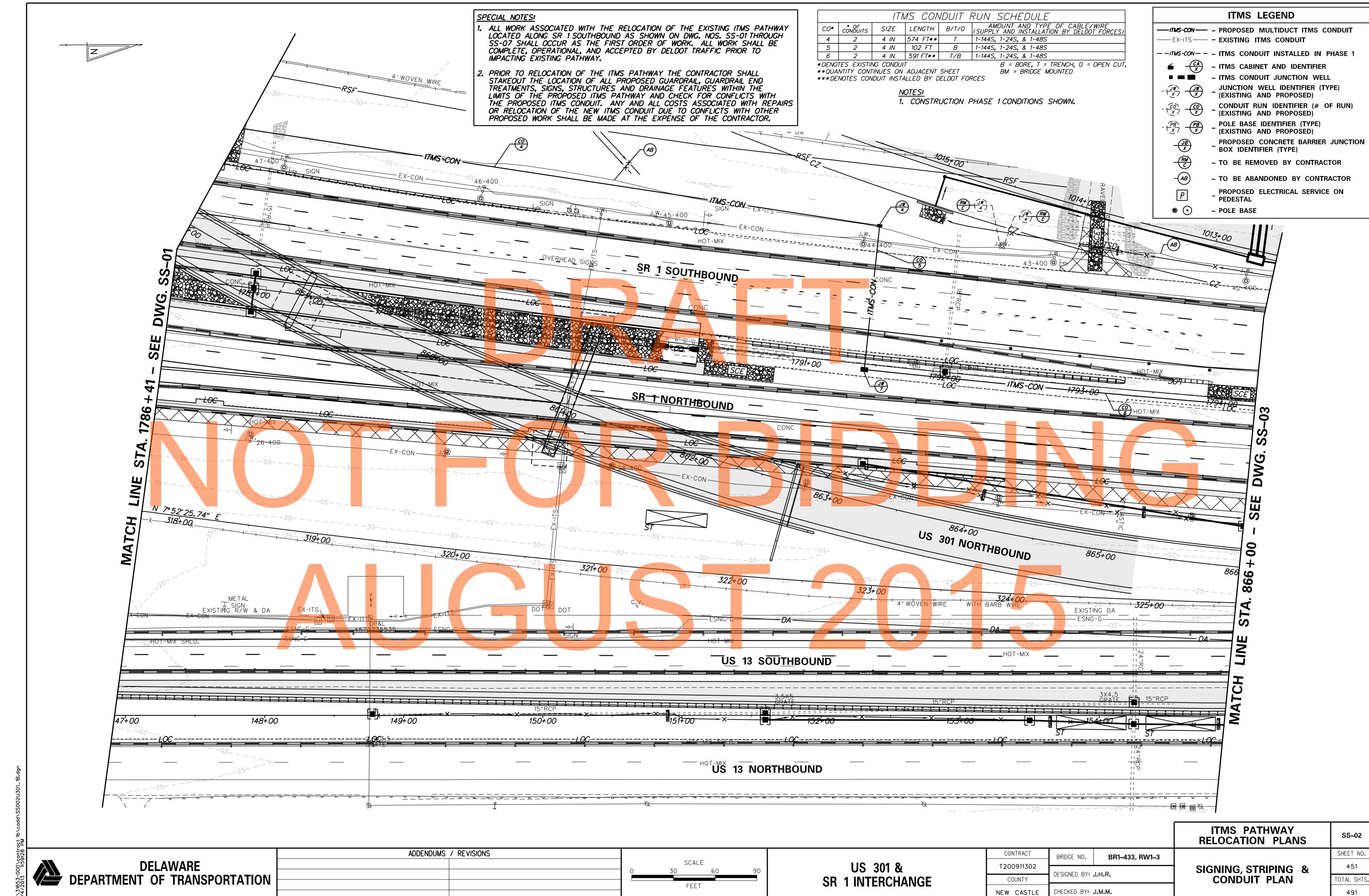


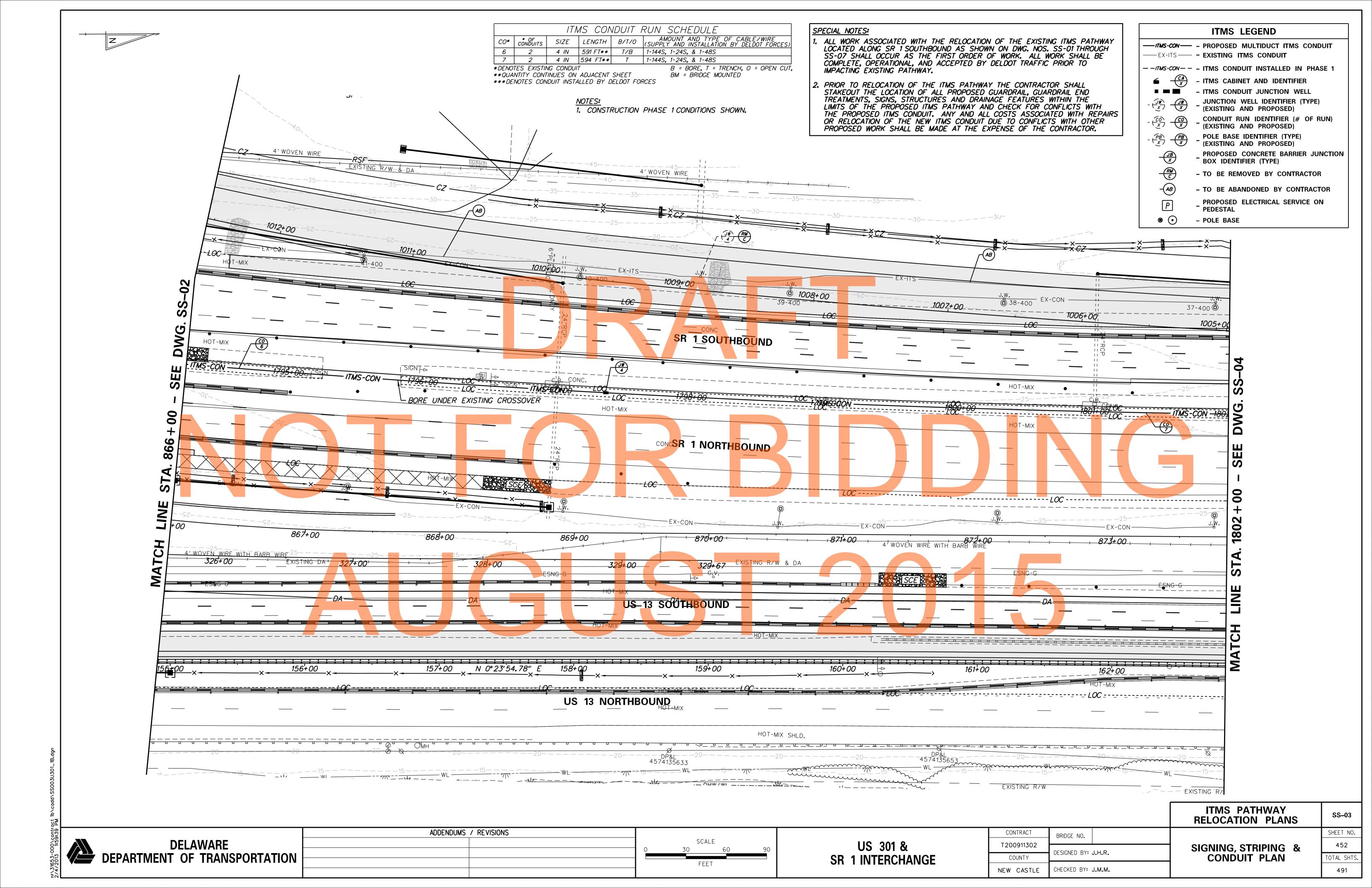
CHECKED BY: J.M.M.

491

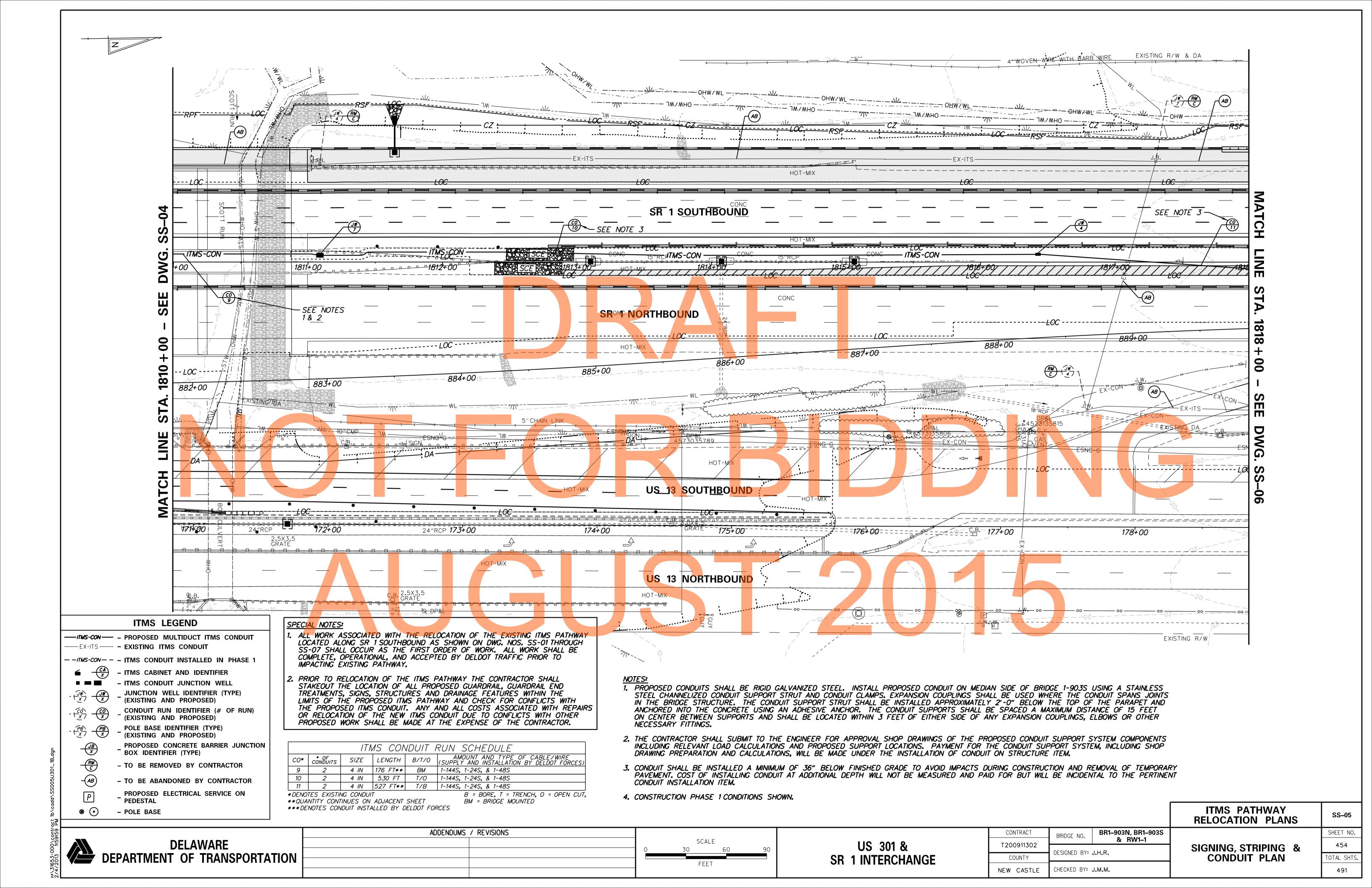
NEW CASTLE

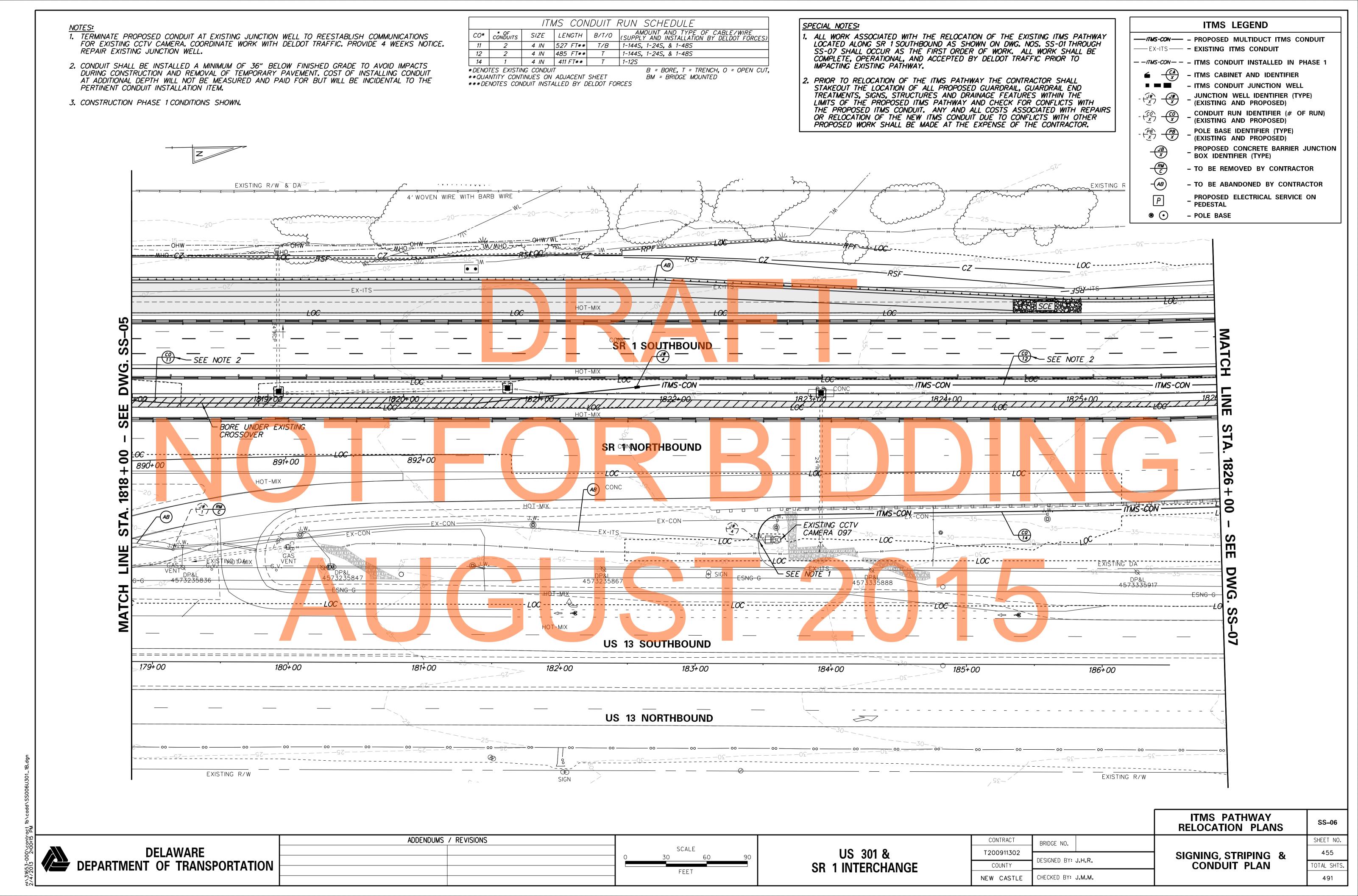
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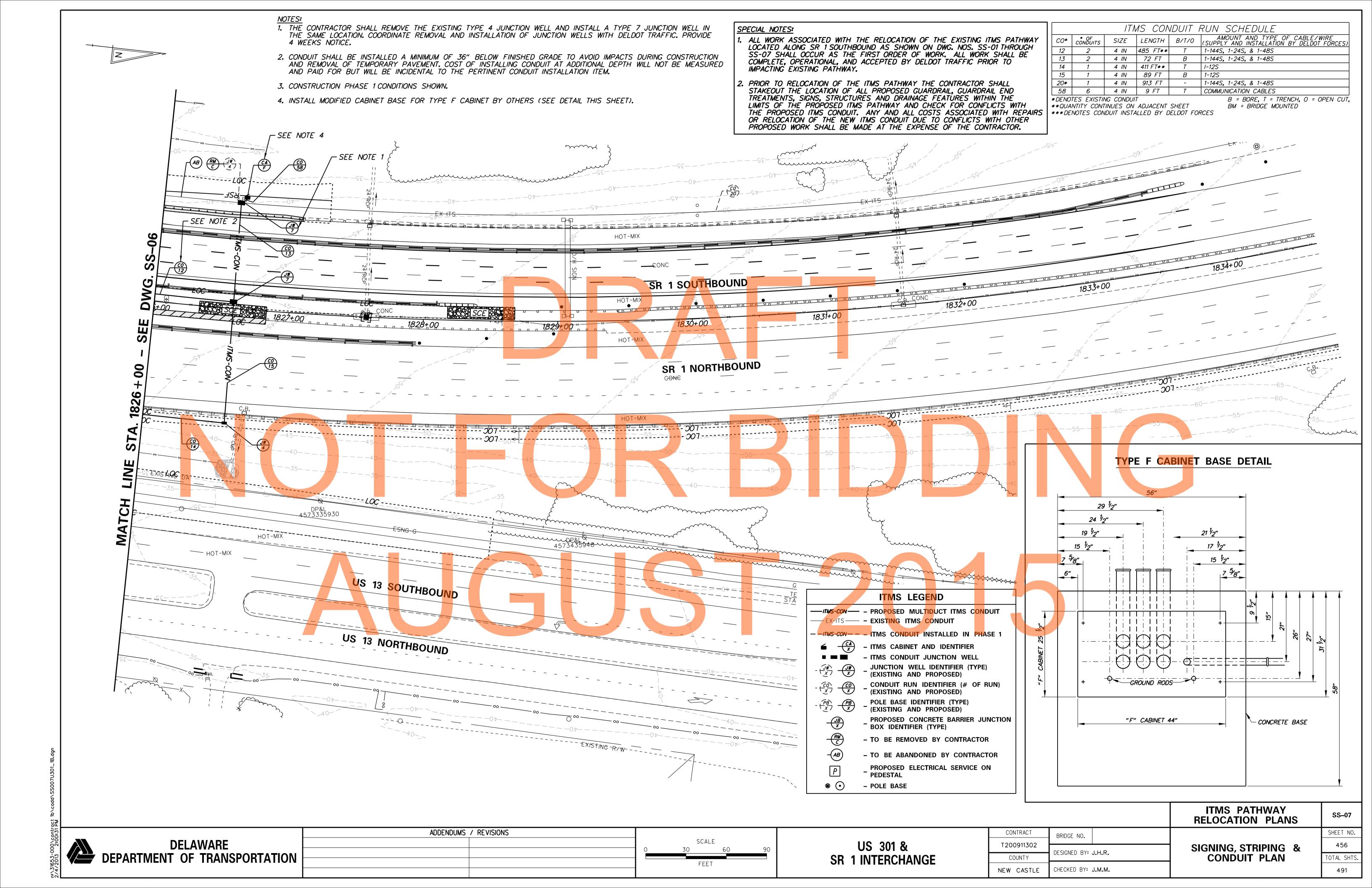


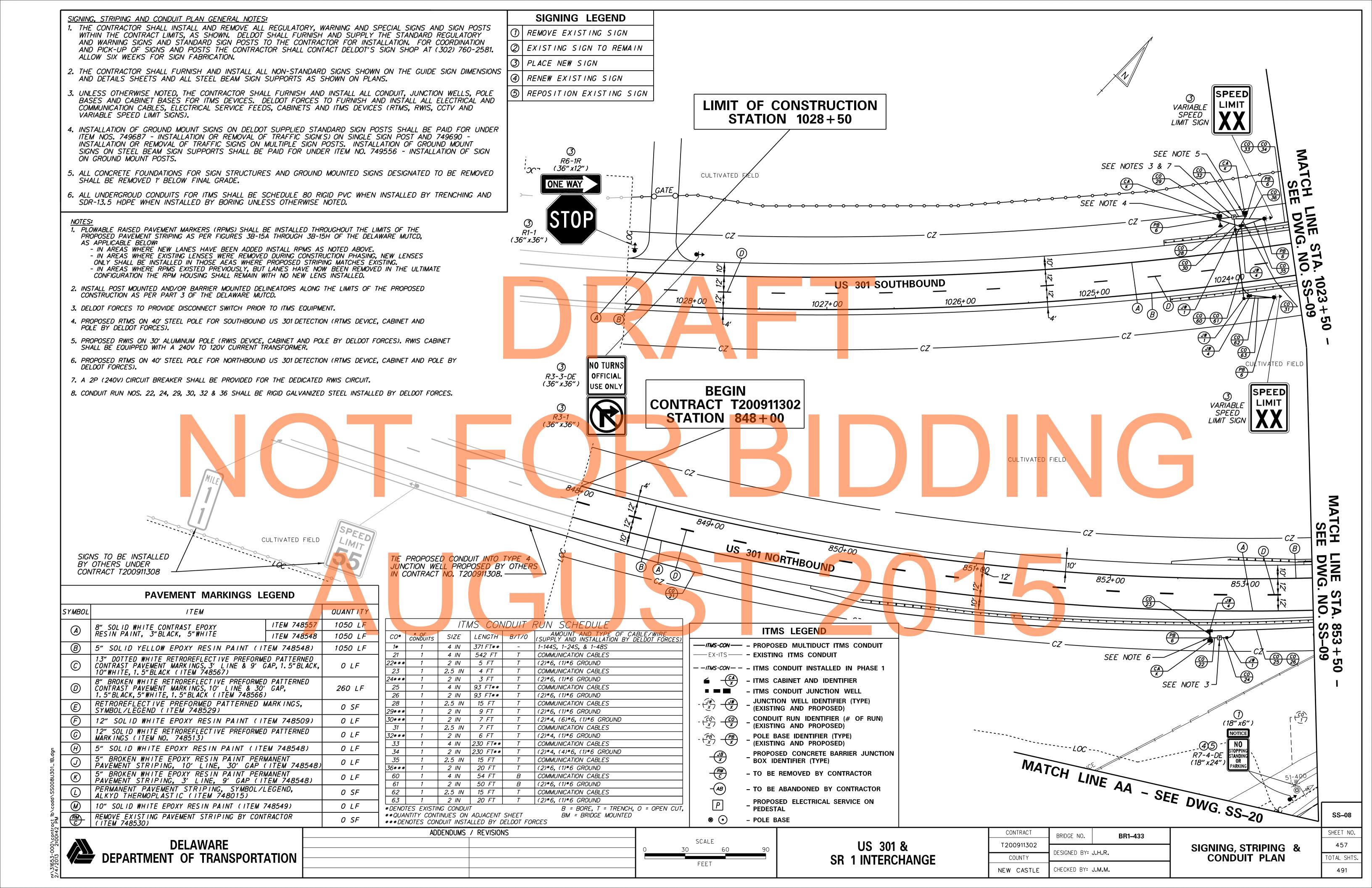


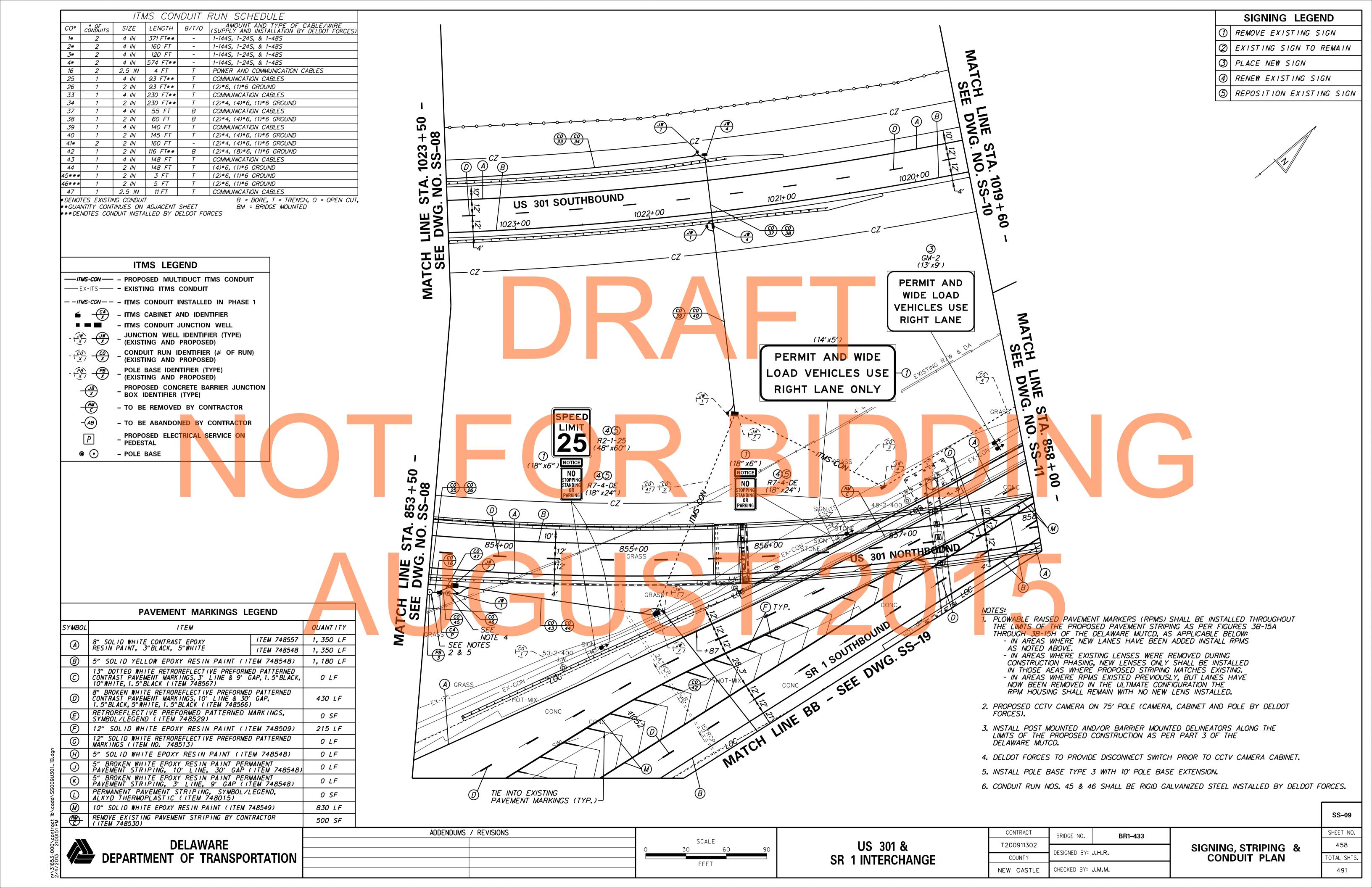
ITMS CONDUIT RUN SCHEDULE ITMS LEGEND 1. PROPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL. INSTALL PROPOSED CONDUIT ON MEDIAN SIDE OF BRIDGE 1-903S USING A STAINLESS AMOUNT AND TYPE OF CABLE/WIRE (SUPPLY AND INSTALLATION BY DELDOT FORCES) CO# CONDUITS STEEL CHANNELIZED CONDUIT SUPPORT STRUT AND CONDUIT CLAMPS. EXPANSION COUPLINGS SHALL BE USED WHERE THE CONDUIT SPANS *—ITMS-CON* — - PROPOSED MULTIDUCT ITMS CONDUIT JOINTS IN THE BRIDGE STRUCTURE. THE CONDUIT SUPPORT STRUT SHALL BE INSTALLED APPROXIMATELY 2'-0" BELOW THE TOP OF THE 4 IN 1-144S, 1-24S, & 1-48S — EX-ITS — **- EXISTING ITMS CONDUIT** PARAPET AND ANCHORED INTO THE CONCRETE USING AN ADHESIVE ANCHOR. THE CONDUIT SUPPORTS SHALL BE SPACED A MAXIMUM DISTANCE 4 IN 591 FT T 1-144S, 1-24S, & 1-48S OF 15 FEET ON CENTER BETWEEN SUPPORTS AND SHALL BE LOCATED WITHIN 3 FEET OF EITHER SIDE OF ANY EXPANSION COUPLINGS. ELBOWS · - ITMS-CON-- - ITMS CONDUIT INSTALLED IN PHASE 1 | 176 FT\*\* | BM | 1-144S, 1-24S, & 1-48S 4 IN OR OTHER NECESSARY FITTINGS. \*DENOTES EXISTING CONDUIT B = BORE, T = TRENCH, O = OPEN CUT, ITMS CABINET AND IDENTIFIER BM = BRIDGE MOUNTED \*\*QUANTITY CONTINUES ON ADJACENT SHEET 2. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL SHOP DRAWINGS OF THE PROPOSED CONDUIT SUPPORT SYSTEM COMPONENTS \*\*\*DENOTES CONDUIT INSTALLED BY DELDOT FORCES - ITMS CONDUIT JUNCTION WELL INCLUDING RELEVANT LOAD CALCULATIONS AND PROPOSED SUPPORT LOCATIONS. PAYMENT FOR THE CONDUIT SUPPORT SYSTEM, INCLUDING SHOP JUNCTION WELL IDENTIFIER (TYPE) DRAWING PREPARATION AND CALCULATIONS, WILL BE MADE UNDER THE INSTALLATION OF CONDUIT ON STRUCTURE ITEM. (EXISTING AND PROPOSED) 3. CONSTRUCTION PHASE 1 CONDITIONS SHOWN. CONDUIT RUN IDENTIFIER (# OF RUN) (EXISTING AND PROPOSED) POLE BASE IDENTIFIER (TYPE) (EXISTING AND PROPOSED) PROPOSED CONCRETE BARRIER JUNCTION BOX IDENTIFIER (TYPE) - TO BE REMOVED BY CONTRACTOR - TO BE ABANDONED BY CONTRACTOR PROPOSED ELECTRICAL SERVICE ON PEDESTAL POLE BASE THE RM C (AB)-SR 1 SOUTHBOUND 1810 1809+<sub>00</sub> SEE NOTES SR 1 NORTHBOUND П *878+00 879+00* 875+00 *876+00* 874'+<mark>,00</mark> 4'WOVEN WIRE WITH BARB W EXISTING R/W & DA П US 13 SOUTHBOUND HOT-MIX----**US 13 NORTHBOUND** HOT-MIX C.M.4574435752 SPECIAL NOTES: ALL WORK ASSOCIATED WITH THE RELOCATION OF THE EXISTING ITMS PATHWAY LOCATED ALONG SR 1 SOUTHBOUND AS SHOWN ON DWG. NOS. SS-01 THROUGH EXISTING R/W SS-07 SHALL OCCUR AS THE FIRST ORDER OF WORK. ALL WORK SHALL BE COMPLETE, OPERATIONAL, AND ACCEPTED BY DELDOT TRAFFIC PRIOR TO IMPACTING EXISTING PATHWAY. 2. PRIOR TO RELOCATION OF THE ITMS PATHWAY THE CONTRACTOR SHALL STAKEOUT THE LOCATION OF ALL PROPOSED GUARDRAIL, GUARDRAIL END TREATMENTS, SIGNS, STRUCTURES AND DRAINAGE FEATURES WITHIN THE LIMITS OF THE PROPOSED ITMS PATHWAY AND CHECK FOR CONFLICTS WITH THE PROPOSED ITMS CONDUIT. ANY AND ALL COSTS ASSOCIATED WITH REPAIRS OR RELOCATION OF THE NEW ITMS CONDUIT DUE TO CONFLICTS WITH OTHER PROPOSED WORK SHALL BE MADE AT THE EXPENSE OF THE CONTRACTOR. **ITMS PATHWAY RELOCATION PLANS** ADDENDUMS / REVISIONS CONTRACT BR1-903N, BR1-903S BRIDGE NO. & RW1–1 **DELAWARE** SCALE US 301 & T200911302 453 SIGNING, STRIPING & DESIGNED BY: J.H.R. DEPARTMENT OF TRANSPORTATION CONDUIT PLAN SR 1 INTERCHANGE TOTAL SHTS COUNTY FEET CHECKED BY: J.M.M. NEW CASTLE 491











PAVEMENT MARKINGS LEGEND									
SYMBOL	OUANT ITY								
(A)	8" SOLID WHITE CONTRAST EPOXY	705 LF							
(A)	RESIN PAINT, 3"BLACK, 5"WHITE	ITEM 748548	705 LF						
(B)	5" SOLID YELLOW EPOXY RESIN PAINT (17	705 LF							
(O)	13" DOTTED WHITE RETROREFLECTIVE PREFORMED PATTERNED CONTRAST PAVEMENT MARKINGS, 3' LINE & 9' GAP, 1.5" BLACK, 10" WHITE, 1.5" BLACK (ITEM 748567)								
0	8" BROKEN WHITE RETROREFLECTIVE PREFORMED PATTERNED CONTRAST PAVEMENT MARKINGS, 10' LINE & 30' GAP, 1.5" BLACK, 5" WHITE, 1.5" BLACK (ITEM 748566)								
Ē	RETROREFLECTIVE PREFORMED PATTERNED N SYMBOL/LEGEND (ITEM 748529)	0 SF							
Ē	12" SOLID WHITE EPOXY RESIN PAINT (11	O LF							
©	12" SOLID WHITE RETROREFLECTIVE PREFORMED MARKINGS (ITEM NO. 748513)	O LF							
(H)	5" SOLID WHITE EPOXY RESIN PAINT (ITE	M 748548)	O LF						
(C)	5" BROKEN WHITE EPOXY RESIN PAINT PERM PAVEMENT STRIPING, 10' LINE, 30' GAP (		O LF						
(X)	5" BROKEN WHITE EPOXY RESIN PAINT PERM PAVEMENT STRIPING, 3' LINE, 9' GAP (1)	MANENT EM 748548)	O LF						
	PERMANENT PAVEMENT STRIPING, SYMBOL/L ALKYD THERMOPLASTIC (ITEM 748015)	0 SF							
( <b>x</b> )	10" SOLID WHITE EPOXY RESIN PAINT (ITEM 7	48549)	O LF						
RMC	REMOVE EXISTING PAVEMENT STRIPING BY CONT (ITEM 748530)	RACTOR	0 SF						

#### NOTES:

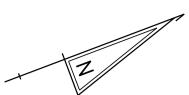
- 1. PLOWABLE RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED THROUGHOUT THE LIMITS OF THE PROPOSED PAVEMENT STRIPING AS PER FIGURES 3B-15A THROUGH 3B-15H OF THE DELAWARE MUTCD, AS APPLICABLE BELOW:

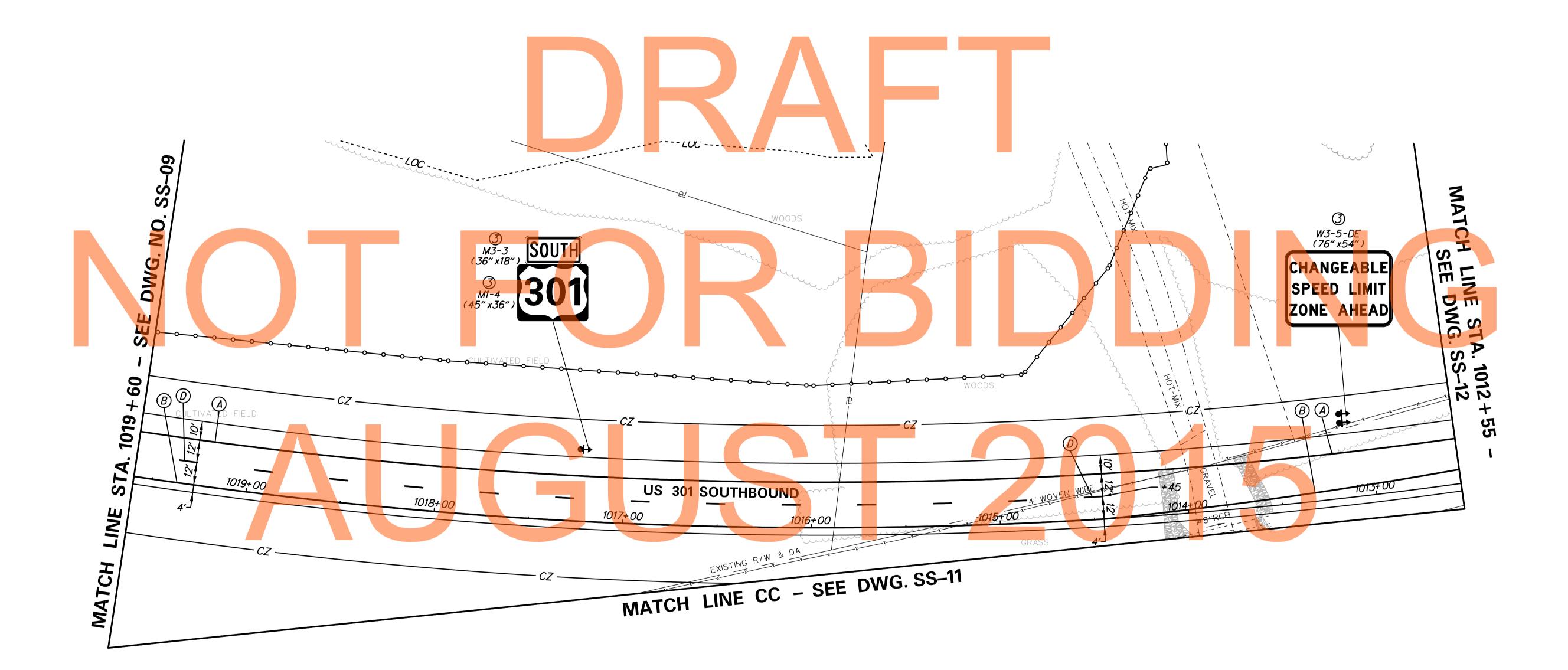
   IN AREAS WHERE NEW LANES HAVE BEEN ADDED INSTALL RPMS
  - AS NOTED ABOVE.

     IN AREAS WHERE EXISTING LENSES WERE REMOVED DURING CONSTRUCTION PHASING, NEW LENSES ONLY SHALL BE INSTALLED IN THOSE AEAS WHERE PROPOSED STRIPING MATCHES EXISTING.

     IN AREAS WHERE RPMS EXISTED PREVIOUSLY, BUT LANES HAVE NOW BEEN REMOVED IN THE ULTIMATE CONFIGURATION THE RPM HOUSING SHALL REMAIN WITH NO NEW LENS INSTALLED.
- 2. INSTALL POST MOUNTED AND/OR BARRIER MOUNTED DELINEATORS ALONG THE LIMITS OF THE PROPOSED CONSTRUCTION AS PER PART 3 OF THE DELAWARE MUTCD.

	SIGNING LEGEND									
1	REMOVE EXISTING SIGN									
2	EXISTING SIGN TO REMAIN									
3	PLACE NEW SIGN									
4	RENEW EXISTING SIGN									
<b>⑤</b>	REPOSITION EXISTING SIGN									





DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

SCALE
O 30 60

FEET

US 301 & SR 1 INTERCHANGE

CONTRACT
BRIDGE NO.

T200911302

COUNTY

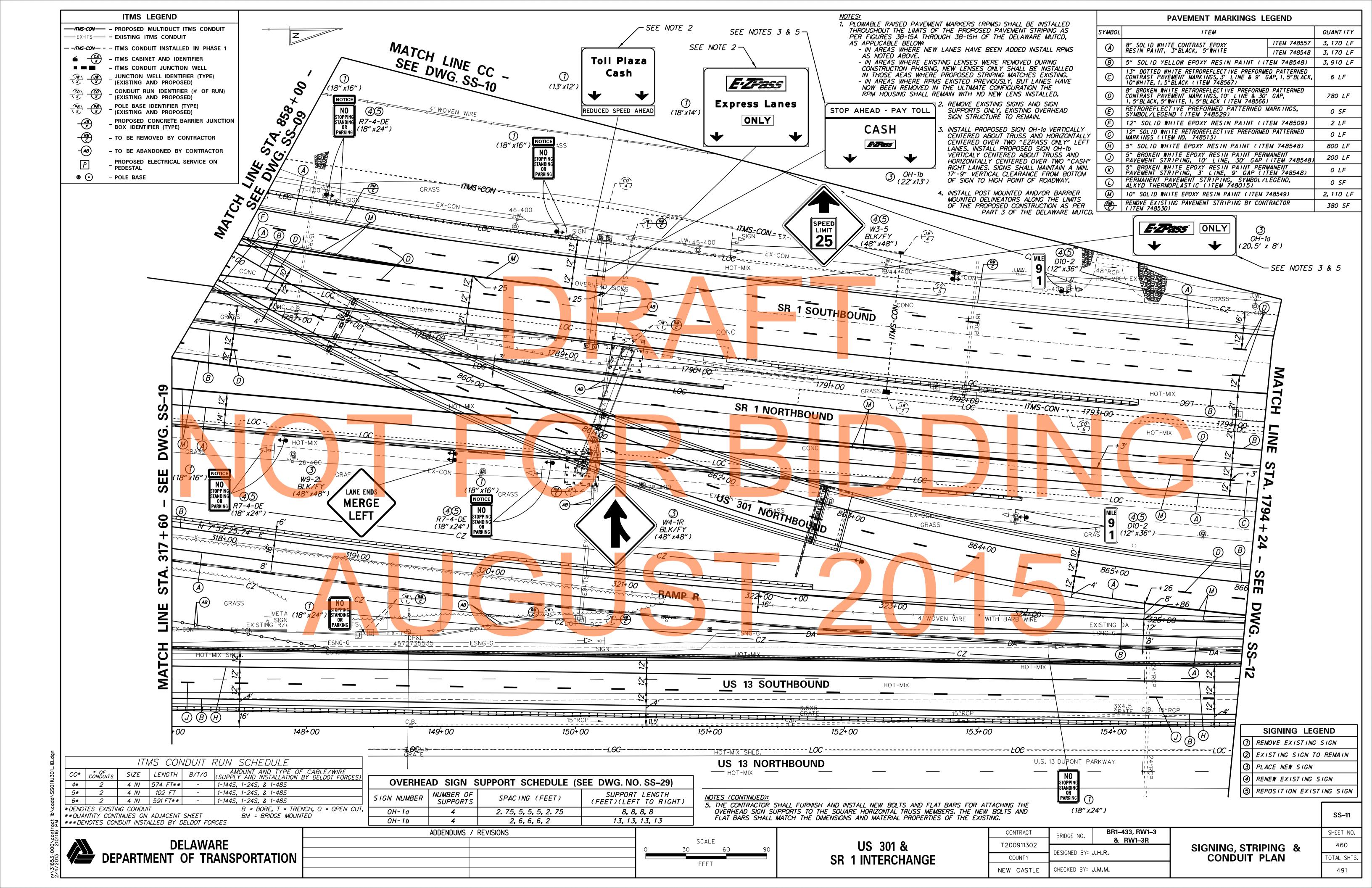
DESIGNED BY: J.H.R.

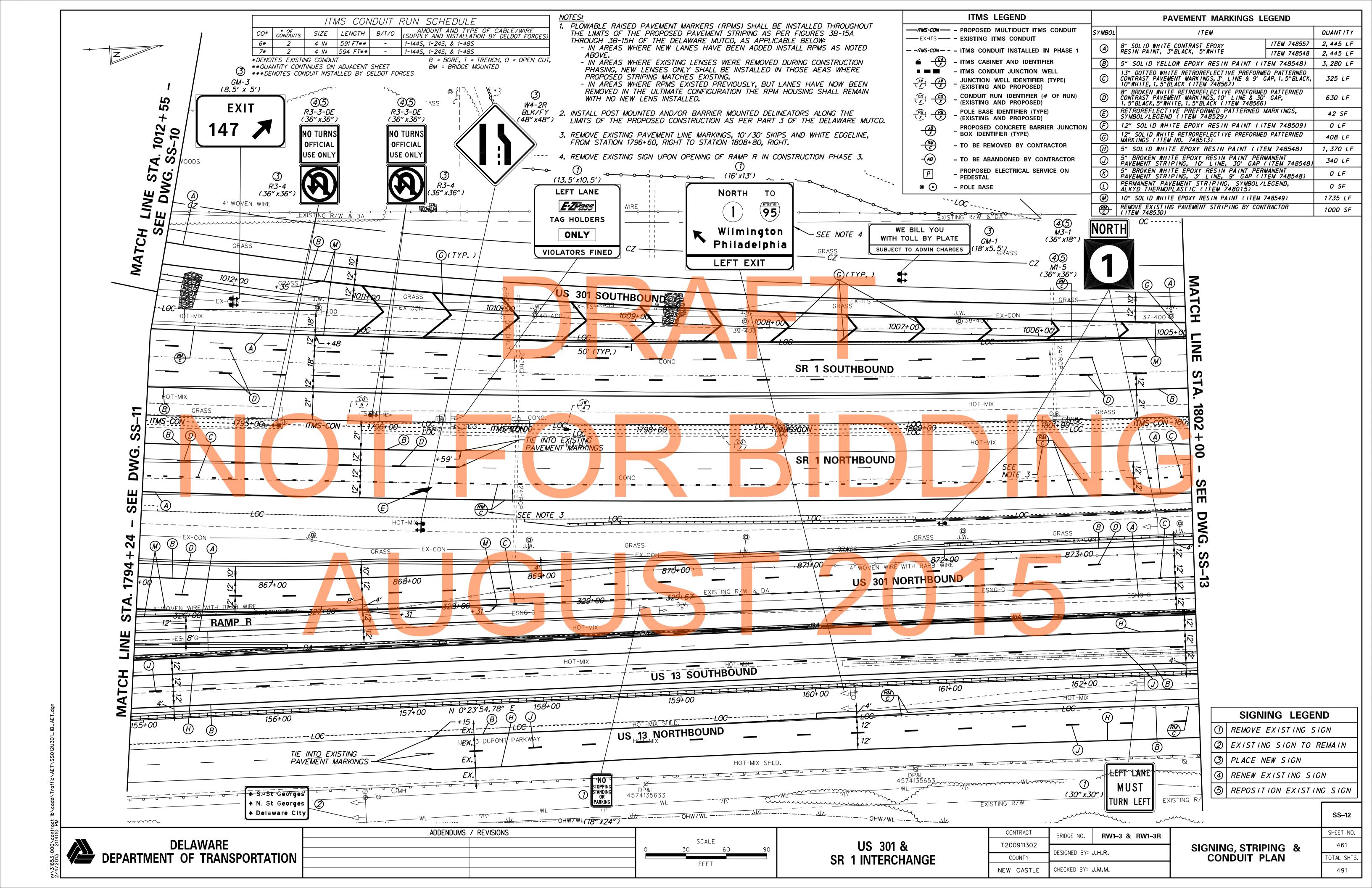
NEW CASTLE
CHECKED BY: J.M.M.

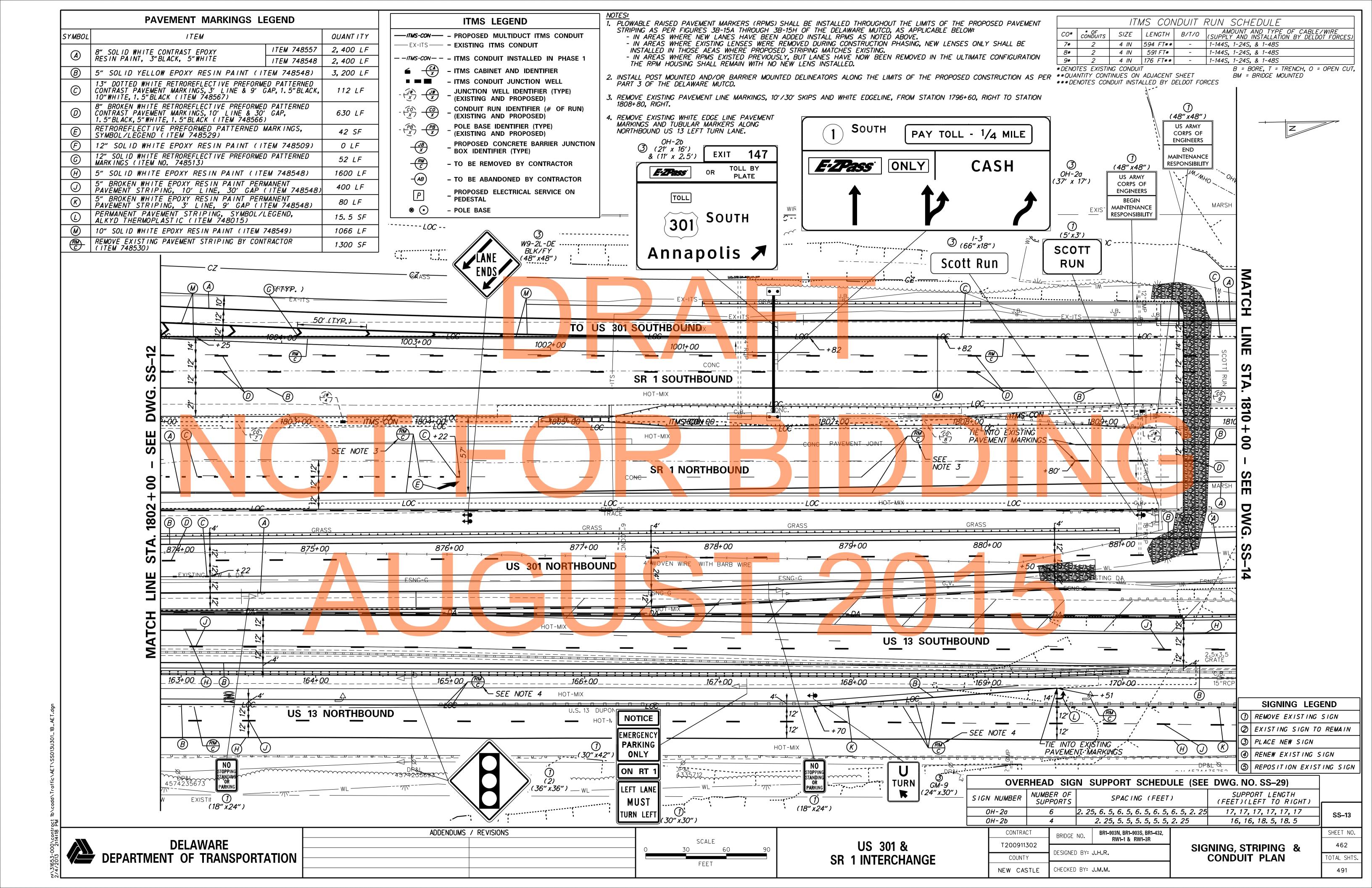
SIGNING, STRIPING & CONDUIT PLAN

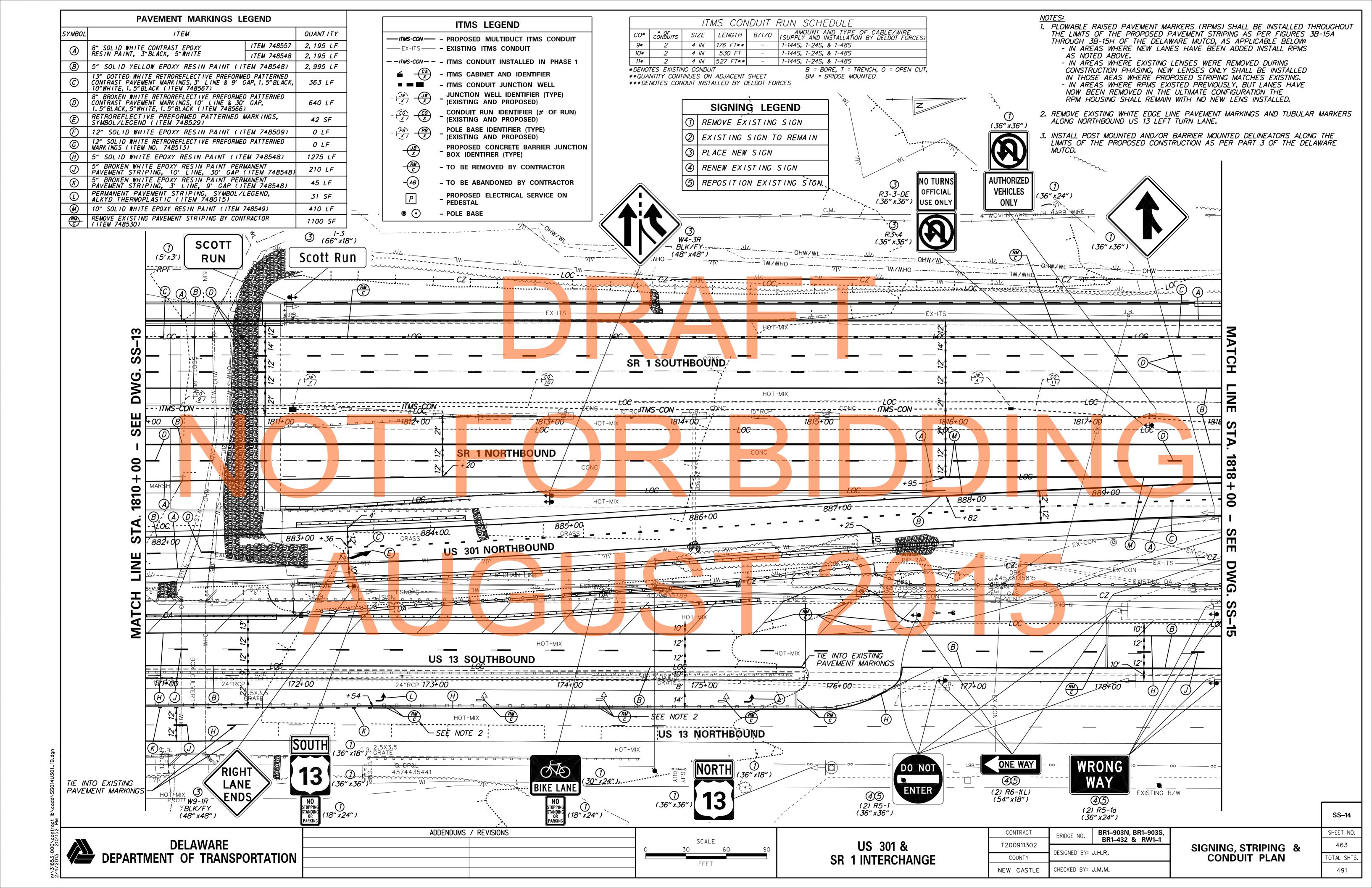
SHEET NO.
459
TOTAL SHTS.
491

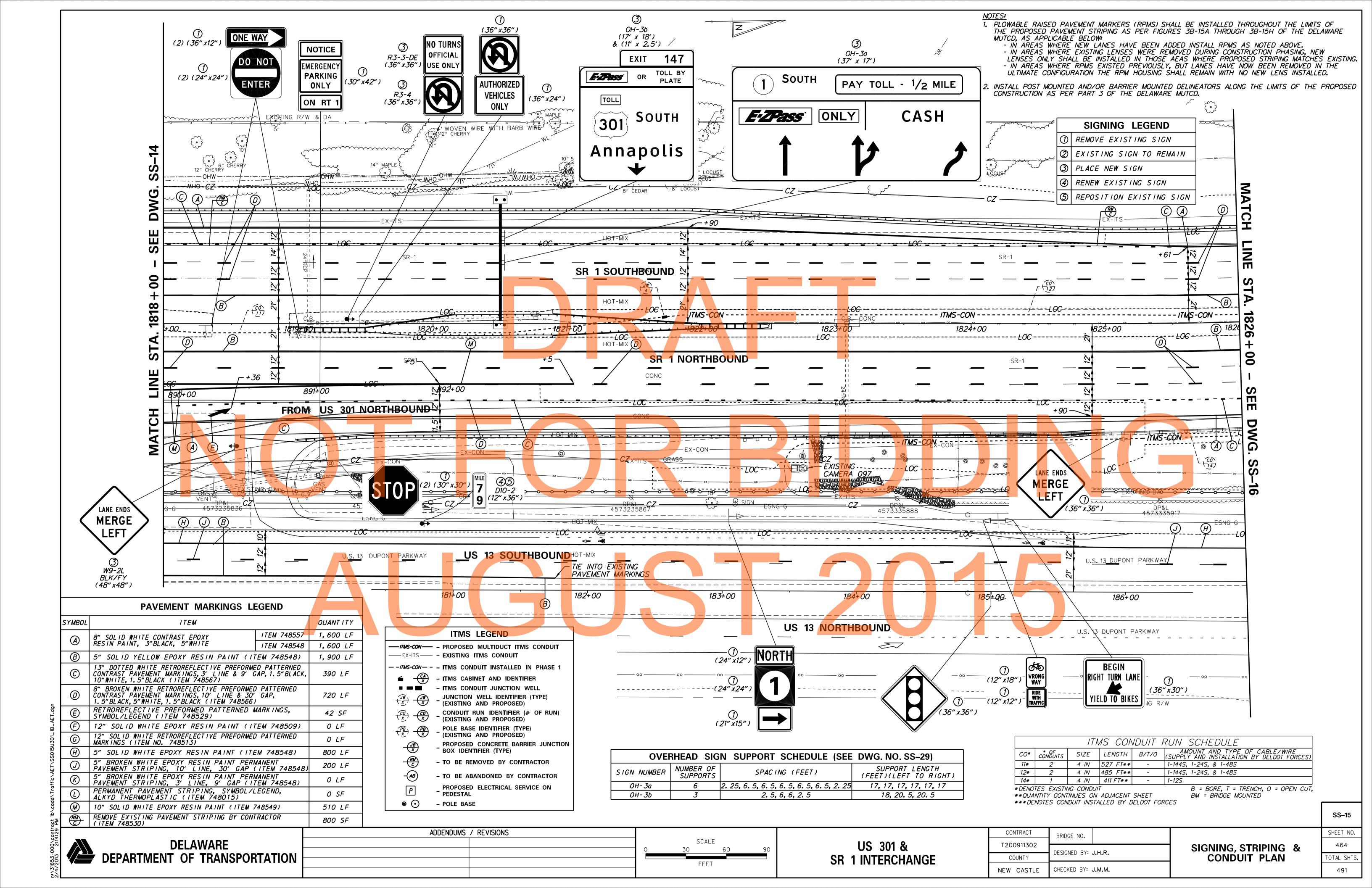
SS-10

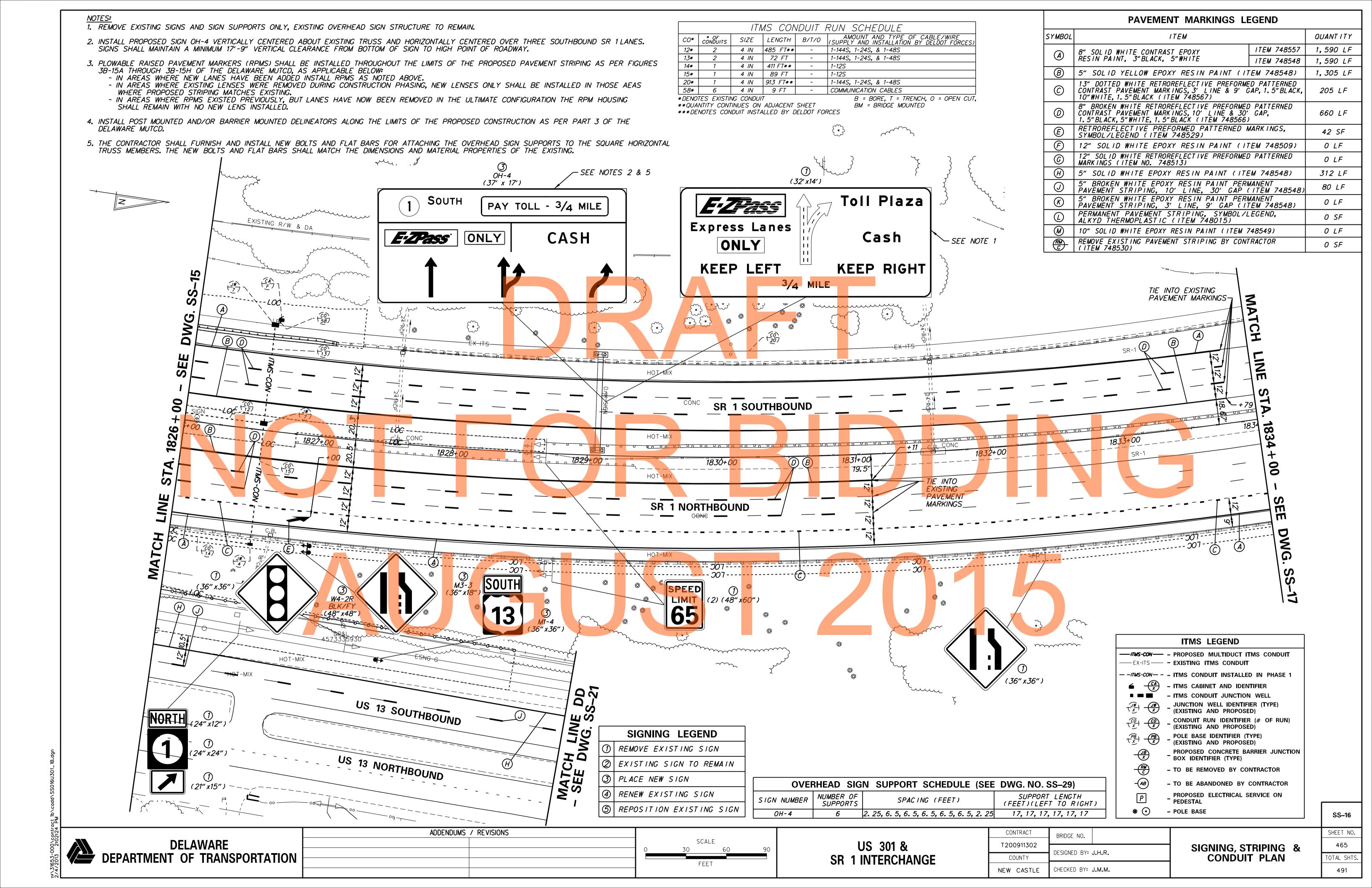


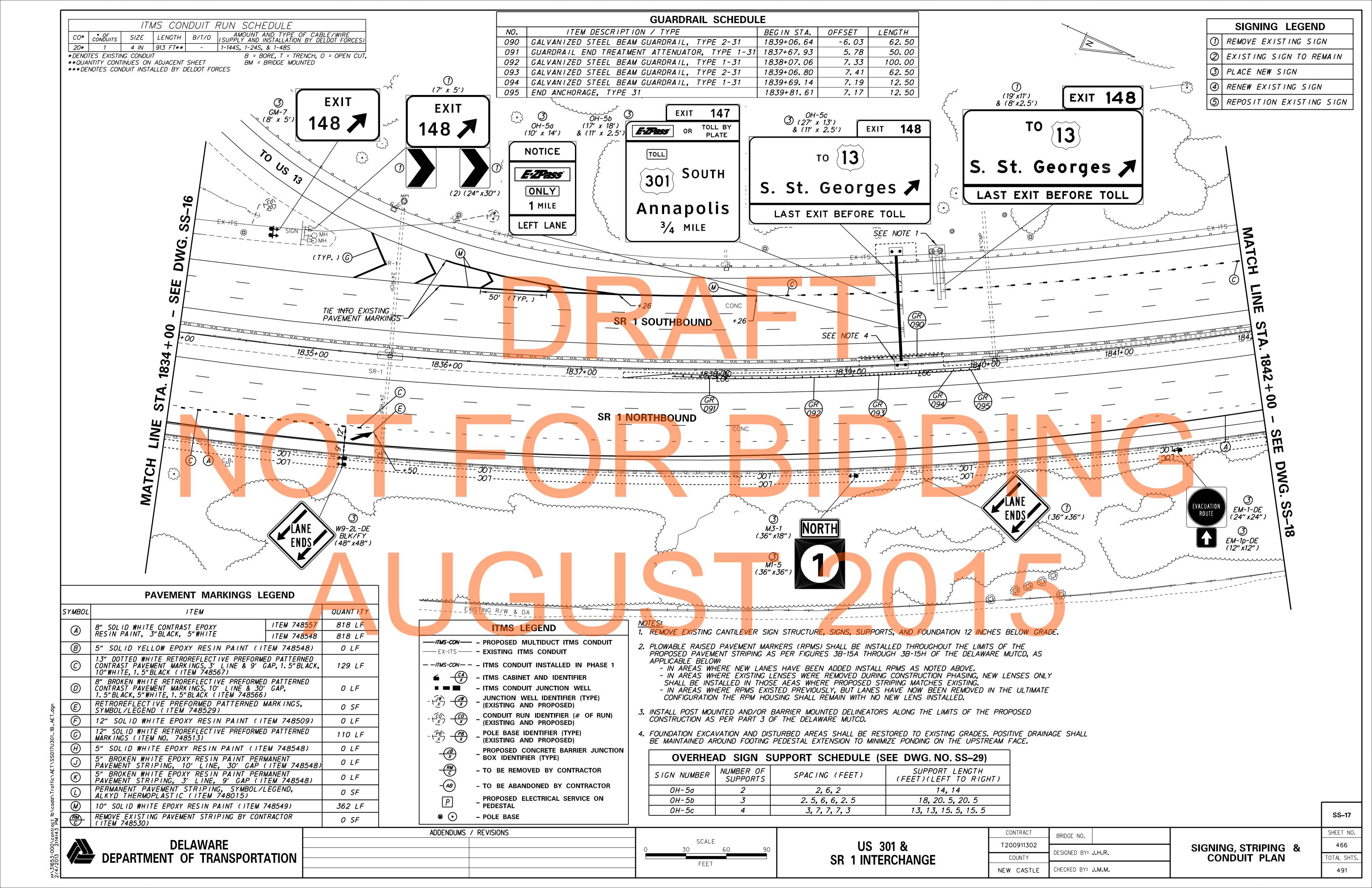


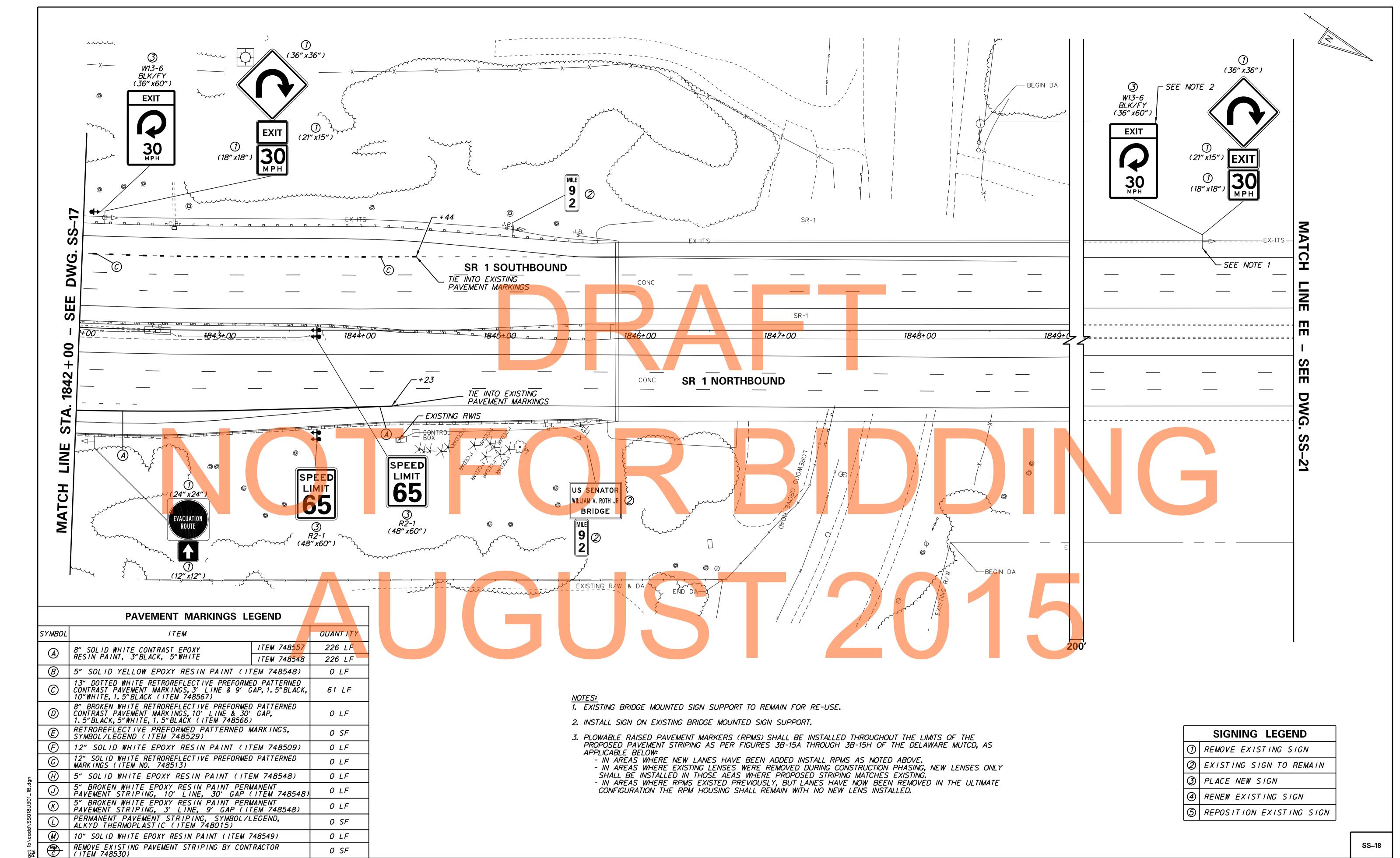












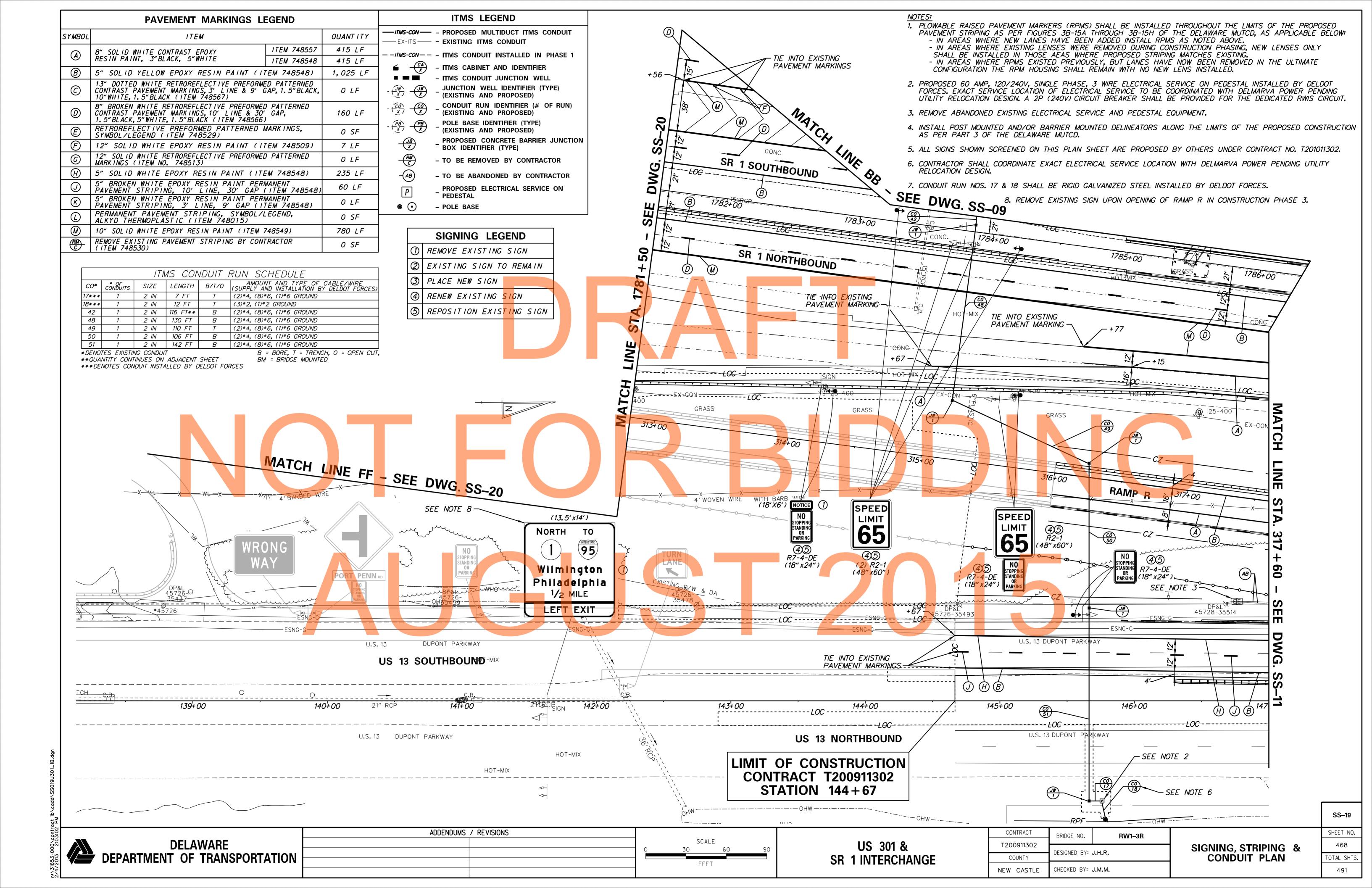
**DELAWARE** DEPARTMENT OF TRANSPORTATION ADDENDUMS / REVISIONS SCALE FEET

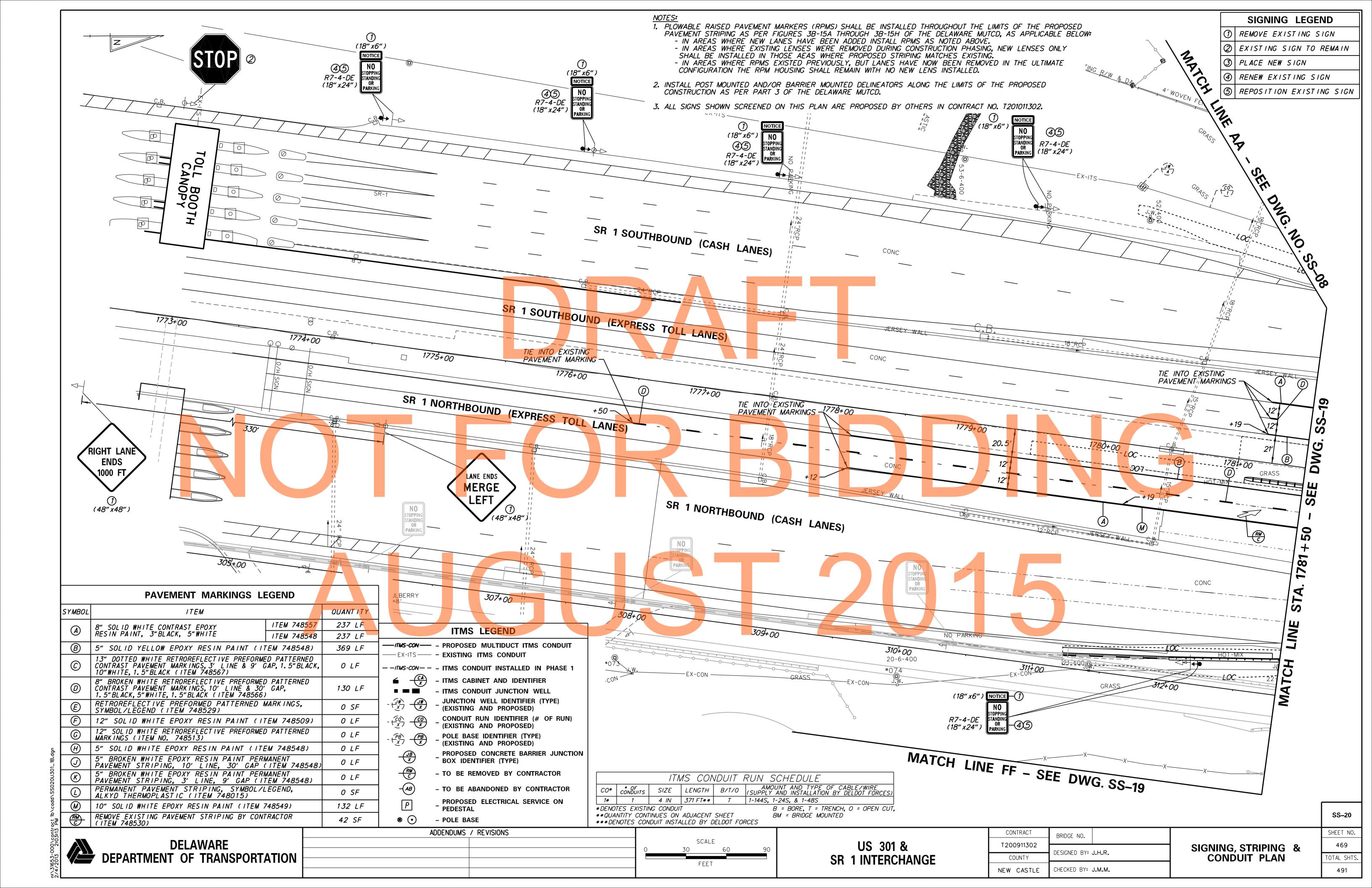
US 301 & SR 1 INTERCHANGE

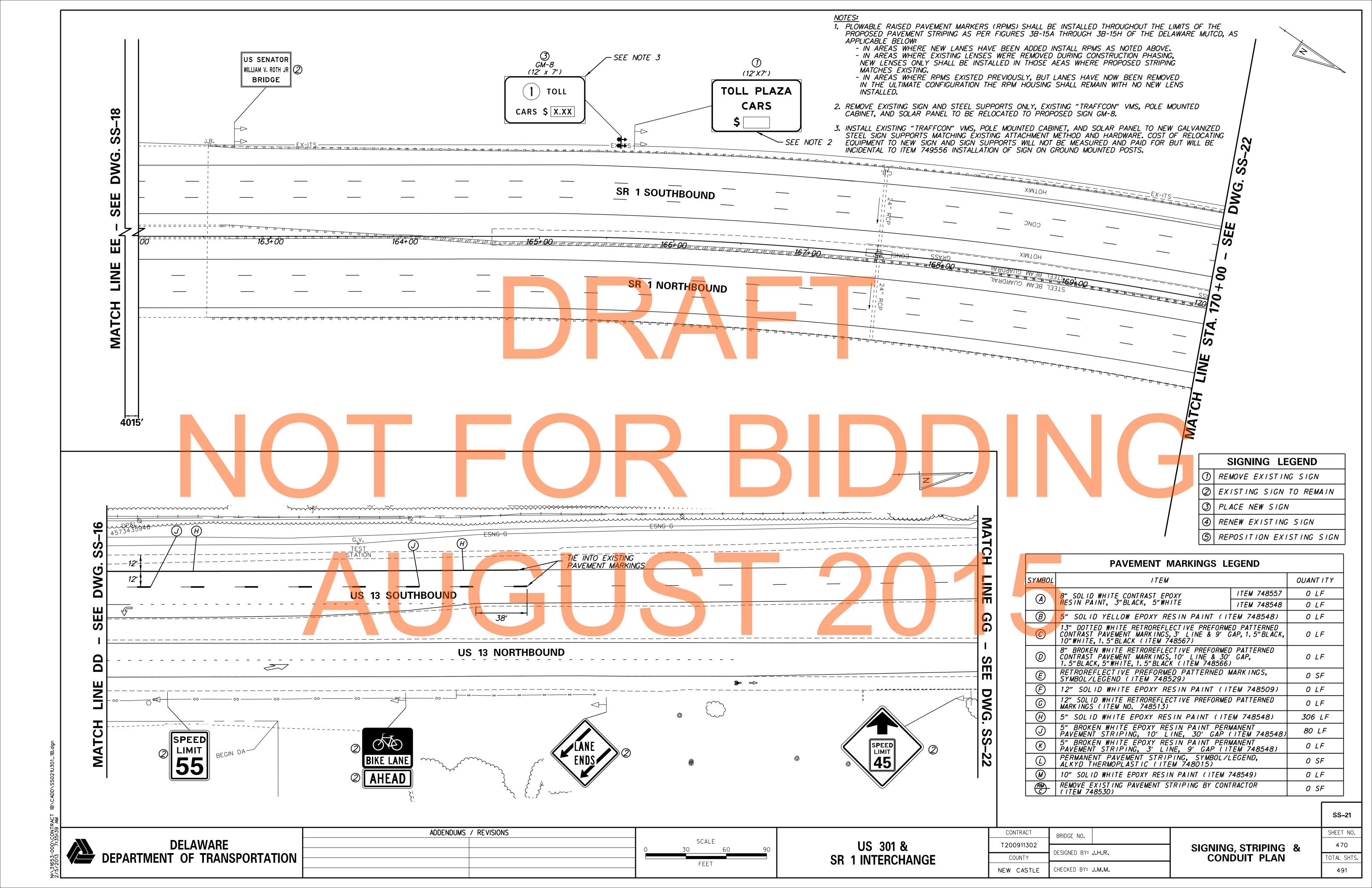
CONTRACT BRIDGE NO. T200911302 DESIGNED BY: J.H.R. COUNTY CHECKED BY: J.M.M. NEW CASTLE

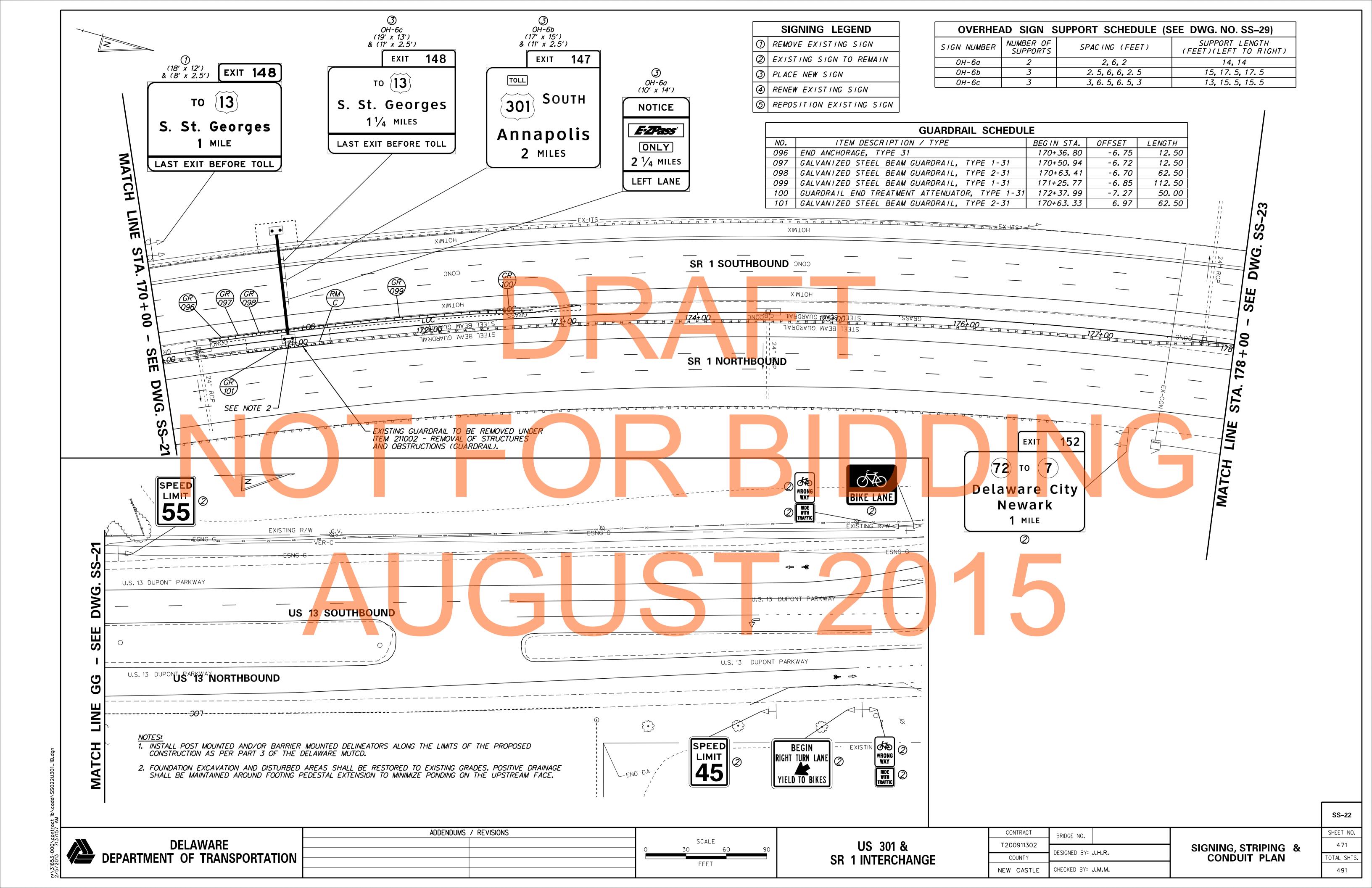
SIGNING, STRIPING & CONDUIT PLAN

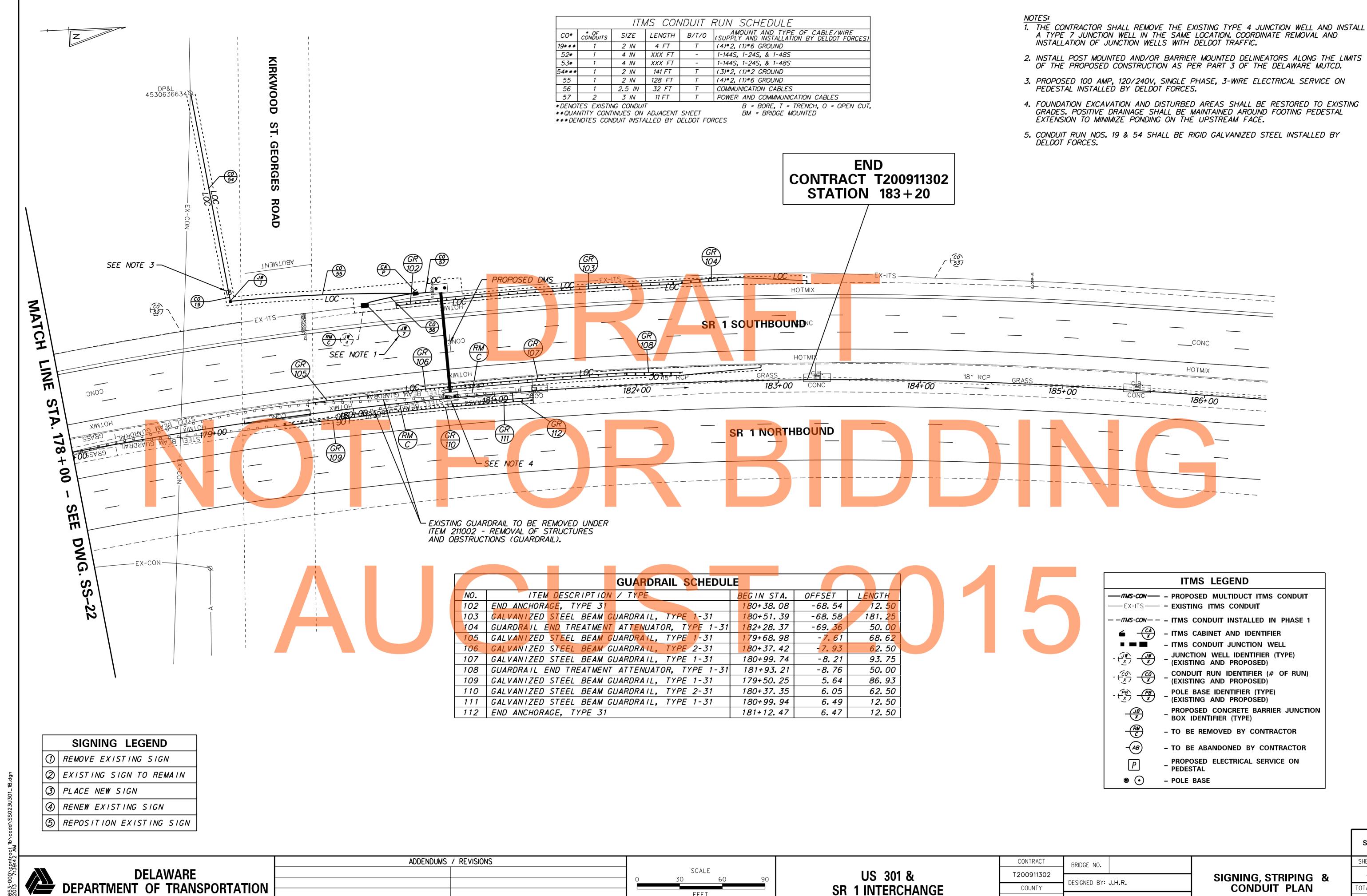
SHEET NO. TOTAL SHTS.











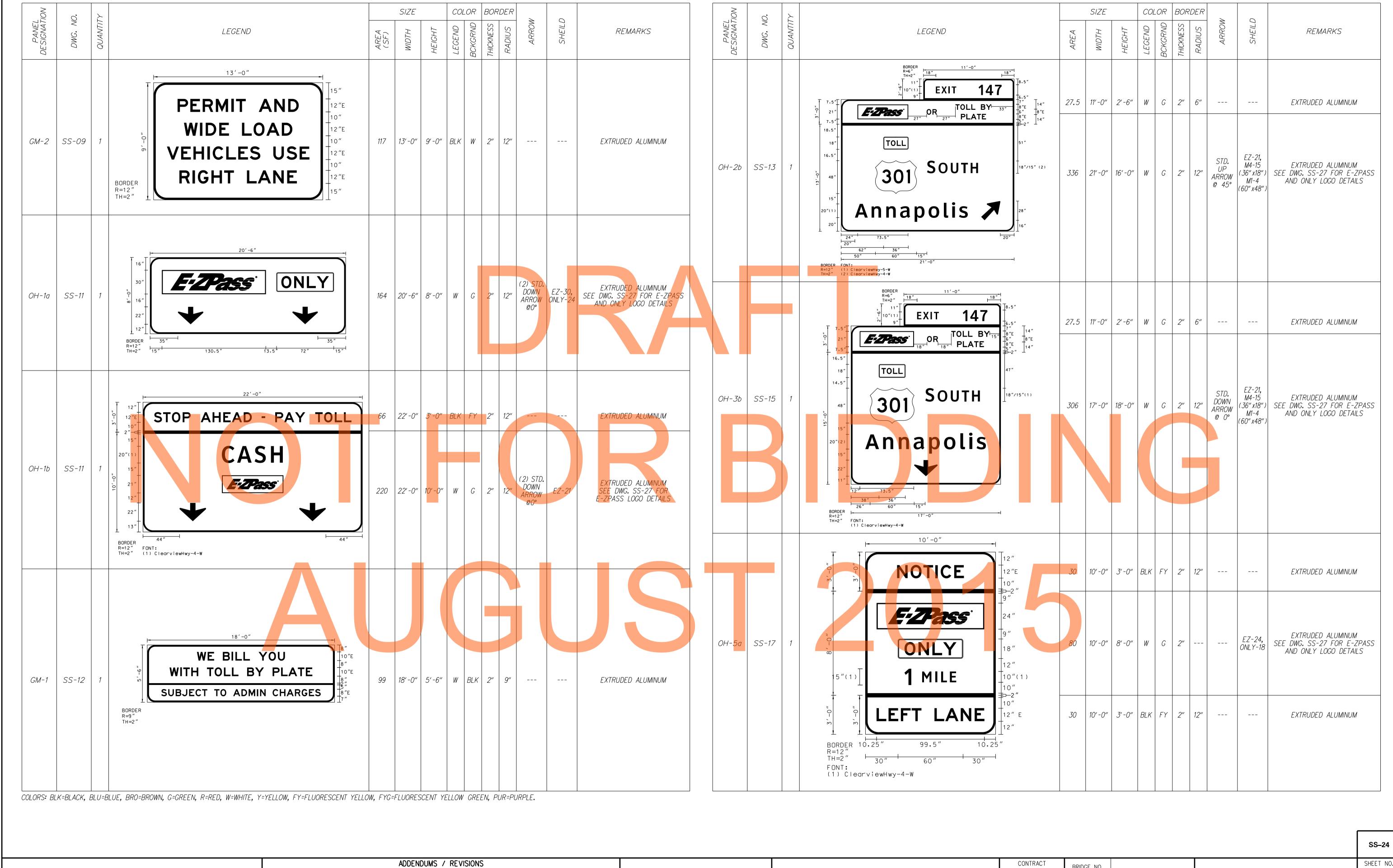
FEET

CHECKED BY: J.M.M. NEW CASTLE

CONDUIT PLAN

SHEET NO. 472 TOTAL SHTS. 491

SS-23



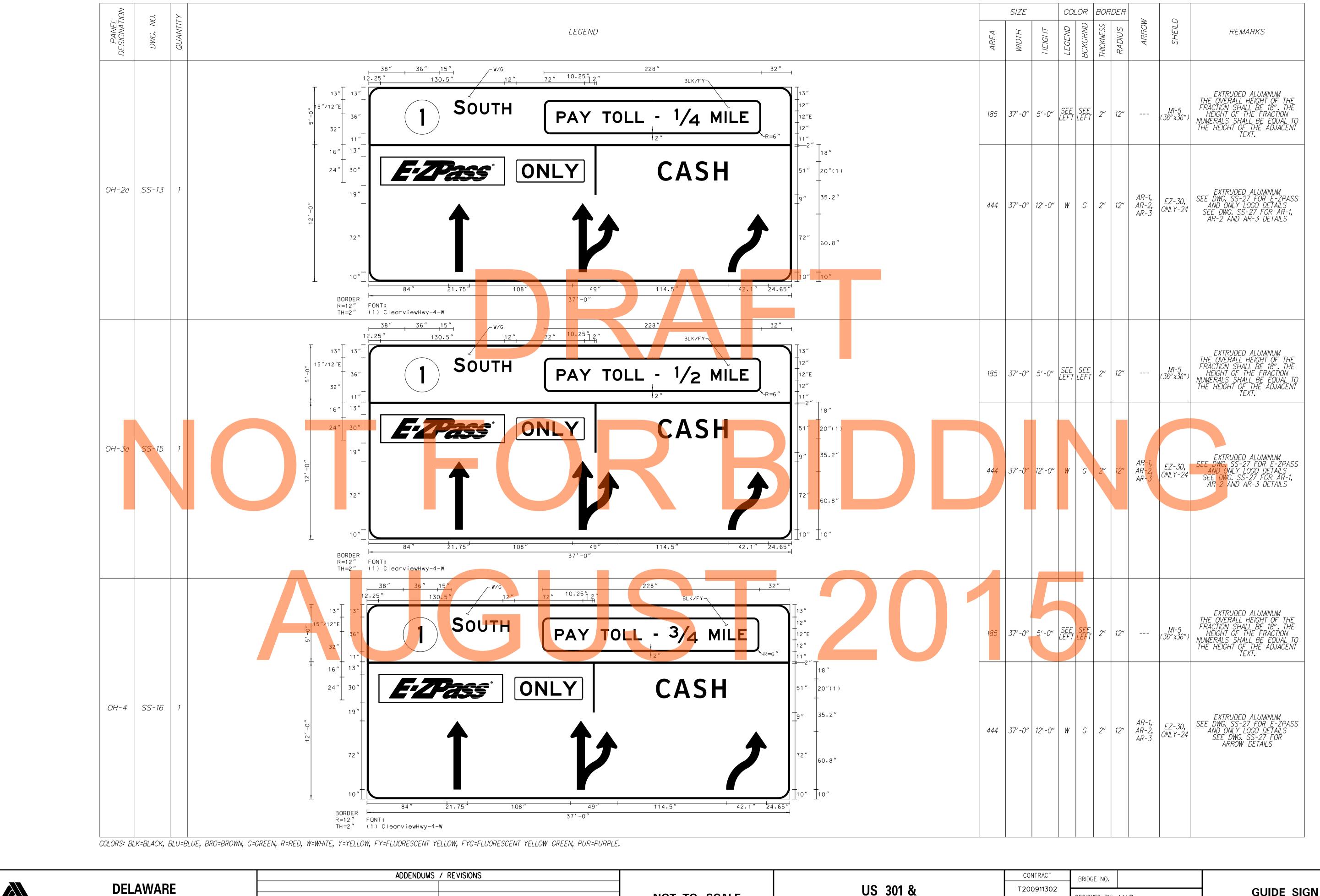
NOT TO SCALE

US 301 & **SR 1 INTERCHANGE** 

BRIDGE NO. T200911302 DESIGNED BY: J.H.R. COUNTY CHECKED BY: J.M.M. NEW CASTLE

473 **GUIDE SIGN DIMENSIONS & DETAILS** TOTAL SHTS. 491

**DELAWARE** DEPARTMENT OF TRANSPORTATION



**DEPARTMENT OF TRANSPORTATION** 

NOT TO SCALE

US 301 & SR 1 INTERCHANGE

T200911302 DESIGNED BY: J.H.R. COUNTY CHECKED BY: J.M.M. NEW CASTLE

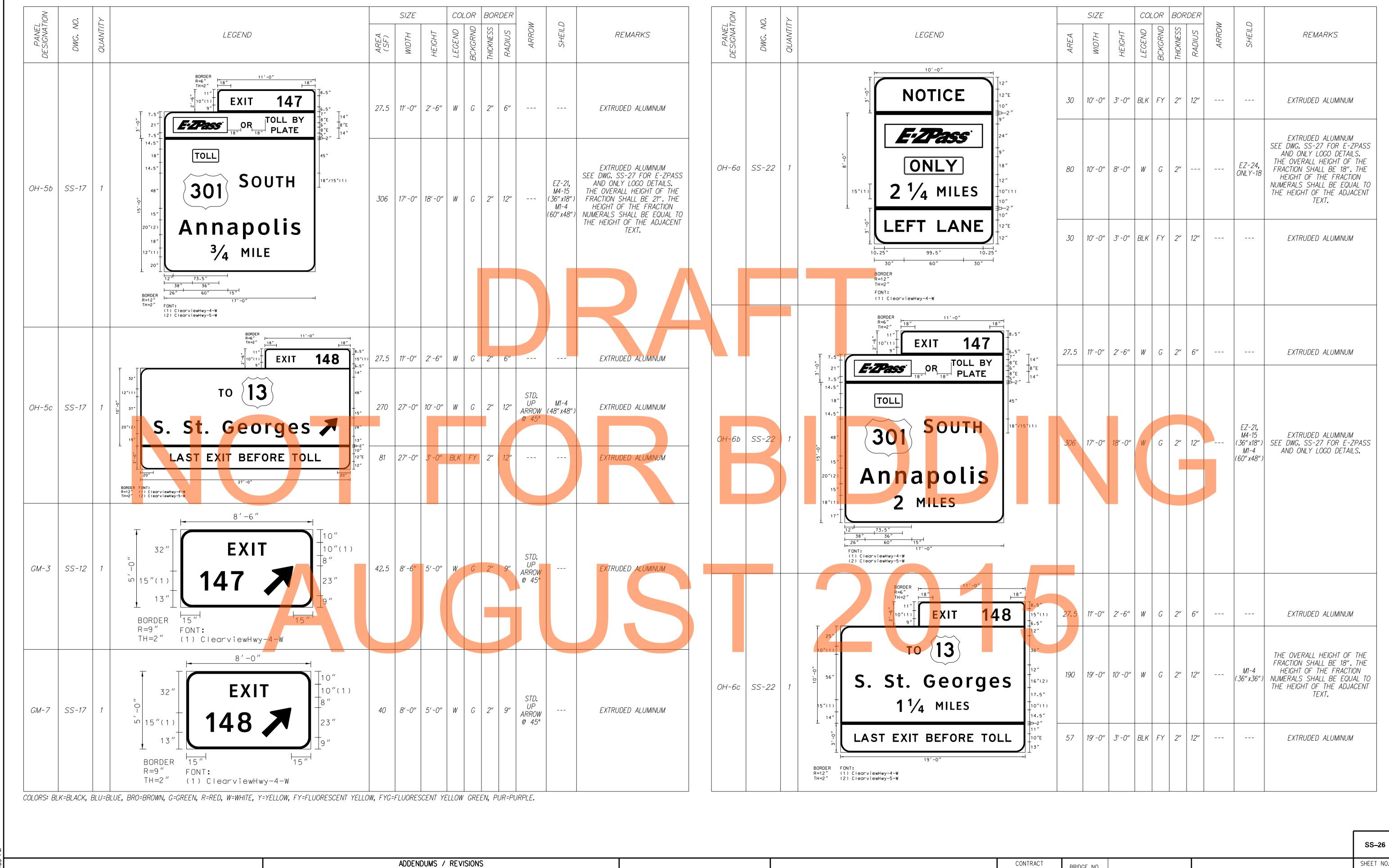
GUIDE SIGN DIMENSIONS & DETAILS

SS-25

SHEET NO.

474

TOTAL SHTS.



DELAWARE DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

US 301 & SR 1 INTERCHANGE CONTRACT
T200911302

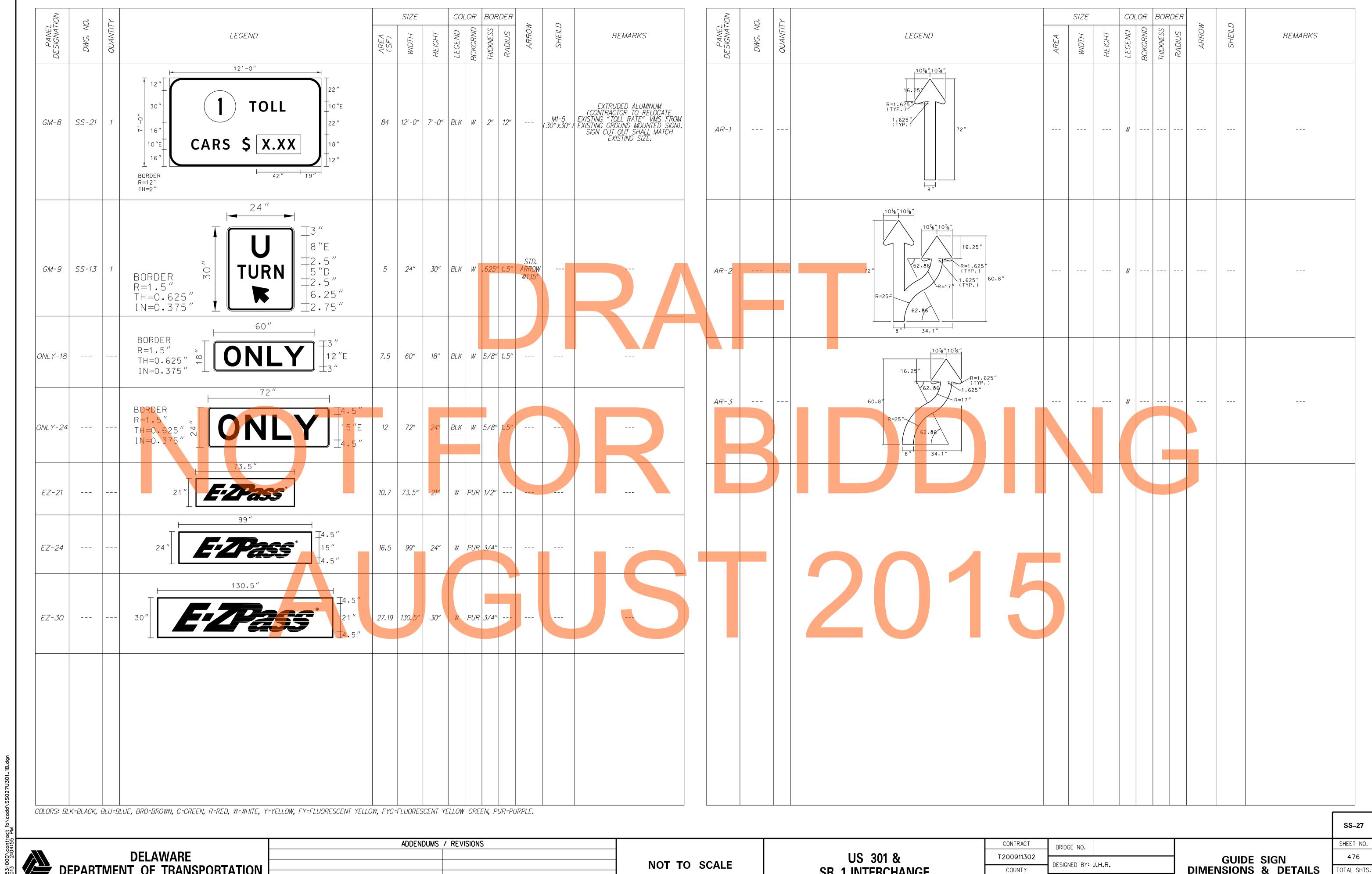
COUNTY

DESIGNED BY: J.H.R.

CHECKED BY: J.M.M.

GUIDE SIGN DIMENSIONS & DETAILS 475

OTAL SHTS.



DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

SR 1 INTERCHANGE

DESIGNED BY: J.H.R. COUNTY CHECKED BY: J.M.M. NEW CASTLE

**GUIDE SIGN DIMENSIONS & DETAILS** 

## GUIDE SIGN STEEL SUPPORT CHART

SIGN NO.	SIGN SIZE (WXH)	SHEET NO.	POST SIZE	SUPPORT L-1	SUPPORT L-2	SUPPORT L-3	LATERAL CLEARANCE OFFSET OBJECT**		SUPPPORT SPACING FROM LEFT EDGE OF SIGN
GM-1	18' x 5.5'	SS-12	W8x18	15.0′	15.0′	-	9.5'	ES	3.6′-10.8′-3.6′
GM-2	13' x 9'	SS-09	W8x18	18 <b>.</b> 0′	19.0′	-	6 <b>.</b> 0′	В	2.5′-8.0′-2.5′
GM-3	8.5' x 5'	SS-12	W6x9	13.0′	13.0′	-	2.5′/2.5′	CG (ES/ES)	.5′-7.5′5′
GM-7	8' x 5'	SS-17	W6x9	13.0′	13.0′	-	12.1′/12.1′	CG (ES/ES)	1.6′-4.8′-1.6′
GM-8	12' x 7'	SS-21	W8x21	16 <b>.</b> 0′	20.0′	-	6.0′	W	2.0′-8.0′-2.0′

#### NOTES:

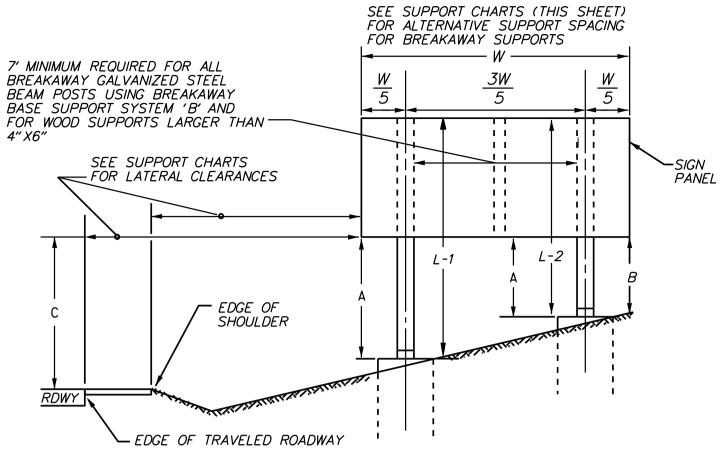
- 1. WHEN SPACING BETWEEN STEEL BEAM SUPPORTS IS GREATER THAN 8'-0" INSTALL DOUBLE ALUMINUM ANGLES (21/2" x31/2" x1/4") FROM TOP TO BOTTOM OF SIGN WITH POST CLIPS INSTALLED AT EACH EXTRUDED ALUMINUM PANEL. COST TO FURNISH AND INSTALL ALUMINUM ANGLES SHALL BE INCIDENTAL TO THE INSTALLATION OF SIGNS ON GROUND MOUNT POSTS ITEM.
- 2. A MINIMUM 7'-0" FROM INSIDE OF FLANGE TO INSIDE OF FLANGE SHALL BE MAINTAINED BETWEEN ALL STEEL BEAM SIGN SUPPORTS LARGER THAN W6X9.
- 3. ALL STEEL BEAM SIGN SUPPORTS SHALL BE MOUNTED ON BREAKAWAY BASES REGARDLESS OF WHETHER PROTECTED BY TRAFFIC BARRIER OR UNPROTECTED. BREAKAWAY BASE SUPPORT SYSTEMS SHALL BE TRANSPO INDUSTRIES OR APPROVED EQUAL.
- 4. STEEL SUPPORTS DESIGNED FOR 90 MPH WIND SPEED AND 25 YEAR DESIGN LIFE USING ASTM A709, GRADE 36 STEEL BEAM SUPPORTS.

## FOUNDATION SELECTION MATRIX

POST	FOUNDATION	ROADWAY CUT / FILL SLOPE										
SIZE	DIAMETER	<u>≥</u> 2:1	<b>3:</b> 1	4:1	5 <b>:</b> 1	6:1	7:1	<b>8:</b> 1	9:1	10:1	12:1	≤13:1
W6x9	30"	*	С	С	С	С	В	В	В	Α	Α	Α
W6x12 or TS 5"X5"X1/4"	30"	*	С	С	С	С	В	В	В	Α	Α	Α
W6x15, W6x16 or TS 6"X6"X 1/4 "	30"	*	С	С	С	С	В	В	В	Α	Α	Α
W8x18	30"	*	С	С	С	С	В	В	В	Α	Α	Α
W8x21 or TS 7"X7"X1/4"	30"	*	C	С	С	С	В	В	В	Α	Α	A
W10x22 or TS 8"X8"X5%"	36"	*	*	С	С	С	С	В	В	В	Α	A
W10x26	36"	*	*	C	C	С	С	В	В	В	Α	A
W12x26	36"	*	*	С	С	C	С	В	В	В	Α	A
W14x30	36"	*	*	С	С	C	С	В	В	В	Α	A
W16x31	36"	*	*	С	С	C	С	В	В	В	Α	Α
W18x35 or W18x40	36"	*	*	С	С	C	С	В	В	В	Α	A
W21x44	42"	*	*	С	С	C	С	С	В	В	В	A

\*IF A FOUNDATION EXCEEDS THE 4" AASHTO CRITERIA, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR APPROPRIATE GUIDANCE.

# SIGN CLEARANCE



#### VERTICAL CLEARANCE OF SIGNS

- A. 7'-6" MINIMUM FOR BREAKAWAY SUPPORTS OR 7'-0" FOR NON-BREAKAWAY SUPPORTS.
- B. 2'-6" MINIMUM C. 7'-6" MINIMUM & PREFERABLE. THIS DIMENSION IS TO BE INCREASED ONLY WHEN REQUIRED TO MEET A = 7'-6" FOR BREAKAWAY OR A (MIN.) = 7'-0" FOR NON-BREAKAWAY AND B (MIN) 2'-0"
- \*\*TOTAL WEIGHT BELOW THE HINGES SHOULD BE LESS THAN 600 POUNDS

#### LATERAL CLEARANCE

SEE SUPPORT CHARTS

#### \*\*\* OBJECT CODES

W = FACE OF W-BEAM TRAFFIC BARRIER

ALL DIMENSIONS ARE TO BOTTOM OF SIGN

FOC = FACE OF CURB ES = EDGE OF SHOULDER

ETR = EDGE OF TRAVELED ROADWAY

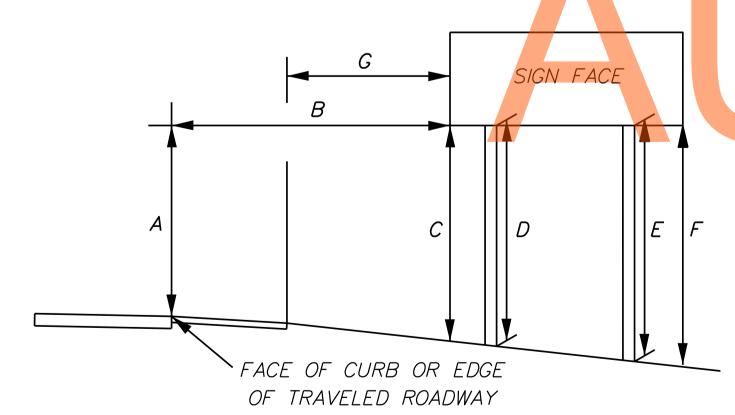
CM = CENTERED IN MEDIAN (LEFT OBJECT/ RIGHT OBJECT) CG = CENTERED IN GORE (LEFT OBJECT/ RIGHT OBJECT)

B = FACE OF CONCRETE TRAFFIC BARRIER

<u>STANDARD SIGN VERTICAL AND</u> LATERAL CLEARANCE DETAI

SEE MINIMUM LATERAL CLEARANCES OF SIGNS

# SIGN STAKEOUT DIMENSIONS



NOTE: CONTRACTOR SHALL COMPLETE SIGN STAKEOUT AND DETERMINE EXACT STEEL SIGN SUPPORT LENGTHS. STAKEOUT DIMENSIONS AND STEEL SIGN SUPPORT LENGTHS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL PRIOR TO FABRICATION OF STEEL SIGN SUPPORTS.

# MINIMUM LATERAL CLEARANCE OF SIGNS:

OR FACE OF W-BEAM OR CURB 7',-0"

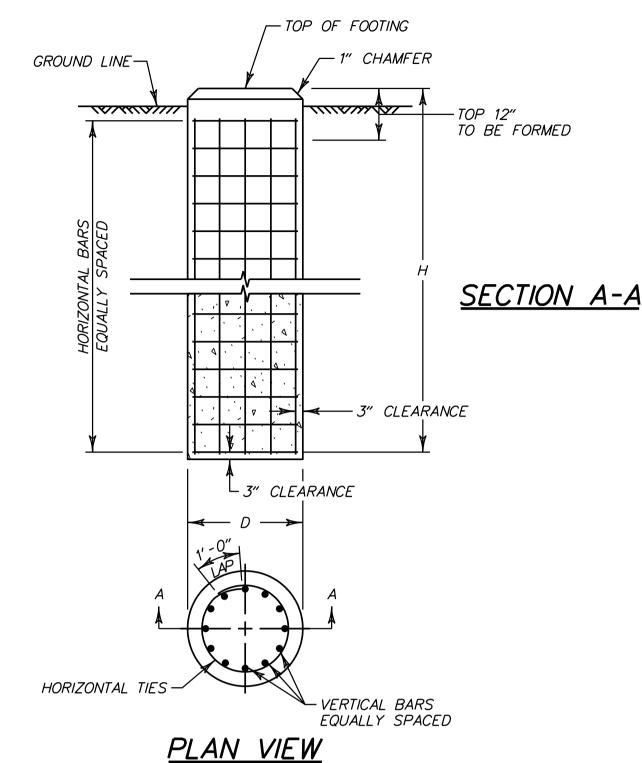
ROADWAY

1 = EDGE OF SIGN 6' FROM FACE OF W-BEAM TRAFFIC BARRIER 2 = EDGE OF SIGN 6' FROM EDGE OF SHOULDER 3 = EDGE OF SIGN 6' PREFERABLE MIN. (2' ABSOLUTE MIN.) FROM EACH EDGE OF SHOULDER IN MEDIAN OR CURB

-1 + + +لللا

NOTE: ALL SUPPORTS WITHIN THE CLEAR ZONE SHALL BE BREAKAWAY UNLESS PROTECTED BY TRAFFIC BARRIER, EXCEPT AS NOTED ABOVE FOR STEEL SUPPORTS.

# GALVANIZED STEEL BEAM TYPE A SIGN POST FOUNDATION DETAIL



FOUNDATION DATA TABLE

POST SIZE	D	Н	VERTICAL REINFORCEMENT	HORIZONTAL REINFORCEMENT	CONCRETE REQUIRED (CY)	
W6x9	30"	6'-0"	EIGHT (8)-NO. 7	SEVEN (7)-NO. 4	1.1	
W6x1 <mark>2 O</mark> R TS-5x <mark>5x1</mark> /4	30"	6'-0"	EIGHT (8)-NO. 7	SEVEN (7)-NO. 4	1. 1	
W6x15, W6x16 OR TS-6x6x1/4	30"	<b>6</b> ′ -6″	EIGHT (8)-NO. 7	SEVEN (7)-NO. 4	1.2	
W8x18	30"	7′-6″	EIGHT (8)-NO. 9	EIGHT (8)-NO. 4	1.4	
W8x21 OR TS-7x7x1/4	30"	8′-0″	EIGHT (8)-NO. 9	NINE (9)-NO. 4	1 <b>.</b> 5	
W10x22 OR TS-8x8x5/16	36"	8′-6″	EIGHT (8)-NO. 10	NINE (9)-NO. 4	2.3	
W10x26	36"	9′ -0″	EIGHT (8)-NO. 10	TEN (10)-NO. 4	2.4	
W12x26	36"	10'-0" EIGHT (8)-NO. 10		ELEVEN (11)-NO. 4	2.7	
W14x30	36"	11'-0" EIGHT (8)-NO. 10		TWELVE (12)-NO. 4	2.9	
W16x31	36"	12' -0"	EIGHT (8)-NO. 10	THIRTEEN (13)-NO. 4	3.2	
W18x35 OR W18x40	36"	13′ -0″	EIGHT (8)-NO. 10	FOURTEEN (14)-NO. 4	3.5	
W21x44	42"	12' -0"	TWELVE (12)-NO. 10	THIRTEEN (13)-NO. 4	<b>4.</b> 3	
	•	•				

# STEEL POST BREAKAWAY SYSTEM SELECTION CHART

SYSTEM TYPE	ASSOCIATED POST SIZE
AI6	W6X9
B525	W6X12, W6X15, W6x16,W8X18, W8X21, 5"x5" & 6"x6" SQUARE
B650	7"x7" AND 8"X8" SQUARE AND ALL I-BEAMS LARGER THAN W8X21

**DELAWARE** DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

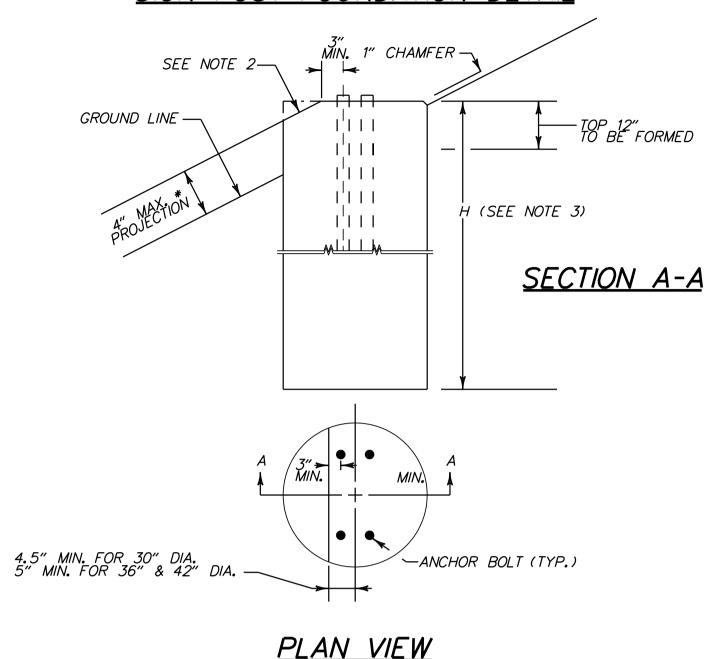
US 301 & **SR 1 INTERCHANGE** 

CONTRACT BRIDGE NO. T200911302 DESIGNED BY: J.H.R. COUNTY NEW CASTLE CHECKED BY: J.M.M.

**SIGNING** CONSTRUCTION DETAILS

SS-28 SHEET NO. 477 OTAL SHTS. 491

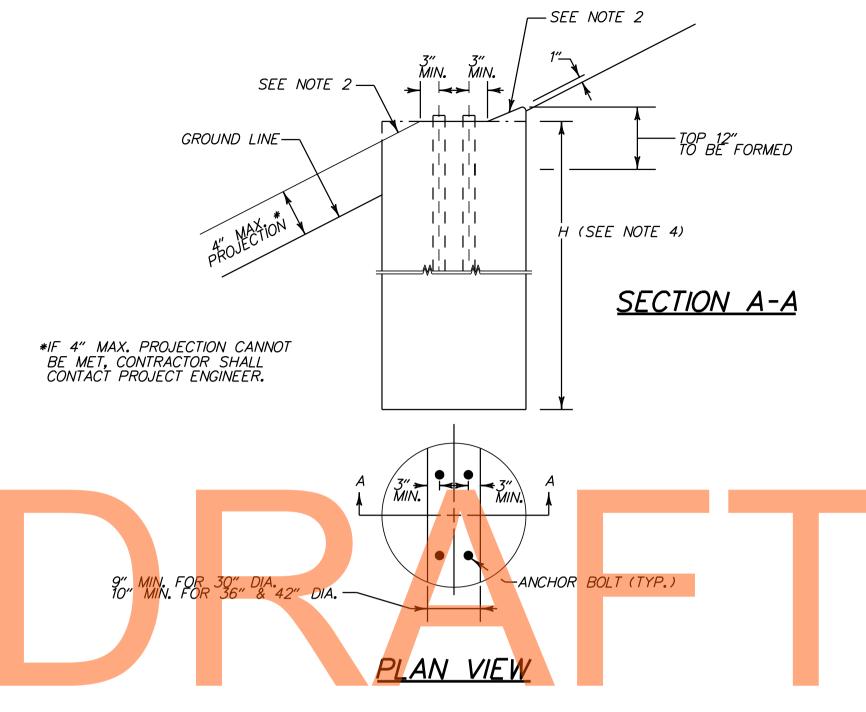
# GALVANIZED STEEL BEAM TYPE B SIGN POST FOUNDATION DETAIL



#### NOTES:

- 1. THIS FOUNDATION SHALL BE USED ONLY IN LOCATIONS MEETING SLOPE CRITERIA IN ACCORDANCE WITH THE STEEL BREAKAWAY SUPPORT FOUNDATION SELECTION MATRIX ON SIGNING CONSTRUCTION DETAILS SHEET.
- 2. SLOPED PORTIONS OF THE FOUNDATION SHALL MATCH THE FINISHED GROUND SLOPE.
- 3. REFER TO GALVANIZED STEEL BEAM TYPE A SIGN POST FOUNDATION DETAIL FOR FOUNDATION DIMENSIONS AND REINFORCING STEEL DETAILS.

# GALVANIZED STEEL BEAM TYPE C SIGN POST FOUNDATION DETAIL



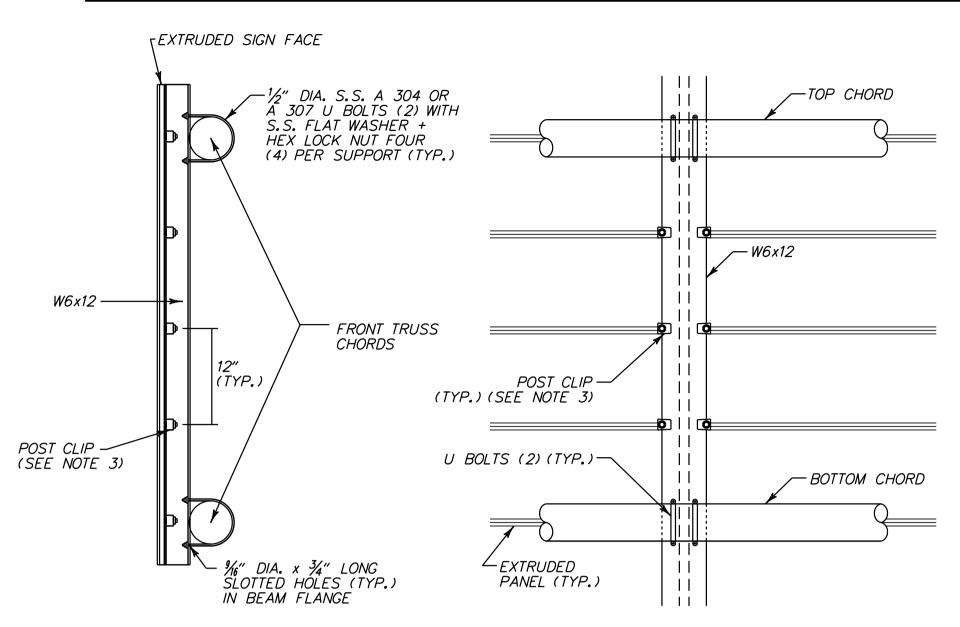
#### NOTES:

- 1. THIS FOUNDATION SHALL BE USED ONLY IN LOCATIONS MEETING SLOPE CRITERIA IN ACCORDANCE WITH THE STEEL BREAKAWAY SUPPORT FOUNDATION SELECTION MATRIX ON THE SIGNING CONSTRUCTION DETAILS SHEET.
- 2. SLOPED PORTIONS OF THE FOUNDATION SHALL MATCH THE FINISHED GROUND SLOPE.

3. ON FILL SLOPES GREATER THAN 6:1 BUT NO STEEPER THAN 3:1, FOUNDATIONS DESIRABLY SHOULD BE INSTALLED A MINIMUM OF 14 FT BEYOND THE HINGE POINT. THE HINGE POINT IS THE POINT OF SLOPE TRANSITION FROM THE SHOULDER SLOPE, OR A RELATIVELY FLAT RECOVERY AREA ADJACENT TO THE ROADWAY, TO A STEEPER FORESLOPE, (ALSO KNOWN AS THE FORESLOPE BREAK).

4. REF<mark>ER</mark> TO GALVANIZED STEEL BEAM TYPE A SIGN POST FOUNDATION DETAIL FOR FOUNDATION DIMENSIONS AND REINFORCING STEEL DETAILS.

# OVERHEAD SIGN SUPPORT DETAIL FOR NEW SIGN STRUCTURES



#### NOTES

- 1. ALL STEEL SHALL BE HOT DIPPED GALVANIZED.
- 2. ALL W-BEAMS SHALL CONFORM TO A 709, GRADE 36.
- 3. POST CLIPS SHALL BE INSTALLED ON EACH SIDE OF SIGN SUPPORT SPACED EVERY 12" FOR ENTIRE HEIGHT OF SIGN, AS SHOWN. POST CLIPS SHALL MEET AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

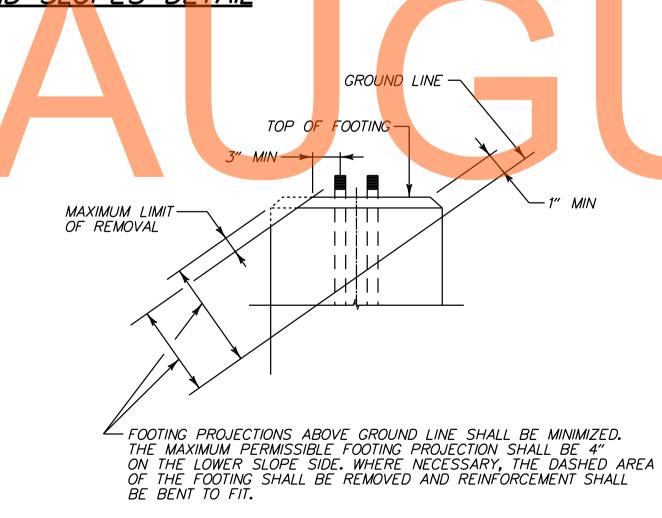
# BREAKAWAY POLES ADJUSTMENT FOR GROUND SLOPES DETAIL

TO AVOID UNDERCARRIAGE SNAGGING ON CONVEX GROUND PROFILES,
THE TOP OF THE FOOTING SHALL NOT PROJECT MORE THAN 4" ABOVE
ANY 60" CHORD ALIGNED PERPENDICULARLY TO THE EDGE OF THE
ROADWAY BETWEEN A POINT ON THE GROUND SURFACE ON ONE SIDE
OF THE SUPPORT TO A POINT ON THE GROUND SURFACE ON THE
OTHER SIDE OF THE SUPPORT.

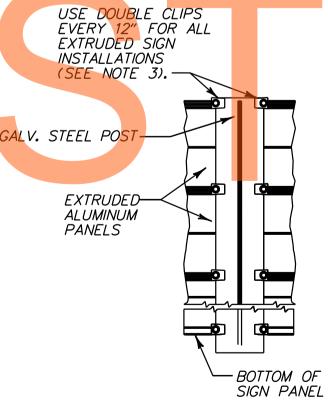
TOP OF FOOTING

GROUND LINE

ANCHOR BOLT (TYP.)



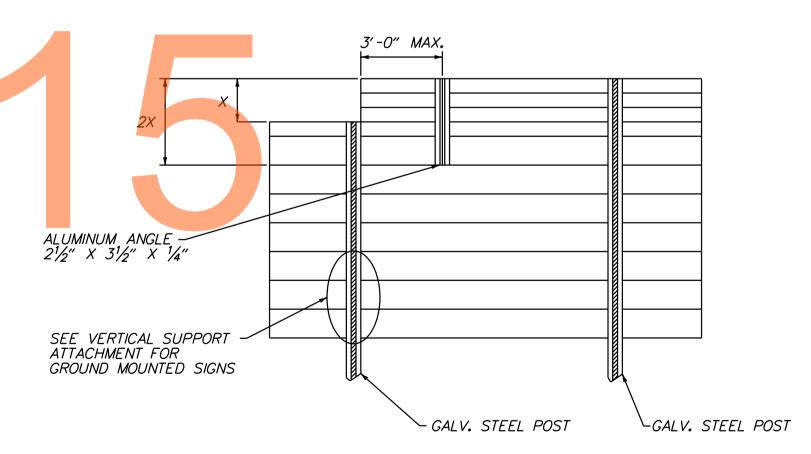
# VERTICAL SUPPORT ATTACHMENT FOR GROUND MOUNTED SIGNS



NOTES:

- 1. ALL STEEL SHALL BE HOT DIPPED GALVANIZED.
- 2. ALL STEEL SUPPORTS SHALL CONFORM TO A 709, GRADE 36.
- 3. POST CLIPS SHALL BE INSTALLED ON EACH SIDE OF SIGN SUPPORT SPACED EVERY 12" FOR ENTIRE HEIGHT OF SIGN, AS SHOWN. POST CLIPS SHALL MEET AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS.

# INSTALLATION OF EXIT PANEL TO EXTRUDED SIGN



NOTE

- 1. VERTICAL SUPPORTS ARE TO BE CONTINUOUS FOR ENTIRE HEIGHT OF SIGN, INCLUDING EXIT PANEL WHERE APPLICABLE.
- 2. ALL SUPPORTS (INCLUDING ANGLES) SHALL BE POST CLIPPED AT 12" INTERVALS.

DELAWARE
DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301 & SR 1 INTERCHANGE

CONTRACT
BRIDGE NO.

T200911302

COUNTY

DESIGNED BY: J.H.R.

CHECKED BY: J.M.M.

SIGNING CONSTRUCTION DETAILS

SHEET NO.

478

TOTAL SHTS.

491

## **SIGN STRUCTURE NOTES:**

- 1. SIGN STRUCTURE STANDARDS ARE IN ACCORDANCE WITH AASHTO "STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 2009".

  ALL STRUCTURAL DETAILS HAVE BEEN ANALYZED AGAINST FATIGUE CATEGORY 1 IMPORTANCE FACTOR AS DESIGNATED IN THE ABOVE AASHTO SPECIFICATIONS.
- 2. ALL STRUCTURAL MAIN TUBES SHALL CONFORM TO AMERICAN PETROLEUM INSTITUTE SPECIFICATION 5L-X52.
- 3. ALL OTHER TUBES SHALL HAVE MIN. 35 KSI YIELD STRENGTH AND CONFORM TO A 501.
  A SUBSTITUTION USING A53, GRADE B MAY BE USED ON A CASE-BY-CASE BASIS, AS APPROVED BY THE ENGINEER.
- 4. ALL STEEL PLATES, W-BEAMS AND MISCELLANEOUS SHAPES SHALL CONFORM TO A 709, GRADE 36.
- 5. ALL PIPE FOR HANDRAIL TO BE ASTM A 500 GRADE 'A'.
- 6. ALL GRATING TO BE 1½" THICK GALVANIZED AND ABLE TO WITHSTAND 100 LBS./SQ.FT. LIVE LOAD.
- 7. ALL RAIL SHALL BE DESIGNED TO CARRY ONE 500 LBS. CONCENTRATED LOAD, PLACED ANYWHERE ALONG TOP OF RAILING.
- 8. ALL SIGN STRUCTURES HAVE BEEN DESIGNED FOR AN ADDITIONAL 15% OF THE PROPOSED SIGN AREA. ADDITIONAL AREA FOR AN EXIT PANEL (12' x 3' HIGH = 36 SQ. FT.) HAS BEEN INCLUDED FOR DESIGN OF ALL STRUCTURAL MEMBERS.
- 9. ALL STRUCTURES HAVE BEEN DESIGNED FOR STANDARD ALUMINUM EXTRUDED SIGN PANELS. ONLY SIGN STRUCTURE DMS-1 HAS BEEN DESIGNED FOR DYNAMIC MESSAGE SIGNS.
- 10. A DESIGN SIGN AREA HAS BEEN INCLUDED FOR SIGN STRUCTURE DMS-1 SINCE THE DMS AREA IS SMALL RELATIVE TO POTENTIAL STATIC SIGN SIZE AND MAY NOT PROVIDE SUFFICIENT AND VERTICAL CLEARANCE FOR FUTURE STATIC SIGN REPLACEMENT.
- 11. ALL SIGN STRUCTURE SUPPORTS SHALL BE LOCATED BEHIND PHYSICAL TRAFFIC BARRIERS.
- 12. MODIFICATIONS TO ANY TRUSSING-CHORD GUSSET PLATE CONNECTION IN ORDER TO ACCOMMODATE SIGN PANEL SUPPORTS SHALL NOT BE PERMITTED.
- 13. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE STANDARDS OF THE AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM) AND STANDARDS OF THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).
- 14. ALL WELDING SHALL BE IN ACCORDANCE WITH AASHTO AMERICAN WELDING SOCIETY (AWS) D1.5
  BRIDGE WELDING CODE. WELDING NOT COVERED IN AWS D1.5 SHALL CONFORM TO
  AWS D1.1 STRUCTURAL WELDING CODE.
- 15. GALVANIZING SHALL CONFORM TO ASTM A123 OR ASTM A153 AND ASTM A143, ASTM A385.
- 16. GALVANIZED HIGH STRENGTH BOLTS SHALL CONFORM TO AASHTO M164/ASTM A325.
- 17. GALVANIZED HEAT TREATED NUTS SHALL CONFORM TO AASHTO M292/ASTM A194 OR AASHTO M291/ASTM A563 GRADE 2H, DH. GALVANIZED HARDENED STEEL WASHERS SHALL CONFORM TO AASHTO M293/ASTM F436.
- 18. GALVANIZED ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM F1554 GRADE 55.
- 19. ALL ANCHOR BOLTS SHALL BE PLUMB AFTER FOUNDATION INSTALLATION. STEEL TEMPLATES SHALL BE USED TO SET ANCHOR BOLTS PLUMB WHEN POURING THE FOUNDATION.
- 20. USE LOCK NUTS AND FLAT WASHERS FOR ALL "U" BOLTS (A307 OR EQUIVALENT).
- 21. BASE PLATE SHALL BE IN FULL CONTACT WITH ALL FLAT WASHERS.
- 22. ALL ANCHOR BOLT NUTS SHALL BE TIGHTENED USING TURN OF NUT METHOD. (30° MIN TO 45° MAX TURN AFTER SNUG TIGHT).
- 23. GROUT SHALL NOT BE PLACED BETWEEN THE BASE PLATE AND CONCRETE TOP.
- 24. USE CLASS B CEMENT CONCRETE f'c=3000 PSI IN PEDESTALS AND FOOTINGS.

	INDEX OF DRAWINGS							
SHEET NUMBER	DRAWING NUMBER	TITLE						
486	SS-30	SIGN STRUCTURE NOTES AND QUANTITIES						
487	SS-31	SIGN STRUCTURE ELEVATION-1						
488	SS-32	SIGN STRUCTURE ELEVATION-2						
489	SS-33	SIGN STRUCTURE SCHEDULE						
490	SS-34	TOWER DETAILS						
491	SS-35	TRUSS DETAILS						
492	SS-36	DMS WALKWAY DETAILS						
493	SS-37	FOUNDATION DETAILS						

QUANTITIES								
ITEM NO.	ITEM TITLE	UNIT	QUANTITY					
605523	BOX TRUSS TYPE OVERHEAD SIGN SUPPORT AND FOUNDATION	L.S.	1					

# JK BILDING UST 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

ADDENDUMS / REVISIONS

NOT TO SCALE

US 301 & SR 1 INTERCHANGE

CONTRACT
BRIDGE NO.

T200911302
COUNTY

DESIGNED BY: BSW

NEW CASTLE
CHECKED BY: BJH

SIGN STRUCTURE NOTES AND QUANTITIES

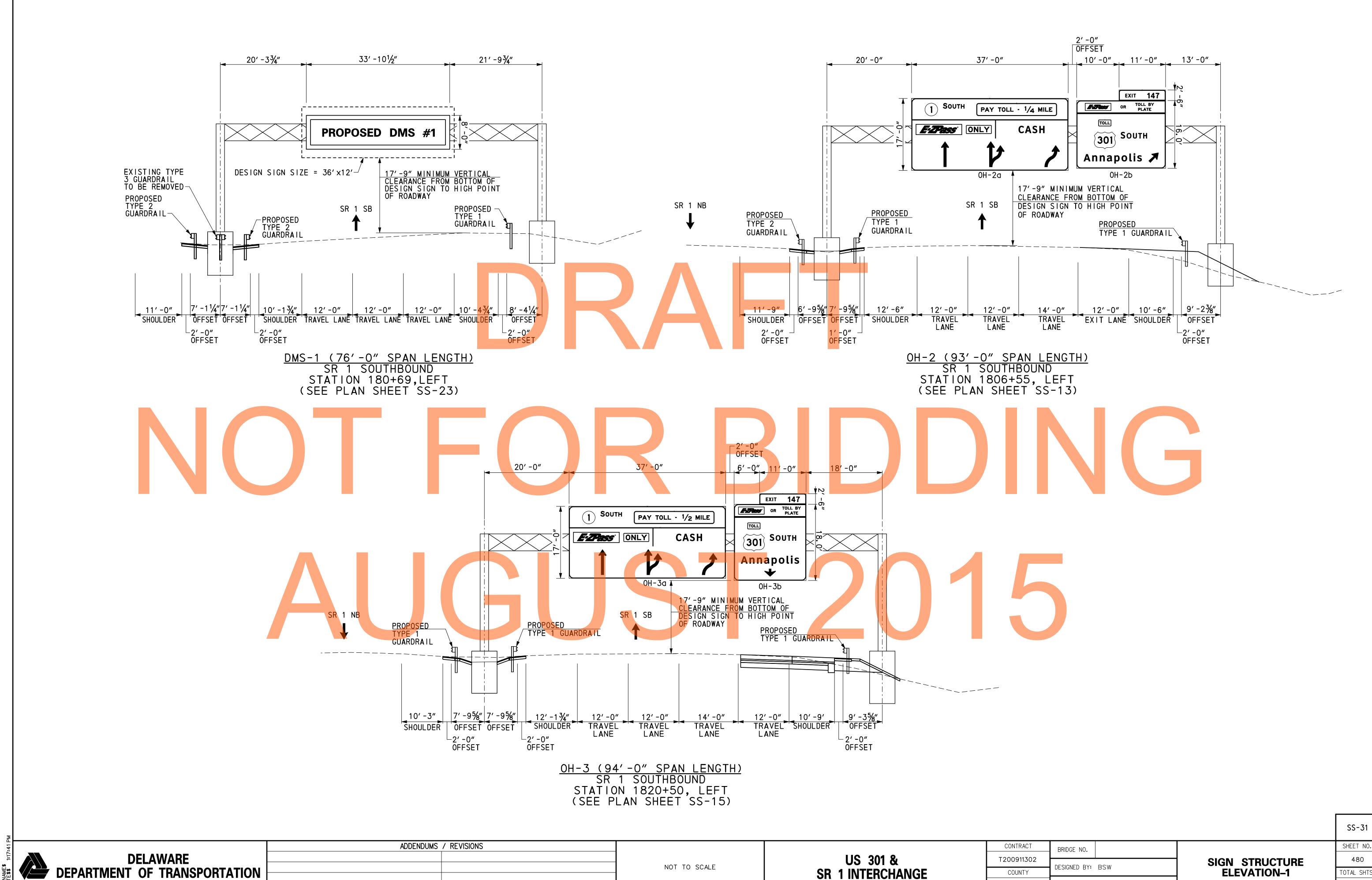
SS-30

SHEET NO.

479

TOTAL SHTS.

491



**SR 1 INTERCHANGE** 

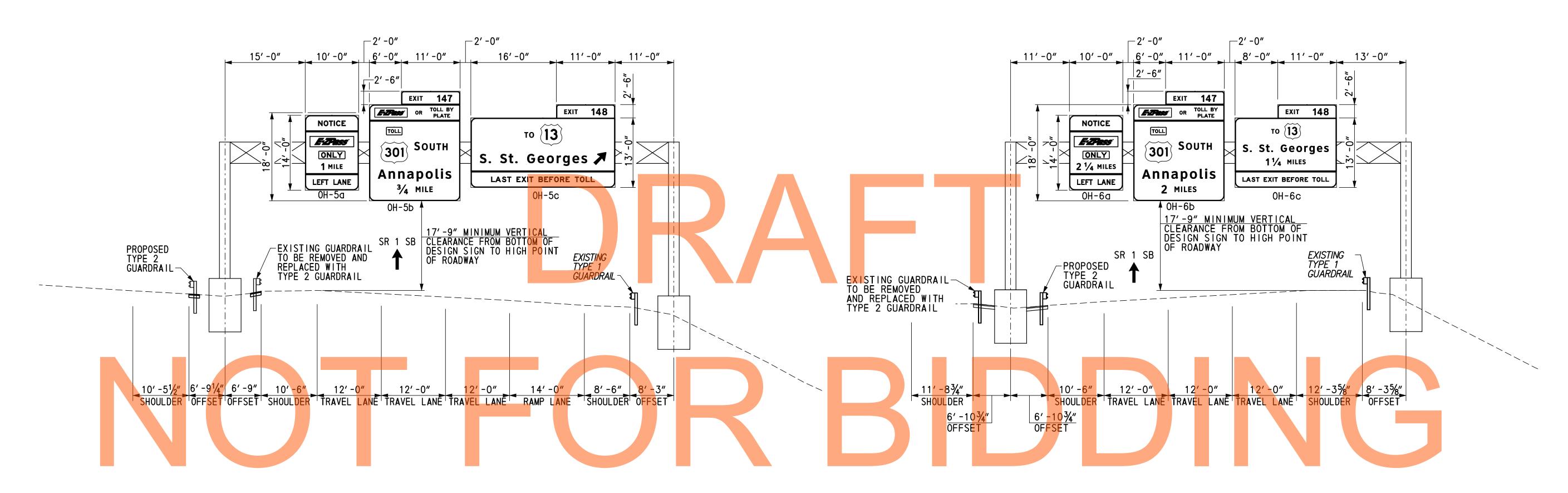
COUNTY

NEW CASTLE

CHECKED BY: BJH

**ELEVATION-1** 

TOTAL SHTS



OH-5 (84'-0" SPAN LENGTH)

SR 1 SOUTHBOUND

STATION 1839+38, LEFT
(SEE DWG. NO. SS-17)

OH-6 (74'-0" SPAN LENGTH)

SR 1 SOUTHBOUND

STATION 170+95, LEFT
(SEE DWG. NO. SS-22)

AUGUSI 2015

DELAWARE DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

ADDENDUMS / REVISIONS

US 301 & SR 1 INTERCHANGE

CONTRACT
BRIDGE NO.

T200911302

COUNTY

DESIGNED BY: BSW

CHECKED BY: BJH

SIGN STRUCTURE ELEVATION-2

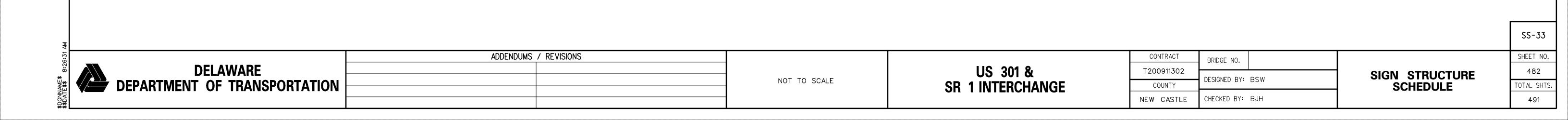
SHEET NO.

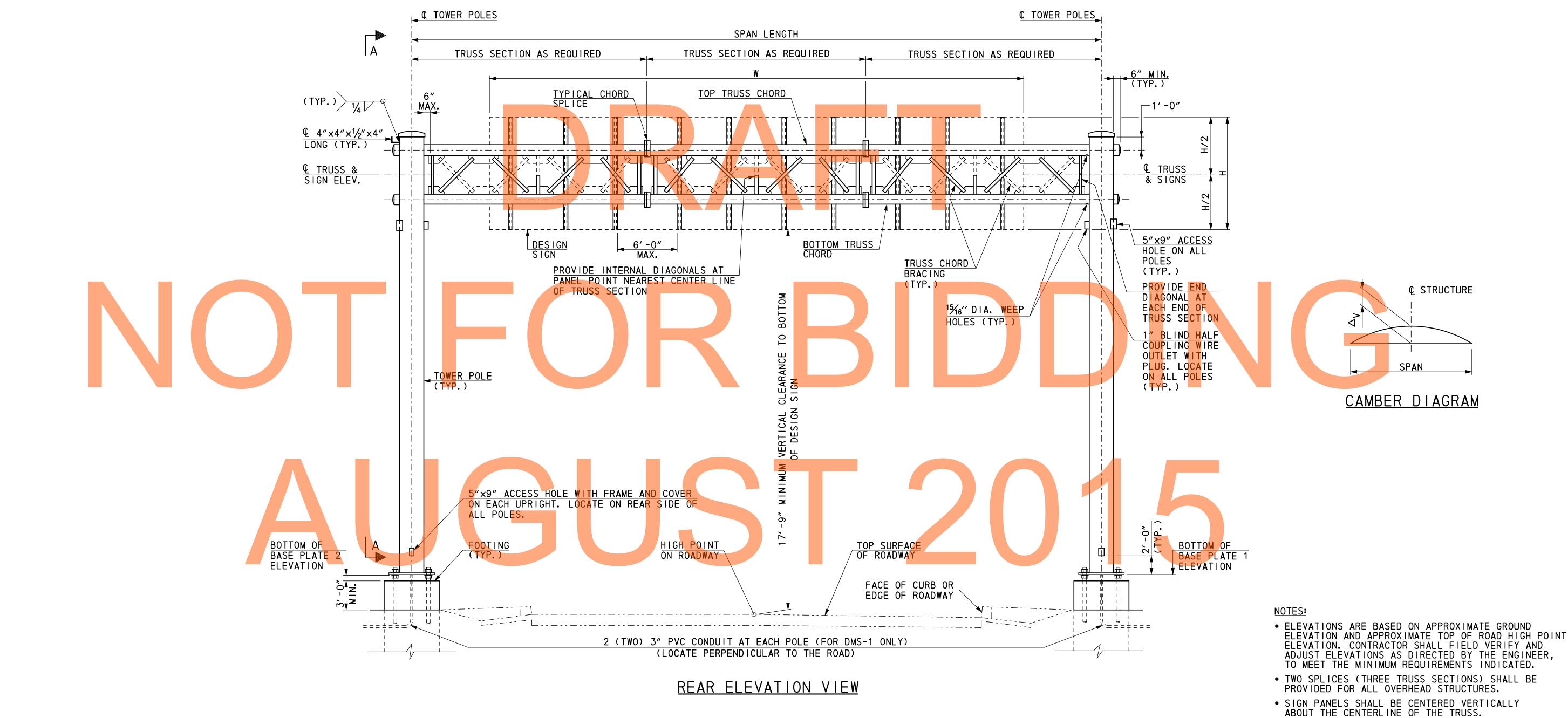
481

TOTAL SHTS.

491

SS-32





**ELEVATIONS\*** 

PLATE 1

41.46

24. 39

27.94

85.70

69.90

BOTTOM OF BOTTOM OF

BASE

PLATE 2

44.09

23.11

27.46

82.42

72.08

TOWER POLE

SIZE

TOWER BRACING

TUBE SIZE

TRUSS CHORD

TUBE SIZE

20'' 0. D.  $\times$  0. 344" THK. 6.625'' 0. D.  $\times$  0. 280" THK. 6.625'' 0. D.  $\times$  0. 250" THK. 3.500'' 0. D.  $\times$  0. 250 THK. 6.625'' 0. D.  $\times$  18' -0"(H)

20" O.D. x 0.344" THK. 6.625" O.D. x 0.280" THK. 6.625" O.D. x 0.250" THK. 3.500" O.D. x 0.250 THK.

|24" O.D.  $\times$  O.312" THK. |6.625" O.D.  $\times$  O.280" THK. |8.625" O.D.  $\times$  O.250" THK. |3.500" O.D.  $\times$  O.250 THK.

| 24" O.D.  $\times$  0.312" THK. | 6.625" O.D.  $\times$  0.280" THK. | 8.625" O.D.  $\times$  0.250" THK. | 3.500" O.D.  $\times$  0.250 THK.

20" O.D. × O.344" THK. 6.625" O.D. × O.280" THK. 8.625" O.D. × O.250" THK. 3.500" O.D. × O.250 THK.

TRUSS CHORD

BRACING SIZE

TOTAL CAMBER

 $(\nabla \land)$ 

1 <sup>13</sup>/<sub>16</sub>"

2 9/16"

2 9/16"

2 3/16"

1 %"

• FOR SECTION A-A, SEE DRAWING SS-36.

DESIGN SIGN

36'-0"(W)×12'-0"(H)

 $62' - 0''(W) \times 18' - 0''(H)$ 

 $62' - 0''(W) \times 18' - 0''(H)$ 

 $60' - 0''(W) \times 18' - 0''(H)$ 

STRUCTURE

MARK

DMS-1

0H-2

0H-3

0H-5

0H-6

\* SEE ELEVATIONS NOTE

SPAN

LENGTH

76′ -0″

93' -0"

94' -0"

84' -0"

74' -0"

TRUSS

& SIGN

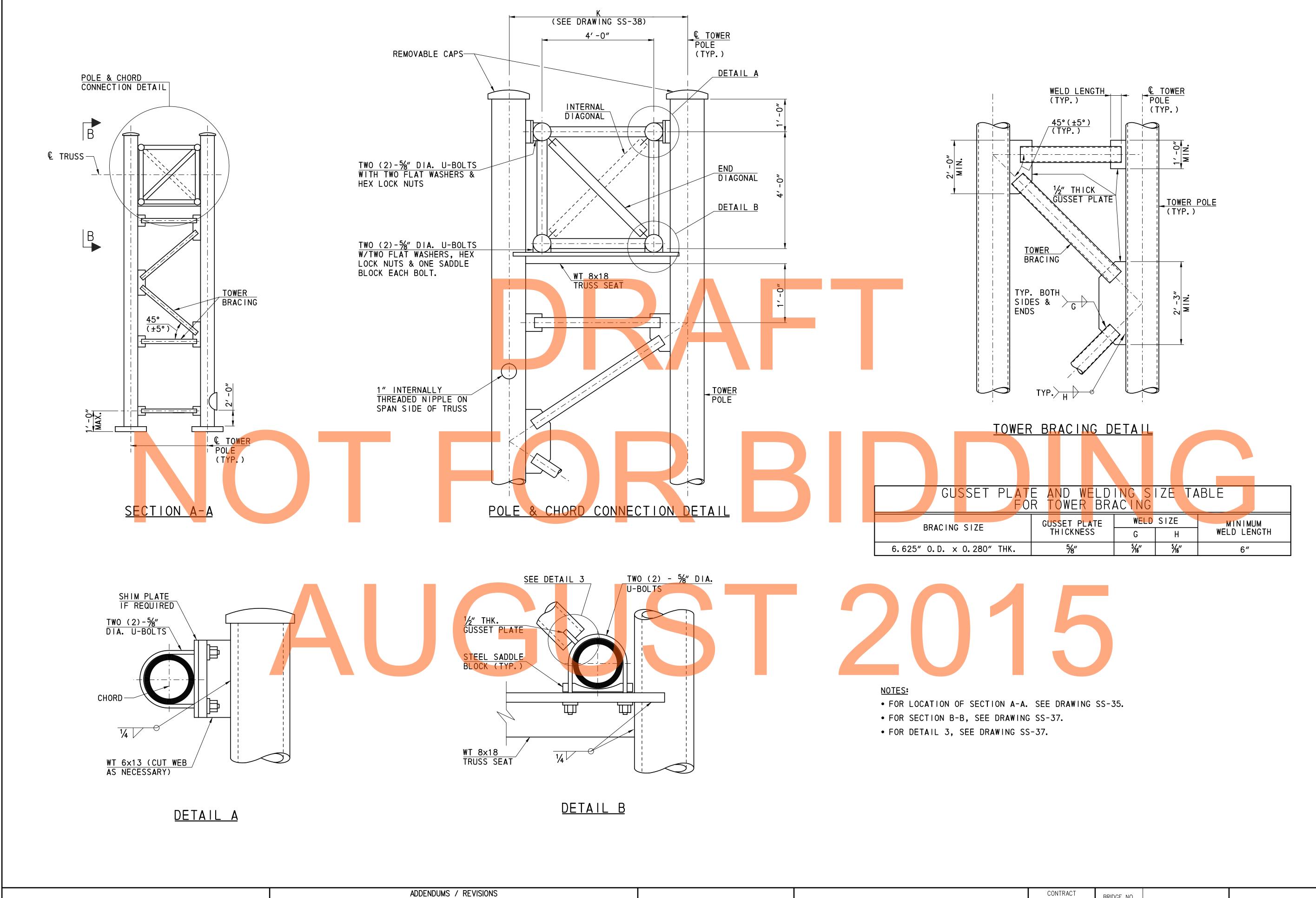
66.70

49.10

53. 31

109.87

96.20



**DELAWARE** 

DEPARTMENT OF TRANSPORTATION

NOT TO SCALE

US 301 & **SR 1 INTERCHANGE** 

CONTRACT BRIDGE NO. T200911302 DESIGNED BY: BSW COUNTY CHECKED BY: BJH NEW CASTLE

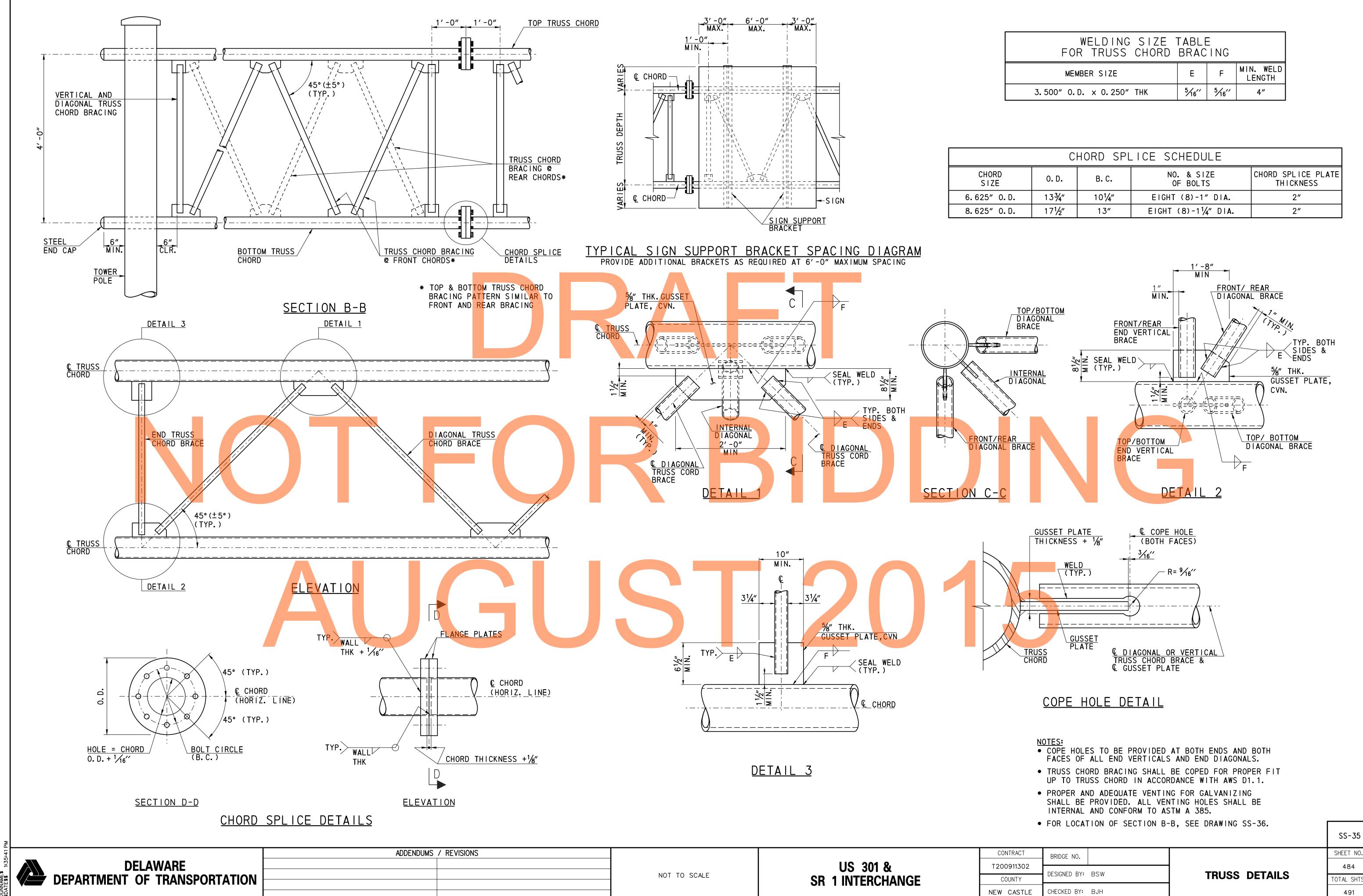
**TOWER DETAILS** 

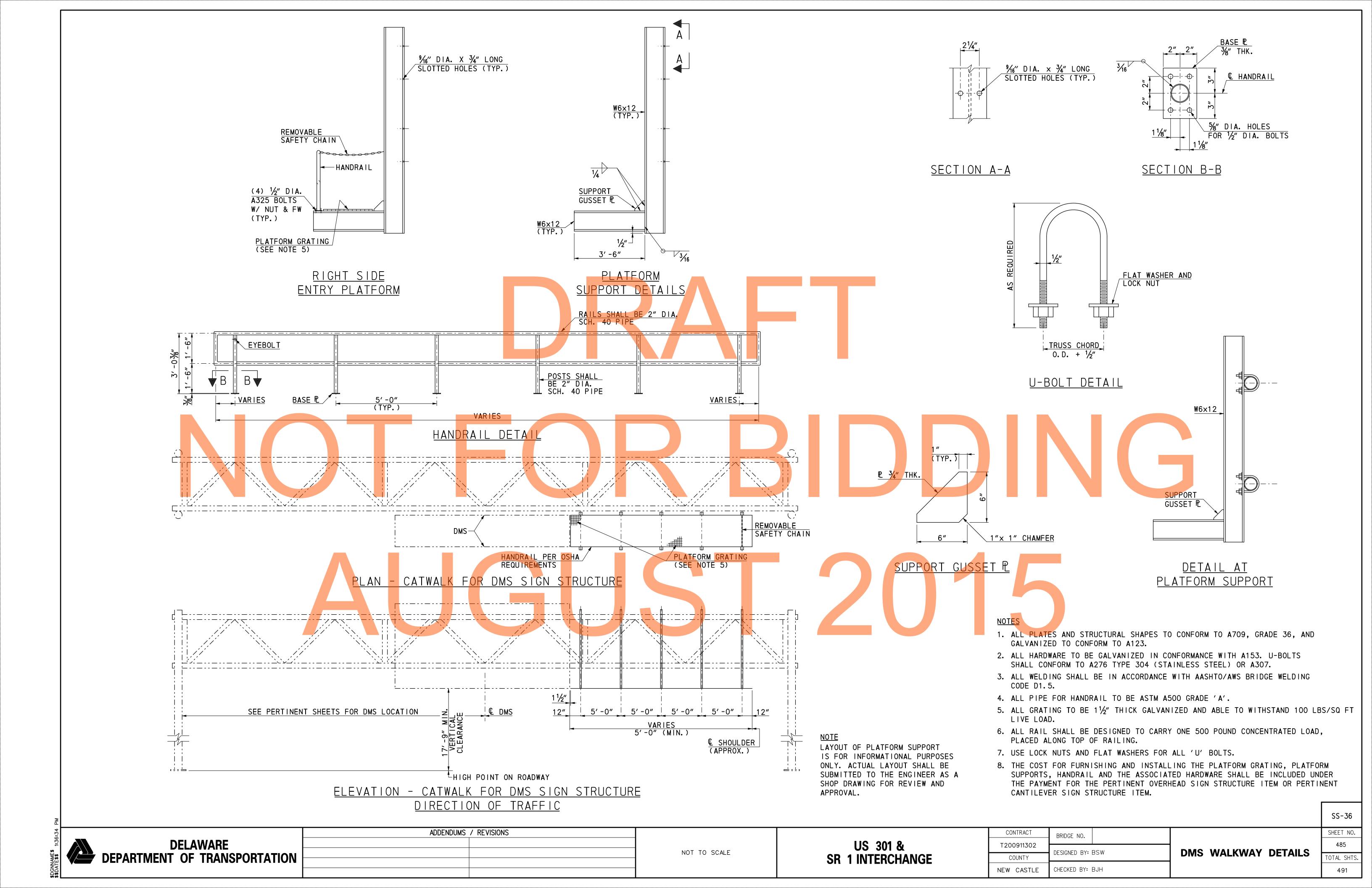
SS-34

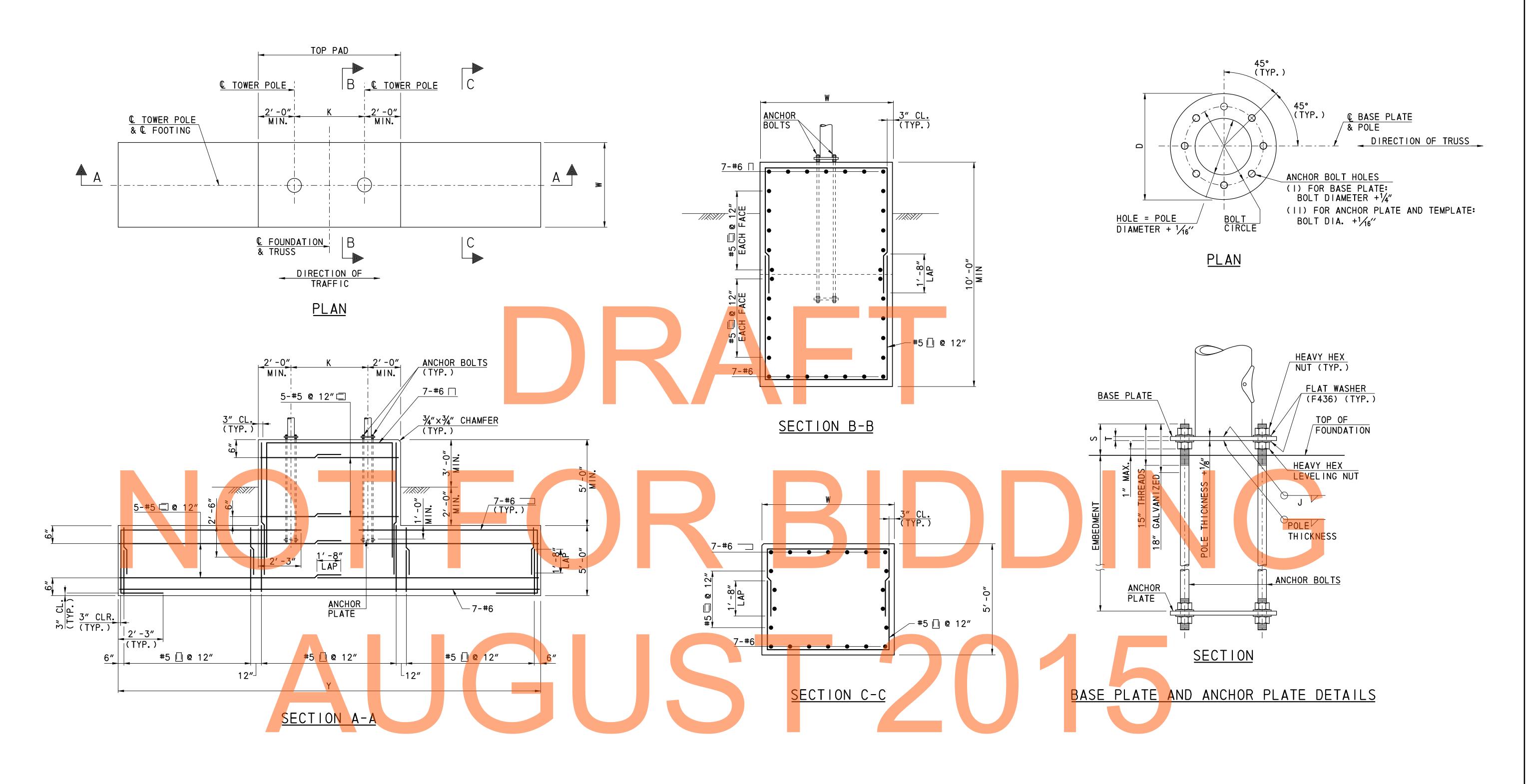
SHEET NO.

483

TOTAL SHTS.







BASE PLATE SCHEDULE									
TOWER POLE SIZE	К	D	BOLT CIRCLE	Т	S	ANCHOR BOLT DIA.	MINIMUM EMBEDMENT LENGTH	ANCHOR PLATE SIZE	FILLET WELD SIZE J
20.00" O.D. × 0.344" THK.	7′ -0″	36"	271/2"	3"	1111/4"	2¾"	6′ -0″	¾" × 36" DIA.	7/16′′
24.00" O.D. × 0.312" THK.	7′ -6″	41 1/2"	32"	3"	12"	3"	6′ -6″	$\frac{3}{4}$ " × 41 $\frac{1}{2}$ " DIA.	7/16′′

, , , , , , ,	ATION DE CHEDULE	TAIL
STRUCTURE	FOOTING [	DIMENSION
MARK	W	Y
DMS-1	6′-0″	26′ -0″
0H-2	6′ -0″	26′ -0″
0H-3	6' -0"	26′ -0″
0H-5	6′ -0″	26′ -0″
0H-6	6′ -0″	26′ -0″

# NOTES:

- ALL ANCHOR BOLTS SHALL BE PLUMB AFTER FOUNDATION INSTALLATION. STEEL TEMPLATE PLATE SHALL BE USED TO SET ANCHOR BOLTS.
- BASE PLATE SHALL BE IN FULL CONTACT WITH ALL FLAT WASHERS.
- ALL ANCHOR BOLTS SHALL BE TIGHTENED USING TURN OF NUT METHOD. (30° MIN. TO 45° MAX. TURN AFTER SNUG FIT).
- GROUT SHALL NOT BE PLACED BETWEEN THE BASE PLATE AND CONCRETE BASE.

SS-37 ADDENDUMS / REVISIONS SHEET NO. CONTRACT BRIDGE NO. **DELAWARE** US 301 & T200911302 FOUNDATION DETAILS NOT TO SCALE DESIGNED BY: BSW DEPARTMENT OF TRANSPORTATION **SR 1 INTERCHANGE** OTAL SHTS COUNTY NEW CASTLE CHECKED BY: BJH 491

