

SUMMARY OF QUANTITIES				UNIT	TOTAL QUANTITY	ROADWAY	BRIDGE	SAFETY	BIKE PATH	TRAINEES
S.I.	CODE NO.	ITEM	CONSTRUCTION TYPE CODE							
			0004			0013	0021	0021	0042	
	60236825	INLETS, TYPE A, TYPE 11V FRAME AND GRATE	EACH	14	14					
	60266600	VALVE BOXES TO BE ADJUSTED	EACH	1	1					
	60300105	FRAMES AND GRATES TO BE ADJUSTED	EACH	12	12					
	60500040	REMOVING MANHOLES	EACH	2	2					
	60500050	REMOVING CATCH BASINS	EACH	1	1					
	60500060	REMOVING INLETS	EACH	1	1					
	60600605	CONCRETE CURB, TYPE B	FOOT	42	42					
	60603800	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.12	FOOT	5650	5650					
	60605000	COMBINATION CONCRETE CURB AND GUTTER, TYPE B-6.24	FOOT	340	340					
	60608300	COMBINATION CONCRETE CURB AND GUTTER, TYPE M-2.12	FOOT	660	660					
	63000003	STEEL PLATE BEAM GUARDRAIL, TYPE A, 9 FOOT POSTS	FOOT	225				225		
	63100087	TRAFFIC BARRIER TERMINAL, TYPE 6A	EACH	4				4		
	63100167	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL) TANGENT	EACH	4				4		
	63200310	GUARDRAIL REMOVAL	FOOT	590				590		
	67100100	MOBILIZATION	LSUM	1	1					
	70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1	1					
	70300100	SHORT TERM PAVEMENT MARKING	FOOT	2275				2275		
	70300150	SHORT TERM PAVEMENT MARKING REMOVAL	SQ FT	750				750		
	70300210	TEMPORARY PAVEMENT MARKING LETTERS AND SYMBOLS	SQ FT	50				50		
	70300220	TEMPORARY PAVEMENT MARKING - LINE 4"	FOOT	47335				47335		
	70300240	TEMPORARY PAVEMENT MARKING - LINE 6"	FOOT	690				690		
	70300280	TEMPORARY PAVEMENT MARKING - LINE 24"	FOOT	95				95		
	70400100	TEMPORARY CONCRETE BARRIER	FOOT	350	350					
	70400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	350	350					
	70600260	IMPACT ATTENUATORS, TEMPORARY (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2					

SUMMARY OF QUANTITIES				UNIT	TOTAL QUANTITY	ROADWAY	BRIDGE	SAFETY	BIKE PATH	TRAINEES
S.I.	CODE NO.	ITEM	CONSTRUCTION TYPE CODE							
			0004			0013	0021	0021	0042	
	70600332	IMPACT ATTENUATORS, RELOCATE (FULLY REDIRECTIVE, NARROW), TEST LEVEL 3	EACH	2	2					
*	72000100	SIGN PANEL - TYPE 1	SQ FT	75				75		
*	72400100	REMOVE SIGN PANEL ASSEMBLY - TYPE A	EACH	15				15		
*	72400500	RELOCATE SIGN PANEL ASSEMBLY - TYPE A	EACH	4				4		
*	72400710	RELOCATE SIGN PANEL - TYPE 1	SQ FT	9				9		
*	72800100	TELESCOPING STEEL SIGN SUPPORT	FOOT	180				180		
*	73100100	BASE FOR TELESCOPING STEEL SIGN SUPPORT	EACH	12				12		
*	78000100	THERMOPLASTIC PAVEMENT MARKING - LETTERS AND SYMBOLS	SQ FT	330				330		
*	78000200	THERMOPLASTIC PAVEMENT MARKING - LINE 4"	FOOT	20600				20600		
*	78000400	THERMOPLASTIC PAVEMENT MARKING - LINE 6"	FOOT	980				980		
*	78000600	THERMOPLASTIC PAVEMENT MARKING - LINE 12"	FOOT	1460				1460		
*	78000650	THERMOPLASTIC PAVEMENT MARKING - LINE 24"	FOOT	170				170		
*	81400100	HANDHOLE	EACH	1				1		
*	81603050	UNIT DUCT, 600V, 3-1C NO.6, 1/C NO.8 GROUND, (XLP-TYPE USE), 1" DIA. POLYETHYLENE	FOOT	30				30		
*	83600200	LIGHT POLE FOUNDATION, 24" DIAMETER	FOOT	9				9		
*	84200804	REMOVAL OF POLE FOUNDATION	EACH	1				1		
*	84400105	RELOCATE EXISTING LIGHTING UNIT	EACH	1				1		
	Z0012754	STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	4			4			
	Z0012755	STRUCTURAL REPAIR OF CONCRETE (DEPTH GREATER THAN 5 INCHES)	SQ FT	4			4			
	Z0030850	TEMPORARY INFORMATION SIGNING	SQ FT	53	53					
	Z0046304	PIPE UNDERDRAINS FOR STRUCTURES 4"	FOOT	185			185			
	Z0076600	TRAINEES	HOUR	1000						1000
	Z0076604	TRAINEES TRAINING PROGRAM GRADUATE	HOUR	1000						1000
	X0322508	PEDESTRIAN TRUSS SUPERSTRUCTURE	SQ FT	920			920			

* - INDICATES SPECIALTY ITEMS

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FILE NAME = 10423_12-QUANT-01 - IDOT-001 (8)

USER NAME =	DESIGNED -- GA	REVISED -- 2/16/15
CHECKED -- HLG	REVISIONS --	
PLOT SCALE =	DRAWN -- MED	REVISED --
PLOT DATE = 08-09-16	CHECKED -- APG	REVISED --

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ST. FRANCIS ROAD (FAU 3752)
RECONSTRUCTION
SUMMARY OF QUANTITIES

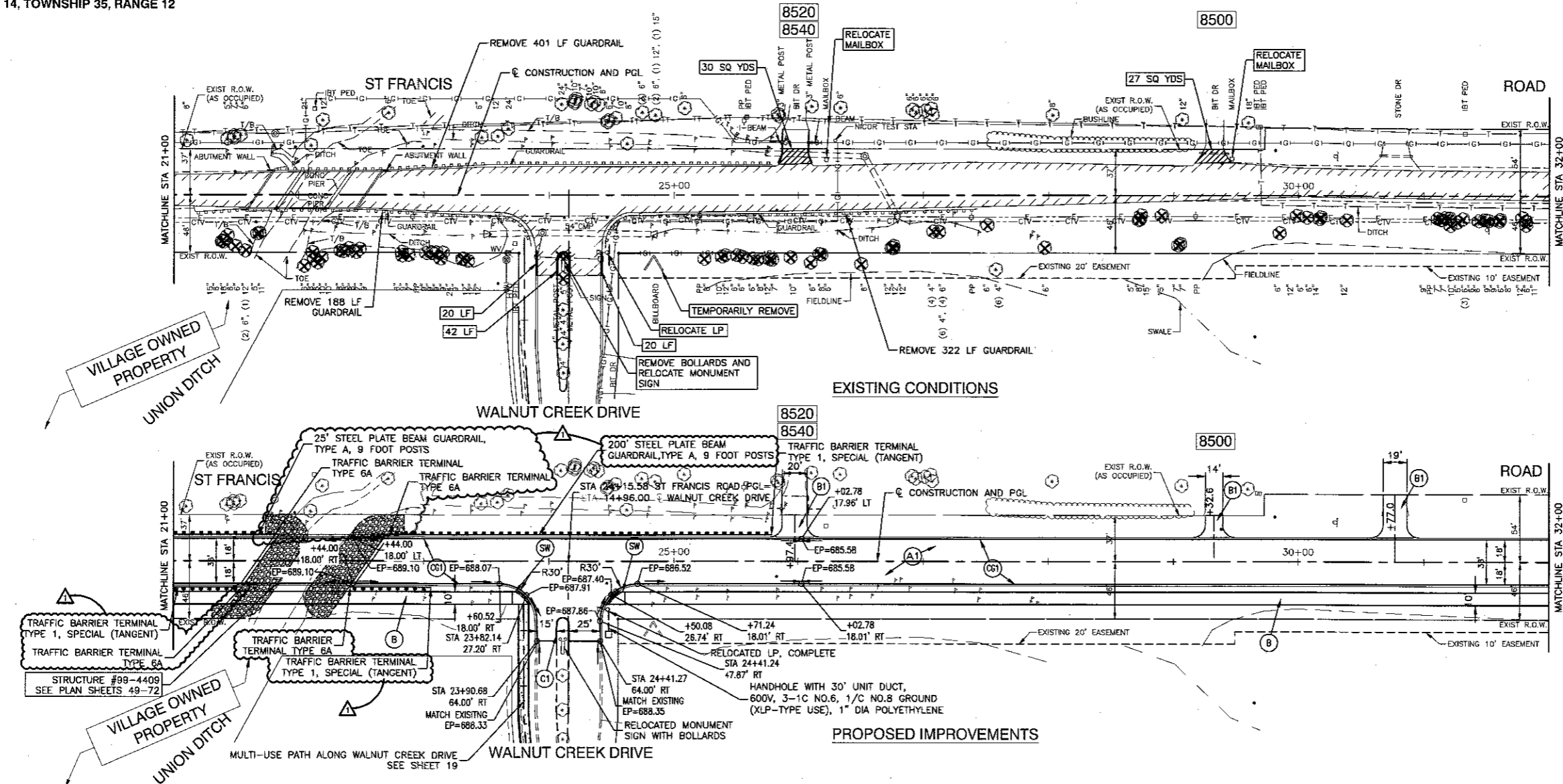
SCALE: SHEET NO. 6 OF 109 SHEETS STA. TO STA.

FAU RTE 3752	SECTION 10-00045-00-WR	COUNTY WILL	TOTAL SHEETS 109	SHEET NO. 6
FED. ROAD DIST. NO. 1 ILLINOIS			CONTRACT NO. 61D22	

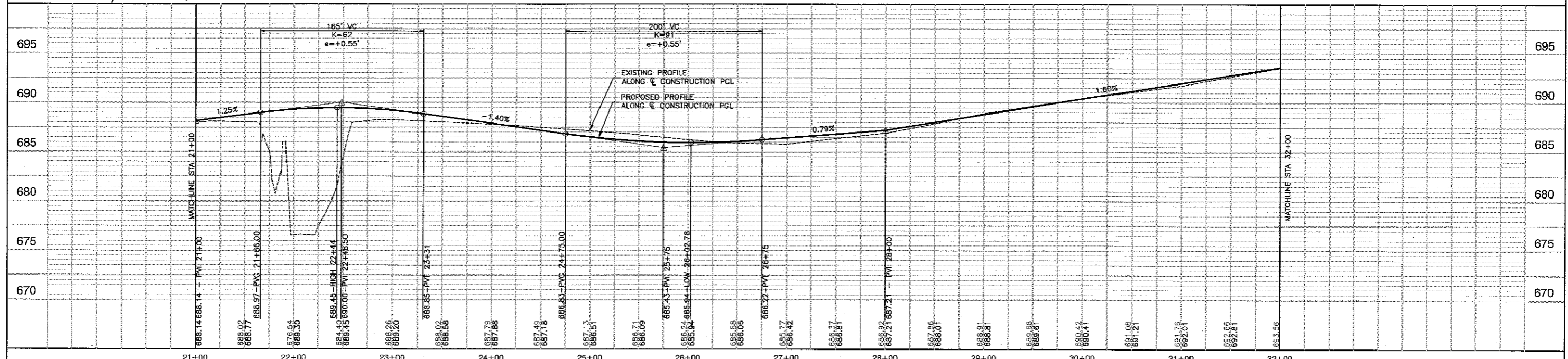


PLAN	SURVEYED	DATE
	PLOTTED	
	REVISIONS CHECKED	
	DATE	
	BY	
	NO.	

PROFILE	SURVEYED	DATE
	PLOTTED	
	REVISIONS CHECKED	
	DATE	
	BY	
	NO.	



- LEGEND**
- HMA SURFACE REMOVAL - BUTT JOINT
 - TREE TO BE REMOVED (SEE NOTE 6)
 - CONC CURB & GUTTER REMOVAL
 - PAVEMENT REMOVAL
 - SIDEWALK/PATH REMOVAL
 - DRIVEWAY REMOVAL
 - STONE RIP RAP, CLASS A4
- NOTES**
1. ALL PCC SIDEWALK SHALL BE 5' WIDE.
 2. ALL CURB RAMPS FOR SIDEWALKS & MULTI-USE PATH SHALL INCLUDE DETECTABLE WARNINGS AND DEPRESSED CURB PER CURRENT HIGHWAY STANDARDS.
 3. OFFSETS ARE NOTED FROM ϕ OF CONSTRUCTION.
 4. RESIDENTIAL DRIVEWAYS HAVE 5' FLARE UNLESS OTHERWISE NOTED.
 5. THE BILLBOARD AT STATION 24+84 SHALL BE REMOVED AND REPLACED ONCE CONSTRUCTION IS COMPLETE. (THIS WORK SHALL BE CONSIDERED INCLUDED IN THE COST OF THE CONTRACT.)
 6. MAJORITY OF TREE REMOVALS HAVE ALREADY BEEN COMPLETED BY OTHERS.



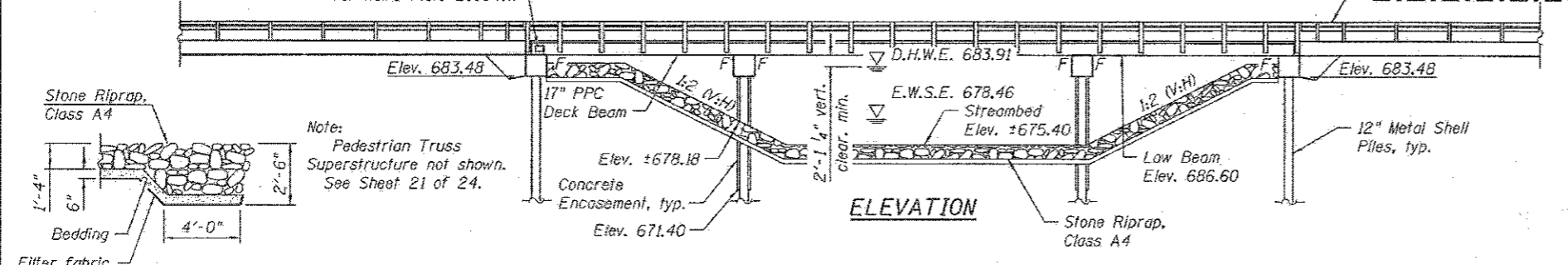
FILE NAME = 10423_12PLPR-01 - EOT PLPR 02	USER NAME =	DESIGNED = GA	REVISED = 02/16/18	STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION	ST. FRANCIS ROAD (FAU 3752) RECONSTRUCTION PLAN & PROFILE	F.A.U. RITE. 3752	SECTION 10-00045-00-WR	COUNTY WILL	TOTAL SHEETS 109	SHEET NO. 13
	PLOT SCALE =	DRAWN = MED	REVISIONS =	SCALE: H: 1"=60' V: 1"=5'	SHEET NO. 13 OF 109 SHEETS	CONTRACT NO. 61D22		FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT		
	PLOT DATE = 06-09-16	CHECKED = APG	REVISIONS =	STA. TO STA.						

Benchmark: Frankfort FFT 178. Two nails in north face of 2nd power pole east of Indian Court, south side of St. Francis Road. Elevation 713.22 (NGVD 29).

Existing Structure: S.N. 099-4401 built in 1984 as TR Route 105. Section 82-06112-00-BR at Station 9+85. Structure consists of three span 17" PPC deck beams on cast-in-place stub abutments with bituminous wearing surface founded on metal shell piles and two reinforced concrete pile bent piers. 91'-10" Bk to Bk of abutments 30'-0" Out-to-Out of deck. Deck beams to be removed and replaced maintaining traffic by using Stage Construction. Superstructure and substructure to be widened.

No salvage.

See Sheet 9 of 24 for Name Plate Location



SECTION A-A

SUGGESTED CONSTRUCTION SEQUENCE

1. Stage 1 Removal.
2. Stage 1 Construction.
3. Multi-Use Path Bridge Installation.
4. Stage 2 Removal.
5. Stage 2 Construction

SCOPE OF WORK

1. Staged Construction.
2. Remove Existing Structure to limits shown.
3. Install proposed Abutment and Pier Substructure.
4. Install proposed Rip-Rap.
5. Install proposed Deck Beams and Concrete Wearing Surface.
6. Install Type SM Rail.
7. Install Multi-Use Path Bridge.

DESIGN SPECIFICATIONS

NEW CONSTRUCTION
 2010 AASHTO LRFD Bridge Design Specifications with 2010 Interims.
 2009 AASHTO LRFD Guide Specification for Design of Pedestrian Bridge

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

SEISMIC DATA
 Seismic Performance Zone (SPZ) = 1
 Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.094
 Design Spectral Acceleration at 0.2 sec. (S_{D5}) = 0.151
 Soil Site Class = D

INDEX OF SHEETS

- 1 General Plan and Elevation
- 2 General Data and Stage Construction Details
- 3 Temporary Concrete Barrier for Stage Construction
- 4-7 Top of Slab Elevations
- 8 Superstructure
- 9 Superstructure Details
- 10 Steel Railing, Type SM with Concrete Wearing Surface
- 11 17"x36" PPC Deck Beam (Span 1 and 3)
- 12 17"x36" PPC Deck Beam (Span 2)
- 13 17"x36" PPC Deck Beam Details
- 14 Abutment Removal Details
- 15 West Abutment
- 16 East Abutment
- 17 Pier Removal Details
- 18 Pier 1
- 19 Pier 2
- 20 Metal Shell Pile Details
- 21 Pedestrian Truss Superstructure Details
- 22 Bar Splicer Assembly and Mechanical Splicer Details
- 23 Soil Boring Logs
- 24 Existing General Plan and Elevation

DESIGN STRESSES

NEW CONSTRUCTION
 $f'_c = 3,500$ psi (Substructure)
 $f'_c = 4,000$ psi (Superstructure)
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)

PRECAST PRESTRESSED UNITS
 $f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f_{pu} = 270,000$ psi (1/2" low lax strands)
 $f_{pbT} = 201,960$ psi (1/2" low lax strands)

EXISTING CONSTRUCTION
 $f_y = 40,000$ psi (Reinforcement)
 $f'_c = 1,400$ psi

MAIN UNION DITCH
 RE-BUILT 2017 BY
 VILLAGE OF FRANKFORT
 SEC 10-000-16-00-BR
 F.A.U. 3752 STATION 22+09.91
 STRUCTURE NO. 099-4401
 LOADING HL-93

NAME PLATE

See Std. 515001
 Existing Name Plate shall be cleaned and relocated next to new Name Plate.
 Cost included with Name Plates.
 See Sheet 9 of 24 for Name Plate Location.

DESIGN SCOUR ELEVATION TABLE

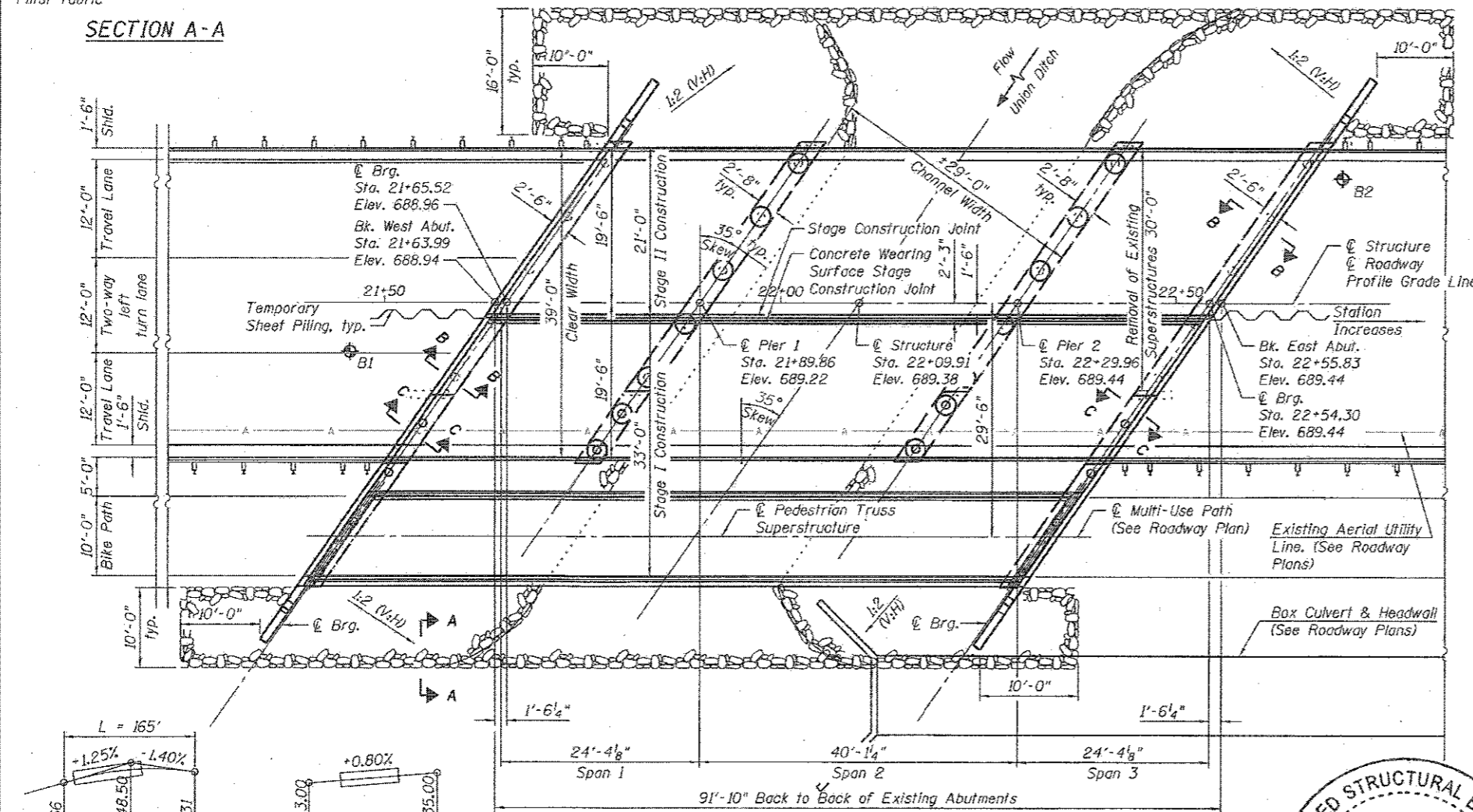
Design Scour Elevation (ft.)	West Abut.	West Pier	East Pier	East Abut.
	674.15	669.73	670.56	668.56

WATERWAY INFORMATION

Drainage Area = 17.2 square miles Prop. Overtopping Elev. 686.09 @ Sta. 17+00

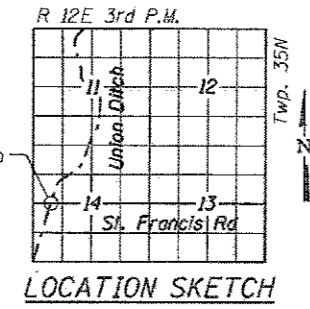
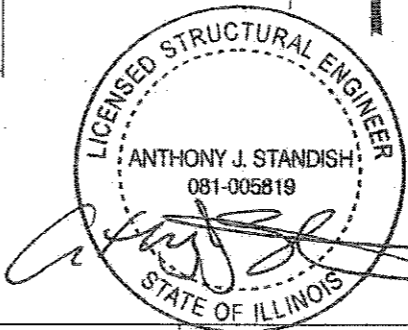
Flood Yr.	Freq.	Q	Opening C.F.S.	Sq. Ft.	Not. H.W.E.	Head - Ft. Exst. Prop.	Headwater El. Exst. Prop.
10	464	286.00	340.79	683.33	0.04	0.00	683.37
Design	30	570	318.88	380.12	683.91	0.13	0.11
Base	100	707	356.65	418.61	684.42	0.26	0.25
Max. Calc.	500	858	387.73	449.68	684.77	0.41	0.42

10-year velocity through existing bridge = 1.84 fps
 10 year velocity through proposed bridge = 1.39 fps.



PLAN

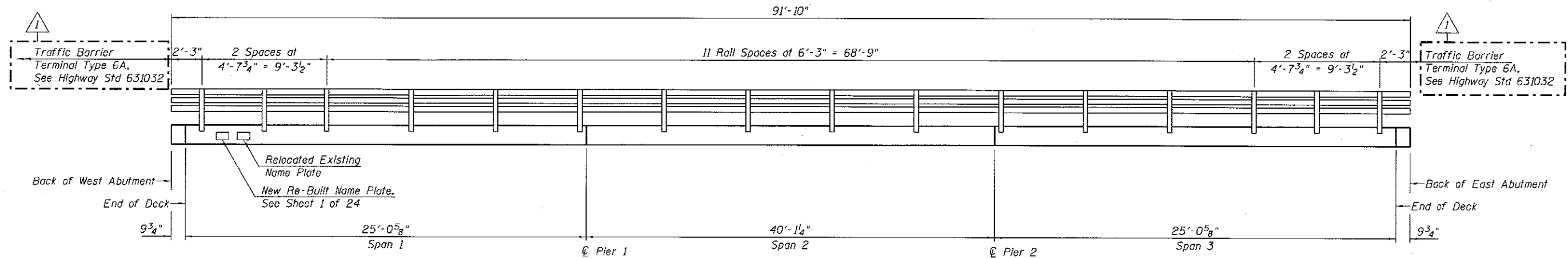
I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.



GENERAL PLAN & ELEVATION
ST. FRANCIS ROAD
OVER UNION DITCH
 F.A.U. 3752
SECTION (10-00046-00-BR)
WILL COUNTY
STA. 22+09.91
S.N. 099-4401

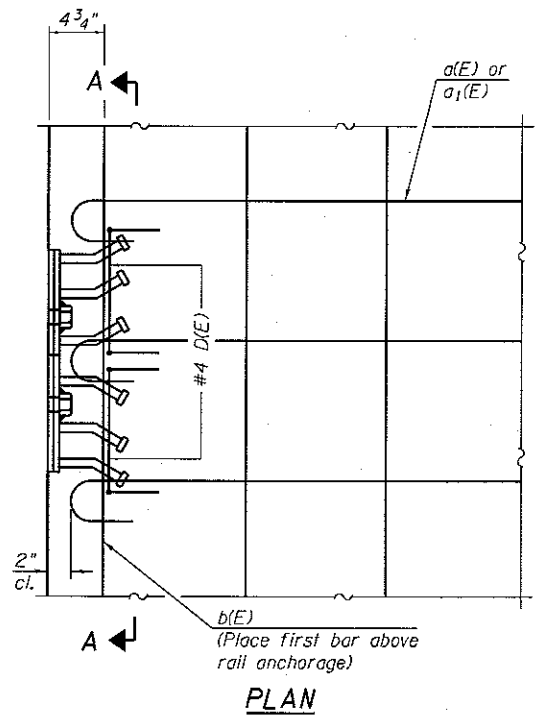
PROFILE GRADE
 (F.A.U. 3752 along \bar{C} of Roadway)

PROFILE GRADE
 (Along \bar{C} of Bikepath)

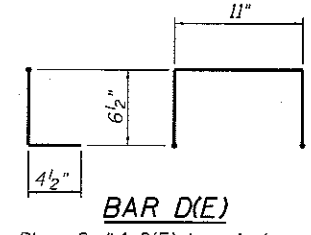
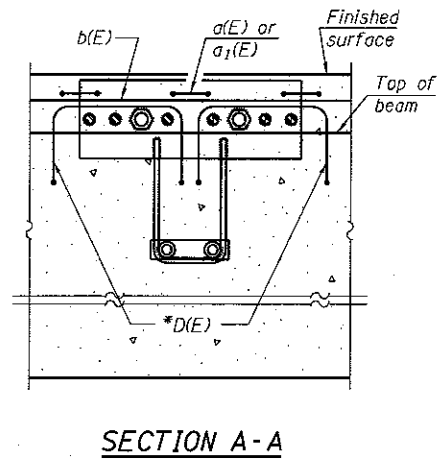
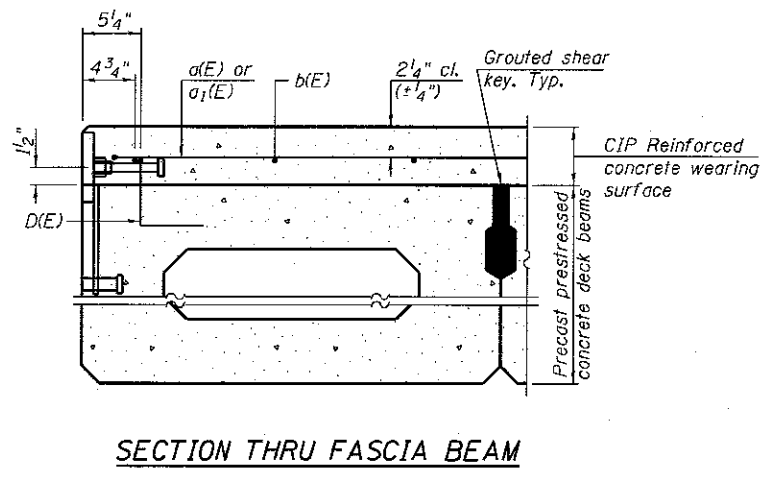


ELEVATION

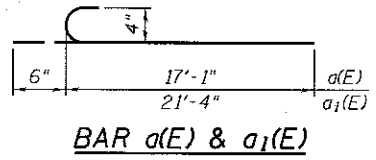
Notes:
See Sheet 10 of 24 for railing details.



Notes:
Formwork necessary for the wearing surface may be secured utilizing the bottom rail anchorage inserts and/or additional inserts cast into the beam.



* Place 2 - #4 D(E) bars in beam at each post location as shown. D(E) bar included in cost of beam.



MINIMUM BAR LAP
#4 bar = 2'-7"

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length	Shape
a(E)	91	#4	17'-1"	C
a1(E)	91	#4	21'-4"	C
b(E)	120	#4	31'-9"	—
Bridge Deck Grooving		Sq. Yd.	398	
Protective Coat		Sq. Yd.	398	
Reinforcement Bars, Epoxy Coated		Pound	5,080	
Bar Splicers		Each	91	
Concrete Wearing Surface, (Variable Depth)		Sq. Yd.	391	

See Sheet 22 of 24 for Mechanical Splicer Details.

FILE NAME = S:\JUL18606-6899\6826\013\Koros\CAD\Sheets\B79-481-XXX-099-SUPDET.dgn



USER NAME = BmL	DESIGNED BRL	REVISED 02/16/2018 BRL
PLOT SCALE =	CHECKED AJS	REVISED -
PLOT DATE = 2/16/2018	DRAWN BJF	REVISED -
	CHECKED BRL	REVISED -

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

SUPERSTRUCTURE DETAILS
STRUCTURE NO. 099-4401
SHEET NO. 9 OF 24 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
3752	10-00046-00-BR	WILL	109	57
CONTRACT NO. 61022				
ILLINOIS FED. AID PROJECT				