CONTRACT NO. 60B85

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
55	2006-031 BY	WILL	137	86
STA.		TO STA.		
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

BENCHMARK:

BM 3166 Square and "X" cut in SE corner of west parapet wall of east frontage road bridge over Sunnyland Drain creek and is about 10 inches above pavement. El. 594.42

EXISTING STRUCTURE:

S.N. 099-0014 & 099-0015 One span, 24'-6" back to back of abutments, reinforced slab on abutments walls. 44'-0" between barriers (each). 16'-6" long retaining walls separating structures. The substructure was originally constructed in 1959. The superstructures were replaced in 1995.

SALVAGE:

None.

STAGING:

See Sht. SB-2 for staging.

DESIGN SPECIFICATIONS:

AASHTO Standard Specifications for Highway Bridges, 17th Edition, 2002.

DESIGN LOADING:

Roadway Live Load: HS-20-44 & Military Alt.
Future Wearing Surface: 50 psf

DESIGN STRESSES:

New Construction:
Concrete, f'c = 3,500 psi
Reinforcement, fy = 60,000 psi
Existing Superstructure Construction:
Concrete, f'c = 3,500 psi
Reinforcement, fy = 60,000 psi
Existing Substructure Construction:
Concrete, fc= 800 psi
Reinforcement, fs= 20,000 psi, n=10

SEISMIC DATA:

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.04g
Site Coeficient (S) = 1.0

STATION 491+90.44
BUILT 200_ BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 2006-031 BY
LOADING HS20 & ALT.
STR. NO. 099-0014
(Northbound Structure)

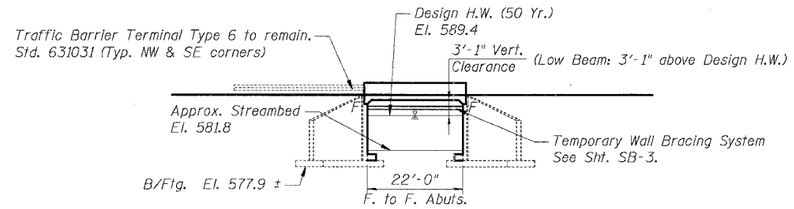
STATION 491+90.44
BUILT 200_ BY
STATE OF ILLINOIS
F.A.I. RT. 55 SEC. 2006-031 BY
LOADING HS20 & ALT.
STR. NO. 099-0015
(Southbound Structure)

NAME PLATES

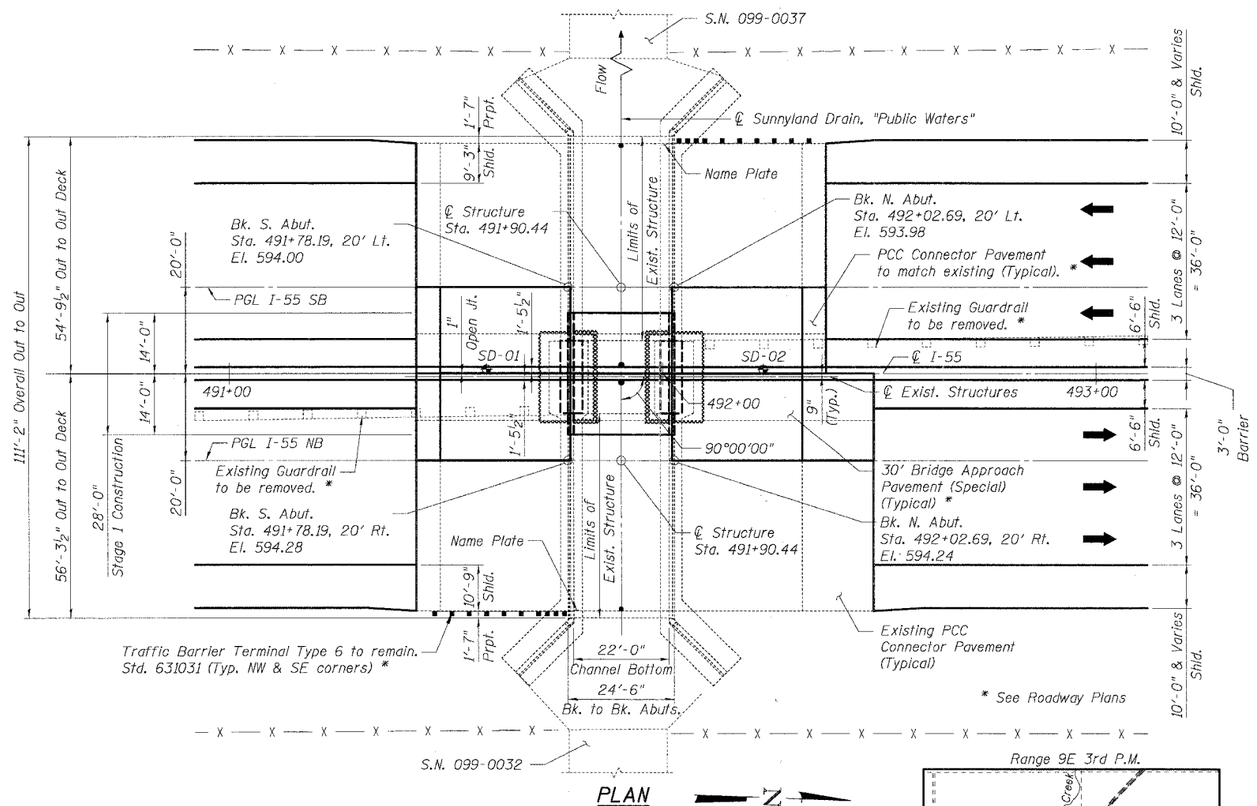
See Std. 515001
(See Sht. SB-8 for locations & details.)

LEGEND

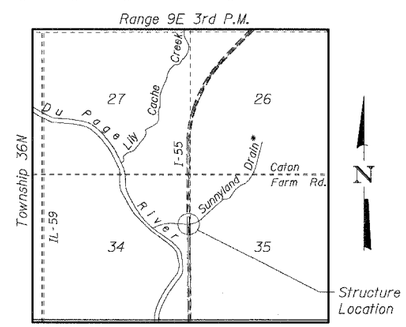
- SD-01 Soil Boring Location
- — X — X — Fence
- Floor Drain
- Temporary Soil Retention System
- Cofferdam



ELEVATION



PLAN



LOCATION MAP

* "Public Waters"

WATERWAY INFORMATION

Drainage Area = 5.3 mi²

Existing Low Grade Elevation: 594.0 ft. @ Sta. 494+00 Bridge
Proposed Low Grade Elevation: 594.0 ft. @ Sta. 494+00 Bridge

Flood	Frequency (Yr)	Q ft³/s	Water Opening (ft²) Existing	Water Opening (ft²) Proposed	Natural H.W.E. (m)	Created Head (ft) Existing	Created Head (ft) Proposed	Headwater Elevation Existing	Headwater Elevation Proposed
	10	410	166	166	589.3	0.1	0.1	589.4	589.4
Design	50	700	169	169	589.4	0.3	0.3	589.7	589.7
Base	100	850	171	171	589.4	0.6	0.6	590.0	590.0
Overtopping	-	-	-	-	-	-	-	-	-
Max Calc.	500	1440	178	178	589.7	1.7	1.7	591.4	591.4

STATE OF ILLINOIS
SIMON T. DANIEL
081-004737
CHICAGO
IL
LICENSED STRUCTURAL ENGINEER

DATE 6/22/06
EXP. 11/30/06

GENERAL NOTES:

1. Reinforcement bars shall conform to the requirements of AASHTO M31 or M322 Grade 60.
2. Backfill shall be placed behind the abutment after the superstructure has been poured and the falsework removed. See Article 502.10 of the Standard Specifications.
3. The Contractor shall make allowance for the deflection of forms, shrinkage and settlement of falsework, in addition to allowance for dead load deflection.
4. Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field 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 the scope of the work; however, the Contractor will be paid for the quantity actually furnished at the unit price for the work.
5. Existing substructure elevations indicated have been adjusted 0.30 feet down to account for datum shift.
6. All construction joints shall be bonded.

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

TOTAL BILL OF MATERIAL

Item	Unit	Sub	Super	Total
Porous Granular Embankment, Special	Cu Yd	103		103
Concrete Removal	Cu Yd	28.4	15.6	44.0
Structure Excavation	Cu Yd	92		92
Cofferdam Excavation	Cu Yd	20		20
Cofferdams	Each	2		2
Floor Drains	Each		2	2
Preformed Joint Seal 2½"	Ft		23.5	23.5
Concrete Structures	Cu Yd	25.2		25.2
Concrete Superstructure	Cu Yd		35.1	35.1
Bridge Deck Grooving	Sq Yd		66	66
** Protective Coat	Sq Yd	56	318	374
Structural Repair of Concrete (Depth Equal to or Less Than 5")	Sq Ft	450		450
Structural Repair of Concrete (Depth Greater Than 5")	Sq Ft	50		50
Reinforcement Bars, Epoxy Coated	Lb	2,780	7,790	10,570
Name Plates	Each		2	2
Epoxy Crack Sealing	Ft	10		10
Geocomposite Wall Drain	Sq Yd	46		46
Conduit Embedded in Structure, 2" dia., Galvanized Steel	Ft		47	47
Temporary Soil Retention System	Sq Ft	1,002		1,002
Temporary Wall Bracing System	L Sum	1		1

** Quantity includes top and inside surfaces of existing and new parapets and top of new and existing slabs

SHT. SB-1 OF 13

REVISIONS NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
FAI ROUTE 55 (OVER CSX RR AND SUNNYLAND DRAIN)
BRIDGE WIDENING
NB & SB I-55 OVER SUNNYLAND DRAIN, S.N. 099-0014 & 099-0015
STA. 491+90.44, SECTION 2006-031 BY
WILL COUNTY

GENERAL PLAN & ELEVATION
GENERAL NOTES
TOTAL BILL OF MATERIAL

SCALE:
DRAWN BY MDB
DATE 07/21/06
CHECKED BY MJK

TENG
TENG & ASSOCIATES, INC.
ENGINEERS/ARCHITECTS/PLANNERS
CHICAGO, ILLINOIS

PLOT DATE = $DATE$
FILE NAME = $FILEL$
PLOT SCALE = $SCALE$
USER NAME = $USER$
\\GPWA042\DGN\BDP60B02.DGN \\UTIA082\DGN\GP291A041.DGN \\SLP91A046.DGN
7-19-2006 13:46:47 GARCIAAZ S:\DOCUMENT\WP26\HWY\STRUCTURE\GP291A041.DGN