BIG STONE SOUTH - ELLENDALE 345 KV TRANSMISSION LINE

STR 398 - STR 590

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

DWG. NO.
BSSE-PP-103-1
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING

PRELIMINARY SUBJECT TO FINAL REVIEW

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

DWG. NO.
BSSE-PP-103-2
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

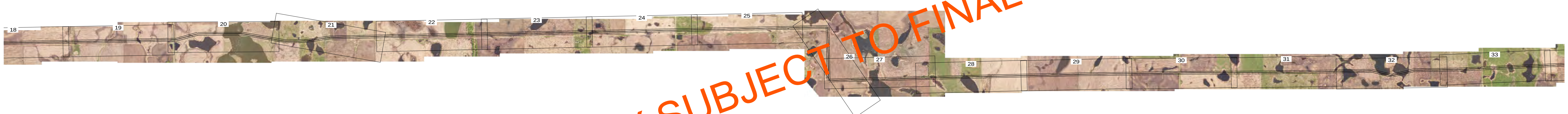
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

NORTH

DWG. NO.
BSSE-PP-103-3
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

NORTH

DWG. NO.
BSSE-PP-103-4
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING

PRELIMINARY SUBJECT TO FINAL REVIEW

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

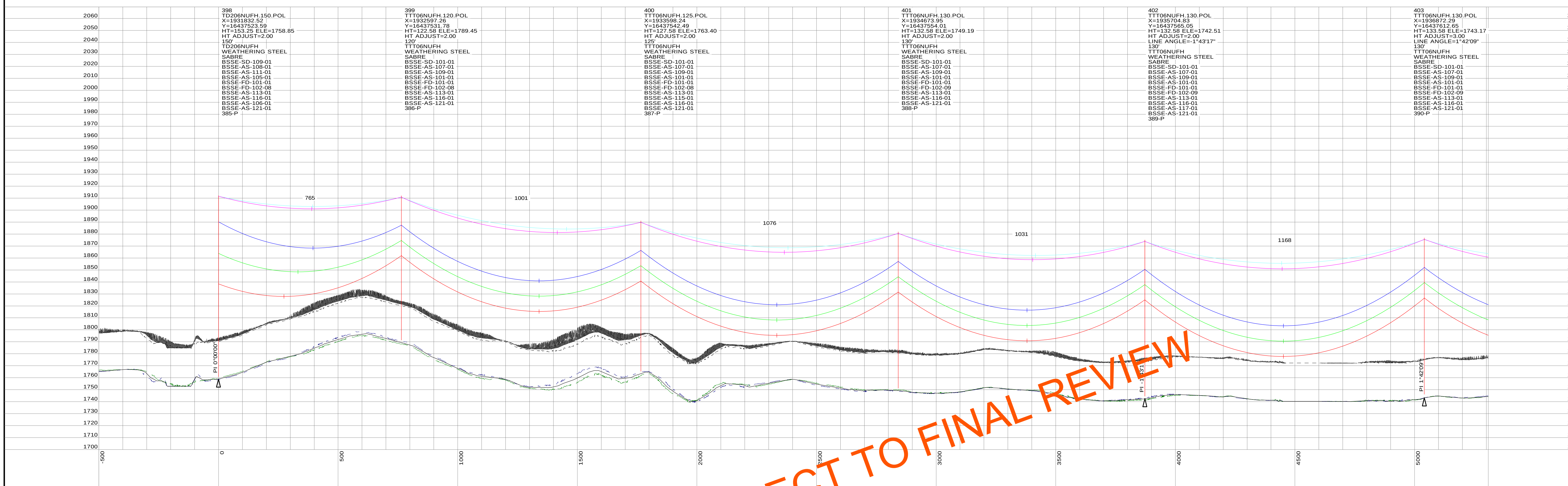
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

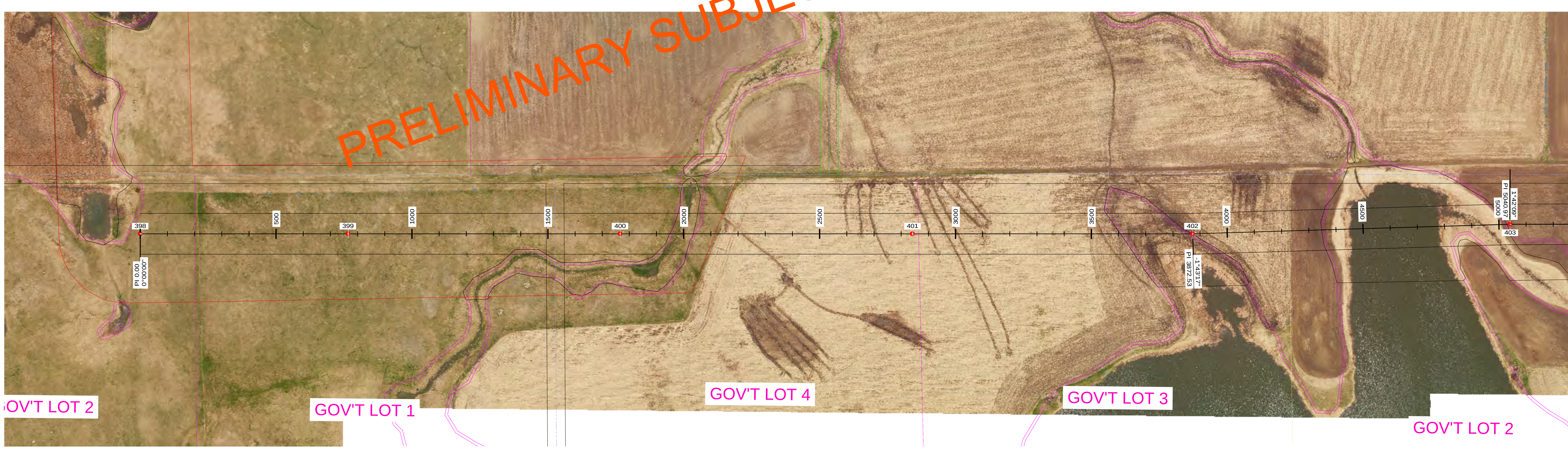
NORTH

DWG. NO.
BSSE-PP-103-5
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





STRS: 398 - 403

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-6
REVISION: L
136508

EXHIBIT 3

STRS: 403 - 408

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS✦E
Big Stone South to Ellendale

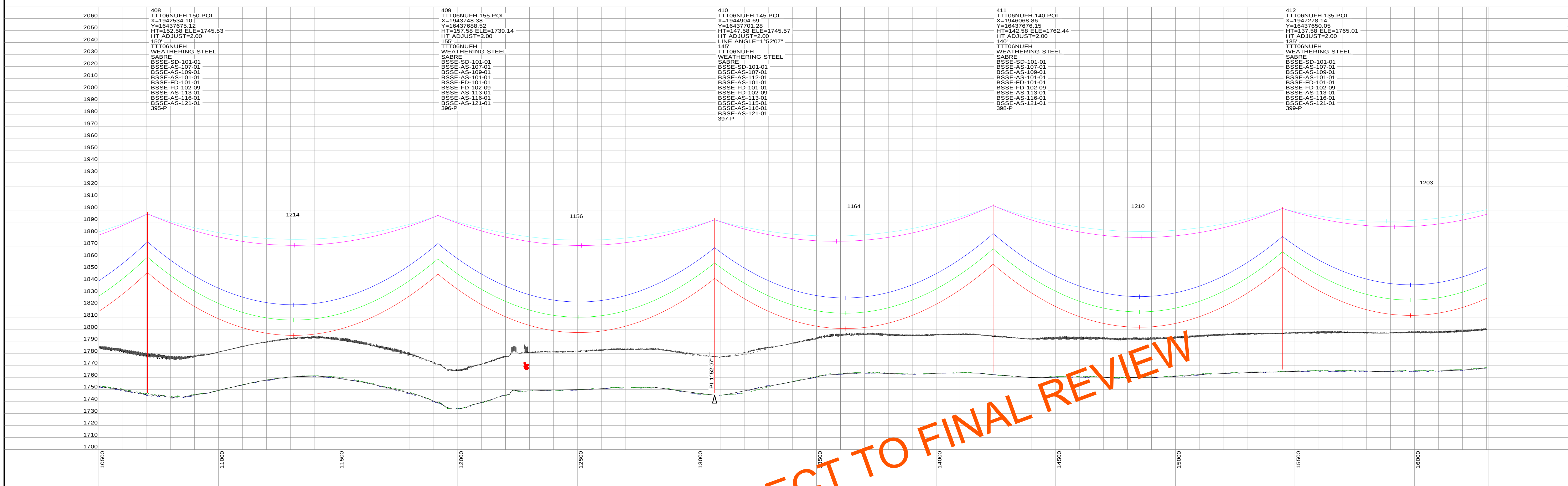
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

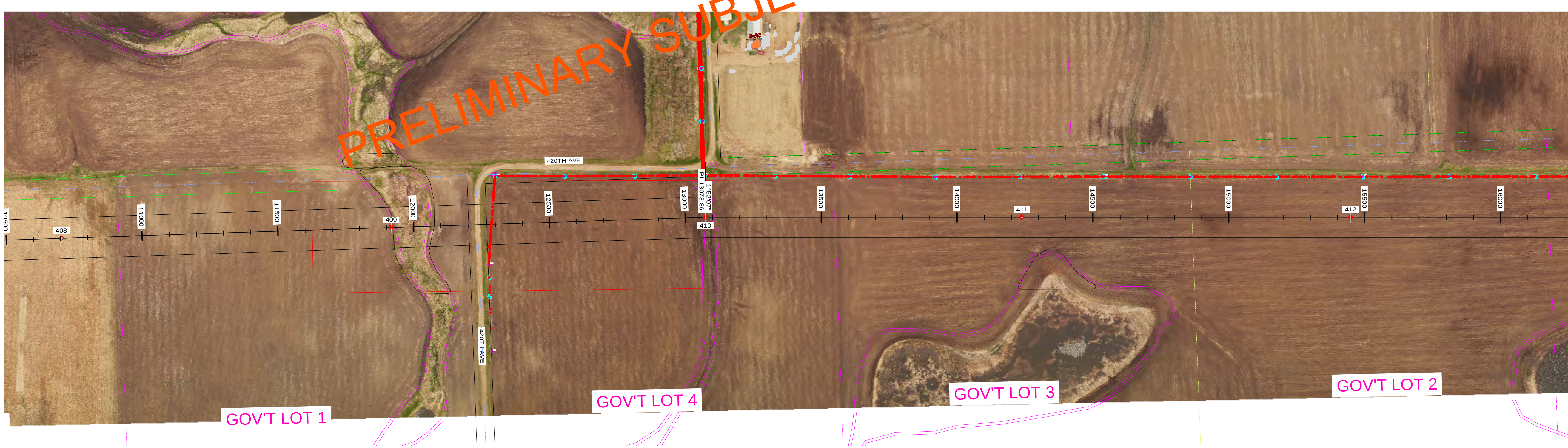
200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-7
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





STRS: 408 - 412

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

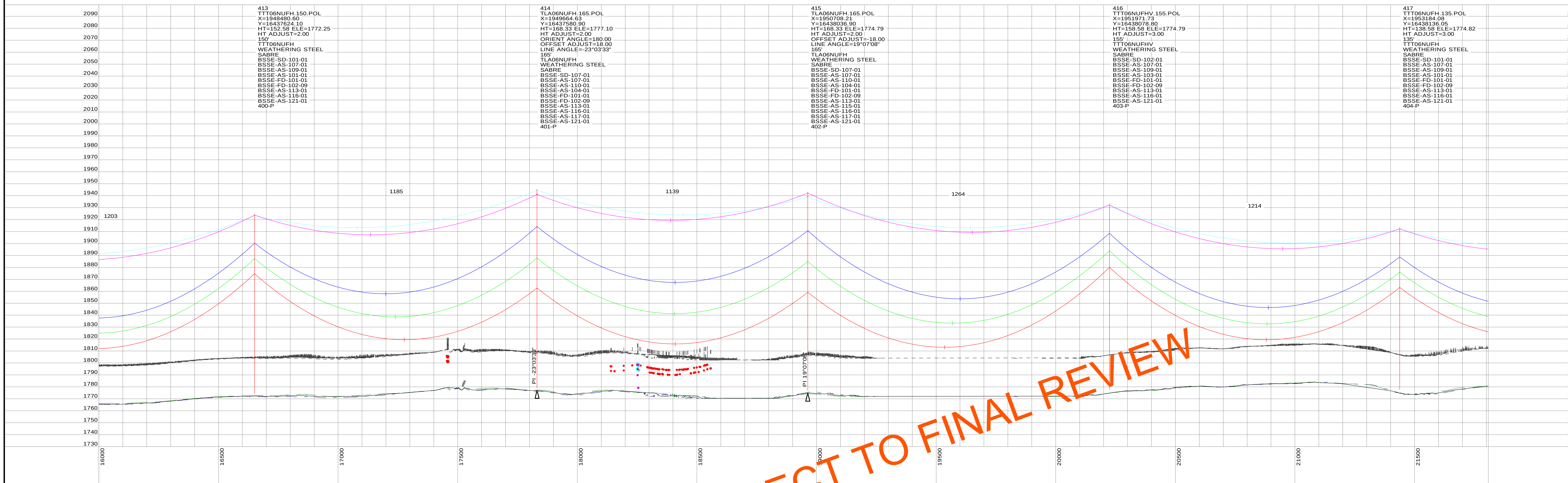
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-8
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 413 - 417

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

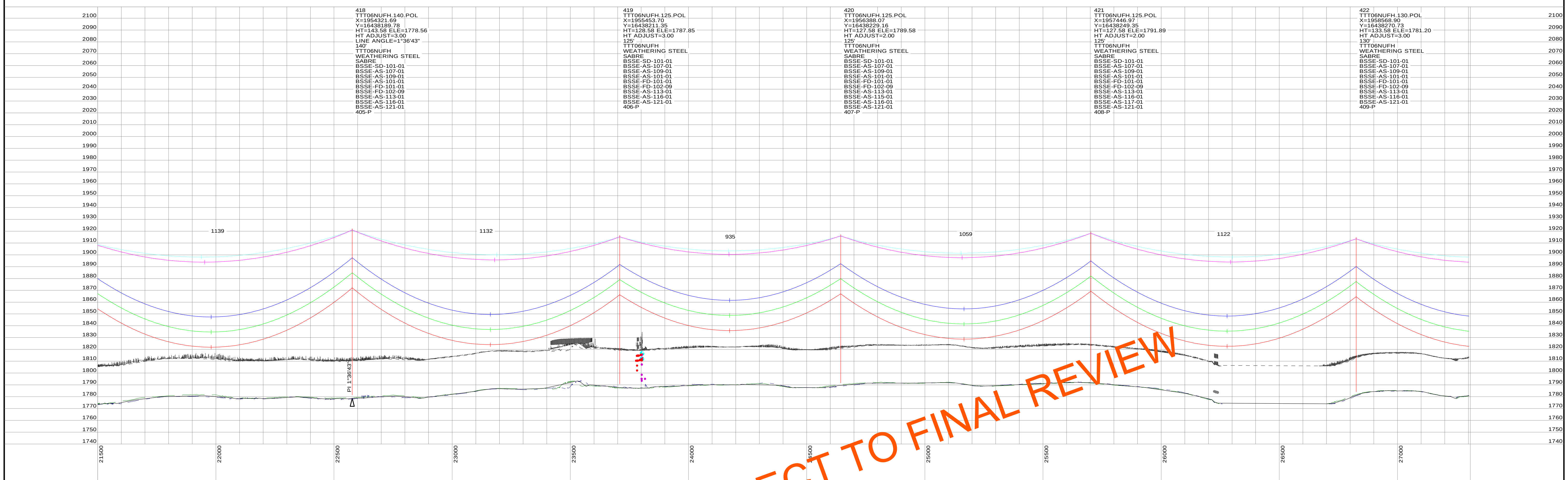
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-9
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 418 - 422

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

	REVISIONS				
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

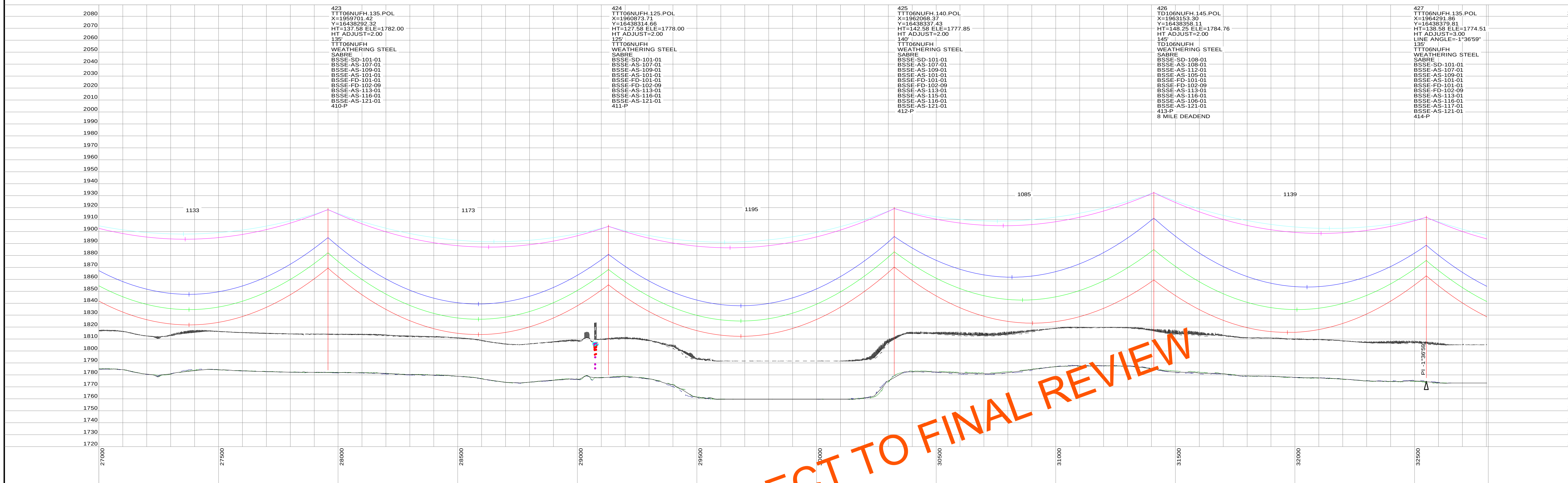
BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-10
REVISION: L
136508

EXHIBIT 3



STRS: 423 - 427

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

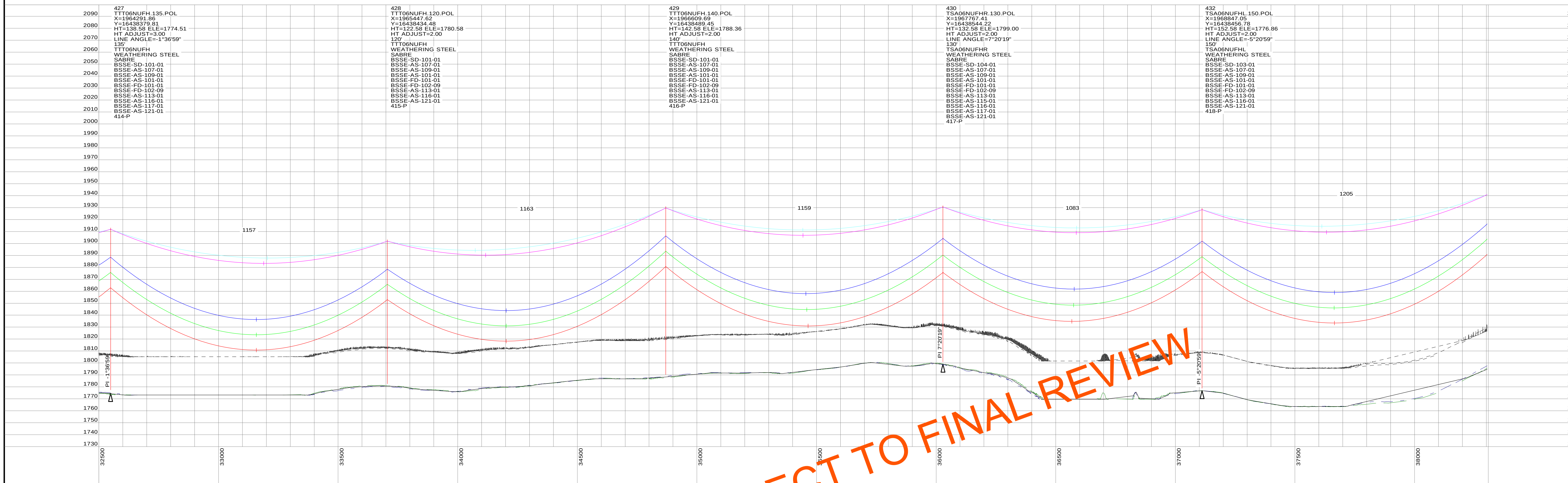
BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-11
REVISION: L
136508

EXHIBIT 3



STRS: 427 - 432

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

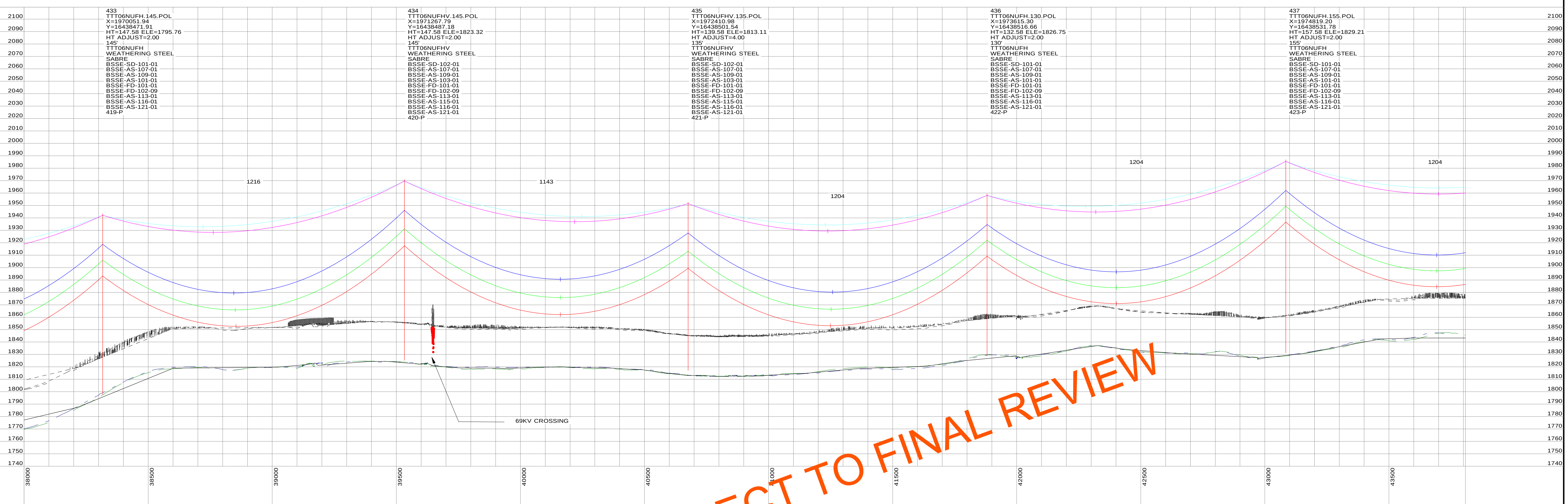
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

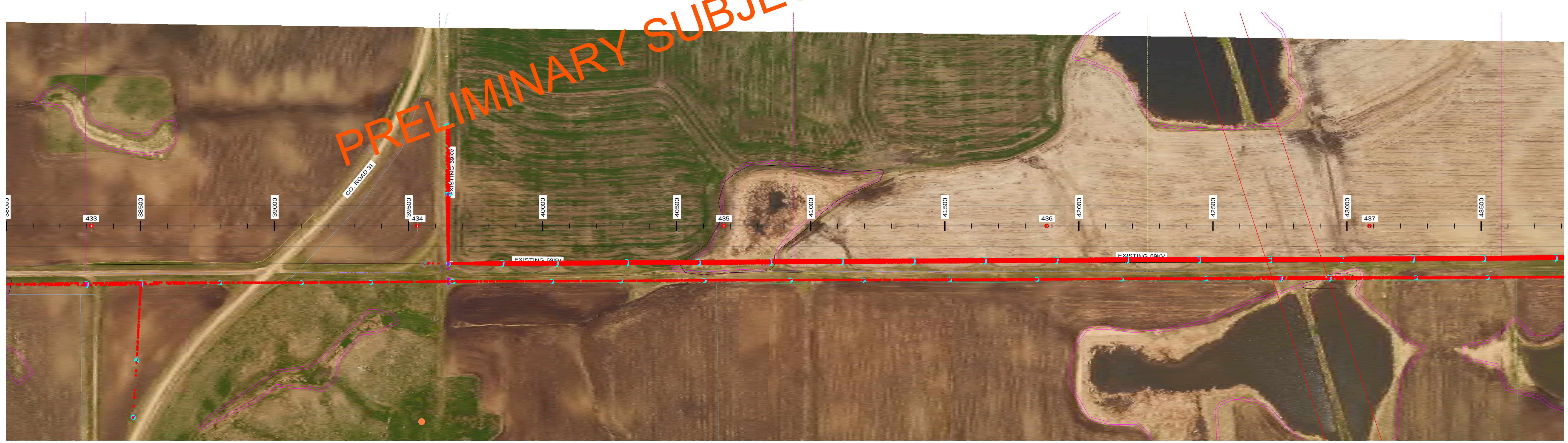
DWG. NO.
BSSE-PP-103-12
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW



STRS: 433 - 437

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

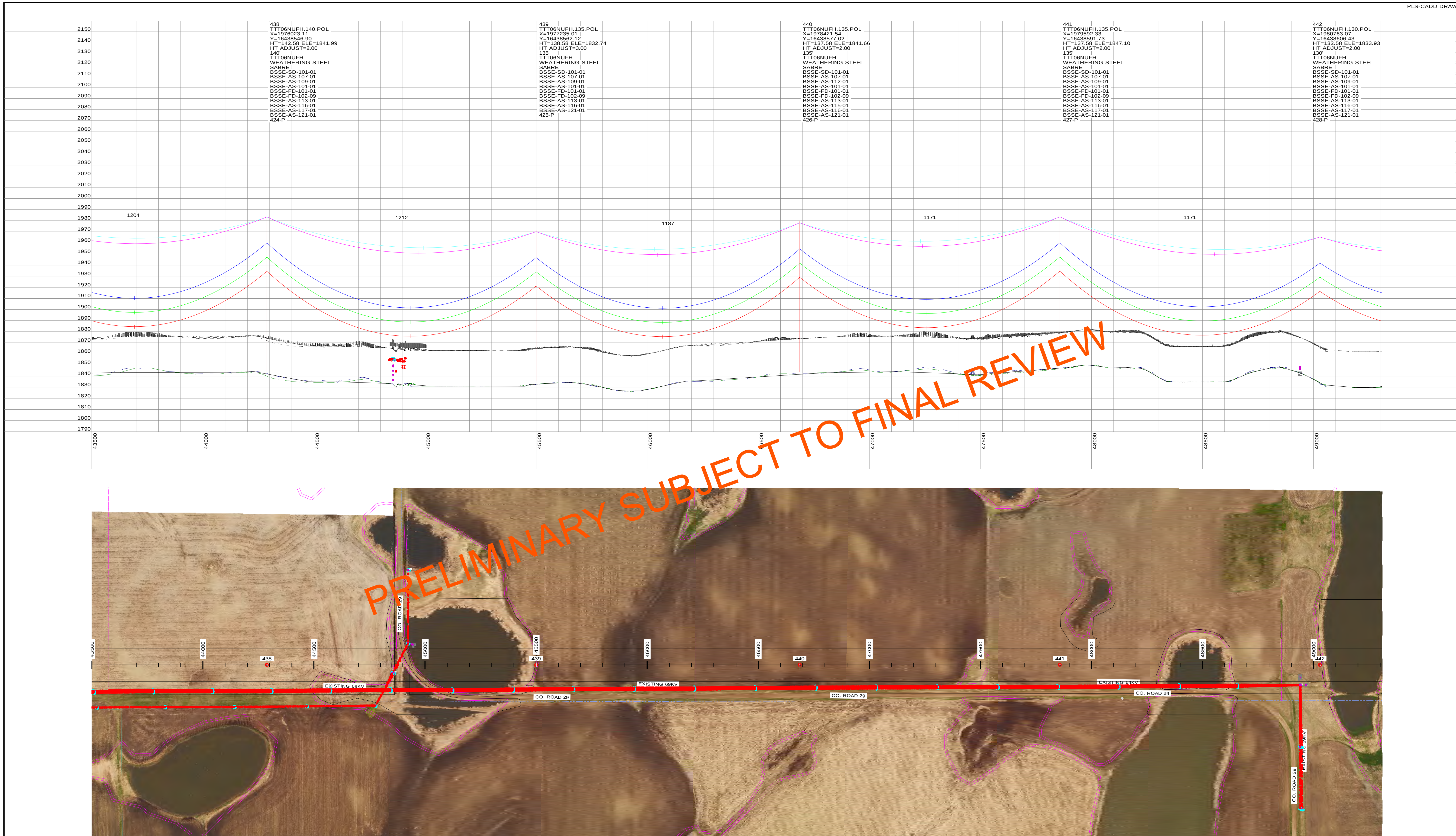
BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-13
REVISION: L
136508

EXHIBIT 3



STRS: 438 - 442

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

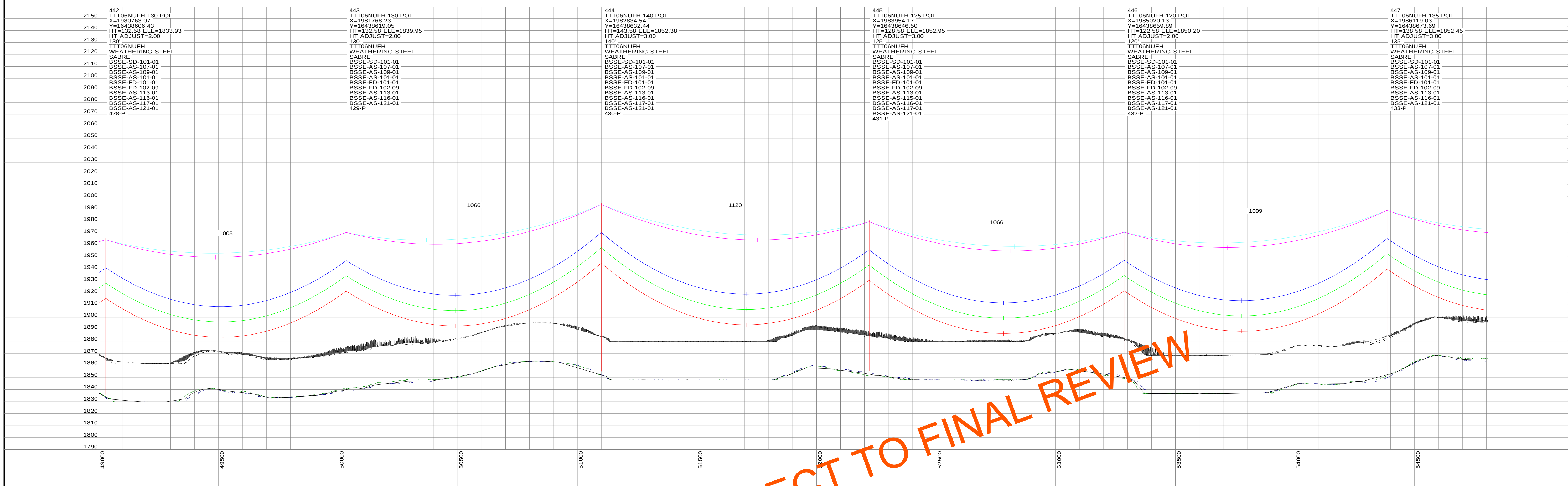
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-14
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 442 - 447

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

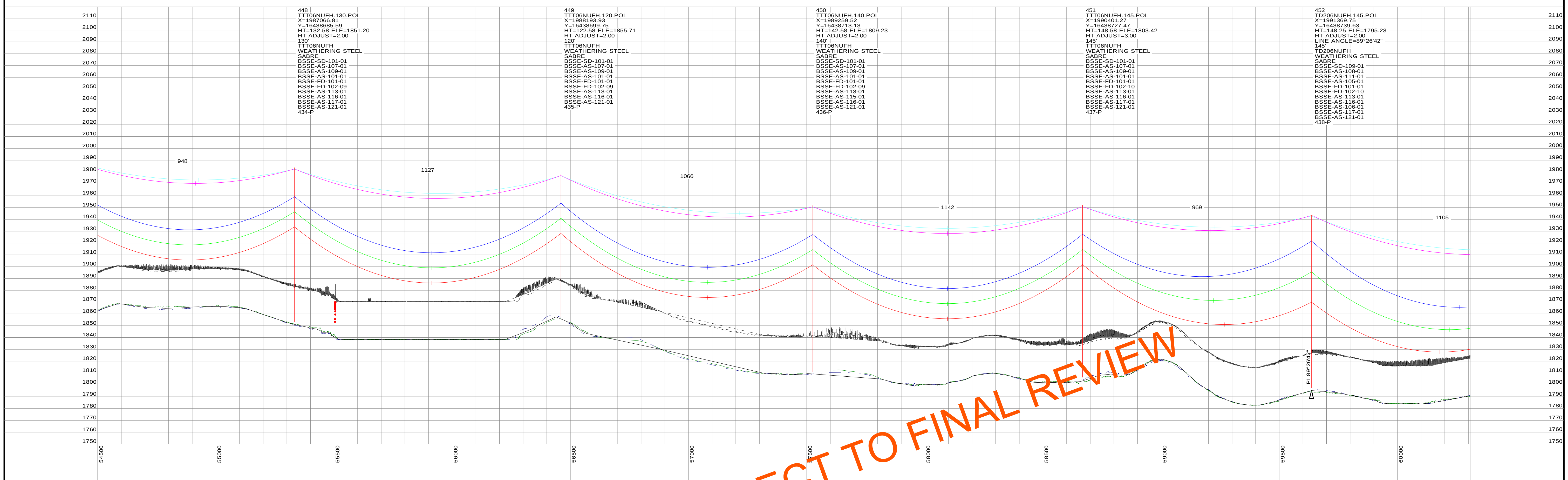
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-15
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 448 - 452

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

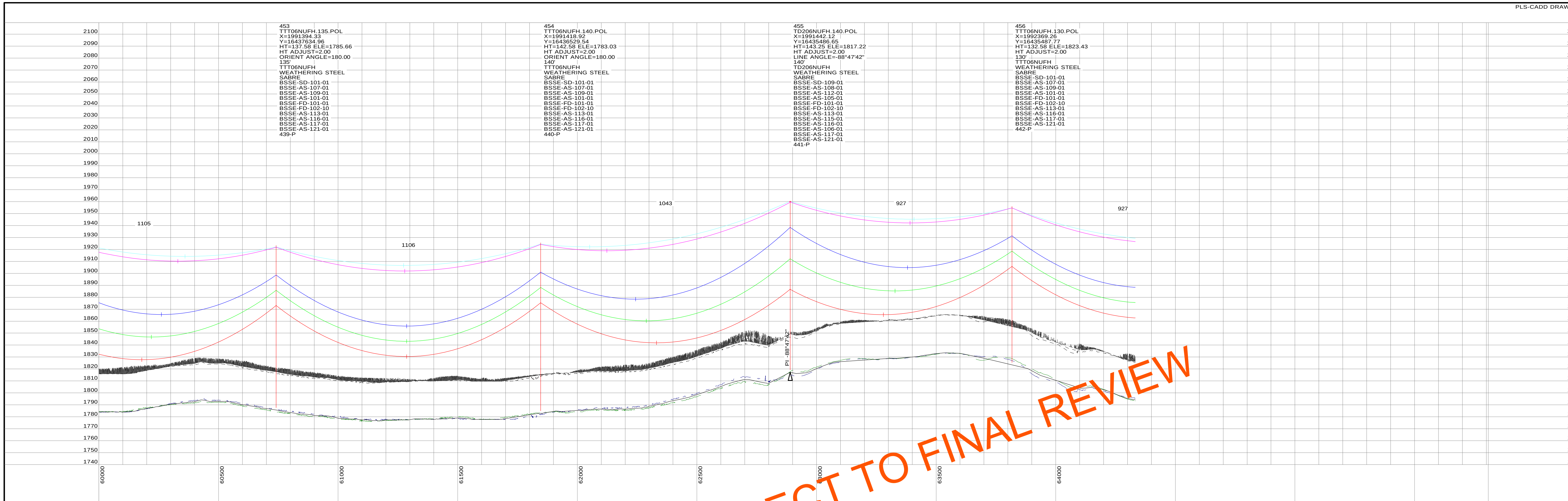
200.0 FT. HORIZ. SCALE

40.0 FT. VERT. SCALE

NORTH

DWG. NO.
BSSE-PP-103-16
REVISION: L
136508

EXHIBIT 3



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 453 - 456

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

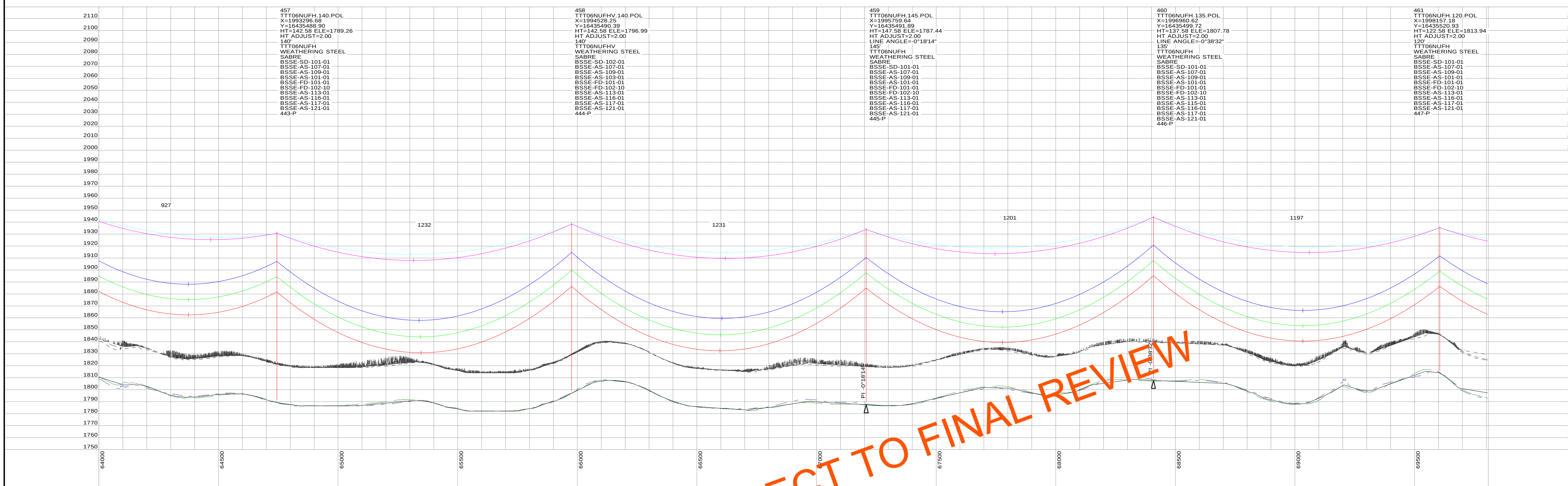
BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-17
REVISION: L
136508

EXHIBIT 3



STRS: 457 - 461

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

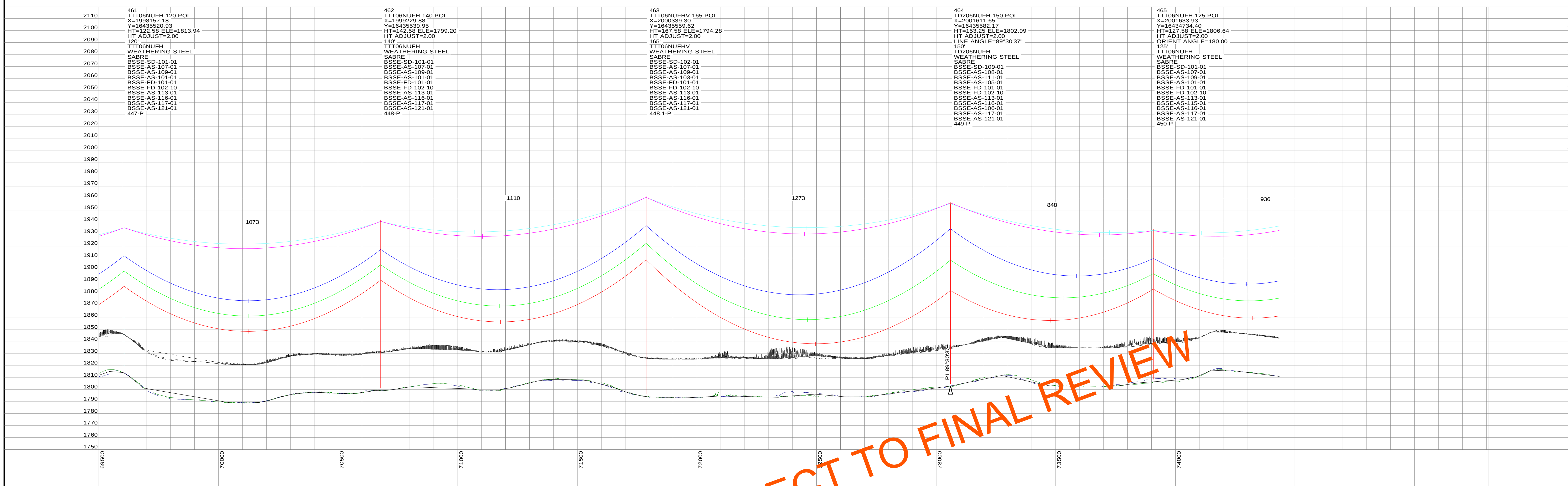
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

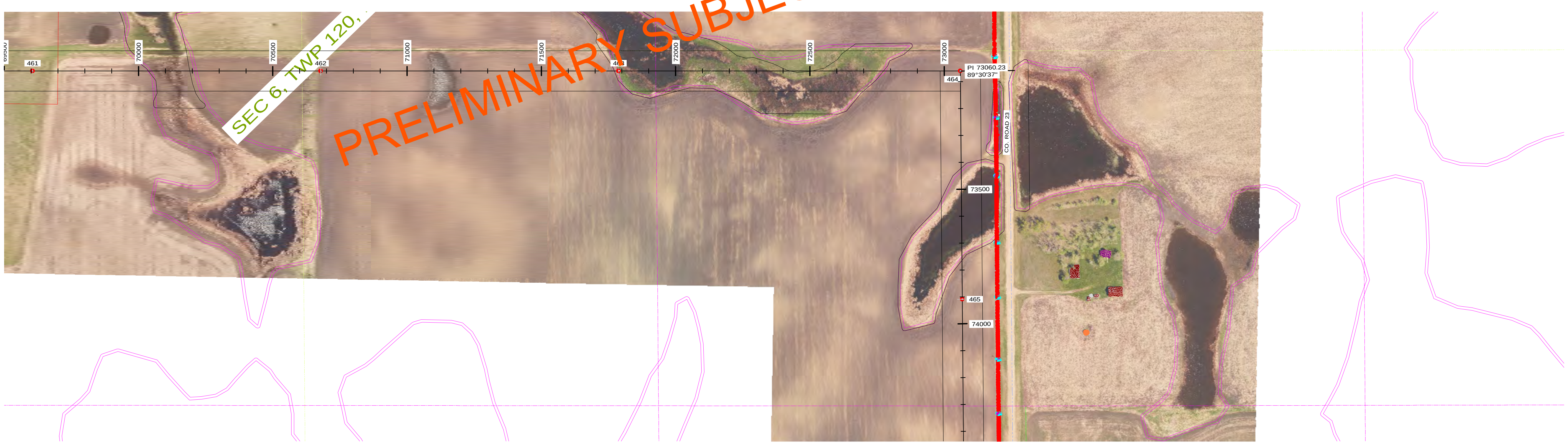
200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-18
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





STRS: 461 - 465

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

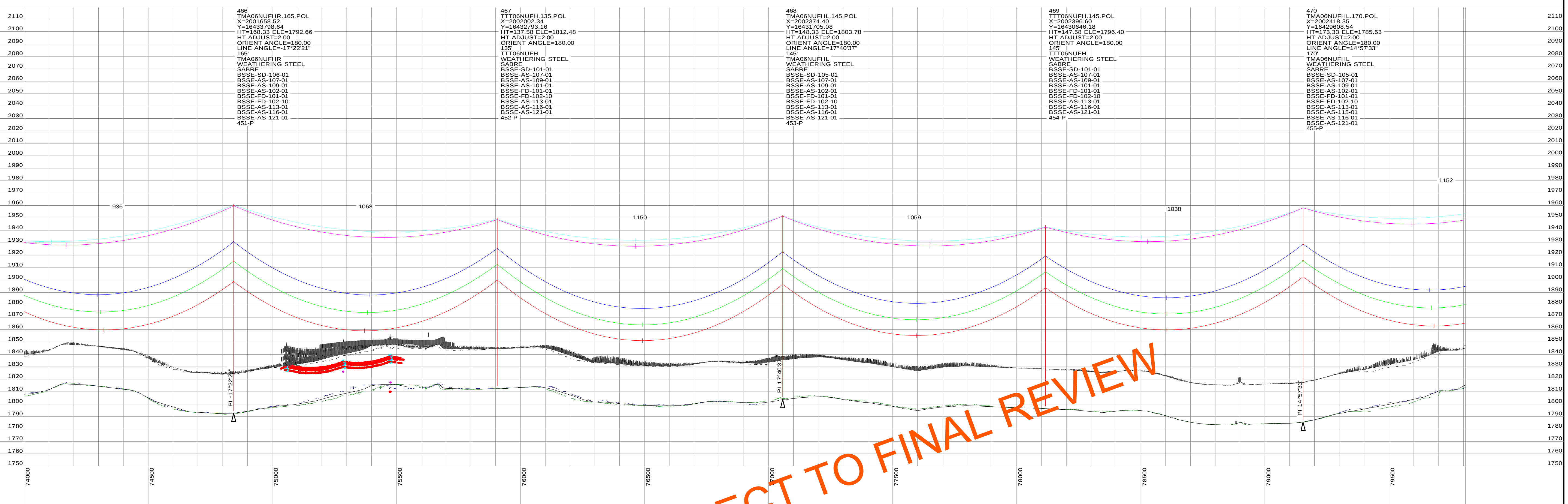
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

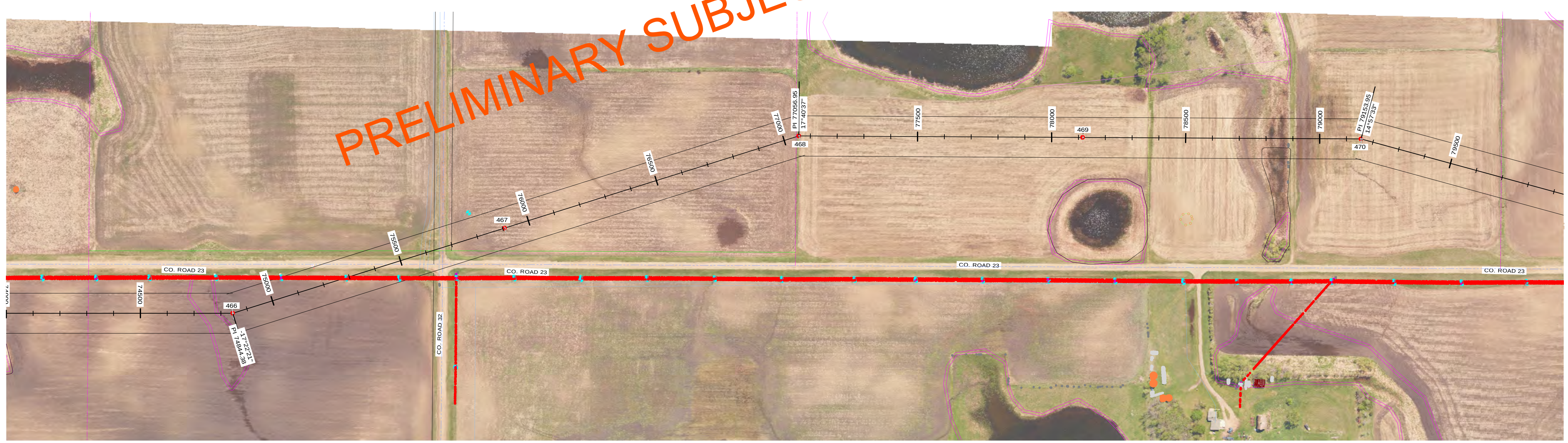
DWG. NO.
BSSE-PP-103-19
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW



STRS: 466 - 470

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

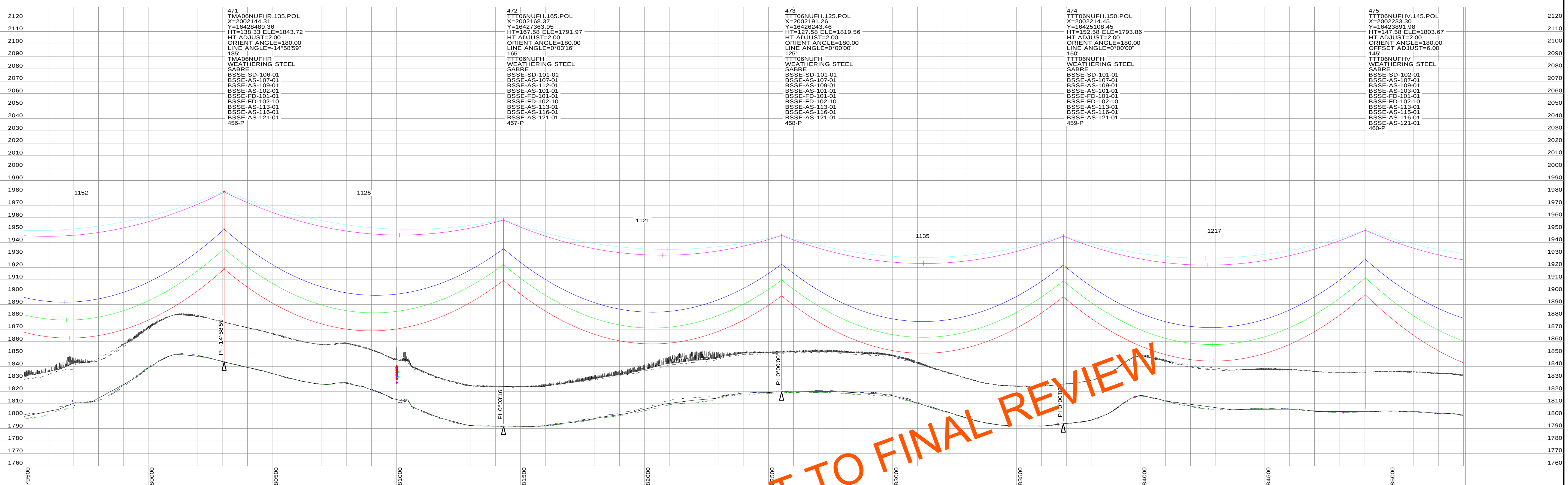
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

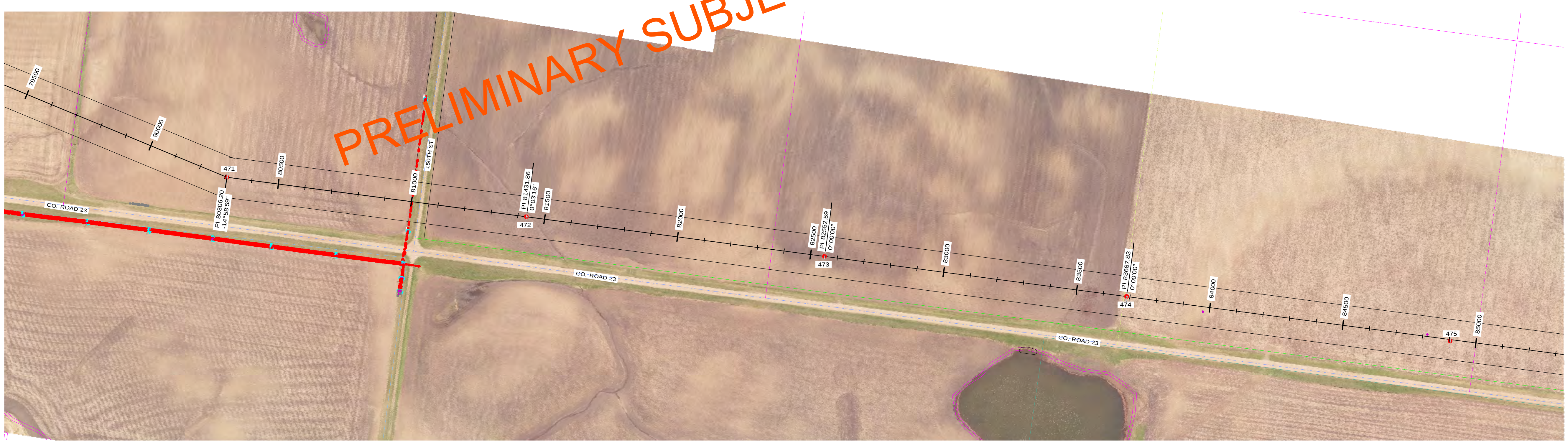
DWG. NO.
BSSE-PP-103-20
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW



STRS: 471 - 475

20160505 PRELIMINARY SUBJECT TO FINAL REVIEW

POWER ENGINEERS

REVISIONS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE Big Stone South to Ellendale

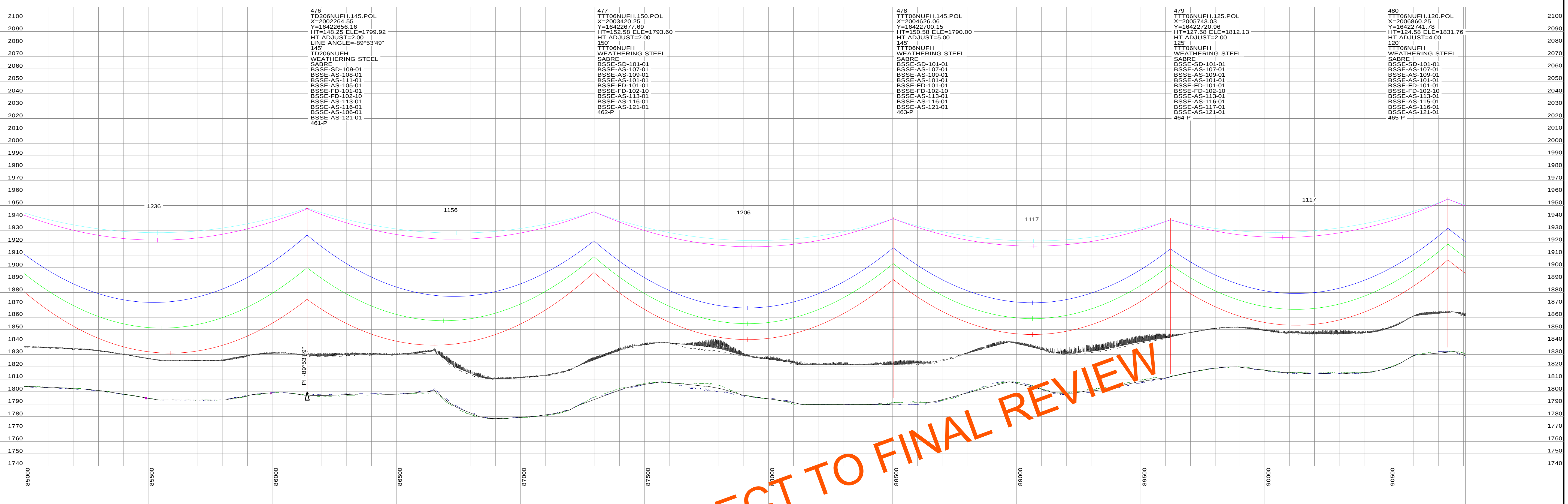
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

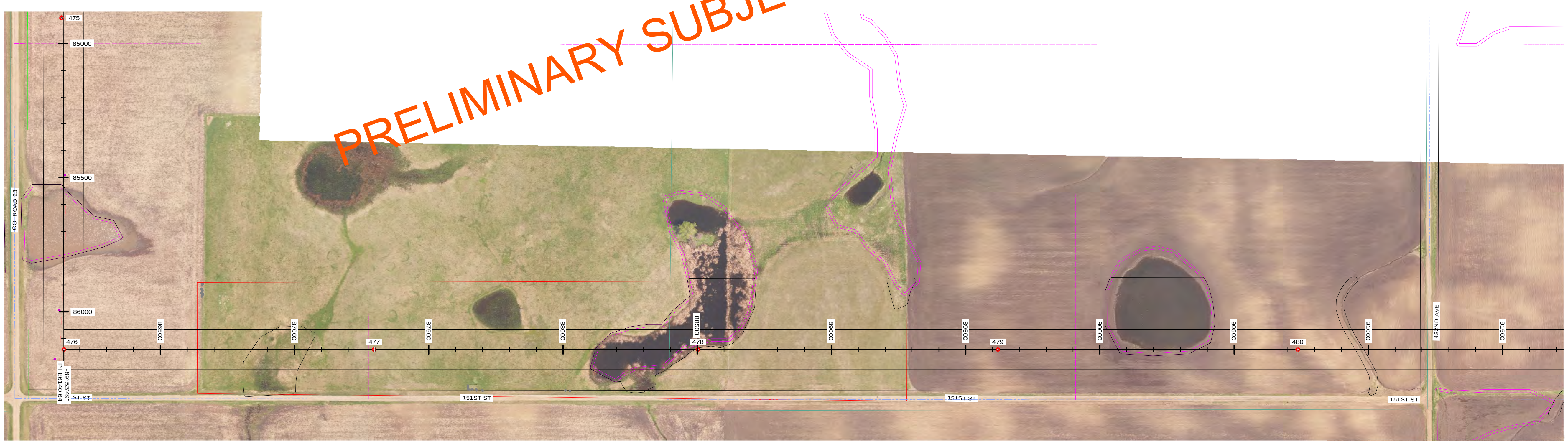
200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-21
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





STRS: 476 - 480

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE

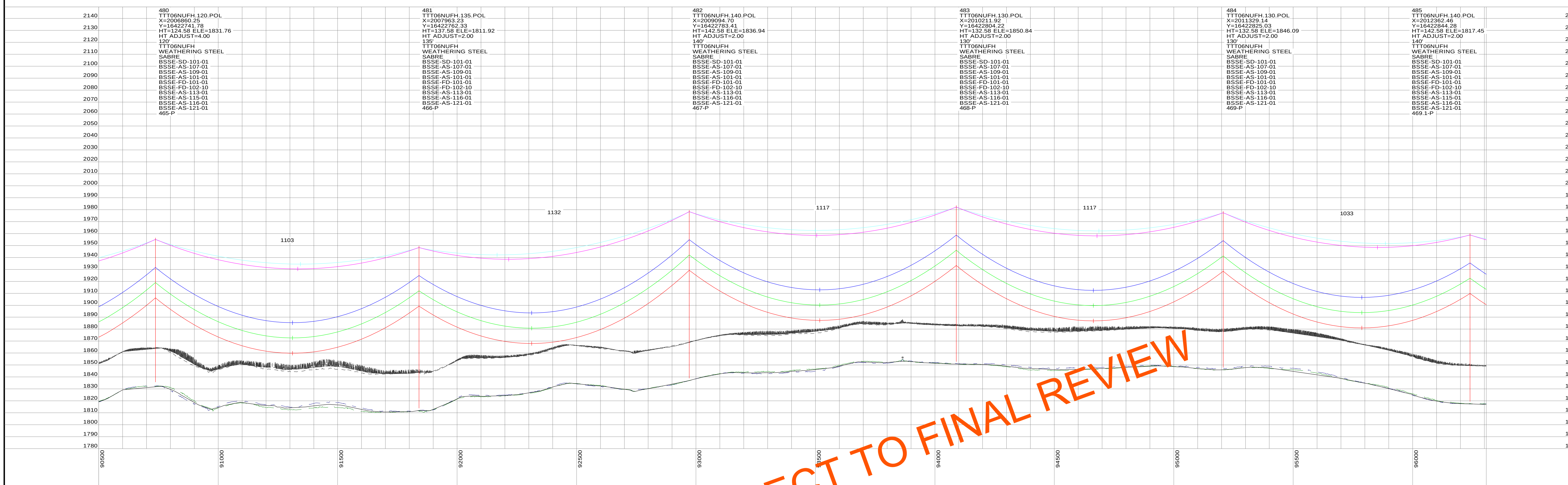
40.0 FT. VERT. SCALE

NORTH

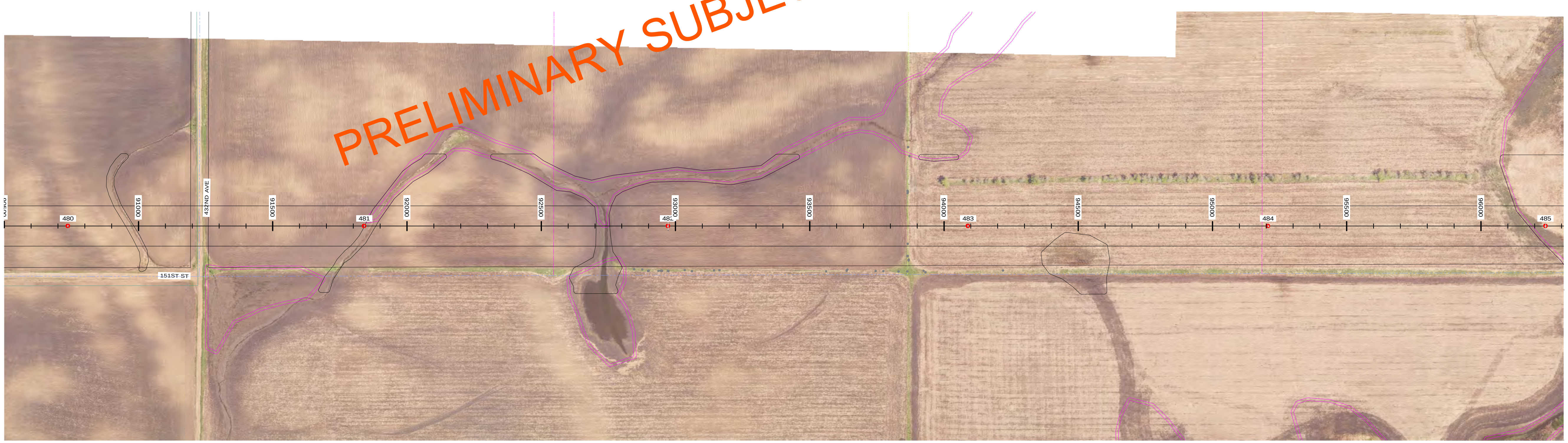
DWG. NO.
BSSE-PP-103-22
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW



STRS: 480 - 485

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

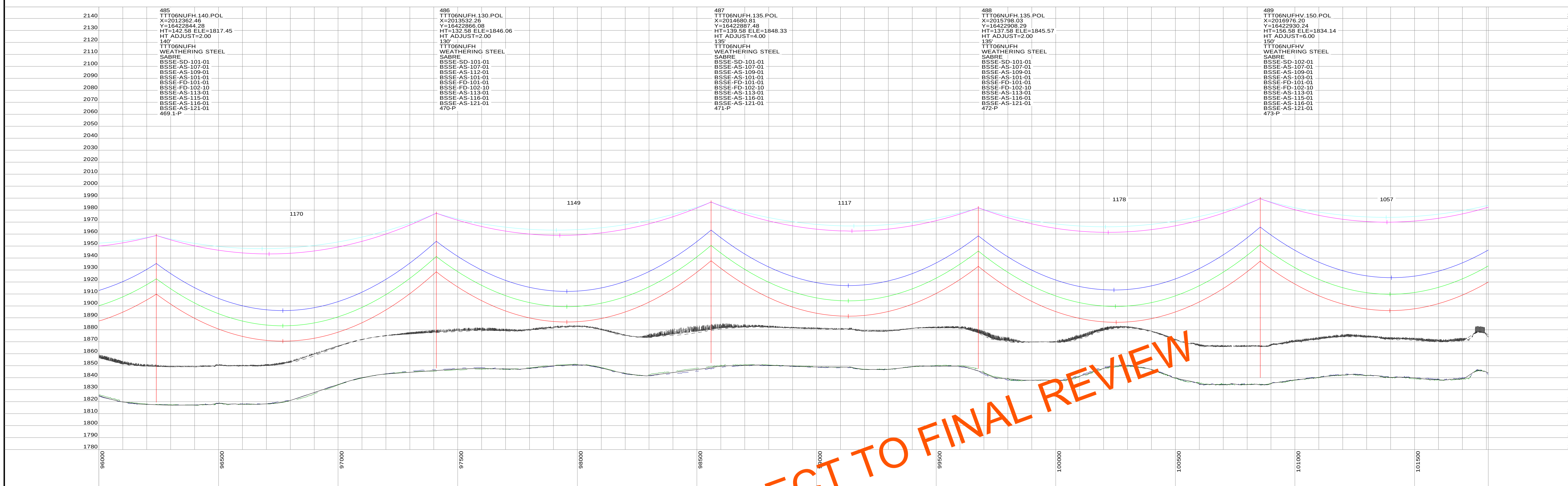
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

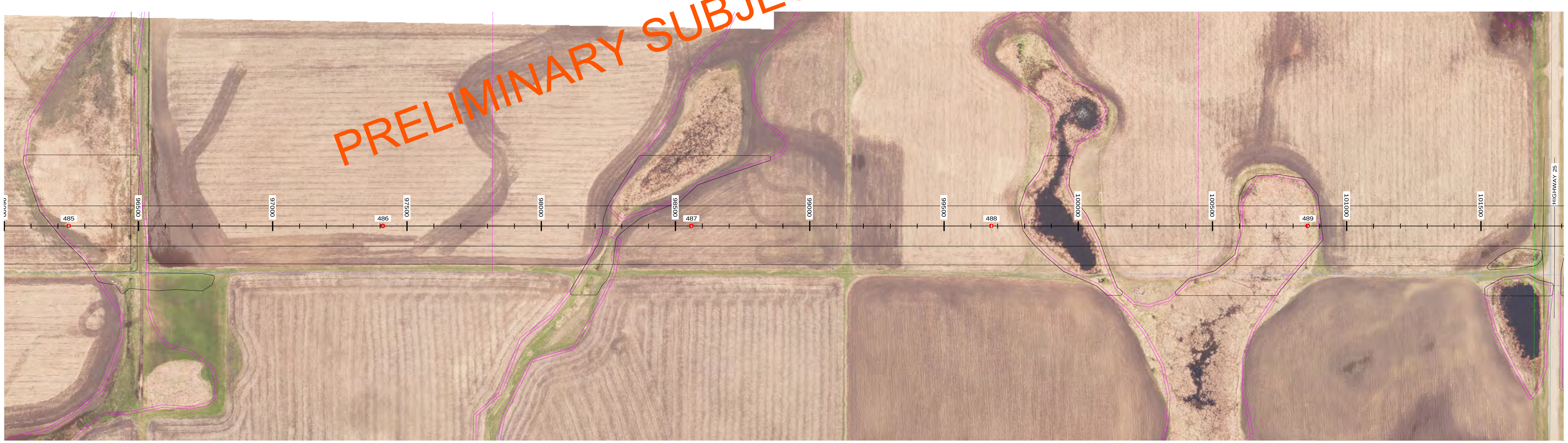
DWG. NO.
BSSE-PP-103-23
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW



STRS: 485 - 489

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

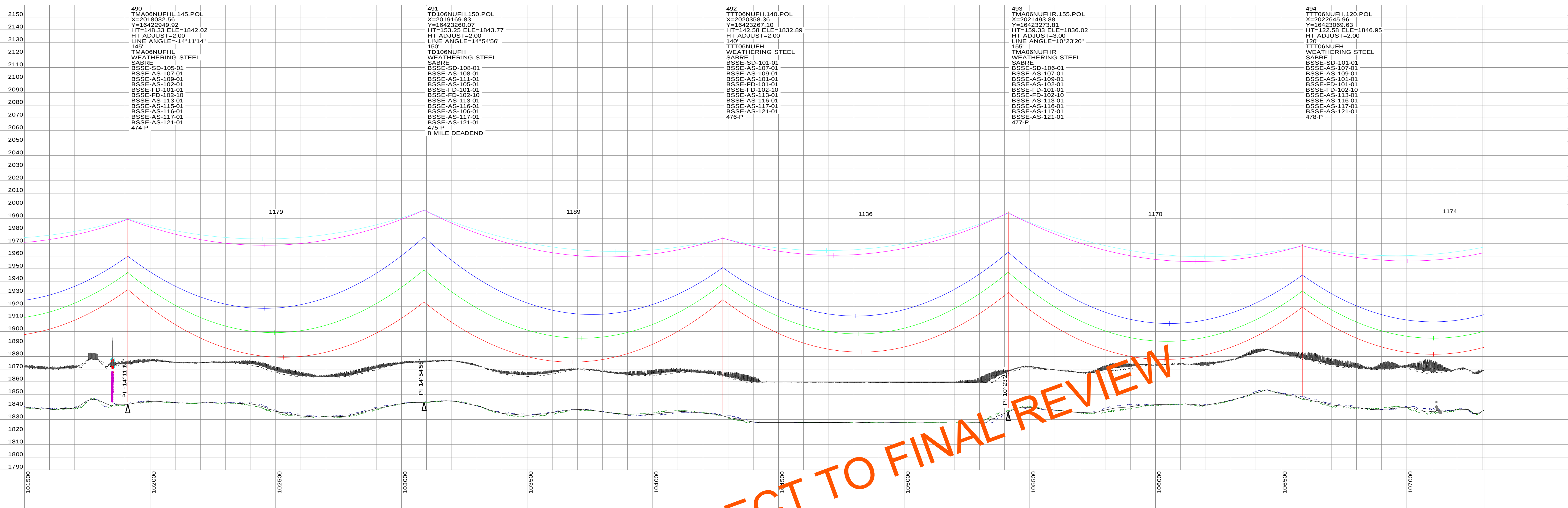
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-24
REVISION: L
136508

EXIBIT 3

PLS-CADD DRAWING



STRS: 490 - 494

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

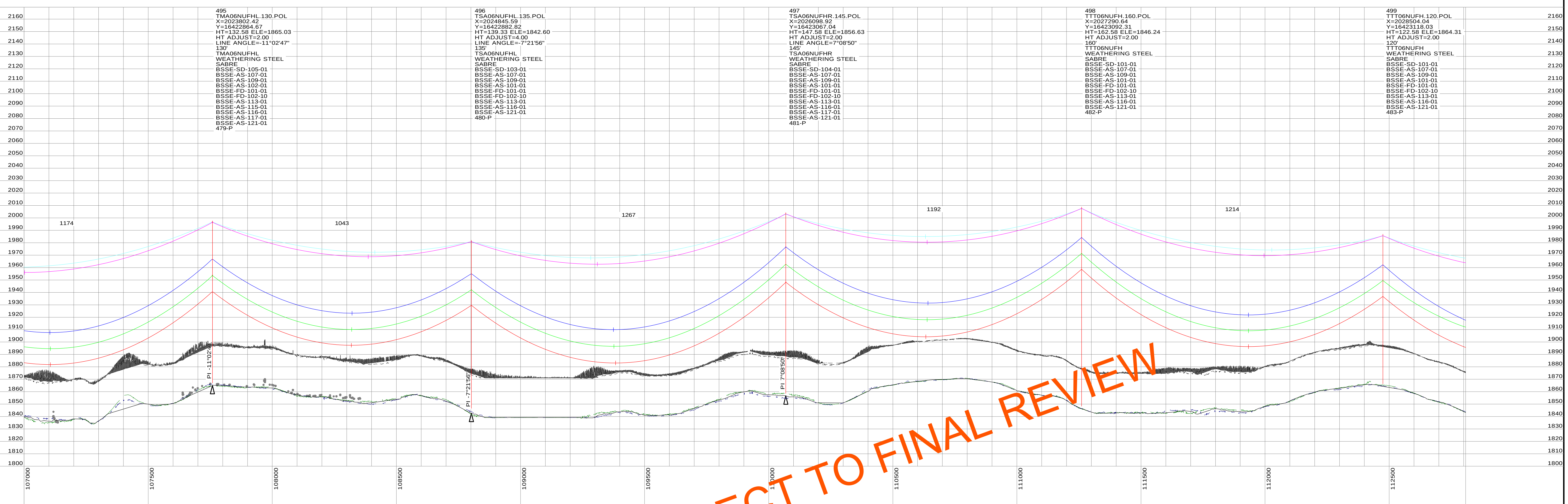
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-25
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 495 - 499

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

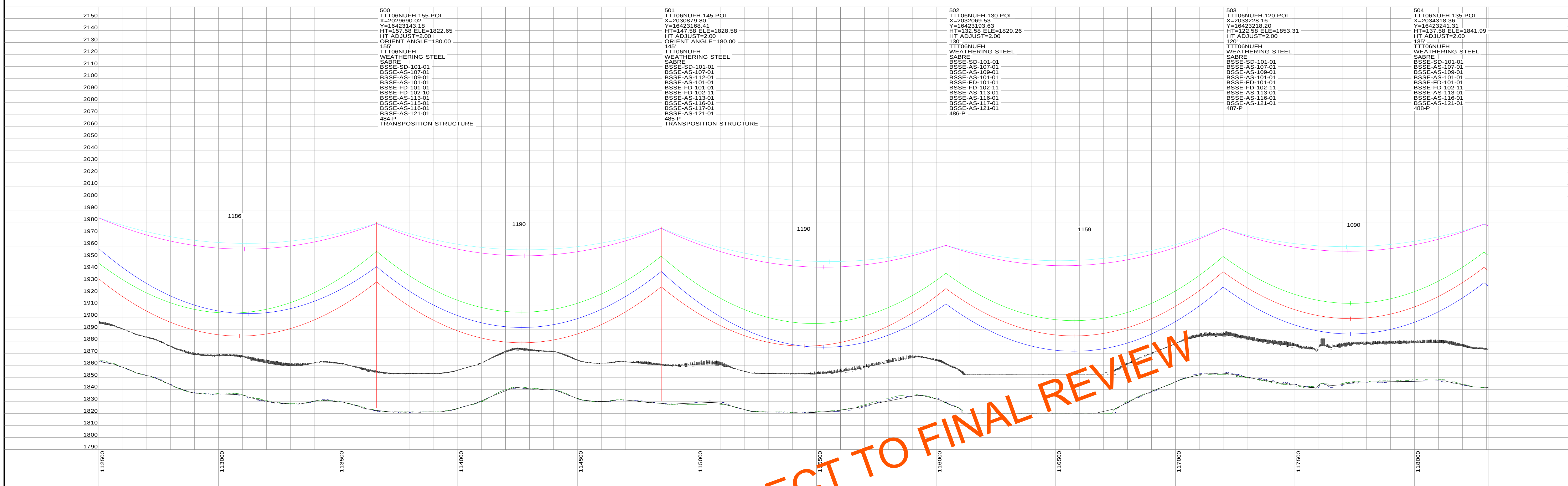
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

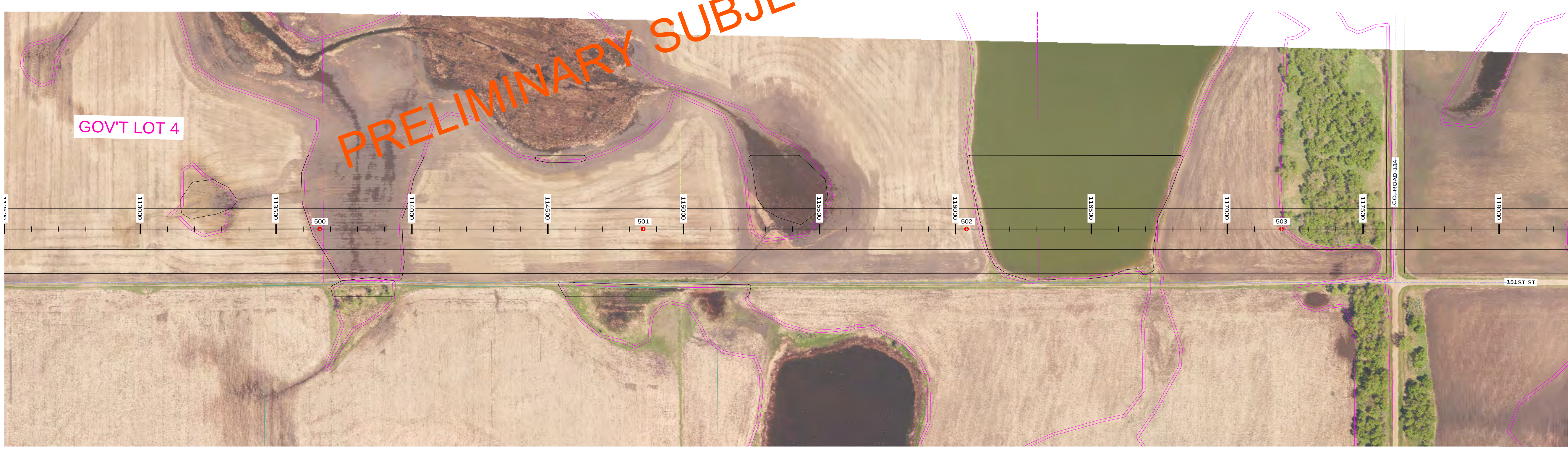
200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-26
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





STRS: 500 - 504

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

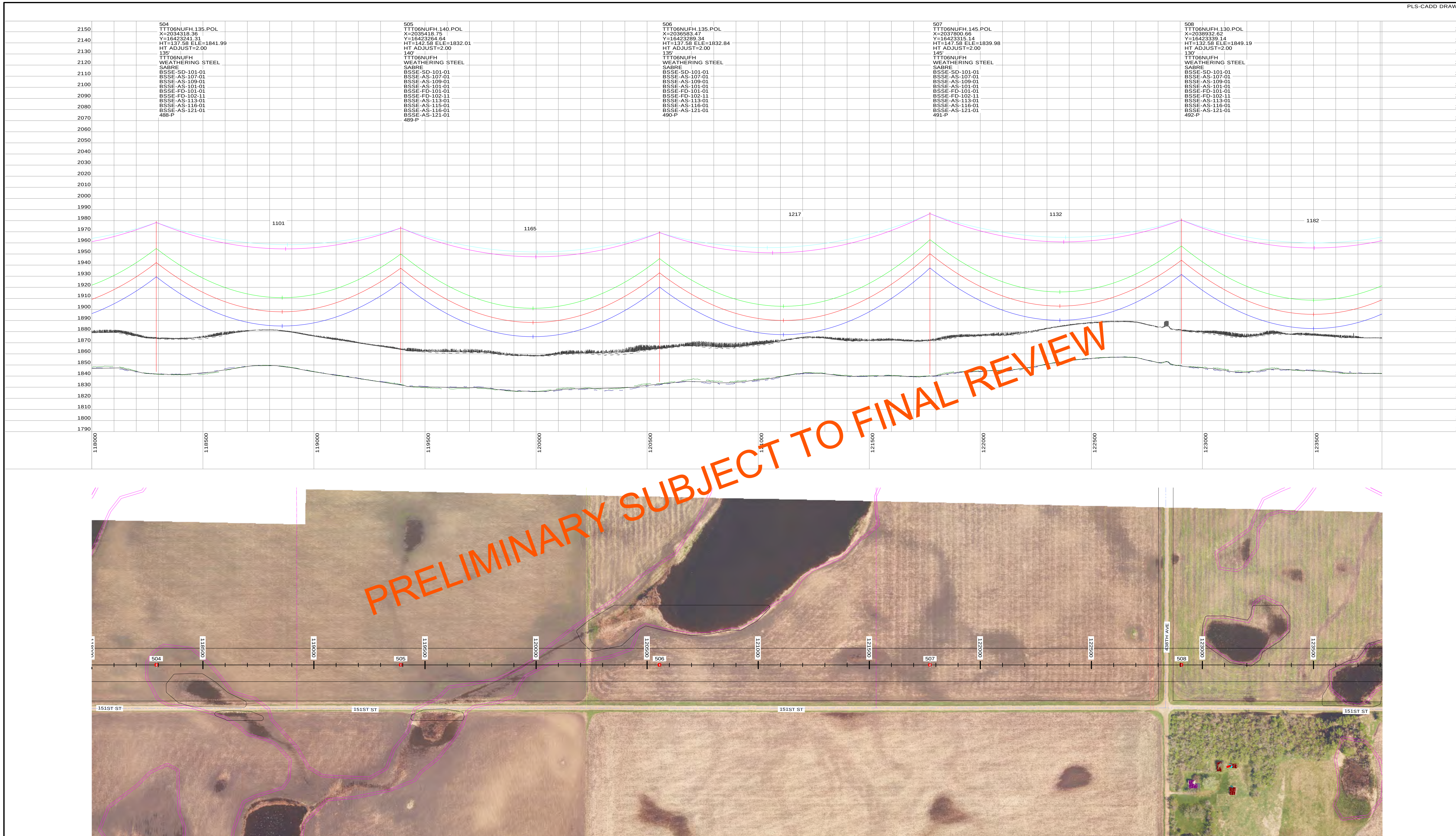
BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-27
REVISION: L
136508

EXHIBIT 3



STRS: 504 - 508

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-28
REVISION: L
136508

EXHIBIT 3

STRS: 509 - 513

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

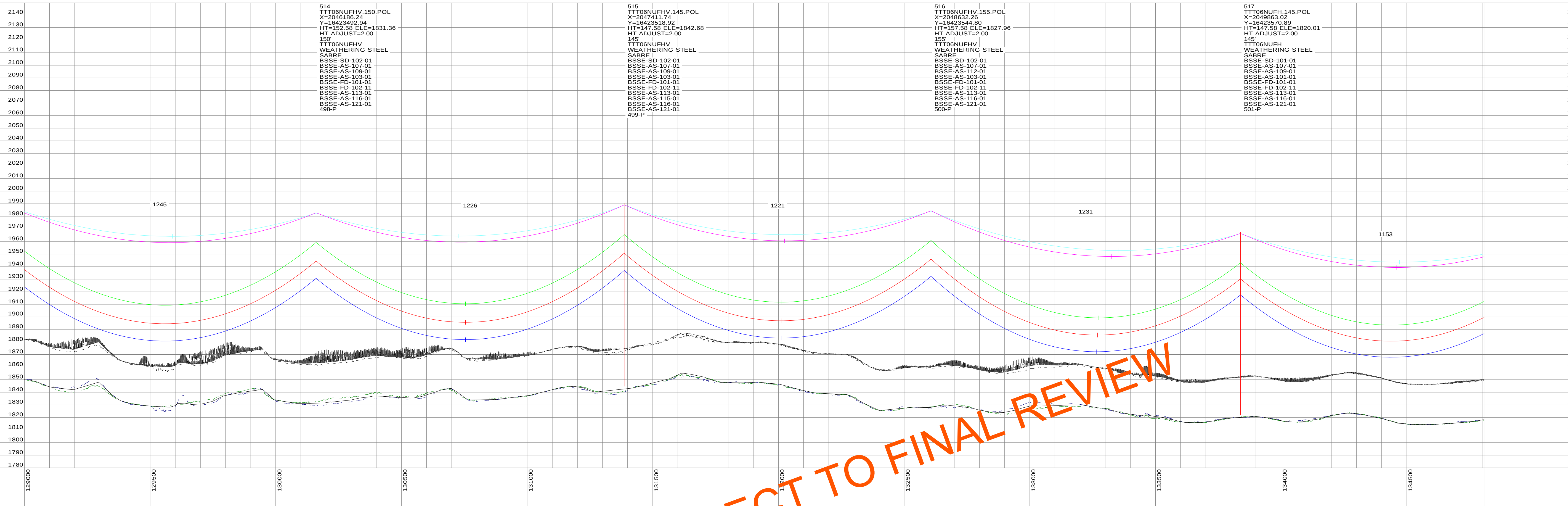
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-29
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 514 - 517

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

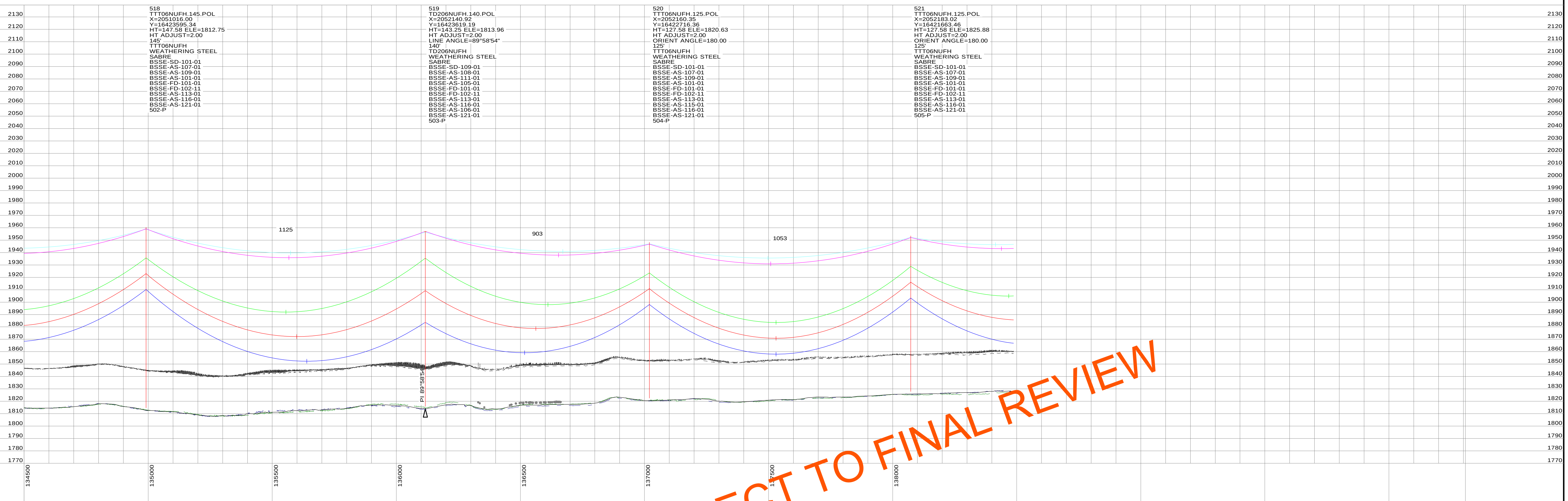
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-30
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 518 - 521

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

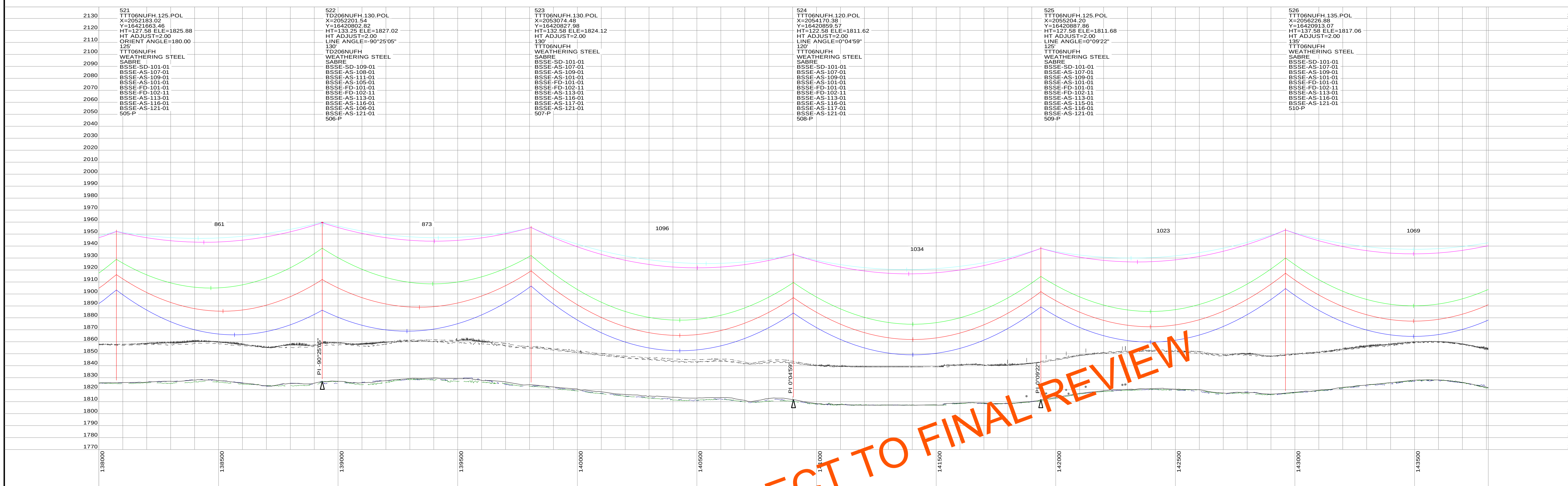
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-31
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 521 - 526

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E Big Stone South to Ellendale

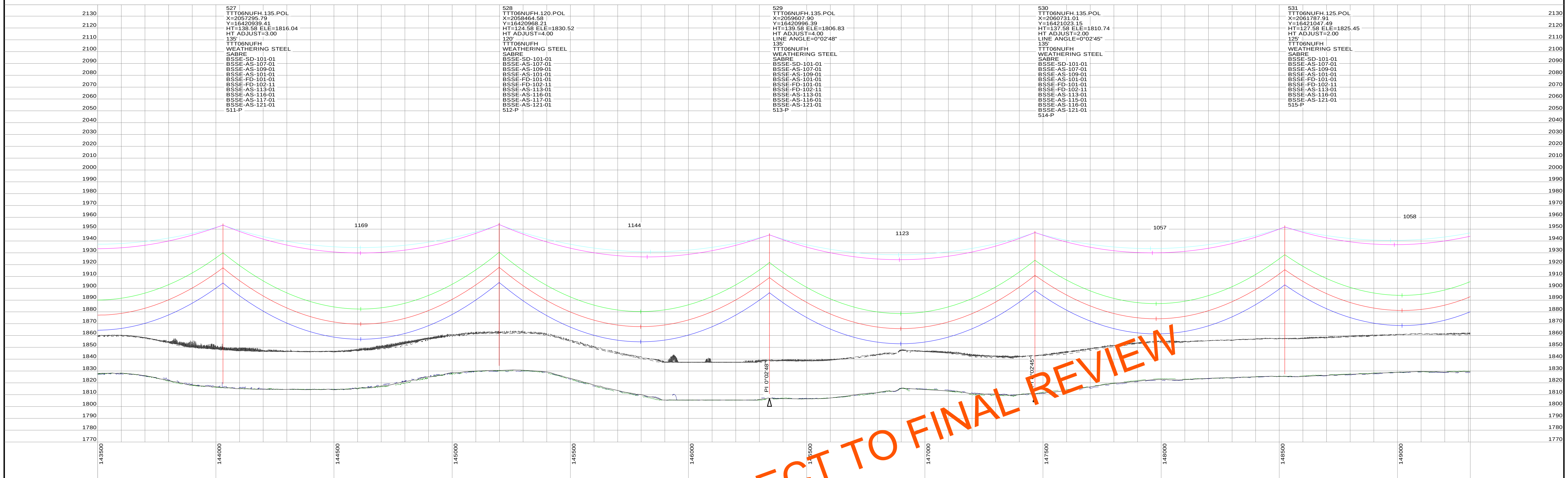
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

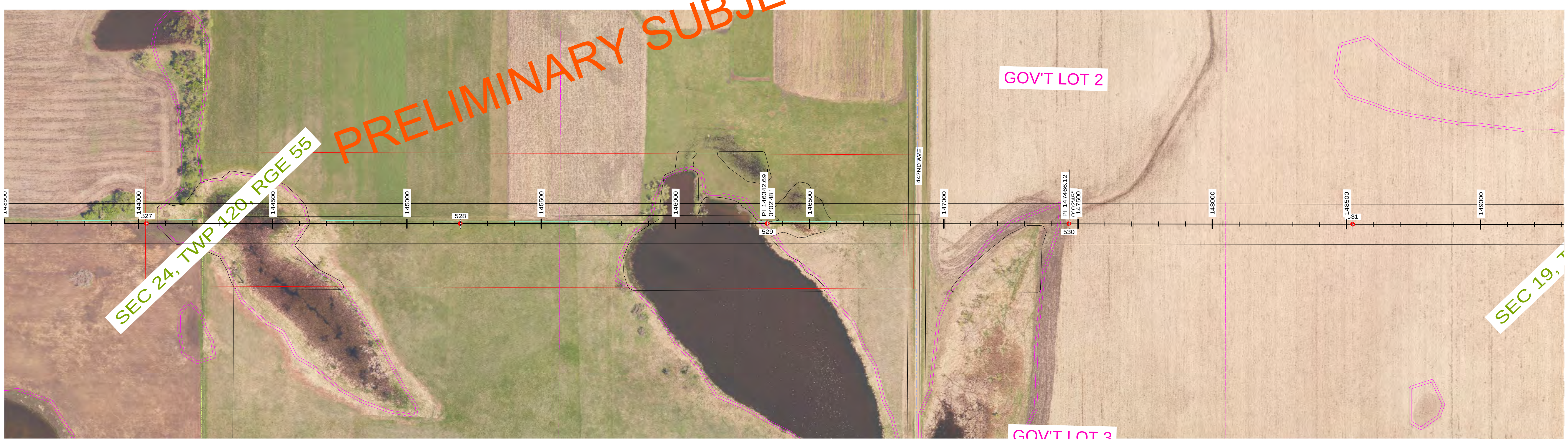
200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-32
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING





PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 527 - 531

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

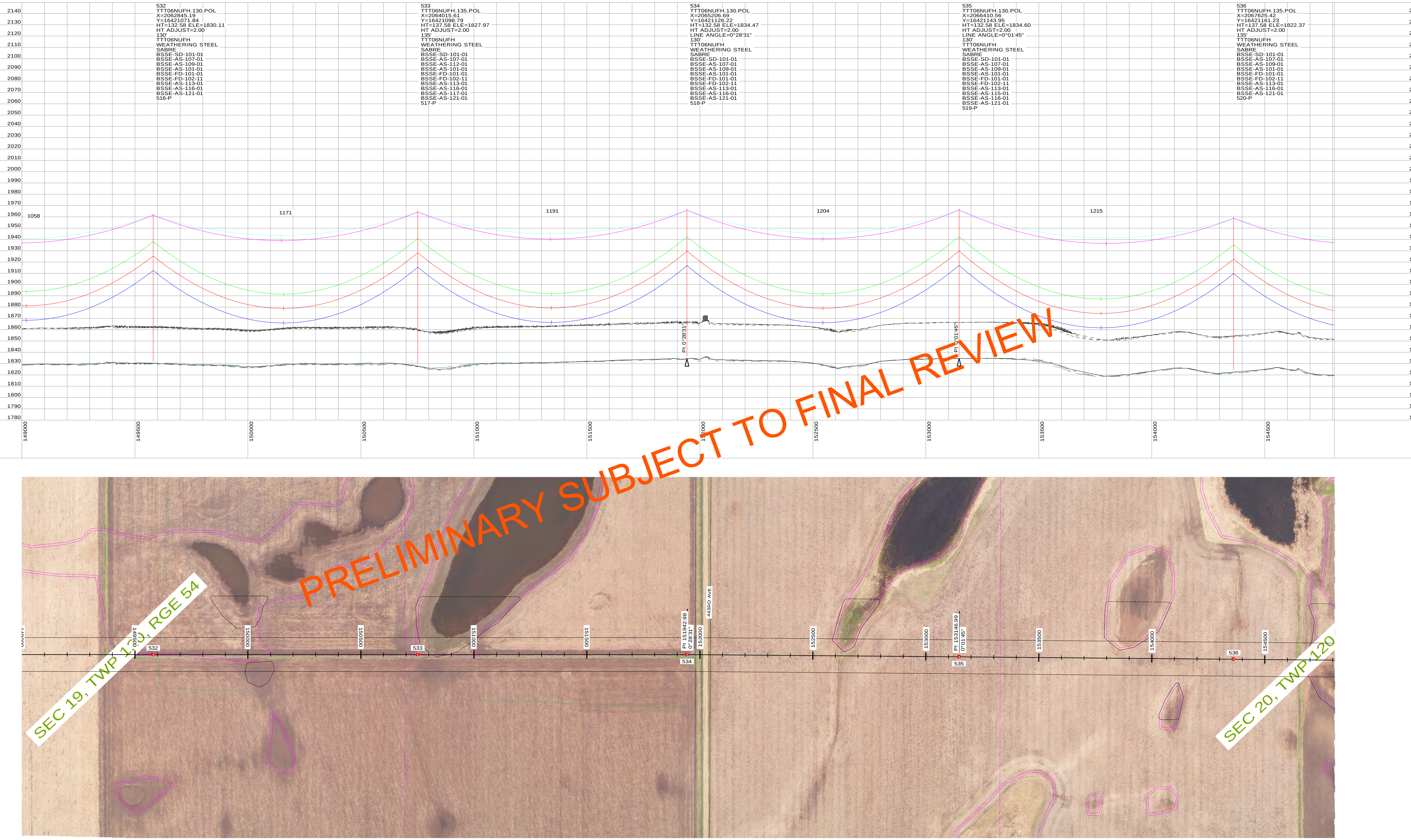
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-33
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 532 - 536

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

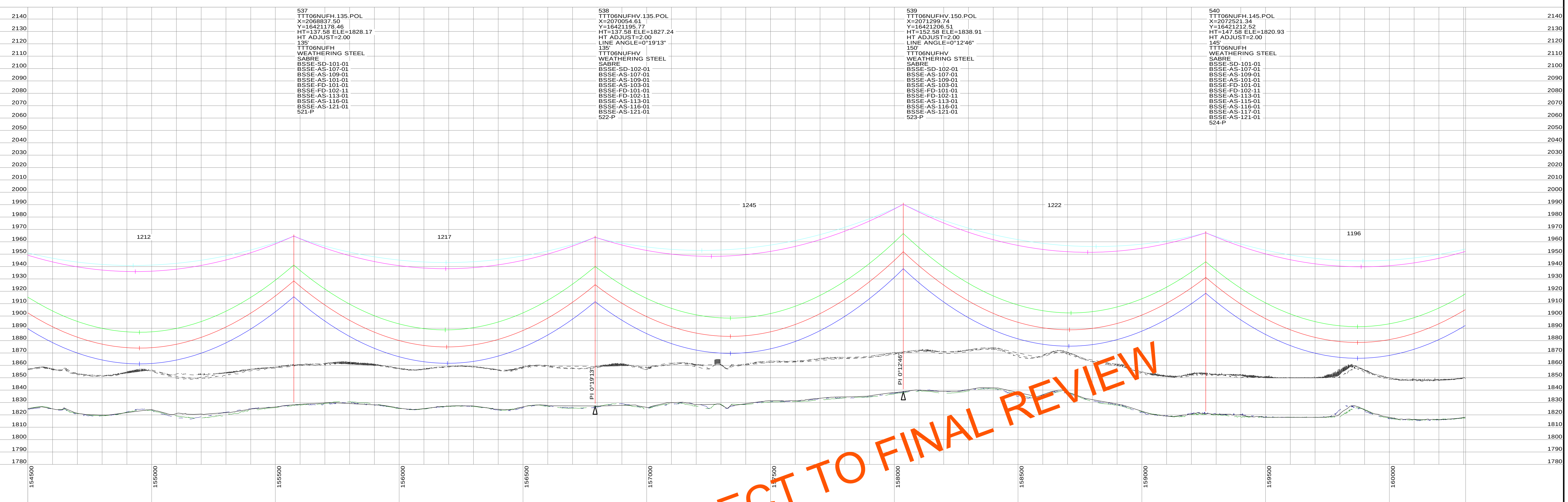
BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-34
REVISION: L
136508

EXHIBIT 3



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 537 - 540

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE

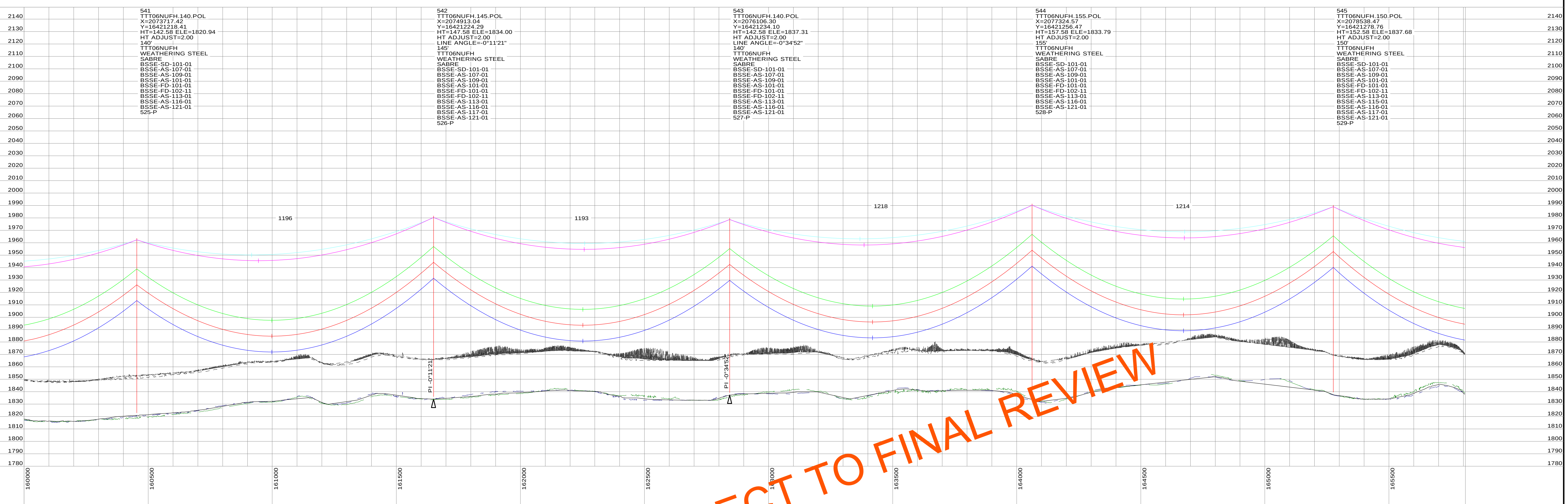
40.0 FT. VERT. SCALE

NORTH

DWG. NO.
BSSE-PP-103-35
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



STRS: 541 - 545

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

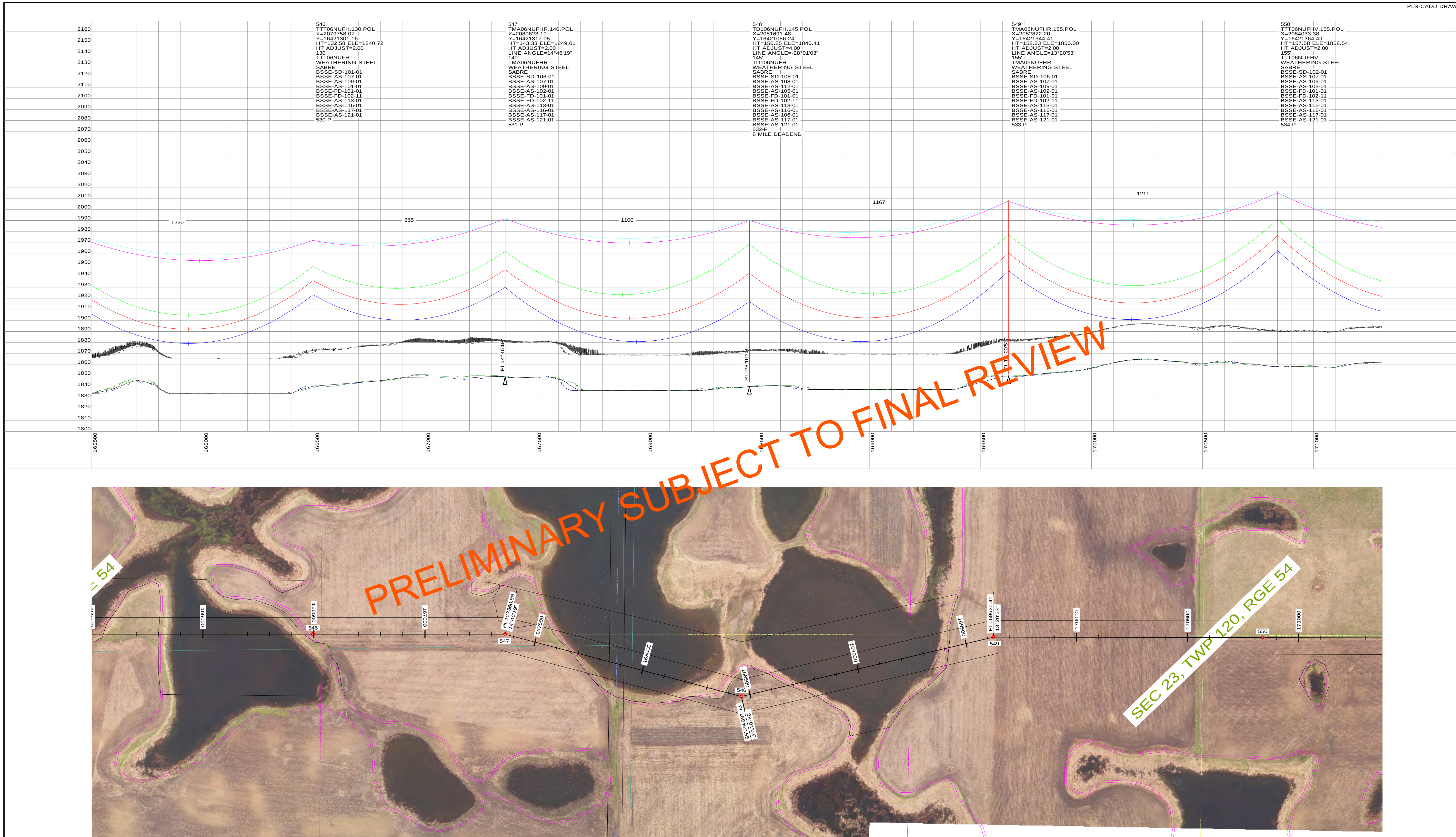
BSSE Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-36
REVISION: L
136508

EXHIBIT 3



STRS: 546 - 550

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

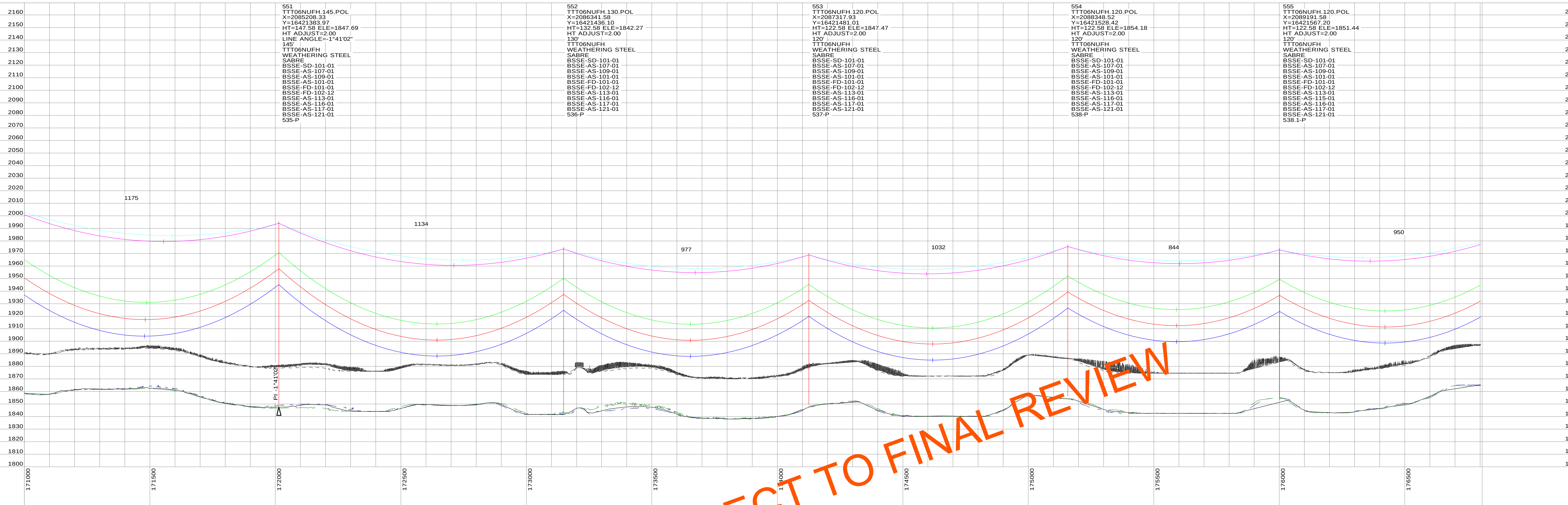
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-37
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 551 - 555

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

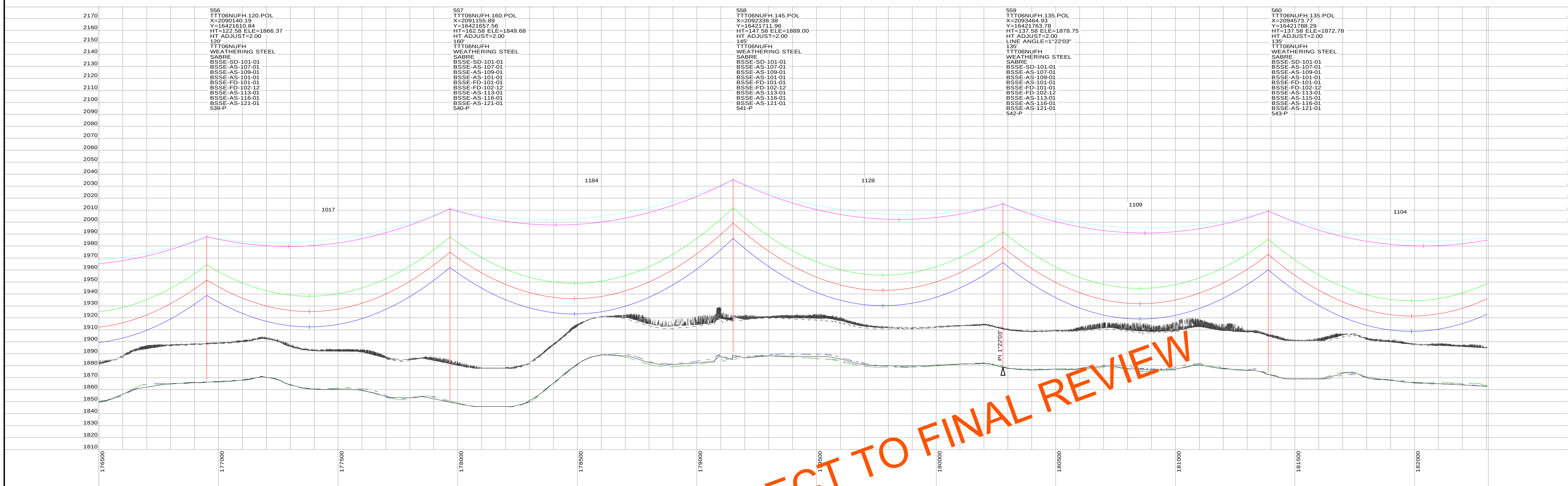
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-38
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 556 - 560

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

REVISIONS

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

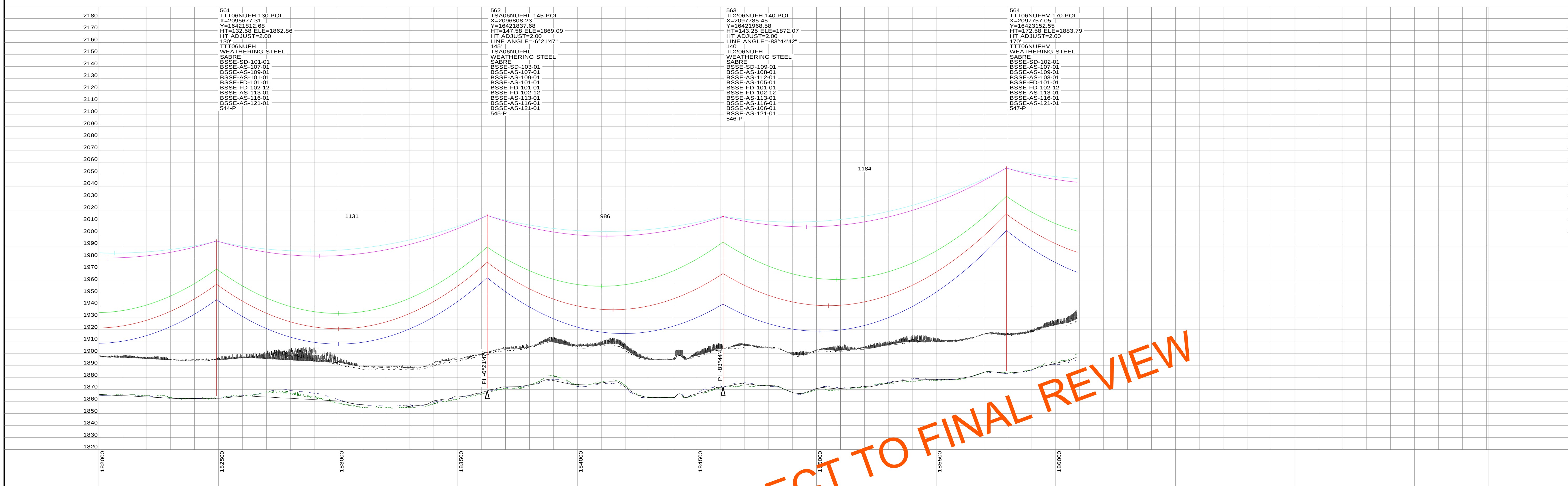
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE

NORTH

DWG. NO.
BSSE-PP-103-39
REVISION: L
136508

EXHIBIT 3



STRS: 561 - 564

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

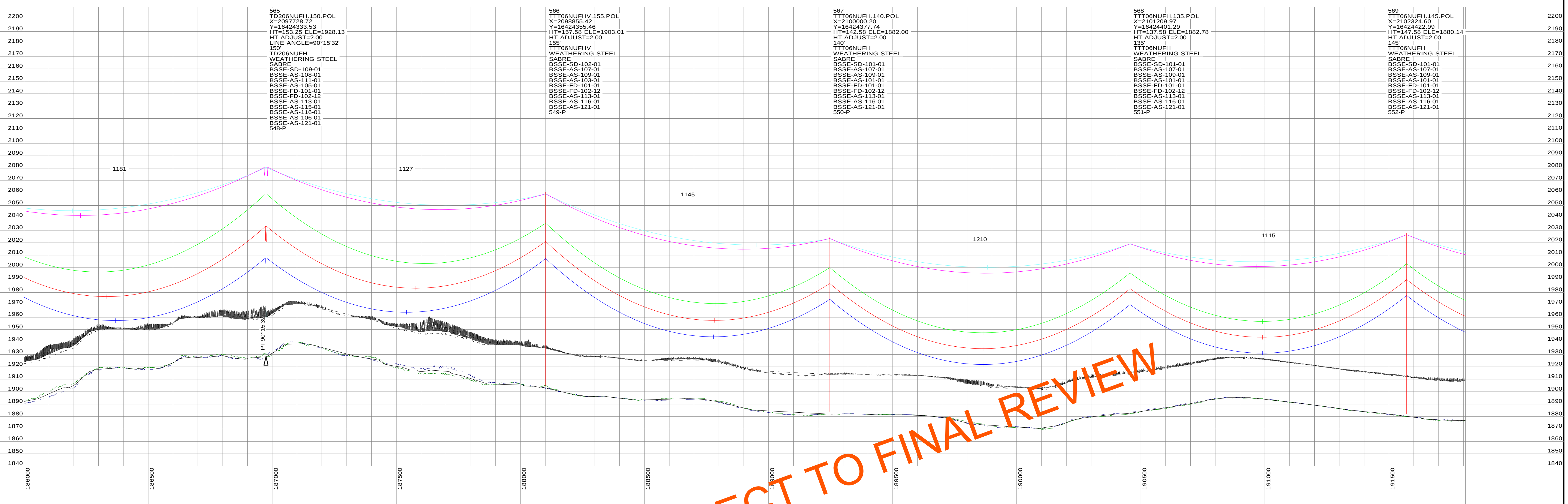
BSSE
Big Stone South to Ellendale

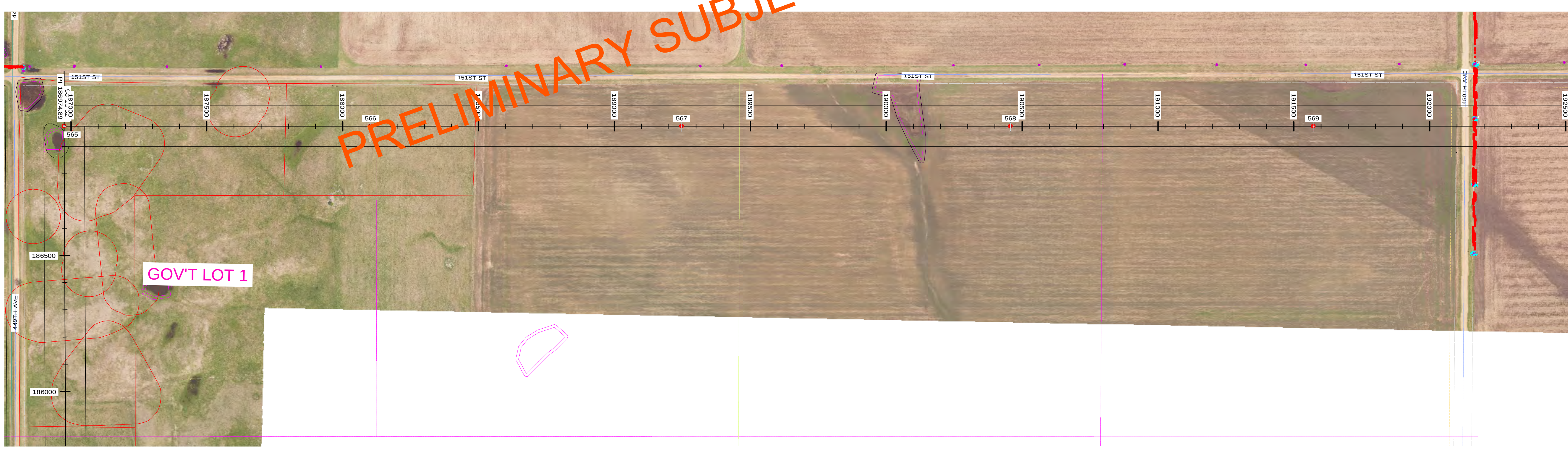
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-40
REVISION: L
136508

EXHIBIT 3





STRS: 565 - 569

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E Big Stone South to Ellendale

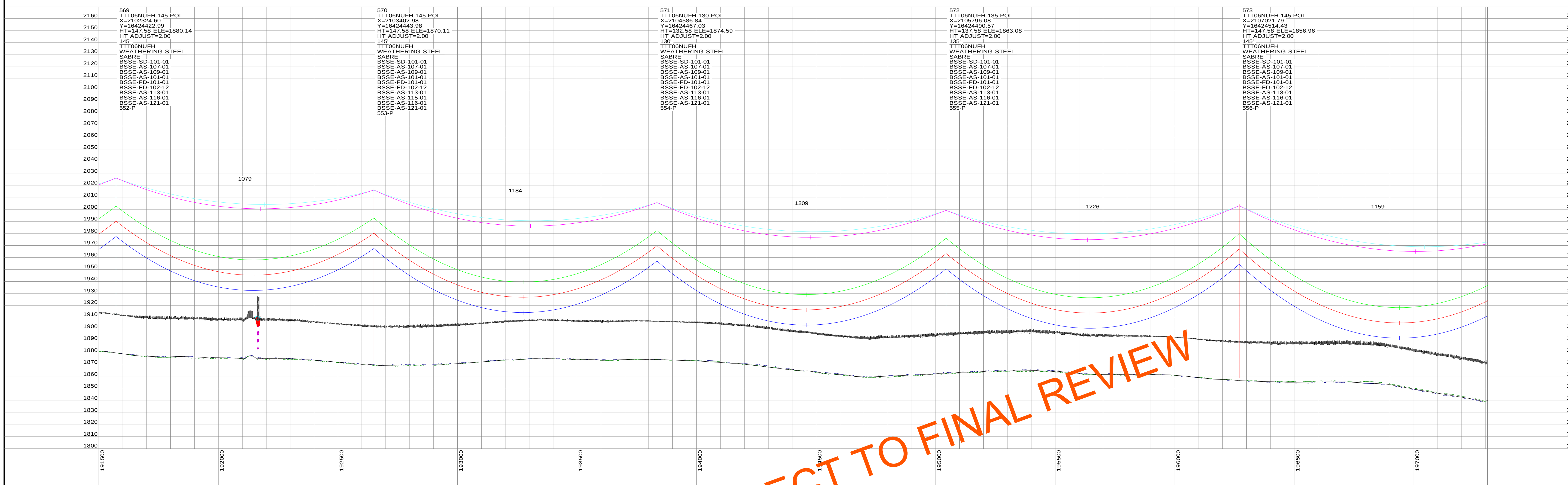
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-41
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 569 - 573

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REV	REVISIONS DESCRIPTION	DWN	DGN	CHK	DATE
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

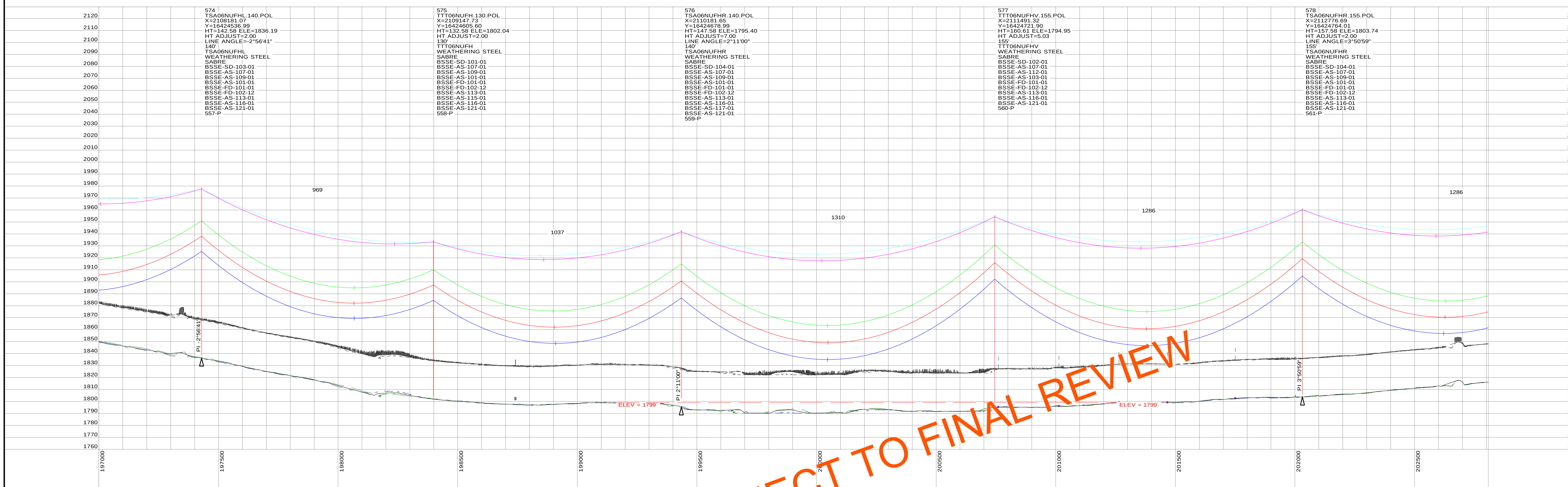
BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-42
REVISION: L
136508

EXHIBIT 3



STRS: 574 - 578

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

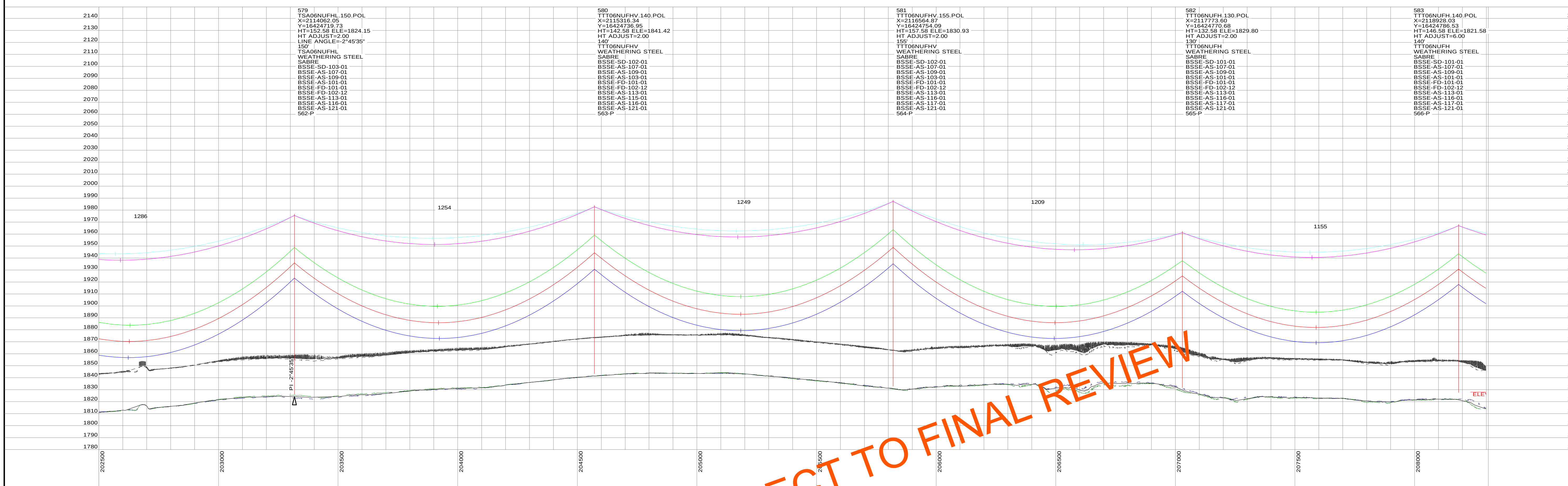
BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-43
REVISION: L
136508

EXHIBIT 3



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 579 - 583

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSSE
Big Stone South to Ellendale

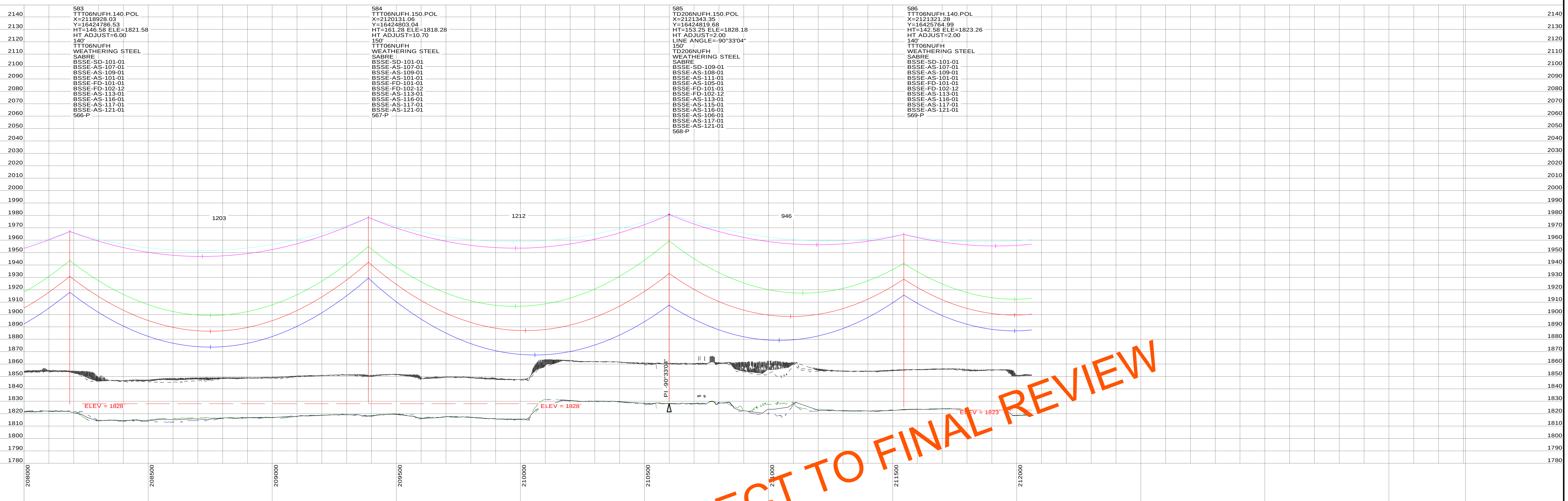
BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-44
REVISION: L
136508

EXHIBIT 3

PLS-CADD DRAWING



PRELIMINARY SUBJECT TO FINAL REVIEW

STRS: 583 - 586

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA
CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

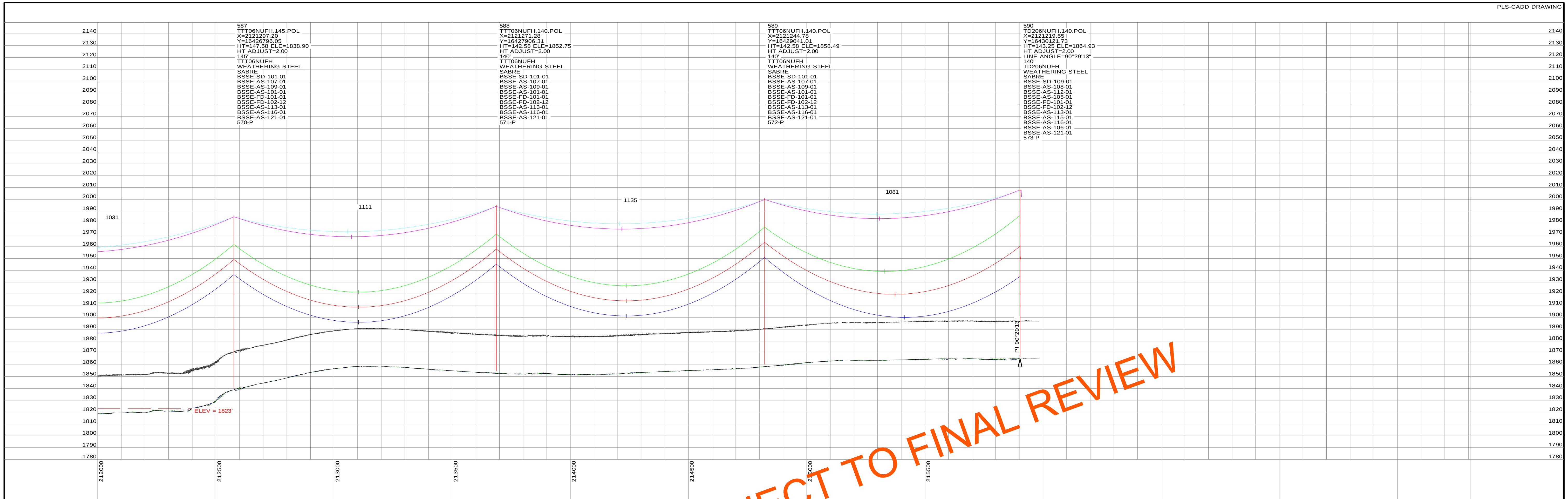
BSSE
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-45
REVISION: L
136508

EXHIBIT 3



STRS: 587 - 590

20160505
PRELIMINARY
SUBJECT TO
FINAL REVIEW

POWER ENGINEERS

REVISIONS					
L	V17: REVISED PER REVIEW	GMD	GMD		05/05/16
K	V16: ISSUED FOR ELECTRICAL BID	GMD	GMD	DJF	02/18/16
J	V15: REVISED PER FIELD REVIEW	GMD	GMD		12/03/15
I	V13: REVISED PER FIELD REVIEW	GMD	GMD		09/02/15
H	V12: REVISED PER FIELD REVIEW	GMD	GMD		08/14/15
REV	DESCRIPTION	DWN	DGN	CHK	DATE

APPROVALS	DATE
DRAWN BY: ---	
DESIGN BY: ---	
CHECKED BY: ---	
APPROVED BY: ---	

DESIGN DATA

CONDUCTOR: (2X) 477 KCMIL 26/7 TP HAWK ACSR
DESIGN TENSION: 18% @ 0 F, CREEP
SHIELD WIRE: 1-3/8" 7 STRAND EHS STEEL
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
OPGW: 1-DN0-10523
DESIGN TENSION: 75% SAG MATCH @ 60 F CREEP
GROUND CLEARANCE LINE: 30 FT
COORDINATE SYSTEM: UTM ZONE 14N, US FT

BSS+E
Big Stone South to Ellendale

BIG STONE SOUTH - ELLENDALE
345 KV TRANSMISSION LINE

200.0 FT. HORIZ. SCALE
40.0 FT. VERT. SCALE
NORTH

DWG. NO.
BSSE-PP-103-46
REVISION: L
136508

EXHIBIT 3