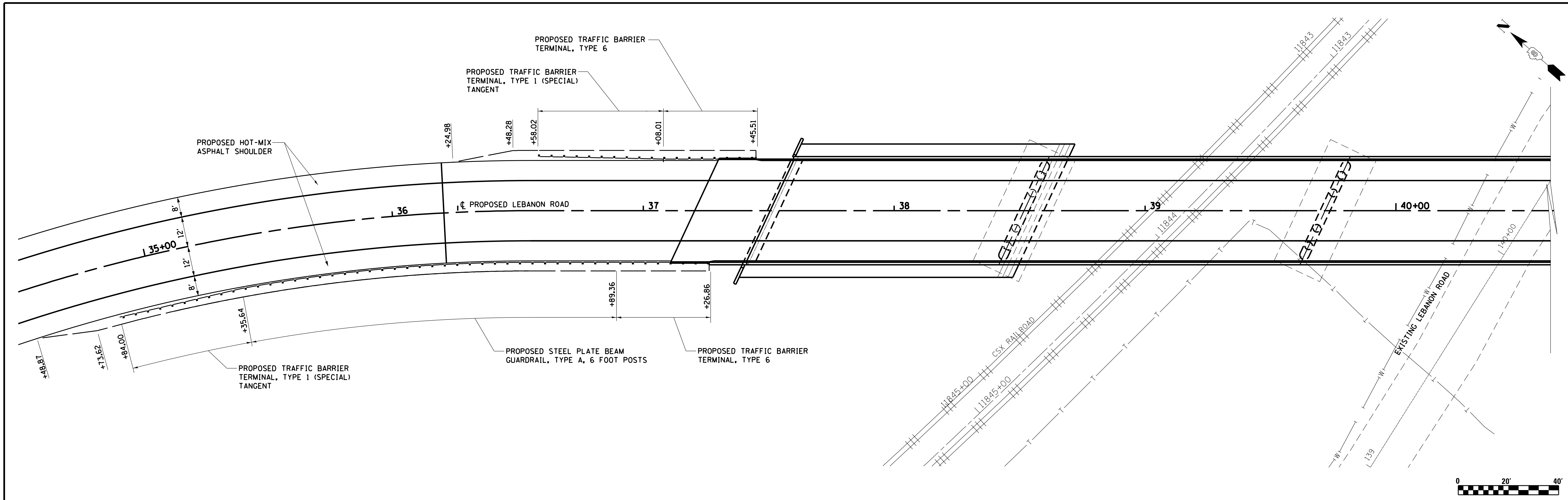

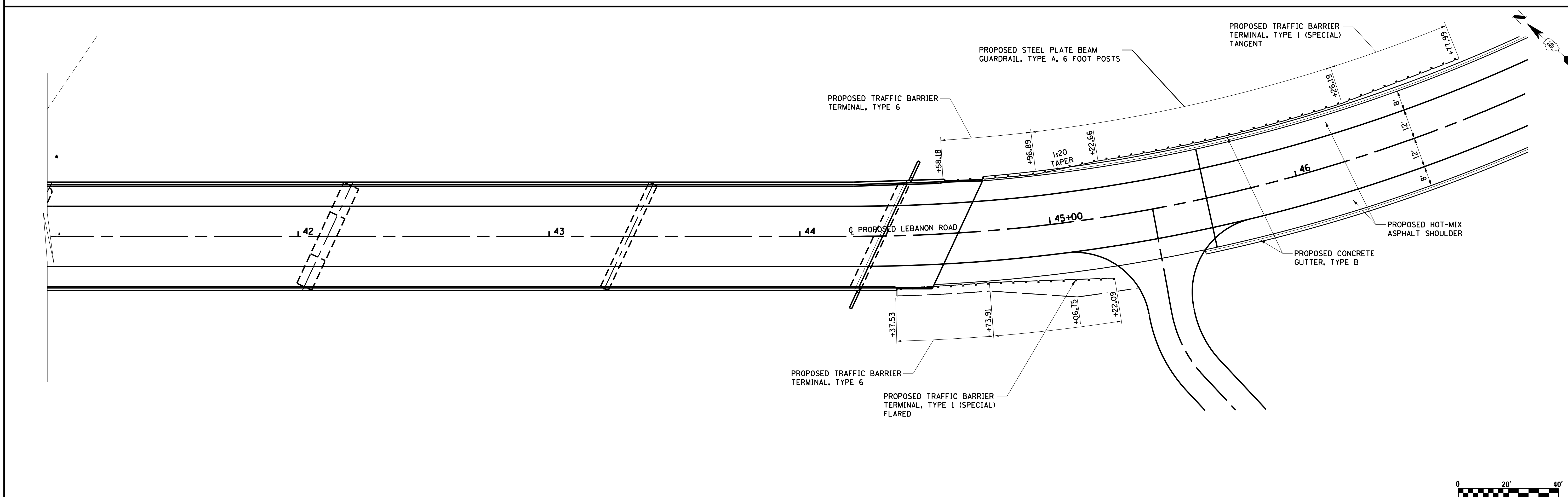

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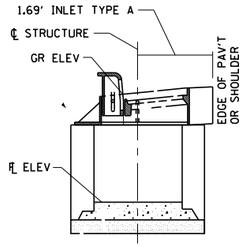
		DRAWN - LEC	REVISED -
	PLOT SCALE = 40.0000 '/ in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

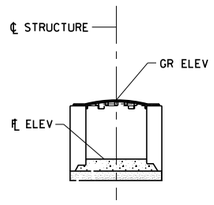
GUARDRAIL PLAN DETAILS

SCALE: 1"=20' | SHEET NO. 1 OF 1 SHEETS | STA. 35+00.00 TO STA. 46+50.000

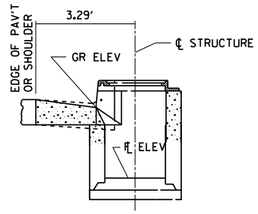
F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	201
		CONTRACT NO. 97790		



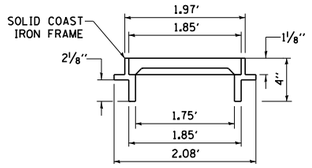
INLET TYPE A
W/ TYPE 3 OR 3V F&G



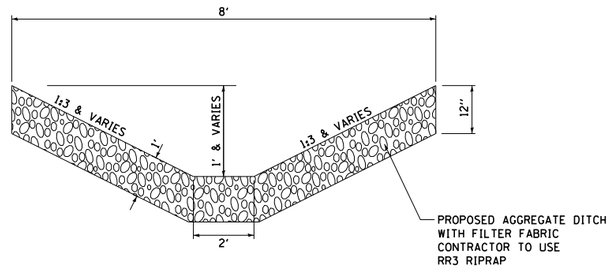
INLET TYPE A
W/ TYPE 8 GRATE



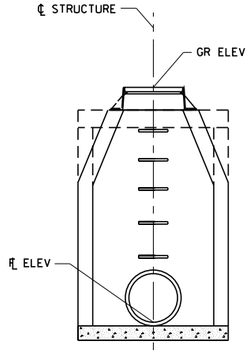
INLET TYPE A
W/ TYPE 15 F&G



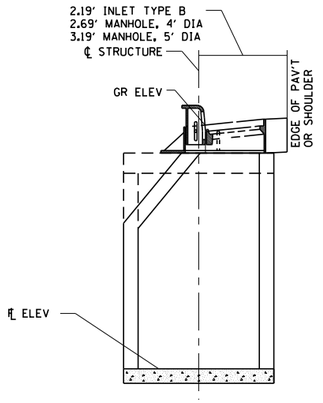
FRAME AND CLOSED LID



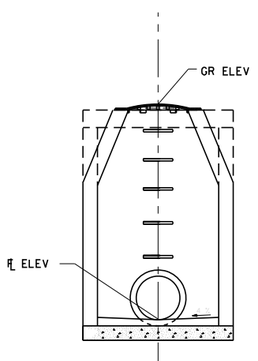
AGGREGATE DITCH DETAIL



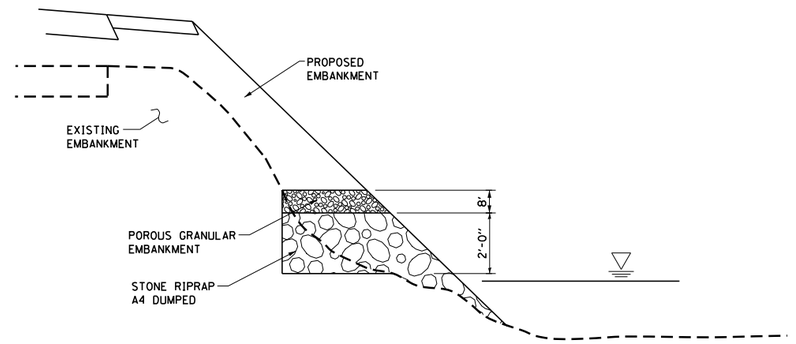
INLET TYPE B AND
MANHOLES W/ TYPE 1 F&L



INLET TYPE B
AND MANHOLES
W/ TYPE 3 AND 3V F&G

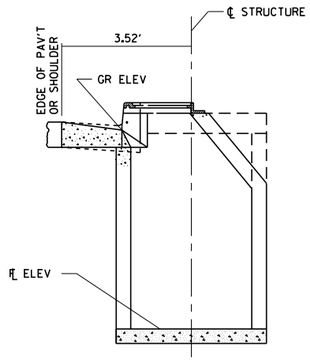


MANHOLES TYPE A
W/ TYPE 8 GRATE

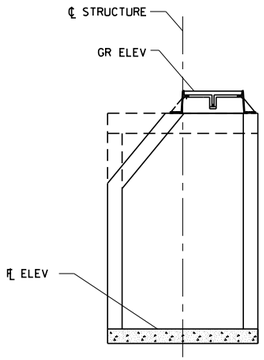


EMBANKMENT IN WATER DETAIL

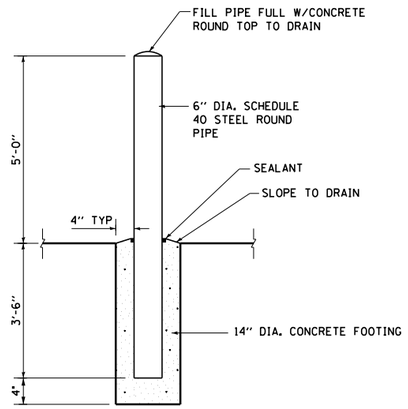
NOTE:
CA6 AND STONE RIPRAP TO BE BENCHED INTO THE EXISTING GROUND ABOVE THE WATER LEVEL



INLET TYPE B
W/ TYPE 15 F&G



INLET TYPE B
W/ TYPE 20 F&G



PIPE BOLLARD DETAIL
(NO SCALE)

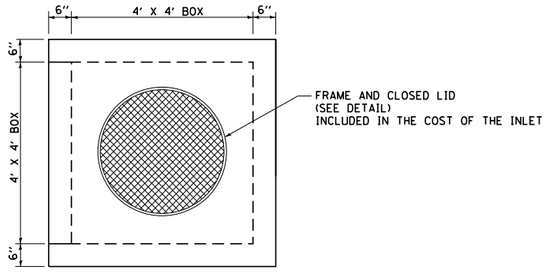
FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Miscellaneous details.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 40.0000 ' / in.	CHECKED - LWJ	REVISED -
Default	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

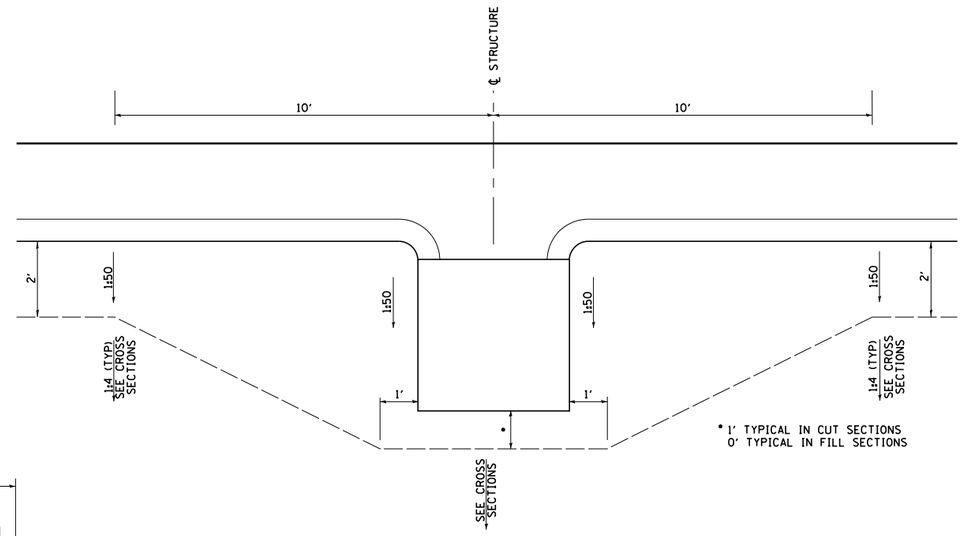
MISCELLANEOUS DETAILS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	202
		CONTRACT NO. 97790		



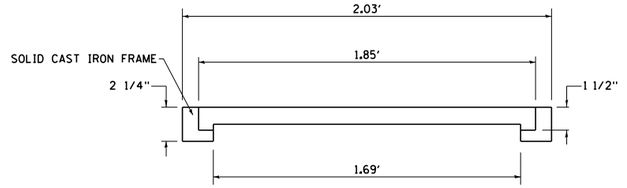
PRECAST LID DETAIL



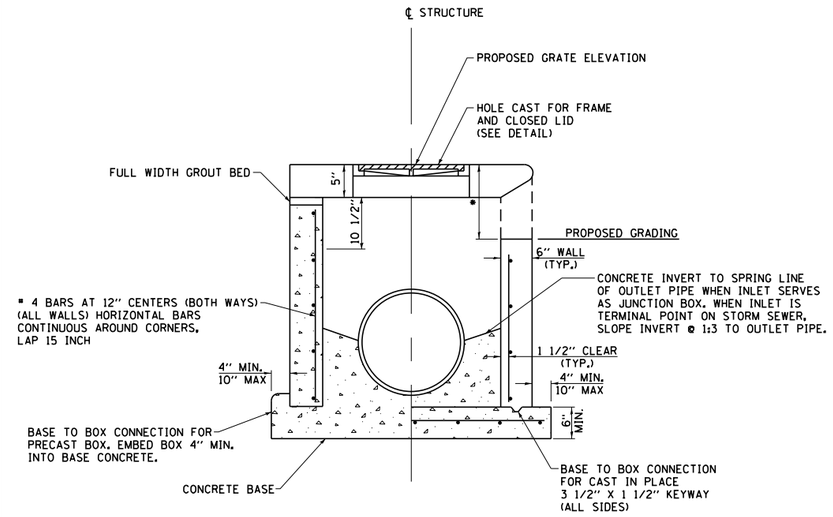
GRADING DETAIL
TYPICAL APPLICATION

STRUCTURE NO.	LOCATION STATION/OFFSET	DESCRIPTION	•-HEIGHT OF OPENING FROM TOP OF LID
45	236+00.00, 18.58' LT	INLET SPECIAL, NO. 1 (4X4)	10"
33	221+50.00, 28.61' LT	INLET SPECIAL, NO. 1 (4X4)	9"
30	220+85.00, 51.45' RT	INLET SPECIAL, NO. 1 (4X4)	9"

(1) INLET NOT ADJACENT TO CURB, OPENINGS ON 2 SIDES
(2) INLET NOT ADJACENT TO CURB, OPENINGS ON 4 SIDES



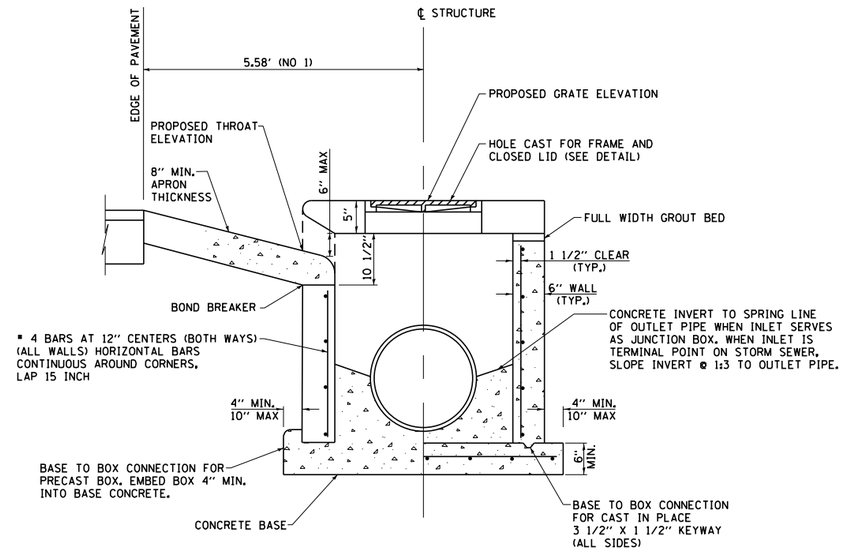
FRAME AND CLOSED LID



PRECAST BASE CAST IN PLACE

TYPICAL INLET SPECIAL, NO 1 - 4' x 4' BOX

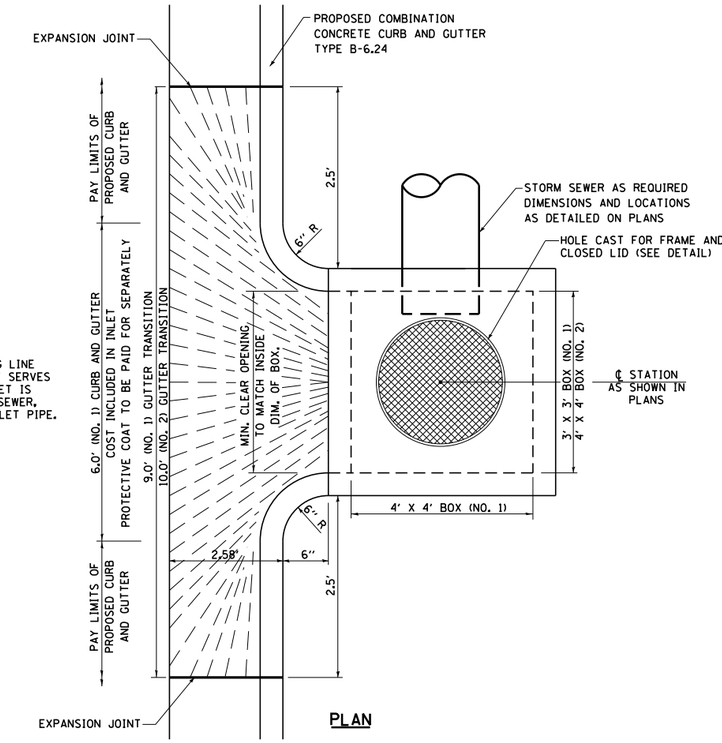
END VIEW



PRECAST BASE CAST IN PLACE

TYPICAL INLET SPECIAL, NO 1 - 4' x 4' BOX

END VIEW



PLAN

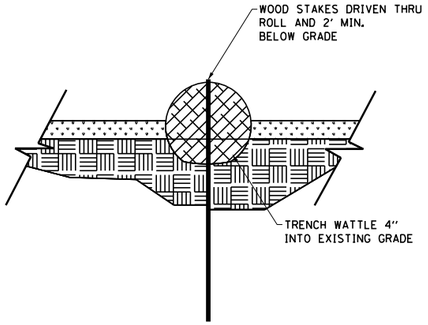
FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Miscellaneous details.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 40.0000 ' / in.	CHECKED - LWJ	REVISED -
Default	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

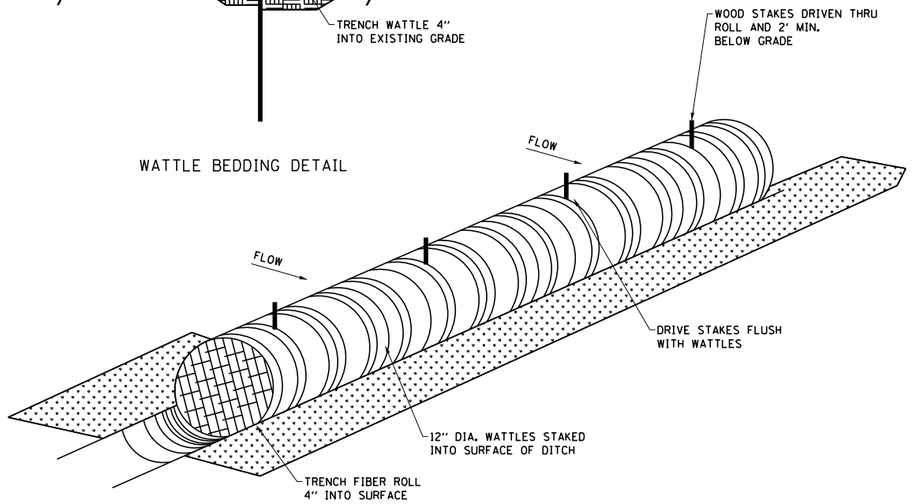
MISCELLANEOUS DETAILS

SCALE: | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	203
		CONTRACT NO. 97790		

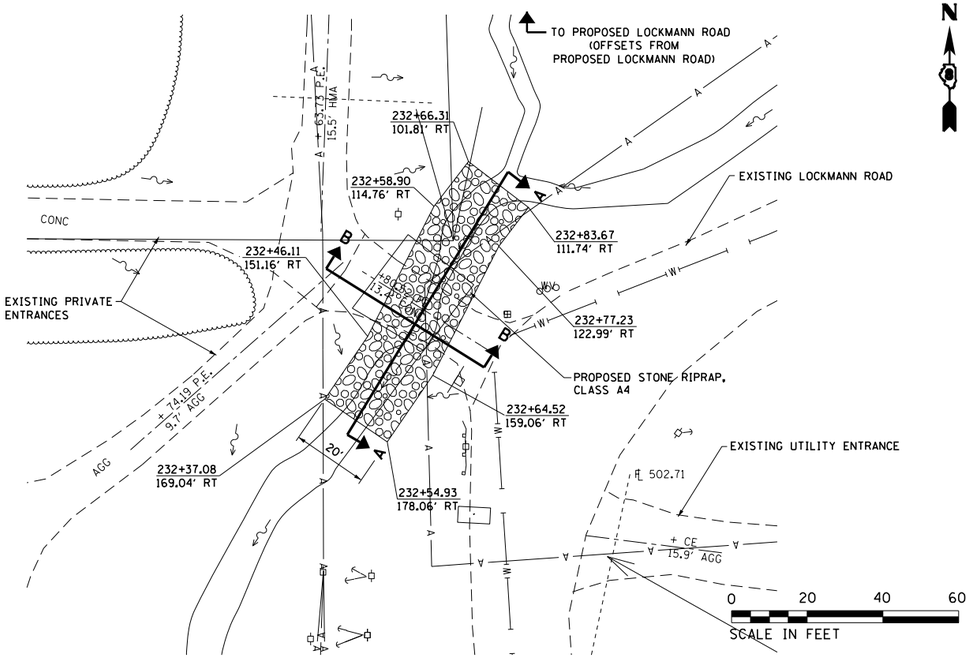


WATTLE BEDDING DETAIL

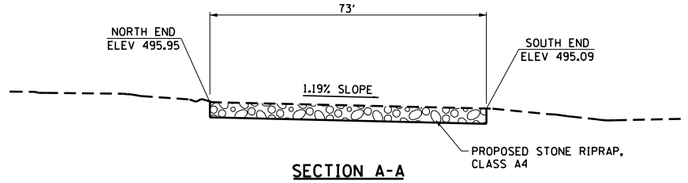


WATTLE BEDDING PLAN

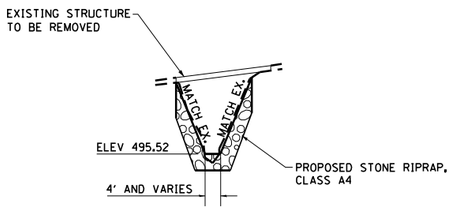
PERIMETER EROSION BARRIER, SPECIAL



RIPRAP DETAIL



SECTION A-A

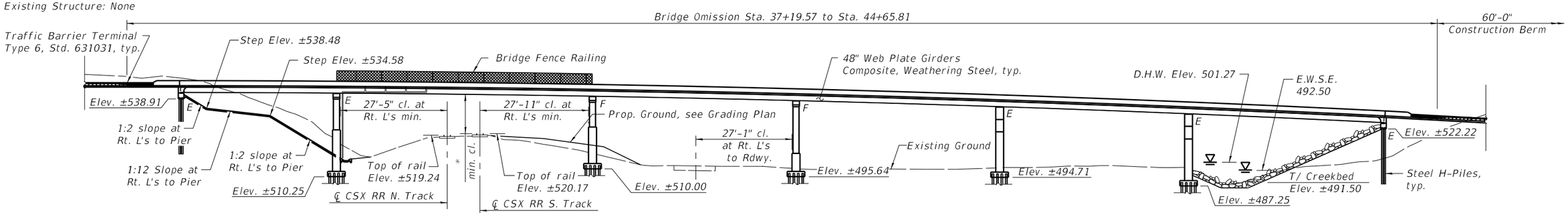


SECTION B-B

FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Miscellaneous details.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	MISCELLANEOUS DETAILS	F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	PLOT SCALE = 40.0000 ' / in.	DRAWN - LEC	REVISED -			772	10-04106-00-BR	MADISON	435	204
Default	PLOT DATE = 6/26/2023	CHECKED - LWJ	REVISED -		SCALE: SHEET 3 OF 4 SHEETS STA. TO STA.			CONTRACT NO. 97790		
		DATE - 05-19-22	REVISED -							

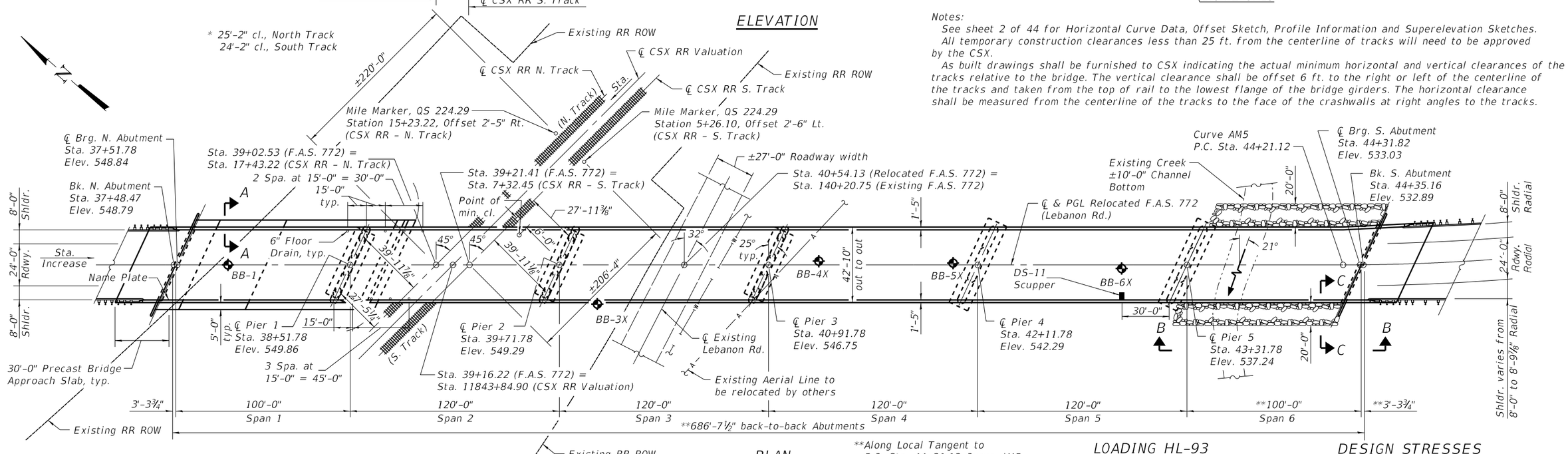
Bench Mark: Railroad Spike in Power Pole 125' East of Trash Dump Entrance
Station 36+77.00, 479' Right, Elevation 499.07

Existing Structure: None



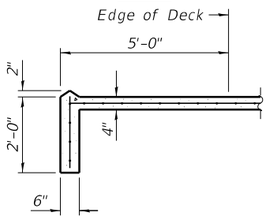
ELEVATION

* 25'-2" cl., North Track
24'-2" cl., South Track

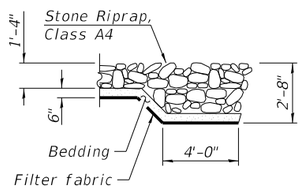


Notes:
See sheet 2 of 44 for Horizontal Curve Data, Offset Sketch, Profile Information and Superelevation Sketches.
All temporary construction clearances less than 25 ft. from the centerline of tracks will need to be approved by the CSX.
As built drawings shall be furnished to CSX indicating the actual minimum horizontal and vertical clearances of the tracks relative to the bridge. The vertical clearance shall be offset 6 ft. to the right or left of the centerline of the tracks and taken from the top of rail to the lowest flange of the bridge girders. The horizontal clearance shall be measured from the centerline of the tracks to the face of the crashwalls at right angles to the tracks.

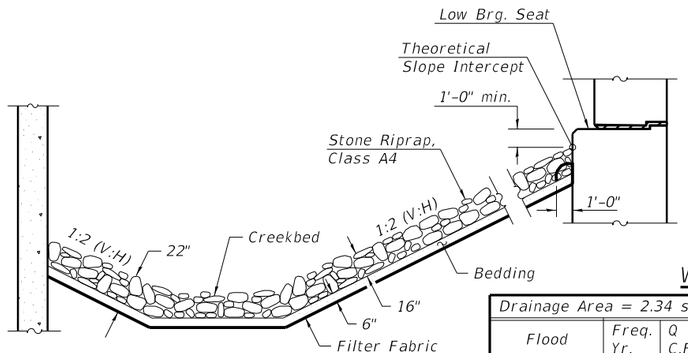
PLAN



SECTION A-A



SECTION C-C



VIEW B-B

(All slopes taken at Rt L's to Creek)

WATERWAY INFORMATION

Drainage Area = 2.34 sq. mi.			Prop. Low Grade Elev. 533.03 @ Sta. 44+34.14						
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	50	1,490	N/A	22,342	500.59	N/A	0.68	N/A	501.27
Base	100	1,780	N/A	22,342	501.30	N/A	0.64	N/A	501.94
Scour	200	2,080	N/A	22,342	501.89	N/A	0.78	N/A	502.67
Max. Calc.	500	2,480	N/A	22,342	502.49	N/A	1.13	N/A	503.62

**Along Local Tangent to P.C. Sta. 44+21.12 Curve AM5

RONALD E. BREVILLE
081-005711
LICENSED STRUCTURAL ENGINEER
ST. LOUIS MO
STATE OF ILLINOIS

Date: 6 July 2023
Exp.: 30 November 2024

"I certify that to the best of my knowledge, information and belief, this bridge/box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges'."

LOADING HL-93

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

DESIGN SPECIFICATIONS

AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

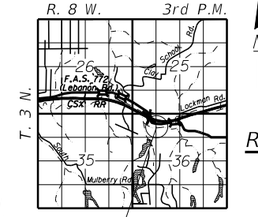
f'c = 3,500 psi (Substructure Concrete)
fy = 4,000 psi (Superstructure Concrete)
fy = 60,000 psi (Reinforcement)
fy = 50,000 psi (AASHTO M270 Grade 50W)

PRECAST UNITS

f'c = 6,000 psi
fy = 60,000 psi (Reinforcement)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.17
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.44
Soil Site Class = C



LOCATION SKETCH

GENERAL PLAN & ELEVATION
RELOCATED LEBANON RD. OVER CSX R.R.
F.A.S. ROUTE 772
SEC. 10-04106-00-BR
MADISON COUNTY
STATION 40+91.78
STRUCTURE NUMBER 060-3366

MODEL: Default
FILE NAME: S:\Projects\409-0027-0H\Y Lebanon Rd\Bridges\dgn\Final Design\D80603366-001-GPE.dgn

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:02 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

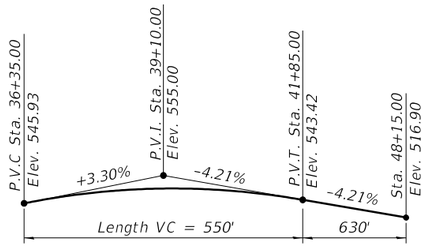
GENERAL PLAN AND ELEVATION
STRUCTURE NO. 060-3366
SHEET 1 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	205
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

6/26/2023 3:13:02 PM

CURVE DATA AM4

P.I. Sta. 34+03.78
Δ = 46°19'19" (RT)
D = 8°40'52"
R = 660.00'
T = 282.34'
L = 533.59'
E = 57.86'
e = 6.00%
T.R. = 33'
S.E. Run = 133'
P.C. Sta. 31+21.44
P.T. Sta. 36+55.03

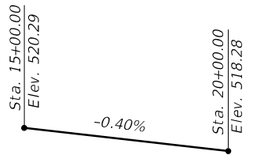


PROPOSED PROFILE GRADE

(Relocated F.A.S. Route 772)

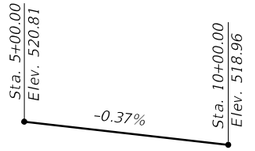
CURVE DATA AM5

P.I. Sta. 47+30.50
Δ = 50°13'49" (LT)
D = 8°40'52"
R = 660.00'
T = 309.38'
L = 578.61'
E = 68.91'
e = 6.00%
T.R. = 33'
S.E. Run = 133'
P.C. Sta. 44+21.12
P.T. Sta. 49+99.74



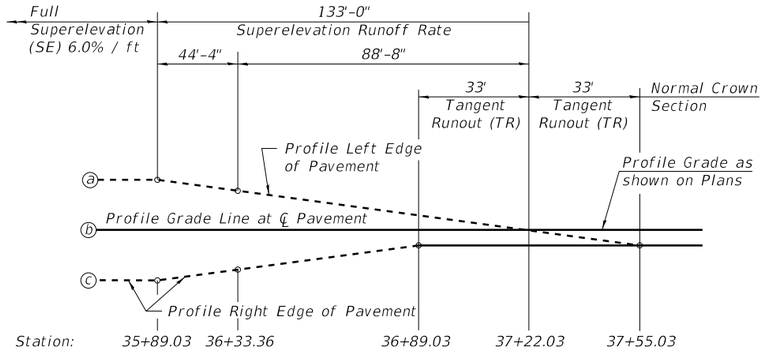
PROFILE GRADE

(CSX RR - N. Track)
CSX Valuation Sta. 11836+49.64 =
North Track Sta. 10+00.00



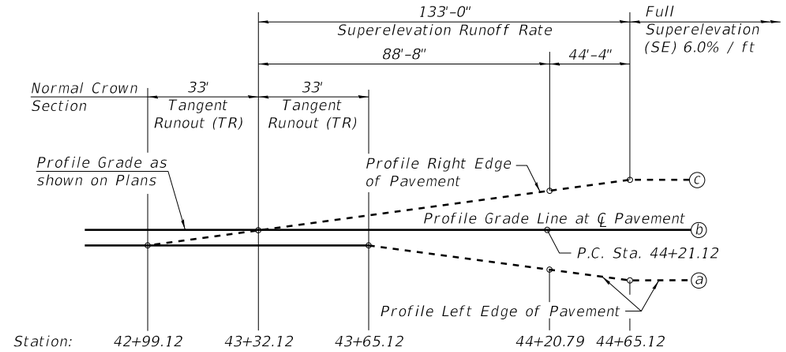
PROFILE GRADE

(CSX RR - S. Track)
CSX Valuation Sta. 11836+49.64 =
South Track Sta. 0+00.00



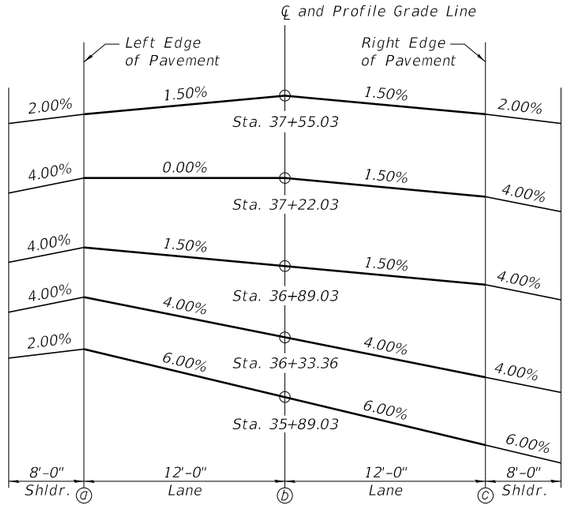
SUPERELEVATION TRANSITION
NORTH END OF BRIDGE CURVE AM4

(Profile Edge of Shoulders along barriers not shown above for clarity)



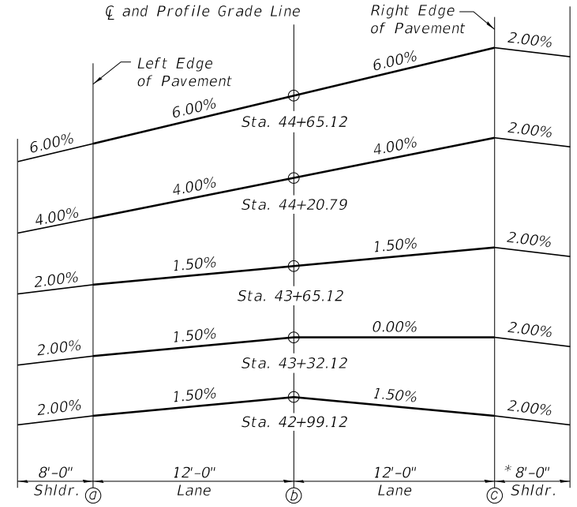
SUPERELEVATION TRANSITION
SOUTH END OF BRIDGE CURVE AM5

(Profile Edge of Shoulders along barriers not shown above for clarity)



SUPERELEVATION TRANSITION CROSS-SECTIONS
NORTH END OF BRIDGE CURVE AM4

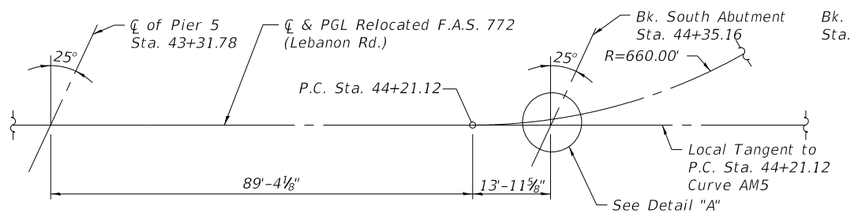
(Looking Upstation)



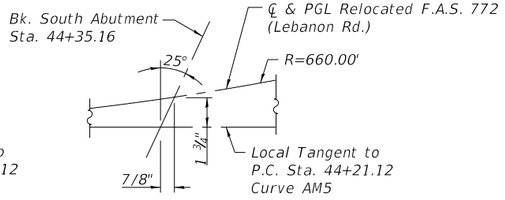
SUPERELEVATION TRANSITION CROSS-SECTIONS
SOUTH END OF BRIDGE CURVE AM5

(Looking Upstation)

* Shoulder varies to 8'-9⅞" max. Radial at 44+53.65



OFFSET SKETCH



DETAIL A

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:03 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PROFILE AND CURVE DATA
STRUCTURE NO. 060-3366
SHEET 2 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	206
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

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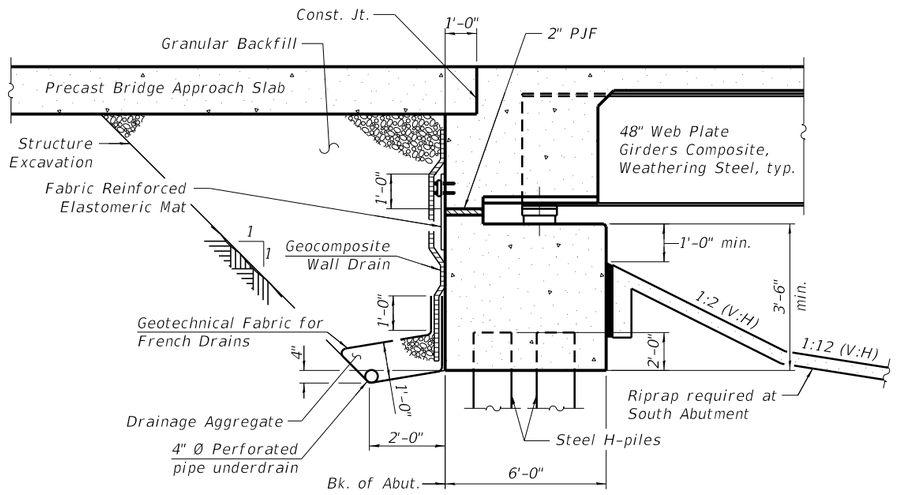
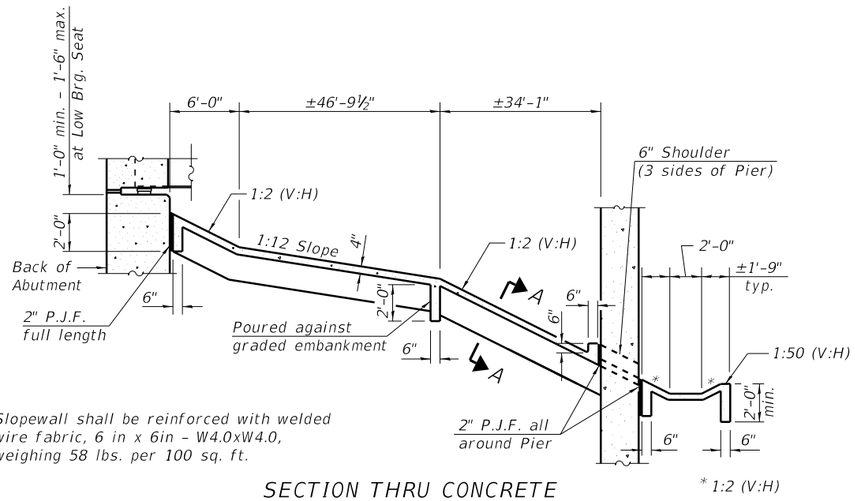


SECTION THRU SEMI-INTEGRAL ABUTMENT

(Horiz. dim. & slopes at Rt. L's)



SECTION THRU CONCRETE SLOPEWALL AT PIER 1

(All dimensions and slopes taken at Rt L's to Pier)

Location	Track	Track Station	Top of Rail Elevation	Horizontal Cl. to Crashwall	Top of Crashwall Elevation	Ground Line Elevation	Bottom of Footing Elevation
Pier 1	North	17+61.71	519.24	39'-11⅞"	525.24	517.00	509.94
Pier 1	North	17+95.70	519.09	27'-5¼"	525.24	516.70	509.94
Pier 2	South	6+80.94	520.17	27'-11⅜"	526.17	516.00	511.50
Pier 2	South	7+14.71	520.04	39'-11⅛"	526.17	516.00	511.50
Pier 3	-	-	-	-	506.25	501.25	496.75

TABLE OF ELEVATIONS/STATIONS & CLEARANCES FOR PIERS 1, 2 & 3

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.	-	977	977
Filter Fabric	Sq. Yd.	-	977	977
Structure Excavation	Cu. Yd.	-	2,625	2,625
Floor Drains	Each	8	-	8
Concrete Structures	Cu. Yd.	28.0	1,504.8	1,532.8
Concrete Superstructure	Cu. Yd.	1,042.5	-	1,042.5
Bridge Deck Grooving	Sq. Yd.	3,149	-	3,149
Protective Coat	Sq. Yd.	3,968	-	3,968
Furnishing and Erecting Structural Steel	L. Sum	1	-	1
Stud Shear Connectors	Each	10,854	-	10,854
Reinforcement Bars, Epoxy Coated	Pound	288,100	225,713	513,813
Bridge Fence Railing	Foot	240	-	240
Slope Wall 4 Inch	Sq. Yd.	-	577	577
Furnishing Steel Piles HP12x53	Foot	-	1,628	1,628
Furnishing Steel Piles HP14x89	Foot	-	6,260	6,260
Driving Piles	Foot	-	7,888	7,888
Test Pile Steel HP12x53	Each	-	2	2
Test Pile Steel HP14x89	Each	-	6	6
Pile Shoes	Each	-	236	236
Name Plates	Each	1	-	1
Preformed Joint Strip Seal	Foot	97	-	97
Elastomeric Bearing Assembly, Type 1	Each	30	-	30
Anchor Bolts, 1¼"	Each	84	-	84
Granular Backfill for Structures	Cu. Yd.	-	260	260
Geocomposite Wall Drain	Sq. Yd.	-	124	124
Concrete Wearing Surface, 5"	Sq. Yd.	283	-	283
Precast Bridge Approach Slab	Sq. Ft.	2,340	-	2,340
Drainage Scuppers, DS-11	Each	1	-	1
Drainage System	L. Sum	1	-	1
Pipe Underdrains for Structures 4"	Foot	-	194	194

INDEX OF SHEETS

GENERAL NOTES

1. Fasteners shall be AASHTO F3125 A325 Type 1, mechanically galvanized bolts in painted or metallized areas and ASTM F3125 Grade A325 Type 3 weathering steel bolts in unpainted areas. Bolts ⅞ in. Ø, holes $^{15}/_{16}$ in. Ø, unless otherwise noted.
2. Calculated weight of Structural Steel = 1,122,130 pounds (Grade 50W) and 88,070 pounds (Grade 36).
3. All structural steel shall be AASHTO M 270 Grade 50W.
4. No field welding is permitted except as specified in the contract documents.
5. Reinforcement bars designated (E) shall be epoxy coated.
6. Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of ⅛ in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.
7. Structural steel shall only be painted for a distance equal to the depth of the embedment into the concrete cap plus 18 inches. Painted areas shall be primed in the shop with a Department-approved zinc rich primer. Field painting will not be required.
8. All structural steel and exposed surfaces of bearings within a distance of 10 ft. each way from the deck joints shall be painted using the Inorganic Zinc-Rich/Waterborne Acrylic Paint System paint system as specified in Section 506 of the Standard Specifications.
9. Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
10. The embankment configuration shown shall be the minimum that must be placed and compacted prior to construction of the abutments.
11. The concrete for bridge decks finished according to Article 503.16(a) of the Standard Specifications shall be placed and compacted parallel to the skew in uniform increments along centerline of bridge. The machine used for finishing shall be set parallel to the skew for striking off and screeding the concrete.
12. See Guide Bridge Special Provisions for railroad requirements.

TRIBUTARY TO CANTEEN CREEK
BUILT 20__ BY
COLLINSVILLE TOWNSHIP
F.A.S. RT. 772 SEC. 10-04106-00-BR
STATION 40+91.78
STR. NO. 060-3366 LOADING HL-93

NAME PLATE

See Std. 515001

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.3400

USER NAME = linda | DESIGNED - CPA | REVISED -
Illinois Design Firm Number 184.001670 | CHECKED - REB | REVISED -
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

GENERAL DATA
STRUCTURE NO. 060-3366
SHEET 3 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	207
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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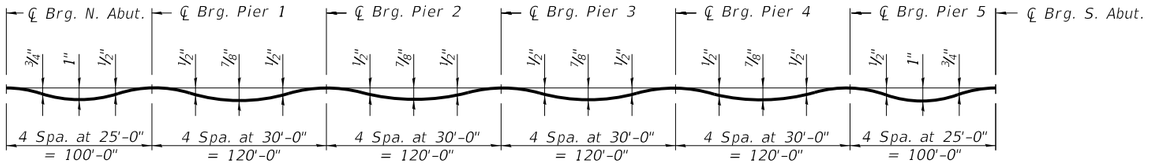
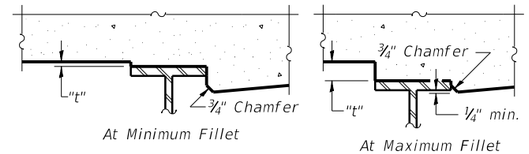


DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)

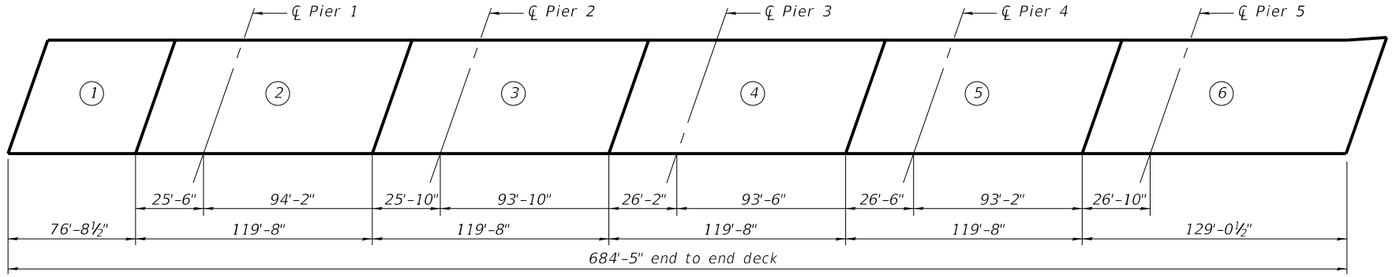
Note:

The above deflections are not to be used in the field if the Engineer is working from the grade elevations adjusted for dead load deflections as shown on sheets 6 thru 10 of 44.



To determine "t": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown on sheets 6 thru 10 of 44, minus slab thickness, equals the fillet heights "t" above top flange of beams.

FILLET HEIGHTS

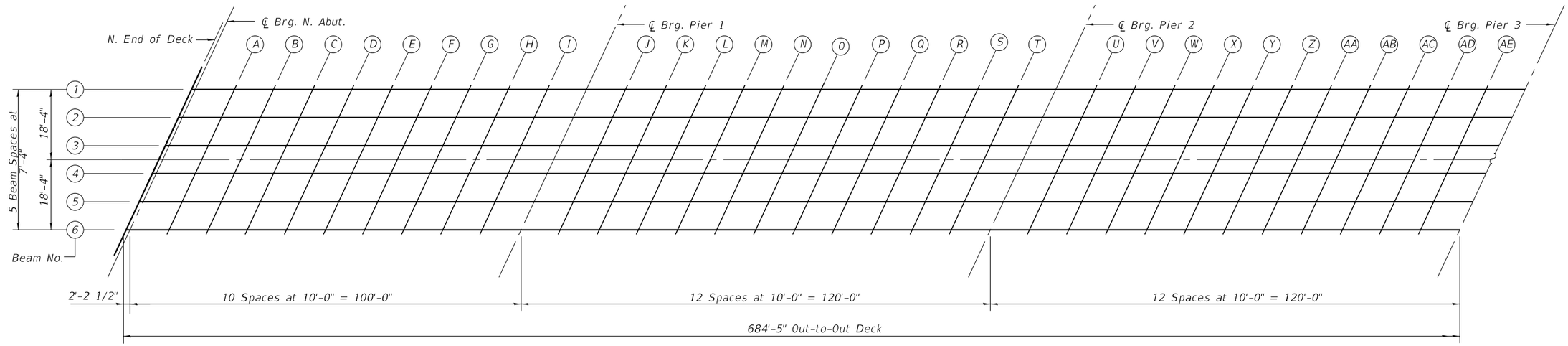


DECK POURING SEQUENCE

When the deck pour is stopped for the day at one or more of the transverse bonded construction joints in the deck pouring sequence as shown, the next pour shall not be made until both of the following are met:

1. At least 72 hours shall have elapsed from the end of the previous pour.

2. The concrete strength shall have attained a minimum flexural strength of 675 psi or a minimum compressive strength of 4,000 psi.



PLAN

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS I
STRUCTURE NO. 060-3366
SHEET 4 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	208
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

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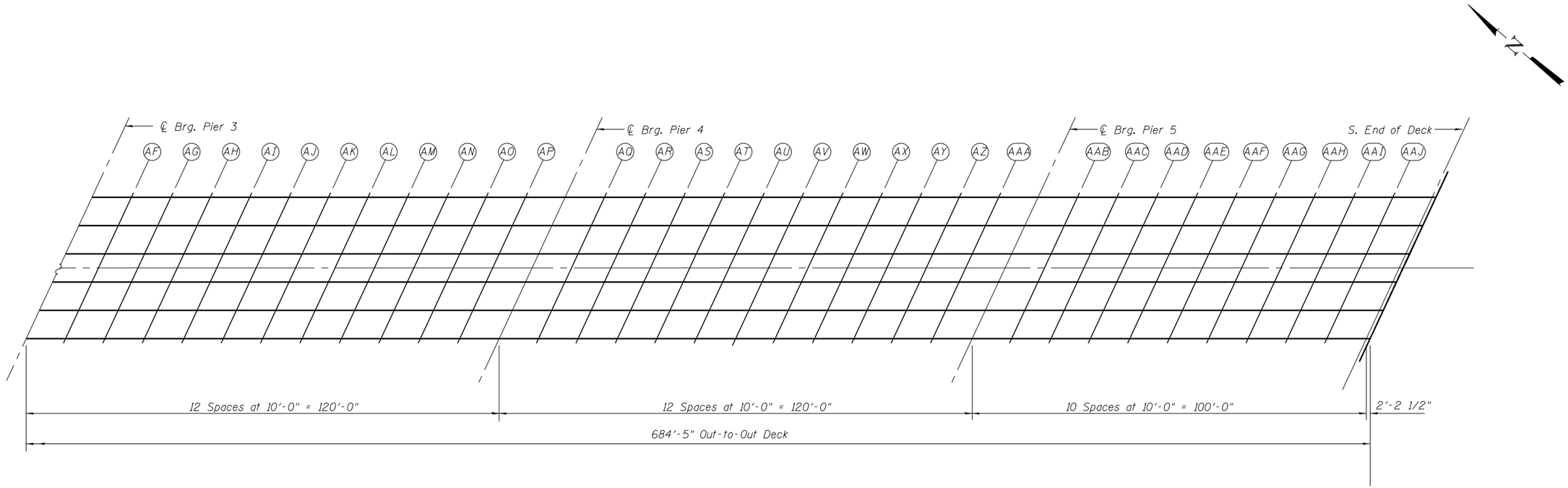

PLAN

MODEL: 05 Elevations
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LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS II
STRUCTURE NO. 060-3366
SHEET 5 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	209
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

BEAM 1

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+58.12	- 18.33	548.65	548.65
℄ Brg. N. Abut.	037+60.33	- 18.33	548.68	548.68
A	037+70.33	- 18.33	548.83	548.87
B	037+80.33	- 18.33	548.97	549.04
C	037+90.33	- 18.33	549.10	549.19
D	038+00.33	- 18.33	549.21	549.31
E	038+10.33	- 18.33	549.31	549.41
F	038+20.33	- 18.33	549.39	549.47
G	038+30.33	- 18.33	549.46	549.52
H	038+40.33	- 18.33	549.52	549.55
I	038+50.33	- 18.33	549.56	549.57
℄ Brg. Pier 1	038+60.33	- 18.33	549.59	549.59
J	038+70.33	- 18.33	549.60	549.61
K	038+80.33	- 18.33	549.61	549.63
L	038+90.33	- 18.33	549.59	549.64
M	039+00.33	- 18.33	549.57	549.64
N	039+10.33	- 18.33	549.53	549.62
O	039+20.33	- 18.33	549.48	549.57
P	039+30.33	- 18.33	549.41	549.50
Q	039+40.33	- 18.33	549.33	549.40
R	039+50.33	- 18.33	549.24	549.29
S	039+60.33	- 18.33	549.13	549.16
T	039+70.33	- 18.33	549.01	549.02
℄ Brg. Pier 2	039+80.33	- 18.33	548.87	548.87
U	039+90.33	- 18.33	548.72	548.73
V	040+00.33	- 18.33	548.56	548.59
W	040+10.33	- 18.33	548.39	548.44
X	040+20.33	- 18.33	548.20	548.28
Y	040+30.33	- 18.33	547.99	548.09
Z	040+40.33	- 18.33	547.78	547.88
AA	040+50.33	- 18.33	547.55	547.64
AB	040+60.33	- 18.33	547.30	547.38
AC	040+70.33	- 18.33	547.05	547.10
AD	040+80.33	- 18.33	546.77	546.80
AE	040+90.33	- 18.33	546.49	546.50
℄ Brg. Pier 3	041+00.33	- 18.33	546.19	546.19
AF	041+10.33	- 18.33	545.88	545.89
AG	041+20.33	- 18.33	545.55	545.58
AH	041+30.33	- 18.33	545.21	545.27

BEAM 1 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+40.33	- 18.33	544.86	544.94
AJ	041+50.33	- 18.33	544.49	544.59
AK	041+60.33	- 18.33	544.11	544.21
AL	041+70.33	- 18.33	543.72	543.81
AM	041+80.33	- 18.33	543.31	543.39
AN	041+90.33	- 18.33	542.89	542.95
AO	042+00.33	- 18.33	542.47	542.50
AP	042+10.33	- 18.33	542.05	542.06
CL Pier 4	042+20.33	- 18.33	541.63	541.63
AQ	042+30.33	- 18.33	541.21	541.22
AR	042+40.33	- 18.33	540.79	540.81
AS	042+50.33	- 18.33	540.37	540.42
AT	042+60.33	- 18.33	539.94	540.02
AU	042+70.33	- 18.33	539.52	539.61
AV	042+80.33	- 18.33	539.10	539.20
AW	042+90.33	- 18.33	538.68	538.77
AX	043+00.33	- 18.33	538.26	538.33
AY	043+10.33	- 18.33	537.84	537.89
AZ	043+20.33	- 18.33	537.42	537.45
AAA	043+30.33	- 18.33	537.00	537.00
CL Pier 5	043+40.33	- 18.33	536.58	536.58
AAB	043+50.33	- 18.33	536.16	536.17
AAC	043+60.33	- 18.33	535.73	535.77
AAD	043+70.33	- 18.33	535.27	535.34
AAE	043+80.33	- 18.33	534.78	534.86
AAF	043+90.33	- 18.33	534.28	534.38
AAG	044+00.33	- 18.33	533.78	533.88
AAH	044+10.33	- 18.33	533.28	533.38
AAI	044+20.33	- 18.33	532.79	532.86
AAJ	044+30.59	- 18.27	532.27	532.31
CL S. Abut.	044+40.87	- 18.05	531.77	531.77
S. End of Deck	044+44.27	- 17.94	531.60	531.60

BEAM 2

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+54.70	- 11.00	548.73	548.73
℄ Brg. N. Abut.	037+56.91	- 11.00	548.77	548.77
A	037+66.91	- 11.00	548.93	548.96
B	037+76.91	- 11.00	549.07	549.14
C	037+86.91	- 11.00	549.20	549.29
D	037+96.91	- 11.00	549.31	549.42
E	038+06.91	- 11.00	549.42	549.52
F	038+16.91	- 11.00	549.50	549.59
G	038+26.91	- 11.00	549.58	549.64
H	038+36.91	- 11.00	549.64	549.67
I	038+46.91	- 11.00	549.69	549.70
℄ Brg. Pier 1	038+56.91	- 11.00	549.72	549.72
J	038+66.91	- 11.00	549.74	549.75
K	038+76.91	- 11.00	549.75	549.77
L	038+86.91	- 11.00	549.74	549.79
M	038+96.91	- 11.00	549.72	549.79
N	039+06.91	- 11.00	549.69	549.77
O	039+16.91	- 11.00	549.64	549.73
P	039+26.91	- 11.00	549.58	549.66
Q	039+36.91	- 11.00	549.50	549.57
R	039+46.91	- 11.00	549.41	549.46
S	039+56.91	- 11.00	549.31	549.34
T	039+66.91	- 11.00	549.19	549.20
℄ Brg. Pier 2	039+76.91	- 11.00	549.06	549.06
U	039+86.91	- 11.00	548.92	548.93
V	039+96.91	- 11.00	548.76	548.79
W	040+06.91	- 11.00	548.59	548.65
X	040+16.91	- 11.00	548.41	548.48
Y	040+26.91	- 11.00	548.21	548.30
Z	040+36.91	- 11.00	547.99	548.09
AA	040+46.91	- 11.00	547.77	547.86
AB	040+56.91	- 11.00	547.53	547.61
AC	040+66.91	- 11.00	547.28	547.33
AD	040+76.91	- 11.00	547.01	547.04
AE	040+86.91	- 11.00	546.73	546.74
℄ Brg. Pier 3	040+96.91	- 11.00	546.44	546.44
AF	041+06.91	- 11.00	546.13	546.14
AG	041+16.91	- 11.00	545.81	545.84
AH	041+26.91	- 11.00	545.47	545.53

MODEL: 06 Elevations
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LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:08 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS III
STRUCTURE NO. 060-3366
SHEET 6 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	210
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

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BEAM 2 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+36.91	- 11.00	545.12	545.20
AJ	041+46.91	- 11.00	544.76	544.86
AK	041+56.91	- 11.00	544.39	544.49
AL	041+66.91	- 11.00	544.00	544.09
AM	041+76.91	- 11.00	543.59	543.67
AN	041+86.91	- 11.00	543.18	543.23
AO	041+96.91	- 11.00	542.76	542.79
AP	042+06.91	- 11.00	542.34	542.34
CL Pier 4	042+16.91	- 11.00	541.91	541.91
AQ	042+26.91	- 11.00	541.49	541.50
AR	042+36.91	- 11.00	541.07	541.10
AS	042+46.91	- 11.00	540.65	540.70
AT	042+56.91	- 11.00	540.23	540.30
AU	042+66.91	- 11.00	539.81	539.90
AV	042+76.91	- 11.00	539.39	539.48
AW	042+86.91	- 11.00	538.97	539.06
AX	042+96.91	- 11.00	538.55	538.62
AY	043+06.91	- 11.00	538.13	538.18
AZ	043+16.91	- 11.00	537.70	537.73
AAA	043+26.91	- 11.00	537.28	537.29
CL Pier 5	043+36.91	- 11.00	536.86	536.86
AAB	043+46.91	- 11.00	536.44	536.45
AAC	043+56.91	- 11.00	536.02	536.05
AAD	043+66.91	- 11.00	535.59	535.65
AAE	043+76.91	- 11.00	535.12	535.21
AAF	043+86.91	- 11.00	534.65	534.75
AAG	043+96.91	- 11.00	534.18	534.28
AAH	044+06.91	- 11.00	533.71	533.80
AAI	044+16.91	- 11.00	533.24	533.31
AAJ	044+27.00	- 10.97	532.76	532.80
CL S. Abut.	044+37.17	- 10.81	532.29	532.29
S. End of Deck	044+40.53	- 10.72	532.14	532.14

BEAM 3

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+51.28	- 3.67	548.79	548.79
℄ Brg. N. Abut.	037+53.49	- 3.67	548.82	548.82
A	037+63.49	- 3.67	548.98	549.02
B	037+73.49	- 3.67	549.13	549.20
C	037+83.49	- 3.67	549.26	549.36
D	037+93.49	- 3.67	549.39	549.49
E	038+03.49	- 3.67	549.49	549.59
F	038+13.49	- 3.67	549.59	549.67
G	038+23.49	- 3.67	549.66	549.73
H	038+33.49	- 3.67	549.73	549.76
I	038+43.49	- 3.67	549.78	549.79
℄ Brg. Pier 1	038+53.49	- 3.67	549.82	549.82
J	038+63.49	- 3.67	549.85	549.85
K	038+73.49	- 3.67	549.86	549.88
L	038+83.49	- 3.67	549.85	549.91
M	038+93.49	- 3.67	549.84	549.91
N	039+03.49	- 3.67	549.81	549.90
O	039+13.49	- 3.67	549.77	549.86
P	039+23.49	- 3.67	549.71	549.80
Q	039+33.49	- 3.67	549.64	549.71
R	039+43.49	- 3.67	549.55	549.61
S	039+53.49	- 3.67	549.45	549.48
T	039+63.49	- 3.67	549.34	549.35
℄ Brg. Pier 2	039+73.49	- 3.67	549.22	549.22
U	039+83.49	- 3.67	549.08	549.09
V	039+93.49	- 3.67	548.93	548.96
W	040+03.49	- 3.67	548.76	548.82
X	040+13.49	- 3.67	548.58	548.66
Y	040+23.49	- 3.67	548.39	548.48
Z	040+33.49	- 3.67	548.18	548.28
AA	040+43.49	- 3.67	547.96	548.05
AB	040+53.49	- 3.67	547.72	547.80
AC	040+63.49	- 3.67	547.48	547.53
AD	040+73.49	- 3.67	547.21	547.24
AE	040+83.49	- 3.67	546.94	546.95
℄ Brg. Pier 3	040+93.49	- 3.67	546.65	546.65
AF	041+03.49	- 3.67	546.35	546.35
AG	041+13.49	- 3.67	546.03	546.06
AH	041+23.49	- 3.67	545.70	545.75

BEAM 3 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+33.49	- 3.67	545.35	545.43
AJ	041+43.49	- 3.67	545.00	545.09
AK	041+53.49	- 3.67	544.63	544.73
AL	041+63.49	- 3.67	544.24	544.33
AM	041+73.49	- 3.67	543.84	543.92
AN	041+83.49	- 3.67	543.43	543.49
AO	041+93.49	- 3.67	543.01	543.04
AP	042+03.49	- 3.67	542.59	542.60
CL Pier 4	042+13.49	- 3.67	542.17	542.17
AQ	042+23.49	- 3.67	541.75	541.76
AR	042+33.49	- 3.67	541.33	541.35
AS	042+43.49	- 3.67	540.91	540.96
AT	042+53.49	- 3.67	540.48	540.56
AU	042+63.49	- 3.67	540.06	540.15
AV	042+73.49	- 3.67	539.64	539.74
AW	042+83.49	- 3.67	539.22	539.31
AX	042+93.49	- 3.67	538.80	538.87
AY	043+03.49	- 3.67	538.38	538.43
AZ	043+13.49	- 3.67	537.96	537.98
AAA	043+23.49	- 3.67	537.54	537.54
CL Pier 5	043+33.49	- 3.67	537.12	537.12
AAB	043+43.49	- 3.67	536.70	536.71
AAC	043+53.49	- 3.67	536.27	536.31
AAD	043+63.49	- 3.67	535.85	535.91
AAE	043+73.49	- 3.67	535.42	535.50
AAF	043+83.49	- 3.67	534.98	535.08
AAG	043+93.49	- 3.67	534.54	534.65
AAH	044+03.49	- 3.67	534.11	534.20
AAI	044+13.49	- 3.67	533.67	533.74
AAJ	044+23.50	- 3.66	533.23	533.27
CL S. Abut.	044+33.55	- 3.55	532.80	532.80
S. End of Deck	044+36.88	- 3.48	532.65	532.65

MODEL: 07 Elevations
FILE NAME: S:\Projects\409-0027-01\Y Lebanon Rd\Bridges\dgn\Final Design\D8060366-007-Top of Slab Elevs IV.dgn

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:09 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS IV
STRUCTURE NO. 060-3366
SHEET 7 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	211
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

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℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+49.57	0.00	548.81	548.81
℄ Brg. N. Abut.	037+51.78	0.00	548.85	548.85
A	037+61.78	0.00	549.01	549.01
B	037+71.78	0.00	549.16	549.16
C	037+81.78	0.00	549.30	549.30
D	037+91.78	0.00	549.42	549.42
E	038+01.78	0.00	549.53	549.53
F	038+11.78	0.00	549.63	549.63
G	038+21.78	0.00	549.71	549.71
H	038+31.78	0.00	549.78	549.78
I	038+41.78	0.00	549.83	549.83
℄ Brg. Pier 1	038+51.78	0.00	549.87	549.87
J	038+61.78	0.00	549.90	549.90
K	038+71.78	0.00	549.91	549.91
L	038+81.78	0.00	549.91	549.91
M	038+91.78	0.00	549.90	549.90
N	039+01.78	0.00	549.87	549.87
O	039+11.78	0.00	549.83	549.83
P	039+21.78	0.00	549.77	549.77
Q	039+31.78	0.00	549.71	549.71
R	039+41.78	0.00	549.62	549.62
S	039+51.78	0.00	549.53	549.53
T	039+61.78	0.00	549.42	549.42
℄ Brg. Pier 2	039+71.78	0.00	549.30	549.30
U	039+81.78	0.00	549.16	549.16
V	039+91.78	0.00	549.01	549.01
W	040+01.78	0.00	548.84	548.84
X	040+11.78	0.00	548.67	548.67
Y	040+21.78	0.00	548.48	548.48
Z	040+31.78	0.00	548.27	548.27
AA	040+41.78	0.00	548.05	548.05
AB	040+51.78	0.00	547.82	547.82
AC	040+61.78	0.00	547.57	547.57
AD	040+71.78	0.00	547.31	547.31
AE	040+81.78	0.00	547.04	547.04
℄ Brg. Pier 3	040+91.78	0.00	546.75	546.75
AF	041+01.78	0.00	546.45	546.45
AG	041+11.78	0.00	546.14	546.14
AH	041+21.78	0.00	545.81	545.81

℄ ROADWAY & P.G.L. (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+31.78	0.00	545.47	545.47
AJ	041+41.78	0.00	545.11	545.11
AK	041+51.78	0.00	544.75	544.75
AL	041+61.78	0.00	544.36	544.36
AM	041+71.78	0.00	543.97	543.97
AN	041+81.78	0.00	543.56	543.56
AO	041+91.78	0.00	543.14	543.14
AP	042+01.78	0.00	542.72	542.72
CL Pier 4	042+11.78	0.00	542.30	542.30
AQ	042+21.78	0.00	541.87	541.87
AR	042+31.78	0.00	541.45	541.45
AS	042+41.78	0.00	541.03	541.03
AT	042+51.78	0.00	540.61	540.61
AU	042+61.78	0.00	540.19	540.19
AV	042+71.78	0.00	539.77	539.77
AW	042+81.78	0.00	539.35	539.35
AX	042+91.78	0.00	538.93	538.93
AY	043+01.78	0.00	538.51	538.51
AZ	043+11.78	0.00	538.09	538.09
AAA	043+21.78	0.00	537.66	537.66
CL Pier 5	043+31.78	0.00	537.24	537.24
AAB	043+41.78	0.00	536.82	536.82
AAC	043+51.78	0.00	536.40	536.40
AAD	043+61.78	0.00	535.98	535.98
AAE	043+71.78	0.00	535.56	535.56
AAF	043+81.78	0.00	535.14	535.14
AAG	043+91.78	0.00	534.72	534.72
AAH	044+01.78	0.00	534.30	534.30
AAI	044+11.78	0.00	533.88	533.88
AAJ	044+21.78	0.00	533.45	533.45
CL S. Abut.	044+31.82	0.00	533.03	533.03
S. End of Deck	044+35.16	0.00	532.89	532.89

BEAM 4

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+47.86	3.67	548.72	548.72
℄ Brg. N. Abut.	037+50.07	3.67	548.76	548.76
	037+60.07	3.67	548.93	548.97
A	037+70.07	3.67	549.08	549.15
B	037+80.07	3.67	549.22	549.32
C	037+90.07	3.67	549.35	549.45
D	038+00.07	3.67	549.46	549.56
E	038+10.07	3.67	549.55	549.64
F	038+20.07	3.67	549.64	549.70
G	038+30.07	3.67	549.71	549.74
H	038+40.07	3.67	549.77	549.78
I	038+50.07	3.67	549.81	549.81
℄ Brg. Pier 1				
	038+60.07	3.67	549.84	549.85
J	038+70.07	3.67	549.85	549.88
K	038+80.07	3.67	549.86	549.91
L	038+90.07	3.67	549.85	549.92
M	039+00.07	3.67	549.82	549.91
N	039+10.07	3.67	549.78	549.88
O	039+20.07	3.67	549.73	549.82
P	039+30.07	3.67	549.66	549.74
Q	039+40.07	3.67	549.58	549.64
R	039+50.07	3.67	549.49	549.52
S	039+60.07	3.67	549.38	549.39
T	039+70.07	3.67	549.26	549.26
℄ Brg. Pier 2				
	039+80.07	3.67	549.13	549.14
U	039+90.07	3.67	548.98	549.01
V	040+00.07	3.67	548.82	548.87
W	040+10.07	3.67	548.64	548.72
X	040+20.07	3.67	548.45	548.55
Y	040+30.07	3.67	548.25	548.35
Z	040+40.07	3.67	548.03	548.13
AA	040+50.07	3.67	547.81	547.88
AB	040+60.07	3.67	547.56	547.62
AC	040+70.07	3.67	547.30	547.33
AD	040+80.07	3.67	547.03	547.04
AE	040+90.07	3.67	546.75	546.75
℄ Brg. Pier 3				
	041+00.07	3.67	546.45	546.46
AF	041+10.07	3.67	546.14	546.17
AG	041+20.07	3.67	545.81	545.87
AH				

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:10 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS V
STRUCTURE NO. 060-3366
SHEET 8 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	212
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: 07 Elevations
FILE NAME: S:\Projects\409-0027-01\Y Lebanon Rd\Bridges\dgn\Final Design\D8060336\6-008-Top of Slab Elevs V.dgn

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BEAM 4 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+30.07	3.67	545.47	545.55
AJ	041+40.07	3.67	545.12	545.21
AK	041+50.07	3.67	544.75	544.85
AL	041+60.07	3.67	544.37	544.47
AM	041+70.07	3.67	543.98	544.06
AN	041+80.07	3.67	543.57	543.63
AO	041+90.07	3.67	543.15	543.18
AP	042+00.07	3.67	542.73	542.74
CL Pier 4	042+10.07	3.67	542.31	542.31
AQ	042+20.07	3.67	541.89	541.90
AR	042+30.07	3.67	541.47	541.50
AS	042+40.07	3.67	541.05	541.10
AT	042+50.07	3.67	540.63	540.70
AU	042+60.07	3.67	540.21	540.30
AV	042+70.07	3.67	539.79	539.88
AW	042+80.07	3.67	539.37	539.45
AX	042+90.07	3.67	538.94	539.02
AY	043+00.07	3.67	538.52	538.58
AZ	043+10.07	3.67	538.12	538.15
AAA	043+20.07	3.67	537.72	537.72
CL Pier 5	043+30.07	3.67	537.31	537.31
AAB	043+40.07	3.67	536.91	536.92
AAC	043+50.07	3.67	536.50	536.54
AAD	043+60.07	3.67	536.10	536.16
AAE	043+70.07	3.67	535.69	535.78
AAF	043+80.07	3.67	535.29	535.39
AAG	043+90.07	3.67	534.89	534.99
AAH	044+00.07	3.67	534.48	534.58
AAI	044+10.07	3.67	534.08	534.15
AAJ	044+20.07	3.67	533.67	533.71
CL S. Abut.	044+30.02	3.73	533.27	533.27
S. End of Deck	044+33.31	3.78	533.14	533.14

BEAM 5

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+44.44	11.00	548.55	548.55
℄ Brg. N. Abut.	037+46.65	11.00	548.59	548.59
A	037+56.65	11.00	548.76	548.80
B	037+66.65	11.00	548.92	548.99
C	037+76.65	11.00	549.06	549.16
D	037+86.65	11.00	549.19	549.30
E	037+96.65	11.00	549.31	549.41
F	038+06.65	11.00	549.41	549.50
G	038+16.65	11.00	549.50	549.56
H	038+26.65	11.00	549.58	549.61
I	038+36.65	11.00	549.64	549.65
℄ Brg. Pier 1	038+46.65	11.00	549.69	549.69
J	038+56.65	11.00	549.72	549.73
K	038+66.65	11.00	549.74	549.77
L	038+76.65	11.00	549.75	549.80
M	038+86.65	11.00	549.74	549.81
N	038+96.65	11.00	549.72	549.81
O	039+06.65	11.00	549.69	549.78
P	039+16.65	11.00	549.64	549.73
Q	039+26.65	11.00	549.58	549.65
R	039+36.65	11.00	549.50	549.55
S	039+46.65	11.00	549.41	549.44
T	039+56.65	11.00	549.31	549.32
℄ Brg. Pier 2	039+66.65	11.00	549.20	549.20
	039+76.65	11.00	549.07	549.07
U	039+86.65	11.00	548.92	548.95
V	039+96.65	11.00	548.77	548.82
W	040+06.65	11.00	548.59	548.67
X	040+16.65	11.00	548.41	548.50
Y	040+26.65	11.00	548.21	548.31
Z	040+36.65	11.00	548.00	548.09
AA	040+46.65	11.00	547.78	547.85
AB	040+56.65	11.00	547.54	547.59
AC	040+66.65	11.00	547.28	547.31
AD	040+76.65	11.00	547.02	547.03
AE				
	040+86.65	11.00	546.74	546.74
℄ Brg. Pier 3				
	040+96.65	11.00	546.44	546.45
AF	041+06.65	11.00	546.14	546.17
AG	041+16.65	11.00	545.82	545.87
AH				

BEAM 5 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+26.65	11.00	545.48	545.56
AJ	041+36.65	11.00	545.13	545.23
AK	041+46.65	11.00	544.77	544.87
AL	041+56.65	11.00	544.40	544.49
AM	041+66.65	11.00	544.01	544.09
AN	041+76.65	11.00	543.60	543.66
AO	041+86.65	11.00	543.19	543.22
AP	041+96.65	11.00	542.77	542.78
CL Pier 4	042+06.65	11.00	542.35	542.35
AQ	042+16.65	11.00	541.93	541.93
AR	042+26.65	11.00	541.50	541.53
AS	042+36.65	11.00	541.08	541.14
AT	042+46.65	11.00	540.66	540.74
AU	042+56.65	11.00	540.24	540.33
AV	042+66.65	11.00	539.82	539.91
AW	042+76.65	11.00	539.40	539.49
AX	042+86.65	11.00	538.98	539.05
AY	042+96.65	11.00	538.56	538.61
AZ	043+06.65	11.00	538.17	538.20
AAA	043+16.65	11.00	537.80	537.81
CL Pier 5	043+26.65	11.00	537.43	537.43
AAB	043+36.65	11.00	537.06	537.07
AAC	043+46.65	11.00	536.69	536.72
AAD	043+56.65	11.00	536.32	536.38
AAE	043+66.65	11.00	535.95	536.03
AAF	043+76.65	11.00	535.58	535.68
AAG	043+86.65	11.00	535.20	535.31
AAH	043+96.65	11.00	534.83	534.93
AAI	044+06.65	11.00	534.46	534.53
AAJ	044+16.65	11.00	534.09	534.13
CL S. Abut.	044+26.56	11.02	533.72	533.72
S. End of Deck	044+29.81	11.06	533.60	533.60

MODEL: 07 Elevations
FILE NAME: S:\Projects\409-0027-01Y Lebanon Rd\Bridges\dgn\Final Design\D8600366-009-Top of Slab Elevs VI.dgn

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:10 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SLAB ELEVATIONS VI
STRUCTURE NO. 060-3366
SHEET 9 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	213
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

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BEAM 6

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
N. End of Deck	037+41.02	18.33	548.30	548.30
℄ Brg. N. Abut.	037+43.23	18.33	548.34	548.34
A	037+53.23	18.33	548.56	548.60
B	037+63.23	18.33	548.73	548.80
C	037+73.23	18.33	548.88	548.97
D	037+83.23	18.33	549.01	549.11
E	037+93.23	18.33	549.13	549.23
F	038+03.23	18.33	549.24	549.32
G	038+13.23	18.33	549.33	549.39
H	038+23.23	18.33	549.41	549.45
I	038+33.23	18.33	549.48	549.49
℄ Brg. Pier 1	038+43.23	18.33	549.53	549.53
J	038+53.23	18.33	549.57	549.58
K	038+63.23	18.33	549.59	549.62
L	038+73.23	18.33	549.61	549.66
M	038+83.23	18.33	549.60	549.68
N	038+93.23	18.33	549.59	549.68
O	039+03.23	18.33	549.56	549.65
P	039+13.23	18.33	549.51	549.60
Q	039+23.23	18.33	549.46	549.53
R	039+33.23	18.33	549.39	549.44
S	039+43.23	18.33	549.30	549.33
T	039+53.23	18.33	549.21	549.21
℄ Brg. Pier 2	039+63.23	18.33	549.09	549.09
U	039+73.23	18.33	548.97	548.98
V	039+83.23	18.33	548.83	548.86
W	039+93.23	18.33	548.68	548.73
X	040+03.23	18.33	548.51	548.59
Y	040+13.23	18.33	548.33	548.43
Z	040+23.23	18.33	548.14	548.24
AA	040+33.23	18.33	547.93	548.03
AB	040+43.23	18.33	547.71	547.79
AC	040+53.23	18.33	547.48	547.53
AD	040+63.23	18.33	547.23	547.26
AE	040+73.23	18.33	546.97	546.98
℄ Brg. Pier 3	040+83.23	18.33	546.69	546.69
AF	040+93.23	18.33	546.40	546.41
AG	041+03.23	18.33	546.10	546.13
AH	041+13.23	18.33	545.79	545.84

BEAM 6 (CONT'D)

Location	Station	Offset	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
AI	041+23.23	18.33	545.46	545.53
AJ	041+33.23	18.33	545.11	545.21
AK	041+43.23	18.33	544.76	544.85
AL	041+53.23	18.33	544.38	544.48
AM	041+63.23	18.33	544.00	544.08
AN	041+73.23	18.33	543.60	543.66
AO	041+83.23	18.33	543.19	543.22
AP	041+93.23	18.33	542.77	542.78
CL Pier 4	042+03.23	18.33	542.35	542.35
AQ	042+13.23	18.33	541.93	541.94
AR	042+23.23	18.33	541.51	541.53
AS	042+33.23	18.33	541.09	541.14
AT	042+43.23	18.33	540.66	540.74
AU	042+53.23	18.33	540.24	540.33
AV	042+63.23	18.33	539.82	539.92
AW	042+73.23	18.33	539.40	539.49
AX	042+83.23	18.33	538.98	539.05
AY	042+93.23	18.33	538.56	538.61
AZ	043+03.23	18.33	538.16	538.19
AAA	043+13.23	18.33	537.79	537.80
CL Pier 5	043+23.23	18.33	537.43	537.43
AAB	043+33.23	18.33	537.06	537.07
AAC	043+43.23	18.33	536.69	536.73
AAD	043+53.23	18.33	536.33	536.39
AAE	043+63.23	18.33	535.96	536.05
AAF	043+73.23	18.33	535.60	535.70
AAG	043+83.23	18.33	535.23	535.33
AAH	043+93.23	18.33	534.86	534.96
AAI	044+03.23	18.33	534.49	534.57
AAJ	044+13.23	18.33	534.13	534.17
CL S. Abut.	044+23.17	18.34	533.76	533.76
S. End of Deck	044+26.39	18.35	533.64	533.64

MODEL: 07 Elevations
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LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.3400

USER NAME = linda	DESIGNED - CPA	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	TOP OF SLAB ELEVATIONS VII STRUCTURE NO. 060-3366 SHEET 10 OF 44 SHEETS
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -		
PLOT SCALE =	DRAWN - LEC	REVISED -		
PLOT DATE = 6/26/2023 3:13:11 PM	CHECKED - REB	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	214
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

EAST EDGE OF SHOULDER

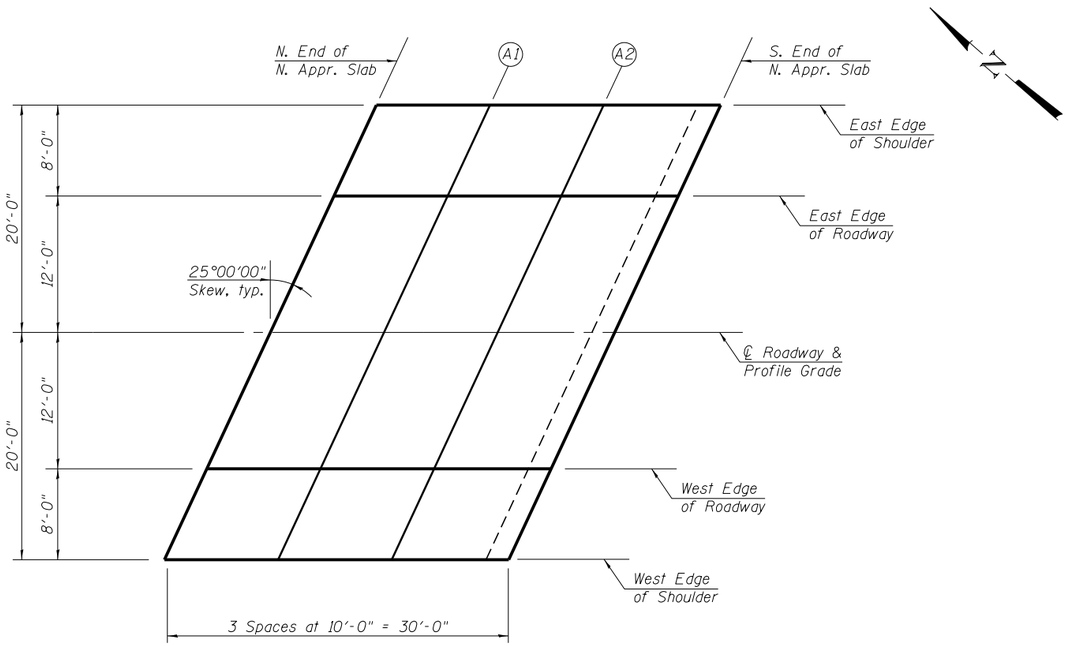
Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	037+28.90	-20.00	548.10
A1	037+38.90	-20.00	548.29
A2	037+48.90	-20.00	548.46
S. End of N. Appr. Slab	037+58.90	-20.00	548.63

EAST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	037+25.17	-12.00	548.33
A1	037+35.17	-12.00	548.47
A2	037+45.17	-12.00	548.61
S. End of N. Appr. Slab	037+55.17	-12.00	548.72

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	037+19.57	0.00	548.23
A1	037+29.57	0.00	548.44
A2	037+39.57	0.00	548.63
S. End of N. Appr. Slab	037+49.57	0.00	548.81



PLAN

WEST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	037+13.98	12.00	547.93
A1	037+23.98	12.00	548.14
A2	037+33.98	12.00	548.34
S. End of N. Appr. Slab	037+43.98	12.00	548.53

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of N. Appr. Slab	037+10.25	20.00	547.52
A1	037+20.25	20.00	547.74
A2	037+30.25	20.00	547.99
S. End of N. Appr. Slab	037+40.25	20.00	548.23

MODEL: 09 Elevations
FILE NAME: S:\Projects\409-0027-01\Y Lebanon Rd\Brdges\dgn\Final Design\D8060366-011-Top N Apprch Slab Elevs.dgn

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1928 S/A Bradley 8, Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF NORTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 060-3366
SHEET 11 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	215
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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EAST EDGE OF SHOULDER

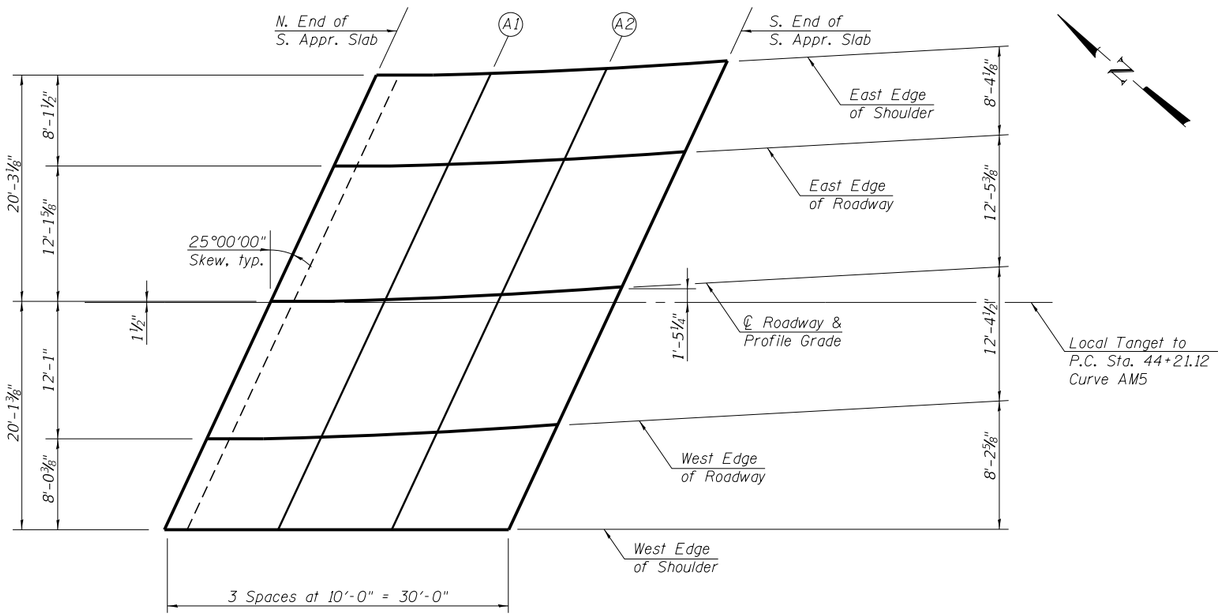
Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	044+44.19	-20.00	531.50
A1	044+54.73	-20.00	530.96
A2	044+65.35	-20.00	530.42
S. End of S. Appr. Slab	044+76.07	-20.00	529.97

EAST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	044+40.05	-12.00	532.10
A1	044+50.42	-12.00	531.61
A2	044+60.87	-12.00	531.11
S. End of S. Appr. Slab	044+71.42	-12.00	530.64

℄ ROADWAY & P.G.L.

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	044+34.04	0.00	532.94
A1	044+44.17	0.00	532.51
A2	044+54.39	0.00	532.08
S. End of S. Appr. Slab	044+64.68	0.00	531.65



PLAN

WEST EDGE OF ROADWAY

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	044+28.27	12.00	533.70
A1	044+38.18	12.00	533.34
A2	044+48.17	12.00	532.97
S. End of S. Appr. Slab	044+58.23	12.00	532.60

WEST EDGE OF SHOULDER

Location	Station	Offset	Theoretical Grade Elevations
N. End of S. Appr. Slab	044+24.56	20.00	533.68
A1	044+34.26	20.13	533.32
A2	044+43.96	20.40	532.96
S. End of S. Appr. Slab	044+53.65	20.82	532.59

MODEL: 09 Elevations
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Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -
PLOT SCALE =	DRAWN - LEC	REVISED -
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP OF SOUTH APPROACH SLAB ELEVATIONS
STRUCTURE NO. 060-3366
SHEET 12 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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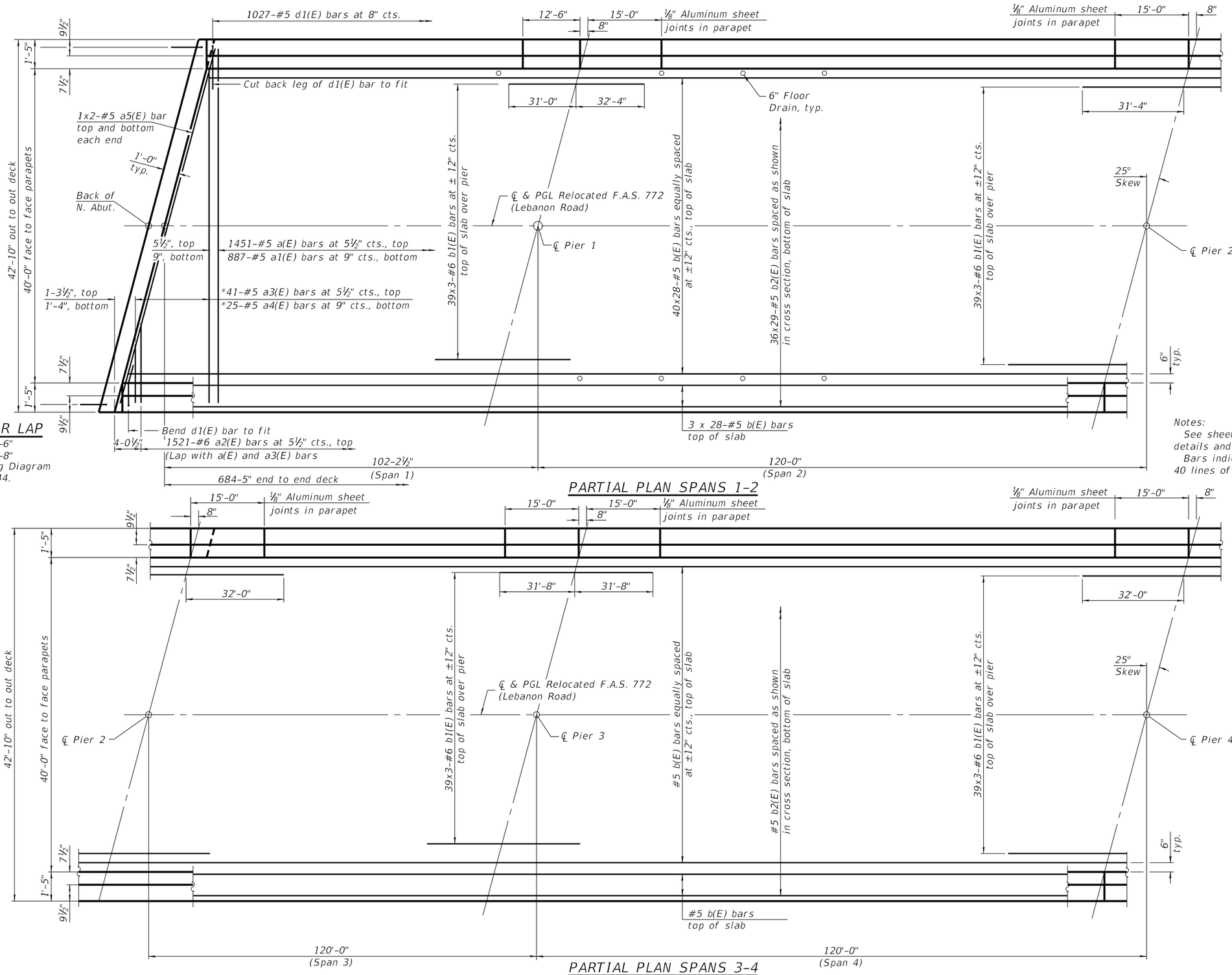
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		



MINIMUM BAR LAP

#5 bar = 3'–6"
#6 bar = 4'–8"
* See Field Cutting Diagram on sheet 15 of 44.

Notes:
See sheets 15 and 16 of 44 for superstructure details and Bill of Material.
Bars indicated thus 40 x 40–#5 etc. indicates 40 lines of bars with 28 lengths per line.

PARTIAL PLAN SPANS 1–2

PARTIAL PLAN SPANS 3–4

LOCHMUELLER GROUP 1928 SrA Bradley R. Smith Drive Troy, IL 62294 PHONE: 618.667.1400	USER NAME = linda	DESIGNED - CPA	REVISED -	**COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD**	**SUPERSTRUCTURE I STRUCTURE NO. 060–3366**
	Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -		SHEET 13 OF 44 SHEETS
	PLOT SCALE =	DRAWN - LEC	REVISED -		
	PLOT DATE = 6/26/2023 3:13:13 PM	CHECKED - REB	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	217
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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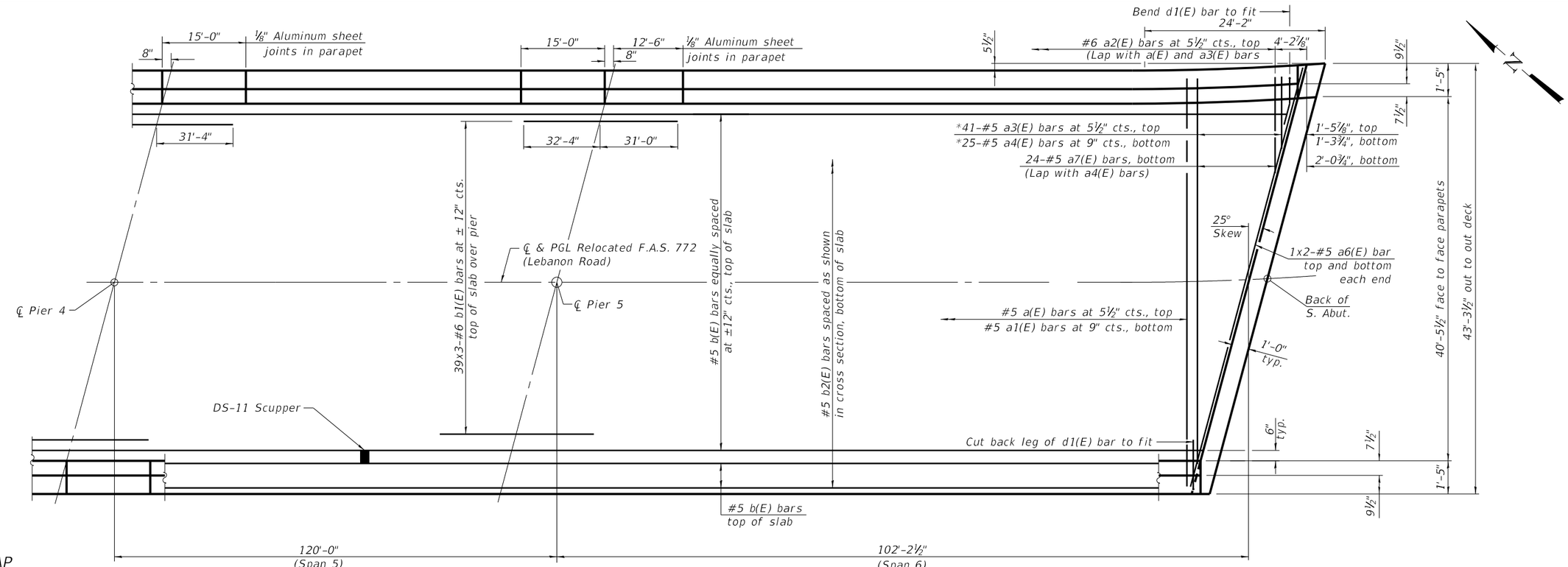
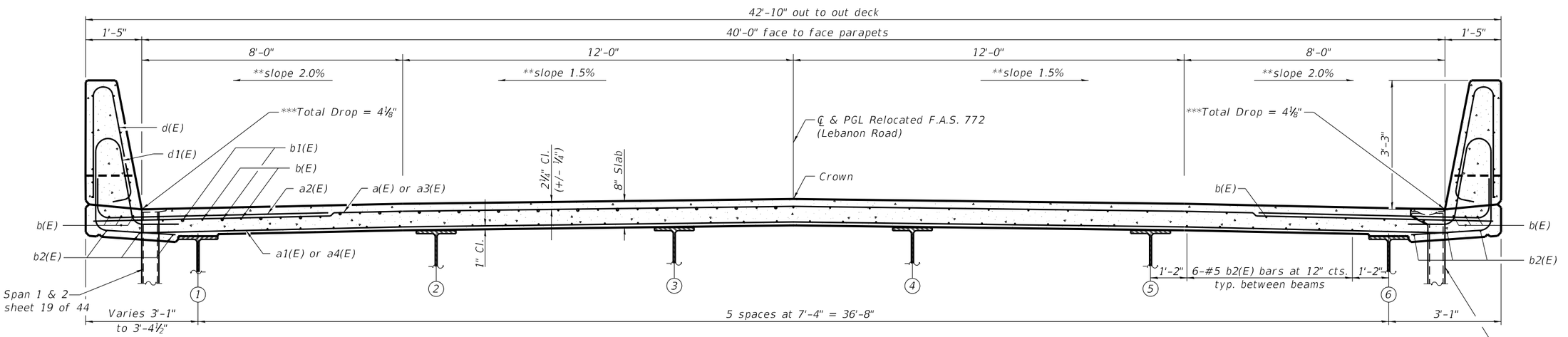


PARTIAL PLAN SPANS 5-6

MINIMUM BAR LAP

#5 bar = 3'-6"
#6 bar = 4'-8"
* See Field Cutting Diagram on sheet 15 of 44.

Notes:
See sheets 15 and 16 of 44 for superstructure details and Bill of Material.
Bars indicated thus 40 x 40-#5 etc. indicates 40 lines of bars with 28 lengths per line.



** Slopes on bridge are as shown except in superelevation transition regions at the ends of the bridge. See sheet 2 of 44 for superelevation transition cross-sections.
*** Drop on bridge is as shown except in superelevation transition regions at the ends of the bridge. Maximum drop is 4⅜" and minimum drops is -⅜".

NEAR PIER

NEAR MIDSPAN

6" Drain, Span 2 only, see sheet 19 of 44
DS-11 Scupper, Span 5 only, see sheet 20 of 44

CROSS SECTION

(Looking South)

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PLOT SCALE =	DRAWN - LEC	REVISED -	
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SUPERSTRUCTURE II
STRUCTURE NO. 060-3366
SHEET 14 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	218
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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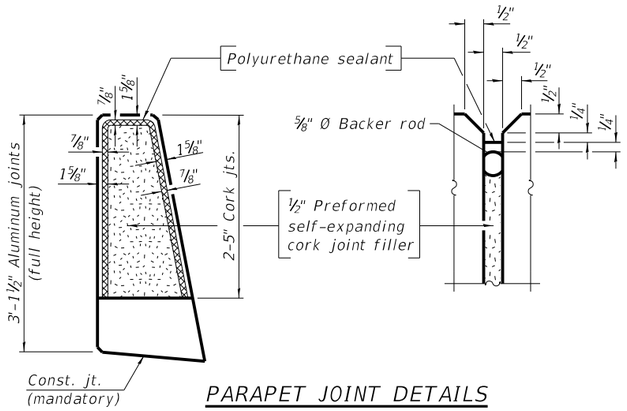


PARAPET JOINT DETAILS

Notes:

Fiberglass pipe shall conform to ASTM D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

The exterior surfaces of the floor drains shall be painted according to Article 506 with the finish coat as specified. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP1 prior to painting.

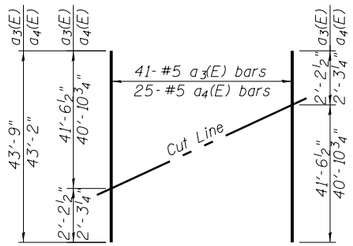
The top portion of aluminum floor drains shall be coated to minimize reaction with wet concrete.

The clamping device shall be galvanized according to AASHTO M 232. Cost of clamping device included with Floor Drains.

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

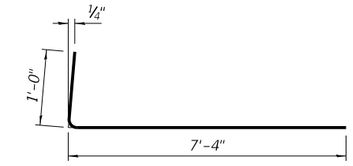
The polyurethane sealant shall be according to Article 1050.04 of the Std. Spec. and the color shall be gray.

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

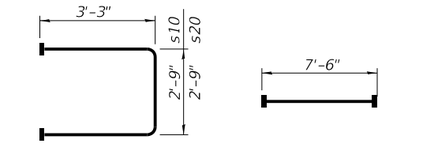


FIELD CUTTING DIAGRAM

Order $a_3(E)$ and $a_4(E)$ bars full length. Cut as shown and use remainder of bars in opposite end of deck.

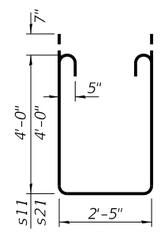


BAR $a_2(E)$

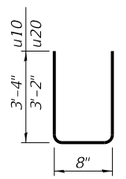


BAR $s_{10}(E)$ (North)
BAR $s_{20}(E)$ (South)
(Headed)

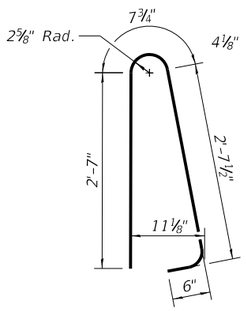
BAR $m_{11}(E)$ (North)
BAR $m_{21}(E)$ (South)
(Headed)



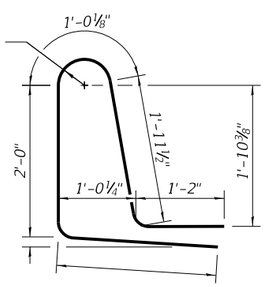
BAR $s_{11}(E)$ (North)
BAR $s_{21}(E)$ (South)



BAR $u_{10}(E)$ (North)
BAR $u_{20}(E)$ (South)



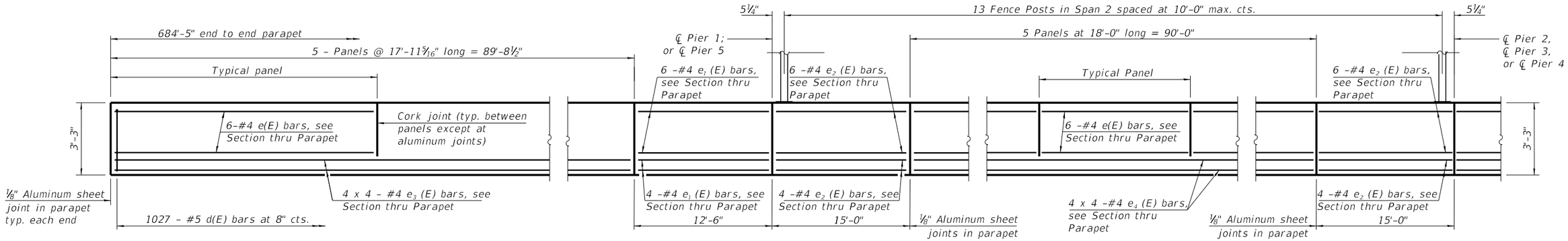
BAR d(E)



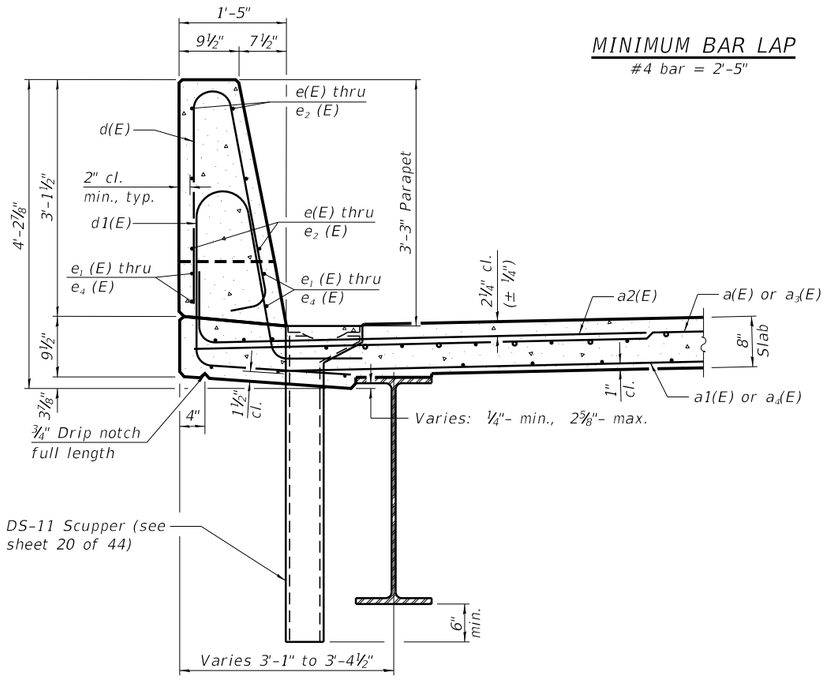
BAR d1(E)

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	1451	#5	42'-6"	
a1(E)	887	#5	42'-6"	
a2(E)	3042	#6	8'-4"	
a3(E)	41	#5	43'-9"	
a4(E)	25	#5	43'-2"	
a5(E)	4	#5	25'-3"	
a6(E)	4	#5	25'-6"	
a7(E)	24	#5	3'-11"	
b(E)	1372	#5	28'-9"	
b1(E)	585	#6	24'-3"	
b2(E)	1044	#5	27'-0"	
d(E)	2054	#5	6'-5"	
d1(E)	2054	#5	8'-8"	
e(E)	360	#4	17'-8"	
e1(E)	40	#4	12'-3"	
e2(E)	160	#4	14'-9"	
e3(E)	64	#4	24'-3"	
e4(E)	128	#4	24'-4"	
m10(E)	4	#6	25'-3"	
m11(E)	10	#6	7'-6"	
m12(E)	18	#6	7'-6"	
m13(E)	6	#6	25'-3"	
m14(E)	4	#4	24'-9"	
m20(E)	4	#6	25'-6"	
m21(E)	10	#6	7'-6"	
m22(E)	25	#6	7'-6"	
m23(E)	6	#6	25'-6"	
m24(E)	2	#4	25'-2"	
m25(E)	2	#4	10'-9"	
m26(E)	2	#4	17'-0"	
s10(E)	36	#5	9'-3"	
s11(E)	36	#5	11'-7"	
s20(E)	36	#5	9'-3"	
s21(E)	36	#5	11'-7"	
u10(E)	36	#4	7'-4"	
u20(E)	36	#4	7'-0"	
Concrete Superstructure		Cu. Yds.	1,042.5	
Bridge Deck Grooving		Sq. Yd.	3,149	
Protective Coat		Sq. Yd.	3,968	
Reinforcement Bars, Epoxy Coated		Lbs.	281,960	



Notes:
Bars indicated thus 4x4 - #4 etc. indicates 4 lines of bars with 4 lengths per line.



MINIMUM BAR LAP

#4 bar = 2'-5"

SECTION THRU PARAPET

(Showing DS-11 Scupper)

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

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -
PLOT SCALE =	DRAWN - LEC	REVISED -
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SUPERSTRUCTURE DETAILS II
STRUCTURE NO. 060-3366
SHEET 16 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	220
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
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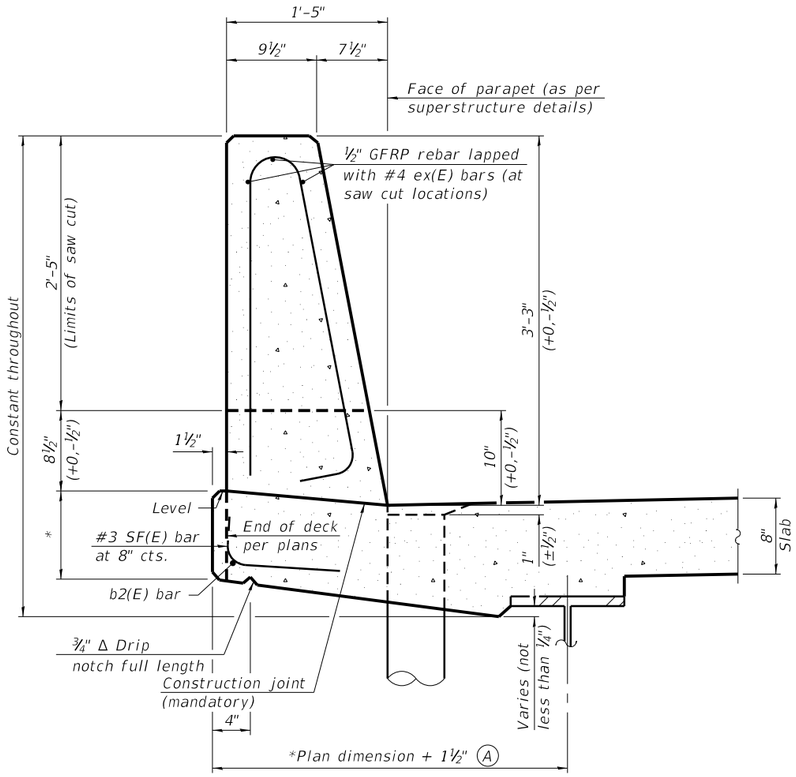
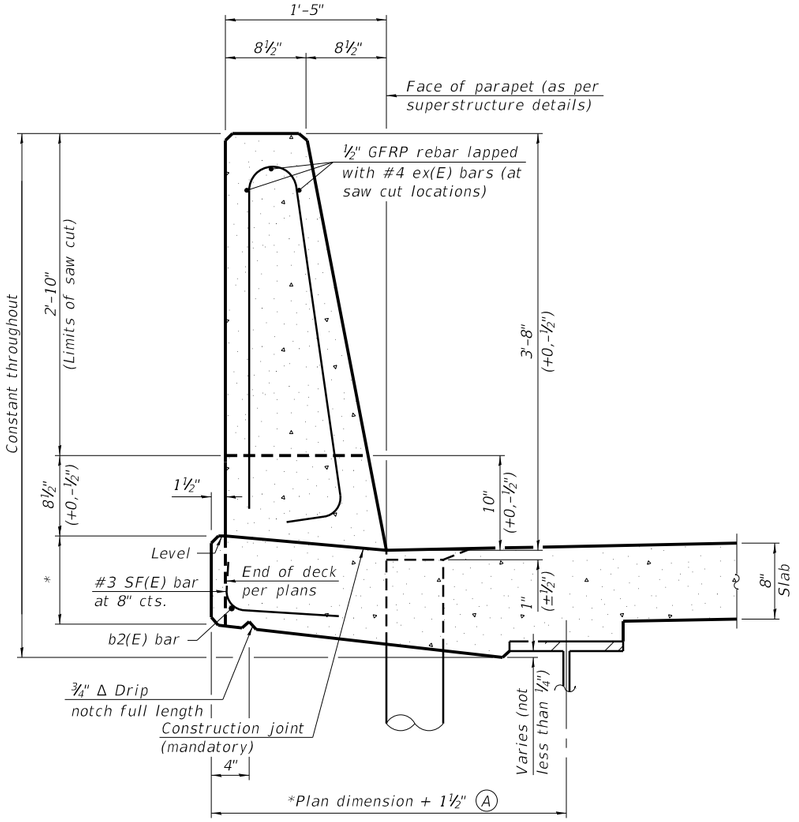


39" CONSTANT-SLOPE PARAPET SECTION

(Showing dimensions, d(E), and ½" Ø GFRP rebar)

*See Superstructure Details.



44" CONSTANT-SLOPE PARAPET SECTION

(Showing dimensions, d(E), and ½" Ø GFRP rebar)

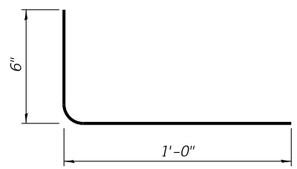
Notes:

All dimensions shall remain the same as shown on superstructure details, except dimension A which is to be revised as shown. Additional concrete needed to revise dimension A = 0.00348 cu. yds./ft. for 39" and 44" parapets.

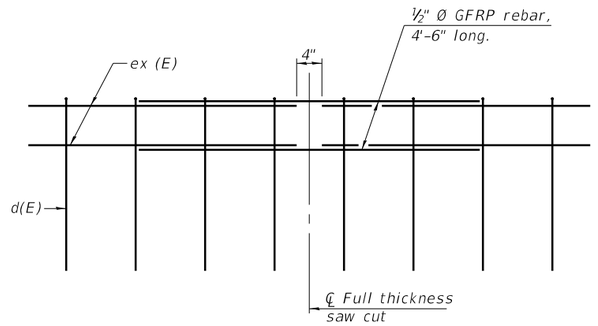
Place full depth aluminum sheets as shown on superstructure details.

Replace all cork joint filler locations with a full thickness saw cut.

Steel superstructure shown. Other superstructure types similar.



#3 (E) BAR



GFRP REBAR STIFFENING DETAIL

(Place as shown in parapet section at each parapet joint location.)

SFP 39-44 1-1-2020

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB	REVISED -	
PLOT SCALE =		DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023	3:13:16 PM	CHECKED - REB	REVISED -	

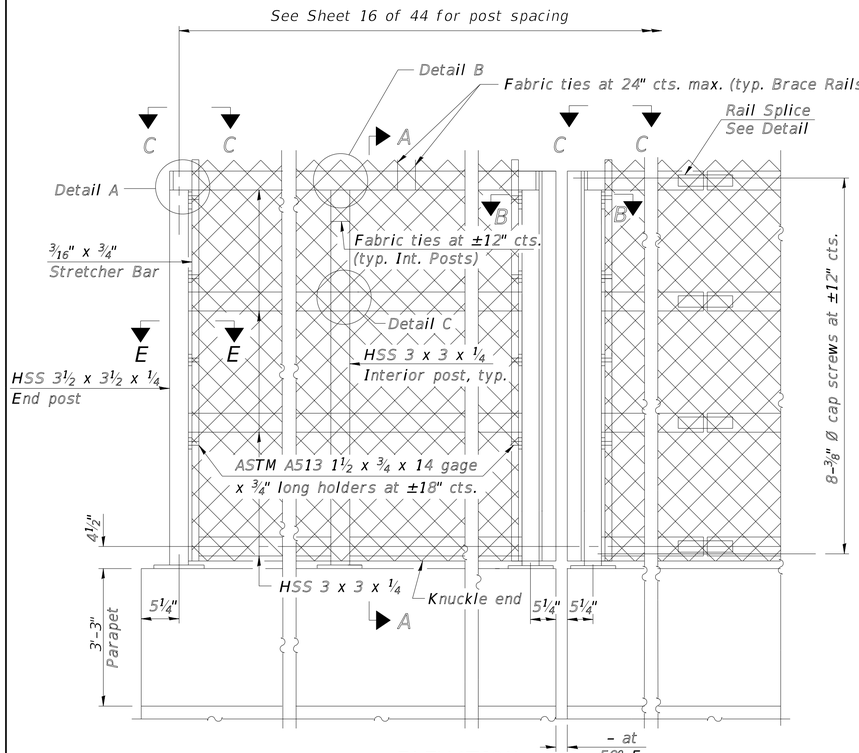
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CONCRETE PARAPET SLIPFORMING OPTION
STRUCTURE NO. 060-3366
SHEET 17 OF 44 SHEETS

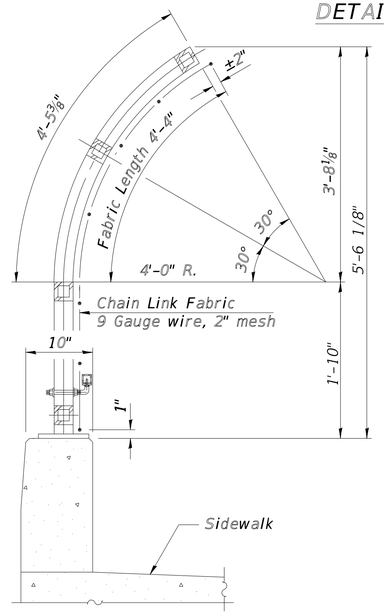
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	221
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: S:\Projects\409-0027-0HY Lebanon Rd\Bridges\dgn\Final Design\D080603366-018-Concrete Parapt Slpfrmg Option.dgn
6/26/2023 3:13:16 PM

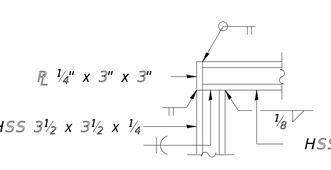
When railing is galvanized:
All steel rail elements shall be galvanized according to Article 509.05 of the Standard Specifications.



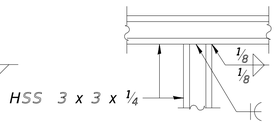
ELEVATION
(Inside Face)



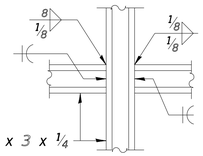
SECTION A-A



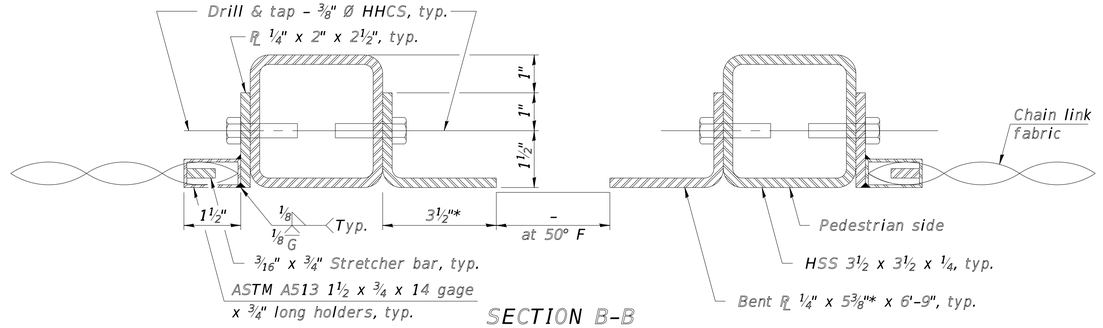
DETAIL A



DETAIL B

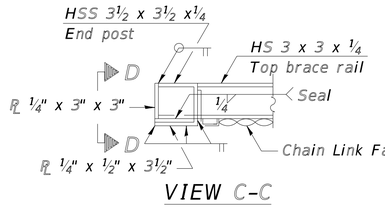


DETAIL C

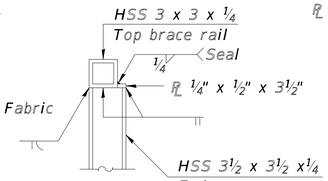


SECTION B-B

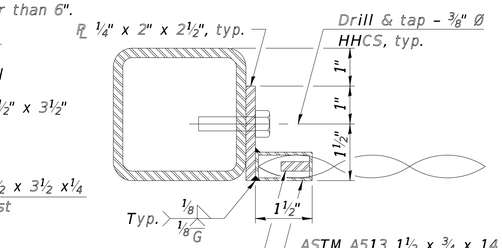
* Assume 3/8" radius. Dimensions may need to be modified for larger joints to avoid gaps greater than 6".



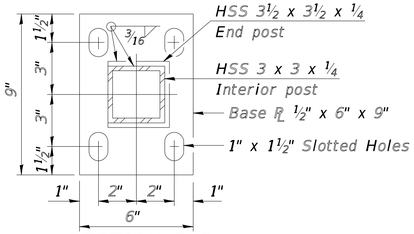
VIEW C-C



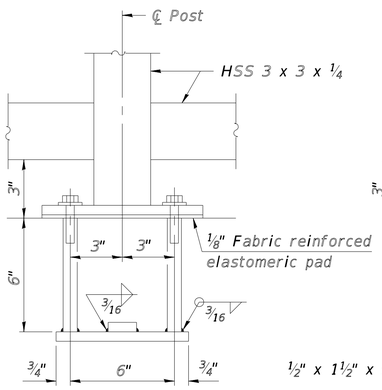
VIEW D-D

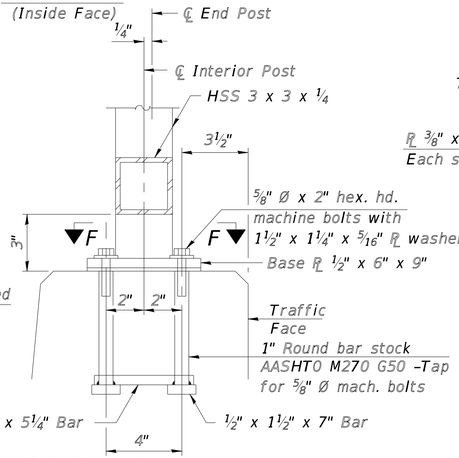


SECTION E-E

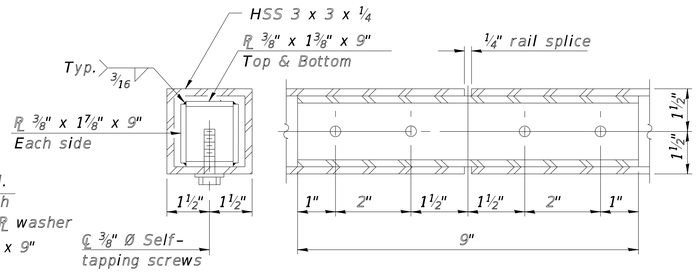


SECTION F-F





ANCHOR BOLT DETAILS



RAIL SPLICE

In lieu of the cast-in-place anchor device shown, the Contractor has the option of drilling and setting 5/8" Ø anchor rods according to Article 509.06 of the Standard Specifications. Embedment shall be according to the manufacturer's specifications. Place reinforcement bars to miss anchor rod locations.

RAILING CRITERIA

NCHRP 350 Test Level	4
Railing Weight (plf)	70
Max Post Spacing	10'-0"

BILL OF MATERIAL

Item	Unit	Quantity
Bridge Fence Railing	Foot	240'

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = Chris.Wilson		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 10/4/2023	6:25:12 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

BRIDGE FENCE RAILING, CURVED
STRUCTURE NO. 060-3366
SHEET 18 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	222
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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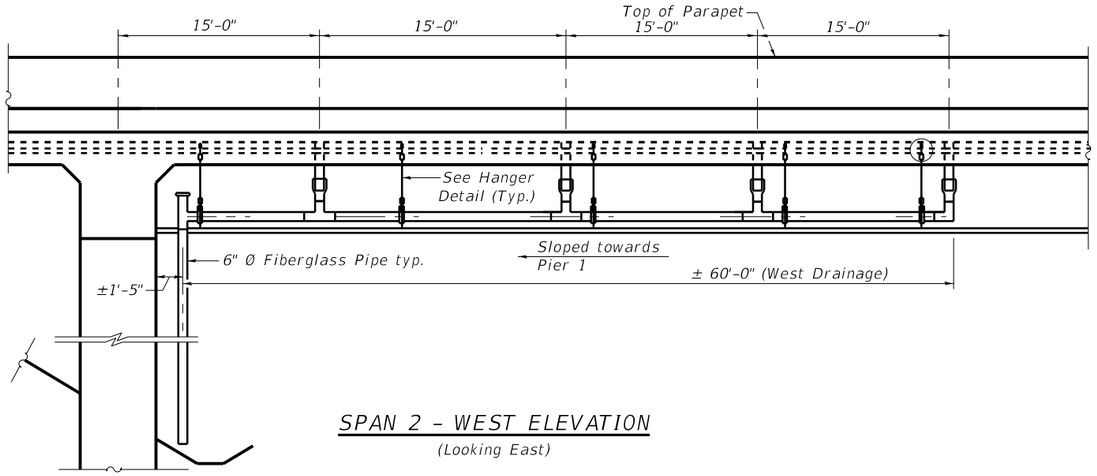
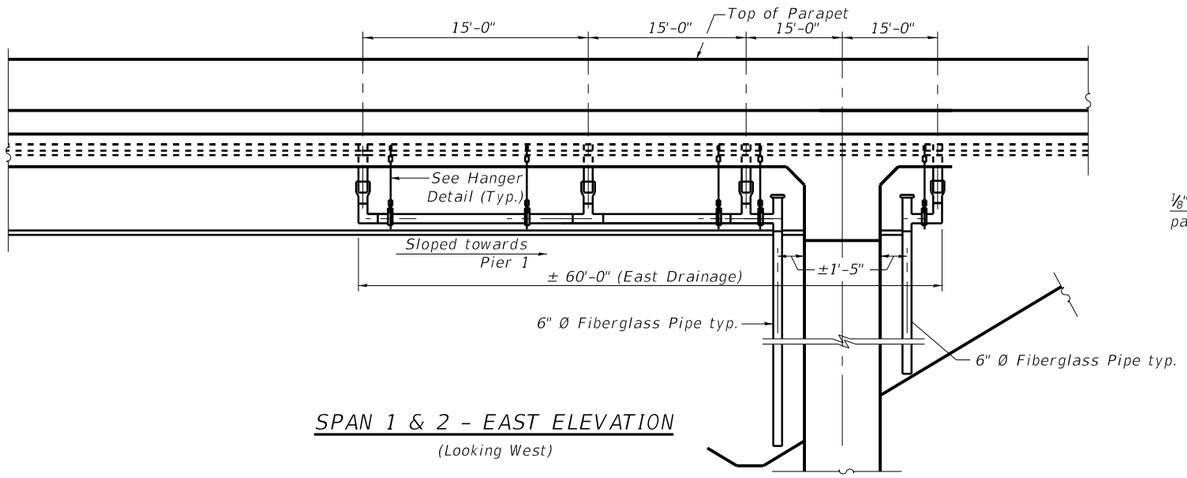


SPAN 2 – WEST ELEVATION

(Looking East)



SPAN 1 & 2 – EAST ELEVATION

(Looking West)

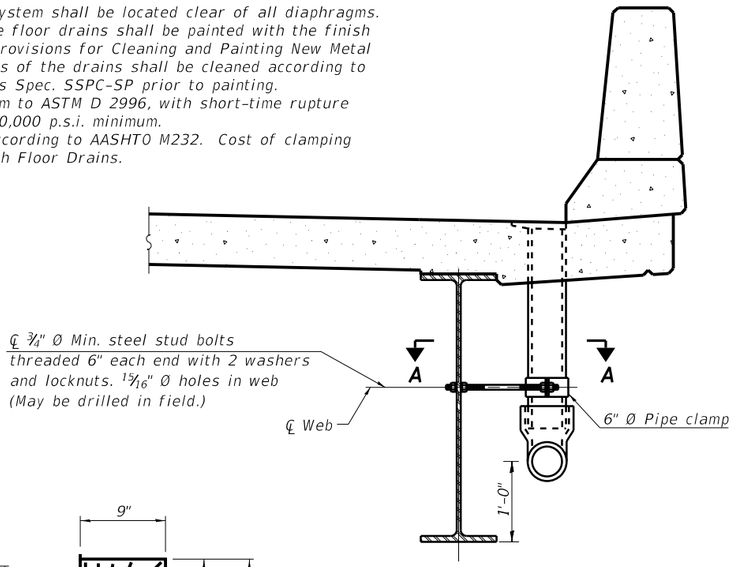
Notes:

Drains & Bridge Drainage System shall be located clear of all diaphragms.

The exterior surfaces of the floor drains shall be painted with the finish coat as specified in the special provisions for Cleaning and Painting New Metal Structures. The exterior surfaces of the drains shall be cleaned according to the Society of Protective Coating's Spec. SSPC-SP prior to painting.

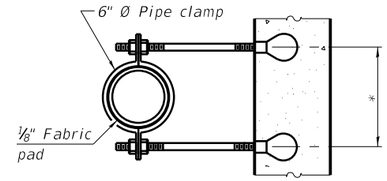
Fiberglass pipe shall conform to ASTM D 2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum.

Galvanize clamping device according to AASHTO M232. Cost of clamping device and inserts is included with Floor Drains.



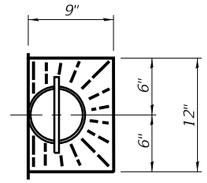
SECTION THRU PARAPET

(Showing 6" Drain)

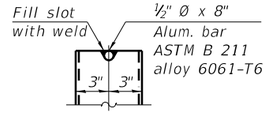


SECTION A-A

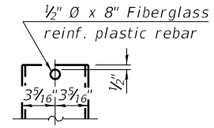
*Dimension as required by pipe clamp



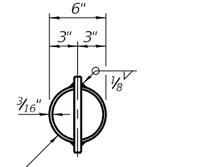
TOP PLAN



ALUMINUM TUBE

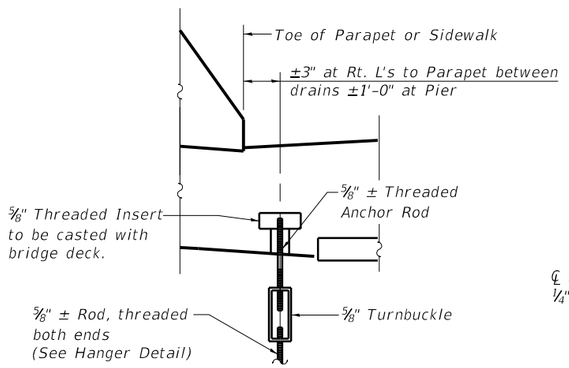


FIBERGLASS PIPE

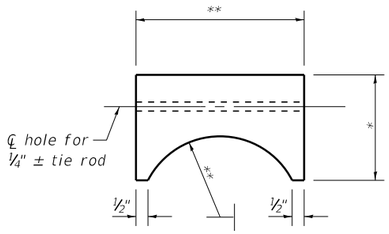


TOP PLAN

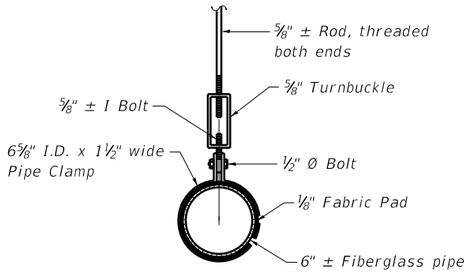
(Showing aluminum tube)



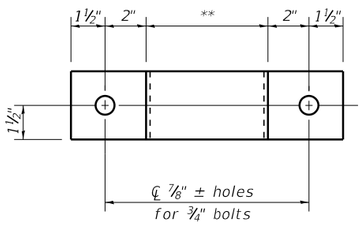
SLAB HANGER DETAIL



RUBBER SHIM DETAIL



HANGER DETAIL



3/8" x 3" STRAP DETAIL

* Dimension as required by the pipe strap.

** Dimension as rquired by the pipe.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage System	L. Sum	1
Floor Drains	Each	8

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:18 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

DRAINAGE SYSTEM
STRUCTURE NO. 060-3366

SHEET 19 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	223
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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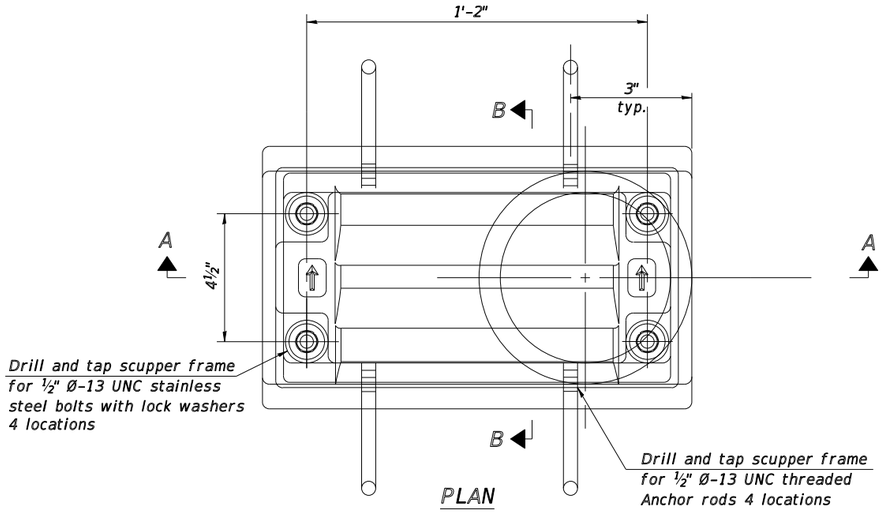
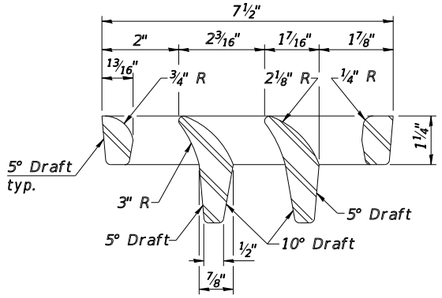
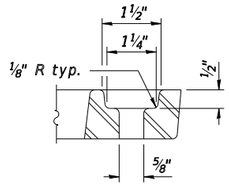


PLAN



VANE GRATE DETAIL



GRATE BOLT HOLE DETAIL

Notes:

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

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

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

Structural steel weldments of equal sections and of the same conflguratlon may be substltuted for the cast Iron scupper frames and downspouts; howevere the scupper grates shall remain cast iron. FIllet or full penetratlon welds shall be used for the weldments. Details shall be submitted to the Engineer for approval.

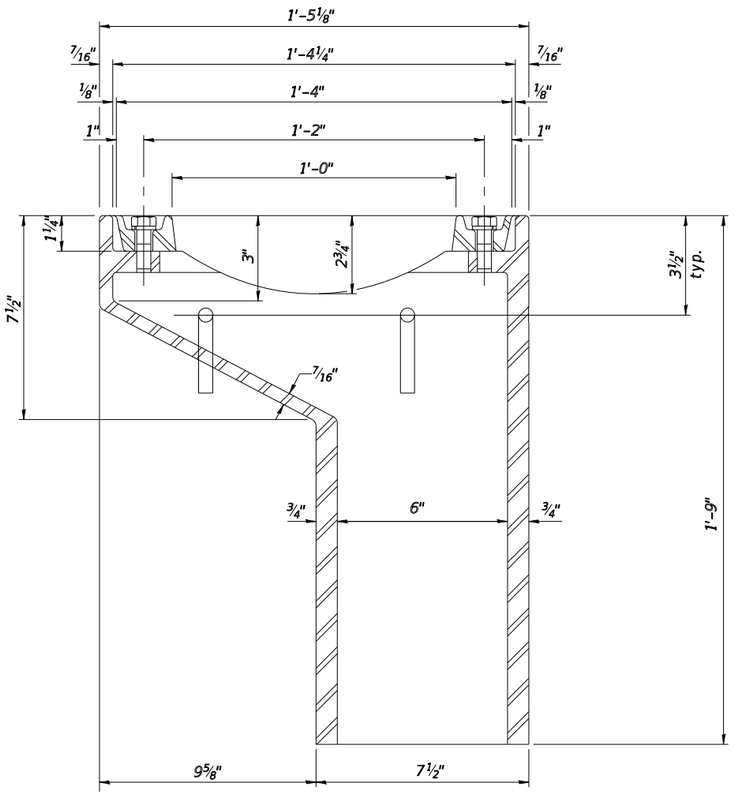
Structural steel scupper frames and downspouts, when utilized, shall be galvanized according to AASHTO M111.

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

Exterlor surfaces of downspouts and exterior exposed surfaces of the scupper frame below deck need not be painted.

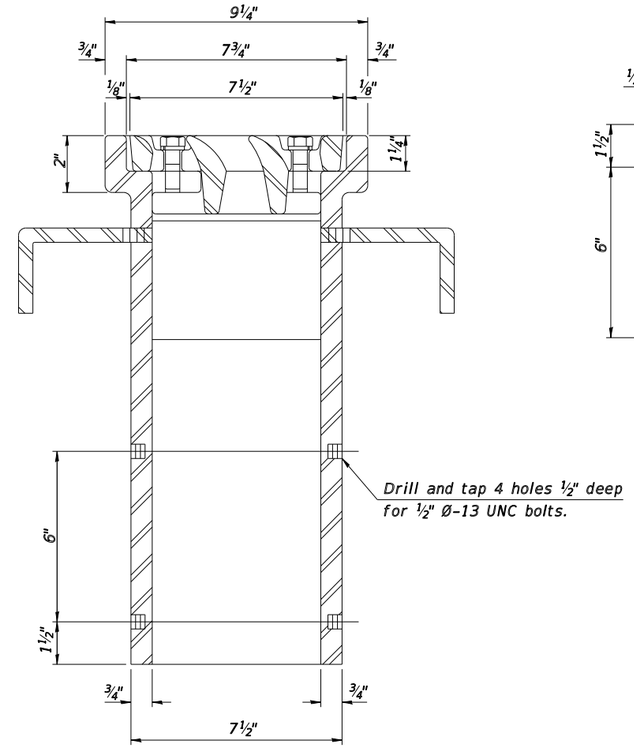
The Contractor shall take appropriate measures to assure that Protective Coat is not applied to the scupper.

Cost of the grate, frame. downspout. anchor rods, nuts and washers including complete installation of the scupper shall be paid for at the contract unlt prlce for Dralnage Scupper, DS-11.

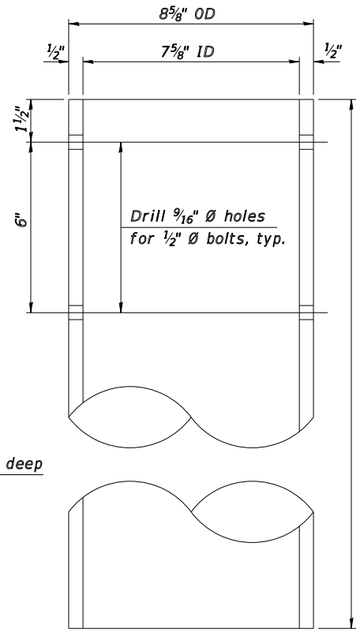


SECTION A-A

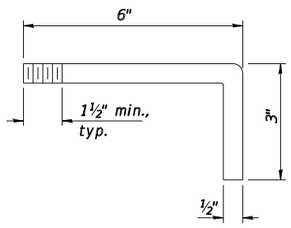
See sheet of for scupper location relative to parapet.



SECTION B-B



DOWNSPOUT



ANCHOR ROD DETAIL

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper, DS-11	Each	1

DS-11 1-1-2020

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:18 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

DRAINAGE SCUPPER, DS-11
STRUCTURE NO. 060-3366
SHEET 20 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	224
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

MODEL: Default
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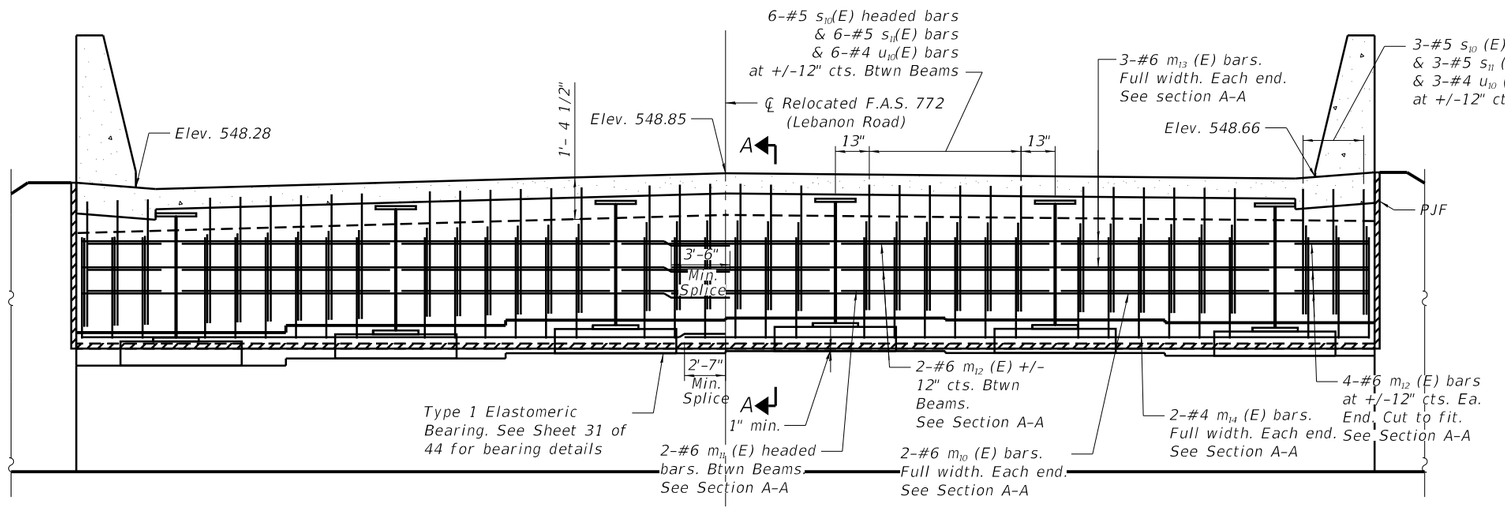
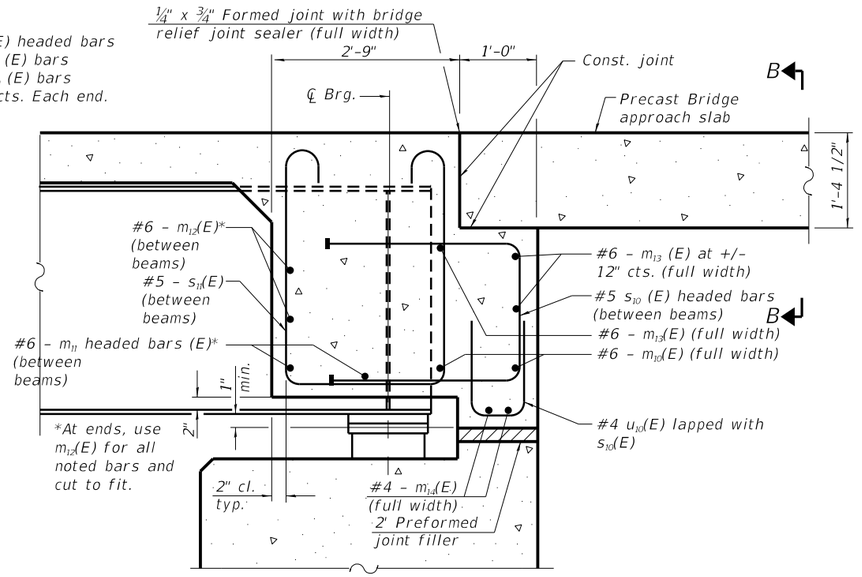
6/26/2023 3:13:18 PM



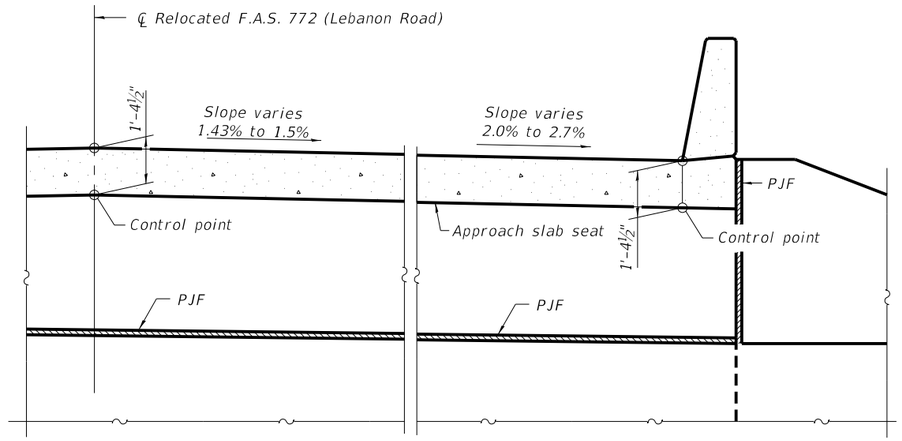
DIAPHRAGM AT NORTH ABUTMENT

(Looking North)

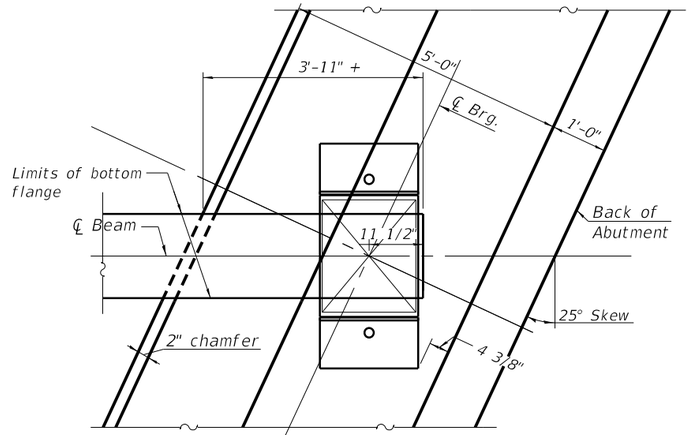


SECTION A-A

(Dimensions at right angles to abutment)



B-B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

Notes:

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

See sheet 15-16 of 44 for Superstructure Details and Bill of Material.

See sheet 23 of 44 for PJF details.

The m_{11}(E), s_{16}(E), s_{11}(E) and u_{16}(E) bars shall be placed parallel to the beams. Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the shown deck elevations and with a constant 1'-4 1/2" seat depth.

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:19 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

NORTH DIAPHRAGM DETAILS
STRUCTURE NO. 060-3366
SHEET 21 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	225
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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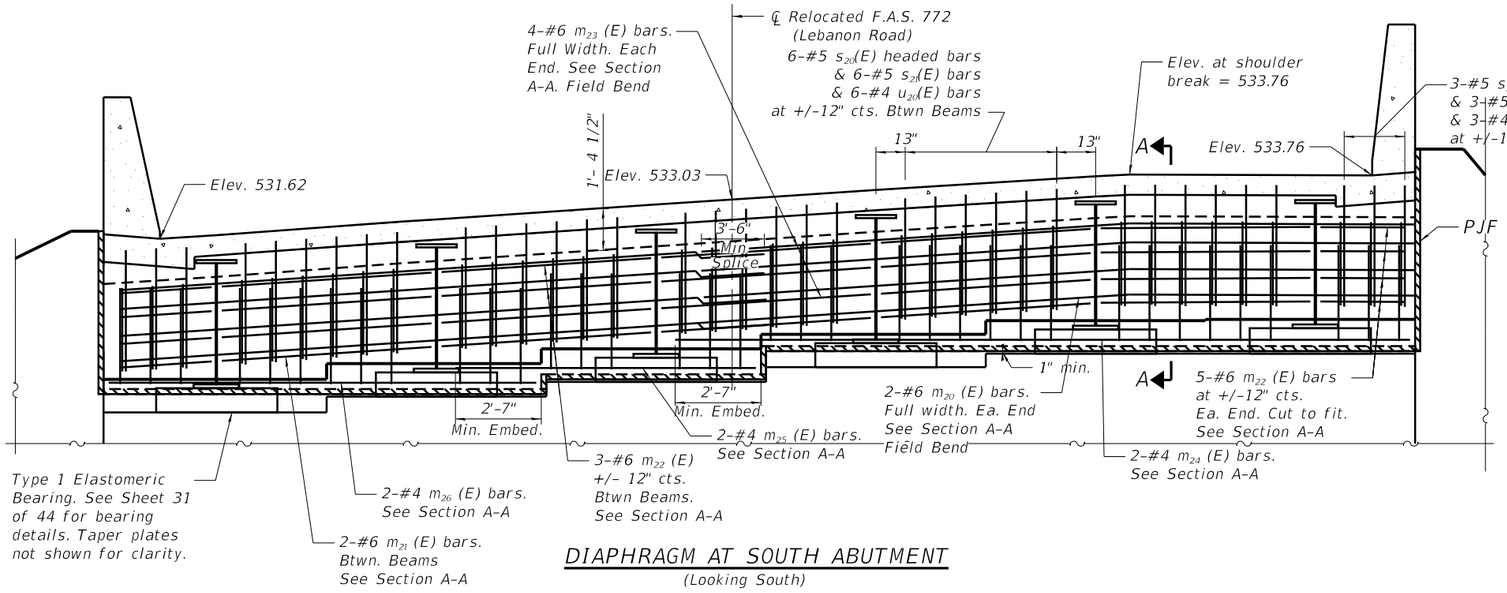
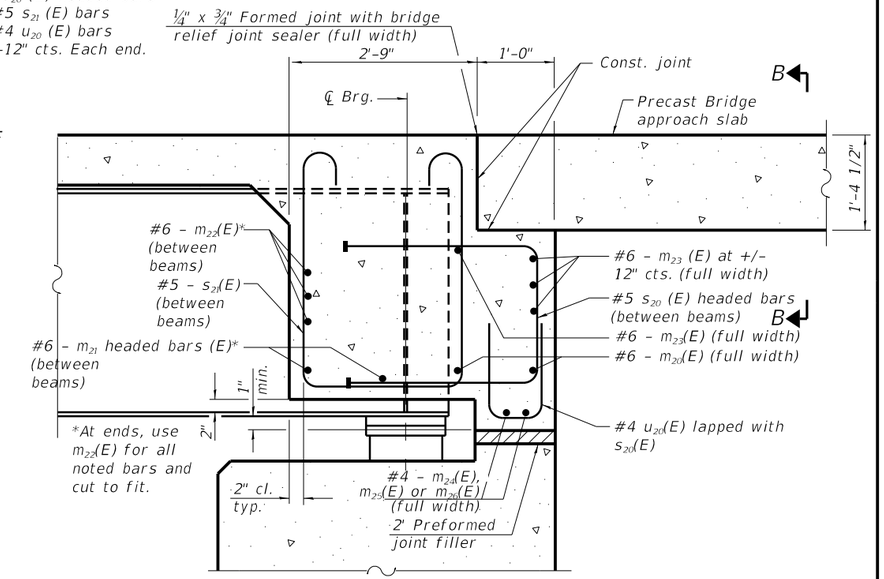


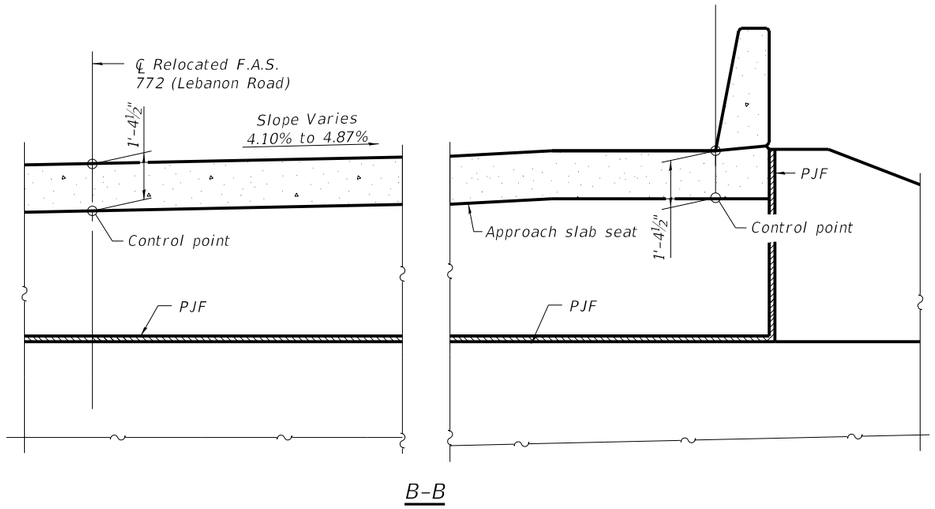
DIAPHRAGM AT SOUTH ABUTMENT

(Looking South)

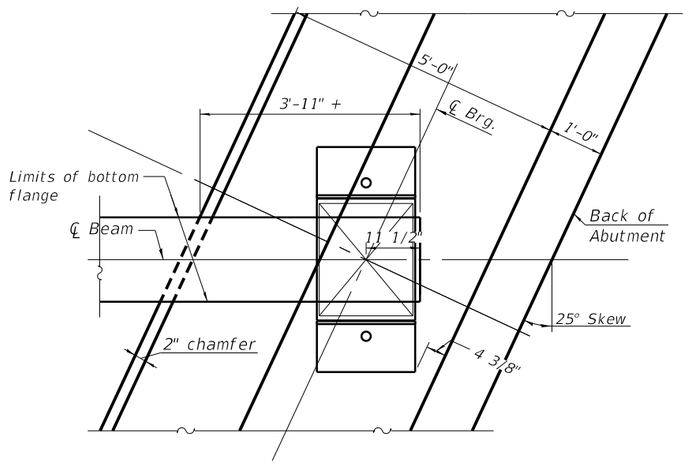


SECTION A–A

(Dimensions at right angles to abutment)



B–B



PLAN AT ABUTMENT

(Showing bottom flange of beam)

Notes:

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

See sheet 15–16 of 44 for Superstructure Details and Bill of Material.

See sheet 24 of 44 for PJF details.

The m_{24}(E), s_{20}(E), s_{21}(E) and u_{20}(E) bars shall be placed parallel to the beams Spacing for these bars shall be at right angles to the beams.

The approach slab seat shall have a constant slope determined from the shown deck elevations and with a constant 1'–4 1/2" seat depth.

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1928 S.R. Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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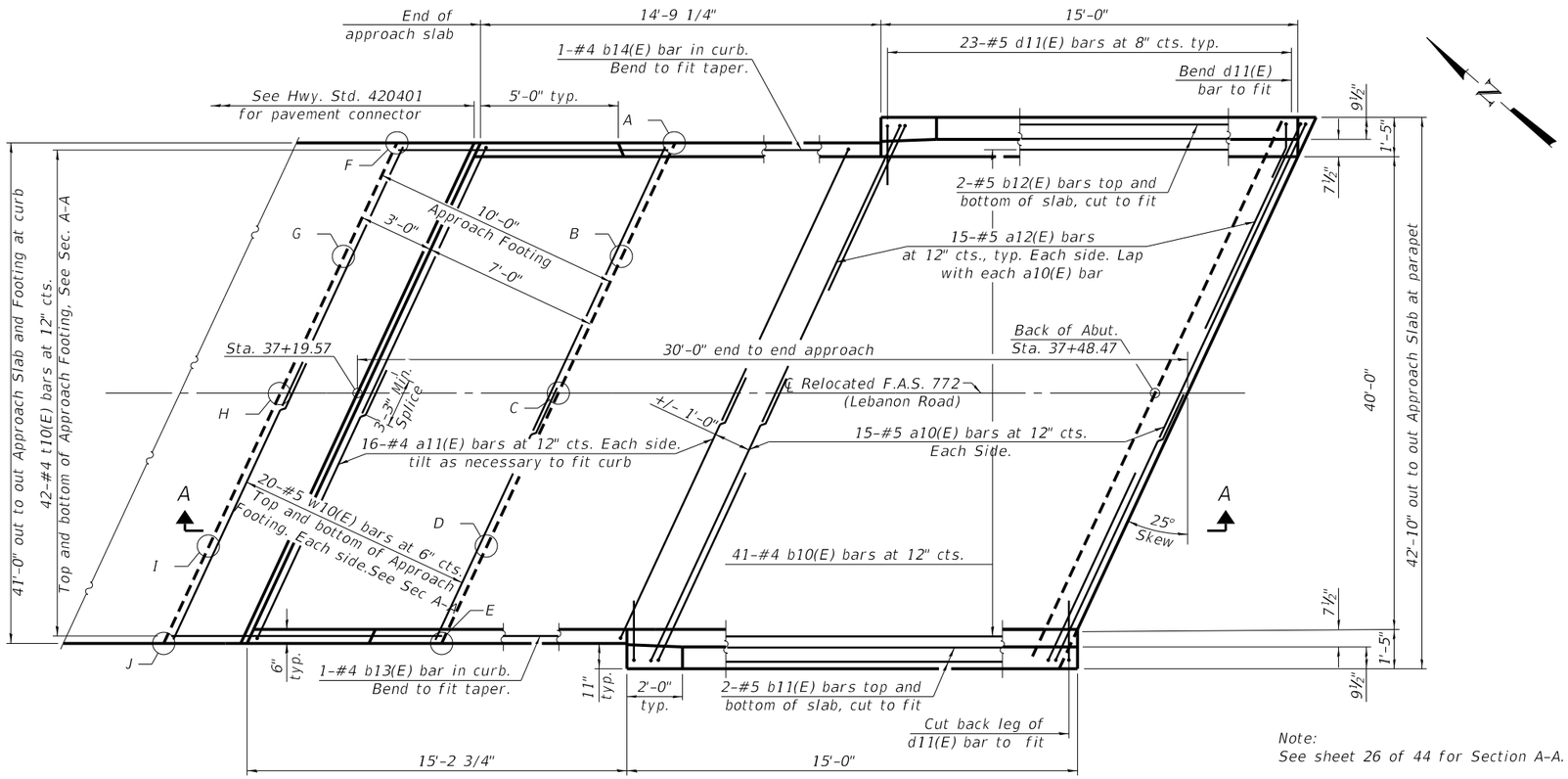
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOUTH DIAPHRAGM DETAILS
STRUCTURE NO. 060–3366
SHEET 22 OF 44 SHEETS

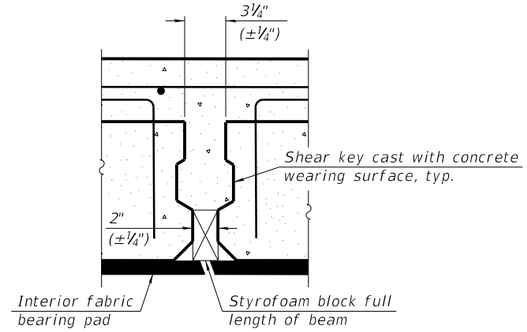
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	226
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: S:\Projects\409-0027-0HY Lebanon Rd\Bridges\dgn\Final Design\D0806033666-019-South Diaphragm Details.dgn
6/26/2023 3:13:20 PM



PLAN

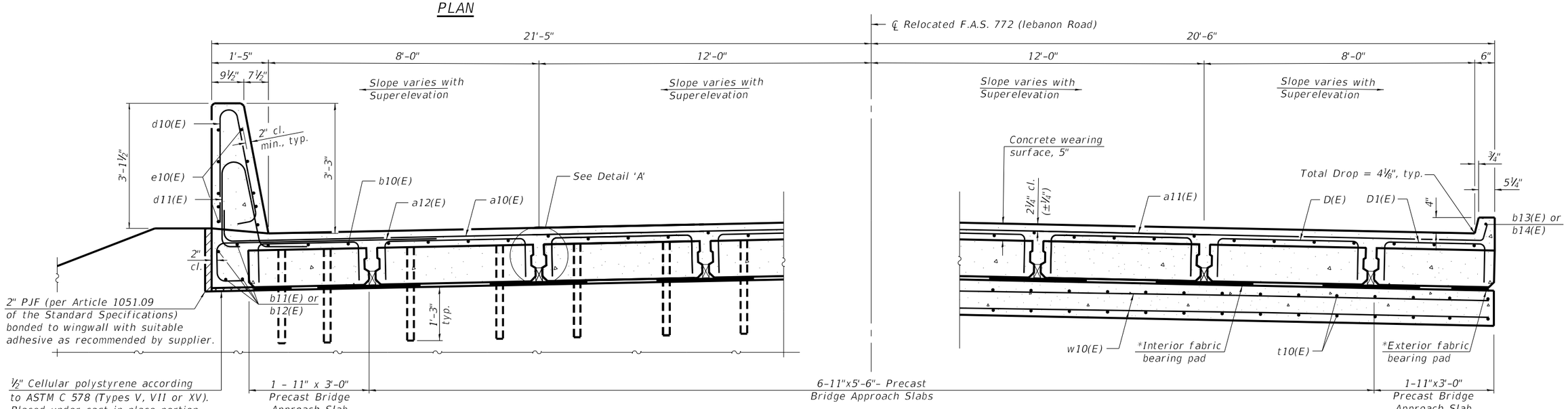
Note:
See sheet 26 of 44 for Section A-A.



DETAIL 'A'

TOP AND BOTTOM ELEVATIONS FOR NORTH APPROACH FOOTING

Point	Description	Top	Bottom
A	East Edge of Slab	546.84	546.00
B	East Shldr Break	547.05	546.21
C	Roadway ℄	546.99	546.16
D	West Shldr Break	546.70	545.86
E	West Edge of Slab	546.27	545.44
F	East Edge of Slab	546.62	545.79
G	East Shldr Break	546.88	546.05
H	Roadway ℄	546.76	545.93
I	West Shldr Break	546.46	545.62
J	West Edge of Slab	546.02	545.19



NEAR ABUTMENT

AT APPROACH FOOTING

CROSS SECTION
(Looking South)

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Troy, IL 62294
PHONE: 618.667.1400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

NORTH PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO. 060-3366
SHEET 23 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	227
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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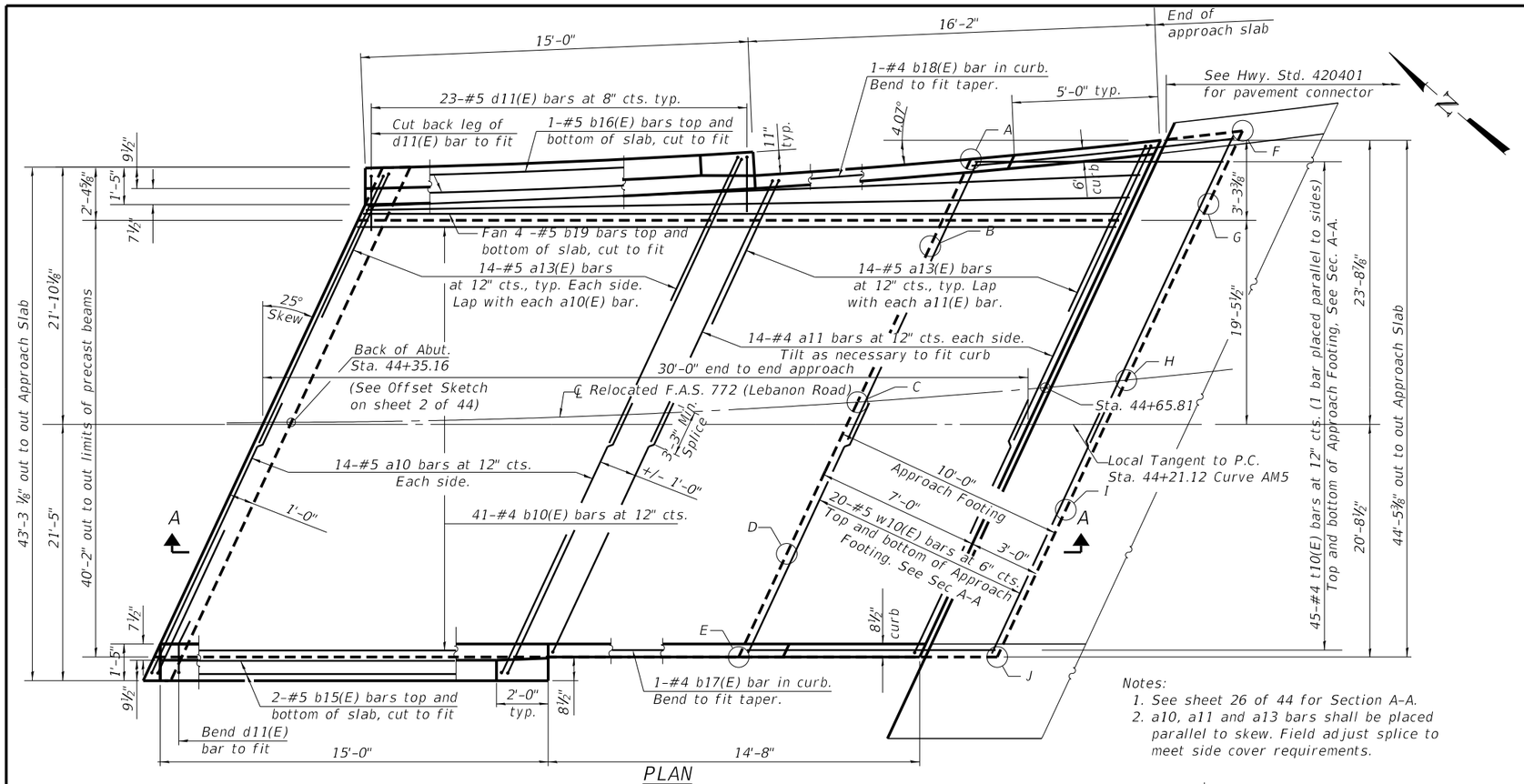
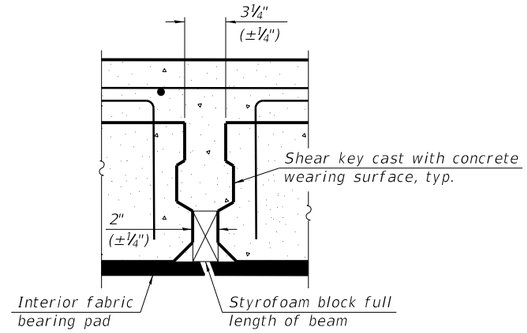


PLAN

Notes:
1. See sheet 26 of 44 for Section A-A.
2. a10, a11 and a13 bars shall be placed parallel to skew. Field adjust splice to meet side cover requirements.

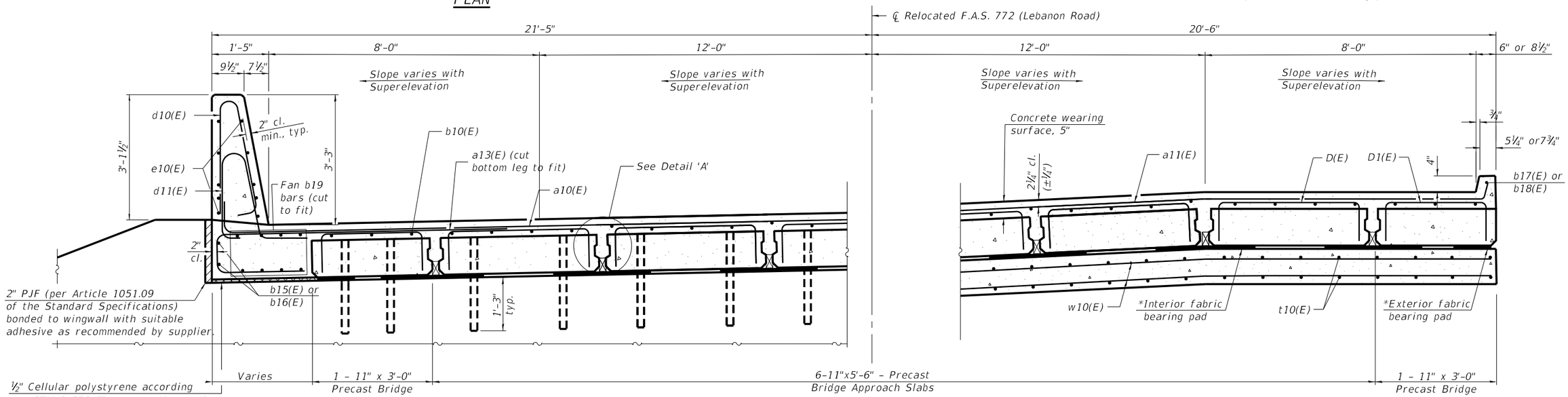


DETAIL 'A'

TOP AND BOTTOM ELEVATIONS FOR SOUTH APPROACH FOOTING

Point	Description	Top	Bottom
A	East Edge of Slab	528.88	528.05
B	East Shldr Break	529.60	528.77
C	Roadway ℄	530.59	529.75
D	West Shldr Break	531.49	530.66
E	West Edge of Slab	531.48	530.64
F	East Edge of Slab	528.38	527.55
G	East Shldr Break	529.10	528.27
H	Roadway ℄	530.11	529.27
I	West Shldr Break	531.08	530.25
J	West Edge of Slab	531.08	530.24

* Fabric bearing pads at the expansion end shall be recessed ¼" into the approach footing and bonded. Adjusting shims, when required, shall be bonded to the top of the fabric bearing pads.



NEAR ABUTMENT

AT APPROACH FOOTING

CROSS SECTION
(Looking South)

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOUTH PRECAST BRIDGE APPROACH SLAB
STRUCTURE NO. 060-3366
SHEET 24 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	228
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

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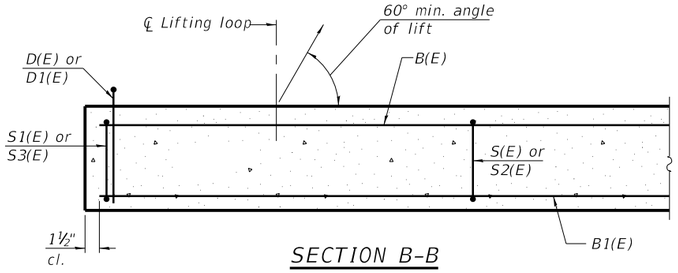
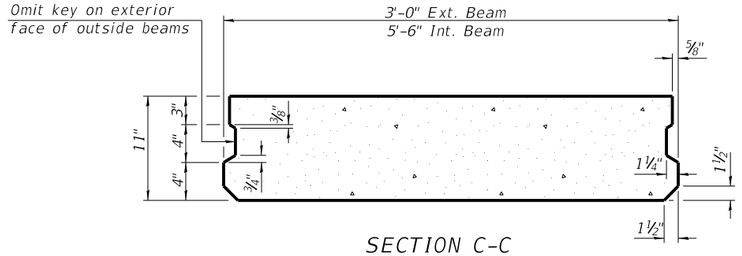


SECTION B-B



SECTION C-C
(Showing dimensions)

Notes:

The precast bridge approach slab shall be according to Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Bridge Approach Slab.

Cast-in-place substitution of Precast Bridge Approach Slab is not allowed.

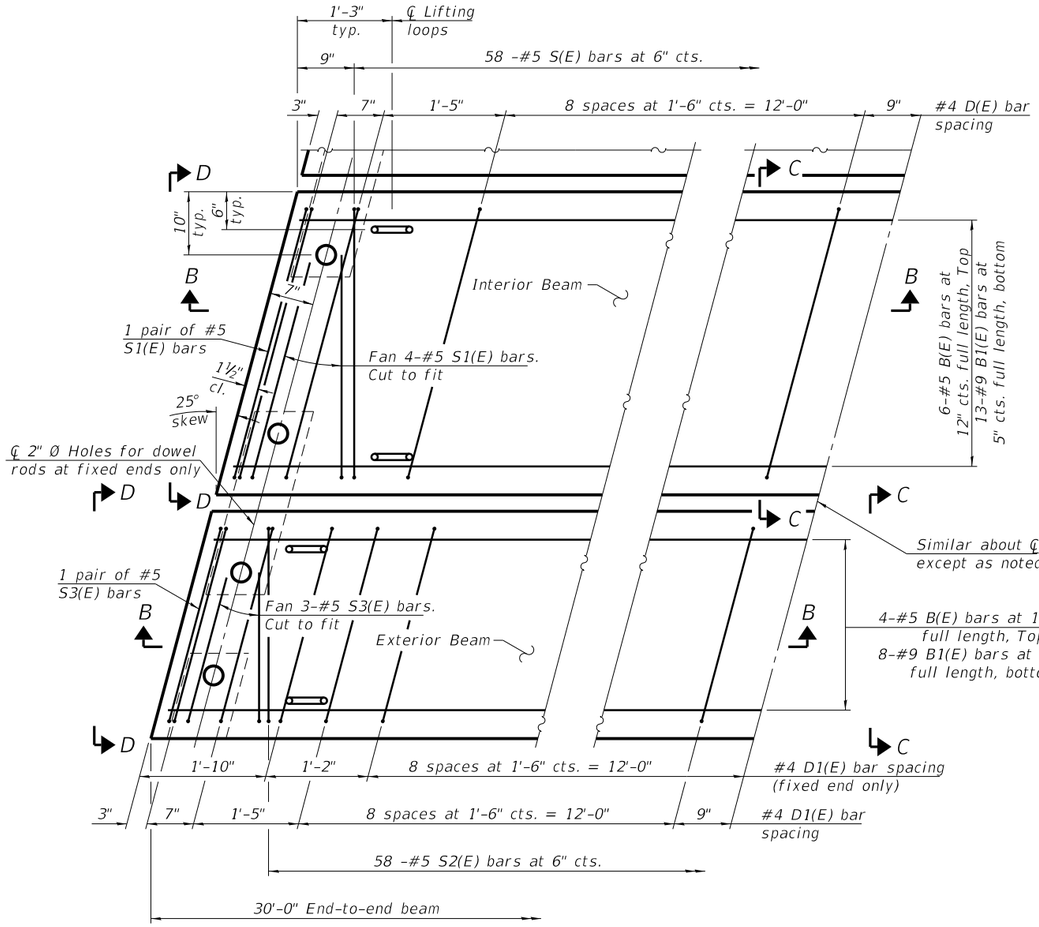
The top surface of precast bridge approach slabs shall be finished similar to precast prestressed deck beams with concrete wearing surface as specified in the IDOT "Manual for Fabrication of Precast Prestressed Concrete Products."

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location. Cost included with Precast Bridge Approach Slab.

A minimum 2 ½" Ø lifting pins shall be used to engage the lifting loops during handling.

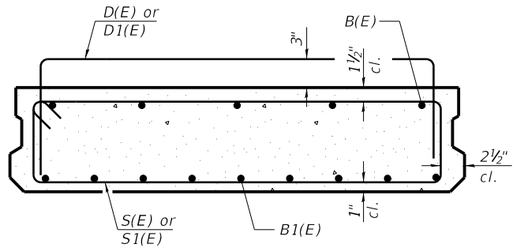
Compressive strength of precast concrete, f'c shall be 6,000 psi.

Compressive strength of precast concrete during initial lifting, f'ci shall be 5,000 psi.

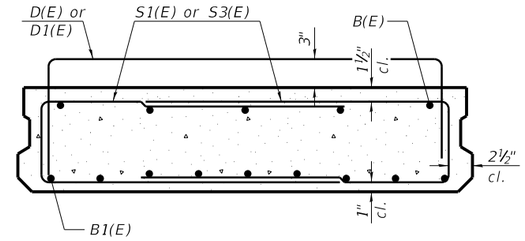


PLAN VIEW

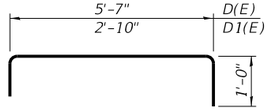
(showing precast bridge approach beams)
(Spacing of D(E) and D1(E) bars may be adjusted up to 3" to miss the dowel rod holes and the lifting loops at the beam ends)



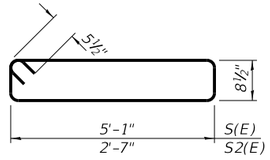
SECTION C-C
(Showing reinforcement)



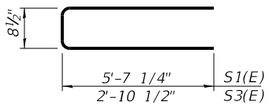
VIEW D-D
(Showing reinforcement)



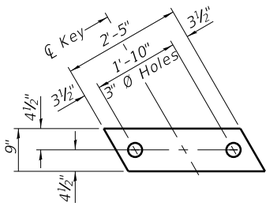
BARS D(E) & D1(E)



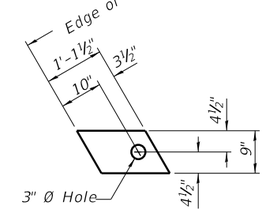
BARS S(E) & S2(E)



BARS S1(E) & S3(E)



INTERIOR



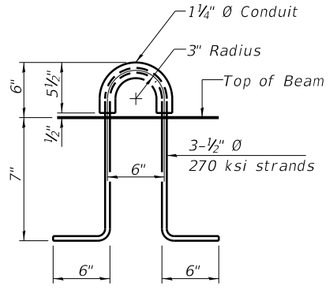
EXTERIOR

FABRIC BEARING PAD

Notes:

Bearing pads at fixed end shall be ½" thick and bearing pads at expansion end shall be ¾" thick.

Omit holes for fabric bearing pads at approach slab footing end of beams.



LIFTING LOOP DETAIL

(An alternate lifting loop with a proof load of 25,000 lbs. and utilized according to the manufacturer's recommendations may be used)

BAR LIST
EACH INTERIOR BEAM
(For information only)

Bar	No.	Size	Length	Shape
B(E)	6	#5	29'-8"	—
B1(E)	13	#9	29'-8"	—
D(E)	22	#4	7'-7"	⌐ ¬
S(E)	58	#5	12'-6"	▭
S1(E)	12	#5	11'-11"	▭

BAR LIST
EACH EXTERIOR BEAM
(For information only)

Bar	No.	Size	Length	Shape
B(E)	4	#5	29'-8"	—
B1(E)	8	#9	29'-8"	—
D1(E)	22	#4	4'-10"	⌐ ¬
S2(E)	58	#5	7'-6"	▭
S3(E)	10	#5	6'-5"	▭

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1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.3400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST BRIDGE APPROACH SLAB DETAILS I
STRUCTURE NO. 060-3366
SHEET 25 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	229
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-0027-OH\Y Lebanon Rd\Bridges\dgn\Final Design\D60603366-022-Precast Brdg Apprch Slab Details I.dgn

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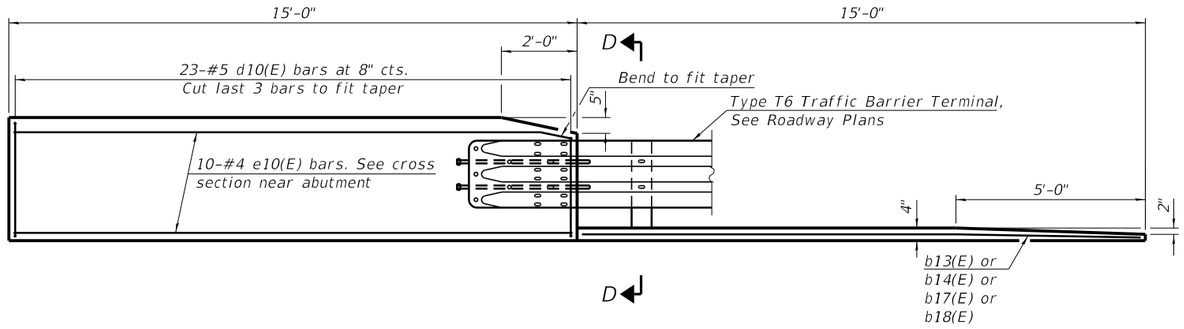
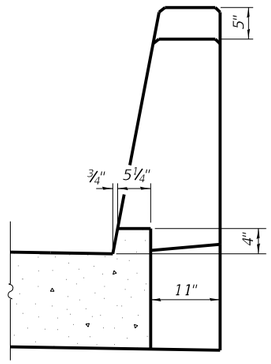
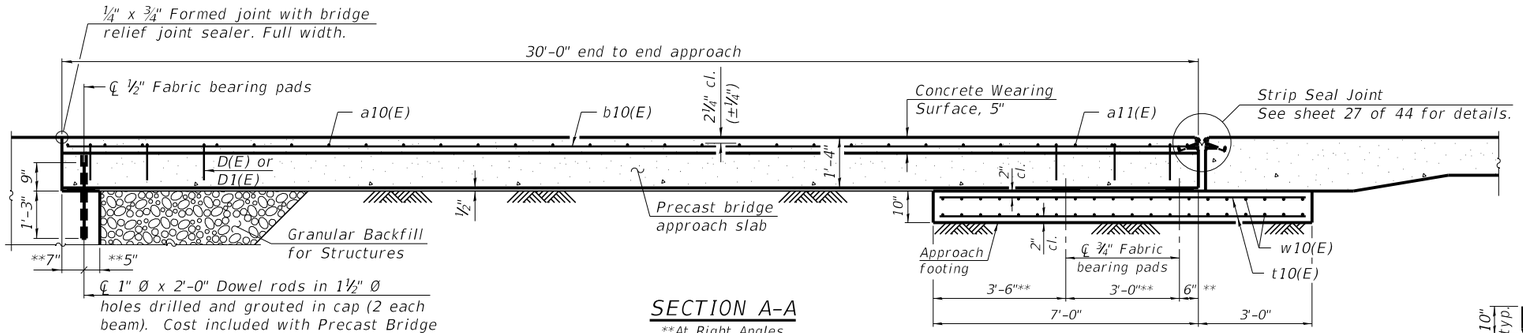


INSIDE ELEVATION OF PARAPET AND CURB

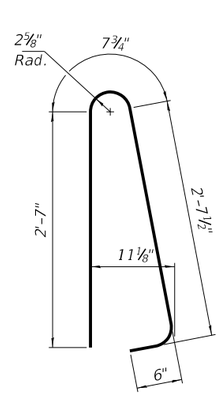


VIEW D-D

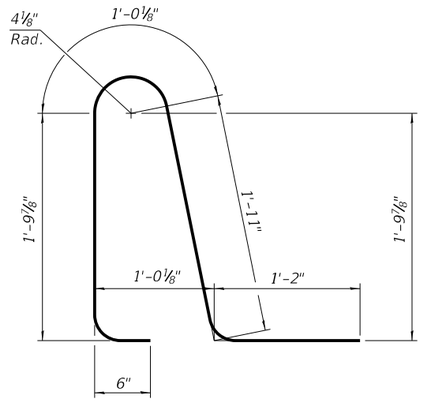


SECTION A-A

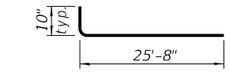
**At Right Angles



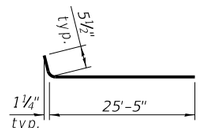
BAR d10(E)



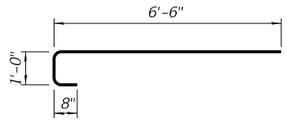
BAR d11(E)



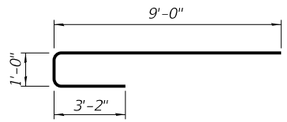
BAR a10(E)



BAR a11(E)



BAR a12(E)



BAR a13(E)

Notes:

The joint opening shall be adjusted for temperature per Article 520.04 of the Standard Specifications. However, since this detail is for jointless structures, the length of bridge used to calculate the adjustment shall be equal to half the total bridge length plus the length of the bridge approach slab.

After precast bridge approach slabs have been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before casting the shear keys and wearing surface.

Any concrete poured monolithically with the wearing surface, such as curbs, shall not be paid for separately, but will be included in the cost of Concrete Wearing Surface, 5".

The strip seal shall extend 6" beyond the edge of the approach slab on each end.

Parapet concrete shall be paid for as Concrete Superstructure.

Approach footing concrete shall be paid for as Concrete Structures.

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

Cost of excavation for approach footing included with Concrete Structures.

For Granular Backfill for Structures and drainage treatment details, see sheet 3 of 44.

Cost of cellular polystyrene is included with Concrete Superstructure.

NORTH APPROACH BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	30	#5	26'-6"	
a11(E)	32	#4	25'-10"	
a12(E)	30	#5	8'-2"	
b10(E)	41	#4	29'-8"	
b11(E)	4	#5	14'-8"	
b12(E)	4	#5	15'-4"	
b13(E)	1	#4	14'-10"	
b14(E)	1	#4	14'-5"	
d10(E)	46	#5	6'-5"	
d11(E)	46	#5	6'-5"	
e10(E)	20	#4	14'-8"	
t10(E)	84	#4	10'-8"	
w10(E)	80	#5	25'-7"	
Concrete Structures			Cu. Yd.	14
Concrete Superstructure			Cu. Yd.	3.9
Bridge Deck Grooving			Sq. Yd.	127
Protective Coat			Sq. Yd.	150
Reinforcement Bars, Epoxy Coated			Pound	6140
Concrete Wearing Surface, 5"			Sq. Yd.	140
Precast Bridge Approach Slab			Sq. Ft.	1170

SOUTH APPROACH BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a10(E)	28	#5	26'-6"	
a11(E)	28	#4	25'-10"	
a13(E)	42	#5	13'-2"	
b10(E)	41	#4	29'-8"	
b15(E)	4	#5	15'-3"	
b16(E)	2	#5	14'-0"	
b17(E)	1	#4	14'-4"	
b18(E)	1	#4	15'-10"	
b19(E)	8	#4	30'-6"	
d10(E)	46	#5	6'-5"	
d11(E)	46	#5	6'-5"	
e10(E)	20	#4	14'-8"	
t10(E)	90	#4	10'-8"	
w10(E)	80	#5	25'-7"	
Concrete Structures			Cu. Yd.	14.8
Concrete Superstructure			Cu. Yd.	3.9
Bridge Deck Grooving			Sq. Yd.	131
Protective Coat			Sq. Yd.	152
Reinforcement Bars, Epoxy Coated			Pound	6500
Concrete Wearing Surface, 5"			Sq. Yd.	145
Precast Bridge Approach Slab			Sq. Ft.	1170

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.3400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST BRIDGE APPROACH SLAB DETAILS II
STRUCTURE NO. 060-3366
SHEET 26 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	230
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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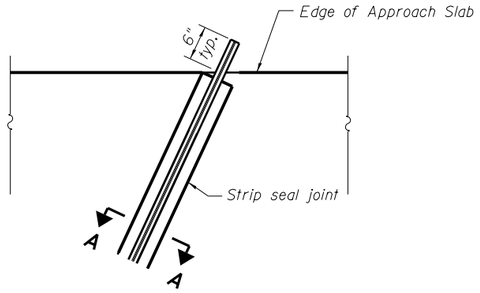
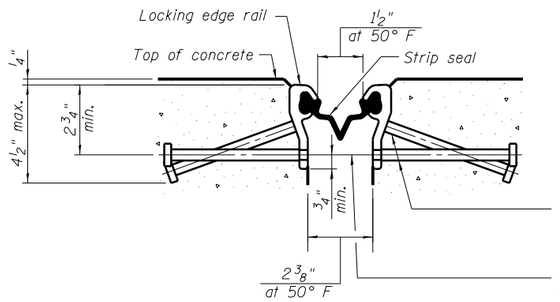
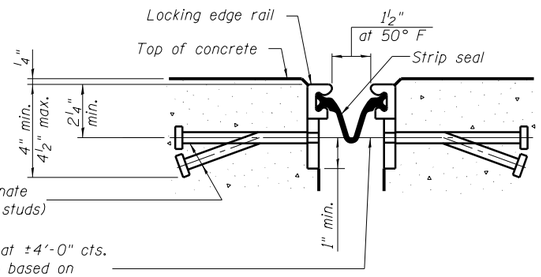


PLAN AT EDGE OF APPROACH SLAB



SHOWING ROLLED RAIL JOINT



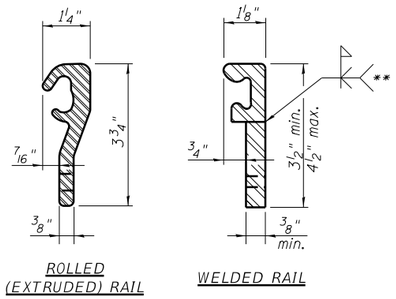
SHOWING WELDED RAIL JOINT

* 5/8" ϕ x 6" studs @ 6" cts. (alternate angled/bent studs with horizontal studs)

3/8" ϕ threaded rods in 7/16" ϕ holes at ±4'-0" cts. for holding the proper joint opening based on the temperature during the deck pour. Place to miss studs. All rods shall be burned, or sawed off flush with the plates after concrete is set.

SECTION A-A

* Granular or solid flux filled headed studs conforming to Article 1006.32 of the Std. Specs., automatically end welded.

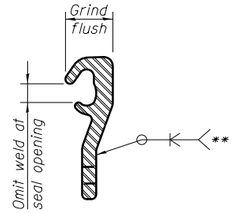


ROLLED (EXTRUDED) RAIL

WELDED RAIL

LOCKING EDGE RAILS

** Back gouge not required if complete joint penetration is verified by mock-up.



LOCKING EDGE RAIL SPLICE

The inside of the locking edge rail groove shall be free of weld residue. Rolled rail shown, welded rail similar.

Notes:

The strip seal shall be made continuous and shall have a minimum thickness of 1/4". The configuration of the strip seal shall match the configuration of the locking edge rails. Open or "webbed" strip seal gland configurations are not permitted. The gland shall be sized for a maximum rated movement of 4 inches.

The locking edge rails depicted are configured for typical applications and are conceptual only. The actual configuration of the locking edge rails and matching strip seal may vary from manufacturer to manufacturer provided they fit the application and meet the minimum anchorage shown. Flanged edge rails, however, will not be allowed. Locking edge rails may exceed the 4 1/2" maximum depth provided the anchorage system is revised according to the manufacturer's recommendation.

The manufacturer's recommended installation methods shall be followed.

All steel components shall be galvanized after fabrication according to Article 520.03 of the Standard Specifications.

The Maximum space between locking edge rail segments shall be 3/16" and sealed with a suitable sealant; however, any rail joint within 10' measured perpendicular to the face of the curb or parapet shall be welded as shown in the locking edge rail splice detail.

Cost of anchorage studs included with Preformed Joint Strip Seal.

The concrete opening below the strip seal will vary based on the locking edge rail chosen by the Contractor. Deck and parapet lengths shown elsewhere in the plans are dimensioned to the concrete opening, not the joint opening, and are based on the rolled locking edge rail. If the Contractor elects to use a different locking edge rail, dimensional adjustments may be required. One exception to this would be the strip seal joint at the end of the precast bridge approach slab. For these cases the pavement connector length shall be adjusted, not the length of the bridge approach slab.

BILL OF MATERIAL

Item	Unit	Total
Preformed Joint Strip Seal	Foot	97

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PREFORMED JOINT STRIP SEAL
STRUCTURE NO. 060-3366
SHEET 27 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	231
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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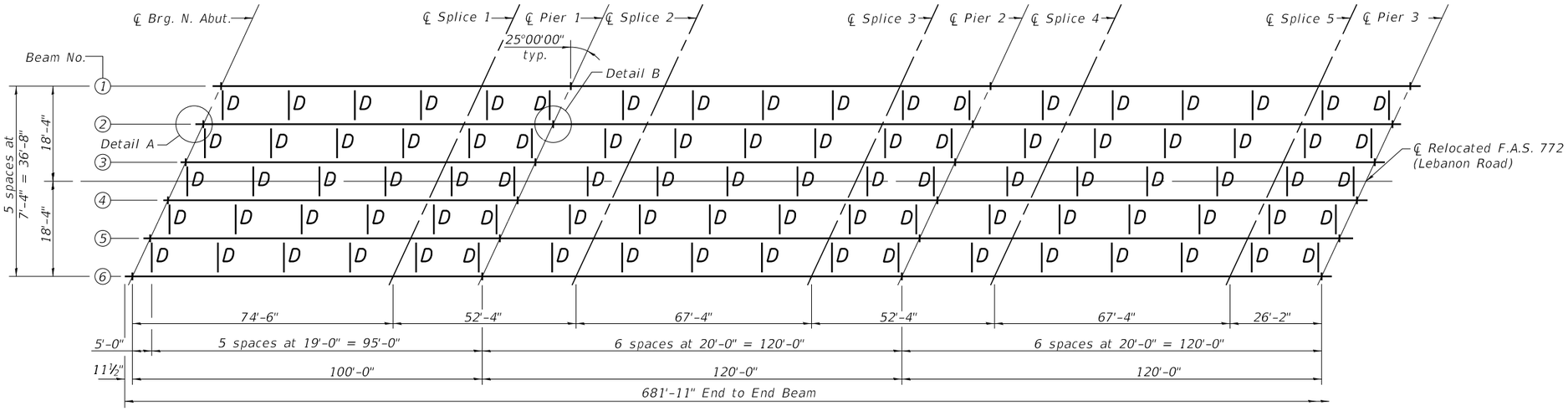
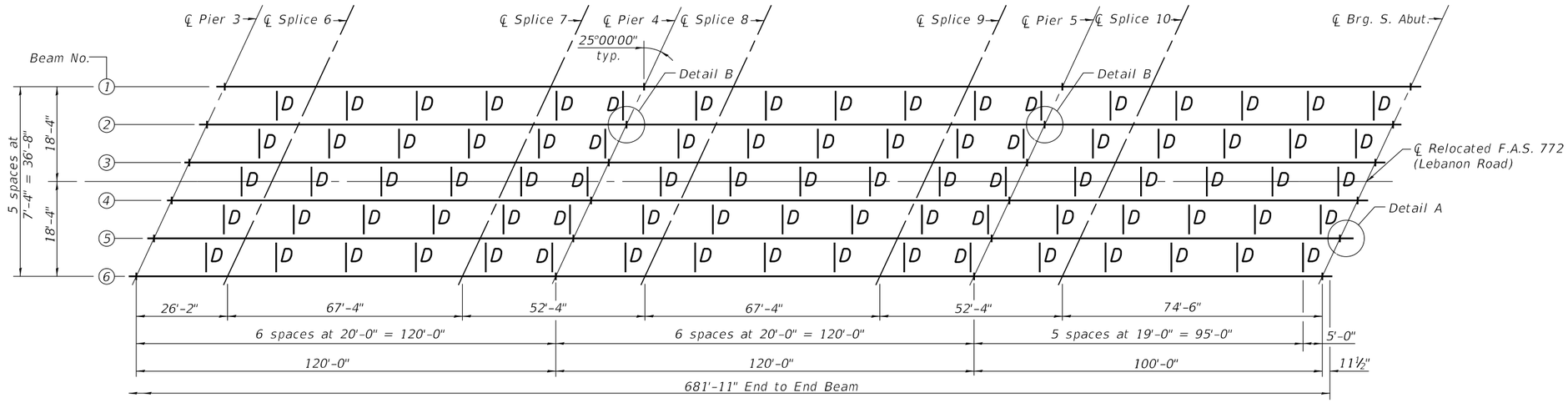


FRAMING PLAN SPANS 1-3



FRAMING PLAN SPANS 4-6

Note:
See sheet 29 of 44 for Detail A, Girder Elevation, and Interior Cross Frame Details.
See sheet 30 of 44 for Splice Details.

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Troy, IL 62294
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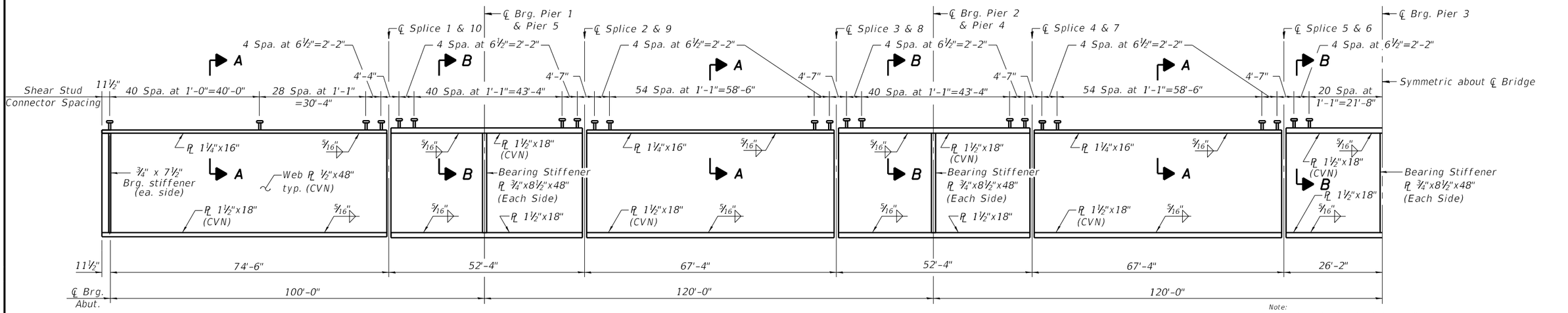
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

FRAMING PLAN
STRUCTURE NO. 060-3366
SHEET 28 OF 44 SHEETS

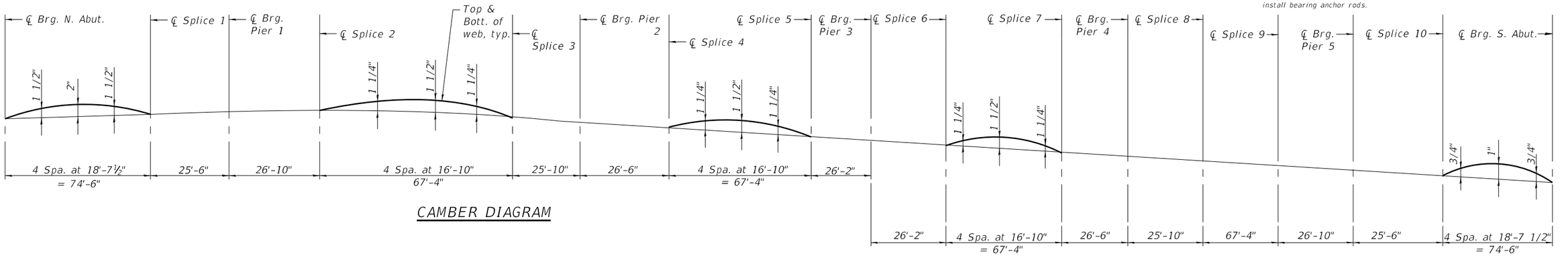
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	232
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			



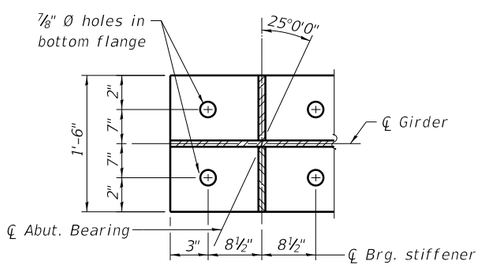
GIRDER ELEVATION

"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.

Note:
See sheets 30 of 44 for Splice Details, and Interior Cross Frame Details.
All webs and flanges of the girders, and bearing stiffeners shall be AASHTO M270 Grade 50W unless noted otherwise.
All cross frames shall be installed as steel is erected and secured with erection pins and bolts except as otherwise noted. Individual cross frames at supports may be temporarily disconnected to install bearing anchor rods.

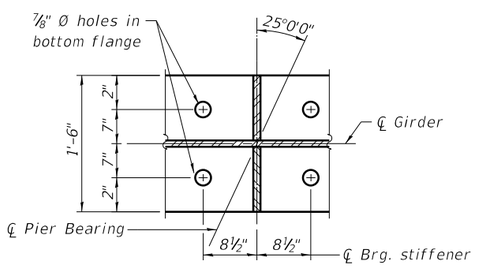


CAMBER DIAGRAM



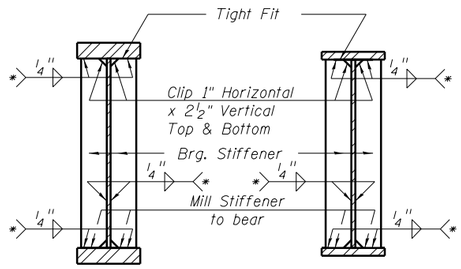
DETAIL A

(End Girder Detail)



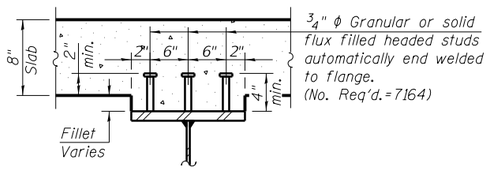
DETAIL B

(Girder Detail at Piers)

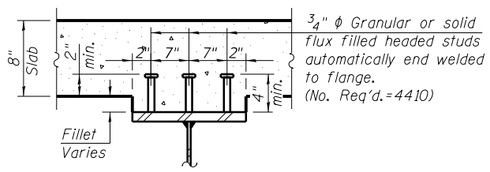


SECTION AT PIER SECTION AT ABUT.

* Terminate ¼" (*⅛") from the end of plate intersects.



SECTION A-A



SECTION B-B

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Troy, IL 62294
PHONE: 618.667.1400

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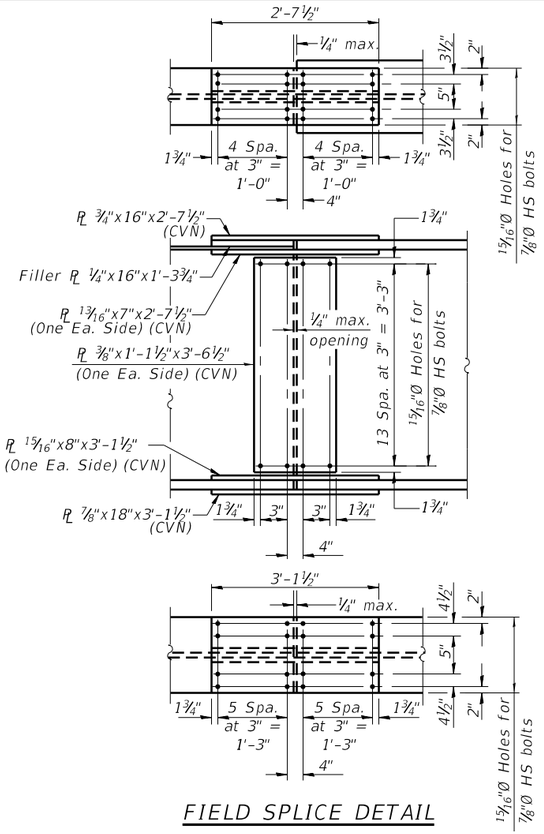
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

STRUCTURAL STEEL
STRUCTURE NO. 060-3366
SHEET 29 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	233
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

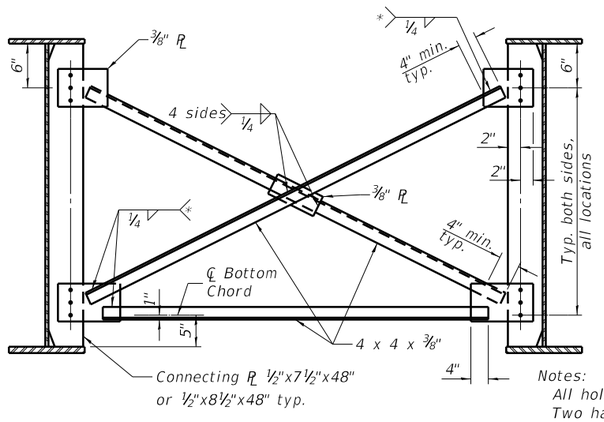


FIELD SPLICE DETAIL

GIRDER REACTION TABLE									
		Abut.		Pier 1 or Pier 5		Pier 2 or Pier 4		Pier 3	
		Interior	Exterior	Interior	Exterior	Interior	Exterior	Interior	Exterior
LLDF		0.767	0.655	0.767	0.655	0.767	0.655	0.767	0.655
OCF		-	1.1	-	1.0	-	1.0	-	1.0
R_{DC1}	(k)	43.6	42.8	144.0	140.1	140.1	136.3	141.0	137.2
R_{DC2}	(k)	7.8	7.8	25.5	25.5	24.9	24.9	25.0	25.0
R_{DW}	(k)	12.5	12.7	40.9	40.9	39.8	39.8	40.0	40.0
R_{LL}	(k)	71.5	66.5	139.7	124.7	142.3	121.5	143.2	122.3
R_{Im}	(k)	16.1	15.0	24.5	21.9	24.5	20.9	24.5	20.9
RTotal	(k)	151.5	144.8	374.6	353.1	371.6	343.4	373.7	345.4

INTERIOR GIRDER MOMENT TABLE							
		0.4 Sp. 1 or 0.6 Sp. 3	Pier 1 or Pier 5	0.5 Sp. 2 or Sp. 5	Pier 2 or Pier 4	0.5 Sp. 3 or Sp. 4	Pier 3
Is	(in^4)	32,848	37,697	32,848	37,697	32,848	37,697
$I_C(n)$	(in^4)	76,558	77,736	76,558	77,736	76,558	77,736
$I_C(3n)$	(in^4)	56,415	58,753	56,415	58,753	56,415	58,753
$I_C(cr)$	(in^4)	-	43,865	-	43,865	-	43,865
S_S	(in^3)	1,427	1,478	1,427	1,478	1,427	1,478
$S_C(n)$	(in^3)	1,833	1,840	1,833	1,840	1,833	1,840
$S_C(3n)$	(in^3)	1,701	1,710	1,701	1,710	1,701	1,710
$S_C(cr)$	(in^3)	-	1,561	-	1,561	-	1,561
DC1	(k/')	1.155	1.186	1.155	1.186	1.155	1.186
M_{DC1}	('k)	808	1,484	653	1,432	670	1,451
DC2	(k/')	0.208	0.208	0.208	0.208	0.208	0.208
M_{DC2}	('k)	147	257	121	250	124	252
DW	(k/')	0.333	0.333	0.333	0.333	0.333	0.333
M_{DW}	('k)	235	411	194	400	198	403
LLDF		0.593	0.584	0.574	0.574	0.574	0.574
M_{LL+IM}	('k)	1,371	1,442	1,332	1,433	1,358	1,447
M_U (Strength I)	('k)	3,946	5,316	3,590	5,210	3,666	5,266
$\phi_f M_n$	('k)	8,850	-	8,850	-	8,850	-
f_s DC1	(ksi)	6.8	12.0	5.5	11.6	5.6	11.8
f_s DC2	(ksi)	1.0	2.0	0.9	1.9	0.9	1.9
f_s DW	(ksi)	1.7	3.2	1.4	3.1	1.4	3.1
f_s (LL+IM)	(ksi)	9.0	11.1	8.7	11.0	8.9	11.1
f_s (Service II)	(ksi)	21.2	31.6	19.0	30.9	19.5	31.3
$0.95R_hF_{yf}$	(ksi)	47.5	47.5	47.5	47.5	47.5	47.5
f_s (Total)(Strength I)	(ksi)	-	41.7	-	40.8	-	41.3
$\phi_f F_n$	(ksi)	-	46.8	-	44.3	-	44.2
V_f	(k)	34.0	34.5	34.5	34.4	34.4	34.4

Notes:
"CVN" denotes Charpy-V-Notch impact energy requirements, zone 2.



INTERIOR CROSS FRAME

Notes:
All holes shall be 15/16" Ø unless otherwise noted.
Two hardened washers are required for each set of oversized holes.

* Fillet weld angles along 3 sides on one face of gusset plate

I_S, S_S: Non-composite moment of inertia and section modulus of the steel section used for computing f_S(Total-Strength I, and Service II) due to non-composite dead loads ($in.^4$ and $in.^3$).
$I_C(n)$, $S_C(n)$: Composite moment of inertia and section modulus of the steel and deck based uponNote: the modular ratio, "n", used for computing f_S(Total-Strength I, and Service II) in uncracked sections due to short-term composite live loads ($in.^4$ and $in.^3$).
$I_C(3n)$, $S_C(3n)$: Composite moment of inertia and section modulus of the steel and deck based upon 3 times the modular ratio, "3n", used for computing f_S(Total-Strength I, and Service II) in uncracked sections, due to long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
$I_C(cr)$, $S_C(cr)$: Composite moment of inertia and section modulus of the steel and longitudinal deck reinforcement, used for computing f_S (Total-Strength I and Service II) in cracked sections, due to both short-term composite live loads and long-term composite (superimposed) dead loads ($in.^4$ and $in.^3$).
DC1: Un-factored non-composite dead load (kips/ft.).
M_{DC1}: Un-factored moment due to non-composite dead load (kip-ft.).
DC2: Un-factored long-term composite (superimposed excluding future wearing surface) dead load (kips/ft.).
M_{DC2}: Un-factored moment due to long-term composite (superimposed excluding future wearing surface) dead load (kip-ft.).
DW: Un-factored long-term composite (superimposed future wearing surface only) dead load (kips/ft.).
M_{DW}: Un-factored moment due to long-term composite (superimposed future wearing surface only) dead load (kip-ft.).
M_{LL+IM}: Un-factored live load moment plus dynamic load allowance (impact) (kip-ft.).
M_U(Strength I): Factored design moment (kip-ft.).
$1.25\ (M_{DC1} + M_{DC2}) + 1.5\ M_{DW} + 1.75\ M_{LL+IM}$
$\phi_f M_n$: Compact composite positive moment capacity computed according to Article 6.10.7.1 or non-slender negative moment capacity according to Article A6.1.1 or A6.1.2 (kip-ft).
f_s DC1: Un-factored stress at edge of flange for controlling steel flange due to vertical non-composite dead loads as calculated below (ksi).
M_{DC1} / S_{nc}
f_s DC2: Un-factored stress at edge of flange for controlling steel flange due to vertical composite dead loads as calculated below (ksi).
$M_{DC2} / S_C(3n)$ or $M_{DC2} / S_C(cr)$ as applicable.
f_s DW: Un-factored stress at edge of flange for controlling steel flange due to vertical composite future wearing surface loads as calculated below (ksi).
$M_{DW} / S_C(3n)$ or $M_{DW} / S_C(cr)$ as applicable.
f_s (LL+IM): Un-factored stress at edge of flange for controlling steel flange due to vertical composite live load plus impact loads as calculated below (ksi).
$M_{LL+IM} / S_C(n)$ or $M_{LL+IM} / S_C(cr)$ as applicable.
f_s (Service II): Sum of stresses as computed below (ksi).
$f_S DC1 + f_S DC2 + f_S DW + 1.3\ f_S(LL+IM)$
$0.95R_hF_{yf}$: Composite stress capacity for Service II loading according to Article 6.10.4.2 (ksi).
f_s (Total)(Strength I): Sum of stresses as computed below on non-compact section (ksi).
$1.25\ (f_S DC1 + f_S DC2) + 1.5\ f_S DW + 1.75\ f_S(LL+IM)$
$\phi_f F_n$: Non-Compact composite positive or negative stress capacity for Strength I loading according to Article 6.10.7 or 6.10.8 (ksi).
V_f: Maximum factored shear range in span computed according to Article 6.10.10.
LLDF: Live Load Distribution Factor according to IDOT ABD Memo 15.3 and Section 3.3.1 of the IDOT Bridge Manual.
OCF: Obtuse Correction Factor as defined in AASHTO Table 4.6.2.2.3c-1 or as simplified in Section 3.3.1 of the IDOT Bridge Manual.

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	STRUCTURAL STEEL DETAILS STRUCTURE NO. 060-3366 SHEET 30 OF 44 SHEETS	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -			
PLOT SCALE =	DRAWN - LEC	REVISED -			
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772	10-04106-00-BR	MADISON	435	234
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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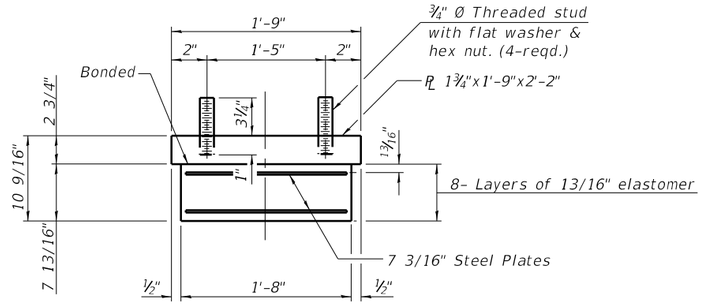
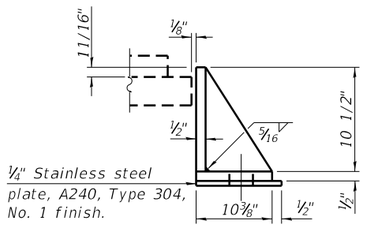
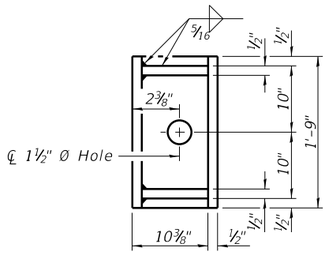


BEARING ASSEMBLY

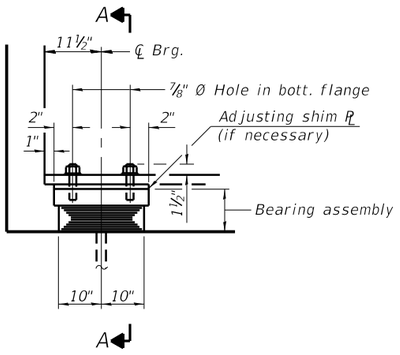
Note:
Shim plates shall not be placed under bearing assembly.



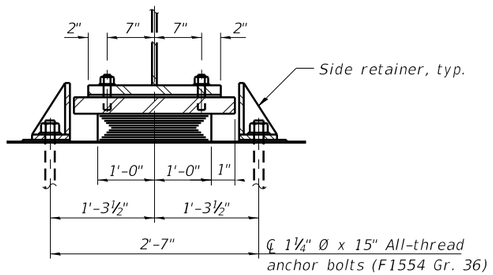


SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.



ELEVATION AT ABUT.

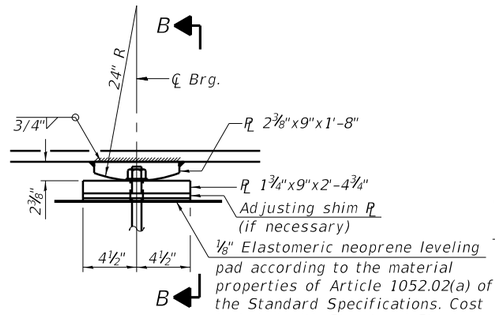


SECTION A-A

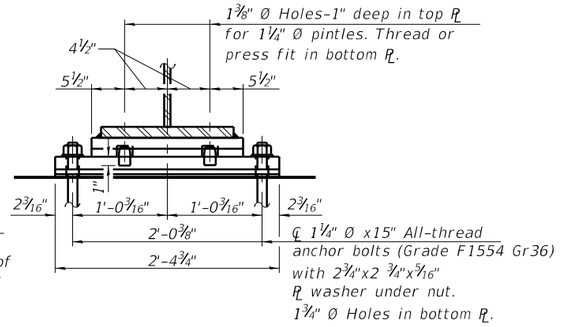
TYPE I ELASTOMERIC EXP. BRG. AT ABUTMENTS & PIERS 1, 4 AND 5

(30 Required)

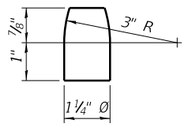
Notes:
Side retainers and stainless steel plates shall be included in the cost of Elastomeric Bearing Assembly, Type I.
Anchor bolts and side retainers at all supports shall be installed as each member is erected unless an equivalent temporary means of lateral restraint is used.
Two ⅛ in. adjusting shims shall be provided for each bearing in addition to all other plates or shims and placed as shown on bearing details.
The structural steel plates of the bearings shall conform to the requirements of AASHTO M 270 Grade 50.



ELEVATION AT PIER



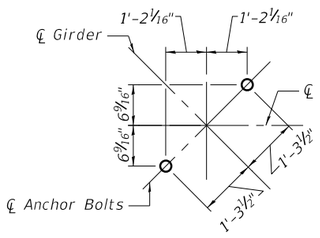
SECTION B-B



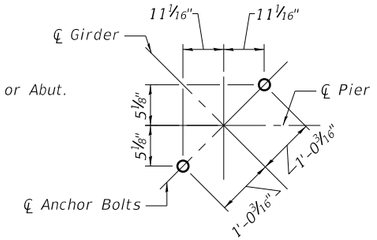
PINTLE

FIXED BEARING AT PIERS 2 AND 3

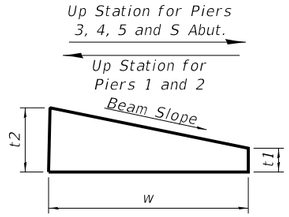
(12 Required)



ANCHOR BOLT LAYOUT FOR ELASTOMERIC BEARINGS



ANCHOR BOLT LAYOUT FOR FIXED BEARINGS



TAPERED SHIM PLATE DIMENSIONS

TAPERED SHIM PLATE TABLE

		Pier 1	Pier 2	Pier 3	Pier 4	Pier 5	S Abut
Girder 1	w	--	--	9"	21"	21"	21"
	t1	--	--	1/2"	1/2"	1/2"	1/2"
	t2	--	--	3/4"	1 3/8"	1 3/8"	1 9/16"
Girder 2	w	--	--	9"	21"	21"	21"
	t1	--	--	1/2"	1/2"	1/2"	1/2"
	t2	--	--	3/4"	1 3/8"	1 3/8"	1 9/16"
Girder 3	w	--	--	9"	21"	21"	21"
	t1	20"	9"	1/2"	1/2"	1/2"	1/2"
	t2	1/8"	5/16"	3/4"	1 3/8"	1 3/8"	1 7/16"
Girder 4	w	1/8"	5/16"	9"	21"	21"	21"
	t1	--	9"	1 1/8"	1/2"	1/2"	1/2"
	t2	--	13/16"	1 3/8"	1 3/8"	1 1/4"	1 7/16"
Girder 5	w	--	13/16"	9"	21"	21"	21"
	t1	--	--	1"	3/4"	1/2"	1/2"
	t2	--	--	1 1/4"	1 5/8"	1 1/4"	1 5/16"
Girder 6	w	--	--	9"	21"	21"	21"
	t1	--	--	1/2"	13/16"	9/16"	13/16"
	t2	--	--	3/4"	1 11/16"	1 5/16"	1 5/8"

Notes:
Taper plates at fixed bearings shall be the same length as bearing plate.
Taper plates at elastomeric bearings shall be the same length as bottom flange width.
Holes shall be provided and match holes in bearing plate.
Quantites associated with taper and shim plates are included in Furnishing and Erecting Structural Steel.

BILL OF MATERIAL

Item	Unit	Total
Elastomeric Bearing Assembly Type I	Each	30
Fixed Bearings	Each	12
Anchor Bolts	Each	84

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

BEARING DETAILS
STRUCTURE NO. 060-3366
SHEET 31 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	235
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

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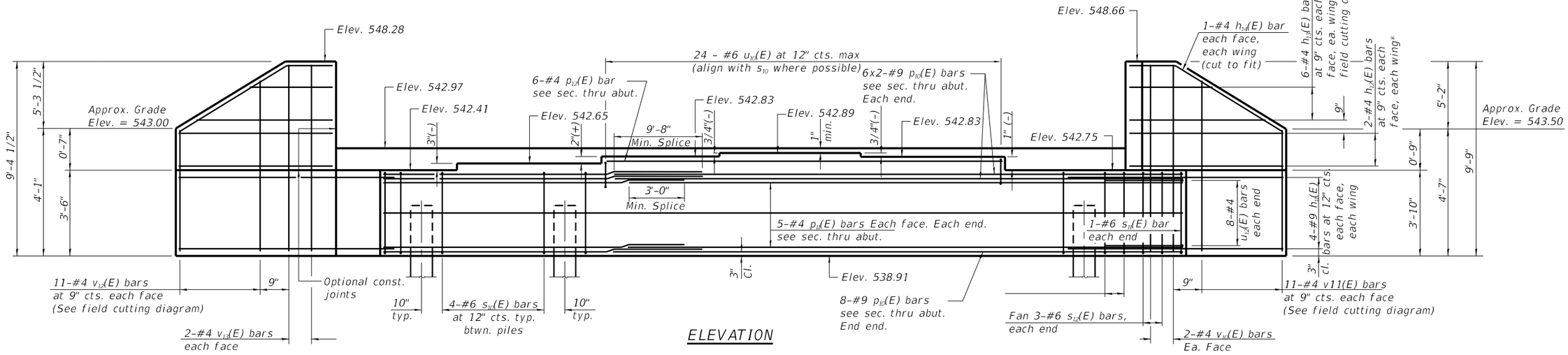
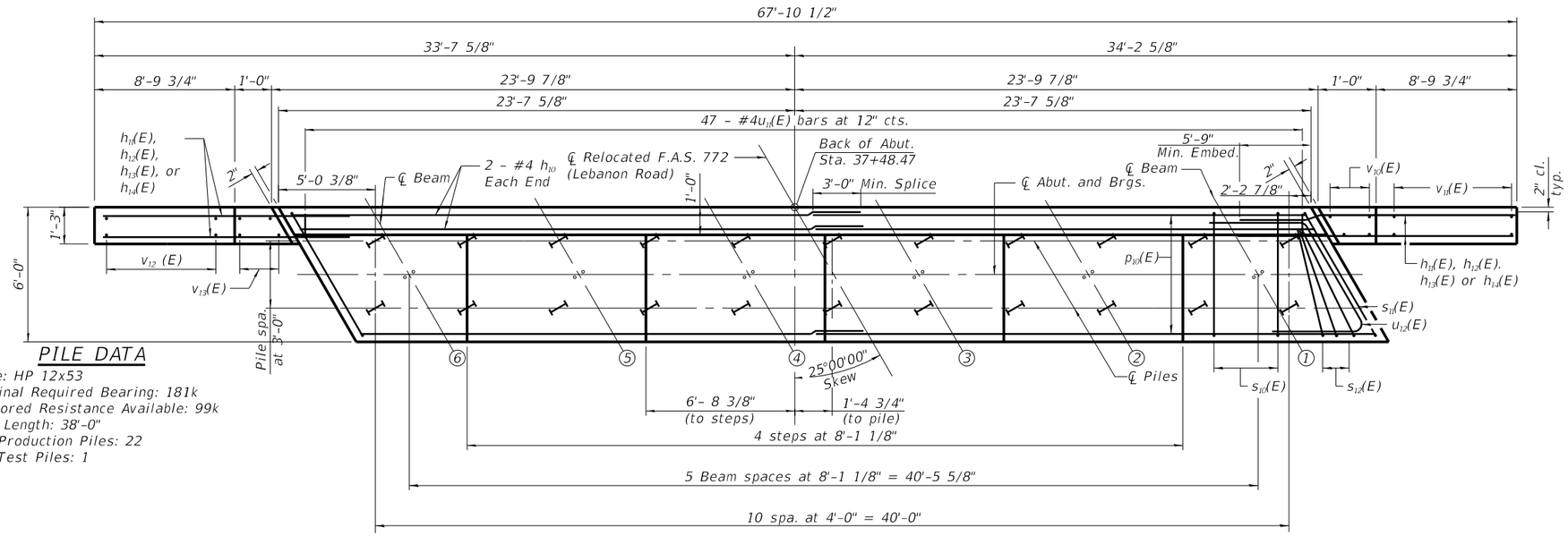


ELEVATION

*Cut bars as required.



PLAN

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 181k
Factored Resistance Available: 99k
Est. Length: 38'-0"
No. Production Piles: 22
No. Test Piles: 1

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

NORTH ABUTMENT DETAILS I
STRUCTURE NO. 060-3366
SHEET 32 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	236
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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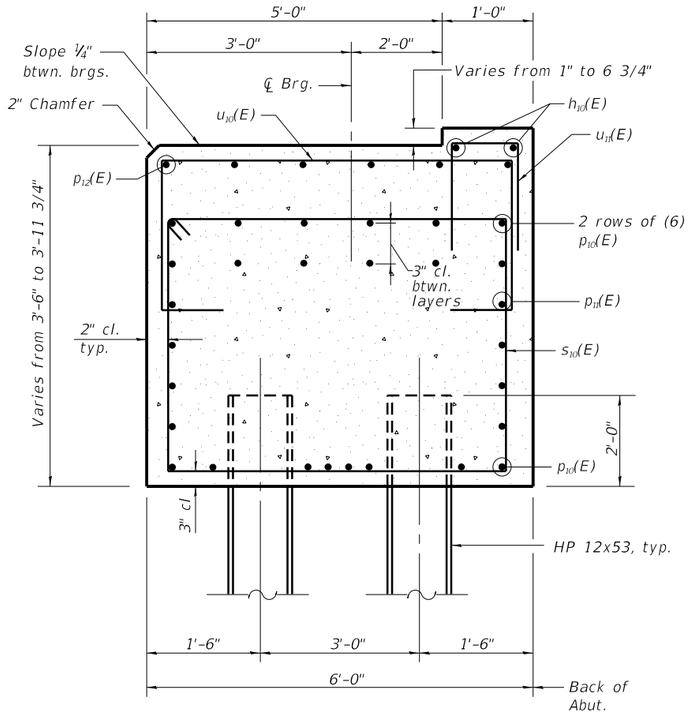
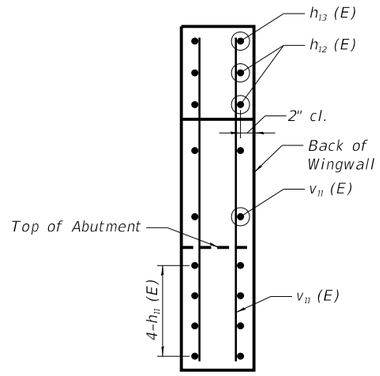
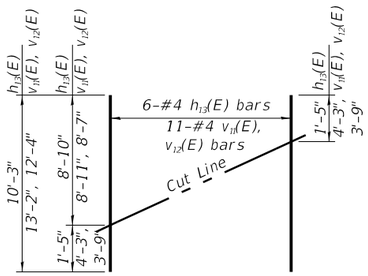


SECTION THRU SEMI-INTEGRAL ABUTMENT

Dimensions at right angles to abutment.

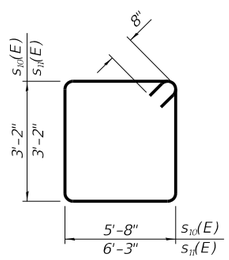


WINGWALL SECTION

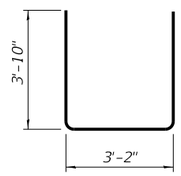


FIELD CUTTING DIAGRAM

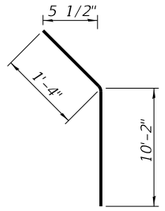
Order h_{13}(E), v_{11}(E) v_{12}(E) full length.



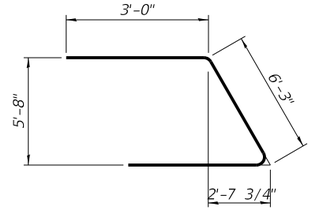
BAR s_{10}(E) & s_{11}(E)



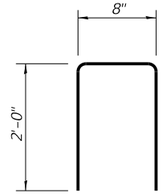
BAR s_{12}(E)



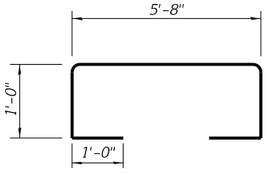
BAR h_{14}(E)



BAR u_{12}(E)



BAR u_{11}(E)



BAR u_{10}(E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{10} (E)	4	#4	28'-4"	
h_{11} (E)	16	#9	15'-9"	
h_{12} (E)	8	#4	10'-0"	
h_{13} (E)	12	#4	10'-3"	
h_{14} (E)	4	#4	11'-6"	
p_{10} (E)	40	#9	28'-4"	
p_{11} (E)	20	#4	25'-0"	
p_{12} (E)	6	#4	23'-11"	
s_{10} (E)	40	#6	19'-0"	
s_{11} (E)	2	#6	20'-2"	
s_{12} (E)	6	#6	10-10"	
u_{10} (E)	24	#6	9'-8"	
u_{11} (E)	47	#4	4'-8"	
u_{12} (E)	16	#4	12'-3"	
v_{10} (E)	4	#4	9'-4"	
v_{11} (E)	11	#4	13'-2"	
v_{12} (E)	11	#4	12'-4"	
v_{13} (E)	4	#4	9'-0"	
Structure Excavation		Cu. Yd.	416	
Concrete Structures		Cu. Yd.	47.2	
Reinforcement Bars, Epoxy Coated		Pound	7550	
Furnishing - Piles, HP 12x53		Foot	836	
Driving Piles		Foot	836	
Pile Shoes		Each	22	

Notes:

Pour steps monolithically with cap.

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

For details of piles see sheet 41 of 44.

For Anchor Bolt Layout, See sheet 31 of 44.

MODEL: Default
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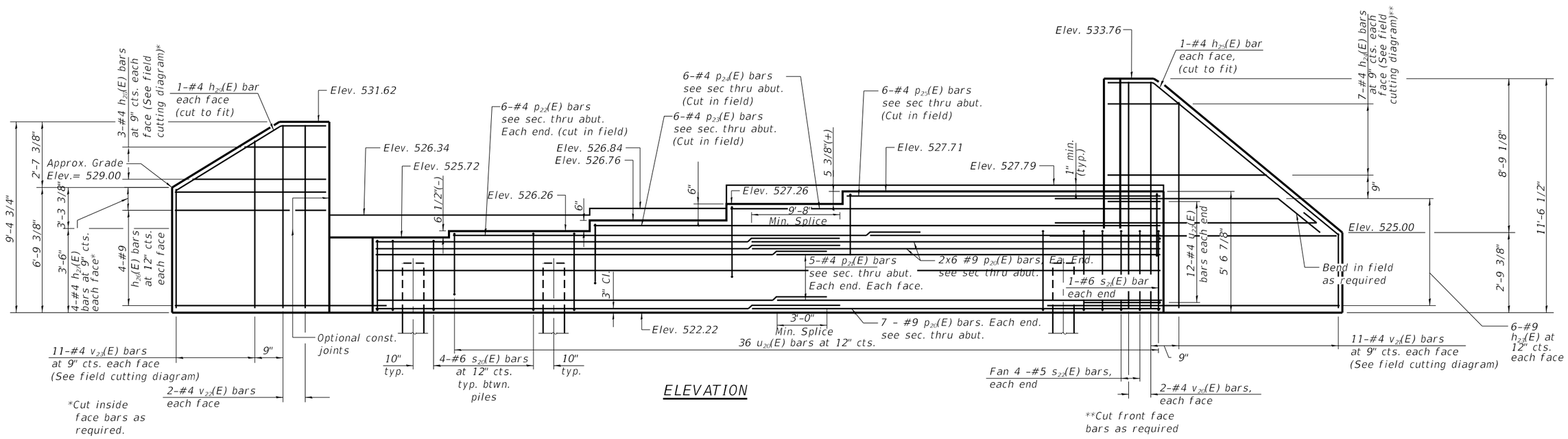
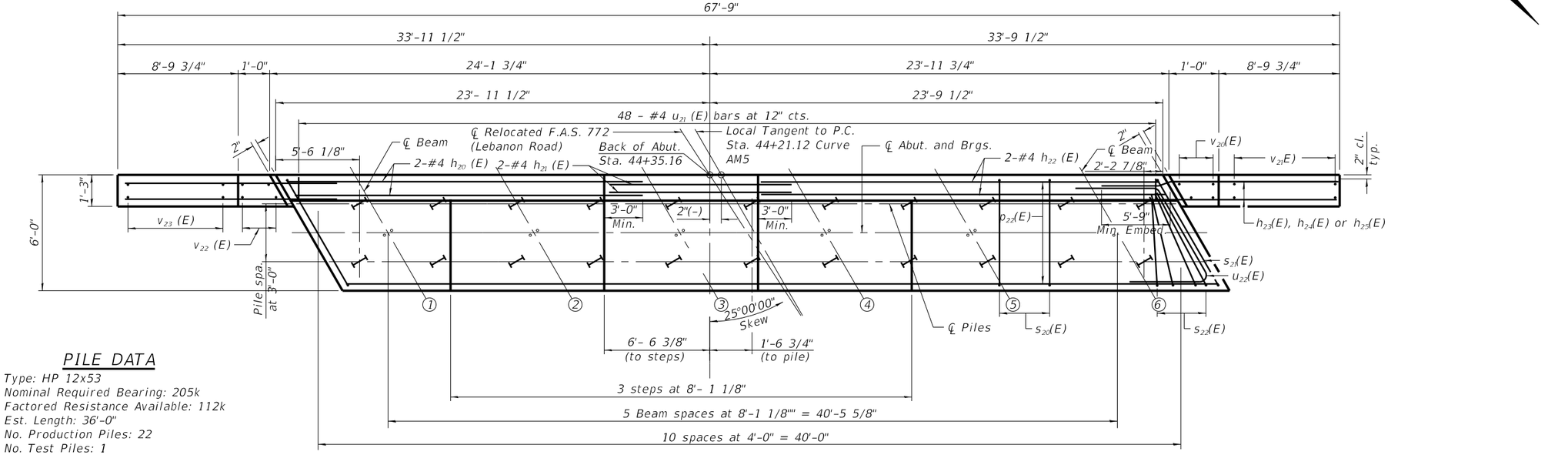
USER NAME = linda	DESIGNED - CPA	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	NORTH ABUTMENT DETAILS II STRUCTURE NO. 060-3366	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -			
PLOT SCALE =	DRAWN - LEC	REVISED -			
PLOT DATE = 6/26/2023 3:13:29 PM	CHECKED - REB	REVISED -		SHEET 33 OF 44 SHEETS	

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	237
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			



ELEVATION



PLAN

PILE DATA

Type: HP 12x53
Nominal Required Bearing: 205k
Factored Resistance Available: 112k
Est. Length: 36'-0"
No. Production Piles: 22
No. Test Piles: 1

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOUTH ABUTMENT DETAILS I
STRUCTURE NO. 060–3366
SHEET 34 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	238
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
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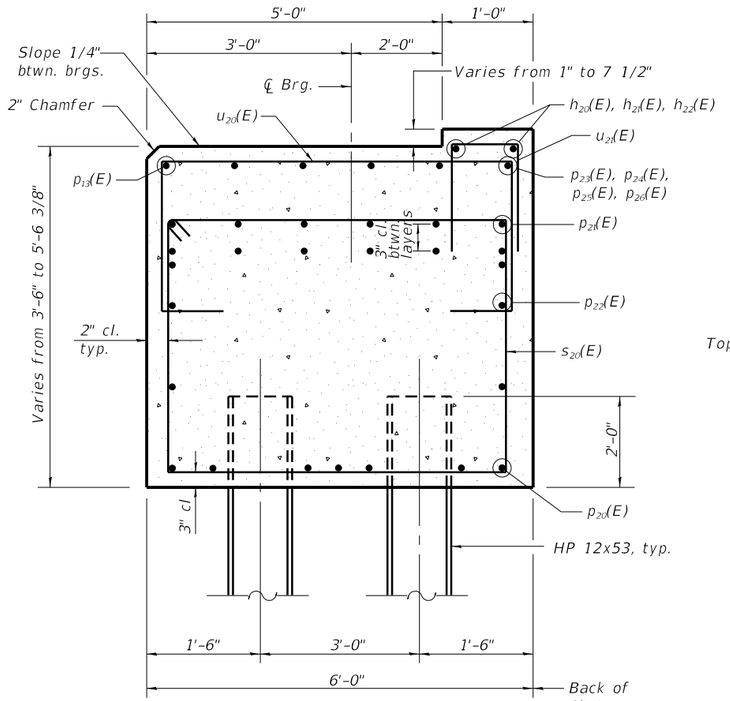
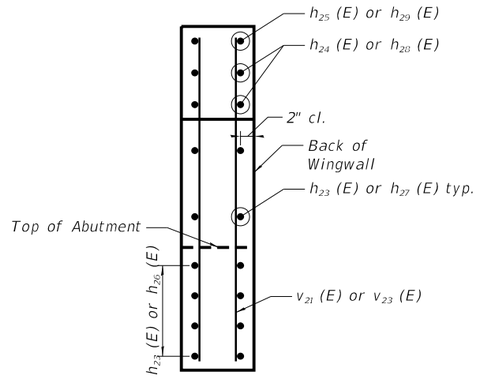
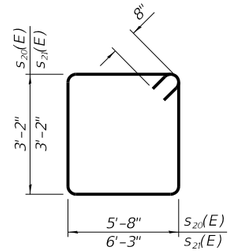


SECTION THRU SEMI-INTEGRAL ABUTMENT

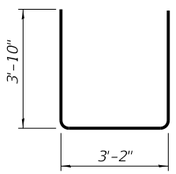
Dimensions at right angles to abutment.



WINGWALL SECTION



BAR $s_{20}(E)$ & $s_{21}(E)$



BAR $s_{22}(E)$

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{20} (E)	2	#4	20'-3"	
h_{21} (E)	2	#4	11'-8"	
h_{22} (E)	2	#4	21'-11"	
h_{23} (E)	12	#9	15'-9"	
h_{24} (E)	7	#4	7'-9"	
h_{25} (E)	2	#4	13'-0"	
h_{26} (E)	8	#9	16'-4"	
h_{27} (E)	8	#4	10'-0"	
h_{28} (E)	3	#4	12'-2"	
h_{29} (E)	2	#4	10'-5"	
p_{20} (E)	38	#9	28'-8"	
p_{21} (E)	20	#4	25'-3"	
p_{22} (E)	12	#4	20'-8"	
p_{23} (E)	6	#4	16'-6"	
p_{24} (E)	6	#4	12'-6"	
p_{25} (E)	6	#4	8'-6"	
s_{20} (E)	40	#6	19'-0"	
s_{21} (E)	2	#6	20'-2"	
s_{22} (E)	8	#6	10'-10"	
u_{20} (E)	36	#6	13'-0"	
u_{21} (E)	48	#4	7'-8"	
u_{22} (E)	24	#4	12'-3"	
v_{20} (E)	4	#4	11'-1"	
v_{21} (E)	11	#4	12'-5"	
v_{22} (E)	4	#4	8'-11"	
v_{23} (E)	11	#4	15'-1"	

Structure Excavation	Cu. Yd.	0
Concrete Structures	Cu. Yd.	57.4
Reinforcement Bars, Epoxy Coated	Pound	8400
Furnishing – Piles, HP 12x53	Foot	792
Driving Piles	Foot	792
Pile Shoes	Each	22

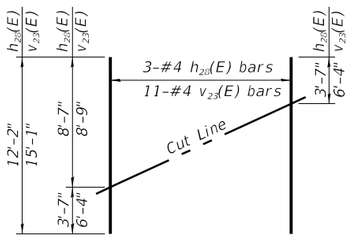
Notes:

Pour steps monolithically with cap.

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

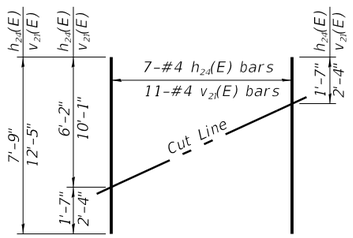
For details of piles see sheet 41 of 44.

For Anchor Bolt Layout, see sheet 31 of 44.



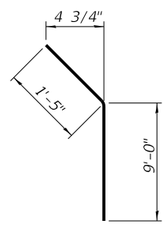
FIELD CUTTING DIAGRAM

Order $h_{20}(E)$ and $v_{23}(E)$ full length.
Southeast Wingwall

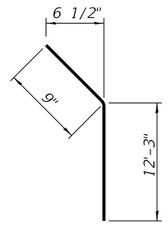


FIELD CUTTING DIAGRAM

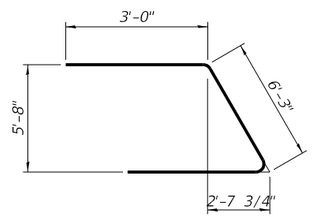
Order $h_{24}(E)$ and $v_{21}(E)$ full length.
Southwest Wingwall



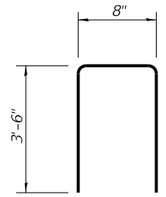
BAR $h_{20}(E)$



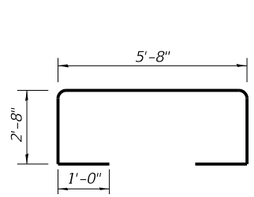
BAR $h_{25}(E)$



BAR $u_{22}(E)$



BAR $u_{21}(E)$



BAR $u_{20}(E)$

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	Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
	PLOT SCALE =	DRAWN - LEC	REVISED -	
	PLOT DATE = 6/26/2023 3:13:31 PM	CHECKED - REB	REVISED -	

SOUTH ABUTMENT DETAILS II
STRUCTURE NO. 060-3366
SHEET 35 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	239
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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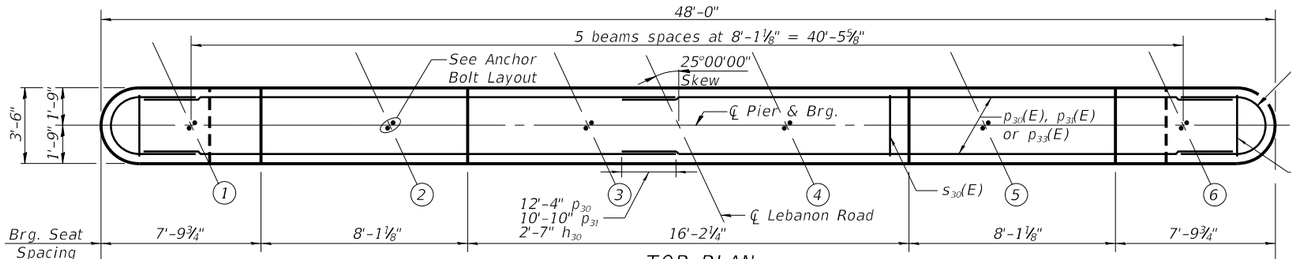
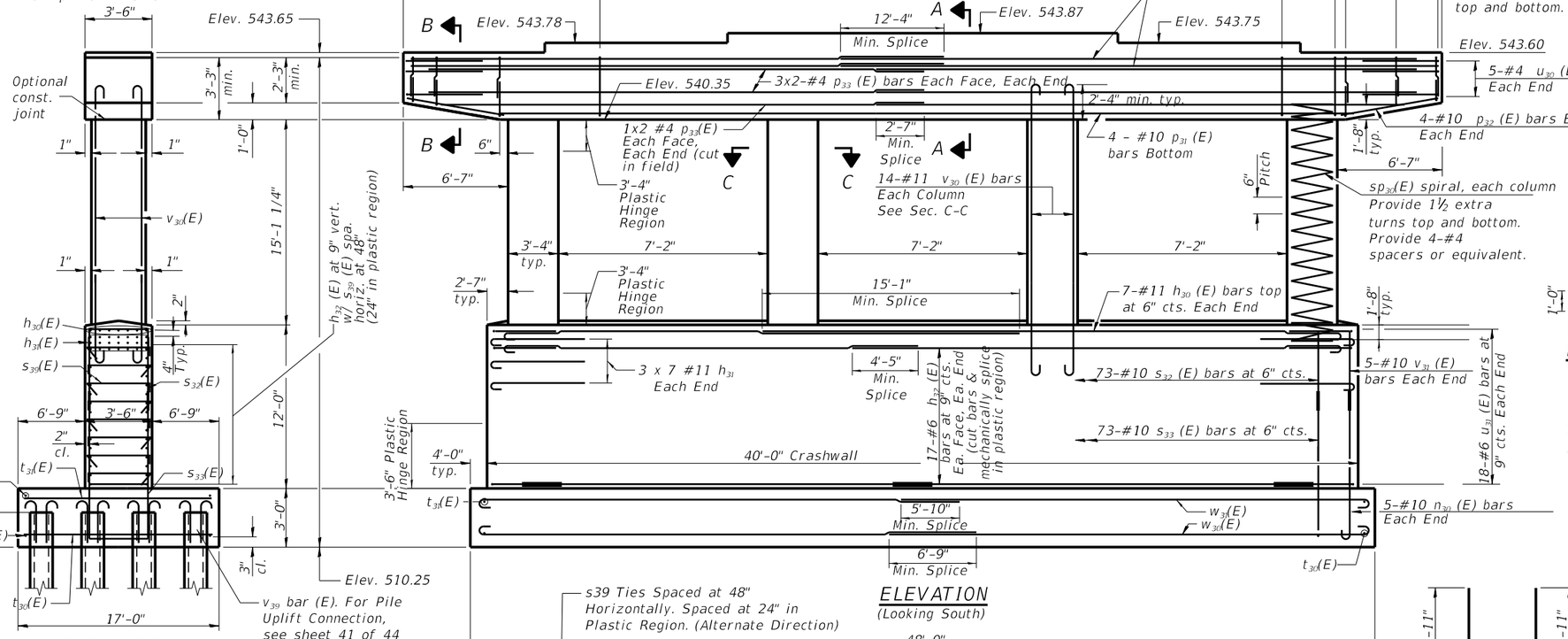
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 41 of 44.
For Pier Anchor Bolt Layout, see sheet 31 of 44.
Splicing shall be prohibited in the plastic regions indicated on the plans.
If bedrock is reached before required bearing capacity is achieved, engineer shall be consulted for recommendations.

PILE DATA

Type: Steel HP14x89
Nominal Required Bearing: 377K
Factored Resistance Available: 207K
Est. Length: 43'-0"
No. Production Piles: 28
No. Test Piles: 1
Min. Pile Tip Elev.: 494.94

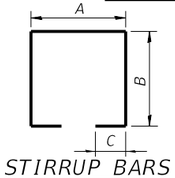


TOP PLAN



ELEVATION
(Looking South)

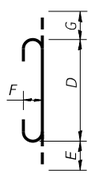
END VIEW



STIRRUP BARS

A,B&C DIMENSIONS

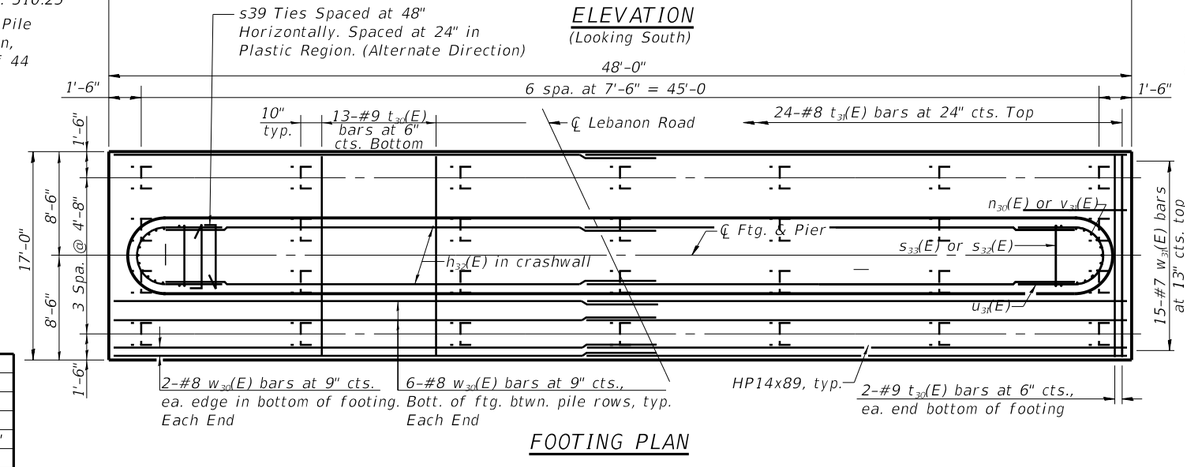
Bar	A	B	C
S_{31}(E)	3'-2"	1'-11"	1'-0"
S_{32}(E)	3'-2"	7'-7"	--
S_{33}(E)	3'-2"	7'-0"	--



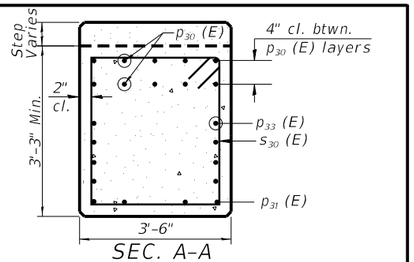
HOOKED BARS

D,E,F & G DIMENSIONS

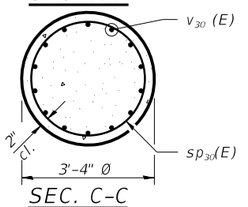
Bar	D	E	F	G
n_{30}	7'-0"	1'-5"	1'-1 1/4"	--
h_{30}	25'-8"	1'-7"	1'-2 3/4"	--
h_{31}	4'-0"	1'-7"	1'-2 3/4"	--
v_{30}	19'-10"	1'-7"	1'-2 3/4"	1'-7"
w_{30}	27'-3"	0'-11"	0'-8"	--
w_{31}	26'-9"	0'-10"	0'-7"	--



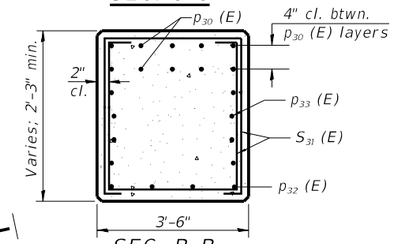
FOOTING PLAN



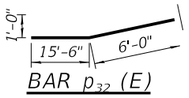
SEC. A-A



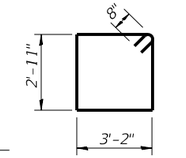
SEC. C-C



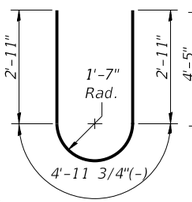
SEC. B-B



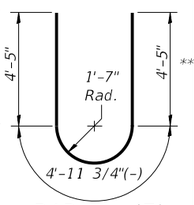
BAR p_{32} (E)



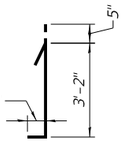
BAR s_{30} (E)



BAR u_{30} (E)



BAR u_{31} (E)



Bar s_{39} (E)

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{30} (E)	14	#11	27'-3"	
h_{31} (E)	42	#11	5'-7"	
h_{32} (E)	68	#6	20'-4"	
n_{30} (E)	10	#10	8'-5"	
p_{30} (E)	20	#10	28'-3"	
p_{31} (E)	4	#10	30'-0"	
p_{32} (E)	8	#10	21'-6"	
p_{33} (E)	16	#4	23'-6"	
s_{30} (E)	69	#6	13'-6"	
s_{31} (E)	60	#6	9'-0"	
s_{32} (E)	73	#10	18'-4"	
s_{33} (E)	73	#10	17'-2"	
s_{39} (E)	233	#4	4'-7"	
sp_{30} (E)	4	#4	18'-6"	
t_{30} (E)	82	#9	16'-8"	
t_{31} (E)	24	#8	16'-8"	
u_{30} (E)	10	#4	10'-10"	
u_{31} (E)	36	#6	13'-10"	
v_{30} (E)	56	#11	23'-0"	
v_{31} (E)	10	#10	7'-7"	
v_{39} (E)	112	#6	1'-10"	
w_{30} (E)	44	#8	28'-2"	
w_{31} (E)	30	#7	27'-7"	

Structure Excavation	Cu. Yd.	921
Concrete Structures	Cu. Yd.	192.1
Reinforcement Bars, Epoxy Coated	Pound	43,750
Furnishing - Piles, HP 14x89	Foot	1,204
Driving Piles	Foot	1,204
Pile Shoes	Each	28

** Length is height of spiral.

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	PIER 1 DETAILS STRUCTURE NO. 060-3366 SHEET 36 OF 44 SHEETS	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -			
PLOT SCALE =	DRAWN - LEC	REVISED -			
PLOT DATE = 6/26/2023 3:13:33 PM	CHECKED - REB	REVISED -			

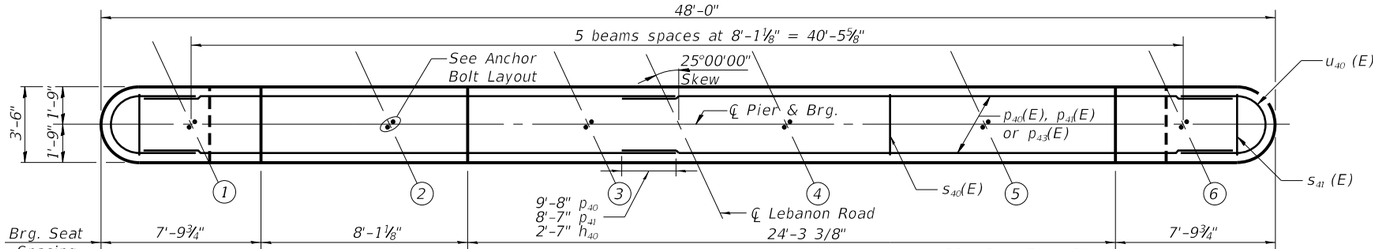
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	240
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
ILLINOIS	FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-0027-0H\Y Lebanon Rd\Bridges\dgn\Final Design\D080603366-033-Pier 1 Details.dgn
6/26/2023 3:13:33 PM

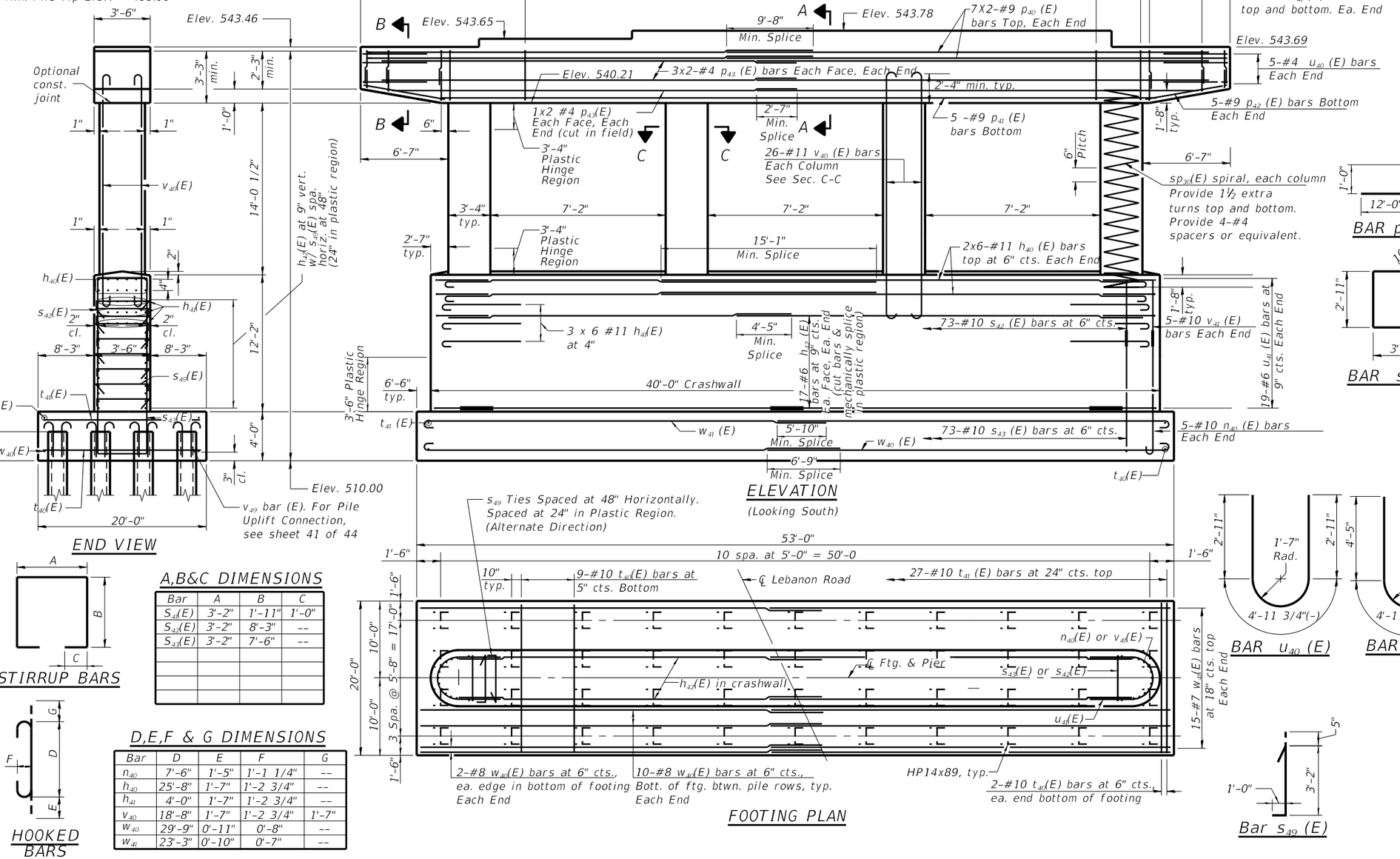
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 41 of 44.
For Pier Anchor Bolt Layout, see sheet 31 of 44.
Splicing shall be prohibited in the plastic regions indicated on the plans.
If bedrock is reached before required bearing capacity is achieved, engineer shall be consulted for recommendations.

PILE DATA

Type: Steel HP14x89
Nominal Required Bearing: 385K
Factored Resistance Available: 209K
Est. Length: 47'-0"
No. Production Piles: 44
No. Test Piles: 1
Min. Pile Tip Elev. = 468.00



TOP PLAN

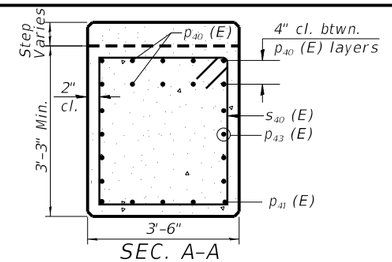


END VIEW

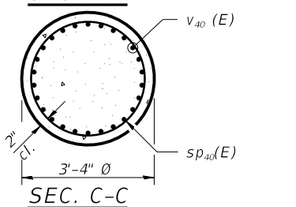
ELEVATION

(Looking South)

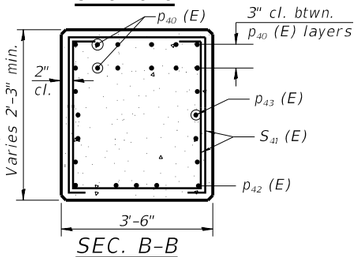
FOOTING PLAN



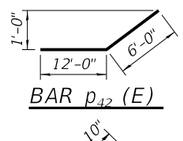
SEC. A-A



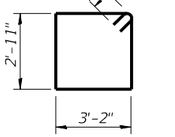
SEC. C-C



SEC. B-B

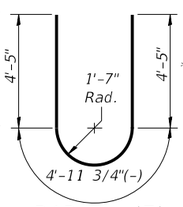


BAR p_{42} (E)



BAR s_{40} (E)

BAR u_{40} (E)



BAR u_{41} (E)

Bar s_{49} (E)

STIRRUP BARS

A,B&C DIMENSIONS

Bar	A	B	C
S_{41}(E)	3'-2"	1'-11"	1'-0"
S_{42}(E)	3'-2"	8'-3"	--
S_{43}(E)	3'-2"	7'-6"	--

HOOKED BARS

D,E,F & G DIMENSIONS

Bar	D	E	F	G
n_{40}	7'-6"	1'-5"	1'-1 1/4"	--
h_{40}	25'-8"	1'-7"	1'-2 3/4"	--
h_{41}	4'-0"	1'-7"	1'-2 3/4"	--
v_{40}	18'-8"	1'-7"	1'-2 3/4"	1'-7"
w_{40}	29'-9"	0'-11"	0'-8"	--
w_{41}	23'-3"	0'-10"	0'-7"	--

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{40} (E)	24	#11	27'-3"	
h_{41} (E)	36	#11	5'-7"	
h_{42} (E)	68	#6	20'-4"	
n_{40} (E)	10	#10	8'-11"	
p_{40} (E)	28	#9	27'-0"	
p_{41} (E)	5	#9	30'-0"	
p_{42} (E)	10	#9	18'-0"	
p_{43} (E)	16	#4	23'-6"	
s_{40} (E)	69	#6	13'-6"	
s_{41} (E)	60	#6	9'-0"	
s_{42} (E)	73	#10	19'-8"	
s_{43} (E)	73	#10	18'-2"	
s_{49} (E)	233	#4	4'-7"	
sp_{40} (E)	4	#4	17'-4"	
t_{40} (E)	94	#10	19'-8"	
t_{41} (E)	27	#10	19'-8"	
u_{40} (E)	10	#4	10'-10"	
u_{41} (E)	38	#6	13'-10"	
v_{40} (E)	104	#11	21'-10"	
v_{41} (E)	10	#10	8'-3"	
v_{49} (E)	176	#6	2'-6"	
w_{40} (E)	68	#8	30'-8"	
w_{41} (E)	30	#7	30'-1"	
Structure Excavation		Cu. Yd.	228	
Concrete Structures		Cu. Yd.	258.6	
Reinforcement Bars, Epoxy Coated		Pound	58,300	
Furnishing - Piles, HP 14x89		Foot	2068	
Driving Piles		Foot	2068	
Pile Shoes		Each	44	

** Length is height of spiral.

MODEL: Default
FILE NAME: S:\Projects\409-0027-04\Y Lebanon Rd\Bridges\dgn\Final Design\D0600336-034-Petr 2 Details.dgn

6/26/2023 3:13:34 PM

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda
Illinois Design Firm Number 184.001670
PLOT SCALE =
PLOT DATE = 6/26/2023 3:13:34 PM

DESIGNED - CPA	CHECKED - REB	REVISED -
DRAWN - LEC	CHECKED - REB	REVISED -
REVISED -	REVISED -	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

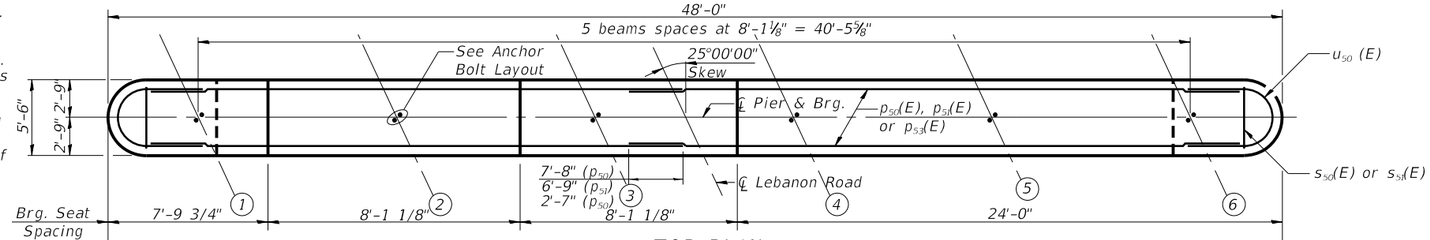
PIER 2 DETAILS
STRUCTURE NO. 060-3366
SHEET 37 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	241
STRUCTURE NO. 060-3366		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

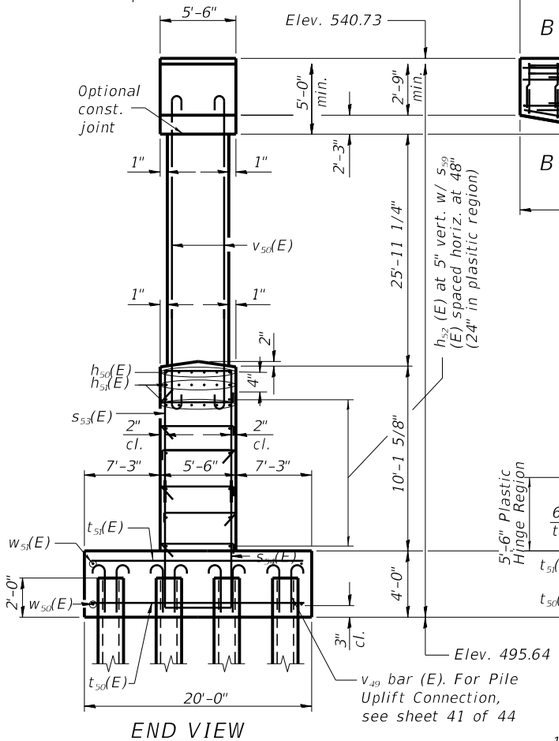
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 41 of 44.
For Pier Anchor Bolt Layout, see sheet 31 of 44.
Splicing shall be prohibited in the plastic regions indicated on the plans.
If bedrock is reached before required bearing capacity is achieved, engineer shall be consulted for recommendations.
Piles must extend past 486.20 to limit impacts of soil layer susceptible to liquefaction.

PILE DATA

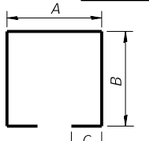
Type: HP14x89
Nominal Required Bearing: 566K
Factored Resistance Available: 311K
Est. Length: 30'-0"
No. Production Piles: 44
No. Test Piles: 1
Min. Pile Tip Elev. = 472.20



TOP PLAN



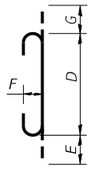
END VIEW



STIRRUP BARS

A,B&C DIMENSIONS

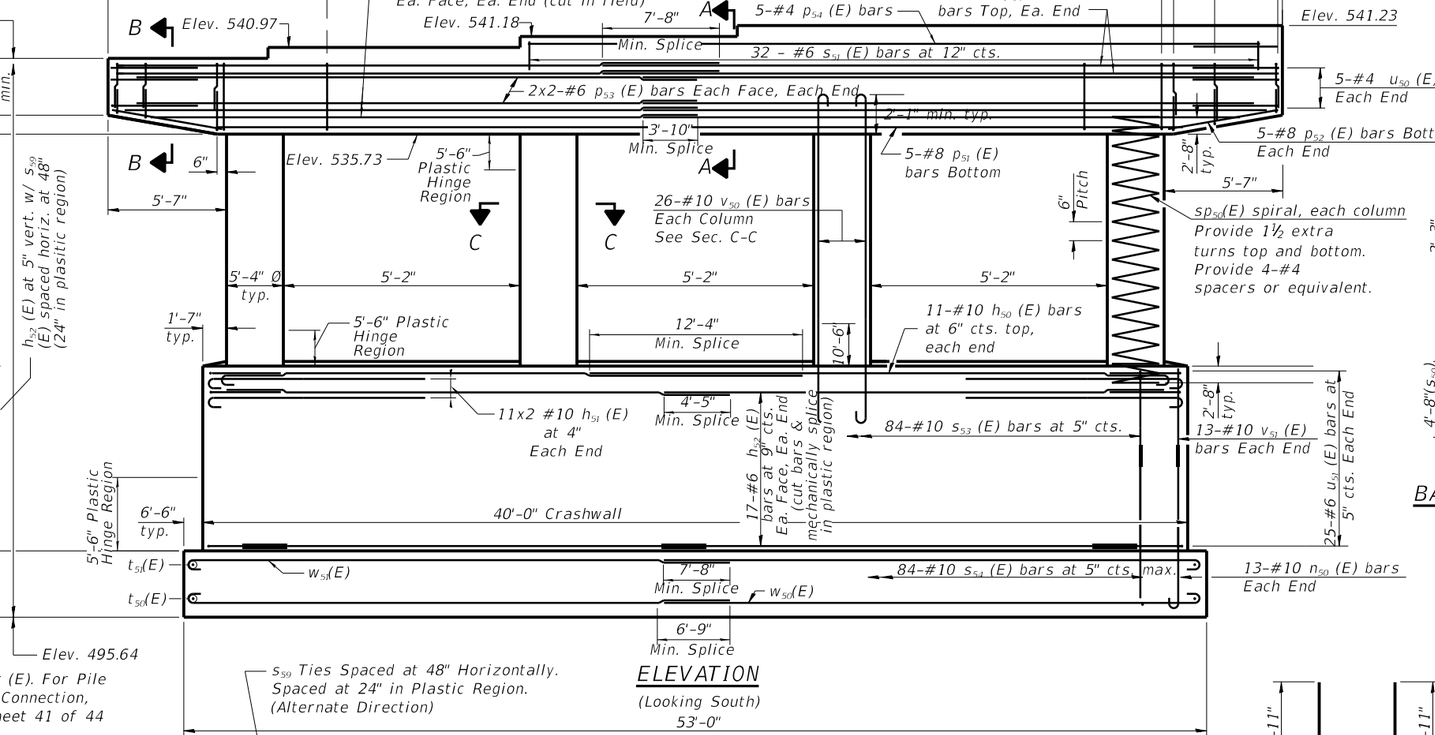
Bar	A	B	C
S_{51}(E)	5'-2"	2'-1"	1'-0"
S_{53}(E)	5'-2"	4'-2"	--
S_{54}(E)	5'-2"	9'-6"	--



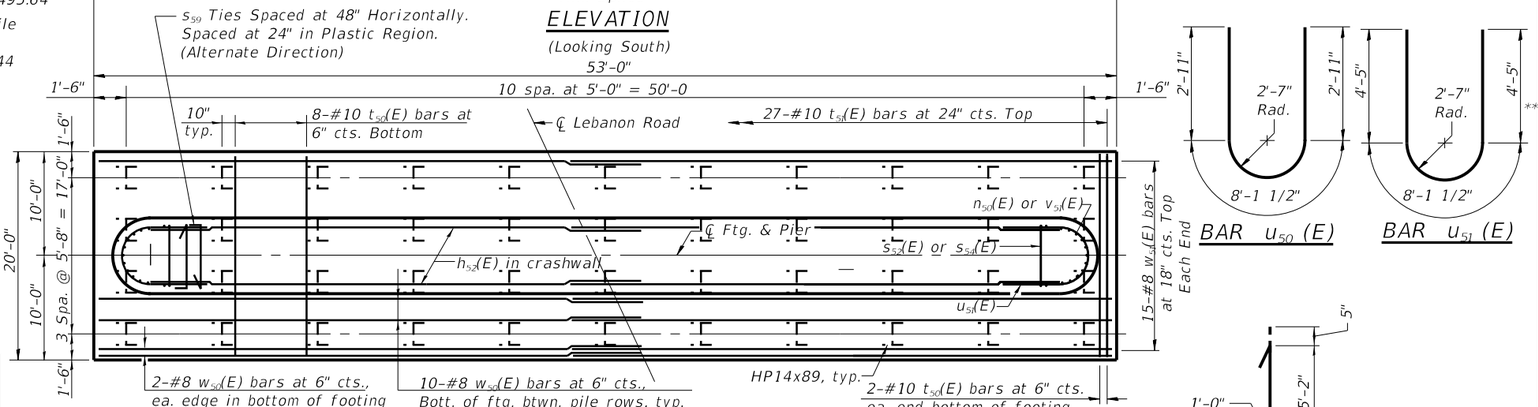
HOOKED BARS

D,E,F & G DIMENSIONS

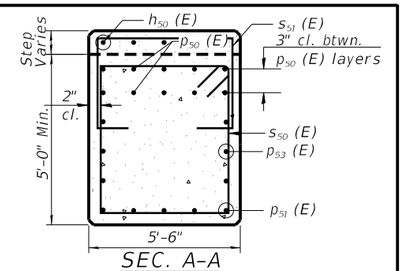
Bar	D	E	F	G
n_{50}	9'-6"	1'-5"	1'-1 1/4"	--
h_{50}	23'-3"	1'-5"	1'-1 1/4"	--
h_{51}	4'-0"	1'-5"	1'-1 1/4"	--
v_{50}	30'-2"	1'-5"	1'-1 1/4"	1'-5"
w_{50}	29'-9"	0'-11"	0'-8"	--
w_{51}	30'-2"	0'-10"	0'-8"	--



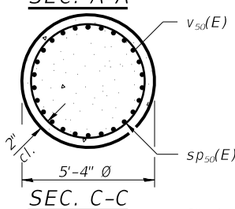
ELEVATION



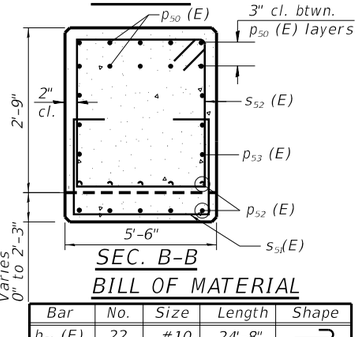
FOOTING PLAN



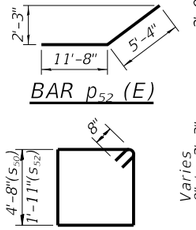
SEC. A-A



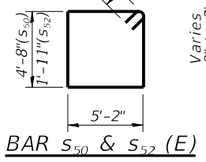
SEC. C-C



SEC. B-B



BAR p_{52} (E)



BAR s_{50} & s_{52} (E)

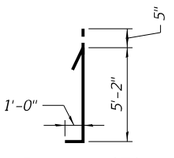
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{50} (E)	22	#10	24'-8"	
h_{51} (E)	44	#10	5'-5"	
h_{52} (E)	50	#6	19'-4"	
n_{50} (E)	26	#10	10'-11"	
p_{50} (E)	20	#8	25'-0"	
p_{51} (E)	5	#8	30'-0"	
p_{52} (E)	10	#8	17'-0"	
p_{53} (E)	16	#6	23'-0"	
p_{54} (E)	5	#4	30'-0"	
s_{50} (E)	50	#6	21'-0"	
s_{51} (E)	48	#6	11'-4"	
s_{52} (E)	16	#6	15'-6"	
s_{53} (E)	84	#10	13'-6"	
s_{54} (E)	84	#10	24'-2"	
s_{59} (E)	376	#4	6'-7"	
sp_{50} (E)	4	#4	31'-4"	
t_{50} (E)	84	#10	19'-8"	
t_{51} (E)	27	#10	19'-8"	
u_{50} (E)	10	#4	14'-0"	
u_{51} (E)	50	#6	17'-0"	
v_{50} (E)	104	#10	33'-0"	
v_{51} (E)	26	#10	4'-2"	
v_{49} (E)	176	#6	2'-6"	
w_{50} (E)	68	#8	30'-8"	
w_{51} (E)	30	#8	31'-1"	
Structure Excavation			Cu. Yd.	297
Concrete Structures			Cu. Yd.	375.1
Reinforcement Bars, Epoxy Coated			Pound	64,390
Furnishing - Piles, HP 14x89			Foot	1,320
Driving Piles			Foot	1,320
Pile Shoes			Each	44

**Length is height of spiral.

BAR u_{50} (E)

BAR u_{51} (E)



Bar s_{59} (E)

MODEL: Default
FILE NAME: S:\Projects\409-0027-0HY Lebanon Rd\Bridges\dgn\Final Design\D60603366-035-Pier 3 Details.dgn
6/26/2023 3:13:35 PM

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive, Troy, IL 62294, PHONE: 618.667.3400
Illinois Design Firm Number 184.001670

USER NAME = linda | PLOT SCALE = | PLOT DATE = 6/26/2023 3:13:35 PM
DESIGNED - CPA | CHECKED - REB | DRAWN - LEC | CHECKED - REB
REVISED - | REVISED - | REVISED - | REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

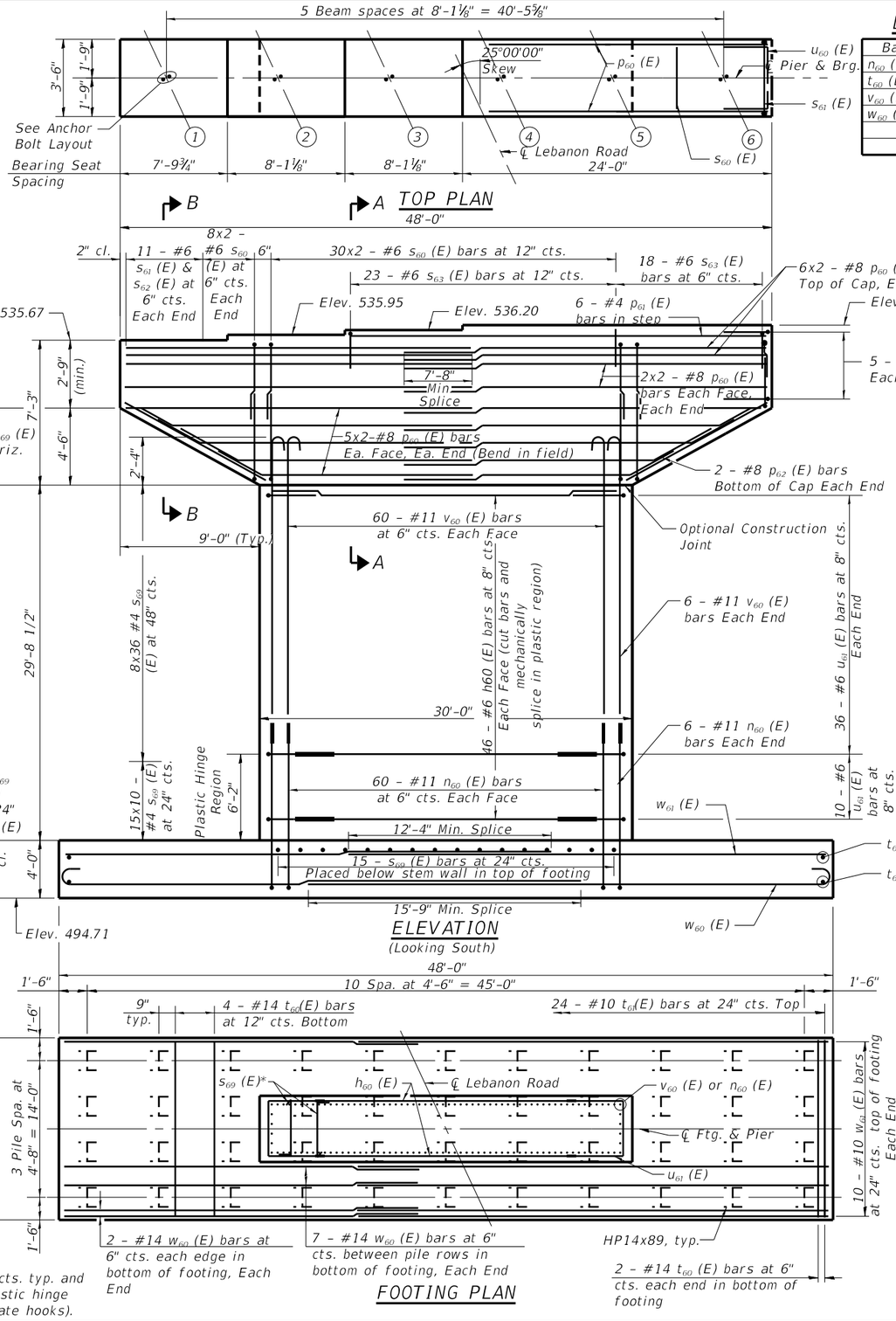
PIER 3 DETAILS
STRUCTURE NO. 060-3366
SHEET 38 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	242
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 41 of 44.
For Pier Anchor Bolt Layout, see sheet 31 of 44.
Splicing shall be prohibited in the plastic regions indicated on the plans.
If bedrock is reached before required bearing capacity is achieved, engineer shall be consulted for recommendations.

PILE DATA

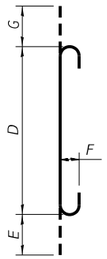
Type: Steel HP14x89
Nominal Required Bearing: 695k
Factored Resistance Available: 382k
Est. Length: 27'-0"
No. Production Piles: 44
No. Test Piles: 1
Min. Pile Tip Elev. = 475.69



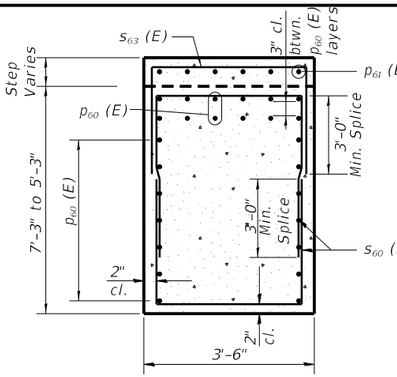
* Ties at 48" cts. typ. and 24" cts. in plastic hinge region (alternate hooks).

D, E, F, G DIMENSIONS

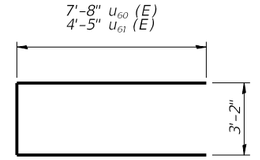
Bar	D	E	F	G
n_{60} (E)	10'-8"	1'-7"	1'-2¾"	----
t_{60} (E)	16'-8"	2'-3"	1'-9¾"	2'-3"
v_{60} (E)	25'-3"	1'-7"	1'-2¾"	----
w_{60} (E)	31'-0"	2'-3"	1'-9¾"	----



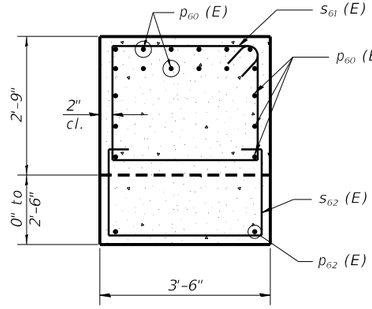
HOOKED BARS



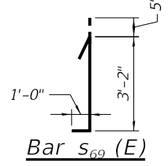
SECTION A-A



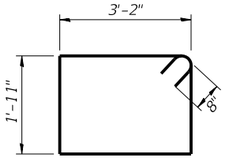
UBARS



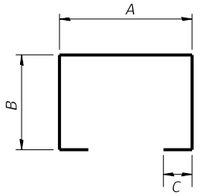
SECTION B-B



Bar s_{69} (E)



BAR s_{61} (E)



STIRRUPS BARS

A, B, C DIMENSIONS

Bar	A	B	C
s_{60} (E)	3'-2	5'-0"	----
s_{62} (E)	3'-2	2'-6"	1'-0"
s_{63} (E)	3'-2	3'-7"	----

BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h_{60} (E)	92	#6	29'-8"	
n_{60} (E)	132	#11	12'-3"	
p_{60} (E)	52	#8	27'-8"	
p_{61} (E)	6	#4	31'-9"	
p_{62} (E)	4	#8	9'-4"	
s_{60} (E)	92	#6	13'-2"	
s_{61} (E)	22	#6	11'-6"	
s_{62} (E)	22	#6	10'-2"	
s_{63} (E)	41	#6	8'-4"	
s_{69} (E)	453	#4	4'-7"	
t_{60} (E)	44	#14	21'-2"	
t_{61} (E)	24	#10	16'-8"	
u_{60} (E)	10	#8	18'-6"	
u_{61} (E)	92	#6	12'-0"	
v_{60} (E)	132	#11	24'-10"	
v_{49} (E)	176	#6	2'-6"	
w_{60} (E)	50	#14	33'-3"	
w_{61} (E)	20	#10	30'-0"	
Structure Excavation		Cu. Yd.	231	
Concrete Structures		Cu. Yd.	278.9	
Reinforcement Bars, Epoxy Coated		Pound	65,570	
Furnishing - Piles, HP 14x89		Foot	1188	
Driving Piles		Foot	1188	
Pile Shoes		Each	44	

LOCHMUELLER GROUP
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Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -
PLOT SCALE =	DRAWN - LEC	REVISED -
PLOT DATE = 6/26/2023 3:13:44 PM	CHECKED - REB	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PIER 4 DETAILS
STRUCTURE NO. 060-3366
SHEET 39 OF 44 SHEETS

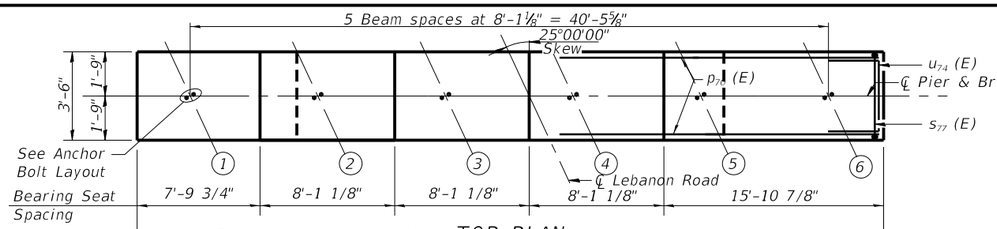
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	243
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-0027-0HY Lebanon Rd\Bridges\dgn\Final Design\D80603366-036-Patr 4 Details.dgn
6/26/2023 3:13:44 PM

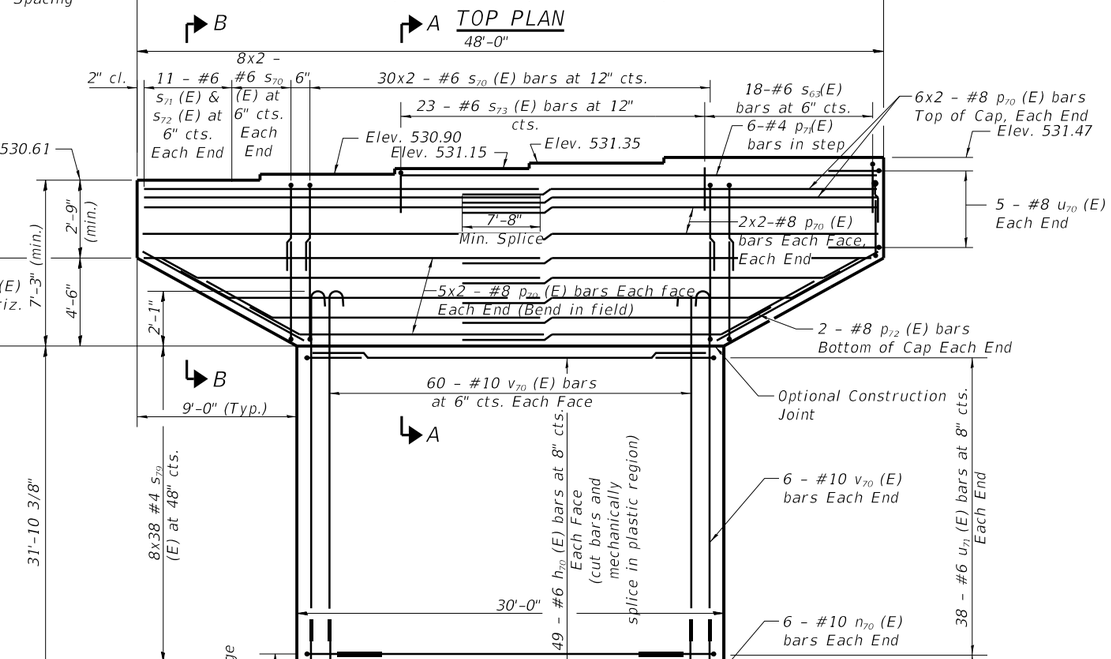
Notes:
Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
For details of piles, see sheet 41 of 44.
For Pier Anchor Bolt Layout, see sheet 31 of 44.
Splicing shall be prohibited in the plastic regions indicated on the plans.
If bedrock is reached before required bearing capacity is achieved, engineer shall be consulted for recommendations.

PILE DATA

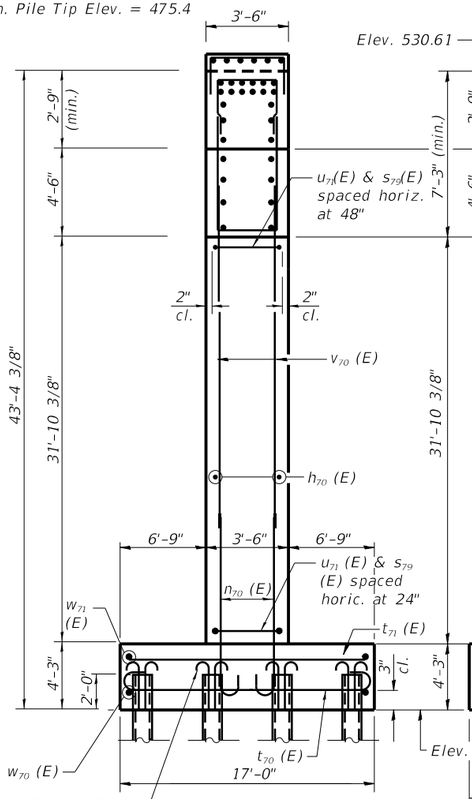
Type: Steel HP14x89
Nominal Required Bearing: 566k
Factored Resistance Available: 311k
Est. Length: 15'-0"
No. Production Piles: 32
No. Test Piles: 1
Min. Pile Tip Elev. = 475.4



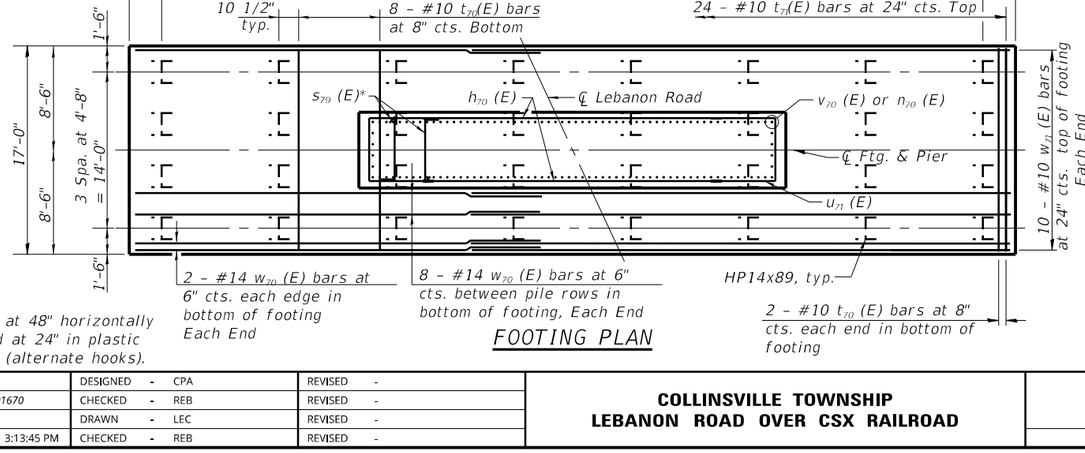
TOP PLAN



ELEVATION
(Looking South)



END VIEW

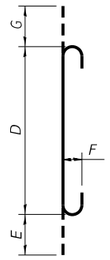


* Ties at 48" horizontally spaced at 24" in plastic region (alternate hooks).

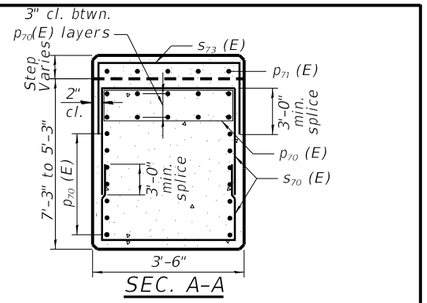
FOOTING PLAN

D,E,F & G DIMENSIONS

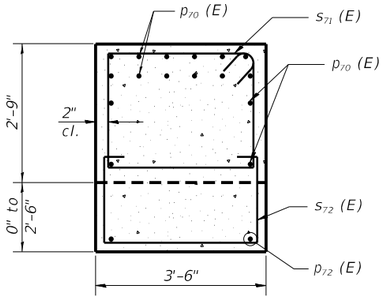
Bar	D	E	F	G
n_{70}	10'-8"	1'-5"	1'-1 1/4"	--
v_{70}	27'-5"	1'-5"	1'-1 1/4"	--
w_{70}	31'-0"	2'-3"	1'-9 3/4"	--
t_{70}	16'-8"	1'-5"	1'-1 1/4"	1'-5"



HOOKED BARS



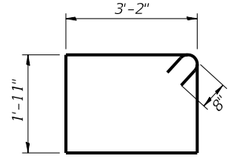
SEC. A-A



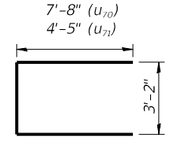
SECTION B-B

BILL OF MATERIAL

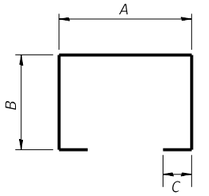
Bar	No.	Size	Length	Shape
h_{70} (E)	92	#6	29'-8"	
n_{70} (E)	132	#10	12'-1"	
p_{70} (E)	52	#8	27'-8"	
p_{71} (E)	6	#4	31'-8"	
p_{72} (E)	4	#8	9'-4"	
s_{70} (E)	92	#6	13'-2"	
s_{71} (E)	22	#6	11'-6"	
s_{72} (E)	22	#6	10'-2"	
s_{73} (E)	41	#6	8'-4"	
s_{79} (E)	469	#4	4'-7"	
t_{70} (E)	60	#10	19'-6"	
t_{71} (E)	24	#10	16'-8"	
u_{70} (E)	10	#8	18'-6"	
u_{71} (E)	98	#6	12'-0"	
v_{70} (E)	132	#10	28'-0"	
v_{49} (E)	128	#6	2'-6"	
w_{70} (E)	50	#14	33'-3"	
w_{71} (E)	20	#10	30'-0"	
Structure Excavation		Cu. Yd.	532	
Concrete Structures		Cu. Yd.	295.5	
Reinforcement Bars, Epoxy Coated		Pound	60,690	
Furnishing - Piles, HP 14x89		Foot	480	
Driving Piles		Foot	480	
Pile Shoes		Each	32	



BAR s_{71} (E)



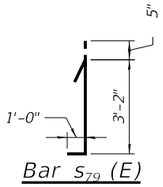
U BARS



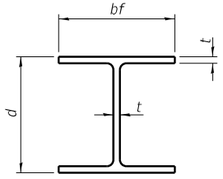
STIRRUPS BARS

A,B&C DIMENSIONS

Bar	A	B	C
S_{70}(E)	3'-2"	5'-0"	--
S_{71}(E)	3'-2"	2'-6"	1'-0"
S_{73}(E)	3'-2"	3'-7"	--

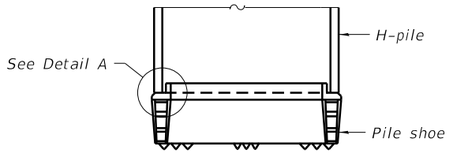


Bar s_{79} (E)

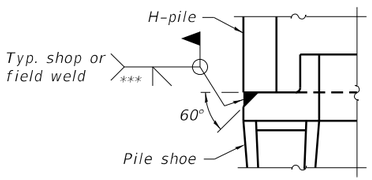


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	1 1/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	1 1/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



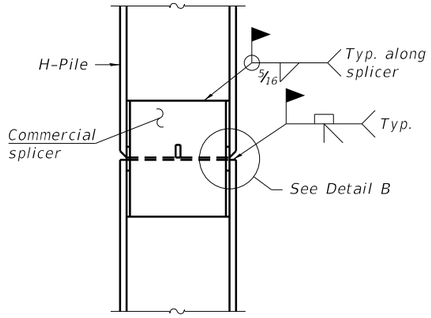
ELEVATION



DETAIL A

SHOE ATTACHMENT

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



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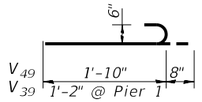
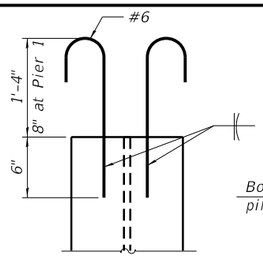
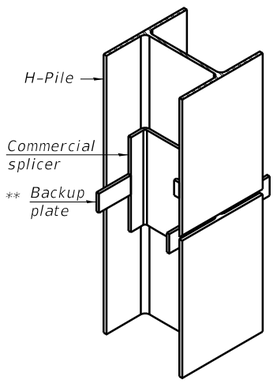


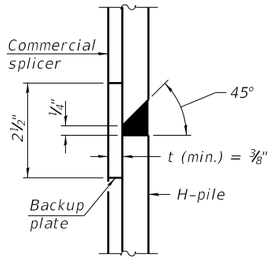
BAR V39 (E) & V49 (E)



PILE UPLIFT CONNECTION DETAIL

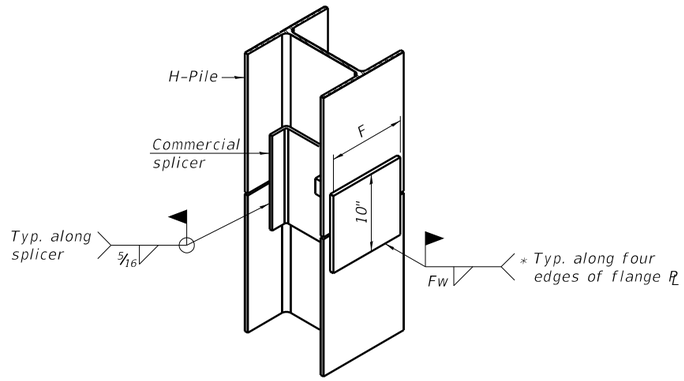


ISOMETRIC VIEW



DETAIL "B"

WELDED COMMERCIAL SPLICE



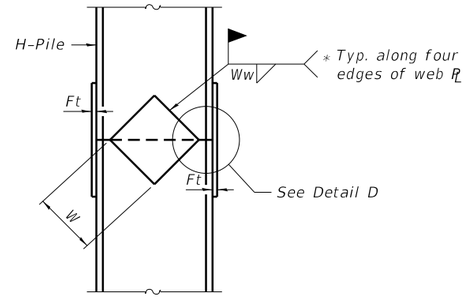
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

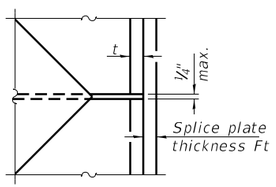
* *Interrupt welds ¼" from end of web and/or each flange.*

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

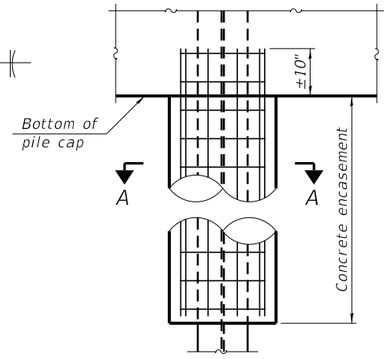
*** *Weld size per pile shoe manufacturer (3/16" min.).*



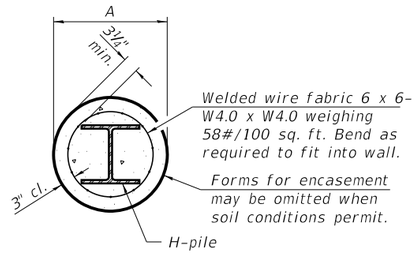
ELEVATION



DETAIL D



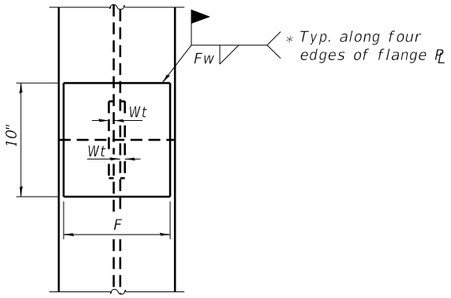
ELEVATION



SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(when specified)



END VIEW

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

WELDED PLATE FIELD SPLICE

LOCHMUELLER GROUP
1928 S/A Bradley Pl, Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:46 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

HP PILE DETAILS
STRUCTURE NO. 060-3366
SHEET 41 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	245
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-0027-01HY Lebanon Rd\Bridges\dgn\Final Design\D060603366-038-HP Pile Details.dgn

6/26/2023 3:13:46 PM

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Date 6/4-5/2014

ROUTE F.A.S. Route 772 DESCRIPTION Structure Boring Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION North Abutment SEC. 36, TWP. 3N, RNG. 8W Northing 730407.8 Easting 2361249.86

COUNTY Madison DRILLING METHOD CME-550 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-1
Station 37+90
Offset 0 ft On CL
Ground Surface Elev. 547.8 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 466.8 ft ▼
Upon Completion 522.8 ft ▽
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
547.4				4" TOPSOIL
				CLAY: Brown, trace organics, A-6
	3 3 4	2.7 P	24	
544.8				
				SILTY CLAY: Brown, trace organics, A-6
	2 2 3	0.8 P	22	
-5 542.3				
				SILTY CLAY LOAM: Brown, A-4
	6 6 6	3.8 P	16	
	5 5 6	3.5 P	17	
-10				
	5 6 8	4.0 P	20	
	5 7 8	1.0 S/10	20	
-15				
	5 6 7	0.8 S/15	21	
529.8				
				SILTY CLAY: Brown, A-6
-20	4 5 6	1.4 S/20	20	
				SILTY CLAY: Brown, A-6 *(continued)*
526.8				
				CLAY: Brown, with fine to coarse sand and gravel, A-7
	5 6 8	2.6 S/15	19	
				No sand or gravel
	4 5 7	1.7 B	22	
-25				
				Trace fine sand and gravel
	3 4 4	1.2 B	23	
	3 4 9	0.9 B	23	
-30				
514.8				
				SILTY LOAM: Brown, A-4
-35	11 16 18	4.0 P	18	
510.8				
				SILTY CLAY LOAM: Gray, A-4
-40	20 21 21	3.6 S/15	17	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Date 6/4-5/2014

ROUTE F.A.S. Route 772 DESCRIPTION Structure Boring Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION North Abutment, SEC. 36, TWP. 3N, RNG. 8W Northing 730407.8 Easting 2361249.86

COUNTY Madison DRILLING METHOD CME-550 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-1
Station 37+90
Offset 0 ft On CL
Ground Surface Elev. 547.8 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 466.8 ft ▼
Upon Completion 522.8 ft ▽
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SILTY CLAY LOAM: Gray, A-4 *(continued)*
504.8				
				CLAY LOAM: Gray, A-7
	5 6 8	2.5 B	20	
-45				
	4 7 8	3.7 B	21	
-50				
				Become brownish-gray
	5 7 11	2.7 B	19	
-55				
490.8				
				CLAY: Greenish-gray, A-7
	8 10 13	4.4 B	16	
-60				
				CLAY: Greenish-gray, A-7 *(continued)*
	5 8 11	4.5 B	17	
-65				
	3 5 8	0.8 B	22	
-70				
474.8				
				SILTY LOAM: Gray, A-4
	8 13 17	3.4 S/15	21	
-75				
469.8				
				SILTY CLAY LOAM: Bluish-gray, A-7
-80	4 6 8	1.6 B	20	

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Date 6/4-5/2014

ROUTE F.A.S. Route 772 DESCRIPTION Structure Boring Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION North Abutment, SEC. 36, TWP. 3N, RNG. 8W Northing 730407.8 Easting 2361249.86

COUNTY Madison DRILLING METHOD CME-550 w/HSA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-1
Station 37+90
Offset 0 ft On CL
Ground Surface Elev. 547.8 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 466.8 ft ▼
Upon Completion 522.8 ft ▽
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				SILTY CLAY LOAM: Bluish-gray, A-7 *(continued)*
466.3				
				SANDSTONE: Gray, weathered
	50/0.5"	--	7	
-85				
461.3				
				SHALE: Brown and gray
458.3				
				SANDSTONE: Bluish-gray, weathered, argillaceous
-90	50/2"	>4.5 P	16	
455.7				
				Boring terminated at 92.0 ft.
	50/0.3"	--		
-95				
-100				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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6/26/2023 3:13:47 PM

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:47 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOIL BORINGS I
STRUCTURE NO. 060–3366
SHEET 42 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	246
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Page 1 of 1

Date 06/25/14

Structure Boring

ROUTE F.A.S. Route 772 DESCRIPTION Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION Pier-2, SEC. 36, TWP. 3N, RNG. 8W
Northing 730189.75 Easting 2361186.89

COUNTY Madison DRILLING METHOD CME-550 w/CFA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-3X
Station 39+85
Offset 23 ft RT
Ground Surface Elev. 503.5 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 492.5 ft
Upon Completion None ft
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
503.1 4" TOPSOIL			
SILTY CLAY LOAM: Brown and dark brown, trace sand, A-4	3 3 4	1.3 S/15	18
	2 2 2	0.4 S/20	23
498.0 SILTY LOAM: Brown, A-4	3 4 4	1.6 S/15	21
495.5 CLAY: Brown and gray, A-7	4 5 6	2.0 B	24
492.5 SILTY CLAY: Brown, A-6	2 2 2	1.1 B	25
Qu test performed	ST	1.3	22
	4 7 7	1.2 S/20	22
485.5 SILTY CLAY: Gray and brown, with fine sand, trace gravel, A-6	3 4 6	2.2 B	23

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY CLAY: Gray and brown, with fine sand, trace gravel, A-6 *(continued)*	4 5 7	2.4 B	25
480.5 CLAY: Gray, trace gravel, A-7	5 5 9	1.4 B	21
	4 5 6	1.2 B	19
	6 7 9	3.4 B	24
470.5 SHALEY CLAY: Bluish-gray, trace fine sand, A-6	9 50/5.5"	>4.5 P	17
469.5 SANDSTONE: Tan, weathered, argillaceous	50/3"	>4.5 P	14
Becomes bluish-gray, with shale lenses	50/3"	>4.5 P	13
464.7 Boring terminated at 38.8 ft.			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Page 1 of 1

Date 05/27/14

Structure Boring

ROUTE F.A.S. Route 772 DESCRIPTION Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION Pier-3, SEC. 36, TWP. 3N, RNG. 8W
Northing 730159.74 Easting 2361488.14

COUNTY Madison DRILLING METHOD CME-550 w/CFA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-4X
Station 41+18
Offset 2 ft LT
Ground Surface Elev. 501.2 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 498.2 ft
Upon Completion None ft
After 24 Hrs. 498.2 ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
501.1 1" TOPSOIL			
SILTY CLAY: Brown, A-6	2 2 2	0.4 B/20	26
	2 2 3	1.3 B/20	25
	1 2 3	1.4 B/20	26
493.5 CLAY LOAM: Gray, trace roots, A-4 CU test performed	ST	--	26
489.7 SANDY CLAY LOAM: Brown, sand is fine, A-4	WOH 1 1	NC	27
488.5 CLAY LOAM: Brown and gray, trace fine sand, A-4 Consolidation test performed	ST	--	26
	2 2 2	<0.25 P	26
481.7 CLAY: Gray, A-7	WOH 1 1	NC	34

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
CLAY: Gray, A-7 *(continued)*			
480.0 SILTY LOAM: Gray, with wood, A-4	7 5 5	3.5 S/15	31
478.2 CLAY: Gray, with fine sand, A-7	8 8 15	3.3 S/10	16
475.2 SILTSTONE: Greenish-gray, with shale lenses	22 28 50/2"	>4.5 P	12
473.2 SANDSTONE: Brown, weathered, argillaceous	50/2"	>4.5 P	14
469.9 Boring terminated at 31.3 ft.	50/3.5"	--	14

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Page 1 of 1

Date 05/27/14

Structure Boring

ROUTE F.A.S. Route 772 DESCRIPTION Lebanon Road Realignment - Collinsville, Illinois LOGGED BY SCI (BDG)

SECTION 10-04106-00-BR LOCATION Pier-4, SEC. 36, TWP. 3N, RNG. 8W
Northing 730103.39 Easting 2361516.52

COUNTY Madison DRILLING METHOD CME-550 w/CFA HAMMER TYPE Automatic

STRUCT. NO. 060-3366
Station 39+12.10

BORING NO. BB-5X
Station 41+92
Offset 1 ft LT
Ground Surface Elev. 500.7 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft

Groundwater Elev.:
First Encounter 493.2 ft
Upon Completion None ft
After N/A Hrs. N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
500.6 1" TOPSOIL			
SILTY CLAY: Brown, A-6			
Attempted shelby tube 10-12, no recovery. Drove a split-spoon to retrieve sample	3 1 3	0.6 S/20	27
497.7 SILTY CLAY LOAM: Brown, A-6	2 3 3	1.5 B/20	25
	2 2 2	0.7 B/20	25
492.7 SILTY LOAM: Brown, with fine sand, A-4	1 1 1	<0.25 P	28
490.7 SILTY CLAY: Brown, A-6	WOH WOH 1	0.6 B/20	27
CU test performed	ST	--	26
485.2 SILTY CLAY LOAM: Brown, A-4	1 2 2	<0.25 P	26
482.7 CLAY: Brown, with fine sand and gravel, A-7	3 4 5	2.3 B/20	19

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
SILTY LOAM: Gray and brown, A-4	6 8 8	2.6 S/15	22
476.7 SANDSTONE: Brownish-gray, weathered, argillaceous	16 50/4"	3.3 P	12
	50/5"	--	13
Becomes brown, with shale lenses Becomes greenish-gray			
472.0 Boring terminated at 28.7 ft.	50/3"	--	15

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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LOCHMUELLER GROUP
1928 S/A Bradley B. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:13:53 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOIL BORINGS II
STRUCTURE NO. 060–3366
SHEET 43 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	247
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS	FED. AID PROJECT		

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Date 05/27/14

Structure Boring

ROUTE F.A.S. Route 772 **DESCRIPTION** Lebanon Road Realignment - Collinsville, Illinois **LOGGED BY** SCI (BDG)

SECTION 10-04106-00-BR **LOCATION** Pier-5, **SEC.** 36, **TWP.** 3N, **RNG.** 8W
Northing 730035.889 **Easting** 2361576.525

COUNTY Madison **DRILLING METHOD** CME-550 w/CFA **HAMMER TYPE** Automatic

STRUCT. NO. 060-3366
Station 39+12.10
BORING NO. BB-6X
Station 42+85
Offset 2 ft RT
Ground Surface Elev. 500.2 ft

Surface Water Elev. -- ft
Stream Bed Elev. -- ft
Groundwater Elev.:
First Encounter 489.2 ft ▼
Upon Completion None ft
After N/A **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
500.1				1" TOPSOIL
	2 2 2	1.3 P	23	SILTY CLAY: Brown, trace roots, A-6
				Becomes brown and gray
-5	2 3 4	1.0 S;20	24	
494.7				SILTY CLAY LOAM: Brown and gray, A-4
	3 4 3	1.0 B;20	23	
			25	Trace coarse gravel
491.4	ST		23	CU test performed
-10				CLAY LOAM: Brown and gray, A-6 Consolidation test performed
	4 4 5	<0.25 P	28	
486.7				SILTY CLAY: Brown and gray, with fine to coarse sand, A-7
-15	4 5 8	2.4 B;20	21	
	3 5 9	3.4 B;20	21	
482.2				CLAY: Gray, trace fine sand and gravel, A-7
-20	3 4 6	1.8 B;20	18	

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)	Description
				CLAY LOAM: Greenish-gray, A-7
	5 13 30	2.2 S;5	20	
478.2				SANDSTONE: Gray, weathered, argillaceous
	50/4"	2.5 P	10	
-25				
	50/2"	--	17	
471.5				Boring terminated at 28.7 ft.
	50/2"	>4.5 P	9	
-30				
-35				
-40				

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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6/26/2023 3:13:59 PM

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.3400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:13:59 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOIL BORINGS III
STRUCTURE NO. 060–3366
SHEET 44 OF 44 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	248
	STRUCTURE NO. 060-3366	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

Benchmark: Chiseled "X" on Northeast Flange Bolt of Fire Hydrant
Station 50+11.00, Offset 101' Left, Elev. 505.52
N: 729,810.6294 E: 2,362,188.3404

Existing Structure: SN 060-3038 carrying F.A.S. Route 772 (Lebanon Road) over Tributary to Canteen Creek was built in 2015. The structure is an approx. 11' wide by 7' high corrugated metal pipe arch. The structure is at an approx. 15° left forward skew to the roadway. The clear width of the roadway above the structure is 20'-0". Traffic will be detoured during construction.

No salvage.

TRIBUTARY TO CANTEEN CREEK
BUILT 20__ BY
COLLINSVILLE TOWNSHIP
F.A.S. RT. 772 SEC. 10-04106-00-BR
STATION 336+18.11
STR. NO. 060-3375 LOADING HL-93

NAME PLATE
See Std. 515001

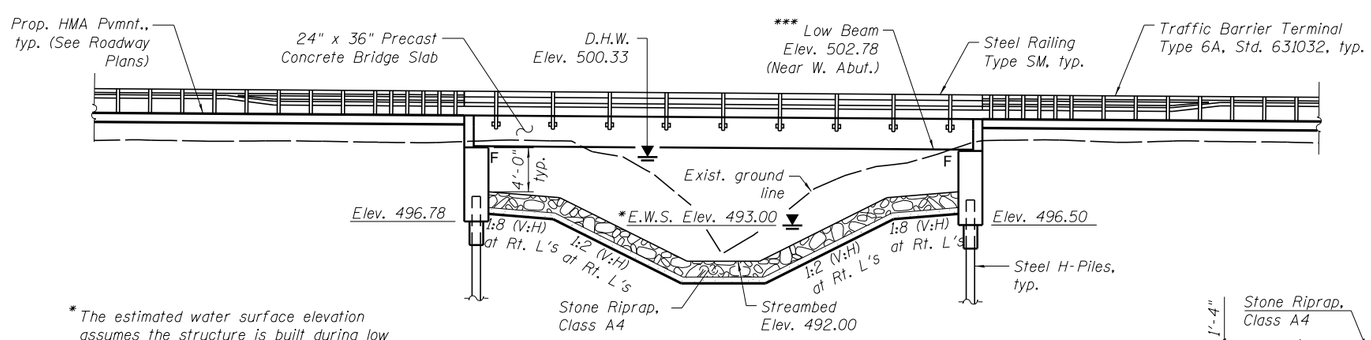
DESIGN SCOUR ELEVATION TABLE

Event / Limit State	Design Scour Elevations (ft.)		
	E. Abut.	W. Abut.	Item 113
Q100	491.8	492.0	
Q200	491.6	492.0	
Q500	490.5	491.8	8B
Design (30 yr)	492.0	492.0	
Check (10 yr)	492.0	492.0	

WATERWAY INFORMATION

Drainage Area = 1.24 sq. mi.
Exist. Low Grade Elev. 502.96 @ Sta. 338+50.00
Prop. Low Grade Elev. 502.96 @ Sta. 338+50.00

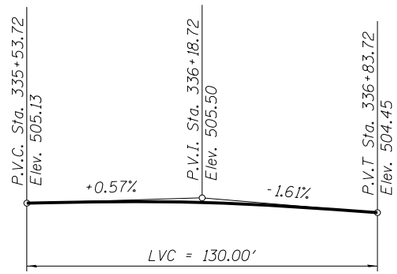
Flood	Freq. Yr.	Q C.F.S.	Opening Ft* Exist.	Opening Ft* Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	10	574	264.00	326.67	499.97	0.27	0.36	500.24	500.33
	30	830	264.00	326.67	501.29	0.41	0.43	501.70	501.72
	50	957	264.00	326.67	501.84	0.45	0.40	502.29	502.24
Base	100	1140	264.00	326.67	502.56	0.47	0.32	503.03	502.88
Scour	200	1325	264.00	326.67	503.16	0.45	0.45	503.61	503.61
Max. Calc.	500	1580	264.00	326.67	503.68	0.66	0.91	504.34	504.59



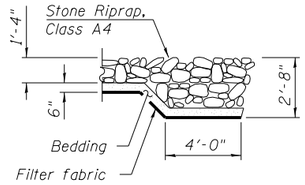
ELEVATION

* The estimated water surface elevation assumes the structure is built during low flow conditions.

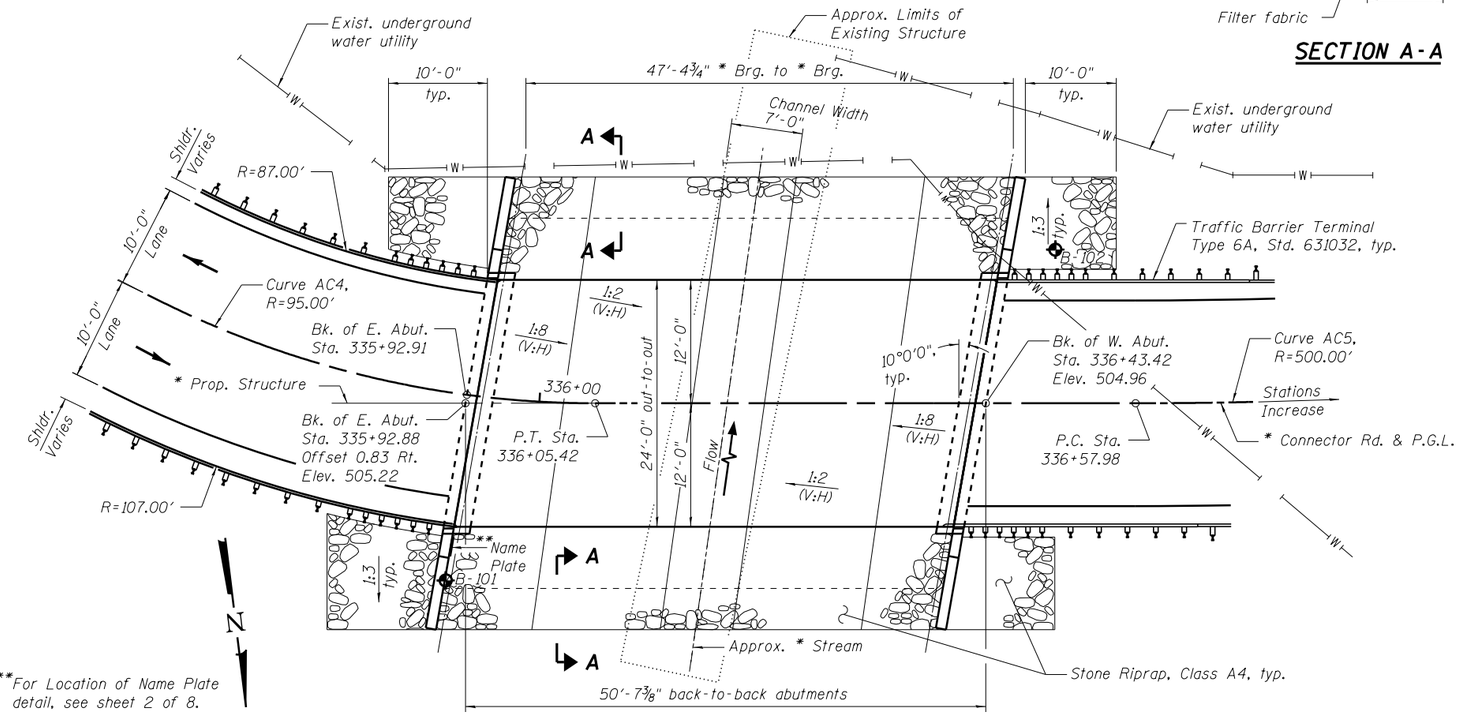
*** The Low Beam Elevation assumes that the Precast Concrete Bridge Slab beams are cambered $\frac{7}{8}$".



PROFILE GRADE
(along * Prop. Connector Road)



SECTION A-A



** For Location of Name Plate detail, see sheet 2 of 8.

**** The precast concrete bridge slabs will be sealed in the future by others using an oil and chip surface treatment.

PLAN

CURVE DATA

(Prop. Connector Rd. - Curve AC5)
P.I. Sta. = 337+03.04
* = 10° 17' 56" (LT)
D = 11° 27' 33"
R = 500.00'
T = 45.06'
L = 89.88'
E = 2.03'
P.C. Sta. = 336+57.98
P.T. Sta. = 337+47.85

CURVE DATA

(Prop. Connector Rd. - Curve AC4)
P.I. Sta. = 335+57.40
* = 66° 34' 33" (LT)
D = 60° 18' 41"
R = 95.00'
T = 62.37'
L = 110.39'
E = 18.65'
P.C. Sta. = 334+95.03
P.T. Sta. = 336+05.42

RONALD E. BREVILLE
081-005711
LICENSED STRUCTURAL ENGINEER
ST. LOUIS MO
STATE OF ILLINOIS

Date: 6 July 2023
Exp.: 30 November 2024

"I certify that to the best of my knowledge, information and belief, this bridge/box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges'."

DESIGN SPECIFICATIONS

2020 AASHTO LRFD Bridge Design Specifications, 9th Edition

DESIGN STRESSES

FIELD UNITS

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

PRECAST UNITS

f'c = 5,000 psi
f'ci = 4,000 psi
fy = 60,000 psi (Reinforcement)

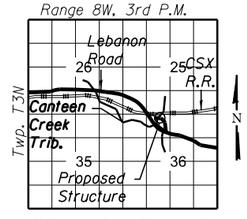
INDEX OF SHEETS

LOADING HL-93

Allow 50#/sq. ft. for future wearing surface.
**** Include allowance for 2" Hot-Mix Asphalt Overlay.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 2
Design Spectral Acceleration at 1.0 sec. (SD1) = 0.17
Design Spectral Acceleration at 0.2 sec. (SDS) = 0.44
Soil Site Class = C



LOCATION SKETCH

GENERAL PLAN & ELEVATION
LEBANON ROAD (CONNECTOR ROAD) OVER
TRIBUTARY TO CANTEEN CREEK
F.A.S. ROUTE 772 - SEC. 10-04106-00-BR
MADISON COUNTY
STATION 336+18.11
STRUCTURE NO. 060-3375

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	PRECAST CONCRETE SLAB BRIDGE STRUCTURE NO. 060-3375
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -		SHEET 1 OF 8 SHEETS
PLOT SCALE =	DRAWN - LEC	REVISED -		
PLOT DATE = 6/26/2023 3:14:02 PM	CHECKED - REB	REVISED -		

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	249
	STRUCTURE NO. 060-3375		CONTRACT NO. 97790	
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: S:\Projects\409-0027-0HY Lebanon Rd\Bridges\SN060-3375 - Single Span Bridge - Connector Road\DGN\Final Plans\060337S-001-GPE.dgn

6/26/2023 3:14:02 PM

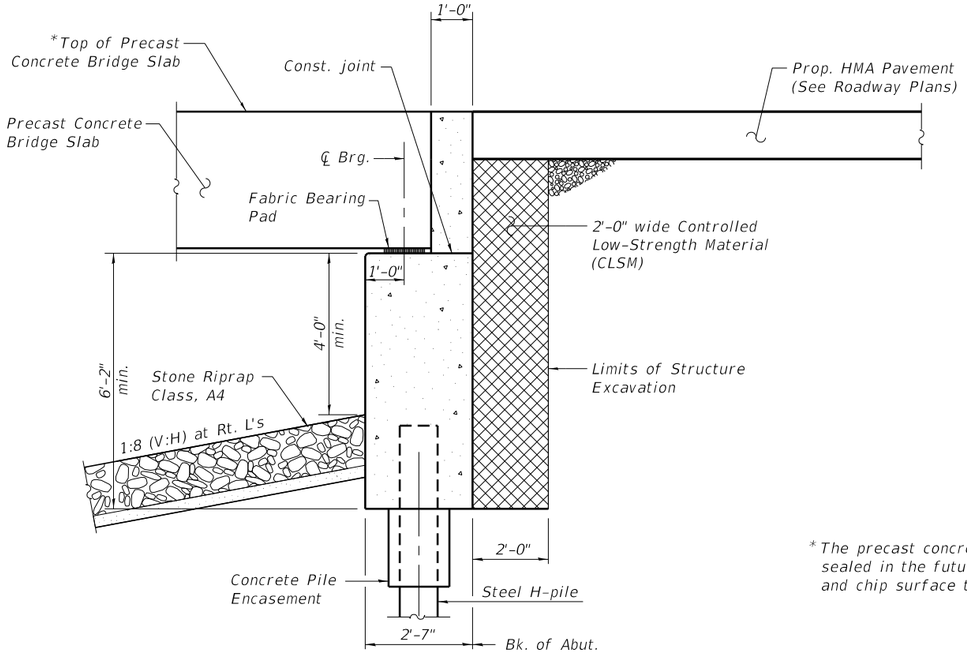
GENERAL NOTES

1) Reinforcement bars designated (E) shall be epoxy coated.
2) Concrete Sealer shall be applied to the abutment back walls, bearing seats, and front and end faces of each abutment.
3) Layout of the slope protection system may be varied to suit ground conditions in the field as directed by the Engineer.
4) Do not place cement aggregate mixture behind abutments until backwall concrete has cured for 14 days or has met concrete strength requirements. The two abutments shall be backfilled simultaneously and the difference in elevation between the backfills of the abutments shall not exceed 2 ft.
5) Excavation pay width for controlled low strength material shall be 2 ft. wide and placed to within 8 in. of finished grade. Additional material beyond 2 ft. width will not be paid for.
6) Current Rating Factors on File for Existing Structure
   Inventory: Unknown
   Operating: HS20
   Live Load Restrictions: No

   Inventory and Operating Ratings and Live Load Restrictions are provided for information only. Inventory and Operating Ratings are based on HS loading and configuration. Live Load Restrictions are based on Illinois legal loads and configurations. The Ratings and Live Load Restrictions are not necessarily representative of capacities to support the Contractor's equipment.

TOTAL BILL OF MATERIAL

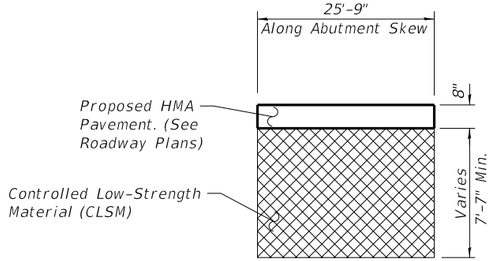
ITEM	UNIT	SUPER	SUB	TOTAL
Stone Riprap, Class A4	Sq. Yd.	–	297	297
Filter Fabric	Sq. Yd.	–	297	297
Removal of Existing Structures	Each	1	–	1
Structure Excavation	Cu. Yd.	–	128	128
Concrete Structures	Cu. Yd.	–	46.3	46.3
Concrete Encasement	Cu. Yd.	–	2.8	2.8
Precast Concrete Bridge Slab	Sq. Ft.	1,166	–	1,166
Reinforcement Bars, Epoxy Coated	Pound	–	8,260	8,260
Steel Railing, Type SM	Foot	102	–	102
Furnishing Steel Piles HP12x53	Foot	–	243	243
Driving Piles	Foot	–	243	243
Test Pile Steel HP12x53	Each	–	2	2
Pile Shoes	Each	–	8	8
Name Plates	Each	–	1	1
Portland Cement Mortar Fairing Course	Foot	341	–	341
Concrete Sealer	Sq. Ft.	–	423	423
Controlled Low-Strength Material	Cu. Yd.	–	29.4	29.4



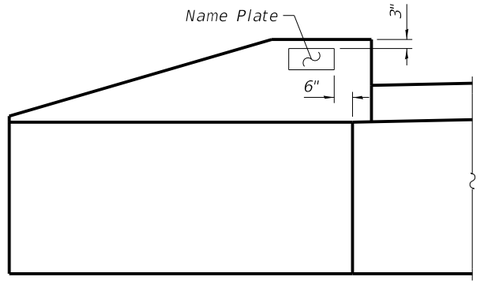
SECTION THRU ABUTMENT

(Dimensions are at right angles to abutment)

*The precast concrete bridge slabs will be sealed in the future by others using an oil and chip surface treatment.



TYPICAL SECTION AT BACK OF ABUTMENT



Northeast Wingwall Elevation

LOCATION OF NAME PLATE

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:03 PM	CHECKED - REB	REVISED -	

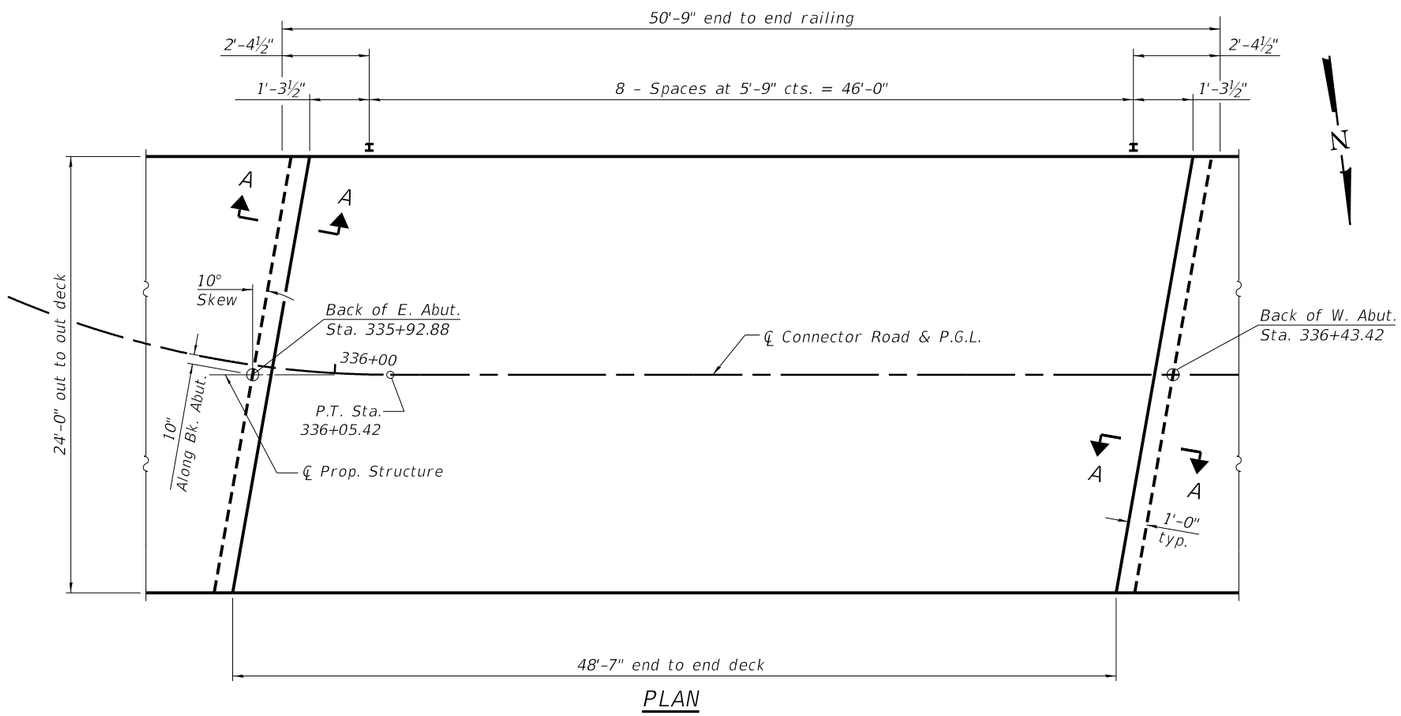
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

GENERAL NOTES AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 060-3375
SHEET 2 OF 8 SHEETS

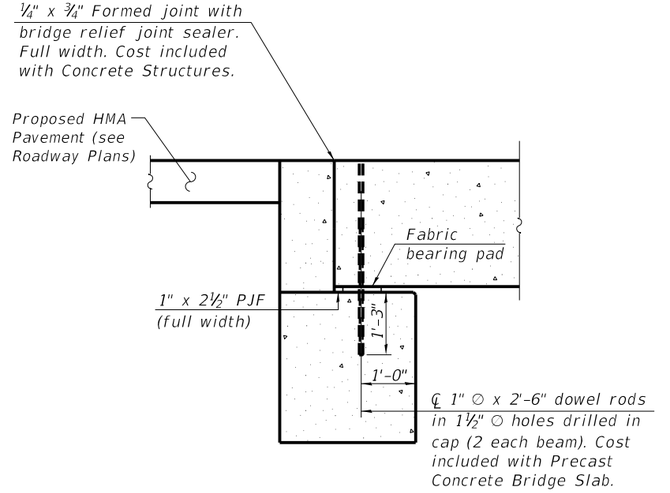
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	250
	STRUCTURE NO. 060-3375		CONTRACT NO. 97790	
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: S:\Projects\409-0027-01\Y Lebanon Rd\Bridges\SN\060-3375 - Single Span Bridge - Connector Road\DGN\Final Plans\0603375-002-Gen Notes.dgn

6/26/2023 3:14:03 PM

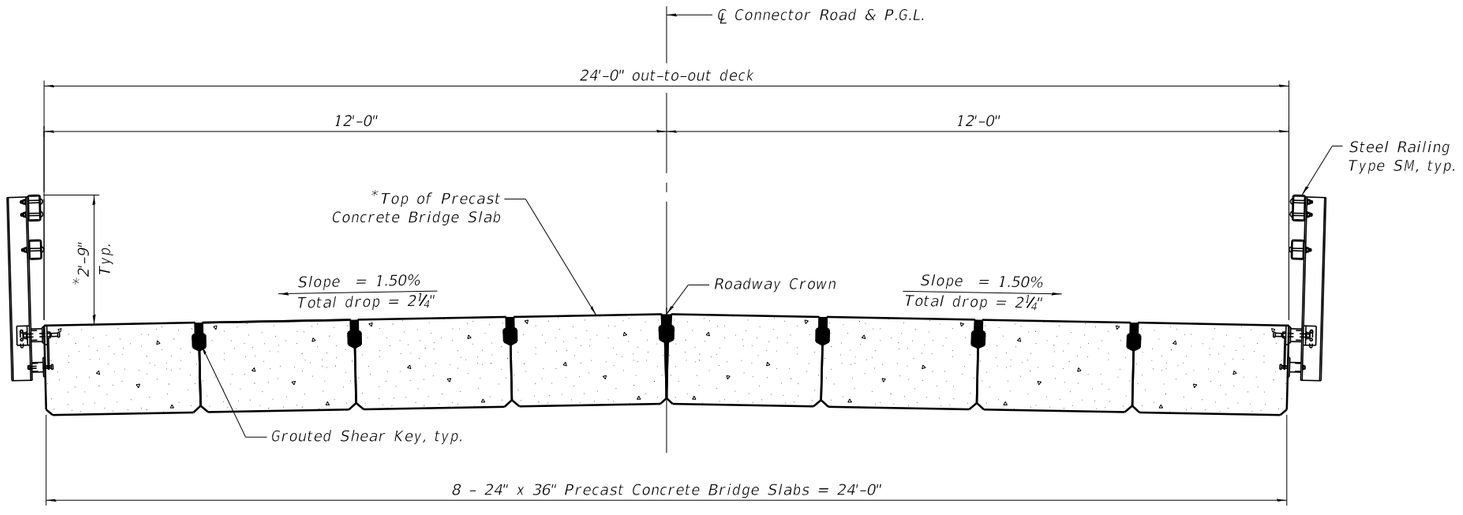


PLAN



SECTION A-A

(Dimensions are at right angles to abutment)



*The precast concrete bridge slabs will be sealed in the future by others using an oil and chip surface treatment. Assumed thickness of oil and chip surface treatment is 1".

CROSS-SECTION

(Looking West)

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Portland Cement Mortar Fairing Course	Foot	341

Notes:

See sheet 4 of 8 for Precast Concrete Bridge Slab details and Bill of Material.

See sheet 4 of 8 for fabric bearing pad details.

See sheet 5 of 8 for Steel Railing, Type SM details.

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:03 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SUPERSTRUCTURE
STRUCTURE NO. 060-3375
SHEET 3 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	251
	STRUCTURE NO. 060-3375	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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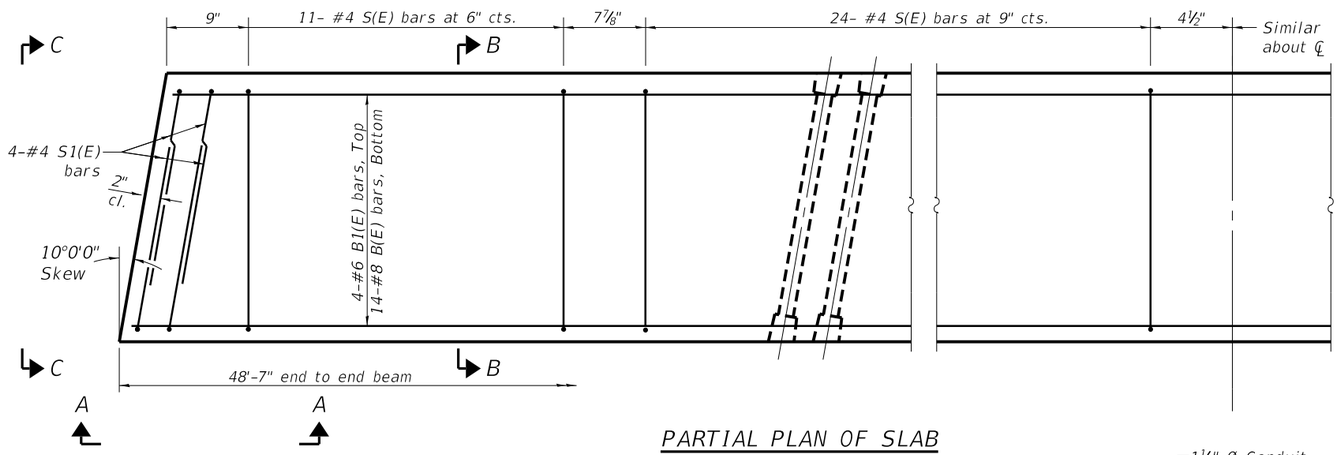
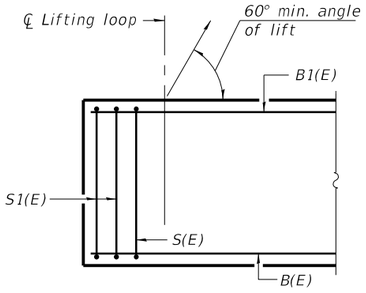
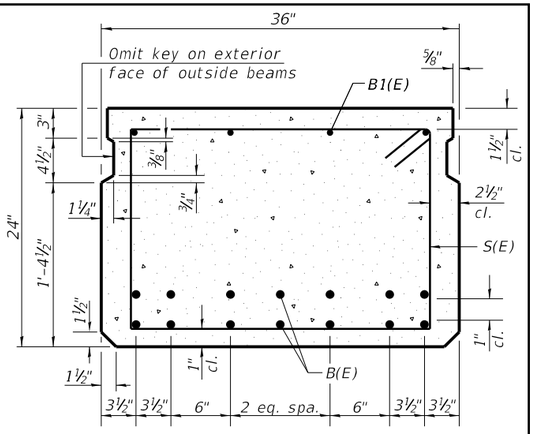


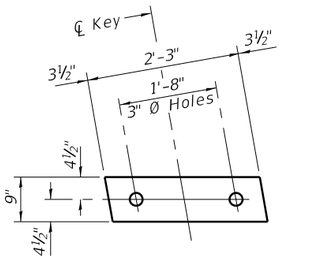
PARTIAL PLAN OF SLAB



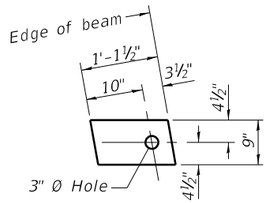
VIEW A-A



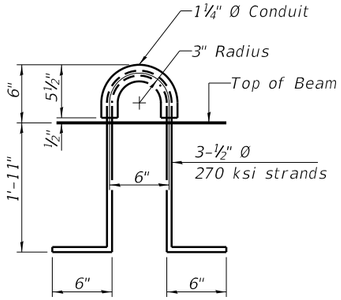
SECTION B-B



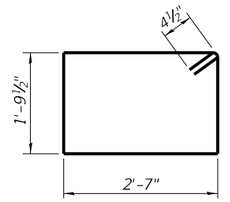
FABRIC BEARING PAD
(Interior)



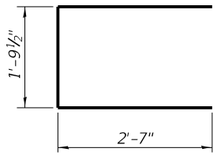
FABRIC BEARING PAD
(Exterior)



LIFTING LOOP DETAIL



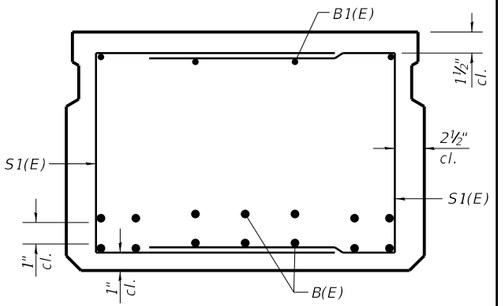
BAR S(E)



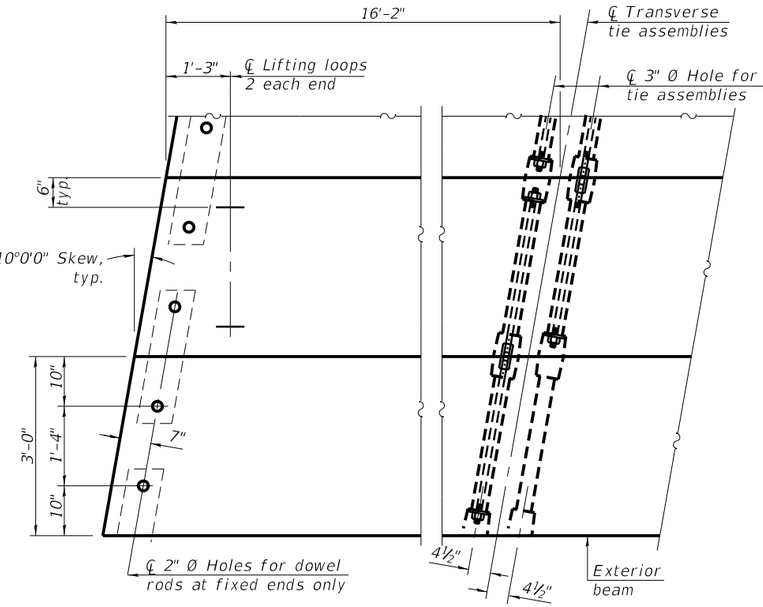
BAR S1(E)

BAR LIST
ONE BEAM ONLY
(For information only)

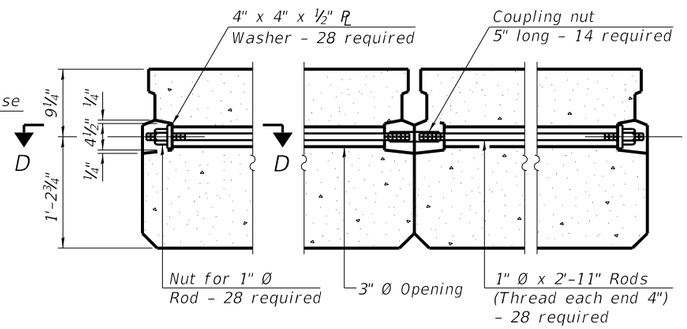
Bar	No.	Size	Length	Shape
B(E)	14	#8	48'-2"	—
B1(E)	4	#6	48'-2"	—
S(E)	70	#4	9'-6"	□
S1(E)	8	#4	7'-0"	⊏



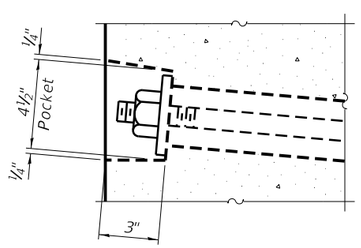
VIEW C-C
(Showing reinforcement)



PARTIAL PLAN VIEW



TYPICAL TRANSVERSE TIE ASSEMBLY



SECTION D-D

Notes:

The precast concrete bridge slab shall be in accordance with Section 504 of the Standard Specifications and shall be paid for at the contract unit price per square foot for Precast Concrete Bridge Slab.

Reinforcing steel shall be epoxy coated, ASTM A 706 Grade 60.

Compressive strength of concrete, f'c, shall be 5,000 psi.

Compressive strength of precast concrete during initial lifting, f'ci, shall be 4,000 psi.

Corrosion Inhibitor, per article 1020.05(b)(10) and 1021.07 of the Standard Specifications, shall be used in the concrete for Precast Concrete Bridge Slab.

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

An alternate lifting loop with a working load limit of 44,000 lbs. and utilized according to the manufacturer's recommendations may be used.

The 1" Ø rods in the transverse tie assembly shall be tightened to a snug fit and the threads set. Pockets on exterior faces of bridge shall be filled with grout after transverse tie assembly is in place.

All bearing pads shall be 1" thick.

Two ⅛" fabric adjusting shims of the dimensions of the exterior bearing pad shall be provided for each bearing pad location.

Beams shall be cambered ⅞".

Spacing of S(E) bars may be adjusted up to 4" in the immediate area of the transverse tie assemblies to miss the block outs for the ties.

After precast concrete bridge slab has been erected, holes shall be drilled into abutment and anchor dowels placed. Dowel holes shall be filled with non-shrink grout to top of precast slab and cured according to Article 1020.13(a)(3) or 1020.13(a)(5) of the Standard Specifications for a minimum of 24 hours before grouting the longitudinal shear keys.

Connect beams in pairs with the transverse tie configuration shown.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Precast Concrete Bridge Slab	Sq. Ft.	1,166

LOCHMUELLER GROUP
1928 S/A Bradley B. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:14:05 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST CONCRETE BRIDGE SLAB
STRUCTURE NO. 060-3375

SHEET 4 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	252
	STRUCTURE NO. 060-3375		CONTRACT NO. 97790	
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-002740\Y Lebanon Rd\Bridges\SN060-3375 - Single Span Bridge - Connector Road\DGN\Final Plans\060337S-004-Bridge Slab.dgn
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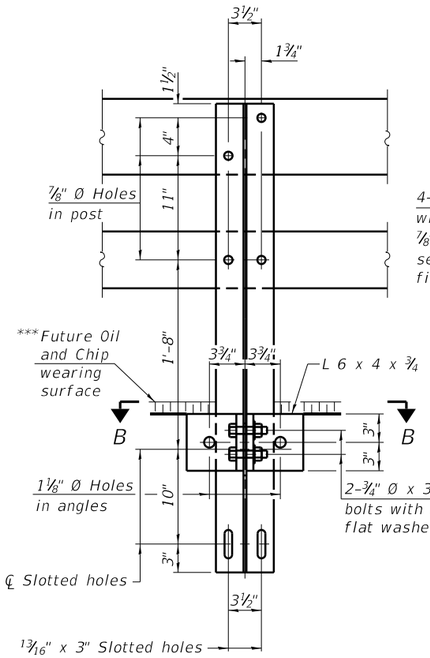
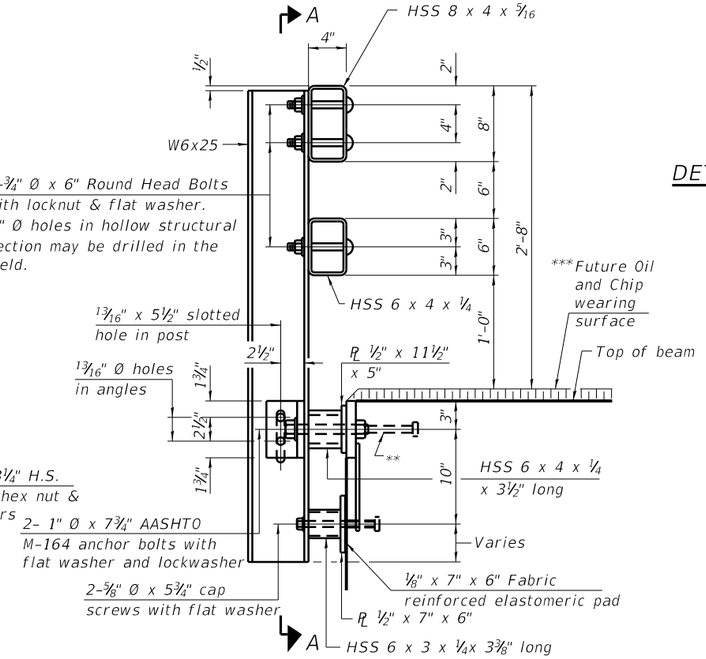
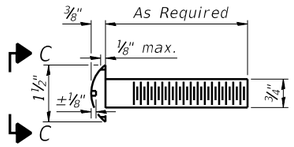


SECTION A-A

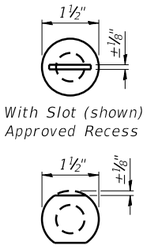


SECTION AT RAIL POST

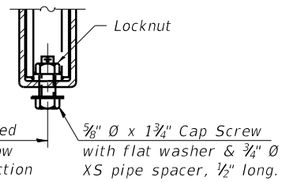
*** The precast concrete bridge slabs will be sealed in the future by others using an oil and chip surface treatment. Assumed thickness of oil and chip surface treatment is 1".



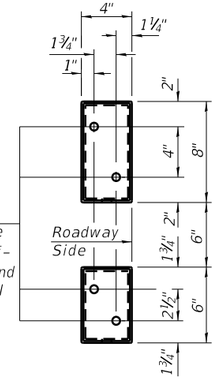
DETAIL OF ¾" Ø ROUND HEAD BOLT



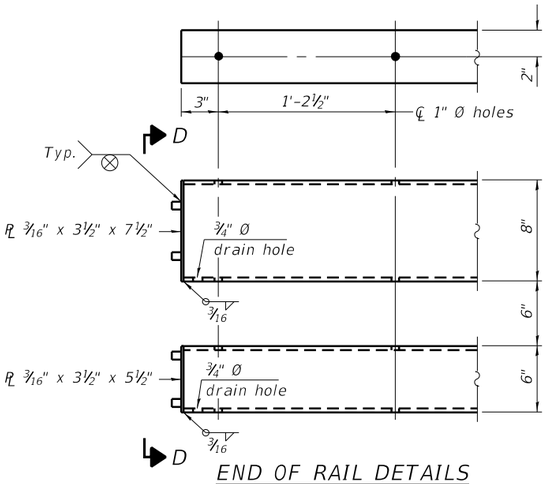
VIEW C-C



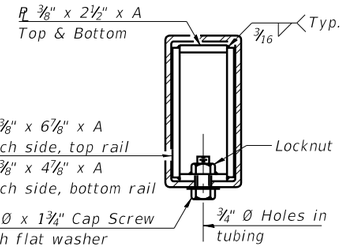
RAIL SPLICE CONNECTION AT EXPANSION JT.



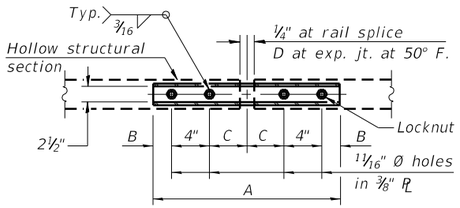
VIEW D-D



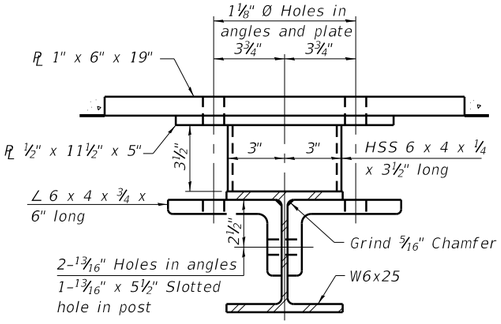
END OF RAIL DETAILS



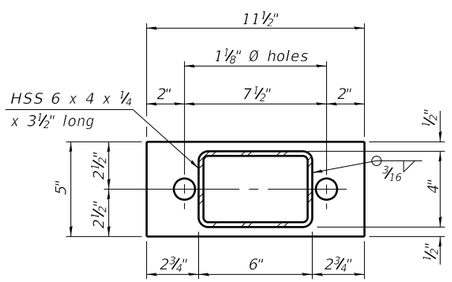
SECTION AT RAIL SPLICE



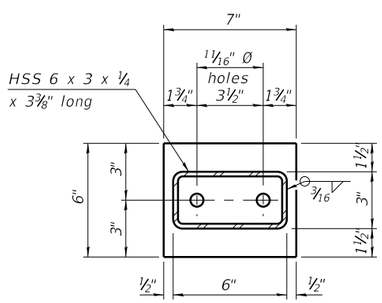
PLAN-BOTT. SPLICE PL TYPICAL



SECTION B-B

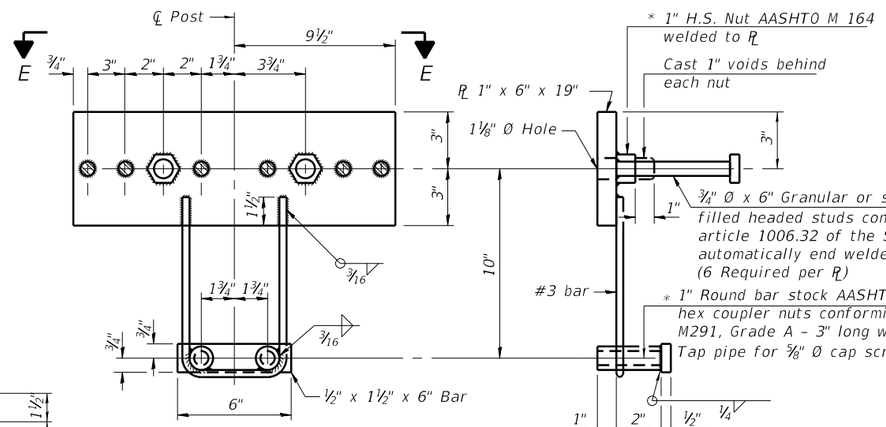


PL ½" x 11½" x 5"



PL ½" x 7" x 6"

(6'-3" Maximum Post Spacing)



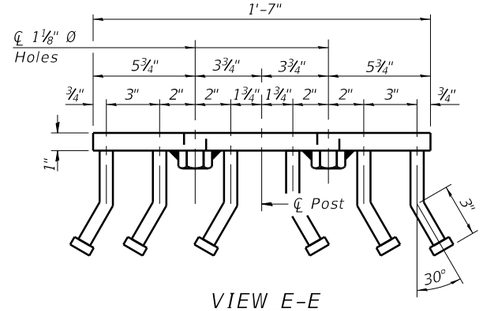
ANCHOR DEVICE

*Threaded areas shall be plugged or blocked off during casting of beam. Galvanized after fabrication.

SPLICE DIMENSIONS

T	D	A	B	C	E
≤ 4"	2½"	1'-8"	2"	4"	2½"
> 4" ≤ 6½"	3¾"	2'-0"	2½"	5½"	3½"
> 6½" ≤ 9"	5"	2'-4"	3½"	6½"	9"
> 9" ≤ 13"	7"	2'-10"	4½"	8½"	11"
Rail Splice	¼"	1'-8"	2"	4"	——

T = Total movement at expansion joint as shown on the design plans.



VIEW E-E

Notes:

For multi-span bridges, sufficient ¼" x 6" x 1'-2" galvanized steel shims shall be provided to align rail between adjacent spans. Cost included with Steel Railing, Type SM.

All steel rail members shall be galvanized according to Article 509.05 of the Standard Specifications.

** The studs of the anchor devices shall be placed below the top reinforcement bars and the outermost longitudinal reinforcement bar shall be placed directly above the studs of the rail post anchor device. The anchorage studs may be bent down ½" to accommodate the top reinforcement bar placement.

BILL OF MATERIAL

Item	Unit	Quantity
Steel Railing, Type SM	Foot	102

LOCHMUELLER GROUP
1928 S/A Bradley Pl, Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:06 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

STEEL RAILING, TYPE SM
STRUCTURE NO. 060-3375
SHEET 5 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	253
	STRUCTURE NO. 060-3375		CONTRACT NO. 97790	
		ILLINOIS	FED. AID PROJECT	

MODEL: Default
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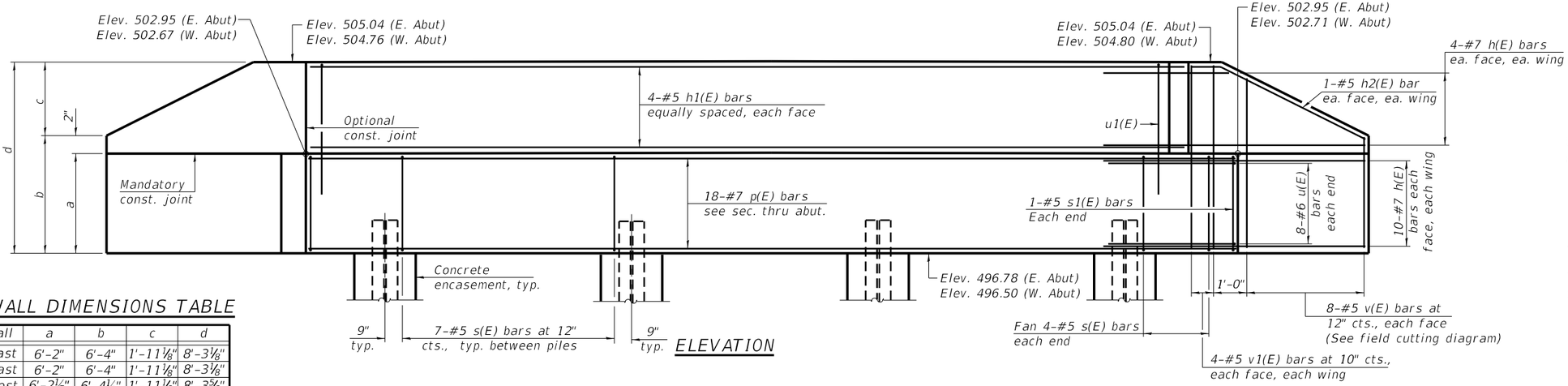
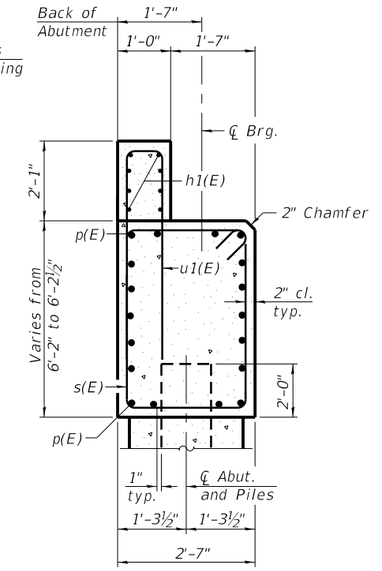


ELEVATION

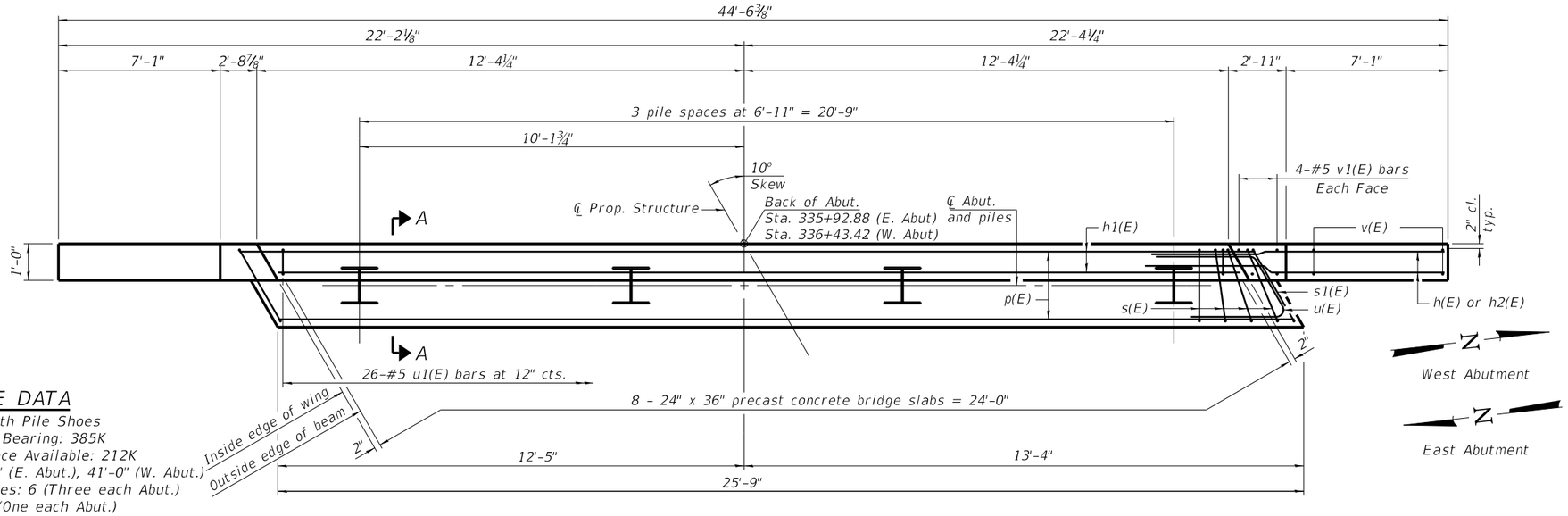
WINGWALL DIMENSIONS TABLE

Wingwall	a	b	c	d
Northeast	6'-2"	6'-4"	1'-11⅛"	8'-3⅛"
Southeast	6'-2"	6'-4"	1'-11⅛"	8'-3⅛"
Northwest	6'-2½"	6'-4½"	1'-11⅛"	8'-3⅜"
Southwest	6'-2"	6'-4"	1'-11⅛"	8'-3⅛"



SECTION A-A

(Dimensions are at right angles to abutment)



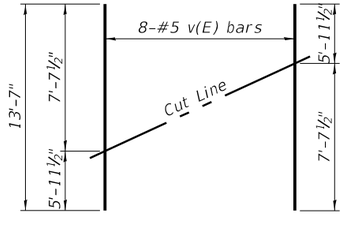
PLAN

West Abutment

East Abutment

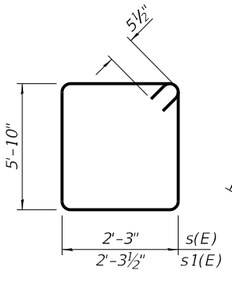
PILE DATA

Type: HP12x53 with Pile Shoes
Nominal Required Bearing: 385K
Factored Resistance Available: 212K
Est. Length: 40'-0" (E. Abut.), 41'-0" (W. Abut.)
No. Production Piles: 6 (Three each Abut.)
No. Test Piles: 2 (One each Abut.)

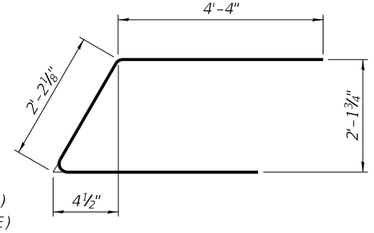


FIELD CUTTING DIAGRAM

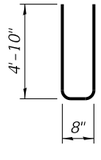
Order v(E) bars full length. Cut as shown and use remainder of bars in opposite wing.



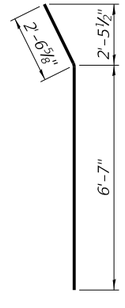
BAR s(E) & s1(E)



BAR u(E)



BAR u1(E)



BAR h2(E)

Notes:

For details of piles and Concrete Encasement, see sheet 7 of 8.

Cast backwall and tops of wingwalls after beams have been erected.

Space reinforcement in cap to miss dowel rods.

TWO ABUTMENTS BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h(E)	112	#7	13'-8"	
h1(E)	16	#5	24'-4"	
h2(E)	8	#5	9'-2"	
p(E)	36	#7	25'-5"	
s(E)	58	#5	17'-1"	
s1(E)	4	#5	17'-2"	
u(E)	32	#6	10'-11"	
u1(E)	52	#5	10'-4"	
* v(E)	32	#5	13'-7"	
v1(E)	16	#5	7'-10"	
Structure Excavation			Cu. Yd.	189
Concrete Structures			Cu. Yd.	46.3
Concrete Encasement			Cu. Yd.	2.8
Reinforcement Bars, Epoxy Coated			Pound	8,260
Furnishing - Piles, HP12X53			Foot	243
Driving Piles			Foot	243
Test Pile Steel HP12X53			Each	2
Pile Shoes			Each	8
Granular Backfill for Structures			Cu. Yd.	142
Concrete Sealer			Sq. Ft.	423
Controlled Low-Strength Material			Cu. Yd.	29.4

* See Field Cutting diagram.

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:07 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

ABUTMENT DETAILS
STRUCTURE NO. 060-3375
SHEET 6 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	254
	STRUCTURE NO. 060-3375	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
FILE NAME: S:\Projects\409-0027-0\HY Lebanon Rd\Bridges\SN060-3375 - Single Span Bridge - Connector Road\DGN\Final Plans\0603375-006-Abutmt Details.dgn

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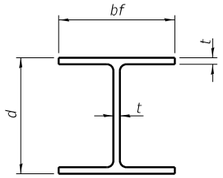
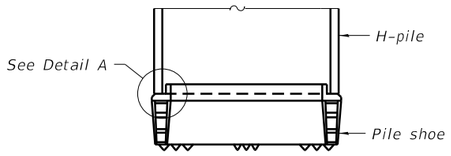
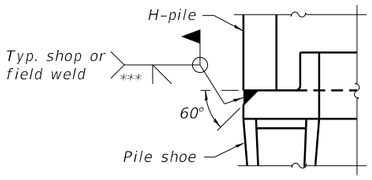


STEEL PILE TABLE

Designation	Depth d	Flange width bf	Web and Flange thickness t	Encasement diameter A
HP 14x117	14¼"	14⅞"	13/16"	30"
x102	14"	14¾"	1 1/16"	30"
x89	13⅞"	14¾"	⅝"	30"
x73	13⅝"	14⅝"	½"	30"
HP 12x84	12¼"	12¼"	1 1/16"	24"
x74	12⅛"	12¼"	⅝"	24"
x63	12"	12⅛"	½"	24"
x53	11¾"	12"	7/16"	24"
HP 10x57	10"	10¼"	9/16"	24"
x42	9¾"	10⅛"	7/16"	24"
HP 8x36	8"	8⅛"	7/16"	18"



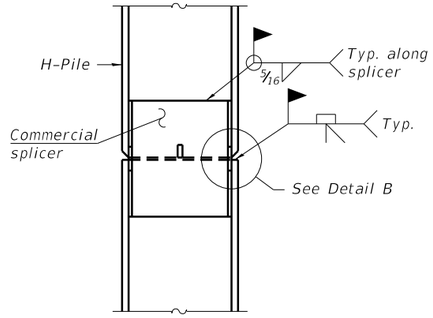
ELEVATION



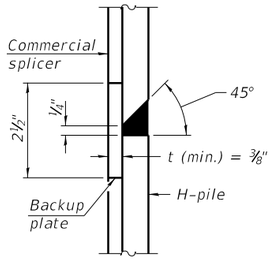
DETAIL A

SHOE ATTACHMENT

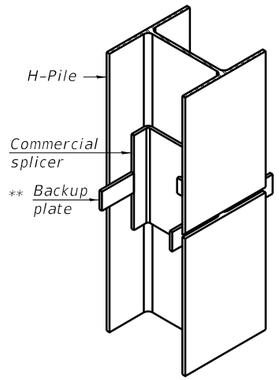
Note:
The steel H-piles shall be according to AASHTO M270 Grade 50.



ELEVATION

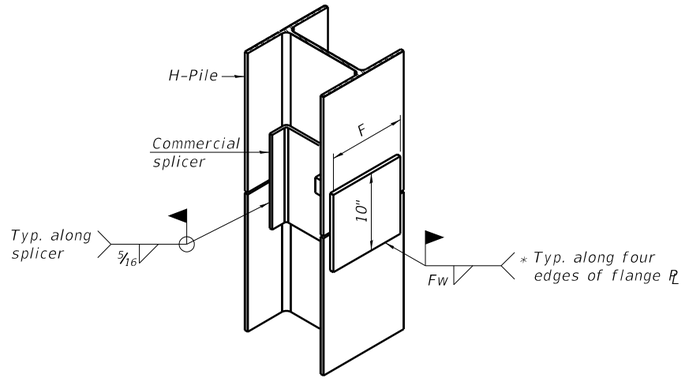


DETAIL "B"



ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE



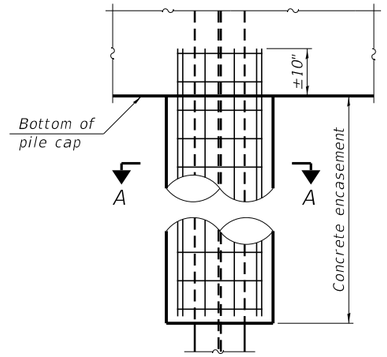
ISOMETRIC VIEW

WELDED COMMERCIAL SPLICE ALTERNATE

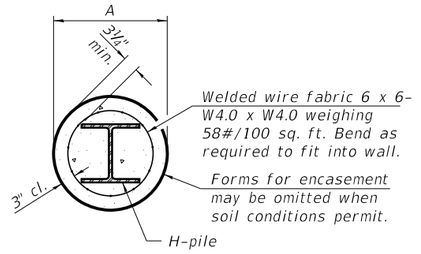
* Interrupt welds ¼" from end of web and/or each flange.

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

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



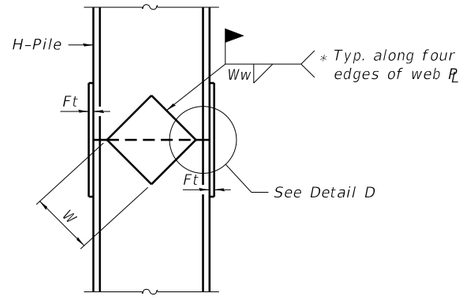
ELEVATION



SECTION A-A

INDIVIDUAL PILE CONCRETE ENCASEMENT

(when specified)



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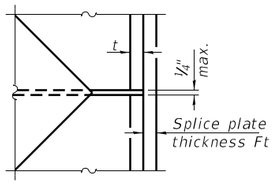
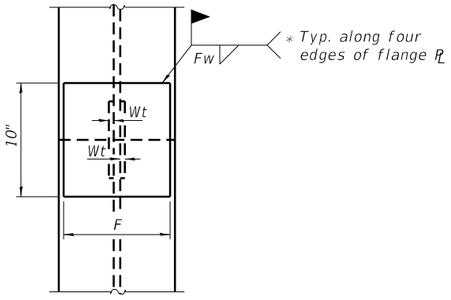


DETAIL D



END VIEW

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

WELDED PLATE FIELD SPLICE

F-HP 1-1-2020

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1928 SrA Bradley R. Smith Drive
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PHONE: 618.667.1400

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PLOT SCALE =	DRAWN - LEC	REVISED -	
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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

HP PILE DETAILS
STRUCTURE NO. 060-3375
SHEET 7 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	255
	STRUCTURE NO. 060-3375	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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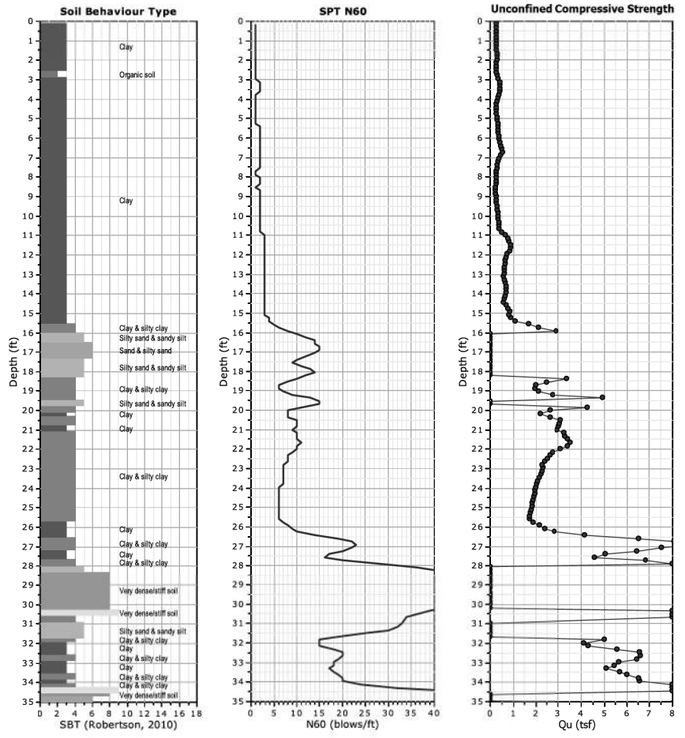
6/26/2023 3:14:08 PM

SCI Engineering, Inc.
650 Pierce Blvd, O'Fallon, IL 62269
Geotechnical Services
https://www.sciengineering.com/

CPT: B-101
F.A.S. Route 772
Section:10-04106-00-BR
Total depth: 35.11 ft, Date: 6/17/2021
Surface Elevation: 503.00 ft
Northing: 730193.1 Easting: 2361782.0
Section 26 Township: 3N Range: 8W
STA: 335+93 Offset: 18 ft RT

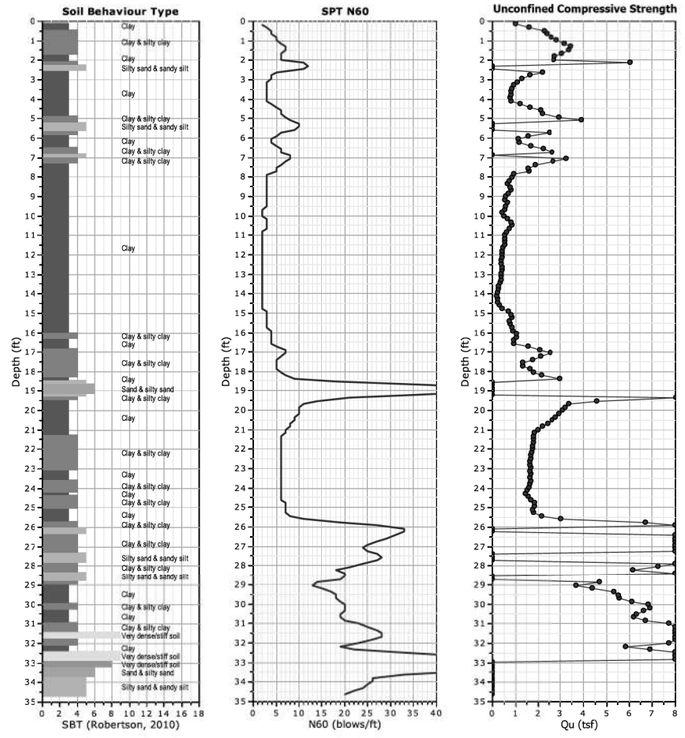
Project: Lebanon Road Realignment - 2009-3280.10
Location: Madison County, Illinois



SCI Engineering, Inc.
650 Pierce Blvd, O'Fallon, IL 62269
Geotechnical Services
https://www.sciengineering.com/

CPT: B-102
F.A.S. Route 772
Section:10-04106-00-BR
Total depth: 34.61 ft, Date: 6/17/2021
Surface Elevation: 503.00 ft
Northing: 730167.8 Easting: 2361719.9
Section 26 Towrship: 3N Range: 8W
STA: 336+50 Offset: 16 ft LT

Project: Lebanon Road Realignment - 2009-3280.10
Location: Madison County, Illinois



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1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:09 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOIL BORINGS
STRUCTURE NO. 060-3375
SHEET 8 OF 8 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	256
	STRUCTURE NO. 060-3375		CONTRACT NO. 97790	
		ILLINOIS	FED. AID PROJECT	

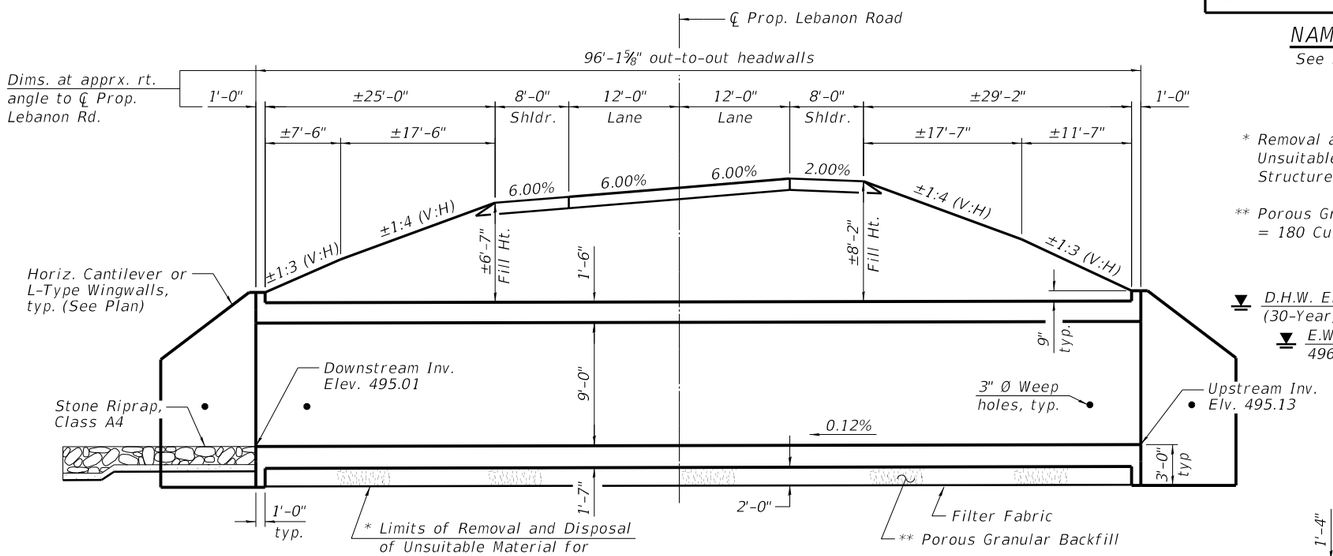
Benchmark: Chiseled "X" on Northeast Flange Bolt of Fire Hydrant
Station 50+11.00, Offset 101' Left, Elev 505.52
N: 729,810.6294 E: 2,362,188.3404

Existing Structure: None

Traffic control: Proposed Lebanon Road is being built on a new alignment.

TRIBUTARY TO CANTEEN CREEK
BUILT 20__ BY
COLLINSVILLE TOWNSHIP
F.A.S. RT. 772 SEC. 10-04106-00-BR
STATION 49+19.00
STR. NO. 060-3376 LOADING HL-93

NAME PLATE
See Std. 515001



LONGITUDINAL SECTION

* Removal and Disposal of Unsuitable Material for Structures = 321 Cu. Yd.

** Porous Granular Backfill = 180 Cu. yd.

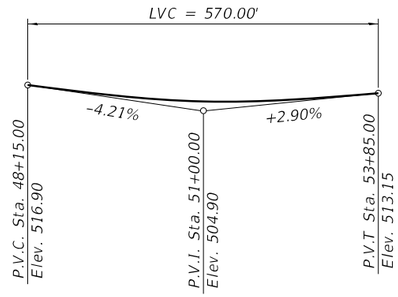
D.H.W. Elev. 503.31 (30-Year)
E.W.S. Elev.= 496.13

WATERWAY INFORMATION

Drainage Area = 1.07 sq. mi.

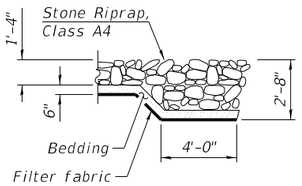
Exist. Low Grade Elev. 503.00 @ Sta. 51+35
Prop. Low Grade Elev. 509.79 @ Sta. 51+60

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head – Ft. Exist.	Head – Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	30	810	N/A	226.00	502.75	N/A	0.56	N/A	503.31
	50	932	N/A	226.00	503.23	N/A	0.36	N/A	503.59
Base	100	1110	N/A	226.00	503.87	N/A	0.47	N/A	504.34
Scour	200	1280	N/A	226.00	504.38	N/A	0.73	N/A	505.11
Max. Calc.	500	1530	N/A	226.00	504.91	N/A	1.27	N/A	506.18



PROFILE GRADE
(along ℄ Prop. Lebanon Road)

INDEX OF SHEETS



SECTION A-A

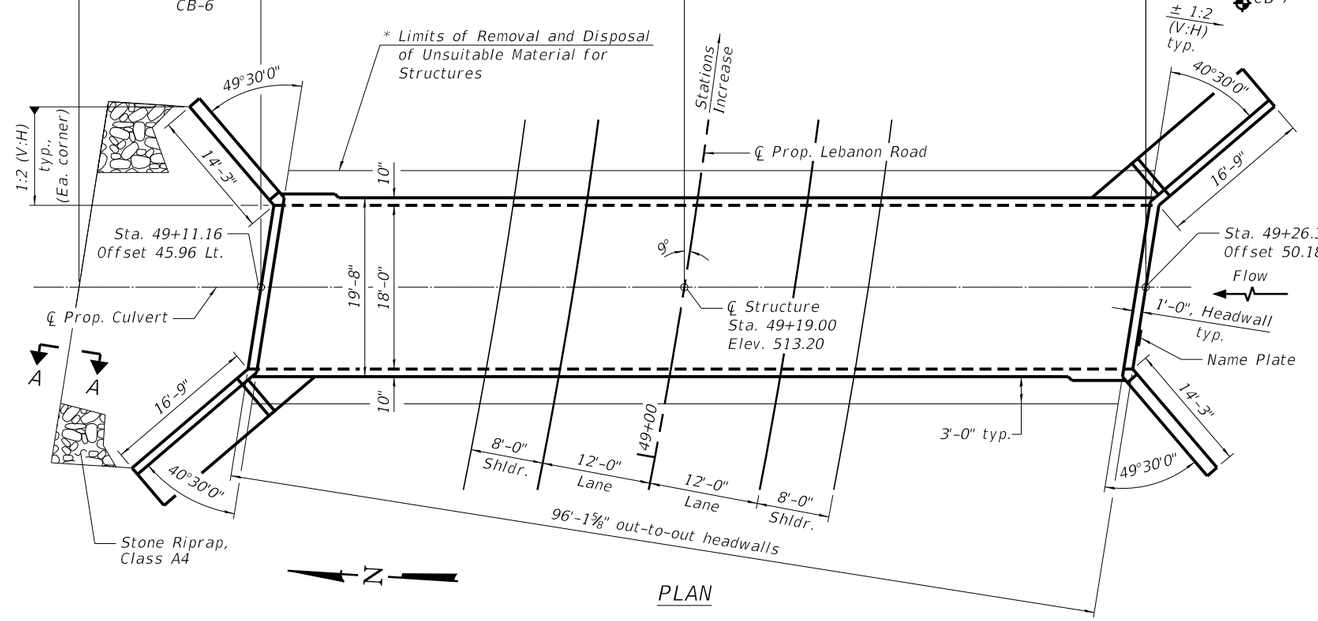
CURVE DATA
(Prop. Lebanon Rd.-Curve AM5)
P.I. Sta. = 47+30.50
Δ = 50° 13' 49" (LT)
D = 8° 40' 52"
R = 660.00'
T = 309.38'
L = 578.61'
E = 68.91'
e = 6.00%
T.R. = 33'
S.E. Run = 133'
P.C. Sta. = 44+21.12
P.T. Sta. = 44+99.74

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

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

DESIGN STRESSES
FIELD UNITS

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

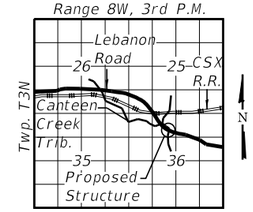


PLAN

"I certify that to the best of my knowledge, information and belief, this bridge/box culvert design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current 'AASHTO Standard Specifications for Highway Bridges'."

RONALD E. BREVILLE
081-005711
LICENSED
STRUCTURAL
ENGINEER
ST. LOUIS MO
STATE OF ILLINOIS

Date: 6 July 2023
Exp.: 30 November 2024



LOCATION SKETCH

GENERAL PLAN & ELEVATION
LEBANON ROAD OVER
TRIBUTARY TO CANTEEN CREEK
F.A.S. ROUTE 772 - SEC. 10-04106-00-BR
MADISON COUNTY
STATION 49+19.00
STRUCTURE NO. 060-3376

LOCHMUELLER GROUP
1928 SrA Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:14 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

BOX CULVERT
STRUCTURE NO. 060-3376
SHEET 1 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	257
	STRUCTURE NO. 060-3376	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

MODEL: Default
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6/26/2023 3:14:14 PM

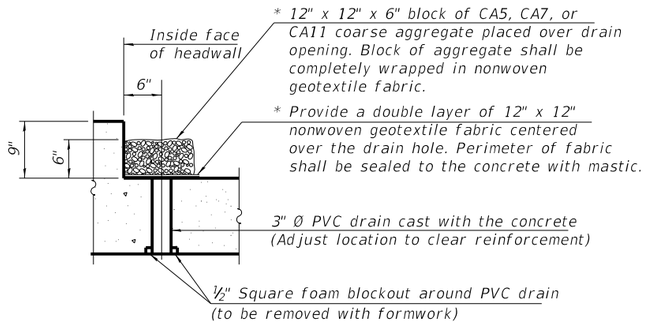
GENERAL NOTES

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

All exposed concrete corners and edges will be chamfered ¾-inch unless noted otherwise in the plans.

Reinforcement bars designated (E) shall be epoxy coated.

* Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01 of the Standard Specifications. The minimum weight of the fabric shall be 6 ounces per square yard.

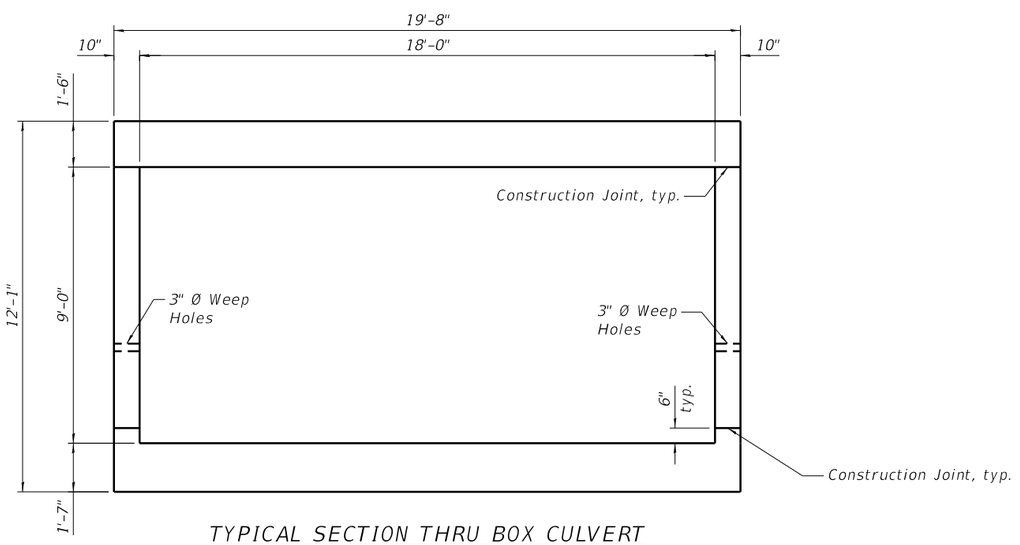


DRAIN DETAIL

(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.)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Backfill	Cu. Yd.	180
Stone Riprap, Class A4	Sq. Yd.	80
Filter Fabric	Sq. Yd.	349
Structure Excavation	Cu. Yd.	826
Removal and Disposal of Unsuitable Material for Structures	Cu. Yd.	321
Reinforcement Bars	Pound	68,590
Reinforcement Bars, Epoxy Coated	Pound	2,390
Name Plates	Each	1
Concrete Box Culverts	Cu. Yd.	318.4



TYPICAL SECTION THRU BOX CULVERT

LOCHMUELLER GROUP
1928 S/A Bradley P. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA		REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB		REVISED -	
PLOT SCALE =		DRAWN - LEC		REVISED -	
PLOT DATE = 6/26/2023	3:14:15 PM	CHECKED - REB		REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

GENERAL NOTES AND TOTAL BILL OF MATERIAL
STRUCTURE NO. 060-3376
SHEET 2 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	258
	STRUCTURE NO. 060-3376		CONTRACT NO. 97790	
	ILLINOIS FED. AID PROJECT			

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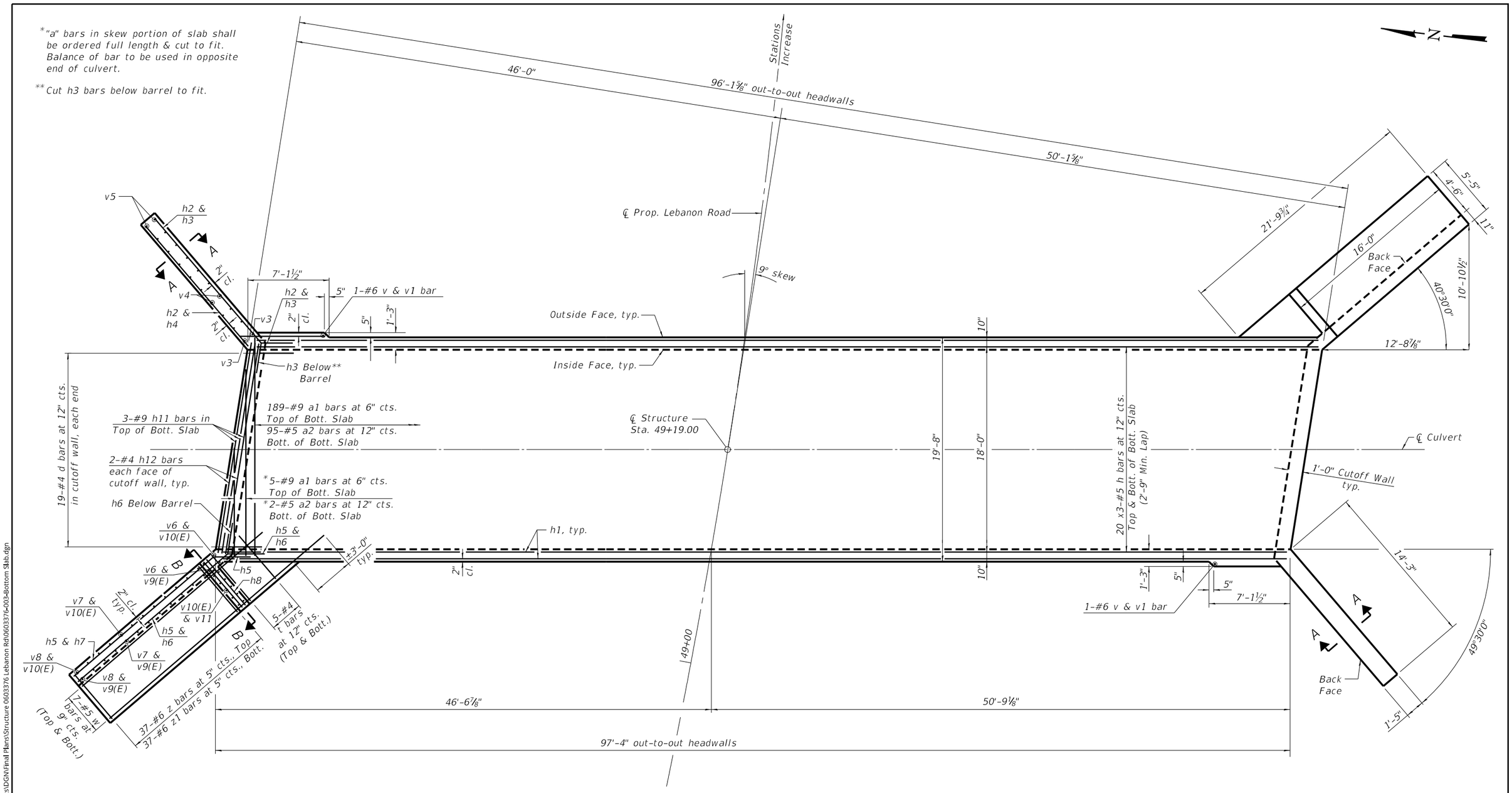
*"a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.

**Cut h3 bars below barrel to fit.



BOTTOM SLAB PLAN

(Showing wingwall reinforcement)

Notes:

A distance of half the length of the wingwall but not less than 7'-1½" of the barrel shall be poured monolithically with the wingwalls.

At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.

For Sections A-A and B-B, Bar Bending details, and Bill of Materials, see Sheet 6 of 7.

LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:16 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

BOTTOM SLAB LAYOUT
STRUCTURE NO. 060-3376
SHEET 3 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	259
	STRUCTURE NO. 060-3376		CONTRACT NO. 97790	
	ILLINOIS	FED. AID PROJECT		

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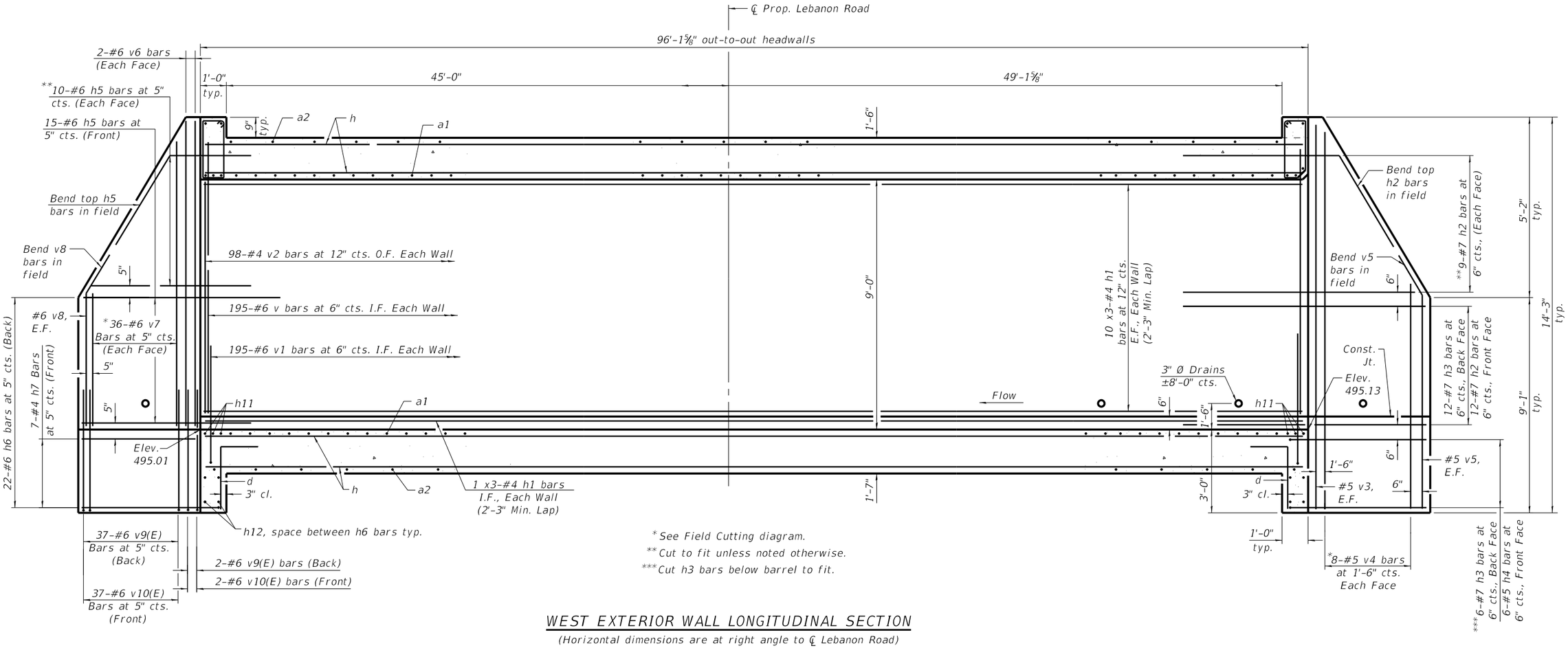

*See Field Cutting diagram.
**Cut to fit unless noted otherwise.
***Cut h3 bars below barrel to fit.

WEST EXTERIOR WALL LONGITUDINAL SECTION

(Horizontal dimensions are at right angle to ℄ Lebanon Road)
(Looking East)
(East Exterior Wall is mirrored about ℄ roadway)

Notes:
Bars indicated thus 12 x 4-#5 etc. indicates 12 lines of bars with 4 lengths per line.
At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.
For Bar Bending details, Bill of Materials, Section Thru Headwall, and Field Cutting Diagram, see Sheet 6 of 7.
O.F. denotes Outside Face.
I.F. denotes Inside Face.

LOCHMUELLER GROUP
1928 S/A Bradley Pl. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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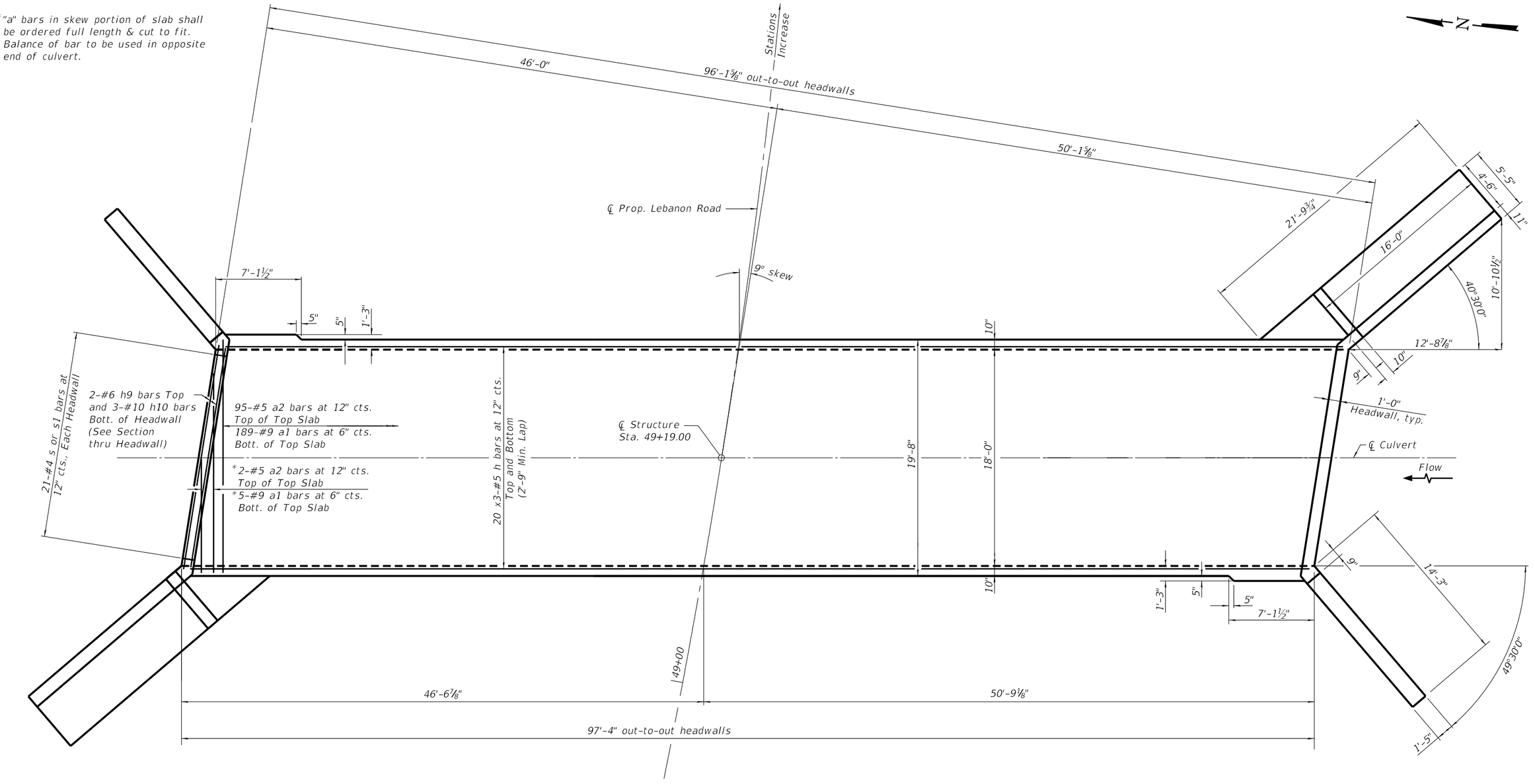
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

EXTERIOR WALL LAYOUT
STRUCTURE NO. 060-3376
SHEET 4 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	260
	STRUCTURE NO. 060-3376		CONTRACT NO. 97790	
	ILLINOIS	FED. AID PROJECT		

*"a" bars in skew portion of slab shall be ordered full length & cut to fit. Balance of bar to be used in opposite end of culvert.



TOP SLAB PLAN

Notes:

A distance of half the length of the wingwall but not less than 7'-1½" of the barrel shall be poured monolithically with the wingwalls.

At the Contractor's option, a longer v1 bar may be ordered to replace the v bar. No reduction in quantities shall be made for this substitution.

For Bar Bending details, Bill of Materials, and Section Thru Headwall, see Sheet 6 of 7.

For wingwall reinforcement layout, see Bottom Slab Plan on Sheet 3 of 7.

LOCHMUELLER GROUP
1928 S/A Bradley B. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

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COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

TOP SLAB LAYOUT
STRUCTURE NO. 060-3376

SHEET 5 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	261
	STRUCTURE NO. 060-3376	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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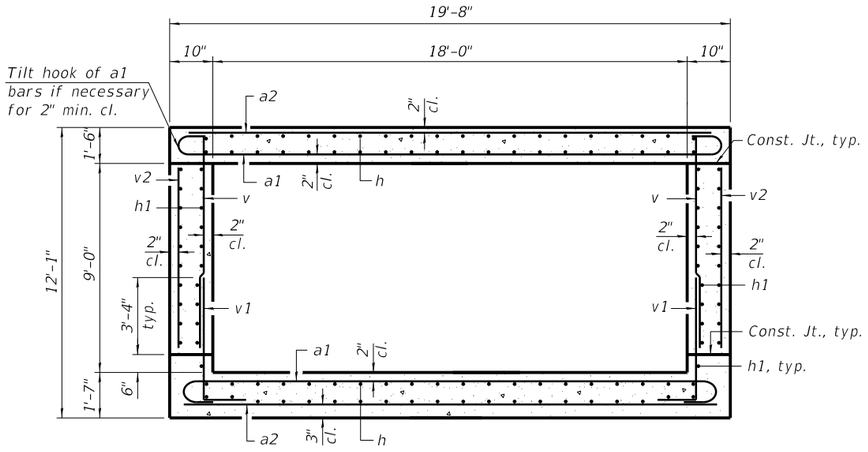
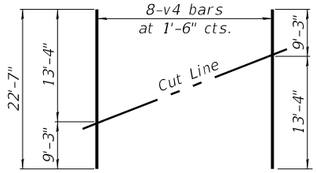
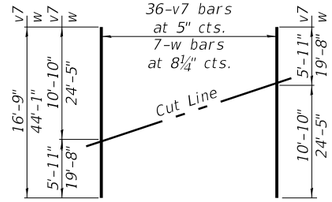


SECTION THRU BARREL



BAR v4 - FIELD CUTTING DIAGRAM

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



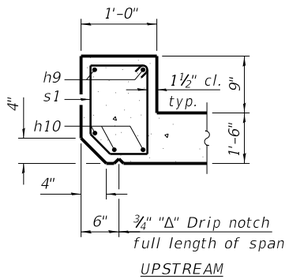
BARS v7 & w FIELD CUTTING DIAGRAM

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

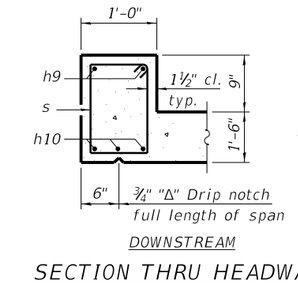
*Cut to fit unless noted otherwise.

**Cut h3 bars below barrel to fit.

***Cut h5 bars in sloped portion of wingwall to fit unless noted otherwise.

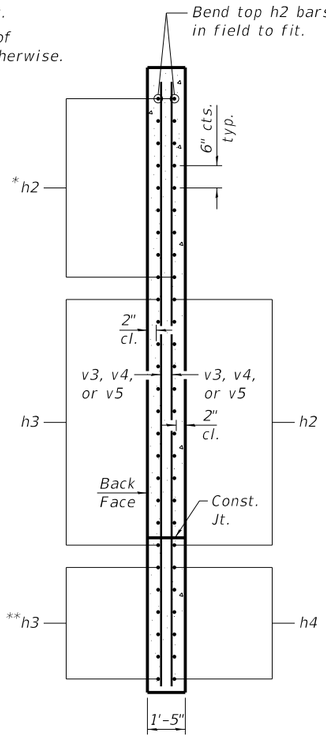


UPSTREAM

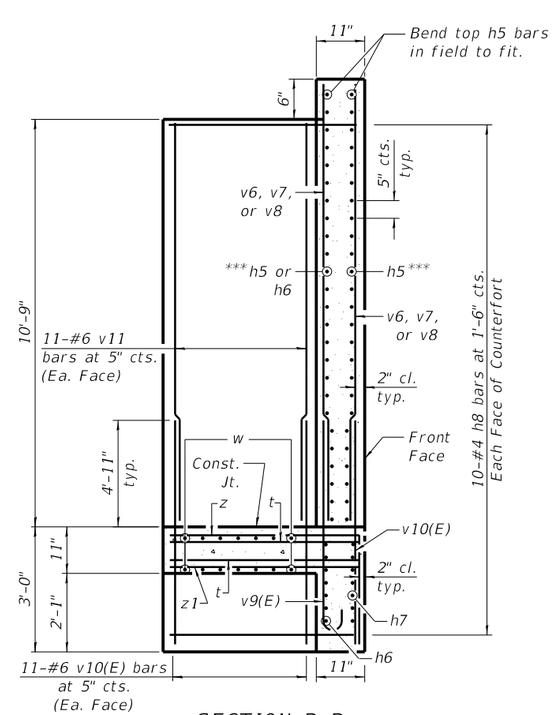


DOWNSTREAM

SECTION THRU HEADWALL



SECTION A-A

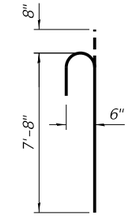


SECTION B-B

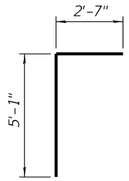
BILL OF MATERIAL

	Bar	No.	Size	Length	Shape
	a1	388	#9	21'-10"	
	a2	194	#5	19'-4"	
	d	38	#4	4'-5"	
	h	240	#5	34'-2"	
	h1	126	#4	33'-10"	
	h2	60	#7	20'-2"	
	h3	36	#7	17'-3"	
	h4	12	#4	13'-11"	
	h5	70	#6	19'-11"	
	h6	44	#6	19'-10"	
	h7	14	#4	16'-5"	
	h8	40	#6	5'-1"	
	h9	4	#6	19'-4"	
	h10	6	#10	19'-4"	
	h11	6	#9	19'-4"	
	h12	8	#4	19'-4"	
	s	21	#4	6'-3"	
	s1	21	#4	6'-2"	
	t	10	#4	5'-1"	
	v	392	#6	9'-8"	
	v1	392	#6	6'-2"	
	v2	196	#4	8'-2"	
	v3	4	#5	13'-10"	
****	v4	16	#5	22'-7"	
	v5	2	#5	13'-7"	
	v6	8	#6	10'-11"	
****	v7	72	#6	16'-9"	
	v8	2	#6	10'-7"	
	v9(E)	78	#6	8'-4"	
	v10(E)	122	#6	7'-8"	
	v11	44	#6	10'-5"	
****	w	14	#5	44'-1"	
	z	74	#6	7'-8"	
	z1	74	#4	5'-1"	
	Concrete Box Culverts	Cu. Yd.		318.4	
	Reinforcement Bars	Pound		68,590	
	Reinforcement Bars, Epoxy Coated	Pound		2,390	

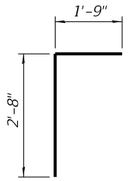
**** See Field Cutting Diagram.



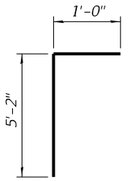
BAR v9(E)



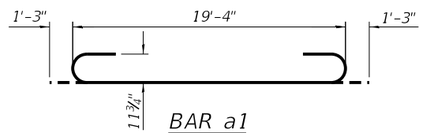
BAR z



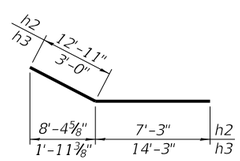
BAR d



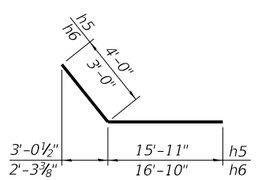
BAR v1



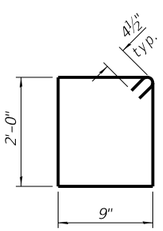
BAR a1



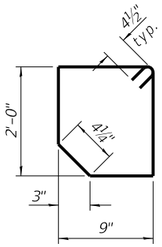
BARS h2 & h3



BARS h5 & h6



BAR s



BAR s1

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LOCHMUELLER GROUP
1928 S/A Bradley P. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda		DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670		CHECKED - REB	REVISED -	
PLOT SCALE =		DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023	3:14:18 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SECTIONS AND DETAILS
STRUCTURE NO. 060-3376
SHEET 6 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	262
	STRUCTURE NO. 060-3376	CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

Illinois Department of Transportation
Division of Highways
SCI Engineering, Inc.

SOIL BORING LOG

Page 1 of 1

Date 06/02/14

ROUTE F.A.S. Route 772 **DESCRIPTION** Lebanon Road over Tributary to Canteen Creek (SCI No. 2009-3280.10) **LOGGED BY** SCI (BDG)

SECTION 10-04106-00-BR **LOCATION** Collinsville, Illinois **SEC.** 26 **TWP.** 3N **RNG.** 8W
Northing: 729708.8 **Easting:** 2361951.2

COUNTY Madison **DRILLING METHOD** CME-550 w/CFA **HAMMER TYPE** Automatic

STRUCT. NO. 060-3376
Station 49+19.00

BORING NO. CB-6
Station 49+46
Offset 54 ft LT
Ground Surface Elev. 504.4 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 496.4 ft ▼
Upon Completion 500.4 ft ▽
After N/A **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
503.9 6" TOPSOIL			
SILTY CLAY LOAM: Brown, with fine sand, A-4	1 2 2	0.6 S/15	22
500.4 ▽ / 500.2 SAND: Brown, fine, A-3	3 3 3	0.8 S/20	17
-5 SILTY CLAY: Brown, A-6			
497.7 SANDY LOAM: Brown, A-2	3 1 1	<0.25 P	19
496.4 ▼ CLAY: Brown, trace fine sand, A-6 *One-Dimensional Consolidation and Atterberg Limits Tests performed*	ST		26
494.8 -10 CLAY LOAM: Brown, A-6	1 1 1	<0.25 P	21
Unconsolidated Unconfined Triaxial Strength and Atterberg Limits Tests performed	ST	1.1	22
-15 488.9 CLAY: Brown and gray, A-7	4 5 8	4.5 B	20
With fine sand -20	3 5 7	1.8 B	20
CLAY: Brown and gray, A-7 *(continued)*			
	3 4 7	1.7 B	20
-25	3 5 7	1.4 B	21
Trace gravel	3 4 6	1.4 B	22
476.4 CLAY LOAM: Gray, trace gravel, A-7			
-30	4 5 6	1.7 B	16
471.4 SANDSTONE: Bluish-gray, weathered, argillaceous	9 33 50/3"	2.6 S/15	14
469.7 -35 Boring terminated at 34.75 ft.			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer)
AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

Illinois Department of Transportation
Division of Highways
SCI Engineering Inc

SOIL BORING LOG

Page 1 of 1

Date 06/03/14

ROUTE F.A.S. Route 772 **DESCRIPTION** Culvert Boring Lebanon Road Realignment - Collinsville, Illinois **LOGGED BY** SCI (BDG)

SECTION 10-04106-00-BR **LOCATION** Proposed Lebanon Road, **SEC.** 36, **TWP.** 3N, **RNG.** 8W

COUNTY Madison **DRILLING METHOD** CME-550 w/CFA **HAMMER TYPE** Automatic

STRUCT. NO. DBL 10'x8' PCC
Station 49+19.00

BORING NO. CB-7
Station 49+59
Offset 61 ft RT
Ground Surface Elev. 504.8 ft

Surface Water Elev. ft
Stream Bed Elev. ft

Groundwater Elev.:
First Encounter 498.8 ft ▼
Upon Completion None ft
After N/A **Hrs.** N/A ft

DEPTH (ft)	BLOWS (/6")	UCS Qu (tsf)	MOIST (%)
504.4 5" TOPSOIL			
SILTY CLAY: Dark brown, trace roots, A-6	1 1 2	1.5 P	21
-5	2 2 2	0.7 S/10	23
▼ UU test performed, 20 psi confining pressure	ST	0.7	22
497.3 LOAM: Brown, with fine sand and silt, A-6	WOH WOH 1	<0.25 P	24
-10	ST	NR	
No sample recovery			
491.6 CLAY: Brown, with fine to coarse sand, trace gravel, A-7	3 4 6	2.8 B	20
-15	4 6 7	3.2 S/15	21
-20	3 4 5	1.9 B	19
CLAY: Brown, with fine to coarse sand, trace gravel, A-7 *(continued)*			
	3 3 5	2.0 B	20
Becomes gray			
-25 Trace sand and gravel	3 3 5	1.8 B	20
	5 6 7	1.9 B	20
474.8 -30	4 6 6	1.3 B	20
Boring terminated at 30.0 ft.			
-35			
-40			

The Unconfined Compressive Strength (UCS) Failure Mode is indicated by (B-Bulge, S-Shear, P-Penetrometer) AASHTO Classifications are based on visual classifications unless otherwise noted BBS, form 137 (Rev. 8-99)

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LOCHMUELLER GROUP
1928 S/A Bradley R. Smith Drive
Troy, IL 62294
PHONE: 618.667.1400

USER NAME = linda	DESIGNED - CPA	REVISED -	
Illinois Design Firm Number 184.001670	CHECKED - REB	REVISED -	
PLOT SCALE =	DRAWN - LEC	REVISED -	
PLOT DATE = 6/26/2023 3:14:19 PM	CHECKED - REB	REVISED -	

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SOIL BORINGS
STRUCTURE NO. 060–3376
SHEET 7 OF 7 SHEETS

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	263
	STRUCTURE NO. 060-3376		CONTRACT NO. 97790	
	ILLINOIS	FED. AID PROJECT		

Benchmark: Chiseled "X" on Northeast Flange Bolt of Fire Hydrant
Station 50+11.00, Offset 101' Left, Elev 505.52
N: 729,810.6294 E: 2,362,188.3404

Existing Structure: None

Traffic control: Proposed Lockmann Road is being built on a new alignment.

INDEX OF SHEETS

TRIBUTARY TO CANTEEN CREEK
BUILT 20__ BY
COLLINSVILLE TOWNSHIP
STA 232+71.84
SEC. 10-04106-00-BR
LOADING HL-93

NAME PLATE

See Std. 515001

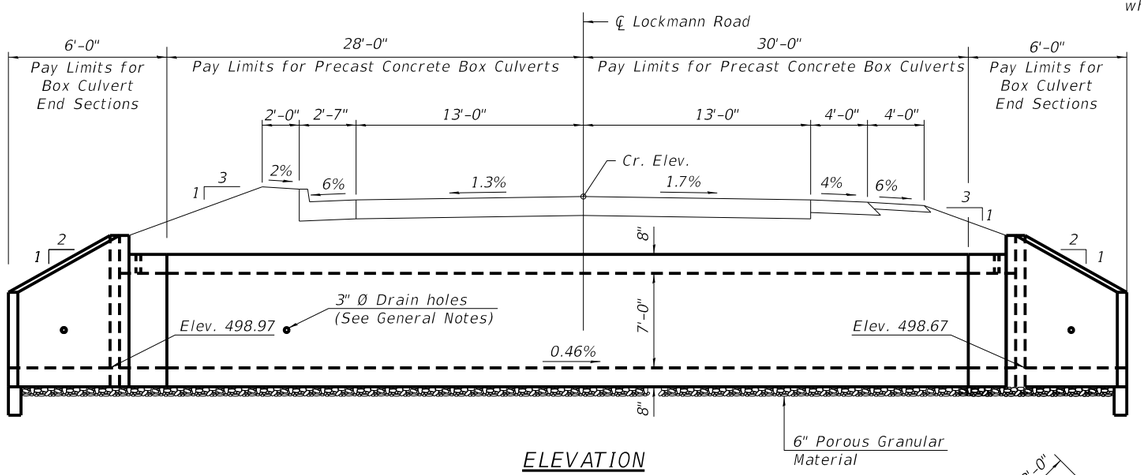
GENERAL NOTES

The design fill height for this box is 5 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.

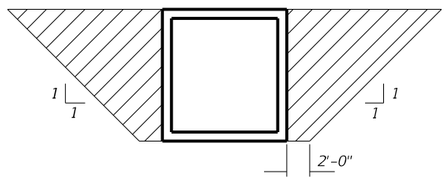
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.

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 in the required excavation areas on the sides of the box culvert from the top of the box culvert to the bottom of the box culvert. This area of PGE is included in the Porous Granular Embankment pay item. The 6-inch thick layer of porous granular material required under the precast concrete box culvert, according to Section 540.06 of the standard specifications, shall also apply to the end sections. Cost of this porous granular material will not be paid for separately but shall be included in the unnit price of the work for which it is required.

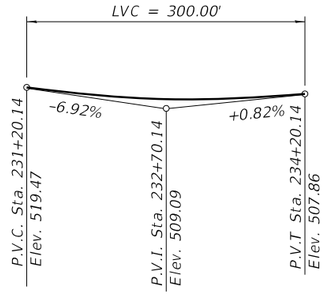


ELEVATION



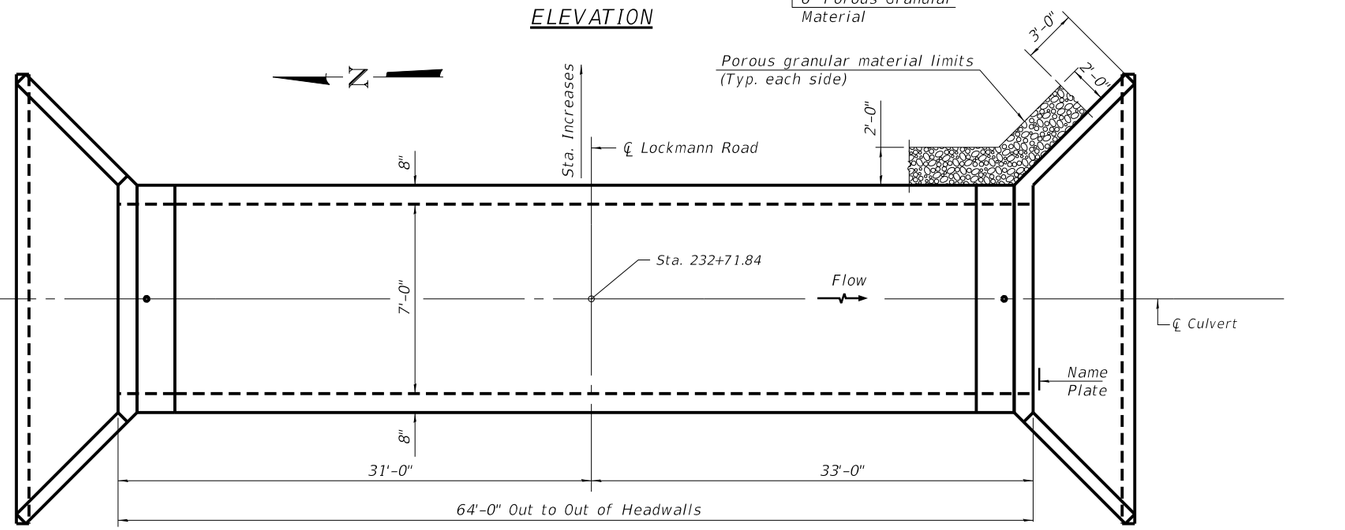
PAY LIMITS FOR POROUS GRANULAR EMBANKMENT

(Hatched area)

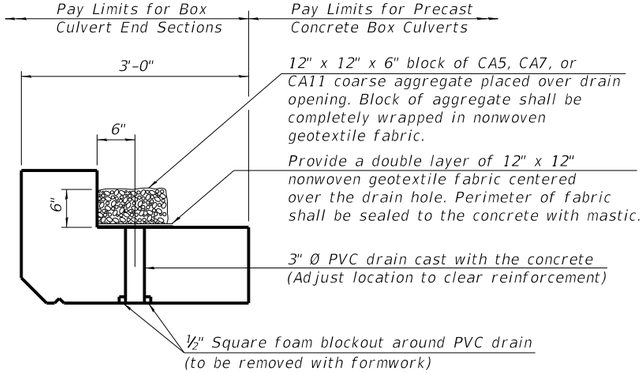


PROFILE GRADE

(along ℄ Prop. Lebanon Road)



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.)

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Name Plates *	Each	1
Box Culvert End Sections, Culvert No. 1	Each	2
Precast Concrete Box Culverts, 7 x 7	Foot	58
Porous Granular Embankment *	Cu. Yd.	258

* Not a total quantity

WATERWAY INFORMATION

Drainage Area = 0.33 sq. mi. Low Grade Elev. = 507 @ Sta. 233+80

Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft. Exist.	Opening Sq. Ft. Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
	20	270	NA	49	510.42	NA	-4.16	NA	506.26
Design	30	305	NA	49	510.59	NA	-3.81	NA	506.78
	50	348	NA	49	510.8	NA	-3.36	NA	507.44
Base	100	411	NA	49	511.1	NA	-2.74	NA	508.36
Max. Calc.	500	563	NA	49	511.63	NA	-1.06	NA	510.57

DESIGN SPECIFICATIONS

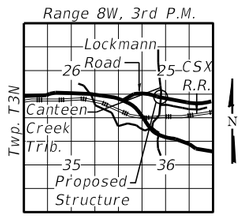
2020 AASHTO LRFD Bridge Design Specifications
Customary U.S. Units, 9th Edition

LOADING HL-93

DESIGN STRESSES

PRECAST UNITS

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



LOCATION SKETCH

GENERAL PLAN & ELEVATION
LOCKMANN ROAD OVER
TRIBUTARY TO CANTEEN CREEK
SEC. 10-04106-00-BR
MADISON COUNTY
STATION 232+71.84

FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Box Culvert Lockmann.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
	PLOT SCALE = 0.1667 ' / in.	DRAWN - LEC	REVISED -
Default	PLOT DATE = 6/26/2023	CHECKED - LWJ	REVISED -
		DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST CONCRETE BOX CULVERT DETAILS

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
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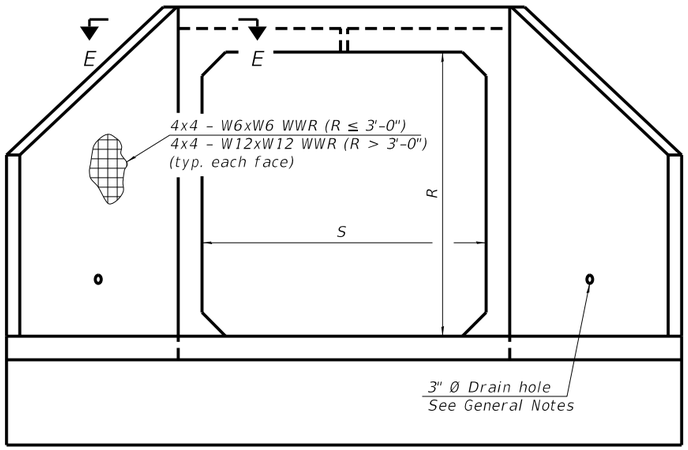
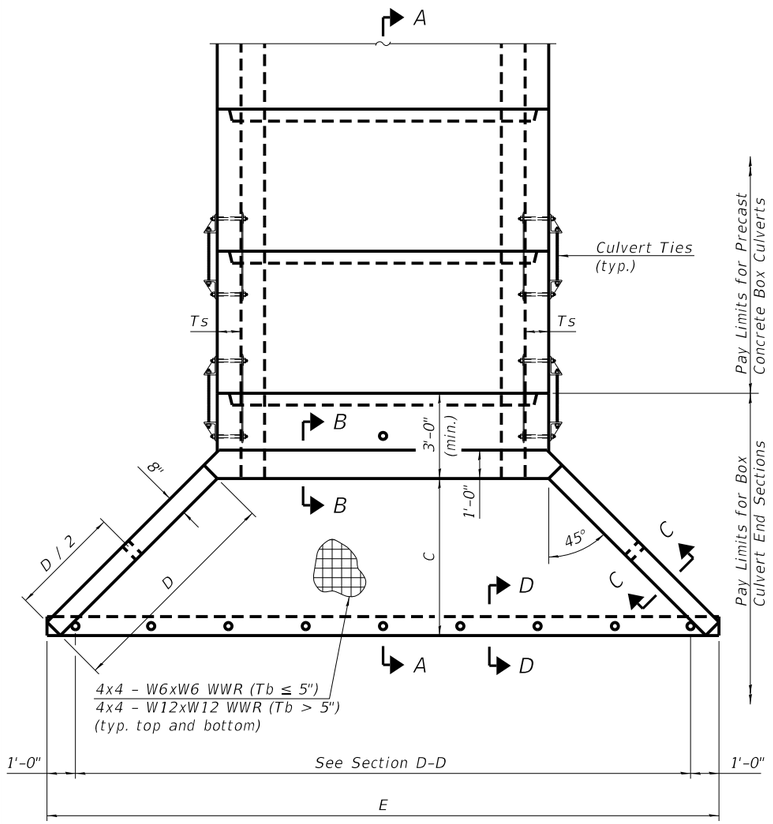
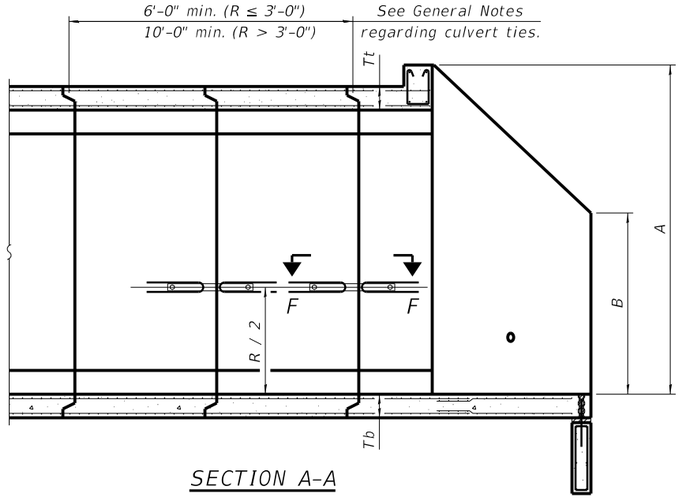
		CONTRACT NO. 97790		
		ILLINOIS FED. AID PROJECT		



END VIEW



PLAN



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 ½" 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
3'-0"	2'-0"	7"	6"	4"	3'-4"	2'-2"	2'-10⅝"	4'-1"	10'-4⅝"	2.8	Yes
3'-0"	2'-0"	4"	4"	4"	3'-1"	2'-1"	2'-7⅞"	3'-9"	9'-11"	2.3	Yes
3'-0"	3'-0"	7"	6"	4"	4'-4"	2'-8"	3'-10⅝"	5'-6"	12-4⅝"	3.7	Yes
3'-0"	3'-0"	4"	4"	4"	4'-1"	2'-7"	3'-7⅞"	5'-2"	11'-11"	3.1	Yes
4'-0"	2'-0"	7.5"	6"	5"	3'-4½"	2'-2½"	2'-11⅜"	4'-2"	11'-8"	3.3	Yes
4'-0"	2'-0"	5"	5"	5"	3'-2"	2'-1"	2'-8½"	3'-10"	11'-2⅜"	2.8	Yes
4'-0"	3'-0"	7.5"	6"	5"	4'-4½"	2'-8½"	3'-11⅜"	5'-7"	13'-8⅛"	4.2	Yes
4'-0"	3'-0"	5"	5"	5"	4'-2"	2'-7"	3'-8½"	5'-3"	13'-2⅜"	3.7	Yes
4'-0"	4'-0"	7.5"	6"	5"	5'-4½"	3'-2½"	4'-11⅜"	7'-0"	15'-8⅛"	5.3	Yes
4'-0"	4'-0"	5"	5"	5"	5'-2"	3'-1"	4'-8⅝"	6'-8"	15'-2½"	4.7	Yes
5'-0"	2'-0"	8"	7"	6"	3'-5"	2'-3"	2'-11⅜"	4'-2"	12'-10"	3.9	Yes
5'-0"	2'-0"	6"	6"	6"	3'-3"	2'-2"	2'-10"	4'-0"	12'-7¼"	3.5	Yes
5'-0"	3'-0"	8"	7"	6"	4'-5"	2'-9"	3'-11⅜	5'-7"	14'-10⅛"	4.9	Yes
5'-0"	3'-0"	6"	6"	6"	4'-3"	2'-8"	3'-10"	5'-5"	14'-7¼"	4.5	Yes
5'-0"	4'-0"	8"	7"	6"	5'-5"	3'-3"	4'-11⅜"	7'-0"	16'-10⅛"	6.1	Yes
5'-0"	4'-0"	6"	6"	6"	5'-3"	3'-2"	4'-9¼"	6'-9"	16'-5⅞"	5.5	Yes
5'-0"	5'-0"	8"	7"	6"	6'-5"	3'-9"	5'-11⅜"	8'-5"	18'-10⅛"	7.4	Yes
5'-0"	5'-0"	6"	6"	6"	6'-3"	3'-8"	5'-9¼"	8'-2"	18'-5⅞"	6.8	Yes
6'-0"	2'-0"	8"	7"	7"	3'-5"	2'-3"	2'-11⅜"	4'-2"	14'-0"	4.3	Yes
6'-0"	2'-0"	7"	7"	7"	3'-4"	2'-2"	2'-10⅝"	4'-1"	13'-10⅝"	4.2	Yes
6'-0"	3'-0"	8"	7"	7"	4'-5"	2'-9"	3'-11⅜"	5'-7"	16'-0⅛"	5.4	Yes
6'-0"	3'-0"	7"	7"	7"	4'-4"	2'-8"	3'-10⅝"	5'-6"	15'-10⅝"	5.2	Yes
6'-0"	4'-0"	8"	7"	7"	5'-5"	3'-3"	4'-11⅜"	7'-0"	18'-0⅛"	6.5	Yes
6'-0"	4'-0"	7"	7"	7"	5'-4"	3'-2"	4'-10¾"	6'-11"	17'-10¾"	6.5	Yes
6'-0"	5'-0"	8"	7"	7"	6'-5"	3'-9"	5'-11⅜"	8'-5"	20'-0⅛"	8.0	Yes
6'-0"	5'-0"	7"	7"	7"	6'-4"	3'-8"	5'-10¾"	8'-4"	19'-10¾"	7.8	Yes
6'-0"	6'-0"	8"	7"	7"	7'-5"	4'-3"	6'-11½"	9'-10"	22'-0¼"	9.5	Yes
6'-0"	6'-0"	7"	7"	7"	7'-4"	4'-2"	6'-10¾"	9'-9"	21'-10¾"	9.3	Yes
7'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11⅜"	4'-2"	15'-2"	4.9	Yes
7'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11⅜"	5'-7"	17'-2⅛"	6.1	Yes
7'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11⅜"	7'-0"	19'-2⅛"	7.4	Yes
7'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11⅜"	8'-5"	21'-2⅛"	8.9	Yes
7'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11½"	9'-10"	23'-2¼"	10.6	Yes
7'-0"	7'-0"	8"	8"	8"	8'-5"	4'-9"	7'-11½"	11'-3"	25'-2¼"	12.3	Yes
8'-0"	2'-0"	8"	8"	8"	3'-5"	2'-3"	2'-11⅜"	4'-2"	16'-2"	5.3	Yes
8'-0"	3'-0"	8"	8"	8"	4'-5"	2'-9"	3'-11⅜"	5'-7"	18'-2⅛"	6.5	Yes
8'-0"	4'-0"	8"	8"	8"	5'-5"	3'-3"	4'-11⅜"	7'-0"	20'-2⅛"	7.8	Yes
8'-0"	5'-0"	8"	8"	8"	6'-5"	3'-9"	5'-11⅜"	8'-5"	22'-2⅛"	9.3	Yes
8'-0"	6'-0"	8"	8"	8"	7'-5"	4'-3"	6'-11½"	9'-10"	24'-2¼"	11.0	Yes
9'-0"	2'-0"	9"	9"	9"	3'-6"	2'-3"	3'-0¾"	4'-4"	17'-6⅞"	6.2	Yes
9'-0"	3'-0"	9"	9"	9"	4'-6"	2'-9"	4'-0¾"	5'-9"	19'-6⅞"	7.5	Yes
9'-0"	4'-0"	9'	9"	9"	5'-6"	3'-3"	5'-0¾"	7'-2"	21'-6⅞"	9.0	Yes
9'-0"	5'-0"	9"	9"	9"	6'-6"	3'-9"	6'-0⅞"	8'-7"	23'-7"	10.6	Yes
9'-0"	6'-0"	9"	9"	9"	7'-6"	4'-3"	7'-0½"	9'-11"	25'-5⅝"	12.4	Yes
10'-0"	2'-0"	10"	10"	10"	3'-7"	2'-4"	3'-1½"	4'-5"	18'-10¼"	7.1	No
10'-0"	3'-0"	10"	10"	10"	4'-7"	2'-10"	4'-1½"	5'-10"	20'-10¼"	8.6	No
10'-0"	4'-0"	10"	10"	10"	5'-7"	3'-4"	5'-1½"	7'-3"	22'-10⅜"	10.2	Yes
10'-0"	5'-0"	10"	10"	10"	6'-7"	3'-10"	6'-1½"	8'-8"	24'-10⅜"	12.0	Yes
10'-0"	6'-0"	10"	10"	10"	7'-7"	4'-4"	7'-1½"	10'-1"	26'-10⅜"	13.9	Yes
11'-0"	2'-0"	11"	11"	11"	3'-8"	2'-4"	3'-2⅞"	4'-7"	20'-3⅛"	8.2	No
11'-0"	3'-0"	11"	11"	11"	4'-8"	2'-10"	4'-2⅞"	6'-0"	22'-3⅛"	9.8	No
11'-0"	4'-0"	11"	11"	11"	5'-8"	3'-4"	5'-2¼"	7'-4"	24'-1¾"	11.5	Yes
11'-0"	5'-0"	11"	11"	11"	6'-8"	3'-10"	6'-2¼"	8'-9"	26'-1¾"	13.3	Yes
11'-0"	6'-0"	11"	11"	11"	7'-8"	4'-4"	7'-2¼"	10'-2"	28'-1⅞"	15.5	Yes
12'-0"	2'-0"	12"	12"	12"	3'-9"	2'-5"	3'-3⅝"	4'-8"	21'-6½"	9.3	No
12'-0"	3'-0"	12"	12"	12"	4'-9"	2'-11"	4'-3⅝"	6'-1"	23'-6½"	11.1	No
12'-0"	4'-0"	12"	12"	12"	5'-9"	3'-5"	5'-3⅝"	7'-6"	25'-6⅝"	13.0	Yes
12'-0"	5'-0"	12"	12"	12"	6'-9"	3'-11"	6'-3⅝"	8'-11"	27'-6⅝"	14.1	Yes
12'-0"	6'-0"	12"	12"	12"	7'-9"	4'-5"	7'-3⅝"	10'-4"	29'-6⅞"	17.4	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.

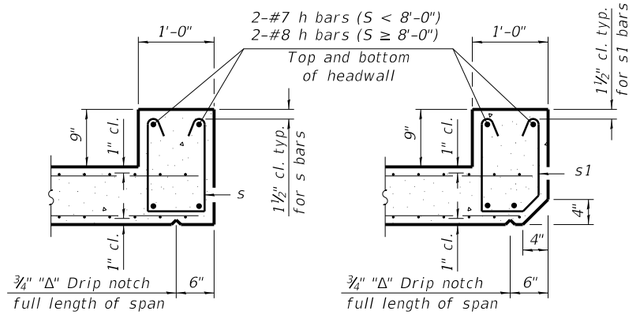
FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Box Culvert Lockmann.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - LWJ	REVISED -
Default	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST CONCRETE BOX CULVERT APRON END SECTION DETAILS – STRUCTURE NO.

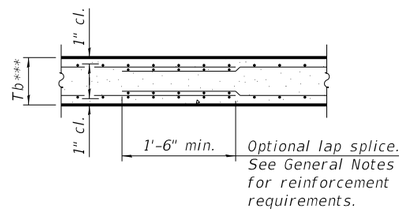
SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	265
		CONTRACT NO. 97790		
		ILLINOIS FED. AID PROJECT		

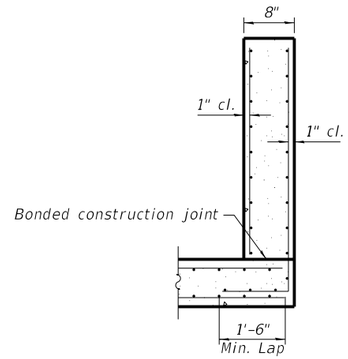


SECTION B-B
(Top slab at downstream end)

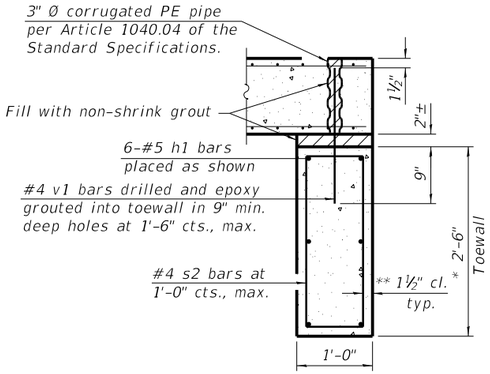
SECTION B-B
(Top slab at upstream end)



SECTION B-B
(Bottom Slab)

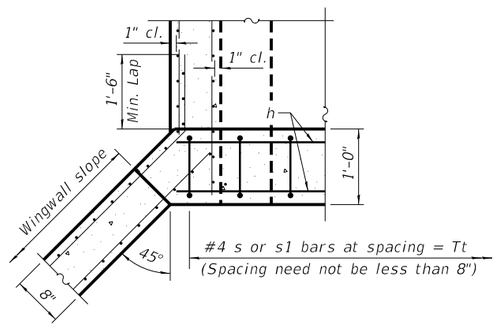


SECTION C-C

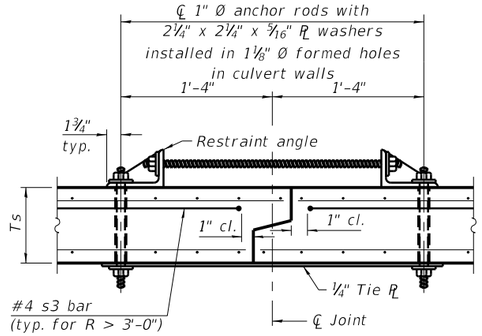


SECTION D-D

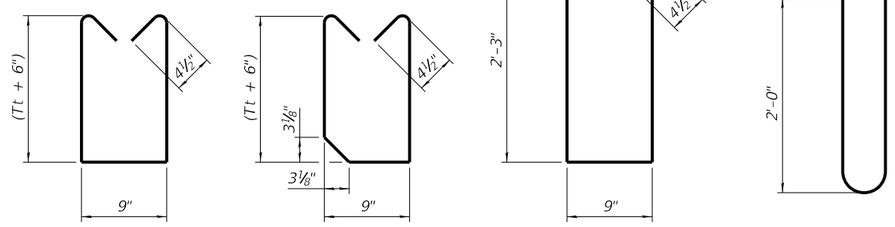
*** This dimension shall be increased by 2" for CIP construction.



SECTION E-E



SECTION F-F
(Showing culvert tie details)

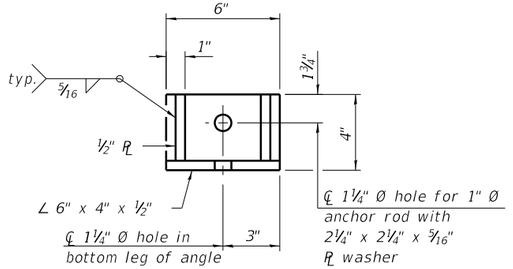


BAR s

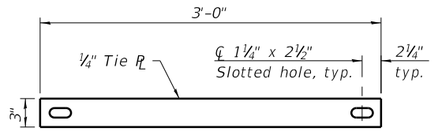
BAR s1

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. 2¼"x2¼"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 ½ 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.

SCB-AES 2-17-2017

FILE NAME = S:\Projects\409-0027-01HY Lebanon Rd\dgn\Box Culvert Lockmann.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
	PLOT SCALE = 0.1667 ' / in.	DRAWN - LEC	REVISED -
Default	PLOT DATE = 6/26/2023	CHECKED - LWJ	REVISED -
		DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

PRECAST CONCRETE BOX CULVERT APRON END
SECTION DETAILS – STRUCTURE NO.

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	266
		CONTRACT NO. 97790		
		ILLINOIS FED. AID PROJECT		

Benchmark: Chiseled "X" on Northeast Flange Bolt of Fire Hydrant
Station 50+11.00, Offset 101' Left, Elev 505.52
N: 729,810.6294 E: 2,362,188.3404

Existing Structure: None

Traffic control: Proposed Lebanon Road is being built on a new alignment.

INDEX OF SHEETS

TRIBUTARY TO CANTEEN CREEK
BUILT 20__ BY
COLLINSVILLE TOWNSHIP
STA 49+47.29
SEC. 10-04106-00-BR
LOADING HL-93

NAME PLATE

See Std. 515001

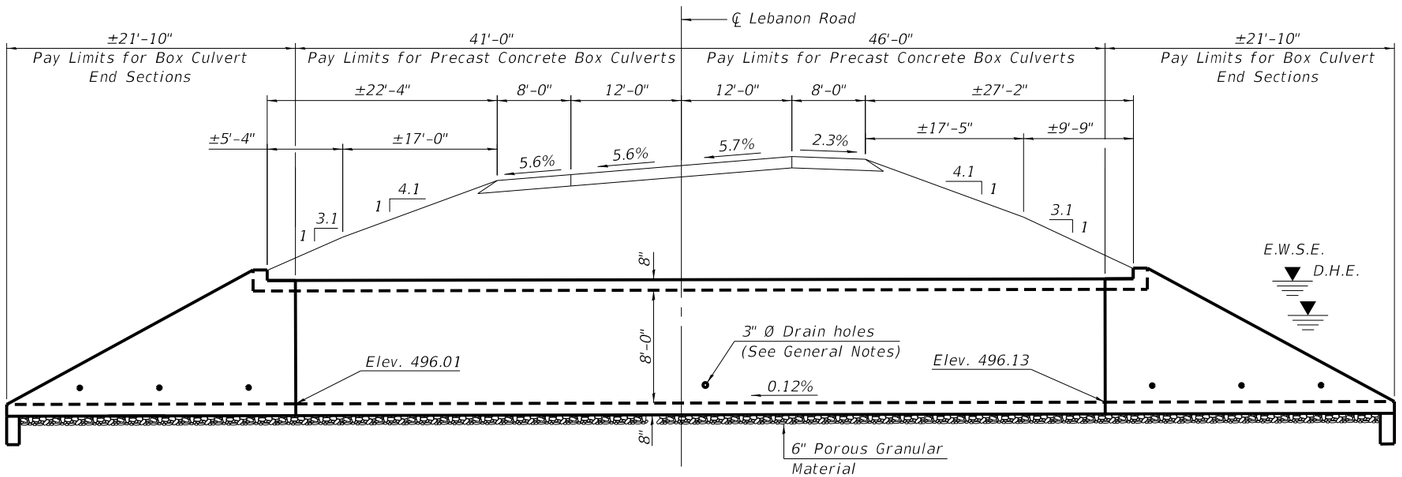
GENERAL NOTES

The design fill height for this box is 8 ft. The precast box culvert sections shall conform to the requirements of ASTM C 1577.

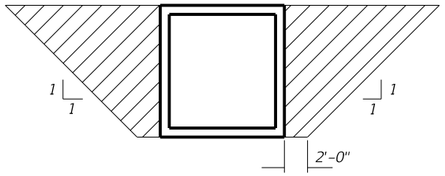
Drain holes shall be provided on exterior culvert walls for each precast box segment with a clear rise greater than 3 ft. The drain hole shall be located within 1/3 of the clear rise of the box culvert, shall not intercept the haunch, and shall conform to the requirements of Article 503.11 of the Standard Specification.

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 in the required excavation areas on the sides of the box culvert from the top of the box culvert to the bottom of the box culvert. This area of PGE is included in the Porous Granular Embankment pay item. The 6-inch thick layer of porous granular material required under the precast concrete box culvert, according to Section 540.06 of the standard specifications, shall also apply to the end sections. Cost of this 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.

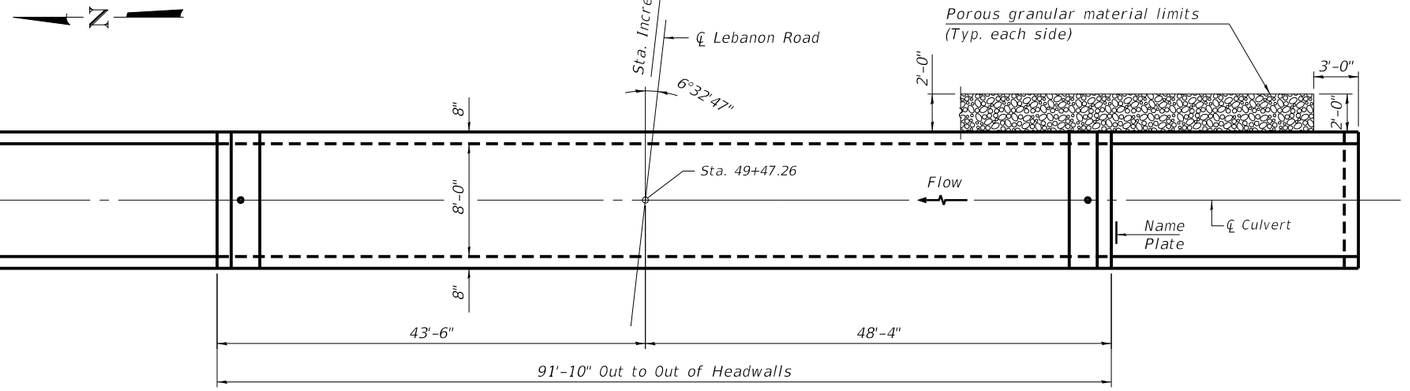


ELEVATION

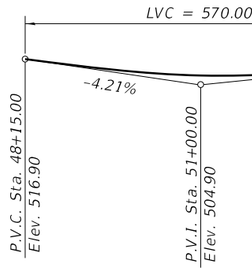


PAY LIMITS FOR POROUS GRANULAR EMBANKMENT

(Hatched area)



PLAN



PROFILE GRADE

(along ℄ Prop. Lebanon Road)

CURVE DATA

(Prop. Lebanon Rd.-Curve AM5)
P.I. Sta. = 47+30.50
Δ = 50° 13' 49" (LT)
D = 8° 40' 52"
R = 660.00'
T = 309.38'
L = 578.61'
E = 68.91'
e = 6.00%
T.R. = 33'
S.E. Run = 133'
P.C. Sta. = 44+21.12
P.T. Sta. = 44+99.74

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Name Plates *	Each	1
Box Culvert End Sections, Culvert No. 2	Each	2
Precast Concrete Box Culverts, 8 x 8	Foot	87
Porous Granular Embankment *	Cu. Yd.	496

* Not a total quantity

WATERWAY INFORMATION

Drainage Area = 1.07 sq. mi.
Exist. Low Grade Elev. 503.00 @ Sta. 51+35
Prop. Low Grade Elev. 509.79 @ Sta. 51+60

Flood	Freq. Yr.	Q C.F.S.	Opening Ft² Exist.	Opening Ft² Prop.	Nat. H.W.E.	Head - Ft. Exist.	Head - Ft. Prop.	Headwater El. Exist.	Headwater El. Prop.
Design	30	810	N/A	226.00	502.75	N/A	0.56	N/A	503.31
	50	932	N/A	226.00	503.23	N/A	0.36	N/A	503.59
Base	100	1110	N/A	226.00	503.87	N/A	0.47	N/A	504.34
Scour	200	1280	N/A	226.00	504.38	N/A	0.73	N/A	505.11
Max. Calc.	500	1530	N/A	226.00	504.91	N/A	1.27	N/A	506.18

DESIGN SPECIFICATIONS

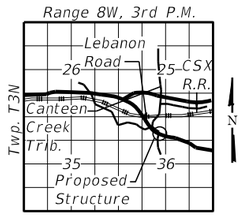
2020 AASHTO LRFD Bridge Design Specifications
Customary U.S. Units, 9th Edition

LOADING HL-93

DESIGN STRESSES

PRECAST UNITS

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

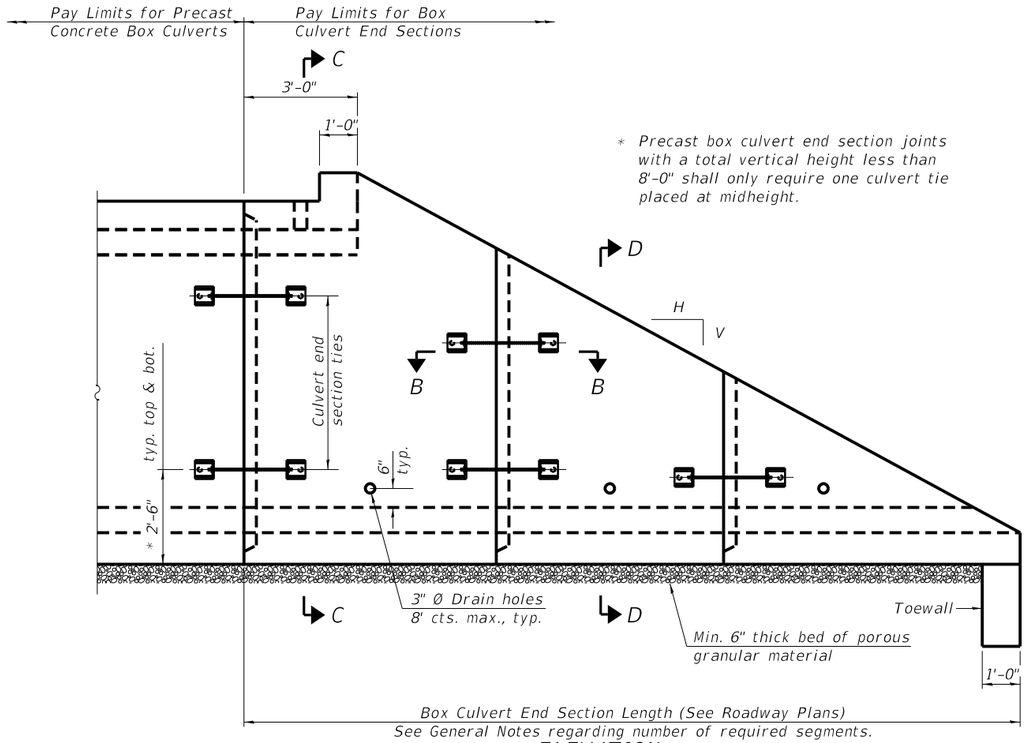


LOCATION SKETCH

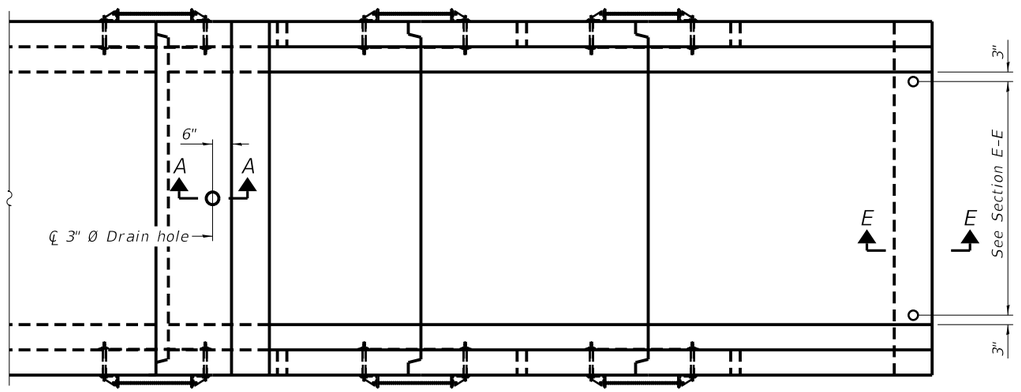
GENERAL PLAN & ELEVATION
LEBANON ROAD OVER
TRIBUTARY TO CANTEEN CREEK
SEC. 10-04106-00-BR
MADISON COUNTY
STATION 49+47.26

FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Box Culvert Lebanon.dgn Default	USER NAME = linda	DESIGNED - SJC	REVISED -	COLLINSVILLE TOWNSHIP LEBANON ROAD OVER CSX RAILROAD	PRECAST CONCRETE BOX CULVERT DETAILS
	PLOT SCALE = 0.1667 ' / in.	CHECKED - LWJ	REVISED -		
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -		SCALE: SHEET 1 OF 3 SHEETS STA. TO STA.

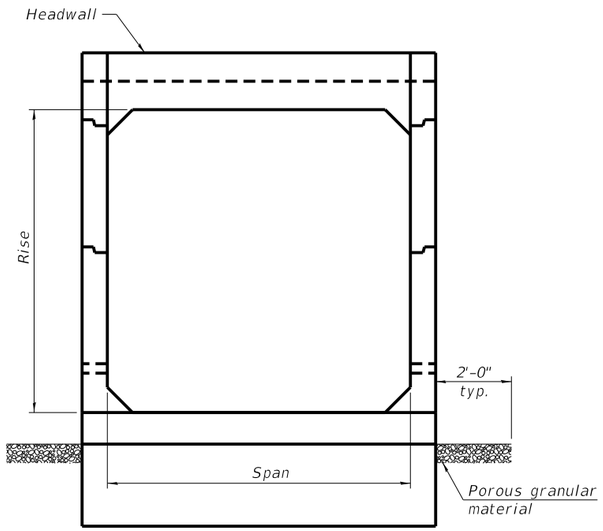
F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	267
		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			



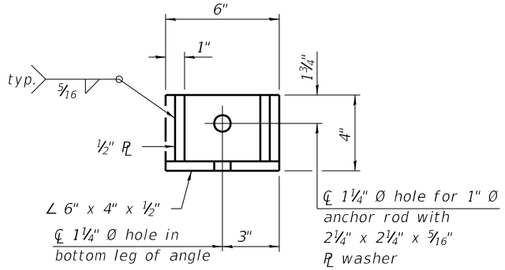
ELEVATION



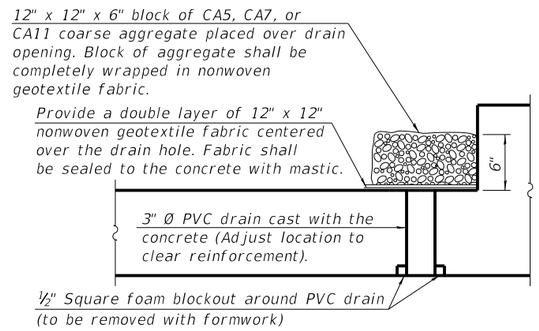
PLAN



END VIEW

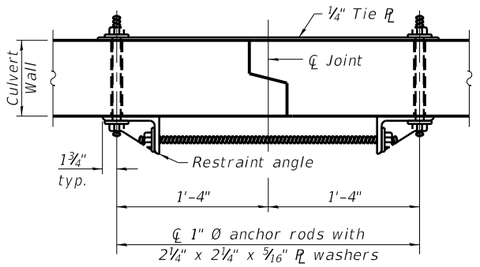


RESTRAINT ANGLE DETAIL



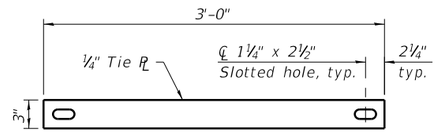
SECTION A-A

(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.)



SECTION B-B

(Showing end section tie details)



TIE PLATE DETAIL

GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. This work will be measured for payment as each, with each end of each culvert being one each. End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.

Typical box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be according to the requirements of 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.

Number of segments shown in Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

See roadway plans for embankment slope (V:H).

1" Ø anchor rods for the culvert ties shall conform to the requirements of ASTM F1554, Grade 105. Structural steel for 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. 2¼" x 2¼" x 5/16" 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 ½ 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.

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 contract unit price for Box Culvert End Sections of the culvert number specified.

Drain holes shall conform to the requirements of Article 503.11 of the Standard Specifications unless noted otherwise.

Nonwoven geotextile fabric shall conform to the requirements of Article 1080.01. The minimum weight of the fabric shall be 6 oz. / sq. yd..

For end sections with traversable pipe grate systems, see grate detail sheet for required modifications.

SCB-TES

2-17-2017

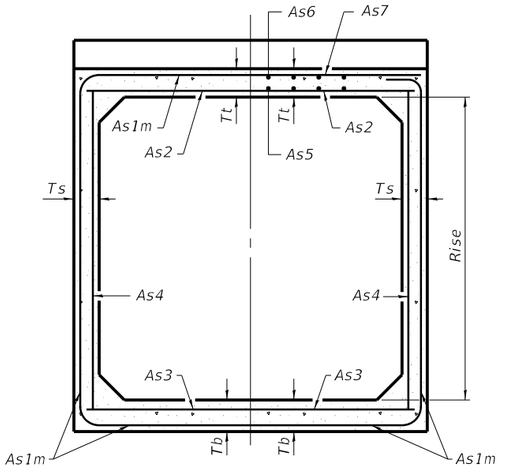
FILE NAME = S:\Projects\409-0027-0HY Lebanon Rd\dgn\Box Culvert Lebanon.dgn	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 0.1667 ' / in.	CHECKED - LWJ	REVISED -
Default	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO.

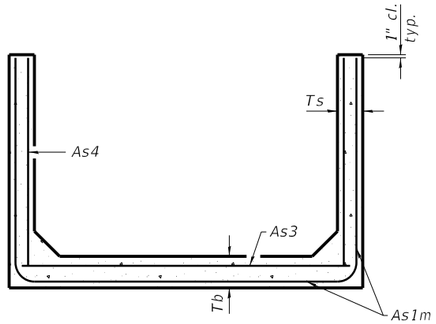
SCALE: | SHEET 2 OF 3 SHEETS | STA. | TO STA.

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	268
		CONTRACT NO. 97790		
		ILLINOIS FED. AID PROJECT		

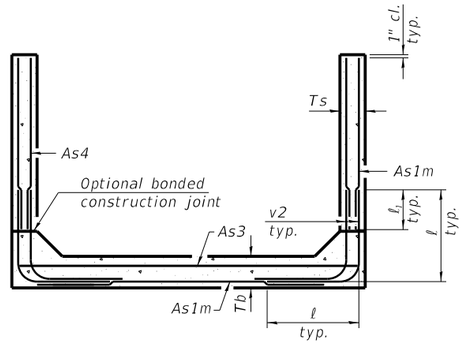


(Design Earth Cover ≥ 2 ft) (Design Earth Cover < 2 ft)

SECTION C-C



SECTION D-D



ALTERNATE SECTION D-D

As1m REINFORCEMENT

(in.²/ ft)

Ts (in.) \ Rise (ft)	2	3	4	5	6	7	8	9	10	11	12
4	0.19	0.17									
5	0.26	0.21	0.18								
6	0.22	0.26	0.23	0.22							
7	0.25	0.33	0.59	0.27	0.28						
8	0.40	0.35	0.43	0.39	0.36	0.34	0.40				
9	0.44	0.39	0.35	0.43	0.40	0.37	0.36	0.48			
10	0.48	0.42	0.38	0.47	0.44	0.41	0.38	0.42	0.56		
11	0.52	0.45	0.54	0.50	0.46	0.44	0.41	0.46	0.50	0.65	
12	0.55	0.49	0.58	0.54	0.50	0.48	0.45	0.46	0.46	0.61	0.75

(As1m reinforcement based upon welded wire reinforcement conforming to AASHTO M 55 or M 221.

ℓ_j DIMENSION

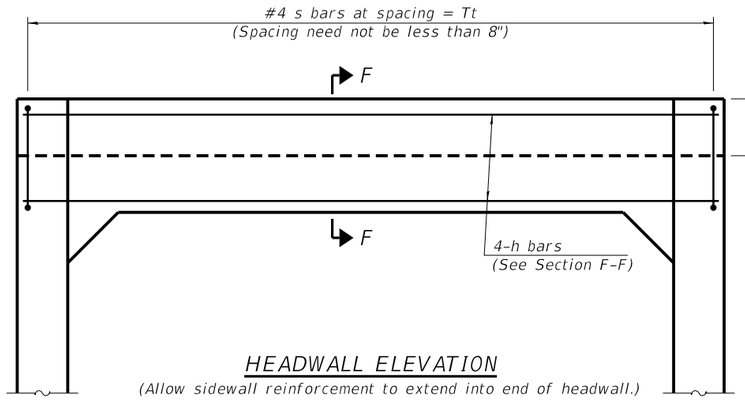
#3 bar = 2'-0"
#4 bar = 2'-8"
#5 bar = 3'-4"
#6 bar = 3'-11"

Notes:

Alternate Section D-D is provided to allow the Contractor the option of casting the bottom slab of the end section first followed by construction of the sidewalls using conventional forming methods. Shop drawings that detail slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval when using Alternate Section D-D.

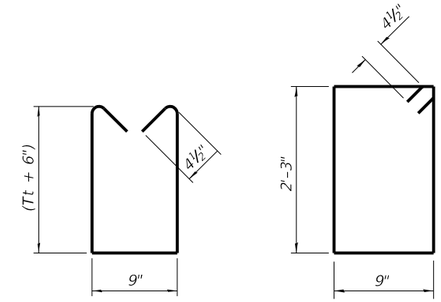
The size and spacing of the v2 bars shall provide a minimum reinforcement area along each face of the walls (in.²/ft.) equal to 1.10*(As1m). v2 bars may consist of #3 thru #6 size reinforcement bars and the longitudinal spacing shall not exceed the lesser of the wall thickness or 8 inches.

Bonded construction joints shall be prepared according to Article 503.09 of the Standard Specifications.



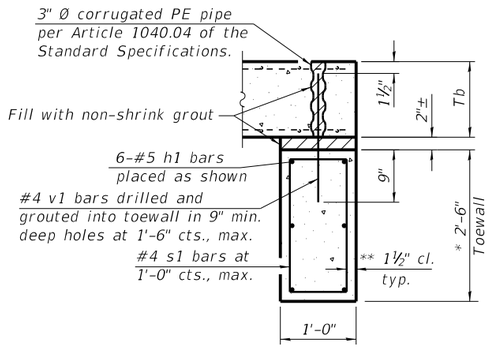
HEADWALL ELEVATION

(Allow sidewall reinforcement to extend into end of headwall.)



BAR s

BAR s1



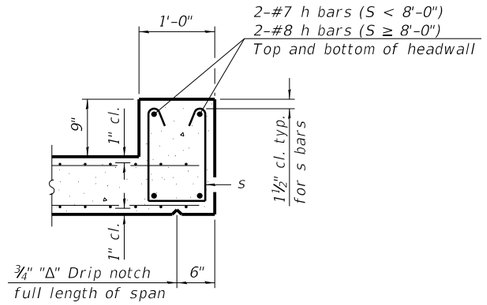
SECTION E-E

TOEWALL CONSTRUCTION SEQUENCE

1. Perform excavation and construct toewall.
2. Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications 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 the 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.



SECTION F-F

SCB-TES 2-17-2017

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		DRAWN - LEC	REVISED -
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Default	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

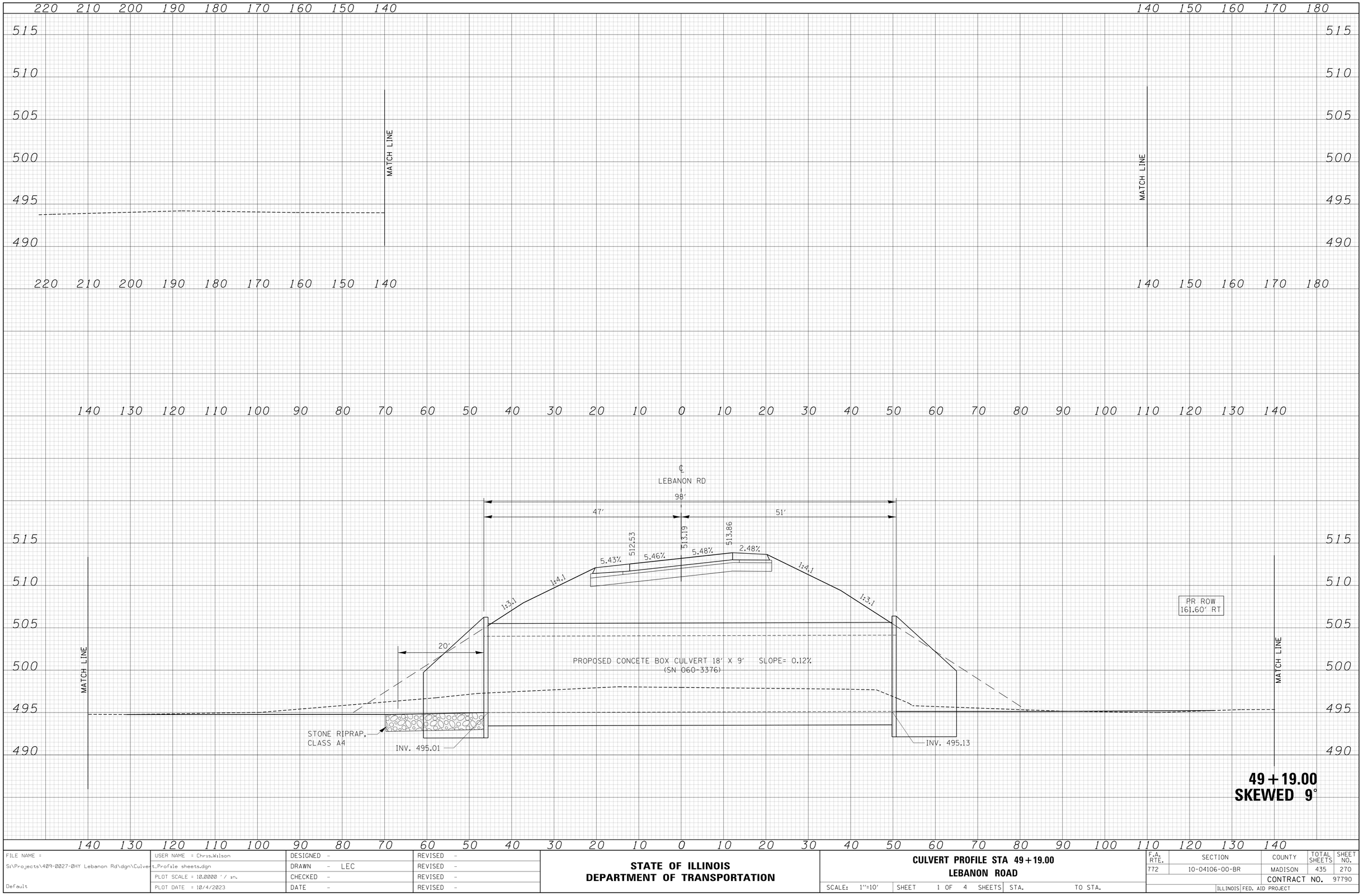
SINGLE CELL PRECAST BOX CULVERT TAPERED END SECTIONS
STRUCTURE NO.

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

F.A.S. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	269
		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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

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



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		DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT PROFILE STA 49+19.00
LEBANON ROAD

SCALE: 1"=10' | SHEET 1 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	270
		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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

ORIGINAL SURVEY		BY	DATE
NOTE BOOK	SURVEYED		
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	AREAS		
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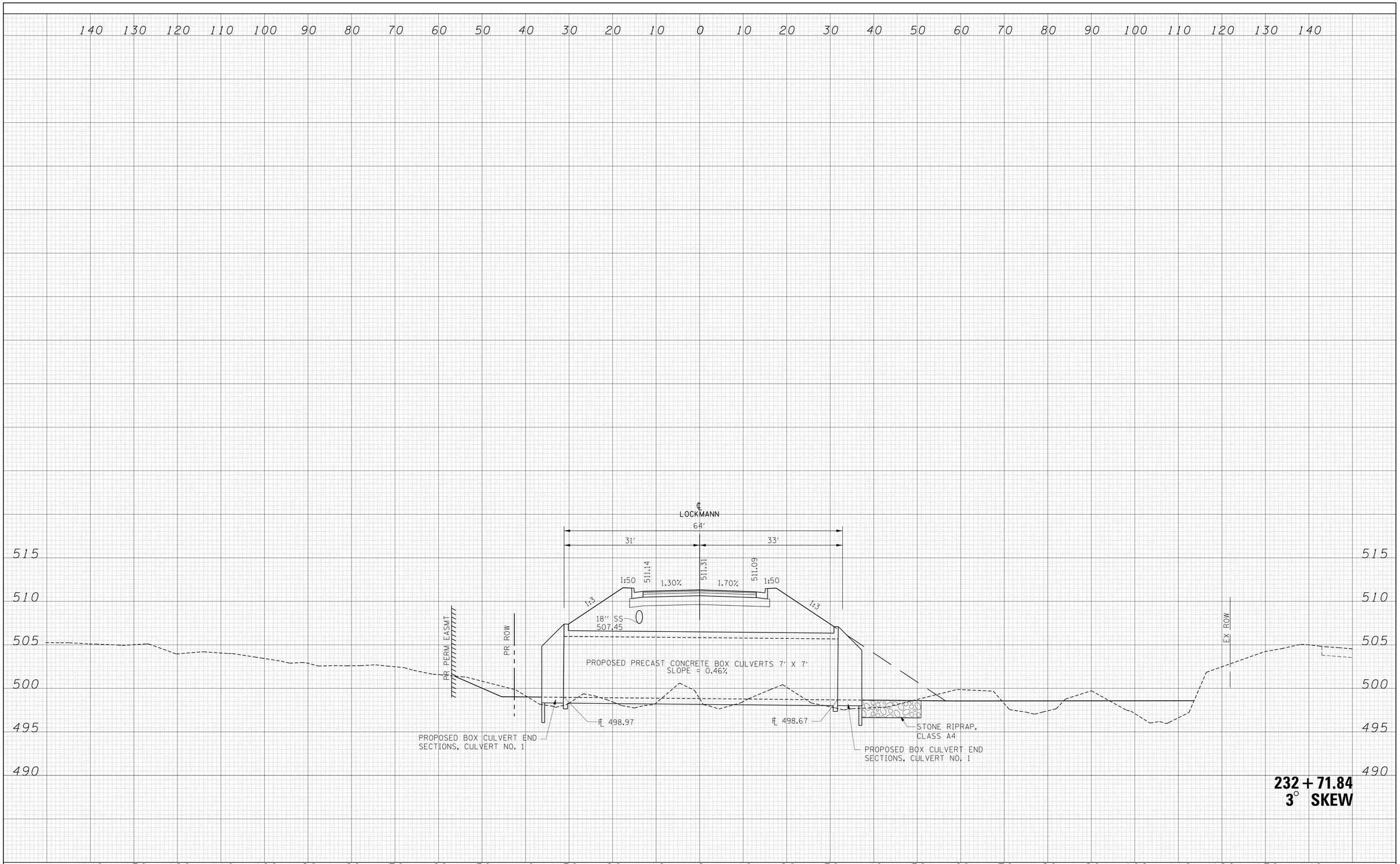

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Default	PLOT DATE = 10/4/2023	DATE -	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

CULVERT PROFILE STA 232 + 71.54
LOCKMANN ROAD

SCALE: 1"=10' | SHEET 2 OF 4 SHEETS | STA. | TO STA.

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	271
		CONTRACT NO. 97790		
	ILLINOIS FED. AID PROJECT			

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	PLOTTED		
NOTE BOOK	TEMPLATE		
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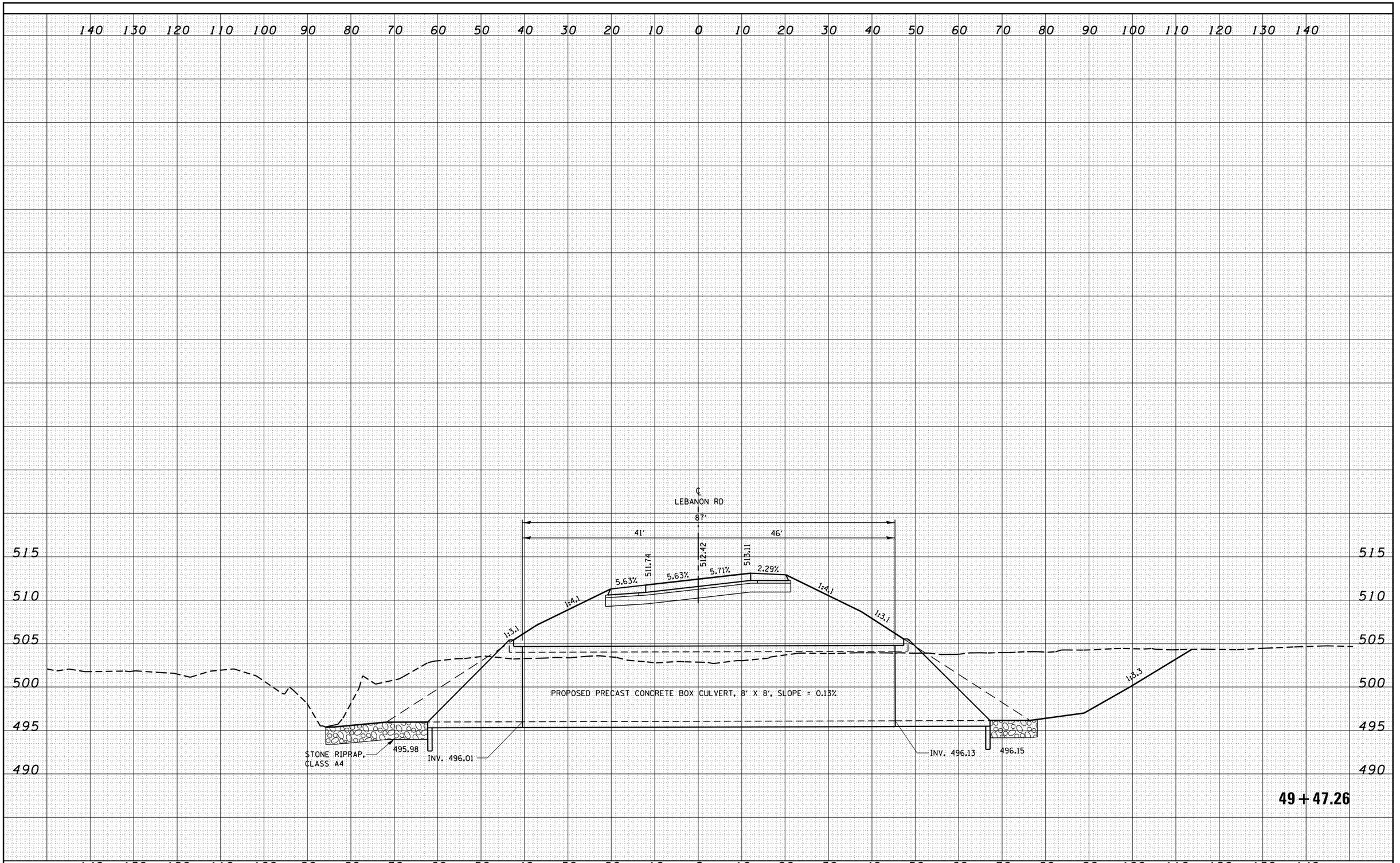

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	SURVEYED		
	PLOTTED		
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		

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	PLOT DATE = 8/30/2023	DATE - ·	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON RD OVER CSX RAILROAD

CULVERT PROFILE STA 49+47.26
LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 3 OF 4 SHEETS | STA. | TO STA.

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	272
		CONTRACT NO. 97790		

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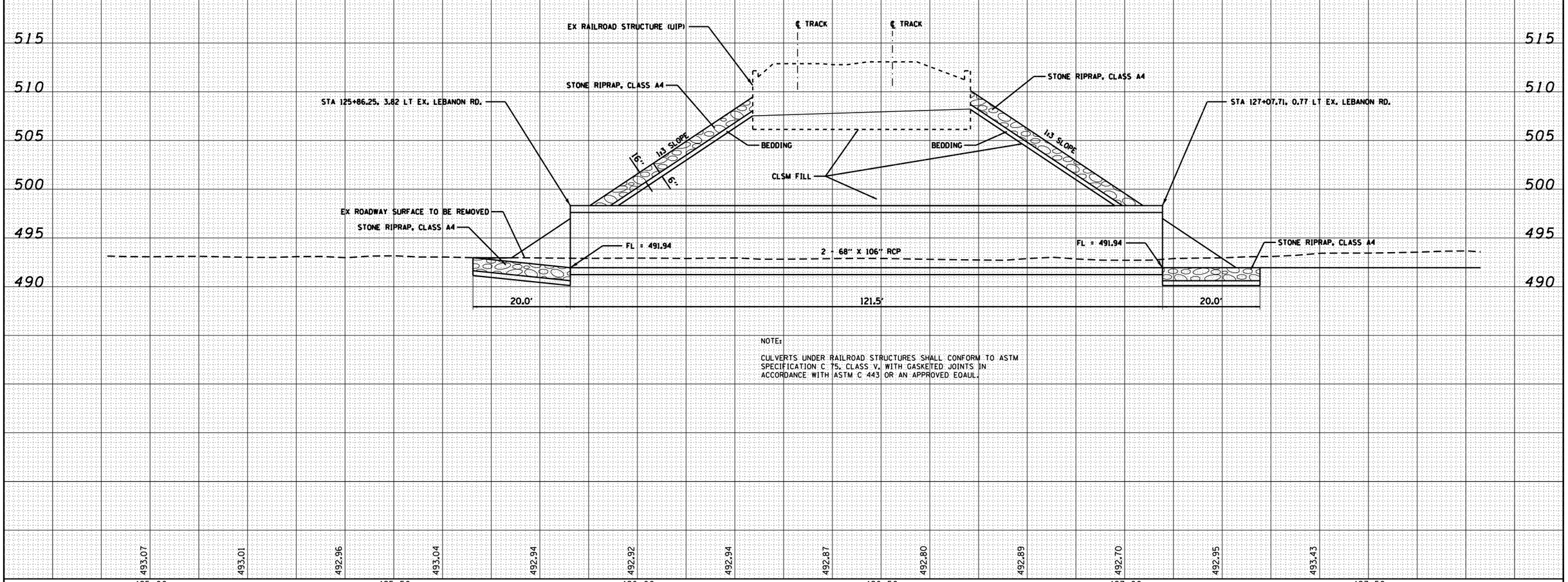
NOTE BOOK	TEMPLATE		
	AREAS		
NO.	AREAS CHECKED		



NOTE:

CULVERTS UNDER RAILROAD STRUCTURES SHALL CONFORM TO ASTM SPECIFICATION C 75, CLASS V, WITH GASKETED JOINTS IN ACCORDANCE WITH ASTM C 443 OR AN APPROVED EQAUL.

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

FILE NAME =	USER NAME = ljackson	DESIGNED - ·	REVISED -
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	PLOT DATE = 8/30/2023	DATE - ·	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON RD OVER CSX RAILROAD

CULVERT PROFILE STA 126+48.19
EXISTING LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 4 OF 4 SHEETS | STA. | TO STA.

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	273
		CONTRACT NO. 97790		

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

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

505
500
495
490

PR ROW
EX ROW
EX ROW
PR ROW

20 + 21.85

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
$FILE$		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 1 OF 70 SHEETS | STA. 20+21.85 TO STA. 20+21.85

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	274
		CONTRACT NO. 97790		

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

BY	DATE

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

BY	DATE

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

510 505 500 495 490

PROP TEMP EASMT

EX ROW

LEBANON RD

℄

1:20 4.00% 493.05 1.50% 493.23 1.50% 493.05 4.00% 1:3

65

INLET, TYPE A

℄ 490.14

EX ROW

PROP TEMP EASMT

21 + 00.00

STAGE 1 C=0 F=0 STAGE 2 C=0 F=0 STAGE 3 C=0 F=0 STAGE 4 C=0 F=0 STAGE 6 C=0 F=0

510 505 500 495 490

PROP TEMP EASMT

EX ROW

℄ LEBANON RD

1:20 4.00% 493.05 1.50% 493.23 1.50% 493.05 4.00% 1:3

EX ROW

PROP TEMP EASMT

20 + 50.00

STAGE 1 C=0 F=0 STAGE 2 C=0 F=0 STAGE 3 C=0 F=0 STAGE 4 C=54 F=11 STAGE 6 C=0 F=0

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 2 OF 70 SHEETS | STA. 20+50.00 TO STA. 21+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	275
			CONTRACT NO. 97790	

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

510 505 500 495

PROP TEMP EASMT

EX ROW

℄ LEBANON RD

56

494.00 494.18 494.00

1:20 4.00% 1.50% 1.50% 4.00% 1:3 1:20

℄ 490.84

INLET, TYPE A

EX ROW

PROP TEMP EASMT

22 + 00.00

STAGE 1 C=0 F=0

STAGE 2 C=0 F=0

STAGE 3 C=0 F=0

STAGE 4 C=55 F=71

STAGE 6 C=0 F=0

510 505 500 495 490

PROP TEMP EASMT

EX ROW

℄ LEBANON RD

1 2

493.37 493.55 493.37

1:20 4.00% 1.50% 1.50% 4.00% 1:3

INLET, TYPE B

℄ 489.96

℄ 489.86

STORM SEWER, CLASS A, TYPE 1, 12" SLOPE=1.14%

℄ 489.46

INLET, TYPE B

℄ 489.36

489.19

1:20

PRECAST REINFORCED CONCRETE FLARED END SECTION, 12"

STORM SEWER, CLASS A, TYPE 1, 12" SLOPE=1.19%

EX ROW

PROP TEMP EASMT

21 + 50.00

STAGE 1 C=0 F=0

STAGE 2 C=0 F=0

STAGE 3 C=0 F=0

STAGE 4 C=127 F=29

STAGE 6 C=0 F=0

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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

FILE NAME = *FILE*	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

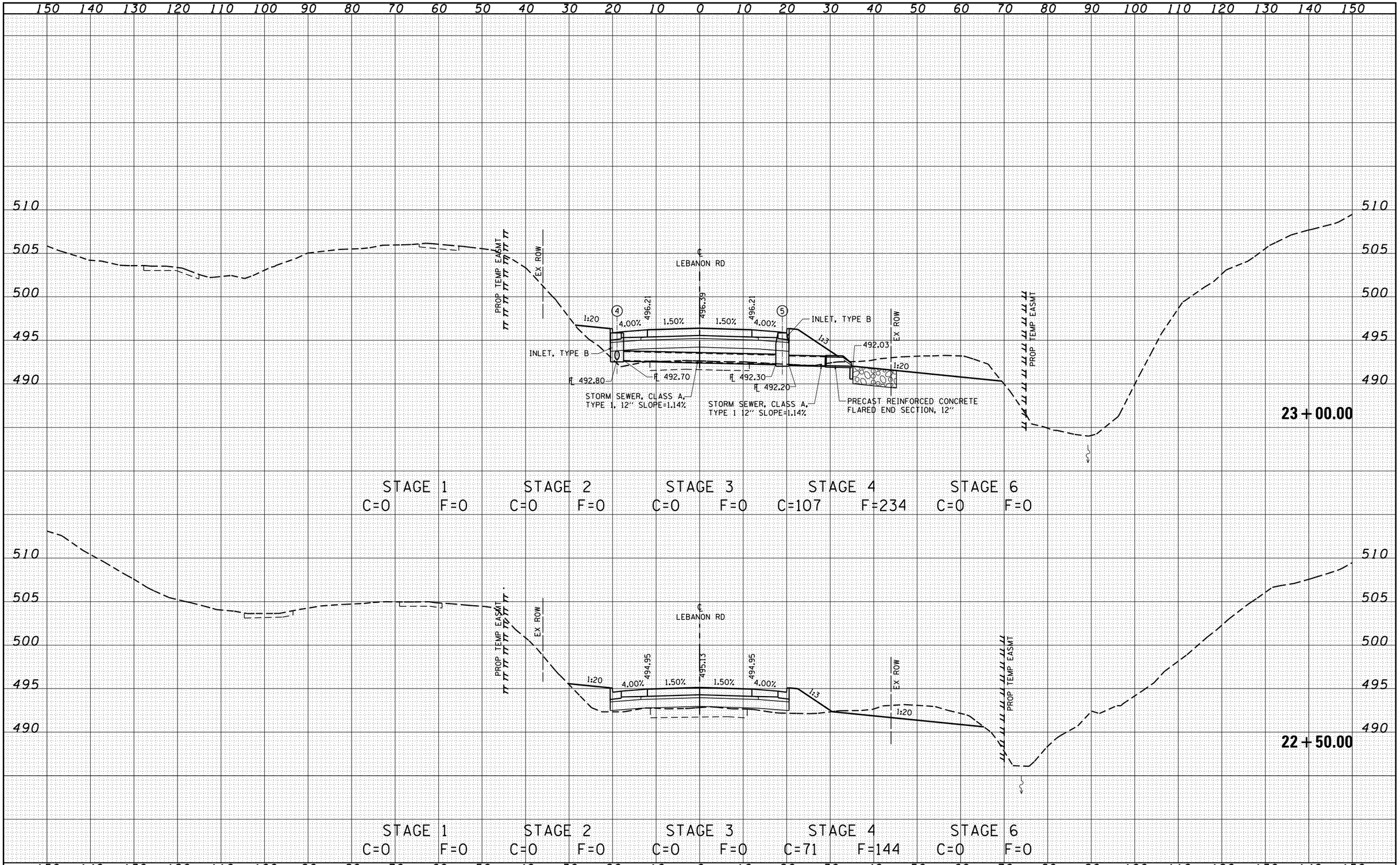
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 3 OF 70 SHEETS | STA. 21+50.00 TO STA. 22+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	276
			CONTRACT NO. 97790	

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



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

FILE NAME = #FILE#	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

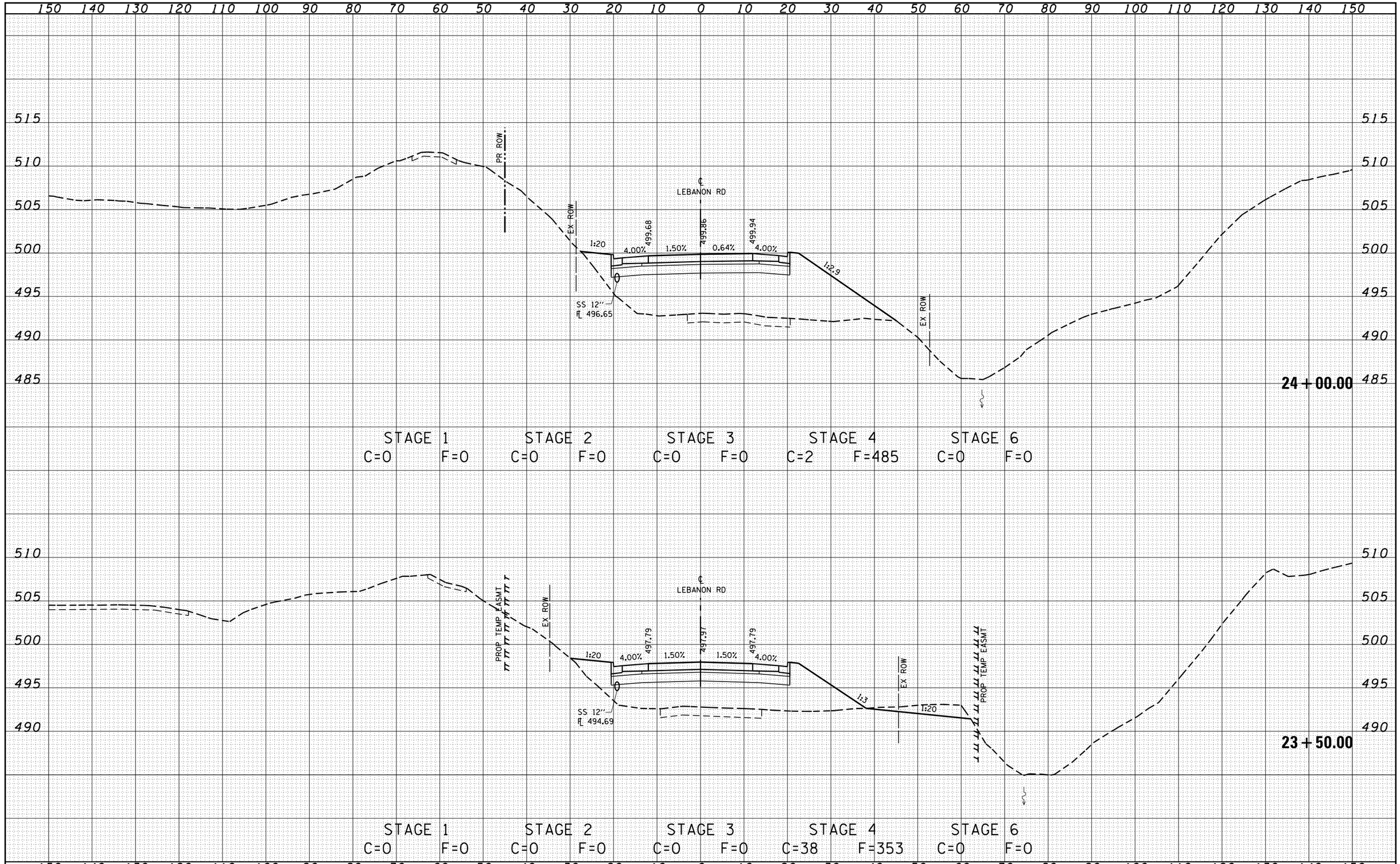
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 4 OF 70 SHEETS | STA. 22+50.00 TO STA. 23+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	277
			CONTRACT NO. 97790	

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

BY	DATE



ORIGINAL SURVEY	NOTE BOOK	NO.
SURVEYED		
PLOTED		
TEMPLATE		
AREAS		
AREAS CHECKED		

BY	DATE

FILE NAME = ©FILE©	USER NAME = linda	DESIGNED - SJC	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

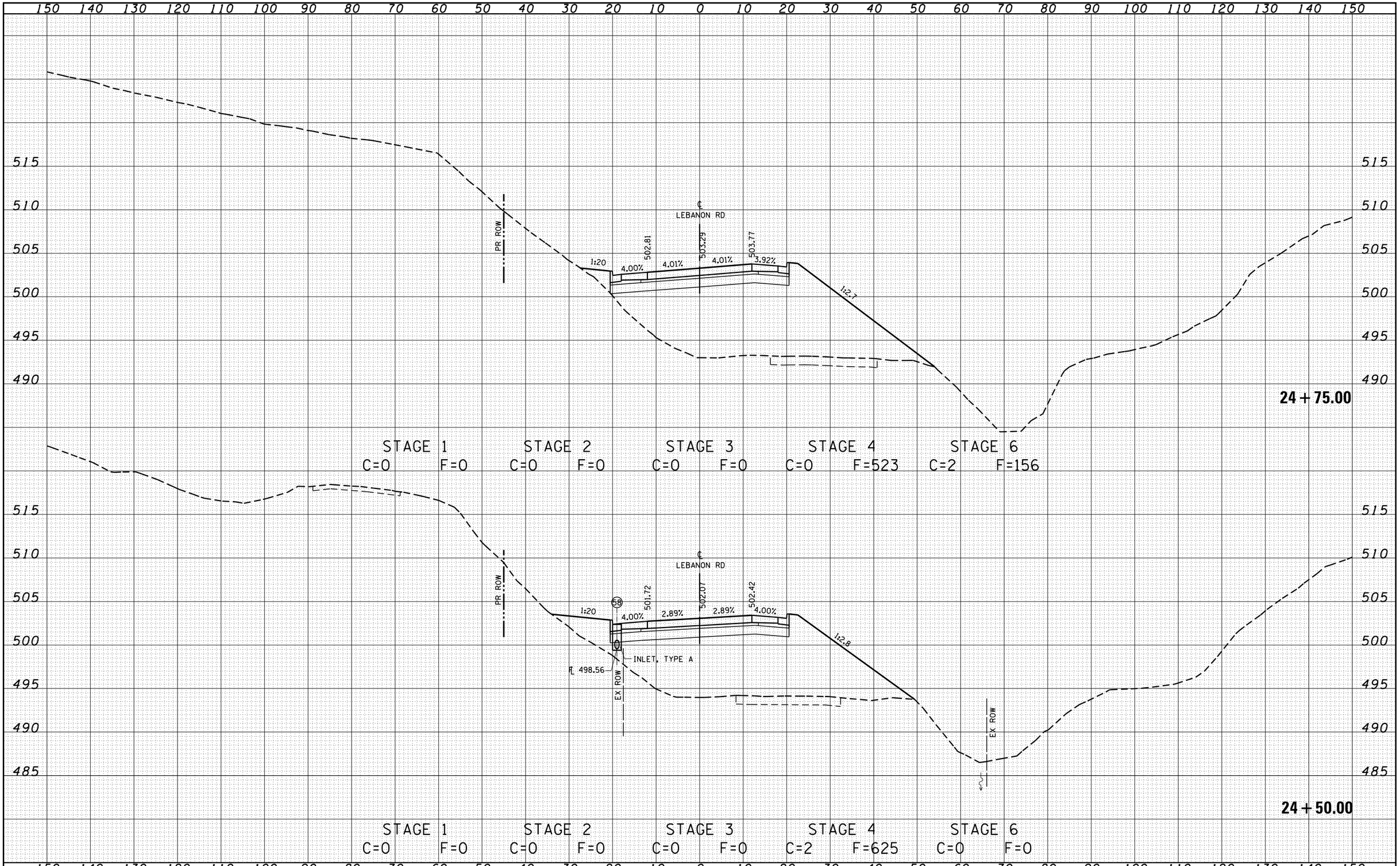
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 5 OF 70 SHEETS | STA. 23+50.00 TO STA. 24+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	278
		CONTRACT NO. 97790		

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



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

FILE NAME = #FILE#	USER NAME = linda	DESIGNED - SJC	REVISED -
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	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

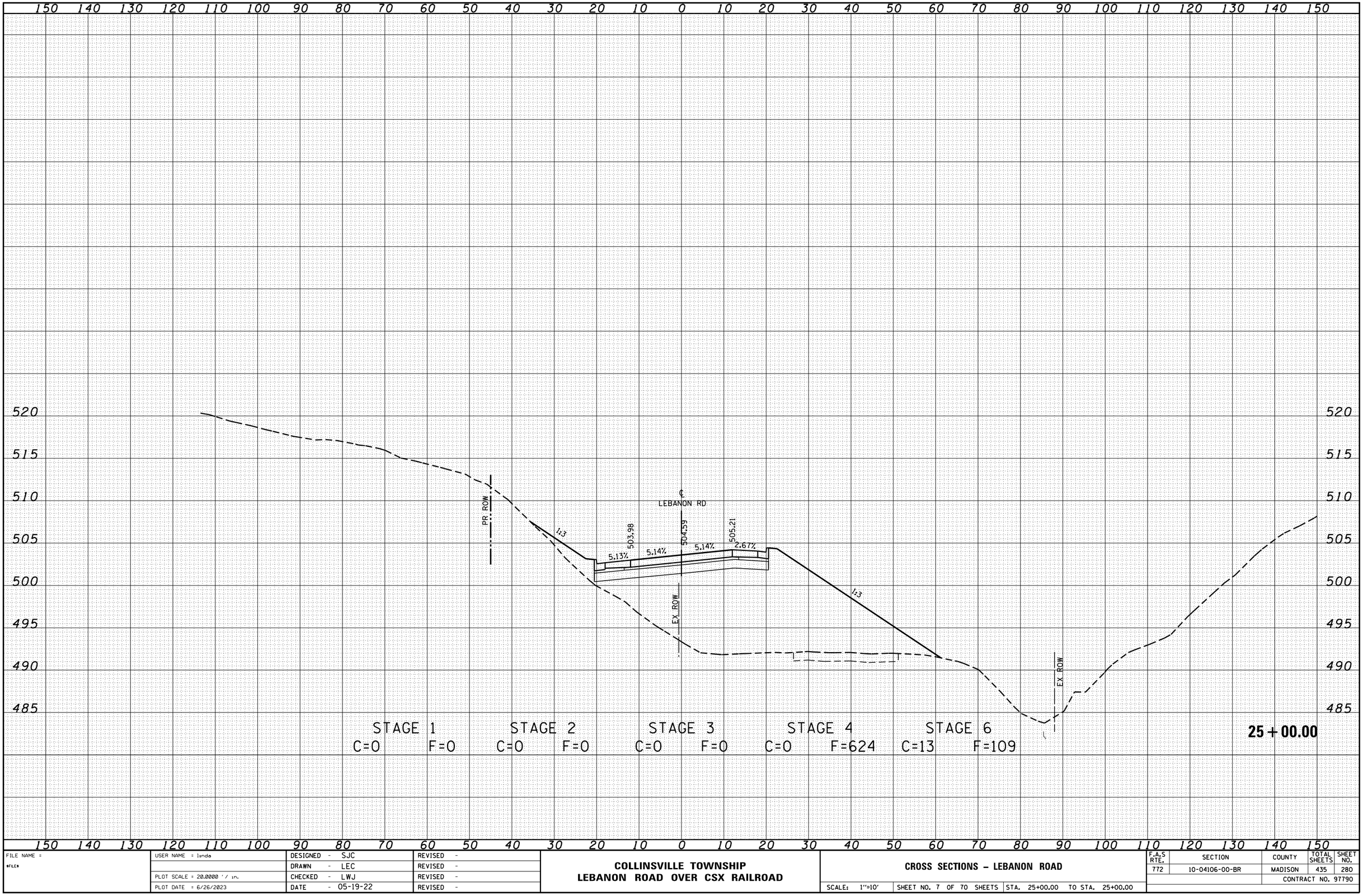
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 6 OF 70 SHEETS | STA. 24+50.00 TO STA. 24+75.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET
772	10-04106-00-BR	MADISON	435	278
			CONTRACT NO. 97790	

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

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



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	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

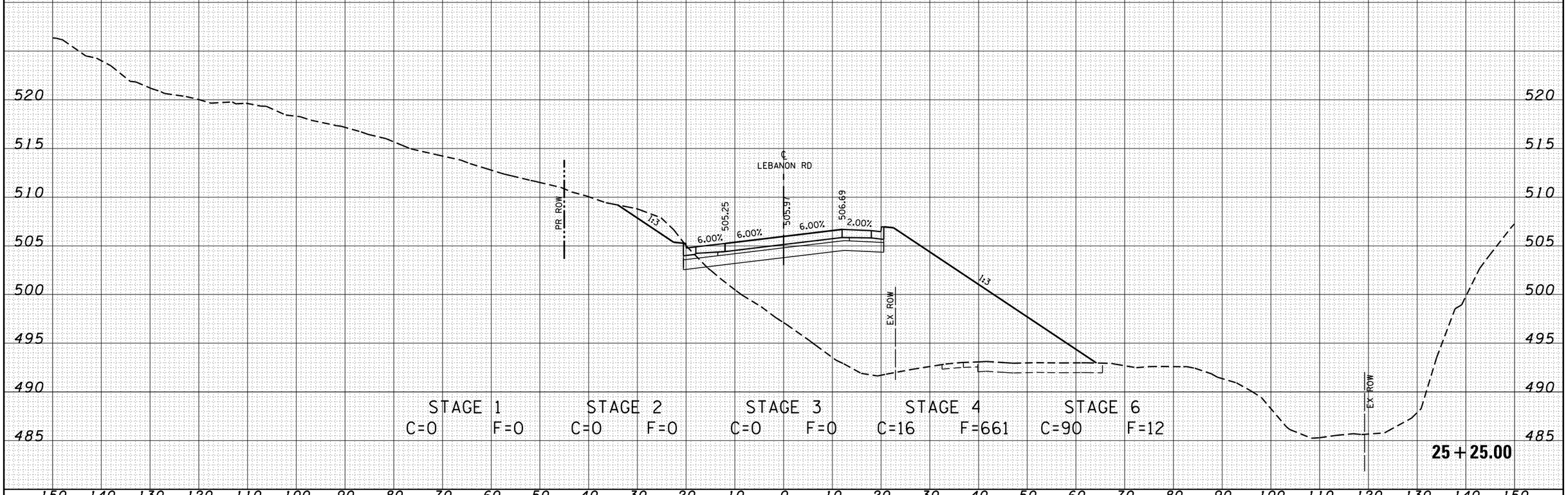
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 7 OF 70 SHEETS | STA. 25+00.00 TO STA. 25+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	280
			CONTRACT NO. 97790	

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

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



FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
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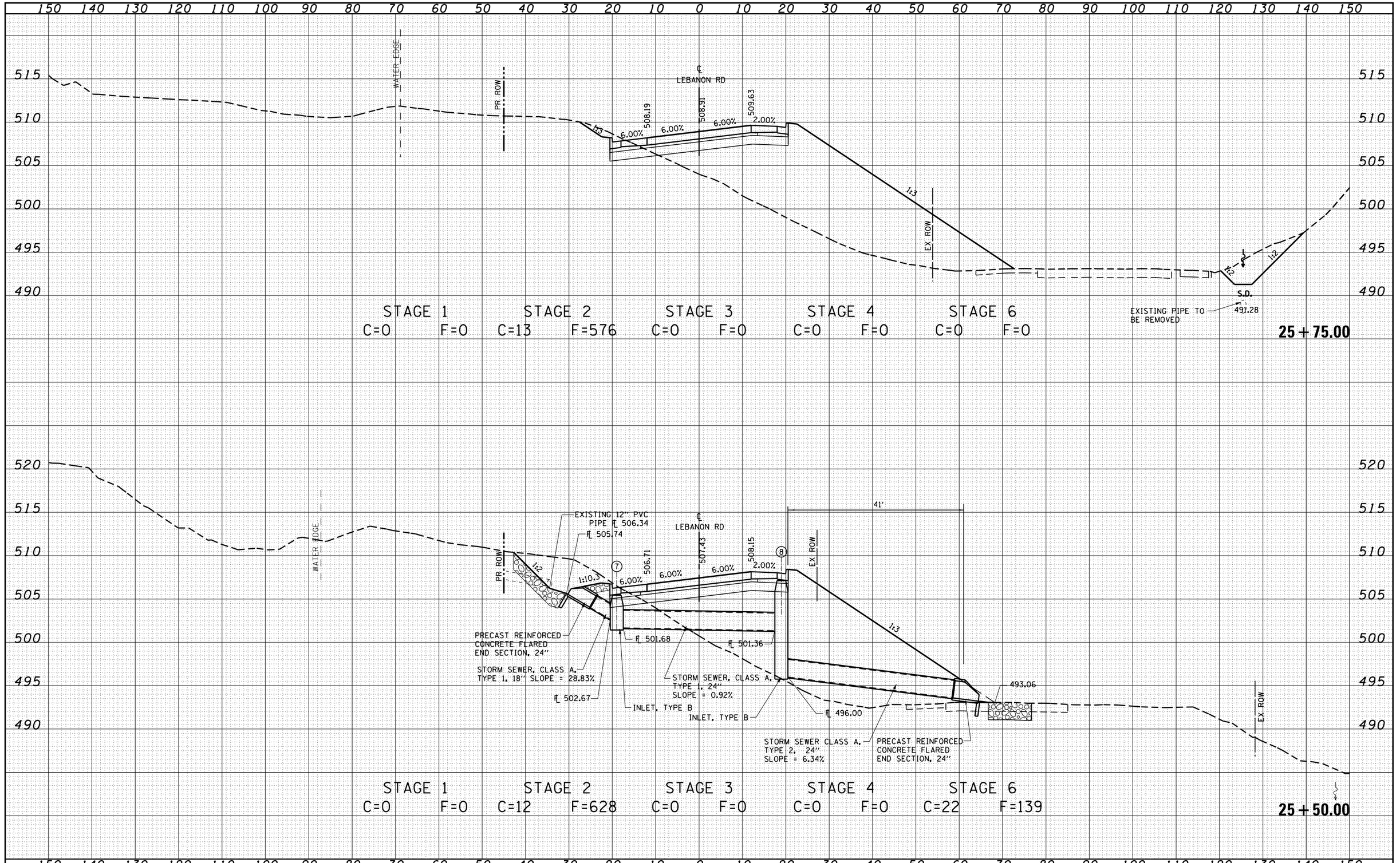
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 8 OF 70 SHEETS | STA. 25+25.00 TO STA. 25+25.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	281
		CONTRACT NO. 97790		



FINAL SURVEY / ORIGINAL SURVEY

NO.	NOTE BOOK	PAGES	SURVEYED	PLOTTED	TEMPLATE	AREAS	AREAS CHECKED	BY	DATE

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
FILE		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 9 OF 70 SHEETS | STA. 25+50.00 TO STA. 25+75.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	282
			CONTRACT NO. 97790	

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

520 515 510 505 500 495

WATER EDGE

PR ROW

℄ LEBANON RD

1:3

6.00%

510.90

6.00%

511.67

6.00%

512.34

2.00%

1:3

EX ROW

1:2 1:2

S.D.

492.44

EXISTING PIPE TO BE REMOVED

STAGE 1 C=0 F=0

STAGE 2 C=21 F=316

STAGE 3 C=0 F=0

STAGE 4 C=0 F=0

STAGE 6 C=0 F=0

26 + 25.00

520 515 510 505 500 495

WATER EDGE

PR ROW

℄ LEBANON RD

1:3

6.00%

509.59

6.00%

510.31

6.00%

511.03

2.00%

1:3

EX ROW

1:2 1:2

S.D.

491.86

EXISTING PIPE TO BE REMOVED

STAGE 1 C=0 F=0

STAGE 2 C=24 F=442

STAGE 3 C=0 F=0

STAGE 4 C=0 F=0

STAGE 6 C=0 F=0

26 + 00.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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

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

FILE NAME = *FILE*	USER NAME = linda	DESIGNED - SJC	REVISED -
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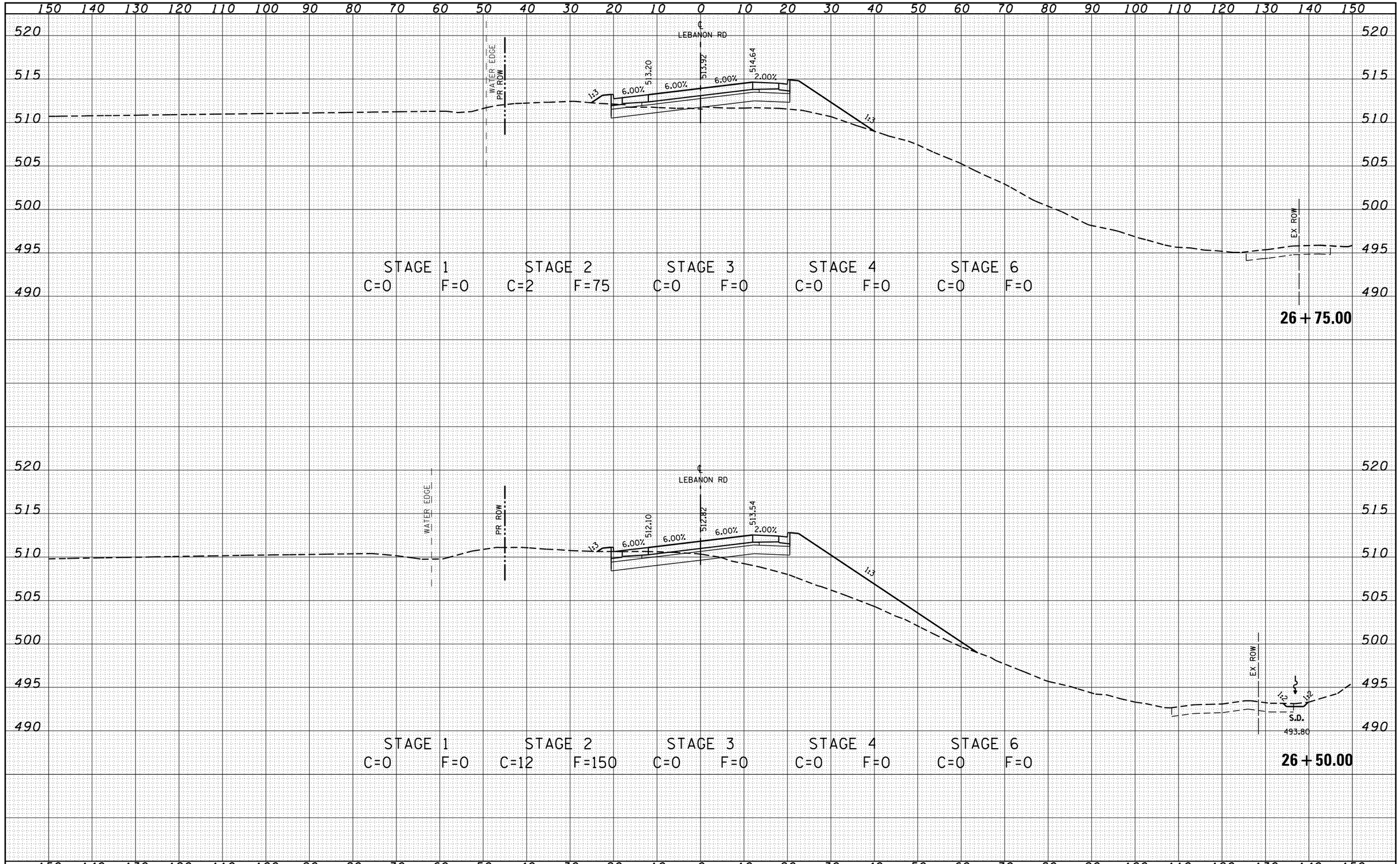
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 10 OF 70 SHEETS | STA. 26+00.00 TO STA. 26+25.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	283
		CONTRACT NO. 97790		



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

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

FILE NAME = ⊕FILE⊕	USER NAME = linda	DESIGNED - SJC
		DRAWN - LEC
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ
	PLOT DATE = 6/26/2023	DATE - 05-19-22

REVISED	-
REVISED	-
REVISED	-
REVISED	-

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

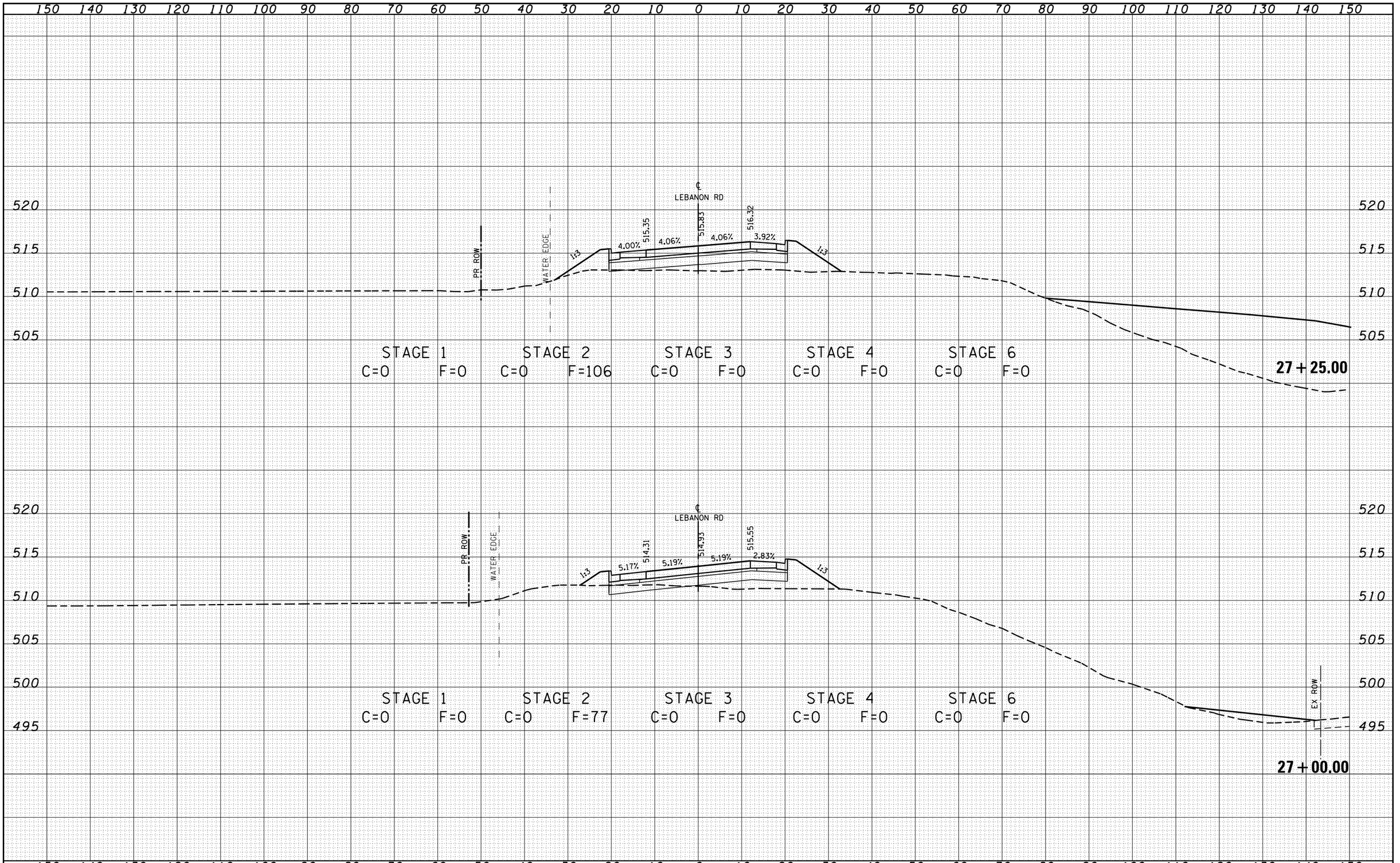
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 11 OF 70 SHEETS | STA. 26+50.00 TO STA. 26+75.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	284
			CONTRACT NO. 97790	

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

BY	DATE



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

BY	DATE

FILE NAME = *FILE*	USER NAME = linda	DESIGNED - SJC	REVISED -
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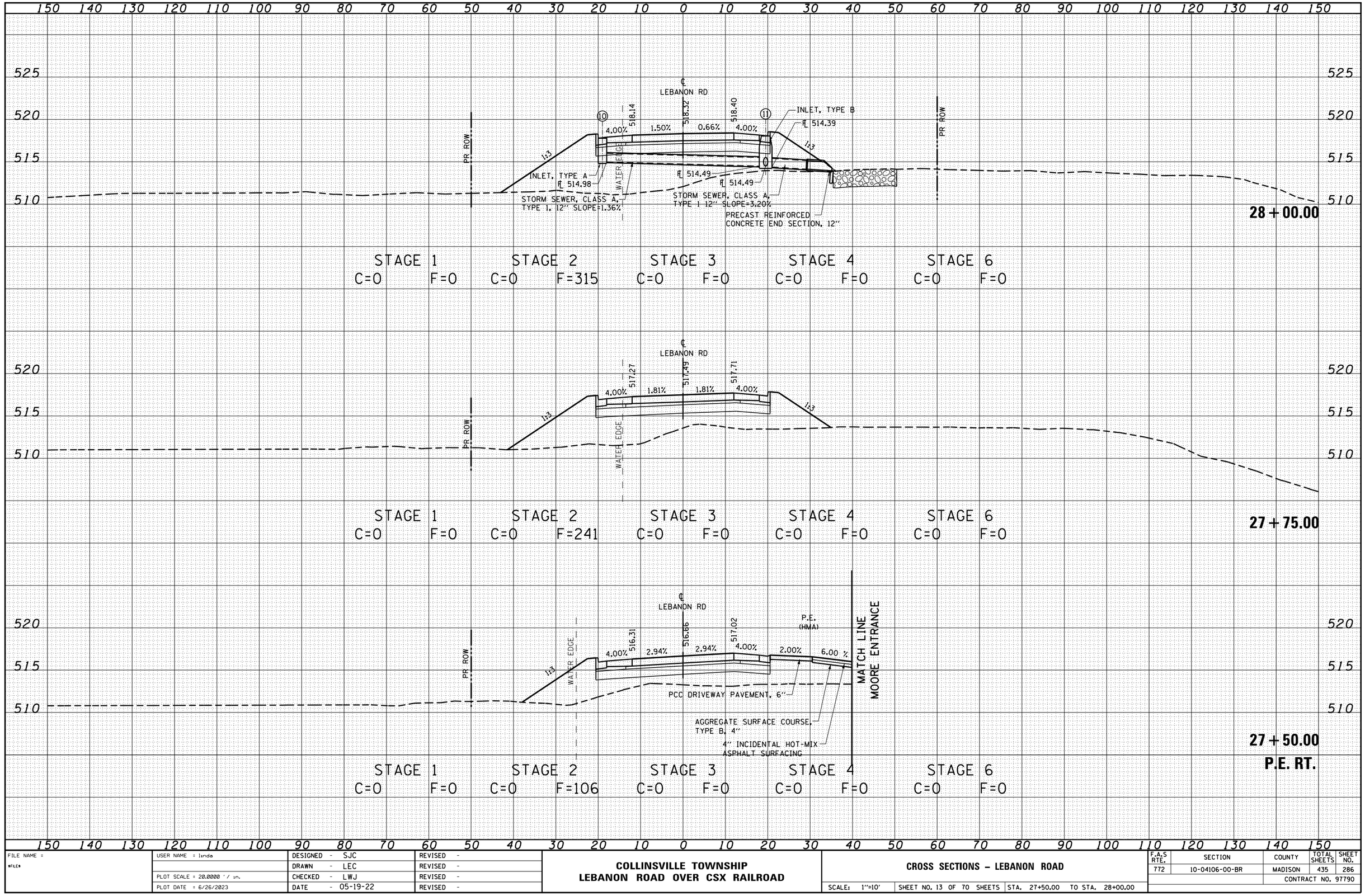
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 12 OF 70 SHEETS | STA. 27+00.00 TO STA. 27+25.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	285
		CONTRACT NO. 97790		



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

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

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	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

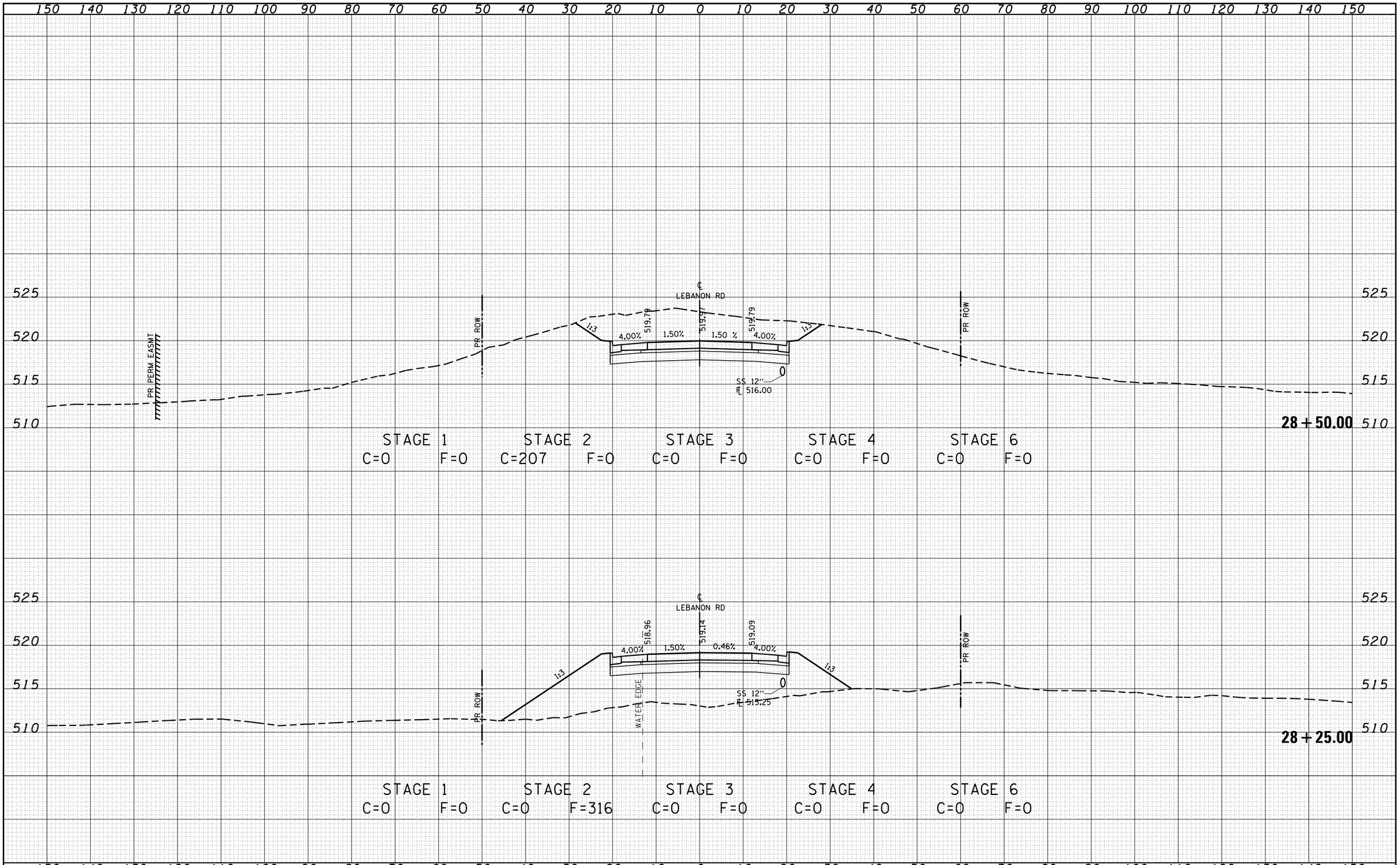
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 13 OF 70 SHEETS | STA. 27+50.00 TO STA. 28+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	286
		CONTRACT NO. 97790		

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



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

FILE NAME = #FILE#	USER NAME = linda	DESIGNED - SJC	REVISED -
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	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

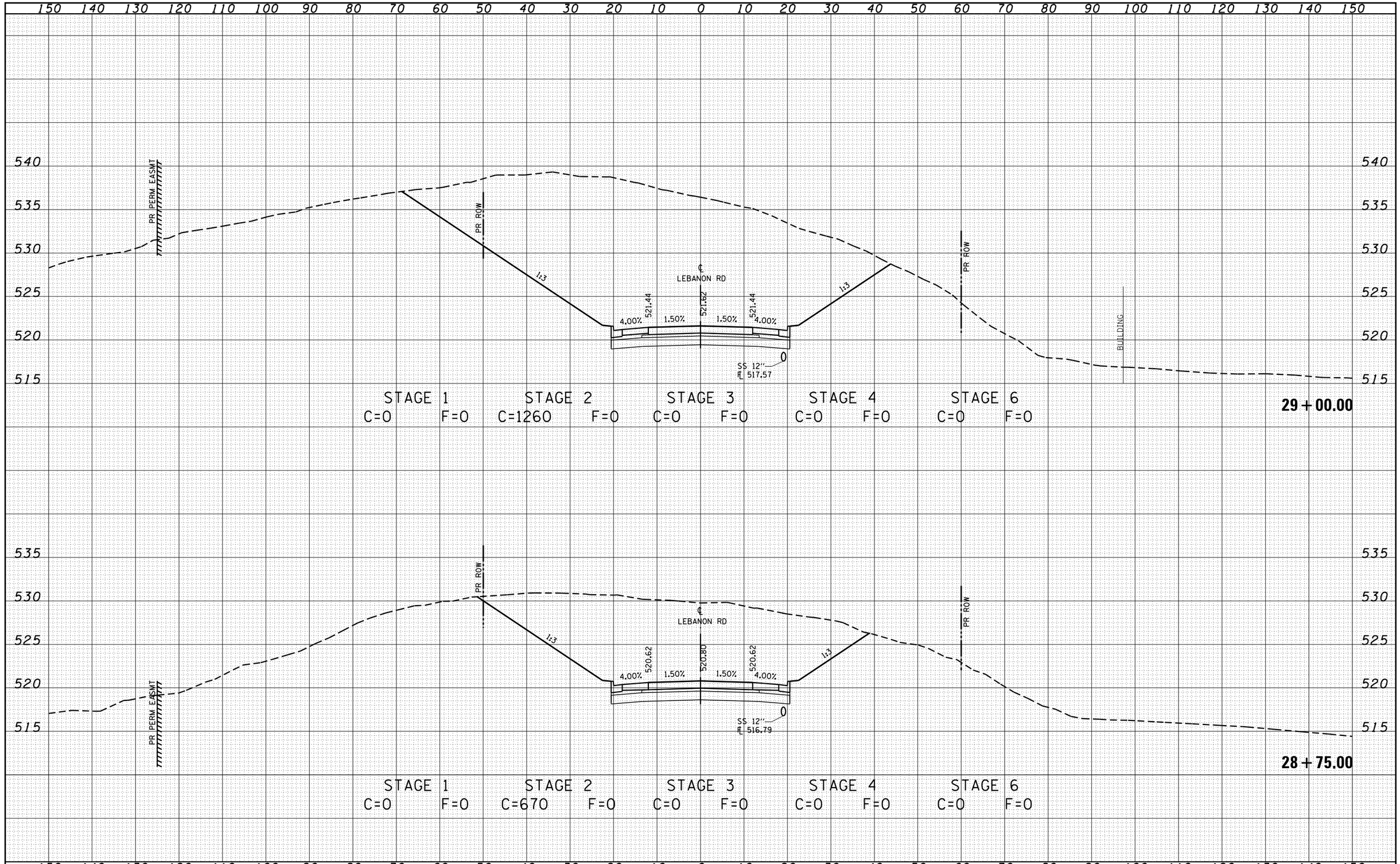
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 14 OF 70 SHEETS | STA. 28+25.00 TO STA. 28+50.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	287
		CONTRACT NO. 97790		

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



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

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
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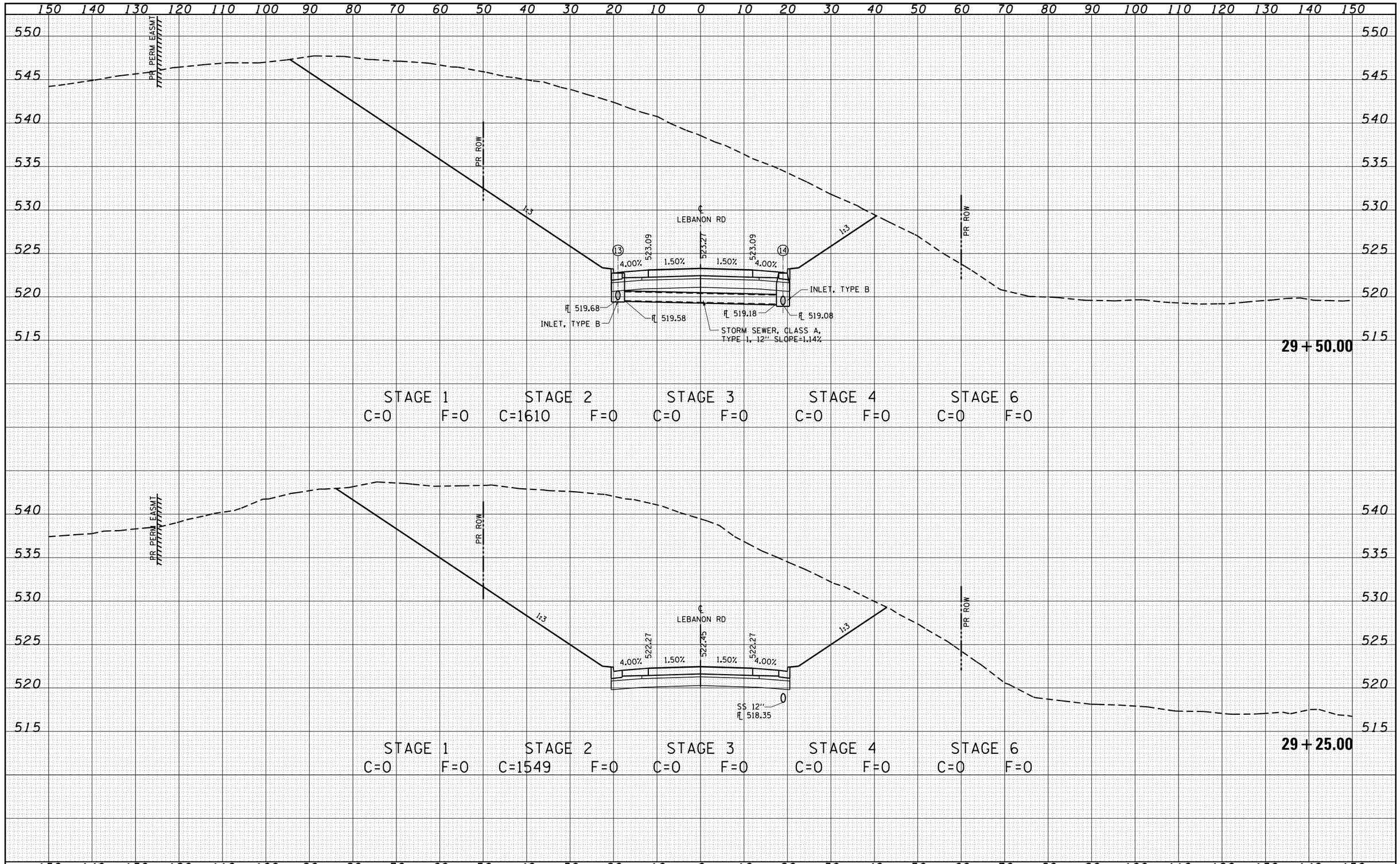
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 15 OF 70 SHEETS | STA. 28+75.00 TO STA. 29+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	288
		CONTRACT NO. 97790		



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

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

FILE NAME = ©FILE©	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

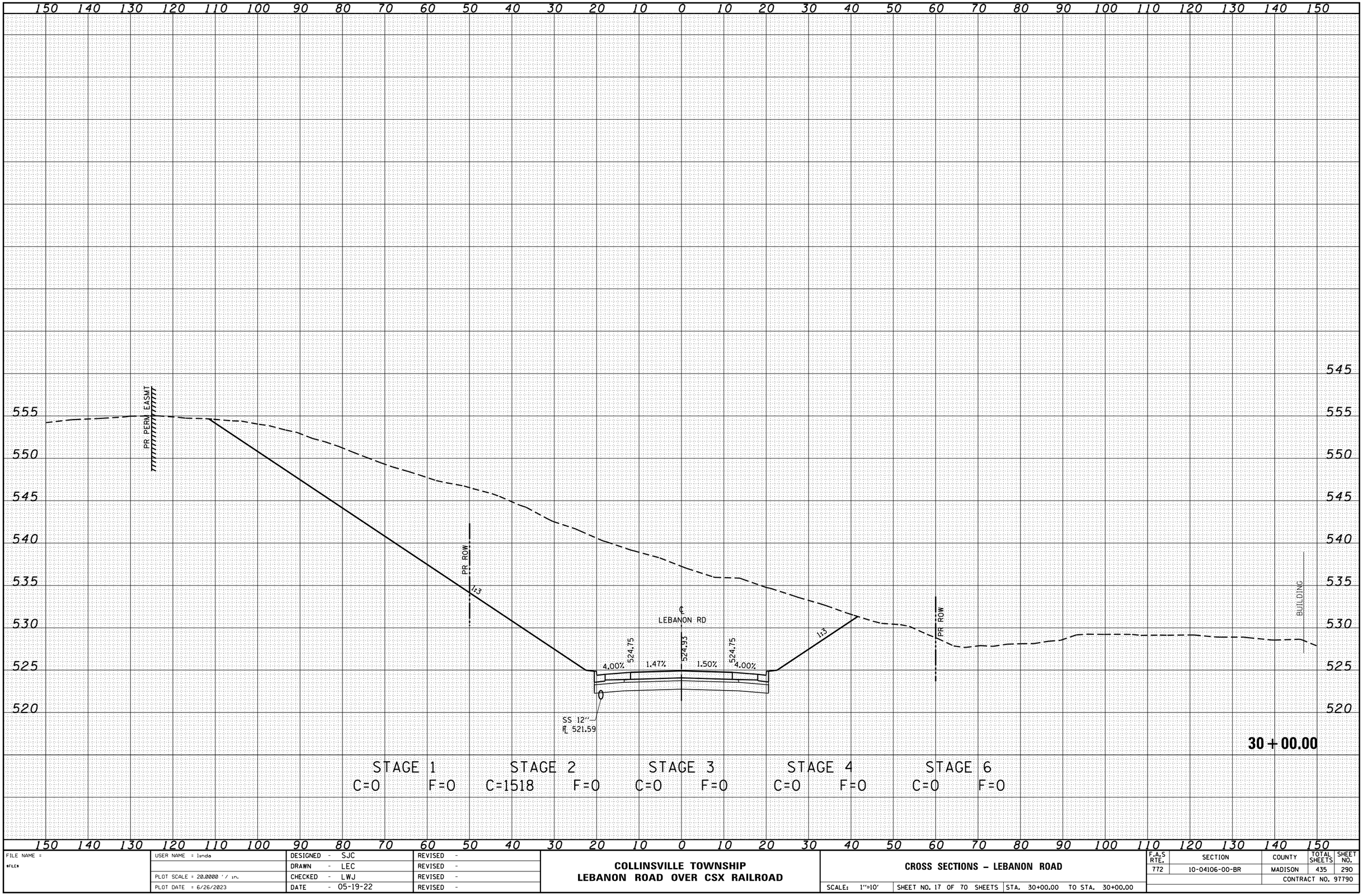
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 16 OF 70 SHEETS | STA. 29+25.00 TO STA. 29+50.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	289
		CONTRACT NO. 97790		

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

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



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	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 17 OF 70 SHEETS | STA. 30+00.00 TO STA. 30+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	290
		CONTRACT NO. 97790		

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

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

560
555
550
545
540
535
530
525
520

PR PERM EASMT

1:3

PR ROW

PR ROW

℄
LEBANON RD

60

526.68

526.38

526.40

4.00%

0.80%

1.50%

4.00%

1:3

INLET, TYPE A

℄ 523.51

STAGE 1 C=0 F=0

STAGE 2 C=1741 F=0

STAGE 3 C=0 F=0

STAGE 4 C=0 F=0

STAGE 6 C=0 F=0

30 + 50.00

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

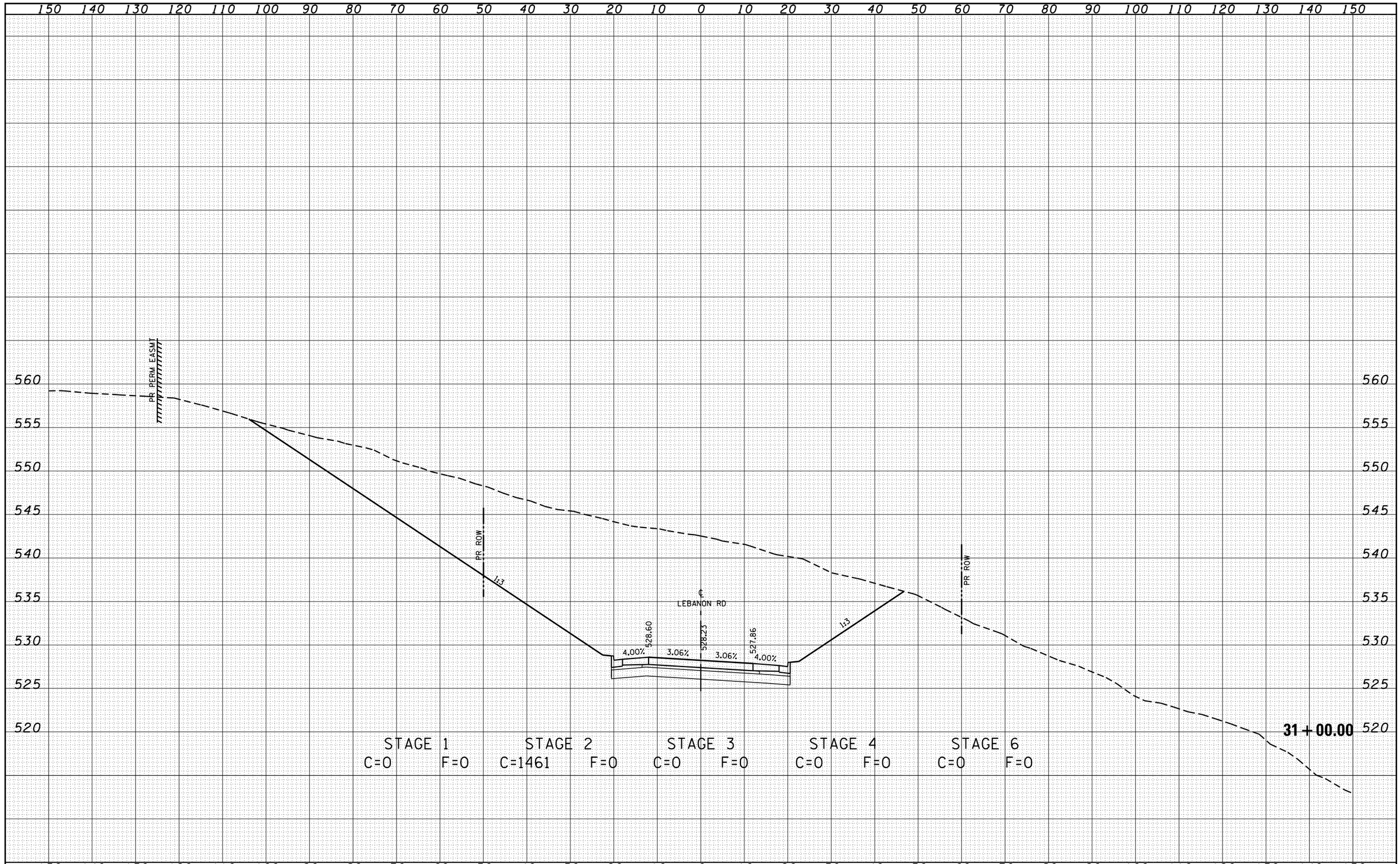
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 18 OF 70 SHEETS | STA. 30+50.00 TO STA. 30+50.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	291
			CONTRACT NO. 97790	

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

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



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#FILE#		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

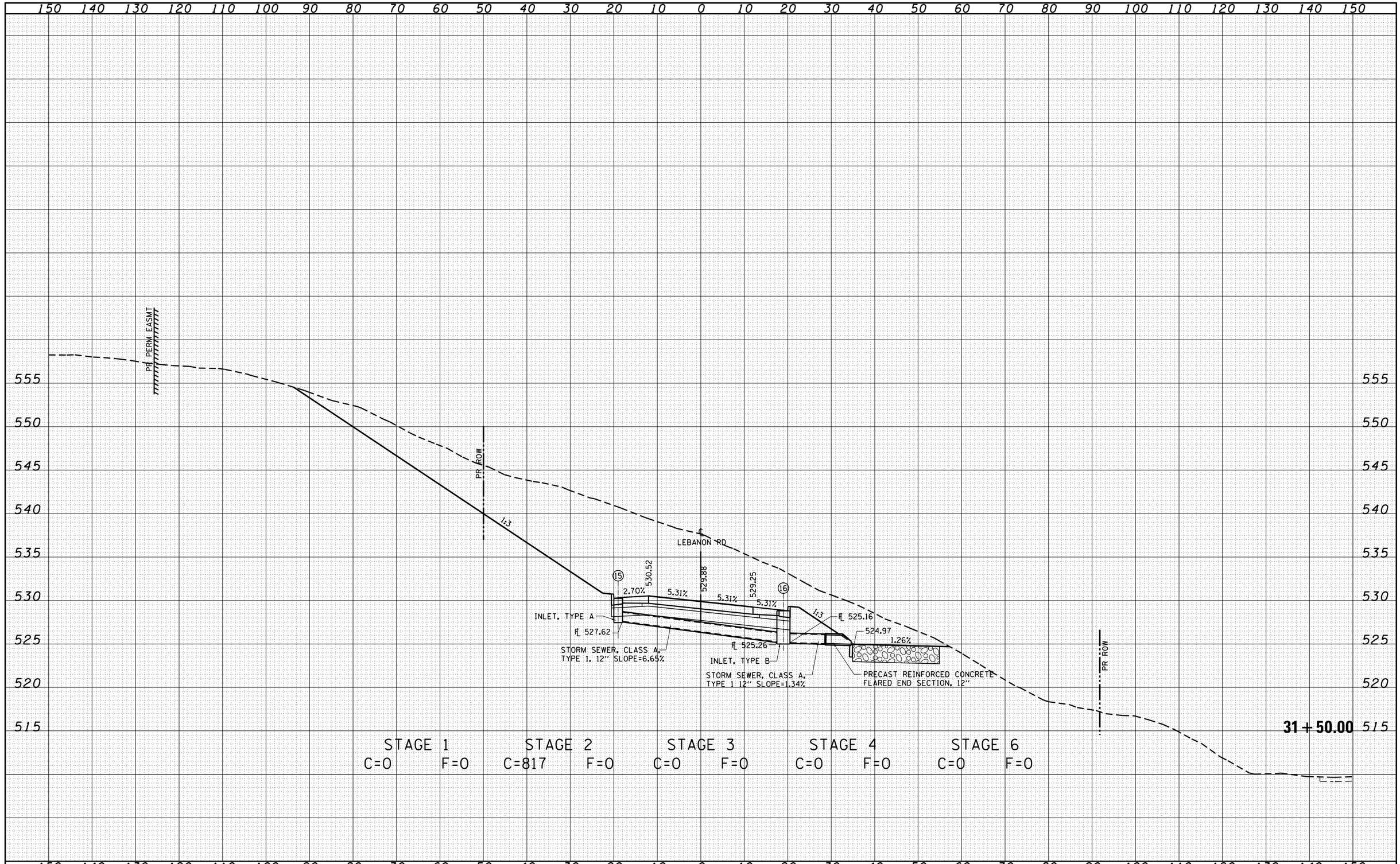
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 19 OF 70 SHEETS | STA. 31+00.00 TO STA. 31+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	292
		CONTRACT NO. 97790		

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

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



FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
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	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 20 OF 70 SHEETS | STA. 31+50.00 TO STA. 31+50.00

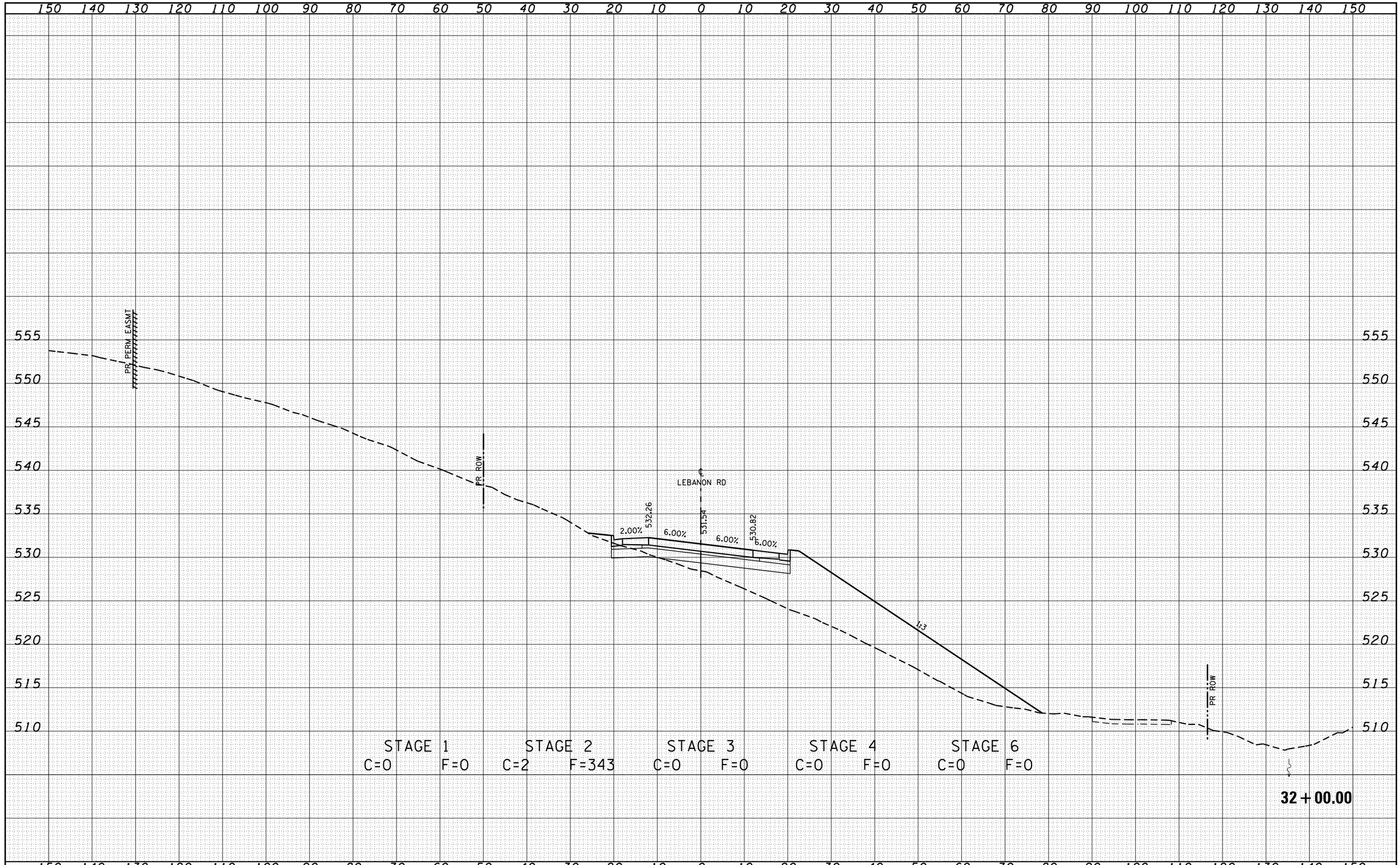
F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	293
		CONTRACT NO. 97790		

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

BY	DATE

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

BY	DATE



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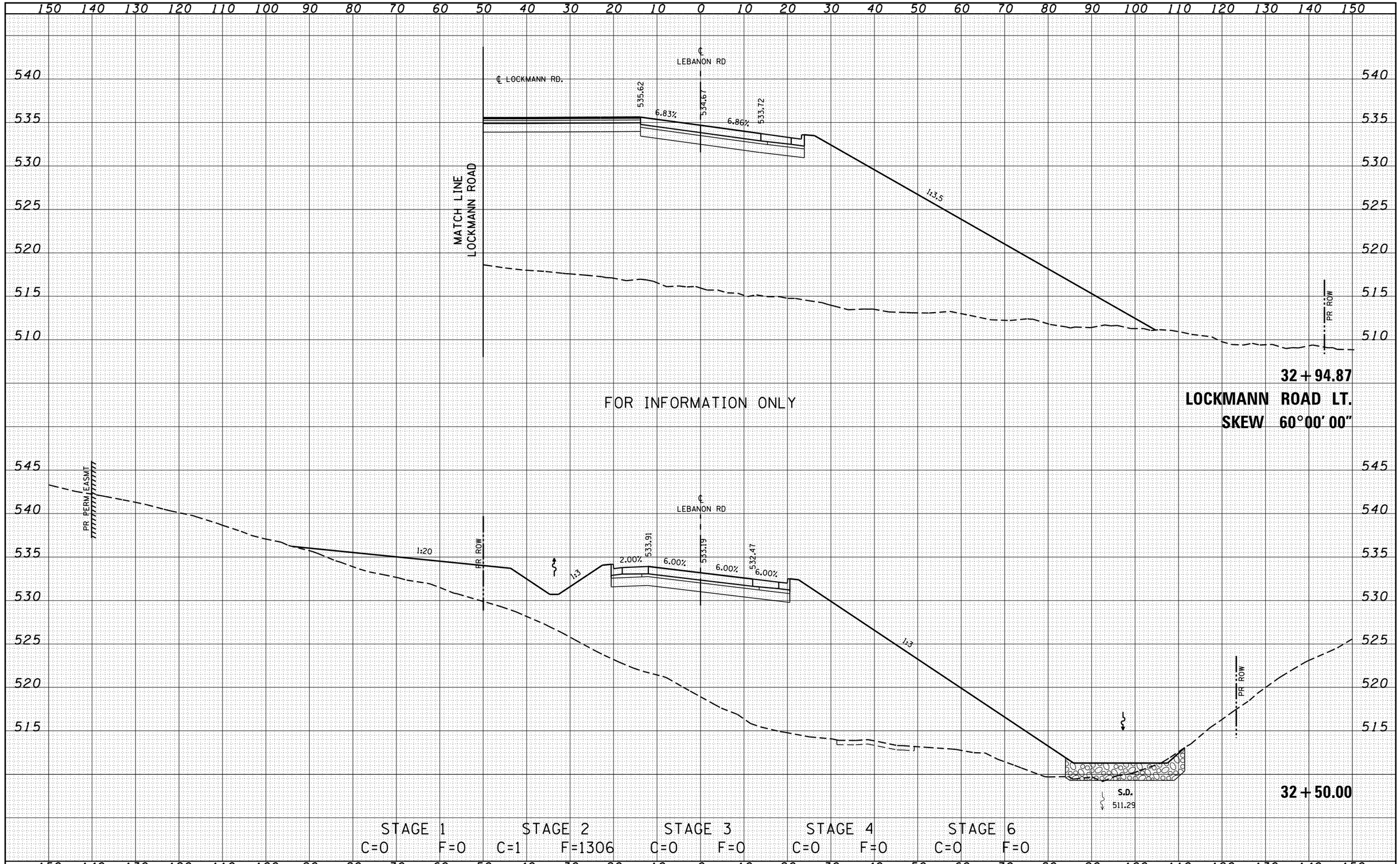
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 21 OF 70 SHEETS | STA. 32+00.00 TO STA. 32+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	294
		CONTRACT NO. 97790		



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

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

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

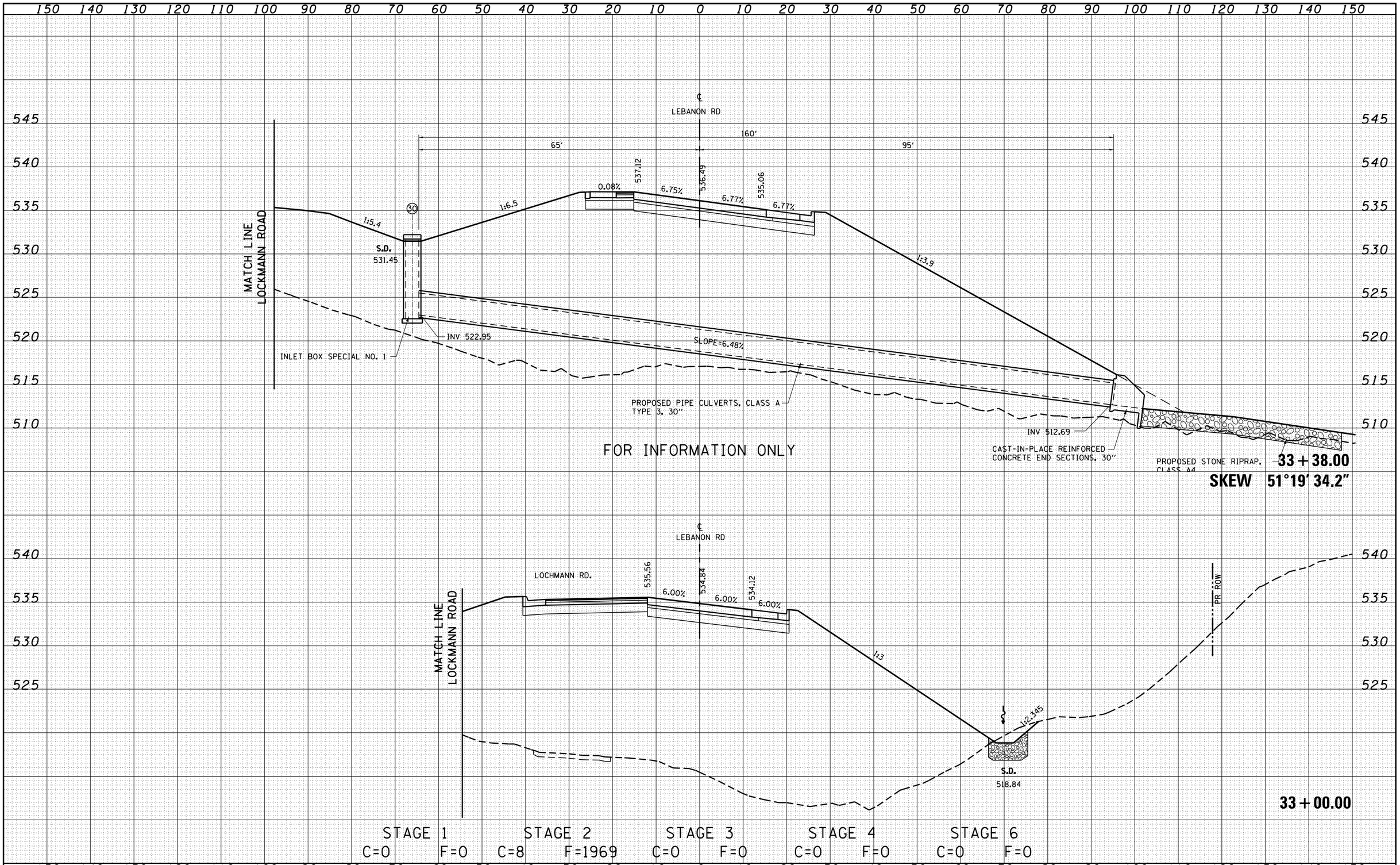
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 22 OF 70 SHEETS | STA. 32+50.00 TO STA. 32+94.87

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	295
		CONTRACT NO. 97790		

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

BY	DATE



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

BY	DATE

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
$FILE$		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

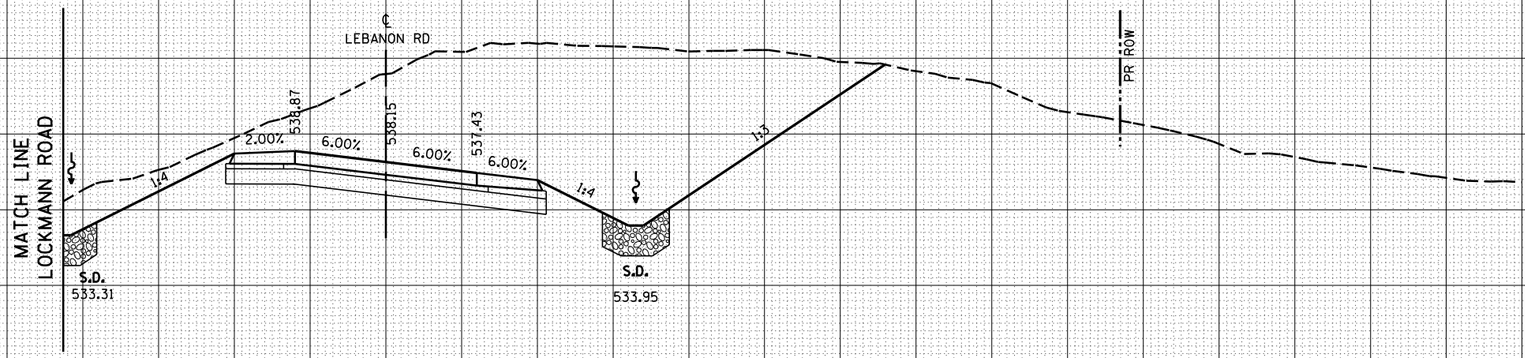
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 23 OF 70 SHEETS | STA. 33+00.00 TO STA. 33+38.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	296
		CONTRACT NO. 97790		

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

545 540 535 530

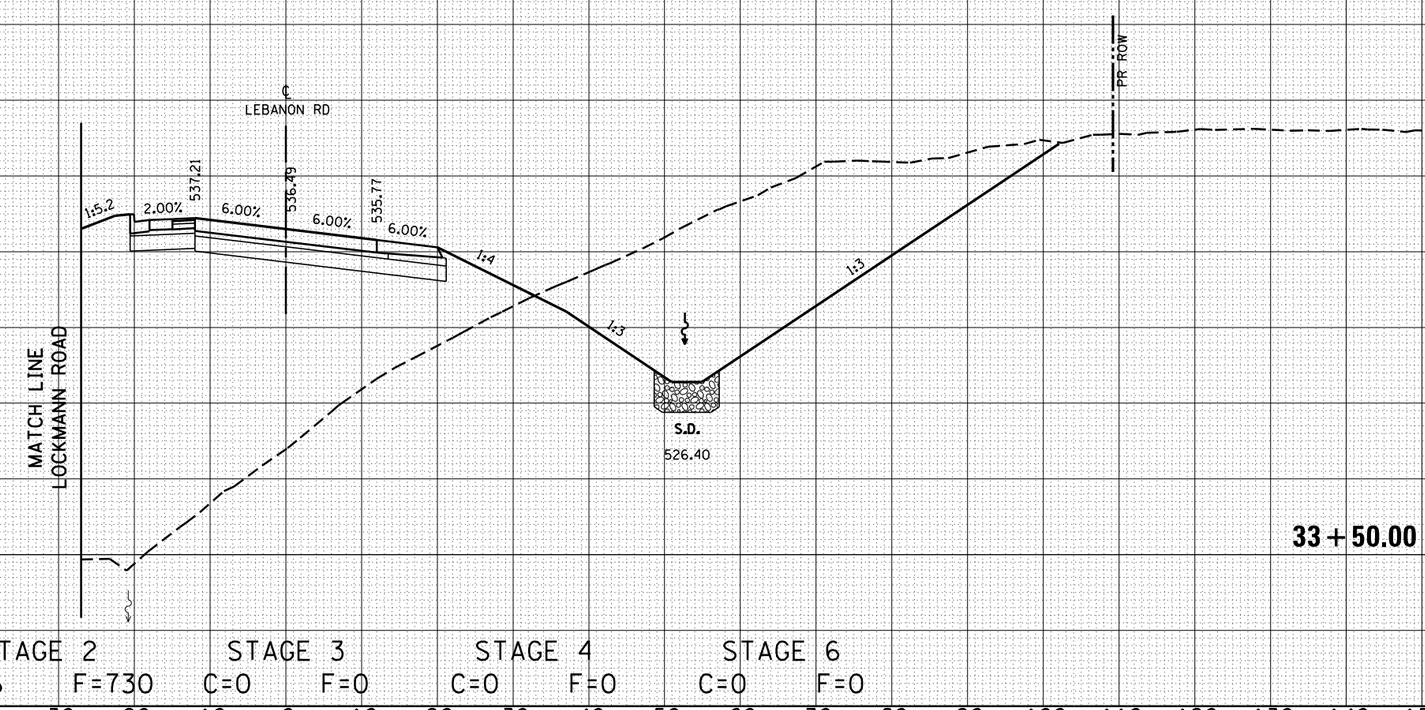


STAGE 1 C=0 F=0 | STAGE 2 C=647 F=0 | STAGE 3 C=0 F=0 | STAGE 4 C=0 F=0 | STAGE 6 C=0 F=0

34+00.00

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

550 545 540 535 530



STAGE 1 C=0 F=0 | STAGE 2 C=426 F=730 | STAGE 3 C=0 F=0 | STAGE 4 C=0 F=0 | STAGE 6 C=0 F=0

33+50.00

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

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

FILE NAME =	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

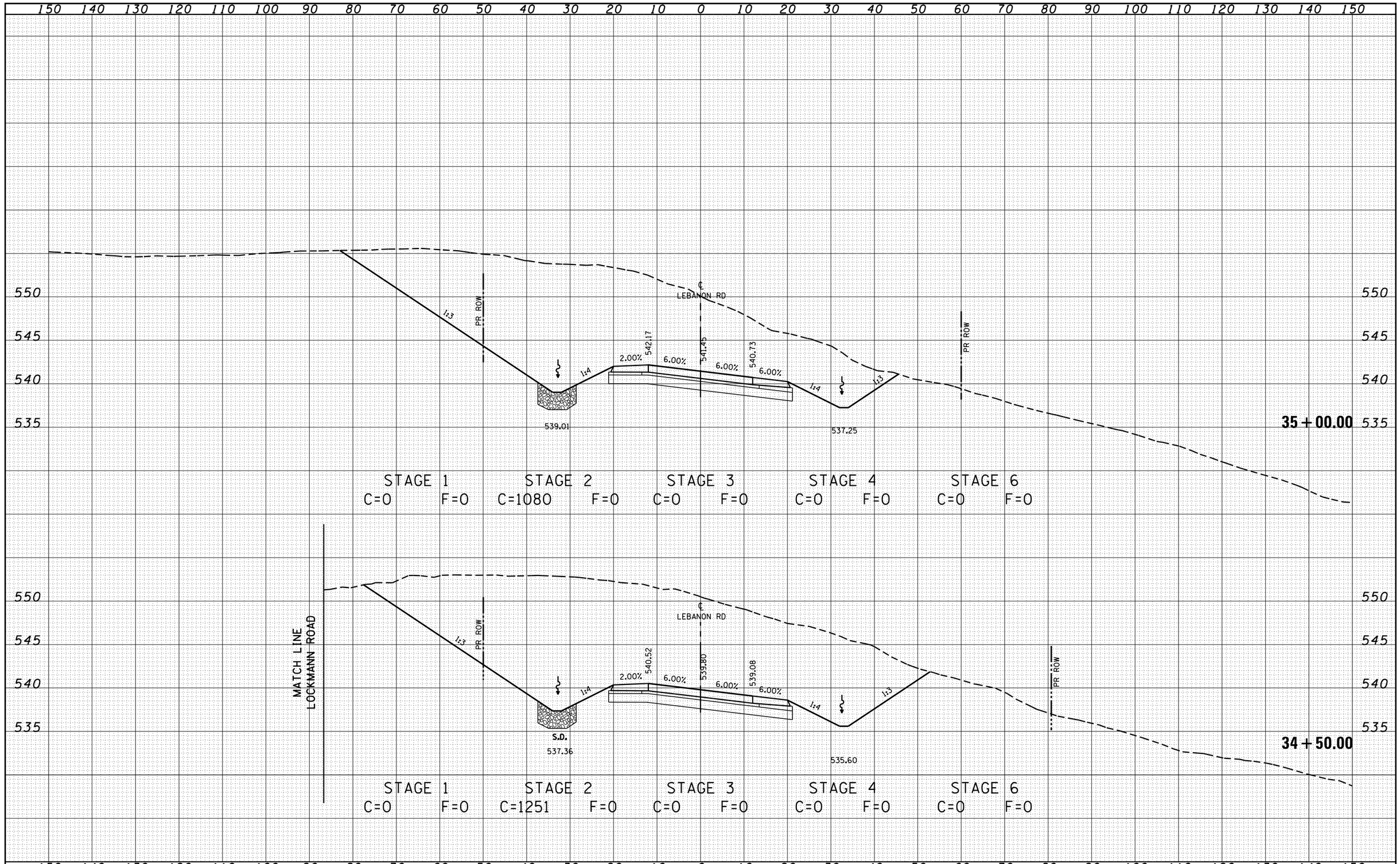
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 24 OF 70 SHEETS | STA. 33+50.00 TO STA. 34+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	297
			CONTRACT NO. 97790	

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



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

FILE NAME = *FILE*	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

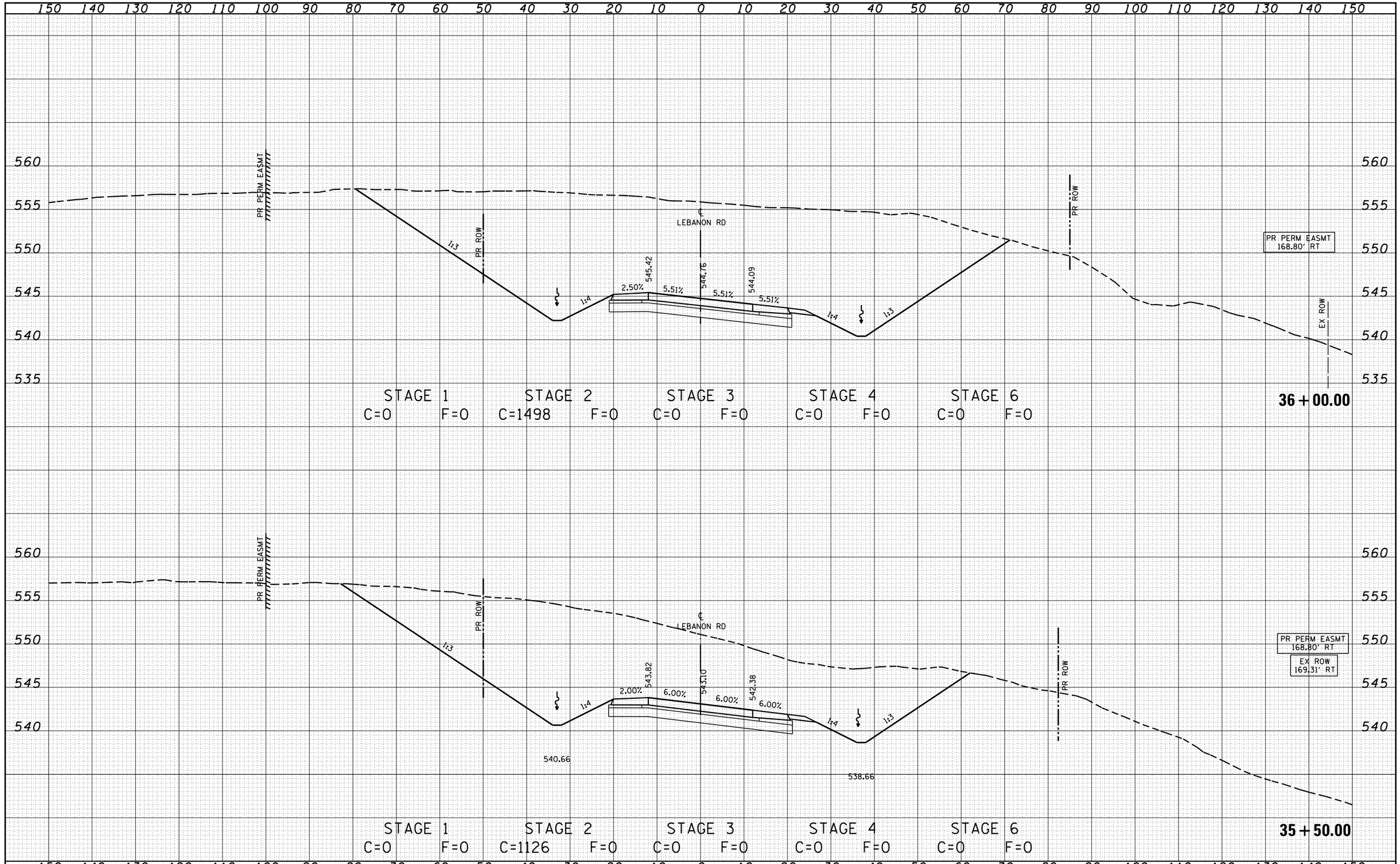
CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 25 OF 70 SHEETS | STA. 34+50.00 TO STA. 35+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	298
		CONTRACT NO. 97790		

FINAL SURVEY	NOTE BOOK	NO.	BY	DATE

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED



ORIGINAL SURVEY	NOTE BOOK	NO.	BY	DATE

SURVEYED
PLOTTED
TEMPLATE
AREAS
AREAS CHECKED

FILE NAME = ©FILE©	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

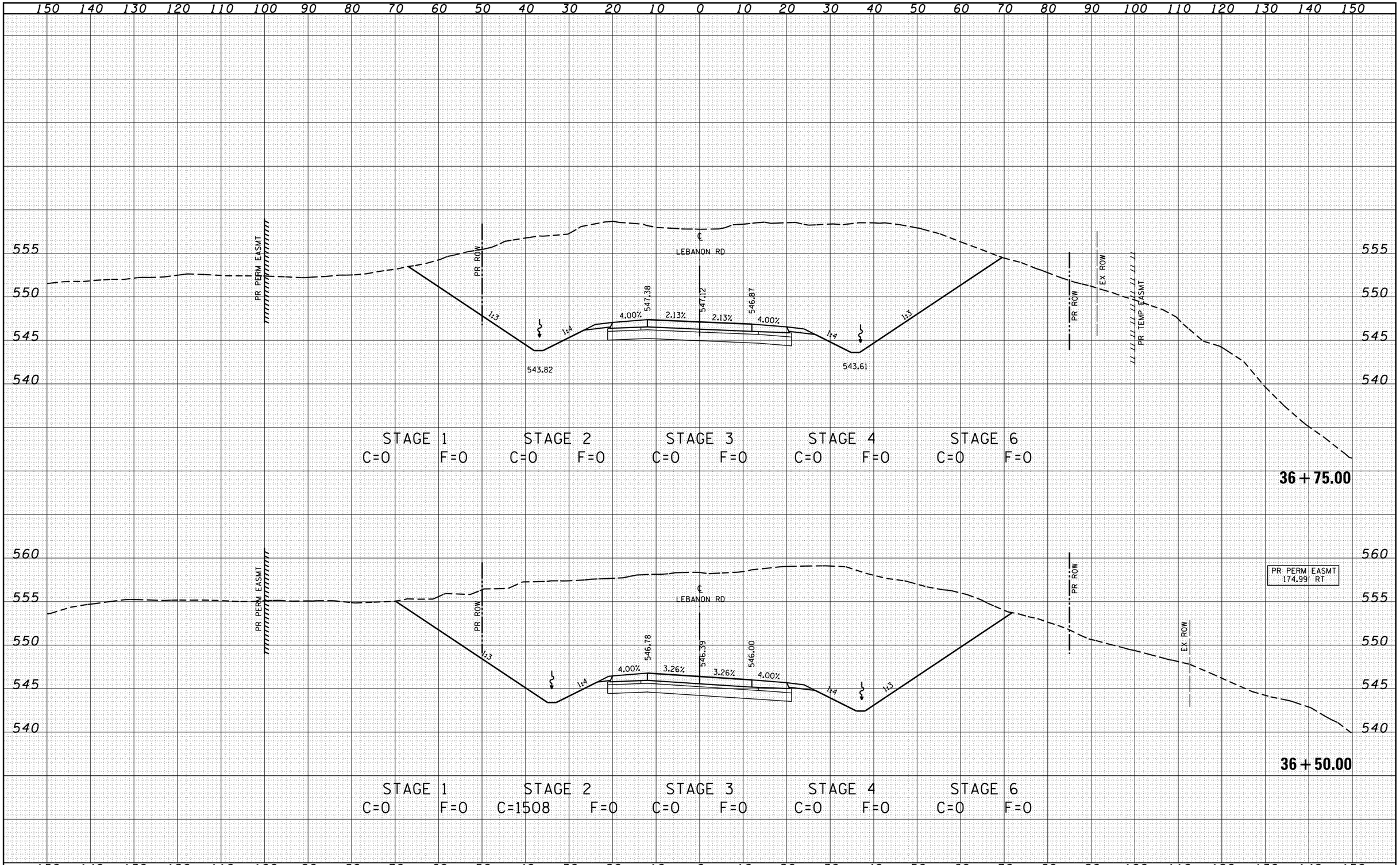
COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 26 OF 70 SHEETS | STA. 35+50.00 TO STA. 36+00.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	299
		CONTRACT NO. 97790		

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



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

FILE NAME = ©FILE©	USER NAME = linda	DESIGNED - SJC	REVISED -
		DRAWN - LEC	REVISED -
	PLOT SCALE = 20.0000 ' / in.	CHECKED - LWJ	REVISED -
	PLOT DATE = 6/26/2023	DATE - 05-19-22	REVISED -

COLLINSVILLE TOWNSHIP
LEBANON ROAD OVER CSX RAILROAD

CROSS SECTIONS – LEBANON ROAD

SCALE: 1"=10' | SHEET NO. 27 OF 70 SHEETS | STA. 36+50.00 TO STA. 36+75.00

F.A.S RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
772	10-04106-00-BR	MADISON	435	300
		CONTRACT NO. 97790		