

F.A.I. SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
ST	•	COOK	916 573
STA.	TO STA.		
FED. ROAD DIST. NO. 1	ILLINOIS	FED. AID PROJECT	

CONTRACT NO. 62304
 (1516.1, 1717, & 1818) R-4

EXISTING STRUCTURE

Structure No. 016-0073 was built in 1960 as F.A.I. 57 and C.T.A. over southbound F.A.I. 90, I-94, and the C.T.A. The structure consists of a 2 cell tunnel containing C.T.A. tracks in the eastern cell and southbound I-94 in the western cell. The substructure consists of reinforced concrete abutments and a pier founded on concrete piles which support a precast concrete deck beam roof system. Traffic is to be maintained using staged construction during rehabilitation.

DESIGN SPECIFICATIONS

2002 AASHTO Standard Specifications for Highway Bridges

DESIGN LOADING

Roadway Live Load: HS20-44 & All.
 Allowance for Future Wearing Surface - 50 psf

DESIGN STRESSES

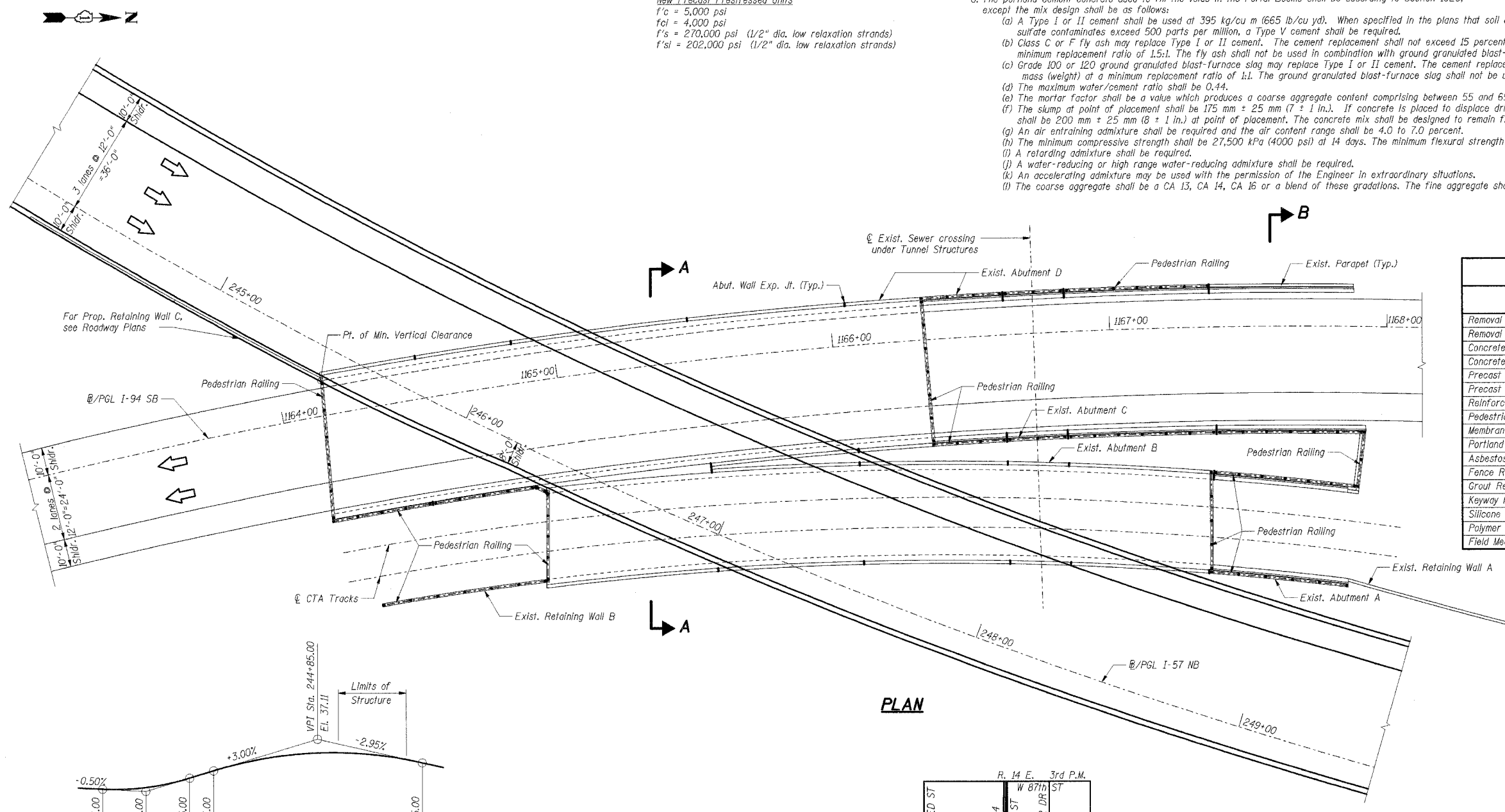
Existing Construction
 Cast in Place Concrete, f'_c = Unknown
 Reinforcement, f_y = 40,000 psi
 Precast Concrete, f'_c = Unknown
 Prestressing Steel, f'_s = 250,000 psi

New Construction
 Cast-in-Place Concrete, f'_c = 3,500 psi
 Reinforcement, f_y = 60,000 psi

New Precast Prestressed Units
 f'_c = 5,000 psi
 f_{cl} = 4,000 psi
 f'_s = 270,000 psi (1/2" dia. low relaxation strands)
 f'_{sl} = 202,000 psi (1/2" dia. low relaxation strands)

NOTES

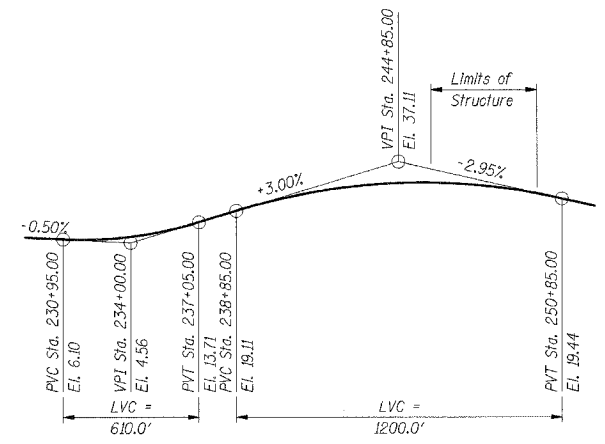
- Plan dimensions and details relative to existing structures have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction 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 bid for the work.
- The top surface of the beams shall be finished according to Article 504.06 of the Standard Specification except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded chamfered a minimum of 1/4".
- All construction joints shall be bonded.
- Non prestressed reinforcement steel shall conform to AASHTO M31 or M322 Grade 60.
- For Sections A-A and B-B, see Sheet ST-001A.
- The portland cement concrete used to fill the voids in the Portal Beams shall be according to Section 1020, except the mix design shall be as follows:
 - A Type I or II cement shall be used at 395 kg/cu m (665 lb/cu yd). When specified in the plans that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required.
 - Class C or F fly ash may replace Type I or II cement. The cement replacement shall not exceed 15 percent by mass (weight) at a minimum replacement ratio of 1.5:1. The fly ash shall not be used in combination with ground granulated blast-furnace slag.
 - Grade 100 or 120 ground granulated blast-furnace slag may replace Type I or II cement. The cement replacement shall not exceed 25 percent by mass (weight) at a minimum replacement ratio of 1:1. The ground granulated blast-furnace slag shall not be used in combination with fly ash.
 - The maximum water/cement ratio shall be 0.44.
 - The mortar factor shall be a value which produces a coarse aggregate content comprising between 55 and 65 percent of total aggregate by mass (weight).
 - The slump at point of placement shall be 175 mm \pm 25 mm (7 \pm 1 in.). If concrete is placed to displace drilling fluid, or against temporary casing, the slump shall be 200 mm \pm 25 mm (8 \pm 1 in.) at point of placement. The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus 1 hour.
 - An air entraining admixture shall be required and the air content range shall be 4.0 to 7.0 percent.
 - The minimum compressive strength shall be 27,500 kPa (4000 psi) at 14 days. The minimum flexural strength shall be 4,650 kPa (675 psi) at 14 days.
 - A retarding admixture shall be required.
 - A water-reducing or high range water-reducing admixture shall be required.
 - An accelerating admixture may be used with the permission of the Engineer in extraordinary situations.
 - The coarse aggregate shall be a CA 13, CA 14, CA 16 or a blend of these gradations. The fine aggregate shall consist of sand only according to Article 1003.01(a).



Item	Unit	Total
Removal Of Existing Superstructures, I-94 Tunnel	Each	1
Removal Of Existing Superstructures, CTA Tunnel	Each	1
Concrete Removal	Cu Yd	10.0
Concrete Superstructure	Cu Yd	99.2
Precast Prestressed Concrete Deck Beams (33" Depth)	Sq Ft	8,087
Precast Prestressed Concrete Deck Beams (42" Depth)	Sq Ft	11,265
Reinforcement Bars, Epoxy Coated	Pound	9,160
Pedestrian Railing	Foot	690
Membrane Waterproofing (Special)	Sq Ft	22,173
Portland Cement Mortar Fairing Course	Foot	500
Asbestos Bearing Pad Removal	Each	872
Fence Removal	Foot	477
Grout Repair	Foot	0.0
Keyway Repair	Foot	0.0
Silicone Joint Sealer, 1.5"	Foot	300
Polymer Concrete	Cu Yd	0.0
Field Measurements	L Sum	1

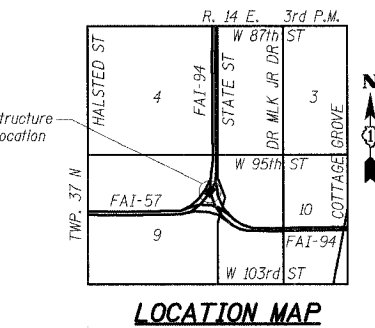
INDEX OF SHEETS

- ST-001 GENERAL PLAN
- ST-001A GENERAL SECTIONS
- ST-002 EXISTING DECK REMOVAL PLAN I
- ST-003 EXISTING DECK REMOVAL PLAN II
- ST-003A PROPOSED DECK PLAN I
- ST-003B PROPOSED DECK PLAN II
- ST-003C 33" P.P.C. DECK BEAM DETAILS
- ST-003D 42" P.P.C. DECK BEAM DETAILS
- ST-003E 33" PORTAL BEAM DETAILS
- ST-003F 42" PORTAL BEAM DETAILS
- ST-003G P.P.C. DECK BEAM SCHEDULE
- ST-003H PARAPET ELEVATIONS I
- ST-003I PARAPET ELEVATIONS II
- ST-003J PARAPET SECTIONS
- ST-003K PARAPET DETAILS & BAR LIST
- ST-004 MEMBRANE WATERPROOFING DETAILS
- ST-005 PEDESTRIAN RAILING



SCOPE OF WORK
 The work under this contract includes replacement of the deck beam superstructure. Repairs to the substructure are included in other contracts.

PLAN



NO.	NAME	DATE

ADDENDUM 1 05/08/06

ILLINOIS DEPARTMENT OF TRANSPORTATION
 F.A.I. ROUTE 57 (INTERSTATE 57) OVER
 F.A.I. ROUTE I-94 SB & CTA TRACKS-BRIDGE REPAIRS
 SN 016-0073
 COOK COUNTY
 SECTION (1516.1, 1717, & 1818) R-4
 GENERAL PLAN

DATE: 05/08/06

DRAWN BY: VV
 CHECKED BY: RDS

TENG
 TENG & ASSOCIATES, INC.
 ENGINEERS/ARCHITECTS/PLANNERS
 225 N. MICHIGAN AVE., CHICAGO, IL 60601
 TELEPHONE 312.611.0000