Existing Structure: SN 001-0055 & SN 001-0056 are dual three span, 54" welded plate girder structures on pile bent abutments and solid piers. The structures were built in 1980 and carry FAI 172 over Burton Creek. Joint rehabilitation was done on the structures in 2001. The structures are 331'-6" long back to back of abutments and 43'-2" wide out to out. Both structures are on a 33 degree left ahead skew.

Structure improvements include removing the existing expansion joints and replacing with strip seals, structural repair of concrete at the abutments and, concrete deck patching, hydro scarification of the deck, placing microsilica overlay, gabion slope protection, replacing existing guardrail, and removing & replacing concrete bridge approach shoulder pavement.

Traffic to be maintained utilizing stage construction.

No salvage

DESIGN STRESSES

FIELD UNITS

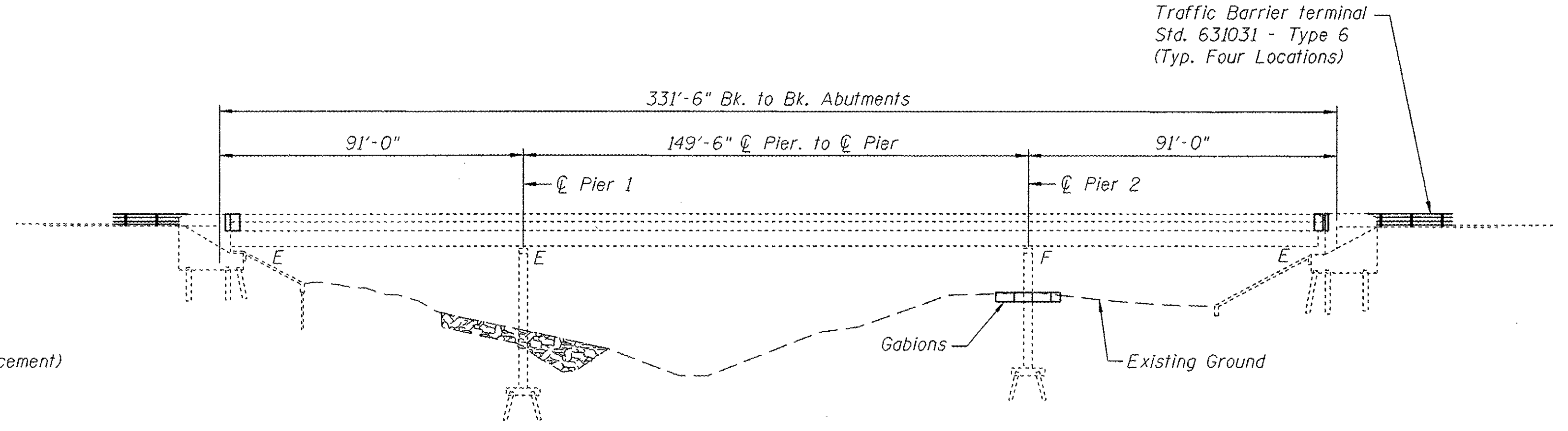
New Construction
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)

Existing Construction
f'c = 3,500 psi
fy = 60,000 psi (Reinforcement)
fs = 36,000 psi & 50,000 psi (Structural Steel)

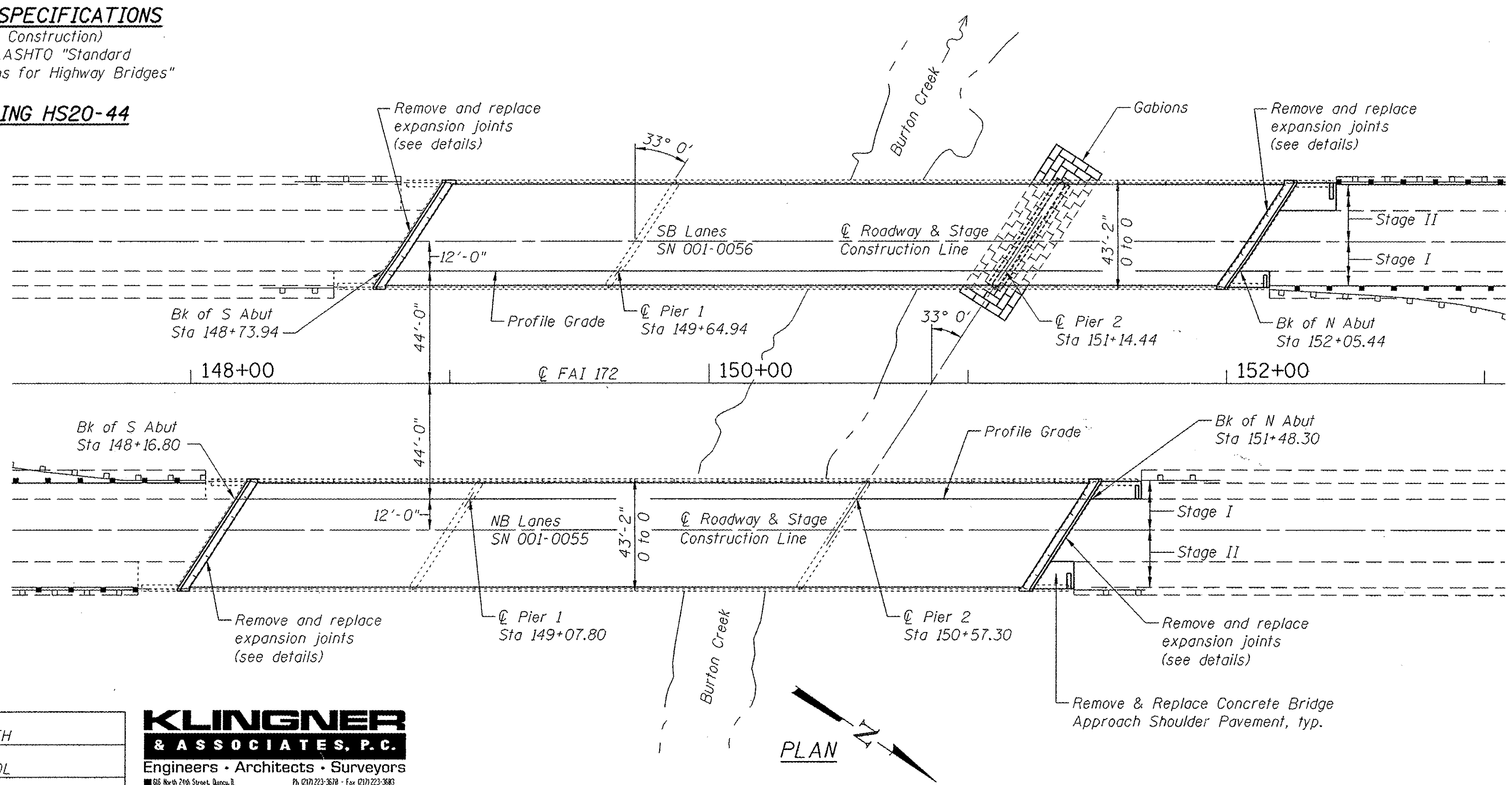
DESIGN SPECIFICATIONS

(New Construction)
2002 AASHTO "Standard Specifications for Highway Bridges"

LOADING HS20-44



ELEVATION



PLAN

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.

Reinforcement bars designated (E) shall be epoxy coated.

Reinforcement bars shall conform to the requirements of ASTM A 706 grade 60. See special provisions.

Existing reinforcement bars extending into the removal area shall be cleaned, straightened and incorporated into the new construction. Any reinforcement bars that are damaged during concrete removal shall be replaced with an approved bar splicer or anchorage system. Cost included with concrete removal.

Joint openings shall be adjusted according to article 520.04 of the standard specifications when the deck is poured at an ambient temperature other than 50 degrees fahrenheit.

All repair work associated with the bridges shall be completed by stage construction utilizing TC&P. Standard 701402 and with temporary concrete barrier located as detailed in these repair plans.

Prior to pouring the new concrete deck, all heavy or loose rust, loose mill scale, and other loose or potentially detrimental foreign material shall be removed from the surfaces in contact with concrete. Tightly adhered paint may remain unless otherwise noted. Removal shall be accomplished by methods that will not damage the steel and the cost will be included in the pay item covering removal of the existing concrete.

As directed by the Engineer, existing construction accessories welded to the top flange of beams and girders shall be removed. The weld areas shall be ground flush and inspected for cracks using magnetic particle testing (MT) or dye penetrant testing (PT) by qualified personnel approved by the Engineer. Any cracks that can not be removed by grinding ½in. deep shall be identified and reported to the Bureau of Bridges and Structures for further disposition. The cost of removing welded accessories, grinding and inspecting weld areas and grinding cracks will be paid for according to Article 109.04 of the Standard Specifications.

The existing structural steel coating contains lead. The Contractor shall take appropriate precautions to deal with the presence of lead on this project.

The "Bridge Approach Shoulder Removal" and "P.C. Concrete Bridge Approach Shoulder Pavement" shall be constructed to proposed grade, after the completion of the microsilica overlays and joint repairs. Stage traffic shall not drive on the new bridge approach shoulders.

Concrete Sealer shall apply to Top of Deck, Inside Face of Parapets, & Top of Parapets.

TOTAL BILL OF MATERIALS

ITEM	UNIT	TOTAL
CONCRETE REMOVAL	CU YD	27.8
REINFORCEMENT BARS, EPOXY COATED	POUND	3620
BAR SPLICERS	EACH	44
PREFORMED JOINT STRIP SEAL	FOOT	201.5
CONCRETE SUPERSTRUCTURE	CU YD	31.8
DECK SLAB REPAIR (FULL DEPTH, TYPE II)	SQ YD	100.2
DECK SLAB REPAIR (FULL DEPTH, TYPE I)	SQ YD	2.3
BRIDGE DECK MICROSILICA CONCRETE OVERLAY 2½"	SQ YD	2863
BRIDGE DECK HYDRO-SCARIFICATION ½"	SQ YD	2863
FRAMES AND GRATES TO BE ADJUSTED	EACH	4
BRIDGE APPROACH SHOULDER REMOVAL	SQ YD	70
P.C. CONCRETE BRIDGE APPROACH SHOULDER PAVEMENT	SQ YD	70
GABIONS	CU YD	144
FILTER FABRIC	SQ YD	203
CONCRETE SEALER	SQ FT	31520
BRIDGE DECK GROOVING	SQ YD	2780
RELOCATING NAME PLATES	EACH	2
STRUCTURAL REPAIR OF CONCRETE (DEPTH EQUAL TO OR LESS THAN 5 INCHES)	SQ FT	18

STATE OF ILLINOIS
ALAN D. LUKENS
081-005167
QUINCY, ILLINOIS
LICENSED STRUCTURAL ENGINEER

2-17-10

Alan D. Lukens — Date
Licensed Structural Engineer
State of Illinois No. 081-005167
License Expires 11/30/10

GENERAL PLAN & ELEVATION
FAI 172 OVER BURTON CREEK
SN 001-0055 & 0056

DESIGNED	KTH
CHECKED	ADL
DRAWN	KTH
CHECKED	ADL

KLINGNER & ASSOCIATES, P.C.
Engineers · Architects · Surveyors
STATE OF ILLINOIS DESIGN FIRM # 1842738

SHEET NO. 1	F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
16 SHEETS	172	1-4B	ADAMS	165	119
			CONTRACT NO. 72A09		
	FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

Klingner & Associates P.C.

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2/17/2010