

Benchmark:
Village B.M. 2007-53 at SW corner of Jonquil Terrace & Osterman Avenue. Elevation 660.63

Existing Structure:

S/N: 049-6153 was originally built in 1965 by the Village of Deerfield. It consists of a single span 17" deep precast prestressed concrete deck beam superstructure. The superstructure is supported on closed concrete abutments founded on spread footings. The structure length measures 35'-3 1/2" from back-to-back of abutments and the roadway width measures 26'-0" from face-to-face of curb. The existing superstructure will be removed and replaced. The roadway will be closed during construction. Traffic will utilize a detour. No Salvage

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

RE-BUILT 2011 BY
VILLAGE OF DEERFIELD
SEC. 09-00084-00-BR
STATION 1+46.01
STR. NO. 049-6153 LOADING HS20

WATERWAY INFORMATION

Drainage Area = 3532.8 Ac Low Grade Elev. 657.10									
Flood	Freq. Yr.	Q C.F.S.	Opening Sq. Ft.		Nat. H.W.E.	Head - Ft.		Headwater El.	
			Exist.	Prop.		Exist.	Prop.	Exist.	Prop.
Design	10	113	148	152	653.27	0.00	0.01	653.27	653.28
	30	216	166	171	653.93	0.01	0.01	653.94	653.94
	50	318	186	192	654.70	0.01	0.01	654.71	654.71
Base	100	529	208	236	656.18	0.10	0.11	656.28	656.29
Overtopping									
Max. Calc.	500	881	241	296	657.91	0.49	0.50	658.40	658.41

TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Removal of Existing Superstructures	EACH	1		1
Concrete Removal	CY		0.8	0.8
Concrete Structures	CY		16.4	16.4
Concrete Superstructure	CY	84.8		84.8
Bridge Deck Grooving	SY	248		248
Protective Coat	SY	401		401
* Precast Prestressed Concrete Deck Beams (17" Depth)	SF	1130		1130
* Reinforcement Bars, Epoxy Coated	POUND	19,460	3,240	22,700
Name Plates	EACH	1		1
Structural Repair of Concrete (Depth less than or equal to 5")	SF		196	196
Concrete Bridge Rail, Sidewalk Mounted	FOOT	71		71
* Concrete Wearing Surface, 5"	SY	99		99
* Temporary Wall Bracing System	LS	1		1
Bar Splicers	EACH	54		54

* See Special Provisions

GENERAL NOTES

- Reinforcement bars shall conform to the requirements of ASTM A 706 Gr 60. See Special Provisions.
- Reinforcement bars designated (E) shall be epoxy coated.
- Plan dimensions and details relative to existing plans are subject to nominal construction variations. The Contractor shall field verify existing dimensions and details affecting new construction and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.
- The existing superstructure has a ±4.0" bituminous concrete overlay that will be removed. Cost included with Removal of Existing Superstructure.
- Existing Name Plate shall be cleaned and relocated next to new Name Plate. Cost included with Name Plates.
- Contractor shall install two Village of Deerfield Emblems provided by the Village at the locations shown. Cost included with Name Plates.

SCOPE OF WORK

Remove the existing superstructure and replace with new 17" PPC deck beams and a new 5" R.C. wearing surface. Incorporate new sidewalks and decorative bridge railings.

DESIGN STRESSES

FIELD UNITS

$f'_c = 3,500$ psi
 $f_y = 60,000$ psi (Reinforcement)
 $f_y = 50,000$ psi (M270 Grade 50)

PRECAST PRESTRESSED UNITS

$f'_c = 6,000$ psi
 $f'_{ci} = 5,000$ psi
 $f'_s = 270,000$ psi (1/2" low lax strands)
 $f'_{si} = 201,960$ psi (1/2" low lax strands)

FIELD UNITS (EXISTING)

$f'_c = 1,400$ psi (Super)
 $f'_c = 1,000$ psi (Sub)
 $v_c = 75$ psi (Footings)
 $f_s = 20,000$ psi (Reinforcement)

DESIGN SPECIFICATIONS

2002 AASHTO LFD Bridge Design
With Interim Updates

LOADING HS-20

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

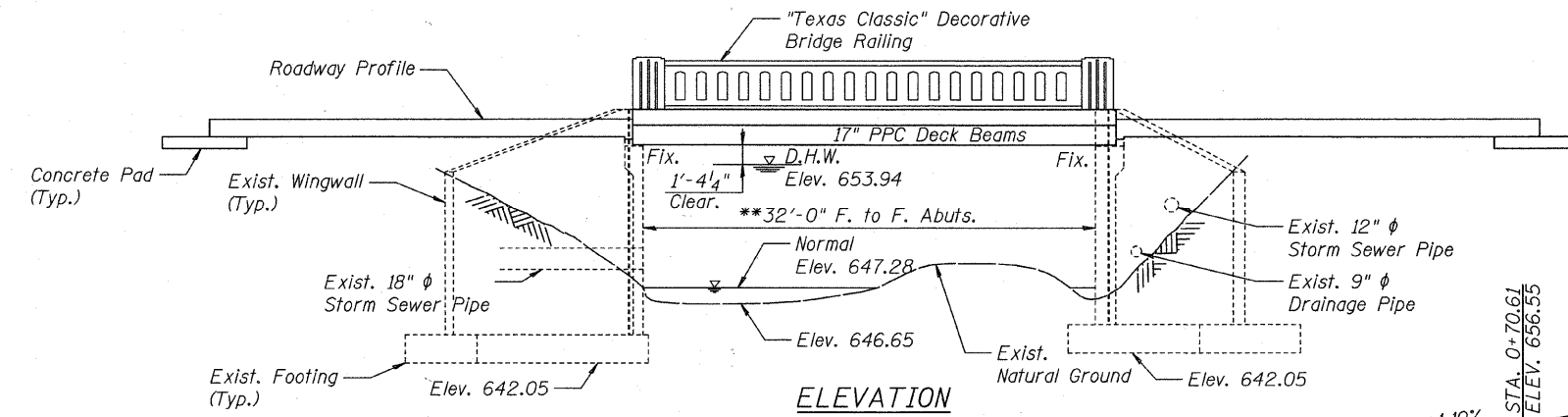
SEISMIC DATA

Seismic Performance Zone (SPZ) = 1
Bedrock Acceleration Coefficient (A) = 0.040g
Site Coefficient (S) = 1.0

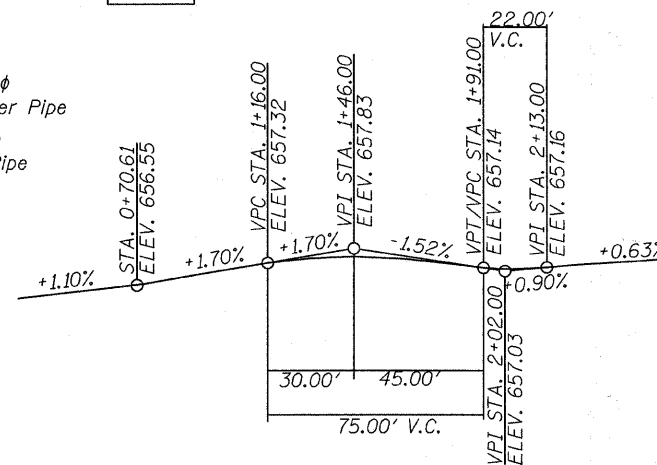
GENERAL PLAN & ELEVATION

STRUCTURE NO. 049-6153

SHEET NO. 1 10 SHEETS	F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
		09-00084-00-BR	LAKE	16	7
			CONTRACT NO. 63587		
FED. ROAD DIST. NO. _		ILLINOIS	FED. AID PROJECT		



(** Dimensions are perpendicular to the face of abutments)

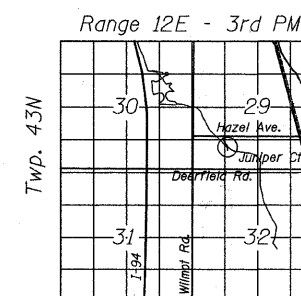


PROFILE GRADE LINE - JUNIPER COURT



JEFFREY P. BUCHOLC
Exp 11/30/12

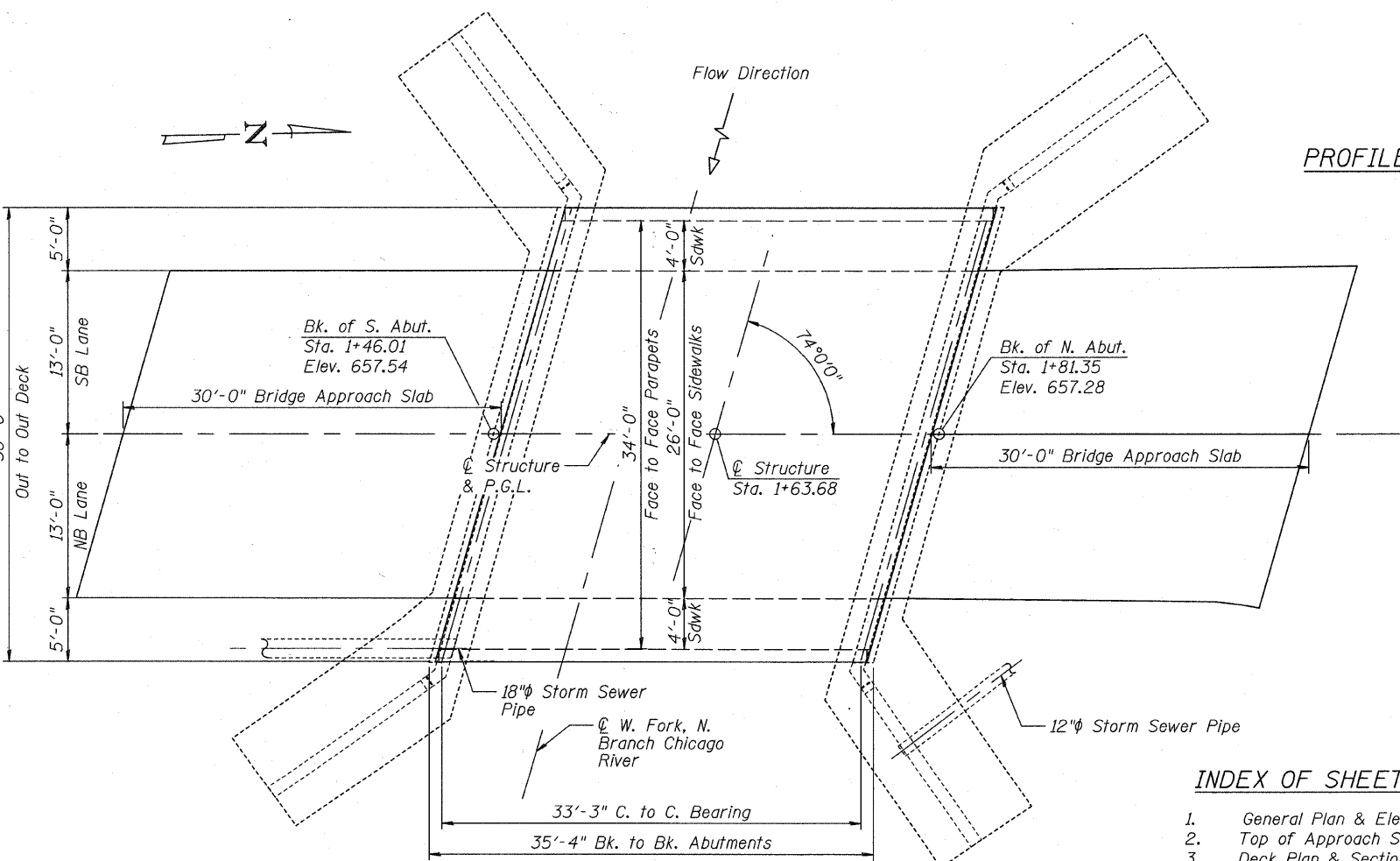
I certify that to the best of knowledge, information and belief, this bridge design is structurally adequate for the design loading shown on the plans. The design is an economical one for the style of structure and complies with requirements of the current AASHTO LRFD Bridge Design Specifications.



LOCATION SKETCH



100 South Wacker Drive, Suite 600
Chicago, IL 60606
Tel: 312.939.1000
Fax: 312.939.4198



PLAN

INDEX OF SHEETS

- General Plan & Elevation
- Top of Approach Slab Elevations
- Deck Plan & Section
- Superstructure & Railing Details
- PPC Deck Beam Details
- Substructure Repairs & Details
- Approach Span Details
- Bar Splicer Details

DESIGNED	L. LAWS
CHECKED	J. BUCHOLC
DRAWN	L. LAWS
CHECKED	J. BUCHOLC