ' / in.	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

TYPICAL SECTION (MURRAYVILLE RD.)			
SCALE:	SHEET 2	OF 5 SHEETS	STA. TO STA.

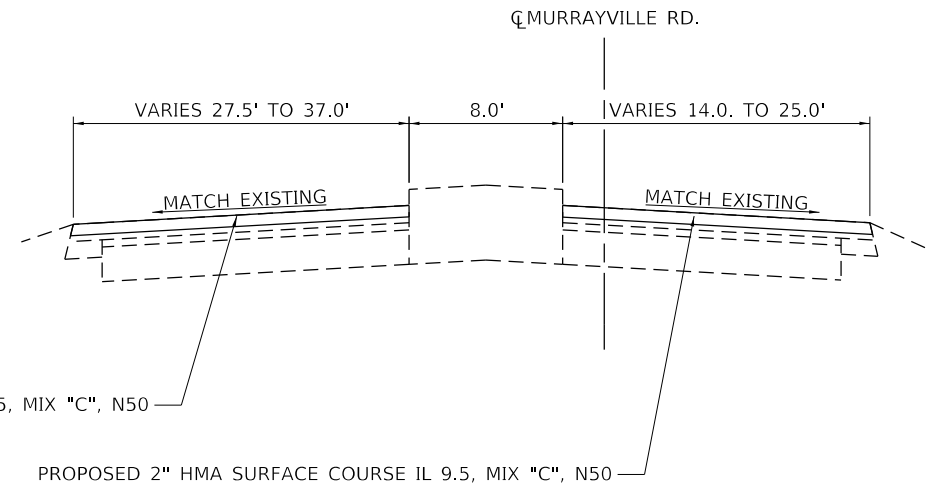
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	7
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



PROPOSED 2" HMA SURFACE COURSE IL 9.5, MIX "C", N50

**PROPOSED TYPICAL**

STA. 101+37.39 TO STA. 105+44.81

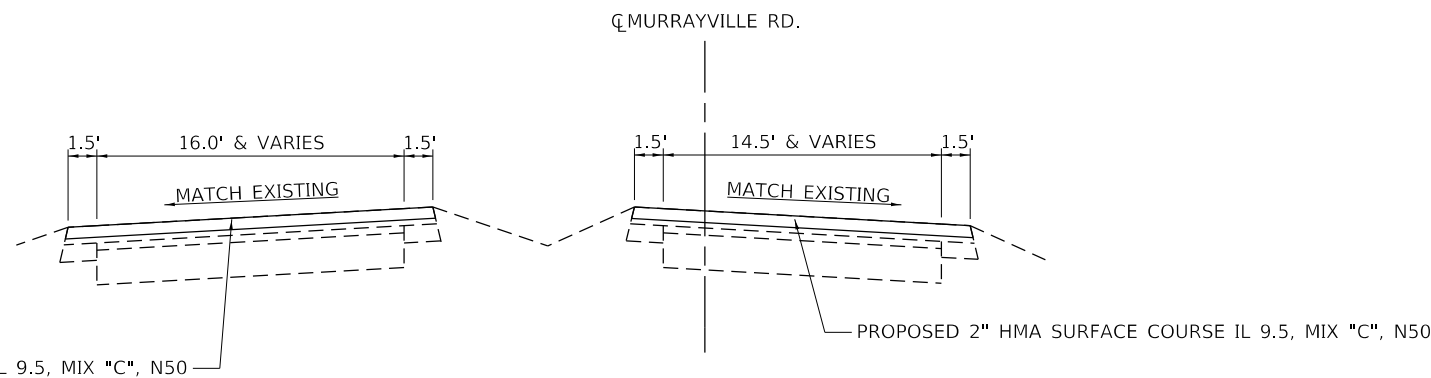


PROPOSED 2" HMA SURFACE COURSE IL 9.5, MIX "C", N50

PROPOSED 2" HMA SURFACE COURSE IL 9.5, MIX "C", N50

**PROPOSED TYPICAL**

STA. 402+73.00 TO STA. 409+70.00

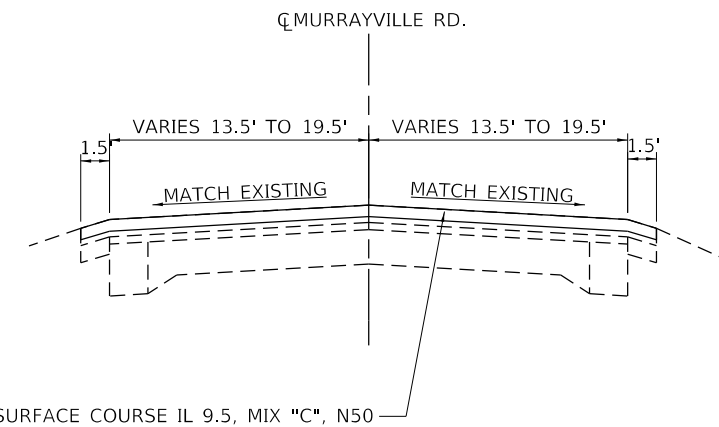


PROPOSED 2" HMA SURFACE COURSE IL 9.5, MIX "C", N50

PROPOSED 2" HMA SURFACE COURSE IL 9.5, MIX "C", N50

**PROPOSED TYPICAL**

STA. 402+73.00 TO STA. 409+70.00



PROPOSED HMA SURFACE COURSE IL 9.5, MIX "C", N50

**PROPOSED TYPICAL**

STA. 409+70.00 TO STA. 411+30.00

NOTE: SUPERELEVATION SECTIONS ARE NOT SHOWN IN THE TYPICAL SECTIONS. SEE THE ALIGNMENT SHEETS FOR THE LOCATION OF EXISTING CURVES. MATCH EXISTING CROSS SLOPES IN ALL EXISTING CURVES.

MODEL: Default; FILE NAME: P:\2023\2451\Design\Design\CAD\_Sheets\3154-006-010-sh-cyp-calc.dgn

**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

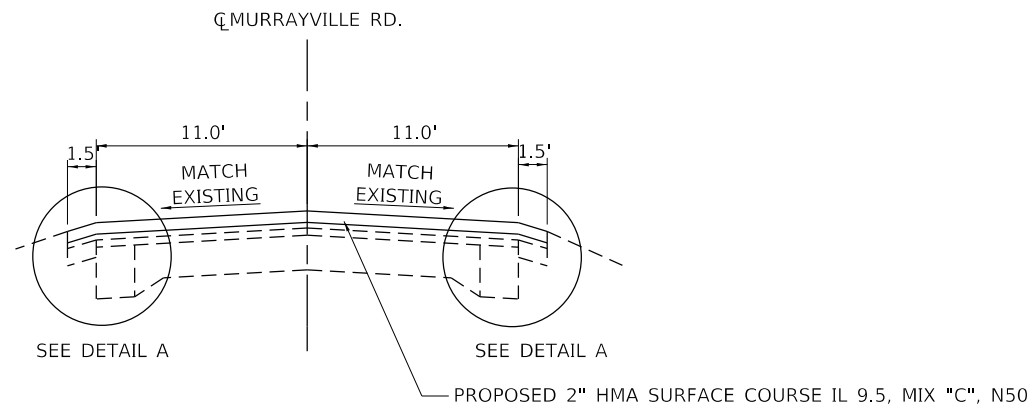
USER NAME = drunoll	DESIGNED - S. BALLINGER	REVISED -
	DRAWN - D. RUHOLL	REVISED -
PLOT SCALE = 100,0000' / in.	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>TYPICAL SECTION (MURRAYVILLE RD.)</b>			
SCALE:	SHEET 3	OF 5 SHEETS	STA. TO STA.

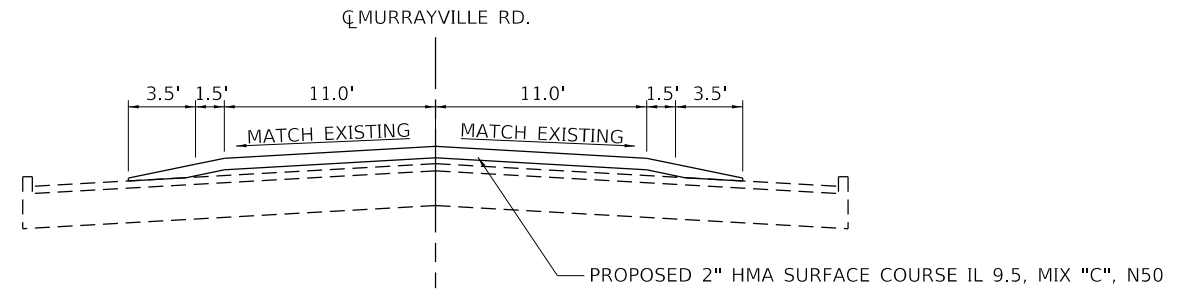
F.A.S. RTE. 310	SECTION 19-00108-00-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 8
ILLINOIS			FED. AID PROJECT	
CONTRACT NO. 93791				





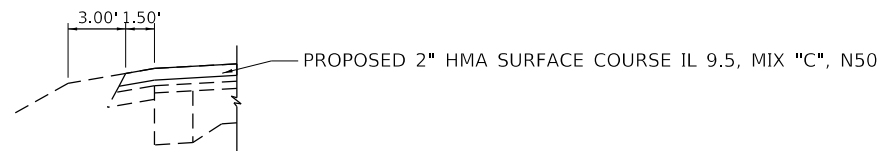
**PROPOSED TYPICAL**

STA. 411+30.00 TO STA. 502+49.00  
 STA. 504+98.00 TO STA. 655+47.94

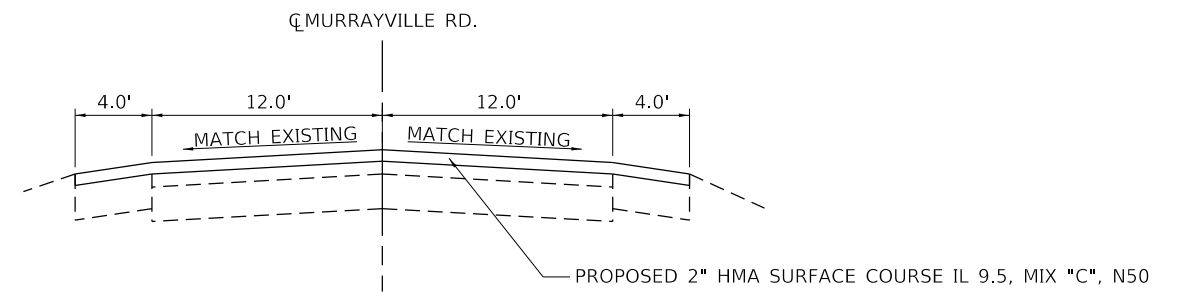


**PROPOSED TYPICAL**

STA. 502+49.00 TO STA. 504+98.00



**DETAIL A**



**PROPOSED TYPICAL**

STA. 1601+78.33 TO STA. 1613+50.00

NOTE: SUPERELEVATION SECTIONS ARE NOT SHOWN IN THE TYPICAL SECTIONS.  
 SEE THE ALIGNMENT SHEETS FOR THE LOCATION OF EXISTING CURVES.  
 MATCH EXISTING CROSS SLOPES IN ALL EXISTING CURVES.

MODEL: Default  
 FILE NAME: P:\2023\24\Design\Design\CAD\_Sheets\3154-006-010-sh-cyp-cals.dgn

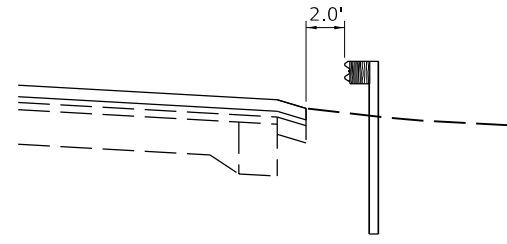


USER NAME = drunoll	DESIGNED - S. BALLINGER	REVISED -
	DRAWN - D. RUHOLL	REVISED -
PLOT SCALE = 100.0000' / in.	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>TYPICAL SECTION (MURRAYVILLE RD.)</b>			
SCALE:	SHEET 4	OF 5 SHEETS	STA. TO STA.

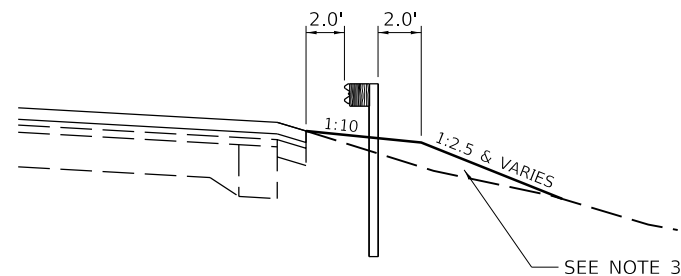
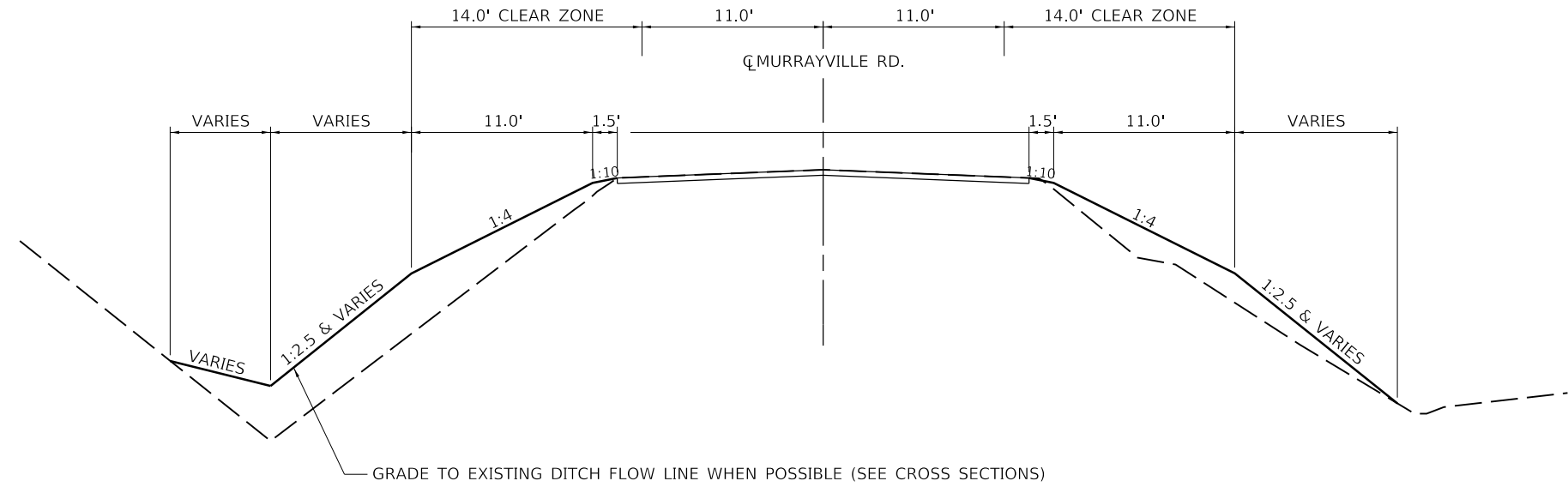
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	9
CONTRACT NO. 93791				
ILLINOIS			FED. AID PROJECT	



**PROPOSED GUARDRAIL TYPICAL**

STA. 609+13.50 RT TO STA. 610+01.00 RT  
 STA. 621+80.25 LT TO STA. 622+05.25 LT  
 STA. 625+05.25 LT TO STA. 625+92.75 LT  
 STA. 624+64.20 RT TO STA. 625+01.71 RT  
 (SEE NOTE 1)

NOTE 1: LOCATIONS WHERE THE EXISTING SHOULDER IS  $\leq$  1V:10H



**PROPOSED GUARDRAIL TYPICAL**

STA. 604+20.40 RT TO STA. 607+24.15 RT  
 STA. 610+01.00 RT TO STA. 613+53.75 RT  
 STA. 622+05.25 LT TO STA. 625+05.25 LT  
 STA. 622+45.50 RT TO STA. 624+64.20 RT  
 (SEE NOTE 2)

NOTE 2: INCLUDES STATIONING OUTSIDE THE GUARDRAIL IMPROVEMENTS WHICH REQUIRE EARTHWORK IMPROVEMENTS. SEE HIGHWAY STANDARD 630301 FOR ADDITIONAL DETAILS.

NOTE 3: WHEN THE SIDE SLOPE EXCEEDS 1V:2.5H, RIRAP SHALL BE USED TO STABILIZE THE SIDE SLOPE. SEE PLAN SHEETS FOR THE PROPOSED RIPRAP LOCATIONS.

**PROPOSED DITCH GRADING TYPICAL**

STA. 596+75.00 RT TO STA. 598+25.00 RT  
 STA. 611+00.00 LT TO 613+00.00 LT  
 STA. 641+40.00 LT TO 644+40.00 LT  
 STA. 642+0000 RT TO 646+40.00 RT  
 STA. 644+90.00 LT TO 646+40.00 LT  
 (SEE NOTE 4)

NOTE 4: SEE CROSS SECTIONS FOR THE PROPOSED DITCH REGRADING SECTIONS.

MODEL: P:\2023\451\Design\Drawings\CAD\_Sheets\315-00-00-00-00-00-00.dgn



USER NAME = \$USERS	DESIGNED - S. BALLINGER	REVISED -
PLOT SCALE = 100.0000' / in.	DRAWN - D. RUHOLL	REVISED -
PLOT DATE = 3/30/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>TYPICAL SECTION (MURRAYVILLE RD.)</b>			
SCALE:	SHEET 5	OF 5 SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	10
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

RESURFACING SCHEDULE									
LOCATON			HMA SURFACE REMOVAL 2.0"	HOT-MIX ASPHALT SURFACE COURSE, 1L 9.5, MIX "C", N 50	BITUMINOUS MATERIALS (TACK COAT)	INCIDENTAL HMA SURFACING	BITUMINOUS MATERIALS (TACK COAT)	HMA SHOULDERS 8"	EARTH EXCAVATION
STA.	TO	STA.	SQ YD	TON	POUND	TON	POUND	SQ YD	CU YD
101+37.39	TO	105+44.81	871.4	97.6	392.1			120.8	26.8
401+84.89	TO	402+73.00	655.9	73.5	295.2				
402+73.00	TO	403+96.00	515.9	57.8	232.2				
403+96.00	TO	409+70.00	1945.2	217.9	875.4				
409+70.00	TO	412+00.00	843.3	94.5	379.5				
412+00.00	TO	502+49.00	27147.0	3040.5	12216.2				
502+49.00	TO	504+98.00	885.3	99.2	398.4				
504+98.00	TO	655+47.94	45149.8	5056.8	20317.4				
1613+50.00	TO	1601+78.33	4165.9	466.6	1874.7				
418+30.00	LT	CO. RD. 967	276.4			31.0	124.4		
496+34.00	LT	MB TURNOUT	26.0			2.9	11.7		
500+58.00	LT	CHURCH ST ADA	88.4			9.9	39.8		
502+46.00	LT	E. PROSPECT RD ADA	31.1			3.5	14.0		
507+00.00	LT	W. PURCELL ST ADA	65.9			7.4	29.6		
555+83.00	LT	CAPPS RD	82.9			9.3	37.3		
580+85.00	LT	MB TURNOUT	26.0			2.9	11.7		
594+10.00	RT	ANDRAS RD	145.4			16.3	65.4		
617+75.00	LT	S CARROL RD	92.8			10.4	41.8		
SUBTOTAL			83014.6	9204.4	36981.1	93.6	375.7	120.8	26.8
TOTAL			83015	9204	36981	94	376	121	SEE NOTE 1

NOTE 1: SEE EARTH EXCAVATION SCHEDULE FOR PAY ITEM TOTAL

SIDE ROAD SCHEDULE (SEE NOTE 2)			
LOCATION			WIDTH
NAME	STA.	SIDE	FOOT
CO. RD. 967	418+30	LT	101.9
COTTAGE LN	482+60	RT	103.7
BROGDON ST	486+11	RT	109.0
MCDONALD ST	497+44	LT	69.5
CHURCH ST	499+88	RT	51.1
CHURCH ST	499+88	LT	67.3
PROSPECT RD	502+75	RT	98.2
PROSPECT RD	502+75	LT	55.3
PURCELL ST	507+30	RT	47.4
PURCELL ST	507+30	LT	114.5
REED ST	513+25	RT	50.0
CAPPS RD	555+83	LT	66.2
ANDRAS RD	594+10	RT	111.8
S CARROL RD	617+75	LT	76.3

NOTE 2: THIS SCHEDULE IS FOR INFORMATION ONLY. SEE THE RESURFACING SCHEDULE FOR PROPOSED IMPROVEMENTS FOR THE SIDE ROADS

ADA IMPROVEMENTS SCHEDULE					
LOCATION		SIDEWALK REMOVAL	PORTLAND CEMENT CONCRETE SIDEWALK 4 INCH	DETECTABLE WARNINGS	AGGREGATE SURFACE COURSE, TYPE B
STA.	SIDE	STREET	SQ FT	SQ FT	TON
500+20	RT	CHURCH ST	85.9	117.6	15.5
500+20	LT	CHURCH ST	29.8	36.5	10.0
502+45	RT	PROSPECT RD	136.5	136.5	34.7
502+45	LT	PROSPECT RD	61.36	48.5	9.9
507+10	RT	W PURCELL ST	33.2	33.2	8.0
507+10	LT	W PURCELL ST	78.3	78.3	10.0
SUBTOTAL			425.1	450.6	88.1
TOTAL			425	451	88

TEMPORARY RAMP SCHEDULE				
LOCATION		LENGTH	WIDTH	TEMPORARY RAMP
STA.	DESCRIPTION	FOOT	FOOT	SQ YD
101+37.39	MAINLINE	6.67	22.50	16.7
401+84.89	MAINLINE	6.67	92.00	68.2
418+30	CO. RD. 967	6.67	37.0	27.4
482+60	COTTAGE LN	2.00	103.7	23.0
486+11	BROGDON ST	2.00	109.0	24.2
497+44	MCDONALD ST	2.00	69.5	15.4
499+88	CHURCH ST	2.00	51.1	11.4
499+88	CHURCH ST	2.00	67.3	15.0
502+75	PROSPECT RD	2.00	98.2	21.8
502+75	PROSPECT RD	2.00	55.3	12.3
507+30	PURCELL ST	2.00	47.4	10.5
507+30	PURCELL ST	2.00	114.5	25.4
513+25	REED ST	2.00	50.0	11.1
555+83	CAPPS RD	2.00	30.1	6.7
594+10	ANDRAS RD	2.00	44.4	9.9
617+75	S CARROL RD	2.00	26.7	5.9
1613+50.00	MAINLINE	6.67	32.00	23.7
SUBTOTAL				328.6
TOTAL				329

PIPE CULVERT SCHEDULE				
LOCATION	PIPE CULVERT REMOVAL	PRECAST REINFORCED CONCRETE FLARED END SECTION 15"	PIPE CULVERTS, CLASS A, TYPE I 15"	REMARKS
STA.	FOOT	EACH	FOOT	
420+99.00	42	2	42.0	
SUBTOTAL		2.0	42.0	
TOTAL		2	42	

SHORT TERM PAVEMENT MARKING				
LOCATION		LINE - 4"	SKIP-DASH YELLOW	SHORT-TERM PAVEMENT MARKING REMOVAL (SEE NOTE 3)
STA.	TO	STA.	FOOT	SQ FT
409+70.00	TO	655+47.94	4468.8	744.8
1613+50.00	TO	1601+78.33	213	35.5
SUBTOTAL			4681.8	780.3
TOTAL			4682	780

NOTE 3: 2 APPLICATIONS OF SHORT TERM PAVEMENT MARKING WAS ASSUMED. ONLY THE REMOVAL OF THE FINAL APPLICATION WILL BE PAID FOR.

BOX CULVERT SCHEDULE															
LOCATION	POROUS GRANULAR EMBANKMENT	REMOVAL EXISTING STRUCTURE NO.				CONCRETE REMOVAL	BOX CULVERT END SECTIONS, CULVERT NO.				CONCRETE BOX CULVERTS	CONCRETE STRUCTURES	PRECAST CONCRETE BOX CULVERTS 4' X 4'	PRECAST CONCRETE BOX CULVERTS 5' X 5'	REMARKS
		1	2	3	4		1	2	3	4					
STA.	CU YD	EACH	EACH	EACH	EACH	CU YD	EACH	EACH	EACH	EACH	CU YD	CU YD	EACH	EACH	
643+79.60	312.0	1.0					1.0					13.0		76.0	SEE STRUCTURE DETAILS FOR CULVERT LOCATION #1
645+73.20	34.0					1.4				1.0		5.9			SEE STRUCTURE DETAILS FOR CULVERT LOCATION #1a
623+73.80	132.0		1.0					2.0					52.0		SEE STRUCTURE DETAILS FOR CULVERT LOCATION #2
611+58.10	206.0			1.0					1.0			8.7	76.0		SEE STRUCTURE DETAILS FOR CULVERT LOCATION #3
605+32.89	29.8					2.5						7.7			SEE STRUCTURE DETAILS FOR CULVERT LOCATION #5
597+75.00	180.2				1.0						11.0	17.6	52.0		SEE STRUCTURE DETAILS FOR CULVERT LOCATION #4
SUBTOTAL		894.0	1.0	1.0	1.0	3.9	1.0	2.0	1.0	1.0	11.0	52.9	180.0	76.0	
TOTAL		894	1	1	1	3.9	1	2	1	1	11	53	180	76	

MODEL: 3400RELENTS  
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USER NAME = \$USERS	DESIGNED - S. BALLINGER	REVISED -
PLOT SCALE = \$SCALE\$	DRAWN - S. BALLINGER	REVISED -
PLOT DATE = \$DATE\$	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SCHEDULE OF QUANTITIES

SCALE: SHEET 1 OF 4 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	11
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



GUARDRAIL SCHEDULE											
LOCATON				GUARDRAIL REMOVAL	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	LONG SPAN OVER CULVERT, 12 FT 6 IN SPAN	LONG SPAN OVER CULVERT, 18 FT 9 IN SPAN	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) FLARED	GUARDRAIL REFLECTORS, TYPE A	TERMINARL MARKER - DIECT APPLIED
STA.	TO	STA.	SIDE	FOOT	FOOT	FOOT	FOOT	EACH	EACH	EACH	EACH
604+34.89	TO	606+10.33	RT	175.4							
604+59.42	TO	606+10.12	LT	150.7							
610+52.08	TO	612+52.60	RT	200.5							
610+84.67	TO	612+97.86	LT	213.2							
622+57.96	TO	624+33.56	RT	175.6							
622+83.39	TO	624+58.93	LT	175.5							
641+81.08	TO	644+31.69	LT	250.6							
642+07.76	TO	646+33.38	RT	425.6							
645+38.71	TO	646+39.47	LT	100.8							
604+32.90	TO	604+70.40	RT					1.0			1.0
604+70.40	TO	605+07.90	RT		37.5					4.0	
605+07.90	TO	605+51.65	RT				43.75				
605+51.65	TO	606+76.65	RT		125.0						
606+76.65	TO	607+14.15	RT					1.0			1.0
609+13.50	TO	609+51.00	RT					1.0			1.0
609+51.00	TO	611+26.00	RT		175.0					6.0	
611+26.00	TO	611+69.75	RT				43.75				
611+69.75	TO	612+82.25	RT		112.5						
612+82.25	TO	613+19.75	RT					1.0			1.0
621+80.25	TO	622+17.75	LT					1.0			1.0
622+17.75	TO	623+55.25	LT		137.5					6.0	
623+55.25	TO	623+92.75	LT			37.5					
623+92.75	TO	625+55.25	LT		162.5						
625+55.25	TO	625+92.75	LT					1.0			1.0
622+57.96	TO	622+95.46	RT						1.0		1.0
622+95.46	TO	623+45.46	RT		50.0					4.0	
623+45.46	TO	623+89.21	RT				43.75				
623+89.21	TO	624+64.21	RT		75.0						
624+64.21	TO	625+01.71	RT					1.0			1.0
SUBTOTAL				1867.9	875.0	37.5	131.25	6.0	2.0	20.0	8.0
TOTAL				1868	875	38	132	6	2	20	8

FENCE SCHEDULE					
LOCATION			FENCE REMOVAL AND REINSTALLATION	REMARKS	
STA.	TO	STA. SIDE	FOOT		
645+60.00	TO	645+80.00 RT	20.0	CULVERT LOCATION #1a	
643+94.00	TO	644+24.00 RT	30.0	CULVERT LOCATION #1	
623+53.00	TO	623+83.00 RT	30.0	CULVERT LOCATION #2	
611+19.00	TO	611+49.00 RT	75.0	CULVERT LOCATION #3	
597+60.00	TO	597+90.00 RT	75.0	CULVERT LOCATION #4	
SUBTOTAL			230.0		
TOTAL			230		

MODEL: 4400BELNAMES  
FILE NAME: STILES



USER NAME = \$USERS	DESIGNED - S. BALLINGER	REVISED -
	DRAWN - S. BALLINGER	REVISED -
PLOT SCALE = \$SCALE\$	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = \$DATE\$	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

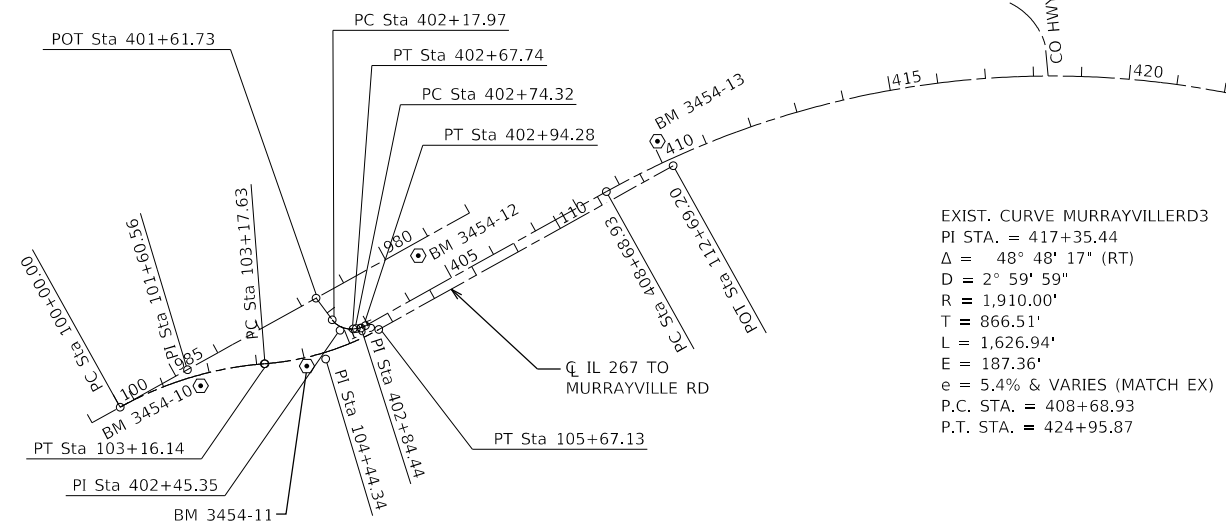
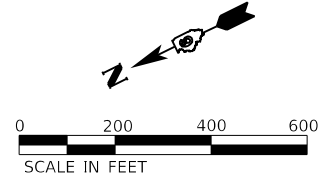
SCHEDULE OF QUANTITIES			
SCALE:	SHEET	OF	SHEETS
	3	4	
	STA.		TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	13
CONTRACT NO. 93791				
		ILLINOIS	FED. AID PROJECT	



EXIST. CURVE MURRAYVILLERD1  
 PI STA. = 402+45.35  
 $\Delta = 59^\circ 24' 29''$  (LT)  
 $D = 119^\circ 21' 58''$   
 $R = 48.00'$   
 $T = 27.38'$   
 $L = 49.77'$   
 $E = 7.26'$   
 P.C. STA. = 402+17.97  
 P.T. STA. = 402+67.74

EXIST. CURVE MURRAYVILLERD2  
 PI STA. = 402+84.44  
 $\Delta = 22^\circ 52' 22''$  (LT)  
 $D = 114^\circ 35' 30''$   
 $R = 50.00'$   
 $T = 10.11'$   
 $L = 19.96'$   
 $E = 1.01'$   
 P.C. STA. = 402+74.32  
 P.T. STA. = 402+94.28

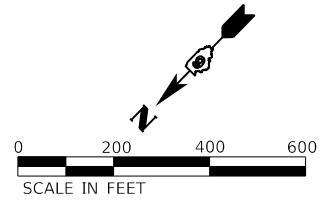
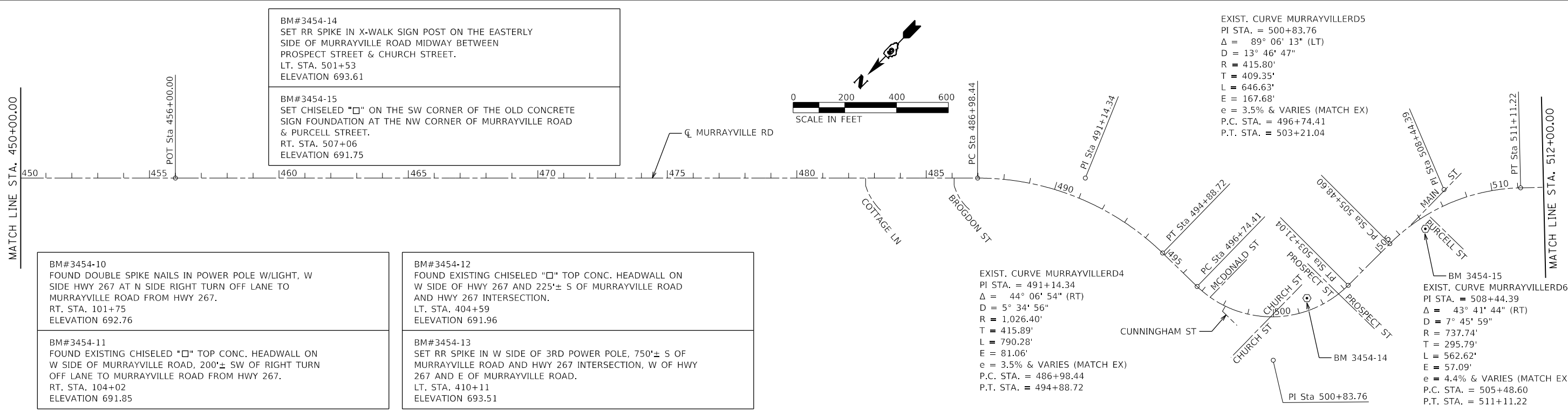


EXIST. CURVE IL267\_TO\_MURD1  
 PI STA. = 101+60.56  
 $\Delta = 24^\circ 39' 51''$  (RT)  
 $D = 7^\circ 48' 06''$   
 $R = 734.40'$   
 $T = 160.56'$   
 $L = 316.14'$   
 $E = 17.35'$   
 P.C. STA. = 100+00.00  
 P.T. STA. = 103+16.14

EXIST. CURVE IL267\_TO\_MURD2  
 PI STA. = 104+44.34  
 $\Delta = 24^\circ 39' 51''$  (LT)  
 $D = 9^\circ 53' 07''$   
 $R = 579.60'$   
 $T = 126.71'$   
 $L = 249.50'$   
 $E = 13.69'$   
 P.C. STA. = 103+17.63  
 P.T. STA. = 105+67.13

EXIST. CURVE MURRAYVILLERD3  
 PI STA. = 417+35.44  
 $\Delta = 48^\circ 48' 17''$  (RT)  
 $D = 2^\circ 59' 59''$   
 $R = 1,910.00'$   
 $T = 866.51'$   
 $L = 1,626.94'$   
 $E = 187.36'$   
 $e = 5.4\% \text{ \& VARIES (MATCH EX)}$   
 P.C. STA. = 408+68.93  
 P.T. STA. = 424+95.87

GROUND COORDINATES			
CONTROL POINT	STATION	NORTHING	EASTING
P.C.	100+00.00	1070483.39	2278978.84
P.I.	101+60.56	1070323.06	2278987.38
P.T.	103+16.14	1070173.79	2278928.23
P.C.	103+17.63	1070172.40	2278927.68
P.I.	104+44.34	1070054.60	2278881.01
P.T.	105+67.13	1069928.07	2278887.74
P.O.T.	112+69.20	1069226.99	2278925.08
P.O.T.	401+61.73	1070016.87	2279003.69
P.C.	402+17.97	1070006.36	2278948.44
P.I.	402+45.35	1070001.24	2278921.54
P.T.	402+67.74	1069975.48	2278912.25
P.C.	402+74.32	1069969.29	2278910.02
P.I.	402+84.44	1069959.78	2278906.59
P.T.	402+94.28	1069949.67	2278907.12
P.C.	408+68.93	1069375.84	2278937.68
P.I.	417+35.44	1068510.56	2278983.77
P.T.	424+95.87	1067905.98	2278363.02
P.O.T.	456+00.00	1065740.19	2276139.30
P.C.	486+98.44	1063578.35	2273919.66
P.I.	491+14.34	1063288.18	2273621.72
P.T.	494+88.72	1063287.24	2273205.83
P.C.	496+74.41	1063286.83	2273020.15
P.I.	500+83.76	1063285.91	2272610.80
P.T.	503+21.04	1062876.60	2272605.32
P.C.	505+48.60	1062649.06	2272602.27
P.I.	508+44.39	1062353.30	2272598.31
P.T.	511+11.22	1062142.19	2272391.13



EXIST. CURVE MURRAYVILLERD5  
 PI STA. = 500+83.76  
 $\Delta = 89^\circ 06' 13''$  (LT)  
 $D = 13^\circ 46' 47''$   
 $R = 415.80'$   
 $T = 409.35'$   
 $L = 646.63'$   
 $E = 167.68'$   
 $e = 3.5\% \text{ \& VARIES (MATCH EX)}$   
 P.C. STA. = 496+74.41  
 P.T. STA. = 503+21.04

EXIST. CURVE MURRAYVILLERD4  
 PI STA. = 491+14.34  
 $\Delta = 44^\circ 06' 54''$  (RT)  
 $D = 5^\circ 34' 56''$   
 $R = 1,026.40'$   
 $T = 415.89'$   
 $L = 790.28'$   
 $E = 81.06'$   
 $e = 3.5\% \text{ \& VARIES (MATCH EX)}$   
 P.C. STA. = 486+98.44  
 P.T. STA. = 494+88.72

EXIST. CURVE MURRAYVILLERD6  
 PI STA. = 508+44.39  
 $\Delta = 43^\circ 41' 44''$  (RT)  
 $D = 7^\circ 45' 59''$   
 $R = 737.74'$   
 $T = 295.79'$   
 $L = 562.62'$   
 $E = 57.09'$   
 $e = 4.4\% \text{ \& VARIES (MATCH EX)}$   
 P.C. STA. = 505+48.60  
 P.T. STA. = 511+11.22

BM#3454-10  
 FOUND DOUBLE SPIKE NAILS IN POWER POLE W/LIGHT, W SIDE HWY 267 AT N SIDE RIGHT TURN OFF LANE TO MURRAYVILLE ROAD FROM HWY 267.  
 RT. STA. 101+75  
 ELEVATION 692.76

BM#3454-11  
 FOUND EXISTING CHISELED "□" TOP CONC. HEADWALL ON W SIDE OF MURRAYVILLE ROAD, 200'± SW OF RIGHT TURN OFF LANE TO MURRAYVILLE ROAD FROM HWY 267.  
 RT. STA. 104+02  
 ELEVATION 691.85

BM#3454-12  
 FOUND EXISTING CHISELED "□" TOP CONC. HEADWALL ON W SIDE OF HWY 267 AND 225'± S OF MURRAYVILLE ROAD AND HWY 267 INTERSECTION.  
 LT. STA. 404+59  
 ELEVATION 691.96

BM#3454-13  
 SET RR SPIKE IN W SIDE OF 3RD POWER POLE, 750'± S OF MURRAYVILLE ROAD AND HWY 267 INTERSECTION, W OF HWY 267 AND E OF MURRAYVILLE ROAD.  
 LT. STA. 410+11  
 ELEVATION 693.51

BM#3454-14  
 SET RR SPIKE IN X-WALK SIGN POST ON THE EASTERLY SIDE OF MURRAYVILLE ROAD MIDWAY BETWEEN PROSPECT STREET & CHURCH STREET.  
 LT. STA. 501+53  
 ELEVATION 693.61

BM#3454-15  
 SET CHISELED "□" ON THE SW CORNER OF THE OLD CONCRETE SIGN FOUNDATION AT THE NW CORNER OF MURRAYVILLE ROAD & PURCELL STREET.  
 RT. STA. 507+06  
 ELEVATION 691.75

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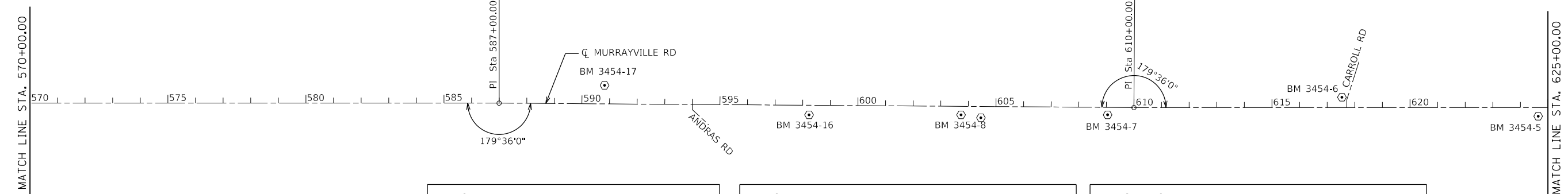
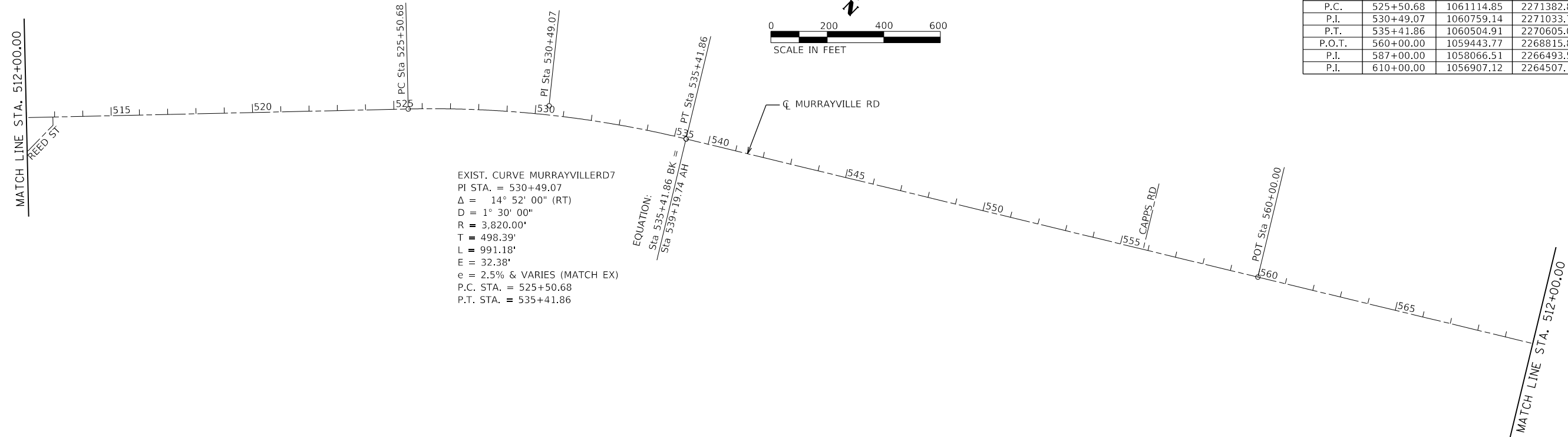
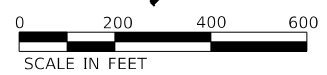
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PLOT SCALE = 400,0000' / in.	DRAWN - M. MCEVERS	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>ALIGNMENT, TIES AND BENCHMARKS</b>			
<b>MURRAYVILLE ROAD</b>			
SCALE:	SHEET 1 OF 4 SHEETS	STA.	TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	15
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

GROUND COORDINATES			
CONTROL POINT	STATION	NORTHING	EASTING
P.C.	525+50.68	1061114.85	2271382.87
P.I.	530+49.07	1060759.14	2271033.77
P.T.	535+41.86	1060504.91	2270605.09
P.O.T.	560+00.00	1059443.77	2268815.83
P.I.	587+00.00	1058066.51	2266493.52
P.I.	610+00.00	1056907.12	2264507.12



**BM#3454-5**  
 SET RR SPIKE IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 700'± SW OF CARROLL ROAD.  
 RT. STA. 624+65  
 ELEVATION 691.12

**BM#3454-6**  
 SET RR SPIKE IN POWER POLE W/ TRANS., AT SE QUAD OF MURRAYVILLE ROAD AND CARROLL ROAD.  
 LT. STA. 617+54  
 ELEVATION 692.30

**BM#3454-7**  
 SET RR SPIKE IN POWER POLE W/ TRANS., ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 750'± NE OF CARROLL ROAD AT HOUSE #1722.  
 RT. STA. 609+05  
 ELEVATION 690.82

**BM#3454-8**  
 SET DOUBLE SPIKE NAILS IN END POST ON EASTERLY SIDE OF BARN ENT. ON NORTHERLY SIDE MURRAYVILLE ROAD, 1250'± NE OF CARROLL ROAD.  
 RT. STA. 603+74  
 ELEVATION 691.11

**BM#3454-16**  
 SET YELLOW BM SPIKE IN CORNER POST OF NORTHERLY SIDE OF MURRAYVILLE ROAD, 425' WEST OF ANDRAS ROAD.  
 RT. STA. 598+27  
 ELEVATION 681.11

**BM#3454-17**  
 SET LARGE CONC. NAIL IN 14" TREE ROOT (W SIDE) ON THE SOUTHERNLY SIDE OF MURRAYVILLE ROAD. ±20' S OF THE PAVEMENT EDGE & 175' W OF ANDRAS ROAD.  
 LT. STA. 595+72  
 ELEVATION 680.26

MODEL: Default  
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**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS - LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

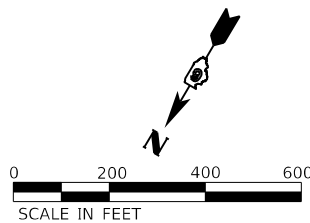
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PLOT SCALE = 400,0000' / in.	DRAWN - M. MCEVERS	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

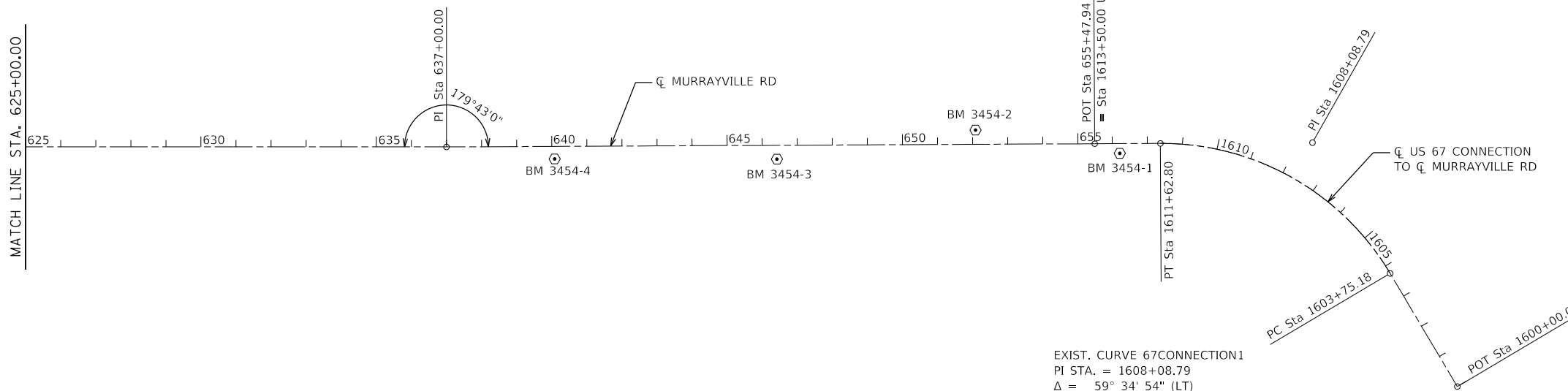
<b>ALIGNMENT, TIES AND BENCHMARKS</b>			
<b>MURRAYVILLE ROAD</b>			
SCALE:	SHEET 2	OF 4 SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	16
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				





GROUND COORDINATES			
CONTROL POINT	STATION	NORTHING	EASTING
P.I.	637+00.00	1055529.85	2262184.81
P.O.T.	655+47.94	1054579.37	2260600.04
P.T.	1611+62.80	1054483.08	2260439.51
P.I.	1608+08.79	1054260.06	2260067.65
P.C.	1603+75.18	1054467.81	2259687.06
P.O.T.	1600+00.00	1054647.56	2259357.74



EXIST. CURVE 67CONNECTION1  
 PI STA. = 1608+08.79  
 Δ = 59° 34' 54" (LT)  
 D = 7° 33' 53"  
 R = 757.40'  
 T = 433.61'  
 L = 787.62'  
 E = 115.34'  
 e = 4.4% & VARIES (MATCH EX)  
 P.C. STA. = 1603+75.18  
 P.T. STA. = 1611+62.80

<p><b>BM#3454-1</b>          FOUND EXISTING CHISELED "□" TOP CENTER CONC. HEADWALL OF CULVERT ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 1150'± NE OF HWY 67 ALONG MURRAYVILLE ROAD.          LT. STA. 1612+79          ELEVATION 689.91</p>
<p><b>BM#3454-2</b>          SET DOUBLE SPIKE NAILS IN 20" TREE ROOT ON SOUTHERLY SIDE MURRAYVILLE ROAD, 1600'± NE OF HWY 67 ALONG MURRAYVILLE ROAD.          LT. STA. 652+08          ELEVATION 693.39</p>
<p><b>BM#3454-3</b>          SET MAG SPIKE IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 2150'± NE OF HWY 67 ALONG MURRAYVILLE ROAD.          RT. STA. 646+42          ELEVATION 692.03</p>
<p><b>BM#3454-4</b>          SET DOUBLE SPIKE NAILS IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 2750'± NE OF HWY 67 ALONG MURRAYVILLE ROAD.          RT. STA. 640+08          ELEVATION 697.35</p>

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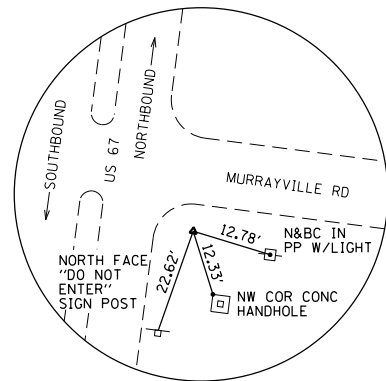
**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000932

USER NAME = drunoll	DESIGNED - S. BALLINGER	REVISED -
PLOT SCALE = 400.0000 ' / in.	DRAWN - M. MCEVERS	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

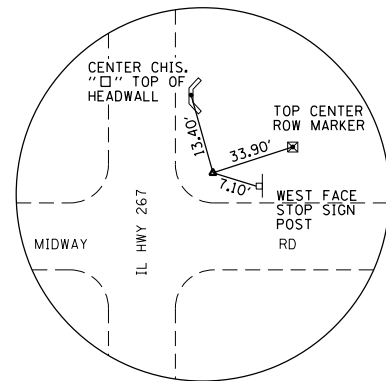
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

ALIGNMENT, TIES AND BENCHMARKS MURRAYVILLE ROAD	
SCALE:	SHEET 3 OF 4 SHEETS STA. TO STA.

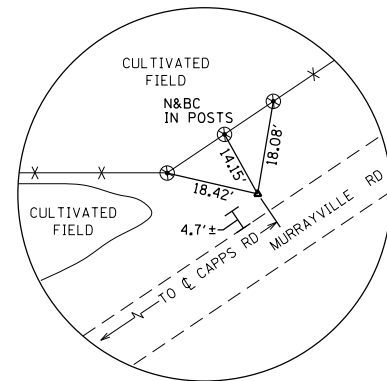
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	17
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



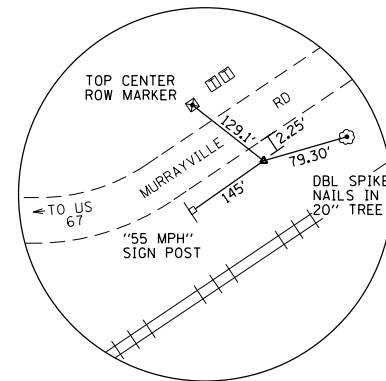
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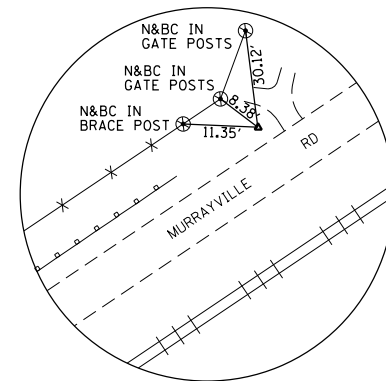
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SET 5/8" IRON ROD



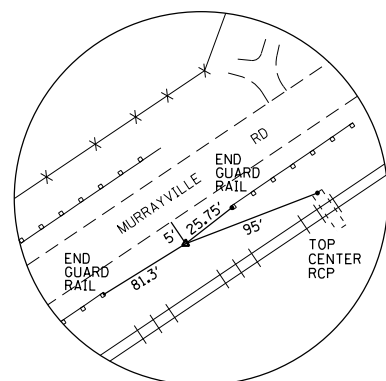
**CONTROL POINT #3**  
SET 5/8" IRON ROD



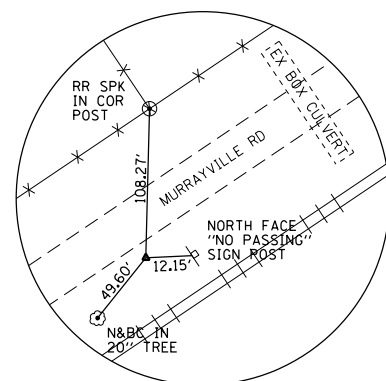
**CONTROL POINT #4**  
SET 5/8" IRON ROD



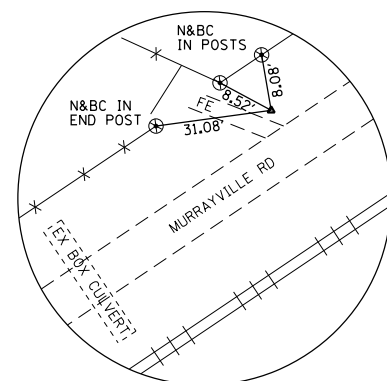
**CONTROL POINT #5**  
SET 5/8" IRON ROD



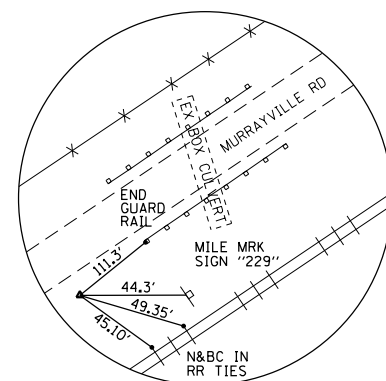
**CONTROL POINT #6**  
SET 5/8" IRON ROD



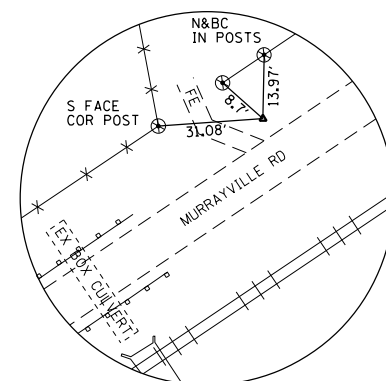
**CONTROL POINT #7**  
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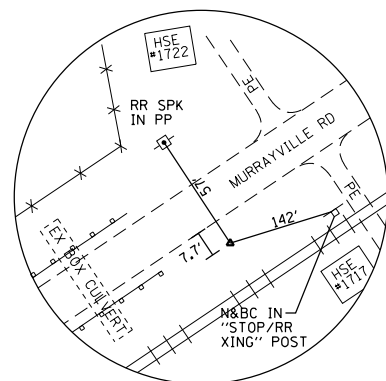
**CONTROL POINT #8**  
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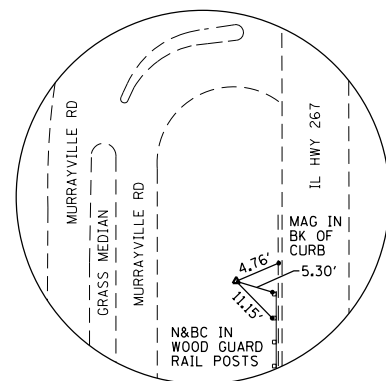
**CONTROL POINT #9**  
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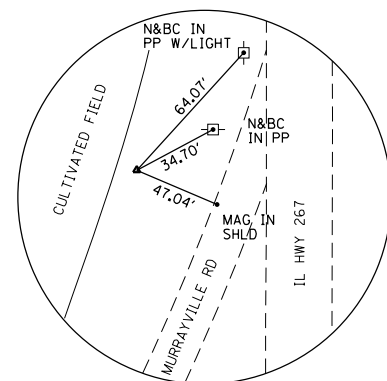
**CONTROL POINT #10**  
SET 5/8" IRON ROD



**CONTROL POINT #11**  
SET 5/8" IRON ROD



**CONTROL POINT #12**  
SET 5/8" IRON ROD



**CONTROL POINT #13**  
SET 5/8" IRON ROD

GROUND COORDINATES

CONTROL POINT	NORTHING	EASTING	Q STATION/OFFSET
CP#1	1054555.313	2259399.990	1600+81.28, 60.73' RT
CP#2	1070817.000	2278986.238	
CP#3	1060264.183	2270167.336	544+19.06, 16.24' RT
CP#4	1054683.818	2260841.277	652+87.33, 34.50' LT
CP#5	1055335.475	2261805.624	641+25.15, 28.34' RT
CP#6	1055126.352	2261543.640	644+57.38, 16.25' LT
CP#7	1056096.627	2263172.118	625+61.68, 16.13' RT
CP#8	1056306.228	2263446.881	622+18.43, 23.99' RT
CP#9	1056672.838	2264170.108	614+09.37, 29.60' LT
CP#10	1057240.157	2265037.995	603+73.62, 20.02' RT
CP#11	1056941.389	2264605.966	608+97.35, 20.23' LT
CP#12	1069299.994	2279016.844	409+43.12, 76.62' LT
CP#13	1070270.254	2278897.415	102+30.70, 59.62' RT

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**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000932

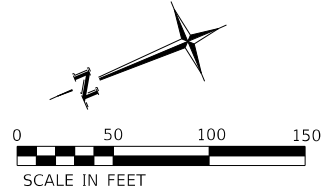
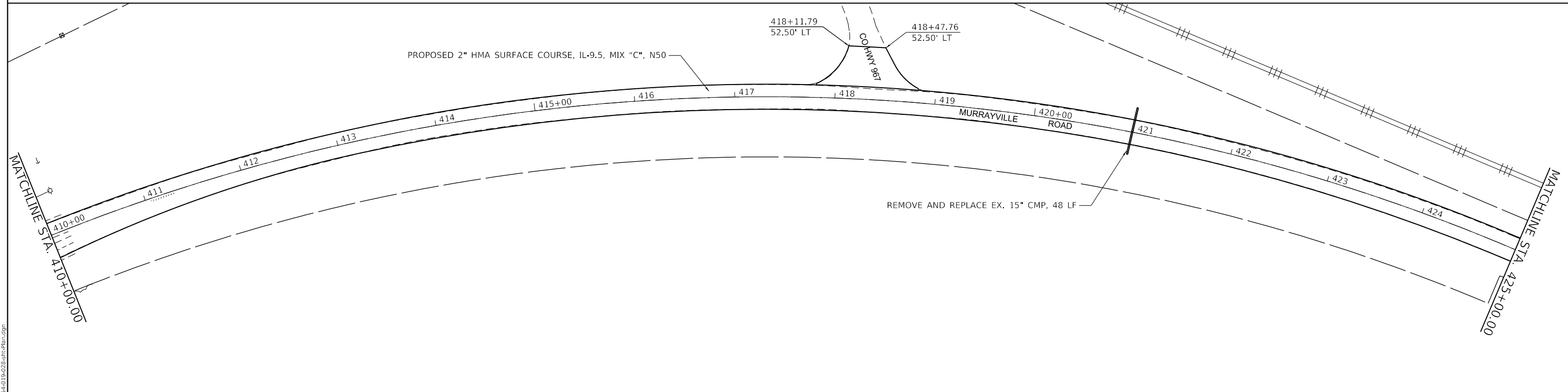
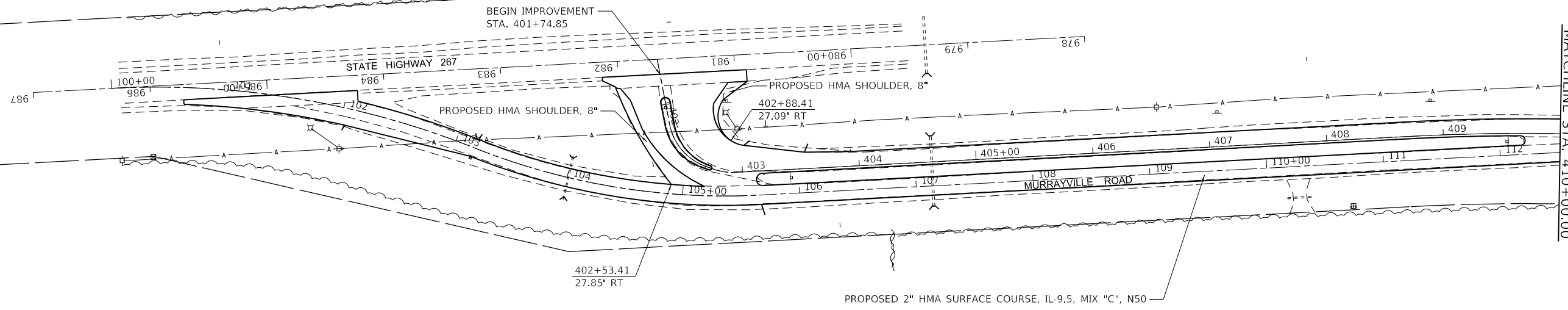
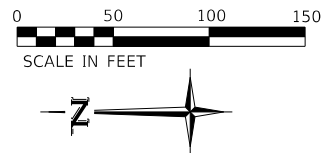
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**ALIGNMENT, TIES AND BENCHMARKS  
MURRAYVILLE ROAD**

SCALE: NTS      SHEET 4 OF 4 SHEETS      STA.      TO STA.

F.A.S. RTE. 310	SECTION 19-00108-00-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 18
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

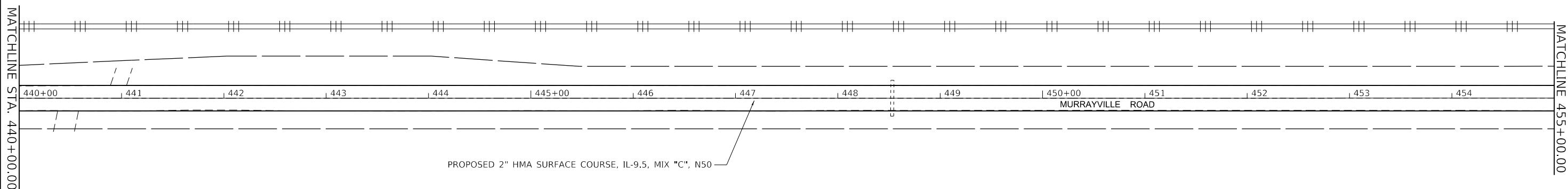
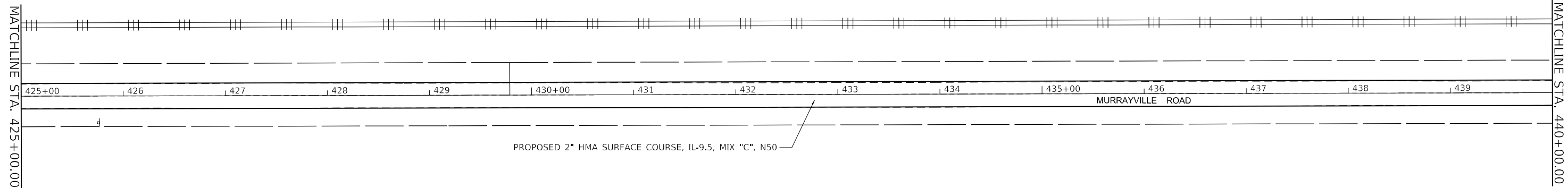
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS  
 (MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 1    OF 10 SHEETS    STA. 401+74.85    TO STA. 425+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	19
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
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1910 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 62550  
PHONE: 217-245-4166 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000832

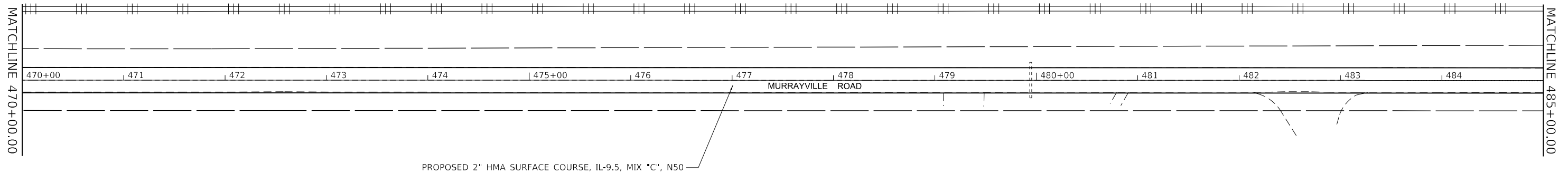
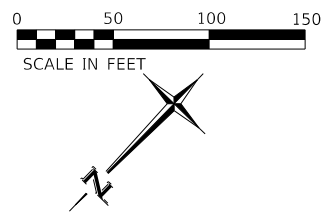
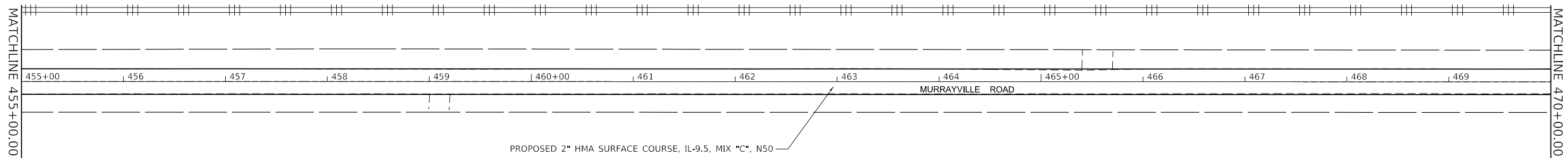
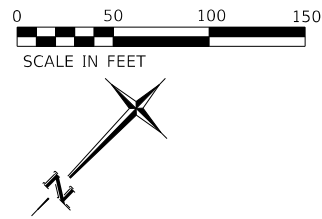
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS  
(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 2    OF 10    SHEETS    STA. 425+00.00    TO STA. 455+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	20
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

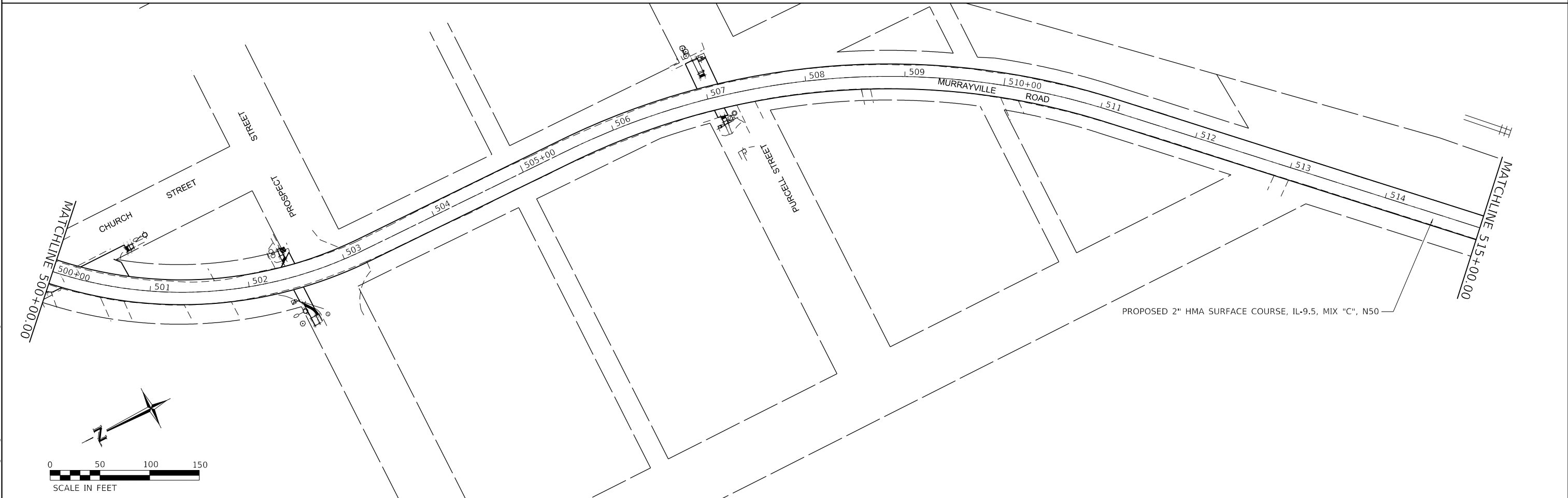
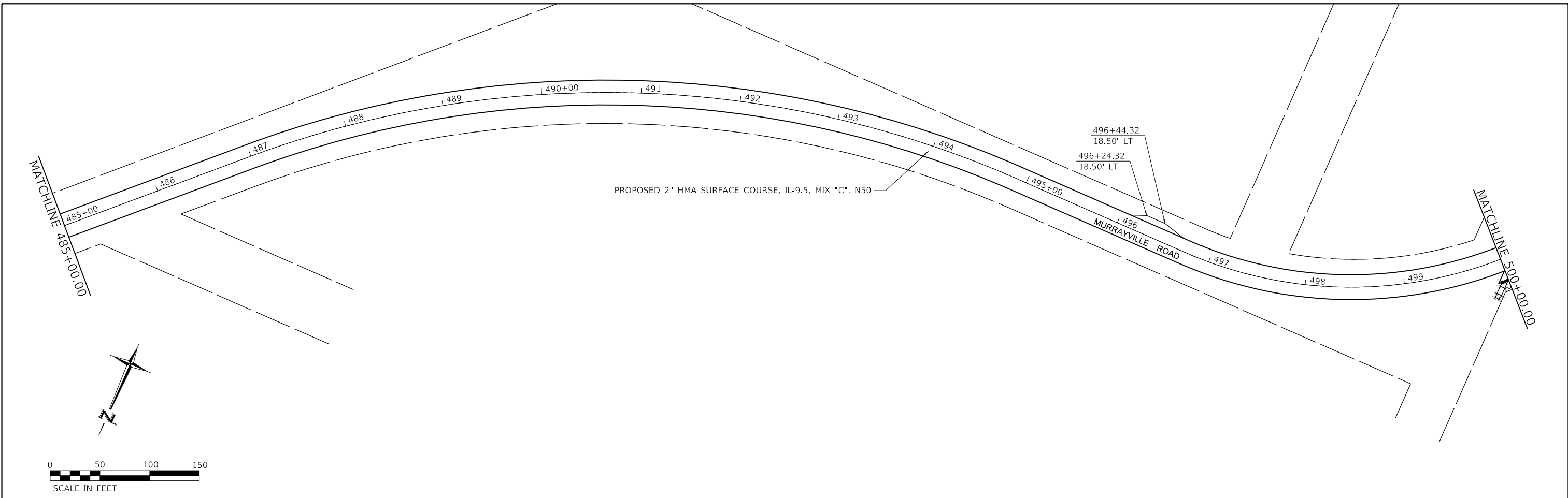
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 3    OF 10    SHEETS    STA. 455+00.00    TO STA. 485+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	21
				CONTRACT NO. 93791
ILLINOIS FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

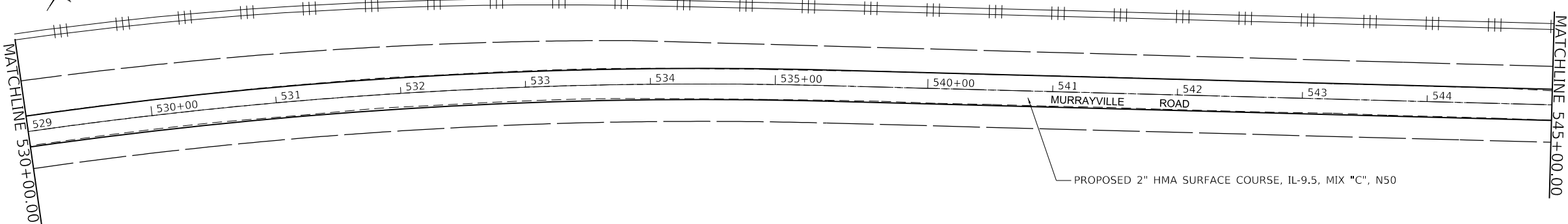
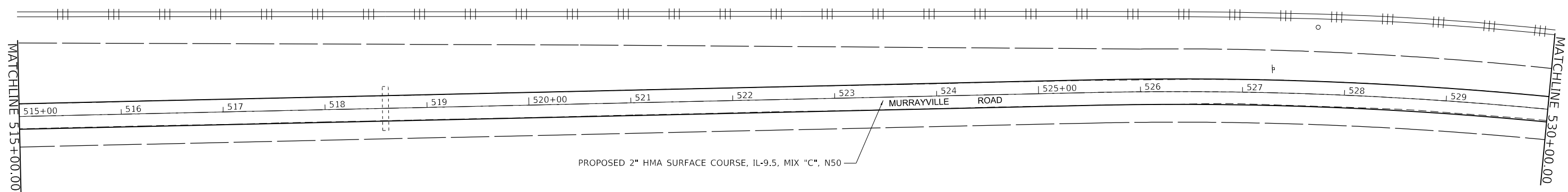
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 4    OF 10 SHEETS    STA. 485+00.00    TO STA. 515+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	22
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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 PLOT DATE: 3/18/2022

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 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4149 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

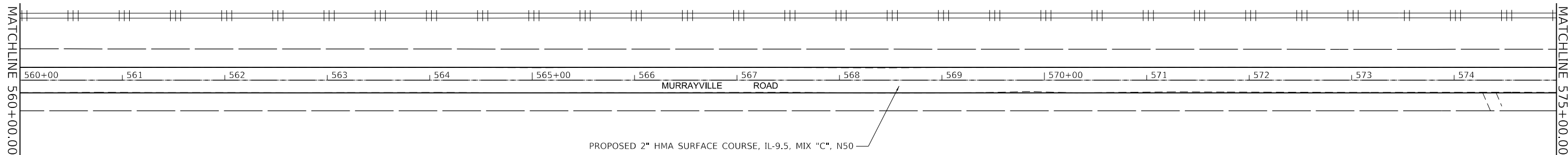
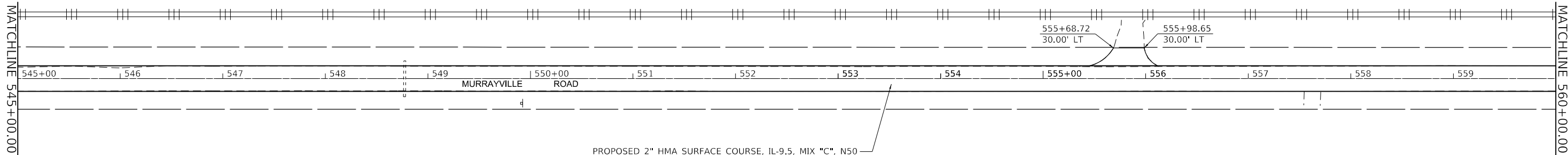
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	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 5    OF 10    SHEETS    STA. 515+00.00    TO STA. 545+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	23
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA**  
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 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

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PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

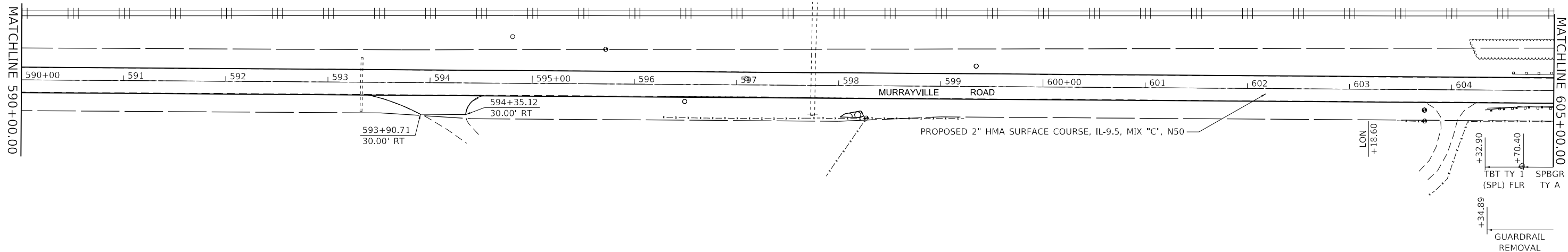
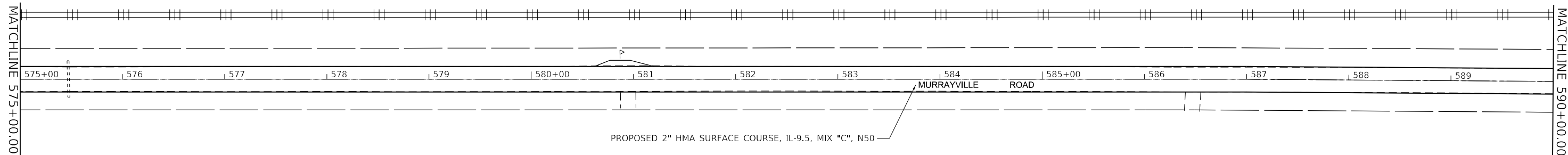
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 6    OF 10    SHEETS    STA. 545+00.00    TO STA. 575+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	24
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				





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 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

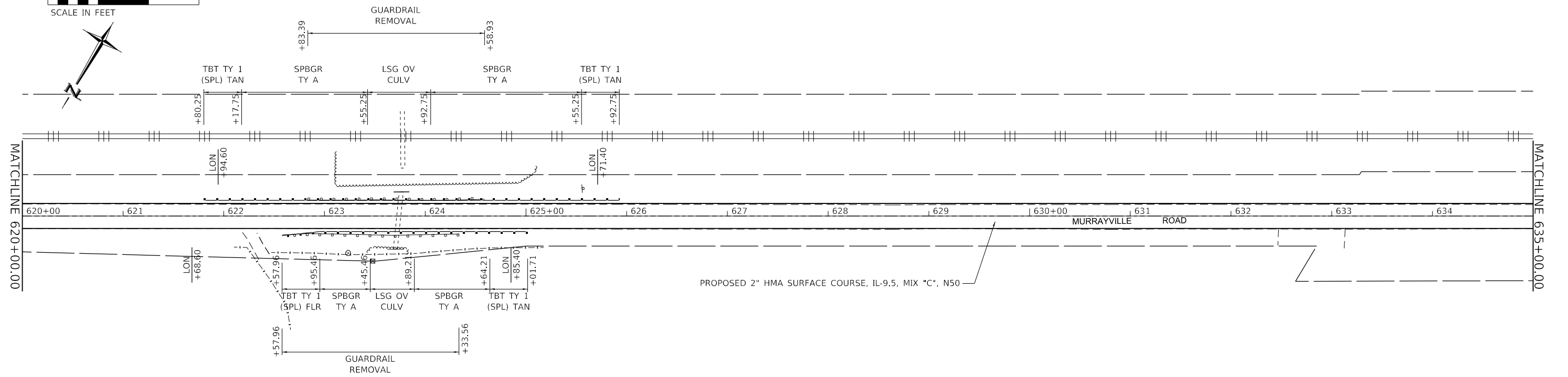
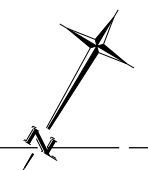
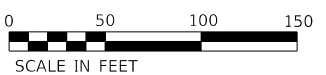
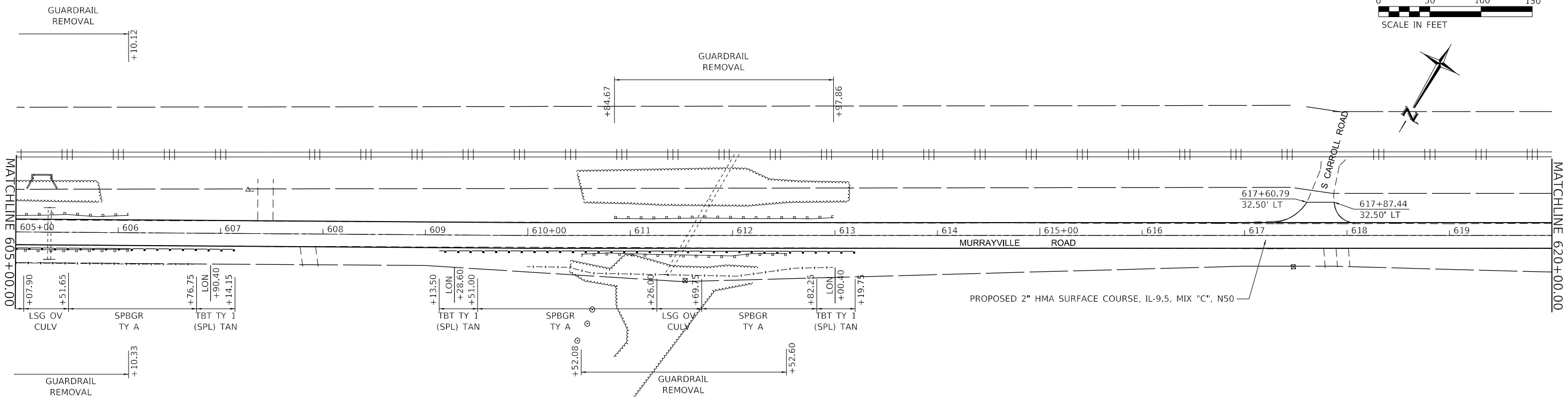
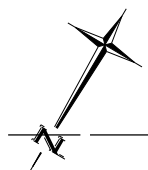
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS  
 (MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 7 OF 10 SHEETS    STA. 575+00.00 TO STA. 605+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	25
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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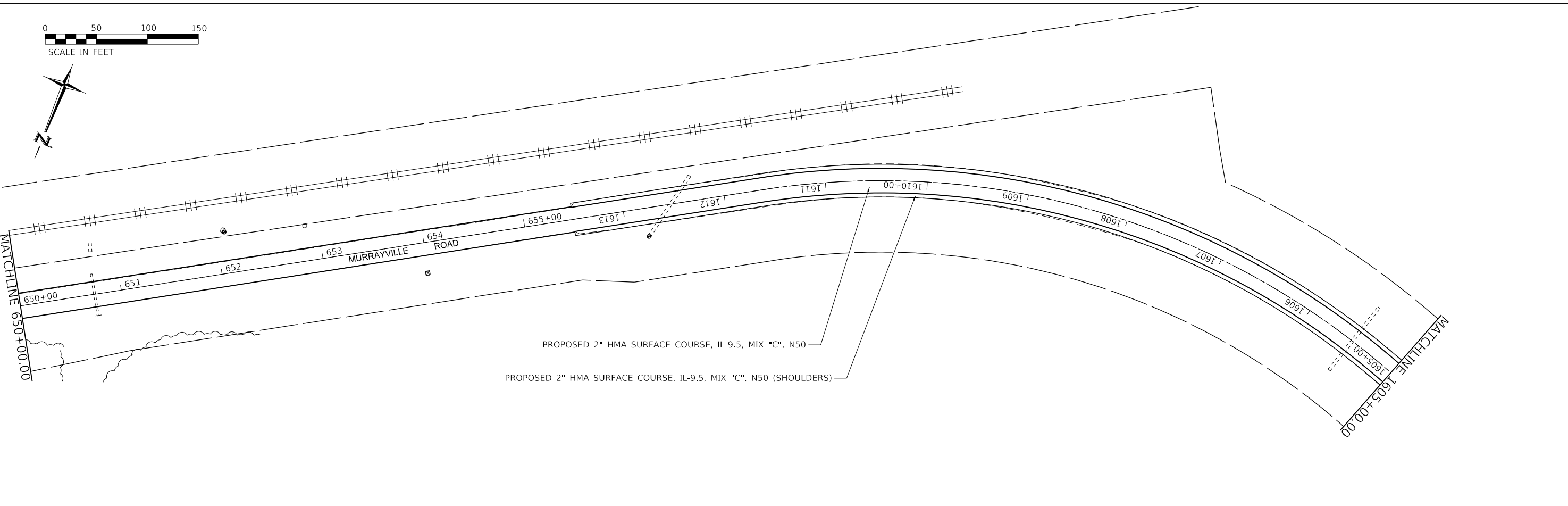
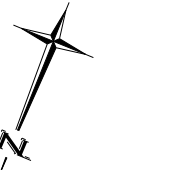
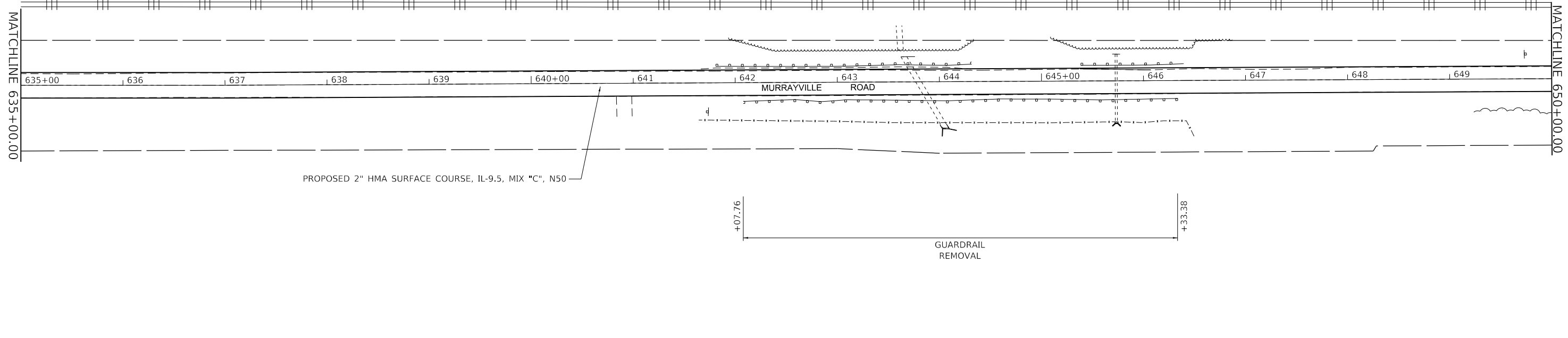
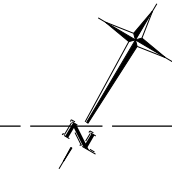
**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

USER NAME = drunoll	DESIGNED - D. RUHOLL	REVISED -
PLOT SCALE = 100,0000' / in.	DRAWN - D. RUHOLL	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>PLAN SHEETS</b> <b>(MURRAYVILLE ROAD)</b>		F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		310	19-00108-000-R5	MORGAN	90	26
SCALE: 1"=50'		SHEET 8 OF 10 SHEETS		STA. 605+00.00 TO STA. 635+00.00		

CONTRACT NO. 93791		ILLINOIS	FED. AID PROJECT
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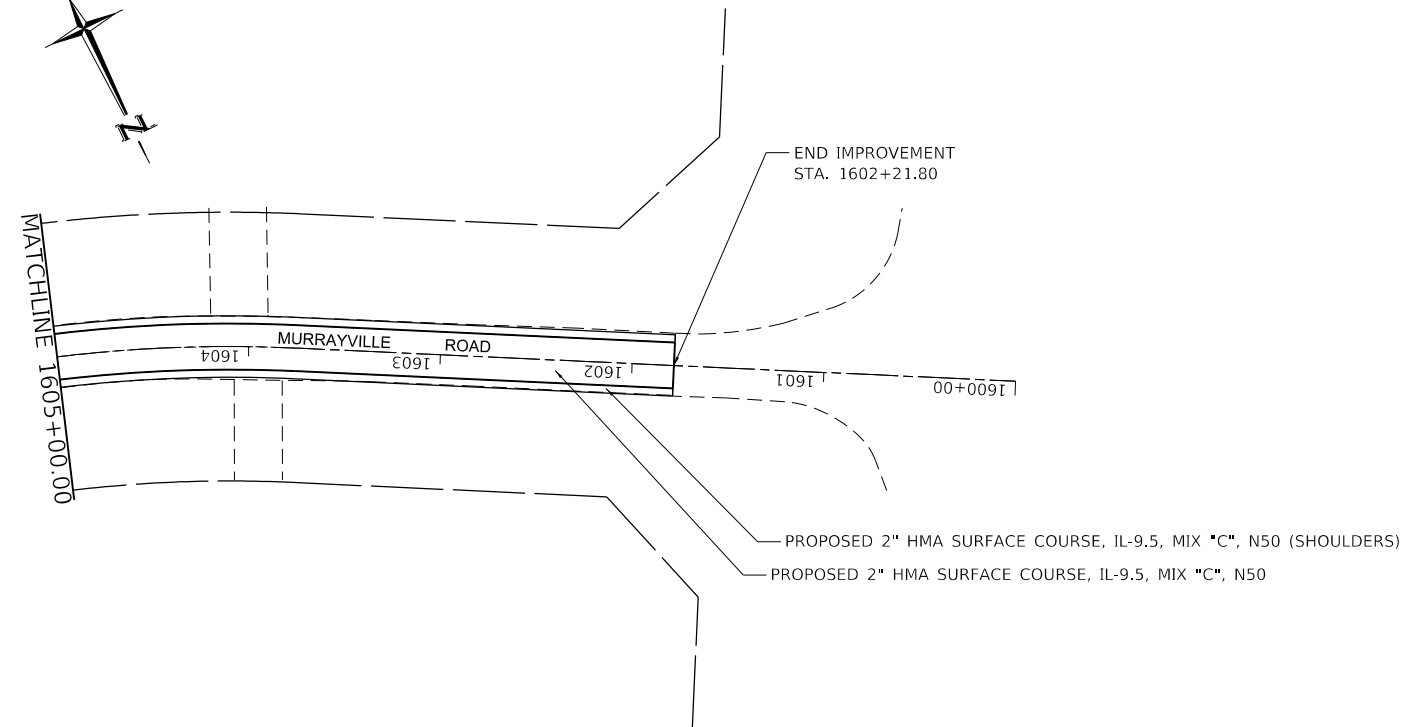
**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

<b>PLAN SHEETS</b>			
<b>(MURRAYVILLE ROAD)</b>			
SCALE: 1"=50'	SHEET 9	OF 10 SHEETS	STA. 635+00.00 TO STA. 1605+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	27
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
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 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4160 FAX: 217-245-4149  
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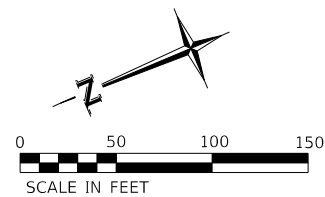
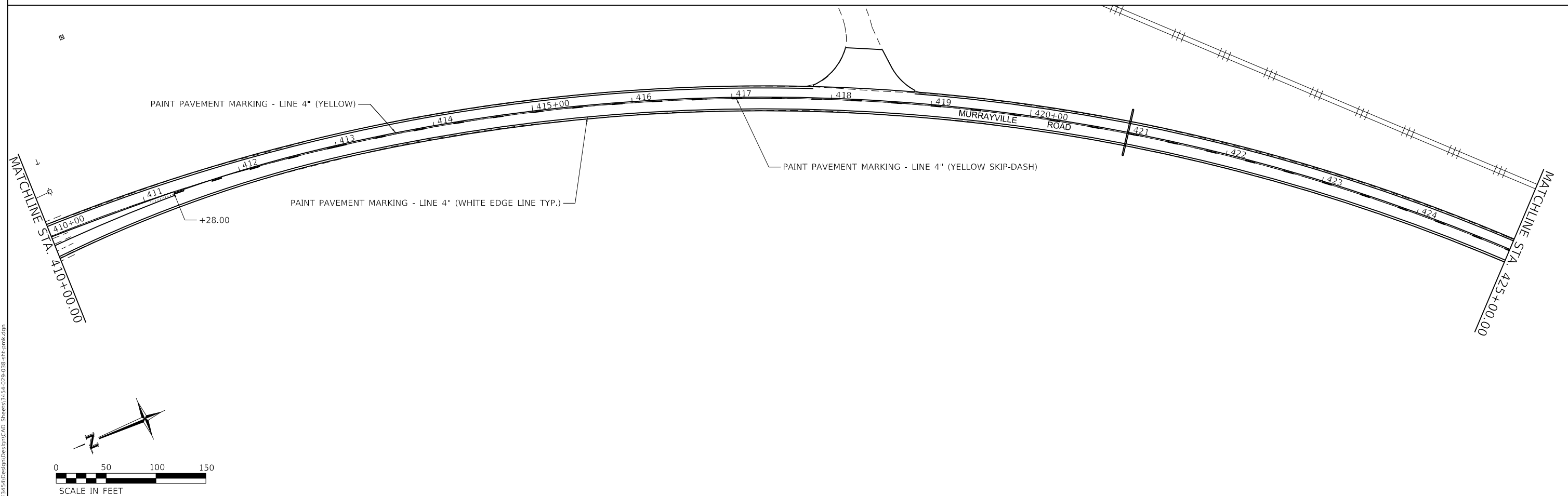
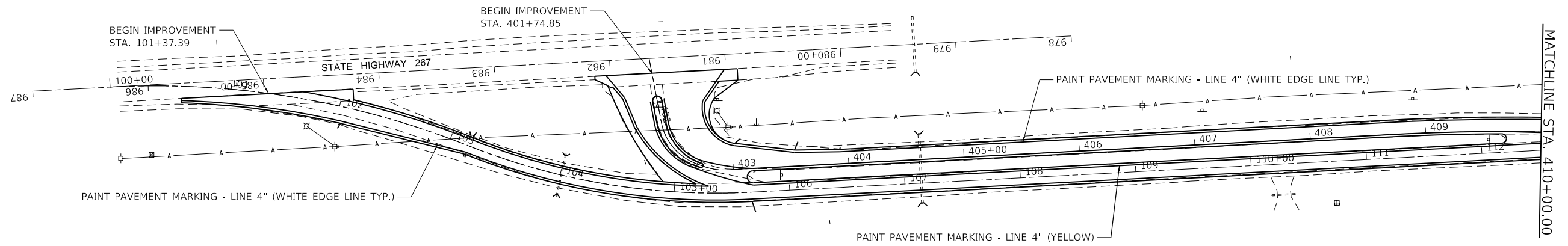
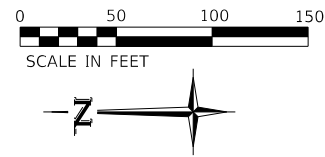
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PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PLAN SHEETS  
(MURRAYVILLE ROAD)**

SCALE: 1"=50'      SHEET 10    OF 10    SHEETS    STA. 1605+00.00    TO STA. 1602+21.80

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	28
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4160 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

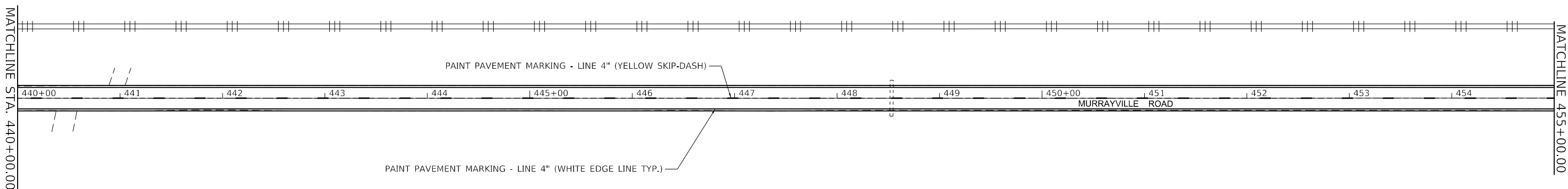
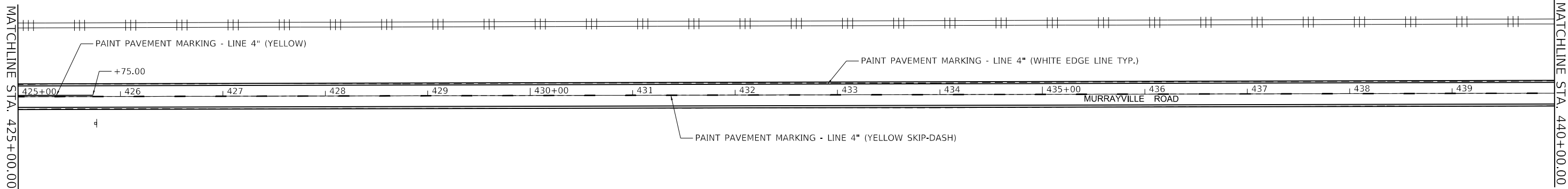
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PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 1 OF 10 SHEETS    STA. 401+74.85 TO STA. 425+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	29
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

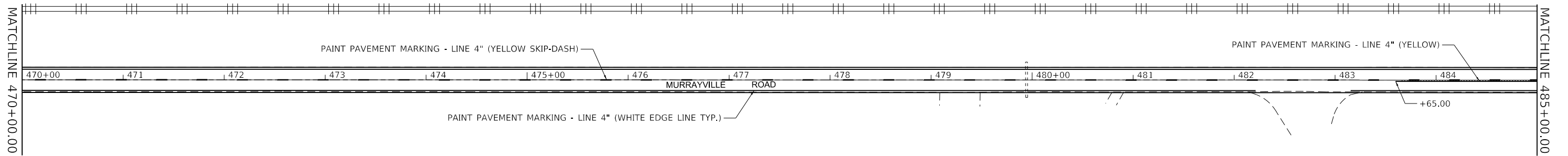
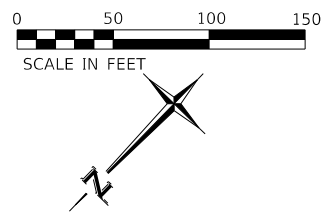
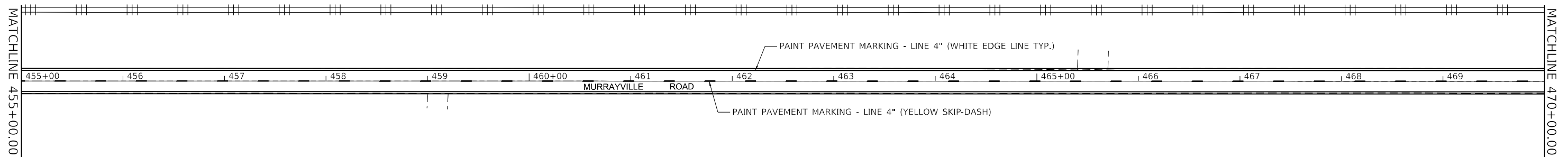
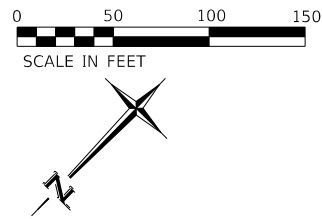
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 2 OF 10 SHEETS    STA. 425+00.00 TO STA. 455+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	30
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA**  
**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

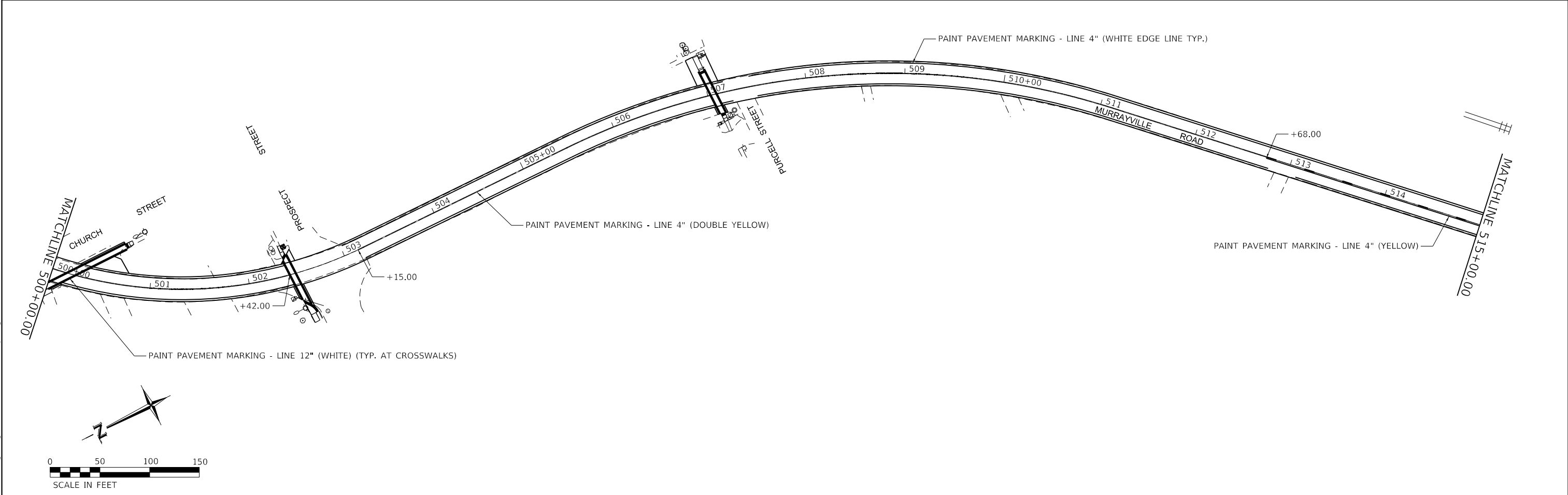
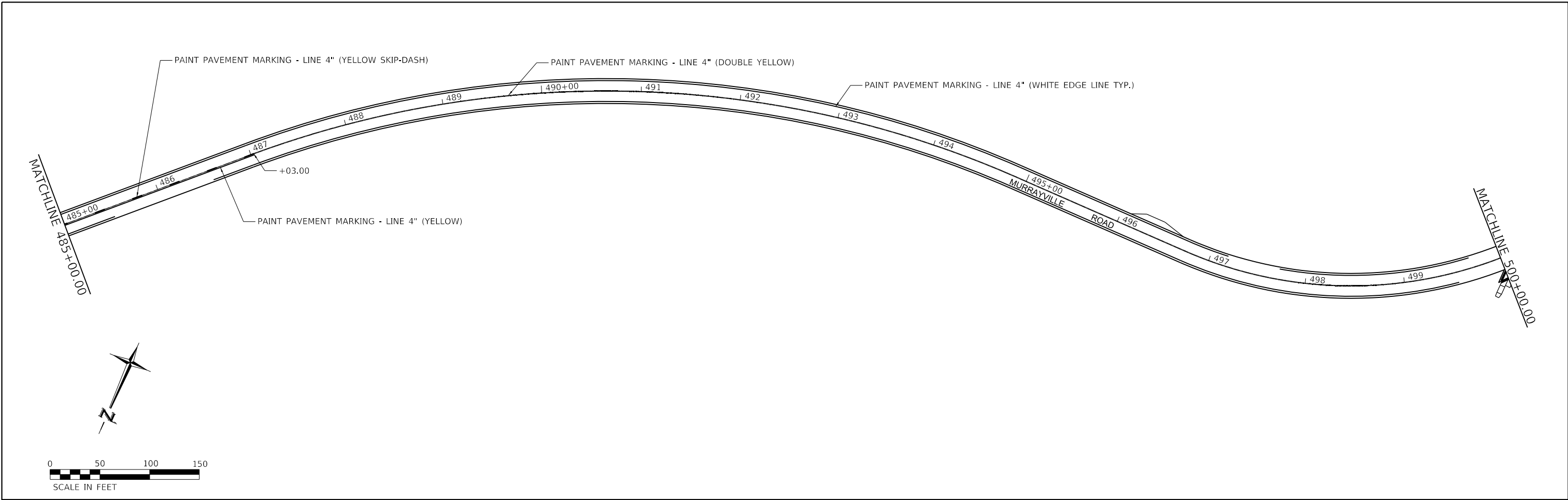
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PLOT SCALE = 100.0000' / in.	DRAWN - D. RUHOLL	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 3 OF 10 SHEETS    STA. 455+00.00 TO STA. 485+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	31
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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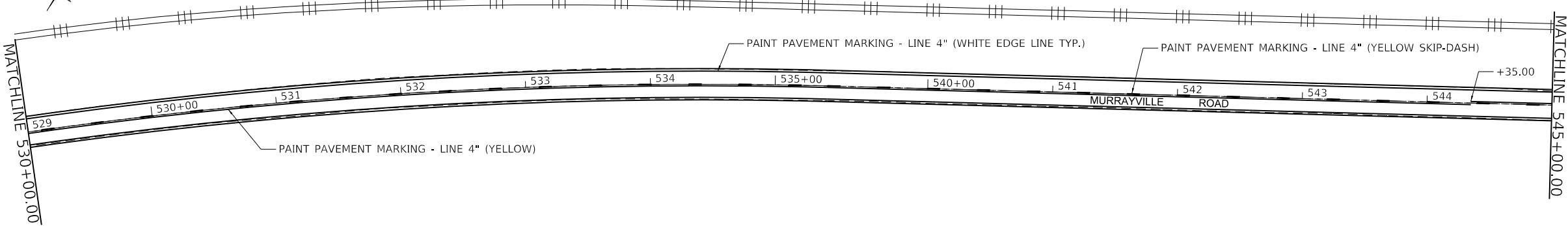
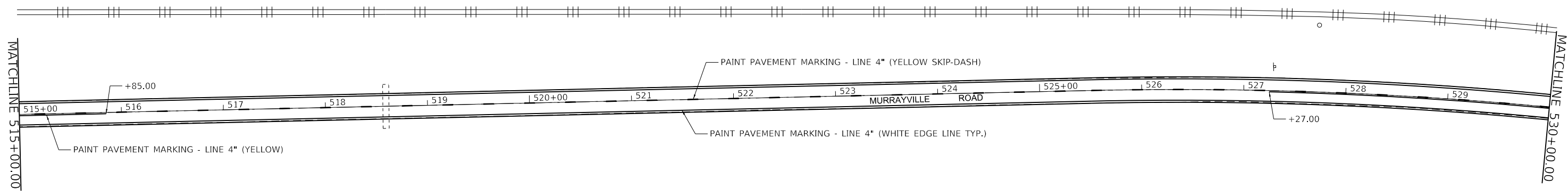
<b>BENTON &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS / LAND SURVEYORS 1910 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62650 PHONE: 217-245-4166 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-000832	USER NAME = druholl	DESIGNED - D. RUHOLL	REVISED -
	PLOT SCALE = 100,0000 ' / in.	DRAWN - D. RUHOLL	REVISED -
	PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
		DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

PAVEMENT MARKING PLAN SHEETS			
(MURRAYVILLE ROAD)			
SCALE: 1"=50'	SHEET 4	OF 10 SHEETS	STA. 485+00.00 TO STA. 515+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	32
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				





MODEL: D:\msh\11  
 FILE NAME: P:\2019\315\Design\Design\CAD\_Sheets\315-029-038-sh-cmk.dgn

**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4160 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

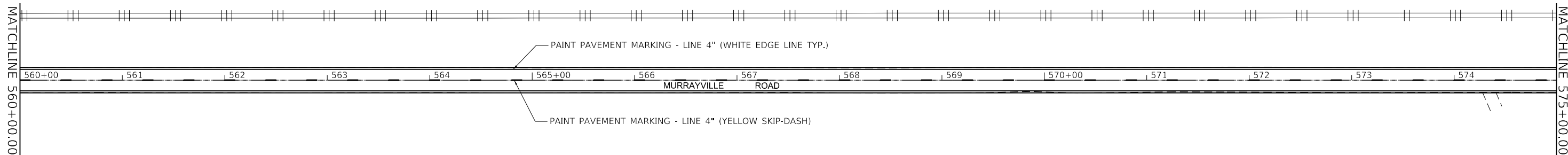
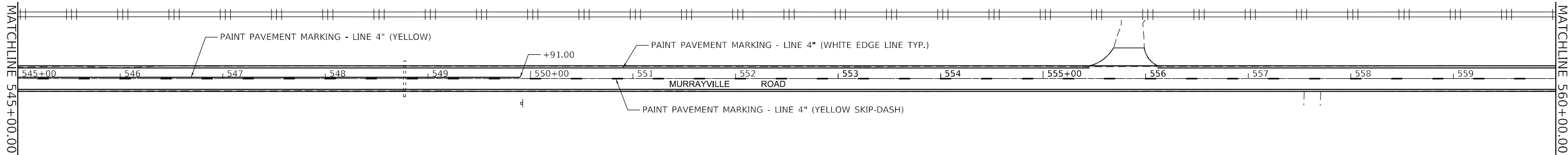
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PLOT SCALE = 100,0000' / in.	DRAWN - D. RUHOLL	REVISED -
PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 5 OF 10 SHEETS    STA. 515+00.00 TO STA. 545+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	33
ILLINOIS			93791	
FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

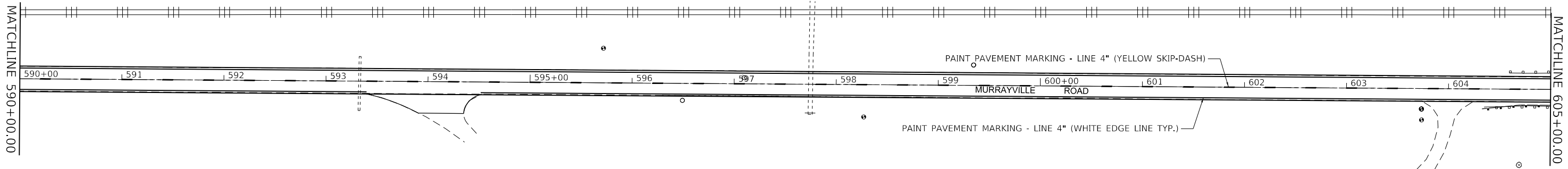
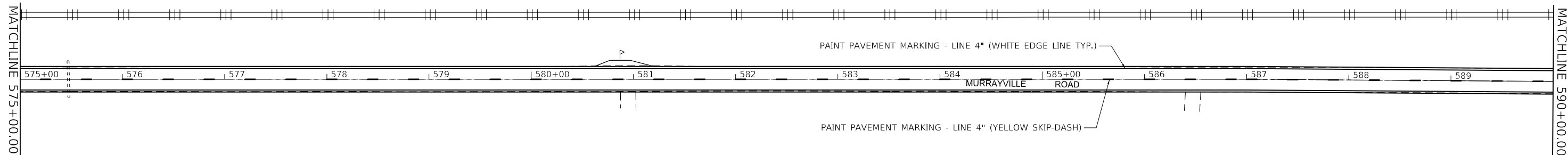
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PLOT SCALE = 100,0000' / in.	CHECKED - W. SLEEMAN	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 6 OF 10 SHEETS    STA. 545+00.00 TO STA. 575+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	34
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

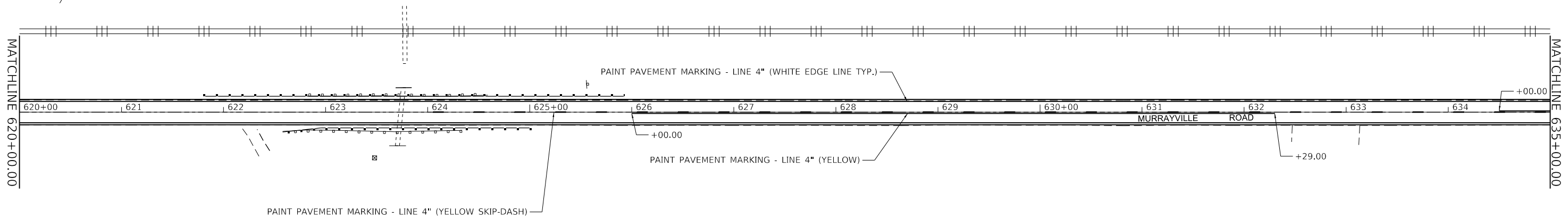
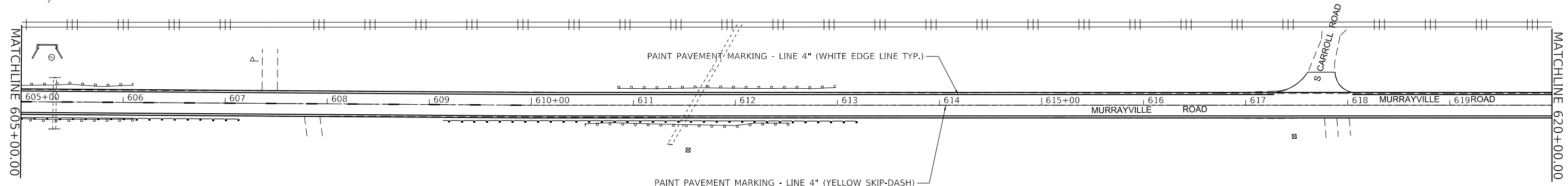
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	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS  
 (MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 7 OF 10 SHEETS    STA. 575+00.00 TO STA. 605+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	35
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

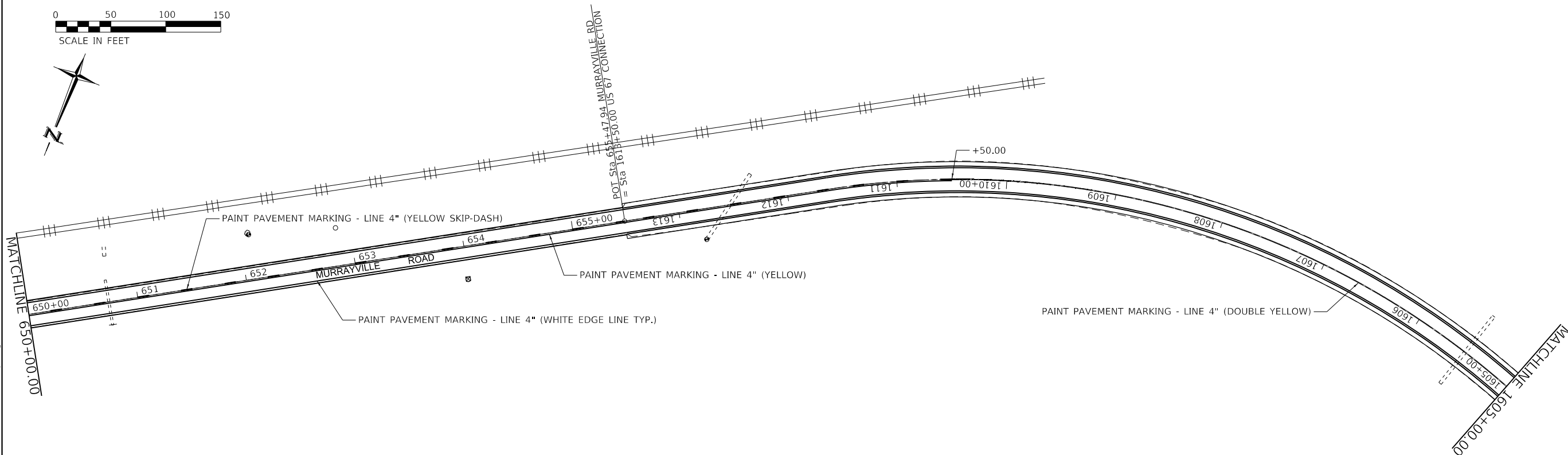
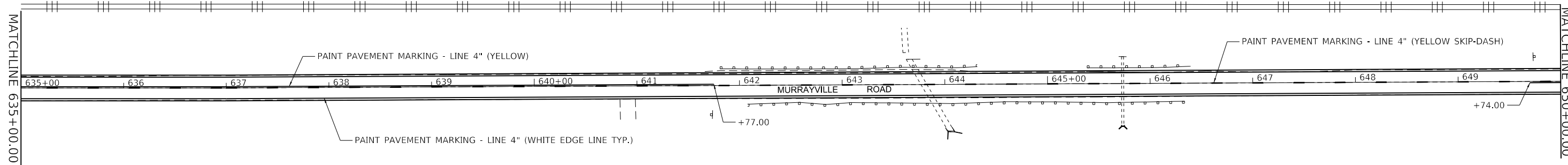
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 8 OF 10 SHEETS    STA. 605+00.00 TO STA. 635+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-R5	MORGAN	90	36
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4160 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

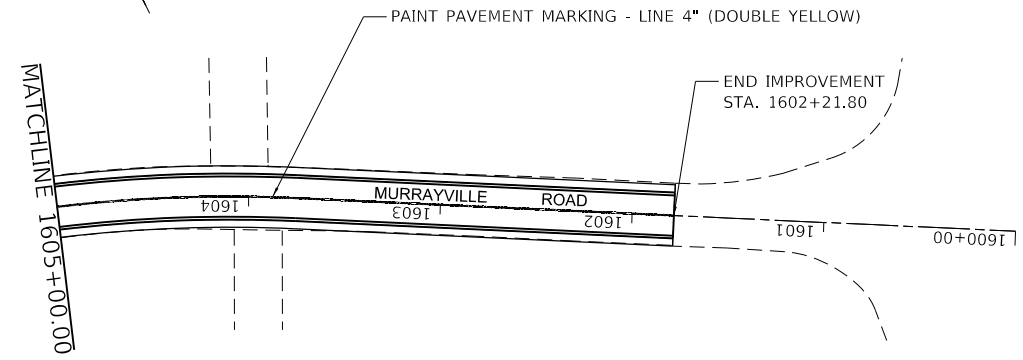
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	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS**  
**(MURRAYVILLE ROAD)**

SCALE: 1"=50'    SHEET 9 OF 10 SHEETS    STA. 635+00.00 TO STA. 1605+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	37
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



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**BA**  
 BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4160 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

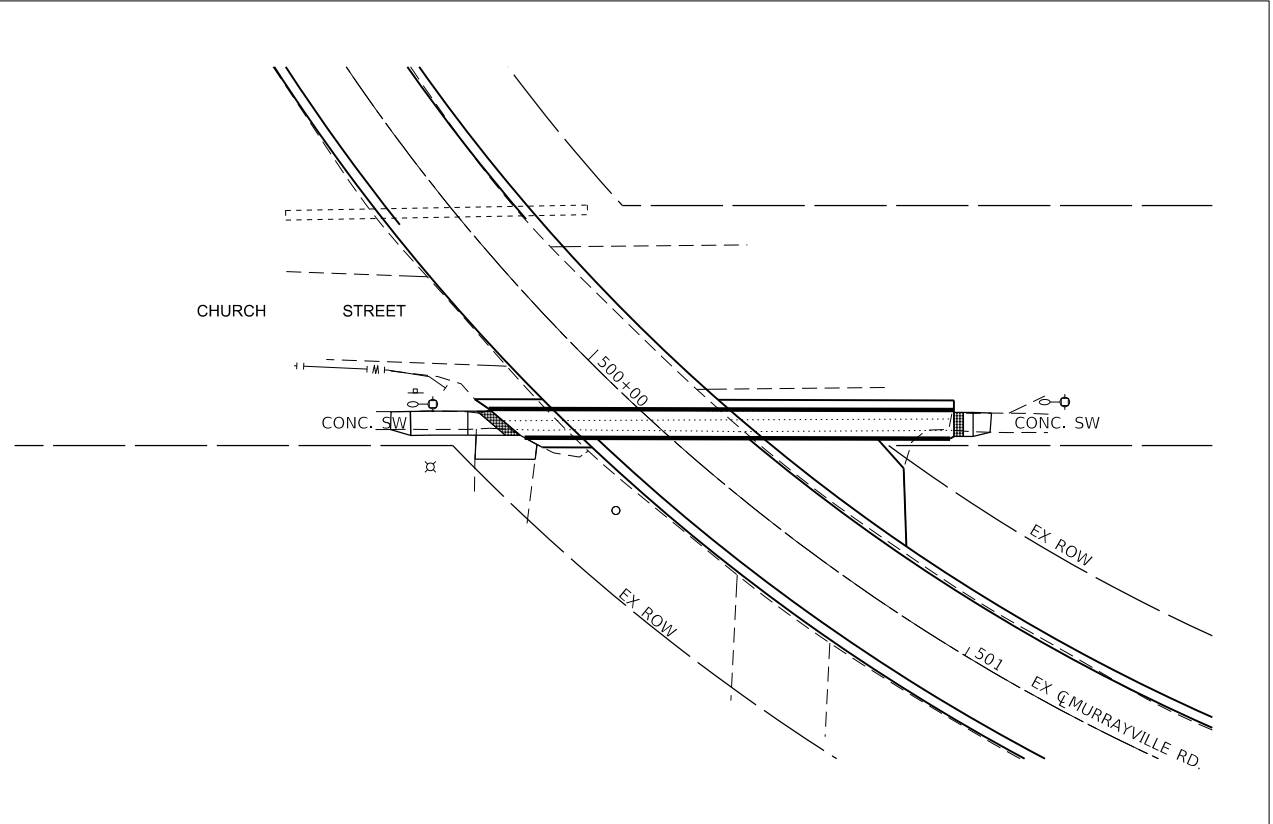
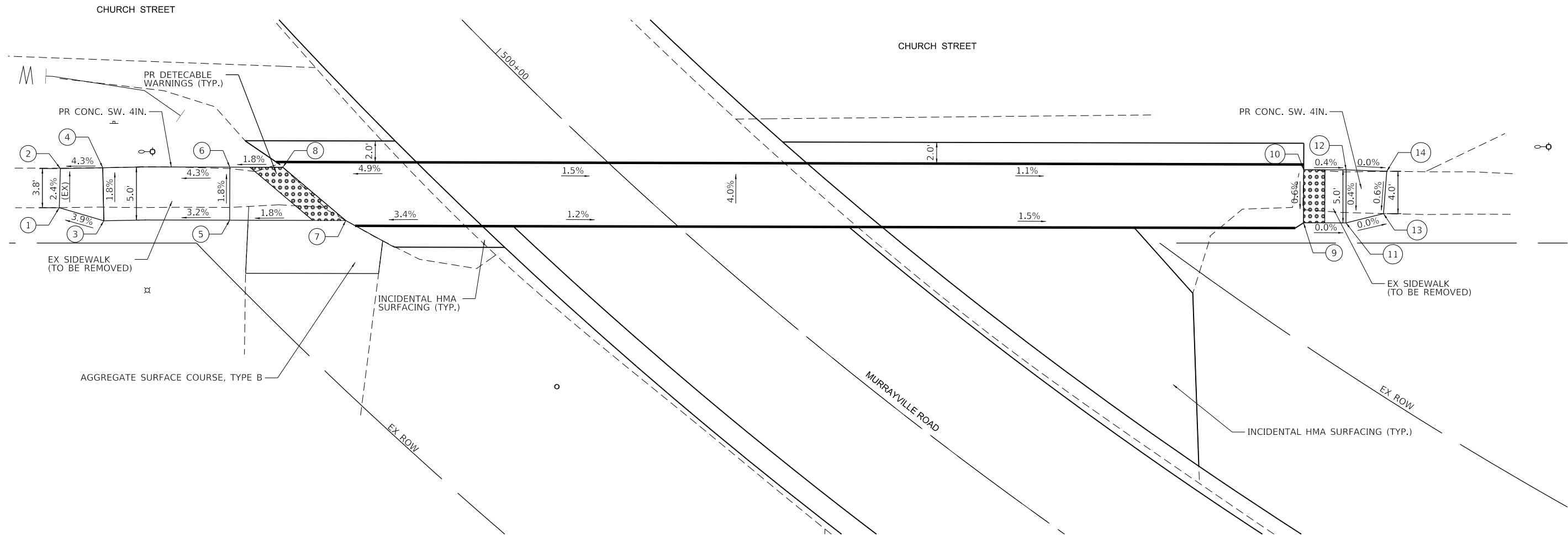
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PLOT DATE = 3/18/2022	CHECKED - W. SLEEMAN	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**PAVEMENT MARKING PLAN SHEETS  
 (MURRAYVILLE ROAD)**

SCALE: 1"=50'      SHEET 10    OF 10    SHEETS    STA. 1605+00.00    TO STA. 1602+21.80

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-000-RS	MORGAN	90	38
ILLINOIS			FED. AID PROJECT	



INTERSECTION OVERVIEW DETAIL  
 0 20 40 60  
 SCALE IN FEET

ADA QUADRANT DETAILS  
 0 5 10 15  
 SCALE IN FEET

CHURCH STREET AND MURRAYVILLE ROAD				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1063206.218	2272712.592	691.90	SIDEWALK (MATCH EXISTING)
2	1063206.116	2272716.279	691.81	SIDEWALK (MATCH EXISTING)
3	1063202.018	2272711.355	692.07	SIDEWALK
4	1063202.113	2272716.355	691.98	SIDEWALK
5	1063190.144	2272711.411	692.59	SIDEWALK
6	1063190.132	2272716.411	692.50	SIDEWALK
7	1063179.195	2272711.385	692.78	SIDEWALK
8	1063185.132	2272716.399	692.59	SIDEWALK
9	1063088.861	2272711.168	691.79	SIDEWALK
10	1063088.849	2272716.168	691.82	SIDEWALK
11	1063084.861	2272711.158	691.79	SIDEWALK
12	1063084.849	2272716.158	691.81	SIDEWALK
13	1063081.324	2272712.028	691.79	SIDEWALK
14	1063081.011	2272716.020	691.81	SIDEWALK

MODEL: 340DELNAME15  
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**BA**  
 BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4140 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000852

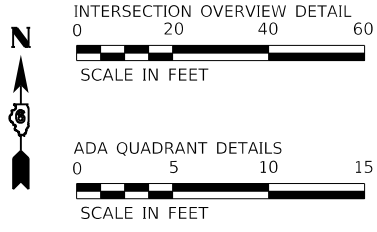
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	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

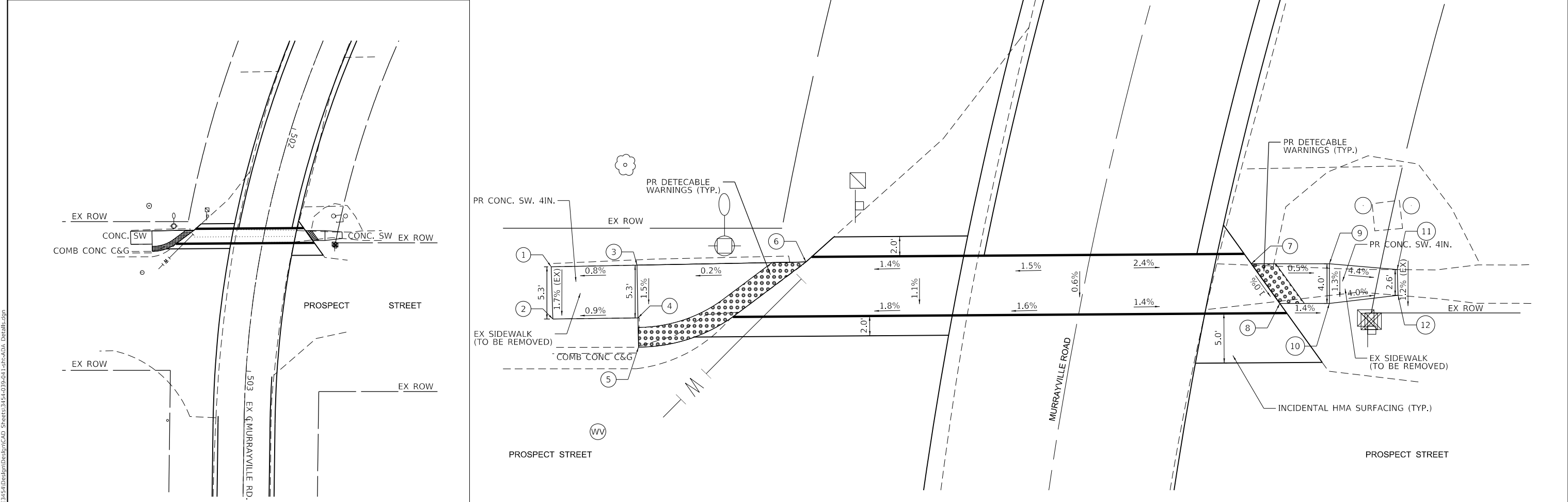
**ADA IMPROVEMENTS  
 (MURRAYVILLE RD. & CHURCH ST.)**

SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	39
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



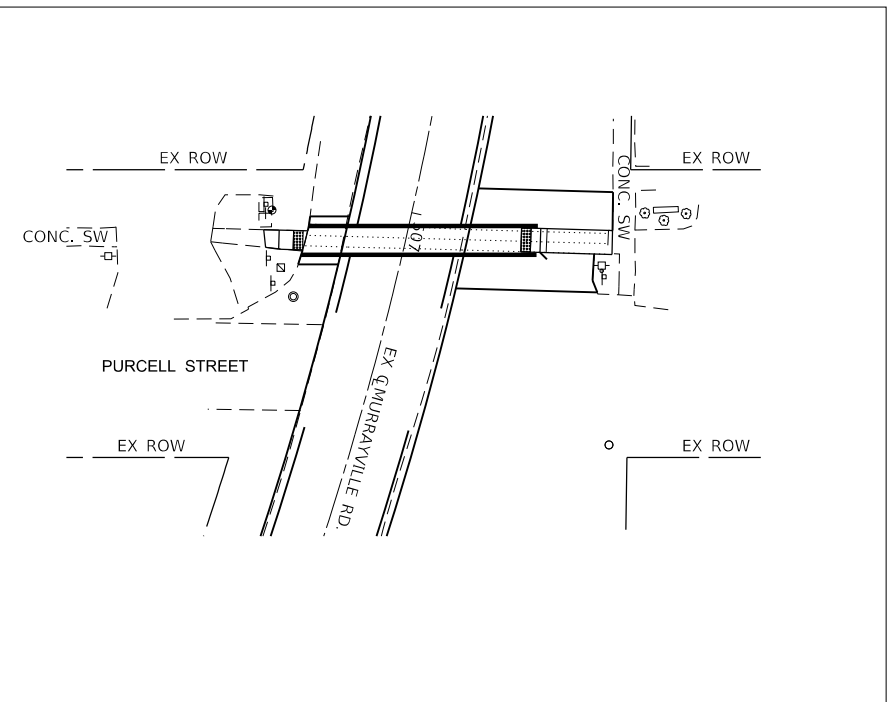
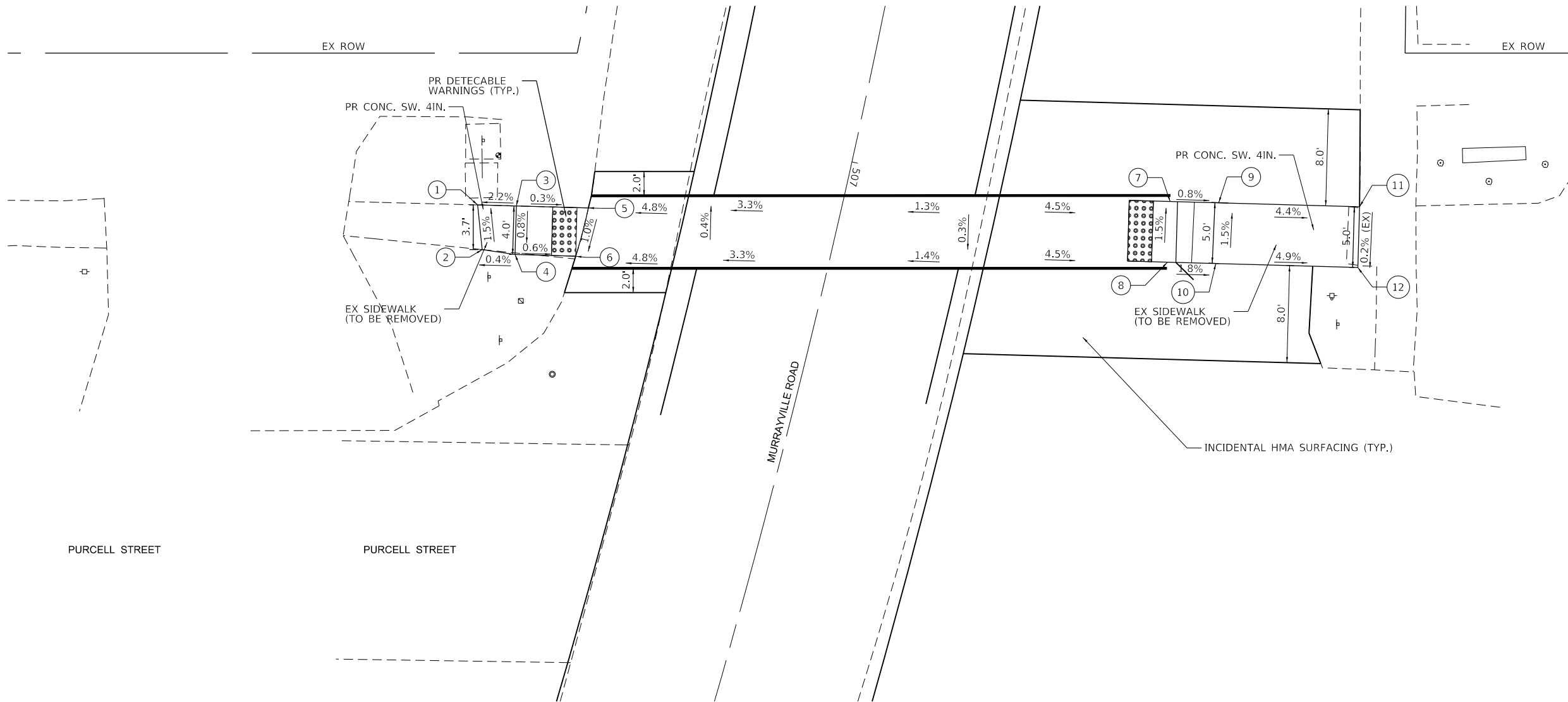
E. PROSPECT STREET AND MURRAYVILLE ROAD				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1062954.026	2272559.488	692.33	SIDEWALK (MATCH EXISTING)
2	1062948.754	2272559.653	692.24	SIDEWALK (MATCH EXISTING)
3	1062954.189	2272568.145	692.40	SIDEWALK
4	1062948.867	2272568.246	692.32	SIDEWALK
5	1062945.915	2272568.301	692.28	SIDEWALK
6	1062954.511	2272585.197	692.44	SIDEWALK
7	1062954.325	2272630.134	692.50	SIDEWALK
8	1062950.325	2272633.013	692.45	SIDEWALK
9	1062954.325	2272638.013	692.43	SIDEWALK
10	1062950.325	2272638.013	692.38	SIDEWALK
11	1062953.740	2272644.855	692.13	SIDEWALK
12	1062951.151	2272644.948	692.10	SIDEWALK



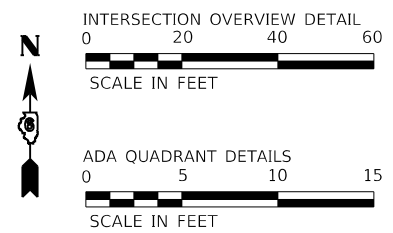
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 <b>BENTLEY &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS - LAND SURVEYORS 1910 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62650 PHONE: 217-245-4160 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-000852	USER NAME = drunoll PLOT SCALE = 40,0000 ' / in. PLOT DATE = 3/18/2022	DESIGNED - D. RUHOLL DRAWN - D. RUHOLL CHECKED - S. BALLINGER DATE - 03/2022	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS          DEPARTMENT OF TRANSPORTATION</b>	<b>ADA IMPROVEMENTS          (MURRAYVILLE RD. &amp; E. PROSPECT ST.)</b>	F.A.S. RTE. 310 SECTION 19-00108-00-RS COUNTY MORGAN TOTAL SHEETS 90 SHEET NO. 40 CONTRACT NO. 93791	ILLINOIS FED. AID PROJECT
	SCALE: SHEET 2 OF 3 SHEETS STA. TO STA.						





W. PURCELL STREET AND MURRAYVILLE ROAD				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1062495.395	2272553.919	691.99	SIDEWALK (MATCH EXISTING)
2	1062491.718	2272554.299	691.05	SIDEWALK (MATCH EXISTING)
3	1062495.309	2272557.118	691.09	SIDEWALK
4	1062491.311	2272557.011	691.06	SIDEWALK
5	1062495.150	2272563.056	691.07	SIDEWALK
6	1062491.176	2272562.009	691.03	SIDEWALK
7	1062495.772	2272607.629	691.51	SIDEWALK
8	1062490.774	2272607.489	691.47	SIDEWALK
9	1062495.660	2272611.627	691.45	SIDEWALK
10	1062490.662	2272611.488	691.41	SIDEWALK
11	1062495.241	2272626.621	690.27	SIDEWALK (MATCH EXISTING)
12	1062490.243	2272626.482	690.22	SIDEWALK (MATCH EXISTING)



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**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62550  
 PHONE: 217-245-4160 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000932

USER NAME =	druhall
PLOT SCALE =	40.0000' / in.
PLOT DATE =	3/18/2022

DESIGNED -	D. RUHOLL	REVISED -	
DRAWN -	D. RUHOLL	REVISED -	
CHECKED -	W. SLEEMAN	REVISED -	
DATE -	03/2022	REVISED -	

**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**ADA IMPROVEMENTS**  
**(MURRAYVILLE RD. & W. PURCELL ST.)**

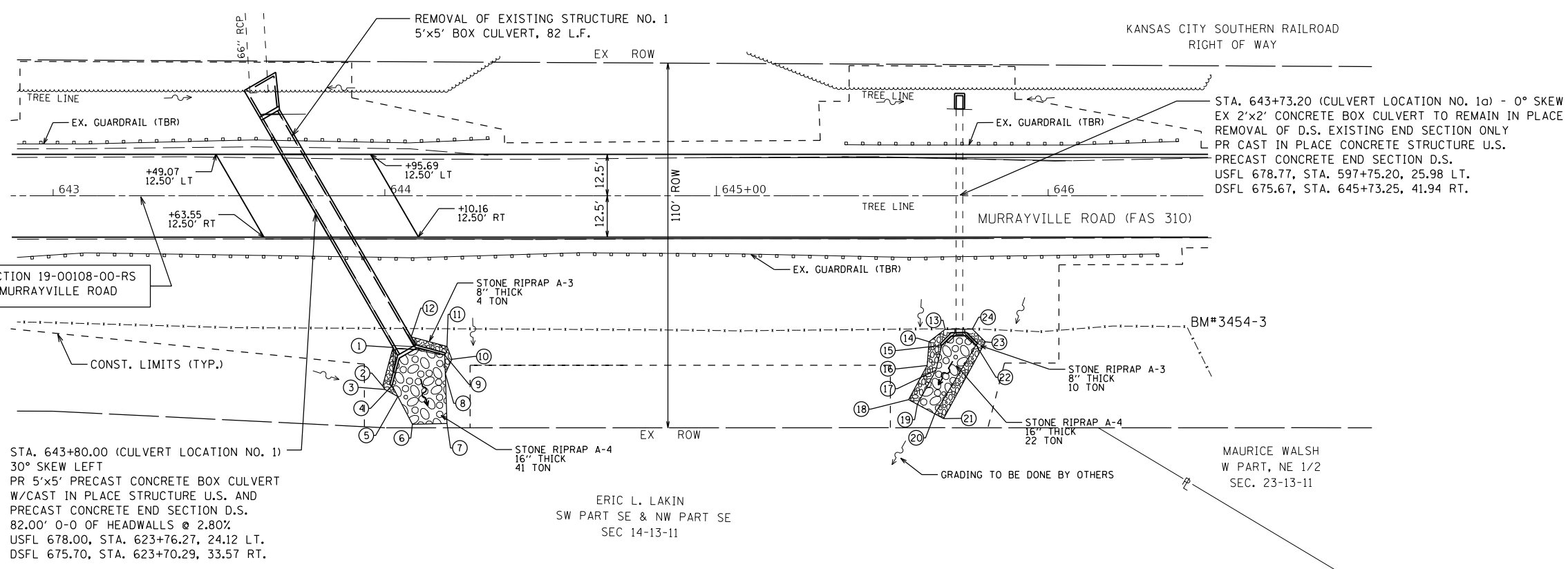
SCALE: SHEET 3 OF 3 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	41
ILLINOIS FED. AID PROJECT			93791	

PLAN	SURVEYED	DATE
	PLOTTED	
	ALIGNED	
	CHECKED	
	FILED	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATIONS	
	CHFD	
	NO.	

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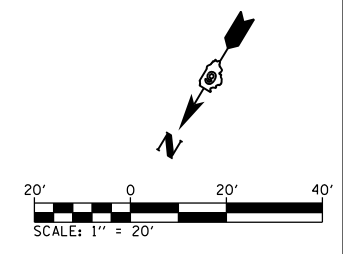
SECTION 19-00108-00-RS  
MURRAYVILLE ROAD

CONST. LIMITS (TYP.)

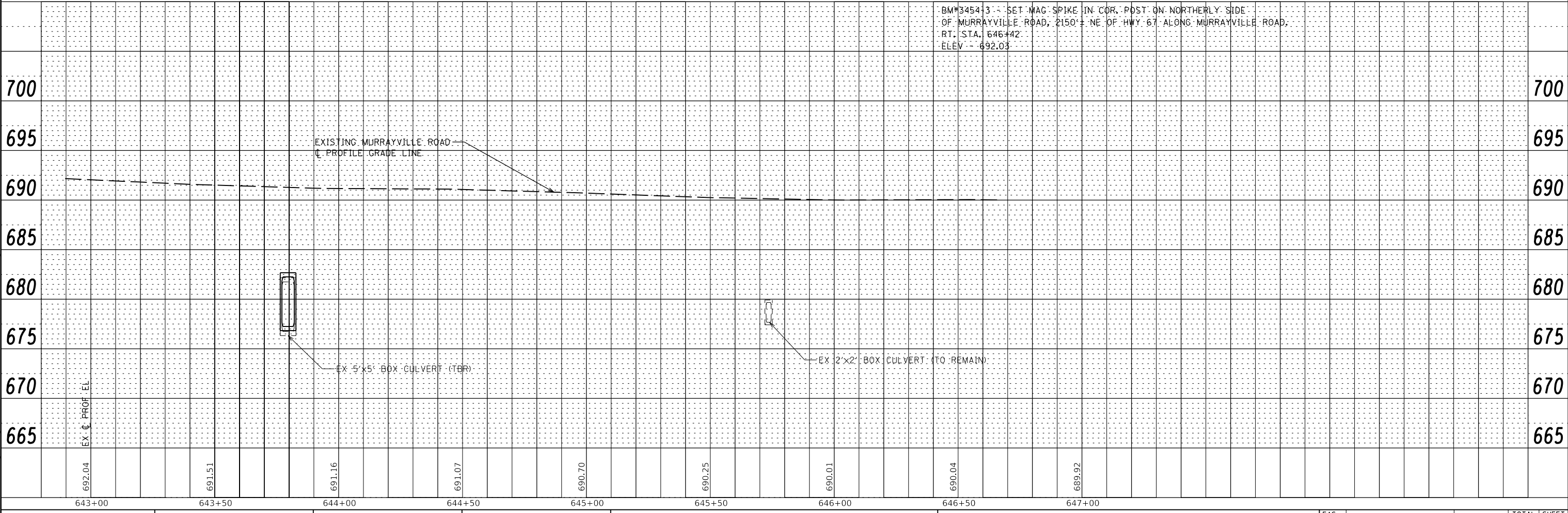
STA. 643+80.00 (CULVERT LOCATION NO. 1)  
30° SKEW LEFT  
PR 5'x5' PRECAST CONCRETE BOX CULVERT  
W/CAST IN PLACE STRUCTURE U.S. AND  
PRECAST CONCRETE END SECTION D.S.  
82.00' 0-0 OF HEADWALLS @ 2.80%  
USFL 678.00, STA. 623+76.27, 24.12 LT.  
DSFL 675.70, STA. 623+70.29, 33.57 RT.

ERIC L. LAKIN  
SW PART SE & NW PART SE  
SEC 14-13-11

STA. 643+73.20 (CULVERT LOCATION NO. 1a) - 0° SKEW  
EX 2'x2' CONCRETE BOX CULVERT TO REMAIN IN PLACE  
REMOVAL OF D.S. EXISTING END SECTION ONLY  
PR CAST IN PLACE CONCRETE STRUCTURE U.S.  
PRECAST CONCRETE END SECTION D.S.  
USFL 678.77, STA. 597+75.20, 25.98 LT.  
DSFL 675.67, STA. 645+73.25, 41.94 RT.



POINT#	STATION	OFFSET	ELEVATION
1	644+02.41	45.76' RT	681.79
2	643+99.36	57.42' RT	675.75
3	644+00.04	58.45' RT	675.75
4	644+02.17	57.24' RT	675.60
5	644+03.92	60.59' RT	675.08
6	644+08.32	68.96' RT	674.95
7	644+18.76	68.71' RT	674.95
8	644+18.25	53.72' RT	675.60
9	644+18.05	48.08' RT	675.75
10	644+20.21	49.36' RT	675.70
11	644+18.74	45.46' RT	675.75
12	644+07.93	42.57' RT	681.79
13	645+68.91	40.30' RT	680.41
14	645+64.09	44.04' RT	678.50
15	645+67.94	45.16' RT	675.89
16	645+63.59	51.16' RT	676.80
17	645+66.17	52.65' RT	675.80
18	645+57.93	61.52' RT	676.75
19	645+60.57	62.95' RT	675.65
20	645+65.84	65.82' RT	675.65
21	645+68.47	67.25' RT	676.75
22	645+78.27	45.02' RT	675.89
23	645+81.08	44.08' RT	678.50
24	645+77.16	40.24' RT	680.41



**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 62650  
PHONE: 217-245-4146 FAX: 217-245-4149  
ILL. DESIGN FIRM REGISTRATION NO. 184-000532

USER NAME = sfenimore	DESIGNED - SJB	REVISED -
	DRAWN - SJB	REVISED -
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PLOT DATE = 4/11/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**PLAN AND PROFILE  
MURRAYVILLE ROAD - CULVERT LOCATION #1 & #1A**

SCALE: SHEET 1 OF 5 SHEETS STA. TO STA.

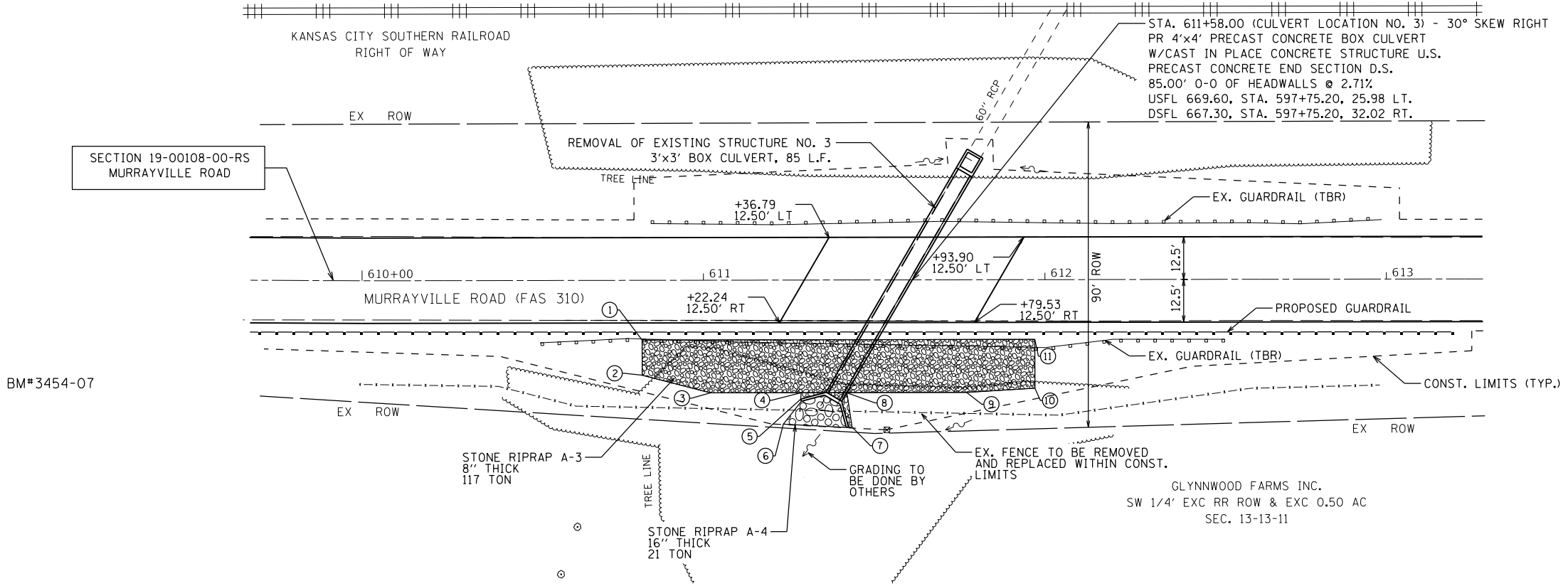
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CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	



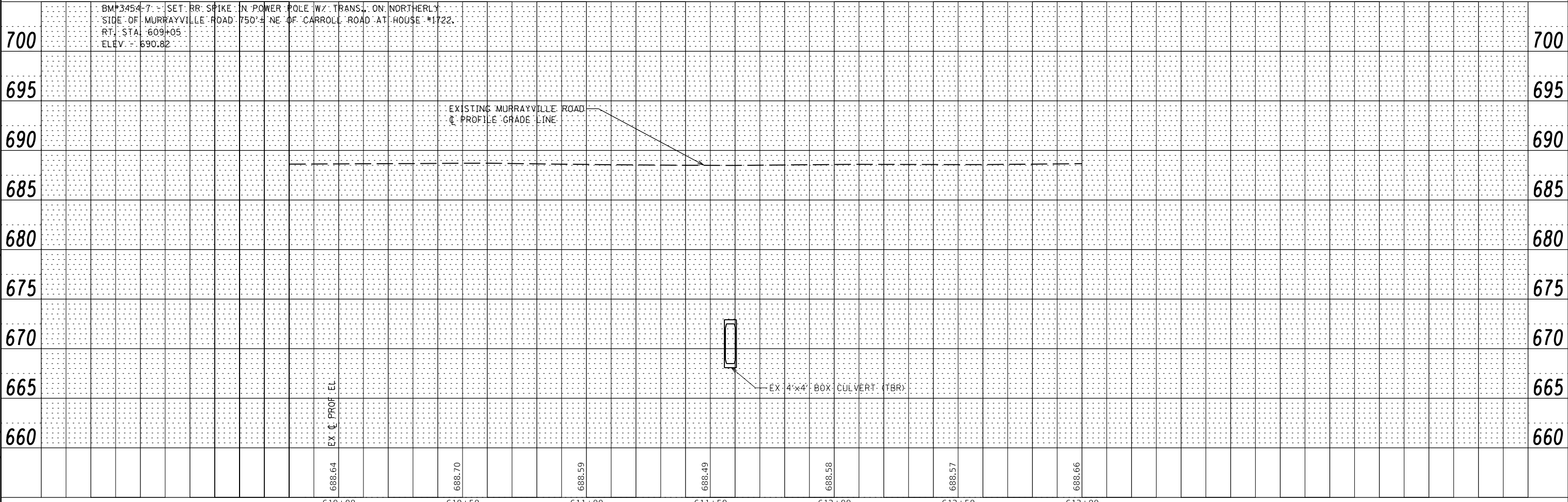
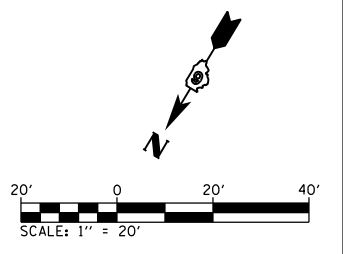
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	PLOTTED	BY
	NOTED	
	CHECKED	
	FILED	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES	
	CHECKED	
	STRUCTURE	
	NOTATIONS	
	CHFD	
	NO.	

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POINT#	STATION	OFFSET	ELEVATION
1	610+82.00	17.50' RT	687.56
2	610+82.00	27.80' RT	678.53
3	611+02.00	33.00' RT	678.00
4	611+28.66	33.24' RT	667.85
5	611+28.47	35.54' RT	667.65
6	611+23.31	42.21' RT	667.35
7	611+43.44	43.09' RT	667.35
8	611+41.94	33.00' RT	677.20
9	611+77.00	33.00' RT	678.00
10	611+97.00	31.80' RT	678.50
11	611+97.00	17.50' RT	687.58



610+00	610+50	611+00	611+50	612+00	612+50	613+00
688.64	688.70	688.59	688.49	688.58	688.57	688.66

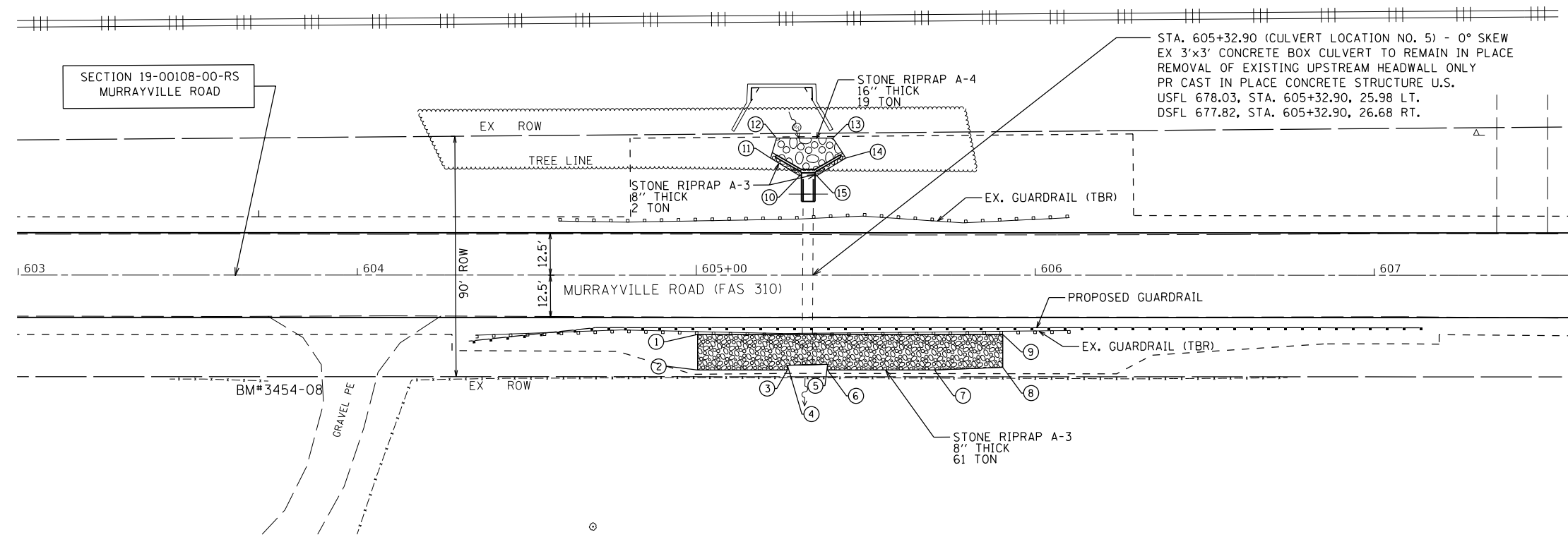
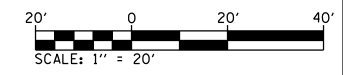
**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 62650  
PHONE: 217-245-4146 FAX: 217-245-4149  
ILL. DESIGN FIRM REGISTRATION NO. 184-00053

USER NAME = sfenimore	DESIGNED - SJB	REVISED -
	DRAWN - SJB	REVISED -
PLOT SCALE = 40.0000' / in.	CHECKED - WJS	REVISED -
PLOT DATE = 4/11/2022	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PLAN AND PROFILE  
MURRAYVILLE ROAD - CULVERT LOCATION #3  
SCALE: SHEET 3 OF 5 SHEETS STA. TO STA.

FAS RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	44
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	

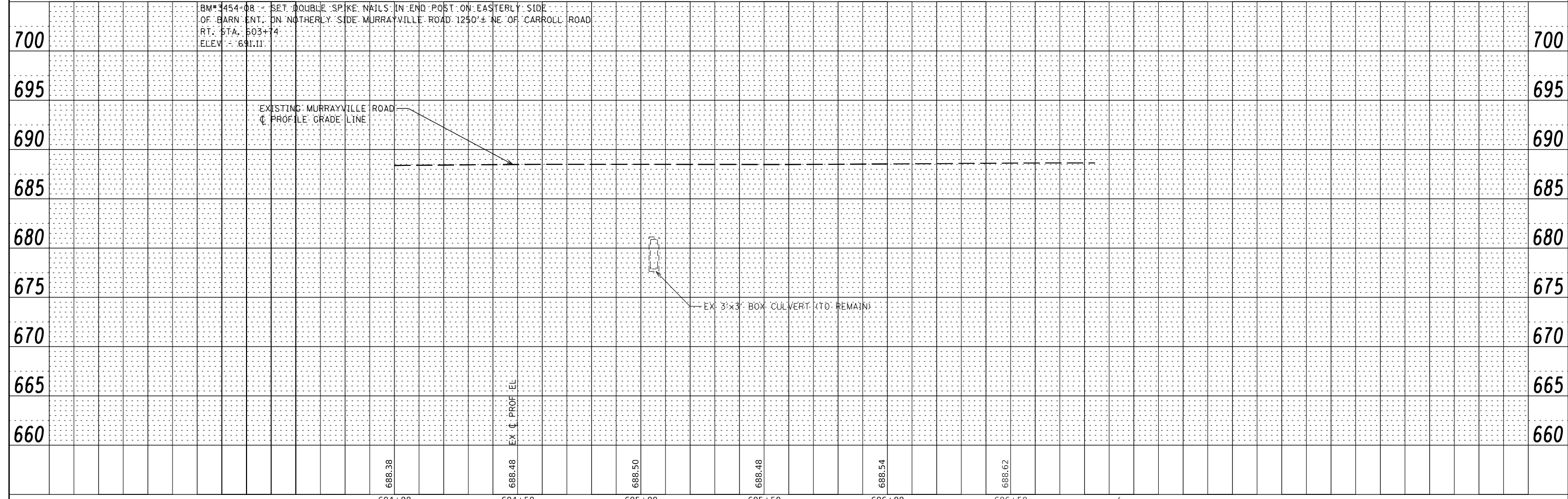


STA. 605+32.90 (CULVERT LOCATION NO. 5) - 0° SKEW  
 EX 3'x3' CONCRETE BOX CULVERT TO REMAIN IN PLACE  
 REMOVAL OF EXISTING UPSTREAM HEADWALL ONLY  
 PR CAST IN PLACE CONCRETE STRUCTURE U.S.  
 USFL 678.03, STA. 605+32.90, 25.98 LT.  
 DSFL 677.82, STA. 605+32.90, 26.68 RT.

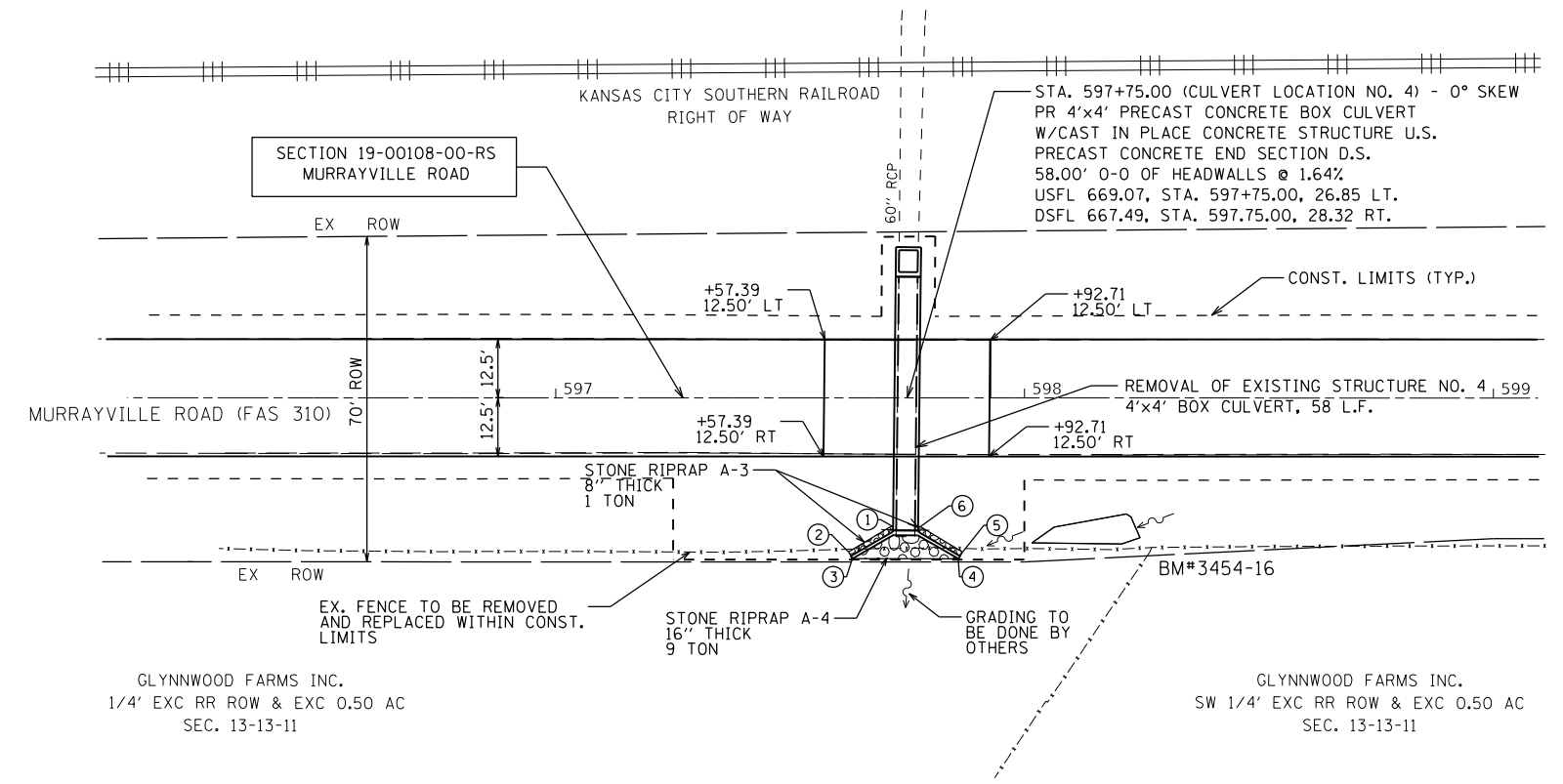
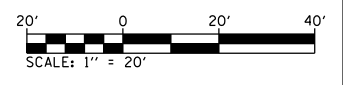
POINT#	STATION	OFFSET	ELEVATION
1	605+00.40	17.51' RT	688.21
2	605+00.40	28.00' RT	681.74
3	605+26.90	28.00' RT	680.71
4	605+26.90	26.62' RT	681.17
5	605+38.75	26.36' RT	681.17
6	605+38.75	28.02' RT	680.17
7	605+70.31	28.00' RT	680.73
8	605+90.40	27.20' RT	681.30
9	605+90.40	17.50' RT	687.58
10	605+30.45	29.33' LT	683.25
11	605+21.94	34.53' LT	678.23
12	605+23.65	40.48' LT	678.11
13	605+40.28	40.48' LT	678.11
14	605+44.08	34.56' LT	678.23
15	605+35.57	29.33' LT	683.25

PLAN	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
	STRUCTURE NOTATIONS CHECKED	
	NOTE BOOK NO.	
	CADD FILE NAME	

PROFILE	SURVEYED	DATE
	PLOTTED	BY
	GRADES CHECKED	
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	NOTE BOOK NO.	
	CADD FILE NAME	



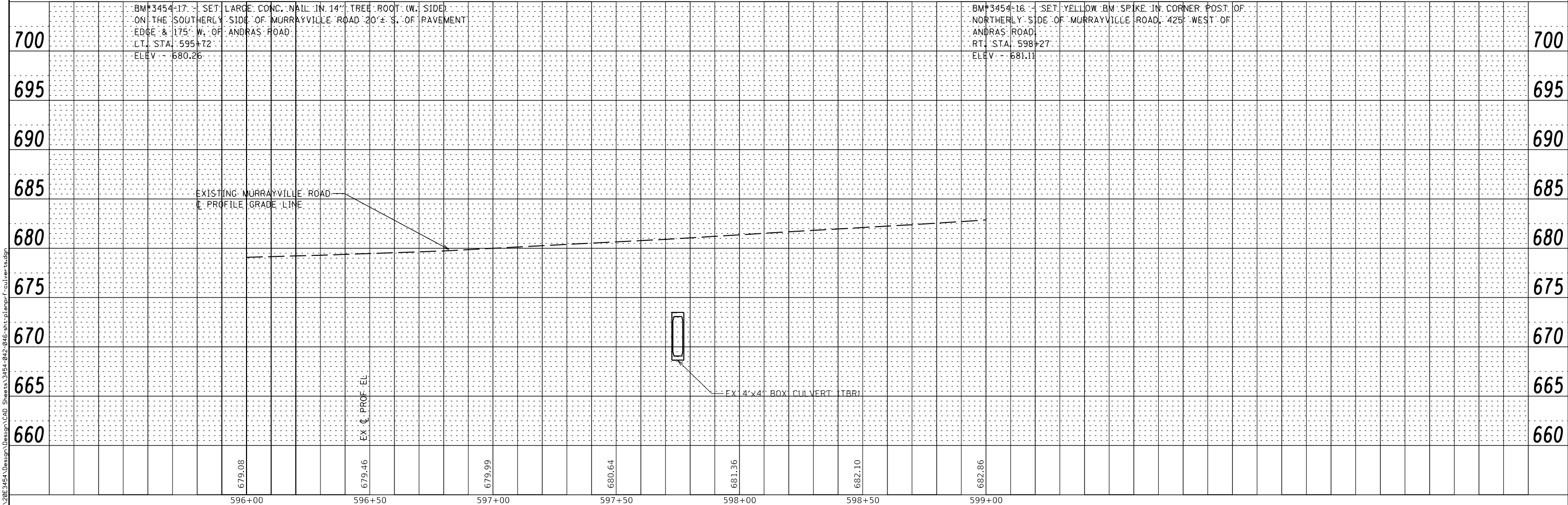
BENTON & ASSOCIATES, INC. CONSULTING ENGINEERS / LAND SURVEYORS 1970 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62650 PHONE: 217-245-4146 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-00053	USER NAME = sfenimore	DESIGNED - SJB	REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND PROFILE</b> <b>MURRAYVILLE ROAD - CULVERT LOCATION #5</b>			FAS RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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	PLOT DATE = 4/11/2022	CHECKED - WJS	REVISED -		CONTRACT NO. 93791							
		DATE - 03/2022	REVISED -		ILLINOIS FED. AID PROJECT							



POINT#	STATION	OFFSET	ELEVATION
1	597+71.45	27.46' RT	676.38
2	597.62.45	32.87' RT	668.30
3	597+63.26	34.32' RT	668.12
4	597+85.94	34.32' RT	668.12
5	597+86.79	32.87' RT	668.30
6	597+77.80	27.46' RT	676.38

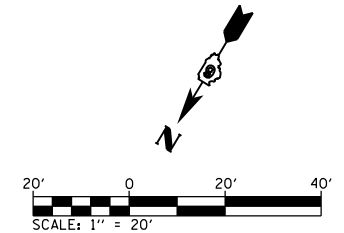
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	PLOTTED	
	GRADES CHECKED	
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	NOTE BOOK NO.	
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	GRADES CHECKED	
	STRUCTURE NOTATIONS CHKD	
	NOTE BOOK NO.	
	CADD FILE NAME	

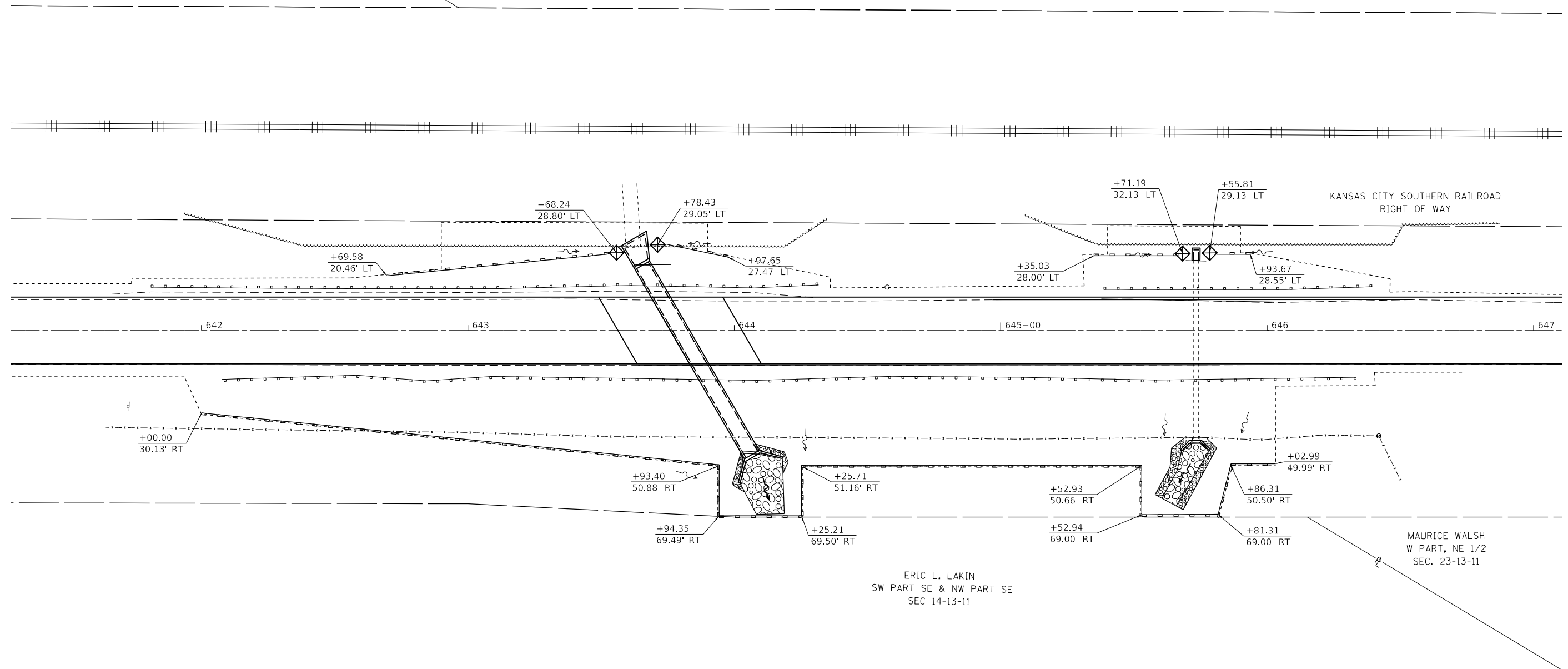


BENTON & ASSOCIATES, INC. CONSULTING ENGINEERS / LAND SURVEYORS 1970 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62650 PHONE: 217-245-4146 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-000832	USER NAME = sfenmore DESIGNED - SJB DRAWN - SJB CHECKED - WJS DATE - 03/2022	REVISED - REVISED - REVISED - REVISED -	<b>STATE OF ILLINOIS</b> <b>DEPARTMENT OF TRANSPORTATION</b>	<b>PLAN AND PROFILE</b> <b>MURRAYVILLE ROAD - CULVERT LOCATION #4</b>		FAS RTE 310 SECTION 19-00108-00-RS COUNTY MORGAN TOTAL SHEETS 90 SHEET NO. 46	CONTRACT NO. 93791 ILLINOIS FED. AID PROJECT
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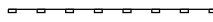



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MAURICE WALSH  
ALL SE 1/4 S OF R/R  
SEC. 23-13-11



**LEGEND**

-  PERIMETER EROSION BARRIER
-  INLET AND PIPE PROTECTION
-  STONE RIP-RAP A-3
-  STONE RIP-RAP A-4

MODEL: Default  
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**BENTON & ASSOCIATES, INC.**  
CONSULTING ENGINEERS / LAND SURVEYORS  
1910 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 62650  
PHONE: 217-245-4166 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000832

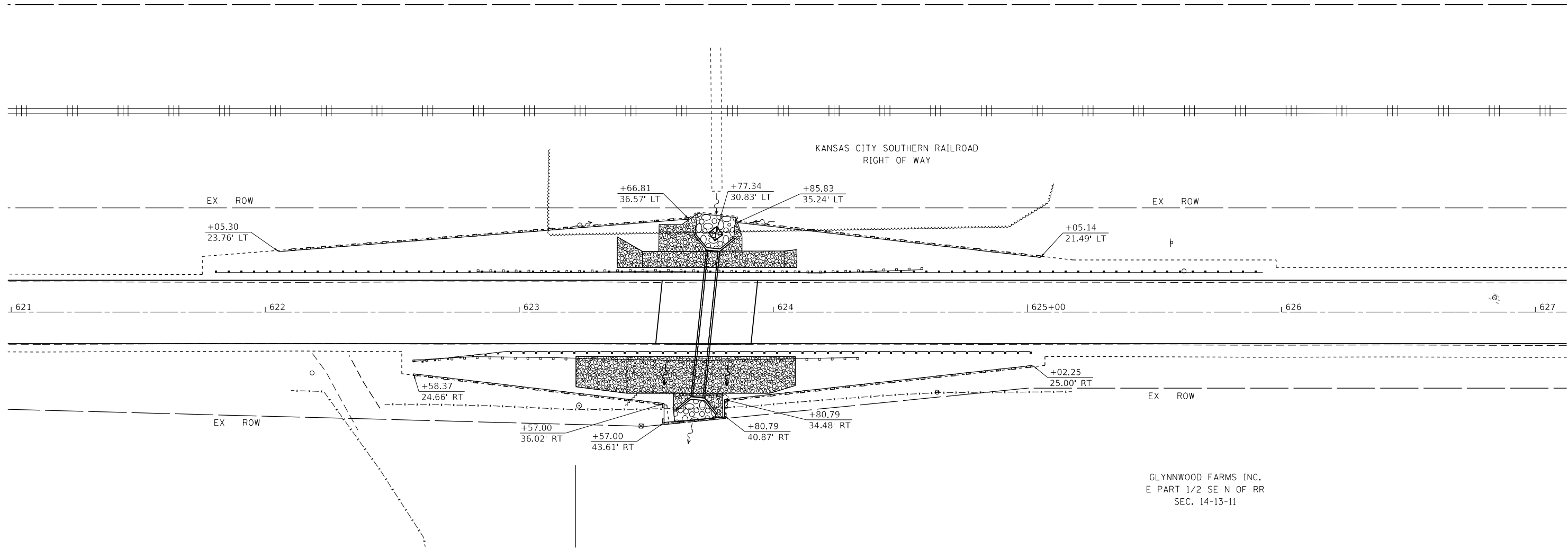
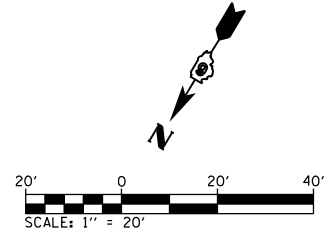
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	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

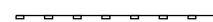



**EROSION AND SEDIMENT CONTROL PLAN**  
**MURRAYVILLE ROAD - CULVERT LOCATIONS #1 AND #1a**

SCALE: SHEET 1 OF 5 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	47
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



**LEGEND**

-  PERIMETER EROSION BARRIER
-  INLET AND PIPE PROTECTION
-  STONE RIP-RAP A-3
-  STONE RIP-RAP A-4

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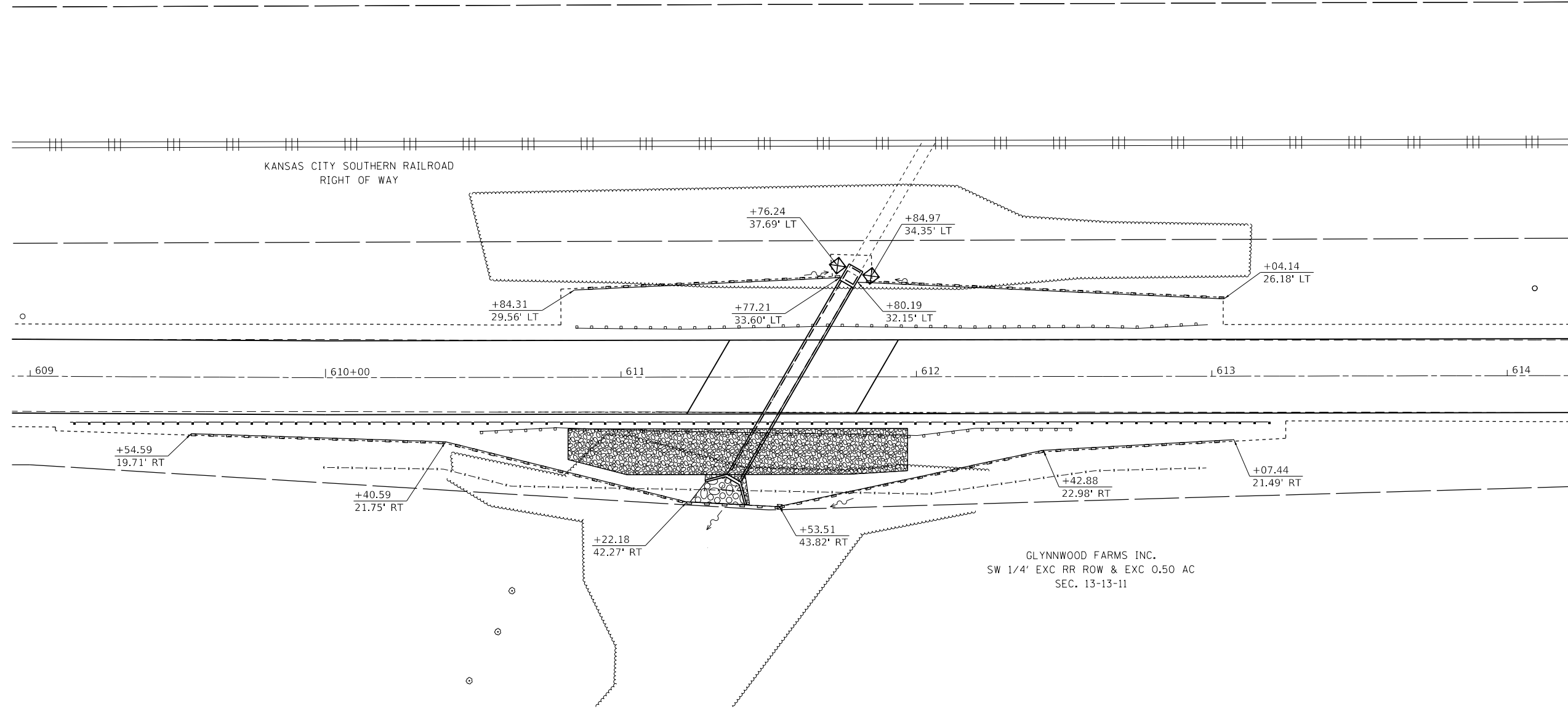
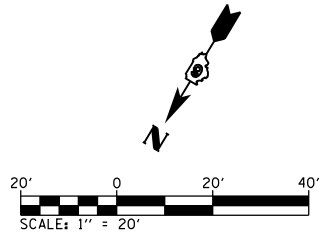
 <b>BENTON &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS / LAND SURVEYORS 1910 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62550 PHONE: 217-245-4166 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-000832	USER NAME = drunoll	DESIGNED - SJB	REVISED -
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		DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

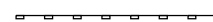

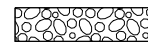

<b>EROSION AND SEDIMENT CONTROL PLAN</b>			
<b>MURRAYVILLE ROAD - CULVERT LOCATION #2</b>			
SCALE:	SHEET 2	OF 5 SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	48
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				





**LEGEND**

-  PERIMETER EROSION BARRIER
-  INLET AND PIPE PROTECTION
-  STONE RIP-RAP A-3
-  STONE RIP-RAP A-4

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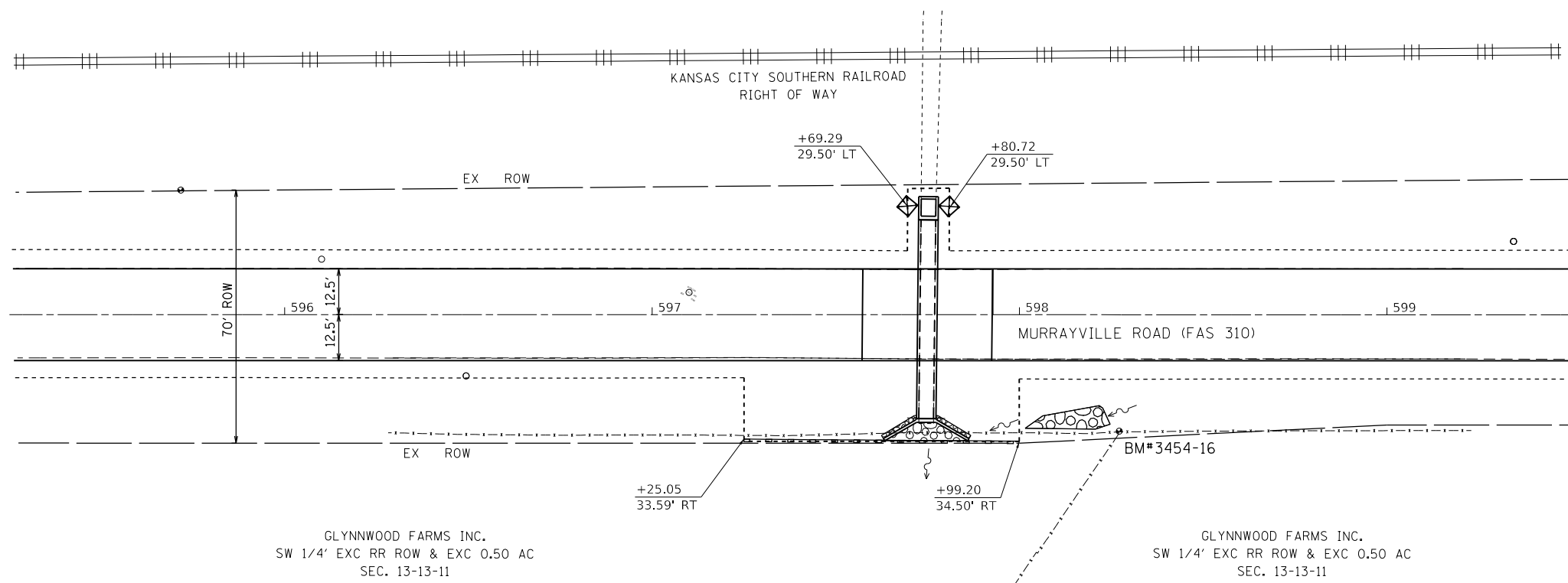
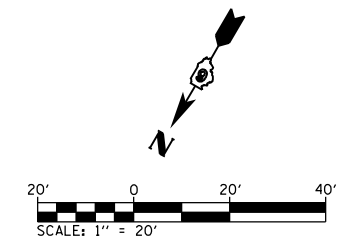
 <b>BENTON &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS - LAND SURVEYORS 1910 WEST LAFAYETTE AVE. JACKSONVILLE, IL 62650 PHONE: 217-245-4160 FAX: 217-245-4149 IL DESIGN FIRM REGISTRATION NO. 184-000832	USER NAME = drunoll	DESIGNED - SJB	REVISED -
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		DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

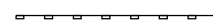

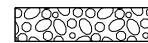

<b>EROSION AND SEDIMENT CONTROL PLAN</b>			
<b>MURRAYVILLE ROAD - CULVERT LOCATION #3</b>			
SCALE:	SHEET 3	OF 5 SHEETS	STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	49
ILLINOIS			FED. AID PROJECT	

CONTRACT NO. 93791



**LEGEND**

-  PERIMETER EROSION BARRIER
-  INLET AND PIPE PROTECTION
-  STONE RIP-RAP A-3
-  STONE RIP-RAP A-4

MODEL: Default  
 FILE NAME: P:\2023\310\Design\Design\CAD\_Sheets\3154-007-0560-erodion\_control.dgn

**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

USER NAME = drunoll	DESIGNED - SJB	REVISED -
PLOT SCALE = 40.0000 ' / in.	DRAWN - SJB	REVISED -
PLOT DATE = 3/18/2022	CHECKED - DSR	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**EROSION AND SEDIMENT CONTROL PLAN  
 MURRAYVILLE ROAD - CULVERT LOCATION #4**

SCALE: SHEET 4 OF 5 SHEETS STA. TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93791				
		ILLINOIS	FED. AID PROJECT	



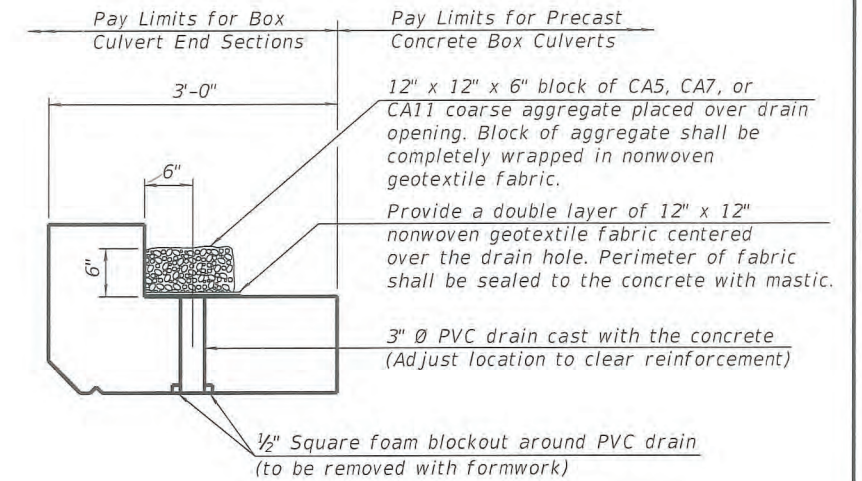
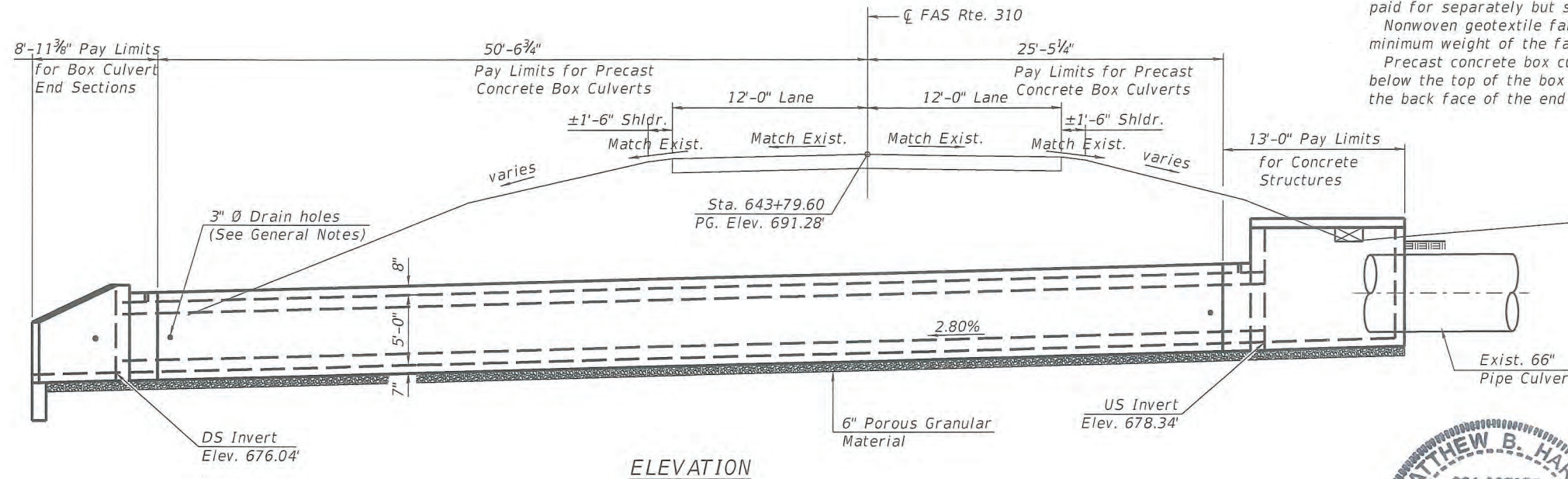
Benchmark: BM#6454-3 - SET MAG SPIKE IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 2150'± NE OF HWY 67 ALONG MURRAYVILLE ROAD, RT. STA. 676+42, ELEV - 692.03

**INDEX OF SHEETS**

1. General Plan and Elevation
- 2.-3. Precast Concrete Box Culvert Apron End Section Details
4. Manhole End Section Details

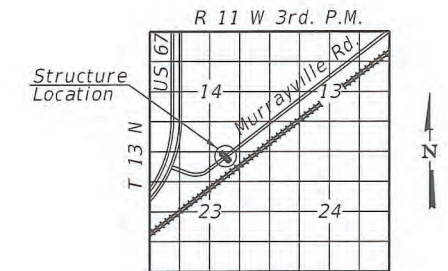
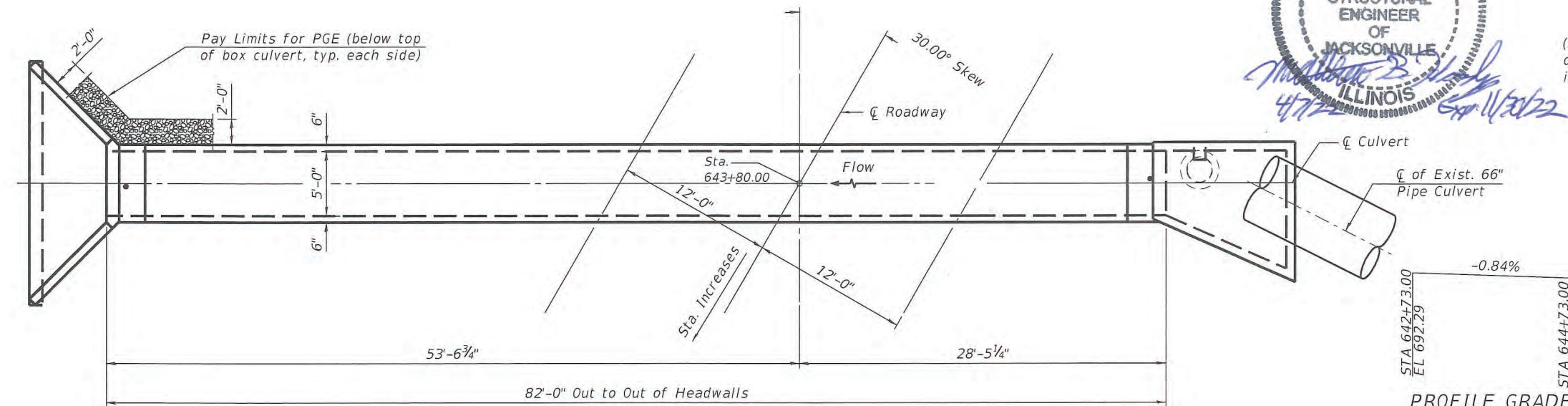
**GENERAL NOTES**

The design fill height for this box is 7.9 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.  
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.  
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.  
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.  
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.



**DRAIN DETAIL**

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**LOCATION SKETCH**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 1	Each	1
Box Culvert End Sections, Culvert No. 1	Each	1
Precast Concrete Box Culverts, 5' x 5'	Foot	76
Porous Granular Embankment	Cu. Yd.	312
Concrete Structures	Cu. Yd.	13

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**LOADING HL-93**

Allow 25 lbs./sq.ft. for future wearing surface

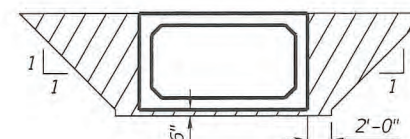
**DESIGN STRESSES**

**PRECAST UNITS**

f'c = 5,000 psi  
 fy = 65,000 psi (Welded Wire Reinforcement)

**FIELD UNITS**

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



**PAY LIMITS FOR POROUS GRANULAR EMBANKMENT**  
 (Hatched Area)

**WATERWAY INFORMATION**

Drainage Area = 0.4 sq. mi. Low Grade Elev. = 691.10 @ Sta. 643+80.00

Flood Design	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Base	10	59.9	25	25	679.27	2.42	2.46	680.48	680.46
Overtopping (Exist.)	50	103	25	25	679.66	3.53	3.58	681.59	681.58
Overtopping (Proposed)	100	123	25	25	679.80	4.00	4.04	682.06	682.04
Max. Calc.	>500	404	25	25			13.19		691.19
	500	173	25	25	680.12	5.12	5.17	683.18	683.17

SCB-GPE 2-17-2017



USER NAME = eiocher	DESIGNED - CML	REVISED -
PLOT SCALE = 8:2 1/2" = 1'	CHECKED - MBH	REVISED -
PLOT DATE = 4/7/2022	DRAWN - CML	REVISED -
	CHECKED - MBH	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

GENERAL PLAN AND ELEVATION - BOX CULVERT  
 MURRAYVILLE ROAD LOCATION 1

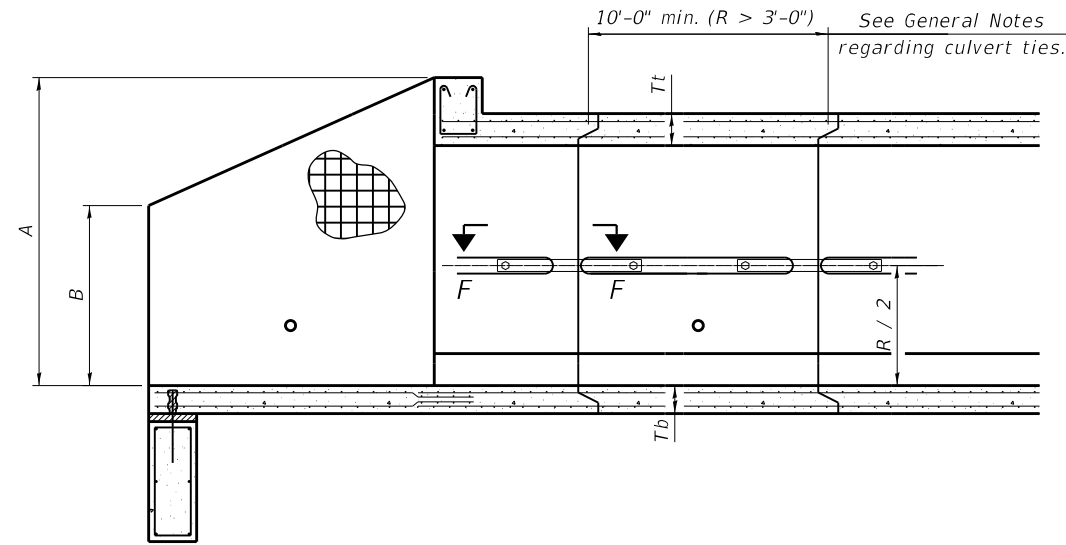
SHEET NO. 1 OF 4 SHEETS

GENERAL PLAN AND ELEVATION  
 MURRAYVILLE RD OVER TRI TO  
 NORTH LITTLE SANDY CREEK

SEC. 19-00108-00-RS  
 MORGAN COUNTY  
 STATION 643+79.60

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	52
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

FILE NAME = P:\2023\454\Design\CAD Sheets\3454-052-1-001-CP&E.dgn



SECTION A-A

**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

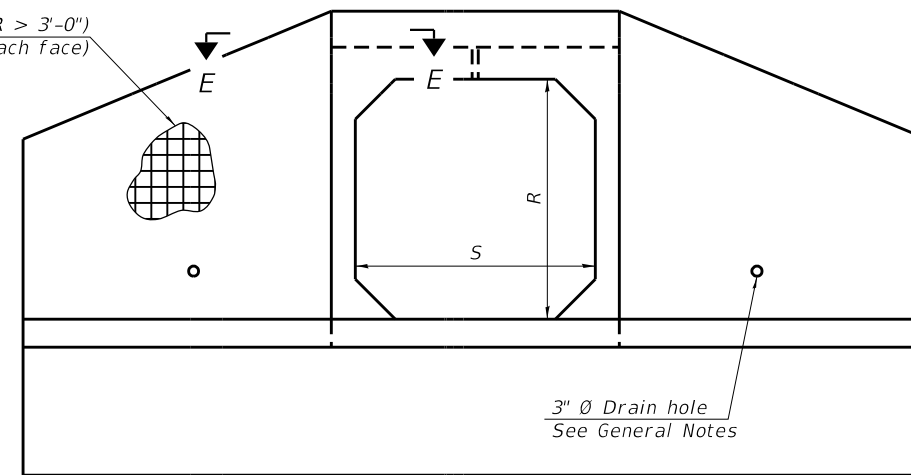
All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

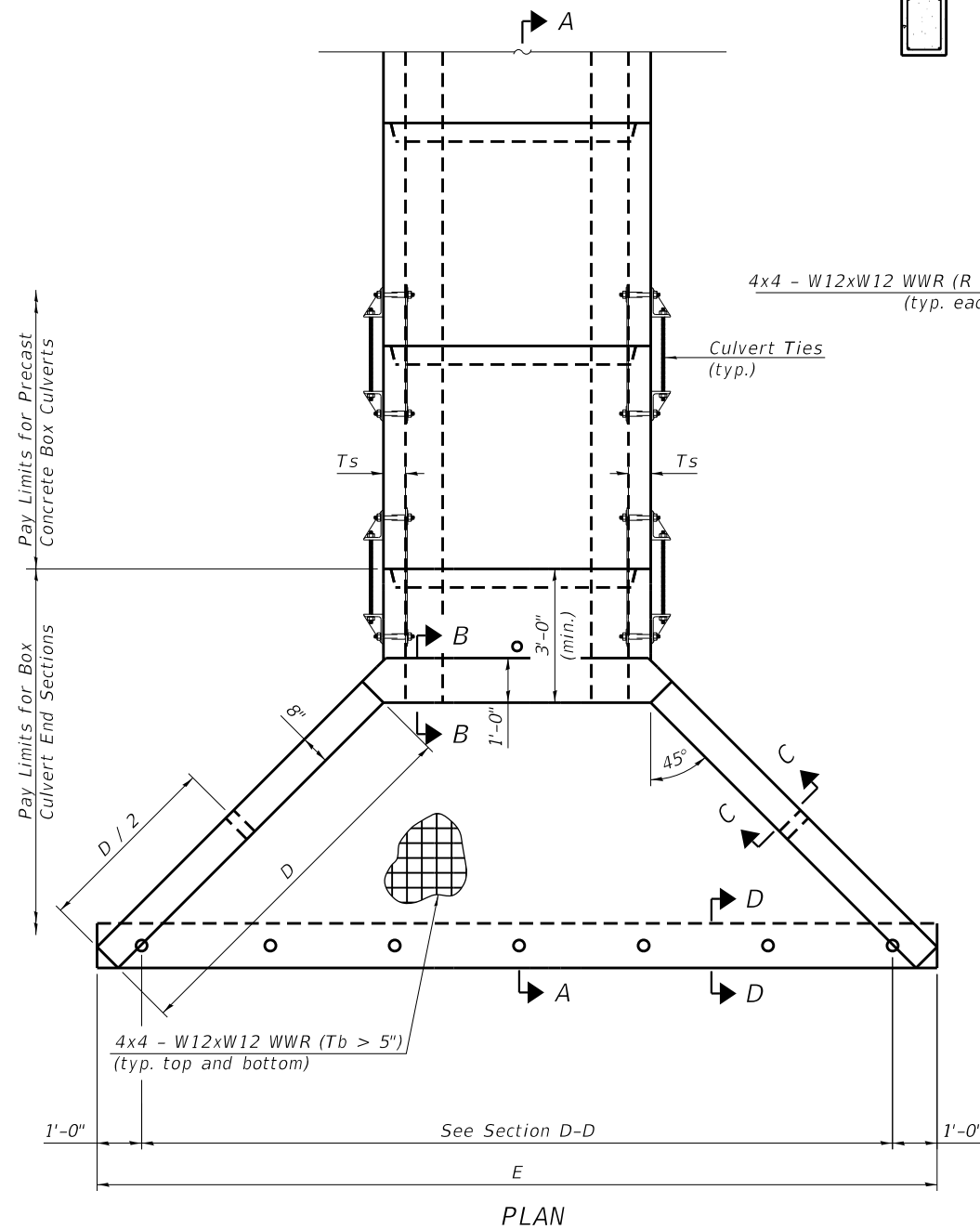
One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.



END VIEW

**APRON END SECTION DIMENSIONS**

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11 3/8"	8'-5"	18'-10 1/8"	7.4	Yes



PLAN

SCB-AES

2-17-2017

(Sheet 1 of 2)

FILE NAME : F:\20E3454\Design\CAD Sheets\3454-053-1-002-Culvert Apron End.dgn  
Layout



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PLOT DATE : 3/18/2022	DRAWN - CML	REVISED -
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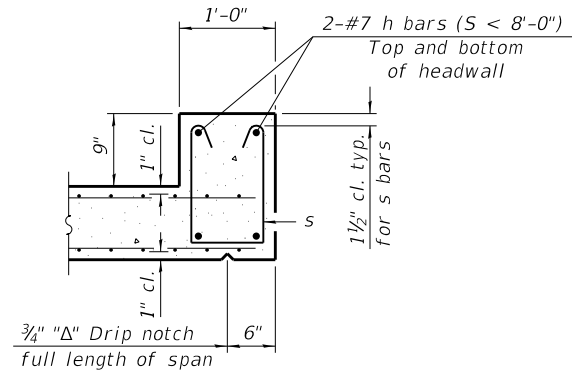
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS  
MURRAYVILLE ROAD LOCATION 1

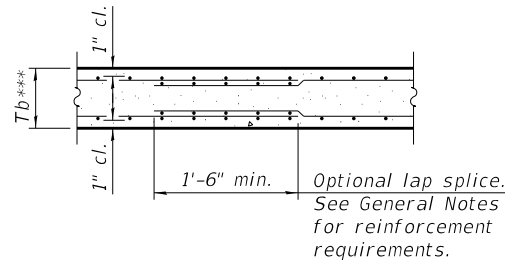
SHEET NO. 2 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93791				

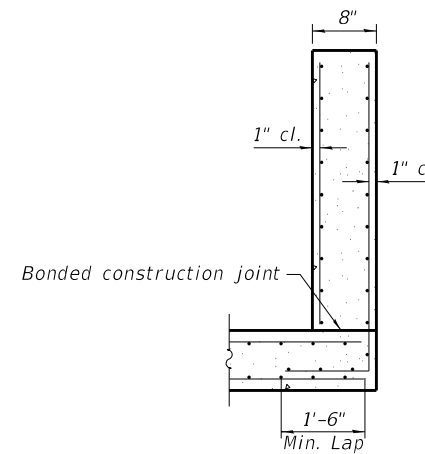
ILLINOIS FED. AID PROJECT



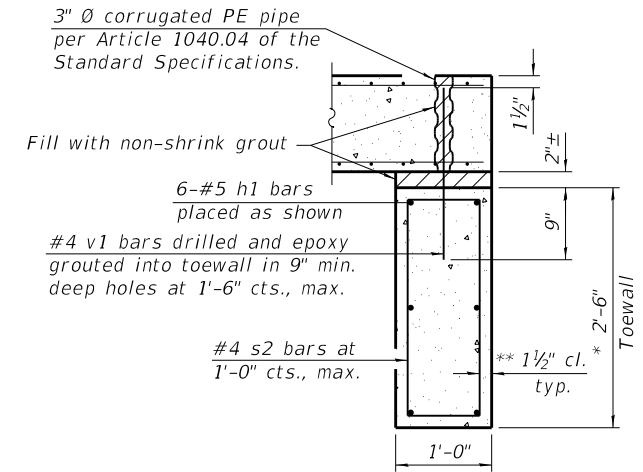
**SECTION B-B**  
(Top slab at downstream end)



**SECTION B-B**  
(Bottom Slab)

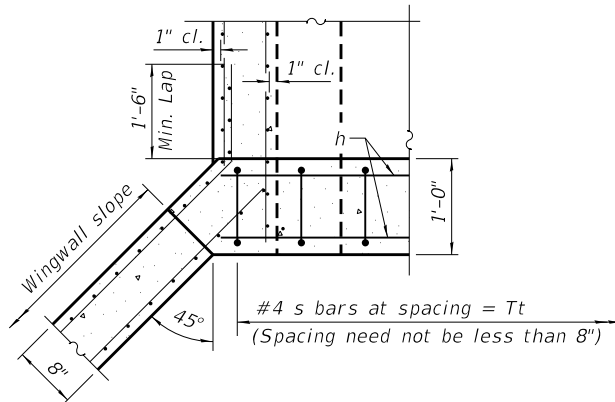


**SECTION C-C**

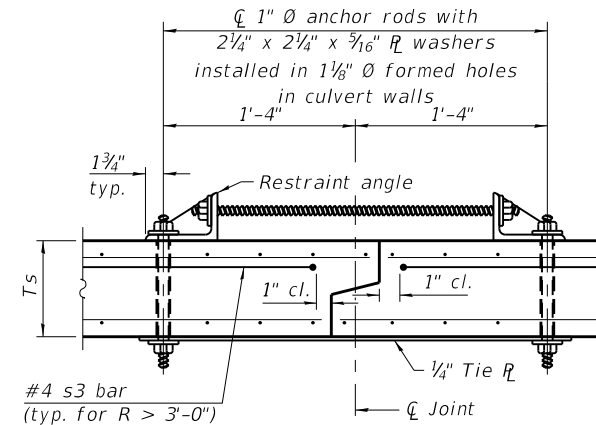


**SECTION D-D**

\*\*\* This dimension shall be increased by 2" for CIP construction.



**SECTION E-E**



**SECTION F-F**  
(Showing culvert tie details)

**TOEWALL CONSTRUCTION SEQUENCE**

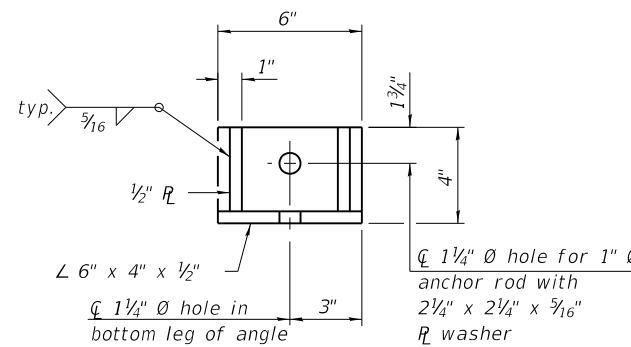
1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

\* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

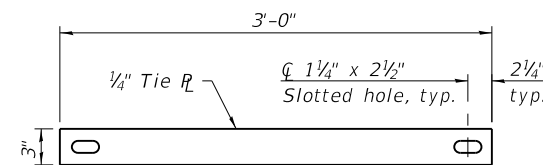
\*\* If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

**Notes:**

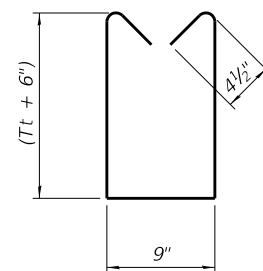
1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 3/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.



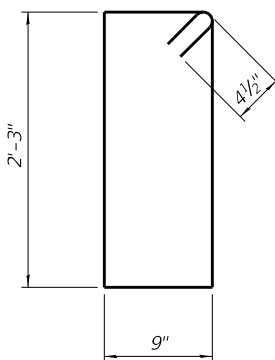
**RESTRAINT ANGLE DETAIL**



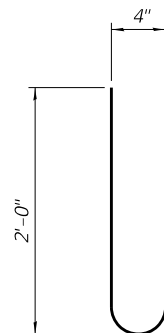
**TIE PLATE DETAIL**



**BAR s**



**BAR s2**



**BAR s3**

(Sheet 2 of 2)

FILE NAME = P:\20E3454\Design\CAD Sheets\3454-054-1-003-Culvert Apron End Detail.dgn



BENTON & ASSOCIATES, INC.  
1910 N. Lafayette Ave., Joplin, MO 64801  
417-783-4444 FAX 417-783-4445  
Professional Design Firm  
Registration No. 0000052

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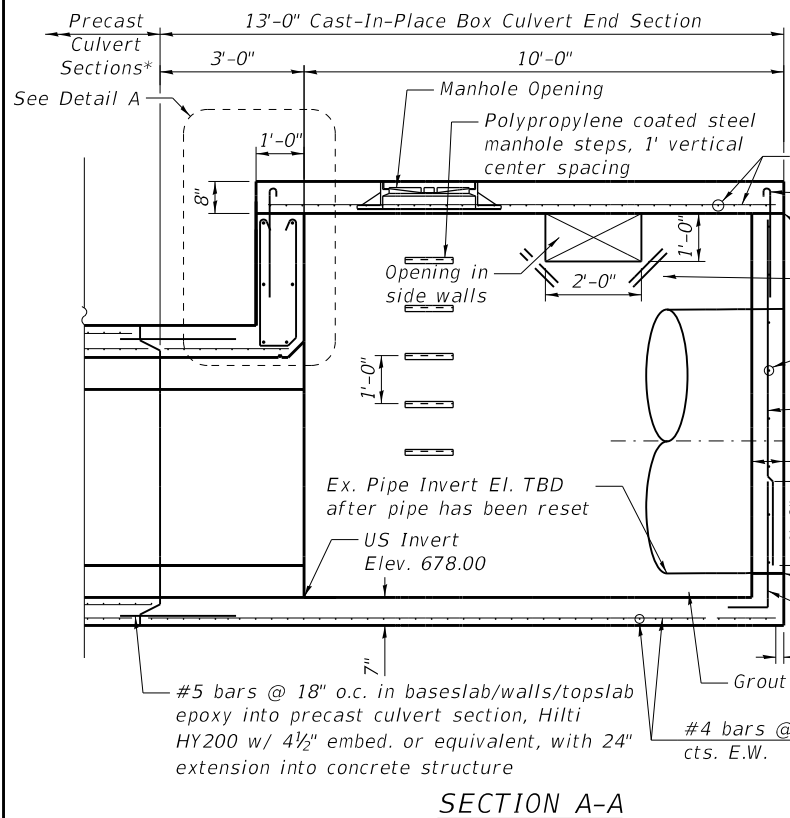
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END  
SECTION DETAILS - MURRAYVILLE ROAD LOCATION 1

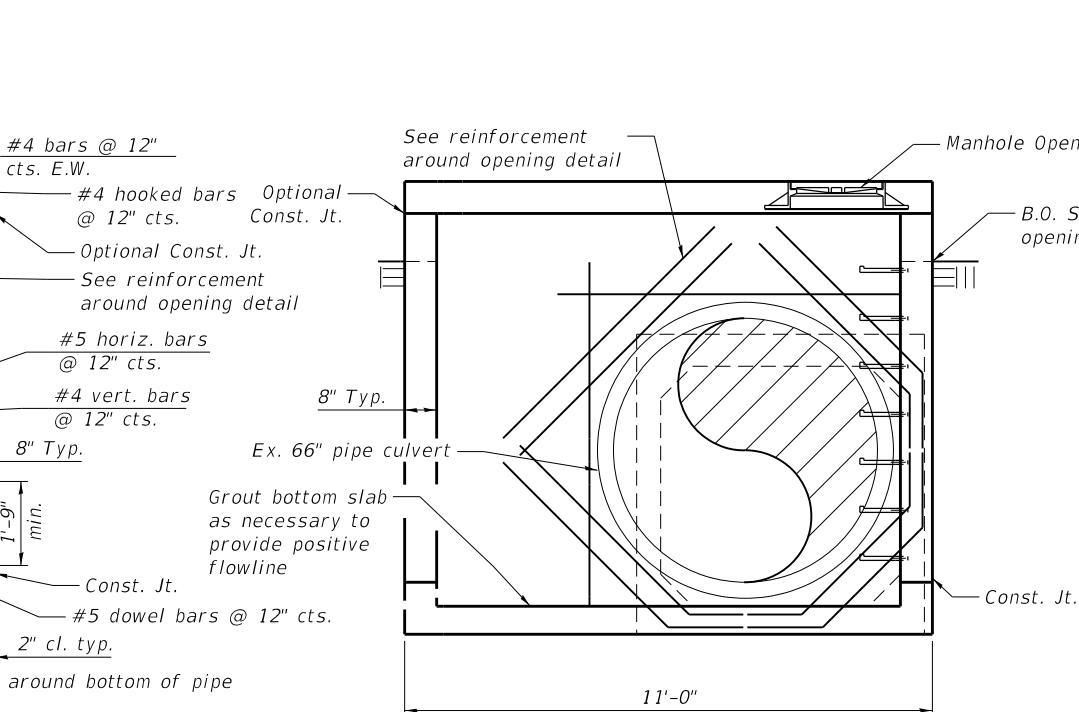
SHEET NO. 3 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93791				

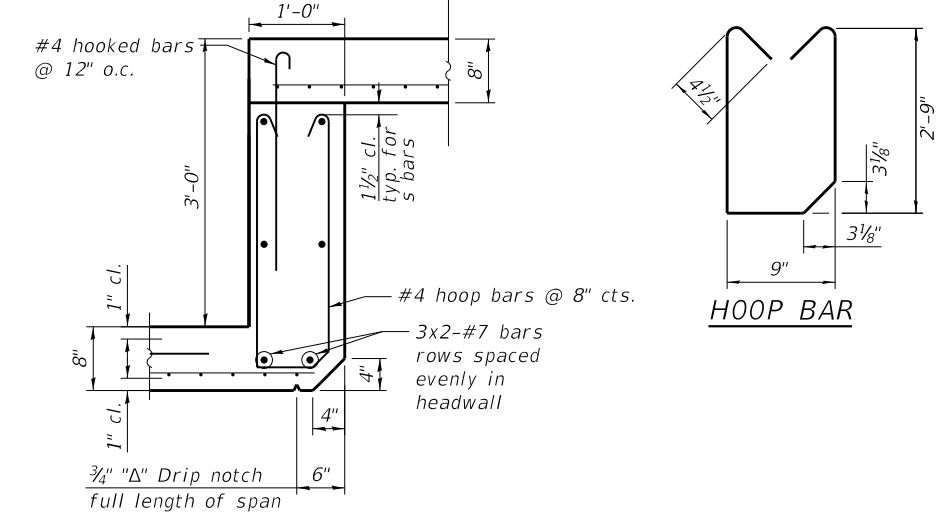
ILLINOIS FED. AID PROJECT



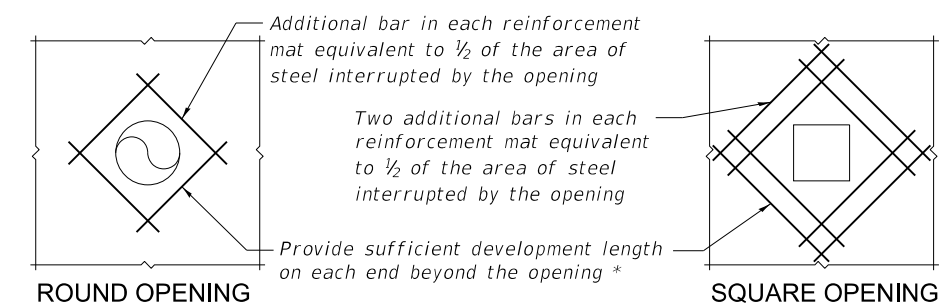
SECTION A-A



SECTION THRU MANHOLE END SECTION

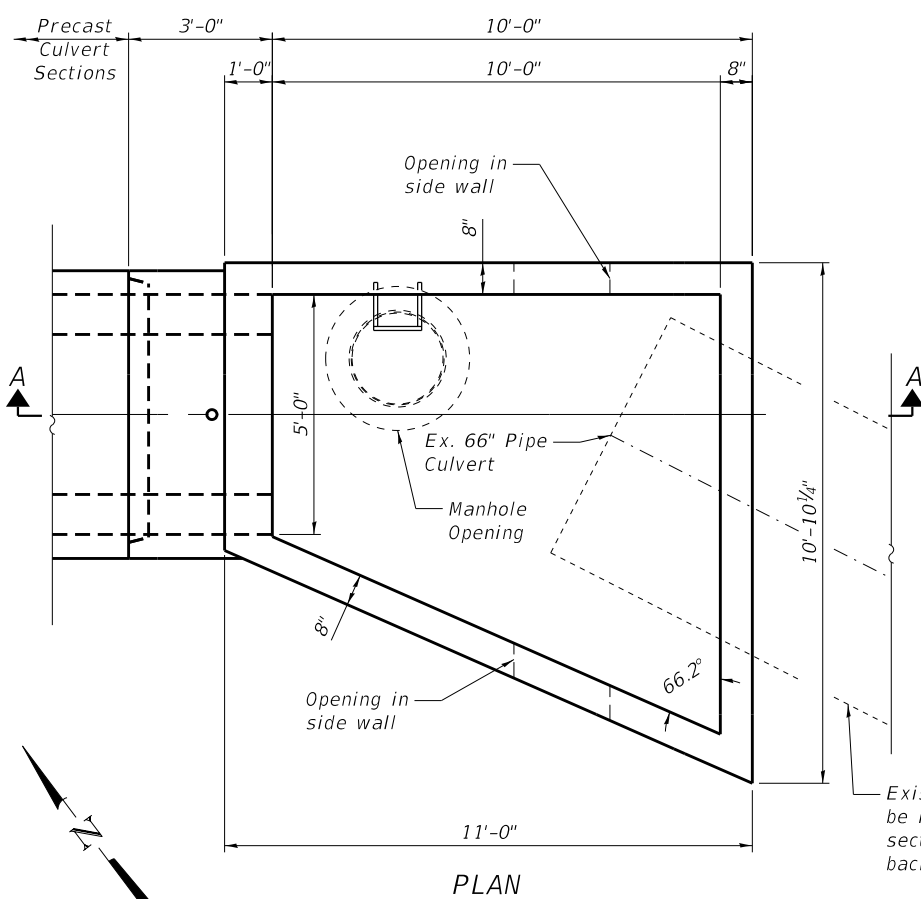


DETAIL A  
(Top slab at upstream end)

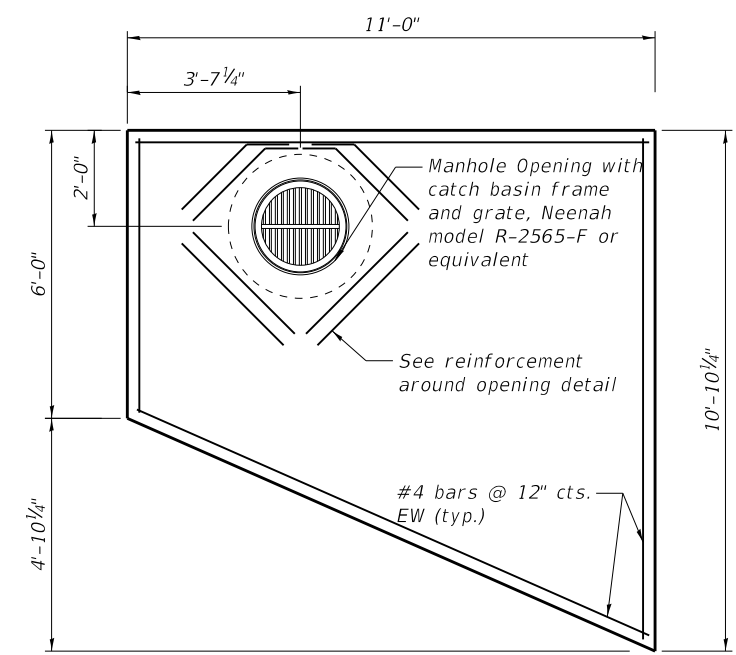


ROUND OPENING

SQUARE OPENING



PLAN

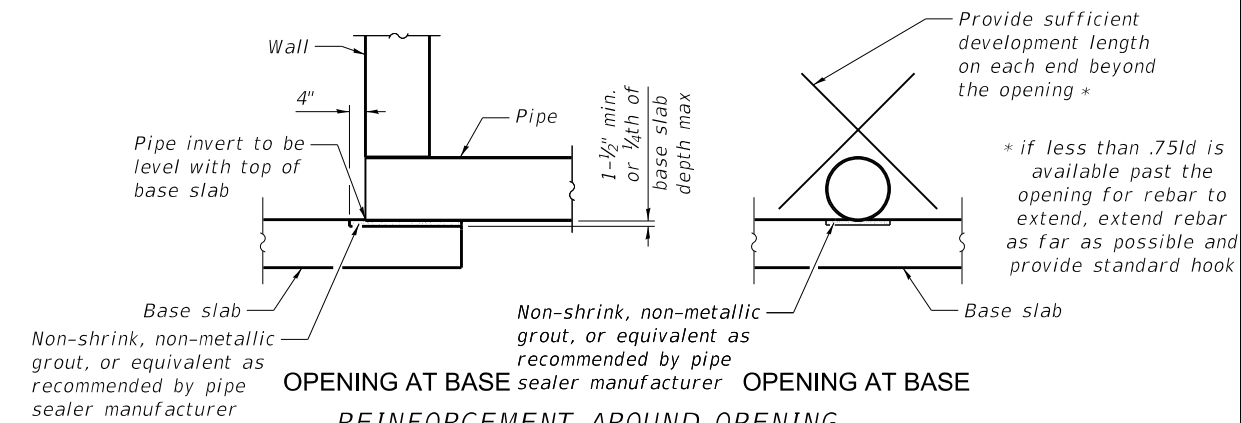


TOP SLAB REINFORCEMENT DETAIL

TOTAL BILL OF MATERIAL

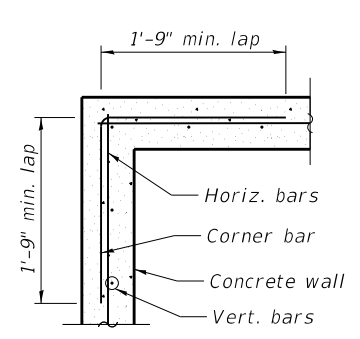
ITEM	UNIT	TOTAL
Concrete Structures	Cu. Yd.	13

Cost of reinforcement, manhole, ladder rungs, and other accessories shall be included in Concrete Structures.

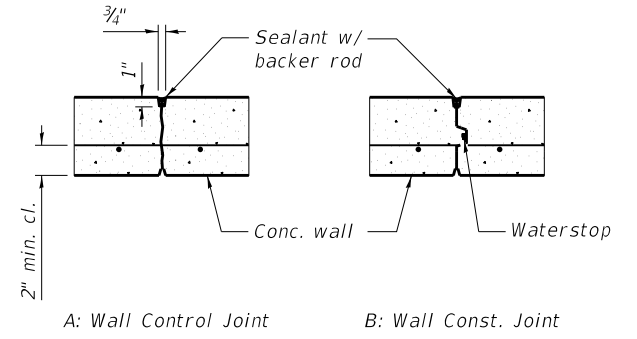


OPENING AT BASE  
REINFORCEMENT AROUND OPENING

- Note:
1. Spread normal reinforcement around pipe
  2. Additional reinforcement steel on each face equivalent to 1/2 of the area of steel interrupted by the opening



WALL CORNER REINF. DETAIL



CONCRETE WALL JOINT DETAIL

FILE NAME : P:\2023454\Design\CAD Sheets\3454-055-1-004-Manhole End.dgn  
Layout1



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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

MANHOLE END SECTION DETAILS - MURRAYVILLE ROAD LOCATION 1

SHEET NO. 4 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	55
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

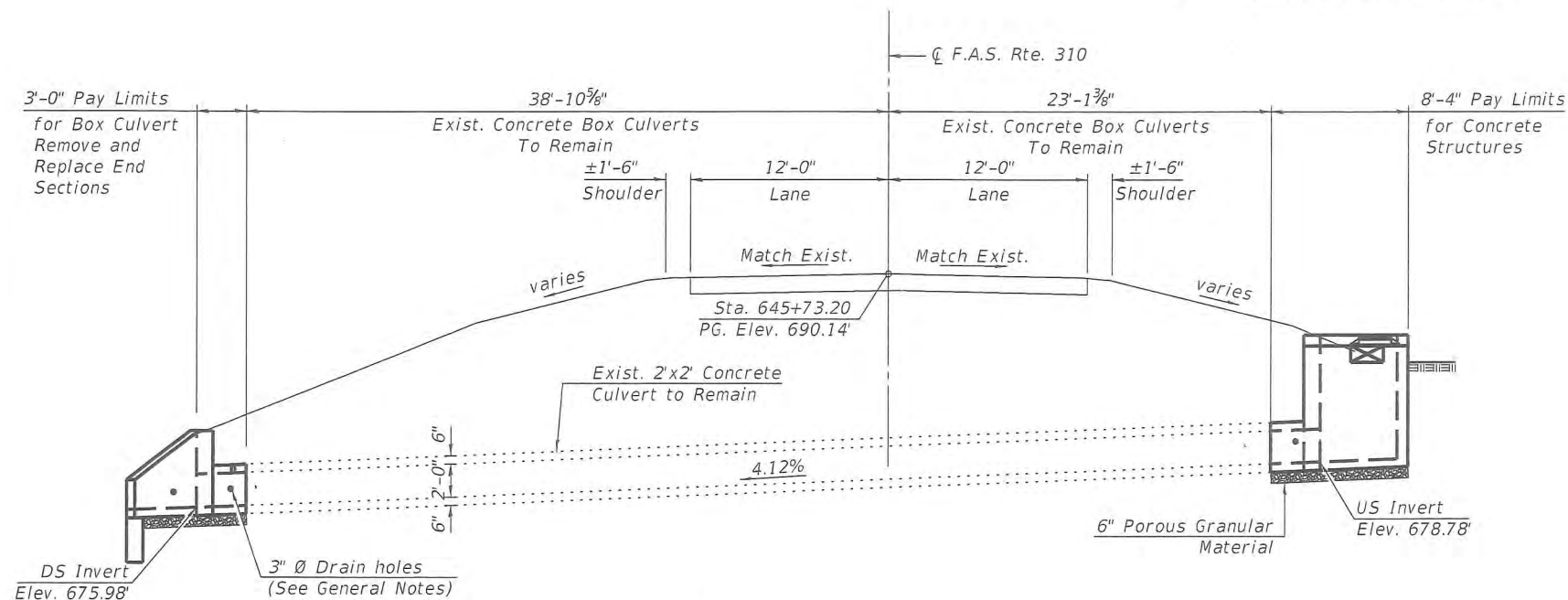
Benchmark: BM#3454-3 - SET MAG SPIKE IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD, 2150'± NE OF HWY 67 ALONG MURRAYVILLE ROAD, RT. STA. 646+42, ELEV - 692.03

**INDEX OF SHEETS**

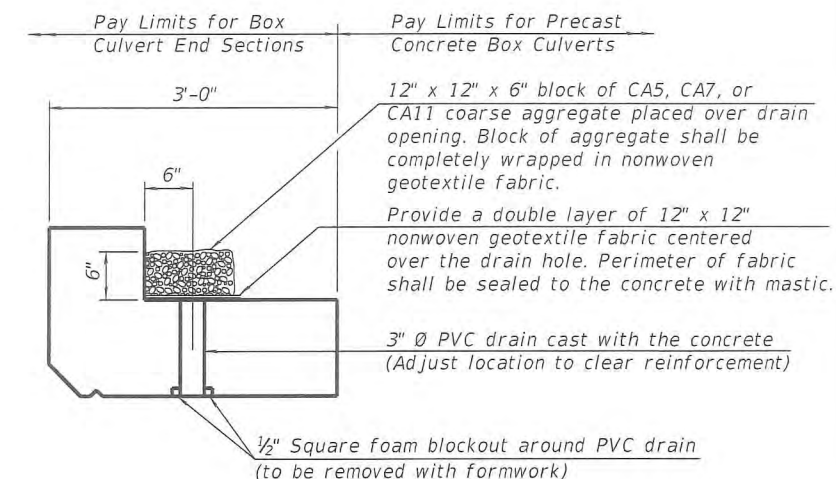
1. General Plan and Elevation
- 2.-3. Precast Concrete Box Culvert Apron End Section Details
4. Manhole End Section Details

**GENERAL NOTES**

The design fill height for this box is 10.4 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.  
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.  
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.  
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.  
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.

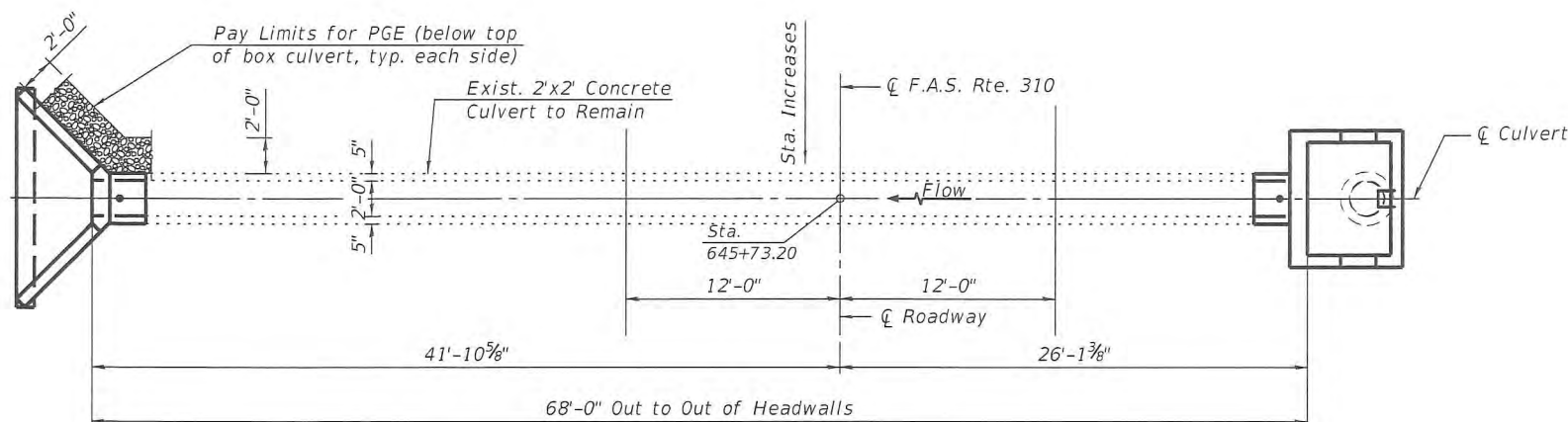


**ELEVATION**

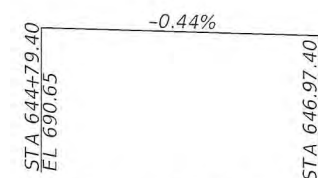


**DRAIN DETAIL**

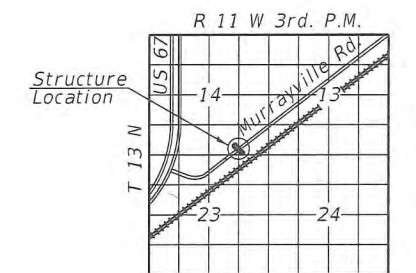
(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**PLAN**



**PROFILE GRADE**



**LOCATION SKETCH**

**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Box Culvert End Sections, Culvert No. 4	Each	1
Porous Granular Embankment	Cu. Yd.	34
Concrete Structures	Cu. Yd.	5.9
Concrete Removal	Cu. Yd.	1.4

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications  
9th Edition

**LOADING HL-93**

Allow 25 lbs./sq.ft. for future wearing surface

**DESIGN STRESSES**

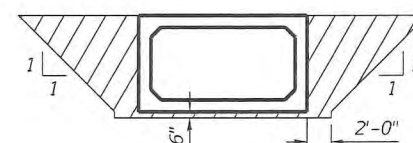
**PRECAST UNITS**

$f'_c = 5,000$  psi  
 $f_y = 65,000$  psi (Welded Wire Reinforcement)

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)

**GENERAL PLAN AND ELEVATION  
 MURRAYVILLE RD OVER TRI TO  
 NORTH LITTLE SANDY CREEK  
 SEC. 19-00108-00-RS  
 MORGAN COUNTY  
 STATION 645+73.20**



**PAY LIMITS FOR POROUS GRANULAR EMBANKMENT**

(Hatched Area)

**MATTHEW B. HARDY**  
 081-007375  
 LICENSED  
 STRUCTURAL  
 ENGINEER  
 OF  
 JACKSONVILLE  
 ILLINOIS  
 4/11/22

**BA** BENTON & ASSOCIATES, INC.  
 1970 N. Lafayette Ave., Springfield, IL 62761  
 217-245-4146 FAX 217-245-4149  
 Illinois Design Firm Registration No. 124-000022

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 CHECKED - MBH  
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 DRAWN - CML  
 PLOT DATE = 4/11/2022  
 CHECKED - MBH  
 REVISED -

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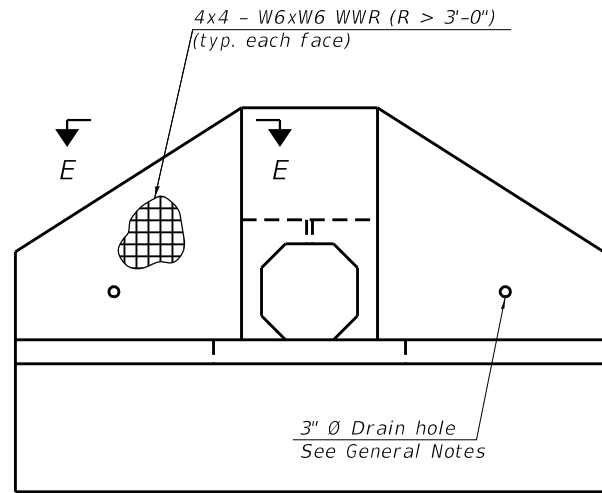
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION - BOX CULVERT  
 MURRAYVILLE ROAD LOCATION 1a**

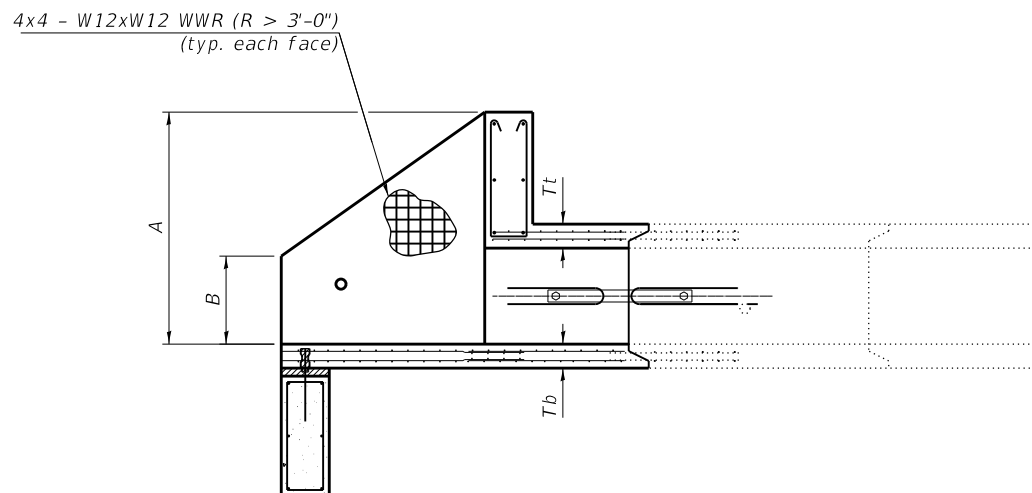
SHEET NO. 1 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	85	56
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

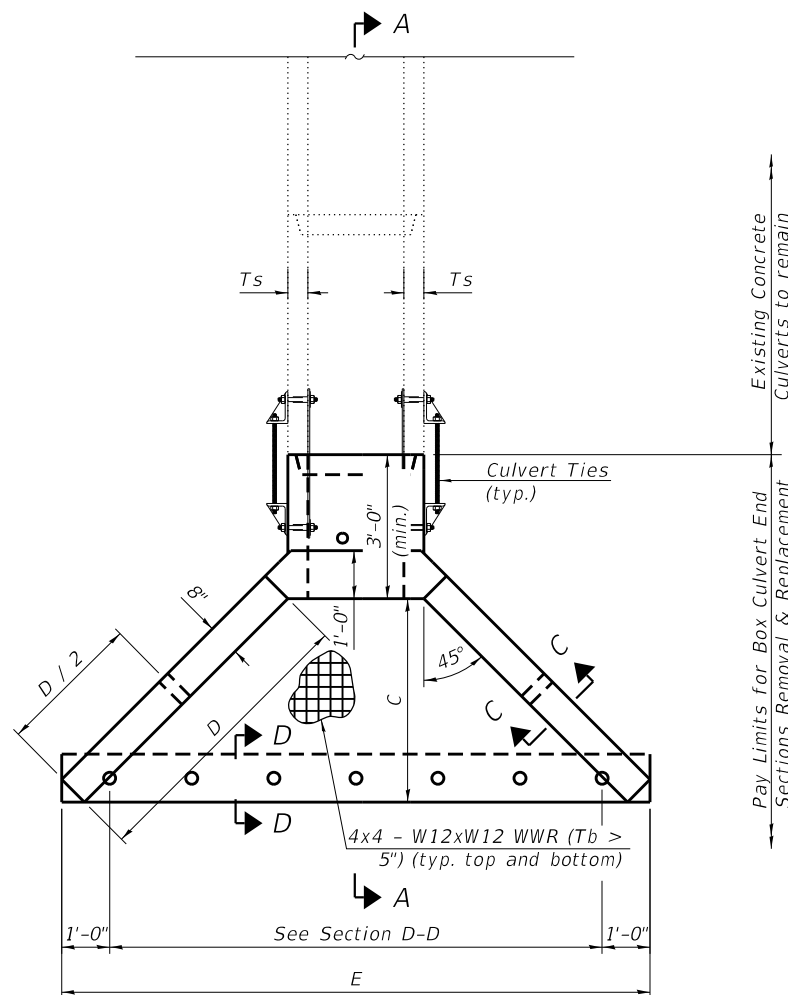




END VIEW



SECTION A-A



PLAN

**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

**APRON END SECTION DIMENSIONS**

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
2'-0"	2'-0"	*6"	*6"	*5"	4'-10"	1'-10"	4-2 7/8"	6'-0"	12'-3 1/8"	3.9	Yes

Note:

\* Slab thickness assumed for quantity calculation, contractor to match existing culvert dimensions for construction

(Sheet 1 of 2)

SCB-AES

2-17-2017



USER NAME = \$USERNAME\$	DESIGNED - CML	REVISED -
	CHECKED - MBH	REVISED -
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PLOT DATE = 3/18/2022	CHECKED - MBH	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

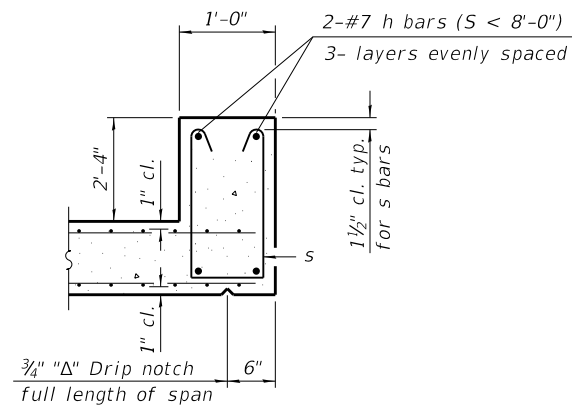
PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS  
MURRAYVILLE ROAD LOCATION 1a

SHEET NO. 2 OF 4 SHEETS

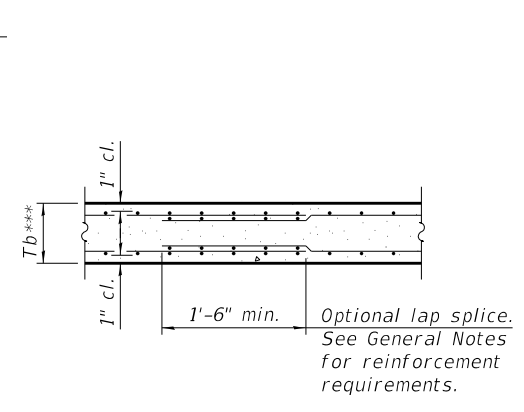
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

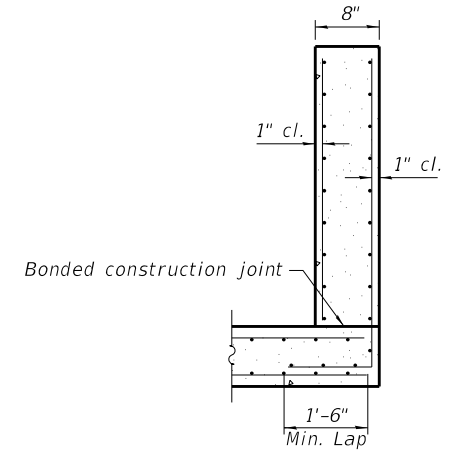
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Layout



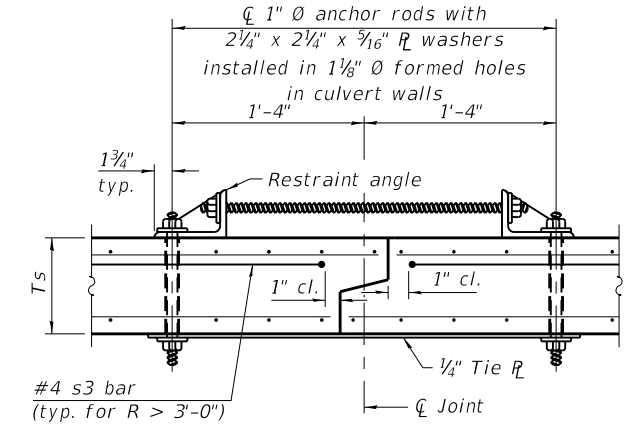
**SECTION B-B**  
(Top slab at downstream end)



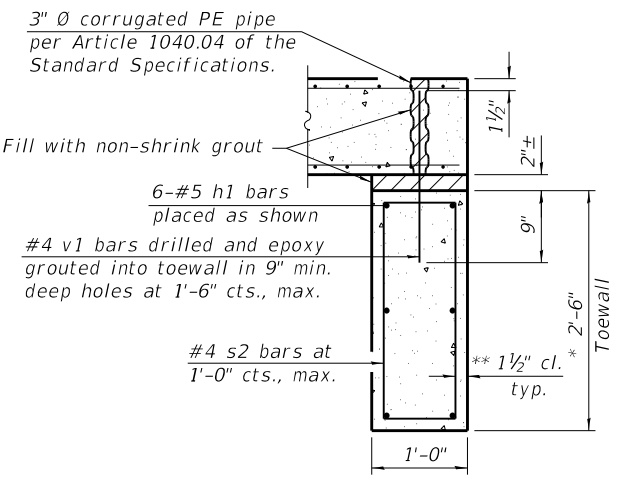
**SECTION B-B**  
(Bottom Slab)



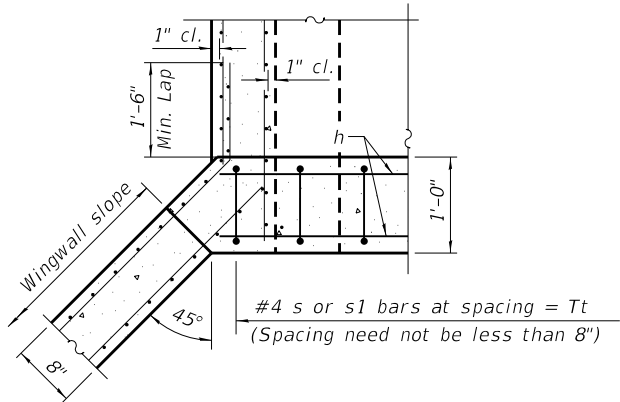
**SECTION C-C**



**SECTION F-F**  
(Showing culvert tie details)



**SECTION D-D**

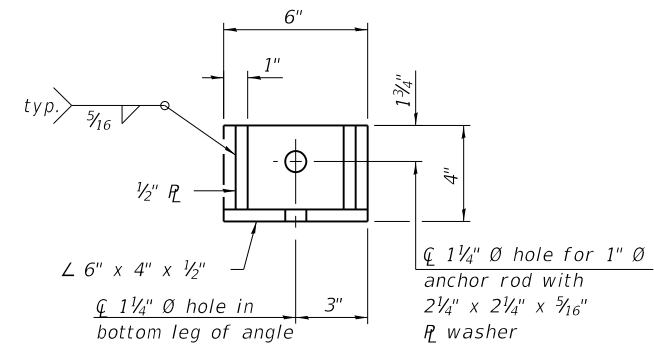


**TOEWALL CONSTRUCTION SEQUENCE**

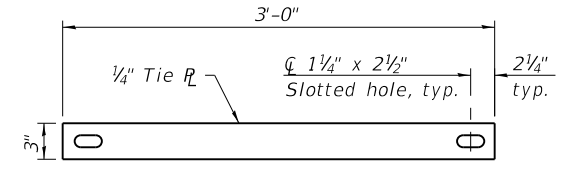
1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

\* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

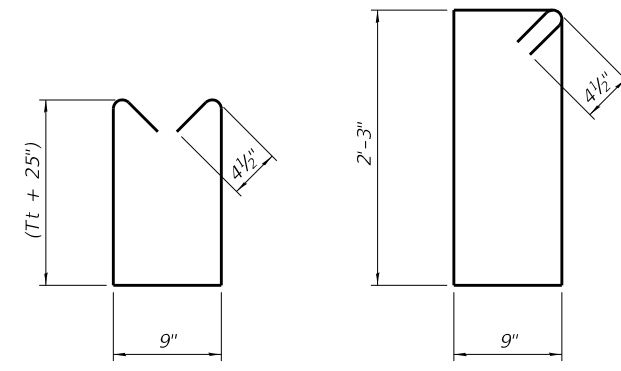
\*\* If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.



**RESTRAINT ANGLE DETAIL**



**TIE PLATE DETAIL**



**BAR s**

**BAR s2**

**BAR s3**

Notes:  
1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4"x2 1/4"x5/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

(Sheet 2 of 2)

FILE NAME = P:\20E3454\Design\CAD Sheets\1454-058-1a-003-Culvert Apron End Details.dgn



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CHECKED - MBH	CHECKED - MBH	REVISED -
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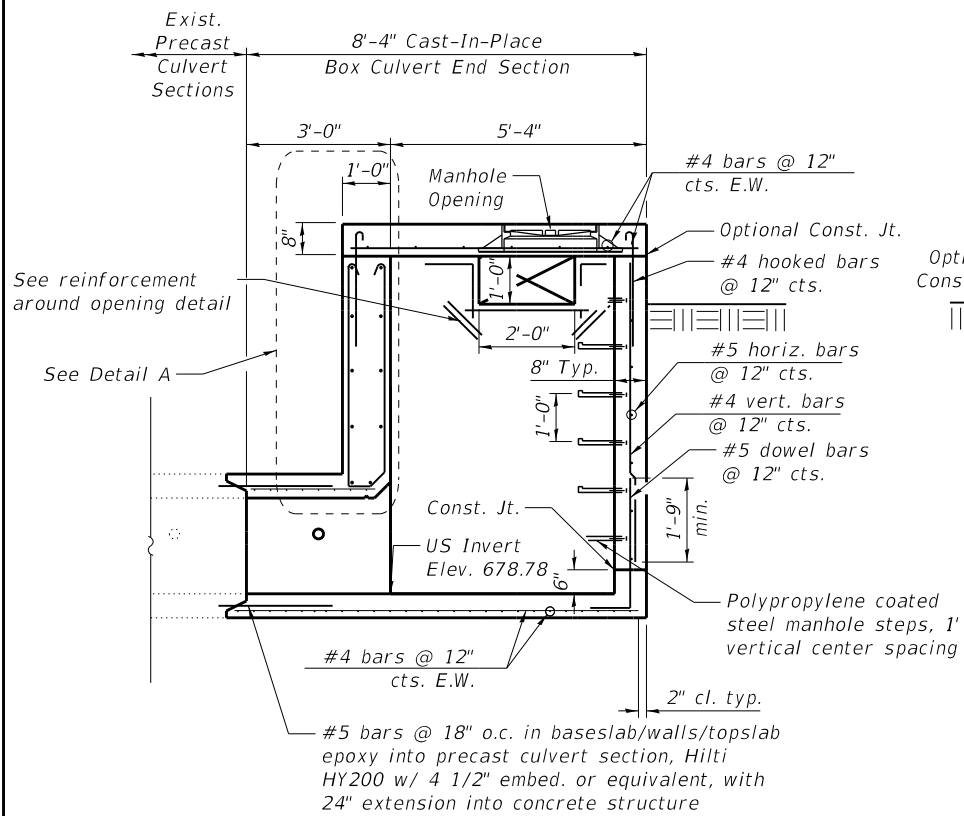
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PRECAST CONCRETE BOX CULVERT APRON END**  
**SECTION DETAILS - MURRAYVILLE ROAD LOCATION 1a**

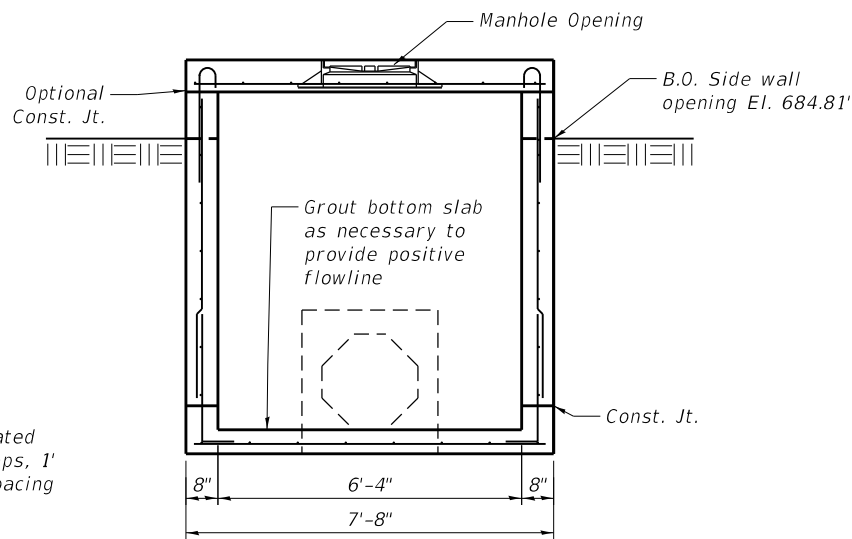
SHEET NO. 3 OF 3 SHEETS

F.A.S. RIE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	85	58
CONTRACT NO. 93791				

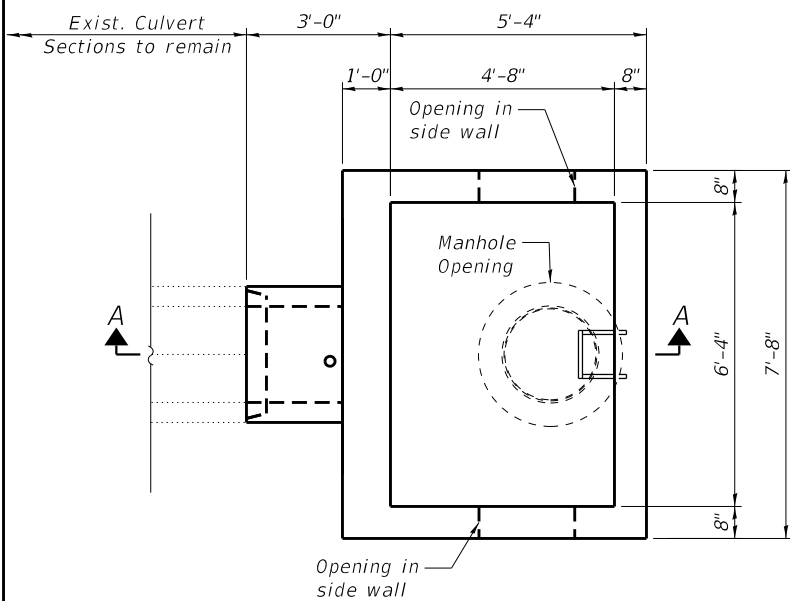
ILLINOIS FED. AID PROJECT



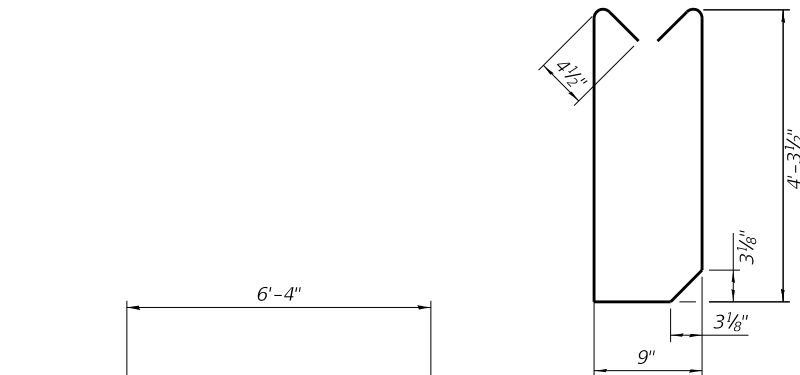
SECTION A-A



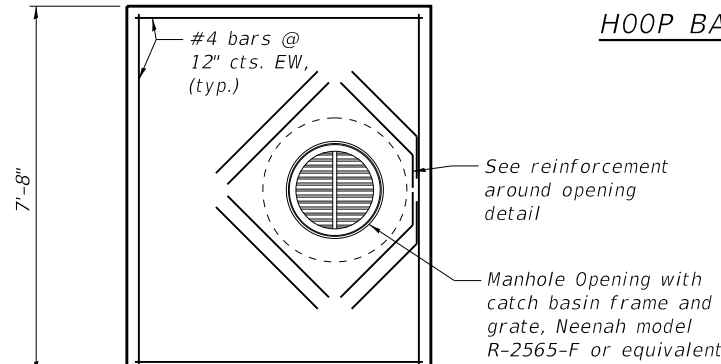
SECTION THRU MANHOLE END SECTION



PLAN



HOOP BAR

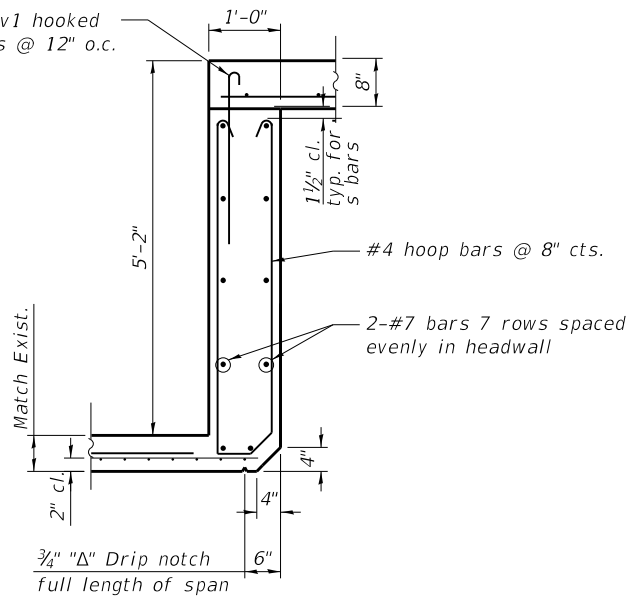


TOP SLAB REINFORCEMENT DETAIL

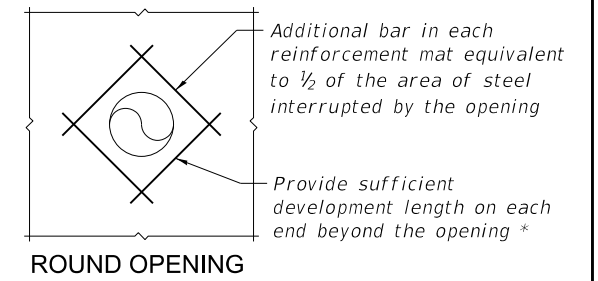
TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Structures	Cu. Yd.	5.9

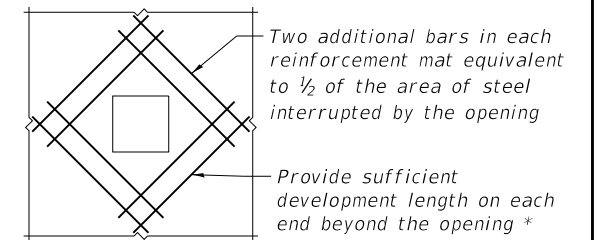
Cost of reinforcement, manhole, ladder rungs, and other accessories shall be included in Concrete Structures.



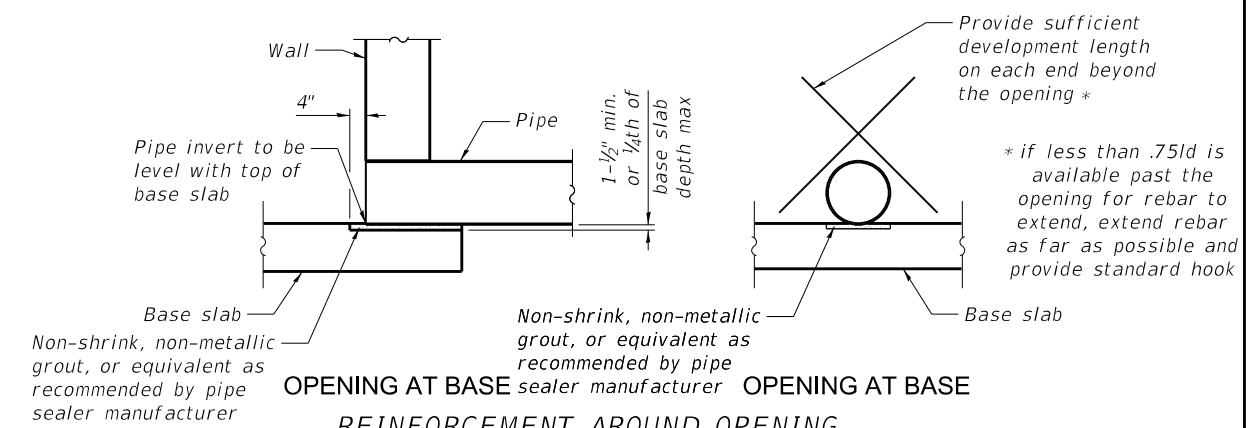
DETAIL A  
(Top slab at upstream end)



ROUND OPENING

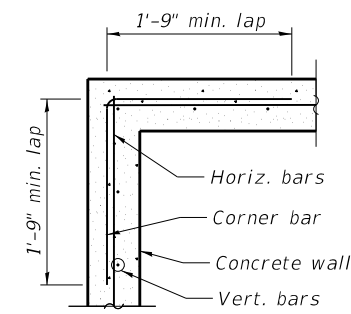


SQUARE OPENING

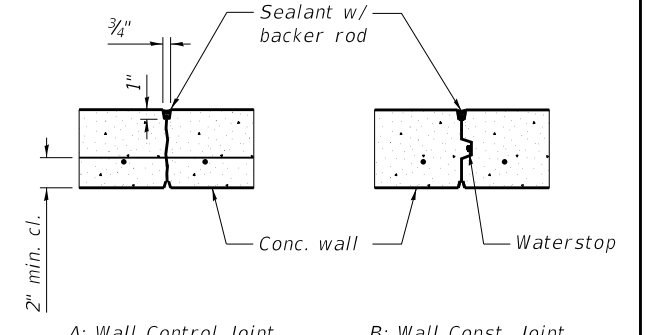


REINFORCEMENT AROUND OPENING

- Note:
1. Spread normal reinforcement around pipe
  2. Additional reinforcement steel on each face equivalent to 1/2 of the area of steel interrupted by the opening



WALL CORNER REINF. DETAIL



CONCRETE WALL JOINT DETAIL

FILE NAME : P:\2023454\Design\CAD Sheets\3454-059-1a-004-Manhole End.dgn



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 CHECKED - MBH  
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 PLOT DATE : 3/18/2022

DESIGNED - CML  
 CHECKED - MBH  
 DRAWN - CML  
 CHECKED - MBH

REVISED -  
 REVISED -  
 REVISED -  
 REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

BOX CULVERT MANHOLE EXTENSION - MURRAYVILLE ROAD LOCATION 1a

SHEET NO. 4 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-DR	MORGAN	90	59
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

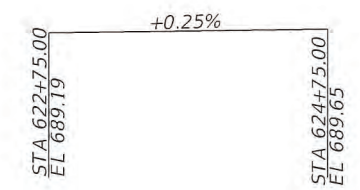
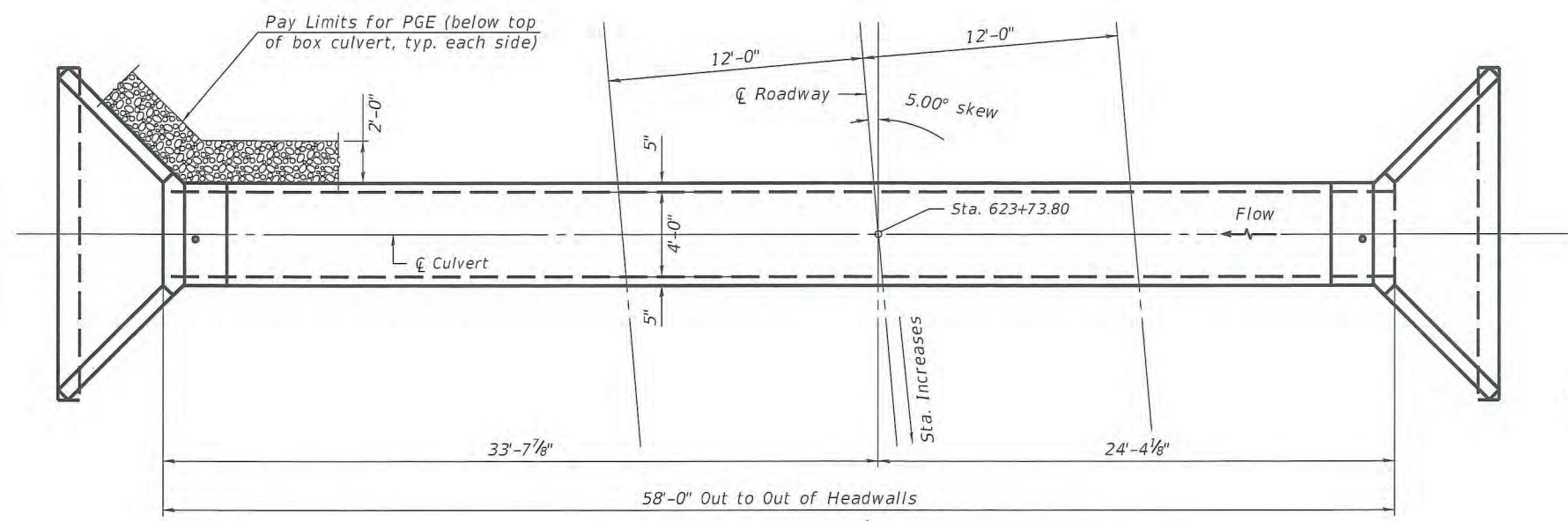
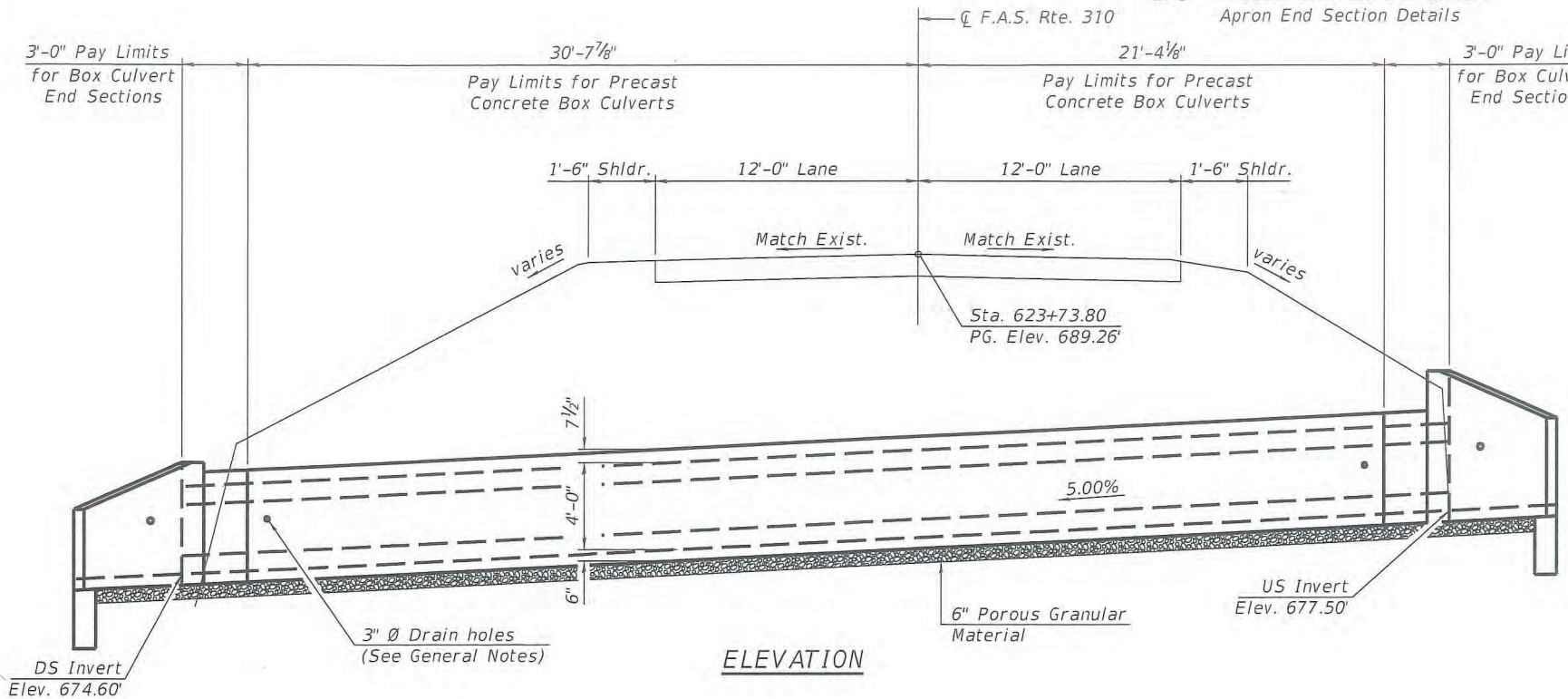
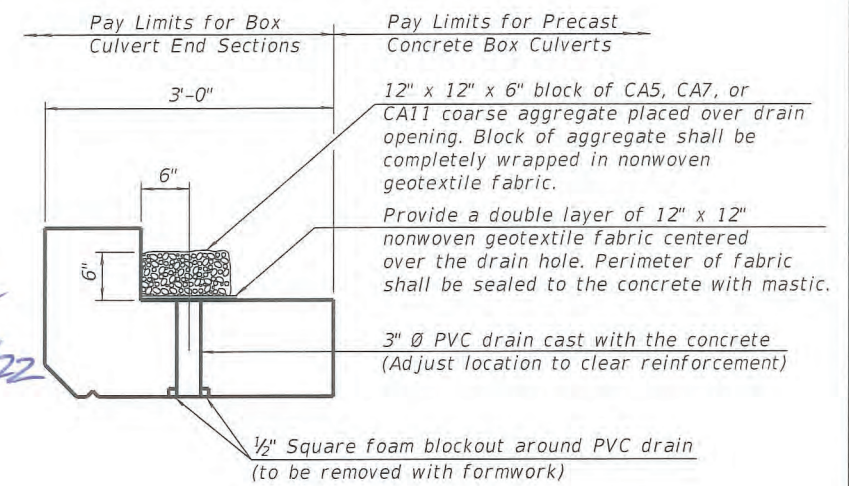
Benchmark: BM#3454-5 - SET RR SPIKE IN COR. POST ON NORTHERLY SIDE OF MURRAYVILLE ROAD 700± SW OF CARROLL ROAD, RT. STA. 624+65, ELEV - 691.12

**INDEX OF SHEETS**

1. General Plan and Elevation
- 2.-3. Precast Concrete Box Culvert Apron End Section Details

**GENERAL NOTES**

The design fill height for this box is 8.2 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.  
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.  
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.  
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.  
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.



**DESIGN SPECIFICATIONS**  
 2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**LOADING HL-93**  
 Allow 25 lbs./sq.ft. for future wearing surface

**DESIGN STRESSES**

**PRECAST UNITS**  
 f'c = 5,000 psi  
 fy = 65,000 psi (Welded Wire Reinforcement)

**FIELD UNITS**  
 f'c = 3,500 psi  
 fy = 60,000 psi (Welded Wire Reinforcement)

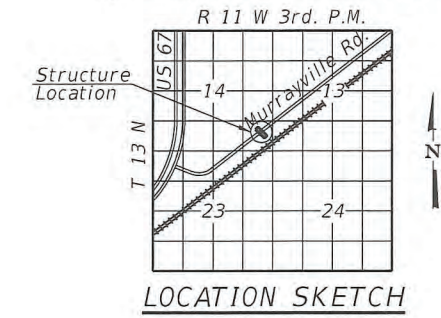
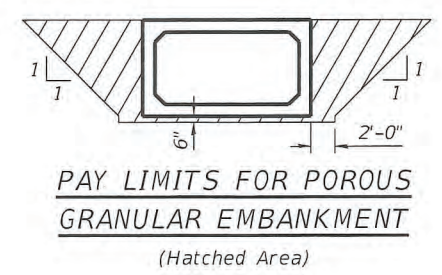
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 2	Each	1
Box Culvert End Sections, Culvert No. 2	Each	2
Precast Concrete Box Culverts, 4' x 4'	Foot	52
Porous Granular Embankment	Cu. Yd.	132

**WATERWAY INFORMATION**

Drainage Area = 0.06 sq. mi. Low Grade Elev. = 689.0 @ Sta. 623+74.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	48.1	16	16	678.89	2.65	2.70	680.17	680.20
Base	50	79.7	16	16	679.36	3.76	3.82	681.28	681.32
Overtopping (Exist.)	100	94.2	16	16	679.54	4.26	4.32	681.78	681.82
Overtopping (Proposed)	>500	235	16	16		11.76		689.28	
Max. Calc.	>500	235	16	16		11.78		689.28	
	500	130	16	16	679.09	5.62	5.62	683.14	683.17

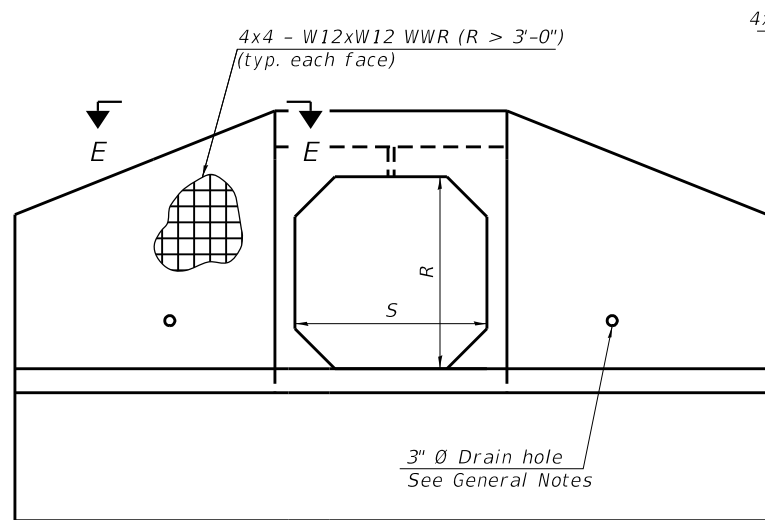


**GENERAL PLAN AND ELEVATION**  
 MURRAYVILLE RD OVER TRI TO  
 NORTH LITTLE SANDY CREEK  
 SEC. 19-00108-00-RS  
 MORGAN COUNTY  
 STATION 623+73.80

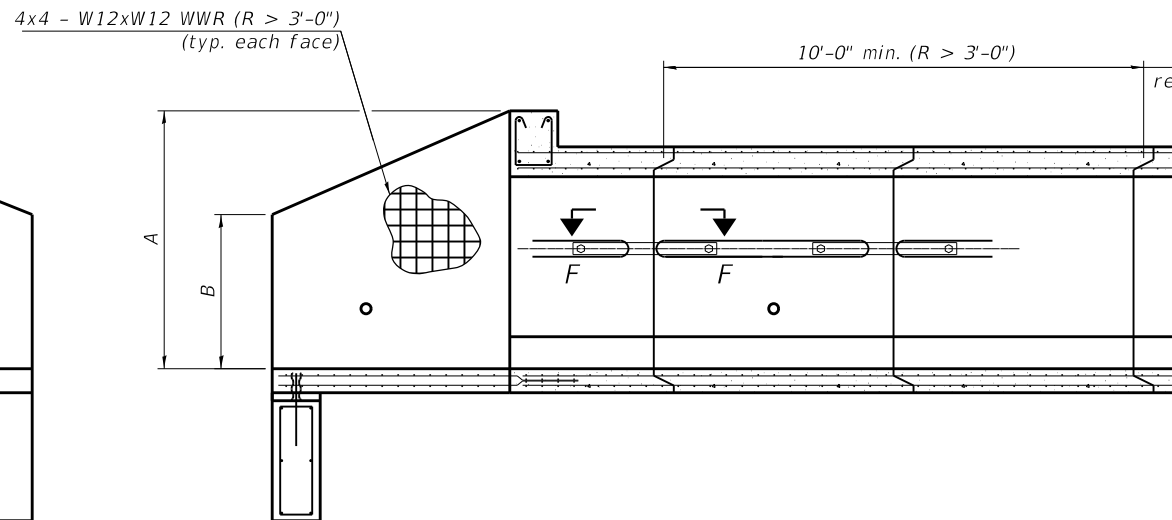
SCB-GPE 2-17-2017

<p>BENTLEY &amp; ASSOCIATES, INC.                  1710 N. Lafayette Ave., Suite 200                  Chicago, IL 60642                  Phone: 773-246-4141                  Fax: 773-246-4142</p>	USER NAME = clocher	DESIGNED - CML	REVISED -	<p><b>STATE OF ILLINOIS</b>                  DEPARTMENT OF TRANSPORTATION</p>	<p><b>GENERAL PLAN AND ELEVATION - BOX CULVERT</b>                  MURRAYVILLE ROAD LOCATION 2</p>	F.A.S. RTE. 310	SECTION 19-00108-00-RS	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 60
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	PLOT DATE = 4/7/2022	CHECKED - MBH	REVISED -			ILLINOIS FED. AID PROJECT				
						SHEET NO. 1 OF 3 SHEETS				

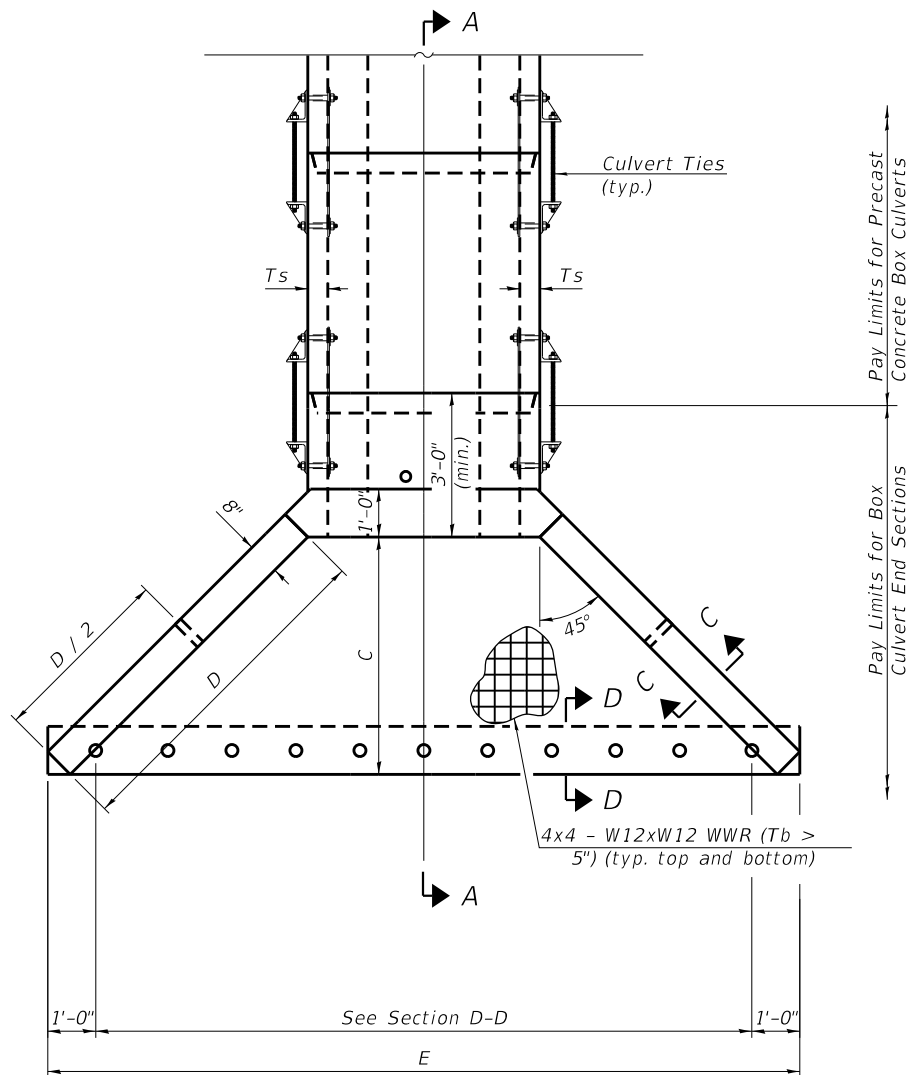
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END VIEW



SECTION A-A



PLAN

**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

**APRON END SECTION DIMENSIONS**

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes
4'-0"	4'-0"	7.5"	6"	5"	6'-2"	4'-0"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes

Note:

Two sets of apron end section dimensions are shown above for some box culvert sizes due to the top and bottom slabs having different thicknesses per ASTM C 1577 for design fill heights less than 2 ft.

(Sheet 1 of 2)

SCB-AES

2-17-2017



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PLOT DATE = 3/18/2022	DRAWN - CML	REVISED -
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

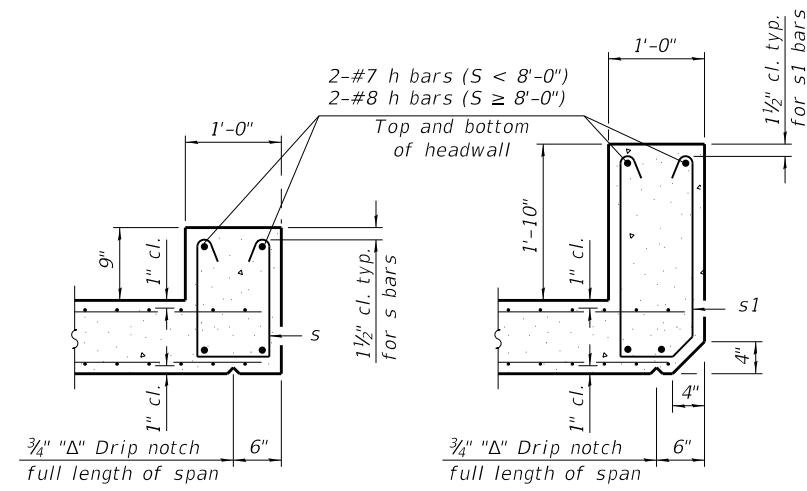
PRECAST CONCRETE BOX CULVERT APRON END - SECTION DETAILS  
MURRAYVILLE ROAD LOCATION 2

SHEET NO. 2 OF 3 SHEETS

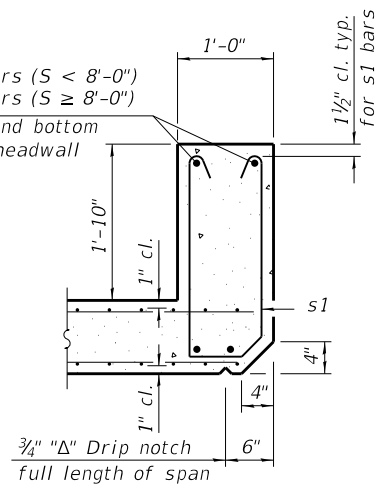
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	61
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

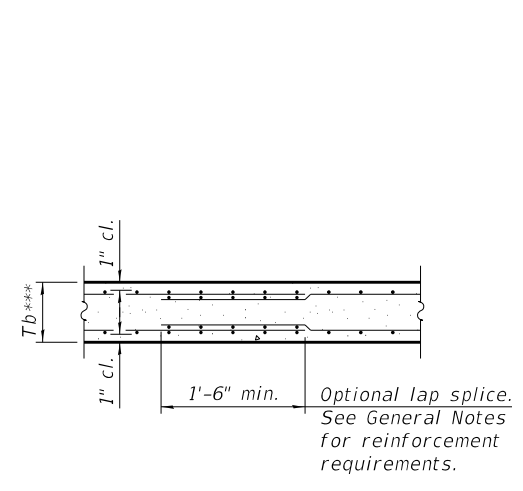
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Layout



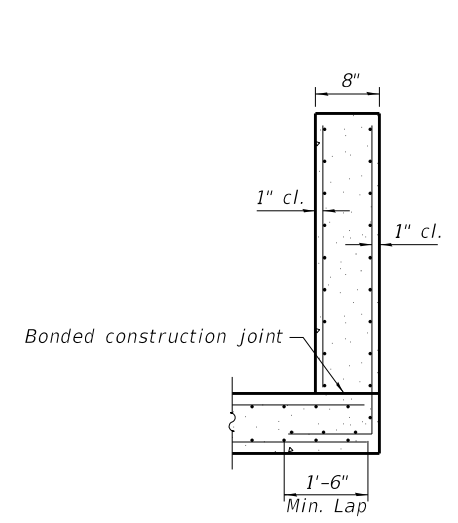
**SECTION B-B**  
(Top slab at downstream end)



**SECTION B-B**  
(Top slab at upstream end)

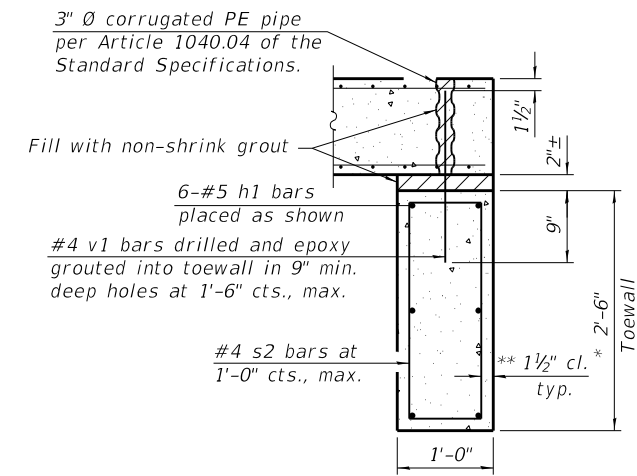


**SECTION B-B**  
(Bottom Slab)

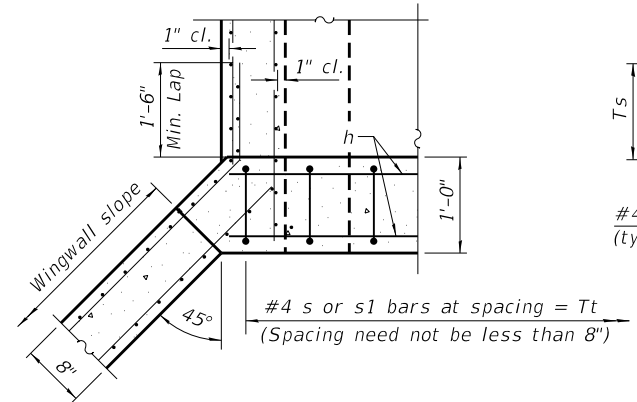


**SECTION C-C**

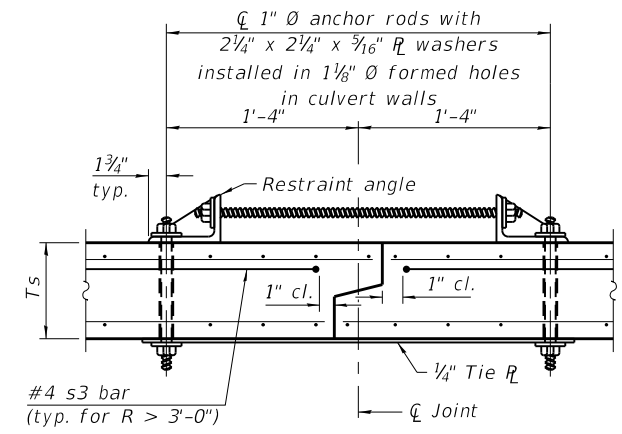
\*\*\* This dimension shall be increased by 2" for CIP construction.



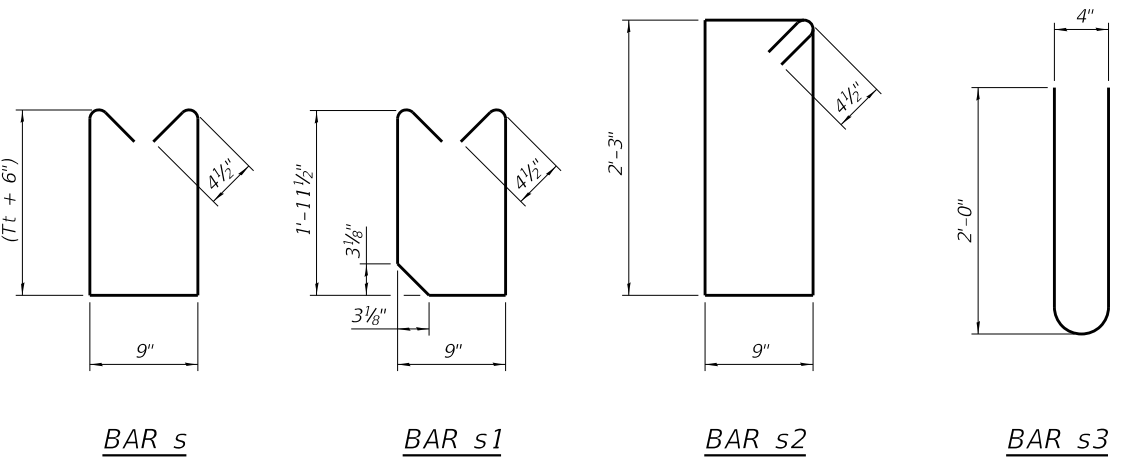
**SECTION D-D**



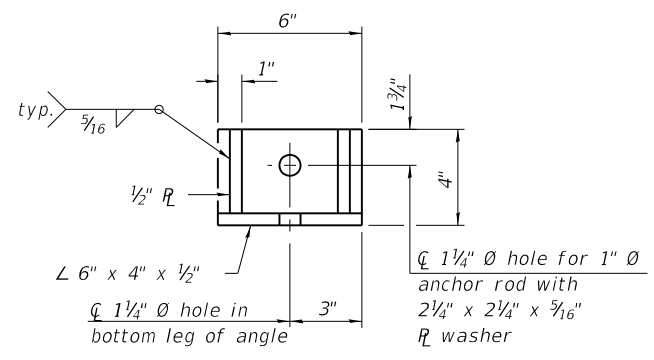
**SECTION E-E**



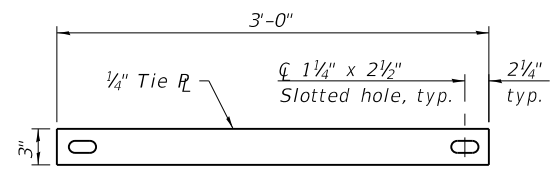
**SECTION F-F**  
(Showing culvert tie details)



**BAR s**      **BAR s1**      **BAR s2**      **BAR s3**



**RESTRAINT ANGLE DETAIL**



**TIE PLATE DETAIL**

**TOEWALL CONSTRUCTION SEQUENCE**

1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

\* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

\*\* If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3" by increasing the thickness of the toewall.

Notes:  
1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 3/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

(Sheet 2 of 2)

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	CHECKED - MBH	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PRECAST CONCRETE BOX CULVERT APRON END  
SECTION DETAILS - MURRAYVILLE ROAD LOCATION 2

SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	62
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

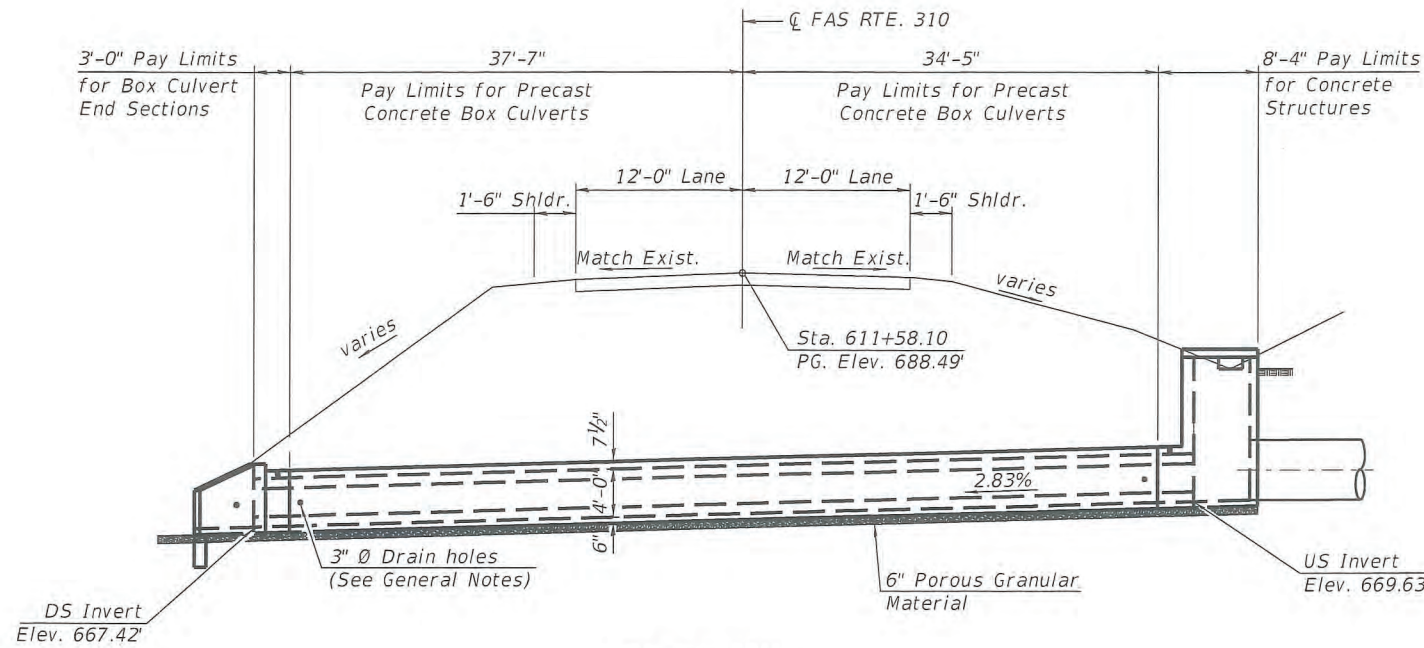
Benchmark: BM#3454-7 - SET RR SPIKE IN POWER POLE W/TRANS. ON NOTHERLY SIDE OF MURRAYVILLE ROAD 750± NE OF CARROLL ROAD AT HOUSE #17.  
RT. STA. 609+05  
ELEV - 690.82

**INDEX OF SHEETS**

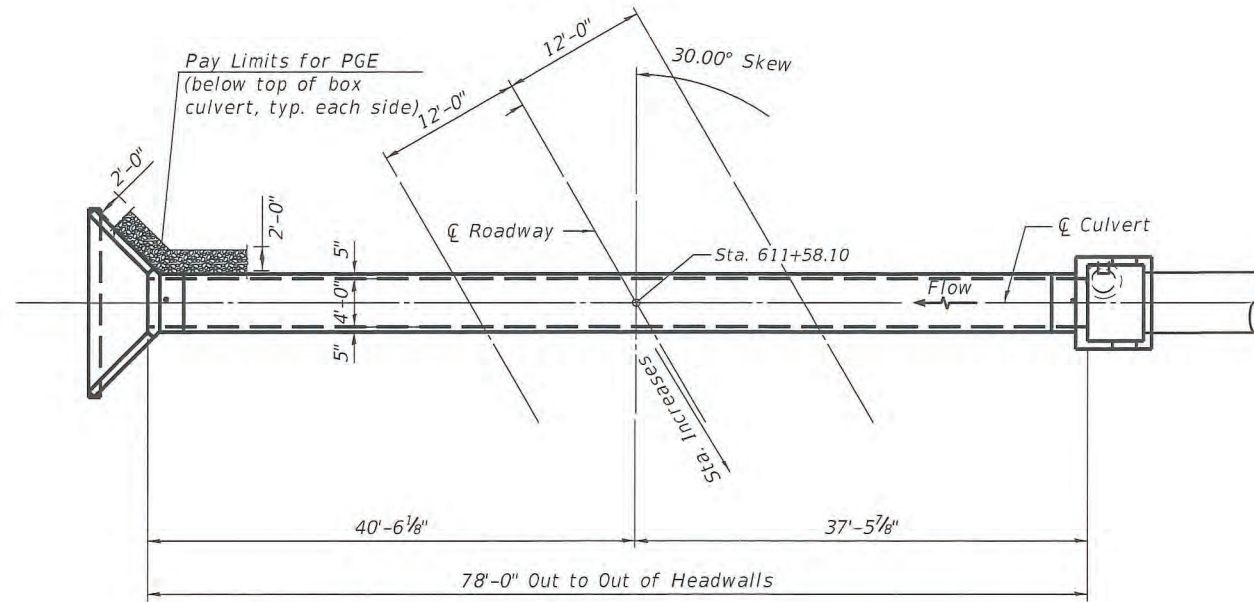
1. General Plan and Elevation
- 2.-3. Precast Concrete Box Culvert Apron End Section Details
4. Manhole End Section Details

**GENERAL NOTES**

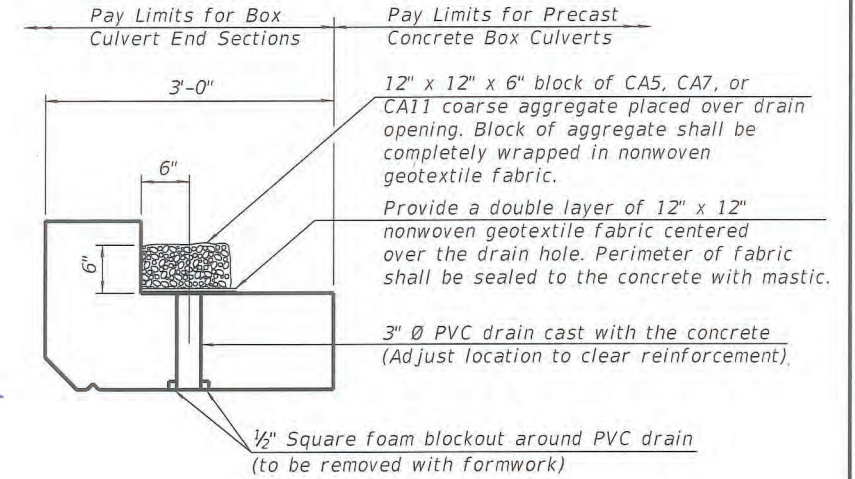
The design fill height for this box is 15.1 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.  
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.  
The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.  
Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.  
Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.



**ELEVATION**

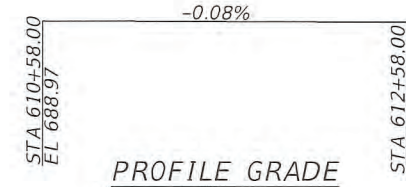


**PLAN**



**DRAIN DETAIL**

(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**LOADING HL-93**

Allow 25 lbs./sq.ft. for future wearing surface

**DESIGN STRESSES**

**PRECAST UNITS**

f'c = 5,000 psi  
fy = 65,000 psi (Welded Wire Reinforcement)

**FIELD UNITS**

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

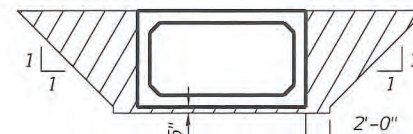
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 3	Each	1
Box Culvert End Sections, Culvert No. 3	Each	2
Precast Concrete Box Culverts, 4' x 4'	Foot	76
Porous Granular Embankment	Cu. Yd.	206
Concrete Structures	Cu. Yd.	8.7

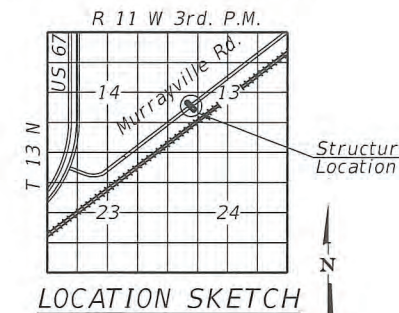
**WATERWAY INFORMATION**

Drainage Area = 0.4 sq. mi. Low Grade Elev. = 688.10 @ Sta. 611+58.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	50.3	16	16	670.67	2.83	2.83	672.49	672.43
Base	50	85.4	16	16	671.11	4.06	4.06	673.72	673.66
Overtopping (Exist.)	100	102	16	16	671.25	4.64	4.64	674.30	674.24
Overtopping (Proposed)	>500	307	16	16		18.83		688.49	
Max. Calc.	>500	308	16	16		18.89		688.49	
	500	143	16	16	671.54	6.28	6.28	675.94	675.88



**PAY LIMITS FOR POROUS GRANULAR EMBANKMENT**  
(Hatched Area)



**LOCATION SKETCH**

**GENERAL PLAN AND ELEVATION  
MURRAYVILLE RD OVER TRI TO  
NORTH LITTLE SANDY CREEK  
SEC. 19-00108-00-RS  
MORGAN COUNTY  
STATION 611+58.10**

SCB-GPE

2-17-2017



USER NAME = clocher	DESIGNED - CML	REVISED -
DESIGNED - CML	CHECKED - MBH	REVISED -
PLOT SCALE = 0:2.0000' = 1"	DRAWN - CML	REVISED -
PLOT DATE = 4/7/2022	CHECKED - MBH	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

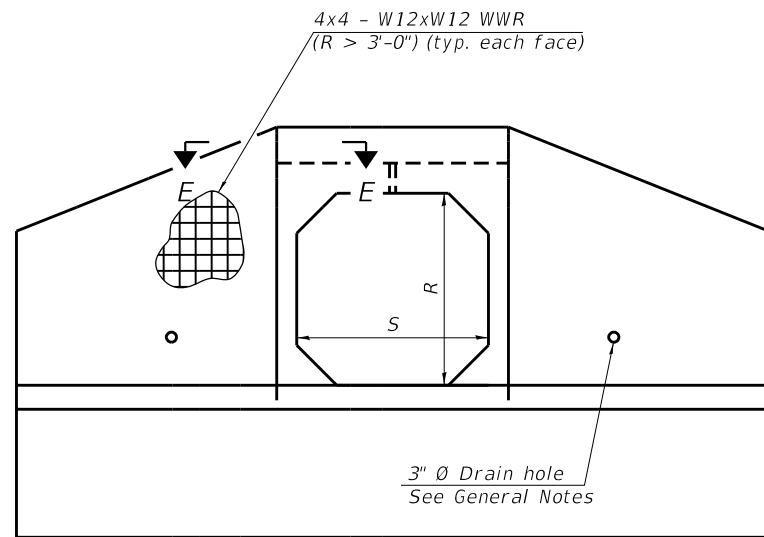
**GENERAL PLAN AND ELEVATION - BOX CULVERT  
MURRAYVILLE ROAD LOCATION 3**

SHEET NO. 1 OF 4 SHEETS

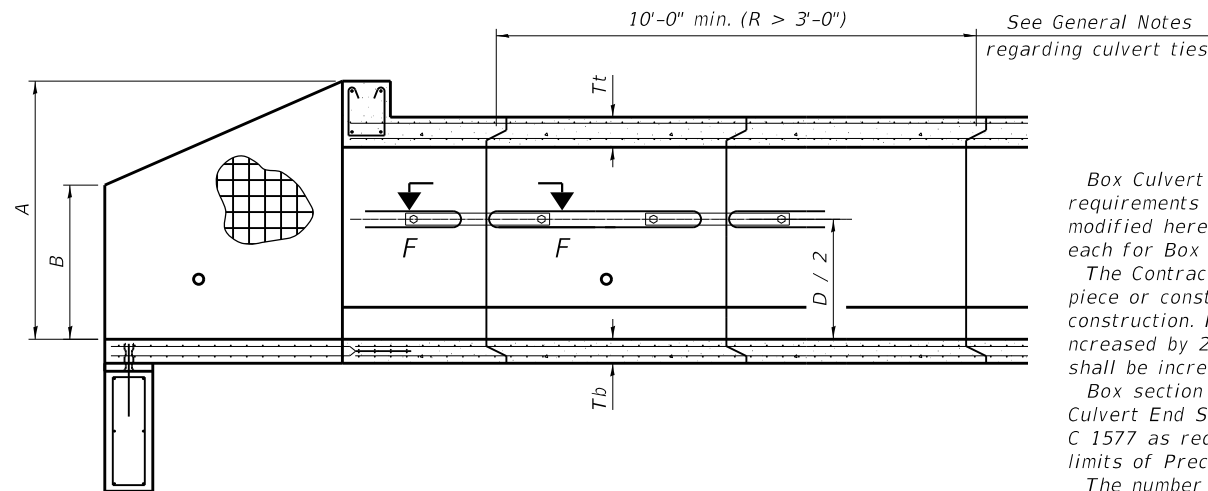
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	63
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

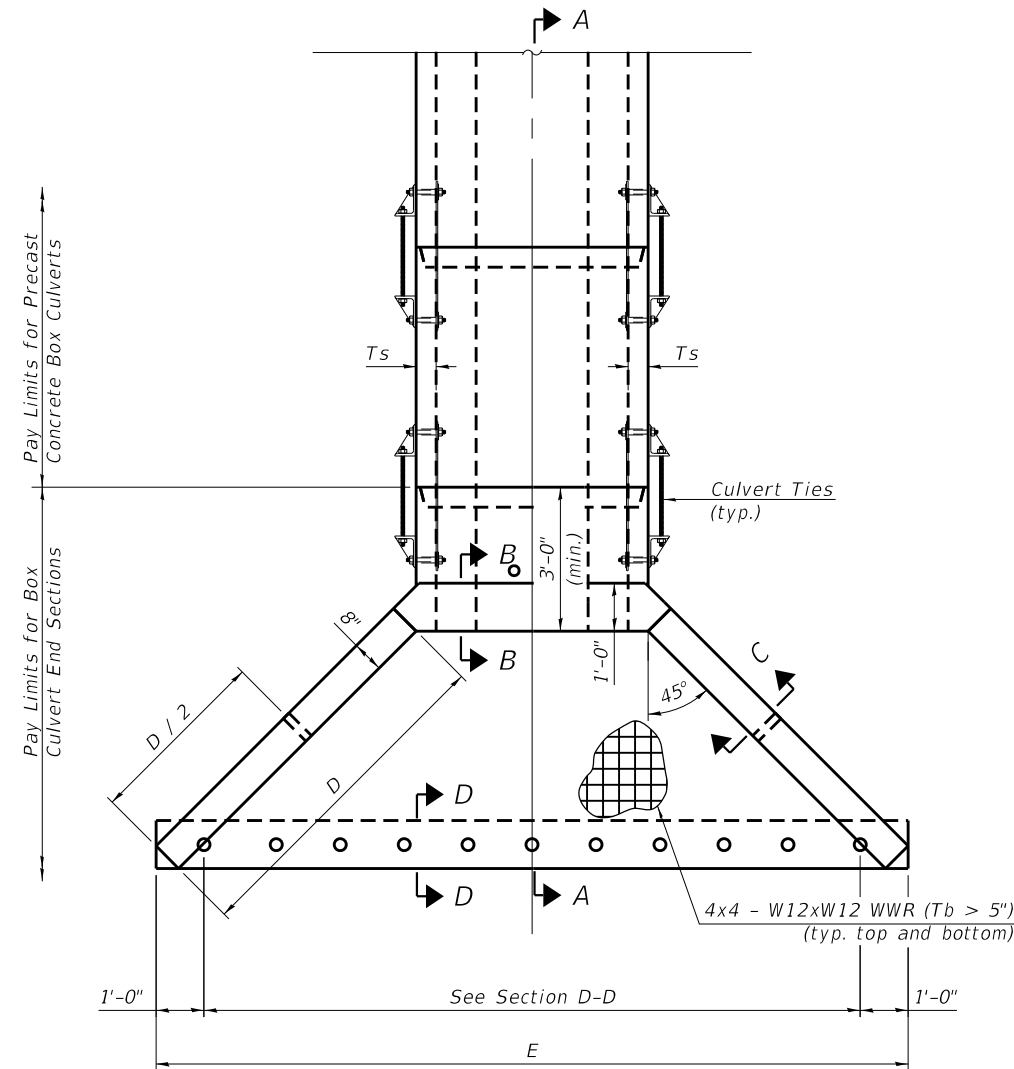
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END VIEW



SECTION A-A



PLAN

**GENERAL NOTES**

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. End sections will be paid for at the contract unit price per each for Box Culvert End Sections.

The Contractor may furnish the end section as a single precast concrete piece or construct the end section in the field using cast-in-place (CIP) construction. For CIP construction, the bottom slab thickness shall be increased by 2" and the clear cover to the bottom mat of reinforcement shall be increased to 3".

Box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements for ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

All costs associated with furnishing and installing or constructing the toewall and culvert ties will not be measured for payment but shall be included in the unit price for Box Culvert End Sections of the culvert number specified.

Shop drawings that detail slab thickness and reinforcement layout for the Box Culvert End Sections shall be provided to the Engineer for review and approval. Reinforcement bars not detailed herein shall be detailed with a clear distance at the end of the reinforcement not less than 1/2" nor more than 2". For the precast option, it shall be the Contractor's responsibility for determining a method of handling and a construction procedure shall be included on the shop drawings. The Contractor shall determine and detail in the shop drawings any necessary strengthening or stiffening provisions necessary to handle the precast segment. Any required modifications shall be at no extra charge.

The Contractor may use reinforcement bars in lieu of welded wire reinforcement (WWR). Reinforcement bars shall be limited to the sizes of #3 through #5 bars, a maximum spacing of the lesser of 8" or the member thickness, and shall result in an area of reinforcement equal to or greater than that provided by the WWR. Minimum lap lengths detailed herein are applicable to WWR and reinforcement bars.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.

**APRON END SECTION DIMENSIONS**

Span (S)	Rise (R)	Tt	Tb	Ts	A	B	C	D	E	Concrete Cu. Yd.	Culvert Ties Required
4'-0"	4'-0"	7.5"	6"	5"	5'-4 1/2"	3'-2 1/2"	4'-11 3/8"	7'-0"	15'-8 1/8"	5.3	Yes

(Sheet 1 of 2)

SCB-AES

2-17-2017

FILE NAME : F:\20E3454\Design\CAD Sheets\3454-064-3-002-Culvert Apron End.dgn  
Layout



USER NAME : \$USERNAME\$	DESIGNED - CML	REVISED -
CHECKED - MBH	REVISIONS -	
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PLOT DATE : 3/18/2022	CHECKED - MBH	REVISED -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

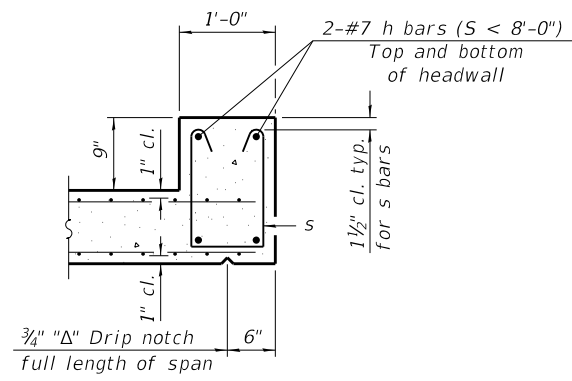
PRECAST CONCRETE BOX CULVERT APRON END - SECTION DETAILS  
MURRAYVILLE ROAD LOCATION 3

SHEET NO. 2 OF 4 SHEETS

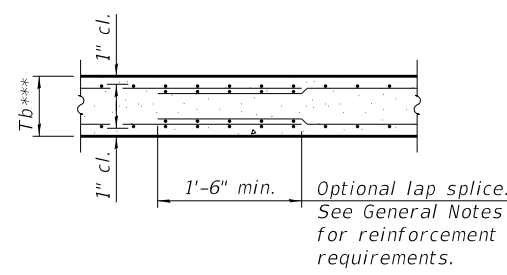
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	64
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

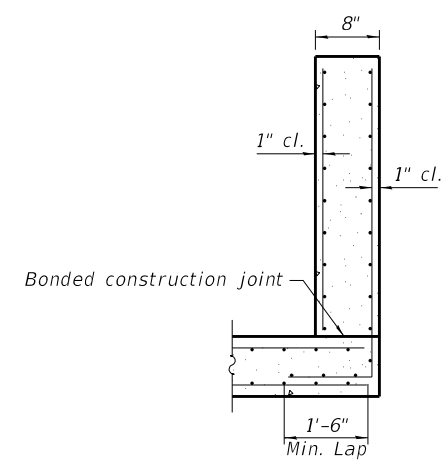




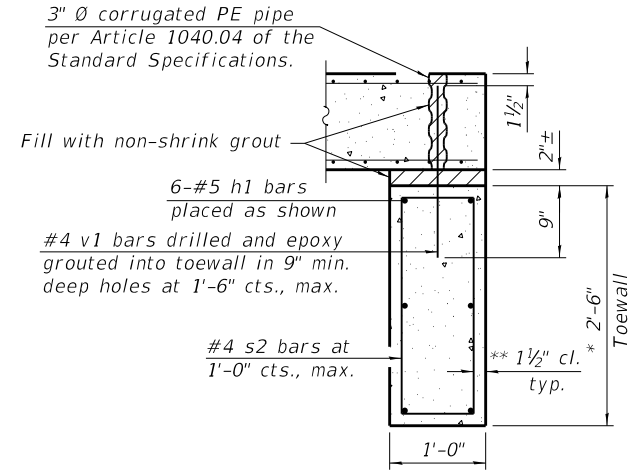
**SECTION B-B**  
(Top slab at downstream end)



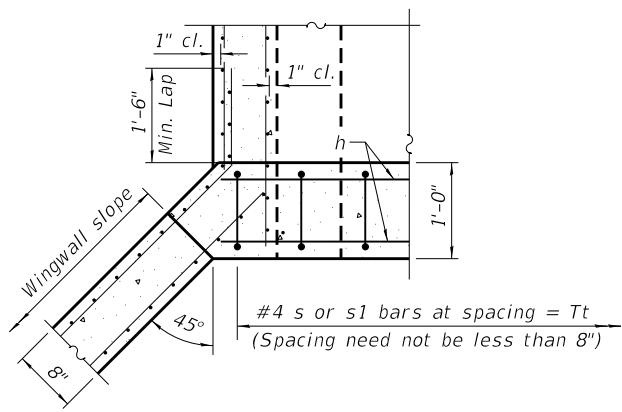
**SECTION B-B**  
(Bottom Slab)



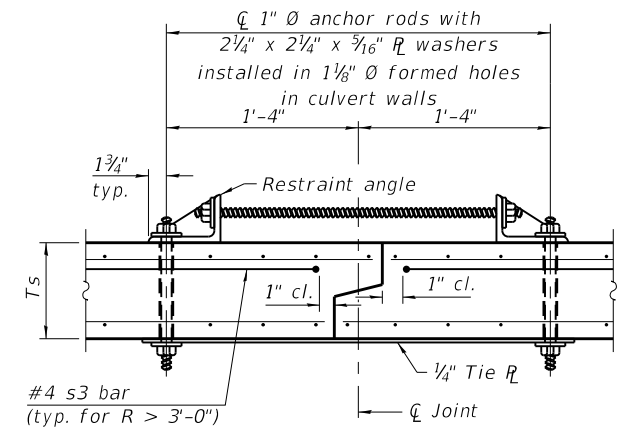
**SECTION C-C**



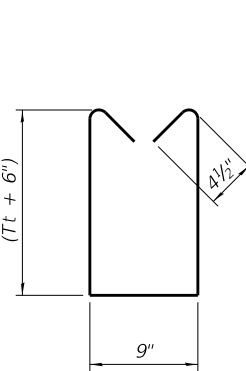
**SECTION D-D**



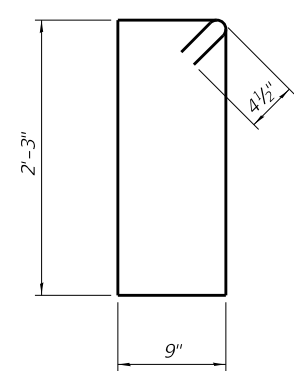
**SECTION E-E**



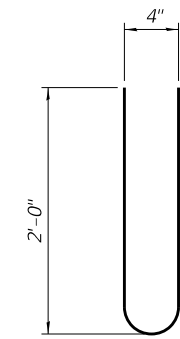
**SECTION F-F**  
(Showing culvert tie details)



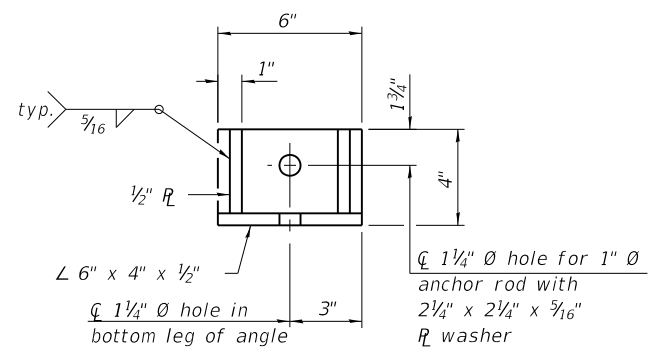
**BAR s**



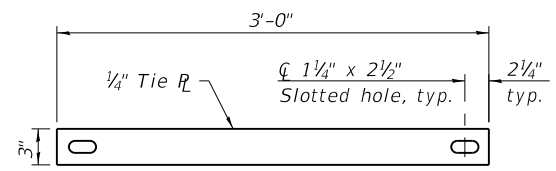
**BAR s2**



**BAR s3**



**RESTRAINT ANGLE DETAIL**



**TIE PLATE DETAIL**

**TOEWALL CONSTRUCTION SEQUENCE**

1. Perform excavation and construct toewall.
2. Backfill accordingly and place bedding for precast box culvert end sections.
3. Set precast box culvert end section.
4. Drill and epoxy grout reinforcement in toewall in accordance with Section 584 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1024 of the Standard Specifications.

\* The Contractor may furnish a precast or cast-in-place toewall. The Contractor shall be responsible for the strength and stability of the precast toewall during handling. Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.

\*\* If soil conditions permit, the sides of the toewall may be poured directly against the soil. The clear cover on the sides of the toewall shall be increased to 3 inch by increasing the thickness of the toewall.

Notes:  
1 inch diameter anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4 inch x 2 1/4 inch x 3/16 inch plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

(Sheet 2 of 2)

FILE NAME = P:\20E3454\Design\CAD Sheets\3454-065-3-003-Culvert Apron End Details.dgn



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	CHECKED - MBH	REVISED -
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PLOT DATE = 3/18/2022	CHECKED - MBH	REVISED -

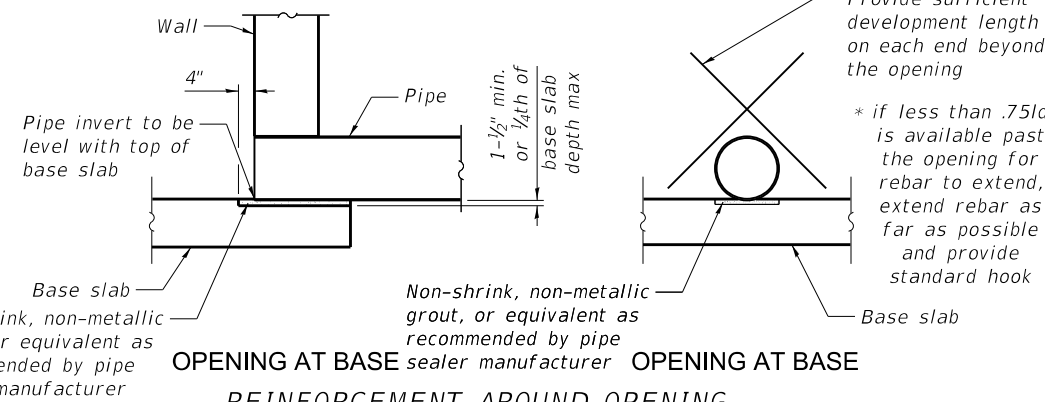
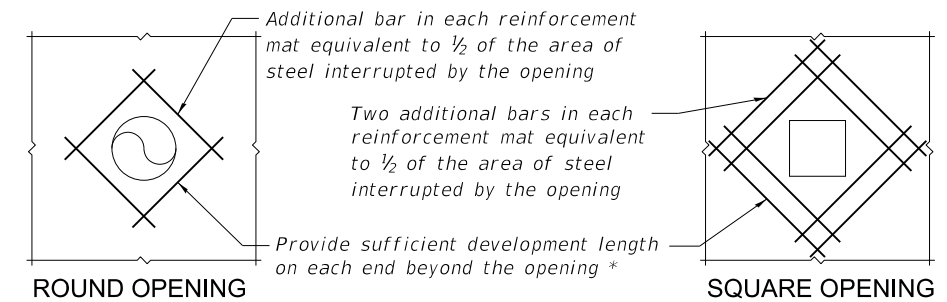
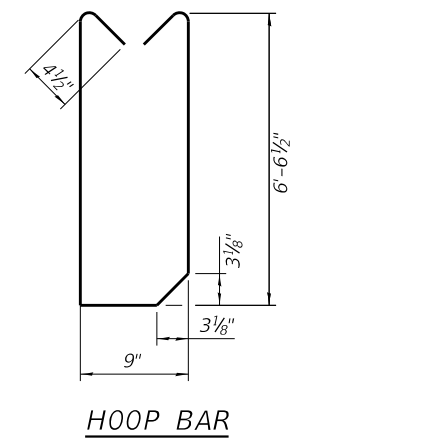
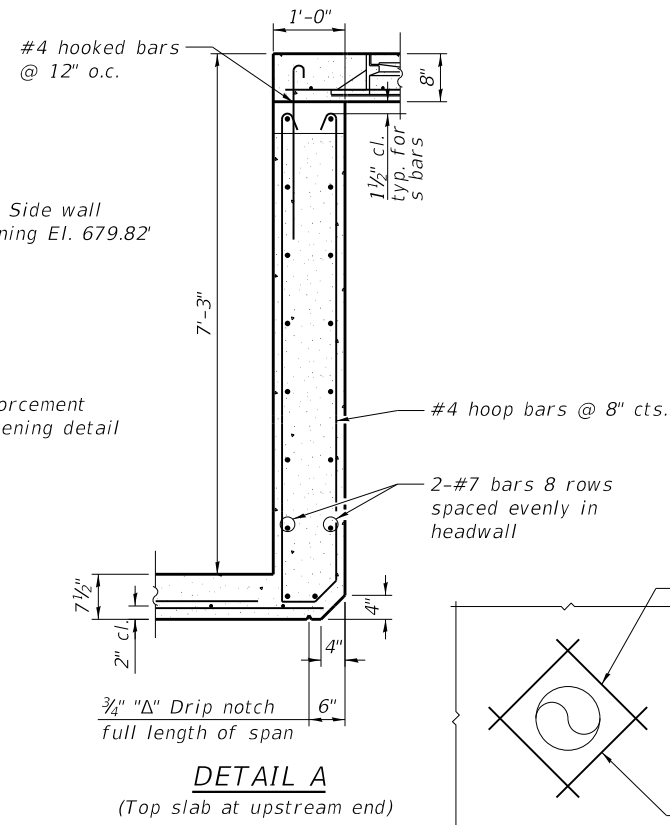
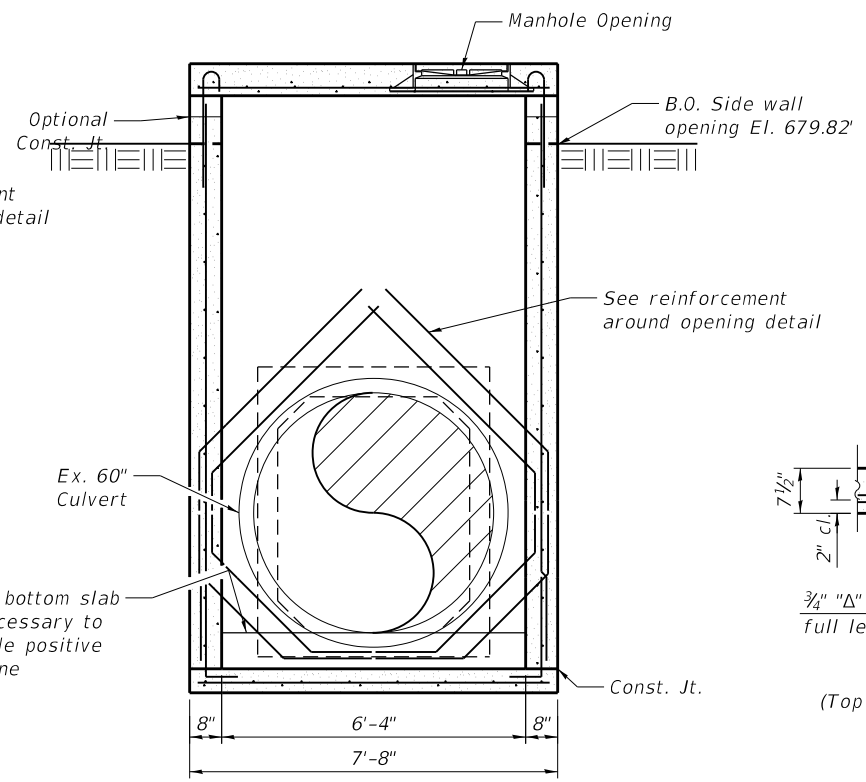
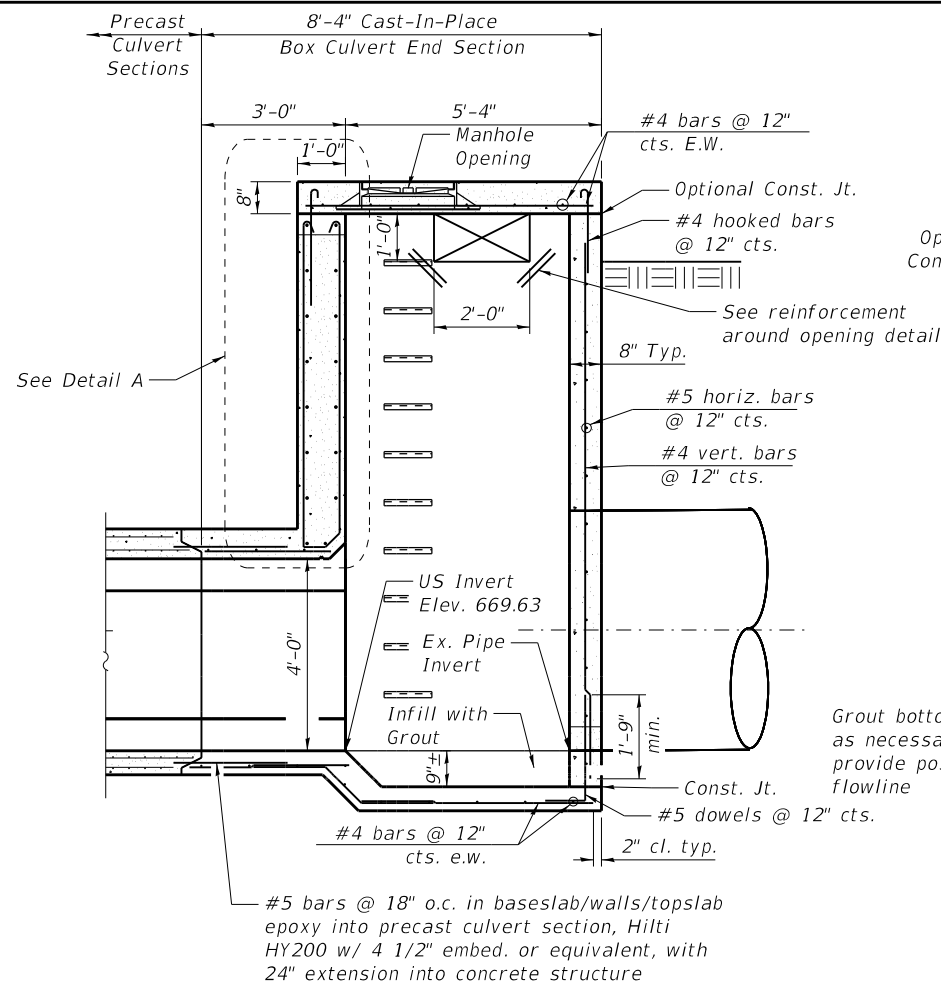
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**PRECAST CONCRETE BOX CULVERT APRON END**  
**SECTION DETAILS - MURRAYVILLE ROAD LOCATION 3**

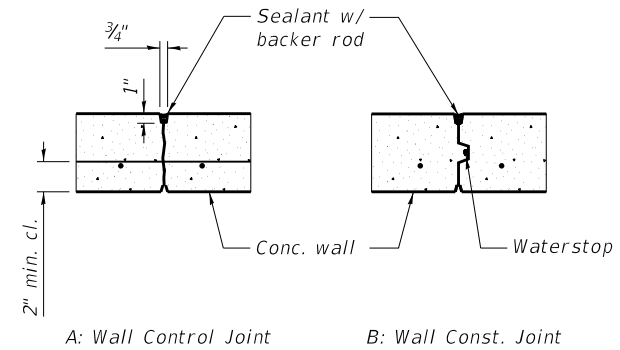
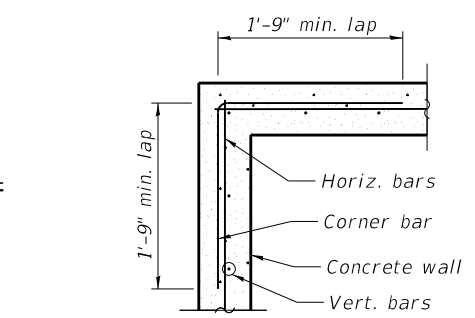
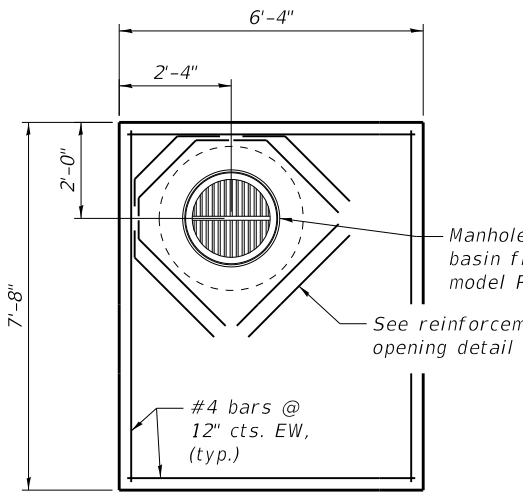
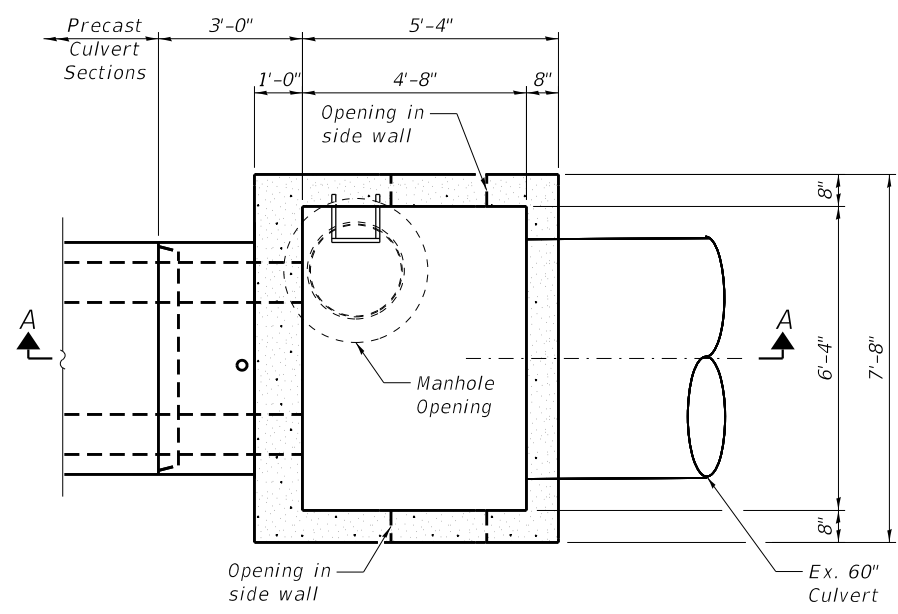
SHEET NO. 3 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	65
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT



Note:  
1. Spread normal reinforcement around pipe  
2. Additional reinforcement steel on each face equivalent to 1/2 of the area of steel interrupted by the opening



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Structures	Cu. Yd.	8.7

Cost of reinforcement, manhole, ladder rungs, and other accessories shall be included in Concrete Structures.

FILE NAME: P:\2023\454\Design\454-066-3-004-Manhole End.dgn



USER NAME: \$USERNAME*	DESIGNED - CML	REVISD -
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PLOT DATE: 3/18/2022	DRAWN - CML	REVISD -
	CHECKED - MBH	REVISD -

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

BOX CULVERT MANHOLE EXTENSION - MURRAYVILLE ROAD LOCATION 3

SHEET NO. 4 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

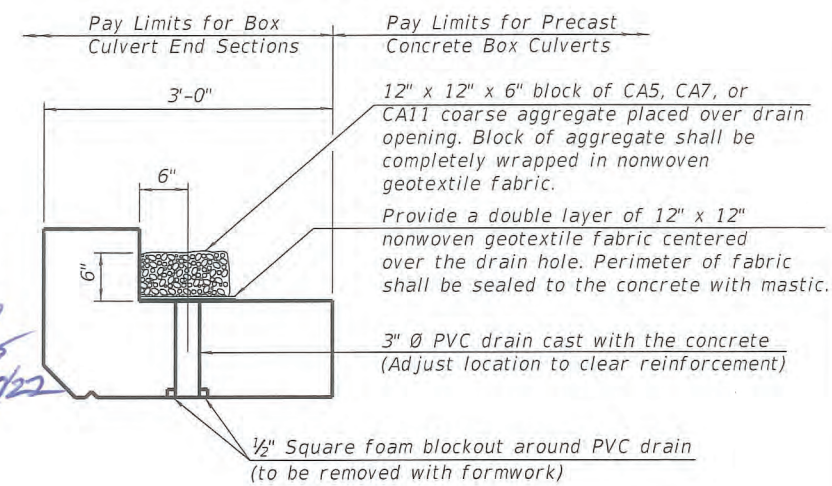
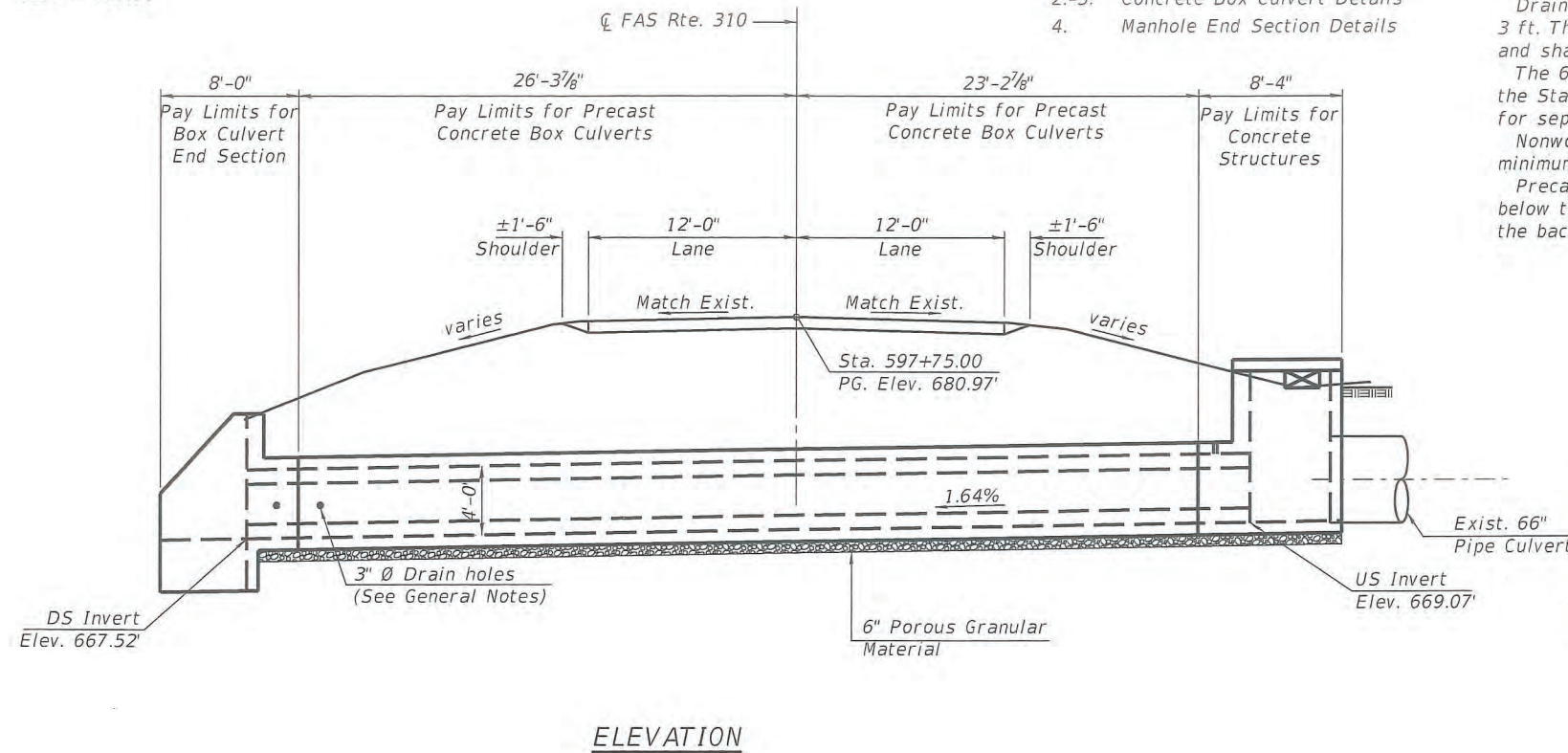
Benchmark: BM#3454-16 - SET YELLOW BM SPIKE IN CORNER POST OF NORTHERLY SIDE OF MURRAYVILLE ROAD, 425' WEST OF ANDRAS ROAD, RT. STA. 598+27 ELEV - 681.11

**INDEX OF SHEETS**

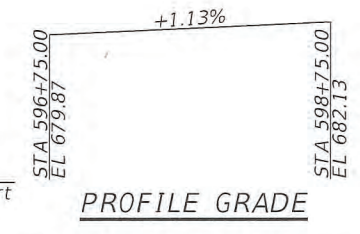
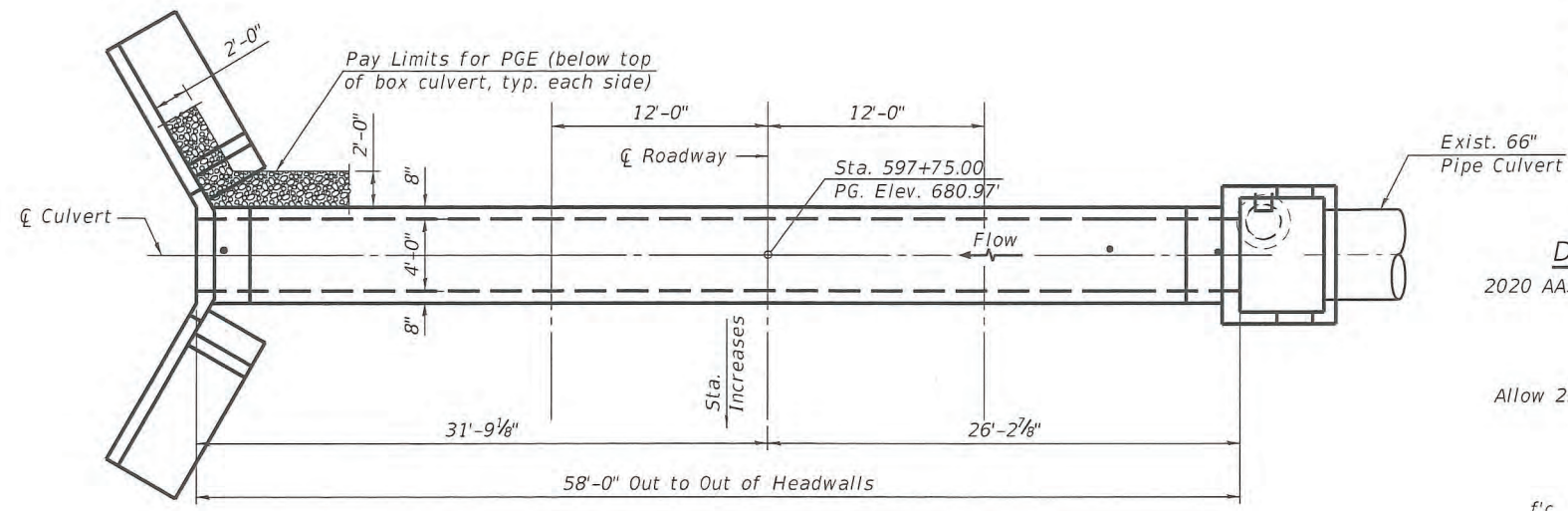
1. General Plan and Elevation
- 2.-3. Concrete Box Culvert Details
4. Manhole End Section Details

**GENERAL NOTES**

The design fill height for this box is 7.5 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.  
 Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.  
 The 6 in. thick layer of porous granular material required for the precast concrete box culvert per Art. 540.06 of the Standard Specifications shall also apply to the end sections. Cost of the porous granular material will not be paid for separately but shall be included in the unit price of the work for which it is required.  
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.  
 Precast concrete box culverts and box culvert end sections shall be backfilled with Porous Granular Embankment below the top of the box culvert extending to a vertical plane 2 ft from the exterior sides of the culvert, 2 ft from the back face of the end sections, and not closer than 2 ft from the face of embankment.



**DRAIN DETAIL**  
 (All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**DESIGN SPECIFICATIONS**  
 2020 AASHTO LRFD Bridge Design Specifications  
 9th Edition

**LOADING HL-93**  
 Allow 25 lbs./sq.ft. for future wearing surface

**DESIGN STRESSES**

**PRECAST UNITS**  
 f'c = 5,000 psi  
 fy = 65,000 psi (Welded Wire Reinforcement)

**FIELD UNITS**  
 f'c = 3,500 psi  
 fy = 60,000 psi (Reinforcement)  
 R 11 W 3rd. P.M.

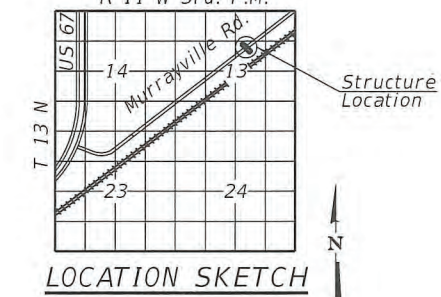
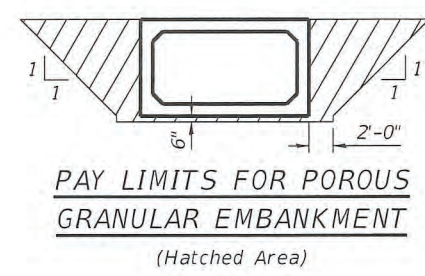
**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Removal of Existing Structures No. 4	Each	1
Concrete Box Culverts	Cu. Yd.	11.0
Precast Concrete Box Culverts, 4' x 4'	Foot	49.6
Porous Granular Embankment	Cu. Yd.	180.2
Concrete Structures	Cu. Yd.	17.6

**WATERWAY INFORMATION**

Drainage Area = 0.7 sq. mi. Low Grade Elev. = 688.10 @ Sta. 597+75.00

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.		Head - Ft.		Headwater El.	
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Exist.	Prop.
Design	10	88.9	16	16	671.53	4.14	-	673.63	-	-
Base	50	151	16	16	672.00	6.61	-	676.10	-	-
	100	180	16	16	672.30	8.12	-	677.61	-	-
Overtopping (Exist.)	>500	227.28	16	16	-	11.58	-	681.07	-	-
Overtopping (Proposed)	>500	308	16	16	-	-	-	-	-	-
Max. Calc.	500	252	16	16	672.74	11.22	-	680.71	-	-



**GENERAL PLAN AND ELEVATION**  
**MURRAYVILLE RD OVER TRI TO**  
**NORTH LITTLE SANDY CREEK**  
**SEC. 19-00108-00-RS**  
**MORGAN COUNTY**  
**STATION 597+75.00**

SCB-GPE 2-17-2017

<p>BENTON &amp; ASSOCIATES, INC.                  1970 N. Lafayette Ave., Springfield, IL 62760                  618-242-4141                  Illinois State Professional Registration No. 031-000022</p>	USER NAME = c1ochoer	DESIGNED - CML	REVISED -	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	GENERAL PLAN AND ELEVATION - BOX CULVERT MURRAYVILLE ROAD LOCATION 4 SHEET NO. 1 OF 4 SHEETS	F.A.S. RTE. 310	SECTION 19-00108-00-RS	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 67
	PLOT SCALE = 8:2,000 1/4" = 1'	CHECKED - MBH	REVISED -			CONTRACT NO. 93791				
	PLOT DATE = 4/7/2022	DRAWN - CML	REVISED -			ILLINOIS FED. AID PROJECT				
		CHECKED - MBH	REVISED -							

FILE NAME = P:\2023\454\Design\CAD Sheets\3454-16-667-4-001-CPAE.dgn

**BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Box Culverts	Cu. Yd.	11.0

Cost of reinforcement and other accessories shall be included in Concrete Structures.

**Notes:**

For cast-in-place (CIP) construction the clear cover to bottom mat of reinforcement shall be 3".

Exposed edges shall be beveled 3/4".

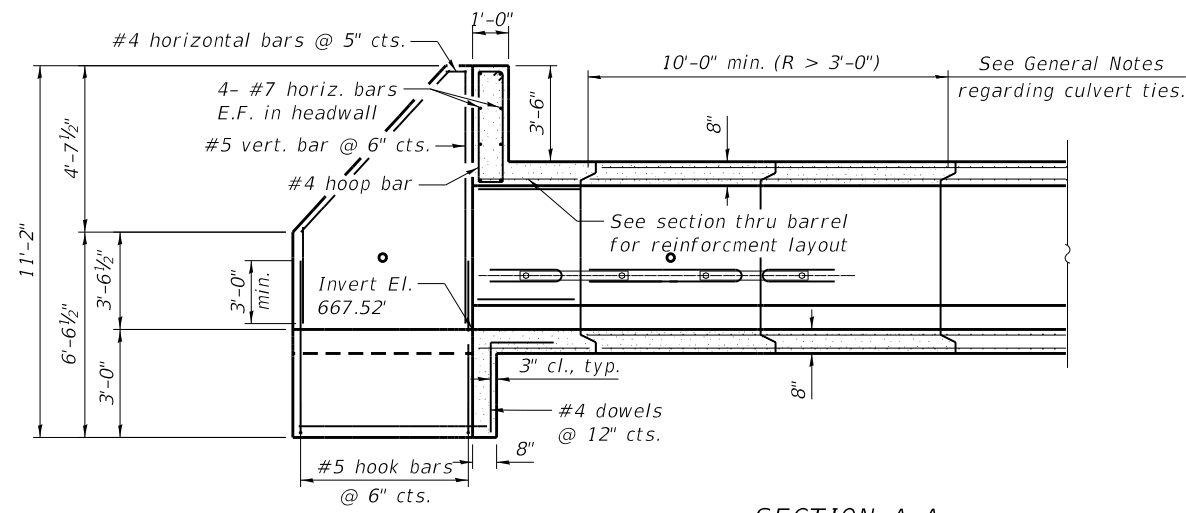
All construction joints shall be bonded.

Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60.

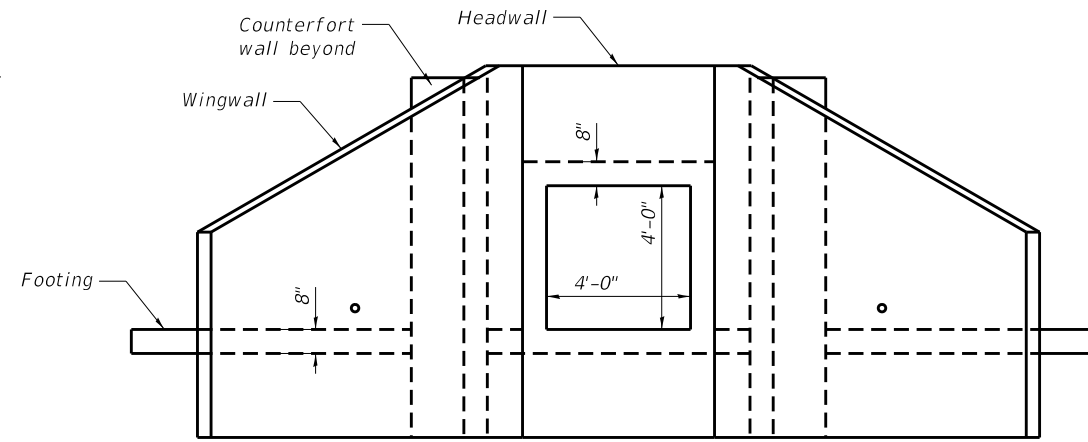
The number of culvert ties shall be sufficient to engage the minimum length of culvert barrel shown within the pay limits for Precast Concrete Box Culverts and will be dependent upon the length of box culvert segments furnished by the Contractor. Culvert ties are not required for box culverts having a rise (R) less than or equal to 3 ft and a span (S) greater than or equal to 10 ft.

Reinforcement (circumferential and longitudinal) in the culvert barrel portion of the end section being lapped with reinforcement from the wingwalls or bottom slab of the end section shall not be less than that required by ASTM C 1577 for the design fill height or the reinforcement detailed for the end section, whichever is greater.

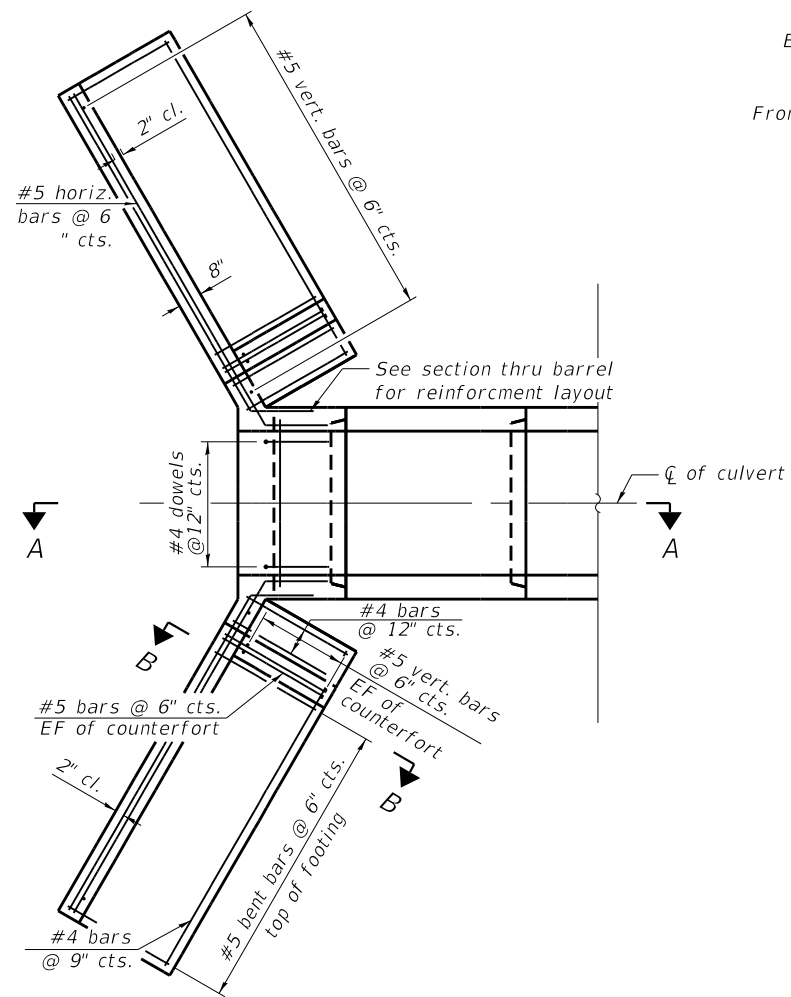
One drain hole shall be provided in each wingwall for end sections of box culverts having an opening with a clear rise greater than 3 ft. The drain hole shall be located within the lower 1/3 of the clear rise of the box culvert and shall conform to the requirements of Article 503.11 of the Standard Specifications.



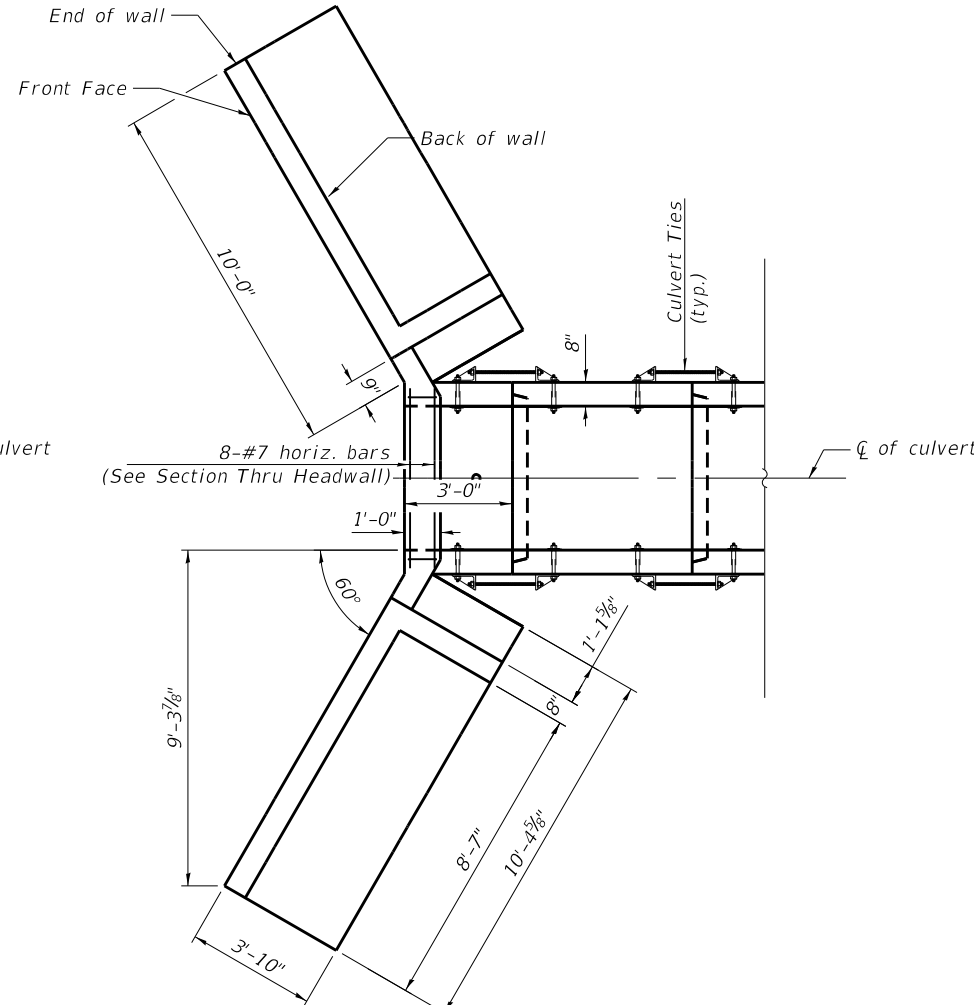
**SECTION A-A**



**END VIEW**



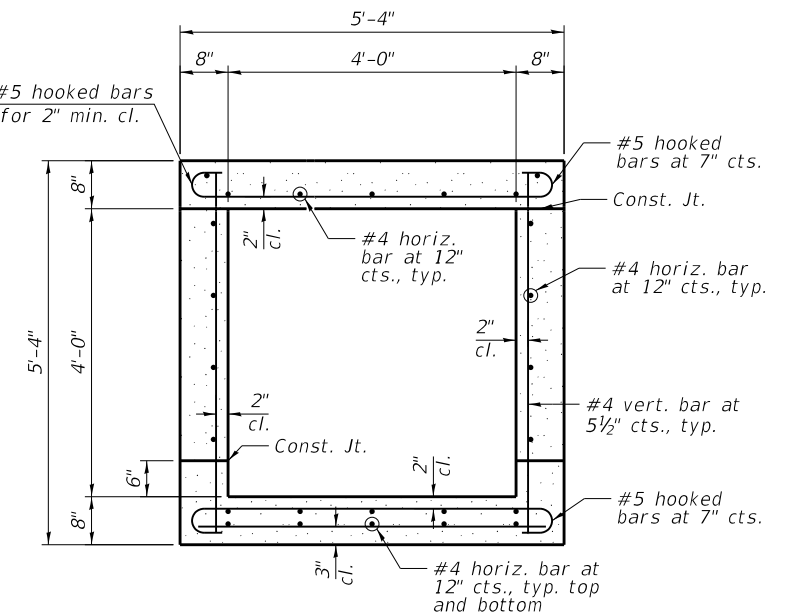
**SHOWING TOEWALL**



**SHOWING HEADWALL**

**PLAN**

Tilt hook of #5 hooked bars if necessary for 2" min. cl.



**SECTION THRU BARREL**  
(For CIP Section only)

FILE NAME : P:\2023454\Design\CAD Sheets\3454-065-4-002-Culvert Apron Enddgn Layout



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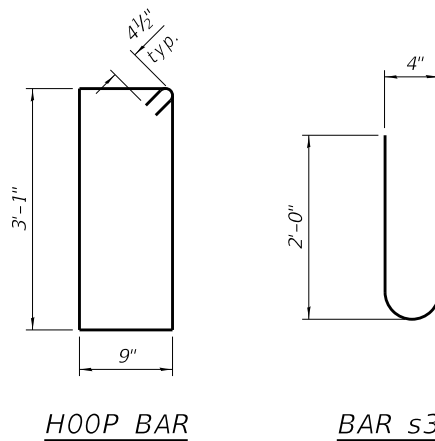
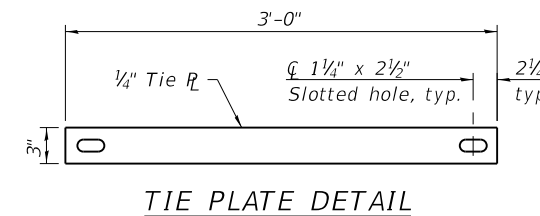
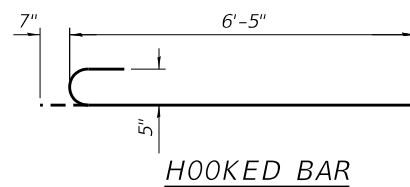
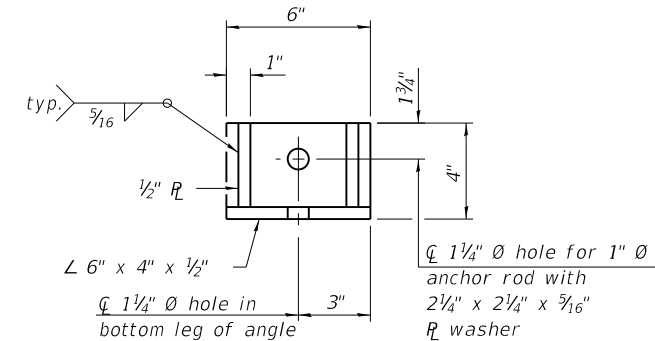
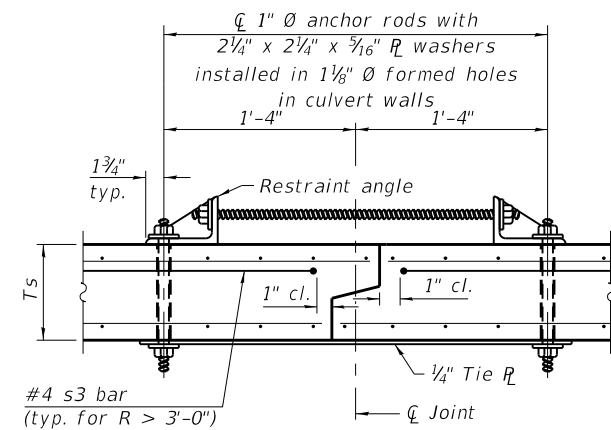
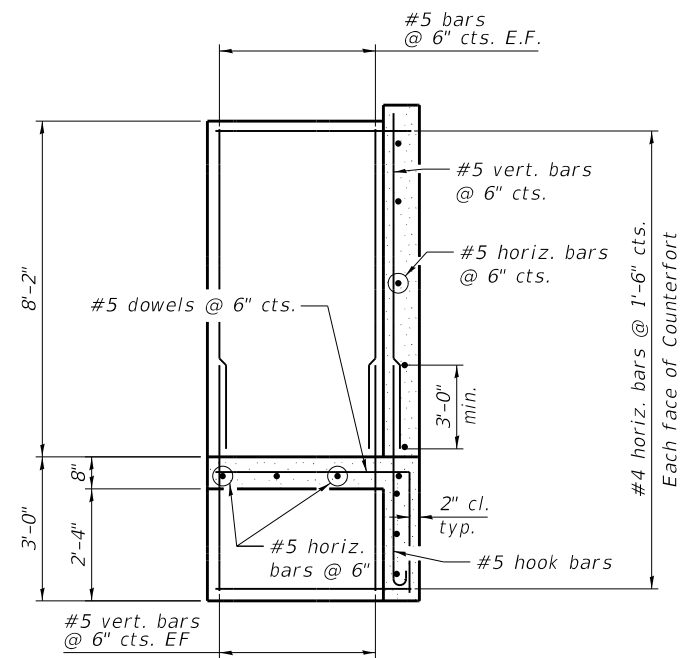
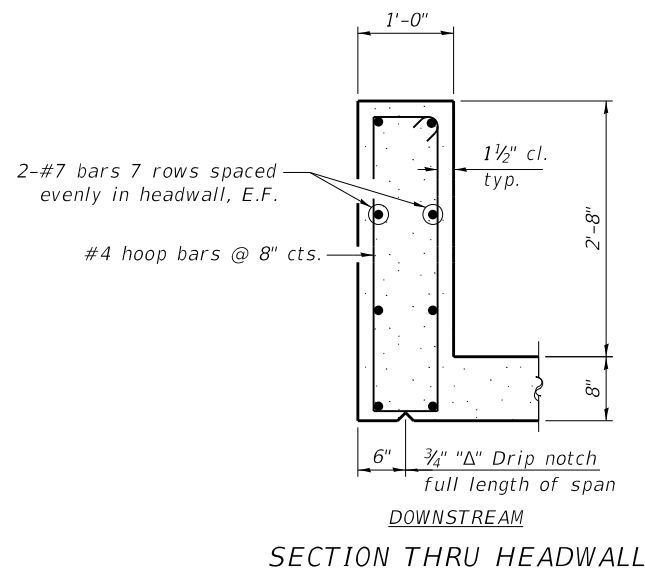
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**CONCRETE BOX CULVERT DETAILS - SECTION DETAILS**  
**MURRAYVILLE ROAD LOCATION 4**

SHEET NO. 2 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	68
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT



**Notes:**

1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for the tie plate and restraint angle shall conform to the requirements of Article 1006.04 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of AASHTO M 111 or M 232 as applicable. 2 1/4" x 2 1/4" x 3/16" plate washers shall be provided under each nut required for the anchor rods. Anchor rods connecting precast sections shall be brought to a snug tight condition followed by an additional 1/2 turn on one of the nuts for anchor rods installed in the walls. Match marks shall be provided on the bolt and nut to verify relative rotation between the bolt and the nut. Holes in the walls for the culvert tie assembly may be drilled using core bits in lieu of using formed holes.

FILE NAME : P:\2023454\Design\Design\CAD Sheets\3454-065-4-003-Culvert Apron End Details.dgn  
Layout



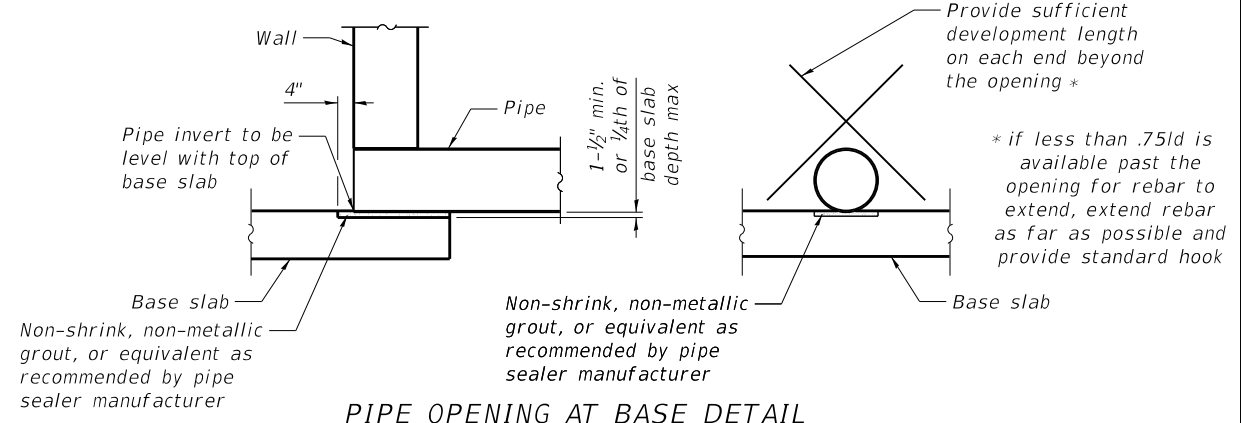
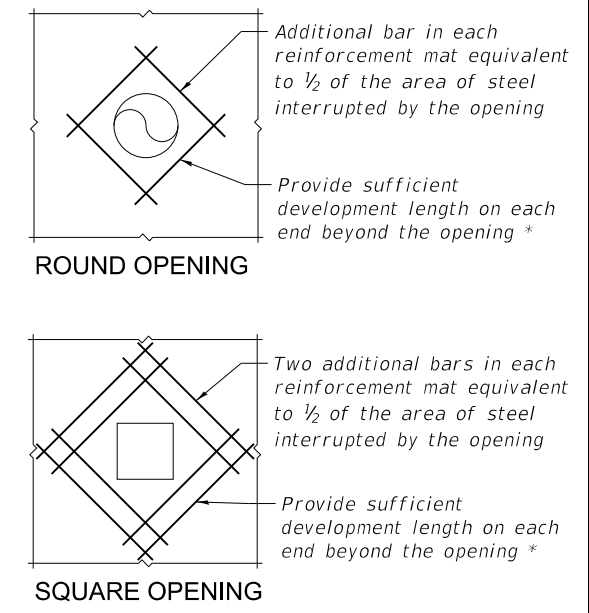
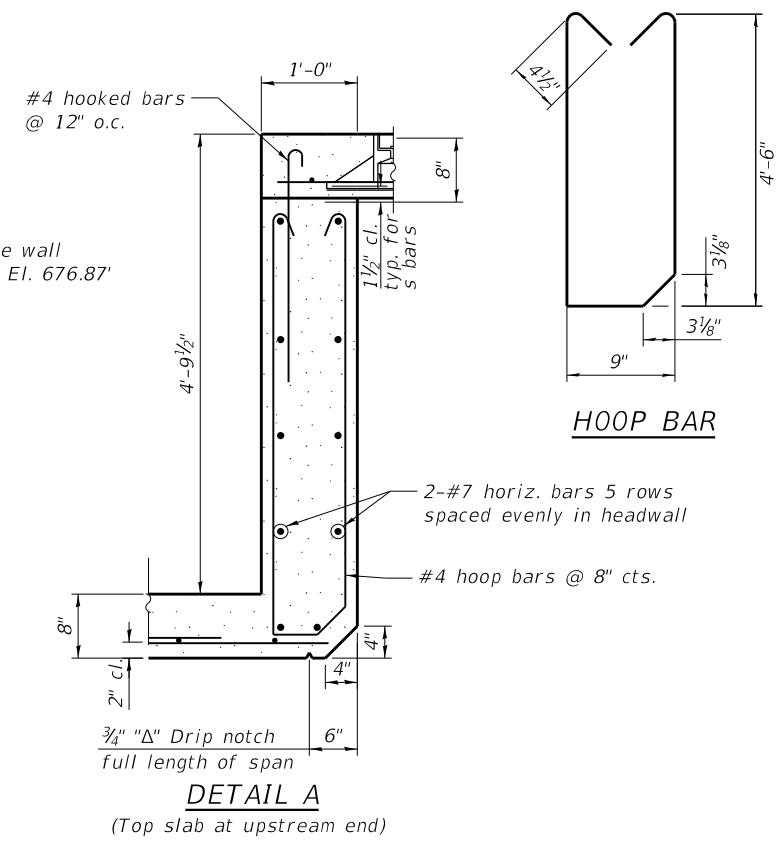
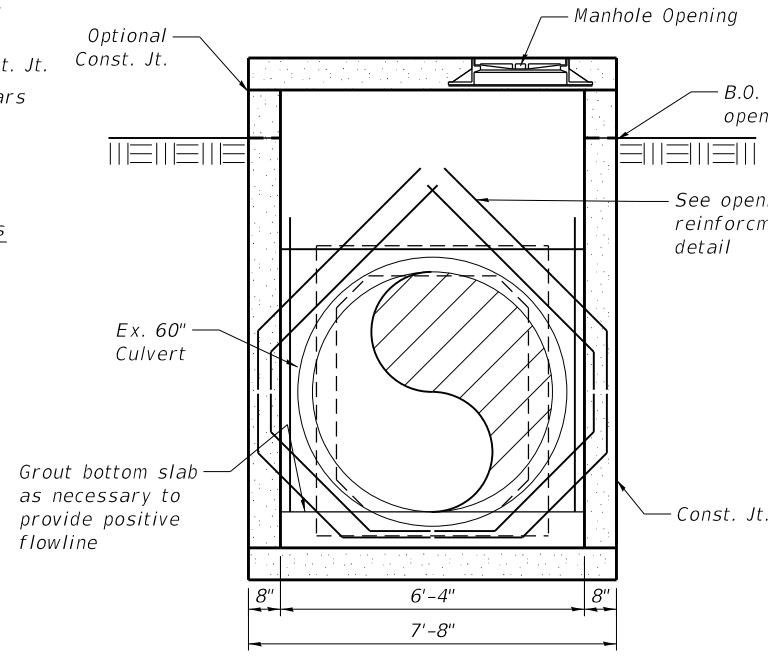
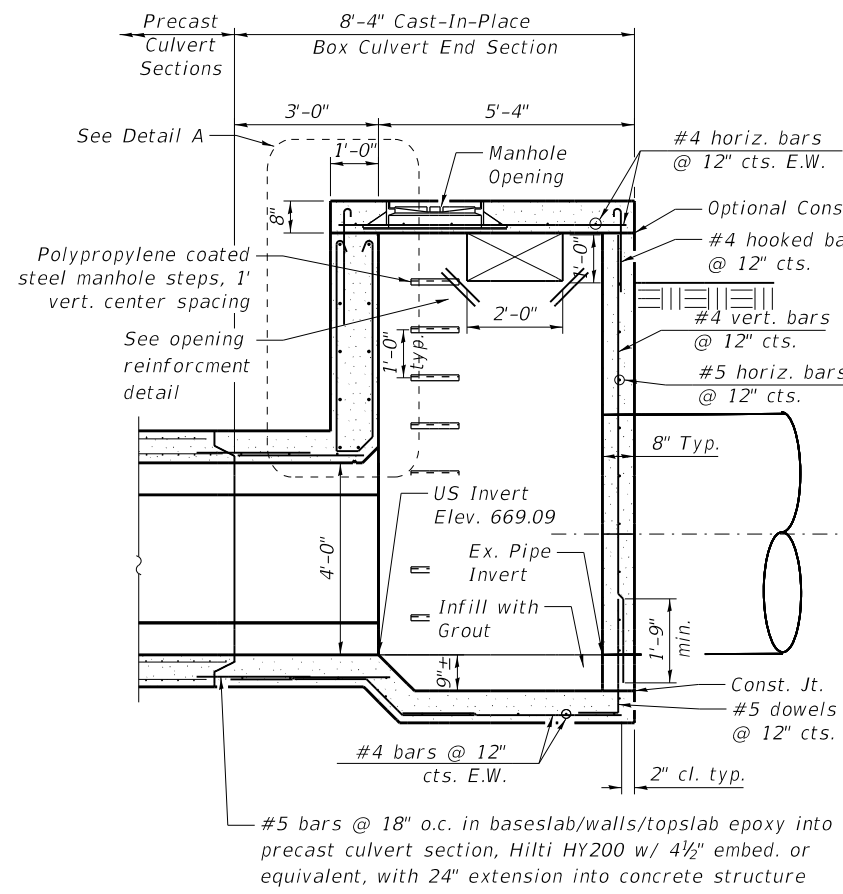
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

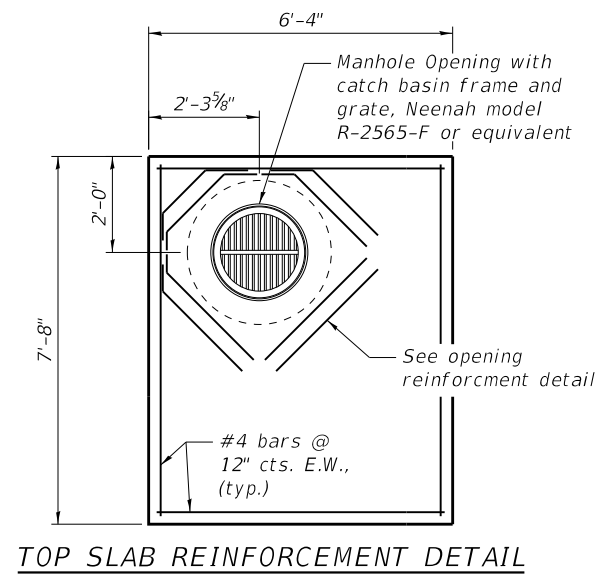
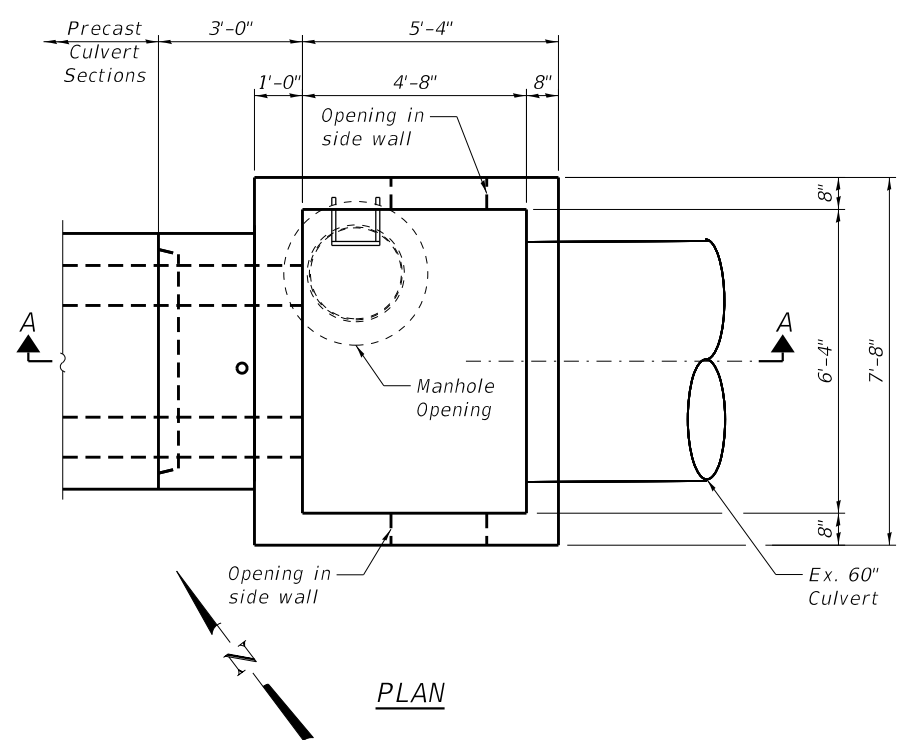
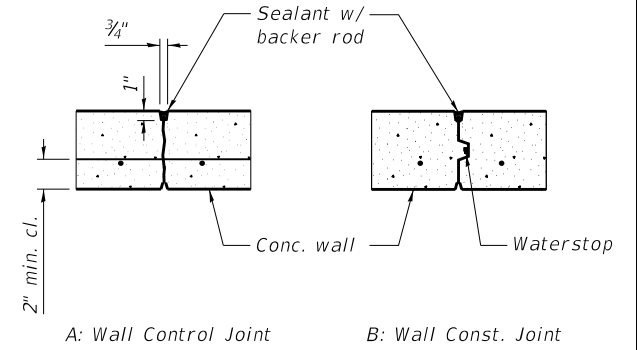
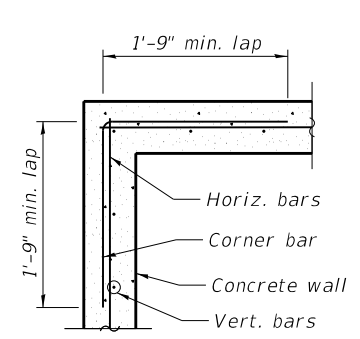
**CONCRETE BOX CULVERT DETAILS - LOCATION 4**

SHEET NO. 3 OF 4 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	69
<b>CONTRACT NO. 93791</b>				
ILLINOIS FED. AID PROJECT				



Note:  
1. Spread normal reinforcement around pipe  
2. Additional reinforcement steel on each face equivalent to 1/2 of the area of steel interrupted by the opening



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Concrete Structures	Cu. Yd.	7.6

Cost of reinforcement, manhole, ladder rungs, and other accessories shall be included in Concrete Structures.

FILE NAME : P:\2023454\Design\CAD Sheets\3454-070-4-004-Manhole End.dgn  
Layout



USER NAME : \$USERNAME\$	DESIGNED - CML	REVISED -
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PLOT DATE : 3/18/2022	DRAWN - CML	REVISED -
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**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**MANHOLE END SECTION DETAILS - MURRAYVILLE ROAD LOCATION 4**

SHEET NO. 4 OF 4 SHEETS

F.A.S. RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	70
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

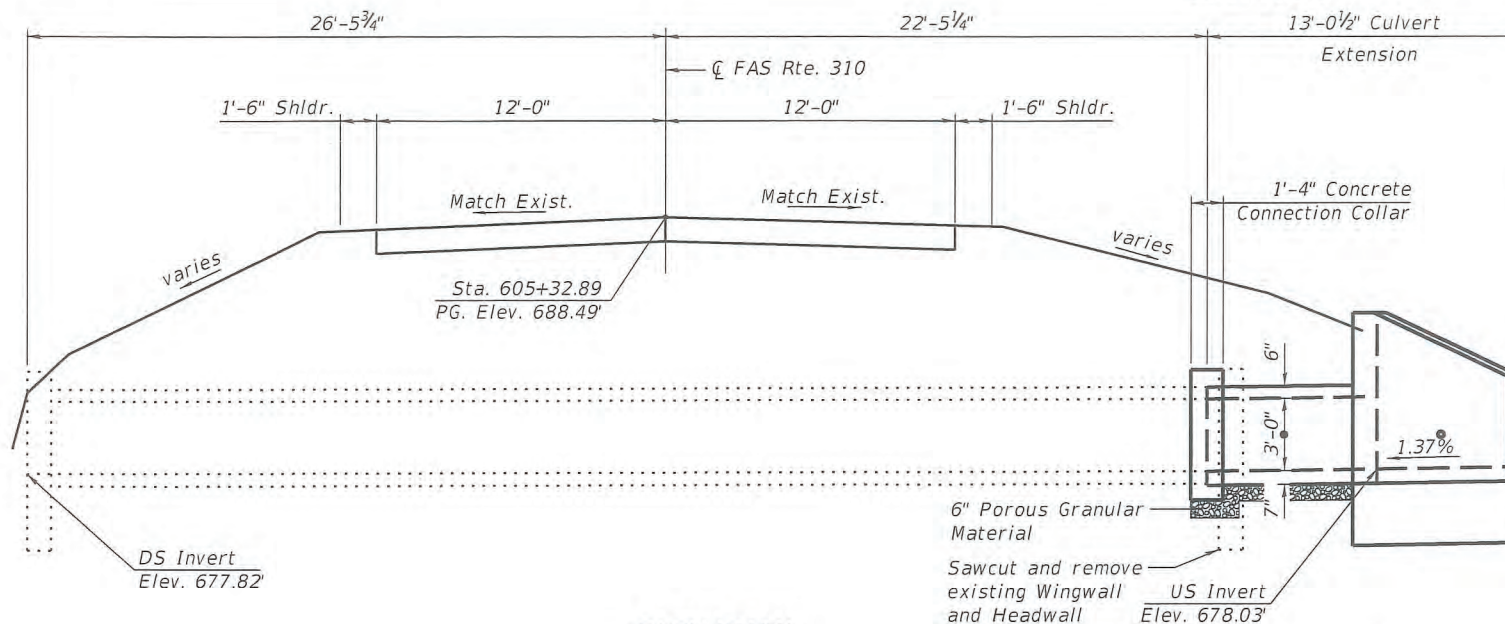
Benchmark: BM#3454-8 - SET DOUBLE SPIKE NAILS IN END POST ON EASTERLY SIDE OF BARN ENT. ON NORTHERLY SIDE MURRAYVILLE, 1250'± NE OF CARROLL ROAD, RT. STA. 603+74, ELEV - 691.11

**INDEX OF SHEETS**

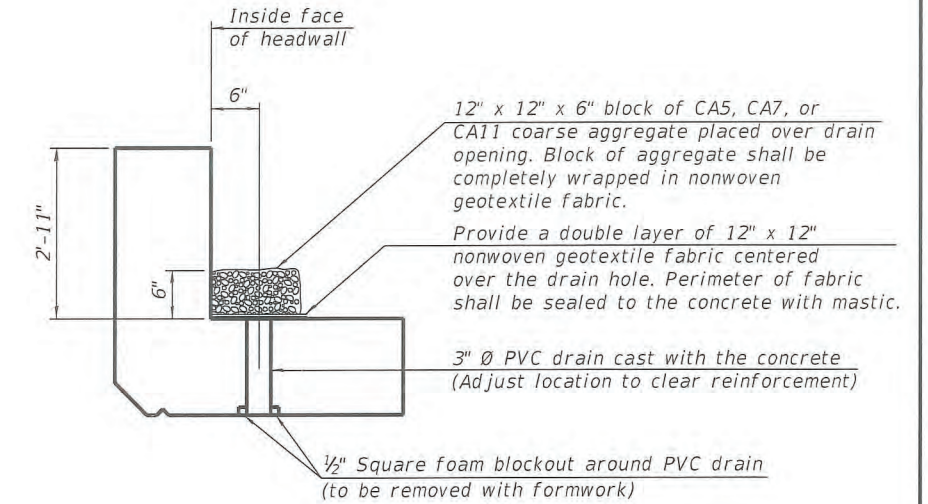
1. General Plan and Elevation
2. Concrete Box Culvert Extension Plan and Details
3. Concrete Removal & Collar Details

**GENERAL NOTES**

Design fill height = ft.  
 Plan dimensions and details relative to the existing structure are subject to nominal variations. 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 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 for the work.  
 The barrel extension shall be poured monolithically with the wingwalls for a distance of half the length of the wingwall but not less than six feet of the barrel.  
 Exposed edges shall be beveled 3/4".  
 All construction joints shall be bonded.  
 Reinforcement bars shall conform to the requirements of ASTM A 706 Grade 60.  
 Nonwoven geotextile fabric shall conform to the requirements of Art. 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

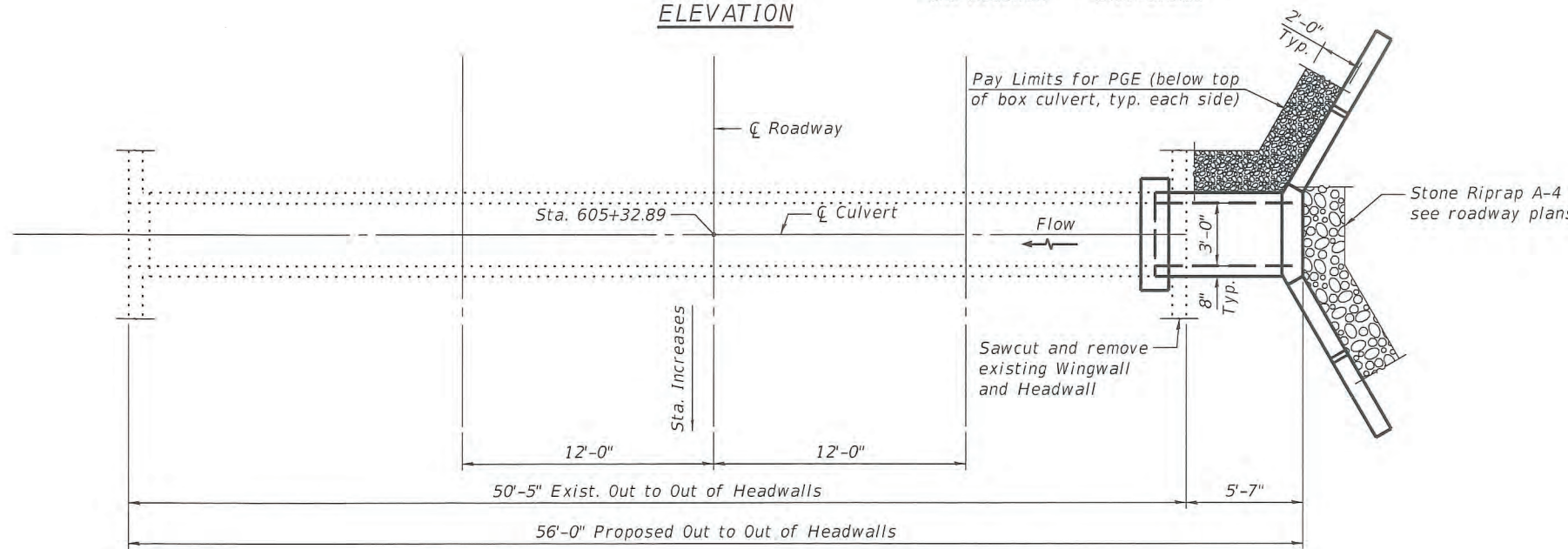


**ELEVATION**

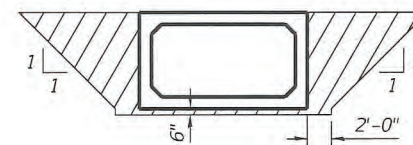


**DRAIN DETAIL**

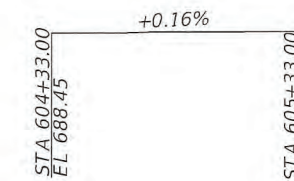
(All costs associated with furnishing and constructing the above drain detail will not be measured for payment but shall be included in the contract unit price for the associated work.)



**PLAN**



**PAY LIMITS FOR POROUS GRANULAR EMBANKMENT**  
 (Hatched Area)



**PROFILE GRADE**

**DESIGN SPECIFICATIONS**

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

**LOADING HL-93**

Allow 25 lbs./sq.ft. for future wearing surface

**DESIGN STRESSES**

**EXIST. UNITS (ASSUMED)**

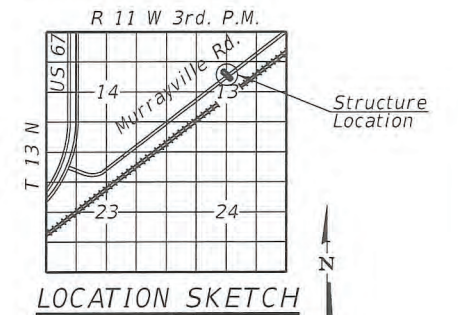
$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)

**PRECAST UNITS**

$f'_c = 5,000$  psi  
 $f_y = 65,000$  psi (Welded Wire Reinforcement)

**FIELD UNITS**

$f'_c = 3,500$  psi  
 $f_y = 60,000$  psi (Reinforcement)



**TOTAL BILL OF MATERIAL**

ITEM	UNIT	TOTAL
Porous Granular Embankment	Cu. Yd.	29.8
Concrete Structures	Cu. Yd.	7.7
Concrete Removal	Cu. Yd.	2.5

**GENERAL PLAN AND ELEVATION**  
**MURRAYVILLE RD OVER TRI TO**  
**NORTH LITTLE SANDY CREEK**  
**SEC. 19-00108-00-RS**  
**MORGAN COUNTY**  
**STATION 605+32.89**

**MATTHEW B. HARDY**  
 081-007375  
 LICENSED  
 STRUCTURAL  
 ENGINEER  
 OF  
 JACKSONVILLE  
 ILLINOIS  
 4/7/22

SCB-GPE 2-17-2017

**BA** BENTON & ASSOCIATES, INC.  
 1970 N. LAFAYETTE BLVD., SUITE 200, JOLIET, IL 61781  
 815-746-4146 FAX 815-746-4149  
 Illinois Statewide P.E. Registration No. 041-000002

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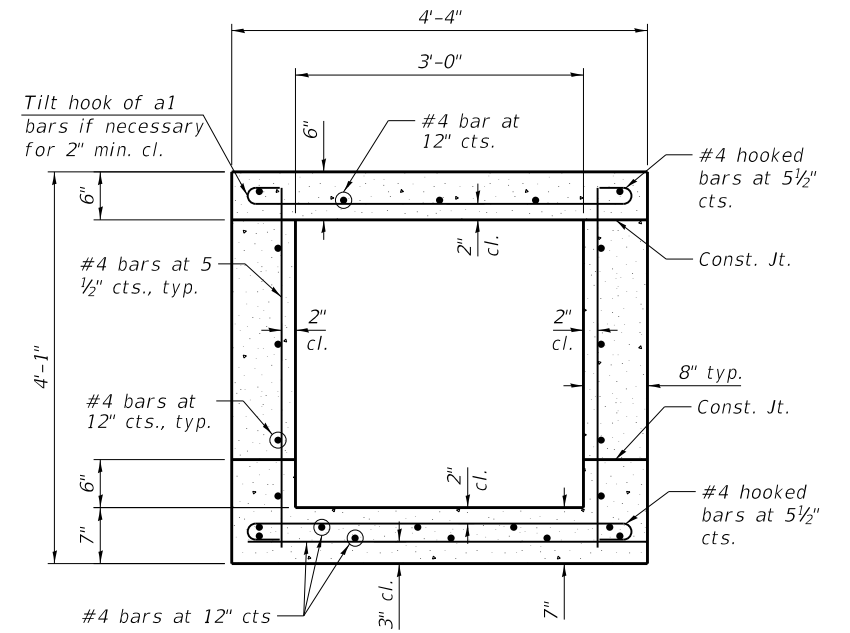
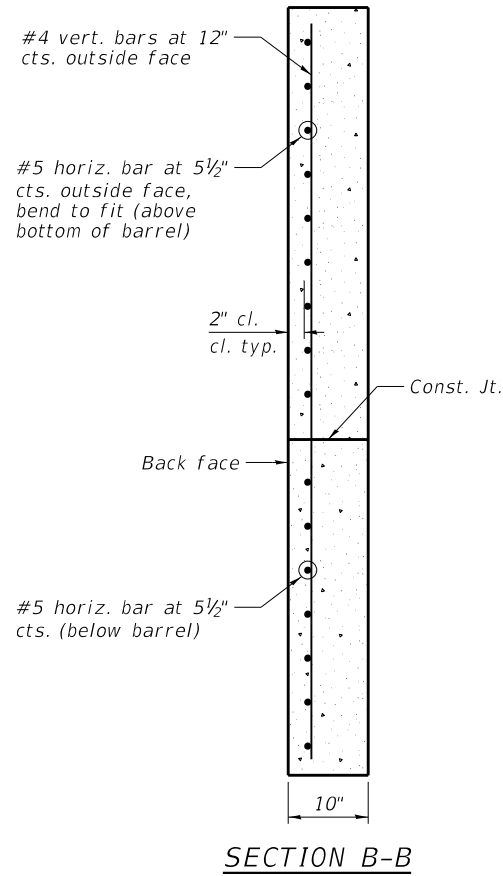
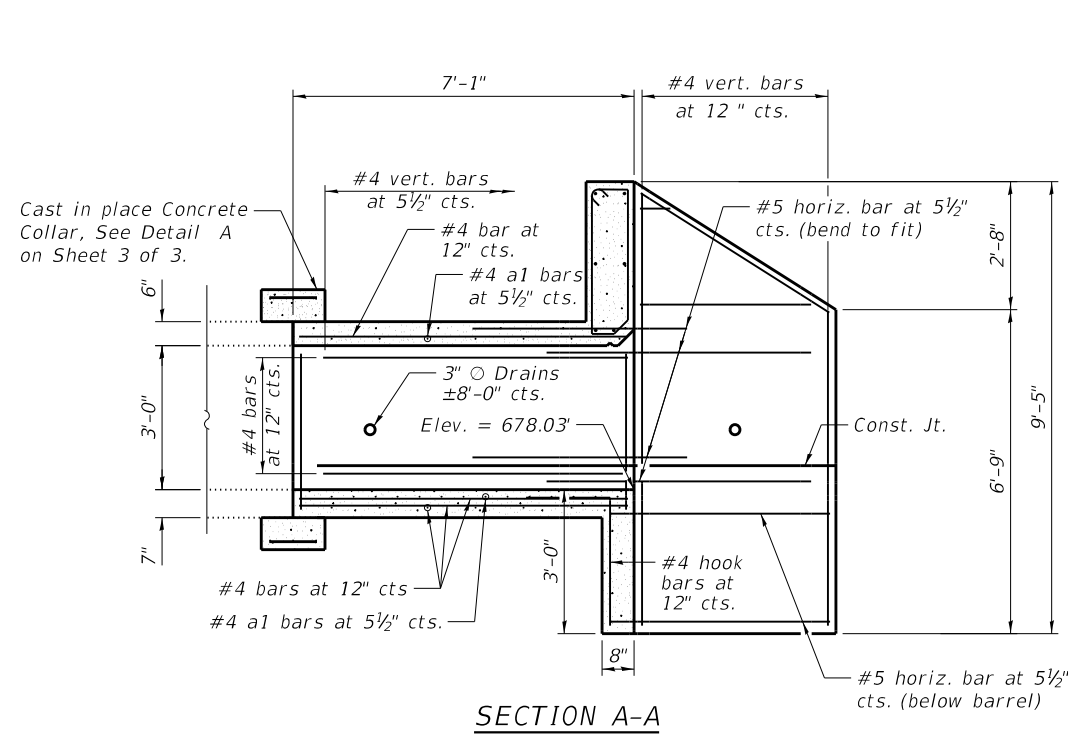
**STATE OF ILLINOIS**  
**DEPARTMENT OF TRANSPORTATION**

**GENERAL PLAN AND ELEVATION - BOX CULVERT**  
**MURRAYVILLE ROAD LOCATION 5**  
 SHEET NO. 1 OF 3 SHEETS

F.A.S. RTE. 310	SECTION 19-00108-00-RS	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 71
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

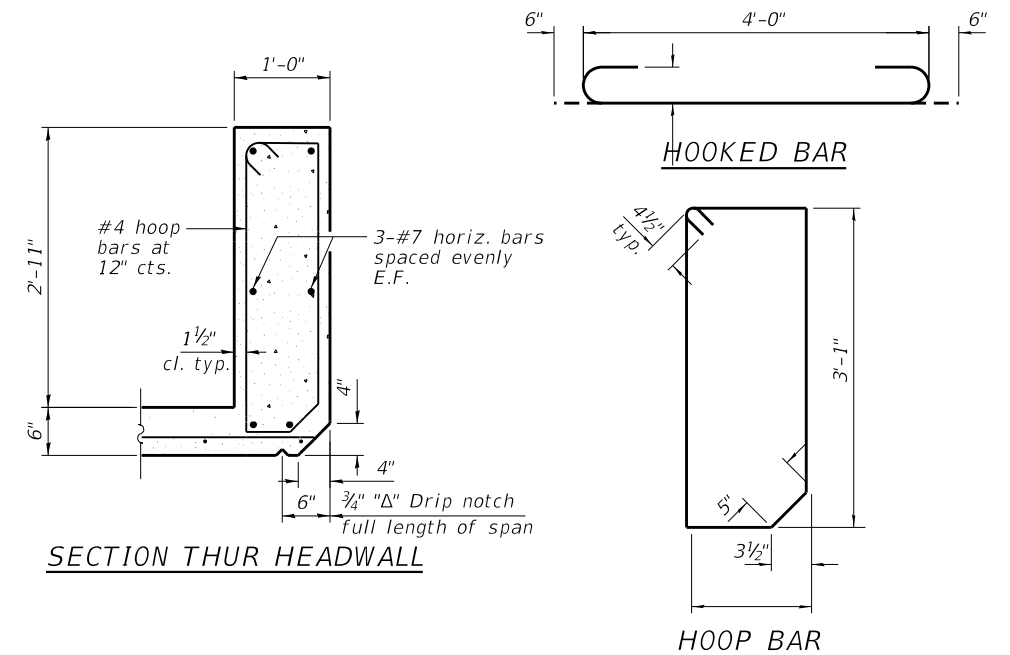
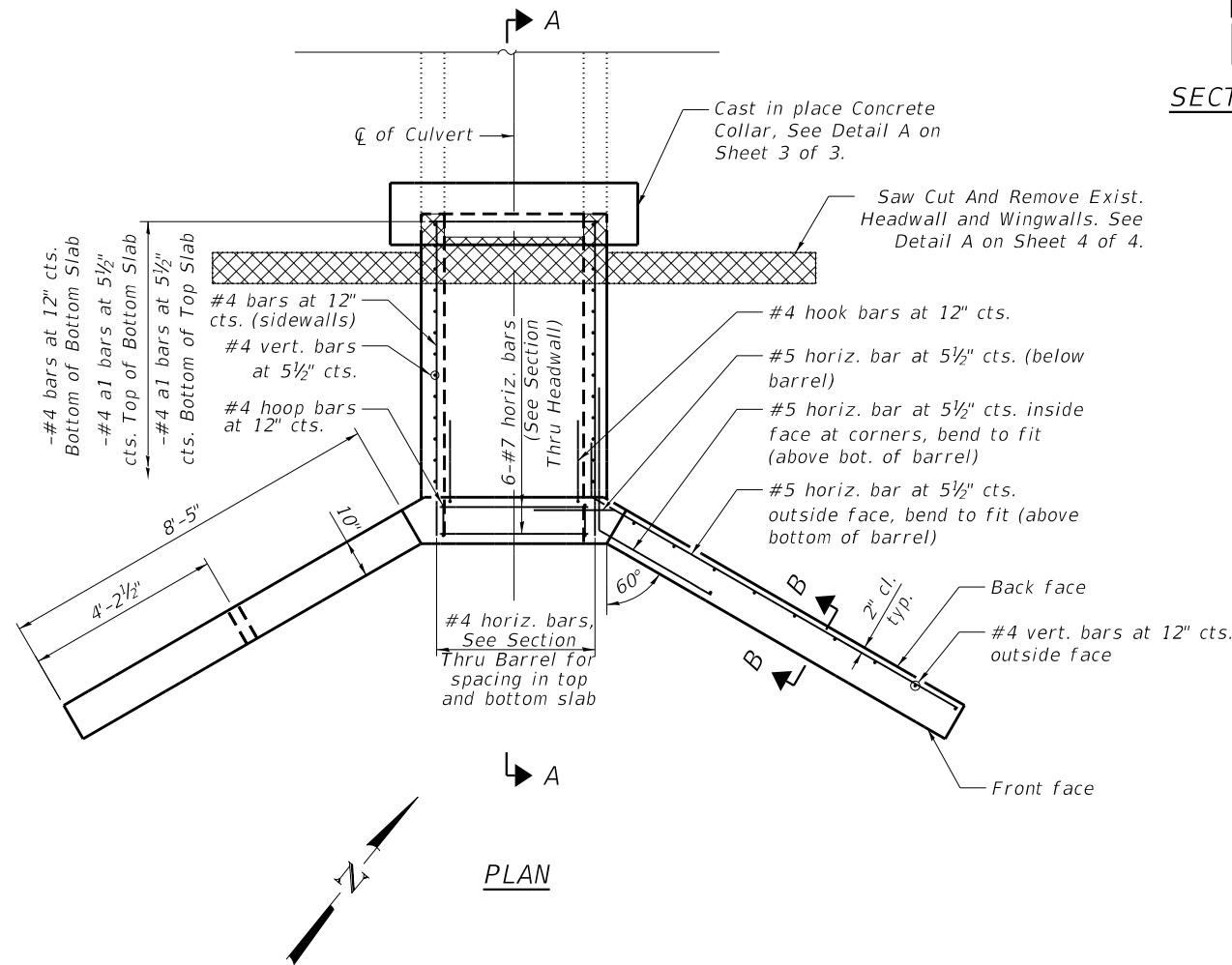
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Notes:  
See sheet 3 of 3 for Bill of Materials



**MIN. BAR LAP**

#4 bar = 1'-9"  
#5 bar = 2'-6"



TSB-SB-HC-ZS

2-17-2017

FILE NAME : P:\2023454\Design\CAD Sheets\3454-072-5-002-Culvert Apron End.dgn  
Layout



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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

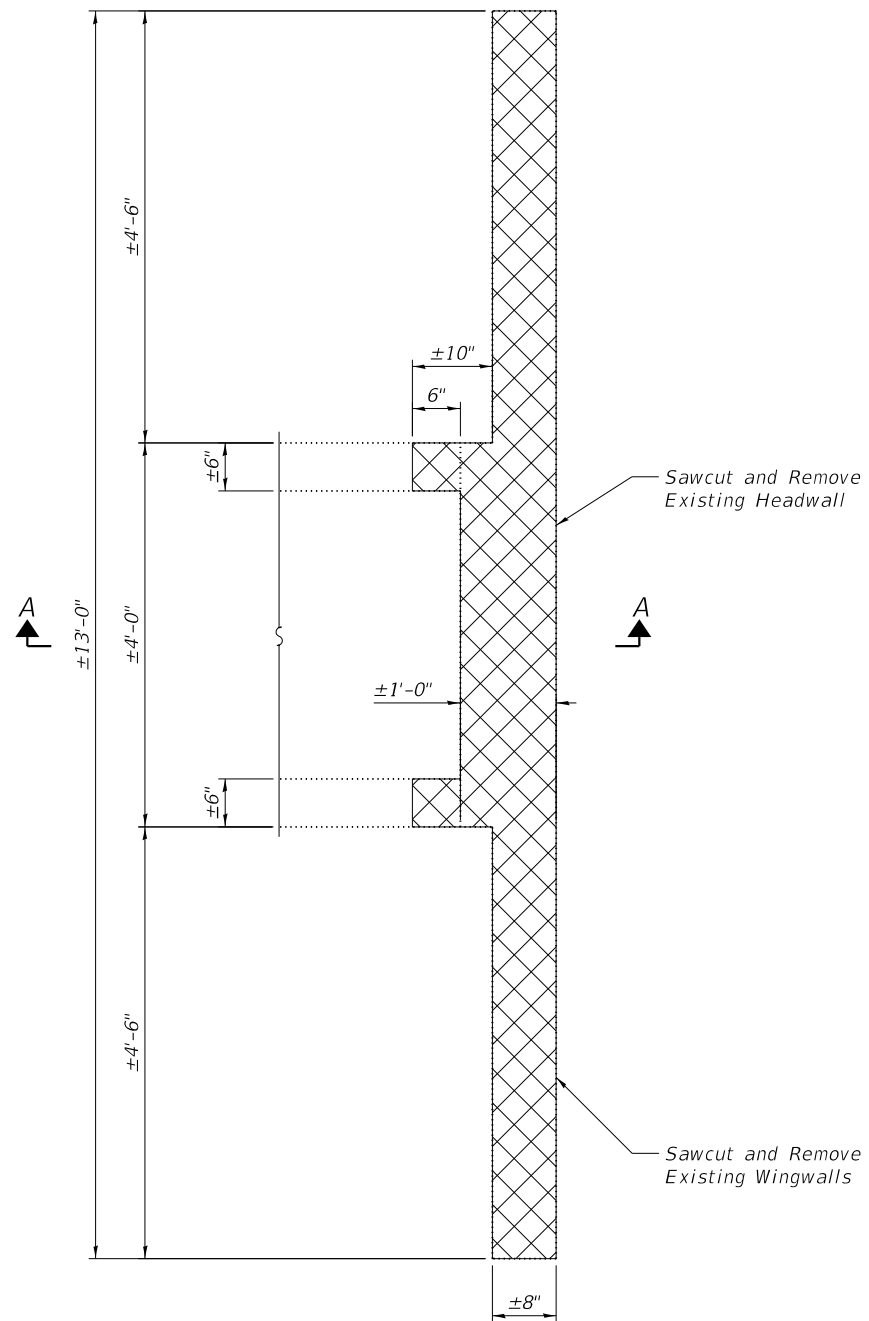
CONCRETE BOX CULVERT EXTENSION PLAN & DETAILS  
MURRAYVILLE ROAD LOCATION 5

SHEET NO. 2 OF 3 SHEETS

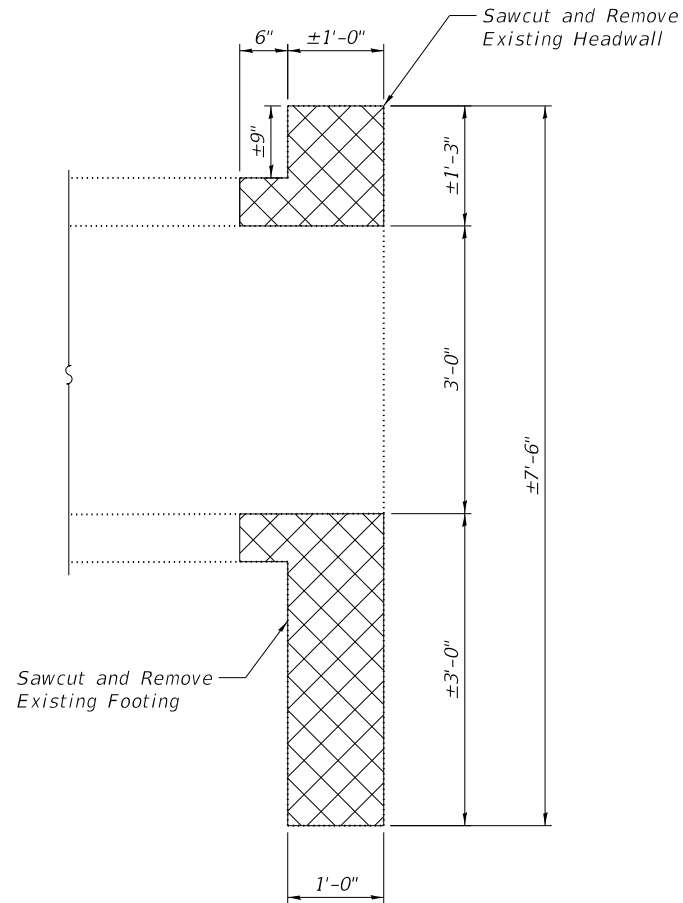
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CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

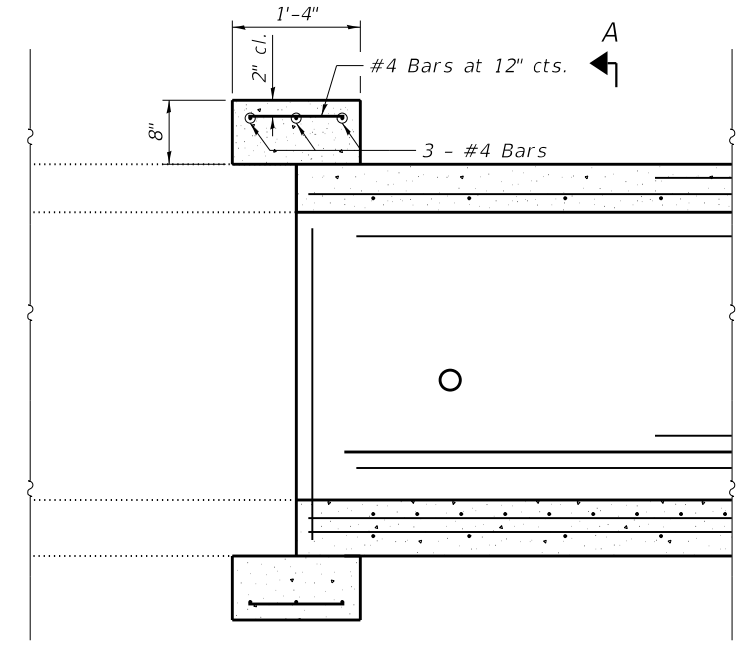




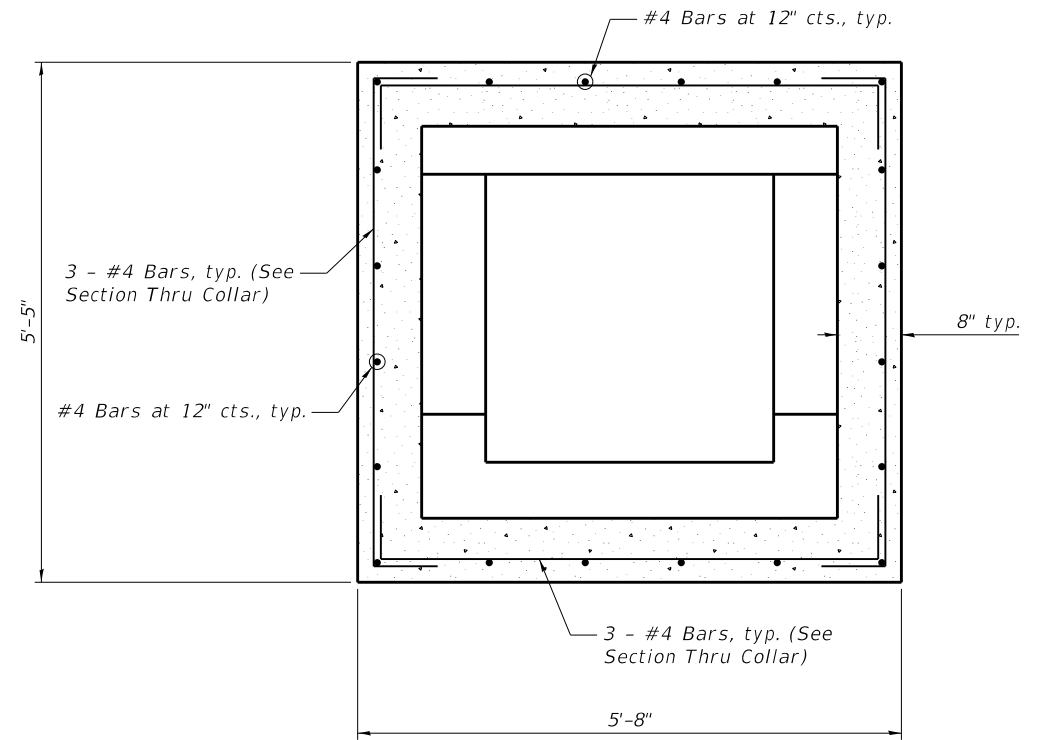
PLAN



SECTION A-A



LONGITUDINAL SECTION THRU COLLAR



SECTION B-B  
(Top slab at upstream end)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Concrete Structures	Cu. Yd.	7.7
Concrete Removal	Cu. Yd.	2.5

Cost of reinforcement and other accessories shall be included in Concrete Structures.

FILE NAME : P:\2023454\Design\CAD Sheets\3454-073-5-003-Culvert Collar - Details.dgn  
Layout1

**BA**  
BENTON & ASSOCIATES, INC.  
1910 N. Lafayette Ave., Joplin, MO 64804  
417-783-4444 FAX 417-783-4445  
Professional Design Firm  
Registration No. 184-000852

USER NAME : \$USERNAME\$	DESIGNED - CML	REVISED -
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PLOT DATE : 3/18/2022	DRAWN - CML	REVISED -
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STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

CONCRETE REMOVAL AND CONCRETE COLLAR DETAILS  
MURRAYVILLE ROAD LOCATION 5  
SHEET NO. 3 OF 3 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	73
CONTRACT NO. 93791				

ILLINOIS FED. AID PROJECT

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ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4146 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-00082

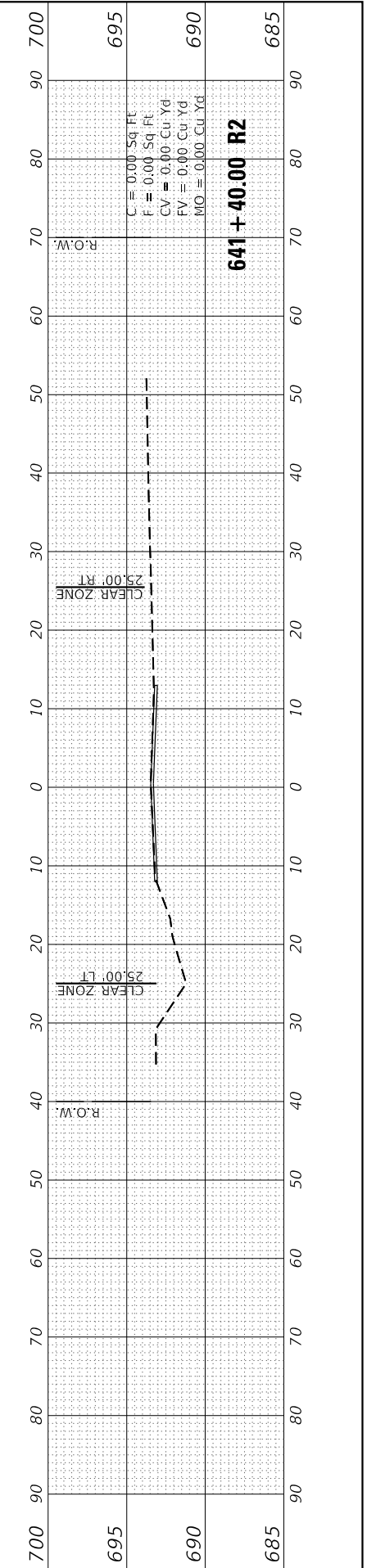
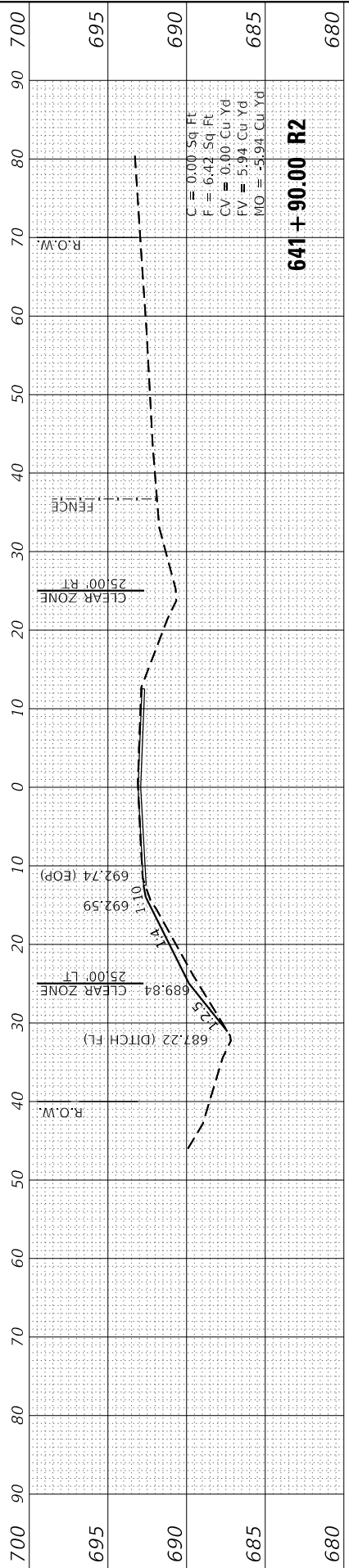
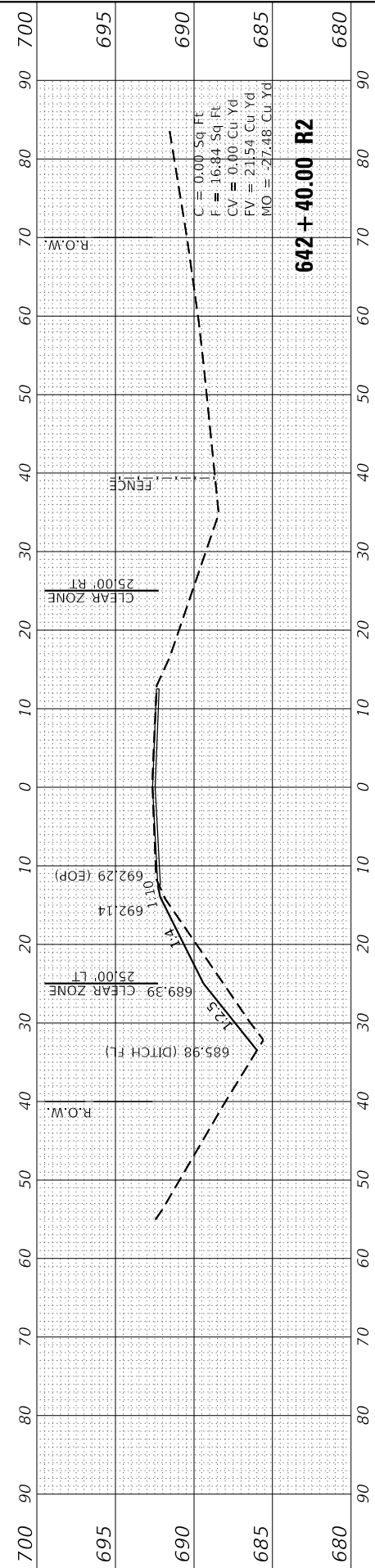
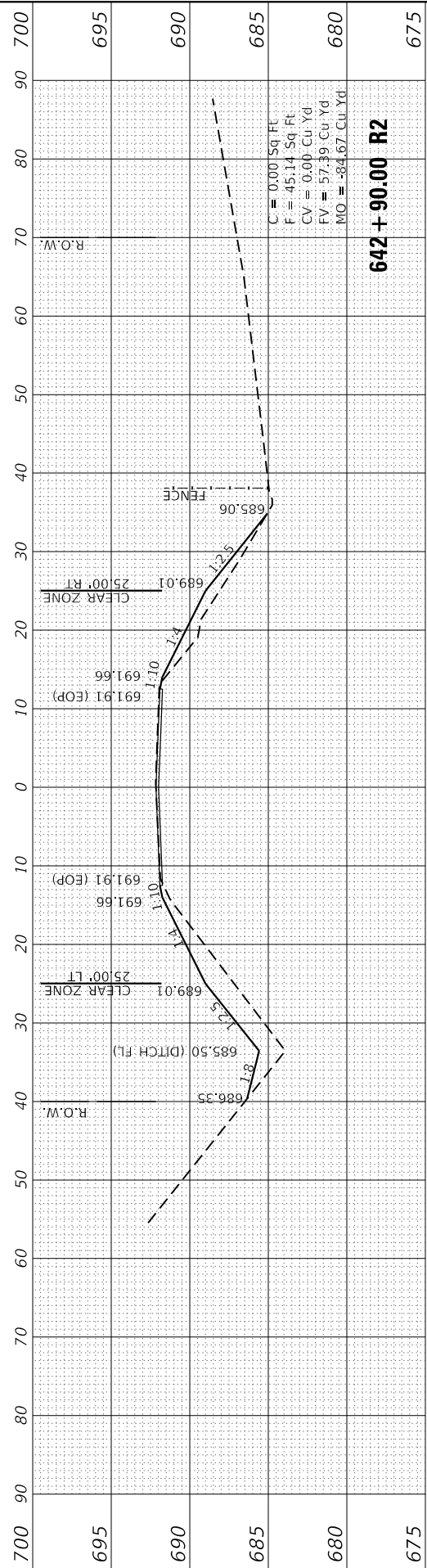
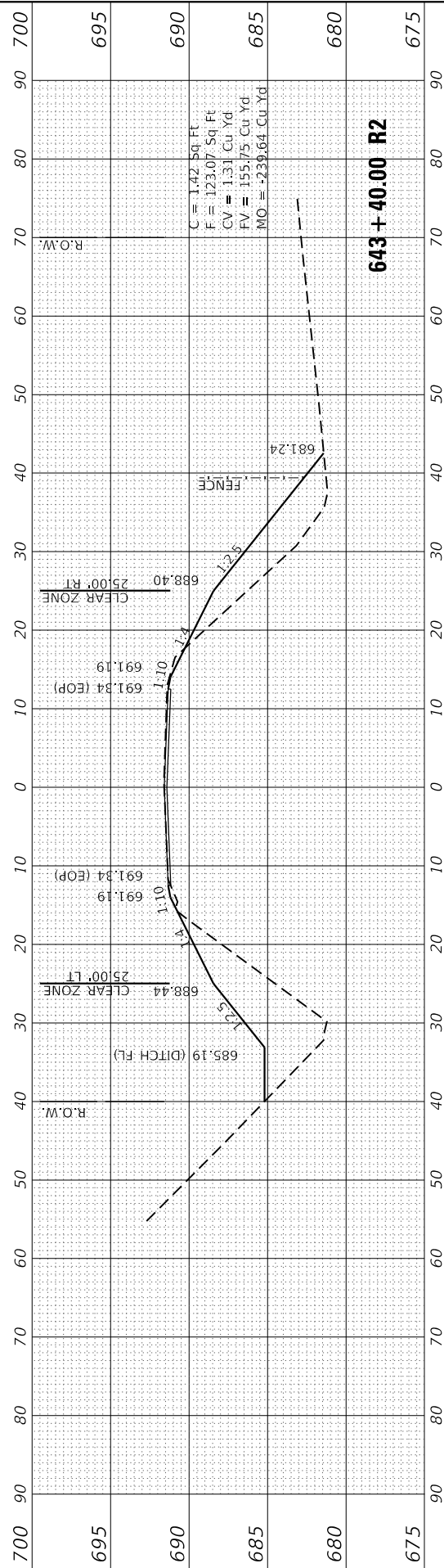
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**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (CULVERT LOCATIONS #1 AND #1a)**

SCALE: SHEET 1 OF 3 SHEETS STA. 641+40.00 TO STA. 643+40.00

F.A.S. RTE. 310	SECTION 19-00108-00-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 74
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93791	



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NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

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NOTE BOOK	PLOTTED		
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	AREAS CHECKED		
	AREAS CHECKED		

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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61850  
 PHONE: 217-245-4166 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-00892

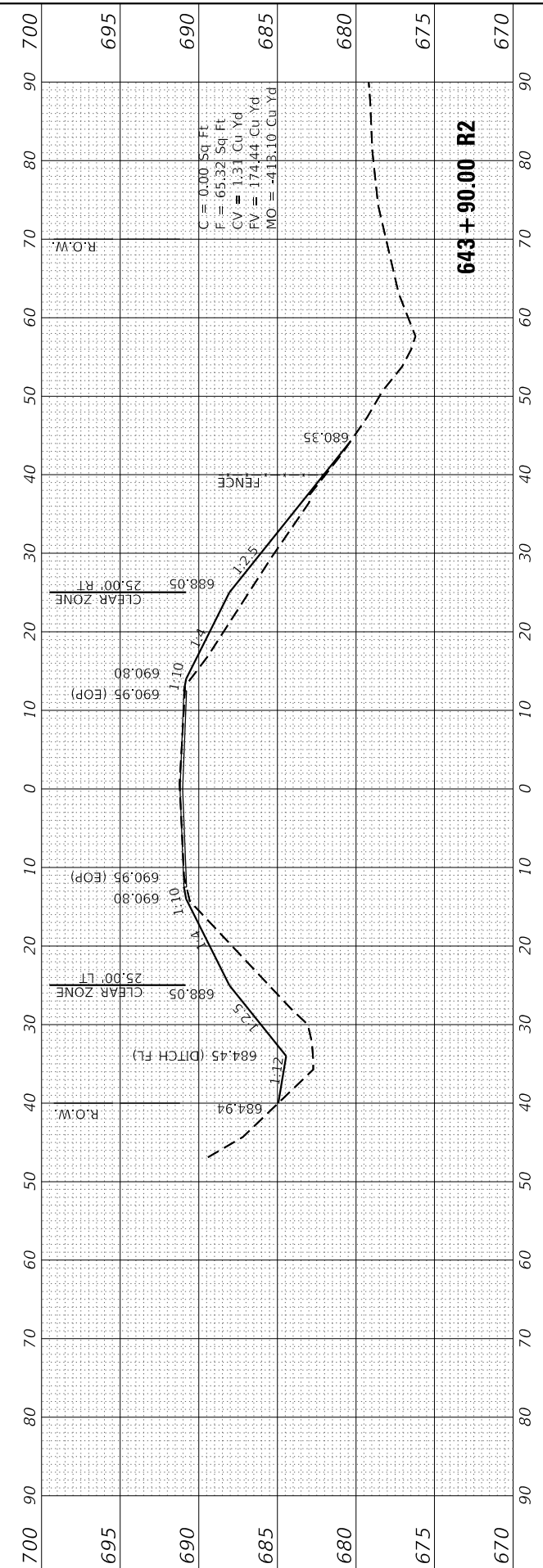
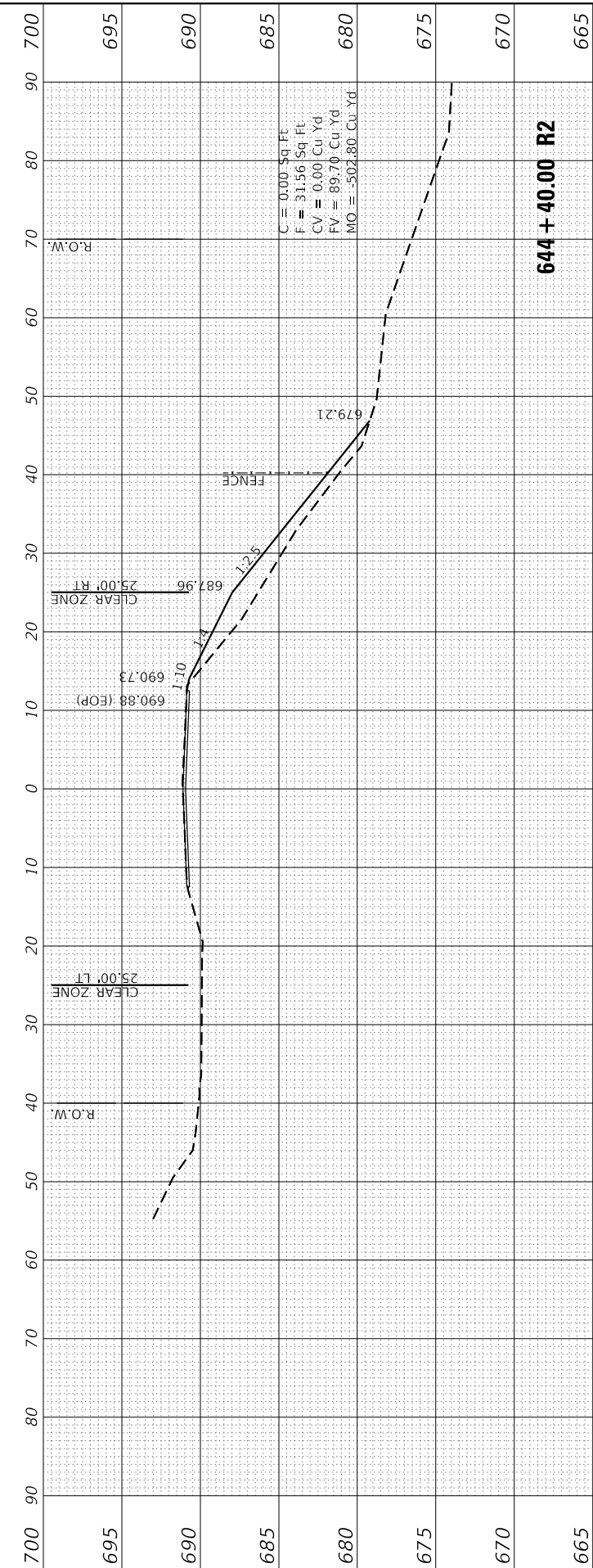
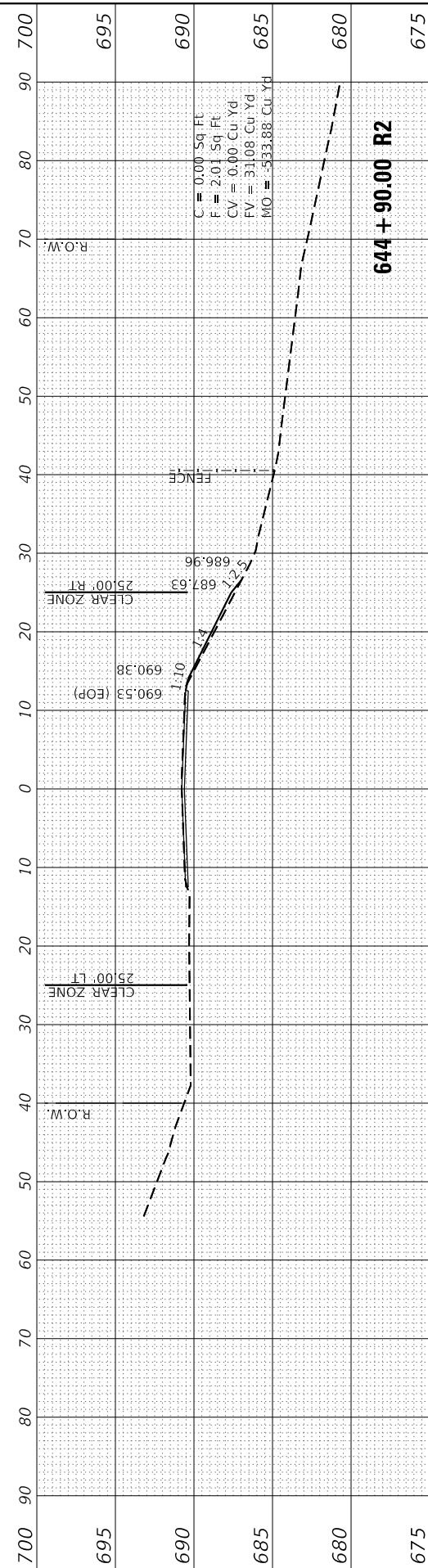
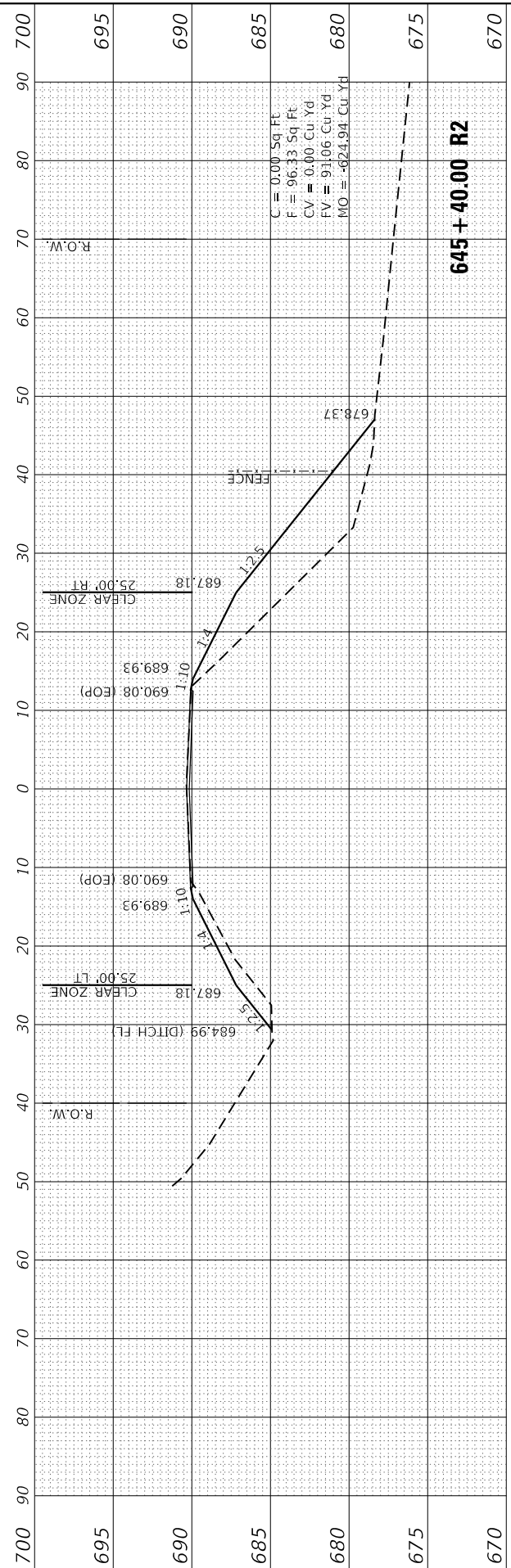
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PLOT DATE =	3/18/2022	DATE	03/2022	REVISED -	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (CULVERT LOCATIONS #1 AND #1a)**

SCALE: SHEET 2 OF 3 SHEETS STA. 643+40.00 TO STA. 645+40.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	75
CONTRACT NO. 93791				
ILLINOIS		FED. AID PROJECT		



FINAL SURVEY	SURVEYED	BY	DATE
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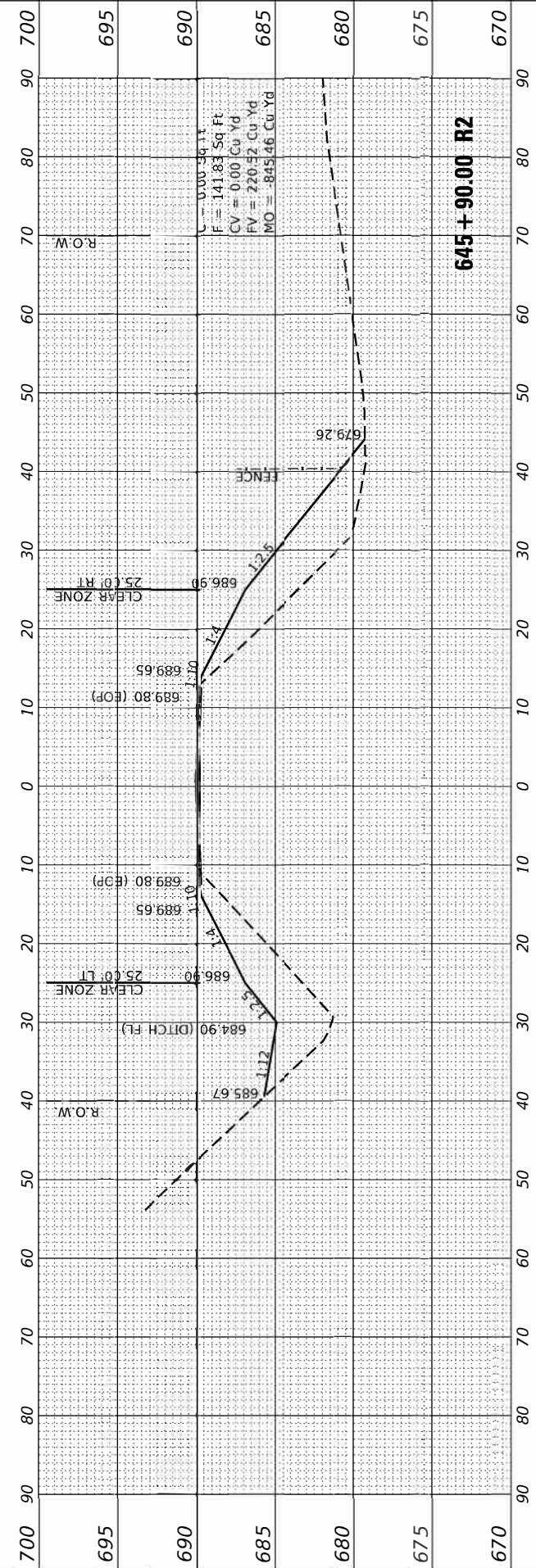
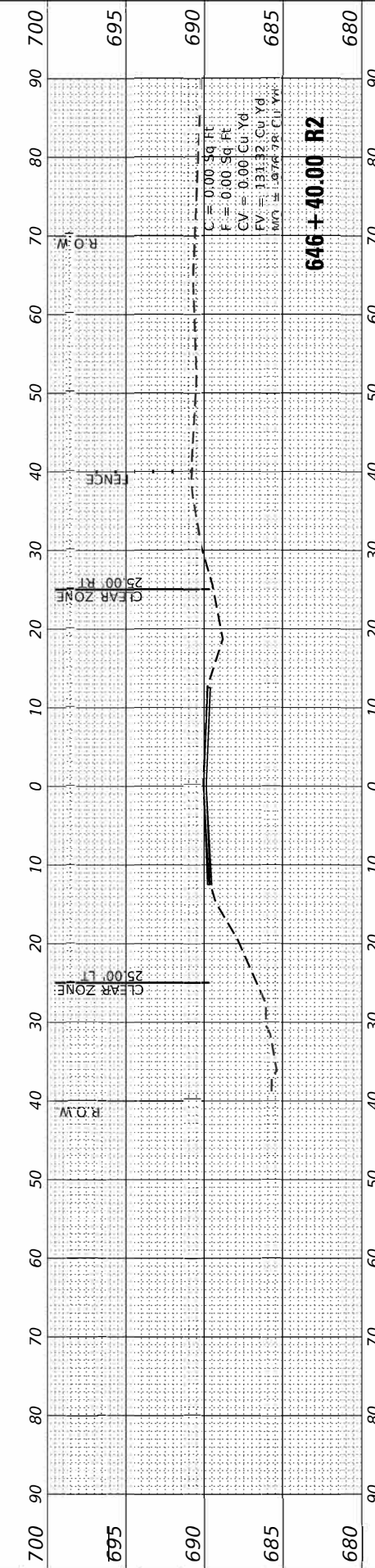
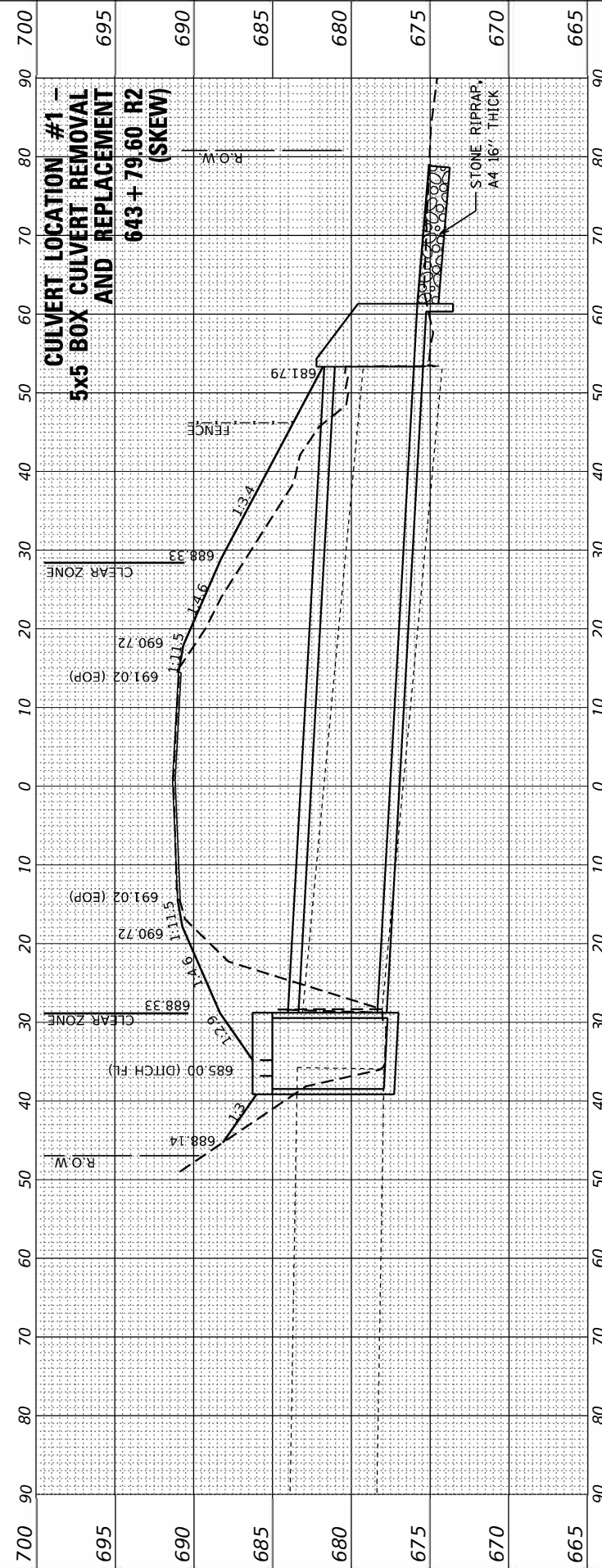
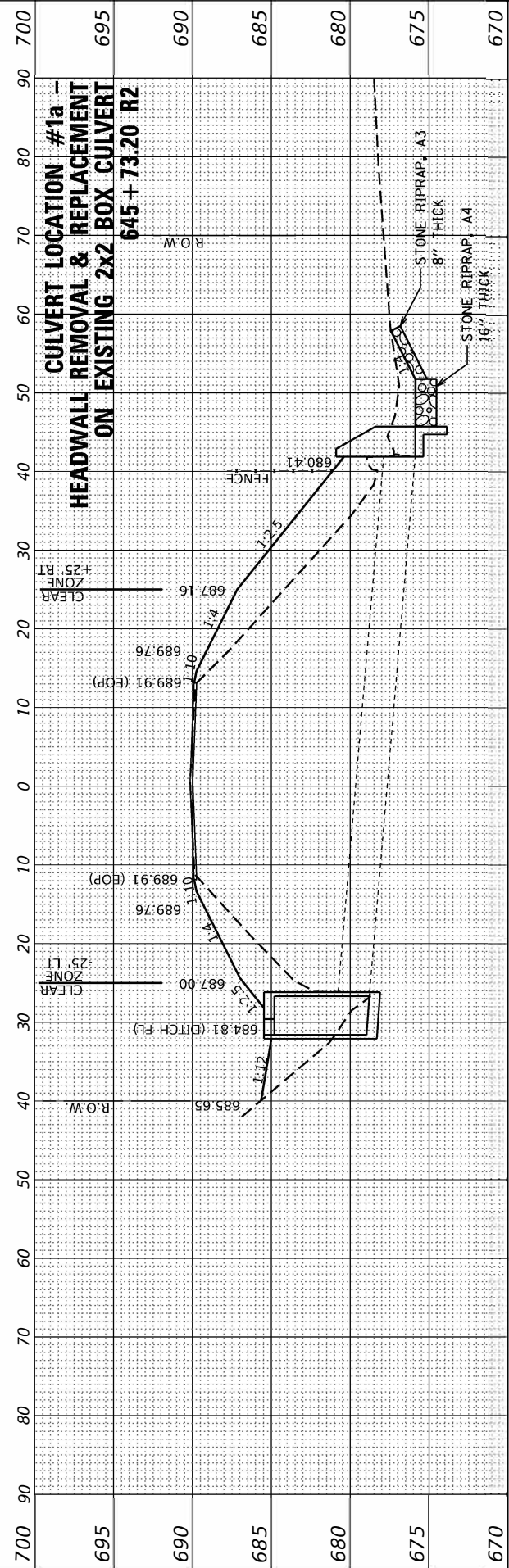
**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4346 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-00092

USER NAME =	druhall	DESIGNED -	SJB	REVISED -	
		DRAWN -	SJB	REVISED -	
PLOT SCALE =	20.0000' / in.	CHECKED -	DSR	REVISED -	
PLOT DATE =	3/18/2022	DATE -	03/2022	REVISED -	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

SCALE: SHEET 3 OF 3 SHEETS STA. 645+40.00 TO STA. 646+40.00

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
19-00108-00-R5	MORGAN	90	76
CONTRACT NO. 93791		ILLINOIS FED. AID PROJECT	



FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

MODEL: Defnair  
FILE NAME: P:\2023\54\Design\CAD\_Sheets\3454-074-090-sh-cs1.dgn

**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFALETTE AVE.  
JACKSONVILLE, IL 61830  
PHONE: 217-245-4146 FAX: 217-243-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000832

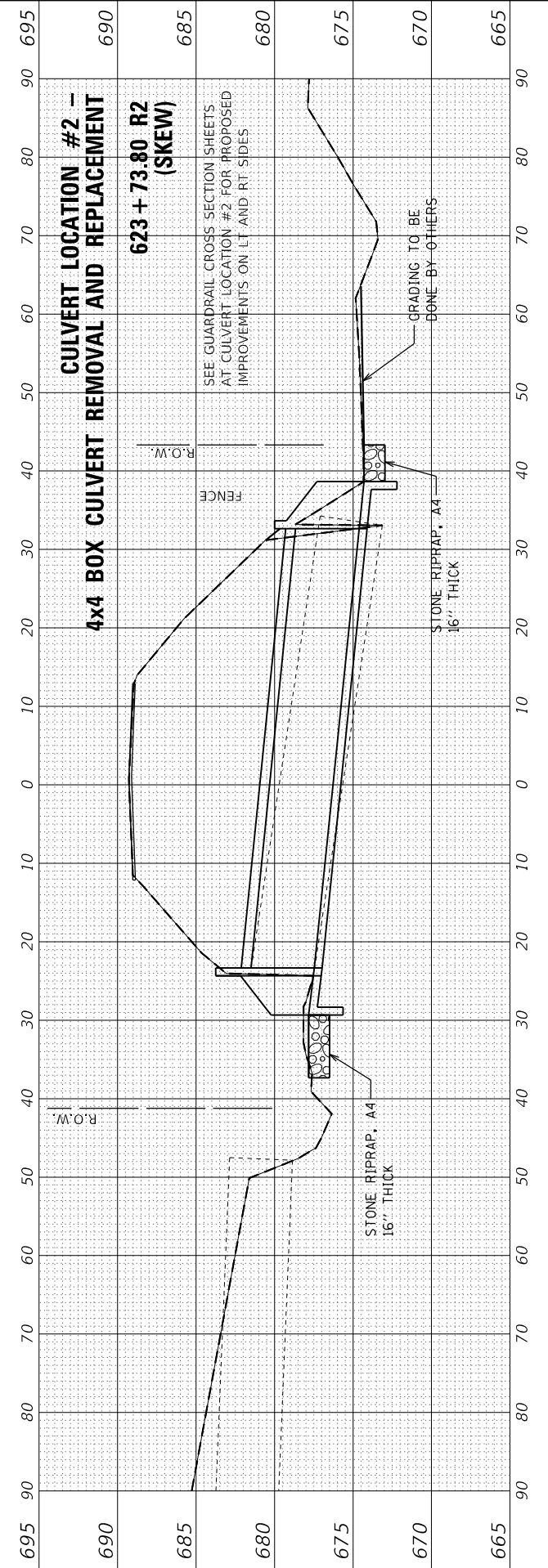
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	DRAWN - SJB	REVISED -
PLOT SCALE = 20.0000 ' / in.	CHECKED - DSR	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(CULVERT LOCATION #2)**

SCALE: SHEET 1 OF 5 SHEETS STA. 623+73.77 TO STA. 623+73.77

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-RS	MORGAN	90	77
CONTRACT NO. 93791				
ILLINOIS		FED. AID PROJECT		



FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

C = 0.00 Sq Ft  
 F = 6.90 Sq Ft  
 CV = 0.78 Cu Yd  
 FV = 3.82 Cu Yd  
 MO = +28.51 Cu Yd  
**624 + 14.20 RT**

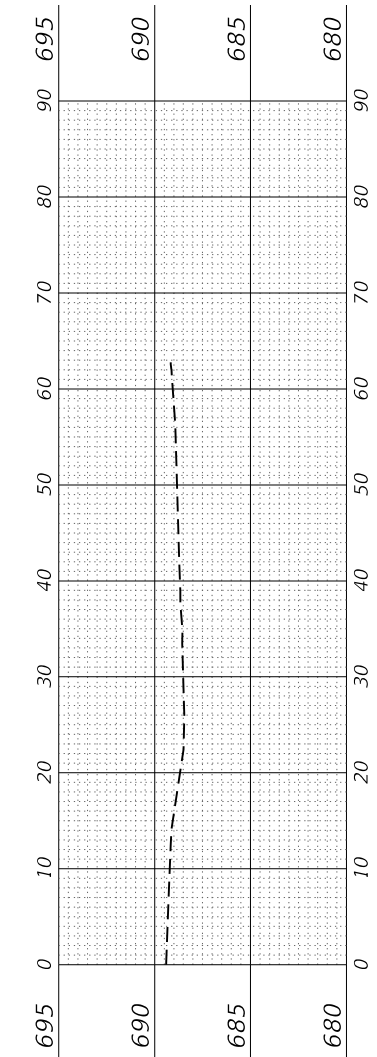
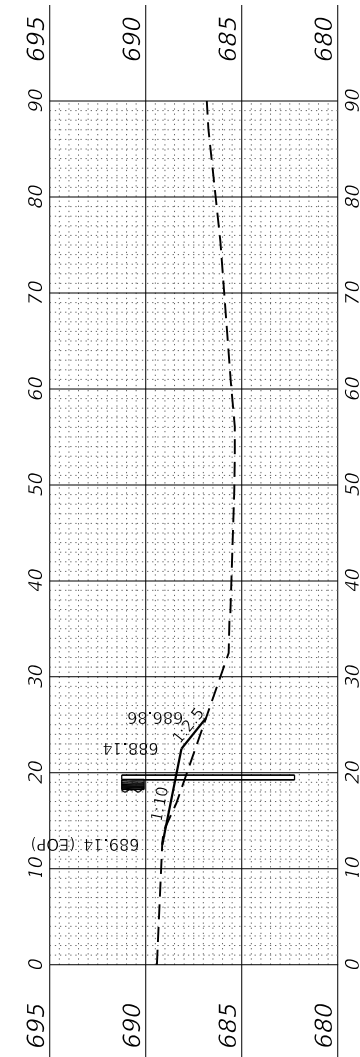
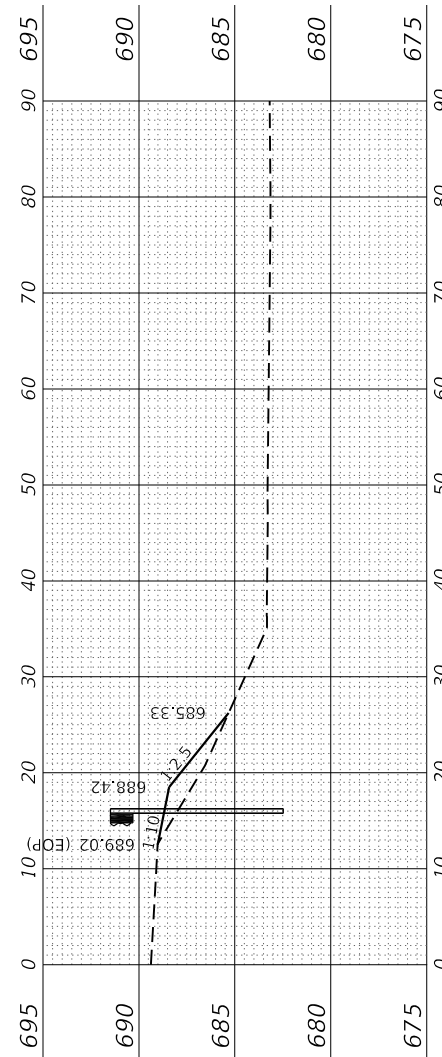
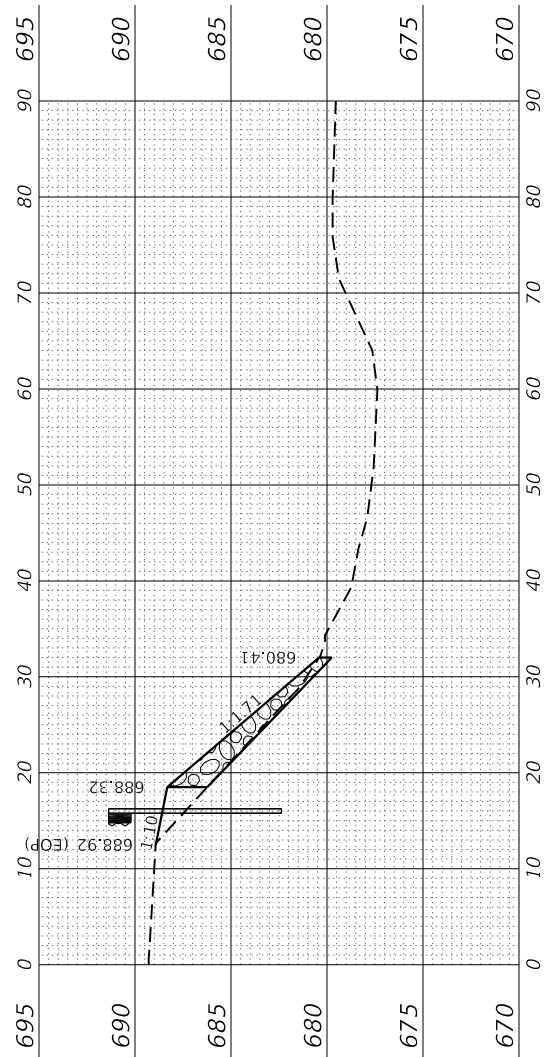
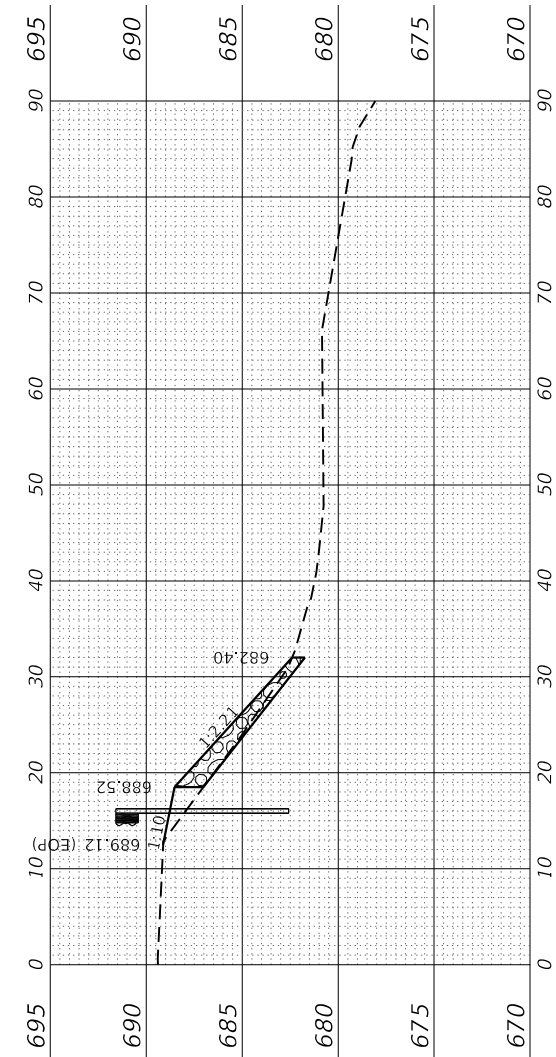
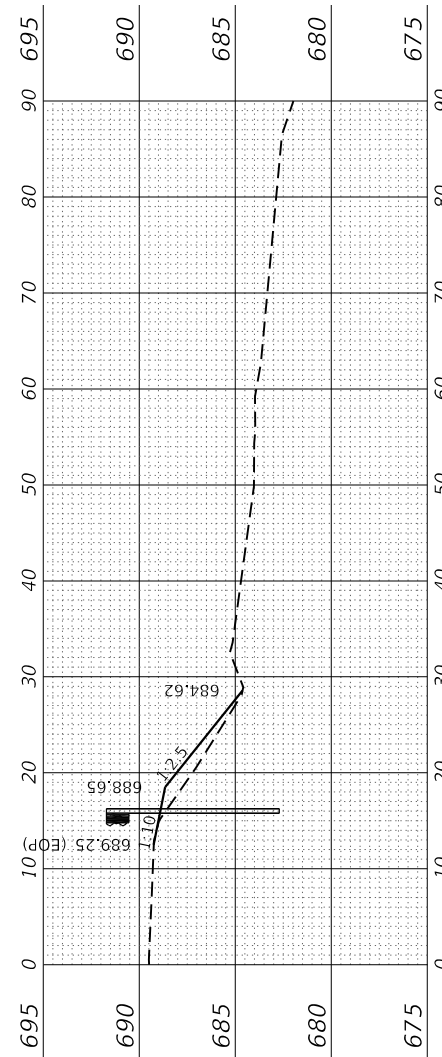
C = 3.01 Sq Ft  
 F = 4.12 Sq Ft  
 CV = 3.79 Cu Yd  
 FV = 9.43 Cu Yd  
 MO = -25.47 Cu Yd  
**623 + 95.50 RT**

C = 2.44 Sq Ft  
 F = 6.06 Sq Ft  
 CV = 1.70 Cu Yd  
 FV = 13.47 Cu Yd  
 MO = -19.83 Cu Yd  
**623 + 45.50 RT**

C = 0.00 Sq Ft  
 F = 8.49 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 6.00 Cu Yd  
 MO = -8.06 Cu Yd  
**622 + 95.50 RT**

C = 0.00 Sq Ft  
 F = 4.46 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 2.06 Cu Yd  
 MO = -2.06 Cu Yd  
**622 + 70.50 RT**

C = 0.00 Sq Ft  
 F = 0.00 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 0.00 Cu Yd  
 MO = 0.00 Cu Yd  
**622 + 45.50 RT**



MODEL: Defn.rvt  
 FILE NAME: P:\2023\51\Design\CAD\_Sheets\315140714-090-rt-1.cad  
 BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-243-1146 FAX: 217-243-1149  
 IL DESIGN FIRM REGISTRATION NO. 184-00082

USER NAME = drunoll	DESIGNED - DSR	REVISED -
	DRAWN - DSR	REVISED -
PLOT SCALE = 20.0000" / 1"	CHECKED - SJB	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

CROSS SECTIONS  
 (GUARDRAIL AT CULVERT LOCATION #2 RT SIDE)

SCALE: SHEET 2 OF 5 SHEETS STA. 622+45.46 TO STA. 624+14.21

F.A.S. RTE. 310	SECTION 19-00108-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 78
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE

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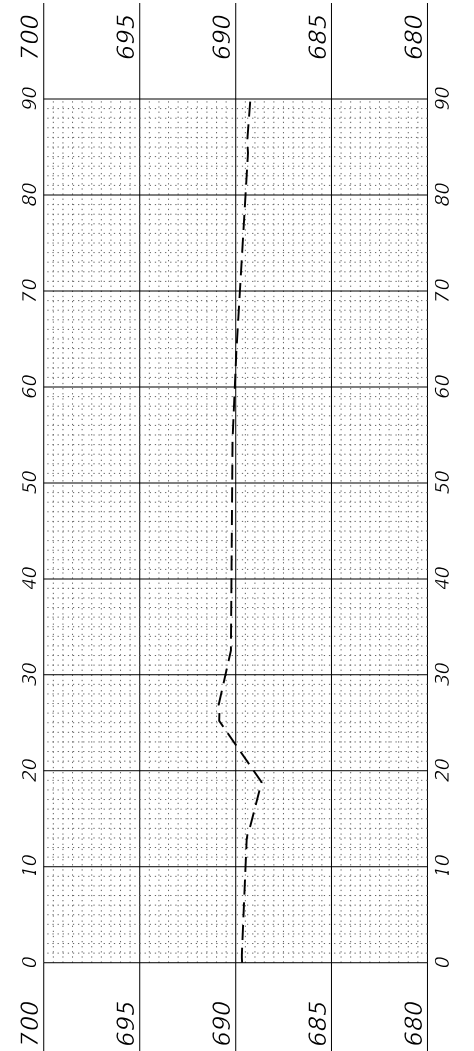
**BENTON & ASSOCIATES, INC.**  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 61850  
PHONE: 217-245-4146 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 194-000852

USER NAME = drunoll	DESIGNED - DSR	REVISED -
PLOT SCALE = 20.0000 ' / in.	DRAWN - DSR	REVISED -
PLOT DATE = 3/18/2022	CHECKED - SJB	REVISED -
	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(GUARDRAIL AT CULVERT LOCATION #2 RT SIDE)**

SCALE: SHEET 3 OF 5 SHEETS STA. 624+64.21 TO STA. 624+64.21



C = 0.00 Sq Ft  
F = 0.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 6.39 Cu Yd  
MO = -34.90 Cu Yd  
**624 + 64.20 RT**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-R5	MORGAN	90	79
ILLINOIS			FED. AID PROJECT	
CONTRACT NO. 93791				

FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

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**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 61830  
PHONE: 217-245-4146 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000932

USER NAME = drunoll  
DESIGNED - DSR  
DRAWN - DSR  
CHECKED - SJB  
DATE - 03/2022

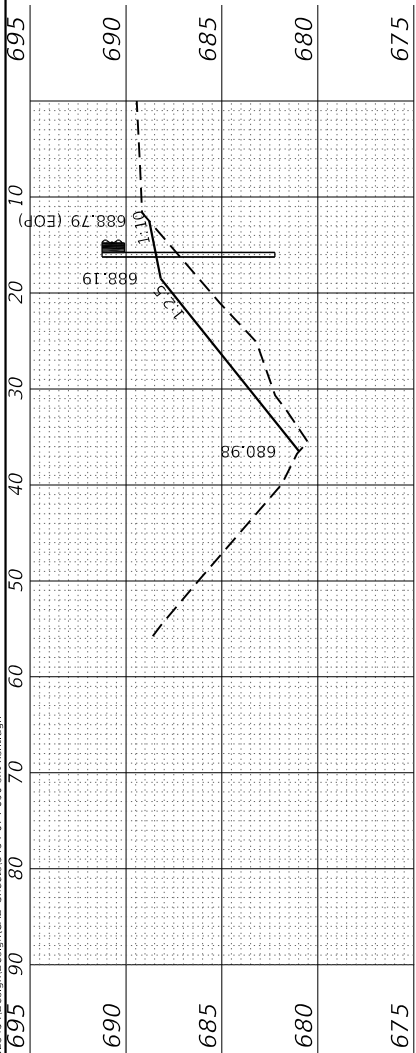
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PLOT DATE = 3/18/2022

REVISIONS  
REVISIONS  
REVISIONS  
REVISIONS

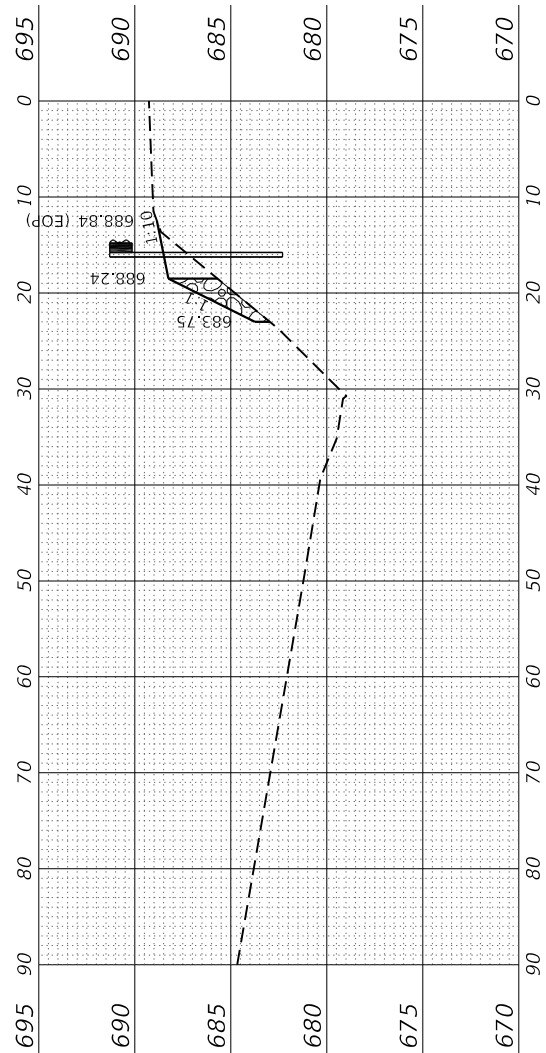
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(GUARDRAIL AT CULVERT LOCATION #2 LT SIDE)**  
SCALE: SHEET 4 OF 5 SHEETS STA. 622+05.25 R2 TO STA. 624+05.25 R2

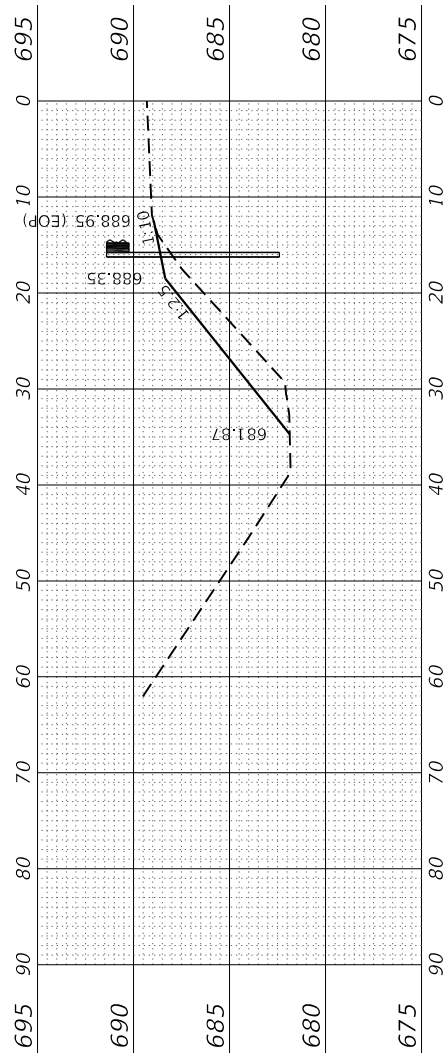
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	MORGAN	MORGAN	90	80
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				



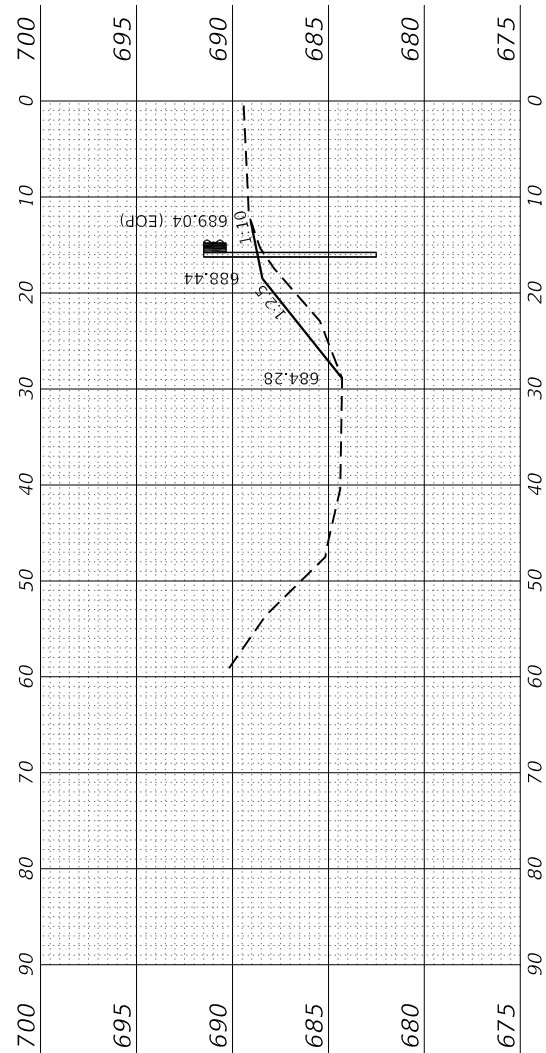
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CV = 0.78 Cu Yd  
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MO = -103.88 Cu Yd  
**624 + 05.25 LT**



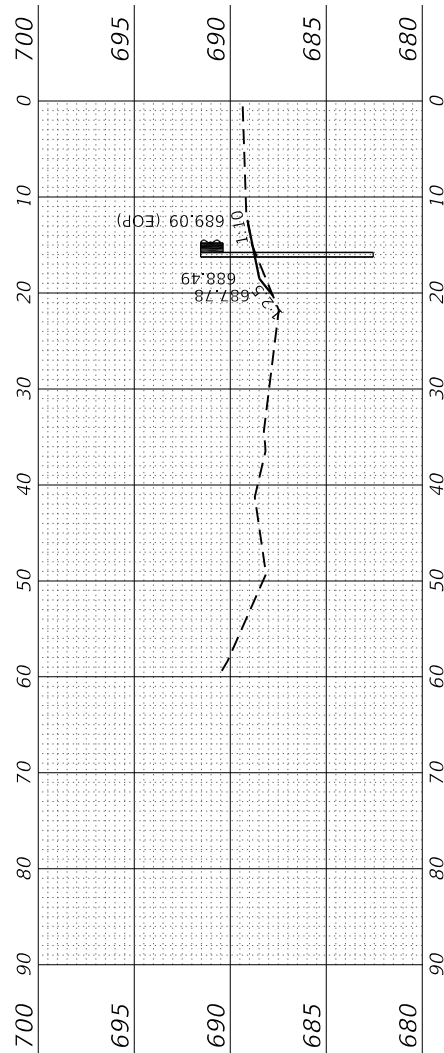
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MO = -75.25 Cu Yd  
**623 + 67.75 LT**



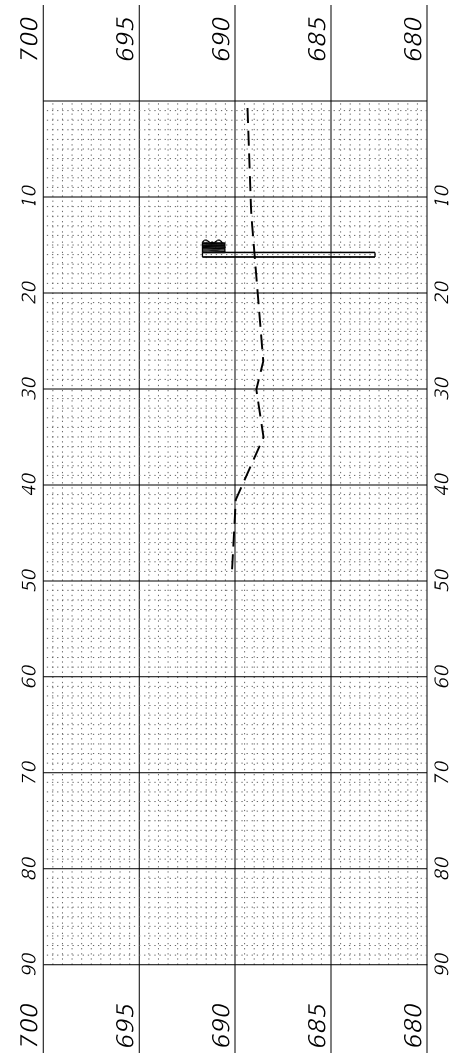
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CV = 0.00 Cu Yd  
FV = 34.14 Cu Yd  
MO = -45.31 Cu Yd  
**623 + 17.75 LT**



C = 0.00 Sq Ft  
F = 11.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 10.97 Cu Yd  
MO = -11.17 Cu Yd  
**622 + 67.75 LT**



C = 0.85 Sq Ft  
F = 0.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 0.20 Cu Yd  
MO = -0.20 Cu Yd  
**622 + 17.75 LT**



C = 0.00 Sq Ft  
F = 0.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 0.00 Cu Yd  
MO = 0.00 Cu Yd  
**622 + 05.25 LT**



FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK NO.			

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK NO.			

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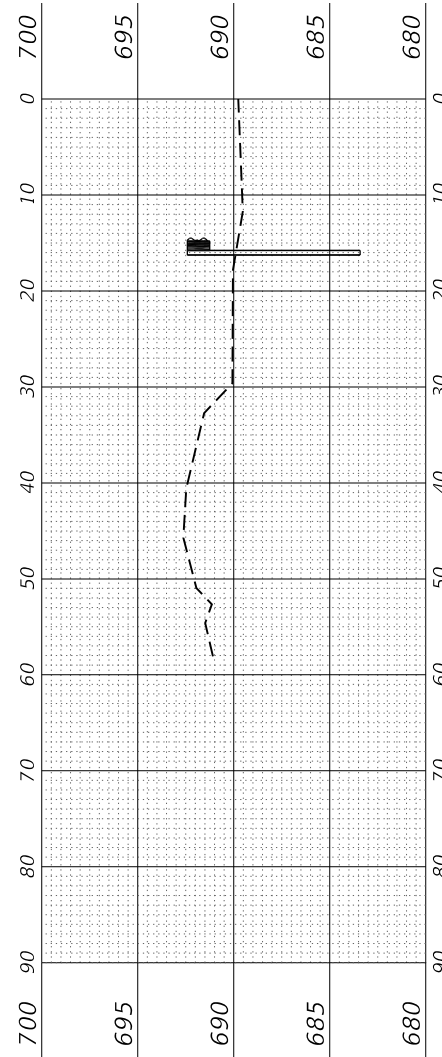
**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4146 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 194-000832

USER NAME = drunoll	DESIGNED - DSR	REVISED -
PLOT SCALE = 20.0000 ' / in.	DRAWN - DSR	REVISED -
PLOT DATE = 3/18/2022	CHECKED - SJB	REVISED -
	DATE -	REVISED -

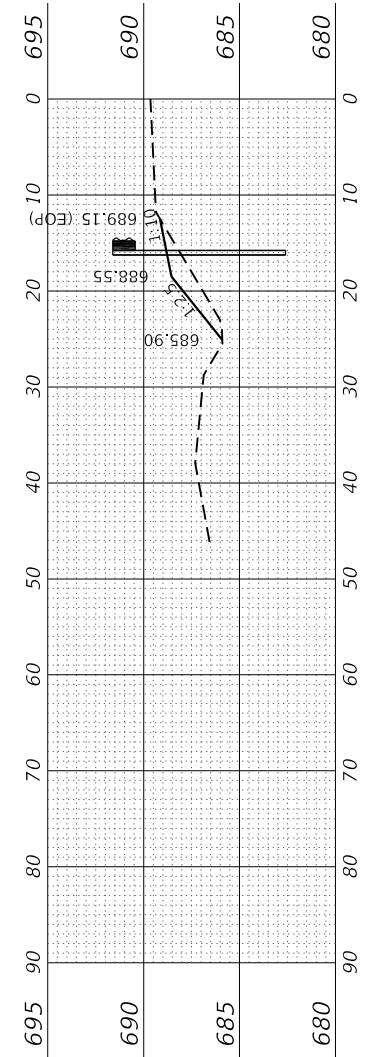
**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>CROSS SECTIONS    (GUARDRAIL AT CULVERT LOCATION #2 LT SIDE)</b>			
SCALE:	SHEET 5	OF 5	SHEETS
STA. 624+55.25 TO STA. 625+05.25		TOTAL SHEETS 90	

F.A.S. RTE. 310	SECTION 19-00108-00-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 81
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93791	



C = 0.00 Sq Ft  
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 MO = -152.18 Cu Yd  
**625 + 05.25 LT**

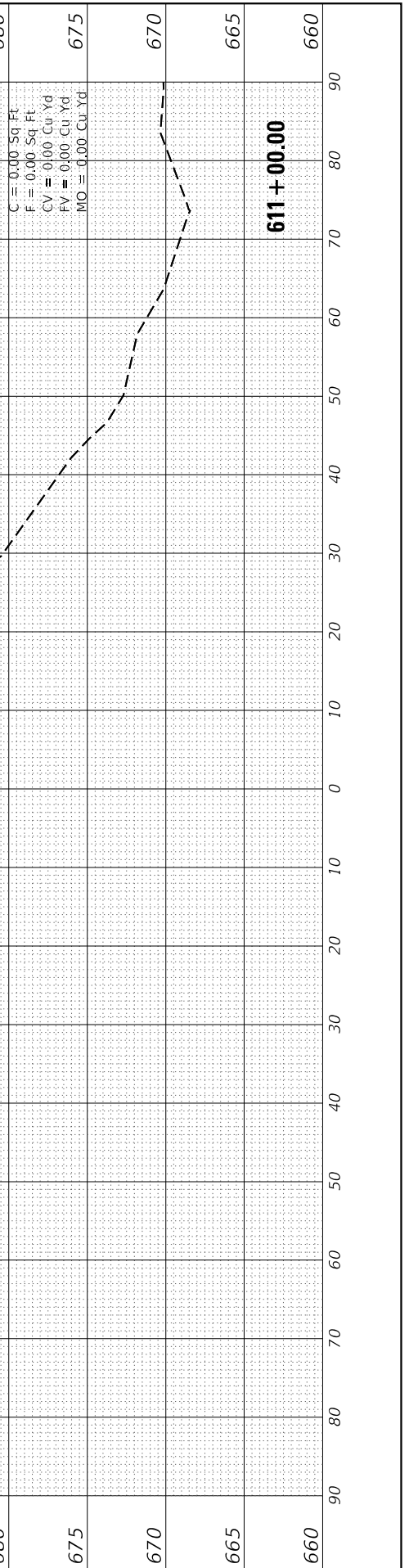
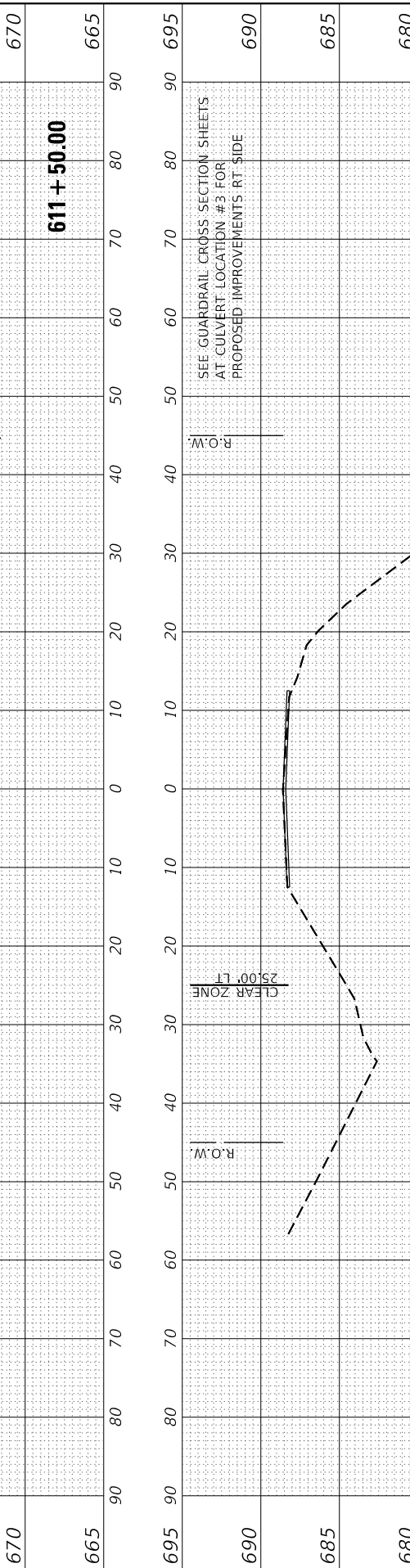
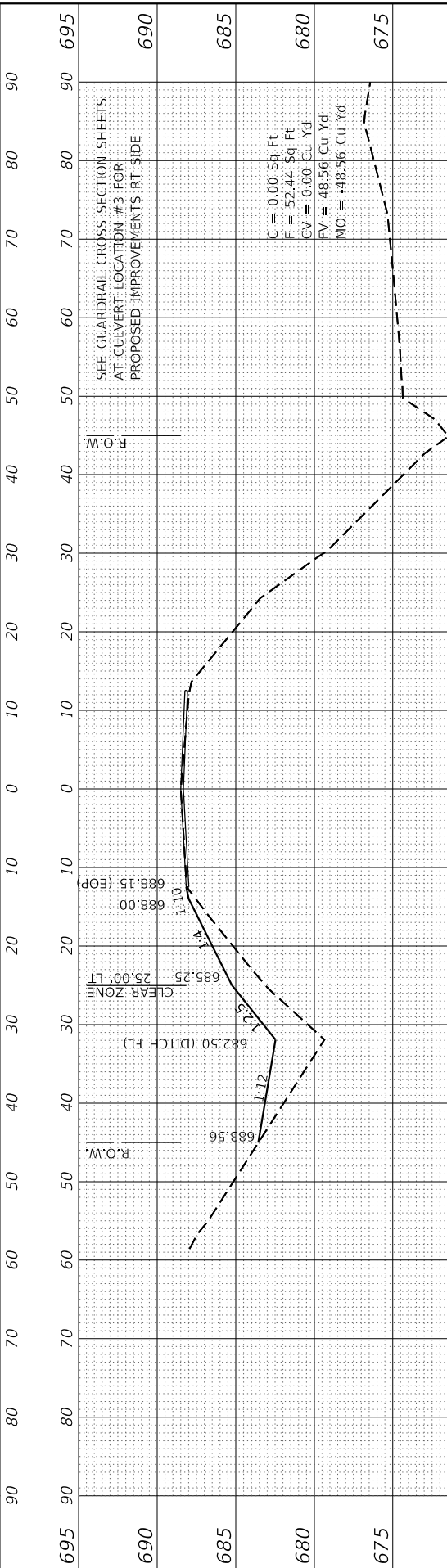
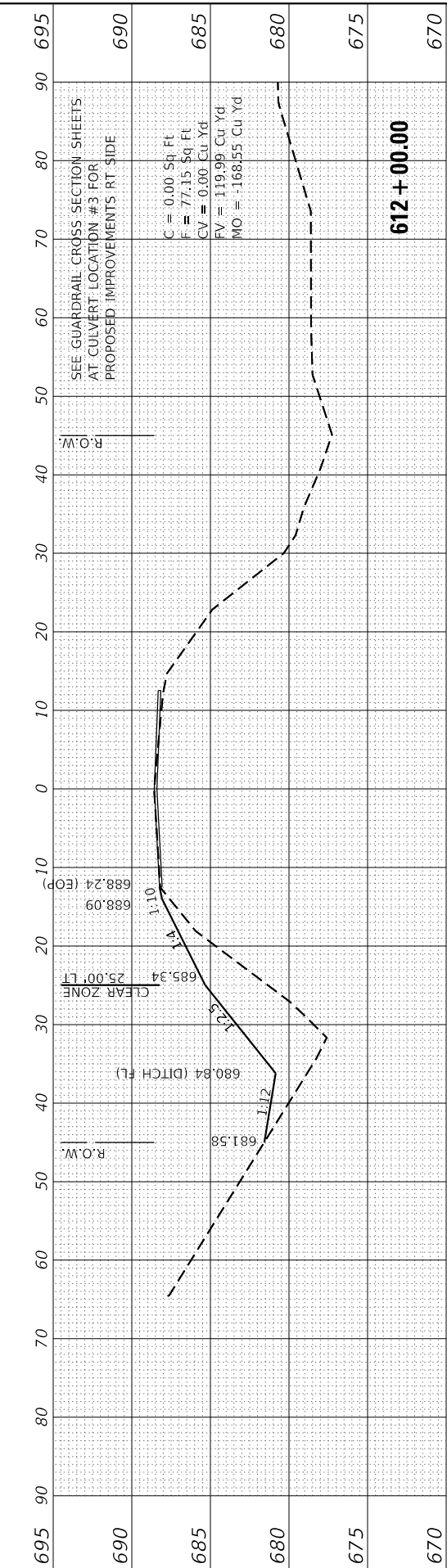
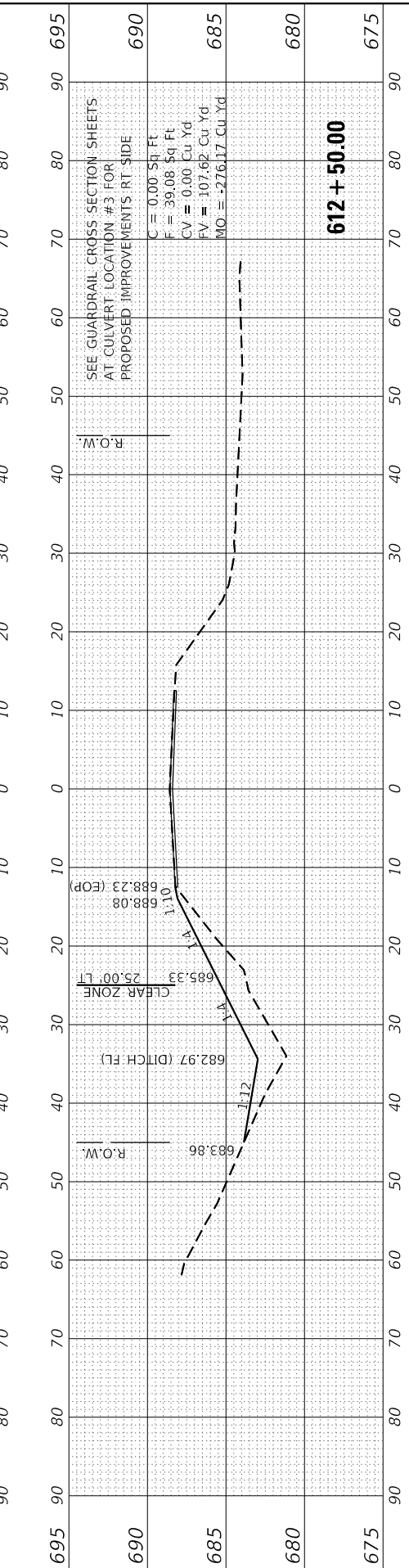
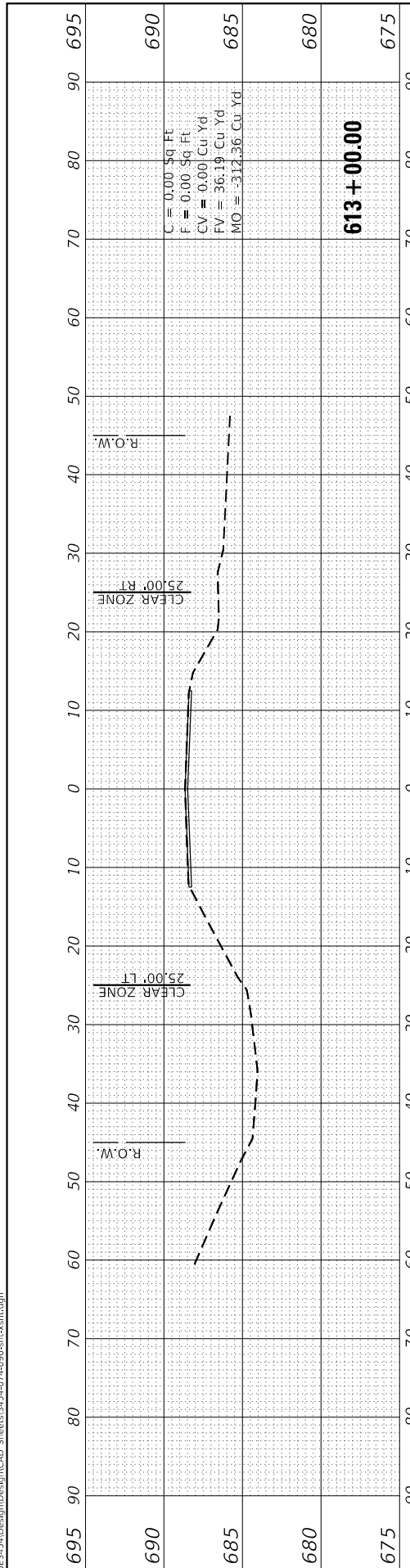


C = 0.00 Sq Ft  
 F = 8.70 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 40.25 Cu Yd  
 MO = -144.12 Cu Yd  
**624 + 55.25 LT**

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		
	AREAS CHECKED		

MODEL: Defnair  
FILE NAME: P:\2025\1\Design\CAD\_Sheets\3154074490\3154074490.dgn



**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFALETTE AVE.  
JACKSONVILLE, IL 61830  
PHONE: 217-245-4146 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-008952

USER NAME	= drunoff
DESIGNED	- SJB
DRAWN	- SJB
CHECKED	- DSR
DATE	- 03/2022

REVISED	-
REVISED	-
REVISED	-
REVISED	-

REVISION	NO.	DESCRIPTION

**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

<b>CROSS SECTIONS (CULVERT LOCATION #3)</b>			
SCALE:	SHEET 1	OF 4 SHEETS	STA. 611+00.00 TO STA. 612+00.00

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	82
CONTRACT NO. 93791				
ILLINOIS				FED. AID PROJECT

FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
	NOTE BOOK		
	TEMPLATE		
	AREAS CHECKED		

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
	NOTE BOOK		
	TEMPLATE		
	AREAS CHECKED		

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**BENTON & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61850  
 PHONE: 217-245-4146 FAX: 217-243-4149  
 IL DESIGN FIRM REGISTRATION NO. 194-000932

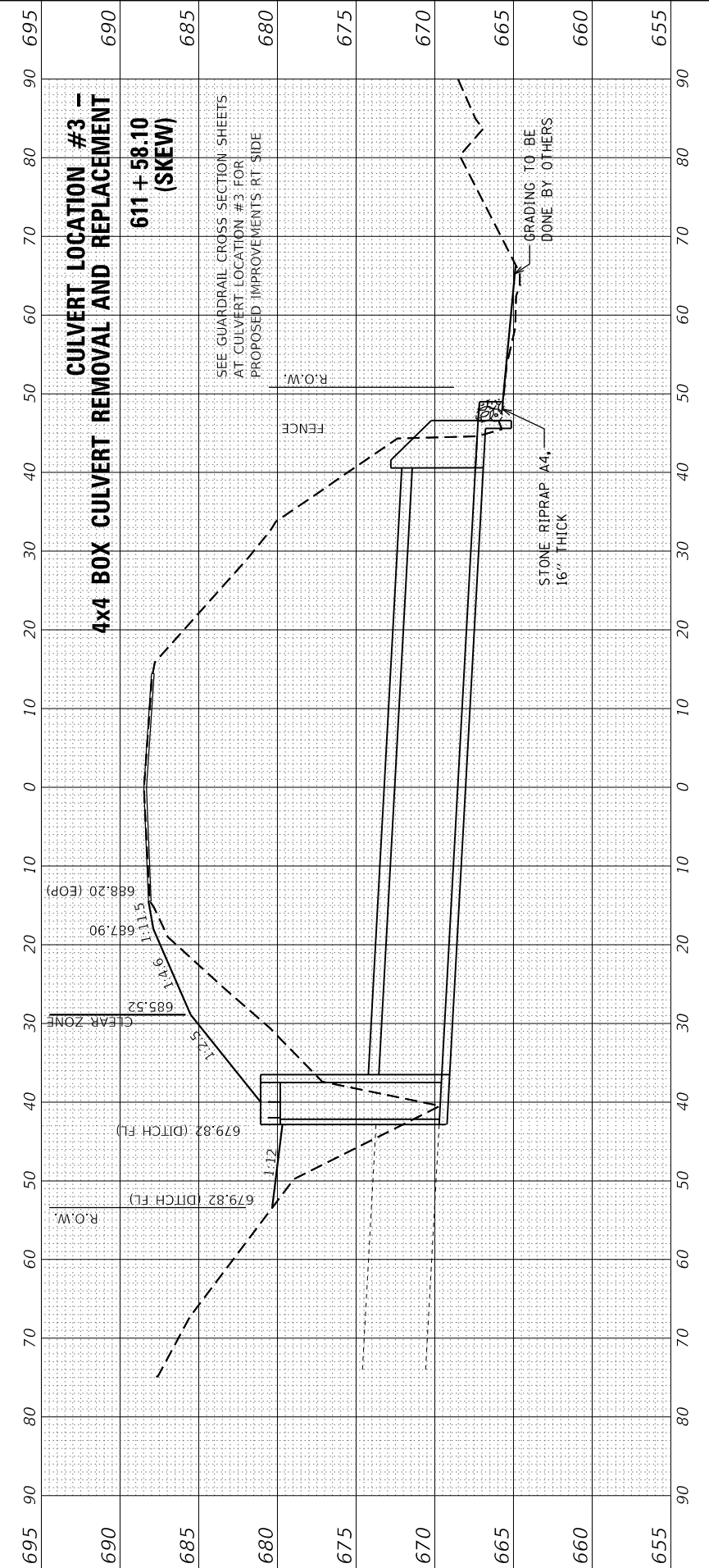
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PLOT SCALE = 20.0000 ' / in.	CHECKED - DSR	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (CULVERT LOCATION #3)**

SCALE: SHEET 2 OF 4 SHEETS STA. 611+58.10 TO STA. 611+58.10

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	83
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93791	



FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

MODEL: Defnair

FILE NAME: P:\2023\45\Design\CAD\_Sheets\31543714-090-31543714.dgn

**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFALETTE AVE.  
JACKSONVILLE, IL 61830  
PHONE: 217-245-4146 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000952

C = 4.52 Sq Ft  
F = 7.47 Sq Ft  
CV = 5.75 Cu Yd  
FV = 5.97 Cu Yd  
MO = 8.64 Cu Yd

**611 + 82.25 RT**

C = 8.71 Sq Ft  
F = 2.84 Sq Ft  
CV = 11.53 Cu Yd  
FV = 4.21 Cu Yd  
MO = 8.86 Cu Yd

**611 + 51.00 RT**

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F = 1.71 Sq Ft  
CV = 5.48 Cu Yd  
FV = 1.18 Cu Yd  
MO = 3.12 Cu Yd

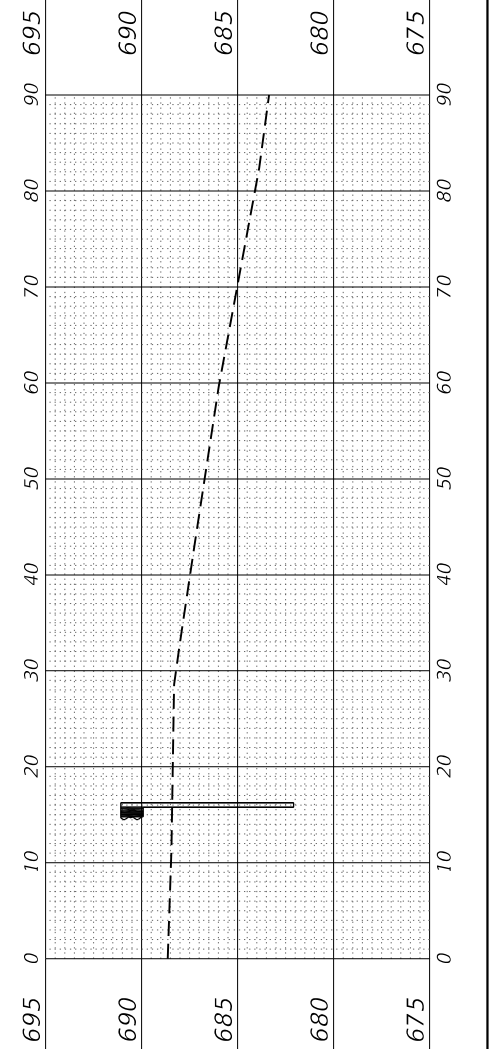
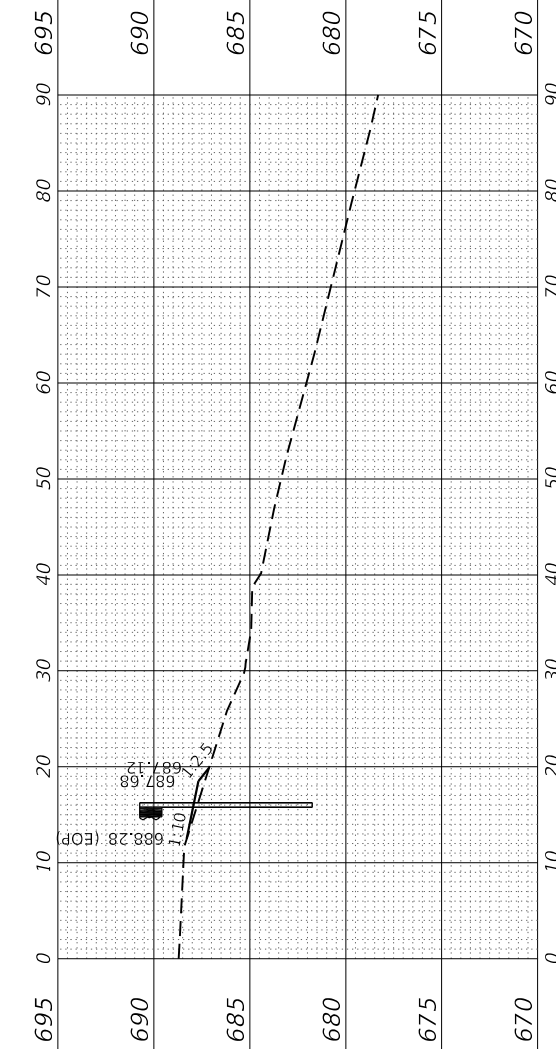
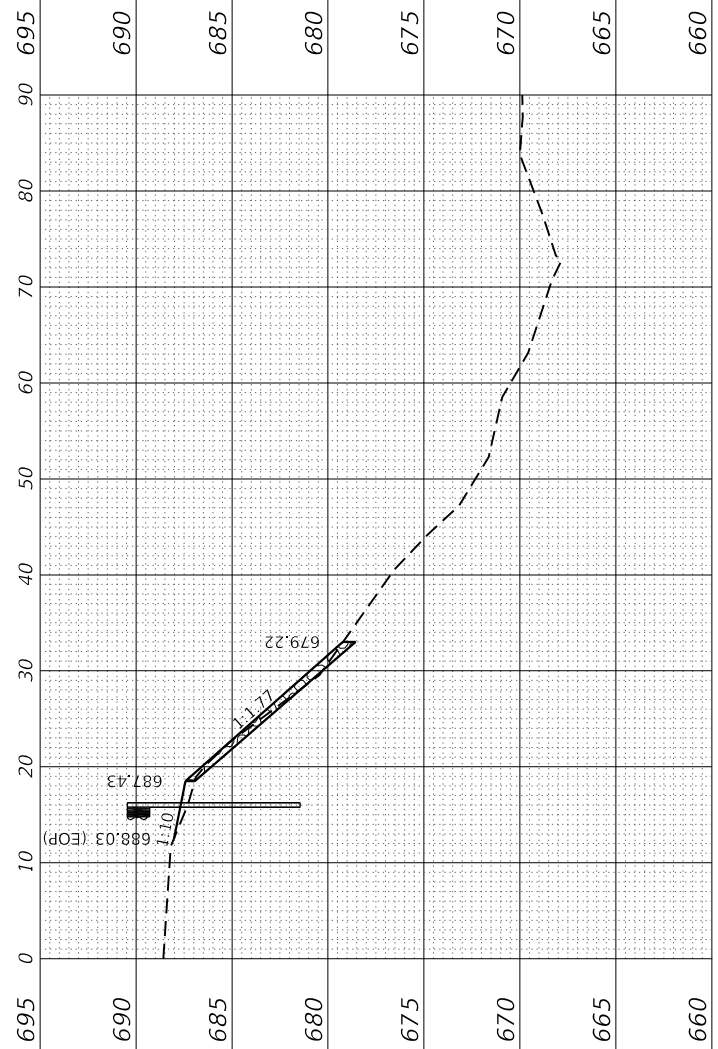
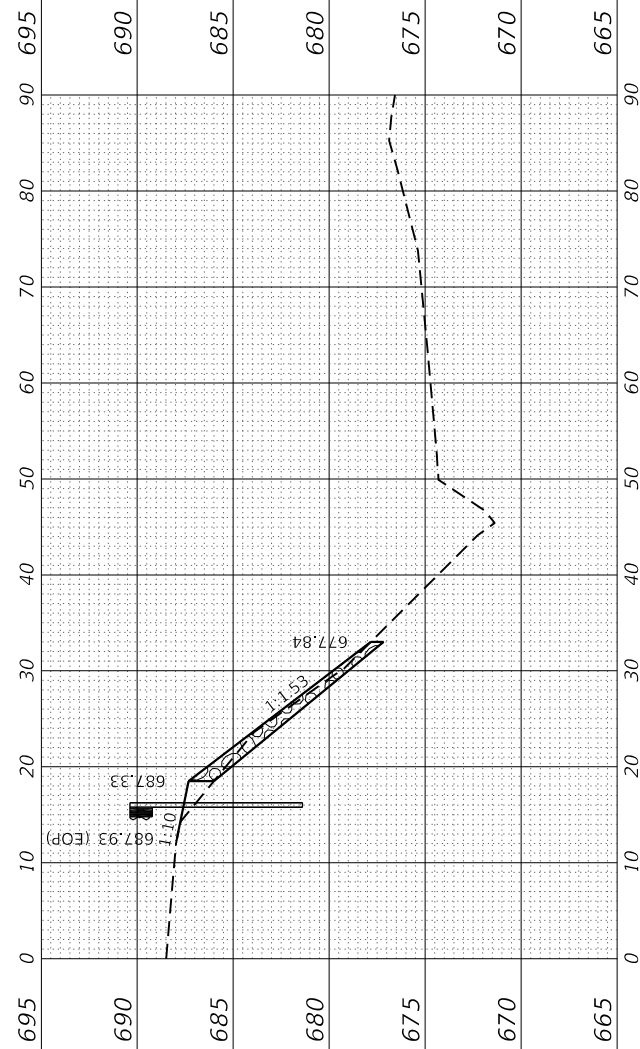
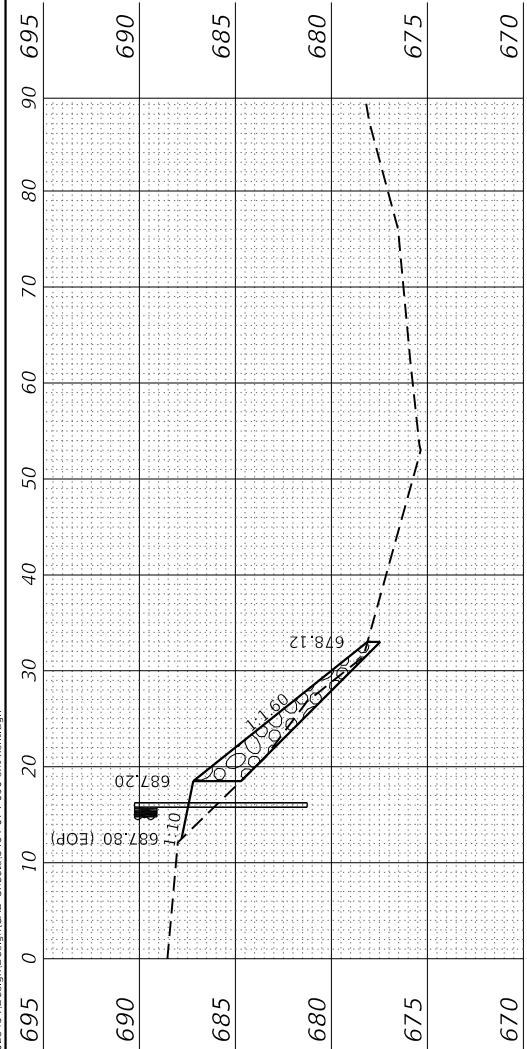
**611 + 01.00 RT**

C = 0.00 Sq Ft  
F = 1.27 Sq Ft  
CV = 0.00 Cu Yd  
FV = 1.18 Cu Yd  
MO = -1.18 Cu Yd

**610 + 51.00 RT**

C = 0.00 Sq Ft  
F = 0.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 0.00 Cu Yd  
MO = 0.00 Cu Yd

**610 + 01.00 RT**



**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
(GUARDRAIL AT CULVERT LOCATION #3 RT SIDE)**

USER NAME = drunoll	DESIGNED - DSR	REVISED -
	DRAWN - DSR	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SJB	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

SCALE: SHEET 3 OF 4 SHEETS STA. 610+01.01 TO STA. 611+82.25

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	84
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

FINAL SURVEY NO.	SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEY PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

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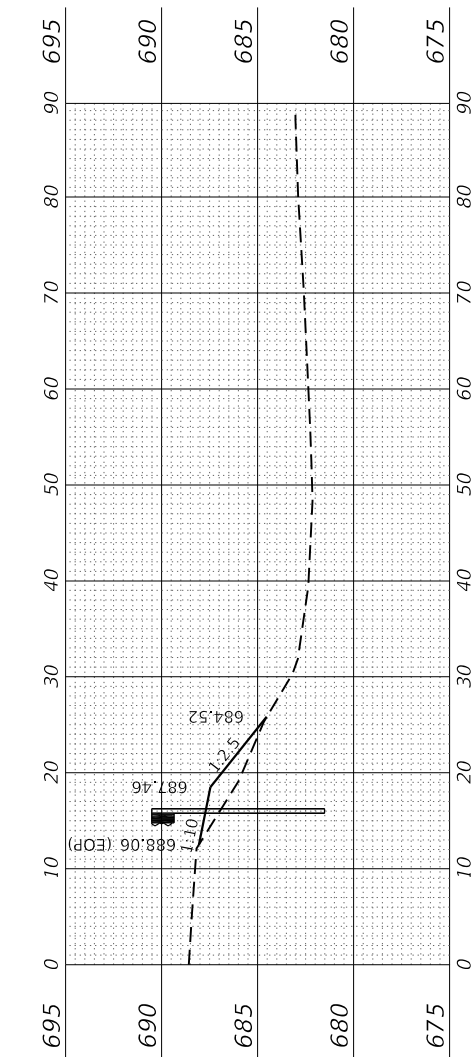
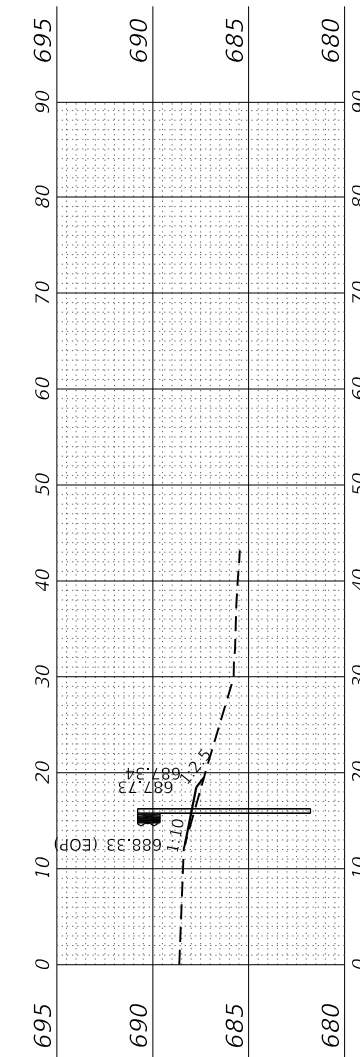
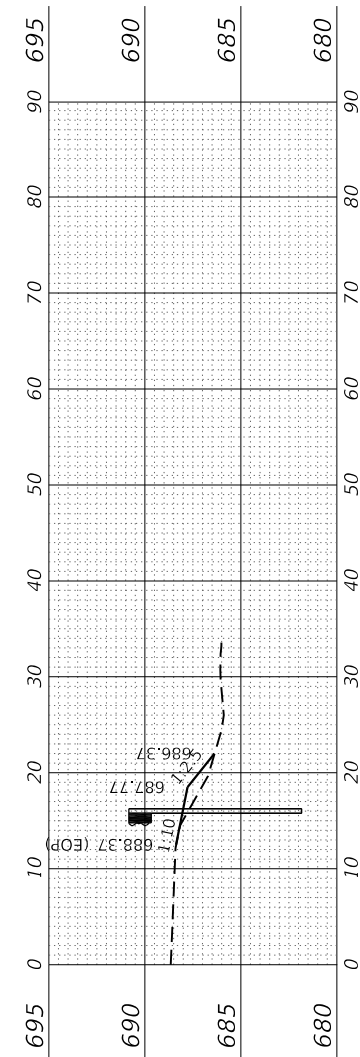
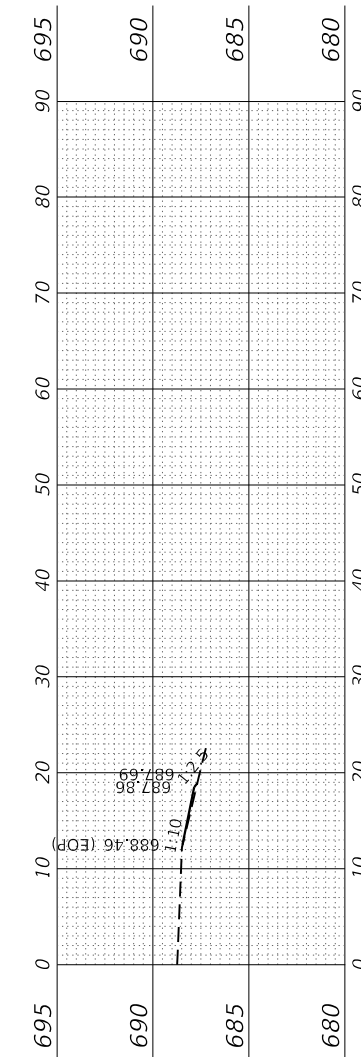
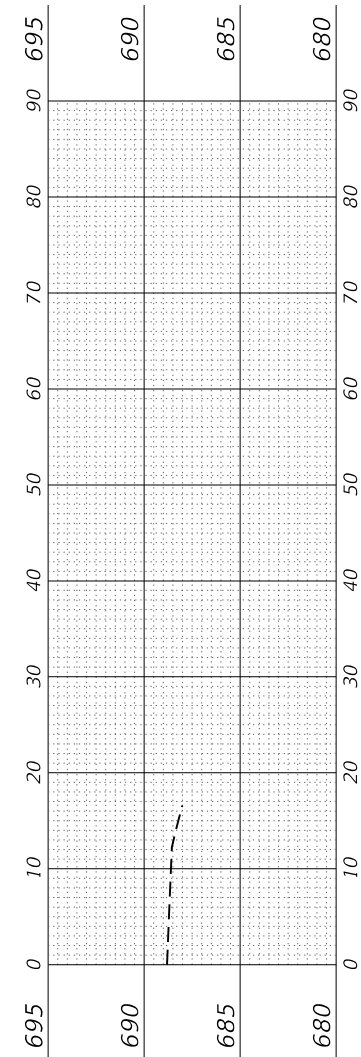
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 F = 0.00 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 0.17 Cu Yd  
 MO = -15.01 Cu Yd  
**613 + 53.75 RT**

C = 0.00 Sq Ft  
 F = 0.38 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 2.15 Cu Yd  
 MO = -14.84 Cu Yd  
**613 + 29.75 RT**

C = 0.00 Sq Ft  
 F = 2.93 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 0.88 Cu Yd  
 MO = -12.69 Cu Yd  
**612 + 94.75 RT**

C = 0.00 Sq Ft  
 F = 0.87 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 8.74 Cu Yd  
 MO = -11.81 Cu Yd  
**612 + 82.25 RT**

C = 0.00 Sq Ft  
 F = 8.57 Sq Ft  
 CV = 3.14 Cu Yd  
 FV = 14.85 Cu Yd  
 MO = -3.07 Cu Yd  
**612 + 32.25 RT**



**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (GUARDRAIL AT CULVERT LOCATION #3 RT SIDE)**

USER NAME = drunoll	DESIGNED - DSR	REVISED -
PLOT SCALE = 20.0000' / in.	DRAWN - DSR	REVISED -
PLOT DATE = 3/18/2022	CHECKED - SJB	REVISED -
	DATE - 03/2022	REVISED -

SCALE: SHEET 4 OF 4 SHEETS STA. 612+32.25 TO STA. 613+53.75

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	85
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93791	

**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61850  
 PHONE: 217-245-4146 FAX: 217-243-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

FINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

ORIGINAL SURVEY	SURVEYED	BY	DATE
NOTE BOOK	PLOTTED		
NO.	TEMPLATE		
	AREAS CHECKED		
	AREAS CHECKED		

MODEL: Defnair  
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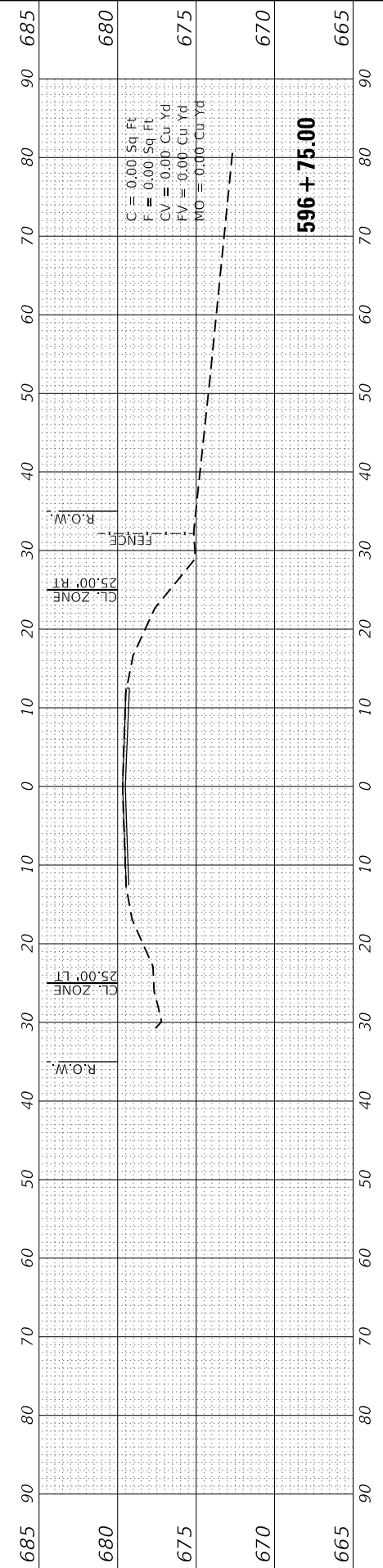
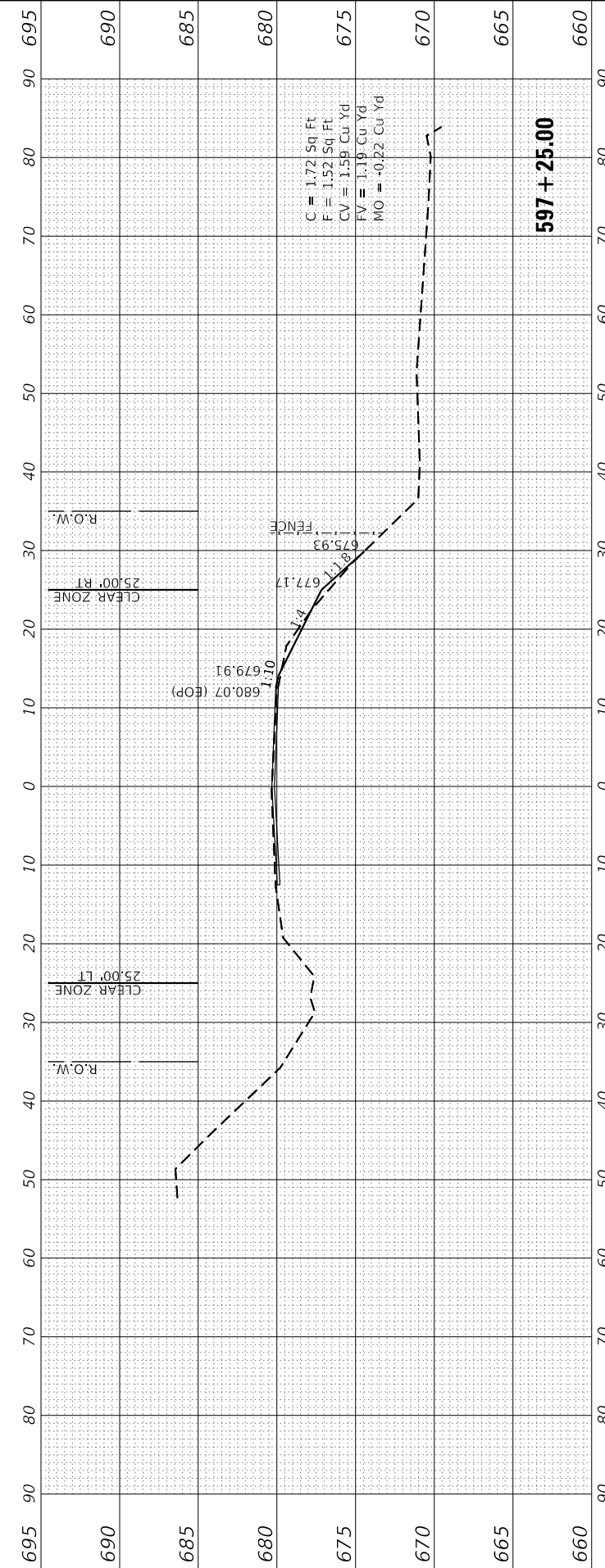
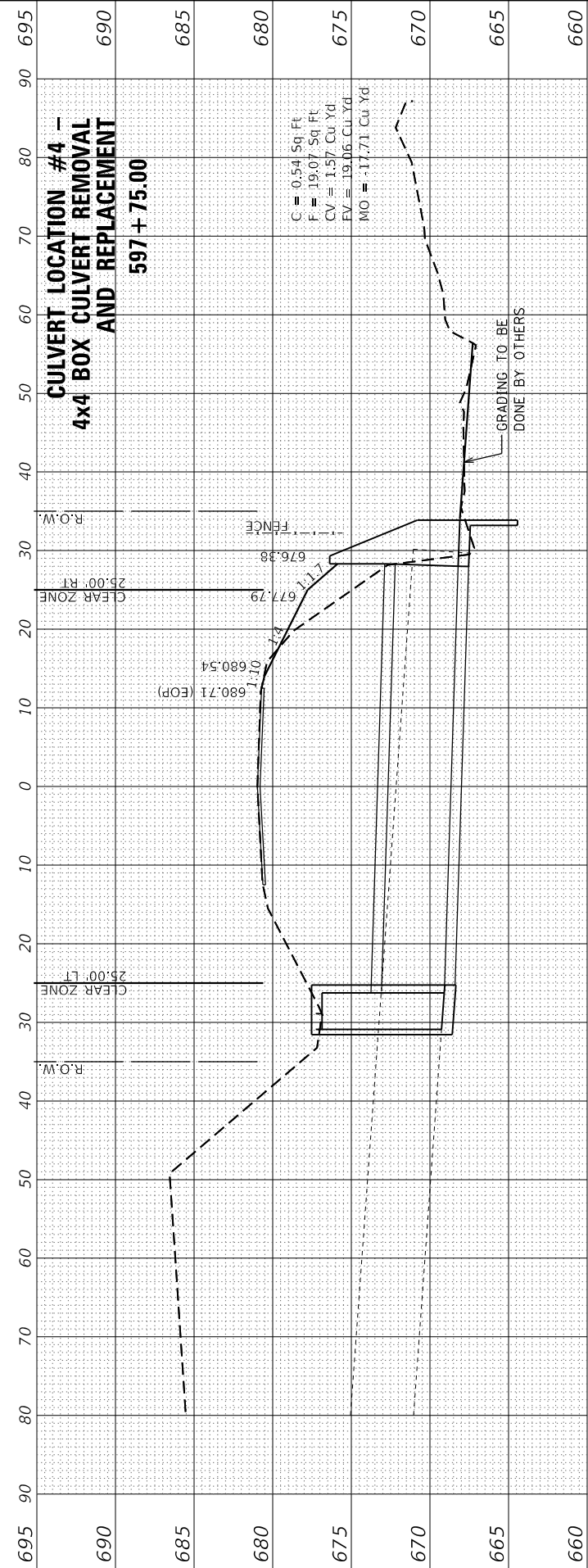
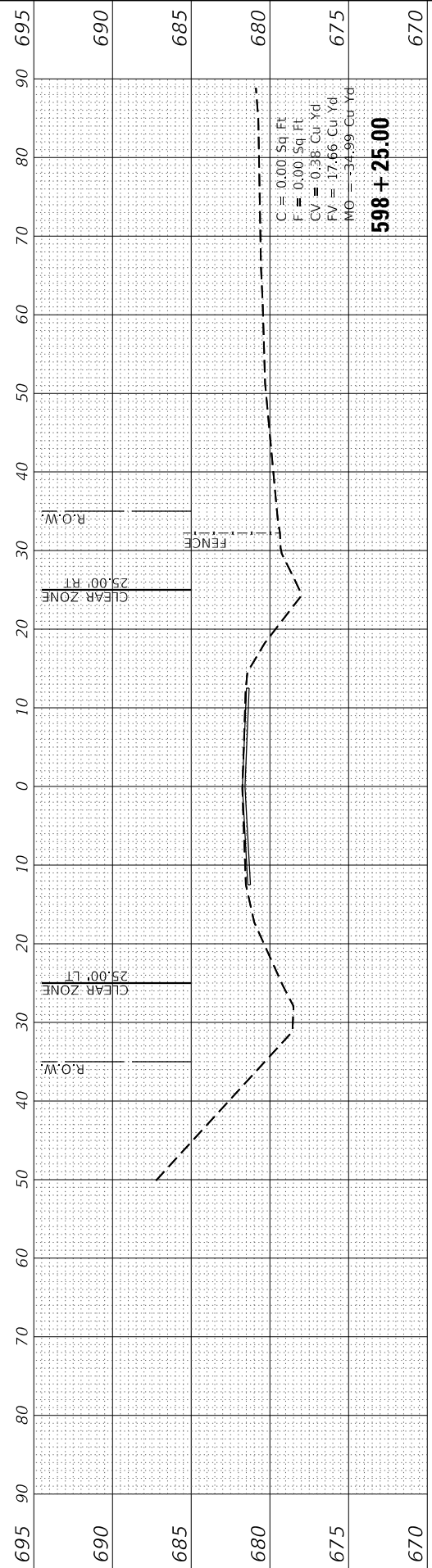
**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4146 FAX: 217-243-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000832

USER NAME =	druhoff	DESIGNED -	SJB	REVISED -	
		DRAWN -	SJB	REVISED -	
PLOT SCALE =	20.0000" / 1'	CHECKED -	DSR	REVISED -	
PLOT DATE =	3/18/2022	DATE -	03/2022	REVISED -	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

<b>CROSS SECTIONS (CULVERT LOCATION #4)</b>			
SCALE:	SHEET 1	OF 1	SHEETS
	STA. 596+75 TO STA. 598+25.00		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	86
				CONTRACT NO. 93791
ILLINOIS		FED. AID PROJECT		



FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

MODEL: Defnair  
 FILE NAME: P:\2025\51\Design\CAD\_Sheets\3151-07-4-090-sh-cs1.dgn

**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4146 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000932

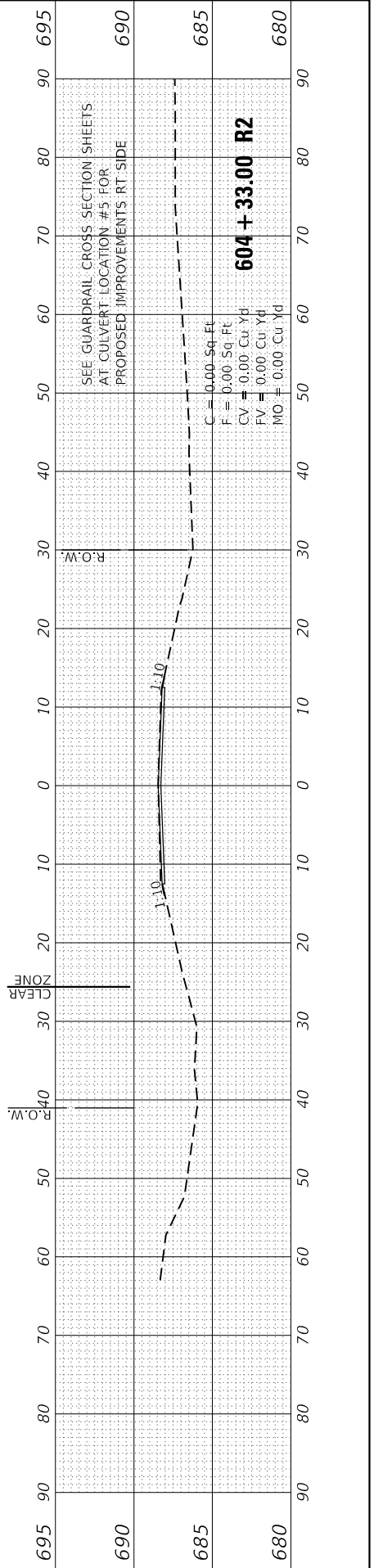
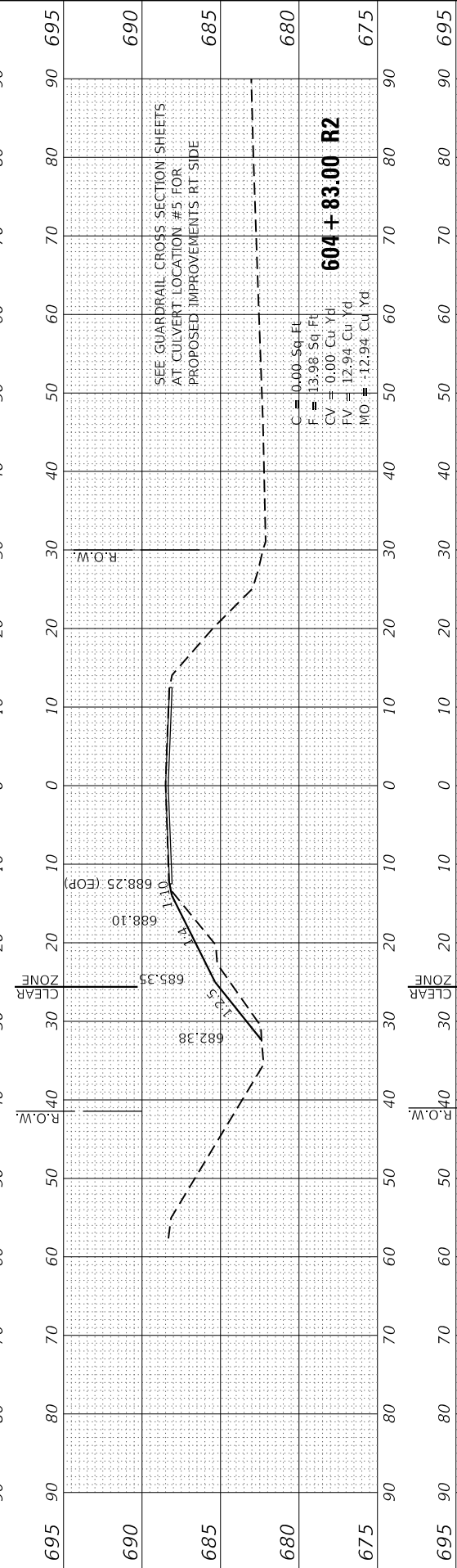
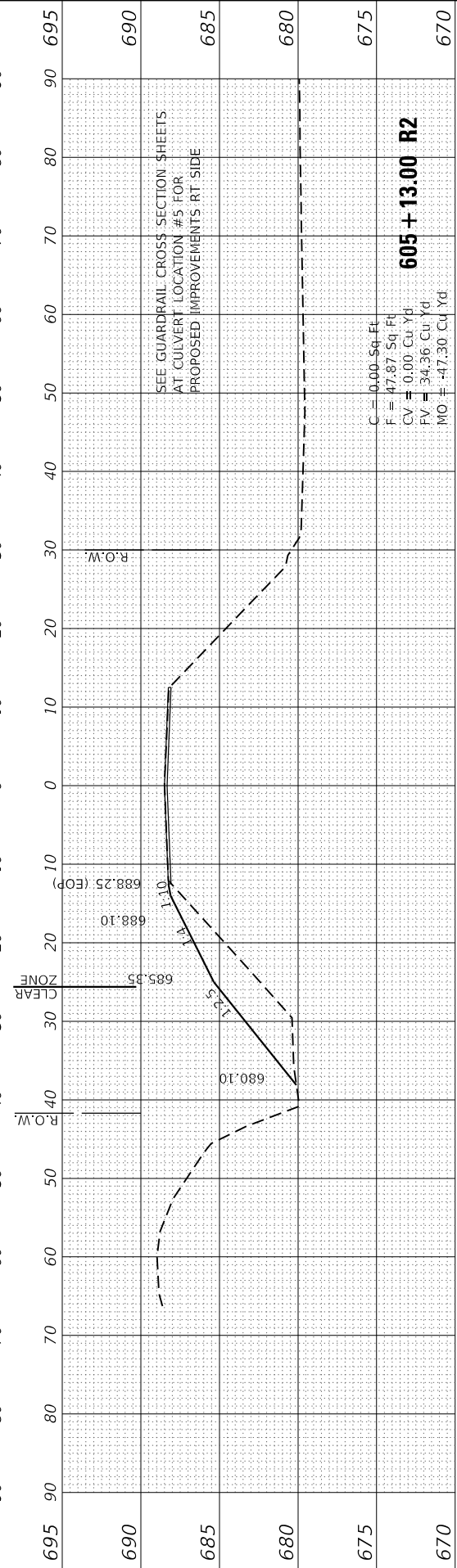
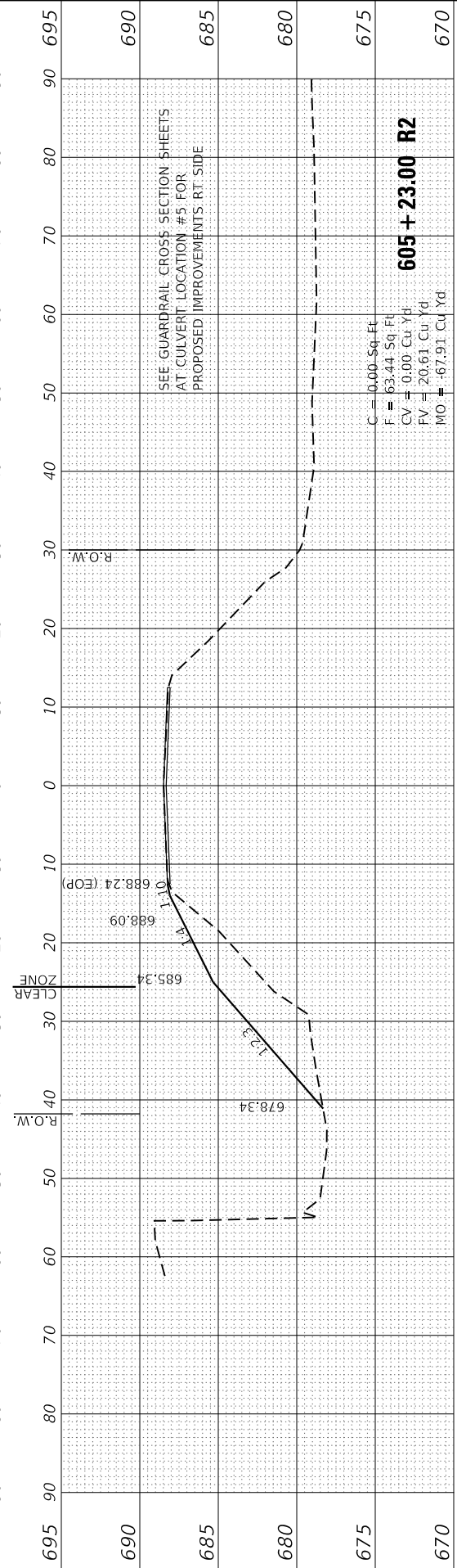
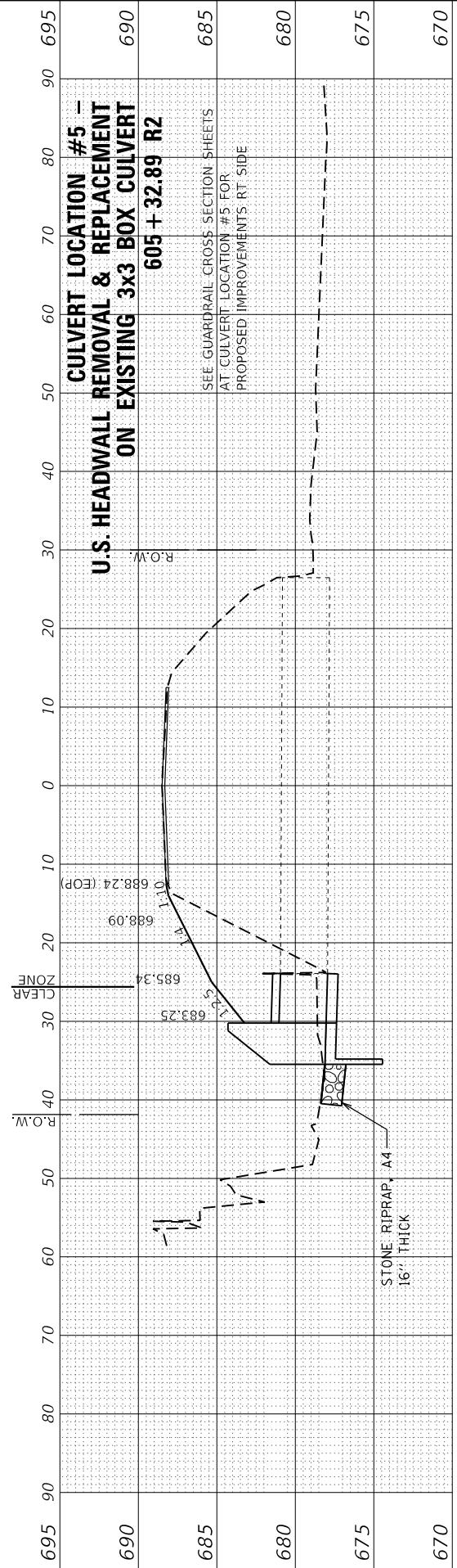
USER NAME =	druinall	DESIGNED -	SJB	REVISED -	
		DRAWN -	SJB	REVISED -	
PLOT SCALE =	20.0000' / in.	CHECKED -	DSR	REVISED -	
PLOT DATE =	3/18/2022	DATE -	03/2022	REVISED -	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

SCALE: SHEET 1 OF 4 SHEETS STA. 604+32.89 R2 TO STA. 605+32.89 R2

**CROSS SECTIONS  
 (CULVERT LOCATION #5 LT SIDE)**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	87
CONTRACT NO. 93791				
ILLINOIS		FED. AID PROJECT		



FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		

MODEL: Definit  
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**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1910 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 62650  
 PHONE: 217-245-4146 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-00852

USER NAME =	druholl
DESIGNED -	SJB
DRAWN -	SJB
CHECKED -	DSR
DATE -	03/2022

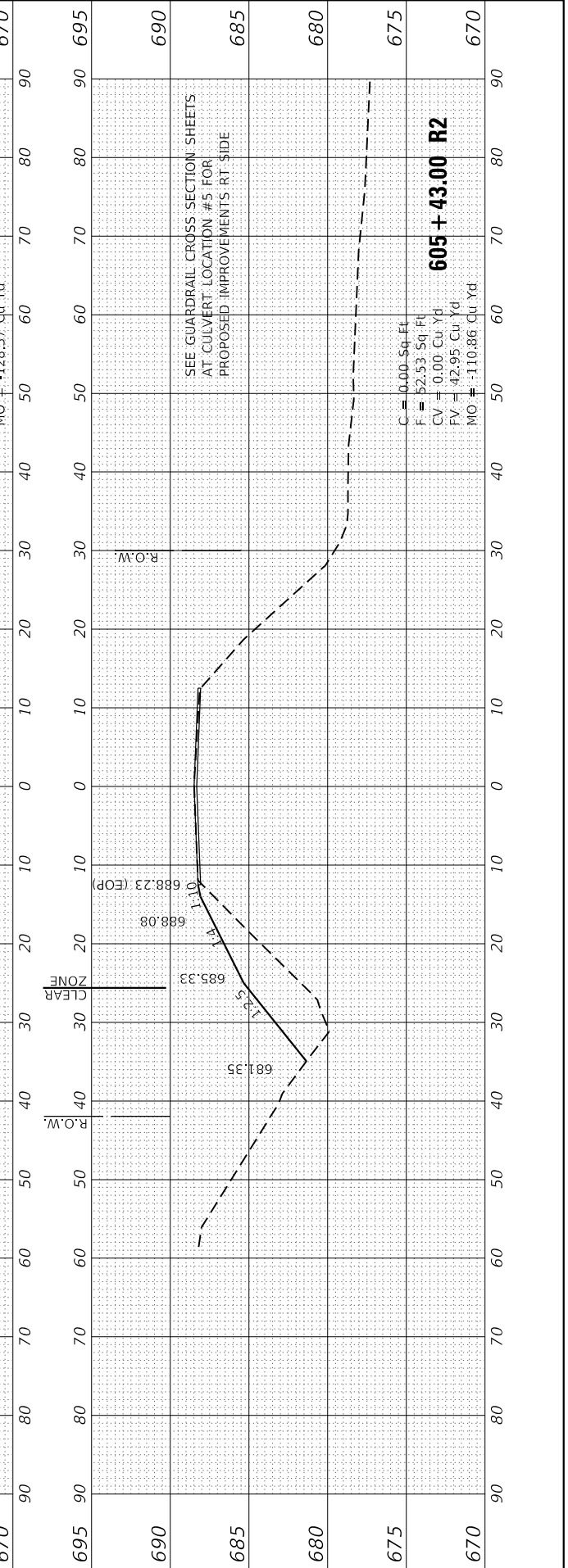
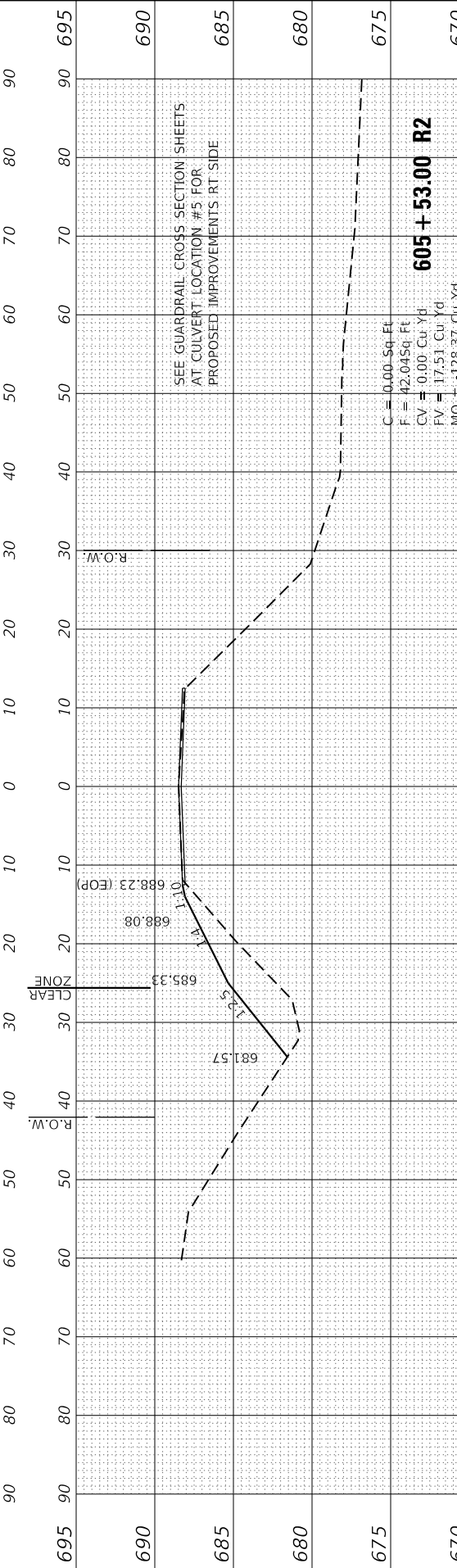
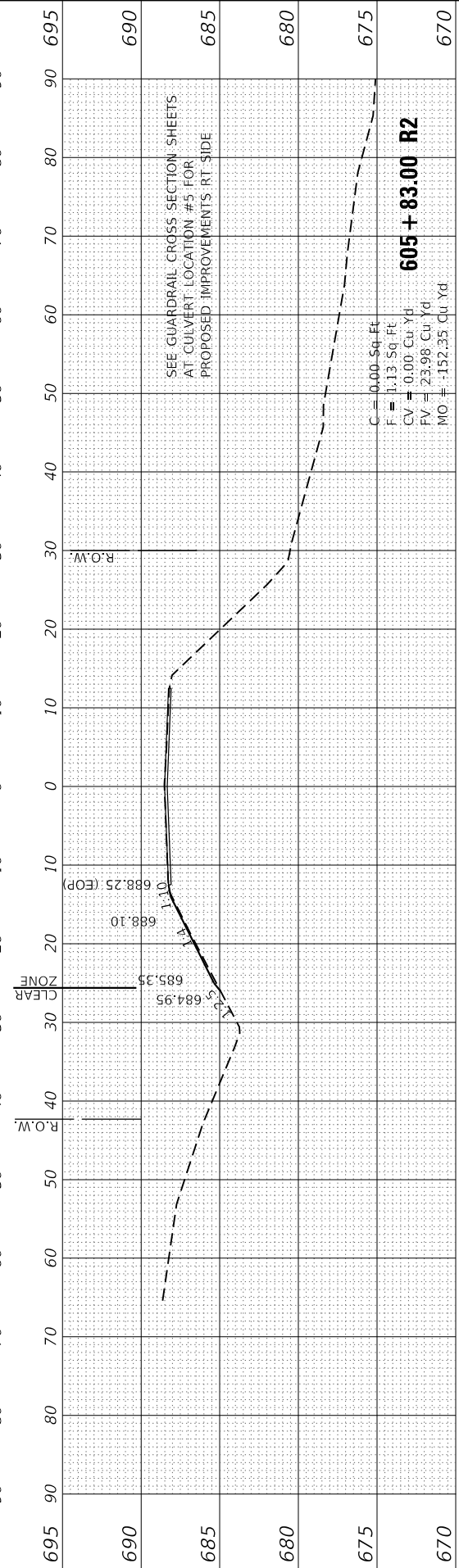
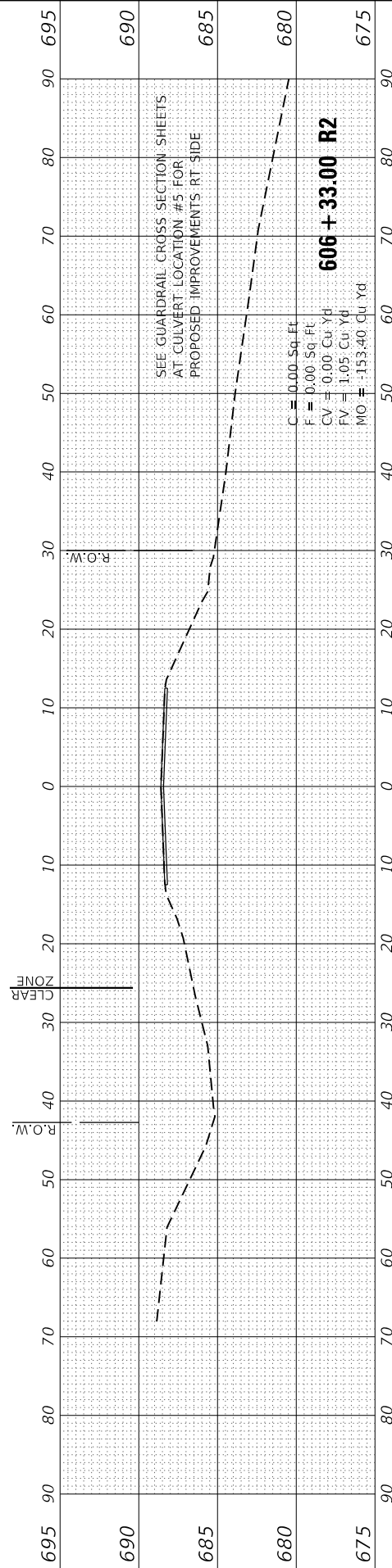
REVISED -	
REVISED -	
REVISED -	
REVISED -	

**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

SCALE: SHEET 2 OF 4 SHEETS STA. 605+42.89 R2 TO STA. 606+32.89 R2

**CROSS SECTIONS  
 (CULVERT LOCATION #5 LT SIDE)**

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	88
CONTRACT NO. 93791			ILLINOIS FED. AID PROJECT	





FINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

ORIGINAL SURVEY NO.	SURVEYED PLOTTED TEMPLATE AREAS CHECKED	BY	DATE

C = 0.00 Sq Ft  
 F = 1.75 Sq Ft  
 CV = 2.41 Cu Yd  
 FV = 3.51 Cu Yd  
 MO = -34.99 Cu Yd  
**606 + 26.65 RT**

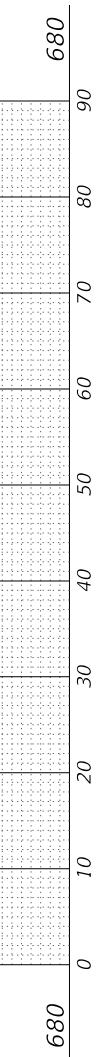
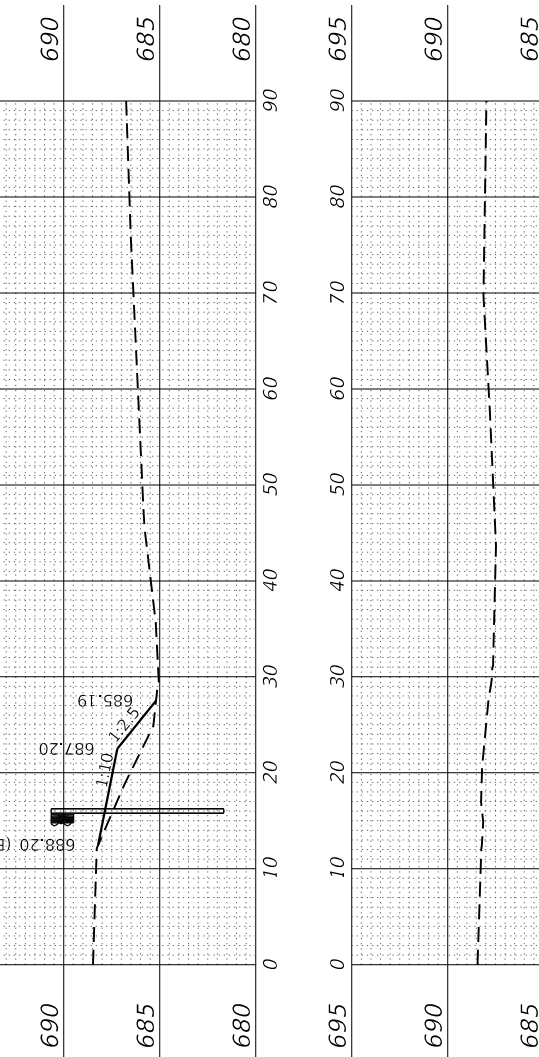
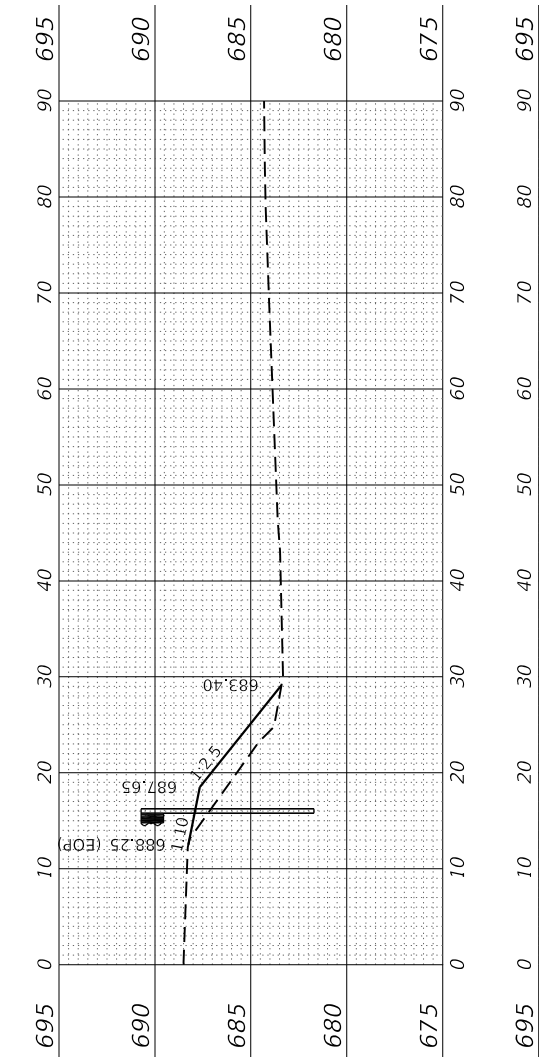
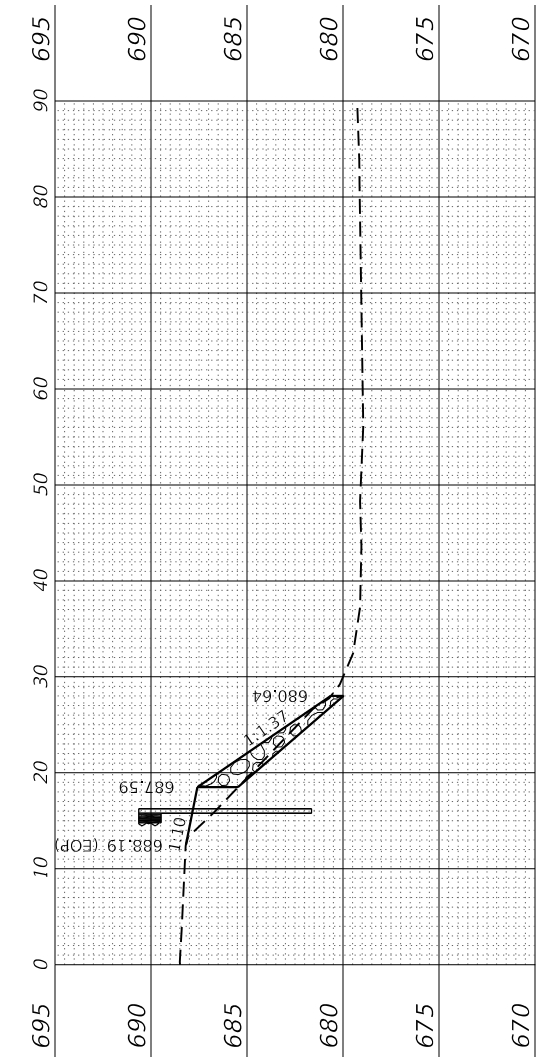
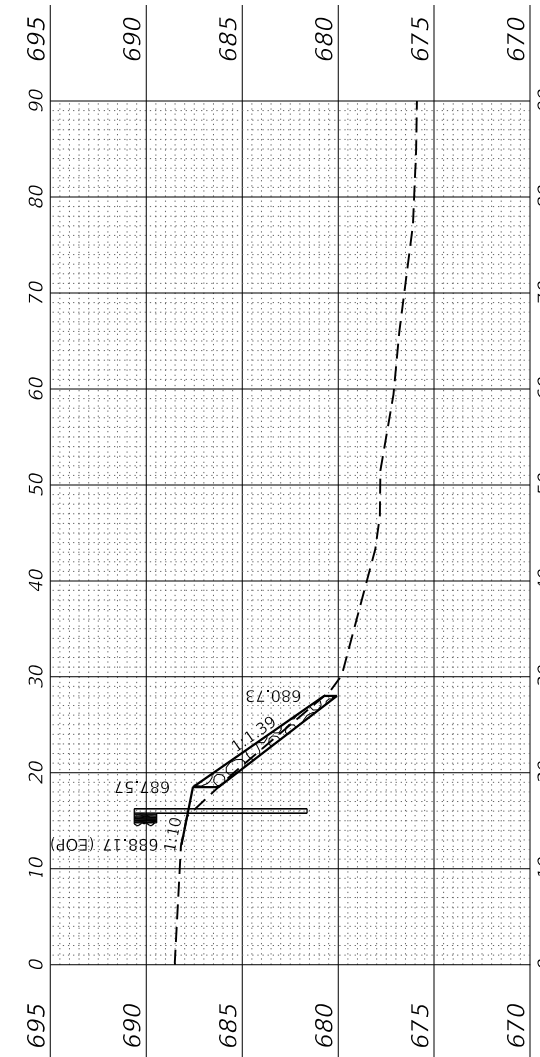
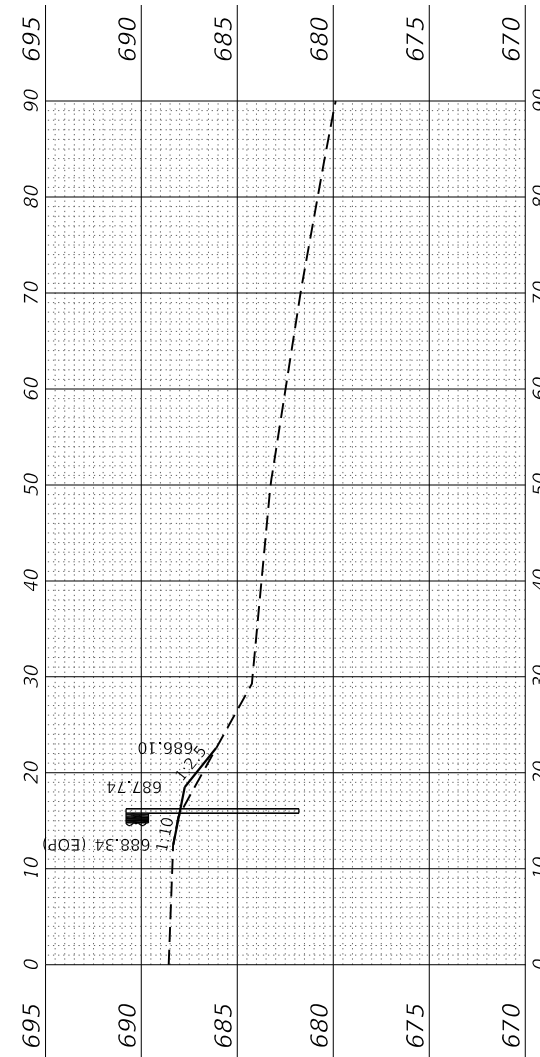
C = 3.47 Sq Ft  
 F = 2.04 Sq Ft  
 CV = 6.07 Cu Yd  
 FV = 8.15 Cu Yd  
 MO = -33.89 Cu Yd  
**605 + 76.65 RT**

C = 4.30 Sq Ft  
 F = 5.78 Sq Ft  
 CV = 2.99 Cu Yd  
 FV = 18.91 Cu Yd  
 MO = -31.81 Cu Yd  
**605 + 20.40 RT**

C = 0.00 Sq Ft  
 F = 14.64 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 11.33 Cu Yd  
 MO = -15.89 Cu Yd  
**604 + 70.40 RT**

C = 0.00 Sq Ft  
 F = 9.84 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 4.56 Cu Yd  
 MO = -4.56 Cu Yd  
**604 + 45.40 RT**

C = 0.00 Sq Ft  
 F = 0.00 Sq Ft  
 CV = 0.00 Cu Yd  
 FV = 0.00 Cu Yd  
 MO = 0.00 Cu Yd  
**604 + 20.40 RT**



**STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION**

**CROSS SECTIONS  
 (CULVERT LOCATION #5 RT SIDE)**

USER NAME = drunoll	DESIGNED - DSR	REVISED -
	DRAWN - DSR	REVISED -
PLOT SCALE = 20.0000' / in.	CHECKED - SJB	REVISED -
PLOT DATE = 3/18/2022	DATE - 03/2022	REVISED -

SCALE: SHEET 3 OF 4 SHEETS STA. 604+20.40 TO STA. 606+26.65

F.A.S. RTE. 310	SECTION 19-00108-00-R5	COUNTY MORGAN	TOTAL SHEETS 90	SHEET NO. 89
CONTRACT NO. 93791				
ILLINOIS FED. AID PROJECT				

**BA** BENTON & ASSOCIATES, INC.  
 CONSULTING ENGINEERS / LAND SURVEYORS  
 1970 WEST LAFAYETTE AVE.  
 JACKSONVILLE, IL 61830  
 PHONE: 217-245-4146 FAX: 217-245-4149  
 IL DESIGN FIRM REGISTRATION NO. 184-000952

MODEL: Defn.rur  
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FINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		

ORIGINAL SURVEY NO.	SURVEYED PLOTTED AREAS CHECKED	BY	DATE
NOTE BOOK	TEMPLATE		

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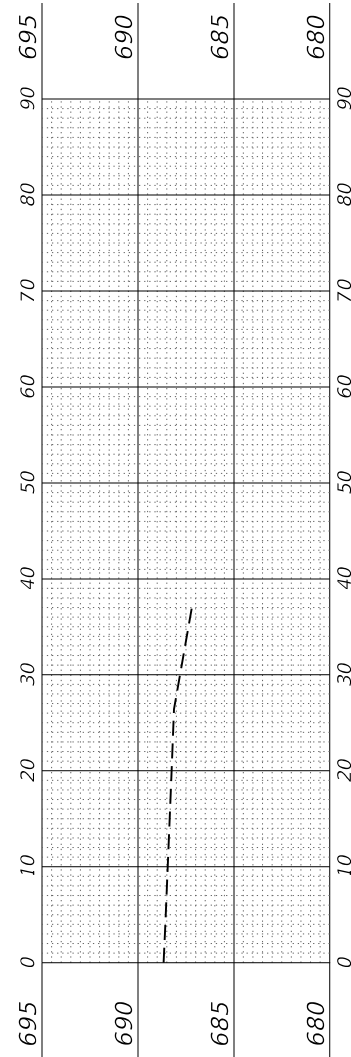
**BA** BENTON & ASSOCIATES, INC.  
CONSULTING ENGINEERS / LAND SURVEYORS  
1970 WEST LAFAYETTE AVE.  
JACKSONVILLE, IL 61850  
PHONE: 217-245-4146 FAX: 217-245-4149  
IL DESIGN FIRM REGISTRATION NO. 184-000832

USER NAME = drunoll	DESIGNED - DSR	REVISED -
PLOT SCALE = 20.0000 ' / in.	DRAWN - DSR	REVISED -
PLOT DATE = 3/18/2022	CHECKED - SJB	REVISED -
	DATE - 03/2022	REVISED -

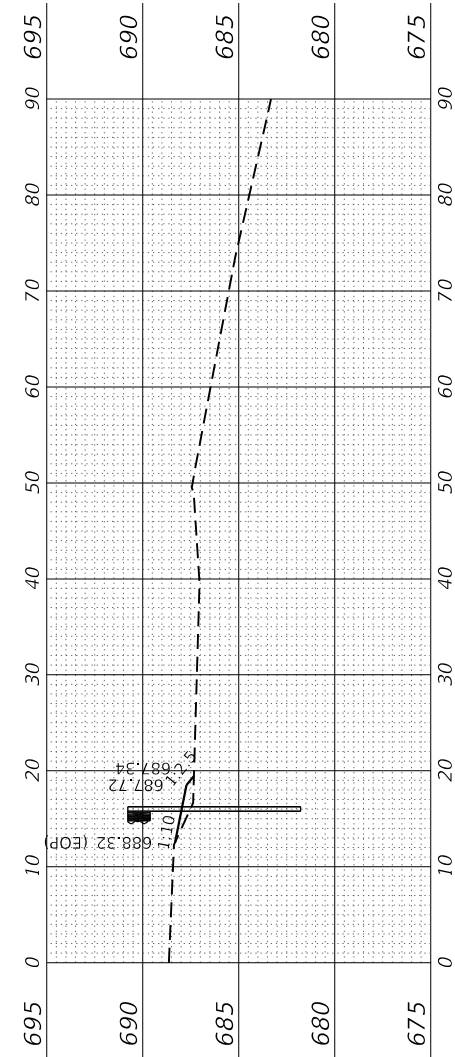
**STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION**

SCALE: SHEET 4 OF 4 SHEETS STA. 606+76.65 TO STA. 607+24.15

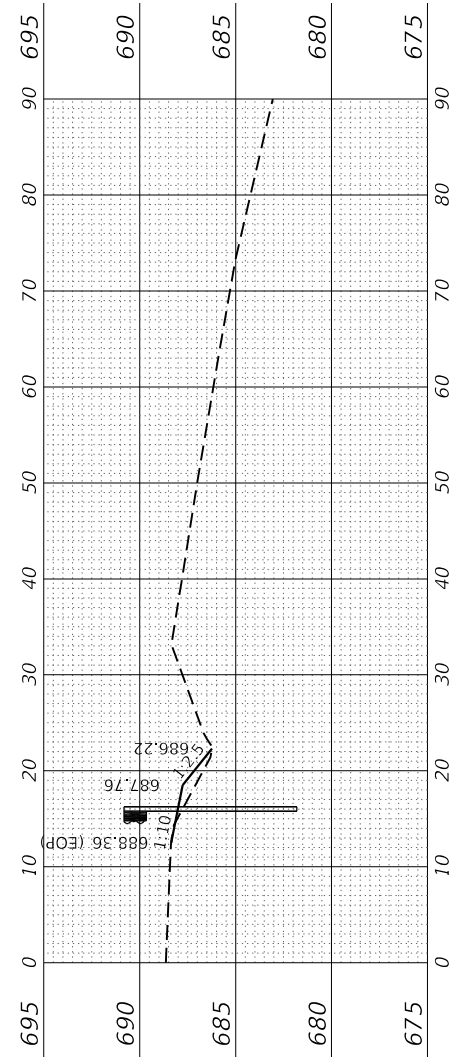
**CROSS SECTIONS  
(CULVERT LOCATION #5 RT SIDE)**



C = 0.00 Sq Ft  
F = 0.00 Sq Ft  
CV = 0.00 Cu Yd  
FV = 2.47 Cu Yd  
MO = -41.68 Cu Yd  
**607 + 24.15 RT**



C = 0.00 Sq Ft  
F = 2.10 Sq Ft  
CV = 0.00 Cu Yd  
FV = 1.14 Cu Yd  
MO = -40.35 Cu Yd  
**606 + 89.15 RT**



C = 0.00 Sq Ft  
F = 2.81 Sq Ft  
CV = 0.00 Cu Yd  
FV = 4.22 Cu Yd  
MO = -39.21 Cu Yd  
**606 + 76.65 RT**

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
310	19-00108-00-R5	MORGAN	90	90
ILLINOIS FED. AID PROJECT			CONTRACT NO. 93791	