

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

Excavate existing roadway
embankment as shown. Approx.
300 Cubic Yards of excavation.

Place 1'-6" Dumped Riprap on top
of filter blanket. See Std. Dwg.
No. 1891F. Top of Riprap Elev. 282.0

Use Type B Approach Gutters (w=8'-0") and
Approach Slabs (Type Sp. 1) at both ends of
Bridge. For details, see Std. Dwg. 2016B and
Dwg. No. 51925.

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.		060352	30	83
				07210	LAYOUT			51916

GENERAL NOTES:

BENCH MARK: TBM 903 Ch. Sq. on Parapet Rail, 26.50' Lt. of C.L. Construction, Sta. 206+55.14, Elev. 281.39

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 refer to Standard Specifications
for Highway Construction.

DESIGN SPECIFICATIONS: AASHTO LRFD Bridge Design Specifications 5th Edition (2010), with 2010 Interims.

LIVE LOADING: HL-93

SEISMIC ZONE: 1

$S_D1 = 0.087$

SITE CLASS = B

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. 36)

$F_y = 36,000$ 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 HPI2X53 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 Hard Shale
on the boring legend. Lengths 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. Prebored holes shall have a diameter 6"
greater than the greatest cross-sectional dimension of the pile for a depth of 3' into material designated
as medium hard or hard shale in the boring legend. After completion of driving, the void space around the
pile shall be backfilled with Class (S) concrete from the bottom of the prebored hole to 10' below the
bottom of the cap. The remaining 10' shall be backfilled with sand or pea gravel. The Contractor shall be
responsible for keeping prebored holes free of debris prior to backfilling, which may require the use of
temporary casing or other approved methods. Any related cost for backfilling and temporary casing will
not be paid for separately but shall be considered subsidiary to the item "Preboring". Preboring will
be paid for in accordance with section 805.

FOOTINGS: Footings in intermediate bents shall be set a minimum of 2'-6" into material designated
as Shale 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. Blasting will not be allowed.
Concrete in footings shall be poured directly against excavated surfaces of rock.

SHORING: Temporary Shoring will be required to construct embankment while maintaining traffic on
existing roadway. See Special Provision Job No. 060352 "Shoring".

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 UNDER DRAIN: One Pipe Under drain with outlet protectors shall be installed behind each bridge
end in accordance with Section 611. Pipe Under drains will not be paid for directly but shall be
considered subsidiary to "Unclassified Excavation".

DETAIL DRAWINGS:

Stage Construction

DRAWING NO.

End Bents

51917

Intermediate Bents

51918

150' Integral W-Beam Unit

51919

Type "B" Special Shoes

51920-51924

Steel Piles

51923

Type B Approach Gutters

14995A

Type Special 1 Approach Slabs

2016B

51925

EXISTING BRIDGE: Bridge No. M0127 (Log Mile 3.84) is 33' wide and 80' long and consists of 4 concrete
slab spans supported by concrete walls on spread footings. The existing bridge is approximately
35' downstream of centerline construction.

REMOVAL AND SALVAGE: After the Stage 1 Construction is complete and opened to traffic, existing
Bridge No. M0127 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	DISCHARGE THRU BRIDGE OPENING	EXISTING WATER SURFACE ELEVATION	WATER SURFACE ELEVATION W/ BACKWATER
	YEARS	CFS	FEET	FEET
Design	50	6,180	4,087	281.4
Base	100	7,361	5,094	281.9
Extreme	500	9,819	7,427	283.3
Overtopping	>500	—	—	—

① Water surface at proposed bridge location with existing
structures and roadway approaches.

② Drainage area = 9.1 sq. miles (includes McHenry Creek, Relief
Structure, Quintuplet 12' x 10' R.C. Box Culvert - Sta. 210+80)

Proposed Low Bridge Member Elevation = 282.84

Historical H.W. Elev. = N/A

Estimated 100-Year backwater elevation with
existing structures in place = 281.9 feet

LAYOUT OF BRIDGE OVER McHENRY CREEK McHENRY CREEK & RELIEF STRS. & APPRS. (S) PULASKI COUNTY

ROUTE 5 SEC. 9
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: MRE DATE: 11/04/10 FILENAME: b060352_11.dgn
CHECKED BY: RBR DATE: 5/6/11 SCALE: 1" = 20'-0"

DESIGNED BY: CBL DATE: Dec 2010
BRIDGE NO. 07210 DRAWING NO. 51916



BRIDGE ENGINEER

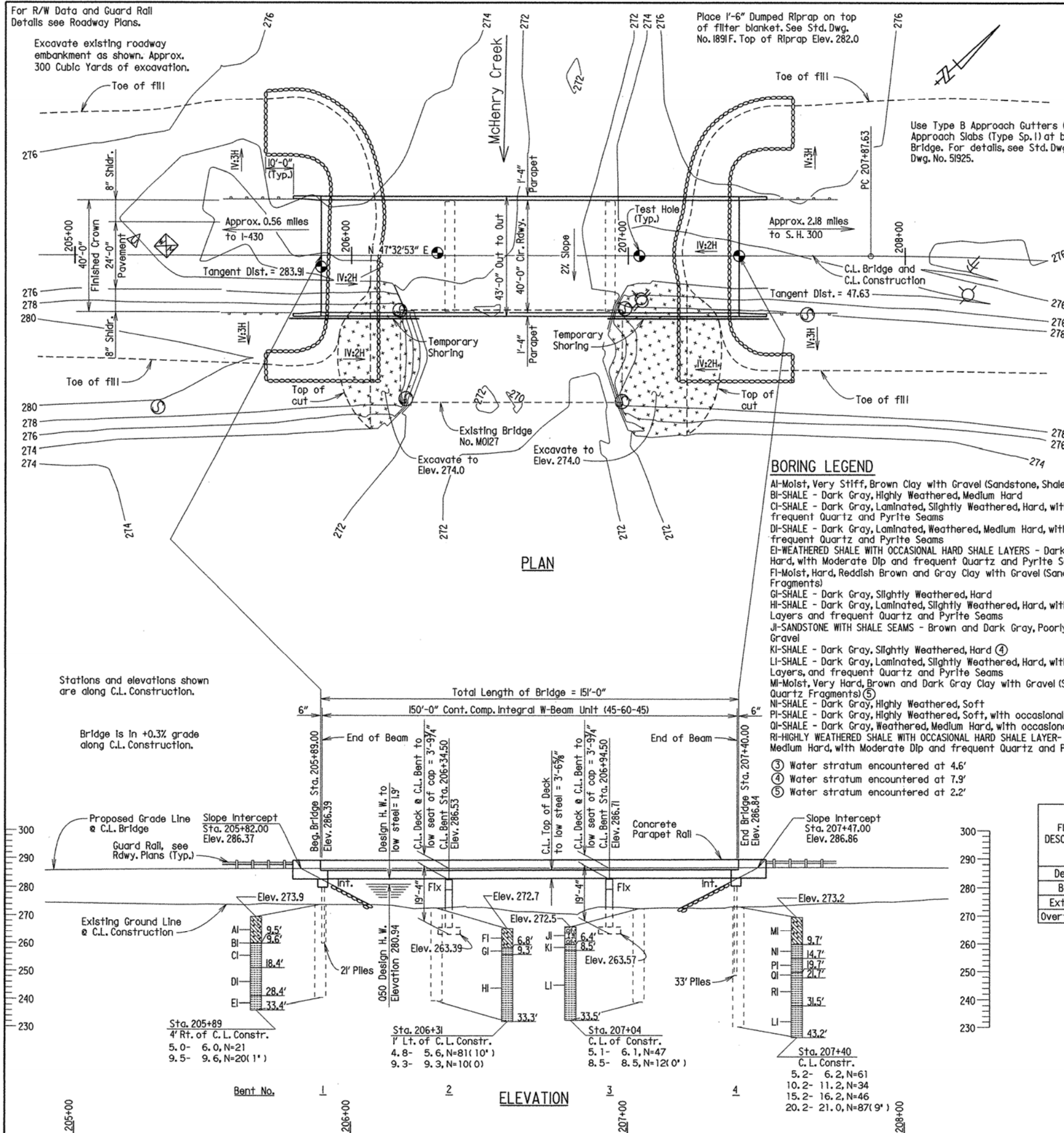
PLAN

BORING LEGEND

- AI-Moist, Very Stiff, Brown Clay with Gravel (Sandstone, Shale and Quartz Fragments) ③
BI-SHALE - Dark Gray, Highly Weathered, Medium Hard
CI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip and
frequent Quartz and Pyrite Seams
DI-SHALE - Dark Gray, Laminated, Weathered, Medium Hard, with Moderate Dip and
frequent Quartz and Pyrite Seams
EI-WEATHERED SHALE WITH OCCASIONAL HARD SHALE LAYERS - Dark Gray, Laminated, Medium
Hard, with Moderate Dip and frequent Quartz and Pyrite Seams
FI-Moist, Hard, Reddish Brown and Gray Clay with Gravel (Sandstone, Shale and Quartz
Fragments)
GI-SHALE - Dark Gray, Slightly Weathered, Hard
HI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip, Fractured
Layers and frequent Quartz and Pyrite Seams
JI-SANDSTONE WITH SHALE SEAMS - Brown and Dark Gray, Poorly-Cemented, with Quartz
Gravel
KI-SHALE - Dark Gray, Slightly Weathered, Hard ④
LI-SHALE - Dark Gray, Laminated, Slightly Weathered, Hard, with Moderate Dip, Fractured
Layers, and frequent Quartz and Pyrite Seams
MI-Moist, Very Hard, Brown and Dark Gray Clay with Gravel (Sandstone, Shale and
Quartz Fragments) ⑤
NI-SHALE - Dark Gray, Highly Weathered, Soft
PI-SHALE - Dark Gray, Highly Weathered, Soft, with occasional Quartz Seams
QI-SHALE - Dark Gray, Weathered, Medium Hard, with occasional Quartz Seams
RI-HIGHLY WEATHERED SHALE WITH OCCASIONAL HARD SHALE LAYER - Dark Gray, Laminated,
Medium Hard, with Moderate Dip and frequent Quartz and Pyrite Seams

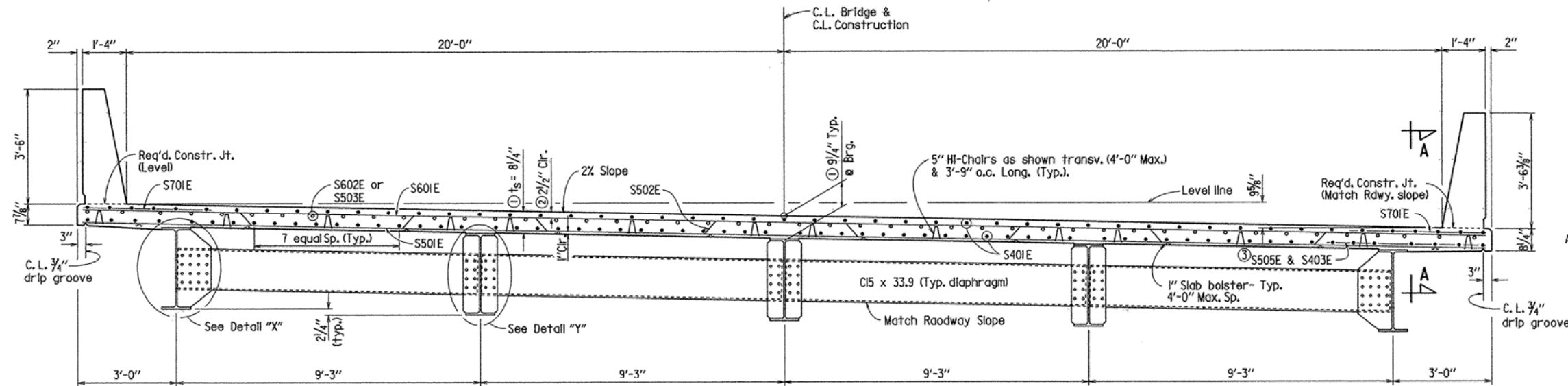
- ③ Water stratum encountered at 4.6'
④ Water stratum encountered at 7.9'
⑤ Water stratum encountered at 2.2'

ELEVATION



NOTE: Class I Protective Surface Treatment shall be applied to the roadway surface and roadway face and top of the concrete parapet wall.

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				JOB NO.		060352	34	83
				07210		SPAN DETAILS		51920



Slab Reinforcing:

Longitudinal: S401E Top & Bottom
S503E placed as shown at ends of unit (See Reinf. Plan)
S602E placed as shown over interior supports (See Reinf. Plan)
Transverse: S502E @ 15" o.c. bent up over beams
S601E @ 15" o.c. in top, S501E @ 15" o.c. in bottom Alternate
Overhang: S701E @ 15" o.c. in top (See "Detail A" on Dwg. No. 51922)
S505E @ 15" o.c. in bottom ③
S403E @ 7 1/2" o.c. in bottom ③

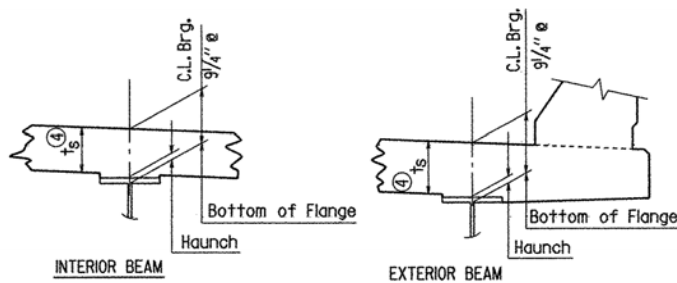
NOTE: At the Contractor's option, two straight epoxy coated #5 bars, top and bottom, may be substituted for bar S502E. Payment will be based on weight of S502E.

NOTE: Bars with an "E" suffix are epoxy coated.

TYPICAL ROADWAY SECTION

1/2" = 1'-0"

- ① Tolerance: Minus = 1/4"
Plus = Equal to amount of slab thickening used to meet slab thickness tolerance-
See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"
- ② See "ADJUSTMENT FOR SLAB THICKNESS TOLERANCE"
- ③ S403E and S505E placed in overhang on low side only to accommodate future expansion of roadway.



- ④ Tolerance when removable deck forming is used is + 1/2", - 1/4".
Haunch forming is required and shall be adjusted to maintain slab thickness tolerance.

NOTES:

t_s = Slab thickness as shown on Typical Roadway Section.

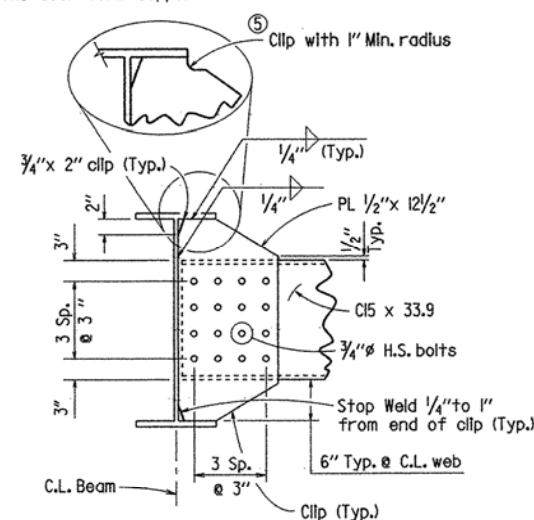
Haunch dimension may vary within the following limits to maintain the grade and slab thickness tolerance: Minimum - occurs when top flange contacts bottom reinforcing steel; Maximum - top flange thickness plus 1 3/4". No increase in concrete and structural steel quantities will be made to maintain tolerances.

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.

ADJUSTMENT FOR SLAB THICKNESS TOLERANCE

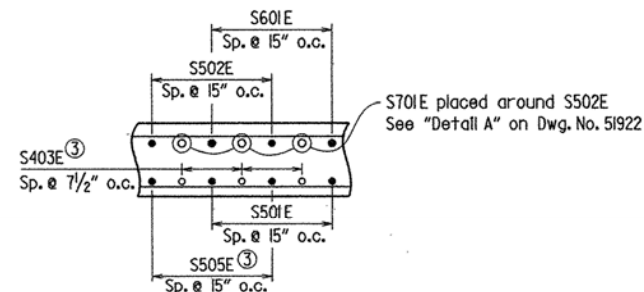
No Scale

- ⑤ If permanent steel bridge deck forms are used, the fabricator shall clip the plate as necessary to accommodate the deck form support.



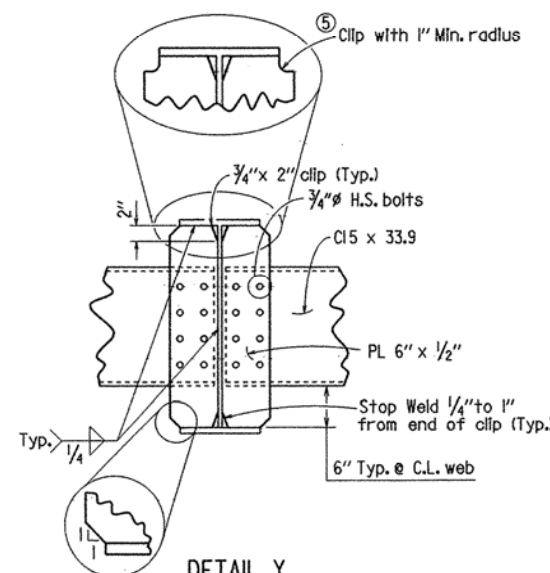
DETAIL X

1" = 1'-0"



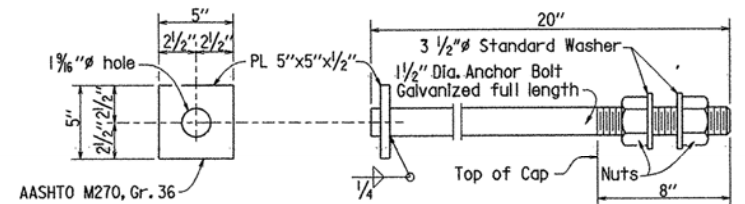
SECTION A-A

1" = 1'-0"



DETAIL Y

1" = 1'-0"



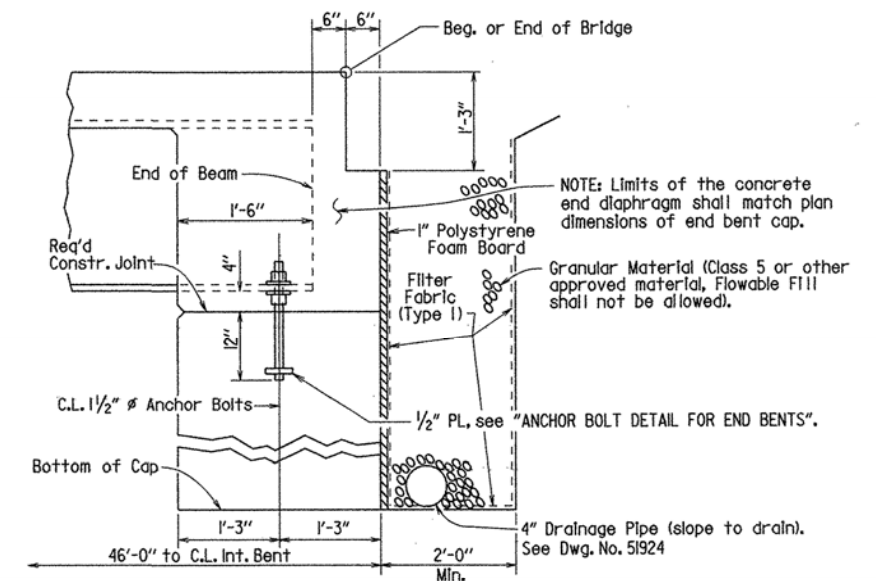
Anchor Bolts and Nuts to be according to subsection 807.07 of the specifications. Anchor Bolts shall be Grade 55. Washers shall be a standard washer.

Use lower nut and washer to adjust to grade. Snug tight top nut and washer after grade is adjusted.

Anchor Bolts, Nuts and Washers will not be measured and paid for separately, but will be considered subsidiary to the unit price bid for "Structural Steel in Beam Spans (M270 Gr.50W)".

ANCHOR BOLT DETAIL FOR END BENTS

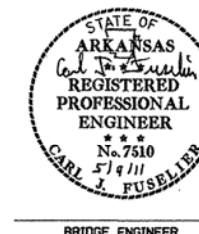
No Scale



SECTION AT END BENT

No Scale

NOTE: For additional details of pipe under drain see Std. Dwg. PU-1 and Section 611 of the Standard Specifications. Pipe under drains, outlet protectors, granular materials, drain pipe, filter fabric and polystyrene foam board will not be measured or paid for separately, but will be considered subsidiary to the unit price bid for "Unclassified Excavation".



SHEET 1 OF 5
DETAILS OF 150'-0"
INTEGRAL W-BEAM UNIT
McHENRY CREEK
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: RBR DATE: 2-3-11 FILENAME: b060352_sl.dgn
CHECKED BY: CMA DATE: 3/31/11 SCALE: As shown
DESIGNED BY: RBR DATE: 2/11
BRIDGE NO. 07210 DRAWING NO. 51920