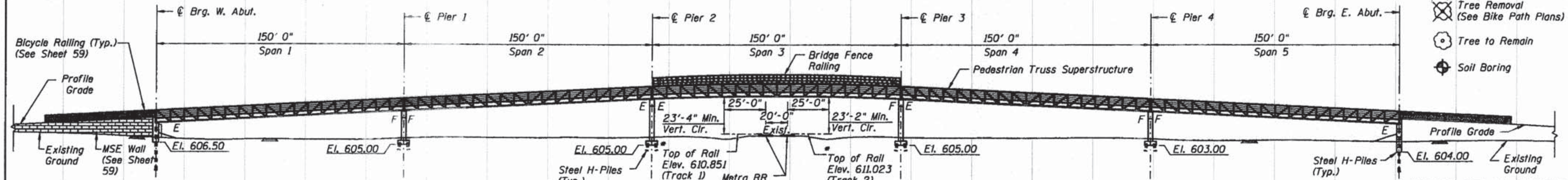
Benchmark: Control Point #11: STA. 60+13.06 Offset 20.79 ft LT N=1,938,383.445 E=1,139,423.252 EL=611.543
Existing Structure: None



Note: No Deck Drains Will Be Permitted In The Span Over The Railroad Tracks And Within Metra Right-Of-Way.

* Surveyed Top of Rail Elevations

ELEVATION
(Looking North)

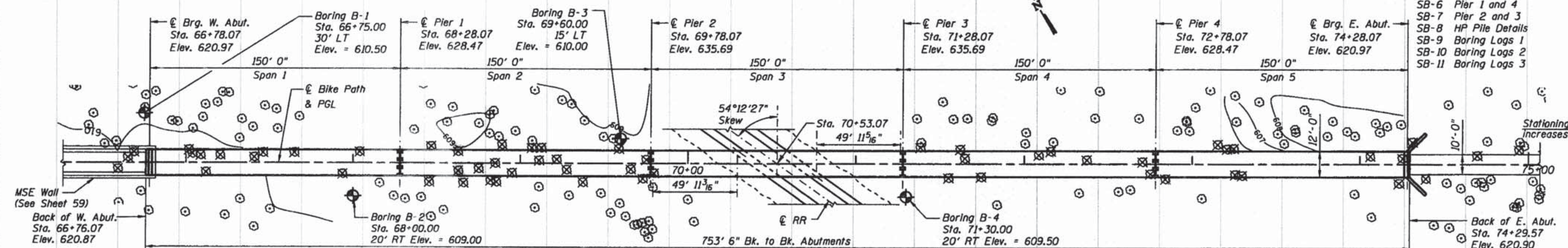
LEGEND

- Tree Removal (See Bike Path Plans)
- Tree to Remain
- Soil Boring

INDEX OF DRAWINGS

NOTE:

HORIZONTAL DATUM: NAD 83
VERTICAL DATUM: NAVD 88



PLAN

GENERAL NOTES

All structural steel shall be AASHTO M 270 Grade 50W (except expansion joints which shall be AASHTO M 270 Grade 50).

All structural steel and exposed surfaces of bearings within a distance of 10 ft. each way from the deck joints shall be painted as specified in Section 506 of the Standard Specifications.

Reinforcement bars designated (E) shall be epoxy coated.

Fasteners shall be ASTM A325 Type 1, mechanically galvanized bolts (painted areas and ASTM A325 Type 3 in unpainted areas).

No field welding is permitted except as specified in the contract documents.

Bearing seat surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 1/8 in. (0.01 ft.). Adjustment shall be made either by grinding the surface or by shimming the bearings.

Concrete Sealer shall be applied to all exposed surfaces of abutments and piers.

The work included under Pedestrian Truss Superstructure shall consist of furnishing, fabricating, transporting, erecting, painting as specified, metal decking, concrete, bearings, anchor bolts, bridge fence railing, wire mesh fence and attachments, and any other item of work to complete the work.

Before fabrication, the Contractor shall submit structural calculations and shop drawings signed and stamped by an Illinois registered Structural Engineer to the Engineer for review and approval, as per Standard Specifications, Section 505.

A cantilevered sheet piling design does not appear feasible and additional members or other retention systems may be necessary. The Contractor shall submit a temporary soil retention system design including plan details and calculations for review and acceptance by the Engineer.

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications, (6th Edition with 2012 Interims).

Illinois Department of Transportation Standard Specifications for Road and Bridge Construction, Adopted January 1, 2012; and Supplemental Specifications and Recurring Special Provisions Adopted January 1, 2015.

2009 AASHTO LRFD Guide Specifications for Design of Pedestrian Bridges.

LIVE LOADING

90 psf Live Load
(May be adjusted for influence area)

20,000 lb. Vehicle Load (H-10 Truck)

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.09g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.158g
Soil Site Class = D

CLASSIFICATION

Pedestrian/Bicycle Bridge

DESIGN STRESSES

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

REACTION TABLE

Span	P (k) 3	P (k) 1,2,4,5	H (k) 3	H (k) 1,2,4,5	L (k) 3	L (k) 1,2,4,5
Dead Load	52.95	51.20				
Uniform Live Load	40.50	40.50				
Vehicle Load	10.00	10.00				
Wind Uplift (20 psf)	(-)15.38	(-)15.38				
Wind	±15.33	±13.46	29.32	27.35		
Thermal					7.95	7.68

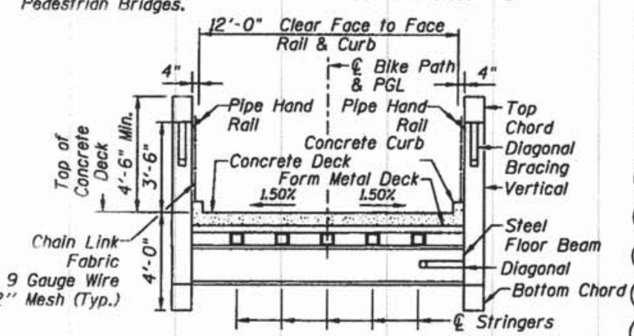
Loads are provided by a fabricator and for reference only.
(-) Indicates uplift load
P = Vertical Load at Each Bearing
H = Horizontal Load at Each Footing
L = Longitudinal Load at Each Bearing

I certify that to the best of my knowledge, information and belief, this 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.

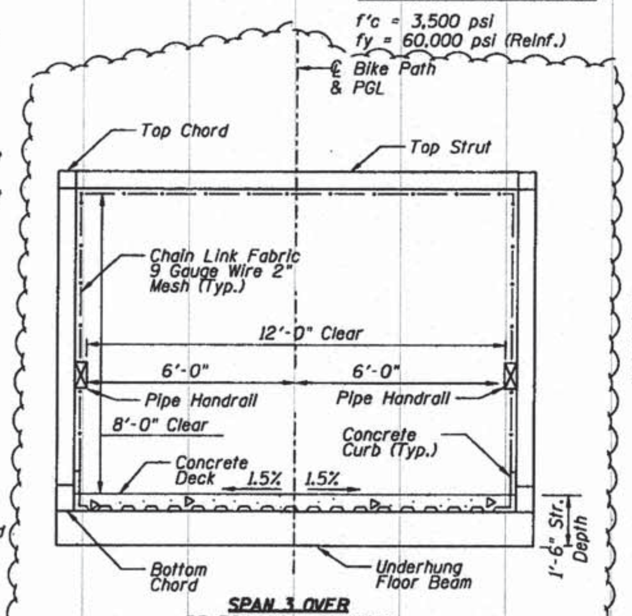
THEODORE P. GEORGAS 081-004609 REGISTERED STRUCTURAL ENGINEER STATE OF ILLINOIS

4-10-15

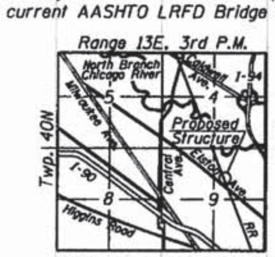
THEODORE P. GEORGAS DATE
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS 081-004609
EXPIRES 11/30/2016



TYPICAL CROSS-SECTION
SPANS 1, 2, 4 & 5



SPAN 3 OVER RR TRACKS - SECTION



LOCATION SKETCH

GENERAL PLAN & ELEVATION
NORTH BRANCH BIKE TRAIL BRIDGE
OVER METRA RAILROAD
SECTION 08-F3000-21-BT
COOK COUNTY
STATION 70+53.07
STRUCTURE NUMBER 016-P021

FILE NAME = G:\Cook\FPD_2538730\...\Metra\GP&E Mod.dgn

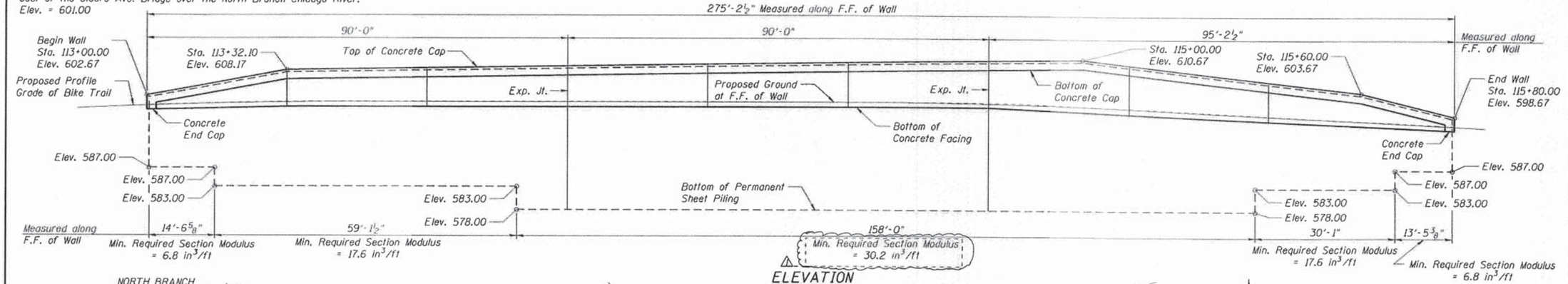
Primera	USER NAME = David.Landeweer	DESIGNED - MMZ	REVISED - 4/9/15 Rev. Cross Section
		DRAWN - MMZ	REVISED -
	PLOT SCALE = 38.8889 ' / in.	CHECKED - JPM//MMH/TPG	REVISED -
	PLOT DATE = 4/9/2015	DATE - 10/20/2014	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

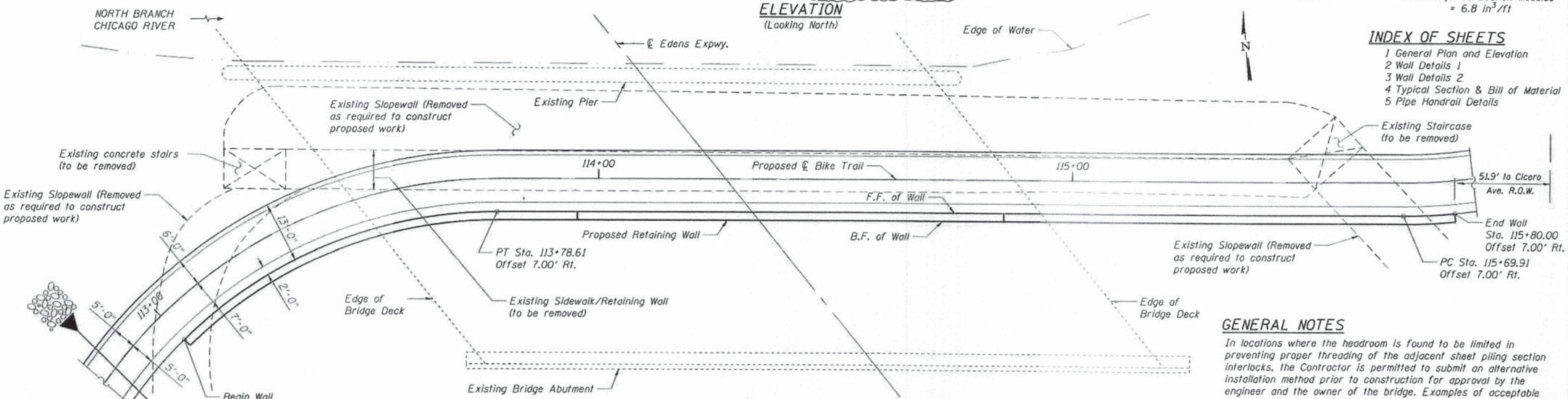
STRUCTURE NO. 016-P017
SHEET NO. SB-1 OF SB-11 SHEETS

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	08-F3000-21-BT	COOK	129	48
		CONTRACT NO. 61A86		
FED. ROAD DIST. NO.	ILLINOIS FED. AID PROJECT			

Benchmark: BM #104 - Cut square at the west end of the South Abutment seat of the Cicero Ave. Bridge over the North Branch Chicago River.
Elev. = 601.00



ELEVATION
(Looking North)



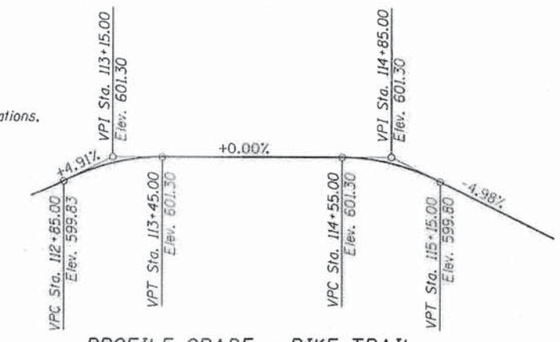
INDEX OF SHEETS

DESIGN SPECIFICATIONS

2012 AASHTO LRFD Bridge Design Specifications.
(6th Edition with 2012 Interims)

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 P.S.I.
Fy = 60,000 P.S.I. (Reinf.)
Fy = 50,000 P.S.I. (Permanent Sheet Piling)



PROFILE GRADE - BIKE TRAIL

PLAN

STATE OF ILLINOIS
MICHAEL B. QUIRIN
081-006070
LICENSED STRUCTURAL ENGINEER
CHICAGO, IL

4/13/15

MICHAEL B. QUIRIN DATE
LICENSED STRUCTURAL ENGINEER
STATE OF ILLINOIS 081-6070
EXPIRES 11/30/2016

I certify that to the best of knowledge, information and belief, this 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.

TOTAL BILL OF MATERIAL

ITEM	UNIT	TOTAL
Porous Granular Backfill	Cu. Yd.	173.0
Concrete Removal	Cu. Yd.	131.3
Slope Wall Removal	Sq. Yd.	237
Structure Excavation	Cu. Yd.	528.0
Concrete Structures	Cu. Yd.	93.7
Stud Shear Connectors	Each	1,426
Reinforcement Bars, Epoxy Coated	Pound	7,940
Pipe Handrail	Foot	270
Slope Wall 4 Inch	Sq. Yd.	271
Geocomposite Wall Drain	Sq. Yd.	199
Concrete Gutter, Type B	Foot	243
Permanent Steel Sheet Piling	Sq. Ft.	7,398
Pipe Underdrains for Structures 4"	Foot	291
Chain Link Fence to be Removed and Re-Erected	Foot	230

GENERAL NOTES

In locations where the headroom is found to be limited in preventing proper threading of the adjacent sheet piling section interlocks, the Contractor is permitted to submit an alternative installation method prior to construction for approval by the engineer and the owner of the bridge. Examples of acceptable methods of installation include welding the piling, installing multiple sheets bolted together, or special driving equipment. The cost of the work required to implement and conduct the approved method is included with the bid item "Permanent Steel Sheet Piling".

Permanent steel pile walls shall be backfilled prior to constructing the concrete facing.

Hard driving in hardpan clay may be encountered below elevation 590.00. The Contractor shall provide the appropriate driving equipment for such.

For Curve data, see sheets 2 & 3.

0.00 Chicago City Datum = 579.88 USGS

GENERAL PLAN AND ELEVATION
NORTH BRANCH TRAIL EXTENSION
EDENS UNDERPASS RETAINING WALL
SEC. 08-F3000-21-BT
COOK COUNTY
STA 113+00.00 TO 115+80.00

FILE NAME

URS
100 SOUTH WACKER DRIVE, Suite 500
CHICAGO, IL. 60606 (312)-939-1000

USER NAME	DESIGNED - PSK 5-16-14	REVISED ⚠ MBO 4-13-15	
	CHECKED - MBO 5-29-14	REVISED	
PLOT SCALE	DRAWN - PSK 5-16-14	REVISED	
PLOT DATE	CHECKED - MBO 5-29-14	REVISED	

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

NORTH BRANCH TRAIL EXTENSION

SHEET NO. 1 OF 5 SHEETS

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	08-F3000-21-BT	COOK	129	63
		CONTRACT NO. 61A86		
		ILLINOIS FED. AID PROJECT		