

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
						090154	104	256
							LAYOUT	48016

GENERAL NOTES

BENCH MARK: BM 900, Chiseled square cut in SE Corner of Existing Bridge, 59' RL of C.L. Const. Sta. 333+42.38, Elevation 1121.93

CONSTRUCTION SPECIFICATIONS: Arkansas State Highway and Transportation Department Standard Specifications for Highway Construction (2003 edition) with applicable supplemental specifications and special provisions. Unless otherwise noted, section and subsection numbers in the plans refer to the Construction Specifications.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications with interim specs (2004 edition).

LIVE LOADING: HL93

SEISMIC ZONE: 1

MATERIALS AND STRENGTHS:

Class S(AE) Concrete (superstructure) $f_c = 4,000$ psi
Class S Concrete (substructure) $f_c = 3,500$ psi
Reinforcing Steel (AASHTO M31 or M53, GR. 60) $f_y = 60,000$ psi
Structural Steel (AASHTO M270, Gr. 38) $F_y = 36,000$ psi
Structural Steel (AASHTO M270, Gr. 50W) $F_y = 50,000$ psi

BORING LOGS: Boring logs may be obtained from the Programs and Contracts Division.

STEEL PILING: Piling in Bents 1 and 4 shall be HP 12X53 and shall be driven with an approved air, steam or diesel hammer to a minimum safe bearing capacity of 70 tons and into material designated as fractured limestone on the boring legend. Lengths of piling shown are for estimating quantities and for use in determining payment for cut-off and build-up in accordance with the standard specifications. On all piles the Contractor shall use approved steel H-Pile driving points. Piles in end bents to be driven after embankment to bottom of cap is in place.

PREBORING: Preboring is required for all piling at Bents 1 and 4 to a depth of 10' below bottom of cap. Preboring holes shall be 6" greater than the diameter of the pile cross-section and shall be backfilled with Sand or Pea Gravel after piles are in place. The Contractor shall be responsible for keeping preboring holes free of debris prior to backfilling, which may require the use of temporary casings or other methods.

FOOTINGS: Footings in intermediate bents shall be set a minimum of 2' into material designated as hard, gray limestone on the boring legend. The top of the footings shall be set at or below the existing channel bottom.

Foundations for footings shall be prepared in accordance with subsection 801.04. Rock excavations shall be made to neat lines of the concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting. Concrete in footings shall be poured directly against excavated surfaces of rock.

Excavations shall be backfilled and compacted to the level of surrounding ground in accordance with subsection 801.08.

BRIDGE DECK: The concrete bridge deck shall be given a fine finish as specified for final finishing in subsection 802.19 for Class 5 Tined Bridge Roadway Surface Finish.

PIPE UNDERDRAIN: One Pipe Underdrain with Outlet Protectors shall be installed behind each Bridge End in accordance with Section 611. Pipe Underdrains will not be paid for directly but shall be considered subsidiary to "Unclassified Excavation".

DETAIL DRAWINGS: DRAWING NO.

End Bents 48018, 48019
Intermediate Bents 48020
167' Integral V-Beam Unit 48021 - 48026
Elastomeric Bearings 48027
Steel Piles 14995A
Type C Approach Gutters 2016C
Type Special Approach Slab 48028

EXISTING BRIDGE: Existing Bridge No. 02996 (Log Mile 20.75) is 28.6' wide and 167' long and consists of 3-55'-0" I-Beam spans supported by concrete intermediate bents with spread footings and pile end bents.

REMOVAL AND SALVAGE: After Stage 1 Construction of the New Bridge is completed and opened to traffic, Existing Bridge No. 02996 shall be removed in accordance with Section 205. All material from the existing bridge shall become the property of the Contractor.

MAINTENANCE OF TRAFFIC: See Roadway Plans.

HYDRAULIC DATA

FLOOD DESCRIPTION	FREQUENCY YEARS	DISCHARGE CFS	NATURAL WATER SURFACE ELEVATION FEET	WATER SURFACE ELEVATION FEET
Design	50	13900	1111.0	1115.9
Base	100	16000	1111.7	1117.2
Extreme	500	19100	1112.4	1118.6
Overtopping	>500	—	—	—

* Unconstructed water surface without structure or roadway approaches.

Drainage area = 20.7 square miles.

Historical H.W. Elev. = 1110.0 ft.

SHEET 1 OF 2 LAYOUT OF BRIDGE OVER FLINT CREEK

ENTRY-SOUTH (S)
BENTON COUNTY
ROUTE 59 SEC. 1

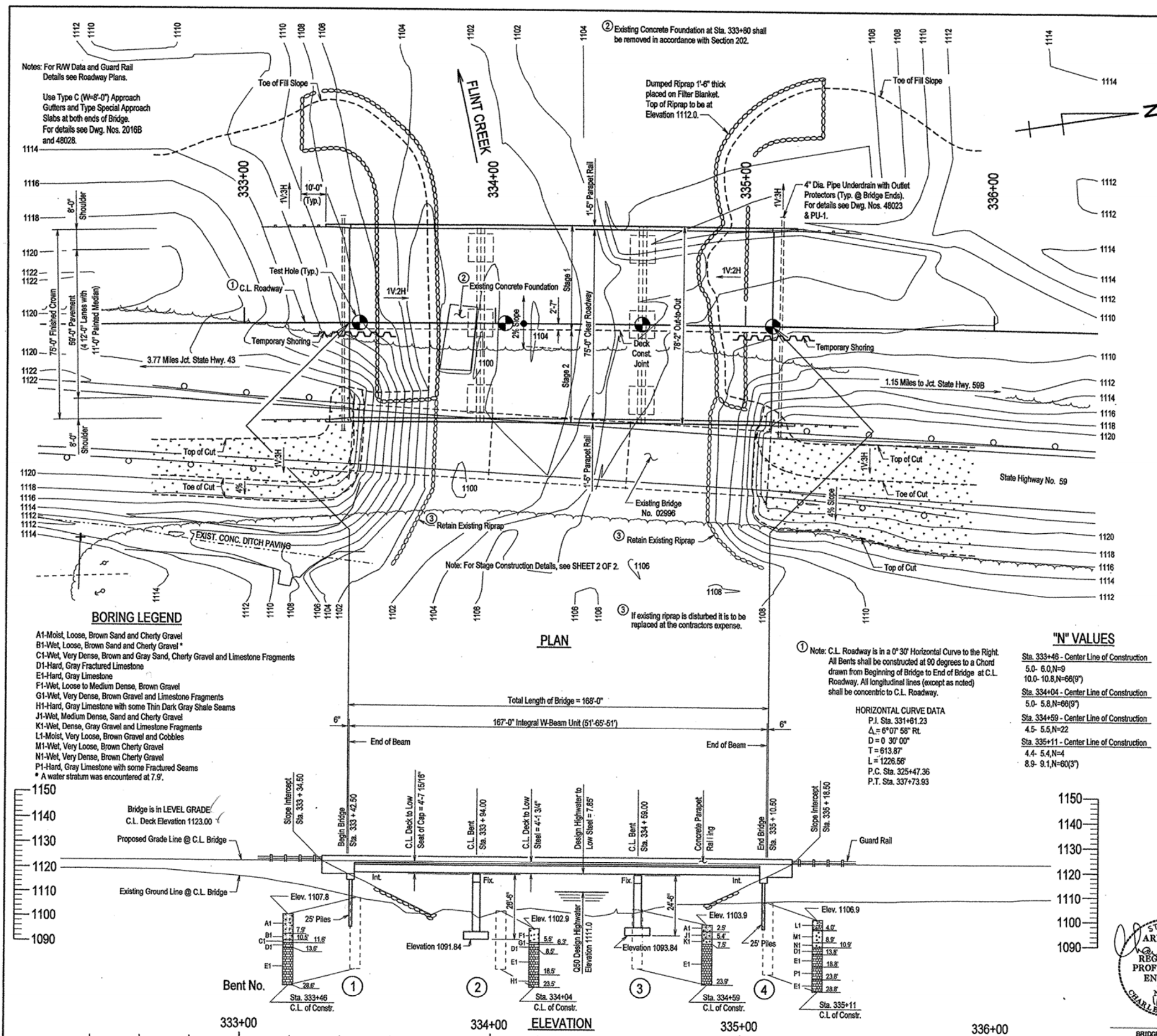
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 05-27-05
CHECKED BY: Jmt DATE: 12-01-05
DESIGNED BY: SHT DATE: 6-05

BRIDGE NO. 07062 DRAWING NO. 48016



BRIDGE ENGINEER



Notes: For R/W Data and Guard Rail Details see Roadway Plans.

Use Type C (W-8'-0") Approach Gutters and Type Special Approach Slabs at both ends of Bridge. For details see Dwg. Nos. 2016B and 48028.

Existing Concrete Foundation at Sta. 333+80 shall be removed in accordance with Section 202.

Dumped Riprap 1'-6" thick placed on Filter Blanket. Top of Riprap to be at Elevation 1112.0.

4" Dia. Pipe Underdrain with Outlet Protectors (Typ. @ Bridge Ends). For details see Dwg. Nos. 48023 & PU-1.

BORING LEGEND

- A1-Moist, Loose, Brown Sand and Cherty Gravel
- B1-Wet, Loose, Brown Sand and Cherty Gravel
- C1-Wet, Very Dense, Brown and Gray Sand, Cherty Gravel and Limestone Fragments
- D1-Hard, Gray Fractured Limestone
- E1-Hard, Gray Limestone
- F1-Wet, Loose to Medium Dense, Brown Gravel
- G1-Wet, Very Dense, Brown Gravel and Limestone Fragments
- H1-Hard, Gray Limestone with some Thin Dark Gray Shale Seams
- J1-Wet, Medium Dense, Sand and Cherty Gravel
- K1-Wet, Dense, Gray Gravel and Limestone Fragments
- L1-Moist, Very Loose, Brown Gravel and Cobbles
- M1-Wet, Very Loose, Brown Cherty Gravel
- N1-Wet, Very Dense, Brown Cherty Gravel
- P1-Hard, Gray Limestone with some Fractured Seams

* A water stratum was encountered at 7.9'.

PLAN

Note: C.L. Roadway is in a 0° 30' Horizontal Curve to the Right. All Bents shall be constructed at 90 degrees to a Chord drawn from Beginning of Bridge to End of Bridge at C.L. Roadway. All longitudinal lines (except as noted) shall be concentric to C.L. Roadway.

HORIZONTAL CURVE DATA
P.I. Sta. 331+61.23
 $\Delta = 6^{\circ}07'58''$ Rt.
 $D = 0^{\circ}30'00''$
 $T = 613.87'$
 $L = 1226.56'$
P.C. Sta. 325+47.36
P.T. Sta. 337+73.93

"N" VALUES

Sta. 333+46 - Center Line of Construction
5.0- 6.0,N=9
10.0- 10.8,N=66(9°)
Sta. 334+04 - Center Line of Construction
5.0- 5.8,N=66(9°)
Sta. 334+59 - Center Line of Construction
4.5- 5.5,N=22
Sta. 335+11 - Center Line of Construction
4.4- 5.4,N=4
8.9- 9.1,N=60(3°)

Total Length of Bridge = 168'-0"

167'-0" Integral W-Beam Unit (51'-65'-51")

Bent No.

333+00

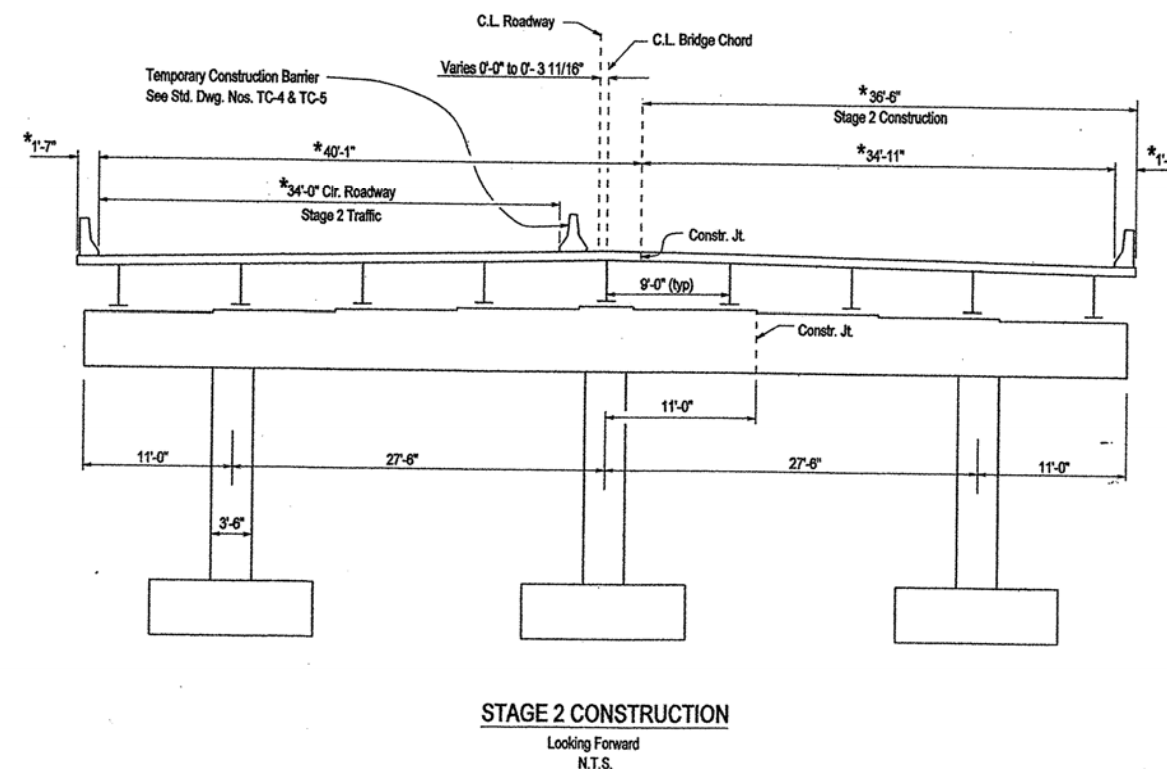
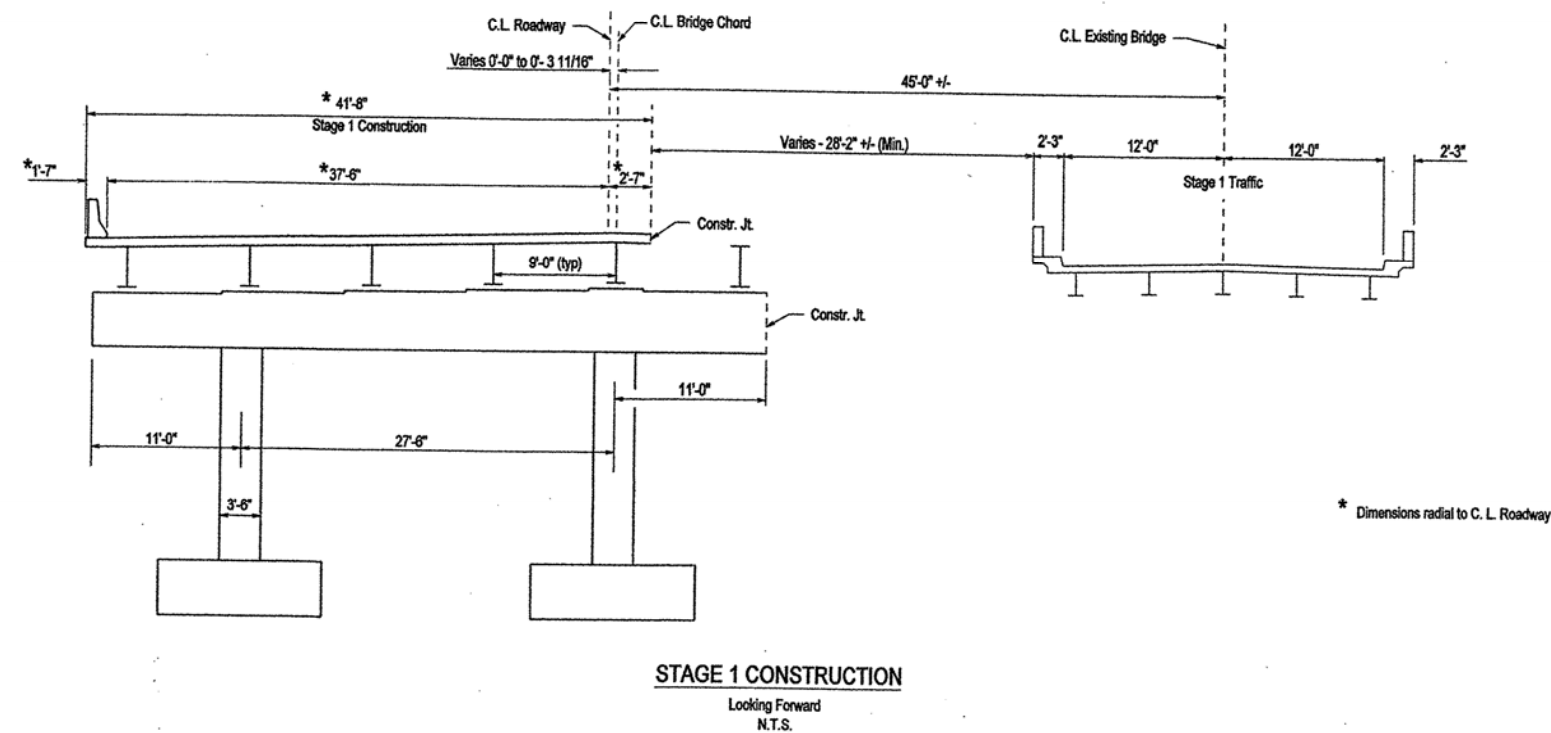
334+00

ELEVATION

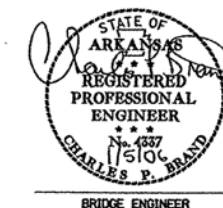
335+00

336+00

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090154	105256	
				07062	LAYOUT		48017	



Note: Details which relate to Maintenance of Traffic are shown on Bridge Plans for information only. See Roadway plans for Maintenance of Traffic and for additional information.



SHEET 2 OF 2
LAYOUT OF BRIDGE OVER
FLINT CREEK
GENTRY-SOUTH (S)
BENTON COUNTY
ROUTE 59 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: SAT DATE: 06/28/05 FILENAME: B090154X1.LLDGN
CHECKED BY: D.M.H. DATE: 12/11/05 SCALE: Not to Scale
DESIGNED BY: SAT DATE: 6-05
BRIDGE NO. 07062 DRAWING NO. 48017

SLAB REINFORCING

Transverse:
S501E & S502E @ 15" o.c. bent up over beams
S601E & S602E @ 15" o.c. in top
S503E & S504E @ 15" o.c. in bottom
S701E @ 15" o.c. at both gutterlines (placed around ends of S501E & S502E, see "Reinforcing Plan & Deck Pouring Sequence", Dwg. No. 48023)

Longitudinal:
S401E as shown (12" max.)
S505E as shown at ends of unit
S603E as shown over int. supports

NOTE: At Contractor's Option, in lieu of providing bars S501E or S502E, one #5 bar top and bottom may be substituted for each bar. Payment for reinforcing will be based on the weight of bars S501E and S502E. Bars in top and bottom shall be Epoxy Coated.

NOTE: Class I Protective Surface Treatment shall be applied to the Roadway Surface and the Face and Top of Concrete Parapet Rail and Transition Rail.

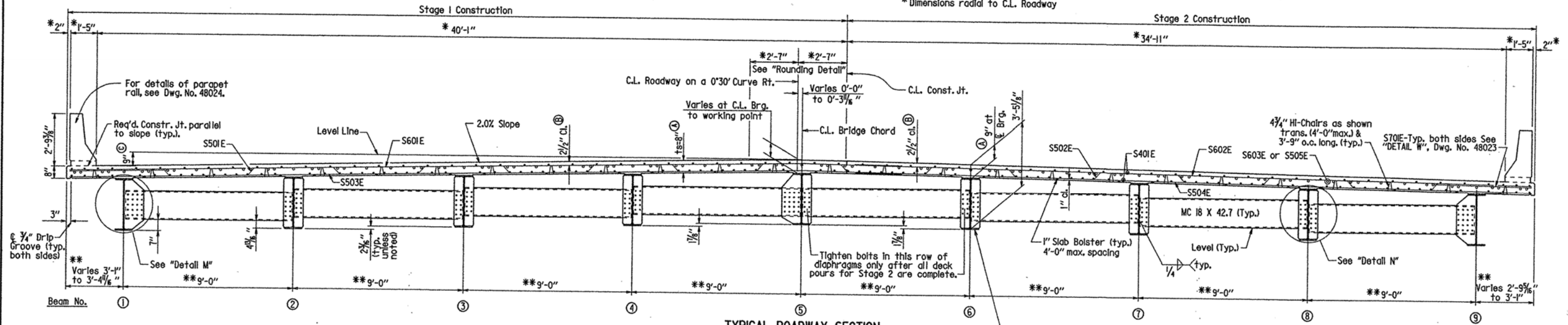
(A) See "ADJUSTMENT FOR SLAB AND HAUNCH THICKNESS TOLERANCE."

(B) Tolerance: Minus = $\frac{1}{4}$ "; Plus equal to the amount of slab thickening used to meet slab thickness tolerance. See "ADJUSTMENT FOR SLAB AND HAUNCH THICKNESS TOLERANCE."

(C) Working Point to Gutterline-See "ROUNDING DETAIL."

*Dimensions radial to C.L. Roadway

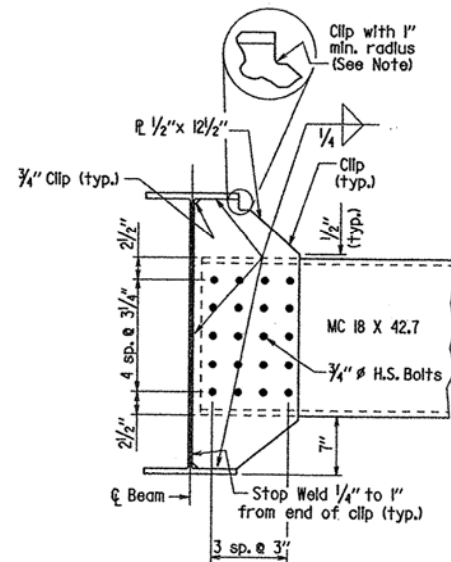
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		090154	109	256
						07062	SUPERSTRUCTURE	48021



TYPICAL ROADWAY SECTION

Looking Ahead
Scale: $\frac{3}{8}$ " = 1'-0"

**Dimensions are perpendicular to C.L. Bridge Chord.



DETAIL M

No Scale

Note: If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.

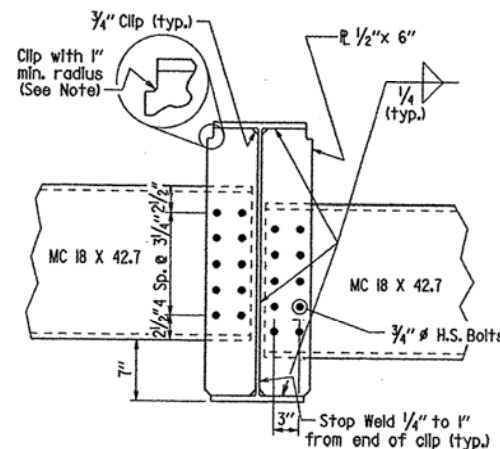
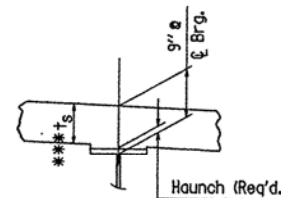
NOTE: t_s = slab thickness as shown in "Typical Roadway Section."
*** Tolerance when removable deck forming is used is $\pm \frac{1}{2}$ ", $\pm \frac{1}{4}$ ". Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

ADJUSTMENT FOR SLAB AND HAUNCH THICKNESS TOLERANCE

No Scale

Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance:
Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus $\frac{1}{4}$ ". No increase in concrete and structural steel quantities will be made to maintain tolerances.

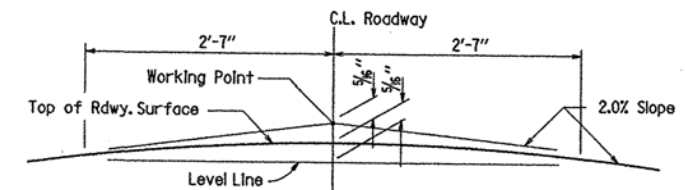
Tolerances shown are applicable only when removable deck forming is used. See Std. Dwg. No. 14991 for tolerances when permanent steel deck forms are used. Payment for concrete shall be based on removable deck forming.



DETAIL N

No Scale

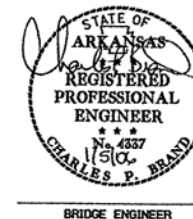
Note: If permanent steel deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



ROUNDING DETAIL

No Scale

NOTE: Working Point matches Theoretical Roadway Grade.



SHEET 1 OF 6
DETAILS OF 167' INTEGRAL
W-BEAM UNIT
FLINT CREEK
ROUTE 59 SEC. 1
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MJT DATE: 08-09-05
CHECKED BY: BEF DATE: 12-19-05
DESIGNED BY: SH DATE: 6-1-05
BRIDGE NO. 07062 DRAWING NO. 48021