Bench Mark: BM #5 Station 23+87.12 Offset 32.32' LT. Cut square box on top of wingwall. Elev. 611.539

BM #11 Station 18+66.04 Offset 32.11' RT. Cut square box on top easterly wingwall. Elev. 611.589

Existing Structure: Structure No. 016-0934, built in 1938, consists of a Pennsylvania (Petit) Through Truss main span and four simply supported precast prestressed concrete (PPC) box beam approach spans. The substructure consists of cast-in-place concrete spill through abutments founded on timber piles with wingwalls supported by and inline with the abutment. The four cast-in-place concrete piers are founded on timber piles. The back to back of abutments dimension measures 523'-3 5/8" and the out-to-out width of the approach spans is 63'-7" and the out-to-out width of the main span is 62'-1". The reinforced concrete approach slabs on each end of the bridge are 40'-0" long by 40'-0" wide.

Traffic is to be detoured during removal and replacement of the existing structure.

Salvage: No Salvage

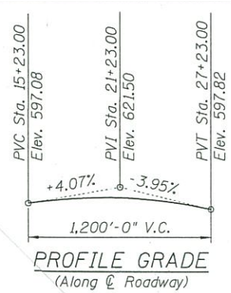
DESIGN SCOUR ELEVATION TABLE

Design Scour Elevation (ft.)	South Abut.	Pier 1	Pier 2	North Abut.
0.100	595.86	558.10	557.90	596.72
0.500	595.86	558.10	557.90	596.72

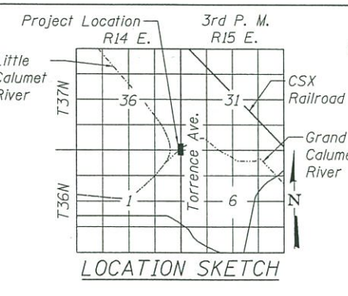
WATERWAY INFORMATION

Drainage Area = Unknown, >7.3 sq. mi. Exist. Low Grade Elev. 610.79 @ Sta. - 23+88 Prop. Low Grade Elev. 610.00 @ Sta. - 18+70

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.
	10	N/A	1,248	1,279	581.44	*	*	*	*
Design	50	N/A	1,521	1,569	582.57	-	-	-	-
Base	100	N/A	1,556	1,605	582.71	-	-	-	-
Overtop	>500	N/A	-	-	-	-	-	-	-
Max. Calc.	500	N/A	1,669	1,720	583.15	-	-	-	-



PROFILE GRADE
(Along ℄ Roadway)



LOCATION SKETCH

DESIGN SPECIFICATIONS

AASHTO LRFD Bridge Design Specifications, 6th Edition with 2013 interim Revision

DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi
fy = 60,000 psi
fy = 50,000 psi (M270 Grade 50W)

LOADING HL-93

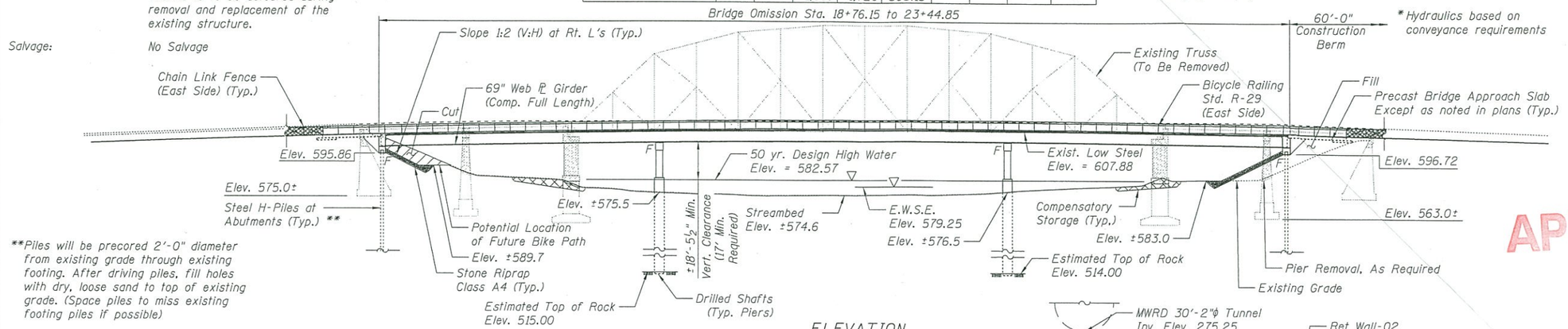
Allow 50#/sq. ft. for future wearing surface

HIGHWAY CLASSIFICATION

F.A.P. Route 358 (Torrence Avenue)
Functional Class: Other Principal Arterial
A.D.T.: 12,700 (2010), 22,000 (2040)
A.D.T.T.: 508 (2010), 1,320 (2040)
D.H.V.: 1,270 (2010), 2,200 (2040)
Design Speed: 40 M.P.H.
Posted Speed: 40 M.P.H.

SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Design Spectral Acceleration at 1.0 sec. (S_{D1}) = 0.064g
Design Spectral Acceleration at 0.2 sec. (S_{DS}) = 0.112g
Soil Site Class = C



ELEVATION

PLAN

*Hydraulics based on conveyance requirements

**Piles will be precored 2'-0" diameter from existing grade through existing footing. After driving piles, fill holes with dry, loose sand to top of existing grade. (Space piles to miss existing footing piles if possible)

***Existing culvert to be removed as required and relocated. See Rdwy Plans

APPROVED
OCT 15 2014
AS A BASIS FOR PREPARATION OF DETAILED PLANS

GENERAL PLAN

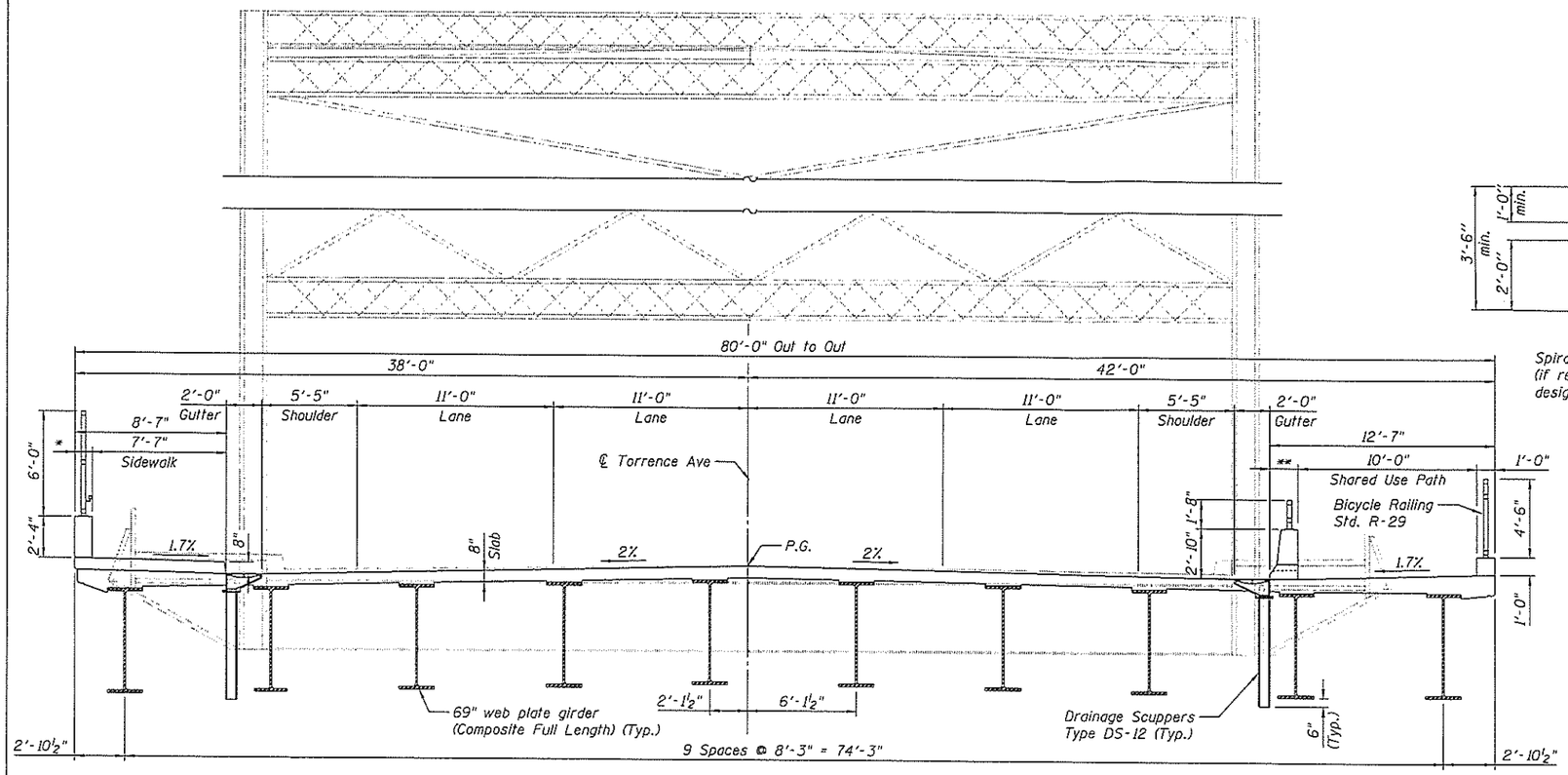
TORRENCE AVENUE OVER
GRAND CALUMET RIVER (Public Water)
F.A.P. ROUTE 358
Section 1112.1B-R
COOK COUNTY
STATION 21+10.50
SN 016-2089

USER NAME =	DESIGNED - KDH		REVISED
	CHECKED - RDW		REVISED
PLOT SCALE =	DRAWN - JMP		REVISED
PLOT DATE =	CHECKED - RDW		REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 1 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
358	1112.1B-R	COOK	3	1
	SN. 016-2089	CONTRACT NO. 60R95		
	ILLINOIS FED. AID PROJECT			

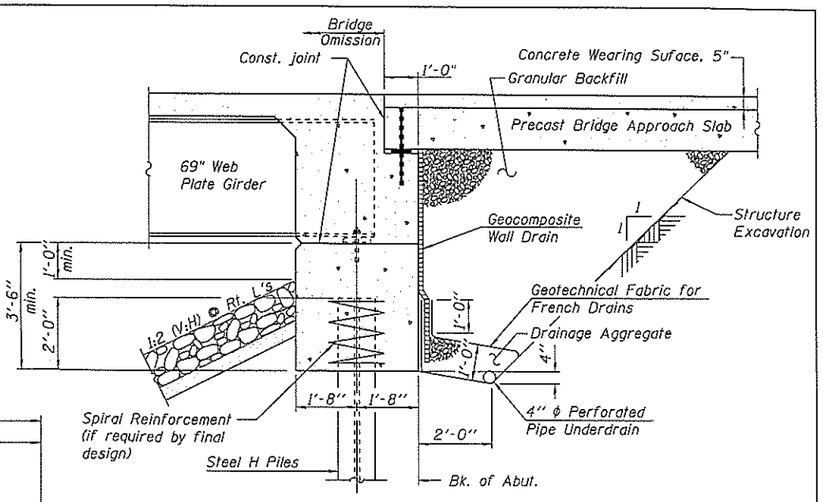


CROSS SECTION
(Looking North)

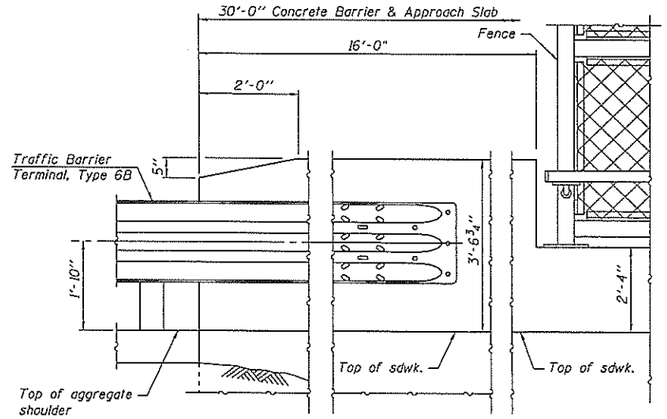
* 1'-0" Conc. Barrier w/ Parapet Railing (Std. R-28)

** Conc. Barrier w/ Parapet Railing (Std. R-29) and 6"x3" Drain Slot @ 6'-0"

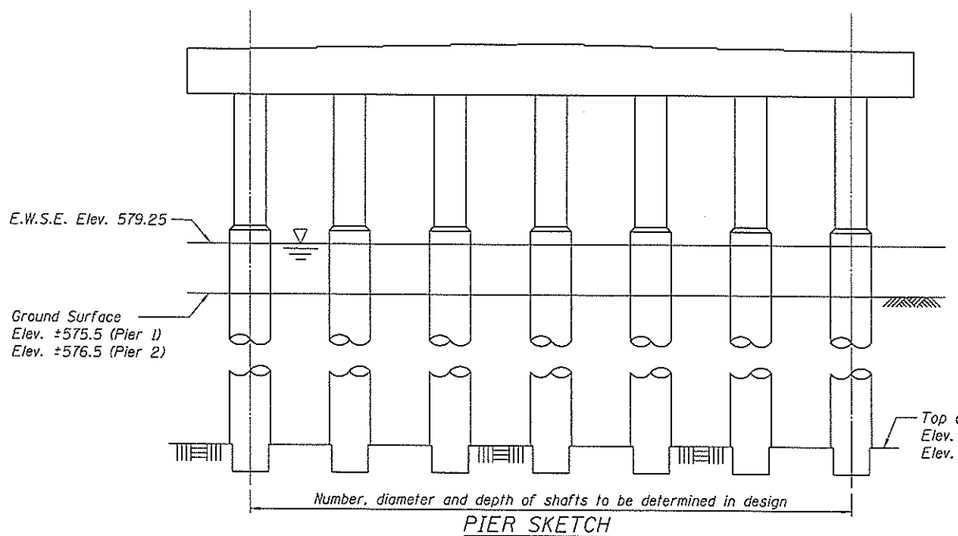
Note:
Traffic lanes shown are for proposed interim traffic condition. Future condition may include a painted median and reduced shoulder widths.



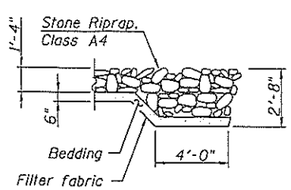
SECTION THRU INTEGRAL ABUTMENT
(Horiz. dim. @ Rt. L's)



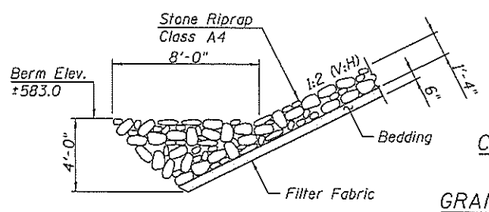
TYPE 6B TERMINAL FOR SOUTHWEST & NORTHWEST PARAPET



PIER SKETCH



SECTION B-B



SECTION A-A

CROSS SECTION AND DETAILS
TORRENCE AVENUE OVER
GRAND CALUMET RIVER (Public Water)
F.A.P. ROUTE 358
SECTION 1112.1B-R
COOK COUNTY
STATION 21+10.50
SN 016-2089

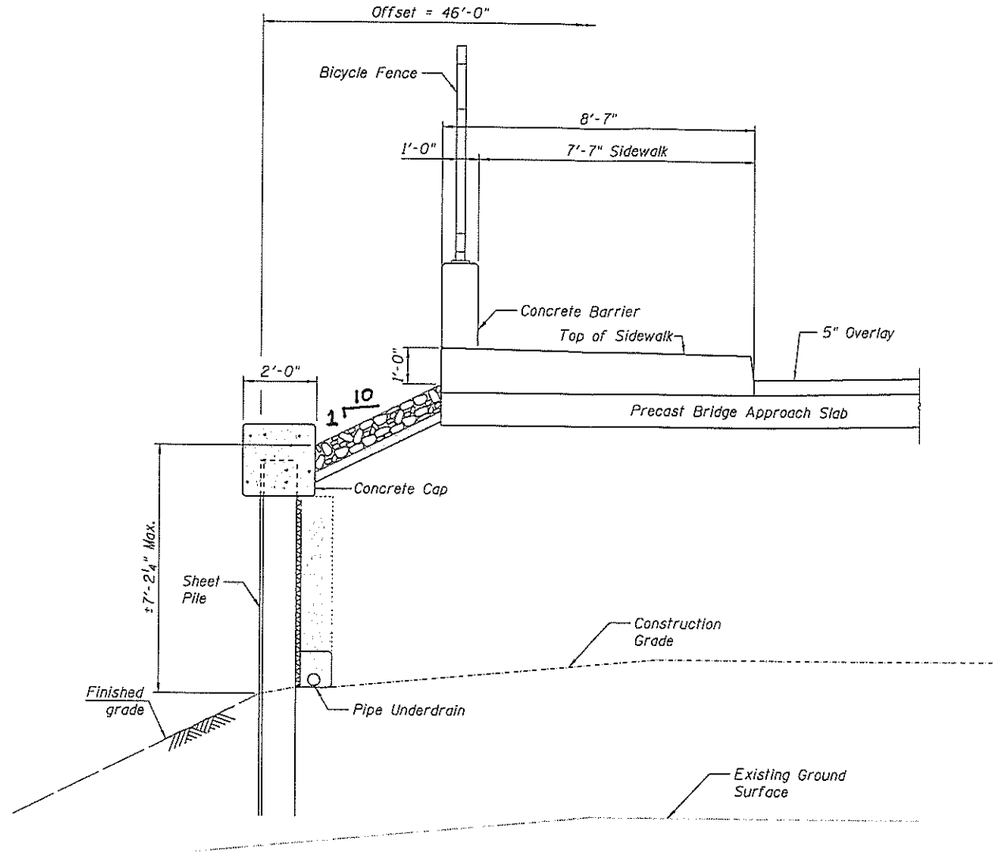
USER NAME =	DESIGNED - KDH	REVISED
	CHECKED - RDW	REVISED
PLOT SCALE =	DRAWN - JMP	REVISED
PLOT DATE =	CHECKED - RDW	REVISED

STV

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 2 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
358	1112.1B-R	COOK	2	3
	SN. 016-2089	CONTRACT NO. 60R95		
	ILLINOIS FED. AID PROJECT			



TYPICAL SECTION THRU RET WALL-02

RETAINING WALL DETAILS
TORRENCE AVENUE OVER
GRAND CALUMET RIVER (Public Water)
F.A.P. ROUTE 358
SECTION 1112.1B-R
COOK COUNTY
STATION 21+10.50
SN 016-2089

STV

USER NAME =	DESIGNED - KDH	REVISED
	CHECKED - RDW	REVISED
PLOT SCALE =	DRAWN - JMP	REVISED
PLOT DATE =	CHECKED - RDW	REVISED

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SHEET NO. 3 OF 3 SHEETS

F.A.P. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
358	1112.1B-R	COOK	3	3
	SN. 016-2089	CONTRACT NO. 60R95		
	ILLINOIS FED. AID PROJECT			