Appendix A – Test Girder Drawings

Total prestress is based on 72.6% f's, f's = 270 ksi and As = 0.217 in^2

All prestressing strands shall conform to ASTM A416 Grade 270 Low Relaxation Strands
All beams are to be increased in length to compensate for elastic shortening, creep, and shrinkage

All concrete strengths shall not be greater than 1,000 psi greater than the specified concrete strength

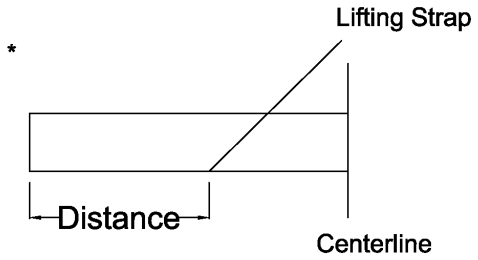
Rebar dimensions are taken from edge to edge, not centerline to centerline

Lifting points as measured from end of girder	
Girder	Distance* (ft)
A34	13
BTC 60	20
BTE 70	25

Cracking will be detrimental to the girders, therefore girders shall be lifted at the points described in the Lifting points as measured from end of girder table

12 modulus of rupture cylinders shall be cast per girder and cured with the girder

Precaster provides girders, girder reinforcement (including hooks), and test cylinders (deck and deck reinforcement are not to be provided by the precaster)



NCHRP 12-94	Cover Page			Dr. Sri Sritharan Principal Investigator	BRIDGE NO. — POST MILES — 05-05-2015 Test Units DISREGARD PRINTS BEARING EARLIER REVISION DATES REVISION DATES (PRELIMINARY STAGE ONLY) X SHEET 1 OF

Figure A.1 – RC and Pretensioned Girder Drawing Cover Page

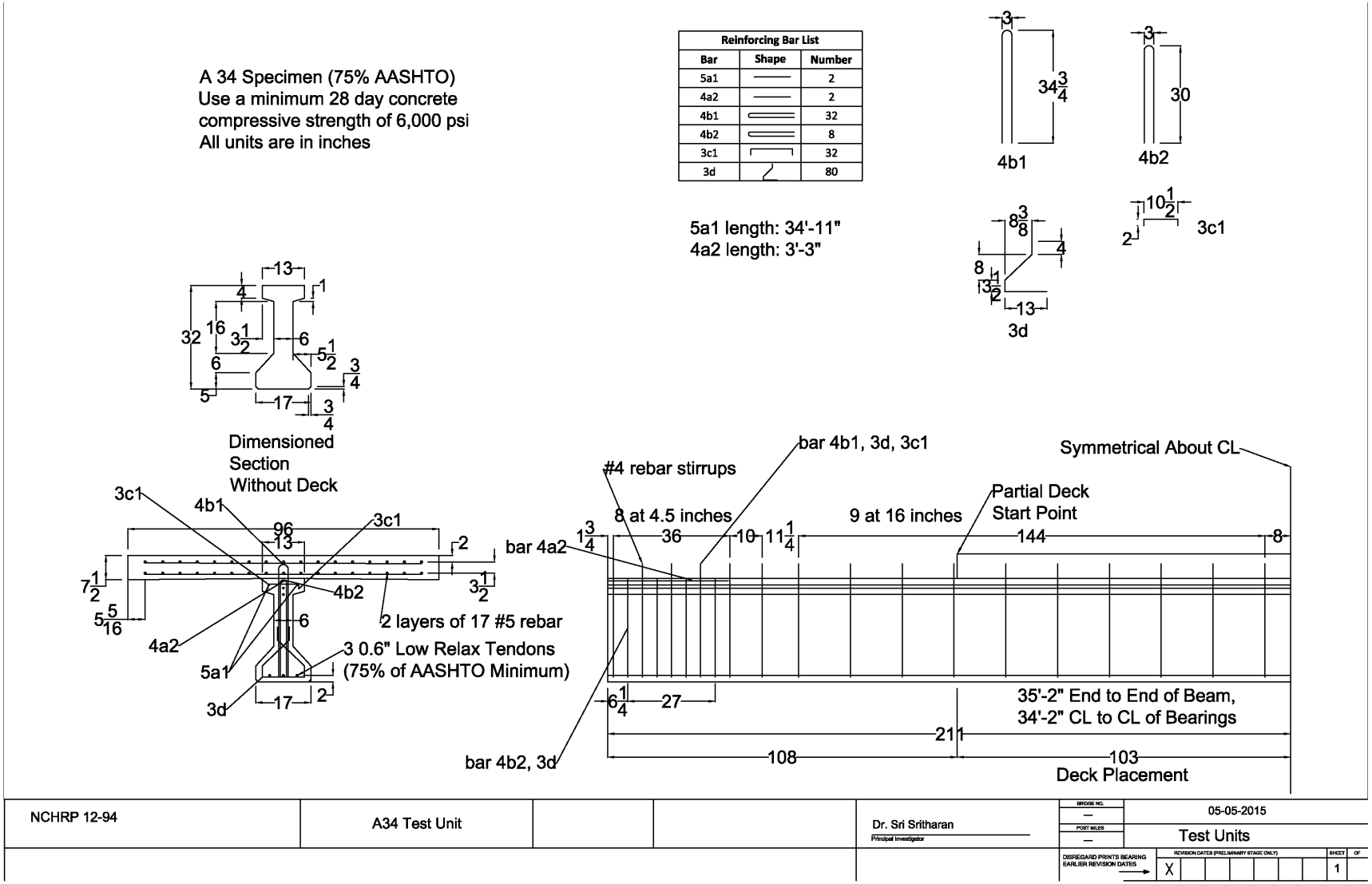


Figure A.2 – A34 Test Unit Details

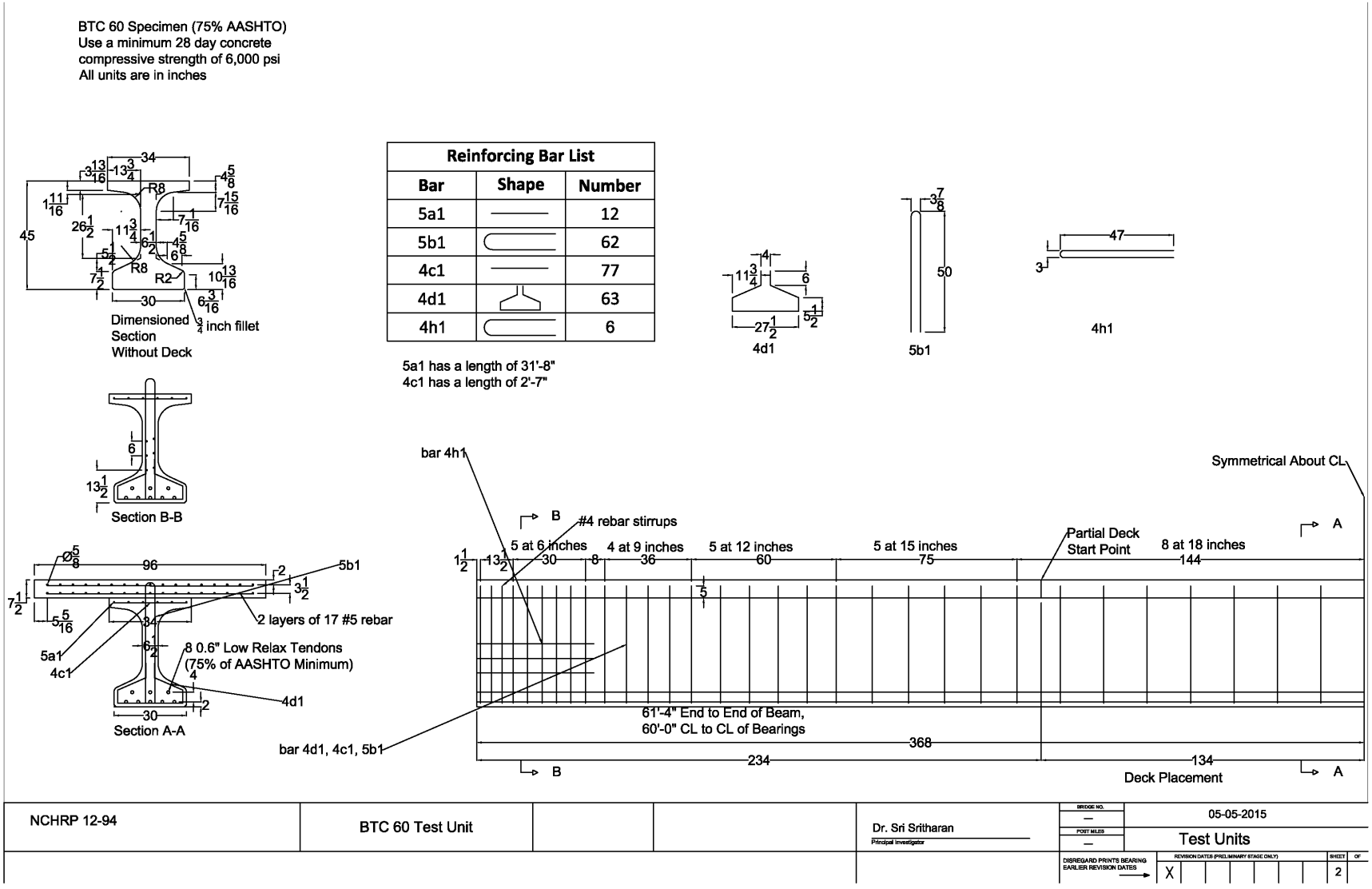


Figure A.3 – BTC 60 Test Unit Details

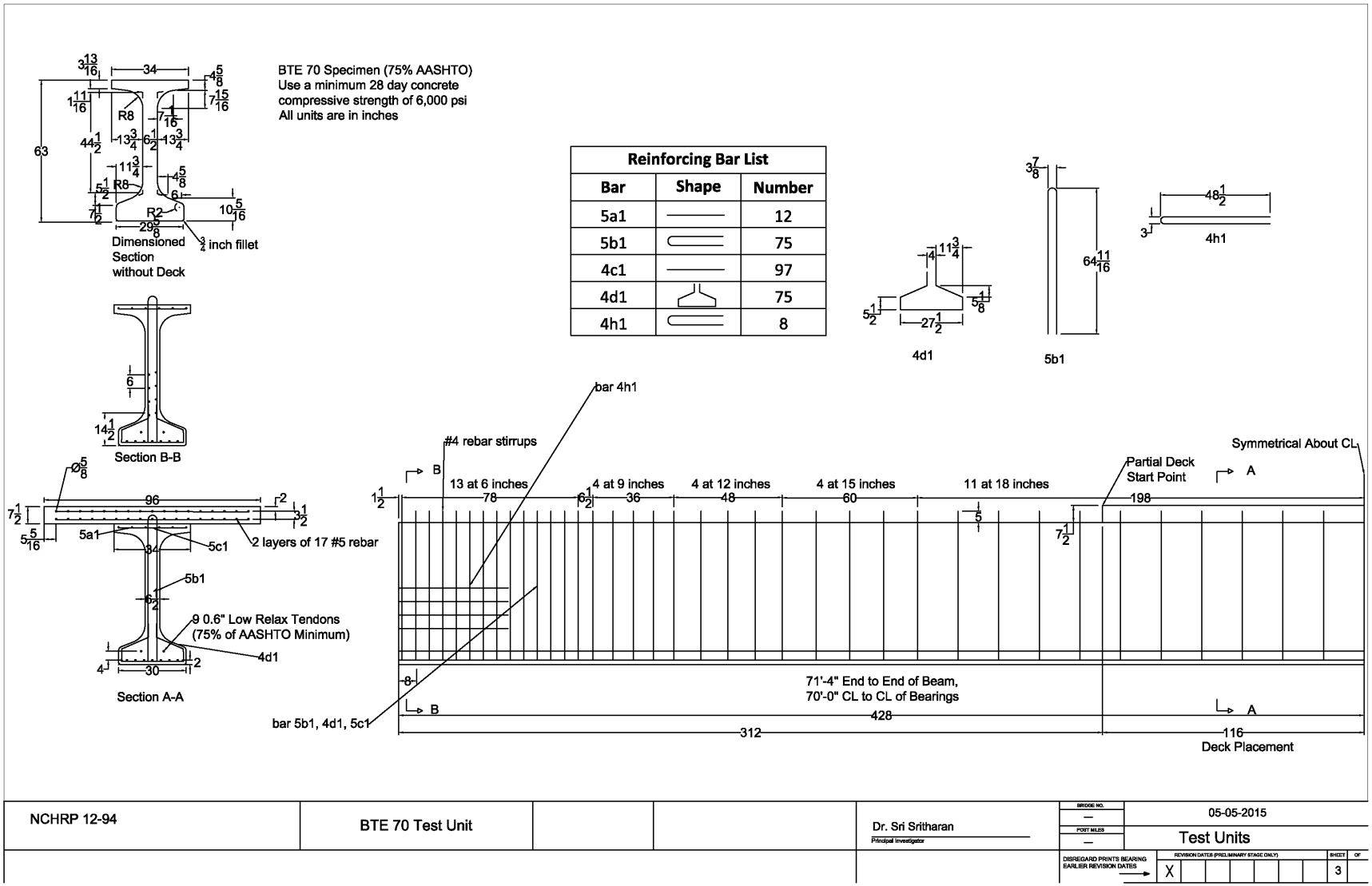


Figure A.4 – BTE 70 Test Unit Details

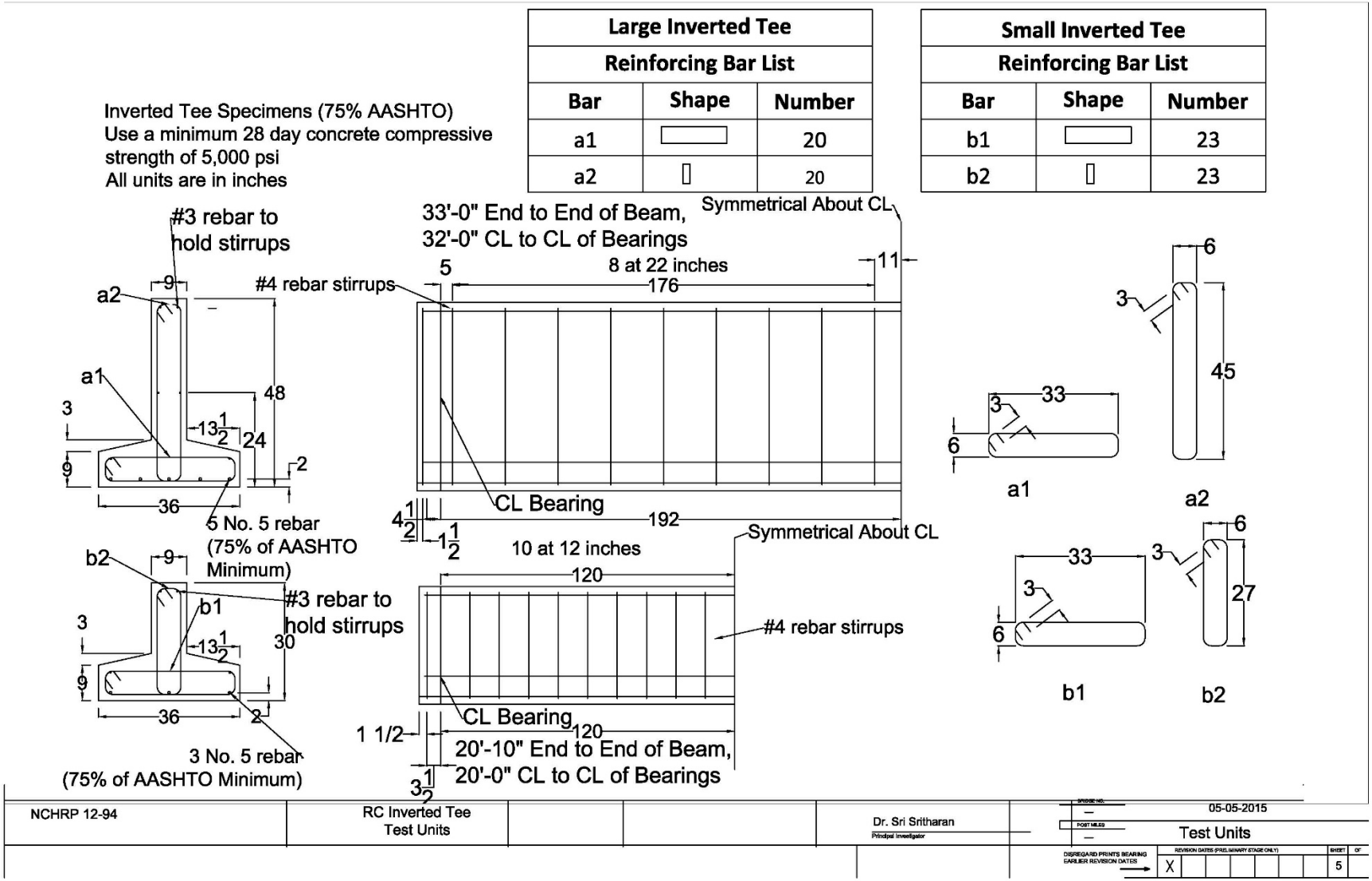


Figure A.5 – Large and Small Inverted Tee Test Unit Details

Sheet List	
Sheet Number	Sheet Name
01	GENERAL NOTES
02	REBAR DETAILS
03	SEGMENTAL BEAMS
04	UNB1 TYPICAL SEGMENT
05	UNB1 END BLOCK
06	UNB1 DEVIATOR
07	UNB2 TYPICAL SEGMENT
08	UNB2 END BLOCK
09	UNB2 DEVIATOR
10	UNB3 TYPICAL SEGMENT
11	UNB3 END BLOCK
12	UNB3 DEVIATOR
13	BON2 TYPICAL SEGMENT
14	BON2 END BLOCK
15	DEVIATOR DETAILS
16	DEVIATOR SEGMENT ISOMETRIC
17	SHEAR & ALIGNMENT KEY DETAILS
18	SHEAR & ALIGNMENT KEY DETAILS 2

General Notes

All reinforcement bars are #4 unless noted otherwise.

The clear cover is 1 inch unless noted otherwise.

For UNB1 and UNB2 the maximum aggregate size is 1/2 inch. For UNB3 and BON2 the maximum aggregate size is 3/4 inch.

No concrete will enter the ducts during the pouring of the segments.

The 28 day compressive strength of the concrete will be at least 6 ksi and not more than 7 ksi.

The mild reinforcement used in the segments is A615 Grade 60 steel.

All transverse sections are symmetrical about their centerlines.

Short reinforcement bars may be placed to secure the tendon ducts.

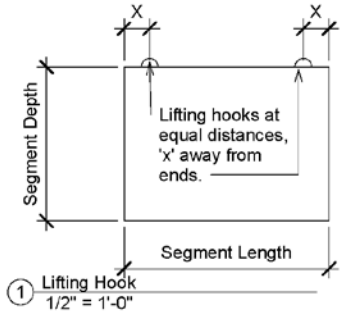
Concrete will have a compressive strength of at least 2.5 ksi before the forms are stripped (AASHTO 5.14.2.4.2).

In addition to the needs of the precaster, provide 18 - 4x8 inch cylinders and 4 - 6 inch x 6 inch x 36 inch modulus of rupture beams for each pour.

All anchorage systems are Muliplane Anchorage from DSI. UNB1: use two 5-0.6". UNB2: Use two 7-0.6". UNB3: Use two 9-0.5". BON2: Use 12-0.5".

The segments will be match cast to ensure proper geometric placement during testing.

Provide lifting hooks at equal distance longitudinally from the center of the segments. (See detail below)



IOWA STATE UNIVERSITY	GENERAL NOTES	NCHRP 12-94	Dr. Sri Sritharan Principal Investigator	BRIDGE NO.	05-20-15
				POST MILES	Test Units
			Drawn by Michael Rosenthal mjr@iastate.edu 319-210-7435	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) X X; SHEET 01; OF

Figure A.6 – Segmental Cover Sheet and Sheet List

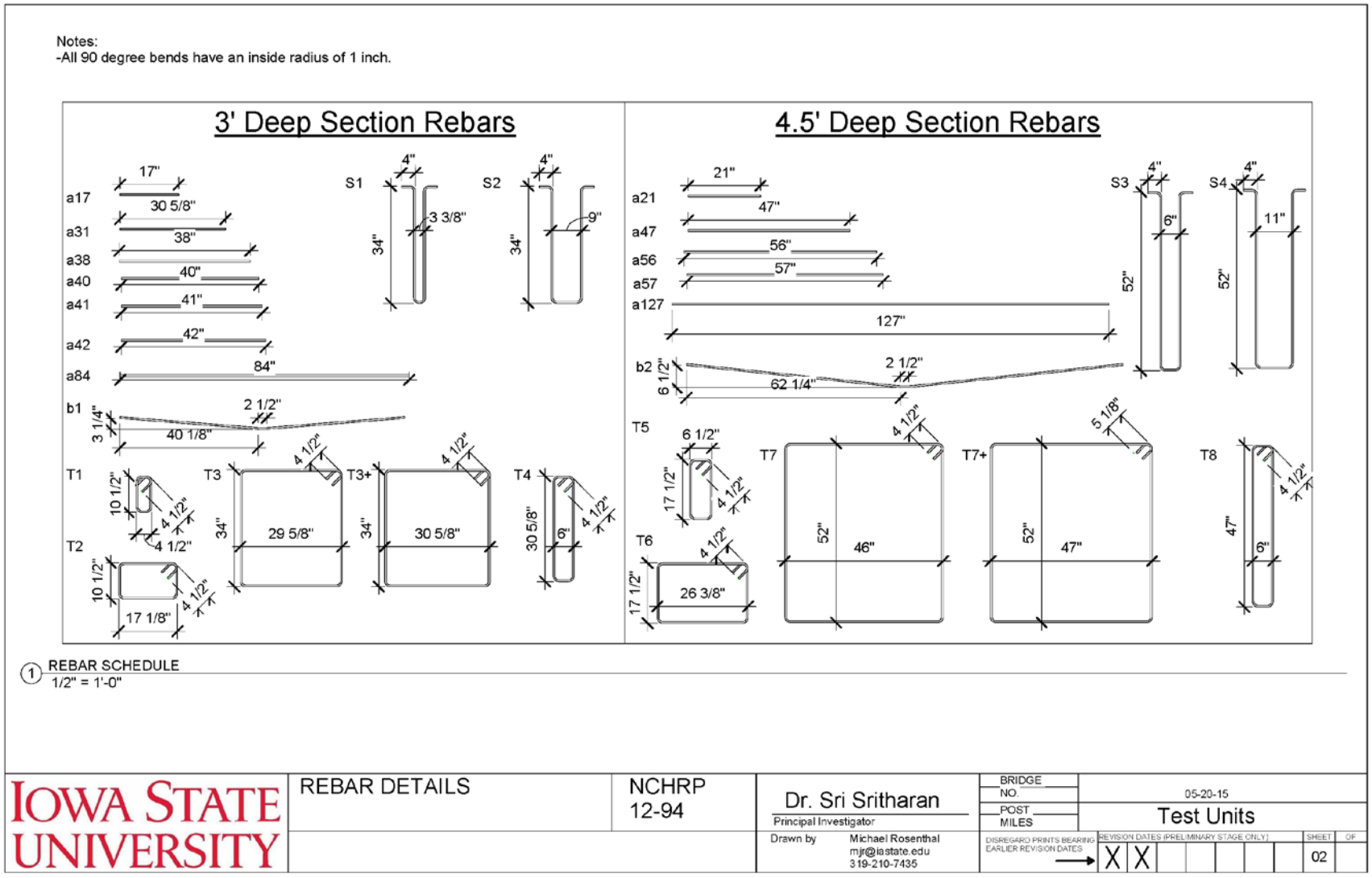


Figure A.7 – Mild Reinforcement Details

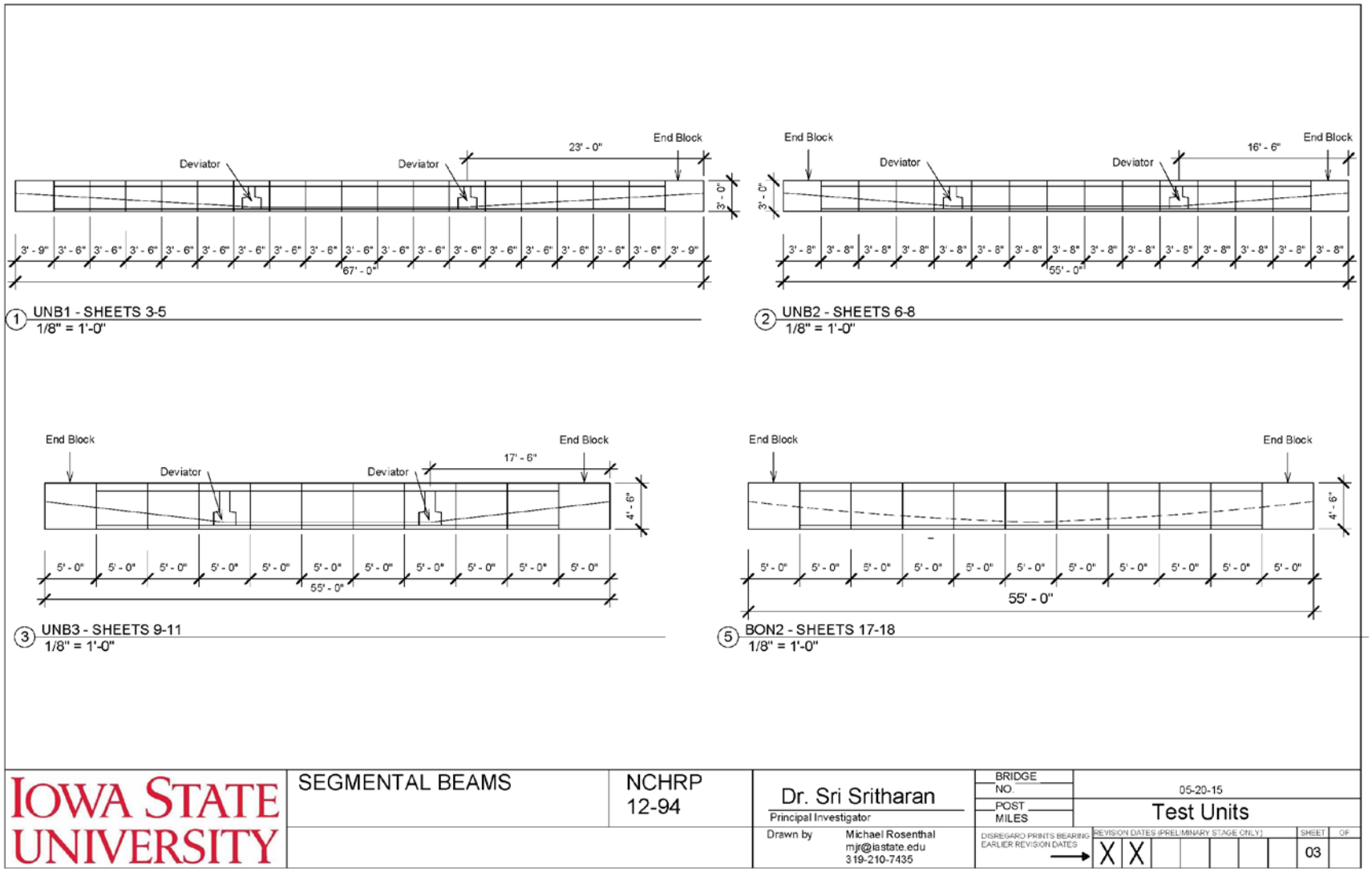


Figure A.8 – Segmental Elevations

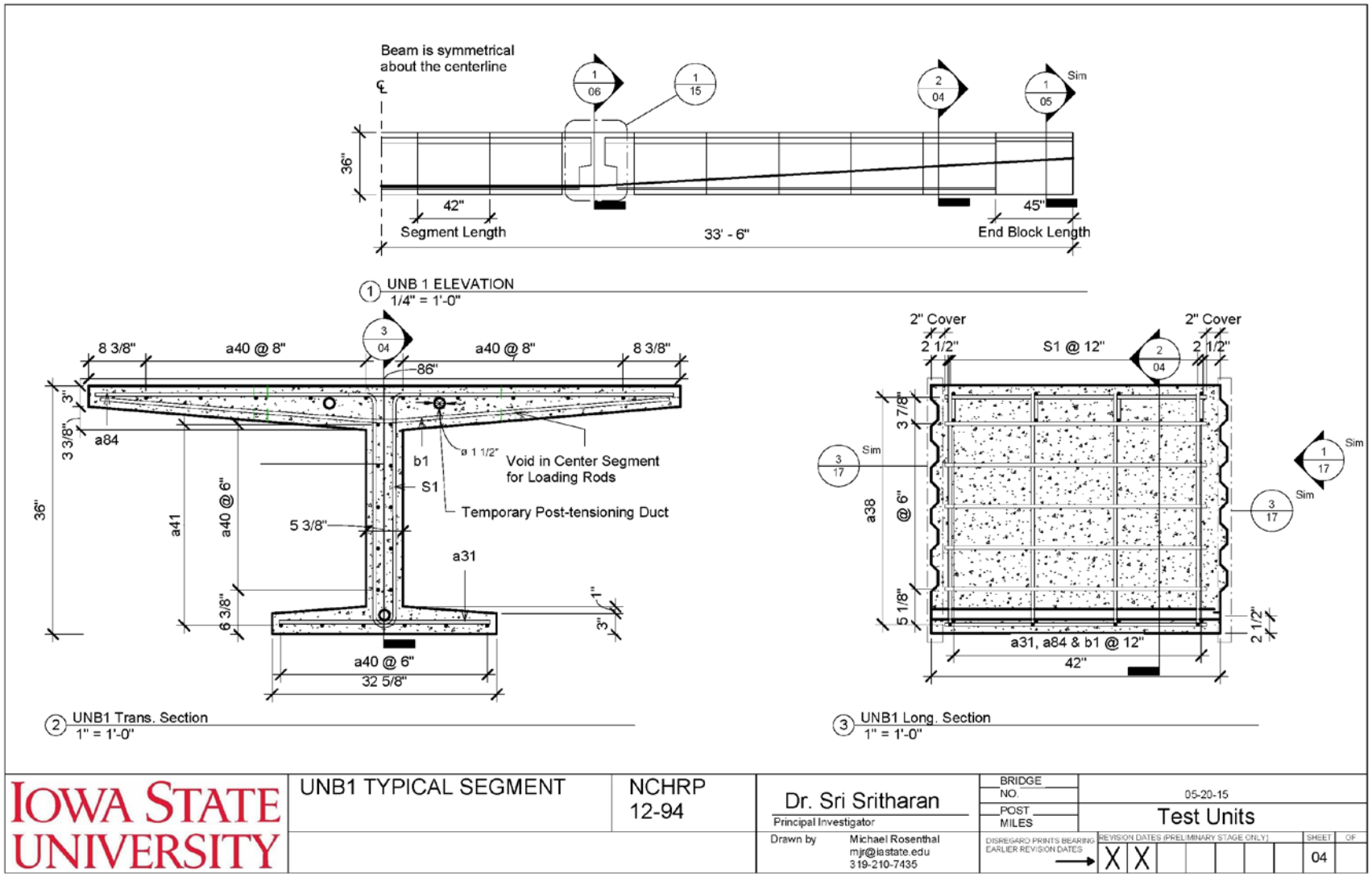


Figure A.9 – UNB1 Typical Longitudinal and Transverse Section

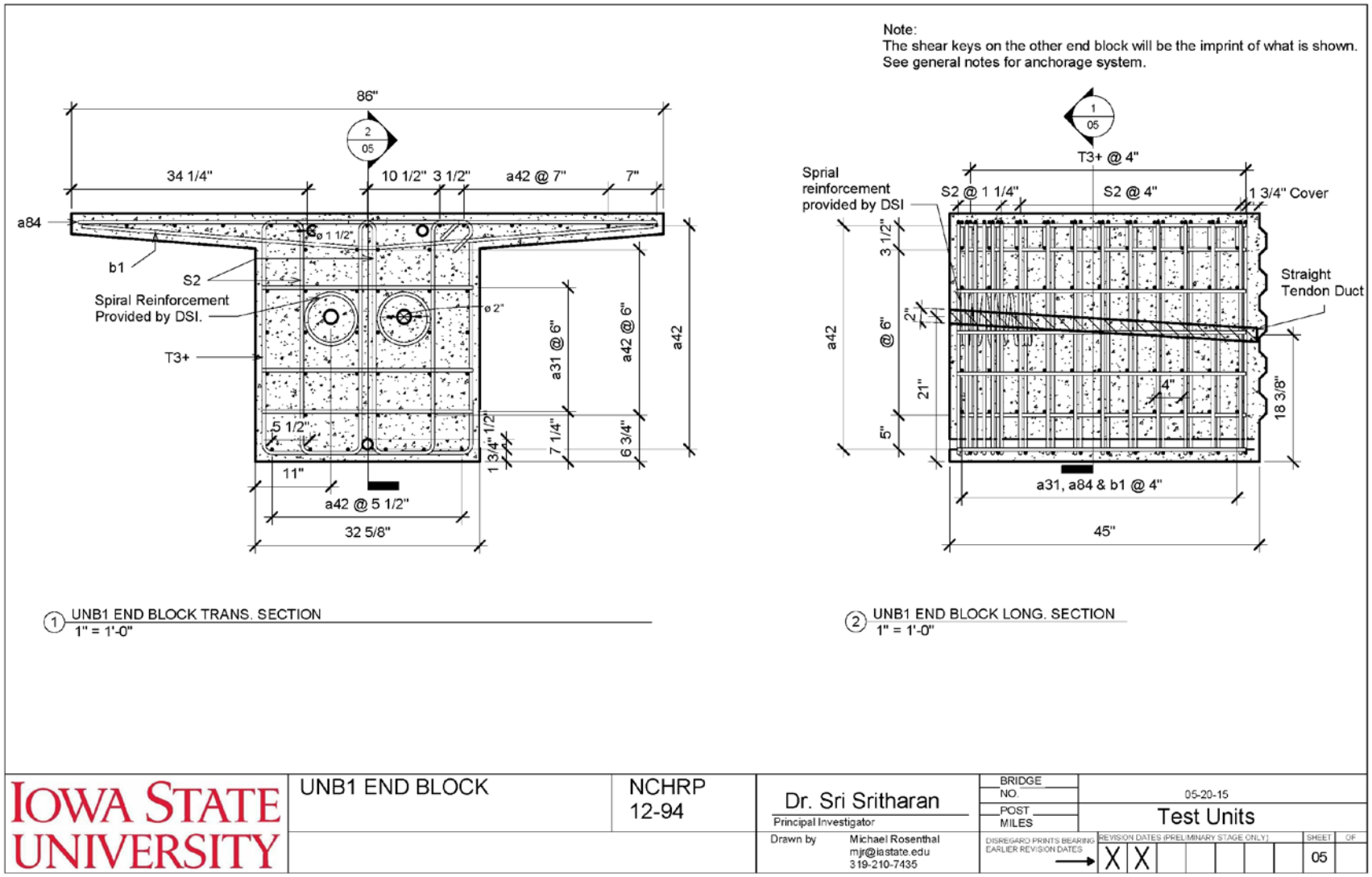


Figure A.10 – UNB1 End Block Longitudinal and Transverse Section

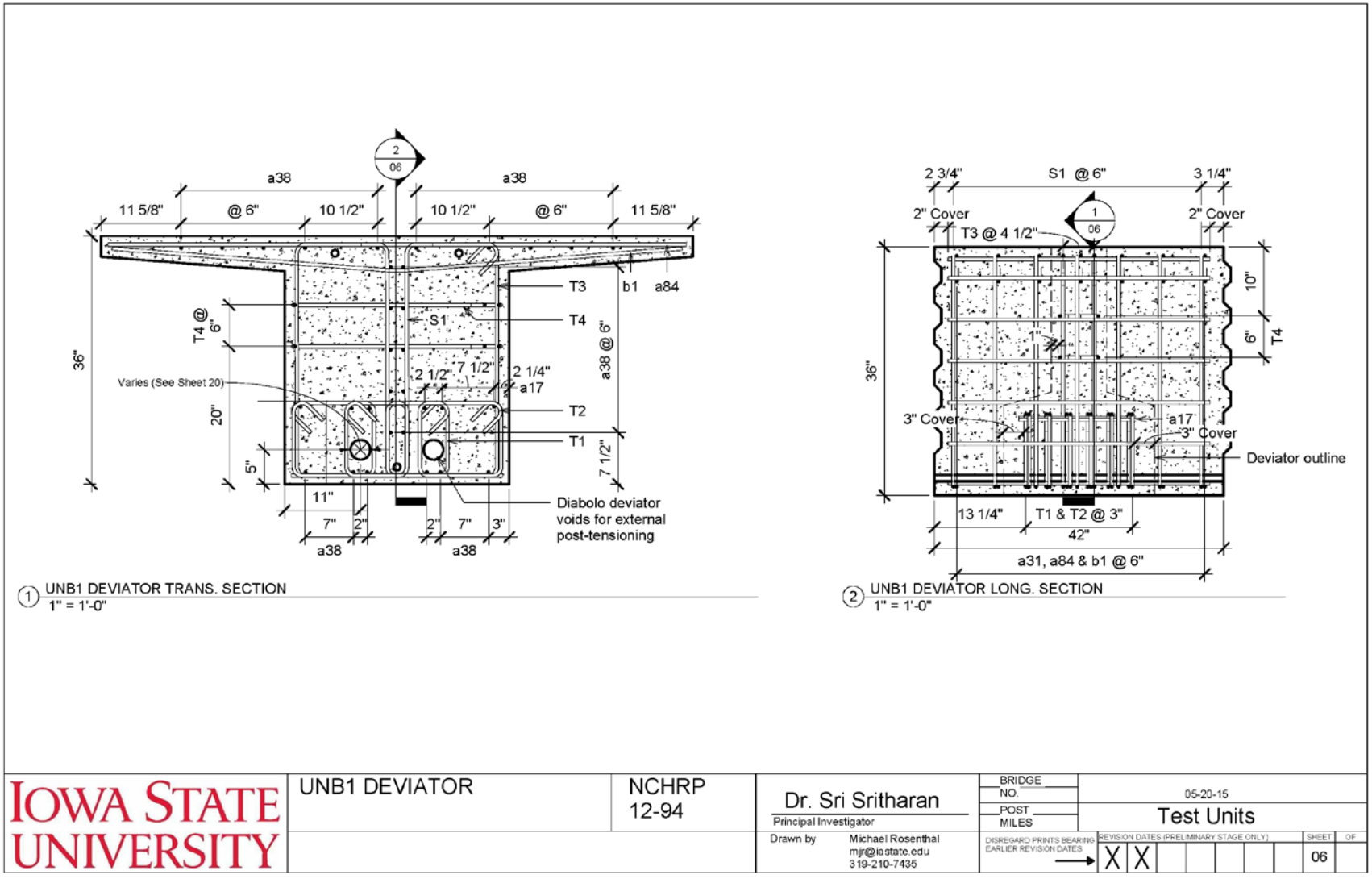


Figure A.11 – UNB1 Deviator Segment Longitudinal and Transverse Section

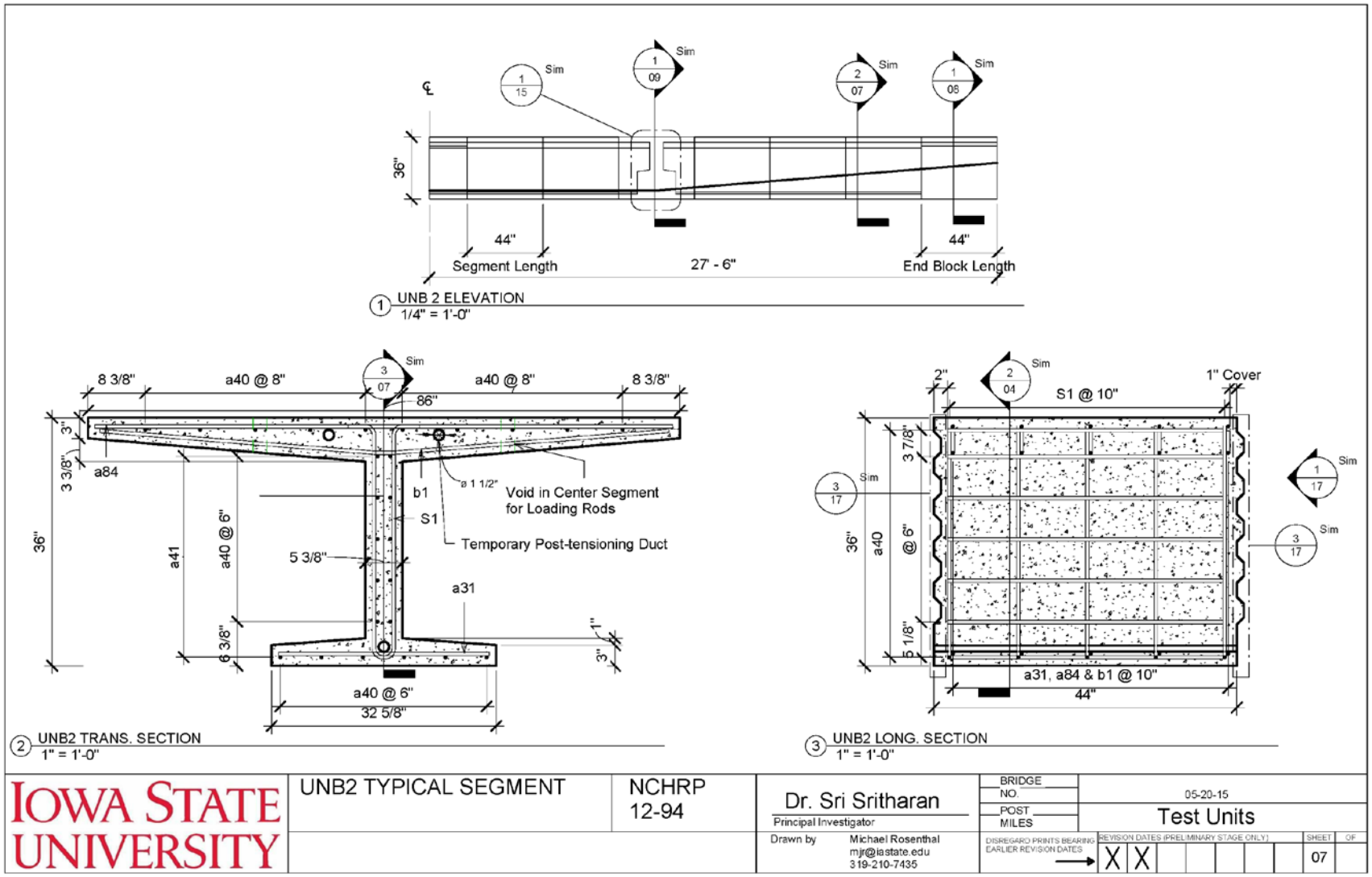


Figure A.12 – UNB2 Typical Longitudinal and Transverse Section

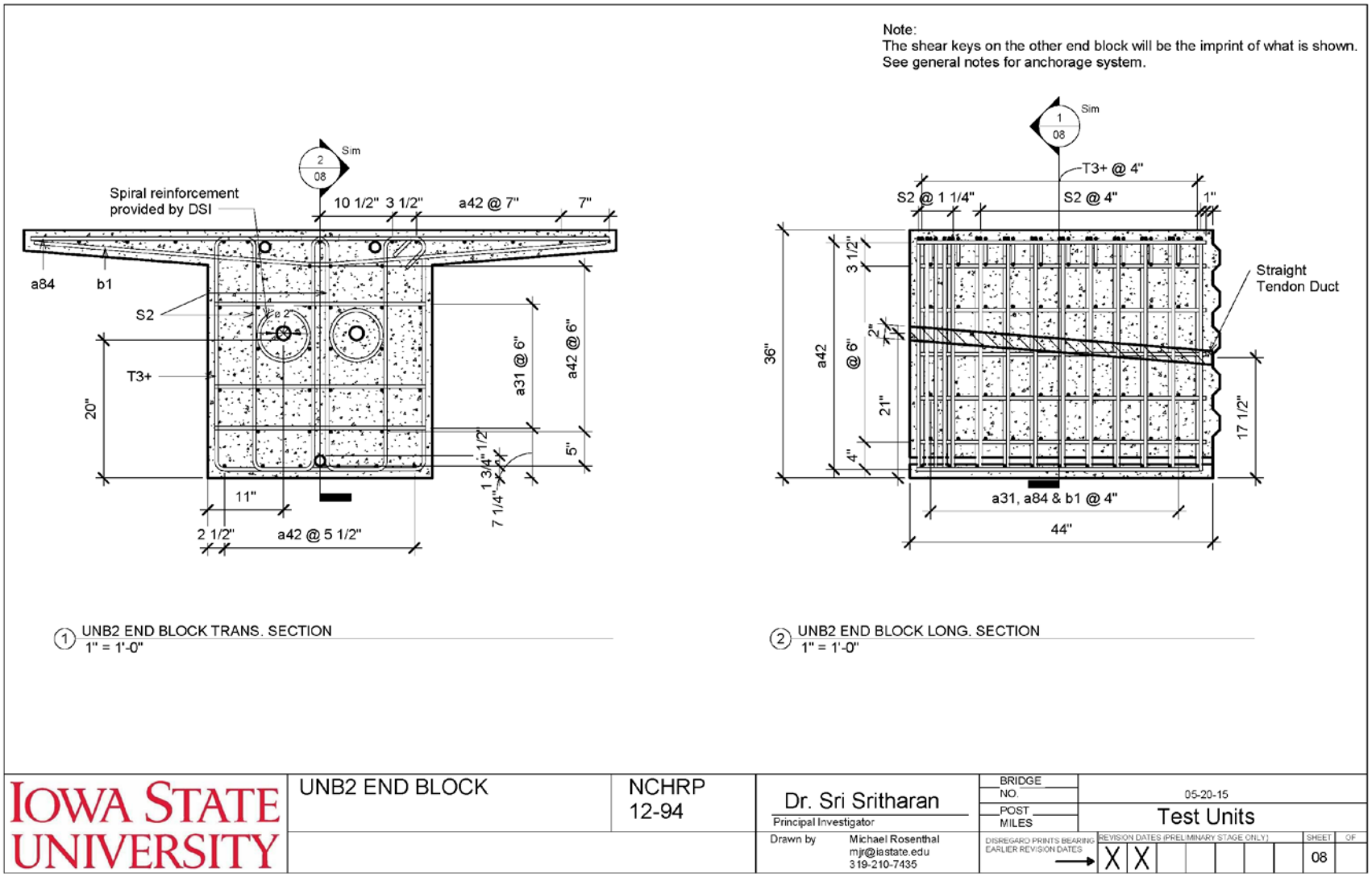


Figure A.13 – UNB2 End Block Longitudinal and Transverse Section

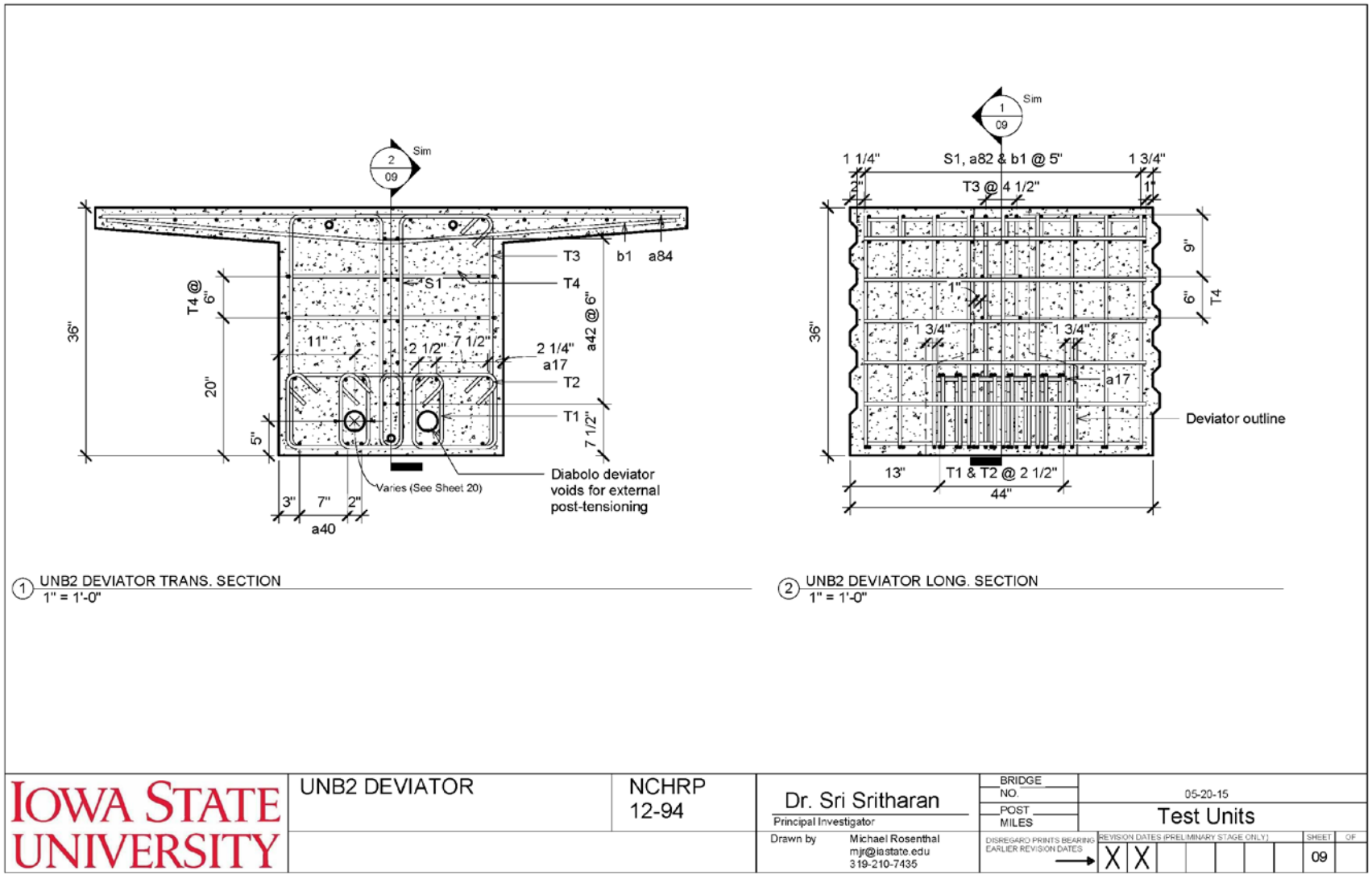


Figure A.14 – UNB2 Deviator Segment Longitudinal and Transverse Section

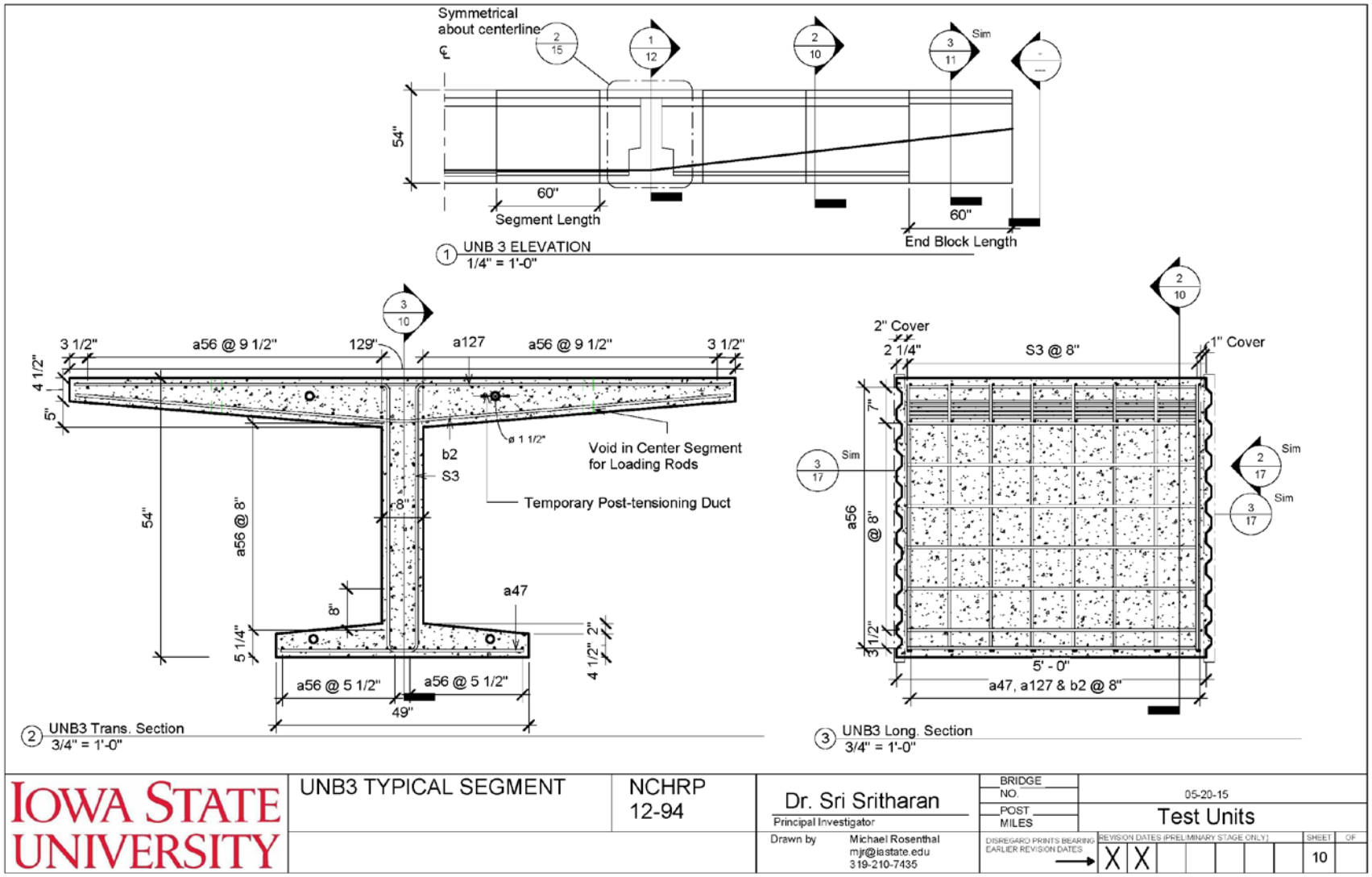


Figure A.15 – UNB3 Typical Longitudinal and Transverse Section

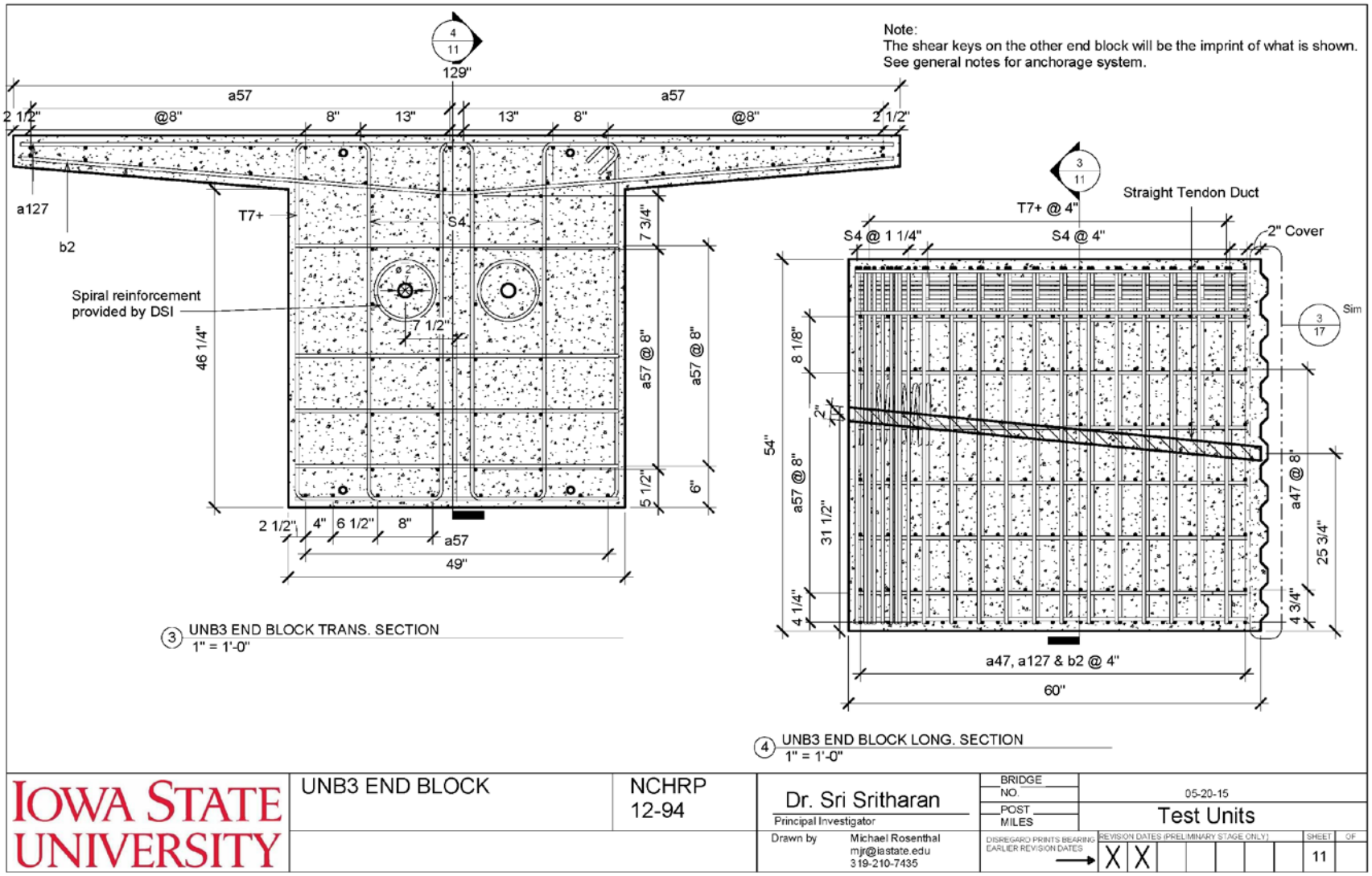


Figure A.16 – UNB3 End Block Longitudinal and Transverse Section

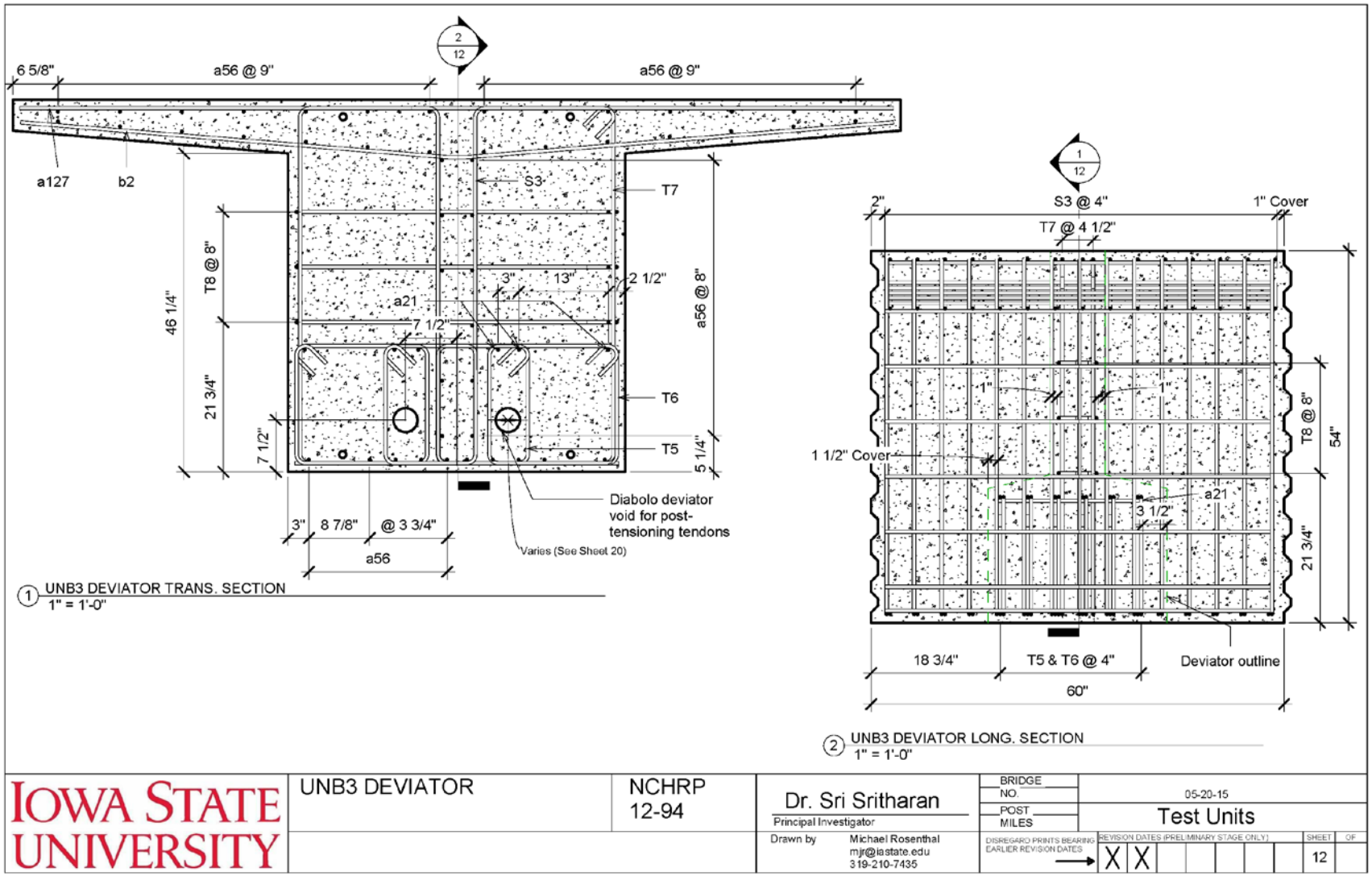


Figure A.17 – UNB3 Deviator Segment Longitudinal and Transverse Section

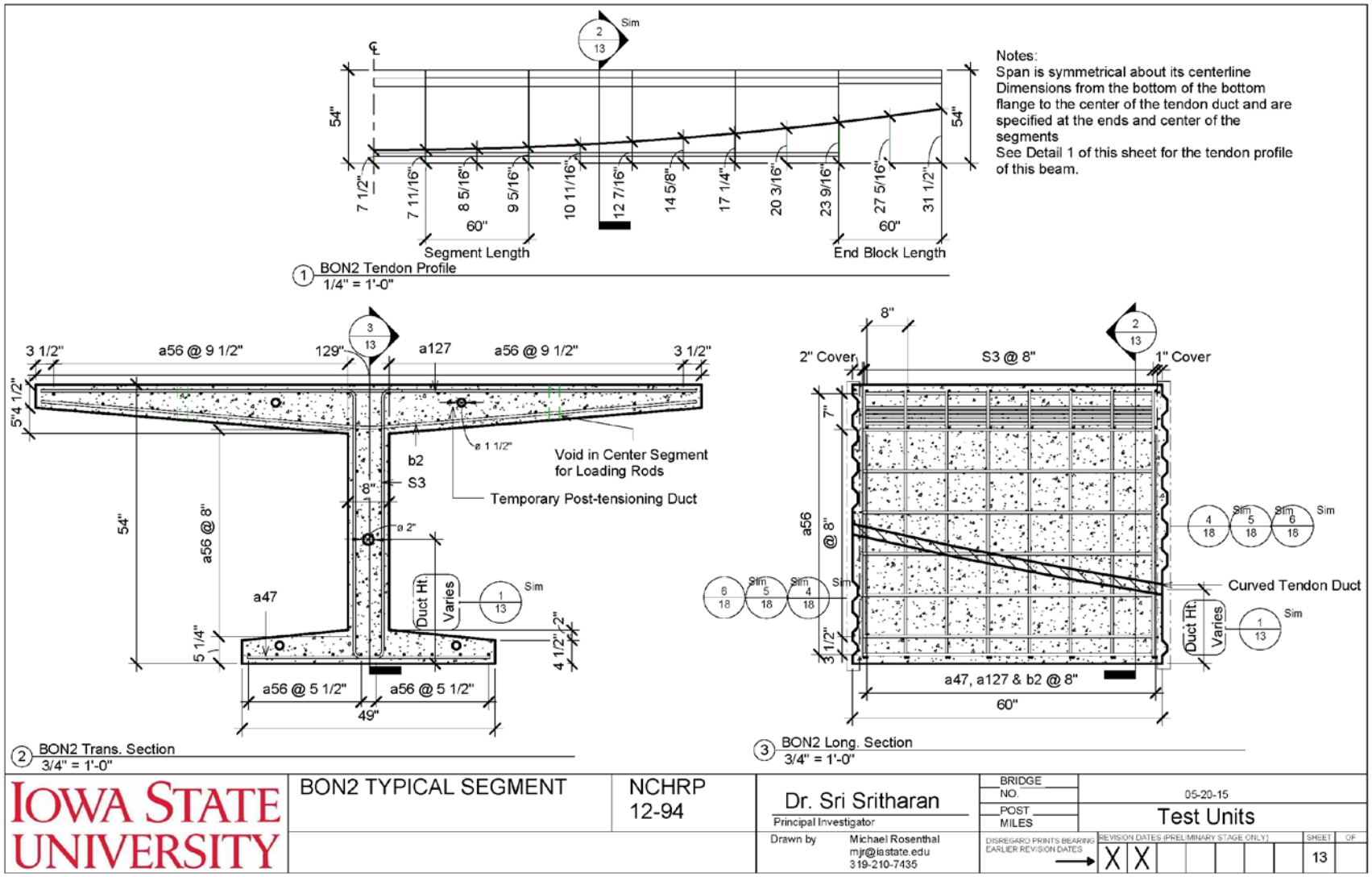


Figure A.18 – BON2 Typical Longitudinal and Transverse Section

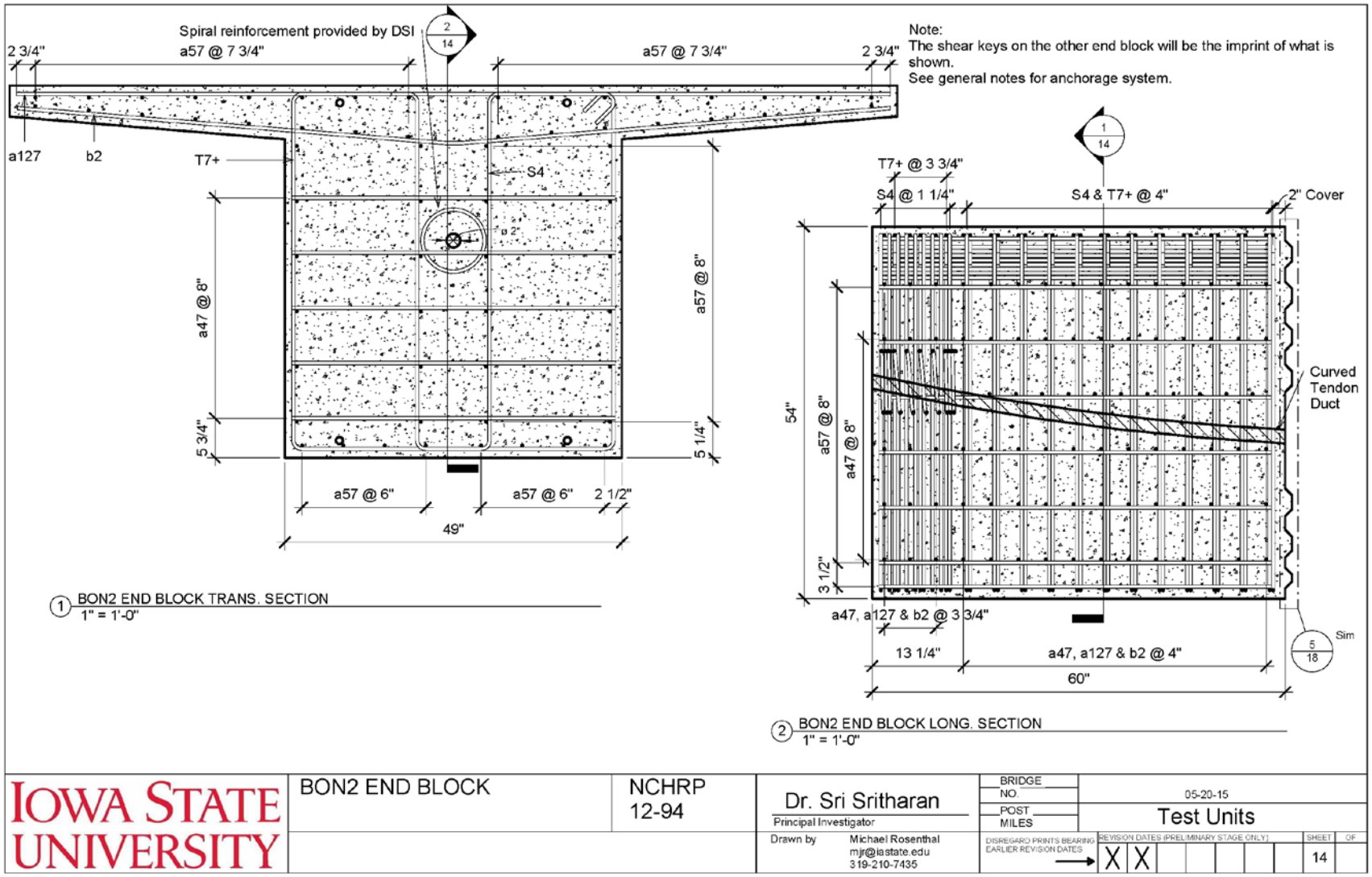


Figure A.19 – BON2 End Block Longitudinal and Transverse Section

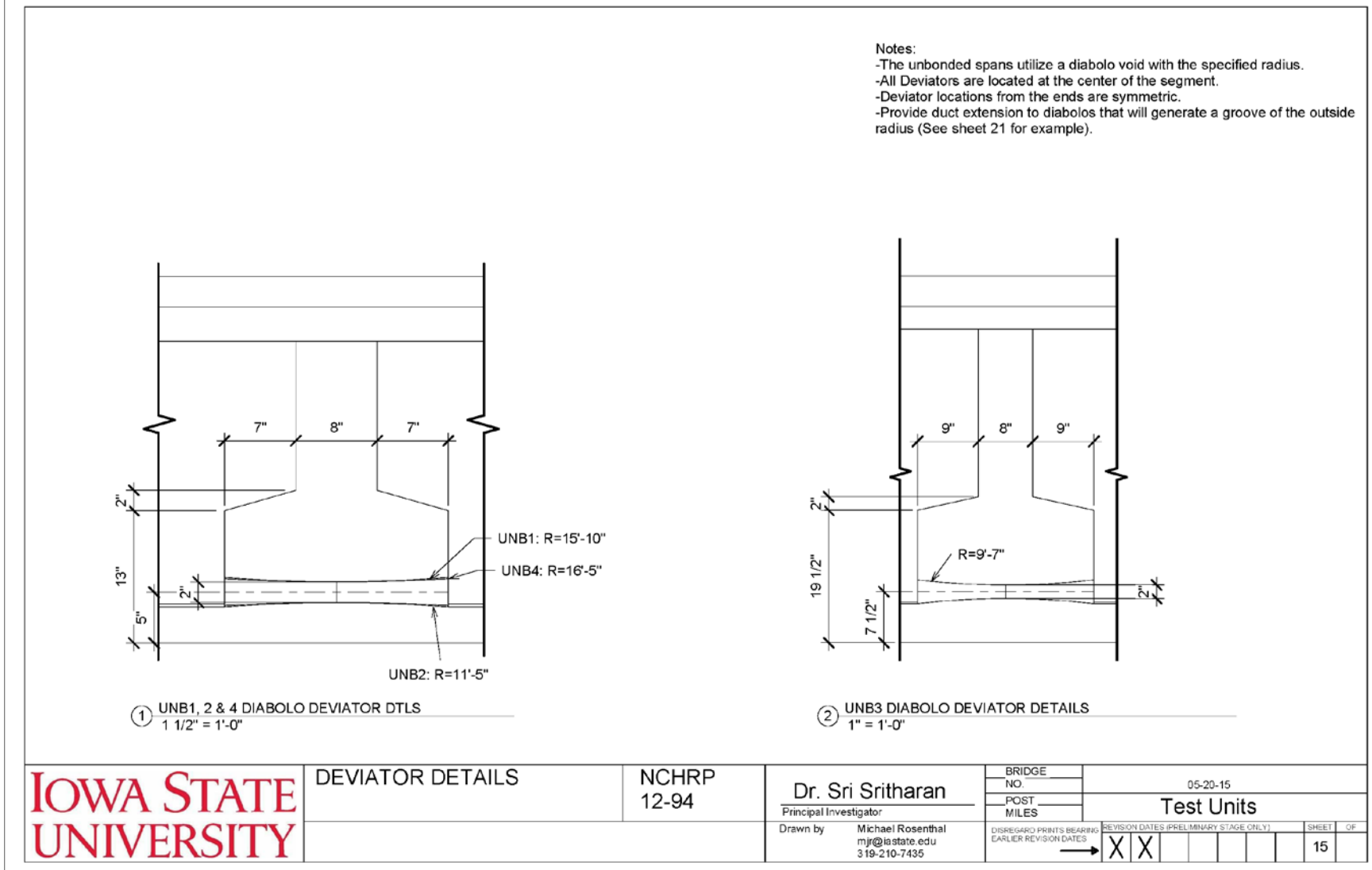
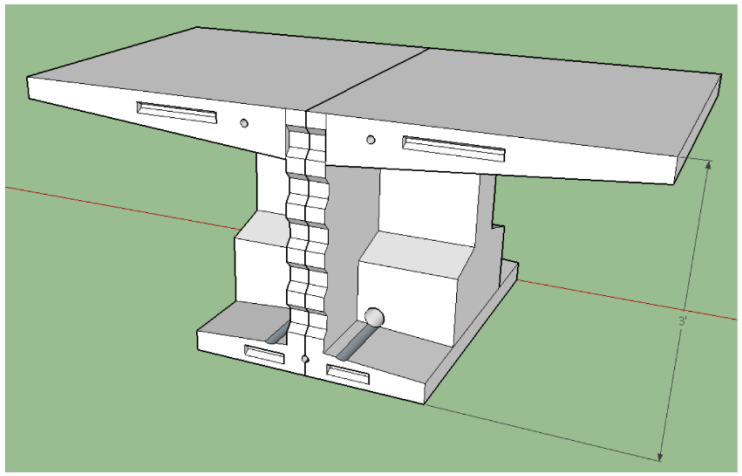
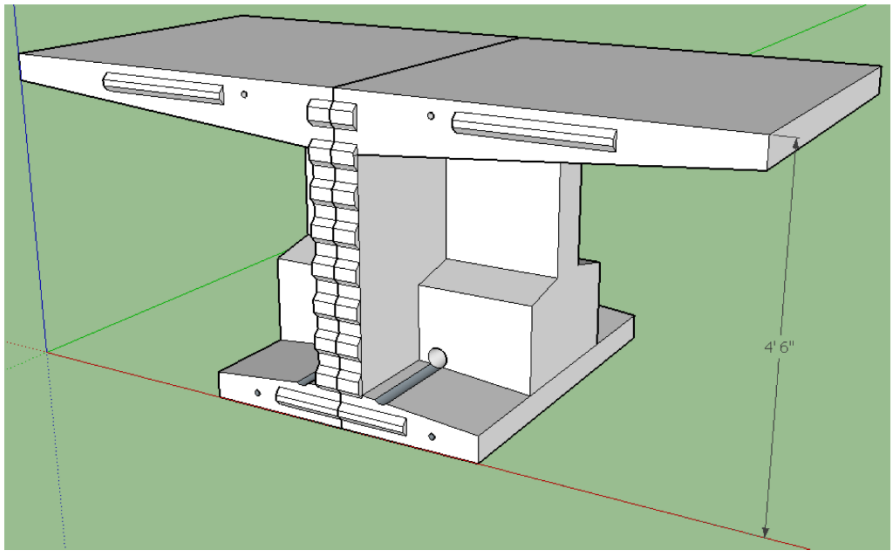


Figure A.20 – Deviator Details



1 UNB2 DEVIATOR SEGMENT ISOMETRIC
1/8" = 1'-0"



2 UNB3 DEVIATOR SEGMENT ISOMETRIC
1/8" = 1'-0"

IOWA STATE UNIVERSITY	DEVIATOR SEGMENT ISOMETRIC	NCHRP 12-94	Dr. Sri Sritharan Principal Investigator	BRIDGE NO. POST MILES	05-20-15 Test Units
			Drawn by Michael Rosenthal mjr@iastate.edu 319-210-7435	DISREGARD PRINTS BEARING EARLIER REVISION DATES →	REVISION DATES (PRELIMINARY STAGE ONLY) X X; SHEET 16; OF

Figure A.21 – Isometric View of Deviator Section

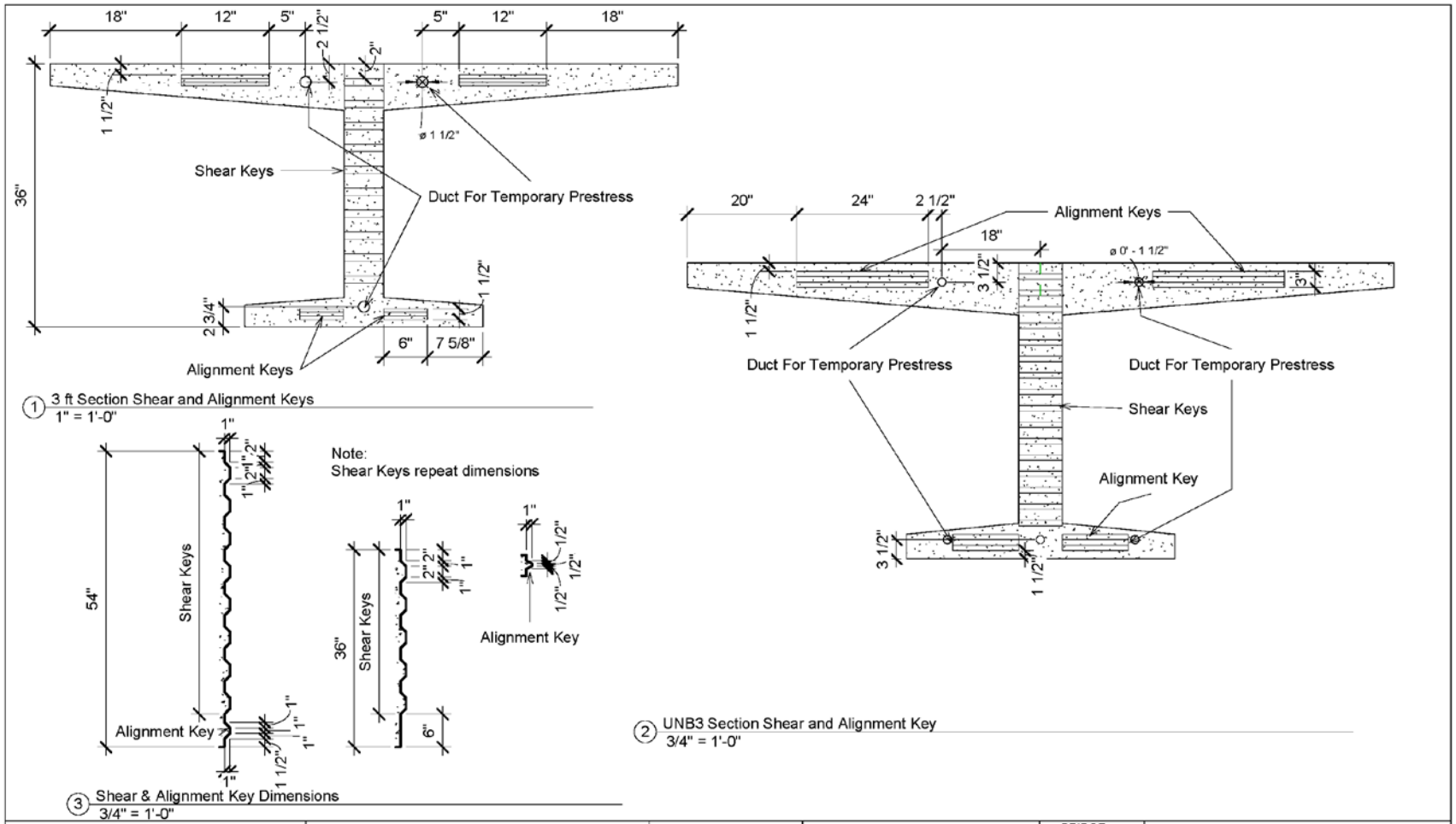


Figure A.22 – Shear and Alignment Key Details

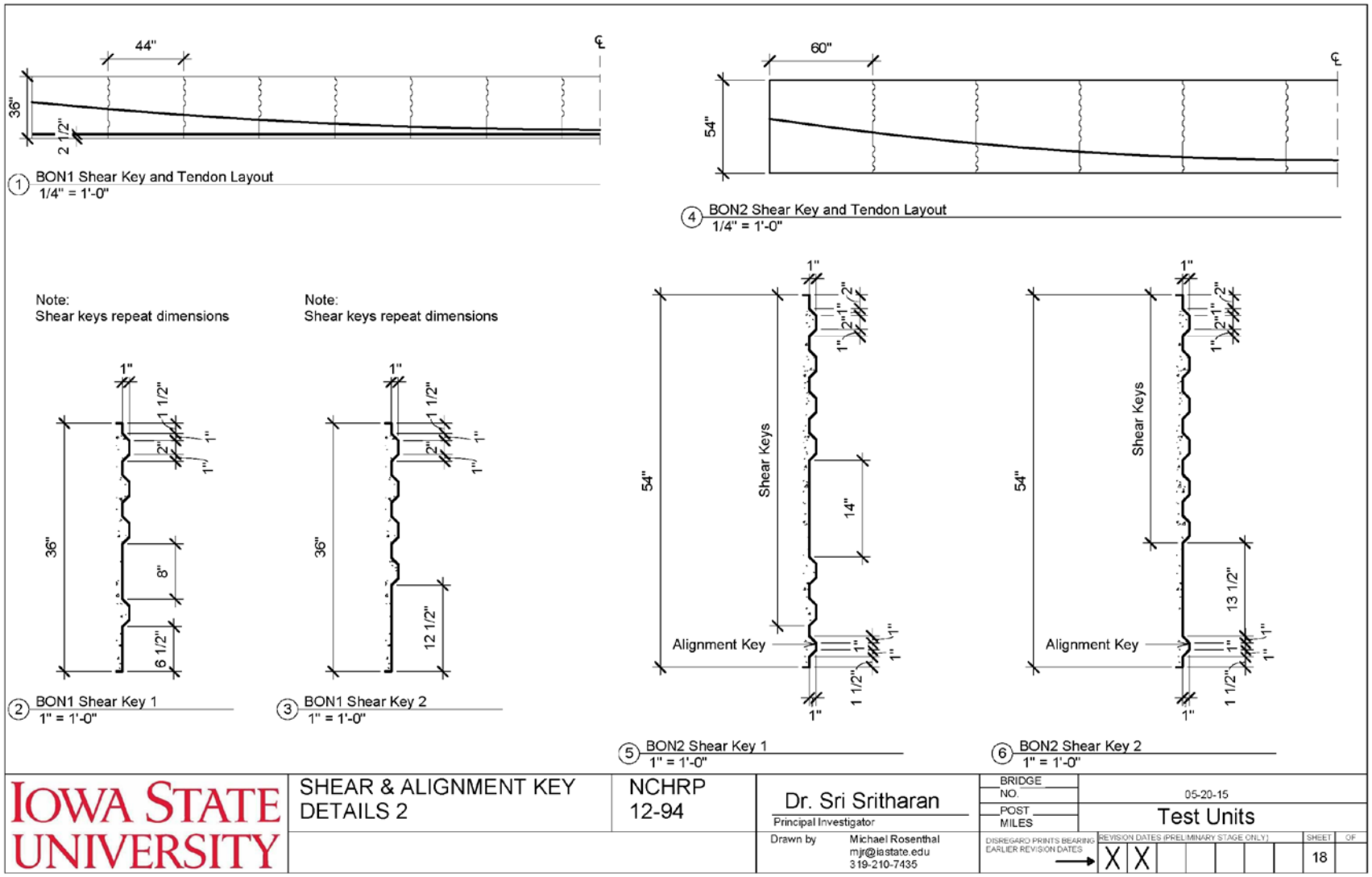


Figure A.23 – Shear and Alignment Key Details for Bonded Segments