

STATE OF OKLAHOMA
 DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED
STATE HIGHWAY

FEDERAL AID PROJECT NO. XX-XXXX(OOX)
 GRADE, DRAIN, BRIDGE, SURFACING AND EROSION CONTROL
 US-81 REALIGNMENT

GRADY COUNTY

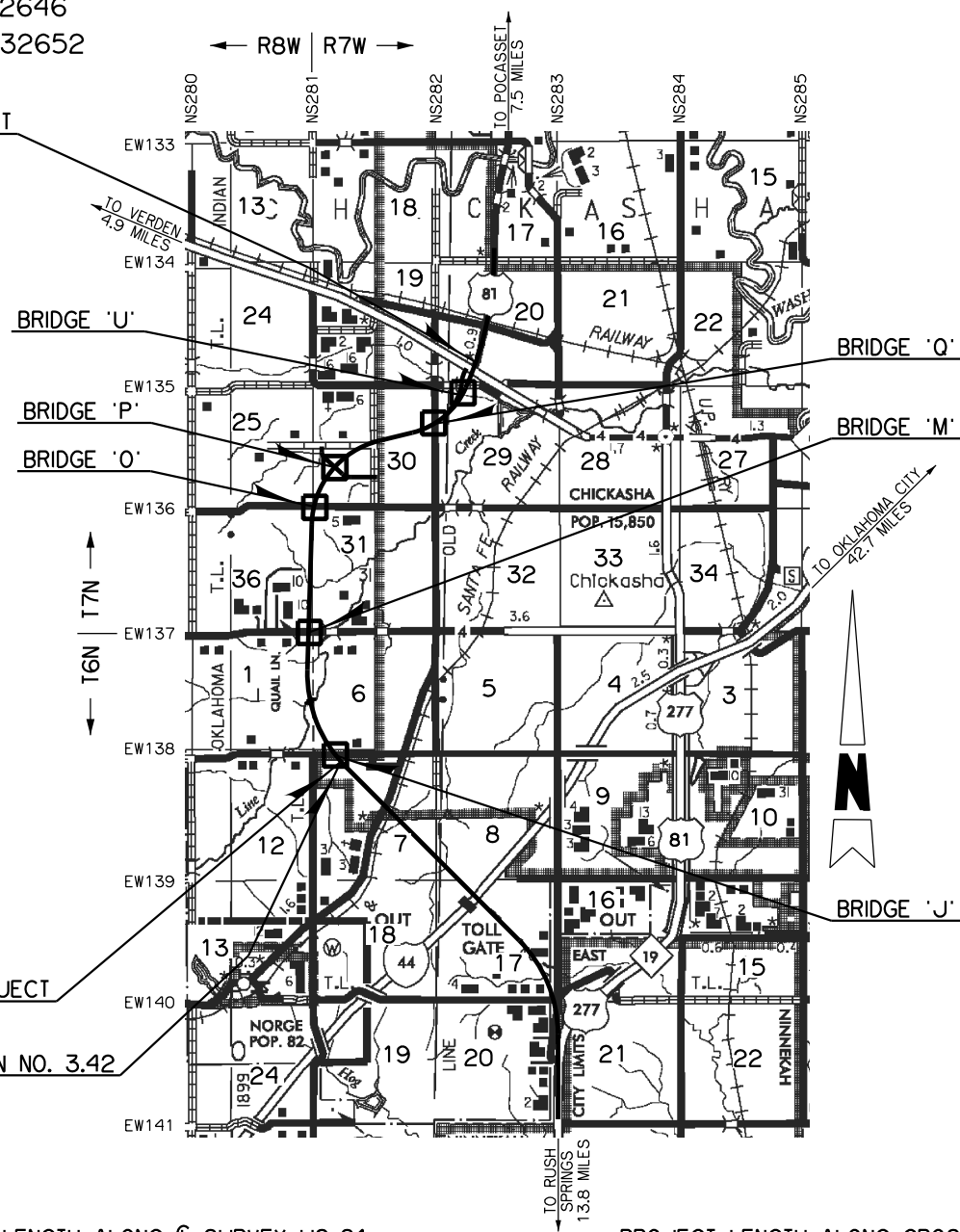
CONTROL SECTION NO. 81-26-54P
 STATE JOB NO. 24428(12)

INDEX OF SHEETS
 SEE SHEET NO. 0003
REQUIRED STANDARD DRAWINGS
 SEE SHEET NO. 0003

SURVEY DATA
 SEE SURVEY DATA SHEET NOS. S001-S076

- BRIDGE 'J' - LOCATION NO. 2654 0346X - NBI NO. 32637
- BRIDGE 'M' - LOCATION NO. 2654 0451WX - NBI NO. 32641
- BRIDGE 'O' - LOCATION NO. 2654 0551X - NBI NO. 32644
- BRIDGE 'P' - LOCATION NO. 2654 0589X - NBI NO. 32645
- BRIDGE 'Q' - LOCATION NO. 2654 0679NX - NBI NO. 32646
- BRIDGE 'U' - LOCATION NO. 2654 0599WXR - NBI NO. 32652

STA. 481+33.54 END PROJECT	
BRIDGE 'J'	BEGIN BRIDGE STA. 107+34.43 BRIDGE LENGTH = 419.20 FT. END BRIDGE STA. 111+53.63
BRIDGE 'M'	BEGIN BRIDGE STA. 338+04.90 BRIDGE LENGTH = 200.00 FT. END BRIDGE STA. 340+04.90
BRIDGE 'O'	BEGIN BRIDGE STA. 1810+07.40 BRIDGE LENGTH = 299.53 FT. END BRIDGE STA. 1813+06.93
BRIDGE 'P'	BEGIN BRIDGE STA. 41+55.09 BRIDGE LENGTH = 290.50 FT. END BRIDGE STA. 44+45.59
BRIDGE 'Q'	BEGIN BRIDGE STA. 458+24.98 BRIDGE LENGTH = 226.67 FT. END BRIDGE STA. 460+51.65
BRIDGE 'U'	BEGIN BRIDGE STA. 474+68.72 BRIDGE LENGTH = 601.67 FT. END BRIDGE STA. 480+70.39
STA. 281+51.75 BEGIN PROJECT	



DESIGN DATA

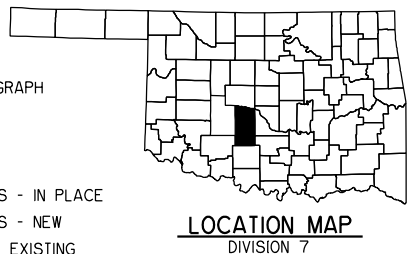
ADT 2020	= 6,220
ADT 2040	= 8,400
DHV (TWO WAY)	= 437
K (DHV/ADT-TWO WAY)	= 10%
D (DIRECTIONAL DIST.)	= 52%
T (% OF DHV)	= 17%
T (% OF ADT)	= 19%
T ₃ (% OF ADT)	= 11%
V	= 70 MPH
20 YEAR FLEX. ESALS	= 6.2M

SCALES

PLAN	1" = 50'
PROFILE HORIZONTAL	1" = 50'
PROFILE VERTICAL	1" = 5'
LAYOUT MAP	1" = 3,000'

CONVENTIONAL SYMBOLS

	PROPOSED ROAD
	RAILROADS
	TOWNSHIP AND RANGE
	SECTION LINES
	QUARTER SECTION LINES
	FENCES
	GROUND LINE
	EXISTING ROADS
	BASE LINE
	GRADE LINES
	TELEPHONE AND TELEGRAPH
	POWER LINES
	BUILDINGS
	OIL WELL
	DRAINAGE STRUCTURES - IN PLACE
	DRAINAGE STRUCTURES - NEW
	RIGHT-OF-WAY LINES - EXISTING
	RIGHT-OF-WAY LINES - NEW
	CONTROLLED ACCESS
	RIGHT-OF-WAY FENCE



CONTROL SUB SECTION NO. 3.42

PROJECT LENGTH ALONG C SURVEY US-81

ROADWAY LENGTH	0.00 FT.	0.000 MILES
BRIDGE LENGTH	426.67 FT.	0.080 MILES
PROJECT LENGTH		0.080 MILES
EQUATIONS:	NONE	
EXCEPTIONS:	NONE	

PROJECT LENGTH ALONG CROSSING STREETS AND RAMP AA

ROADWAY LENGTH	4,270.77 FT.	0.808 MILES
BRIDGE LENGTH	1,610.90 FT.	0.305 MILES
PROJECT LENGTH		1.113 MILES
EQUATIONS:	NONE	
EXCEPTIONS:	NONE	

	TEIM DESIGN, PLLC C.A. NO. 8428 RENEWAL: 6/30/2021	3020 N.W. 149TH STREET OKLAHOMA CITY, OK 73134 (405) 752-1122	THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.
	BRIAN E. SCHMITT, OKLA. REG. NO. 15836 DATE		
	EST, INC. C.A. NO. 3639 RENEWAL: 6/30/2022	615 N. HUDSON, STE. 300 OKLAHOMA CITY, OK 73102 (405) 815-3600	THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.
	PAUL G. POYNTER, OKLA. REG. NO. 19103 DATE		
OKLAHOMA DEPARTMENT OF TRANSPORTATION	DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION		
DATE APPROVED:	DATE APPROVED:		
BY: CHIEF ENGINEER	BY: DIVISION ADMINISTRATOR		
SWO 4380(1) F.A. PROJECT NO. XX-XXXX(OOX)			SHEET NO. 0001

2019 OKLAHOMA STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION GOVERN, APPROVED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, DECEMBER 18, 2019.

TEIM DESIGN, PLLC

3020 N.W. 149TH STREET
OKLAHOMA CITY, OK 73134
(405) 752-1122

C.A. NO. 8428
RENEWAL: 6/30/2021

OLSSON

11600 BROADWAY EXTENSION, SUITE 300
OKLAHOMA CITY, OK 73114
(405) 242-6600

C.A. NO. 2483
RENEWAL: 6/30/2021

EST, INC.

615 N. HUDSON, SUITE 300
OKLAHOMA CITY, OK 73102
(405) 815-3600

C.A. NO. 3639
RENEWAL: 6/30/2022

BRIAN E. SCHMITT, OKLA. REG NO. 15836 DATE
(CORRIDOR MANAGER)

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LIESEL POLWORT, OKLA. REG NO. 24569 DATE
(SHEET NOS. XX, XX-XX)

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PAUL G. POYNTER, OKLA. REG NO. 19103 DATE
(SHEET NOS. XX, XX-XX)

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JOSHUA M. JOHNSTON, OKLA. REG NO. 26204 DATE
(SHEET NOS. XX, XX-XX)

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KEARA A. PHILLIPS-BERLIN, OKLA. REG NO. 25864 DATE
(SHEET NOS. XX, XX-XX)

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SHAY V. SMITH, OKLA. REG NO. 27713 DATE
(SHEET NOS. XX, XX-XX)

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US-81 REALIGNMENT

SIGNATURE BLOCKS

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION		
0001	TITLE SHEET	B103, B104	GENERAL PLAN AND ELEVATION (BRIDGE 'P')
0002	SIGNATURE BLOCKS	B105- B107	FOUNDATION BORING LOGS
0003	INDEX OF SHEETS REQUIRED STANDARD DRAWINGS	B108	SUBSTRUCTURE STAKING DIAGRAM
0004- 0006	TYPICAL SECTIONS	B109, B110	DETAILS OF ABUTMENT NOS. 1 AND 2
AB01- AB04	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)	B111	DETAILS OF WINGS
AE01	ENVIRONMENTAL NOTES	B112	DETAILS OF PIER NOS. 1 AND 3
AR01	SUMMARY OF PAY QUANTITIES	B113	DETAILS OF PIER NO. 2
AR02	PAY NOTES (ROADWAY)	B114	DETAILS OF PIER NOS. 1, 2 AND 3
AR03	SUGGESTED SEQUENCE OF CONSTRUCTION	B115	DETAILS OF PIER PROTECTION AT PIER NO. 2
AR04- AR06	SUMMARIES	B116- B120	DETAILS OF SUPERSTRUCTURE
AT01	PAY QUANTITIES & NOTES - TRAFFIC CONTROL	B121	DETAILS OF BEARING ASSEMBLIES
AT02	PAY QUANTITIES & NOTES - TRAFFIC SIGNING & STRIPING	B122	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 1 AND 4)
AT03	SUMMARY OF SHEETS - TRAFFIC	B123	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 2 AND 3)
BO01, BO02	GENERAL PLAN AND ELEVATION (BRIDGE 'J')	B124	DETAILS OF APPROACH SLABS
BO03- BO05	FOUNDATION BORING LOGS	B125	LAYOUT OF CONCRETE RAIL (TR4)
BO06	SUBSTRUCTURE STAKING DIAGRAM	B126	DETAILS OF SLOPE WALLS
BO07	DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS	B127	DETAILS OF DRAINS AT ENDS OF BRIDGE
BO08, BO09	DETAILS OF ABUTMENT NO. 1	B128- B130	GENERAL PLAN AND ELEVATION (BRIDGE 'Q')
BO10, BO11	DETAILS OF ABUTMENT NO. 2	B131, B132	SUBSURFACE PROFILE
BO12	DETAILS OF ABUTMENT NOS. 1 AND 2	B133	SUBSTRUCTURE STAKING DIAGRAM
BO13	DETAILS OF WINGS AT ABUTMENT NO. 1	B134, B135	ABUTMENT 1 DETAILS
BO14, BO15	DETAILS OF WINGS AT ABUTMENT NO. 2	B136	ABUTMENT 1 WINGWALL DETAILS
BO16	DETAILS OF DRILLED SHAFTS AT ABUTMENTS AND WINGS	B137, B138	ABUTMENT 2 DETAILS
BO17- BO19	DETAILS OF PIER NOS. 1 AND 3	B139	ABUTMENT 2 WINGWALL DETAILS
BO20- BO22	DETAILS OF PIER NO. 2	B140	SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS
BO23	DETAILS OF PIER PROTECTION AT PIER NO. 2	B141- B144	PIER DETAILS
BO24- BO30	DETAILS OF SUPERSTRUCTURE	B145	BEARING DETAILS
BO31	DETAILS OF BEARING ASSEMBLIES	B146	TYPICAL CROSS SECTION
BO32, BO33	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NO. 1	B147	TYPICAL LONGITUDINAL SECTION
BO34, BO35	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NOS. 2 AND 3	B148- B150	DIAPHRAGM DETAILS
BO36, BO37	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NO. 4	B151	P.C. BEAM AND DIAPHRAGM LAYOUT
BO38, BO39	DETAILS OF APPROACH SLABS	B152	SLAB PLAN SHOWING CANTILEVER LAYOUT
BO40	LAYOUT OF CONCRETE RAIL (TR4)	B153	PLAN SHOWING TOP OF SLAB ELEVATIONS
BO41	DETAILS OF SLOPE WALLS	B154, B155	BOTTOM SLAB REINFORCING PLAN
BO42	DETAILS OF DRAINS AT ENDS OF BRIDGE	B156, B157	TOP SLAB REINFORCING PLAN
BO43, BO44	GENERAL PLAN AND ELEVATION (BRIDGE 'M')	B158, B159	TYPE III P.C. BEAM DETAILS
BO45- BO47	FOUNDATION BORING LOGS	B160, B161	TYPE IV P.C. BEAM DETAILS
BO48	SUBSTRUCTURE STAKING DIAGRAM	B162- B164	APPROACH SLAB DETAILS
BO49, BO50	DETAILS OF ABUTMENT NO. 1	B165, B166	SLOPE WALL DETAILS
BO51, BO52	DETAILS OF ABUTMENT NO. 2	B167, B168	GENERAL PLAN AND ELEVATION (BRIDGE 'U')
BO53	DETAILS OF ABUTMENT NOS. 1 AND 2	B169	DESIGN DATA AND SUMMARY OF PAY QUANTITIES
BO54	DETAILS OF WINGS AT ABUTMENT NO. 1	B170- B173	SUBSURFACE PROFILE
BO55	DETAILS OF WINGS AT ABUTMENT NO. 2	B174	SUBSTRUCTURE STAKING DIAGRAM
BO56	DETAILS OF PIER NO. 1	B175- B177	DETAILS OF ABUTMENT NO. 1
BO57	DETAILS OF PIER NO. 2	B178- B180	DETAILS OF ABUTMENT NO. 2
BO58, BO59	DETAILS OF PIER NOS. 1 AND 2	B181	DETAILS OF EXCAVATION
BO60- BO63	DETAILS OF SUPERSTRUCTURE	B182, B183	DETAILS OF PIERS
BO64	DETAILS OF BEARING ASSEMBLIES	B184- B198	DETAILS OF SUPERSTRUCTURE
BO65	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 1 AND 3)	B199	DETAILS OF BEARINGS
BO66	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NO. 2)	B200, B201	APPROACH SLAB DETAILS
BO67	DETAILS OF APPROACH SLABS	E001	SECTION 404 PERMIT COMPLIANCE
BO68	LAYOUT OF 42" F-SHAPED PARAPET	RO01- RO22	GEOMETRIC LAYOUT
BO69	DETAILS OF SLOPE WALLS	RO23	STORMWATER MANAGEMENT PLAN SHEET
BO70	DETAILS OF DRAINS AT ENDS OF BRIDGE	RO24- RO28	DRAINAGE AREA MAP
BO71, BO72	GENERAL PLAN AND ELEVATION (BRIDGE 'O')	RO29- RO32	EROSION CONTROL SHEETS
BO73- BO75	FOUNDATION BORING LOGS	RO33- RO38	PLAN AND PROFILE SHEETS
BO76	SUBSTRUCTURE STAKING DIAGRAM	RO39- RO41	REMOVAL SHEETS
BO77	DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS	RO42- RO44	SURFACING CONSTRUCTION DETAILS
BO78	DETAILS OF ABUTMENT NO. 1	RO45	MASS DIAGRAM SHEETS
BO79	DETAILS OF ABUTMENT NO. 2	SO01- SO76	SURVEY DATA SHEETS
BO80, BO81	DETAILS OF TYPICAL ABUTMENT REINFORCING STEEL PLACEMENT	TO01- TO07	SUGGESTED TRAFFIC CONTROL SIGNING & STRIPING
BO82	DETAILS OF WINGS AT ABUTMENT NO. 1	TO08- TO11	
BO83	DETAILS OF WINGS AT ABUTMENT NO. 2	XO01- XO50	CROSS SECTIONS
BO84	DETAILS OF DRILLED SHAFTS AT ABUTMENTS AND WINGS		
BO85	DETAILS OF PIER NO. 1		
BO86	DETAILS OF PIER NO. 2		
BO87	DETAILS OF PIER NO. 3		
BO88	DETAILS OF PIER NOS. 1, 2 AND 3		
BO89	DETAILS OF PIER PROTECTION AT PIER NO. 2		
BO90- BO94	DETAILS OF SUPERSTRUCTURE		
BO95	DETAILS OF BEARING ASSEMBLIES		
BO96	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NO. 1)		
BO97	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NO. 4)		
BO98	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 2 AND 3)		
BO99	DETAILS OF APPROACH SLABS		
B100	LAYOUT OF CONCRETE RAIL (TR4)		
B101	DETAILS OF SLOPE WALLS		
B102	DETAILS OF DRAINS AT ENDS OF BRIDGE		

ROADWAY

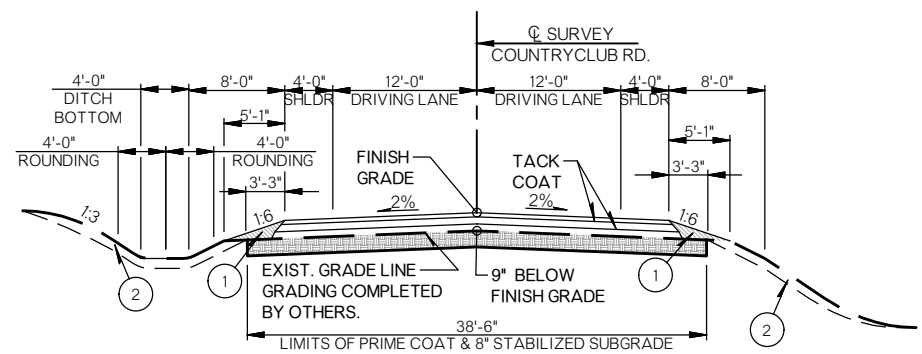
SS5-1-1
TSC2-3-2
TSD-2-0
ASCD-5-2
LECS-4-2
PED-3-2
PSE-1-0
CET6S-3-2
CET6D-3-2
SPI-4-1
FPI-3-3
SPB-1-4
FHTMPP-1-0
FHTCP-3-1
PUD-3-3
MI-3-0
RDI-3-2
DC-3-2
PDI-1-3
SUEL1-3-2
SUEL3-3-2

REQUIRED STANDARD DRAWINGS

BRIDGE	TRAFFIC CONTROL	TRAFFIC SIGNING
TR4-2-00E	TCS1-1-01	PM1-1-03
FSHP-42-2-00E	TCS2-1-00	PM3-1-02
EJ-SQ-04E	TCS3-1-01	PM6-1-00
EJ-SK-04E	TCS4-1-01	DU1-1-00
EJ-DTL-02E	TCS5-1-00	DU2-1-00
HP1-2-01E	TCS6-1-02	RSD1-1-00
B40-C-ABUT-MISC-01E	TCS7-1-02	WSD1-1-00
	TCS8-1-00	WSD2-1-00
	TCS9-1-01	WSD3-1-00
	TCS10-1-00	SBS1-1-00
	TCS11-1-01	SBS2-1-00
	TCS13-1-00	SBS3-1-00
	TCS14-1-00	SBS5-1-00
	TCS15-1-00	GMS1-1-00
	TCS16-1-00	SSP1-1-02
	TCS18-1-01	SSA1-1-00
	TCS19-1-01	SSA2-1-00
	TCS20-1-00	FGS1-1-00
	TCS24-1-02	
	TCS25-1-00	

US-81 REALIGNMENT

INDEX OF SHEETS AND
REQUIRED STANDARD DRAWINGS

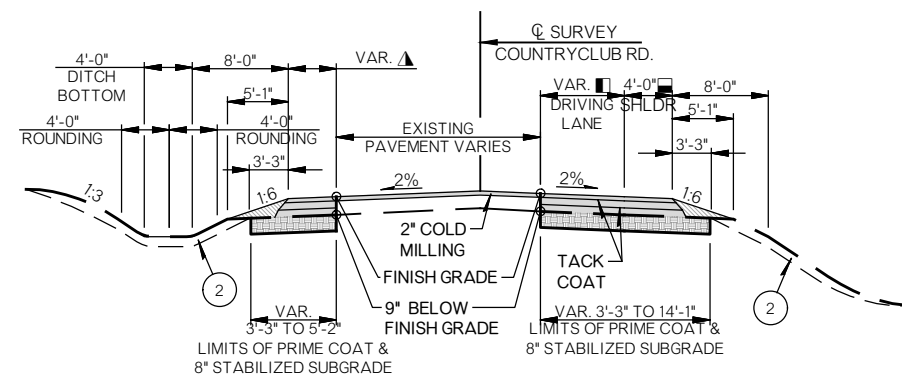


TYPICAL SECTION NO. 1
COUNTRY CLUB RD.
STA. 101+00.00 TO STA. 123+00.00

STA. 122+00 TO STA. 123+00
SHOULDER VARIES 4'-0" TO 2'-2"

STA. 122+00 TO STA. 123+00
SHOULDER VARIES 4'-0" TO 0'-0"
STA. 122+00 TO STA. 123+00
TRANSITION CROWN TO MATCH EXISTING

PAVEMENT REQUIREMENTS		
9" PAVEMENT STRUCTURE	12'-0" DRIVING LANE	4'-0" SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 2
COUNTRY CLUB RD.
STA. 100+16.53 TO STA. 101+00.00

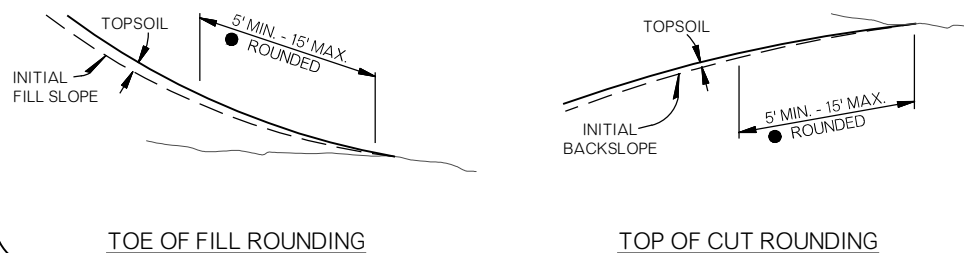
▲ VARIES 0'-0" TO 1'-11" FROM STA. 100+50 TO STA. 101+00
■ DRIVING LANE VARIES 0'-0" TO 6'-10" FROM STA. 100+16.53 TO STA. 101+00 RT.
■ SHOULDER VARIES 0'-0" TO 4'-0" FROM STA. 100+16.53 TO STA. 100+29.24 RT.

PAVEMENT REQUIREMENTS		
9" PAVEMENT STRUCTURE	DRIVING LANE	4'-0" SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)

GRADING TO BE COMPLETED BY OTHERS IN J/P 24428(04)

ROUNDING DETAIL

- INTERSECTION OF CUT AND/OR FILL SLOPES WITH GROUND LINE TO BE ROUNDED AS PART OF FINISHING OPERATIONS. ROUNDED SHALL BE 5' MINIMUM FOR SMALLER CUTS AND FILLS TO 15' MAXIMUM FOR LARGER CUTS AND FILLS OR AS DESIGNATED BY THE ENGINEER. COST OF ROUNDED TO BE INCLUDED IN THE PRICE BID FOR OTHER ITEMS OF WORK.



1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPAKED AS PART OF THE FINISHING OPERATIONS.
QUANTITY IS MEASURED IN UNCLASSIFIED BARROW.

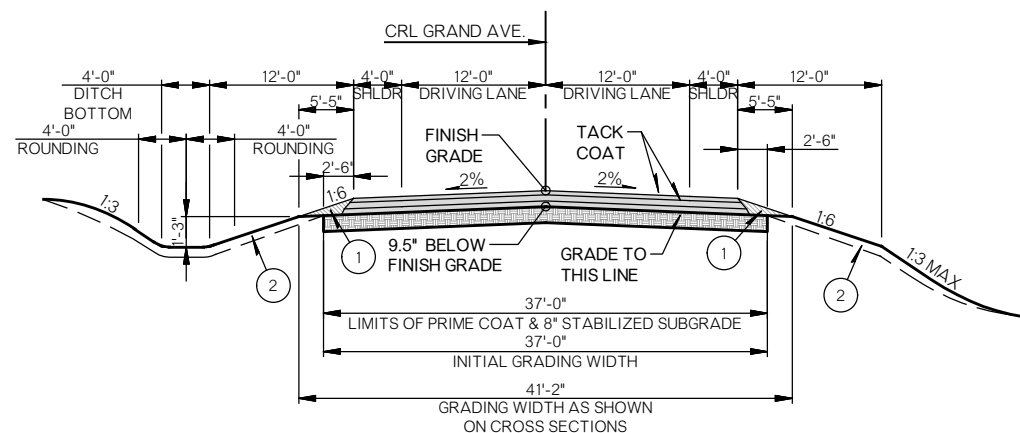
2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.

SEE SURFACING CONSTRUCTION DETAIL SHEETS FOR ADDITIONAL TRANSITION AND TAPER INFORMATION AND CROSS SECTIONS FOR ADDITIONAL SUPERELEVATION AND CROSS SLOPE INFORMATION.

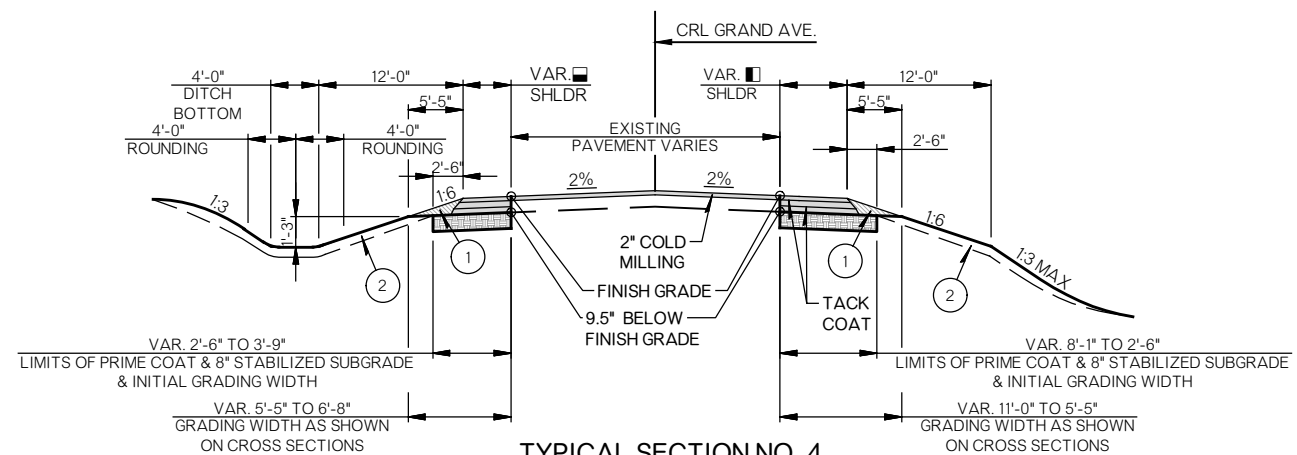
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TYPICAL SECTIONS



TYPICAL SECTION NO. 3
GRAND AVE.
STA. 115+50 TO STA. 123+52.68

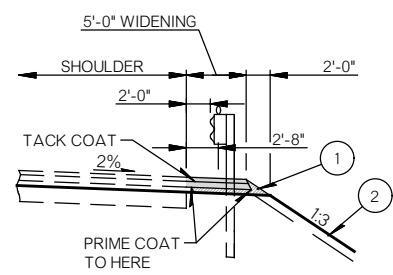
PAVEMENT REQUIREMENTS		
9.5" PAVEMENT STRUCTURE	12'-0" DRIVING LANE	4'-0" SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)
	4" SUPERPAVE TYPE S3 (PG 64-22 OK)	4" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 4
GRAND AVE.
STA. 113+43.58 TO STA. 115+50
STA. 123+52.68 TO STA. 126+05

PAVEMENT REQUIREMENTS	
9.5" PAVEMENT STRUCTURE	SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)
	4" SUPERPAVE TYPE S3 (PG 64-22 OK)

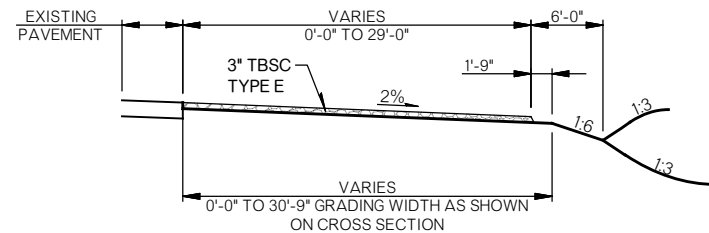
LT. WIDENING VARIES FROM 0'-0" TO 1'-3" FROM STA. 114+60 TO STA. 115+50
RT. WIDENING VARIES FROM 0'-0" TO 1'-11" FROM STA. 114+60 TO STA. 115+50
RT. WIDENING VARIES FROM 5'-7" TO 0'-0" FROM STA. 123+52.68 TO STA. 126+05



PAVEMENT REQUIREMENTS	
PAVEMENT STRUCTURE	5'-0" GUARDRAIL WIDENING
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)

GUARDRAIL WIDENING
SEE GUARDRAIL SUMMARY FOR STATIONING AND LOCATION

PAVEMENT REQUIREMENTS	
PAVEMENT STRUCTURE	5'-0" GUARDRAIL WIDENING
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 5
GRAND AVE. DETOUR WIDENING
STA. 113+43.58 TO STA. 126+05

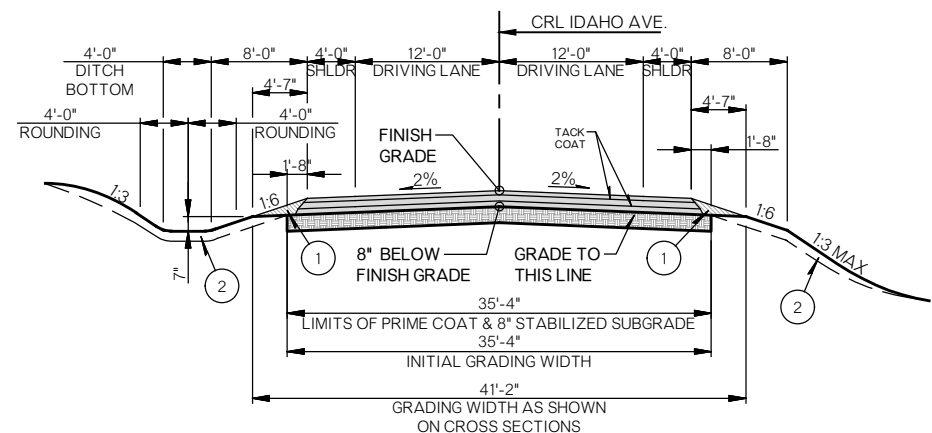
- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN UNCLASSIFIED BARROW.
 - 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- SEE SURFACING CONSTRUCTION DETAIL SHEETS FOR ADDITIONAL TRANSITION AND TAPER INFORMATION AND CROSS SECTIONS FOR ADDITIONAL SUPERELEVATION AND CROSS SLOPE INFORMATION.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

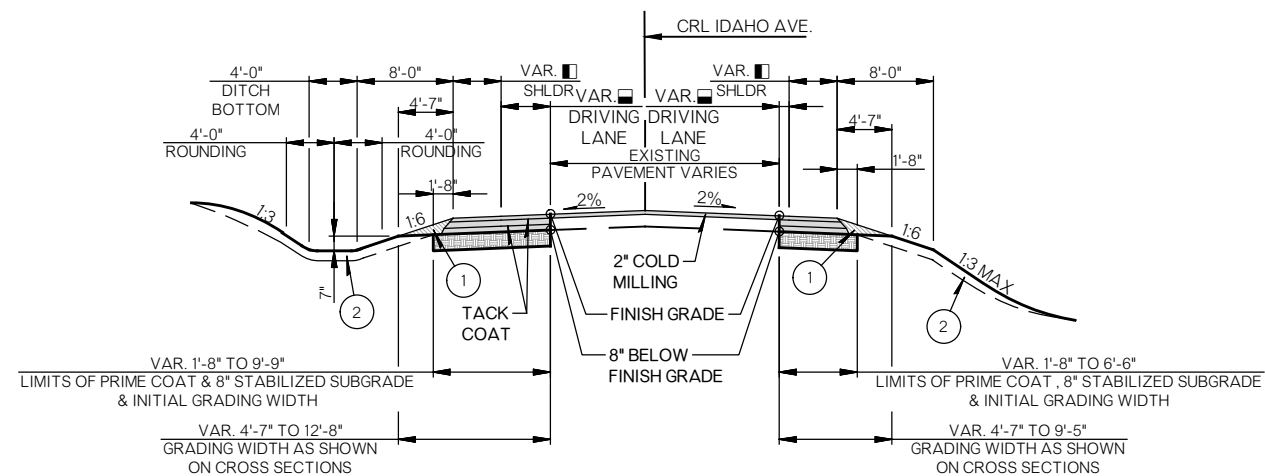
TYPICAL SECTIONS

GRADY COUNTY US 81 REALIGNMENT



TYPICAL SECTION NO. 6
IDAHO AVE.
STA. 1807+00 TO STA. 1816+00

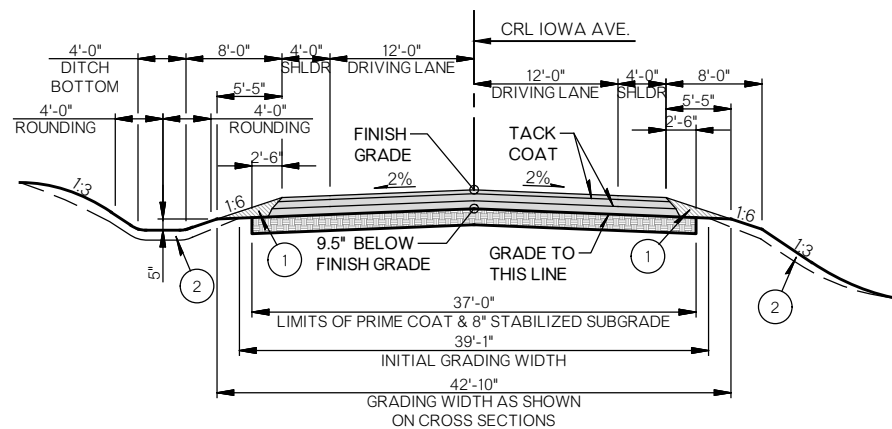
PAVEMENT REQUIREMENTS		
8" PAVEMENT STRUCTURE	12'-0" DRIVING LANE	4'-0" SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 7
IDAHO AVE.
STA. 1805+59 TO STA. 1807+00
STA. 1816+00 TO STA. 1818+82

- LT. LANE VARIES 0'-0" TO 3'-0" & FROM 4'-1" TO 0'-0"
- RT. LANE VARIES 0'-0" TO 0'-10" & FROM 0'-10" TO 0'-0"
- LT. SHOULDER VARIES 0'-0" TO 4'-0" & FROM 4'-0" TO 0'-0"
- RT. SHOULDER VARIES 0'-0" TO 4'-0" & FROM 4'-0" TO 0'-0"

PAVEMENT REQUIREMENTS	
8" PAVEMENT STRUCTURE	SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3" SUPERPAVE TYPE S3 (PG 64-22 OK)
	3" SUPERPAVE TYPE S3 (PG 64-22 OK)



TYPICAL SECTION NO. 8
IOWA AVE.
STA. 31+88.60 TO STA. 53+80.00

PAVEMENT REQUIREMENTS		
9.5" PAVEMENT STRUCTURE	12'-0" DRIVING LANE	4'-0" SHOULDER
SURFACE COURSE	2" SUPERPAVE TYPE S4 (PG 64-22 OK)	2" SUPERPAVE TYPE S4 (PG 64-22 OK)
BASE COURSE	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)	3.5" SUPERPAVE TYPE S3 (PG 64-22 OK)
	4" SUPERPAVE TYPE S3 (PG 64-22 OK)	4" SUPERPAVE TYPE S3 (PG 64-22 OK)

- 1 BACKFILL NOTE:
TO BE BACKFILLED AND COMPACTED AS PART OF THE FINISHING OPERATIONS. QUANTITY IS MEASURED IN UNCLASSIFIED BARROW.
 - 2 TOPSOIL NOTE:
THE CONTRACTOR SHALL STRIP ALL OF THE AVAILABLE TOPSOIL, STOCKPILE IT, AND PLACE IT BACK ON THE SECTION IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. RESERVED TOPSOIL SHALL BE SPREAD FIRST ON THE COMPLETED SLOPES OF THE CUT SECTIONS AND THE REMAINDER ON COMPLETED FILL SLOPES OR OTHER PRIORITY AREAS LOCATED BY THE ENGINEER. ALL ADDITIONAL COSTS ASSOCIATED WITH OPERATIONS SHALL BE INCLUDED IN THE PAY ITEM FOR SALVAGED TOPSOIL, LUMP SUM.

THE GRADING LINE AS SHOWN ON THE TYPICAL AND CROSS SECTIONS IS TO THE TOP OF THE TOPSOIL. EARTHWORK QUANTITIES WERE NOT ADJUSTED FOR SALVAGE AND THE TOPSOIL QUANTITY IS INCLUDED IN THE MASSLINE BALANCE.
- SEE SURFACING CONSTRUCTION DETAIL SHEETS FOR ADDITIONAL TRANSITION AND TAPER INFORMATION AND CROSS SECTIONS FOR ADDITIONAL SUPERELEVATION AND CROSS SLOPE INFORMATION.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

TYPICAL SECTIONS

GENERAL NOTES

SPECIFICATIONS

COMPLY WITH THE REQUIREMENTS OF THE OKLAHOMA DEPARTMENT OF TRANSPORTATION 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EXCEPT AS MODIFIED BY THE PLANS AND SPECIAL PROVISIONS.

PILE MATERIAL

ALL STEEL PILING SHALL CONFORM TO AASHTO M 270 GRADE 50 WITH ALL COST INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "PILES, FURNISHED (HP 10X42)" AND "PILES, FURNISHED (HP 12X53)."

PILE DRIVING EQUIPMENT

USE A PILE DRIVING HAMMER OF THE SIZE AND TYPE CAPABLE OF CONSISTENTLY DELIVERING THE EFFECTIVE DYNAMIC ENERGY SUFFICIENT TO DRIVE THE PILES TO THE REQUIRED TIP ELEVATION AND TO ACHIEVE THE MAXIMUM FACTORED PILE LOAD WITHOUT EXCEEDING THE LIMITATIONS SET ON THE ALLOWABLE DRIVING STRESSES IN ACCORDANCE WITH SECTION 514.03.A.(2) OF THE STANDARD SPECIFICATIONS.

PILE DRIVING METHOD

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN IN THE PLANS. IF THE MAXIMUM FACTORED PILE LOAD IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE MAXIMUM FACTORED PILE LOAD IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN IN THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

MAXIMUM FACTORED PILE LOAD

THE MAXIMUM FACTORED PILE LOADS FOR EACH BRIDGE IS SHOWN IN THE TABLE BELOW:

MAXIMUM FACTORED PILE LOADS (TONS)	
LOCATION	BRIDGE SEATS
BRIDGE 'J'	-
BRIDGE 'M'	97
BRIDGE 'O'	-
BRIDGE 'P'	97
BRIDGE 'Q'	86
BRIDGE 'U'	80

DETERMINATION OF PILE CAPACITY

DRIVE EACH PILE UNTIL THE PILE CAPACITY EXCEEDS THE MAXIMUM FACTORED PILE LOAD. THE PILE CAPACITY OF EACH PILE SHALL BE DETERMINED USING THE GATES EQUATION. THE GATES EQUATION IS DEFINED AS FOLLOWS:

$$CAPACITY \text{ IN TONS} = \phi (0.875 \sqrt{E} \log_{10} (10N) - 50)$$

WHERE:

ϕ = RESISTANCE FACTOR OF 0.4

E = ENERGY PRODUCED BY THE HAMMER PER BLOW IN FOOT-POUNDS. FOR GRAVITY AND SINGLE ACTING DIESEL HAMMERS, THE VALUE IS CALCULATED AS THE ACTUAL RAM STROKE OBSERVED IN THE FIELD AND MEASURED IN FEET MULTIPLIED BY THE RAM WEIGHT IN POUNDS.

N = AVERAGE NUMBER OF HAMMER BLOWS PER INCH OF PILE PENETRATION FOR THE LAST 10 TO 20 BLOWS DELIVERED TO THE PILE HEAD.

THE EQUATION IS APPLICABLE ONLY WHEN:

THE PILE DRIVING HAMMER HAS A FREE FALL (GRAVITY AND SINGLE ACTING HAMMERS ONLY), THE HEAD OF THE PILE IS NOT BROOMED, CRUSHED, OR OTHERWISE DAMAGED, THE PENETRATION IS QUICK AND UNIFORM, THERE IS NO APPRECIABLE REBOUND OF THE HAMMER, AND A FOLLOWER IS NOT USED.

THE NUMBER OF BLOWS PER INCH OF PILE PENETRATION MAY BE MEASURED EITHER DURING INITIAL DRIVING OR BY RE-DRIVING WITH A WARM HAMMER OPERATED AT FULL ENERGY AFTER A PILE SET PERIOD, AS DETERMINED BY THE ENGINEER. IF WATER JETS ARE USED IN CONNECTION WITH THE DRIVING, DETERMINE THE PILE CAPACITY BY THE EQUATION SHOWN ONLY AFTER THE JETS HAVE BEEN WITHDRAWN.

STEEL PILE ENCASEMENTS

AS SHOWN ON BRIDGE STANDARD HP1-2, ALL STEEL PILES SHALL BE ENCASED IN REINFORCED CONCRETE TO A DEPTH OF 4'-0" BELOW THE ABUTMENT BRIDGE SEATS AND ABUTMENT WINGS. THE ENCASEMENT CONSTRUCTION WILL REQUIRE CLASS A CONCRETE AND REINFORCING STEEL (WELDED WIRE FABRIC).

ALL COSTS TO CONSTRUCT THE STEEL PILE ENCASEMENTS INCLUDING THE COST OF EXCAVATION, CLASS A CONCRETE AND REINFORCING STEEL, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "PILES, DRIVEN (HP 10X42)" AND "PILES, DRIVEN (HP 12X53)."

PERFORATED PIPE UNDERDRAIN AT ABUTMENTS AND SLOPE WALLS

INSTALLATION OF PERFORATED PIPE UNDERDRAIN AT ABUTMENTS WILL REQUIRE PIPE UNDERDRAIN COVER MATERIAL AND FILTER FABRIC. THE INSTALLATION OF THE PERFORATED PIPE, PIPE UNDERDRAIN COVER MATERIAL AND FILTER FABRIC SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS B40-C-ABUT-MISC, PED-3 AND PUD-3.

ALL COSTS TO INSTALL THE PERFORATED PIPE UNDERDRAIN INCLUDING THE COST OF ALL PERFORATED PIPE, PIPE FITTINGS INCLUDING END CAPS AND TEES, PIPE UNDERDRAIN COVER MATERIAL, FILTER FABRIC, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN ROUND."

NON-PERFORATED PIPE UNDERDRAIN AT ABUTMENTS AND SLOPE WALLS

INSTALLATION OF NON-PERFORATED PIPE UNDERDRAIN AT ABUTMENTS WILL REQUIRE TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL. THE INSTALLATION OF THE NON-PERFORATED PIPE SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS B40-C-ABUT-MISC, PED-3 AND PUD-3. THE STANDARD BEDDING MATERIAL SHALL BE CLASS B AND SHALL BE PLACED AROUND THE NON-PERFORATED PIPE UNDERDRAIN IN THE BOTTOM 2 FEET OF THE TRENCH. THE TRENCH SHALL BE BACKFILLED WITH COMPACTED NATIVE SOIL ABOVE THE STANDARD BEDDING MATERIAL.

ALL COSTS TO INSTALL THE NON-PERFORATED PIPE UNDERDRAIN INCLUDING THE COST OF ALL NON-PERFORATED PIPE, TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, BACKFILLING, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" NON-PERF. PIPE UNDERDRAIN RND."

BRIDGE 'M' - DRILLED SHAFT CONSTRUCTION

THE DOUBLE CASING METHOD OF DRILLED SHAFT CONSTRUCTION WILL NOT BE ALLOWED AT BRIDGE 'M'. SEE SECTION 516.04.C. OF THE STANDARD SPECIFICATIONS FOR OTHER ACCEPTABLE METHODS OF DRILLED SHAFT CONSTRUCTION.

BEARING ASSEMBLIES

MATERIAL REQUIREMENTS FOR ALL BEARING ASSEMBLIES SHALL CONFORM TO THE CURRENT ODOT SPECIAL PROVISIONS FOR "BRIDGE BEARING STRUCTURAL STEEL" AND "ELASTOMERIC BEARING PADS."

ALL COSTS OF PROVIDING AND INSTALLING THE STAINLESS STEEL BEARING ASSEMBLIES AS SPECIFIED OR AS SHOWN IN THE PLANS INCLUDING THE COST OF STEEL REINFORCED ELASTOMERIC BEARING PADS; ALL STAINLESS STEEL PARTS INCLUDING: ANCHOR PLATES, CONTACT PLATES, BUILT-UP CONTACT ANGLES, ANCHOR RODS, NUTS AND WASHERS; AND ALL MATERIAL; LABOR; EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH OF "STAINLESS STEEL FIXED BEARING ASSEMBLY" AND "STAINLESS STEEL EXPANSION BEARING ASSEMBLY."

STRUCTURAL STEEL

ALL STRUCTURAL STEEL INSTALLED ON ALL BRIDGES SHALL CONFORM TO AASHTO M270 (ASTM A709) GRADE 50W AND SECTION 724.01 OF THE STANDARD SPECIFICATIONS. ALL BOLTED CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH FASTENERS CONFORMING TO SECTION 724.02 OF THE STANDARD SPECIFICATIONS. ALL WELDED STUD SHEAR CONNECTORS SHALL CONFORM TO SECTION 724.04 OF THE STANDARD SPECIFICATIONS.

CONCRETE INTERMEDIATE DIAPHRAGMS

ONCE THE CONCRETE HAS BEEN PLACED FOR THE CONCRETE INTERMEDIATE DIAPHRAGMS, WAIT A MINIMUM OF 24 HOURS BEFORE REMOVING THE SIDE FORMS. DO NOT REMOVE THE BOTTOM FORM FOR A MINIMUM OF 3 DAYS OR AT THE DISCRETION OF THE ENGINEER. THIS TIME MAY BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH. DO NOT PLACE THE CONCRETE FOR THE DECK SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS OR DIAPHRAGMS UNTIL THE CONCRETE IN THE DIAPHRAGMS HAS BEEN IN PLACE FOR A MINIMUM OF 10 DAYS OR AT THE DISCRETION OF THE ENGINEER. THIS TIME MAY BE SHORTENED IF THE CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

STAY-IN-PLACE DECK SLAB FORMS

STAY-IN-PLACE STEEL DECK SLAB FORMS MAY BE USED IF THE MINIMUM DECK SLAB THICKNESS OF 8" IS OBTAINED BY MEASURING FROM THE TOP OF THE DECK SLAB TO THE TOP PORTION OF THE CORRUGATIONS IN THE FORMS. LIMIT THE COMBINED LOAD OF THE FORMS AND ANY ADDITIONAL WEIGHT OF CONCRETE NECESSITATED BY THE USE OF THE FORMS TO A MAXIMUM OF 5 PSF. ANY POLYSTYRENE OR OTHER FILLER MATERIAL PLACED TO FILL THE CORRUGATIONS IN THE FORMS MUST BE BONDED TO THE FORMS.

ALL COSTS ASSOCIATED WITH THE USE OF STAY-IN-PLACE FORMS INCLUDING THE COST OF ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF "CLASS AA CONCRETE." FOR ADDITIONAL INFORMATION CONCERNING THE USE OF STAY-IN-PLACE FORMS, SEE SECTION 502 OF THE STANDARD SPECIFICATIONS.

THE CONTRACTOR MAY SUBSTITUTE STAY-IN-PLACE PRESTRESSED CONCRETE DECK SLAB FORMS, AT NO ADDITIONAL COST TO THE DEPARTMENT, IF THE FOLLOWING CONDITIONS ARE MET:

1. SHOP DRAWINGS AND STRUCTURAL CALCULATIONS FOR THE FORMS ARE SUBMITTED TO AND APPROVED BY THE BRIDGE ENGINEER.
2. A NEW STRUCTURAL DESIGN, STRUCTURAL CALCULATIONS AND A NEW REINFORCING SCHEDULE FOR THE DECK SLAB ARE SUBMITTED TO AND APPROVED BY THE BRIDGE ENGINEER.
3. ALL SUBMITTED SHOP DRAWINGS, NEW DECK SLAB REINFORCING SCHEDULE, STRUCTURAL DESIGNS AND CALCULATIONS ARE PREPARED, SIGNED AND SEALED BY AN PROFESSIONAL ENGINEER LICENSED IN THE STATE OF OKLAHOMA.

BRIDGE DECK SLAB CONSTRUCTION METHODS

ANY STEEL USED BY THE CONTRACTOR TO FACILITATE DECK SLAB CONSTRUCTION, SUCH AS INSERT WELD ANCHORS, TY-BAR CLIPS, FORM HANGERS OR OTHER APPURTENANCES, THAT REMAIN IN PLACE IN THE BRIDGE DECK SLAB, MUST BE EPOXY COATED OR GALVANIZED. EPOXY COAT IN ACCORDANCE WITH AASHTO M 284 OR GALVANIZE IN ACCORDANCE WITH AASHTO M 111.

DECK SLAB HAUNCHES

PLAN QUANTITY FOR CLASS AA CONCRETE FOR THE HAUNCHES OVER THE PRESTRESSED CONCRETE BEAMS OR STEEL PLATE GIRDERS IS AS SHOWN IN THE TABLE BELOW. NO PAYMENT WILL BE MADE FOR DIFFERENCES BETWEEN PLAN QUANTITY AND THE ACTUAL QUANTITY OF HAUNCH CONCRETE.

HAUNCH CONCRETE (CUBIC YARDS)	
BRIDGE 'J'	34.2
BRIDGE 'M'	5.1
BRIDGE 'O'	7.3
BRIDGE 'P'	6.9
BRIDGE 'Q'	15.3
BRIDGE 'U'	31.4

SEALING CONSTRUCTION JOINTS IN THE DECK SLAB

THE CONSTRUCTION JOINTS IN THE DECK SLABS SHALL BE SEALED WITH HIGH MOLECULAR WEIGHT METHACRYLATE (HMWM) OR EPOXY RESIN AS SHOWN IN THE PLANS AND IN ACCORDANCE WITH SECTION 523 OF THE STANDARD SPECIFICATIONS.

ALL COSTS TO SEAL THE CONSTRUCTION JOINTS IN THE DECK SLABS INCLUDING THE COST OF CRACK PREPARATION, HMWM, RESIN, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "SEALER CRACK PREPARATION" AND THE UNIT PRICE BID PER GALLON OF "SEALER RESIN."

PENETRATING WATER REPELLENT SURFACE TREATMENT

A PENETRATING WATER REPELLENT SURFACE TREATMENT SHALL BE APPLIED TO THE CONCRETE SURFACES OF THE BRIDGES AS SHOWN IN THE PLANS INCLUDING ALL THE FOLLOWING SURFACES:

1. TOP AND EXPOSED FRONT FACE AND ENDS OF ABUTMENT BRIDGE SEATS
2. FRONT FACE AND EXPOSED ENDS OF ABUTMENT BACKWALLS
3. TOPS AND SIDES OF PEDESTALS ON ABUTMENT BRIDGE SEATS
4. TOPS, SIDES AND ENDS OF PIER CAPS
5. TOPS AND SIDES OF PEDESTALS ON PIER CAPS
6. THE OUTER FACE AND BOTTOM OF EXTERIOR PRESTRESSED CONCRETE BEAMS
7. EDGE AND UNDERSIDE OF THE OVERHANGING PORTIONS OF THE BRIDGE DECK SLABS
8. ROADWAY FACE AND TOP OF CONCRETE PARAPETS AND INSIDE ALL DRAIN OPENINGS IN THE CONCRETE PARAPETS
9. ROADWAY FACE AND TOP OF CONCRETE TRAFFIC RAILS AND INSIDE ALL POST OPENINGS IN THE CONCRETE TRAFFIC RAILS

ALL COSTS OF THE PENETRATING WATER REPELLENT SURFACE TREATMENT INCLUDING THE COST OF ALL MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD OF "WATER REPELLENT (VISUALLY INSPECTED)."

APPROACH SLABS

CLASS AA CONCRETE SHALL BE USED IN THE APPROACH SLABS OF THE BRIDGES. THE QUANTITIES GIVEN ARE BASED ON THE ACTUAL SQUARE YARDS OF THE APPROACH SLABS.

ALL COSTS TO CONSTRUCT THE APPROACH SLABS INCLUDING THE COST OF CLASS AA CONCRETE, EPOXY COATED REINFORCING STEEL, SILICONE JOINT SEALANT, RAPID CURE JOINT SEALANT, BACKER ROD, PREFORMED EXPANSION JOINT FILLER, POLYETHYLENE SHEETING, SAW CUTTING, JOINT GRINDING, PREPARATION OF SUBGRADE INCLUDING ANY NECESSARY EMBANKMENT AND EXCAVATION, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER SQUARE YARD OF "APPROACH SLAB."

BRIDGES 'J', 'M', 'O', 'P', 'Q' AND 'U'

NOTES AND SUMMARY OF
PAY QUANTITIES (BRIDGES)
(SHEET NO. 1 OF 4)

GENERAL NOTES CONTINUED

BRIDGE 'U' - STEEL BEAM AND GIRDER BRACING FOR PLACEMENT OF DECK SLAB CONCRETE

WHEN PLACING THE DECK SLAB CONCRETE AT BRIDGE 'U', THE STEEL BEAMS/GIRDERS SHALL BE BRACED WITH CANTILEVER FORMING BRACKETS, TENSION TIE BARS, TY-BAR CLIPS AND STRUT BRACES INSTALLED AS SHOWN ON SHEET NO. B192. THE TENSION TIE BARS, TY-BAR CLIPS AND STRUT BRACES SHALL BE SPACED ALONG THE GIRDERS AT INTERVALS NO GREATER THAN 4 FEET. THE TENSION TIE BARS, TY-BAR CLIPS AND STRUT BRACES SHALL ALL BE PLACED IN LINE WITH ONE ANOTHER AND HAVE THE SAME SPACING. THE CANTILEVER FORMING BRACKETS SHALL BE SPACED ALONG BOTH EXTERIOR GIRDERS SUCH THAT ONE CANTILEVER FORMING BRACKET ON EACH EXTERIOR GIRDER IS PLACED IN LINE WITH EACH LINE OF THE TENSION TIE BARS, TY-BAR CLIPS AND STRUT BRACES. ALL OTHER REQUIRED CANTILEVER FORMING BRACKETS SHALL BE EVENLY SPACED BETWEEN THE CANTILEVER FORMING BRACKETS THAT ARE TO BE PLACED IN LINE WITH EACH LINE OF THE TENSION TIE BARS, TY-BAR CLIPS AND STRUT BRACES.

THE CANTILEVER FORMING BRACKETS SHALL BE USED AT THE EXTERIOR GIRDERS TO PREVENT TWISTING OF THE GIRDERS. ALL CANTILEVER FORMING BRACKETS SHALL BE ADJUSTABLE DURING PLACEMENT OF THE DECK SLAB CONCRETE AS REQUIRED TO MAINTAIN PROPER GRADES OF THE DECK SLAB OVERHANG. IF SHIMS ARE EMPLOYED TO ADJUST THE FORMING BRACKETS, A METHOD TO PREDICT THE CRUSH AND SETTLEMENT OF THE SHIMS MUST BE PROVIDED TO AND APPROVED BY THE ENGINEER PRIOR TO PLACING THE DECK SLAB CONCRETE. THE LEG BRACES ON THE CANTILEVER FORMING BRACKETS SHALL BEAR ON THE GIRDER WEBS WITHIN 6" OF THE BOTTOM FLANGE. UNDER NO CIRCUMSTANCES SHALL THE CANTILEVER FORMING BRACKETS EXTEND BELOW THE BOTTOM FLANGE OF THE GIRDERS. IN ADDITION, NO GIRDERS SHALL BE SUPPORTED ON JACKS WHILE THE CANTILEVER FORMING BRACKETS ARE IN PLACE OR WHILE THE DECK SLAB CONCRETE IS BEING POURED OR CURED.

THE TENSION TIE BARS SHALL BE PLACED PERPENDICULAR TO THE GIRDERS. THE TENSION TIE BARS SHALL HAVE A MINIMUM OF 1 INCH COVER AND SHALL BE PLACED AT OR BELOW THE LEVEL OF THE TOP LAYER OF REINFORCING STEEL IN THE DECK SLAB. THE TENSION TIE BARS SHALL BE A MINIMUM OF #4 EPOXY COATED REINFORCING STEEL BARS WITH THREADED ENDS OR 1/2" DIAMETER GALVANIZED ALL-THREAD. THE TENSION TIE BARS SHALL BE ATTACHED TO THE TOP FLANGE OF THE GIRDERS WITH TY-BAR CLIPS. NO WELDING TO THE TOP FLANGE OF THE GIRDERS OR THE SHEAR CONNECTORS WILL BE PERMITTED. THE STRUT BRACING SHALL BE COMPOSED OF 4" X 4" HARDWOOD OR A MATERIAL OF AN EQUIVALENT STRENGTH. THE STRUTS SHALL BE PLACED AT EACH TENSION TIE BAR LOCATION AND BRACED AGAINST THE WEB OF THE GIRDERS WITHIN 6" OF THE BOTTOM FLANGE.

THE CONTRACTOR SHALL SUBMIT TO THE BRIDGE ENGINEER FOR APPROVAL, AND COPY THE RESIDENT ENGINEER, WORKING DRAWINGS FOR THE BRACING SYSTEM. DRAWINGS OF THE PROPOSED BRACING SYSTEM SHALL BE APPROVED BY THE BRIDGE ENGINEER BEFORE ANY CONCRETE IS PLACED. IF THE CONTRACTOR ELECTS TO USE A BRACING SYSTEM OTHER THAN THAT SHOWN, THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE BRACING SYSTEM TO THE ENGINEER FOR APPROVAL. ALL DRAWINGS AND CALCULATIONS OF THE PROPOSED BRACING SYSTEM SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.

THE STEEL GIRDER BRACING WILL NOT BE MEASURED FOR PAYMENT. ALL COST OF THE BRACING INCLUDING THE COST OF CANTILEVER FORMING BRACKETS, EPOXY COATED REINFORCING STEEL, GALVANIZED ALL-THREAD, TY-BAR CLIP CONNECTION DEVICES, HARDWOOD STRUT BRACES OR EQUIVALENT, PROFESSIONAL SERVICES, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF "CLASS AA CONCRETE."

PAY ITEM NOTES

(BR-1) PAYMENT FOR THIS ITEM WILL BE BASED UPON PLAN QUANTITIES ONLY. SEE SECTION 109.01.B OF THE STANDARD SPECIFICATIONS.

(BR-2) INCLUDES THE FOLLOWING FOR FABRICATION OF STEEL PARTS OF BEARING ASSEMBLIES:

LOCATION	STAINLESS STEEL (LB)
BRIDGE 'J'	7,030.00
BRIDGE 'M'	4,620.00
BRIDGE 'O'	5,280.00
BRIDGE 'P'	5,270.00
BRIDGE 'Q'	5,640.00
BRIDGE 'U'	13,260.00

(BR-3) QUANTITY TO BE USED FOR CONSTRUCTION OF DRAINS AT ENDS OF BRIDGE

(BR-4) A MINIMUM OF ONE (1) CSL TEST SHALL BE CONDUCTED AT EACH ABUTMENT IN A DRILLED SHAFT SUPPORTING THE BRIDGE SEATS, AND A MINIMUM OF ONE (1) CSL TEST SHALL BE CONDUCTED IN A DRILLED SHAFT SUPPORTING THE PIERS. SELECTION OF THE ACTUAL DRILLED SHAFTS TO BE TESTED SHALL BE APPROVED BY THE ENGINEER.

(BR-5) INCLUDES THE FOLLOWING FOR INSTALLATION OF PERFORATED PIPE UNDERDRAIN:

LOCATION	PIPE UNDERDRAIN COVER MATERIAL (CY)	FILTER FABRIC (SY)
BRIDGE 'J'	130.00	102.00
BRIDGE 'M'	110.00	97.00
BRIDGE 'O'	83.00	85.00
BRIDGE 'P'	89.00	83.00
BRIDGE 'Q'	185.00	172.00
BRIDGE 'U'	11.00	36.00

(BR-6) INCLUDES THE FOLLOWING FOR INSTALLATION OF NON-PERFORATED PIPE UNDERDRAIN:

LOCATION	TRENCH EXCAVATION (CY)	STD. BEDDING MATL. CLASS B (CY)
BRIDGE 'J'	14.00	7.00
BRIDGE 'M'	13.00	7.00
BRIDGE 'O'	12.00	7.00
BRIDGE 'P'	14.00	7.00
BRIDGE 'Q'	98.00	78.00
BRIDGE 'U'	11.00	5.00

(BR-7) INCLUDES THE FOLLOWING FOR CONSTRUCTION OF STEEL PILE ENCASEMENTS:

LOCATION	CLASS A CONCRETE (CY)	REINFORCING STEEL (LB)
BRIDGE 'J'	-	-
BRIDGE 'M'	7.70	330.00
BRIDGE 'O'	5.90	250.00
BRIDGE 'P'	-	-
BRIDGE 'Q'	9.50	390.00
BRIDGE 'U'	7.70	330.00

(BR-8) INCLUDES THE FOLLOWING FOR INSTALLATION OF TYPE I PLAIN RIPRAP WITH FILTER BLANKET

FILTER BLANKET: 136.00 TONS

24428(12) PAY QUANTITIES				
0200 BRIDGE 'J' - NBI NO. 32637 - FOUR SPAN (34'-134'-134'-117') P.C. BEAM BRIDGE WITH 36° 13'38" SKEW RIGHT FORWARD, 32'-0" CLEAR ROADWAY AND CONCRETE RAIL (TR4)				
ITEM		DESCRIPTION	UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	390.00
501(G)	6309	CLSM BACKFILL (BR-1)	CY	356.00
503(A)	6290	PRESTRESSED CONCRETE BEAMS (TYPE J BT) (BR-1)	LF	1,652.00
504(A)	1304	APPROACH SLAB (BR-1)	SY	350.80
504(B)	1305	SAW-CUT GROOVING (BR-1)	SY	1,820.00
504(C)	6250	SEALED EXPANSION JOINT (BR-1)	LF	84.32
504(D)	6254	CONCRETE RAIL (TR4) (BR-1)	LF	1,022.60
506(A)	1322	STRUCTURAL STEEL (BR-1)	LB	4,370.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
509(A)	1326	CLASS AA CONCRETE (BR-1)	CY	456.00
509(B)	1328	CLASS A CONCRETE (BR-1)	CY	383.20
509(D)	1331	CLASS C CONCRETE (BR-1)(BR-3)	CY	18.00
510(C)	6138	SLOPE WALL (5") (BR-1)	SY	1,038.00
511(A)	1332	REINFORCING STEEL (BR-1)	LB	1,880.00
511(B)	6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	155,860.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	2,082.00
516(A)	6090	DRILLED SHAFTS 24" DIAMETER	LF	84.00
516(A)	6091	DRILLED SHAFTS 30" DIAMETER	LF	80.00
516(A)	6098	DRILLED SHAFTS 72" DIAMETER	LF	56.00
516(A)	6100	DRILLED SHAFTS 84" DIAMETER	LF	28.00
516(C)	6200	CROSSHOLE SONIC LOGGING (BR-4)	EA	1.00
523(A)	6550	SEALER CRACK PREPARATION (BR-1)	LF	40.00
523(B)	6560	SEALER RESIN (BR-1)	GAL	0.40
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	182.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	68.00
613(Q)	5946	OUTLET LATERAL HEADWALL (BR-1)	EA	2.00

24428(12) PAY QUANTITIES				
0600 CONSTRUCTION STAKING				
ITEM		DESCRIPTION	UNIT	QUANTITY
642(B)	0096	CONSTRUCTION STAKING LEVEL II	LSUM	1.00

24428(12) PAY QUANTITIES				
0640 CONSTRUCTION				
ITEM		DESCRIPTION	UNIT	QUANTITY
220	2800	SWPPP DOCUMENTATION AND MANAGEMENT	LSUM	1.00
640(A)	1398	FIELD OFFICE	EA	1.00
641	1399	MOBILIZATION	LSUM	1.00

BRIDGES 'J', 'M', 'O', 'P', 'Q' AND 'U'

NOTES AND SUMMARY OF
PAY QUANTITIES (BRIDGES)
(SHEET NO. 2 OF 4)

24428(12)				
PAY QUANTITIES				
0201 BRIDGE 'M' - NBI NO. 32641 - THREE SPAN (52'-96'-52') P.C. BEAM BRIDGE WITH 0° SKEW, 38'-0" CLEAR ROADWAY AND 42" F-SHAPED PARAPETS				
ITEM	DESCRIPTION		UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	250.00
501(G)	6309	CLSM BACKFILL (BR-1)	CY	174.00
503(A)	1311	PRESTRESSED CONCRETE BEAMS (TYPE II) (BR-1)	LF	505.00
503(A)	1313	PRESTRESSED CONCRETE BEAMS (TYPE IV) (BR-1)	LF	476.67
504(A)	1304	APPROACH SLAB (BR-1)	SY	273.40
504(B)	1305	SAW-CUT GROOVING (BR-1)	SY	1,099.00
504(C)	6250	SEALED EXPANSION JOINT (BR-1)	LF	42.00
504(E)	6190	42" F-SHAPED PARAPET (BR-1)	LF	519.50
506(A)	1322	STRUCTURAL STEEL (BR-1)	LB	1,350.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	10.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	20.00
509(A)	1326	CLASS AA CONCRETE (BR-1)	CY	223.90
509(B)	1328	CLASS A CONCRETE (BR-1)	CY	239.20
510(C)	6138	SLOPE WALL (5") (BR-1)	SY	656.00
511(A)	1332	REINFORCING STEEL (BR-1)	LB	980.00
511(B)	6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	83,470.00
514(A)	6010	PILES, FURNISHED (HP 10X42)	LF	356.00
514(A)	6011	PILES, FURNISHED (HP 12X53)	LF	1,191.00
514(B)	6292	PILES, DRIVEN (HP 10X42) (BR-7)	LF	356.00
514(B)	6294	PILES, DRIVEN (HP 12X53) (BR-7)	LF	1,191.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	983.00
516(A)	6098	DRILLED SHAFTS 72" DIAMETER	LF	316.00
516(C)	6200	CROSSHOLE SONIC LOGGING	EA	1
523(A)	6550	SEALER CRACK PREPARATION (BR-1)	LF	38.00
523(B)	6560	SEALER RESIN (BR-1)	GAL	0.50
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	174.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	66.00
613(Q)	5946	OUTLET LATERAL HEADWALL (BR-1)	EA	2.00

24428(12)				
PAY QUANTITIES				
0202 BRIDGE 'O' - NBI NO. 32644 - FOUR SPAN (41'-105'-105'-48') P.C. BEAM BRIDGE WITH 12°22'22" SKEW LEFT FORWARD, 32'-0" CLEAR ROADWAY AND CONCRETE RAIL (TR4)				
ITEM	DESCRIPTION		UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	260.00
501(G)	6309	CLSM BACKFILL (BR-1)	CY	185.00
503(A)	1311	PRESTRESSED CONCRETE BEAMS (TYPE II) (BR-1)	LF	342.00
503(A)	1313	PRESTRESSED CONCRETE BEAMS (TYPE IV) (BR-1)	LF	834.67
504(A)	1304	APPROACH SLAB (BR-1)	SY	252.20
504(B)	1305	SAW-CUT GROOVING (BR-1)	SY	1,304.00
504(C)	6250	SEALED EXPANSION JOINT (BR-1)	LF	71.73
504(D)	6254	CONCRETE RAIL (TR4) (BR-1)	LF	731.30
506(A)	1322	STRUCTURAL STEEL (BR-1)	LB	1,510.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
509(A)	1326	CLASS AA CONCRETE (BR-1)	CY	278.50
509(B)	1328	CLASS A CONCRETE (BR-1)	CY	287.70
509(D)	1331	CLASS C CONCRETE (BR-1)(BR-3)	CY	13.00
510(C)	6138	SLOPE WALL (5") (BR-1)	SY	748.00
511(A)	1332	REINFORCING STEEL (BR-1)	LB	1,430.00
511(B)	6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	103,700.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	1,326.00
516(A)	6090	DRILLED SHAFTS 24" DIAMETER	LF	48.00
516(A)	6091	DRILLED SHAFTS 30" DIAMETER	LF	152.00
516(A)	6098	DRILLED SHAFTS 72" DIAMETER	LF	118.00
516(C)	6200	CROSSHOLE SONIC LOGGING (BR-4)	EA	1.00
523(A)	6550	SEALER CRACK PREPARATION (BR-1)	LF	34.00
523(B)	6560	SEALER RESIN (BR-1)	GAL	0.50
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	154.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	68.00
613(Q)	5946	OUTLET LATERAL HEADWALL (BR-1)	EA	2.00

24428(12)				
PAY QUANTITIES				
0203 BRIDGE 'P' - NBI 32645 - FOUR SPAN (50'-95'-95'-50') P.C. BEAM BRIDGE WITH 0° SKEW, 32'-0" CLEAR ROADWAY AND CONCRETE RAIL (TR4)				
ITEM	DESCRIPTION		UNIT	QUANTITY
501(B)	1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	215.00
501(G)	6309	CLSM BACKFILL (BR-1)	CY	138.00
503(A)	1311	PRESTRESSED CONCRETE BEAMS (TYPE II) (BR-1)	LF	390.00
503(A)	1313	PRESTRESSED CONCRETE BEAMS (TYPE IV) (BR-1)	LF	756.00
504(A)	1304	APPROACH SLAB (BR-1)	SY	227.80
504(B)	1305	SAW-CUT GROOVING (BR-1)	SY	1,247.00
504(C)	6250	SEALED EXPANSION JOINT (BR-1)	LF	70.34
504(D)	6245	CONCRETE RAIL (TR4) (BR-1)	LF	700.40
506(A)	1322	STRUCTURAL STEEL (BR-1)	LB	1,480.00
507(A)	6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
507(B)	6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	16.00
509(A)	1326	CLASS AA CONCRETE (BR-1)	CY	270.20
509(B)	1328	CLASS A CONCRETE (BR-1)	CY	282.50
509(D)	1331	CLASS C CONCRETE (BR-1)(BR-3)	CY	18.00
510(C)	6138	SLOPE WALL (5") (BR-1)	SY	616.00
511(A)	1332	REINFORCING STEEL (BR-1)	LB	1,690.00
511(B)	6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	102,830.00
514(A)	6010	PILES, FURNISHED (HP 10X42)	LF	100.00
514(A)	6011	PILES, FURNISHED (HP 12X53)	LF	223.00
514(B)	6292	PILES, DRIVEN (HP 10X42) (BR-7)	LF	100.00
514(B)	6294	PILES, DRIVEN (HP 12X53) (BR-7)	LF	223.00
514(L)	6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
515(A)	6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	1,278.00
516(A)	6098	DRILLED SHAFTS 72" DIAMETER	LF	104.00
516(C)	6200	CROSSHOLE SONIC LOGGING	EA	1
523(A)	6550	SEALER CRACK PREPARATION (BR-1)	LF	64.00
523(B)	6560	SEALER RESIN (BR-1)	GAL	0.70
613(H)	6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	148.00
613(I)	6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	66.00
613(Q)	5946	OUTLET LATERAL HEADWALL (BR-1)	EA	2.00

NOTES

SEE SHEET NO. ABO2 FOR PAY ITEM NOTES
BRIDGES 'J', 'M', 'O', 'P', 'Q' AND 'U'

NOTES AND SUMMARY OF
PAY QUANTITIES (BRIDGES)
(SHEET NO. 3 OF 4)

24428(12)

PAY QUANTITIES

0204 BRIDGE 'O' - NBI NO. 32646 - THREE SPAN (62'-100'-62') P.C. BEAM BRIDGE SKEWED LEFT FORWARD WITH 50'-0" CLEAR ROADWAY AND 42" F-SHAPED PARAPETS

ITEM	DESCRIPTION	UNIT	QUANTITY
501(B) 1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	238.20
501(G) 6309	CLSM BACKFILL (BR-1)	CY	334.20
503(A) 1312	PRESTRESSED CONCRETE BEAMS (TYPE III) (BR-1)	LF	730.00
503(A) 1313	PRESTRESSED CONCRETE BEAMS (TYPE IV) (BR-1)	LF	595.30
504(A) 1304	APPROACH SLAB (BR-1)	SY	521.80
504(B) 1305	SAW-CUT GROOVING (BR-1)	SY	1,742.40
504(C) 6250	SEALED EXPANSION JOINT (BR-1)	LF	59.00
504(E) 6190	42" F-SHAPED PARAPET (BR-1)	LF	628.10
506(A) 1322	STRUCTURAL STEEL (BR-1)	LB	2,280.00
507(A) 6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	12.00
507(B) 6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	24.00
509(A) 1326	CLASS AA CONCRETE (BR-1)	CY	339.90
509(B) 1328	CLASS A CONCRETE (BR-1)	CY	323.50
510(C) 6138	SLOPE WALL (5") (BR-1)	SY	1,302.00
511(A) 1332	REINFORCING STEEL (BR-1)	LB	2,420.00
511(B) 6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	152,990.00
514(A) 6010	PILES, FURNISHED (HP 10X42)	LF	273.00
514(A) 6011	PILES, FURNISHED (HP 12X53)	LF	1,201.00
514(B) 6292	PILES, DRIVEN (HP 10X42) (BR-7)	LF	273.00
514(B) 6294	PILES, DRIVEN (HP 12X53) (BR-7)	LF	1,201.00
514(L) 6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
515(A) 6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	1,700.80
516(A) 6098	DRILLED SHAFTS 72" DIAMETER	LF	324.00
516(C) 6200	CROSSHOLE SONIC LOGGING	EA	1.00
523(A) 6550	SEALER CRACK PREPARATION (BR-1)	LF	184.00
523(B) 6560	SEALER RESIN (BR-1)	GAL	3.00
613(H) 6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	308.00
613(I) 6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	230.00
613(O) 5946	OUTLET LATERAL HEADWALL (BR-1)	EA	2.00

24428(12)

PAY QUANTITIES

0205 BRIDGE 'U' - NBI NO. 32652 - SIX SPAN (2-100'-2-100'-2-100') CONTINUOUS PLATE GIRDER BRIDGE WITH 29'-0" CLEAR ROADWAY AND 42" F-SHAPED PARAPETS

ITEM	DESCRIPTION	UNIT	QUANTITY
501(B) 1307	SUBSTRUCTURE EXCAVATION COMMON (BR-1)	CY	180.00
501(G) 6309	CLSM BACKFILL (BR-1)	CY	220.00
504(A) 1304	APPROACH SLAB (BR-1)	SY	214.00
504(B) 1305	SAW-CUT GROOVING (BR-1)	SY	2,154.00
504(C) 6250	SEALED EXPANSION JOINT (BR-1)	LF	128.00
504(E) 6190	42" F-SHAPED PARAPET (BR-1)	LF	1,324.00
506(A) 1322	STRUCTURAL STEEL (BR-1)	LB	767,000.00
507(A) 6170	STAINLESS STEEL FIXED BEARING ASSEMBLY (BR-1)(BR-2)	EA	12.00
507(B) 6174	STAINLESS STEEL EXPANSION BEARING ASSEMBLY (BR-1)(BR-2)	EA	24.00
509(A) 1326	CLASS AA CONCRETE (BR-1)	CY	530.00
509(B) 1328	CLASS A CONCRETE (BR-1)	CY	248.00
511(B) 6010	EPOXY COATED REINFORCING STEEL (BR-1)	LB	169,800.00
514(A) 6010	PILES, FURNISHED (HP 10X42)	LF	226.00
514(A) 6011	PILES, FURNISHED (HP 12X53)	LF	750.00
514(B) 6292	PILES, DRIVEN (HP 10X42) (BR-7)	LF	226.00
514(B) 6294	PILES, DRIVEN (HP 12X53) (BR-7)	LF	750.00
514(L) 6220	PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
515(A) 6013	WATER REPELLENT (VISUALLY INSPECTED) (BR-1)	SY	1,303.00
516(A) 6096	DRILLED SHAFTS 60" DIAMETER	LF	590.00
516(C) 6200	CROSSHOLE SONIC LOGGING	EA	2.00
523(A) 6550	SEALER CRACK PREPARATION (BR-1)	LF	192.00
523(B) 6560	SEALER RESIN (BR-1)	GAL	2.50
601(B) XXXX	TYPE I PLAIN RIPRAP WITH FILTER BLANKET (BR-8)	TON	800.00
613(H) 6204	6" PERFORATED PIPE UNDERDRAIN ROUND (BR-1)(BR-5)	LF	68.00
613(I) 6207	6" NON-PERF. PIPE UNDERDRAIN RND. (BR-6)	LF	44.00

NOTES

SEE SHEET NO. ABO2 FOR PAY ITEM NOTES

BRIDGES 'J', 'M', 'O', 'P', 'Q' AND 'U'

NOTES AND SUMMARY OF
PAY QUANTITIES (BRIDGES)
(SHEET NO. 4 OF 4)

State Job No. 24428(12)

Sheet No. ABO4

ENVIRONMENTAL MITIGATION NOTES

REVISIONS		
REV. NO.	DESCRIPTION	DATE

EARTHWORK NOTE:
 THE CONTRACTOR MUST ENSURE THAT ANY MATERIAL INCORPORATED INTO THE PROJECT IS FREE OF ANY HAZARDOUS, INDUSTRIAL OR CONTAMINATED WASTE, REFER TO SUB-SECTIONS 106.01 AND 202.02 OF THE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

IMPORTED MATERIAL (EG. BORROW) - IF MATERIAL IS IMPORTED TO THE PROJECT AND AT ANY POINT THE MATERIAL IS DETERMINED BY THE ENGINEER TO INCLUDE ANY TYPE OF UNACCEPTABLE CONTAMINATION, THE MATERIAL MAY REQUIRE REMOVAL, IN WHOLE, OR IN PART. IF REMOVAL IS REQUIRED, THEN THE INITIAL PLACEMENT, REMOVAL AND PROPER DISPOSAL OF THIS MATERIAL SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE DISPOSAL OF THE UNACCEPTABLE MATERIAL SHALL BE APPROVED BY THE ENGINEER, REFER TO SUB-SECTION 107.15 OF THE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

TO ASSIST THE CONTRACTOR, THE "OFF PROJECT FACILITY/ BORROW SITE HAZARDOUS MATERIALS QUESTIONNAIRE" IS PROVIDED ON THE DEPARTMENT'S WEB SITE:

[HTTPS://OK.GOV/ODOT/PROGRAMS AND PROJECTS/ENVIRONMENTAL/INDEX.HTML](https://ok.gov/odot/programs_and_projects/environmental/index.html)

THIS QUESTIONNAIRE IS PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR SO THAT A CLEARER UNDERSTANDING OF THE CHARACTERISTICS OF THE PROPOSED SITE/ MATERIAL IS ACHIEVED. COMPLETION AND SUBMITTAL OF THIS FORM TO THE ENGINEER DOES NOT EXCUSE THE CONTRACTOR FROM PROVIDING MATERIALS THAT ARE FREE OF HAZARDOUS AND INDUSTRIAL COMPOSITION IN ACCORDANCE WITH SUB-SECTIONS 106.01 AND 202.02 OF THE 2009 STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

NON-COMPLIANCE NOTE:
 FAILURE TO IMPLEMENT THE COMMITMENTS SPECIFIED IN THE PLAN NOTES CAN RESULT IN NON-COMPLIANCE ISSUES ON THE PROJECT. WORK ACTIVITIES MAY BE SUSPENDED ON THE PROJECT, FOR AN UNDETERMINED DURATION, WHILE WORKING WITH REGULATORS TO BRING THE PROJECT BACK INTO COMPLIANCE. THE CONTRACTOR WILL NOT BE COMPENSATED FOR TIME LOST.

WATER QUALITY CONVSERVATION NOTE:
 APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE IMPACTS FROM STORM WATER DISCHARGES AND SEDIMENTATION IN STREAMS, AS ESTABLISHED BY THE OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY, SHALL BE CONSCIENTIOUSLY IMPLEMENTED THROUGHOUT THE PROPOSED CONSTRUCTION PERIODS, IN ORDER TO MINIMIZE ANY POTENTIAL IMPACTS TO ANY LISTED SPECIES. THE EFFECTIVENESS OF EROSION CONTROLS SHALL BE MAINTAINED FOR THE DURATION OF CONSTRUCTION ACTIVITIES. HAZARDOUS MATERIALS, CHEMICALS, FUELS, LUBRICATING OILS, AND OTHER SUCH SUBSTANCES SHALL BE STORED AT LEAST 100 FEET FROM THE ORDINARY HIGH WATER MARK (OHWM). REFUELING OF CONSTRUCTION EQUIPMENT SHALL ALSO BE CONDUCTED AT LEAST 100 FEET FROM THE OHWMS. SEDIMENT AND EROSION CONTROLS SHALL BE INSTALLED AROUND STAGING AREAS TO PROHIBIT DISCHARGE OF MATERIALS FROM THESE SITES. CONSTRUCTION WASTE MATERIALS AND DEBRIS SHALL BE STOCKPILED AT LEAST 25 FEET OUTSIDE OF THE OHWMS, AND THESE MATERIALS SHALL BE REMOVED AND DISPOSED OF PROPERLY FOLLOWING COMPLETION OF THE PROJECT. PREVENTATIVE MEASURES MUST BE TAKEN TO PROHIBIT THE DISCHARGE OF CONTAMINANTS INTO ANY SURFACE WATERS.

MIGRATORY BIRD NOTE:
 MIGRATORY BIRDS ARE PROTECTED BY THE FEDERAL MIGRATORY BIRD TREATY ACT. MANY BIRDS COMMONLY USE BRIDGES AND CULVERTS FOR NESTING. THE NESTING SEASON FOR MOST MIGRATORY BIRD SPECIES EXTENDS FROM MARCH 1 TO AUGUST 31. MIGRATORY BIRD NESTING USE OF THE US-81 RCBS (STA.108+67.8, AT 34.983665,-97.951738), AND EW-140 RCB (34.9859, -97.952847), AND I-44 RCBS (STA.260+24.87, STA.291+29.17, STA.327+99.02) WAS OBSERVED. PAINTING, REPAIR, RETROFIT, REHABILITATION OR DEMOLITION OF THE EXISTING CULVERTS SHALL BE CONDUCTED BETWEEN SEPTEMBER 1, AND FEBRUARY 28, WHEN MIGRATORY BIRD NESTS ARE NOT OCCUPIED. IF PAINTING, REPAIR, RETROFIT, REHABILITATION OR DEMOLITION CANNOT BE COMPLETED BETWEEN SEPTEMBER 1 AND FEBRUARY 28, THE CULVERTS SHALL BE PROTECTED FROM NEW NEST ESTABLISHMENT PRIOR TO MARCH 1, BY MEANS THAT DO NOT RESULT IN BIRD DEATH OR INJURY. OPTIONS INCLUDE THE EXCLUSION OF ADULT BIRDS FROM SUITABLE NEST SITES ON OR WITHIN A STRUCTURE BY THE PLACEMENT OF WEATHER-RESISTANT POLYPROPYLENE NETTING WITH 0.25-INCH OR SMALLER OPENINGS, PRIOR TO MARCH 1. METHODS OTHER THAN NETTING MUST BE PRE-APPROVED BY THE ODOT BIOLOGIST. ALTHOUGH NO NESTS WERE OBSERVED ON ALL OTHER STRUCTURES, THE BIRDS MAY OCCUPY THE STRUCTURES IN THE FUTURE. THE RESIDENT ENGINEER SHALL CONTACT THE ODOT BIOLOGIST IF ANY BIRD USE OF THESE STRUCTURES IS OBSERVED. IF BIRDS ARE OBSERVED THEN PAINTING, REPAIR, RETROFIT, REHABILITATION OR DEMOLITION OF THE EXISTING CULVERTS SHALL BE CONDUCTED BETWEEN SEPTEMBER 1, AND FEBRUARY 28 (WN MIGRATORY BIRD NESTS ARE NOT OCCUPIED).

WHOOPING CRANE PLAN NOTE:
 IF WHOOPING CRANES ARE SEEN AT OR WITHIN ONE MILE OF THE PROPOSED WORK SITE, THE RESIDENT ENGINEER SHALL IMMEDIAHETELY CONTACT THE ODOT BIOLOGIST IF THERE IS A CONFIRMED SITING AND/OR WHOOPING CRANES ARE OBSERVED WITHIN ONE MILE OF THE PROPOSED WORK SITE, ALL CONSTRUCTION ACTIVITIES SHALL CEASE UNTIL IT IS DETERMINED THAT WHOOPING CRANES HAVE LEFT THE PROJECT VICINITY WITHOUT BEING HARASSED.

TREE REMOVAL MINIMIZATION COMMITMENT:
 IN ORDER TO AVOID AND MINIMIZE ADVERSE IMPACTS TO BIRDS OF CONSERVATION CONCERN, THE REMOVAL OF TREES AND SHRUBS SHALL BE RESTRICTED TO AREAS WITHIN THE ACTUAL LIMITS OF CONSTRUCTION, AND ALL ASPECTS OF THE PROJECT (E.G TEMPORARY WORK AREAS, ALIGNMENTS) WILL BE MODIFIED TO AVOID TREE REMOVAL, IF POSSIBLE, DURING THE DESIGN OF THE PROJECT. TREE REMOVAL WILL BE LIMITED TO THAT SPECIFIED IN THE PROJECT PLANS PROVIDED TO CONTRACTORS.

ENVIRONMENTAL NOTES	DETAIL		
	REVIEW		
	APPROVED		
	ENVIRONMENTAL DIVISION		
STATE OF OKLAHOMA	DEPARTMENT OF TRANSPORTATION		JOB/PIECE NO. 24428(12) SHEET NO. AE01

SUMMARY OF PAY QUANTITIES (STAKING)				
STAKING 600				
ITEM	DESCRIPTION		UNIT	QUANTITY
642(B) 0096	CONSTRUCTION STAKING LEVEL II (6)		LSUM	1

SUMMARY OF PAY QUANTITIES (CONSTRUCTION)				
CONSTRUCTION 640				
ITEM	DESCRIPTION		UNIT	QUANTITY
220 2800	SWPPP DOCUMENTATION AND MANAGEMENT		LSUM	1
640(A) 1426	FIELD OFFICE (5)		EA	1
641 1552	MOBILIZATION		LSUM	1

SUMMARY OF PAY QUANTITIES - ROADWAY				
ROADWAY 100				
ITEM	DESCRIPTION		UNIT	QUANTITY
201(A) 0102	CLEARING AND GRUBBING		LSUM	1.0
202(A) 0183	UNCLASSIFIED EXCAVATION (R-2)		CY	50,340.0
205(A) 4229	TYPE A-SALVAGED TOPSOIL (R-4.6)		LSUM	1.0
221(C) 2801	TEMPORARY SILT FENCE (R-8)		LF	2,739.0
221(D) 2803	TEMPORARY SEDIMENT FILTER (R-8)		EA	7.0
221(F) 0100	TEMPORARY SILT DIKE (R-8)		LF	651.0
230(A) 2806	SOLID SLAB SODDING (3)(R-6.7)		SY	26,659.0
233(A) 2817	VEGETATIVE MULCHING (R-11)		AC	6.0
241 2832	MOWING (R-15)		AC	12.0
242 0400	(PL) STABILIZED CONSTRUCTION EXIT (9)		EA	10.0
307(K) 4300	STABILIZED SUBGRADE (7)		SY	13,291.0
402(E) 0225	TRAFFIC BOUND SURFACE COURSE TYPE E (1)(R-18)		TON	728.0
407(B) 0250	TACK COAT (8)		GAL	2,400.0
408 5774	PRIME COAT (R-21)		GAL	7,608.0
411(B) 5945	SUPERPAVE, TYPE S3 (PG 64-22 OK) (R-24)		TON	50,120.0
411(C) 5960	SUPERPAVE, TYPE S4 (PG 64-22 OK) (R-24)		TON	2,370.0
412 5267	COLD MILLING PAVEMENT (R-26,27)		SY	2,124.0
509(D) 0325	CLASS C CONCRETE (R-30)		CY	67.0
601(B) 0536	TYPE I-A PLAIN RIPRAP		TON	11.0
601(C) 0538	TYPE I-A FILTER BLANKET		TON	4.0
613(A) 4497	36" X 22" R.C.P.I.P.E ARCH CLASS A-III		LF	82.0
613(H) 0450	6" PERFORATED PIPE UNDERDRAIN ROUND (4,10)		LF	345.0
613(I) 1096	6" NON-PERF.P.I.P.E UNDERDRAIN RND. (4,10)		LF	115.0
613(M) 7197	TYPE B6 CULVERT END TREATMENT		EA	2.0
613(M) 7201	TYPE AA6 CULVERT END TREATMENT		EA	4.0
613(Q) 5946	OUTLET LATERAL HEADWALL (10)		EA	4.0
619(A) 0920	REMOVAL OF STRUCTURES & OBSTRUCTIONS (R-36,37)		LSUM	1.0
619(B) 4727	REMOVAL OF CONCRETE PAVEMENT (R-37,38)		SY	51.0
619(B) 4728	REMOVAL OF ASPHALT PAVEMENT (R-37,38)		SY	9,460.0
619(C) 0924	SAWING PAVEMENT		LF	132.0
623 0100	(PL) GUARDRAIL CURBING		EA	12.0
623(A) 0932	BEAM GUARDRAIL W-BEAM SINGLE (R-39)		LF	638.0
623(G) 8571	GUARDRAIL END TREATMENT (GET)		EA	12.0
623(I) 8700	GUARDRAIL BRIDGE CONN-THRIE BEAM (31")		EA	12.0
629(A) 4958	MAILBOX INSTALLATION-SINGLE		EA	1.0
629(C) 4960	MAILBOX		EA	1.0
853 9069	GUARDRAIL DELINEATORS(TYPE 2, CODE 1)		EA	47.0

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SUMMARY OF PAY QUANTITIES
State Job No. 24428(12) Sheet No. AR01

PAY QUANTITY NOTES

- (R-4) AN ESTIMATED QUANTITY OF 4741 C.Y. TOPSOIL TO BE RESERVED FOR REPLACEMENT OF APPROXIMATELY 5" ON COMPLETED FORESLOPES, DITCHES, AND BACKSLOPES. THIS QUANTITY IS INCLUDED IN THE EARTHWORK BALANCE. ANY ADDITIONAL EXCAVATION REQUIRED IN CUT SECTIONS TO ALLOW FOR PLACEMENT OF TOPSOIL TO FINAL GRADE, SHALL BE INCLUDED IN THE PRICE BID.
- (R-6) FOR TYPE A SALVAGED TOPSOIL PRICE BID TO INCLUDE COST OF 18-46-0 FERTILIZER, ESTIMATED AT 150 POUNDS PER ACRE. FOR SOLID SLAB PRICE BID TO INCLUDE COST OF 10-20-10 FERTILIZER WATERING, ESTIMATED AT 200 LBS PER 1,000 SY.
- (R-7) FOR SOLID SLAB SODDING PRICE BID TO INCLUDE COST OF WATERING, ESTIMATED AT 40 GALLONS PER SY.
- (R-8) PRICE BID TO INCLUDE COST OF SEDIMENT REMOVAL AND ALL MAINTENANCE. SEDIMENT MUST BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE DEVICE.
- (R-11) THE QUANTITIES ESTIMATED FOR TEMPORARY EROSION AND SEDIMENT CONTROL IS 6 ACRES.
- (R-15) QUANTITY BASED ON TWO APPLICATIONS.
- (R-18) ESTIMATED AT 160 LBS. PER CU. FT.
- (R-21) PRIME COAT SHALL BE APPLIED AT AN ESTIMATED RATE OF 0.35 GAL. PER SQ. YD. WHEN APPLIED TO SUBGRADE, AND 0.25 GAL. PER SQ. YD. WHEN APPLIED TO AGGREGATE BASE. THE ACTUAL CUTBACK PRIME COAT REQUIRED FOR PLACEMENT OPERATIONS WILL BE DETERMINED BY THE CONTRACTOR, AND SHALL CONSIDER THE RESIDUE FROM DISTILLATION PERCENTAGE SHOWN IN SECTION 708.03 OF THE STANDARD SPECIFICATIONS.
- (R-24) ESTIMATED AT 112 LBS. PER SQ. YD. PER 1" THICK.
- (R-26) PRICE BID TO INCLUDE COST OF FOG SEAL, MEETING THE REQUIREMENTS OF SECTION 407 OF THE STANDARD SPECIFICATIONS.
- (R-27) MILLINGS SHALL BECOME THE PROPERTY OF ODOT, TO BE HAULED AND STOCKPILED WITHIN TEN MILES OF THE PROJECT. MILLINGS SHALL BE FREE FROM SOIL OR FOREIGN MATERIAL AND SHALL CONTAIN NO PIECES GREATER THAN 4" DIAMETER. CARE SHOULD BE TAKEN WHEN STOCKPILING TO NOT INCORPORATE UNDERLYING MATERIAL INTO THE STOCKPILE.
- (R-30) QUANTITY INCLUDES AN ESTIMATED 50 C.Y. TO BE USED AS DIRECTED BY THE ENGINEER.
- (R-34) ANY DRAINAGE STRUCTURE DESCRIBED AS TEMPORARY, SHALL AFTER COMPLETION OF THE PROJECT, BE REMOVED BY AND BECOME THE PROPERTY OF THE CONTRACTOR.
- (R-36) INCLUDES REMOVAL OF ALL EXISTING ROADWAY DRAINAGE STRUCTURES, HEADWALLS (UNLESS OTHERWISE SPECIFIED), INLETS, FENCES, AND OTHER STRUCTURES WITHIN THE RIGHT OF WAY.
- (R-37) TO BECOME THE PROPERTY OF AND BE DISPOSED OF BY THE CONTRACTOR IN A MANNER APPROVED BY THE ENGINEER.
- (R-38) MATERIALS REMOVED SHALL NOT BE MEASURED FOR PAYMENT UNDER SECTION 202.06 UNCLASSIFIED EXCAVATION.
- (R-40) INCLUDES 2% FOR GROUND MEASUREMENT.
 - (1) PRICE BID TO INCLUDE 500 TONS TO BE USED AT THE DISCRETION OF THE ENGINEER.
 - (2) PRICE BID TO INCLUDE THE COST OF TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL.
 - (3) SOLID SLAB SODDING TO BE USED IN LIEU OF DITCH LINER PROTECTION IN AREAS OF PAVED DITCHES.
 - (4) PRICE BID TO INCLUDE THE COST OF PIPE UNDERDRAIN COVER MATERIAL AND TRENCH EXCAVATION.
 - (5) FIELD OFFICE TO BE EQUIPPED WITH ONE TELECOMMUNICATION PHONE LINE FOR AN OPERATIONAL TELEPHONE. IN ADDITION, THE FIELD OFFICE IS TO BE EQUIPPED WITH A TWO MIFI DEVICES REQUIRED FOR USE IN THE FIELD OFFICE, 1 MIFI FOR USE OUTSIDE THE FIELD OFFICE (NEEDS TO WORK AT PROJECT LOCATION), AND SHALL PROVIDE POTABLE DRINKING WATER FOR INSPECTORS. ALL COSTS ASSOCIATED WITH THESE ITEMS, INCLUDING MONTHLY EXPENSES, SHALL BE INCLUDED IN THE PRICE BID FOR FIELD OFFICE.
 - (6) IN ADDITION TO SECTION 642.04(B), THE CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING: SURVEY CONTROL POINTS, REFERENCE POINTS AND BENCHMARKS NOTED ON THE PLANS. THE CONTRACTORS SHALL BE RESPONSIBLE FOR LOCATING AND REFRESHING THE CENTERLINE OF PERMANENT CONSTRUCTION, AND SETTING ALL OTHER CONTROL POINTS AND REFERENCE POINTS REQUIRED FOR CONSTRUCTION AND INSPECTION TO INCLUDE BRIDGE CURVES, CONSTRUCTION REFERENCE LINES (CRL), AND RIGHT-OF-WAY. THE SURVEYOR WILL PROVIDE THE RESIDENT ENGINEER WITH A COMPUTERIZED DISK OF SURVEY DATA. THE SURVEY WILL IDENTIFY AND VERIFY BENCHMARKS SET AND MAINTAIN ADDITIONAL BENCHMARKS WITHIN THE PROJECT UNITS AT A MINIMUM OF 500' AS REQUIRED TO ENSURE CONSTRUCTION OF A SMOOTH PROFILE OF MAINLINE TO ENSURE SMOOTH TRANSITIONS AT THE BOP, EOP, AND BRIDGES AS REQUIRED IN SECTIONS 642.04(C). THE SURVEYOR WILL PROVIDE A COPY OF CHECKED BENCHMARKS TO THE RESIDENT ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO BEGINNING ANY EARTHWORK PAY ITEMS. THE CONTRACTOR SHALL PROVIDE FOR THE RESIDENT ENGINEERS USE A ROVING CABLE FREE INTEGRATED GPS & RTK SYSTEM WITH TWO FIELD CONTROLLERS. THE SYSTEM SHALL BE COMPATIBLE WITH THE SURVEY BASE STATION USED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAINTAIN THE BASE STATION DURING WORK HOURS FROM THE BEGINNING OF EARTHWORK ACTIVITIES UNTIL SUBSTANTIAL COMPLETION IS ACHIEVED. THE CONTRACTOR SHALL PROVIDE A ONE WEEK TRAINING COURSE FOR THIS EQUIPMENT FOR UP TO FOUR ODOT INSPECTORS. THIS TRAINING WILL BE CONDUCTED PRIOR TO COMMENCING EARTHWORK ACTIVITIES. AT A MINIMUM TRAINING SHALL CONSIST OF UNIT OPERATION, SETUP, TAKEDOWN, STATION, OFFSET, ELEVATION, PROJECT LINE WORK, TOC/TOS, CALCULATE AREA, AND DISTANCE. CONTRACTOR SHALL ALSO SET UP TWO (2) POLES AT EACH BASE LOCATION TO ALLOW INSPECTION AND CONTRACTOR TO OPERATE UNITS SIMULTANEOUSLY.
 - (7) "STABILIZED SUBGRADE" SHALL INCLUDE THE COST OF THE CHEMICAL ADDITIVE TO ACHIEVE THE RATE SPECIFIED FOR THE APPROPRIATE SOIL CLASSIFICATION AS SPECIFIED IN THE MOST CURRENT ODOT MATERIALS DIVISION OHD L-50. SOIL CLASSIFICATION SHALL BE DETERMINED BY THE CONTRACTOR.
 - (8) ESTIMATED QUANTITY IS BASED ON 0.06 GAL. PER SQ. YD. FOR NEW ASPHALT.
 - (9) PRICE BID TO INCLUDE 10 STABILIZED CONSTRUCTION EXITS AT LOCATIONS APPROVED BY THE ENGINEER.
 - (10) ESTIMATED QUANTITY, TO BE USED AT THE DISCRETION OF THE ENGINEER.

GENERAL CONSTRUCTION NOTES

IN ACCORDANCE WITH THE OKLAHOMA UNDERGROUND FACILITIES DAMAGE PREVENTION ACT, THE CONTRACTOR SHALL NOTIFY THE OKLAHOMA ONE-CALL SYSTEM, INC. 48 HOURS PRIOR TO BEGINNING EXCAVATION. OKLAHOMA ONE-CALL SYSTEM, INC. "CALL OKIE" 1-800-522-6543 OR 811.

THIS PROJECT SHALL BE CONSTRUCTED WITHOUT CLOSING THE EXISTING ROAD TO LOCAL AND THROUGH TRAFFIC UNLESS NOTED OTHERWISE IN THE SEQUENCE OF CONSTRUCTION. SEE STANDARD SPECIFICATIONS FOR MAINTENANCE OF LOCAL AND THROUGH TRAFFIC.

MAINTENANCE OF THROUGH TRAFFIC INCLUDES THE MAINTENANCE OF THE EXISTING ROAD IN CLOSE PROXIMITY TO THE NEW CONSTRUCTION AS SHOWN ON THE PLANS.

FOR PROJECTS THAT INCLUDE WIDENING AND/OR RESURFACING, THE CONTRACTOR SHALL SCHEDULE OPERATIONS TO MINIMIZE POTENTIAL DROP-OFF HAZARDS AND SHALL SUBMIT A SEQUENCE OF CONSTRUCTION OPERATIONS TO THE RESIDENT ENGINEER FOR APPROVAL BEFORE OPERATIONS BEGIN. ANY PORTION OF THE CONSTRUCTION OPERATIONS, SUCH AS SUPERPAVE LAYING OPERATIONS, EXCAVATION FOR PAVEMENT WIDENING, OR EXTENSION OF ROADWAY STRUCTURES, SHALL BE LIMITED TO ONE SIDE AT A TIME, AND THE PROCEDURES OUTLINED IN THE PAVEMENT DROP-OFF TREATMENT STANDARD PDT-1 (LATEST REVISION) SHALL BE IMPLEMENTED. ONLY THAT AMOUNT OF OPEN TRENCH WILL BE ALLOWED THAT CAN BE SURFACED IN 1 (ONE) DAY'S TIME WITHOUT APPROVAL BY THE ENGINEER. LIGHTS, SIGNS AND BARRICADES SHALL BE MOVED AS WORK PROGRESSES.

ALL TREES, BRUSH, AND OTHER DEBRIS THAT MIGHT INTERFERE WITH THE FLOW OF WATER SHALL BE CLEANED OUT TO THE RIGHT-OF-WAY LINE, AT EACH STRUCTURE AND BRIDGE, IN A MANNER APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY RIGHT-OF-WAY FENCE AS REQUIRED. WHEN THE PORTION OF THE PROJECT THAT REQUIRED THIS FENCE IS COMPLETED, THE TEMPORARY FENCE SHALL BE REMOVED, AND PERMANENT RIGHT-OF-WAY FENCING SHALL BE RESTORED OR INSTALLED IN A MANNER APPROVED BY THE ENGINEER. ALL COST OF TEMPORARY FENCING SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

ALL FLOWLINES THAT ARE TO BE FILLED SHALL BE THOROUGHLY TAMPED BEFORE CONSTRUCTION OR EXTENSION OF DRAINAGE STRUCTURES. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

IN ORDER TO ALLEVIATE DUST CONDITIONS DURING GRADING OPERATIONS AND BEFORE PAVEMENT WORK IS COMPLETED, THE CONTRACTOR SHALL SPRINKLE GRADING AT INTERVALS APPROVED BY THE ENGINEER. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

THIS PROJECT IS LOCATED NEAR KNOWN SOURCES OF GYPSUM (SULFATE) DEPOSITS. SPECIAL ATTENTION SHOULD BE USED TO AVOID BORROW MATERIAL THAT COULD ADVERSELY INTERACT WITH THE CALCIUM BASED ADDITIVES (FLY ASH, PORTLAND CEMENT, CEMENT KILN DUST, AND LIME) USED IN THE STABILIZED SUBGRADE. THE CONTRACTOR MAY BE REQUIRED TO PROVIDE SULFATE TESTING OF BORROW PIT SITES AS DIRECTED BY THE ENGINEER.

THE CONTRACTOR SHALL NOT WASTE ANY EXCESS EXCAVATION UNTIL ALL PLANNED EMBANKMENTS AND BACKFILLS ARE COMPLETED. EXCESS UNCLASSIFIED EXCAVATION MATERIAL DETERMINED BY THE ENGINEER TO BE SUITABLE FOR BACKFILL SHALL BE USED TO REDUCE ANY UNCLASSIFIED BORROW NEEDED. COST OF SECOND HANDLING SHALL BE INCLUDED IN OTHER ITEMS OF WORK. ANY REMAINING EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

PRIME COAT SHALL BE APPLIED TO THE SUBGRADE IMMEDIATELY AFTER FINAL COMPACTION AND SHAPING TO RETAIN MOISTURE FOR PROPER CHEMICAL REACTION OF THE SOIL ADDITIVE.

THE CONTRACTOR SHALL KEEP THE OPEN TRENCH DRAINED. COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

VEGETATIVE MULCHING: THE VEGETATIVE MULCH SHALL BE ANCHORED IN ACCORDANCE WITH THE "MULCHING TILLER METHOD", AS SPECIFIED IN 233.04B(2) OF THE STANDARD SPECIFICATIONS.

AREAS ON WHICH SALVAGED TOPSOIL IS TO BE REPLACED SHALL HAVE 18-46-0 FERTILIZER APPLIED, AT THE RATE OF 150 POUNDS PER ACRE, JUST PRIOR TO THE REPLACEMENT OF SALVAGED TOPSOIL.

AT THE BEGINNING OF TURFING OPERATIONS, ANY AREAS INCLUDED IN PLANNED QUANTITIES THAT HAVE GROWN A SATISFACTORY VOLUNTEER TURF OF PERENNIAL GRASS, AS DETERMINED BY THE ENGINEER, SHALL BE FERTILIZED AND WATERED AS CALLED FOR ON THE PLANS, BUT SHALL NOT BE SEEDED, SODDED, OR SPRIGGED.

PIPE UNDERDRAIN QUANTITIES ESTIMATED ONLY. LOCATION, IF AND WHERE REQUIRED, TO BE DETERMINED BY THE ENGINEER.

THE CONTRACTOR SHALL REMOVE AND RESET MAILBOXES AS NECESSARY. MAILBOXES ARE TO BE MAINTAINED IN AN UPRIGHT POSITION AND ACCESSIBLE TO MAIL CARRIER'S CAR DURING CONSTRUCTION. ANY DAMAGE TO BOXES OR SUPPORTS SHALL BE REPAIRED BY THE CONTRACTOR. ALL COST TO BE INCLUDED IN OTHER ITEMS OF WORK.

SURFACING OF RETURNS, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL BE OF THE SAME MATERIAL (BASE AND SURFACE) AS THAT OF THE ABUTTING SHOULDER OF THE MAINLINE. BASE AND SURFACE THICKNESS SHALL BE THE THICKNESS SHOWN ON PLANS.

T.B.S.C. SURFACES SHALL BE SPRINKLED WITH WATER AND ROLLED WITH A PNEUMATIC ROLLER IN A MANNER APPROVED BY THE ENGINEER.

THE ENGINEER SHALL CHECK GRADES AT RAMP TERMINALS, AND MAKE ANY ADJUSTMENTS OF THE GRADES AND SUPERELEVATIONS, WHICH ARE REQUIRED TO OBTAIN SMOOTH PROFILES FOR BOTH EDGES OF THE RAMP PAVEMENT. CROSS SLOPE BREAKOVER SHALL NOT EXCEED 5%(FIVE PERCENT).

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PAY NOTES
(ROADWAY)

SUGGESTED SEQUENCE OF CONSTRUCTION

GENERAL NOTES

THE CONTRACTOR SHALL SEQUENCE AND OR PHASE CONSTRUCTION TO ENSURE THAT ACCESS TO EXISTING DRIVES AND LOCAL ROADS ARE MAINTAINED DURING ALL CONSTRUCTION OPERATIONS. IF AT ANY TIME ACCESS IS TO BE INTERRUPTED THE CONTRACTOR SHALL NOTIFY THE PROPERTY OWNER, THE CITY, AND ALL EMERGENCY AGENCIES A MINIMUM OF FIVE WORKING DAYS BEFORE OPERATIONS BEGIN. DRIVES SHALL BE CONSTRUCTED DURING OFF PEAK HOURS OR AS DIRECTED BY THE ENGINEER.

PHASES MAY BE CONSTRUCTED CONCURRENTLY TO EACH OTHER.

CONSTRUCTION SEQUENCING SHOULD BE COORDINATED WITH J/P 24428(04) IN ORDER TO ENSURE EMBANKMENTS ADJACENT TO BRIDGES ARE CONSTRUCTED PRIOR TO BRIDGE CONSTRUCTION. BRIDGE "J" AND "O" SHOULD BE COORDINATED SPECIFICALLY IN REGARDS TO ROAD CLOSURES AND COMPLETION OF GRADING UNDER BRIDGES.

**PHASE 1: CONSTRUCT BRIDGE "J" AND COUNTRY CLUB ROAD
TRAFFIC ON EXISTING LOCAL ROADS, COUNTRY CLUB ROAD CLOSED**

- A ENSURE THAT COUNTRY CLUB ROAD IS CLOSED TO THROUGH TRAFFIC AND CONSTRUCT BRIDGE "J".
- B COMPLETE CONSTRUCTION OF COUNTRY CLUB ROAD.
- C COMPLETE FINISHING OPERATIONS.
- D OPEN COUNTRY CLUB ROAD TO TRAFFIC.

NOTES: CONSTRUCTION OF BRIDGE "J" AND PAVING OF COUNTRY CLUB ROAD SHOULD BE COORDINATED WITH J/P 24428(04). GRADING FOR COUNTRY CLUB ROAD WILL BE COMPLETED IN J/P 24428(04).

PAVING AND BRIDGE STEPS SHOULD BE RUN CONCURRENTLY TO OPEN COUNTRY CLUB ROAD TO TRAFFIC AS QUICKLY AS POSSIBLE.

**PHASE 2: CONSTRUCT GRAND AVE. DETOUR
TRAFFIC ON EXISTING GRAND AVE.**

- A SHIFT EXISTING GRAND AVE. TRAFFIC TO THE NORTH EDGE OF GRAND AVE.
- B CONSTRUCT A TEMPORARY WIDENING AND TEMPORARY STRUCTURES FROM STA. 113+43 TO STA. 123+53 RT.
- C CONSTRUCT PERMANENT WIDENING FROM STA. 123+53 TO EOP RT.
- D SHIFT GRAND AVE. TRAFFIC TO THE TEMPORARY WIDENING.

**PHASE 3: CONSTRUCT BRIDGES "M" AND GRAND AVE.
TRAFFIC ON GRAND AVE. DETOUR**

- A COMPLETE ANY FINE GRADING OPERATIONS REQUIRED TO CONSTRUCT BRIDGE "M".
- B CONSTRUCT BRIDGE "M" ABUTMENTS AND PIERS.
- C CONSTRUCT THE REMAINDER OF BRIDGE "M". UTILIZE SHORT TERM CLOSURES DURING BEAM HANGING AND FORMWORK OPERATIONS ONLY.
- D CONSTRUCT THE LT. SHOULDER AND BOTH DRIVING LANES OF GRAND AVE. FROM STA. 116+00 TO STA. 121+50.
- E SHIFT TRAFFIC TO THE NORTH EDGE OF NEWLY CONSTRUCTED GRAND AVE. & REMOVE THE DETOUR.
- F CONSTRUCT RT. SHOULDER & REMAINING PORTIONS OF GRAND AVE. ONE HALF AT A TIME.
- G COMPLETE FINISHING OPERATIONS.
- H OPEN GRAND AVENUE TO NORMAL TRAFFIC OPERATIONS.

SUGGESTED SEQUENCE OF CONSTRUCTION CONTINUED

**PHASE 4: CONSTRUCT BRIDGE "O" AND IDAHO AVE.
TRAFFIC ON EXISTING IDAHO AVE., IDAHO AVE. CLOSED**

- A ENSURE THAT IDAHO AVE. IS CLOSED TO THROUGH TRAFFIC AND CONSTRUCT BRIDGE "O".
- B COMPLETE CONSTRUCTION OF IDAHO AVE.
- C COMPLETE FINISHING OPERATIONS.
- D OPEN IDAHO AVE. TO TRAFFIC.

NOTES: CONSTRUCTION OF BRIDGE "O" AND CONSTRUCTION OF IDAHO AVE. SHOULD BE COORDINATED WITH J/P 24428(04). IDAHO AVE. WILL BE CLOSED UNDER J/P 24428(04) AND OPENED TO TRAFFIC UNDER THIS PROJECT.

PAVING AND BRIDGE STEPS SHOULD BE RUN CONCURRENTLY TO OPEN IDAHO AVE. TO TRAFFIC AS QUICKLY AS POSSIBLE.

IDAHO AVE. SHOULD NOT BE CLOSED AT THE SAME TIME AS COUNTRY CLUB ROAD.

**PHASE 5: CONSTRUCT BRIDGE "P"
TRAFFIC ON EXISTING LOCAL ROADS**

- A COMPLETE REMAINING GRADING REQUIRED TO CONSTRUCT IOWA AVE. & BRIDGE "P" FROM STA 31+87.75 TO STA 53+80.
- B CONSTRUCT BRIDGE "P".
- C CONSTRUCT IOWA AVE. FROM STA 31+87.75 TO STA 53+80.
- D COMPLETE FINISHING OPERATIONS.
- E OPEN IOWA AVENUE TO TRAFFIC.

**PHASE 6: CONSTRUCT BRIDGE "Q"
TRAFFIC ON EXISTING 29TH STREET**

- A COMPLETE ANY FINE GRADING OPERATIONS REQUIRED TO CONSTRUCT BRIDGE "Q".
- B CONSTRUCT BRIDGE "Q". UTILIZE FLAGMEN AND SHIFT TRAFFIC ON 29TH STREET AS NECESSARY TO CONSTRUCT BRIDGE "Q". SHORT TERM CLOSURES TO 29TH STREET FOR BEAM HANGING AND FORMWORK OPERATIONS ONLY.
- C COMPLETE FINISHING OPERATIONS.
- D OPEN 29TH STREET TO NORMAL TRAFFIC

**PHASE 7: CONSTRUCT BRIDGE "U"
TRAFFIC ON EXISTING LOCAL ROADS**

- A ENSURE THAT FRISCO RD. WAS CLOSED UNDER J/P 24428(04).
- B COMPLETE ANY FINE GRADING OPERATIONS REQUIRED TO CONSTRUCT BRIDGE "U".
- C COMPLETE FINISHING OPERATIONS.

NOTES: FRISCO ROAD WAS CLOSED IN J/P 24428(04) WITHIN THE PROJECT EXTENTS. FRISCO ROAD WILL NOT RETAIN THROUGH ACCESS WITHIN THE PROJECT EXTENTS ONCE GRADING OPERATIONS IN J/P 24428(04) HAVE BEGUN.

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SUGGESTED SEQUENCE OF CONSTRUCTION

SUMMARY OF SURFACING							
STATION EXTENTS	STABILIZED SUBGRADE 307(K)	3" TBSC TYPE E 402(E)	TACK COAT 407(B)	PRIME COAT 408	SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)	SUPERPAVE, TYPE S4 (PG 64-22 OK) 411(C)	COLD MILLING PAVEMENT 412
	SY	TON	GAL	GAL	TON	TON	SY
COUNTRY CLUB RD. STA. 100+16.53 TO STA. 101+00.00			20.73	16.87	41.35	26.54	140.64
STA. 101+00.00 TO STA. 123+00.00			759.66	2,598.57	2,510.75	712.31	
GRAND AVE. DETOUR STA. 113+43.58 TO STA. 126+05.00		206.20					
GRAND AVE. STA. 113+43.58 TO STA. 115+50.00	62.55		32.58	21.89	42,489.66	56.78	490.82
STA. 115+50.00 TO STA. 123+52.68	3,076.96		335.65	1,076.94	1,188.92	306.61	
STA. 123+52.68 TO STA. 126+05.00	148.13		45.28	51.85	42.17	72.25	574.46
IDAHO AVE. STA. 1805+59.00 TO STA. 1807+00.00	125.76		29.51	44.02	32.14	43.69	311.72
STA. 1807+00.00 TO STA. 1816+00.00	2,095.52		263.36	897.10	744.52	267.08	
STA. 1816+00.00 TO STA. 1818+82.00	180.27		51.23	63.09	44.52	79.68	606.30
IOWA AVE. STA. 31+88.60 TO STA. 53+80.00	7,601.33		838.83	2,766.90	2,971.02	784.33	
TOTALS	13,290.52	206.20	2,376.83	7,537.23	50,065.05	2,349.27	2,123.94

NOTE: QUANTITIES INCLUDE ASPHALT AND PRIME COAT QUANTITIES FOR GUARDRAIL WIDENING
QUANTITY IS BASED ON 2 APPLICATIONS OF TBSC TYPE E.

SUMMARY OF EARTHWORK QUANTITIES			
STATION EXTENTS	UNCLASSIFIED EXCAVATION 202(A)	EMBANKMENT +15%	EXCESS EXCAVATION
	CY	CY	CY
GRAND AVE STA. 114+40.00 TO STA. 126+04.00	2,390	53	2,337
GRAND AVE. DETOUR STA. 113+43.58 TO STA. 126+05.00	879	396	483
IDAHO AVE STA. 1805+59.00 TO STA. 1818+82.00	11,799	7	11,792
IOWA AVE STA. 31+87.75 TO STA. 53+80.00	35,272	1,294	33,978
TOTALS	50,340	1,750	48,590

SUMMARY OF REMOVAL QUANTITIES				
STATION EXTENTS	REMOVAL OF FENCE	REMOVAL OF ASPHALT PAVEMENT 619(B)	REMOVAL OF CONCRETE DRIVEWAY 619(B)	SAWING PAVEMENT 619(C)
	LF	SY	SY	LF
COUNTRY CLUB RD. STA. 100+00.00 TO STA. 126+19.80	4,721.00	4,910.00	50.49	52.00
GRAND AVE. STA. 113+43.58 TO STA. 126+05.00	1,830.00	2,019.00		41.00
IDAHO AVE. STA. 1805+59.00 TO STA. 1818+82.00	2,313.00	2,531.00		39.00
IOWA AVE. STA. 31+88.60 TO STA. 53+80.00	361.00			
TOTALS	9,225.00	9,460.00	50.49	132.00

◆ FOR INFORMATION PURPOSES ONLY. COST TO BE INCLUDED IN PRICE BID FOR REMOVAL OF STRUCTURES AND OBSTRUCTIONS.
NOTE: ITEMS TO BE REMOVED MAY OR MAY NOT BE PRESENT IN ANY SPECIFIED LOCATION.

SUMMARY OF EROSION CONTROL				
STATION EXTENTS	LOCATION AND DESCRIPTION	SOLID SLAB SODDING 230(A)	TYPE I-A PLAIN RIPRAP 601(B)	TYPE I-A FILTER BLANKET 601(C)
		SY	TON	TON
COUNTRY CLUB STA. 100+00.00 TO STA. 107+00.00	EDGE OF ROADWAY TO TOE LT & RT.	620.11		
STA. 112+00.00 TO STA. 124+00.00	EDGE OF ROADWAY TO TOE LT & RT.	2,247.02		
GRAND AVE. STA. 113+43.58 TO STA. 115+50.00	EDGE OF ROADWAY TO TOE LT & RT.	292.55		
STA. 115+50.00 TO STA. 123+00.00	EDGE OF ROADWAY TO TOE LT & RT.	5,418.98		
STA. 123+00.00 TO STA. 126+05.00	EDGE OF ROADWAY TO TOE LT & RT.	290.13		
IDAHO AVE. STA. 1805+59.00 TO STA. 1812+00.00	EDGE OF ROADWAY TO TOE LT & RT.	1,536.83		
STA. 1812+00.00 TO STA. 1819+00.00	EDGE OF ROADWAY TO TOE LT & RT.	1,915.69		
IOWA AVE. STA. 31+88.60 TO STA. 43+00.00	EDGE OF ROADWAY TO TOE LT & RT.	8,080.40		
STA. 43+00.00 TO STA. 53+80.00	EDGE OF ROADWAY TO TOE LT & RT.	6,256.71		
STA. 32+24.00	STR. 156 AROUND OUTLET RT.		10.21	3.24
TOTALS		26,658.43	10.21	3.24

SUMMARY OF DRIVES									
STATION AND LOCATION	WIDTH x LENGTH	TYPE	RADIUS (R1)	RADIUS (R2)	3" TBSC TYPE E 402(E)	TACK COAT 407(B)	PRIME COAT 408	(2-2.5") 5" SUPERPAVE, TYPE S3 (PG 64-22 OK) 411(B)	2" SUPERPAVE, TYPE S4 (PG 64-22 OK) 411(C)
					TON	GAL	GAL	TON	TON
COUNTRY CLUB RD.									
STA. 118+42 - LT.	12' x 86'	RURAL	15'	15'		15.75	48.26	37.36	14.25
STA. 121+78 - RT.	12.00' x 34.00'	RURAL	15'	15'		7.04	21.57	16.70	6.37
IDAHO AVE.									
STA. 1817+00 - LT.	16.00' x 60.00'	RURAL	15'	15'	21.32				
TOTALS					21.32	22.79	69.83	54.06	20.62

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US 81 REALIGNMENT
GRADY COUNTY

SUMMARY OF TEMPORARY SEDIMENT CONTROL

STATION EXTENTS	LOCATION AND DESCRIPTION	TYPE	TEMPORARY SILT FENCE 221(C)	TEMPORARY SEDIMENT FILTER 221(D)	TEMPORARY SILT DIKE 221(F)
			LF	EA	LF
COUNTRY CLUB RD.					
STA. 105+00	ACROSS DITCH RT.				14
STA. 106+50	ACROSS DITCH LT. & RT.				35
STA. 106+93 TO STA. 108+13	ALONG TOE OF BRIDGE		310		
STA. 109+84 TO STA. 112+00	ALONG TOE OF BRIDGE		492		
STA. 109+63	AROUND INLET RT.			1	
STA. 110+73	AROUND INLET RT.			1	
STA. 113+25	ACROSS DITCH LT.				14
STA. 115+00	ACROSS DITCH LT.				14
STA. 122+50	AROUND INLET RT.			1	
STA. 123+50	ACROSS DITCH LT. & RT.				28
GRAND AVE.					
STA. 115+45	ACROSS DITCH RT.				14
STA. 117+75	ACROSS DITCH LT. & RT.				42
STA. 118+00	ACROSS DITCH LT.				14
STA. 118+12 TO STA. 121+20	ALONG TOE LT. & RT.		733		
STA. 120+25	ACROSS DITCH LT. & RT.				28
STA. 121+75	ACROSS DITCH LT. & RT.				28
STA. 126+50	ACROSS DITCH LT. & RT.				28
IDAHO AVE.					
STA. 1807+40	ACROSS DITCH LT. & RT.				28
STA. 1808+90	ACROSS DITCH LT. & RT.				28
STA. 1809+39	AROUND INLET LT. & RT.			2	
STA. 1809+74 TO STA. 1810+88	ALONG TOE OF BRIDGE		279		
STA. 1812+22 TO STA. 1813+55	ALONG TOE OF BRIDGE		358		
STA. 1814+14	AROUND INLET LT.			1	
STA. 1815+00	ACROSS DITCH LT. & RT.				28
STA. 1816+50	ACROSS DITCH RT.				14
STA. 1818+50	ACROSS DITCH LT. & RT.				28
IOWA AVE.					
STA. 33+00	ACROSS DITCH LT. & RT.				28
STA. 34+50	ACROSS DITCH LT. & RT.				28
STA. 36+00	ACROSS DITCH LT. & RT.				28
STA. 37+50	ACROSS DITCH LT. & RT.				28
STA. 41+31 TO STA. 42+19	ALONG TOE OF BRIDGE		281		
STA. 42+00	ACROSS LT. DITCH				21
STA. 43+00	AROUND INLET RT.			1	
STA. 43+66 TO STA. 44+76	ALONG TOE OF BRIDGE		286		
STA. 44+13	ACROSS LT. DITCH				21
STA. 49+00	ACROSS DITCH LT. & RT.				28
STA. 50+50	ACROSS DITCH LT. & RT.				28
STA. 52+00	ACROSS DITCH LT. & RT.				28
STA. 53+80	ACROSS DITCH LT. & RT.				28
TOTALS			2,739	7	651

SUMMARY OF GUARDRAIL

STATION EXTENTS AND LOCATION	(P) GUARDRAIL CURBING 623	BEAM GUARDRAIL W-BEAM SINGLE 623(A)	GUARDRAIL END TREATMENT (GET) 623(G)	GUARDRAIL BRIDGE CONN.-THREE BEAM (31") 623(I)	GUARDRAIL DELINEATORS (TYPE 2, CODE 1) 853
	EA	LF	EA	EA	EA
COUNTRY CLUB RD.					
STA. 105+66.23 TO STA. 106+94.35 - RT.		62.5	1	1	4
STA. 105+66.23 TO STA. 106+94.35 - LT.	1	62.5	1	1	4
STA. 112+04.71 TO STA. 112+70.34 - RT.	1		1	1	3
STA. 112+04.71 TO STA. 113+32.83 - LT.	1	62.5	1	1	4
IDAHO AVE.					
STA. 1807+96.67 TO STA. 1809+74.79 - RT.	1	112.5	1	1	5
STA. 1808+46.67 TO STA. 1809+74.79 - LT.	1	62.5	1	1	4
STA. 1813+39.53 TO STA. 1814+67.66 - RT.	1	62.5	1	1	4
STA. 1813+39.53 TO STA. 1815+17.66 - LT.	1	112.5	1	1	5
IOWA AVE.					
STA. 40+10.07 TO STA. 41+25.69 - RT.	1	50.0	1	1	4
STA. 40+60.07 TO STA. 41+25.69 - LT.	1		1	1	3
STA. 44+74.99 TO STA. 45+40.61 - RT.	1		1	1	3
STA. 44+74.99 TO STA. 45+90.61 - LT.	1	50.0	1	1	4
TOTALS					
	12	637.50	12	12	47

NOTE: ASPHALT AND PRIME COAT QUANTITIES FOR GUARDRAIL WIDENING ARE INCLUDED IN THE MAINLINE SURFACING QUANTITIES

SUMMARY OF MAILBOX

STATION AND LOCATION	TYPE	MAILBOX INSTALLATION - SINGLE 629(A)	MAILBOX 629(C)
		EA	EA
COUNTRY CLUB RD.			
STA. 122+00.00 - RT.	1	1	1
TOTALS		1	1

✪ SURFACING QUANTITIES FOR MAIL STOP TURNOUTS INCLUDED IN MAINLINE SUMMARIES.

SUMMARY OF DITCH TREATMENT

STATION EXTENTS AND LOCATION	DESIGN NO.	BOTTOM WIDTH	CURTAIN WALL	CLASS C CONCRETE 509(D)
		FT	EA	CY
GRAND AVENUE				
STA. 121+50 TO STA. 122+77 - LT.	2A	4	3	16.72
TOTALS		3		16.72

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SUMMARY SHEET

SUMMARY OF DRAINAGE STRUCTURES											
STRUCTURE NO.	STATION	DESCRIPTION	DESIGN	TRENCH EXC. ✪ 613(V)	STD. BEDDING MATERIAL	ELEVATIONS		R.C. PIPE ARCH CLASS A-III 613(A)	CORR. GALV. STEEL PIPE ARCH 613(B)	C.E.T. 613(M)	
					CLASS B ✪ 613 (S)	INLET FLOWLINE	DOWN STREAM FLOWLINE	36"x22"	21"x15"	B6	AA6
					C.Y.	C.Y.	ELEV.	ELEV.	L.F.	L.F.	EA.
156	Iowa 32+24.00	CONST. 36"x22"x82' LG. RCPA 37' LG. LT. & 45' LG. RT.	SPI-4, SPB-1, FHTCP-3, CET6S-3	85.22	64.01	1139.06	1136.92	82		2	
217	Grand Ave. 118+00.00	CONST. TYPE AA6 C.E.T.	CET6D-3			1132.40	1132.00				2
218	Grand Ave. 121+00.00	CONST. TYPE AA6 C.E.T.	CET6D-3			1129.90	1129.50				2
T1	Grand Ave. 118+00.00	EXT. EXIST. 2-22"x13"x78' LG. RCPA W/ 21"x15" CGSPA 22' LG. RT.	FPI-3, SPB-1, FHTMPP-1			1132.49	1132.39		48		
T2	Grand Ave. 121+00.00	EXT. EXIST. 2-22"x13"x78' LG. RCPA W/ 21"x15" CGSPA 22' LG. RT.	FPI-3, SPB-1, FHTMPP-1			1129.99	1129.89		48		
TOTALS				85.22	64.01			82	96	2	4

✪ FOR CONTRACTOR INFORMATION ONLY. PRICE BID TO BE INCLUDED IN THE COST OF RCPA.

SUMMARY OF DRAINAGE STRUCTURES

GENERAL NOTES - TRAFFIC CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER BARRICADES, LIGHTS, AND SIGNING WITHIN THE LIMITS OF CONSTRUCTION. ALL CONSTRUCTION SIGNING WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS. CONSTRUCTION TRAFFIC CONTROL WILL BE INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS.

REMOVED MATERIAL TO BECOME PROPERTY OF CONTRACTOR AND IT SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE RESIDENT ENGINEER.

ANY EXISTING SIGNS THAT INTERFERE WITH CONSTRUCTION ACTIVITIES SHALL BE BROUGHT TO THE ATTENTION OF THE RESIDENT ENGINEER FOR APPROVAL AND INSPECTION OF THE EXISTING CONDITION. UPON APPROVAL OF REMOVAL, THE SIGNS WILL BE REMOVED AND STORED BY THE CONTRACTOR. THE SIGNS WILL BE REPLACED BY THE CONTRACTOR ONCE THEY NO LONGER INTERFERE WITH THE REMAINING ACTIVITIES OR WITHIN 24 HOURS OF A REQUEST BY THE RESIDENT ENGINEER TO REPLACE ANY DAMAGED SIGNS WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL PROVIDE A PERSON TO BE ON 24 HOUR CALL AS NEEDED AS DETERMINED BY THE ENGINEER. THE PERSON SHALL HOLD A CURRENT CERTIFICATION FROM THE AMERICAN TRAFFIC SAFETY SERVICE ASSOCIATION (ATSSA) OR THE OKLAHOMA TRAFFIC ENGINEERING ASSOCIATION (OTEA) AS A TRAFFIC CONTROL TECHNICIAN OR TRAFFIC CONTROL SUPERVISOR.

ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL MEET ODOT'S "QUALITY STANDARDS FOR TEMPORARY TRAFFIC CONTROL DEVICES." CHANNELIZING DEVICES SHALL HAVE A MINIMUM HEIGHT OF 36 INCHES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE TEMPORARY TRAFFIC CONTROL DEVICES, AND SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING ANY DEVICE DURING CONSTRUCTION.

THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE TRAFFIC CONTROL DESIGN FOR APPROVAL BY THE RESIDENT ENGINEER AND TRAFFIC ENGINEERING DIVISION.

PAY QUANTITY NOTES - TRAFFIC CONTROL

- (TC-17) INCLUDES AN ESTIMATED 2,000 L.F. (PAINT)(4" WIDE) WHITE AND 2,000 L.F. (PAINT)(4" WIDE) YELLOW STRIPE.
- (TC-20) ALL STRIPING TO BE PLACED ON TEMPORARY SURFACES OR ON SURFACES SCHEDULED TO BE REMOVED SHALL BE DONE WITH PAINT UNLESS OTHERWISE NOTED ON THE PLANS OR STANDARD DRAWINGS. TEMPORARY PAVEMENT MARKINGS PLACED ON FINISHED PAVEMENT OR EXISTING PAVEMENT TO REMAIN IN PLACE SHALL USE ONE OF THE FOLLOWING METHODS:
* REMOVABLE PAVEMENT MARKING TAPE
* CLASS A PAVEMENT MARKERS
- (TC-21) INCLUDED IN THE COST OF THIS ITEM SHALL BE INSTALLATION, MAINTENANCE, AND REMOVAL. THIS ITEM SHALL BE BID ACCORDINGLY.
- (TC-22) AMOUNT SHOWN IS AN APPROXIMATION AND THE ACTUAL AMOUNT OF REMOVAL, IF NECESSARY, SHALL BE DETERMINED BY THE ENGINEER. PRICE BID FOR PAVEMENT MARKING REMOVAL SHALL INCLUDE THE COST OF REMOVING STRIP, ARROWS, WORDS AND SYMBOLS, AS SHOWN IN THE PLANS. THESE ITEMS MAY CONSIST OF PLASTIC, PAINT OR NON-REMOVABLE MARKING TAPE.
- (TC-23) QUANTITY SHOWN FOR THIS ITEM INCLUDES THOSE SIGNS WHICH COMPRISE THE ROUTE MARKER ASSEMBLIES USED TO INDICATE THE DETOUR ROUTE.
- (TC-26) ALL CONSTRUCTION TRAFFIC CONTROL WILL BE IMPLEMENTED ACCORDING TO CONSTRUCTION PLANS, AND INSTALLED IN A MANNER APPROVED BY THE ENGINEER, IN ACCORDANCE WITH CHAPTER VI OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, (CURRENT EDITION), AND COMPLIANT WITH APPLICABLE O.D.O.T. STANDARD DRAWINGS. PRICE BID FOR THIS ITEM SHALL BE PAYMENT IN FULL FOR THE INSTALLATION, MAINTENANCE AND SUBSEQUENT REMOVAL OF ALL NECESSARY CONSTRUCTION TRAFFIC CONTROL DEVICES REQUIRED FOR COMPLETION OF THE PROJECT.

ALL SIGNS AND BARRICADES WHICH ARE SHOWN WITH TYPE 'A' LIGHTS IN THE STANDARD DRAWINGS SHALL HAVE THE CORRESPONDING LIGHT ATTACHED DURING NON-DAYLIGHT HOURS.
- (TC-28) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 0.00 S.F. AND 6.25 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-29) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 6.26 S.F. AND 15.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-30) INCLUDED IN THIS ITEM ARE ALL S.C.S. (SPECIAL CONSTRUCTION SIGNING) SIGNS WHICH ARE BETWEEN 16.00 S.F. AND 32.99 S.F. ALSO INCLUDED IN THIS ITEM SHALL BE THE COST OF INSTALLATION, MAINTENANCE, AND REMOVAL OF THESE SIGNS.
- (TC-33) ALL CONSTRUCTION WORK ZONE SIGNS SHALL HAVE FLUORESCENT SHEETING. THE FLUORESCENT SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956 (LATEST REVISION).

THE MANUFACTURER SHALL FURNISH A TYPE 'D' CERTIFICATION IN ACCORDANCE WITH O.D.O.T. STANDARD SPECIFICATIONS (CURRENT EDITION) SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON MATERIAL SUBMITTED FOR APPROVAL.

PAY QUANTITY NOTES - TRAFFIC CONTROL (CONTD.)

- (TC-61) ANY DAMAGE TO A FINISHED OR EXISTING SURFACE RESULTING FROM THE CONTRACTOR'S NEGLIGENCE IN THE REMOVAL OF CONSTRUCTION ZONE PAVEMENT MARKERS OR CHANNELIZING DEVICES AND THE BITUMINOUS ADHESIVE USED IN THEIR INSTALLATION, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.
- (TC-70) THIS ITEM IS AN ESTIMATED QUANTITY TO BE USED AS DEEMED NECESSARY BY THE ENGINEER.
- (TC-75) TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE THE SAME DAY THAT EXISTING PAVEMENT MARKINGS ARE REMOVED FROM ANY ROADWAY OPEN TO TRAFFIC. ALSO, ALL TEMPORARY PAVEMENT MARKINGS SHALL BE REMOVED PRIOR TO THE INSTALLATION OF FINAL STRIPING.
- (TC-84) 690 CONSTRUCTION CALENDAR DAYS WERE USED TO COMPUTE THE SIGN DAY PAY ITEMS. THE AMOUNT OF CALENDAR DAYS USED TO COMPUTE THE SIGN DAY PAY ITEMS IS AN ESTIMATED QUANTITY ONLY, BASED ON THE CURRENT O.D.O.T. STANDARDS AND SUGGESTED CONSTRUCTION SEQUENCE FOR THIS PROJECT. THESE ESTIMATED SIGN DAY QUANTITIES MAY CHANGE AS THE PROJECT'S CONSTRUCTION TRAFFIC CONTROL IS MODIFIED DURING CONSTRUCTION.
- (TC-85) THESE SIGNS MUST BE ON THE OKLAHOMA DEPARTMENT OF TRANSPORTATION LIST OF APPROVED CHANGEABLE MESSAGE SIGNS. FOR A LIST OF THE APPROVED SIGNS GO TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION WEBSITE AT:
<http://www.okladot.state.ok.us/traffic/qpl/index.php>
- (102) PORTABLE CHANGEABLE MESSAGE SIGN(S) TO BE PLACED WHERE DEEMED NECESSARY BY THE ENGINEER.

PORTABLE CHANGEABLE MESSAGE SIGN(S) TO BE PLACED 14 DAYS PRIOR TO CONSTRUCTION.

PAY QUANTITIES

0300 TRAFFIC CONTROL

ITEM NO.	CODE NO.	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
857(A)	8839	CONSTRUCTION TRAFFIC STRIPE (PAINT) (4" WIDE)	(TC-17,20,21,61,70,75)	LF	4,000.00
857(F)	8006	PAVEMENT MARKING REMOVAL (TRAFFIC STRIPE)	(TC-22,70,75)	LF	8,000.00
880(B)	8818	CONSTRUCTION SIGNS 0 TO 6.25 S.F.	(TC-23,26,28,33,84)	SD	12,710.00
880(B)	8821	CONSTRUCTION SIGNS 6.26 S.F. TO 15.99 S.F.	(TC-26,29,33,84)	SD	12,210.00
880(B)	8824	CONSTRUCTION SIGNS 16.0 S.F. TO 32.99 S.F.	(TC-26,30,33,84)	SD	3,420.00
880(C)	8842	CONSTRUCTION BARRICADES (TYPE III)	(TC-26, 84)	SD	5,370.00
880(C)	8848	WING BARRICADES	(TC-26, 84)	SD	1,640.00
880(E)	8860	WARNING LIGHTS (TYPE A)	(TC-26, 84)	SD	18,820.00
880(G)	8890	CHANNELIZER CONES	(TC-26, 84)	SD	3,200.00
882(A)	8306	PORT. CHANGEABLE MESSAGE SIGN	(TC-52,84,85)(102)	SD	668.00

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PAY QUANTITIES & NOTES - TRAFFIC CONTROL

4/21/2020

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GENERAL NOTES - TRAFFIC SIGNING

REMOVED MATERIAL TO BECOME PROPERTY OF CONTRACTOR AND IT SHALL BE DISPOSED OF IN A MANNER APPROVED BY THE ENGINEER.

ANY DAMAGE CAUSED BY THE CONTRACTOR TO ANY STRUCTURES, ROADWAY SURFACES, STRIPING, RAISED PAVEMENT MARKERS, GUARDRAIL, SLOPES, AND SIGNS SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE ENGINEER.

ALL REGULATORY SIGNS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) FOR TYPE III SHEETING.

ALL WARNING SIGNS SHALL HAVE FLUORESCENT YELLOW SHEETING. THE FLUORESCENT YELLOW SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) REQUIREMENTS FOR TYPE VIII SHEETING.

ALL GREEN AND BLUE SIGNS ON CONVENTIONAL HIGHWAYS SHALL HAVE HIGH INTENSITY SHEETING. THE HIGH INTENSITY SHEETING SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION) FOR TYPE III SHEETING.

ALL PANEL AND OVERHEAD SIGNS SHALL HAVE TYPE III HIGH INTENSITY BACKGROUND WITH TYPE VIII LEGENDS AND BORDERS. THE TYPE III BACKGROUND AND THE TYPE VIII LEGENDS AND BORDERS SHALL MEET THE REQUIREMENTS OF ASTM D4956-(LATEST REVISION).

THE MANUFACTURER SHALL FURNISH A TYPE 'A' CERTIFICATION IN ACCORDANCE WITH ODOT STANDARD SPECIFICATIONS, LATEST EDITION, AND SUBSECTION 106.04. THE CERTIFICATION SHALL INCLUDE TEST RESULTS ON THE MATERIAL SUBMITTED FOR APPROVAL.

ALL BROKEN CONCRETE INCLUDING OLD SIGN FOOTINGS WITH STUBS, WASTE MATERIAL AND DEBRIS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE LIMITS OF THE PROJECT AND DISPOSED OF IN AN AREA APPROVED BY THE ENGINEER. NO PAYMENT SHALL BE MADE FOR THE DISPOSAL OF THIS MATERIAL. ANY PIPE POST OR WIDE FLANGE POST ABOVE THE OLD SIGN FOOTINGS SHALL BE CUT AND HANDLED AS PROPERTY OF THE STATE AND SHALL BE NEATLY STACKED ON THE JOB SITE, AS DESIGNATED BY THE ENGINEER UNTIL SUCH TIME AS DIVISION PERSONNEL CAN REMOVE THE MATERIAL FROM THE JOB SITE.

NO SPLICES SHALL BE PERMITTED IN ANY PIPE OR WIDE FLANGE SIGN POSTS.

ALL ANCHOR BOLTS SHALL BE GRADE A-36 STEEL.

THE STATIONS AND LOCATIONS OF THE SIGN PLACEMENT, AS SHOWN ON THE PLAN SHEETS, ARE APPROXIMATE. EXACT STATIONS AND LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR SO THAT THE SIGN IS INSTALLED IN ACCORDANCE WITH OTA STANDARDS AND THE MUTCD IN ORDER TO PROVIDE OPTIMUM VISIBILITY TO THE ONCOMING/ APPROACHING MOTORIST. IF A PROPOSED LOCATION CONFLICTS WITH OTHER SIGNS, UTILITIES OR OTHER ROADWAY FEATURES, THE ENGINEER SHALL BE NOTIFIED.

POST LENGTHS SHOWN ON SIGN SUMMARY ARE APPROXIMATE. EXACT LENGTH SHALL BE DETERMINED BY FIELD SURVEY BY THE CONTRACTOR.

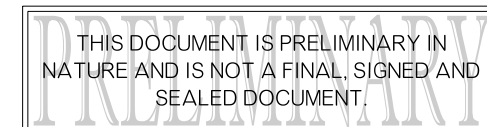
AFTER REMOVAL OF ANY SIGN FOOTINGS, THE HOLES SHALL BE FILLED WITH SOIL AND TAMPED AND SHAPED IN A MANNER APPROVED BY THE ENGINEER.

FOR NEW OR EXISTING GROUND MOUNTED SIGNS, MAXIMUM STUB POST PROJECTION ABOVE FOOTING/GROUND LINE SHALL BE 1-3/4" +/- 1/4". MAXIMUM FOOTING PROJECTION ABOVE GROUND LINE SHALL BE NO MORE THAN 2". SHOULD ADDITIONAL SOIL BE REQUIRED, THE ENGINEER WILL DESIGNATE AN AREA TO OBTAIN ADDITIONAL SOIL. ALL ASSOCIATED COSTS SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

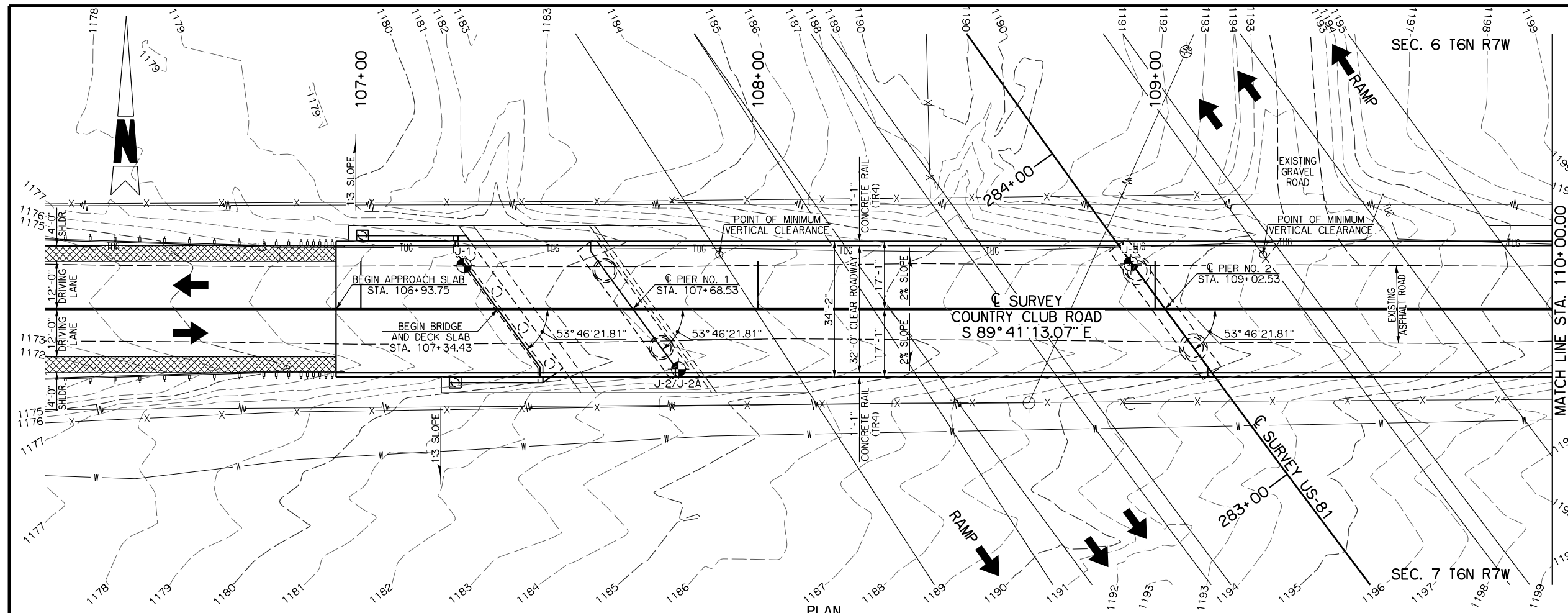
PAY QUANTITY NOTES - TRAFFIC SIGNING

- (TS-19) QUANTITY SHOWN INCLUDES 11,548 L.F. TRAFFIC STRIPE (PLASTIC)(WHITE) AND 11,538 L.F. TRAFFIC STRIPE (PLASTIC) (YELLOW) AND WILL BE MEASURED BY THE LINEAR FOOT OF FOUR INCH (4") WIDE TRAFFIC STRIPE.
- (TS-23) QUANTITY SHOWN INCLUDES 18 L.F. TRAFFIC STRIPE (PLASTIC)(WHITE) AND WILL BE MEASURED BY THE LINEAR FOOT OF TWENTY-FOUR INCH (24") WIDE TRAFFIC STRIPE.
- (TS-33) INCLUDED IN THIS PAY ITEM IS ALL HARDWARE ASSOCIATED WITH PROPERLY ANCHORING AND MOUNTING THE HIGHWAY SIGN IN ACCORDANCE WITH O.D.O.T. PLANS AND STANDARD DRAWINGS SSA1-1 AND SSP1-1-(LATEST REVISION).
- (TS-34) INCLUDED IN THIS PAY ITEM IS THE REMOVAL OF ANY EXISTING SIGNS TO BE REPLACED BY NEW ASSEMBLIES AND THE REMOVAL OF ANY EXISTING SIGNS THAT WILL BE IN CONFLICT WITH THE NEW ROADWAY OR NEW SIGNAGE.
- (TS-41) *REMOVAL OF EXISTING SIGNS* SHALL INCLUDE THE REMOVAL OF A COMPLETE SIGN ASSEMBLY WHICH MAY INCLUDE MULTIPLE SIGNS, POSTS, FOOTINGS, AND ANY FOOTINGS ADJACENT TO THE SIGN ASSEMBLY. WHEN APPROVED BY THE ENGINEER, FOOTINGS MAY BE OBLITERATED TO A POINT BELOW GROUND LEVEL IN LIEU OF BEING COMPLETELY REMOVED. SEE GENERAL CONSTRUCTION NOTES FOR DISPOSAL OF OLD CONCRETE FOOTING MATERIAL.
- (121) INCLUDED IN THIS ITEM IS THE REMOVAL OR COVERING OF ANY EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL AS SHOWN IN THESE PLANS. ALSO INCLUDED IS THE COST OF UNCOVERING THESE SIGNS UPON COMPLETION OF THE PROJECT OR AS DIRECTED BY THE ENGINEER. NO ADHESIVE SHALL BE PLACED ON THE FACE OF ANY SIGN.
- (122) POST LENGTHS SHOWN ON SUMMARY ARE APPROXIMATE; EXACT LENGTHS SHALL BE DETERMINED BY FIELD SURVEY BY THE CONTRACTOR.

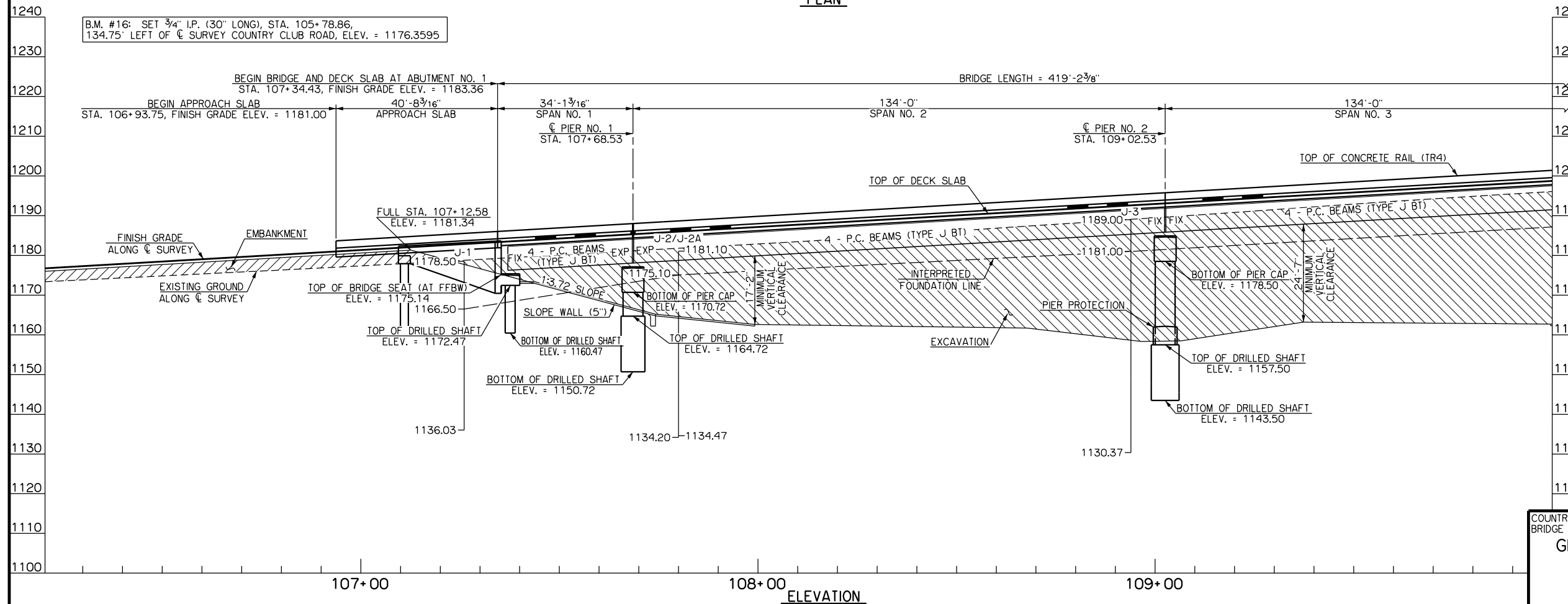
PAY QUANTITIES					
0310 TRAFFIC SIGNING AND STRIPING					
ITEM NO.	CODE NO.	ITEM DESCRIPTION	NOTES	UNIT	QUANTITY
805(A)	8722	(PL) REMOVAL OF EXISTING SIGNS	(TS-41)	LSUM	1.00
850(A)	8110	SHEET ALUMINUM SIGNS	(TS-34)	SF	546.00
851(C)	8324	2" SQUARE TUBE POST	(TS-33)(121)(122)	LF	120.00
851(C)	8327	2 1/4" SQUARE TUBE POST	(TS-33)(121)(122)	LF	182.00
851(C)	8330	2 1/2" SQUARE TUBE POST	(TS-33)(121)(122)	LF	72.00
855(A)	8812	TRAFFIC STRIPE (PLASTIC) (4" WIDE)	(TS-19)	LF	23,086.00
855(A)	8825	TRAFFIC STRIPE (PLASTIC) (24" WIDE)	(TS-23)	LF	18.00
880(C)	8845	BARRICADES (TYPE III)		EA	36.00



PAY QUANTITIES & NOTES - TRAFFIC SIGNING & STRIPING



PLAN



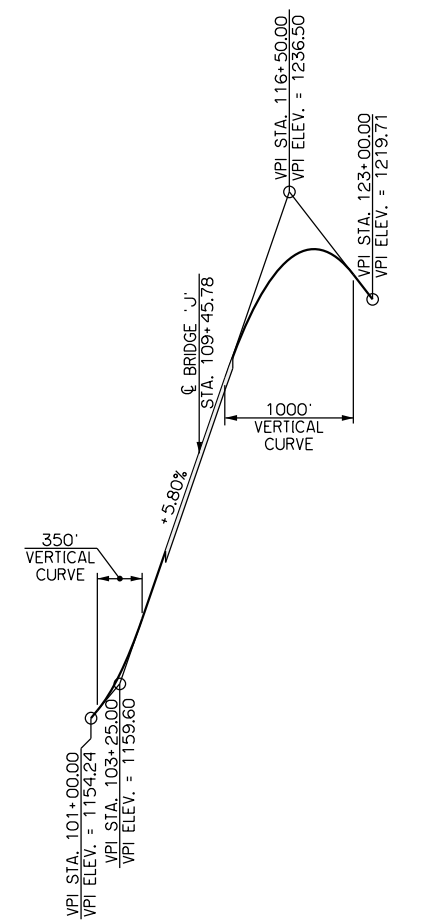
ELEVATION

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
AB01, AB04	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)
BO01, BO02	GENERAL PLAN AND ELEVATION (BRIDGE 'J')
BO03-BO05	FOUNDATION BORING LOGS
BO06	SUBSTRUCTURE STAKING DIAGRAM
BO07	DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS
BO08, BO09	DETAILS OF ABUTMENT NO. 1
BO10, BO11	DETAILS OF ABUTMENT NO. 2
BO12	DETAILS OF ABUTMENT NOS. 1 AND 2
BO13	DETAILS OF WINGS AT ABUTMENT NO. 1
BO14-BO15	DETAILS OF WINGS AT ABUTMENT NO. 2
BO16	DETAILS OF DRILLED SHAFTS AT ABUTMENTS AND WINGS
BO17-BO19	DETAILS OF PIER NOS. 1 AND 3
BO20-BO22	DETAILS OF PIER NO. 2
BO23	DETAILS OF PIER PROTECTION AT PIER NO. 2
BO24-BO30	DETAILS OF SUPERSTRUCTURE
BO31	DETAILS OF BEARING ASSEMBLIES
BO32, BO33	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NO. 1
BO34, BO35	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NOS. 2 AND 3
BO36, BO37	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE J BT) IN SPAN NO. 4
BO38, BO39	DETAILS OF APPROACH SLABS
BO40	LAYOUT OF CONCRETE RAIL (TR4)
BO41	DETAILS OF SLOPE WALLS
BO42	DETAILS OF DRAINS AT ENDS OF BRIDGE

REQUIRED STANDARD DRAWINGS

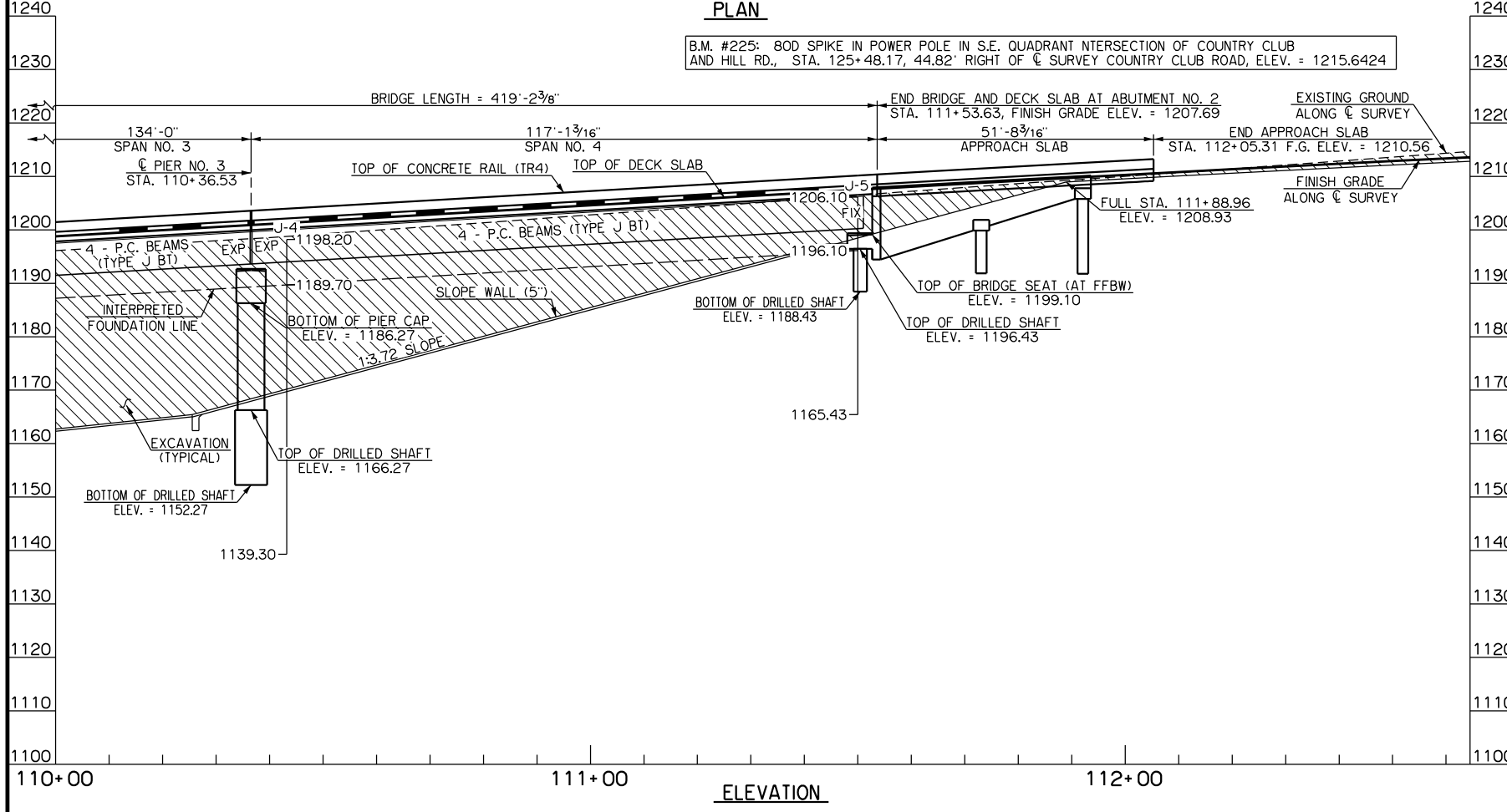
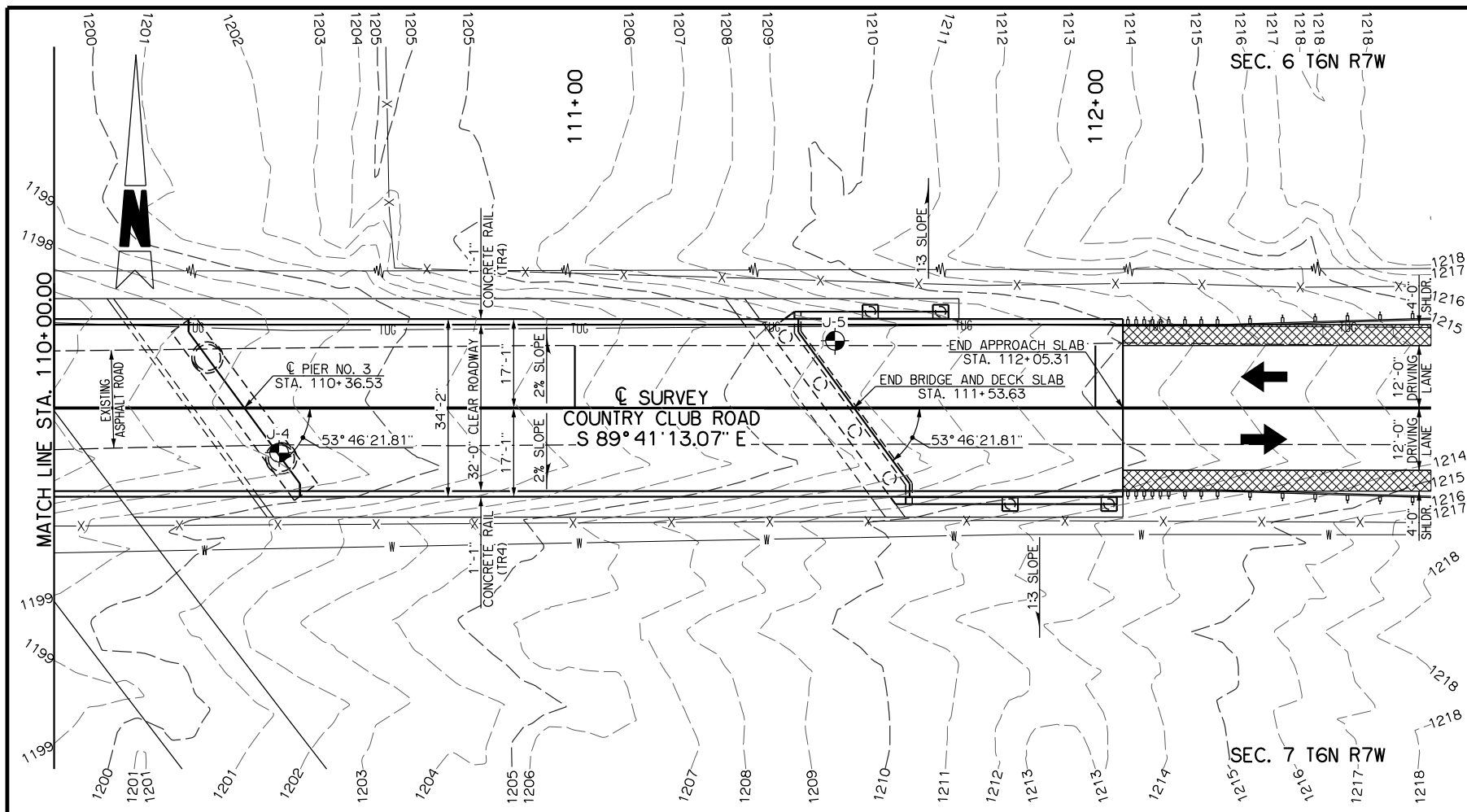
ROADWAY	BRIDGE
PED-3-2	TR4-2-00E
PUD-3-3	EJ-SK-04E
	EJ-DTL-02E
	HP1-2-01E



PROFILE GRADE DATA
FINISH GRADE ALONG C SURVEY

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'
GENERAL PLAN AND ELEVATION (BRIDGE 'J')
(SHEET NO. 1 OF 2)
FOUR SPAN (34'-134'-134'-117') P.C. BEAM BRIDGE WITH
36° 13' 38" SKEW RIGHT FORWARD, 32'-0" CLEAR ROADWAY
AND CONCRETE RAIL (TR4) AT C SURVEY STA. 109+45.78
State Job No. 24428(12) Sheet No. B001

US 81 REALIGNMENT
GRADY COUNTY



SUMMARY OF QUANTITIES - BRIDGE 'J'								
ITEM	UNIT	ABUTMENTS	PIERS	PIER PROTECTION	SUPER-STRUCTURE	APPROACH SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	375.00	-	15.00	-	-	-	390.00
CLSM BACKFILL	CY	356.00	-	-	-	-	-	356.00
PRESTRESSED CONCRETE BEAMS (TYPE J BT)	LF	-	-	-	1,652.00	-	-	1,652.00
APPROACH SLAB	SY	-	-	-	-	350.80	-	350.80
SAW-CUT GROOVING	SY	-	-	-	1,491.00	329.00	-	1,820.00
SEALED EXPANSION JOINT	LF	-	-	-	84.32	-	-	84.32
CONCRETE RAIL (TR4)	LF	-	-	-	837.80	184.80	-	1,022.60
STRUCTURAL STEEL	LB	-	-	-	4,370.00	-	-	4,370.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
CLASS AA CONCRETE	CY	-	-	-	456.00	-	-	456.00
CLASS A CONCRETE	CY	130.20	230.30	22.70	-	-	-	383.20
SLOPE WALL (5")	SY	-	-	-	-	-	1,038.00	1,038.00
REINFORCING STEEL	LB	-	1,880.00	-	-	-	-	1,880.00
EPOXY COATED REINFORCING STEEL	LB	17,800.00	21,480.00	920.00	115,660.00	-	-	155,860.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	132.00	285.00	-	1,581.00	84.00	-	2,082.00
DRILLED SHAFT 24" DIAMETER	LF	84.00	-	-	-	-	-	84.00
DRILLED SHAFT 30" DIAMETER	LF	80.00	-	-	-	-	-	80.00
DRILLED SHAFT 72" DIAMETER	LF	-	56.00	-	-	-	-	56.00
DRILLED SHAFT 84" DIAMETER	LF	-	28.00	-	-	-	-	28.00
SEALER CRACK PREPARATION	LF	-	-	-	40.00	-	-	40.00
SEALER RESIN	GAL	-	-	-	0.40	-	-	0.40
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	82.00	-	-	-	-	100.00	182.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	50.00	-	-	-	-	18.00	68.00
OUTLET LATERAL HEADWALL	EA	-	-	-	-	-	2.00	2.00

STRUCTURAL AND FOUNDATION DESIGN DATA

MATERIAL:
 CLASS A CONCRETE, $f'_c = 3$ KSI
 CLASS AA CONCRETE, $f'_c = 4$ KSI
 REINFORCING STEEL, $f_y = 60$ KSI
 STRUCTURAL STEEL M270 (GRADE 50W), $F_y = 50$ KSI
 STAINLESS STEEL A240 (TYPE 316), $F_y = 30$ KSI

LOADING:
 HL-93 OR OKLAHOMA OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE
 5 PSF STAY-IN-PLACE FORMS

DESIGN:
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION WITH 2015 INTERIMS
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

HL-93 INVENTORY RATING FACTOR: 1.00
 HL-93 OPERATING RATING FACTOR: 1.30

UTILITIES

TELEPHONE:
 CHICKASAW TELEPHONE CO. - (580) 618-5455
 SOUTHWESTERN BELL - (800) 522-6543
 AT&T - (800) 778-9140
 DOBSON TECHNOLOGIES - (800) 778-9140
 INTELEQ COMMUNICATIONS - (800) 335-4343
 MEDICINE PARK TELEPHONE CO. - (580) 529-2700

ELECTRIC:
 AEP PUBLIC SERVICE CO. OF OKLAHOMA - (888) 216-3523
 OKLAHOMA ELECTRIC COOPERATIVE - (405) 321-2024

WATER AND SANITARY SEWER:
 CITY OF CHICKASHA PUBLIC WORKS - (405) 222-6080
 RURAL WATER DISTRICT #6 - (405) 459-6626
 RURAL WATER DISTRICT #7 - (405) 779-6224

GAS AND PETROLEUM PIPELINES:
 ENABLE MIDSTREAM - (800) 522-8048
 CONTINUUM ENERGY - (877) 587-0026
 DCP MIDSTREAM - (800) 435-1679
 UNIT PETROLEUM - (918) 493-7700
 SUNOCO LOGISTICS - (800) 753-5531
 KEPSCO OPERATING INC. - (855) 421-2088

ABUTMENT (30" DIAMETER DRILLED SHAFTS)

ABUTMENT NOS.	1	2
MINIMUM DEPTH INTO ROCK (FEET)	= 6	= 6
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	= 3	= 3
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 60.0	= 60.0
BEARING RESISTANCE FACTOR	= 0.70	= 0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 206	= 206
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 6.53	= 9.0
FRICTION RESISTANCE FACTOR	= 0.45	= 0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 69	= 95
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 275	= 301
TOTAL FACTORED REACTION (TONS/SHAFT)	= 211	= 209

PIERS

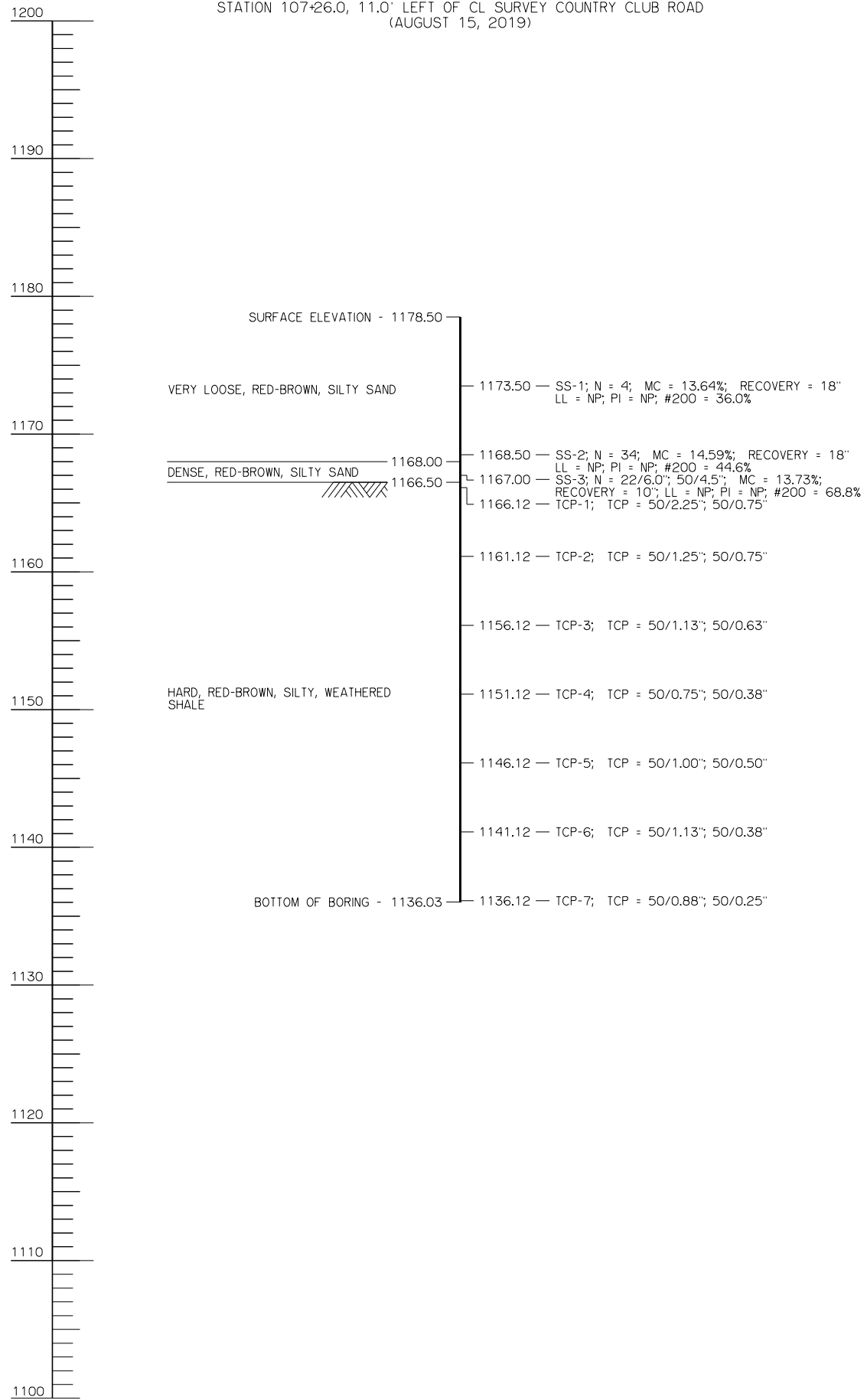
PIER NO.	1	2	3
DRILLED SHAFTS DIAMETER (INCHES)	= 72	84	72
FACTORED REACTION (TONS/SHAFT)	= 549	744	687
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 55.1	60.0	46.1
BEARING RESISTANCE FACTOR	= 0.70	0.70	0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 1090	1616	912
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 3.0	9.0	9.0
FRICTION RESISTANCE FACTOR	= 0.45	0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 216	623	534
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	= 5	5	5
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 1307	2239	1446

COUNTRY CLUB ROAD OVER US-81
 BRIDGE 'J'
GENERAL PLAN AND ELEVATION (BRIDGE 'J')
 (SHEET NO. 2 OF 2)
 FOUR SPAN (34'-134'-134'-117') P.C. BEAM BRIDGE WITH
 36" 13'38" SKEW RIGHT FORWARD, 32'-0" CLEAR ROADWAY
 AND CONCRETE RAIL (TR4) AT SURVEY STA. 109+45.78
 State Job No. 24428(12) Sheet No. B002

US 81 REALIGNMENT
GRADY COUNTY

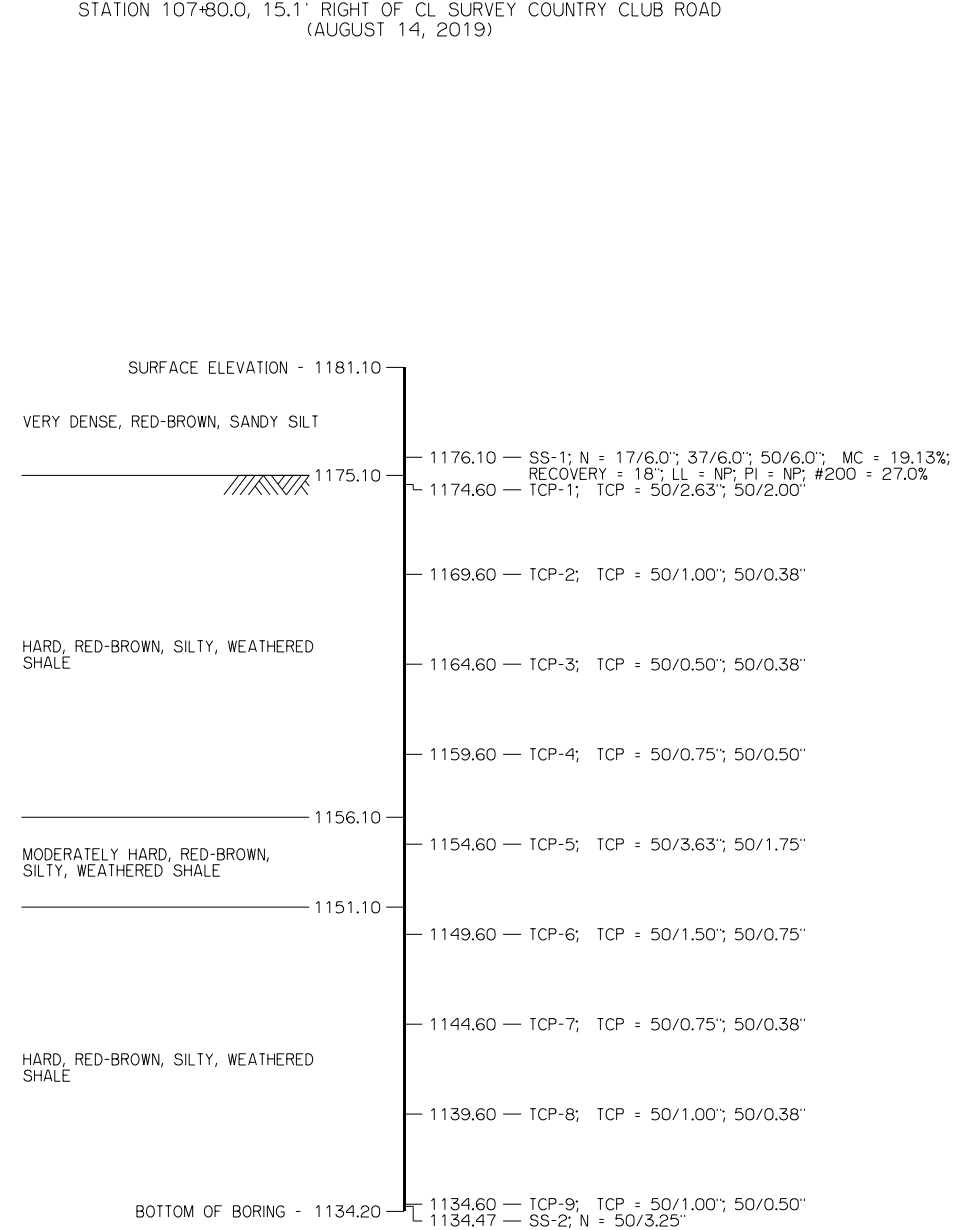
BORING NO. J-1

STATION 107+26.0, 11.0' LEFT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 15, 2019)



BORING NO. J-2

STATION 107+80.0, 15.1' RIGHT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 14, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ◄ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

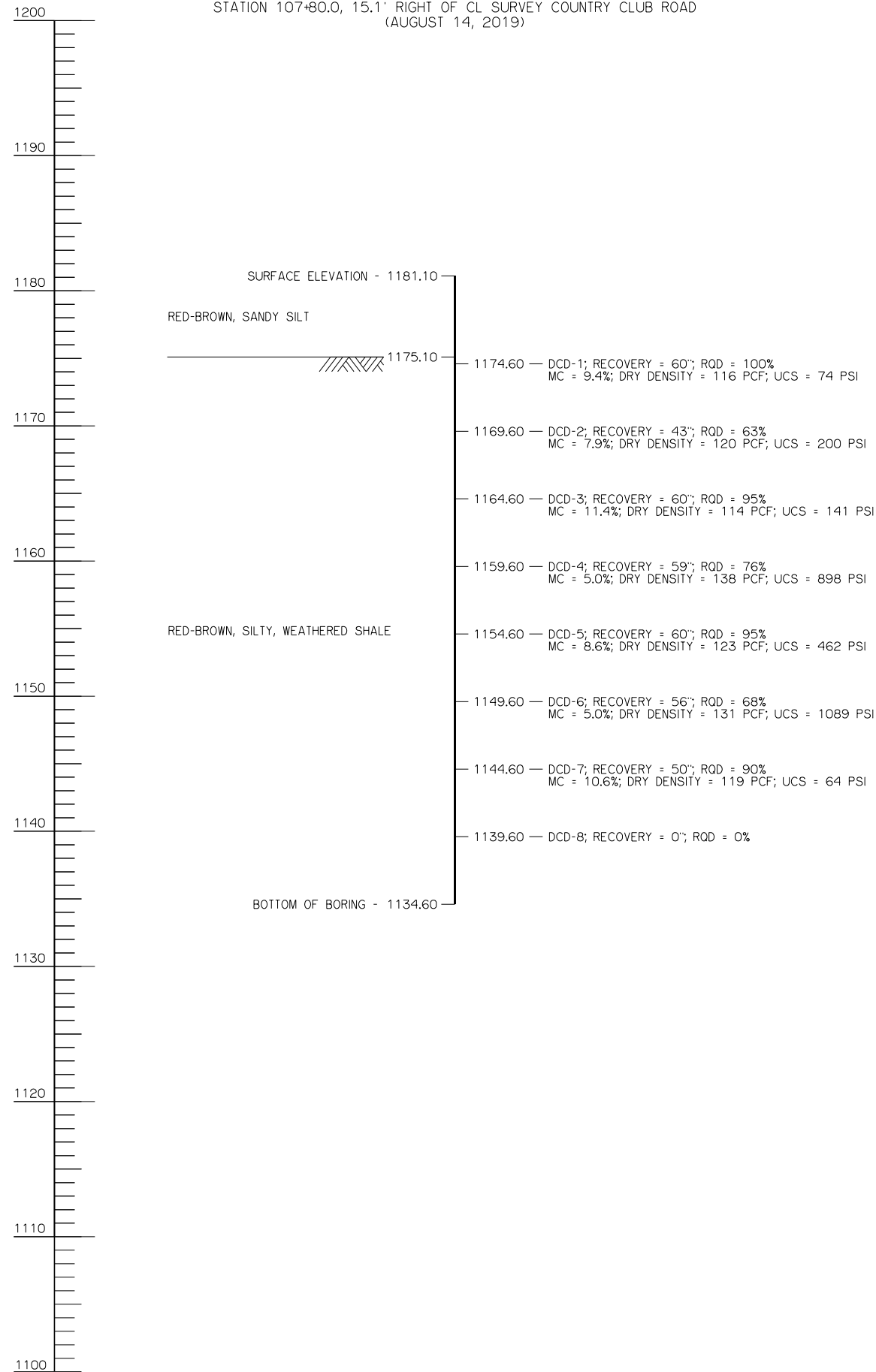
ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**FOUNDATION BORING LOGS
(SHEET NO. 1 OF 3)**

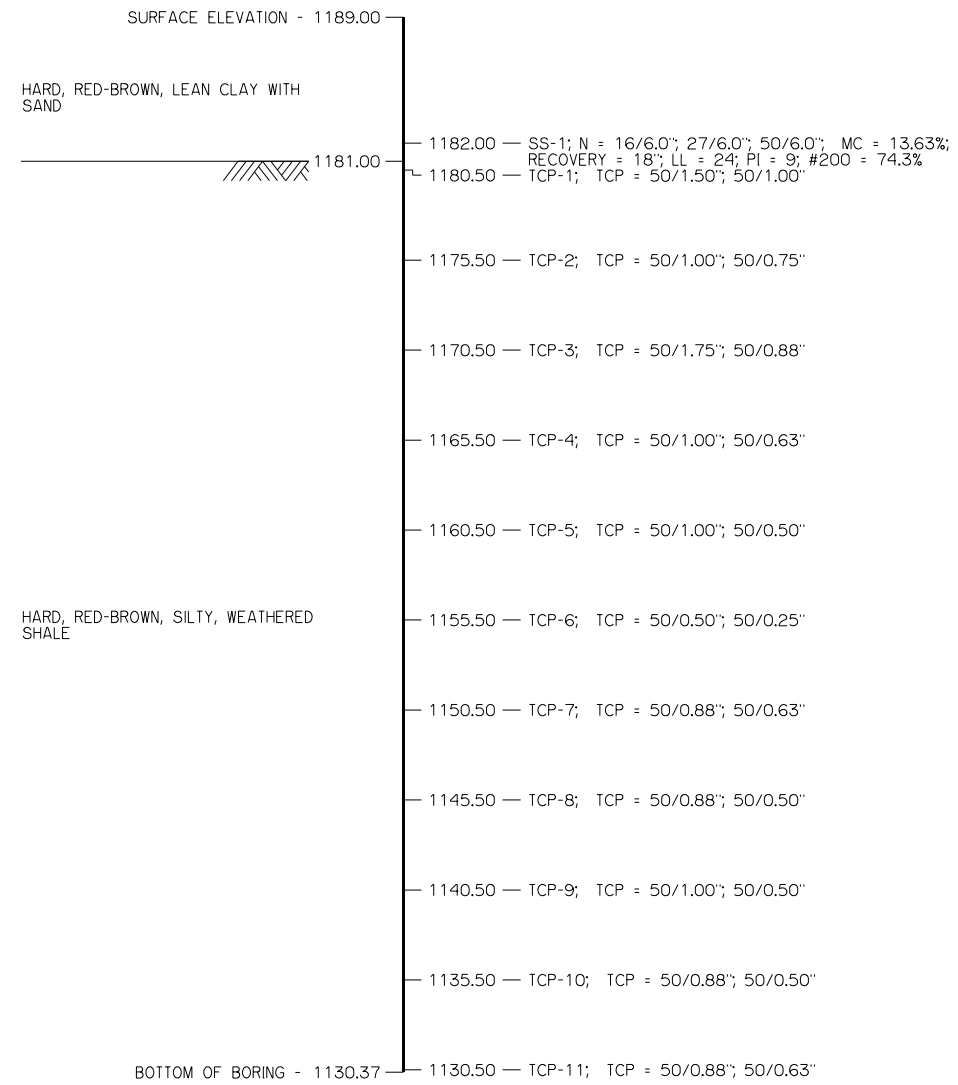
BORING NO. J-2A

STATION 107+80.0, 15.1' RIGHT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 14, 2019)



BORING NO. J-3

STATION 108+93.9, 11.4' LEFT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 13, 2019)



LEGEND

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- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
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- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
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- PCF = POUNDS PER CUBIC FOOT
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- //// = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

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GEOTECHNICAL REPORT

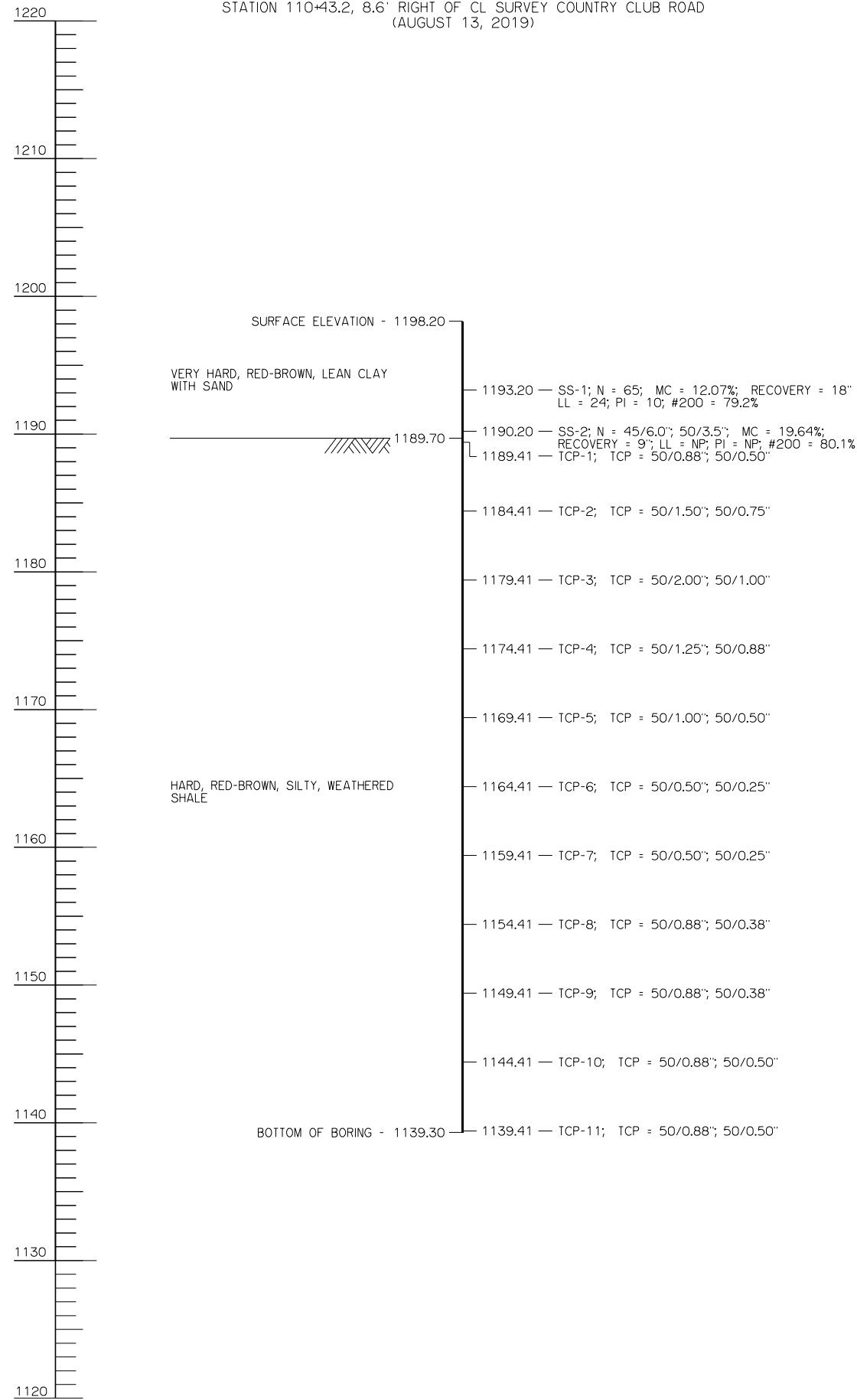
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COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

FOUNDATION BORING LOGS
(SHEET NO. 2 OF 3)

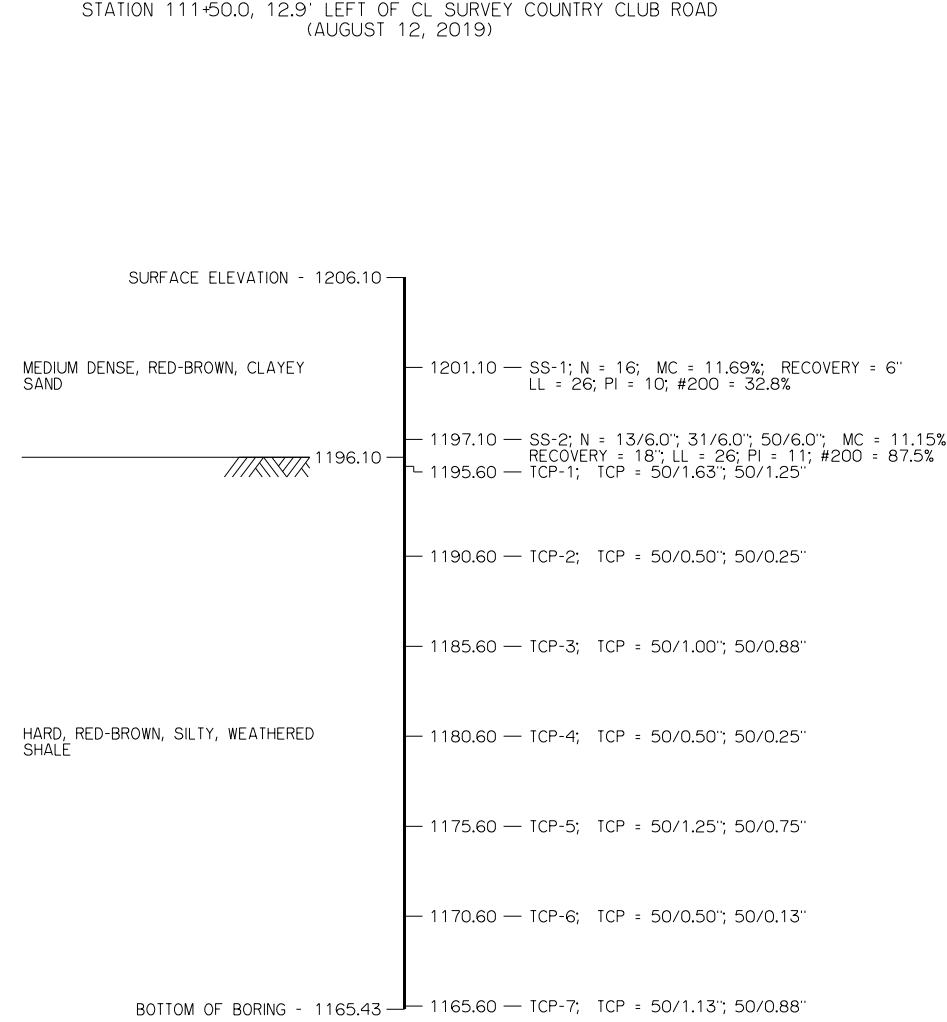
BORING NO. J-4

STATION 110+43.2, 8.6' RIGHT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 13, 2019)



BORING NO. J-5

STATION 111+50.0, 12.9' LEFT OF CL SURVEY COUNTRY CLUB ROAD
(AUGUST 12, 2019)



LEGEND

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- SS = SPLIT SPOON SAMPLER
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- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
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- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
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- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH

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- = WATER LEVEL 24 HOURS AFTER DRILLING
- = TOP OF ROCK

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SITE GEOLOGY

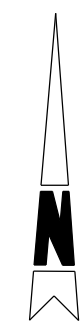
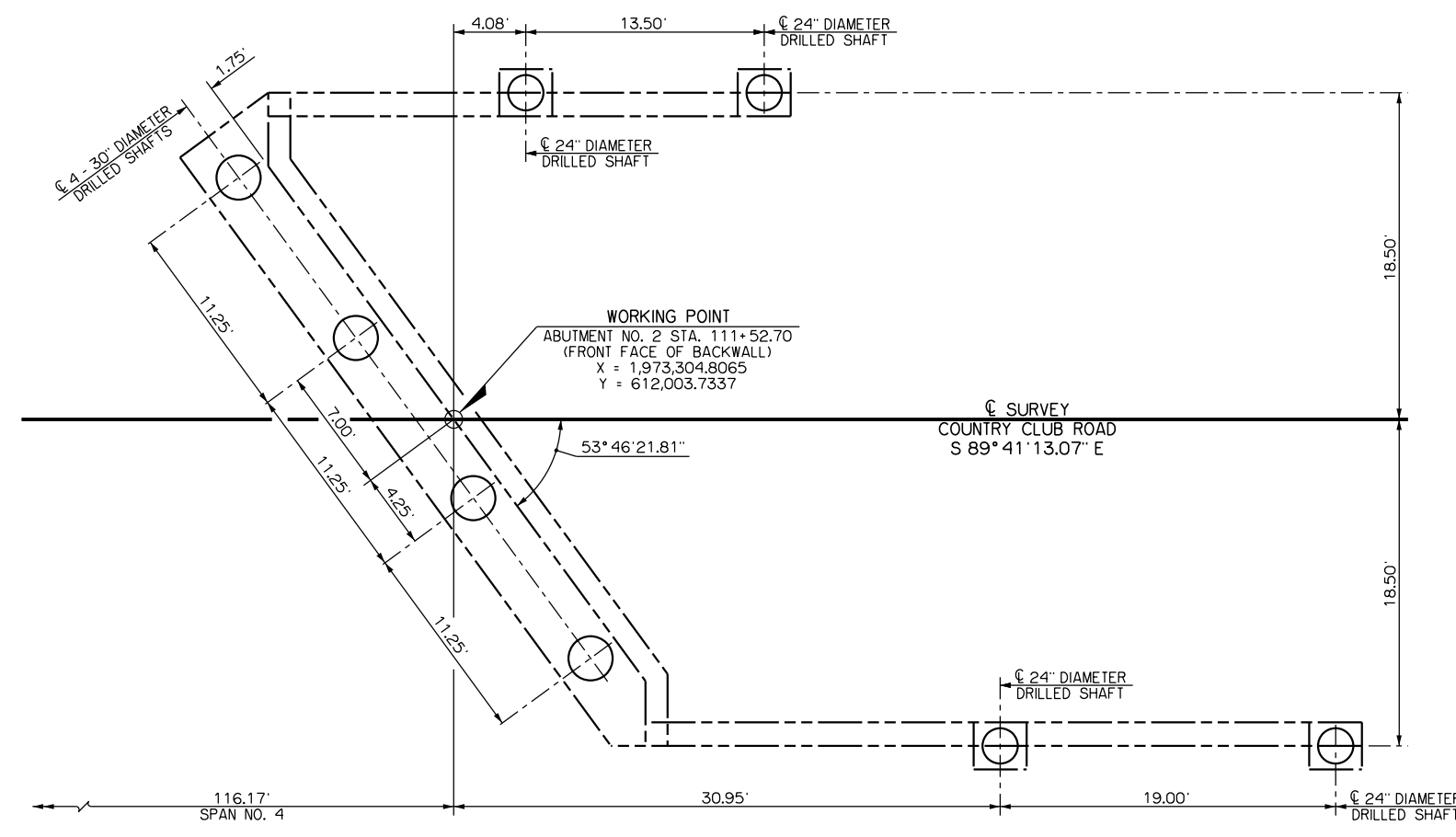
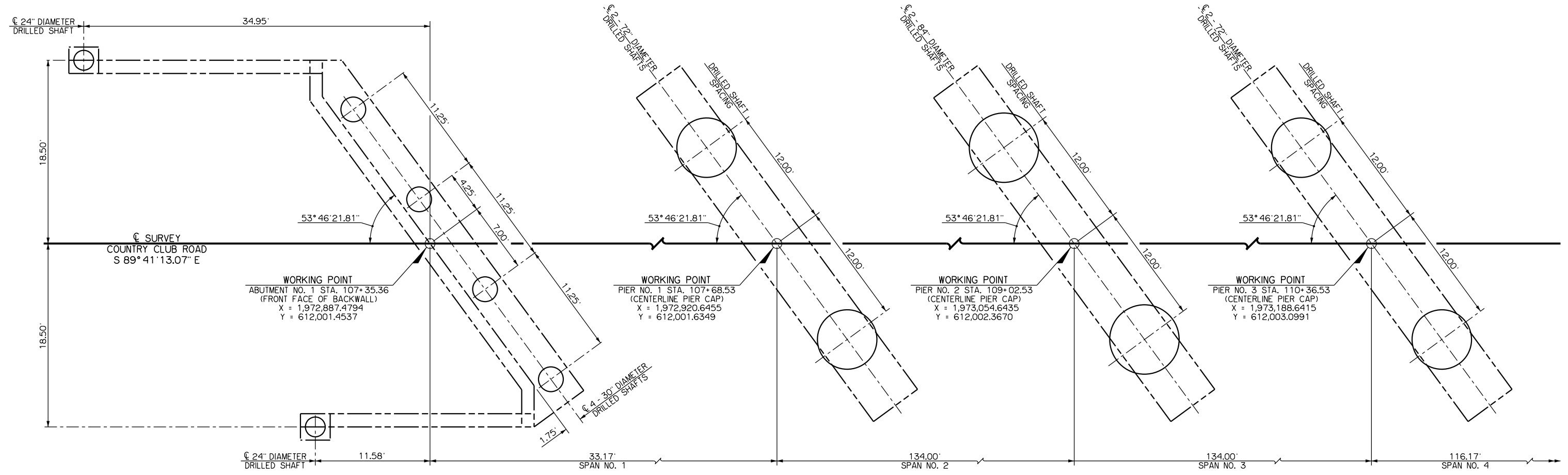
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GEOTECHNICAL REPORT

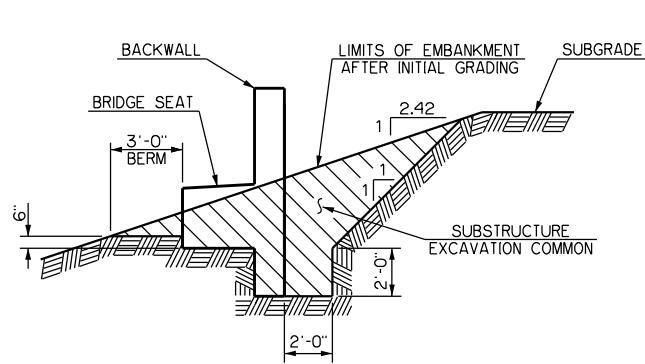
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COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**FOUNDATION BORING LOGS
(SHEET NO. 3 OF 3)**

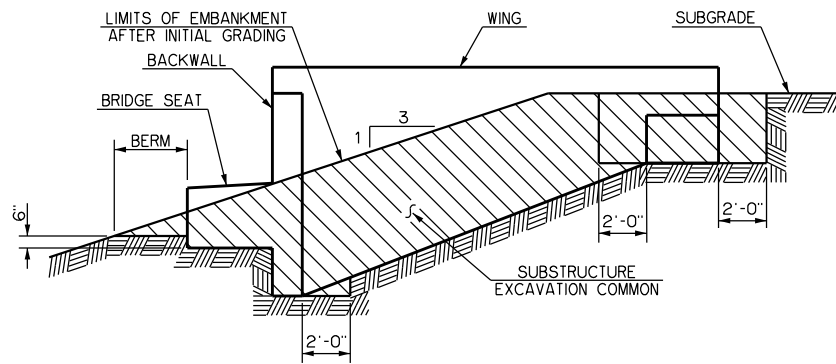


COUNTRY CLUB ROAD OVER US-81
 BRIDGE 'J'
SUBSTRUCTURE STAKING DIAGRAM
 State Job No. 24428(12) Sheet No. B006



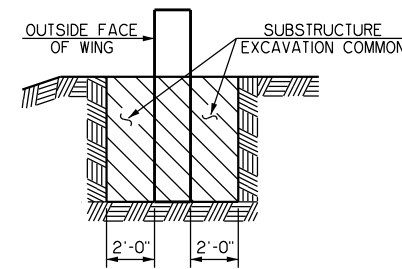
SECTION A-A

NOTE: DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO BACK WALL.

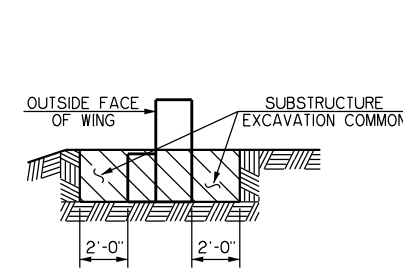


SECTION B-B

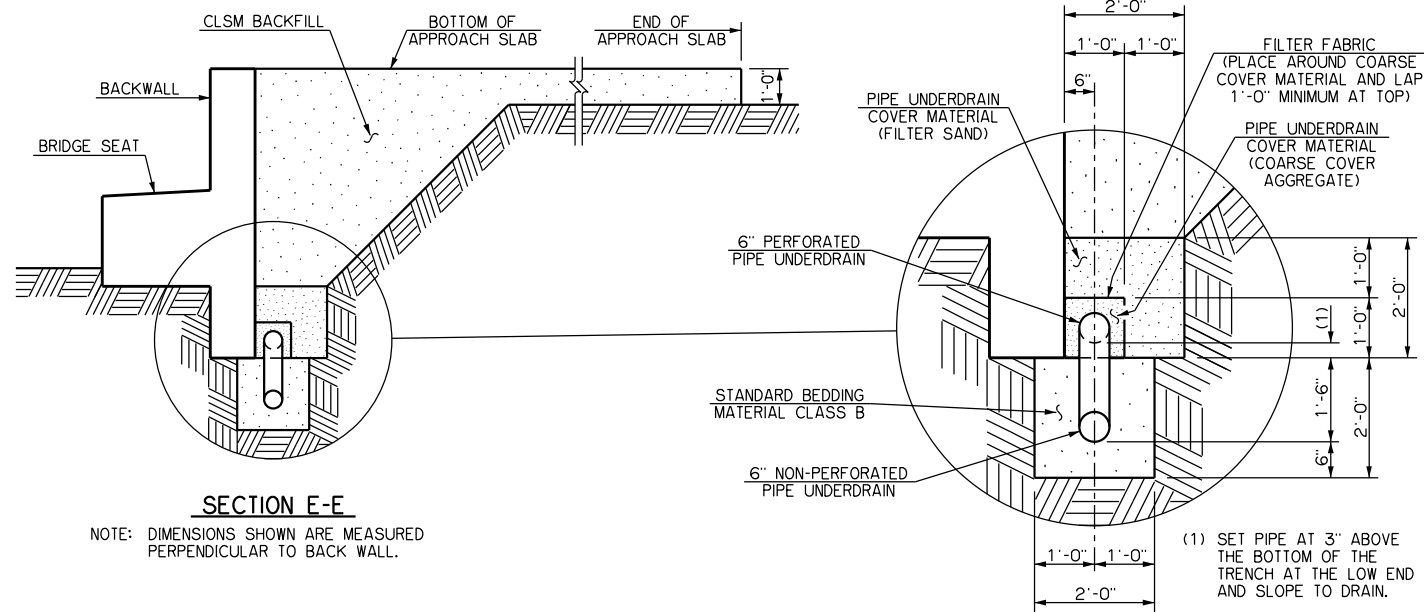
NOTE: DIMENSIONS SHOWN ARE MEASURED ALONG THE C-BRIDGE.



SECTION C-C

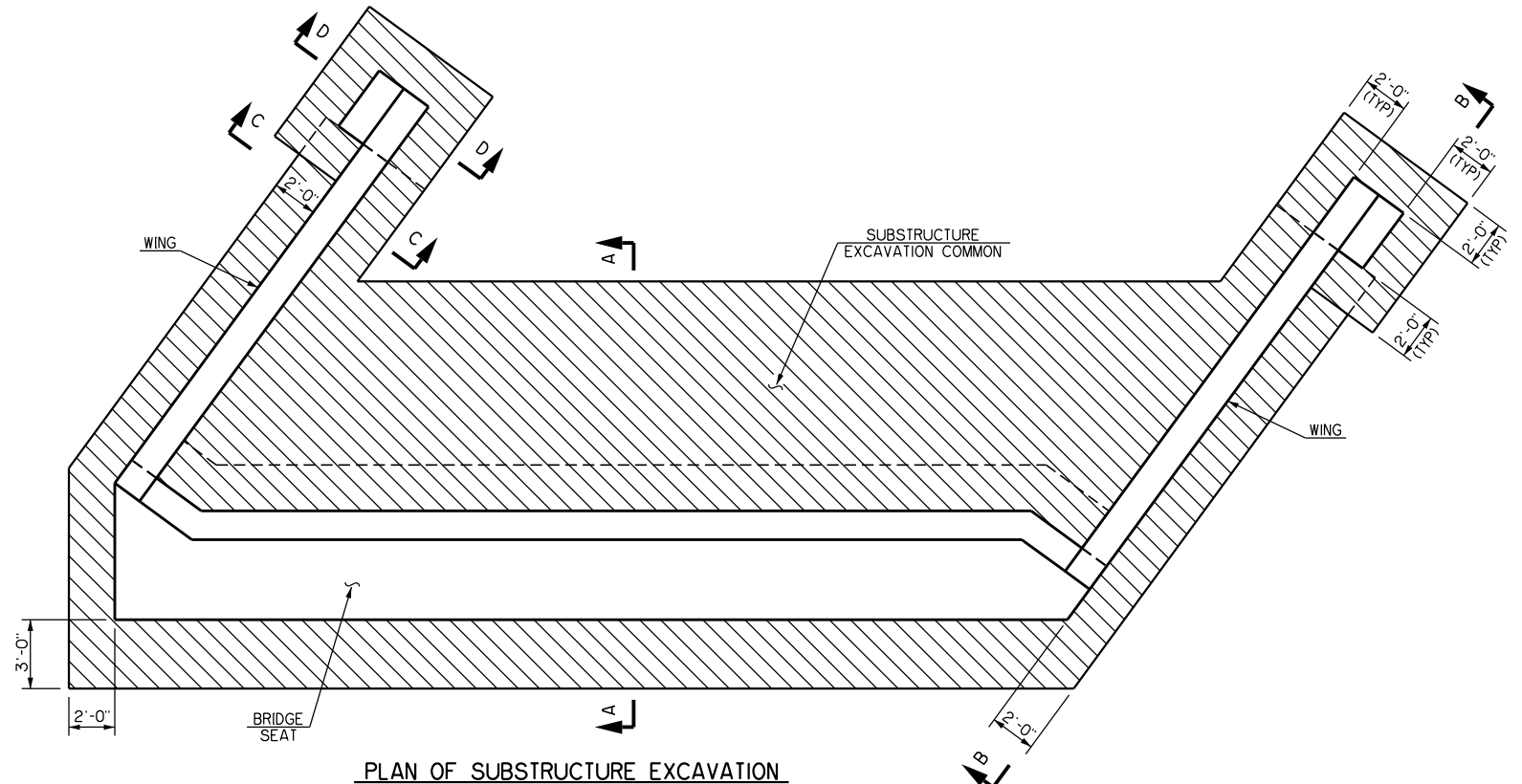


SECTION D-D

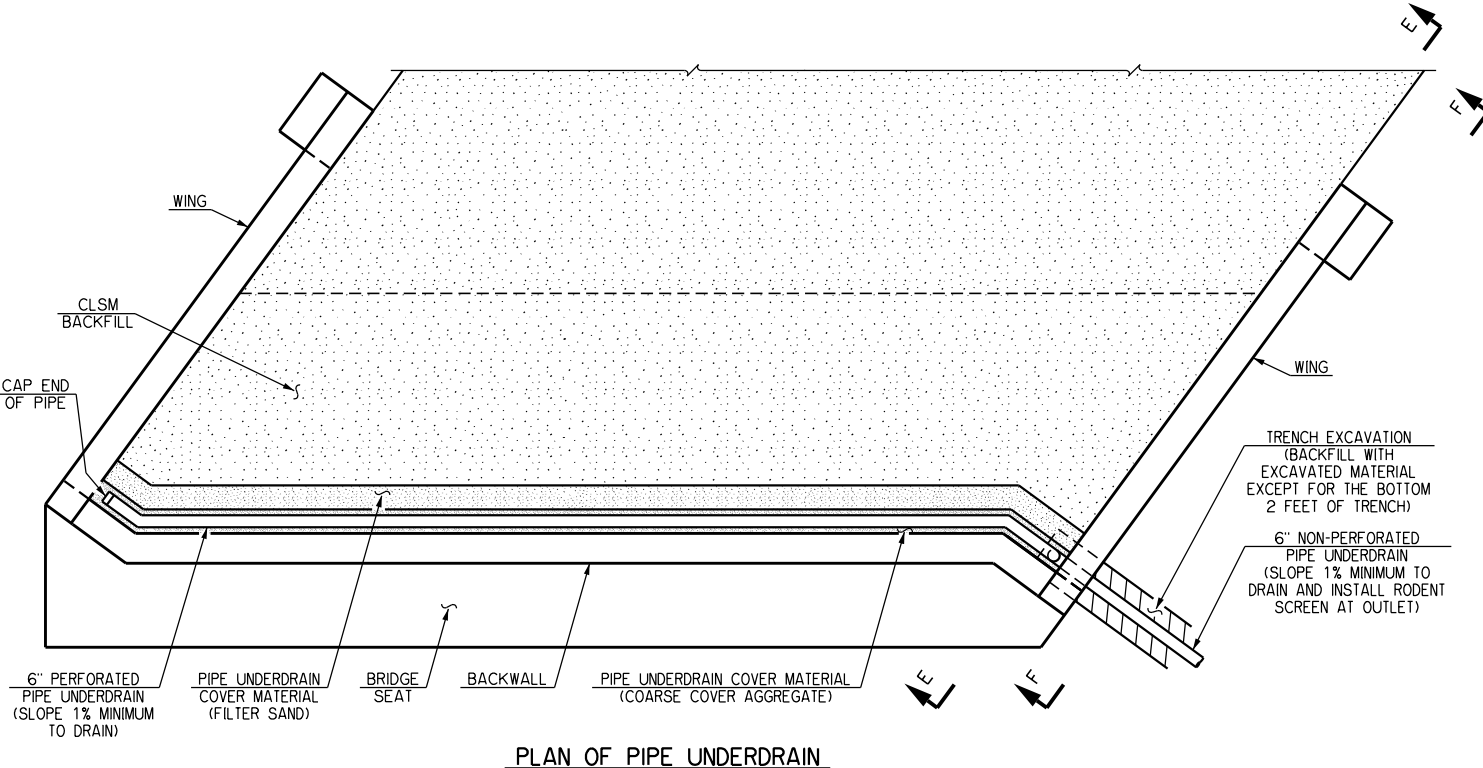


SECTION E-E

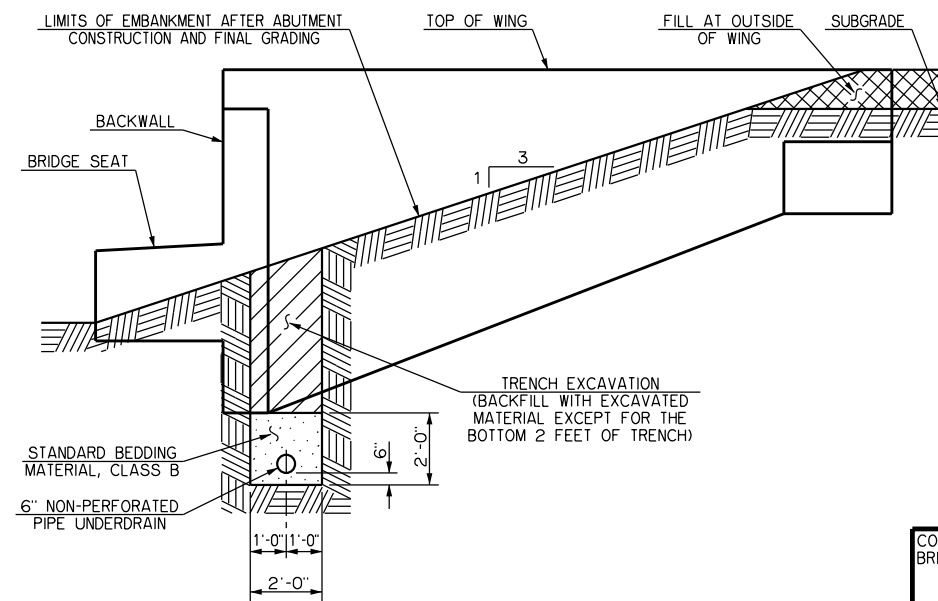
NOTE: DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO BACK WALL.



PLAN OF SUBSTRUCTURE EXCAVATION



PLAN OF PIPE UNDERDRAIN



SECTION F-F

NOTE: DIMENSIONS SHOWN ARE MEASURED ALONG THE C-SURVEY.

NOTE

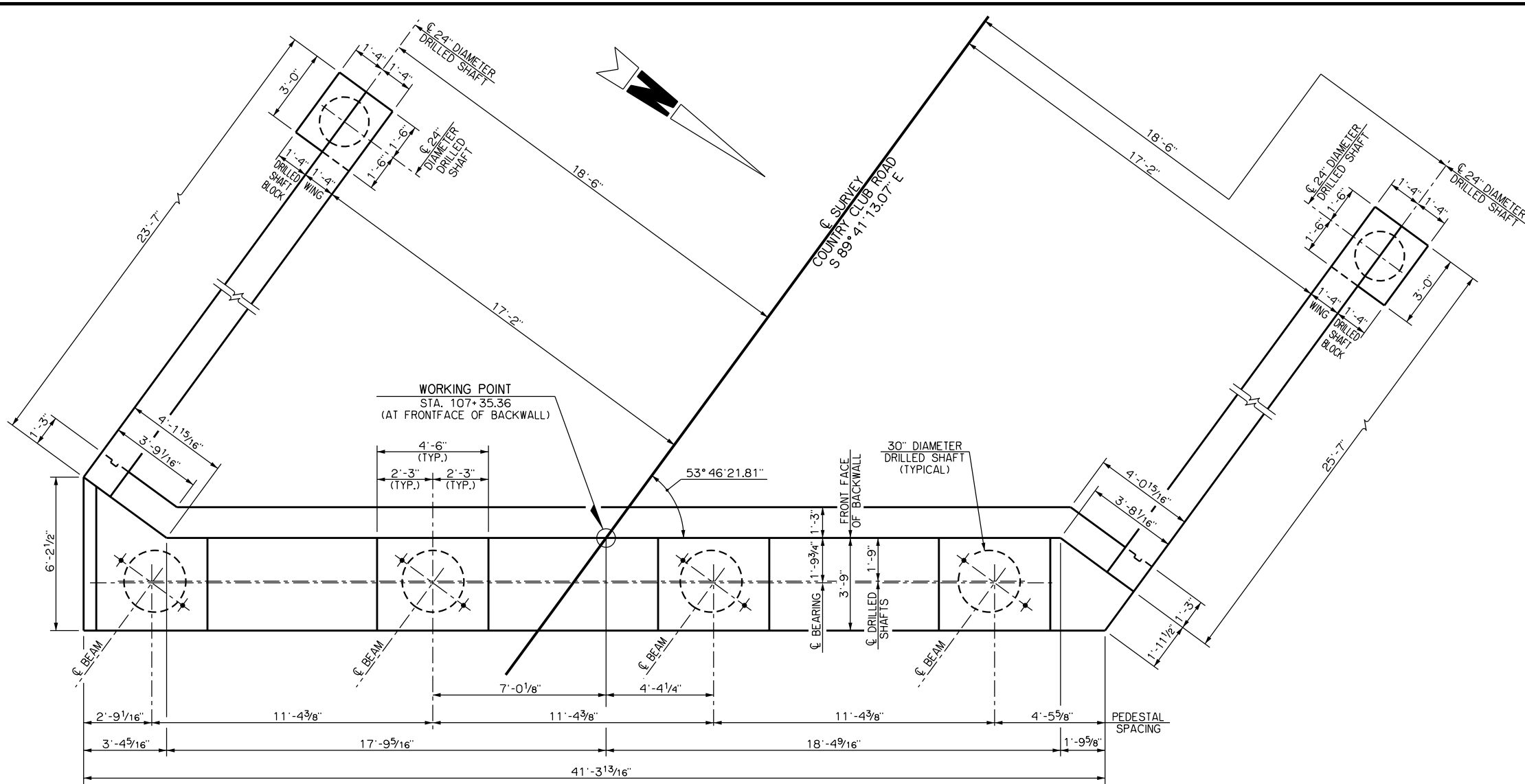
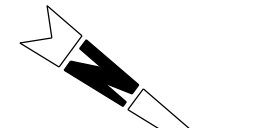
CONCRETE MAY BE PLACED AGAINST THE LIMITS OF EXCAVATION IF THE MATERIAL IS EXCAVATED TO THE NEAT LINES OF THE ABUTMENT AND APPROVED BY THE ENGINEER. IF NECESSARY, FORMS SHALL BE USED ON THE BACK VERTICAL FACE OF THE ABUTMENT AND REMOVED AFTER THE CONCRETE HAS SET. THE MEASUREMENT AND PAYMENT FOR "SUBSTRUCTURE EXCAVATION COMMON" AT THE ABUTMENTS SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS.

CLSM BACKFILL SHALL NOT BE PLACED UNTIL THE CONCRETE IN THE ABUTMENT WINGS HAS ATTAINED A STRENGTH OF 3,000 PSI.

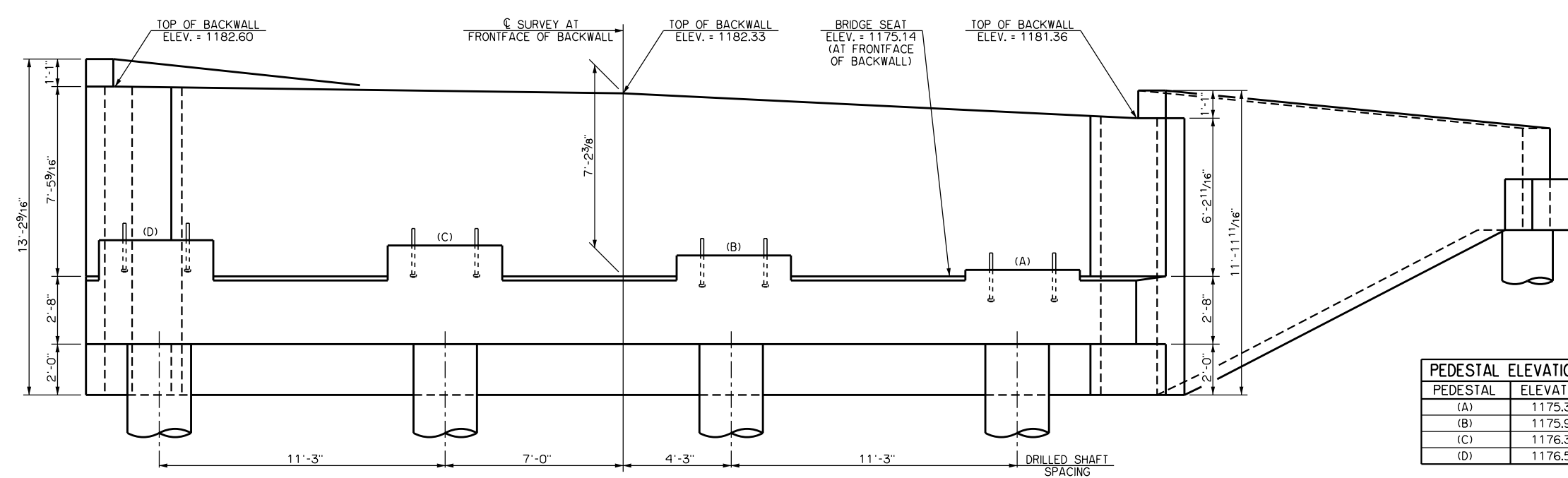
INSTALLATION ON THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON ROADWAY STANDARD DRAWING PUD-3-3. THE EXTENT, LOCATION AND DEPTH OF THE 6" NON-PERFORATED PIPE UNDERDRAIN MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION. ALL COSTS OF THE PERFORATED AND NON-PERFORATED PIPE, PIPE UNDERDRAIN COVER MATERIAL, FILTER FABRIC, TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, PIPE CAPS, RODENT SCREEN, BACKFILLING OF TRENCH EXCAVATION, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN" AND "6" NON-PERFORATED PIPE UNDERDRAIN.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"

DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS



PLAN



ELEVATION

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1175.39
(B)	1175.96
(C)	1176.35
(D)	1176.55

BAR LIST - ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#10	2	STR.	41'-1"	-
BH2	#10	2	STR.	42'-0"	-
BH3	#10	2	STR.	42'-6"	-
BH4	#10	2	BNT.	43'-8"	-
BH5	#10	2	BNT.	43'-8"	-
BH6	#4	1	STR.	41'-1"	-
BH7	#4	12	BNT.	45'-0"	-
BH8	#4	11	BNT.	43'-8"	-
BH9	#4	3	BNT.	4'-3"	-
BH10	#4	3	BNT.	8'-4"	-
BH11	#10	4	STR.	10'-7"	-
BV1	#5	21	STR.	11'-6 1/2" AVG.	11'-5" TO 11'-8"
BV2	#4	21	STR.	11'-6 1/2" AVG.	11'-5" TO 11'-8"
BV3	#5	21	STR.	10'-11 1/2" AVG.	10'-6" TO 11'-5"
BV4	#4	21	STR.	10'-11 1/2" AVG.	10'-6" TO 11'-5"
BV5	#4	4	STR.	12'-9"	-
BV6	#4	4	STR.	11'-7"	-
BV7	#4	4	BNT.	3'-6"	-
BV8	#4	1	STR.	2'-1"	-
P1	#4	10	BNT.	7'-0"	-
P2	#4	10	BNT.	7'-9"	-
P3	#4	10	BNT.	8'-4"	-
P4	#4	10	BNT.	9'-1"	-
PT1	#4	5	BNT.	15'-11"	-
S1	#5	37	BNT.	14'-7"	-
S2	#5	3	BNT.	17'-1" AVG.	15'-9" TO 18'-5"
S3	#5	2	BNT.	13'-2" AVG.	12'-7" TO 13'-9"
WT1	#6	1	BNT.	11'-6"	-
WT2	#6	4	BNT.	9'-0" AVG.	5'-6" TO 12'-6"
WT3	#6	33	BNT.	13'-0"	-
WT4	#6	1	BNT.	11'-6"	-
WT5	#6	3	BNT.	9'-8" AVG.	6'-4" TO 13'-0"
WT6	#6	5	BNT.	17'-0"	-
FOUR DRILLED SHAFTS (1)					
EPOXY COATED					
D1	#10	72	STR.	13'-11"	-
UNCOATED					
DS1	W20	4	BNT.	163'-10"	-

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

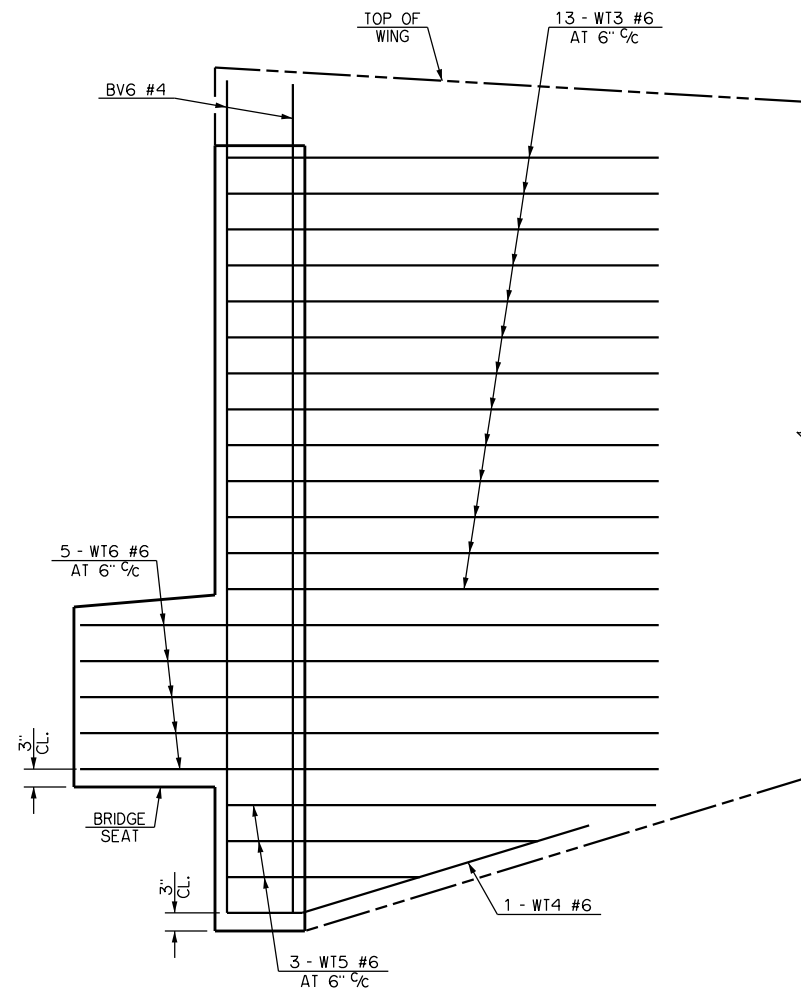
SUMMARY OF QUANTITIES - ABUTMENT NO. 1		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	170.00
CLSM BACKFILL	CY	151.00
CLASS A CONCRETE	CY	60.40
EPOXY COATED REINFORCING STEEL	LB	8,250.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	65.00
DRILLED SHAFTS 24" DIAMETER	LF	32.00
DRILLED SHAFTS 30" DIAMETER	LF	48.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	41.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	25.00

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

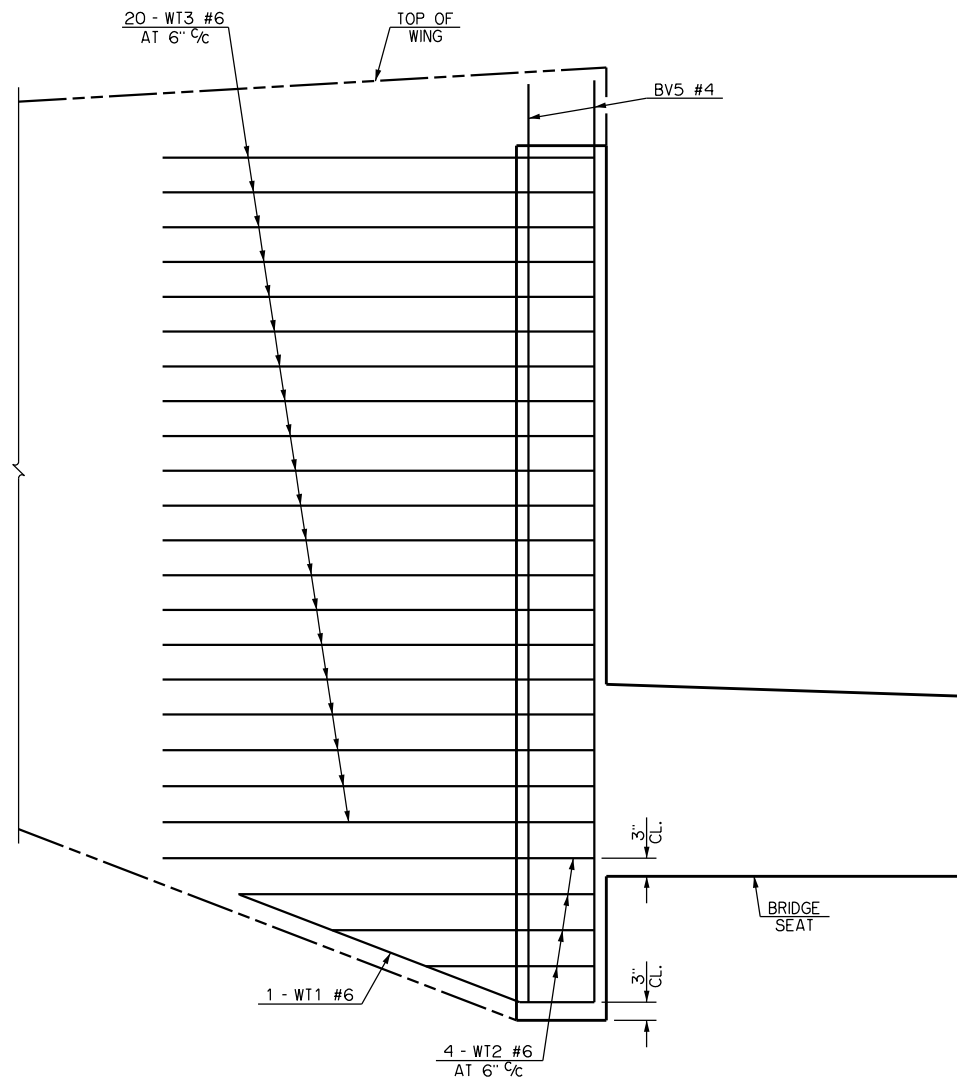
DETAILS OF ABUTMENT NO. 1
(SHEET NO. 1 OF 2)

State Job No. 24428(12) Sheet No. B008

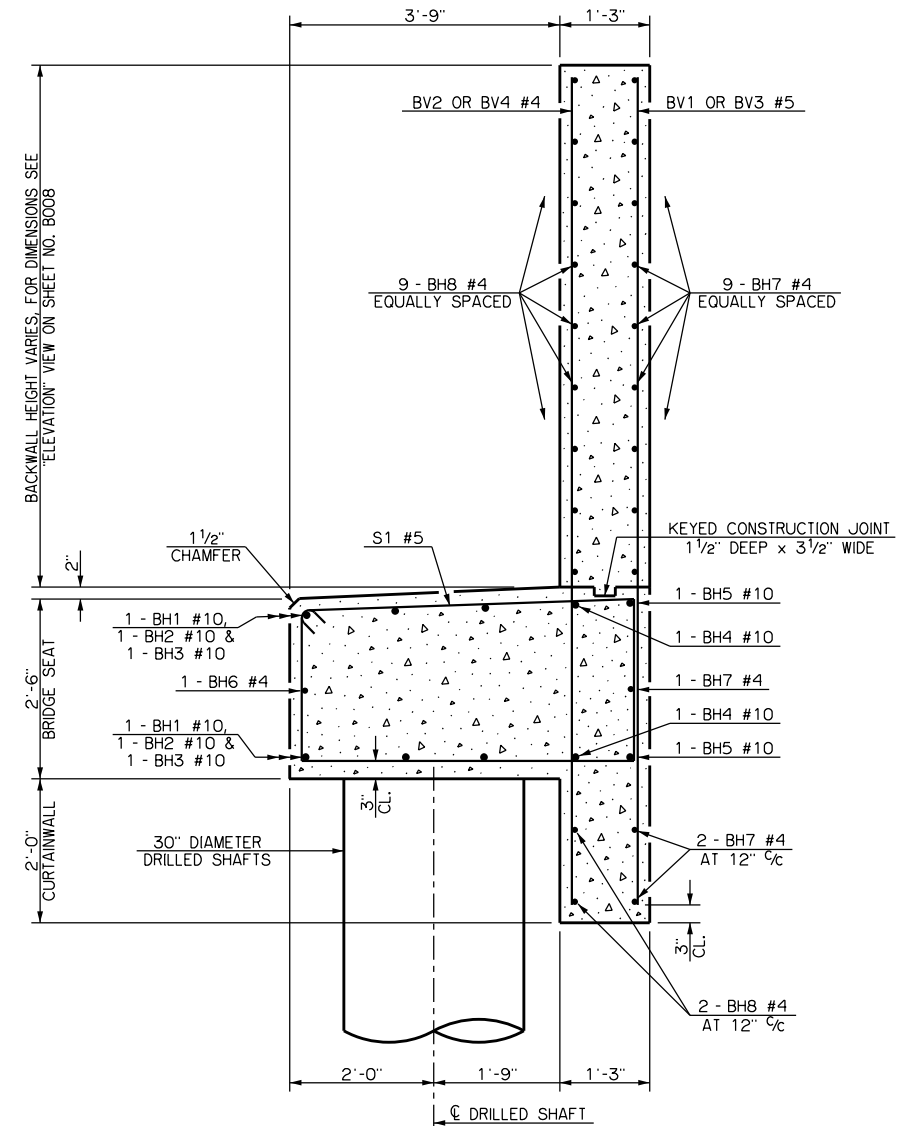
US 81 REALIGNMENT
GRADY COUNTY



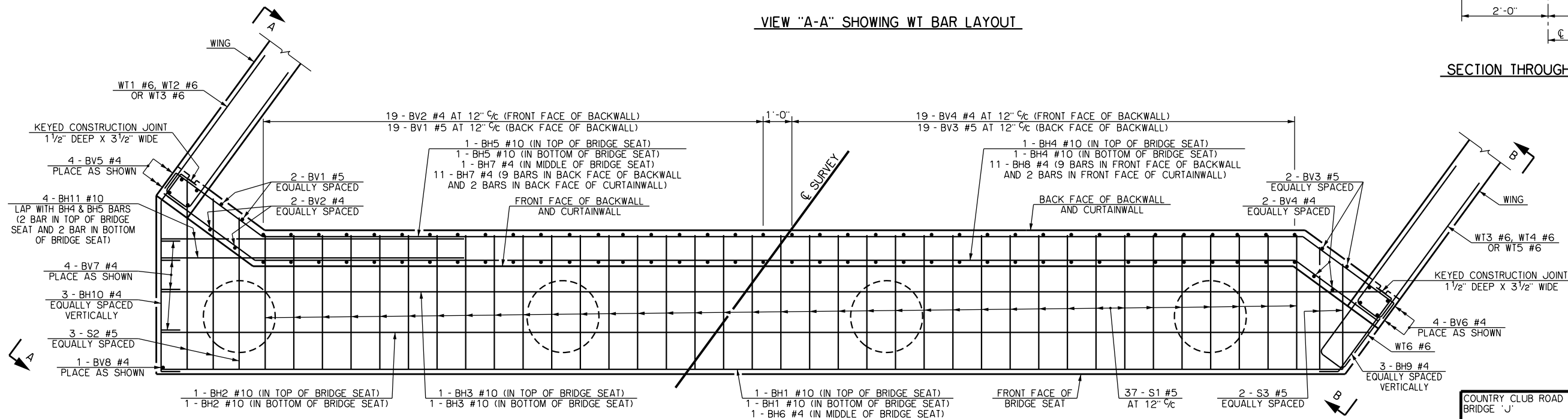
VIEW "B-B" SHOWING WT BAR LAYOUT



VIEW "A-A" SHOWING WT BAR LAYOUT



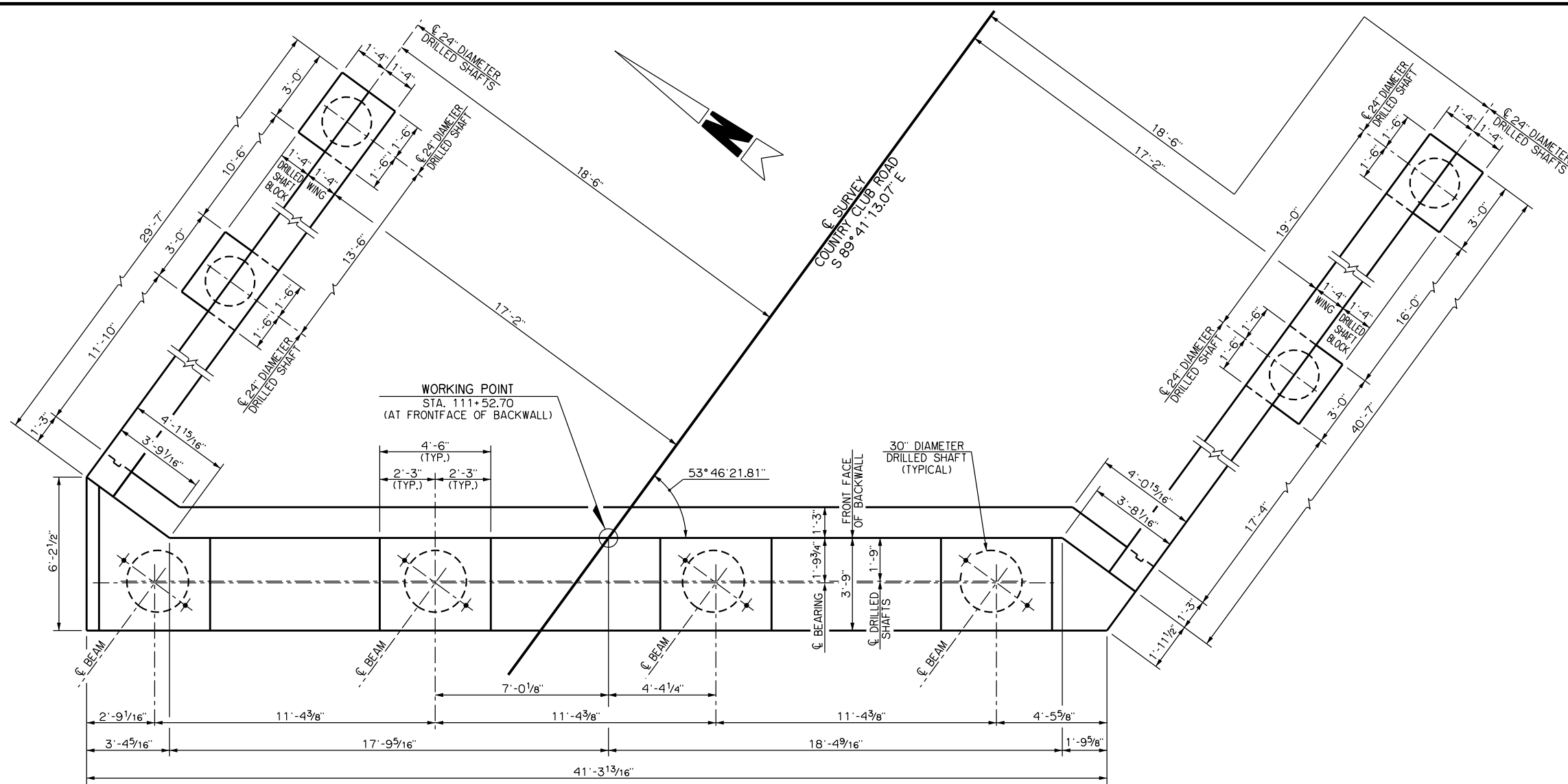
SECTION THROUGH BRIDGE SEAT



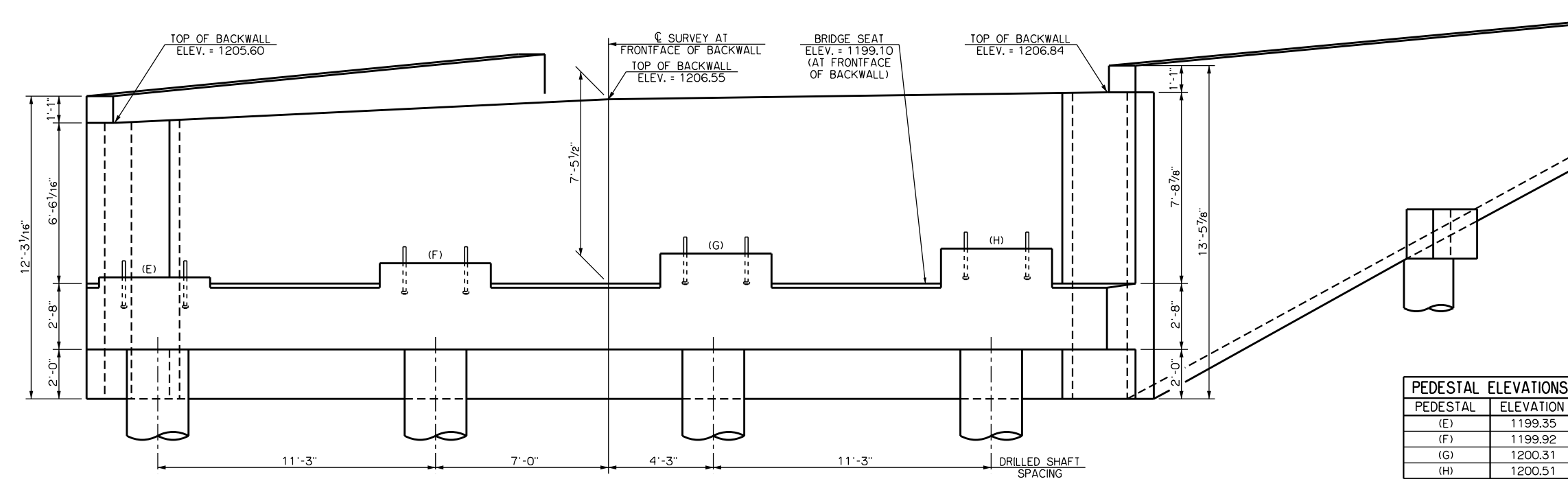
LAYOUT OF ABUTMENT REINFORCING STEEL

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF ABUTMENT NO. 1
(SHEET NO. 2 OF 2)



PLAN



ELEVATION

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(E)	1199.35
(F)	1199.92
(G)	1200.31
(H)	1200.51

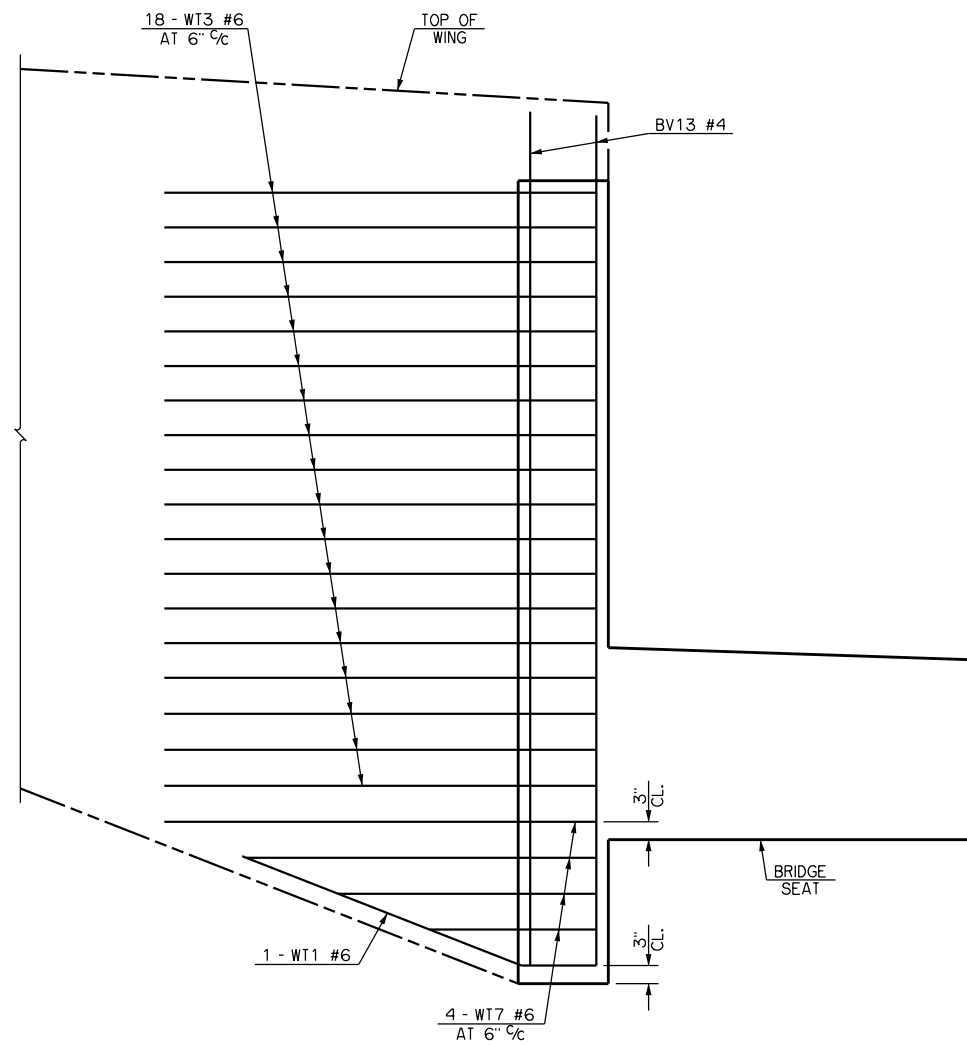
BAR LIST - ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#10	2	STR.	41'-1"	-
BH2	#10	2	STR.	42'-0"	-
BH3	#10	2	STR.	42'-6"	-
BH4	#10	2	BNT.	43'-8"	-
BH5	#10	2	BNT.	43'-8"	-
BH6	#4	1	STR.	41'-1"	-
BH7	#4	12	BNT.	45'-0"	-
BH8	#4	11	BNT.	43'-8"	-
BH9	#4	3	BNT.	4'-3"	-
BH10	#4	3	BNT.	8'-4"	-
BH11	#10	4	STR.	10'-7"	-
BV7	#4	4	BNT.	3'-6"	-
BV8	#4	1	STR.	2'-1"	-
BV9	#5	21	STR.	11'-2 1/2" AVG.	10'-9" TO 11'-8"
BV10	#4	21	STR.	11'-2 1/2" AVG.	10'-9" TO 11'-8"
BV11	#5	21	STR.	11'-9 1/2" AVG.	11'-8" TO 11'-11"
BV12	#4	21	STR.	11'-9 1/2" AVG.	11'-8" TO 11'-11"
BV13	#4	4	STR.	11'-10"	-
BV14	#4	4	STR.	13'-1"	-
P1	#4	10	BNT.	7'-0"	-
P2	#4	10	BNT.	7'-9"	-
P3	#4	10	BNT.	8'-4"	-
P4	#4	10	BNT.	9'-1"	-
PT1	#4	5	BNT.	15'-11"	-
S1	#5	37	BNT.	14'-7"	-
S2	#5	3	BNT.	17'-1" AVG.	15'-9" TO 18'-5"
S3	#5	2	BNT.	13'-2" AVG.	12'-7" TO 13'-9"
WT1	#6	1	BNT.	11'-6"	-
WT3	#6	34	BNT.	13'-0"	-
WT6	#6	5	BNT.	16'-6"	-
WT7	#6	4	BNT.	9'-5" AVG.	5'-8" TO 13'-2"
WT8	#6	1	BNT.	11'-6"	-
WT9	#6	3	BNT.	9'-3" AVG.	6'-2" TO 12'-4"
FOUR DRILLED SHAFTS (1)					
EPOXY COATED					
D1	#10	72	STR.	9'-11"	-
UNCOATED					
DS1	W20	4	BNT.	113'-5"	-

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

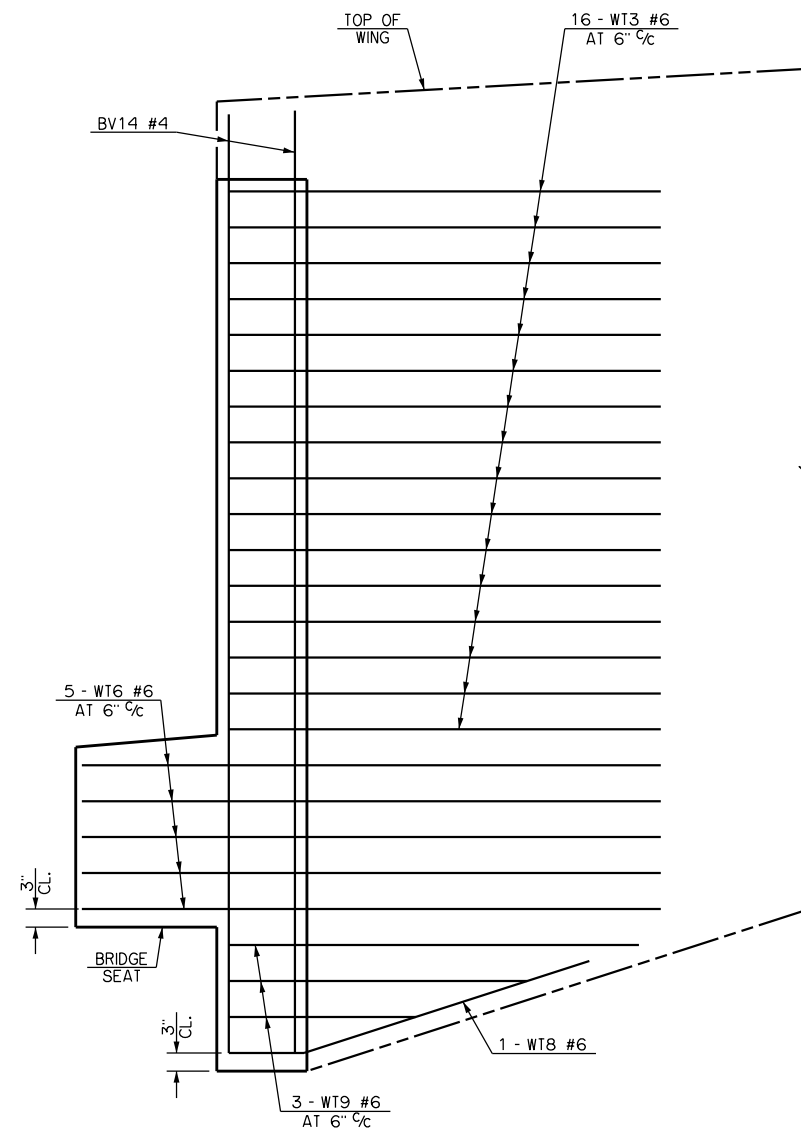
SUMMARY OF QUANTITIES - ABUTMENT NO. 2		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	205.00
CLSM BACKFILL	CY	205.00
CLASS A CONCRETE	CY	69.80
EPOXY COATED REINFORCING STEEL	LB	9,550.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	67.00
DRILLED SHAFTS 24" DIAMETER	LF	52.00
DRILLED SHAFTS 30" DIAMETER	LF	32.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	41.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	25.00

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

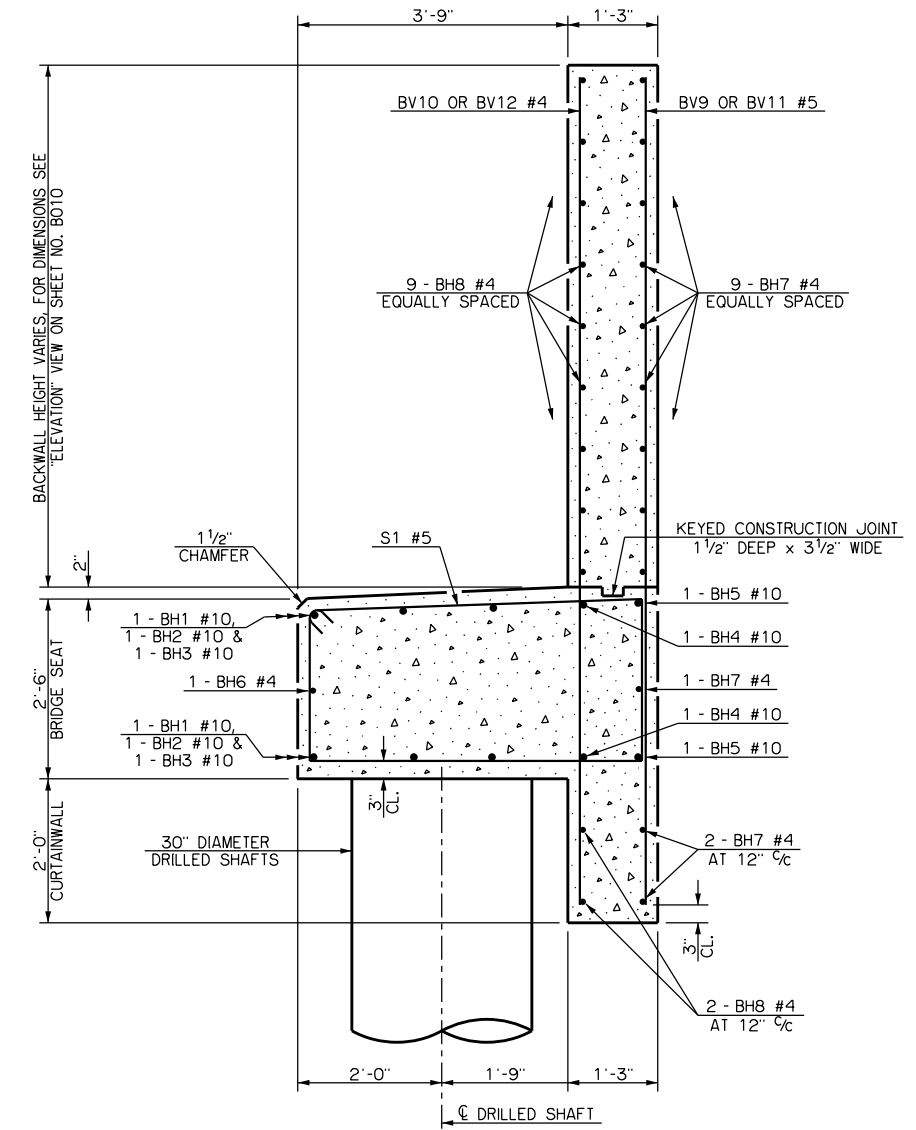
DETAILS OF ABUTMENT NO. 2
(SHEET NO. 1 OF 2)



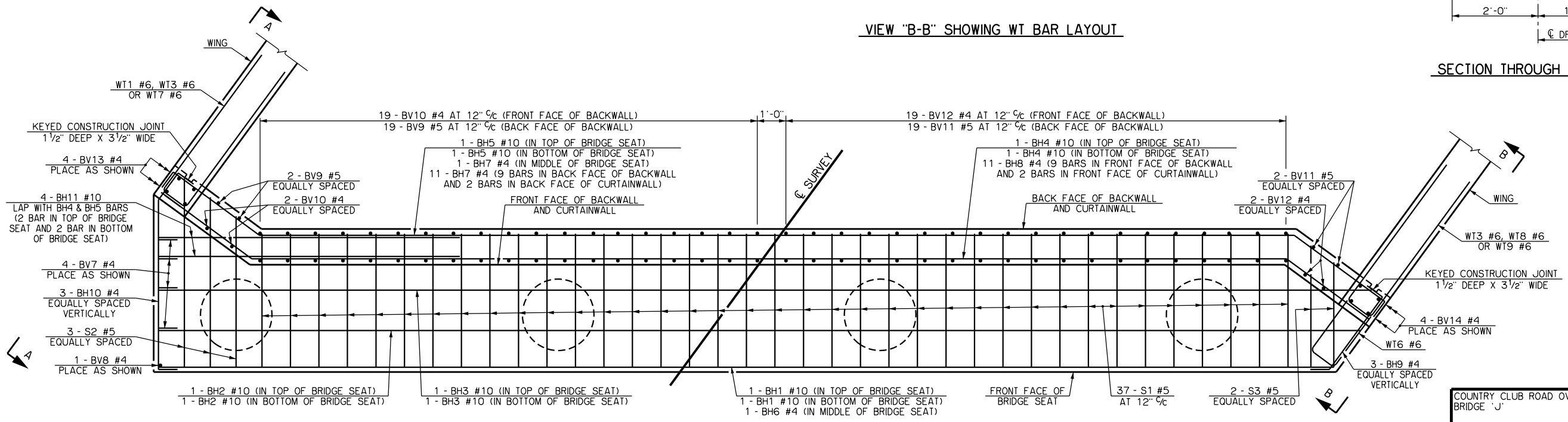
VIEW "A-A" SHOWING WT BAR LAYOUT



VIEW "B-B" SHOWING WT BAR LAYOUT

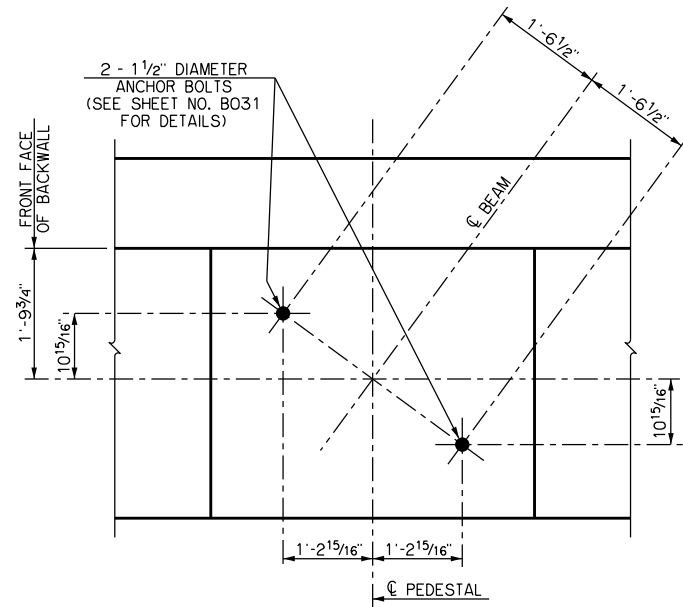


SECTION THROUGH BRIDGE SEAT

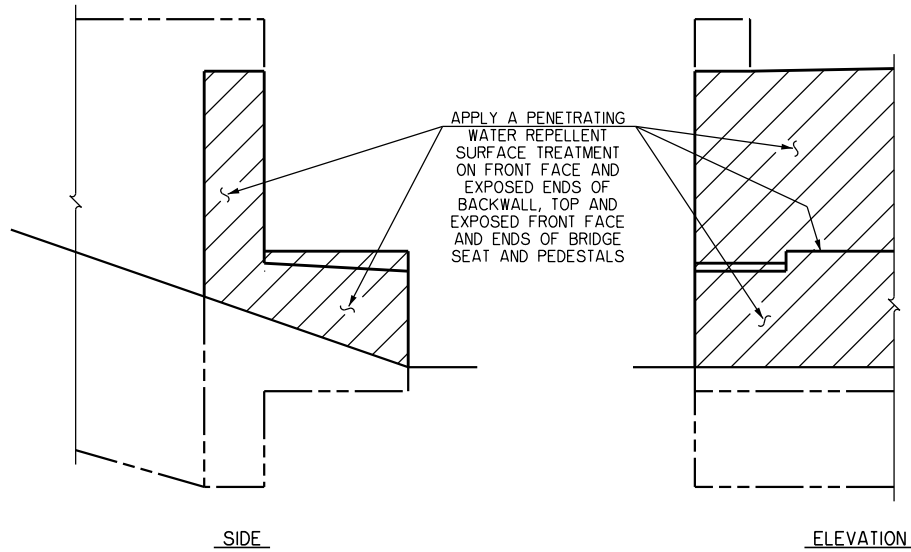


LAYOUT OF ABUTMENT REINFORCING STEEL

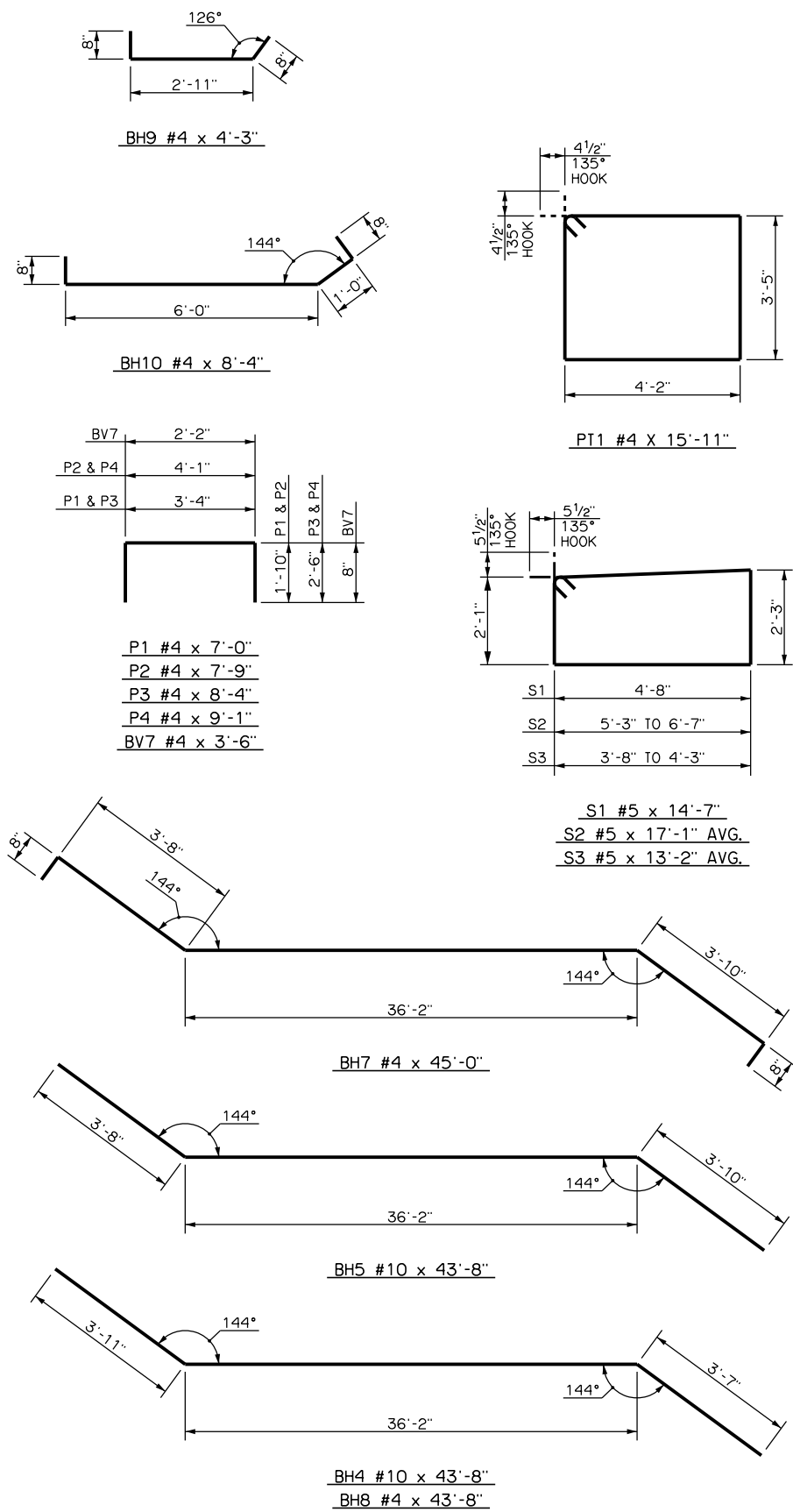
COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'
DETAILS OF ABUTMENT NO. 2
(SHEET NO. 2 OF 2)



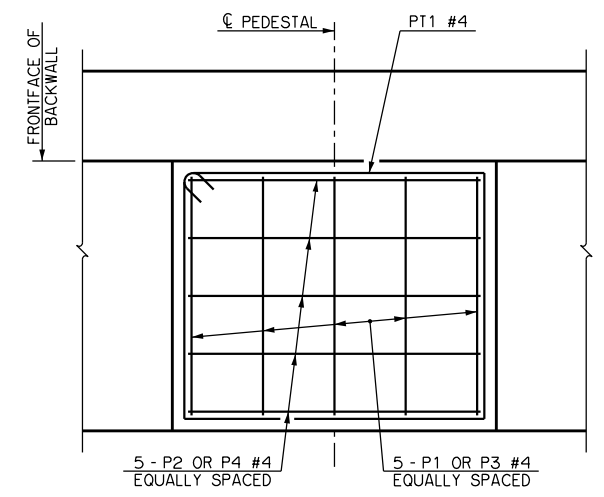
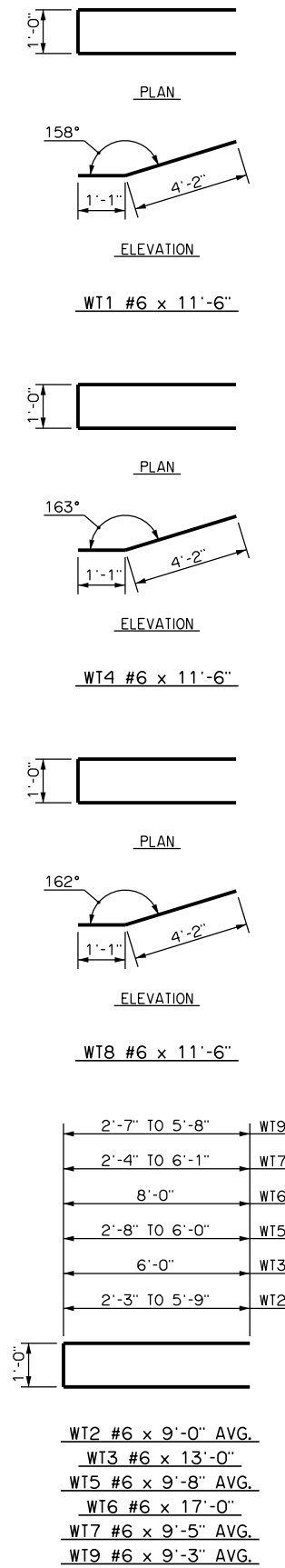
TYPICAL PLAN OF PEDESTAL WITH ANCHOR BOLT LAYOUT



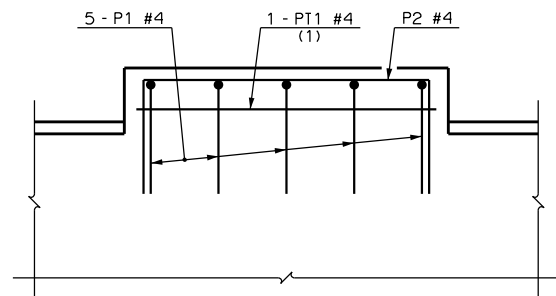
DETAIL OF PENETRATING WATER REPELLENT TREATMENT



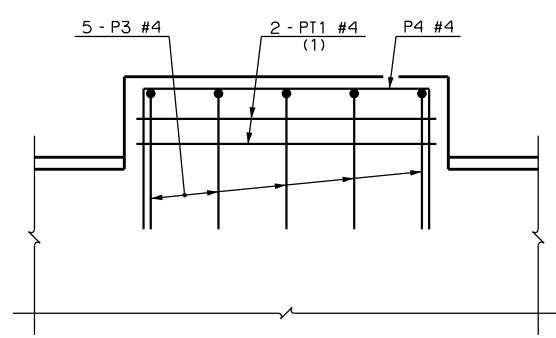
DETAILS OF BENT REINFORCING STEEL



LAYOUT OF PEDESTAL REINFORCING STEEL



ELEVATION OF PEDESTALS (A) AND (B)



ELEVATION OF PEDESTALS (C) AND (D)

NOTES

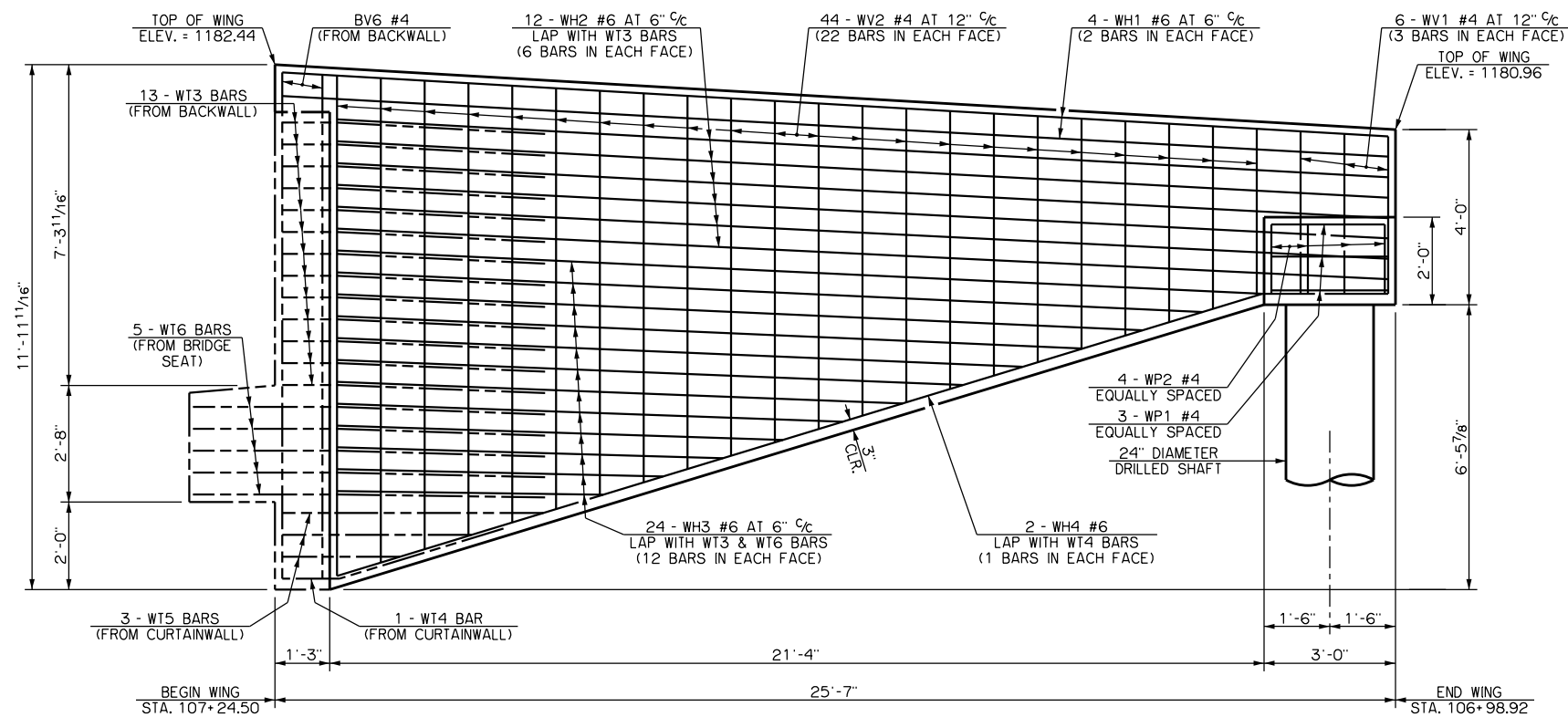
(1) THE PT1 BARS SHOWN SHALL BE EQUALLY SPACED BETWEEN THE BOTTOM OF THE HORIZONTAL LEG OF THE P BARS AND THE TOP OF PIER CAP AT THE SIDE FACE OF THE PIER CAP. OMIT PT1 BAR IN PEDESTAL (A).

COUNTRY CLUB ROAD OVER US-81 BRIDGE 'J'

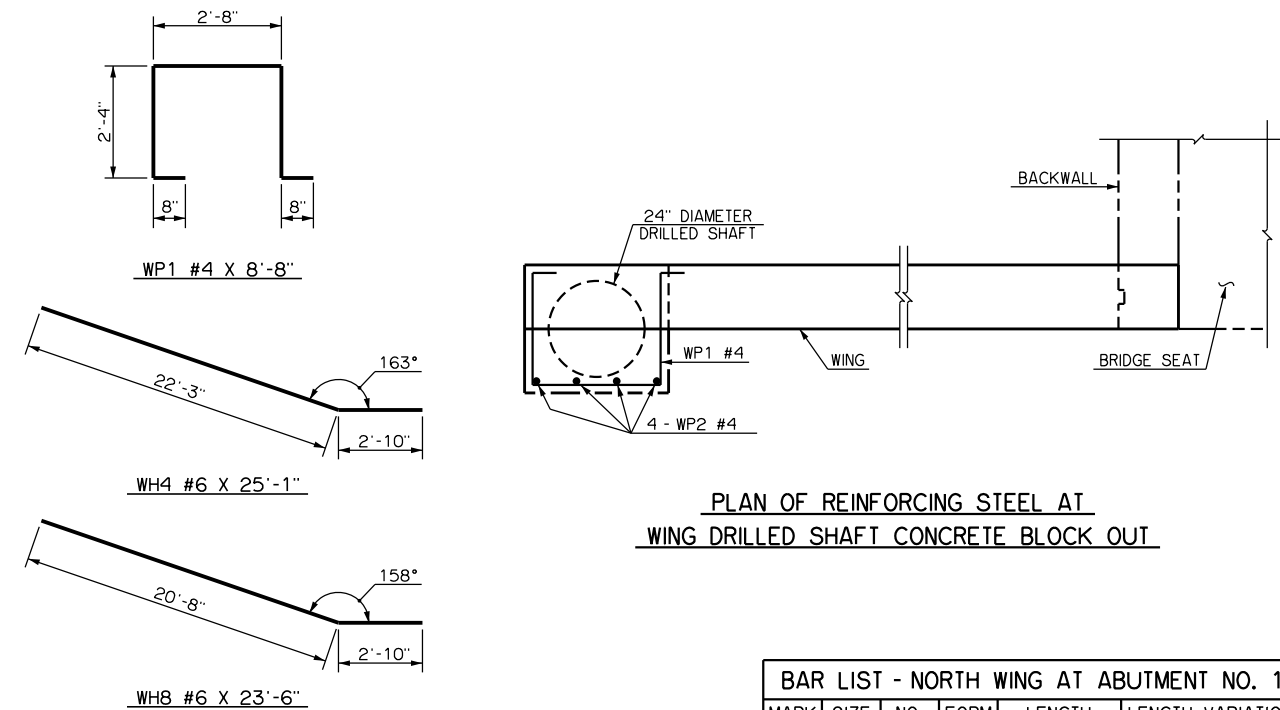
DETAILS OF ABUTMENT NOS. 1 AND 2

State Job No. 24428(12) Sheet No. B012

US 81 REALIGNMENT GRADY COUNTY

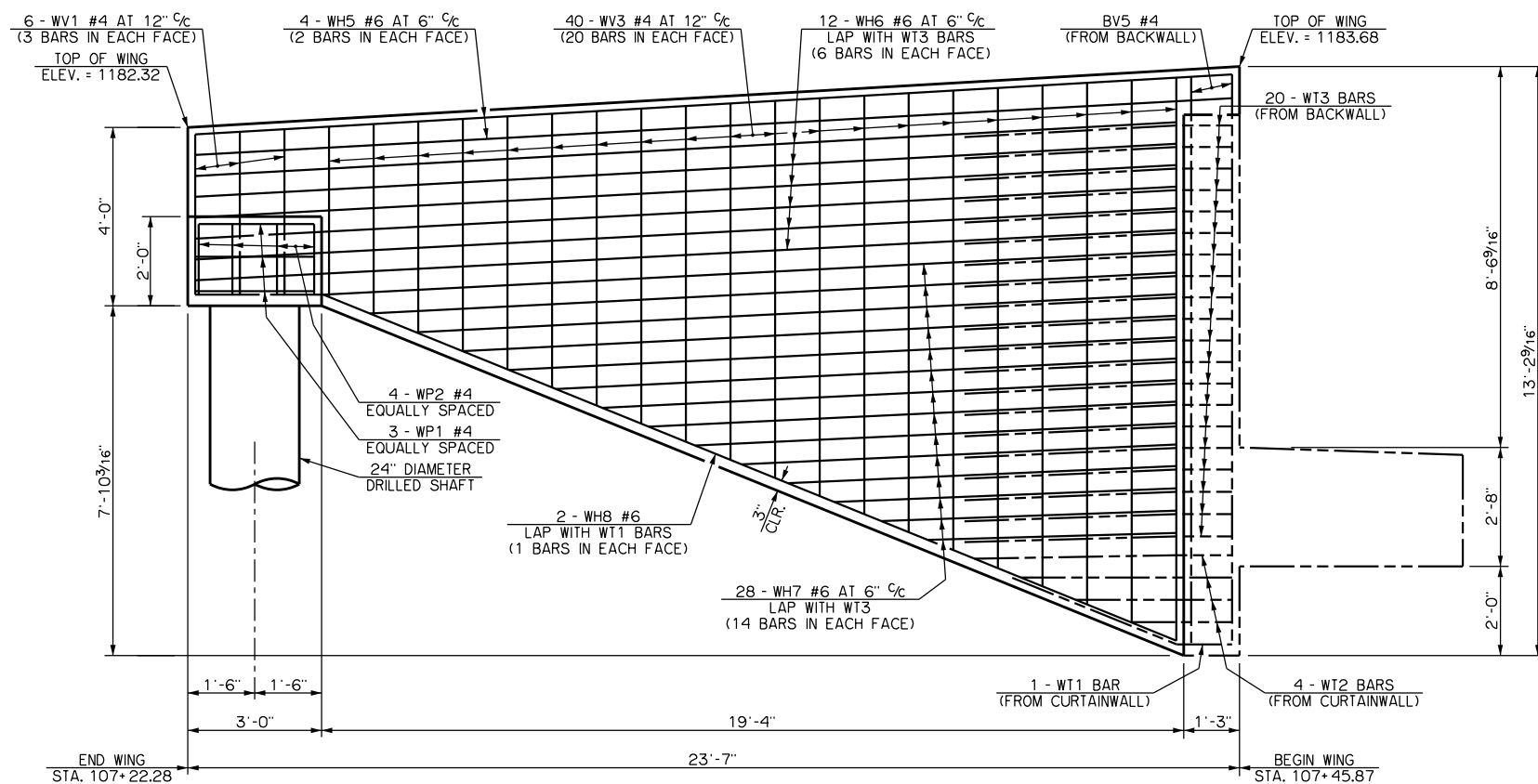


ELEVATION ON NORTH WING (LOOKING SOUTH)

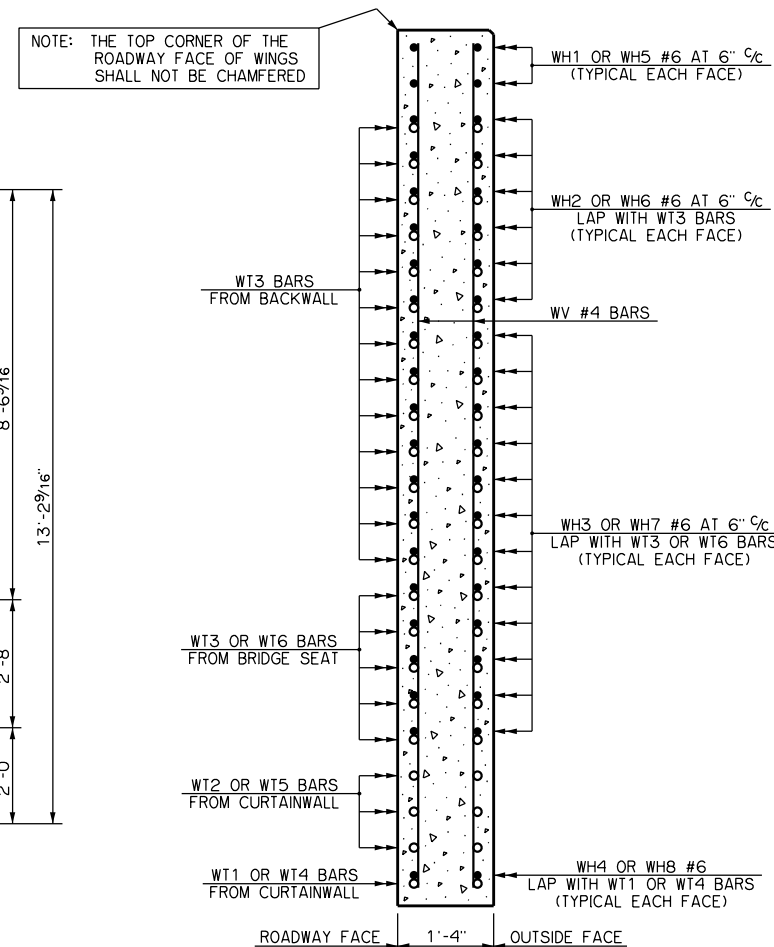


DETAILS OF BENT REINFORCING STEEL

PLAN OF REINFORCING STEEL AT WING DRILLED SHAFT CONCRETE BLOCK OUT



ELEVATION ON SOUTH WING (LOOKING NORTH)



SECTION THRU WING (AT BACK FACE OF BACKWALL)

BAR LIST - NORTH WING AT ABUTMENT NO. 1

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#6	4	STR.	25'-3"	-
WH2	#6	12	STR.	24'-0"	-
(1) WH3	#6	24	STR.	13'-7 1/2" AVG.	6'-1" TO 21'-2"
WH4	#6	2	BNT.	25'-1"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
(2) WV1	#4	6	STR.	3'-7 1/2" AVG.	3'-7" TO 3'-8"
(3) WV2	#4	44	STR.	7'-7 1/2" AVG.	3'-10" TO 11'-5"
ONE DRILLED SHAFT (6)					
EPOXY COATED					
D2	#6	12	STR.	17'-6"	-
UNCOATED					
DS2	W20	1	BNT.	161'-1"	-

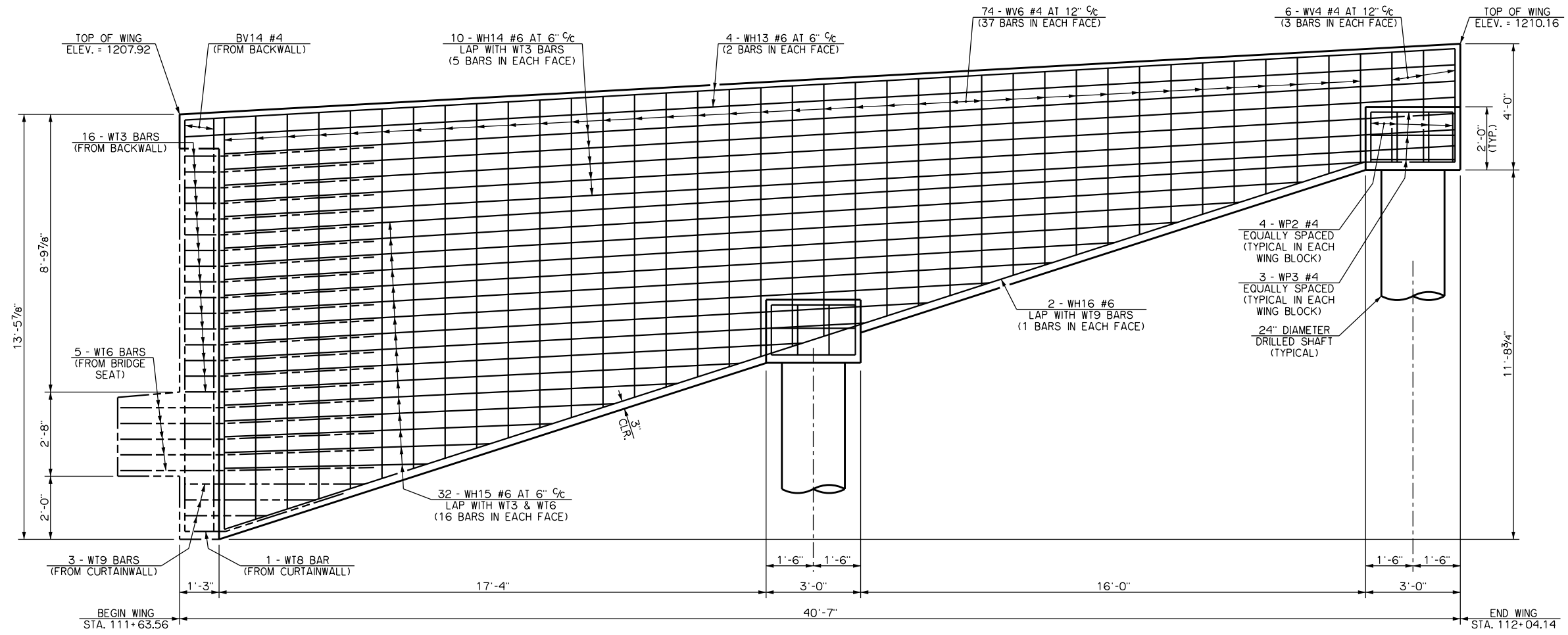
BAR LIST - SOUTH WING AT ABUTMENT NO. 1

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH5	#6	4	STR.	23'-3"	-
WH6	#6	12	STR.	22'-0"	-
(4) WH7	#6	28	STR.	12'-4 1/2" AVG.	5'-7" TO 19'-2"
WH8	#6	2	BNT.	23'-6"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
(2) WV1	#4	6	STR.	3'-7 1/2" AVG.	3'-7" TO 3'-8"
(5) WV3	#4	40	STR.	8'-2 1/2" AVG.	3'-10" TO 12'-7"
ONE DRILLED SHAFT (6)					
EPOXY COATED					
D2	#6	12	STR.	17'-6"	-
UNCOATED					
DS2	W20	1	BNT.	161'-1"	-

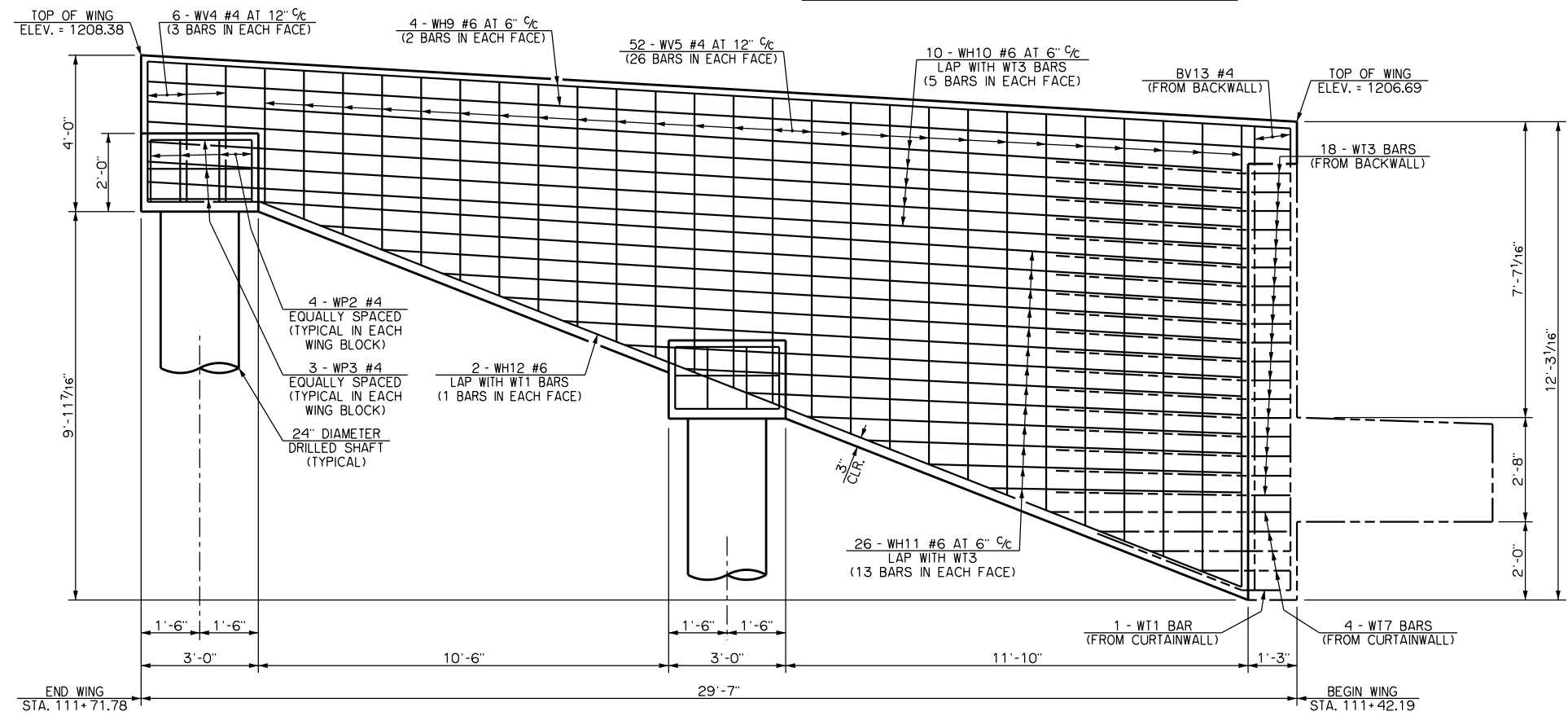
- (1) INCLUDES TWO SETS OF 12 BARS
- (2) INCLUDES TWO SETS OF 3 BARS
- (3) INCLUDES TWO SETS OF 22 BARS
- (4) INCLUDES TWO SETS OF 14 BARS
- (5) INCLUDES TWO SETS OF 20 BARS
- (6) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF WINGS AT ABUTMENT NO. 1



ELEVATION ON SOUTH WING (LOOKING NORTH)



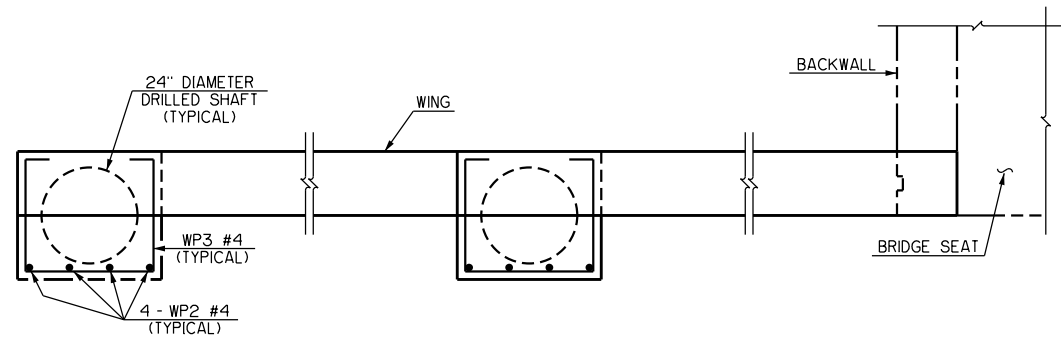
ELEVATION ON NORTH WING (LOOKING SOUTH)

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

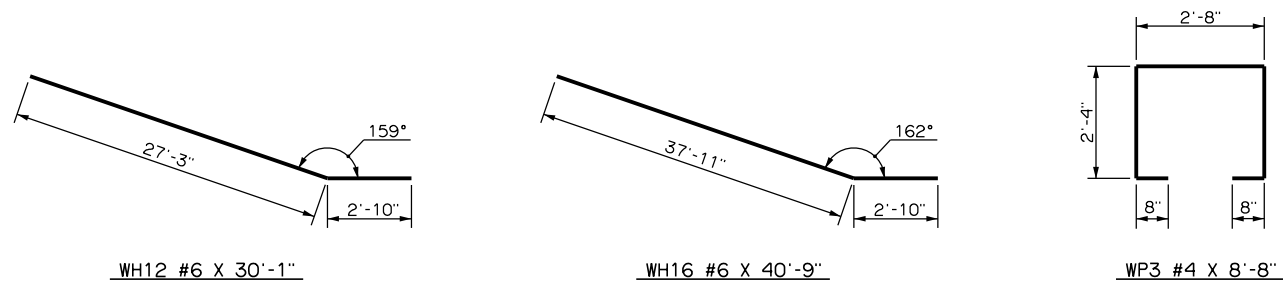
DETAILS OF WINGS AT ABUTMENT NO. 2
(SHEET NO. 1 OF 2)

State Job No. 24428(12) Sheet No. B014

US 81 REALIGNMENT
GRADY COUNTY

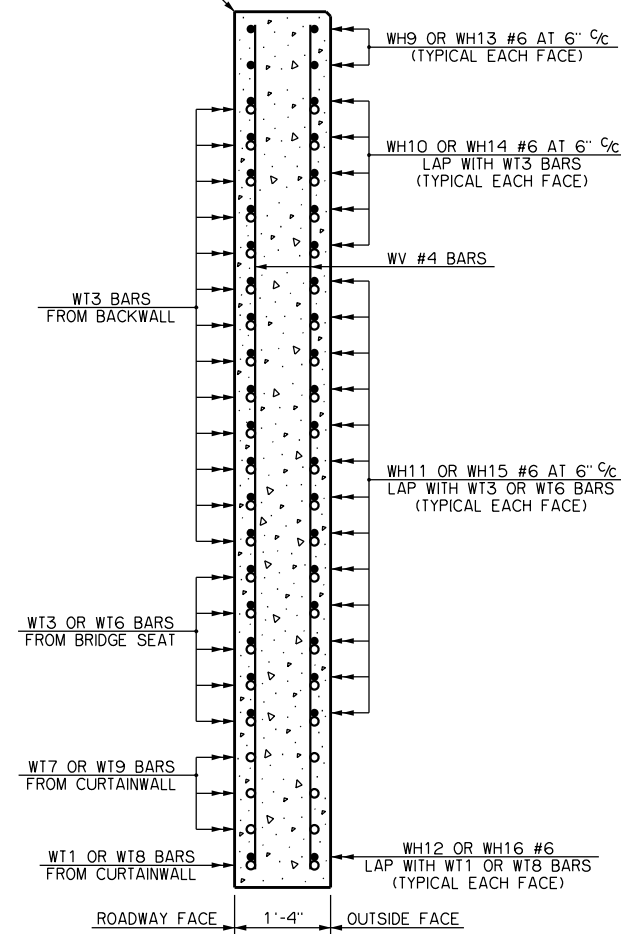


PLAN OF REINFORCING STEEL AT WING DRILLED SHAFT CONCRETE BLOCK OUT



DETAILS OF BENT REINFORCING STEEL

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED



SECTION THRU WING
(AT BACK FACE OF BACKWALL)

BAR LIST - NORTH WING AT ABUTMENT NO. 2

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH9	#6	4	STR.	29'-3"	-
WH10	#6	10	STR.	28'-0"	-
(1) WH11	#6	26	STR.	15'-9 1/2" AVG.	6'-5" TO 25'-2"
WH12	#6	2	BNT.	30'-1"	-
WP2	#4	8	STR.	1'-7"	-
WP3	#4	6	BNT.	8'-8"	-
(2) WV4	#4	6	STR.	3'-6 1/2" AVG.	3'-6" TO 3'-7"
(3) WV5	#4	52	STR.	7'-7 1/2" AVG.	3'-5" TO 11'-10"
TWO DRILLED SHAFTS (6)					
EPOXY COATED					
D2	#6	12	STR.	17'-6"	-
D3	#6	12	STR.	11'-6"	-
UNCOATED					
DS2	W20	1	BNT.	161'-1"	-
DS3	W20	1	BNT.	104'-3"	-

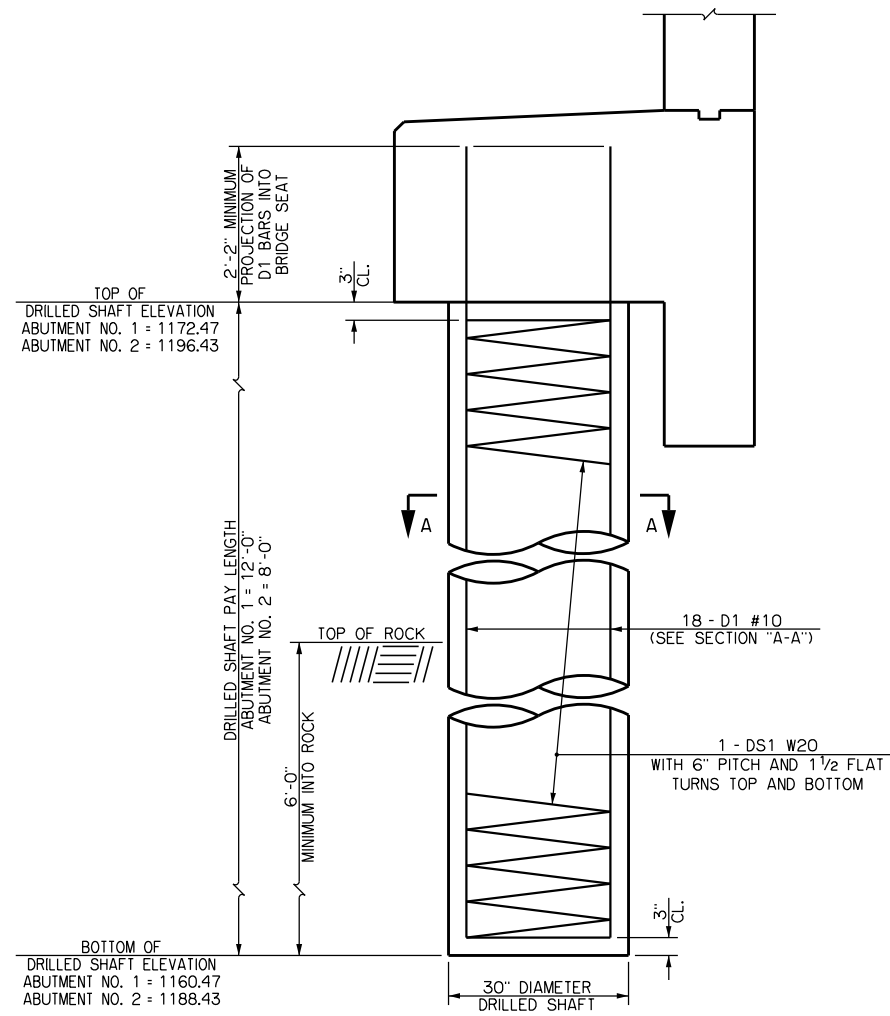
BAR LIST - SOUTH WING AT ABUTMENT NO. 2

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH13	#6	4	STR.	40'-4"	-
WH14	#6	10	STR.	39'-1"	-
(4) WH15	#6	32	STR.	21'-3 1/2" AVG.	6'-5" TO 36'-2"
WH16	#6	2	BNT.	40'-9"	-
WP2	#4	8	STR.	1'-7"	-
WP3	#4	6	BNT.	8'-8"	-
(2) WV4	#4	6	STR.	3'-6 1/2" AVG.	3'-6" TO 3'-7"
(5) WV6	#4	74	STR.	8'-2 1/2" AVG.	3'-5" TO 13'-0"
TWO DRILLED SHAFTS (6)					
EPOXY COATED					
D2	#6	12	STR.	17'-6"	-
D3	#6	12	STR.	11'-6"	-
UNCOATED					
DS2	W20	1	BNT.	161'-1"	-
DS3	W20	1	BNT.	104'-3"	-

- (1) INCLUDES TWO SETS OF 13 BARS
- (2) INCLUDES TWO SETS OF 3 BARS
- (3) INCLUDES TWO SETS OF 26 BARS
- (4) INCLUDES TWO SETS OF 16 BARS
- (5) INCLUDES TWO SETS OF 37 BARS
- (6) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

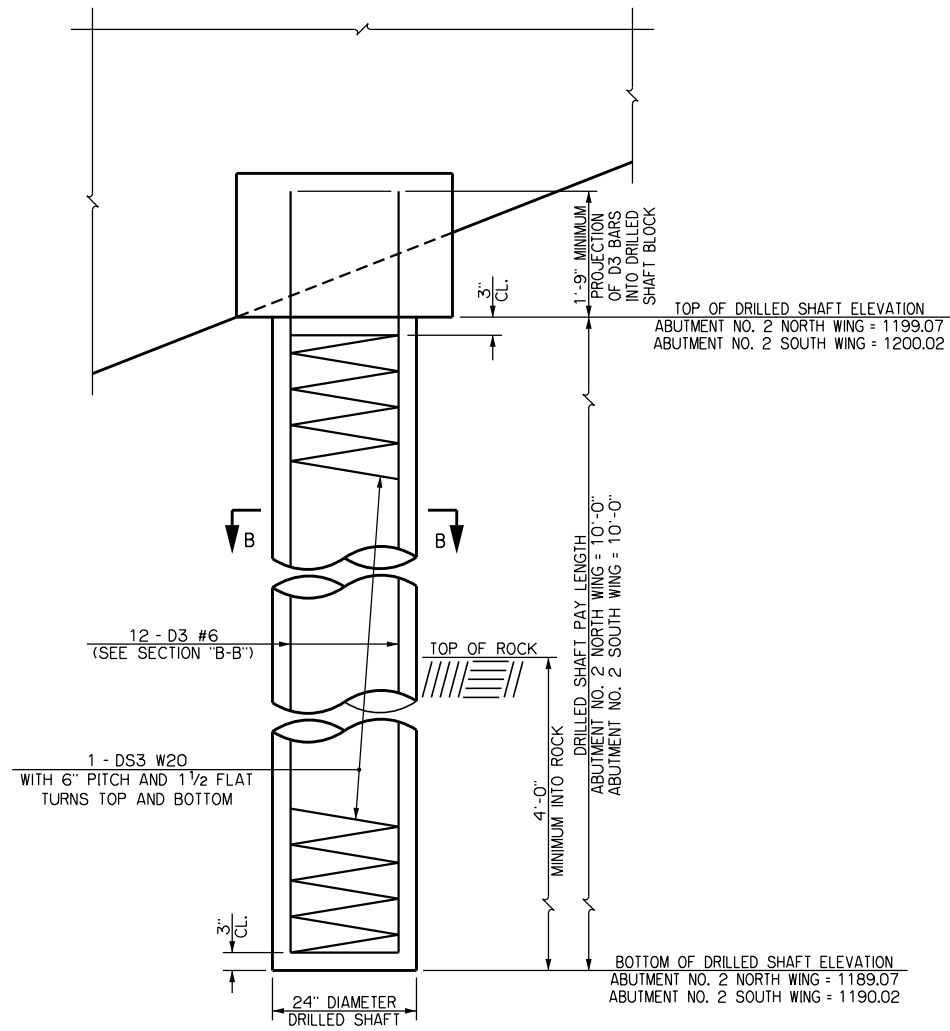
COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF WINGS AT ABUTMENT NO. 2
(SHEET NO. 2 OF 2)



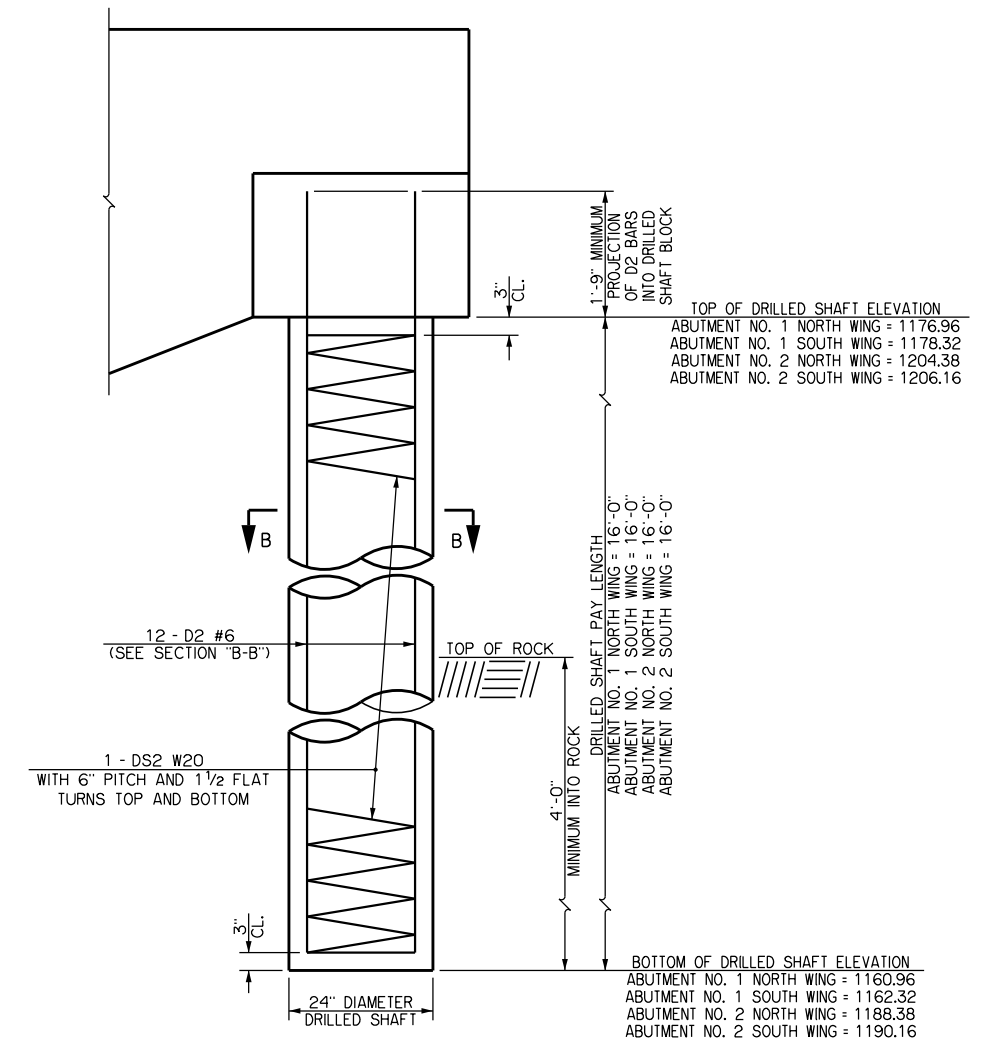
TYPICAL SECTION THROUGH DRILLED SHAFT AT BRIDGE SEAT

NOTE: FOR BAR LIST OF 30" DIAMETER DRILLED SHAFT SEE SHEET NOS. B008 AND B010



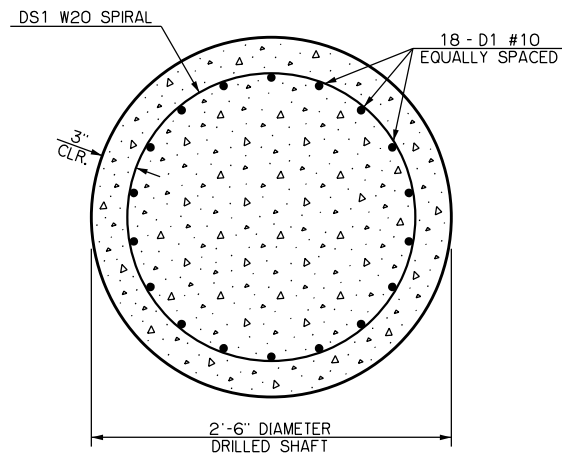
TYPICAL SECTION THROUGH DRILLED SHAFT AT MIDDLE OF WING

NOTE: FOR BAR LIST OF 24" DIAMETER DRILLED SHAFT SEE SHEET NO. B015

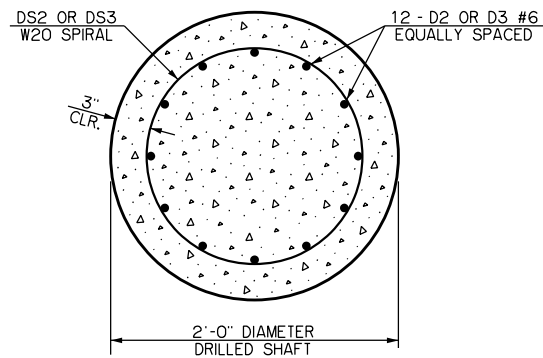


TYPICAL SECTION THROUGH DRILLED SHAFT AT END OF WING

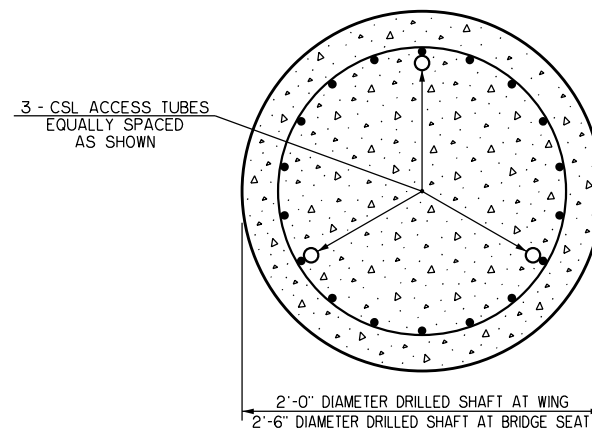
NOTE: FOR BAR LIST OF 24" DIAMETER DRILLED SHAFT SEE SHEET NOS. B013 AND B015



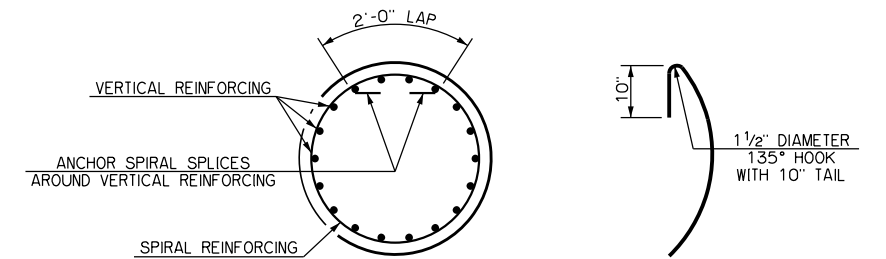
SECTION "A-A"



SECTION "B-B"



SECTION THROUGH DRILLED SHAFT SHOWING PLACEMENT OF CROSSHOLE SONIC LOGGING ACCESS TUBES

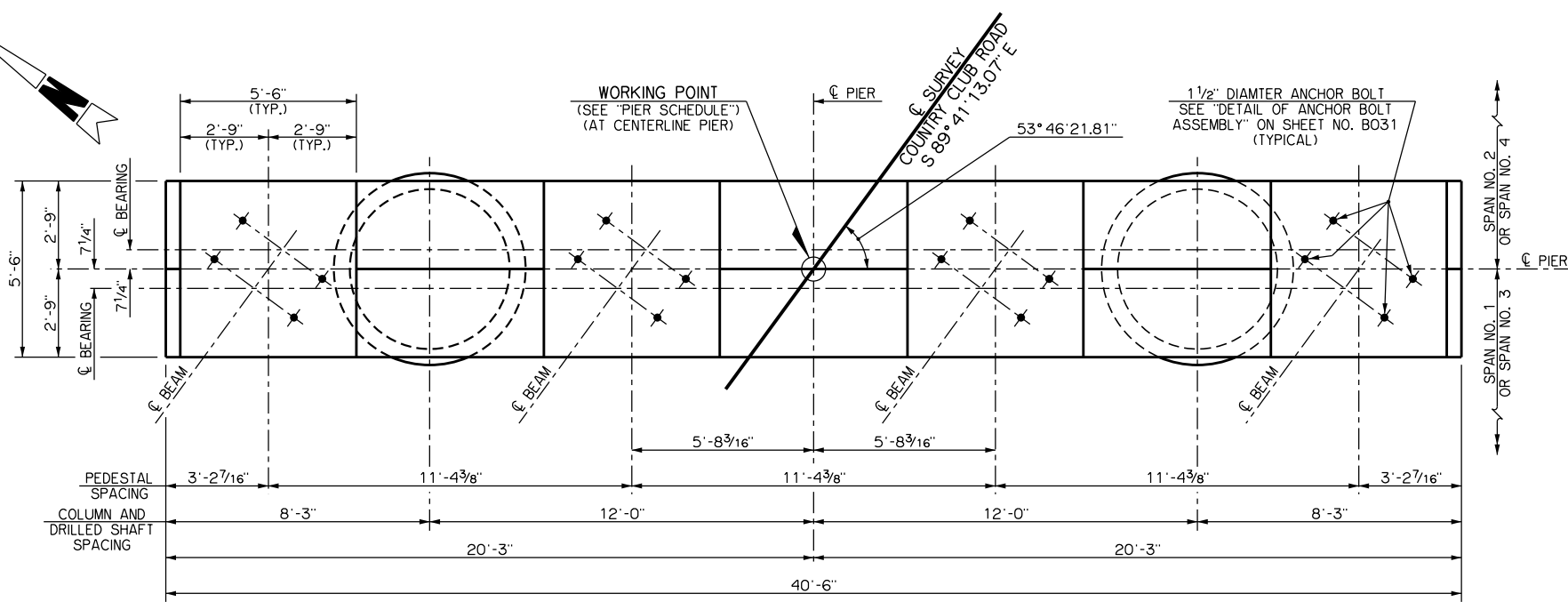
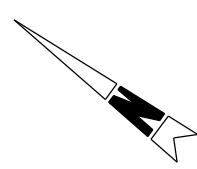


DETAILS OF SPIRAL REINFORCING SPLICE

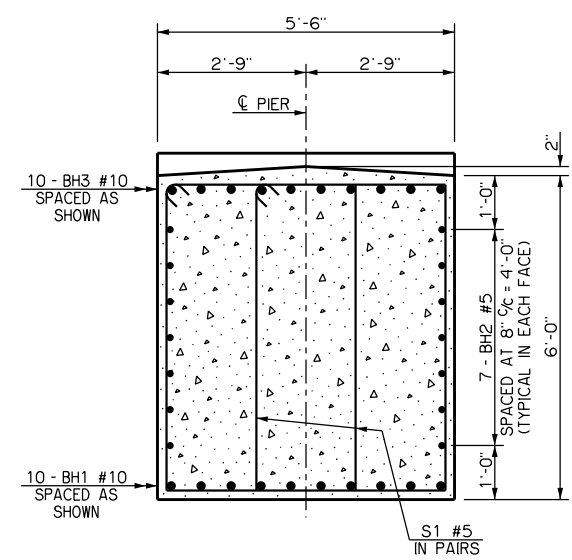
NOTE: SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

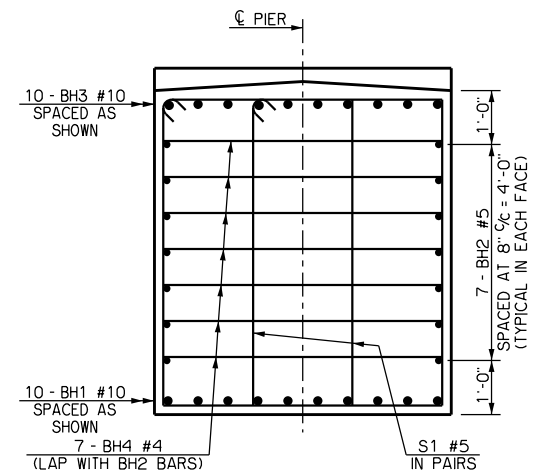
**DETAILS OF DRILLED SHAFTS
AT ABUTMENTS AND WINGS**



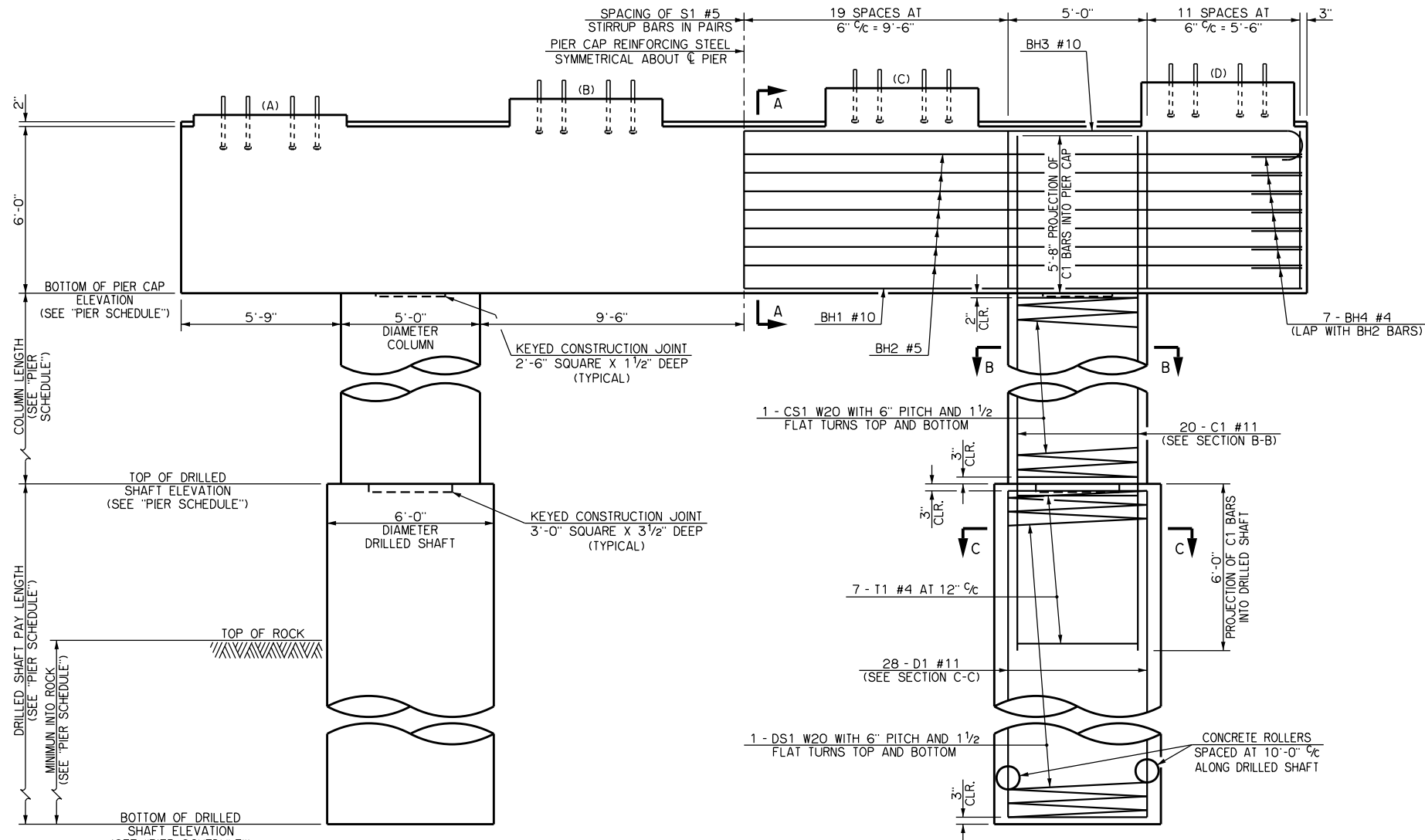
PLAN



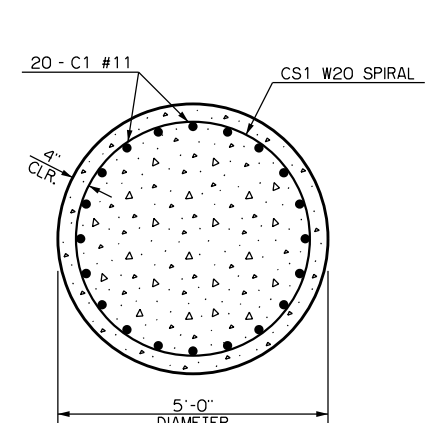
SECTION A-A



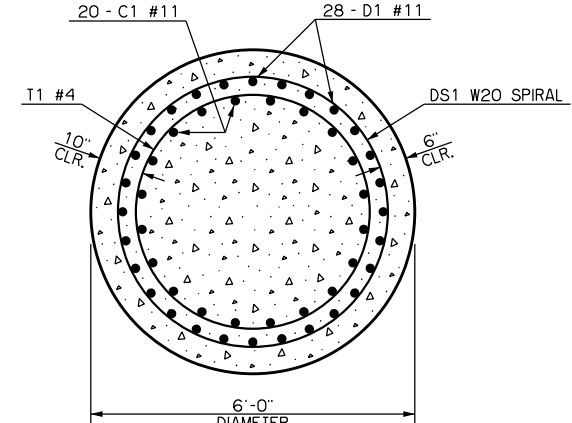
END OF PIER CAP REINFORCING



ELEVATION



SECTION B-B

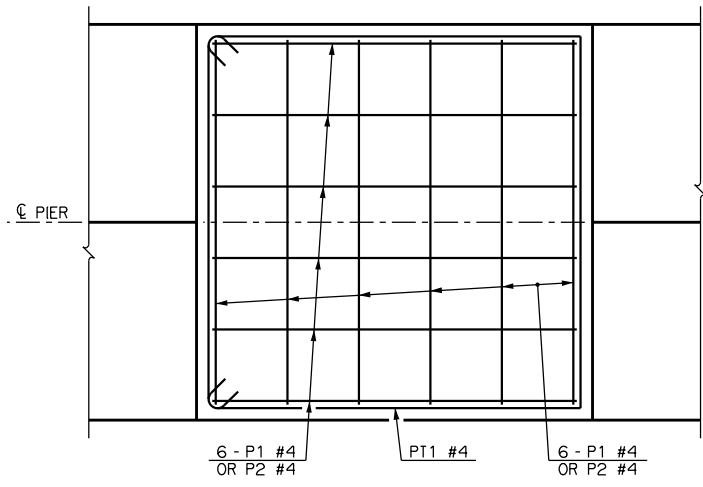


SECTION C-C

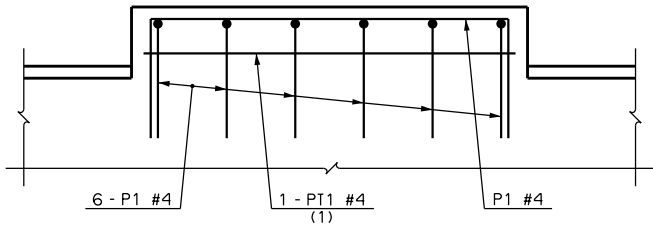
PIER NO.	WORKING POINT STATION	PEDESTAL ELEVATIONS				BOTTOM OF PIER CAP ELEVATION	COLUMN LENGTH	TOP OF DRILLED SHAFT ELEVATION	BOTTOM OF DRILLED SHAFT ELEVATION	DRILLED SHAFT PAY LENGTH	MINIMUM DEPTH INTO ROCK
		(A)	(B)	(C)	(D)						
1	107+68.53	1177.14	1177.71	1178.10	1178.31	1170.72	6'-0"	1164.72	1150.72	14'-0"	12'-0"
3	110+36.53	1192.69	1193.26	1193.65	1193.86	1186.27	20'-0"	1166.27	1152.27	14'-0"	12'-0"

COUNTRY CLUB ROAD OVER US-81 BRIDGE 'J'

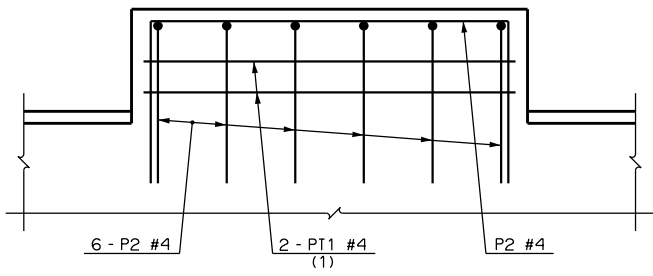
DETAILS OF PIER NOS. 1 AND 3 (SHEET NO. 1 OF 3)



PLAN OF PEDESTAL REINFORCING



ELEVATION OF PEDESTALS (A) AND (B)



ELEVATION OF PEDESTALS (C) AND (D)

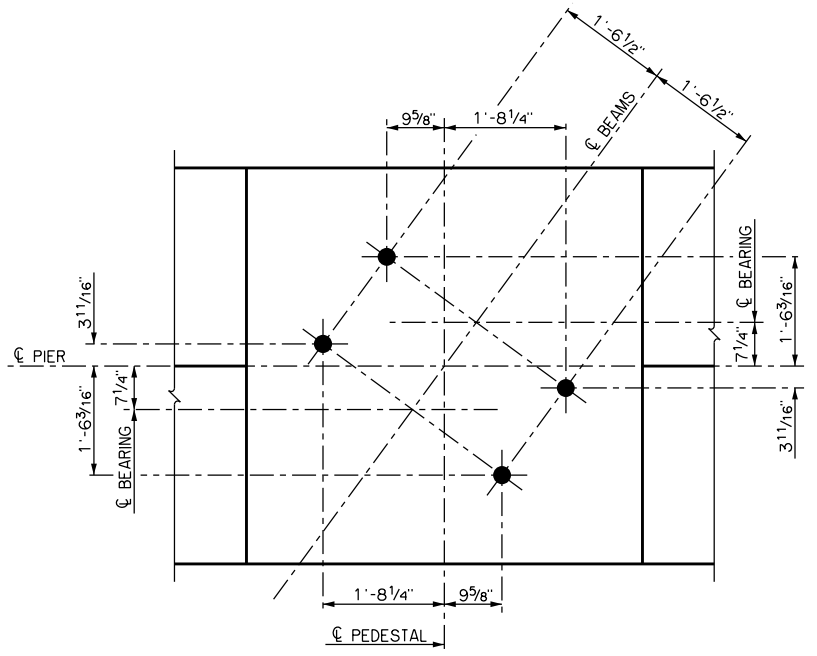
BAR LIST - PIER NO. 1				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	40'-2"
BH2	#5	14	STR.	40'-2"
BH3	#10	10	BNT.	43'-0"
BH4	#4	14	BNT.	8'-9"
P1	#4	24	BNT.	8'-9"
P2	#4	24	BNT.	10'-1"
PT1	#4	5	BNT.	21'-5"
S1	#5	126	BNT.	19'-3"
UNCOATED				
CS1	W20	2	BNT.	193'-0"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	17'-8"
UNCOATED				
D1	#11	56	STR.	13'-6"
DS1	W20	2	BNT.	468'-11"
T1	#4	14	BNT.	16'-0"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

BAR LIST - PIER NO. 3				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	40'-2"
BH2	#5	14	STR.	40'-2"
BH3	#10	10	BNT.	43'-0"
BH4	#4	14	BNT.	8'-9"
P1	#4	24	BNT.	8'-9"
P2	#4	24	BNT.	10'-1"
PT1	#4	5	BNT.	21'-5"
S1	#5	126	BNT.	19'-3"
UNCOATED				
CS1	W20	2	BNT.	574'-5"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	31'-8"
UNCOATED				
D1	#11	56	STR.	13'-6"
DS1	W20	2	BNT.	468'-11"
T1	#4	14	BNT.	16'-0"

SUMMARY OF QUANTITIES - PIER NO. 1		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	62.70
REINFORCING STEEL	LB	270.00
EPOXY COATED REINFORCING STEEL	LB	7,160.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	95.00
DRILLED SHAFTS 72" DIAMETER	LF	28.00

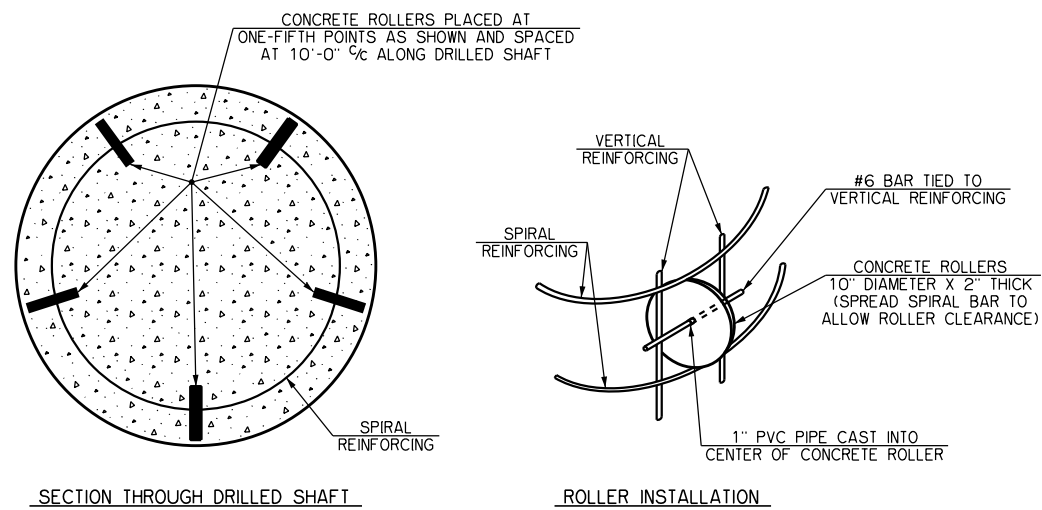
SUMMARY OF QUANTITIES - PIER NO. 3		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	83.10
REINFORCING STEEL	LB	790.00
EPOXY COATED REINFORCING STEEL	LB	7,160.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	95.00
DRILLED SHAFTS 72" DIAMETER	LF	28.00



TYPICAL PLAN OF ANCHOR BOLT LAYOUT

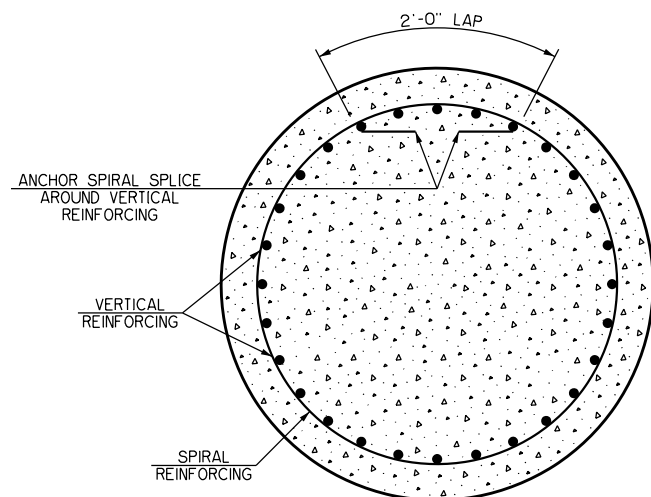
ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B031 FOR DETAILS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'
DETAILS OF PIER NOS. 1 AND 3
(SHEET NO. 2 OF 3)



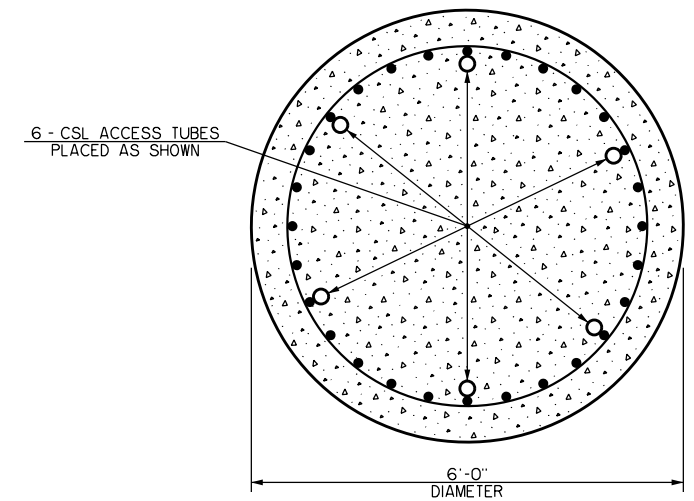
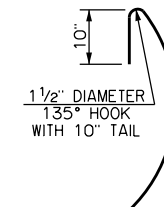
DETAILS OF CONCRETE ROLLERS

CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS. COST OF CONCRETE ROLLERS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF DRILLED SHAFT.

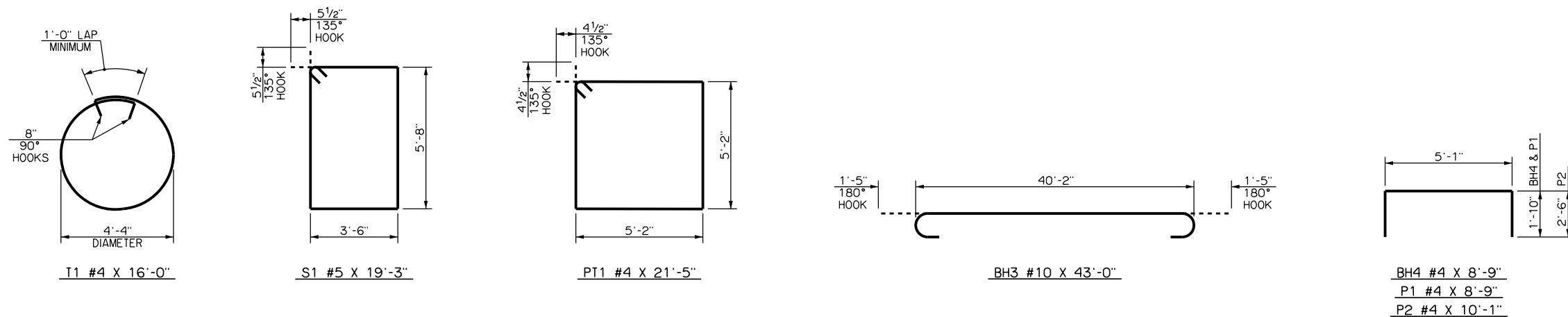


DETAILS OF SPIRAL REINFORCING STEEL SPLICE

SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



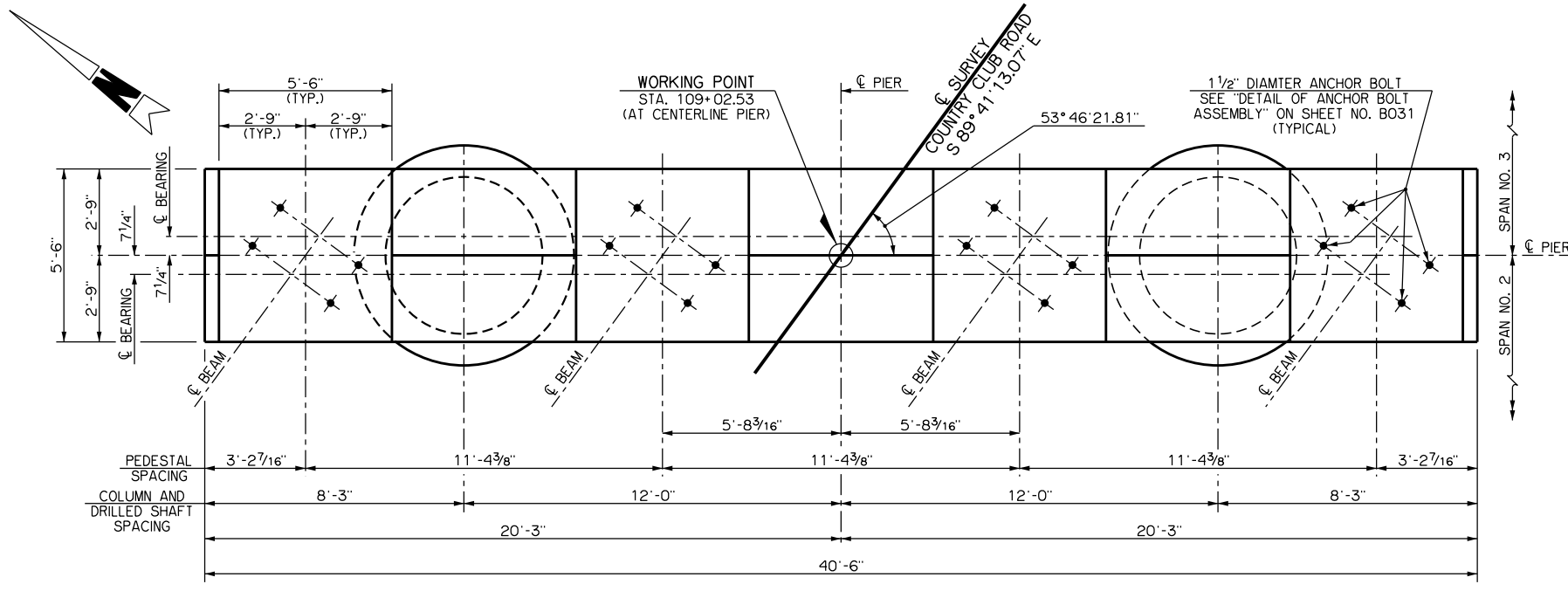
DETAILS OF BENT REINFORCING STEEL



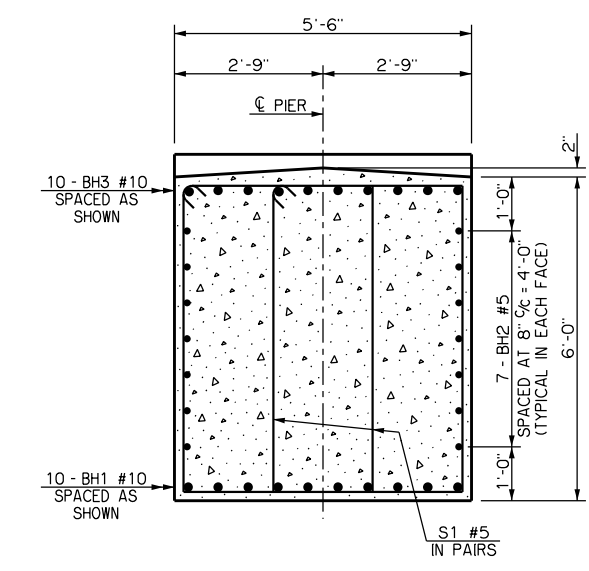
DETAILS OF BENT REINFORCING STEEL

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

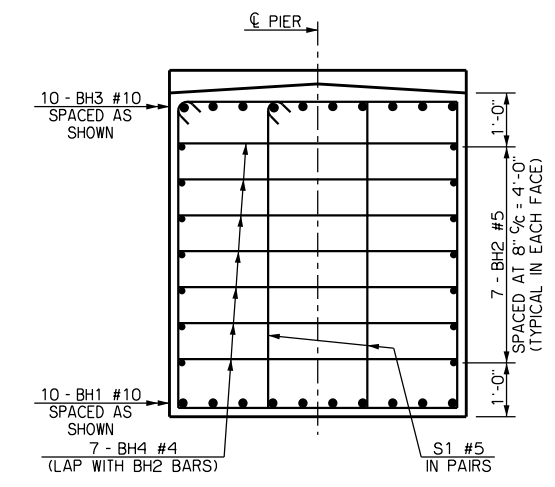
DETAILS OF PIER NOS. 1 AND 3
(SHEET NO. 3 OF 3)



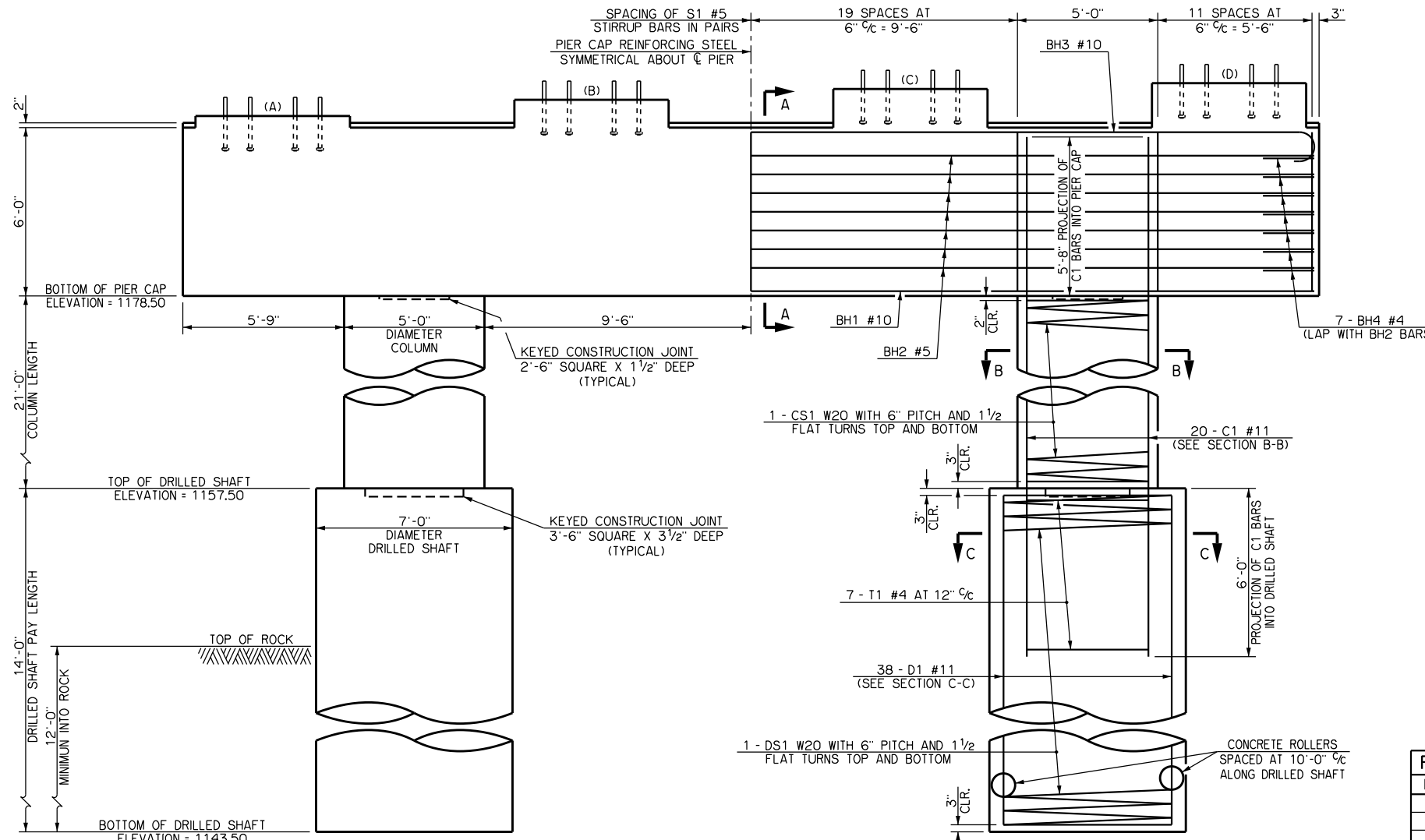
PLAN



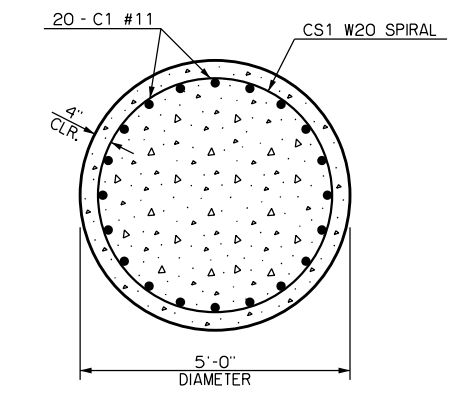
SECTION A-A



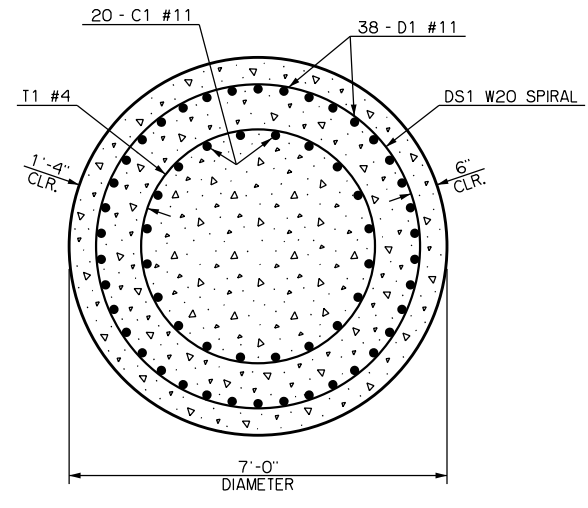
END OF PIER CAP REINFORCING



ELEVATION



SECTION B-B



SECTION C-C

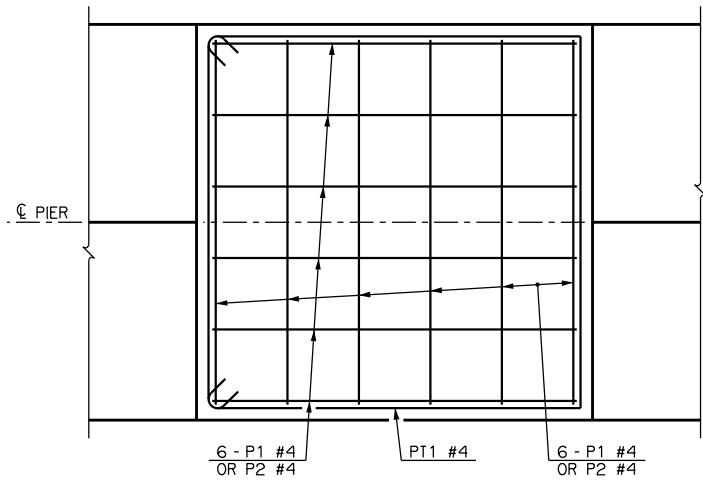
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1184.91
(B)	1185.49
(C)	1185.88
(D)	1186.08

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

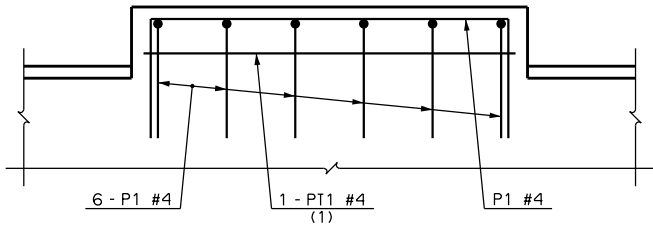
DETAILS OF PIER NO. 2
(SHEET NO. 1 OF 3)

State Job No. 24428(12) Sheet No. B020

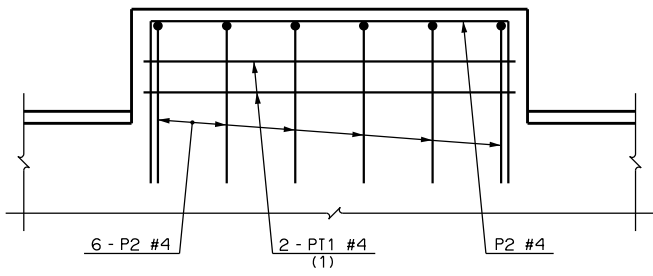
US 81 REALIGNMENT
GRADY COUNTY



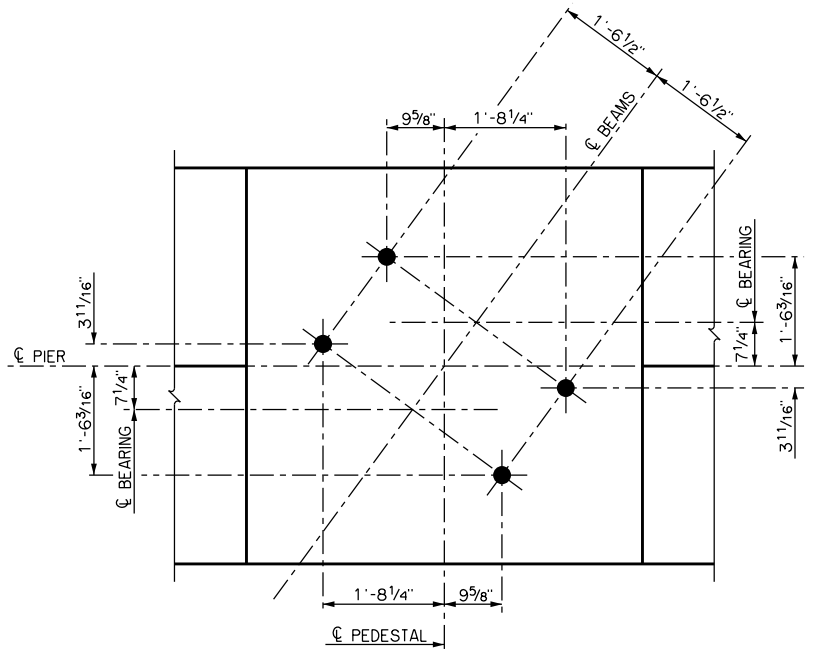
PLAN OF PEDESTAL REINFORCING



ELEVATION OF PEDESTALS (A) AND (B)



ELEVATION OF PEDESTALS (C) AND (D)



TYPICAL PLAN OF ANCHOR BOLT LAYOUT

ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B031 FOR DETAILS.

BAR LIST - PIER NO. 2				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	40'-2"
BH2	#5	14	STR.	40'-2"
BH3	#10	10	BNT.	43'-0"
BH4	#4	14	BNT.	8'-9"
P1	#4	24	BNT.	8'-9"
P2	#4	24	BNT.	10'-1"
PT1	#4	5	BNT.	21'-5"
S1	#5	126	BNT.	19'-3"
UNCOATED				
CS1	W20	2	BNT.	601'-8"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	32'-8"
UNCOATED				
D1	#11	76	STR.	13'-6"
DS1	W20	2	BNT.	562'-7"
T1	#4	14	BNT.	16'-0"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

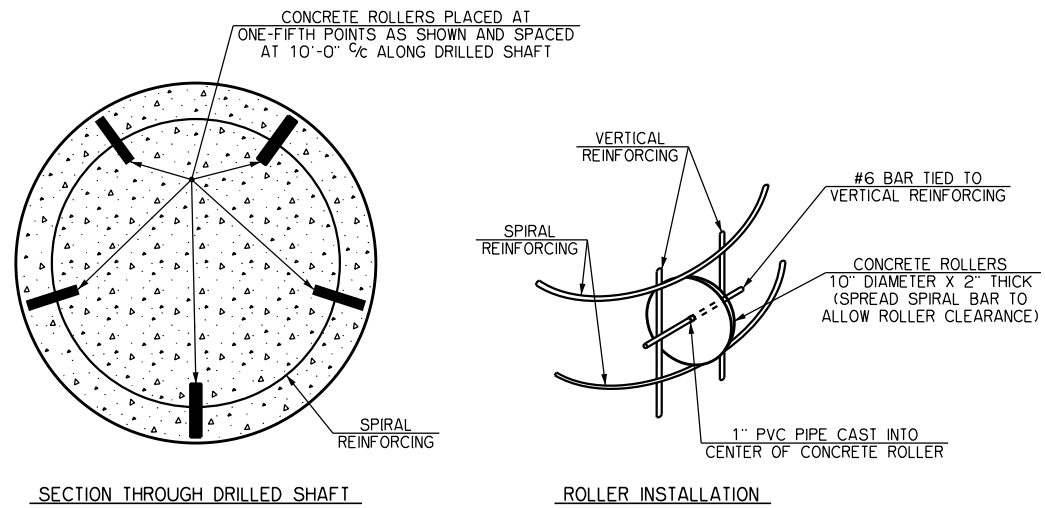
SUMMARY OF QUANTITIES - PIER NO. 2		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	84.50
REINFORCING STEEL	LB	820.00
EPOXY COATED REINFORCING STEEL	LB	7,160.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	95.00
DRILLED SHAFTS 84" DIAMETER	LF	28.00

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF PIER NO. 2
(SHEET NO. 2 OF 3)

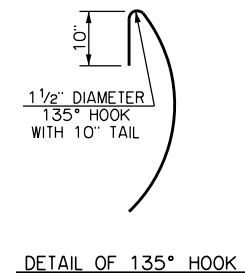
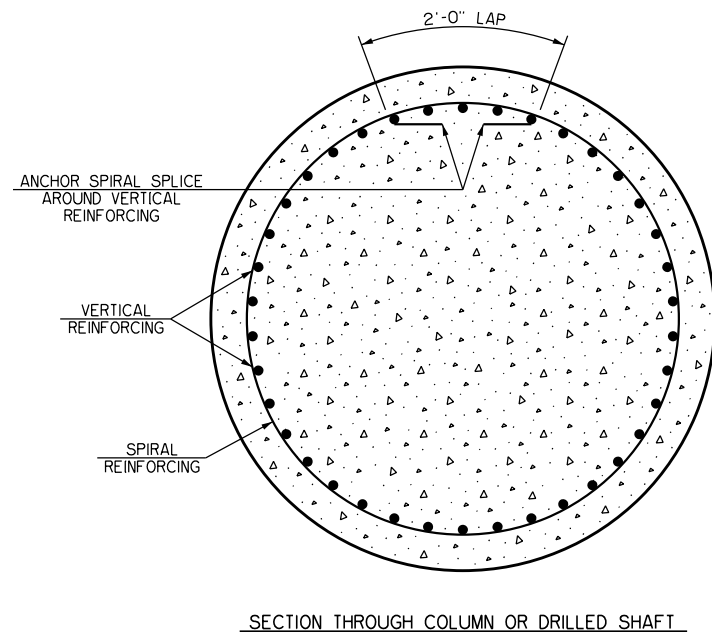
State Job No. 24428(12) Sheet No. B021

US 81 REALIGNMENT
GRADY COUNTY



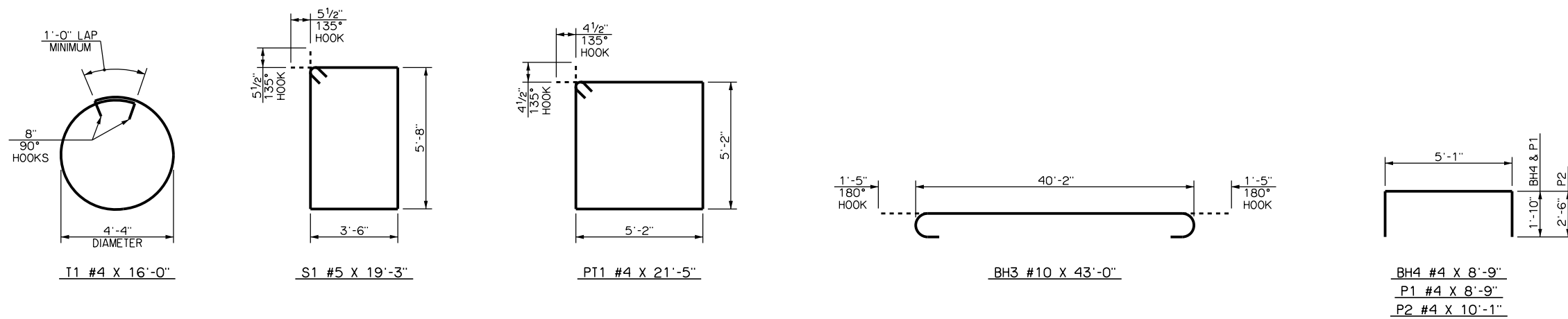
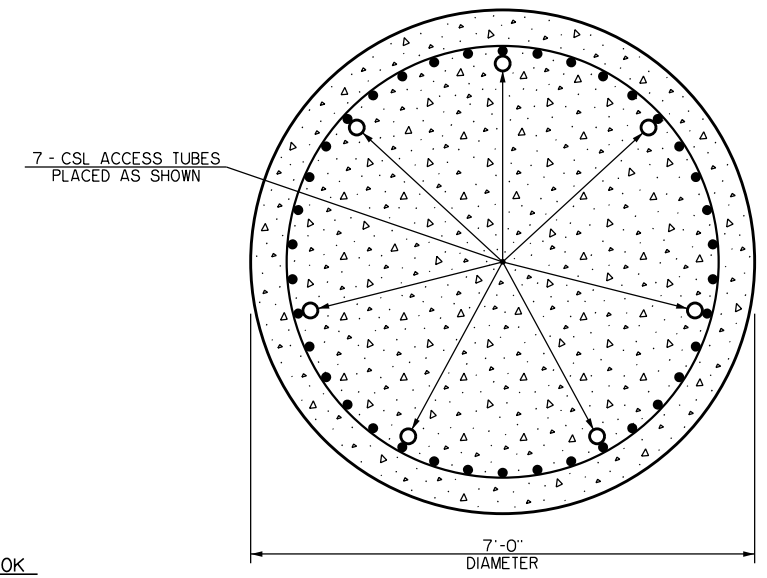
DETAILS OF CONCRETE ROLLERS

CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS. COST OF CONCRETE ROLLERS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF DRILLED SHAFT.

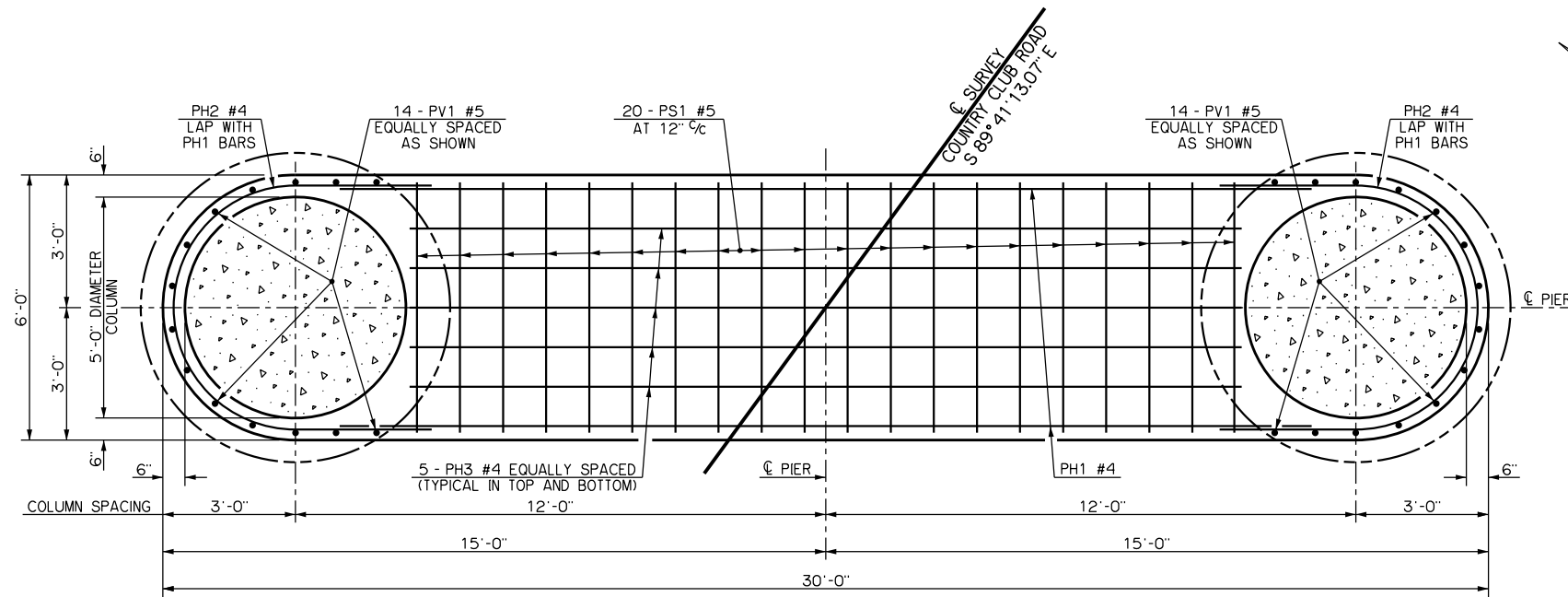


DETAILS OF SPIRAL REINFORCING STEEL SPLICE

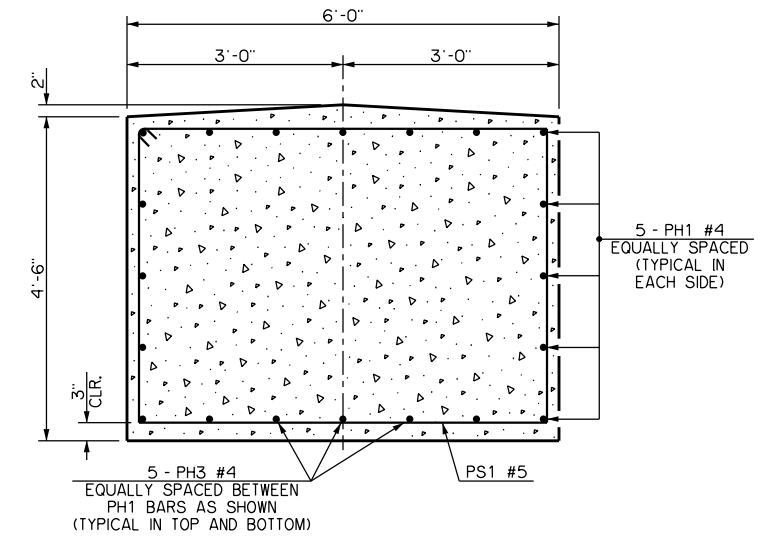
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



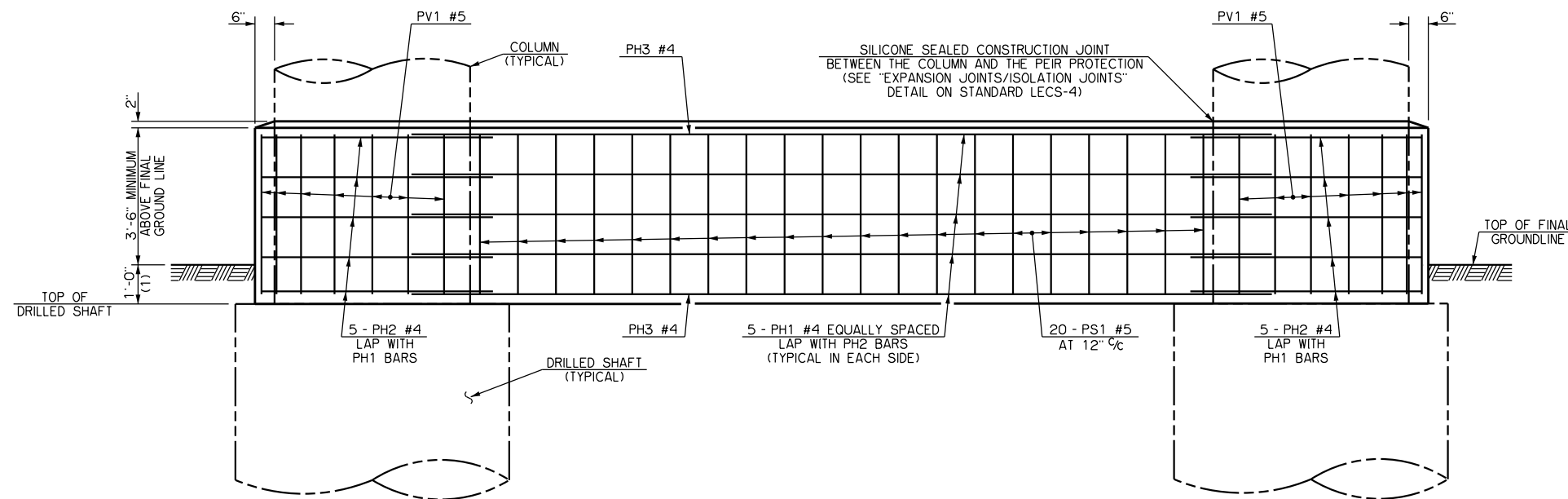
DETAILS OF BENT REINFORCING STEEL



PLAN



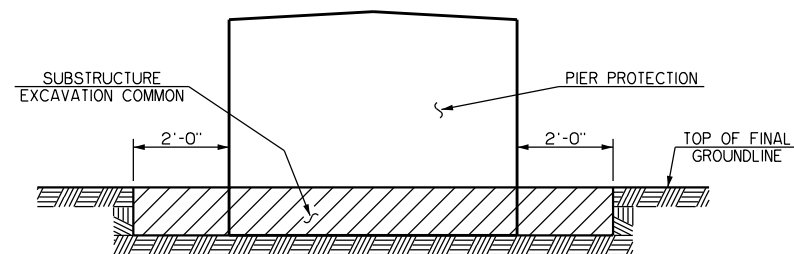
TYPICAL SECTION



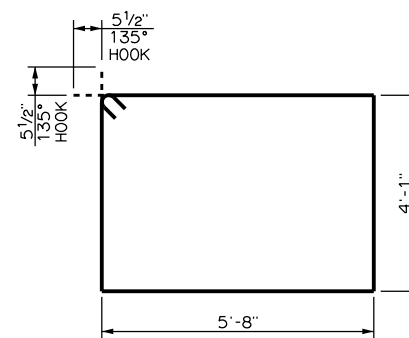
ELEVATION

BAR LIST - PIER PROTECTION				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
PH1	#4	10	STR.	22'-0"
PH2	#4	10	BNT.	14'-11"
PH3	#4	10	STR.	18'-10"
PS1	#5	20	BNT.	20'-5"
PV1	#5	28	STR.	4'-1"

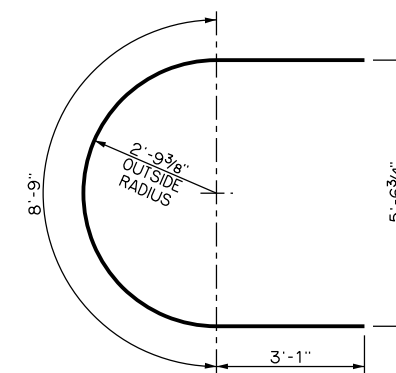
SUMMARY OF QUANTITIES - PIER PROTECTION		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	12.00
CLASS A CONCRETE	CY	22.70
EPOXY COATED REINFORCING STEEL	LB	920.00



DETAIL OF EXCAVATION FOR PIER PROTECTION



PS1 #5 X 20'-5"



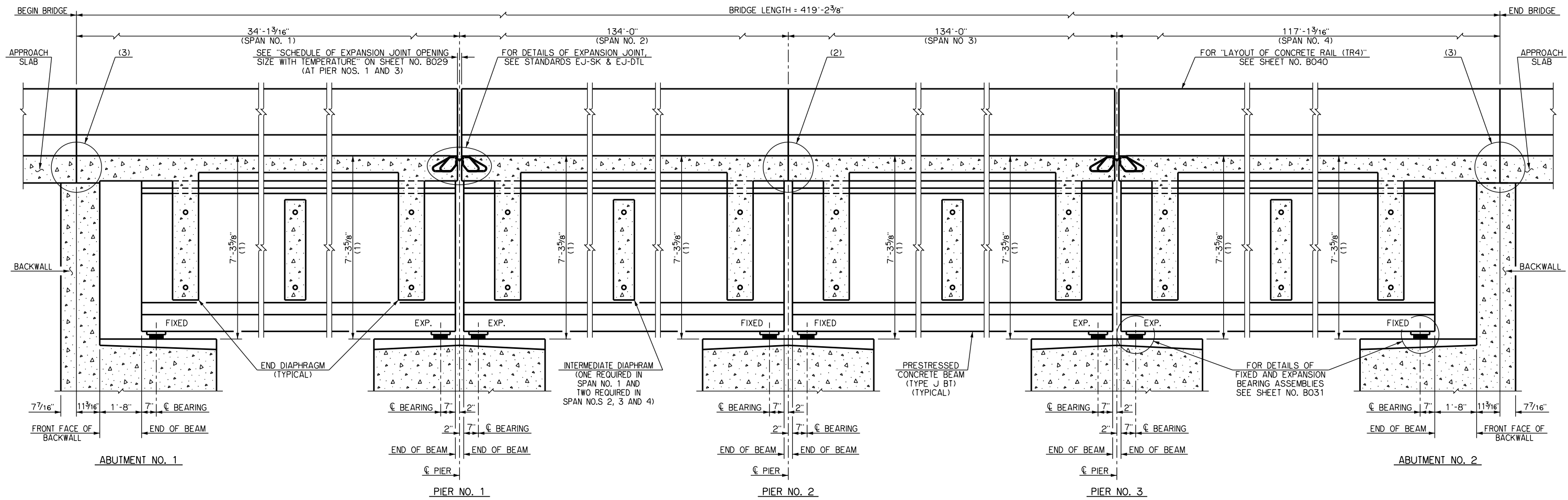
PH2 #4 X 14'-11"

NOTES

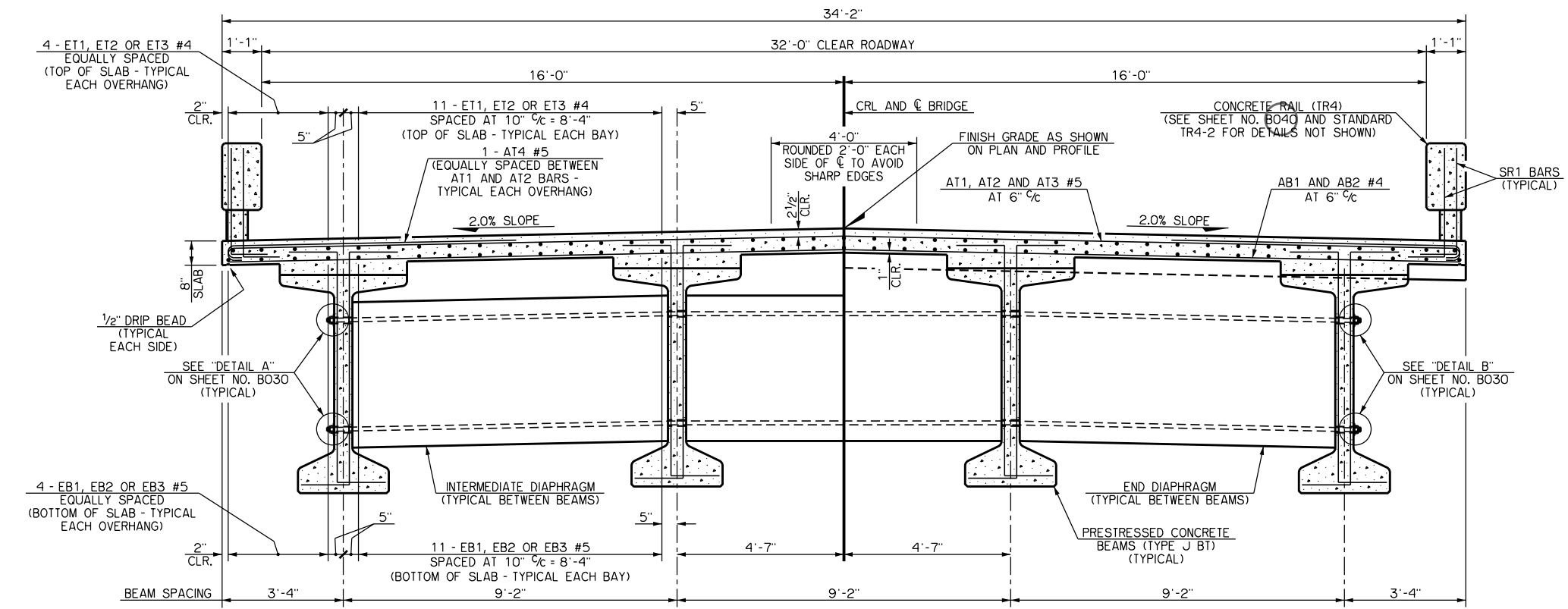
(1) THIS DIMENSION TO BE FIELD VERIFIED. THE CONTRACTOR SHALL ADJUST THE HEIGHT OF THE PIER PROTECTION TO MAINTAIN THE 3'-6" MINIMUM HEIGHT SHOWN IN THE "ELEVATION".

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"

DETAILS OF PIER PROTECTION
AT PIER NO. 2



LONGITUDINAL SECTION



TYPICAL SECTION

NOTES

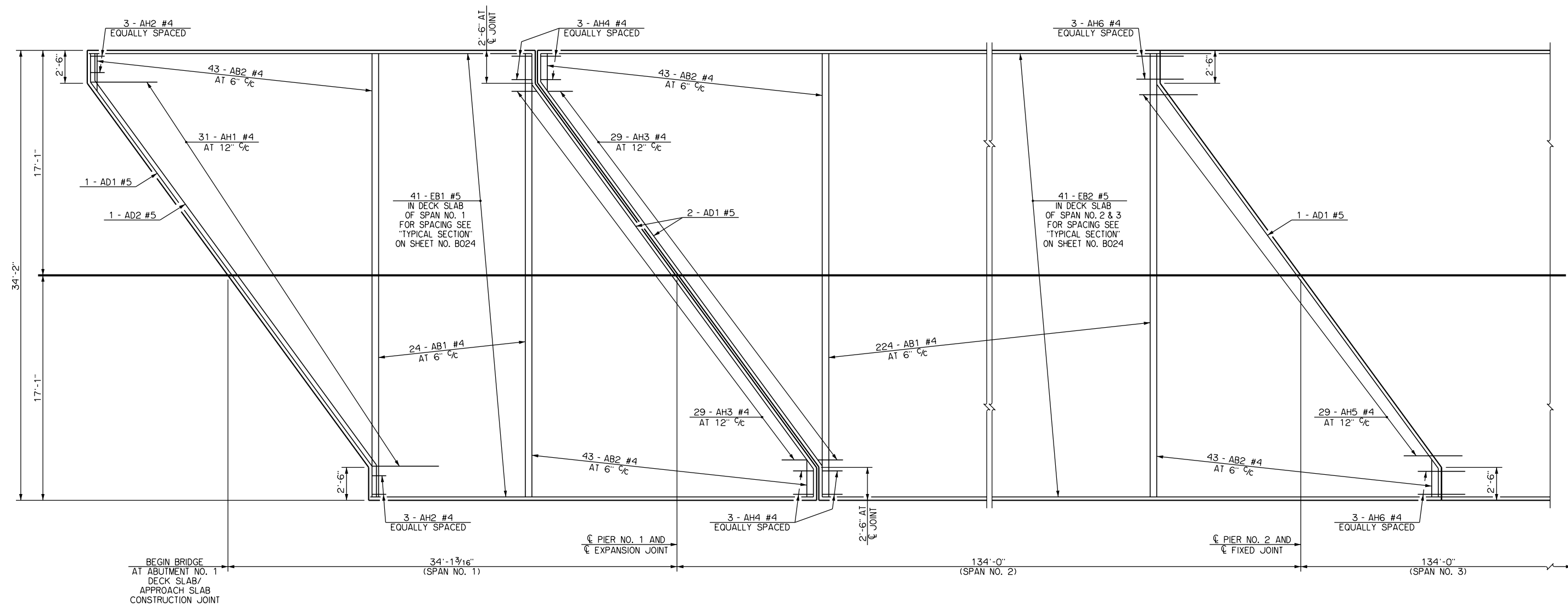
- (1) DIMENSION IS FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT $\text{\textcircled{C}}$ BEARING.
 - (2) UNDER NO CIRCUMSTANCES SHALL THE SLAB BE A CONTINUOUS POUR OVER THE FIXED PIER NO. 2. THIS LOCATIONS SHALL HAVE A CONSTRUCTION JOINT IN THE SLAB AND SHALL BE SEALED WITH SEALER RESIN (SEE GENERAL NOTE ON SHEET NO. ABO1). THE LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU THE CONSTRUCTION JOINT.
 - (3) UNDER NO CIRCUMSTANCES SHALL THE DECK SLAB AND THE APPROACH SLAB OVER THE BACKWALLS OF ABUTMENT NOS. 1 AND 2 BE A CONTINUOUS POUR. THESE LOCATIONS SHALL HAVE A SAWED AND SEALED CONSTRUCTION JOINT IN THE SLAB. SEE "DETAILS OF APPROACH SLABS" ON SHEET NOS. B038 AND B039 FOR DETAILS OF THIS JOINT.
- ROTATE HOOKS ON AT BARS TO MAINTAIN MINIMUM CLEARANCE.
- ALL DIMENSIONS SHOWN IN THE LONGITUDINAL SECTION ARE ALONG THE $\text{\textcircled{C}}$ OF THE P.C. BEAM.
- DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF SUPERSTRUCTURE
(SHEET NO. 1 OF 7)

State Job No. 24428(12) Sheet No. B024

US 81 REALIGNMENT
GRADY COUNTY



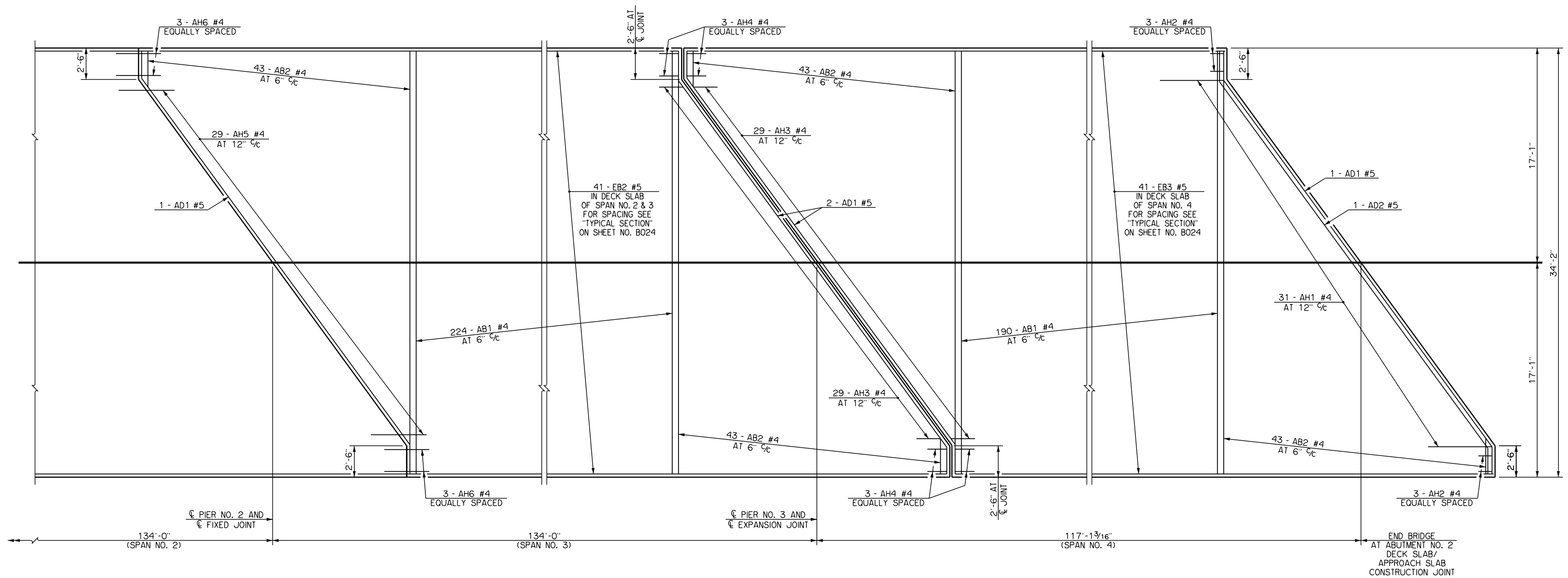
BOTTOM OF DECK SLAB REINFORCING STEEL LAYOUT WITHIN SPAN NOS. 1 AND 2

NOTE

SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B040 FOR PLACEMENT OF SR1 BARS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 2 OF 7)**



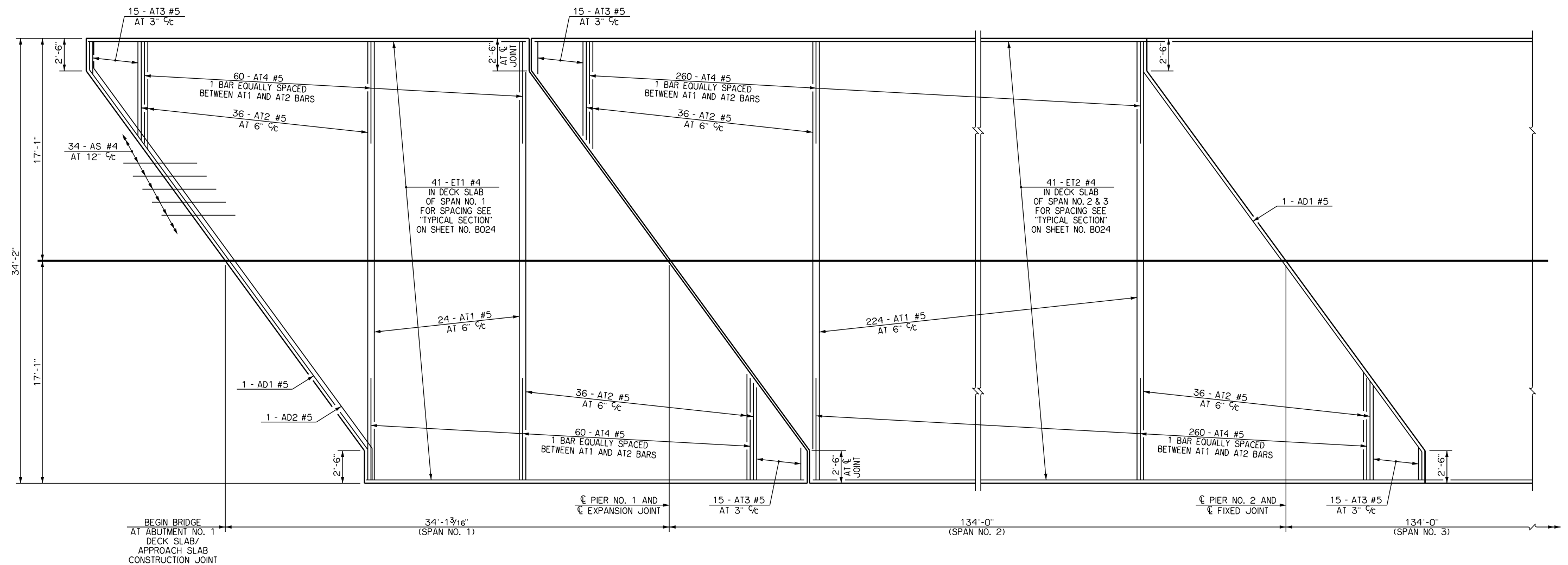
BOTTOM OF DECK SLAB REINFORCING STEEL LAYOUT WITHIN SPAN NOS. 3 AND 4

NOTE

SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B040 FOR PLACEMENT OF SR1 BARS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 3 OF 7)**



TOP OF DECK SLAB REINFORCING STEEL LAYOUT WITHIN SPAN NOS. 1 AND 2

NOTE

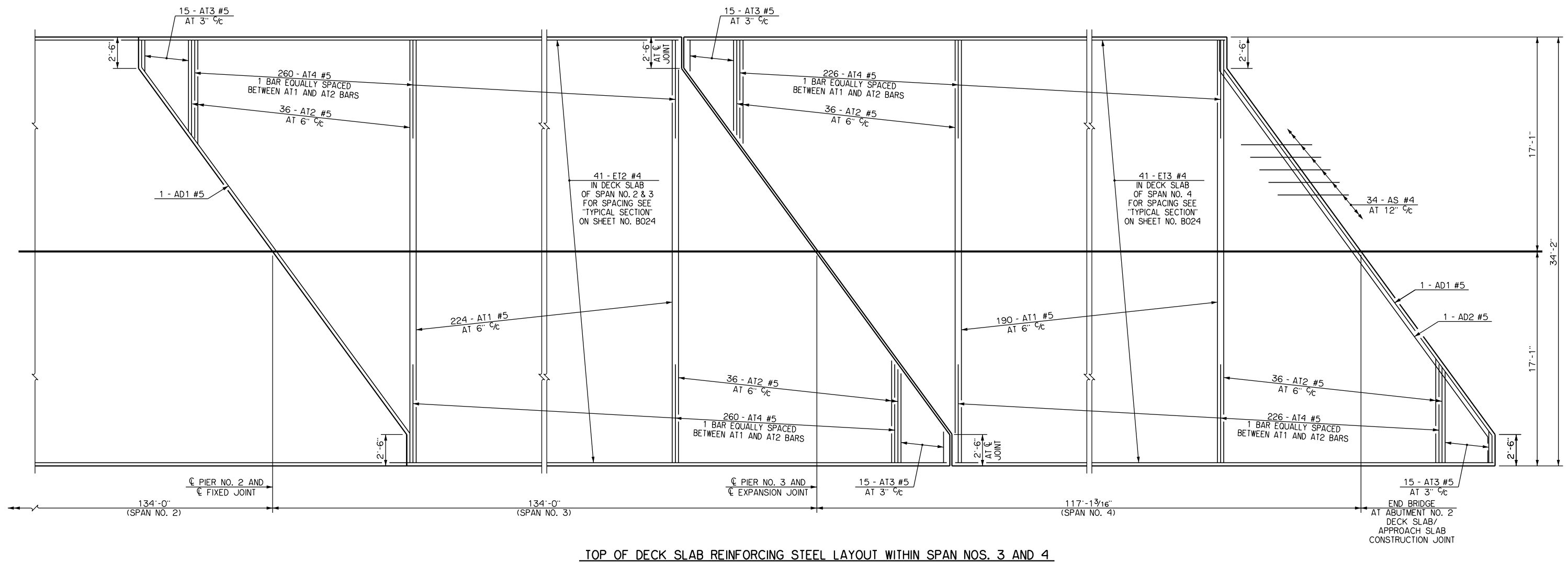
SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B040 FOR PLACEMENT OF SR1 BARS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 4 OF 7)**

State Job No. 24428(12) Sheet No. B027

US 81 REALIGNMENT
GRADY COUNTY



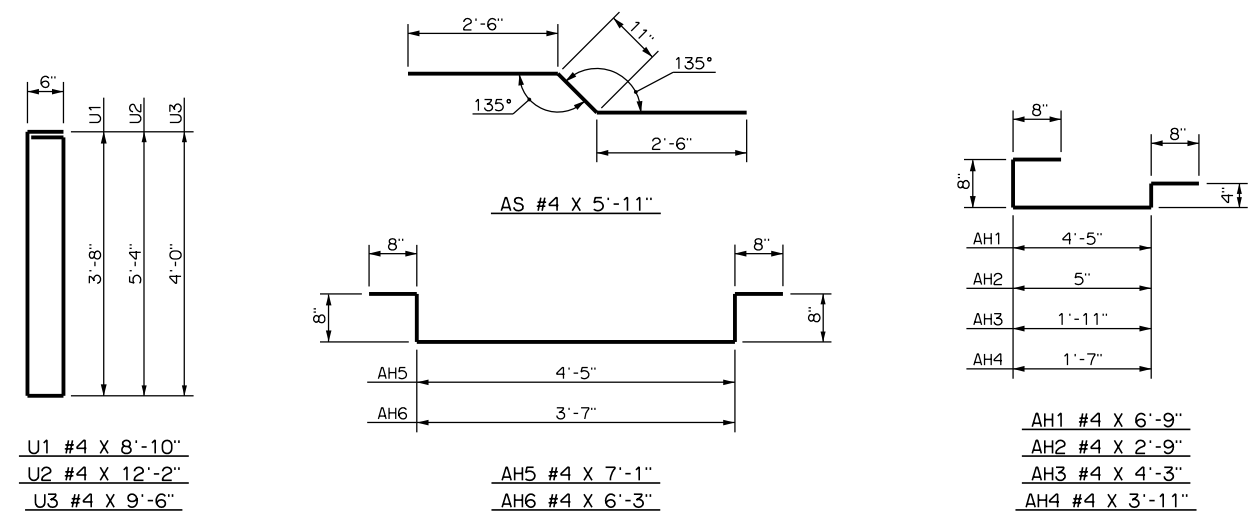
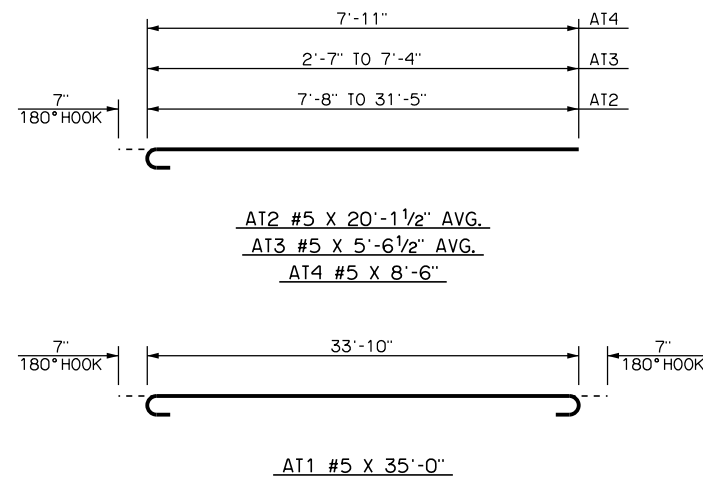
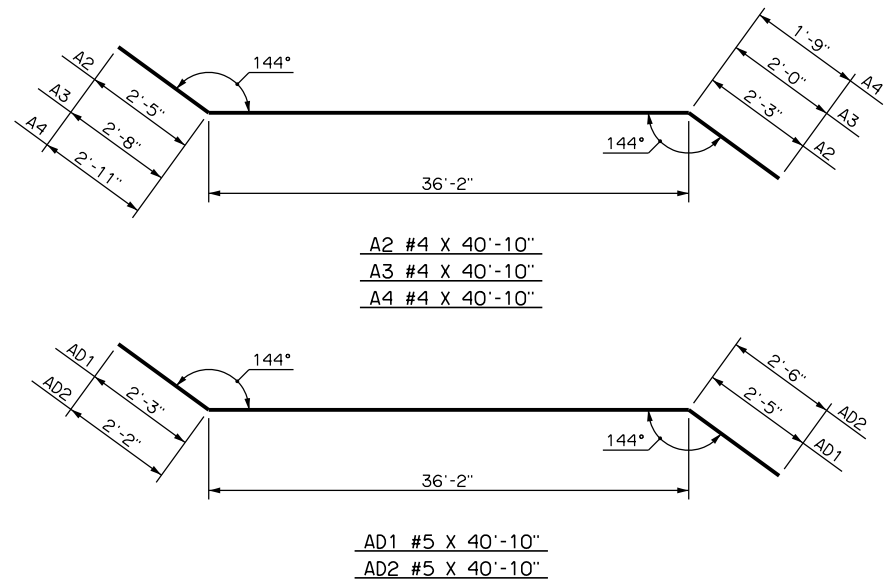
TOP OF DECK SLAB REINFORCING STEEL LAYOUT WITHIN SPAN NOS. 3 AND 4

NOTE

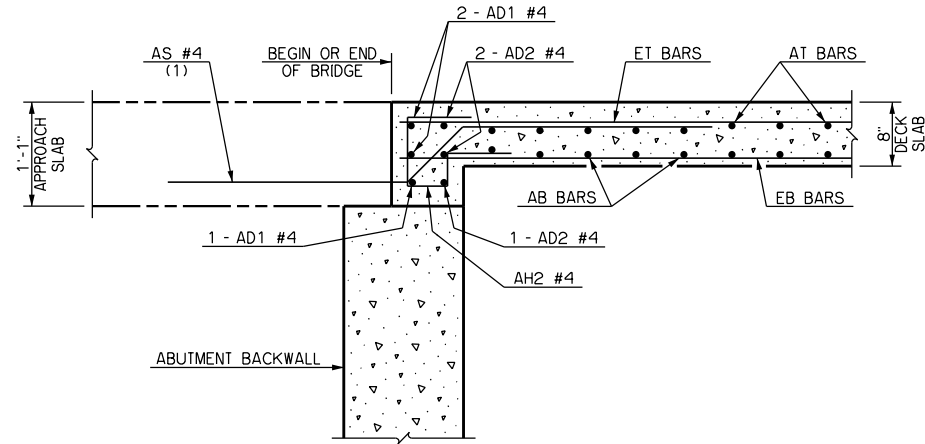
SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B040 FOR PLACEMENT OF SR1 BARS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

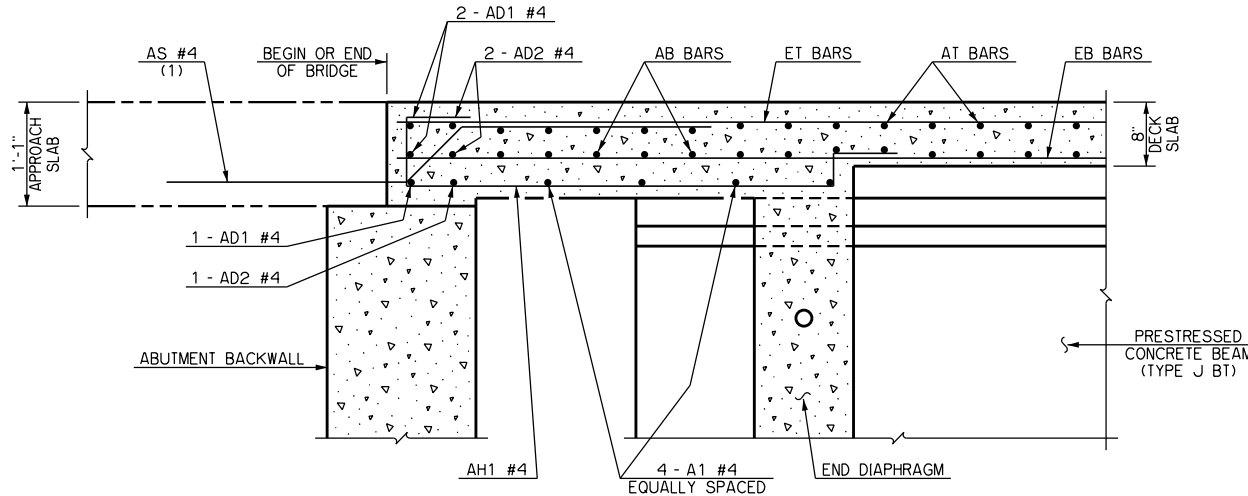
DETAILS OF SUPERSTRUCTURE
(SHEET NO. 5 OF 7)



DETAILS OF BENT REINFORCEMENT STEEL

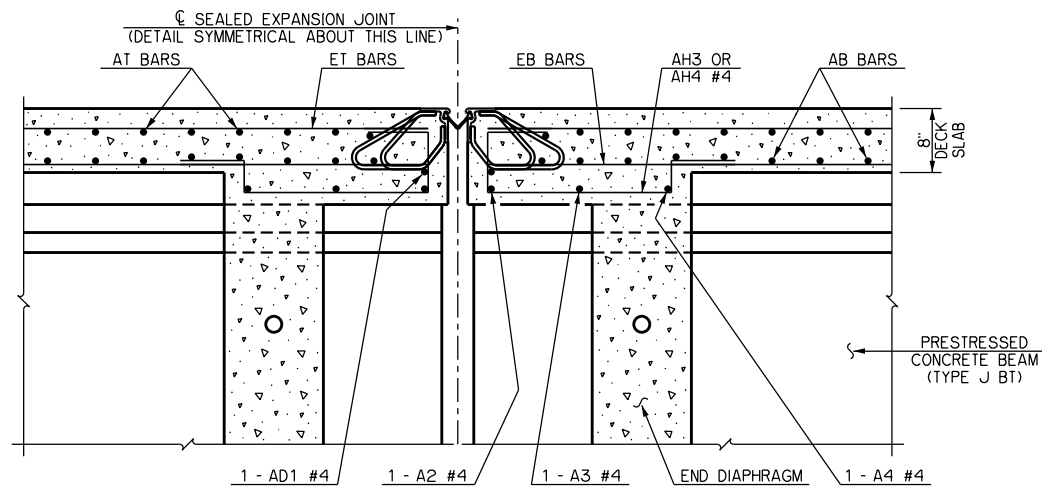


**DECK SLAB REINFORCING AT ABUTMENT BACKWALL
WITHIN THE DECK SLAB CANTILEVER**

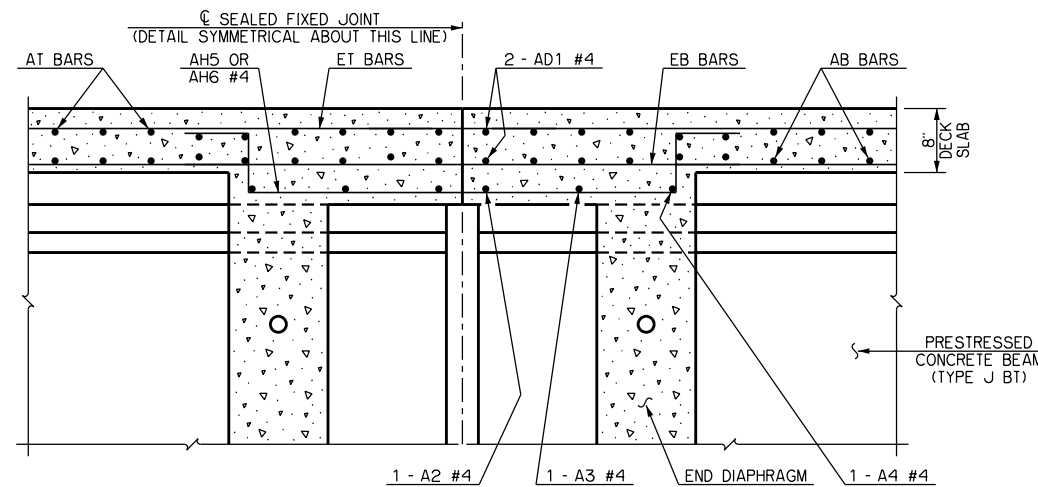


DECK SLAB REINFORCING AT ABUTMENT BACKWALL

SCHEDULE OF EXPANSION JOINT OPENING SIZE WITH TEMPERATURE		
TEMPERATURE (2)	OPENING AT PIER NO. 1	OPENING AT PIER NO. 3
0°F	2 1/2"	2 3/4"
10°F	2 3/8"	2 9/8"
20°F	2 1/4"	2 3/8"
30°F	2 1/8"	2 1/4"
40°F	2"	2"
50°F	1 7/8"	1 7/8"
60°F	1 3/4"	1 3/4"
70°F	1 5/8"	1 1/2"
80°F	1 5/8"	1 3/8"
90°F	1 1/2"	1 1/8"
100°F	1 3/8"	1"
110°F	1 1/4"	7/8"



DECK SLAB REINFORCING AT SEALED EXPANSION JOINT



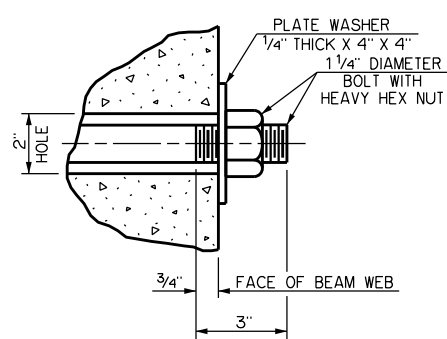
DECK SLAB REINFORCING AT CONSTRUCTION JOINT

NOTES

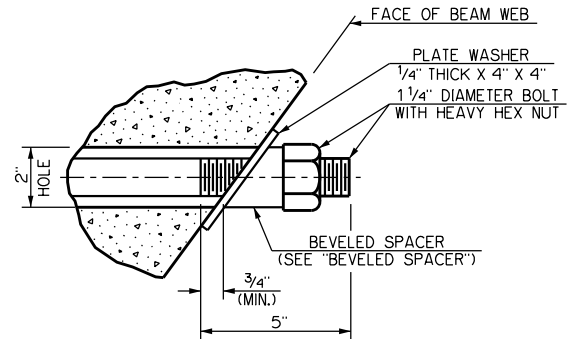
- (1) 'AS' BARS SHALL BE TIED TO THE TOP MAT OF REINFORCING IN THE DECK SLAB AND TO THE BOTTOM MAT OF REINFORCING IN THE APPROACH SLAB. 'AS' BARS MUST BE IN PLACE PRIOR TO POURING THE DECK SLAB CONCRETE.
- (2) AMBIENT AIR TEMPERATURE AT THE TIME THE DECK SLAB CONCRETE IS POURED.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

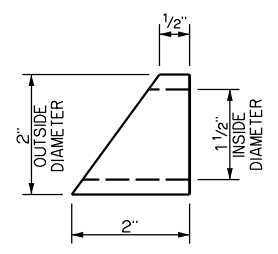
**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 6 OF 7)**



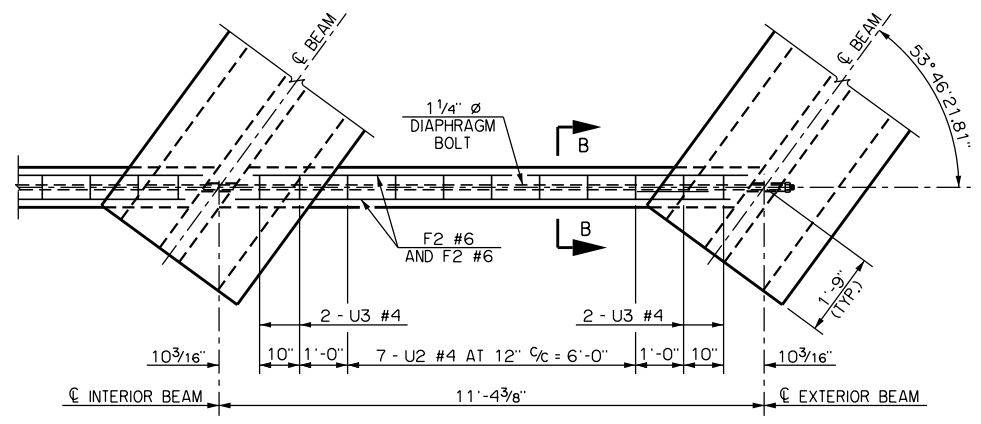
DETAIL "A"



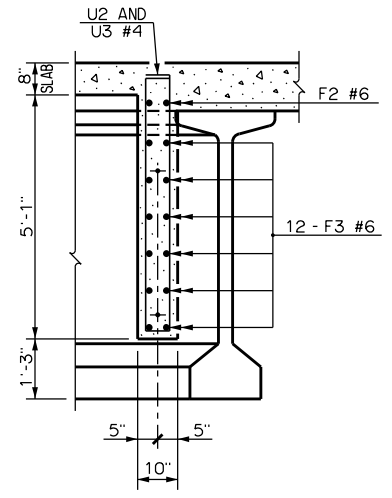
DETAIL "B"



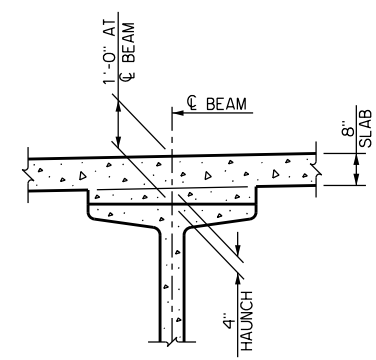
BEVELED SPACER
EXTRA STRONG PIPE SLEEVE



PLAN OF END DIAPHRAGM

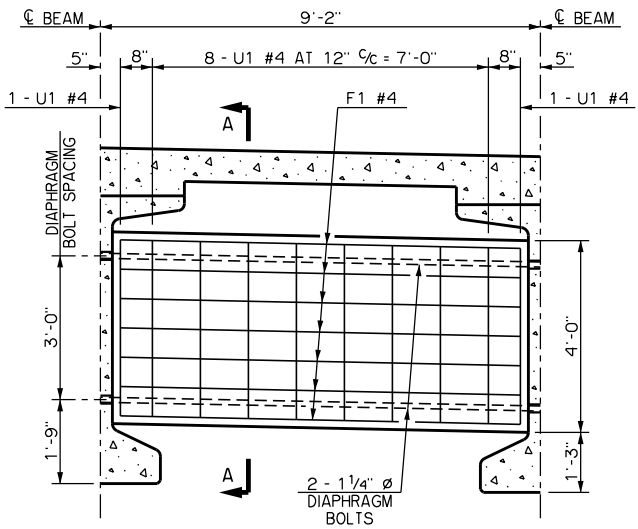


SECTION "B-B"

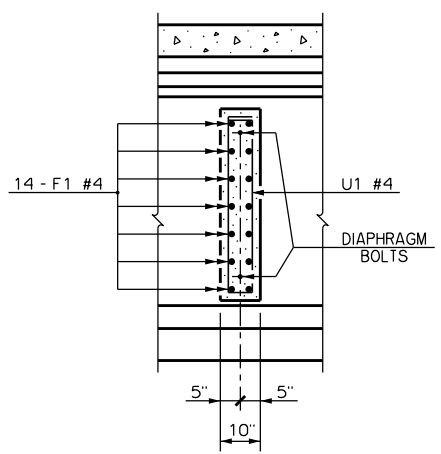


DETAIL OF HAUNCH

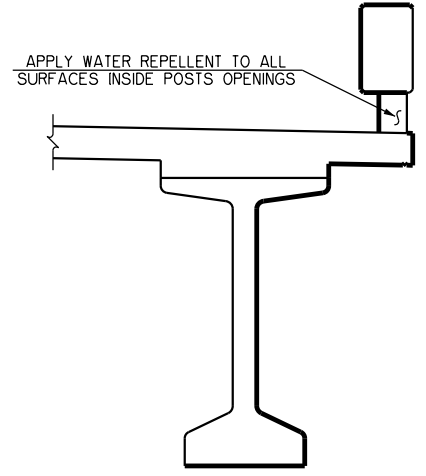
PLAN QUANTITIES FOR CLASS "AA" CONCRETE INCLUDES 34.2 CUBIC YARDS FOR HAUNCHES OVER BEAMS. HAUNCH HEIGHT SHOWN IS PLANNED HEIGHT AT CENTERLINE OF BEARING ONLY, AND VARIES ACROSS THE SPAN. HAUNCH HEIGHT TO BE DETERMINED AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT, BUT THE PAY QUANTITY WILL BE AS SHOWN. FOR DEAD LOAD DEFLECTIONS SEE SHEET NOS. B032, B034 AND B037.



ELEVATION OF INTERMEDIATE DIAPHRAGM



SECTION "A-A"



PENETRATING WATER REPELLENT TREATMENT

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.

BAR LIST - SUPERSTRUCTURE					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
A1	#4	8	STR.	38'-0"	-
A2	#4	6	BNT.	40'-10"	-
A3	#4	6	BNT.	40'-10"	-
A4	#4	6	BNT.	40'-10"	-
AB1	#4	662	STR.	33'-10"	-
AB2	#4	344	STR.	17'-2" AVG.	2'-11" TO 31'-5"
AD1	#5	14	BNT.	40'-10"	-
AD2	#5	4	BNT.	40'-10"	-
AH1	#4	62	BNT.	6'-9"	-
AH2	#4	12	BNT.	2'-9"	-
AH3	#4	116	BNT.	4'-3"	-
AH4	#4	24	BNT.	3'-11"	-
AH5	#4	29	BNT.	7'-1"	-
AH6	#4	6	BNT.	6'-3"	-
AS	#4	68	BNT.	5'-11"	-
AT1	#5	662	BNT.	35'-0"	-
(3) AT2	#5	288	BNT.	20'-1 1/2" AVG.	8'-3" TO 32'-0"
(4) AT3	#5	120	BNT.	5'-6 1/2" AVG.	3'-2" TO 7'-11"
AT4	#5	1,612	BNT.	8'-6"	-
EB1	#5	41	STR.	33'-8"	-
EB2	#5	41	STR.	279'-6"	-
(6) EB3	#5	41	STR.	119'-9"	-
ET1	#4	41	STR.	33'-8"	-
(7) ET2	#4	41	STR.	275'-6"	-
(8) ET3	#4	41	STR.	118'-9"	-
F1	#4	294	STR.	8'-4"	-
F2	#6	48	STR.	6'-7"	-
F3	#6	288	STR.	10'-4"	-
SR1	#5	2,100	BNT.	4'-1"	-
U1	#4	210	BNT.	8'-10"	-
U2	#4	168	BNT.	12'-2"	-
U3	#4	96	BNT.	9'-6"	-

- (2) INCLUDES 8 SETS OF 43 BARS
- (3) INCLUDES 8 SETS OF 36 BARS
- (4) INCLUDES 8 SETS OF 15 BARS
- (5) LENGTH INCLUDES FOUR 3'-0" LAP, LAPS SHALL BE STAGGERED
- (6) LENGTH INCLUDES ONE 3'-0" LAP, LAPS SHALL BE STAGGERED
- (7) LENGTH INCLUDES FOUR 2'-0" LAP, LAPS SHALL BE STAGGERED
- (8) LENGTH INCLUDES ONE 2'-0" LAP, LAPS SHALL BE STAGGERED

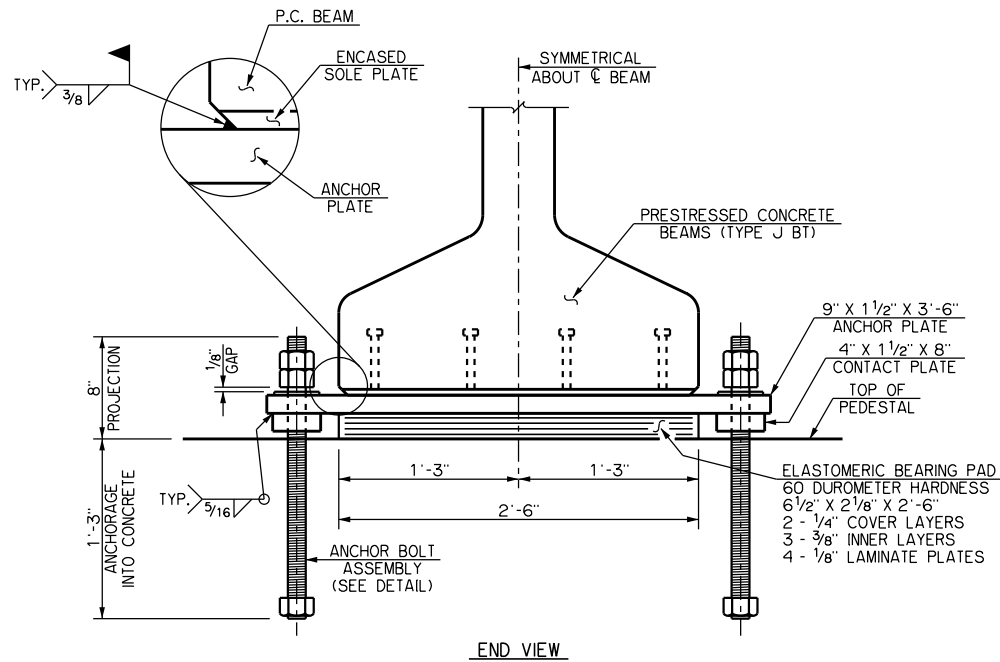
SUMMARY OF QUANTITIES - SUPERSTRUCTURE		
ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE J BT)	LF	1,652.00
SAW-CUT GROOVING	SY	1,491.00
SEALED EXPANSION JOINT	LF	84.32
CONCRETE RAIL (TR4)	LF	837.80
STRUCTURAL STEEL	LB	4,370.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	16.00
CLASS AA CONCRETE	CY	456.00
EPOXY COATED REINFORCING STEEL	LB	115,660.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	1,581.00
SEALER CRACK PREPARATION	LF	40.00
SEALER RESIN	GAL	0.40

NOTES

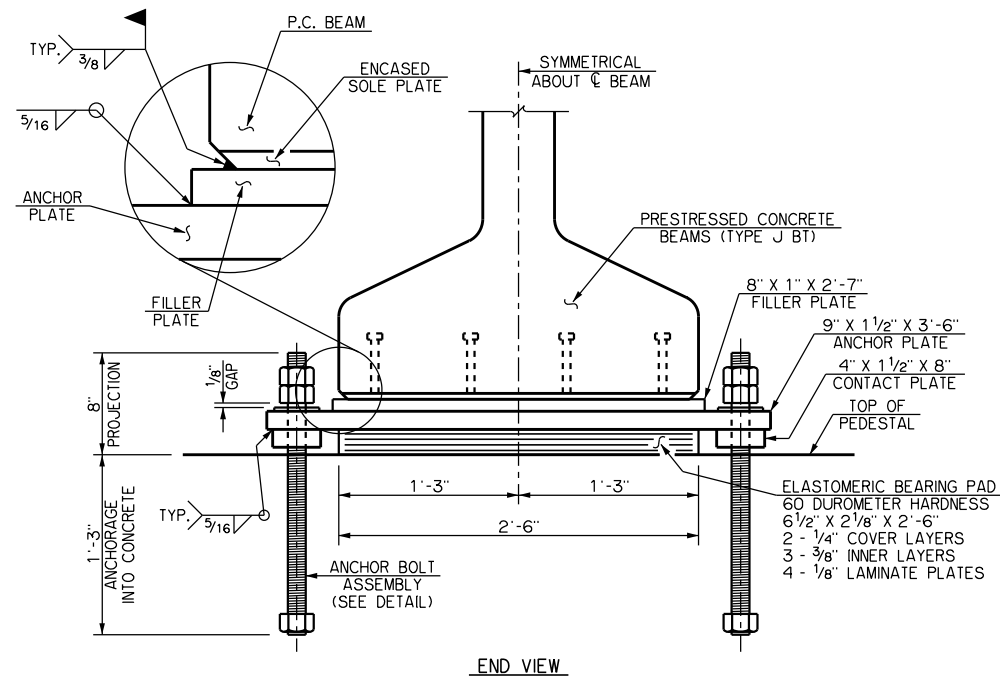
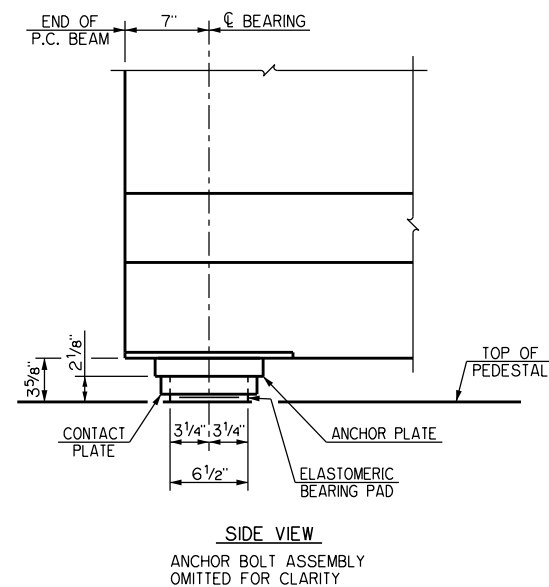
STRUCTURAL STEEL FOR DIAPHRAGM RODS AND PLATE WASHERS SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 50W, WEATHERING STEEL (CHARPY V-NOTCH TESTING NOT REQUIRED). A #10 REINFORCING STEEL BAR CONFORMING TO AASHTO M 31, GRADE 60 AND THREADED AT BOTH ENDS AS SHOWN MAY BE SUBSTITUTED FOR THE DIAPHRAGM ROD. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. PAINT EXPOSED PARTS OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS WITH TWO (2) COATS OF ZINC-RICH PAINT (6 MIL MINIMUM THICKNESS) AFTER ASSEMBLY. ALL COST OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS SHALL BE INCLUDED IN UNIT PRICE BID PER POUND OF "STRUCTURAL STEEL."

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"

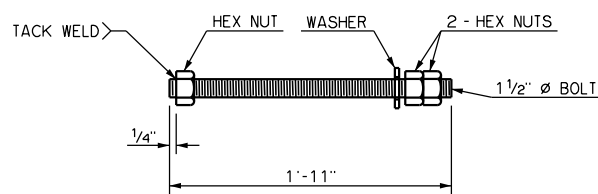
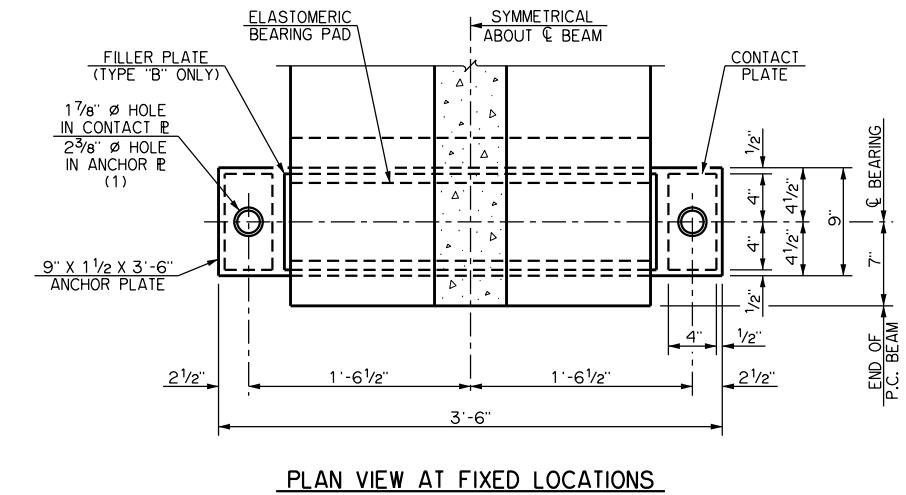
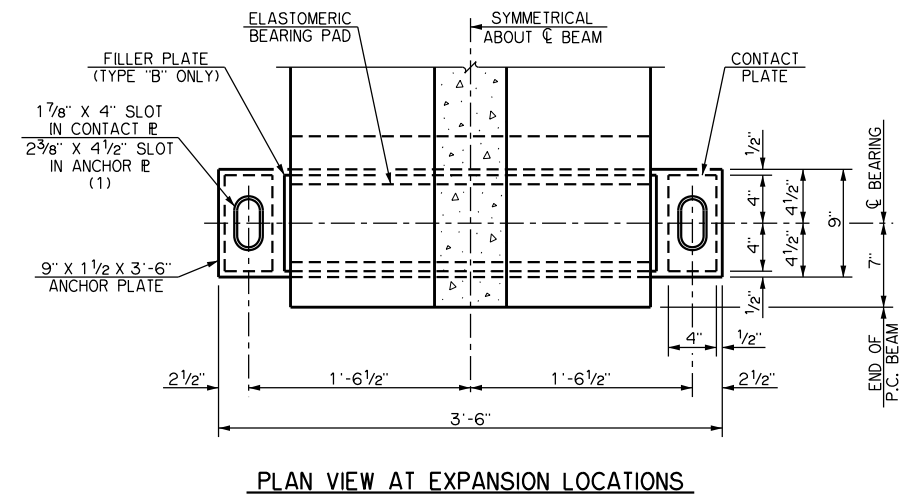
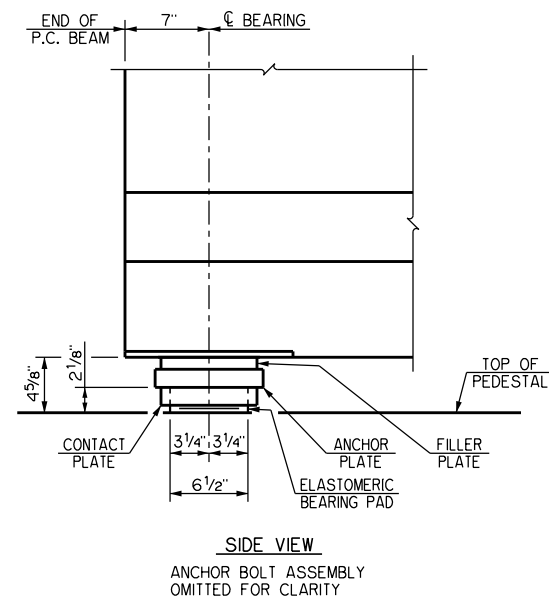
DETAILS OF SUPERSTRUCTURE
(SHEET NO. 7 OF 7)



BEARING ASSEMBLY - TYPE "A"

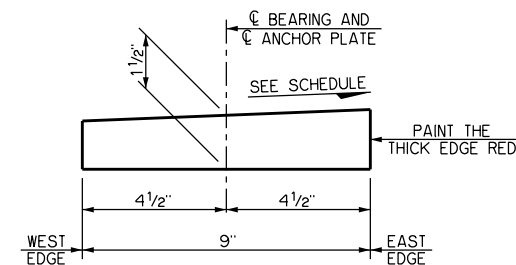


BEARING ASSEMBLY - TYPE "B"



DETAIL OF ANCHOR BOLT ASSEMBLY

ANCHOR PLATE BEVEL SCHEDULE (2)		
LOCATION	BEARING ASSEMBLY TYPE	SLOPE
SPAN NO. 1 AT ABUTMENT NO. 1	TYPE "A"	+5.8%
SPAN NO. 1 AT PIER NO. 1	TYPE "A"	+5.8%
SPAN NO. 2 AT PIER NO. 1	TYPE "B"	+5.8%
SPAN NO. 2 AT PIER NO. 2	TYPE "A"	+5.0%
SPAN NO. 3 AT PIER NO. 2	TYPE "B"	+5.8%
SPAN NO. 3 AT PIER NO. 3	TYPE "A"	+5.0%
SPAN NO. 4 AT PIER NO. 3	TYPE "B"	+5.8%
SPAN NO. 4 AT ABUTMENT NO. 2	TYPE "A"	+5.0%



DETAIL OF BEVELED ANCHOR PLATE

NOTES

ALL STEEL PARTS OF BEARING ASSEMBLIES SHALL SATISFY THE REQUIREMENTS OF SECTION 724.05.A "STAINLESS STEEL BEARING ASSEMBLIES" OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION FOR BRIDGE BEARING STRUCTURAL STEEL" (SP 724-1). THE MATERIAL REQUIREMENTS FOR THE CONTACT PLATES SHALL BE THE SAME AS THE MATERIAL REQUIREMENTS FOR THE ANCHOR PLATES.

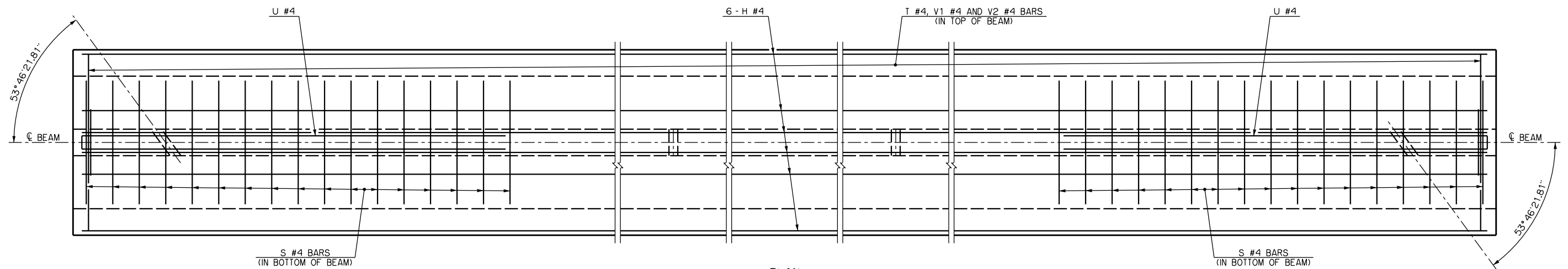
ELASTOMERIC BEARING PADS SHALL SATISFY THE REQUIREMENTS OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISIONS FOR ELASTOMERIC BEARING PADS" (SP 733-1).

(1) CENTER ANCHOR BOLT ASSEMBLIES IN HOLES AND SLOTS DURING SETTING OF BEAMS. DIMENSION MAY VARY DEPENDING UPON TEMPERATURE AT TIME OF SETTING OF BEAMS.

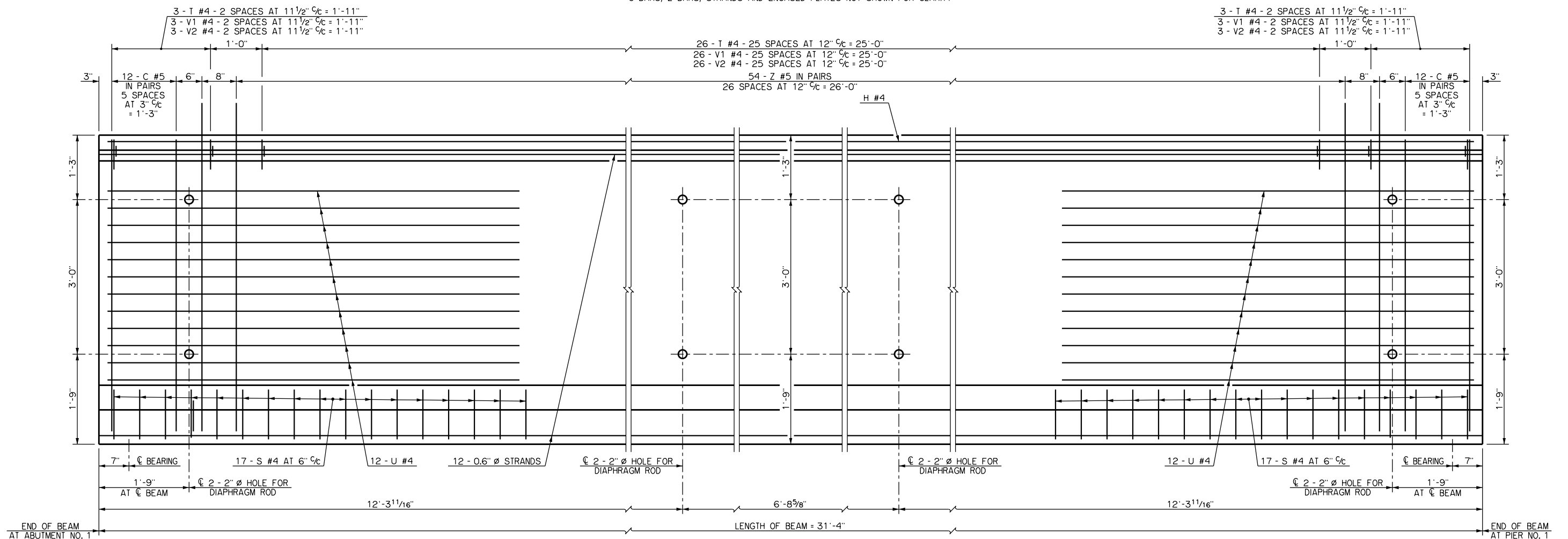
(2) ALL ANCHOR PLATES SHALL BE BEVELED AS SHOWN. THE THICK EDGE OF THE BEVELED ANCHOR PLATES SHALL BE PAINTED RED TO INSURE THEY ARE PROPERLY ORIENTED DURING INSTALLATION. THE PAINTED THICK EDGE SHALL FACE EAST AT ALL LOCATIONS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"

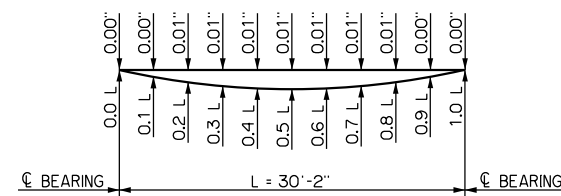
DETAILS OF BEARING ASSEMBLIES



PLAN
C BARS, Z BARS, STRANDS AND ENCASED PLATES NOT SHOWN FOR CLARITY



ELEVATION
ENCASED PLATES NOT SHOWN



DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DIAPHRAGMS, A 5 PSF STEEL SIP FORMS ALLOWANCE, DECK SLAB, HAUNCH AND CONCRETE RAIL (TR4). THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

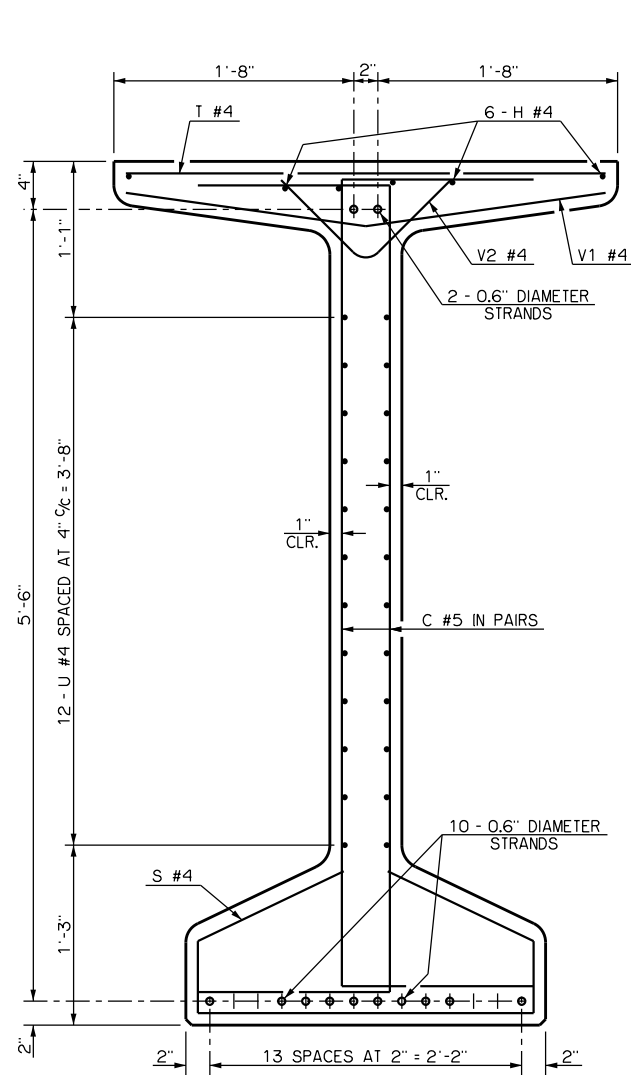
MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 4,500 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 6,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

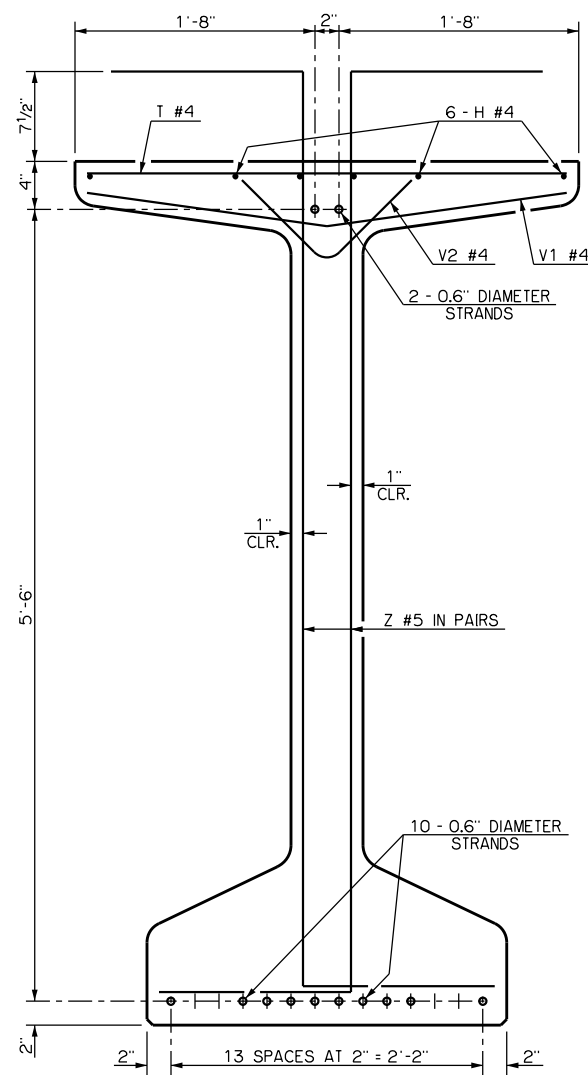
THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NO. 1
(SHEET NO. 1 OF 2)

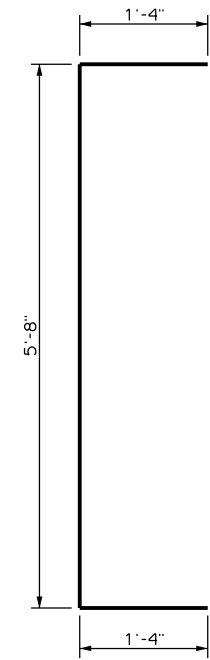
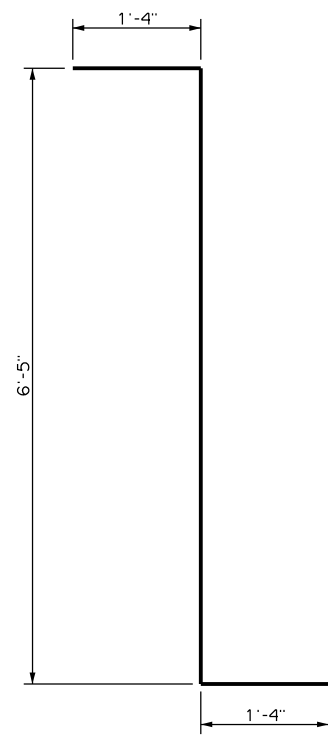
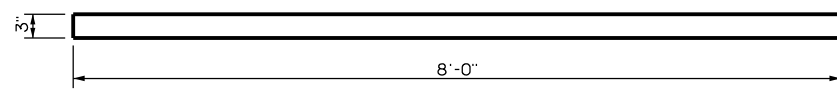
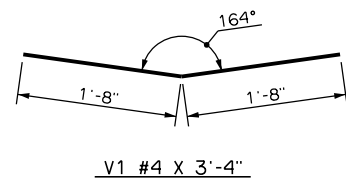
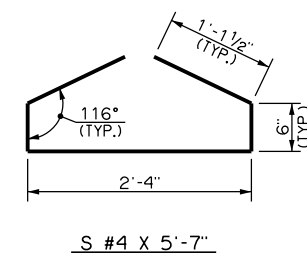
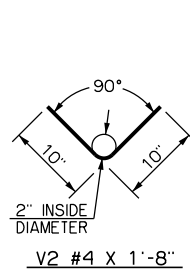


END SECTION

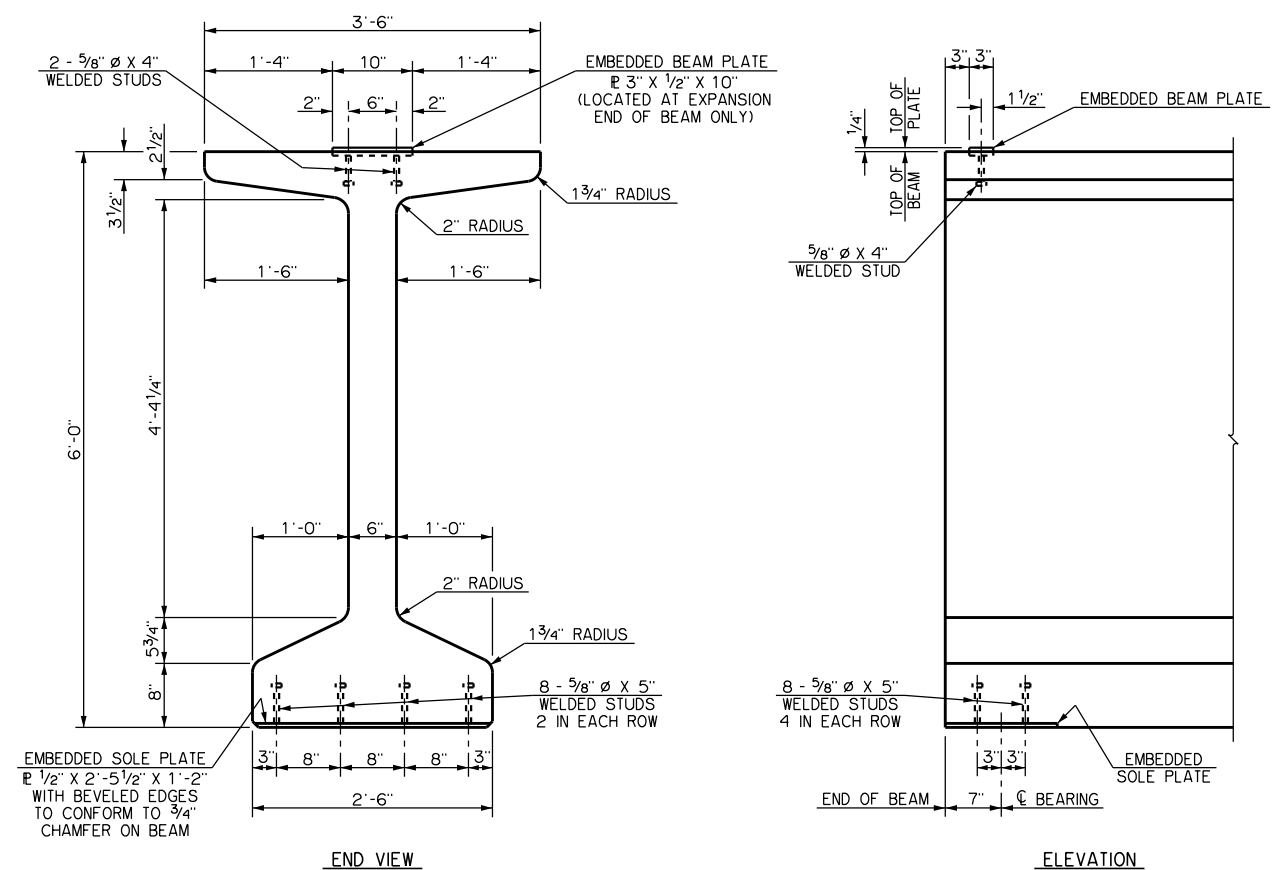


C SECTION

BEAM SECTIONS
(12 - 0.6" ϕ STRANDS)



DETAILS OF BENT REINFORCING STEEL

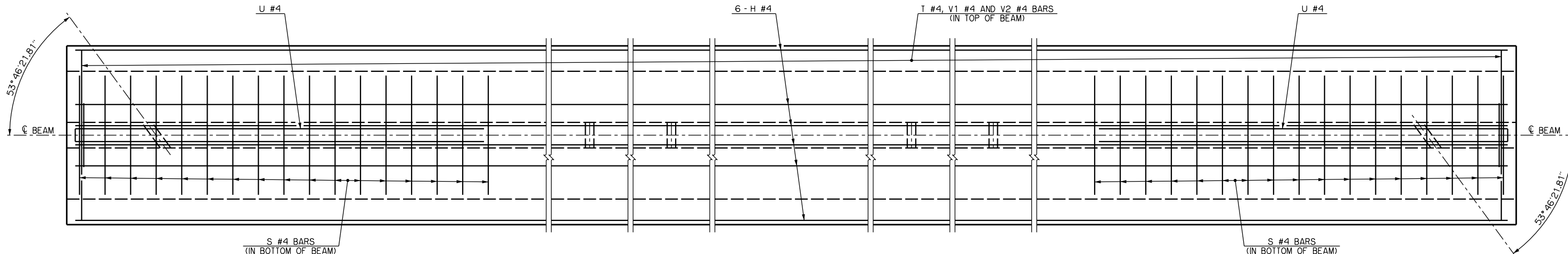


DETAILS OF EMBEDDED SOLE PLATE AND BEAM PLATE

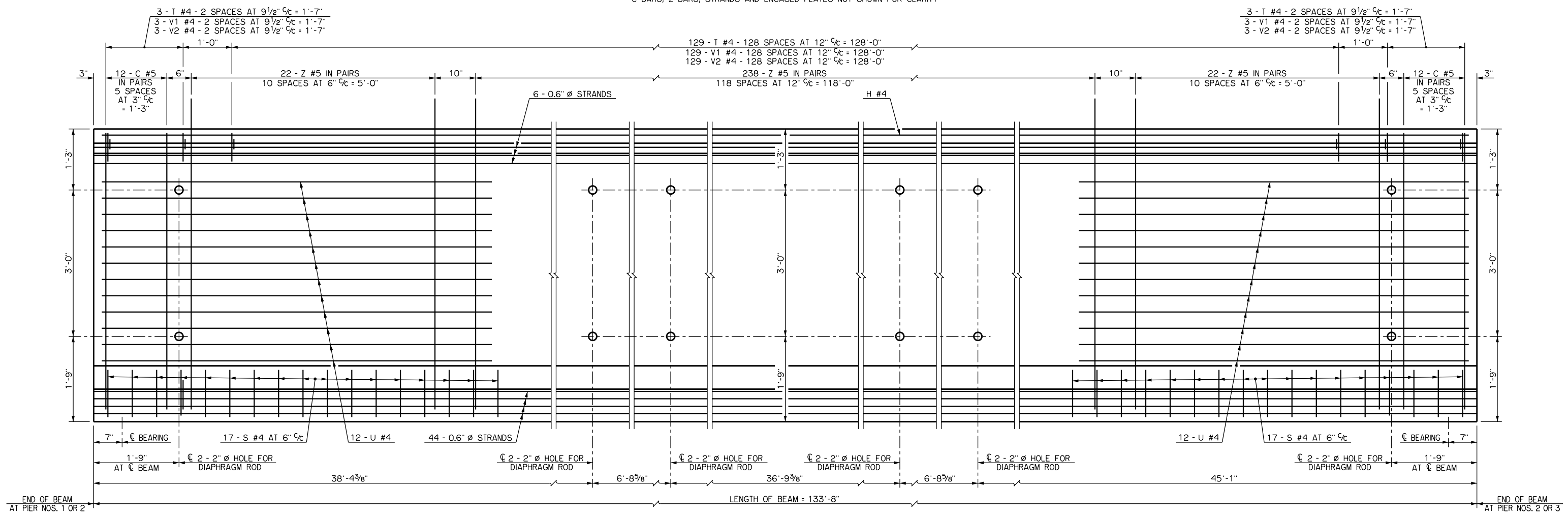
INTENTIONALLY ROUGHENED SURFACE EXAMPLES

TOP SURFACE OF P.C. BEAMS SHALL BE INTENTIONALLY ROUGHENED TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. THE CREST AND TROUGH ASSOCIATED WITH THE HEIGHT SHALL NOT BE LESS THAN 1/2" AND SHALL EXTEND THE FULL WIDTH OF THE TOP FLANGE. ROUGHENED SURFACE MAY BE OBTAINED BY A SPECIAL TROWEL AS SHOWN IN THE EXAMPLES, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH OR BLASTING TO THE EXTENT THAT AGGREGATE IS EXPOSED TO A HEIGHT OF 1/4", OR BY ANOTHER METHOD APPROVED BY THE ENGINEER.

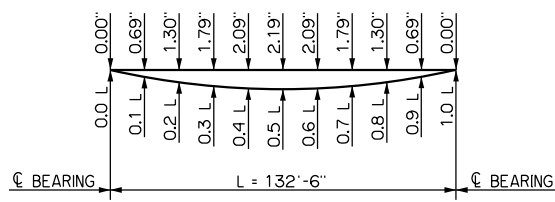
COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'
DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NO. 1
(SHEET NO. 2 OF 2)



PLAN
C BARS, Z BARS, STRANDS AND ENCASED PLATES NOT SHOWN FOR CLARITY



ELEVATION
ENCASED PLATES NOT SHOWN



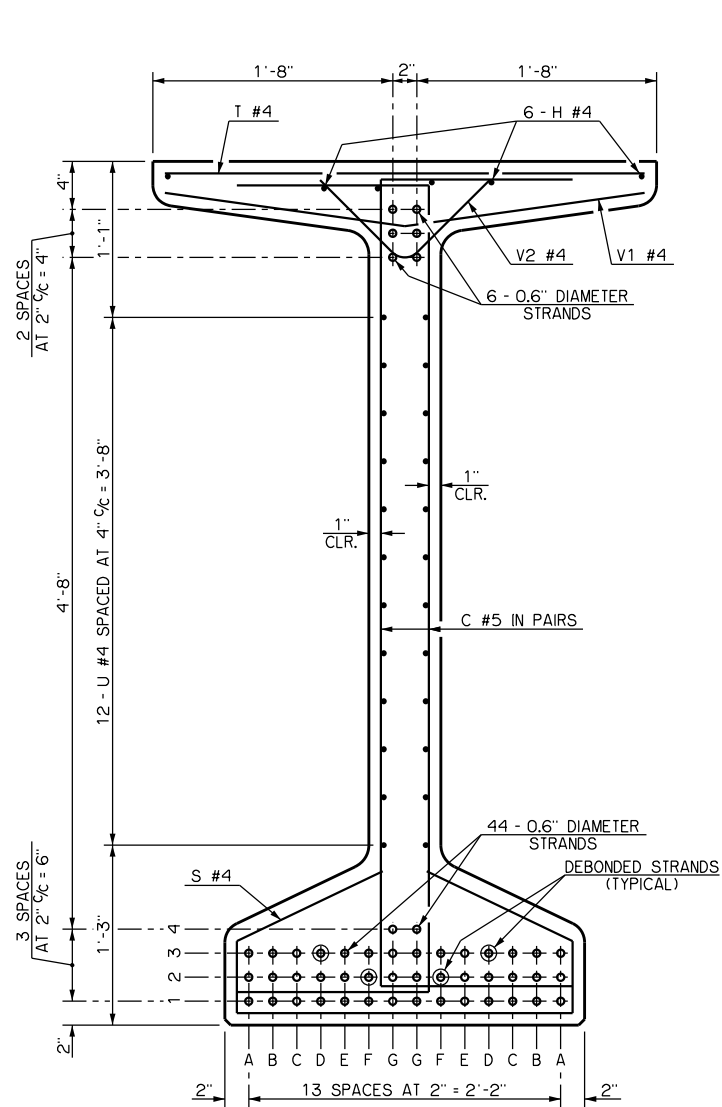
DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DIAPHRAGMS, A 5 PSF STEEL SIP FORMS ALLOWANCE, DECK SLAB, HAUNCH AND CONCRETE RAIL (TR4). THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

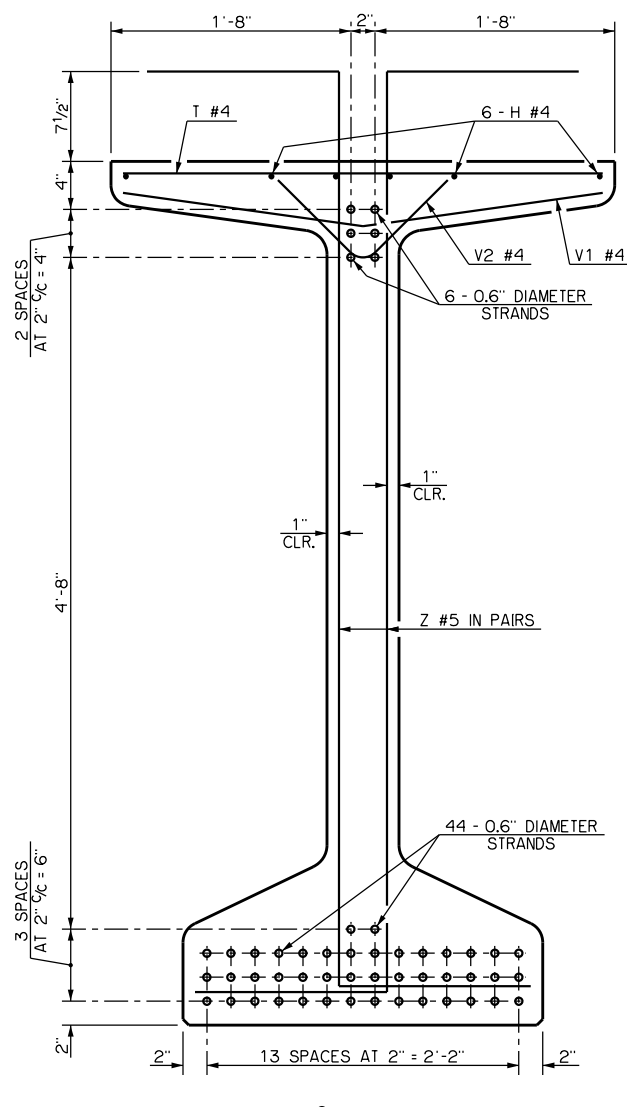
MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 7,000 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 10,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.
THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"
DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NOS. 2 AND 3
(SHEET NO. 1 OF 2)



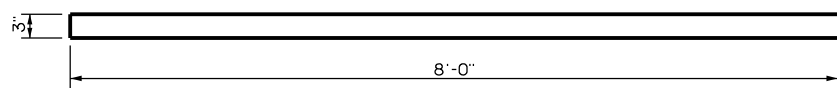
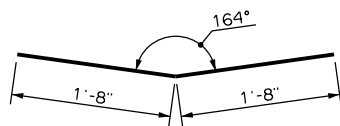
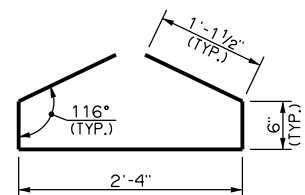
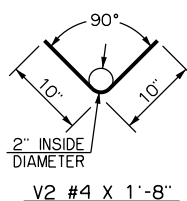
END SECTION



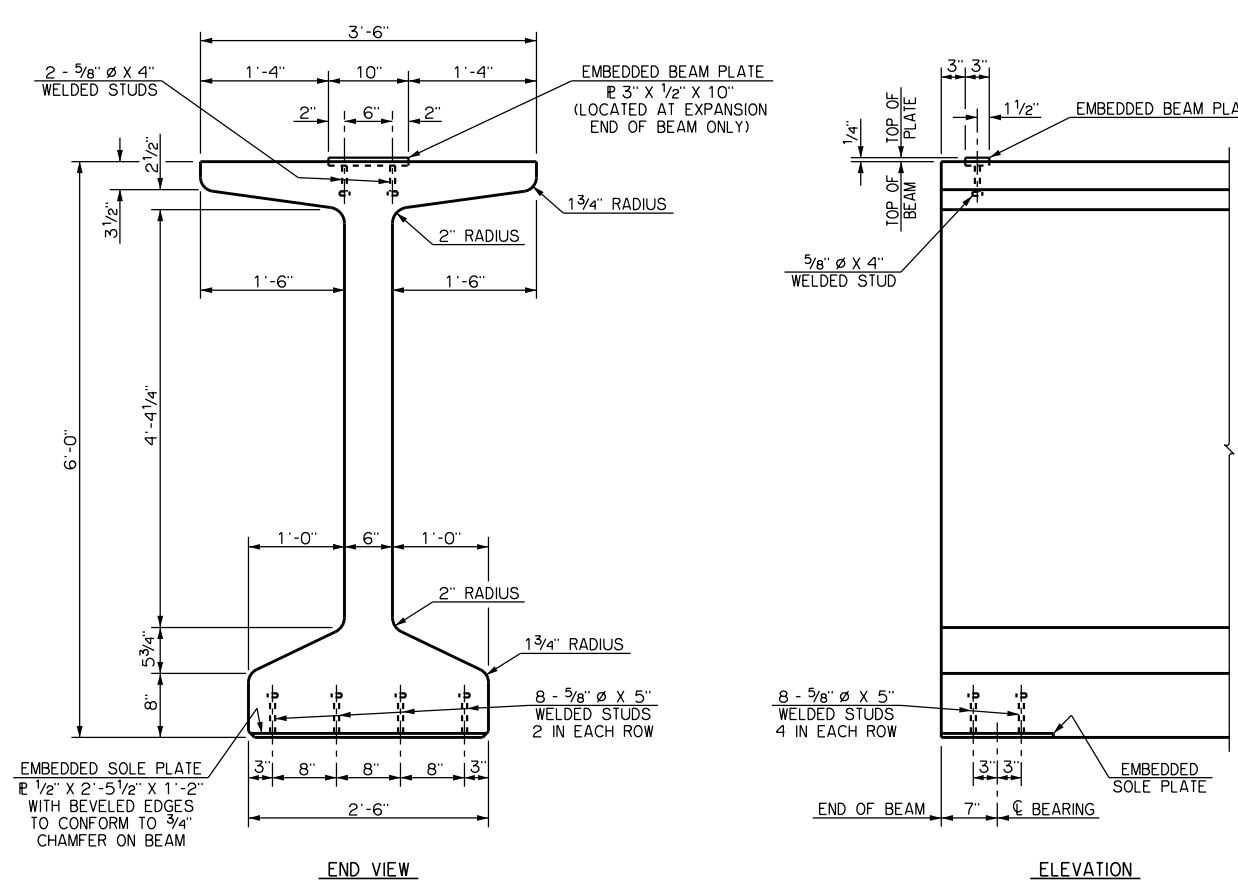
C SECTION

BEAM SECTIONS
(50 - 0.6" Ø STRANDS)

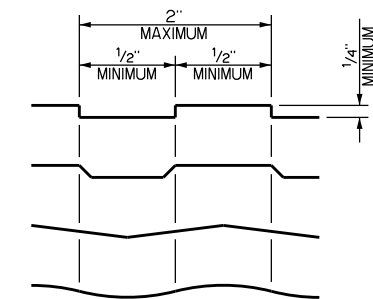
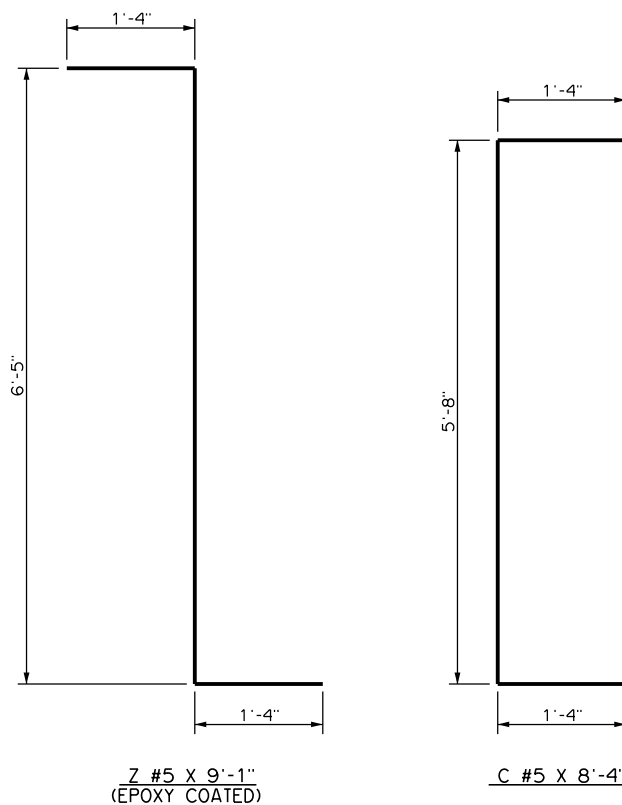
DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
F2	12'-0"
D3	6'-0"



DETAILS OF BENT REINFORCING STEEL



DETAILS OF EMBEDDED SOLE PLATE AND BEAM PLATE

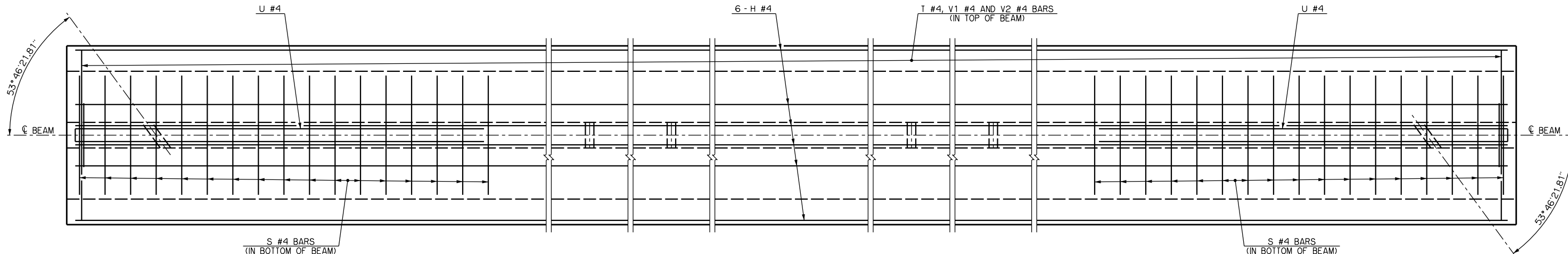


INTENTIONALLY ROUGHENED SURFACE EXAMPLES

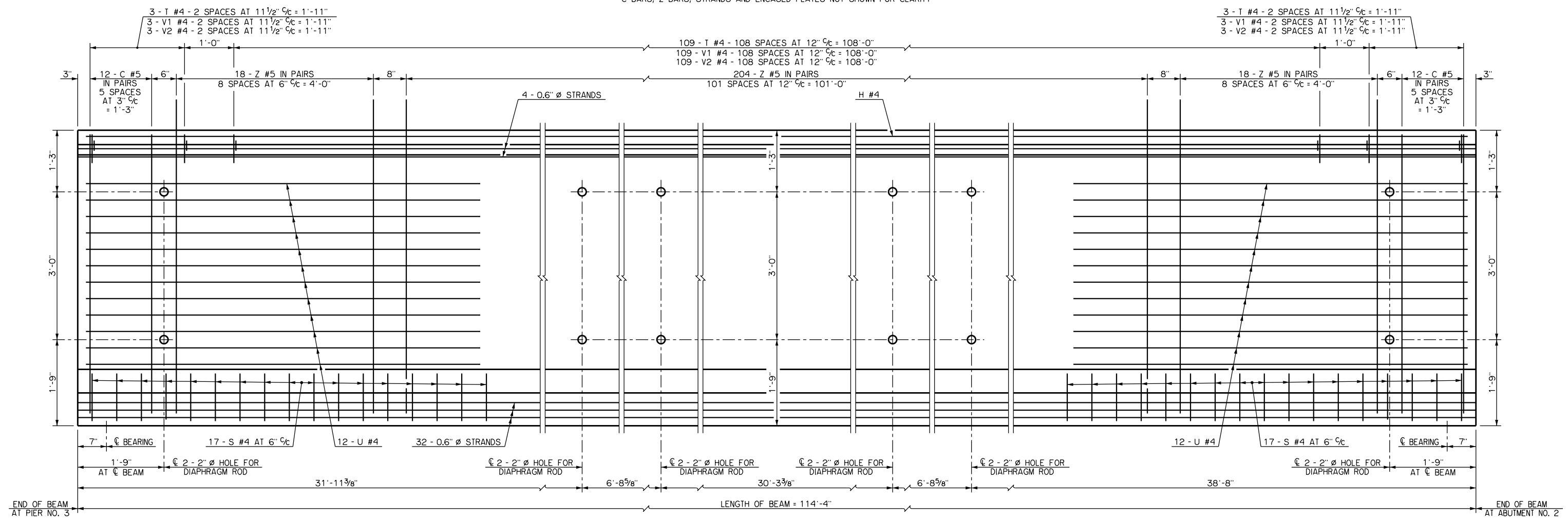
TOP SURFACE OF P.C. BEAMS SHALL BE INTENTIONALLY ROUGHENED TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. THE CREST AND TROUGH ASSOCIATED WITH THE HEIGHT SHALL NOT BE LESS THAN 1/2" AND SHALL EXTEND THE FULL WIDTH OF THE TOP FLANGE. ROUGHENED SURFACE MAY BE OBTAINED BY A SPECIAL TROWEL AS SHOWN IN THE EXAMPLES, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH OR BLASTING TO THE EXTENT THAT AGGREGATE IS EXPOSED TO A HEIGHT OF 1/4", OR BY ANOTHER METHOD APPROVED BY THE ENGINEER.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"

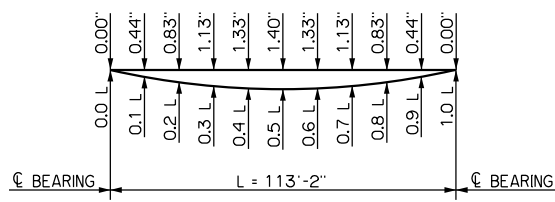
DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NOS. 2 AND 3
(SHEET NO. 2 OF 2)



PLAN
C BARS, Z BARS, STRANDS AND ENCASED PLATES NOT SHOWN FOR CLARITY



ELEVATION
ENCASED PLATES NOT SHOWN



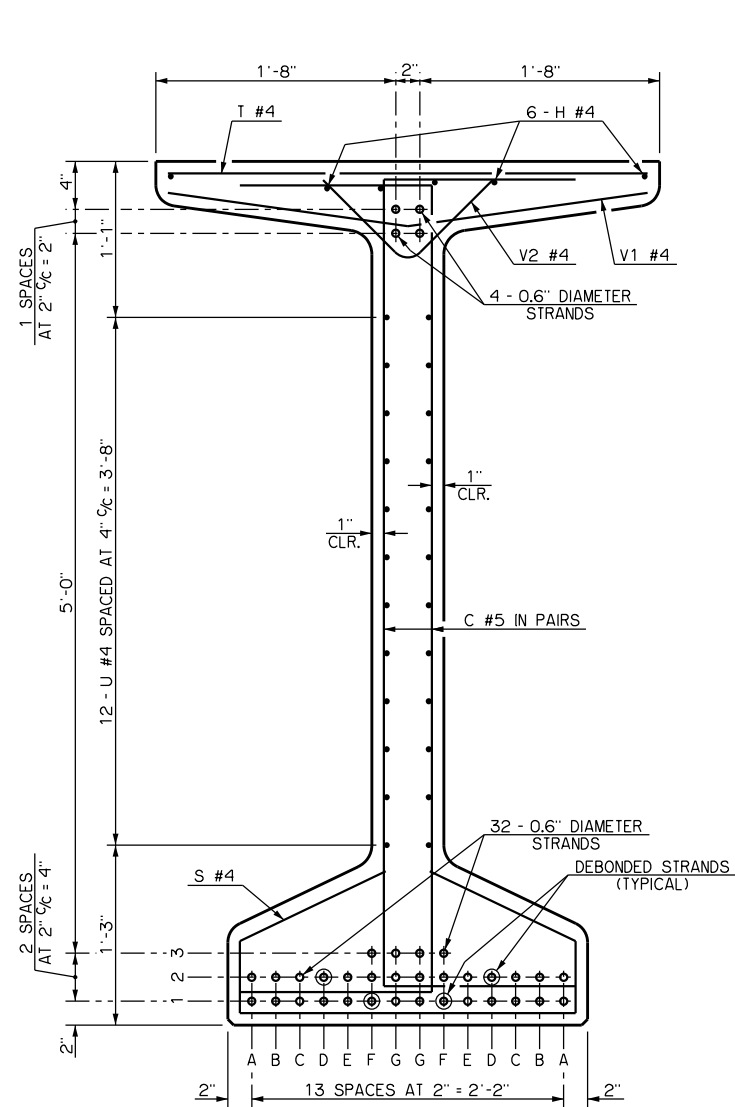
DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DIAPHRAGMS, A 5 PSF STEEL SIP FORMS ALLOWANCE, DECK SLAB, HAUNCH AND CONCRETE RAIL (TR4). THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

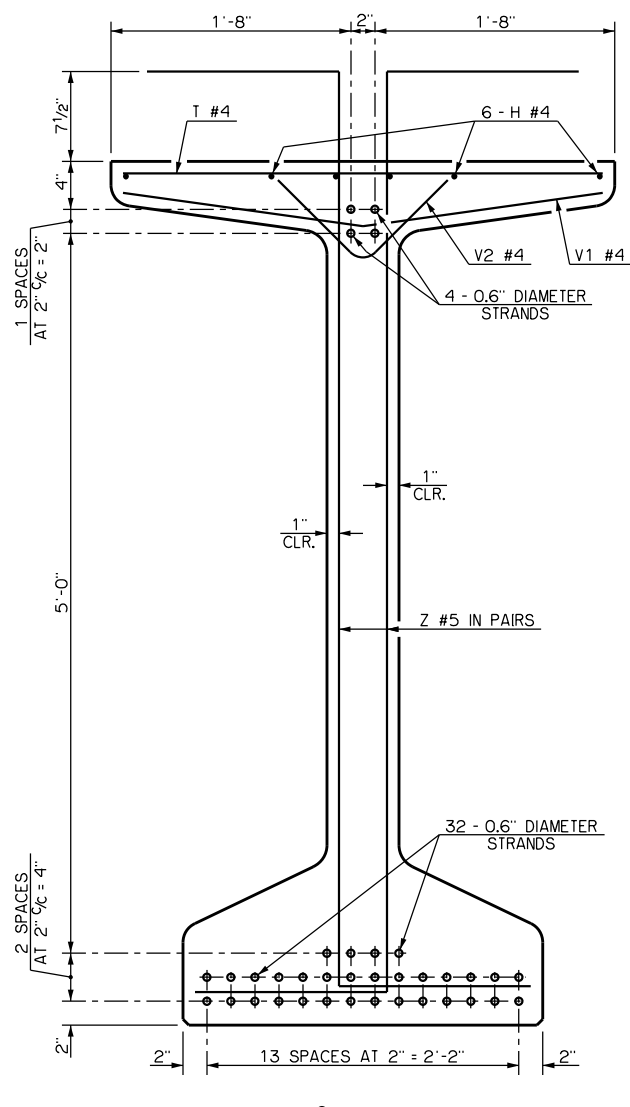
MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 5,250 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 7,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.
THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"
DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NO. 4
(SHEET NO. 1 OF 2)



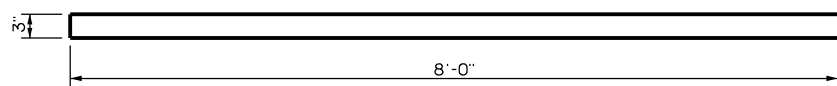
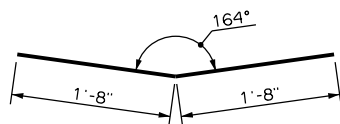
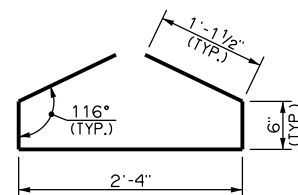
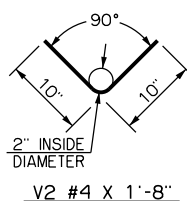
END SECTION



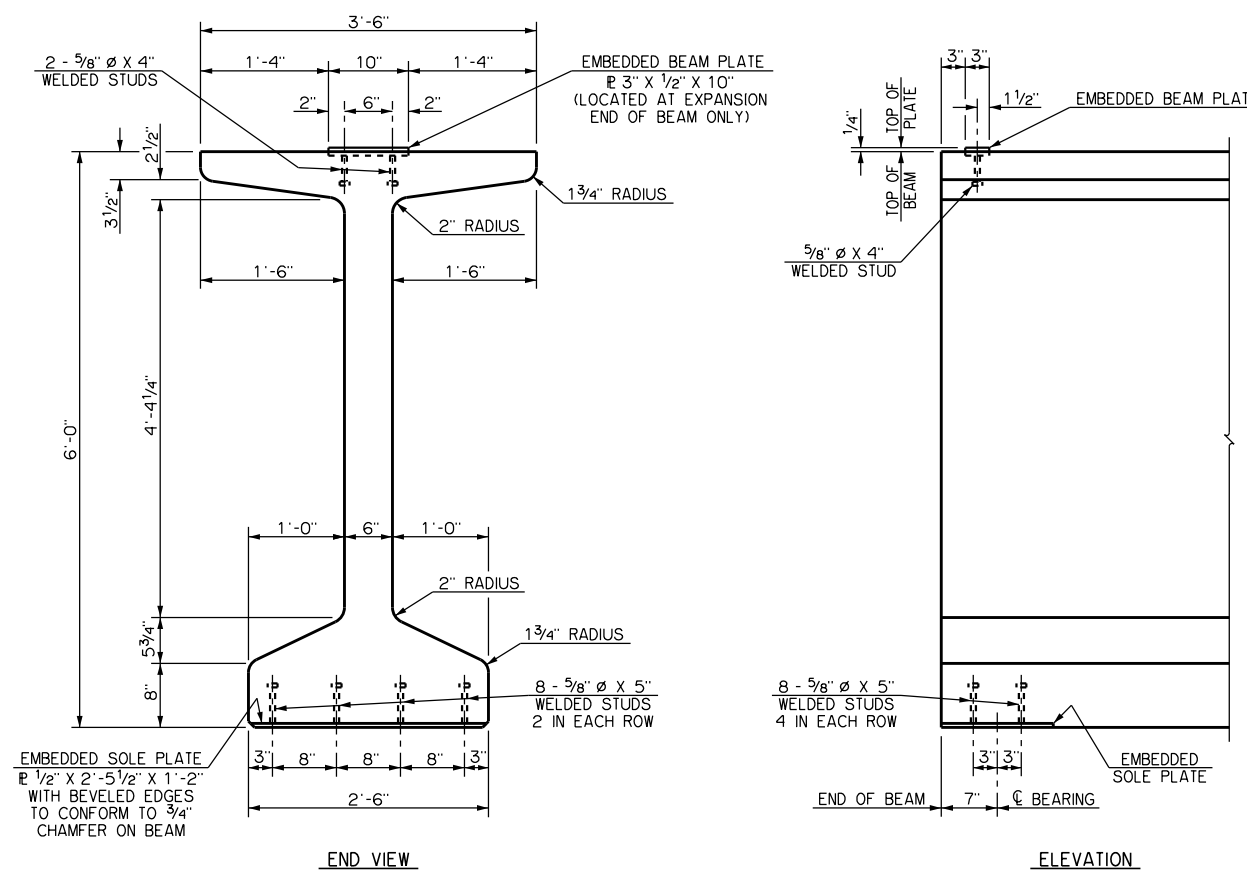
C SECTION

BEAM SECTIONS
(36 - 0.6" Ø STRANDS)

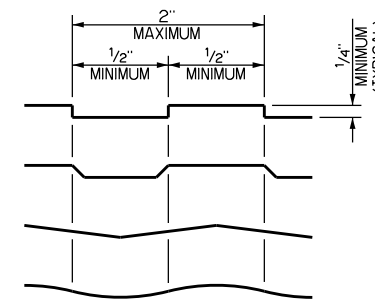
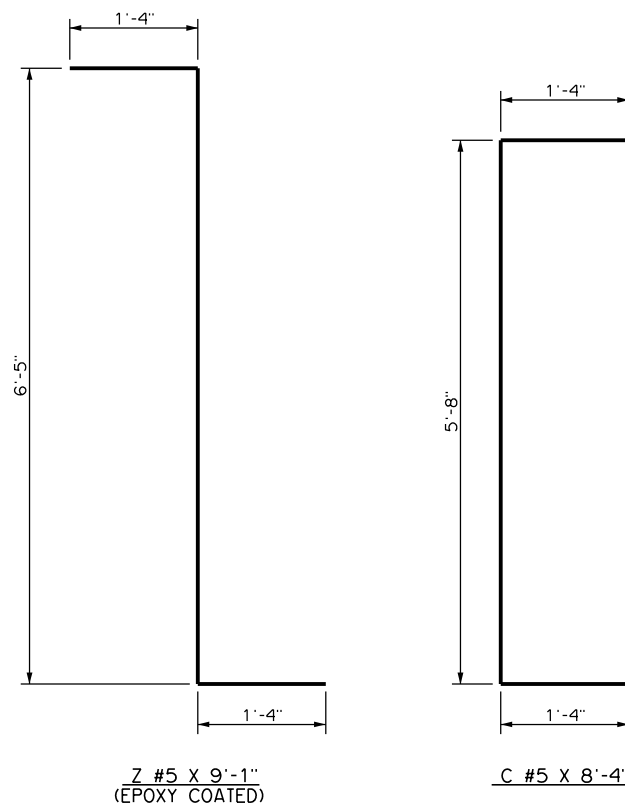
DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
F1	12'-0"
D2	4'-0"



DETAILS OF BENT REINFORCING STEEL



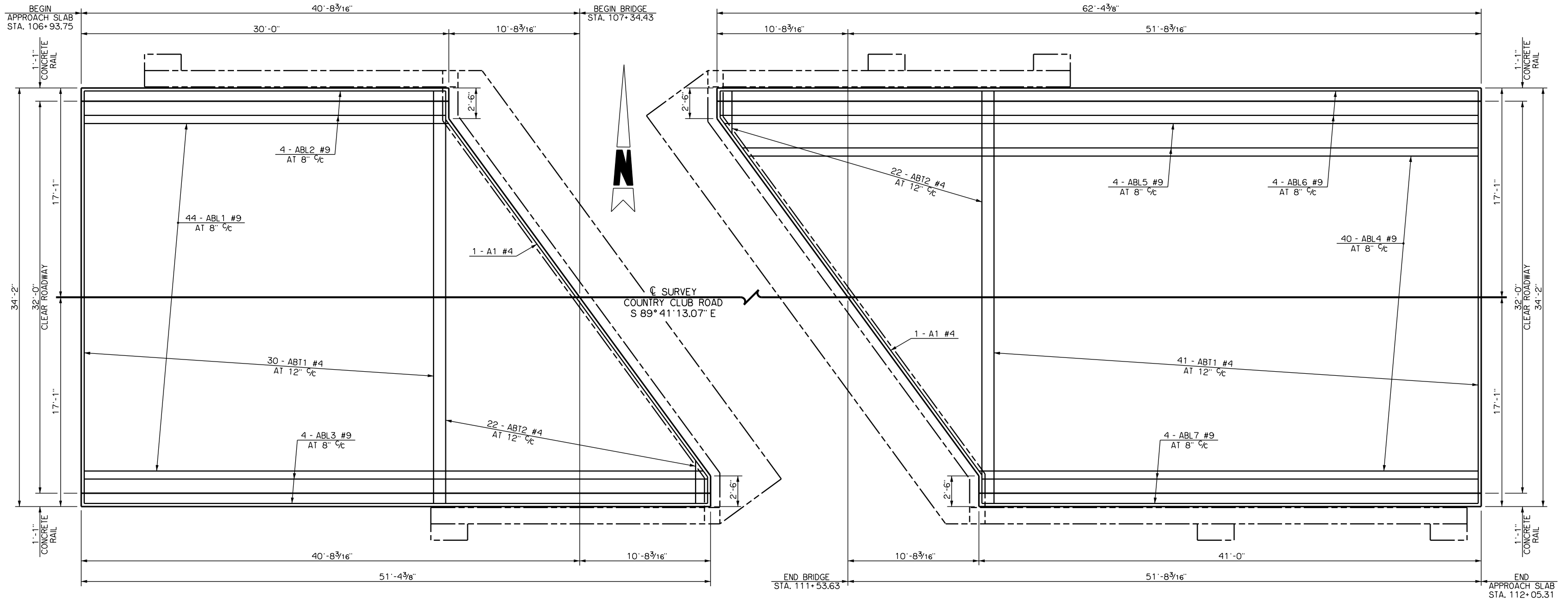
DETAILS OF EMBEDDED SOLE PLATE AND BEAM PLATE



INTENTIONALLY ROUGHENED SURFACE EXAMPLES

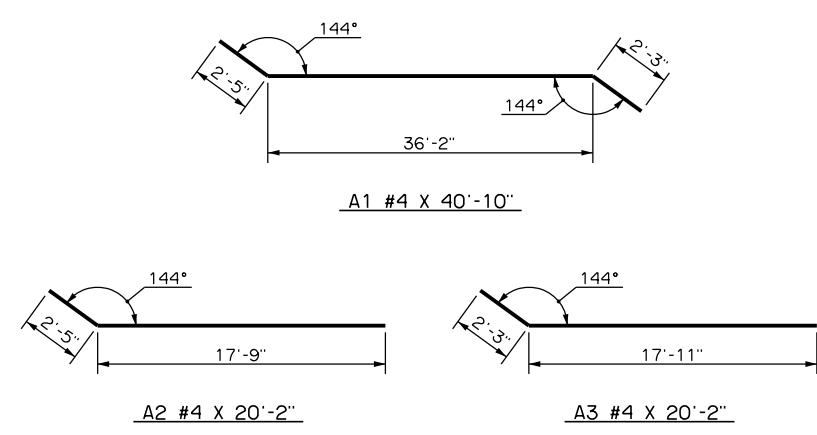
TOP SURFACE OF P.C. BEAMS SHALL BE INTENTIONALLY ROUGHENED TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. THE CREST AND TROUGH ASSOCIATED WITH THE HEIGHT SHALL NOT BE LESS THAN 1/2" AND SHALL EXTEND THE FULL WIDTH OF THE TOP FLANGE. ROUGHENED SURFACE MAY BE OBTAINED BY A SPECIAL TROWEL AS SHOWN IN THE EXAMPLES, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH OR BLASTING TO THE EXTENT THAT AGGREGATE IS EXPOSED TO A HEIGHT OF 1/4", OR BY ANOTHER METHOD APPROVED BY THE ENGINEER.

COUNTRY CLUB ROAD OVER US-81
BRIDGE "J"
DETAILS OF PRESTRESSED CONCRETE BEAMS
(TYPE J BT) IN SPAN NO. 4
(SHEET NO. 2 OF 2)



PLAN OF APPROACH SLAB AT ABUTMENT NO. 1
BOTTOM LAYER OF REINFORCING STEEL SHOWN

PLAN OF APPROACH SLAB AT ABUTMENT NO. 2
BOTTOM LAYER OF REINFORCING STEEL SHOWN



DETAILS OF BENT REINFORCING STEEL

BAR LIST - APPROACH SLAB AT ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
A1	#4	1	BNT.	40'-10"	-
A2	#4	1	BNT.	20'-2"	-
A3	#4	1	BNT.	20'-2"	-
ABL1	#9	44	STR.	40'-3 1/2" AVG.	29'-10" TO 50'-9"
ABL2	#9	4	STR.	29'-8"	-
ABL3	#9	4	STR.	51'-0"	-
ABT1	#4	30	STR.	33'-10"	-
ABT2	#4	22	STR.	17'-6" AVG.	3'-7" TO 31'-5"
ATL1	#4	36	STR.	19'-8"	-
ATL2	#4	15	STR.	15'-1 1/2" AVG.	10'-1" TO 20'-2"
ATL3	#4	3	STR.	9'-8"	-
ATL4	#4	15	STR.	25'-5 1/2" AVG.	20'-5" TO 30'-6"
ATL5	#4	3	STR.	31'-0"	-
ATT1	#4	74	STR.	16'-9"	-
ATT2	#4	11	STR.	7'-10" AVG.	1'-4" TO 14'-4"
ATT3	#4	10	STR.	9'-6" AVG.	3'-7" TO 15'-5"
SR1	#5	270	BNT.	4'-1"	-

BAR LIST - APPROACH SLAB AT ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
A1	#4	1	BNT.	40'-10"	-
A2	#4	1	BNT.	20'-2"	-
A3	#4	1	BNT.	20'-2"	-
ABL4	#9	40	STR.	50'-4" AVG.	40'-10" TO 59'-10"
(1) ABL5	#9	4	STR.	66'-5" AVG.	65'-8" TO 67'-2"
(1) ABL6	#9	4	STR.	67'-5"	-
ABL7	#9	4	STR.	40'-8"	-
ABT1	#4	41	STR.	33'-10"	-
ABT2	#4	22	STR.	17'-6" AVG.	3'-7" TO 31'-5"
ATL1	#4	54	STR.	19'-8"	-
ATL6	#4	15	STR.	16'-5 1/2" AVG.	11'-5" TO 21'-6"
ATL7	#4	3	STR.	22'-0"	-
ATL8	#4	15	STR.	26'-1 1/2" AVG.	21'-1" TO 31'-2"
ATL9	#4	3	STR.	20'-8"	-
ATT1	#4	97	STR.	16'-9"	-
ATT2	#4	11	STR.	7'-10" AVG.	1'-4" TO 14'-4"
ATT3	#4	10	STR.	9'-6" AVG.	3'-7" TO 15'-5"
SR1	#5	342	BNT.	4'-1"	-

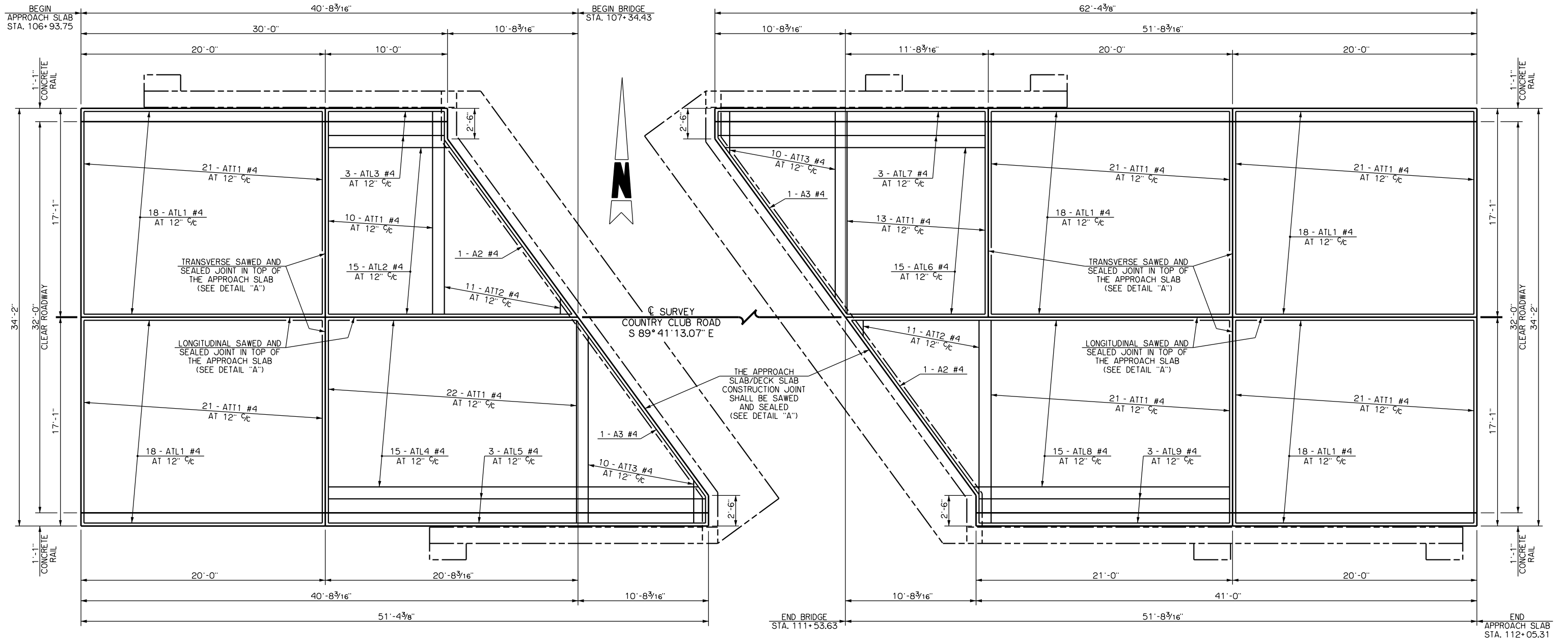
(1) LENGTH INCLUDES ONE 5'-4" LAP, LAPS SHALL BE STAGGERED

SUMMARY OF QUANTITIES - APPROACH SLAB				
ITEM	UNIT	ABUT. NO 1	ABUT. NO 2	
(1) APPROACH SLAB	SY	154.50	196.30	
SAW-CUT GROOVING	SY	145.00	184.00	
CONCRETE RAIL (TR4)	LF	81.40	103.40	
WATER REPELLENT (VISUALLY INSPECTED)	SY	38.00	46.00	

(1) QUANTITY INCLUDES ALL COSTS OF CONCRETE, EPOXY COATED REINFORCING STEEL INCLUDING SR1 BARS, BACKER ROD, RAPID CURE JOINT SEALANT, PREFORMED EXPANSION JOINT FILLER, SAWING, GRINDING AND FINAL GRADING OF SUB-GRADE INCLUDING EMBANKMENT AND EXCAVATION FOR THE APPROACH SLAB.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

DETAILS OF APPROACH SLABS
(SHEET NO. 1 OF 2)

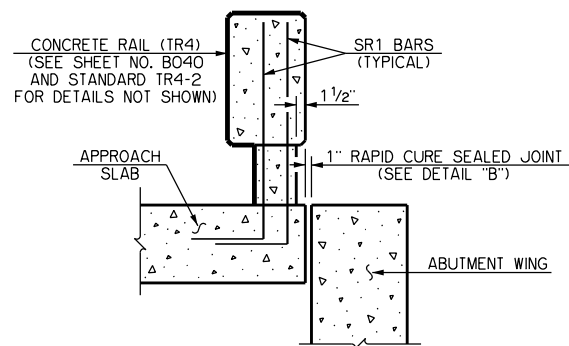


PLAN OF APPROACH SLAB AT ABUTMENT NO. 1

TOP LAYER OF REINFORCING STEEL SHOWN

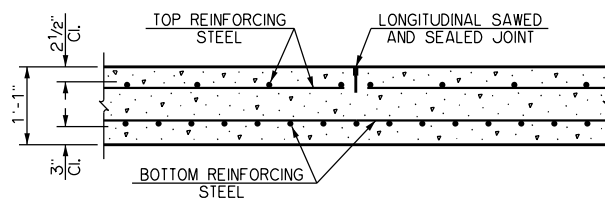
PLAN OF APPROACH SLAB AT ABUTMENT NO. 2

TOP LAYER OF REINFORCING STEEL SHOWN



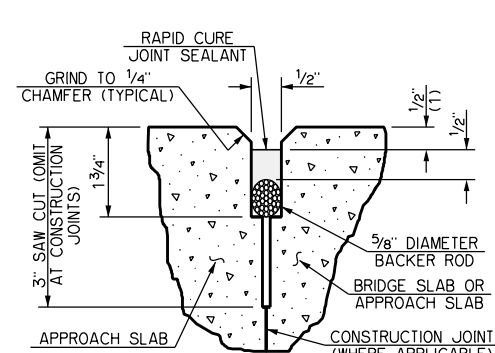
DETAIL OF APPROACH SLAB AT ABUTMENT WING

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLANT SURFACE TREATMENT.



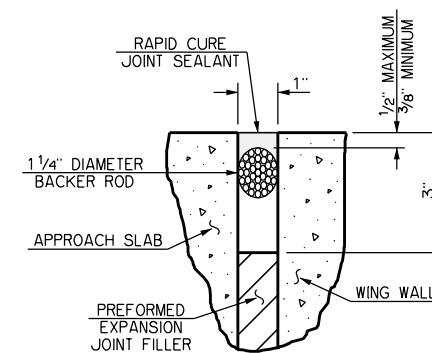
SECTION THROUGH APPROACH SLAB

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" EITHER SIDE OF THE LONGITUDINAL SAWED AND SEALED JOINT.



DETAIL "A"

(1) THIS DIMENSION SHALL TAPER FROM 1/2" AT EDGE OF DRIVING LANE/SHOULDER TO 1/8" AT CONCRETE RAIL FOR TRANSVERSE JOINTS ONLY.



DETAIL "B"

NOTES

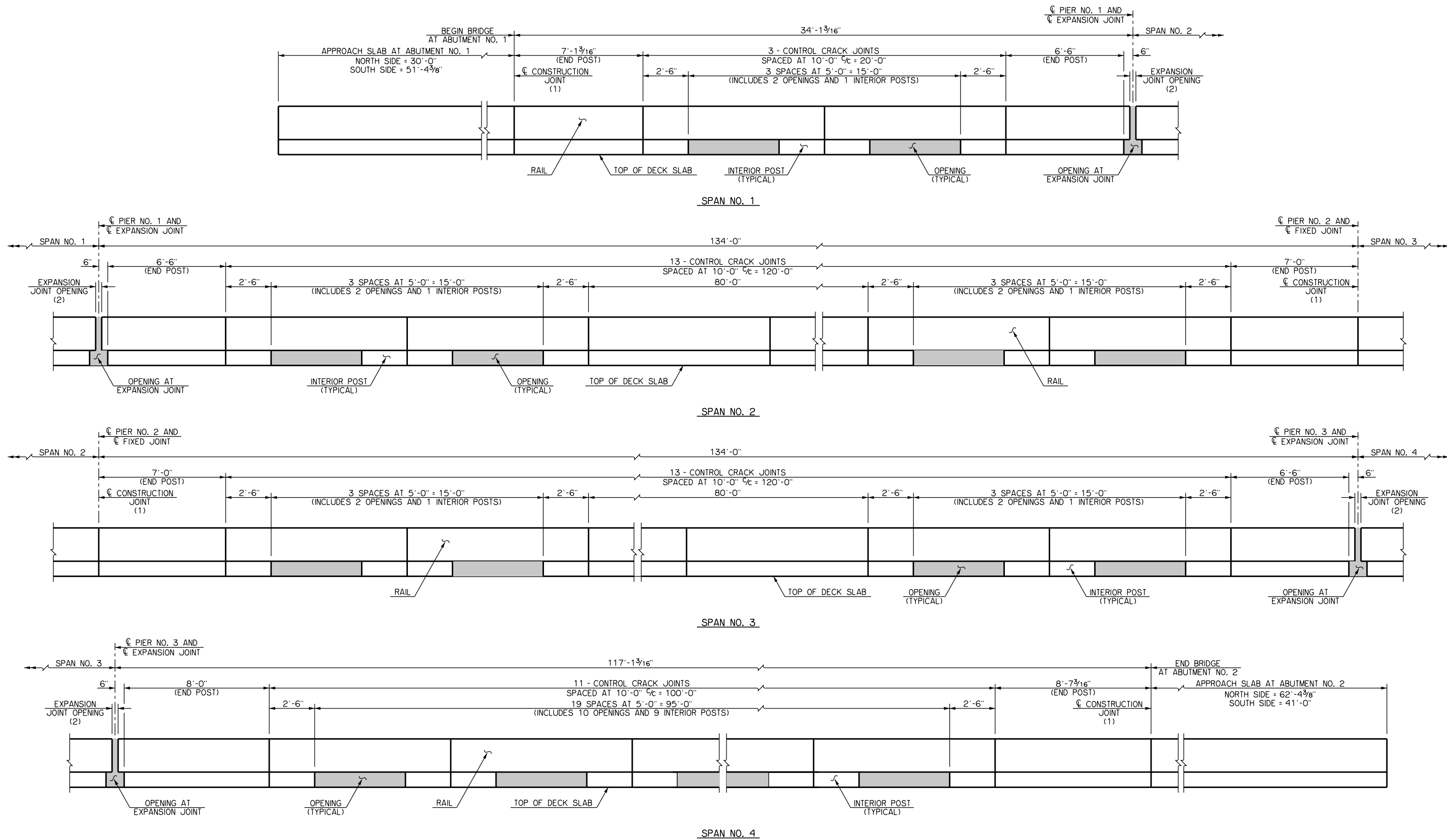
THE 'SR1' BARS PROJECTING FROM THE APPROACH SLABS INTO THE CONCRETE RAIL (TR4) HAVE BEEN OMITTED IN THE APPROACH SLAB PLAN VIEWS FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B040 FOR PLACEMENT OF 'SR1' BARS.

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" ON EACH SIDE OF THE LONGITUDINAL JOINTS.

DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS AND CONTRACTION JOINTS.

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

**DETAILS OF APPROACH SLABS
(SHEET NO. 2 OF 2)**

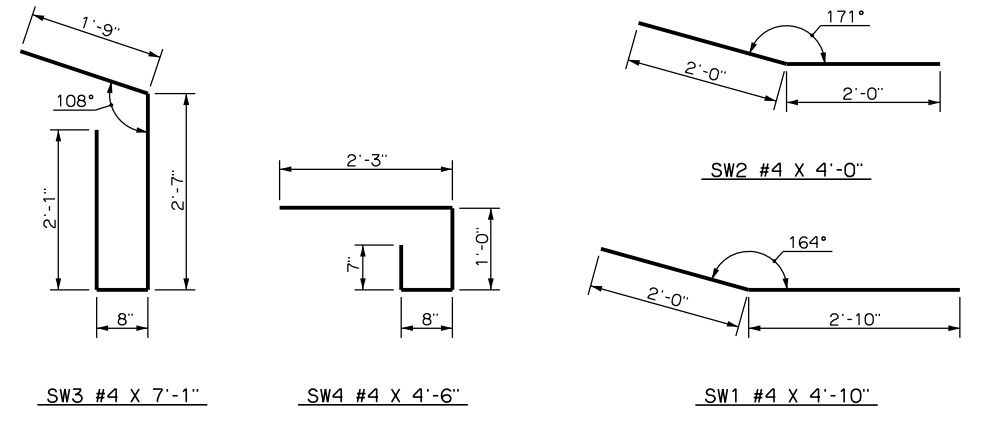
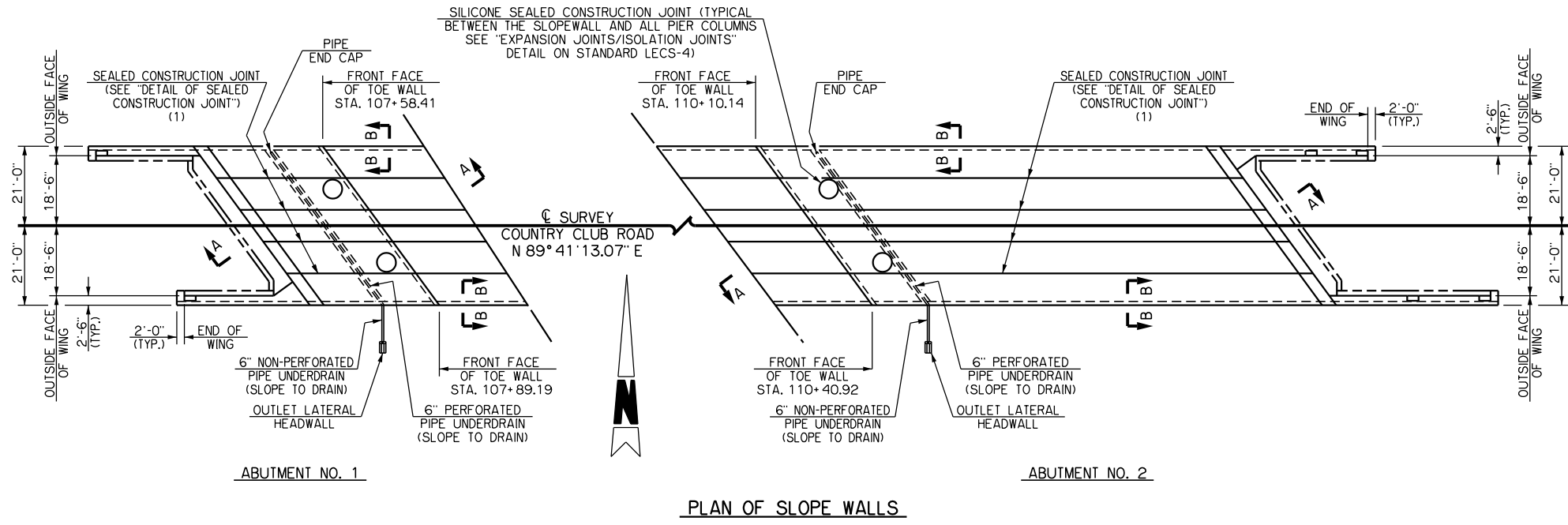


NOTES

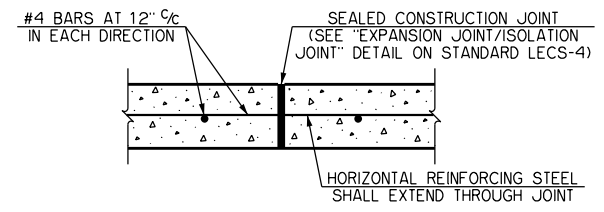
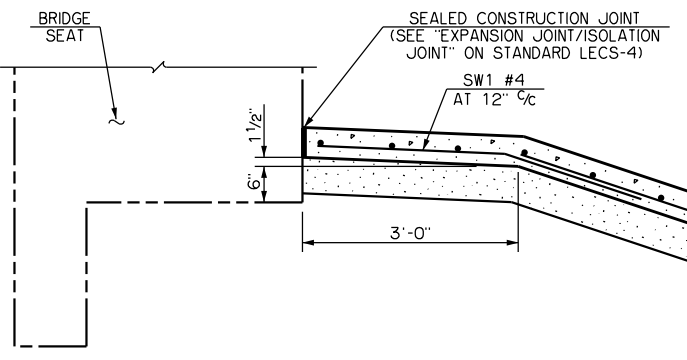
- (1) HORIZONTAL REINFORCING STEEL SHALL END 2" EACH SIDE OF CONSTRUCTION JOINTS.
 - (2) EXPANSION JOINT OPENING IN THE CONCRETE RAIL SHALL MATCH THE EXPANSION JOINT OPENING IN THE DECK SLAB.
- THE CONCRETE RAIL LAYOUT IS TYPICAL ALONG EACH SIDE OF THE BRIDGE DECK. SEE STANDARD TR4-2 FOR ADDITIONAL DIMENSIONS, DETAILS AND INFORMATION.

COUNTRY CLUB ROAD OVER US-81
 BRIDGE 'J'

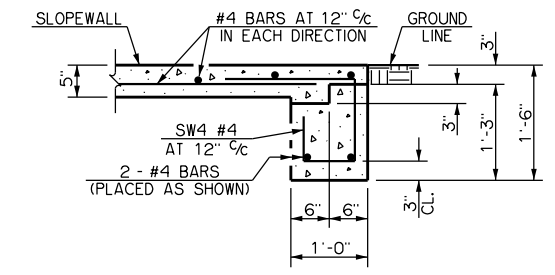
LAYOUT OF CONCRETE RAIL (TR4)



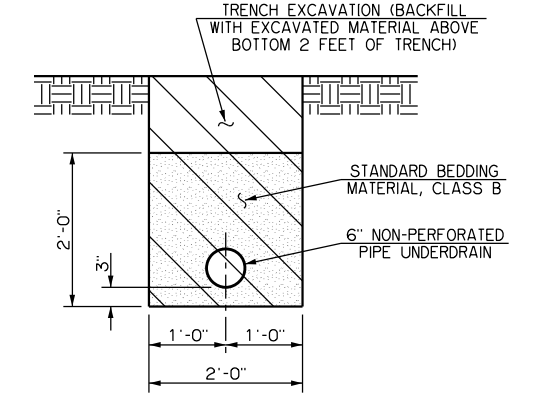
DETAILS OF BENT REINFORCING STEEL



DETAIL OF SEALED CONSTRUCTION JOINT



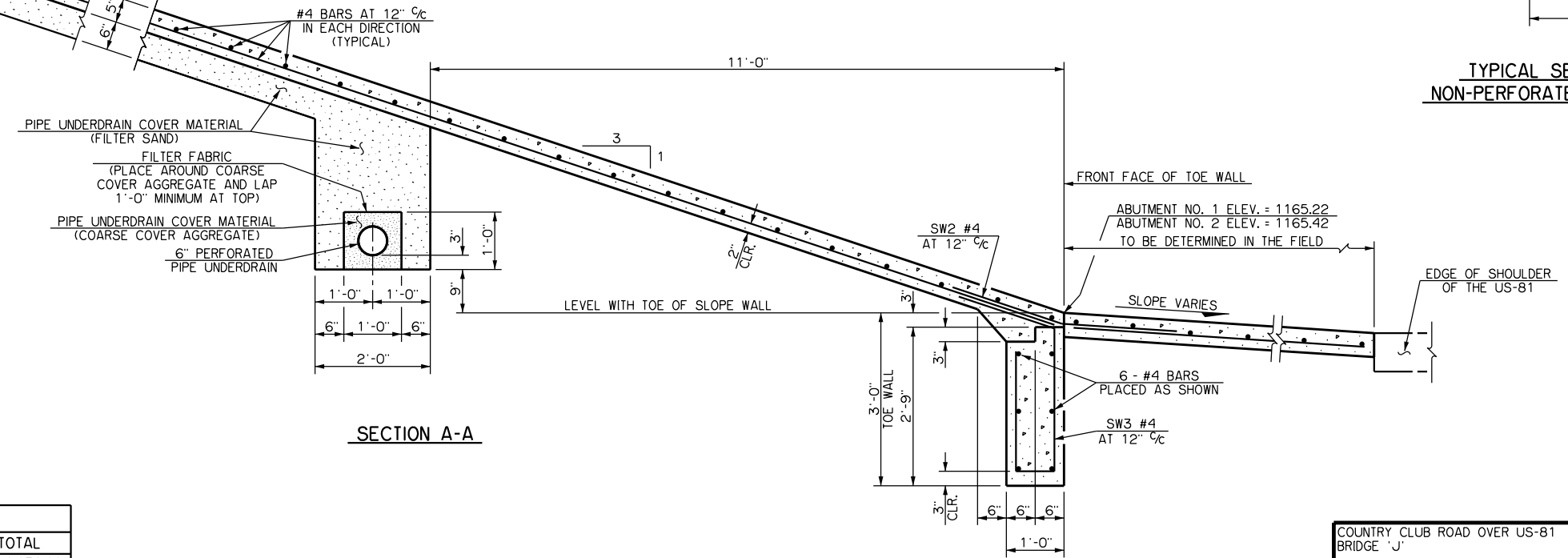
SECTION B-B



TYPICAL SECTION THROUGH NON-PERFORATED PIPE UNDERDRAIN

NOTES

- INSTALLATION OF THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS PUD-3 AND PED-3.
- (1) PLACEMENT OF VERTICAL CONSTRUCTION JOINTS IN THE SLOPE WALL SHALL BE LOCATED AS SHOWN IN THE PLAN VIEW. ANY CHANGES SHALL NOT EXCEED 10'-0" WIDE AND SHALL BE APPROVED BY THE ENGINEER. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE ALLOWED IN THE SLOPE WALL.
- (2) INCLUDES ALL COST OF EXCAVATION, EMBANKMENT, CONCRETE, REINFORCING STEEL, SILICONE JOINT SEALER, BACKER ROD AND PREFORMED EXPANSION JOINT FILLER.
- (3) INCLUDES ALL COST OF EXCAVATION, PERFORATED PIPE, PIPE FITTINGS, PIPE CAPS, FILTER FABRIC AND ALL PIPE UNDERDRAIN COVER MATERIAL SHOWN INCLUDING 6" THICKNESS BELOW SLOPE WALL.
- (4) INCLUDES ALL COST OF TRENCH EXCAVATION, NON-PERFORATED PIPE, PIPE FITTINGS, PIPE RODENT SCREENS AND BACKFILLING OF TRENCHES.



SECTION A-A

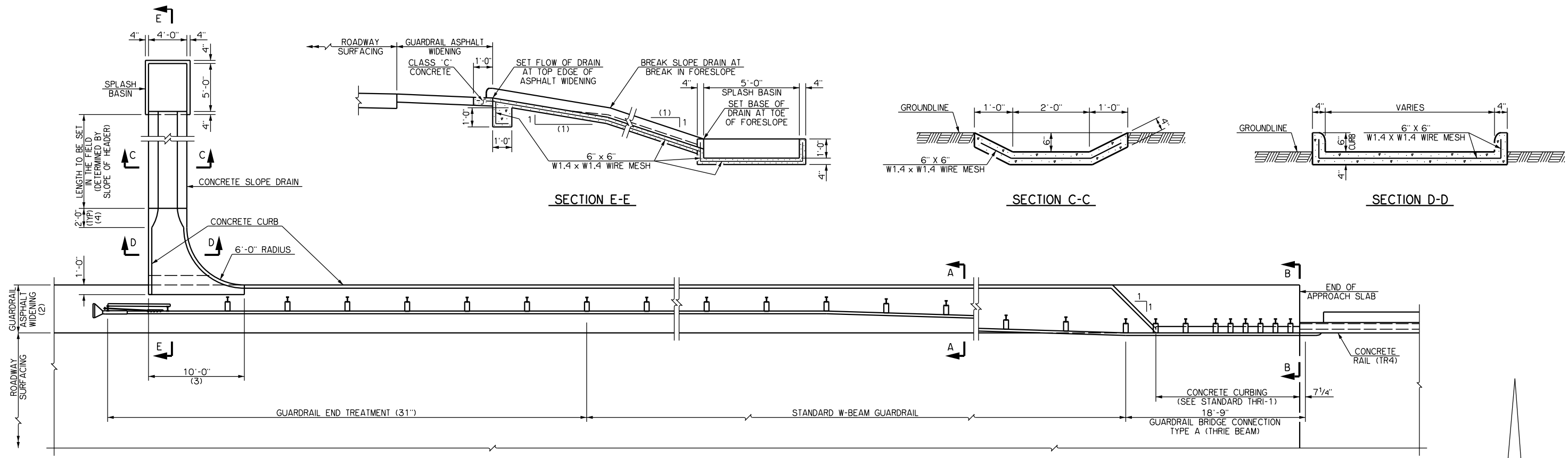
SUMMARY OF QUANTITIES - SLOPEWALL				
ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
(2) SLOPE WALL (5")	SY	301.00	737.00	1,038.00
(3) 6" PERFORATED PIPE UNDERDRAIN ROUND	LF	50.00	50.00	100.00
(4) 6" NON-PERF. PIPE UNDERDRAIN RND.	LF	9.00	9.00	18.00
OUTLET LATERAL HEADWALL	EA	1.00	1.00	2.00

COUNTRY CLUB ROAD OVER US-81
BRIDGE 'J'

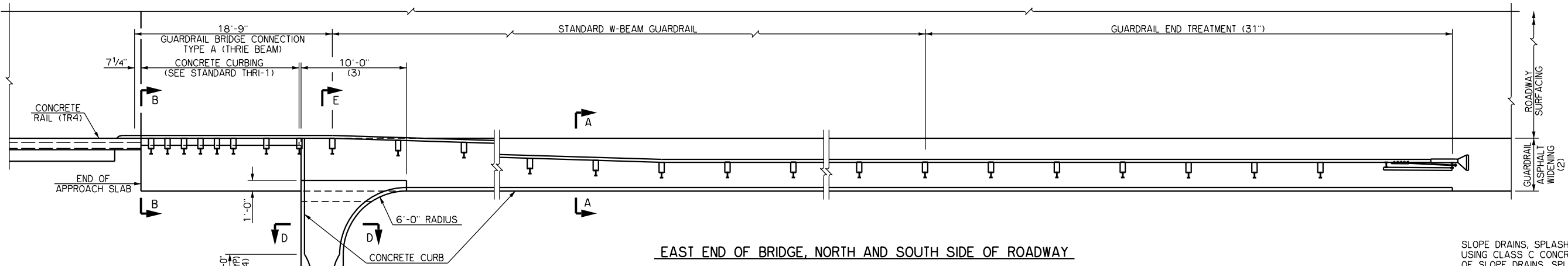
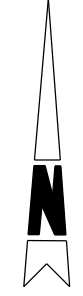
DETAILS OF SLOPEWALL

State Job No. 24428(12) Sheet No. B041

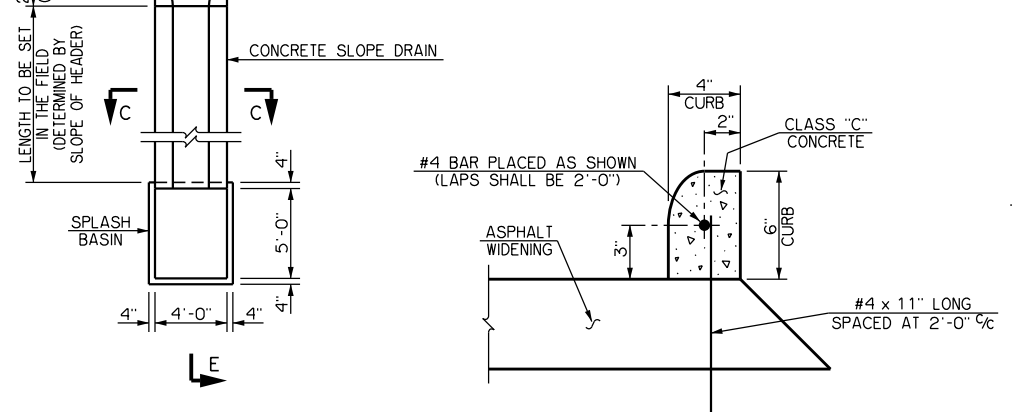
US 81 REALIGNMENT
GRADY COUNTY



WEST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY



EAST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY

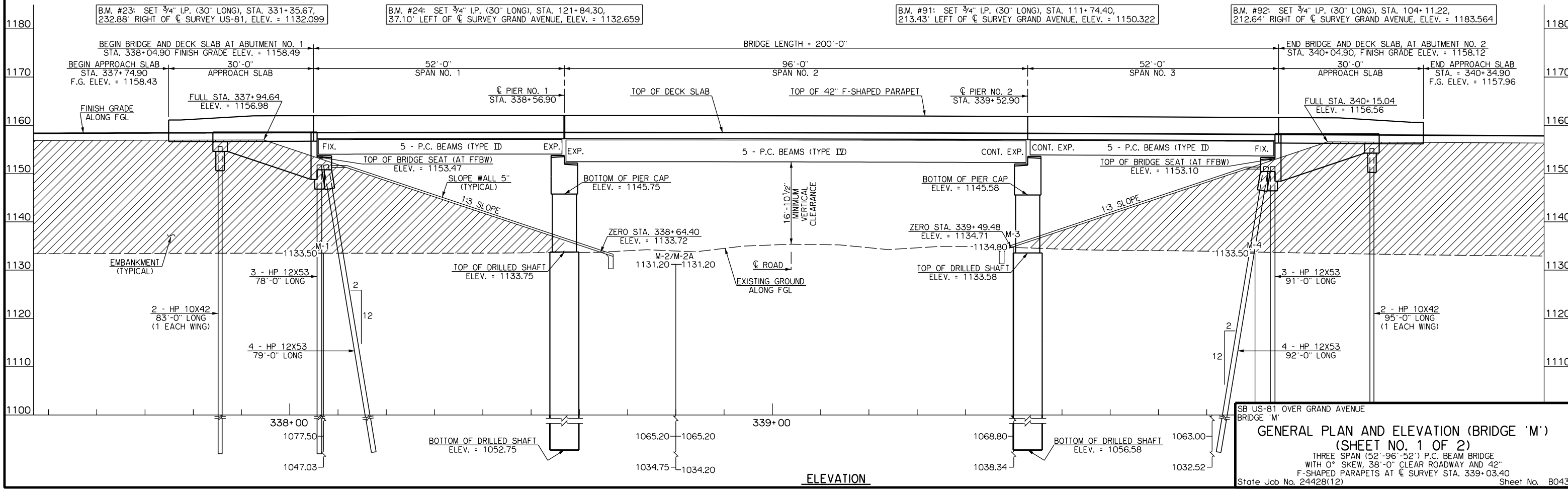
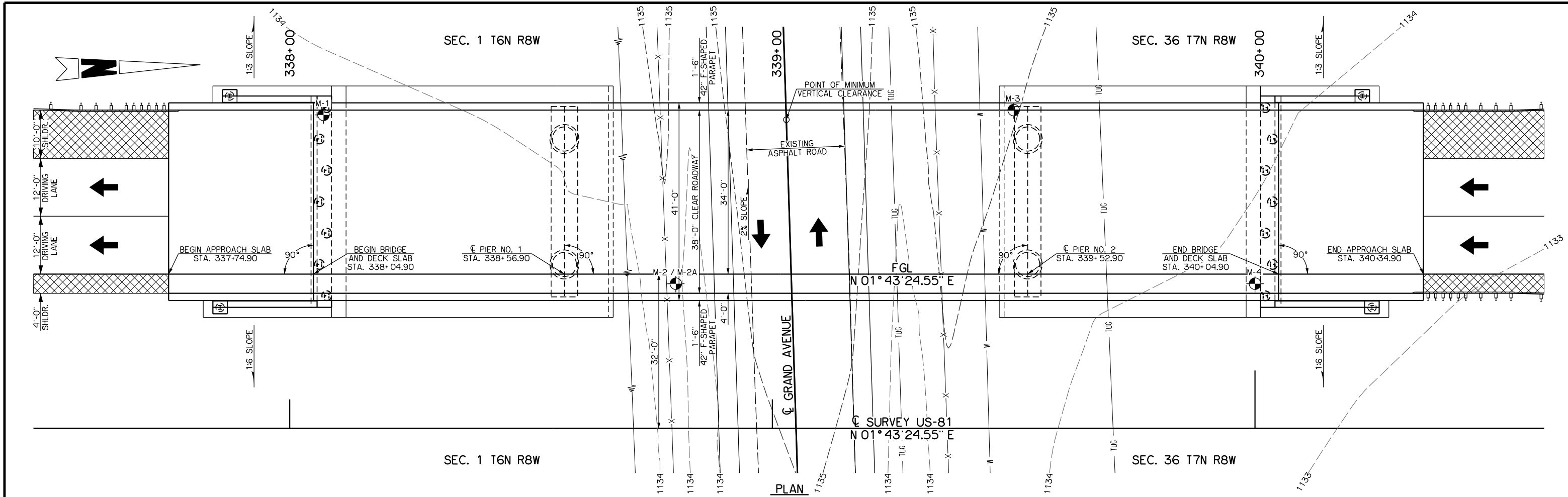


NOTES

- SLOPE DRAINS, SPLASH BASINS AND CURBS SHALL BE CONSTRUCTED USING CLASS C CONCRETE AS SHOWN ON THIS SHEET. ALL COSTS OF SLOPE DRAINS, SPLASH BASINS AND CURBS INCLUDING THE COST OF CONCRETE, REINFORCING STEEL BARS AND WIRE MESH, ASPHALT REMOVAL, EXCAVATION, BACKFILLING, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF "CLASS C CONCRETE."
- (1) SLOPE TO MATCH FORESLOPE.
- (2) ASPHALT WIDENING SHALL BE IN ACCORDANCE WITH STANDARD GHW1-1 EXCEPT AS SHOWN ON THIS SHEET. ALL COSTS OF THE ASPHALT WIDENING SHALL BE INCLUDED IN ROADWAY PAY ITEMS.
- (3) A 1'-0" WIDE X 10'-0" LONG PORTION OF THE GUARDRAIL ASPHALT WIDENING SHALL BE REMOVED AS SHOWN. CLASS 'C' CONCRETE SHALL REPLACE THIS AREA AS A PART OF THE SLOPE DRAIN CONSTRUCTION.
- (4) THE CONCRETE CURB SHALL TRANSITION INTO THE 1:2 SIDE SLOPE PORTION OF THE SLOPE DRAIN WITHIN THIS 2'-0" DIMENSION.

COUNTRY CLUB ROAD OVER US-81
 BRIDGE 'J'

DETAILS OF DRAINS AT ENDS OF BRIDGE



SB US-81 OVER GRAND AVENUE
 BRIDGE 'M'
GENERAL PLAN AND ELEVATION (BRIDGE 'M')
(SHEET NO. 1 OF 2)
 THREE SPAN (52'-96'-52') P.C. BEAM BRIDGE
 WITH 0° SKEW, 38'-0" CLEAR ROADWAY AND 42"
 F-SHAPED PARAPETS AT \angle SURVEY STA. 339+03.40
 State Job No. 24428(12) Sheet No. B043

GRADY COUNTY

SUMMARY OF QUANTITIES - BRIDGE 'M'							
ITEM	UNIT	ABUTMENTS	PIERS	SUPERSTRUCTURE	APPROACH SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	250.00	-	-	-	-	250.00
CLSM BACKFILL	CY	174.00	-	-	-	-	174.00
PRESTRESSED CONCRETE BEAMS (TYPE ID)	LF	-	-	505.00	-	-	505.00
PRESTRESSED CONCRETE BEAMS (TYPE IID)	LF	-	-	476.67	-	-	476.67
APPROACH SLAB	SY	-	-	-	273.40	-	273.40
SAW-CUT GROOVING	SY	-	-	845.00	254.00	-	1,099.00
SEALED EXPANSION JOINT	LF	-	-	42.00	-	-	42.00
42" F-SHAPED PARAPET	LF	-	-	399.50	120.00	-	519.50
STRUCTURAL STEEL	LB	-	-	1,350.00	-	-	1,350.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	10.00	-	-	10.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	20.00	-	-	20.00
CLASS AA CONCRETE	CY	-	-	223.90	-	-	223.90
CLASS A CONCRETE	CY	87.40	151.80	-	-	-	239.20
SLOPE WALL (5')	SY	-	-	-	-	656.00	656.00
REINFORCING STEEL	LB	-	980.00	-	-	-	980.00
EPOXY COATED REINFORCING STEEL	LB	10,680.00	15,740.00	57,050.00	-	-	83,470.00
PILES, FURNISHED (HP 10X42)	LF	356.00	-	-	-	-	356.00
PILES, FURNISHED (HP 12X53)	LF	1,191.00	-	-	-	-	1,191.00
PILES, DRIVEN (HP 10X42)	LF	356.00	-	-	-	-	356.00
PILES, DRIVEN (HP 12X53)	LF	1,191.00	-	-	-	-	1,191.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	90.00	204.00	629.00	60.00	-	983.00
DRILLED SHAFT 72" DIAMETER	LF	-	316.00	-	-	-	316.00
SEALER CRACK PREPARATION	LF	-	-	38.00	-	-	38.00
SEALER RESIN	GAL	-	-	0.50	-	-	0.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	82.00	-	-	-	92.00	174.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	44.00	-	-	-	22.00	66.00
OUTLET LATERAL HEADWALL	EA	-	-	-	-	2.00	2.00

STRUCTURAL AND FOUNDATION DESIGN DATA

MATERIAL:
 CLASS A CONCRETE, f'c = 3 KSI
 CLASS AA CONCRETE, f'c = 4 KSI
 REINFORCING STEEL, fy = 60 KSI
 STRUCTURAL STEEL M270 (GRADE 50W), Fy = 50 KSI
 STAINLESS STEEL A240 (TYPE 316), Fy = 30 KSI

LOADING:
 HL-93 OR OKLAHOMA OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE
 5 PSF STAY-IN-PLACE FORMS

DESIGN:
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
 7TH EDITION WITH 2015 INTERIMS
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

HL-93 INVENTORY RATING FACTOR: 1.00
 HL-93 OPERATING RATING FACTOR: 1.30

ABUTMENTS (HP 12X53 PILING)

ABUTMENTS NO. 1 2
 MAXIMUM FACTORED PILE LOAD (TONS/PILE) = 72 72

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN IN THE PLANS. IF THE MAXIMUM FACTORED PILE LOAD IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE MAXIMUM FACTORED PILE LOAD IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN IN THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIERS

PIER NO. 1 2
 DRILLED SHAFTS DIAMETER (INCHES) = 72 72
 FACTORED REACTION (TONS/SHAFT) = 725 714
 NOMINAL UNIT BEARING RESISTANCE (TSF) = 60.0 60.0
 BEARING RESISTANCE FACTOR = 0.70 0.70
 FACTORED BEARING RESISTANCE (TONS/SHAFT) = 1187 1187
 NOMINAL UNIT FRICTION RESISTANCE (TSF) = 5.8 5.8
 FRICTION RESISTANCE FACTOR = 0.45 0.45
 FACTORED FRICTION RESISTANCE (TONS/SHAFT) = 344 344
 DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET) = 5 5
 TOTAL FACTORED RESISTANCE (TONS/SHAFT) = 1531 1531

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
ABO1, ABO4	NOTES AND SUMMARY OF QUANTITIES (BRIDGES)
B043, B044	GENERAL PLAN AND ELEVATION (BRIDGE 'M')
B045- B047	FOUNDATION BORING LOGS
B048	SUBSTRUCTURE STAKING DIAGRAM
B049, B050	DETAILS OF ABUTMENT NO. 1
B051, B052	DETAILS OF ABUTMENT NO. 2
B053	DETAILS OF ABUTMENT NOS. 1 AND 2
B054	DETAILS OF WINGS AT ABUTMENT NO. 1
B055	DETAILS OF WINGS AT ABUTMENT NO. 2
B056	DETAILS OF PIER NO. 1
B057	DETAILS OF PIER NO. 2
B058, B059	DETAILS OF PIER NOS. 1 AND 2
B060- B063	DETAILS OF SUPERSTRUCTURE
B064	DETAILS OF BEARING ASSEMBLIES
B065	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE IID IN SPAN NOS. 1 AND 3)
B066	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE IID IN SPAN NO. 2)
B067	DETAILS OF APPROACH SLABS
B068	LAYOUT OF 42" F-SHAPED PARAPET
B069	DETAILS OF SLOPE WALLS
B070	DETAILS OF DRAINS AT ENDS OF BRIDGE

REQUIRED STANDARD DRAWINGS

ROADWAY	BRIDGE
LECS-4-2	FSHP-42-2-OOE
LTU-4-0	EJ-SQ-04E
PED-3-2	EJ-DTL-02E
PUD-3-3	HP1-2-01E
	B40-C-ABUT-MISC-01E

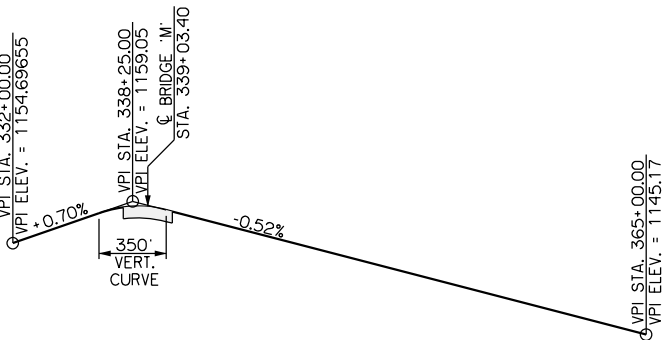
UTILITIES

TELEPHONE:
 CHICKASAW TELEPHONE CO. - (580) 618-5455
 SOUTHWESTERN BELL - (800) 522-6543
 AT&T - (800) 778-9140
 DOBSON TECHNOLOGIES - (800) 778-9140
 INTELLEO COMMUNICATIONS - (800) 335-4343
 MEDICINE PARK TELEPHONE CO. - (580) 529-2700

ELECTRIC:
 AEP PUBLIC SERVICE CO. OF OKLAHOMA - (888) 216-3523
 OKLAHOMA ELECTRIC COOPERATIVE - (405) 321-2024

WATER AND SANITARY SEWER:
 CITY OF CHICKASHA PUBLIC WORKS - (405) 222-6080
 RURAL WATER DISTRICT #6 - (405) 459-6626
 RURAL WATER DISTRICT #7 - (405) 779-6224

GAS AND PETROLEUM PIPELINES:
 ENABLE MIDSTREAM - (800) 522-8048
 CONTINUUM ENERGY - (877) 587-0026
 DCP MIDSTREAM - (800) 435-1679
 UNIT PETROLEUM - (918) 493-7700
 SUNOCO LOGISTICS - (800) 753-5531
 KEPSCO OPERATING INC. - (855) 421-2088



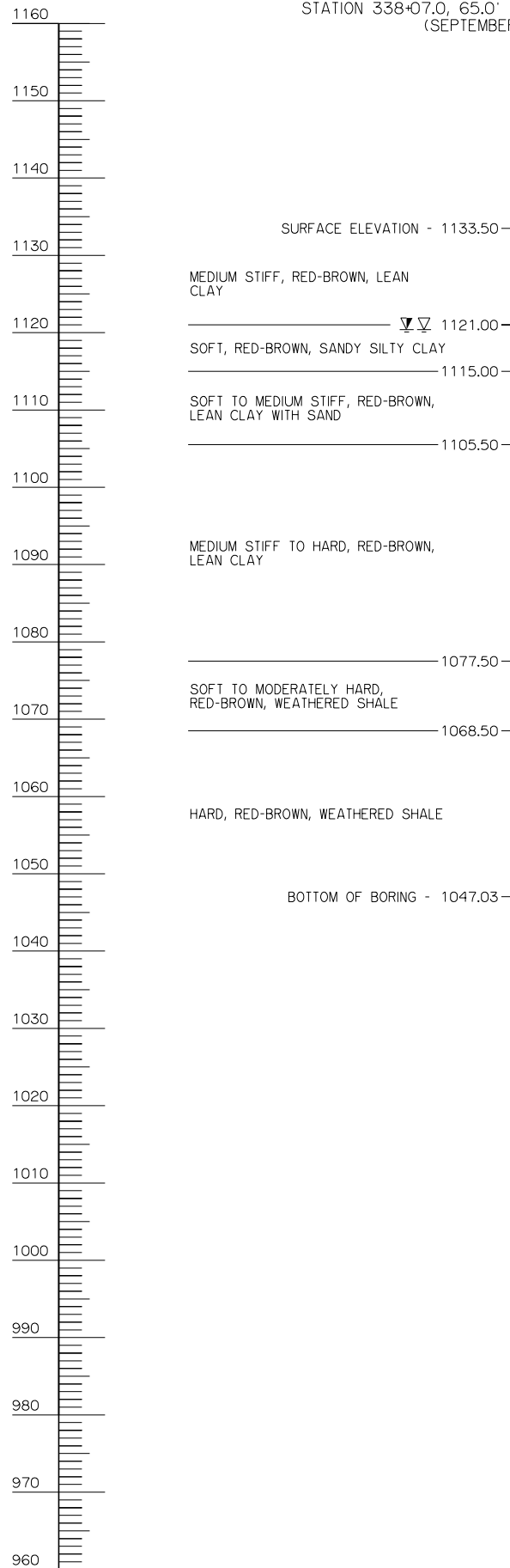
PROFILE GRADE DATA
 FINISH GRADE ALONG FGL

SB US-81 OVER GRAND AVENUE
 BRIDGE 'M'
GENERAL PLAN AND ELEVATION (BRIDGE 'M')
(SHEET NO. 2 OF 2)
 THREE SPAN (52'-96'-52') P.C. BEAM BRIDGE
 WITH 0° SKEW, 38'-0" CLEAR ROADWAY AND 42"
 F-SHAPED PARAPETS AT C SURVEY STA. 339+03.40
 State Job No. 24428(12) Sheet No. B044

US 81 REALIGNMENT GRADY COUNTY

BORING NO. M-1

STATION 338+07.0, 65.0' LEFT OF CL SURVEY US-81
(SEPTEMBER 18, 2019)



SURFACE ELEVATION - 1133.50

1128.50	SS-1; N = 6; MC = 15.3%; RECOVERY = 18" LL = 35; PI = 18; #200 = 91.5%
1123.50	SS-2; N = 8; RECOVERY = 0"
1118.50	SS-3; N = 4; MC = 20.7%; RECOVERY = 18" LL = 23; PI = 7; #200 = 64.3%
1113.50	SS-4; N = 8; MC = 21.1%; RECOVERY = 18" LL = 26; PI = 13; #200 = 79.0%
1108.50	SS-5; N = 2; MC = 20.1%; RECOVERY = 18" LL = 25; PI = 10; #200 = 80.9%
1103.50	SS-6; N = 9; MC = 18.5%; RECOVERY = 18" LL = 26; PI = 13; #200 = 88.6%
1098.50	SS-7; N = 5; MC = 19.9%; RECOVERY = 18" LL = 27; PI = 13; #200 = 90.1%
1093.50	SS-8; N = 5; MC = 19%; RECOVERY = 18" LL = 27; PI = 12; #200 = 89.1%
1088.50	SS-9; N = 7; MC = 20.9%; RECOVERY = 18" LL = 28; PI = 13; #200 = 87.0%
1083.50	SS-10; N = 17; MC = 16.9%; RECOVERY = 18" LL = 28; PI = 14; #200 = 87.3%
1078.50	SS-11; N = 17/6.0; 30/6.0; 50/5.0; MC = 15.9%; RECOVERY = 11"; LL = NP; PI = NP; #200 = 65.4%
1077.08	TCP-1; TCP = 50/5.75"; 50/4.75"
1072.08	TCP-2; TCP = 50/3.50"; 50/1.50"
1067.08	TCP-3; TCP = 50/1.50"; 50/1.38"
1062.08	TCP-4; TCP = 50/1.00"; 50/0.75"
1057.08	TCP-5; TCP = 50/1.00"; 50/0.50"
1052.08	TCP-6; TCP = 50/0.75"; 50/0.25"
1047.08	TCP-7; TCP = 50/0.38"; 50/0.19"

BOTTOM OF BORING - 1047.03

MEDIUM STIFF, RED-BROWN, LEAN CLAY

SOFT, RED-BROWN, SANDY SILTY CLAY

SOFT TO MEDIUM STIFF, RED-BROWN, LEAN CLAY WITH SAND

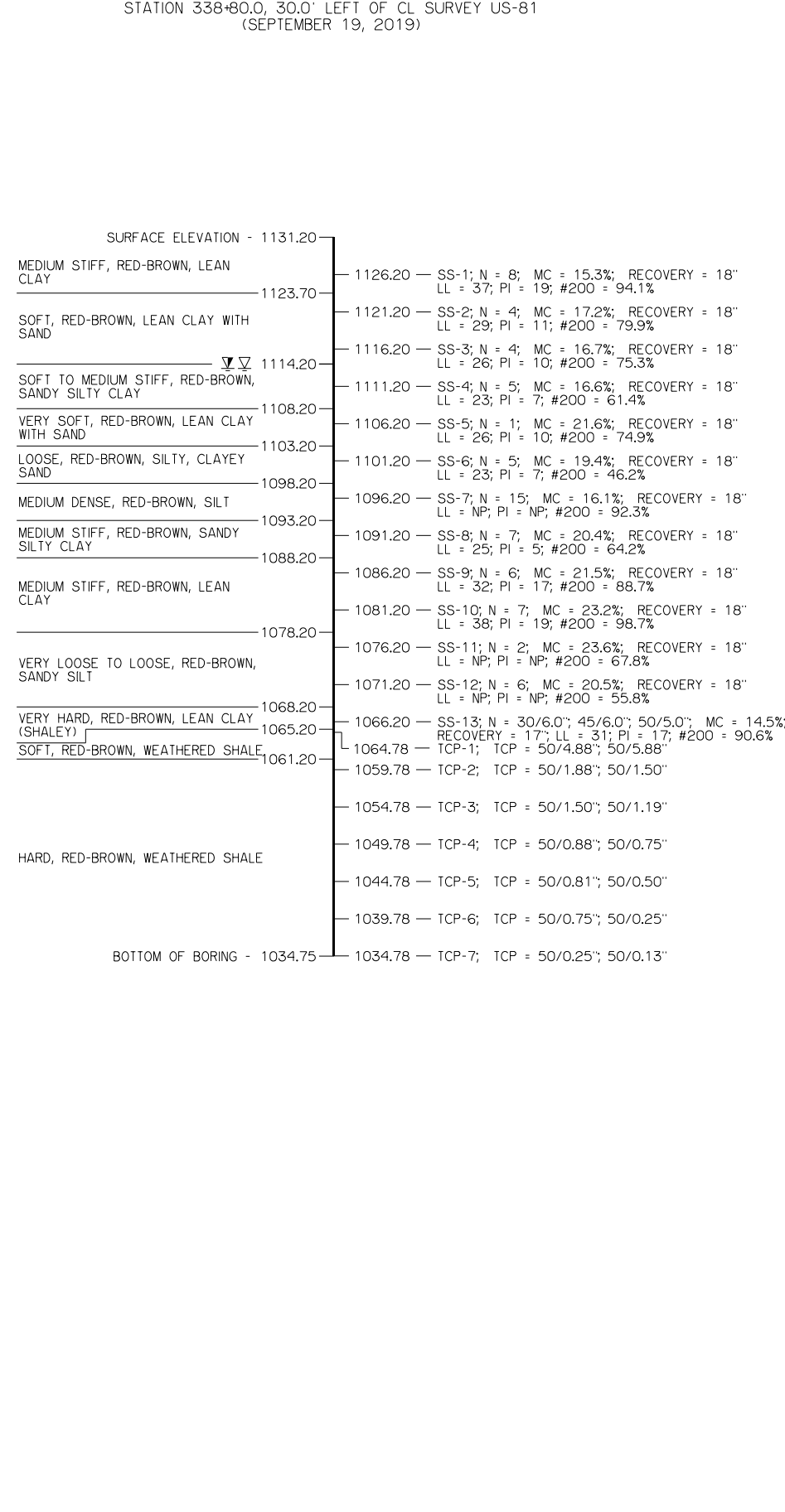
MEDIUM STIFF TO HARD, RED-BROWN, LEAN CLAY

SOFT TO MODERATELY HARD, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE

BORING NO. M-2

STATION 338+80.0, 30.0' LEFT OF CL SURVEY US-81
(SEPTEMBER 19, 2019)



SURFACE ELEVATION - 1131.20

1126.20	SS-1; N = 8; MC = 15.3%; RECOVERY = 18" LL = 37; PI = 19; #200 = 94.1%
1121.20	SS-2; N = 4; MC = 17.2%; RECOVERY = 18" LL = 29; PI = 11; #200 = 79.9%
1116.20	SS-3; N = 4; MC = 16.7%; RECOVERY = 18" LL = 26; PI = 10; #200 = 75.3%
1111.20	SS-4; N = 5; MC = 16.6%; RECOVERY = 18" LL = 23; PI = 7; #200 = 61.4%
1106.20	SS-5; N = 1; MC = 21.6%; RECOVERY = 18" LL = 26; PI = 10; #200 = 74.9%
1101.20	SS-6; N = 5; MC = 19.4%; RECOVERY = 18" LL = 23; PI = 7; #200 = 46.2%
1096.20	SS-7; N = 15; MC = 16.1%; RECOVERY = 18" LL = NP; PI = NP; #200 = 92.3%
1091.20	SS-8; N = 7; MC = 20.4%; RECOVERY = 18" LL = 25; PI = 5; #200 = 64.2%
1086.20	SS-9; N = 6; MC = 21.5%; RECOVERY = 18" LL = 32; PI = 17; #200 = 88.7%
1081.20	SS-10; N = 7; MC = 23.2%; RECOVERY = 18" LL = 38; PI = 19; #200 = 98.7%
1076.20	SS-11; N = 2; MC = 23.6%; RECOVERY = 18" LL = NP; PI = NP; #200 = 67.8%
1071.20	SS-12; N = 6; MC = 20.5%; RECOVERY = 18" LL = NP; PI = NP; #200 = 55.8%
1066.20	SS-13; N = 30/6.0; 45/6.0; 50/5.0; MC = 14.5%; RECOVERY = 17"; LL = 31; PI = 17; #200 = 90.6%
1064.78	TCP-1; TCP = 50/4.88"; 50/5.88"
1059.78	TCP-2; TCP = 50/1.88"; 50/1.50"
1054.78	TCP-3; TCP = 50/1.50"; 50/1.19"
1049.78	TCP-4; TCP = 50/0.88"; 50/0.75"
1044.78	TCP-5; TCP = 50/0.81"; 50/0.50"
1039.78	TCP-6; TCP = 50/0.75"; 50/0.25"
1034.78	TCP-7; TCP = 50/0.25"; 50/0.13"

BOTTOM OF BORING - 1034.75

MEDIUM STIFF, RED-BROWN, LEAN CLAY

SOFT, RED-BROWN, LEAN CLAY WITH SAND

SOFT TO MEDIUM STIFF, RED-BROWN, SANDY SILTY CLAY

VERY SOFT, RED-BROWN, LEAN CLAY WITH SAND

LOOSE, RED-BROWN, SILTY, CLAYEY SAND

MEDIUM DENSE, RED-BROWN, SILT

MEDIUM STIFF, RED-BROWN, SANDY SILTY CLAY

MEDIUM STIFF, RED-BROWN, LEAN CLAY

VERY LOOSE TO LOOSE, RED-BROWN, SANDY SILT

VERY HARD, RED-BROWN, LEAN CLAY (SHALEY)

SOFT, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE

LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200= PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▽ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

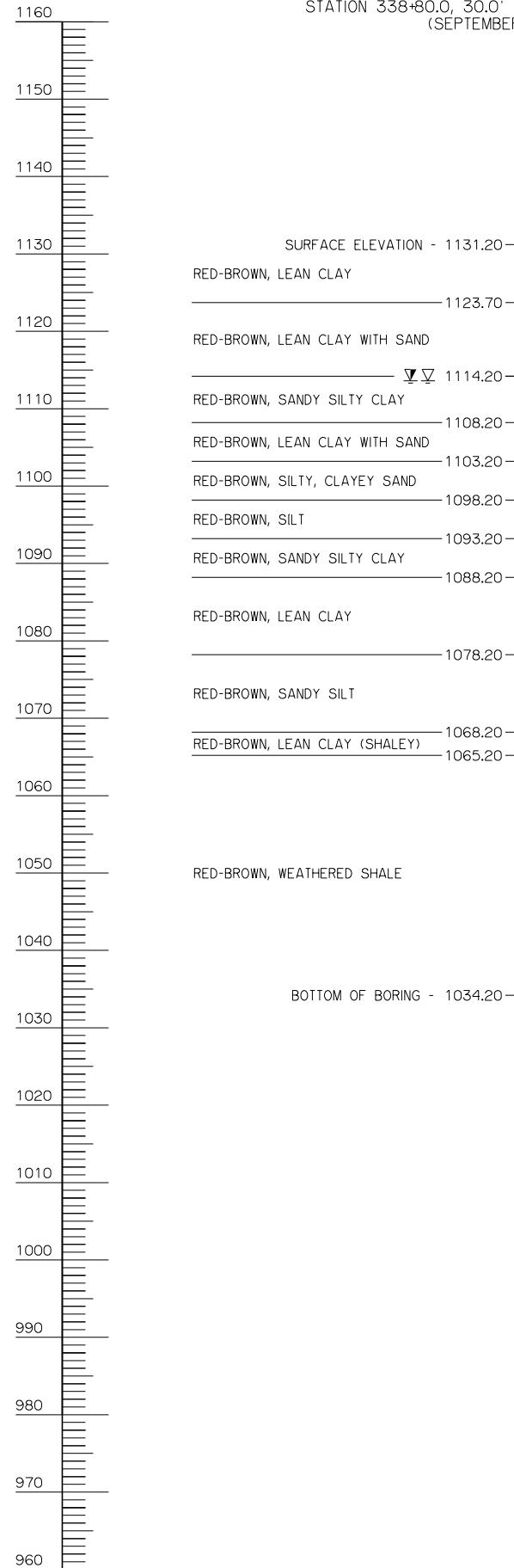
ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

FOUNDATION BORING LOGS
(SHEET 1 OF 3)

BORING NO. M-2A

STATION 338+80.0, 30.0' LEFT OF CL SURVEY US-81
(SEPTEMBER 30, 2019)



SURFACE ELEVATION - 1131.20

RED-BROWN, LEAN CLAY 1123.70

RED-BROWN, LEAN CLAY WITH SAND 1114.20

RED-BROWN, SANDY SILTY CLAY 1108.20

RED-BROWN, LEAN CLAY WITH SAND 1103.20

RED-BROWN, SILTY, CLAYEY SAND 1098.20

RED-BROWN, SILT 1093.20

RED-BROWN, SANDY SILTY CLAY 1088.20

RED-BROWN, LEAN CLAY 1078.20

RED-BROWN, SANDY SILT 1068.20

RED-BROWN, LEAN CLAY (SHALEY) 1065.20

RED-BROWN, WEATHERED SHALE 1039.20

BOTTOM OF BORING - 1034.20

1065.20 — DCD-1; RECOVERY = 11"

1064.20 — DCD-2; RECOVERY = 60"; RQD = 100.0%
MC = 7.9%; DRY DENSITY = 137 PCF; UCS = 1,004 PSI

1059.20 — DCD-3; RECOVERY = 60"; RQD = 100.0%
MC = 12.7%; DRY DENSITY = 126 PCF; UCS = 216 PSI

1054.20 — DCD-4; RECOVERY = 59"; RQD = 86.6%
MC = 8.2%; DRY DENSITY = 136 PCF; UCS = 367 PSI

1049.20 — DCD-5; RECOVERY = 56"; RQD = 83.3%
MC = 5.5%; DRY DENSITY = 148 PCF; UCS = 981 PSI

1044.20 — DCD-6; RECOVERY = 60"; RQD = 100.0%
MC = 8.1%; DRY DENSITY = 132 PCF; UCS = 210 PSI

1039.20 — DCD-7; RECOVERY = 59"; RQD = 93.3%
MC = 7.6%; DRY DENSITY = 136 PCF; UCS = 507 PSI

BORING NO. M-3

STATION 339+50.0, 66.0' LEFT OF CL SURVEY US-81
(SEPTEMBER 17, 2019)

SURFACE ELEVATION - 1134.80

RED-BROWN, LEAN CLAY WITH SAND 1117.80

RED-BROWN, SILT WITH SAND 1104.80

RED-BROWN, LEAN CLAY WITH SAND 1079.80

RED-BROWN, SANDY SILTY CLAY 1074.80

RED-BROWN, SANDY SILT 1070.80

HARD, RED-BROWN, LEAN CLAY WITH SAND (SHALEY) 1068.80

SOFT, RED-BROWN, WEATHERED SHALE 1064.80

HARD, RED-BROWN, WEATHERED SHALE 1038.38

BOTTOM OF BORING - 1038.34

1069.80 — SS-1; N = 14/6.0"; 36/6.0"; 50/5.0"; MC = 12.6%;
RECOVERY = 17"; LL = 26; PI = 12; #200 = 84.6%

1068.38 — TCP-1; TCP = 50/5.50"; 50/4.75"

1063.38 — TCP-2; TCP = 50/1.13"; 50/1.00"

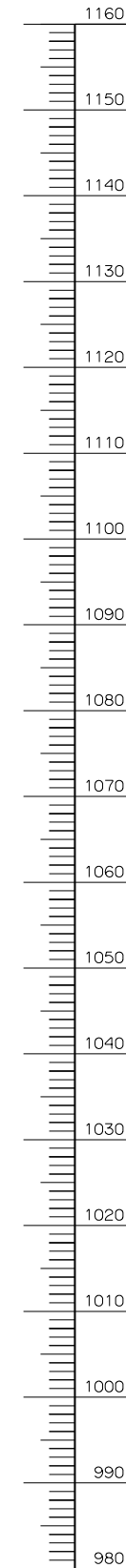
1058.38 — TCP-3; TCP = 50/0.75"; 50/0.50"

1053.38 — TCP-4; TCP = 50/0.88"; 50/0.38"

1048.38 — TCP-5; TCP = 50/0.50"; 50/0.25"

1043.38 — TCP-6; TCP = 50/0.50"; 50/0.38"

1038.38 — TCP-7; TCP = 50/0.38"; 50/0.13"



LEGEND

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- ▽ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- //// = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

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GEOTECHNICAL REPORT

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SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

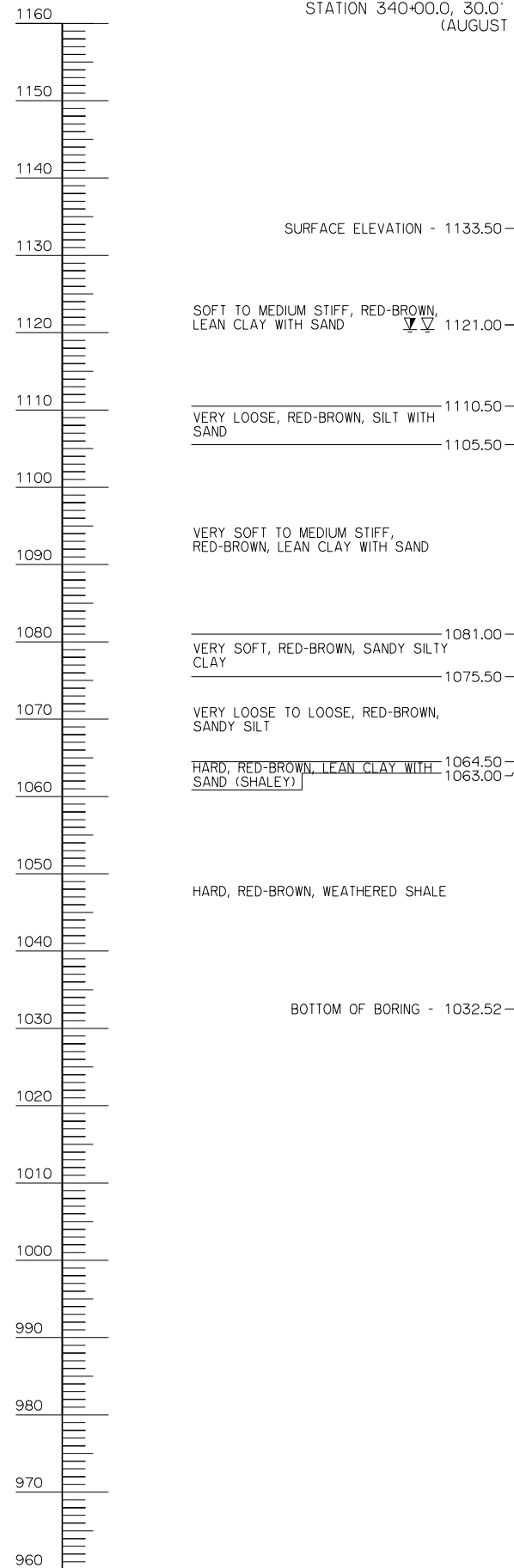
FOUNDATION BORING LOGS
(SHEET 2 OF 3)

State Job No. 24428(12) Sheet No. B046

US 81 REALIGNMENT GRADY COUNTY

BORING NO. M-4

STATION 340+00.0, 30.0' LEFT OF CL SURVEY US-81
(AUGUST 22, 2019)



SURFACE ELEVATION - 1133.50

SOFT TO MEDIUM STIFF, RED-BROWN, LEAN CLAY WITH SAND

VERY LOOSE, RED-BROWN, SILT WITH SAND

VERY SOFT TO MEDIUM STIFF, RED-BROWN, LEAN CLAY WITH SAND

VERY SOFT, RED-BROWN, SANDY SILTY CLAY

VERY LOOSE TO LOOSE, RED-BROWN, SANDY SILT

HARD, RED-BROWN, LEAN CLAY WITH SAND (SHALEY)

HARD, RED-BROWN, WEATHERED SHALE

BOTTOM OF BORING - 1032.52

1128.50	SS-1; N = 5; MC = 17.1%; RECOVERY = 18" LL = 23; PI = 8; #200 = 70.5%
1123.50	SS-2; N = 7; MC = 17.5%; RECOVERY = 18" LL = 34; PI = 19; #200 = 80.8%
1118.50	SS-3; N = 3; MC = 19.7%; RECOVERY = 18" LL = 28; PI = 12; #200 = 71.9%
1113.50	SS-4; N = 3; MC = 21.9%; RECOVERY = 18" LL = 23; PI = 10; #200 = 75.5%
1108.50	SS-5; N = 1; MC = 22.3%; RECOVERY = 18" LL = NP; PI = NP; #200 = 70.9%
1103.50	SS-6; N = 1; MC = 23%; RECOVERY = 18" LL = 24; PI = 9; #200 = 76.4%
1098.50	SS-7; N = 6; MC = 20.9%; RECOVERY = 18" LL = 26; PI = 11; #200 = 76.7%
1093.50	SS-8; N = 5; MC = 21.9%; RECOVERY = 18" LL = 23; PI = 8; #200 = 77.1%
1088.50	SS-9; N = 6; MC = 21.9%; RECOVERY = 18" LL = 22; PI = 9; #200 = 77.3%
1083.50	SS-10; N = 1; MC = 24.7%; RECOVERY = 18" LL = 26; PI = 12; #200 = 84.2%
1078.50	SS-11; N = 1; MC = 22.8%; RECOVERY = 12" LL = 22; PI = 7; #200 = 53.2%
1073.50	SS-12; N = 2; MC = 19.9%; RECOVERY = 12" LL = NP; PI = NP; #200 = 63.6%
1068.50	SS-13; N = 5; MC = 19.2%; RECOVERY = 12" LL = NP; PI = NP; #200 = 64.5%
1063.50	SS-14; N = 17/6.0; 50/5.0; MC = 15.8%; RECOVERY = 11"; LL = 24; PI = 11; #200 = 76.9%
1062.58	TCP-1; TCP = 50/1.06"; 50/0.38"
1057.58	TCP-2; TCP = 50/1.00"; 50/0.63"
1052.58	TCP-3; TCP = 50/0.75"; 50/0.50"
1047.58	TCP-4; TCP = 50/1.13"; 50/0.38"
1042.58	TCP-5; TCP = 50/0.88"; 50/0.38"
1037.58	TCP-6; TCP = 50/0.75"; 50/0.25"
1032.58	TCP-7; TCP = 50/0.50"; 50/0.25"

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- RQD = ROCK QUALITY DESIGNATION
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- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH

- = WATER LEVEL WHILE DRILLING OR SAMPLING
- = WATER LEVEL AFTER DRILLING
- = WATER LEVEL 24 HOURS AFTER DRILLING

= TOP OF ROCK

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NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

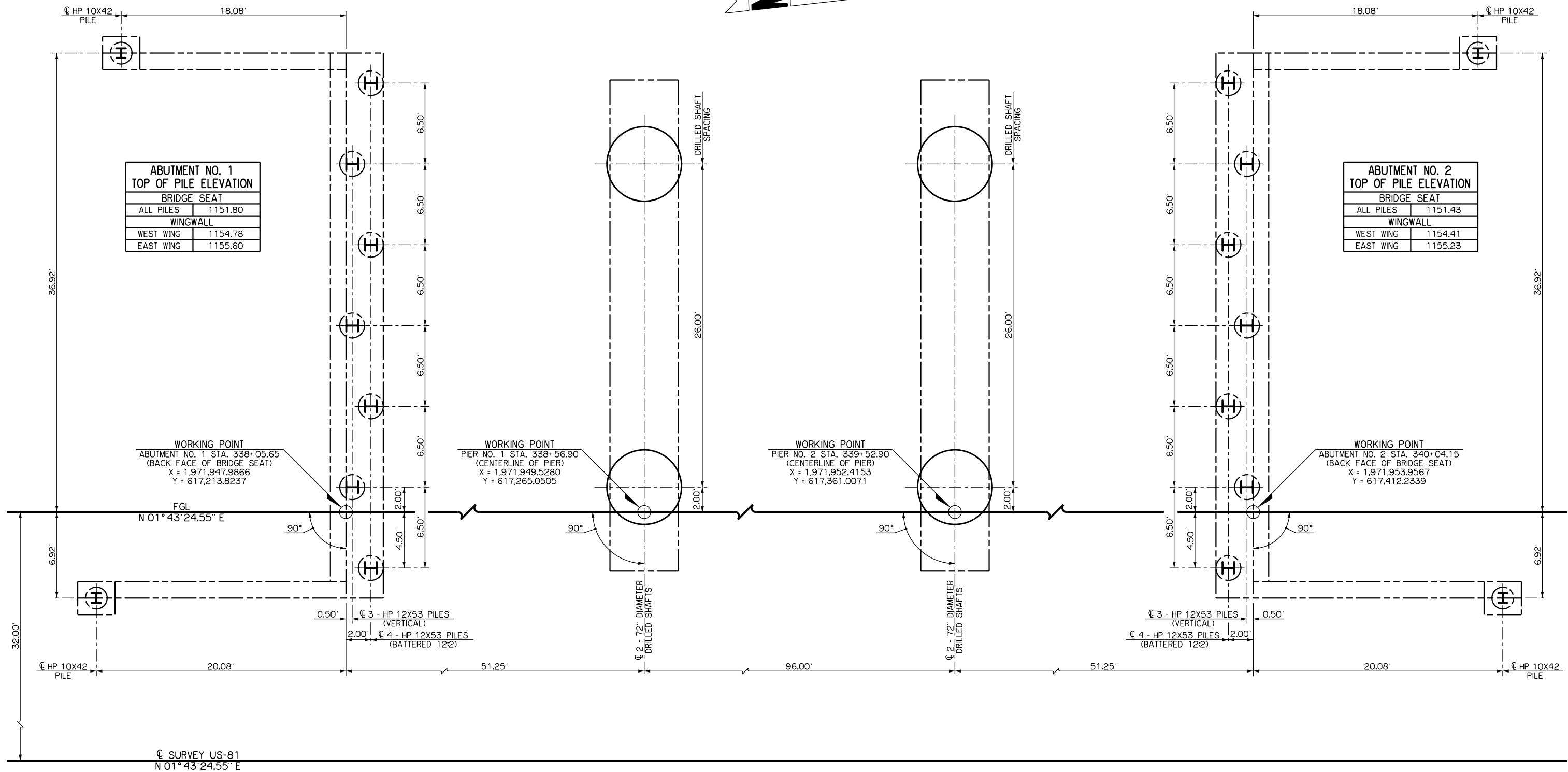
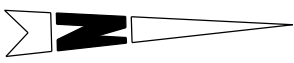
THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

FOUNDATION BORING LOGS
(SHEET 3 OF 3)



ABUTMENT NO. 1 TOP OF PILE ELEVATION	
BRIDGE SEAT	
ALL PILES	1151.80
WINGWALL	
WEST WING	1154.78
EAST WING	1155.60

ABUTMENT NO. 2 TOP OF PILE ELEVATION	
BRIDGE SEAT	
ALL PILES	1151.43
WINGWALL	
WEST WING	1154.41
EAST WING	1155.23

WORKING POINT
 ABUTMENT NO. 1 STA. 338+05.65
 (BACK FACE OF BRIDGE SEAT)
 X = 1,971,947.9866
 Y = 617,213.8237

WORKING POINT
 PIER NO. 1 STA. 338+56.90
 (CENTERLINE OF PIER)
 X = 1,971,949.5280
 Y = 617,265.0505

WORKING POINT
 PIER NO. 2 STA. 339+52.90
 (CENTERLINE OF PIER)
 X = 1,971,952.4153
 Y = 617,361.0071

WORKING POINT
 ABUTMENT NO. 2 STA. 340+04.15
 (BACK FACE OF BRIDGE SEAT)
 X = 1,971,953.9567
 Y = 617,412.2339

SUBSTRUCTURE STAKING DIAGRAM

NOTES

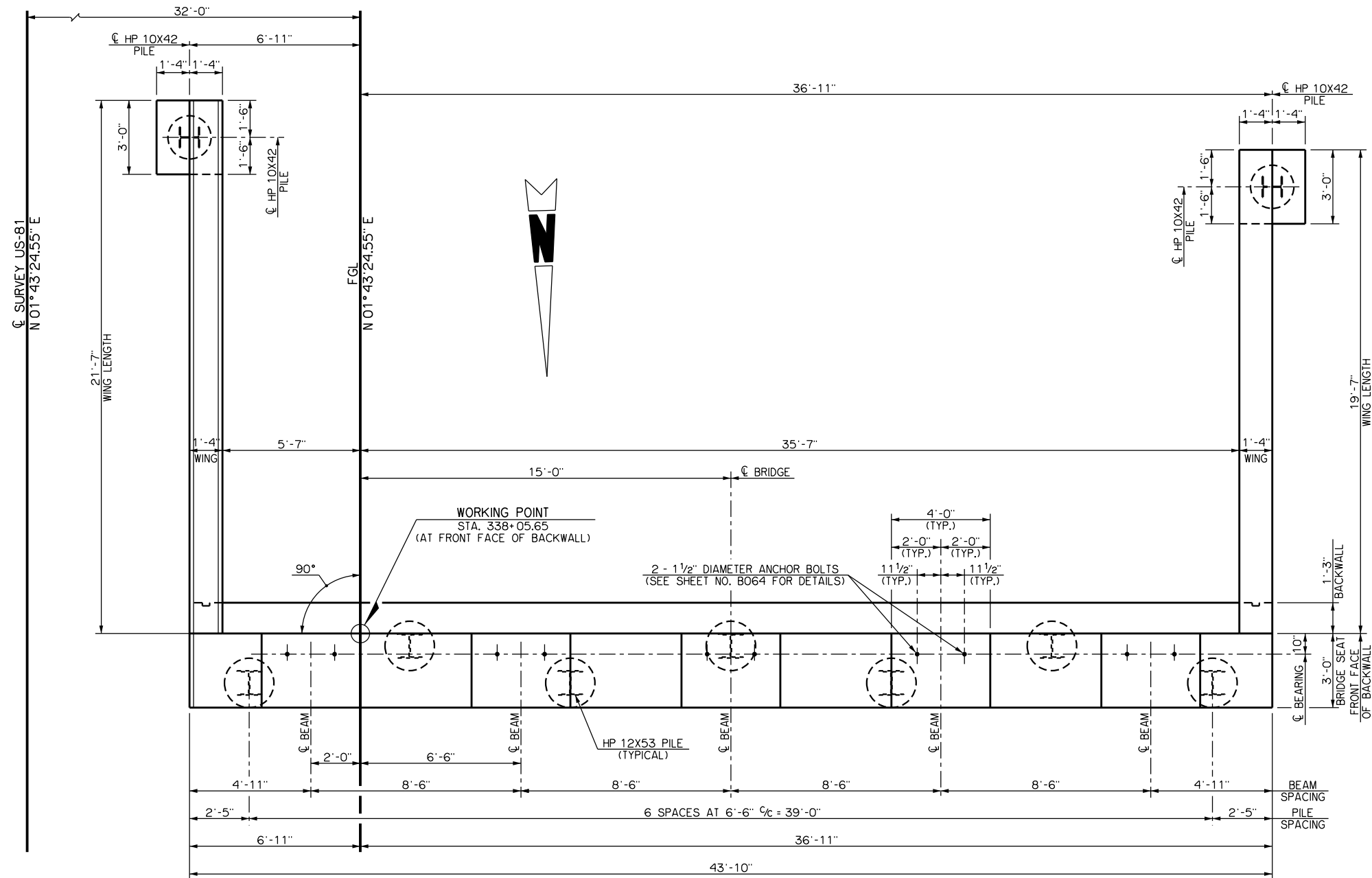
THE FACE OF THE PILE WEB IN THE ABUTMENT BRIDGE SEAT SHALL BE PERPENDICULAR TO THE FRONT FACE OF THE BRIDGE SEAT.

SB US-81 OVER GRAND AVENUE
 BRIDGE 'M'

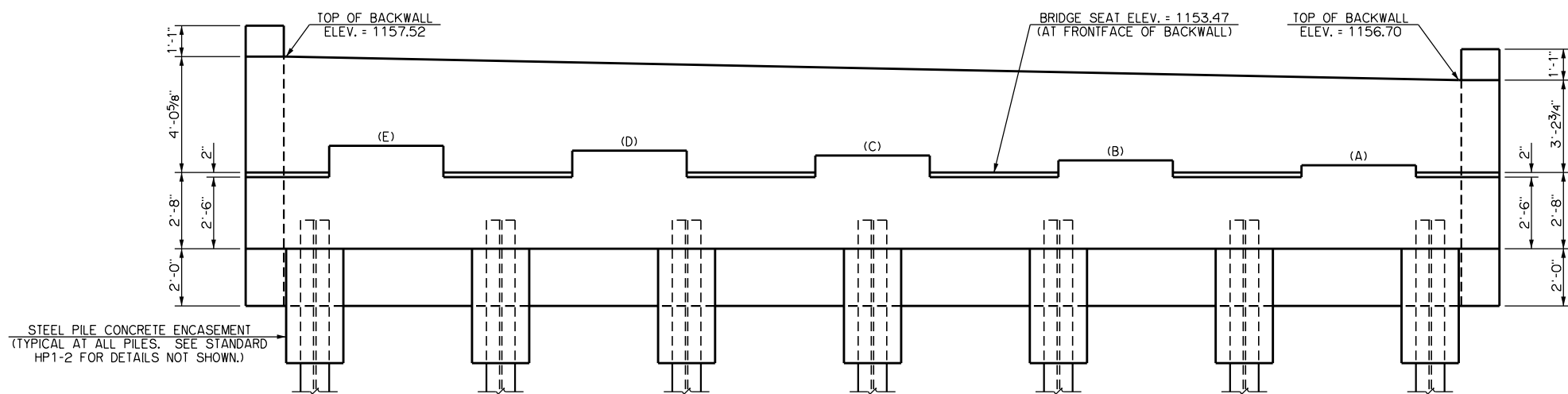
SUBSTRUCTURE STAKING DIAGRAM

State Job No. 24428(12) Sheet No. B048

US 81 REALIGNMENT
GRADY COUNTY



PLAN



ELEVATION

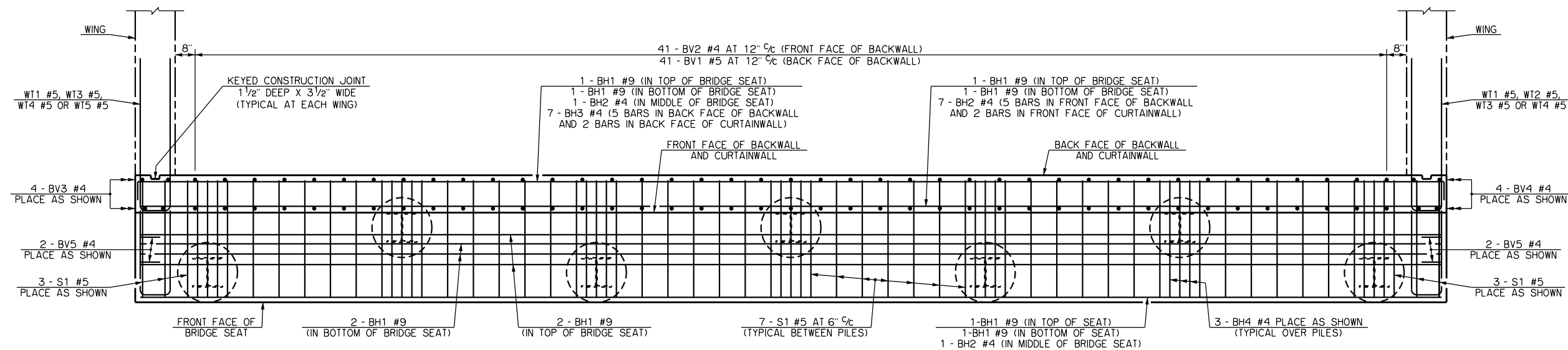
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1153.72
(B)	1153.89
(C)	1154.06
(D)	1154.23
(E)	1154.40

BAR LIST - ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#9	10	STR.	43'-6"	-
BH2	#4	9	STR.	43'-6"	-
BH3	#4	7	BNT.	45'-4"	-
BH4	#4	21	BNT.	5'-1"	-
BV1	#5	41	STR.	7'-10 1/2" AVG.	7'-6" TO 8'-3"
BV2	#4	41	STR.	7'-10 1/2" AVG.	7'-6" TO 8'-3"
BV3	#4	4	STR.	9'-4"	-
BV4	#4	4	STR.	8'-7"	-
BV5	#4	4	BNT.	3'-6"	-
P1	#4	15	BNT.	5'-11"	-
P2	#4	12	BNT.	7'-11"	-
P3	#4	10	BNT.	6'-7"	-
P4	#4	8	BNT.	8'-7"	-
PT1	#4	3	BNT.	13'-5"	-
S1	#5	48	BNT.	13'-1"	-
WT1	#5	2	BNT.	8'-6"	-
WT2	#5	3	BNT.	9'-3" AVG.	6'-2" TO 12'-4"
WT3	#5	10	BNT.	17'-0"	-
WT4	#5	16	BNT.	11'-0"	-
WT5	#5	3	BNT.	9'-0" AVG.	6'-0" TO 12'-0"

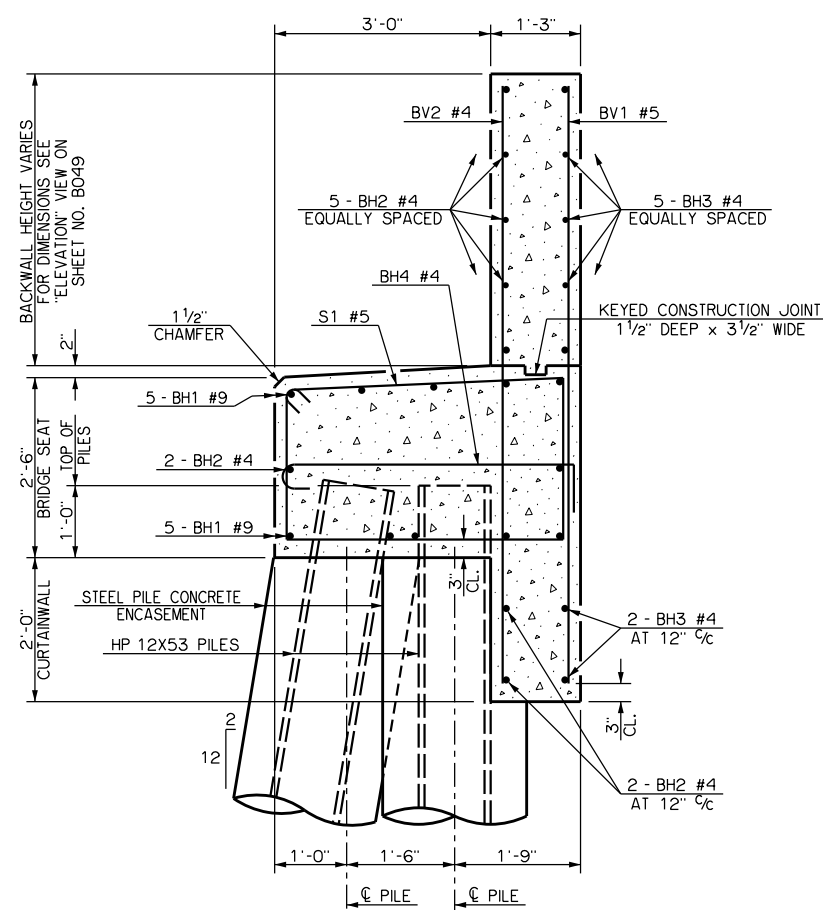
SUMMARY OF QUANTITIES - ABUTMENT NO. 1		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	125.00
CLSM BACKFILL	CY	87.00
CLASS A CONCRETE	CY	43.70
EPOXY COATED REINFORCING STEEL	LB	5,340.00
PILES, FURNISHED (HP 10X42)	LF	166.00
PILES, FURNISHED (HP 12X53)	LF	550.00
PILES, DRIVEN (HP 10X42)	LF	166.00
PILES, DRIVEN (HP 12X53)	LF	550.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	45.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	41.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	22.00

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

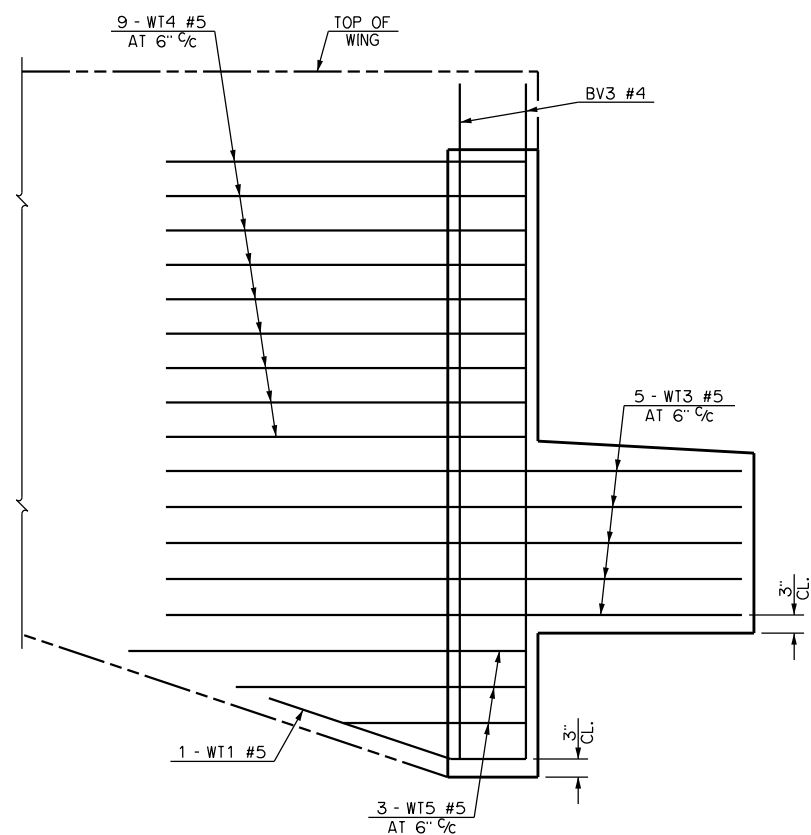
DETAILS OF ABUTMENT NO. 1
(SHEET NO. 1 OF 2)



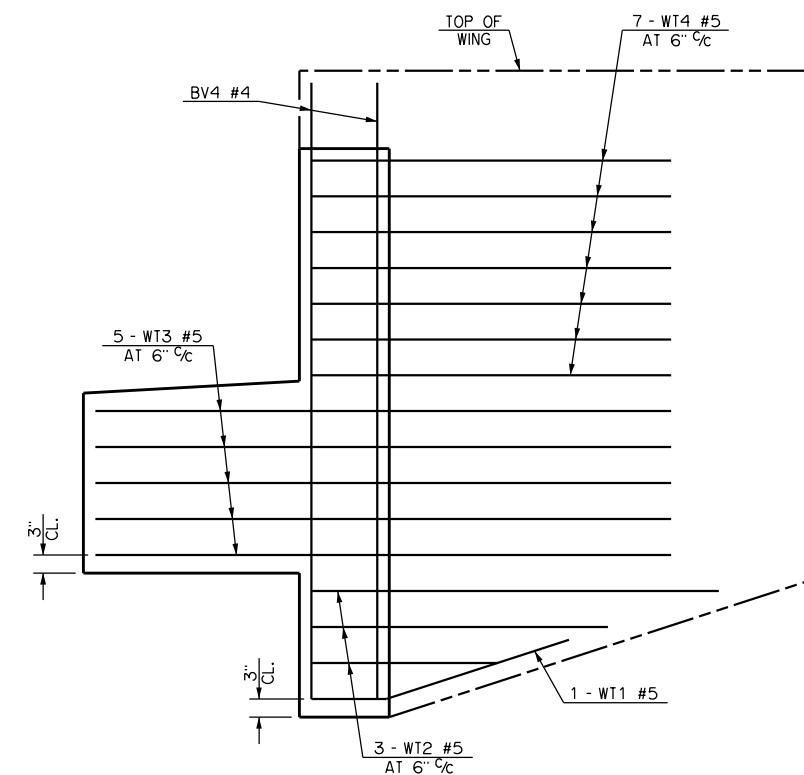
LAYOUT OF ABUTMENT REINFORCING STEEL



SECTION THROUGH BRIDGE SEAT



SECTION THRU ABUTMENT AT EAST WING



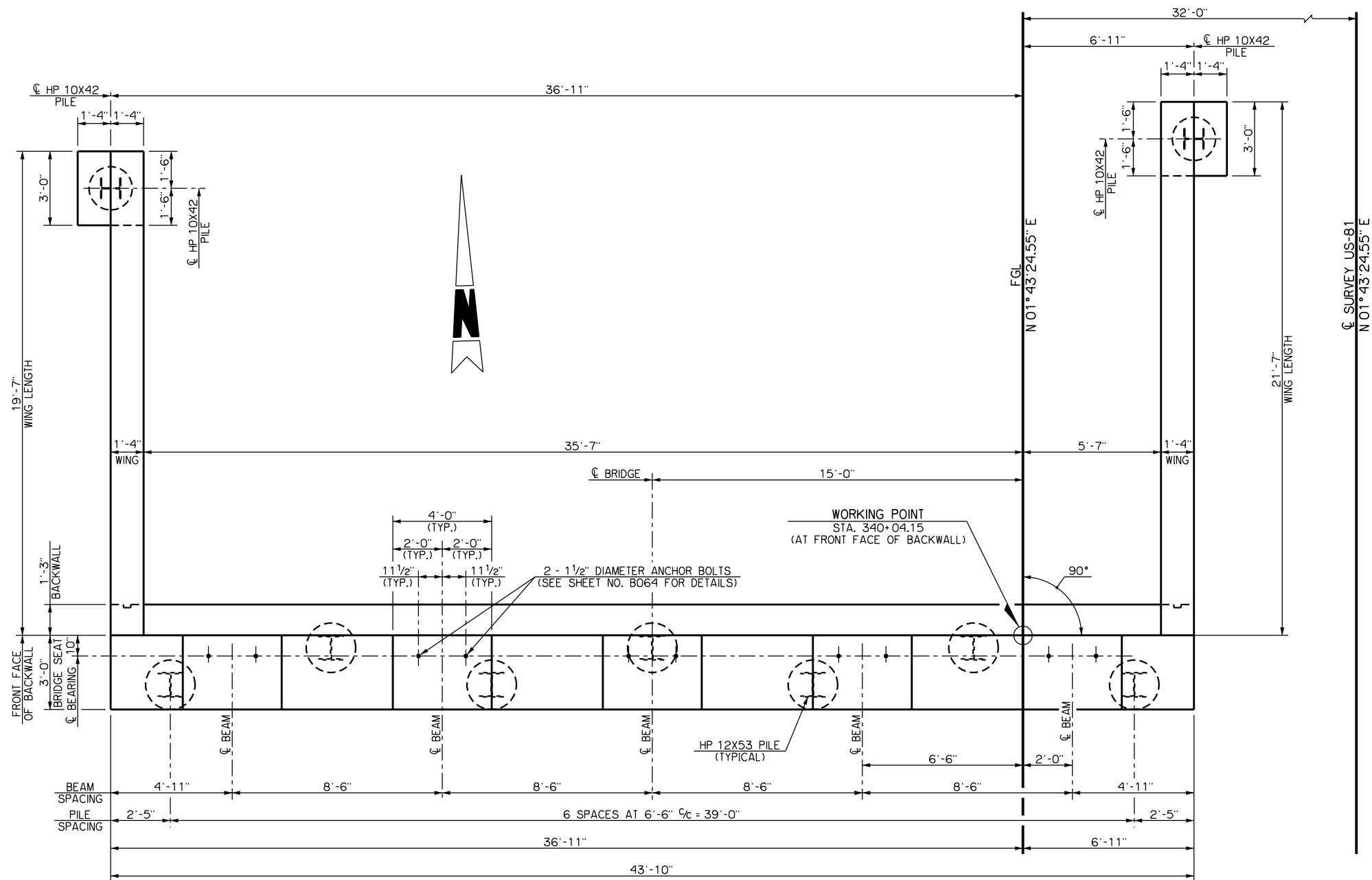
SECTION THRU ABUTMENT AT WEST WING

NOTE

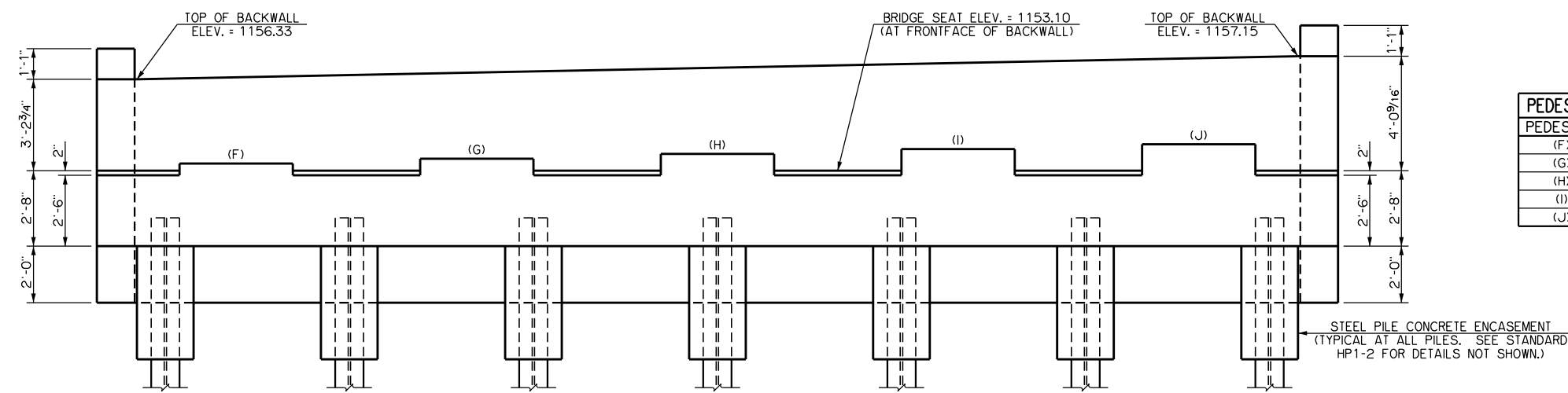
ALL WT WING REINFORCING TIED TO ABUTMENT BRIDGE SEAT, BACKWALL, AND CURTAINWALL REINFORCING MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR WING DETAILS AND REINFORCING STEEL NOT SHOWN, SEE SHEET NO. B054.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF ABUTMENT NO. 1
(SHEET NO. 2 OF 2)



PLAN



ELEVATION

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(F)	1153.35
(G)	1153.52
(H)	1153.69
(I)	1153.86
(J)	1154.03

BAR LIST - ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#9	10	STR.	43'-6"	-
BH2	#4	9	STR.	43'-6"	-
BH3	#4	7	BNT.	45'-4"	-
BH4	#4	21	BNT.	5'-1"	-
BV1	#5	41	STR.	7'-10 1/2" AVG.	7'-6" TO 8'-3"
BV2	#4	41	STR.	7'-10 1/2" AVG.	7'-6" TO 8'-3"
BV3	#4	4	STR.	9'-4"	-
BV4	#4	4	STR.	8'-7"	-
BV5	#4	4	BNT.	3'-6"	-
P1	#4	15	BNT.	5'-11"	-
P2	#4	12	BNT.	7'-11"	-
P3	#4	10	BNT.	6'-7"	-
P4	#4	8	BNT.	8'-7"	-
PT1	#4	3	BNT.	13'-5"	-
S1	#5	48	BNT.	13'-1"	-
WT1	#5	2	BNT.	8'-6"	-
WT2	#5	3	BNT.	9'-3" AVG.	6'-2" TO 12'-4"
WT3	#5	10	BNT.	17'-0"	-
WT4	#5	16	BNT.	11'-0"	-
WT5	#5	3	BNT.	9'-0" AVG.	6'-0" TO 12'-0"

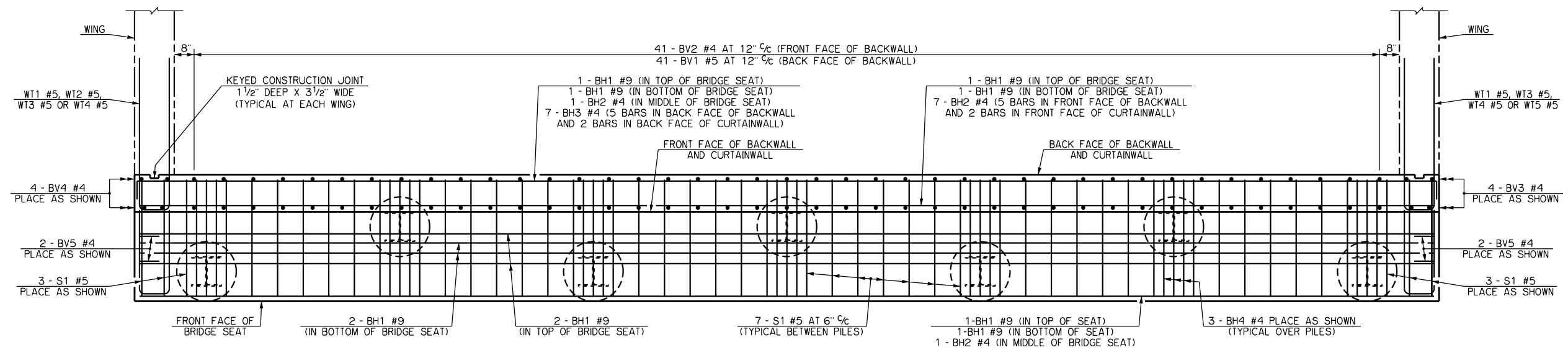
SUMMARY OF QUANTITIES - ABUTMENT NO. 2		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	125.00
CLSM BACKFILL	CY	87.00
CLASS A CONCRETE	CY	43.70
EPOXY COATED REINFORCING STEEL	LB	5,340.00
PILES, FURNISHED (HP 10X42)	LF	190.00
PILES, FURNISHED (HP 12X53)	LF	641.00
PILES, DRIVEN (HP 10X42)	LF	190.00
PILES, DRIVEN (HP 12X53)	LF	641.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	45.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	41.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	22.00

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

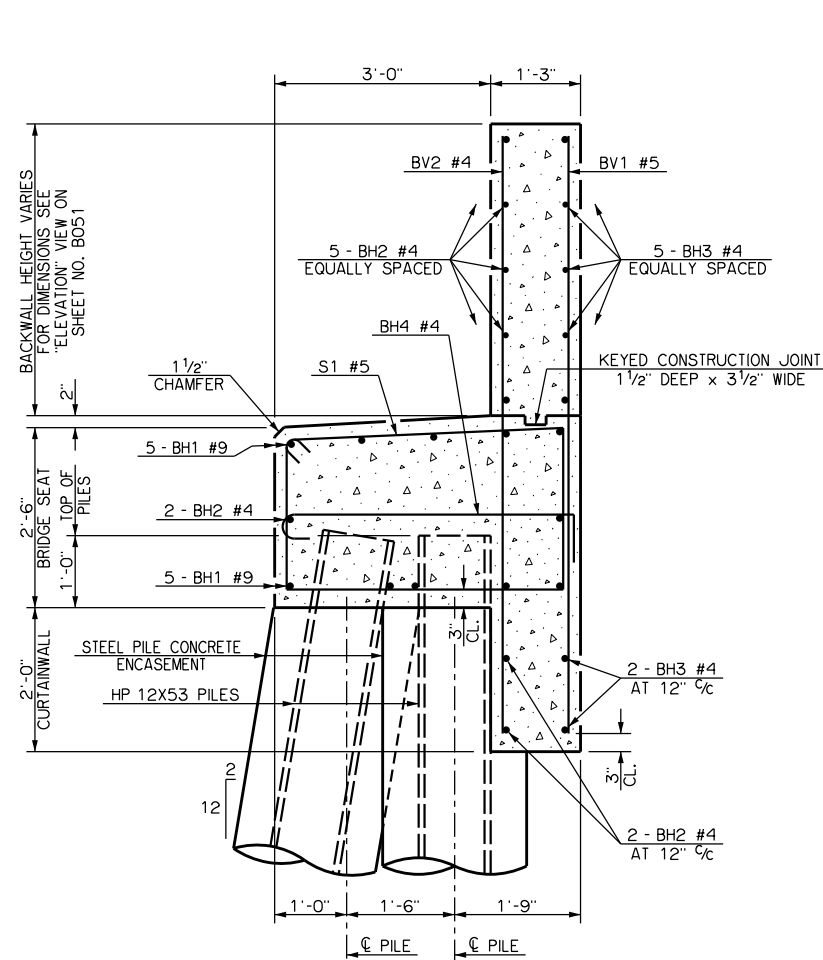
DETAILS OF ABUTMENT NO. 2
(SHEET NO. 1 OF 2)

State Job No. 24428(12) Sheet No. B051

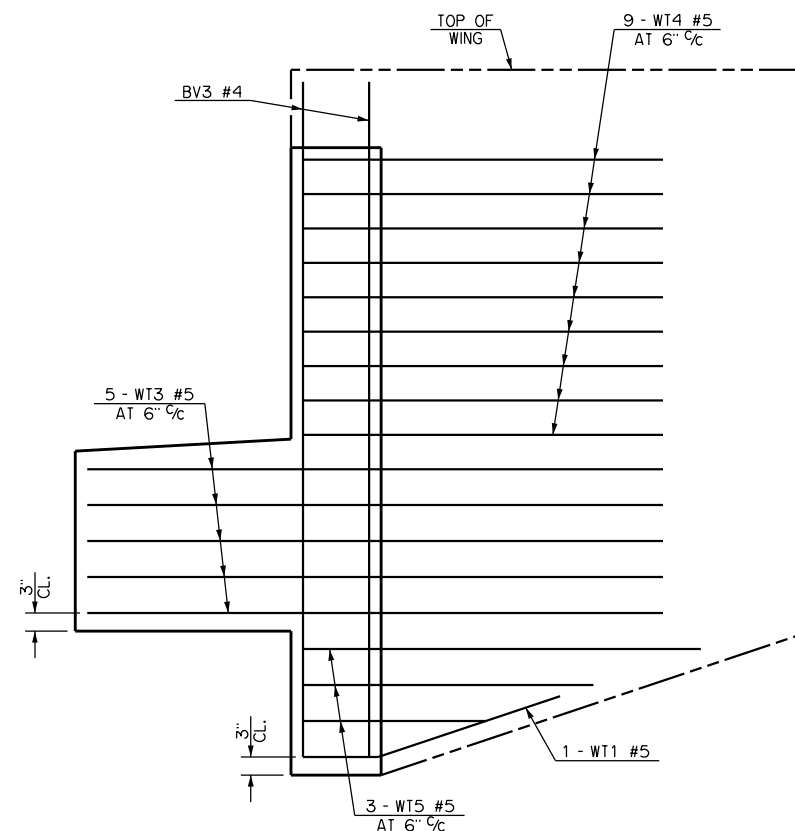
US 81 ALIGNMENT
GRADY COUNTY



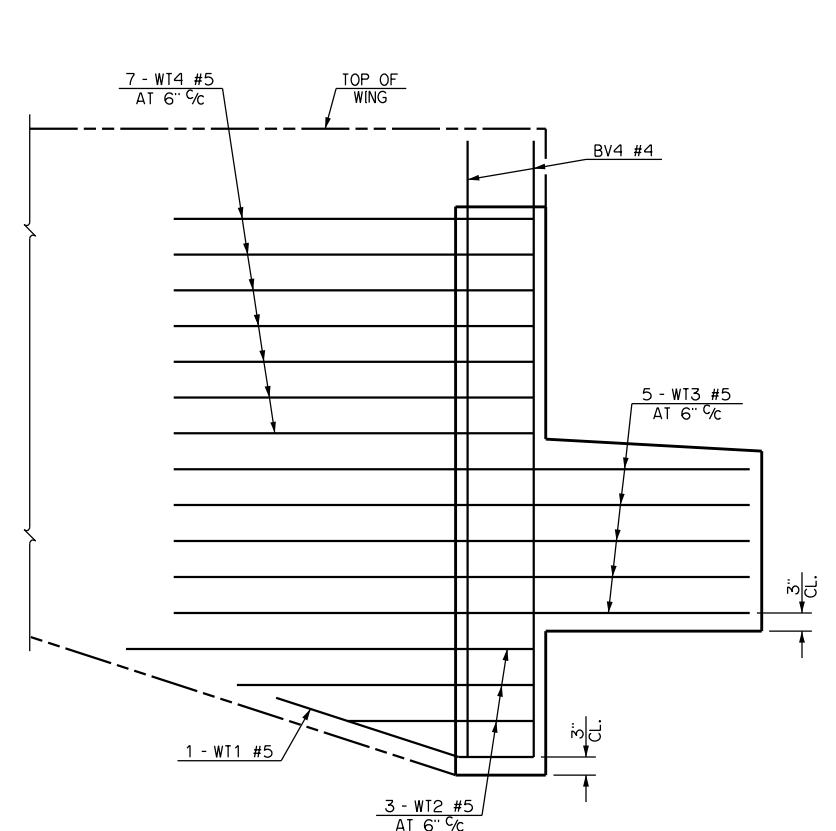
LAYOUT OF ABUTMENT REINFORCING STEEL



SECTION THROUGH BRIDGE SEAT



SECTION THRU ABUTMENT AT EAST WING



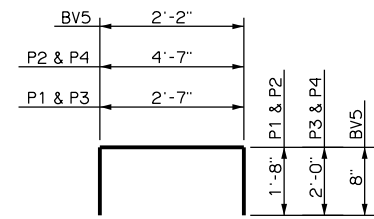
SECTION THRU ABUTMENT AT WEST WING

NOTE

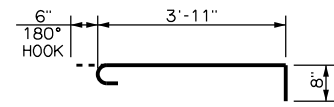
ALL WT WING REINFORCING TIED TO ABUTMENT BRIDGE SEAT, BACKWALL, AND CURTAINWALL REINFORCING MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR WING DETAILS AND REINFORCING STEEL NOT SHOWN, SEE SHEET NO. B055.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

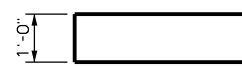
DETAILS OF ABUTMENT NO. 2
(SHEET NO. 2 OF 2)



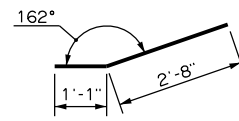
P1 #4 x 5'-11"
 P2 #4 x 7'-11"
 P3 #4 x 6'-7"
 P4 #4 x 8'-7"
 BV5 #4 x 3'-6"



BH4 #4 x 5'-1"

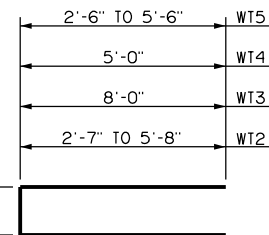


PLAN

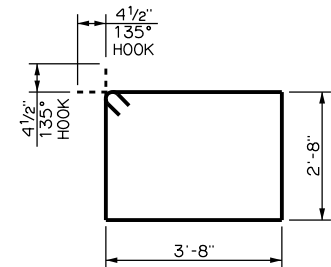


ELEVATION

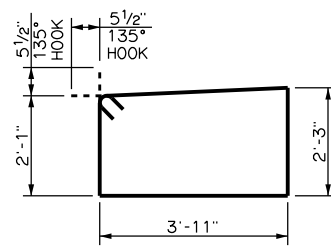
WT1 #5 x 8'-6"



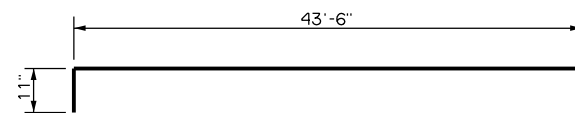
WT2 #5 x 9'-3" AVG.
 WT3 #5 x 17'-0"
 WT4 #5 x 11'-0"
 WT5 #5 x 9'-0" AVG.



PT1 #4 x 13'-5"

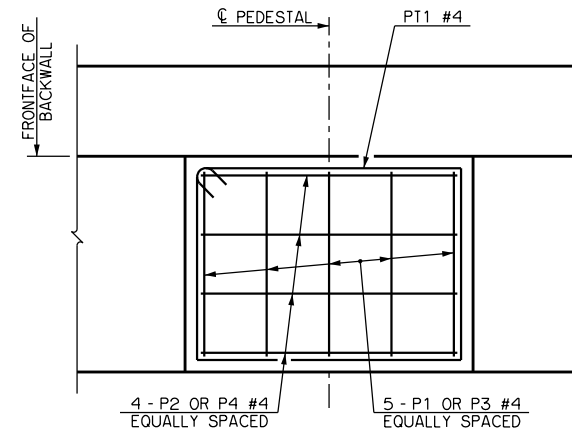


S1 #5 x 13'-1"

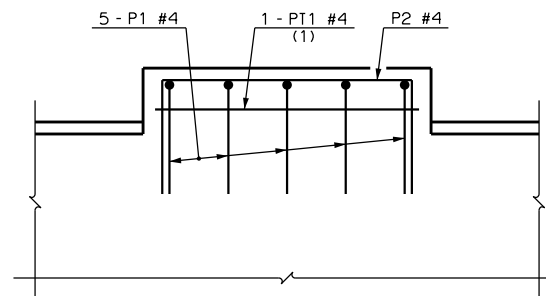


BH3 #4 x 45'-4"

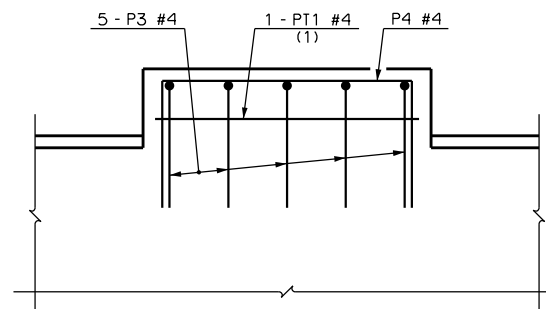
DETAILS OF BENT REINFORCING STEEL



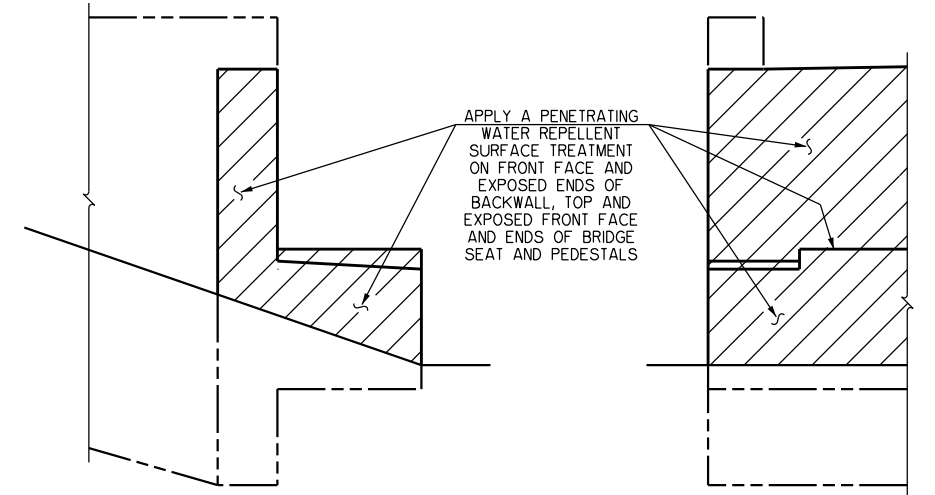
LAYOUT OF PEDESTAL REINFORCING STEEL



ELEVATION OF PEDESTALS (A), (B), (C), (F), (G) AND (H)



ELEVATION OF PEDESTALS (D), (E), (I) AND (J)



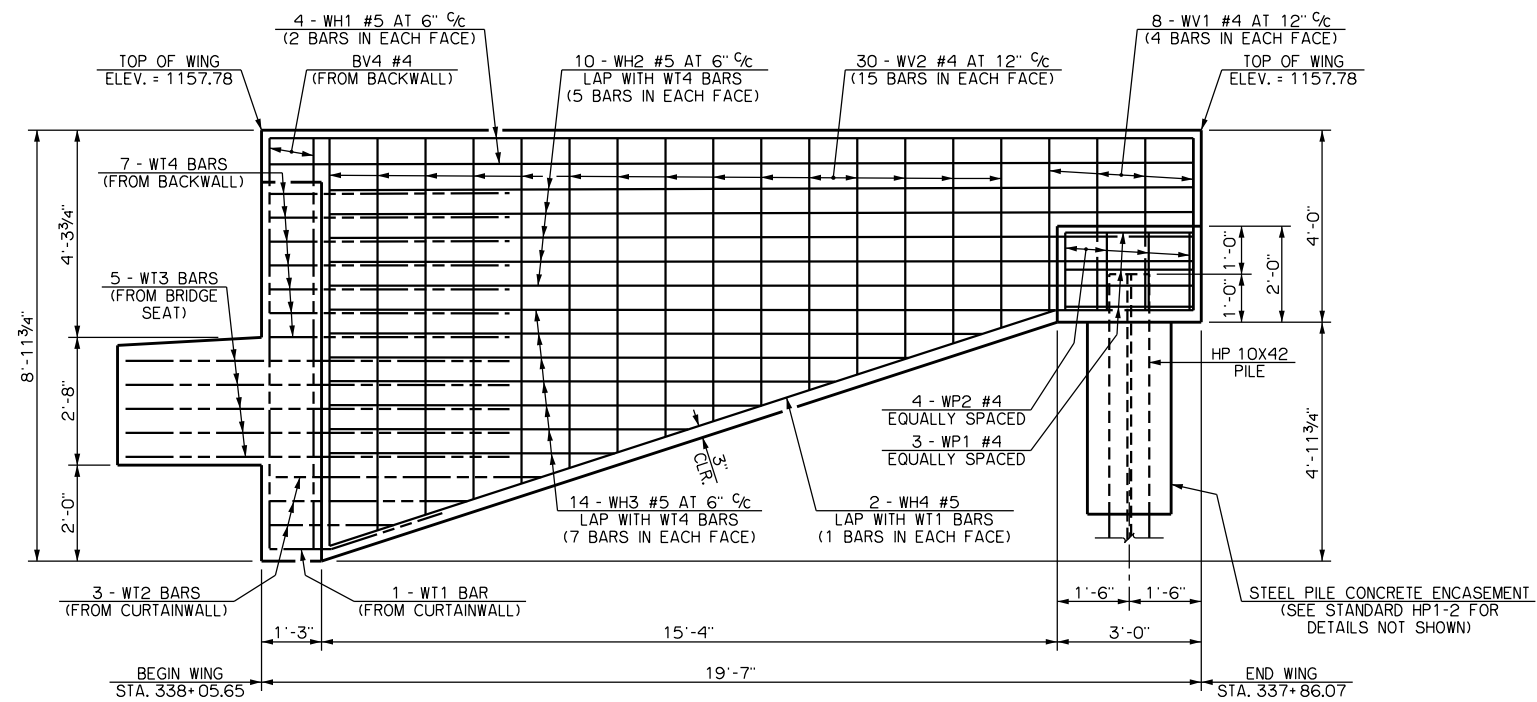
DETAIL OF PENETRATING WATER REPELLENT TREATMENT

NOTES

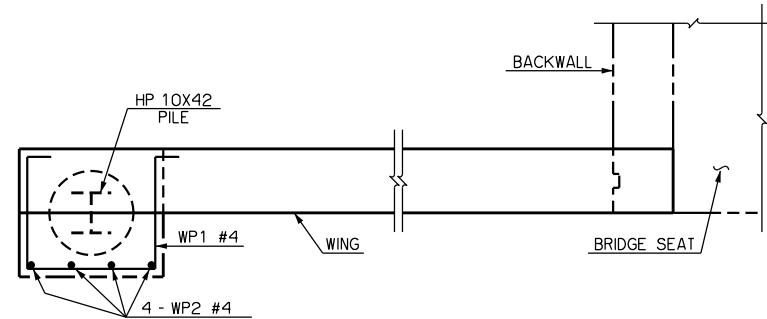
(1) THE PT1 BARS SHOWN SHALL BE EQUALLY SPACED BETWEEN THE BOTTOM OF THE HORIZONTAL LEG OF THE P BARS AND THE TOP OF PIER CAP AT THE SIDE FACE OF THE PIER CAP. OMIT PT1 BAR IN PEDESTALS (A), (B), (F) AND (G).

SB US-81 OVER GRAND AVENUE
 BRIDGE 'M'

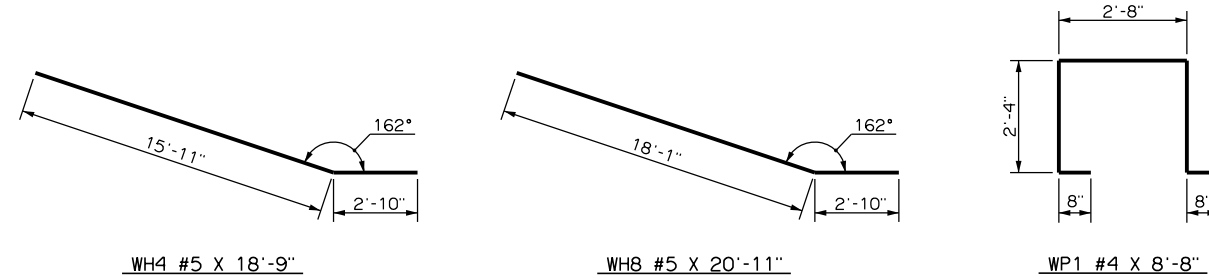
DETAILS OF ABUTMENT NOS. 1 AND 2



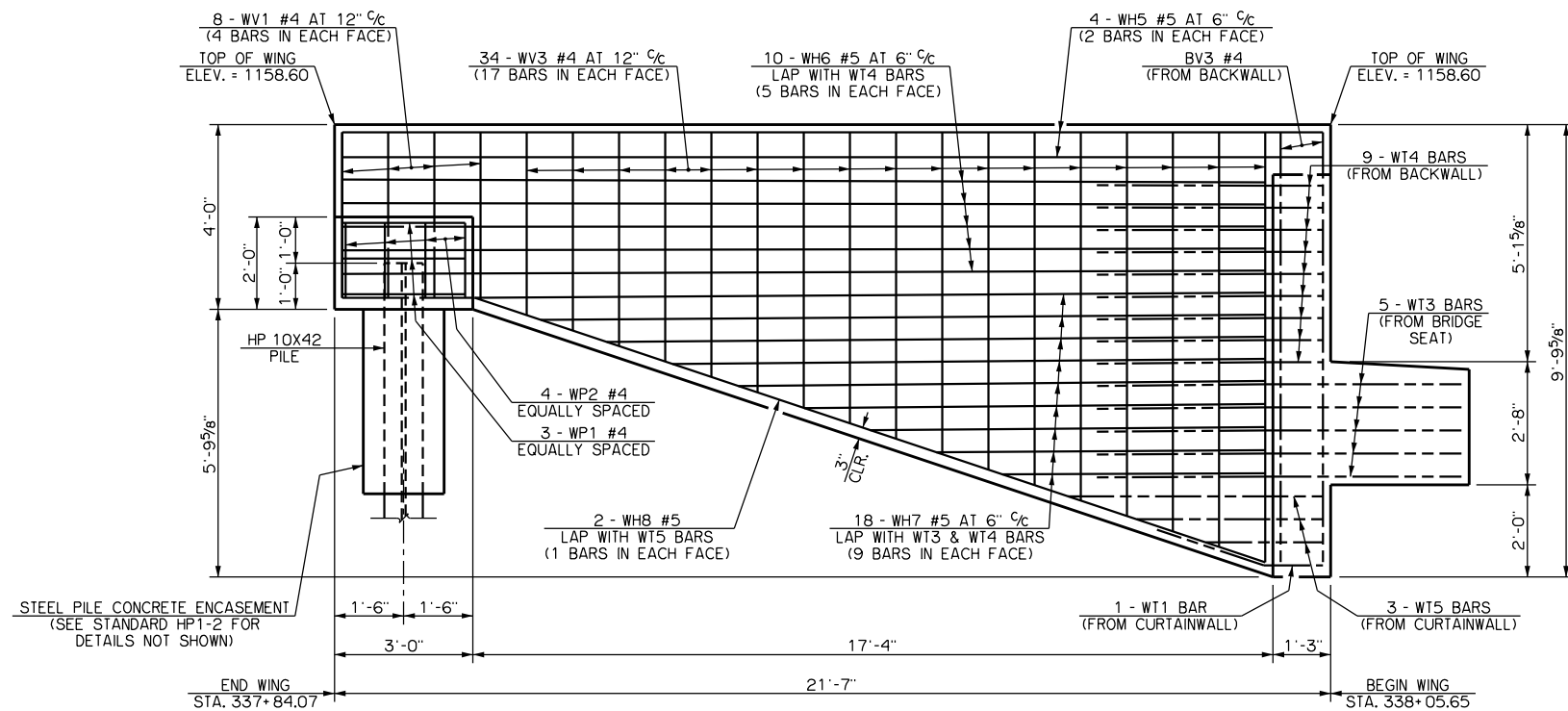
ELEVATION OF WEST WING (LOOKING EAST)



PLAN OF REINFORCING STEEL AT WING PILE CONCRETE BLOCK OUT

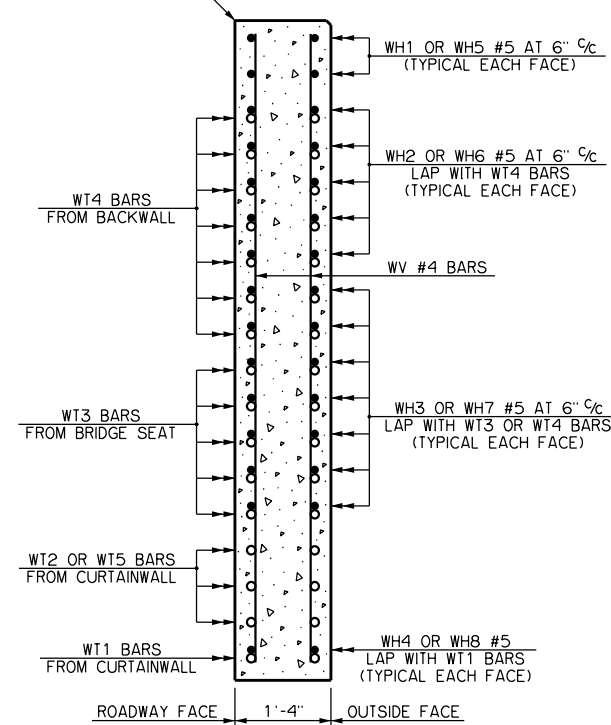


DETAILS OF BENT REINFORCING STEEL



ELEVATION ON EAST WING (LOOKING WEST)

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED



SECTION THRU WING (AT BACK FACE OF BACKWALL)

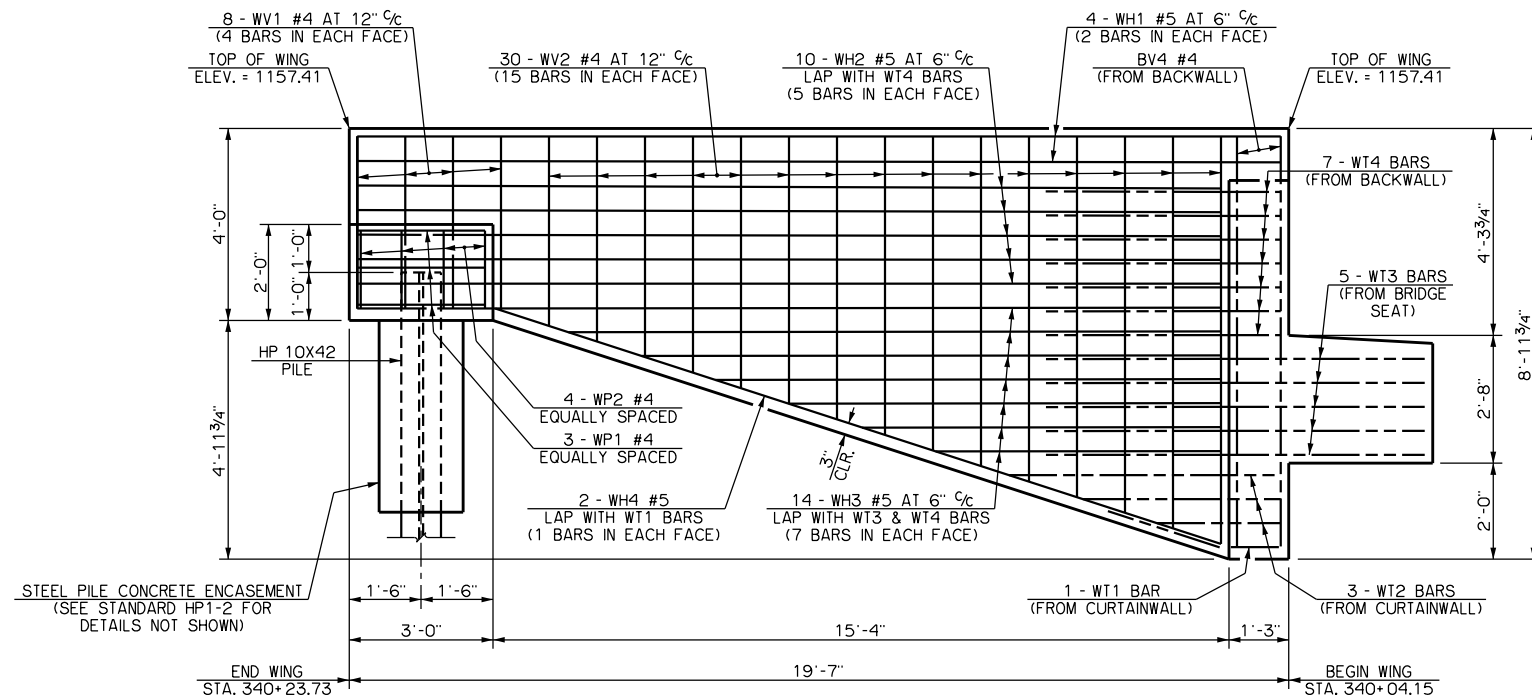
BAR LIST - WEST WING AT ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#5	4	STR.	19'-3"	-
WH2	#5	10	STR.	18'-0"	-
(1) WH3	#5	14	STR.	10'-6" AVG.	5'-11" TO 15'-11"
WH4	#5	2	BNT.	18'-9"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(2) WV2	#4	30	STR.	6'-2 1/2" AVG.	3'-11" TO 8'-6"

BAR LIST - EAST WING AT ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH5	#5	4	STR.	21'-3"	-
WH6	#5	10	STR.	20'-0"	-
(3) WH7	#5	18	STR.	11'-4 1/2" AVG.	5'-8" TO 17'-11"
WH8	#5	2	BNT.	20'-11"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(4) WV3	#4	34	STR.	6'-7 1/2" AVG.	3'-11" TO 9'-4"

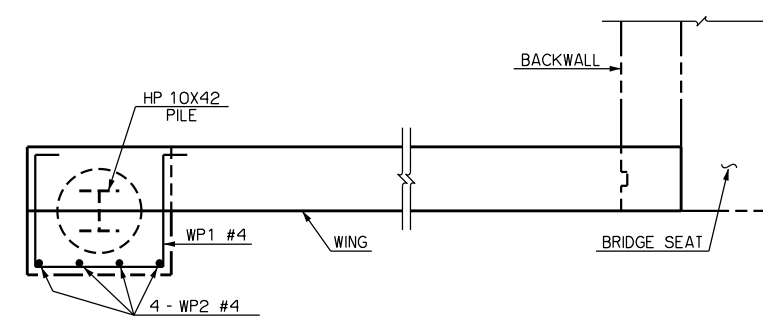
- (1) INCLUDES TWO SETS OF 7 BARS
- (2) INCLUDES TWO SETS OF 15 BARS
- (3) INCLUDES TWO SETS OF 9 BARS
- (4) INCLUDES TWO SETS OF 17 BARS

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

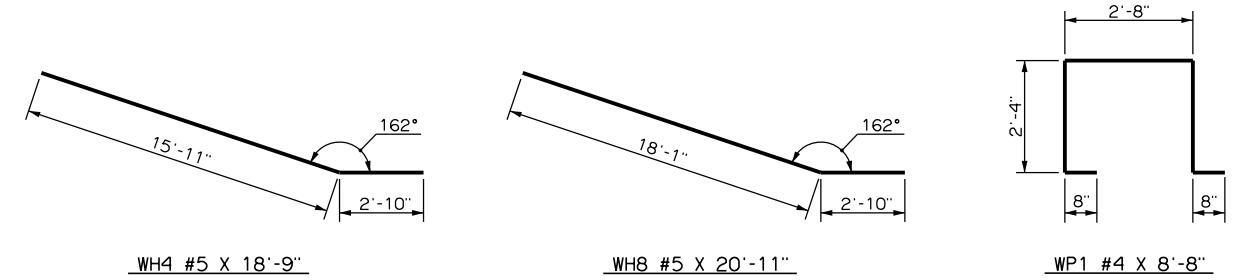
DETAILS OF WINGS AT ABUTMENT NO. 1



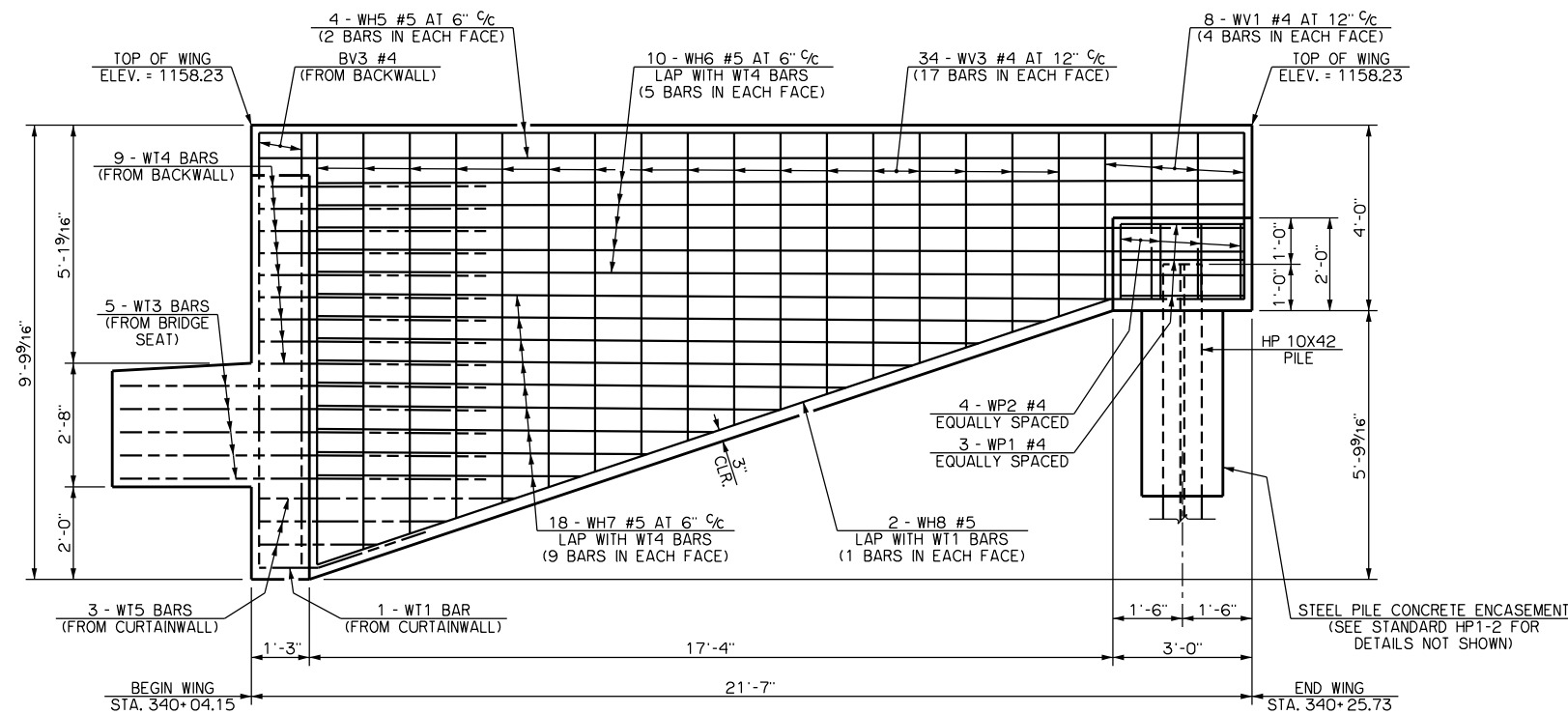
ELEVATION ON WEST WING (LOOKING EAST)



PLAN OF REINFORCING STEEL AT WING PILE CONCRETE BLOCK OUT

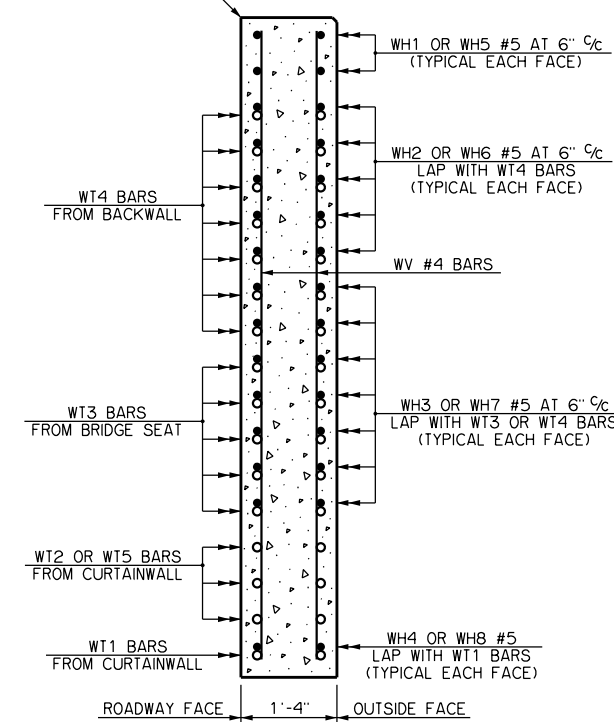


DETAILS OF BENT REINFORCING STEEL



ELEVATION OF EAST WING (LOOKING WEST)

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED



SECTION THRU WING (AT BACK FACE OF BACKWALL)

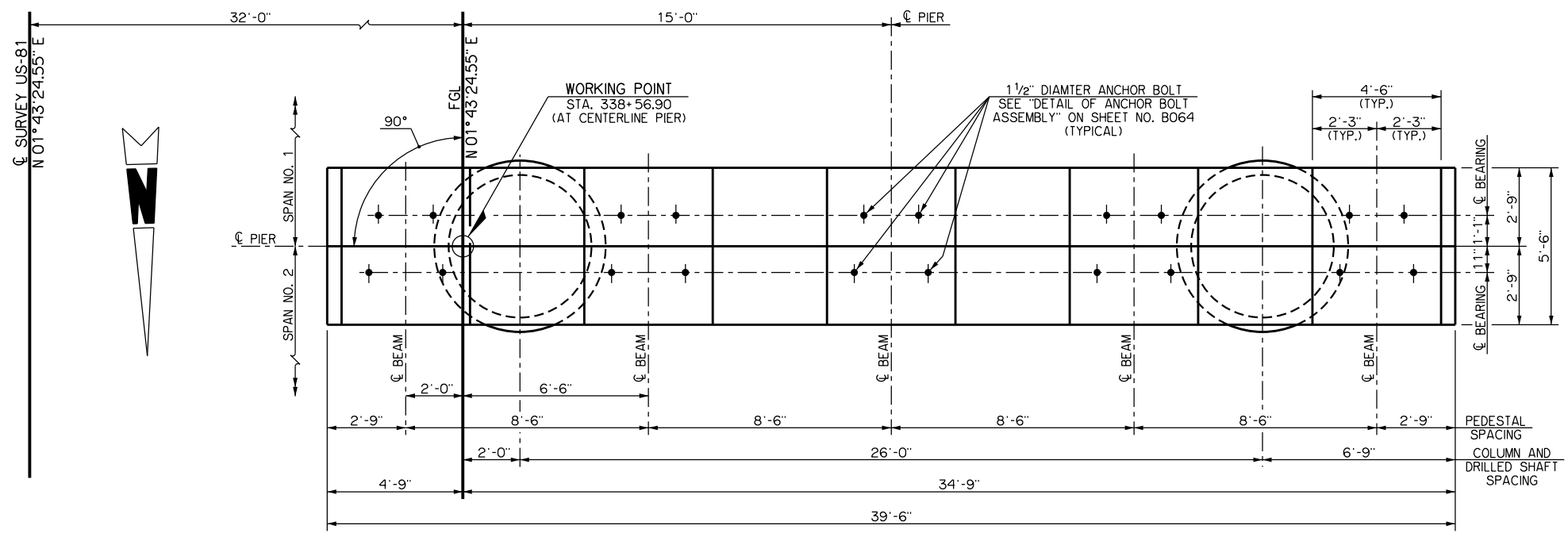
BAR LIST - WEST WING AT ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#5	4	STR.	19'-3"	-
WH2	#5	10	STR.	18'-0"	-
(1) WH3	#5	14	STR.	10'-6" AVG.	5'-11" TO 15'-1"
WH4	#5	2	BNT.	18'-9"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(2) WV2	#4	30	STR.	6'-2 1/2" AVG.	3'-11" TO 8'-6"

BAR LIST - EAST WING AT ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH5	#5	4	STR.	21'-3"	-
WH6	#5	10	STR.	20'-0"	-
(3) WH7	#5	18	STR.	11'-4 1/2" AVG.	5'-8" TO 17'-1"
WH8	#5	2	BNT.	20'-11"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(4) WV3	#4	34	STR.	6'-7 1/2" AVG.	3'-11" TO 9'-4"

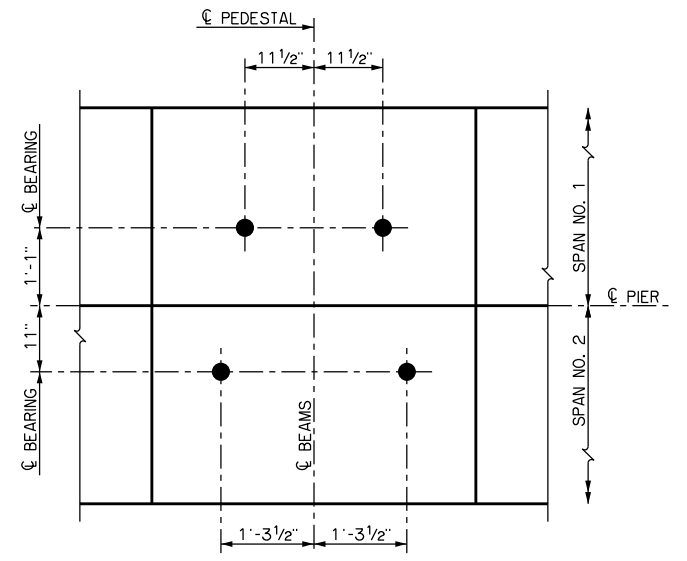
- (1) INCLUDES TWO SETS OF 7 BARS
- (2) INCLUDES TWO SETS OF 15 BARS
- (3) INCLUDES TWO SETS OF 9 BARS
- (4) INCLUDES TWO SETS OF 17 BARS

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

DETAILS OF WINGS AT ABUTMENT NO. 2

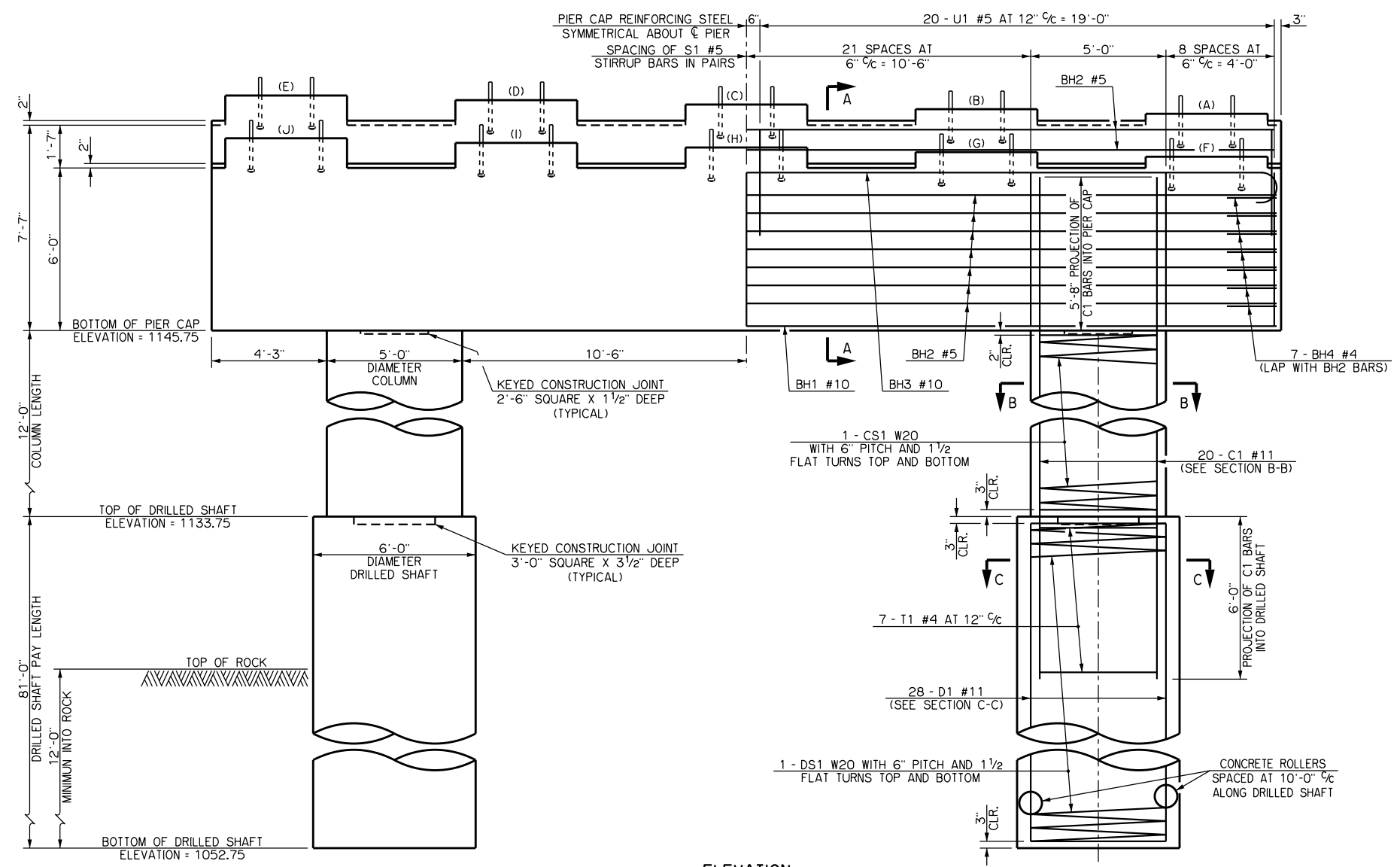


PLAN



TYPICAL PLAN OF ANCHOR BOLT LAYOUT

ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B064 FOR DETAILS.



ELEVATION

PEDESTAL	ELEVATION
(A)	1153.75
(B)	1153.92
(C)	1154.09
(D)	1154.26
(E)	1154.43
(F)	1152.17
(G)	1152.34
(H)	1152.51
(I)	1152.68
(J)	1152.85

BAR LIST - PIER NO. 1				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	39'-2"
BH2	#5	21	STR.	39'-2"
BH3	#10	10	BNT.	42'-0"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	30	BNT.	5'-8"
P2	#4	24	BNT.	7'-5"
P3	#4	30	BNT.	6'-4"
P4	#4	24	BNT.	8'-1"
PT1	#4	6	BNT.	13'-11"
S1	#5	122	BNT.	19'-3"
U1	#5	40	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	356'-6"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	23'-8"
UNCOATED				
(2) D1	#11	56	STR.	86'-3"
DS1	W20	2	BNT.	2,577'-5"
T1	#4	14	BNT.	16'-0"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.
 (2) LENGTH INCLUDES ONE 5'-9" LAP, LAPS SHALL BE STAGGERED

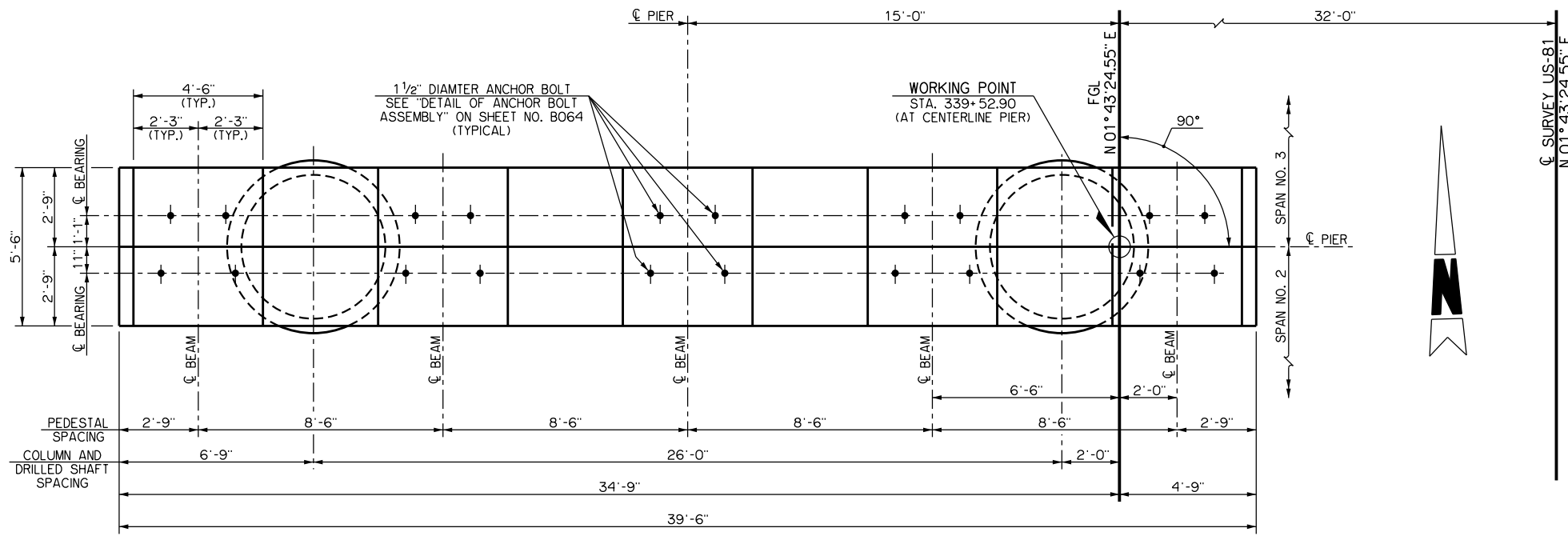
SUMMARY OF QUANTITIES - PIER NO. 1		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	75.90
REINFORCING STEEL	LB	490.00
EPOXY COATED REINFORCING STEEL	LB	7,870.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	102.00
DRILLED SHAFTS 72" DIAMETER	LF	162.00

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

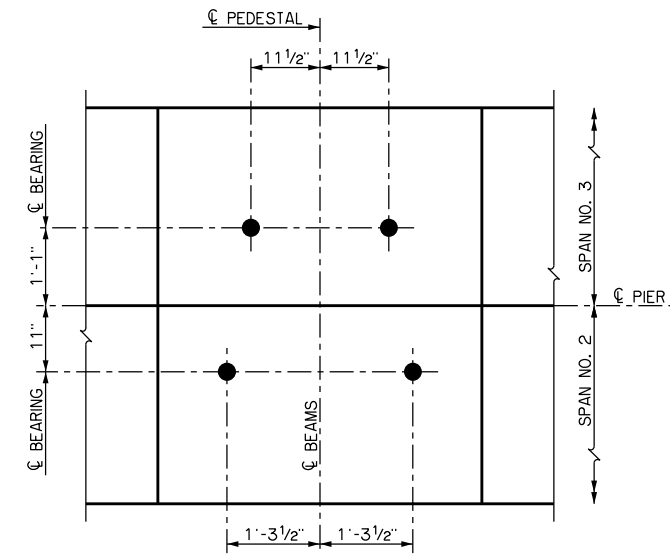
DETAILS OF PIER NO. 1

State Job No. 24428(12) Sheet No. B056

US 81 REALIGNMENT GRADY COUNTY

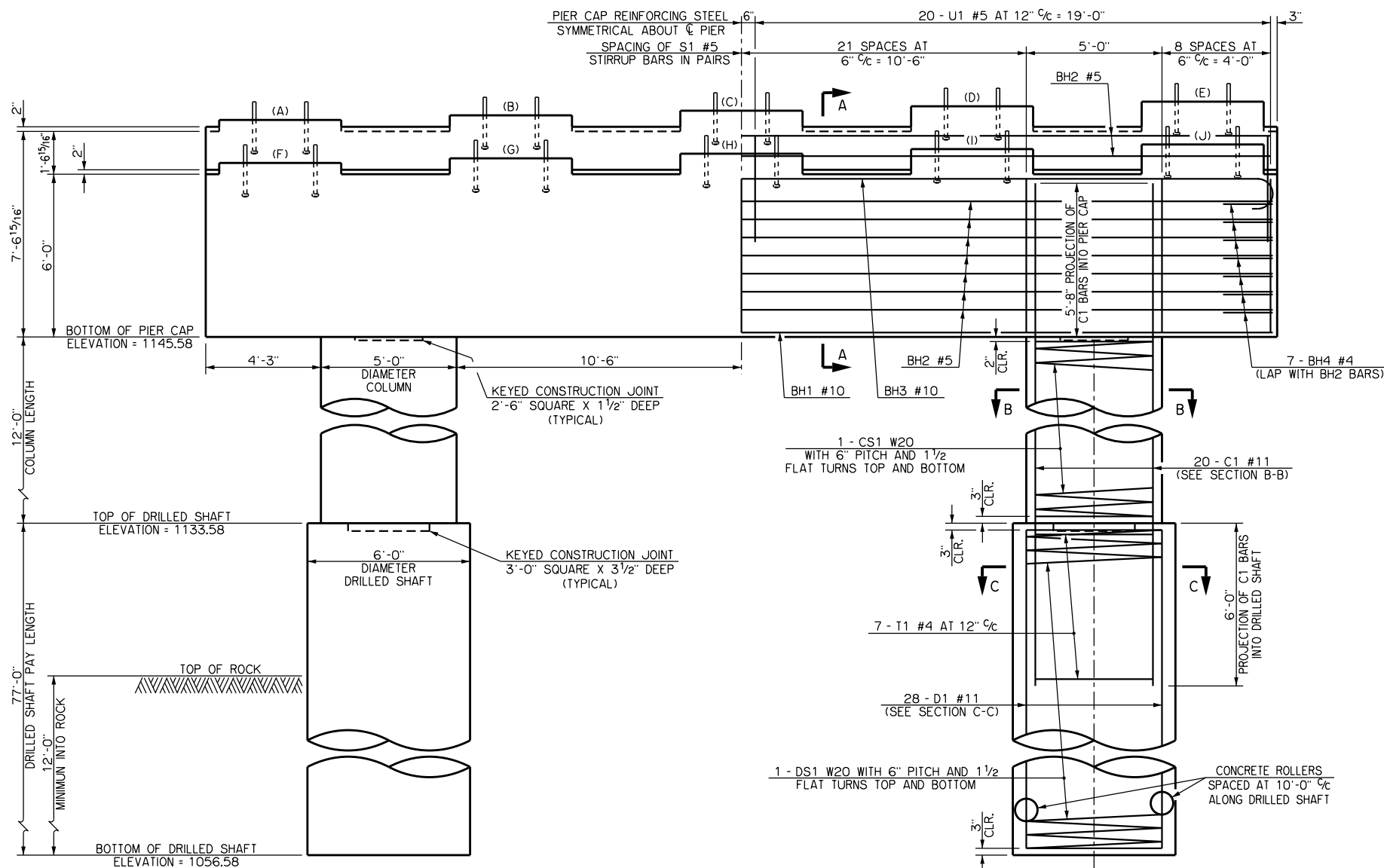


PLAN



TYPICAL PLAN OF ANCHOR BOLT LAYOUT

ANCHOR BOLTS SHALL BE 1 1/2\"/>



ELEVATION

PEDESTAL	ELEVATION
(A)	1153.57
(B)	1153.74
(C)	1153.91
(D)	1154.08
(E)	1154.25
(F)	1151.99
(G)	1152.16
(H)	1152.33
(I)	1152.50
(J)	1152.67

BAR LIST - PIER NO. 2				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	39'-2"
BH2	#5	21	STR.	39'-2"
BH3	#10	10	BNT.	42'-0"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	30	BNT.	5'-8"
P2	#4	24	BNT.	7'-5"
P3	#4	30	BNT.	6'-4"
P4	#4	24	BNT.	8'-1"
PT1	#4	6	BNT.	13'-11"
S1	#5	122	BNT.	19'-3"
U1	#5	40	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	356'-6"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	23'-8"
UNCOATED				
(2) D1	#11	56	STR.	82'-3"
DS1	W20	2	BNT.	2,451'-8"
T1	#4	14	BNT.	16'-0"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.
 (2) LENGTH INCLUDES ONE 5'-9" LAP, LAPS SHALL BE STAGGERED

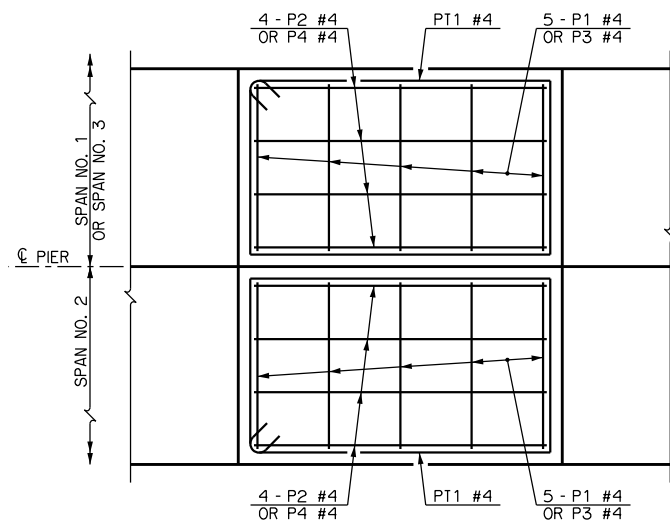
SUMMARY OF QUANTITIES - PIER NO. 2		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	75.90
REINFORCING STEEL	LB	490.00
EPOXY COATED REINFORCING STEEL	LB	7,870.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	102.00
DRILLED SHAFTS 72" DIAMETER	LF	154.00

SB US-81 OVER GRAND AVENUE
 BRIDGE 'M'

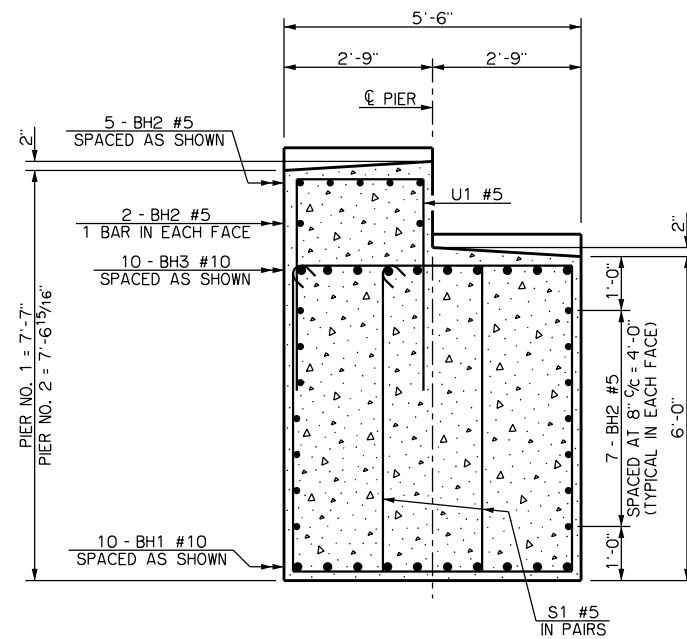
DETAILS OF PIER NO. 2

State Job No. 24428(12) Sheet No. B057

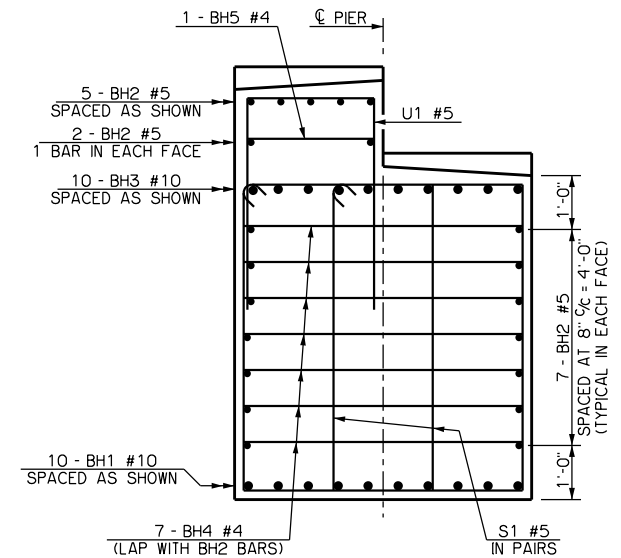
US 81 REALIGNMENT GRADY COUNTY



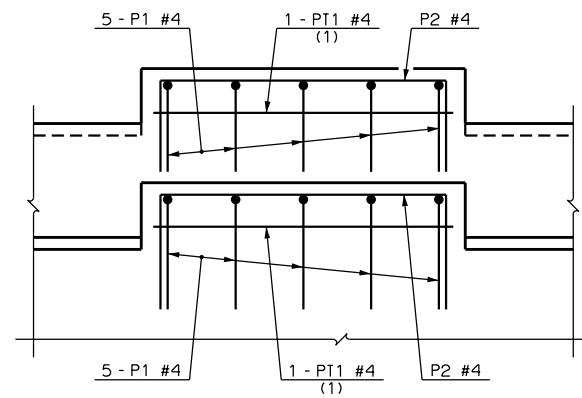
PLAN OF PEDESTAL REINFORCING AT PIER NOS. 1 AND 2



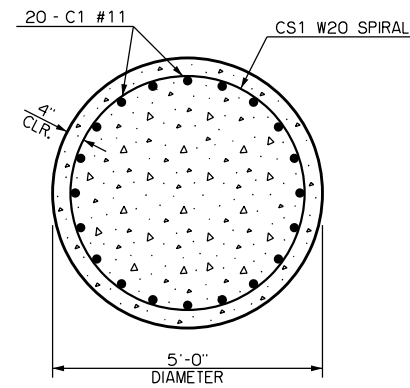
SECTION A-A



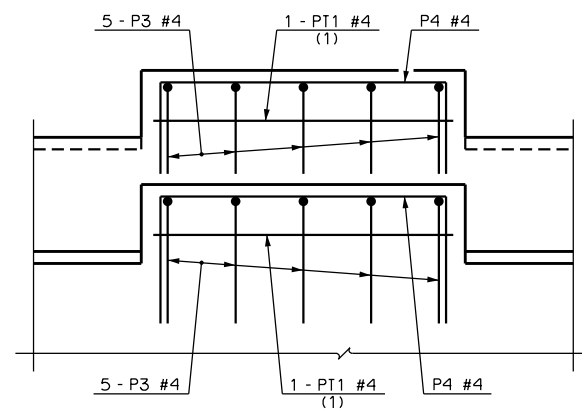
END OF PIER CAP REINFORCING



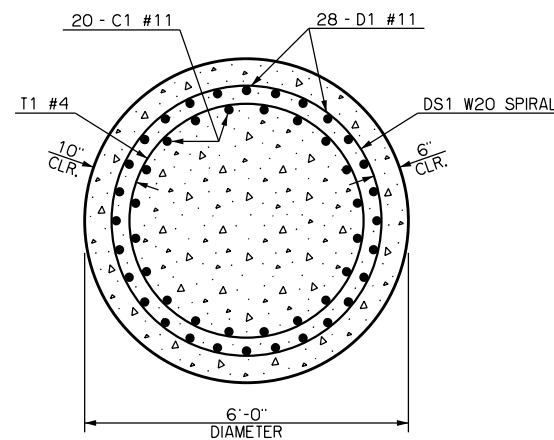
ELEVATION OF PEDESTALS (A), (B), (C), (F), (G) AND (H)



SECTION B-B



ELEVATION OF PEDESTALS (D), (E), (I) AND (J)



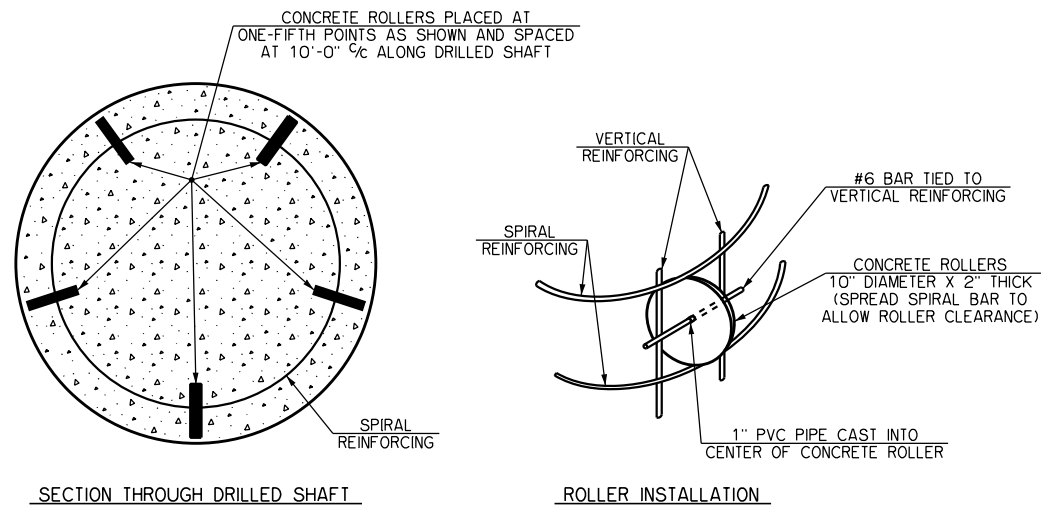
SECTION C-C

NOTES

(1) THE PT1 BARS SHOWN SHALL BE EQUALLY SPACED BETWEEN THE BOTTOM OF THE HORIZONTAL LEG OF THE P BARS AND THE TOP OF PIER CAP AT THE SIDE FACE OF THE PIER CAP. OMIT PT1 BAR IN PEDESTALS (A), (B), (F) AND (G).

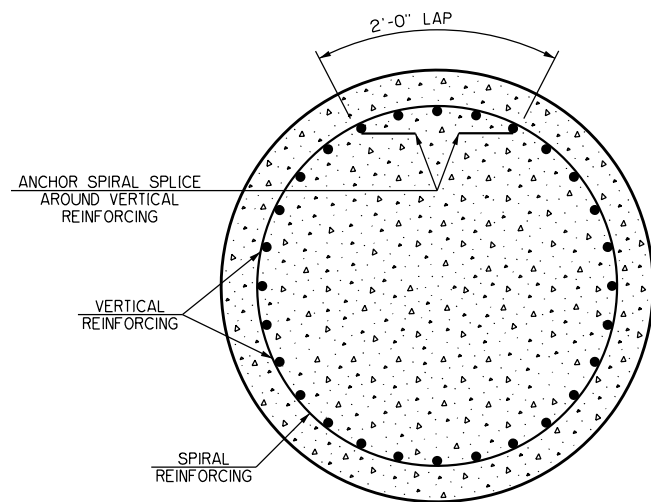
SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF PIER NOS. 1 AND 2
(SHEET NO. 1 OF 2)



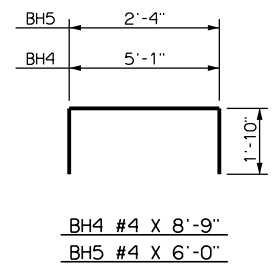
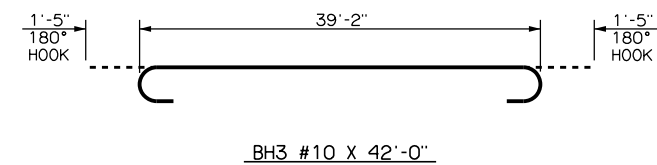
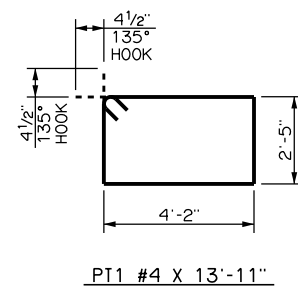
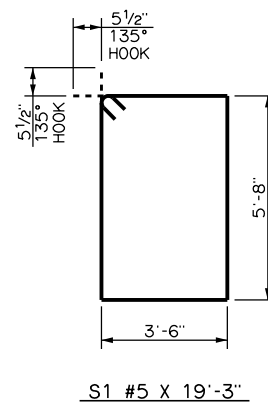
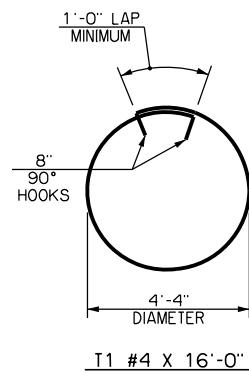
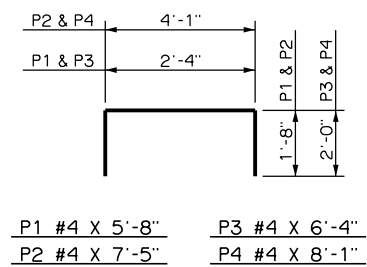
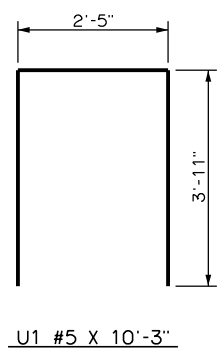
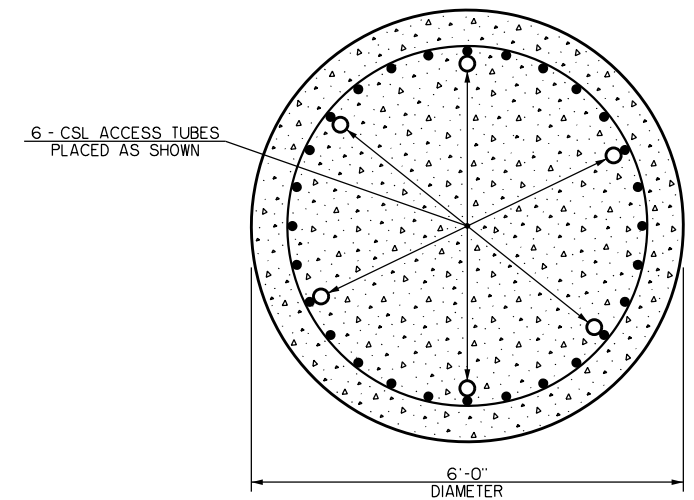
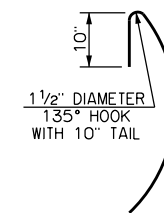
DETAILS OF CONCRETE ROLLERS

CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS. COST OF CONCRETE ROLLERS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF DRILLED SHAFT.



DETAILS OF SPIRAL REINFORCING STEEL SPLICE

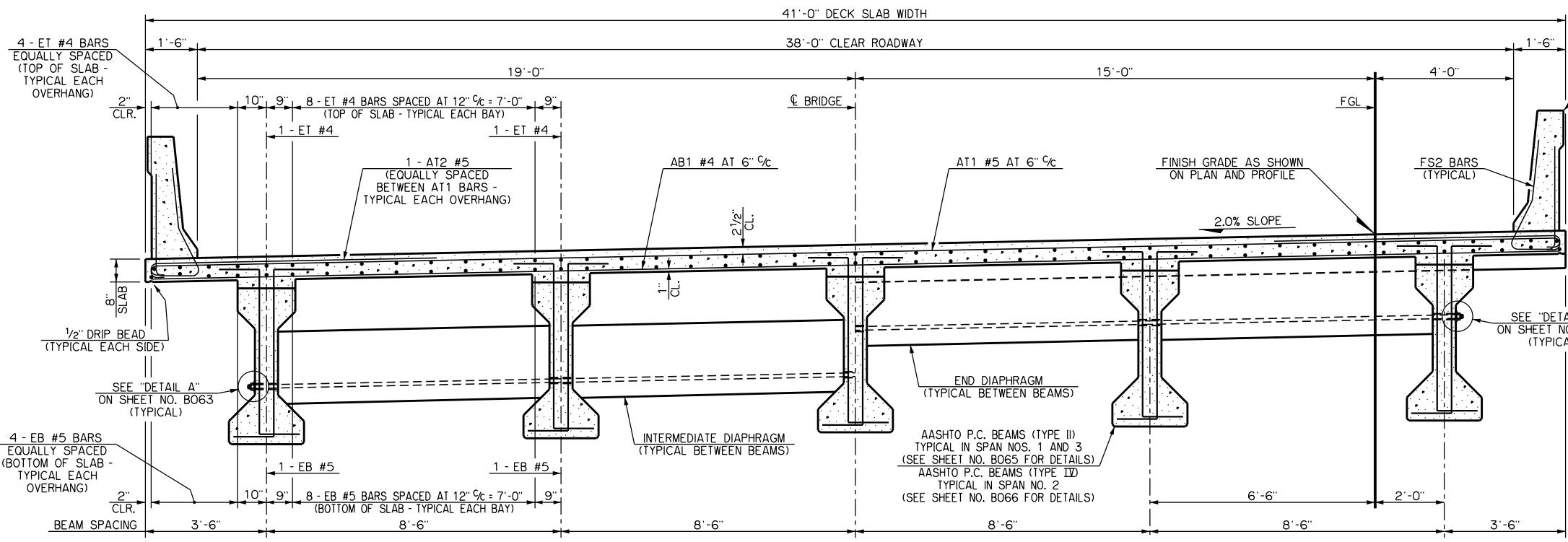
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



DETAILS OF BENT REINFORCING STEEL

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

DETAILS OF PIER NOS. 1 AND 2 (SHEET NO. 2 OF 2)



TYPICAL SECTION

BAR LIST - SUPERSTRUCTURE				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
AB1	#4	407	STR.	40'-8"
AS	#4	82	BNT.	5'-11"
AT1	#5	401	BNT.	41'-10"
AT2	#5	800	BNT.	8'-10"
EB1	#5	45	STR.	51'-8"
EB2	#5	45	STR.	153'-8"
ET1	#4	45	STR.	51'-8"
ET2	#4	45	STR.	151'-8"
F1	#4	80	STR.	7'-8"
F2	#4	40	STR.	7'-6"
F3	#4	64	STR.	7'-4"
F4	#4	32	STR.	6'-8"
FS2	#5	345	BNT.	7'-4"
U1	#4	72	BNT.	3'-5"
U2	#4	36	BNT.	4'-9"
U3	#4	144	BNT.	4'-11"
U4	#4	64	BNT.	6'-3"
UD1	#4	84	BNT.	5'-10"

- (4) LENGTH INCLUDES TWO 3'-0" LAP, LAPS SHALL BE STAGGERED
- (5) LENGTH INCLUDES TWO 2'-0" LAP, LAPS SHALL BE STAGGERED

SUMMARY OF QUANTITIES - SUPERSTRUCTURE

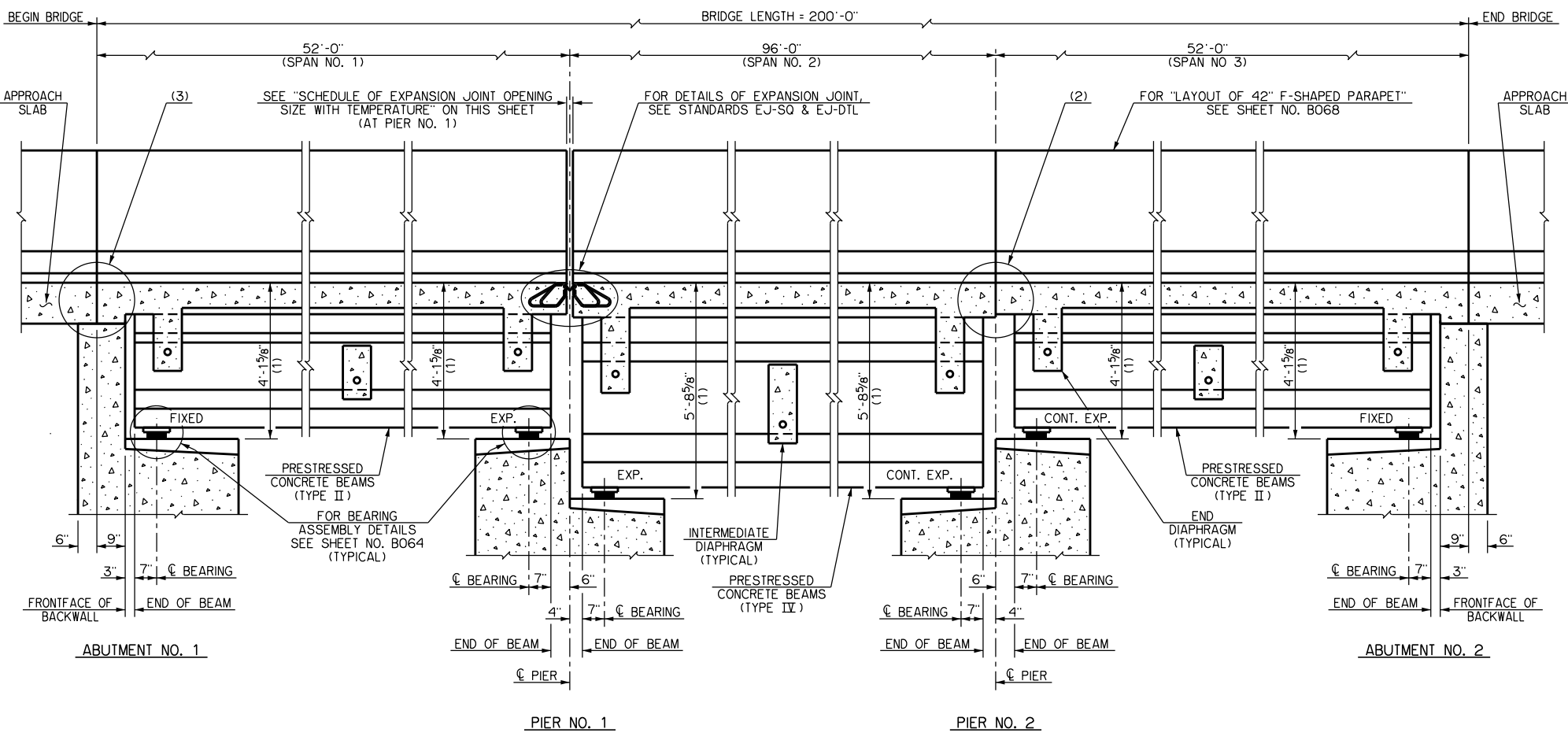
ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE II)	LF	505.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF	476.67
SAW-CUT GROOVING	SY	845.00
SEALED EXPANSION JOINT	LF	42.00
42" F-SHAPED PARAPET	LF	399.50
STRUCTURAL STEEL	LB	1,350.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	10.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	20.00
CLASS AA CONCRETE	CY	223.90
EPOXY COATED REINFORCING STEEL	LB	57,050.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	629.00
SEALER CRACK PREPARATION	LF	38.00
SEALER RESIN	GAL	0.50

NOTES

- (1) DIMENSION IS FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT \bar{C} BEARING.
 - (2) UNDER NO CIRCUMSTANCES SHALL THE SLAB BE A CONTINUOUS POUR OVER PIER NO. 2. THIS LOCATION SHALL HAVE A CONSTRUCTION JOINT IN THE SLAB AND SHALL BE SEALED WITH SEALER RESIN (SEE GENERAL NOTE ON SHEET NO. ABO1). THE LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU THE CONSTRUCTION JOINT.
 - (3) UNDER NO CIRCUMSTANCES SHALL THE DECK SLAB AND THE APPROACH SLAB OVER THE BACKWALLS OF ABUTMENT NOS. 1 AND 2 BE A CONTINUOUS POUR. THESE LOCATIONS SHALL HAVE A SAWS AND SEALED CONSTRUCTION JOINT IN THE SLAB. SEE "DETAILS OF APPROACH SLABS" ON SHEET NO. B067 FOR DETAILS OF THIS JOINT.
 - (4) AMBIENT AIR TEMPERATURE AT THE TIME THE DECK SLAB CONCRETE IS POURED.
- ROTATE HOOKS ON AT BARS TO MAINTAIN MINIMUM CLEARANCE.
- ALL DIMENSIONS SHOWN IN THE LONGITUDINAL SECTION ARE ALONG THE \bar{C} OF THE P.C. BEAM.
- DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS.

SCHEDULE OF EXPANSION JOINT OPENING SIZE WITH TEMPERATURE

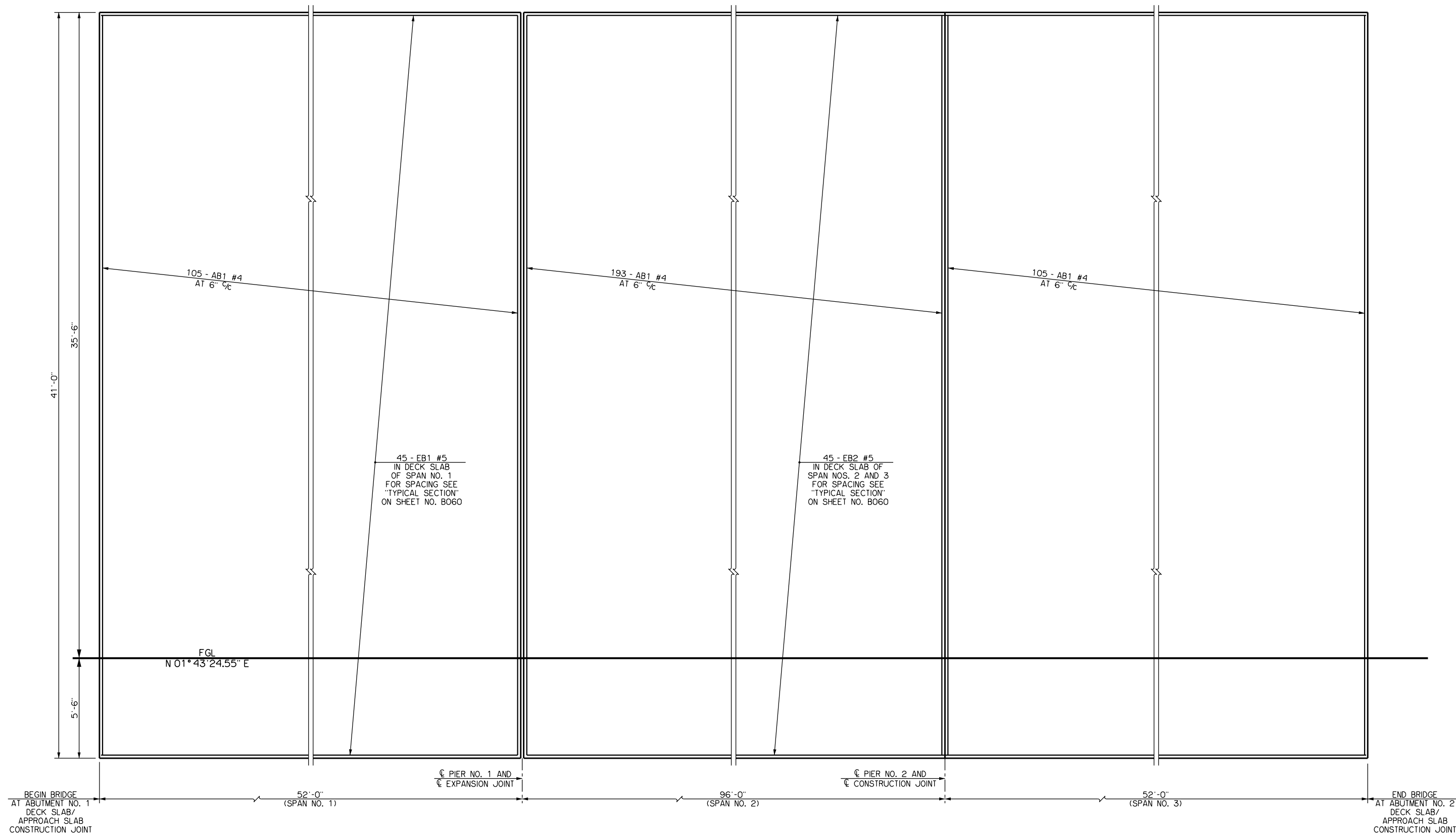
TEMPERATURE (4)	OPENING AT PIER NO. 1
0°F	2 ⁹ / ₈ "
10°F	2 ¹ / ₂ "
20°F	2 ³ / ₈ "
30°F	2 ¹ / ₈ "
40°F	2"
50°F	1 ⁷ / ₈ "
60°F	1 ³ / ₄ "
70°F	1 ⁵ / ₈ "
80°F	1 ¹ / ₂ "
90°F	1 ³ / ₈ "
100°F	1 ¹ / ₄ "
110°F	1"



LONGITUDINAL SECTION

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

DETAILS OF SUPERSTRUCTURE (SHEET NO. 1 OF 4)



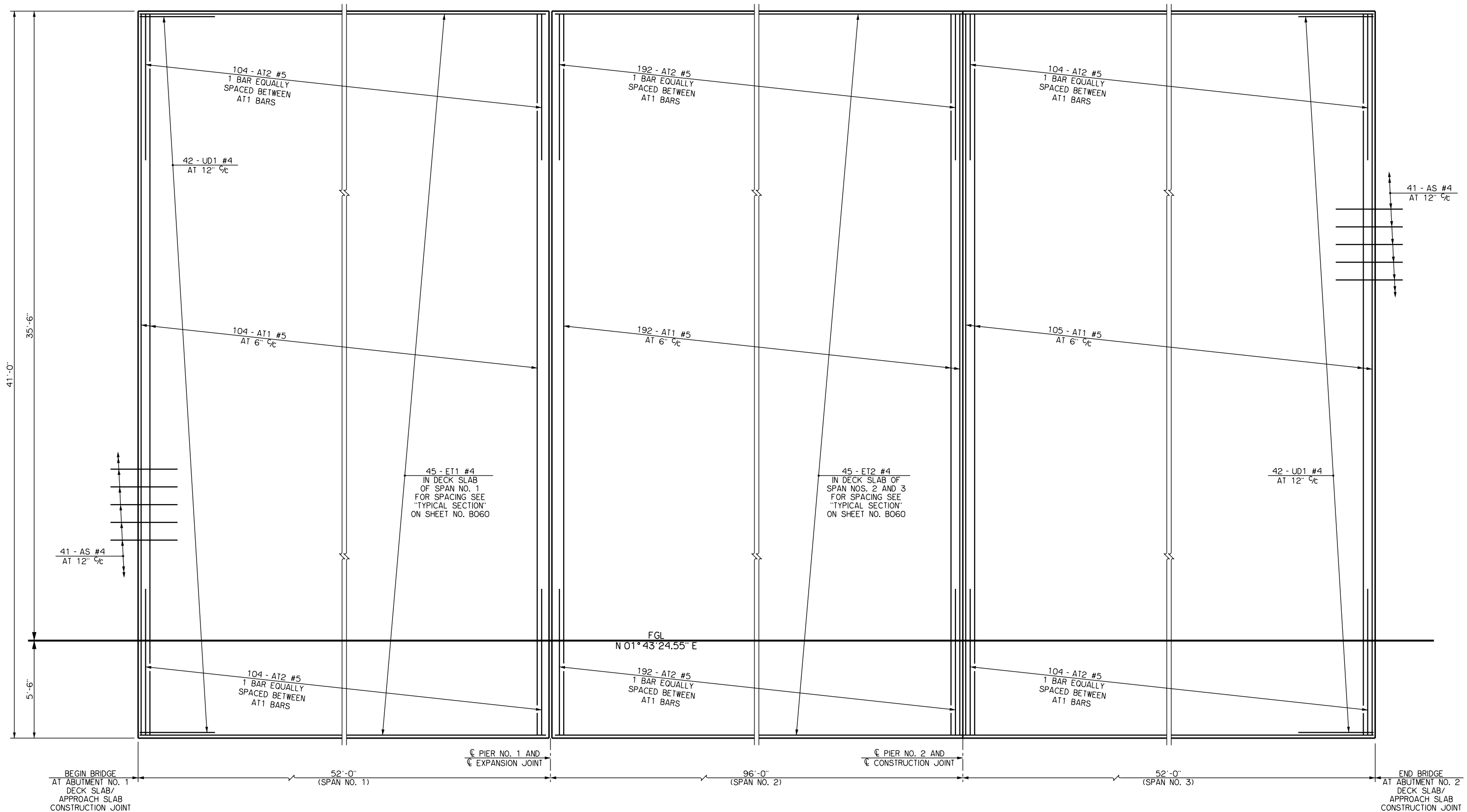
BOTTOM OF DECK SLAB REINFORCING STEEL LAYOUT

NOTE

'FS' BARS PROJECTING FROM DECK SLAB INTO THE 42" F-SHAPED PARAPETS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD FSHP-42-2 AND "LAYOUT OF 42" F-SHAPED PARAPET" ON SHEET NO. B068 FOR PLACEMENT OF 'FS' BARS.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 2 OF 4)**



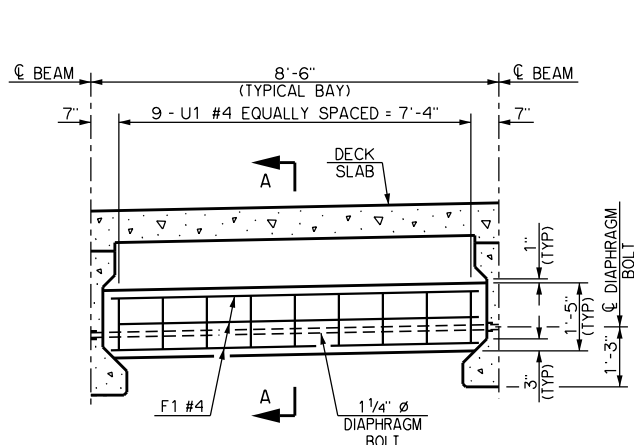
TOP OF DECK SLAB REINFORCING STEEL LAYOUT

NOTE

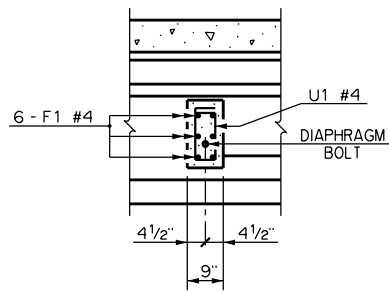
'FS' BARS PROJECTING FROM DECK SLAB INTO THE 42" F-SHAPED PARAPETS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD FSHP-42-2 AND "LAYOUT OF 42" F-SHAPED PARAPET" ON SHEET NO. B068 FOR PLACEMENT OF 'FS' BARS.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

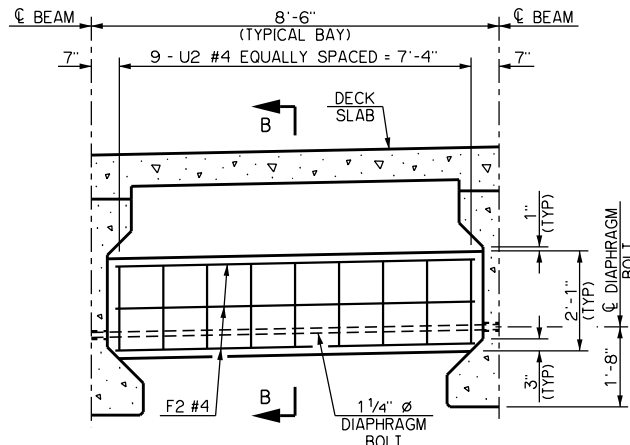
DETAILS OF SUPERSTRUCTURE
(SHEET NO. 3 OF 4)



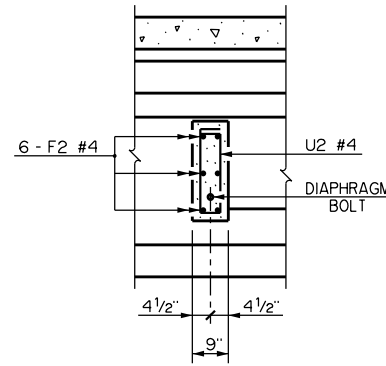
ELEVATION OF INTERMEDIATE DIAPHRAGM
WITHIN SPAN NOS. 1 AND 3



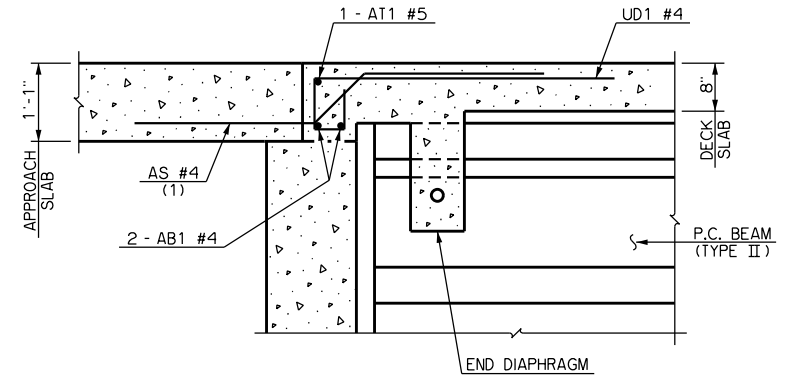
SECTION "A-A"



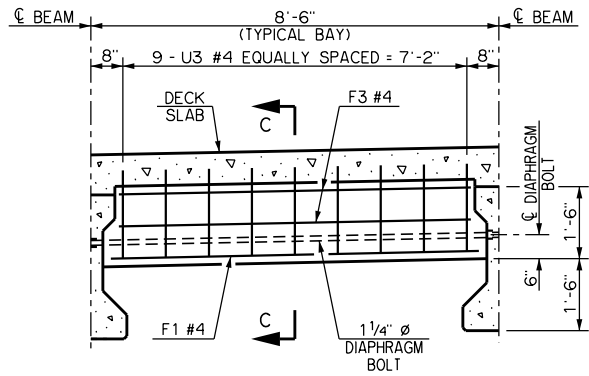
ELEVATION OF INTERMEDIATE DIAPHRAGM
WITHIN SPAN NO. 2



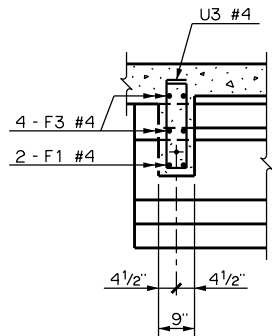
SECTION "B-B"



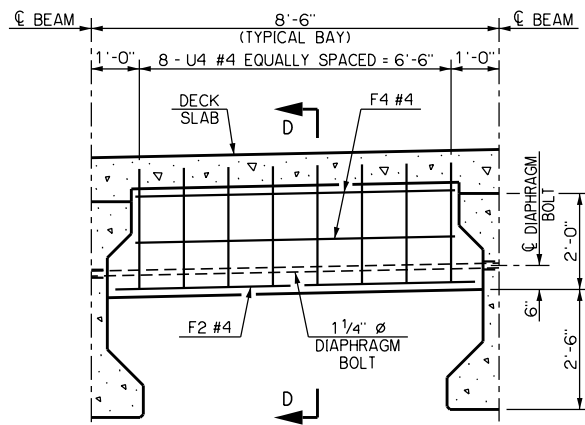
PARTIAL LONGITUDINAL SECTION WITH ADDITIONAL
DECK SLAB REINFORCING STEEL AT ABUTMENT BACKWALL



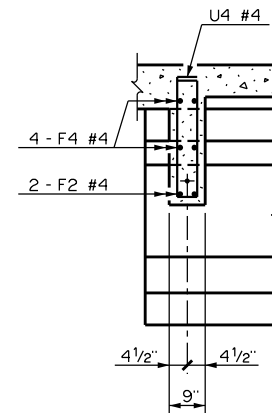
ELEVATION OF END DIAPHRAGM
WITHIN SPAN NOS. 1 AND 3



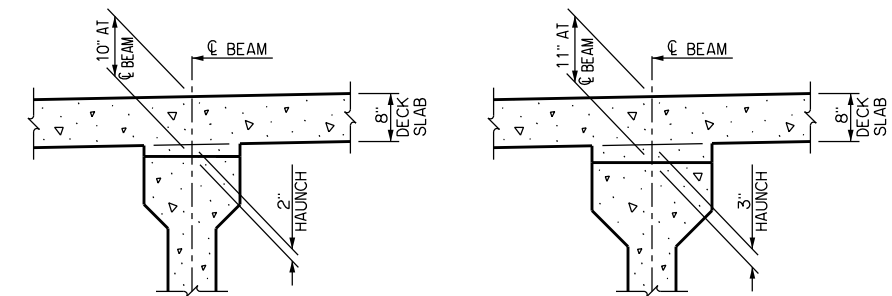
SECTION "C-C"



ELEVATION OF END DIAPHRAGM
WITHIN SPAN NO. 2



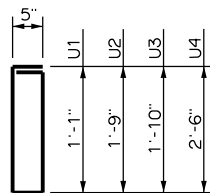
SECTION "D-D"



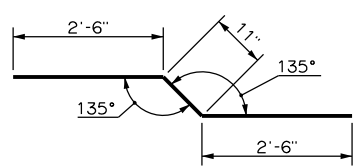
AT SPAN NO. 1 AND 3 AT SPAN NO. 2

DETAILS OF HAUNCH

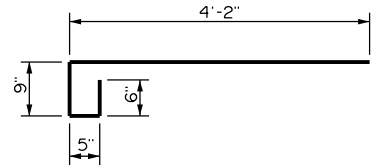
NOTE: PLAN QUANTITIES FOR CLASS "AA" CONCRETE INCLUDES 5.1 CUBIC YARDS FOR HAUNCHES OVER BEAMS. HAUNCH HEIGHT SHOWN IS PLANNED HEIGHT AT CENTERLINE OF BEARING ONLY, AND VARIES ACROSS THE SPAN. HAUNCH HEIGHT TO BE DETERMINED AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT, BUT THE PAY QUANTITY WILL BE AS SHOWN. FOR DEAD LOAD DEFLECTIONS SEE P.C. BEAM DETAIL SHEET NOS. B065 AND B066.



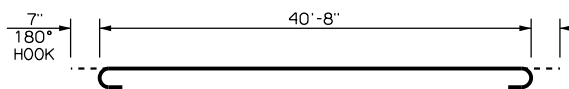
- U1 #4 X 3'-5"
- U2 #4 X 4'-9"
- U3 #4 X 4'-11"
- U4 #4 X 6'-3"



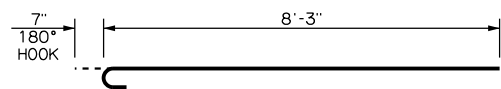
AS #4 X 5'-11"



UD1 #4 X 5'-10"

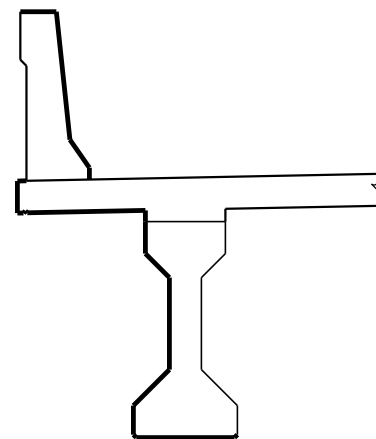


AT1 #5 X 41'-10"



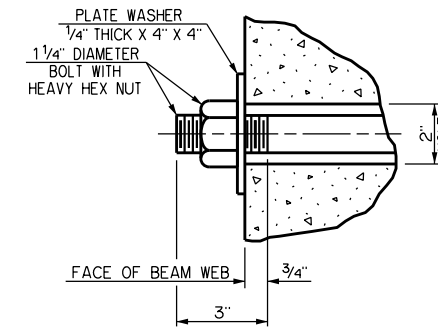
AT2 #5 X 8'-10"

DETAILS OF BENT REINFORCEMENT STEEL



PENETRATING WATER REPELLENT TREATMENT

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.



DETAIL "A"

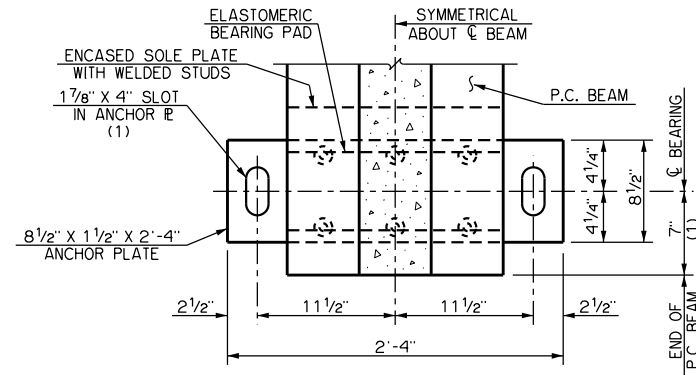
NOTES

STRUCTURAL STEEL FOR DIAPHRAGM RODS AND PLATE WASHERS SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 50W, WEATHERING STEEL (CHARPY V-NOTCH TESTING NOT REQUIRED). A #10 REINFORCING STEEL BAR CONFORMING TO AASHTO M 31, GRADE 60 AND THREADED AT BOTH ENDS AS SHOWN MAY BE SUBSTITUTED FOR THE DIAPHRAGM ROD. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. PAINT EXPOSED PARTS OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS WITH TWO (2) COATS OF ZINC-RICH PAINT (6 MIL MINIMUM THICKNESS) AFTER ASSEMBLY. ALL COST OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS SHALL BE INCLUDED IN UNIT PRICE BID PER POUND OF "STRUCTURAL STEEL."

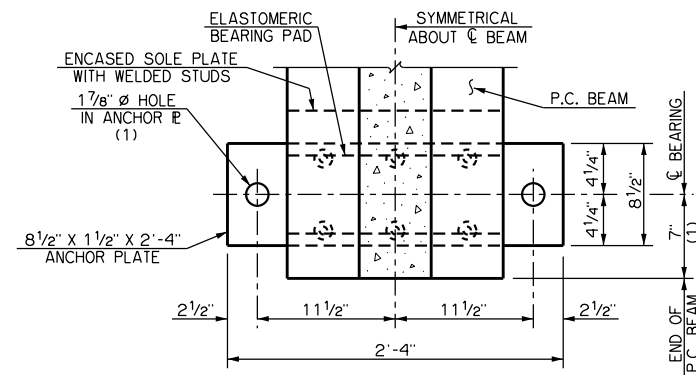
(1) "AS" BARS SHALL BE TIED TO THE TOP MAT OF REINFORCING IN THE DECK SLAB AND TO THE BOTTOM MAT OF REINFORCING IN THE APPROACH SLAB. "AS" BARS MUST BE IN PLACE PRIOR TO POURING THE DECK SLAB CONCRETE.

SB US-81 OVER GRAND AVENUE
BRIDGE "M"

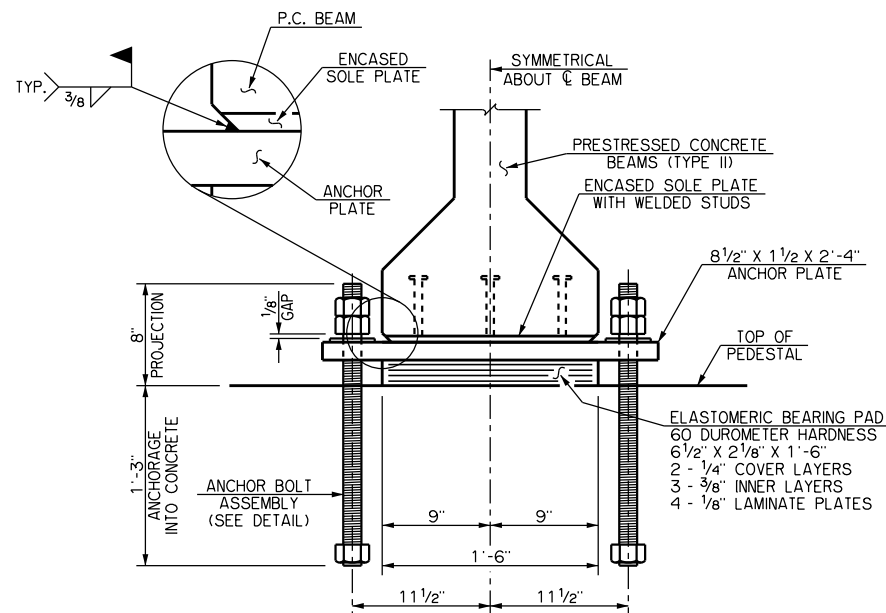
DETAILS OF SUPERSTRUCTURE
(SHEET NO. 4 OF 4)



PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

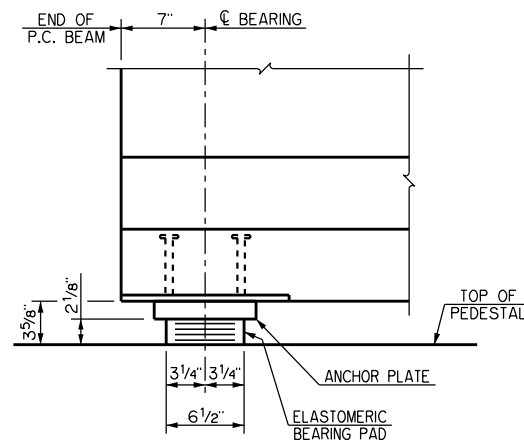


PLAN VIEW AT FIXED LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

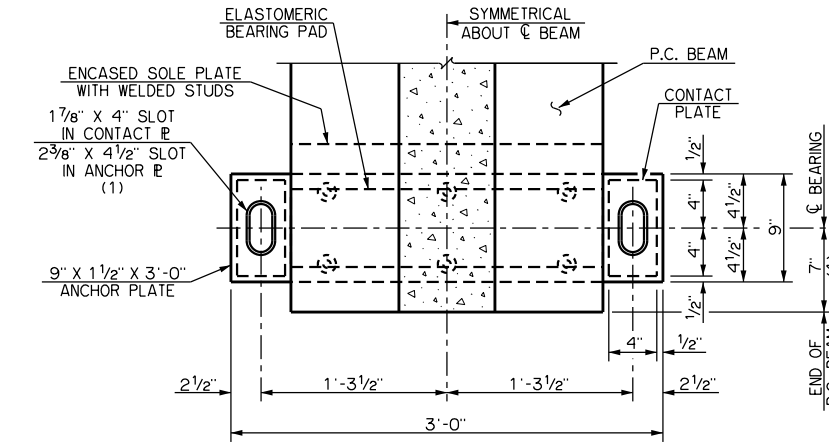


END VIEW

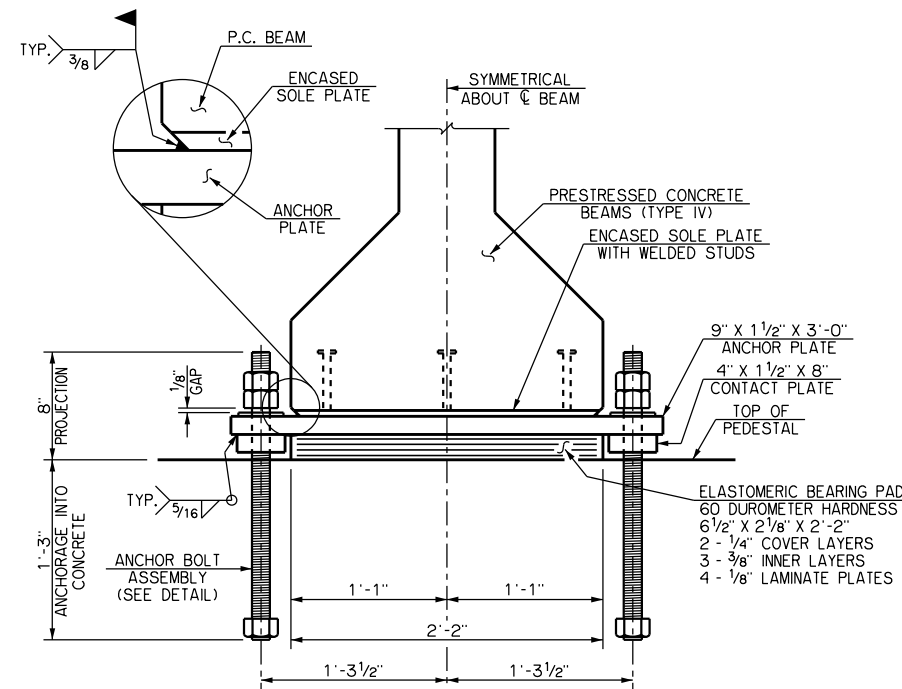
DETAILS OF BEARING ASSEMBLY WITHIN SPAN NOS. 1 AND 3



SIDE VIEW
ANCHOR BOLT ASSEMBLY
OMITTED FOR CLARITY

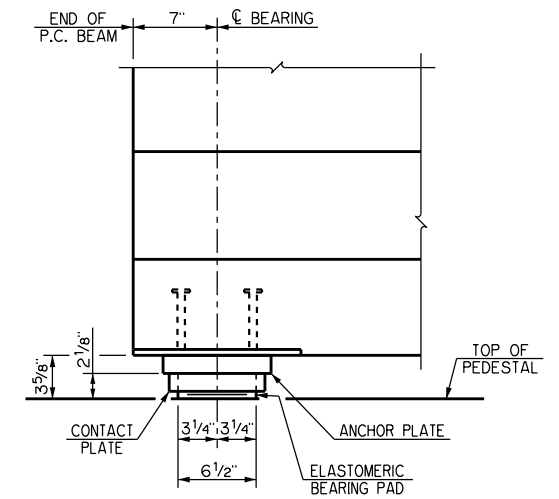


PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

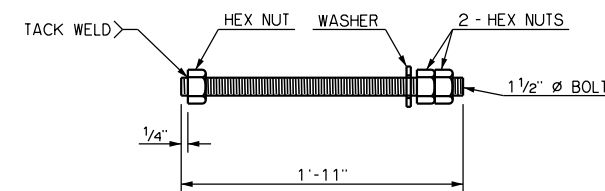


END VIEW

DETAILS OF BEARING ASSEMBLY WITHIN SPAN NO. 2



SIDE VIEW
ANCHOR BOLT ASSEMBLY
OMITTED FOR CLARITY



DETAIL OF ANCHOR BOLT ASSEMBLY

NOTES

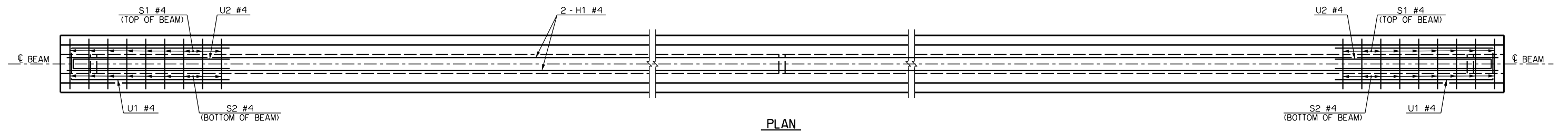
ALL STEEL PARTS OF BEARING ASSEMBLIES SHALL SATISFY THE REQUIREMENTS OF SECTION 724.05.A "STAINLESS STEEL BEARING ASSEMBLIES" OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION FOR "BRIDGE BEARING STRUCTURAL STEEL" (SP 724-1). THE MATERIAL REQUIREMENTS FOR THE CONTACT PLATES SHALL BE THE SAME AS THE MATERIAL REQUIREMENTS FOR THE ANCHOR PLATES.

ELASTOMERIC BEARING PADS SHALL SATISFY THE REQUIREMENTS OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISIONS FOR ELASTOMERIC BEARING PADS" (SP 733-1).

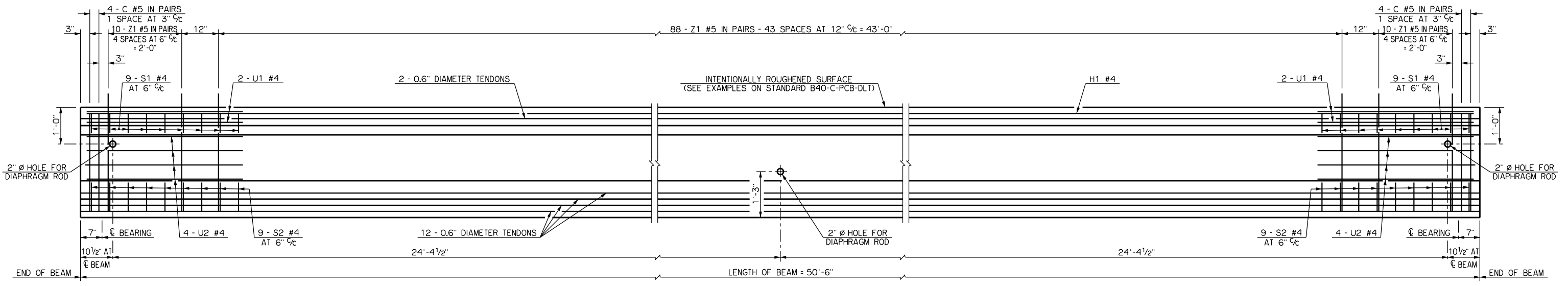
(1) CENTER ANCHOR BOLT ASSEMBLIES IN HOLES AND SLOTS DURING SETTING OF P.C. BEAMS. DIMENSION MAY VARY DEPENDING UPON TEMPERATURE AT TIME OF SETTING OF P.C. BEAMS.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

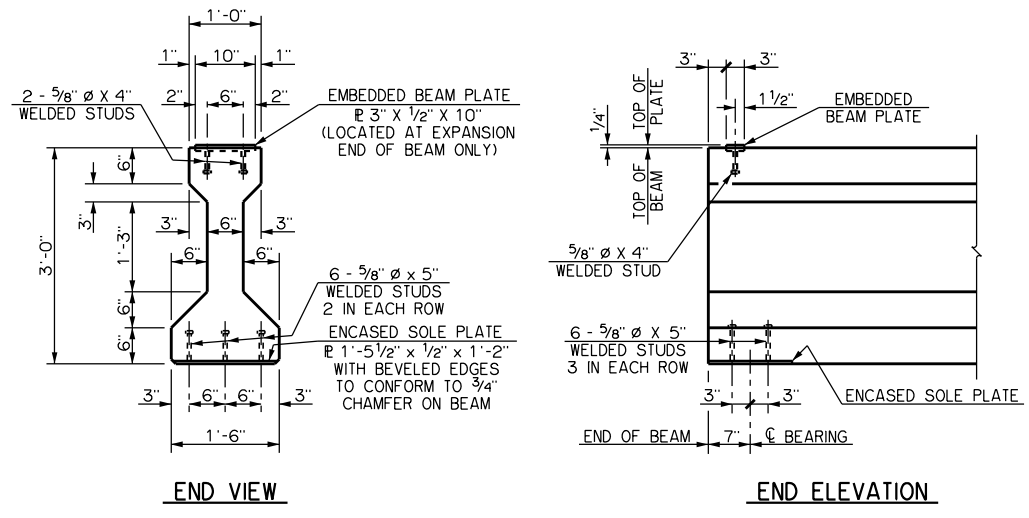
DETAILS OF BEARING ASSEMBLIES



PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN

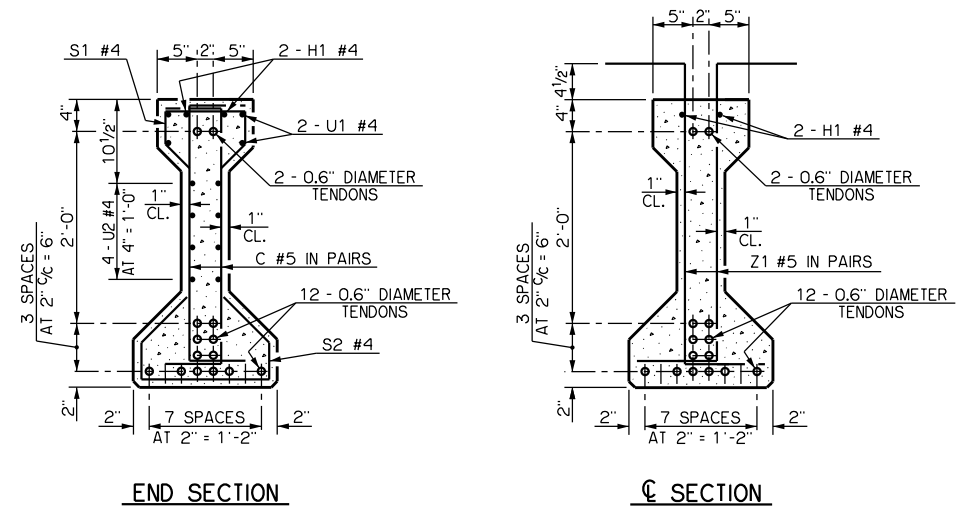


ELEVATION
ENCASED PLATES NOT SHOWN



END VIEW

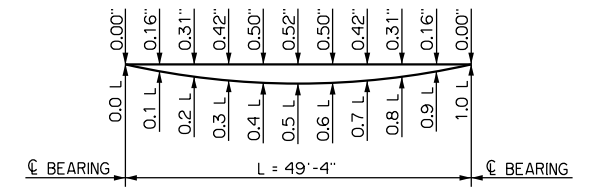
END ELEVATION



END SECTION

C SECTION

BEAM SECTIONS
(14 - 0.6" Ø STRANDS)



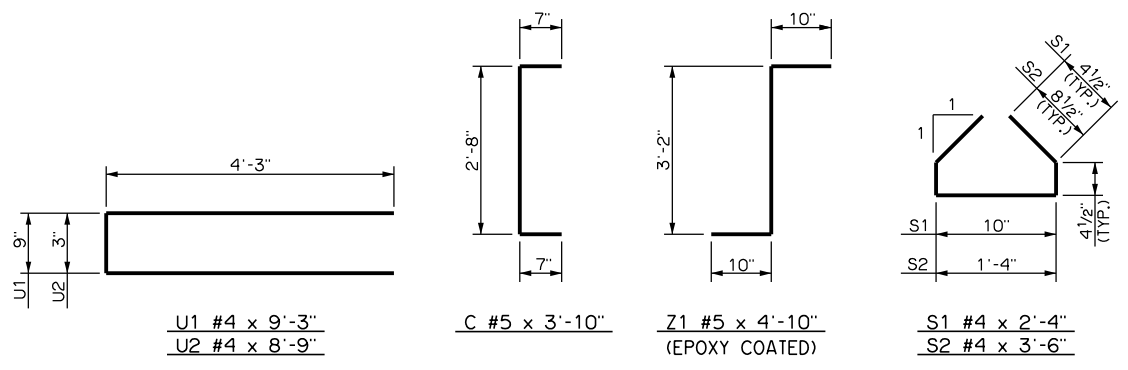
DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 5,250 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 7,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

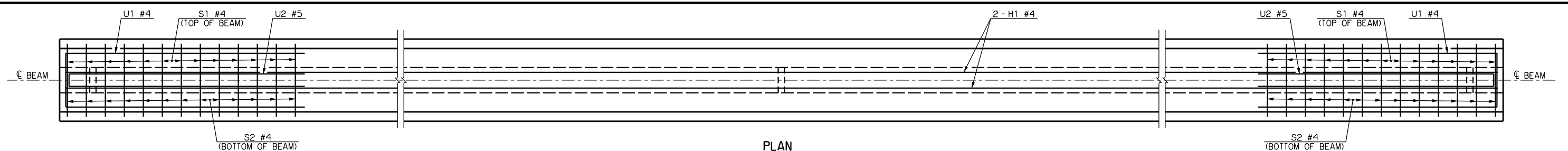


DETAILS OF BENT REINFORCING STEEL

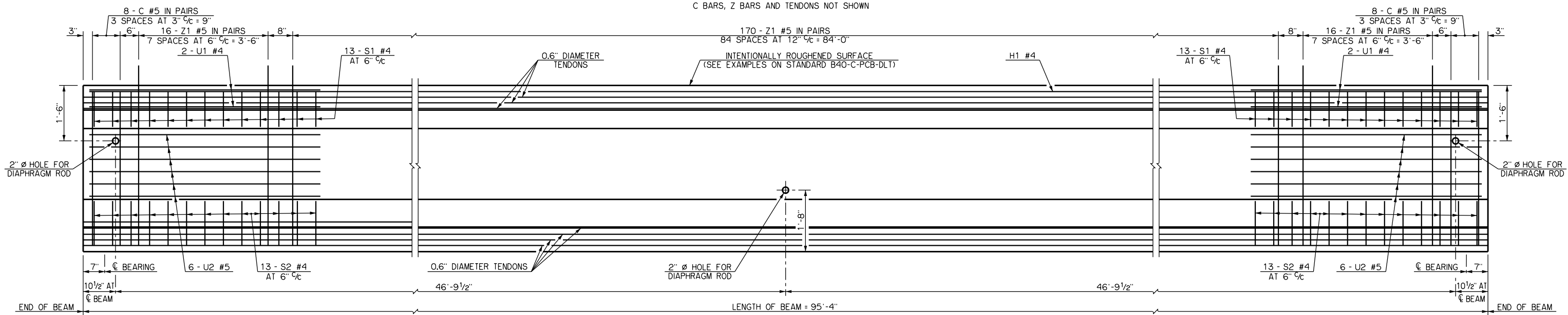
SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE II) AT SPAN NOS. 1 AND 3

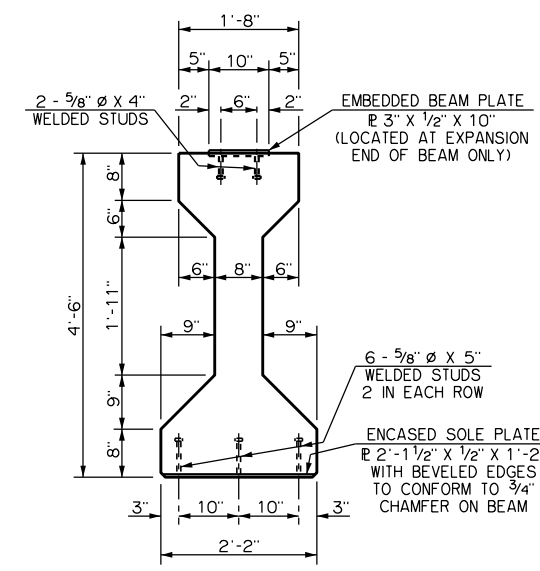
State Job No. 24428(12) Sheet No. B065



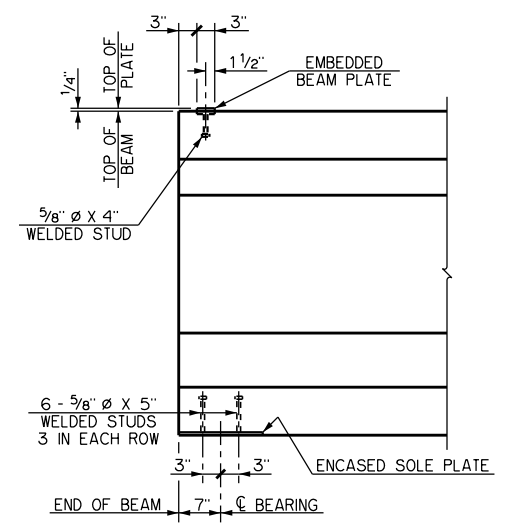
PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN



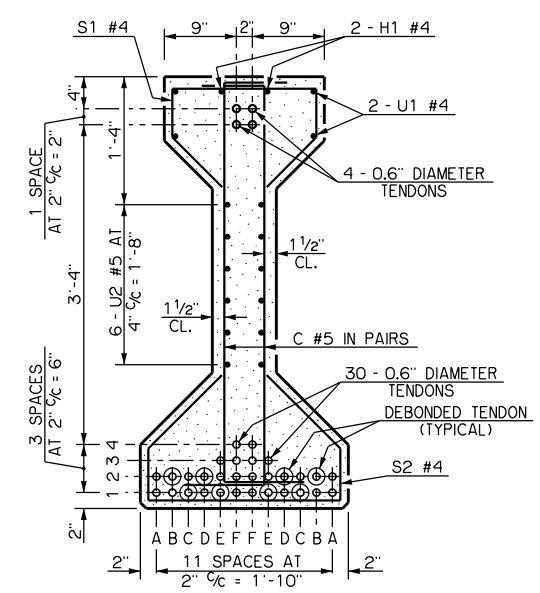
ELEVATION
ENCASED PLATES NOT SHOWN



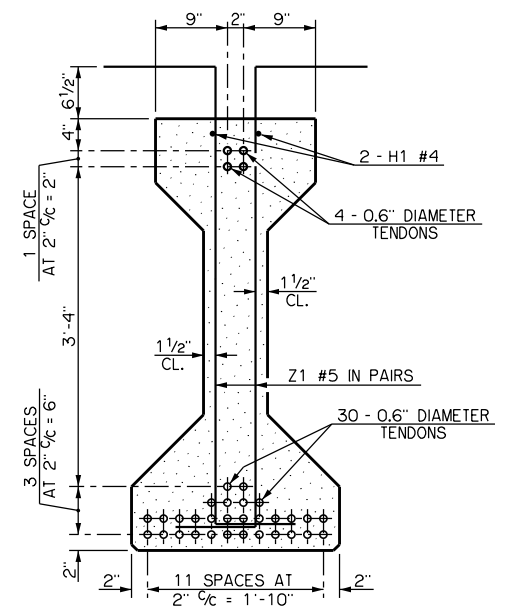
END VIEW



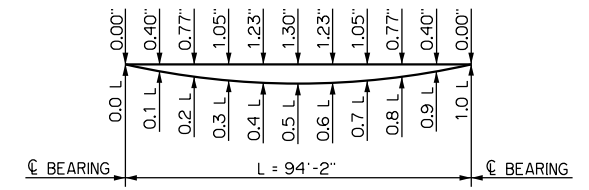
END ELEVATION



END SECTION



CL SECTION



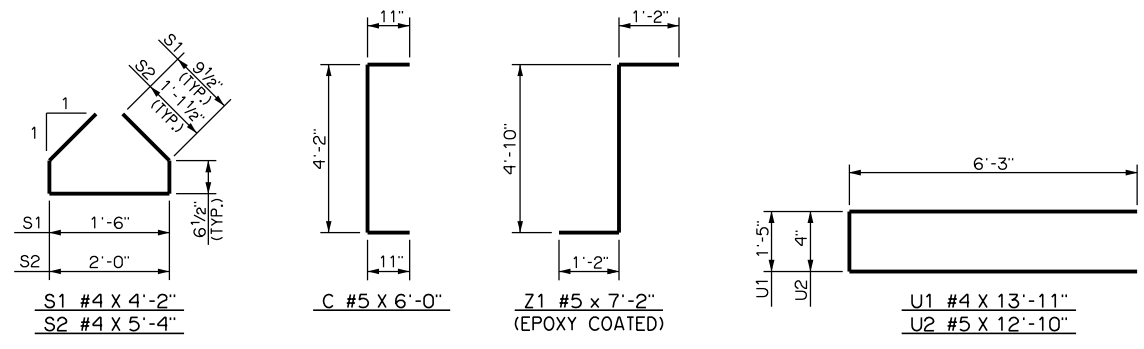
DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 6,000 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 8,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.



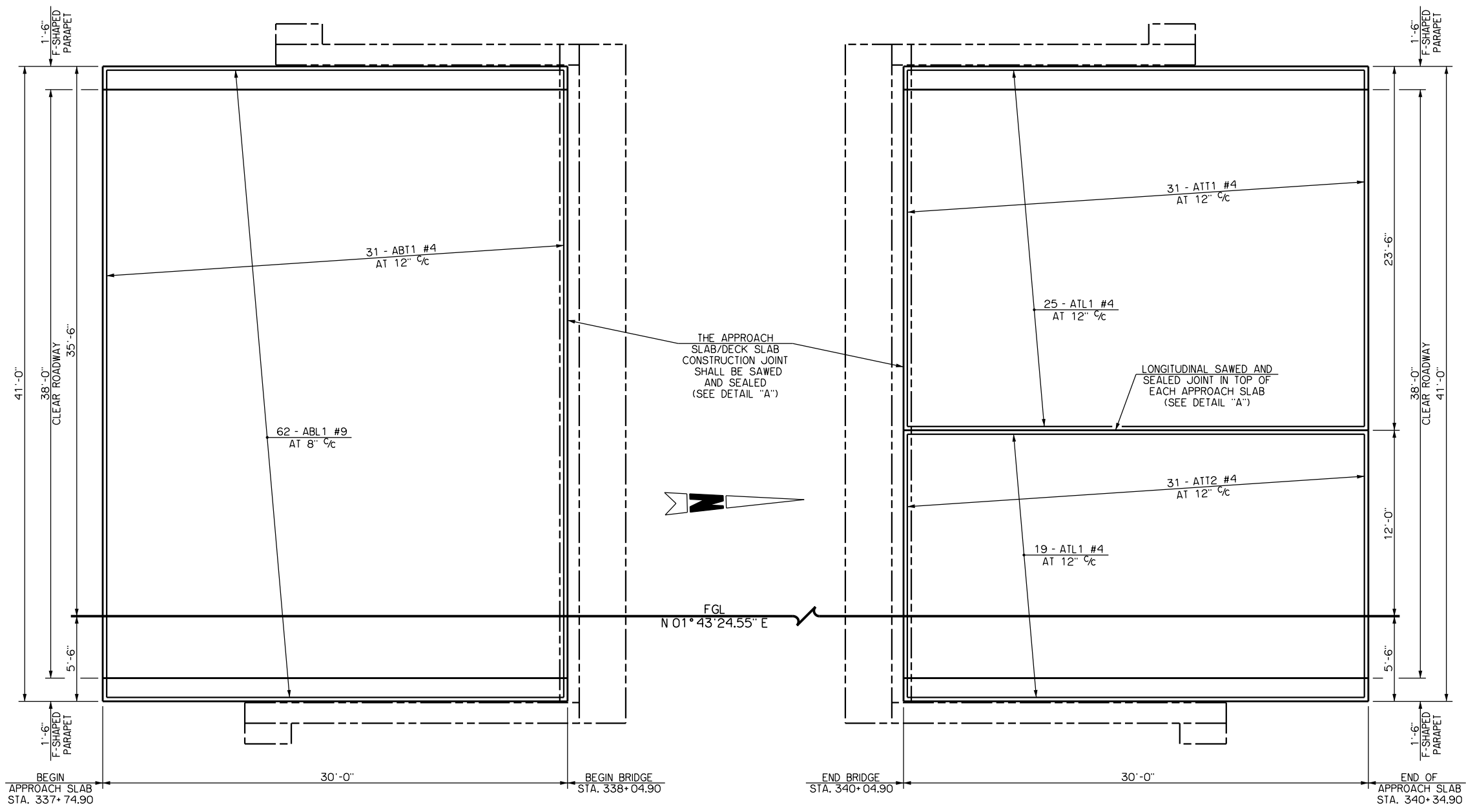
DETAILS OF BENT REINFORCING STEEL

BEAM SECTIONS
(34 - 0.6" Ø STRANDS)

DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
C1	8'-0"
E1	8'-0"
B2	4'-0"
D2	4'-0"

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF PRESTRESSED CONCRETE BEAM (TYPE IV) AT SPAN NO. 2



BAR LIST - APPROACH SLAB AT ABUTMENT NO. 1

MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
ABL1	#9	62	STR.	29'-8"
ABT1	#4	31	STR.	40'-8"
ATL1	#4	44	STR.	29'-8"
ATT1	#4	31	STR.	23'-2"
ATT2	#4	31	STR.	17'-2"
FS2	#5	59	BNT.	7'-4"
FS6	#5	5	BNT.	7'-6 1/2"

BAR LIST - APPROACH SLAB AT ABUTMENT NO. 2

MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
ABL1	#9	62	STR.	29'-8"
ABT1	#4	31	STR.	40'-8"
ATL1	#4	44	STR.	29'-8"
ATT1	#4	31	STR.	23'-2"
ATT2	#4	31	STR.	17'-2"
FS2	#5	56	BNT.	7'-4"
FS6	#5	10	BNT.	7'-6 1/2"

SUMMARY OF QUANTITIES - ONE APPROACH SLAB (TWO REQUIRED)

ITEM	UNIT	TOTAL
APPROACH SLAB	SY	136.70
SAW-CUT GROOVING	SY	127.00
42" F-SHAPED PARAPET	LF	60.00
WATER REPELLANT (VISUALLY INSPECTED)	SY	30.00

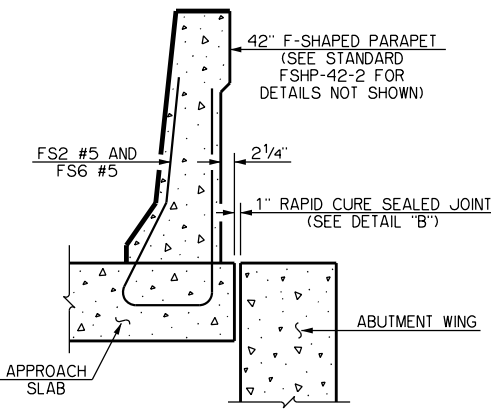
PLAN OF APPROACH SLAB AT ABUTMENT NO. 1

BOTTOM LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.

PLAN OF APPROACH SLAB AT ABUTMENT NO. 2

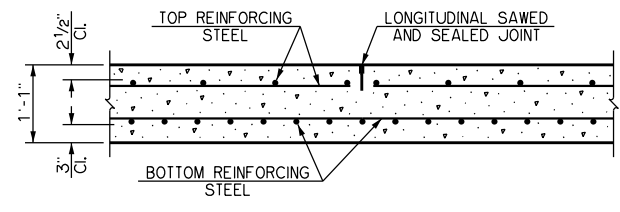
TOP LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.

(1) QUANTITY INCLUDES ALL COSTS OF CONCRETE, EPOXY COATED REINFORCING STEEL INCLUDING FS BARS, BACKER ROD, RAPID CURE JOINT SEALANT, PREFORMED EXPANSION JOINT FILLER, SAWING, GRINDING AND FINAL GRADING OF SUB-GRADE INCLUDING EMBANKMENT AND EXCAVATION FOR THE APPROACH SLAB.



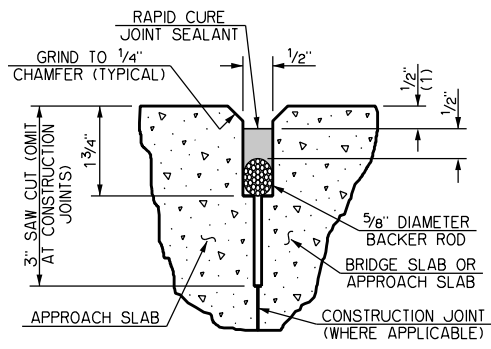
DETAIL OF APPROACH SLAB AT ABUTMENT WING

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLANT SURFACE TREATMENT.



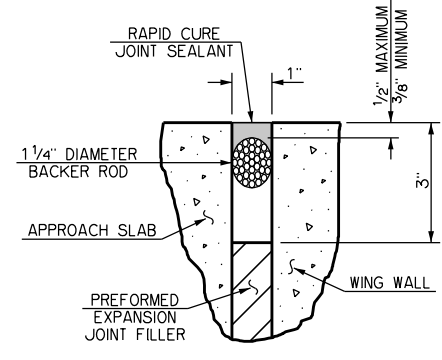
SECTION THROUGH APPROACH SLAB

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" EITHER SIDE OF THE LONGITUDINAL SAWS AND SEALED JOINT.



DETAIL "A"

(1) THIS DIMENSION SHALL TAPER FROM 1/2" AT EDGE OF DRIVING LANE/SHOULDER TO 1/8" AT 42" F-SHAPED PARAPET FOR TRANSVERSE JOINTS ONLY.



DETAIL "B"

NOTES

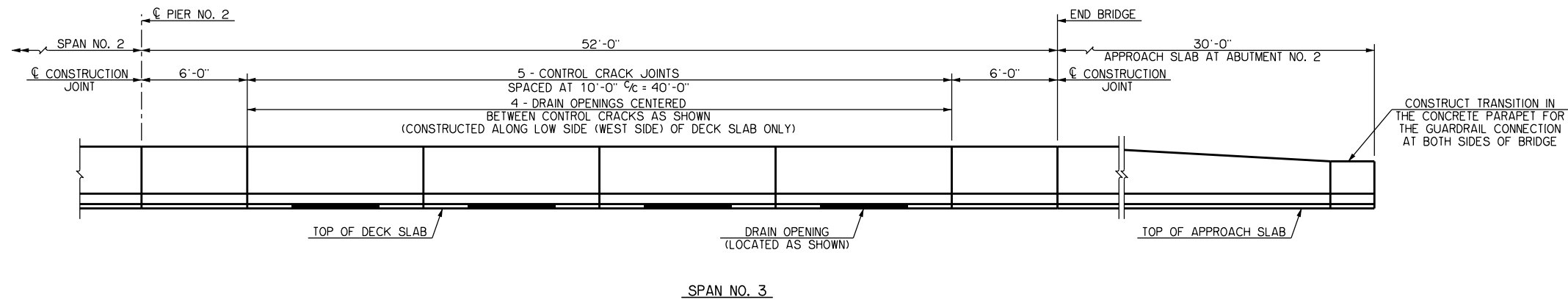
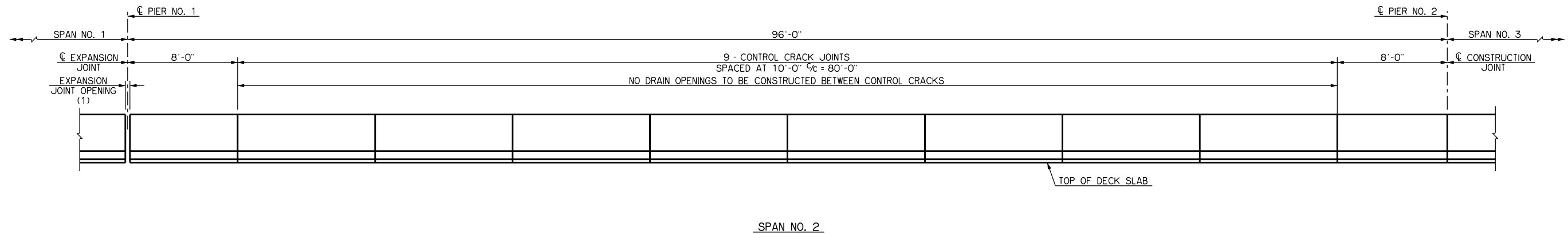
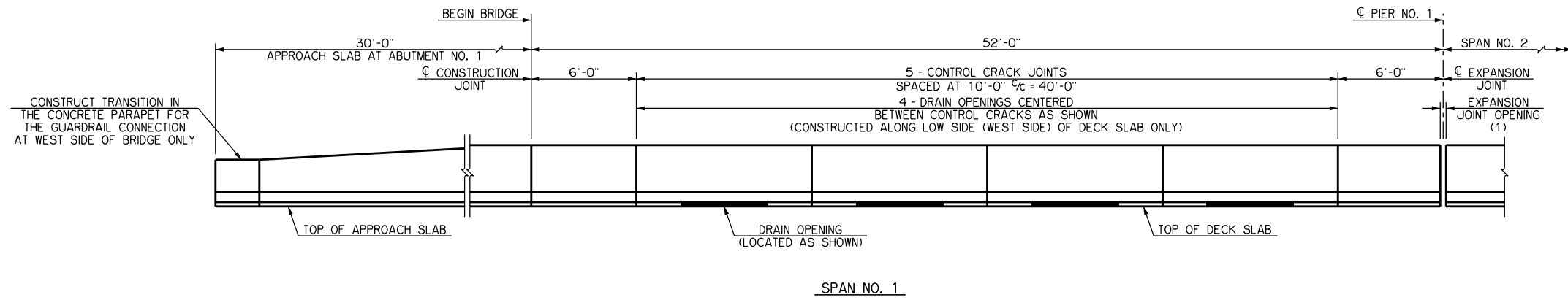
THE 'FS' BARS PROJECTING FROM THE APPROACH SLABS INTO THE CONCRETE TRAFFIC RAIL HAVE BEEN OMITTED IN THE APPROACH SLAB PLAN VIEWS FOR CLARITY. SEE STANDARD FSHP-42-2 AND "LAYOUT OF 42" F-SHAPED PARAPET" ON SHEET NO. B068 FOR PLACEMENT OF 'FS' BARS.

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" ON EACH SIDE OF THE LONGITUDINAL JOINTS.

DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS AND CONTRACTION JOINTS.

SB US-81 OVER GRAND AVENUE BRIDGE 'M'

DETAILS OF APPROACH SLABS



LAYOUT OF 42" F-SHAPED PARAPET

NOTES

THE LAYOUT OF THE 42" F-SHAPED PARAPET SHOWN IS TYPICAL ALONG EACH SIDE OF THE DECK SLAB. DRAIN OPENINGS SHOWN WILL BE CONSTRUCTED ALONG THE LOW SIDE (WEST SIDE) OF THE DECK SLAB ONLY. THE PARAPETS ALONG THE HIGH SIDE (EAST SIDE) OF DECK SLAB WILL NOT HAVE DRAIN OPENINGS.

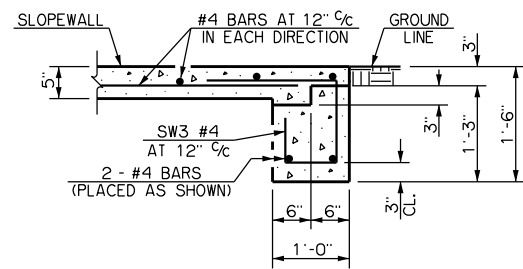
FH BARS IN 42" F-SHAPED PARAPET SHALL NOT EXTEND THROUGH CONSTRUCTION JOINTS.

SEE STANDARD FSHP-42-2 FOR ADDITIONAL DIMENSIONS, DETAILS, AND INFORMATION.

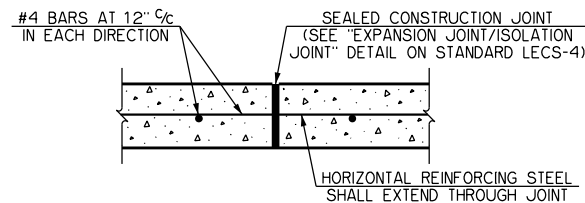
(1) EXPANSION JOINT OPENING IN THE 42" F-SHAPED PARAPET SHALL MATCH THE EXPANSION JOINT OPENING IN THE DECK SLAB.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

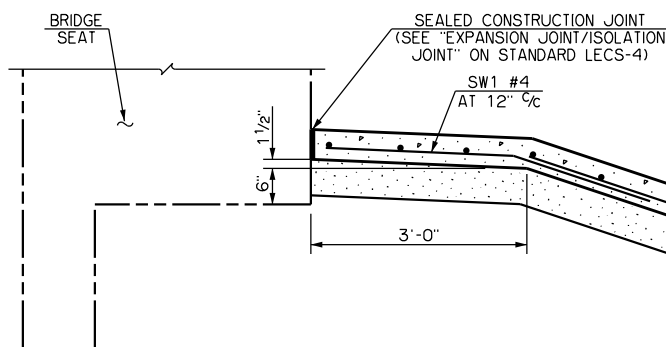
LAYOUT OF 42" F-SHAPED PARAPET



SECTION B-B



DETAIL OF SEALED CONSTRUCTION JOINT



NOTES

INSTALLATION OF THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS PUD-3 AND PED-3.

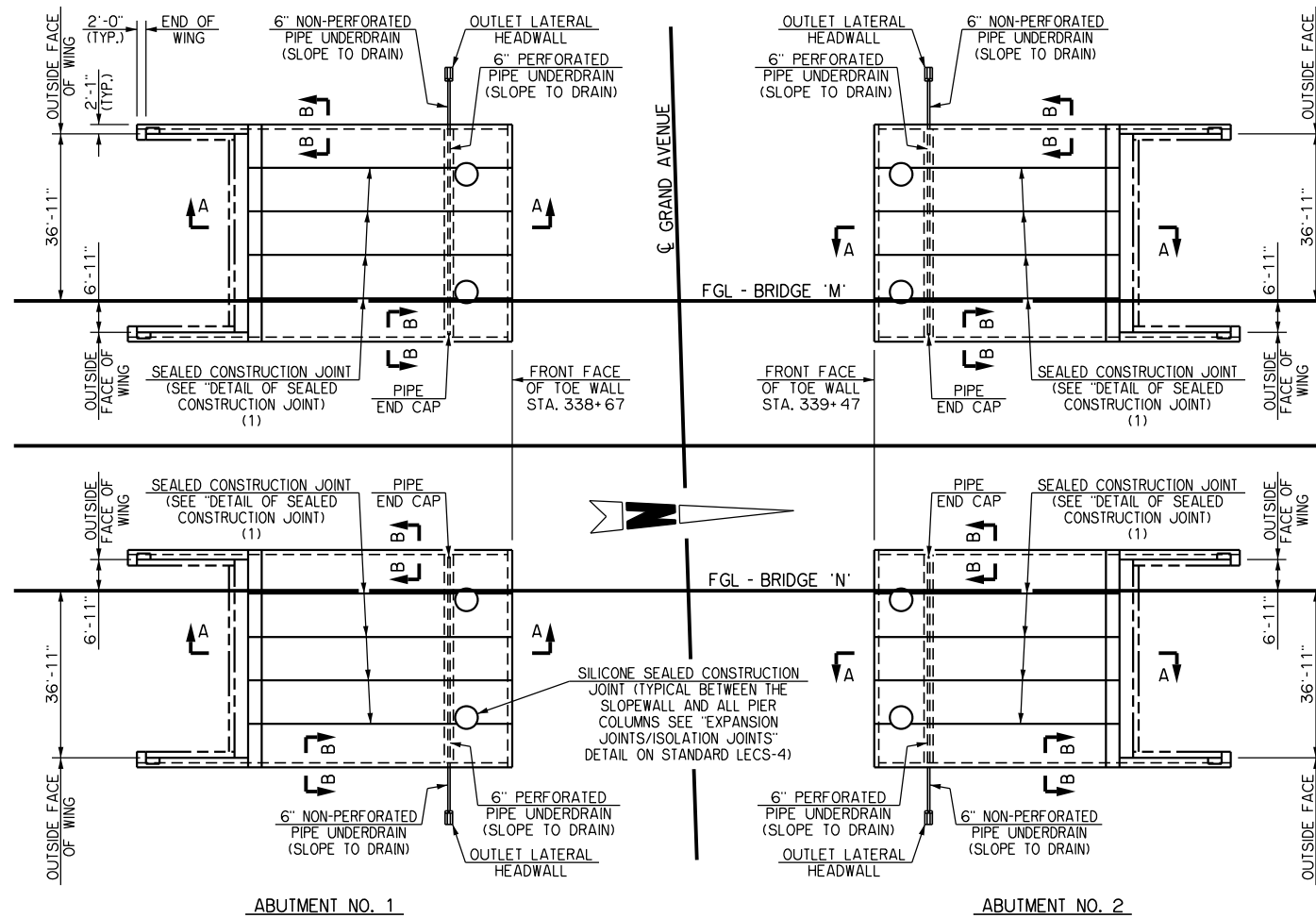
(1) PLACEMENT OF VERTICAL CONSTRUCTION JOINTS IN THE SLOPE WALL SHALL BE LOCATED AS SHOWN IN THE PLAN VIEW. ANY CHANGES SHALL NOT EXCEED 10'-0" WIDE AND SHALL BE APPROVED BY THE ENGINEER. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE ALLOWED IN THE SLOPE WALL.

(2) INCLUDES ALL COST OF EXCAVATION, EMBANKMENT, CONCRETE, REINFORCING STEEL, SILICONE JOINT SEALER, BACKER ROD AND PREFORMED EXPANSION JOINT FILLER.

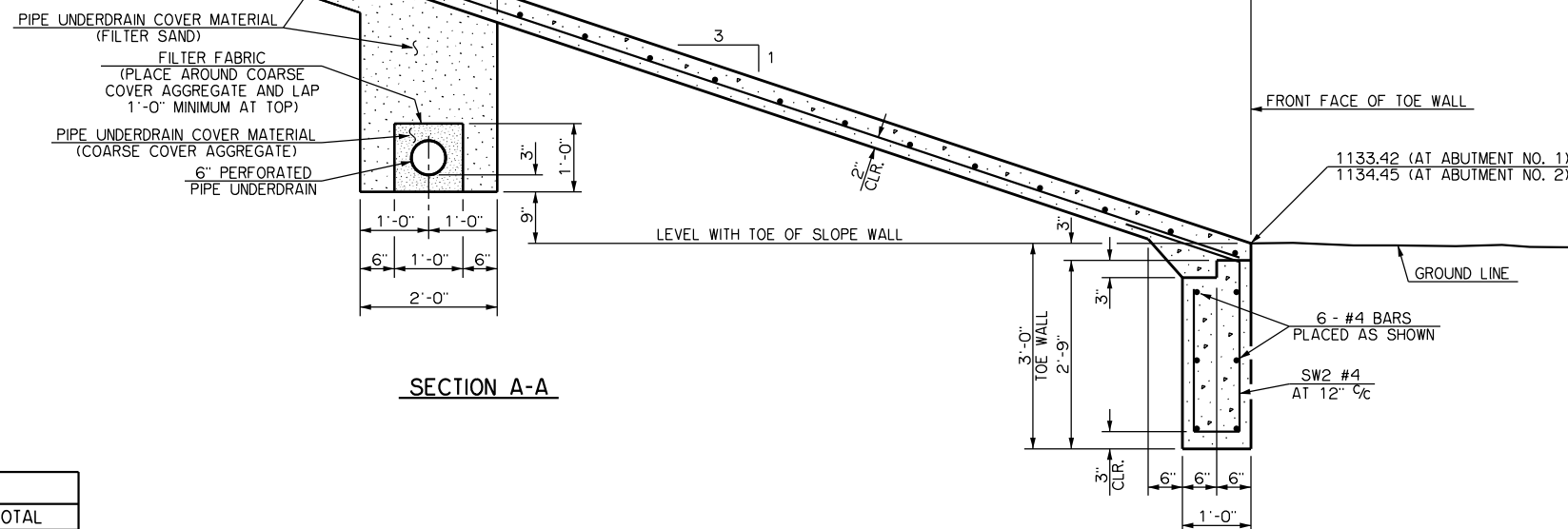
(3) INCLUDES ALL COST OF EXCAVATION, PERFORATED PIPE, PIPE FITTINGS, PIPE CAPS, FILTER FABRIC AND ALL PIPE UNDERDRAIN COVER MATERIAL SHOWN INCLUDING 6" THICKNESS BELOW SLOPE WALL.

(4) INCLUDES ALL COST OF TRENCH EXCAVATION, NON-PERFORATED PIPE, PIPE FITTINGS, PIPE RODENT SCREENS AND BACKFILLING OF TRENCHES.

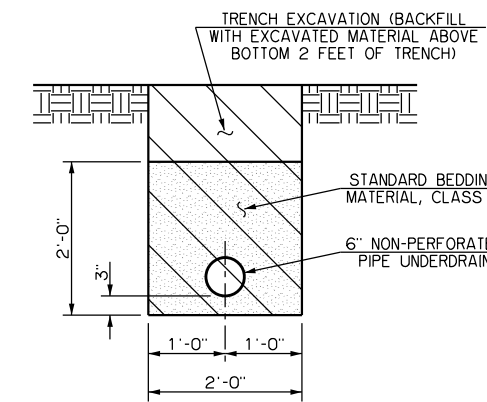
SUMMARY OF QUANTITIES - SLOPEWALL (BRIDGE 'M')				
ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
(2) SLOPE WALL (5")	SY	340.00	316.00	656.00
(3) 6" PERFORATED PIPE UNDERDRAIN ROUND	LF	46.00	46.00	92.00
(4) 6" NON-PERF. PIPE UNDERDRAIN RND.	LF	12.00	10.00	22.00
OUTLET LATERAL HEADWALL	EA	1.00	1.00	2.00



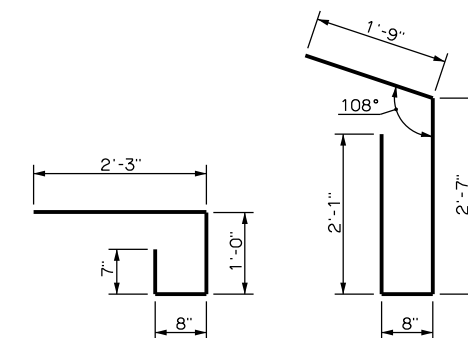
PLAN OF SLOPE WALLS



SECTION A-A

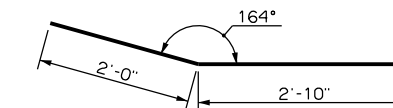


TYPICAL SECTION THROUGH NON-PERFORATED PIPE UNDERDRAIN



SW3 #4 X 4'-6"

SW2 #4 X 7'-1"

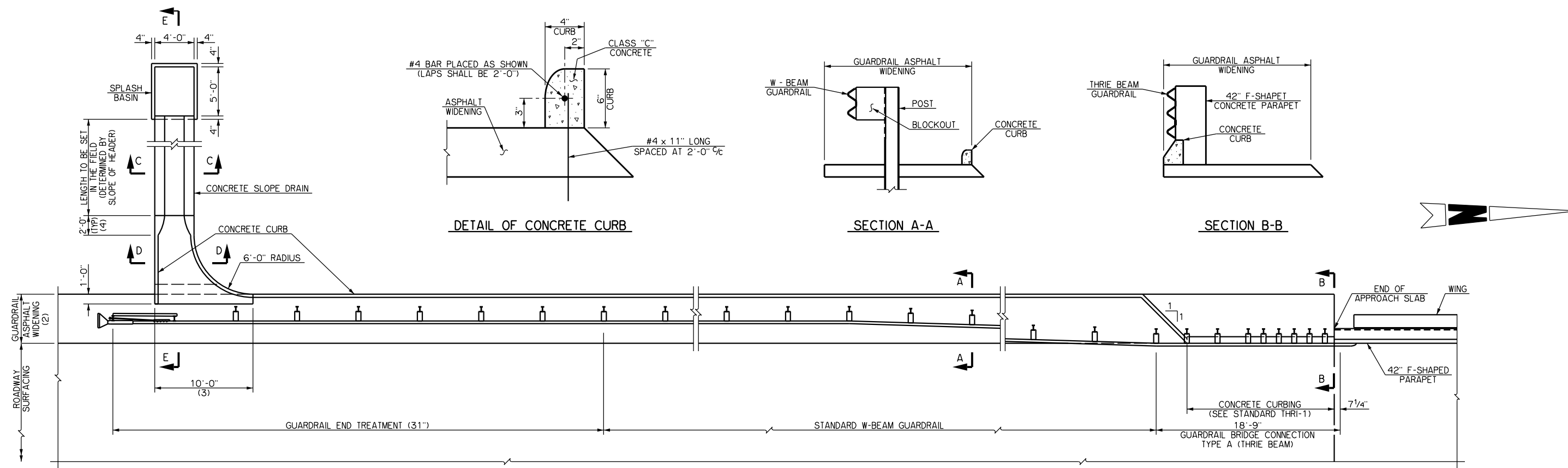


SW1 #4 X 4'-10"

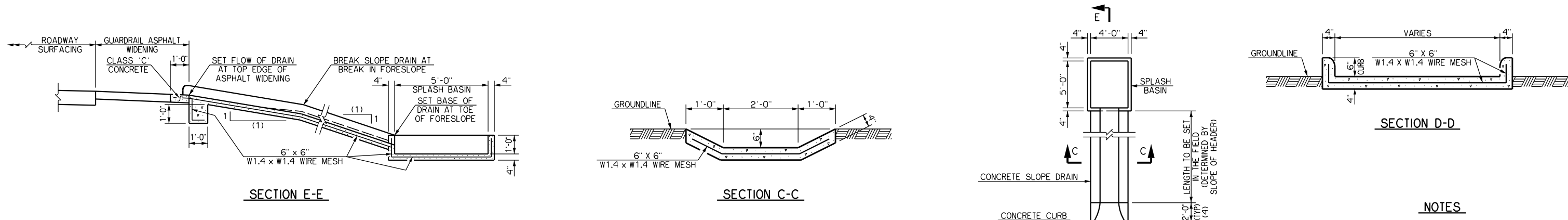
DETAILS OF BENT REINFORCING STEEL

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF SLOPE WALLS



PLAN OF DRAIN AT SOUTH END OF BRIDGE
(WEST SIDE OF ROADWAY ONLY)



PLAN OF DRAIN AT NORTH END OF BRIDGE
(WEST SIDE OF ROADWAY ONLY)

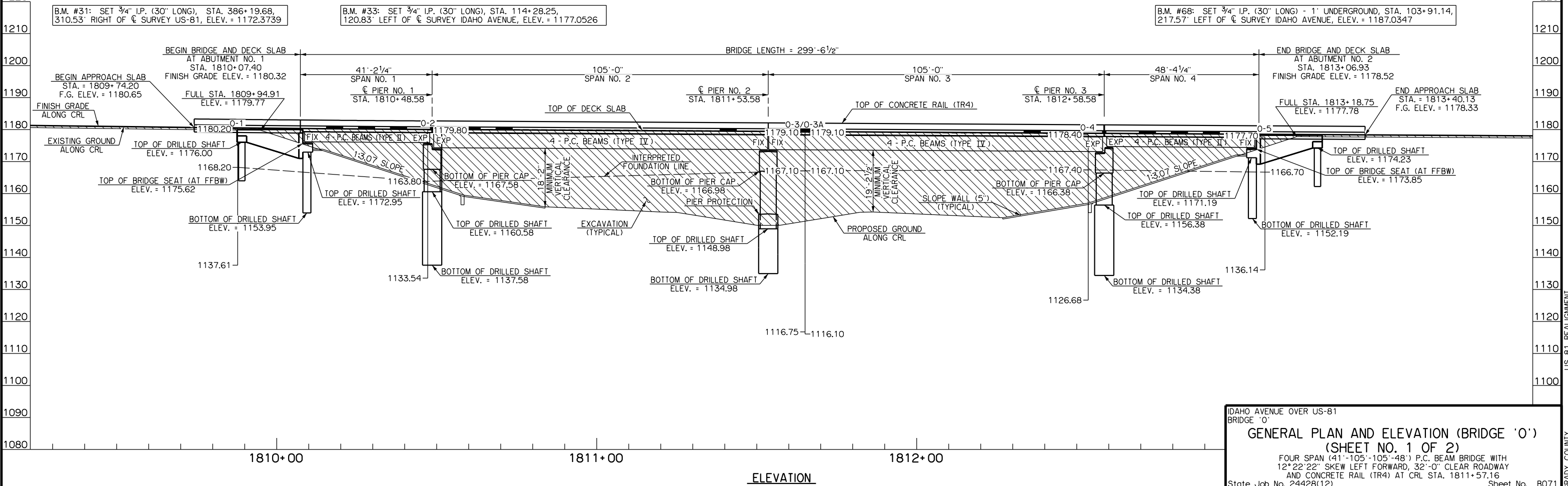
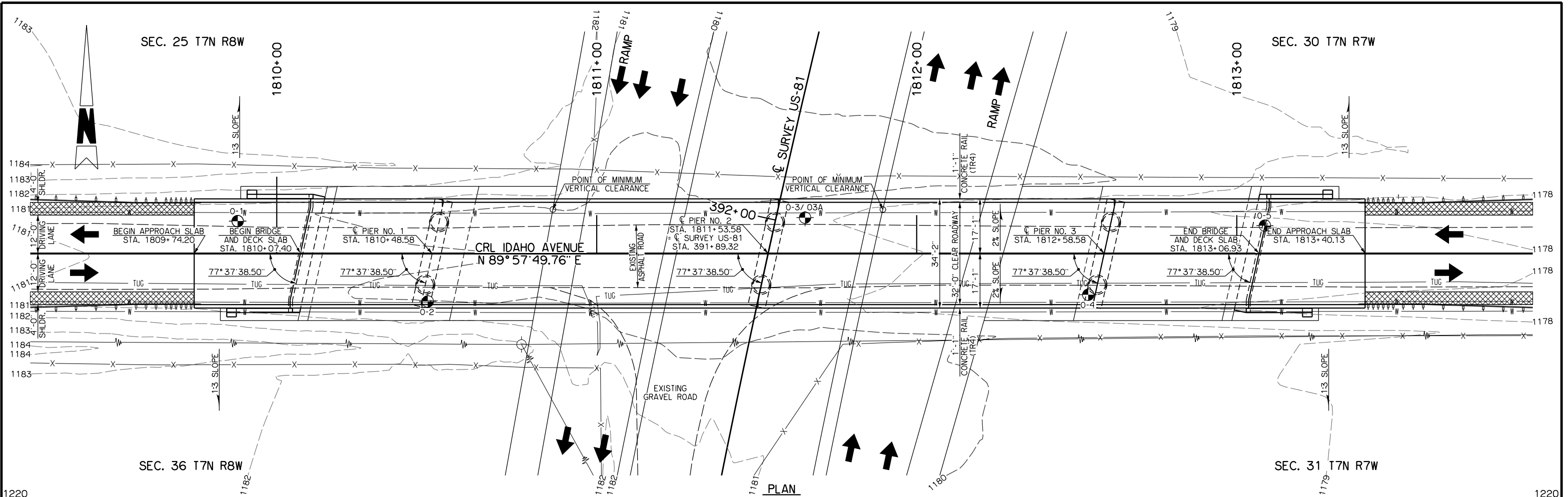
- NOTES**
- SLOPE TO MATCH FORESLOPE.
 - ASPHALT WIDENING SHALL BE IN ACCORDANCE WITH STANDARD GHW1-1 EXCEPT AS SHOWN ON THIS SHEET. ALL COSTS OF THE ASPHALT WIDENING SHALL BE INCLUDED IN ROADWAY PAY ITEMS.
 - A 1'-0" WIDE X 10'-0" LONG PORTION OF THE GUARDRAIL ASPHALT WIDENING SHALL BE REMOVED AS SHOWN. CLASS 'C' CONCRETE SHALL REPLACE THIS AREA AS A PART OF THE SLOPE DRAIN CONSTRUCTION.
 - THE CONCRETE CURB SHALL TRANSITION INTO THE 1:2 SLOPE PORTION OF THE SLOPE DRAIN WITHIN THIS 2'-0" DIMENSION.

SB US-81 OVER GRAND AVENUE
BRIDGE 'M'

DETAILS OF DRAINS AT ENDS OF BRIDGE

State Job No. 24428(12) Sheet No. B070

GRADY COUNTY US 81 REALIGNMENT



IDAHO AVENUE OVER US-81
 BRIDGE '0'
GENERAL PLAN AND ELEVATION (BRIDGE '0')
(SHEET NO. 1 OF 2)
 FOUR SPAN (41'-105'-105'-48') P.C. BEAM BRIDGE WITH
 12°22'22" SKEW LEFT FORWARD, 32'-0" CLEAR ROADWAY
 AND CONCRETE RAIL (TR4) AT CRL STA. 1811+57.16
 State Job No. 24428(12) Sheet No. B071

US 81 REALIGNMENT GRADY COUNTY

SUMMARY OF QUANTITIES - BRIDGE 'O'								
ITEM	UNIT	ABUTMENTS	PIERS	PIER PROTECTION	SUPERSTRUCTURE	APPROACH SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	250.00	-	10.00	-	-	-	260.00
CLSM BACKFILL	CY	185.00	-	-	-	-	-	185.00
PRESTRESSED CONCRETE BEAMS (TYPE ID)	LF	-	-	-	342.00	-	-	342.00
PRESTRESSED CONCRETE BEAMS (TYPE ID)	LF	-	-	-	834.67	-	-	834.67
APPROACH SLAB	SY	-	-	-	-	252.20	-	252.20
SAW-CUT GROOVING	SY	-	-	-	1,066.00	238.00	-	1,304.00
SEALED EXPANSION JOINT	LF	-	-	-	71.73	-	-	71.73
CONCRETE RAIL (TR4)	LF	-	-	-	598.50	132.80	-	731.30
STRUCTURAL STEEL	LB	-	-	-	1,510.00	-	-	1,510.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
CLASS AA CONCRETE	CY	-	-	-	278.50	-	-	278.50
CLASS A CONCRETE	CY	76.10	193.00	18.60	-	-	-	287.70
SLOPE WALL (5')	SY	-	-	-	-	-	748.00	748.00
REINFORCING STEEL	LB	-	1,430.00	-	-	-	-	1,430.00
EPOXY COATED REINFORCING STEEL	LB	9,380.00	16,850.00	780.00	76,690.00	-	-	103,700.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	73.00	251.00	-	940.00	62.00	-	1,326.00
DRILLED SHAFTS 24" DIAMETER	LF	48.00	-	-	-	-	-	48.00
DRILLED SHAFTS 30" DIAMETER	LF	152.00	-	-	-	-	-	152.00
DRILLED SHAFTS 72" DIAMETER	LF	-	118.00	-	-	-	-	118.00
SEALER CRACK PREPARATION	LF	-	-	-	34.00	-	-	34.00
SEALER RESIN	GAL	-	-	-	0.50	-	-	0.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	70.00	-	-	-	-	84.00	154.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	46.00	-	-	-	-	22.00	68.00
OUTLET LATERAL HEADWALL	EA	-	-	-	-	-	2.00	2.00

STRUCTURAL AND FOUNDATION DESIGN DATA

MATERIAL:
 CLASS A CONCRETE, f'c = 3 KSI
 CLASS AA CONCRETE, f'c = 4 KSI
 REINFORCING STEEL, fy = 60 KSI
 STRUCTURAL STEEL M270 (GRADE 50W), Fy = 50 KSI
 STAINLESS STEEL A240 (TYPE 316), Fy = 30 KSI

LOADING:
 HL-93 OR OKLAHOMA OVERLOAD TRUCK
 20 PSF FUTURE WEARING SURFACE
 5 PSF STAY-IN-PLACE FORMS

DESIGN:
 AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
 7TH EDITION WITH 2015 INTERIMS
 ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

HL-93 INVENTORY RATING FACTOR: 1.00
 HL-93 OPERATING RATING FACTOR: 1.30

ABUTMENT (30" DIAMETER DRILLED SHAFTS)

ABUTMENT NOS.	1	2
MINIMUM DEPTH INTO ROCK (FEET)	= 6	= 6
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	= 3	= 3
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 60.0	= 60.0
BEARING RESISTANCE FACTOR	= 0.70	= 0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 206	= 206
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 5.8	= 9.0
FRICTION RESISTANCE FACTOR	= 0.45	= 0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 61	= 95
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 267	= 301
TOTAL FACTORED REACTION (TONS/SHAFT)	= 112	= 112

PIERS

PIER NO.	1	2	3
DRILLED SHAFTS DIAMETER (INCHES)	= 72	72	72
FACTORED REACTION (TONS/SHAFT)	= 474	573	471
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 60.0	60.0	46.1
BEARING RESISTANCE FACTOR	= 0.70	0.70	0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 1187	1187	912
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 9.0	9.0	9.0
FRICTION RESISTANCE FACTOR	= 0.45	0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 534	534	534
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	= 5	5	5
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 1,721	1,721	1,721

UTILITIES

TELEPHONE:
 CHICKASAW TELEPHONE CO. - (580) 618-5455
 SOUTHWESTERN BELL - (800) 522-6543
 AT&T - (800) 778-9140
 DOBSON TECHNOLOGIES - (800) 778-9140
 INTELLEO COMMUNICATIONS - (800) 335-4343
 MEDICINE PARK TELEPHONE CO. - (580) 529-2700

ELECTRIC:
 AEP PUBLIC SERVICE CO. OF OKLAHOMA - (888) 216-3523
 OKLAHOMA ELECTRIC COOPERATIVE - (405) 321-2024

WATER AND SANITARY SEWER:
 CITY OF CHICKASHA PUBLIC WORKS - (405) 222-6080
 RURAL WATER DISTRICT #6 - (405) 459-6626
 RURAL WATER DISTRICT #7 - (405) 779-6224

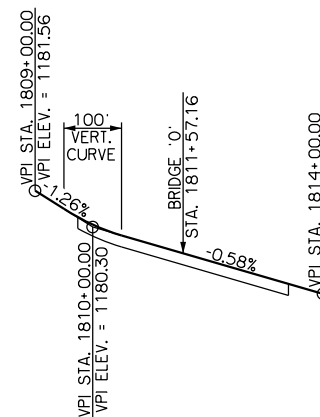
GAS AND PETROLEUM PIPELINES:
 ENABLE MIDSTREAM - (800) 522-8048
 CONTINUUM ENERGY - (877) 587-0026
 DCP MIDSTREAM - (800) 435-1679
 UNIT PETROLEUM - (918) 493-7700
 SUNOCO LOGISTICS - (800) 753-5531
 KEPCO OPERATING INC. - (855) 421-2088

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
AB01, AB04	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)
B071, B072	GENERAL PLAN AND ELEVATION (BRIDGE 'O')
B073- B075	FOUNDATION BORING LOGS
B076	SUBSTRUCTURE STAKING DIAGRAM
B077	DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS
B078	DETAILS OF ABUTMENT NO. 1
B079	DETAILS OF ABUTMENT NO. 2
B080, B081	DETAILS OF TYPICAL ABUTMENT REINFORCING STEEL PLACEMENT
B082	DETAILS OF WINGS AT ABUTMENT NO. 1
B083	DETAILS OF WINGS AT ABUTMENT NO. 2
B084	DETAILS OF DRILLED SHAFTS AT ABUTMENTS AND WINGS
B085	DETAILS OF PIER NO. 1
B086	DETAILS OF PIER NO. 2
B087	DETAILS OF PIER NO. 3
B088	DETAILS OF PIER NOS. 1, 2 AND 3
B089	DETAILS OF PIER PROTECTION AT PIER NO. 2
B090- B094	DETAILS OF SUPERSTRUCTURE
B095	DETAILS OF BEARING ASSEMBLIES
B096	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NO. 1)
B097	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NO. 4)
B098	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 2 AND 3)
B099	DETAILS OF APPROACH SLABS
B100	LAYOUT OF CONCRETE RAIL (TR4)
B101	DETAILS OF SLOPE WALLS
B102	DETAILS OF DRAINS AT ENDS OF BRIDGE

REQUIRED STANDARD DRAWINGS

ROADWAY	BRIDGE
PED-3-2	F5HP-42-2-00E
PUD-3-3	EJ-SK-04E
	EJ-DTL-02E
	HP1-2-01E

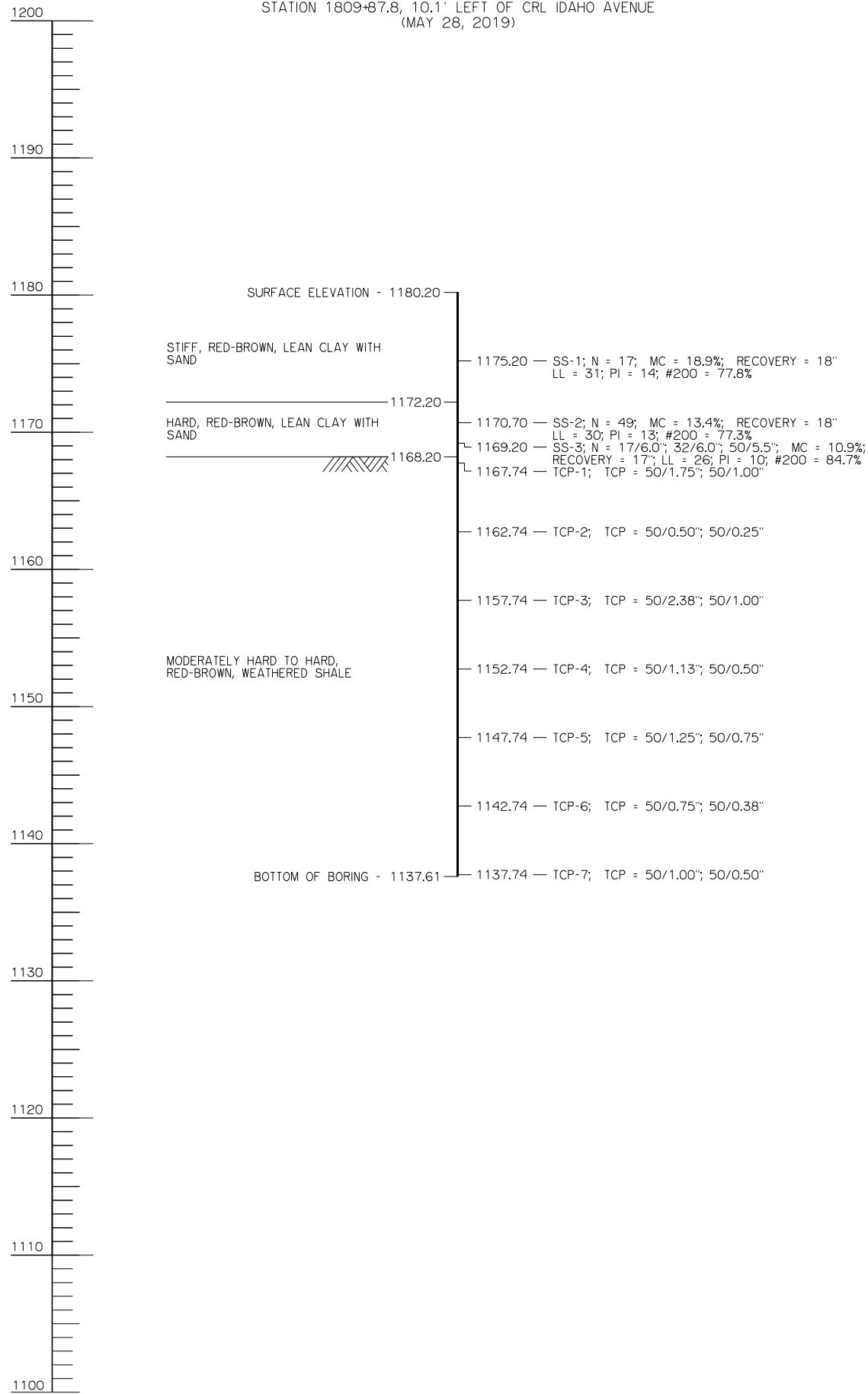


PROFILE GRADE DATA
 FINISH GRADE ALONG CRL

IDAHO AVENUE OVER US-81
 BRIDGE 'O'
GENERAL PLAN AND ELEVATION (BRIDGE 'O')
(SHEET NO. 2 OF 2)
 FOUR SPAN (41'-105'-105'-48') P.C. BEAM BRIDGE WITH
 12°22'22" SKEW LEFT FORWARD, 32'-0" CLEAR ROADWAY
 AND CONCRETE RAIL (TR4) AT CRL STA. 1811+57.16
 State Job No. 24428(12) Sheet No. B072

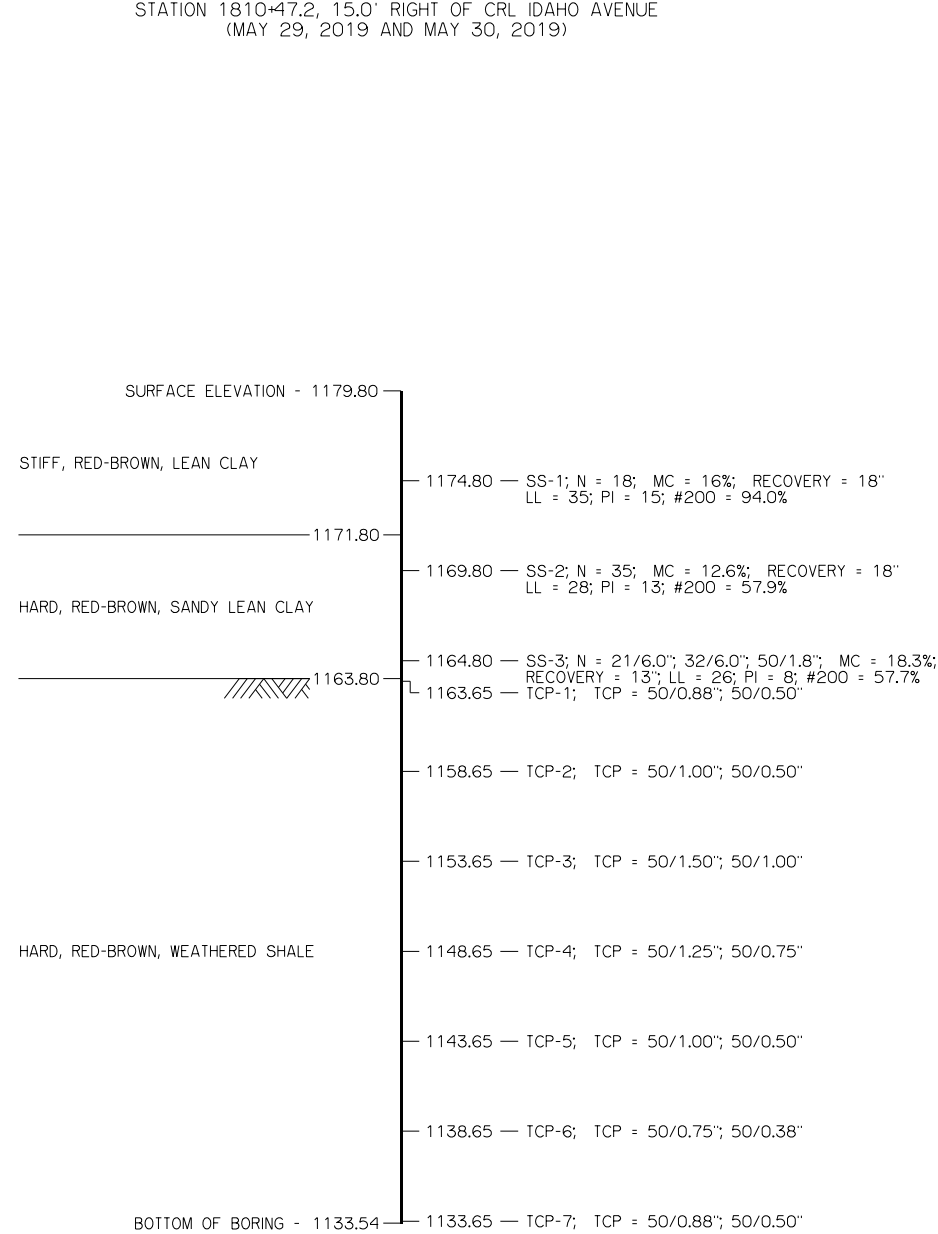
BORING NO. 0-1

STATION 1809+87.8, 10.1' LEFT OF CRL IDAHO AVENUE
(MAY 28, 2019)



BORING NO. 0-2

STATION 1810+47.2, 15.0' RIGHT OF CRL IDAHO AVENUE
(MAY 29, 2019 AND MAY 30, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH

- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ▼ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

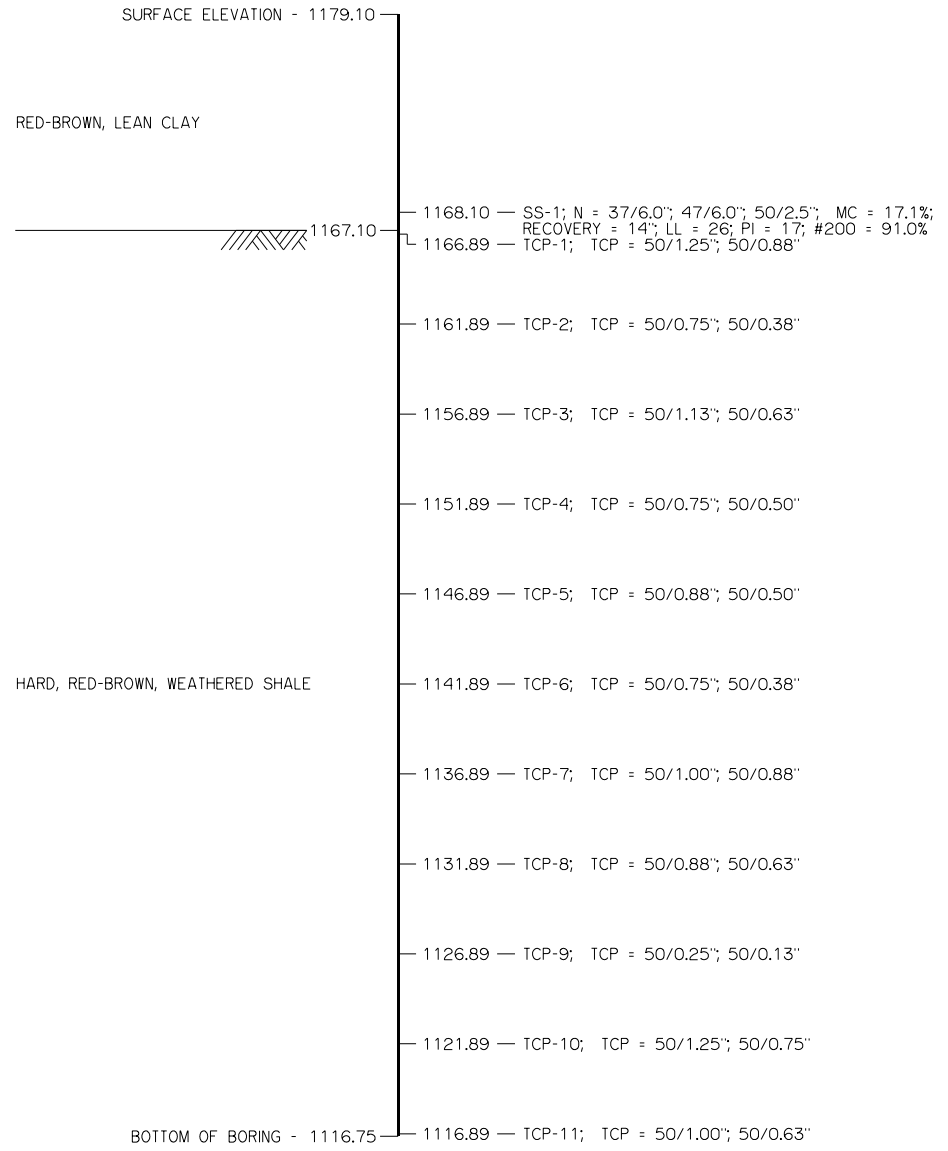
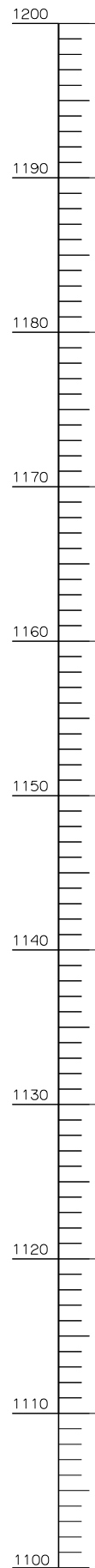
ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

IDAHO AVENUE OVER US-81
BRIDGE '0

FOUNDATION BORING LOGS
(SHEET NO. 1 OF 3)

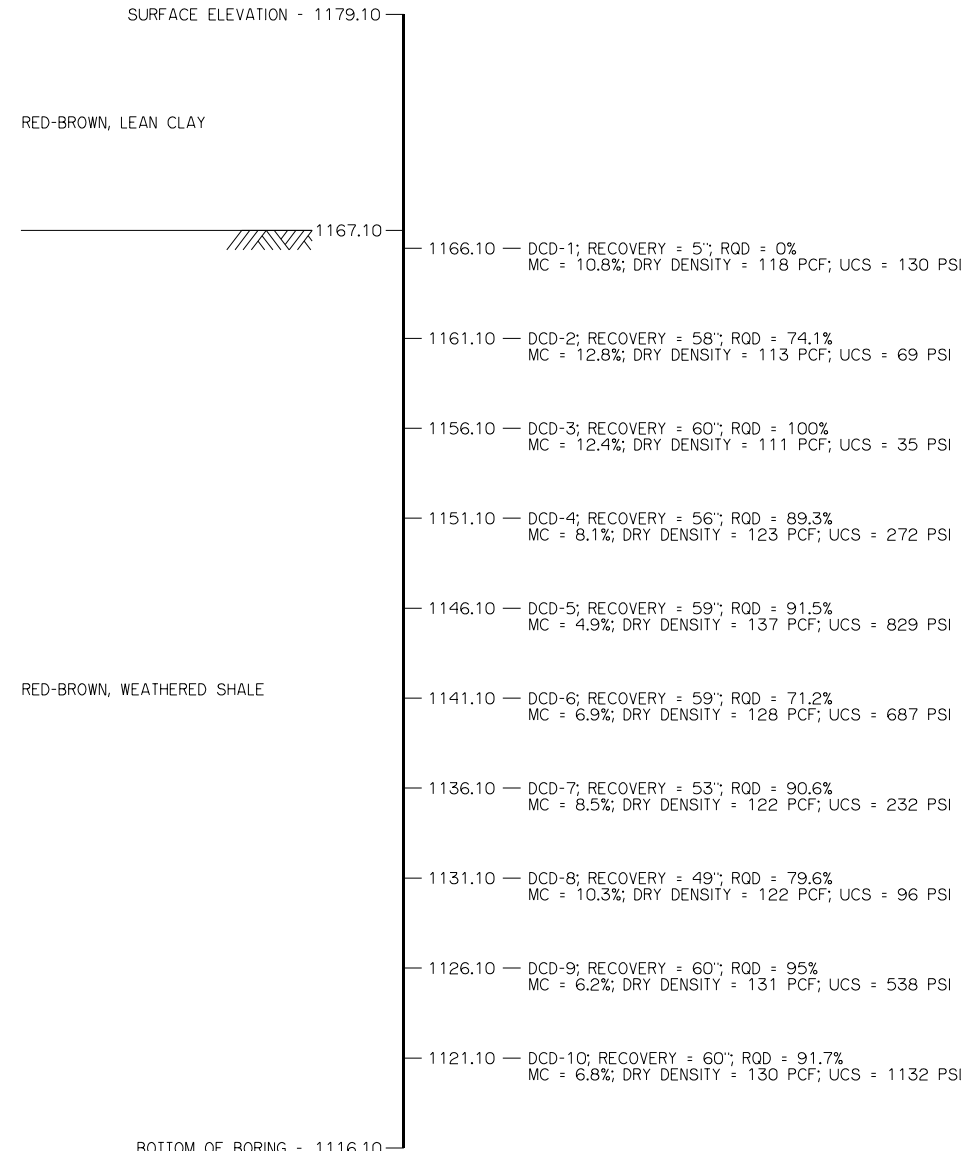
BORING NO. 0-3

STATION 1811+65.1, 11.2' LEFT OF CRL IDAHO AVENUE
(JULY 18, 2019)



BORING NO. 0-3A

STATION 1811+65.1, 11.2' LEFT OF CRL IDAHO AVENUE
(JULY 18, 2019)



LEGEND

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- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
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GEOTECHNICAL REPORT

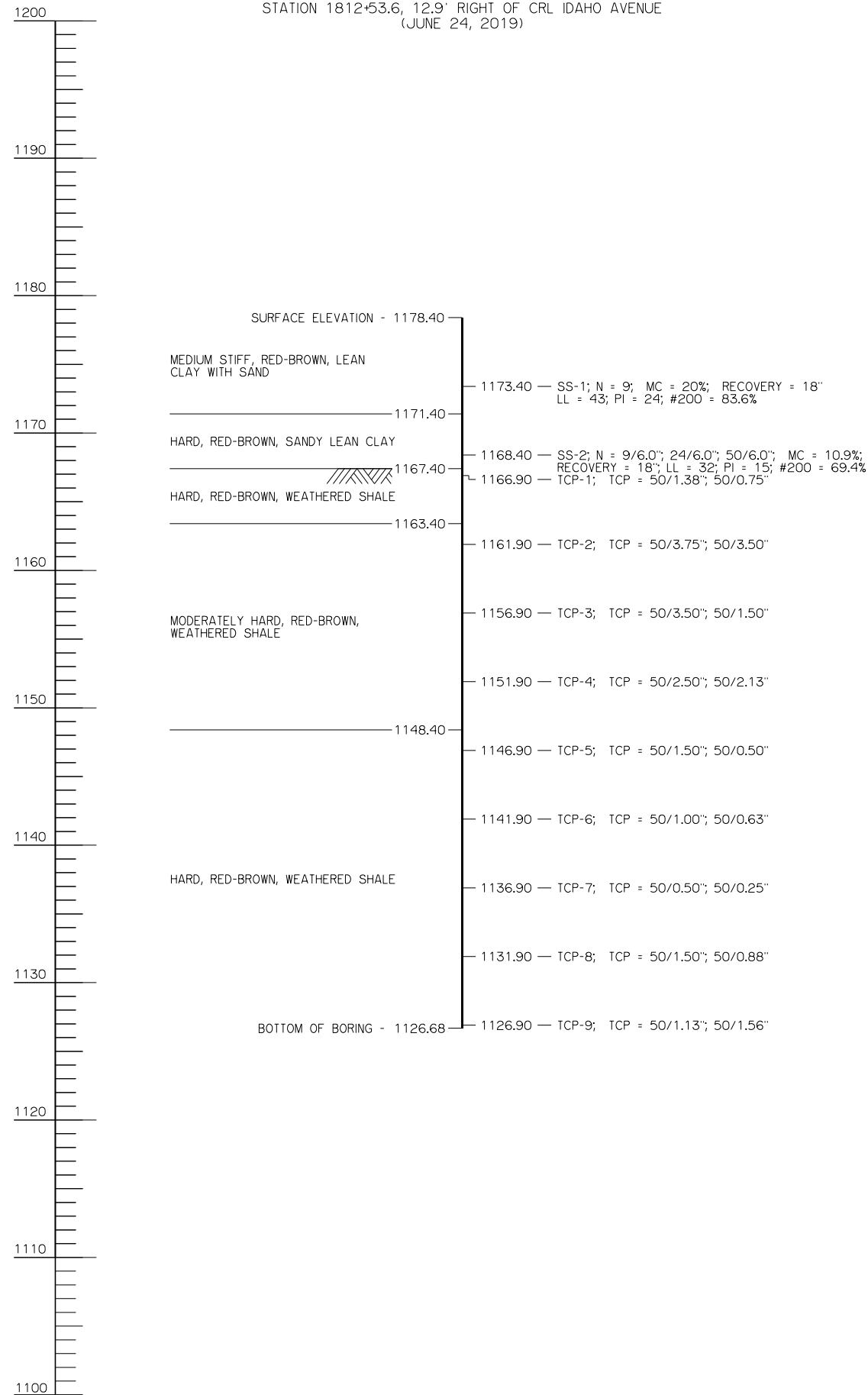
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IDAHO AVENUE OVER US-81
BRIDGE '0

FOUNDATION BORING LOGS
(SHEET NO. 2 OF 3)

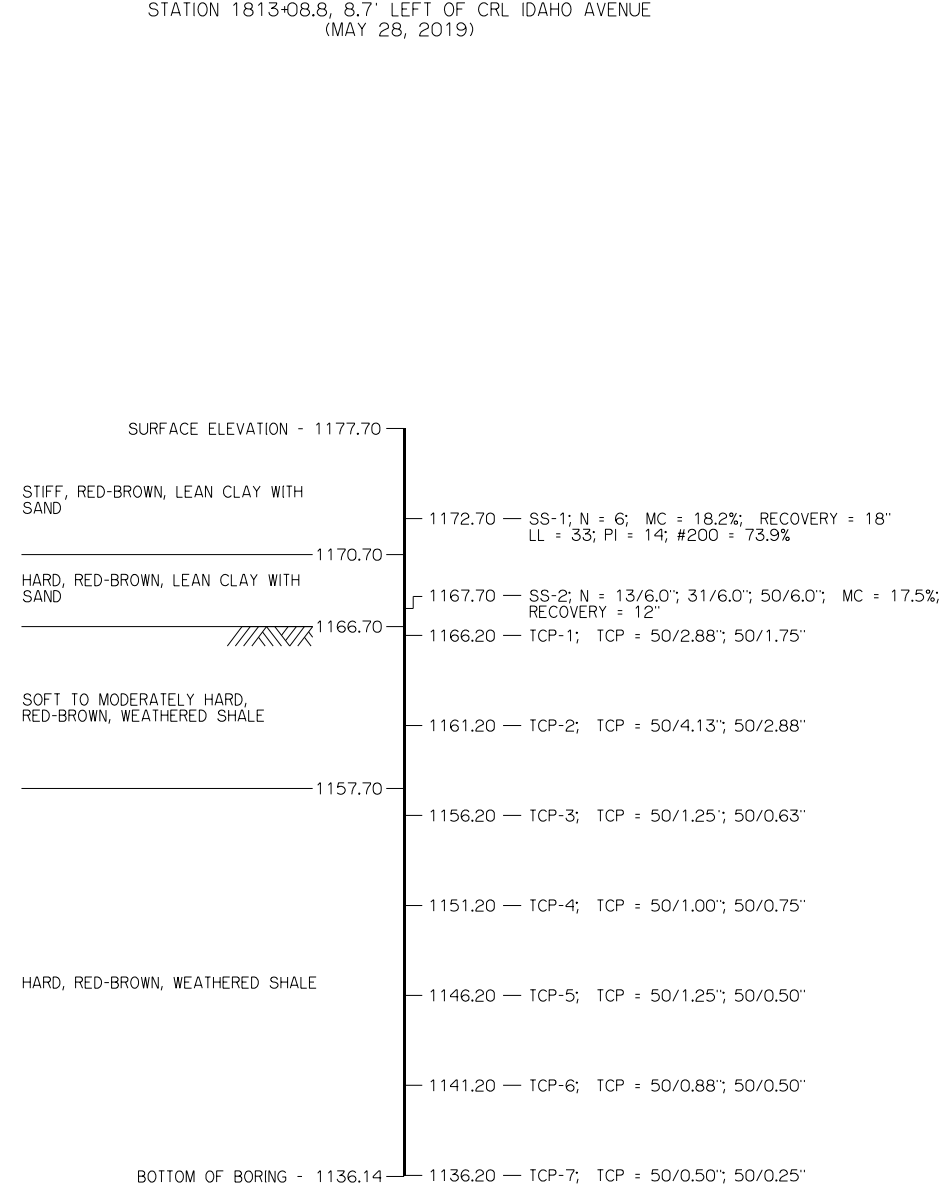
BORING NO. 0-4

STATION 1812+53.6, 12.9' RIGHT OF CRL IDAHO AVENUE
(JUNE 24, 2019)



BORING NO. 0-5

STATION 1813+08.8, 8.7' LEFT OF CRL IDAHO AVENUE
(MAY 28, 2019)



LEGEND

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SITE GEOLOGY

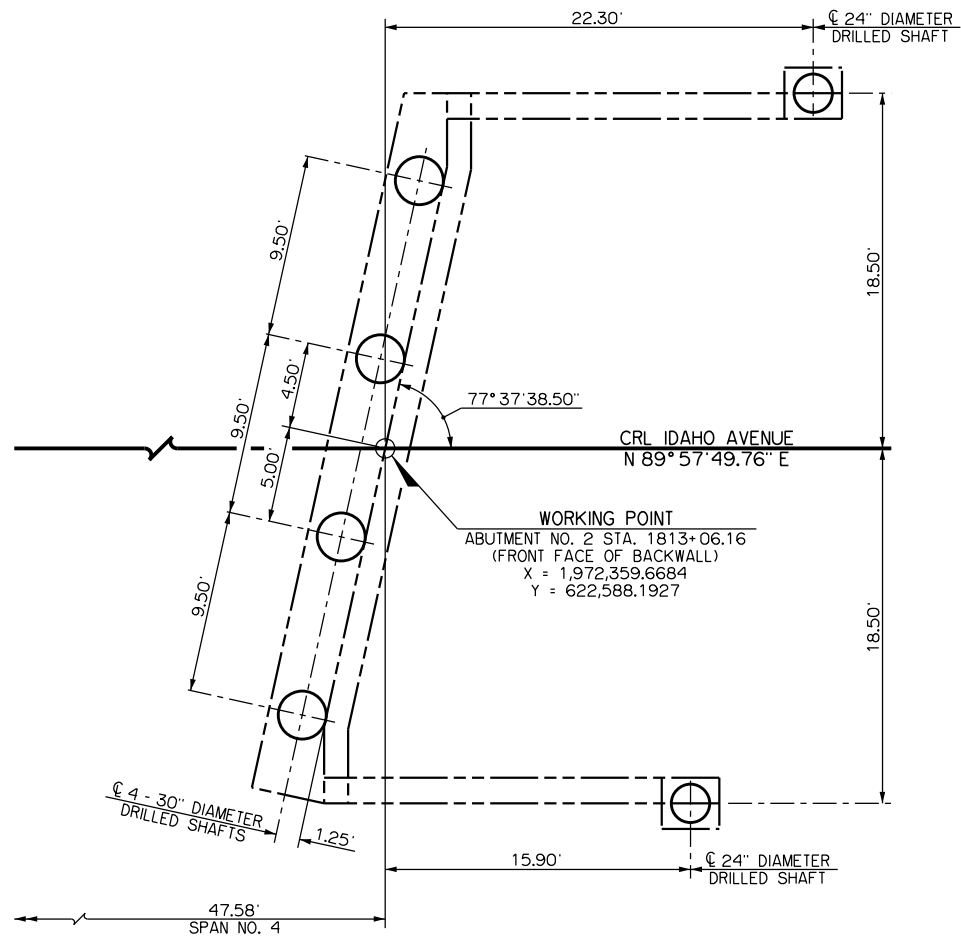
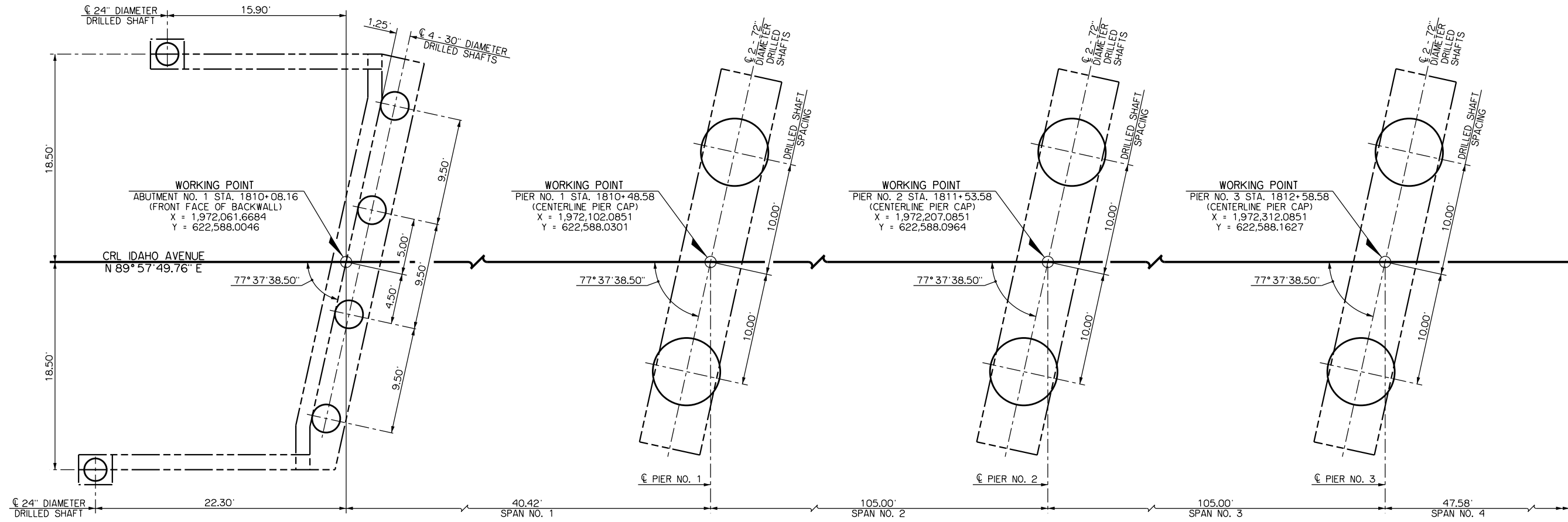
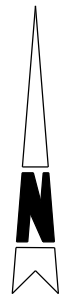
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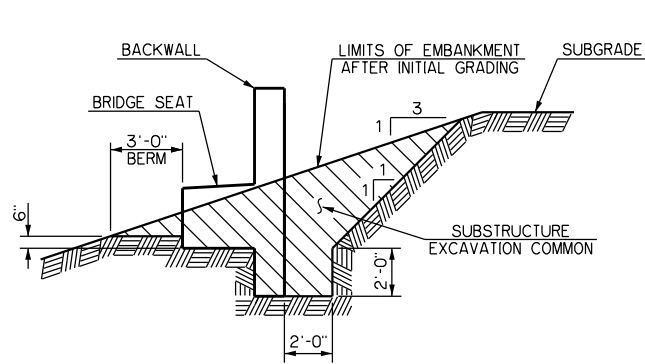
IDAHO AVENUE OVER US-81
BRIDGE '0

**FOUNDATION BORING LOGS
(SHEET NO. 3 OF 3)**



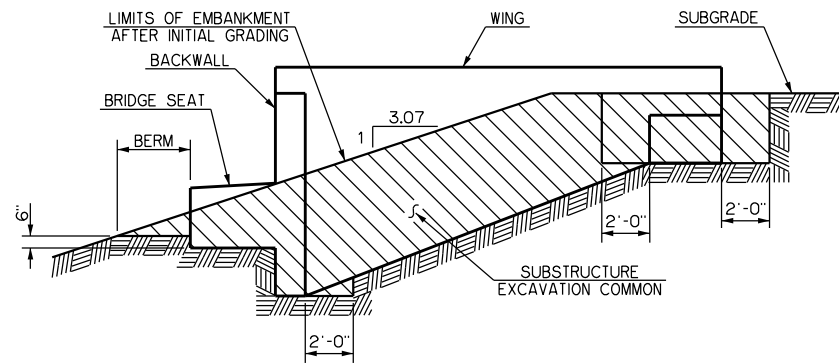
IDAHO AVENUE OVER US-81
BRIDGE '0

SUBSTRUCTURE STAKING DIAGRAM



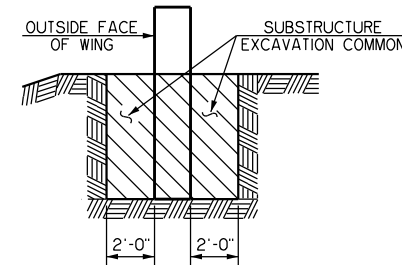
SECTION A-A

NOTE: DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO BACK WALL.

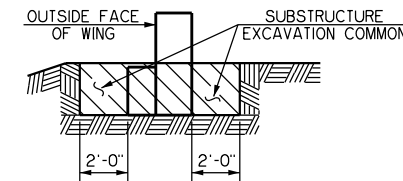


SECTION B-B

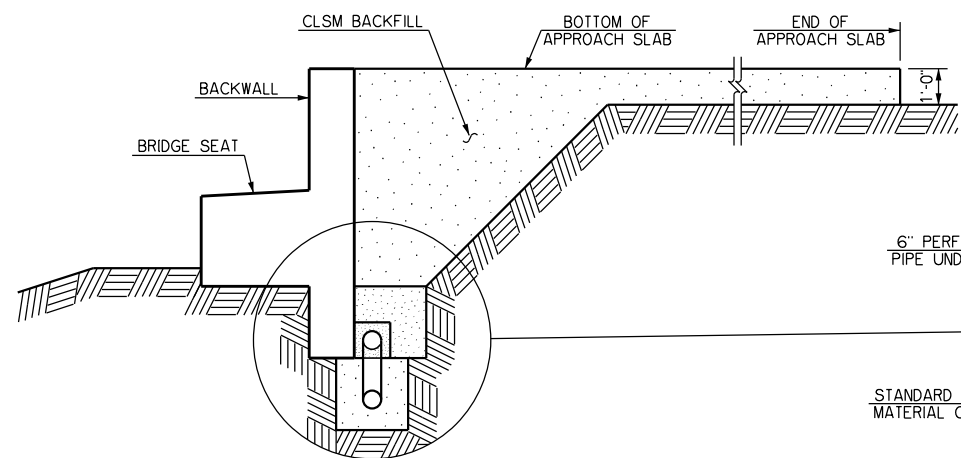
NOTE: DIMENSIONS SHOWN ARE MEASURED ALONG THE C.R.L.



SECTION C-C

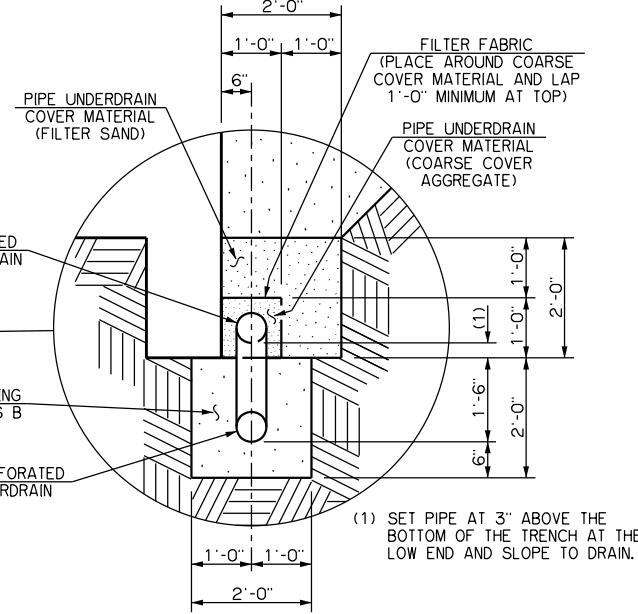


SECTION D-D

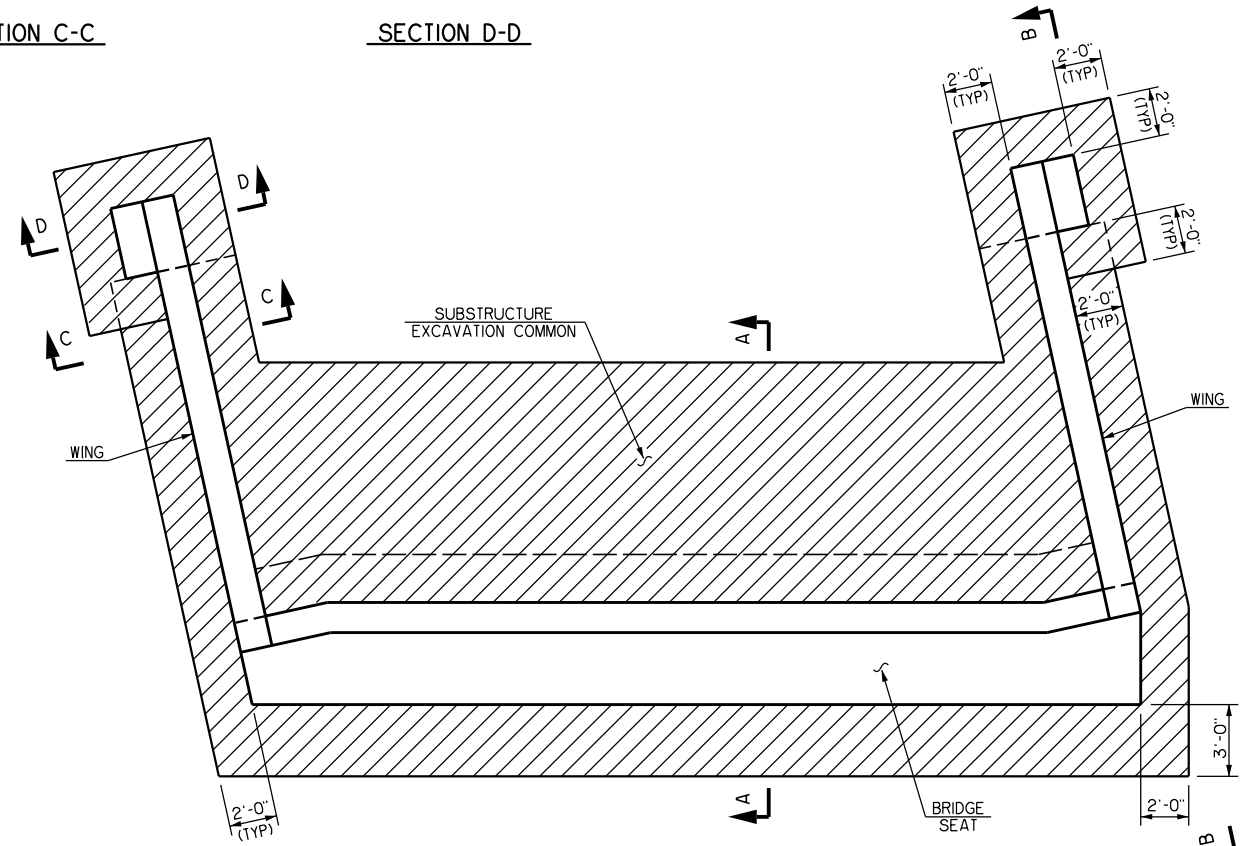


SECTION E-E

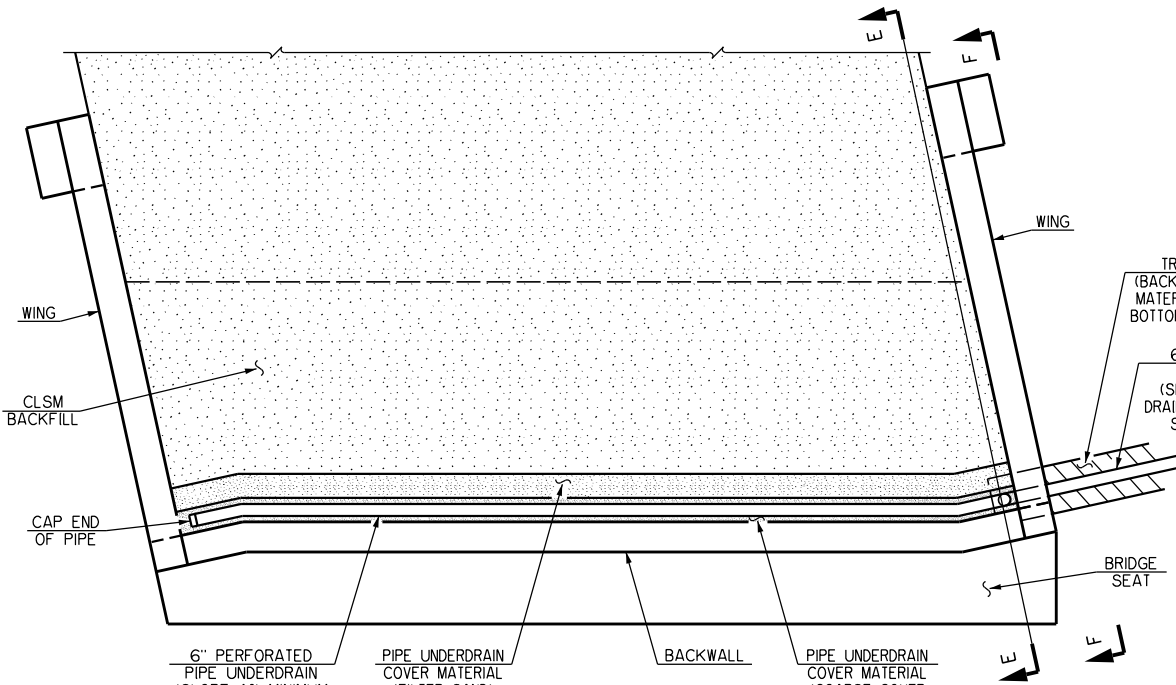
NOTE: DIMENSIONS SHOWN ARE MEASURED PERPENDICULAR TO BACK WALL.



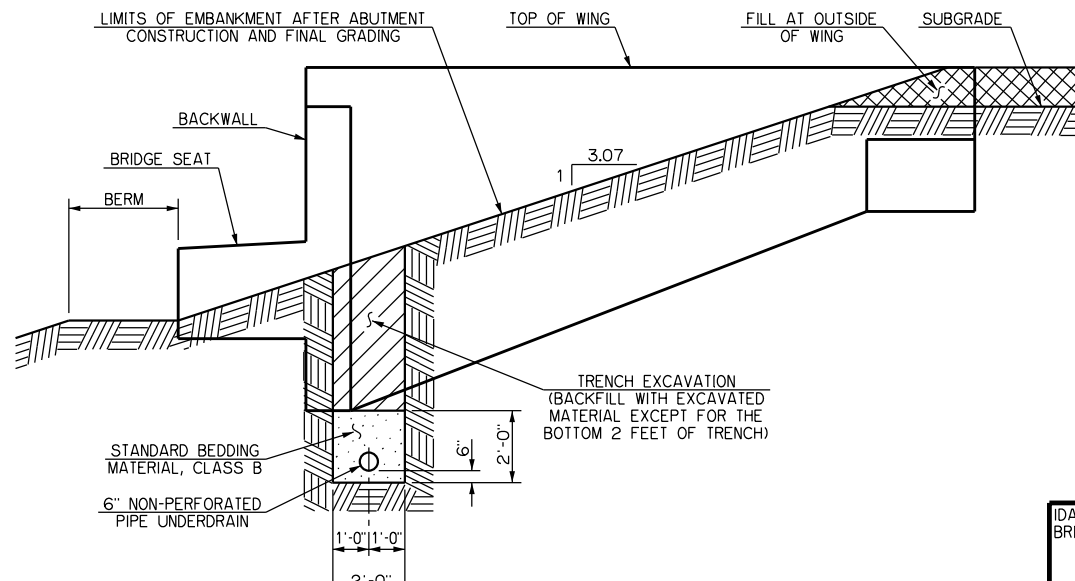
(1) SET PIPE AT 3" ABOVE THE BOTTOM OF THE TRENCH AT THE LOW END AND SLOPE TO DRAIN.



PLAN OF SUBSTRUCTURE EXCAVATION



PLAN OF PIPE UNDERDRAIN



SECTION F-F

NOTE: DIMENSIONS SHOWN ARE MEASURED ALONG THE C. BRIDGE.

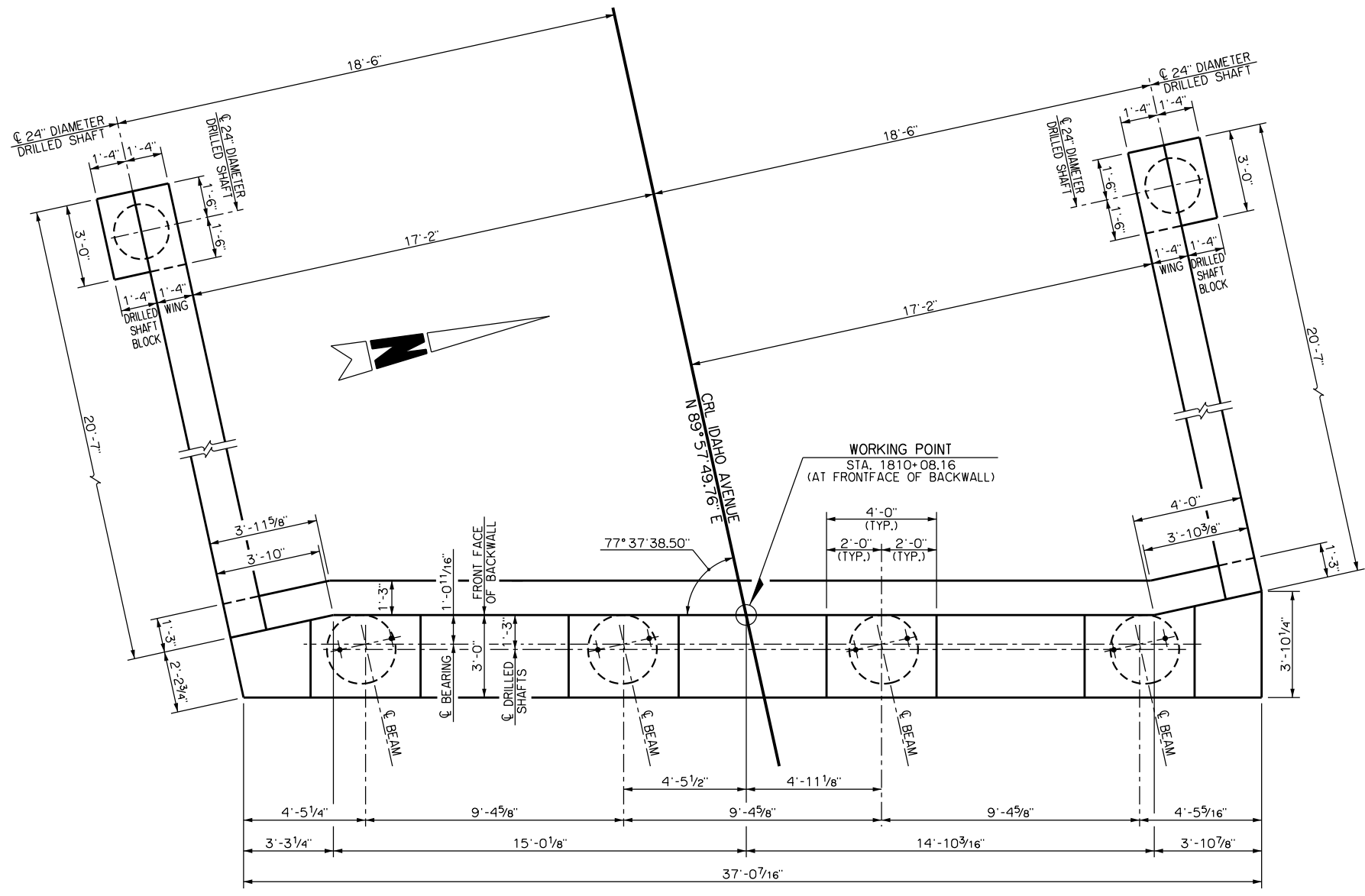
NOTE

CONCRETE MAY BE PLACED AGAINST THE LIMITS OF EXCAVATION IF THE MATERIAL IS EXCAVATED TO THE NEAT LINES OF THE ABUTMENT AND APPROVED BY THE ENGINEER. IF NECESSARY, FORMS SHALL BE USED ON THE BACK VERTICAL FACE OF THE ABUTMENT AND REMOVED AFTER THE CONCRETE HAS SET. THE MEASUREMENT AND PAYMENT FOR "SUBSTRUCTURE EXCAVATION COMMON" AT THE ABUTMENTS SHALL BE IN ACCORDANCE WITH THE DETAILS SHOWN IN THE PLANS.

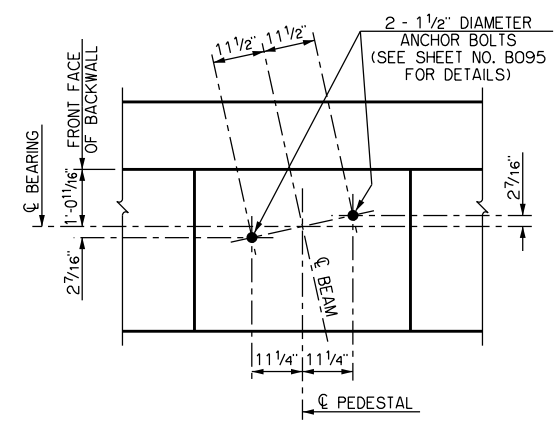
CLSM BACKFILL SHALL NOT BE PLACED UNTIL THE CONCRETE IN THE ABUTMENT WINGS HAS ATTAINED A STRENGTH OF 3,000 PSI.

INSTALLATION ON THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON ROADWAY STANDARD DRAWING PUD-3-3. THE EXTENT, LOCATION AND DEPTH OF THE 6" NON-PERFORATED PIPE UNDERDRAIN MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION. ALL COSTS OF THE PERFORATED AND NON-PERFORATED PIPE, PIPE UNDERDRAIN COVER MATERIAL, FILTER FABRIC, TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, PIPE CAPS, RODENT SCREEN, BACKFILLING OF TRENCH EXCAVATION, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF "6" PERFORATED PIPE UNDERDRAIN" AND "6" NON-PERFORATED PIPE UNDERDRAIN.

IDAHO AVENUE OVER US-81
BRIDGE '0'
DETAILS OF GRADING, SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY AT ABUTMENTS



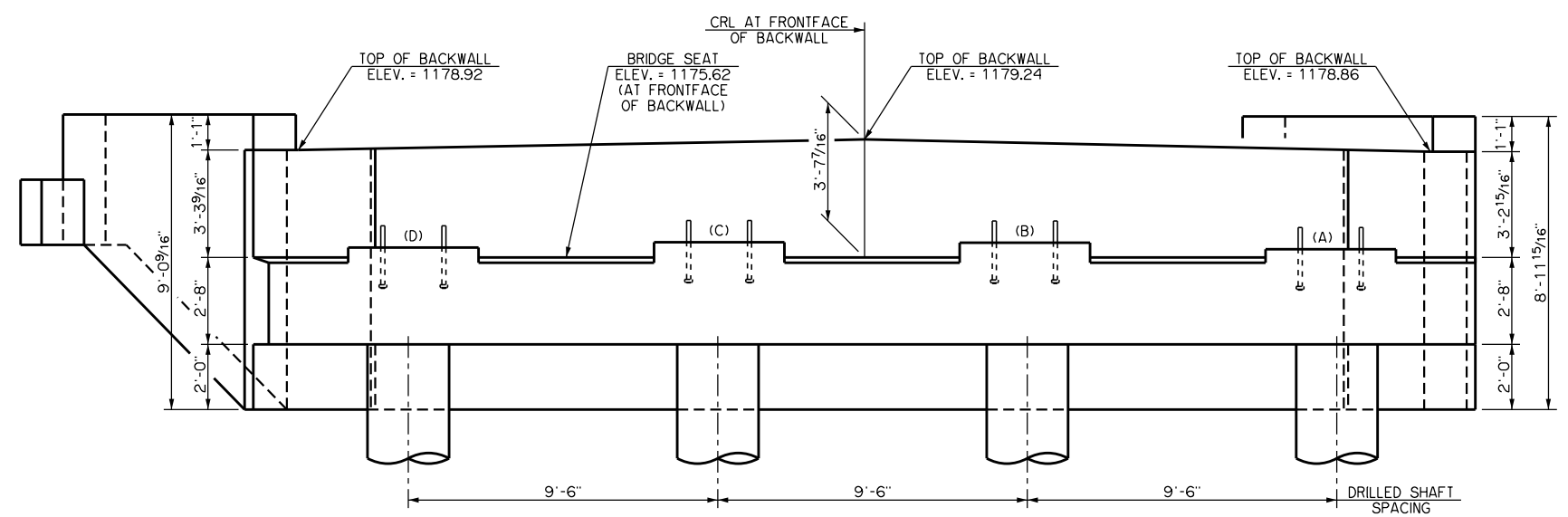
PLAN



PLAN OF PEDESTAL WITH ANCHOR BOLT LAYOUT

BAR LIST - ABUTMENT NO. 1					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#9	2	STR.	36'-9"	-
BH2	#9	2	STR.	36'-11"	-
BH3	#9	2	STR.	37'-2"	-
BH4	#9	2	BNT.	37'-4"	-
BH5	#9	2	BNT.	37'-4"	-
BH6	#4	1	STR.	36'-9"	-
BH7	#4	8	BNT.	38'-8"	-
BH8	#4	7	BNT.	37'-4"	-
BH9	#4	3	BNT.	4'-5"	-
BH10	#4	3	BNT.	6'-0"	-
BH11	#9	2	STR.	10'-0"	-
(1) BV1	#5	36	STR.	7'-8" AVG.	7'-6" TO 7'-10"
(1) BV2	#4	36	STR.	7'-8" AVG.	7'-6" TO 7'-10"
BV3	#4	8	STR.	8'-7"	-
BV4	#4	5	BNT.	3'-6"	-
BV5	#4	1	STR.	2'-1"	-
P1	#4	20	BNT.	5'-8"	-
P2	#4	16	BNT.	6'-8"	-
S1	#5	31	BNT.	13'-1"	-
S2	#5	3	BNT.	12'-2" AVG.	11'-9" TO 12'-7"
S3	#5	3	BNT.	13'-10" AVG.	13'-5" TO 14'-3"
W1	#5	2	BNT.	8'-6"	-
(2) W2	#5	6	BNT.	9'-7" AVG.	6'-4" TO 12'-10"
W3	#5	5	BNT.	15'-6"	-
W4	#5	19	BNT.	11'-0"	-
FOUR DRILLED SHAFTS (3)					
EPOXY COATED					
D1	#10	72	STR.	20'-11"	-
UNCOATED					
DS1	W20	4	BNT.	252'-1"	-

- (1) INCLUDES TWO SETS OF 18 BARS
- (2) INCLUDES TWO SETS OF 3 BARS
- (3) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.



ELEVATION

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1175.87
(B)	1176.07
(C)	1176.08
(D)	1175.92

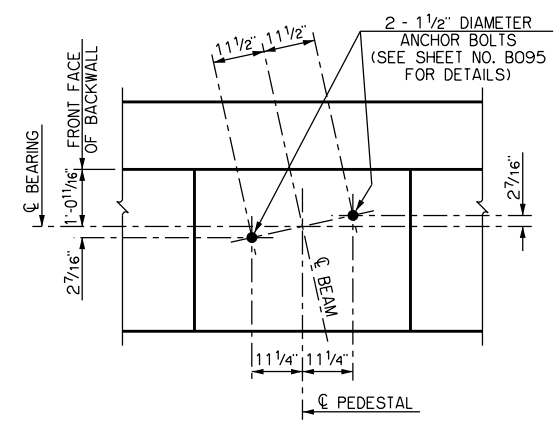
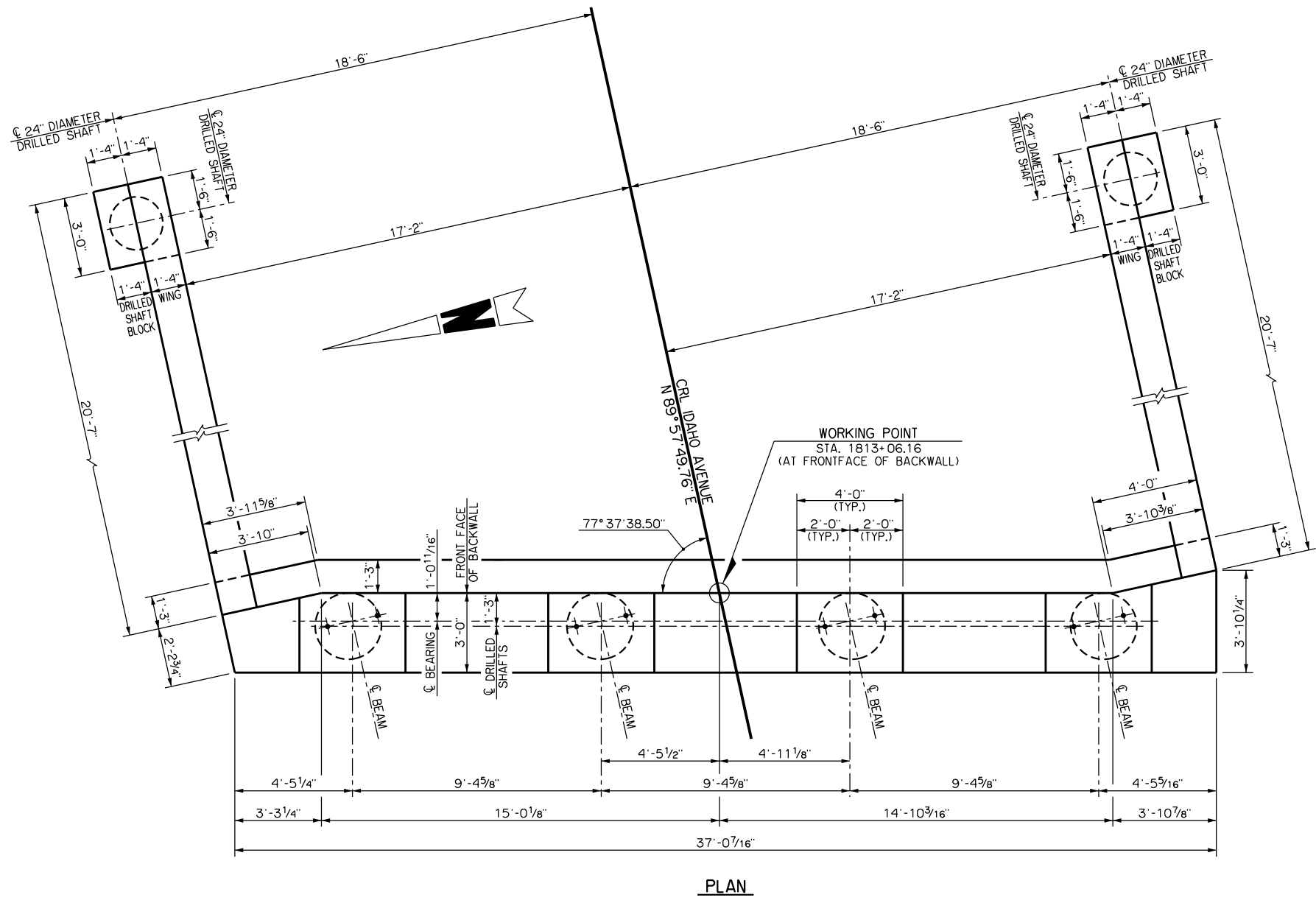
SUMMARY OF QUANTITIES - ABUTMENT NO. 1		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	125.00
CLSM BACKFILL	CY	93.00
CLASS A CONCRETE	CY	38.10
EPOXY COATED REINFORCING STEEL	LB	4,690.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	37.00
DRILLED SHAFTS 24" DIAMETER	LF	24.00
DRILLED SHAFTS 30" DIAMETER	LF	76.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	35.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	23.00

IDAHO AVENUE OVER US-81
BRIDGE 'O'

DETAILS OF ABUTMENT NO. 1

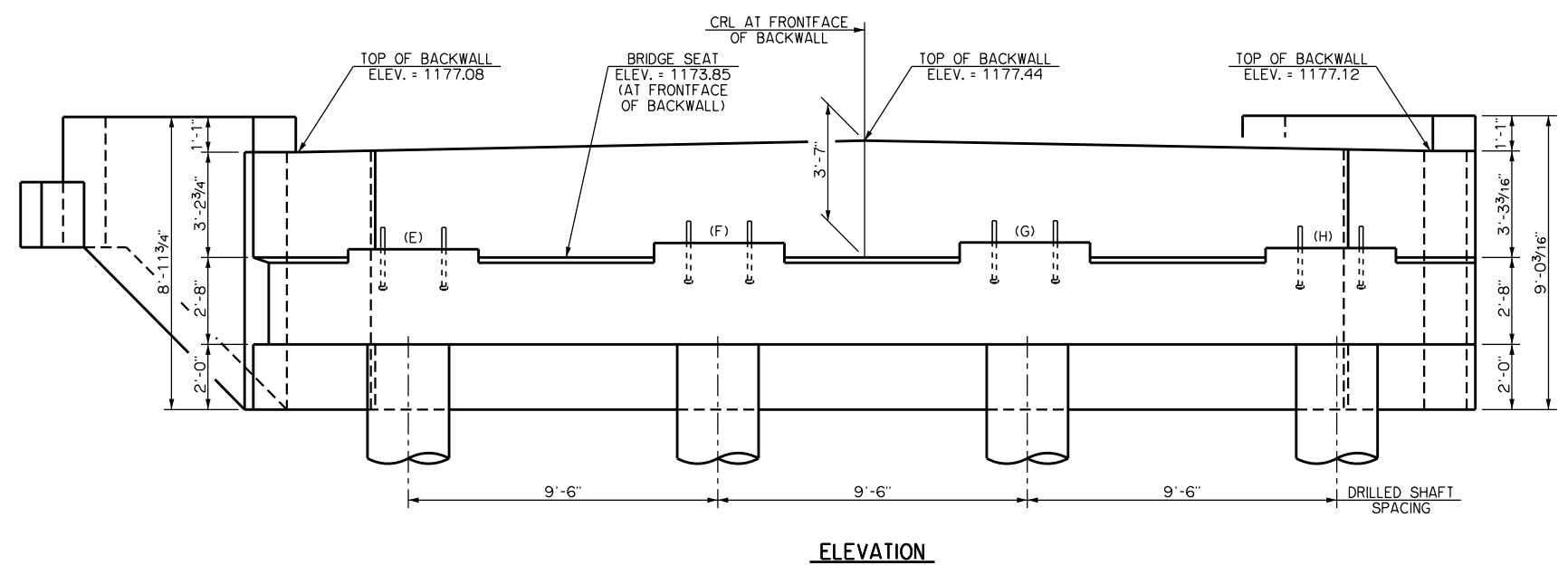
State Job No. 24428(12) Sheet No. B078

US 81 REALIGNMENT
GRADY COUNTY



BAR LIST - ABUTMENT NO. 2					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#9	2	STR.	36'-9"	-
BH2	#9	2	STR.	36'-11"	-
BH3	#9	2	STR.	37'-2"	-
BH4	#9	2	BNT.	37'-4"	-
BH5	#9	2	BNT.	37'-4"	-
BH6	#4	1	STR.	36'-9"	-
BH7	#4	8	BNT.	38'-8"	-
BH8	#4	7	BNT.	37'-4"	-
BH9	#4	3	BNT.	4'-5"	-
BH10	#4	3	BNT.	6'-0"	-
BH11	#9	2	STR.	10'-0"	-
(1) BV1	#5	36	STR.	7'-8" AVG.	7'-6" TO 7'-10"
(1) BV2	#4	36	STR.	7'-8" AVG.	7'-6" TO 7'-10"
BV3	#4	8	STR.	8'-7"	-
BV4	#4	5	BNT.	3'-6"	-
BV5	#4	1	STR.	2'-1"	-
P1	#4	20	BNT.	5'-8"	-
P2	#4	16	BNT.	6'-8"	-
S1	#5	31	BNT.	13'-1"	-
S2	#5	3	BNT.	12'-2" AVG.	11'-9" TO 12'-7"
S3	#5	3	BNT.	13'-10" AVG.	13'-5" TO 14'-3"
W1	#5	2	BNT.	8'-6"	-
(2) W2	#5	6	BNT.	9'-7" AVG.	6'-4" TO 12'-10"
W3	#5	5	BNT.	15'-6"	-
W4	#5	19	BNT.	11'-0"	-
FOUR DRILLED SHAFTS (3)					
EPOXY COATED					
D1	#10	72	STR.	20'-11"	-
UNCOATED					
DS1	W20	4	BNT.	252'-1"	-

- (1) INCLUDES TWO SETS OF 18 BARS
- (2) INCLUDES TWO SETS OF 3 BARS
- (3) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.



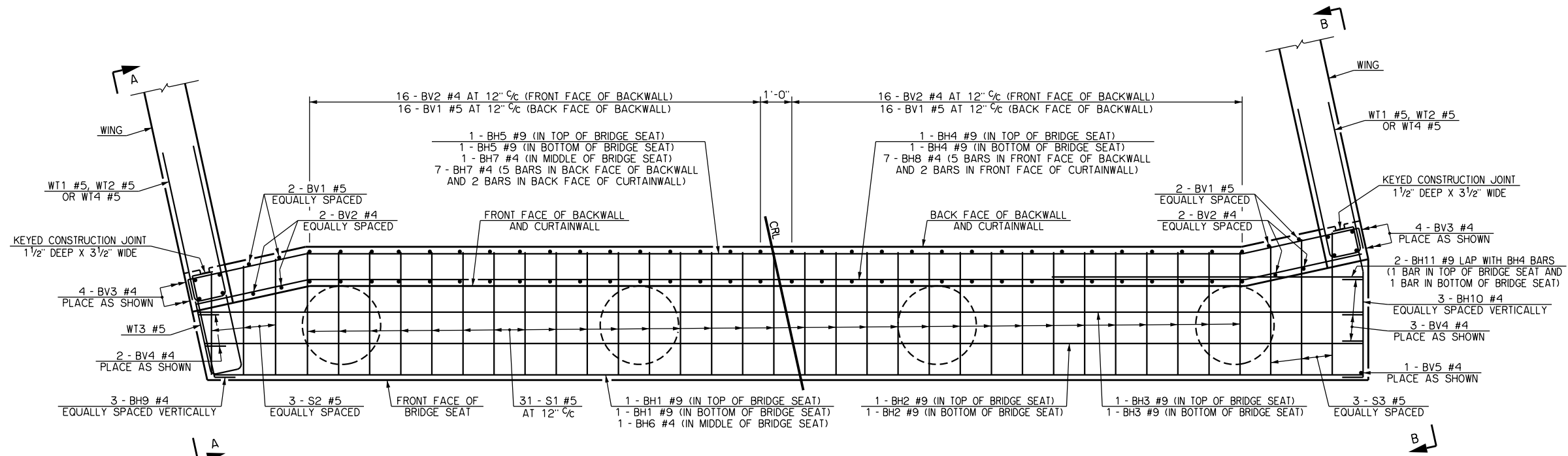
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(E)	1174.10
(F)	1174.30
(G)	1174.31
(H)	1174.14

SUMMARY OF QUANTITIES - ABUTMENT NO. 2		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	125.00
CLSM BACKFILL	CY	92.00
CLASS A CONCRETE	CY	38.00
EPOXY COATED REINFORCING STEEL	LB	4,690.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	36.00
DRILLED SHAFTS 24" DIAMETER	LF	24.00
DRILLED SHAFTS 30" DIAMETER	LF	76.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	35.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	23.00

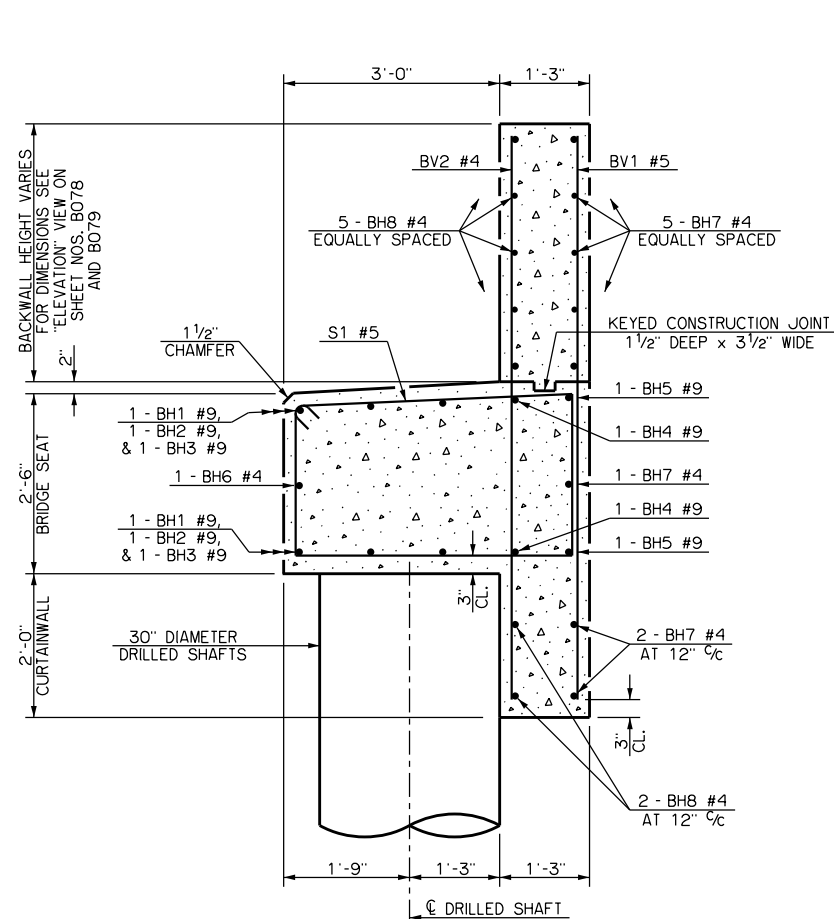
IDAHO AVENUE OVER US-81
BRIDGE 'O'

DETAILS OF ABUTMENT NO. 2

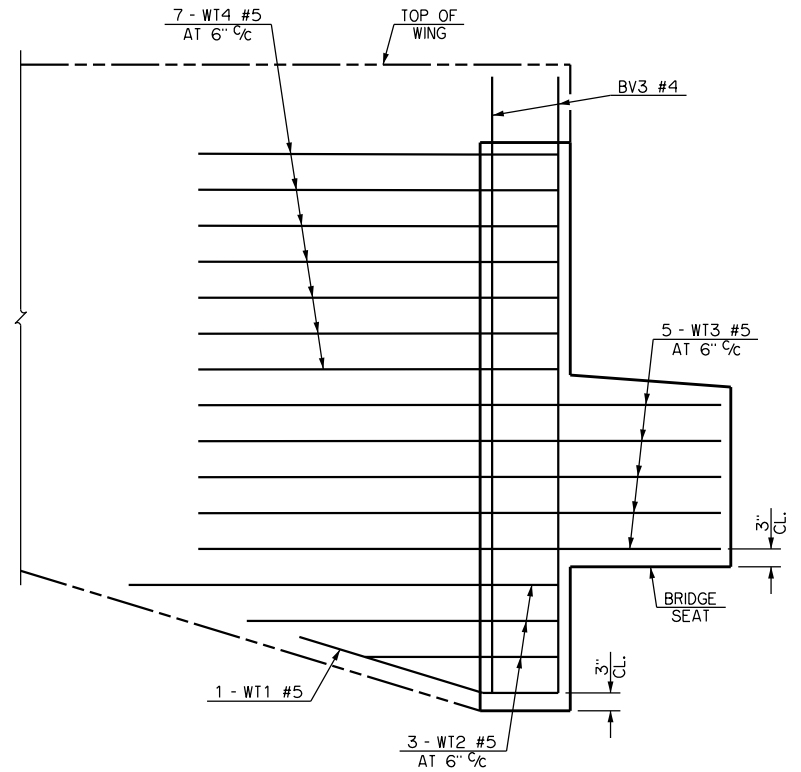
US 81 REALIGNMENT
GRADY COUNTY



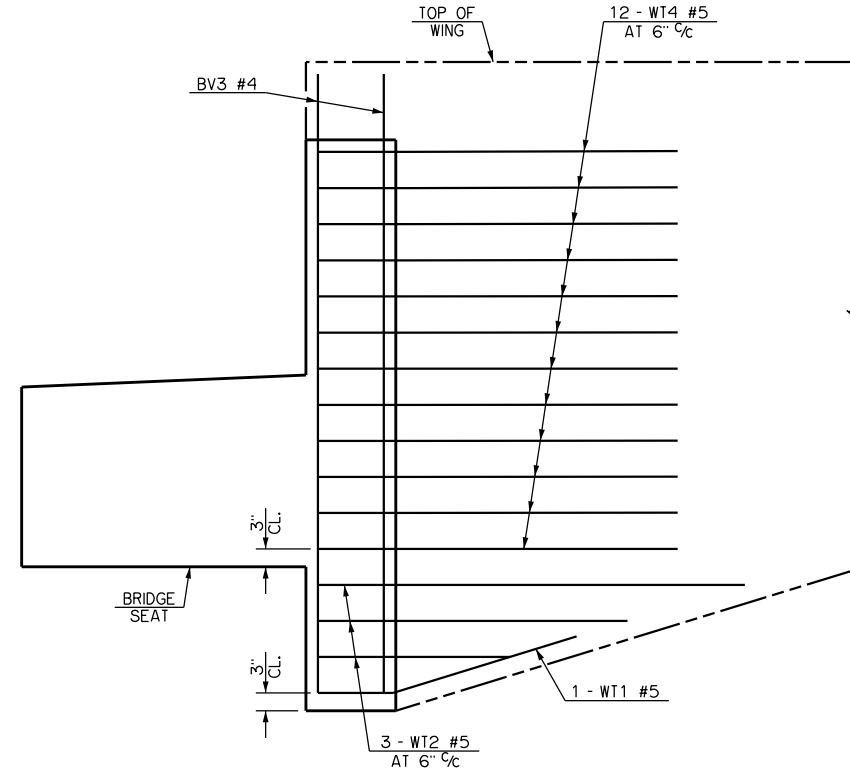
LAYOUT OF ABUTMENT REINFORCING STEEL



SECTION THROUGH BRIDGE SEAT

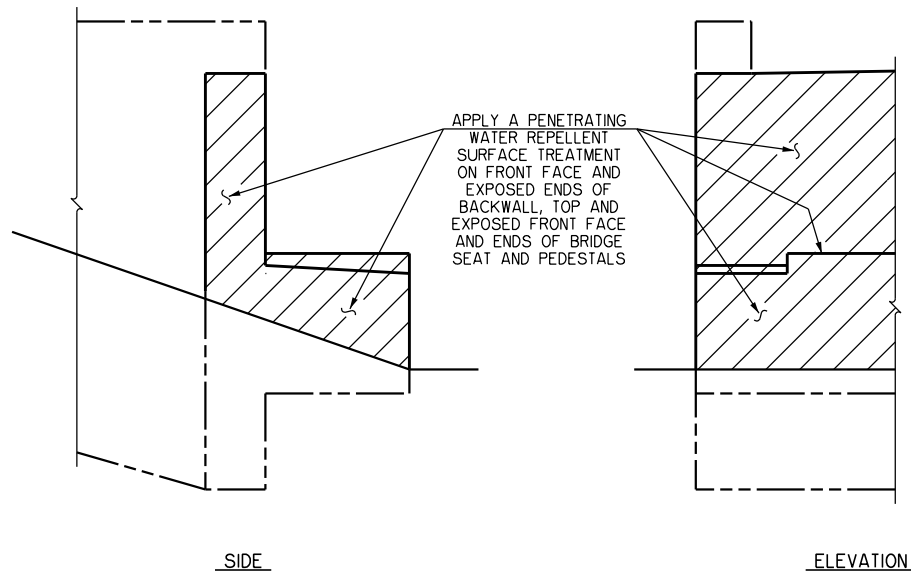


VIEW "A-A" SHOWING WT BAR LAYOUT

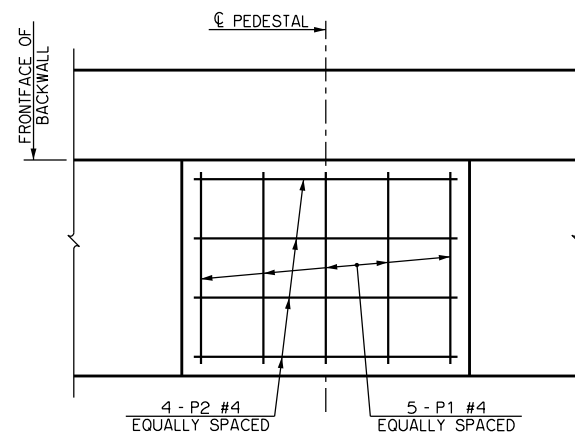


VIEW "B-B" SHOWING WT BAR LAYOUT

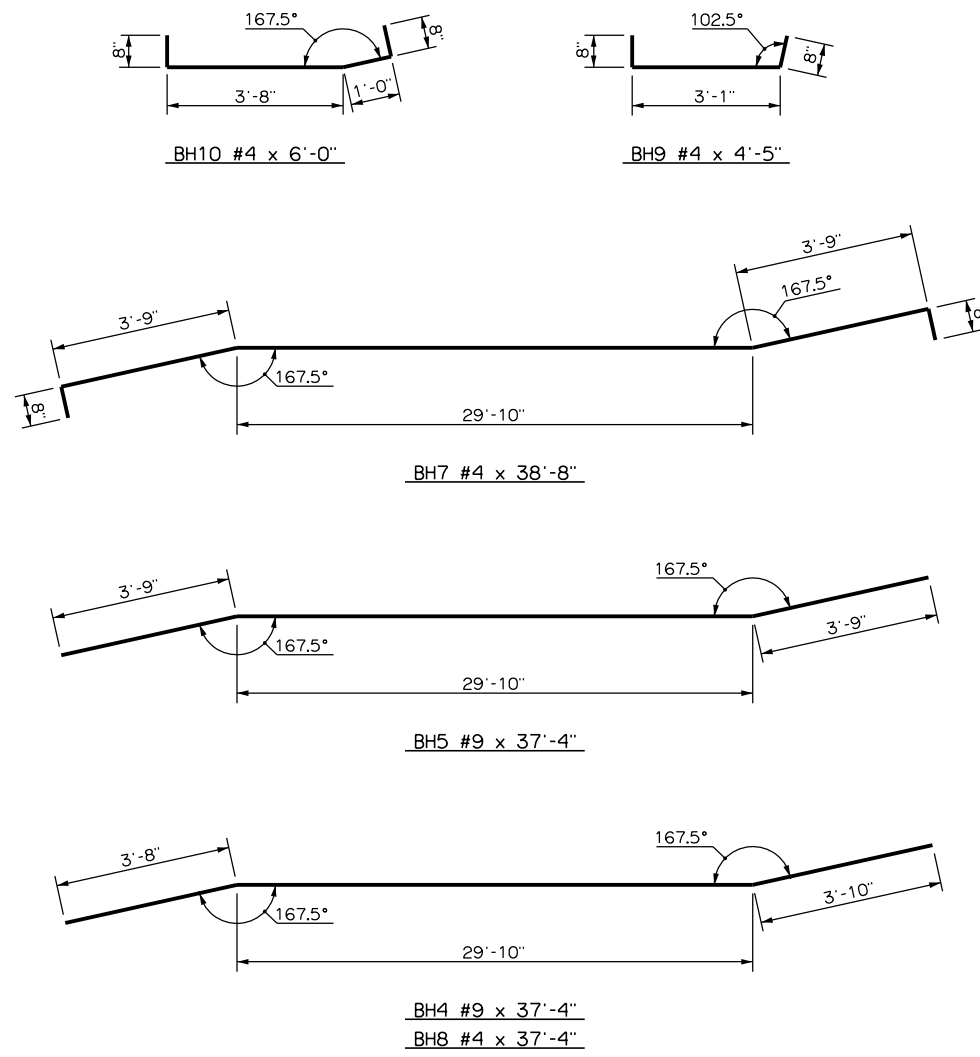
IDAHO AVENUE OVER US-81
BRIDGE 'O'
DETAILS OF TYPICAL ABUTMENT
REINFORCING STEEL PLACEMENT
(SHEET NO. 1 OF 2)
State Job No. 24428(12)



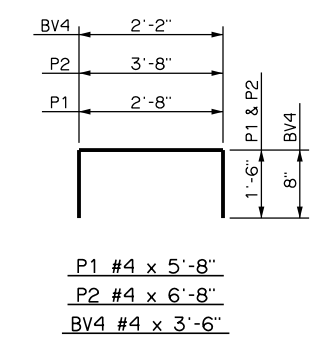
DETAIL OF PENETRATING WATER REPELLENT TREATMENT



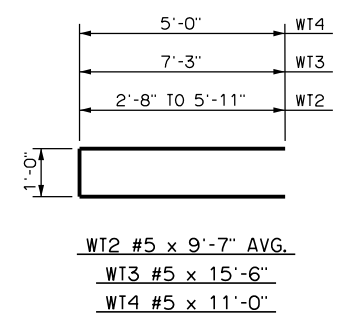
LAYOUT OF PEDESTAL REINFORCING STEEL



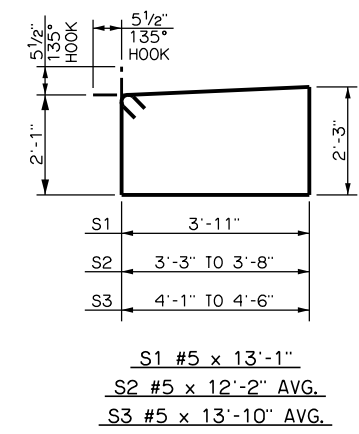
DETAILS OF BENT REINFORCING STEEL



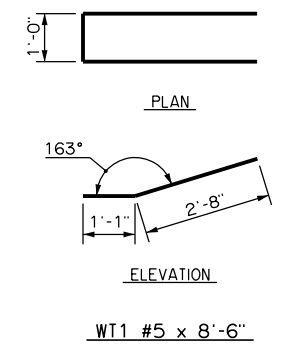
P1 #4 x 5'-8"
P2 #4 x 6'-8"
BV4 #4 x 3'-6"



WT2 #5 x 9'-7" AVG.
WT3 #5 x 15'-6"
WT4 #5 x 11'-0"

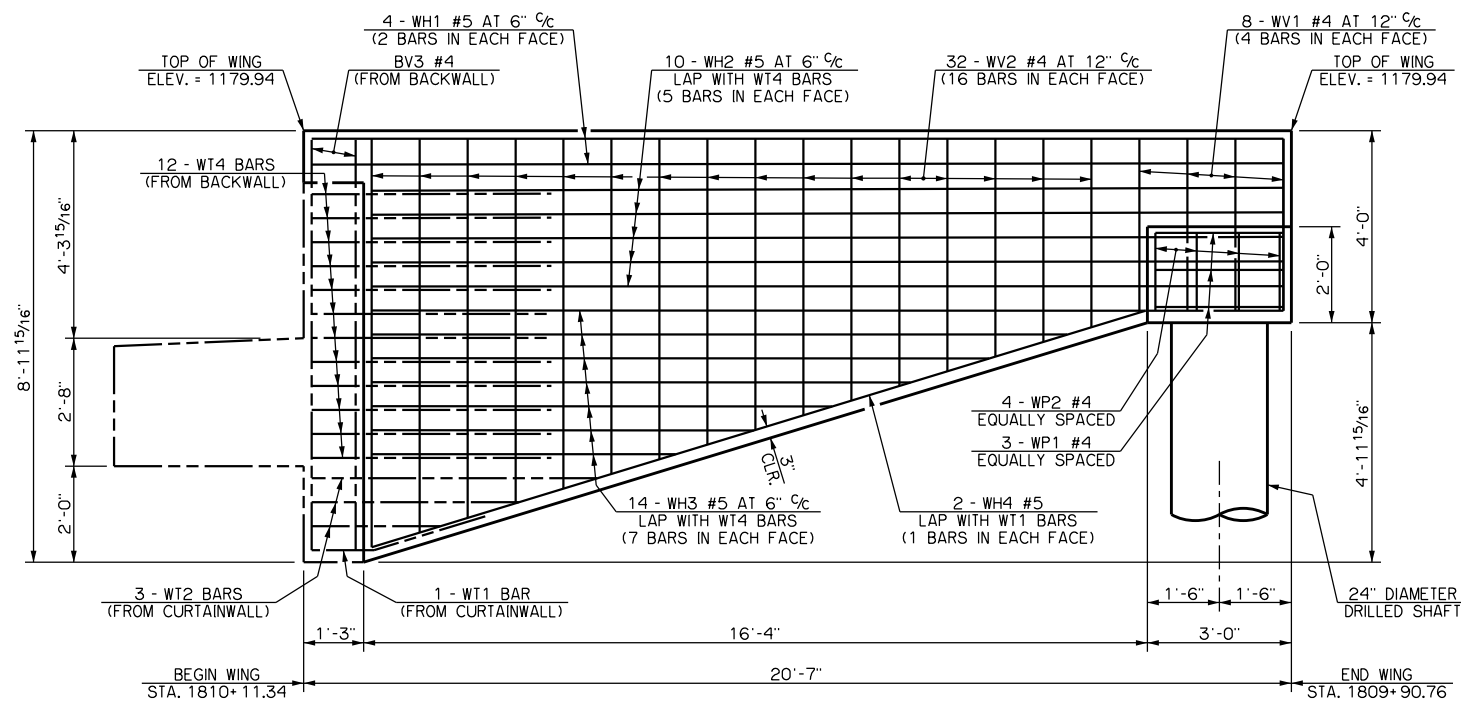


S1 #5 x 13'-1"
S2 #5 x 12'-2" AVG.
S3 #5 x 13'-10" AVG.

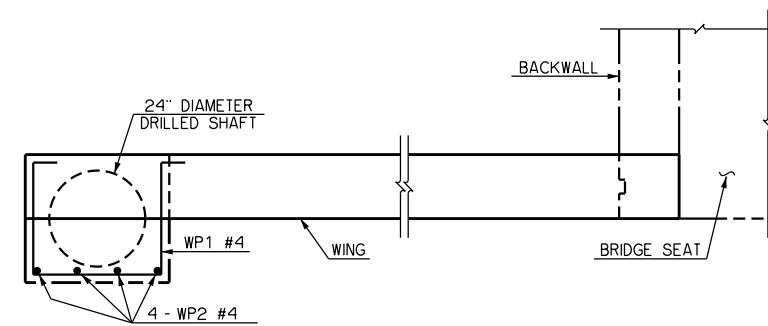


WT1 #5 x 8'-6"

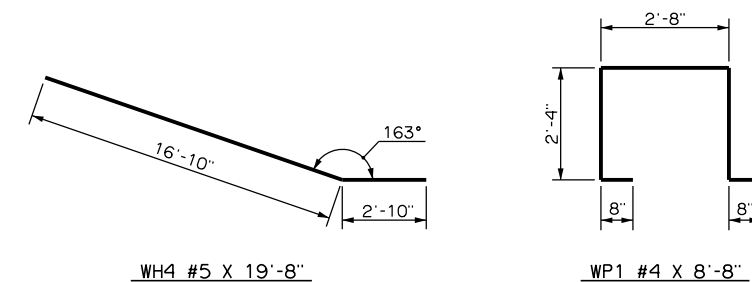
IDAHO AVENUE OVER US-81
BRIDGE '0
DETAILS OF TYPICAL ABUTMENT
REINFORCING STEEL PLACEMENT
(SHEET NO. 2 OF 2)



ELEVATION OF NORTH WING (LOOKING SOUTH)

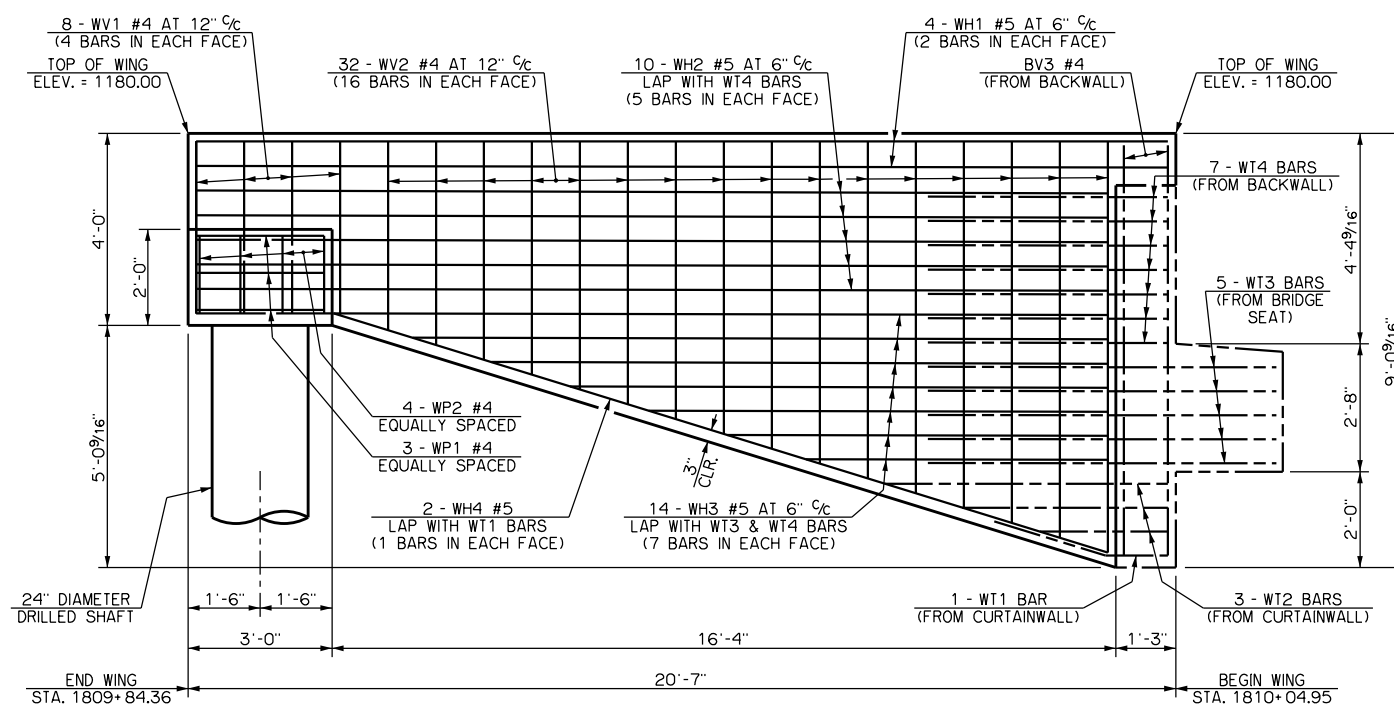


PLAN OF REINFORCING STEEL AT WING DRILLED SHAFT CONCRETE BLOCK OUT

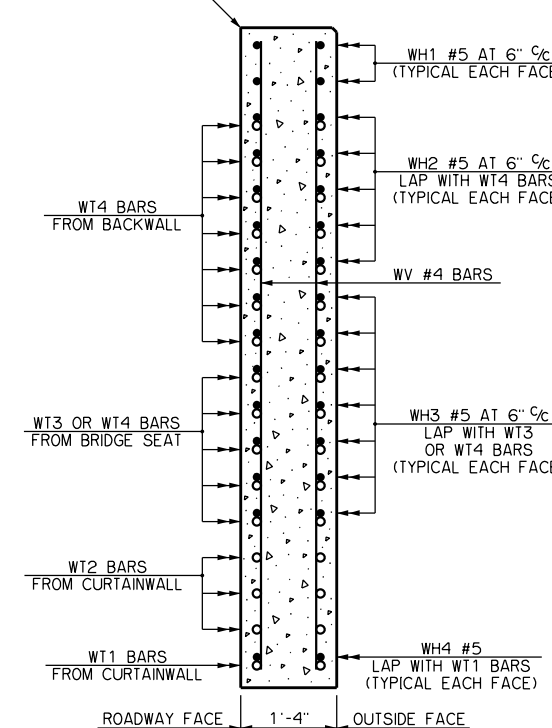


DETAILS OF BENT REINFORCING STEEL

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED



ELEVATION ON SOUTH WING (LOOKING NORTH)



SECTION THRU WING (AT BACK FACE OF BACKWALL)

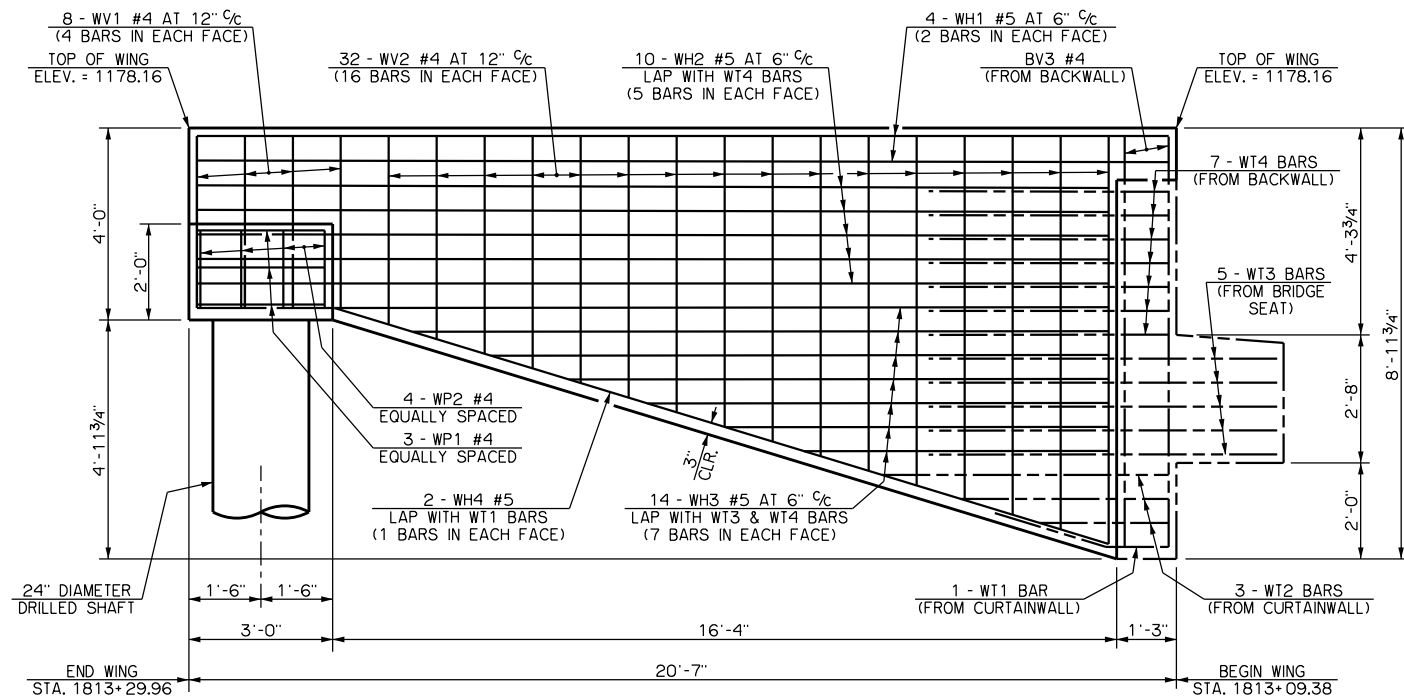
BAR LIST - ONE WING AT ABUTMENT NO. 1 (TWO REQUIRED)

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#5	4	STR.	20'-3"	-
WH2	#5	10	STR.	19'-0"	-
(1) WH3	#5	14	STR.	11'-3" AVG.	6'-4" TO 16'-2"
WH4	#5	2	BNT.	19'-8"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(2) WV2	#4	32	STR.	6'-2 1/2" AVG.	3'-11" TO 8'-6"
ONE DRILLED SHAFT (3)					
EPOXY COATED					
D2	#6	24	STR.	13'-6"	-
UNCOATED					
DS2	W20	2	BNT.	123'-2"	-

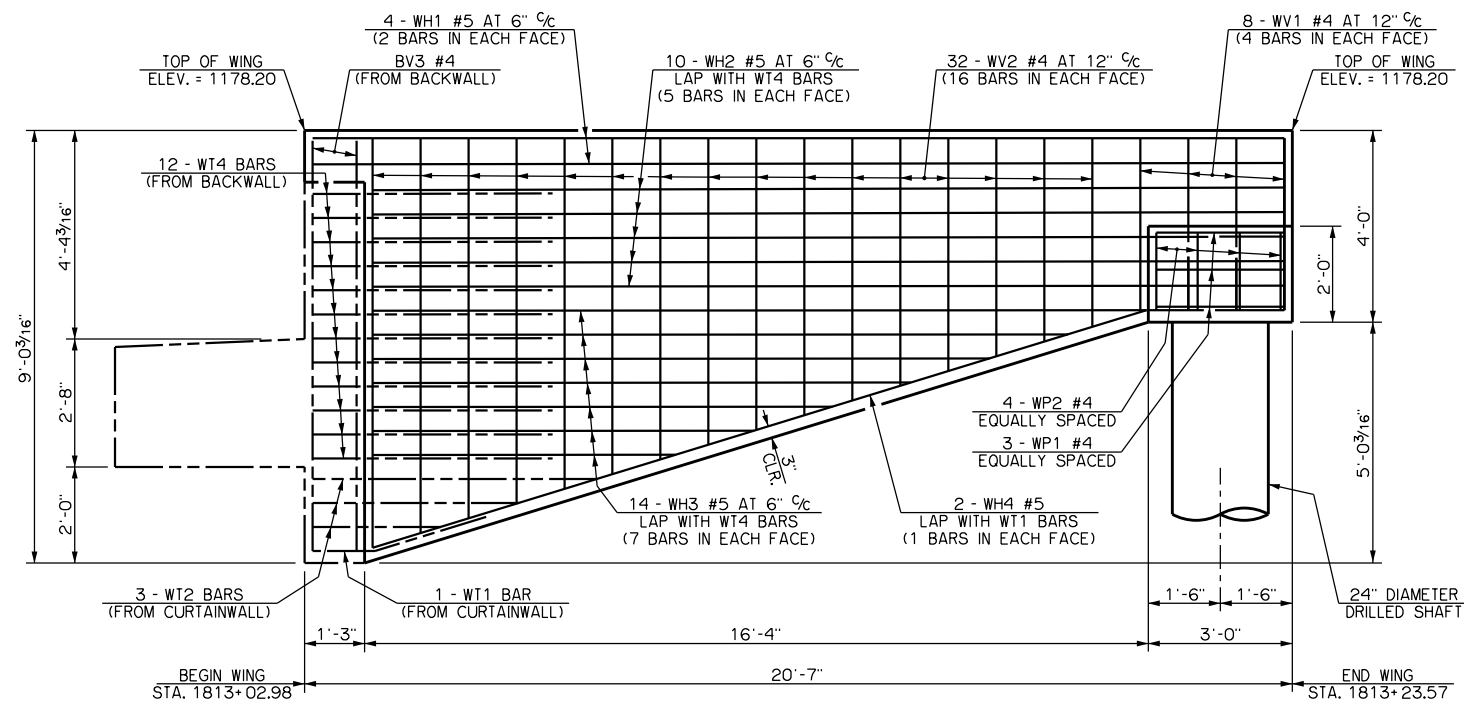
- (1) INCLUDES TWO SETS OF 7 BARS
- (2) INCLUDES TWO SETS OF 16 BARS
- (3) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

IDAHO AVENUE OVER US-81 BRIDGE '0

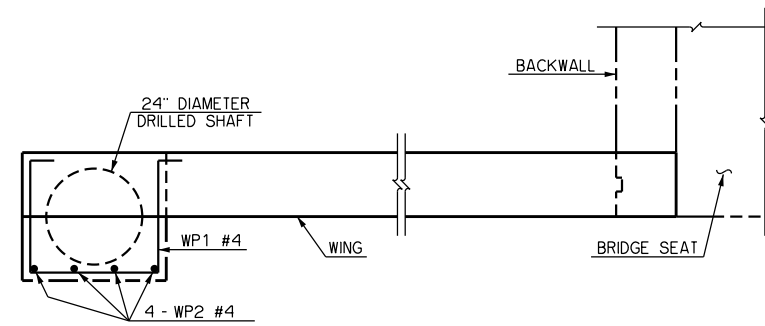
DETAILS OF WINGS AT ABUTMENT NO. 1



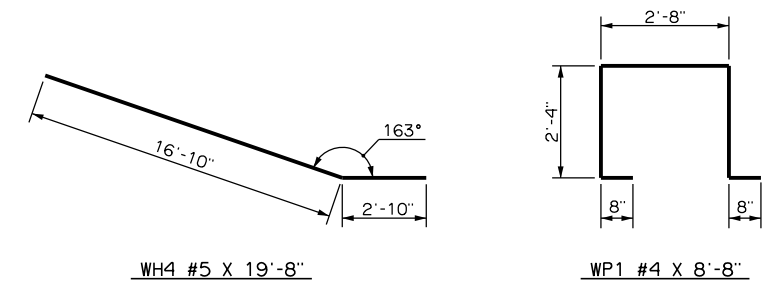
ELEVATION OF NORTH WING (LOOKING SOUTH)



ELEVATION ON SOUTH WING (LOOKING NORTH)

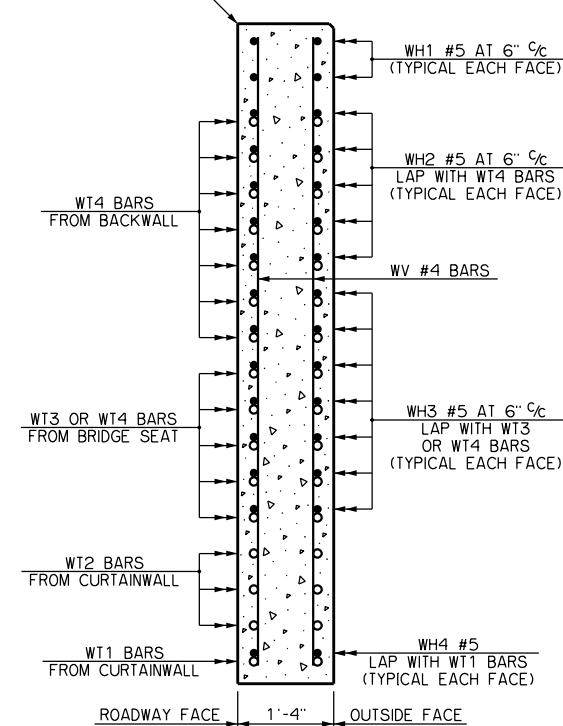


PLAN OF REINFORCING STEEL AT WING DRILLED SHAFT CONCRETE BLOCK OUT



DETAILS OF BENT REINFORCING STEEL

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED

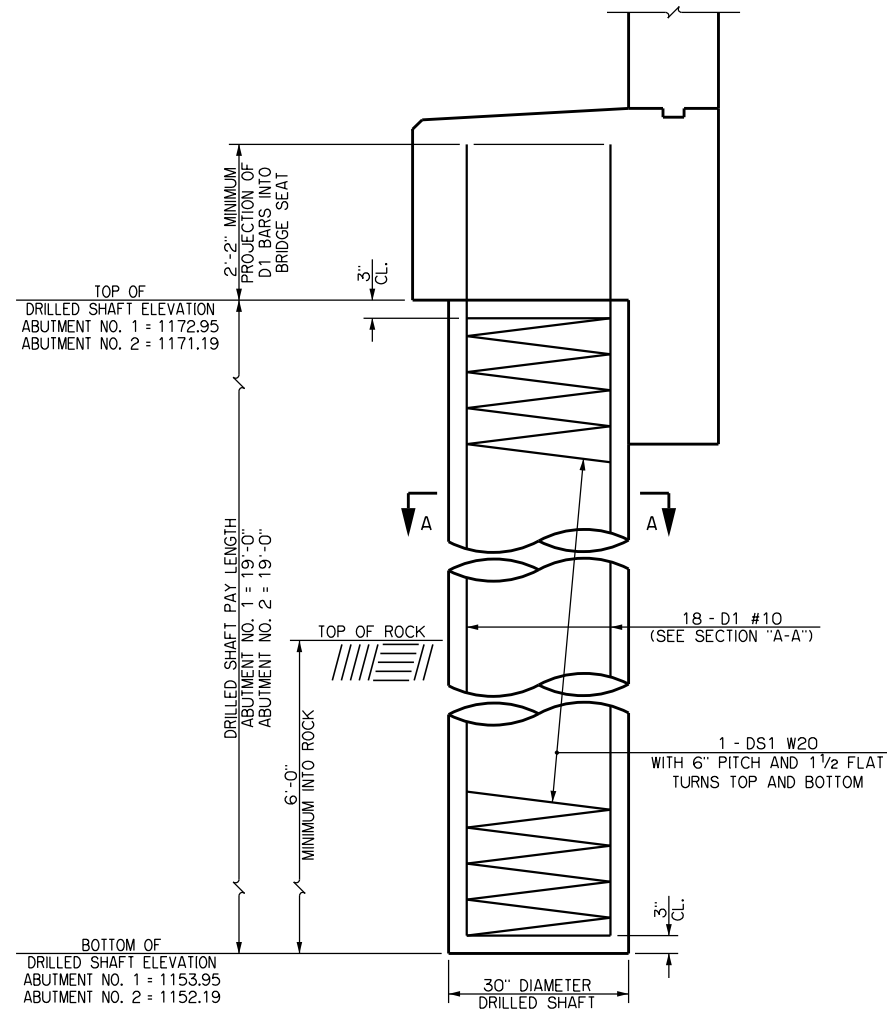


SECTION THRU WING (AT BACK FACE OF BACKWALL)

BAR LIST - ONE WING AT ABUTMENT NO. 2 (TWO REQUIRED)					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#5	4	STR.	20'-3"	-
WH2	#5	10	STR.	19'-0"	-
(1) WH3	#5	14	STR.	11'-3" AVG.	6'-4" TO 16'-2"
WH4	#5	2	BNT.	19'-8"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(2) WV2	#4	32	STR.	6'-2 1/2" AVG.	3'-11" TO 8'-6"
ONE DRILLED SHAFT (3)					
EPOXY COATED					
D2	#6	24	STR.	13'-6"	-
UNCOATED					
DS2	W20	2	BNT.	123'-2"	-

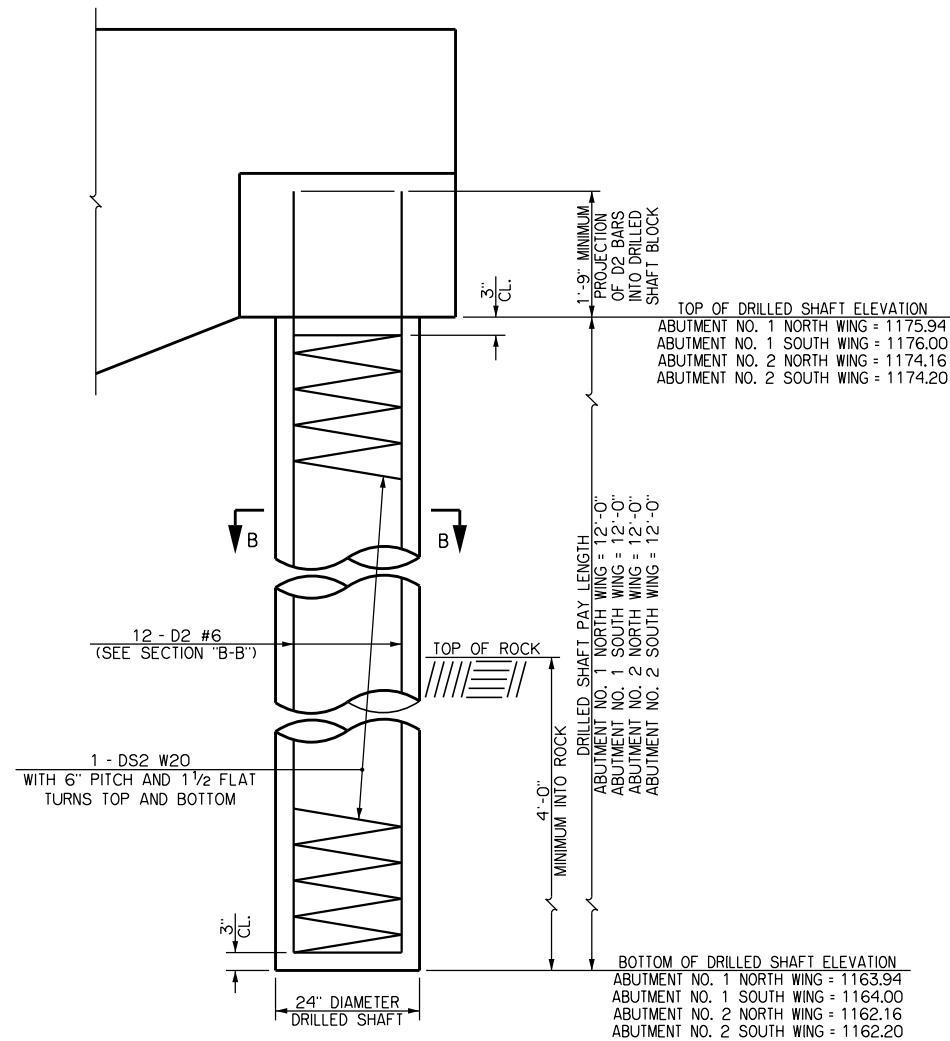
- (1) INCLUDES TWO SETS OF 7 BARS
- (2) INCLUDES TWO SETS OF 16 BARS
- (3) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

IDAHO AVENUE OVER US-81 BRIDGE '0
 DETAILS OF WINGS AT ABUTMENT NO. 2



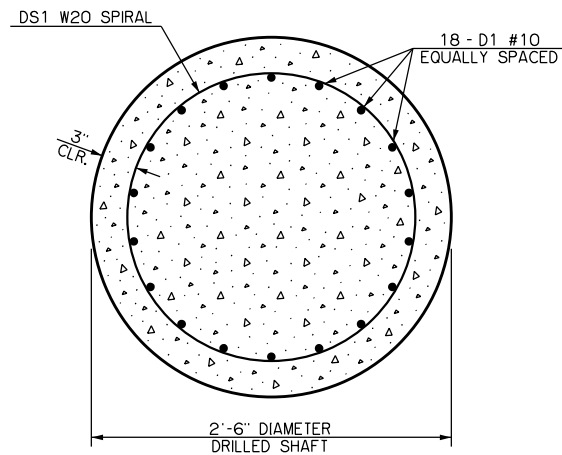
TYPICAL SECTION THROUGH DRILLED SHAFT AT BRIDGE SEAT

NOTE: FOR BAR LIST OF 30" DIAMETER DRILLED SHAFT SEE SHEET NOS. B078 AND B079

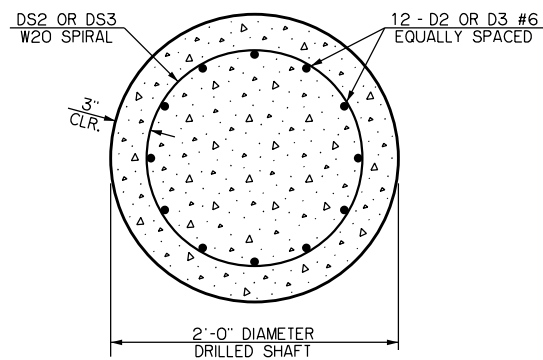


TYPICAL SECTION THROUGH DRILLED SHAFT AT END OF WING

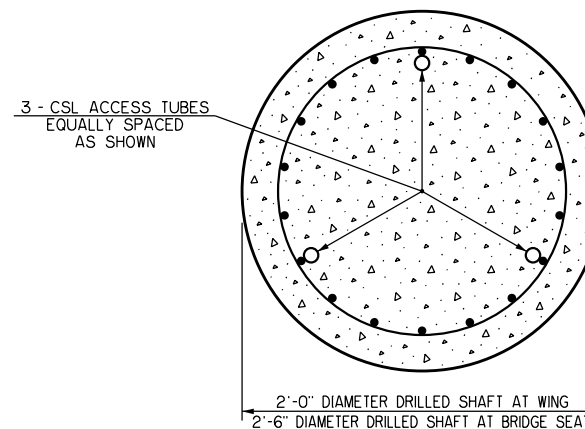
NOTE: FOR BAR LIST OF 24" DIAMETER DRILLED SHAFT SEE SHEET NOS. B082 AND B083



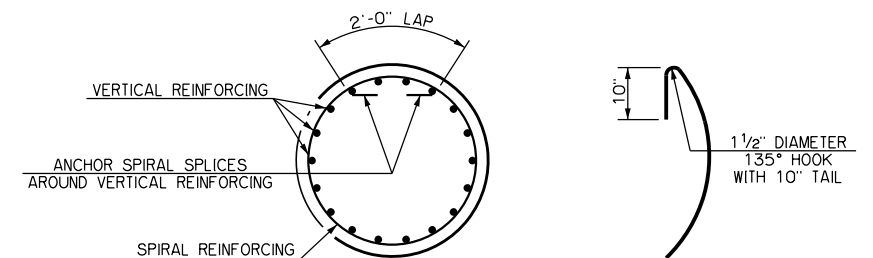
SECTION "A-A"



SECTION "B-B"



SECTION THROUGH DRILLED SHAFT SHOWING PLACEMENT OF CROSSHOLE SONIC LOGGING ACCESS TUBES

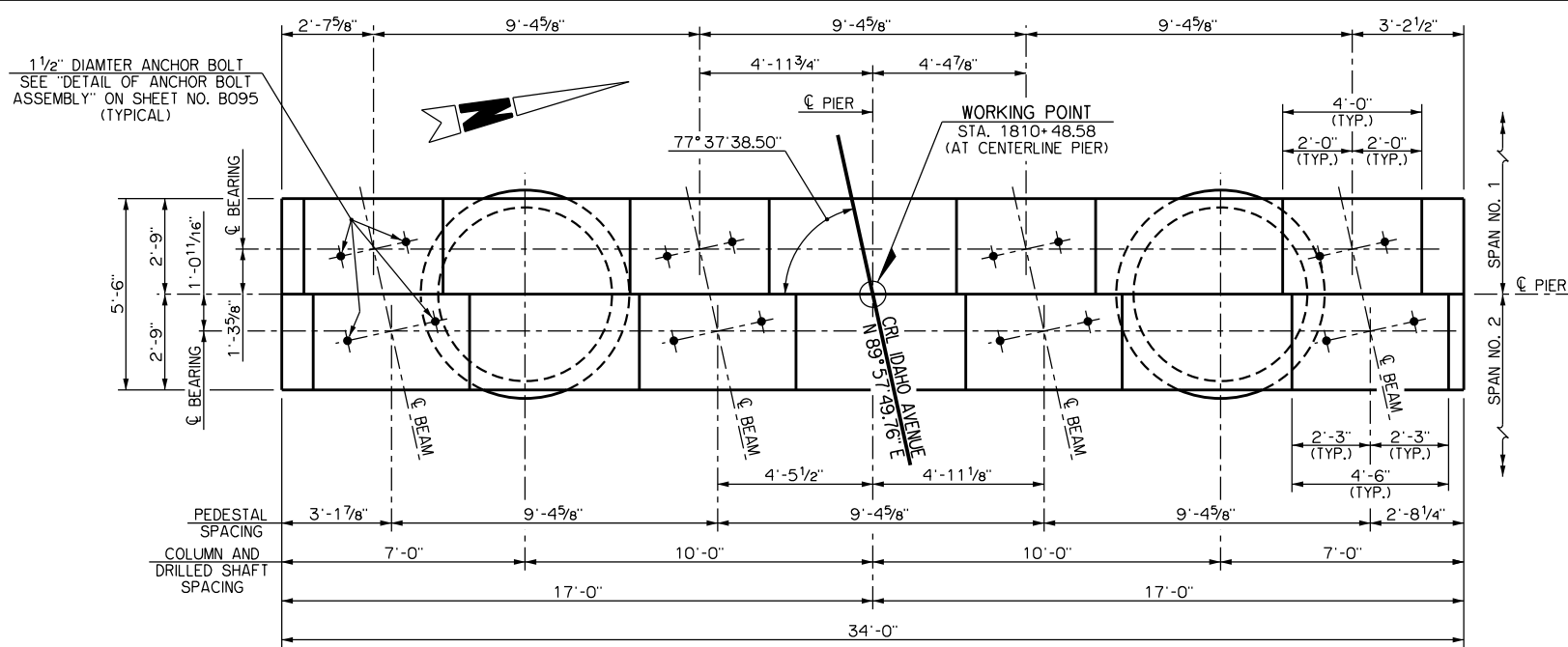


DETAILS OF SPIRAL REINFORCING SPLICE

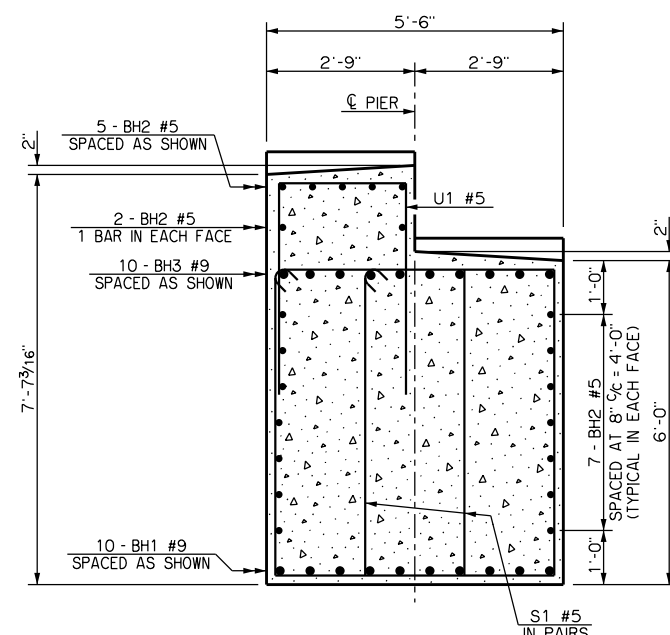
NOTE: SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.

IDAHO AVENUE OVER US-81
BRIDGE '0'

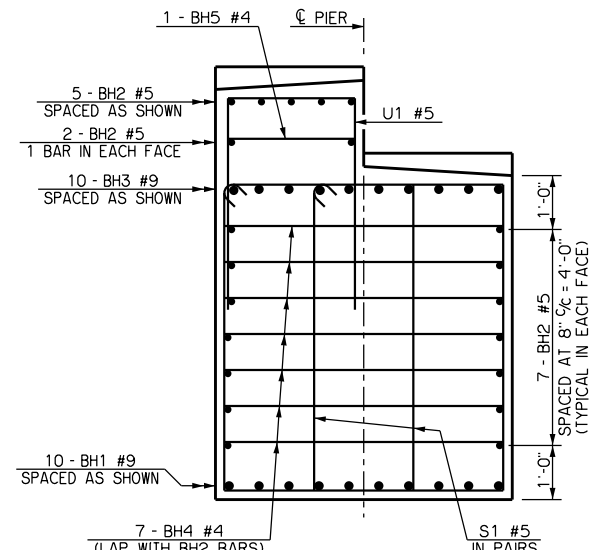
**DETAILS OF DRILLED SHAFTS
AT ABUTMENTS AND WINGS**



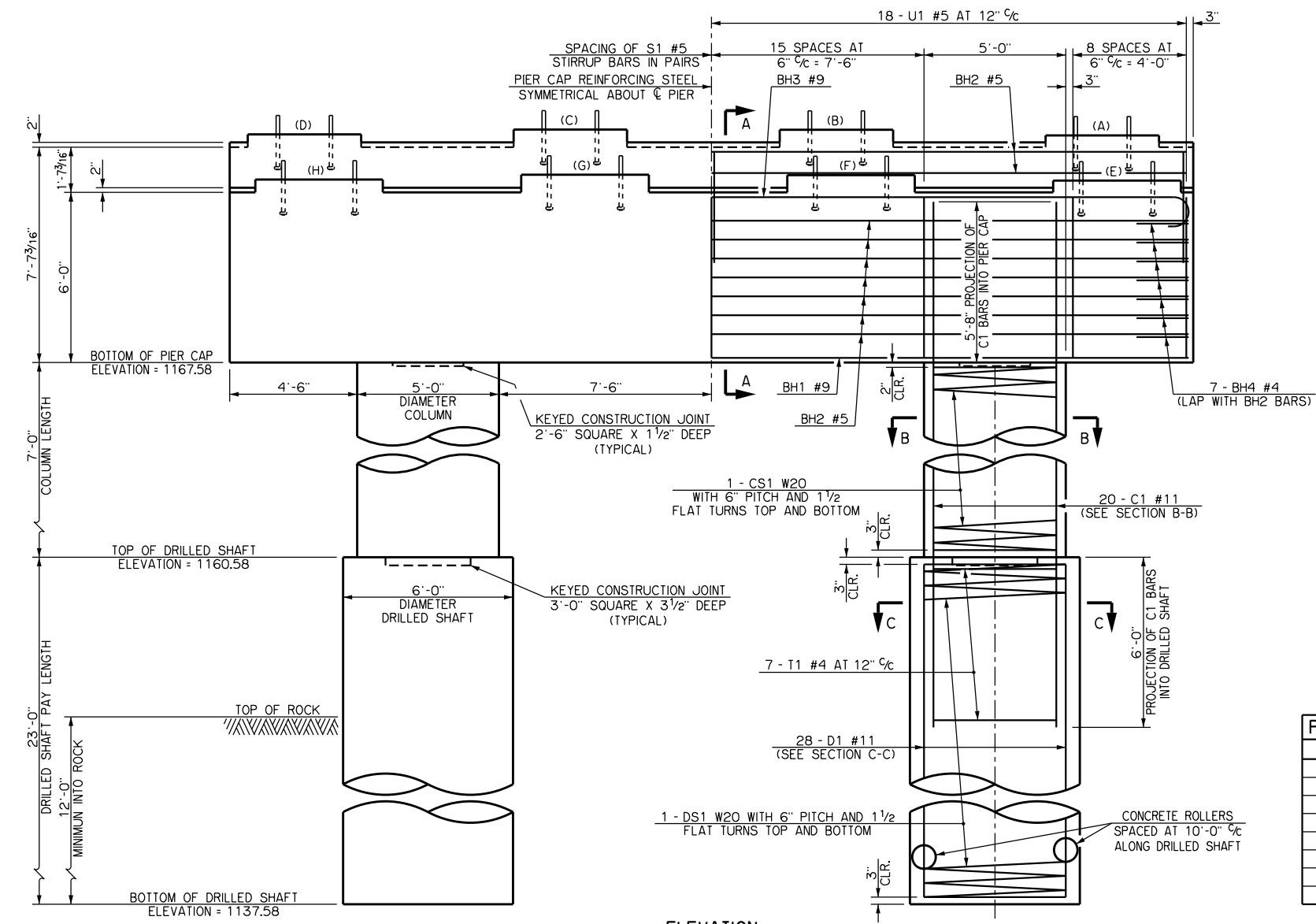
PLAN



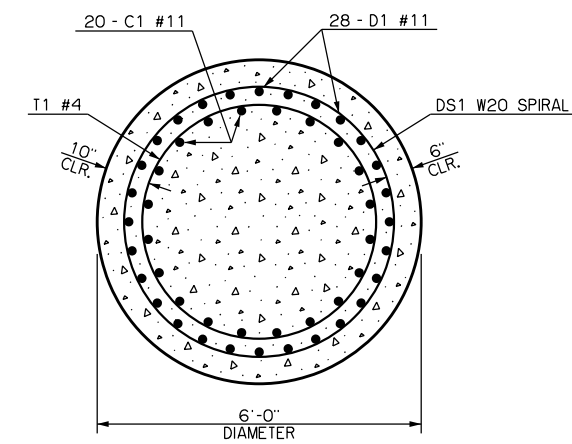
SECTION A-A



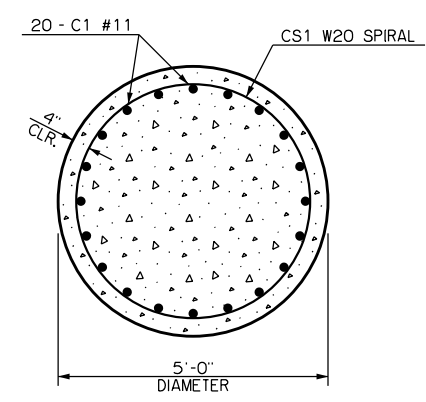
END OF PIER CAP REINFORCING



ELEVATION



SECTION C-C



SECTION B-B

BAR LIST - PIER NO. 1				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#9	10	STR.	33'-8"
BH2	#5	21	STR.	33'-8"
BH3	#9	10	BNT.	36'-2"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	40	BNT.	5'-5"
P2	#4	16	BNT.	6'-8"
P3	#4	16	BNT.	7'-2"
S1	#5	98	BNT.	19'-3"
U1	#5	35	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	220'-3"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	18'-8"
UNCOATED				
D1	#11	56	STR.	22'-6"
DS1	W20	2	BNT.	754'-5"
T1	#4	14	BNT.	16'-0"

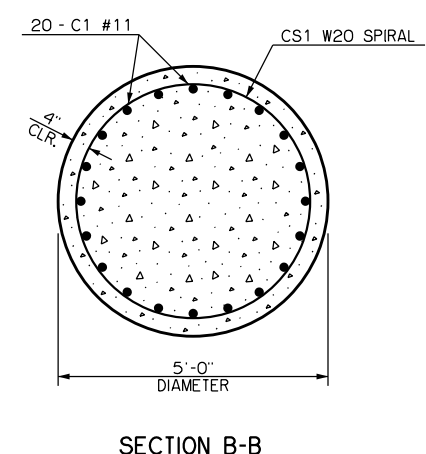
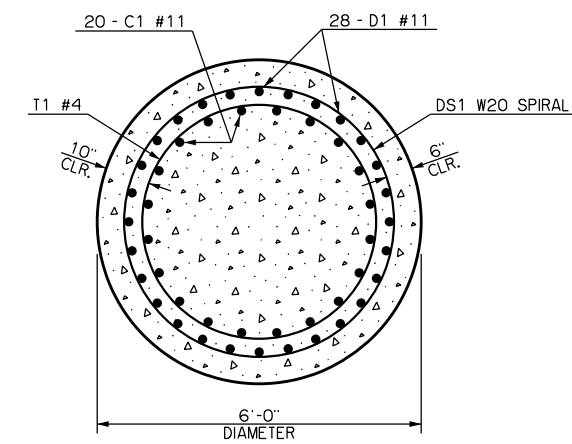
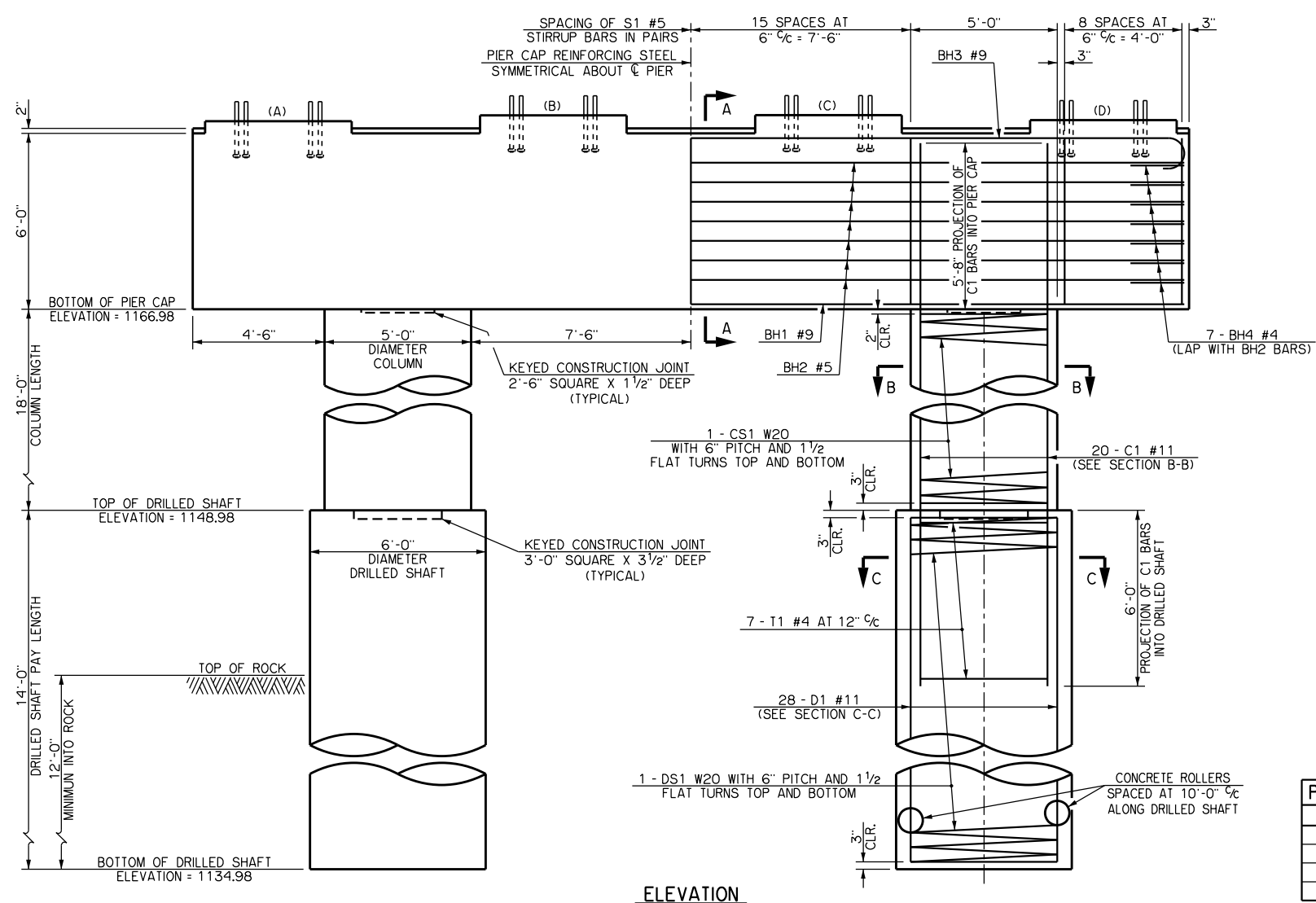
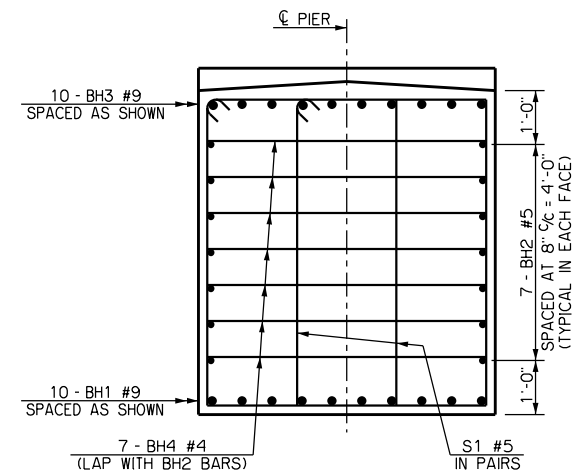
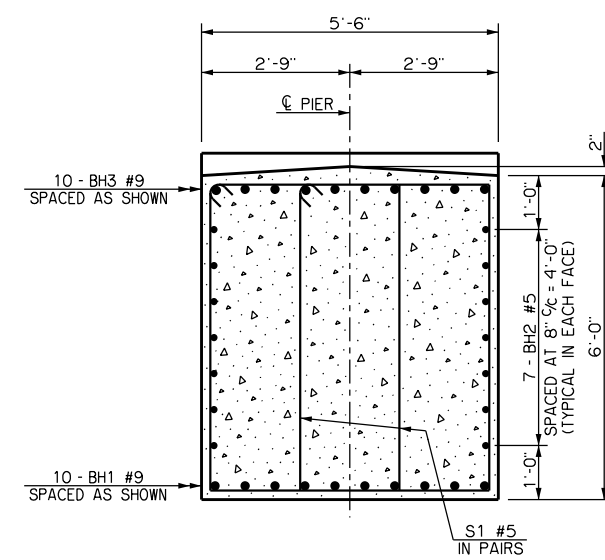
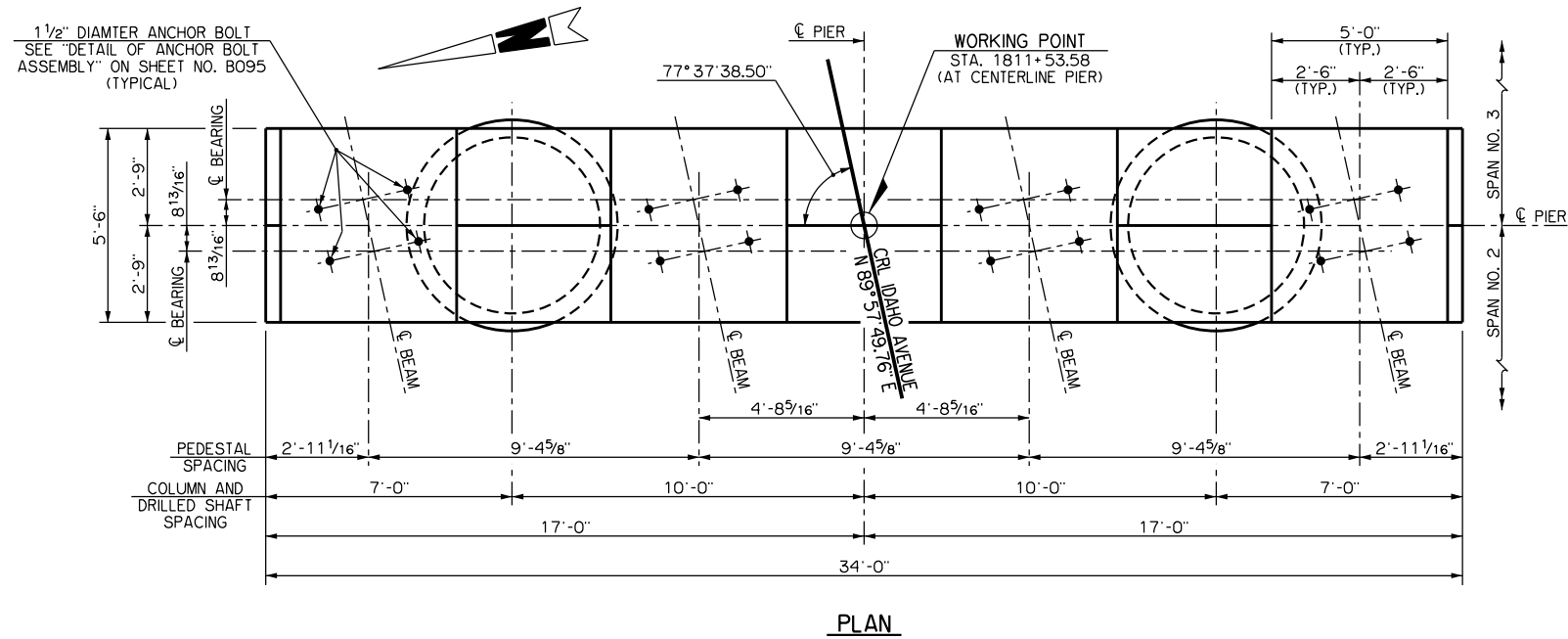
SUMMARY OF QUANTITIES - PIER NO. 1		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	59.40
REINFORCING STEEL	LB	300.00
EPOXY COATED REINFORCING STEEL	LB	5,840.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	86.00
DRILLED SHAFTS 72" DIAMETER	LF	46.00

NOTES

(1) INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.
 IDAHO AVENUE OVER US-81
 BRIDGE '0'

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1175.60
(B)	1175.79
(C)	1175.81
(D)	1175.63
(E)	1174.00
(F)	1174.20
(G)	1174.21
(H)	1174.04

DETAILS OF PIER NO. 1



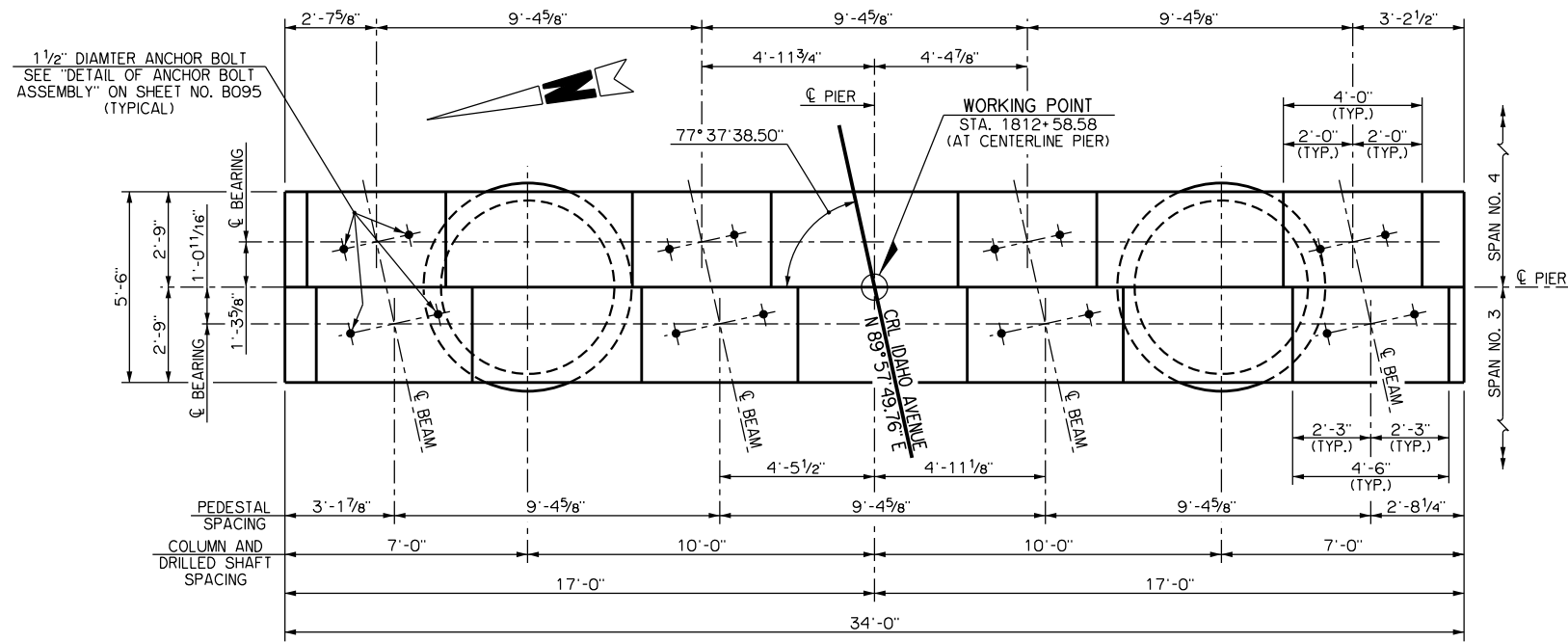
BAR LIST - PIER NO. 2				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#9	10	STR.	33'-8"
BH2	#5	14	STR.	33'-8"
BH3	#9	10	BNT.	36'-2"
BH4	#4	14	BNT.	8'-9"
P4	#4	24	BNT.	8'-2"
P5	#4	24	BNT.	7'-8"
S1	#5	98	BNT.	19'-3"
UNCOATED				
CS1	W20	2	BNT.	519'-11"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	29'-8"
UNCOATED				
D1	#11	56	STR.	13'-6"
DS1	W20	2	BNT.	471'-6"
T1	#4	14	BNT.	16'-0"

SUMMARY OF QUANTITIES - PIER NO. 2		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	70.20
REINFORCING STEEL	LB	710.00
EPOXY COATED REINFORCING STEEL	LB	5,170.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	79.00
DRILLED SHAFTS 72" DIAMETER	LF	28.00

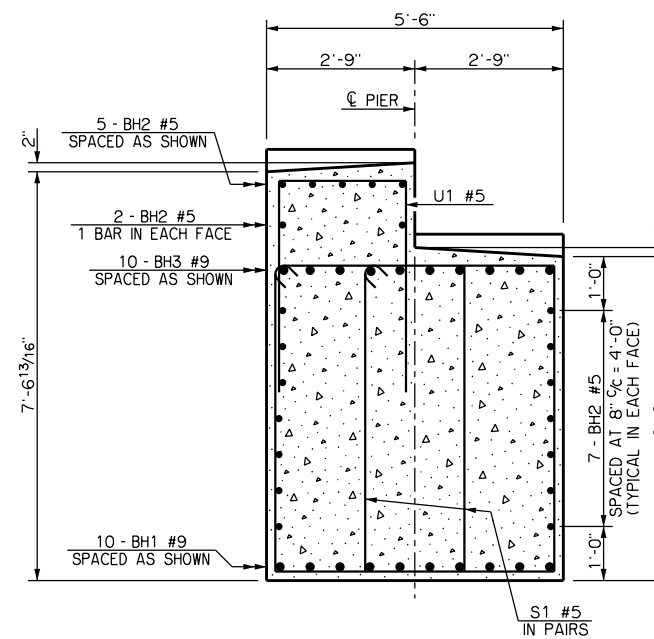
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1173.40
(B)	1173.59
(C)	1173.60
(D)	1173.43

NOTES
 (1) INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.
 IDAHO AVENUE OVER US-81
 BRIDGE '0

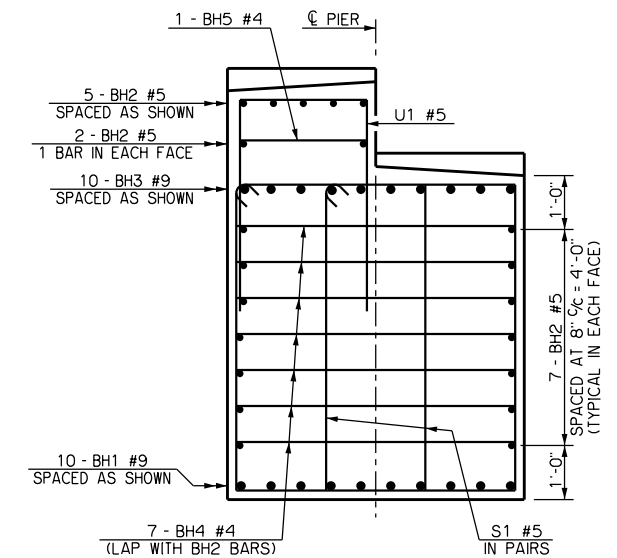
DETAILS OF PIER NO. 2



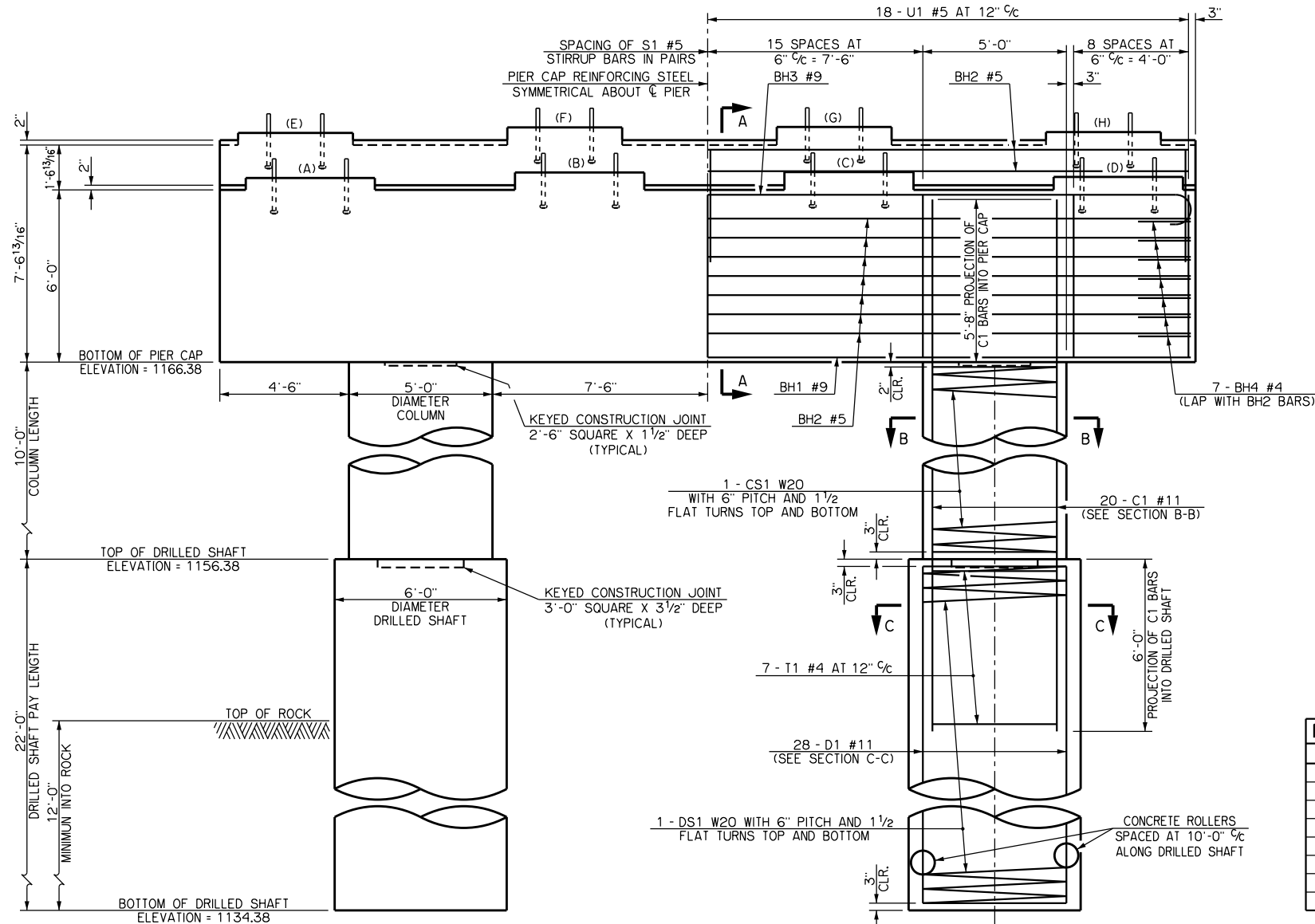
PLAN



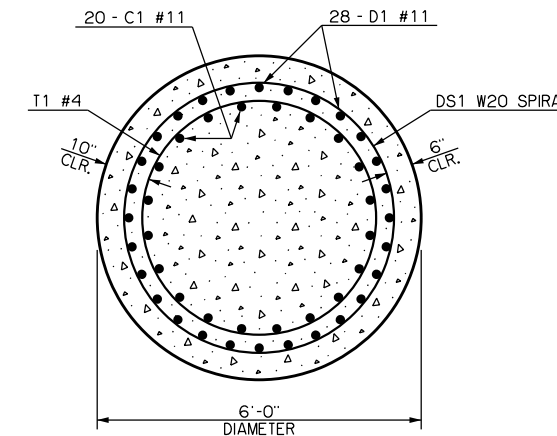
SECTION A-A



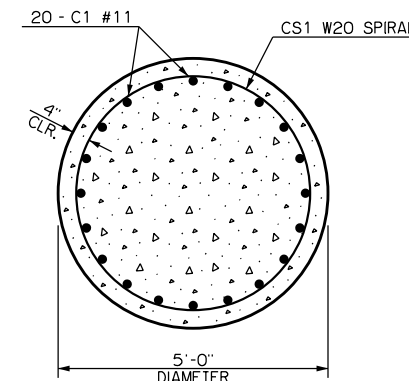
END OF PIER CAP REINFORCING



ELEVATION



SECTION C-C



SECTION B-B

BAR LIST - PIER NO. 3				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#9	10	STR.	33'-8"
BH2	#5	21	STR.	33'-8"
BH3	#9	10	BNT.	36'-2"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	40	BNT.	5'-5"
P2	#4	16	BNT.	6'-8"
P3	#4	16	BNT.	7'-2"
S1	#5	98	BNT.	19'-3"
U1	#5	35	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	302'-0"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	21'-8"
UNCOATED				
D1	#11	56	STR.	21'-6"
DS1	W20	2	BNT.	722'-11"
T1	#4	14	BNT.	16'-0"

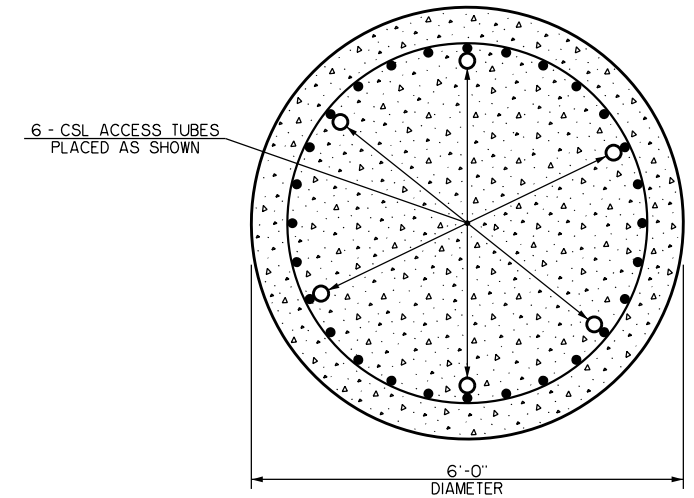
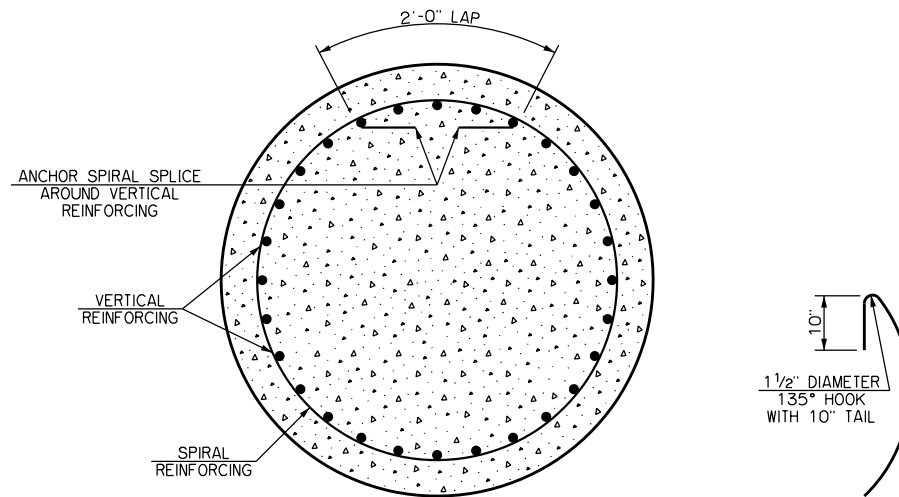
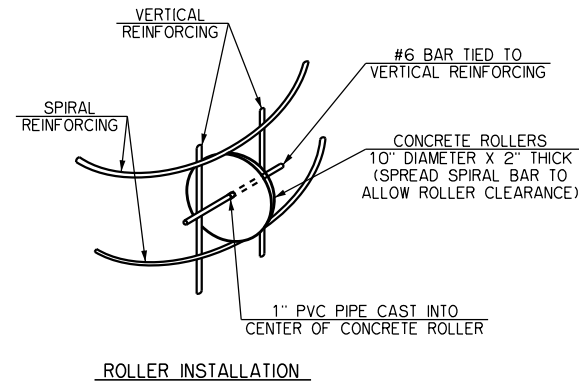
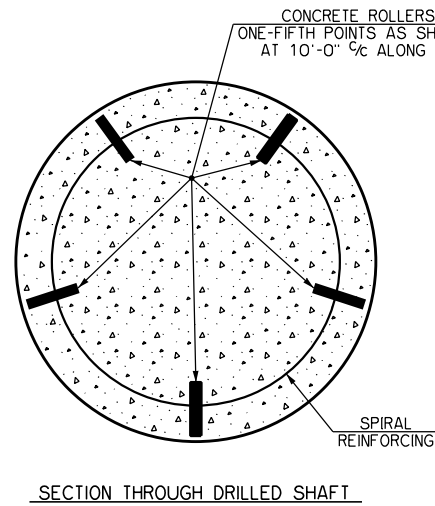
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
(A)	1172.80
(B)	1172.99
(C)	1173.00
(D)	1172.83
(E)	1174.36
(F)	1174.56
(G)	1174.57
(H)	1174.40

SUMMARY OF QUANTITIES - PIER NO. 3		
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	63.70
REINFORCING STEEL	LB	420.00
EPOXY COATED REINFORCING STEEL	LB	5,840.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	86.00
DRILLED SHAFTS 72" DIAMETER	LF	44.00

NOTES

(1) INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.
IDAHO AVENUE OVER US-81
BRIDGE '0

DETAILS OF PIER NO. 3



DETAILS OF CONCRETE ROLLERS

CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS. COST OF CONCRETE ROLLERS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF DRILLED SHAFT.

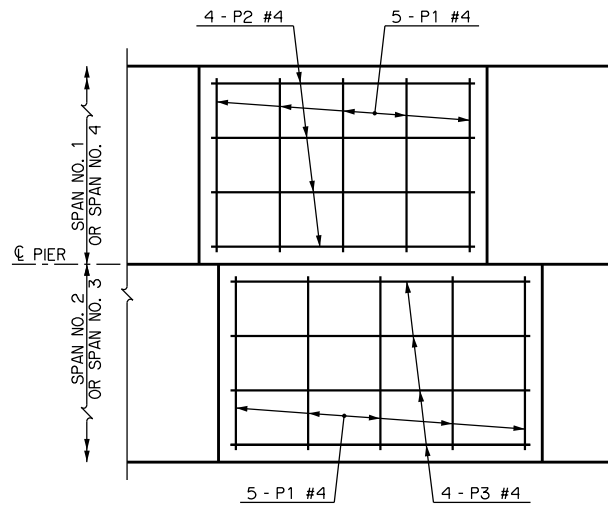
SECTION THROUGH COLUMN OR DRILLED SHAFT

DETAIL OF 135° HOOK

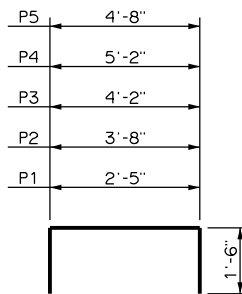
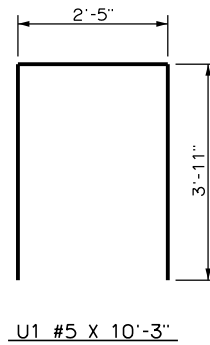
SECTION THROUGH DRILLED SHAFT SHOWING PLACEMENT OF CROSSHOLE SONIC LOGGING ACCESS TUBES

DETAILS OF SPIRAL REINFORCING STEEL SPLICE

SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



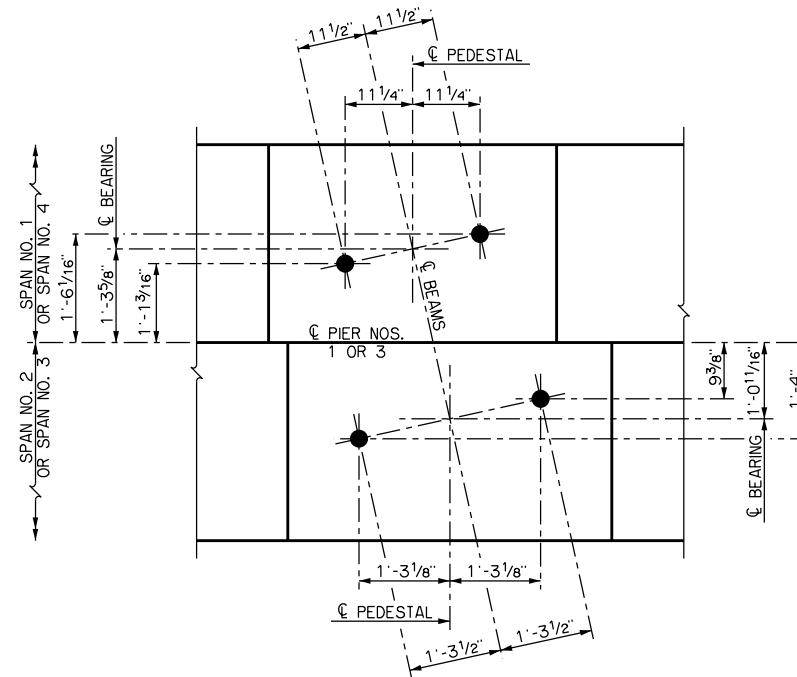
PLAN OF PEDESTAL REINFORCING AT PIER NOS. 1 AND 3



P1 #4 X 5'-5" P4 #4 X 8'-2"

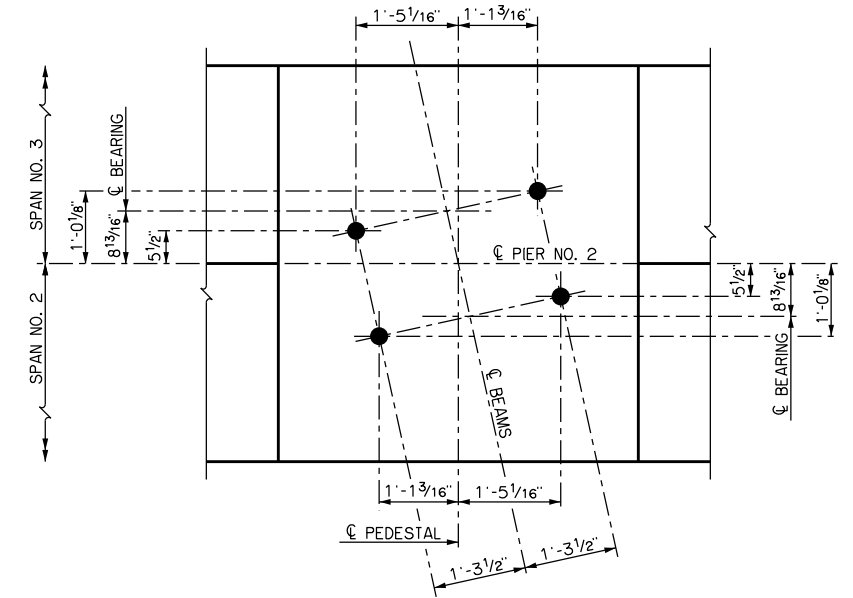
P2 #4 X 6'-8" P5 #4 X 7'-8"

P3 #4 X 7'-2"



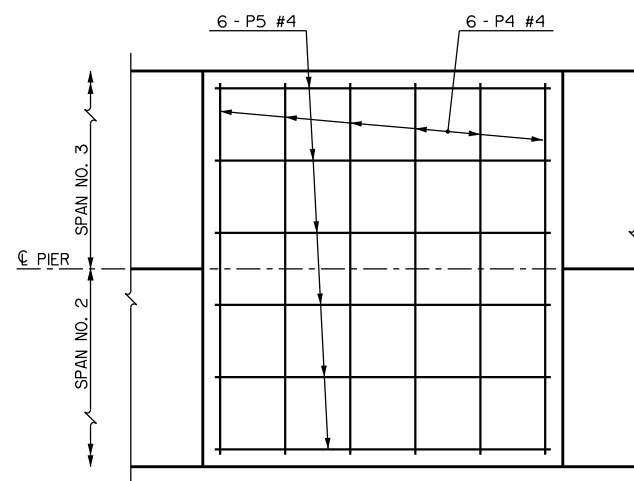
TYPICAL PLAN OF ANCHOR BOLT LAYOUT AT PIER NOS. 1 AND 3

ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B095 FOR DETAILS.

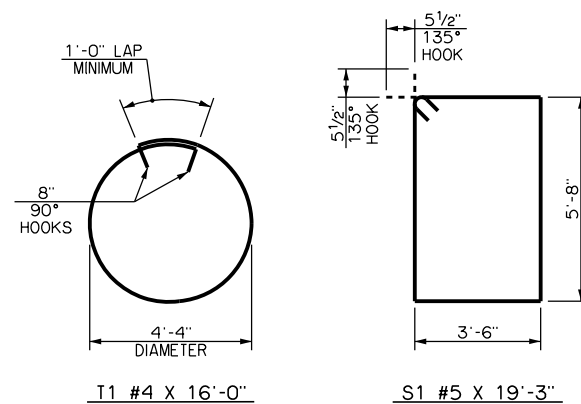


TYPICAL PLAN OF ANCHOR BOLT LAYOUT AT PIER NO. 2

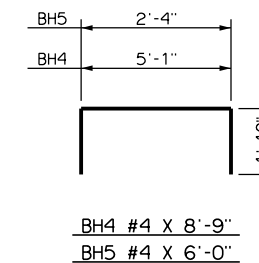
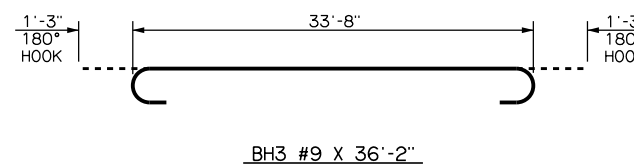
ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B095 FOR DETAILS.



PLAN OF PEDESTAL REINFORCING AT PIER NO. 2

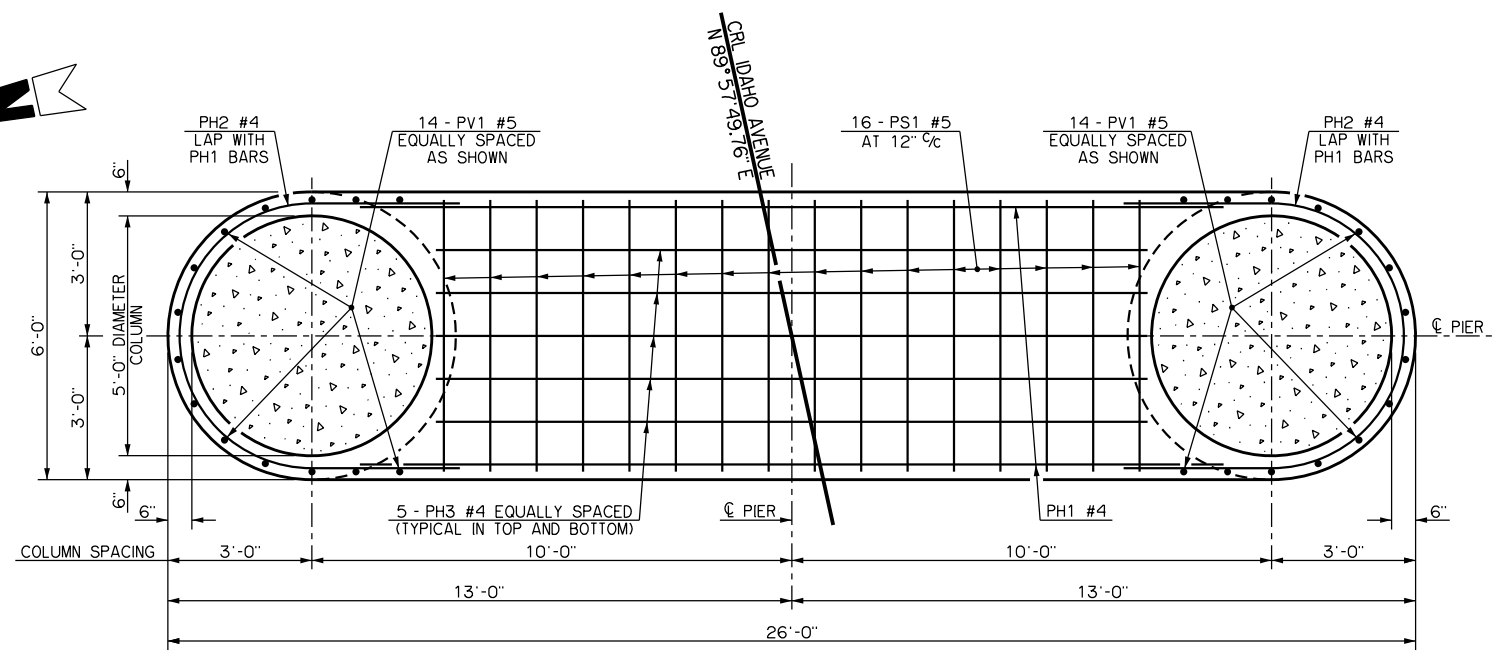
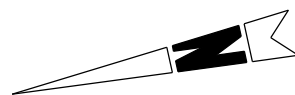


DETAILS OF BENT REINFORCING STEEL

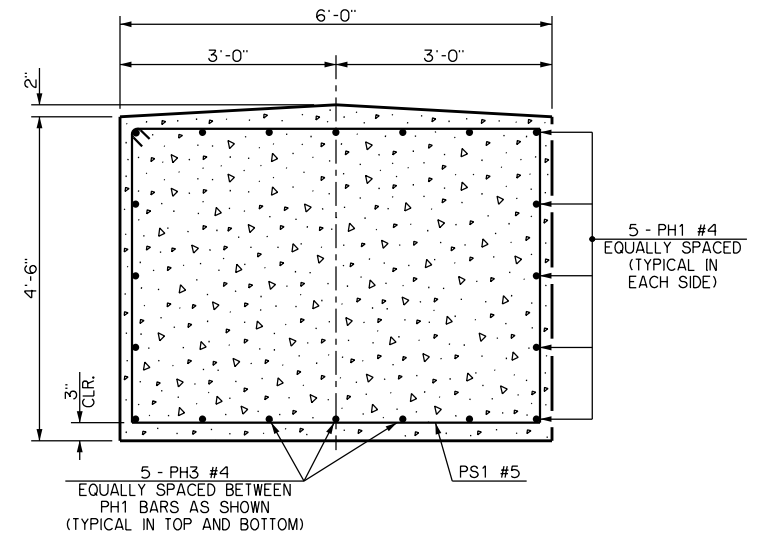


IDAHO AVENUE OVER US-81 BRIDGE '0

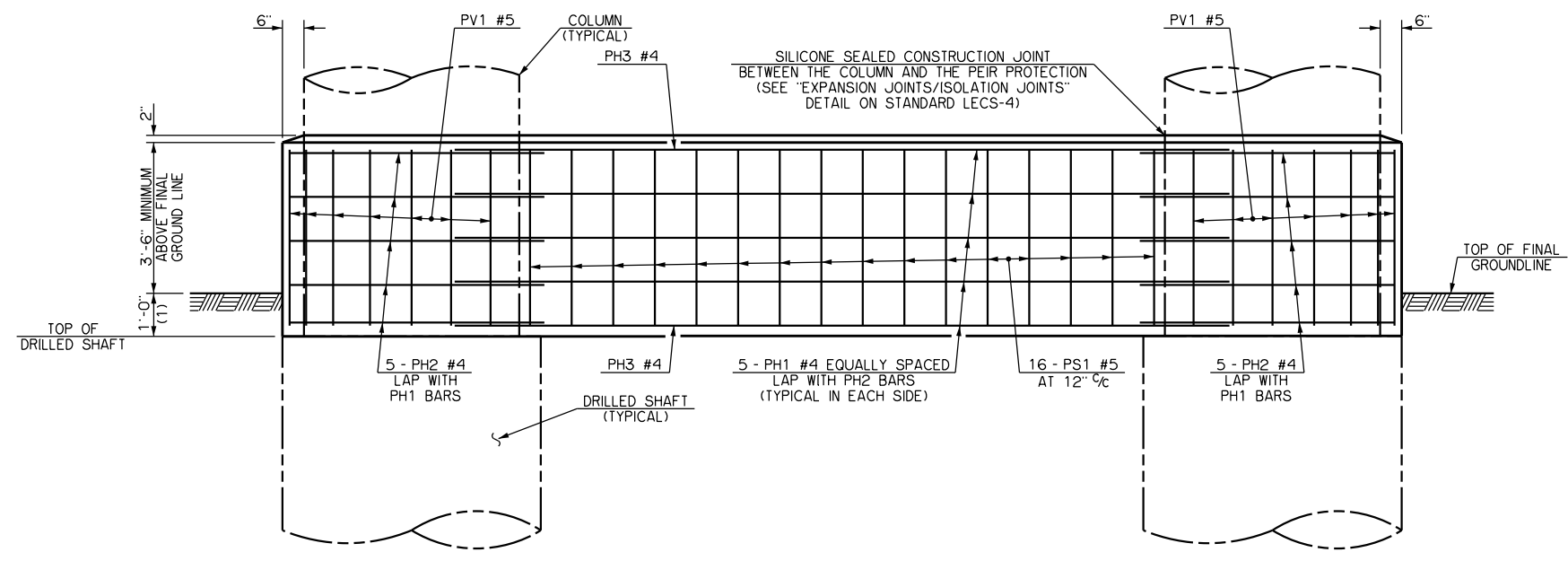
DETAILS OF PIER NOS. 1, 2 AND 3



PLAN



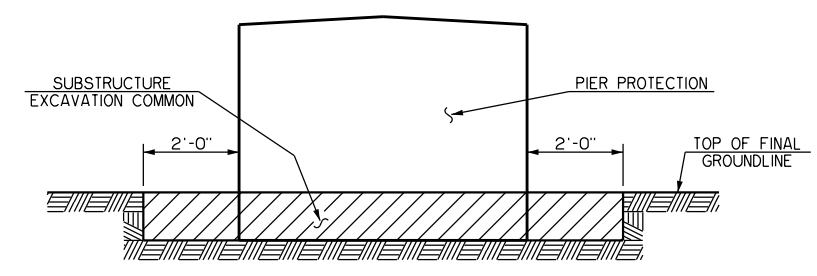
TYPICAL SECTION



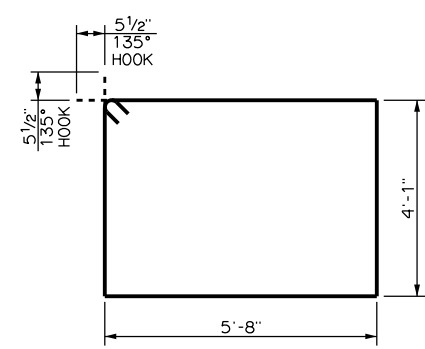
ELEVATION

BAR LIST - PIER PROTECTION				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
PH1	#4	10	STR.	18'-0"
PH2	#4	10	BNT.	14'-11"
PH3	#4	10	STR.	14'-10"
PS1	#5	16	BNT.	20'-5"
PV1	#5	28	STR.	4'-1"

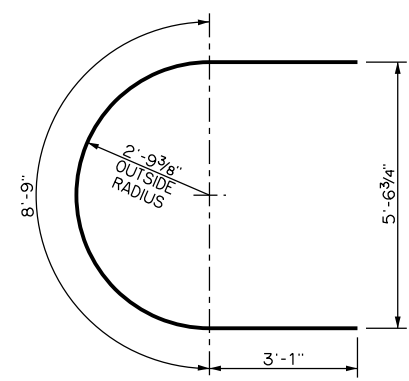
SUMMARY OF QUANTITIES - PIER PROTECTION		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	10.00
CLASS A CONCRETE	CY	18.60
EPOXY COATED REINFORCING STEEL	LB	780.00



DETAIL OF EXCAVATION FOR PIER PROTECTION



PS1 #5 X 20'-5"



PH2 #4 X 14'-11"

NOTES

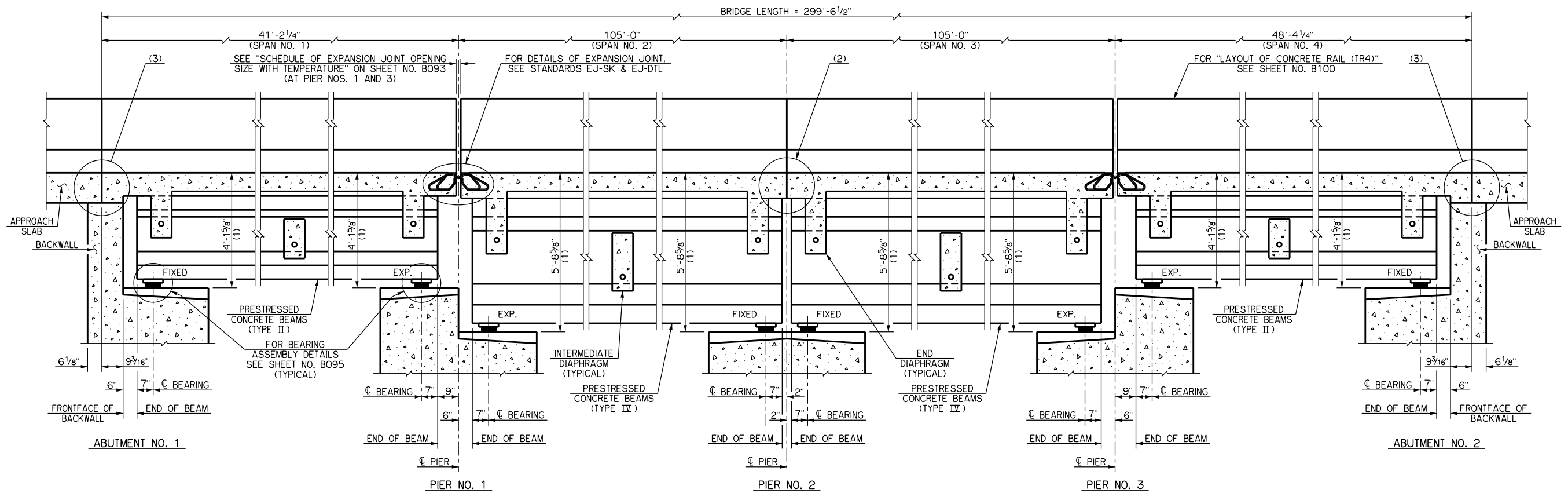
(1) THIS DIMENSION TO BE FIELD VERIFIED. THE CONTRACTOR SHALL ADJUST THE HEIGHT OF THE PIER PROTECTION TO MAINTAIN THE 3'-6" MINIMUM HEIGHT SHOWN IN THE "ELEVATION".

IDAHO AVENUE OVER US-81 BRIDGE '0

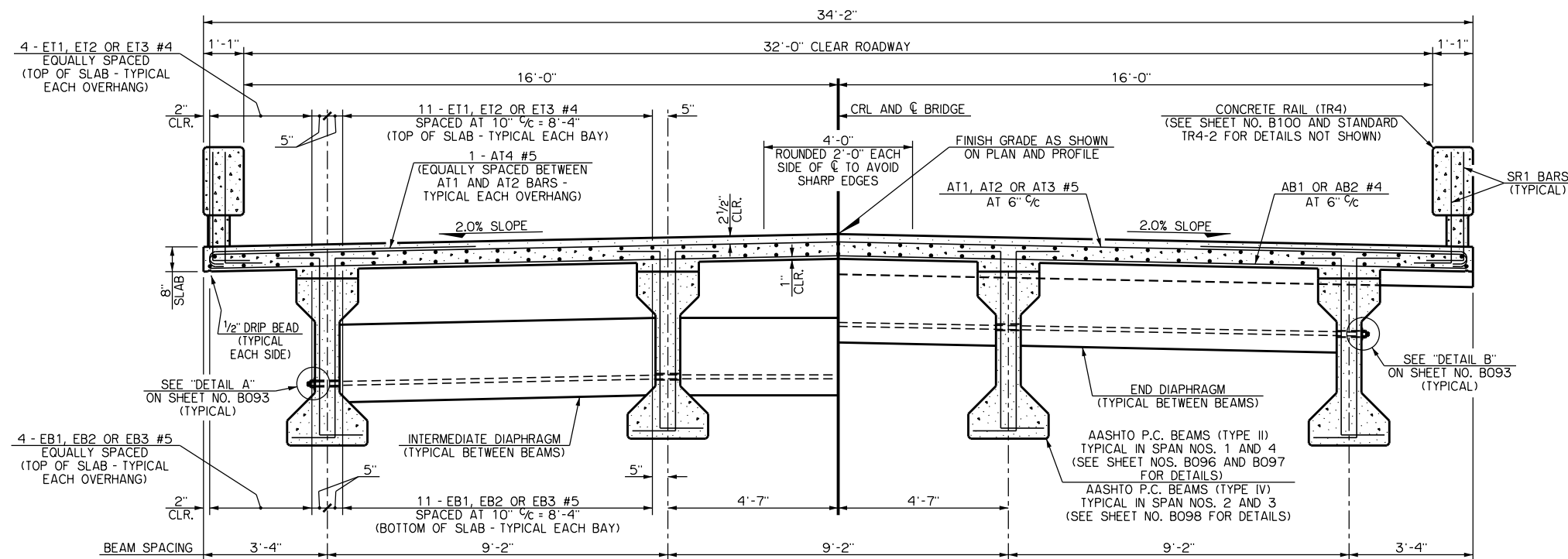
DETAILS OF PIER PROTECTION AT PIER NO. 2

State Job No. 24428(12) Sheet No. B089

US 81 REALIGNMENT GRADY COUNTY



LONGITUDINAL SECTION



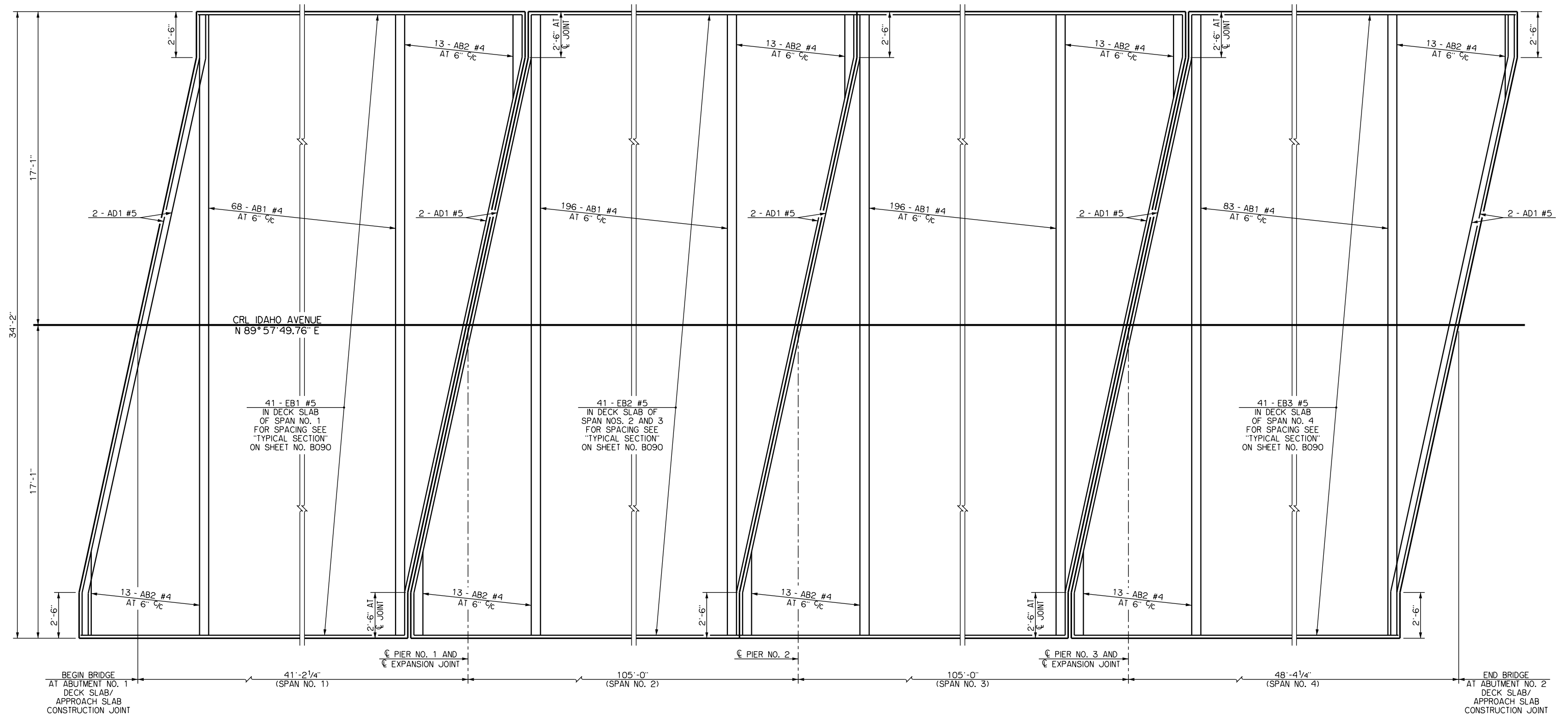
TYPICAL SECTION

NOTES

- (1) DIMENSION IS FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT C BEARING.
 - (2) UNDER NO CIRCUMSTANCES SHALL THE SLAB BE A CONTINUOUS POUR OVER THE FIXED PIER NO. 2. THIS LOCATION SHALL HAVE A CONSTRUCTION JOINT IN THE SLAB AND SHALL BE SEALED WITH SEALER RESIN (SEE GENERAL NOTE ON SHEET NO. ABO1). THE LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THROUGH THE CONSTRUCTION JOINT.
 - (3) UNDER NO CIRCUMSTANCES SHALL THE DECK SLAB AND THE APPROACH SLAB OVER THE BACKWALLS OF ABUTMENT NOS. 1 AND 2 BE A CONTINUOUS POUR. THESE LOCATIONS SHALL HAVE A SAWED AND SEALED CONSTRUCTION JOINT IN THE SLAB. SEE "DETAILS OF APPROACH SLABS" ON SHEET NO. B099 FOR DETAILS OF THIS JOINT.
- ROTATE HOOKS ON AT BARS TO MAINTAIN MINIMUM CLEARANCE.
- ALL DIMENSIONS SHOWN IN THE LONGITUDINAL SECTION ARE ALONG THE C OF THE P.C. BEAM.
- DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS.

IDAHO AVENUE OVER US-81
BRIDGE '0

DETAILS OF SUPERSTRUCTURE
(SHEET NO. 1 OF 5)



BOTTOM OF DECK SLAB REINFORCING STEEL LAYOUT

NOTE

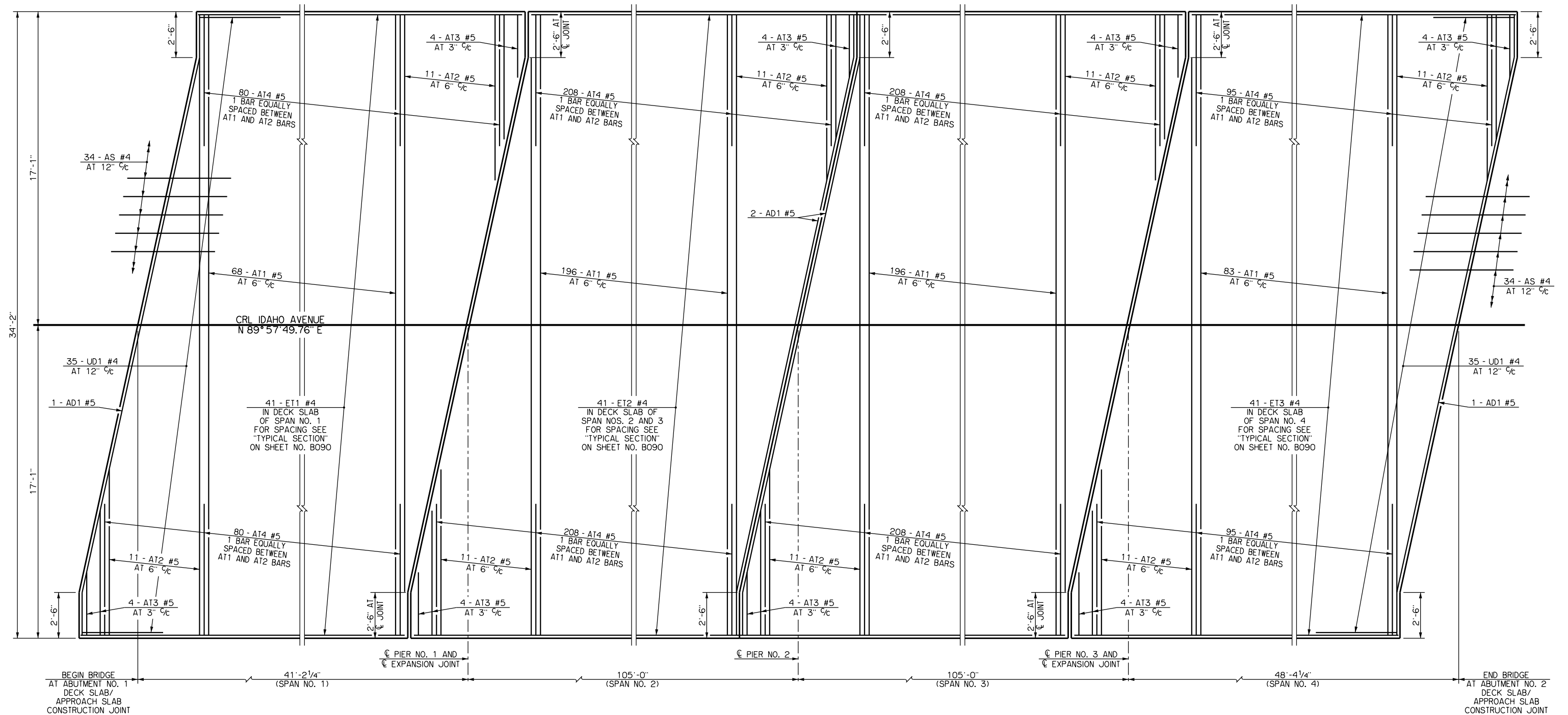
SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B100 FOR PLACEMENT OF SR1 BARS.

IDAHO AVENUE OVER US-81
BRIDGE '0

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 2 OF 5)**

State Job No. 24428(12) Sheet No. B091

US 81 REALIGNMENT
GRADY COUNTY



TOP OF DECK SLAB REINFORCING STEEL LAYOUT

NOTE

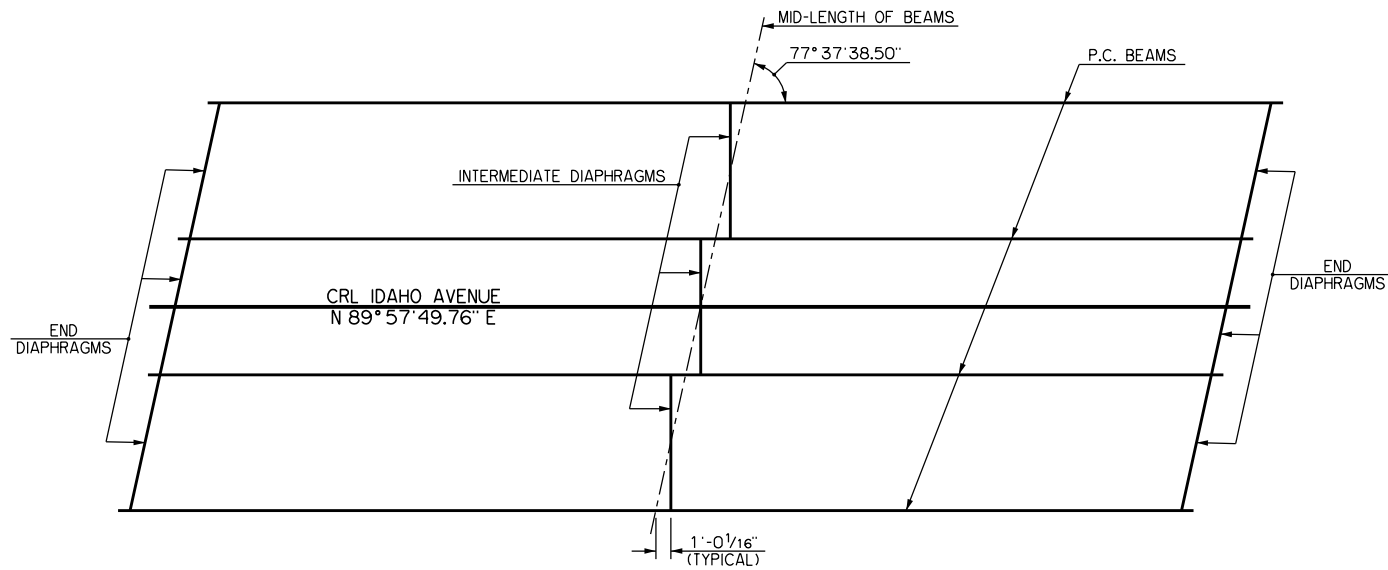
SR1 BARS PROJECTING FROM DECK SLAB INTO CONCRETE TRAFFIC RAILS HAVE BEEN OMITTED FROM THE TOP OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B100 FOR PLACEMENT OF SR1 BARS.

IDAHO AVENUE OVER US-81
BRIDGE '0'

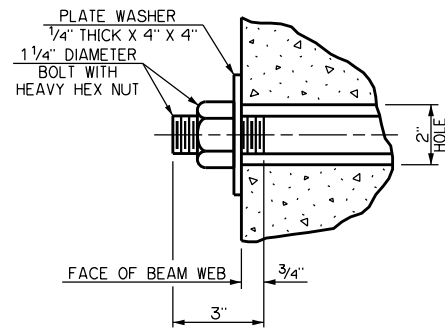
**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 3 OF 5)**

State Job No. 24428(12) Sheet No. B092

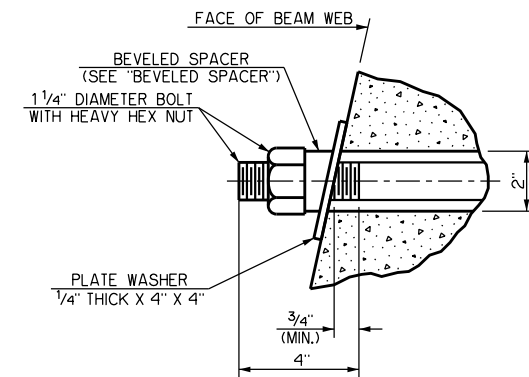
US 81 REALIGNMENT
GRADY COUNTY



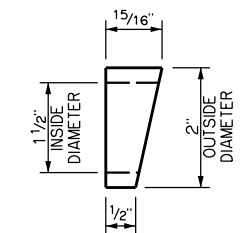
DIAPHRAGM LAYOUT
(ONE SPAN SHOWN - TYPICAL EACH SPAN)



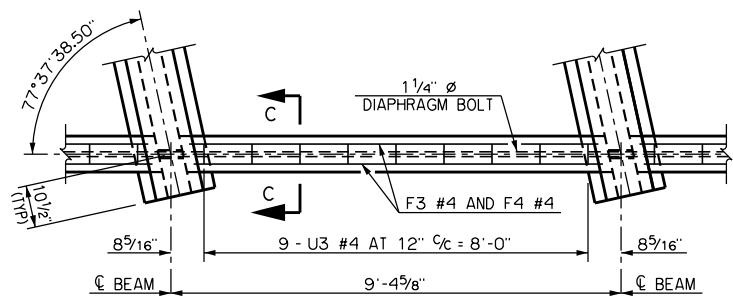
DETAIL "A"



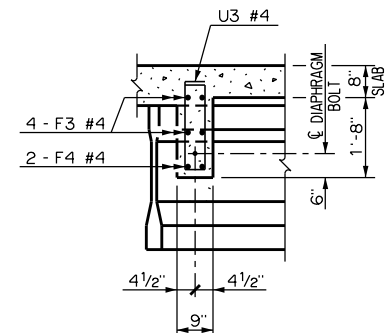
DETAIL "B"



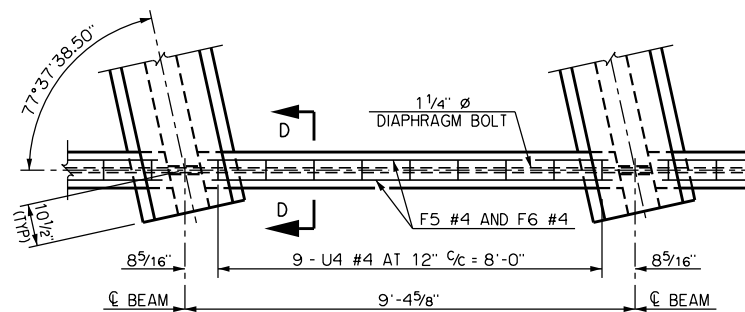
BEVELED SPACER
EXTRA STRONG PIPE SLEEVE



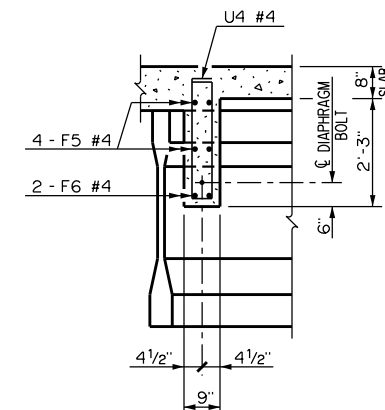
PLAN OF END DIAPHRAGM WITHIN SPAN NOS. 1 AND 4



SECTION "C-C"



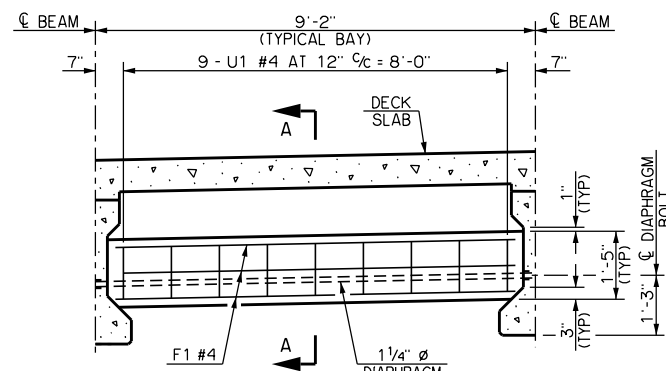
PLAN OF END DIAPHRAGM WITHIN SPAN NOS. 2 AND 3



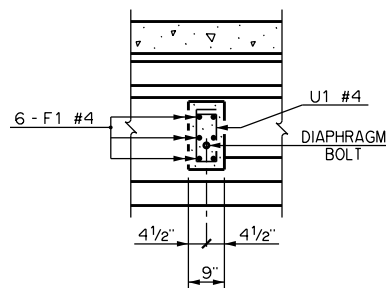
SECTION "D-D"

SCHEDULE OF EXPANSION JOINT OPENING SIZE WITH TEMPERATURE

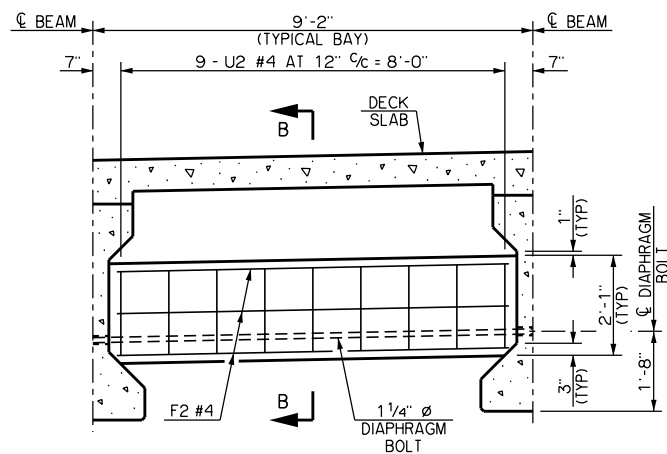
TEMPERATURE (1)	OPENING AT PIER NO. 1	OPENING AT PIER NO. 3
0°F	2 1/2"	2 1/2"
10°F	2 3/8"	2 3/8"
20°F	2 1/4"	2 1/4"
30°F	2 1/8"	2 1/8"
40°F	2"	2"
50°F	1 7/8"	1 7/8"
60°F	1 3/4"	1 3/4"
70°F	1 3/4"	1 3/4"
80°F	1 3/8"	1 3/8"
90°F	1 1/2"	1 1/2"
100°F	1 3/8"	1 3/8"
110°F	1 3/8"	1 1/4"



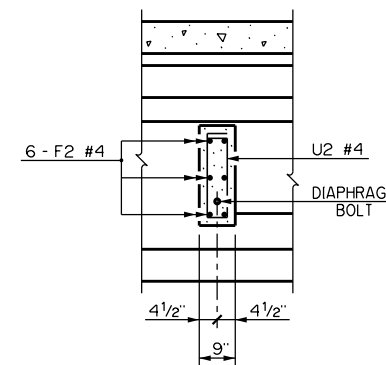
ELEVATION OF INTERMEDIATE DIAPHRAGM WITHIN SPAN NOS. 1 AND 4



SECTION "A-A"



ELEVATION OF INTERMEDIATE DIAPHRAGM WITHIN SPAN NOS. 2 AND 3



SECTION "B-B"

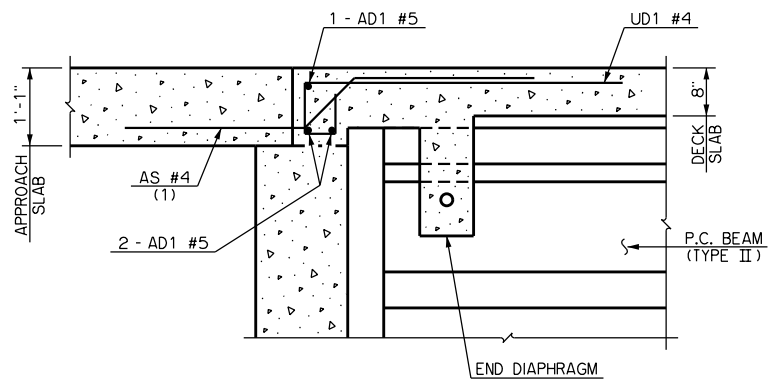
NOTES

STRUCTURAL STEEL FOR DIAPHRAGM RODS AND PLATE WASHERS SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 50W, WEATHERING STEEL (CHARPY V-NOTCH TESTING NOT REQUIRED). A #10 REINFORCING STEEL BAR CONFORMING TO AASHTO M 31, GRADE 60 AND THREADED AT BOTH ENDS AS SHOWN MAY BE SUBSTITUTED FOR THE DIAPHRAGM ROD. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. PAINT EXPOSED PARTS OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS WITH TWO (2) COATS OF ZINC-RICH PAINT (6 MIL MINIMUM THICKNESS) AFTER ASSEMBLY. ALL COST OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS SHALL BE INCLUDED IN UNIT PRICE BID PER POUND OF "STRUCTURAL STEEL."

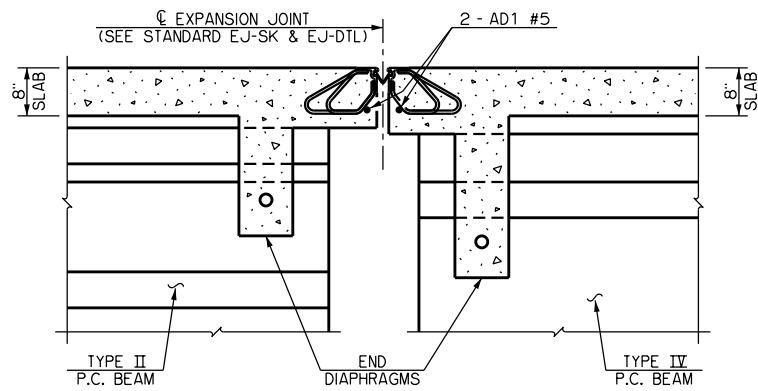
(1) AMBIENT AIR TEMPERATURE AT THE TIME THE DECK SLAB CONCRETE IS POURED.

IDAHO AVENUE OVER US-81
BRIDGE '0

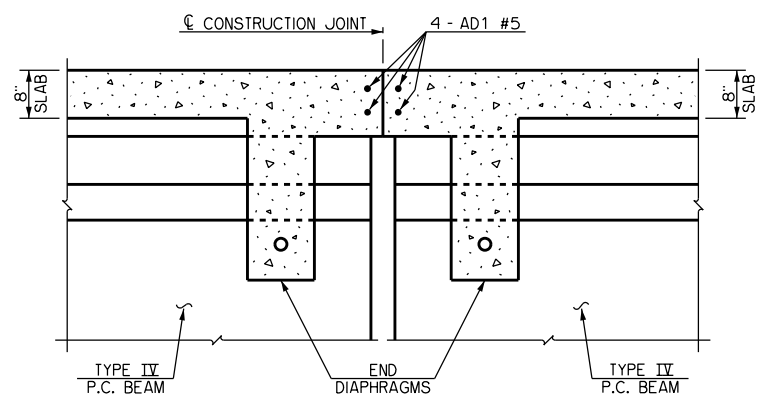
DETAILS OF SUPERSTRUCTURE
(SHEET NO. 4 OF 5)



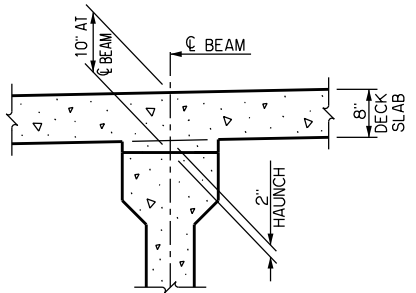
PARTIAL LONGITUDINAL SECTION WITH ADDITIONAL DECK SLAB REINFORCING STEEL AT ABUTMENT BACKWALL



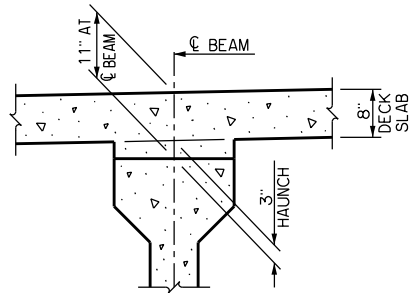
ADDITIONAL DECK REINFORCING AT PIER NO. 1 AND 3



ADDITIONAL DECK REINFORCING AT PIER NO. 2



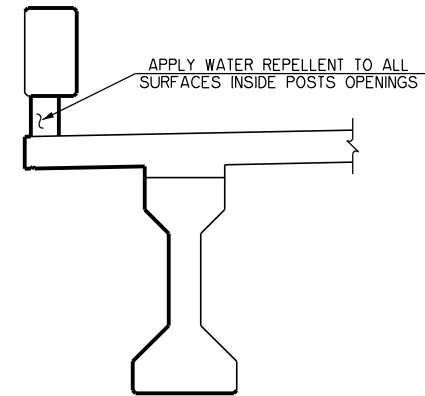
AT SPAN NO. 1 AND 4



AT SPAN NO. 2 AND 3

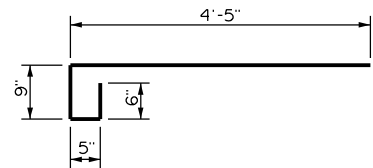
DETAILS OF HAUNCH

NOTE: PLAN QUANTITIES FOR CLASS 'AA' CONCRETE INCLUDES 7.3 CUBIC YARDS FOR HAUNCHES OVER BEAMS. HAUNCH HEIGHT SHOWN IS PLANNED HEIGHT AT CENTERLINE OF BEARING ONLY, AND VARIES ACROSS THE SPAN. HAUNCH HEIGHT TO BE DETERMINED AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT, BUT THE PAY QUANTITY WILL BE AS SHOWN. FOR DEAD LOAD DEFLECTIONS SEE P.C. BEAM DETAIL SHEET NOS. B096, B097 AND B098.

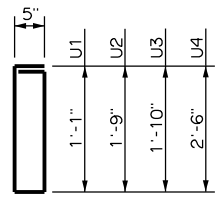


PENETRATING WATER REPELLENT TREATMENT

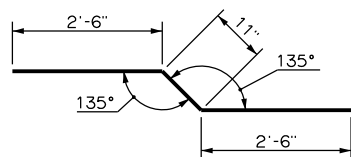
SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.



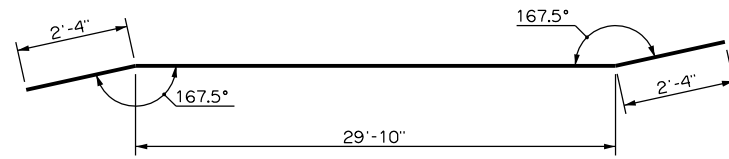
UD1 #4 X 6'-1"



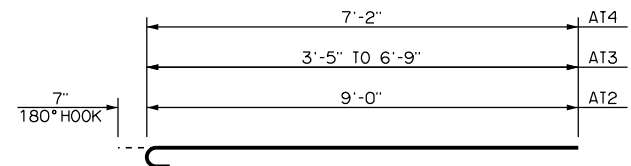
U1 #4 X 3'-5"
U2 #4 X 4'-9"
U3 #4 X 4'-11"
U4 #4 X 6'-3"



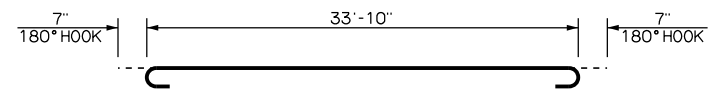
AS #4 X 5'-11"



AD1 #5 X 34'-6"



AT2 #5 X 20'-10" AVG.
AT3 #5 X 5'-8" AVG.
AT4 #5 X 7'-9"



AT1 #5 X 35'-0"

DETAILS OF BENT REINFORCING STEEL

BAR LIST - SUPERSTRUCTURE					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
(2)	AB1	#4	543	STR.	33'-10"
	AB2	#4	104	STR.	18'-0 1/2" AVG.
	AD1	#5	14	BNT.	34'-6"
	AS	#4	68	BNT.	5'-11"
	AT1	#5	543	BNT.	35'-0"
(3)	AT2	#5	88	BNT.	20'-10" AVG.
(4)	AT3	#5	32	BNT.	5'-8" AVG.
	AT4	#5	1,182	BNT.	7'-9"
	EB1	#5	41	STR.	40'-10"
(5)	EB2	#5	41	STR.	218'-6"
	EB3	#5	41	STR.	48'-0"
	ET1	#4	41	STR.	40'-10"
(6)	ET2	#4	41	STR.	215'-6"
	ET3	#4	41	STR.	48'-0"
	F1	#4	36	STR.	8'-4"
	F2	#4	36	STR.	8'-2"
	F3	#4	48	STR.	8'-0"
	F4	#4	24	STR.	8'-6"
	F5	#4	48	STR.	7'-4"
	F6	#4	24	STR.	8'-4"
	SR1	#5	1,616	BNT.	4'-1"
	U1	#4	54	BNT.	3'-5"
	U2	#4	54	BNT.	4'-9"
	U3	#4	108	BNT.	4'-11"
	U4	#4	108	BNT.	6'-3"
	UD1	#4	70	BNT.	6'-1"

- (2) INCLUDES 8 SETS OF 13 BARS
- (3) INCLUDES 8 SETS OF 11 BARS
- (4) INCLUDES 8 SETS OF 4 BARS
- (5) LENGTH INCLUDES THREE 3'-0" LAP, LAPS SHALL BE STAGGERED
- (6) LENGTH INCLUDES THREE 2'-0" LAP, LAPS SHALL BE STAGGERED

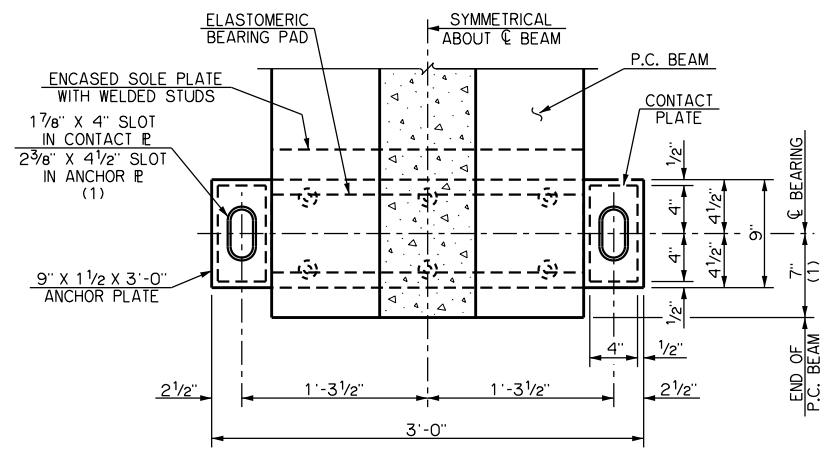
SUMMARY OF QUANTITIES - SUPERSTRUCTURE		
ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE II)	LF	342.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF	834.67
SAW-CUT GROOVING	SY	1,066.00
SEALED EXPANSION JOINT	LF	71.73
CONCRETE RAIL (TR4)	LF	598.50
STRUCTURAL STEEL	LB	1,510.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	16.00
CLASS AA CONCRETE	CY	278.50
EPOXY COATED REINFORCING STEEL	LB	76,690.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	940.00
SEALER CRACK PREPARATION	LF	34.00
SEALER RESIN	GAL	0.50

NOTES

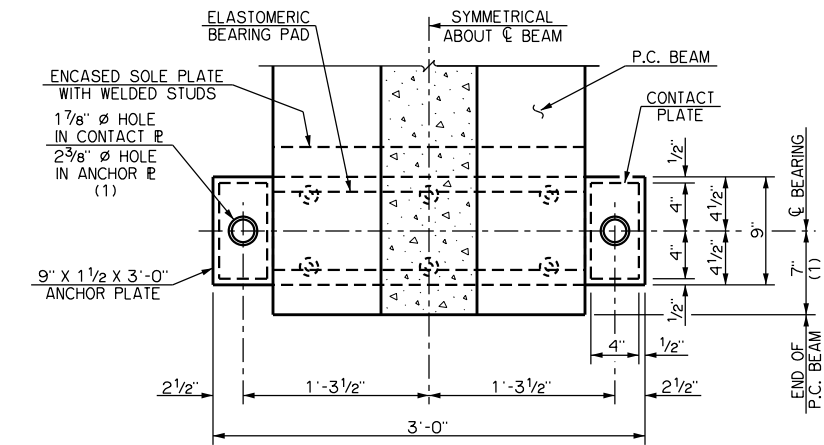
- (1) 'AS' BARS SHALL BE TIED TO THE TOP MAT OF REINFORCING IN THE DECK SLAB AND TO THE BOTTOM MAT OF REINFORCING IN THE APPROACH SLAB. 'AS' BARS MUST BE IN PLACE PRIOR TO POURING THE DECK SLAB CONCRETE.

IDAHO AVENUE OVER US-81
BRIDGE 'O'

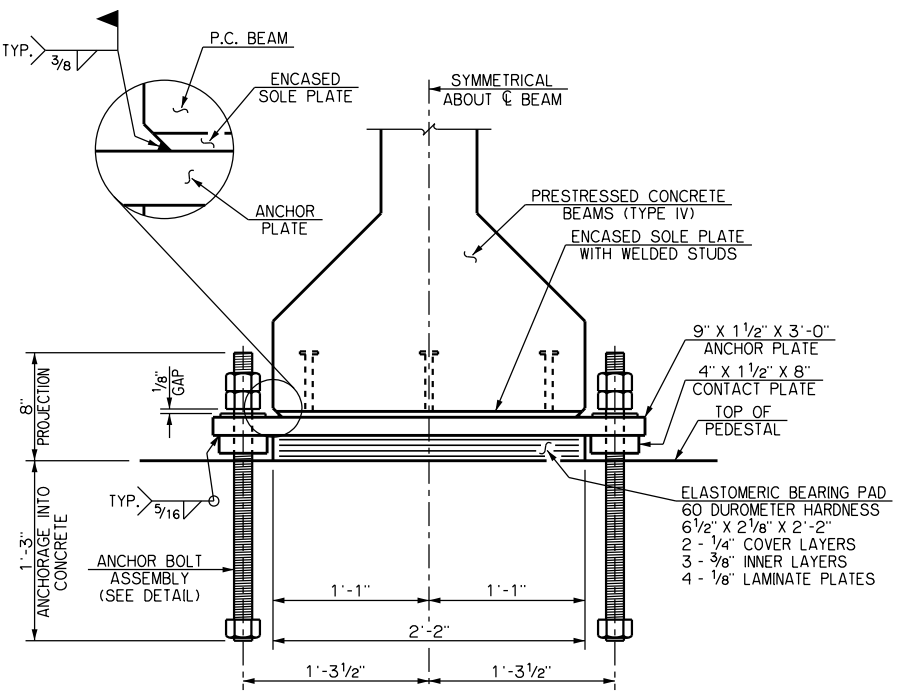
**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 5 OF 5)**



PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

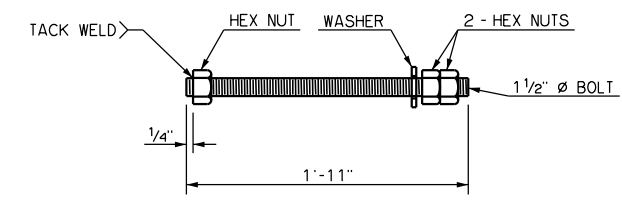


PLAN VIEW AT FIXED LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

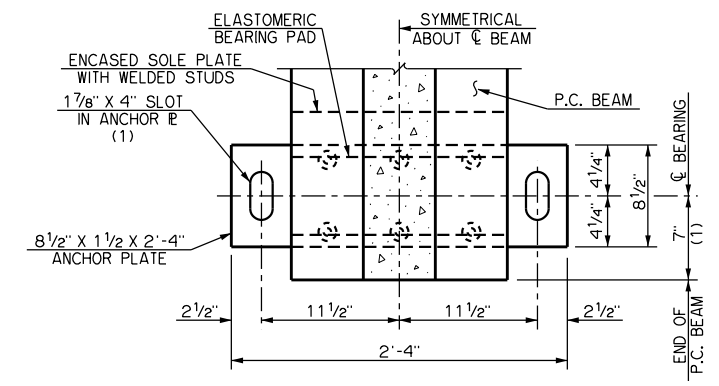


END VIEW

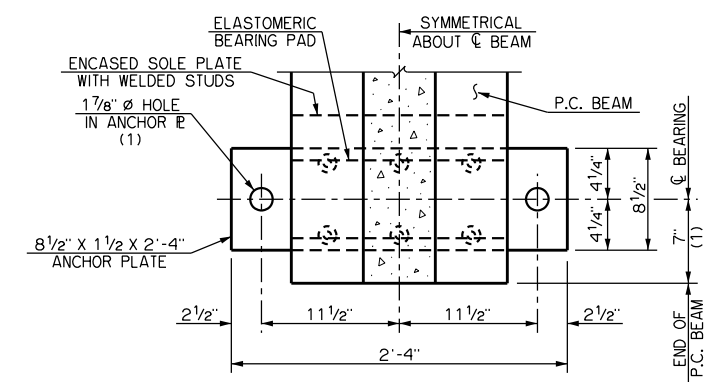
DETAILS OF BEARING ASSEMBLY WITHIN SPAN NOS. 2 AND 3



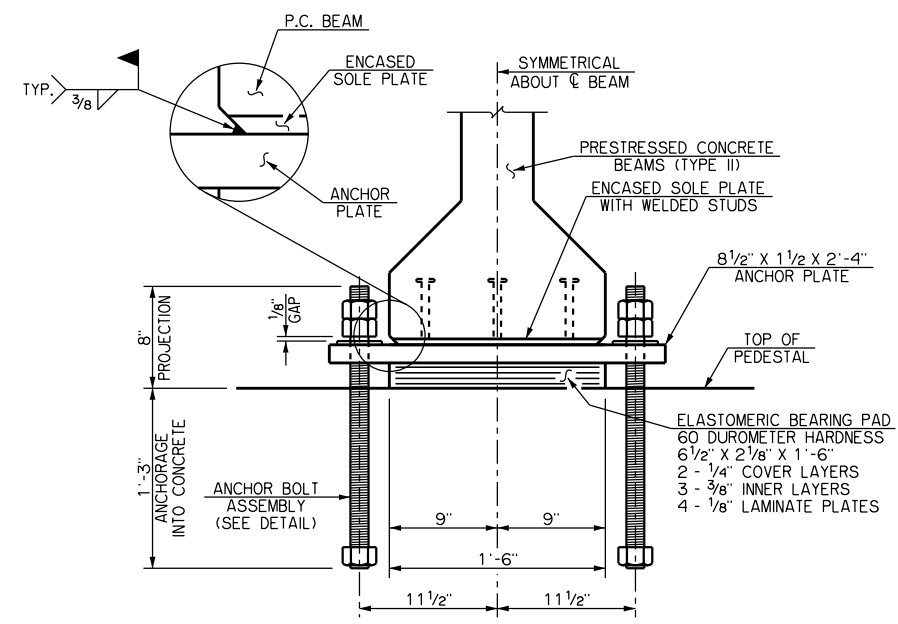
DETAIL OF ANCHOR BOLT ASSEMBLY



PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

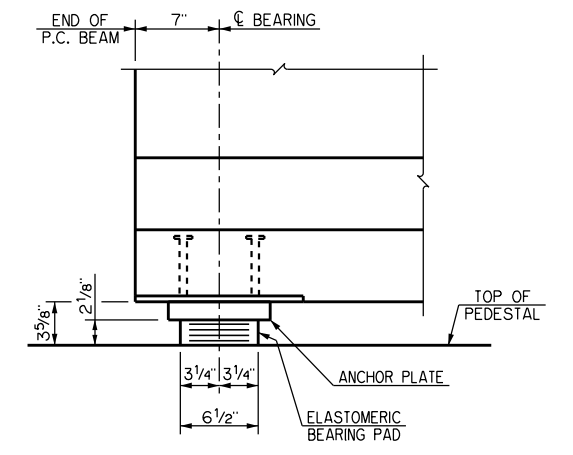


PLAN VIEW AT FIXED LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN



END VIEW

DETAILS OF BEARING ASSEMBLY WITHIN SPAN NOS. 1 AND 4



SIDE VIEW
ANCHOR BOLT ASSEMBLY OMITTED FOR CLARITY

NOTES

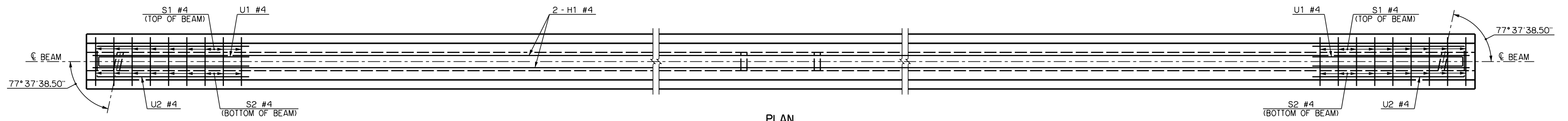
ALL STEEL PARTS OF BEARING ASSEMBLIES SHALL SATISFY THE REQUIREMENTS OF SECTION 724.05.A "STAINLESS STEEL BEARING ASSEMBLIES" OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION FOR "BRIDGE BEARING STRUCTURAL STEEL" (SP 724-1). THE MATERIAL REQUIREMENTS FOR THE CONTACT PLATES SHALL BE THE SAME AS THE MATERIAL REQUIREMENTS FOR THE ANCHOR PLATES.

ELASTOMERIC BEARING PADS SHALL SATISFY THE REQUIREMENTS OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISIONS FOR ELASTOMERIC BEARING PADS" (SP 733-1).

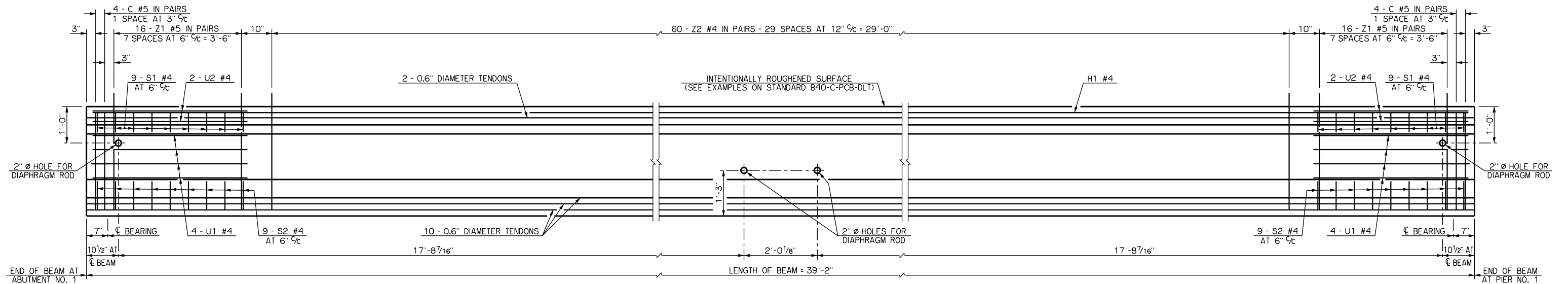
(1) CENTER ANCHOR BOLT ASSEMBLIES IN HOLES AND SLOTS DURING SETTING OF P.C. BEAMS. DIMENSION MAY VARY DEPENDING UPON TEMPERATURE AT TIME OF SETTING OF P.C. BEAMS.

IDAHO AVENUE OVER US-81
BRIDGE '0

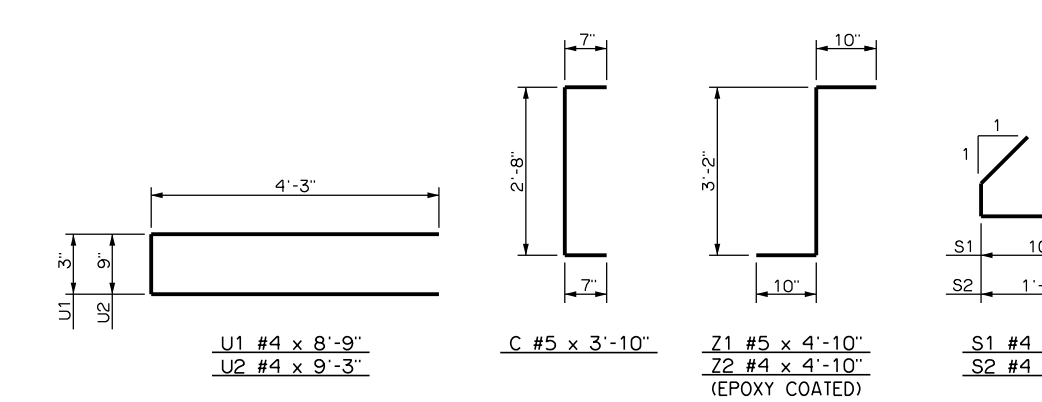
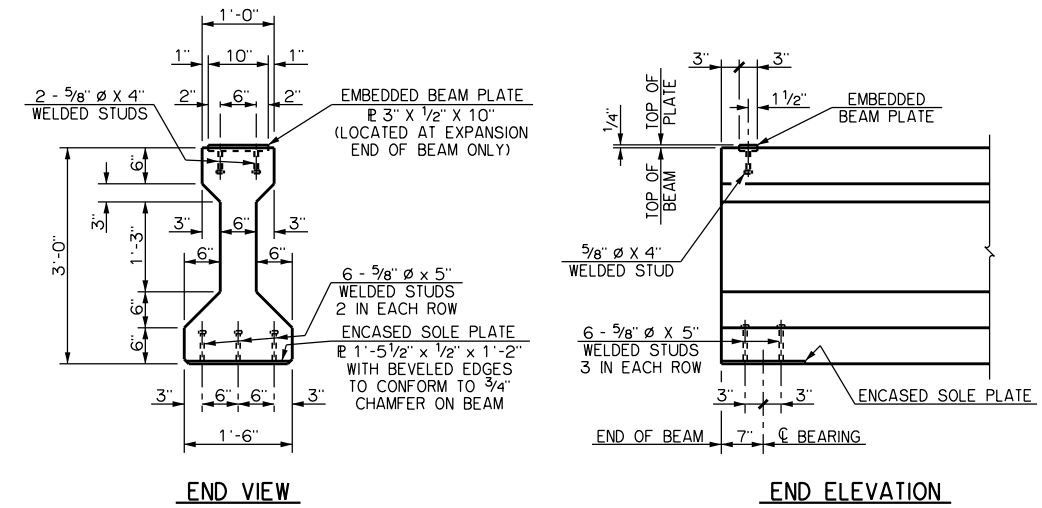
DETAILS OF BEARING ASSEMBLIES



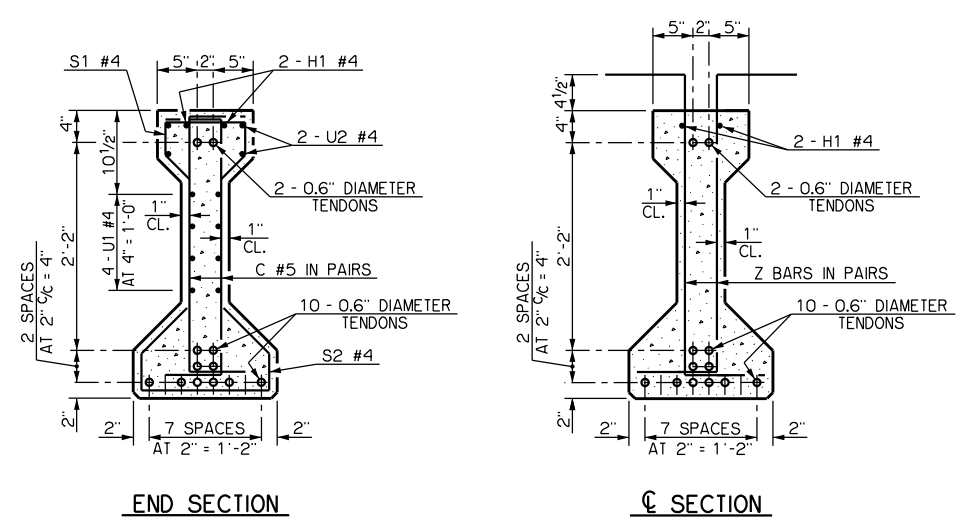
PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN



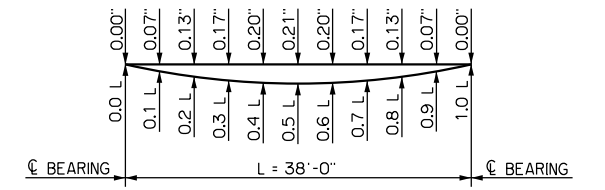
ELEVATION
ENCASED PLATES NOT SHOWN



DETAILS OF BENT REINFORCING STEEL



BEAM SECTIONS
(12 - 0.6\"/>



DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

MATERIAL PROPERTIES

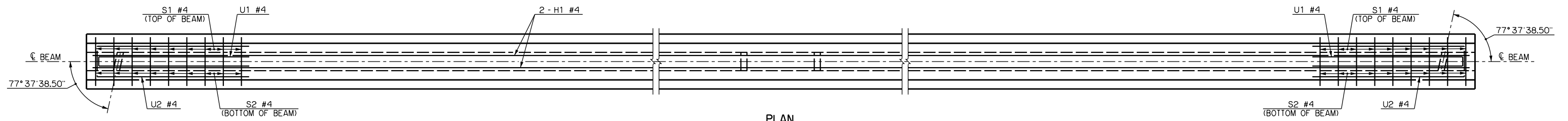
THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 4,500 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 6,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

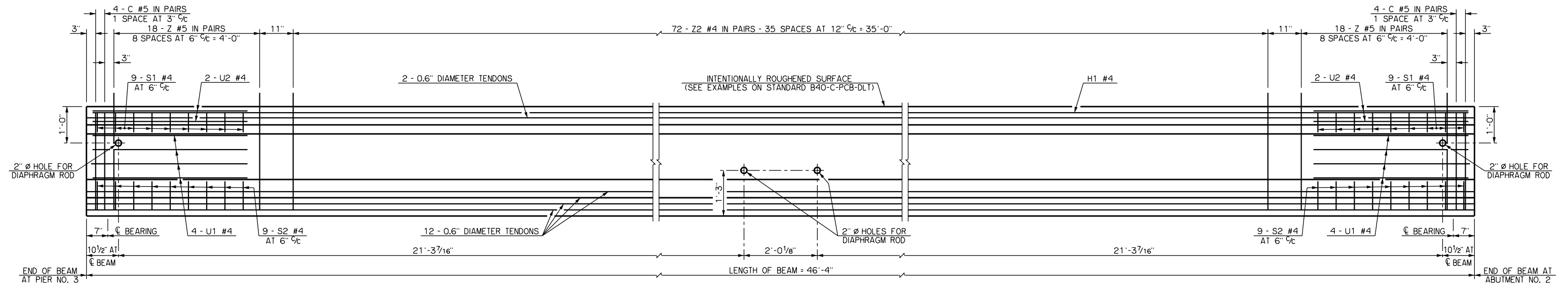
IDAHO AVENUE OVER US-81
BRIDGE '0

**DETAILS OF PRESTRESSED
CONCRETE BEAM (TYPE II)
AT SPAN NO. 1**

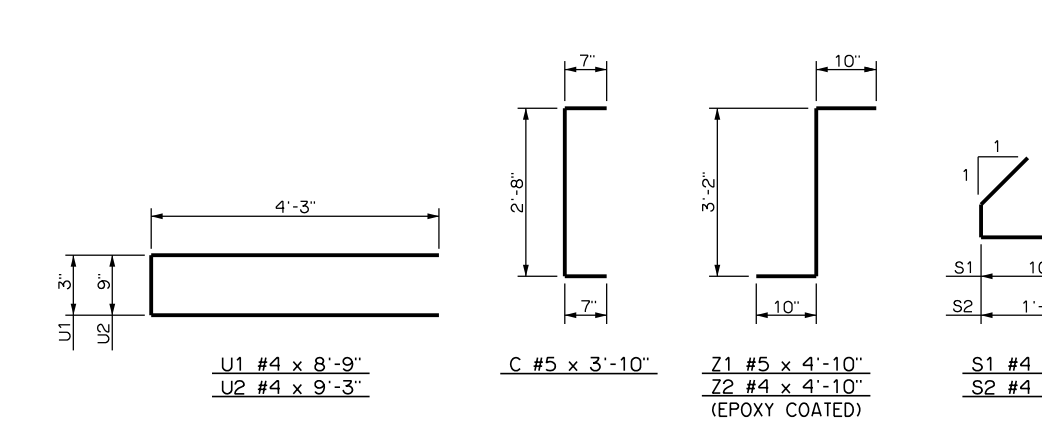
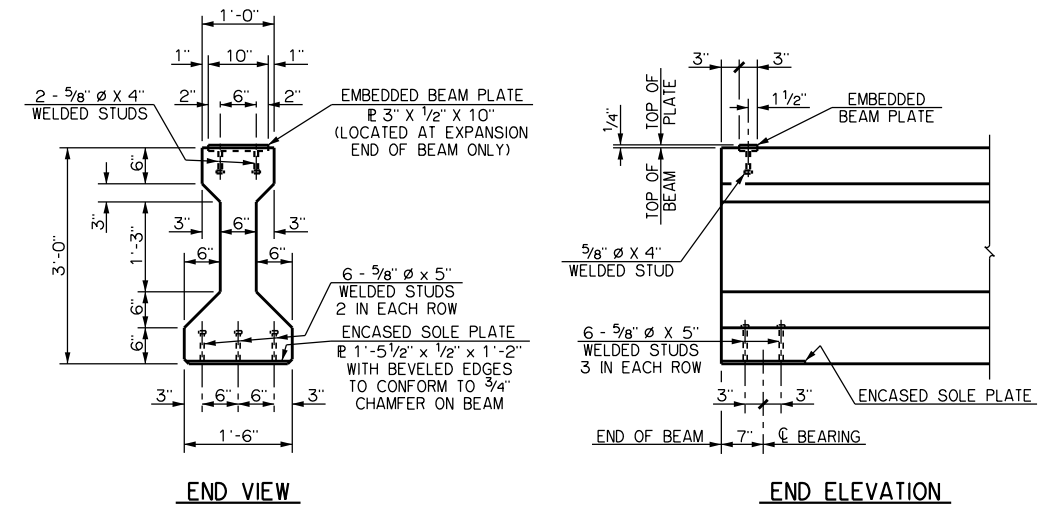
US 81 REALIGNMENT
GRADY COUNTY



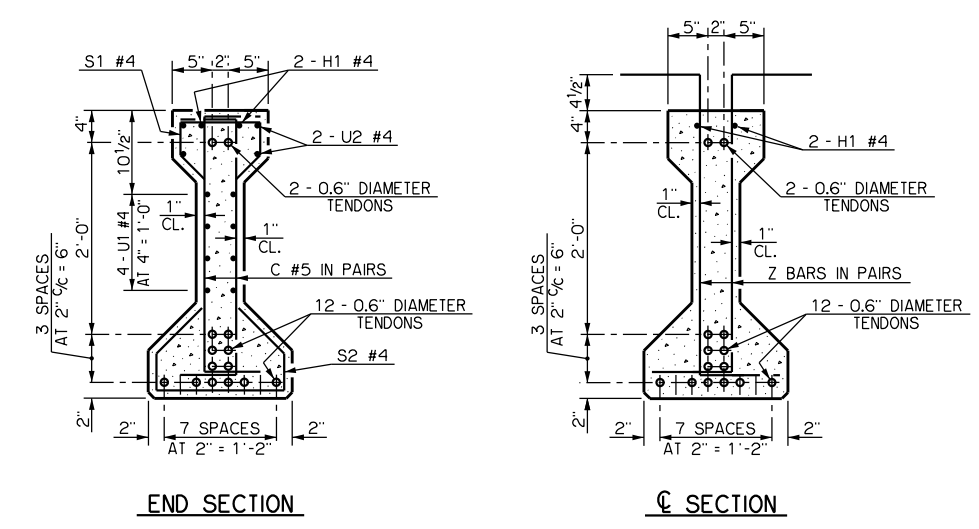
PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN



ELEVATION
ENCASED PLATES NOT SHOWN

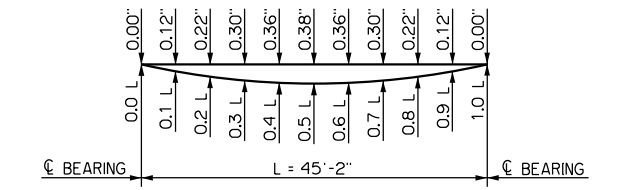


DETAILS OF BENT REINFORCING STEEL



END SECTION **C SECTION**

BEAM SECTIONS
(14 - 0.6" Ø STRANDS)



DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

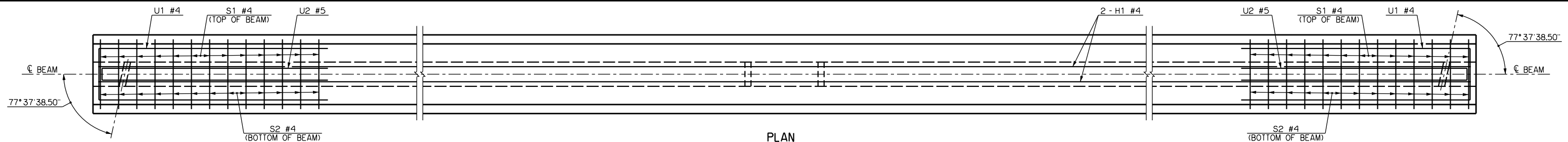
MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 5,250 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 7,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

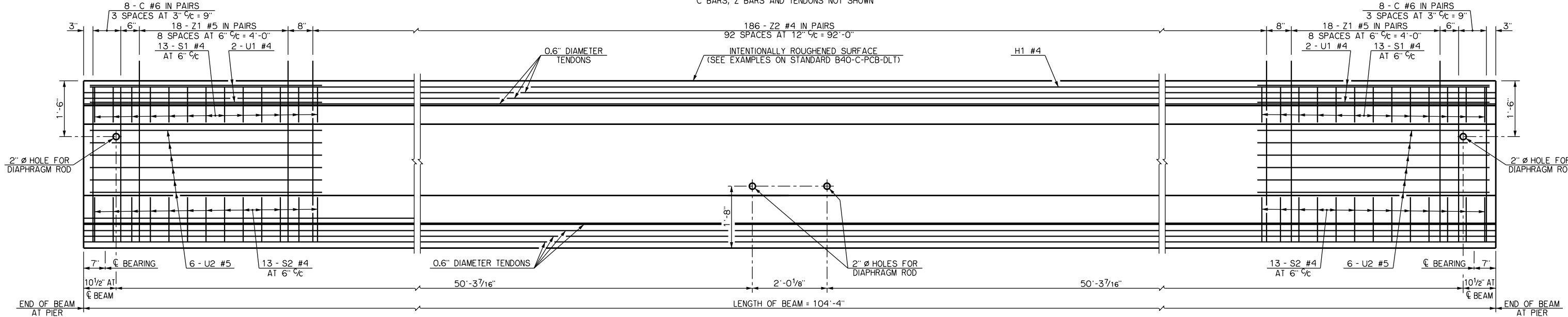
THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

IDAHO AVENUE OVER US-81
BRIDGE '0

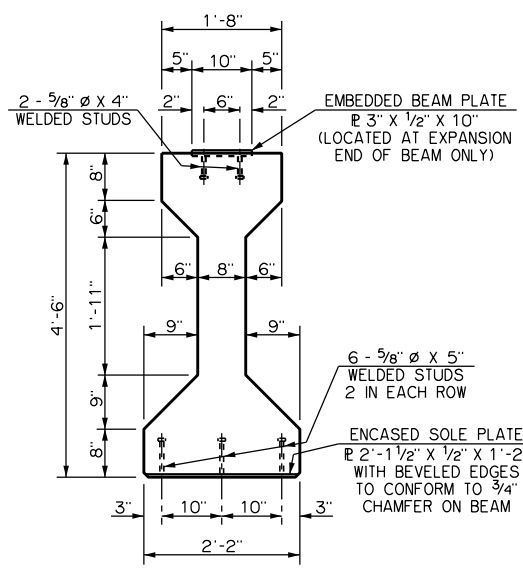
**DETAILS OF PRESTRESSED
CONCRETE BEAM (TYPE II)
AT SPAN NO. 4**



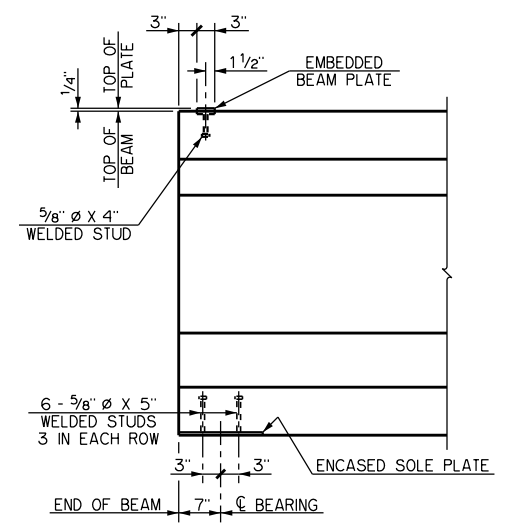
PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN



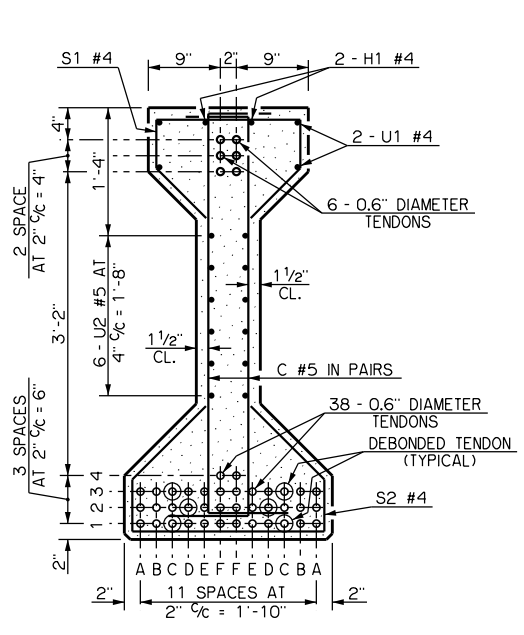
ELEVATION
ENCASED PLATES NOT SHOWN



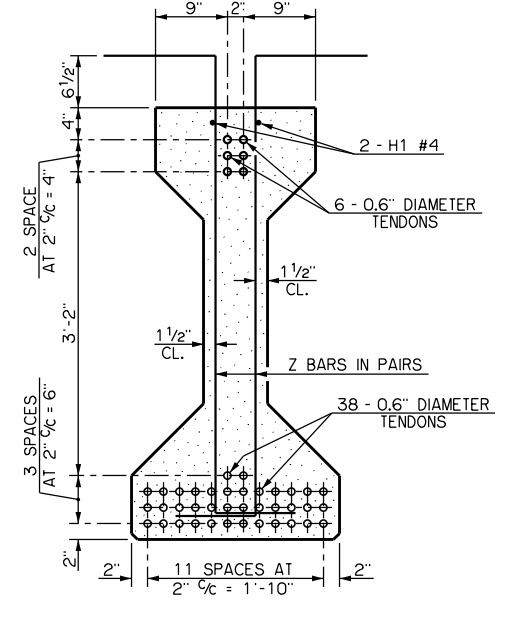
END VIEW



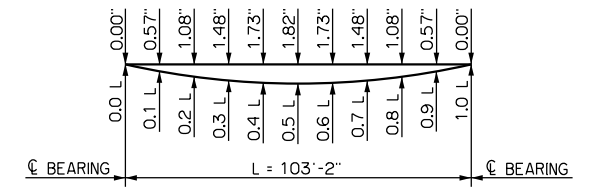
END ELEVATION



END SECTION

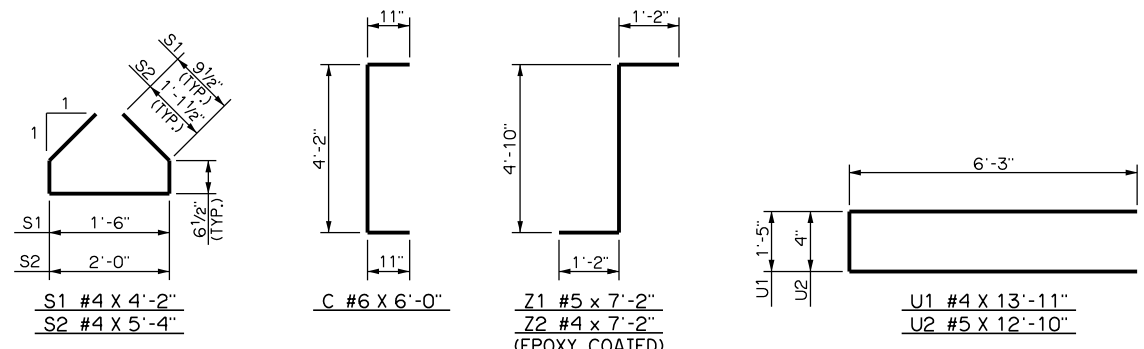


CL SECTION



DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.



DETAILS OF BENT REINFORCING STEEL

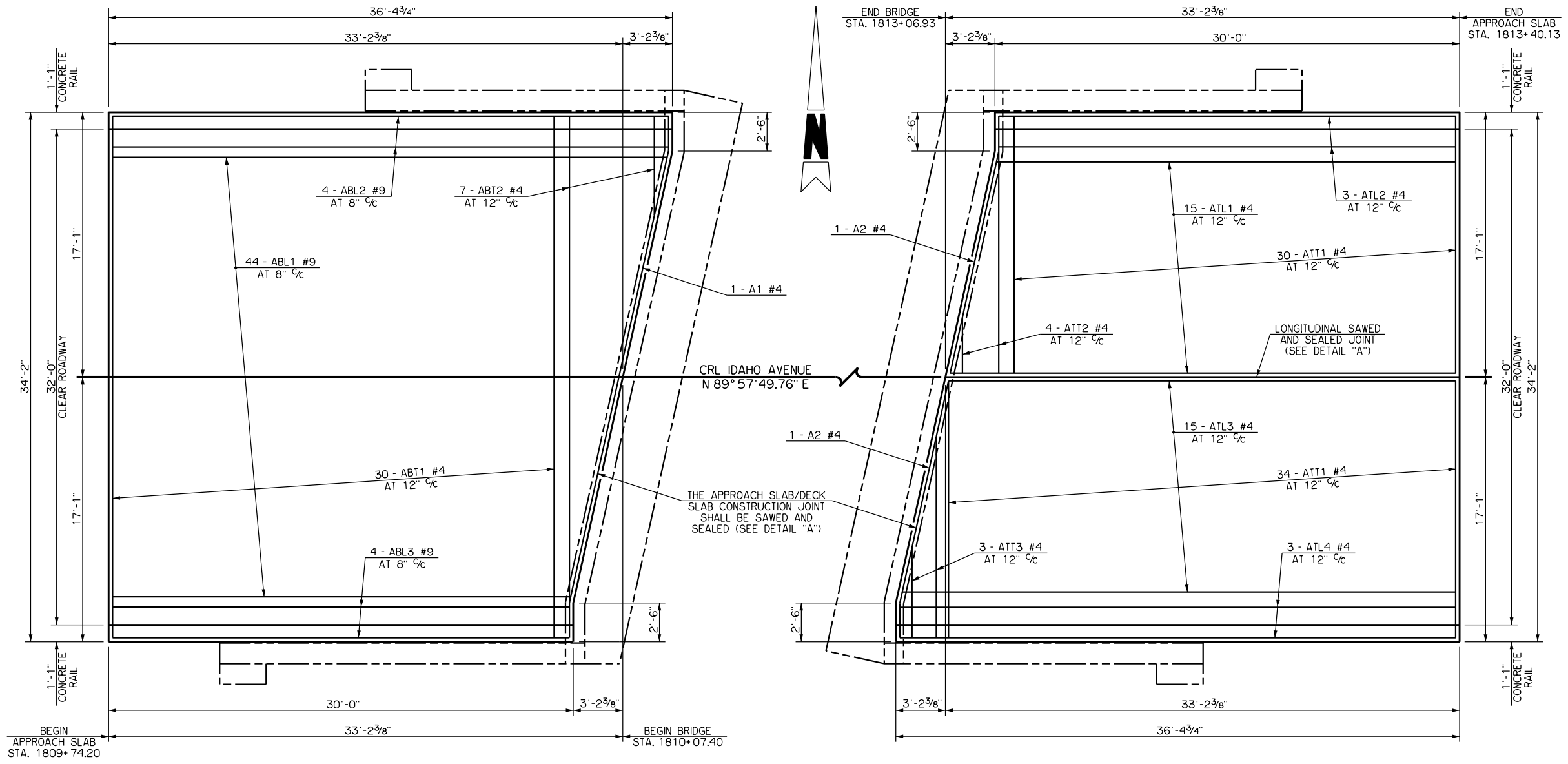
BEAM SECTIONS
(44 - 0.6" Ø STRANDS)

DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
C1	20'-0"
D2	12'-0"
C3	6'-0"

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 6,300 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 9,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

IDAHO AVENUE OVER US-81 BRIDGE '0'
DETAILS OF PRESTRESSED CONCRETE BEAM (TYPE IV) AT SPAN NOS. 2 AND 3

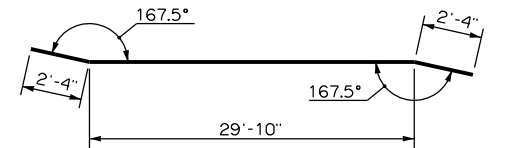


PLAN OF APPROACH SLAB AT ABUTMENT NO. 1

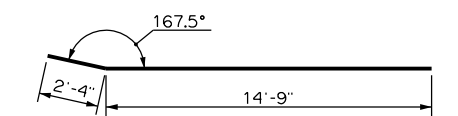
BOTTOM LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.

PLAN OF APPROACH SLAB AT ABUTMENT NO. 2

TOP LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.



A1 #4 X 34'-6"



A2 #4 X 17'-1"

DETAILS OF BENT REINFORCING STEEL

BAR LIST - ONE APPROACH SLAB (TWO REQUIRED)					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
A1	#4	1	BNT.	34'-6"	-
A2	#4	2	BNT.	17'-1"	-
ABL1	#9	44	STR.	32'-10 1/2" AVG.	29'-9" TO 36'-0"
ABL2	#9	4	STR.	36'-1"	-
ABL3	#9	4	STR.	29'-8"	-
ABT1	#4	30	STR.	33'-10"	-
ABT2	#4	7	STR.	19'-0" AVG.	6'-6" TO 31'-6"
ATL1	#4	15	STR.	31'-4" AVG.	29'-10" TO 32'-10"
ATL2	#4	3	STR.	29'-8"	-
ATL3	#4	15	BNT.	34'-5" AVG.	32'-11" TO 35'-11"
ATL4	#4	3	BNT.	36'-1"	-
ATT1	#4	64	STR.	16'-9"	-
ATT2	#4	4	STR.	9'-0" AVG.	3'-7" TO 14'-5"
ATT3	#4	3	STR.	9'-6 1/2" AVG.	5'-11" TO 13'-2"
SR1	#5	221	BNT.	4'-1"	-

SUMMARY OF QUANTITIES - ONE APPROACH SLAB (TWO REQUIRED)

ITEM	UNIT	TOTAL
(1) APPROACH SLAB	SY	126.10
SAW-CUT GROOVING	SY	119.00
CONCRETE RAIL (TR4)	LF	66.40
WATER REPELLENT (VISUALLY INSPECTED)	SY	31.00

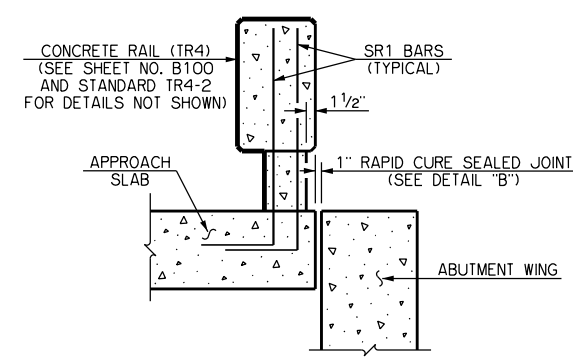
(1) QUANTITY INCLUDES ALL COSTS OF CONCRETE, EPOXY COATED REINFORCING STEEL INCLUDING SR1 BARS, BACKER ROD, RAPID CURE JOINT SEALANT, PREFORMED EXPANSION JOINT FILLER, SAWING, GRINDING AND FINAL GRADING OF SUB-GRADE INCLUDING EMBANKMENT AND EXCAVATION FOR THE APPROACH SLAB.

NOTES

THE 'SR1' BARS PROJECTING FROM THE APPROACH SLABS INTO THE CONCRETE TRAFFIC RAIL HAVE BEEN OMITTED IN THE APPROACH SLAB PLAN VIEWS FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE TRAFFIC RAIL (TR4)' ON SHEET NO. B100 FOR PLACEMENT OF 'SR1' BARS.

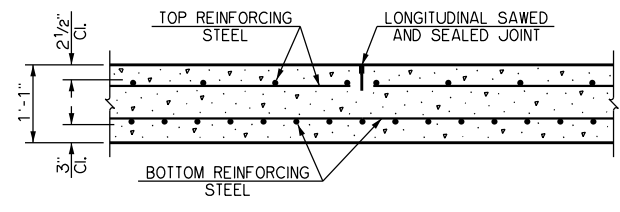
THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" ON EACH SIDE OF THE LONGITUDINAL JOINTS.

DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS AND CONTRACTION JOINTS.



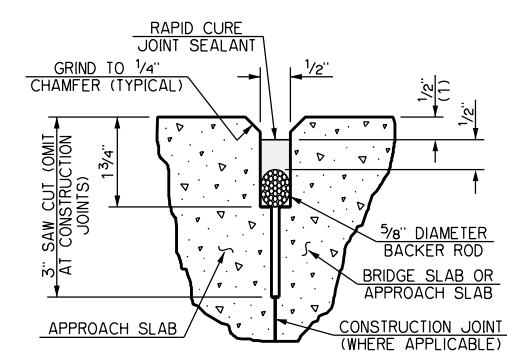
DETAIL OF APPROACH SLAB AT ABUTMENT WING

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLANT SURFACE TREATMENT.



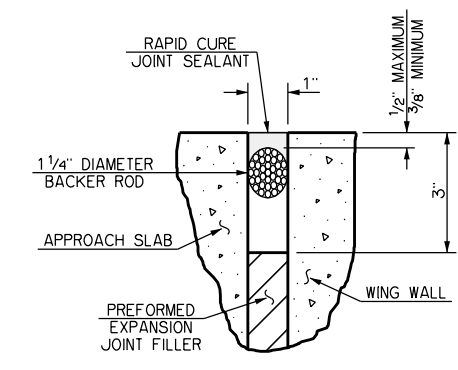
SECTION THROUGH APPROACH SLAB

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" EITHER SIDE OF THE LONGITUDINAL SAWED AND SEALED JOINT.



DETAIL "A"

(1) THIS DIMENSION SHALL TAPER FROM 1/2" AT EDGE OF DRIVING LANE/SHOULDER TO 1/8" AT CONCRETE RAIL FOR TRANSVERSE JOINTS ONLY.



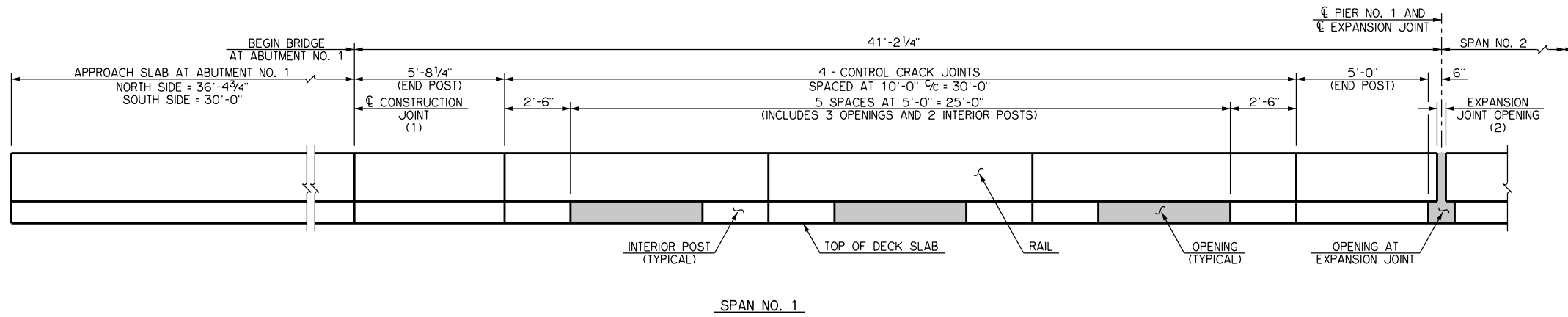
DETAIL "B"

IDAHO AVENUE OVER US-81
BRIDGE '0'

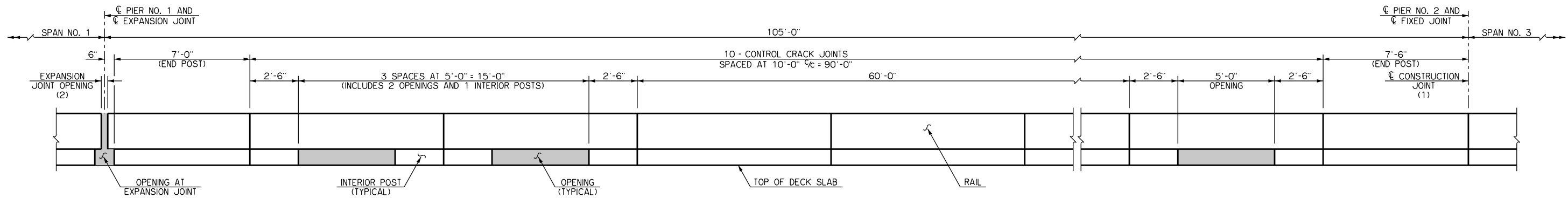
DETAILS OF APPROACH SLABS

State Job No. 24428(12) Sheet No. B099

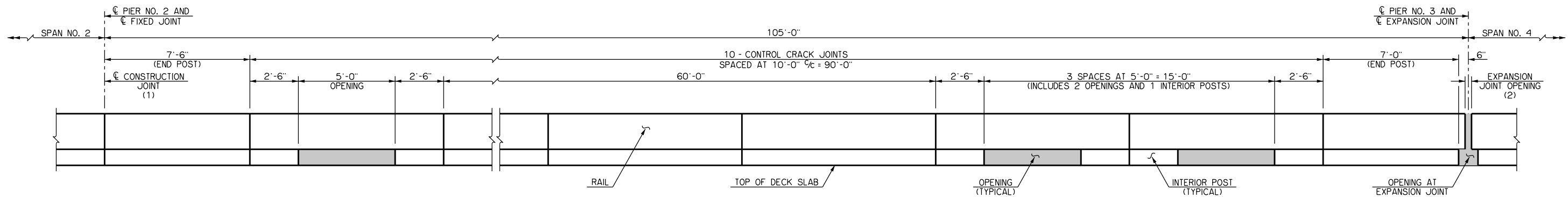
US 81 REALIGNMENT
GRADY COUNTY



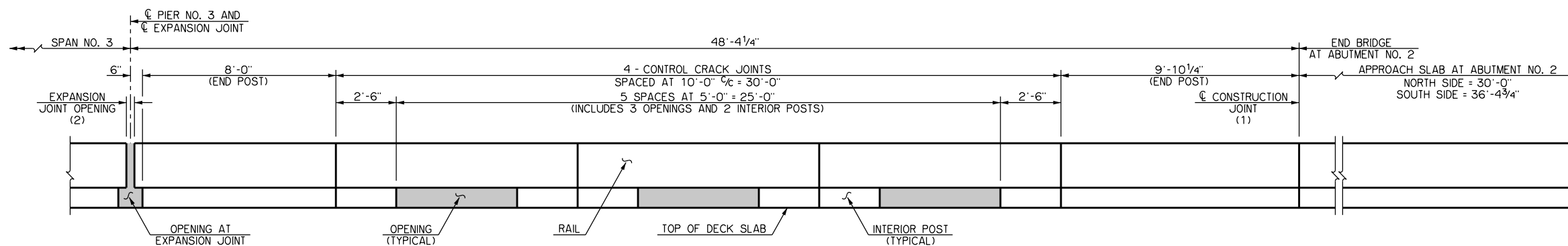
SPAN NO. 1



SPAN NO. 2



SPAN NO. 3



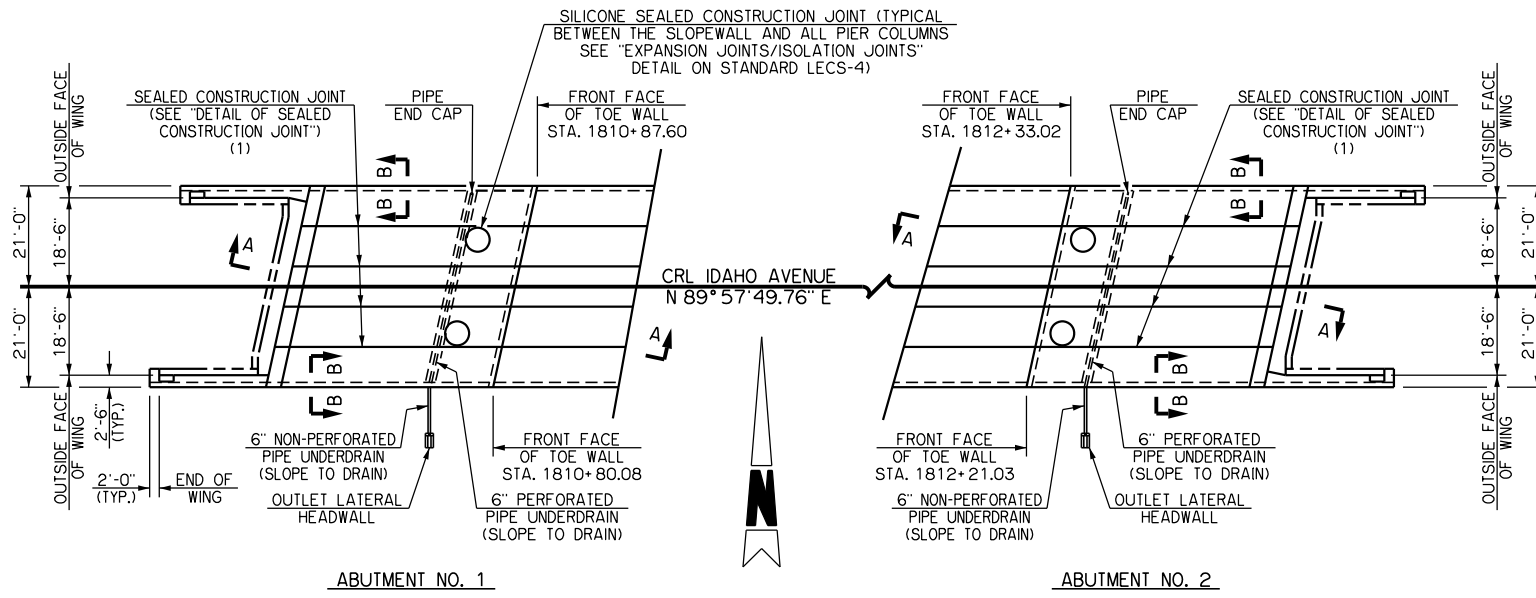
SPAN NO. 4

NOTES

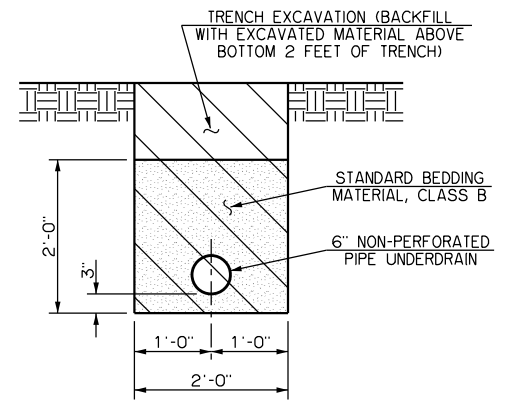
- (1) HORIZONTAL REINFORCING STEEL SHALL END 2" EACH SIDE OF CONSTRUCTION JOINTS.
 - (2) EXPANSION JOINT OPENING IN THE CONCRETE RAIL SHALL MATCH THE EXPANSION JOINT OPENING IN THE DECK SLAB.
- THE CONCRETE RAIL LAYOUT IS TYPICAL ALONG EACH SIDE OF THE BRIDGE DECK. SEE STANDARD TR4-2 FOR ADDITIONAL DIMENSIONS, DETAILS, AND INFORMATION.

IDAHO AVENUE OVER US-81
BRIDGE '0

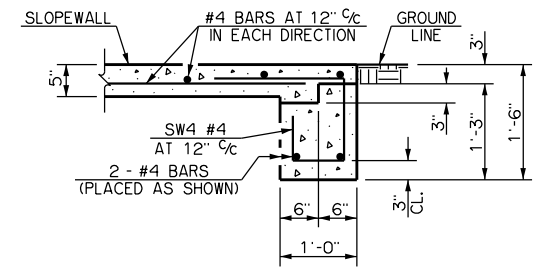
LAYOUT OF CONCRETE RAIL (TR4)



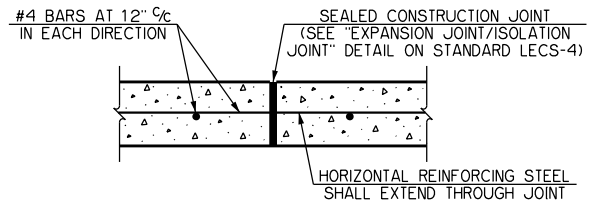
PLAN OF SLOPE WALLS



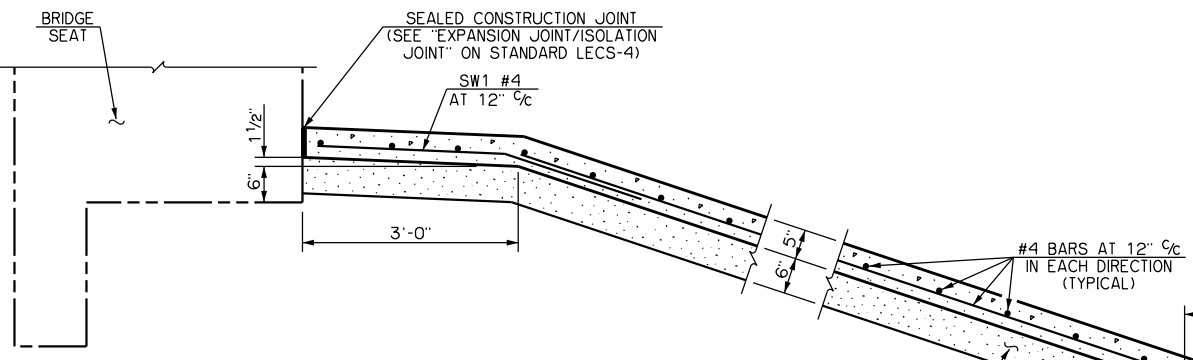
TYPICAL SECTION THROUGH NON-PERFORATED PIPE UNDERDRAIN



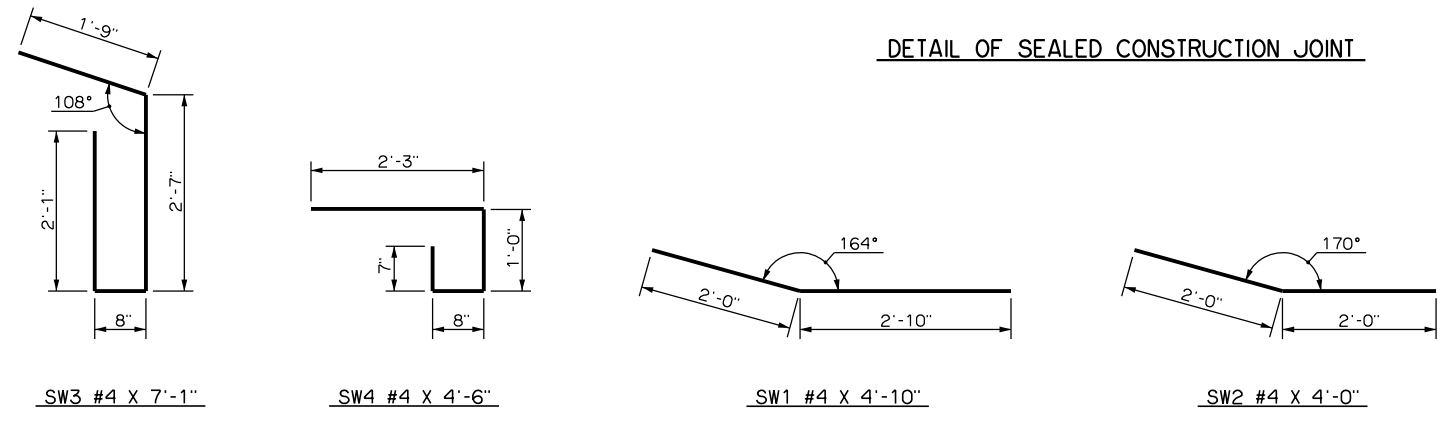
SECTION B-B



DETAIL OF SEALED CONSTRUCTION JOINT



SECTION A-A



DETAILS OF BENT REINFORCING STEEL

NOTES

- INSTALLATION OF THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS PUD-3 AND PED-3.
- (1) PLACEMENT OF VERTICAL CONSTRUCTION JOINTS IN THE SLOPE WALL SHALL BE LOCATED AS SHOWN IN THE PLAN VIEW. ANY CHANGES SHALL NOT EXCEED 10'-0" WIDE AND SHALL BE APPROVED BY THE ENGINEER. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE ALLOWED IN THE SLOPE WALL.
- (2) INCLUDES ALL COST OF EXCAVATION, EMBANKMENT, CONCRETE, REINFORCING STEEL, SILICONE JOINT SEALER, BACKER ROD AND PREFORMED EXPANSION JOINT FILLER.
- (3) INCLUDES ALL COST OF EXCAVATION, PERFORATED PIPE, PIPE FITTINGS, PIPE CAPS, FILTER FABRIC AND ALL PIPE UNDERDRAIN COVER MATERIAL SHOWN INCLUDING 6" THICKNESS BELOW SLOPE WALL.
- (4) INCLUDES ALL COST OF TRENCH EXCAVATION, NON-PERFORATED PIPE, PIPE FITTINGS, PIPE RODENT SCREENS AND BACKFILLING OF TRENCHES.

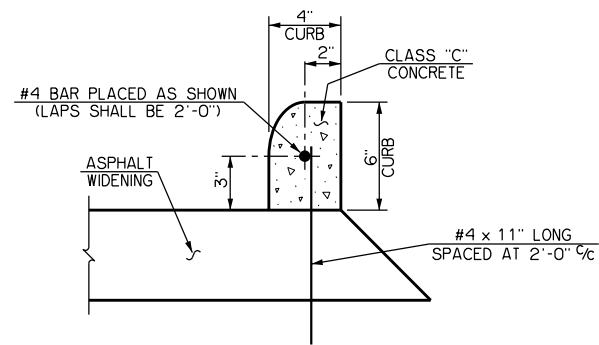
SUMMARY OF QUANTITIES - SLOPEWALL				
ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
(2) SLOPE WALL (5")	SY	365.00	383.00	748.00
(3) 6" PERFORATED PIPE UNDERDRAIN ROUND	LF	42.00	42.00	84.00
(4) 6" NON-PERF. PIPE UNDERDRAIN RND.	LF	11.00	11.00	22.00
OUTLET LATERAL HEADWALL	EA	1.00	1.00	2.00

IDAHO AVENUE OVER US-81
BRIDGE '0

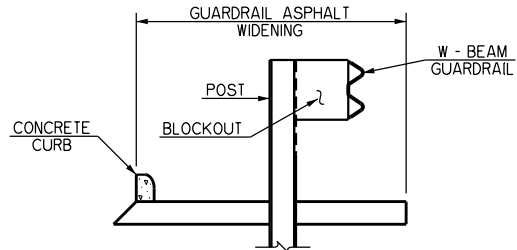
DETAILS OF SLOPE WALLS

State Job No. 24428(12) Sheet No. B101

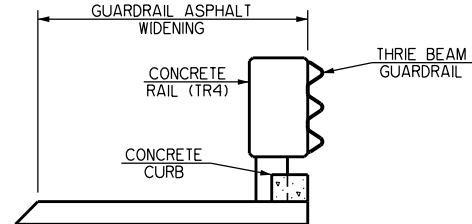
US 81 REALIGNMENT
GRADY COUNTY



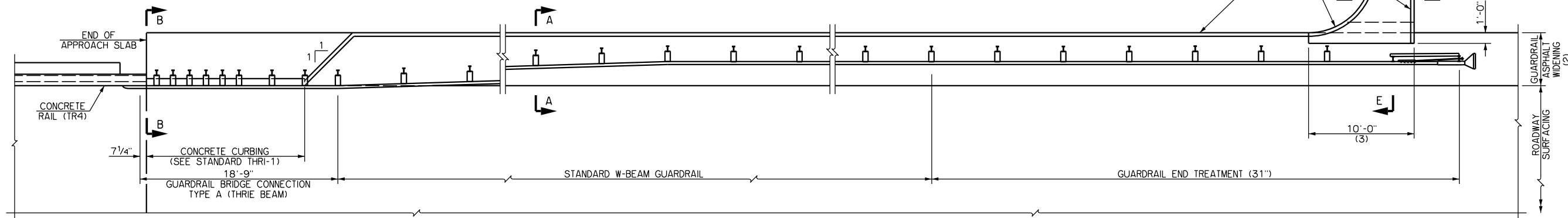
DETAIL OF CONCRETE CURB



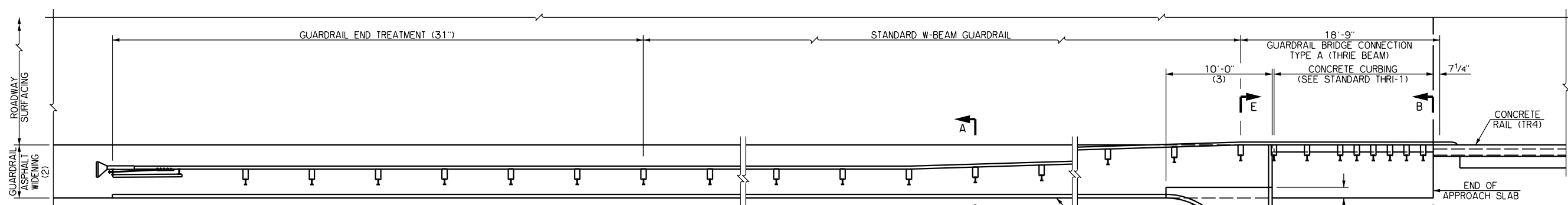
SECTION A-A



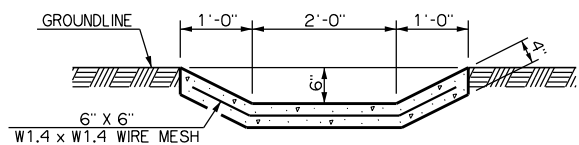
SECTION B-B



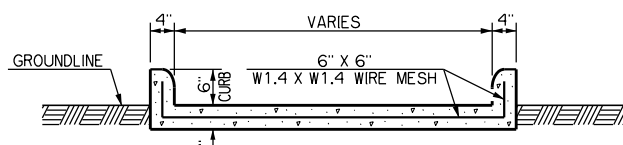
EAST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY



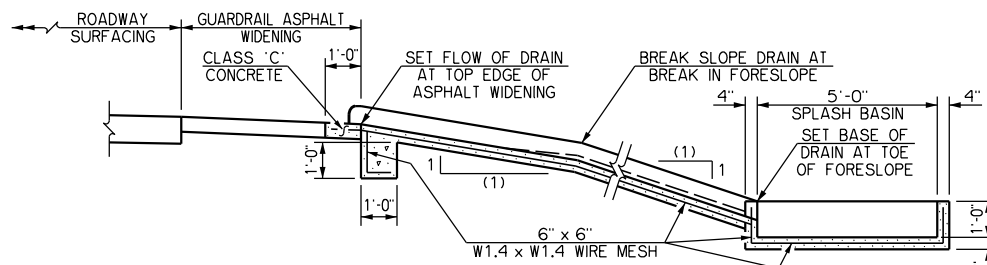
WEST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY



SECTION C-C



SECTION D-D



SECTION E-E

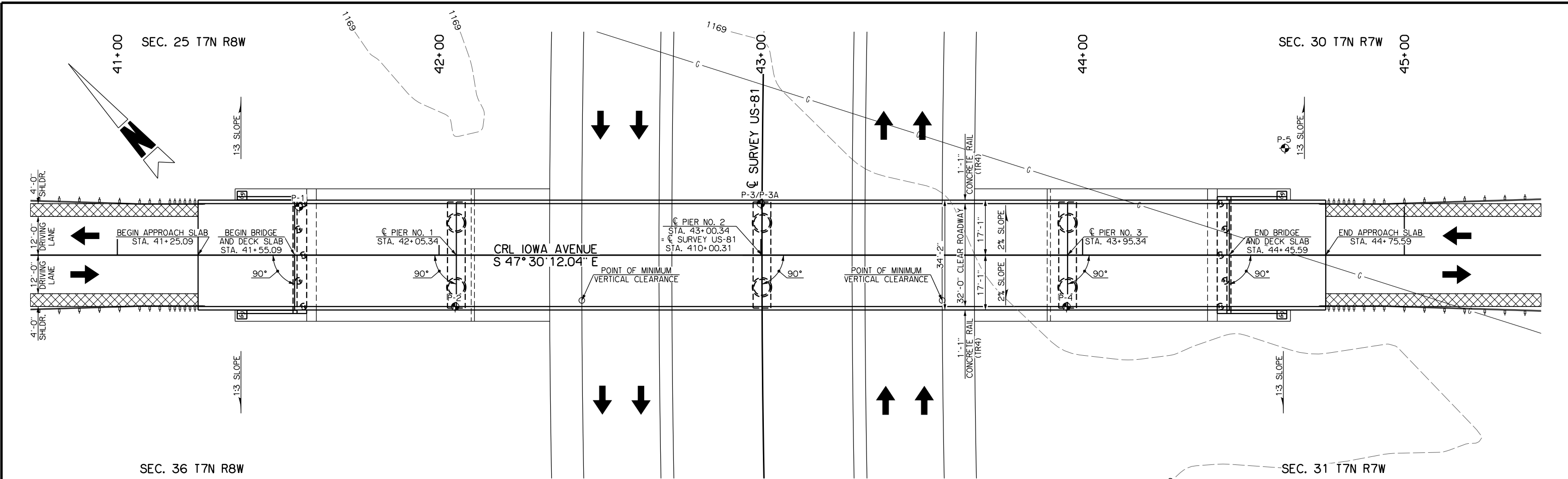
NOTES

SLOPE DRAINS, SPLASH BASINS AND CURBS SHALL BE CONSTRUCTED USING CLASS C CONCRETE AS SHOWN ON THIS SHEET. ALL COSTS OF SLOPE DRAINS, SPLASH BASINS AND CURBS INCLUDING THE COST OF CONCRETE, REINFORCING STEEL BARS AND WIRE MESH, ASPHALT REMOVAL, EXCAVATION, BACKFILLING, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF "CLASS C CONCRETE."

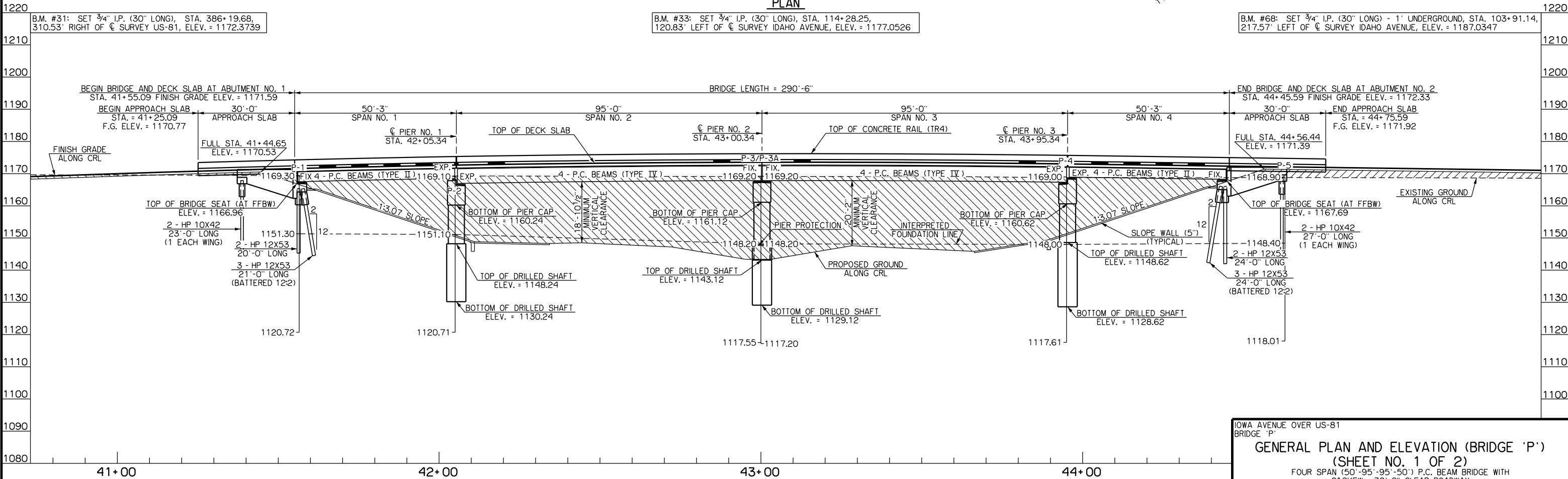
- (1) SLOPE TO MATCH FORESLOPE.
- (2) ASPHALT WIDENING SHALL BE IN ACCORDANCE WITH STANDARD GHW1-1 EXCEPT AS SHOWN ON THIS SHEET. ALL COSTS OF THE ASPHALT WIDENING SHALL BE INCLUDED IN ROADWAY PAY ITEMS.
- (3) A 1'-0" WIDE X 10'-0" LONG PORTION OF THE GUARDRAIL ASPHALT WIDENING SHALL BE REMOVED AS SHOWN. CLASS 'C' CONCRETE SHALL REPLACE THIS AREA AS A PART OF THE SLOPE DRAIN CONSTRUCTION.
- (4) THE CONCRETE CURB SHALL TRANSITION INTO THE 1:2 SIDE SLOPE PORTION OF THE SLOPE DRAIN WITHIN THIS 2'-0" DIMENSION.

IDAHO AVENUE OVER US-81
BRIDGE '0

DETAILS OF DRAINS AT ENDS OF BRIDGE



PLAN



IOWA AVENUE OVER US-81
BRIDGE 'P'
GENERAL PLAN AND ELEVATION (BRIDGE 'P')
(SHEET NO. 1 OF 2)
FOUR SPAN (50'-95'-95'-50') P.C. BEAM BRIDGE WITH
0° SKEW, 32'-0" CLEAR ROADWAY
AND CONCRETE RAIL (TR4) AT CRL STA. 43+00.34
State Job No. 24428(12) Sheet No. B103

GRADY COUNTY

SUMMARY OF QUANTITIES - BRIDGE 'P'								
ITEM	UNIT	ABUTMENTS	PIERS	PIER PROTECTION	SUPERSTRUCTURE	APPROACH SLABS	SLOPE WALL	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	210.00	-	5.00	-	-	-	215.00
CLSM BACKFILL	CY	138.00	-	-	-	-	-	138.00
PRESTRESSED CONCRETE BEAMS (TYPE ID)	LF	-	-	-	390.00	-	-	390.00
PRESTRESSED CONCRETE BEAMS (TYPE ID)	LF	-	-	-	756.00	-	-	756.00
APPROACH SLAB	SY	-	-	-	-	227.80	-	227.80
SAW-CUT GROOVING	SY	-	-	-	1,033.00	214.00	-	1,247.00
SEALED EXPANSION JOINT	LF	-	-	-	70.34	-	-	70.34
CONCRETE RAIL (TR4)	LF	-	-	-	580.40	120.00	-	700.40
STRUCTURAL STEEL	LB	-	-	-	1,480.00	-	-	1,480.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	-	-	-	16.00	-	-	16.00
CLASS AA CONCRETE	CY	-	-	-	270.20	-	-	270.20
CLASS A CONCRETE	CY	66.80	199.10	16.60	-	-	-	282.50
SLOPE WALL (5')	SY	-	-	-	-	-	616.00	616.00
REINFORCING STEEL	LB	-	1,690.00	-	-	-	-	1,690.00
EPOXY COATED REINFORCING STEEL	LB	8,840.00	18,150.00	750.00	75,090.00	-	-	102,830.00
PILES, FURNISHED (HP 10X42)	LF	100.00	-	-	-	-	-	100.00
PILES, DRIVEN (HP 10X42)	LF	100.00	-	-	-	-	-	100.00
PILES, DRIVEN (HP 12X53)	LF	223.00	-	-	-	-	-	223.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	72.00	244.00	-	906.00	56.00	-	1,278.00
DRILLED SHAFT 72" DIAMETER	LF	-	104.00	-	-	-	-	104.00
SEALER CRACK PREPARATION	LF	-	-	-	64.00	-	-	64.00
SEALER RESIN	GAL	-	-	-	0.70	-	-	0.70
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	68.00	-	-	-	-	80.00	148.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	46.00	-	-	-	-	20.00	66.00
OUTLET LATERAL HEADWALL	EA	-	-	-	-	-	2.00	2.00

STRUCTURAL AND FOUNDATION DESIGN DATA

MATERIAL:
CLASS A CONCRETE, f'c = 3 KSI
CLASS AA CONCRETE, f'c = 4 KSI
REINFORCING STEEL, fy = 60 KSI
STRUCTURAL STEEL M270 (GRADE 50W), Fy = 50 KSI
STAINLESS STEEL A240 (TYPE 316), Fy = 30 KSI

LOADING:
HL-93 OR OKLAHOMA OVERLOAD TRUCK
20 PSF FUTURE WEARING SURFACE
5 PSF STAY-IN-PLACE FORMS

DESIGN:
AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS,
7TH EDITION WITH 2015 INTERIMS
ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL

HL-93 INVENTORY RATING FACTOR: 1.00
HL-93 OPERATING RATING FACTOR: 1.30

ABUTMENTS (HP 12X53 PILING)

ABUTMENTS NO. 1 2
MAXIMUM FACTORED PILE LOAD (TONS/PILE) = 76 76

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN IN THE PLANS. IF THE MAXIMUM FACTORED PILE LOAD IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE MAXIMUM FACTORED PILE LOAD IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN IN THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

PIERS

PIER NO.	1	2	3
DRILLED SHAFTS DIAMETER (INCHES)	= 72	72	72
FACTORED REACTION (TONS/SHAFT)	= 460	537	466
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 41.2	23.0	41.2
BEARING RESISTANCE FACTOR	= 0.70	0.70	0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 816	457	816
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 2.9	9.0	4.1
FRICTION RESISTANCE FACTOR	= 0.45	0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 172	534	245
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	= 5	5	5
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 987	990	1,060

UTILITIES

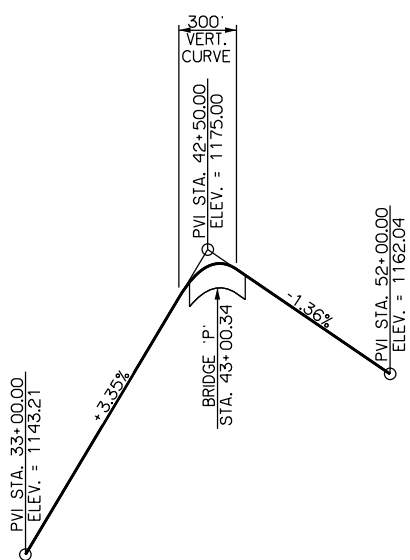
- TELEPHONE:
CHICKASAW TELEPHONE CO. - (580) 618-5455
SOUTHWESTERN BELL - (800) 522-6543
AT&T - (800) 778-9140
DOBSON TECHNOLOGIES - (800) 778-9140
INTELLEO COMMUNICATIONS - (800) 335-4343
MEDICINE PARK TELEPHONE CO. - (580) 529-2700
- ELECTRIC:
AEP PUBLIC SERVICE CO. OF OKLAHOMA - (888) 216-3523
OKLAHOMA ELECTRIC COOPERATIVE - (405) 321-2024
- WATER AND SANITARY SEWER:
CITY OF CHICKASHA PUBLIC WORKS - (405) 222-6080
RURAL WATER DISTRICT #6 - (405) 459-6626
RURAL WATER DISTRICT #7 - (405) 779-6224
- GAS AND PETROLEUM PIPELINES:
ENABLE MIDSTREAM - (800) 522-8048
CONTINUUM ENERGY - (877) 587-0026
DCP MIDSTREAM - (800) 435-1679
UNIT PETROLEUM - (918) 493-7700
SUNOCO LOGISTICS - (800) 753-5531
KEPCO OPERATING INC. - (855) 421-2088

INDEX OF SHEETS

SHEET NO.	SHEET DESCRIPTION
AB01, AB04	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)
B103, B104	GENERAL PLAN AND ELEVATION (BRIDGE 'P')
B105- B107	FOUNDATION BORING LOGS
B108	SUBSTRUCTURE STAKING DIAGRAM
B109, B110	DETAILS OF ABUTMENT NOS. 1 AND 2
B111	DETAILS OF WINGS
B112	DETAILS OF PIER NOS. 1 AND 3
B113	DETAILS OF PIER NO. 2
B114	DETAILS OF PIER NOS. 1, 2 AND 3
B115	DETAILS OF PIER PROTECTION AT PIER NO. 2
B116- B120	DETAILS OF SUPERSTRUCTURE
B121	DETAILS OF BEARING ASSEMBLIES
B122	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 1 AND 4)
B123	DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE ID IN SPAN NOS. 2 AND 3)
B124	DETAILS OF APPROACH SLABS
B125	LAYOUT OF CONCRETE RAIL (TR4)
B126	DETAILS OF SLOPE WALLS
B127	DETAILS OF DRAINS AT ENDS OF BRIDGE

REQUIRED STANDARD DRAWINGS

ROADWAY	BRIDGE
PED-3-2	TR4-2-00E
PUD-3-3	EJ-SK-04E
	EJ-DTL-02E
	HP1-2-01E



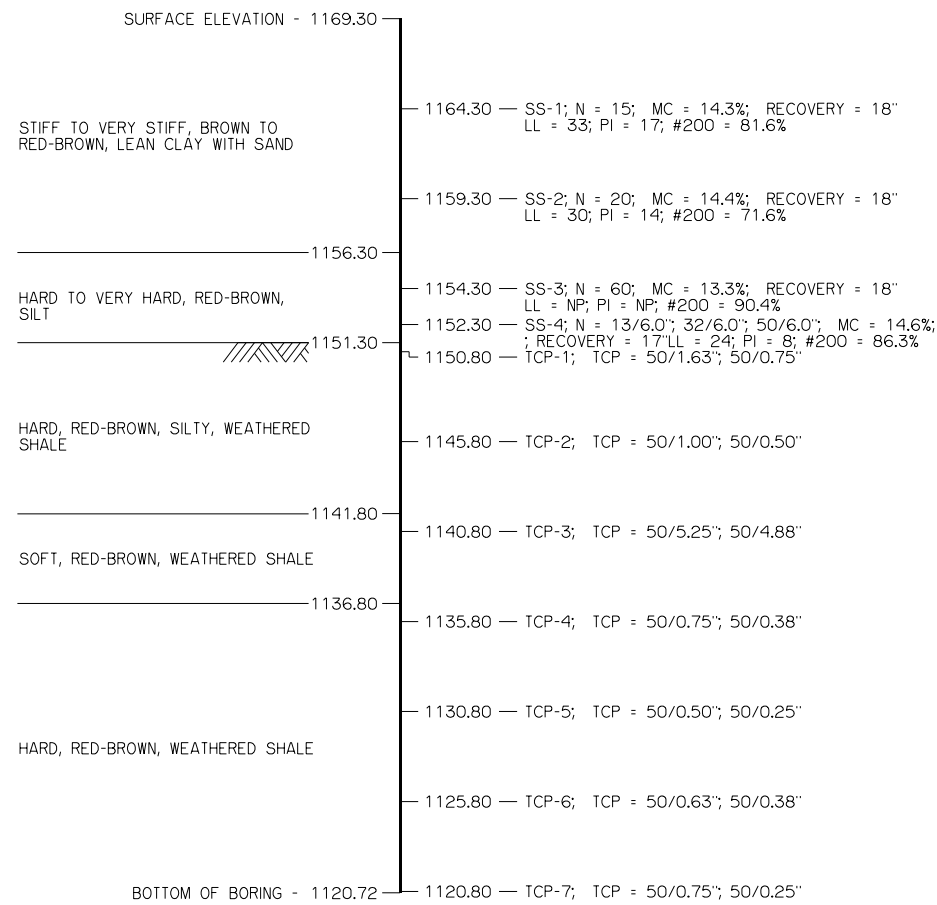
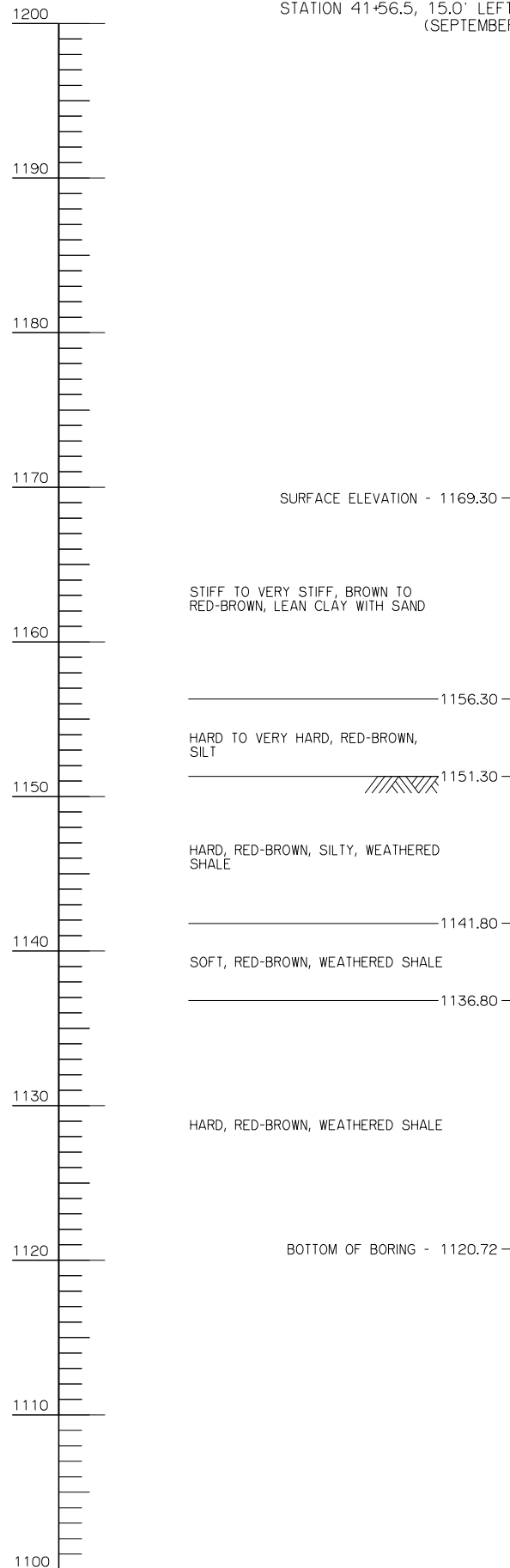
PROFILE GRADE DATA
FINISH GRADE ALONG CRL

IOWA AVENUE OVER US-81
BRIDGE 'P'
GENERAL PLAN AND ELEVATION (BRIDGE 'P')
(SHEET NO. 2 OF 2)
FOUR SPAN (50'-95'-95'-50') P.C. BEAM BRIDGE WITH
0° SKEW, 32'-0" CLEAR ROADWAY
AND CONCRETE RAIL (TR4) AT CRL STA. 43+00.34
State Job No. 24428(12) Sheet No. B104

US 81 REALIGNMENT GRADY COUNTY

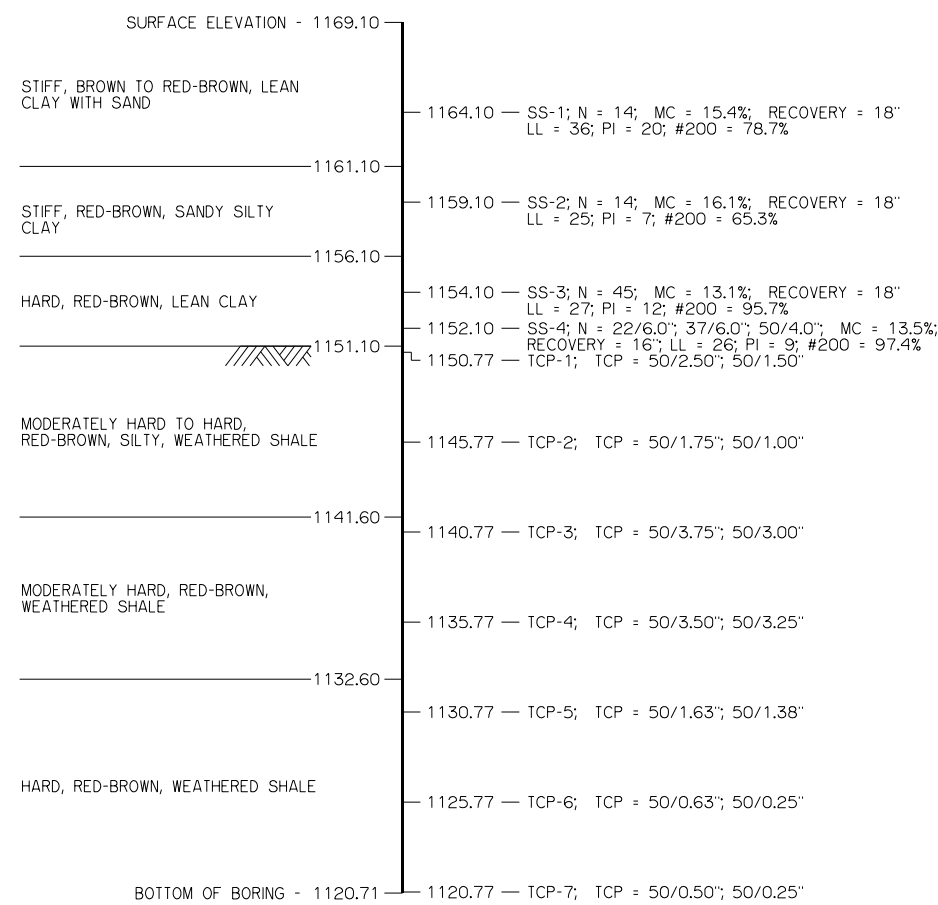
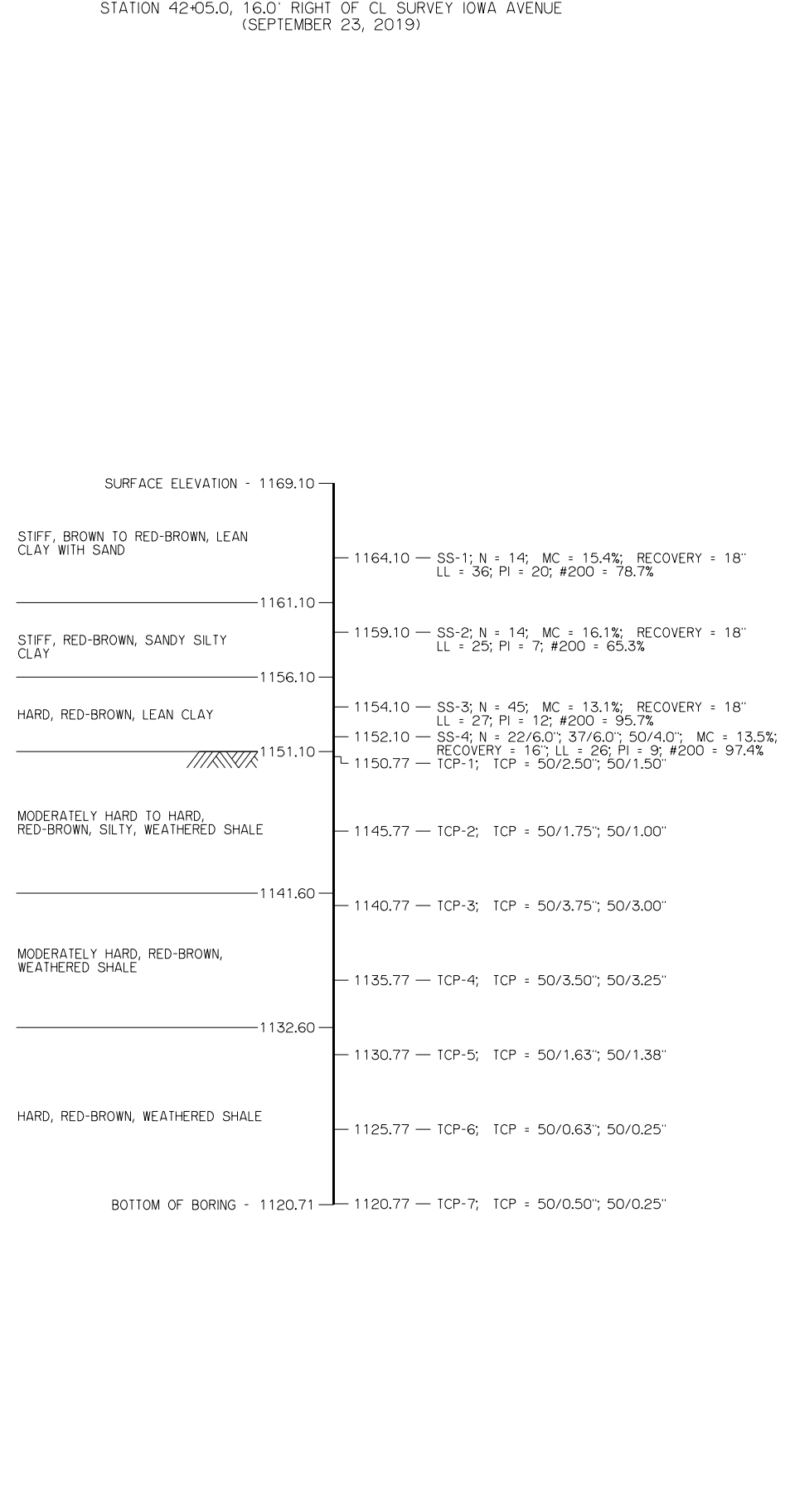
BORING NO. P-1

STATION 41+56.5, 15.0' LEFT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 20, 2019)



BORING NO. P-2

STATION 42+05.0, 16.0' RIGHT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 23, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- //// = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.

NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.

NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

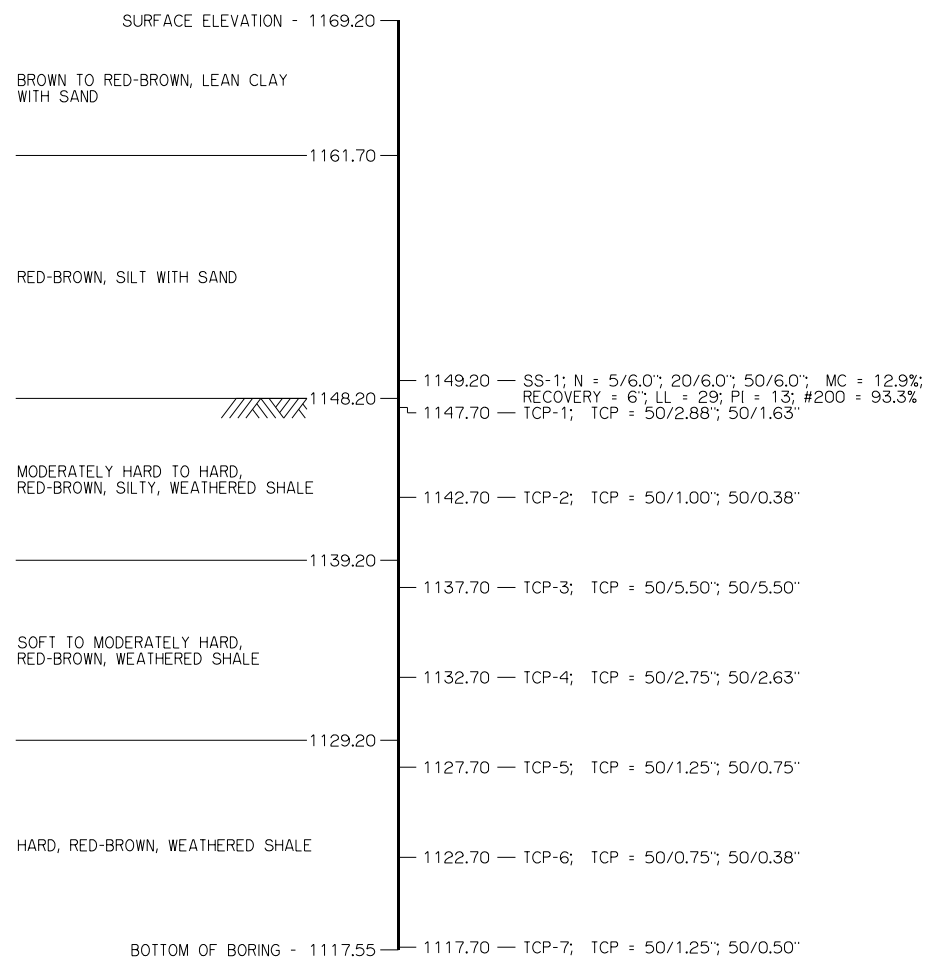
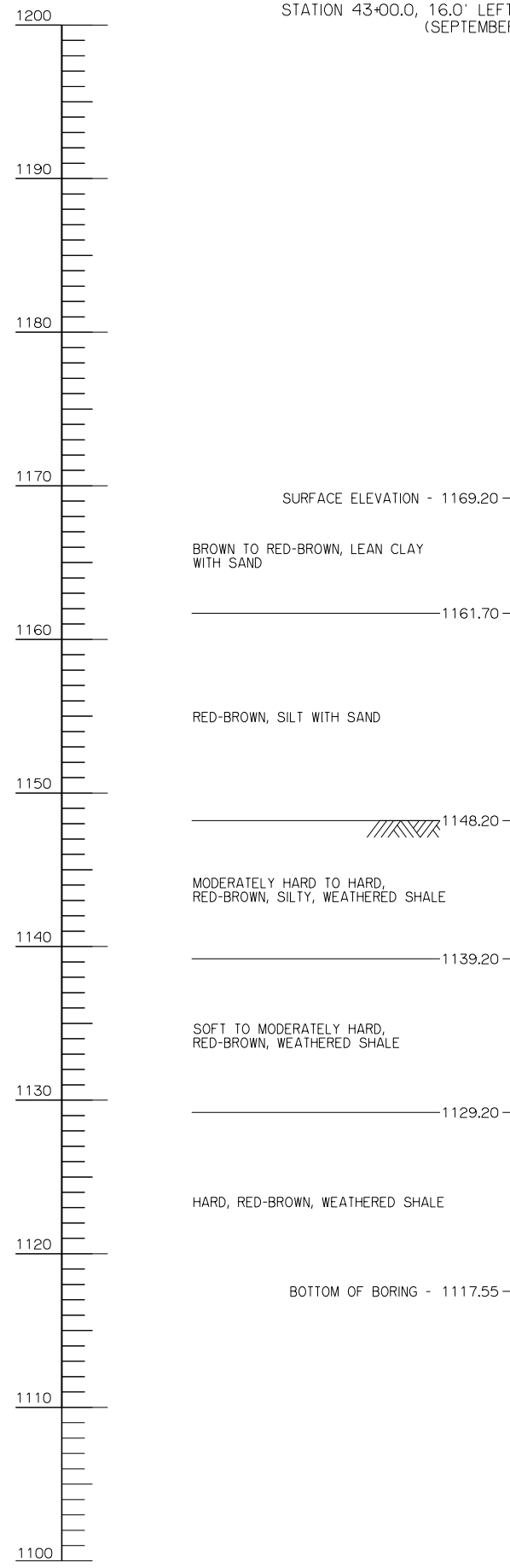
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IOWA AVENUE OVER US-81
BRIDGE 'P'

FOUNDATION BORING LOGS
(SHEET NO. 1 OF 3)

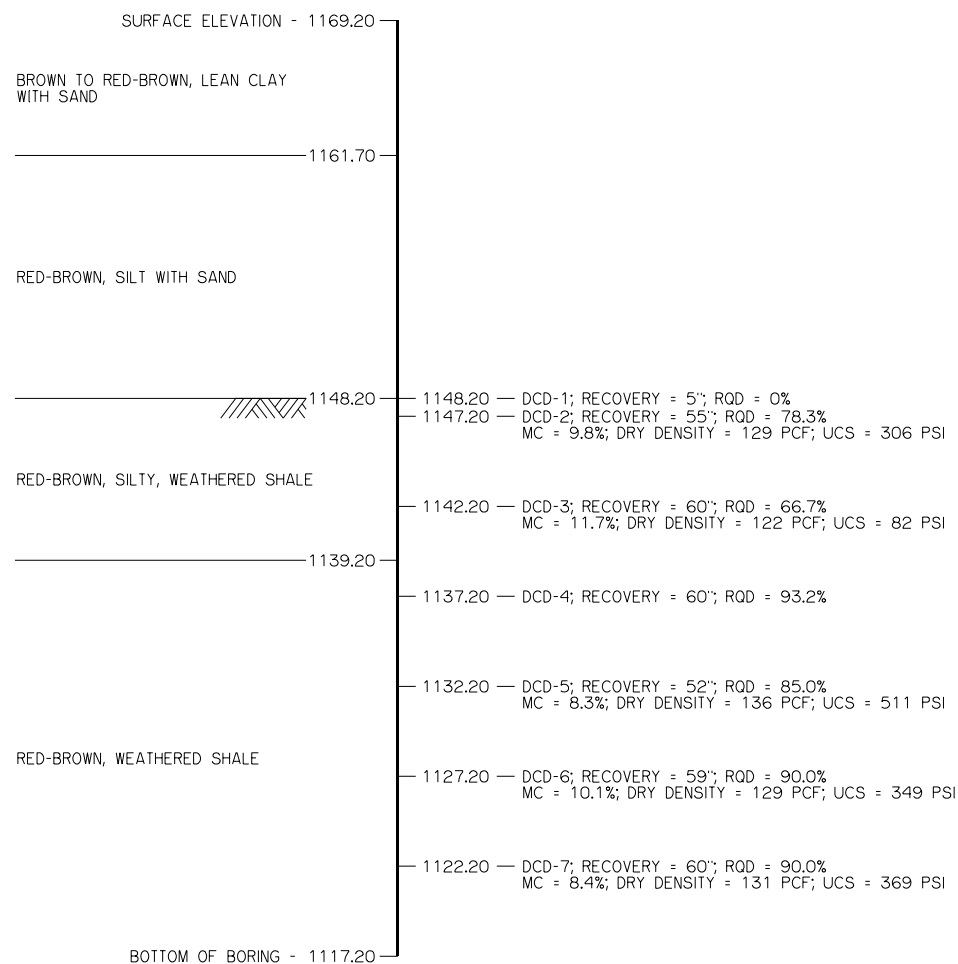
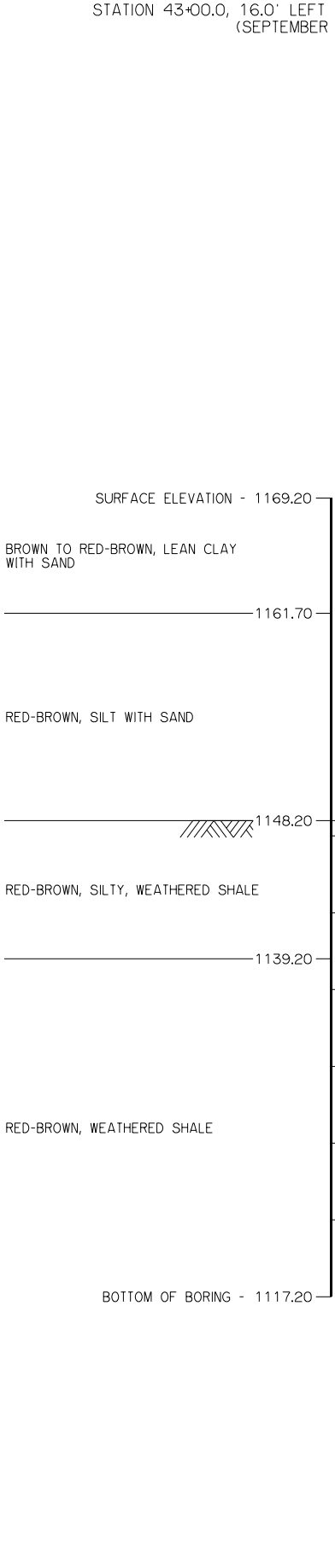
BORING NO. P-3

STATION 43+00.0, 16.0' LEFT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 24, 2019)



BORING NO. P-3A

STATION 43+00.0, 16.0' LEFT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 25, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

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GEOTECHNICAL REPORT

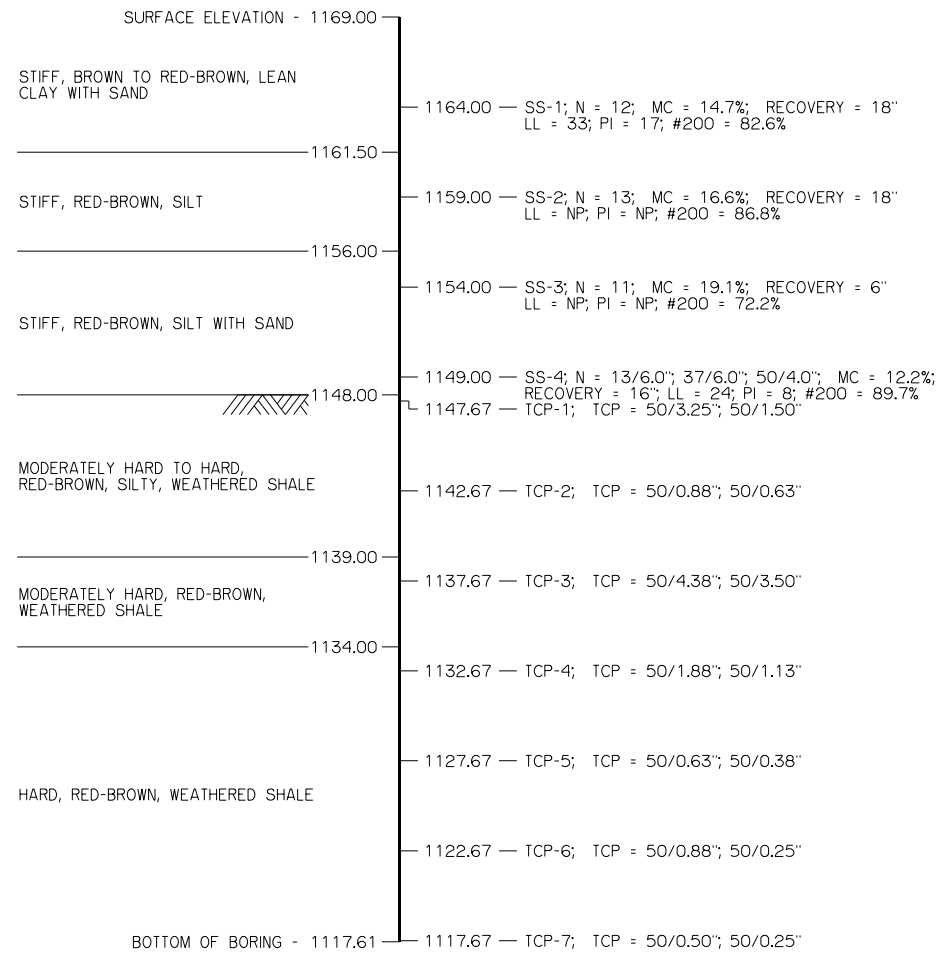
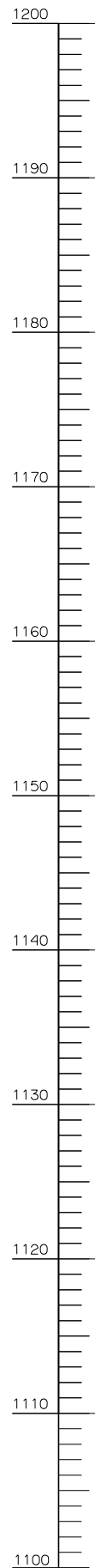
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IOWA AVENUE OVER US-81
BRIDGE 'P'

**FOUNDATION BORING LOGS
(SHEET NO. 2 OF 3)**

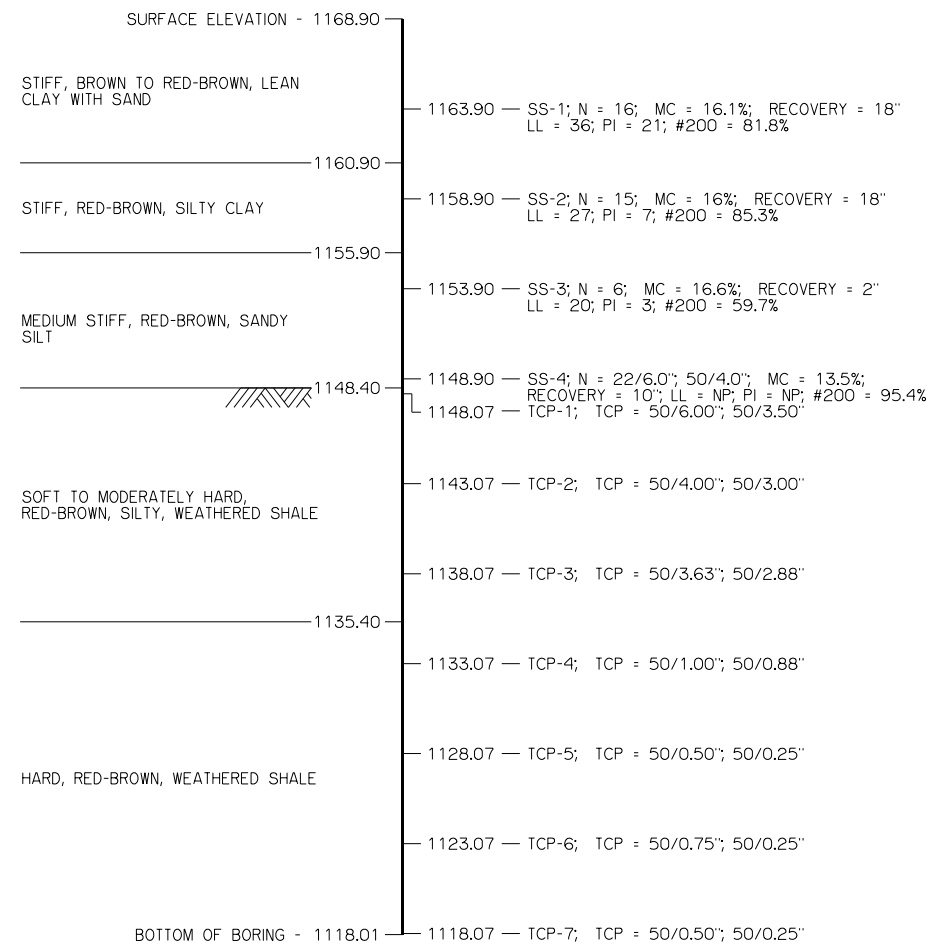
BORING NO. P-4

STATION 43+95.0, 16.0' RIGHT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 24, 2019)



BORING NO. P-5

STATION 44+62.9, 33.2' LEFT OF CL SURVEY IOWA AVENUE
(SEPTEMBER 22, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
SS = SPLIT SPOON SAMPLER
N = NUMBER OF BLOWS PER 12 INCHES
MC = MOISTURE CONTENT
LL = LIQUID LIMIT (NV=NO VALUE)
PI = PLASTICITY INDEX (NP=NO PLASTICITY)
#200 = PERCENT PASSING #200 SIEVE
UCS = UNCONFINED COMPRESSIVE STRENGTH
TCP = TEXAS CONE PENETROMETER
RQD = ROCK QUALITY DESIGNATION
NP = NON-PLASTIC
PCF = POUNDS PER CUBIC FOOT
PSI = POUNDS PER SQUARE INCH
Water level symbols and rock top symbol.

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

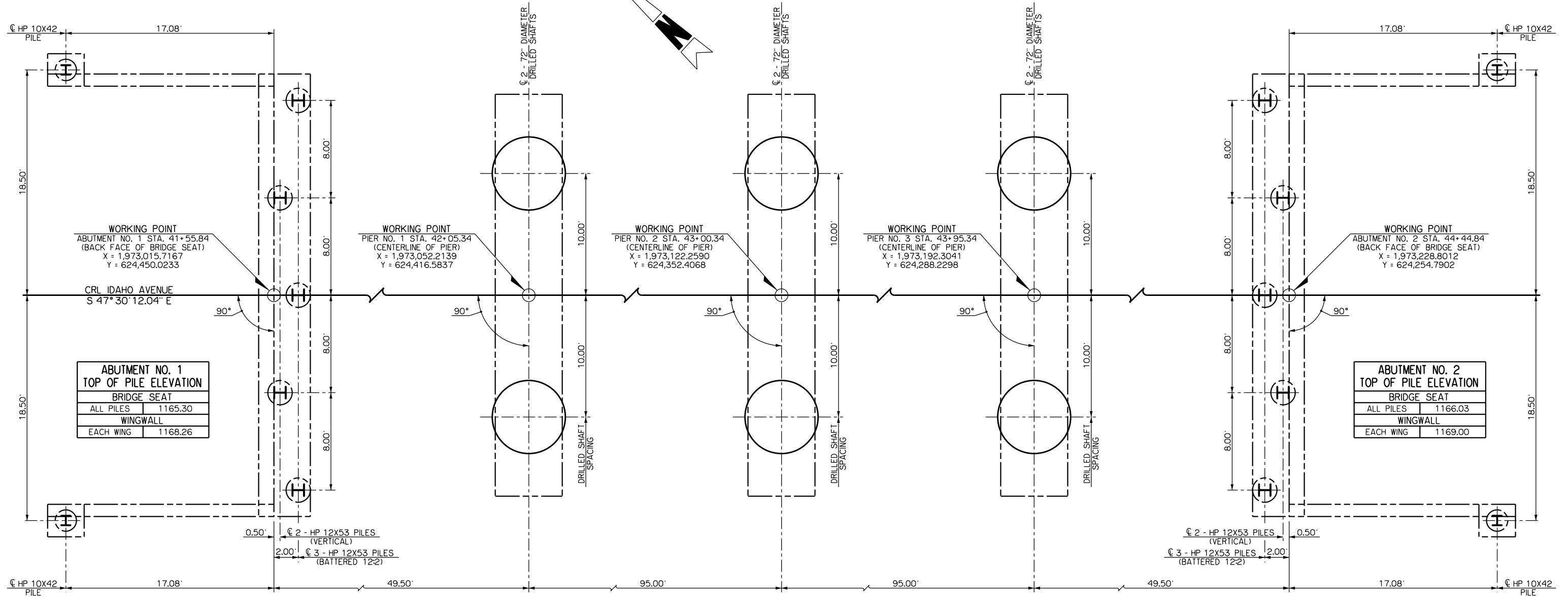
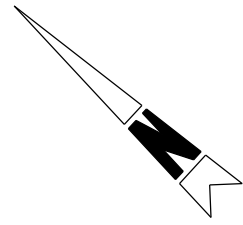
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IOWA AVENUE OVER US-81 BRIDGE 'P'

FOUNDATION BORING LOGS (SHEET NO. 3 OF 3)



ABUTMENT NO. 1 TOP OF PILE ELEVATION	
BRIDGE SEAT	
ALL PILES	1165.30
WINGWALL	
EACH WING	1168.26

ABUTMENT NO. 2 TOP OF PILE ELEVATION	
BRIDGE SEAT	
ALL PILES	1166.03
WINGWALL	
EACH WING	1169.00

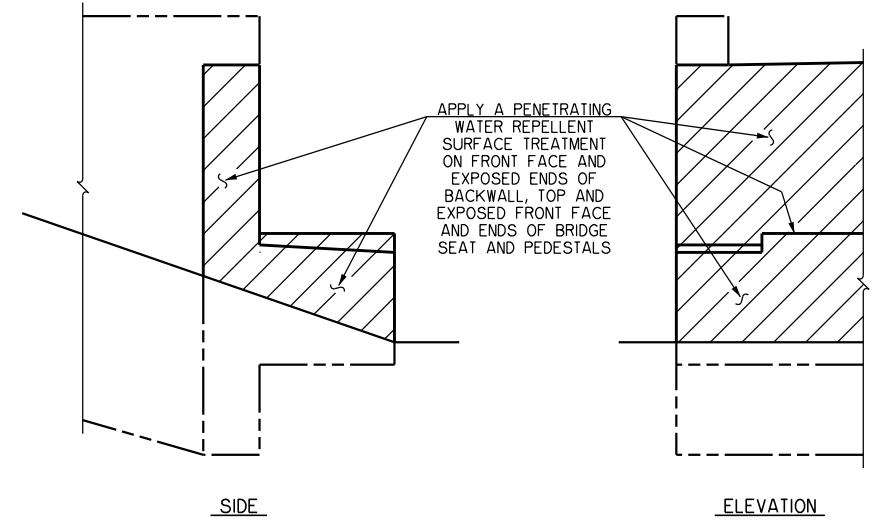
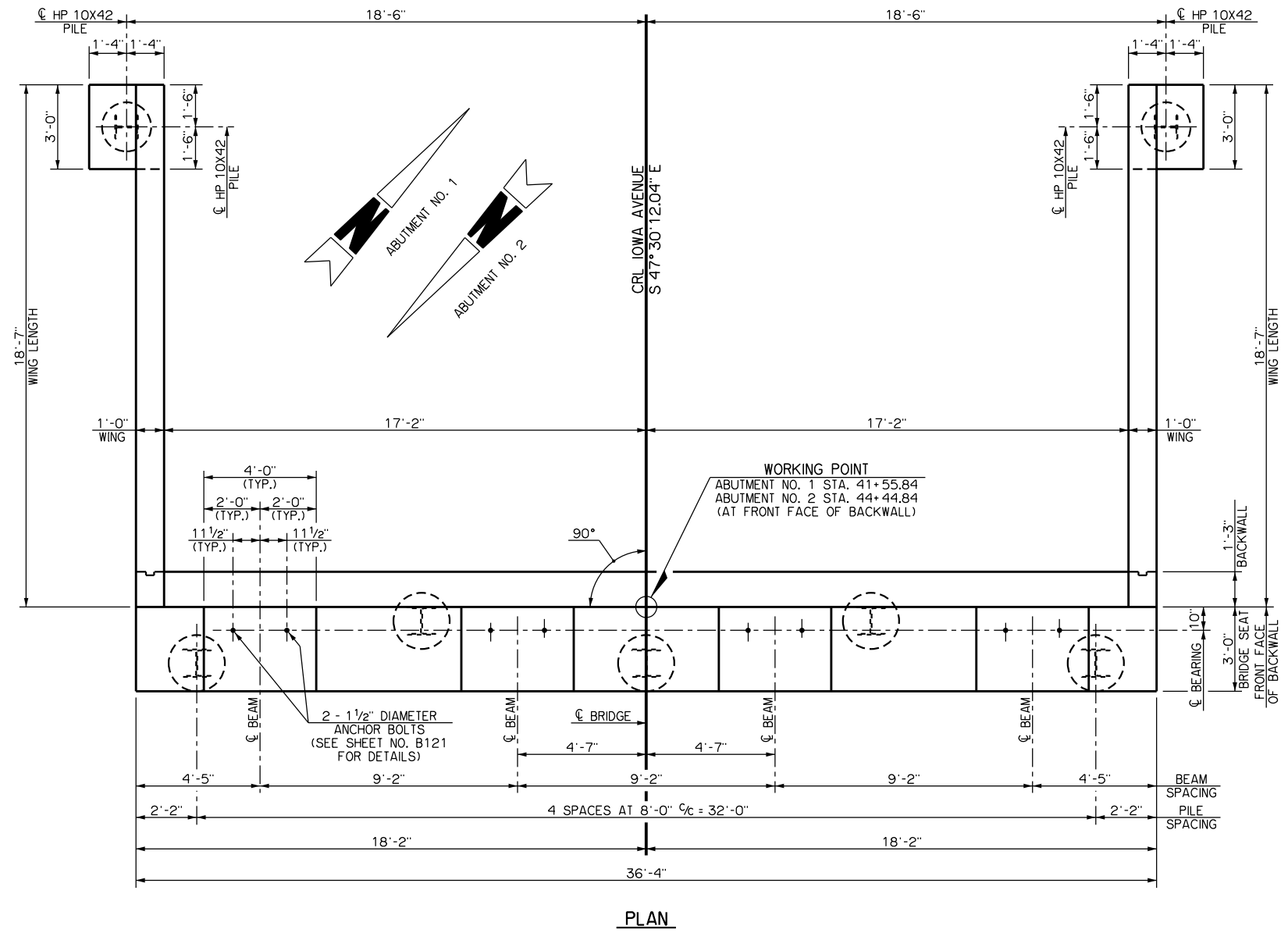
SUBSTRUCTURE STAKING DIAGRAM

NOTES

THE FACE OF THE PILE WEB IN THE ABUTMENT BRIDGE SEAT SHALL BE PERPENDICULAR TO THE FRONT FACE OF THE BRIDGE SEAT.

IOWA AVENUE OVER US-81 BRIDGE 'P' SUBSTRUCTURE STAKING DIAGRAM State Job No. 24428(12)
--

US 81 REALIGNMENT GRADY COUNTY

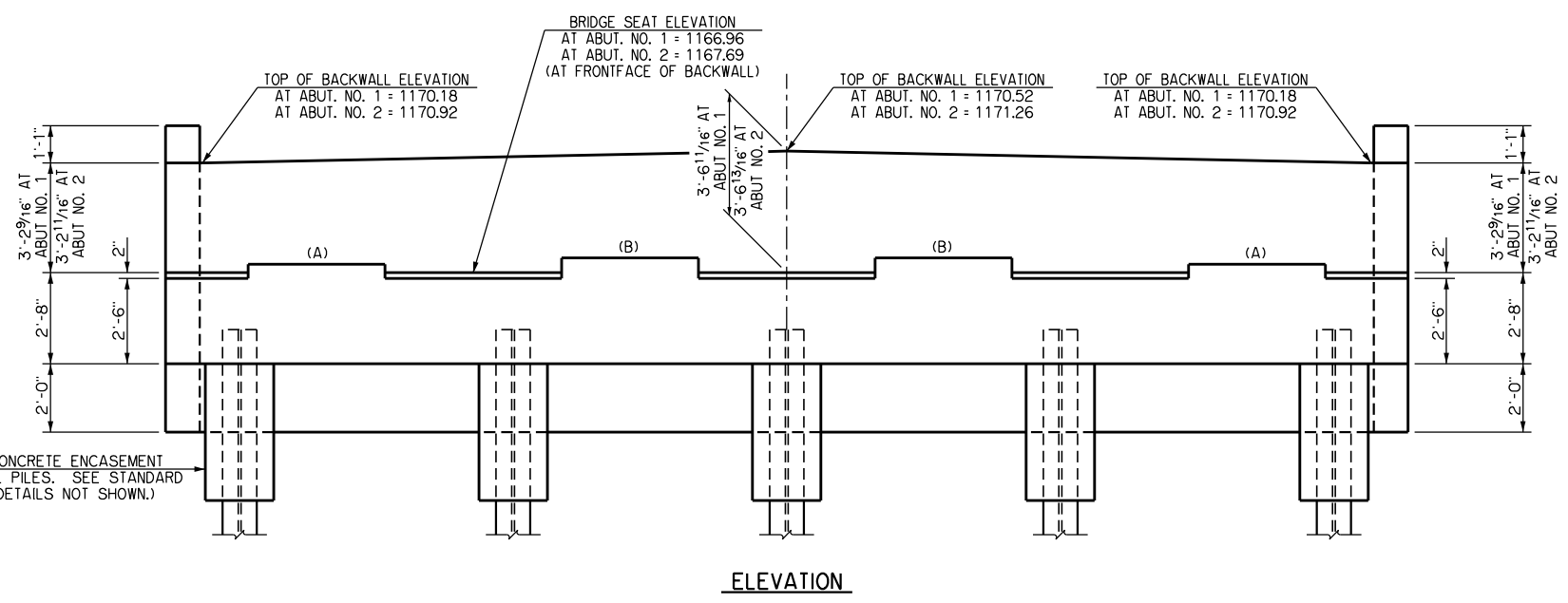


DETAIL OF PENETRATING WATER REPELLENT TREATMENT

BAR LIST - ONE ABUTMENT SHOWN (TWO REQUIRED)

MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
BH1	#9	10	STR.	36'-0"	-
BH2	#4	9	STR.	36'-0"	-
BH3	#4	7	BNT.	37'-10"	-
BH4	#4	15	BNT.	5'-1"	-
(1) BV1	#5	34	STR.	7'-7 1/2" AVG.	7'-6" TO 7'-9"
(1) BV2	#4	34	STR.	7'-7 1/2" AVG.	7'-6" TO 7'-9"
BV3	#4	8	STR.	8'-6"	-
BV4	#4	4	BNT.	3'-6"	-
BV5	#4	2	STR.	2'-1"	-
P1	#4	20	BNT.	5'-8"	-
P2	#4	16	BNT.	6'-8"	-
S1	#5	38	BNT.	13'-1"	-
WT1	#5	2	BNT.	8'-2"	-
(2) WT2	#5	6	BNT.	8'-6" AVG.	5'-8" TO 11'-4"
WT3	#5	10	BNT.	16'-8"	-
WT4	#5	14	BNT.	10'-8"	-

(1) INCLUDES TWO SETS OF 17 BARS
(2) INCLUDES TWO SETS OF 3 BARS



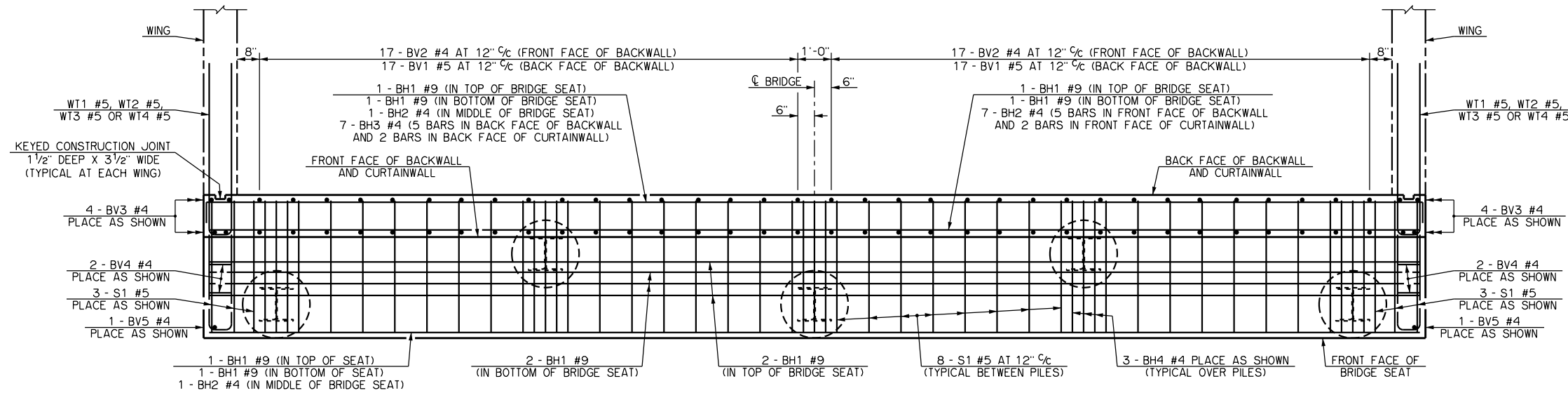
PEDESTAL ELEVATIONS

PEDESTAL	ABUT. NO. 1	ABUT. NO. 2
(A)	1167.21	1167.94
(B)	1167.40	1168.13

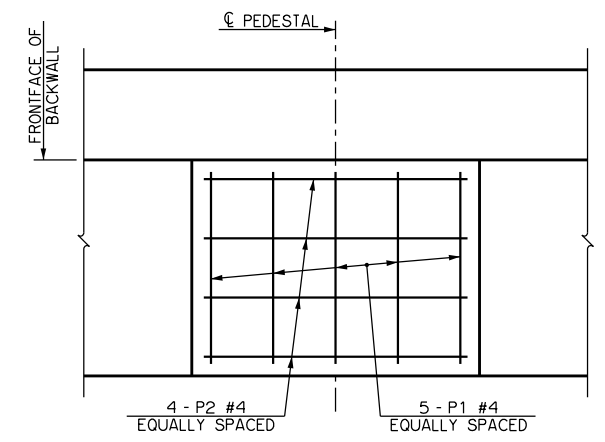
SUMMARY OF QUANTITIES - ABUTMENT NOS. 1 AND 2

ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2
SUBSTRUCTURE EXCAVATION COMMON	CY	105.00	105.00
CLSM BACKFILL	CY	69.00	69.00
CLASS A CONCRETE	CY	33.40	33.40
EPOXY COATED REINFORCING STEEL	LB	4,420.00	4,420.00
PILES, FURNISHED (HP 10X42)	LF	46.00	54.00
PILES, FURNISHED (HP 12X53)	LF	103.00	120.00
PILES, DRIVEN (HP 10X42)	LF	46.00	54.00
PILES, DRIVEN (HP 12X53)	LF	103.00	120.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	36.00	36.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	34.00	34.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	23.00	23.00

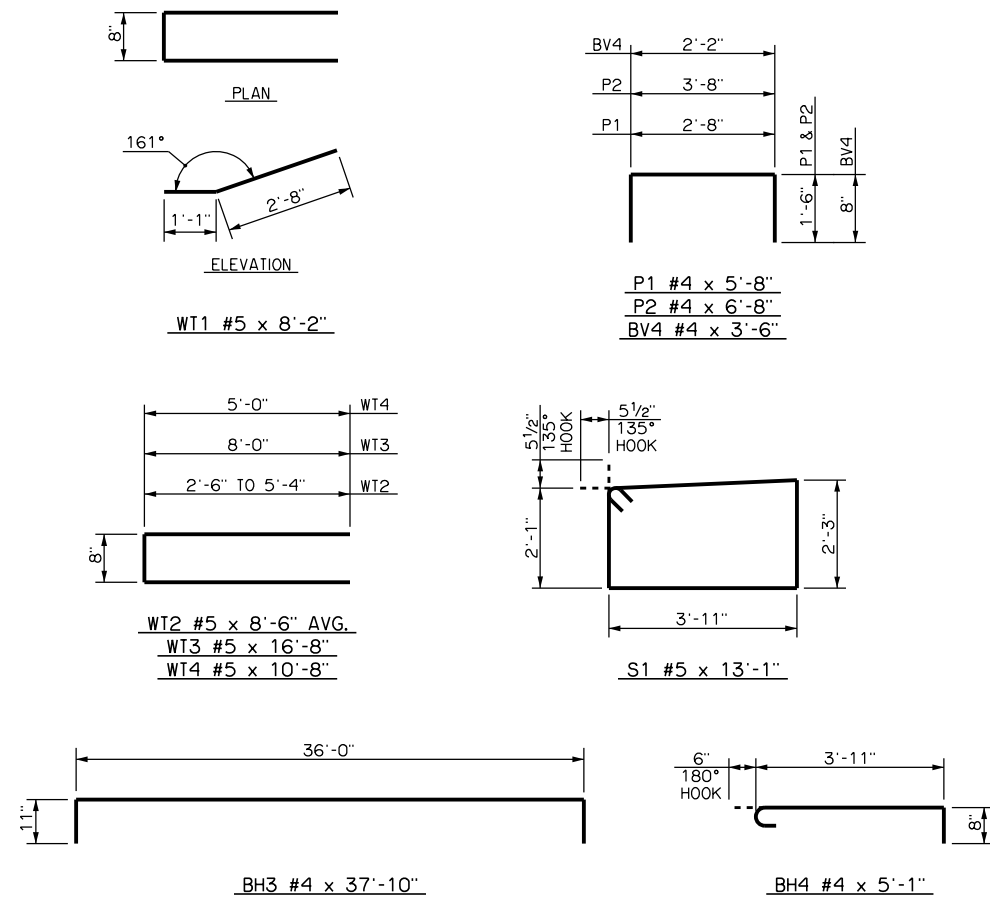
IOWA AVENUE OVER US-81
BRIDGE 'P'
DETAILS OF ABUTMENT NOS. 1 AND 2
(SHEET NO. 1 OF 2)



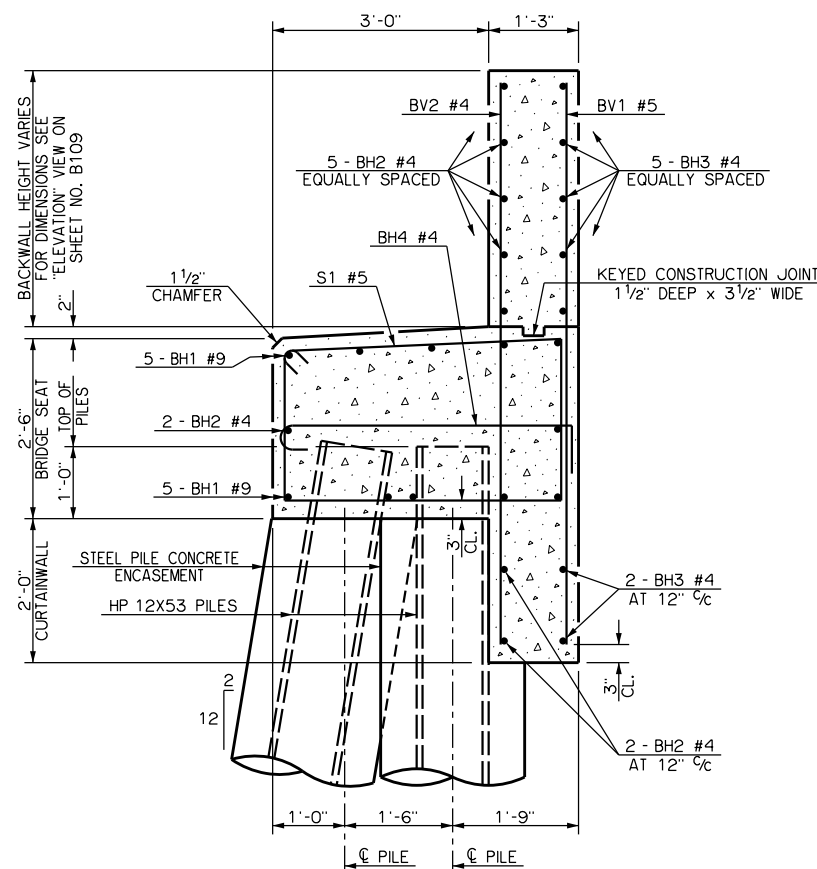
LAYOUT OF ABUTMENT REINFORCING STEEL



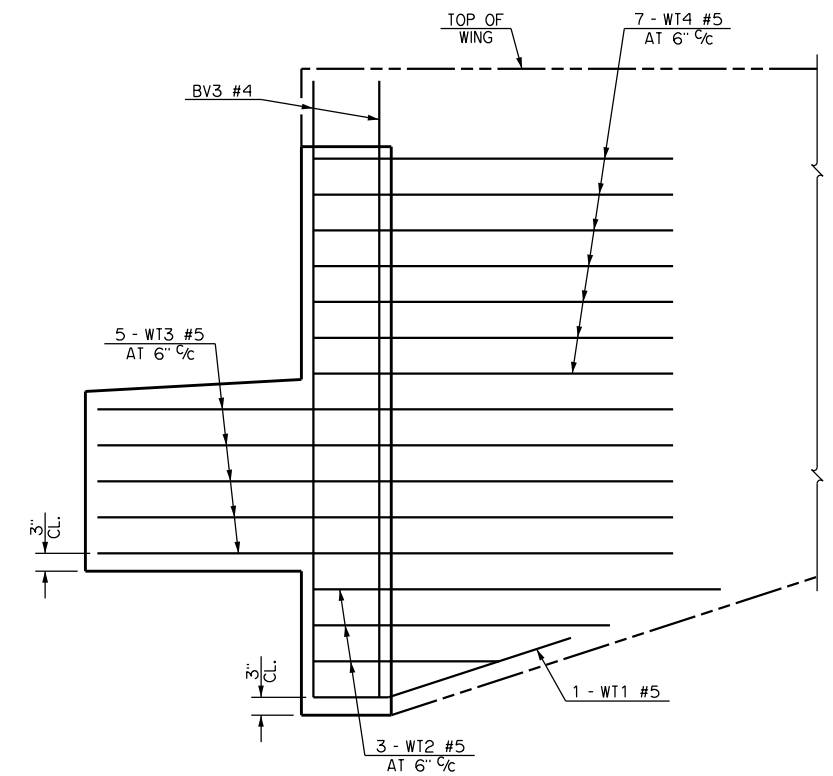
LAYOUT OF PEDESTAL REINFORCING STEEL



DETAILS OF BENT REINFORCING STEEL



SECTION THROUGH BRIDGE SEAT

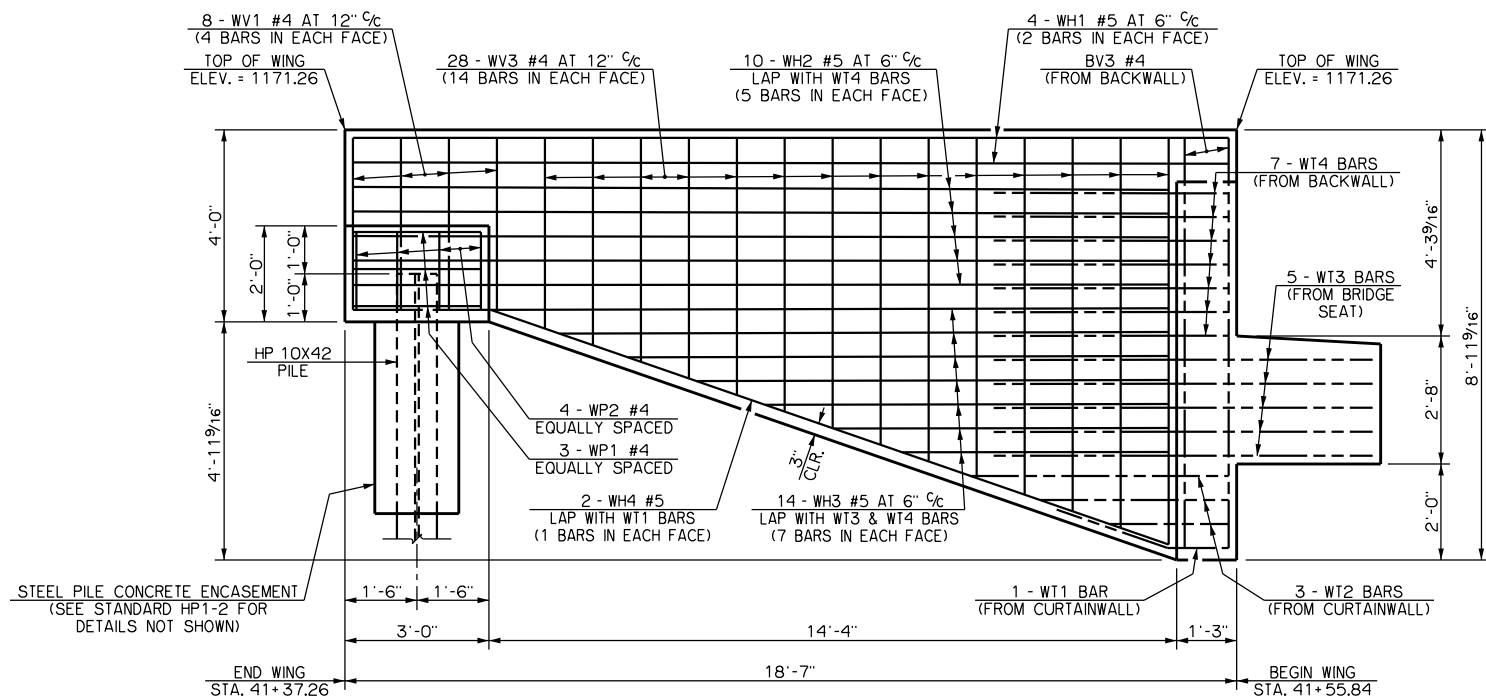


SECTION THRU ABUTMENT AT WING

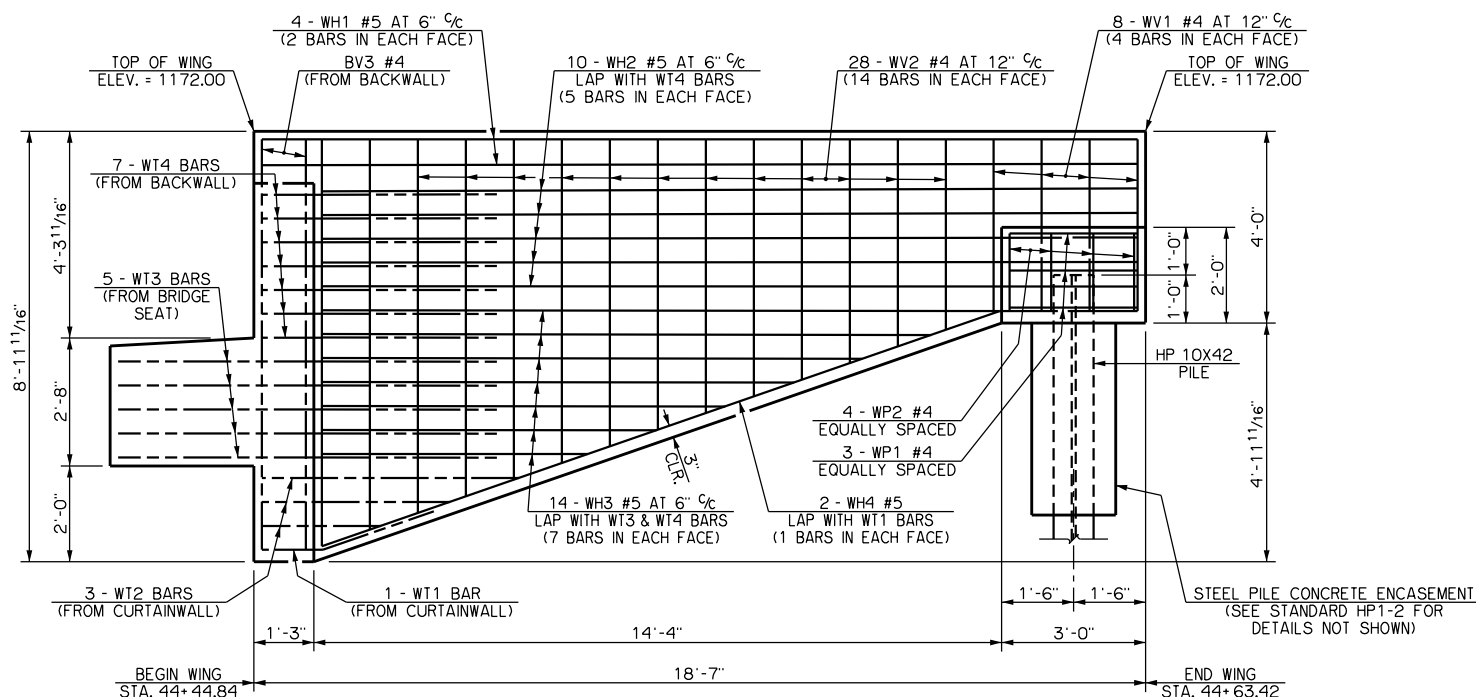
NOTE

ALL WT WING REINFORCING TIED TO ABUTMENT BRIDGE SEAT, BACKWALL, AND CURTAINWALL REINFORCING MUST BE IN PLACE PRIOR TO POURING ABUTMENT CONCRETE. FOR WING DETAILS AND REINFORCING STEEL NOT SHOWN, SEE SHEET NO. B111.

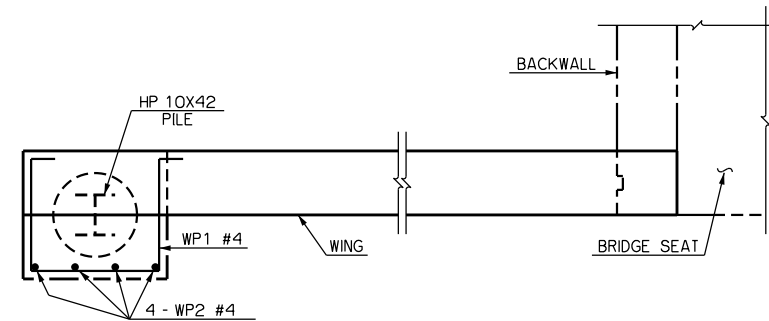
IOWA AVENUE OVER US-81
BRIDGE 'P'
DETAILS OF ABUTMENT NOS. 1 AND 2
(SHEET NO. 2 OF 2)



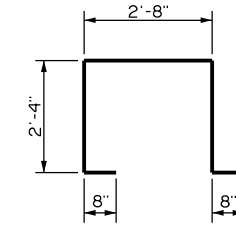
ELEVATION ON WING AT ABUTMENT NO. 1



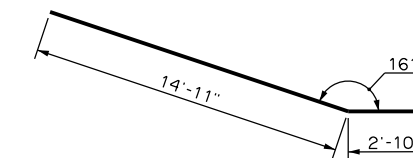
ELEVATION OF WING AT ABUTMENT NO. 2



PLAN OF REINFORCING STEEL AT WING PILE CONCRETE BLOCK OUT



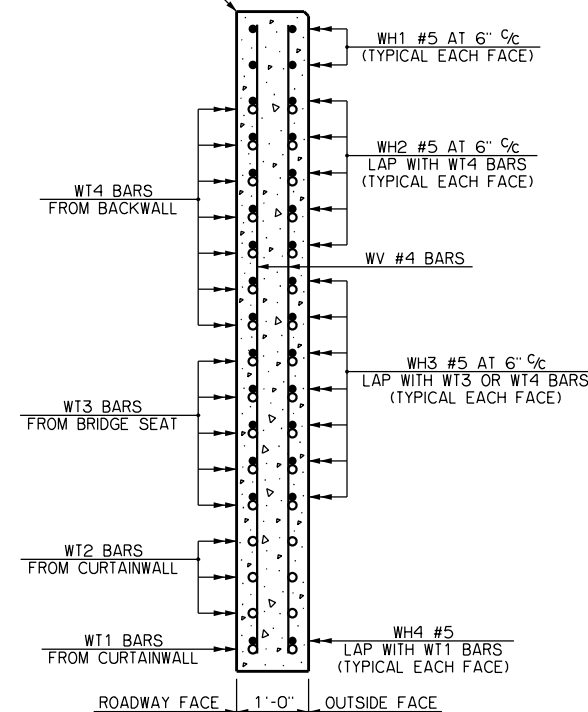
WP1 #4 X 8'-8"



WH4 #5 X 17'-9"

DETAILS OF BENT REINFORCING STEEL

NOTE: THE TOP CORNER OF THE ROADWAY FACE OF WINGS SHALL NOT BE CHAMFERED



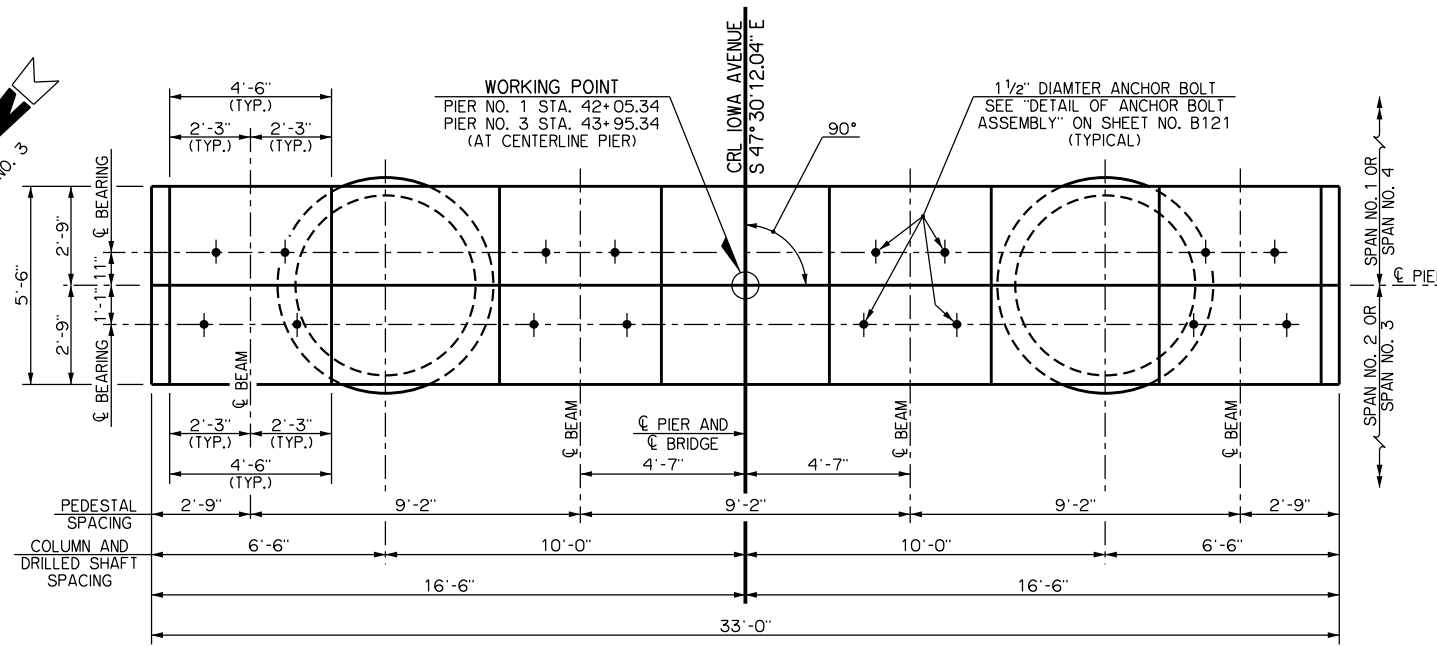
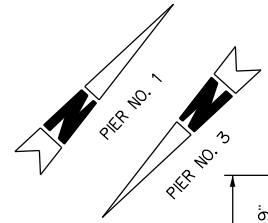
SECTION THRU WING (AT BACK FACE OF BACKWALL)

BAR LIST - ONE WING SHOWN (FOUR REQUIRED)					
MARK	SIZE	NO.	FORM	LENGTH	LENGTH VARIATION
EPOXY COATED					
WH1	#5	4	STR.	18'-3"	-
WH2	#5	10	STR.	17'-0"	-
(1) WH3	#5	14	STR.	9'-10" AVG.	5'-7" TO 14'-1"
WH4	#5	2	BNT.	17'-9"	-
WP1	#4	3	BNT.	8'-8"	-
WP2	#4	4	STR.	1'-7"	-
WV1	#4	8	STR.	3'-7"	-
(2) WV2	#4	28	STR.	6'-2" AVG.	3'-11" TO 8'-5"

(1) INCLUDES TWO SETS OF 7 BARS
(2) INCLUDES TWO SETS OF 14 BARS

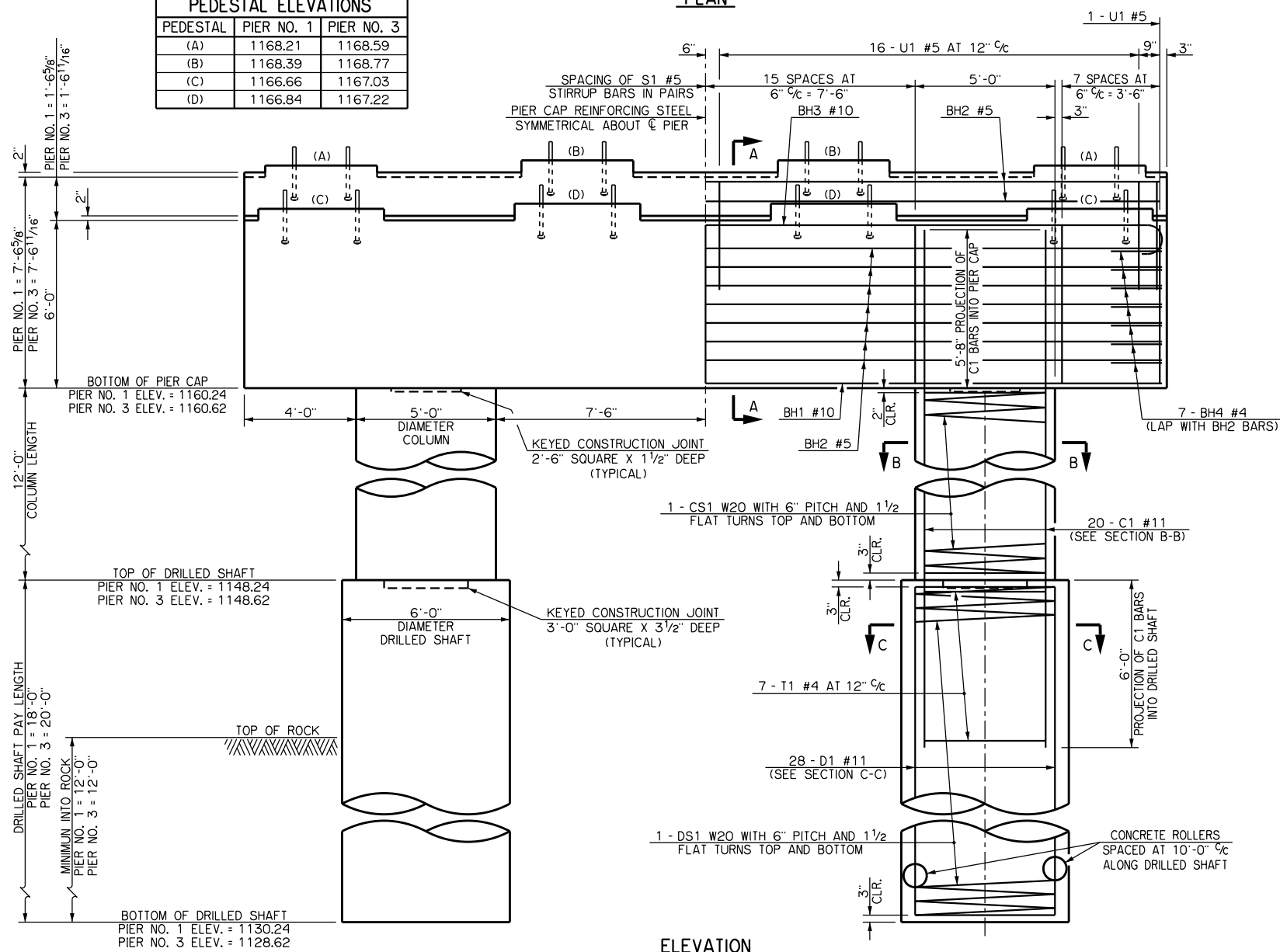
IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF WINGS

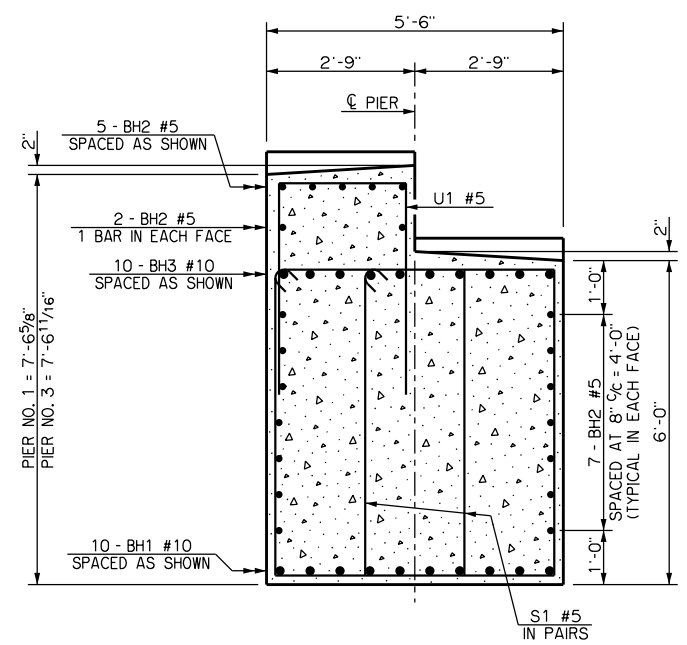


PEDESTAL ELEVATIONS		
PEDESTAL	PIER NO. 1	PIER NO. 3
(A)	1168.21	1168.59
(B)	1168.39	1168.77
(C)	1166.66	1167.03
(D)	1166.84	1167.22

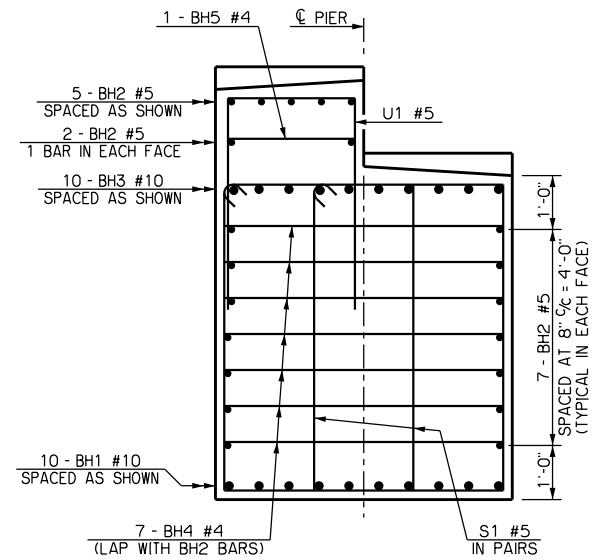
PLAN



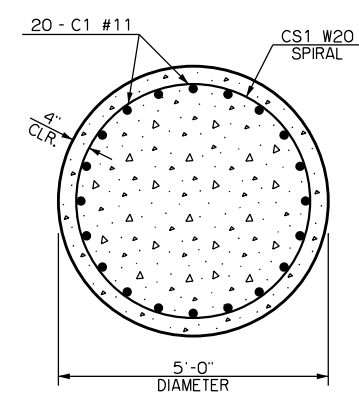
ELEVATION



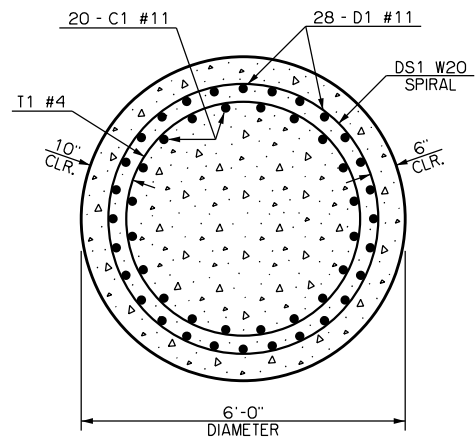
SECTION A-A



END OF PIER CAP REINFORCING



SECTION B-B



SECTION C-C

BAR LIST - PIER NO. 1				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	32'-8"
BH2	#5	21	STR.	32'-8"
BH3	#10	10	BNT.	35'-2"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	40	BNT.	5'-5"
P2	#4	32	BNT.	7'-2"
S1	#5	94	BNT.	19'-3"
U1	#5	34	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	356'-6"

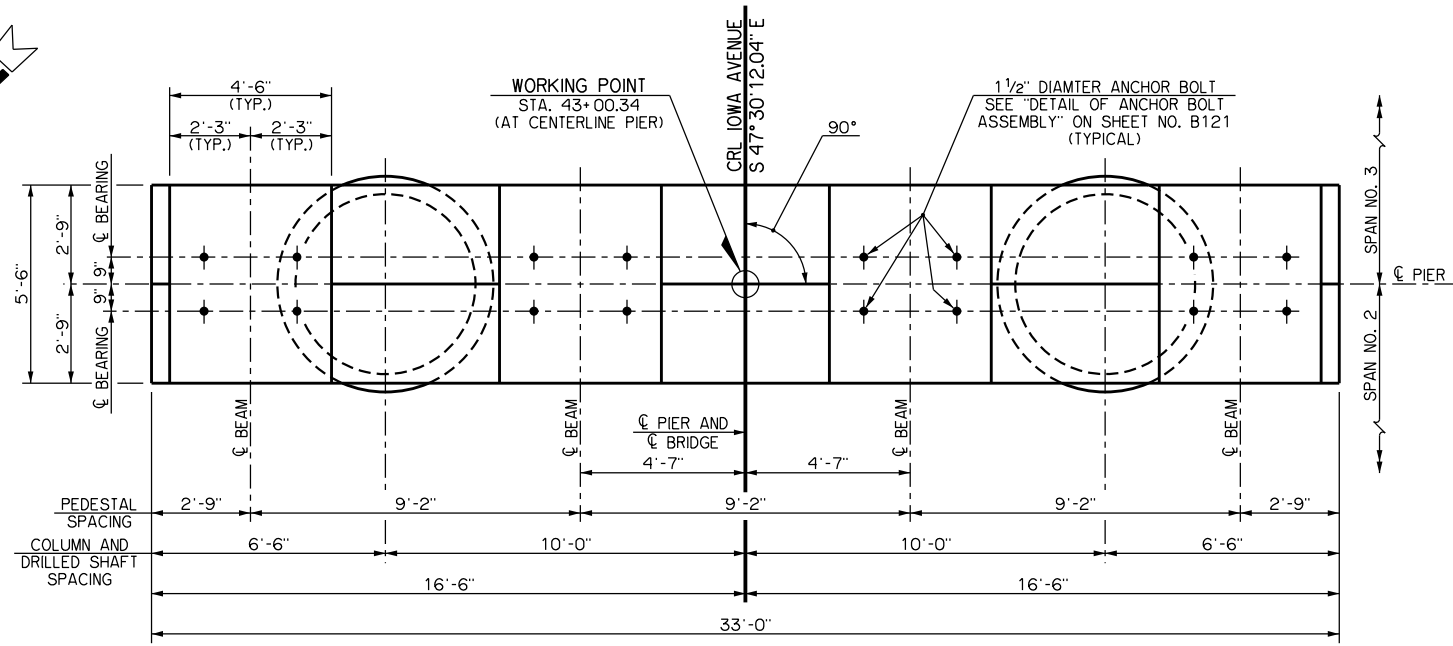
BAR LIST - PIER NO. 3				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	32'-8"
BH2	#5	21	STR.	32'-8"
BH3	#10	10	BNT.	35'-2"
BH4	#4	14	BNT.	8'-9"
BH5	#4	2	BNT.	6'-0"
P1	#4	40	BNT.	5'-5"
P2	#4	32	BNT.	7'-2"
S1	#5	94	BNT.	19'-3"
U1	#5	34	BNT.	10'-3"
UNCOATED				
CS1	W20	2	BNT.	356'-6"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

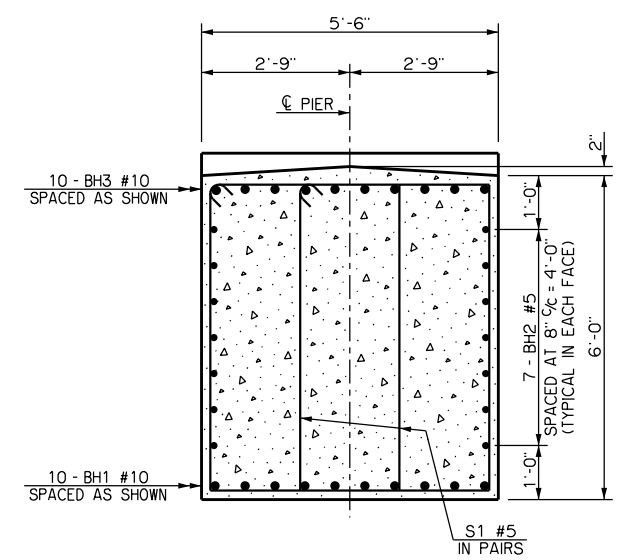
SUMMARY OF QUANTITIES - PIER NOS. 1 AND 3			
ITEM	UNIT	PIER NO. 1	PIER NO. 3
CLASS A CONCRETE	CY	65.20	65.20
REINFORCING STEEL	LB	490.00	490.00
EPOXY COATED REINFORCING STEEL	LB	6,280.00	6,280.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	84.00	84.00
DRILLED SHAFTS 72" DIAMETER	LF	36.00	40.00

IOWA AVENUE OVER US-81 BRIDGE 'P'

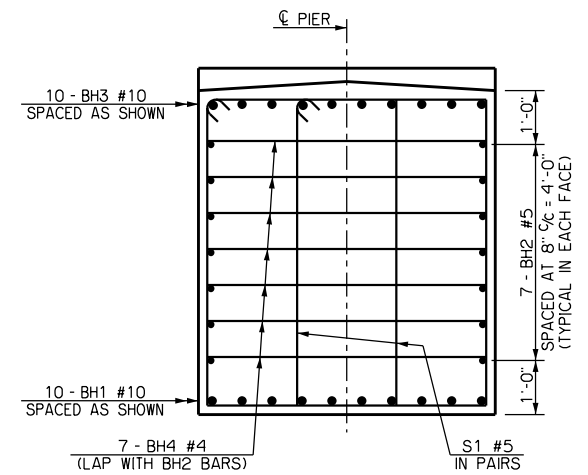
DETAILS OF PIER NOS. 1 AND 3



PLAN



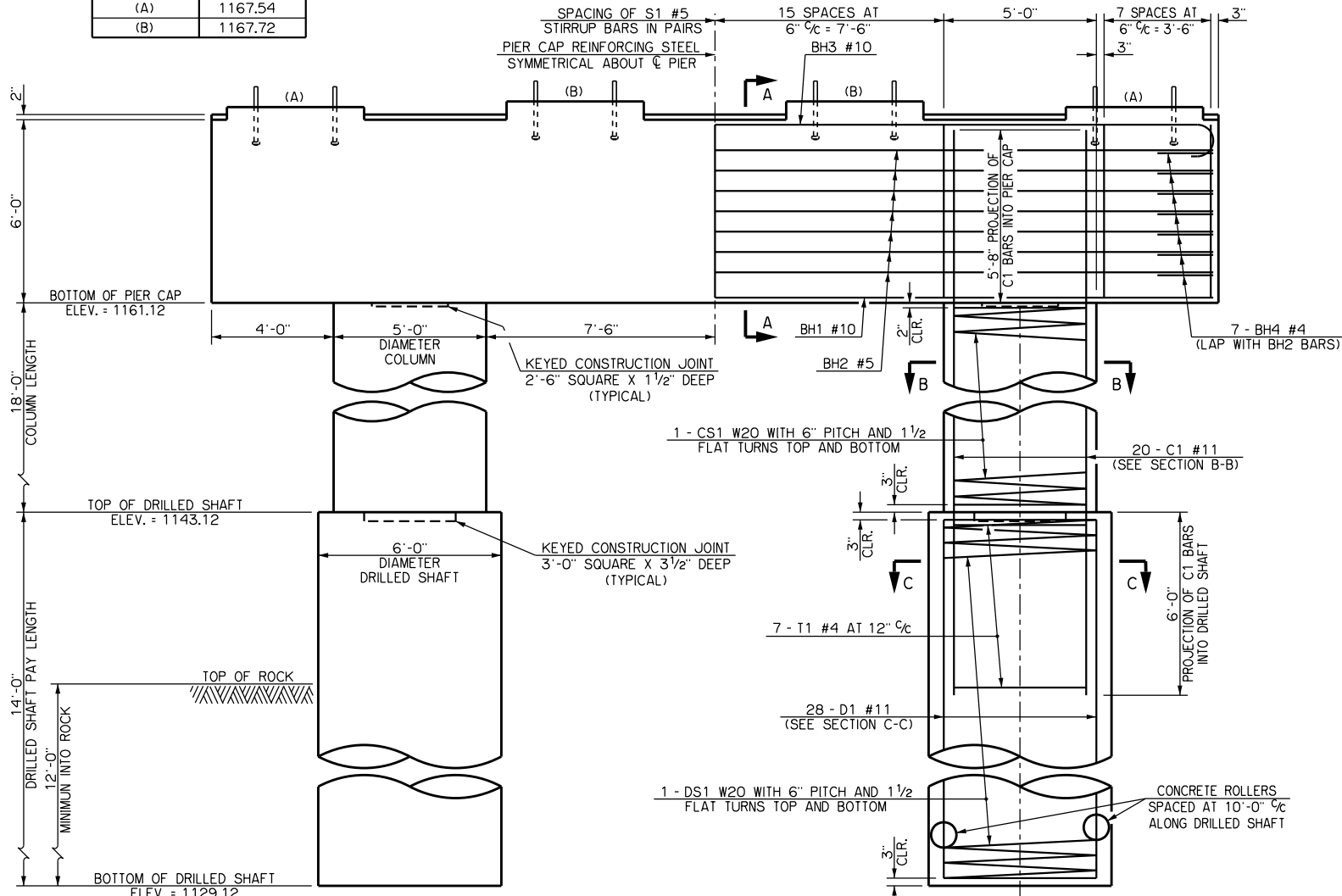
SECTION A-A



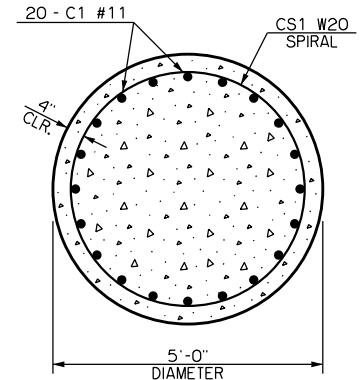
END OF PIER CAP REINFORCING

PEDESTAL ELEVATIONS

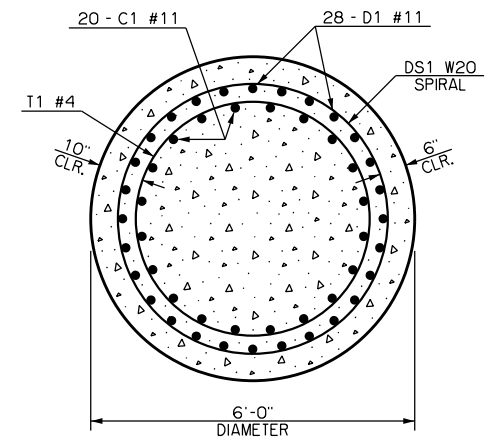
PEDESTAL	ELEVATION
(A)	1167.54
(B)	1167.72



ELEVATION



SECTION B-B



SECTION C-C

BAR LIST - PIER NO. 2

MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
BH1	#10	10	STR.	32'-8"
BH2	#5	14	STR.	32'-8"
BH3	#10	10	BNT.	35'-2"
BH4	#4	14	BNT.	8'-9"
P2	#4	24	BNT.	7'-2"
P3	#4	20	BNT.	8'-2"
S1	#5	94	BNT.	19'-3"
UNCOATED				
CS1	W20	2	BNT.	519'-11"
TWO DRILLED SHAFTS (1)				
EPOXY COATED				
C1	#11	40	STR.	29'-8"
UNCOATED				
D1	#11	56	STR.	13'-6"
DS1	W20	2	BNT.	471'-6"
T1	#4	14	BNT.	16'-0"

(1) INCLUDED IN PRICE BID PER LINEAR FOOT OF DRILLED SHAFT.

SUMMARY OF QUANTITIES - PIER NO. 2

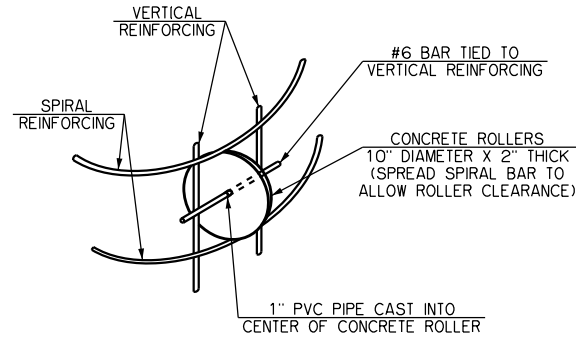
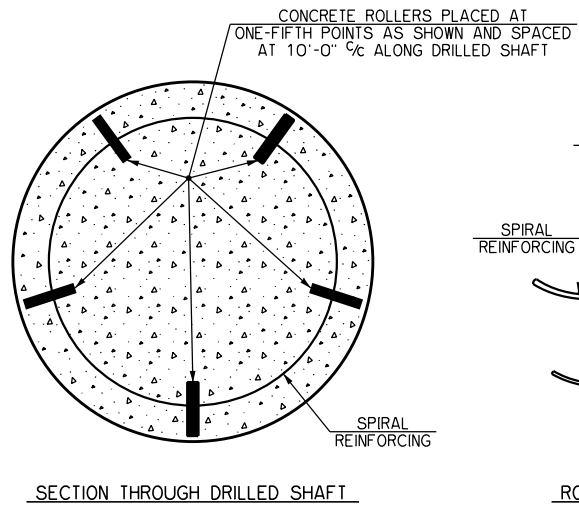
ITEM	UNIT	TOTAL
CLASS A CONCRETE	CY	68.70
REINFORCING STEEL	LB	710.00
EPOXY COATED REINFORCING STEEL	LB	5,590.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	76.00
DRILLED SHAFTS 72" DIAMETER	LF	28.00

IOWA AVENUE OVER US-81 BRIDGE 'P'

DETAILS OF PIER NO. 2

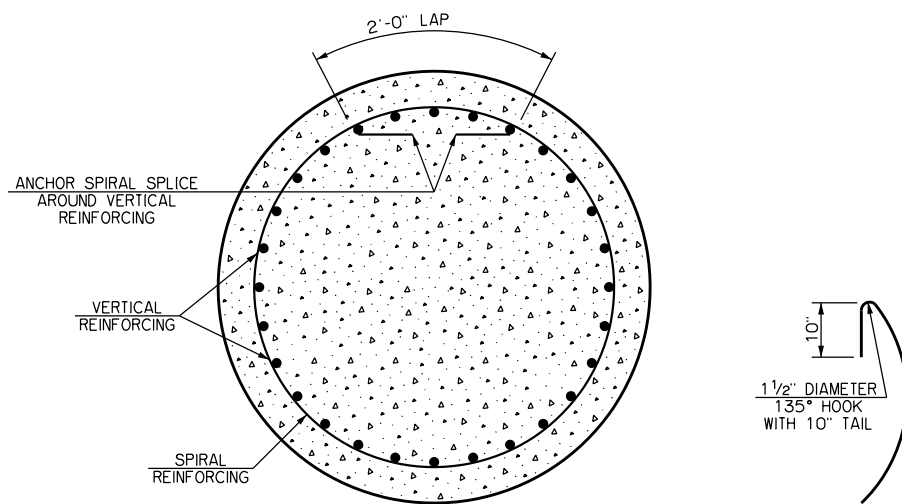
State Job No. 24428(12) Sheet No. B113

US 81 REALIGNMENT GRADY COUNTY

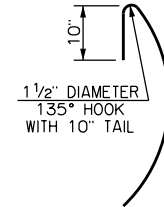


DETAILS OF CONCRETE ROLLERS

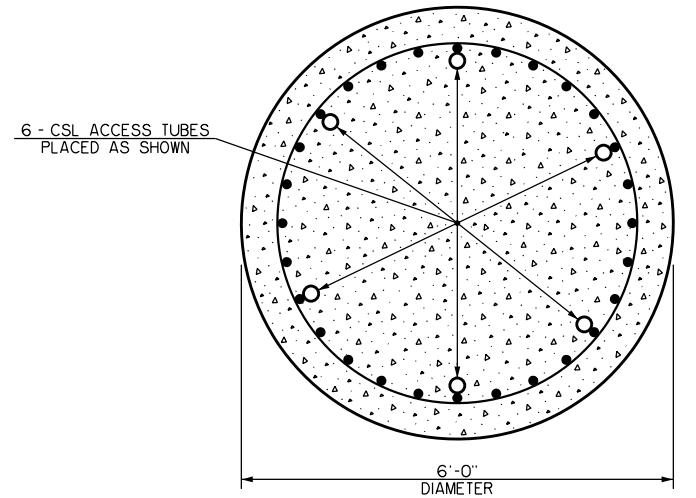
CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 P.S.I. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS. COST OF CONCRETE ROLLERS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FEET OF DRILLED SHAFT.



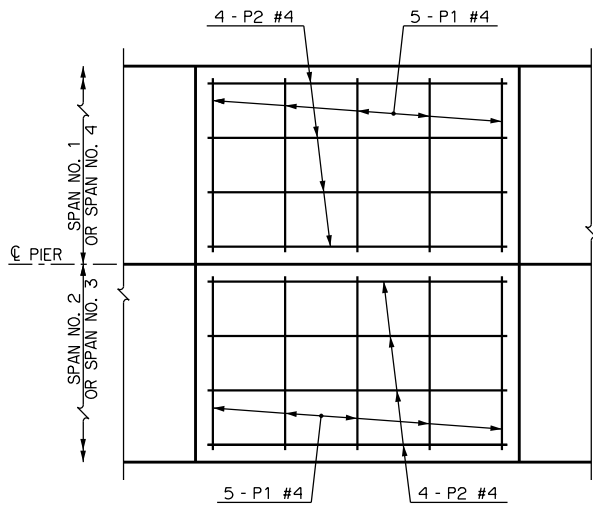
SECTION THROUGH COLUMN OR DRILLED SHAFT



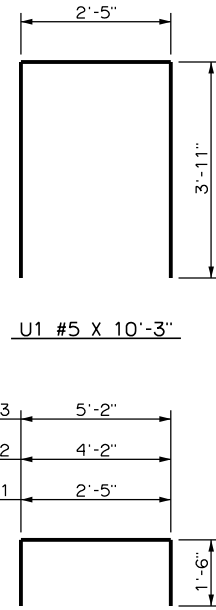
DETAIL OF 135° HOOK



SECTION THROUGH DRILLED SHAFT SHOWING PLACEMENT OF CROSSHOLE SONIC LOGGING ACCESS TUBES



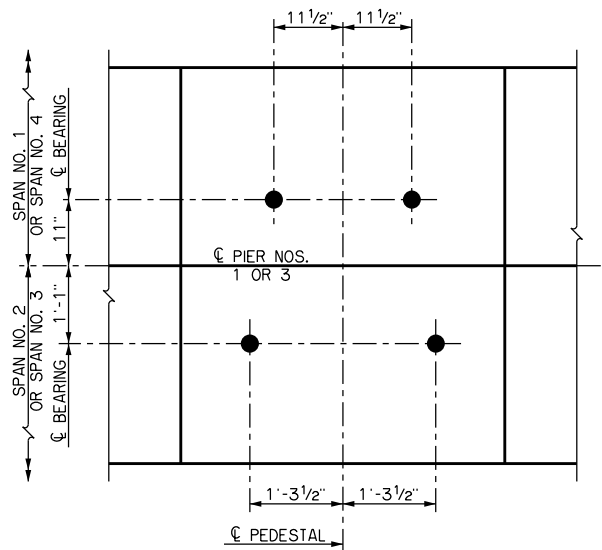
PLAN OF PEDESTAL REINFORCING AT PIER NOS. 1 AND 3



- P1 #4 X 5'-5"
- P2 #4 X 7'-2"
- P3 #4 X 8'-2"

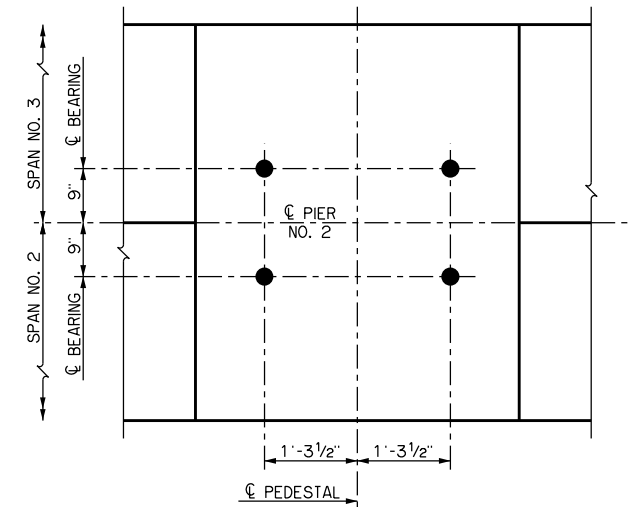
DETAILS OF SPIRAL REINFORCING STEEL SPLICE

SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAP. IF LAP IS REQUIRED, THE LENGTH OF THE LAP SHALL BE AS SHOWN.



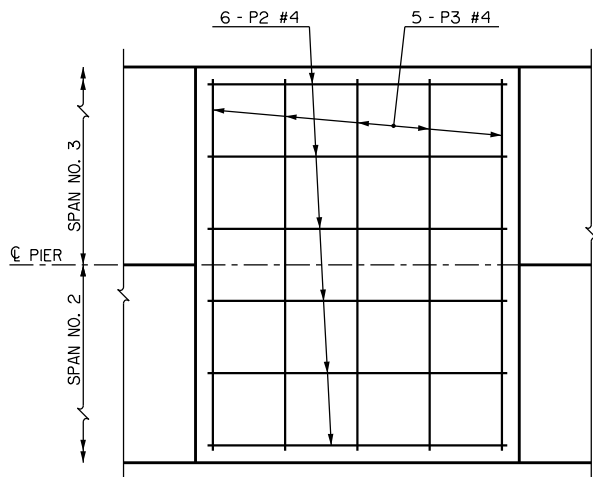
TYPICAL PLAN OF ANCHOR BOLT LAYOUT AT PIER NOS. 1 AND 3

ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B121 FOR DETAILS.

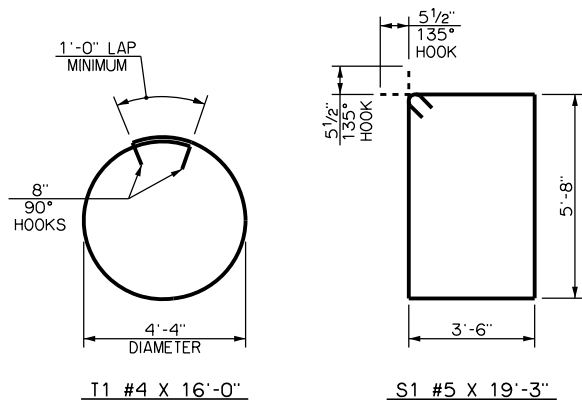


TYPICAL PLAN OF ANCHOR BOLT LAYOUT AT PIER NO. 2

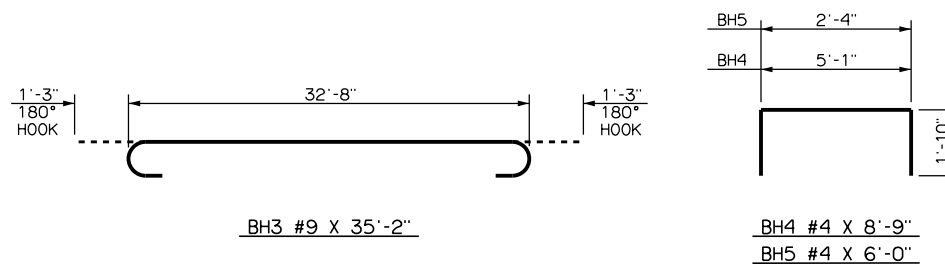
ANCHOR BOLTS SHALL BE 1 1/2" DIAMETER. SEE "DETAIL OF ANCHOR BOLT ASSEMBLY" ON SHEET NO. B121 FOR DETAILS.



PLAN OF PEDESTAL REINFORCING AT PIER NO. 2



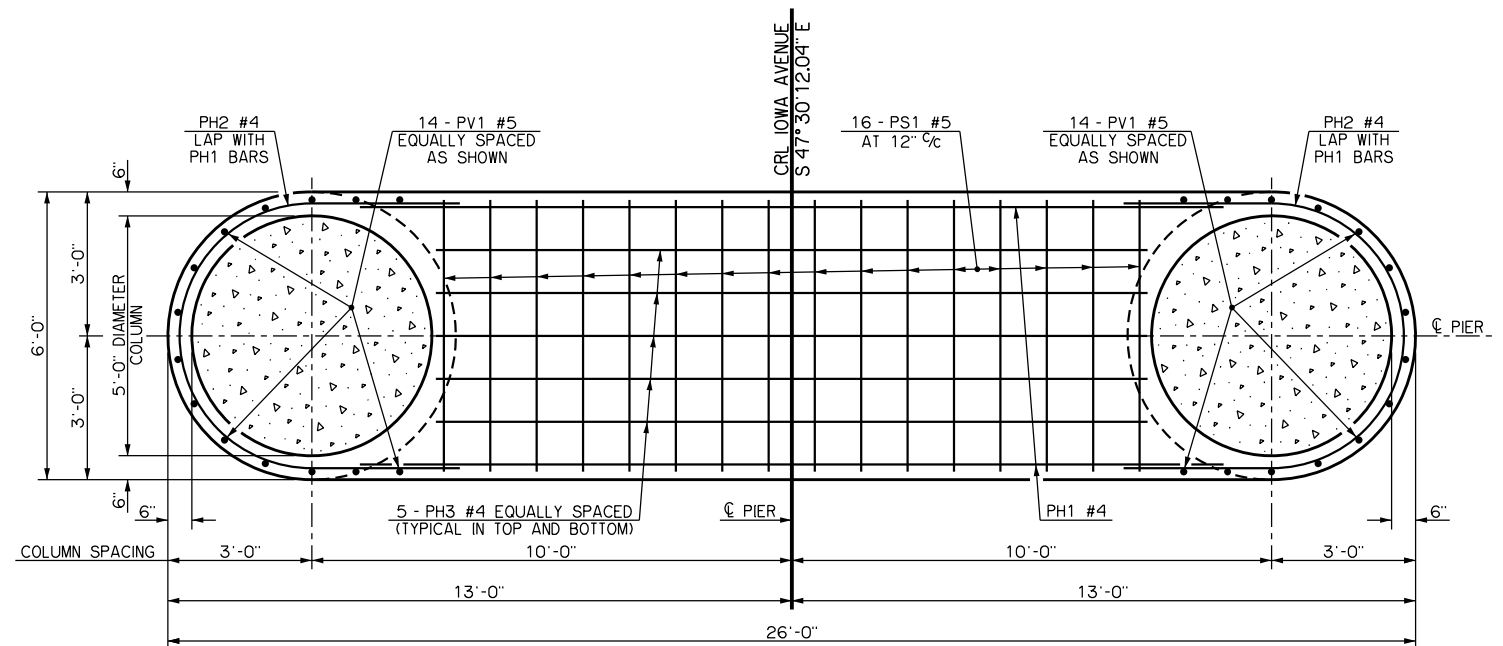
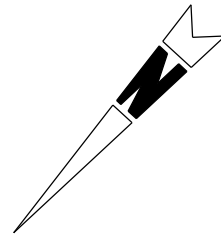
DETAILS OF BENT REINFORCING STEEL



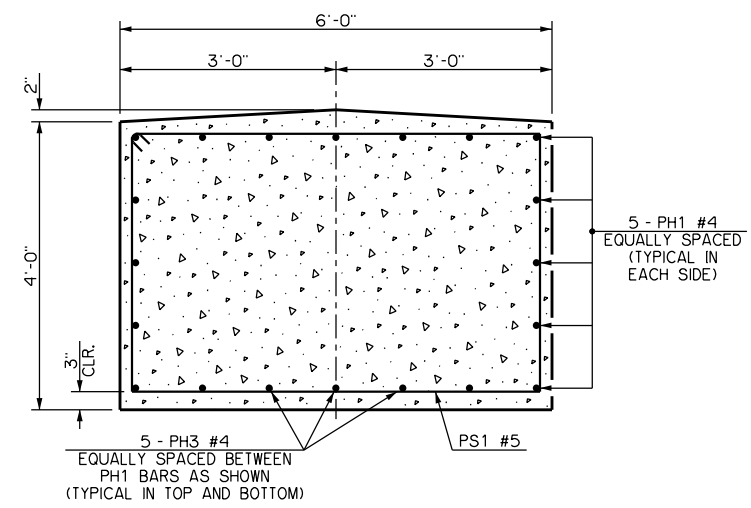
ANCHOR BOLT LAYOUT AT PIER NO. 1

IOWA AVENUE OVER US-81
BRIDGE 'P'

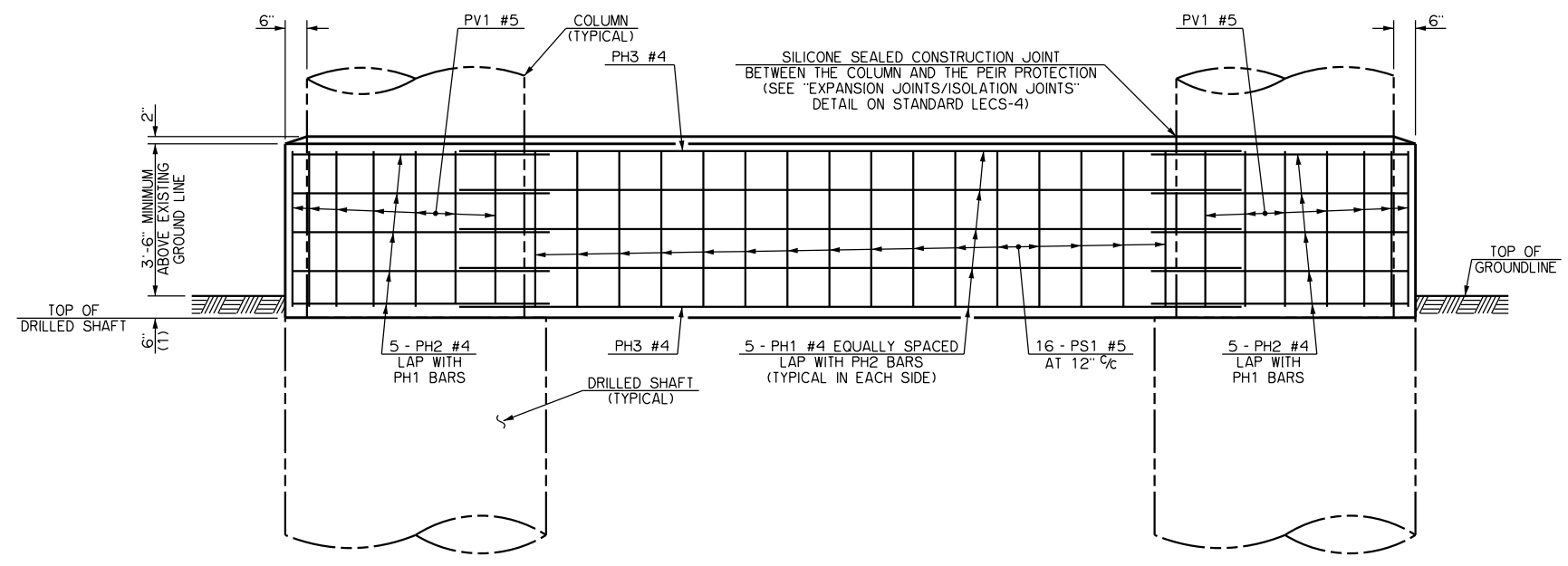
DETAILS OF PIER NOS. 1, 2 AND 3



PLAN



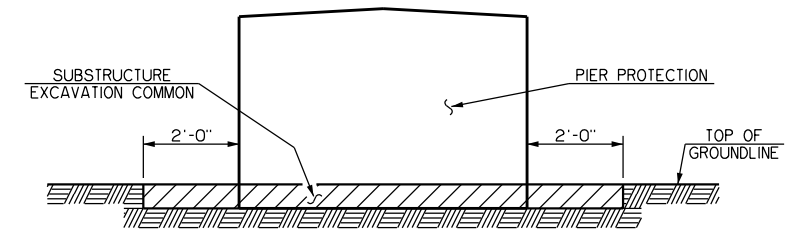
TYPICAL SECTION



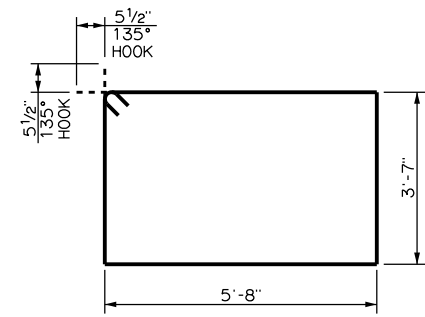
ELEVATION

BAR LIST - PIER PROTECTION				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
PH1	#4	10	STR.	18'-0"
PH2	#4	10	BNT.	14'-11"
PH3	#4	10	STR.	14'-10"
PS1	#5	16	BNT.	19'-5"
PV1	#5	28	STR.	3'-7"

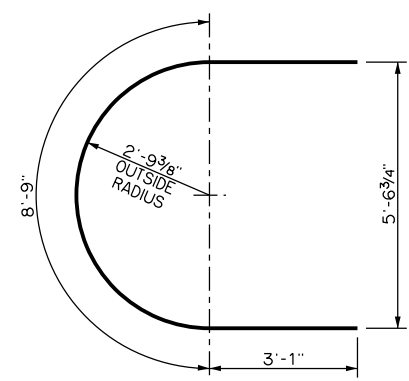
SUMMARY OF QUANTITIES - PIER PROTECTION		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	5.00
CLASS A CONCRETE	CY	16.60
EPOXY COATED REINFORCING STEEL	LB	750.00



DETAIL OF EXCAVATION FOR PIER PROTECTION



PS1 #5 X 19'-5"



PH2 #4 X 14'-11"

NOTES

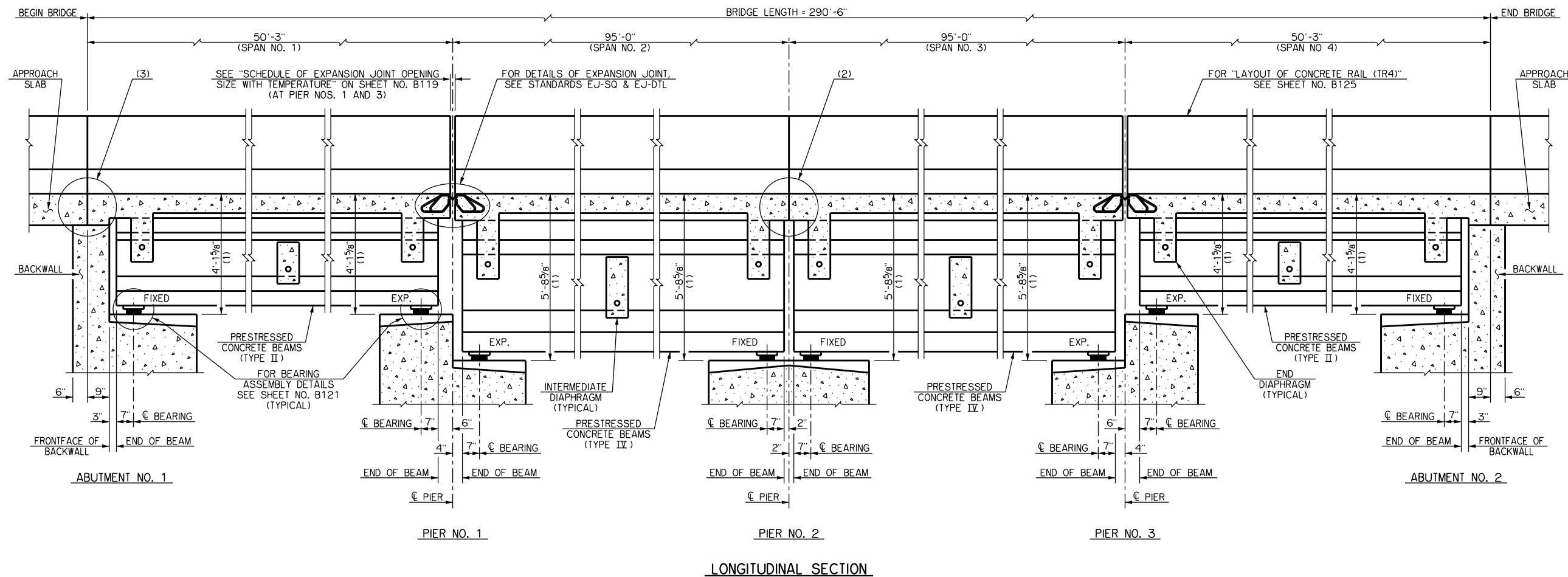
(1) THIS DIMENSION TO BE FIELD VERIFIED. THE CONTRACTOR SHALL ADJUST THE HEIGHT OF THE PIER PROTECTION TO MAINTAIN THE 3'-6" MINIMUM HEIGHT SHOWN IN THE "ELEVATION".

IOWA AVENUE OVER US-81
BRIDGE 'P'

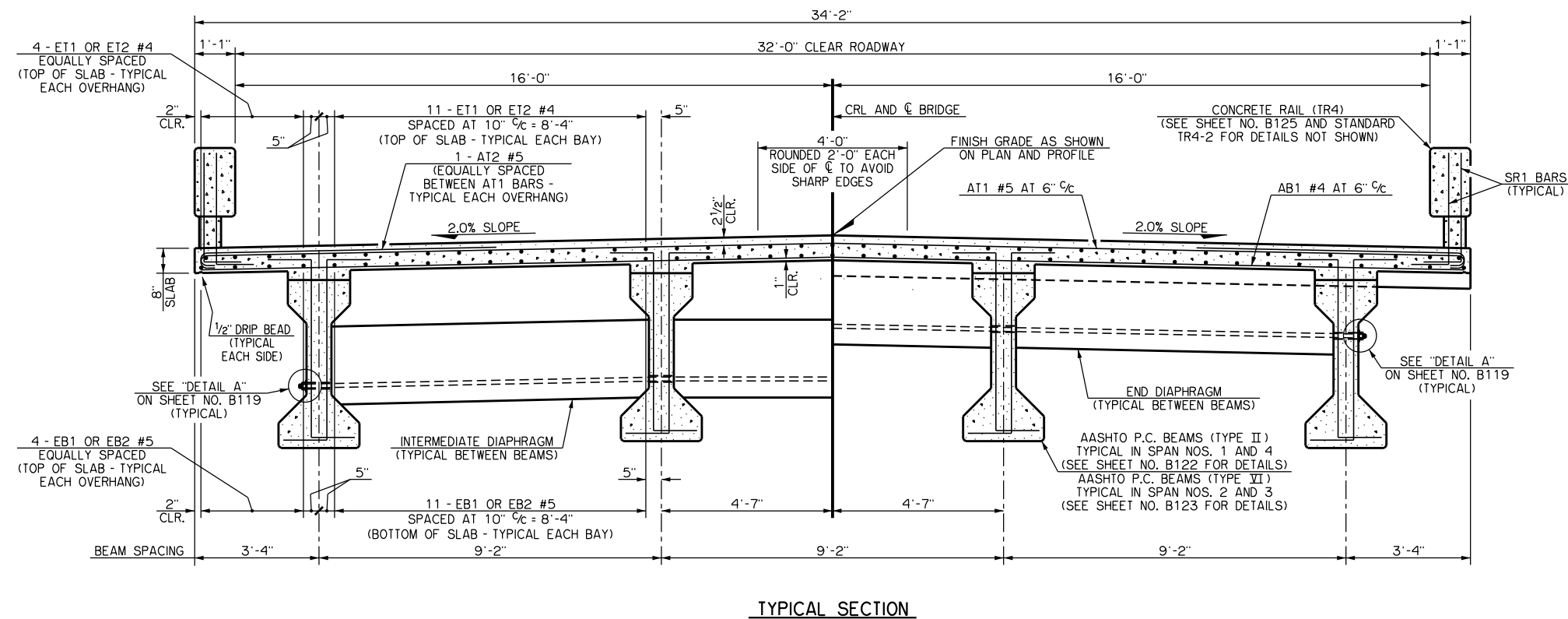
**DETAILS OF PIER PROTECTION
AT PIER NO. 2**

State Job No. 24428(12) Sheet No. B115

US 81 REALIGNMENT
GRADY COUNTY



LONGITUDINAL SECTION



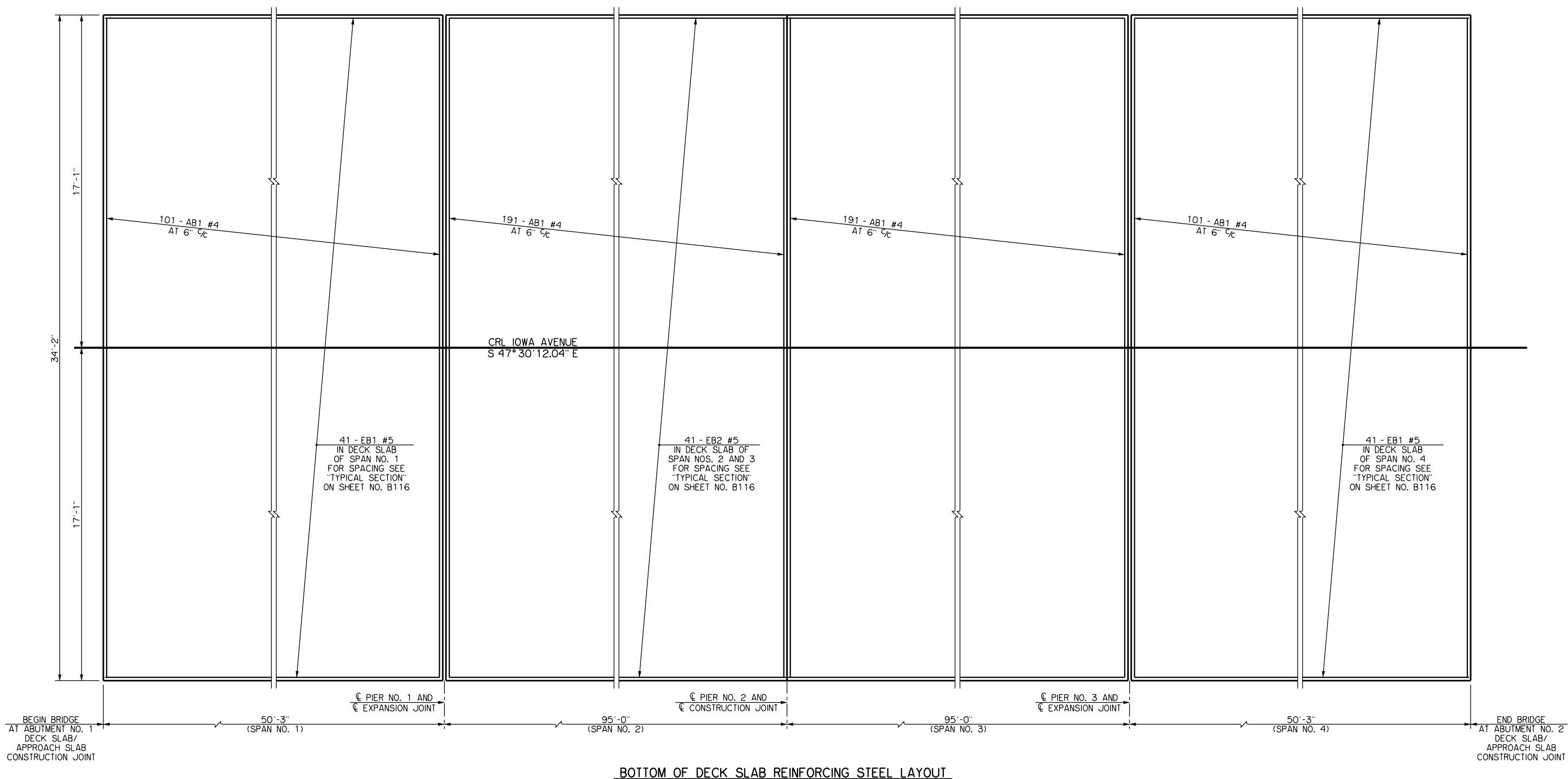
TYPICAL SECTION

NOTES

- (1) DIMENSION IS FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT C BEARING.
 - (2) UNDER NO CIRCUMSTANCES SHALL THE SLAB BE A CONTINUOUS POUR OVER THE FIXED PIER NO. 2. THIS LOCATION SHALL HAVE A CONSTRUCTION JOINT IN THE SLAB AND SHALL BE SEALED WITH SEALER RESIN (SEE GENERAL NOTE ON SHEET NO. ABO1). THE LONGITUDINAL REINFORCING STEEL SHALL BE CONTINUOUS THRU THE CONSTRUCTION JOINT.
 - (3) UNDER NO CIRCUMSTANCES SHALL THE DECK SLAB AND THE APPROACH SLAB OVER THE BACKWALLS OF ABUTMENT NOS. 1 AND 2 BE A CONTINUOUS POUR. THESE LOCATIONS SHALL HAVE A SAWS AND SEALED CONSTRUCTION JOINT IN THE SLAB. SEE "DETAILS OF APPROACH SLABS" ON SHEET NO. B124 FOR DETAILS OF THIS JOINT.
- ROTATE HOOKS ON AT BARS TO MAINTAIN MINIMUM CLEARANCE.
- ALL DIMENSIONS SHOWN IN THE LONGITUDINAL SECTION ARE ALONG THE Cc OF THE P.C. BEAM.
- DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS.

IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF SUPERSTRUCTURE
(SHEET NO. 1 OF 5)



NOTE

THE 'SR1' BARS PROJECTING FROM THE DECK SLAB INTO THE CONCRETE RAIL HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B125 FOR PLACEMENT OF 'SR1' BARS.

IOWA AVENUE OVER US-81
BRIDGE 'P'

**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 2 OF 5)**

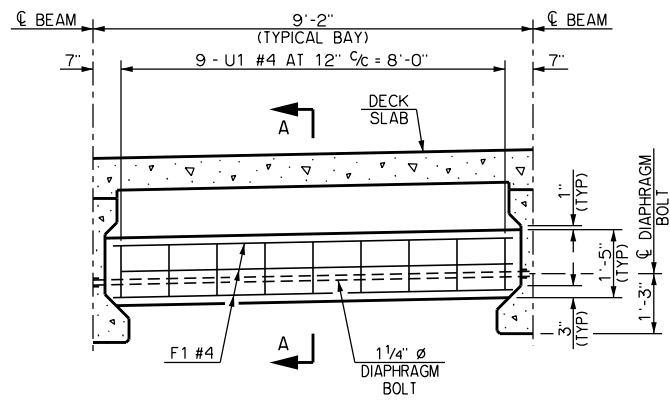


NOTE

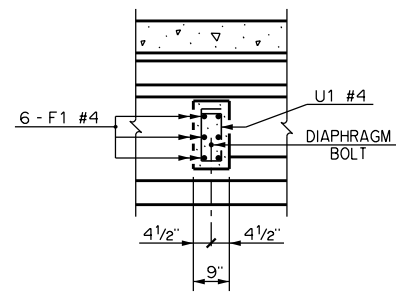
THE 'SR1' BARS PROJECTING FROM THE DECK SLAB INTO THE CONCRETE RAIL HAVE BEEN OMITTED FROM THE BOTTOM OF DECK SLAB REINFORCING LAYOUT FOR CLARITY. SEE STANDARD TR4-2 AND 'LAYOUT OF CONCRETE RAIL (TR4)' ON SHEET NO. B125 FOR PLACEMENT OF 'SR1' BARS.

IOWA AVENUE OVER US-81
BRIDGE 'P'

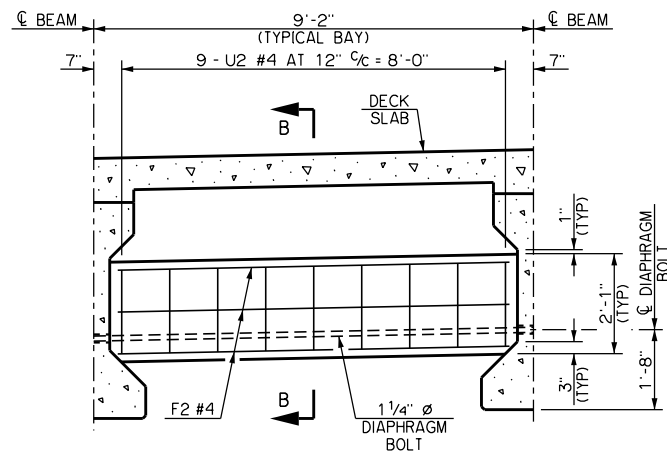
**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 3 OF 5)**



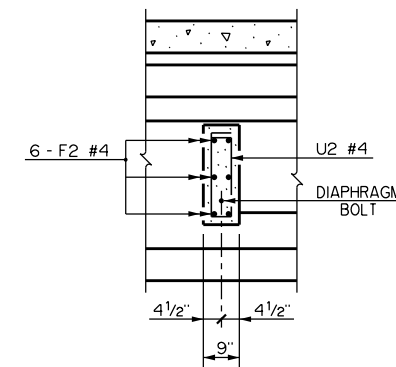
ELEVATION OF INTERMEDIATE DIAPHRAGM
WITHIN SPAN NOS. 1 AND 4



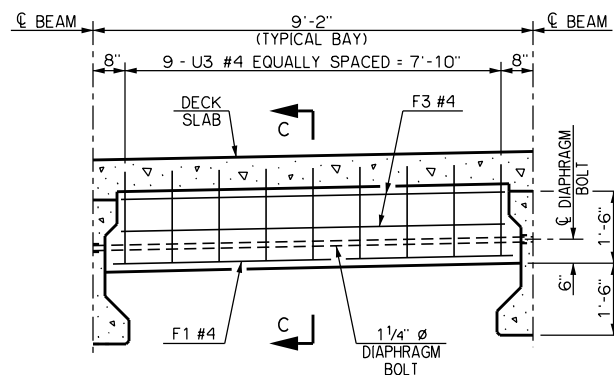
SECTION "A-A"



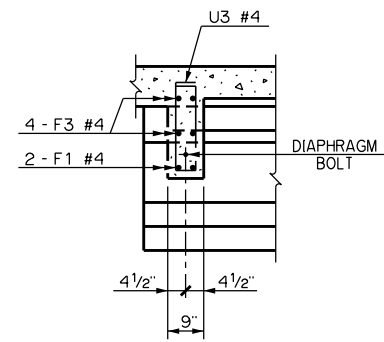
ELEVATION OF INTERMEDIATE DIAPHRAGM
WITHIN SPAN NOS. 2 AND 3



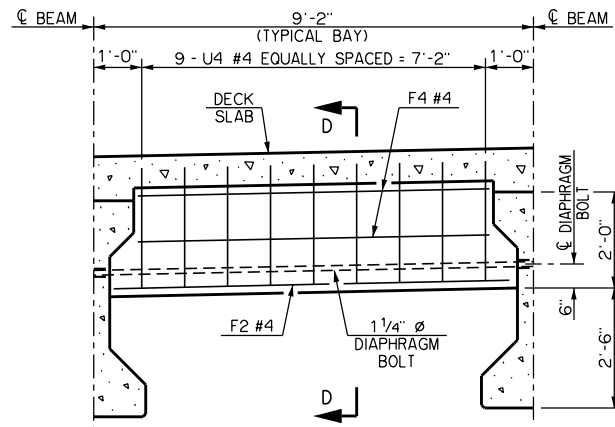
SECTION "B-B"



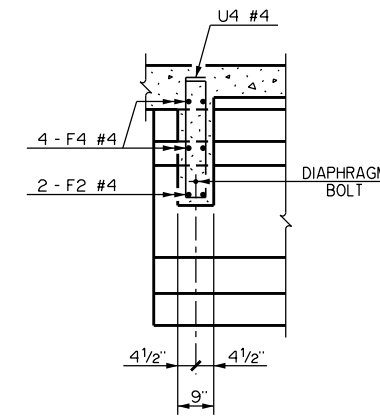
ELEVATION OF END DIAPHRAGM
WITHIN SPAN NOS. 1 AND 4



SECTION "C-C"

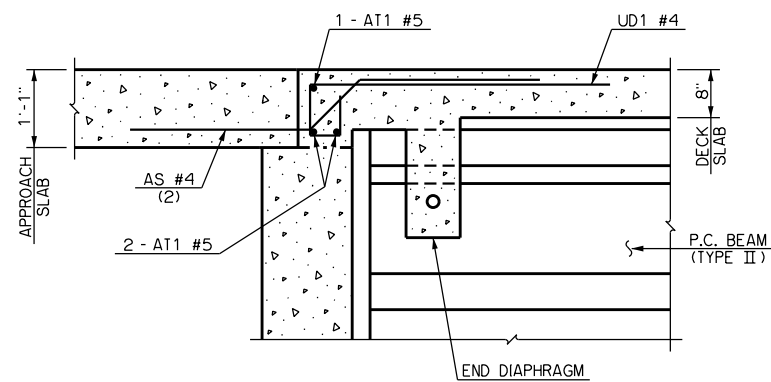


ELEVATION OF END DIAPHRAGM
WITHIN SPAN NOS. 2 AND 3

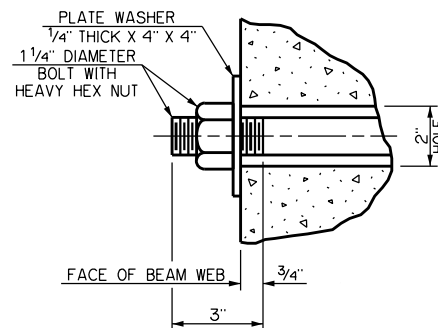


SECTION "D-D"

SCHEDULE OF EXPANSION JOINT OPENING SIZE WITH TEMPERATURE	
TEMPERATURE (1)	OPENING AT PIER NOS. 1 & 3
0°F	2 1/2"
10°F	2 3/8"
20°F	2 1/4"
30°F	2 1/8"
40°F	2"
50°F	1 7/8"
60°F	1 7/8"
70°F	1 3/4"
80°F	1 3/8"
90°F	1 1/2"
100°F	1 3/8"
110°F	1 1/4"



PARTIAL LONGITUDINAL SECTION WITH ADDITIONAL
DECK SLAB REINFORCING STEEL AT ABUTMENT BACKWALL



DETAIL "A"

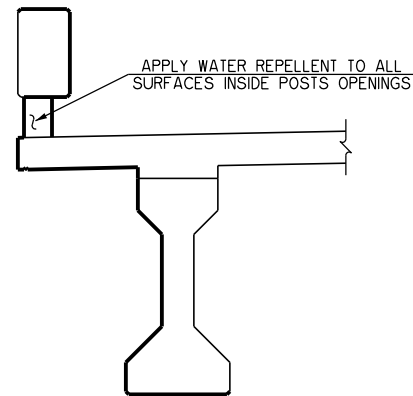
NOTES

STRUCTURAL STEEL FOR DIAPHRAGM RODS AND PLATE WASHERS SHALL CONFORM TO AASHTO M 270 (ASTM A 709), GRADE 50W, WEATHERING STEEL (CHARPY V-NOTCH TESTING NOT REQUIRED). A #10 REINFORCING STEEL BAR CONFORMING TO AASHTO M 31, GRADE 60 AND THREADED AT BOTH ENDS AS SHOWN MAY BE SUBSTITUTED FOR THE DIAPHRAGM ROD. HEX NUTS SHALL CONFORM TO AASHTO M 291 (ASTM A 563), PROPERTY CLASS 8S3 OR 10S3. PAINT EXPOSED PARTS OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS WITH TWO (2) COATS OF ZINC-RICH PAINT (6 MIL MINIMUM THICKNESS) AFTER ASSEMBLY. ALL COST OF DIAPHRAGM RODS, PLATE WASHERS AND HEX NUTS SHALL BE INCLUDED IN UNIT PRICE BID PER POUND OF "STRUCTURAL STEEL."

- (1) AMBIENT AIR TEMPERATURE AT THE TIME THE DECK SLAB CONCRETE IS POURED.
- (2) 'AS' BARS SHALL BE TIED TO THE TOP MAT OF REINFORCING IN THE DECK SLAB AND TO THE BOTTOM MAT OF REINFORCING IN THE APPROACH SLAB. 'AS' BARS MUST BE IN PLACE PRIOR TO POURING THE DECK SLAB CONCRETE.

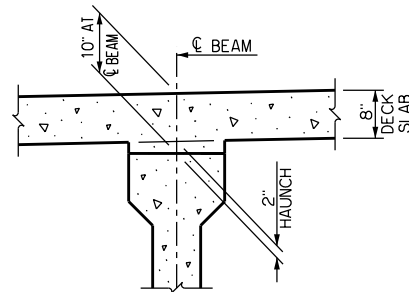
IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF SUPERSTRUCTURE
(SHEET NO. 4 OF 5)

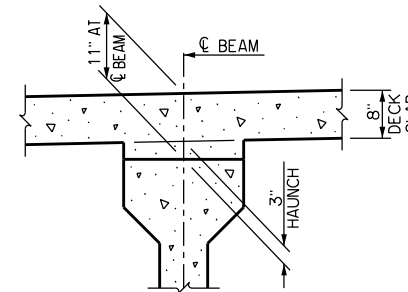


PENETRATING WATER REPELLENT TREATMENT

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.



AT SPAN NOS. 1 AND 4



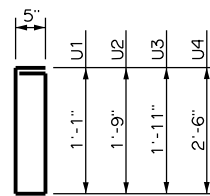
AT SPAN NOS. 2 AND 3

DETAILS OF HAUNCH

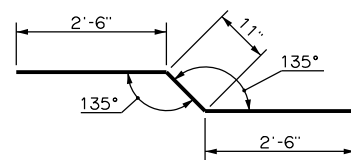
NOTE: PLAN QUANTITIES FOR CLASS 'AA' CONCRETE INCLUDES 6.9 CUBIC YARDS FOR HAUNCHES OVER BEAMS. HAUNCH HEIGHT SHOWN IS PLANNED HEIGHT AT CENTERLINE OF BEARING ONLY, AND VARIES ACROSS THE SPAN. HAUNCH HEIGHT TO BE DETERMINED AFTER ERECTION OF BEAMS TO PROVIDE FOR DEAD LOAD DEFLECTION AND GRADE ADJUSTMENT, BUT THE PAY QUANTITY WILL BE AS SHOWN. FOR DEAD LOAD DEFLECTIONS SEE P.C. BEAM DETAIL SHEET NOS. B122 AND B123.

BAR LIST - SUPERSTRUCTURE				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
AB1	#4	584	STR.	33'-10"
AS	#4	68	BNT.	5'-11"
AT1	#5	584	BNT.	35'-0"
AT2	#5	1,160	BNT.	8'-6"
EB1	#5	82	STR.	49'-11"
(1) EB2	#5	41	STR.	198'-6"
ET1	#4	82	STR.	49'-11"
(2) ET2	#4	41	STR.	195'-6"
F1	#4	60	STR.	8'-4"
F2	#4	60	STR.	8'-2"
F3	#4	48	STR.	8'-0"
F4	#4	48	STR.	7'-4"
SR1	#5	1,556	BNT.	4'-1"
U1	#4	54	BNT.	3'-5"
U2	#4	54	BNT.	4'-9"
U3	#4	108	BNT.	5'-1"
U4	#4	108	BNT.	6'-3"
UD1	#4	70	BNT.	5'-10"

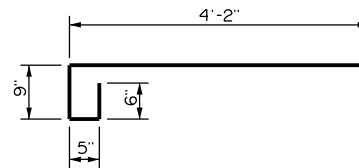
- (1) LENGTH INCLUDES THREE 3'-0" LAP, LAPS SHALL BE STAGGERED
- (2) LENGTH INCLUDES THREE 2'-0" LAP, LAPS SHALL BE STAGGERED



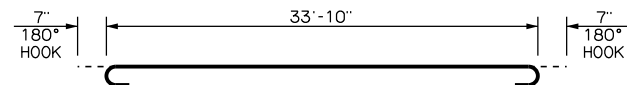
- U1 #4 X 3'-5"
- U2 #4 X 4'-9"
- U3 #4 X 5'-1"
- U4 #4 X 6'-3"



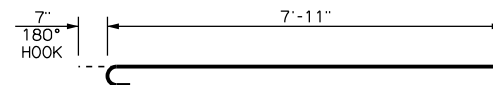
AS #4 X 5'-11"



UD1 #4 X 5'-10"



AT1 #5 X 35'-0"



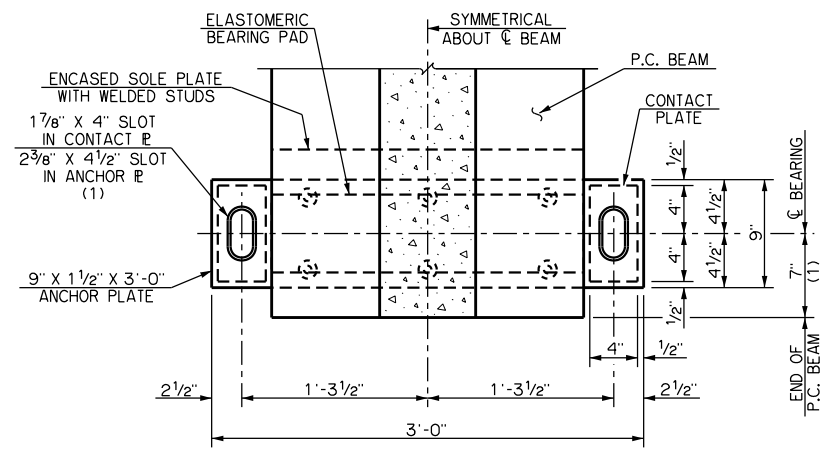
AT2 #5 X 8'-6"

DETAILS OF BENT REINFORCING STEEL

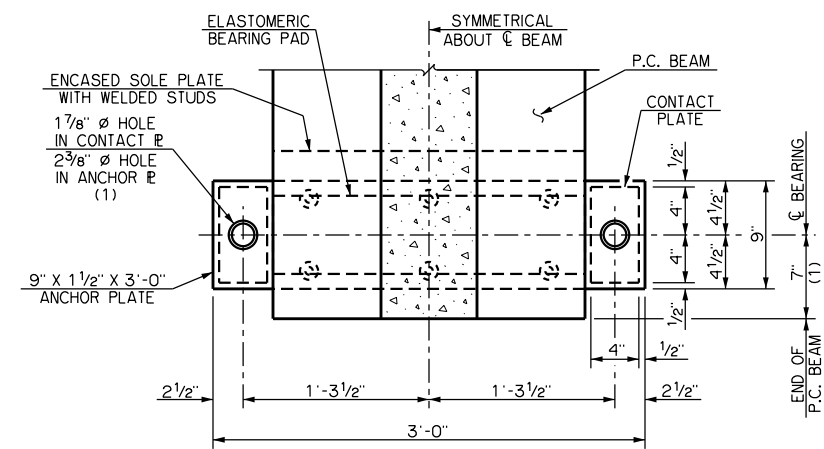
SUMMARY OF QUANTITIES - SUPERSTRUCTURE		
ITEM	UNIT	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE II)	LF	390.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF	756.00
SAW-CUT GROOVING	SY	1,033.00
SEALED EXPANSION JOINT	LF	70.34
CONCRETE RAIL (TR4)	LF	580.40
STRUCTURAL STEEL	LB	1,480.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	16.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	16.00
CLASS AA CONCRETE	CY	270.20
EPOXY COATED REINFORCING STEEL	LB	75,090.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	906.00
SEALER CRACK PREPARATION	LF	64.00
SEALER RESIN	GAL	0.70

IOWA AVENUE OVER US-81
BRIDGE 'P'

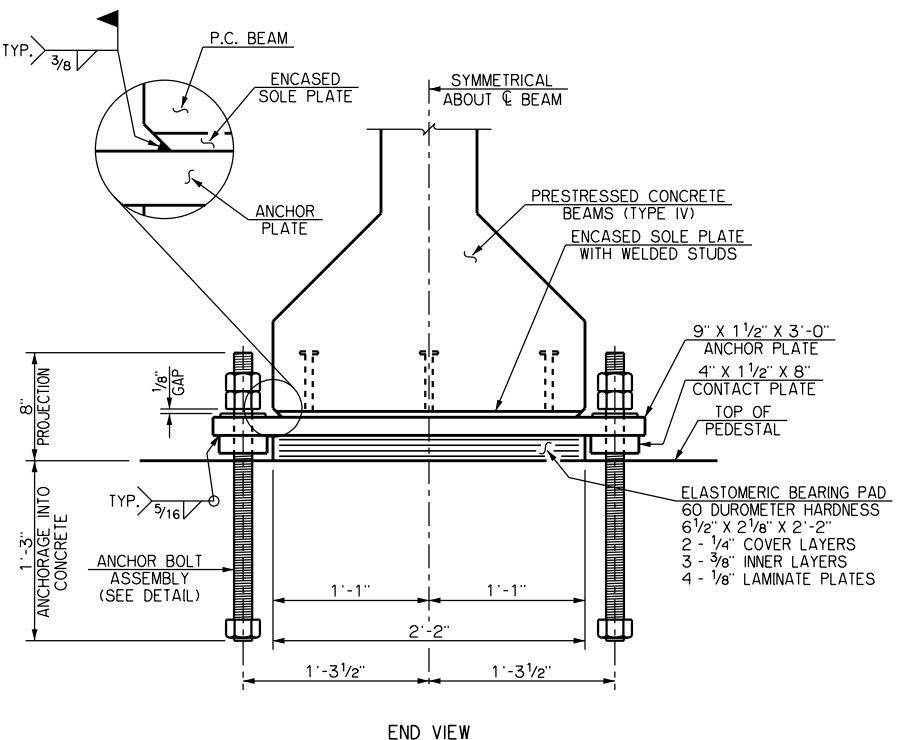
**DETAILS OF SUPERSTRUCTURE
(SHEET NO. 5 OF 5)**



PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

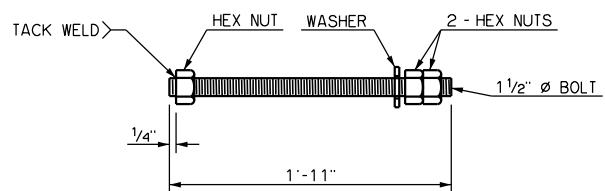


PLAN VIEW AT FIXED LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

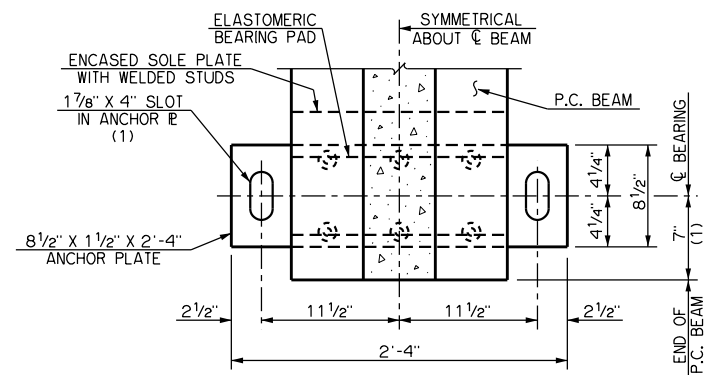


END VIEW

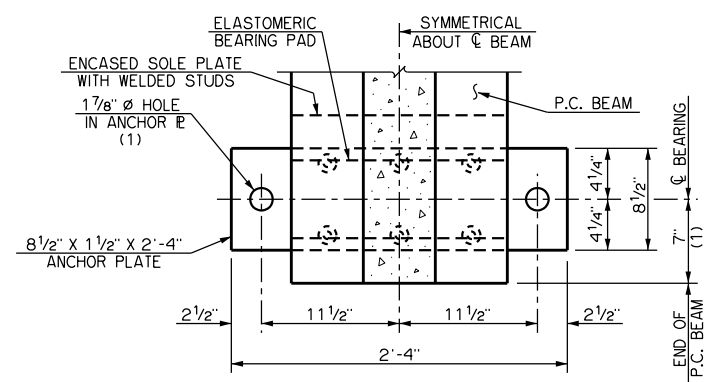
DETAILS OF BEARING ASSEMBLY WITHIN SPAN NOS. 2 AND 3



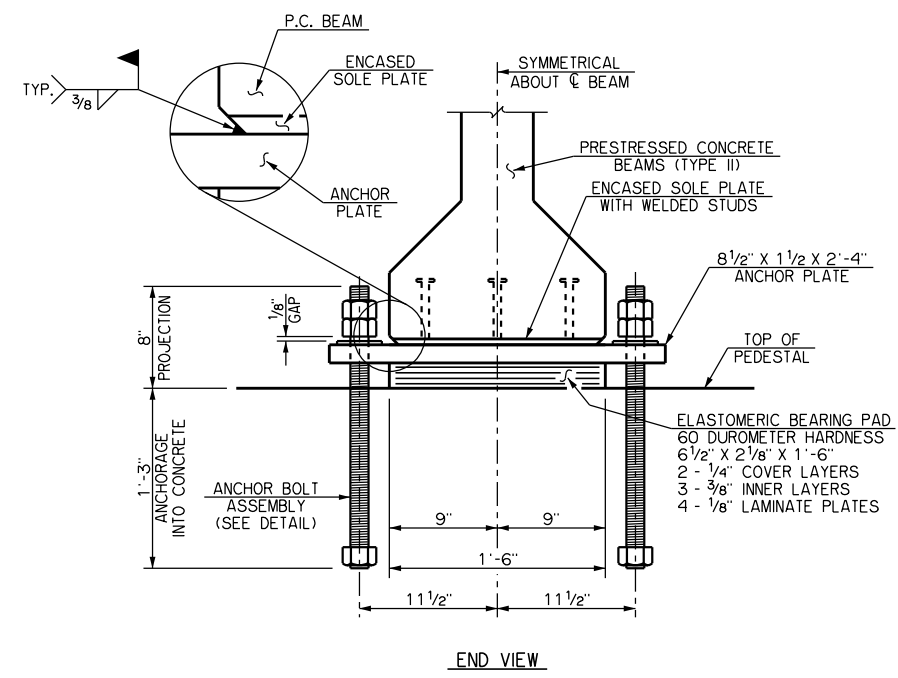
DETAIL OF ANCHOR BOLT ASSEMBLY



PLAN VIEW AT EXPANSION LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN

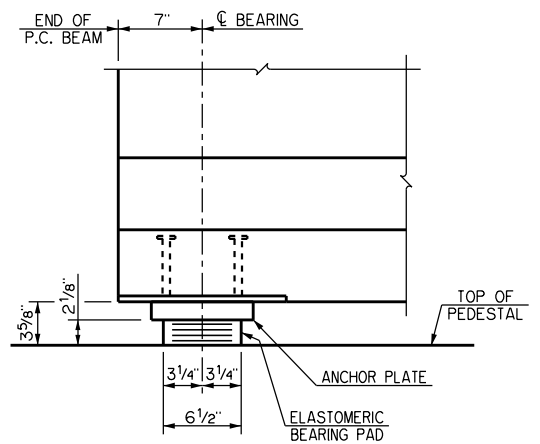


PLAN VIEW AT FIXED LOCATIONS
ANCHOR BOLT ASSEMBLIES NOT SHOWN



END VIEW

DETAILS OF BEARING ASSEMBLY WITHIN SPAN NOS. 1 AND 4



SIDE VIEW
ANCHOR BOLT ASSEMBLY OMITTED FOR CLARITY

NOTES

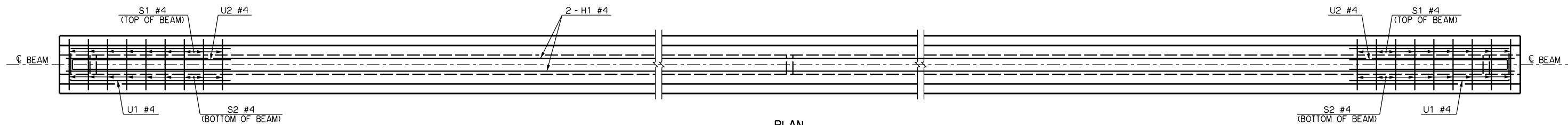
ALL STEEL PARTS OF BEARING ASSEMBLIES SHALL SATISFY THE REQUIREMENTS OF SECTION 724.05.A "STAINLESS STEEL BEARING ASSEMBLIES" OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISION FOR "BRIDGE BEARING STRUCTURAL STEEL" (SP 724-1). THE MATERIAL REQUIREMENTS FOR THE CONTACT PLATES SHALL BE THE SAME AS THE MATERIAL REQUIREMENTS FOR THE ANCHOR PLATES.

ELASTOMERIC BEARING PADS SHALL SATISFY THE REQUIREMENTS OF THE "OKLAHOMA DEPARTMENT OF TRANSPORTATION SPECIAL PROVISIONS FOR ELASTOMERIC BEARING PADS" (SP 733-1).

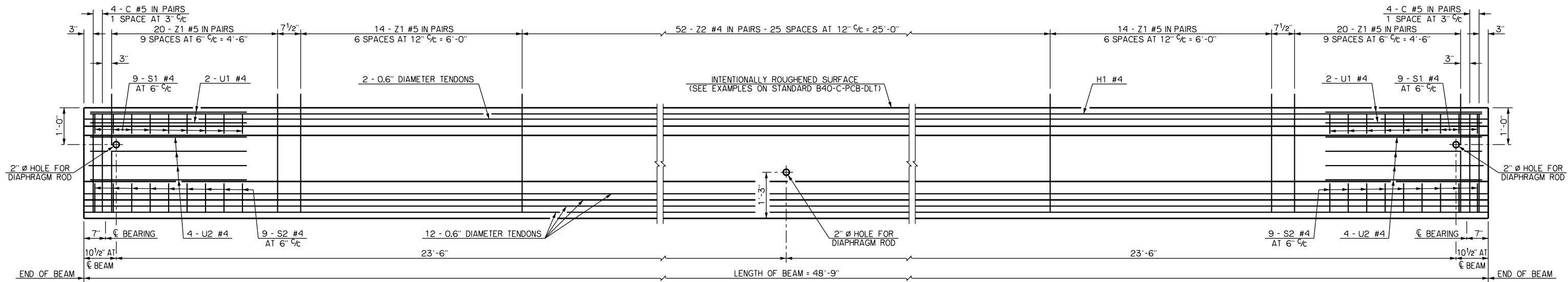
(1) CENTER ANCHOR BOLT ASSEMBLIES IN HOLES AND SLOTS DURING SETTING OF P.C. BEAMS. DIMENSION MAY VARY DEPENDING UPON TEMPERATURE AT TIME OF SETTING OF P.C. BEAMS.

IOWA AVENUE OVER US-81
BRIDGE 'P'

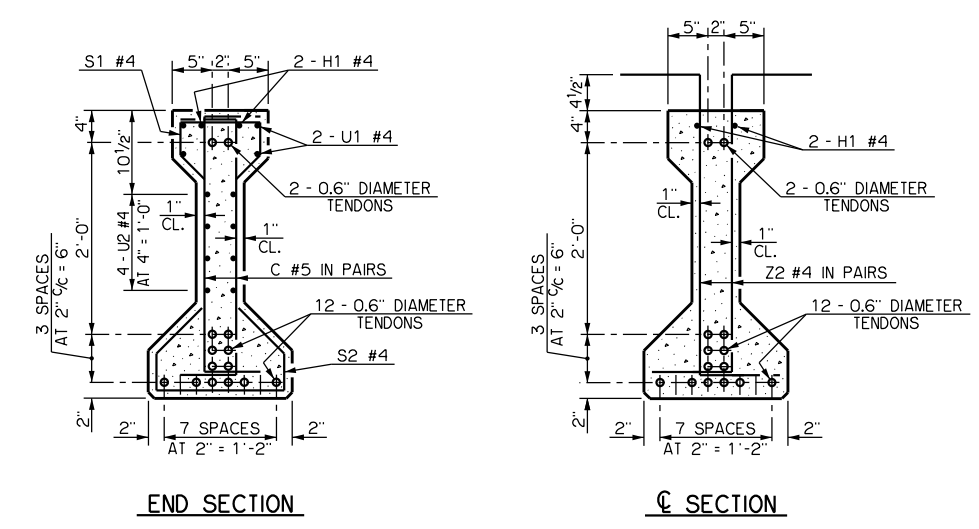
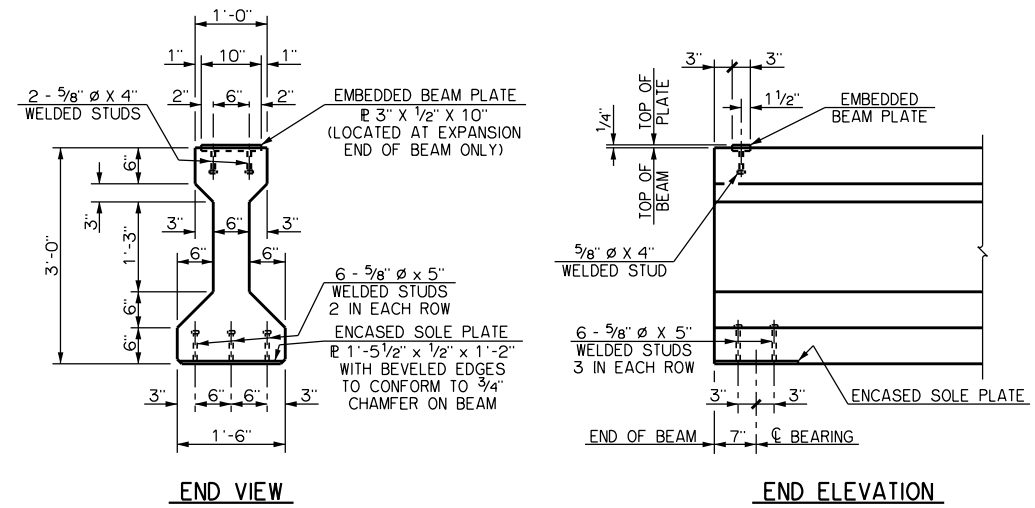
DETAILS OF BEARING ASSEMBLIES



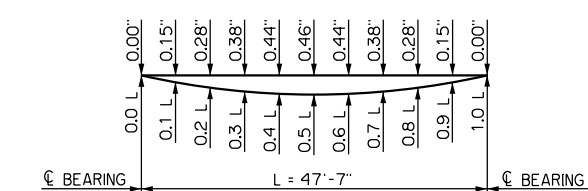
PLAN
C BARS, Z BARS AND TENDONS NOT SHOWN



ELEVATION
ENCASED PLATES NOT SHOWN



BEAM SECTIONS
(14 - 0.6" Ø STRANDS)



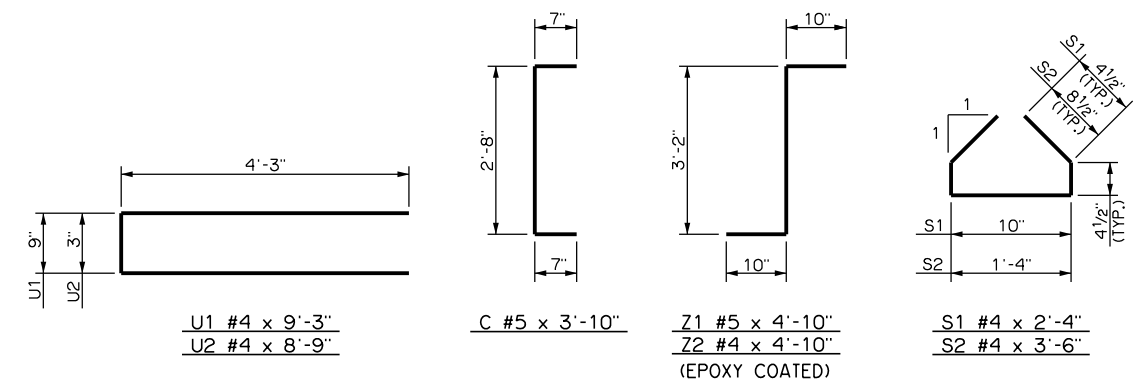
DEAD LOAD DEFLECTIONS

THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 5,250 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 7,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.



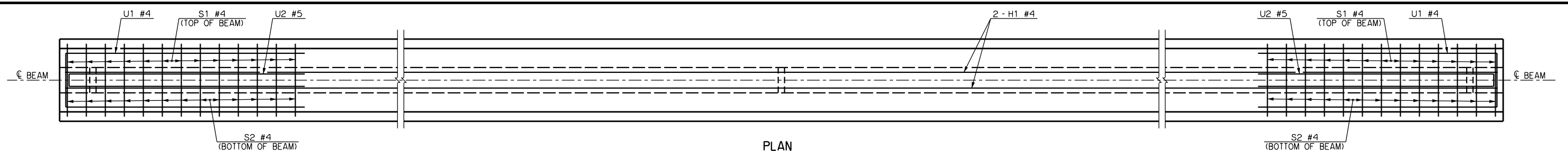
DETAILS OF BENT REINFORCING STEEL

IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF PRESTRESSED CONCRETE BEAMS (TYPE II) IN SPAN NOS. 1 AND 4

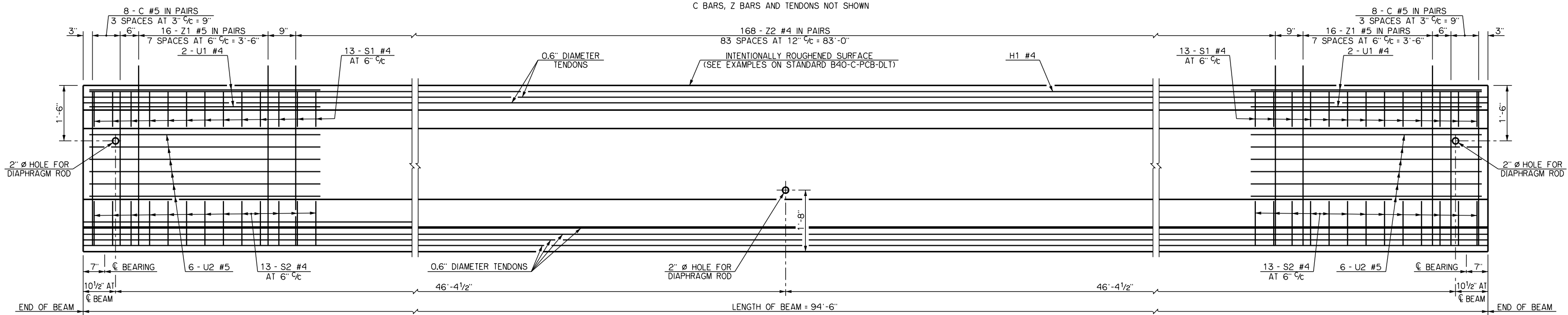
State Job No. 24428(12) Sheet No. B122

US 81 REALIGNMENT
GRADY COUNTY



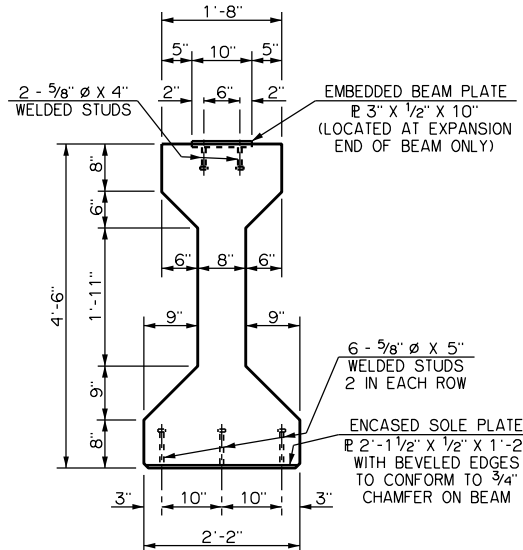
PLAN

C BARS, Z BARS AND TENDONS NOT SHOWN

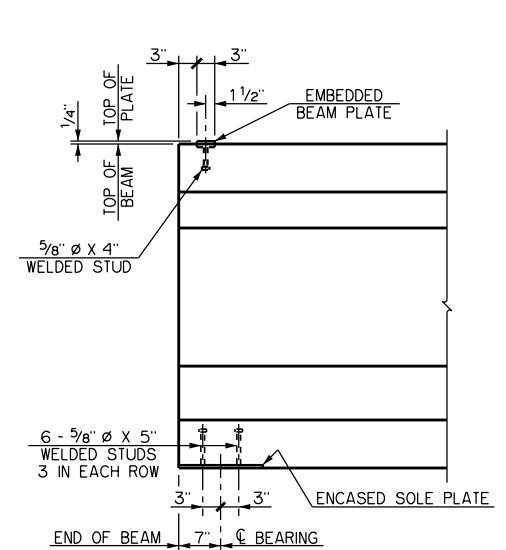


ELEVATION

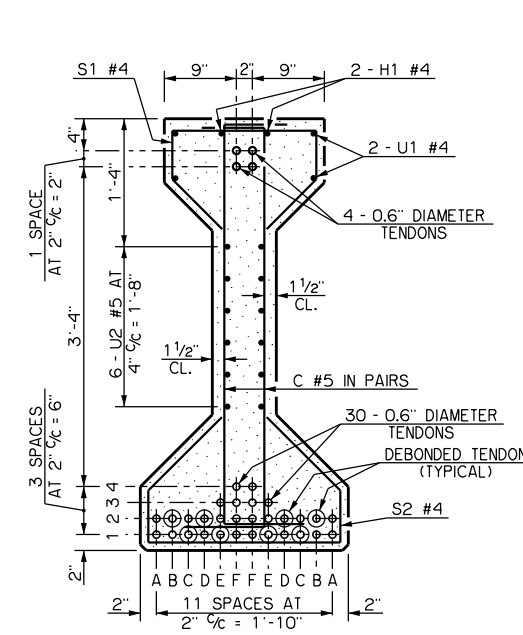
ENCASED PLATES NOT SHOWN



END VIEW

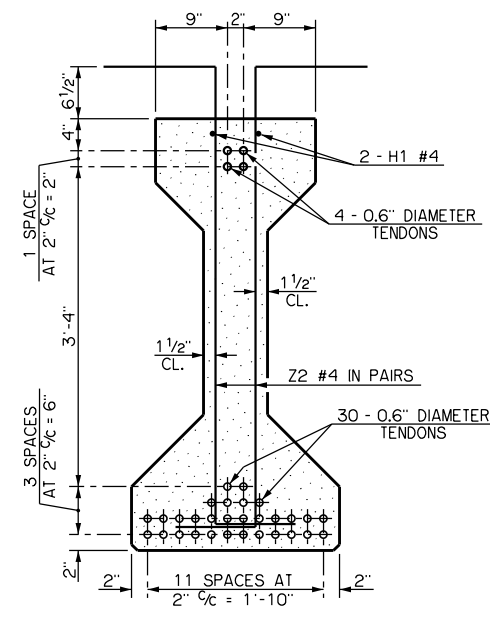


END ELEVATION

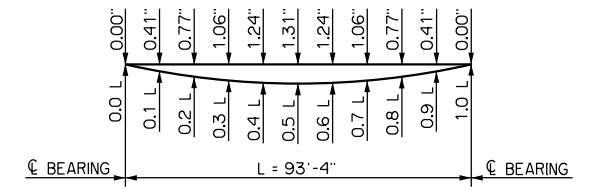


END SECTION

BEAM SECTIONS
(34 - 0.6" Ø STRANDS)



CL SECTION



DEAD LOAD DEFLECTIONS

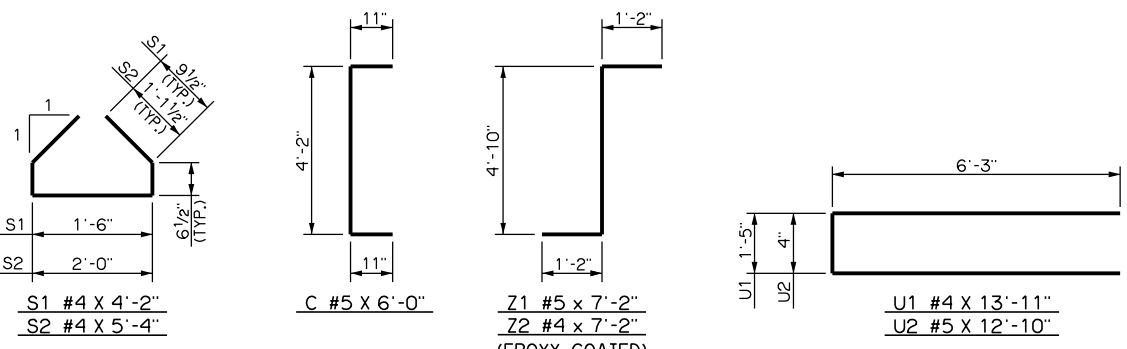
THE DEAD LOAD DEFLECTIONS SHOWN ABOVE AT THE TENTH POINTS ARE THE INITIAL THEORETICAL BEAM DEFLECTIONS DUE TO THE DECK SLAB, HAUNCH, CONCRETE RAIL AND A 5 PSF STEEL STAY-IN-PLACE FORM ALLOWANCE. THE DEAD LOAD DEFLECTIONS SHALL BE ACCOUNTED FOR IN THE HAUNCH DEPTH CALCULATIONS.

MATERIAL PROPERTIES

THE COMPRESSIVE STRENGTH OF THE CONCRETE IN THE P.C. BEAM SHALL BE NO LESS THAN 6,000 PSI AT THE TIME OF TRANSFER OF THE PRESTRESSING FORCE AND NO LESS THAN 8,000 PSI AT 28 DAYS AFTER THE POURING OF THE CONCRETE.

THE TYPE OF PRESTRESSING STRANDS REQUIRED IN THE P.C. BEAM SHALL BE LOW RELAXATION 7-WIRE STRAND WITH A NOMINAL DIAMETER OF 0.6 INCHES AND AN ULTIMATE TENSILE STRENGTH OF 270 KSI.

DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
C1	8'-0"
E1	8'-0"
B2	4'-0"
D2	4'-0"

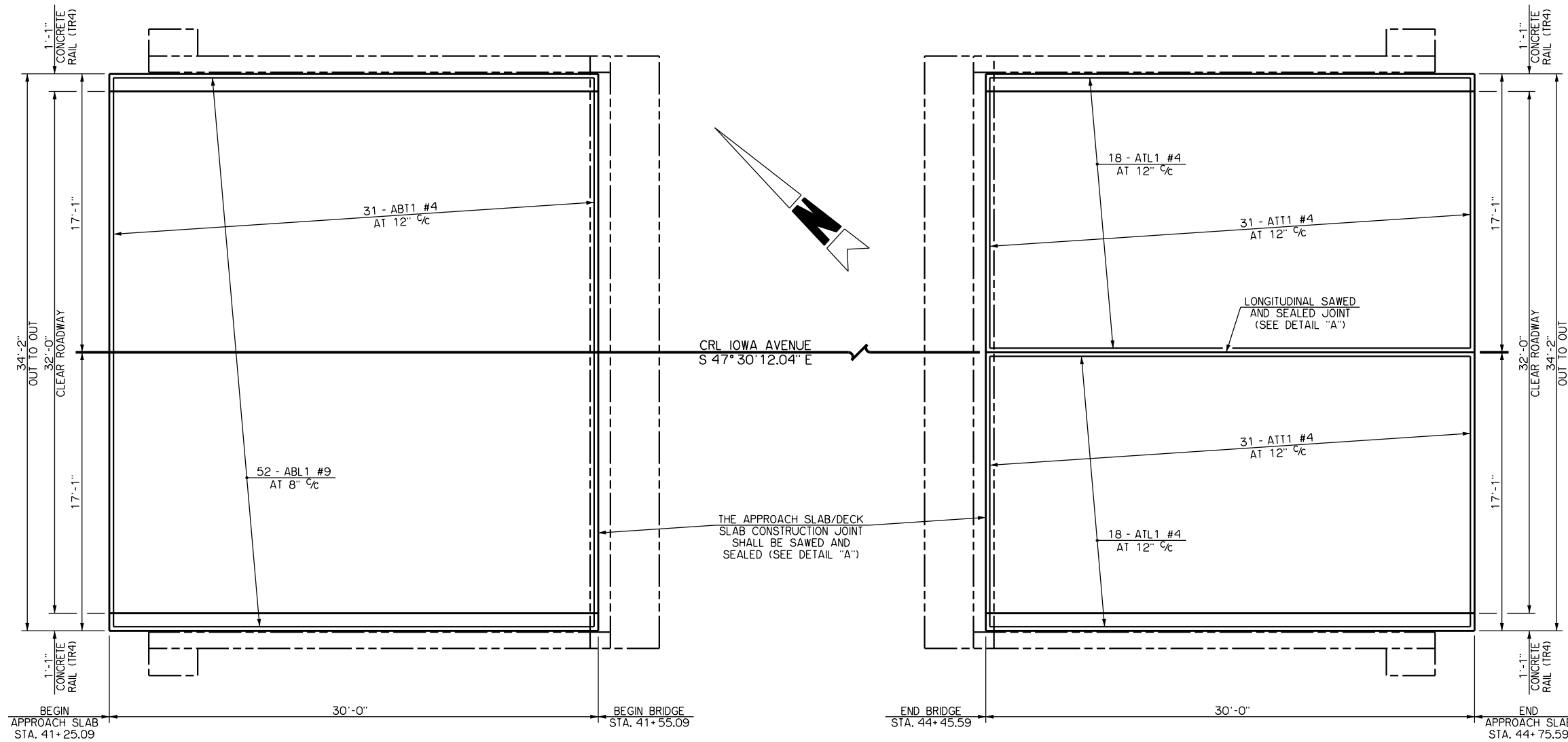


DETAILS OF BENT REINFORCING STEEL

IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF PRESTRESSED CONCRETE BEAM (TYPE IV) AT SPAN NOS. 2 AND 3

US 81 REALIGNMENT GRADY COUNTY



PLAN OF APPROACH SLAB AT ABUTMENT NO. 1

BOTTOM LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.

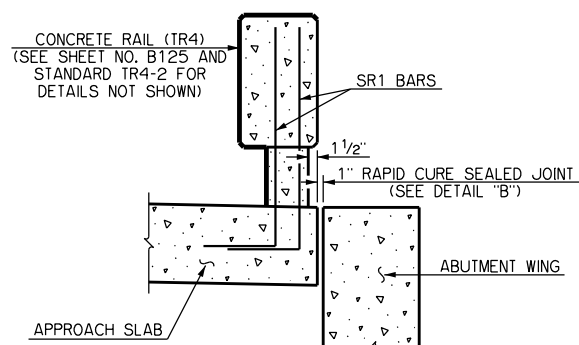
PLAN OF APPROACH SLAB AT ABUTMENT NO. 2

TOP LAYER OF REINFORCING STEEL IS SHOWN AND IS TYPICAL FOR EACH APPROACH SLAB.

BAR LIST - ONE APPROACH SLAB (TWO REQUIRED)				
MARK	SIZE	NO.	FORM	LENGTH
EPOXY COATED				
ABL1	#9	52	STR.	29'-8"
ABT1	#4	31	STR.	33'-10"
ATL1	#4	36	STR.	29'-8"
ATT1	#4	62	STR.	16'-9"
SR1	#5	200	BNT.	4'-1"

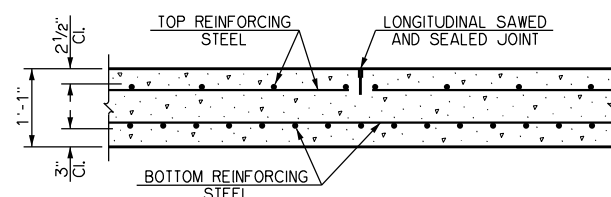
SUMMARY OF QUANTITIES - ONE APPROACH SLAB (TWO REQUIRED)			
ITEM	UNIT	TOTAL	
(1) APPROACH SLAB	SY	113.90	
SAW-CUT GROOVING	SY	107.00	
CONCRETE RAIL (TR4)	LF	60.00	
WATER REPELLENT (VISUALLY INSPECTED)	SY	28.00	

(1) QUANTITY INCLUDES ALL COSTS OF CONCRETE, EPOXY COATED REINFORCING STEEL INCLUDING SR1 BARS, POLYSTYRENE, BACKER ROD, RAPID CURE JOINT SEALANT, SAWING, GRINDING, FILL AND EXCAVATION.



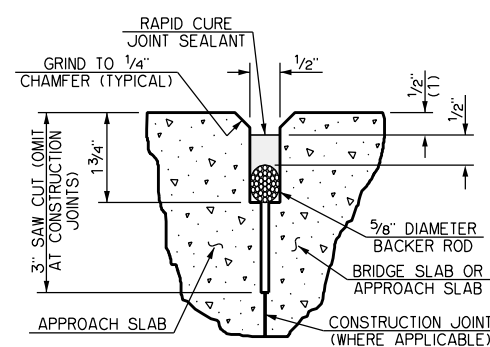
DETAIL OF APPROACH SLAB AT ABUTMENT WING

SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLANT SURFACE TREATMENT.



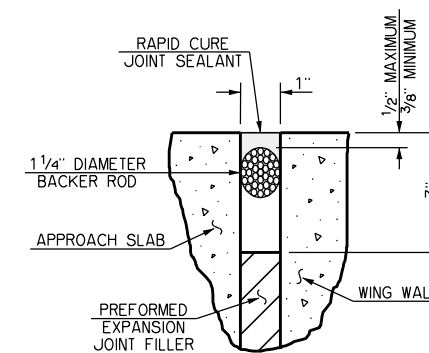
SECTION THROUGH APPROACH SLAB

THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLAB SHALL END 2" EITHER SIDE OF THE LONGITUDINAL SAWED AND SEALED JOINT.



DETAIL "A"

(1) THIS DIMENSION SHALL TAPER FROM 1/2" AT EDGE OF DRIVING LANE/SHOULDER TO 1/8" AT CONCRETE RAIL FOR TRANSVERSE JOINTS ONLY.



DETAIL "B"

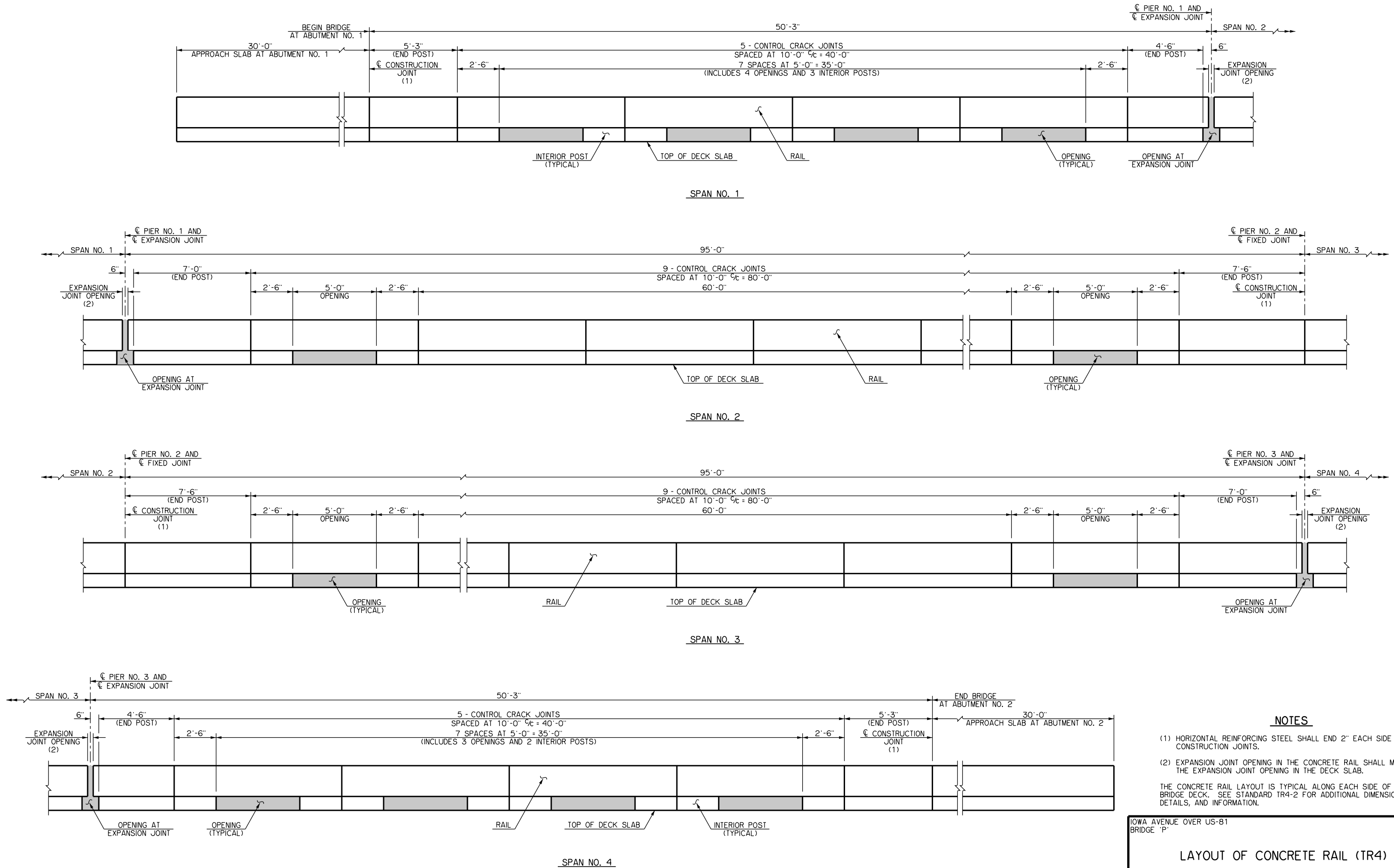
NOTES

THE SR1 BARS PROJECTING FROM THE APPROACH SLAB INTO THE CONCRETE RAILS HAVE BEEN OMITTED IN THE APPROACH SLAB PLAN VIEWS FOR CLARITY. SEE STANDARD TR4-2 AND "LAYOUT OF CONCRETE RAIL (TR4)" ON SHEET NO. B125 FOR PLACEMENT OF SR1 BARS.

DO NOT SAW CUT GROOVE WITHIN 6" OF ALL CONSTRUCTION JOINTS AND CONTRACTION JOINTS.

IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF APPROACH SLABS

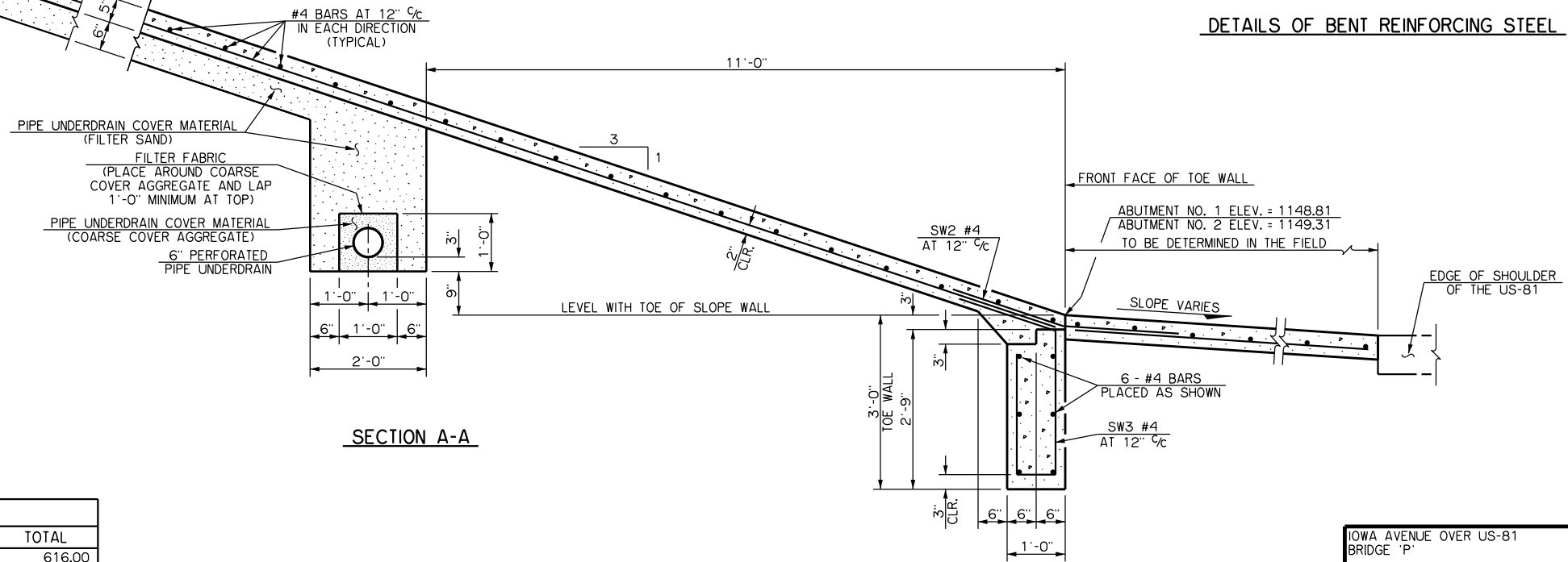
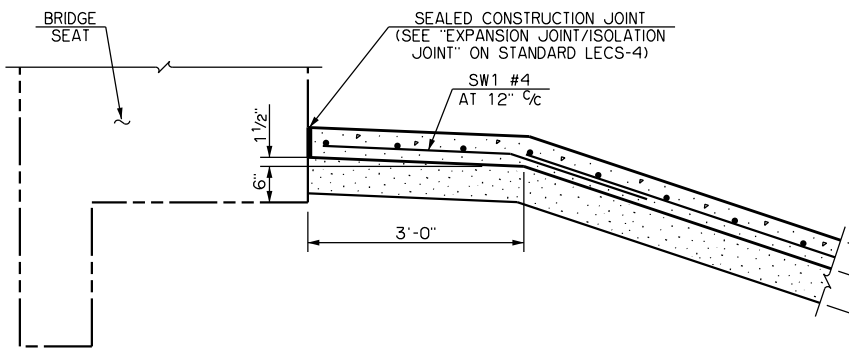
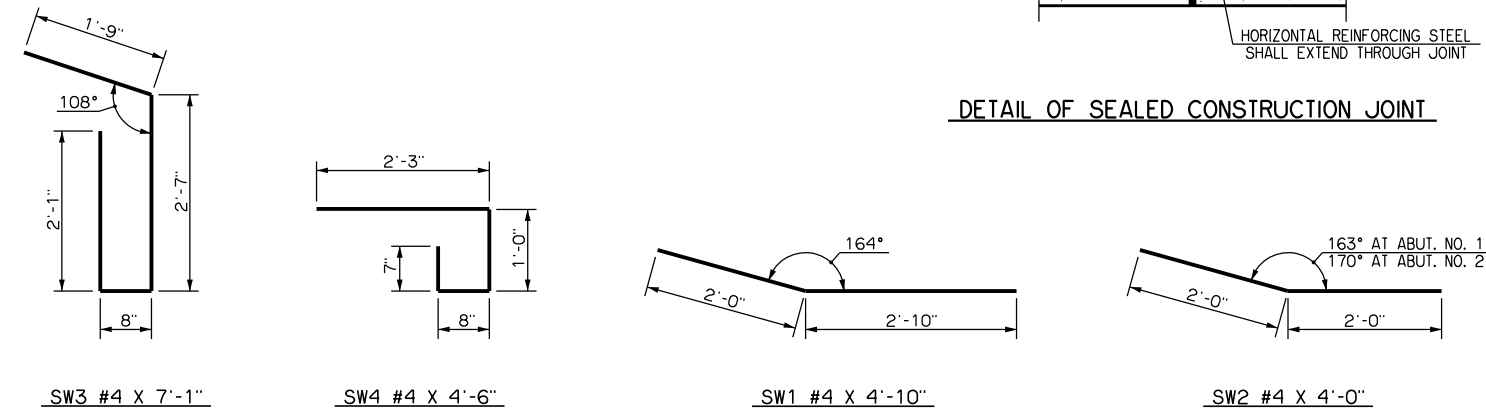
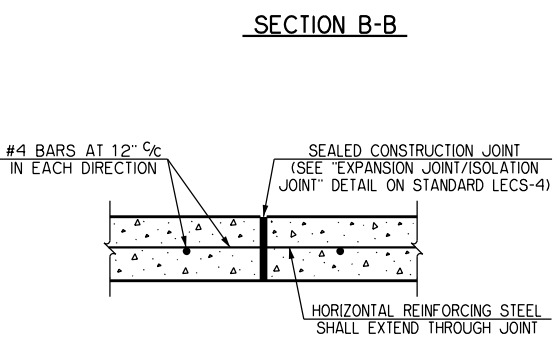
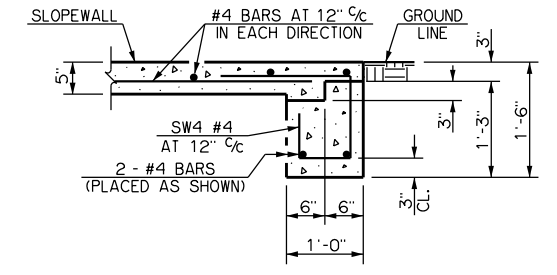
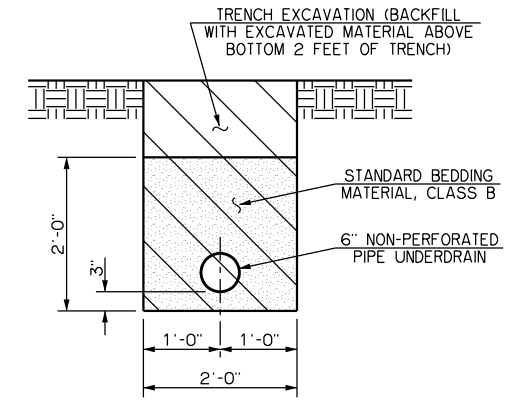
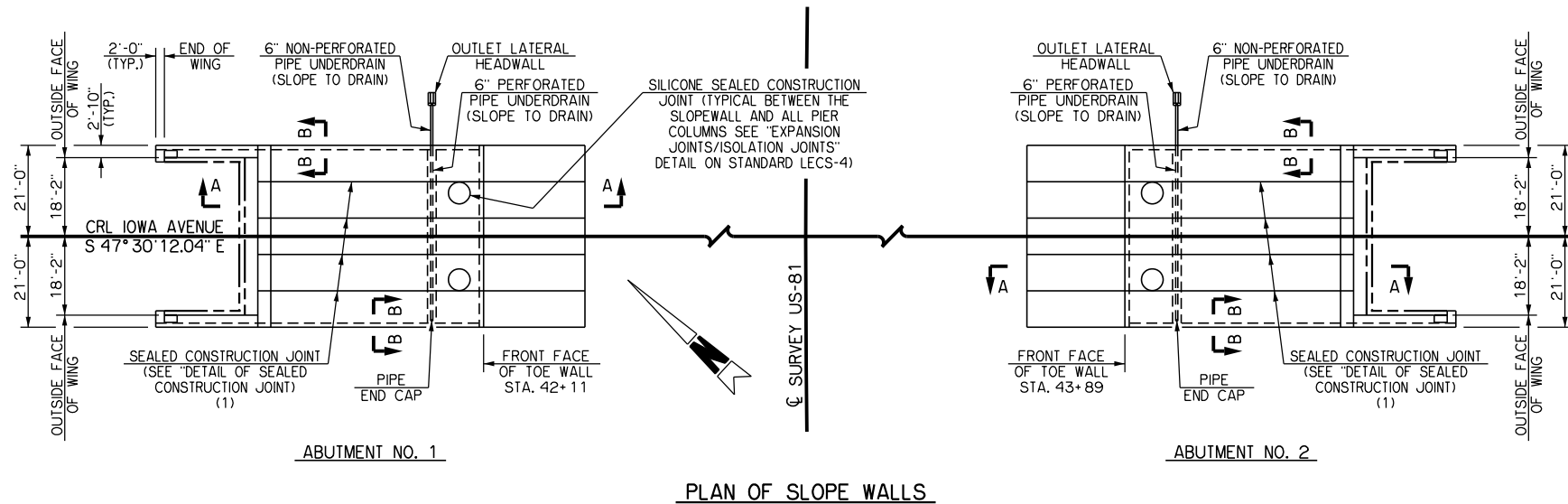


NOTES

- (1) HORIZONTAL REINFORCING STEEL SHALL END 2" EACH SIDE OF CONSTRUCTION JOINTS.
 - (2) EXPANSION JOINT OPENING IN THE CONCRETE RAIL SHALL MATCH THE EXPANSION JOINT OPENING IN THE DECK SLAB.
- THE CONCRETE RAIL LAYOUT IS TYPICAL ALONG EACH SIDE OF THE BRIDGE DECK. SEE STANDARD TR4-2 FOR ADDITIONAL DIMENSIONS, DETAILS, AND INFORMATION.

IOWA AVENUE OVER US-81
BRIDGE 'P'

LAYOUT OF CONCRETE RAIL (TR4)



- NOTES**
- INSTALLATION OF THE PIPE UNDERDRAIN SHALL BE AS SHOWN IN THE PLANS AND ON STANDARDS PUD-3 AND PED-3.
 - PLACEMENT OF VERTICAL CONSTRUCTION JOINTS IN THE SLOPE WALL SHALL BE LOCATED AS SHOWN IN THE PLAN VIEW. ANY CHANGES SHALL NOT EXCEED 10'-0" WIDE AND SHALL BE APPROVED BY THE ENGINEER. NO HORIZONTAL CONSTRUCTION JOINTS WILL BE ALLOWED IN THE SLOPE WALL.
 - INCLUDES ALL COST OF EXCAVATION, EMBANKMENT, CONCRETE, REINFORCING STEEL, SILICONE JOINT SEALER, BACKER ROD AND PREFORMED EXPANSION JOINT FILLER.
 - INCLUDES ALL COST OF EXCAVATION, PERFORATED PIPE, PIPE FITTINGS, PIPE CAPS, FILTER FABRIC AND ALL PIPE UNDERDRAIN COVER MATERIAL SHOWN INCLUDING 6" THICKNESS BELOW SLOPE WALL.
 - INCLUDES ALL COST OF TRENCH EXCAVATION, NON-PERFORATED PIPE, PIPE FITTINGS, PIPE RODENT SCREENS AND BACKFILLING OF TRENCHES.

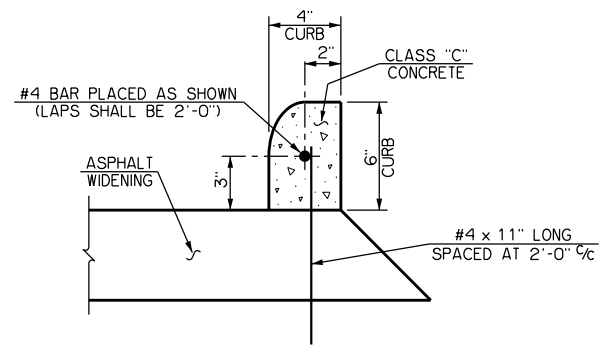
SUMMARY OF QUANTITIES - SLOPEWALL				
ITEM	UNIT	ABUT. NO. 1	ABUT. NO. 2	TOTAL
(2) SLOPE WALL (5')	SY	307.00	309.00	616.00
(3) 6" PERFORATED PIPE UNDERDRAIN ROUND	LF	40.00	40.00	80.00
(4) 6" NON-PERF. PIPE UNDERDRAIN RND.	LF	10.00	10.00	20.00
OUTLET LATERAL HEADWALL	EA	1.00	1.00	2.00

IOWA AVENUE OVER US-81
BRIDGE 'P'

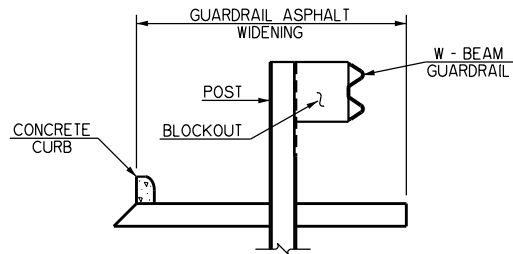
DETAILS OF SLOPE WALLS

State Job No. 24428(12) Sheet No. B126

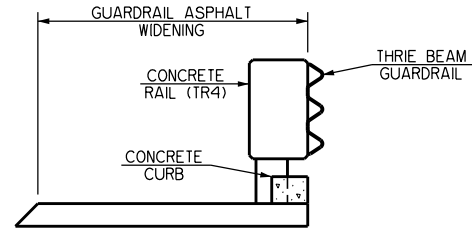
US 81 REALIGNMENT
GRADY COUNTY



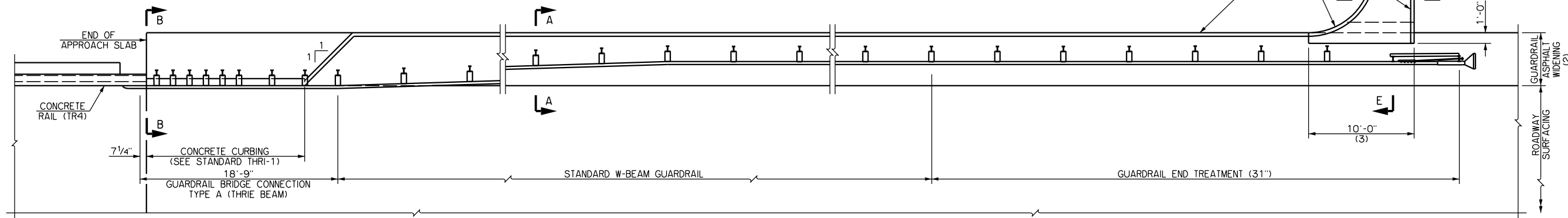
DETAIL OF CONCRETE CURB



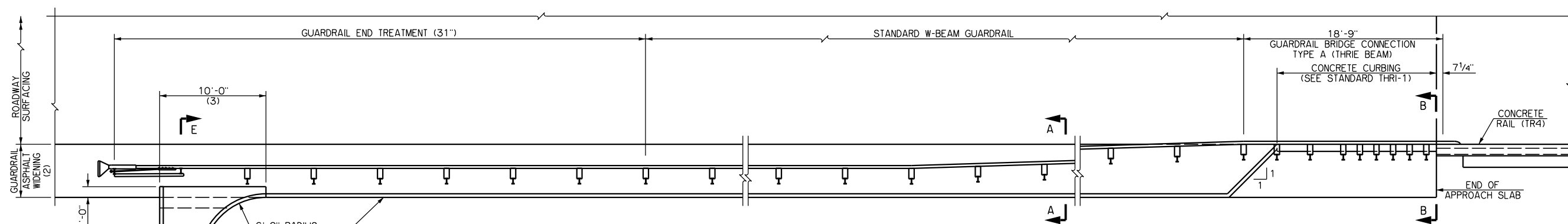
SECTION A-A



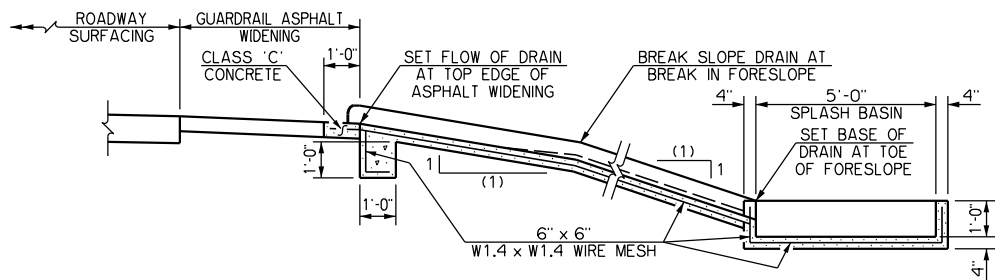
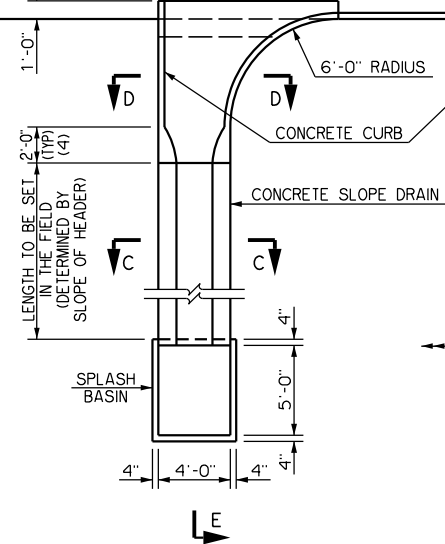
SECTION B-B



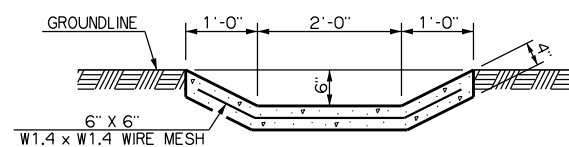
EAST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY



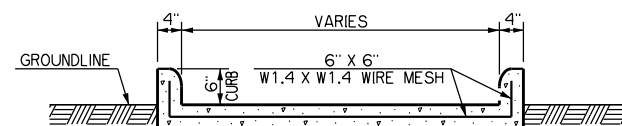
WEST END OF BRIDGE, NORTH AND SOUTH SIDE OF ROADWAY



SECTION E-E



SECTION C-C



SECTION D-D

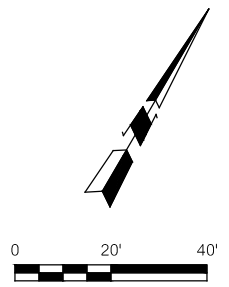
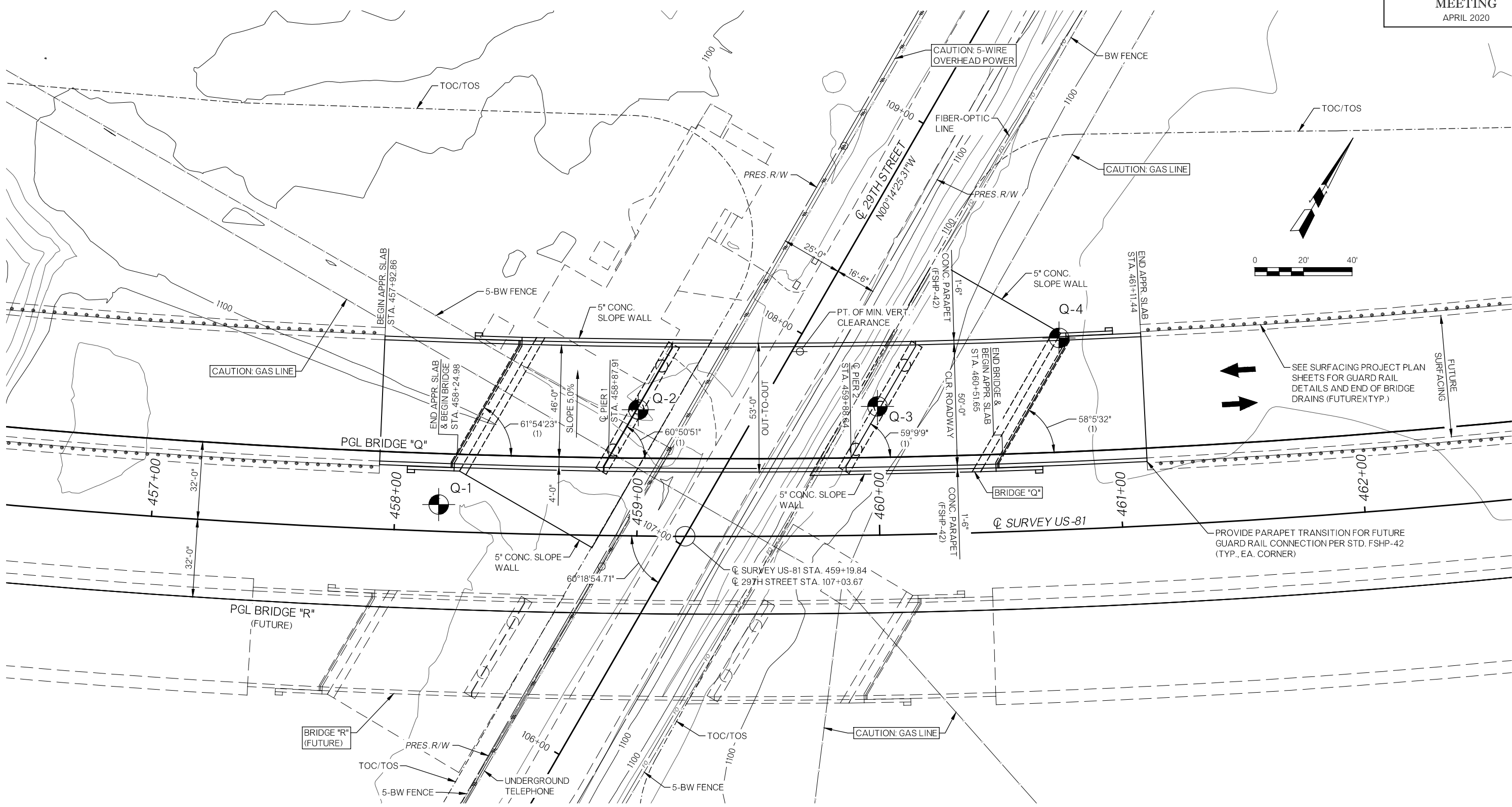
NOTES

SLOPE DRAINS, SPLASH BASINS AND CURBS SHALL BE CONSTRUCTED USING CLASS C CONCRETE AS SHOWN ON THIS SHEET. ALL COSTS OF SLOPE DRAINS, SPLASH BASINS AND CURBS INCLUDING THE COST OF CONCRETE, REINFORCING STEEL BARS AND WIRE MESH, ASPHALT REMOVAL, EXCAVATION, BACKFILLING, MATERIAL, LABOR, EQUIPMENT AND INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID PER CUBIC YARD OF "CLASS C CONCRETE."

- (1) SLOPE TO MATCH FORESLOPE.
- (2) ASPHALT WIDENING SHALL BE IN ACCORDANCE WITH STANDARD GHW1-1 EXCEPT AS SHOWN ON THIS SHEET. ALL COSTS OF THE ASPHALT WIDENING SHALL BE INCLUDED IN ROADWAY PAY ITEMS.
- (3) A 1'-0" WIDE X 10'-0" LONG PORTION OF THE GUARDRAIL ASPHALT WIDENING SHALL BE REMOVED AS SHOWN. CLASS 'C' CONCRETE SHALL REPLACE THIS AREA AS A PART OF THE SLOPE DRAIN CONSTRUCTION.
- (4) THE CONCRETE CURB SHALL TRANSITION INTO THE 1:2 SIDE SLOPE PORTION OF THE SLOPE DRAIN WITHIN THIS 2'-0" DIMENSION.

IOWA AVENUE OVER US-81
BRIDGE 'P'

DETAILS OF DRAINS AT ENDS OF BRIDGE



PLAN
SCALE 1" = 20'

BM#42 - 3/4" I.P. (30" LONG)
 C 29TH STREET A019 STA. 103+55.35, 104.61' LT.
 ELEV. = 1101.56'

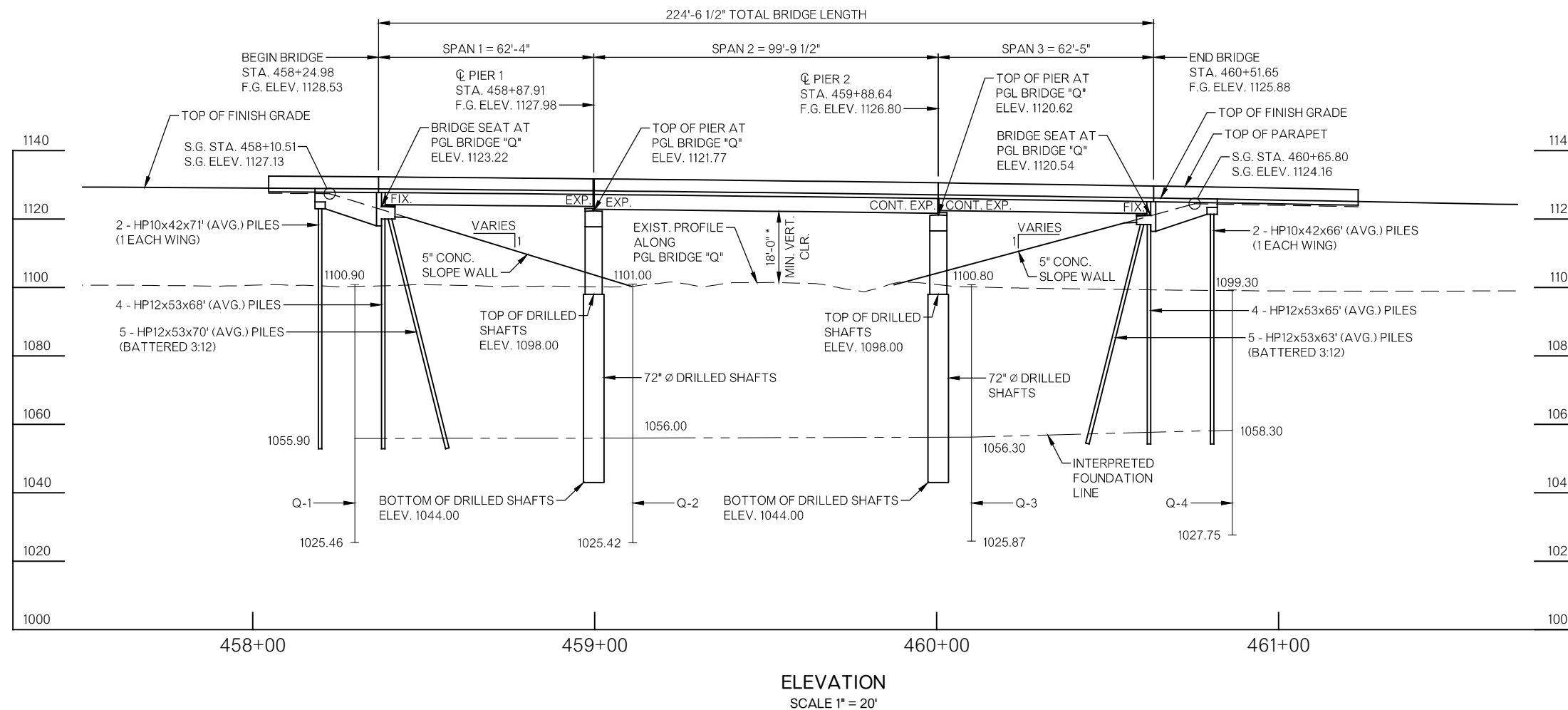
BM#43 - 3/4" I.P. (30" LONG)
 CRL US-81 A001 STA. 465+43.47, 284.38' RT.
 ELEV. = 1098.98'

- NOTES**
- ALL STATIONING FOLLOWS C SURVEY US-81, UNLESS NOTED OTHERWISE.
 - FOR ELEVATION VIEW, SEE SHEET NO. B129.
 - SEE SHEET NO. B130 FOR DESIGN DATA, FINISH GRADE DATA, AND INDEX OF SHEETS.
 - FOR GEOMETRIC DATA, SEE GEOMETRIC LAYOUT SHEETS.
 - PROPOSED R/W IS OUTSIDE THE VIEWING AREA. SEE ROADWAY PLANS FOR LIMITS.
 - (1) MEASURED TO TANGENT AT PGL BRIDGE "Q".

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SB US-81 OVER 29TH STREET
 BRIDGE "Q"
GENERAL PLAN AND ELEVATION (BRIDGE "Q")
 (SHEET NO. 1 OF 3)
 THREE SPAN (62'-100'-62') P.C. BEAM BRIDGE WITH VARYING SKEW, 50'-0" CLEAR ROADWAY AND 42' F-SHAPED PARAPETS AT C STA. 459+38.32
 State Job No. 24428(12) Sheet No. B128

US 81 REALIGNMENT
GRADY COUNTY



BM#42 - 3/4" I.P. (30" LONG)
 ☉ 29TH STREET A019 STA. 103+55.35, 104.61' LT.
 ELEV. = 1101.56'

NOTES
 ALL STATIONING FOLLOWS ☉ SURVEY US-81, UNLESS NOTED OTHERWISE.
 ALL LENGTHS ARE MEASURED ALONG PGL BRIDGE "Q".
 FOR PLAN VIEW, SEE SHEET NO. B128.
 SEE SHEET NO. B130 FOR DESIGN DATA, FINISH GRADE DATA, AND INDEX OF SHEETS.
 * MINIMUM THEORETICAL VERTICAL CLEARANCE. SEE PLAN VIEW FOR LOCATIONS. (BRIDGE "Q" CONTROLS VERTICAL CLEARANCES). SEE SHEET NO. B130 FOR VERTICAL CLEARANCE SIGN DETAILS AND NOTE.

BM#43 - 3/4" I.P. (30" LONG)
 CRL US-81 A001 STA. 465+43.47, 284.38' RT.
 ELEV. = 1098.98'

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SB US-81 OVER 29TH STREET
 BRIDGE "Q"
GENERAL PLAN AND ELEVATION (BRIDGE "Q")
 (SHEET NO. 2 OF 3)
 THREE SPAN (62'-100'-62') P.C. BEAM BRIDGE WITH VARYING SKEW, 50'-0" CLEAR ROADWAY AND 42" F-SHAPED PARAPETS AT ☉ STA. 459+38.32
 State Job No. 24428(12) Sheet No. B129

US 81 REALIGNMENT
 GRADY COUNTY

DESIGN DATA
(LOAD AND RESISTANCE FACTOR DESIGN)

CLASS "AA" CONCRETE F'C = 4,000 PSI
CLASS "A" CONCRETE F'C = 3,000 PSI
REINFORCING STEEL (GRADE 60) FY = 60,000 PSI
STRUCTURAL STEEL M270 (GRADE 50W) FY = 50,000 PSI
STAINLESS STEEL A240 (TYPE 316) FY = 30,000 PSI

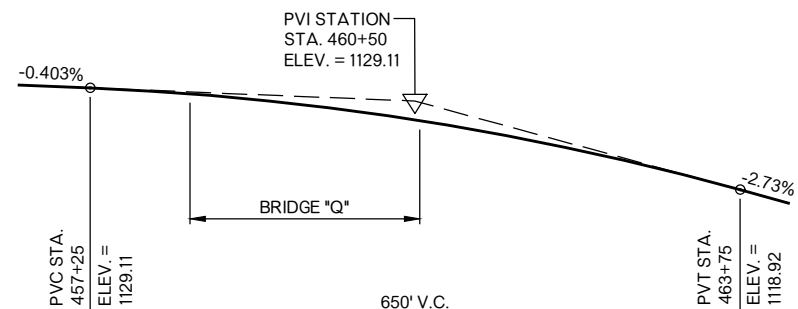
LOADING: HL-93 OR ODOT OVERLOAD TRUCK
20 PSF FUTURE WEARING SURFACE
5 PSF STAY-IN-PLACE FORMS

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION.
ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE.
ANSI/AWS D1.6 STRUCTURAL WELDING CODE - STAINLESS STEEL.

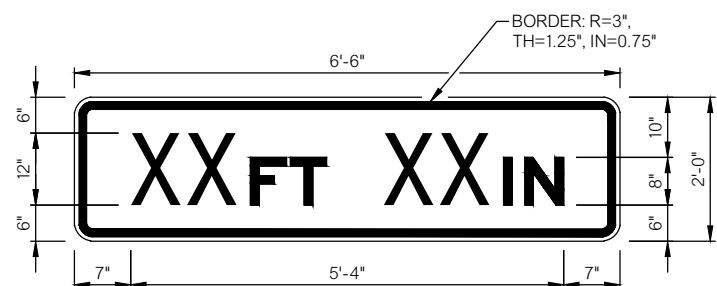
LFD OPERATING RATING: HS 49.9

THE FOLLOWING STANDARDS SHALL BE REQUIRED:

FSHP-42-2-00E
EJ-SK-04E
EJ-DTL-02E
HP1-2-01E
LECS-4-2
PUD-3-3



FINISH GRADE DATA
Q SURVEY US-81
(STATIONS SHOWN ON THE DETAIL ARE ALONG Q)



VERTICAL CLEARANCE SIGN DETAILS

SIGN NUMBER	W12-2p
WIDTH x HEIGHT	6'-6" x 2'-0"
BORDER WIDTH	1.25"
CORNER RADIUS	3"
MOUNTING	BRIDGE
BACKGROUND	TYPE: REFLECTIVE COLOR: YELLOW
LEGEND & BORDER	TYPE: REFLECTIVE COLOR: BLACK

NOTES

INSTALL ONE (1) SIGN ABOVE THE N.B. LANE OF 29TH STREET ON THE SOUTH SIDE OF SPAN 2 AND ONE (1) SIGN ABOVE THE S.B. LANE OF 29TH STREET ON THE NORTH SIDE OF SPAN 2.

SIGNS SHOULD INDICATE A VERTICAL CLEARANCE OF 3" MIN. LESS THAN THE FINAL MEASURED CLEARANCE. THE CONTRACTOR SHALL CONTACT ODOT DIV. 7 FOR FINAL MEASUREMENT OF VERTICAL CLEARANCES.

HARDWARE AND CONNECTION DETAILS TO THE P.C. BEAM SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

ALL COSTS FOR FABRICATION, LABOR, MATERIALS, HARDWARE, AND INSTALLATION OF THE VERTICAL CLEARANCE SIGNS, COMPLETE-IN-PLACE, SHALL BE INCLUDED IN THE PRICE BID FOR "SHEET ALUMINUM SIGNS", PER SQ. FT. (TRAFFIC ITEM).

THE INSTALLATION OF THE PERMANENT VERTICAL CLEARANCE SIGNS DOES NOT RELIEVE THE CONTRACTOR OF MAINTAINING APPROPRIATE VERTICAL CLEARANCE SIGNS DURING CONSTRUCTION. COSTS TO BE INCLUDED IN OTHER ITEMS OF WORK.

ABUTMENTS (HP12x53 PILING)	ABUT. 1	ABUT. 2
(1) FACTORED PILE REACTION (TONS/PILE)	= 86.00	86.00
PILE LENGTH (BR. SEAT, VERTICAL) (FT.)	= 68.00	63.00
PILE LENGTH (BR. SEAT, BATTERED) (FT.)	= 70.00	65.00
(2) PILE LENGTH (WINGS) (FT.)	= 71.00	66.00

(1) ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE FACTORED PILE CAPACITY IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE FACTORED PILE CAPACITY IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.

(2) HP10x42 PILES, WINGS

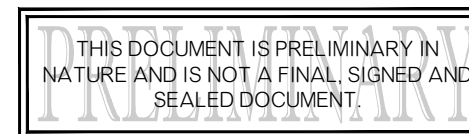
PIERS (72" DIAMETER DRILLED SHAFTS)	PIER 1	PIER 2
FACTORED REACTION (TONS/SHAFT)	= 496.0	496.0
NOMINAL UNIT BEARING RESISTANCE (TSF)	= 60.00	60.00
BEARING RESISTANCE FACTOR	= 0.70	0.70
FACTORED BEARING RESISTANCE (TONS/SHAFT)	= 1187.50	1187.50
NOMINAL UNIT FRICTION RESISTANCE (TSF)	= 7.20	9.00
FRICTION RESISTANCE FACTOR	= 0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAFT)	= 366.40	458.00
DEPTH OF ROCK NEGLECTED FOR FRICTION (FT.)	= 6.00	6.00
MINIMUM DEPTH INTO ROCK (FT.)	= 12.00	12.00
TOTAL FACTORED RESISTANCE (TONS/SHAFT)	= 1554.00	1645.60

SUMMARY OF QUANTITIES - BRIDGE "Q"

DESCRIPTION	UNIT	ABUTS.	PIERS	SUPSTR.	APPR. SLABS	SLOPE WALLS	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	238.20					238.20
CLSM BACKFILL	CY	334.20					334.20
PRESTRESSED CONCRETE BEAMS (TYPE III)	LF			730.00			730.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF			595.30			595.30
APPROACH SLAB	SY				521.80		521.80
SAW-CUT GROOVING	SY			1,250.10	492.30		1,742.40
SEALED EXPANSION JOINT	LF			59.00			59.00
42" F-SHAPED PARAPET	LF			450.10	178.00		628.10
STRUCTURAL STEEL	LB			2,280.00			2,280.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA			12.00			12.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA			24.00			24.00
CLASS AA CONCRETE	CY			339.90			339.90
CLASS A CONCRETE	CY	126.70	196.80				323.50
SLOPE WALL (5")	SY					1302.00	1,302.00
REINFORCING STEEL	LB		2,420.00				2,420.00
EPOXY COATED REINFORCING STEEL	LB	15,920.00	23,810.00	113,260.00			152,990.00
PILES, FURNISHED (HP10x42)	LF	273.00					273.00
PILES, FURNISHED (HP12x53)	LF	1,201.00					1,201.00
PILES, DRIVEN (HP10x42)	LF	273.00					273.00
PILES, DRIVEN (HP12x53)	LF	1,201.00					1,201.00
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00					1.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	197.00	498.80	918.00	87.00		1,700.80
DRILLED SHAFTS 72" DIAMETER	LF		324.00				324.00
CROSSHOLE SONIC LOGGING	EA		1.00				1.00
SEALER CRACK PREPARATION	LF			184.00			184.00
SEALER RESIN	GAL			3.00			3.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	126.00				182.00	308.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	200.00				30.00	230.00
OUTLET LATERAL HEADWALL	EA	2.00					2.00

INDEX OF SHEETS (BRIDGE "Q")

NO.	DESCRIPTION
AB01	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)(SHEET NO. 1 OF 4)
AB02	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)(SHEET NO. 2 OF 4)
AB03	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)(SHEET NO. 3 OF 4)
AB04	NOTES AND SUMMARY OF PAY QUANTITIES (BRIDGES)(SHEET NO. 4 OF 4)
B128	GENERAL PLAN AND ELEVATION (BRIDGE 'Q')(SHEET NO. 1 OF 3)
B129	GENERAL PLAN AND ELEVATION (BRIDGE 'Q')(SHEET NO. 2 OF 3)
B130	GENERAL PLAN AND ELEVATION (BRIDGE 'Q')(SHEET NO. 3 OF 3)
B131	SUBSURFACE PROFILE (SHEET NO. 1 OF 2)
B132	SUBSURFACE PROFILE (SHEET NO. 2 OF 2)
B133	SUBSTRUCTURE STAKING DIAGRAM
B134	ABUTMENT 1 DETAILS (SHEET NO. 1 OF 2)
B135	ABUTMENT 1 DETAILS (SHEET NO. 2 OF 2)
B136	ABUTMENT 1 WINGWALL DETAILS
B137	ABUTMENT 2 DETAILS (SHEET NO. 1 OF 2)
B138	ABUTMENT 2 DETAILS (SHEET NO. 2 OF 2)
B139	ABUTMENT 2 WINGWALL DETAILS
B140	SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS
B141	PIER DETAILS (SHEET NO. 1 OF 4)
B142	PIER DETAILS (SHEET NO. 2 OF 4)
B143	PIER DETAILS (SHEET NO. 3 OF 4)
B144	PIER DETAILS (SHEET NO. 4 OF 4)
B145	BEARING DETAILS
B146	TYPICAL CROSS SECTION
B147	TYPICAL LONGITUDINAL SECTION
B148	DIAPHRAGM DETAILS (SHEET NO. 1 OF 3)
B149	DIAPHRAGM DETAILS (SHEET NO. 2 OF 3)
B150	DIAPHRAGM DETAILS (SHEET NO. 3 OF 3)
B151	P.C. BEAM AND DIAPHRAGM LAYOUT
B152	SLAB PLAN SHOWING CANTILEVER LAYOUT
B153	PLAN SHOWING TOP OF SLAB ELEVATIONS
B154	BOTTOM SLAB REINFORCING PLAN (SHEET NO. 1 OF 2)
B155	BOTTOM SLAB REINFORCING PLAN (SHEET NO. 2 OF 2)
B156	TOP SLAB REINFORCING PLAN (SHEET NO. 1 OF 2)
B157	TOP SLAB REINFORCING PLAN (SHEET NO. 2 OF 2)
B158	TYPE III P.C. BEAM DETAILS (SHEET NO. 1 OF 2)
B159	TYPE III P.C. BEAM DETAILS (SHEET NO. 2 OF 2)
B160	TYPE IV P.C. BEAM DETAILS (SHEET NO. 1 OF 2)
B161	TYPE IV P.C. BEAM DETAILS (SHEET NO. 2 OF 2)
B162	APPROACH SLAB DETAILS (SHEET NO. 1 OF 3)
B163	APPROACH SLAB DETAILS (SHEET NO. 2 OF 3)
B164	APPROACH SLAB DETAILS (SHEET NO. 3 OF 3)
B165	SLOPE WALL DETAILS (SHEET NO. 1 OF 2)
B166	SLOPE WALL DETAILS (SHEET NO. 2 OF 2)



SB US-81 OVER 29TH STREET
BRIDGE "Q"
GENERAL PLAN AND ELEVATION (BRIDGE "Q")
(SHEET NO. 3 OF 3)
THREE SPAN (62'-100'-62") P.C. BEAM BRIDGE WITH VARYING SKEW, 50'-0" CLEAR ROADWAY
AND 42" F-SHAPED PARAPETS AT Q STA. 459+38.32
State Job No. 24428(12) Sheet No. B130

BORING NO. Q-1

STATION 458+18.0, 11.0' LEFT OF CL SURVEY US-81
(AUGUST 26, 2019)

BORING NO. Q-2

STATION 459+00.0, 52.0' LEFT OF CL SURVEY US-81
(SEPTEMBER 3, 2019)

LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH

- = WATER LEVEL WHILE DRILLING OR SAMPLING
- = WATER LEVEL AFTER DRILLING
- = WATER LEVEL 24 HOURS AFTER DRILLING
- = TOP OF ROCK

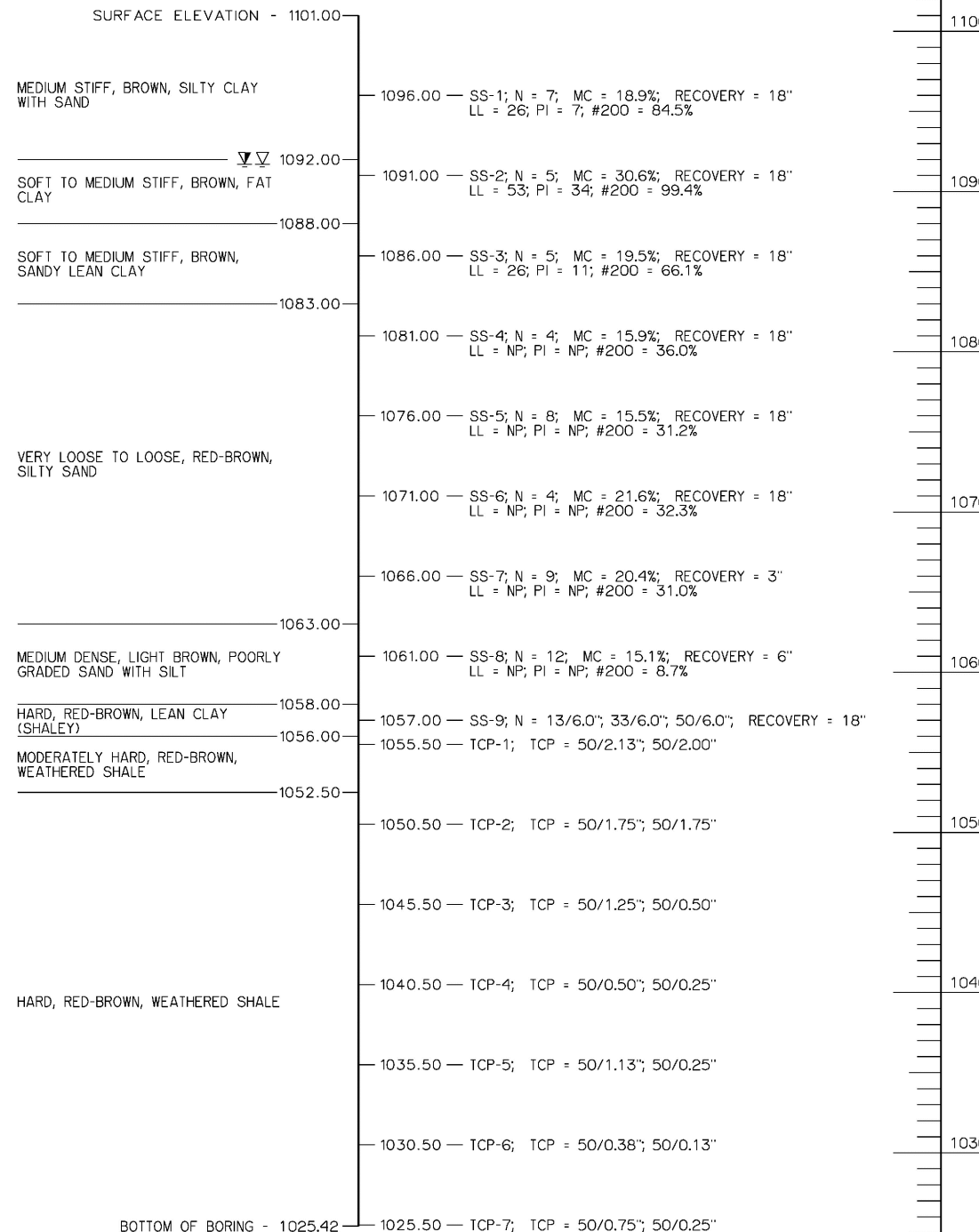
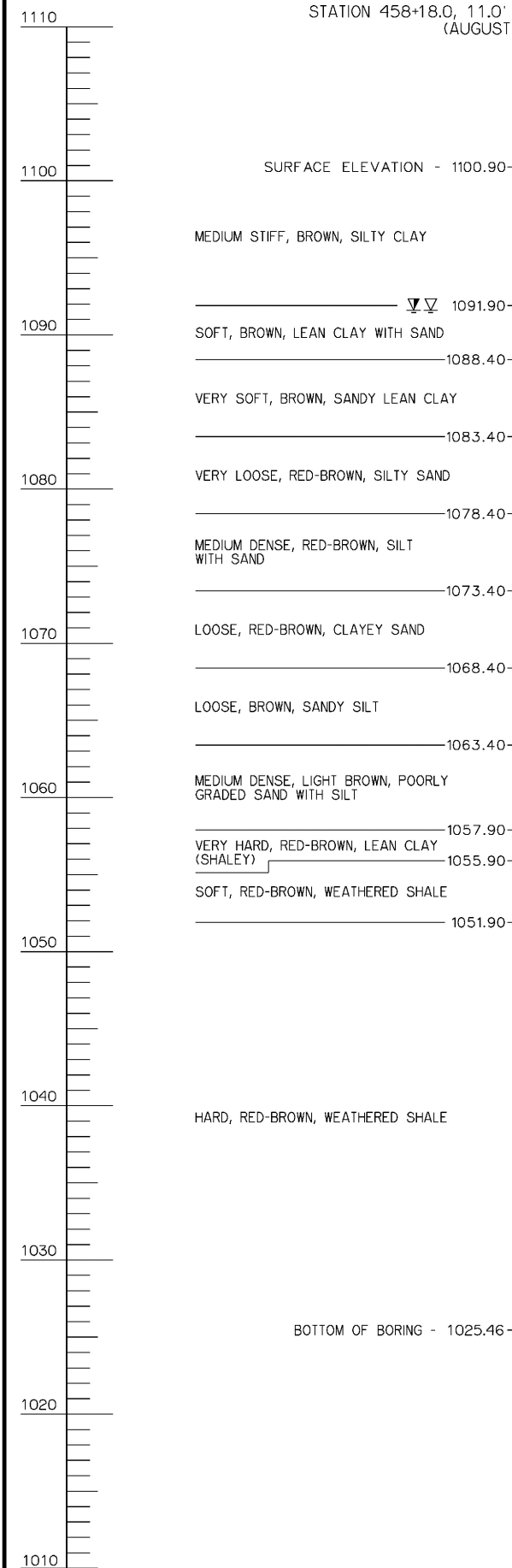
NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

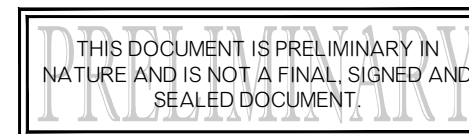
GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.



NOTE:

INFORMATION SHOWN ON THIS SHEET TAKEN FROM GEOTECHNICAL REPORT PREPARED BY EST, INC. DATED NOVEMBER 12, 2019.

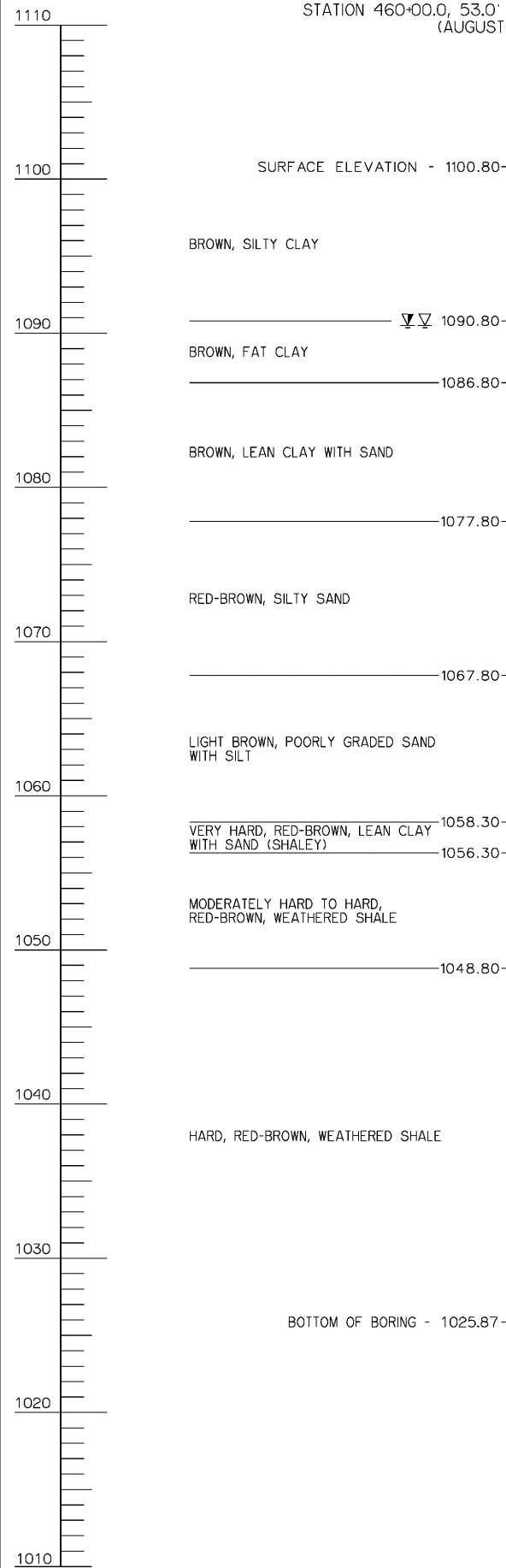


SB US-81 OVER 29TH STREET BRIDGE "Q"

SUBSURFACE PROFILE
(SHEET NO. 1 OF 2)

BORING NO. Q-3

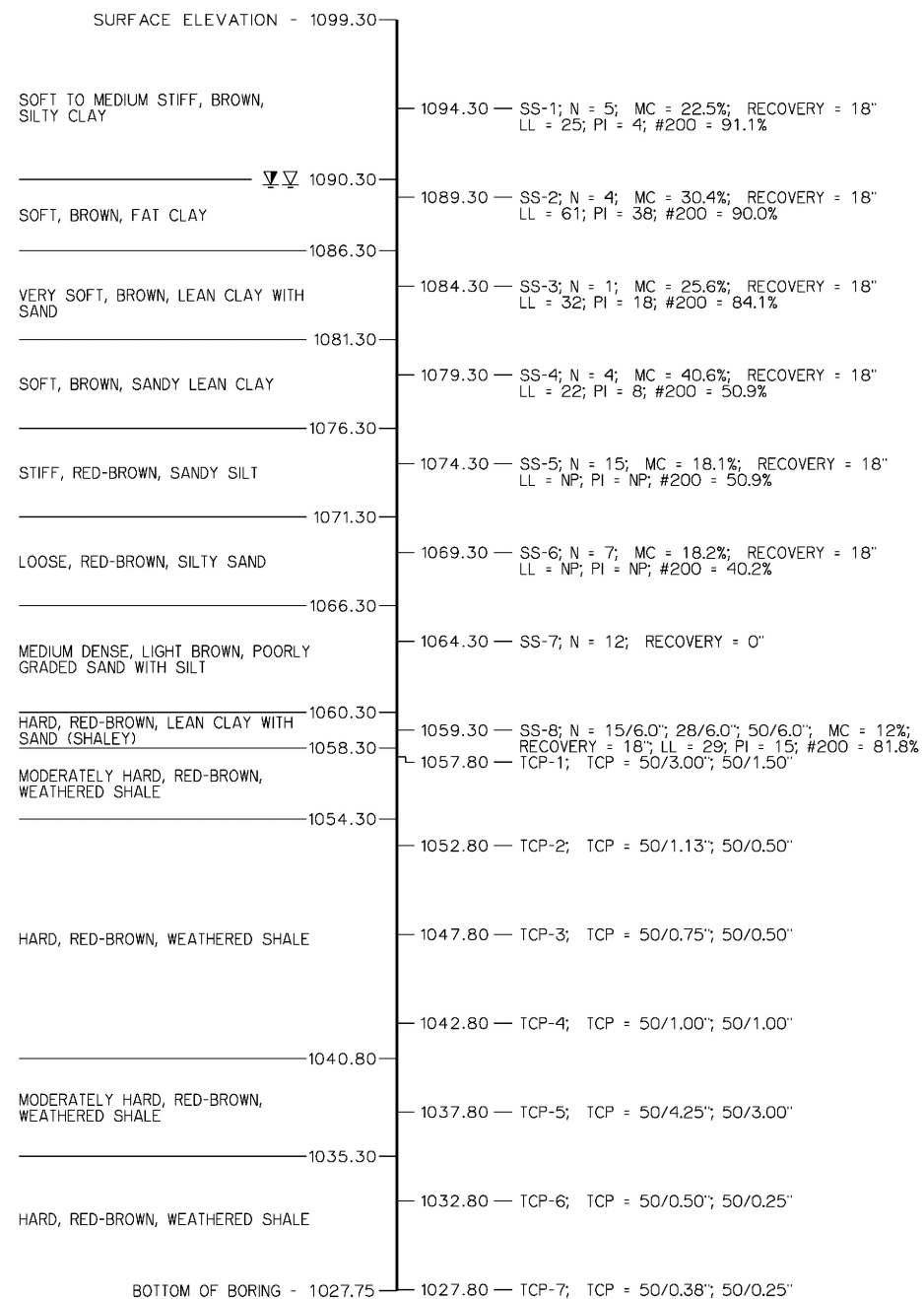
STATION 460+00.0, 53.0' LEFT OF CL SURVEY US-81
(AUGUST 30, 2019)



1057.30	SS-1; N = 44/6.0"; 24/6.0"; 50/4.0"; MC = 14.1%; RECOVERY = 16"
1055.97	TCP-1; TCP = 50/1.25"; 50/0.75"
1050.97	TCP-2; TCP = 50/2.25"; 50/1.50"
1045.97	TCP-3; TCP = 50/0.38"; 50/0.13"
1040.97	TCP-4; TCP = 50/0.50"; 50/0.13"
1035.97	TCP-5; TCP = 50/0.50"; 50/0.38"
1030.97	TCP-6; TCP = 50/1.00"; 50/0.63"
1025.97	TCP-7; TCP = 50/0.75"; 50/0.50"

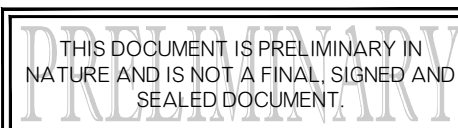
BORING NO. Q-4

STATION 460+77.0, 79.0' LEFT OF CL SURVEY US-81
(AUGUST 29, 2019)



NOTE:

INFORMATION SHOWN ON THIS SHEET TAKEN FROM
GEOTECHNICAL REPORT PREPARED BY EST, INC.
DATED NOVEMBER 12, 2019.



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH

- = WATER LEVEL WHILE DRILLING OR SAMPLING
- = WATER LEVEL AFTER DRILLING
- = WATER LEVEL 24 HOURS AFTER DRILLING
- = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

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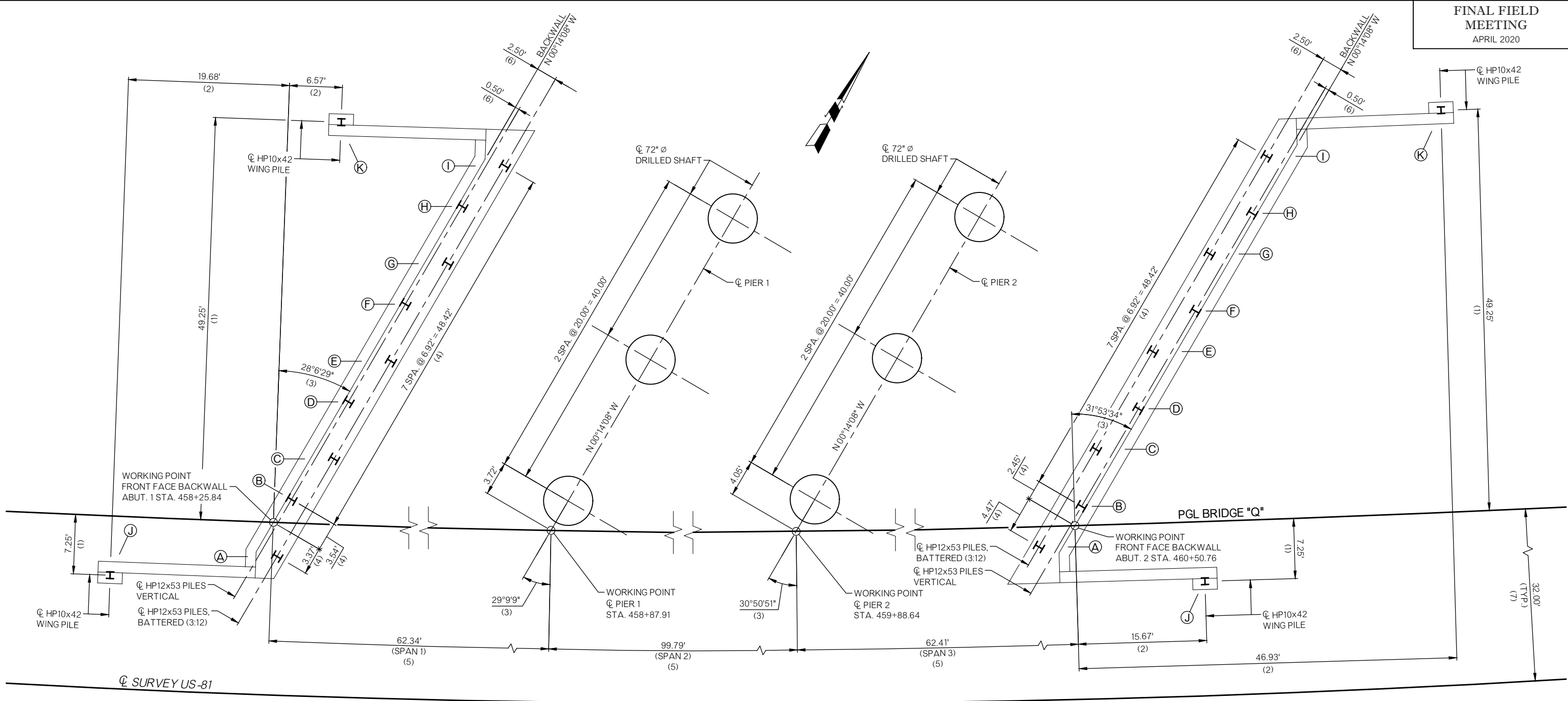
GEOTECHNICAL REPORT

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

SUBSURFACE PROFILE
(SHEET NO. 2 OF 2)



SUBSTRUCTURE STAKING DIAGRAM
(NOT TO SCALE)

TOP OF PILE ELEVATION SCHEDULE		
PILE	ABUTMENT 1	ABUTMENT 2
A	1121.70	1119.09
B	1121.37	1118.74
C	1121.04	1118.38
D	1120.71	1118.03
E	1120.38	1117.68
F	1120.04	1117.33
G	1119.71	1116.97
H	1119.38	1116.62
I	1119.05	1116.27
J	1124.87	1122.22
K	1121.92	1118.97

- NOTES**
- (1) MEASURED NORMAL TO PGL BRIDGE "Q" AT THE ϕ PILE.
 - (2) MEASURED RADIALLY AND PARALLEL TO PGL BRIDGE "Q" AT THE ϕ PILE.
 - (3) MEASURED TO TANGENT OF PGL BRIDGE "Q" AT WORKING POINT.
 - (4) MEASURED PARALLEL TO BACKWALL.
 - (5) MEASURED RADIALLY ALONG PGL BRIDGE "Q".
 - (6) MEASURED NORMAL TO BACKWALL.
 - (7) MEASURED RADIALLY.

- NOTES**
- ALL SUBSTRUCTURE WORKING LINES (FRONT FACE BACKWALL AND ϕ PIER LINES) ARE PARALLEL.
 - FACE OF PILE WEB SHALL BE PERPENDICULAR TO FACE OF BRIDGE SEAT.
 - FOR SUMMARY OF QUANTITIES, SEE SHEET NO. B130.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SB US-81 OVER 29TH STREET BRIDGE "Q"

SUBSTRUCTURE STAKING DIAGRAM

State Job No. 24428(12)

Sheet No. B133

US 81 REALIGNMENT
GRADY COUNTY

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

NOTE

- TREAT FRONT FACE OF BACKWALL, TOP OF ABUTMENT SEAT, AND ALL SURFACES OF PEDESTALS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. TREAT FRONT FACE OF ABUTMENT SEAT ABOVE THE FINISHED GROUND LINE WITH PENETRATING WATER REPELLENT SURFACE TREATMENT.

NOTES
ALL REINFORCING STEEL BETWEEN BRIDGE SEAT AND/OR BACKWALL AND WINGS SHALL BE TIED IN PLACE PRIOR TO POURING BRIDGE SEAT AND BACKWALL.

FOR ADDITIONAL ABUTMENT 1 DETAILS, SEE SHEET NO. B135.

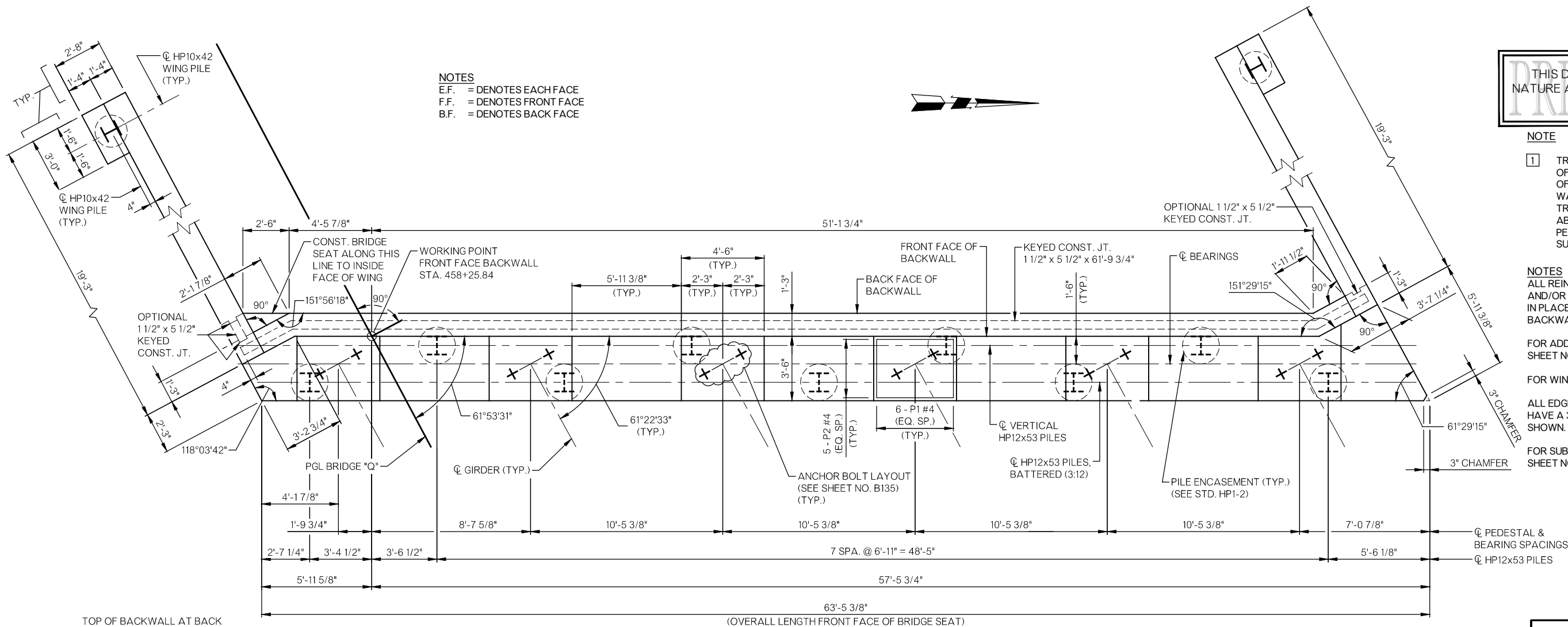
FOR WING DETAILS, SEE SHEET NO. B136.

ALL EDGES OF THE ABUTMENT AND WINGS SHALL HAVE A 3/4" CHAMFER, UNLESS OTHERWISE SHOWN.

FOR SUBSTRUCTURE STAKING DIAGRAM, SEE SHEET NO. B133.

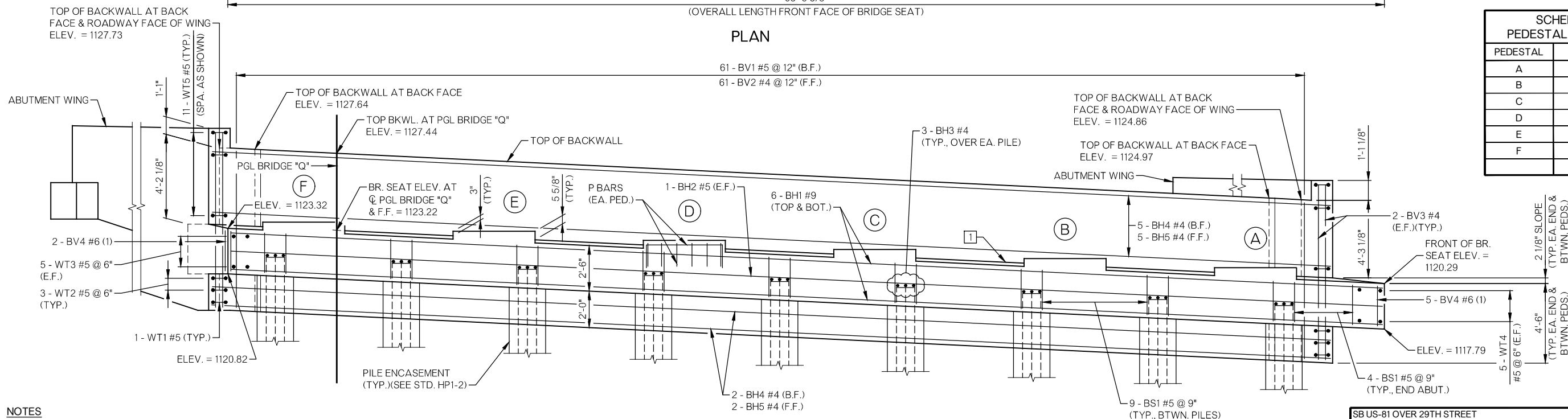
NOTES

- E.F. = DENOTES EACH FACE
- F.F. = DENOTES FRONT FACE
- B.F. = DENOTES BACK FACE



PLAN
(OVERALL LENGTH FRONT FACE OF BRIDGE SEAT)

SCHEDULE OF PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
A	1121.16
B	1121.66
C	1122.16
D	1122.66
E	1123.16
F	1123.66



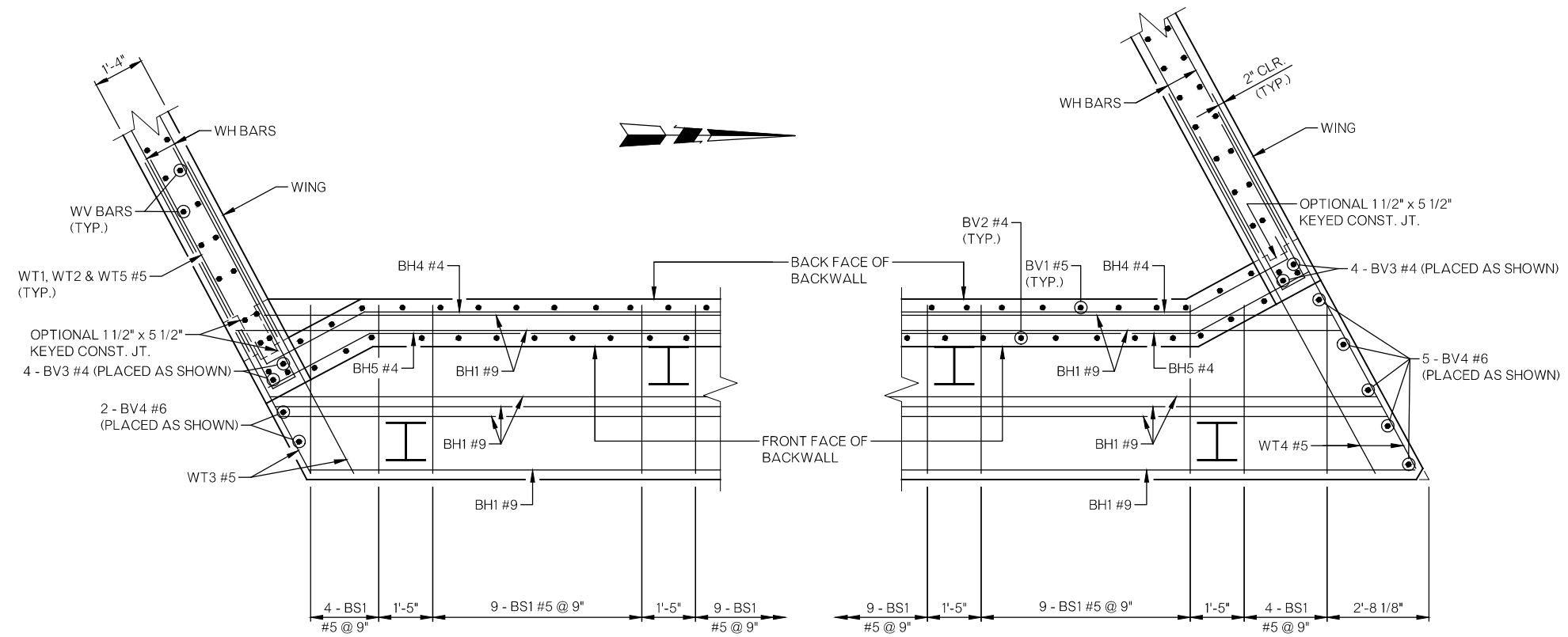
ELEVATION

NOTES

- PLACED AS SHOWN ON SHEET NO. B135.

SB US-81 OVER 29TH STREET
BRIDGE "Q"

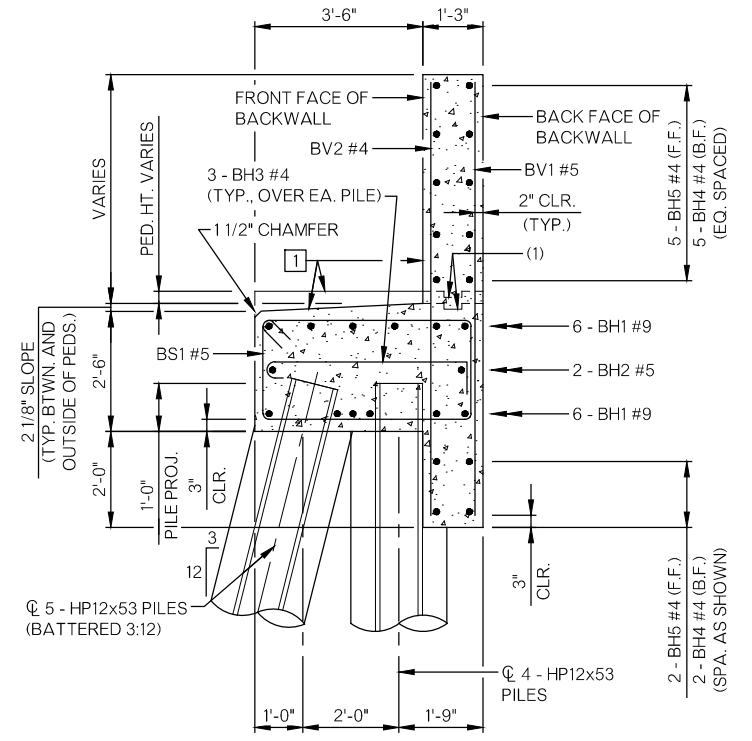
ABUTMENT 1 DETAILS
(SHEET NO. 1 OF 2)



PARTIAL PLAN OF BRIDGE SEAT AND BACKWALL SHOWING REINFORCING STEEL
(SHOWING BOTTOM REINFORCING IN ABUTMENT SEAT)

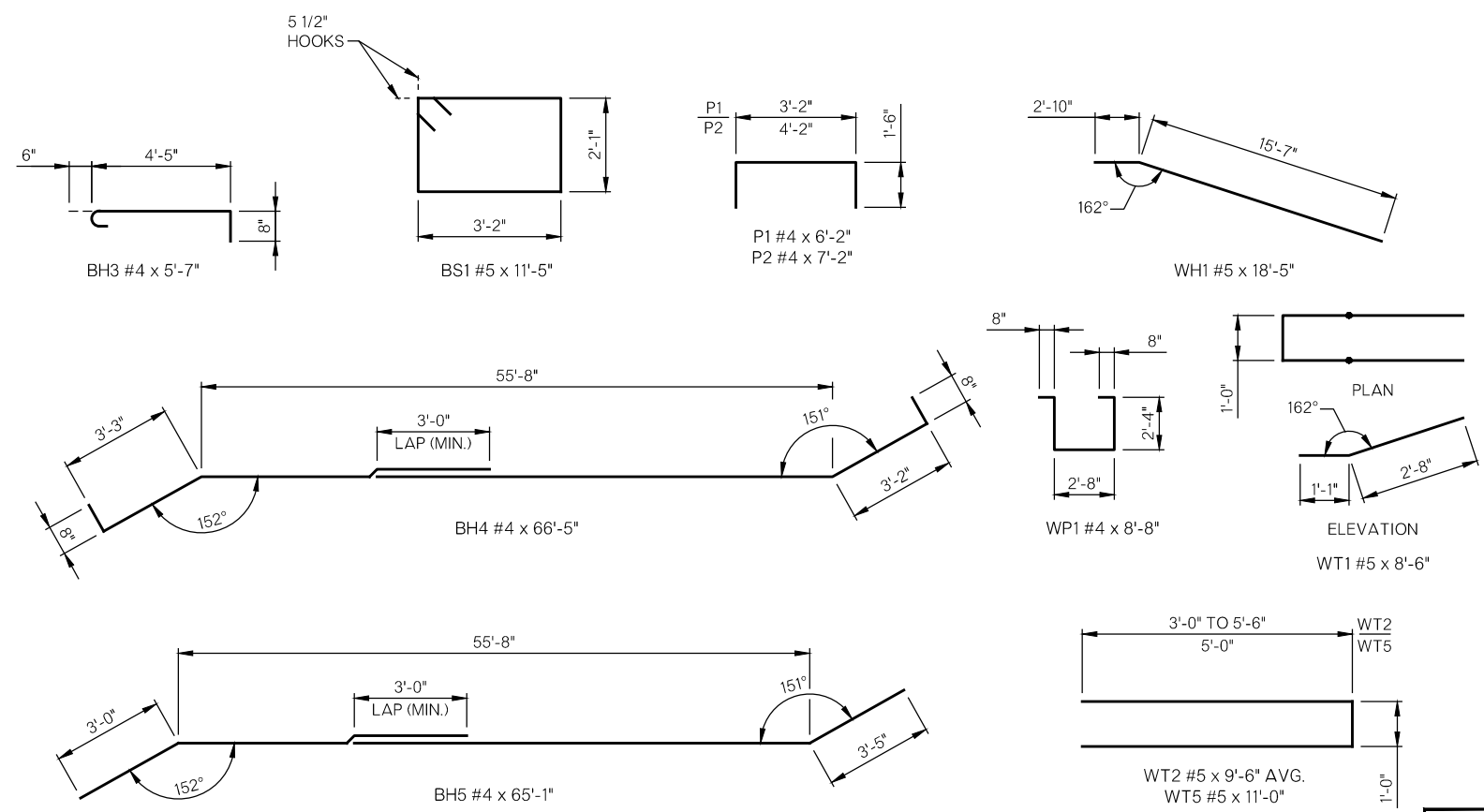
NOTES
F.F. = DENOTES FRONT FACE
B.F. = DENOTES BACK FACE

NOTE
(1) 1 1/2" x 5 1/2" KEYED CONST. JT. (TO FOLLOW TOP OF PEDS. AND BR. SEAT)

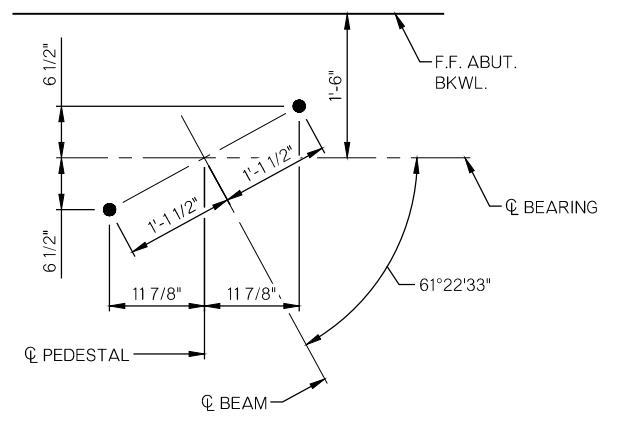


SECTION THRU BRIDGE SEAT

NOTE
[1] TREAT FRONT FACE OF BACKWALL, TOP OF ABUTMENT SEAT, AND ALL SURFACES OF PEDESTALS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. TREAT FRONT FACE OF ABUTMENT SEAT ABOVE THE FINISHED GROUND LINE WITH PENETRATING WATER REPELLENT SURFACE TREATMENT.



BAR BEND DETAILS

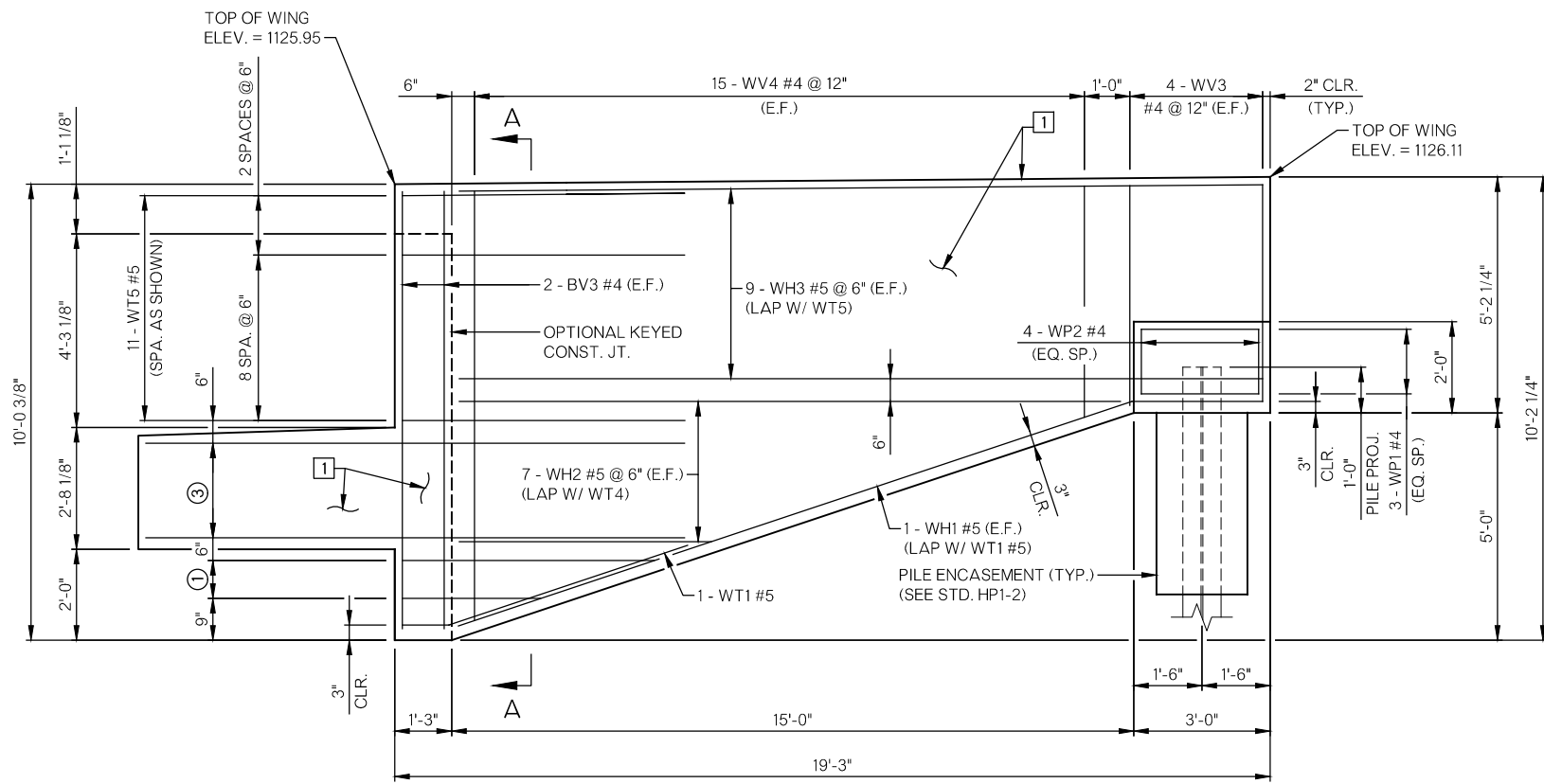


TYPICAL ANCHOR BOLT LAYOUT

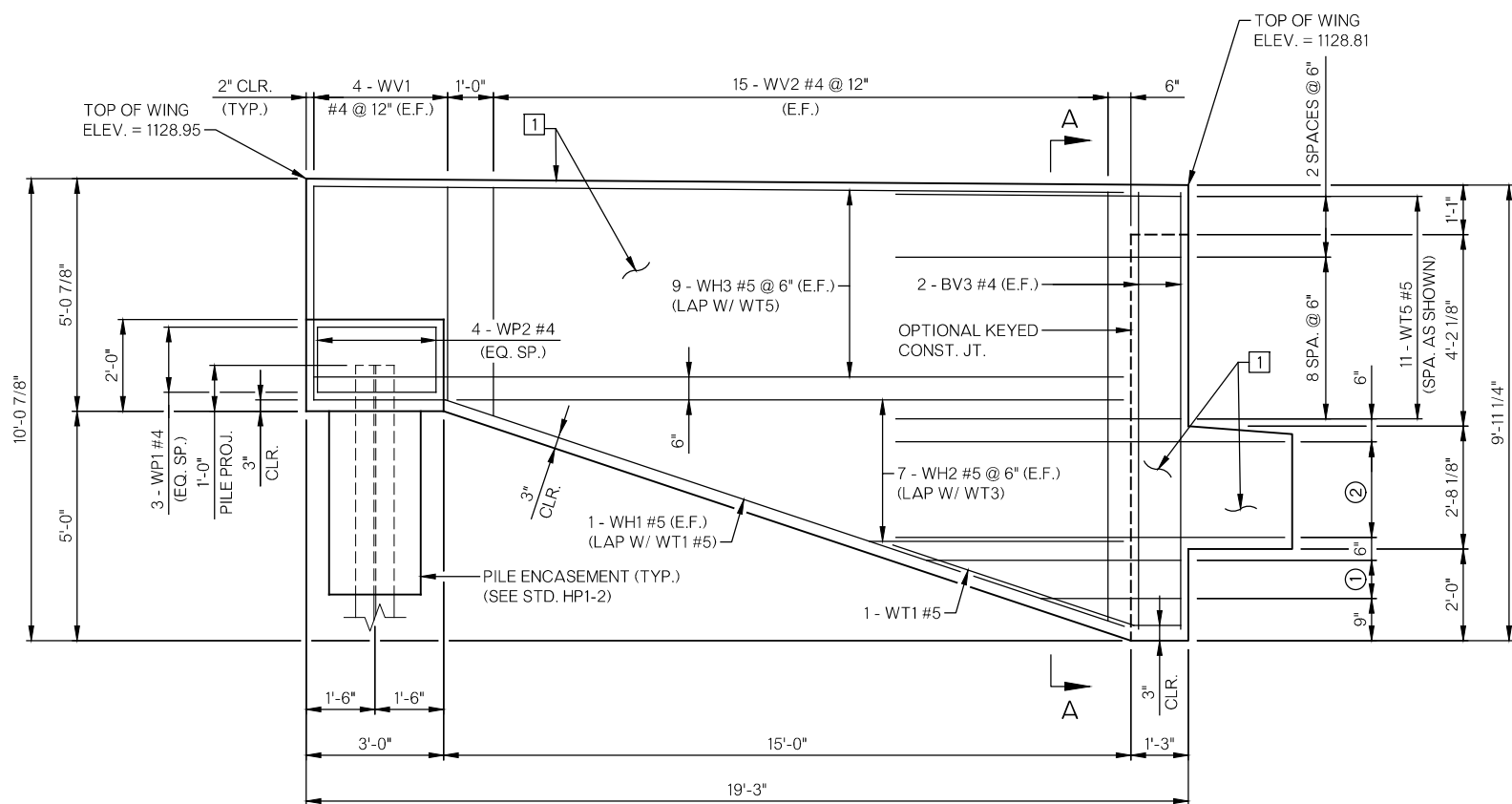
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SB US-81 OVER 29TH STREET
BRIDGE "Q"

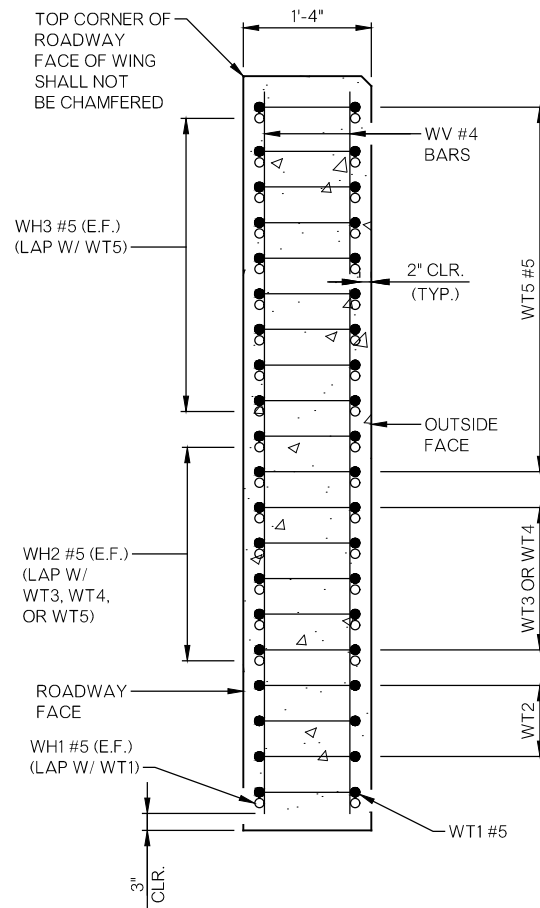
ABUTMENT 1 DETAILS
(SHEET NO. 2 OF 2)



NORTH WING ELEVATION



SOUTH WING ELEVATION



SECTION A-A

NOTES

E.F. = DENOTES EACH FACE

1 TREAT ENDS OF THE BRIDGE SEAT AND ALL EXPOSED SURFACES OF WINGS WITH WATER REPELLENT SURFACE TREATMENT, ABOVE THE FINISHED GROUND LINE.

NOTES

① 3 - WT2 #5 @ 6"

② 5 - WT3 #5 @ 6" (E.F.)

③ 5 - WT4 #5 @ 6" (E.F.)

ABUTMENT 1 QUANTITIES

ITEM	UNITS	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	120.10
CLSM BACKFILL	CY	162.20
CLASS A CONCRETE	CY	62.30
EPOXY COATED REINFORCING STEEL	LB	7,860.00
PILES, FURNISHED (HP10x42)	LF	141.00
PILES, FURNISHED (HP12x53)	LF	622.00
PILES, DRIVEN (HP10x42)	LF	141.00
PILES, DRIVEN (HP12x53)	LF	622.00
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA	1.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	96.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	62.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	100.00
OUTLET LATERAL HEADWALL	EA	1.00

ABUTMENT 1 BAR LIST

MARK	NO.	SIZE	FORM	LENGTH	REMARKS
(EPOXY COATED)					
(1)	BH1	12	#9	STR.	70'-0"
(2)	BH2	2	#5	STR.	66'-8"
	BH3	27	#4	BNT.	5'-7"
(3)	BH4	7	#4	BNT.	66'-5"
(3)	BH5	7	#4	BNT.	65'-1"
	BS1	80	#5	BNT.	11'-5"
	BV1	61	#5	STR.	8'-5"
	BV2	61	#4	STR.	8'-5"
	BV3	8	#4	STR.	9'-6"
	BV4	7	#6	STR.	2'-1"
	P1	36	#4	BNT.	6'-2"
	P2	30	#4	BNT.	7'-2"
	WH1	4	#5	BNT.	18'-5"
(4)	WH2	28	#5	STR.	10'-1" AVG.
	WH3	36	#5	STR.	17'-8"
	WP1	6	#4	BNT.	8'-8"
	WP2	8	#4	STR.	1'-7"
	WT1	2	#5	BNT.	8'-6"
(5)	WT2	6	#5	BNT.	9'-6" AVG.
	WT3	10	#5	STR.	8'-2"
	WT4	10	#5	STR.	11'-0"
	WT5	22	#5	BNT.	11'-0"
	WV1	8	#4	STR.	4'-7"
(6)	WV2	30	#4	STR.	7'-1" AVG.
	WV1	8	#4	STR.	4'-9"
(7)	WV2	30	#4	STR.	7'-3" AVG.

- (1) LENGTH INCLUDES ONE (1) 7'-0" LAP SPLICE.
- (2) LENGTH INCLUDES ONE (1) 3'-8" LAP SPLICE.
- (3) LENGTH INCLUDES ONE (1) 3'-0" LAP SPLICE.
- (4) 7 BARS VARYING FROM 5'-5" TO 14'-9"; FOUR OF EACH LENGTH.
- (5) 3 BARS VARYING FROM 7'-0" TO 12'-0"; TWO OF EACH LENGTH.
- (6) 15 BARS VARYING FROM 4'-11" TO 9'-3"; TWO OF EACH LENGTH.
- (7) 15 BARS VARYING FROM 5'-1" TO 9'-5"; TWO OF EACH LENGTH.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

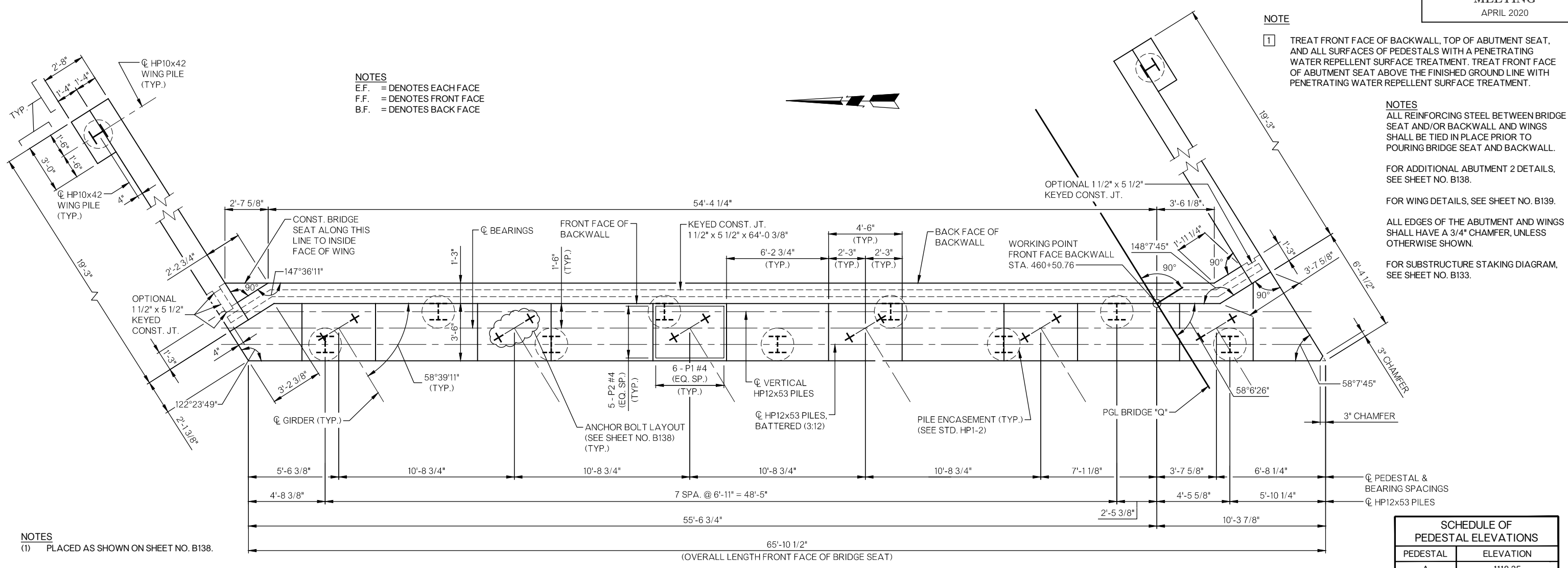
SB US-81 OVER 29TH STREET
BRIDGE "Q"

ABUTMENT 1 WINGWALL DETAILS

NOTE
 [1] TREAT FRONT FACE OF BACKWALL, TOP OF ABUTMENT SEAT, AND ALL SURFACES OF PEDESTALS WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. TREAT FRONT FACE OF ABUTMENT SEAT ABOVE THE FINISHED GROUND LINE WITH PENETRATING WATER REPELLENT SURFACE TREATMENT.

NOTES
 ALL REINFORCING STEEL BETWEEN BRIDGE SEAT AND/OR BACKWALL AND WINGS SHALL BE TIED IN PLACE PRIOR TO POURING BRIDGE SEAT AND BACKWALL.
 FOR ADDITIONAL ABUTMENT 2 DETAILS, SEE SHEET NO. B138.
 FOR WING DETAILS, SEE SHEET NO. B139.
 ALL EDGES OF THE ABUTMENT AND WINGS SHALL HAVE A 3/4" CHAMFER, UNLESS OTHERWISE SHOWN.
 FOR SUBSTRUCTURE STAKING DIAGRAM, SEE SHEET NO. B133.

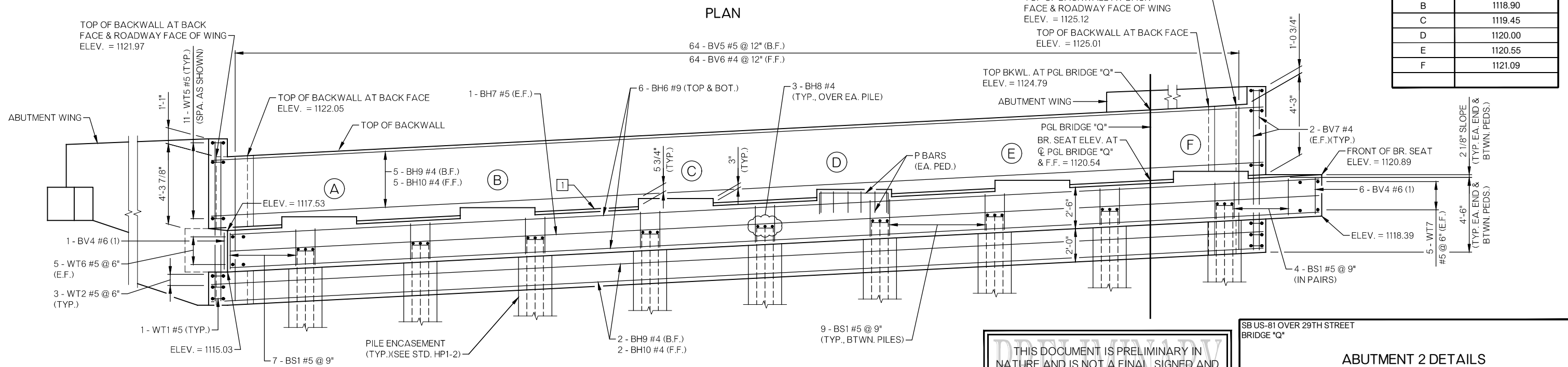
NOTES
 E.F. = DENOTES EACH FACE
 F.F. = DENOTES FRONT FACE
 B.F. = DENOTES BACK FACE



NOTES
 (1) PLACED AS SHOWN ON SHEET NO. B138.

SCHEDULE OF PEDESTAL ELEVATIONS

PEDESTAL	ELEVATION
A	1118.35
B	1118.90
C	1119.45
D	1120.00
E	1120.55
F	1121.09

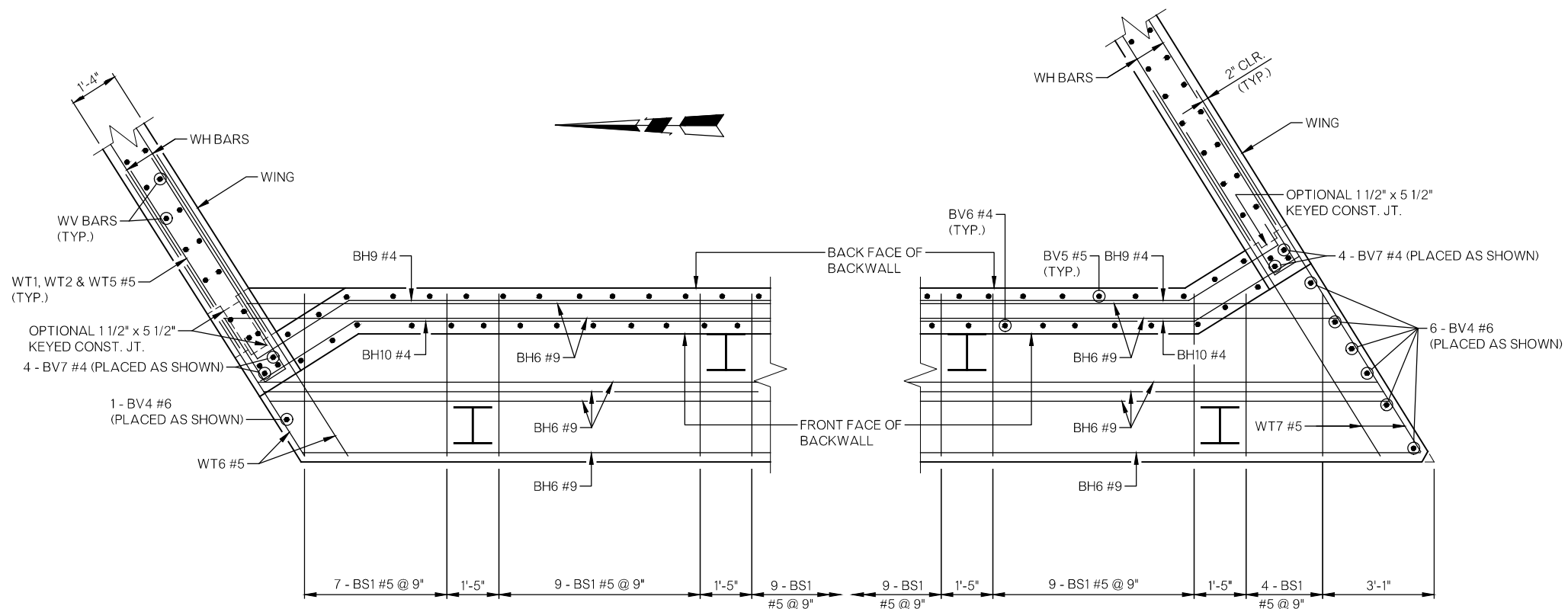


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SB US-81 OVER 29TH STREET BRIDGE "Q"
ABUTMENT 2 DETAILS
 (SHEET NO. 1 OF 2)
 State Job No. 24428(12) Sheet No. B137

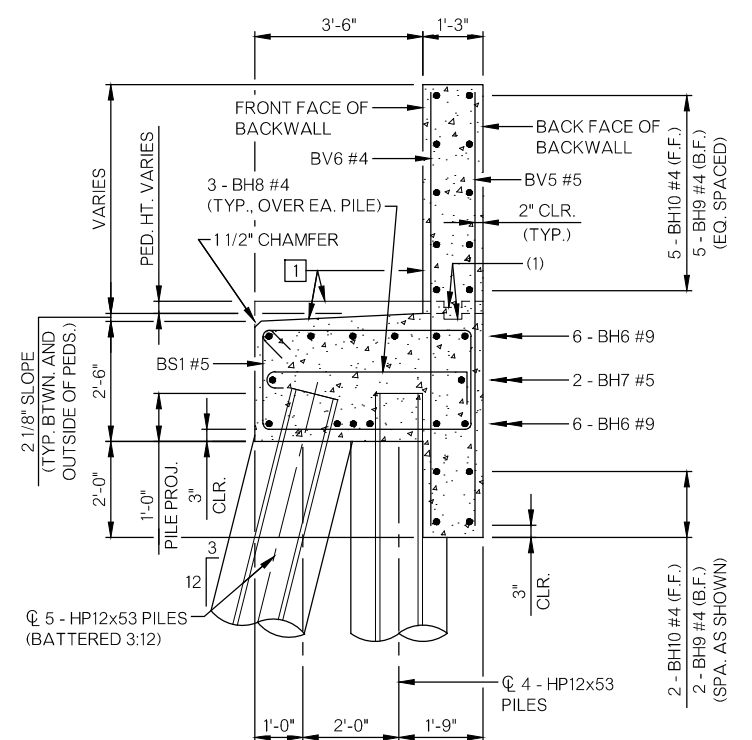
US 81 REALIGNMENT
GRADY COUNTY

NOTE
(1) 1 1/2" x 5 1/2" KEYED CONST. JT. (TO FOLLOW TOP OF PEDS. AND BR. SEAT)



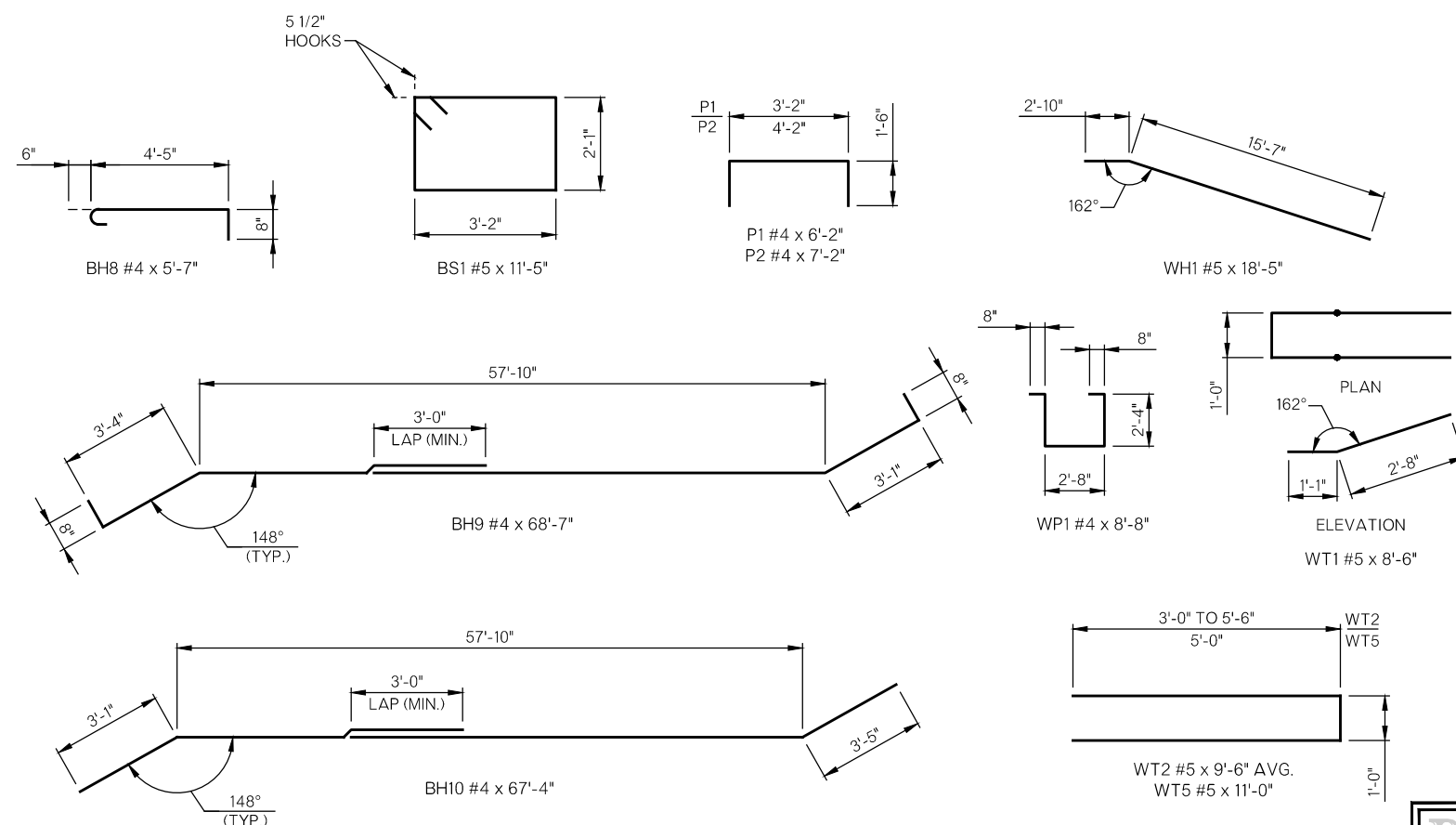
PARTIAL PLAN OF BRIDGE SEAT AND BACKWALL SHOWING REINFORCING STEEL
(SHOWING BOTTOM REINFORCING IN ABUTMENT SEAT)

NOTES
F.F. = DENOTES FRONT FACE
B.F. = DENOTES BACK FACE

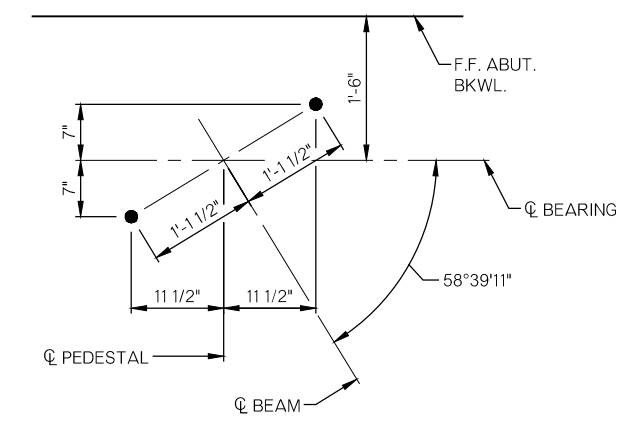


SECTION THRU BRIDGE SEAT

NOTE
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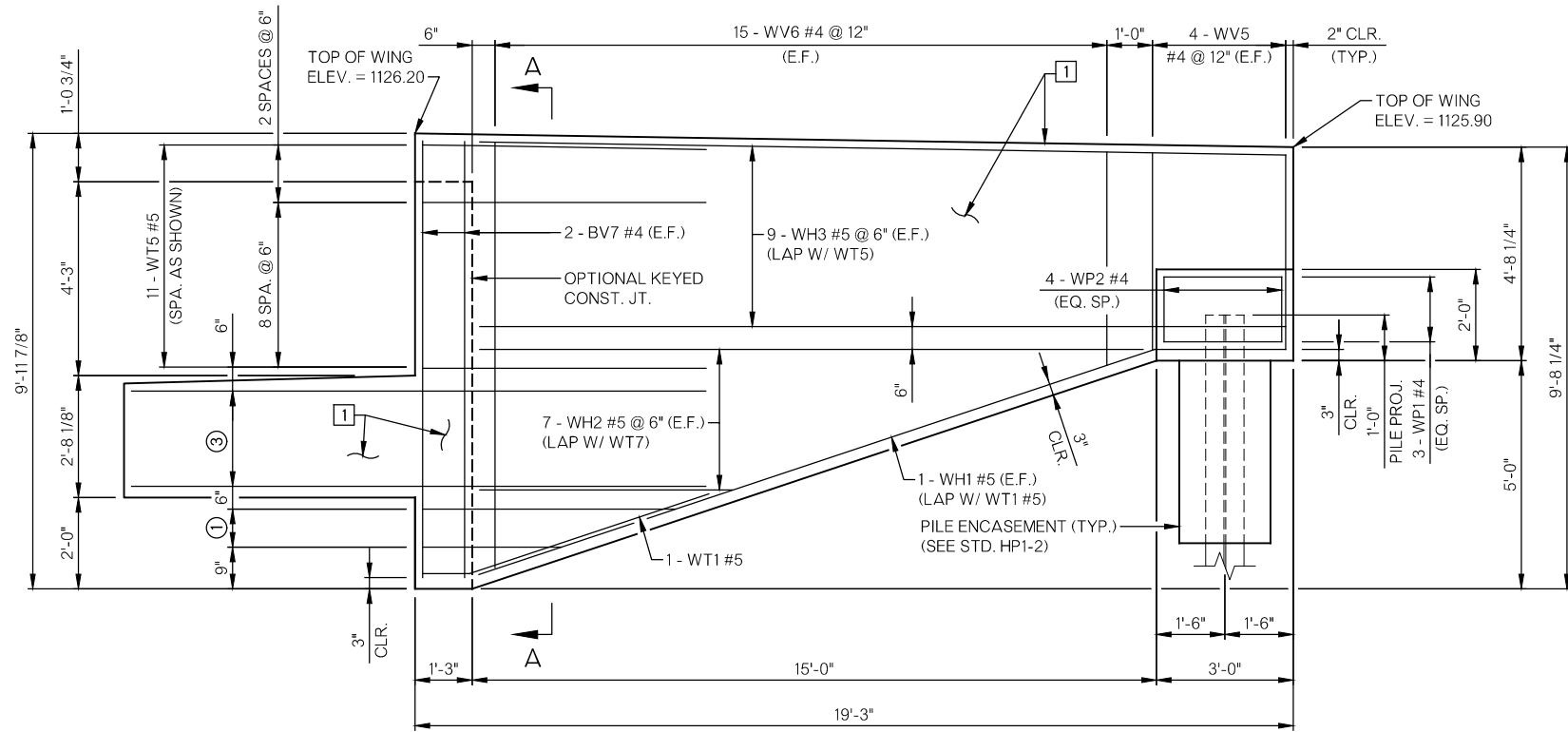


BAR BEND DETAILS

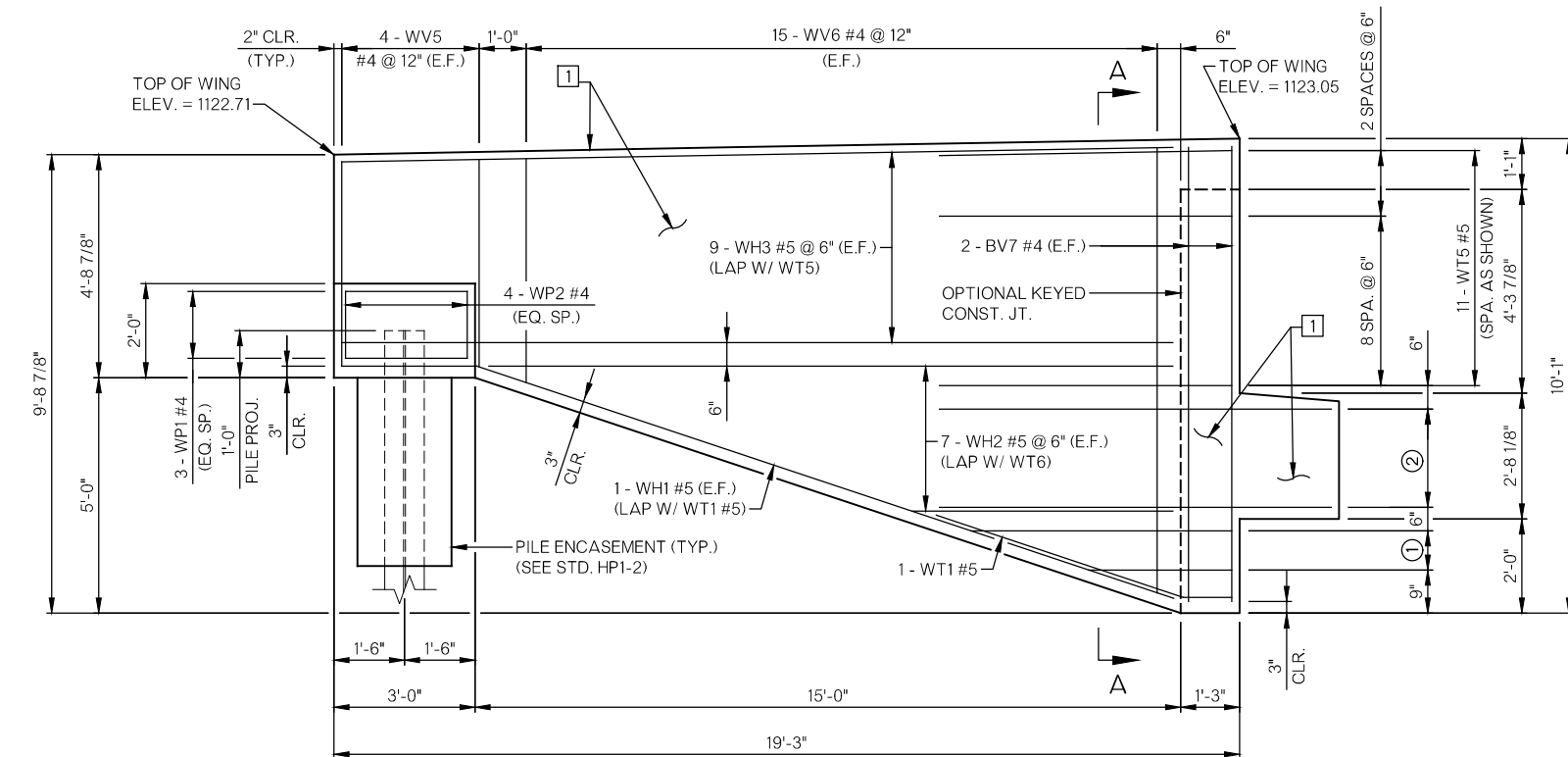


TYPICAL ANCHOR BOLT LAYOUT

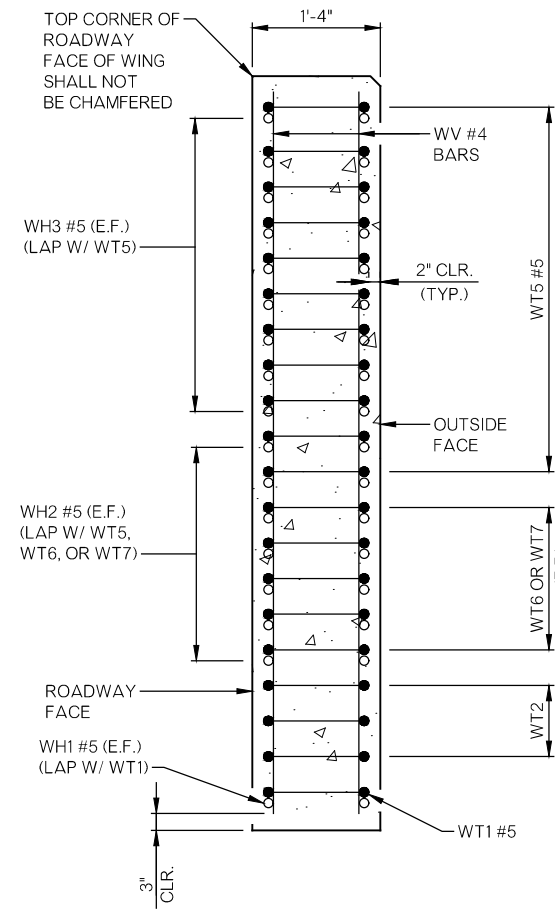
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SOUTH WING ELEVATION



NORTH WING ELEVATION



SECTION A-A

NOTES

E.F. = DENOTES EACH FACE

1 TREAT ENDS OF THE BRIDGE SEAT AND ALL EXPOSED SURFACES OF WINGS WITH WATER REPELLENT SURFACE TREATMENT, ABOVE THE FINISHED GROUND LINE.

NOTES

1 3 - WT2 #5 @ 6"

2 5 - WT6 #5 @ 6" (E.F.)

3 5 - WT7 #5 @ 6" (E.F.)

ABUTMENT 2 QUANTITIES

ITEM	UNITS	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	118.10
CLSM BACKFILL	CY	172.00
CLASS A CONCRETE	CY	64.40
EPOXY COATED REINFORCING STEEL	LB	8,060.00
PILES, FURNISHED (HP10x42)	LF	132.00
PILES, FURNISHED (HP12x53)	LF	579.00
PILES, DRIVEN (HP10x42)	LF	132.00
PILES, DRIVEN (HP12x53)	LF	579.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	100.50
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	64.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	100.00
OUTLET LATERAL HEADWALL	EA	1.00

ABUTMENT 2 BAR LIST

MARK	NO.	SIZE	FORM	LENGTH	REMARKS
(EPOXY COATED)					
(1)	BH6	12	#9 STR.	72'-5"	
(2)	BH7	2	#5 STR.	69'-1"	
	BH8	27	#4 BNT.	5'-7"	
(3)	BH9	7	#4 BNT.	68'-7"	
(3)	BH10	7	#4 BNT.	67'-4"	
	BS1	83	#5 BNT.	11'-5"	
	BV4	7	#6 STR.	2'-1"	
	BV5	64	#5 STR.	8'-6"	
	BV6	64	#4 STR.	8'-6"	
	BV7	8	#4 STR.	9'-7"	
	P1	36	#4 BNT.	6'-2"	
	P2	30	#4 BNT.	7'-2"	
	WH1	4	#5 BNT.	18'-5"	
(4)	WH2	28	#5 STR.	10'-1" AVG.	
	WH3	36	#5 STR.	17'-8"	
	WP1	6	#4 BNT.	8'-8"	
	WP2	8	#4 STR.	1'-7"	
	WT1	2	#5 BNT.	8'-6"	
(5)	WT2	6	#5 BNT.	9'-6" AVG.	
	WT5	22	#5 BNT.	11'-0"	
	WT6	10	#5 STR.	8'-2"	
	WT7	10	#5 STR.	11'-4"	
	WV3	16	#4 STR.	4'-3"	
(6)	WV4	60	#4 STR.	7'-0" AVG.	

- (1) LENGTH INCLUDES ONE (1) 7'-0" LAP SPLICE.
- (2) LENGTH INCLUDES ONE (1) 3'-8" LAP SPLICE.
- (3) LENGTH INCLUDES ONE (1) 3'-0" LAP SPLICE.
- (4) 7 BARS VARYING FROM 5'-5" TO 14'-9"; FOUR OF EACH LENGTH.
- (5) 3 BARS VARYING FROM 7'-0" TO 12'-0"; TWO OF EACH LENGTH.
- (6) 15 BARS VARYING FROM 4'-8" TO 9'-4"; FOUR OF EACH LENGTH.

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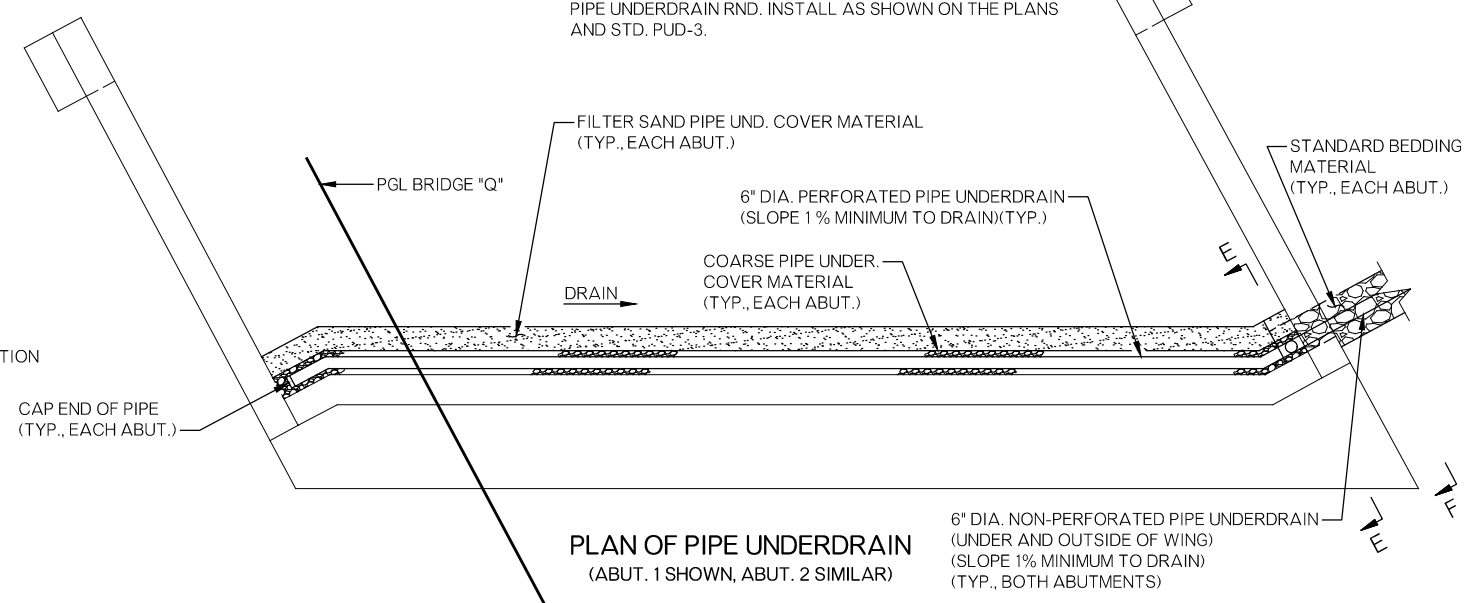
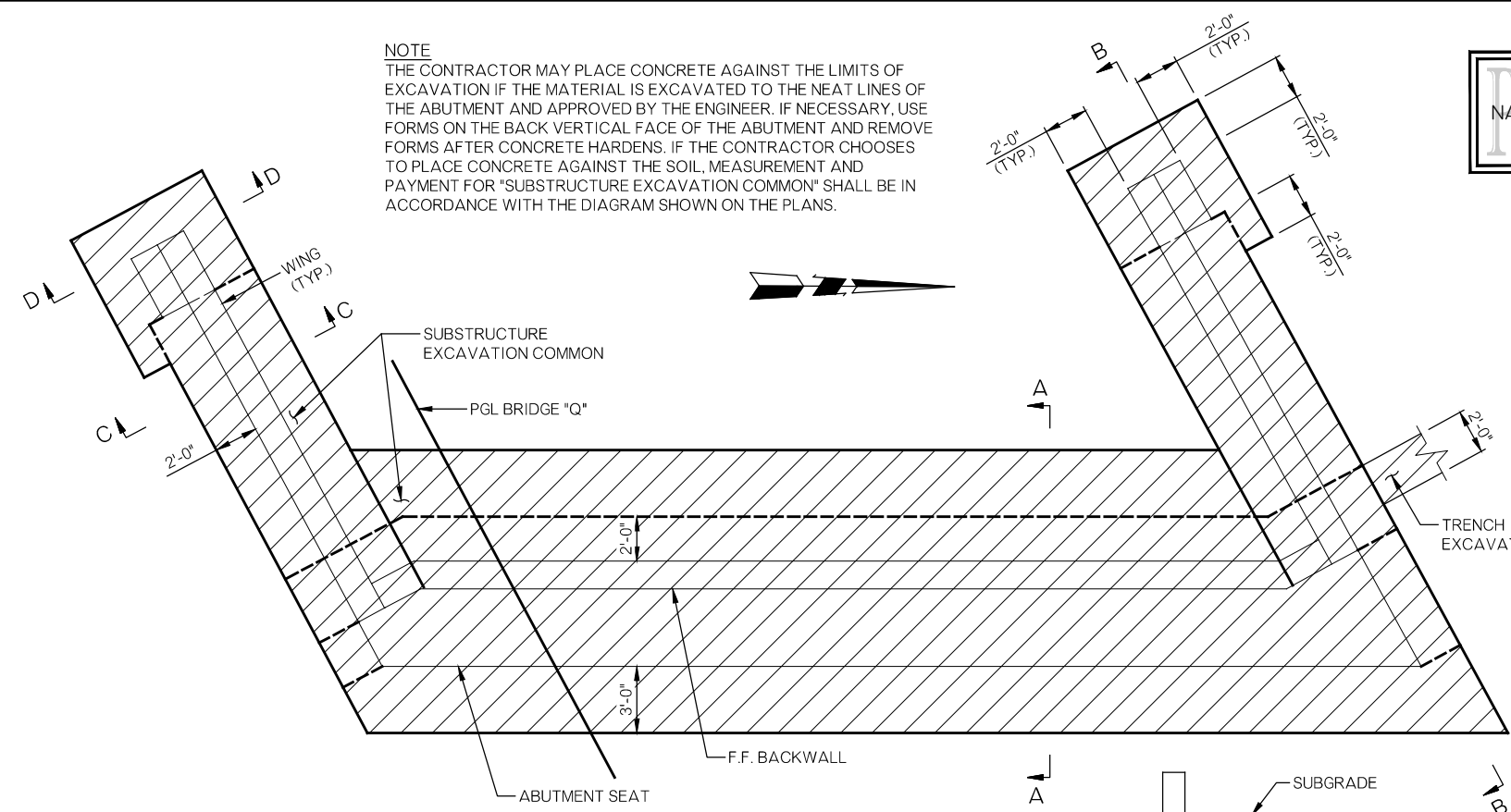
SB US-81 OVER 29TH STREET
BRIDGE "Q"

ABUTMENT 2 WINGWALL DETAILS

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NOTE
THE CONTRACTOR MAY PLACE CONCRETE AGAINST THE LIMITS OF EXCAVATION IF THE MATERIAL IS EXCAVATED TO THE NEAT LINES OF THE ABUTMENT AND APPROVED BY THE ENGINEER. IF NECESSARY, USE FORMS ON THE BACK VERTICAL FACE OF THE ABUTMENT AND REMOVE FORMS AFTER CONCRETE HARDENS. IF THE CONTRACTOR CHOOSES TO PLACE CONCRETE AGAINST THE SOIL, MEASUREMENT AND PAYMENT FOR "SUBSTRUCTURE EXCAVATION COMMON" SHALL BE IN ACCORDANCE WITH THE DIAGRAM SHOWN ON THE PLANS.

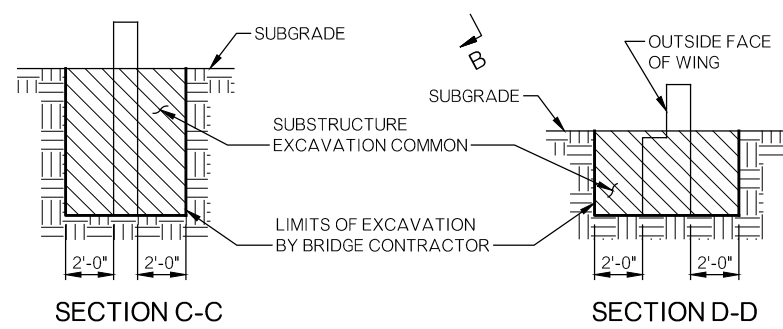
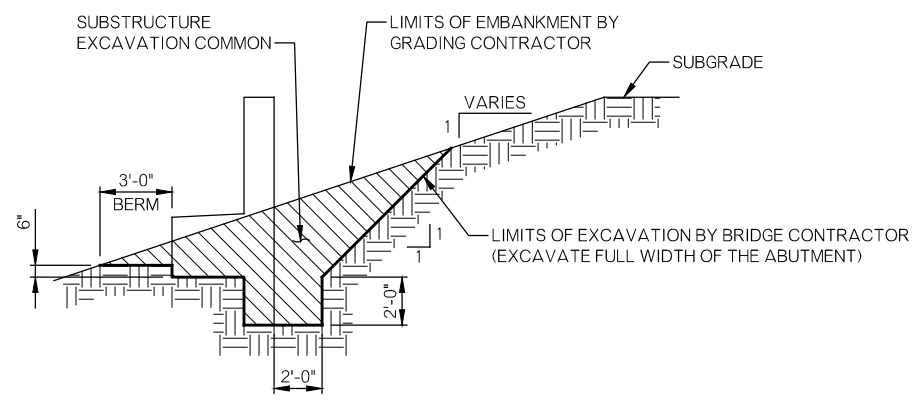
NOTE
THE ENGINEER MAY ADJUST THE EXTENT, LOCATION AND DEPTH OF THE 6" NON-PERFORATED PIPE UNDERDRAIN DURING CONSTRUCTION. INCLUDE THE COST OF PIPE UNDERDRAIN COVER MATERIAL (BOTH FINE AND COARSE), FILTER FABRIC, TRENCH EXCAVATION, STANDARD BEDDING MATERIAL, AND EQUIPMENT AND LABOR FOR THEIR INSTALLATION IN THE CONTRACT UNIT PRICE OF 6" PERFORATED PIPE UNDERDRAIN ROUND AND 6" NON-PERF. PIPE UNDERDRAIN RND. INSTALL AS SHOWN ON THE PLANS AND STD. PUD-3.



ABUTMENT EXCAVATION PLAN
(ABUT. 1 SHOWN, ABUT. 2 SIMILAR)

PLAN OF PIPE UNDERDRAIN
(ABUT. 1 SHOWN, ABUT. 2 SIMILAR)

6" DIA. NON-PERFORATED PIPE UNDERDRAIN (UNDER AND OUTSIDE OF WING) (SLOPE 1% MINIMUM TO DRAIN) (TYP., BOTH ABUTMENTS)

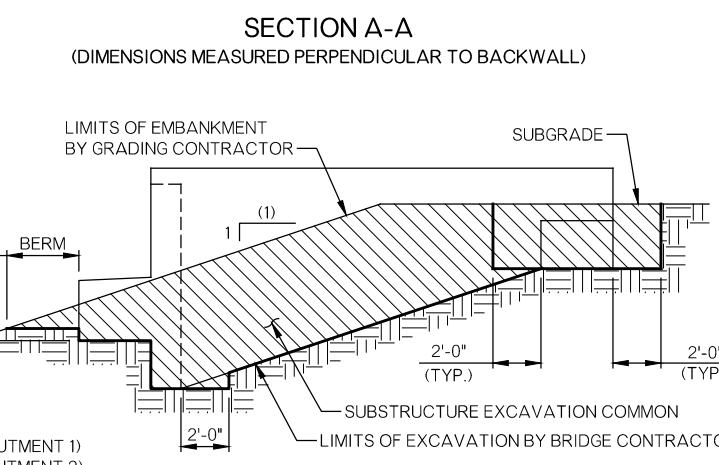


SECTION C-C

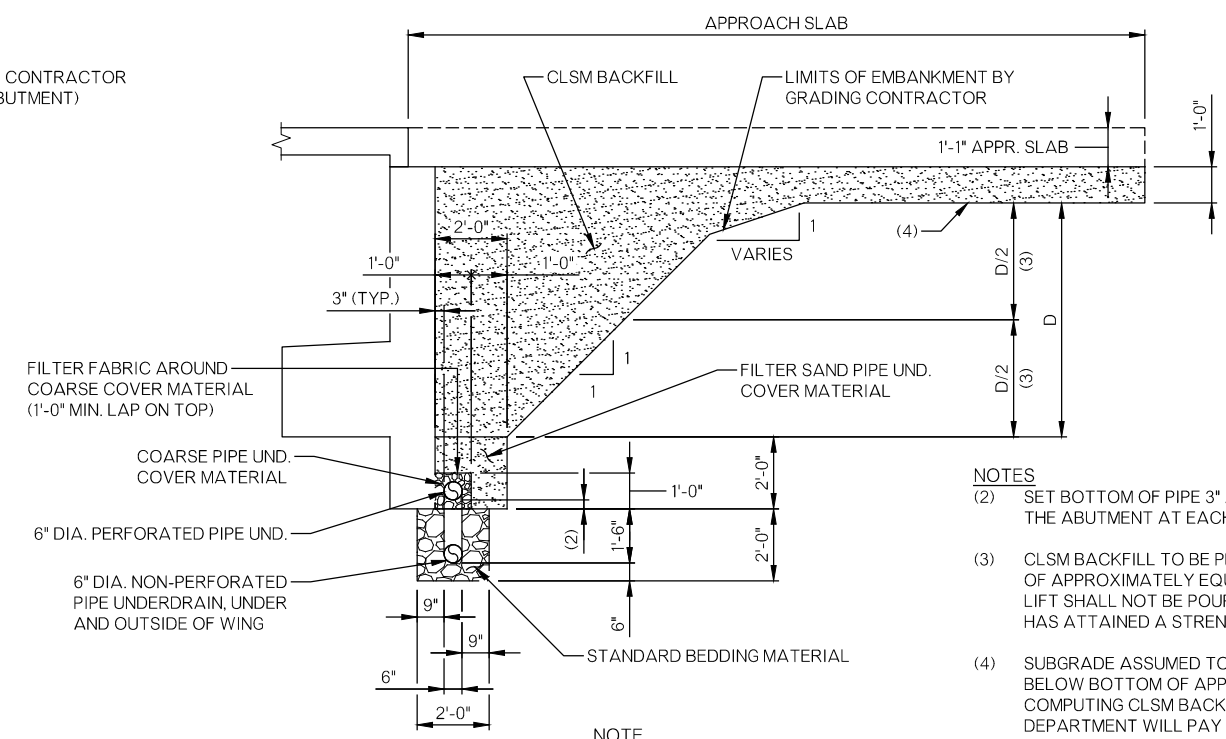
SECTION D-D

FILL OUTSIDE OF WING AND ALONG APPROACH SLAB BY BRIDGE CONTRACTOR (COST TO BE INCLUDED IN OTHER ITEMS)

FINISH GRADE OUTSIDE OF WING BY BRIDGE CONTRACTOR (COST TO BE INCLUDED IN OTHER ITEMS)

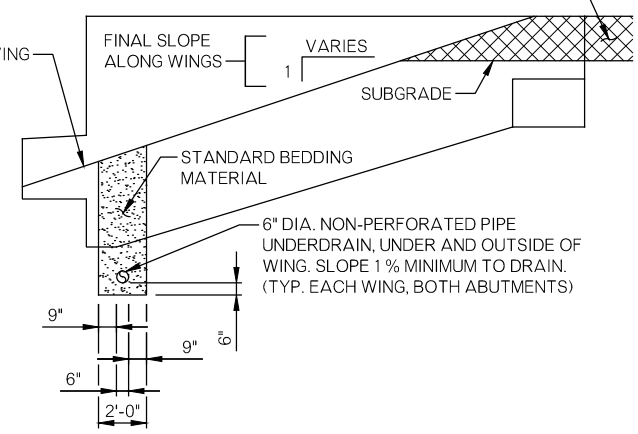


SECTION B-B
(DIMENSIONS MEASURED PARALLEL WITH PGL BRIDGE "Q")



SECTION E-E

NOTE
FOR DETAILS OF PIPE UNDERDRAIN NOT SHOWN, SEE STD. PUD-3.



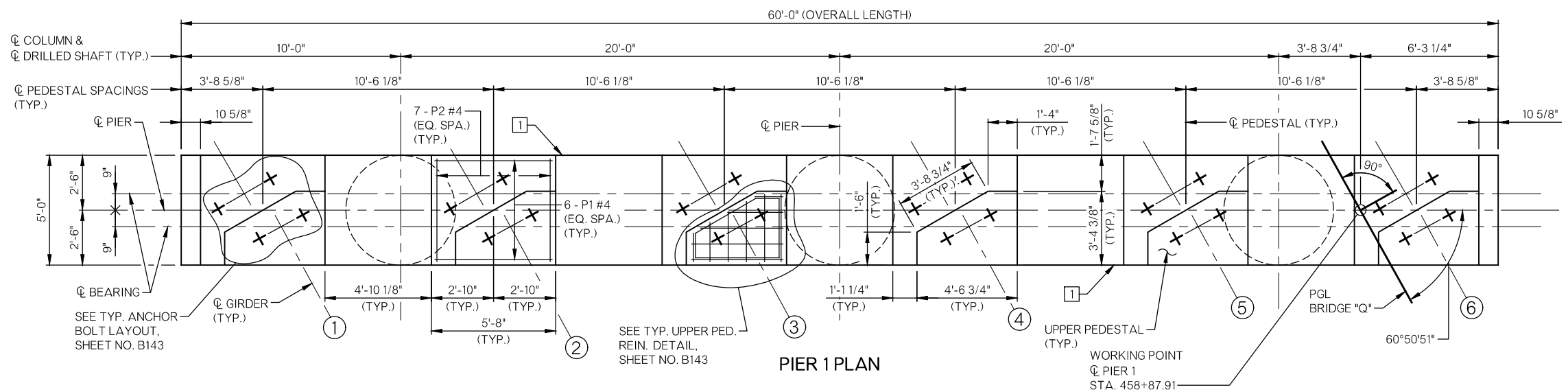
SECTION F-F

- NOTES
- (1) 3.46 (ABUTMENT 1)
3.70 (ABUTMENT 2)
(ALONG PGL BRIDGE "Q")
 - (2) SET BOTTOM OF PIPE 3" ABOVE THE BOTTOM OF THE ABUTMENT AT EACH LOW END.
 - (3) CLSM BACKFILL TO BE PLACED IN TWO (2) LIFTS OF APPROXIMATELY EQUAL DEPTHS. SECOND LIFT SHALL NOT BE POURED UNTIL FIRST LIFT HAS ATTAINED A STRENGTH OF 100 PSI.
 - (4) SUBGRADE ASSUMED TO BE LOCATED 1'-0" BELOW BOTTOM OF APPROACH SLAB FOR COMPUTING CLSM BACKFILL QUANTITY. THE DEPARTMENT WILL PAY FOR CLSM BACKFILL IN ACCORDANCE WITH THE PLAN AND NO ADJUSTMENT WILL BE MADE FOR ACTUAL LOCATION OF SUBGRADE.

NOTES
DO NOT PLACE CLSM BACKFILL UNTIL SUPERSTRUCTURE IS IN PLACE AND THE ABUTMENT WING CONCRETE HAS ATTAINED A STRENGTH OF 3,000 PSI.
THE OUTSIDE FACES OF THE WINGS SHALL BE BACKFILLED TO THE ORIGINAL EMBANKMENT LIMITS (MIN.), PRIOR TO PLACING CLSM BACKFILL.

SB US-81 OVER 29TH STREET
BRIDGE "Q"

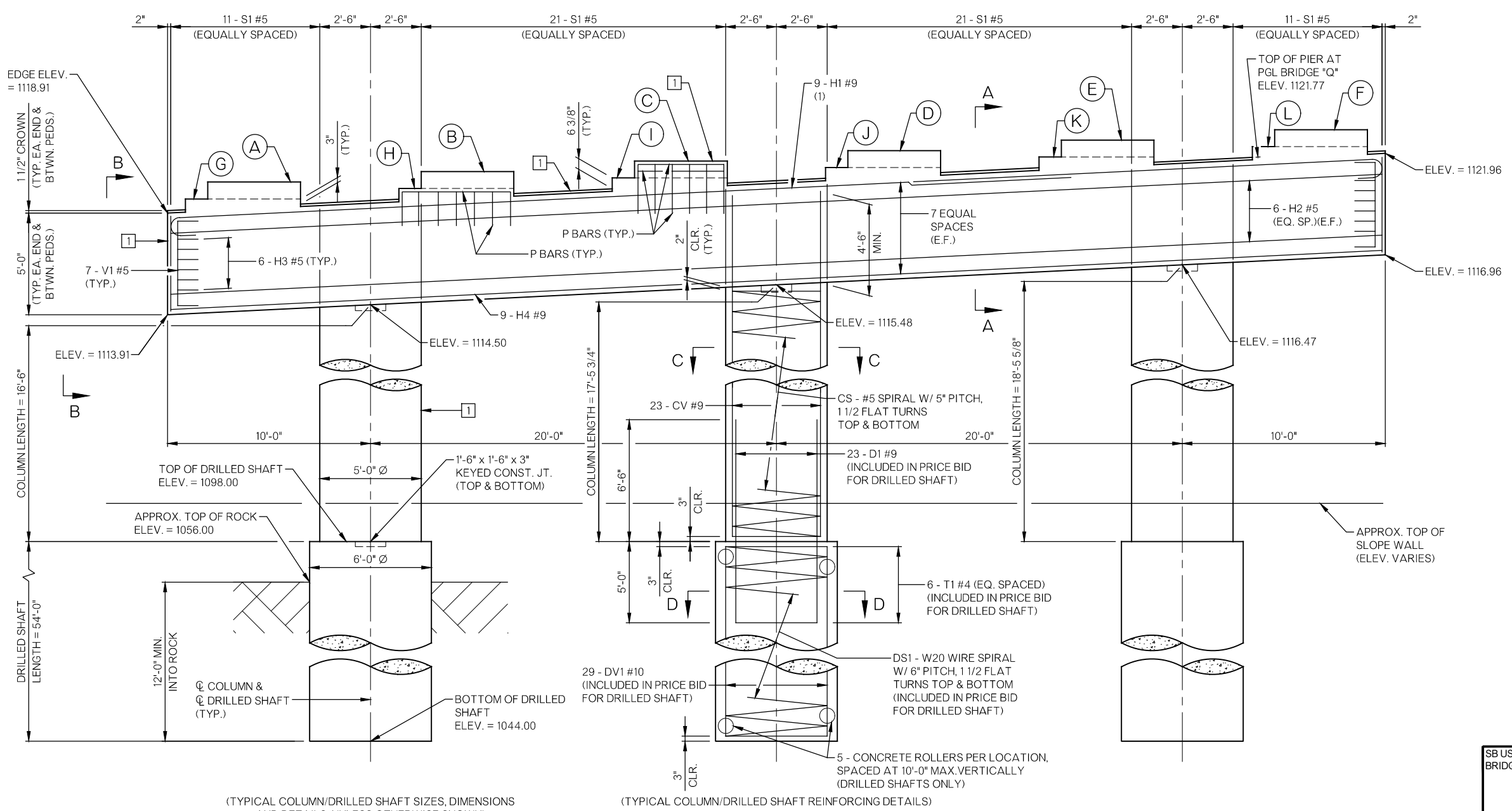
SUBSTRUCTURE EXCAVATION AND PIPE UNDERDRAIN ASSEMBLY DETAILS



NOTE
1 TREAT TOP OF PIER CAP, INCLUDING ALL SURFACES OF PEDESTALS, ALL VERTICAL FACES OF THE PIER CAP AND ALL SURFACES OF THE COLUMNS ABOVE THE TOP OF SLOPE WALL, WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.

NOTES
E.F. = DENOTES EACH FACE
FOR SECTION VIEWS, BAR BEND DETAILS, BAR LISTS, QUANTITIES, AND SPIRAL DETAILS, SEE SHEET NOS. B143 AND B144.
ALL SPIRAL HOOKS SHALL ENGAGE A MAIN REINFORCING BAR.
ALL EDGES OF THE PIER CAP SHALL HAVE A 1 1/2" CHAMFER, EXCEPT FOR EDGES OF PEDESTALS, WHICH HAVE A 3/4" CHAMFERS.

(1) PROVIDE ONE (1) 8'-0" LAP SPLICE PER BAR. LAPS SHALL BE PLACED HALF-WAY BETWEEN COLUMNS AND STAGGERED IN ALTERNATING BAYS.



SCHEDULE OF PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
A	1120.60
B	1121.11
C	1121.62
D	1122.13
E	1122.64
F	1123.15
G	1119.71
H	1120.23
I	1120.74
J	1121.26
K	1121.77
L	1122.29

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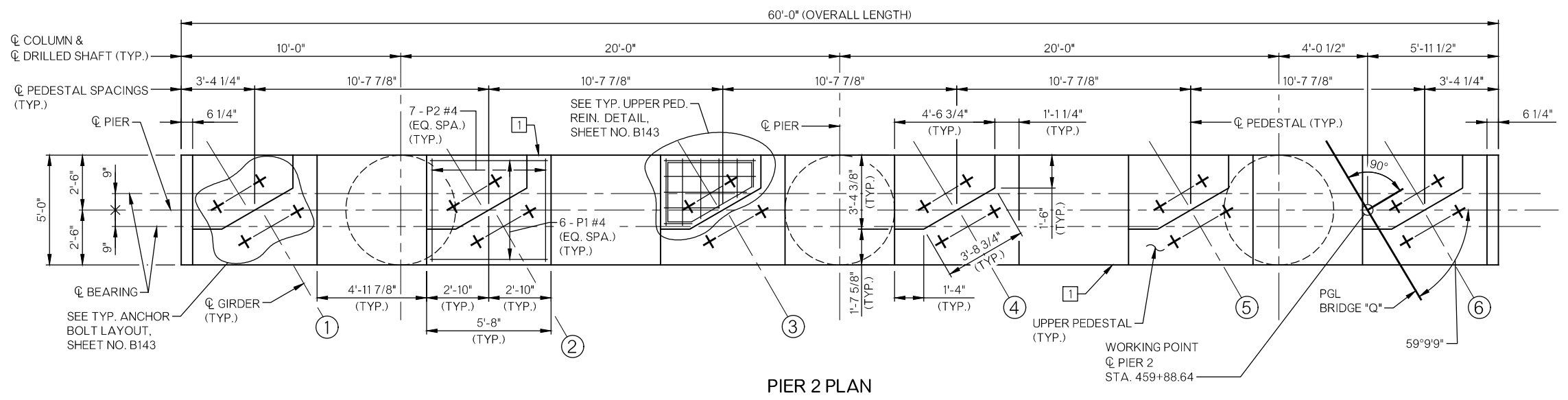
(TYPICAL COLUMN/DRILLED SHAFT SIZES, DIMENSIONS AND DETAILS, UNLESS OTHERWISE SHOWN)

(TYPICAL COLUMN/DRILLED SHAFT REINFORCING DETAILS)

PIER 1 ELEVATION

SB US-81 OVER 29TH STREET
BRIDGE "Q"

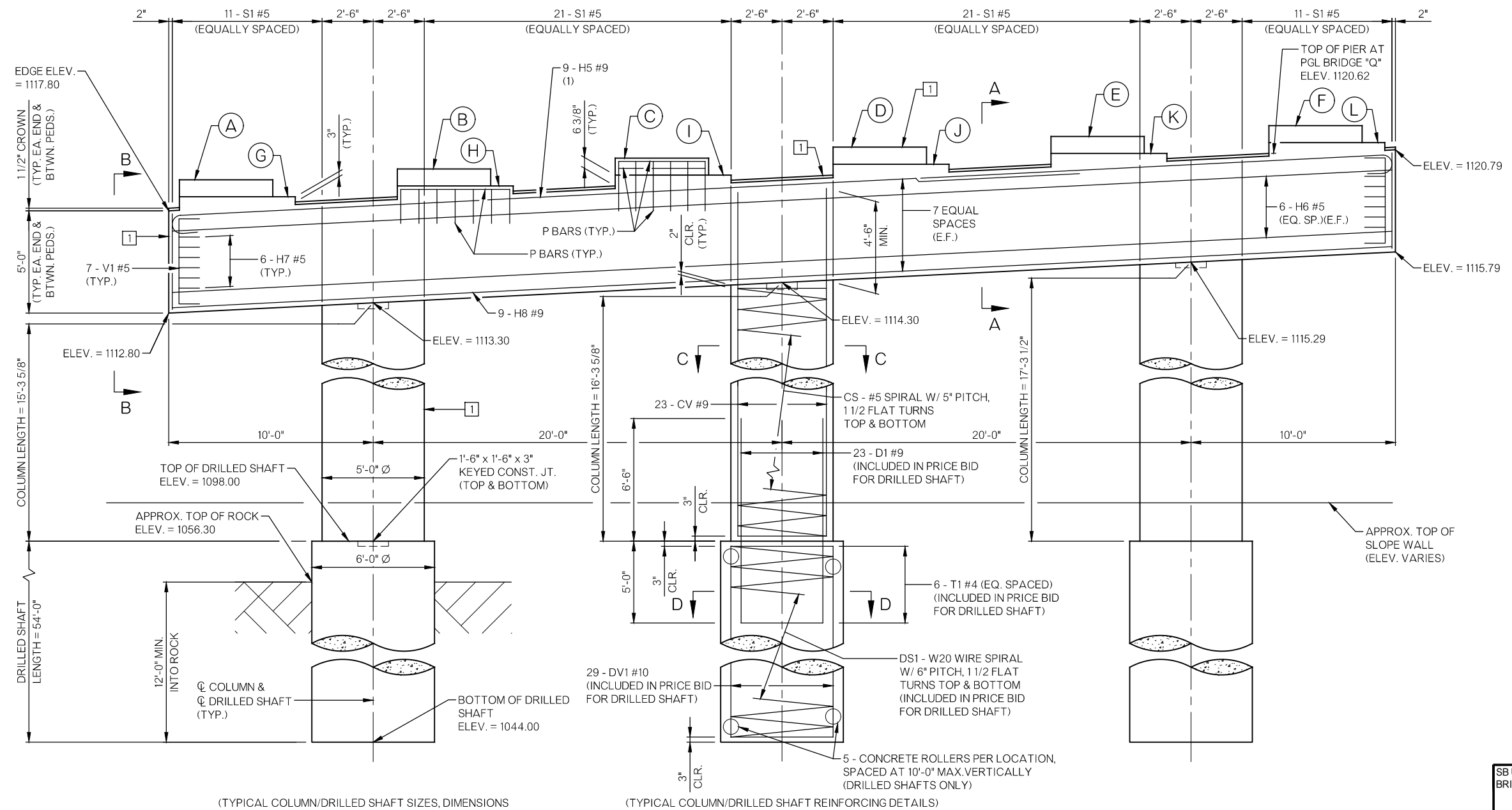
PIER DETAILS
(SHEET NO. 1 OF 4)



PIER 2 PLAN

NOTE

1 TREAT TOP OF PIER CAP, INCLUDING ALL SURFACES OF PEDESTALS, ALL VERTICAL FACES OF THE PIER CAP AND ALL SURFACES OF THE COLUMNS ABOVE THE TOP OF SLOPE WALL, WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.



PIER 2 ELEVATION

NOTES

E.F. = DENOTES EACH FACE

FOR SECTION VIEWS, BAR BEND DETAILS, BAR LISTS, QUANTITIES, AND SPIRAL DETAILS, SEE SHEET NOS. B143 AND B144.

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(1) PROVIDE ONE (1) 8'-0" LAP SPLICE PER BAR. LAPS SHALL BE PLACED HALF-WAY BETWEEN COLUMNS AND STAGGERED IN ALTERNATING BAYS.

SCHEDULE OF PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
A	1119.27
B	1119.81
C	1120.35
D	1120.88
E	1121.42
F	1121.96
G	1118.49
H	1119.02
I	1119.55
J	1120.08
K	1120.61
L	1121.14

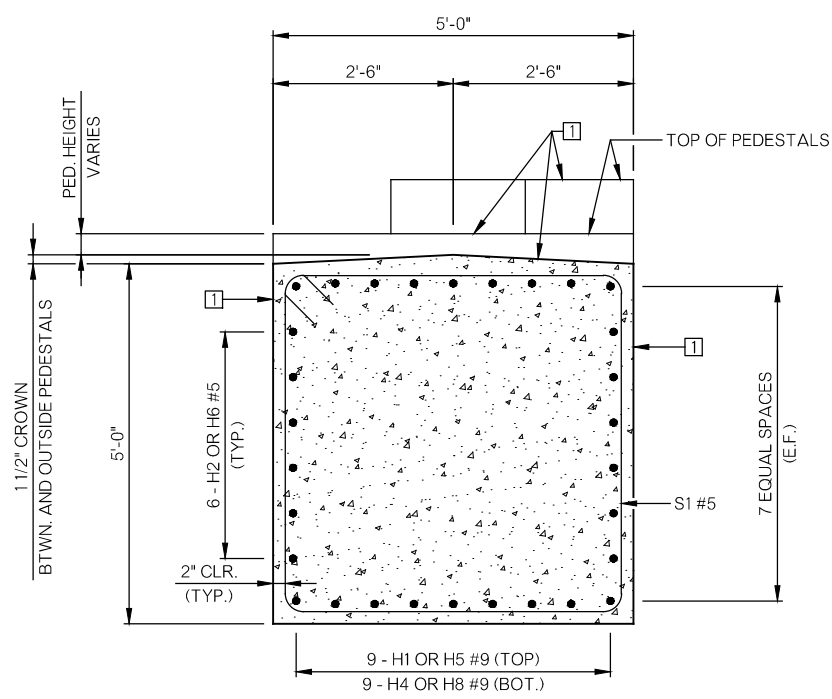
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(TYPICAL COLUMN/DRILLED SHAFT SIZES, DIMENSIONS AND DETAILS, UNLESS OTHERWISE SHOWN)

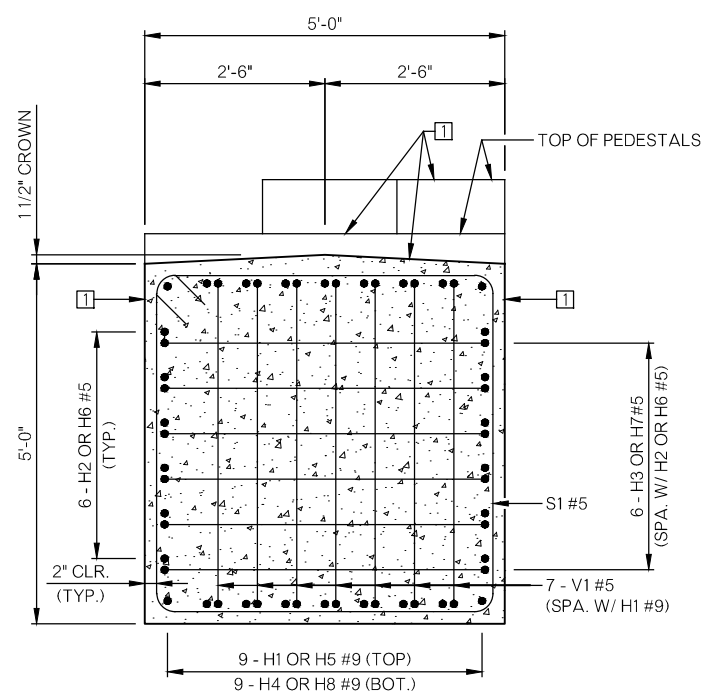
(TYPICAL COLUMN/DRILLED SHAFT REINFORCING DETAILS)

SB US-81 OVER 29TH STREET BRIDGE "Q"

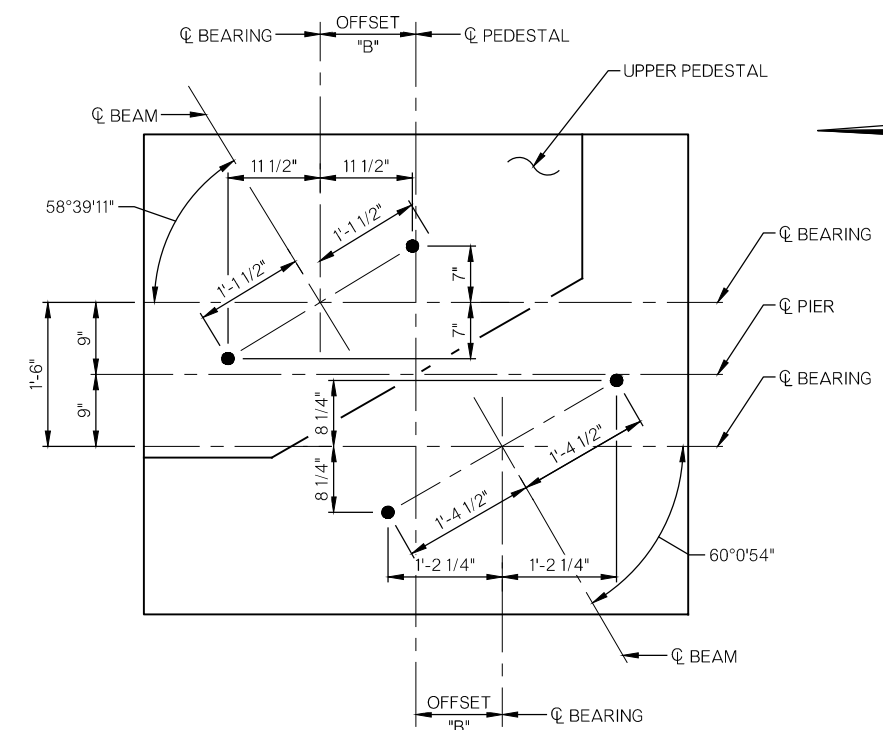
PIER DETAILS
(SHEET NO. 2 OF 4)



SECTION A-A
(PIER 1 SHOWN, PIER 2 SIMILAR.)



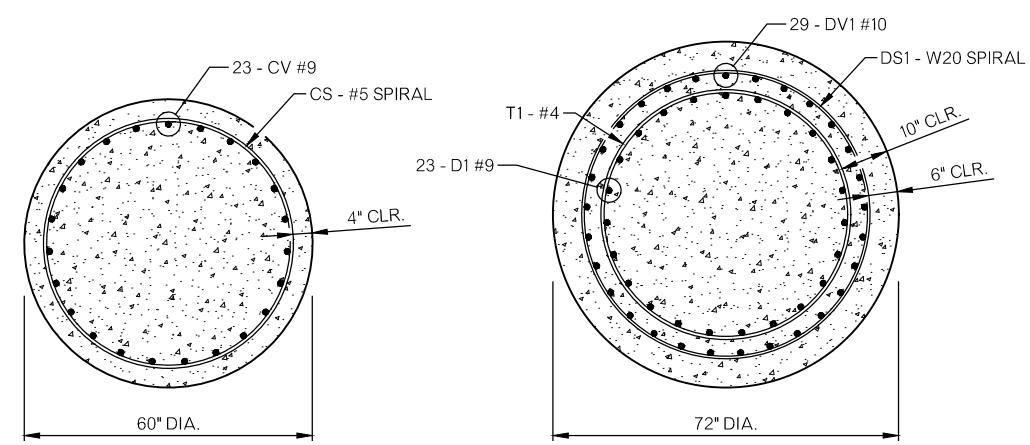
VIEW B-B
(TYP. EACH END OF CAP)
(FOR DETAILS NOT SHOWN, SEE SECTION A-A.)
(PIER 1 SHOWN, PIER 2 SIMILAR.)



TYPICAL ANCHOR BOLT LAYOUT
(PIER 2)

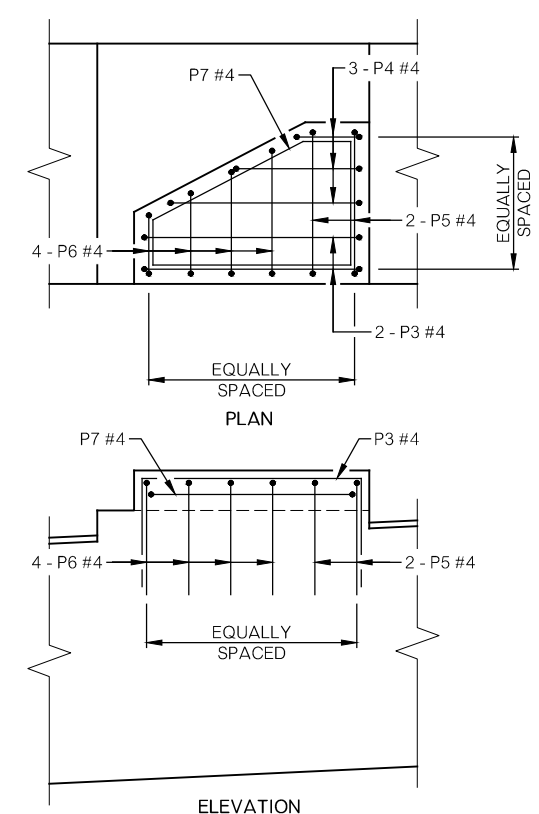
BEAM LINE	OFFSET "B"
1	8 7/8"
2	8"
3	7 1/8"
4	6 1/8"
5	5 1/4"
6	4 3/8"

NOTES
ALL EDGES OF THE PIER CAP SHALL HAVE A 1 1/2" CHAMFER, EXCEPT FOR EDGES OF PEDESTALS, WHICH HAVE A 3/4" CHAMFERS.
E.F. = DENOTES EACH FACE
NOTE
TREAT TOP OF PIER CAP, INCLUDING ALL SURFACES OF PEDESTALS, ALL VERTICAL FACES OF THE PIER CAP AND ALL SURFACES OF THE COLUMNS ABOVE THE TOP OF SLOPE WALL, WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT.

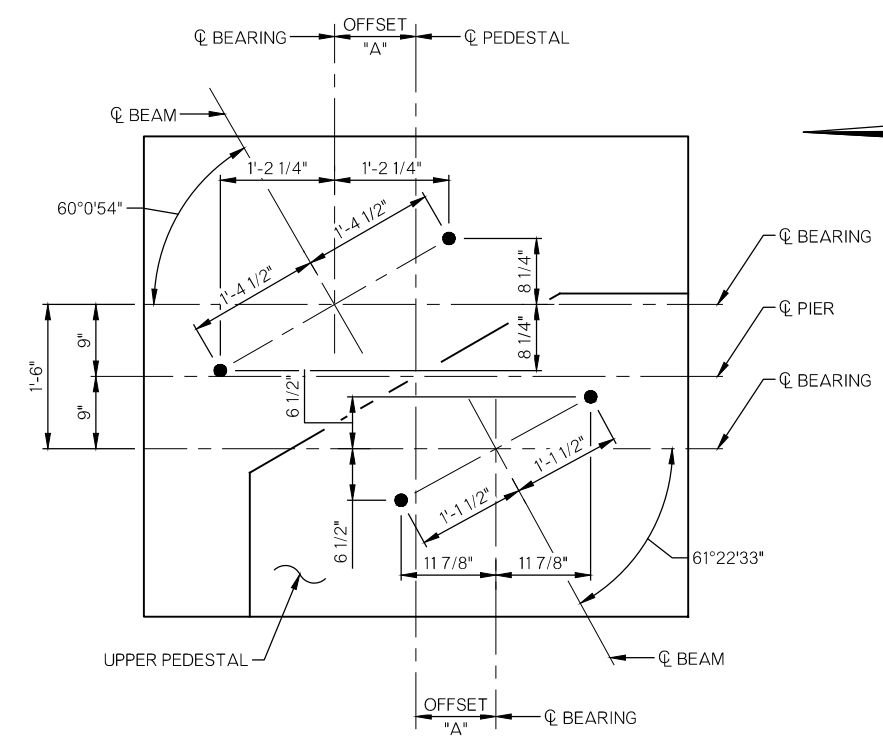


SECTION C-C

SECTION D-D



UPPER PEDESTAL REINFORCING DETAIL



TYPICAL ANCHOR BOLT LAYOUT
(PIER 1)

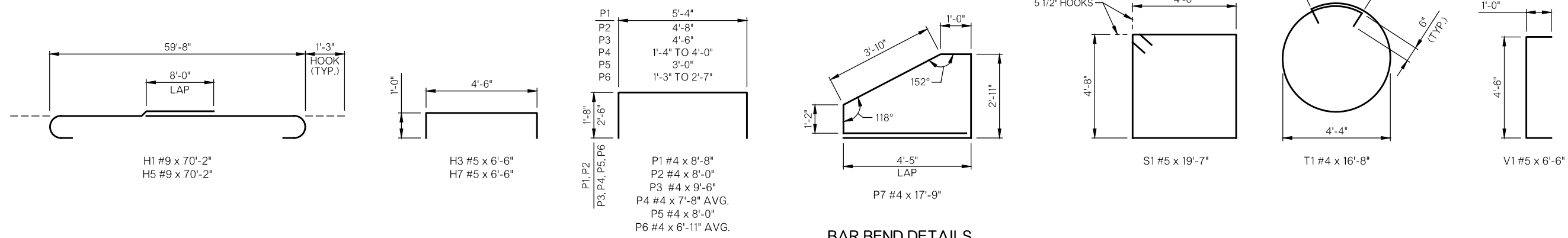
BEAM LINE	OFFSET "A"
1	10 1/8"
2	9 1/4"
3	8 3/8"
4	7 1/2"
5	6 3/4"
6	5 7/8"

NOTE
FOR BAR BEND DETAILS, BAR LISTS, QUANTITIES, AND SPIRAL REINFORCING AND CONCRETE ROLLER DETAILS, SEE SHEET NO. B144.

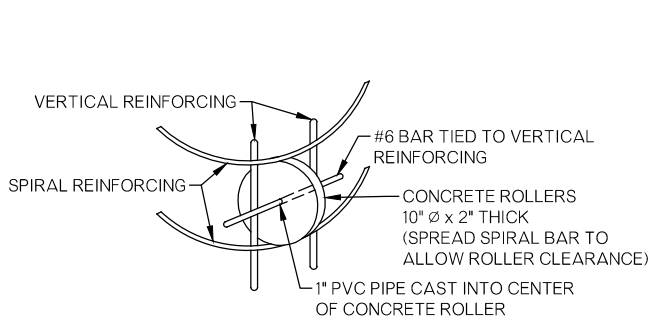
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SB US-81 OVER 29TH STREET BRIDGE "Q"

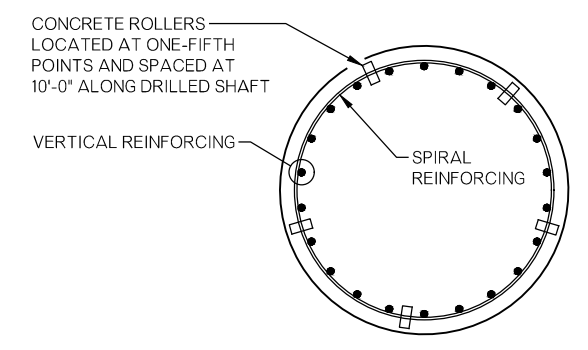
PIER DETAILS
(SHEET NO. 3 OF 4)



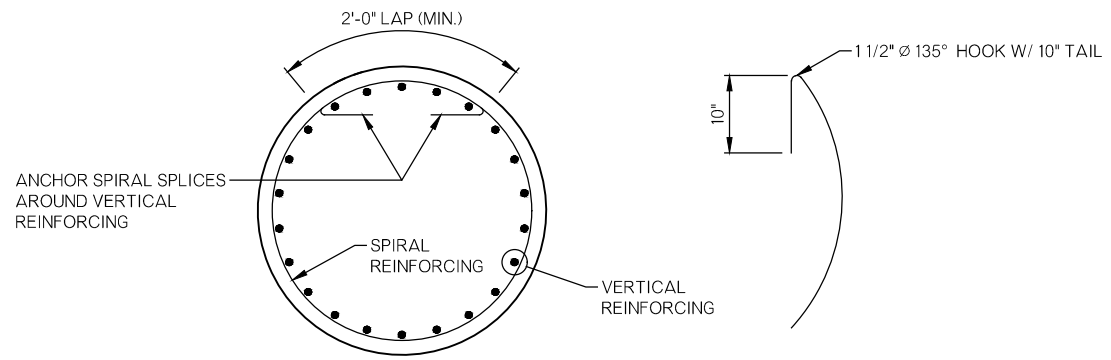
BAR BEND DETAILS



ROLLER INSTALLATION DETAIL



ROLLER PLACEMENT DETAIL



SPIRAL REINFORCING SPLICE DETAIL

NOTES
SPIRAL BARS SHALL CONFORM TO AASHTO M32. SPIRAL BAR LENGTH DOES NOT INCLUDE LAPS. IF LAPS ARE REQUIRED, THE LENGTH OF THE LAP SHALL BE 2'-0" WITH 10" HOOKS.

CONCRETE USED IN THE CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

PLASTIC ROLLERS MAY BE SUBSTITUTED IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR DRILLED SHAFT FOUNDATIONS.

PIER 1 BAR LIST						
MARK	NO.	SIZE	FORM	LENGTH	REMARKS	
(EPOXY COATED)						
(1)	CV1	23	#9	STR.	20'-3"	
(2)	CV2	23	#9	STR.	21'-3"	
(3)	CV3	23	#9	STR.	22'-3"	
(4)	H1	9	#9	BNT.	70'-2"	
	H2	12	#5	STR.	59'-8"	
	H3	12	#5	BNT.	6'-6"	
	H4	9	#9	STR.	59'-8"	
	P1	36	#4	BNT.	8'-8"	
	P2	42	#4	BNT.	8'-0"	
	P3	12	#4	BNT.	9'-6"	
	P4	18	#4	BNT.	7'-8" AVG.	VARIES 6'-4" TO 9'-0"
	P5	12	#4	BNT.	8'-0"	
	P6	24	#4	BNT.	6'-11" AVG.	VARIES 6'-3" TO 7'-7"
	P7	6	#4	BNT.	17'-9"	
	S1	64	#5	BNT.	19'-7"	
	V1	14	#5	BNT.	6'-6"	
(NON-EPOXY COATED)						
(1)	CS1	1	#5	SPIRAL	577'-0"	
(2)	CS2	1	#5	SPIRAL	608'-0"	
(3)	CS3	1	#5	SPIRAL	641'-0"	
PIER 1 DRILLED SHAFTS						
(EPOXY COATED)						
(5)	D1	69	#9	STR.	11'-6"	
(5)	DV1	87	#10	STR.	53'-6"	
(5)	T1	18	#4	BNT.	16'-8"	
(NON-EPOXY COATED)						
(5)	DS1	3	W20	SPIRAL	1732'-0"	

PIER 2 BAR LIST						
MARK	NO.	SIZE	FORM	LENGTH	REMARKS	
(EPOXY COATED)						
(1)	CV4	23	#9	STR.	19'-1"	
(2)	CV5	23	#9	STR.	20'-1"	
(3)	CV6	23	#9	STR.	21'-1"	
(4)	H5	9	#9	BNT.	70'-2"	
	H6	12	#5	STR.	59'-8"	
	H7	12	#5	BNT.	6'-6"	
	H8	9	#9	STR.	59'-8"	
	P1	36	#4	BNT.	8'-8"	
	P2	42	#4	BNT.	8'-0"	
	P3	12	#4	BNT.	9'-6"	
	P4	18	#4	BNT.	7'-8" AVG.	VARIES 6'-4" TO 9'-0"
	P5	12	#4	BNT.	8'-0"	
	P6	24	#4	BNT.	6'-11" AVG.	VARIES 6'-3" TO 7'-7"
	P7	6	#4	BNT.	17'-9"	
	S1	64	#5	BNT.	19'-7"	
	V1	14	#5	BNT.	6'-6"	
(NON-EPOXY COATED)						
(1)	CS4	1	#5	SPIRAL	538'-0"	
(2)	CS5	1	#5	SPIRAL	570'-0"	
(3)	CS6	1	#5	SPIRAL	602'-0"	
PIER 2 DRILLED SHAFTS						
(EPOXY COATED)						
(5)	D1	69	#9	STR.	11'-6"	
(5)	DV1	87	#10	STR.	53'-6"	
(5)	T1	18	#4	BNT.	16'-8"	
(NON-EPOXY COATED)						
(5)	DS1	3	W20	SPIRAL	1732'-0"	

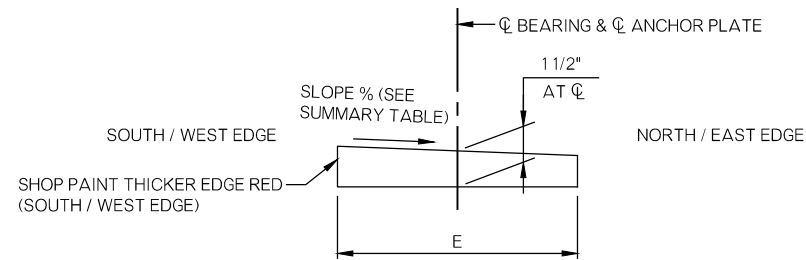
PIER QUANTITIES				
ITEM	UNITS	PIER 1	PIER 2	TOTAL
CLASS A CONCRETE	CY	99.70	97.10	196.80
REINFORCING STEEL	LB	1,250.00	1,170.00	2,420.00
EPOXY COATED REINFORCING STEEL	LB	12,040.00	11,770.00	23,810.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	252.50	246.30	498.80
DRILLED SHAFTS 72" DIAMETER	LF	162.00	162.00	324.00
CROSSHOLE SONIC LOGGING	EA	1.00	0.00	1.00

NOTES
(1) COLUMN 1 REINFORCING.
(2) COLUMN 2 REINFORCING.
(3) COLUMN 3 REINFORCING.
(4) LENGTH INCLUDES ONE (1) 8'-0" LAP SPLICE.
(5) INCLUDED IN PRICE BID PER L.F. OF DRILLED SHAFT.

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SB US-81 OVER 29TH STREET
BRIDGE *Q*

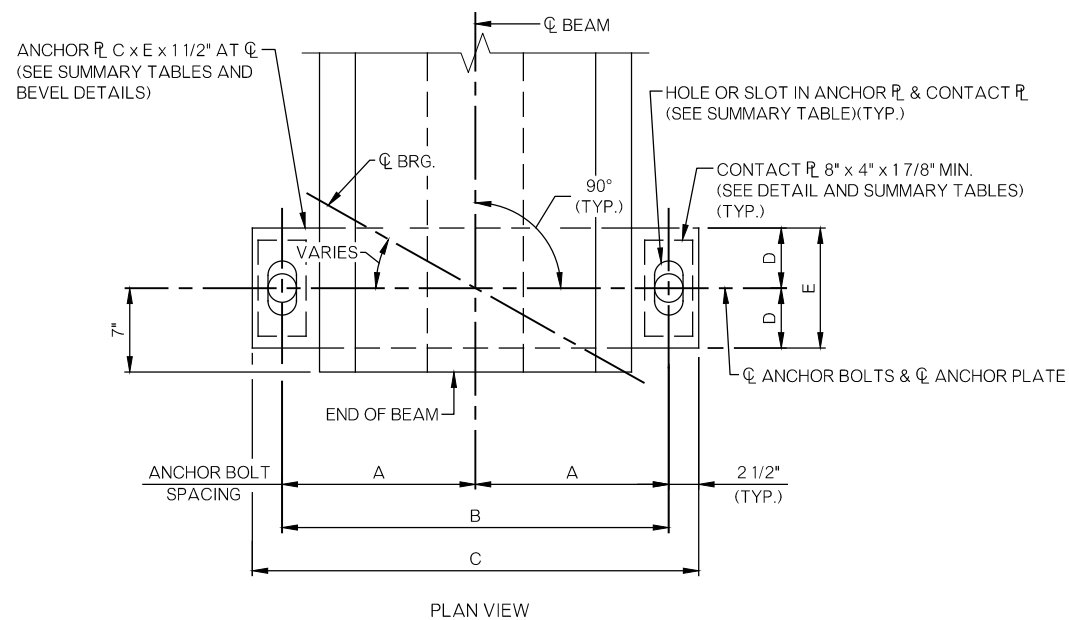
PIER DETAILS
(SHEET NO. 4 OF 4)



BEVELED ANCHOR PLATE DETAILS

NOTES
BEFORE ANCHOR PLATES ARE SHIPPED TO THE FIELD, THE THICKER EDGE SHALL BE PAINTED RED.
THE CONTRACTOR SHALL EXERCISE CARE IN THE PLACEMENT OF THE ANCHOR PLATES. THE THICKER EDGE OF ALL PLATES AT ABUTMENTS AND PIERS SHALL FACE SOUTH / WEST.

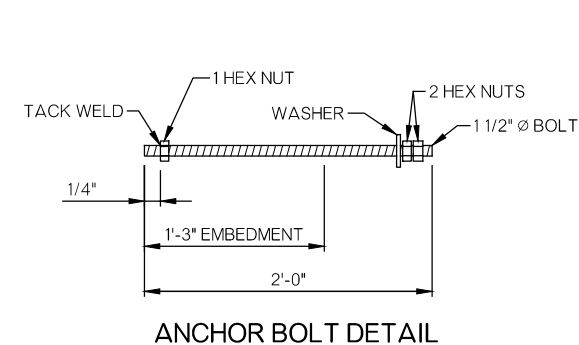
LOCATION		DIMENSION								CONTACT \bar{r} THICKNESS	ANCHOR \bar{r} SLOPE (%)
		A	B	C	D	E	F	G	H		
ABUT. 1	SPAN 1	1'-1 1/2"	2'-3"	2'-8"	5"	10"	2 1/2"	11"	4"	1 7/8"	-1.00%
PIER 1	SPAN 1	1' 1 1/2"	2'-3"	2'-8"	5"	10"	2 1/2"	11"	4"	1 7/8"	-1.00%
	SPAN 2	1'-4 1/2"	2'-9"	3'-2"	5"	10"	3 1/2"	1'-1"	4"	2 3/8"	-1.11%
PIER 2	SPAN 2	1'-4 1/2"	2'-9"	3'-2"	5"	10"	3 1/2"	1'-1"	4"	2 3/8"	-1.31%
	SPAN 3	1'-1 1/2"	2'-3"	2'-8"	5"	10"	2 1/2"	11"	4"	1 7/8"	-1.45%
ABUT. 2	SPAN 3	1'-1 1/2"	2'-3"	2'-8"	5"	10"	2 1/2"	11"	4"	1 7/8"	-1.56%



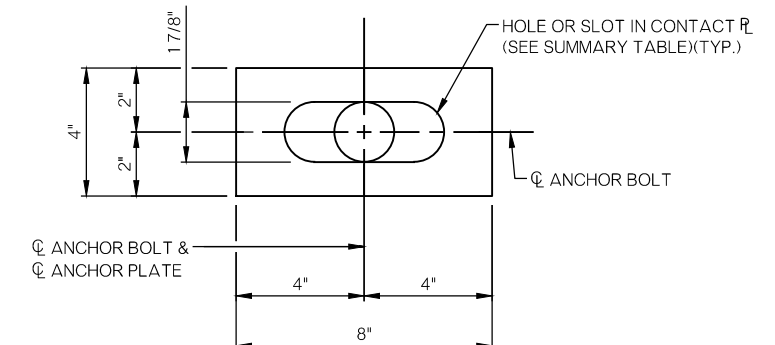
PLAN VIEW

SIZE - 7" x 1'-10" x 3 1/8" WITH 6 - 1/8" STEEL LAMINATES 2 - 1/4" EXTERIOR ELASTOMER LAYERS 5 - 3/8" INTERIOR ELASTOMER LAYERS
--

SIZE - 8" x 2'-2" x 3 1/8" WITH 6 - 1/8" STEEL LAMINATES 2 - 1/4" EXTERIOR ELASTOMER LAYERS 5 - 3/8" INTERIOR ELASTOMER LAYERS

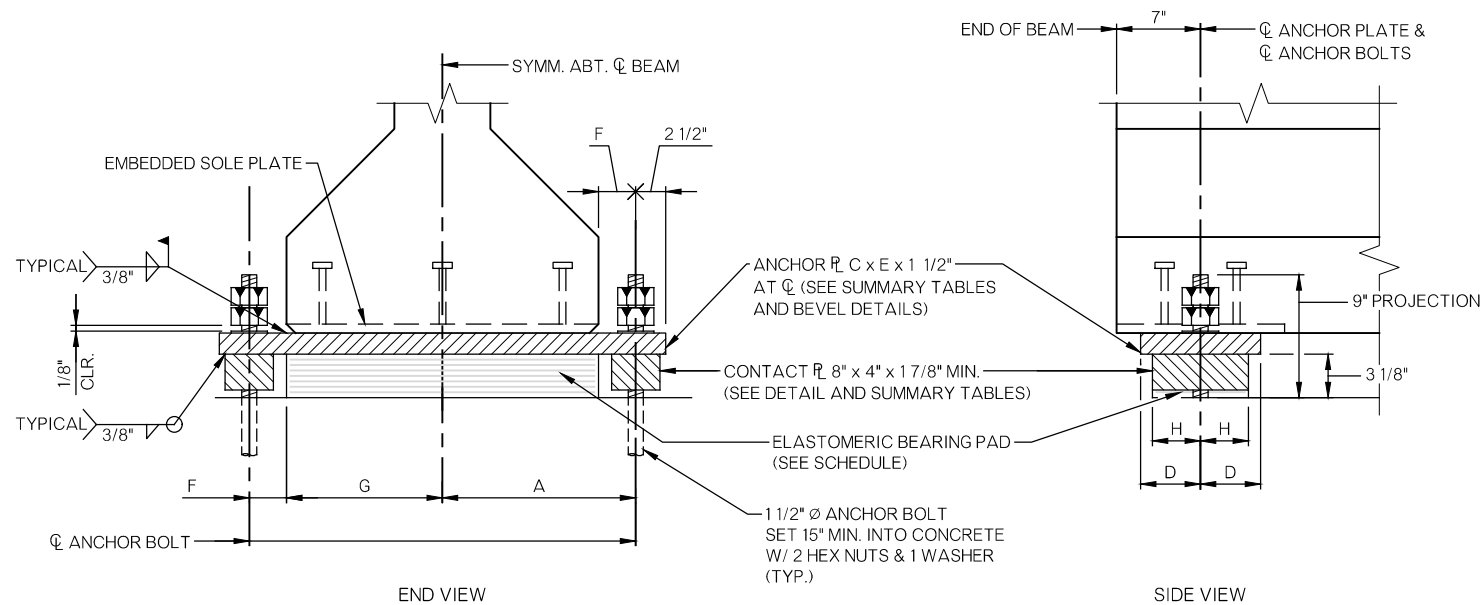


ANCHOR BOLT DETAIL



DETAIL OF CONTACT PLATE (SEE SUMMARY TABLE FOR CONTACT \bar{r} THICKNESS)

LOCATION	IN ANCHOR PLATE	IN CONTACT PLATE
FIXED BEARING	2 3/8" ϕ HOLE	1 7/8" ϕ HOLE
EXPANSION OR CONTINUOUS BEARING	2 3/8" x 5 1/2" SLOT	1 7/8" x 5" SLOT



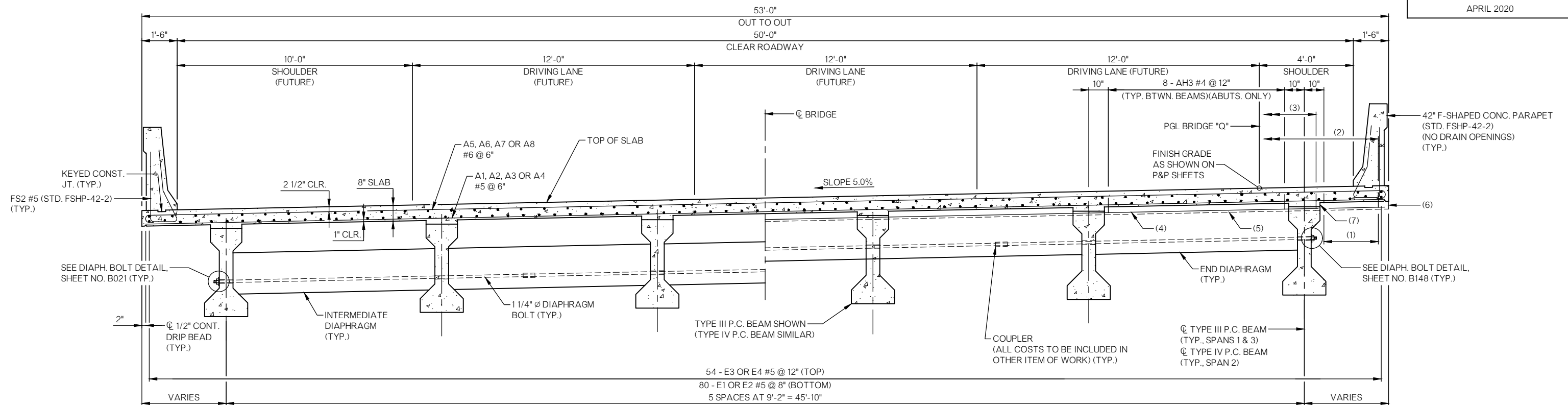
BEARING ASSEMBLY DETAILS

NOTES
BEARING ASSEMBLIES SHALL BE IN ACCORDANCE WITH SECTION 507 OF THE STANDARD SPECIFICATIONS, AND PER THE ANSI/AWS D1.6 STRUCTURAL WELDING CODE FOR STAINLESS STEEL, AS APPLICABLE, UNLESS NOTED OTHERWISE.
PROVIDE STRUCTURAL STEEL FOR ANCHOR PLATES AND CONTACT PLATES IN ACCORDANCE WITH ASTM A240 (AUSTENITIC STAINLESS STEEL, TYPE 316 OR 316L, CHARTY V-NOTCH TESTING NOT REQUIRED). FOR ANCHOR BOLTS, PROVIDE CONTINUOUSLY THREADED BARS IN ACCORDANCE WITH ASTM A320, CLASS 2, GRADE B8M (AUSTENITIC STAINLESS STEEL, TYPE 316 OR 316L, CHARTY V-NOTCH TESTING NOT REQUIRED). USE AUSTENITIC STAINLESS STEEL NUTS AND WASHERS CONFORMING TO ASTM A194, GRADE 8M, AND ASTM A320, TYPE 316 OR 316L, RESPECTIVELY. PERFORM ALL WELDING CONSISTENT WITH PROCEDURES FOR STAINLESS STEEL.
ANCHOR PLATES FOR BEARING ASSEMBLIES SHALL BE MATCH-MARKED, SHIPPED LOOSE, AND FIELD WELDED TO THE EMBEDDED SOLE PLATE IN ORDER THAT MINOR HORIZONTAL ADJUSTMENT OF THE BEARING LOCATION MAY BE MADE IF NECESSARY.
METAL USED IN FIELD WELDS WILL NOT BE MEASURED FOR PAYMENT.
ALL BEARING PADS SHALL BE CENTERED BETWEEN ANCHOR BOLTS.
AT THE TIME OF SETTING THE BEARING ASSEMBLIES AT THE PIER 1, THE SLOT IN THE ANCHOR PLATES SHALL BE CENTERED ON THE ANCHOR BOLTS.
THE DIMENSION FROM THE END OF THE BEAM TO THE CENTERLINE OF THE ANCHOR BOLTS MAY VARY FROM THAT SHOWN, DEPENDING ON THE SETTING TEMPERATURE.
BONDING BETWEEN THE ANCHOR PLATE AND BEARING PAD IS REQUIRED.

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SB US-81 OVER 29TH STREET BRIDGE "Q"

BEARING DETAILS



HALF SECTION AT INTERMEDIATE DIAPHRAGM

TYPICAL CROSS SECTION

HALF SECTION AT ABUTMENTS AND PIERS DIAPHRAGM

NOTE
ROTATE A5 THRU A8 BARS TO ENSURE MINIMUM CLEARANCE IS MET FOR TOP & BOTTOM OF HOOK(S).

NOTE
DO NOT PLACE THE CONCRETE FOR THE BRIDGE SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS OR DIAPHRAGMS UNTIL THE DIAPHRAGMS HAVE BEEN IN PLACE A MINIMUM OF 10 DAYS AND ALL BOLTS TIGHTENED, OR AT THE DISCRETION OF THE ENGINEER. THE ENGINEER MAY APPROVE SHORTENING TIME IF THE BEAM AND DIAPHRAGM CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

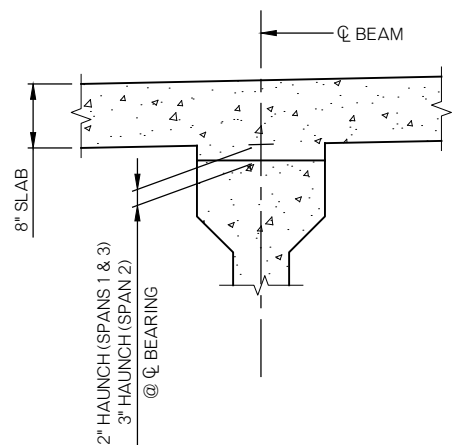
NOTES

- (1) AH1 #4 (ABUT. CANTILEVERS).
- (2) 54 - EPH1 #4 @ 12" PIER 1 ONLY) (EA. SIDE OF EXP. JT.).
- (3) 47 - FPH1 #4 @ 12" (PIER 2 ONLY).
- (4) 1 - AT2 OR AT4 #4 (CONT.)(PIER 1 ONLY)(EA. SIDE OF EXP. JT.)
1 - AT4 OR AT5 #4 (CONT.)(PIER 2 ONLY)(EA. SIDE OF CONST. JT.)
2 - AT1 OR AT7 #4 (CONT.)(ABUT. ONLY)(TYP.)
1 - AT2 OR AT5 #4 (CONT.)(ABUT. ONLY)(TYP.)
1 - AT3 OR AT6 #4 (BETWEEN P.C. BEAMS)(ABUT. ONLY)(TYP.)
- (5) BOTTOM OF SLAB THICKENING IS 3" BELOW THE TOP OF THE BEAMS AT THE ABUTMENTS (SHOWN) AND LEVEL WITH THE TOP OF THE BEAMS AT THE PIERS.
- (6) OUTSIDE EDGE OF SLAB THICKENING AT PIER 1.
- (7) OUTSIDE EDGE OF SLAB THICKENING AT PIER 2.

NOTES

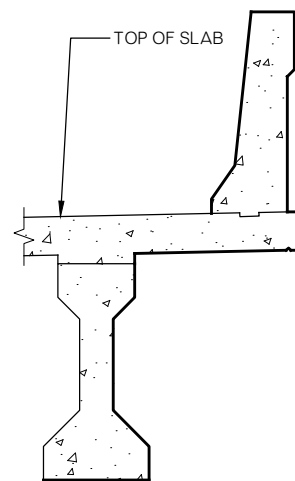
- FS2 BARS IN PARAPETS SHALL BE TIED IN PLACE PRIOR TO POURING SLABS.
- FOR LONGITUDINAL SECTION, SEE SHEET NO. B147.
- FOR SLAB REINFORCING PLANS, SEE SHEET NOS. B154-B157.
- FOR BAR BEND DETAILS AND BAR LIST, SEE SHEET NO. B155.
- FOR BRIDGE SLAB NOTES, SEE SHEET NOS. B147 AND B154-B157.
- FOR P.C. BEAM DETAILS AND DEAD LOAD DEFLECTION DIAGRAM, SEE SHEET NOS. B158-B161.

SUPERSTRUCTURE QUANTITIES		
ITEM	UNITS	TOTAL
PRESTRESSED CONCRETE BEAMS (TYPE III)	LF	730.00
PRESTRESSED CONCRETE BEAMS (TYPE IV)	LF	595.30
SAW-CUT GROOVING	SY	1,250.10
SEALED EXPANSION JOINT	LF	59.00
42" F-SHAPED PARAPET	LF	450.10
STRUCTURAL STEEL	LB	2280.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	12.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	24.00
CLASS AA CONCRETE	CY	339.90
EPOXY COATED REINFORCING STEEL	LB	113,260.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	918.00
SEALER CRACK PREPARATION	LF	184.00
SEALER RESIN	GAL	3.00



TYPICAL HAUNCH DETAIL

NOTES
PLAN QUANTITIES FOR "CLASS AA CONCRETE" INCLUDE 15.30 CY FOR BEAM HAUNCHES. HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE SLAB TO THE TOP OF THE BEAM, AND VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHTS (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENT.



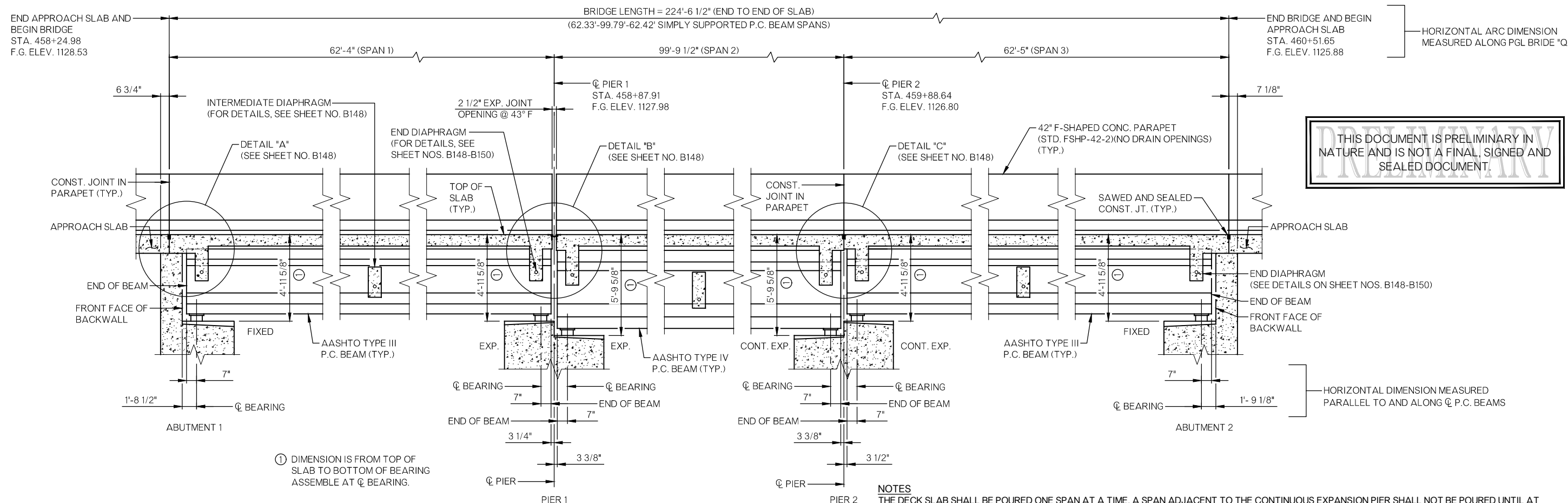
WATER REPELLENT SURFACE TREATMENT

NOTE
SURFACES INDICATED WITH HEAVY LINES SHALL BE TREATED WITH A PENETRATING WATER REPELLENT SURFACE TREATMENT. (TYP., EACH SIDE).

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

TYPICAL CROSS SECTION



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

① DIMENSION IS FROM TOP OF SLAB TO BOTTOM OF BEARING ASSEMBLY AT ϕ BEARING.

NOTES
THE DECK SLAB SHALL BE POURED ONE SPAN AT A TIME. A SPAN ADJACENT TO THE CONTINUOUS EXPANSION PIER SHALL NOT BE POURED UNTIL AT LEAST 48 HOURS AFTER THE POUR OF ANY ADJACENT SPAN HAS BEEN COMPLETED.

IN THE EVENT OF AN EMERGENCY, HALT THE PLACEMENT OF CONCRETE BY FORMING A CONSTRUCTION JOINT PARALLEL TO THE SKEW OR AS DIRECTED BY THE ENGINEER. LONGITUDINAL REINFORCING SHALL BE CONTINUOUS THRU ALL TRANSVERSE CONSTRUCTION JOINTS. DO NOT PLACE ANY HEAVY EQUIPMENT ON THE FINISHED BRIDGE SLAB WITHIN 5'-0" OF ANY CONSTRUCTION JOINT UNTIL CONCRETE IS IN PLACE ON BOTH SIDES OF THE RESPECTIVE JOINT AND AT LEAST 48 HOURS HAS ELAPSED SINCE CONCRETE PLACEMENT.

EPOXY-COAT OR GALVANIZE STEEL ITEMS USED TO FACILITATE CONSTRUCTION, SUCH AS FORM HANGER ASSEMBLIES, TY-BAR CLIPS, INSERT WELD ANCHORS, OR OTHER APPURTENANCES, THAT WILL REMAIN IN PLACE IN THE BRIDGE SLAB. EPOXY-COAT IN ACCORDANCE WITH AASHTO M284 OR GALVANIZE IN ACCORDANCE WITH AASHTO M111.

FOLLOW "EXPANSION JOINT SETTING TABLE" SHOWN ON THIS SHEET. LINEAR INTERPOLATION MAY BE USED BETWEEN TEMPERATURE VALUES SHOWN.

ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.
FOR DETAILS "A", "B" AND "C", SEE SHEET NO. B148.
FOR INTERMEDIATE AND END DIAPHRAGM LAYOUT & REINFORCING DETAILS, SEE SHEET NOS. B148-B151.

FOR SUPERSTRUCTURE BAR BEND DETAILS AND BAR LISTS, SEE SHEET NO. B155.
FOR BRIDGE SLAB REINFORCING PLANS AND NOTES, SEE SHEET NOS. B154-B157.

ALL AH, EPH, AND FPH BARS SHALL BE PLACED PARALLEL TO THE GIRDERS.
FOR P.C. BEAM DETAILS AND DEAD LOAD DEFLECTION DIAGRAMS, SEE SHEET NOS. B158 AND B160.

FOR ADDITIONAL DETAILS AND REQUIREMENTS OF JOINTS AND SEALERS, SEE STD. LECS-4.
FOR F-SHAPED PARAPET DETAILS AND CONTROL CRACK JOINT LAYOUT, SEE STANDARD FSHP-42-2.

SEAL ALL BRIDGE SLAB CONSTRUCTION JOINTS WITH HIGH MOLECULAR WEIGHT METHACRYLATE OR EPOXY RESIN IN ACCORDANCE WITH SECTION 523 OF THE SPECIFICATIONS. INCLUDE ALL COSTS OF EQUIPMENT AND LABOR FOR THE INSTALLATION OF HIGH MOLECULAR WEIGHT METHACRYLATE OR EPOXY RESIN IN THE CONTRACT UNIT PRICE OF "SEALER CRACK PREPARATION". INCLUDE ALL COSTS OF HIGH MOLECULAR WEIGHT METHACRYLATE OR EPOXY RESIN IN THE CONTRACT UNIT PRICE OF "SEALER RESIN". THE DEPARTMENT WILL NOT MEASURE THE PREPARATION AND SEALER OF EMERGENCY CONSTRUCTION JOINTS FOR PAYMENT.

FOR ADDITIONAL DETAILS AND EXPANSION JOINT NOTES, SEE STDS. EJ-SK AND EJ-DTL.

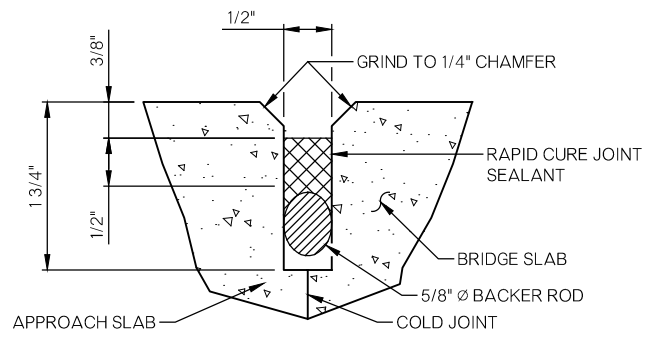
DO NOT SAW CUT GROOVE WITHIN 6" OF ANY CONSTRUCTION JOINT.

SB US-81 OVER 29TH STREET
BRIDGE "Q"

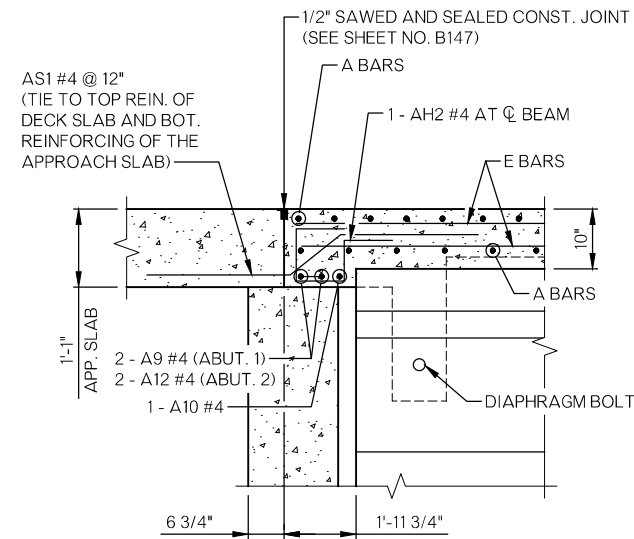
TYPICAL LONGITUDINAL SECTION

TEMPERATURE	DIMENSION A (PERP. TO ϕ JT. ALONG SKEW)	DIMENSION B (PERP. TO ϕ JT. AT EDGE OF SLAB)
3°F	3 1/4"	3 1/8"
11°F	3 1/8"	3"
19°F	2 7/8"	2 7/8"
27°F	2 3/4"	2 3/4"
35°F	2 5/8"	2 5/8"
43°F	2 1/2"	2 1/2"
51°F	2 3/8"	2 3/8"
59°F	2 1/4"	2 1/4"
67°F	2 1/8"	2 1/8"
75°F	1 7/8"	2"
83°F	1 3/4"	1 7/8"
90°F	1 5/8"	1 3/4"
98°F	1 1/2"	1 5/8"
106°F	1 3/8"	1 1/2"
114°F	1 1/4"	1 3/8"
122°F	1 1/8"	1 1/4"

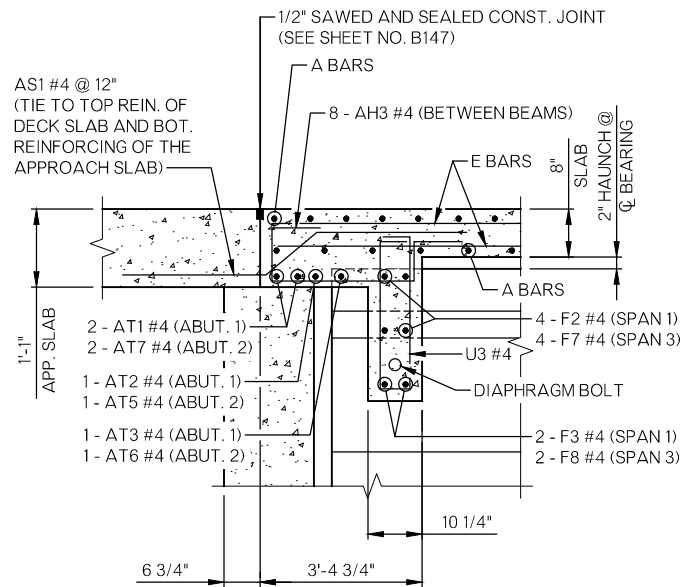
NOTES
EXPANSION JOINT SHALL BE INSTALLED AT PIER 1.



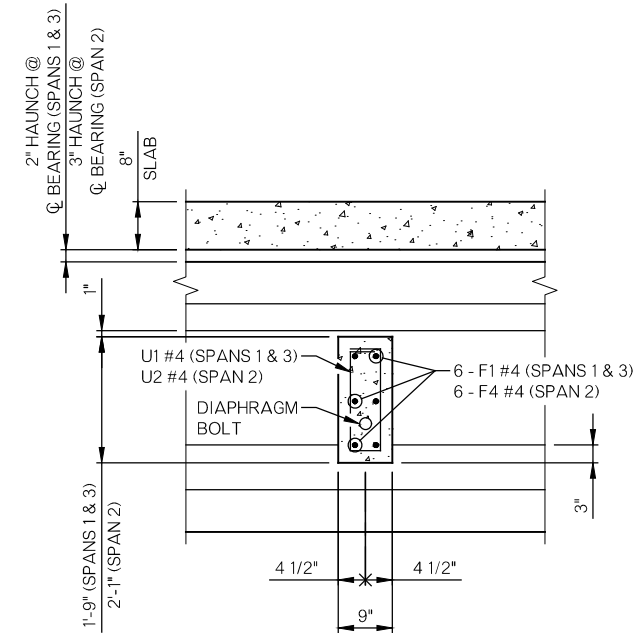
1/2" SAWS AND SEALED CONSTRUCTION JOINT DETAIL



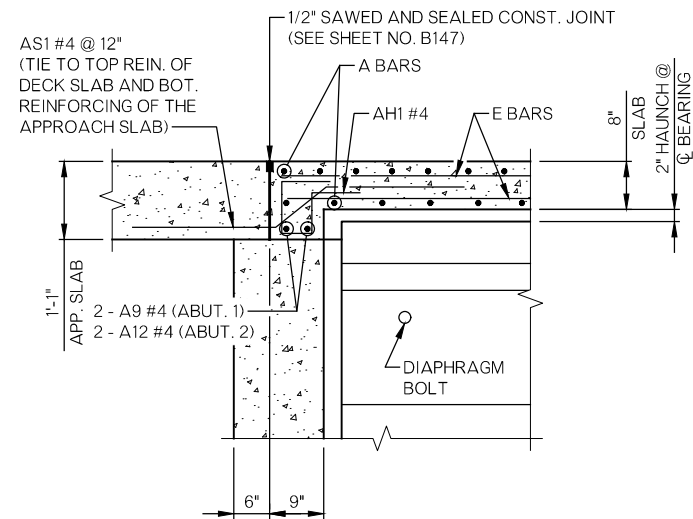
DETAIL "A" (AT Q BEAM)
(MEASURED RADIALLY ALONG PGL BRIDGE "Q")



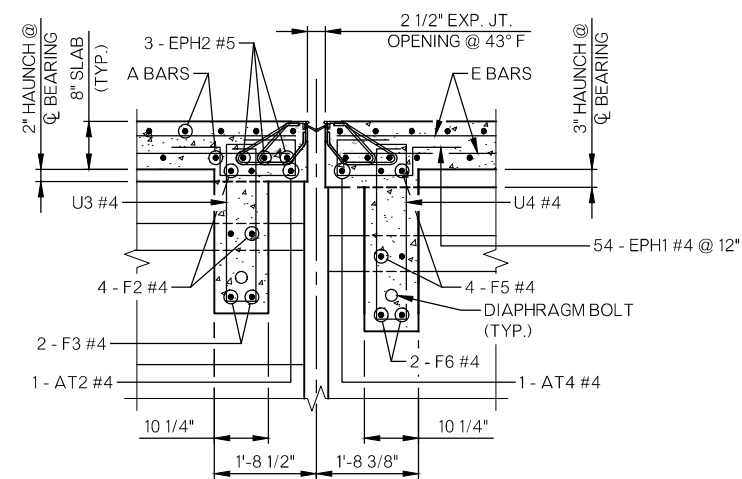
DETAIL "A" (BETWEEN BEAMS)
(MEASURED RADIALLY ALONG PGL BRIDGE "Q")



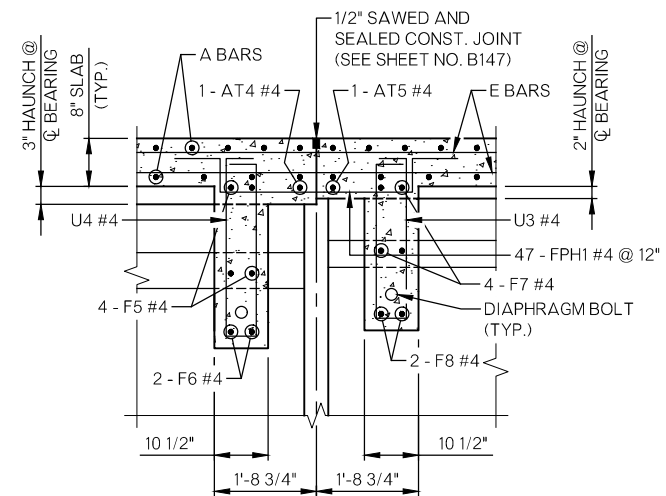
INTERMEDIATE DIAPHRAGM
(MEASURED PARALLEL TO BEAM FACE)



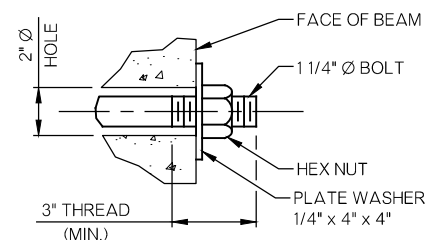
DETAIL "A" (AT CANTILEVERS)
(MEASURED PERPENDICULAR TO BACKWALL)



DETAIL "B"
(MEASURED RADIALLY ALONG PGL BRIDGE "Q")

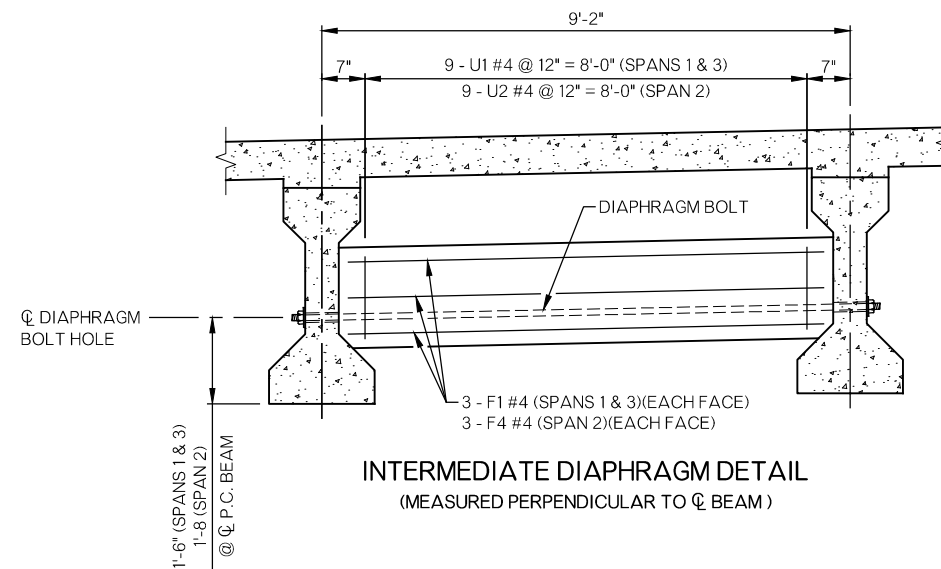


DETAIL "C"
(MEASURED RADIALLY ALONG PGL BRIDGE "Q")



INTERMEDIATE DIAPHRAGM BOLT DETAIL

DIAPHRAGM BOLT NOTE
STRUCTURAL STEEL FOR DIAPHRAGM BOLTS AND PLATE WASHERS SHALL CONFORM TO AASHTO M270 (ASTM A709), GRADE 50W (WEATHERING STEEL, CHARPY V-NOTCH TESTING NOT REQUIRED). A #10 REINFORCING BAR CONFORMING TO AASHTO M31, GRADE 60, AND THREADED AT THE ENDS AS SHOWN MAY BE SUBSTITUTED FOR THE DIAPHRAGM BOLT AT NO ADDITIONAL COST TO THE OKLAHOMA DEPARTMENT OF TRANSPORTATION. HEX NUTS SHALL CONFORM TO AASHTO M291 (ASTM A563). PAINT EXPOSED DIAPHRAGM BOLT, HEX NUTS AND PLATE WASHERS WITH TWO (2) COATS OF ZINC RICH PAINT (6 MIL. THICKNESS) AFTER ASSEMBLY. ALL COSTS OF DIAPHRAGM BOLTS, PLATE WASHERS, SPACERS, AND HEX NUTS TO BE INCLUDED IN THE PRICE BID FOR "STRUCTURAL STEEL".



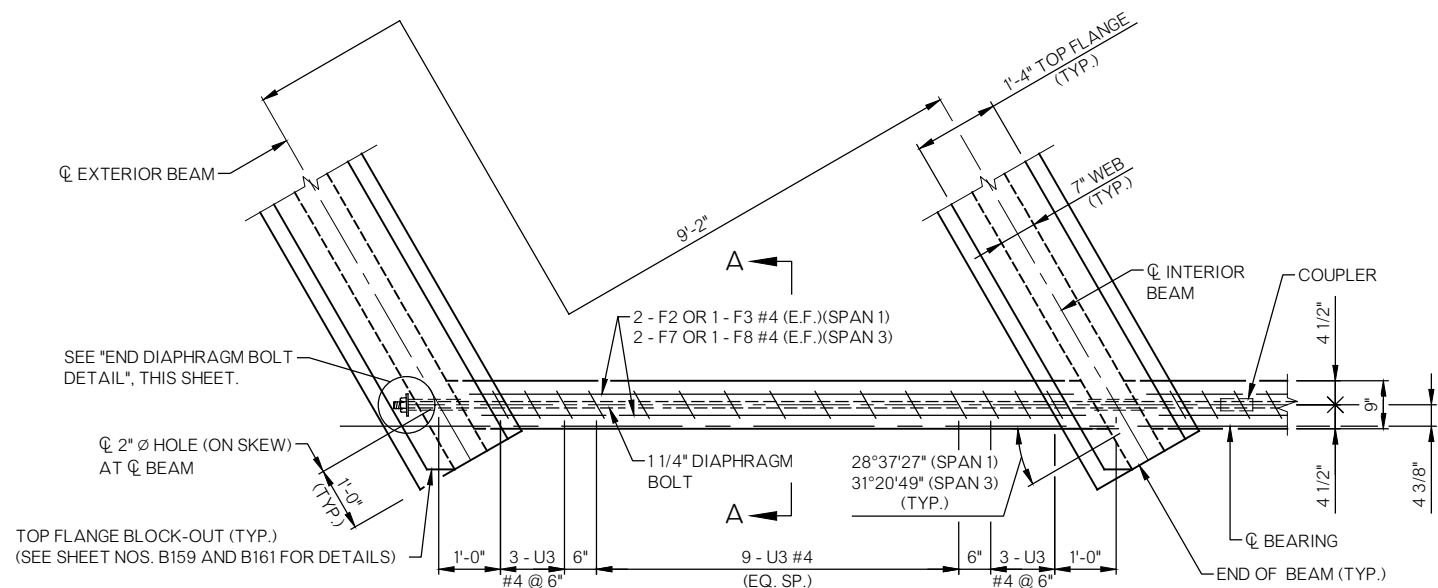
INTERMEDIATE DIAPHRAGM DETAIL
(MEASURED PERPENDICULAR TO Q BEAM)

NOTE
DO NOT PLACE THE CONCRETE FOR THE BRIDGE SLAB OR APPLY OTHER MASSIVE LOADS TO THE BEAMS OR DIAPHRAGMS UNTIL THE DIAPHRAGMS HAVE BEEN IN PLACE A MINIMUM OF 10 DAYS AND ALL BOLTS TIGHTENED, OR AT THE DISCRETION OF THE ENGINEER. THE ENGINEER MAY APPROVE SHORTENING TIME IF THE BEAM AND DIAPHRAGM CONCRETE HAS ATTAINED 80% OF THE SPECIFIED COMPRESSIVE STRENGTH.

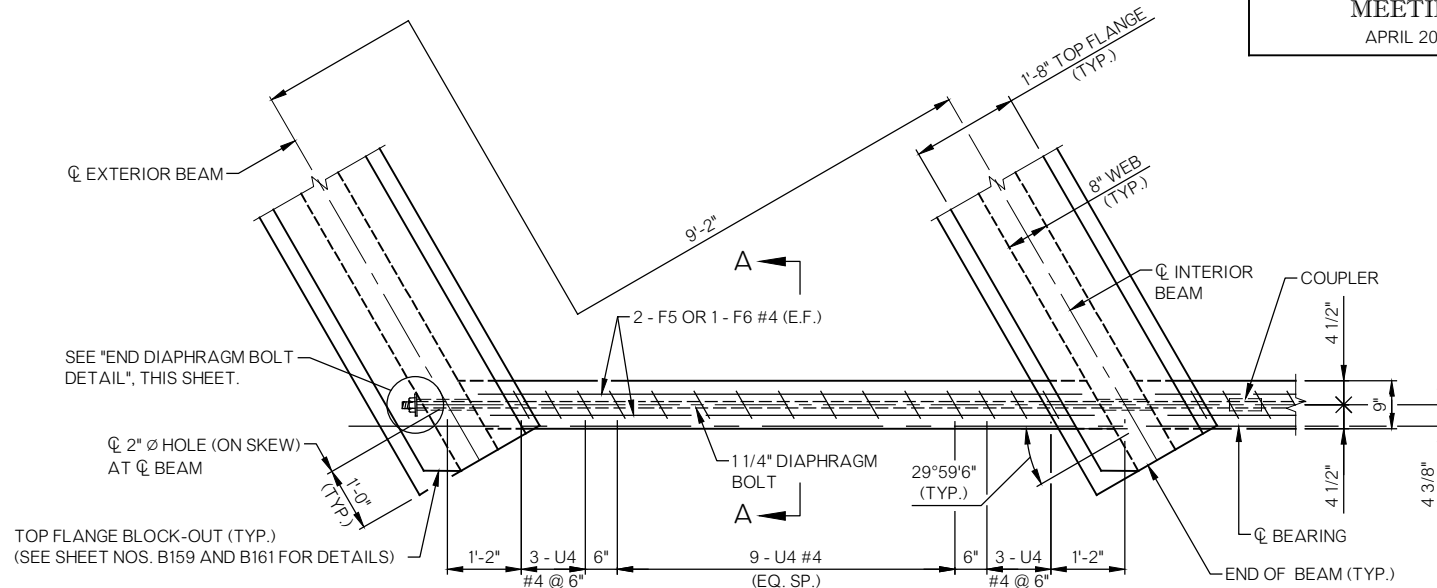
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

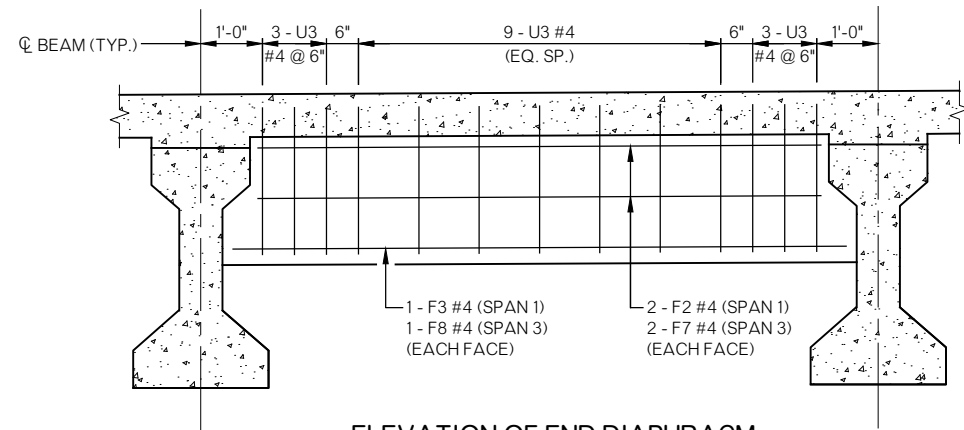
DIAPHRAGM DETAILS
(SHEET NO. 1 OF 3)



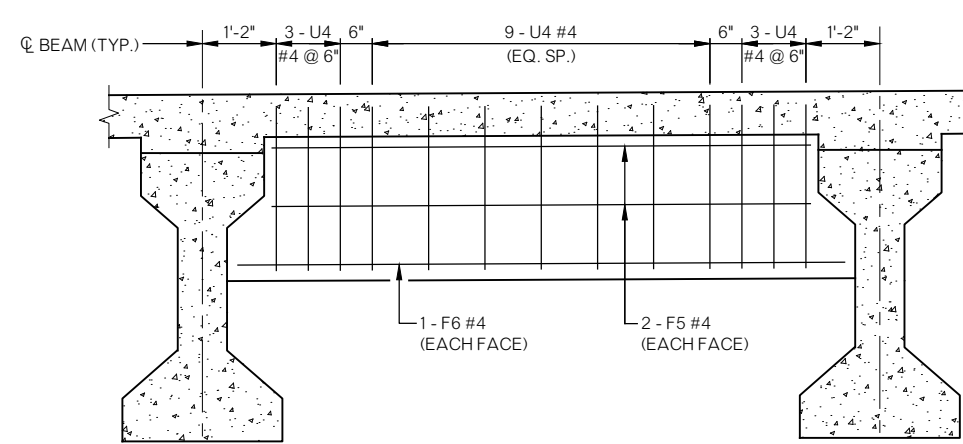
PARTIAL PLAN OF END DIAPHRAGM SPANS 1 AND 3
(TYPICAL BTWN. BEAMS, AT ABUTMENTS AND PIERS)



PARTIAL PLAN OF END DIAPHRAGM SPAN 2
(TYPICAL BTWN. BEAMS, AT PIERS)

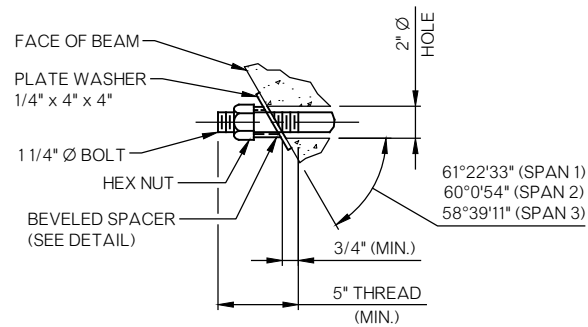


ELEVATION OF END DIAPHRAGM SPANS 1 AND 3
(TYPICAL BTWN. BEAMS, AT ABUTMENTS AND PIERS)

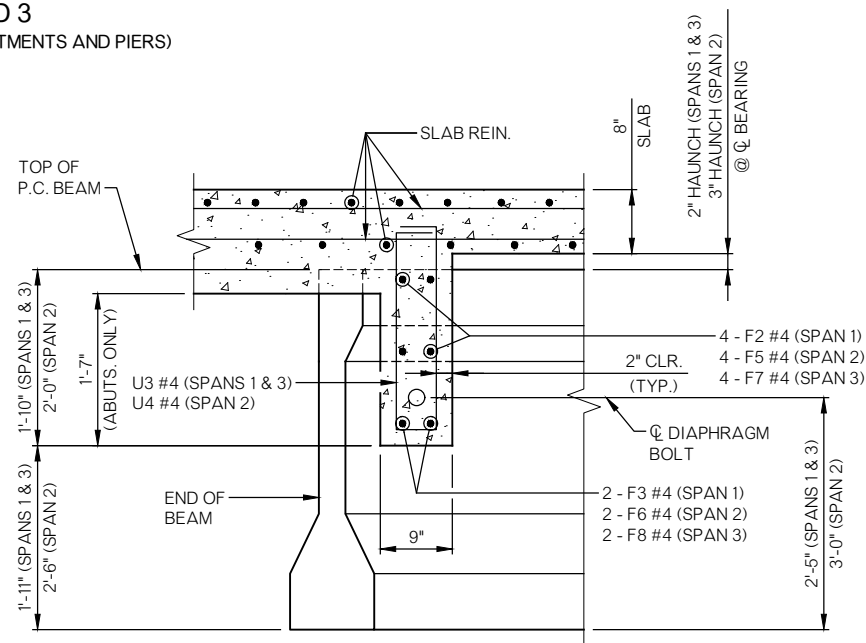


ELEVATION OF END DIAPHRAGM SPAN 2
(TYPICAL BTWN. BEAMS, AT PIERS)

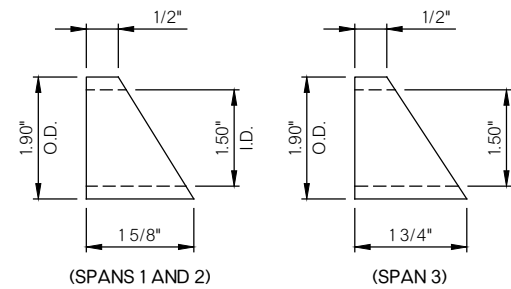
NOTE
E.F. = DENOTES EACH FACE



END DIAPHRAGM BOLT DETAIL
(EXTERIOR BEAMS ONLY)



SECTION A-A



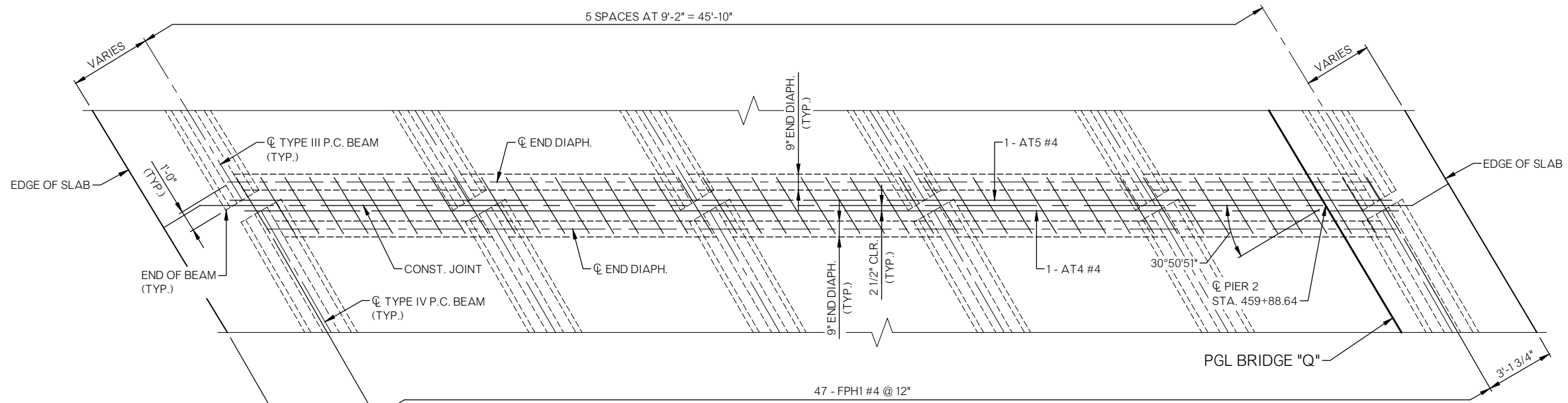
BEVELED SPACER DETAILS
1 1/2 inch diameter EXTRA STRONG PIPE SLEEVE

- NOTES
- U BARS SHALL BE PLACED PARALLEL TO THE P.C. BEAMS.
 - ALL COSTS FOR DIAPHRAGM BOLT COUPLERS TO BE INCLUDED IN OTHER ITEMS.
 - FOR ADDITIONAL REINFORCING DETAILS OVER END DIAPHRAGMS, SEE SHEET NOS. B148 THRU B151.
 - FOR BAR LIST, SEE SHEET NO. B155.
 - FOR BAR BEND DETAILS, SEE SHEET NO. B155.
 - FOR ADDITIONAL NOTES REGARDING THE CONCRETE DIAPHRAGMS, SEE SHEET NO. B148.

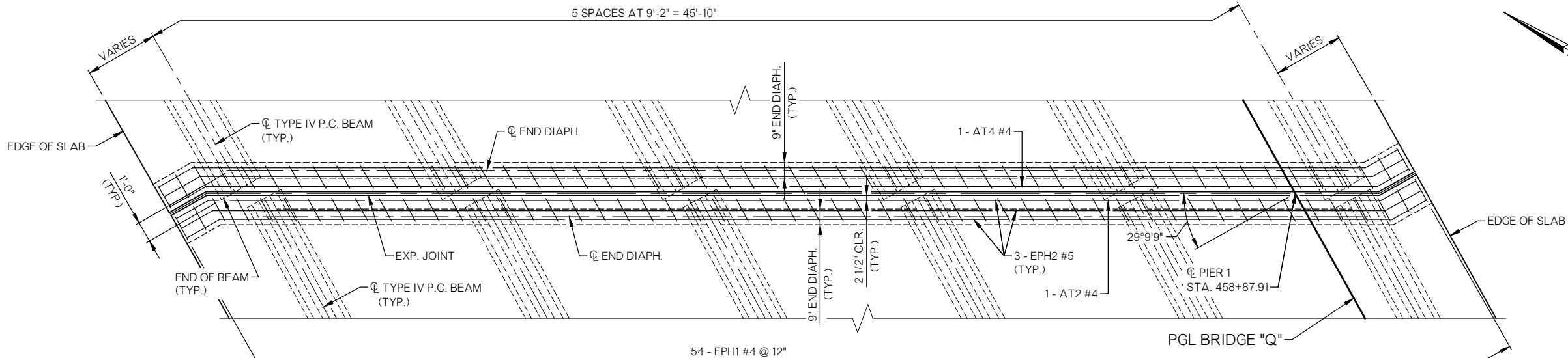
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

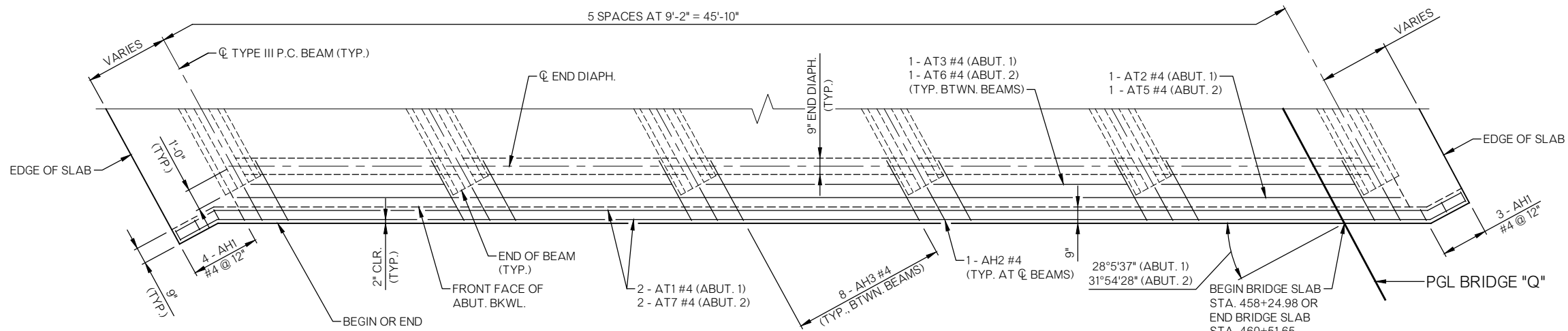
DIAPHRAGM DETAILS
(SHEET NO. 2 OF 3)



SLAB REINFORCING PLAN AT PIER 2



SLAB REINFORCING PLAN AT PIER 1



SLAB REINFORCING PLAN AT ABUTMENT
(ABUTMENT 1 SHOWN, ABUTMENT 2 SIMILAR)

NOTES
DIMENSIONS AND DETAILS ARE TYPICAL FOR BOTH ABUTMENTS UNLESS OTHERWISE SHOWN.

ALL AH, EPH, AND FPH BARS SHALL BE PLACED PARALLEL TO THE P.C. BEAMS.

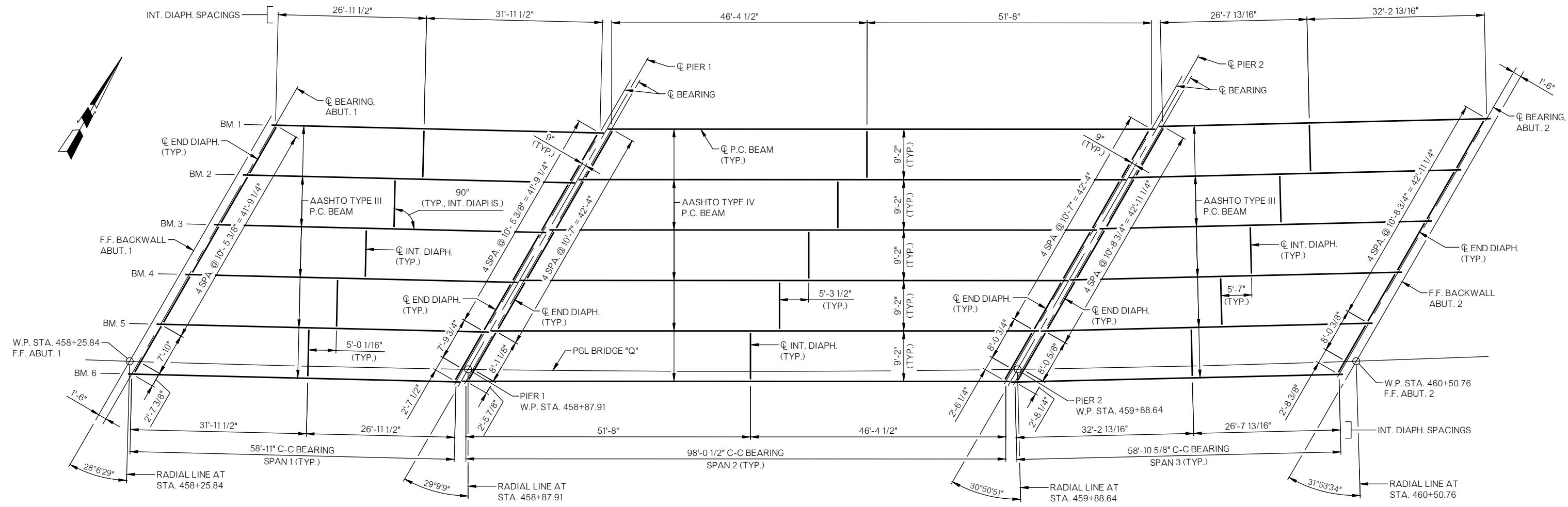
FOR INTERMEDIATE AND END DIAPHRAGM LAYOUT & REINFORCING DETAILS, SEE SHEET NOS. B148 THRU B151.

FOR BRIDGE SLAB AND EMERGENCY CONSTRUCTION JOINT NOTES, BAR BEND DETAILS AND SUPERSTRUCTURE BAR LIST SEE SHEET NOS. B147, B155, AND B157.

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

DIAPHRAGM DETAILS
(SHEET NO. 3 OF 3)



P.C. BEAM AND DIAPHRAGM LAYOUT PLAN
(NOT TO SCALE)

- NOTES**
- ALL LONGITUDINAL AND TRANSVERSE DIMENSIONS ARE HORIZONTAL DIMENSIONS.
 - ALL STATIONING FOLLOWS ϕ SURVEY US-81.
 - FRONT FACE BACKWALL, ϕ BEARING, ϕ PIER AND ϕ END DIAPHRAGM LINES ARE PARALLEL.
 - FOR INTERMEDIATE DIAPHRAGM DETAILS, SEE SHEET NO. B148.
 - FOR END DIAPHRAGM DETAILS, SEE SHEET NOS. B148-B150.
 - FOR TYPE III P.C. BEAM DETAILS, SEE SHEET NOS. B158 AND B159.
 - FOR TYPE IV P.C. BEAM DETAILS, SEE SHEET NOS. B160 AND B161.
 - F.F. = DENOTES FRONT FACE

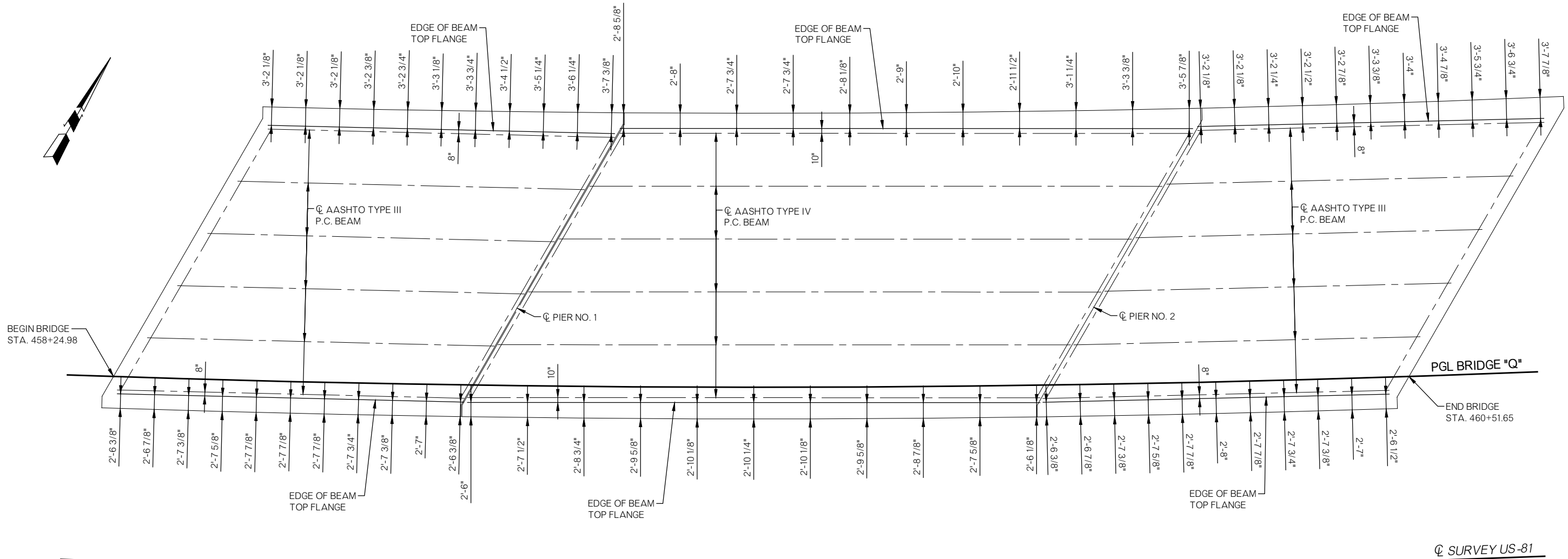
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

P.C. BEAM AND DIAPHRAGM LAYOUT

State Job No. 24428(12) Sheet No. B151

US 81 REALIGNMENT
GRADY COUNTY



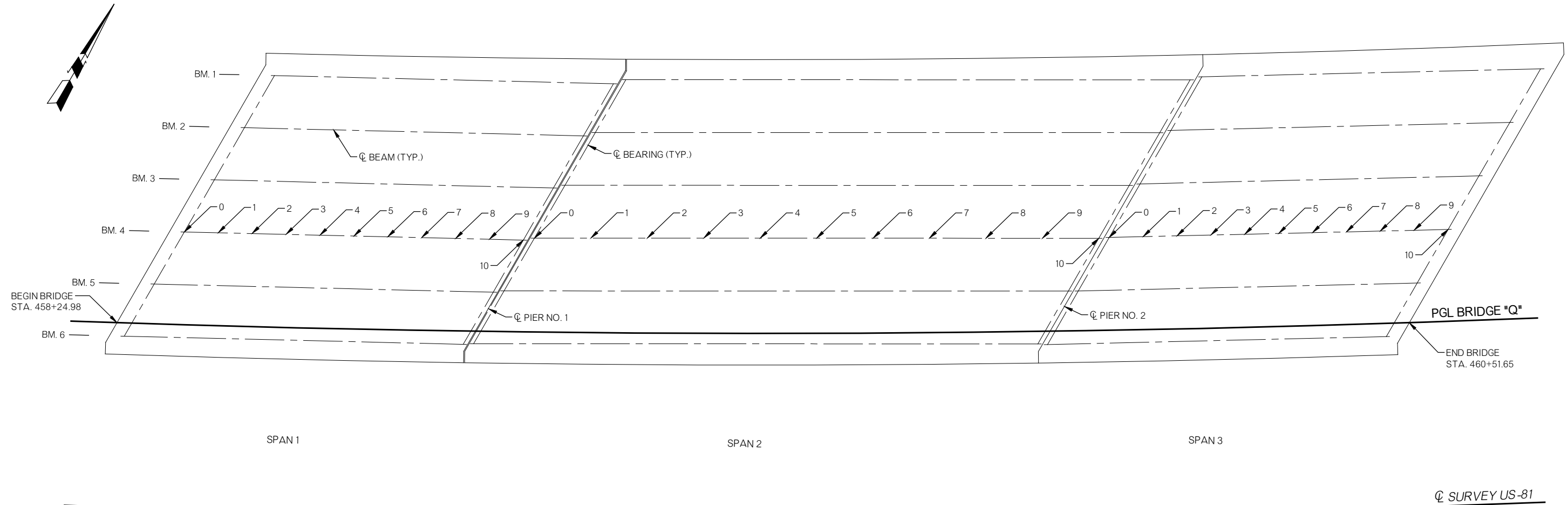
BRIDGE SLAB PLAN SHOWING CANTILEVER LAYOUT
(NOT TO SCALE)

NOTES
THE VARYING CANTILEVER DIMENSIONS SHOWN ARE MEASURED ALONG LINE PERPENDICULAR TO THE TOP OUTSIDE FACE OF THE EXTERIOR BEAM FLANGE AND AT TENTH POINTS BETWEEN THE CENTERLINE OF BEARING AT EACH EXTERIOR BEAM END.
ALL STATIONING FOLLOWS CL SURVEY US-81.

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SB US-81 OVER 29TH STREET
BRIDGE "Q"
SLAB PLAN SHOWING CANTILEVER LAYOUT
State Job No. 24428(12) Sheet No. B152

US 81 REALIGNMENT
GRADY COUNTY



TOP OF SLAB ELEVATIONS
(NOT TO SCALE)

	SPAN 1										SPAN 2										SPAN 3												
	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10	0	1	2	3	4	5	6	7	8	9	10
BM. 1	1126.13	1126.08	1126.03	1125.97	1125.92	1125.86	1125.81	1125.75	1125.69	1125.63	1125.57	1125.51	1125.40	1125.29	1125.17	1125.05	1124.93	1124.80	1124.68	1124.55	1124.42	1124.29	1124.23	1124.15	1124.06	1123.97	1123.88	1123.79	1123.70	1123.60	1123.51	1123.42	1123.32
BM. 2	1126.63	1126.58	1126.53	1126.48	1126.42	1126.37	1126.31	1126.26	1126.20	1126.14	1126.08	1126.03	1125.92	1125.81	1125.69	1125.57	1125.45	1125.33	1125.21	1125.08	1124.95	1124.82	1124.77	1124.69	1124.60	1124.51	1124.42	1124.33	1124.24	1124.15	1124.06	1123.97	1123.87
BM. 3	1127.13	1127.08	1127.03	1126.98	1126.93	1126.87	1126.82	1126.76	1126.71	1126.65	1126.59	1126.55	1126.44	1126.32	1126.21	1126.09	1125.98	1125.86	1125.73	1125.61	1125.48	1125.35	1125.31	1125.23	1125.14	1125.05	1124.97	1124.88	1124.79	1124.70	1124.61	1124.52	1124.42
BM. 4	1127.63	1127.58	1127.53	1127.48	1127.43	1127.38	1127.32	1127.27	1127.21	1127.16	1127.10	1127.06	1126.95	1126.84	1126.73	1126.62	1126.50	1126.38	1126.26	1126.14	1126.01	1125.88	1125.85	1125.77	1125.68	1125.58	1125.51	1125.42	1125.33	1125.24	1125.15	1125.06	1124.97
BM. 5	1128.13	1128.09	1128.04	1127.98	1127.93	1127.88	1127.83	1127.77	1127.72	1127.66	1127.61	1127.58	1127.47	1127.36	1127.25	1127.14	1127.02	1126.90	1126.78	1126.66	1126.54	1126.41	1126.39	1126.31	1126.22	1126.14	1126.05	1125.96	1125.88	1125.79	1125.70	1125.61	1125.52
BM. 6	1128.63	1128.58	1128.54	1128.49	1128.43	1128.38	1128.33	1128.28	1128.22	1128.17	1128.11	1128.09	1127.98	1127.88	1127.77	1127.66	1127.54	1127.43	1127.31	1127.19	1127.07	1126.94	1126.93	1126.84	1126.76	1126.67	1126.59	1126.50	1126.42	1126.33	1126.24	1126.15	1126.06

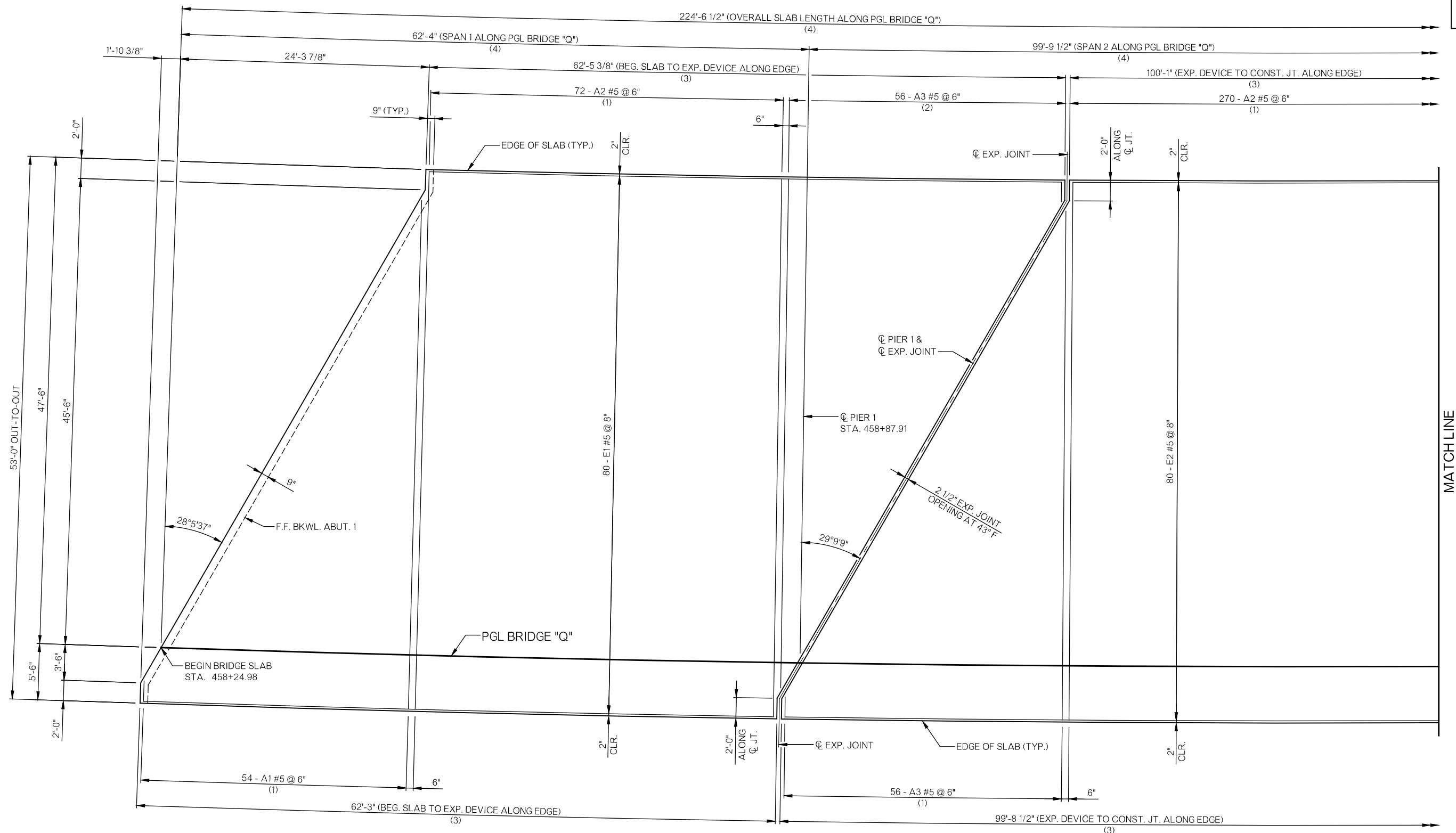
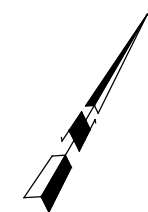
NOTES
THE VARYING ELEVATIONS SHOWN ARE MEASURED ALONG THE CENTERLINE OF THE GIRDERS
AND AT TENTH POINTS BETWEEN THE CENTERLINE OF BEARING AT EACH BEAM END.

ALL STATIONING FOLLOWS \mathcal{C} SURVEY US-81.

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

PLAN SHOWING TOP OF SLAB ELEVATIONS



BOTTOM SLAB REINFORCING PLAN
(NOT TO SCALE)

NOTES
ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.

ALL LAPS SHALL BE STAGGERED. E2 BARS SHALL BE CONTINUOUS ACROSS THE CONSTRUCTION JOINT OVER PIER 2. E2 BAR LAPS SHALL NOT BE MADE WITHIN 10' OF THE CL PIER 2.

FOR BAR BEND DETAILS AND BAR LISTS, SEE SHEET NO. B155.

END AND INTERMEDIATE DIAPHRAGMS ARE NOT SHOWN FOR CLARITY. SEE SHEET NOS. B148-B151 FOR PLACEMENT DETAILS. THIS STEEL SHALL BE TIED IN PLACE WITH AND BELOW THE BOTTOM MAT OF SLAB REINFORCING STEEL.

FOR EXPANSION DEVICE SETTING TABLE, SEE SHEET NO. B147.

FS2 BARS IN PARAPETS SHALL BE TIED IN PLACE PRIOR TO SLAB POUR(S). FOR DETAILS AND BAR SPACINGS, SEE ODOT STD. FSHP-42-2 AND SHEET NOS. B156 AND B157.

FOR CONTROL CRACK JOINT LOCATIONS IN PARAPETS, SEE SHEET NO. B147 AND ODOT STD. FSHP-42-2.

FOR EXPANSION JOINT DETAILS, SEE SHEET NOS. B148 AND B150 AND STDS. EJ-SK AND EJ-DTL. W1 AND W2 EXPANSION JOINT ANCHOR BARS SHALL BE ANCHORED WITH EPH2 #5 TRANSVERSE SLAB BARS.

FOR TOP SLAB REINFORCING PLAN AND PARAPET LAYOUT, SEE SHEET NOS. B156 AND B157.

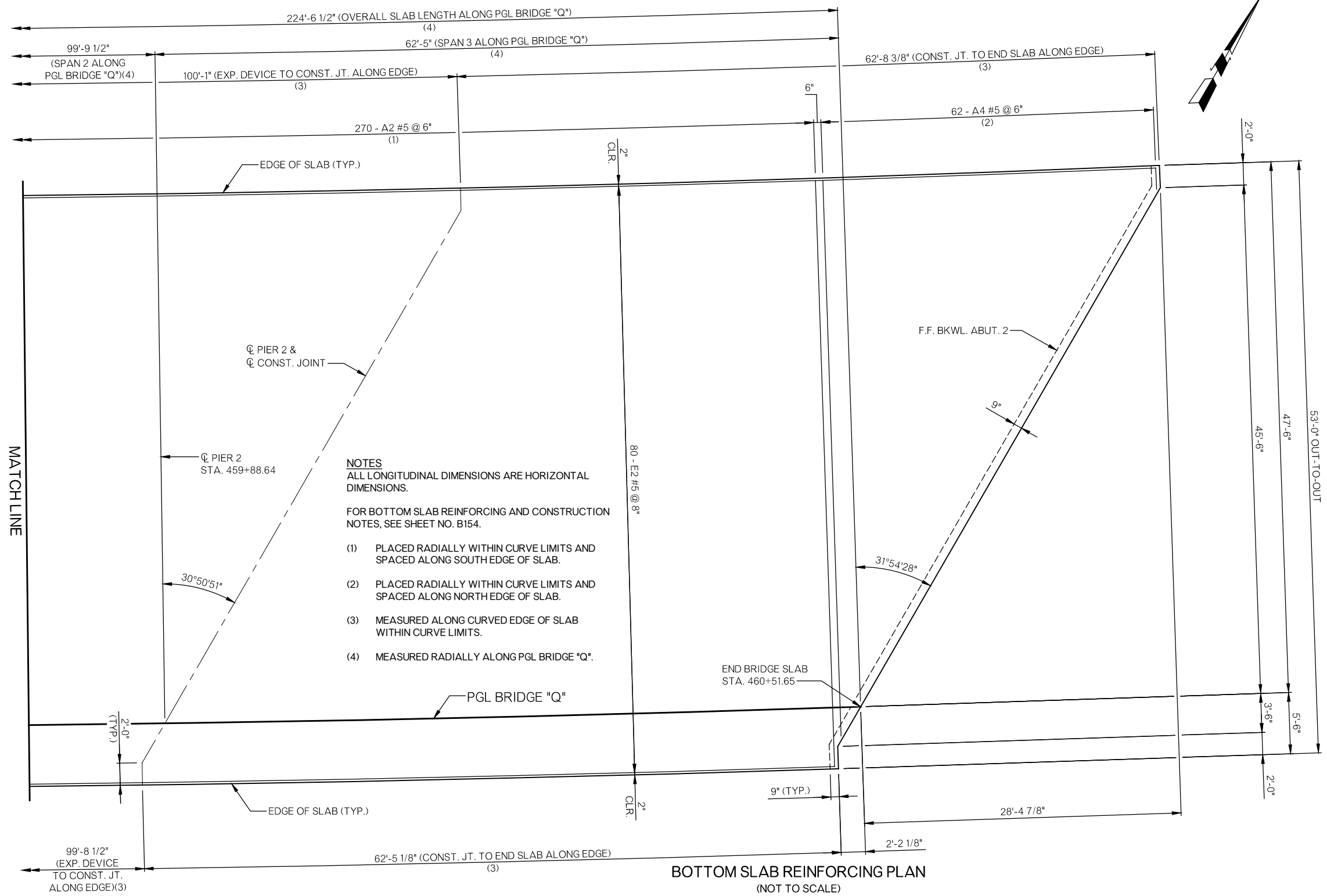
FOR ADDITIONAL NOTES REGARDING SLAB REINFORCING AND CONSTRUCTION, SEE SHEET NOS. B146 AND B147.

- NOTES**
- (1) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG SOUTH EDGE OF SLAB.
 - (2) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG NORTH EDGE OF SLAB.
 - (3) MEASURED ALONG CURVED EDGE OF SLAB WITHIN CURVE LIMITS.
 - (4) MEASURED RADIALLY ALONG PGL BRIDGE "Q".

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SB US-81 OVER 29TH STREET
BRIDGE "Q"
BOTTOM SLAB REINFORCING PLAN
(SHEET NO. 1 OF 2)
State Job No. 24428(12) Sheet No. B154

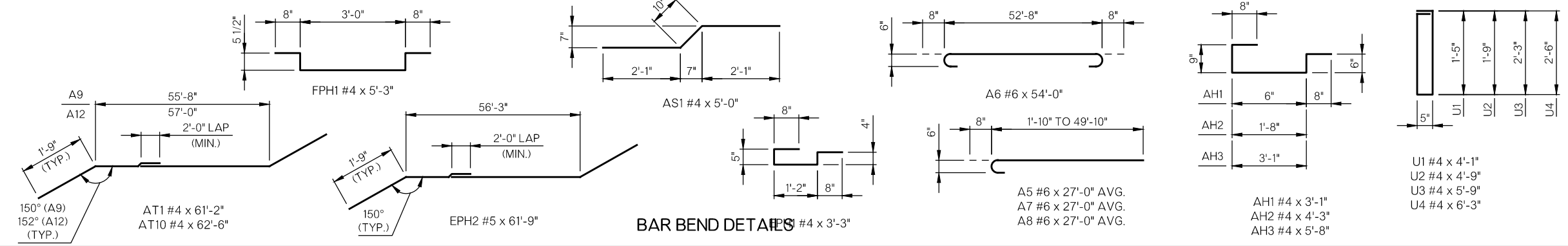
US 81 REALIGNMENT
GRADY COUNTY



BOTTOM SLAB REINFORCING PLAN
(NOT TO SCALE)

SUPERSTRUCTURE BAR LIST					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
(EPOXY COATED)					
A1	54	#5	STR.	25'-10" AVG.	1'-10" TO 49'-10"
A2	414	#5	STR.	52'-8"	
(5) A3	112	#5	STR.	25'-10" AVG.	1'-10" TO 49'-10"
A4	62	#5	STR.	25'-10" AVG.	1'-10" TO 49'-10"
A5	54	#6	BNT.	27'-0" AVG.	3'-0" TO 51'-0"
A6	414	#6	BNT.	54'-0"	
(5) A7	112	#6	BNT.	27'-0" AVG.	3'-0" TO 51'-0"
A8	54	#6	BNT.	27'-0" AVG.	3'-0" TO 51'-0"
(6) A9	2	#4	BNT.	61'-2"	
AH1	14	#4	BNT.	3'-1"	
AH2	12	#4	BNT.	4'-3"	
AH3	80	#4	BNT.	5'-8"	
AS1	108	#4	BNT.	5'-0"	
(6) AT1	2	#4	STR.	61'-2"	
(6) AT2	2	#4	STR.	55'-4"	
AT3	5	#4	STR.	9'-7"	
(6) AT4	2	#4	STR.	56'-6"	
(6) AT5	2	#4	STR.	56'-10"	
AT6	5	#4	STR.	9'-10"	
(6) AT7	1	#4	STR.	62'-6"	
(7) E1	80	#5	STR.	65'-2"	
(8)(9) E2	80	#5	STR.	168'-5"	
(7) E3	54	#5	STR.	65'-2"	
(8)(9) E4	54	#5	STR.	168'-5"	
EPH1	108	#4	BNT.	3'-3"	
EPH2	6	#5	BNT.	61'-9"	
F1	60	#4	STR.	8'-3"	
F2	40	#4	STR.	8'-7"	
F3	20	#4	STR.	9'-5"	
F4	30	#4	STR.	8'-2"	
F5	40	#4	STR.	8'-3"	
F6	20	#4	STR.	9'-5"	
F7	40	#4	STR.	8'-10"	
F8	20	#4	STR.	9'-8"	
FPH1	47	#4	BNT.	5'-3"	
(10) FS2	456	#5	BNT.	7'-4"	
U1	90	#4	BNT.	4'-1"	
U2	45	#4	BNT.	4'-9"	
U3	300	#4	BNT.	5'-9"	
U4	150	#4	BNT.	6'-3"	

- (5) TWO SETS OF FIFTY-SIX (56) BARS EACH.
- (6) LENGTH INCLUDES ONE (1) 2'-0" LAP SPLICE. LAP SPLICES SHALL BE STAGGERED.
- (7) LENGTH INCLUDES ONE (1) 3'-0" LAP SPLICE. LAP SPLICES SHALL BE STAGGERED.
- (8) LENGTH INCLUDES TWO (2) 3'-0" LAP SPLICES. LAP SPLICES SHALL BE STAGGERED.
- (9) DO NOT LAP WITHIN 10'-0" OF CENTERLINE OF PIER.
- (10) FOR BAR BEND DETAILS, SEE STD. FSHP-42-2.



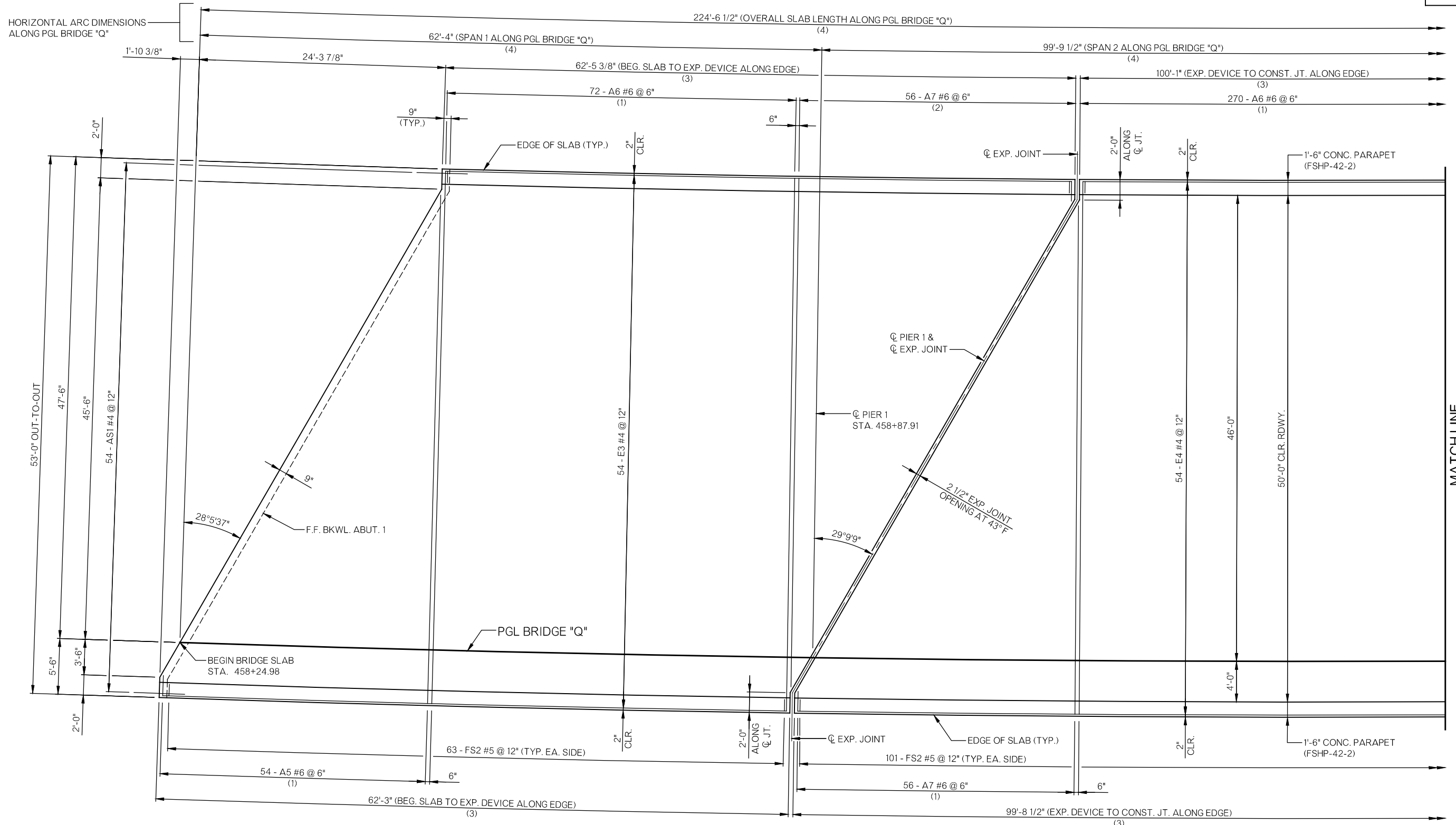
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BOTTOM SLAB REINFORCING PLAN
(SHEET NO. 2 OF 2)

SB US-81 OVER 29TH STREET BRIDGE "Q"

State Job No. 24428(12) Sheet No. B155

US 81 REALIGNMENT GRADY COUNTY



TOP SLAB REINFORCING PLAN AND PARAPET LAYOUT
(NOT TO SCALE)

NOTES
ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.

ALL LAPS SHALL BE STAGGERED. E4 BARS SHALL BE CONTINUOUS ACROSS THE CONSTRUCTION JOINT OVER PIER 2. E4 BAR LAPS SHALL NOT BE MADE WITHIN 10' OF THE C PIER 2.

FOR BAR BEND DETAILS AND BAR LISTS, SEE SHEET NO. B155.

END AND INTERMEDIATE DIAPHRAGMS ARE NOT SHOWN FOR CLARITY. SEE ON SHEET NOS. B148-B151 FOR PLACEMENT DETAILS. THIS STEEL SHALL BE TIED IN PLACE WITH AND BELOW THE BOTTOM MAT OF SLAB REINFORCING STEEL.

FOR EXPANSION DEVICE SETTING TABLE, SEE SHEET NO. B147.

FOR ADDITIONAL NOTES REGARDING SLAB REINFORCING AND CONSTRUCTION, SEE SHEET NOS. B146 AND B147.

FS2 BARS IN PARAPETS SHALL BE TIED IN PLACE PRIOR TO SLAB POUR(S). FOR DETAILS AND BAR SPACINGS, SEE ODOT STD. FSHP-42-2, THIS SHEET AND SHEET NO. B157.

FOR CONTROL CRACK JOINT LOCATIONS IN PARAPETS, SEE SHEET NO. B147 AND ODOT STD. FSHP-42-2.

FOR EXPANSION JOINT DETAILS, SEE SHEET NO. B148 AND B150 AND STDS. EJ-SK AND EJ-DTL. W1 AND W2 EXPANSION JOINT ANCHOR BARS SHALL BE ANCHORED WITH EPH2 #5 TRANSVERSE SLAB BARS.

FOR BOTTOM SLAB REINFORCING PLAN, SEE SHEET NOS. B154 AND B155.

NOTES
(1) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG SOUTH EDGE OF SLAB.

(2) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG NORTH EDGE OF SLAB.

(3) MEASURED ALONG CURVED EDGE OF SLAB WITHIN CURVE LIMITS.

(4) MEASURED RADIALLY ALONG PGL BRIDGE "Q".

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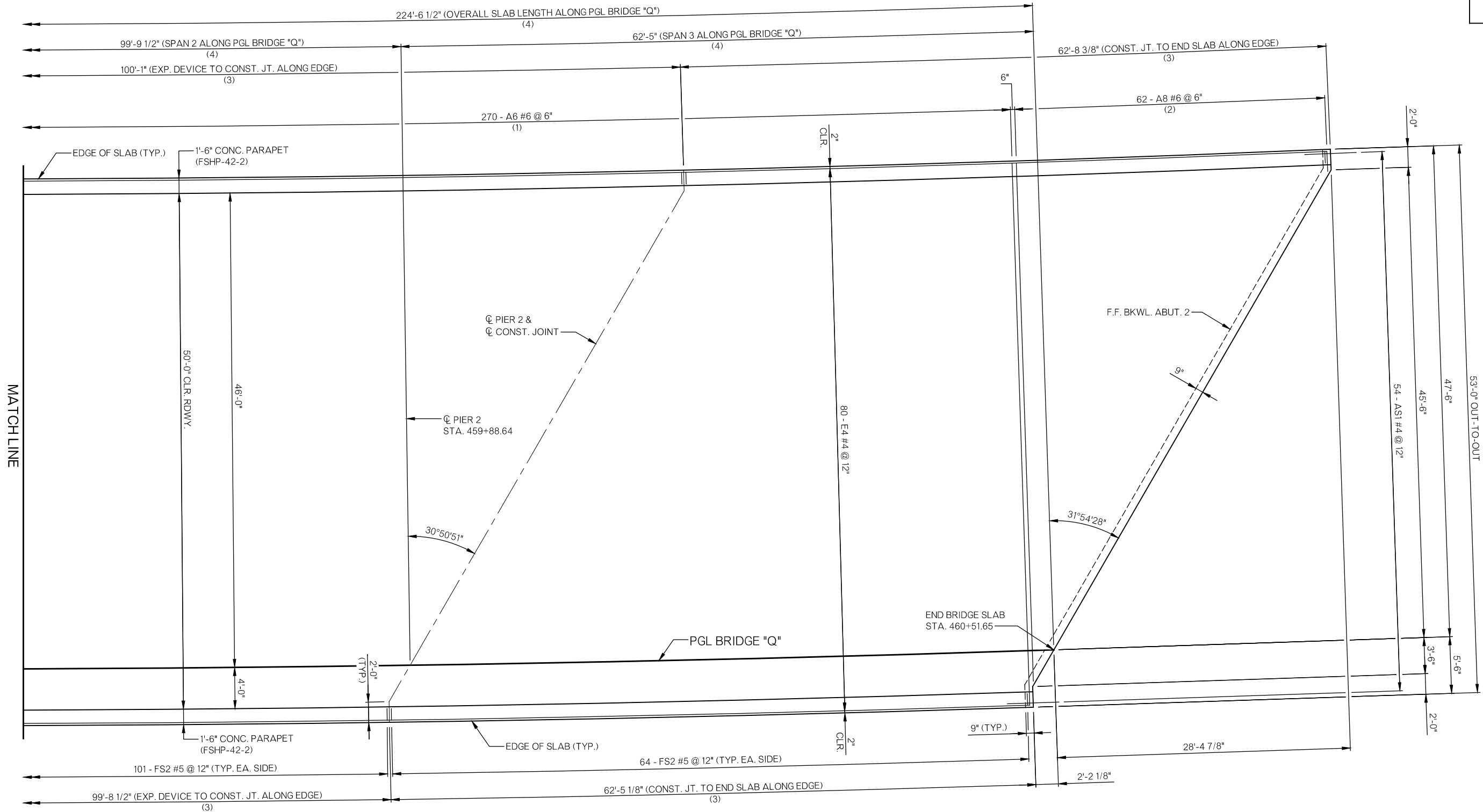
SB US-81 OVER 29TH STREET BRIDGE "Q"

TOP SLAB REINFORCING PLAN
(SHEET NO. 1 OF 2)

State Job No. 24428(12)

Sheet No. B156

US 81 REALIGNMENT
GRADY COUNTY



TOP SLAB REINFORCING PLAN AND PARAPET LAYOUT
(NOT TO SCALE)

- NOTES**
ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.
FOR ADDITIONAL TOP SLAB REINFORCING AND CONSTRUCTION NOTES, SEE SHEET NO. B156.
- (1) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG SOUTH EDGE OF SLAB.
 - (2) PLACED RADIALLY WITHIN CURVE LIMITS AND SPACED ALONG NORTH EDGE OF SLAB.
 - (3) MEASURED ALONG CURVED EDGE OF SLAB WITHIN CURVE LIMITS.
 - (4) MEASURED RADIALLY ALONG PGL BRIDGE "Q".

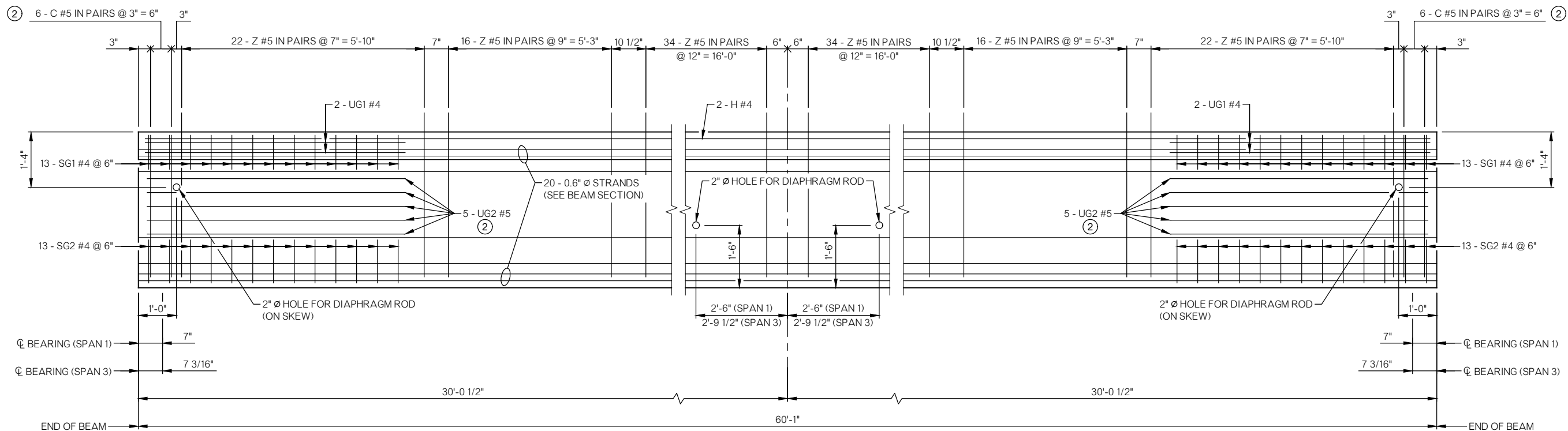
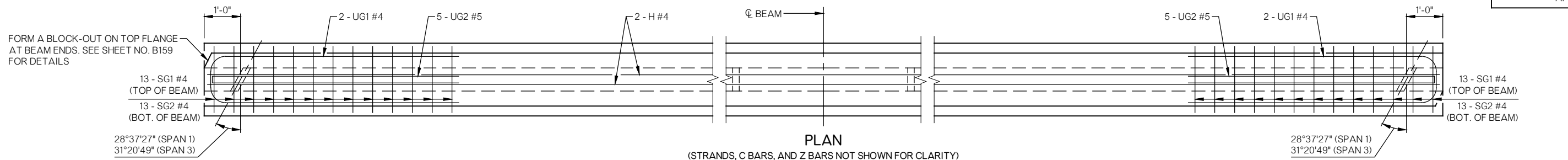
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

**TOP SLAB REINFORCING PLAN
(SHEET NO. 2 OF 2)**

State Job No. 24428(12) Sheet No. B157

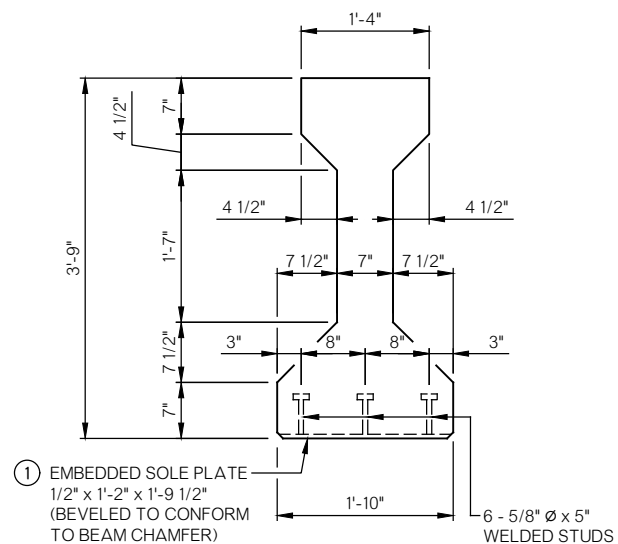
US 81 REALIGNMENT
GRADY COUNTY



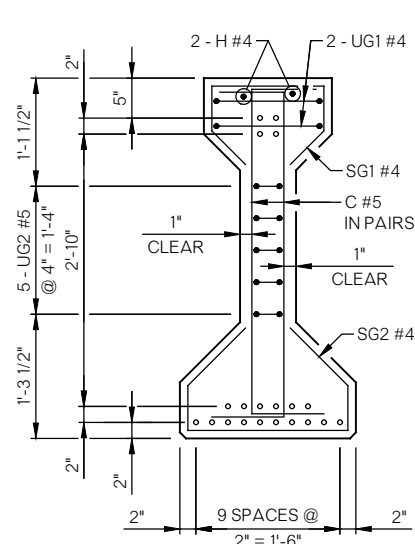
NOTES
FOR ADDITIONAL P.C.BEAM DETAILS, SEE SHEET NO. B159.
ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.

PC BEAM NOTES
COMPRESSIVE STRENGTH
PROVIDE CONCRETE WITH A COMPRESSIVE STRENGTH OF 5,250 PSI AT TRANSFER OF PRESTRESS AND 7,000 PSI AT 28 DAYS.
STRAND TYPE
PROVIDE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" WITH AN ULTIMATE TENSILE STRENGTH OF 270 KSI.
LFD OPERATING RATING = HS 51.30
FOR ADDITIONAL DESIGN DATA, SEE SHEET NO. B130.

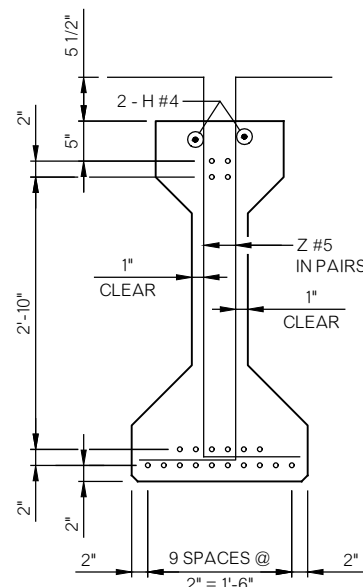
- ① INSTALL AT EACH END OF BEAM.
- ② SHIFT PLAIN REINFORCING STEEL AS NECESSARY TO PROVIDE 1" MIN. CLEAR TO DIAPHRAGM ROD HOLE.



TYPICAL SECTION
(STRANDS, C BARS, AND Z BARS NOT SHOWN FOR CLARITY)



END SECTION
(WELDED STUDS & EMBEDDED SOLE PLATE NOT SHOWN FOR CLARITY)

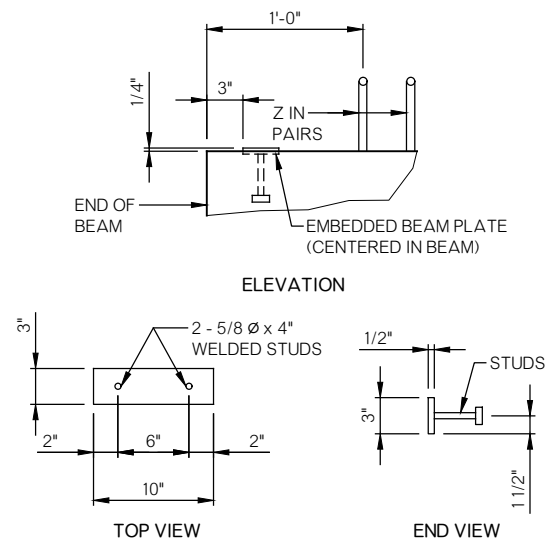


Q SECTION
20 - 0.6" Ø STRANDS

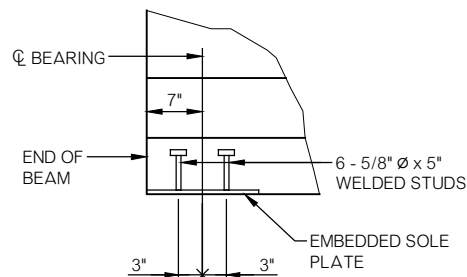
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

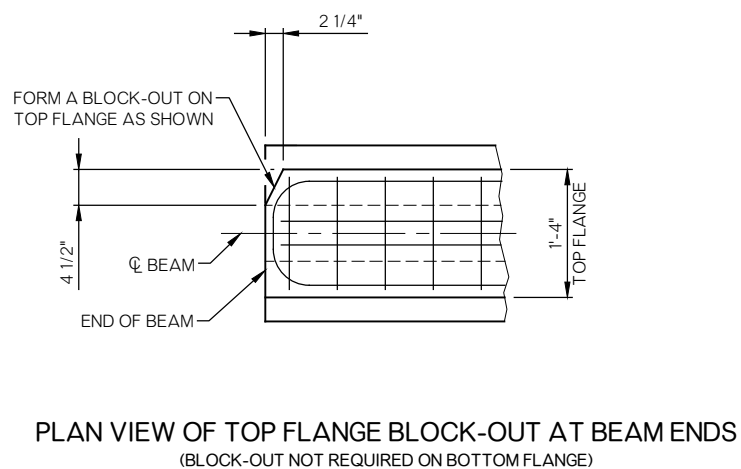
TYPE III P.C. BEAM DETAILS
(SHEET NO. 1 OF 2)



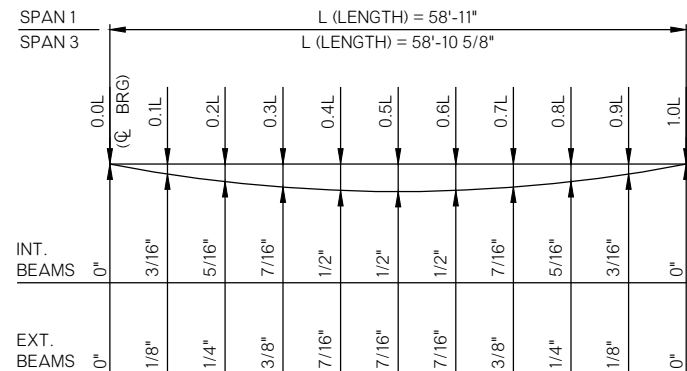
EMBEDDED BEAM PLATE DETAILS
(PROVIDE AN EMBEDDED BEAM PLATE AT EXPANSION ENDS ONLY)



EMBEDDED SOLE PLATE DETAIL AT EACH END OF BEAM

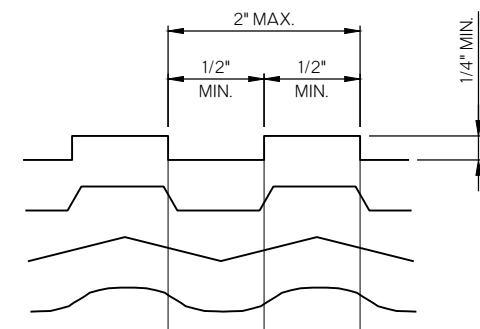


PLAN VIEW OF TOP FLANGE BLOCK-OUT AT BEAM ENDS
(BLOCK-OUT NOT REQUIRED ON BOTTOM FLANGE)



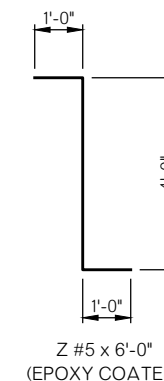
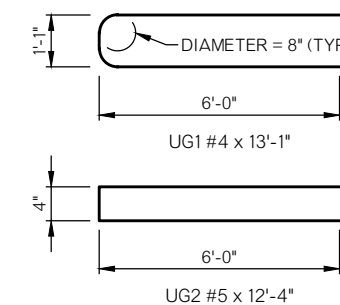
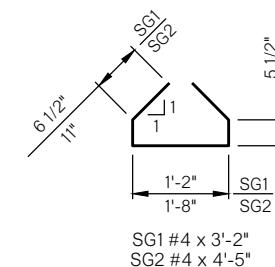
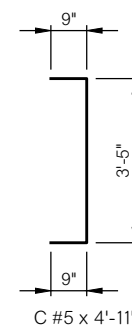
DEAD LOAD DEFLECTION DIAGRAM

NOTES
THE DEAD LOAD DEFLECTIONS SHOWN ABOVE ARE DUE TO THE SLAB, DIAPHRAGMS, HAUNCH, STAY-IN-PLACE FORM ALLOWANCE AND PARAPETS AND ARE THEORETICAL ONLY. (DEFLECTIONS DO NOT INCLUDE BEAM WEIGHT OR FUTURE WEARING SURFACE.) DEAD LOAD DEFLECTION SHALL BE TAKEN INTO CONSIDERATION IN FORMING AND POURING THE SLAB AND HAUNCHES.



INTENTIONALLY ROUGHENED SURFACE EXAMPLES

NOTES
INTENTIONALLY ROUGHEN THE ENTIRE TOP SURFACE OF THE P.C. BEAM TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. PROVIDE A CREST AND TROUGH ASSOCIATED WITH THE HEIGHT OF NOT LESS THAN 1/2". PRODUCE THE ROUGHENED SURFACE BY USING A SPECIAL TROWEL TO FORM ONE OF THE SURFACES SHOWN IN THE DETAILS, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH (OR BLASTING) TO EXPOSE THE AGGREGATE TO A HEIGHT OF 1/4", OR BY USING ANOTHER APPROVED METHOD. SUBMIT THE METHOD TO BE USED FOR APPROVAL BY THE ENGINEER. REPAIR ANY DAMAGE TO REINFORCEMENT'S EPOXY COATING BEFORE PLACEMENT OF DECK CONCRETE.

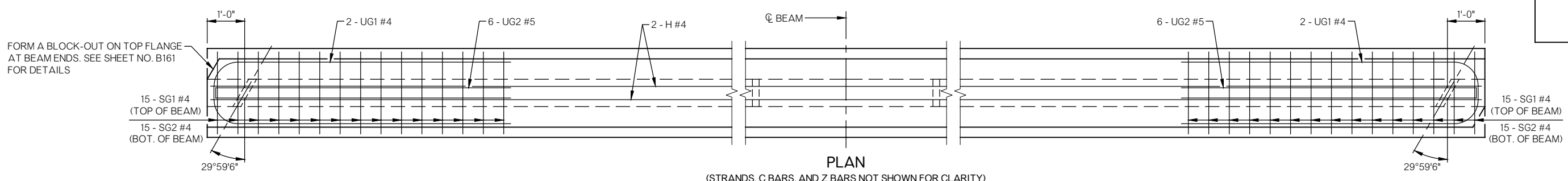


BAR BEND DETAILS

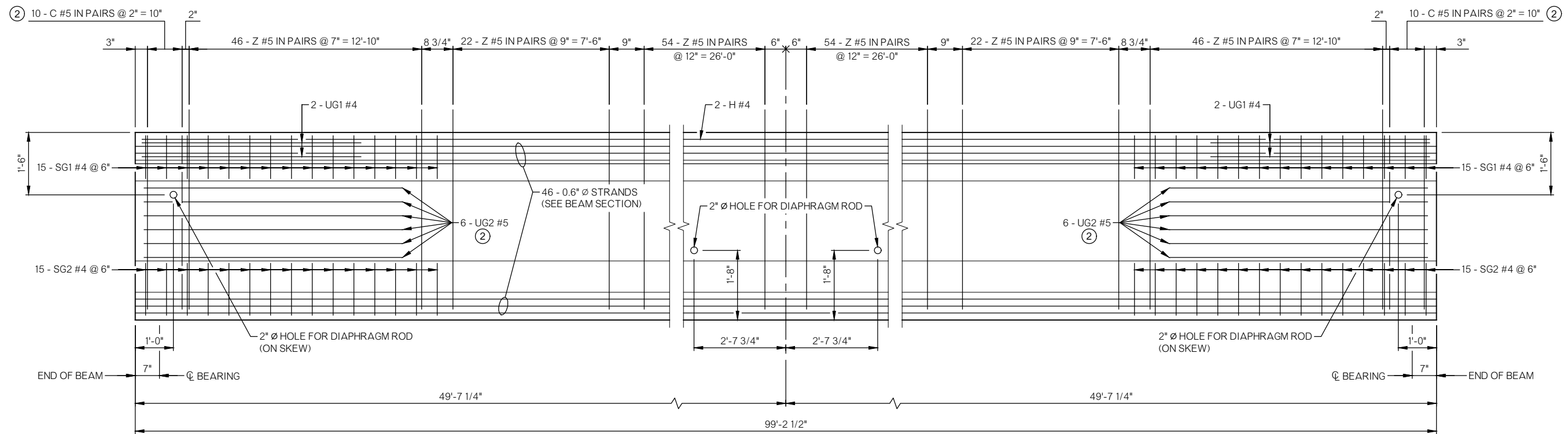
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

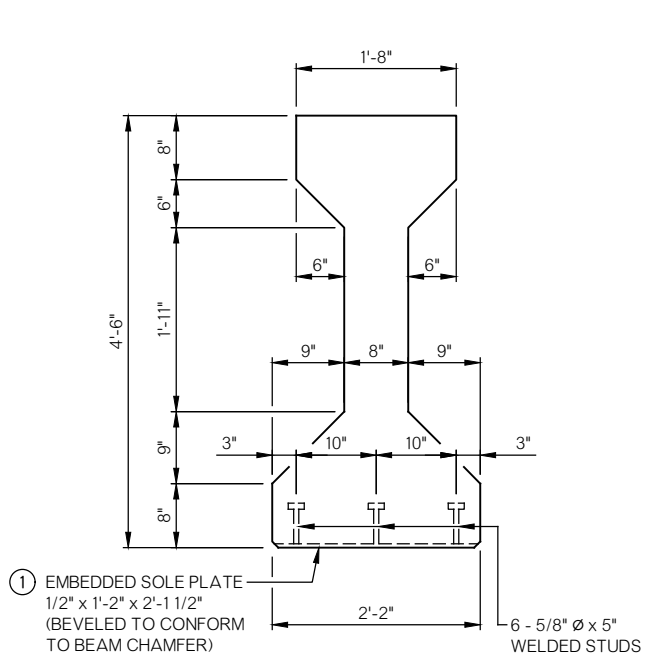
TYPE III P.C. BEAM DETAILS
(SHEET NO. 2 OF 2)



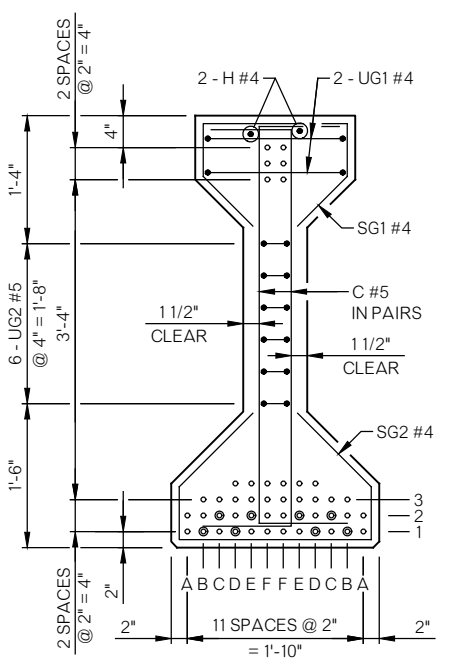
PLAN
(STRANDS, C BARS, AND Z BARS NOT SHOWN FOR CLARITY)



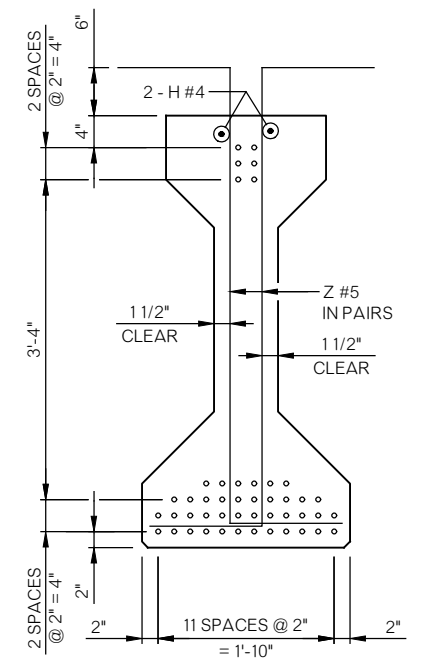
ELEVATION



TYPICAL SECTION
(STRANDS, C BARS, AND Z BARS NOT SHOWN FOR CLARITY)



END SECTION
(WELDED STUDS & EMBEDDED SOLE PLATE NOT SHOWN FOR CLARITY)



Q SECTION
46 - 0.6" Ø STRANDS

NOTES
FOR ADDITIONAL P.C.BEAM DETAILS, SEE SHEET NO. B161.
ALL LONGITUDINAL DIMENSIONS ARE HORIZONTAL DIMENSIONS.

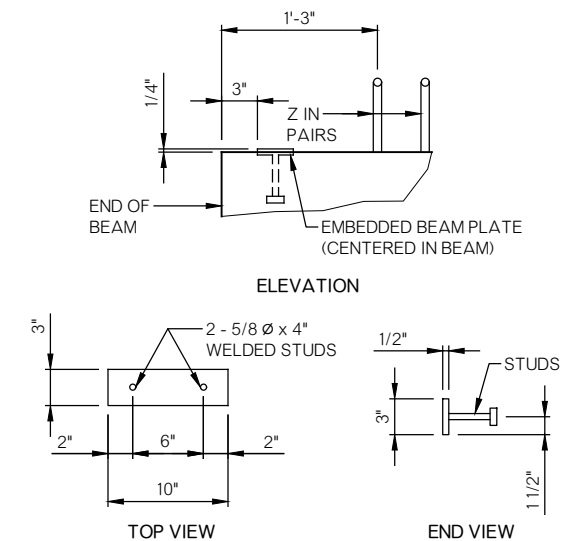
DEBOND SCHEDULE	
DEBOND PAIR	DEBOND LENGTH FROM END OF BEAM
B1 & D1	16'-0"
C2 & E2	8'-0"

PC BEAM NOTES
COMPRESSION STRENGTH
PROVIDE CONCRETE WITH A COMPRESSION STRENGTH OF 7,000 PSI AT TRANSFER OF PRESTRESS AND 10,000 PSI AT 28 DAYS.
STRAND TYPE
PROVIDE LOW-RELAXATION STRANDS HAVING A NOMINAL DIAMETER OF 0.6" WITH AN ULTIMATE TENSILE STRENGTH OF 270 KSI.
LFD OPERATING RATING = HS 49.90
FOR ADDITIONAL DESIGN DATA, SEE SHEET NO. B130.
① INSTALL AT EACH END OF BEAM.
② SHIFT PLAIN REINFORCING STEEL AS NECESSARY TO PROVIDE 1" MIN. CLEAR TO DIAPHRAGM ROD HOLE.

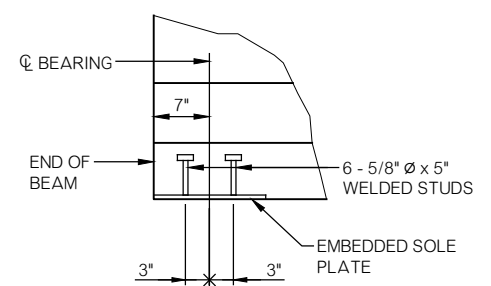
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SB US-81 OVER 29TH STREET
BRIDGE "Q"

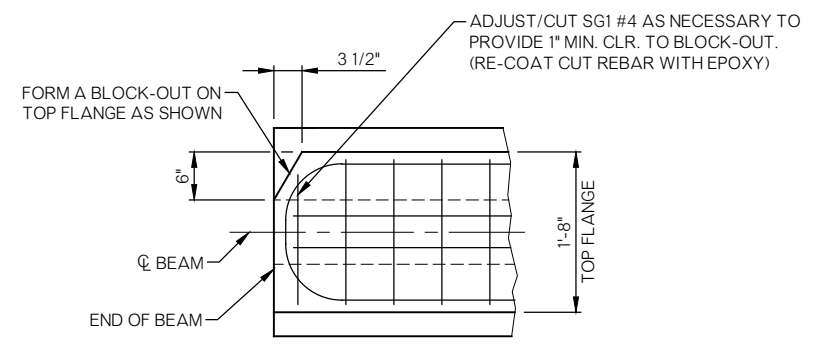
TYPE IV P.C. BEAM DETAILS
(SHEET NO. 1 OF 2)



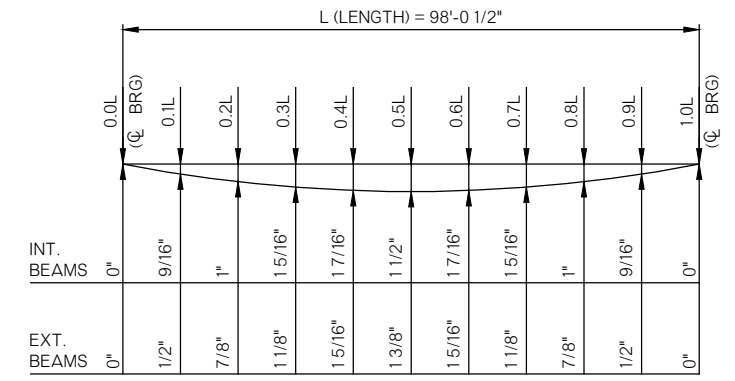
EMBEDDED BEAM PLATE DETAILS
(PROVIDE AN EMBEDDED BEAM PLATE AT EXPANSION ENDS ONLY)



EMBEDDED SOLE PLATE DETAIL AT EACH END OF BEAM

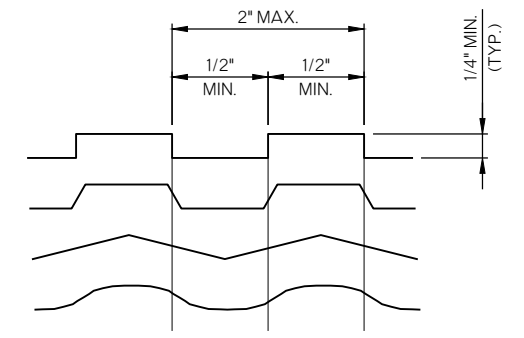


PLAN VIEW OF TOP FLANGE BLOCK-OUT AT BEAM ENDS
(BLOCK-OUT NOT REQUIRED ON BOTTOM FLANGE)



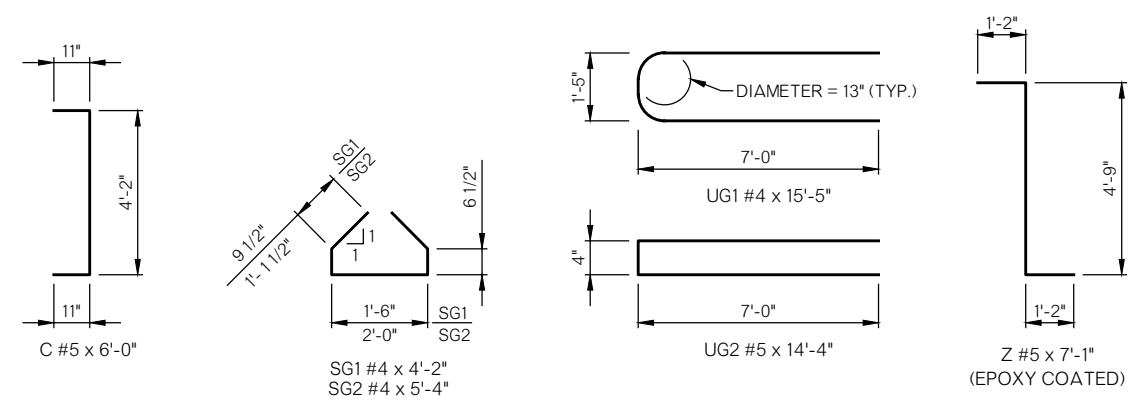
DEAD LOAD DEFLECTION DIAGRAM

NOTES
THE DEAD LOAD DEFLECTIONS SHOWN ABOVE ARE DUE TO THE SLAB, DIAPHRAGMS, HAUNCH, STAY-IN-PLACE FORM ALLOWANCE AND PARAPETS AND ARE THEORETICAL ONLY. (DEFLECTIONS DO NOT INCLUDE BEAM WEIGHT OR FUTURE WEARING SURFACE.) DEAD LOAD DEFLECTION SHALL BE TAKEN INTO CONSIDERATION IN FORMING AND POURING THE SLAB AND HAUNCHES.



INTENTIONALLY ROUGHENED SURFACE EXAMPLES

NOTES
INTENTIONALLY ROUGHEN THE ENTIRE TOP SURFACE OF THE P.C. BEAM TO A MINIMUM HEIGHT OF 1/4" OVER A MAXIMUM PITCH OF 2" MEASURED LONGITUDINALLY ALONG THE LENGTH OF THE BEAM. PROVIDE A CREST AND TROUGH ASSOCIATED WITH THE HEIGHT OF NOT LESS THAN 1/2". PRODUCE THE ROUGHENED SURFACE BY USING A SPECIAL TROWEL TO FORM ONE OF THE SURFACES SHOWN IN THE DETAILS, BY CLEANING THE CONCRETE SURFACE WITH A STIFF WIRE BRUSH (OR BLASTING) TO EXPOSE THE AGGREGATE TO A HEIGHT OF 1/4", OR BY USING ANOTHER APPROVED METHOD. SUBMIT THE METHOD TO BE USED FOR APPROVAL BY THE ENGINEER. REPAIR ANY DAMAGE TO REINFORCEMENT'S EPOXY COATING BEFORE PLACEMENT OF DECK CONCRETE.

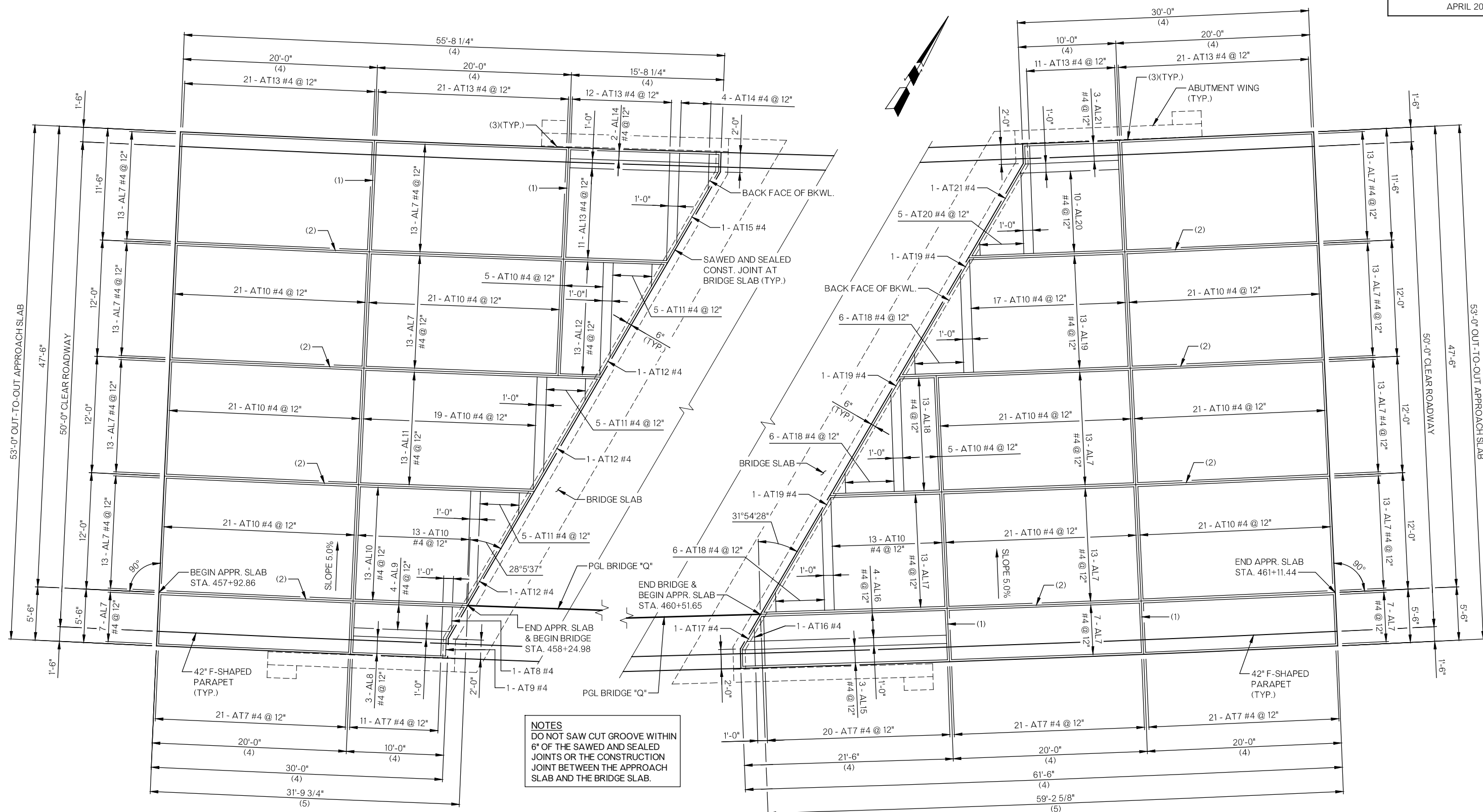


BAR BEND DETAILS

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

TYPE IV P.C. BEAM DETAILS
(SHEET NO. 2 OF 2)



NOTES
DO NOT SAW CUT GROOVE WITHIN 6" OF THE SAWED AND SEALED JOINTS OR THE CONSTRUCTION JOINT BETWEEN THE APPROACH SLAB AND THE BRIDGE SLAB.

- NOTES**
- (1) SAWED AND SEALED CONTRACTION JOINT (SEE STD. LECS-4)
 - (2) SAWED AND SEALED LONGITUDINAL JOINT (SEE STD. LECS-4)
 - (3) 1" SEALED EXPANSION JOINT. (TYP. EA. WING) (SEE DETAIL, SHEET NO. B164)
 - (4) MEASURED RADIALLY ALONG OUTSIDE EDGE OF APPROACH SLAB.
 - (5) MEASURED RADIALLY ALONG JOINT, ALL LONGITUDINAL JOINTS ARE PARALLEL TO PGL BRIDGE "Q".

ABUTMENT 1

NOTES
ALL TRANSVERSE DIMENSIONS ARE MEASURED NORMAL TO PGL BRIDGE "Q".

FOR BOTTOM OF APPROACH SLAB REINFORCING PLAN, SEE SHEET NO. B163.

FOR ADDITIONAL APPROACH SLAB DETAILS, BAR LISTS, BAR BEND DETAILS, AND QUANTITIES, SEE SHEET NO. B164.

PLAN SHOWING DIMENSIONS AND TOP OF APPROACH SLAB REINFORCING STEEL (NOT TO SCALE)

FS2 AND FS6 #5 PARAPET BARS ARE NOT SHOWN FOR CLARITY. SEE STD. FSHP-42-2 FOR PLACEMENT DETAILS.

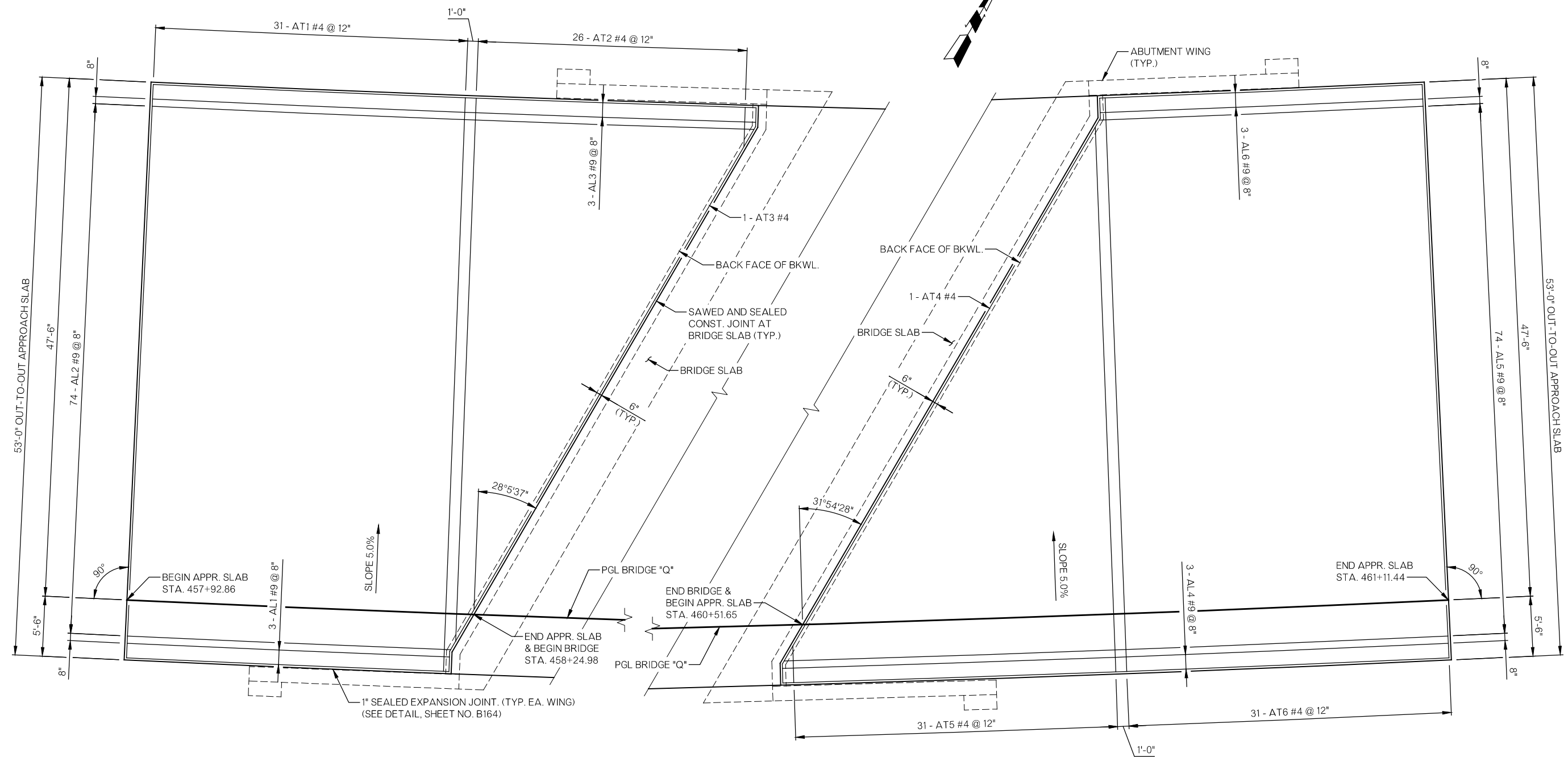
PROVIDE PARAPET END TRANSITION WITH CONNECTION HOLES. FOR PARAPET DETAILS NOT SHOWN, SEE STD. FSHP-42-2.

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SB US-81 OVER 29TH STREET BRIDGE "Q"

APPROACH SLAB DETAILS (SHEET NO. 1 OF 3)

State Job No. 24428(12)



ABUTMENT 1

ABUTMENT 2

PLAN SHOWING BOTTOM OF APPROACH SLAB REINFORCING STEEL
(NOT TO SCALE)

NOTES

ALL DIMENSIONS ARE HORIZONTAL DIMENSIONS.

FOR APPROACH SLAB LAYOUT DIMENSIONS, SEE SHEET NO. B162.

FOR ADDITIONAL APPROACH SLAB DETAILS, BAR LISTS, BAR BEND DETAILS, AND QUANTITIES, SEE SHEET NO. B164.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

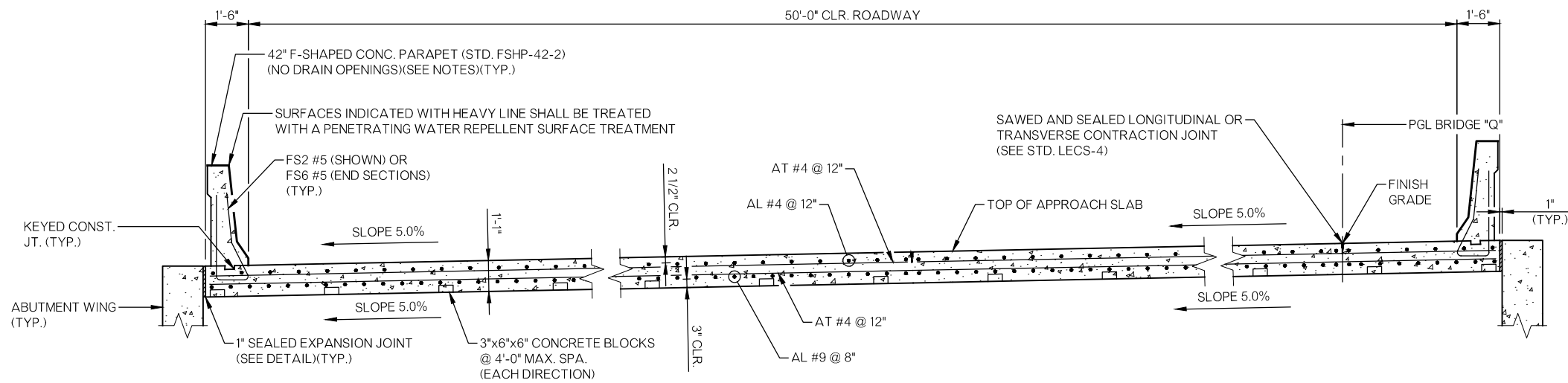
SB US-81 OVER 29TH STREET
BRIDGE "Q"

APPROACH SLAB DETAILS
(SHEET NO. 2 OF 3)

State Job No. 24428(12)

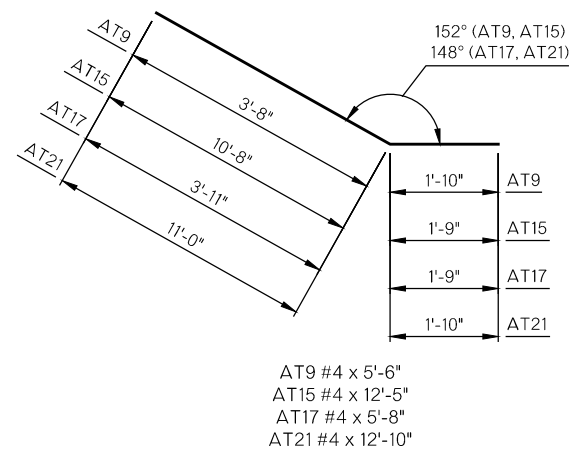
Sheet No. B163

US 81 REALIGNMENT
GRADY COUNTY

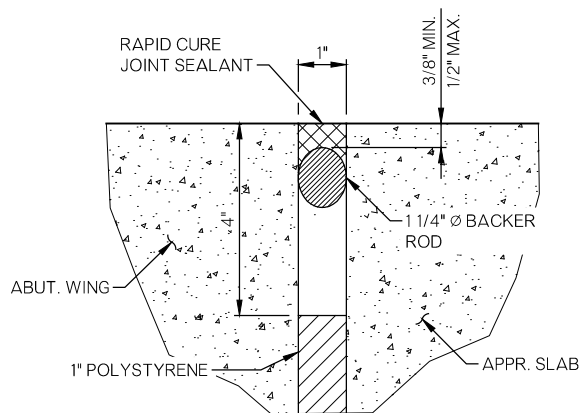


TYPICAL SECTION THRU APPROACH SLAB

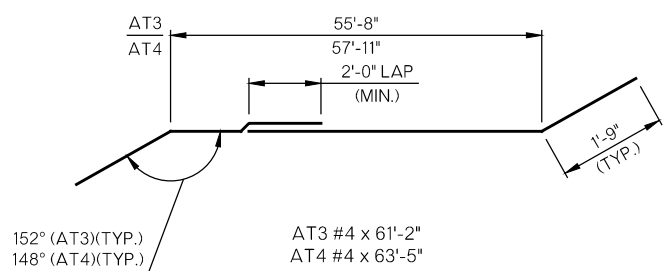
NOTES
THE REINFORCING STEEL IN THE TOP OF THE APPROACH SLABS SHALL END 2\"/>



BAR BEND DETAILS



1\"/>



APPROACH SLAB QUANTITIES		
ITEM	UNITS	TOTAL
(1) APPROACH SLAB	SY	521.80
(2) SAW-CUT GROOVING	SY	492.30
42\"/>	LF	178.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	87.00

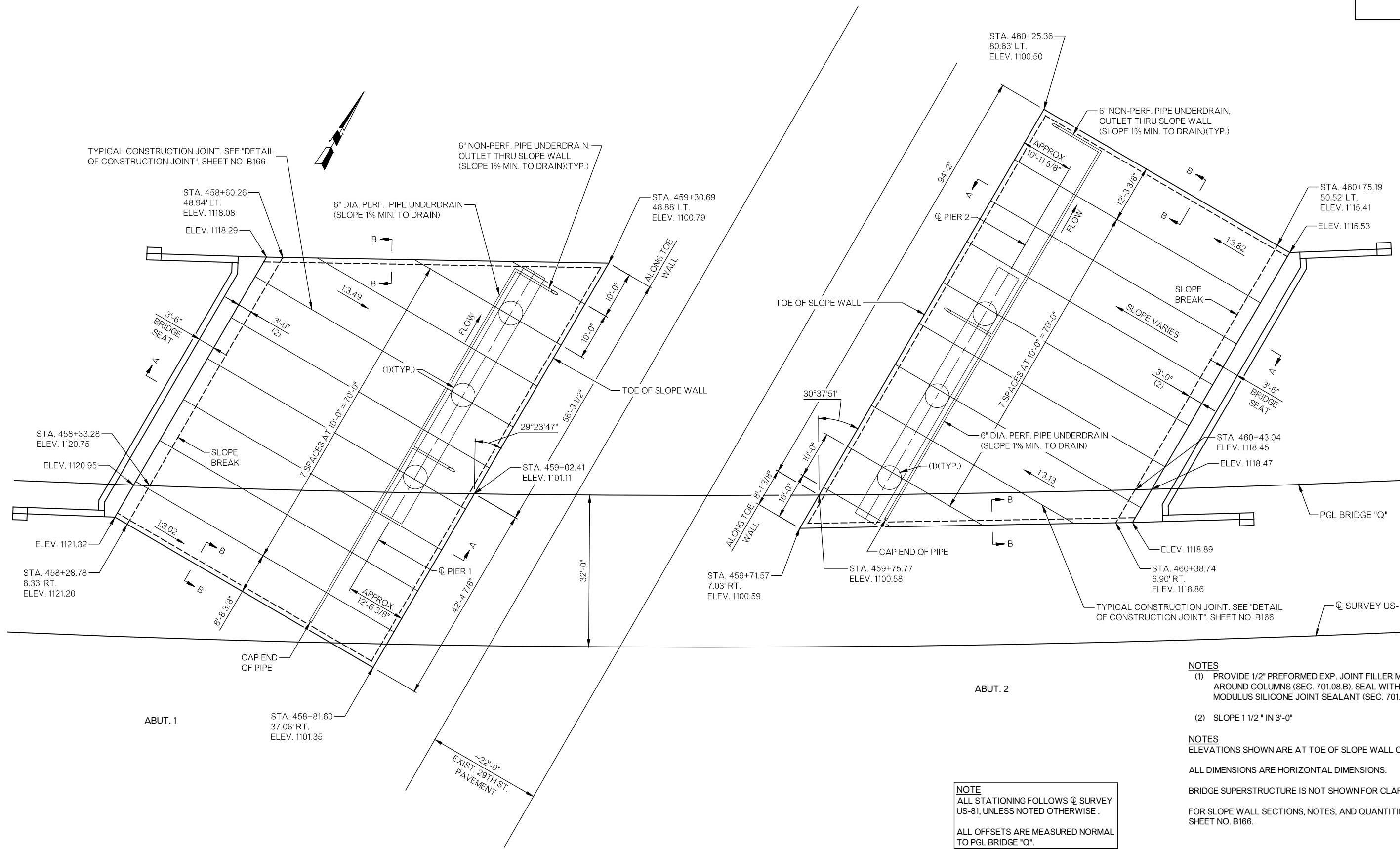
- (1) THE UNIT PRICE BID FOR APPROACH SLAB SHALL INCLUDE ALL CONCRETE AND REINFORCING STEEL IN THE APPROACH SLABS, INCLUDING FS2 AND FS6 BARS, RAPID CURE JOINT SEALANT, BACKER RODS, POLYSTYRENE, LABOR, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN. THERE IS AN ESTIMATED 188.5 C.Y. OF CLASS \"AA\" CONCRETE, AND AN ESTIMATED 35,280 LBS. OF EPOXY COATED REINFORCING STEEL IN THE APPROACH SLABS.
- (2) TO BE USED ON THE 50'-0\"/>

APPROACH SLAB BAR LIST					
MARK	NO.	SIZE	FORM	LENGTH	REMARKS
(EPOXY COATED)					
AL1	3	#9	STR.	29'-7"	
AL2	74	#9	STR.	42'-5" AVG.	29'-8" TO 55'-2"
AL3	3	#9	STR.	55'-4"	
AL4	3	#9	STR.	61'-1"	
AL5	74	#9	STR.	45'-4" AVG.	29'-9" TO 60'-11"
AL6	3	#9	STR.	29'-8"	
AL7	177	#4	STR.	19'-8"	
AL8	3	#4	STR.	9'-8"	
AL9	4	#4	STR.	10'-8" AVG.	10'-0" TO 11'-4"
AL10	13	#4	STR.	14'-7" AVG.	11'-6" TO 17'-8"
AL11	13	#4	STR.	20'-10" AVG.	17'-9" TO 23'-11"
AL12	13	#4	STR.	7'-2" AVG.	4'-1" TO 10'-3"
AL13	11	#4	STR.	12'-10" AVG.	10'-5" TO 15'-3"
AL14	2	#4	STR.	15'-4"	
AL15	3	#4	STR.	21'-2"	
AL16	4	#4	STR.	19'-9" AVG.	18'-11" TO 20'-7"
AL17	13	#4	STR.	15'-0" AVG.	11'-3" TO 18'-9"
AL18	13	#4	STR.	7'-3" AVG.	3'-6" TO 11'-0"
AL19	13	#4	STR.	19'-7" AVG.	15'-10" TO 23'-4"
AL20	10	#4	STR.	12'-11" AVG.	10'-3" TO 15'-7"
AL21	3	#4	STR.	9'-8"	
AT1	31	#4	STR.	52'-8"	
AT2	26	#4	STR.	26'-3" AVG.	3'-7" TO 48'-11"
(1) AT3	1	#4	BNT.	61'-2"	
(1) AT4	1	#4	BNT.	63'-5"	
AT5	31	#4	STR.	26'-3" AVG.	3'-4" TO 49'-2"
AT6	31	#4	STR.	52'-8"	
AT7	94	#4	STR.	5'-2"	
AT8	1	#4	STR.	1'-9"	
AT9	1	#4	BNT.	5'-6"	
AT10	261	#4	STR.	11'-8"	
(2) AT11	15	#4	STR.	6'-0" AVG.	2'-3" TO 9'-9"
AT12	3	#4	STR.	13'-2"	
AT13	86	#4	STR.	11'-2"	
AT14	4	#4	STR.	6'-5" AVG.	3'-8" TO 9'-2"
AT15	1	#4	BNT.	12'-5"	
AT16	1	#4	STR.	3'-5"	
AT17	1	#4	BNT.	5'-8"	
(3) AT18	18	#4	STR.	6'-0" AVG.	2'-0" TO 10'-0"
AT19	3	#4	STR.	13'-9"	
AT20	5	#4	STR.	4'-7"	1'-6" TO 7'-8"
AT21	1	#4	BNT.	12'-10"	
(4) FS2	172	#5	BNT.	7'-4"	
(4) FS6	20	#5	BNT.	7'-6 1/2"	

- (1) LENGTH INCLUDES ONE (1) 2'-0" LAP SPLICE.
- (2) THREE SETS OF FIVE (5) BARS EACH.
- (3) THREE SETS OF SIX (6) BARS EACH.
- (4) FOR BAR BEND DETAILS, SEE STD. FSHP-42-2.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

US 81 REALIGNMENT
GRADY COUNTY



- NOTES**
- (1) PROVIDE 1/2" PREFORMED EXP. JOINT FILLER MAT'L AROUND COLUMNS (SEC. 701.08.B). SEAL WITH LOW MODULUS SILICONE JOINT SEALANT (SEC. 701.08.E).
 - (2) SLOPE 1 1/2" IN 3'-0"
- NOTES**
- ELEVATIONS SHOWN ARE AT TOE OF SLOPE WALL CONCRETE.
 - ALL DIMENSIONS ARE HORIZONTAL DIMENSIONS.
 - BRIDGE SUPERSTRUCTURE IS NOT SHOWN FOR CLARITY.
 - FOR SLOPE WALL SECTIONS, NOTES, AND QUANTITIES, SEE SHEET NO. B166.

NOTE
ALL STATIONING FOLLOWS \odot SURVEY US-81, UNLESS NOTED OTHERWISE.
ALL OFFSETS ARE MEASURED NORMAL TO PGL BRIDGE "Q".

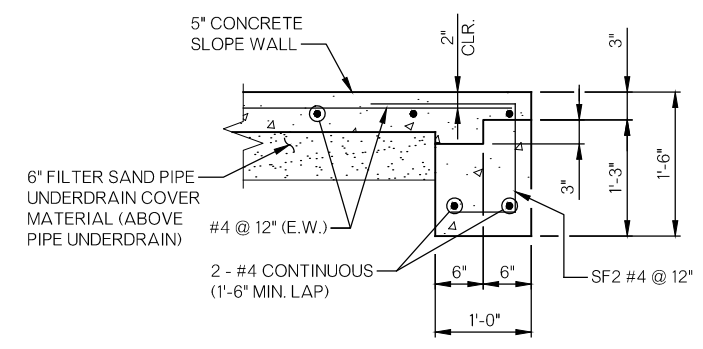
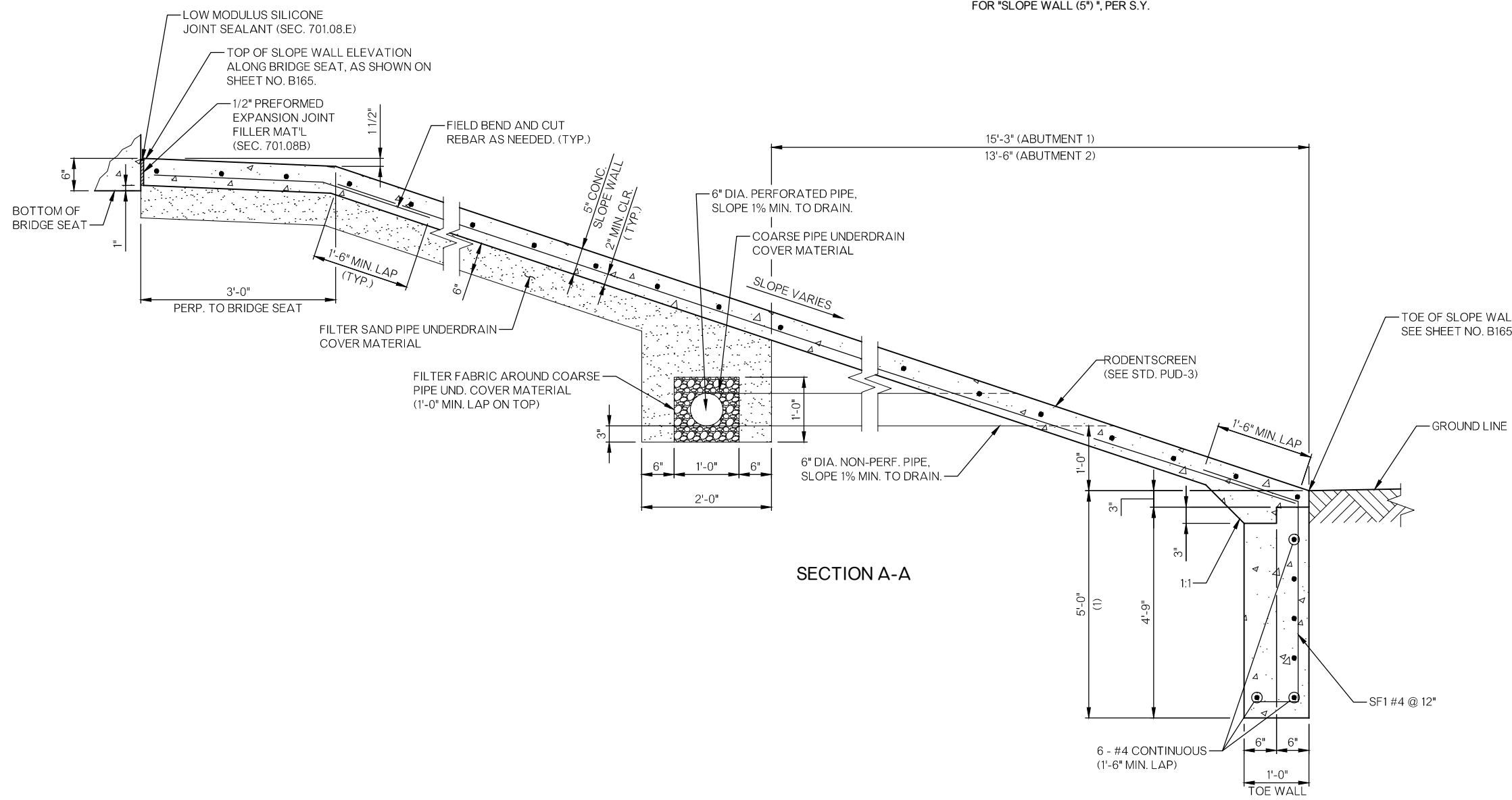
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PLAN OF SLOPE WALLS

SB US-81 OVER 29TH STREET BRIDGE "Q"

SLOPE WALL DETAILS
(SHEET NO. 1 OF 2)

NOTE
(1) SURFACE AREA OF TOE WALL INCLUDED IN ESTIMATED QUANTITY FOR "SLOPE WALL (5)", PER S.Y.



SECTION B-B

SECTION A-A

SLOPE WALL QUANTITIES		
ITEM	UNITS	TOTAL
SLOPE WALL (5")	SY	1,302.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	182.00
6" NON-PERF. PIPE UNDERDRAIN RND.	LF	30.00

SLOPE WALL NOTES
ALL CONCRETE IN THE SLOPE WALLS SHALL BE CLASS "A" CONCRETE AND SHALL BE POURED IN THE DRY. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTIONS 509 AND 610 OF THE STANDARD SPECIFICATIONS. COARSE AGGREGATE FOR THIN SECTION CONCRETE (SEC. 701.06) MAY BE USED.

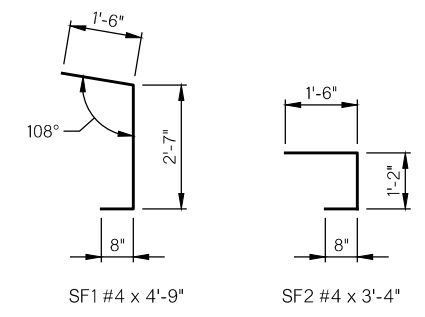
NO HORIZONTAL CONSTRUCTION JOINTS WILL BE PERMITTED IN THE SLOPE WALLS EXCEPT AS SHOWN ON THE PLANS. FINAL NUMBER AND LOCATION OF ALL CONSTRUCTION JOINTS WILL BE DETERMINED BY THE ENGINEER. JOINTS SHALL HAVE A MAXIMUM SPACING OF 10'-0".

5" CONCRETE SLOPE WALL WILL BE MEASURED FROM EDGE TO EDGE AND FROM TOP TO BOTTOM ALONG THE TOP SURFACE OF THE SLOPE WALL AND ALONG THE FRONT FACE OF THE TOE WALL. PAYMENT WILL BE MADE AT THE CONTRACT PRICE BID FOR "SLOPE WALL (5")", PER S.Y. PRICE BID SHALL INCLUDE ALL COSTS OF JOINT SEALERS, FILLER MATERIALS, REINFORCING STEEL, CONCRETE, EXCAVATIONS, LABOR, FORMS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK AS SHOWN.

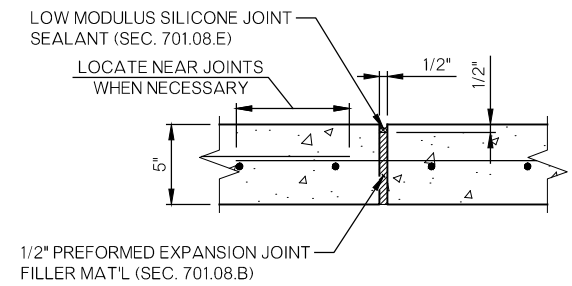
EXTENT, LOCATION AND DEPTH OF 6" PERFORATED AND NON-PERF. PIPE UNDERDRAINS MAY BE ADJUSTED BY THE ENGINEER DURING CONSTRUCTION.

ALL COSTS OF PIPE UNDERDRAIN COVER MATERIALS (BOTH FILTER SAND AND COARSE MATERIAL), FILTER FABRICS, EXCAVATIONS, EQUIPMENT, LABOR AND INCIDENTALS FOR THEIR INSTALLATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE BID FOR "6" PERFORATED PIPE UNDERDRAIN ROUND". INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND STD. PUD-3.

ALL COSTS OF TRENCH EXCAVATION AND STANDARD BEDDING MATERIAL, PLUS OTHER MATERIALS, LABOR, EQUIPMENT, AND INCIDENTALS FOR THEIR INSTALLATION SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE OF "6" NON-PERFORATED PIPE UNDERDRAIN RND". INSTALLATION SHALL BE AS SHOWN ON THE PLANS AND STD. PUD-3.



BAR BEND DETAILS

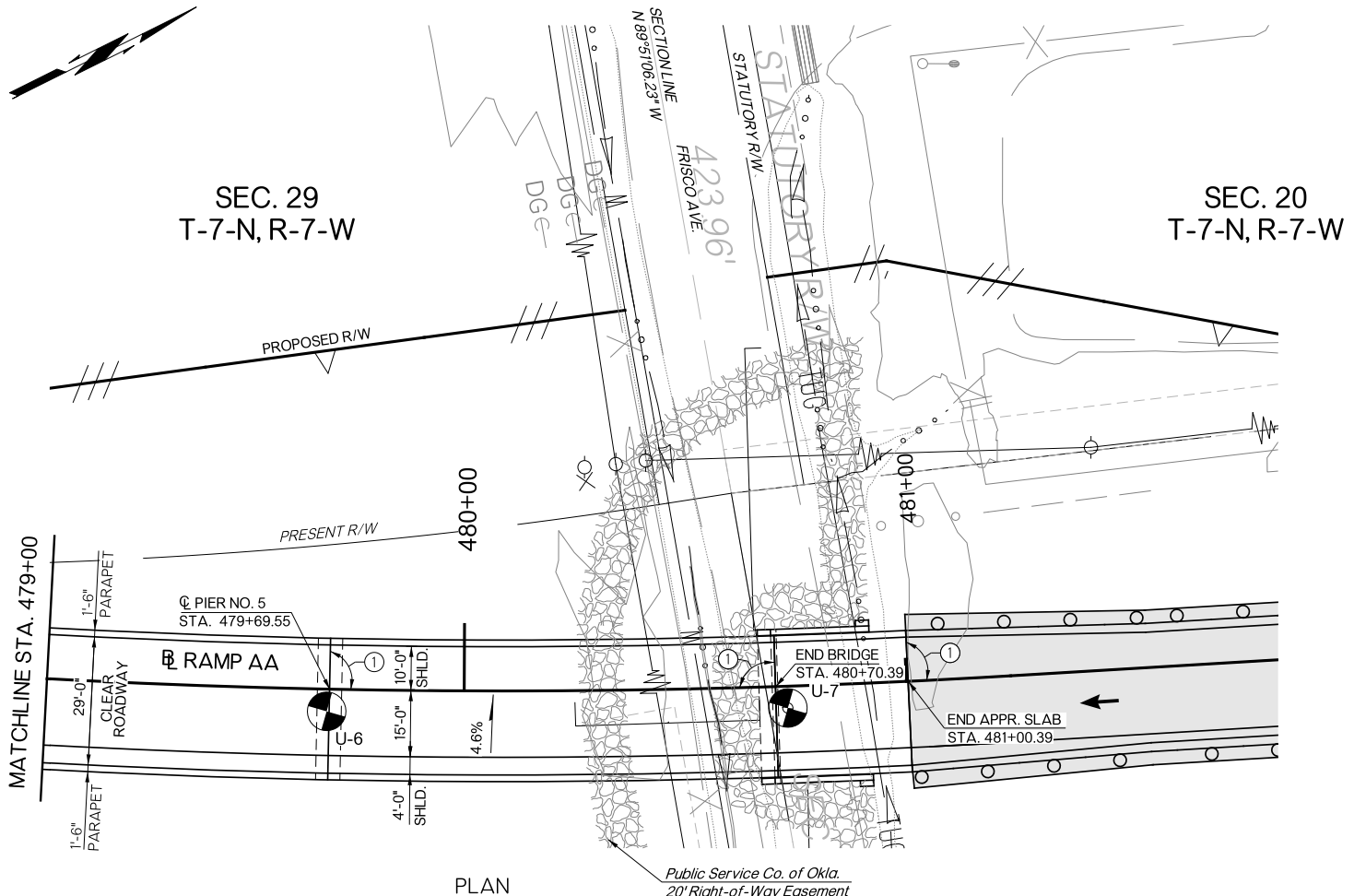


DETAIL OF CONSTRUCTION JOINT

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SB US-81 OVER 29TH STREET
BRIDGE "Q"

SLOPE WALL DETAILS
(SHEET NO. 2 OF 2)



CURVE NO. AA-1
 PI STA. 475+20.40
 $\Delta 37^{\circ}22'01.79"$
 R = 1920.91'
 D = 2°58'57.86"
 T = 649.58'
 L = 1252.78'
 Ch = 1230.70'
 E = 106.86'
 e = 0.060
 S = 0.044
 V = 50MPH

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
B167-B168	GENERAL PLAN AND ELEVATION
B0169	DESIGN DATA AND SUMMARY OF PAY QUANTITIES
B170-B173	SUBSURFACE PROFILE
B174	SUBSTRUCTURE STAKING DIAGRAM
B175-B180	DETAILS OF ABUTMENTS
B181	DETAILS OF EXCAVATION
B182-B183	DETAILS OF PIERS
B184-B198	DETAILS OF SUPERSTRUCTURE
B199	DETAILS OF BEARINGS
B200-B201	DETAILS OF APPROACH SLABS

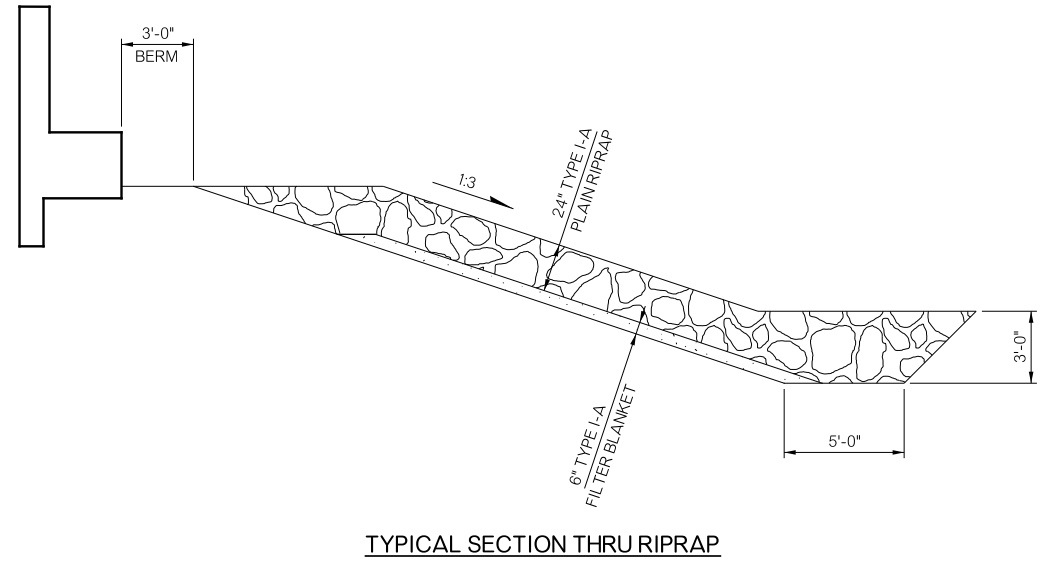
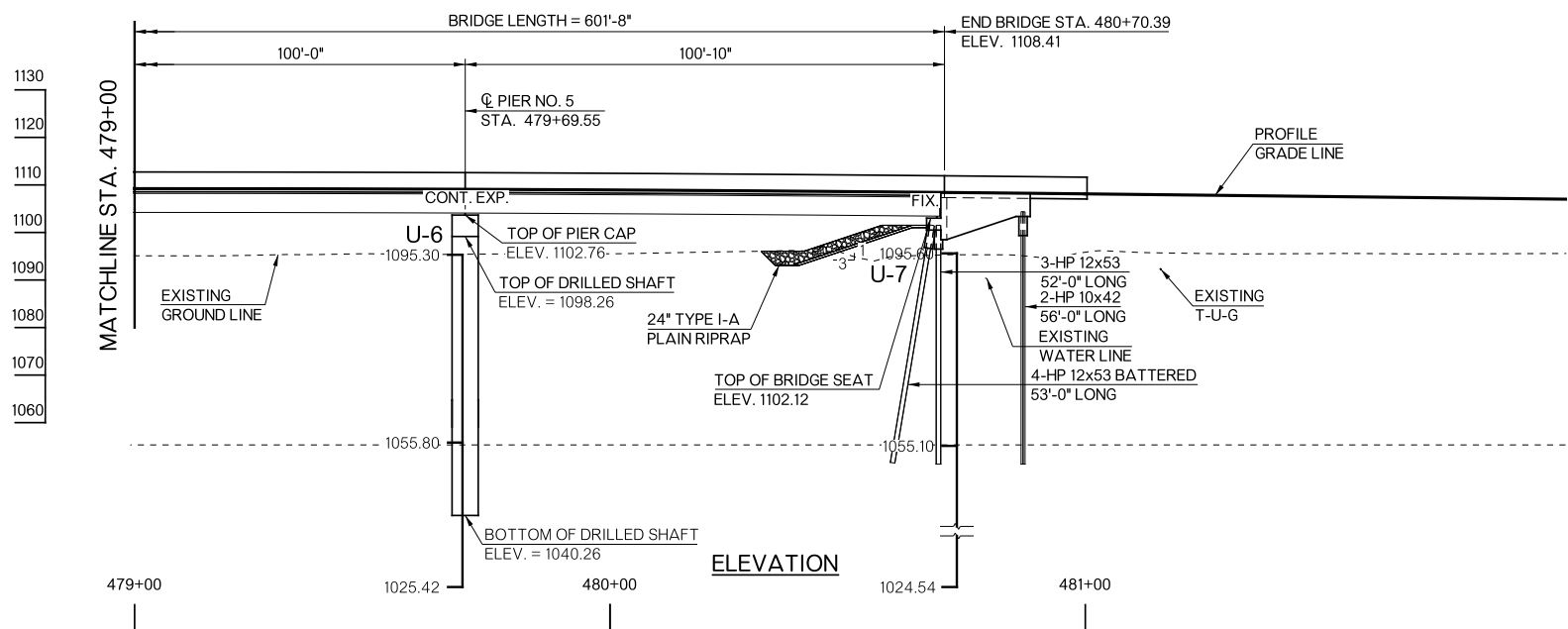
STANDARDS

- FSHP-42-2-00E
- EJ-SQ-04E
- EJ-DTL-02E
- LECS-4-1
- PUD-3-2
- SPI-4-1

NOTE:
 ① 90° TO TANGENT.

NOTE:
 ALL STATIONING FOLLOWS RAMP AA UNLESS NOTED OTHERWISE. ELEVATION OF BRIDGE IS SHOWN ALONG THE RAMP AA.

BENCHMARK NO. 45: 283.55' RT. OF US-81 CRL A001
 SET 3/4" I.P. (30" LONG)
 STA. 480+83.78 ELEV: 1093.72



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BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK
GENERAL PLAN AND ELEVATION (BRIDGE "U")
 (SHEET 2 OF 2)
 CONST. 3 (2-100') CONTINUOUS PLATE GIRDER SPANS
 x 29' CLEAR ROADWAY WITH 42" F-SHAPED PARAPETS
 @ STA. 477+69.55 @ RAMP AA

DESIGN DATA - BRIDGE 'U'

ABUTMENT - HP 12x54	
FACTORED PILE REACTION (TONS/PILE)	80.0

DRILLED SHAFT FOUNDATION SUMMARY - PIERS					
	PIER NO. 1	PIER NO. 2	PIER NO. 3	PIER NO. 4	PIER NO. 5
DRILLED SHAFT DIAMETER (FEET)	5.00	5.00	5.00	5.00	5.00
TOP OF ROCK ELEVATION (FEET)	1052.10	1055.52	1054.09	1055.14	1055.47
MINIMUM INTO ROCK (FEET)	15.00	15.00	15.00	15.00	15.00
DEPTH OF ROCK NEGLECTED FOR FRICTION (FEET)	3.00	3.00	3.00	3.00	3.00
FACTORED REACTION	825.00	705.00	825.00	705.00	825.00
NOMINAL UNIT BEARING RESISTANCE (TSF)	22.59	22.59	22.59	22.59	22.59
BEARING RESISTANCE FACTOR	0.70	0.70	0.70	0.70	0.70
FACTORED BEARING RESISTANCE (TONS/SHAF T)	310.40	310.40	310.40	310.40	310.40
NOMINAL UNIT FRICTION RESISTANCE (TSF)	7.38	7.38	7.38	7.38	7.38
FRICTION RESISTANCE FACTOR	0.45	0.45	0.45	0.45	0.45
FACTORED FRICTION RESISTANCE (TONS/SHAF T)	626.00	626.00	626.00	626.00	626.00
TOTAL FACTORED RESISTANCE (TONS/SHAF T)	936.40	936.40	936.40	936.40	936.40

SUMMARY OF PAY QUANTITIES - BRIDGE 'U'						
ITEM	UNIT	ABUTMENTS	PIERS	SUPERSTR.	APPROACH	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	180.00				180.00
CLSM BACKFILL	CY	220.00				220.00
APPROACH SLAB	SY				214.00	214.00
SAW-CUT GROOVING	SY			1940.00	214.00	2154.00
SEALED EXPANSION JOINT	LF			128.00		128.00
42" F-SHAPED PARAPET	LF			1204.00	120.00	1324.00
STRUCUTRAL STEEL	LB			767000.00		767000.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA			8.00		8.00
STAINLESS STEEL EXPANSION BEARING ASSEMBL	EA			24.00		24.00
CLASS AA CONCRETE	CY			530.00		530.00
CLASS A CONCRETE	CY	91.80	156.00			247.80
EPOXY COATED REINFORCING STEEL	LB	11890.00	26800.00	132000.00		170690.00
PILES, FURNISHED (HP 10x42)	LF	226.00				226.00
PILES, FURNISHED (HP 12x53)	LF	750.00				750.00
PILES, DRIVEN (HP 10x42)	LF	226.00				226.00
PILES, DRIVEN (HP 10x53)	LF	750.00				750.00
(PL) PILOT HOLES	LF					0.00
PILE SPLICE, H-PILE (NON-BIDDABLE)	EA					0.00
WATER REPELLANT (VISUALLY INSPECTED)	SY	84.00	305.00	800.00	114.00	1303.00
DRILLED SHAF TS 60" DIAMETER	LF		590.00			590.00
CROSSHOLE SONIC LOGGING	EA		2.00			2.00
(SP) SEALER CRACK PREPARATION	LF			192.00		192.00
(SP) SEALER RESIN	GAL			2.50		2.50
TYPE 1-A PLAIN RIPRAP	TON	800.00				800.00
6" PERFORATED PIPE UNDERDRAIN ROUND	LF	68.00				68.00
6" NON-PERF. PIPE UNDERGROUND RND.	LF	44.00				44.00

NOTE:
APPROXIMATELY 136 TONS OF FILTER BLANKET MATERIAL SHALL BE INCLUDED IN THE COST FOR PAY ITEM *TYPE 1-A RIPRAP*.

DESIGN DATA

MATERIAL

CLASS AA CONCRETE FC=4,000 P.S.I.
 CLASS A CONCRETE FC=3,000 P.S.I.
 REINFORCING STEEL (GRADE 60) FY=60,000 P.S.I.
 STRUCTURAL STEEL M270 (GRADE 50W) FY=50,000 P.S.I.
 STAINLESS STEEL A240 (TYPE 316) FY=30,000 P.S.I.

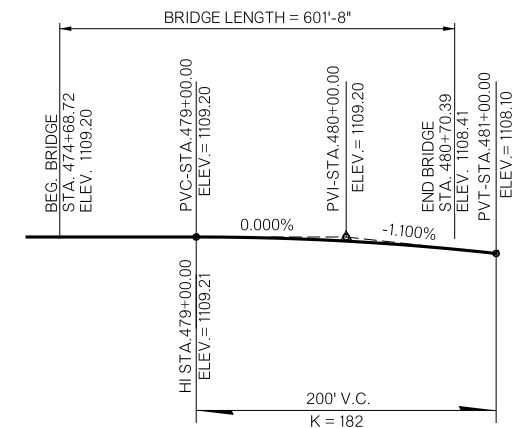
LOADING

LOADING: HL-93 OR OKLAHOMA OVERLOAD TRUCK OR 315 K OVERLOAD TRUCK
 20 P.S.F. FUTURE WEARING SURFACE
 5 P.S.F. STAY-IN-PLACE FORMS

DESIGN: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION.

ANSI/AASHTO/AWS D1.5 BRIDGE WELDING CODE
 ANSI/AWS D1.6 STRUCTURAL WELDING CODE-STAINLESS STEEL
 LRFR OPERATING RATING RATING 1.67

ALL ABUTMENT PILING SHALL BE DRIVEN THROUGH THE COMPACTED FILL. PILING SHALL BE DRIVEN TO POINT BEARING ON SOLID FOUNDATION MATERIAL AT THE APPROXIMATE ELEVATION SHOWN ON THE PLANS. IF THE REQUIRED AXIAL LOAD RESISTANCE IS NOT OBTAINED AT THIS ELEVATION, DRIVING SHALL CONTINUE UNTIL THE REQUIRED AXIAL LOAD RESISTANCE IS OBTAINED. THE LENGTH OF STEEL PILING SHOWN ON THE PLANS IS FOR ESTIMATING PURPOSES ONLY.



VERTICAL CURVE DATA

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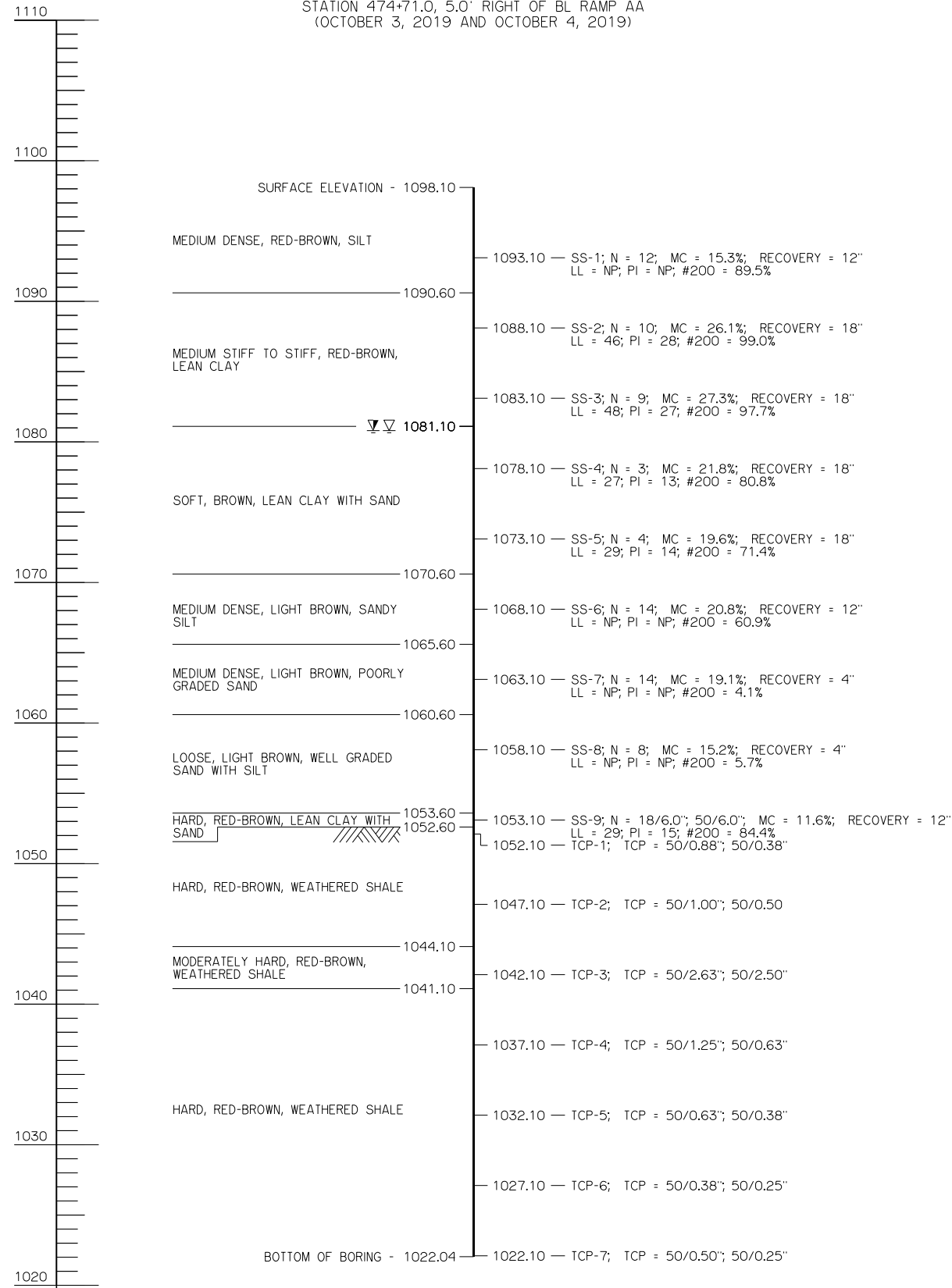
BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DESIGN DATA AND SUMMARY OF PAY QUANTITIES

REVISIONS		
REV. NO.	DESCRIPTION	DATE

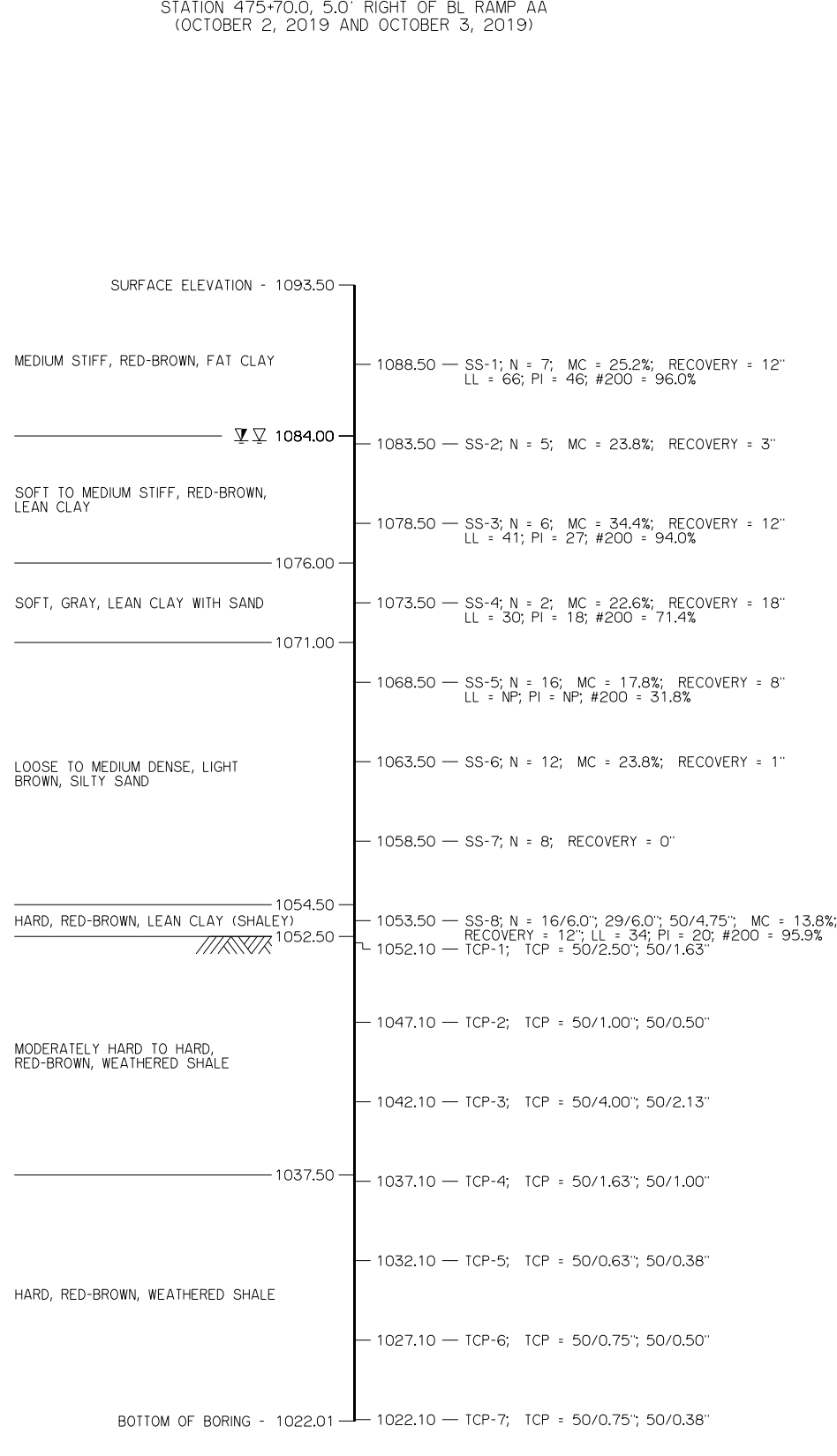
BORING NO. U-1

STATION 474+71.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 3, 2019 AND OCTOBER 4, 2019)



BORING NO. U-2

STATION 475+70.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 2, 2019 AND OCTOBER 3, 2019)



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ◄ = WATER LEVEL AFTER DRILLING
- ◄◄ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
NOTE: ROCK CLASSIFICATION IS BASED ON DRILLING CHARACTERISTICS AND VISUAL OBSERVATION OF ROCK CORE SAMPLES. PETROGRAPHIC ANALYSIS OF THIN SECTIONS OF THE ROCK CORE SAMPLES MAY REVEAL OTHER TYPES.

SITE GEOLOGY

THE SUBJECT BRIDGE IS SITUATED IN A GEOLOGIC AREA BEST DESCRIBED AS BEING PART OF THE DOG CREEK-BLAINE SUBUNIT (PDB) UNDIFFERENTIATED. ACCORDING TO PUBLISHED MATERIALS (ENGINEERING CLASSIFICATION OF GEOLOGIC MATERIALS, DIVISION SEVEN, 1969, OKLAHOMA HIGHWAY DEPARTMENT), THE DOG CREEK-BLAINE SUBUNIT CONSISTS OF DARK RED SHALES INTERBEDDED WITH MINOR AMOUNTS OF FINE-GRAINED GYPSIFEROUS SANDSTONES THAT LOCALLY GRADE INTO PURE GYPSUM. MUDSTONE CONGLOMERATES A FEW FEET IN THICKNESS OCCUR SPARINGLY WITHIN THE STRATA.

GEOTECHNICAL REPORT

ALL GEOTECHNICAL INFORMATION CONTAINED ON THIS SHEET IS COVERED BY THE ENGINEERING SEAL AFFIXED TO AN ORIGINAL GEOTECHNICAL ENGINEERING REPORT THAT HAS BEEN STAMPED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN OKLAHOMA. TO OBTAIN A COPY OF THE COMPLETE REPORT, CONTACT THE ODOT OFFICE ENGINEER. THE CONTRACTOR SHOULD BE FULLY AWARE OF THE SITE CONDITIONS PRIOR TO BEGINNING WORK. ANY ADDITIONAL GEOTECHNICAL INFORMATION WHICH MAY BE DESIRED IS THE RESPONSIBILITY OF THE CONTRACTOR.

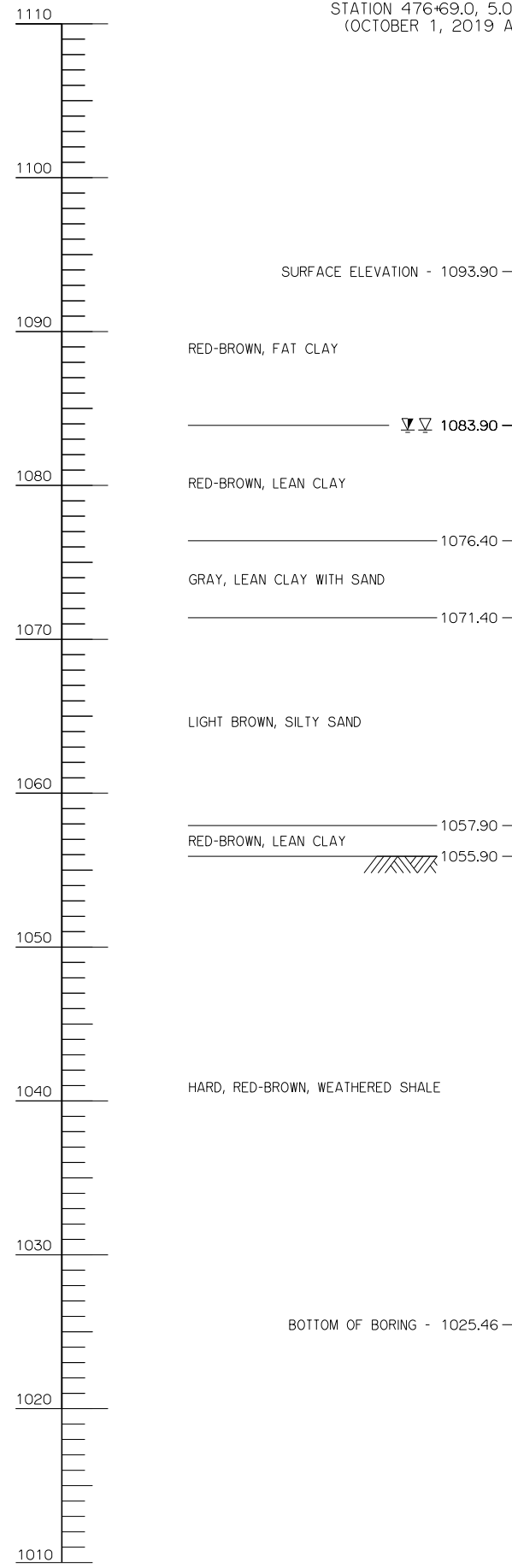


BRIDGE "U" RAMP AA OVER ROCK HOLLOW CREEK		GRADY COUNTY	Design	
SUBSURFACE PROFILE (SHEET 1 OF 4)		STATE OF OKLAHOMA	Detail	
			Check	
DEPARTMENT OF TRANSPORTATION		JOB PIECE NO. 24428(04)	Squad	
			Engr.	
			SHEET	B170

REVISIONS		
REV. NO.	DESCRIPTION	DATE

BORING NO. U-3

STATION 476+69.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 1, 2019 AND OCTOBER 2, 2019)



RED-BROWN, FAT CLAY

1083.90

RED-BROWN, LEAN CLAY

1076.40

GRAY, LEAN CLAY WITH SAND

1071.40

LIGHT BROWN, SILTY SAND

RED-BROWN, LEAN CLAY

1056.90 — SS-1; N = 19/6.0"; 31/6.0"; 50/4.5"; MC = 13.4%;
RECOVERY = 16"; LL = 65; PI = 40; #200 = 45.8%
1055.52 — TCP-1; TCP = 50/1.13"; 50/0.63"

1050.52 — TCP-2; TCP = 50/0.88"; 50/0.63"

1045.52 — TCP-3; TCP = 50/0.88"; 50/0.63"

HARD, RED-BROWN, WEATHERED SHALE

1040.52 — TCP-4; TCP = 50/0.75"; 50/0.38"

1035.52 — TCP-5; TCP = 50/0.38"; 50/0.25"

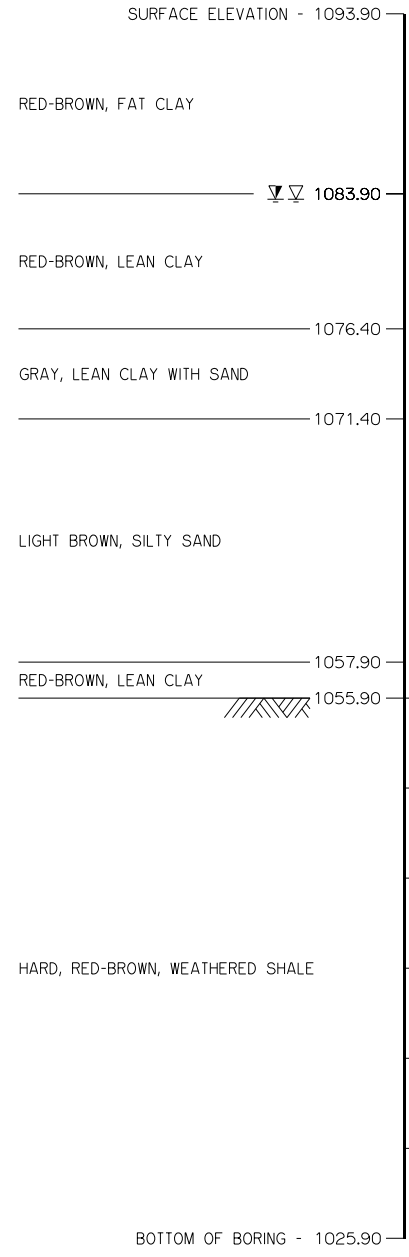
1030.52 — TCP-6; TCP = 50/0.38"; 50/0.25"

BOTTOM OF BORING - 1025.46

1025.52 — TCP-7; TCP = 50/0.50"; 50/0.25"

BORING NO. U-3A

STATION 476+69.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 2, 2019)



RED-BROWN, FAT CLAY

1083.90

RED-BROWN, LEAN CLAY

1076.40

GRAY, LEAN CLAY WITH SAND

1071.40

LIGHT BROWN, SILTY SAND

RED-BROWN, LEAN CLAY

1055.90 — DCD-1; RECOVERY = 39"; RQD = 48%
MC = 5.8%; DRY DENSITY = 141 PCF; UCS = 764 PSI

1050.90 — DCD-2; RECOVERY = 38"; RQD = 53%
MC = 9.1%; DRY DENSITY = 129 PCF; UCS = 176 PSI

1045.90 — DCD-3; RECOVERY = 33"; RQD = 35%
MC = 11.4%; DRY DENSITY = 128 PCF; UCS = 168 PSI

HARD, RED-BROWN, WEATHERED SHALE

1040.90 — DCD-4; RECOVERY = 44"; RQD = 70%
MC = 10.6%; DRY DENSITY = 129 PCF; UCS = 233 PSI

1035.90 — DCD-5; RECOVERY = 50"; RQD = 47%
MC = 11.1%; DRY DENSITY = 127 PCF; UCS = 903 PSI

1030.90 — DCD-6; RECOVERY = 59"; RQD = 45%
MC = 8.5%; DRY DENSITY = 137 PCF; UCS = 3975 PSI

BOTTOM OF BORING - 1025.90

LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200 = PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- //// = TOP OF ROCK

NOTE: TOP OF ROCK LINE SHOWN FOR ESTIMATING PURPOSES ONLY.
NOTE: WATER LEVEL ELEVATION SHOWN WERE OBTAINED AT THE TIME THE BORINGS WERE DRILLED AND MAY FLUCTUATE THROUGHOUT THE YEAR.
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SITE GEOLOGY

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GEOTECHNICAL REPORT

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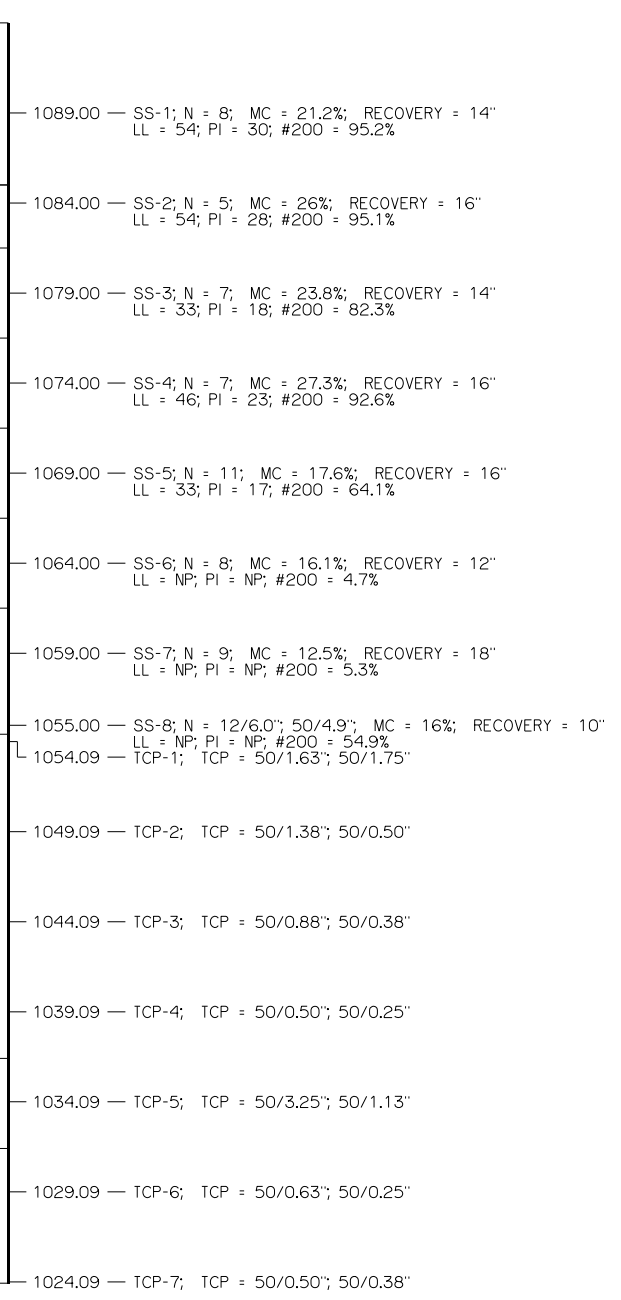
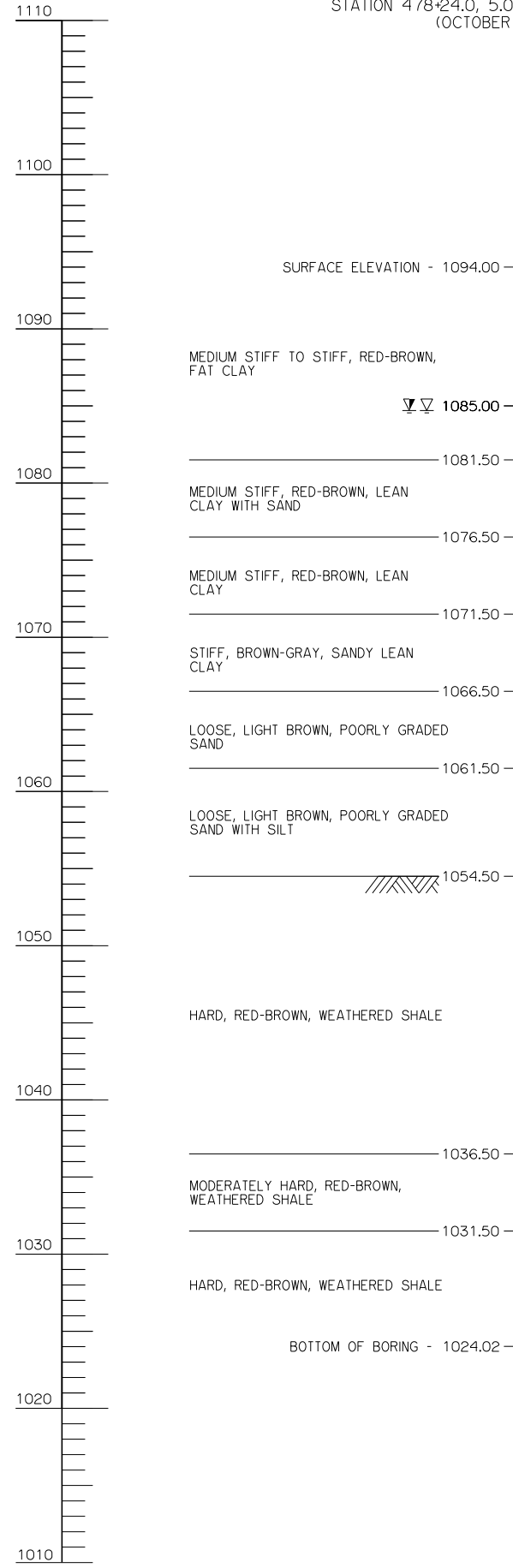


BRIDGE "U" RAMP AA OVER ROCK HOLLOW CREEK		GRADY COUNTY	Design	
SUBSURFACE PROFILE (SHEET 2 OF 4)			Detail	
			Check	
STATE OF OKLAHOMA		DEPARTMENT OF TRANSPORTATION	Squad:	
			Engr.:	
JOB PIECE NO. 24428(04)			SHEET B171	

REVISIONS		
REV. NO.	DESCRIPTION	DATE

BORING NO. U-4

STATION 478+24.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 15, 2019)



MEDIUM STIFF TO STIFF, RED-BROWN, FAT CLAY

MEDIUM STIFF, RED-BROWN, LEAN CLAY WITH SAND

MEDIUM STIFF, RED-BROWN, LEAN CLAY

STIFF, BROWN-GRAY, SANDY LEAN CLAY

LOOSE, LIGHT BROWN, POORLY GRADED SAND

LOOSE, LIGHT BROWN, POORLY GRADED SAND WITH SILT

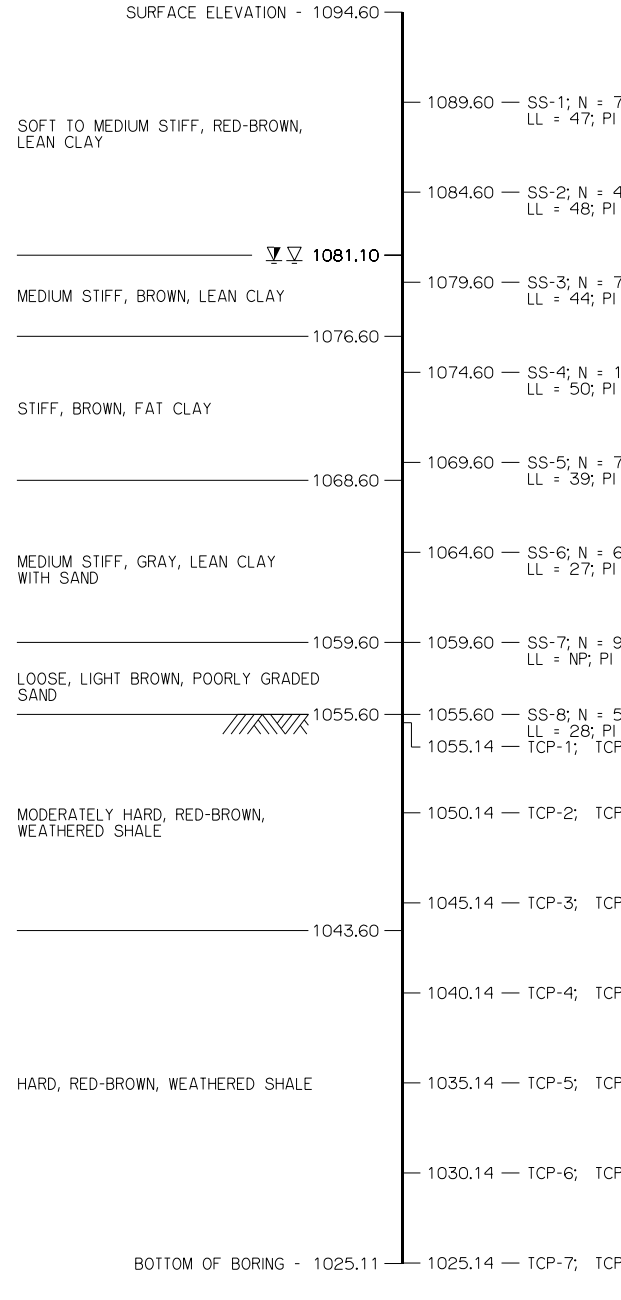
HARD, RED-BROWN, WEATHERED SHALE

MODERATELY HARD, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE

BORING NO. U-5

STATION 478+70.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 15, 2019)



SOFT TO MEDIUM STIFF, RED-BROWN, LEAN CLAY

MEDIUM STIFF, BROWN, LEAN CLAY

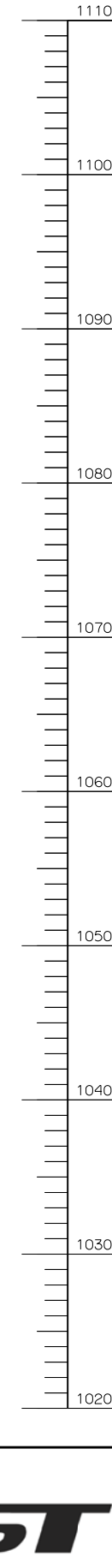
STIFF, BROWN, FAT CLAY

MEDIUM STIFF, GRAY, LEAN CLAY WITH SAND

LOOSE, LIGHT BROWN, POORLY GRADED SAND

MODERATELY HARD, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE



LEGEND

- DCD = DIAMOND CORE DRILLING, ASTM D2113-83
- SS = SPLIT SPOON SAMPLER
- N = NUMBER OF BLOWS PER 12 INCHES
- MC = MOISTURE CONTENT
- LL = LIQUID LIMIT (NV=NO VALUE)
- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
- #200= PERCENT PASSING #200 SIEVE
- UCS = UNCONFINED COMPRESSIVE STRENGTH
- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
- ▽ = WATER LEVEL WHILE DRILLING OR SAMPLING
- ▼ = WATER LEVEL AFTER DRILLING
- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
- ▨ = TOP OF ROCK

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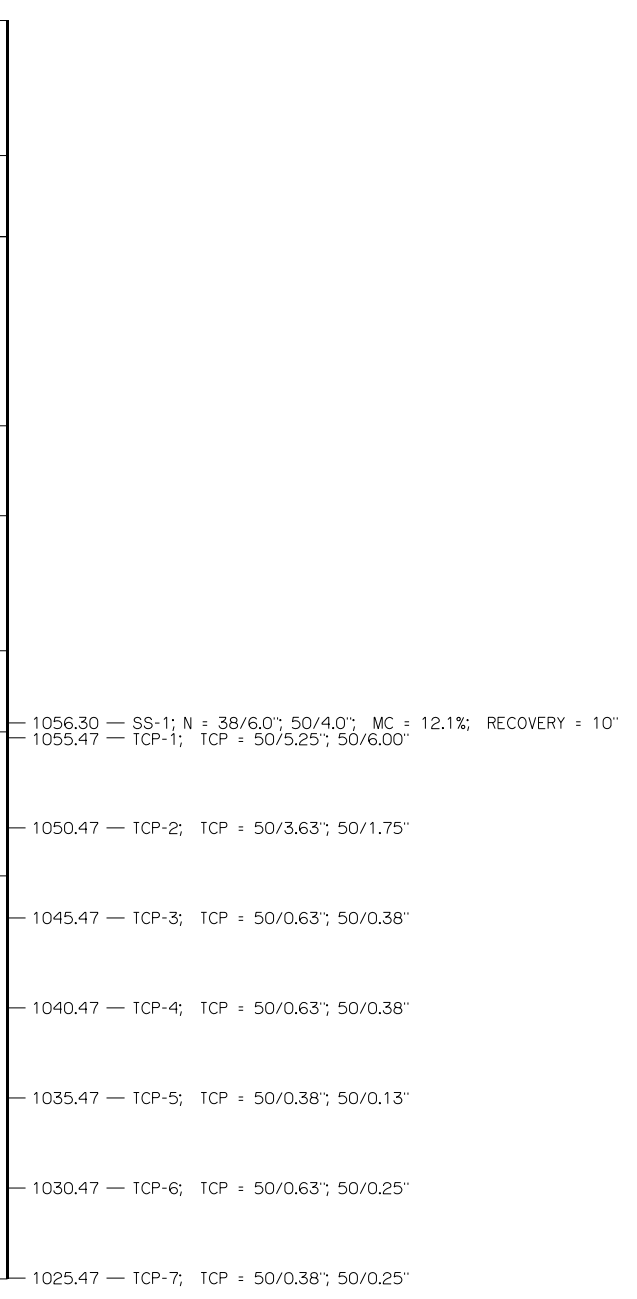
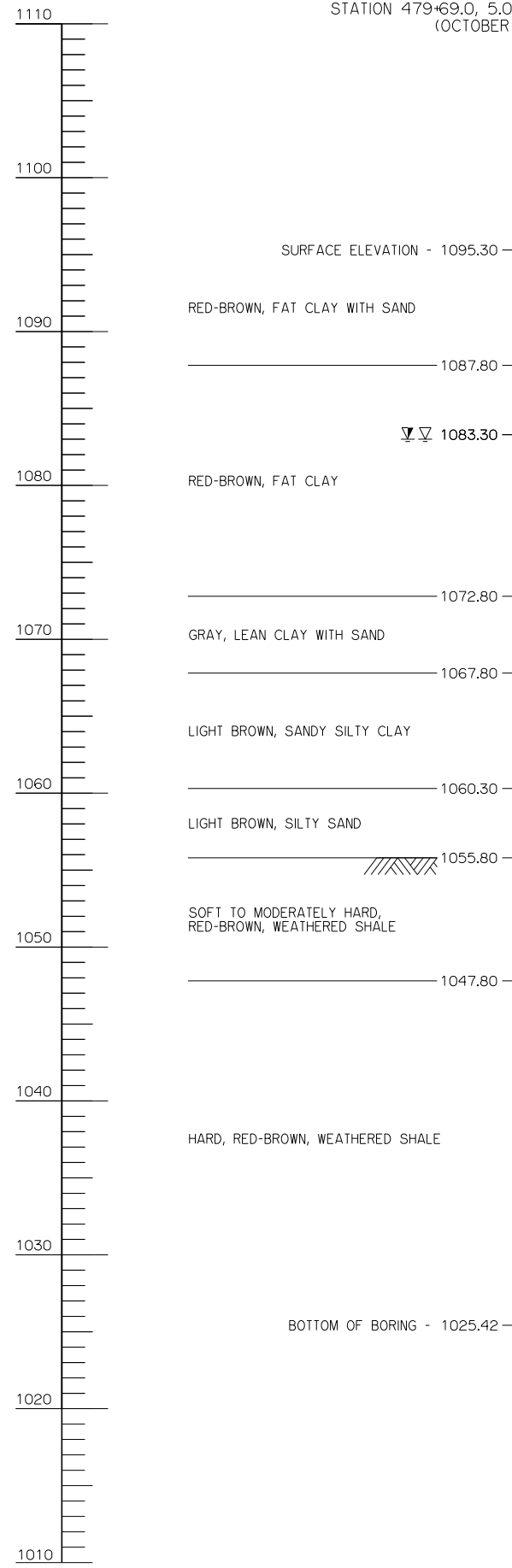


BRIDGE "U" RAMP AA OVER ROCK HOLLOW CREEK		GRADY COUNTY	Design	
SUBSURFACE PROFILE (SHEET 3 OF 4)			Detail	
			Check	
			Squad	
			Engr	
STATE OF OKLAHOMA	DEPARTMENT OF TRANSPORTATION	JOB PIECE NO. 24428(04)	SHEET B172	

REVISIONS		
REV. NO.	DESCRIPTION	DATE

BORING NO. U-6

STATION 479+69.0, 5.0' RIGHT OF BL RAMP AA
(OCTOBER 16, 2019)



RED-BROWN, FAT CLAY WITH SAND

RED-BROWN, FAT CLAY

GRAY, LEAN CLAY WITH SAND

LIGHT BROWN, SANDY SILTY CLAY

LIGHT BROWN, SILTY SAND

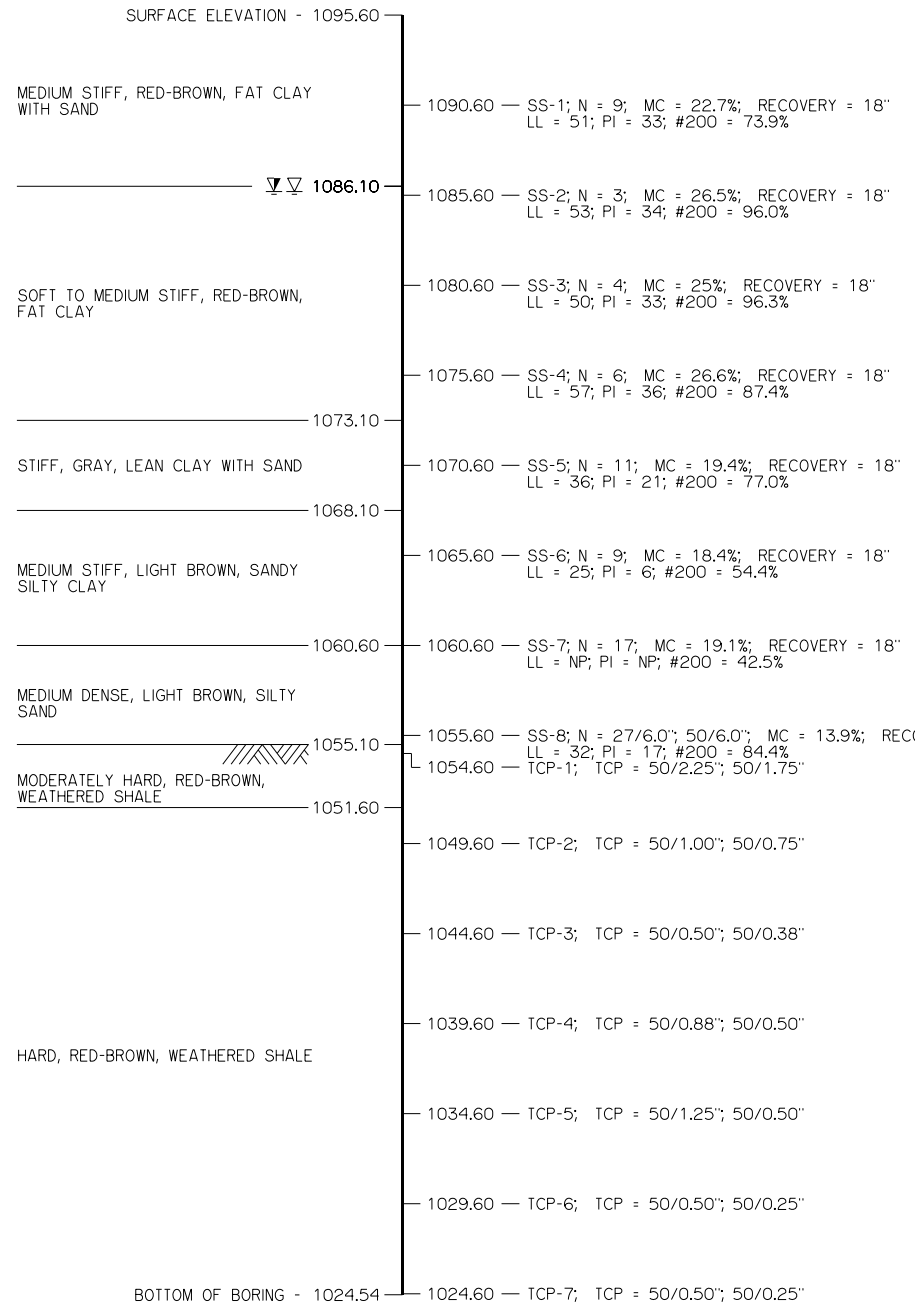
SOFT TO MODERATELY HARD, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE

BOTTOM OF BORING - 1025.42

BORING NO. U-7

STATION 480+73.0, 5.0' RIGHT OF BL RAMP AA
(NOVEMBER 15, 2019)



MEDIUM STIFF, RED-BROWN, FAT CLAY WITH SAND

SOFT TO MEDIUM STIFF, RED-BROWN, FAT CLAY

STIFF, GRAY, LEAN CLAY WITH SAND

MEDIUM STIFF, LIGHT BROWN, SANDY SILTY CLAY

MEDIUM DENSE, LIGHT BROWN, SILTY SAND

MODERATELY HARD, RED-BROWN, WEATHERED SHALE

HARD, RED-BROWN, WEATHERED SHALE

BOTTOM OF BORING - 1024.54

LEGEND

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- PI = PLASTICITY INDEX (NP=NO PLASTICITY)
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- TCP = TEXAS CONE PENETROMETER
- RQD = ROCK QUALITY DESIGNATION
- NP = NON-PLASTIC
- PCF = POUNDS PER CUBIC FOOT
- PSI = POUNDS PER SQUARE INCH
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- ▽ = WATER LEVEL 24 HOURS AFTER DRILLING
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SITE GEOLOGY

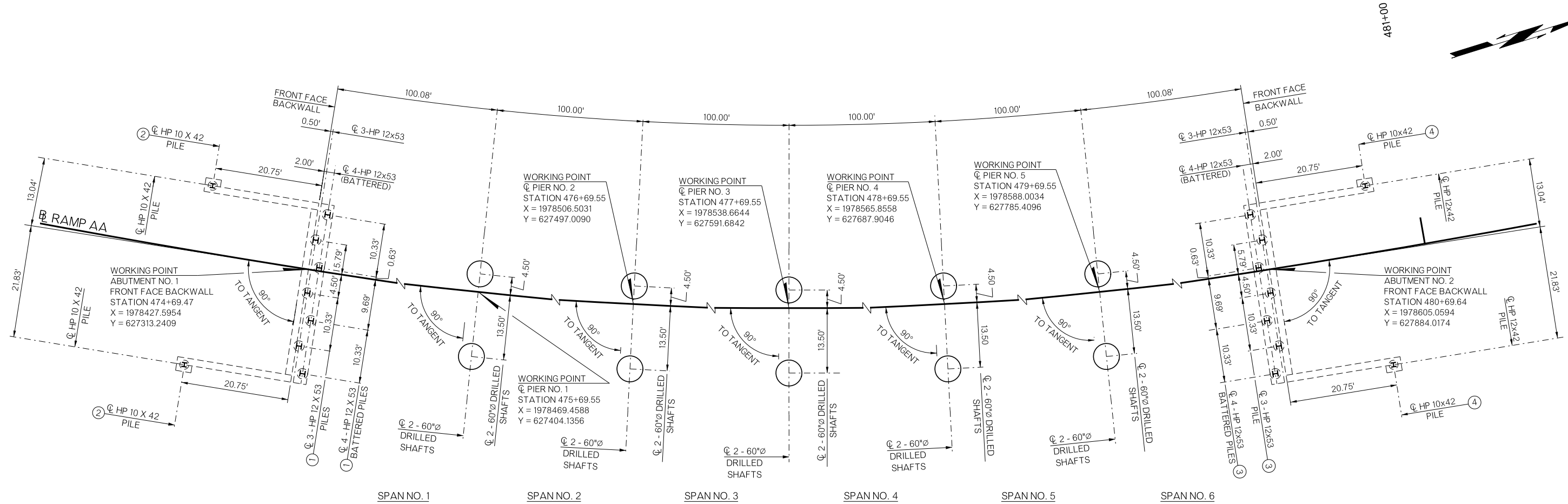
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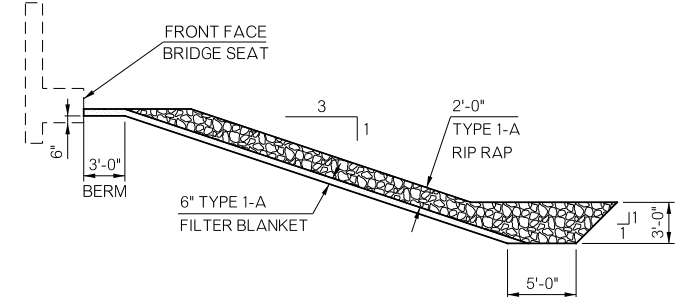
BRIDGE "U" RAMP AA OVER ROCK HOLLOW CREEK		GRADY COUNTY	Design	
SUBSURFACE PROFILE (SHEET 4 OF 4)			Detail	
			Check	
STATE OF OKLAHOMA		DEPARTMENT OF TRANSPORTATION	Squad:	
			Engr.:	
JOB PIECE NO. 24428(04)			SHEET B173	



SUBSTRUCTURE STAKING LAYOUT

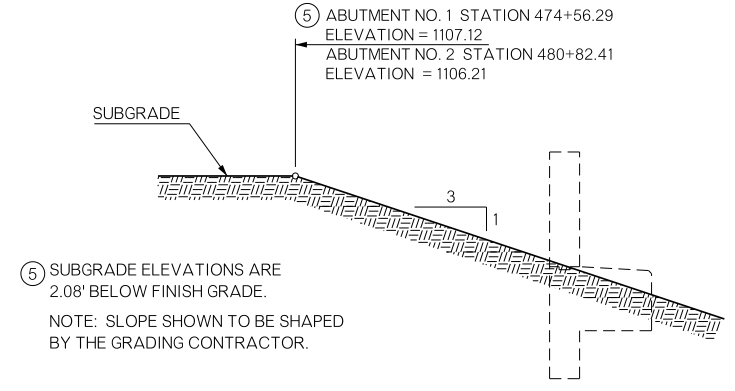
- ① BRIDGE SEAT TOP OF PILE ELEVATION 1101.22.
 - ② WING TOP OF PILE ELEVATION 1105.23.
- NOTE: BRIDGE SEAT PILES SHALL BE PLACED WITH FACE OF PILE WEB PERPENDICULAR TO FACE OF BRIDGE SEAT.
- NOTE: WING PILES SHALL BE PLACED WITH FACE OF PILE WEB PERPENDICULAR TO BRIDGE C.R.L.

- ③ BRIDGE SEAT TOP OF PILE ELEVATION 1100.45.
 - ④ WING TOP OF PILE ELEVATION 1104.45.
- NOTE: BRIDGE SEAT PILES SHALL BE PLACED WITH FACE OF PILE WEB PERPENDICULAR TO FACE OF BRIDGE SEAT.
- NOTE: WING PILES SHALL BE PLACED WITH FACE OF PILE WEB PERPENDICULAR TO BRIDGE C.R.L.



TYPICAL RIPRAP SECTION

- ⑤ DUE TO THE PHASING OF CONSTRUCTION OF BRIDGE U AND FUTURE BRIDGES, RIPRAP QUANTITY SHOWN IN THE PLANS IS AN ESTIMATE REQUIRED FOR CONSTRUCTION OF BRIDGE U ALONE, AND DOES NOT INCLUDE RIPRAP PLACEMENT IN THE AREA WHERE FUTURE BRIDGE S IS TO BE CONSTRUCTED.



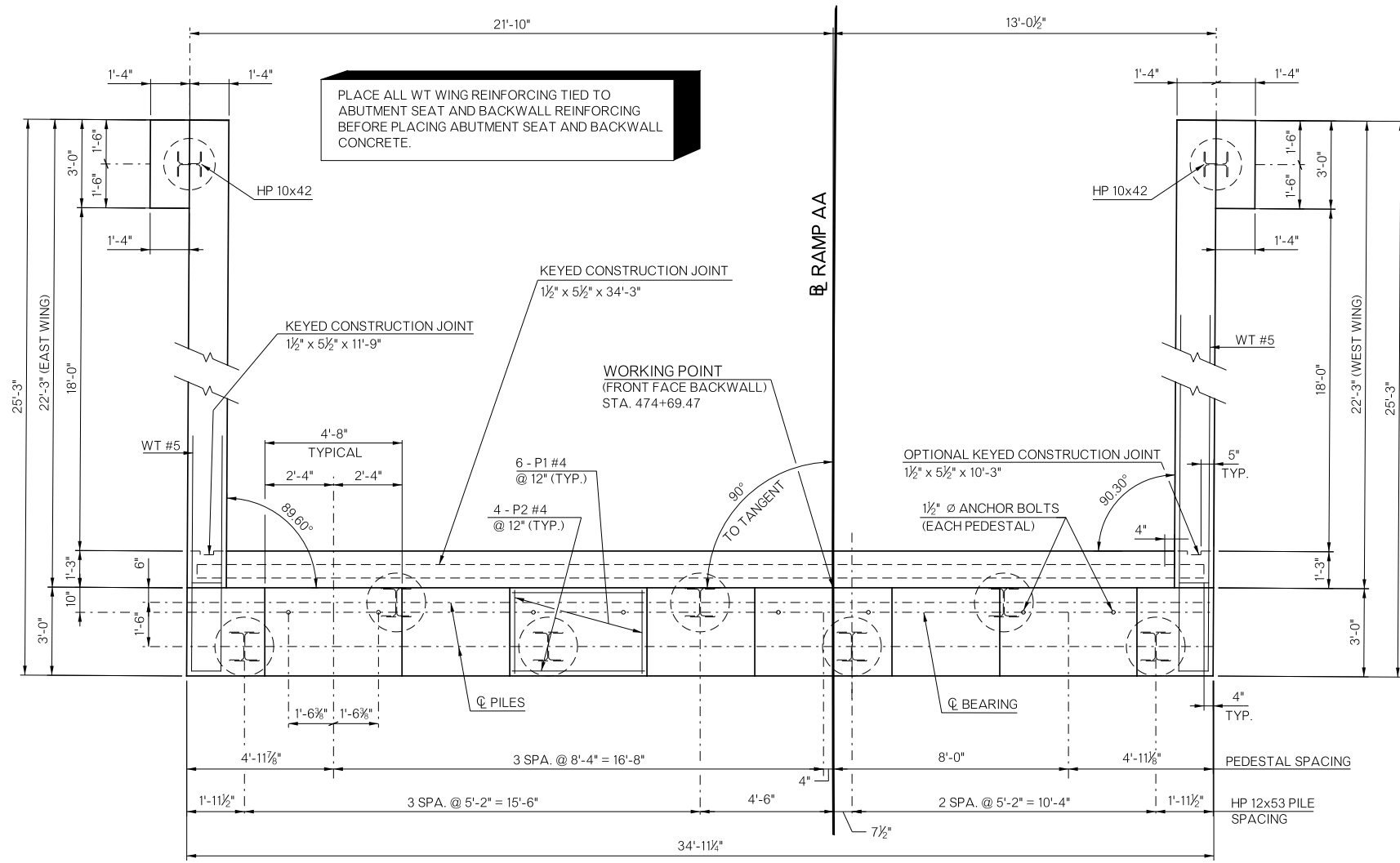
DETAIL OF GRADING
(SHOWN AT BRIDGE C.R.L.)

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

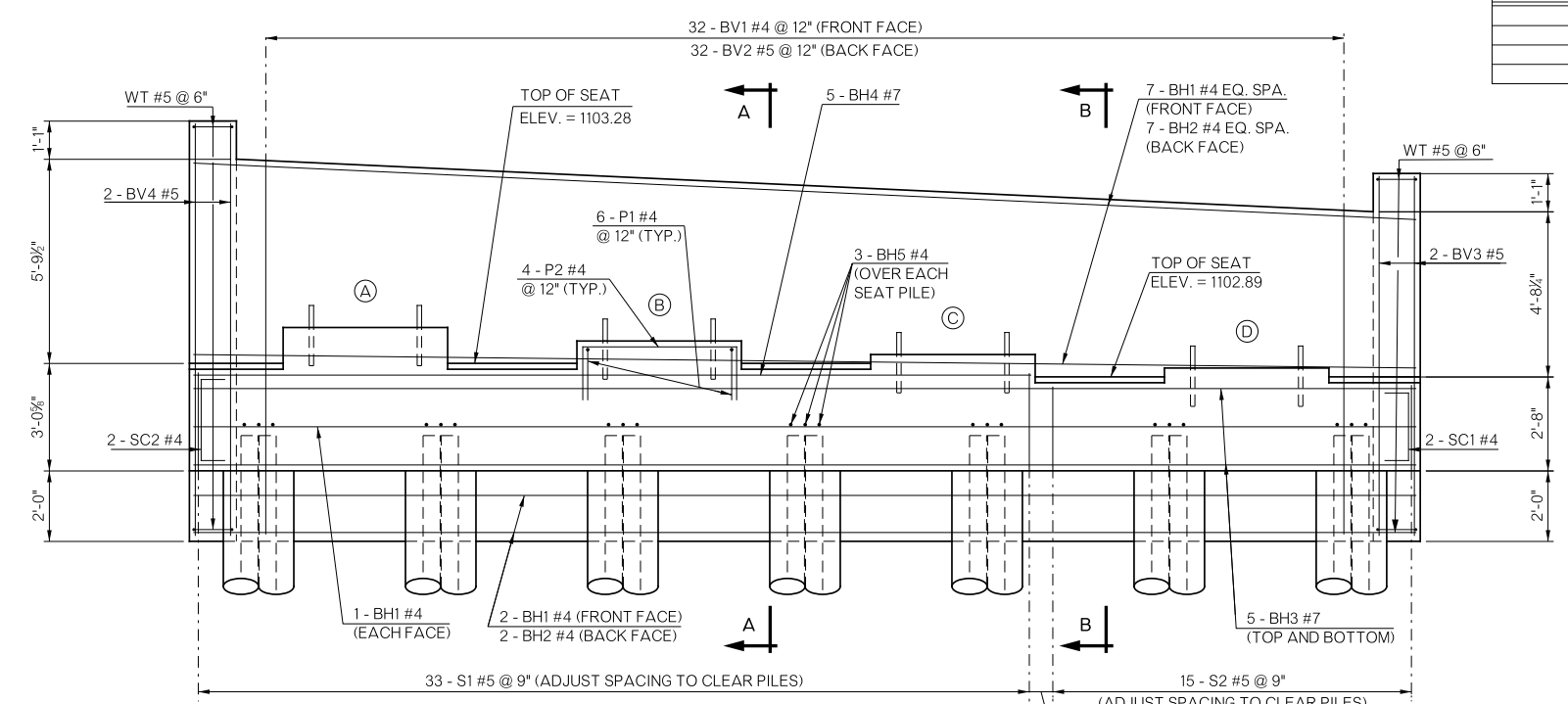
BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

SUBSTRUCTURE STAKING DIAGRAM
(SHEET 1 OF 2)

State Job No. 24428 (12) Sheet No. B174

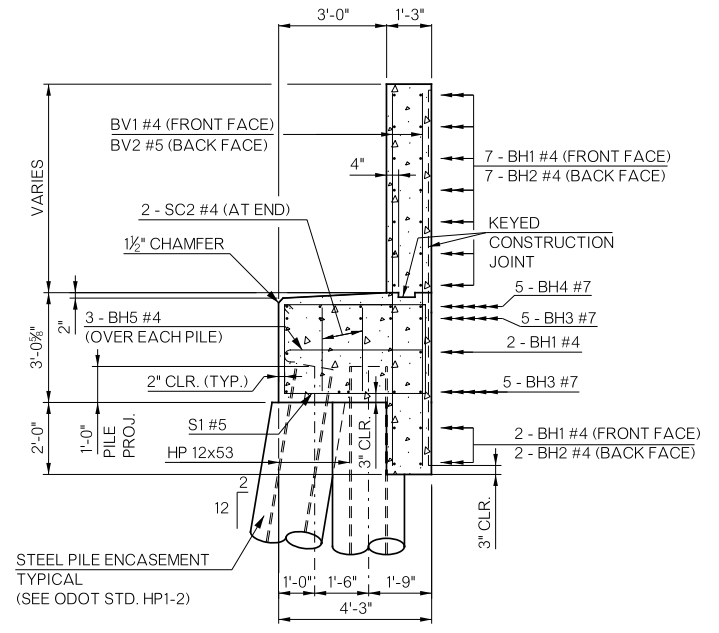


PLAN

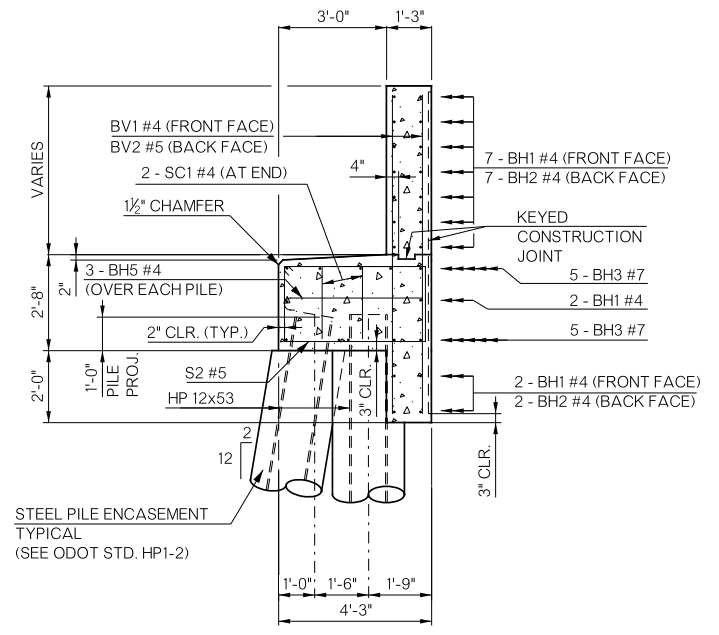


ELEVATION

PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
A	1104.29
B	1103.91
C	1103.53
D	1109.20



SECTION A-A

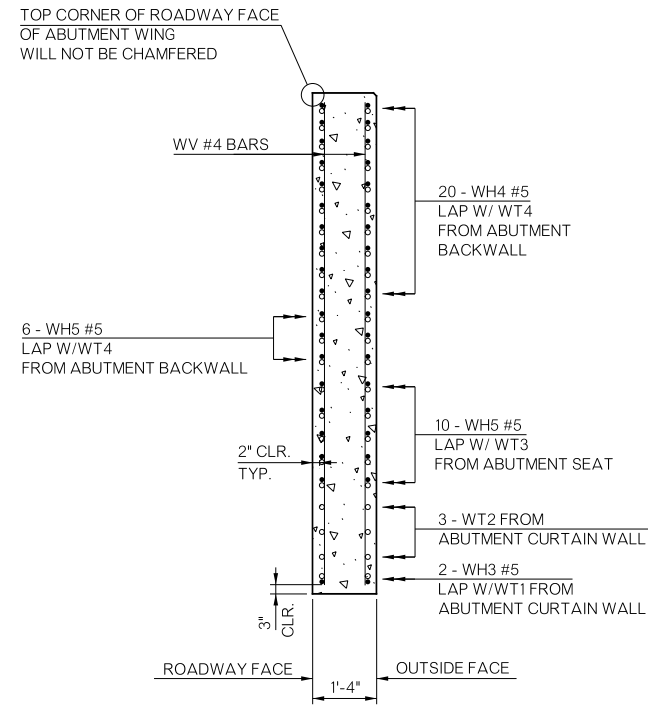


SECTION B-B

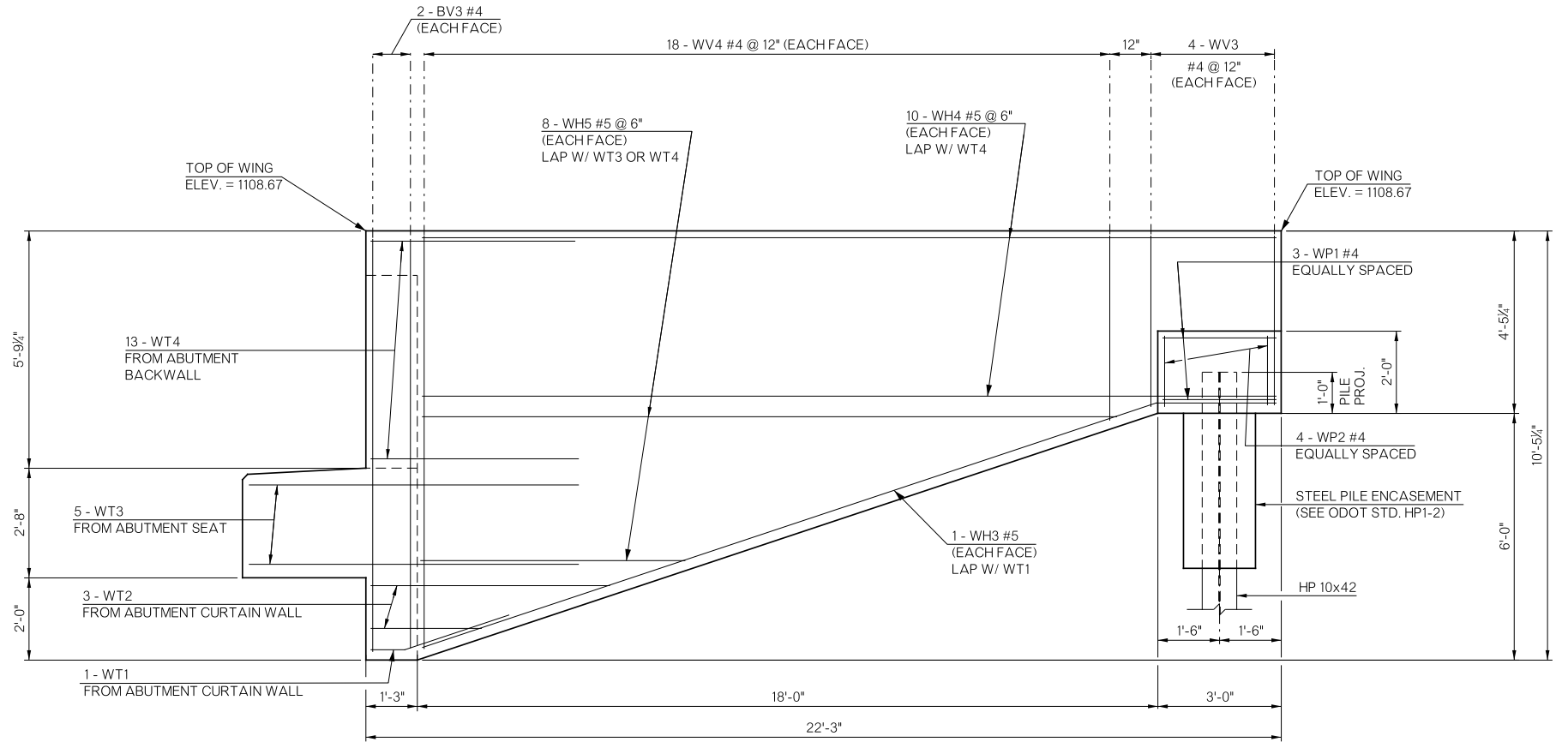
DO NOT PLACE CLSM BACKFILL UNTIL SUPERSTRUCTURE IS IN PLACE AND THE ABUTMENT WING CONCRETE HAS ATTAINED A STRENGTH OF 3,000 PSI.

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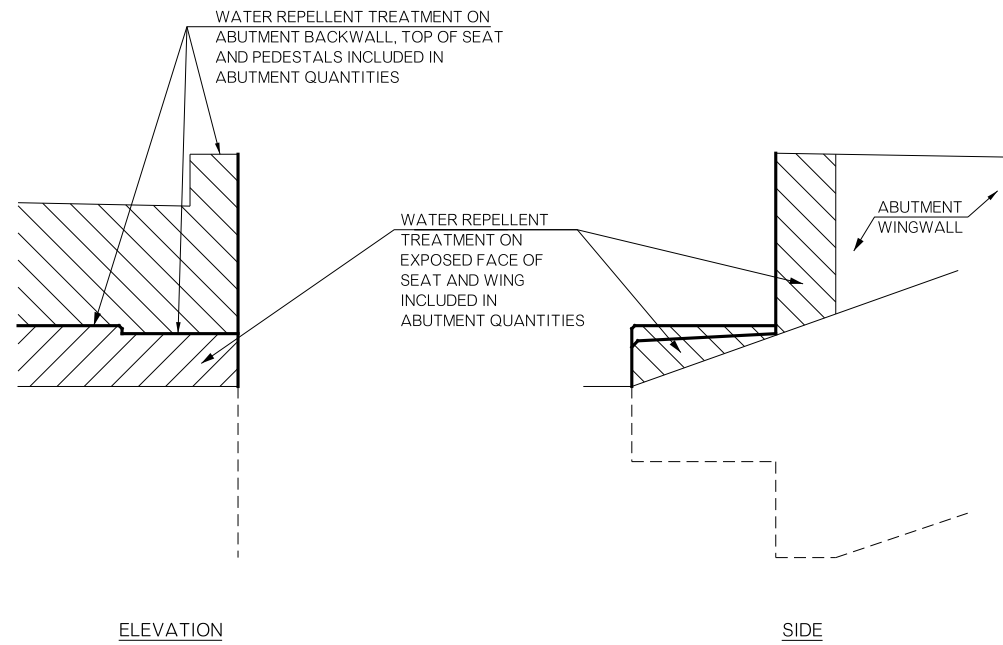
BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK
DETAILS OF ABUTMENT NO. 1
 (SHEET 1 OF 3)
 State Job No. 24428 (12) Sheet No. B175



SECTION THRU WING AT
 BACK FACE OF ABUTMENT SEAT



WING ELEVATION - WEST WING



WATER REPELLENT TREATMENT DETAILS

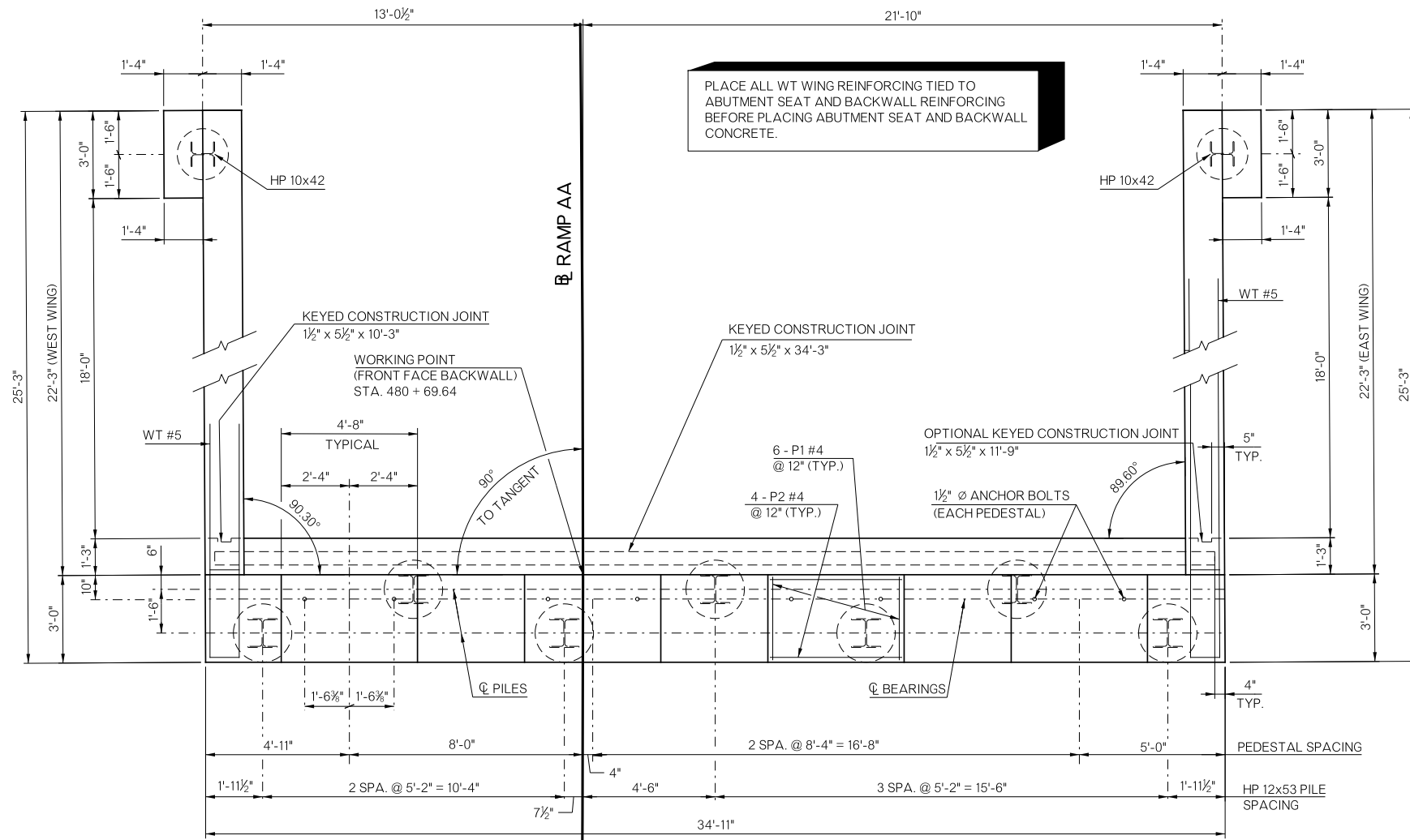
ABUTMENT NO. 1 BAR LIST					
EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	# 4	11	STR.	34'-7"	
BH2	# 4	9	BNT.	35'-11"	
BH3	# 7	10	STR.	34'-7"	
BH4	# 7	5	STR.	23'-7"	
BH5	# 4	21	BNT.	5'-1"	
BV1	# 4	32	STR.	9'-8" AVG.	9'-0" TO 10'-4"
BV2	# 5	32	STR.	9'-8" AVG.	9'-0" TO 10'-4"
BV3	# 5	4	STR.	10'-0"	
BV4	# 5	4	STR.	11'-6"	
P1	# 4	24	BNT.	6'-8"	
P2	# 4	16	BNT.	8'-4"	
S1	# 5	33	BNT.	12'-11"	
S2	# 5	15	BNT.	13'-9"	
SC1	# 4	2	BNT.	3'-5"	
SC2	# 4	2	BNT.	3'-9"	
WH1	# 5	26	STR.	20'-8"	
WH2	# 5	16	STR.	11'-6" AVG.	6'-3" TO 16'-4"
WH3	# 5	4	BNT.	21'-7"	
WH4	# 5	20	STR.	20'-8"	
WH5	# 5	16	STR.	11'-6" AVG.	6'-3" TO 16'-9"
WP1	# 4	6	STR.	8'-8"	
WP2	# 4	8	STR.	1'-7"	
WT1	# 5	2	BNT.	8'-6"	
WT2	# 5	6	BNT.	9'-4" AVG.	6'-4" TO 12'-4"
WT3	# 5	12	BNT.	17'-0"	
WT4	# 5	30	BNT.	11'-0"	
WV1	# 4	8	STR.	5'-6"	
WV2	# 4	32	STR.	8'-8" AVG.	5'-10" TO 11'-5"
WV3	# 4	8	STR.	4'-0"	
WV4	# 4	32	STR.	7'-2" AVG.	4'-5" TO 9'-11"

ABUTMENT NO. 1 QUANTITIES		
ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION COMMON	CY	90.00
CLSM BACKFILL	CY	110.00
CLASS A CONCRETE	CY	46.00
EPOXY COATED REINFORCING STEEL	LB	5500.00
PILES, FURNISHED (HP 10X42)	LF	226.00
PILES, FURNISHED (HP 12X53)	LF	750.00
PILES, DRIVEN (HP 10X42)	LF	226.00
PILES, DRIVEN (HP 12X53)	LF	750.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	42.00
6" PERF. PIPE UNDERDRAIN RND.	LF	34.00

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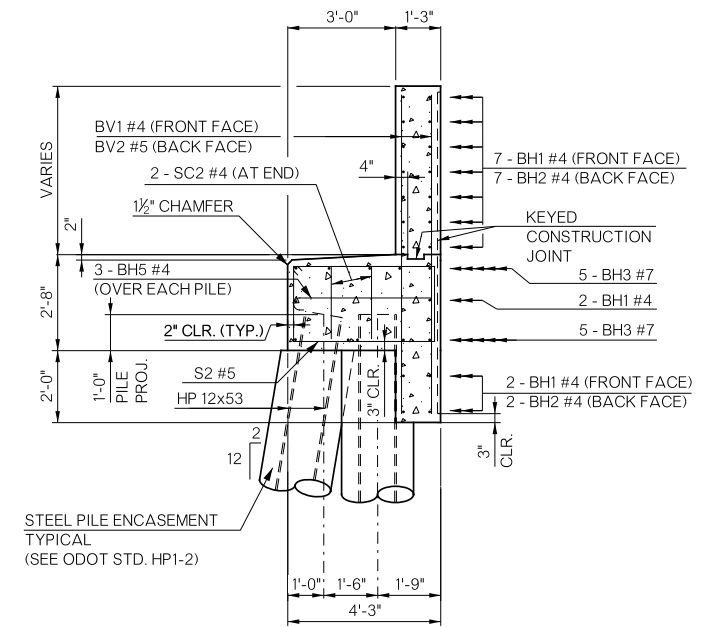
BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF ABUTMENT NO. 1
 DETAILS OF WEST WING
 (SHEET 3 OF 3)

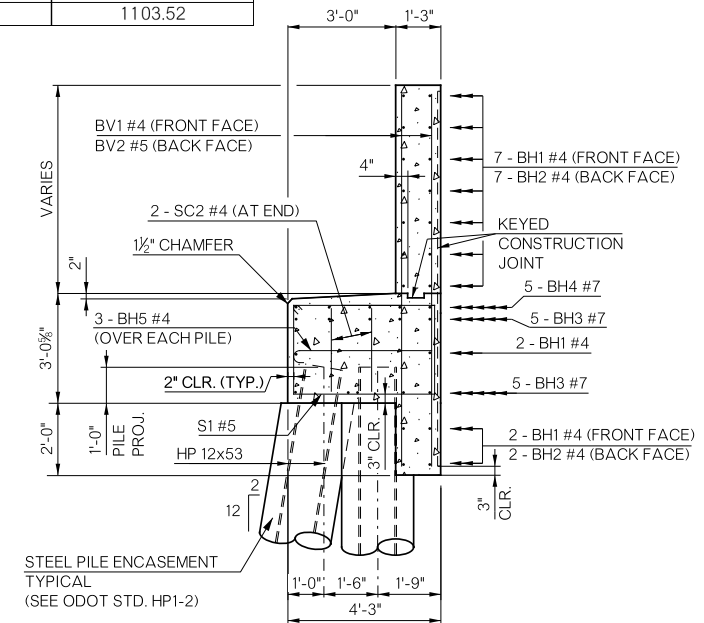


PLACE ALL WT WING REINFORCING TIED TO ABUTMENT SEAT AND BACKWALL REINFORCING BEFORE PLACING ABUTMENT SEAT AND BACKWALL CONCRETE.

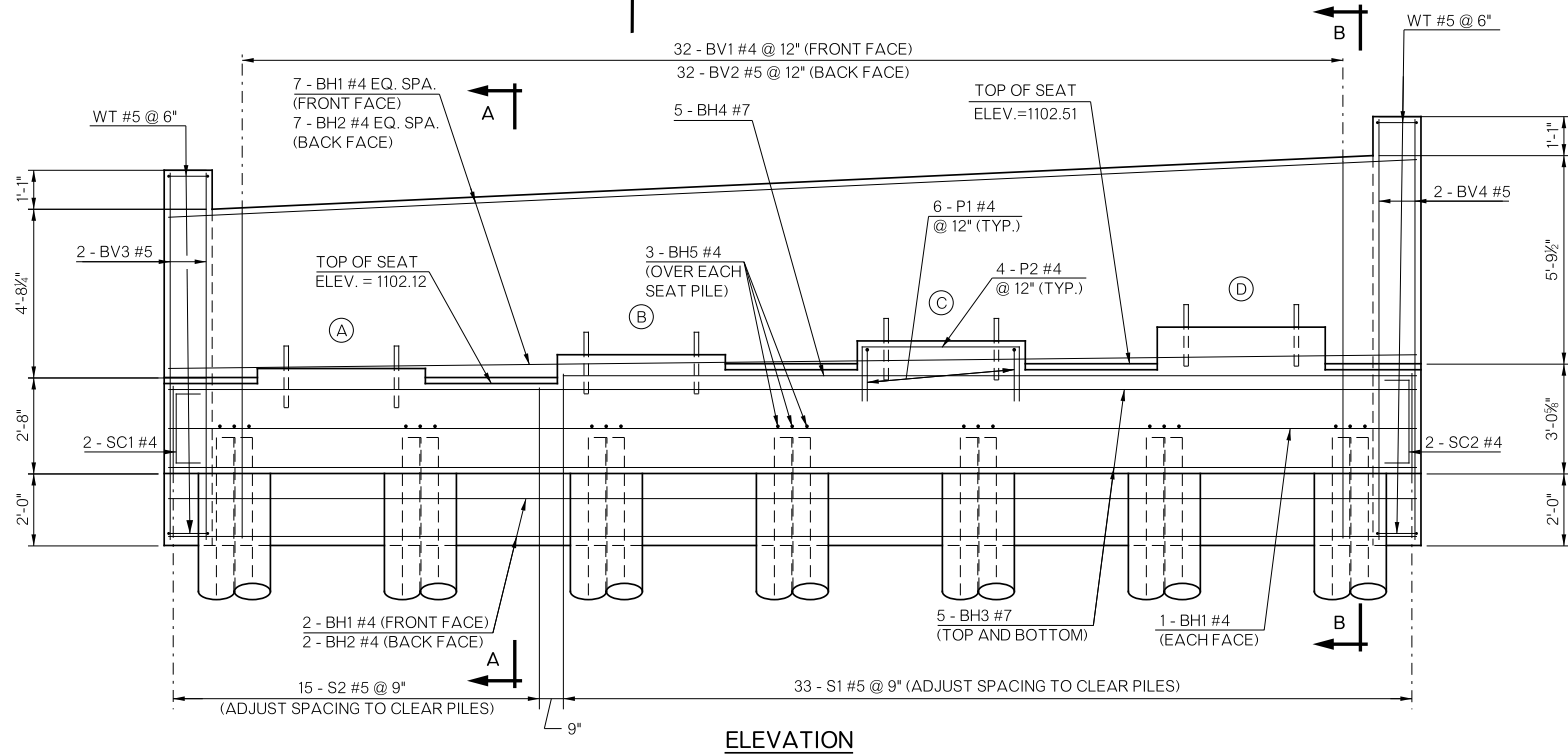
PEDESTAL ELEVATIONS	
PEDESTAL	ELEVATION
A	1102.37
B	1102.76
C	1103.14
D	1103.52



SECTION A-A



SECTION B-B

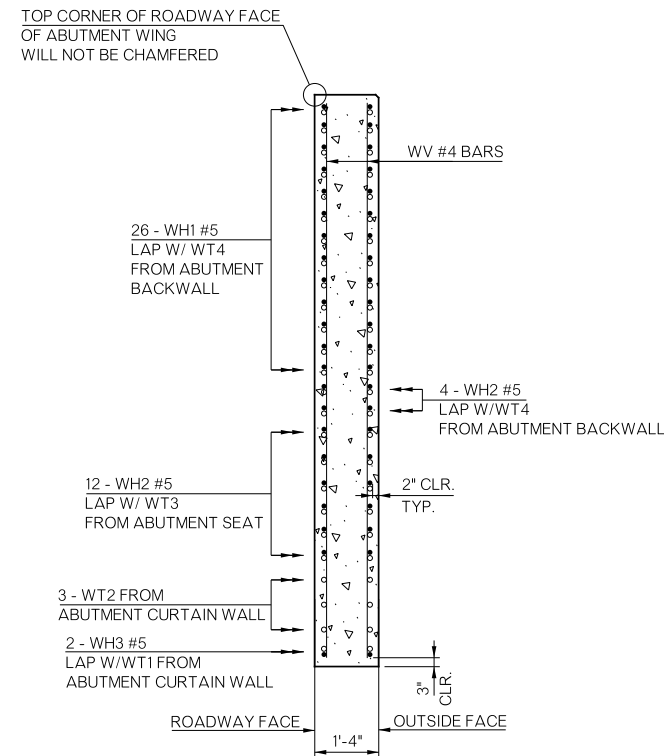


ELEVATION

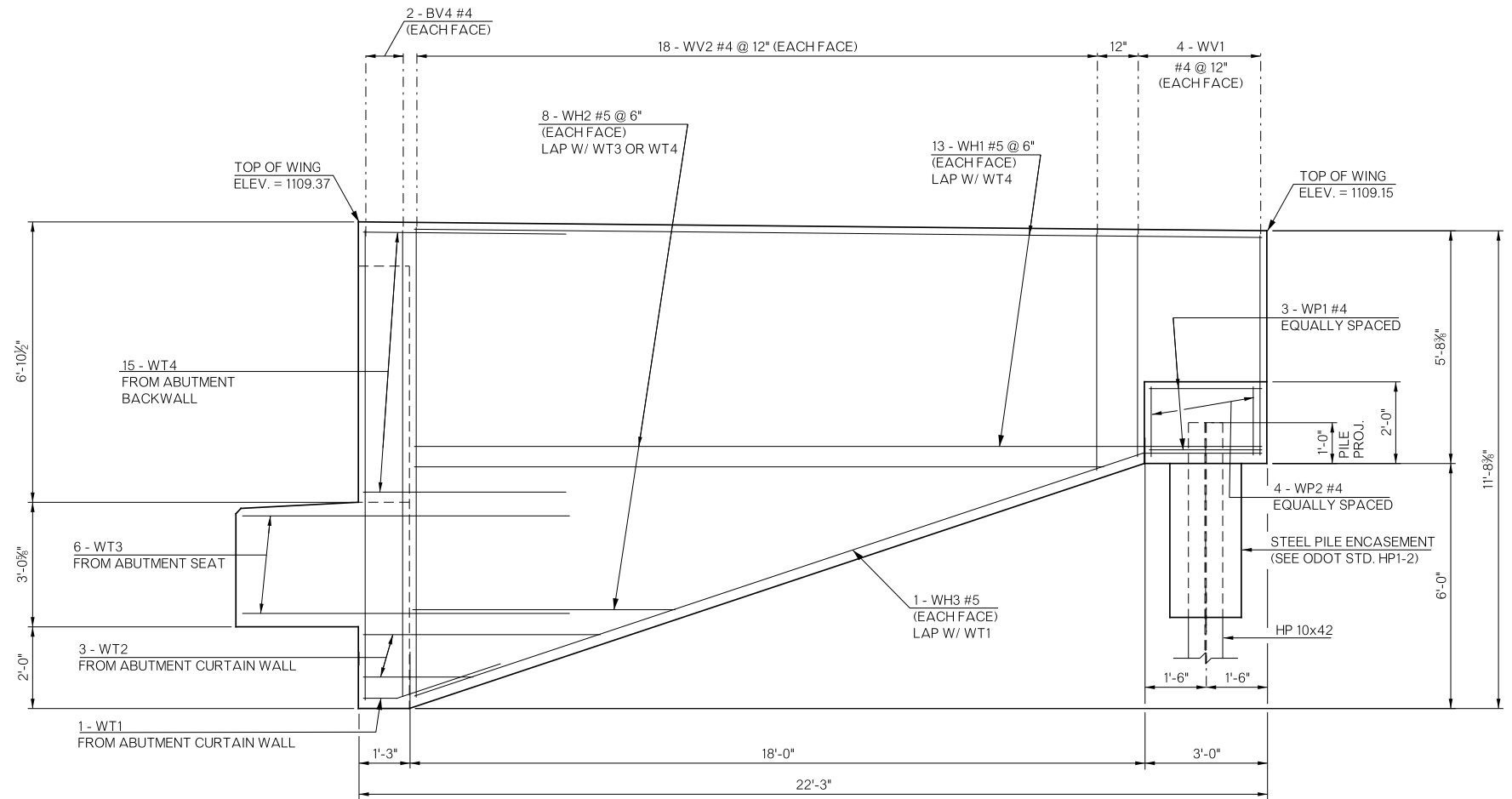
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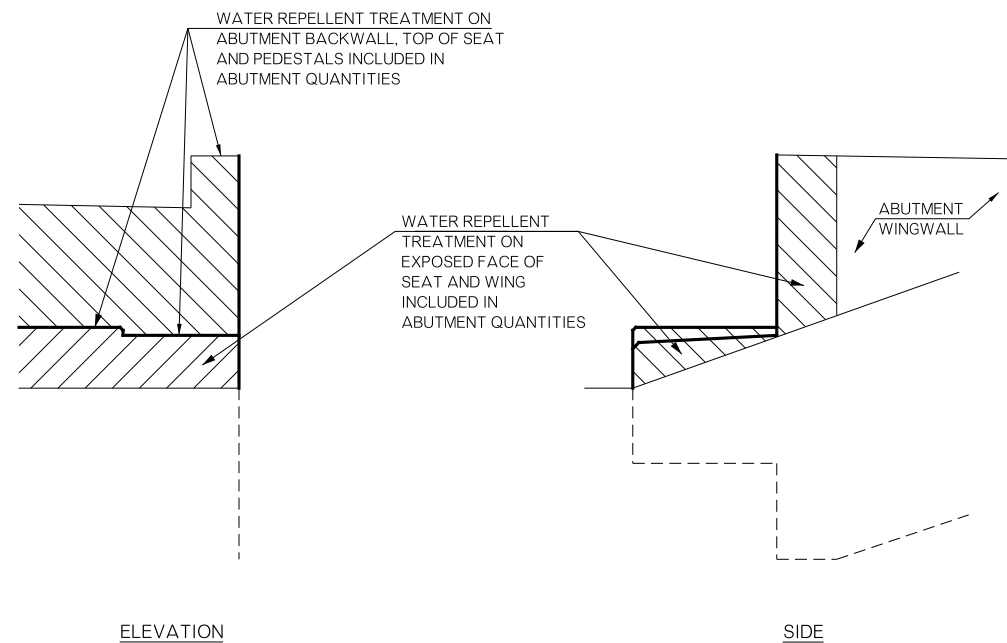
BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK
DETAILS OF ABUTMENT NO. 2
 (SHEET 1 OF 3)
 State Job No. 24428 (12) Sheet No. B178



SECTION THRU WING AT
 BACK FACE OF ABUTMENT SEAT



WING ELEVATION - EAST WING



WATER REPELLENT TREATMENT DETAILS

ABUTMENT NO. 2 BAR LIST

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	# 4	11	STR.	34'-7"	
BH2	# 4	9	BNT.	35'-11"	
BH3	# 7	10	STR.	34'-7"	
BH4	# 7	5	STR.	23'-7"	
BH5	# 4	21	BNT.	5'-1"	
BV1	# 4	32	STR.	9'-8" AVG.	9'-0" TO 10'-4"
BV2	# 5	32	STR.	9'-8" AVG.	9'-0" TO 10'-4"
BV3	# 5	4	STR.	10'-0"	
BV4	# 5	4	STR.	11'-6"	
P1	# 4	24	BNT.	6'-8"	
P2	# 4	16	BNT.	8'-4"	
S1	# 5	33	BNT.	12'-11"	
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SC1	# 4	2	BNT.	3'-5"	
SC2	# 4	2	BNT.	3'-9"	
WH1	# 5	26	STR.	20'-8"	
WH2	# 5	16	STR.	11'-6" AVG.	6'-3" TO 16'-4"
WH3	# 5	4	BNT.	21'-7"	
WH4	# 5	20	STR.	20'-8"	
WH5	# 5	16	STR.	11'-6" AVG.	6'-3" TO 16'-9"
WP1	# 4	6	STR.	8'-8"	
WP2	# 4	8	STR.	1'-7"	
WT1	# 5	2	BNT.	8'-6"	
WT2	# 5	6	BNT.	9'-4" AVG.	6'-4" TO 12'-4"
WT3	# 5	12	BNT.	17'-0"	
WT4	# 5	30	BNT.	11'-0"	
WV1	# 4	8	STR.	5'-4"	
WV2	# 4	32	STR.	8'-7" AVG.	5'-9" TO 11'-5"
WV3	# 4	8	STR.	3'-10"	
WV4	# 4	32	STR.	7'-1" AVG.	4'-3" TO 9'-11"

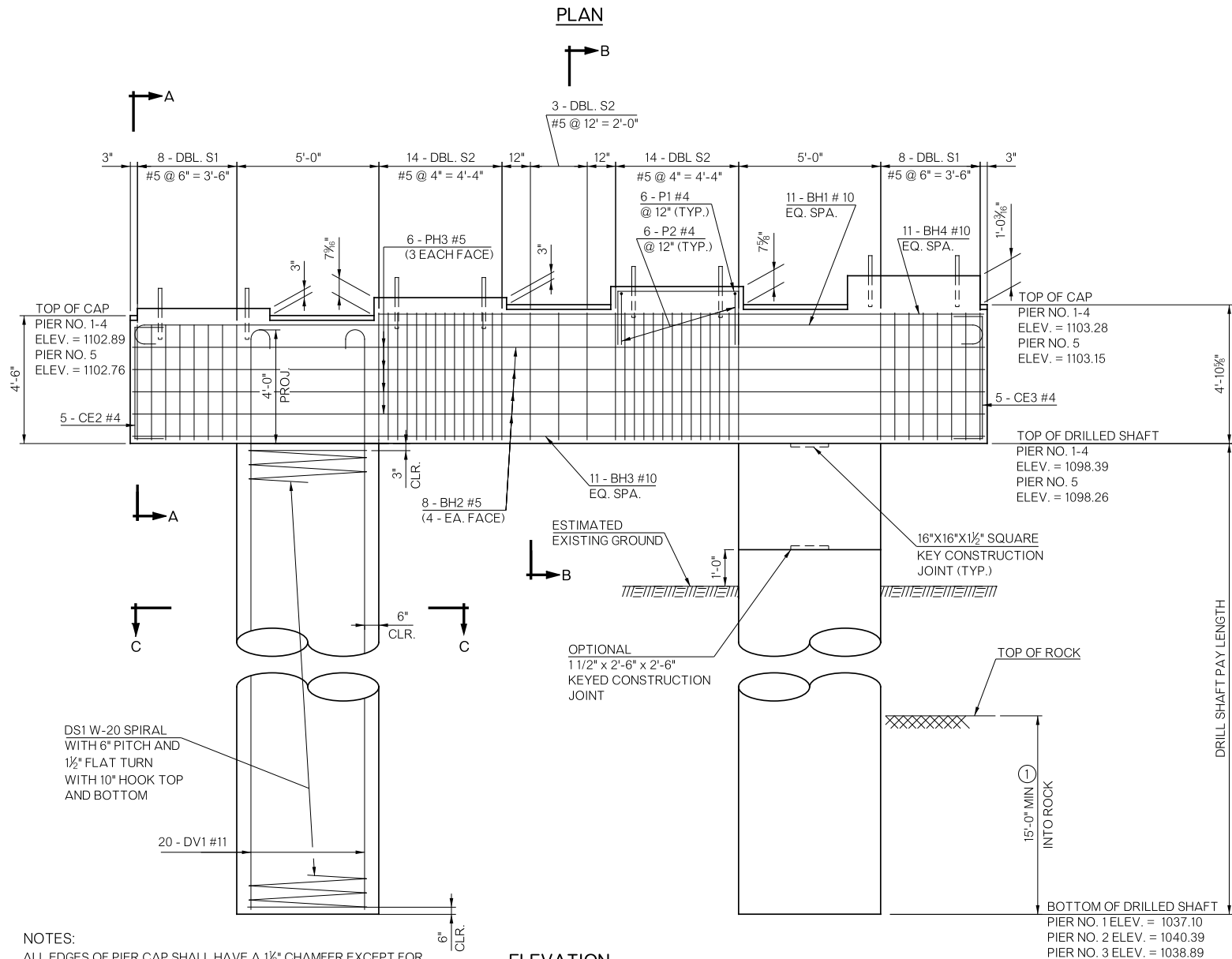
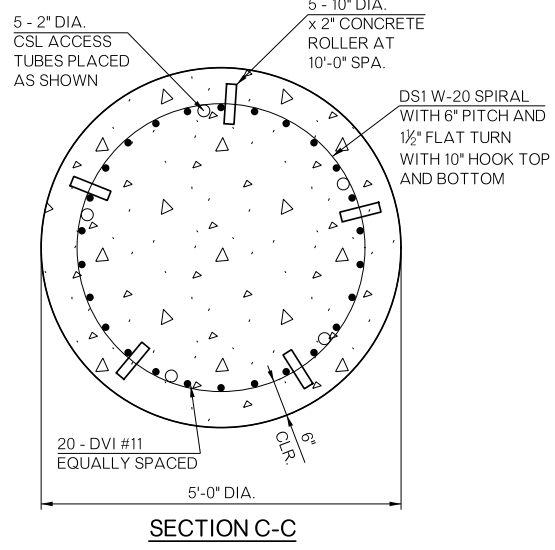
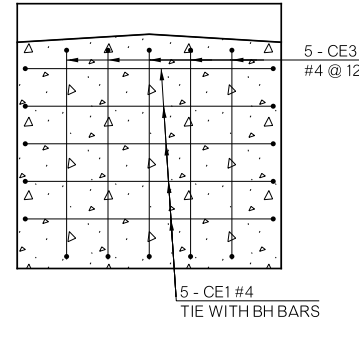
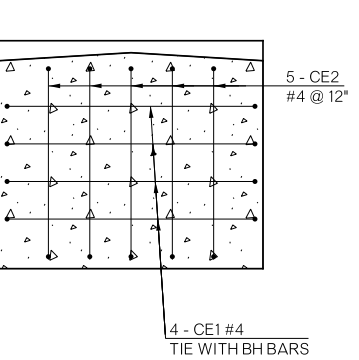
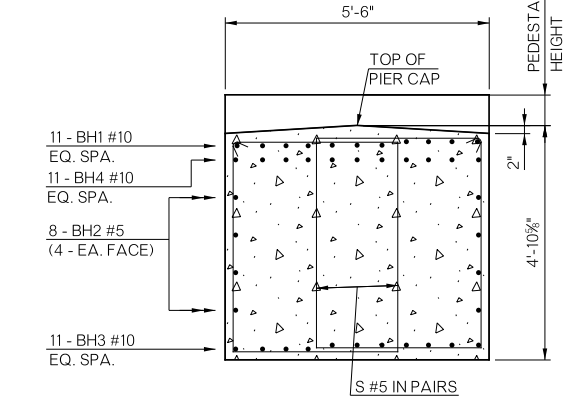
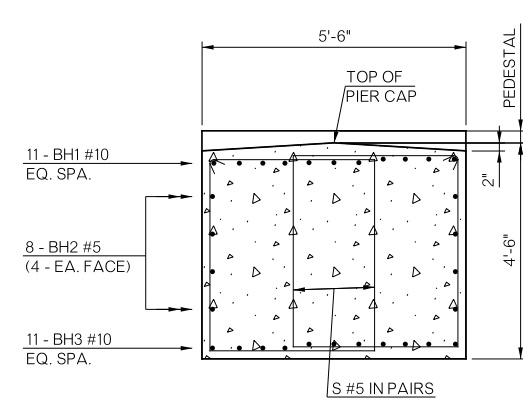
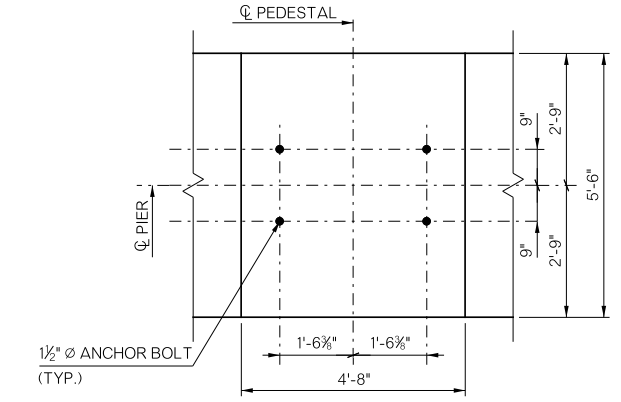
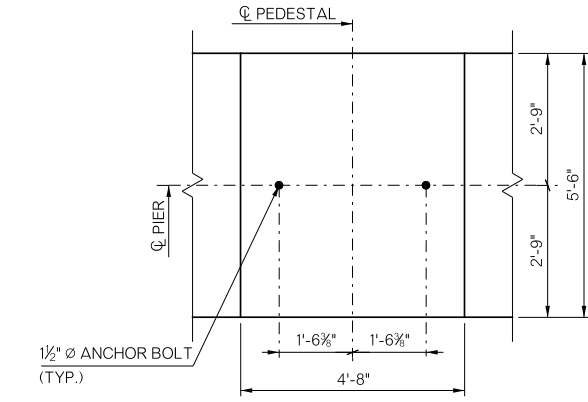
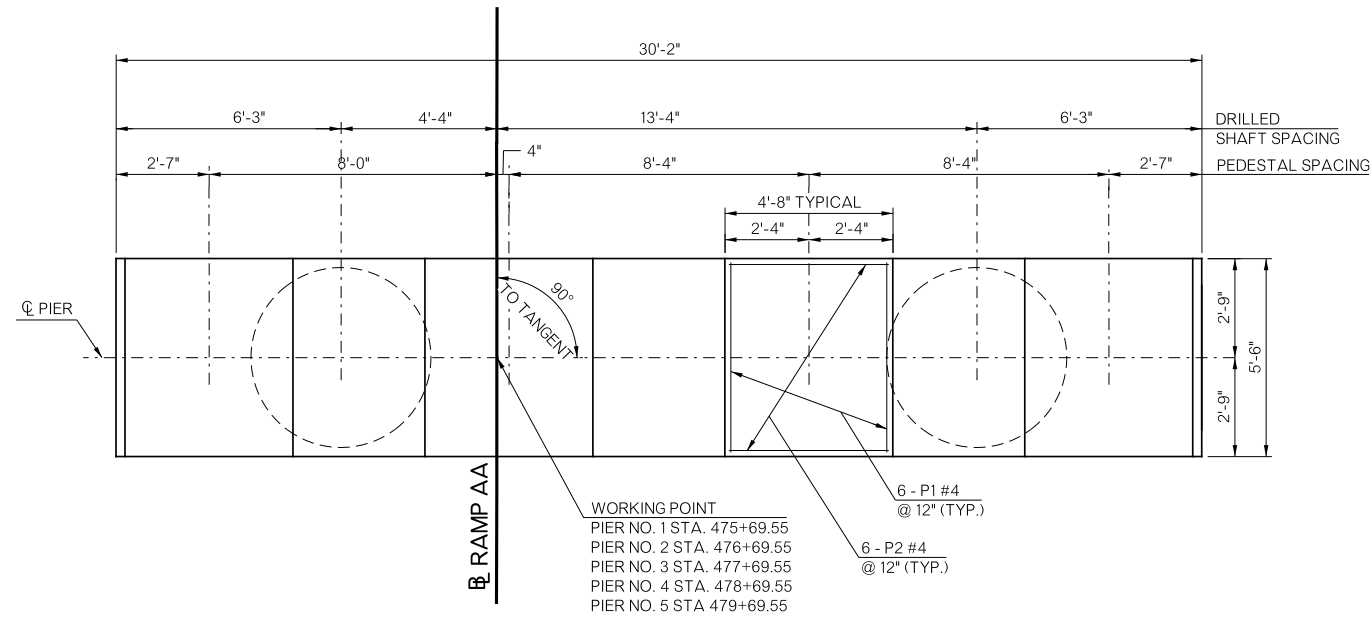
ABUTMENT NO. 2 QUANTITIES

ITEM	UNIT	TOTAL
SUBSTRUCTURE EXCAVATION	CY	90.00
CLSM BACKFILL	CY	110.00
CLASS A CONCRETE	CY	45.80
EPOXY COATED REINFORCING STEEL	LB	5500.00
PILES, FURNISHED (HP 10X42)	LF	226.00
PILES, FURNISHED (HP 10X53)	LF	750.00
PILES, DRIVEN (HP 10X42)	LF	226.00
PILES, DRIVEN (HP 10X53)	LF	750.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	42.00
6" PERF. PIPE UNDERDRAIN RND.	LF	34.00

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BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF ABUTMENT NO. 2
 DETAILS OF EAST WING
 (SHEET 3 OF 3)



NOTES:
 ALL EDGES OF PIER CAP SHALL HAVE A 1/2" CHAMFER EXCEPT FOR PEDESTAL EDGES WHICH SHALL HAVE A 3/8" CHAMFER.
 DRILLED SHAFT CASING SHALL NOT BE VISIBLE ABOVE FINISH GRADE. ALL VISIBLE SURFACES OR DRILLED SHAFTS SHALL BE SMOOTH FINISHED.

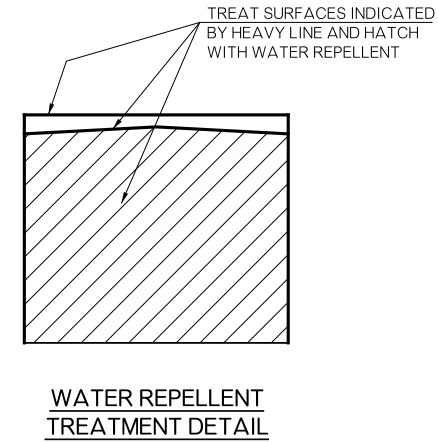
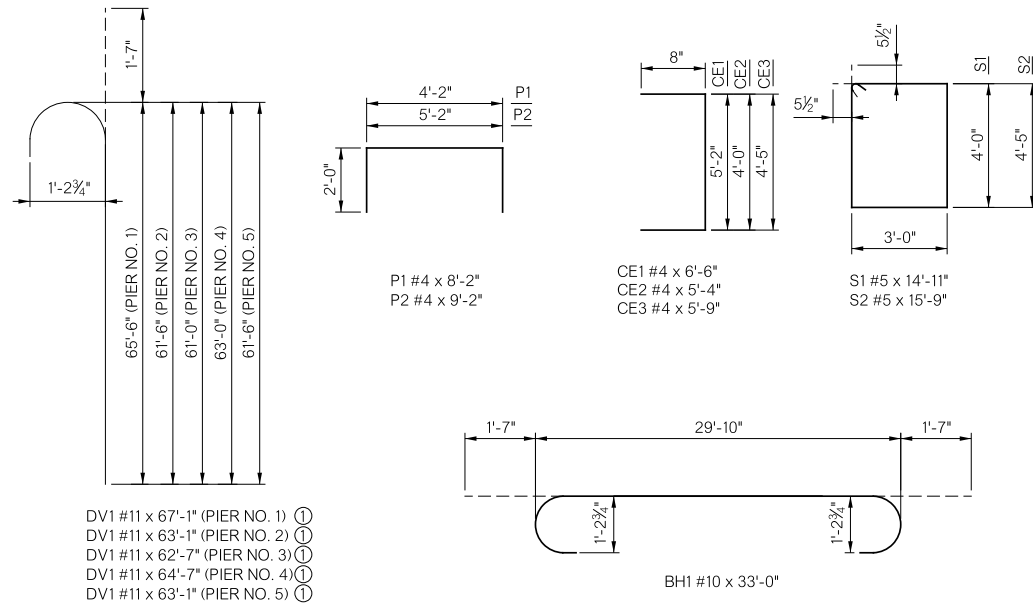
- DRILLED SHAFT SHALL BE INSTALLED THE SPECIFIED MINIMUM DISTANCE INTO ROCK. BUT IN NO CASE SHALL BE HIGHER THAN THE BOTTOM OF DRILLED SHAFT ELEVATION SHOWN ON PLANS.
- AT HIS OPTION, THE CONTRACTOR MAY ELECT TO FORM A CONSTRUCTION JOINT A MINIMUM 1' ABOVE THE NATURAL GROUNDLINE. THE PORTION OF SHAFT ABOVE THE OPTIONAL CONSTRUCTION JOINT SHALL BE FORMED AND POURED AND SHALL BE PAID FOR AT THE UNIT PRICE PER L.F. OF DRILLED SHAFT.

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BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF PIERS
 (SHEET 1 OF 2)

State Job No. 24428 (12) Sheet No. B182



PIERS NOS. 1-5 CAP BAR LIST					
ONE PIER CAP SHOWN					
EPOXY COATED REINFORCNG					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
BH1	# 10		BNT.	33'-0"	
BH2	# 5		STR.	29'-10"	
BH3	# 10		STR.	29'-10"	
BH4	# 10		STR.	21'-5"	
CE1	# 4		BNT.	6'-6"	
CE2	# 4		BNT.	5'-4"	
CE3	# 4		BNT.	5'-9"	
P1	# 4		BNT.	8'-2"	
P2	# 4		BNT.	9'-2"	
S1	# 5		BNT.	14'-11"	
S2	# 5		BNT.	15'-9"	

PIER CAP NO. 1 DRILLED SHAFT BAR LIST					
PLAN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
② DS1	W20	2	BNT.	1555'-0"	
① DV1	#11	40	BNT.	67'-1"	

PIER CAP NO. 2 DRILLED SHAFT BAR LIST					
PLAN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
② DS1	W20	2	BNT.	1479'-6"	
① DV1	# 11	40	BNT.	63'-1"	

PIER CAP NO. 3 DRILLED SHAFT BAR LIST					
PLAN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
② DS1	W20	2	BNT.	1517'-6"	
① DV1	# 11	40	BNT.	62'-7"	

PIER CAP NO. 4 DRILLED SHAFT BAR LIST					
PLAN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
② DS1	W20	2	BNT.	1492'-0"	
① DV1	# 11	40	BNT.	64'-7"	

PIER CAP NO. 5 DRILLED SHAFT BAR LIST					
PLAN REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
② DS1	W20	2	BNT.	1479'-6"	
① DV1	# 11	40	BNT.	63'-1"	

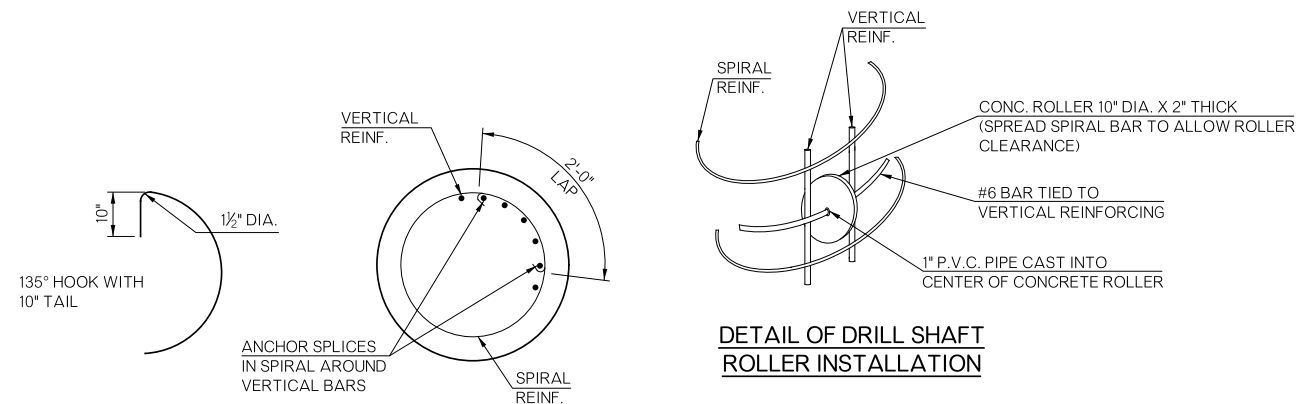
PIERS NOS. 1-5 QUANTITIES						
ITEM	UNIT	PIER NO. 1	PIER NO. 2	PIER NO. 3	PIER NO. 4	PIER NO. 5
CLASS A CONCRETE	CY	31.20	31.20	31.20	31.20	31.20
EPOXY REINFORCING STEEL	LB	5360.00	5360.00	5360.00	5360.00	5360.00
WATER REPELLENT (VISUALLY INSPECTED)	SY	61.00	61.00	61.00	61.00	61.00
DRILLED SHAFT 60" DIAMETER	LF	124.00	116.00	118.00	116.00	116.00

- ① DIMENSIONS SHOWN FOR DV1 BARS REPRESENT THE BAR LENGTH REQUIRED BASED ON TOTAL LENGTH OF DRILLED SHAFT AND EMBEDMENT INTO PIER CAP, NOT INCLUDING LAP LENGTH. LAP SPLICES SHALL BE 7'-6" FOR DV1 #11 BARS.
- ② LENGTH DOES NOT INCLUDE LAP SPLICES. PROVIDE A 3'-8" LAP SPLICE PER 735 FEET OF DS1 SPIRAL BAR.

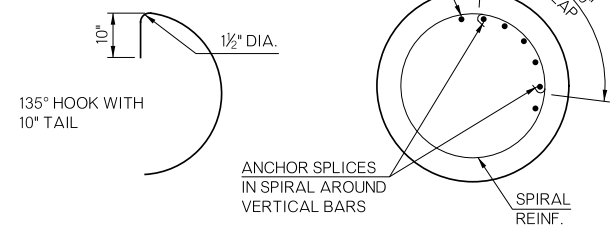
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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

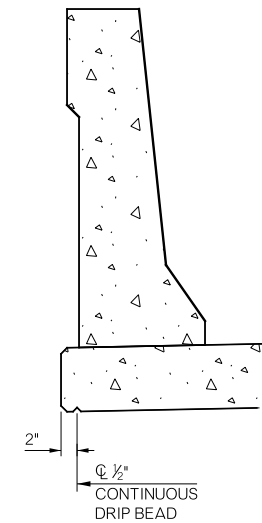
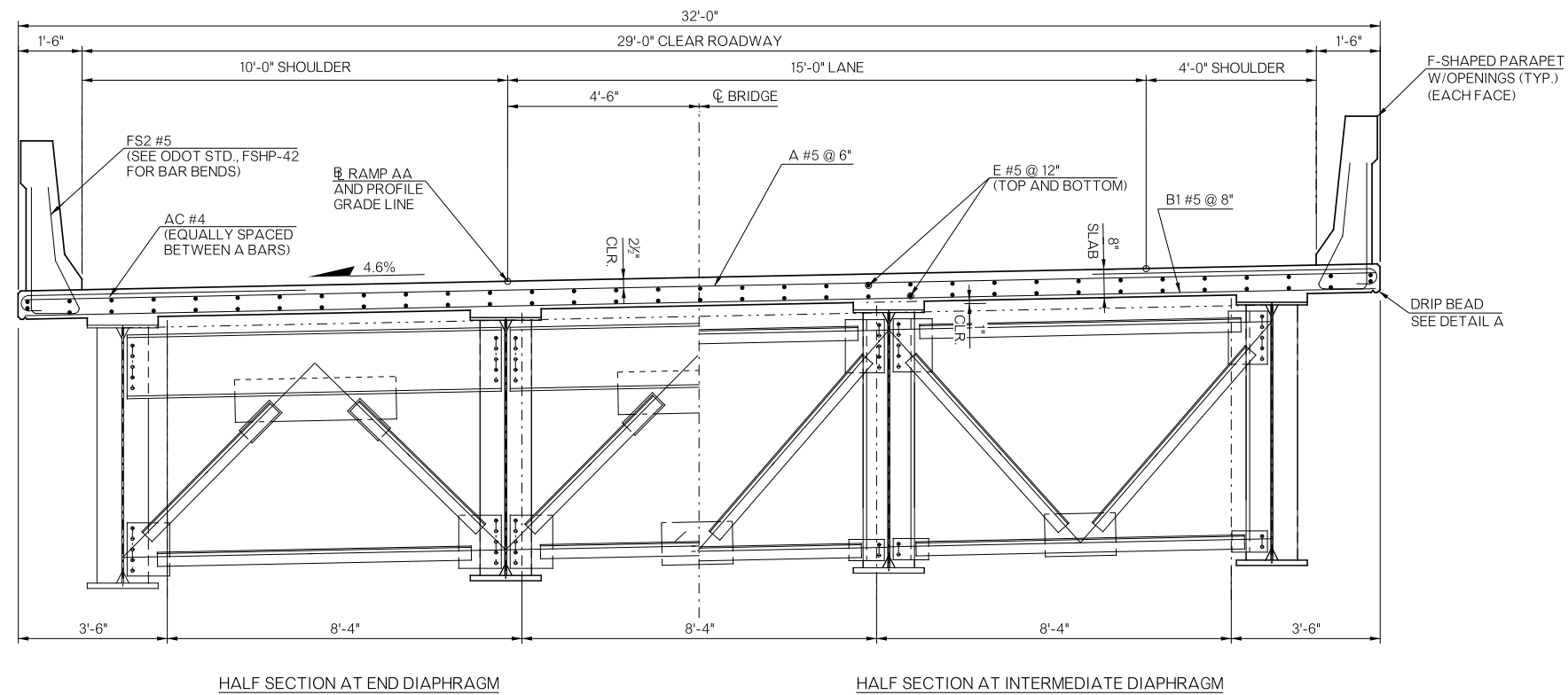
DETAILS OF PIER NO. 1
(SHEET 1 OF 2)



SPIRAL SPLICE

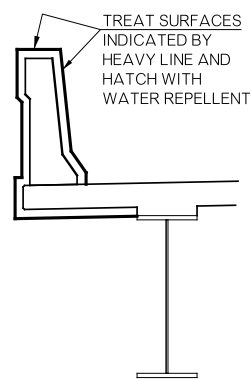


NOTE:
CONCRETE USED IN CONCRETE ROLLERS SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. SLAB BOLSTERS, HIGH CHAIRS AND PLASTIC ROLLERS SHALL NOT BE SUBSTITUTED FOR THE CONCRETE ROLLERS.

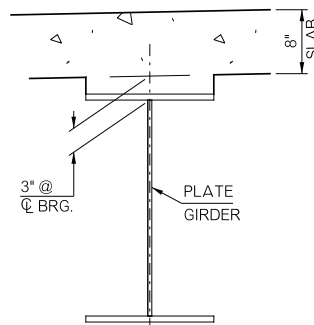


DETAIL A

TYPICAL BRACING SECTION



WATER REPELLENT TREATMENT DETAILS



BEAM HAUNCH DETAIL

NOTE:
 PLAN QUANTITIES FOR CLASS AA CONCRETE INCLUDE BEAM HAUNCHES. THE HAUNCH HEIGHT SHOWN IS THE THEORETICAL HAUNCH HEIGHT AT THE CENTERLINE BEARING ONLY, MEASURED FROM THE BOTTOM OF THE DECK SLAB TO THE TOP OF THE PLATE GIRDER AND INCLUDE THE TOP FLANGE. THIS MEASUREMENT VARIES ACROSS THE SPAN. DETERMINE THE ACTUAL HAUNCH HEIGHT (ACCOUNTING FOR BEAM CAMBER, DEAD LOAD DEFLECTION AND ROADWAY GRADE) AFTER ERECTION OF THE BEAMS AND SUBMIT TO THE ENGINEER FOR APPROVAL. THE ENGINEER WILL NOT MEASURE DIFFERENCES BETWEEN THE THEORETICAL AND THE ACTUAL HAUNCH HEIGHTS FOR PAYMENTS.

INSTALL ALL DIAPHRAGMS AND TIGHTEN ALL BOLTS BEFORE PLACING CONCRETE FOR THE DECK SLAB OR APPLYING OTHER MASSIVE LOADS TO THE GIRDERS.

SUPERSTRUCTURE BAR LIST						
EPOXY COATED REINFORCING						
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS	
A	# 5	1222	STR.	31'-8"		
AC	# 4	2432	BNT.	5'-6"		
AS	# 4	66	BNT.	5'-2"		
AH1	# 4	20	BNT.	2'-11"		
AH2	# 4	48	STR.	4'-1"		
AT1	# 4	4	STR.	31'-8"		
AT2	# 4	6	STR.	6'-4"		
B	# 5	924	BNT.	31'-8"		
E1	# 5	66	STR.	208'-2" AVG.	206'-5" TO 209'-11"	
E2	# 5	66	STR.	199'-10" AVG.	190'-6" TO 208'-10"	
E3	# 5	66	STR.	208'-1" AVG.	206'-5" TO 209'-9"	
EPH	# 4	120	BNT.	3'-8"		
FPH	# 4	72	BNT.	5'-0"		
FS2	# 5	794	STR.	7'-4"		
L	# 4	400	BNT.	1'-3"		
PT1	# 4	60	STR.	6'-4"		
PT2	# 4	16	STR.	6'-4"		

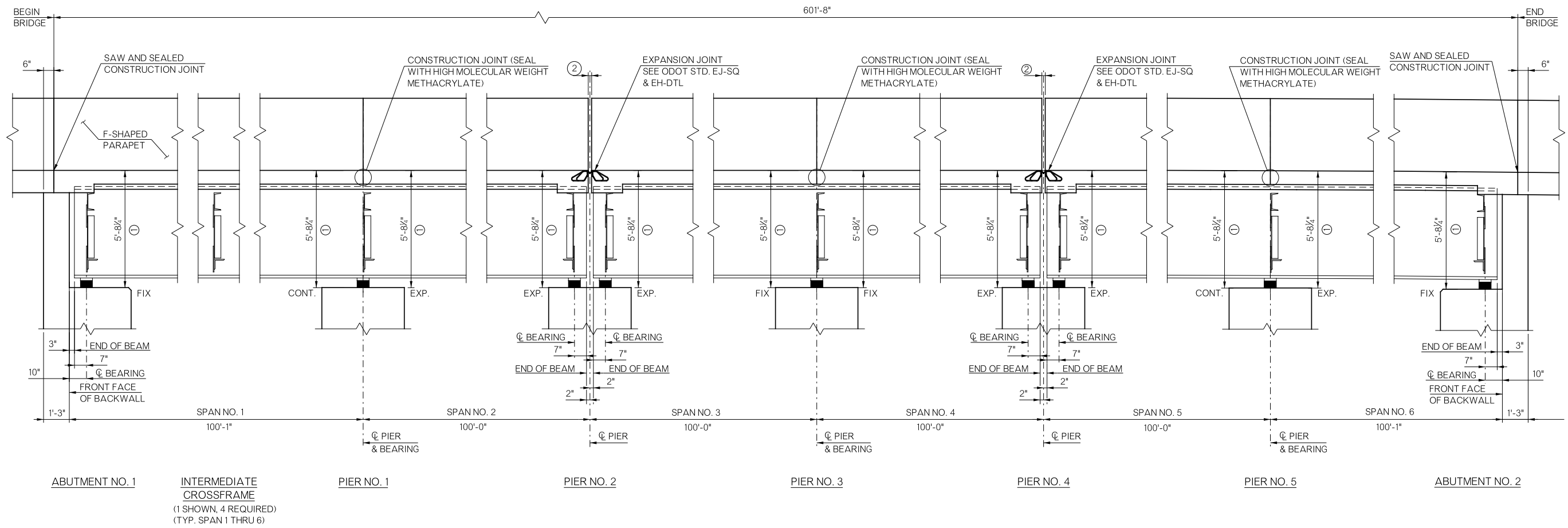
- ① SEE PARPET DETAILS FOR SPACING AND LOCATION.
- ② SEE ODOT STD., FSHP-42 FOR BAR BENDS.
- ③ INCLUDES 3 2'-5" LAPS.

SUPERSTRUCTURE QUANTITIES		
ITEM	UNIT	TOTAL
SAWCUT GROOVING	SY	1940.00
SEALED EXPANSION JOINT	LF	128.00
42" F-SHAPED PARAPET	LF	1204.00
STRUCTURAL STEEL	LB	767000.00
STAINLESS STEEL FIXED BEARING ASSEMBLY	EA	8.00
STAINLESS STEEL EXPANSION BEARING ASSEMBLY	EA	24.00
CLASS AA CONCRETE	CY	530.00
EPOXY COATED REINFORCING STEEL	LB	132000.00
WATER REPELLANT (VISUALLY INSPECTED)	SY	800.00
SEALER CRACK PREPARATION	LF	192.00
SEALER RESIN	GAL	2.50

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BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
 (SHEET 1 OF 15)



LONGITUDINAL SECTION

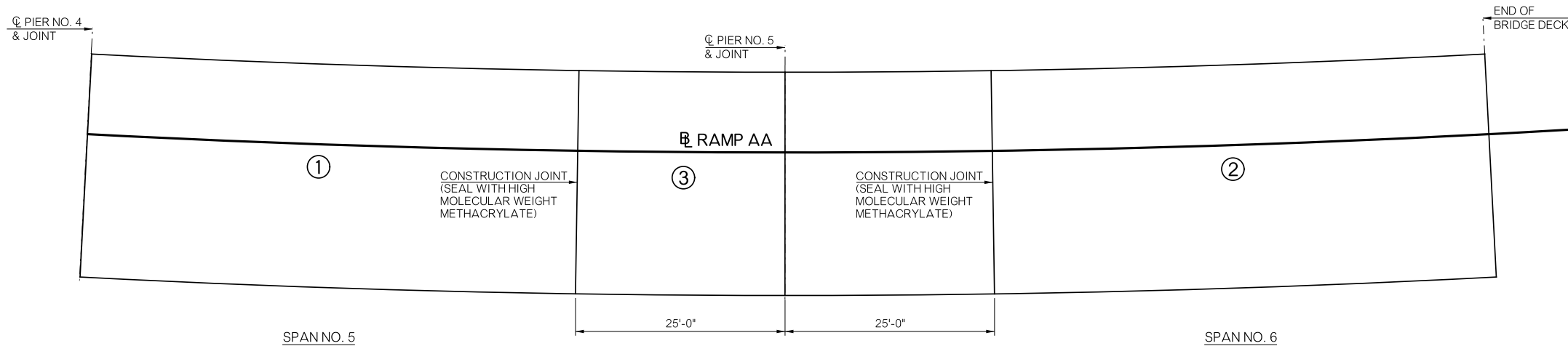
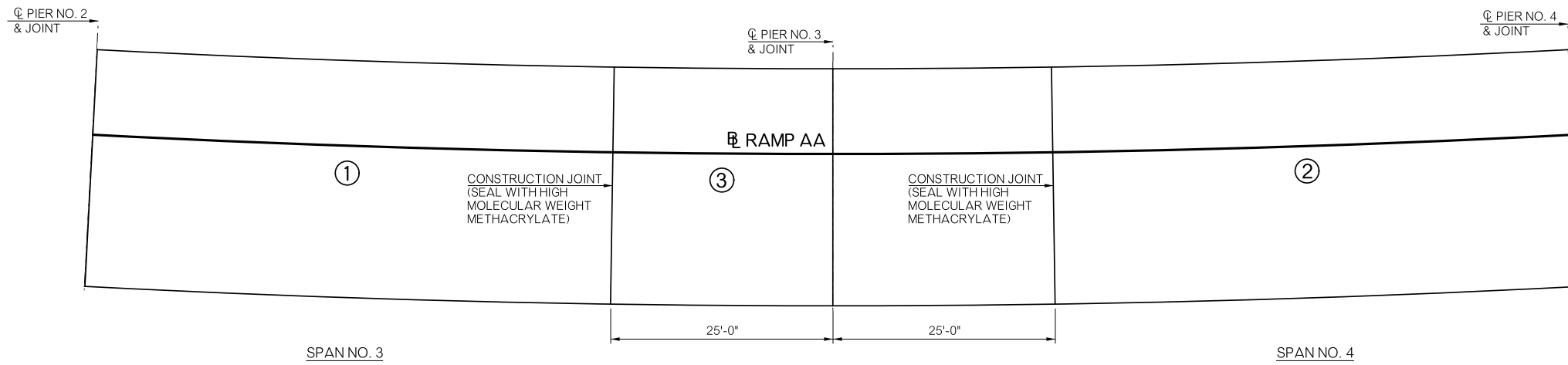
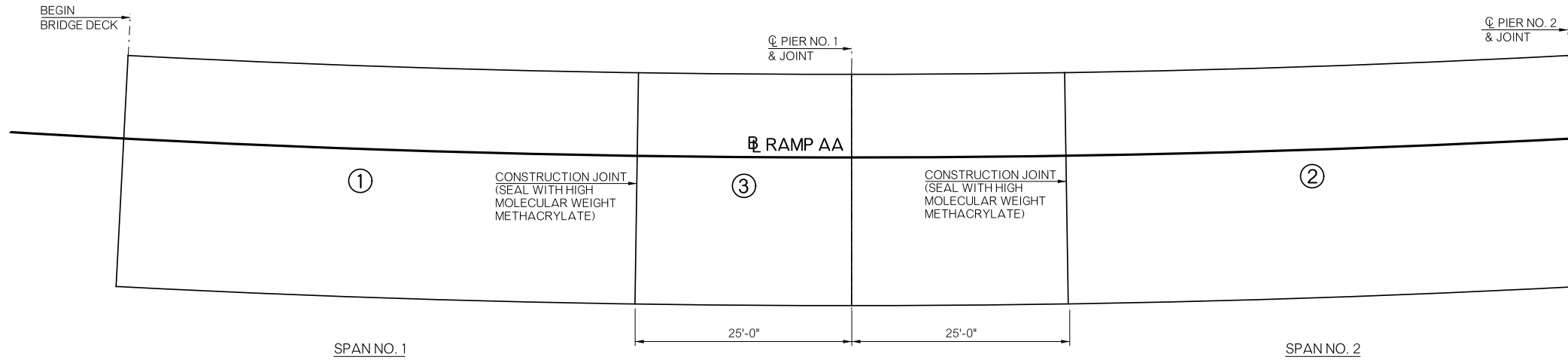
- ① DIMENSION IS FROM TOP OF DECK SLAB TO BOTTOM OF BEARING ASSEMBLY AT ϕ BEARING.
- ② FOR SLAB AND PARAPET OPENINGS SEE EXPANSION JOINT SETTING TABLE.

Expansion Joint Setting Table	
PIER NOS. 1-5	
33°F	2 5/8"
39°F	2 1/2"
44°F	2 3/8"
49°F	2 1/4"
55°F	2 1/8"
60°F	2"
65°F	1 7/8"
71°F	1 3/4"
76°F	1 5/8"
81°F	1 1/2"
87°F	1 3/8"
92°F	1 1/4"
97°F	1 1/8"
103°F	1"
108°F	7/8"
114°F	3/4"
119°F	5/8"
124°F	1/2"

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
(SHEET 2 OF 15)



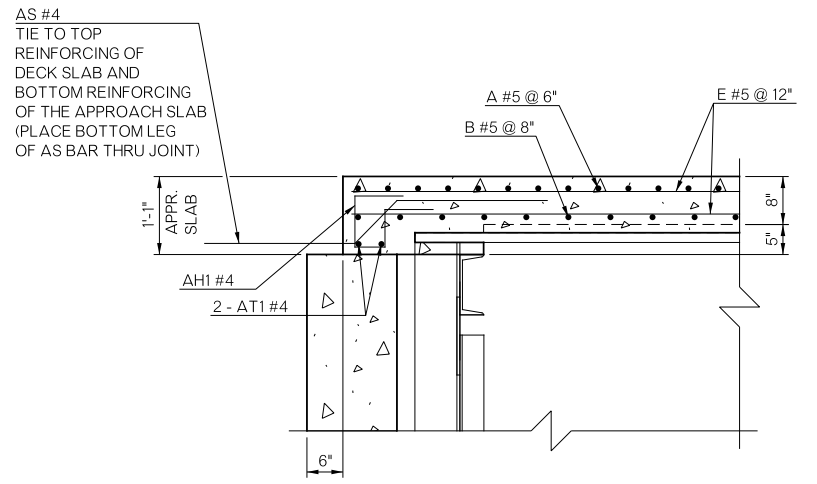
DECK SLAB POURING SEQUENCE DIAGRAM

NOTE:
 THE DECK SLAB IS DIVIDED INTO SECTIONS AS SHOWN. PLACE THE DECK SLAB CONCRETE OF EACH SECTION IN THE NUMERICAL SEQUENCE INDICATED. SECTIONS OF THE DECK SLAB WITH THE SAME NUMBER MAY BE PLACED IN ANY ORDER. DO NOT PLACE CONCRETE FOR HIGHER NUMBERED SECTIONS UNTIL ALL LOWER NUMBERED SECTIONS HAVE BEEN PLACED.

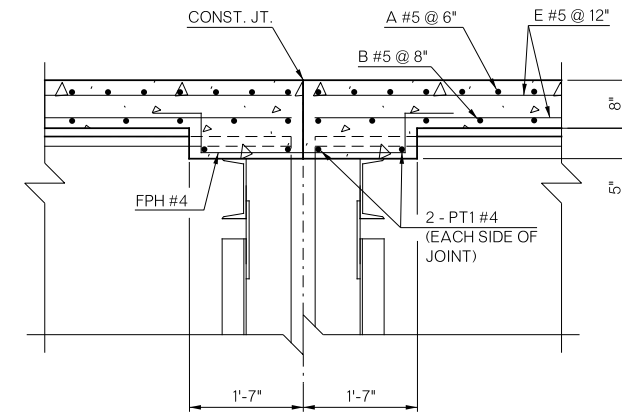
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BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

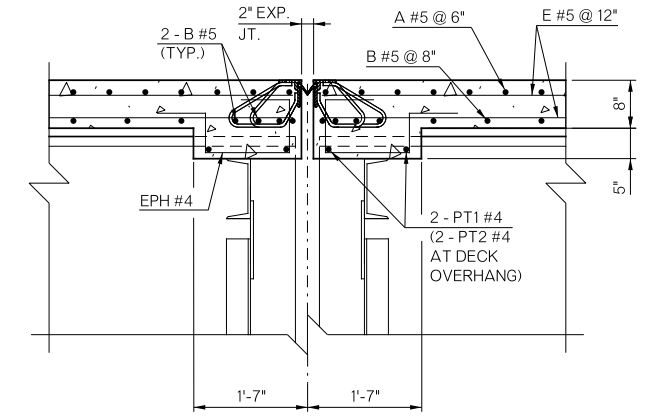
DETAILS OF SUPERSTRUCTURE
 (SHEET 5 OF 15)



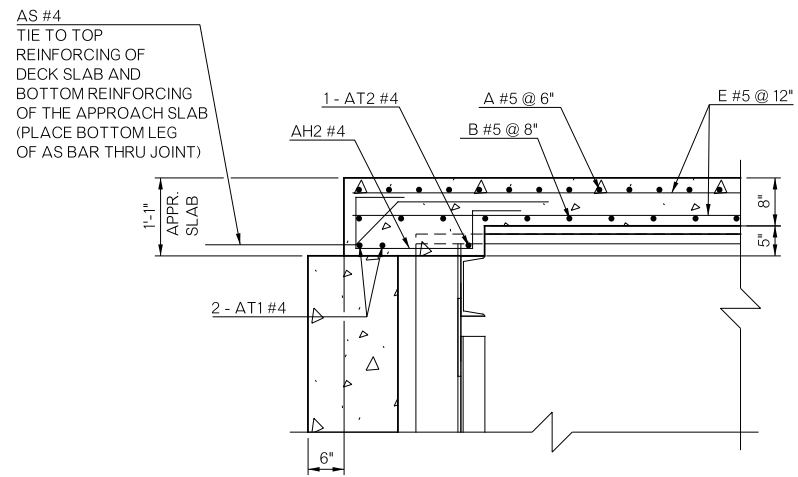
SECTION C



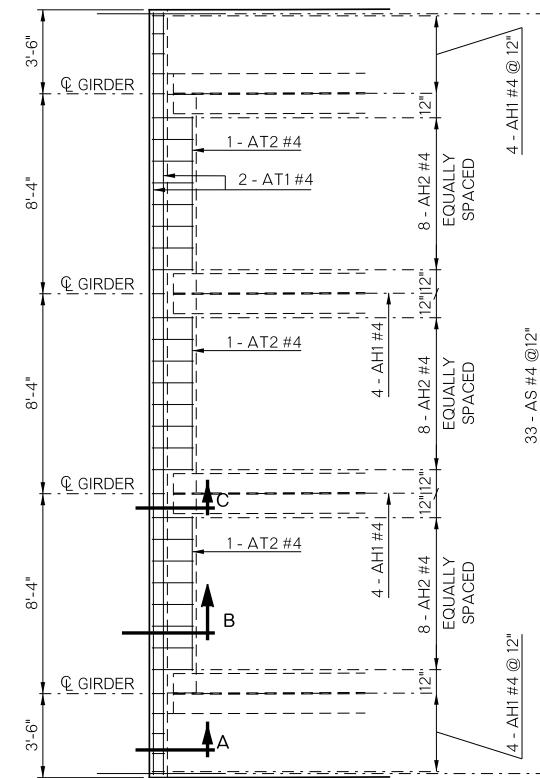
SECTION D



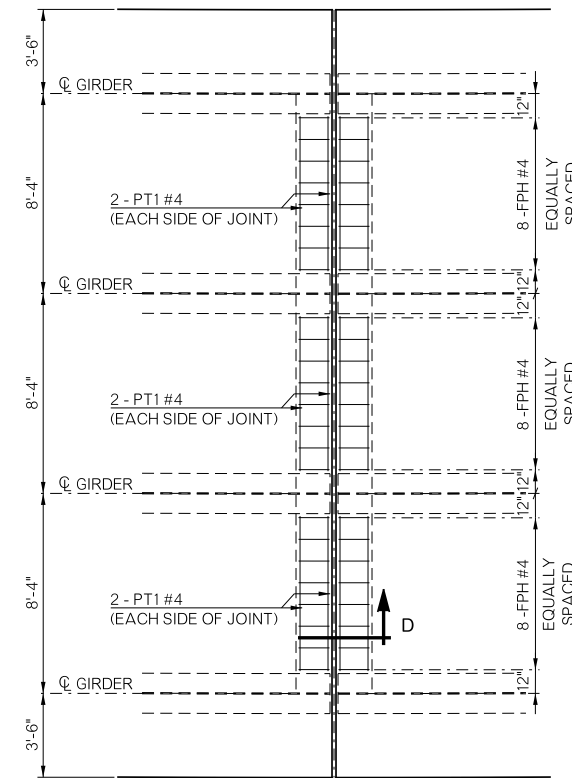
SECTION E



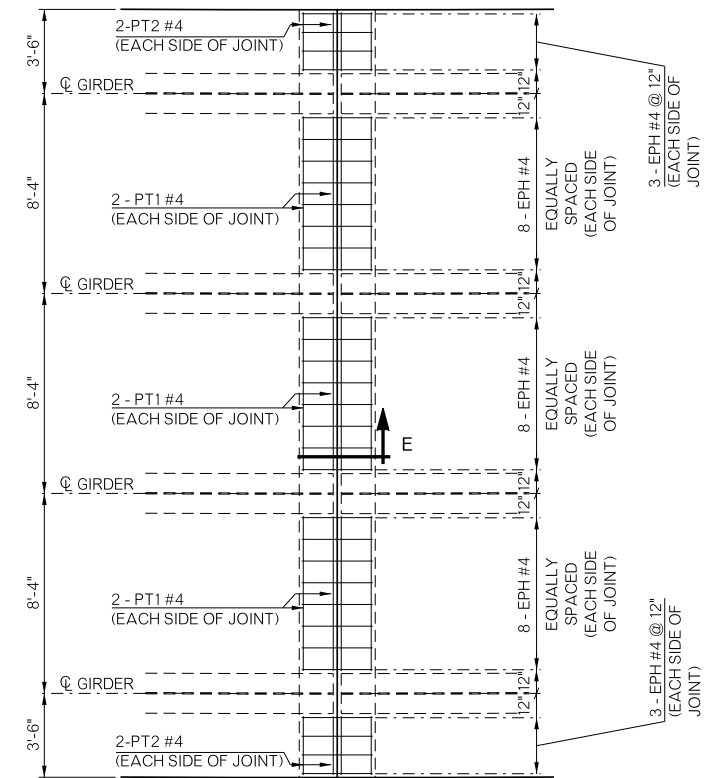
SECTION B



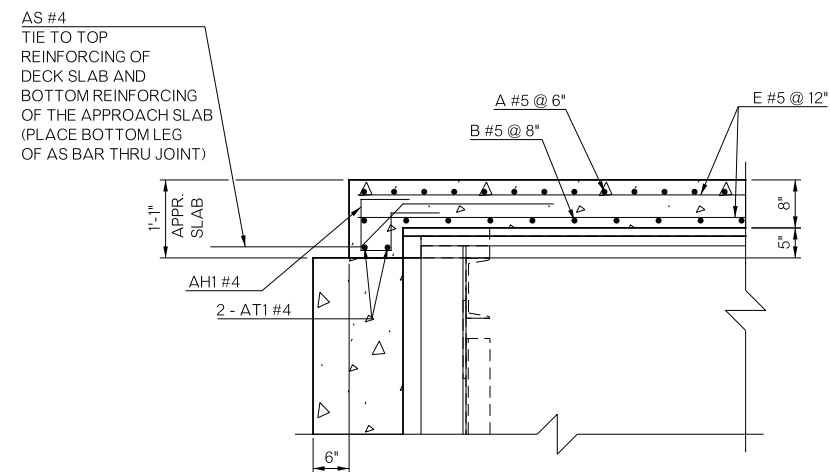
ABUTMENTS



PIER NOS. 1, 3, & 5



PIER NOS. 2 & 4



SECTION A

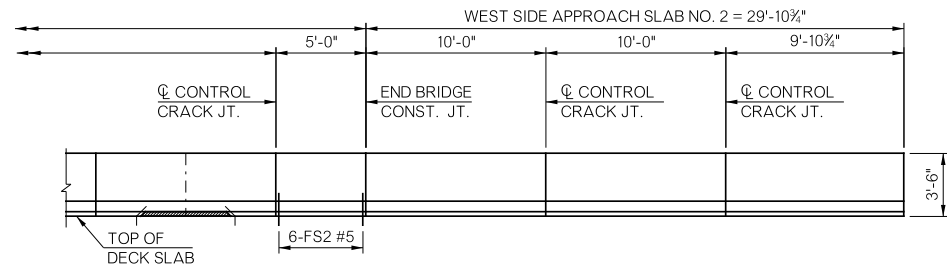
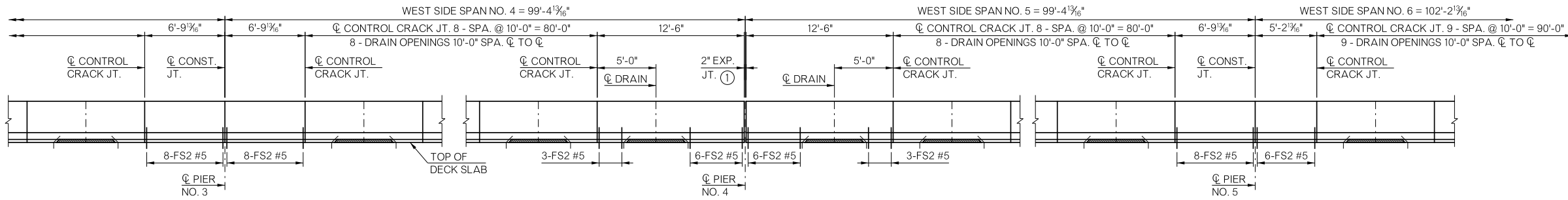
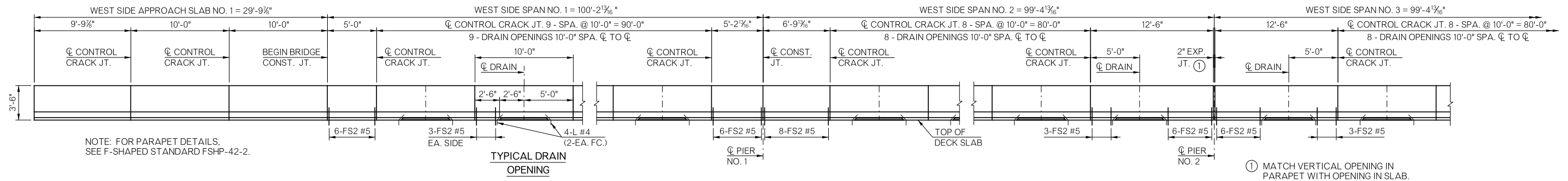
ADDITIONAL SLAB REINFORCING AT DIAPHRAGM PLANS

NOTE:
DECK SLAB REINFORCING NOT SHOWN FOR CLARITY.

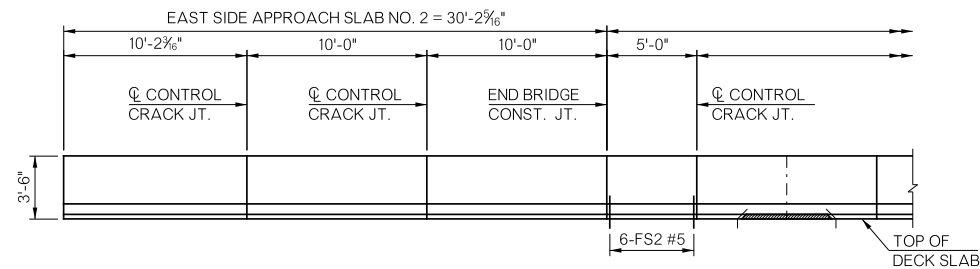
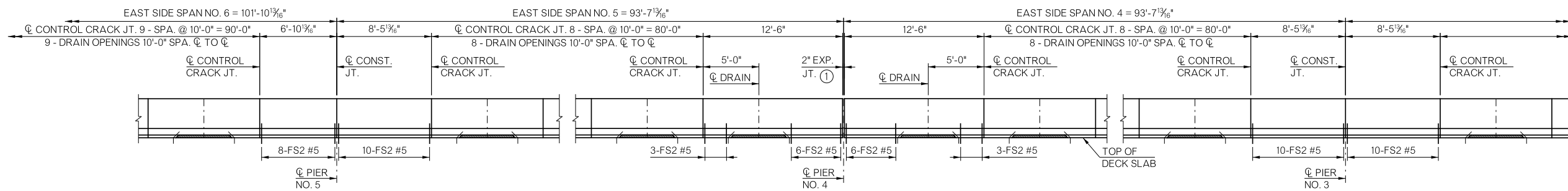
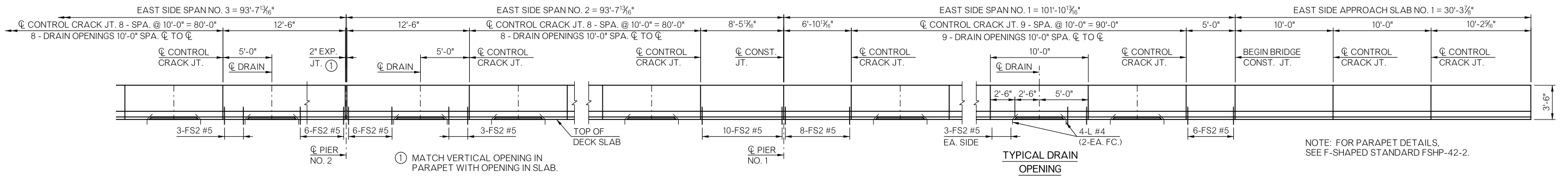
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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
(SHEET 7 OF 15)



WEST ELEVATION - BRIDGE "U"
(INSIDE FACE OF PARAPET SHOWN)

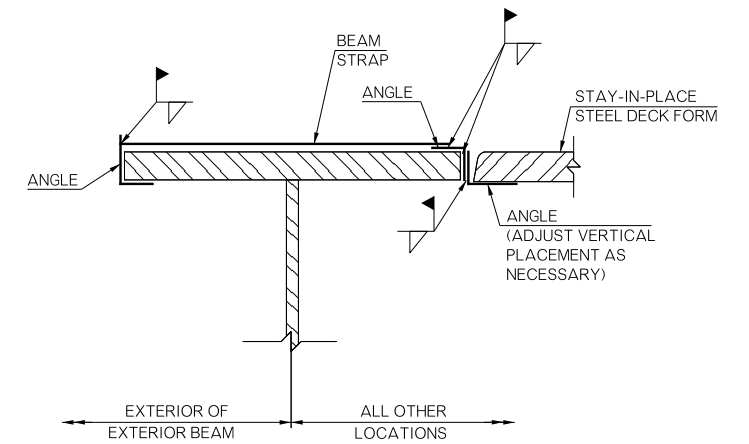
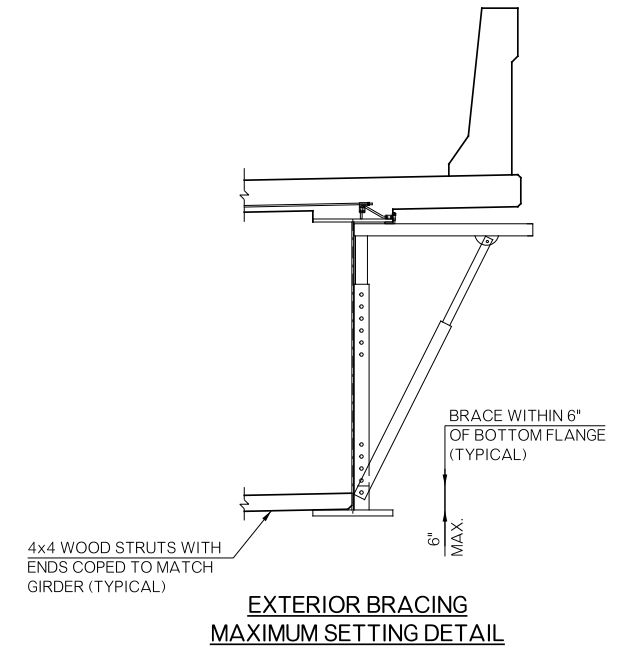
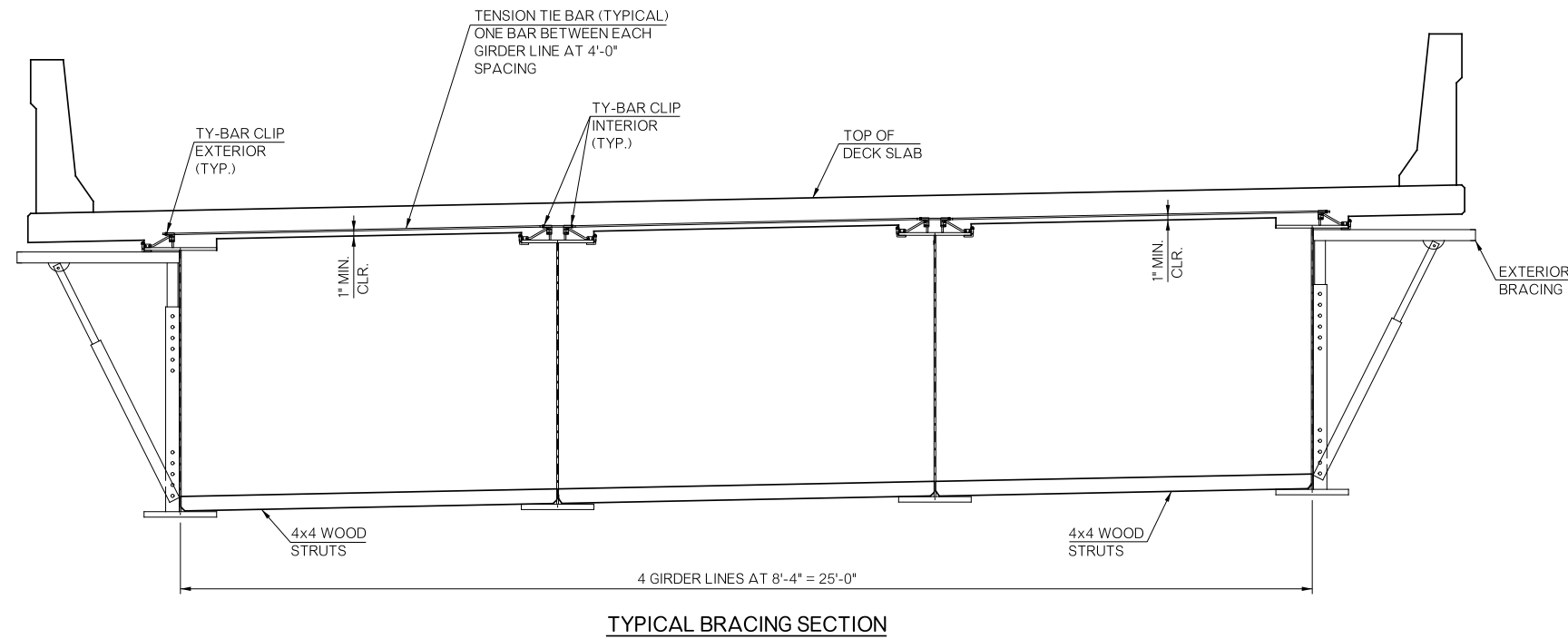
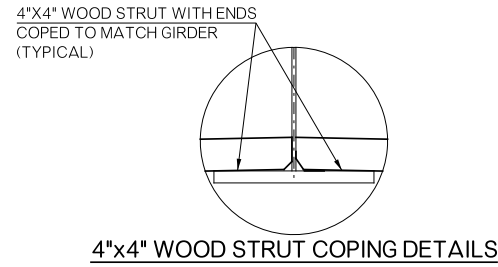


EAST ELEVATION - BRIDGE "U"
(INSIDE FACE OF PARAPET SHOWN)

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
(SHEET 8 OF 15)



NOTES:

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, DRAWINGS OF THE BRACING SYSTEM TO BE USED. BRACING SYSTEM SHALL BE APPROVED BY THE BRIDGE ENGINEER BEFORE ANY FLOOR CONCRETE IS PLACED.

CANTILEVER FORMING BRACKETS SHALL BE USED AT EXTERIOR GIRDERS TO PREVENT GIRDER TWIST. ALL CANTILEVER FORMING BRACKETS SHALL BE ADJUSTABLE AND CAPABLE OF BEING ADJUSTED DURING THE PLACEMENT OF FLOOR CONCRETE IN ORDER TO MAINTAIN PROPER GRADES OF OVERHANG. IF THE CONTRACTOR USES SHIMS TO ADJUST THE FORMING BRACKETS, HE MUST PROVIDE THE ENGINEER A METHOD TO PREVENT THE CRUSH AND SETTLEMENT OF THE SHIMS. THE RESULTING FORCE OF THE LEG BRACE OF THE CANTILEVER BRACKETS SHALL BEAR ON THE WEB AND WITHIN 6 INCHES OF THE BOTTOM FLANGE OF THE GIRDERS. THE GIRDERS SHALL BE TIED TOGETHER AT 4'-0" INTERVALS AS SHOWN ON THE PLANS.

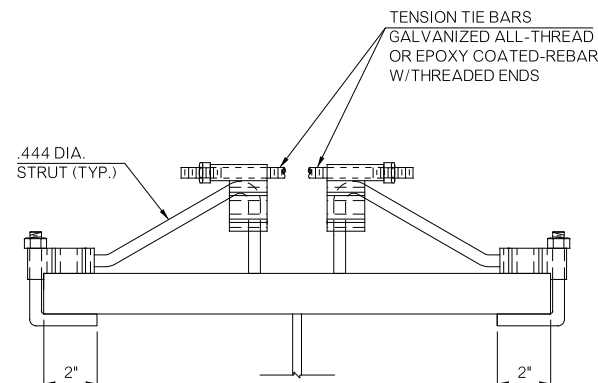
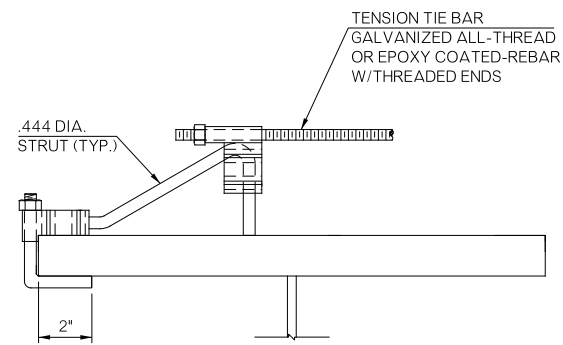
HARDWOOD 4"x4" STRUTS OR MATERIAL OF AN EQUIVALENT STRENGTH SHALL BE WEDGED BETWEEN WEBS OF GIRDERS WITHIN 6" OF THE BOTTOM FLANGE OF EACH GIRDER AT EACH LOCATION WHERE THE TOP OF THE GIRDERS ARE TIED TOGETHER WITH TENSION TIES.

TENSION TIES SHALL BE A MINIMUM #4 EPOXY COATED REINFORCING STEEL BARS WITH THREADED ENDS OR 0.5 INCH GALVANIZED ALL-THREAD, FURNISHED BY THE CONTRACTOR. THE TENSION TIES SHALL BE PLACED PERPENDICULAR TO THE GIRDERS AND SHALL HAVE A MINIMUM CLEARANCE FROM THE DECK FORMWORK AS THE BOTTOM MATTE OF TRANSVERSE REINFORCING BARS.

TENSION TIES SHALL BE ATTACHED TO THE TOP FLANGE OF GIRDERS BY MEANS OF EPOXY COATED TY-BAR CLIPS AS SHOWN ON THE DETAILS. WELDING CLIPS TO THE TOP FLANGE OF GIRDERS SHALL NOT BE PERMITTED.

IF THE CONTRACTOR ELECTS TO USE A FORMWORK BRACING SYSTEM OTHER THAN IS SHOWN IN THE PLANS, THE CONTRACTOR SHALL SUBMIT WORKING DRAWINGS AND CALCULATIONS OF THE BRACING SYSTEM TO THE ENGINEER FOR APPROVAL. DRAWINGS AND CALCULATIONS OF THE PROPOSED BRACING SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OKLAHOMA.

ALL COST FOR BRACING AND FORMWORK SHALL BE INCLUDED IN OTHER ITEMS OF WORK.

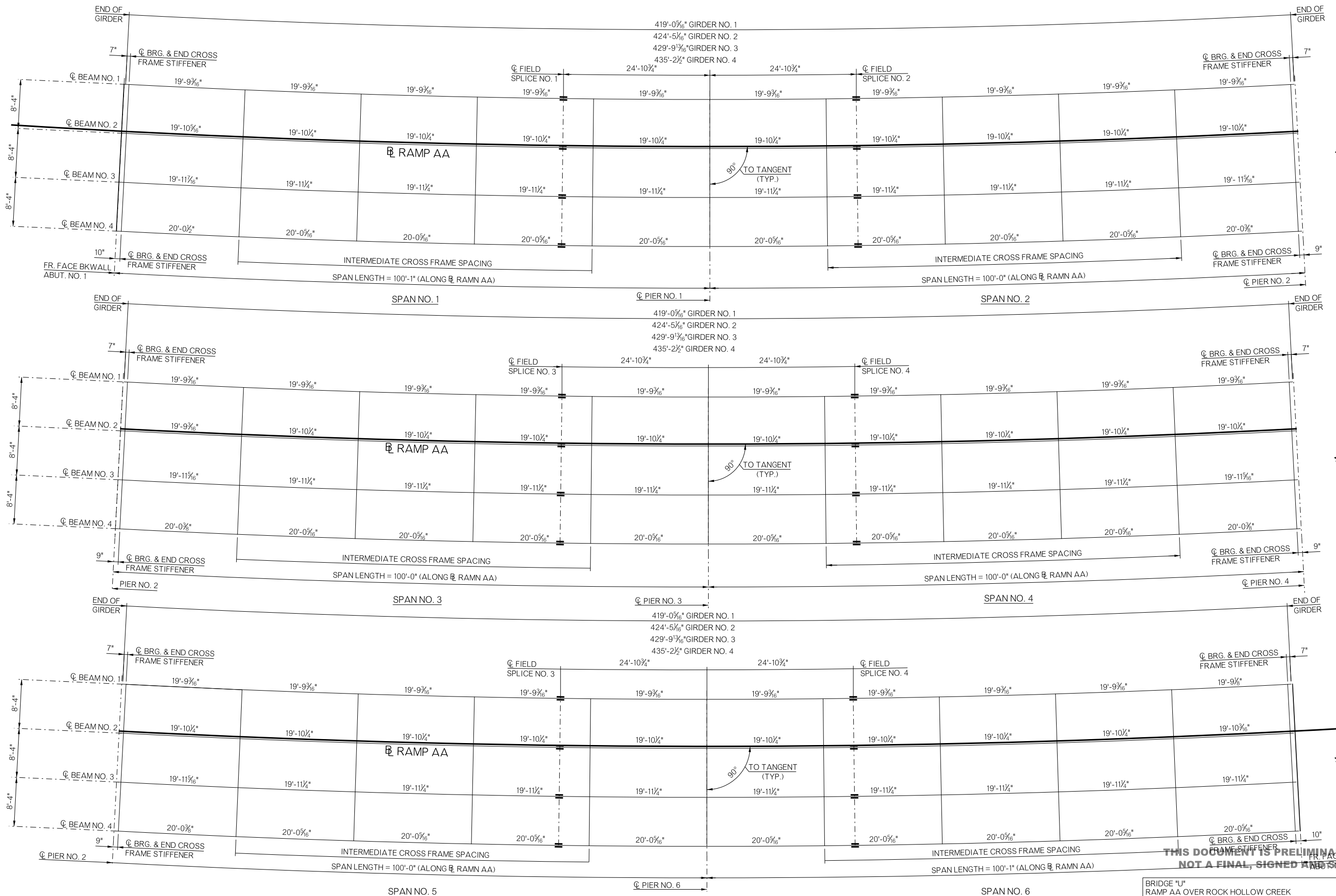


NOTE:
DO NOT WELD TO THE TOP FLANGE OR STUDS. REPORT ANY ARC STRIKE, WELD SPLATTER OR WELDING ON TOP FLANGE TO BRIDGE ENGINEER IMMEDIATELY.

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

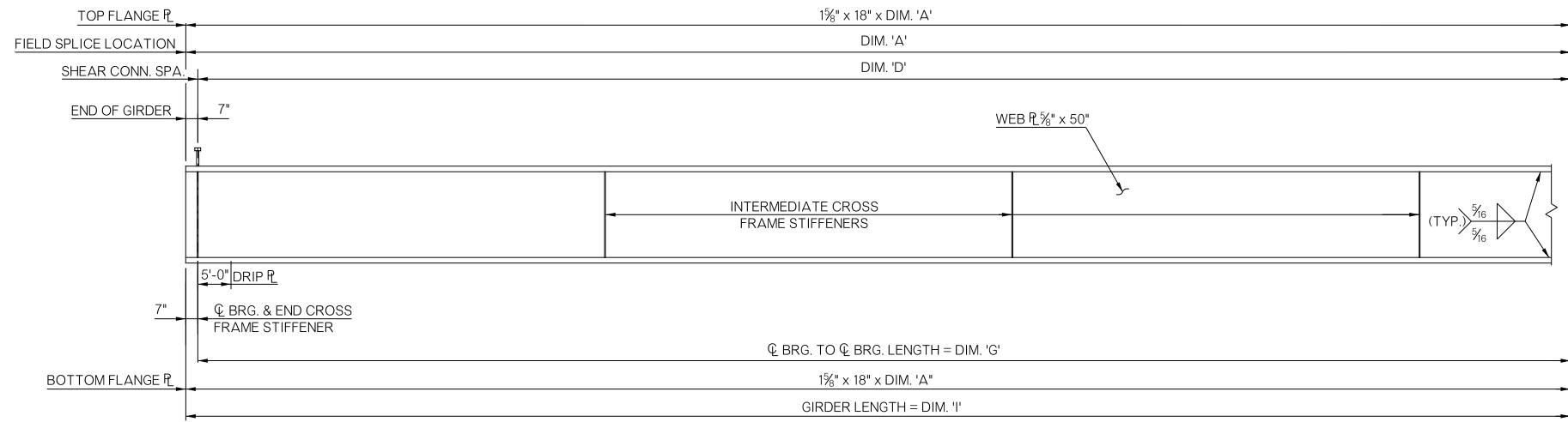
DETAILS OF SUPERSTRUCTURE
(SHEET 9 OF 15)



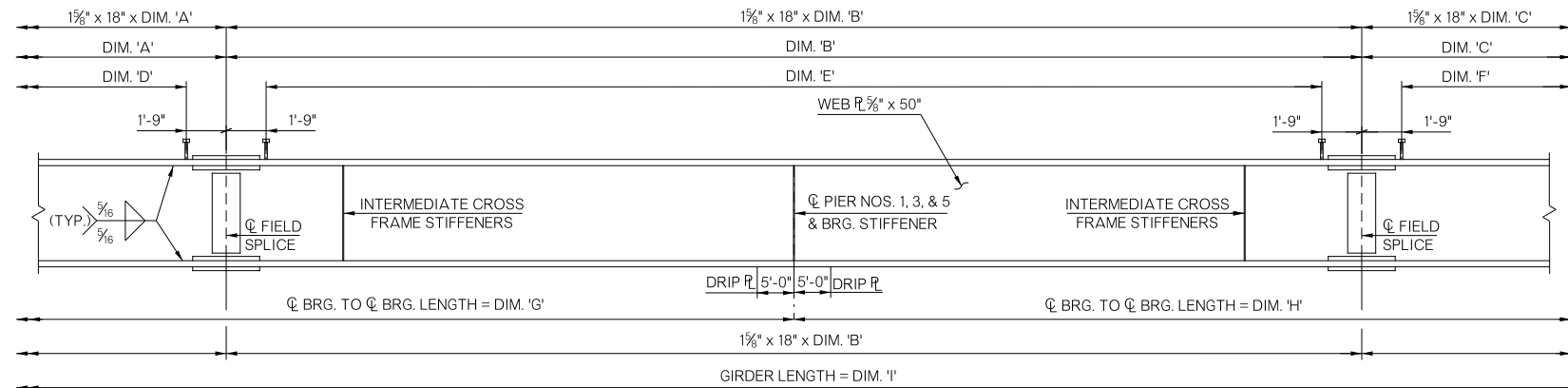
GIRDER FRAMING PLAN
(DIMENSIONS SHOWN ARE ALONG C GIRDER)

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK
DETAILS OF SUPERSTRUCTURE
(SHEET 10 OF 15)

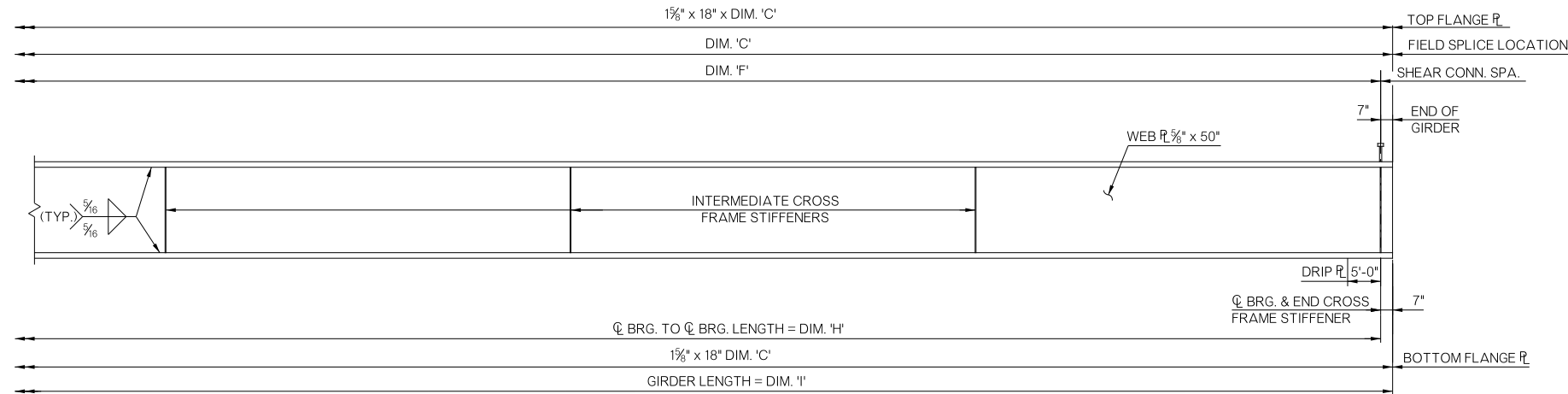


SPAN NOS. 1, 3 & 5



SPAN NOS. 1, 3, & 5

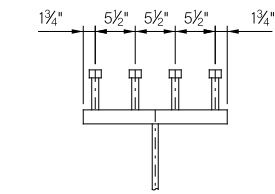
SPAN NOS. 2, 4, & 6



SPAN NOS. 2, 4, & 6

GIRDER ELEVATION

TABLE OF DIMENSIONS									
SPAN NOS. 1 & 2									
GIRDER NO.	DIMENSION 'A'	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	DIMENSION 'E'	DIMENSION 'F'	DIMENSION 'G'	DIMENSION 'H'	DIMENSION 'I'
1	74'-6 1/4"	49'-9 1/2"	74'-6 1/4"	72'-2 1/4"	46'-3 1/2"	72'-2 1/4"	98'-1 0"	98'-1 0"	198'-1 0"
2	74'-10 3/16"	50'-0 1/8"	74'-10 1/8"	72'-6 3/16"	46'-6 1/8"	72'-6 1/8"	99'-3 3/16"	99'-3 3/16"	199'-8 7/16"
3	75'-2 3/16"	50'-2 11/16"	75'-2 1/16"	72'-10 3/16"	46'-8 11/16"	72'-10 1/16"	99'-8 1/2"	100'-3 7/16"	200'-6 15/16"
4	75'-6 1/8"	50'-5 5/16"	75'-5 15/16"	73'-2 1/8"	46'-11 5/16"	73'-1 15/16"	100'-8 3/4"	100'-1 5/8"	201'-5 3/8"
SPAN NOS. 3 & 4									
GIRDER NO.	DIMENSION 'A'	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	DIMENSION 'E'	DIMENSION 'F'	DIMENSION 'G'	DIMENSION 'H'	DIMENSION 'I'
1	74'-6 1/4"	49'-9 1/2"	74'-6 1/4"	72'-2 1/4"	46'-3 1/2"	72'-2 1/4"	98'-1 0"	98'-1 0"	198'-1 0"
2	74'-10 1/8"	50'-0 1/8"	74'-10 1/8"	72'-6 1/8"	46'-6 1/8"	72'-6 1/8"	99'-3 3/16"	99'-3 3/16"	199'-8 7/16"
3	75'-2 1/16"	50'-2 11/16"	75'-2 1/16"	72'-10 1/16"	46'-8 11/16"	72'-10 1/16"	99'-8 7/16"	99'-8 7/16"	200'-6 13/16"
4	75'-5 15/16"	50'-5 5/16"	75'-5 15/16"	73'-1 15/16"	46'-11 5/16"	73'-1 15/16"	100'-1 5/8"	100'-1 5/8"	201'-5 1/4"
SPAN NOS. 5 & 6									
GIRDER NO.	DIMENSION 'A'	DIMENSION 'B'	DIMENSION 'C'	DIMENSION 'D'	DIMENSION 'E'	DIMENSION 'F'	DIMENSION 'G'	DIMENSION 'H'	DIMENSION 'I'
1	74'-6 1/4"	49'-9 1/2"	74'-6 3/16"	72'-2 1/4"	46'-3 1/2"	72'-2 3/16"	98'-1 0"	98'-9 15/16"	198'-9 15/16"
2	74'-10 1/8"	50'-0 1/8"	74'-10 1/8"	72'-6 1/8"	46'-6 1/8"	72'-6 1/8"	99'-3 3/16"	99'-3 1/8"	199'-8 3/8"
3	75'-2 1/16"	50'-2 11/16"	75'-2"	72'-10 1/16"	46'-8 11/16"	72'-1 0"	99'-8 7/16"	99'-8 3/8"	200'-6 3/4"
4	75'-5 15/16"	50'-5 5/16"	75'-5 15/16"	73'-1 15/16"	46'-11 5/16"	73'-1 15/16"	100'-1 5/8"	100'-1 9/16"	201'-5 3/16"

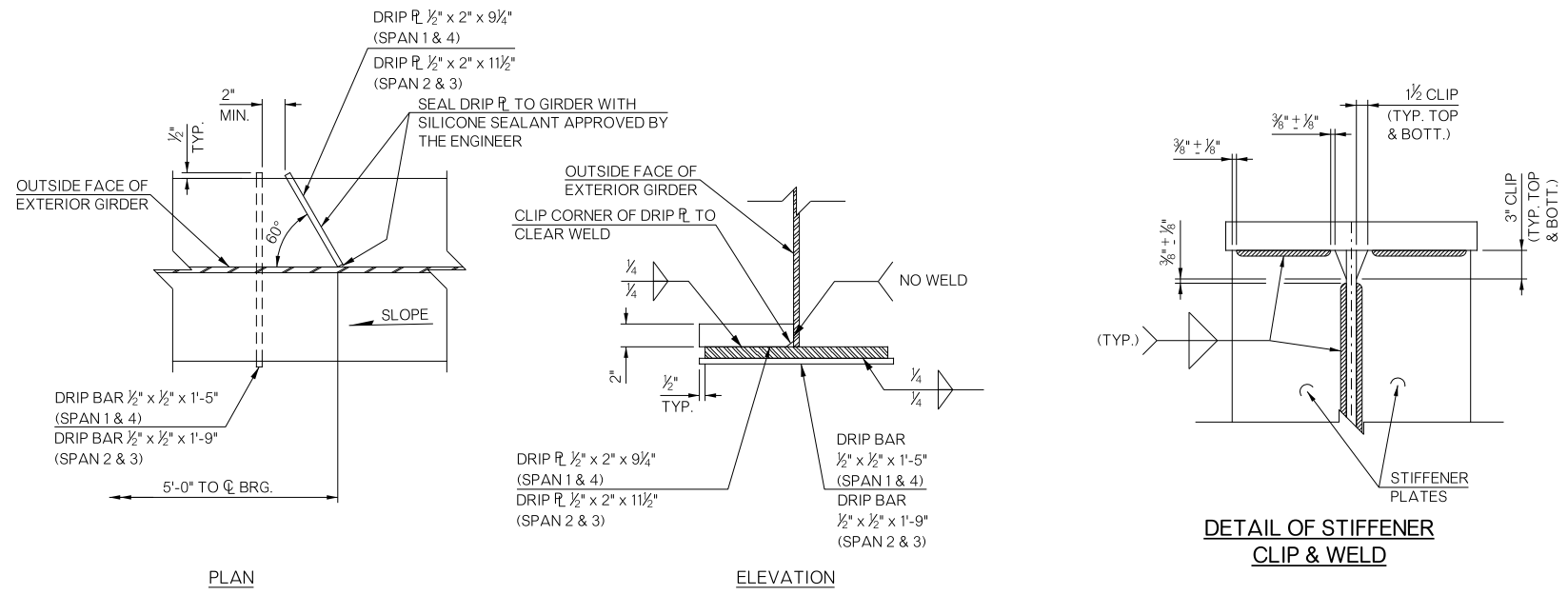


DETAIL OF STUD SHEAR CONNECTORS

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
(SHEET 11 OF 15)

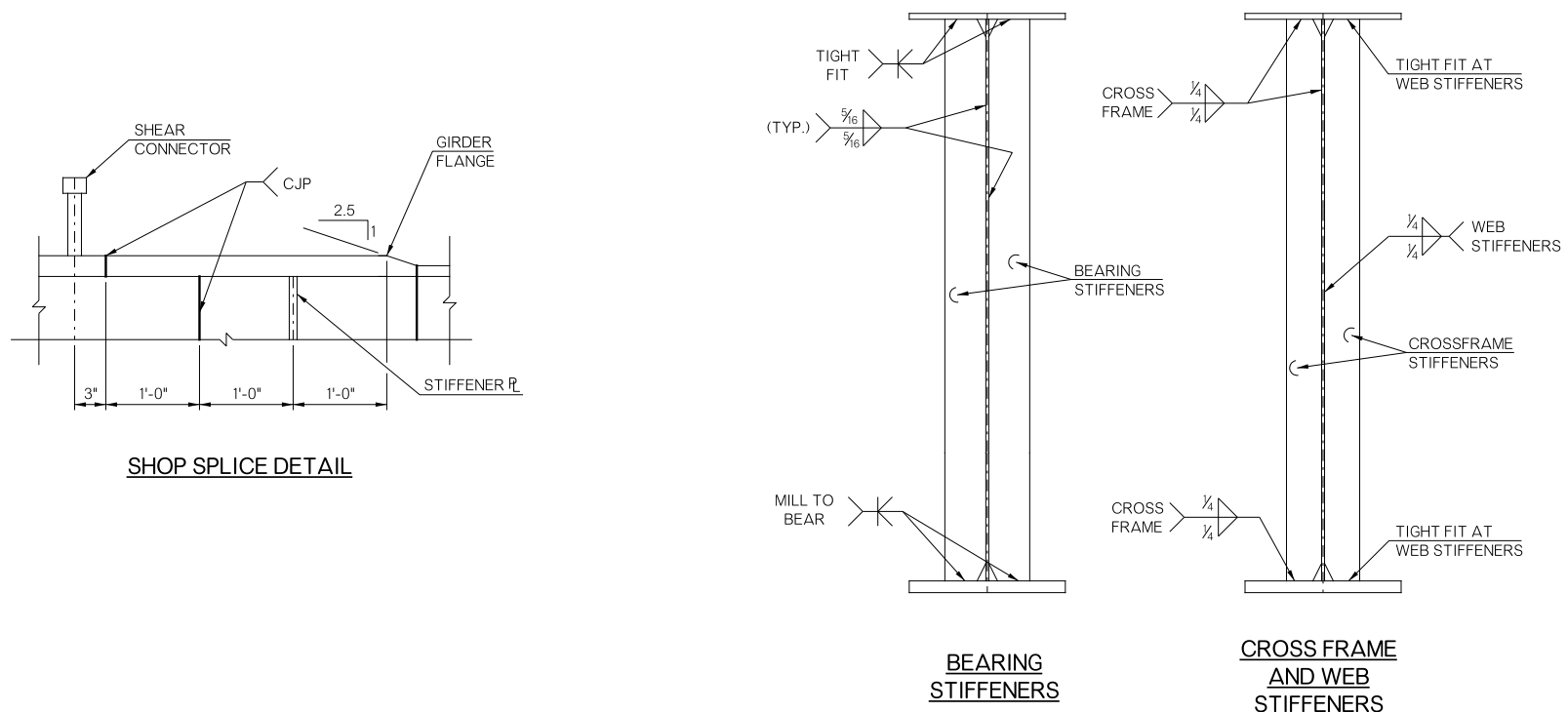


DRIP PLATE AND DRIP BAR DETAILS

NOTES:

- CROSS FRAME STIFFENERS SHALL BE PLACED ONE EACH FACE OF WEB FOR INTERIOR GIRDERS. EXTERIOR GIRDERS SHALL HAVE CROSS FRAME STIFFENERS AT INTERIOR WEB FACE ONLY.
- ALL FLANGE PLATES, WEB PLATES, AND FIELD SPLICE PLATES SHALL CONFORM TO THE CHARPY V-NOTCH REQUIREMENTS.
- FOR LAYOUT OF ENTIRE GIRDER, SEE FRAMING PLAN SHEET.
- ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.
- ϕ BRG. TO ϕ BRG. LENGTH IS TAKEN ALONG THE GIRDER WEB AND TOP FLANGE WITH DIAPHRAGMS PLACED RADIALLY OR PERPENDICULAR TO ϕ GIRDER.
- GIRDERS SHOWN ON THIS SHEET ARE DRAWN AND DIMENSIONS SHOWN AS IF THE TOP FLANGE OF GIRDERS WERE IN A TRULY HORIZONTAL POSITION. SHOP DRAWINGS SHALL INCLUDE ADJUSTMENTS AS NECESSARY TO ACCOUNT FOR VERTICAL CURVE AND DEAD LOAD DEFLECTIONS.
- DRIP PLATES SHALL BE PLACED ON THE OUTSIDE OF THE EXTERIOR GIRDERS AT THE DISTANCE FROM THE SUBSTRUCTURE SHOWN IN THE DETAILS ON THE UP GRADE SIDE OF THE SUBSTRUCTURE. ALL COST OF DRIP PLATE, WELD, CAULK, AND LABOR NEEDED FOR INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID PER LB. FOR "STRUCTURAL STEEL."

STEEL GIRDER FABRICATION AND ERECTION:
 THE CONTRACTOR SHALL ANALYZE THE STRUCTURAL BEHAVIOR OF STEEL GIRDERS AND COMPONENTS FOR EACH STAGE THAT MAY BE CRITICAL DURING FABRICATION, HANDLING, TRANSPORTATION, AND ERECTION OF THE BRIDGE. BASED ON THE PROPOSED ERECTION SEQUENCE, THE CONTRACTOR SHALL DETERMINE THE LIFTING AND SUPPORT REQUIREMENTS INCLUDING STRESSES OF THE STEEL GIRDERS AND COMPONENTS. THE CONTRACTOR SHALL DETERMINE NEED AND EXTENTS FOR TEMPORARY SUPPORT OR SHORING DURING FABRICATION, HANDLING, TRANSPORTATION, AND ERECTION. INCLUDE ALL COSTS ASSOCIATED WITH THE MATERIALS AND LABOR FOR FABRICATION, HANDLING, TRANSPORTATION AND ERECTION AS WELL AS THE COSTS ASSOCIATED WITH THE ENGINEERING SERVICES NECESSARY TO DESIGN, DRAFT, INSPECT, OR CERTIFY THE FABRICATION, HANDLING, TRANSPORTATION AND ERECTION IN THE PRICE BID FOR STRUCTURAL STEEL. ALL DOCUMENTS, INCLUDING BUT NOT LIMITED TO, DESIGN CALCULATIONS, MATERIAL LISTS, CONSTRUCTION SEQUENCE (FABRICATION, HANDLING, TRANSPORTATION AND ERECTION SEQUENCE), AND ERECTION DRAWINGS MUST BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED BY THE STATE OF OKLAHOMA.



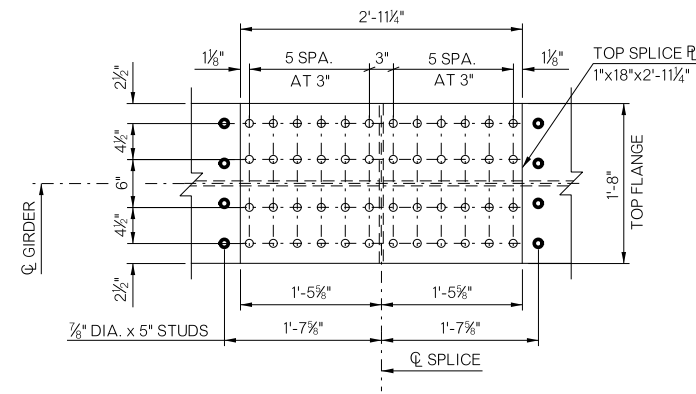
NOTE: OMIT CROSS FRAME STIFFENERS AT OUTSIDE FACE OF EXTERIOR GIRDERS.

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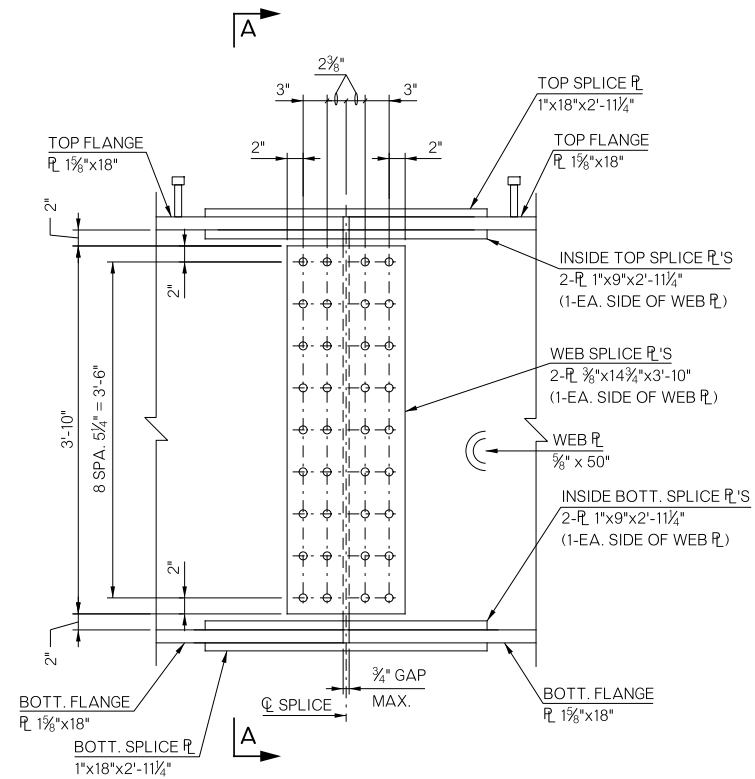
BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
 (SHEET 12 OF 15)

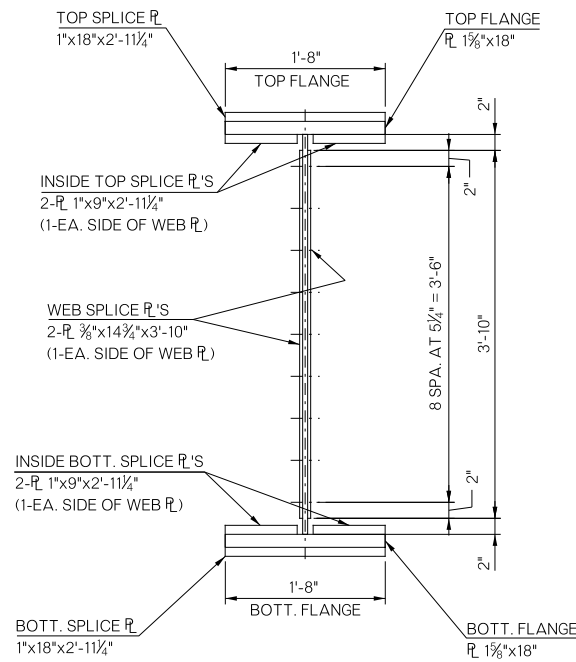
State Job No. 24428 (12) Sheet No. B196



OUTSIDE TOP FLANGE
(48-7/8" DIA. BOLTS)



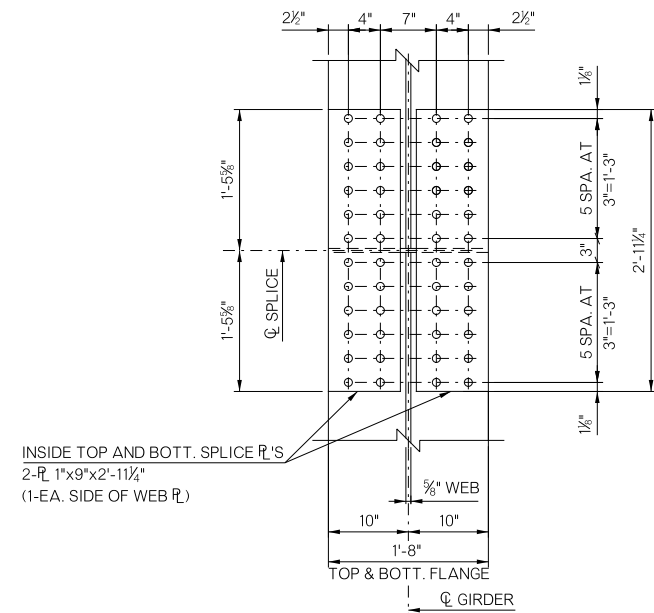
ELEVATION
(36-7/8" DIA. BOLTS)



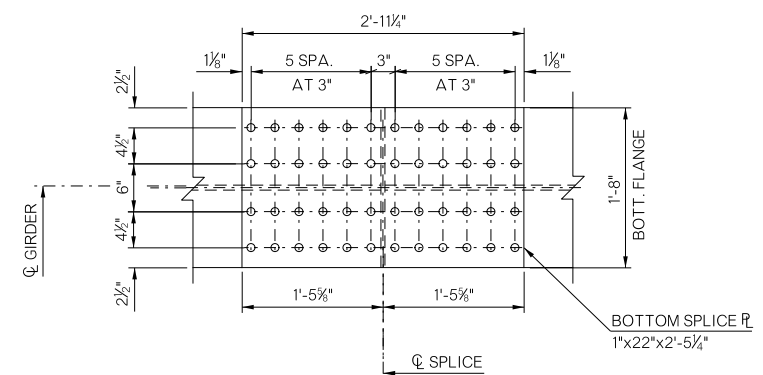
SECTION A-A
(132-7/8" DIA. BOLTS
REQUIRED AT EACH FIELD SPLICE)

- NOTES:
1. ALL CONTACTING STEEL SURFACES OF FIELD SPLICES SHALL BE CLEANED FREE OF RUST OR ANY FOREIGN MATTER IN ACCORDANCE WITH SECTION 506.04. BLAST CLEAN SURFACES TO THE REQUIREMENTS OF SSPC-SP6 FOR "COMMERCIAL BLAST CLEANING" BEFORE ASSEMBLING BOLTED CONNECTIONS.
 2. ALL BOLTED CONNECTIONS SHALL USE 7/8" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED.
 3. ALL SPLICE PLATES SHALL BE M270 GRADE 50W STEEL.
 4. BOLT HOLES SHALL BE 15/16" DIA.

FIELD SPLICE DETAILS



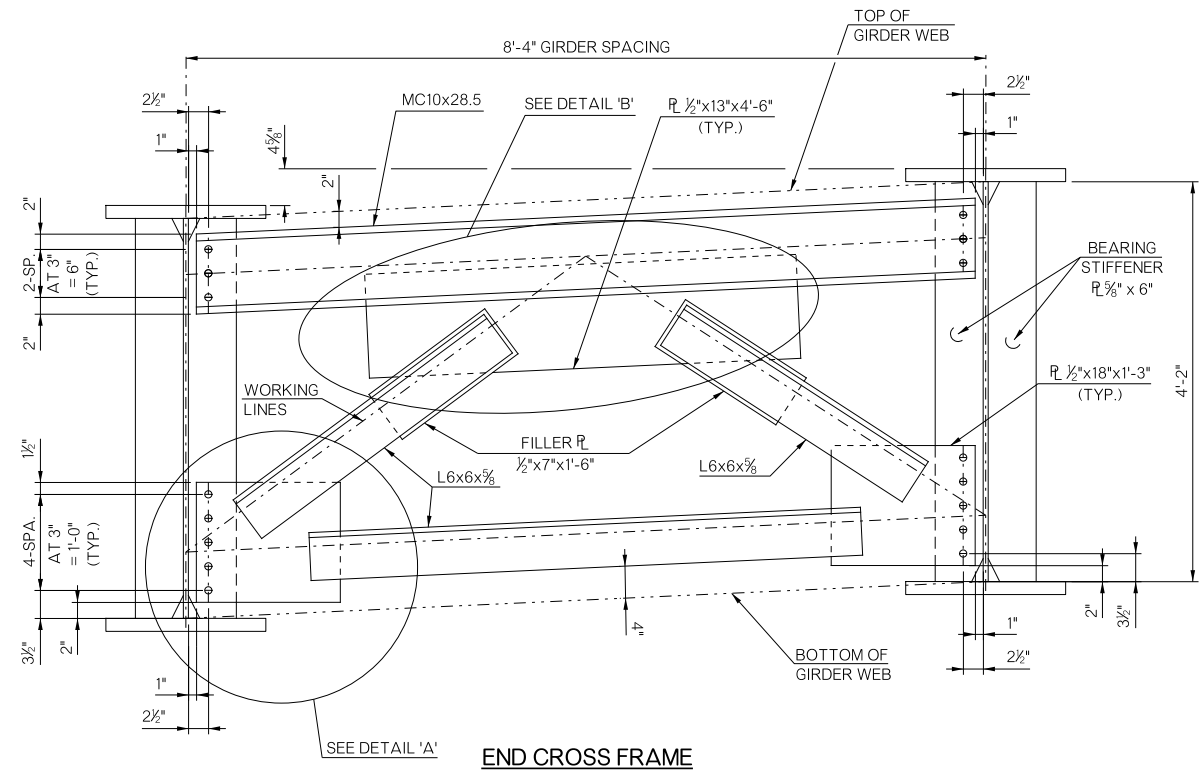
INSIDE TOP AND BOTTOM FLANGE



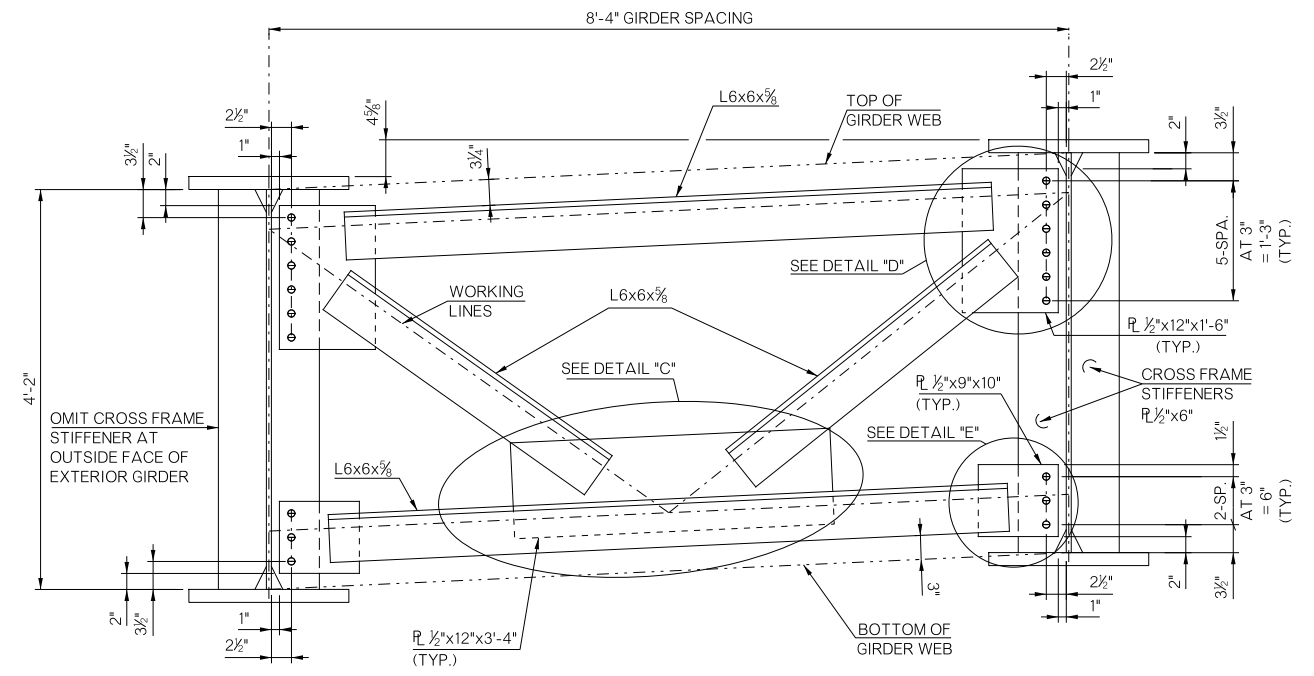
OUTSIDE BOTTOM FLANGE
(48-7/8" DIA. BOLTS)

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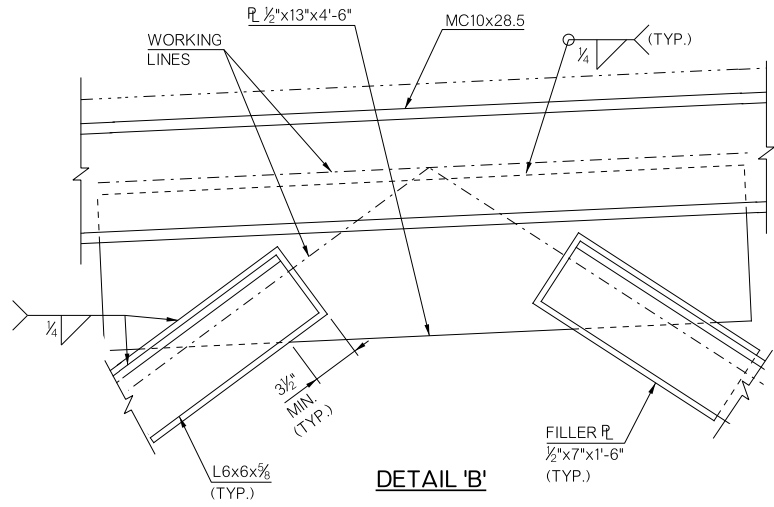
BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK
DETAILS OF SUPERSTRUCTURE
(SHEET 13 OF 15)



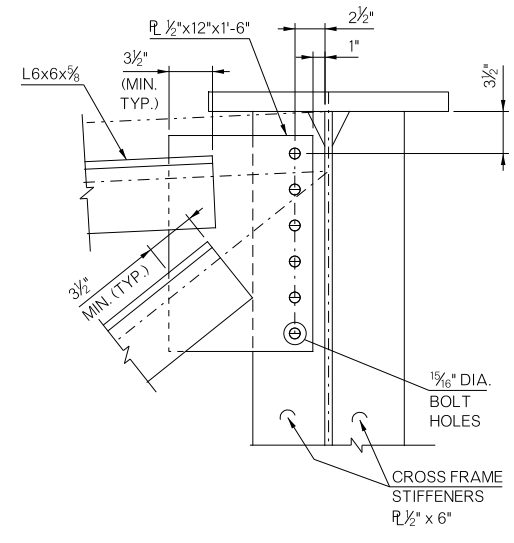
END CROSS FRAME



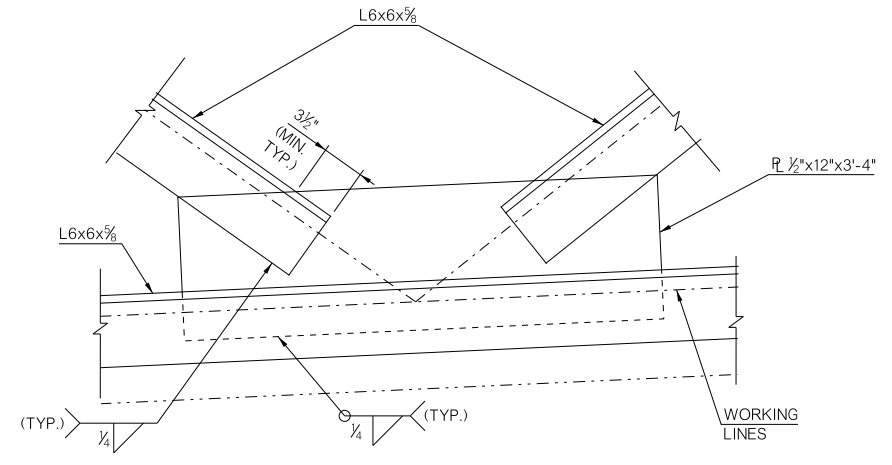
INTERMEDIATE CROSS FRAME



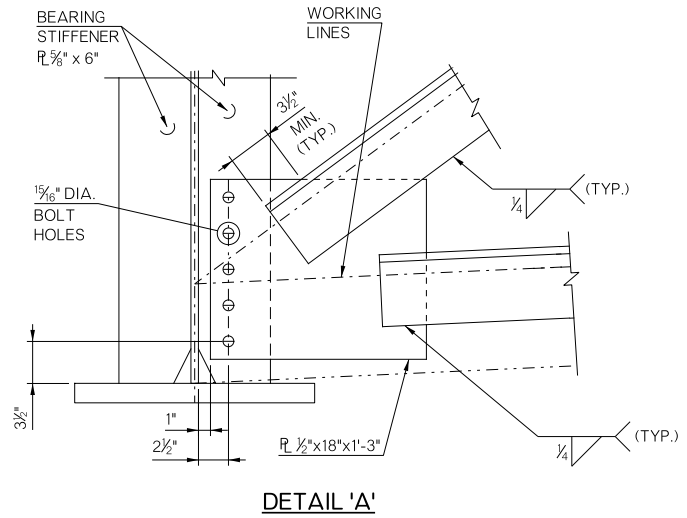
DETAIL 'B'



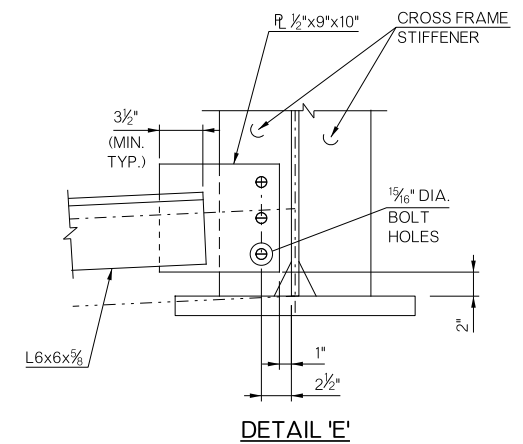
DETAIL 'D'



DETAIL 'C'



DETAIL 'A'



DETAIL 'E'

NOTES:

ALL BOLTED CONNECTIONS SHALL USE 7/8" DIA. HIGH STRENGTH BOLTS (A325) WITH DIRECT TENSION INDICATORS AS SPECIFIED IN SECTION 506 OF THE STANDARD SPECIFICATIONS. THE "CALIBRATED WRENCH" METHOD SHALL NOT BE USED. BOLT HOLES SHALL BE 1/16" DIA.

ALL STRUCTURAL STEEL SHALL BE M270 GRADE 50W STEEL.

ALL FILLET WELDS SHALL BE TERMINATED 3/8" (± 1/8") FROM EDGE OF ANGLES OR STIFFENER PLATES AS PER AWS D1.5 SECTION 9.15.

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF SUPERSTRUCTURE
(SHEET 14 OF 15)

DEFLECTION SCHEDULE

GIRDER NO. 1

TENTH POINT

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
① GIRDER & DIAPHRAGM DEFLECTION	0.000	-0.096	-0.17	-0.219	-0.246	-0.238	-0.201	-0.15	-0.08	-0.035	0.000	-0.017	-0.072	-0.124	-0.186	-0.217	-0.23	-0.21	-0.16	-0.091	0.000
① DECK SLAB, HAUNCH, SP, & CONCRETE PARAPET DEFLECTION	0.000	-0.313	-0.553	-0.721	-0.815	-0.801	-0.688	-0.525	-0.293	-0.134	0.000	-0.026	-0.165	-0.304	-0.477	-0.568	-0.611	-0.562	-0.431	-0.246	0.000

GIRDER NO. 2

TENTH POINT

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
① GIRDER & DIAPHRAGM DEFLECTION	0.000	-0.093	-0.164	-0.212	-0.237	-0.23	-0.194	-0.145	-0.078	-0.034	0.000	-0.017	-0.07	-0.121	-0.18	-0.211	-0.223	-0.203	-0.155	-0.088	0.000
① DECK SLAB, HAUNCH, SP, & CONCRETE PARAPET DEFLECTION	0.000	-0.301	-0.532	-0.693	-0.784	-0.769	-0.663	-0.504	-0.283	-0.129	0.000	-0.027	-0.164	-0.299	-0.466	-0.554	-0.595	-0.546	-0.419	-0.239	0.000

GIRDER NO. 3

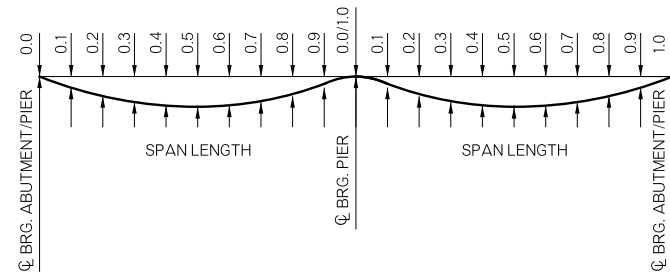
TENTH POINT

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
① GIRDER & DIAPHRAGM DEFLECTION	0.000	-0.09	-0.157	-0.204	-0.228	-0.222	-0.187	-0.14	-0.075	-0.033	0.000	-0.016	-0.068	-0.116	-0.174	-0.203	-0.215	-0.196	-0.149	-0.085	0.000
① DECK SLAB, HAUNCH, SP, & CONCRETE PARAPET DEFLECTION	0.000	-0.287	-0.507	-0.662	-0.747	-0.735	-0.632	-0.481	-0.269	-0.123	0.000	-0.026	-0.16	-0.29	-0.452	-0.536	-0.576	-0.528	-0.405	-0.231	0.000

GIRDER NO. 4

TENTH POINT

	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
① GIRDER & DIAPHRAGM DEFLECTION	0.000	-0.085	-0.15	-0.194	-0.217	-0.211	-0.178	-0.133	-0.071	-0.031	0.000	-0.015	-0.065	-0.111	-0.166	-0.193	-0.204	-0.186	-0.142	-0.08	0.000
① DECK SLAB, HAUNCH, SP, & CONCRETE PARAPET DEFLECTION	0.000	-0.27	-0.478	-0.622	-0.704	-0.691	-0.594	-0.452	-0.254	-0.116	0.000	-0.026	-0.154	-0.277	-0.431	-0.511	-0.548	-0.502	-0.386	-0.219	0.000



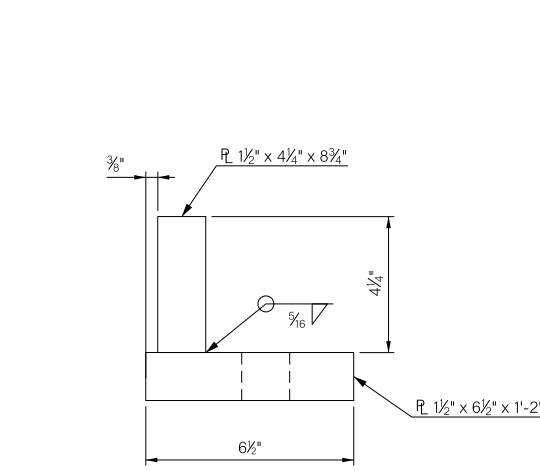
DEAD LOAD DEFLECTION DIAGRAM

① THE DEAD LOAD DEFLECTION SHOWN AT THE TENTH POINTS ARE THE DEFLECTIONS DUE TO DECK SLAB + HAUNCH + S.I.P. DECK FORM ALLOWANCE + CONCRETE PARAPET. IT DOES NOT INCLUDE THE GIRDER WEIGHT, DIAPHRAGMS, OR FUTURE WEARING SURFACE.

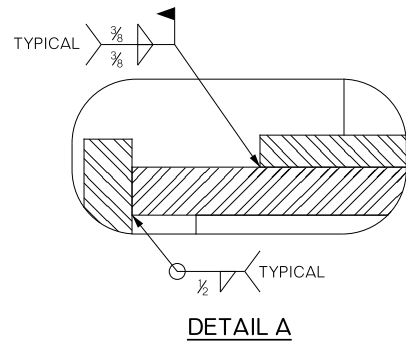
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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

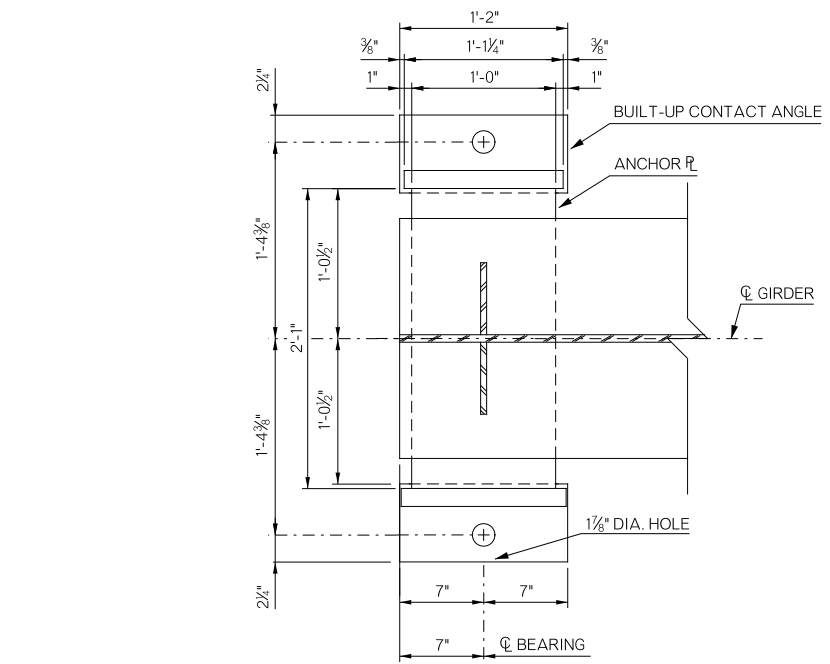
DETAILS OF SUPERSTRUCTURE
(SHEET 15 OF 15)



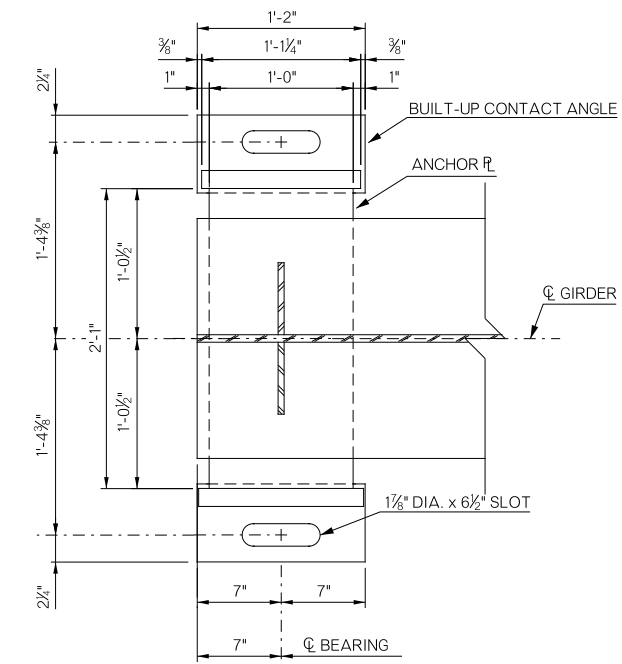
**BUILT-UP
CONTACT ANGLE
DETAIL**



DETAIL A

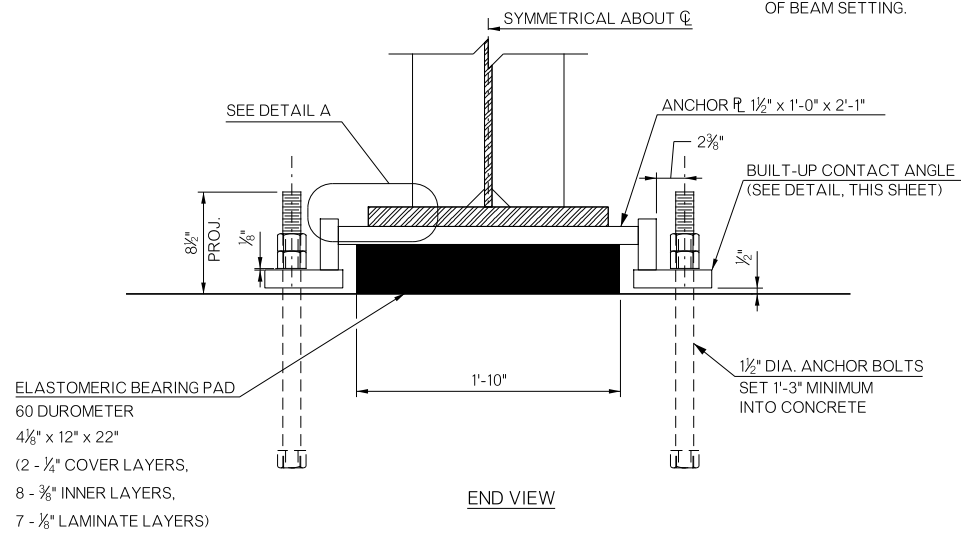


FIXED BEARING PLAN



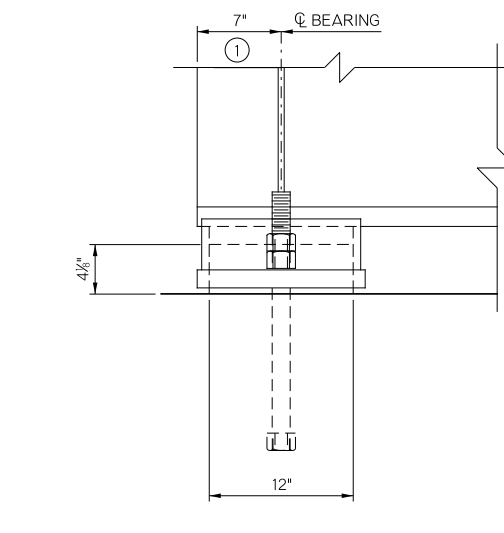
EXPANSION BEARING PLAN

① CENTER ANCHOR BOLTS IN SLOTS DURING SETTING OF BEAMS. DIMENSION MAY VARY DEPENDING ON TEMPERATURE AT THE TIME OF BEAM SETTING.



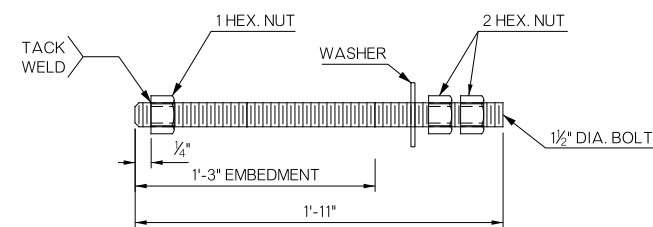
END VIEW

ELASTOMERIC BEARING PAD
60 DUROMETER
4 1/8" x 12" x 22"
(2 - 1/4" COVER LAYERS,
8 - 3/8" INNER LAYERS,
7 - 1/8" LAMINATE LAYERS)



SIDE VIEW

BEARING DETAILS



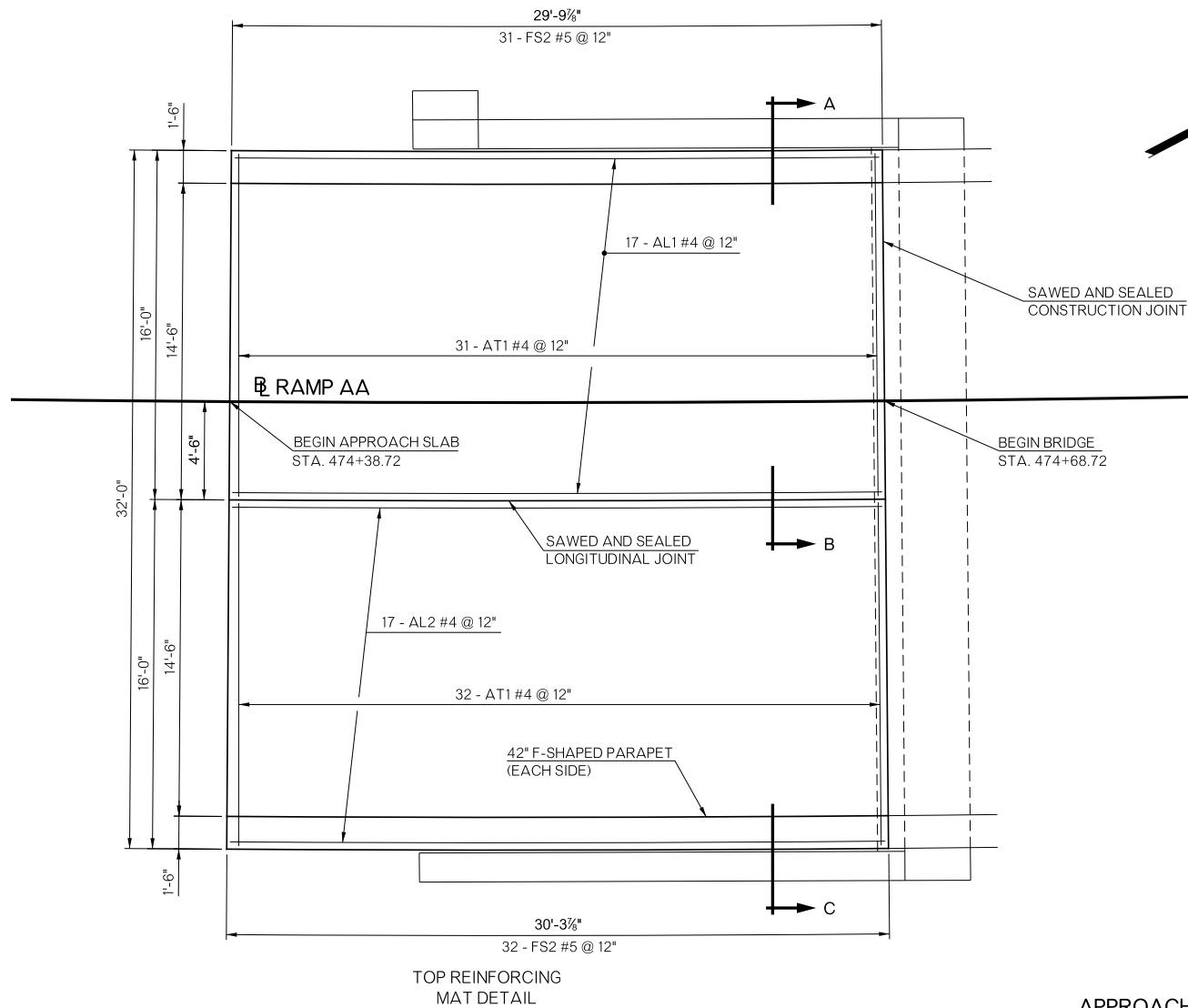
ANCHOR BOLT DETAIL

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

DETAILS OF BEARINGS

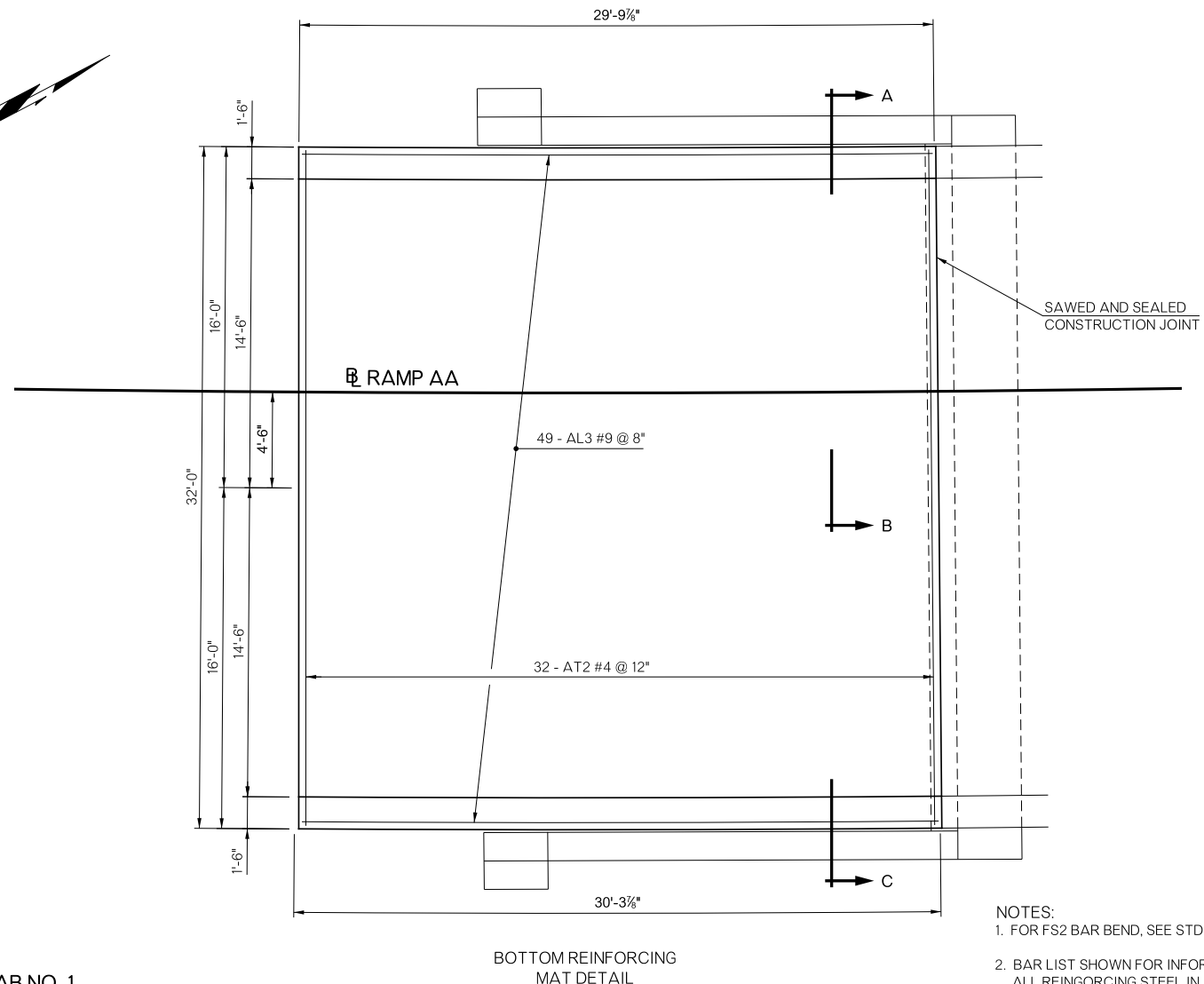
4/17/2020
 F:\2016\100-1500-016-1182-A-40-Design\Microstation\000T\00N\PK5-S-T-U-V-Bridge Package\SS\Sheets\Bridg U\2428597\SSMF APPROACH SLAB(1) BRIDGE U.dgn



TOP REINFORCING MAT DETAIL

APPROACH SLAB NO. 1

FOR ADDITIONAL DETAIL OF APPROACH SLAB AT ABUTMENT, SEE LONGITUDINAL SECTION AND DIAPHRAGM DETAILS.



BOTTOM REINFORCING MAT DETAIL

- NOTES:**
- FOR FS2 BAR BEND, SEE STD. FSHP-42-2.
 - BAR LIST SHOWN FOR INFORMATION ONLY. ALL REINFORCING STEEL IN APPROACH SLAB SHALL BE INCLUDED IN THE UNIT BID PRICE FOR SY APPROACH SLAB.

APPROACH SLAB NO.1 BAR LIST

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
AL1	# 4	17	STR.	29'-6"	
AL2	# 4	17	STR.	29'-10"	
AL3	# 9	49	STR.	29'-8" AVG.	29'-6" TO 29'-10"
AT1	# 4	63	STR.	14'-2"	
AT2	# 4	32	STR.	31'-8"	
FS2	# 5	63	BNT.	7'-4"	

APPROACH SLAB NO.2 QUANTITIES

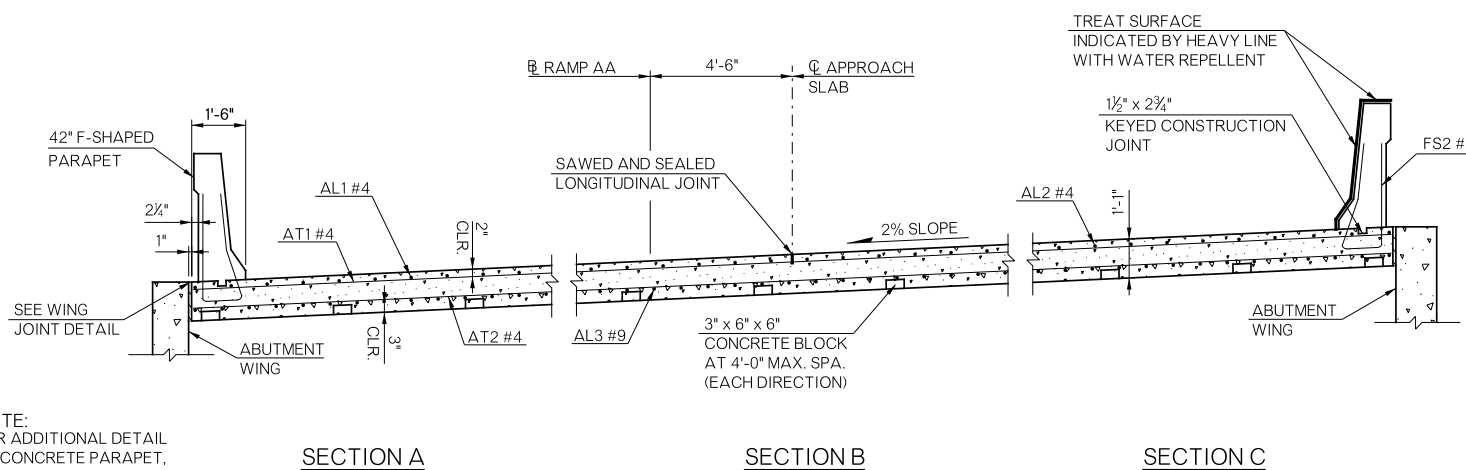
ITEM	UNIT	TOTAL
APPROACH SLAB	SY	107.00
SAW-CUT GROOVING	SY	107.00
42" F-SHAPED PARAPET	LF	60.00
WATER REPELLANT (VISUALLY INSPECTED)	SY	57.00

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BRIDGE "U"
RAMP AA OVER ROCK HOLLOW CREEK

APPROACH SLAB DETAILS
APPROACH SLAB NO. 1
(SHEET 1 OF 2)

US 81 REALIGNMENT
GRADY COUNTY

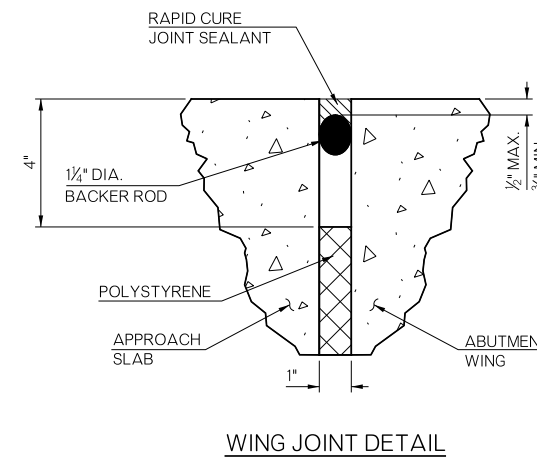


NOTE:
FOR ADDITIONAL DETAIL OF CONCRETE PARAPET, SEE STD. FSHP-42-2.

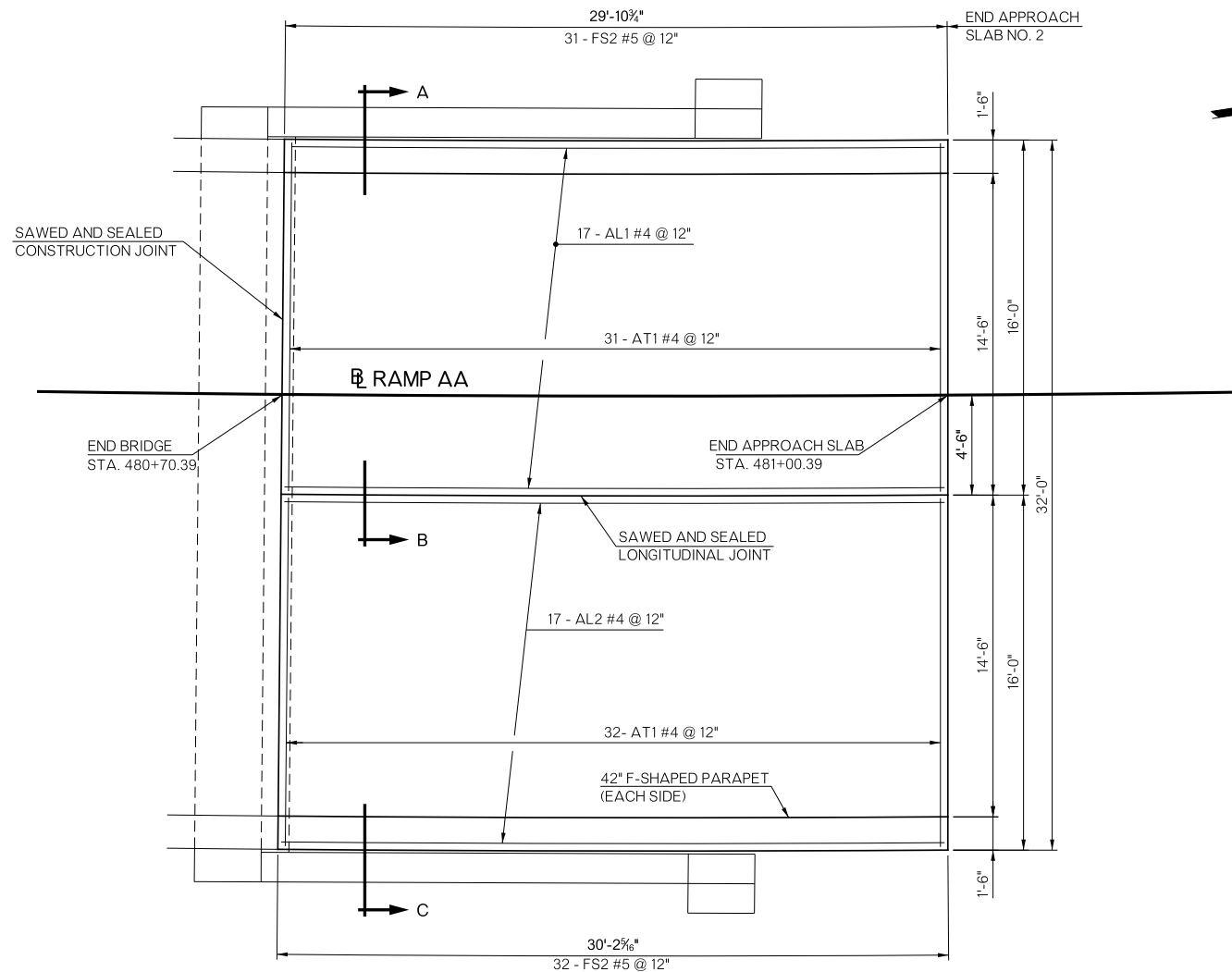
SECTION A

SECTION B

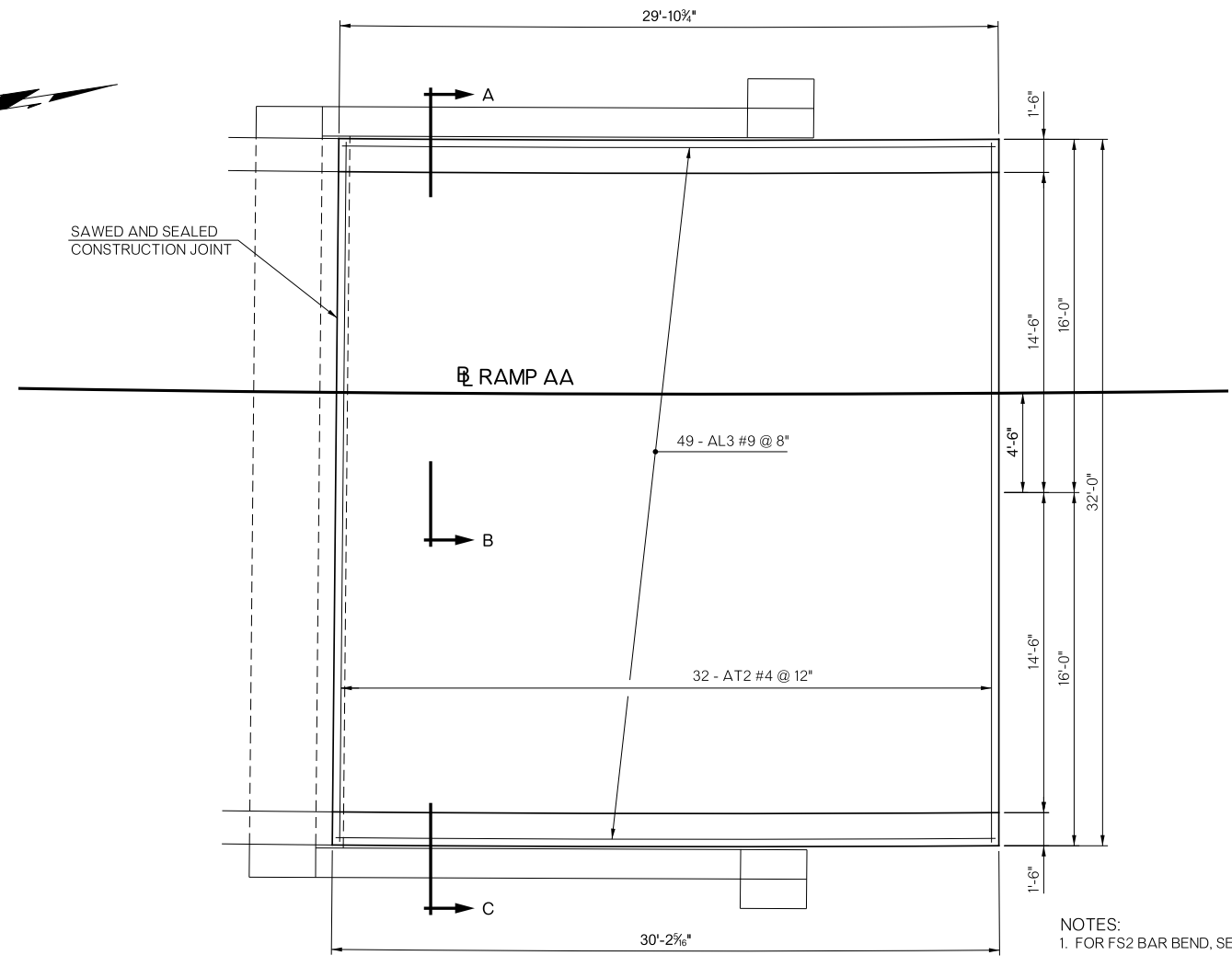
SECTION C



WING JOINT DETAIL



TOP REINFORCING MAT DETAIL



BOTTOM REINFORCING MAT DETAIL

APPROACH SLAB NO. 2
 FOR ADDITIONAL DETAIL OF APPROACH SLAB AT ABUTMENT, SEE LONGITUDINAL SECTION AND DIAPHRAGM DETAILS.

- NOTES:
 1. FOR FS2 BAR BEND, SEE STD. FSHP-42-2.
 2. BAR LIST SHOWN FOR INFORMATION ONLY. ALL REINFORCING STEEL IN APPROACH SLAB SHALL BE INCLUDED IN THE UNIT BID PRICE FOR SY APPROACH SLAB.

APPROACH SLAB NO.2 BAR LIST

EPOXY COATED REINFORCING					
MARK	SIZE	QTY.	FORM	LENGTH	REMARKS
AL1	# 4	17	STR.	29'-6"	
AL2	# 4	17	STR.	29'-10"	
AL3	# 9	49	STR.	29'-8" AVG.	29'-6" TO 29'-10"
AT1	# 4	63	STR.	14'-2"	
AT2	# 4	32	STR.	31'-8"	
FS2	# 5	63	BNT.	7'-4"	

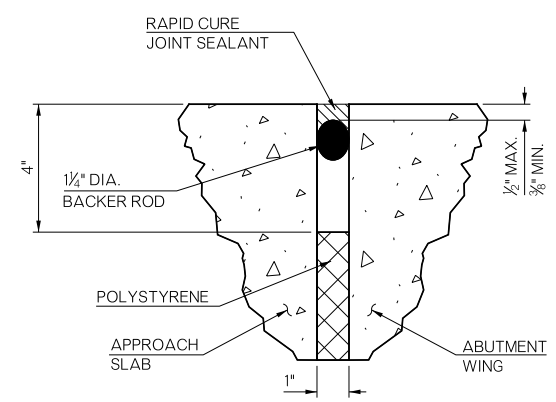
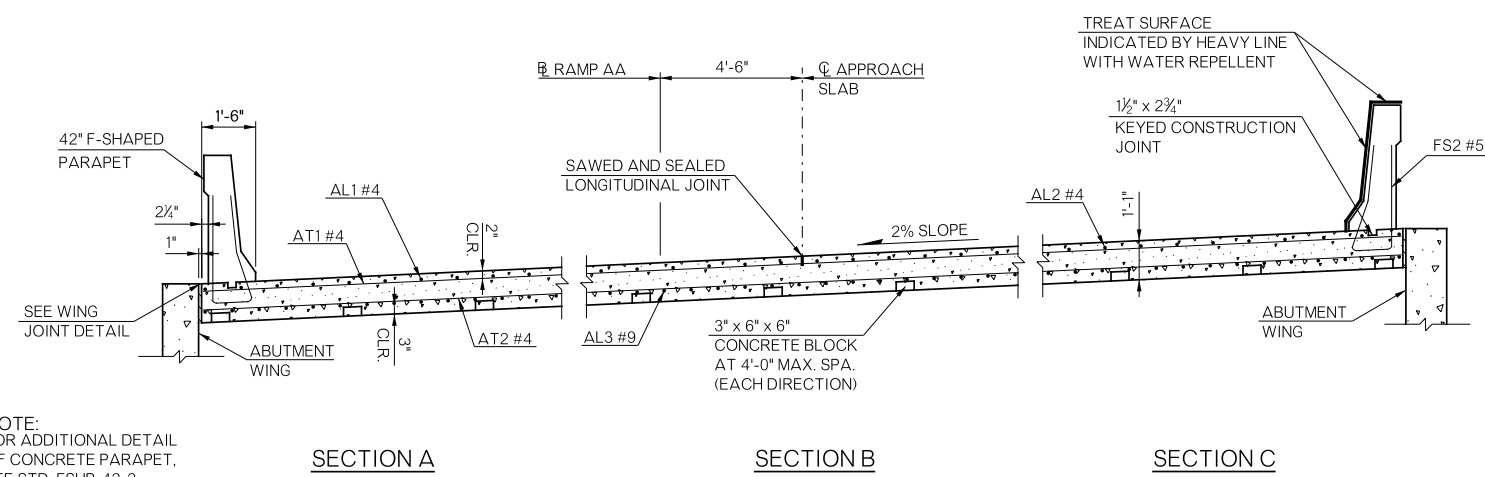
APPROACH SLAB NO.2 QUANTITIES

ITEM	UNIT	TOTAL
APPROACH SLAB	SY	107.00
SAW-CUT GROOVING	SY	107.00
42" F-SHAPE PARAPET	LF	60.00
WATER REPELLANT (VISUALLY NSPECTED)	SY	57.00

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

BRIDGE "U"
 RAMP AA OVER ROCK HOLLOW CREEK

APPROACH SLAB DETAILS
 APPROACH SLAB NO. 2
 (SHEET 2 OF 2)



WING JOINT DETAIL

NOTE:
 FOR ADDITIONAL DETAIL OF CONCRETE PARAPET, SEE STD. FSHP-42-2.

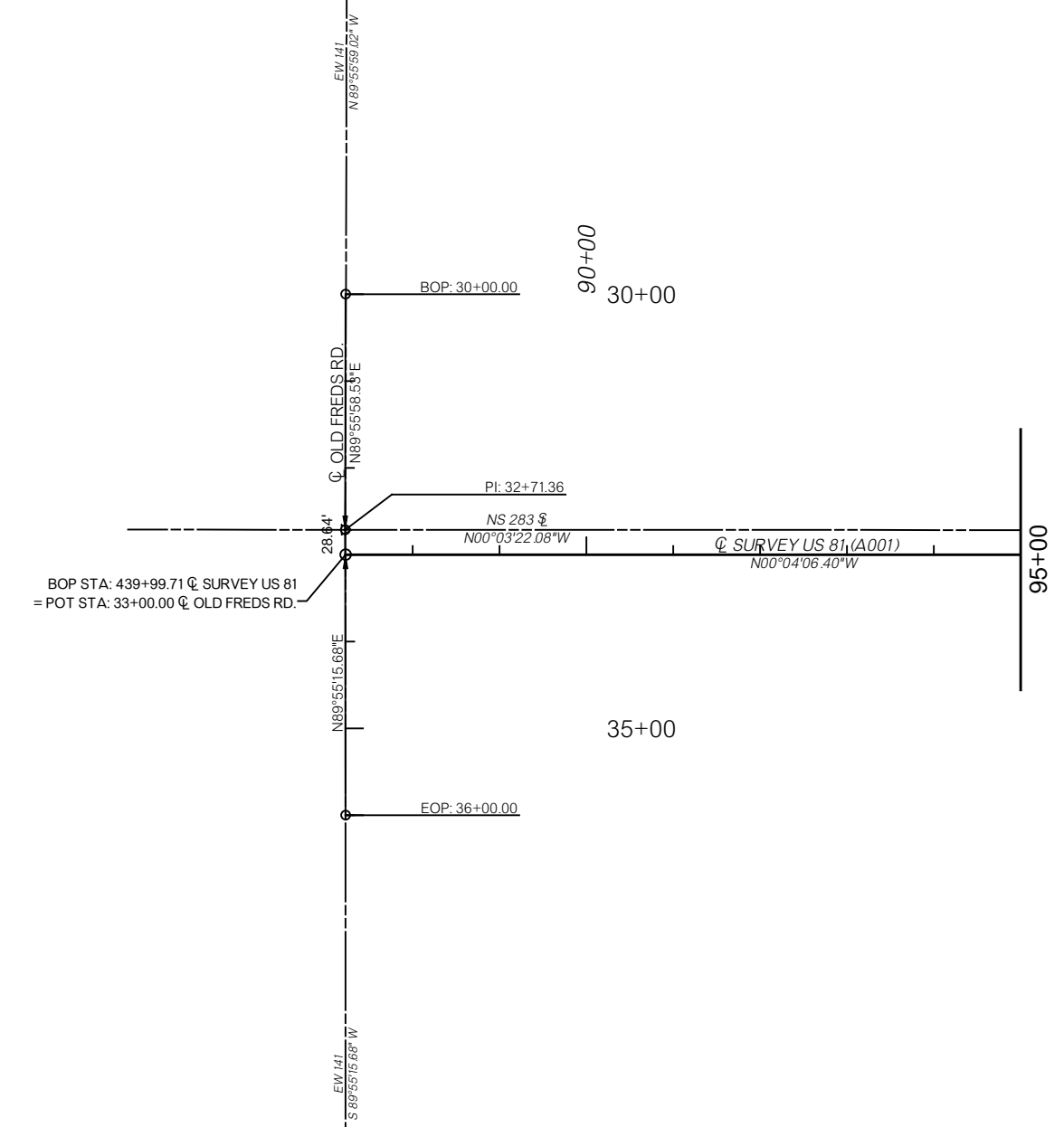
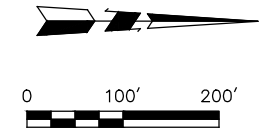
REVISIONS		
REV. NO.	DESCRIPTION	DATE

U.S. ARMY CORPS OF ENGINEERS SECTION 404 PERMIT CONDITIONS

404 PERMIT INFORMATION	PERMIT GENERAL CONDITIONS	PERMIT GENERAL CONDITIONS
<p>NATIONWIDE PERMIT NO. _____</p> <p><input type="checkbox"/> TO BE PROVIDED AT A LATER DATE</p> <p>SECTION 404 OF THE CLEAN WATER ACT REQUIRES PRIOR AUTHORIZATION FROM SECRETARY OF THE ARMY (CORPS) FOR THE DISCHARGE OF DREDGED OR FILL MATERIAL INTO WATERS OF THE UNITED STATES.</p> <p><input type="checkbox"/> NO PRE-CONSTRUCTION NOTIFICATION REQUIRED: PROJECT DOES NOT REQUIRE NOTIFICATION TO THE US ARMY CORPS OF ENGINEERS (USACE) IN ORDER TO COMMENCE.</p> <p><input type="checkbox"/> PRE-CONSTRUCTION NOTIFICATION REQUIRED: RESIDENT ENGINEER MUST NOTIFY THE USACE WITHIN 30 DAYS OF THE START OF CONSTRUCTION AND 30 DAYS PRIOR TO COMPLETION OF CONSTRUCTION, FORMS LOCATED IN THE CONTRACT.</p> <p><input type="checkbox"/> INDIVIDUAL PERMIT: WILL BE MONITORED CLOSELY BY THE USACE.</p> <p><input type="checkbox"/> GENERAL PERMIT: PROJECT WITHIN A DESIGNATED CRITICAL RESOURCE WATER AND WILL REQUIRE PRE-CONSTRUCTION NOTIFICATION SEE ABOVE FOR EXPLANATION OF PRE-CONSTRUCTION NOTIFICATION.</p> <p><input type="checkbox"/> NO PERMIT REQUIRED</p> <p>SWT TRACKING NO. _____</p>	<p>THE CONTRACTOR SHALL BE RESPONSIBLE BUT NOT LIMITED TO THE FOLLOWING HIGHLIGHTS OF THE 404 PERMIT (SEE CONTRACT FOR COMPLETE LIST):</p> <p>TEMPORARY FILLS: APPROPRIATE MEASURES MUST BE TAKEN TO MAINTAIN NORMAL DOWNSTREAM FLOWS AND MINIMIZE FLOODING TO THE MAXIMUM EXTENT PRACTICABLE. WHEN TEMPORARY STRUCTURES (WORK ROADS, WORK PADS, ETC.) WORK, AND DISCHARGES, INCLUDING COFFERDAMS, ARE NECESSARY FOR CONSTRUCTION ACTIVITIES, ACCESS FILLS, OR DE WATERING OF CONSTRUCTION SITES. TEMPORARY FILLS MUST CONSIST OF MATERIALS, AND BE PLACED IN A MANNER, THAT WILL NOT BE ERODED BY EXPECTED HIGH FLOWS. TEMPORARY FILLS MUST BE REMOVED IN THEIR ENTIRETY AND THE AFFECTED AREAS RETURNED TO PRE-CONSTRUCTION ELEVATIONS. THE AREAS AFFECTED BY TEMPORARY FILLS MUST BE RE VEGETATED, AS APPROPRIATE.</p> <p>NAVIGATION: NO ACTIVITY MAY CAUSE MORE THAN A MINIMAL ADVERSE EFFECT ON NAVIGATION WITHIN A NAVIGABLE WATER OF THE U.S. IF THIS PROJECT IS LOCATED WITHIN A NAVIGABLE WATER OF THE U.S., IT WILL BE IDENTIFIED IN THE SPECIAL CONDITIONS.</p> <p>AQUATIC LIFE MOVEMENTS & ADVERSE EFFECTS FROM IMPOUNDMENTS: NO ACTIVITY MAY LARGELY DISRUPT THE NECESSARY LIFE CYCLE MOVEMENTS OF THOSE SPECIES INDIGENOUS TO THE BODY OF WATER, INCLUDING THOSE SPECIES THAT NORMALLY MIGRATE THROUGH THE AREA. CULVERTS WILL BE DESIGNED TO PROVIDE SUFFICIENT PASSAGE FOR AQUATIC LIFE AND INSTALLED TO MAINTAIN LOW FLOW. RATE OF FLOW CANNOT BE MADE HIGHER THAN WHAT WAS PRIOR TO THE START OF CONSTRUCTION. EROSION CONTROL MEASURES SHOULD BE UTILIZED AROUND THE PERIMETER OF NEW STRUCTURES TO AVOID SILT BUILD UP. CAUTION SHOULD BE TAKEN TO MINIMIZE HARM IF CONSTRUCTION ACTIVITIES TAKE PLACE WITHIN A STREAM OR RIVER CHANNEL AND CREATE A CONFINED BODY OF WATER, CAUSE ADVERSE EFFECTS TO THE AQUATIC SYSTEM IN ANY WAY AND/OR RESTRICTING ITS FLOW.</p> <p>MANAGEMENT OF WATER FLOWS: CONSTRUCTION ACTIVITIES MAY NOT IMPEDE THE PASSAGE OF NORMAL OR HIGH FLOWS. TO THE GREATEST EXTENT POSSIBLE, THE PRE- CONSTRUCTION COULSE, CONDITIONS, CAPACITY AND LOCATION OF OPEN WATERS MUST BE MAINTAINED. THIS INCLUDES STREAM CHANNELIZATION AND STORAGE WATER MANAGEMENT.</p> <p>SUITABLE MATERIAL: NO ACTIVITY MAY USE UNSUITABLE MATERIAL (E.G., TRASH, DEBRIS, CAR BODIES, ASPHALT, ETC.). MATERIALS USED FOR CONSTRUCTION OR DISCHARGED MUST BE FREE FROM TOXIC POLLUTANTS IN TOXIC AMOUNTS (SEE SECTION 307 OF CLEAN WATER ACT).</p> <p>PROPER MAINTENANCE: ANY AUTHORIZED STRUCTURE OR FILL SHALL BE PROPERLY MAINTAINED, INCLUDING MAINTENANCE TO ENSURE PUBLIC SAFETY AND COMPLIANCE WITH APPLICABLE NATION WIDE PERMIT GENERAL CONDITIONS, AS WELL AS ANY ACTIVITY- SPECIFIC CONDITIONS ADDED BY THE DISTRICT ENGINEER TO AN NATIONWIDE PERMIT AUTHORIZATION</p> <p>HAZARDOUS MATERIALS: HAZARDOUS MATERIALS, CHEMICALS, FUELS, LUBRICATING OILS AND OTHER SUCH SUBSTANCES SHOULD BE STORED AWAY FROM ANY STREAM OR RIVERCHANNEL (SEE SECTION 307 OF CLEAN WATER ACT)</p> <p>EQUIPMENT: HEAVY EQUIPMENT WORKING IN WETLANDS OR MUDFLATS MUST BE PLACED ON MATS, OR OTHER MEASURES MUST BE TAKEN TO MINIMIZE SOIL DISTURBANCE; FOR EXAMPLE IF WETLANDS ARE PRESENT WITHIN THE CONSTRUCTION, THE FOOTPRINT WILL BE SHOWN ON THE PLANS. MEASURES SHOULD BE TAKEN TO PREVENT DISCHARGE INTO ANY WATERS OF THE STATE (e.g. CONCRETE WASHOUT).</p> <p>SOIL EROSION AND SEDIMENT CONTROLS: APPROPRIATE SOIL EROSION AND SEDIMENT CONTROLS MUST BE USED AND MAINTAINED IN EFFECTIVE OPERATING CONDITION DURING CONSTRUCTION, AND ALL EXPOSED SOILS AND OTHER FILLS, AS WELL AS ANY WORK WITHIN STREAM OR RIVER CHANNELS OR BANKS, MUST BE PERMANENTLY STABILIZED AS SOON AS POSSIBLE.</p> <p>404 COMPLIANCE: IN ORDER TO REMAIN COMPLIANT WITH THE 404 PERMIT, THE PROJECT MUST COMPLY WITH ALL FEDERAL ENVIRONMENTAL PROTECTION LAWS ASSOCIATED AND, THE ENVIRONMENTAL COMMITMENTS AS SHOWN ON THE PLANS. THIS INCLUDES BUT IS NOT LIMITED TO COMPLIANCE WITH ALL ENVIRONMENTAL NOTES IN THE PLANS, INCLUDING CULTURAL RESOURCES, HAZARDOUS WASTE, BIOLOGICAL FOR PROTECTED SPECIES, AND DEQ STORM WATER REGULATIONS AS THEY PERTAIN TO THE SWMP SHEET WITHIN THE PLANS. ALL OF THE 404 PERMIT GENERAL AND SPECIFIC CONDITIONS MUST BE ADHERED TO. A COPY OF THESE CONDITIONS CAN BE FOUND IN THE CONTRACT WITH THE 404 PERMIT.</p>	<p>FUELING: ALL FUELING AND SERVICING OF VEHICLES AND EQUIPMENT SHALL BE DONE ABOVE THE ORDINARY HIGH WATER MARK (OHWM).</p> <p>MATERIAL STORAGE: STORE MATERIAL AND FUEL OUTSIDE OF THE ORDINARY HIGH WATER MARK OR ANY AREA LIKELY TO FLOOD.</p> <p>DEBRIS STORAGE: THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ANY MATERIALS, DEBRIS, OR REFUSE WHICH HAS FALLEN INTO ANY STREAM OR RIVER CHANNELS RESULTING FROM THE EXECUTION OF THE PROJECT AS SOON AS POSSIBLE</p> <p style="text-align: center;">SEE NATIONWIDE PERMIT 14 IN THE CONTRACT</p>
<p style="text-align: center;">SPECIAL CONDITIONS</p> <p><input type="checkbox"/> NAVIGABLE WATER OF THE U.S.</p> <p><input type="checkbox"/> ON-SITE MITIGATION</p> <p><input type="checkbox"/> ENDANGERED SPECIES PRESENT</p> <p><input type="checkbox"/> HISTORIC PROPERTIES PRESENT</p> <p><input type="checkbox"/> DESIGNATED CRITICAL RESOURCE WATERS</p>	<p style="text-align: center;">401 CERTIFICATION CONDITIONS</p> <p>THE CONTRACTOR SHALL BE RESPONSIBLE BUT NOT LIMITED TO THE FOLLOWING HIGHLIGHTS OF THE 401 CERTIFICATION (SEE CONTRACT FOR COMPLETE LIST):</p> <p><input type="checkbox"/> ALL SPILLS OF FUEL OR POLLUTANTS IN EXCESS OF FIVE GALLONS SHALL BE REPORTED TO ODEQ WITHIN 24 HRS AND REPORTED TO POLLUTION PREVENTION HOTLINE (1-800-522-0206)</p> <p><input type="checkbox"/> ALL FUELING AND SERVICING OF VEHICLES AND EQUIPMENT SHALL BE DONE OUTSIDE THE ORDINARY HIGH WATER MARK</p> <p><input type="checkbox"/> THE PERMITTEE SHALL PROVIDE ACCESS TO THE PROPERTY TO ODEQ FOR INSPECTIONS.</p> <p><input type="checkbox"/> ANY STOCKPILE SHALL BE ABOVE ORDINARY HIGH WATER MARK AND REMOVED FROM LIKELY FLOOD ZONE</p> <p><input type="checkbox"/> BEST MANAGEMENT PRACTICES SHOULD BE USED TO CONTROL SOIL EROSION AND MAINTAIN COMPLIANCE WITH WATER QUALITY STANDARDS.</p> <p><input type="checkbox"/> FOR ANY PROJECT THAT INVOLVES BANK STABILIZATION, THE PERMITTEE SHALL CONSIDER INSTALLING BIOENGINEERING PRACTICES IN PLACE OF STRUCTURAL PRACTICES (RIPRAP) TO MINIMIZE IMPACTS TO AQUATIC RESOURCES</p>	

PLACEHOLDER

SECTION 404 PERMIT COMPLIANCE		DETAIL	
		REVIEW	
		APPROVED	
ENVIRONMENTAL DIVISION			
STATE OF OKLAHOMA	DEPARTMENT OF TRANSPORTATION		
	JOB/PIECE NO. 24428(12)	SHEET NO. E001	

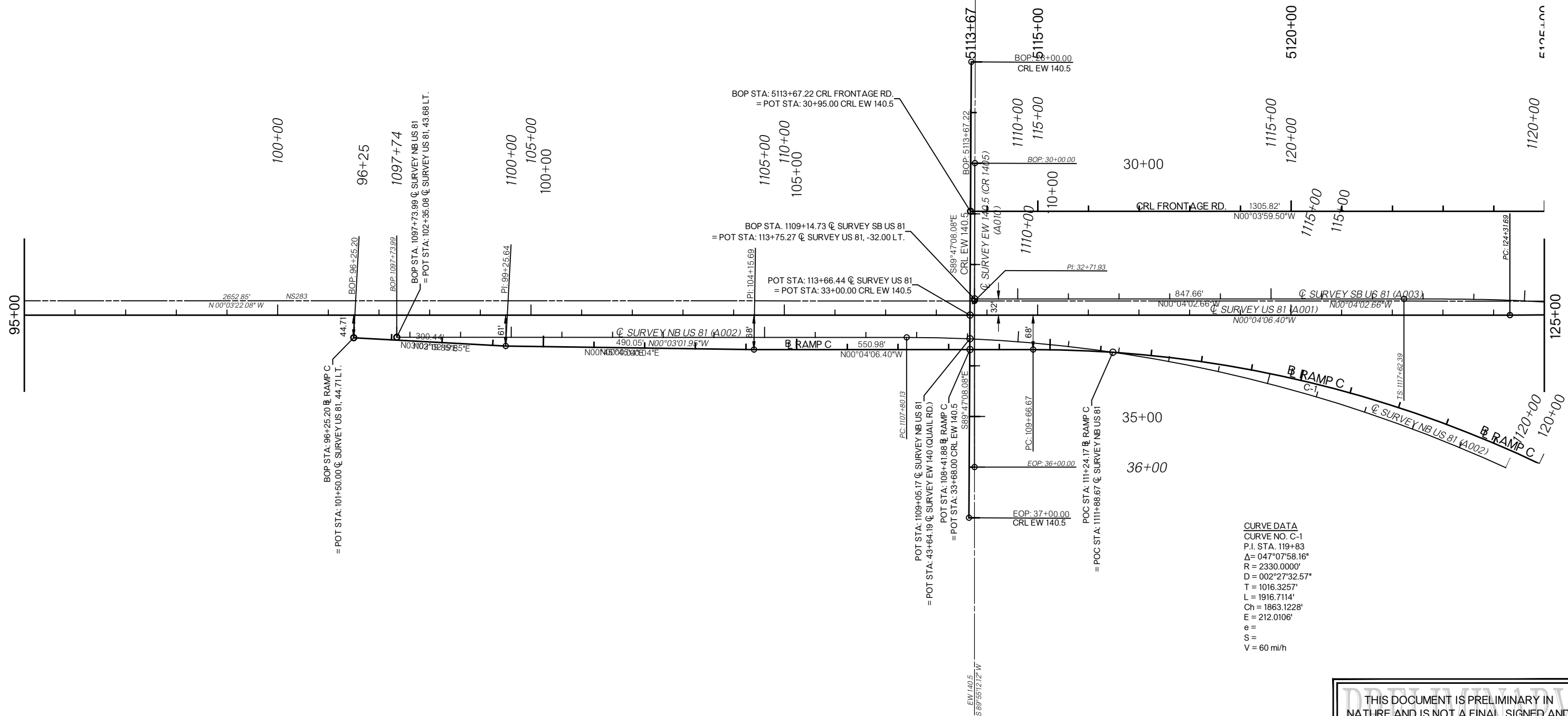
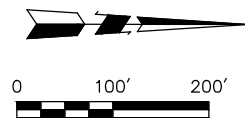


BOP STA: 439+99.71 @ SURVEY US 81
= POT STA: 33+00.00 @ OLD FRED'S RD.

THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS: A001 - A019

GEOMETRIC LAYOUT



CURVE DATA
 CURVE NO. C-1
 P.I. STA. 119+83
 $\Delta = 047^{\circ}07'58.16''$
 $R = 2330.0000'$
 $D = 002^{\circ}27'32.57''$
 $T = 1016.3257'$
 $L = 1916.7114'$
 $Ch = 1863.1228'$
 $E = 212.0106'$
 $e =$
 $S =$
 $V = 60 \text{ mi/h}$

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS: A001 - A019

GEOMETRIC LAYOUT

CURVE DATA
CURVE NO. US 81-1
P.I. STA. 147+93.78
Δ = 044°48'32.01"
R = 5729.5801'
D = 001°00'00.00"
T = 2362.0826'
L = 4480.8909'
Ch = 4367.5686'
E = 467.8002'
e = .06
S = .034
V = 70 mi/h

CURVE DATA
CURVE NO. A-1
P.I. STA. 137+46.08
Δ = 014°01'06.35"
R = 5661.5801'
D = 001°00'43.24"
T = 696.0790'
L = 1385.2062'
Ch = 1381.7537'
E = 42.6302'
e = 0.06'/
S = 0.034'/
V = 70 mi/h

CURVE DATA
CURVE NO. A-2
P.I. STA. 140+77.40
Δ = 249°53'03.76"
R = 250.0000'
D = 022°55'05.92"
T = 357.8048'
L = 1090.3263'
Ch = 409.8652'
E = 686.4909'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. FR-2
P.I. STA. 5140+16.66
Δ = 019°27'21.73"
R = 868.0000'
D = 006°36'03.23"
T = 148.8069'
L = 294.7484'
Ch = 293.3343'
E = 12.6631'
e = 0.06'/
S = 0.044'/
V = 35 mi/h

CURVE DATA
CURVE NO. A-1 EXT.
P.I. STA. 245+52.42
Δ = 032°44'07.81"
R = 267.0000'
D = 021°27'32.74"
T = 78.4191'
L = 152.5484'
Ch = 150.4820'
E = 11.2778'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. B-1
P.I. STA. 245+72.52
Δ = 010°23'39.28"
R = 1660.0000'
D = 003°27'05.59"
T = 150.9878'
L = 301.1469'
Ch = 300.7341'
E = 6.8525'
e = 0.06'/
S = 0.048'/
V = 50 mi/h

CURVE DATA
CURVE NO. B-2
P.I. STA. 254+13.01
Δ = 044°10'35.95"
R = 1070.0000'
D = 005°21'17.08"
T = 434.2280'
L = 825.0000'
Ch = 804.7159'
E = 84.7528'
e = 0.06'/
S = 0.058'/
V = 50 mi/h

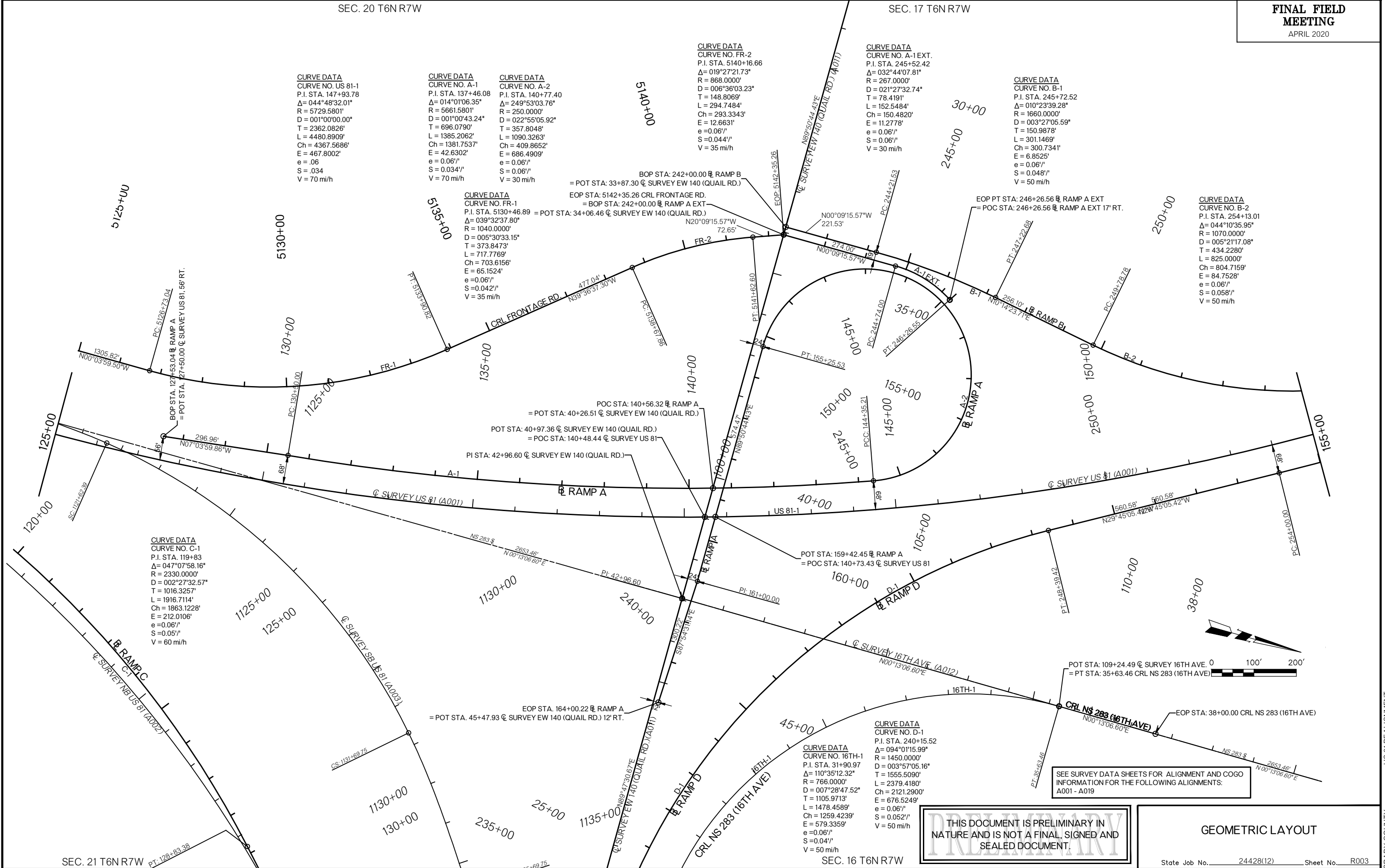
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CURVE NO. C-1
P.I. STA. 119+83
Δ = 047°07'58.16"
R = 2330.0000'
D = 002°27'32.57"
T = 1016.3257'
L = 1916.7114'
Ch = 1863.1228'
E = 212.0106'
e = 0.06'/
S = 0.05'/
V = 60 mi/h

CURVE DATA
CURVE NO. 16TH-1
P.I. STA. 31+90.97
Δ = 110°35'12.32"
R = 766.0000'
D = 007°28'47.52"
T = 1105.9713'
L = 1478.4589'
Ch = 1259.4239'
E = 579.3359'
e = 0.06'/
S = 0.04'/
V = 50 mi/h

CURVE DATA
CURVE NO. D-1
P.I. STA. 240+15.52
Δ = 094°01'15.99"
R = 1450.0000'
D = 003°57'05.16"
T = 1555.5090'
L = 2379.4180'
Ch = 2121.2900'
E = 676.5249'
e = 0.06'/
S = 0.052'/
V = 50 mi/h

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GEOMETRIC LAYOUT



GRADY COUNTY US 81 REALIGNMENT

SEC. 17 T6N R7W

CURVE DATA
CURVE NO. B-2
P.I. STA. 254+13.01
Δ = 044°10'35.95"
R = 1070.0000'
D = 005°21'17.08"
T = 434.2280'
L = 825.0000'
Ch = 804.7159'
E = 84.7528'
e = 0.06'/'
S = 0.058'/'
V = 50 mi/h

CURVE DATA
CURVE NO. B-3
P.I. STA. 260+88.29
Δ = 005°45'13.21"
R = 5661.5801'
D = 001°00'43.24"
T = 284.5084'
L = 568.5386'
Ch = 568.2998'
E = 7.1441'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

CURVE DATA
CURVE NO. D-2
P.I. STA. 259+26.44
Δ = 010°22'36.62"
R = 5797.5801'
D = 000°59'17.77"
T = 526.4396'
L = 1049.9997'
Ch = 1048.5653'
E = 23.8522'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

CURVE DATA
CURVE NO. SB CD-1
P.I. STA. 264+05.84
Δ = 000°40'57.00"
R = 5661.5801'
D = 001°00'43.24"
T = 33.7204'
L = 67.4400'
Ch = 67.4396'
E = 0.1004'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

CURVE DATA
CURVE NO. SB CD-2
P.I. STA. 266+11.36
Δ = 006°41'18.66"
R = 2940.0000'
D = 001°56'55.81"
T = 171.7980'
L = 343.2057'
Ch = 343.0108'
E = 5.0152'
e = 0.06'/'
S = 0.034'/'
V = 50 mi/h

CURVE DATA
CURVE NO. SB CD-3
P.I. STA. 271+66.51
Δ = 002°11'02.70"
R = 7870.0000'
D = 000°43'40.90"
T = 150.0182'
L = 300.0000'
Ch = 299.9818'
E = 1.4297'
e = 0.06'/'
S = NC
V = 50 mi/h

CURVE DATA
CURVE NO. G-1
P.I. STA. 1194+92.65
Δ = 087°03'00.25"
R = 1670.0000'
D = 003°25'51.19"
T = 1586.1582'
L = 2537.2483'
Ch = 2300.1627'
E = 633.2147'
e = 0.06'/'
S = 0.048'/'
V = 50 mi/h

255+00

260+00
160+00
260+00

265+00
165+00
265+00

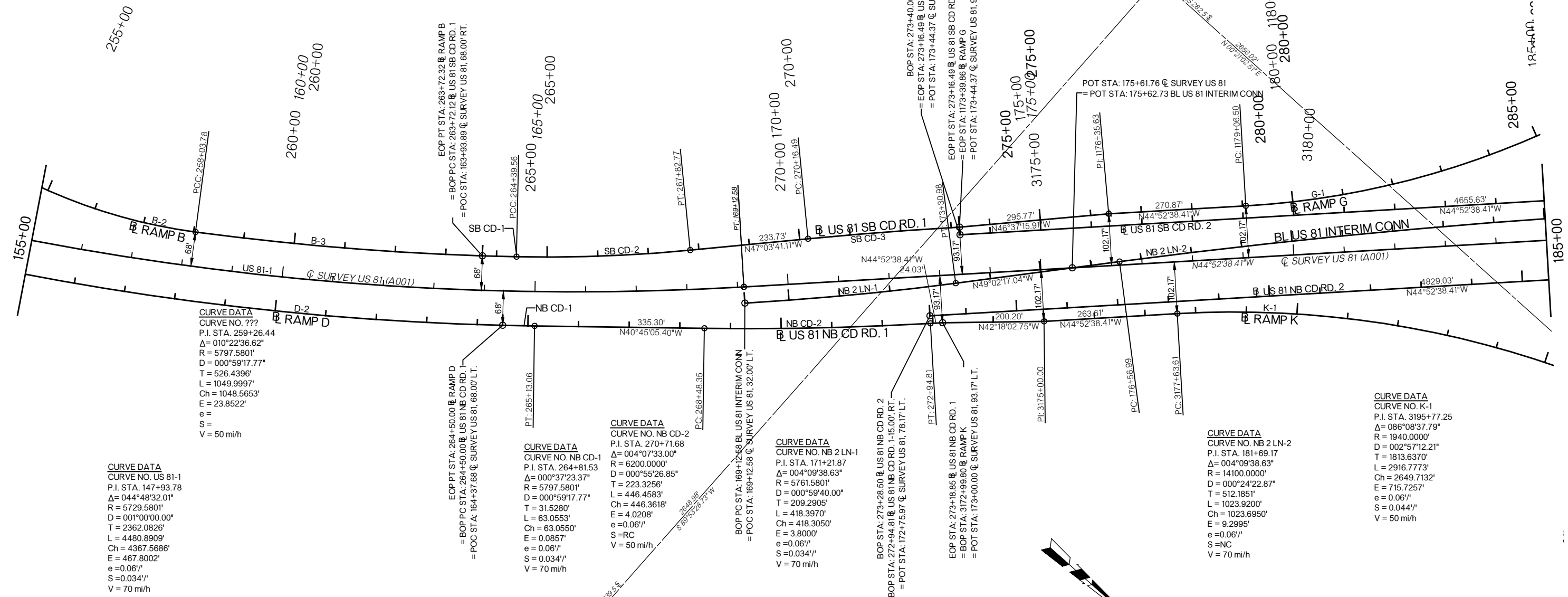
270+00
170+00
270+00

275+00
175+00
3175+00
175+00

280+00
180+00
280+00
3180+00

1185+00

285+00
185+00



CURVE DATA
CURVE NO. ???
P.I. STA. 259+26.44
Δ = 010°22'36.62"
R = 5797.5801'
D = 000°59'17.77"
T = 526.4396'
L = 1049.9997'
Ch = 1048.5653'
E = 23.8522'
e =
S =
V = 50 mi/h

CURVE DATA
CURVE NO. US 81-1
P.I. STA. 147+93.78
Δ = 044°48'32.01"
R = 5729.5801'
D = 001°00'00.00"
T = 2362.0826'
L = 4480.8909'
Ch = 4367.5686'
E = 467.8002'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

EOP PT STA: 264+50.00 RAMP D
= BOP PC STA: 264+50.00 US 81 NB CD RD. 1
= POC STA: 164+37.88 SURVEY US 81, 68.00' RT.

CURVE DATA
CURVE NO. NB CD-1
P.I. STA. 264+81.53
Δ = 000°37'23.37"
R = 5797.5801'
D = 000°59'17.77"
T = 31.5280'
L = 63.0553'
Ch = 63.0550'
E = 0.0857'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

CURVE DATA
CURVE NO. NB CD-2
P.I. STA. 270+71.68
Δ = 004°07'33.00"
R = 6200.0000'
D = 000°55'26.85"
T = 223.3256'
L = 446.4583'
Ch = 446.3618'
E = 4.0208'
e = 0.06'/'
S = RC
V = 50 mi/h

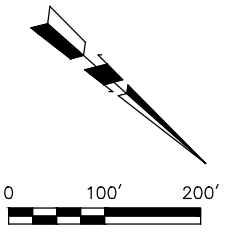
CURVE DATA
CURVE NO. NB 2 LN-1
P.I. STA. 171+21.87
Δ = 004°09'38.63"
R = 5761.5801'
D = 000°59'40.00"
T = 209.2905'
L = 418.3970'
Ch = 418.3050'
E = 3.8000'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

BOP STA: 273+28.50 US 81 NB CD RD. 2
= BOP STA: 272+94.81 US 81 NB CD RD. 1-15.00' RT.
= POT STA: 172+75.97 SURVEY US 81, 78.17' LT.

EOP STA: 273+18.85 US 81 NB CD RD. 1
= BOP STA: 3172+99.80 RAMP K
= POT STA: 173+00.00 SURVEY US 81, 93.17' LT.

CURVE DATA
CURVE NO. NB 2 LN-2
P.I. STA. 181+69.17
Δ = 004°09'38.63"
R = 14100.0000'
D = 000°24'22.87"
T = 512.1851'
L = 1023.9200'
Ch = 1023.6950'
E = 9.2995'
e = 0.06'/'
S = NC
V = 70 mi/h

CURVE DATA
CURVE NO. K-1
P.I. STA. 3195+77.25
Δ = 086°08'37.79"
R = 1940.0000'
D = 002°57'12.21"
T = 1813.6370'
L = 2916.7773'
Ch = 2649.7132'
E = 715.7257'
e = 0.06'/'
S = 0.044'/'
V = 50 mi/h



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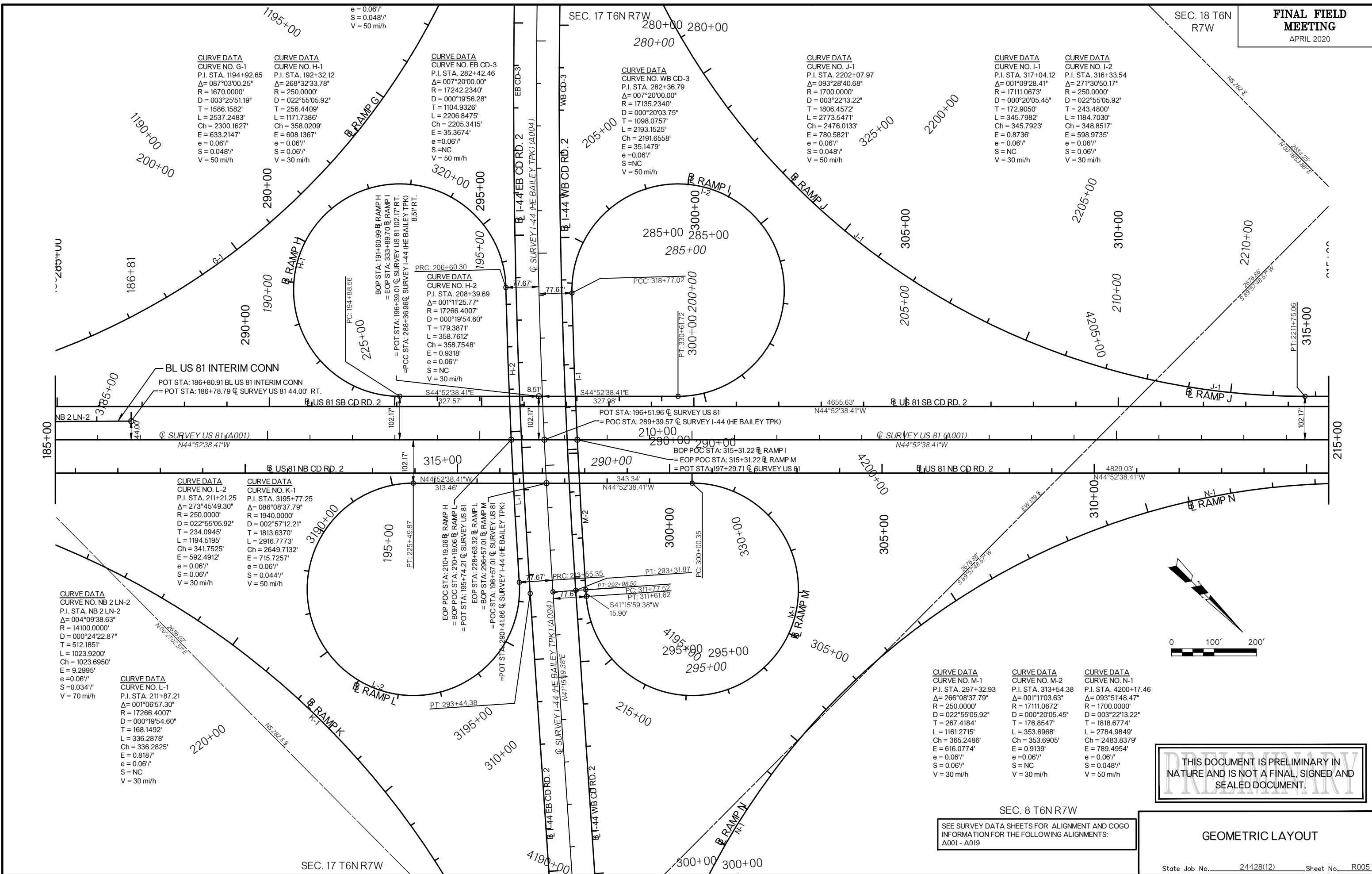
SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001 - A019

GEOMETRIC LAYOUT

SEC. 16 T6N R7W

SEC. 17 T6N R7W

US 81 REALIGNMENT
GRADY COUNTY



CURVE DATA
CURVE NO. G-1
P.I. STA. 1194+92.65
Δ = 087°03'00.25"
R = 1670.0000'
D = 003°25'51.19"
T = 1586.1582'
L = 2537.2483'
Ch = 2300.1627'
E = 633.2147'
e = 0.06'/
S = 0.048'/
V = 50 mi/h

CURVE DATA
CURVE NO. H-1
P.I. STA. 192+32.12
Δ = 268°32'33.78"
R = 250.0000'
D = 022°55'05.92"
T = 256.4409'
L = 1171.7386'
Ch = 358.0209'
E = 608.1367'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. EB CD-3
P.I. STA. 282+42.46
Δ = 007°20'00.00"
R = 17242.2340'
D = 000°19'56.28"
T = 1104.9326'
L = 2206.8475'
Ch = 2205.3415'
E = 35.3674'
e = 0.06'/
S = NC
V = 50 mi/h

CURVE DATA
CURVE NO. WB CD-3
P.I. STA. 282+36.79
Δ = 007°20'00.00"
R = 17135.2340'
D = 000°20'03.75"
T = 1098.0757'
L = 2193.1525'
Ch = 2191.6558'
E = 35.1479'
e = 0.06'/
S = NC
V = 50 mi/h

CURVE DATA
CURVE NO. J-1
P.I. STA. 2202+07.97
Δ = 093°28'40.68"
R = 1700.0000'
D = 003°22'13.22"
T = 1806.4572'
L = 2773.5471'
Ch = 2476.0133'
E = 780.5821'
e = 0.06'/
S = 0.048'/
V = 50 mi/h

CURVE DATA
CURVE NO. I-1
P.I. STA. 317+04.12
Δ = 001°09'28.41"
R = 17111.0673'
D = 000°20'05.45"
T = 172.9050'
L = 345.7982'
Ch = 345.7923'
E = 0.8736'
e = 0.06'/
S = NC
V = 30 mi/h

CURVE DATA
CURVE NO. I-2
P.I. STA. 316+33.54
Δ = 271°30'50.17"
R = 250.0000'
D = 022°55'05.92"
T = 243.4800'
L = 1184.7030'
Ch = 348.8517'
E = 598.9735'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. L-2
P.I. STA. 211+21.25
Δ = 273°45'49.30"
R = 250.0000'
D = 022°55'05.92"
T = 234.0945'
L = 1194.5195'
Ch = 341.7525'
E = 592.4912'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. K-1
P.I. STA. 3195+77.25
Δ = 086°08'37.79"
R = 1940.0000'
D = 002°57'12.21"
T = 1813.6370'
L = 2916.7773'
Ch = 2649.7132'
E = 715.7257'
e = 0.06'/
S = 0.044'/
V = 50 mi/h

CURVE DATA
CURVE NO. NB 2 LN-2
P.I. STA. NB 2 LN-2
Δ = 004°09'38.63"
R = 14100.0000'
D = 000°24'22.87"
T = 512.1851'
L = 1023.9200'
Ch = 1023.6950'
E = 9.2995'
e = 0.06'/
S = 0.034'/
V = 70 mi/h

CURVE DATA
CURVE NO. L-1
P.I. STA. 211+87.21
Δ = 001°06'57.30"
R = 17266.4007'
D = 000°19'54.60"
T = 168.1492'
L = 336.2878'
Ch = 336.2825'
E = 0.8187'
e = 0.06'/
S = NC
V = 30 mi/h

CURVE DATA
CURVE NO. M-1
P.I. STA. 297+32.93
Δ = 266°08'37.79"
R = 250.0000'
D = 022°55'05.92"
T = 267.4184'
L = 1161.2715'
Ch = 365.2486'
E = 616.0774'
e = 0.06'/
S = 0.06'/
V = 30 mi/h

CURVE DATA
CURVE NO. M-2
P.I. STA. 313+54.38
Δ = 001°11'03.63"
R = 250.0000'
D = 000°20'05.45"
T = 176.8547'
L = 353.6968'
Ch = 353.6905'
E = 0.9139'
e = 0.06'/
S = NC
V = 30 mi/h

CURVE DATA
CURVE NO. N-1
P.I. STA. 4200+17.46
Δ = 093°51'48.47"
R = 1700.0000'
D = 003°22'13.22"
T = 1818.6774'
L = 2784.9849'
Ch = 2483.8379'
E = 789.4954'
e = 0.06'/
S = 0.048'/
V = 50 mi/h

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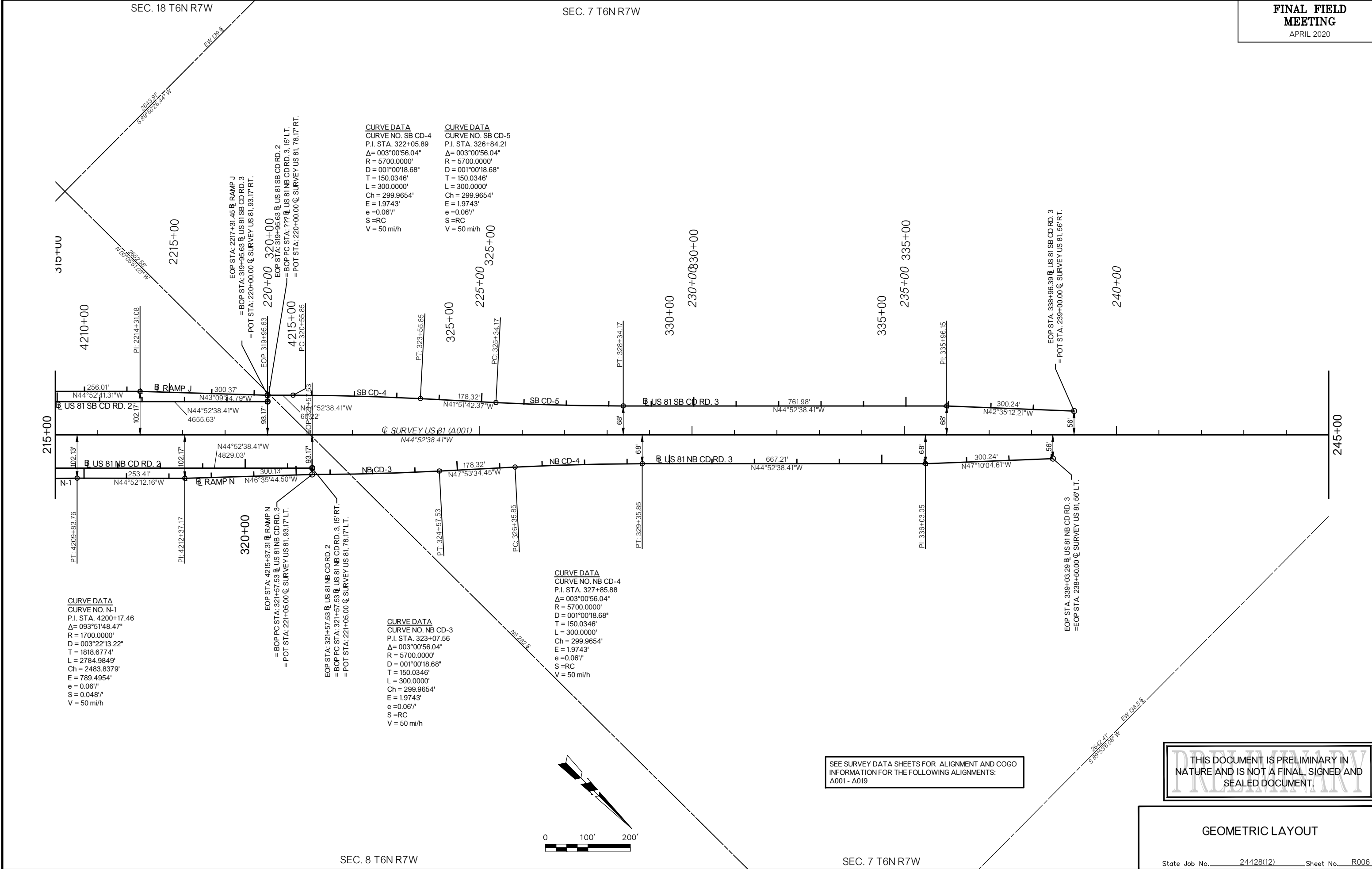
SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001 - A019

GEOMETRIC LAYOUT

US 81 REALIGNMENT
GRADY COUNTY

SEC. 18 T6N R7W

SEC. 7 T6N R7W



CURVE DATA
CURVE NO. SB CD-4
P.I. STA. 322+05.89
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

CURVE DATA
CURVE NO. SB CD-5
P.I. STA. 326+84.21
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

CURVE DATA
CURVE NO. NB CD-4
P.I. STA. 327+85.88
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

CURVE DATA
CURVE NO. NB CD-3
P.I. STA. 323+07.56
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

CURVE DATA
CURVE NO. N-1
P.I. STA. 4200+17.46
 $\Delta = 093^{\circ}51'48.47''$
R = 1700.0000'
D = 003^{\circ}22'13.22''
T = 1818.6774'
L = 2784.9849'
Ch = 2483.8379'
E = 789.4954'
e = 0.061'
S = 0.0481'
V = 50 mi/h

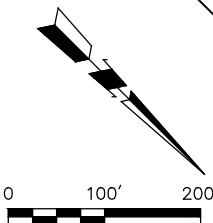
CURVE DATA
CURVE NO. RAMP N
P.I. STA. 4215+37.31
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

CURVE DATA
CURVE NO. RAMP J
P.I. STA. 2217+31.45
 $\Delta = 003^{\circ}00'56.04''$
R = 5700.0000'
D = 001^{\circ}00'18.68''
T = 150.0346'
L = 300.0000'
Ch = 299.9654'
E = 1.9743'
e = 0.061'
S = RC
V = 50 mi/h

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS: A001 - A019

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GEOMETRIC LAYOUT

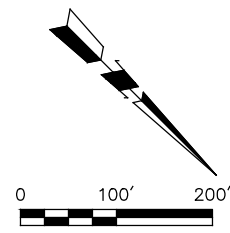


SEC. 8 T6N R7W

SEC. 7 T6N R7W

GRADY COUNTY US 81 REALIGNMENT

SEC. 7 T6N R7W



CURVE DATA
 CURVE NO. O-1
 P.I. STA. 1016+45.95
 $\Delta = 033^{\circ}46'51.15''$
 R = 1432.3900'
 D = 004^{\circ}00'00.05"
 T = 434.9323'
 L = 844.5193'
 Ch = 832.3404'
 E = 64.5760'
 e = 0.06'/
 S = 0.052'/
 V = 50 mi/h

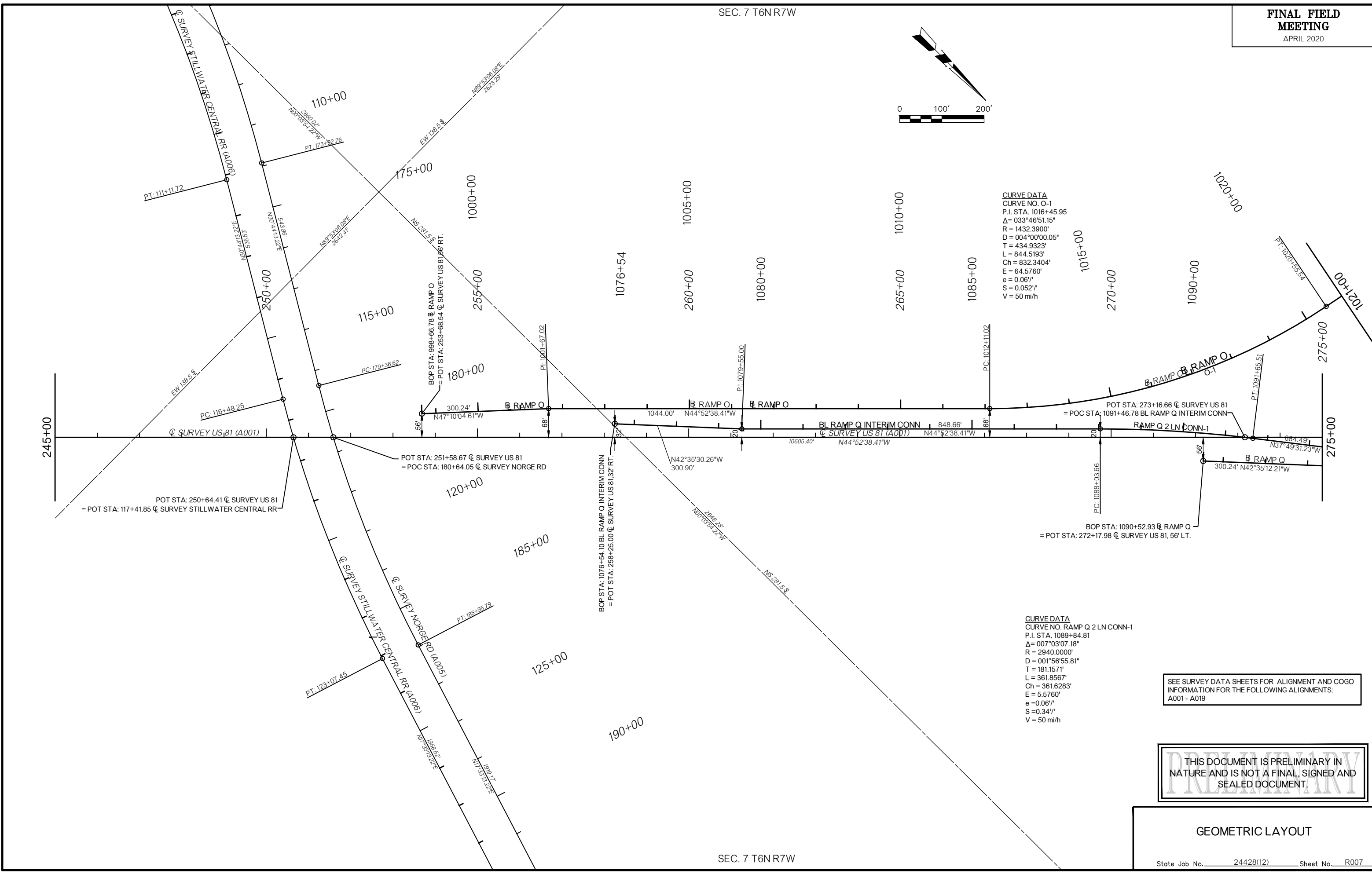
CURVE DATA
 CURVE NO. RAMP Q 2 LN CONN-1
 P.I. STA. 1089+84.81
 $\Delta = 007^{\circ}03'07.18''$
 R = 2940.0000'
 D = 001^{\circ}56'55.81"
 T = 181.1571'
 L = 361.8567'
 Ch = 361.6283'
 E = 5.5760'
 e = 0.06'/
 S = 0.34'/
 V = 50 mi/h

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001 - A019

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GEOMETRIC LAYOUT

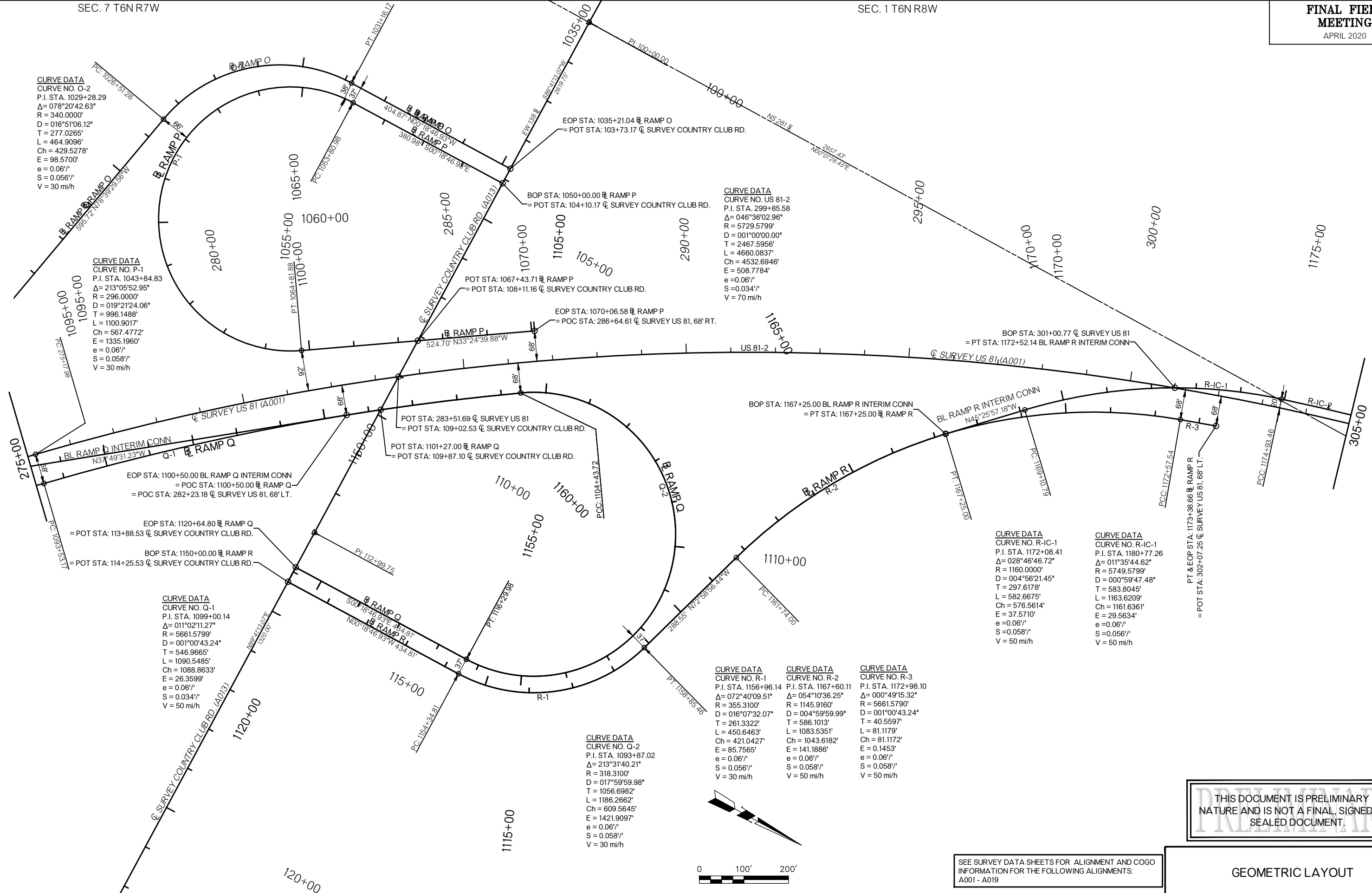
SEC. 7 T6N R7W



GRADY COUNTY US 81 REALIGNMENT

SEC. 7 T6N R7W

SEC. 1 T6N R8W



CURVE DATA
CURVE NO. Q-2
P.I. STA. 1029+28.29
 $\Delta = 078^{\circ}20'42.63''$
R = 340.0000'
D = 016^{\circ}51'06.12"
T = 277.0265'
L = 464.9096'
Ch = 429.5278'
E = 98.5700'
e = 0.06'/
S = 0.056'/
V = 30 mi/h

CURVE DATA
CURVE NO. P-1
P.I. STA. 1043+84.83
 $\Delta = 213^{\circ}05'52.95''$
R = 296.0000'
D = 019^{\circ}21'24.06"
T = 996.1488'
L = 1100.9017'
Ch = 567.4772'
E = 1335.1960'
e = 0.06'/
S = 0.058'/
V = 30 mi/h

CURVE DATA
CURVE NO. US 81-2
P.I. STA. 299+85.58
 $\Delta = 046^{\circ}36'02.96''$
R = 5729.5799'
D = 001^{\circ}00'00.00"
T = 2467.5956'
L = 4660.0837'
Ch = 4532.6946'
E = 508.7784'
e = 0.06'/
S = 0.034'/
V = 70 mi/h

CURVE DATA
CURVE NO. Q-1
P.I. STA. 1099+00.14
 $\Delta = 011^{\circ}02'11.27''$
R = 5661.5799'
D = 001^{\circ}00'43.24"
T = 546.9665'
L = 1090.5485'
Ch = 1088.8633'
E = 26.3599'
e = 0.06'/
S = 0.034'/
V = 50 mi/h

CURVE DATA
CURVE NO. Q-2
P.I. STA. 1093+87.02
 $\Delta = 213^{\circ}31'40.21''$
R = 318.3100'
D = 017^{\circ}59'59.98"
T = 1056.6982'
L = 1186.2662'
Ch = 609.5645'
E = 1421.9097'
e = 0.06'/
S = 0.058'/
V = 30 mi/h

CURVE DATA
CURVE NO. R-1
P.I. STA. 1156+96.14
 $\Delta = 072^{\circ}40'09.51''$
R = 355.3100'
D = 016^{\circ}07'32.07"
T = 261.3322'
L = 450.6463'
Ch = 421.0427'
E = 85.7565'
e = 0.06'/
S = 0.056'/
V = 30 mi/h

CURVE DATA
CURVE NO. R-2
P.I. STA. 1167+60.11
 $\Delta = 054^{\circ}10'36.25''$
R = 1145.9160'
D = 004^{\circ}59'59.99"
T = 586.1013'
L = 1083.5351'
Ch = 1043.6182'
E = 141.1886'
e = 0.06'/
S = 0.058'/
V = 50 mi/h

CURVE DATA
CURVE NO. R-3
P.I. STA. 1172+98.10
 $\Delta = 000^{\circ}49'15.32''$
R = 5661.5790'
D = 001^{\circ}00'43.24"
T = 40.5597'
L = 81.1179'
Ch = 81.1172'
E = 0.1453'
e = 0.06'/
S = 0.058'/
V = 50 mi/h

CURVE DATA
CURVE NO. R-IC-1
P.I. STA. 1172+08.41
 $\Delta = 028^{\circ}46'46.72''$
R = 1160.0000'
D = 004^{\circ}56'21.45"
T = 297.6178'
L = 582.6675'
Ch = 576.5614'
E = 37.5710'
e = 0.06'/
S = 0.058'/
V = 50 mi/h

CURVE DATA
CURVE NO. R-IC-1
P.I. STA. 1180+77.26
 $\Delta = 011^{\circ}35'44.62''$
R = 5749.5799'
D = 000^{\circ}59'47.48"
T = 583.8045'
L = 1163.6209'
Ch = 1161.6361'
E = 29.5634'
e = 0.06'/
S = 0.056'/
V = 50 mi/h

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS: A001 - A019

GEOMETRIC LAYOUT

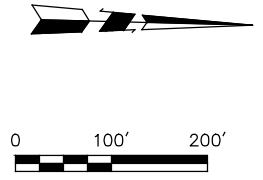
SEC. 7 T6N R7W

SEC. 6 T6N R7W

GRADY COUNTY US 81 REALIGNMENT

SEC. 1 T6N R8W

SEC. 1 T6N R8W



CURVE DATA
CURVE NO. R-IC-2
P.I. STA. 1180+77.26
 $\Delta = 011^{\circ}35'44.62''$
R = 5749.5799'
D = 000^{\circ}59'47.48"
T = 583.8045'
L = 1163.6209'
Ch = 1161.6361'
E = 29.5634'
e = 0.061'
S = 0.0561'
V = 50 mi/h

EOP STA: 1186+57.08 BL RAMP R INTERIM CONN
= BOP STA: 1291+87.82 BL RAMP U INTERIM CONN
= POT STA: 315+00.00 @ SURVEY US 81 20' RT.

BL RAMP R INTERIM CONN

US 81-2

R-IC-2

Q SURVEY US 81 (A001)

2657.43'
N00^{\circ}01'28.45"E

CURVE DATA
CURVE NO. US 81-2
P.I. STA. 299+85.58
 $\Delta = 046^{\circ}36'02.96''$
R = 5729.5799'
D = 001^{\circ}00'00.00"
T = 2467.5956'
L = 4660.0837'
Ch = 4532.6946'
E = 508.7784'
e = 0.061'
S = 0.0541'
V = 70 mi/h

N89^{\circ}53'38.40"E
2618.77'

EW 137.5'

1180+00

310+00

1185+00

3112+00 @ 88 1186+57

315+00

BOP: 1291+87.82

SEC. 6 T6N R7W

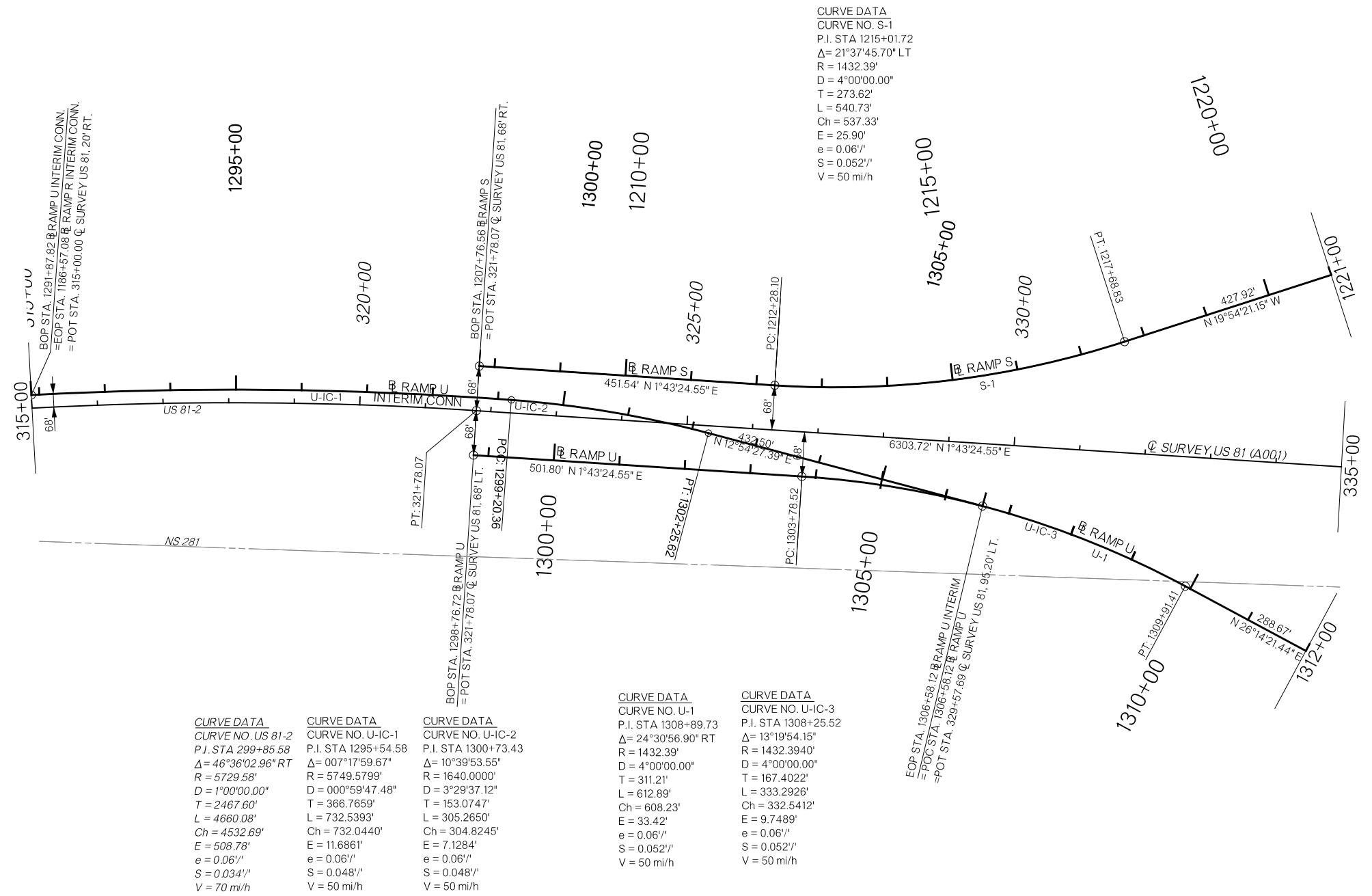
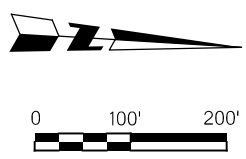
SEC. 6 T6N R7W

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A001 - A019

GEOMETRIC LAYOUT

SEC. 1 T6N R8W



CURVE DATA
CURVE NO. S-1
P.I. STA 1215+01.72
 $\Delta = 21^{\circ}37'45.70''$ LT
R = 1432.39'
D = 4°00'00.00"
T = 273.62'
L = 540.73'
Ch = 537.33'
E = 25.90'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. US 81-2
P.I. STA 299+85.58
 $\Delta = 46^{\circ}36'02.96''$ RT
R = 5729.58'
D = 1°00'00.00"
T = 2467.60'
L = 4660.08'
Ch = 4532.69'
E = 508.78'
e = 0.06'/'
S = 0.034'/'
V = 70 mi/h

CURVE DATA
CURVE NO. U-IC-1
P.I. STA 1295+54.58
 $\Delta = 007^{\circ}17'59.67''$
R = 5749.5799'
D = 000°59'47.48"
T = 366.7659'
L = 732.5393'
Ch = 732.0440'
E = 11.6861'
e = 0.06'/'
S = 0.048'/'
V = 50 mi/h

CURVE DATA
CURVE NO. U-IC-2
P.I. STA 1300+73.43
 $\Delta = 10^{\circ}39'53.55''$
R = 1640.0000'
D = 3°29'37.12"
T = 153.0747'
L = 305.2650'
Ch = 304.8245'
E = 7.1284'
e = 0.06'/'
S = 0.048'/'
V = 50 mi/h

CURVE DATA
CURVE NO. U-1
P.I. STA 1308+89.73
 $\Delta = 24^{\circ}30'56.90''$ RT
R = 1432.39'
D = 4°00'00.00"
T = 311.21'
L = 612.89'
Ch = 608.23'
E = 33.42'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. U-IC-3
P.I. STA 1308+25.52
 $\Delta = 13^{\circ}19'54.15''$
R = 1432.3940'
D = 4°00'00.00"
T = 167.4022'
L = 333.2926'
Ch = 332.5412'
E = 9.7489'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

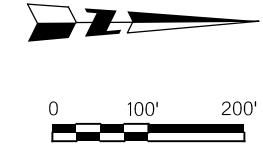
EOP STA. 1306+58.12 RAMP U INTERIM
= POT STA. 1306+58.12 RAMP U
= POT STA. 329+57.69 Q SURVEY US 81, 95.20' LT.

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SEC. 6 T6N R7W

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001-A019

GEOMETRIC LAYOUT



SEC. 1 T6N R8W

SEC. 36 T7N R8W

CURVE DATA
CURVE NO. S-2
P.I. STA 1222+99.41
 $\Delta = 21^\circ 31' 41.96''$ RT
R = 540.00'
D = $10^\circ 36' 37.19''$
T = 102.66'
L = 202.90'
Ch = 201.71'
E = 9.67'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. T-1
P.I. STA 1252+62.91
 $\Delta = 24^\circ 40' 54.29''$ RT
R = 540.00'
D = $10^\circ 36' 37.19''$
T = 118.14'
L = 232.62'
Ch = 230.83'
E = 12.77'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. T-2
P.I. STA 1259+76.50
 $\Delta = 24^\circ 30' 56.90''$ LT
R = 1432.39'
D = $4^\circ 00' 00.00''$
T = 311.21'
L = 612.89'
Ch = 608.23'
E = 33.42'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. V-IC-1
P.I. STA 1367+27.33
 $\Delta = 9^\circ 29' 49.40''$
R = 1820.00'
D = $3^\circ 08' 53.23''$
T = 151.1833'
L = 301.6739'
Ch = 301.3287'
E = 6.2684'
e = 0.06'/'
S = 0.046'/'
V = 50 mi/h

CURVE DATA
CURVE NO. U-2
P.I. STA 1313+98.22
 $\Delta = 24^\circ 40' 54.29''$ LT
R = 540.00'
D = $10^\circ 36' 37.19''$
T = 118.14'
L = 232.62'
Ch = 230.83'
E = 12.77'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

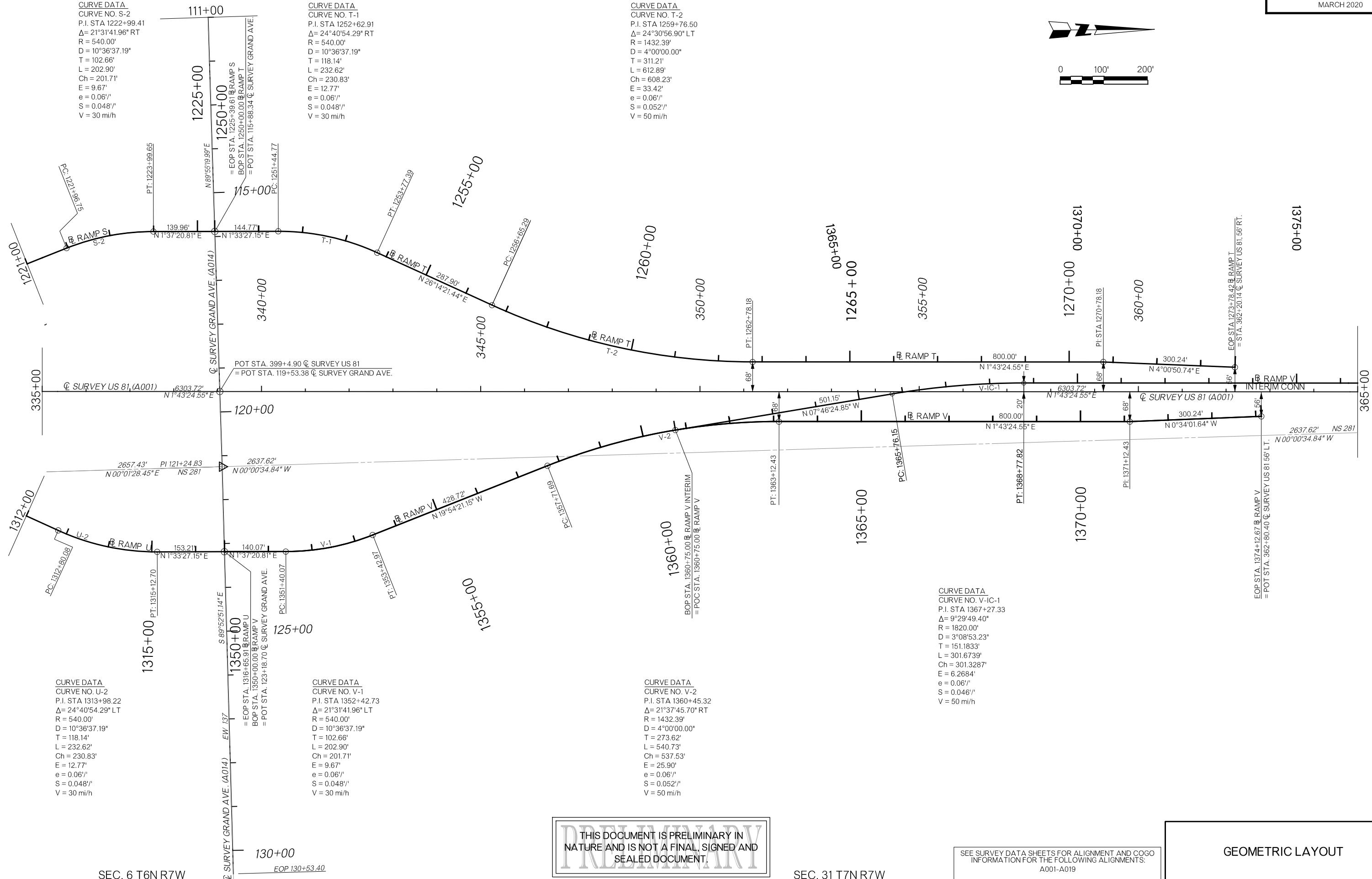
CURVE DATA
CURVE NO. V-1
P.I. STA 1352+42.73
 $\Delta = 21^\circ 31' 41.96''$ LT
R = 540.00'
D = $10^\circ 36' 37.19''$
T = 102.66'
L = 202.90'
Ch = 201.71'
E = 9.67'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. V-2
P.I. STA 1360+45.32
 $\Delta = 21^\circ 37' 45.70''$ RT
R = 1432.39'
D = $4^\circ 00' 00.00''$
T = 273.62'
L = 540.73'
Ch = 537.53'
E = 25.90'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

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GEOMETRIC LAYOUT
State Job No. 24428(04) Sheet No. R011



SEC. 6 T6N R7W

SEC. 31 T7N R7W

US 81 REALIGNMENT
GRADY COUNTY

SEC. 36 T7N R8W

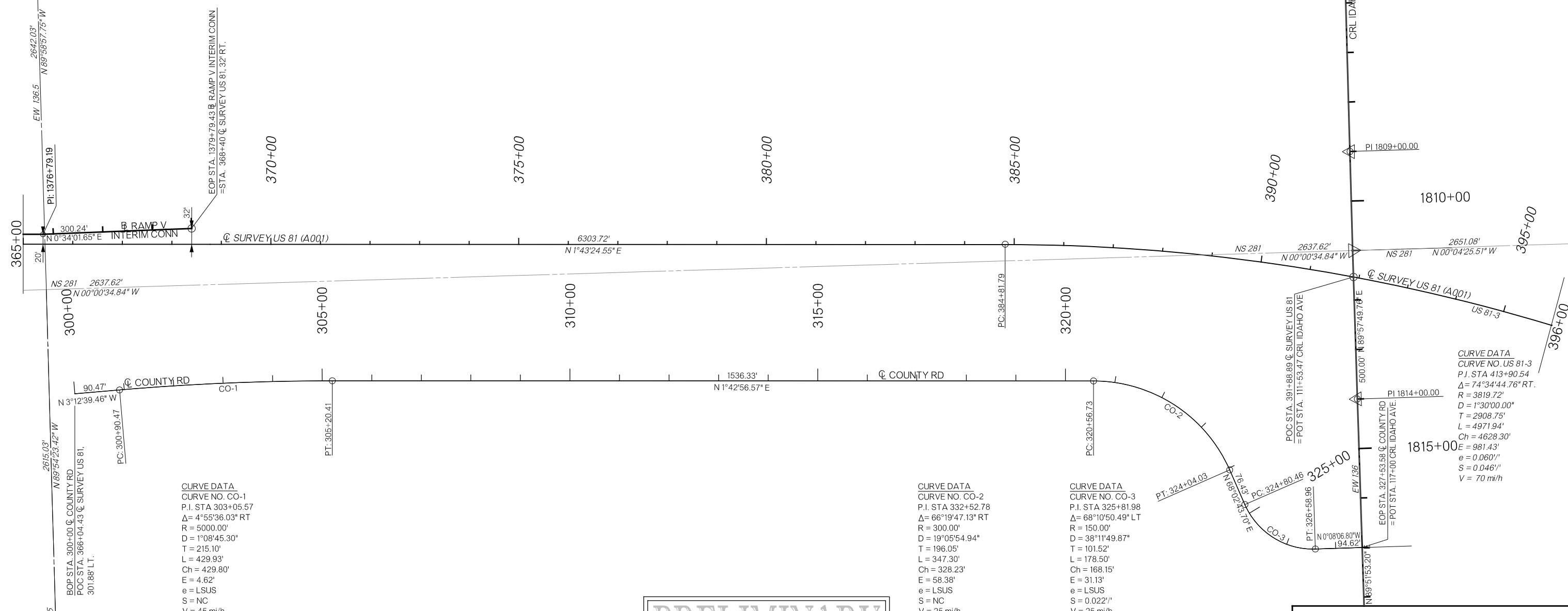
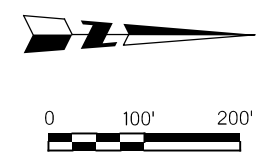
1800+00

SEC. 30 T7N R7W

1805+00

1810+00

1815+00



CURVE DATA
 CURVE NO. CO-1
 P.I. STA 303+05.57
 $\Delta = 4^{\circ}55'36.03''$ RT
 R = 5000.00'
 D = $1^{\circ}08'45.30''$
 T = 215.10'
 L = 429.93'
 Ch = 429.80'
 E = 4.62'
 e = LSUS
 S = NC
 V = 45 mi/h

CURVE DATA
 CURVE NO. CO-2
 P.I. STA 332+52.78
 $\Delta = 66^{\circ}19'47.13''$ RT
 R = 300.00'
 D = $19^{\circ}05'54.94''$
 T = 196.05'
 L = 347.30'
 Ch = 328.23'
 E = 58.38'
 e = LSUS
 S = NC
 V = 25 mi/h

CURVE DATA
 CURVE NO. CO-3
 P.I. STA 325+81.98
 $\Delta = 68^{\circ}10'50.49''$ LT
 R = 150.00'
 D = $38^{\circ}11'49.87''$
 T = 101.52'
 L = 178.50'
 Ch = 168.15'
 E = 31.13'
 e = LSUS
 S = NC
 V = 25 mi/h

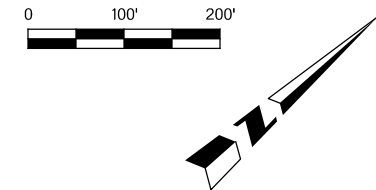
CURVE DATA
 CURVE NO. US 81-3
 P.I. STA 413+90.54
 $\Delta = 74^{\circ}34'44.76''$ RT.
 R = 3819.72'
 D = $1^{\circ}30'00.00''$
 T = 2908.75'
 L = 4971.94'
 Ch = 4628.30'
 E = 981.43'
 e = 0.0601''
 S = 0.0461''
 V = 70 mi/h

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001-A019

GEOMETRIC LAYOUT

SEC. 25, T7N R8W



CURVE DATA

CURVE IOWA-1
PI STA. 35+62.55
 $\Delta = 47^{\circ}30'12.04''$
R = 341.00'
D = $16^{\circ}48'08.21''$
T = 150.06'
L = 282.72'
Ch = 274.69'
E = 31.56'
e = 0.060'/l
S = 0.060'/l
V = 35 mi/h

CURVE DATA

CURVE NO. W-1
PI STA. 403+71.09
 $\Delta = 16^{\circ}58'34.55''$
R = 1288.91'
D = $4^{\circ}26'43.08''$
T = 192.36'
L = 381.89'
Ch = 380.50'
E = 14.27'
e = 0.060'/l
S = 0.054'/l
V = 50 mi/h

CURVE DATA

CURVE NO. W-2
PI STA. 409+86.99
 $\Delta = 36^{\circ}31'56.87''$
R = 637.34'
D = $8^{\circ}59'23.35''$
T = 210.36'
L = 406.36'
Ch = 399.53'
E = 33.82'
e = 0.060'/l
S = 0.052'/l
V = 35 mi/h

CURVE DATA

CURVE NO. X-1
PI STA. 413+94.53
 $\Delta = 36^{\circ}38'02.19''$
R = 520.98'
D = $10^{\circ}59'51.76''$
T = 172.47'
L = 333.11'
Ch = 327.46'
E = 27.81'
e = 0.060'/l
S = 0.056'/l
V = 35 mi/h

CURVE DATA

CURVE NO. X-2
PI STA. 419+78.69
 $\Delta = 17^{\circ}43'47.07''$
R = 1259.64'
D = $4^{\circ}32'54.85''$
T = 196.46'
L = 389.79'
Ch = 388.23'
E = 15.23'
e = 0.060'/l
S = 0.056'/l
V = 50 mi/h

CURVE DATA

CURVE NO. CR-1
PI STA. 13+77.17
 $\Delta = 29^{\circ}27'45.84''$
R = 288.00'
D = $19^{\circ}53'39.72''$
T = 75.72'
L = 148.10'
Ch = 146.47'
E = 9.79'
e = LSUS
S = NC
V = 25 mi/h

CURVE DATA

CURVE NO. US 81-3
P.I. STA. 413+90.54
 $\Delta = 74^{\circ}34'44.76''$
R = 3819.72'
D = $1^{\circ}30'00.00''$
T = 2908.75'
L = 4971.94'
Ch = 4628.30'
E = 981.43'
e = 0.060'/l
S = 0.060'/l
V = 70 mi/h

CURVE DATA

CURVE NO. Y-1
PI STA. 402+26.93
 $\Delta = 36^{\circ}07'45.02''$
R = 887.93'
D = $6^{\circ}27'09.89''$
T = 289.61'
L = 559.90'
Ch = 550.67'
E = 46.04'
e = 0.060'/l
S = 0.060'/l
V = 50 mi/h

CURVE DATA

CURVE NO. Y-2
PI STA. 408+63.72
 $\Delta = 17^{\circ}11'20.16''$
R = 1025.56'
D = $5^{\circ}35'12.41''$
T = 155.00'
L = 307.67'
Ch = 306.52'
E = 11.65'
e = 0.060'/l
S = 0.042'/l
V = 35 mi/h

CURVE DATA

CURVE IOWA-2
PI STA. 49+47.37
 $\Delta = 42^{\circ}46'53.06''$
R = 520.87'
D = $11^{\circ}00'00.05''$
T = 204.03'
L = 388.92'
Ch = 379.95'
E = 38.53'
e = 0.060'/l
S = 0.056'/l
V = 35 mi/h

CURVE DATA

CURVE NO. Z-1
PI STA. 415+48.00
 $\Delta = 15^{\circ}17'37.10''$
R = 1125.00'
D = $5^{\circ}05'34.65''$
T = 151.04'
L = 300.29'
Ch = 299.40'
E = 10.09'
e = 0.060'/l
S = 0.040'/l
V = 35 mi/h

CURVE DATA

CURVE NO. Z-2
PI STA. 422+49.17
 $\Delta = 35^{\circ}54'58.57''$
R = 1075.77'
D = $5^{\circ}19'33.67''$
T = 348.67'
L = 674.35'
Ch = 663.37'
E = 55.09'
e = 0.060'/l
S = 0.058'/l
V = 50 mi/h

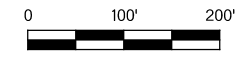
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SEC. 30, T7N R7W

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING SEGMENTS:
A001-A019

GEOMETRIC LAYOUT

US 81 REALIGNMENT
GRADY COUNTY

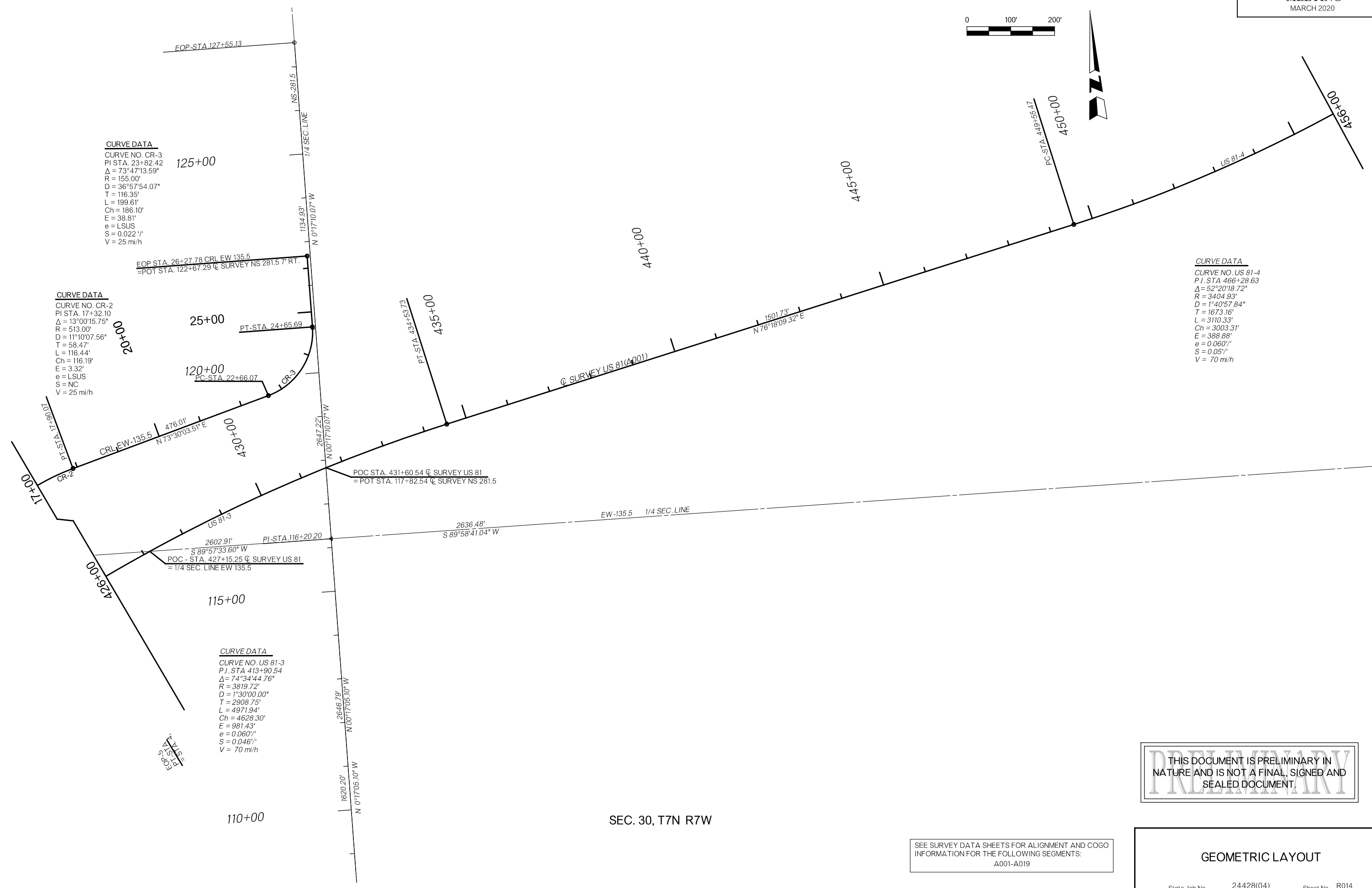


CURVE DATA
 CURVE NO. CR-3
 P.I. STA. 23+82.42
 $\Delta = 73^\circ 47' 13.59''$
 R = 155.00'
 $D = 36^\circ 57' 54.07''$
 T = 116.35'
 L = 199.61'
 Ch = 186.10'
 E = 38.81'
 e = LSUS
 S = 0.022 1/1
 V = 25 mi/h

CURVE DATA
 CURVE NO. CR-2
 P.I. STA. 17+32.10
 $\Delta = 13^\circ 00' 15.75''$
 R = 513.00'
 $D = 11^\circ 10' 07.56''$
 T = 58.47'
 L = 116.44'
 Ch = 116.19'
 E = 3.32'
 e = LSUS
 S = NC
 V = 25 mi/h

CURVE DATA
 CURVE NO. US 81-4
 P.I. STA 466+28.63
 $\Delta = 52^\circ 20' 18.72''$
 R = 3404.93'
 $D = 1^\circ 40' 57.84''$
 T = 1673.16'
 L = 3110.33'
 Ch = 3003.31'
 E = 388.88'
 e = 0.060 1/1
 S = 0.05 1/1
 V = 70 mi/h

CURVE DATA
 CURVE NO. US 81-3
 P.I. STA 413+90.54
 $\Delta = 74^\circ 34' 44.76''$
 R = 3819.72'
 $D = 1^\circ 30' 00.00''$
 T = 2908.75'
 L = 4971.94'
 Ch = 4628.30'
 E = 981.43'
 e = 0.060 1/1
 S = 0.046 1/1
 V = 70 mi/h



SEC. 30, T7N R7W

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING SEGMENTS:
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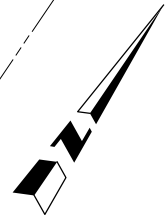
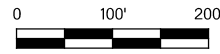
GEOMETRIC LAYOUT
 State Job No. 24428(04) Sheet No. R014

US 81 REALIGNMENT
 GRADY COUNTY

SEC. 20, T7N R7W

SEC. 30, T7N R7W

SEC. 29, T7N R7W



CURVE DATA

CURVE NO. AA-2
PI STA. 485+17.91
 $\Delta = 24^\circ 38' 57.30''$
R = 978.46'
D = 5°51'20.65"
T = 213.78'
L = 420.94'
Ch = 417.70'
E = 23.08'
e = 0.060'/'
S = 0.042'/'
V = 35 mi/h

CURVE DATA

CURVE NO. AA-1
PI STA. 475+20.40
 $\Delta = 37^\circ 22' 01.79''$
R = 1920.91'
D = 2°58'57.86"
T = 649.58'
L = 1252.78'
Ch = 1230.70'
E = 106.86'
e = 0.060'/'
S = 0.046'/'
V = 50 mi/h

CURVE DATA

CURVE NO. CC-3
PI STA. 485+69.88
D = 6°01'52.08"
R = 950.00'
T = 133.57'
L = 265.39'
Ch = 264.53'
E = 9.34'
e = 0.060'/'
S = 0.044'/'
V = 35 mi/h

CURVE DATA

CURVE NO. US 81-5
P.I. STA 510+85.30
 $\Delta = 23^\circ 48' 44.87''$
R = 14320.85'
D = 000°24'00.31"
T = 3019.50'
L = 5951.83'
Ch = 5909.09'
E = 314.86'
e = 0.060'/'
S = NC
V = 70 mi/h

CURVE DATA

CURVE NO. CC-2
PI STA. 474+12.91
R = 9000.00'
D = 0°38'11.83"
T = 530.78'
L = 1060.33'
Ch = 1059.71'
E = 15.64'
e = 0.060'/'
S = 0.024'/'
V = 70 mi/h

CURVE DATA

CURVE NO. US 81-4
P.I. STA 466+28.63
 $\Delta = 52^\circ 20' 18.72''$
R = 3404.93'
D = 1°40'57.84"
T = 1673.16'
L = 3110.33'
Ch = 3003.31'
E = 388.88'
e = 0.060'/'
S = 0.05'/'
V = 70 mi/h

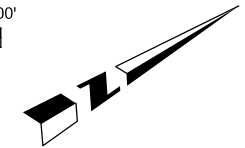
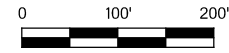
CURVE DATA

CURVE NO. CC-1
PI STA. 466+26.49
 $\Delta = 8^\circ 27' 01.34''$
R = 3472.93'
D = 1°38'59.22"
T = 256.57'
L = 512.21'
Ch = 511.75'
E = 9.46'
e = 0.060'/'
S = 0.05'/'
V = 70 mi/h

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING SEGMENTS:
A001-A019

GEOMETRIC LAYOUT



CURVE DATA

CURVE NO. AA-2
PI STA. 485+17.91
 $\Delta = 24^\circ 38' 57.30''$
R = 978.46'
D = $5^\circ 51' 20.65''$
T = 213.78'
L = 420.94'
Ch = 417.70'
E = 23.08'
e = 0.060'/'
S = 0.042'/'
V = 35 mi/h

CURVE DATA

CURVE NO. BB-1
PI STA. 493+08.77
 $\Delta = 1^\circ 38' 21.55''$
R = 11321.10
D = $0^\circ 30' 21.95''$
T = 161.97'
L = 323.91'
Ch = 323.90'
E = 1.16'
e = 0.060'/'
S = NC
V = 35 mi/h

CURVE DATA

CURVE NO. BB-2
PI = 498+34.84
 $\Delta = 16^\circ 55' 40.57''$
R = 1388.50'
D = $4^\circ 07' 35.21''$
T = 206.62'
L = 410.23'
Ch = 408.74'
E = 15.29'
e = 0.060'/'
S = 0.054'/'
V = 50 mi/h

CURVE DATA

CURVE NO. BB-1C-1
P.I. STA. 500+20.06
 $\Delta = 17^\circ 56' 07.40''$
R = 4212.0000'
D = $01^\circ 21' 37.08''$
T = 664.6810'
L = 1318.4891'
Ch = 1313.1124'
E = 52.1230'
e = 0.060'/'
S = 0.030'/'
V = 55 mi/h

CURVE DATA

CURVE NO. DD-2
PI STA. 496+96.73
 $\Delta = 22^\circ 54' 57.98''$
R = 1420.28'
D = $4^\circ 02' 02.78''$
T = 287.88'
L = 568.06'
Ch = 564.28'
E = 28.88'
e = 0.060'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA

CURVE NO. DD-1
PI STA. 490+48.96
 $\Delta = 32^\circ 57' 30.60''$
R = 506.95'
D = $11^\circ 18' 07.15''$
T = 149.97'
L = 291.62'
Ch = 287.61'
E = 21.72'
e = 0.060'/'
S = 0.056'/'
V = 35 mi/h

CURVE DATA

CURVE NO. US 81-5
P.I. STA 510+85.30
 $\Delta = 23^\circ 48' 44.87''$
R = 14320.85'
D = $00^\circ 24' 00.31''$
T = 3019.50'
L = 5951.83'
Ch = 5909.09'
E = 314.86'
e = 0.060'/'
S = NC
V = 70 mi/h

CURVE DATA

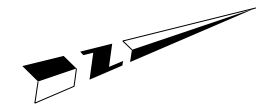
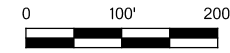
CURVE NO. CC-3
PI STA. 485+69.88
R = 950.00'
D = $6^\circ 01' 52.08''$
T = 133.57'
L = 265.39'
Ch = 264.53'
E = 9.34'
e = 0.060'/'
S = 0.044'/'
V = 35 mi/h

SEC. 20, T7N R7W

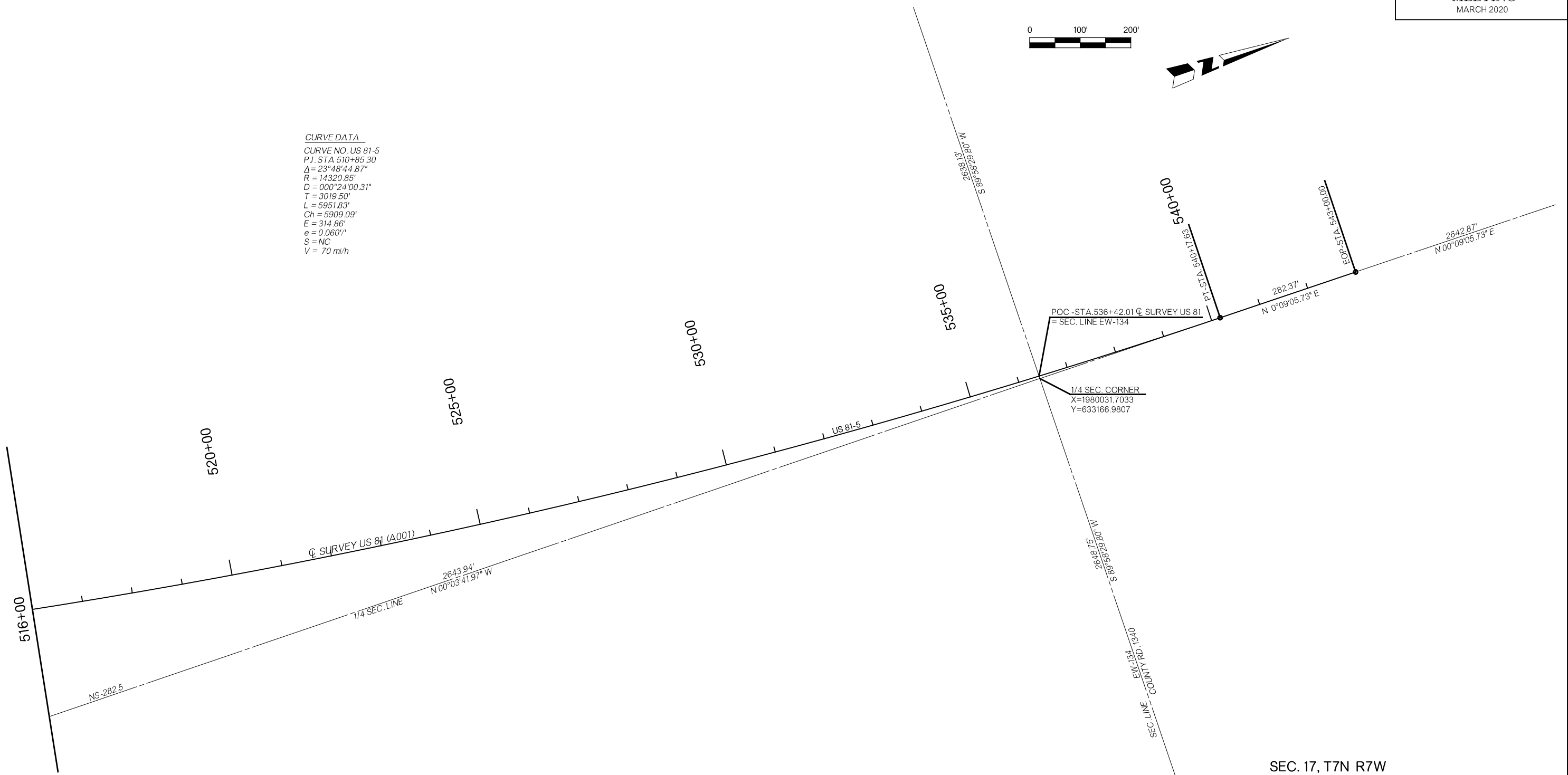
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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING SEGMENTS:
A001-A019

GEOMETRIC LAYOUT



CURVE DATA
 CURVE NO. US 81-5
 P.I. STA 510+85.30
 $\Delta = 23^\circ 48' 44.87''$
 $R = 14320.85'$
 $D = 000^\circ 24' 00.31''$
 $T = 3019.50'$
 $L = 5951.83'$
 $Ch = 5909.09'$
 $E = 314.86'$
 $e = 0.0601'$
 $S = NC$
 $V = 70 \text{ mi/h}$



SEC. 20, T7N R7W

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A001-A019

GEOMETRIC LAYOUT
 State Job No. 24428(04) Sheet No. R017

US 81 REALIGNMENT GRADY COUNTY

SEC. 1 T6N R8W

SEC. 6 T6N R7W

SEC. 12 T6N R8W

SEC. 7 T6N R7W

CURVE DATA
CURVE NO. O-1
P.I. STA. 1016+45.95
 $\Delta = 033^\circ 46' 51.15''$
R = 1432.3900'
D = 004°00'00.05"
T = 434.9323'
L = 844.5193'
Ch = 832.3404'
E = 64.5760'
e = 0.061'
S = 0.0521'
V = 50 mi/h

CURVE DATA
CURVE NO. O-2
P.I. STA. 1029+28.29
 $\Delta = 078^\circ 20' 42.63''$
R = 340.0000'
D = 016°51'06.12"
T = 277.0265'
L = 464.9096'
Ch = 429.5278'
E = 98.5700'
e = 0.061'
S = 0.0561'
V = 30 mi/h

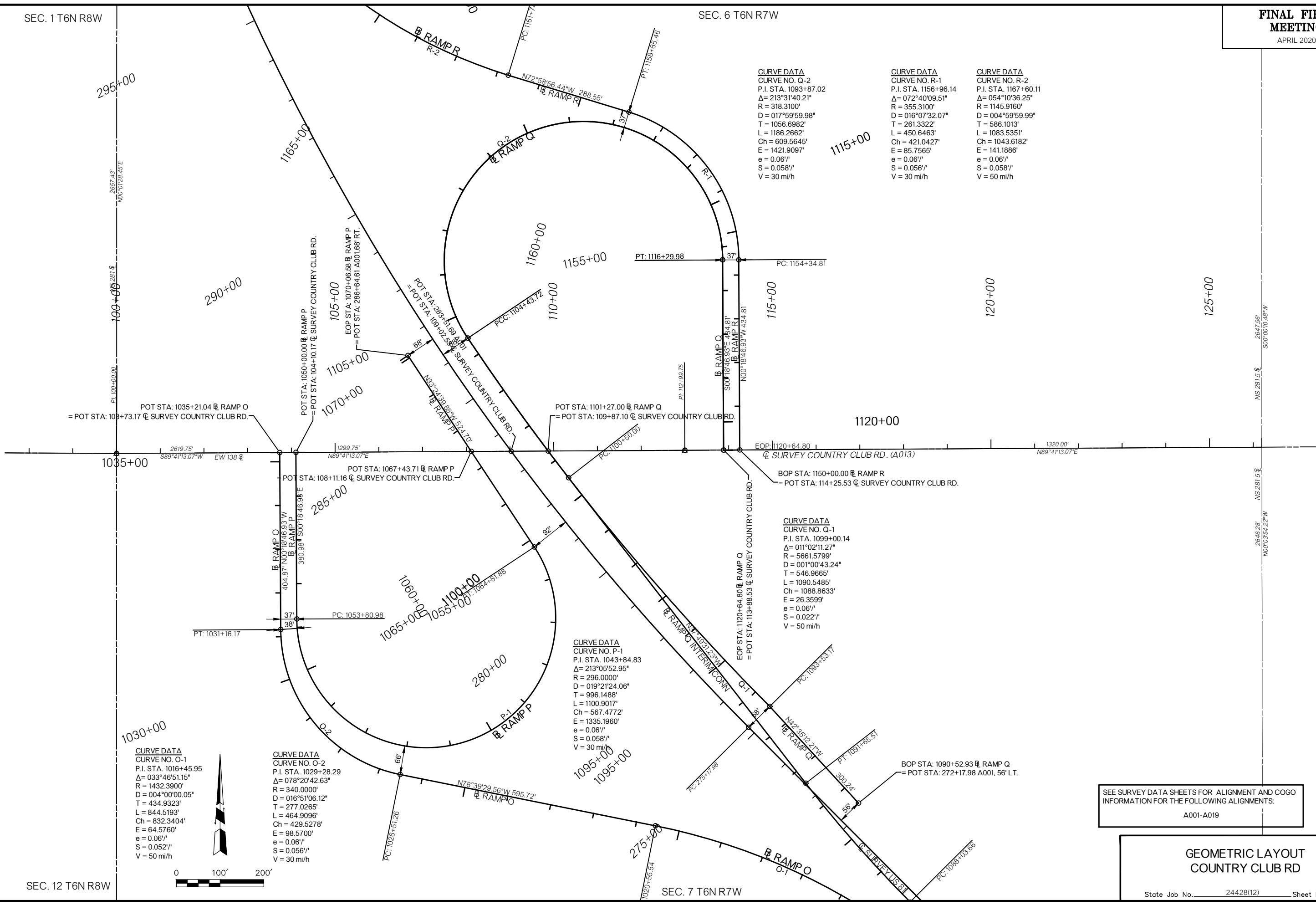
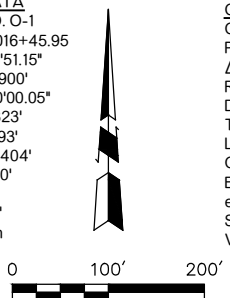
CURVE DATA
CURVE NO. P-1
P.I. STA. 1043+84.83
 $\Delta = 213^\circ 05' 52.95''$
R = 296.0000'
D = 019°21'24.06"
T = 996.1488'
L = 1100.9017'
Ch = 567.4772'
E = 1335.1960'
e = 0.061'
S = 0.0581'
V = 30 mi/h

CURVE DATA
CURVE NO. Q-2
P.I. STA. 1093+87.02
 $\Delta = 213^\circ 31' 40.21''$
R = 318.3100'
D = 017°59'59.98"
T = 1056.6982'
L = 1186.2662'
Ch = 609.5645'
E = 1421.9097'
e = 0.061'
S = 0.0581'
V = 30 mi/h

CURVE DATA
CURVE NO. R-1
P.I. STA. 1156+96.14
 $\Delta = 072^\circ 40' 09.51''$
R = 355.3100'
D = 016°07'32.07"
T = 261.3322'
L = 450.6463'
Ch = 421.0427'
E = 85.7565'
e = 0.061'
S = 0.0561'
V = 30 mi/h

CURVE DATA
CURVE NO. R-2
P.I. STA. 1167+60.11
 $\Delta = 054^\circ 10' 36.25''$
R = 1145.9160'
D = 004°59'59.99"
T = 586.1013'
L = 1083.5351'
Ch = 1043.6182'
E = 141.1886'
e = 0.061'
S = 0.0581'
V = 50 mi/h

CURVE DATA
CURVE NO. Q-1
P.I. STA. 1099+00.14
 $\Delta = 011^\circ 02' 11.27''$
R = 5661.5799'
D = 001°00'43.24"
T = 546.9665'
L = 1090.5485'
Ch = 1088.8633'
E = 26.3599'
e = 0.061'
S = 0.0221'
V = 50 mi/h



SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001-A019

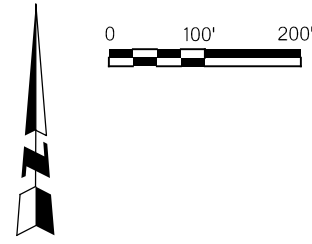
GEOMETRIC LAYOUT
COUNTRY CLUB RD
State Job No. 24428(12) Sheet No. R018

GRADY COUNTY US 81 REALIGNMENT

SEC. 1 T6N R8W

SEC. 36 T7N R8W
1260+00

FINAL FIELD MEETING
MARCH 2020



100+00

105+00

110+00

1225+00

1220+00

1215+00

1255+00

340+00

335+00

330+00

345+00

120+00

1360+00

1355+00

125+00

1350+00

1315+00

1310+00

130+00

CL SURVEY GRAND AVE. (A014) 2124.83' N 89°55'19.99" E 2124.83' N 89°55'19.99" E 2642.53' S 89°55'19.99" W 2637.62' N 00°00'34.84" W 2657.43' N 00°01'28.45" E 2617.40' N 89°52'51.14" W 928.57' S 89°52'51.14" E 928.57' S 89°52'51.14" E CL SURVEY GRAND AVE. (A014)

CURVE DATA
CURVE NO. T-1
P.I. STA 1252+62.91
Δ = 24°40'54.29" RT
R = 540.00'
D = 10°36'37.19"
T = 118.14'
L = 232.62'
Ch = 230.83'
E = 12.77'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. T-2
P.I. STA 1259+76.50
Δ = 24°30'56.90" LT
R = 1432.39'
D = 4°00'00.00"
T = 311.21'
L = 612.89'
Ch = 608.23'
E = 33.42'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

= POT STA. 115+88.34 CL SURVEY GRAND AVE
= EOP STA. 1225+39.61 RAMP S
= BOP STA. 1250+00.00 RAMP T

POT STA. 399+4.90 CL SURVEY US 81
= POT STA. 119+53.38 CL SURVEY GRAND AVE.

= POT STA. 123+18.70 CL SURVEY GRAND AVE.
= EOP STA. 1316+65.91 RAMP U
= BOP STA. 1350+00.00 RAMP V

CURVE DATA
CURVE NO. V-1
P.I. STA 1352+42.73
Δ = 21°31'41.96" LT
R = 540.00'
D = 10°36'37.19"
T = 102.66'
L = 202.90'
Ch = 201.71'
E = 9.67'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. V-2
P.I. STA 1360+45.32
Δ = 21°37'45.70" RT
R = 1432.39'
D = 4°00'00.00"
T = 273.62'
L = 540.73'
Ch = 537.53'
E = 25.90'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. S-1
P.I. STA 1215+01.72
Δ = 21°37'45.70" LT
R = 1432.39'
D = 4°00'00.00"
T = 273.62'
L = 540.73'
Ch = 537.33'
E = 25.90'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. S-2
P.I. STA 1222+99.41
Δ = 21°31'41.96" RT
R = 540.00'
D = 10°36'37.19"
T = 102.66'
L = 202.90'
Ch = 201.71'
E = 9.67'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

CURVE DATA
CURVE NO. U-1
P.I. STA 1308+89.73
Δ = 24°30'56.90" RT
R = 1432.39'
D = 4°00'00.00"
T = 311.21'
L = 612.89'
Ch = 608.23'
E = 33.42'
e = 0.06'/'
S = 0.052'/'
V = 50 mi/h

CURVE DATA
CURVE NO. U-2
P.I. STA 1313+98.22
Δ = 24°40'54.29" LT
R = 540.00'
D = 10°36'37.19"
T = 118.14'
L = 232.62'
Ch = 230.83'
E = 12.77'
e = 0.06'/'
S = 0.048'/'
V = 30 mi/h

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SEC. 6 T6N R7W

SEC. 31 T7N R7W

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001-A019

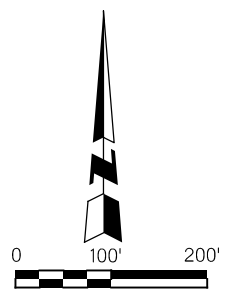
GEOMETRIC LAYOUT
GRAND AVENUE

State Job No. 24428(04) Sheet No. R019

US 81 REALIGNMENT
GRADY COUNTY

SEC. 30 T7N R7W

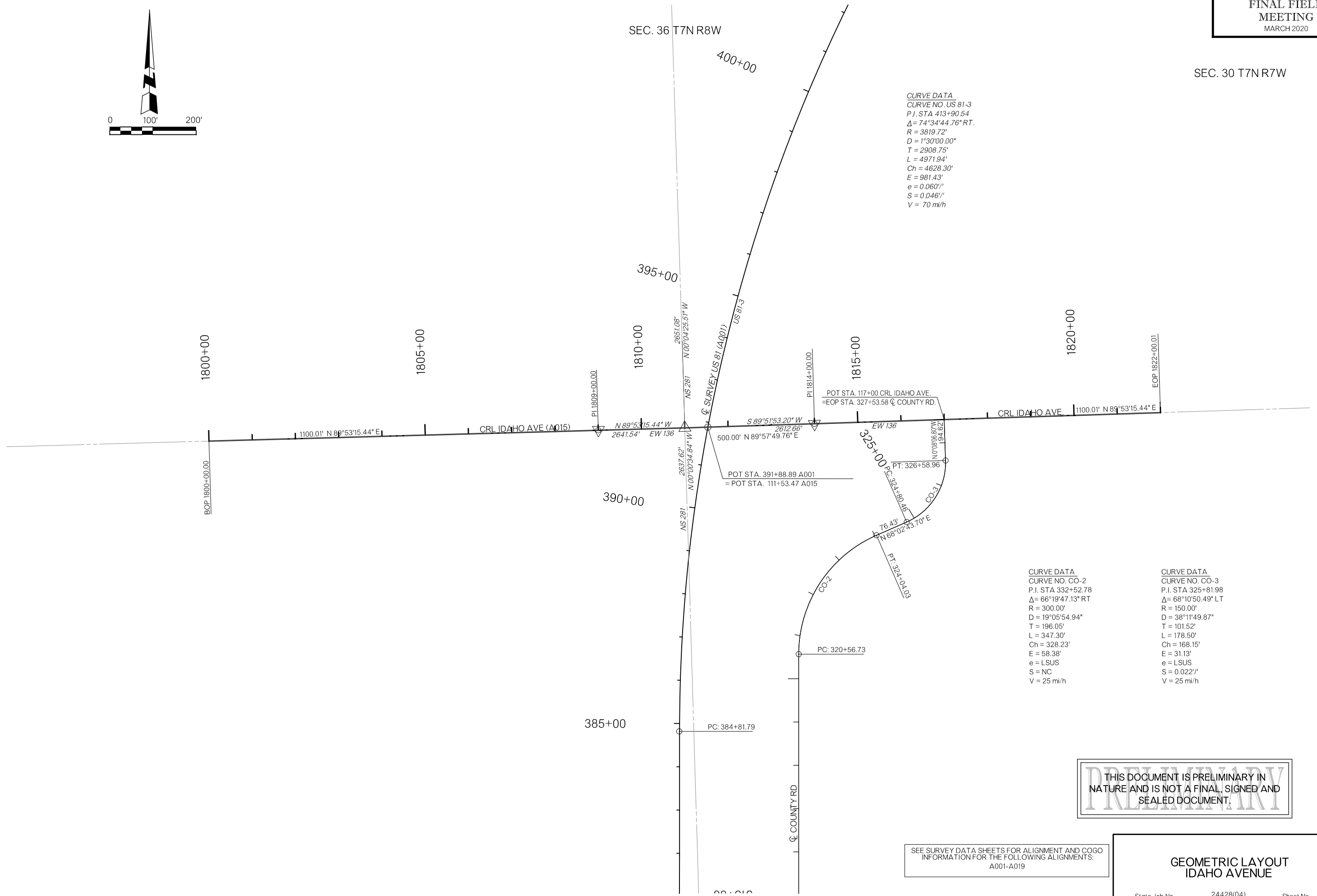
SEC. 36 T7N R8W



CURVE DATA
 CURVE NO. US 81-3
 P.I. STA 413+90.54
 $\Delta = 74^\circ 34' 44.76''$ RT.
 R = 3819.72'
 D = $1^\circ 30' 00.00''$
 T = 2908.75'
 L = 4971.94'
 Ch = 4628.30'
 E = 981.43'
 e = 0.0601'
 S = 0.0461'
 V = 70 mi/h

CURVE DATA
 CURVE NO. CO-2
 P.I. STA 332+52.78
 $\Delta = 66^\circ 19' 47.13''$ RT
 R = 300.00'
 D = $19^\circ 05' 54.94''$
 T = 196.05'
 L = 347.30'
 Ch = 328.23'
 E = 58.38'
 e = LSUS
 S = NC
 V = 25 mi/h

CURVE DATA
 CURVE NO. CO-3
 P.I. STA 325+81.98
 $\Delta = 68^\circ 10' 50.49''$ LT
 R = 150.00'
 D = $38^\circ 11' 49.87''$
 T = 101.52'
 L = 178.50'
 Ch = 168.15'
 E = 31.13'
 e = LSUS
 S = 0.0221'
 V = 25 mi/h



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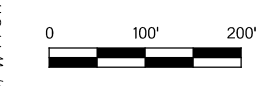
SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS:
A001-A019

GEOMETRIC LAYOUT IDAHO AVENUE
 State Job No. 24428(04) Sheet No. R020

GRADY COUNTY US 81 REALIGNMENT

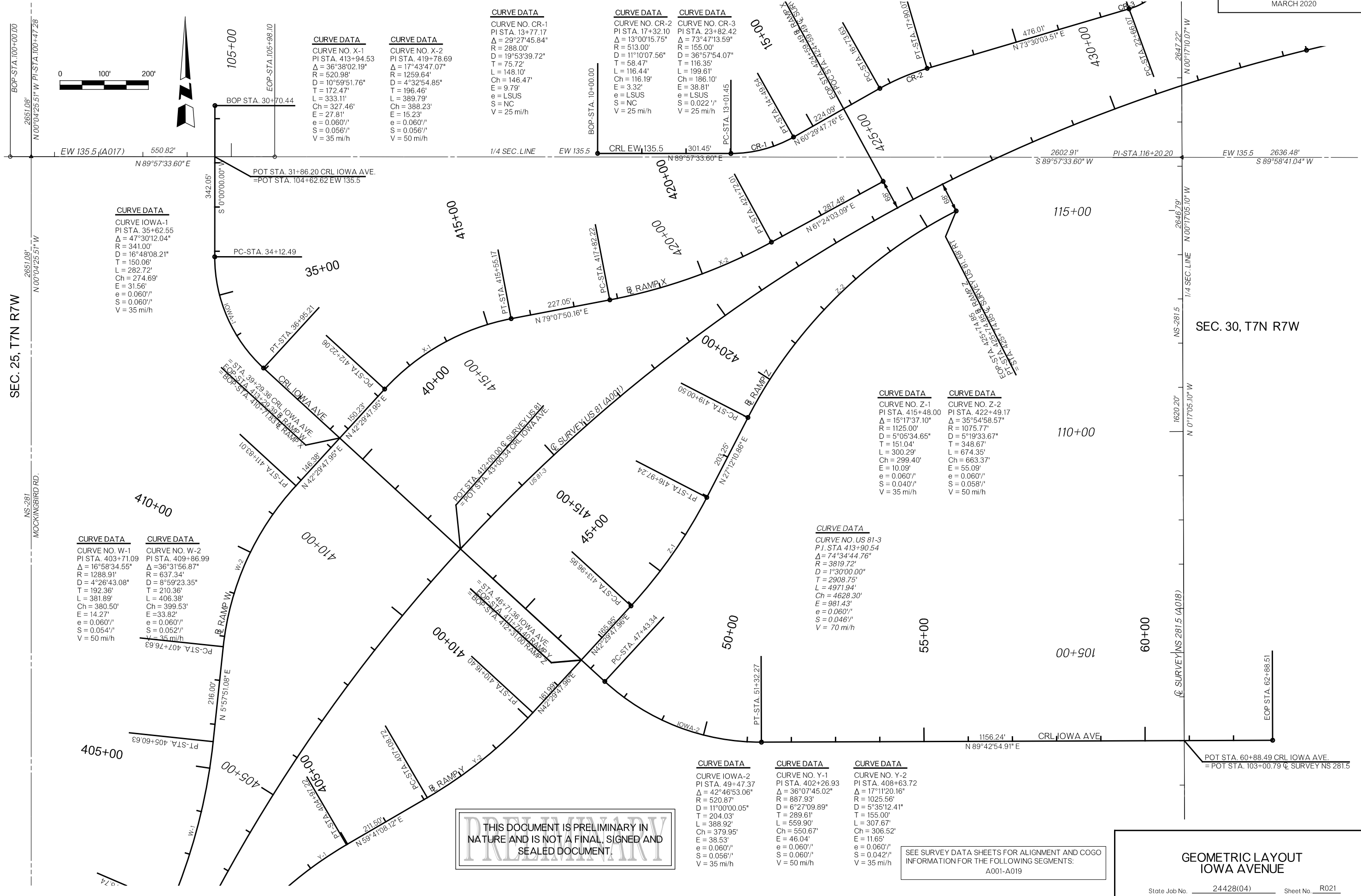
SEC. 30, T7N R7W

GEOMETRIC LAYOUT
IOWA AVENUE



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING SEGMENTS:
A001-A019



CURVE DATA
CURVE NO. X-1
PI STA. 413+94.53
Δ = 36°38'02.19"
R = 520.98'
D = 10°59'51.76"
T = 172.47'
L = 333.11'
Ch = 327.46'
E = 27.81'
e = 0.060'/"
S = 0.056'/"
V = 35 mi/h

CURVE DATA
CURVE NO. X-2
PI STA. 419+78.69
Δ = 17°43'47.07"
R = 1259.64'
D = 4°32'54.85"
T = 196.46'
L = 389.79'
Ch = 388.23'
E = 15.23'
e = 0.060'/"
S = 0.056'/"
V = 50 mi/h

CURVE DATA
CURVE NO. CR-1
PI STA. 13+77.17
Δ = 29°27'45.84"
R = 288.00'
D = 19°53'39.72"
T = 75.72'
L = 148.10'
Ch = 146.47'
E = 9.79'
e = LSUS
S = NC
V = 25 mi/h

CURVE DATA
CURVE NO. CR-2
PI STA. 17+32.10
Δ = 13°00'15.75"
R = 513.00'
D = 11°10'07.56"
T = 58.47'
L = 116.44'
Ch = 116.19'
E = 3.32'
e = LSUS
S = NC
V = 25 mi/h

CURVE DATA
CURVE NO. CR-3
PI STA. 23+82.42
Δ = 73°47'13.59"
R = 155.00'
D = 36°57'54.07"
T = 116.35'
L = 199.61'
Ch = 186.10'
E = 38.81'
e = LSUS
S = 0.022'/"
V = 25 mi/h

CURVE DATA
CURVE IOWA-1
PI STA. 35+62.55
Δ = 47°30'12.04"
R = 341.00'
D = 16°48'08.21"
T = 150.06'
L = 282.72'
Ch = 274.69'
E = 31.56'
e = 0.060'/"
S = 0.060'/"
V = 35 mi/h

CURVE DATA
CURVE NO. Z-1
PI STA. 415+48.00
Δ = 15°17'37.10"
R = 1125.00'
D = 5°05'34.65"
T = 151.04'
L = 300.29'
Ch = 299.40'
E = 10.09'
e = 0.060'/"
S = 0.040'/"
V = 35 mi/h

CURVE DATA
CURVE NO. Z-2
PI STA. 422+49.17
Δ = 35°54'58.57"
R = 1075.77'
D = 5°19'33.67"
T = 348.67'
L = 674.35'
Ch = 663.37'
E = 55.09'
e = 0.060'/"
S = 0.058'/"
V = 50 mi/h

CURVE DATA
CURVE NO. W-1
PI STA. 403+71.09
Δ = 16°58'34.55"
R = 1288.91'
D = 4°26'43.08"
T = 192.36'
L = 381.89'
Ch = 380.50'
E = 14.27'
e = 0.060'/"
S = 0.054'/"
V = 50 mi/h

CURVE DATA
CURVE NO. W-2
PI STA. 409+86.99
Δ = 36°31'56.87"
R = 637.34'
D = 8°59'23.35"
T = 210.36'
L = 406.38'
Ch = 399.53'
E = 33.82'
e = 0.060'/"
S = 0.052'/"
V = 35 mi/h

CURVE DATA
CURVE NO. US 81-3
PI STA. 413+90.54
Δ = 74°34'44.76"
R = 3819.72'
D = 1°30'00.00"
T = 2908.75'
L = 4971.94'
Ch = 4628.30'
E = 981.43'
e = 0.060'/"
S = 0.046'/"
V = 70 mi/h

CURVE DATA
CURVE IOWA-2
PI STA. 49+47.37
Δ = 42°46'53.06"
R = 520.87'
D = 11°00'00.05"
T = 204.03'
L = 388.92'
Ch = 379.95'
E = 38.53'
e = 0.060'/"
S = 0.056'/"
V = 35 mi/h

CURVE DATA
CURVE NO. Y-1
PI STA. 402+26.93
Δ = 36°07'45.02"
R = 887.93'
D = 6°27'09.89"
T = 289.61'
L = 559.90'
Ch = 550.67'
E = 46.04'
e = 0.060'/"
S = 0.060'/"
V = 50 mi/h

CURVE DATA
CURVE NO. Y-2
PI STA. 408+63.72
Δ = 17°11'20.16"
R = 1025.56'
D = 5°35'12.41"
T = 155.00'
L = 307.67'
Ch = 306.52'
E = 11.65'
e = 0.060'/"
S = 0.042'/"
V = 35 mi/h

Alignment: Q SURVEY US 81
Description: A001

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	87+22.420	596110.5945000	1982754.9150000
End:	124+31.693	599819.8646060	1982750.4840007
Parameter Value		Parameter Value	
Length:	3709.273	Course:	N 00° 04' 06.40" W
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	124+31.69	599819.8646060	1982750.4840007
RP:		599813.0202009	1977020.9079996
PT:	169+12.58	603855.7621970	1981080.9973030
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	44° 48' 32.01"	Type:	LEFT
Radius:	5729.58	Tangent:	
Length:	4480.89	External:	2362.08
Mid-Ord:	432.49	Course:	467.8
Chord:	4367.57		N 22° 28' 22.40" W
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	169+12.58	603855.7621970	1981080.9973030
End:	275+17.98	611370.9494532	1973597.9197501
Parameter Value		Parameter Value	
Length:	10605.4	Course:	N 44° 52' 38.41" W
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	275+17.98	611370.9494532	1973597.9197501
RP:		615413.6912974	1977658.0089010
PCC:	321+78.07	615586.0139434	1971931.0209983
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	46° 36' 02.96"	Type:	RIGHT
Radius:	5729.58	Tangent:	2467.6
Length:	4660.08	External:	508.78
Mid-Ord:	467.28	Course:	N 21° 34' 36.93" W
Chord:	4532.69		
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	321+78.07	615586.0139434	1971931.0209983
End:	384+81.79	621886.8867931	1972120.6115998
Parameter Value		Parameter Value	
Length:	6303.72	Course:	N 01° 43' 24.55" E
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	384+81.79	621886.8867931	1972120.6115998
RP:		621772.0050265	1975938.6036215
PT:	434+53.73	625483.0914641	1975034.1157272
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	74° 34' 44.76"	Type:	RIGHT
Radius:	3819.72	Tangent:	2908.75
Length:	4971.94	External:	981.43
Mid-Ord:	780.81	Course:	N 39° 00' 46.93" E
Chord:	4628.3		
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	434+53.73	625483.0914641	1975034.1157272
End:	449+55.47	625838.6934974	1976493.1401006
Parameter Value		Parameter Value	
Length:	1501.73	Course:	N 76° 18' 09.31" E
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	449+55.47	625838.6934974	1976493.1401006
RP:		629146.7828053	1975686.8730064
PCC:	480+65.80	627763.8263981	1978798.2960043
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	52° 20' 18.72"	Type:	LEFT
Radius:	3404.93	Tangent:	1673.16
Length:	3110.33	External:	388.88
Mid-Ord:	349.02	Course:	N 50° 07' 59.95" E
Chord:	3003.31		
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	540+17.63	633542.5435000	1980032.6969000
End:	543+00.00	633824.9174000	1980033.4440000
Parameter Value		Parameter Value	
Length:	282.37	Course:	N 00° 09' 05.73" E

Alignment: Q SURVEY COUNTRY CLUB RD.
Description: Q SURVEY COUNTRY CLUB RD.

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	96+00.00	611999.3714741	1971752.1316826
End:	100+00.00	611997.4360000	1972152.1270000
Parameter Value		Parameter Value	
Length:	400.00	Course:	S 89° 43' 21.95" E
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	100+00.00	611997.4360000	1972152.1270000
End:	112+99.75	612004.5371934	1973451.8617010
Parameter Value		Parameter Value	
Length:	1299.75	Course:	N 89° 41' 13.07" E
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	112+99.75	612004.5371934	1973451.8617010
End:	126+19.75	612011.7490000	1974771.8420000
Parameter Value		Parameter Value	
Length:	1320.00	Course:	N 89° 41' 13.07" E

Alignment: CRL IOWA AVE
Description: CRL IOWA AVE

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	30+70.44	625354.6716322	1972565.4484033
End:	34+12.49	625012.6253460	1972565.4484033
Parameter Value		Parameter Value	
Length:	342.05	Course:	S 00° 00' 00.00" W
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	34+12.49	625012.6253460	1972565.4484033
RP:		625012.6253460	1972906.4484033
PT:	36+95.21	624761.2003321	1972676.0868127
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	47° 30' 12.04"	Type:	LEFT
Radius:	341	Tangent:	150.06
Length:	282.72	External:	31.56
Mid-Ord:	28.88	Course:	S 23° 45' 06.02" E
Chord:	274.69		
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	36+95.21	624761.2003321	1972676.0868127
End:	47+43.34	624053.1366677	1973448.8932349
Parameter Value		Parameter Value	
Length:	1048.13	Course:	S 47° 30' 12.04" E
<u>Curve Point Data</u>			
Description	Station	Northing	Easting
PC:	47+43.34	624053.1366677	1973448.8932349
RP:		624437.1828465	1973800.7654979
PT:	51+32.27	623916.3192789	1973803.3541036
<u>Circular Curve Data</u>			
Parameter Value	Parameter Value	Value	
Delta:	42° 46' 53.06"	Type:	LEFT
Radius:	520.87	Tangent:	204.03
Length:	388.92	External:	38.53
Mid-Ord:	35.88	Course:	S 68° 53' 38.56" E
Chord:	379.95		
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	51+32.27	623916.3192789	1973803.3541036
End:	62+88.51	623922.0655352	1974959.5809989
Parameter Value		Parameter Value	
Length:	1156.24	Course:	N 89° 42' 54.91" E

Alignment: CRL GRAND AVE
Description: COUNTY ROAD EW 137

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	100+00.00	617309.4145186	1970029.5777479
End:	121+24.83	617312.2990000	1972154.4060000
Parameter Value		Parameter Value	
Length:	2124.83	Course:	N 89° 55' 19.99" E
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	121+24.83	617312.2990000	1972154.4060000
End:	130+53.40	617310.3683586	1973082.9724838
Parameter Value		Parameter Value	
Length:	928.57	Course:	S 89° 52' 51.14" E

Alignment: CRL IDAHO AVE
Description: COUNTY ROAD EW 136

<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	1800+00.00	622589.7015111	1971053.5068602
End:	1809+00.00	622587.9362912	1971953.5051290
Parameter Value		Parameter Value	
Length:	900.00	Course:	S 89° 53' 15.44" E
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	1809+00.00	622587.9362912	1971953.5051290
End:	1814+00.00	622588.2519903	1972453.5039089
Parameter Value		Parameter Value	
Length:	500.00	Course:	N 89° 57' 49.76" E
<u>Tangent Data</u>			
Description	PT Station	Northing	Easting
Start:	1814+00.00	622588.2519903	1972453.5039089
End:	1822+00.01	622590.1400532	1973253.5119214
Parameter Value		Parameter Value	
Length:	800.01	Course:	N 89° 51' 53.20" E

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SEE SURVEY DATA SHEETS FOR ALIGNMENT AND COGO INFORMATION FOR THE FOLLOWING ALIGNMENTS: A001 - A019

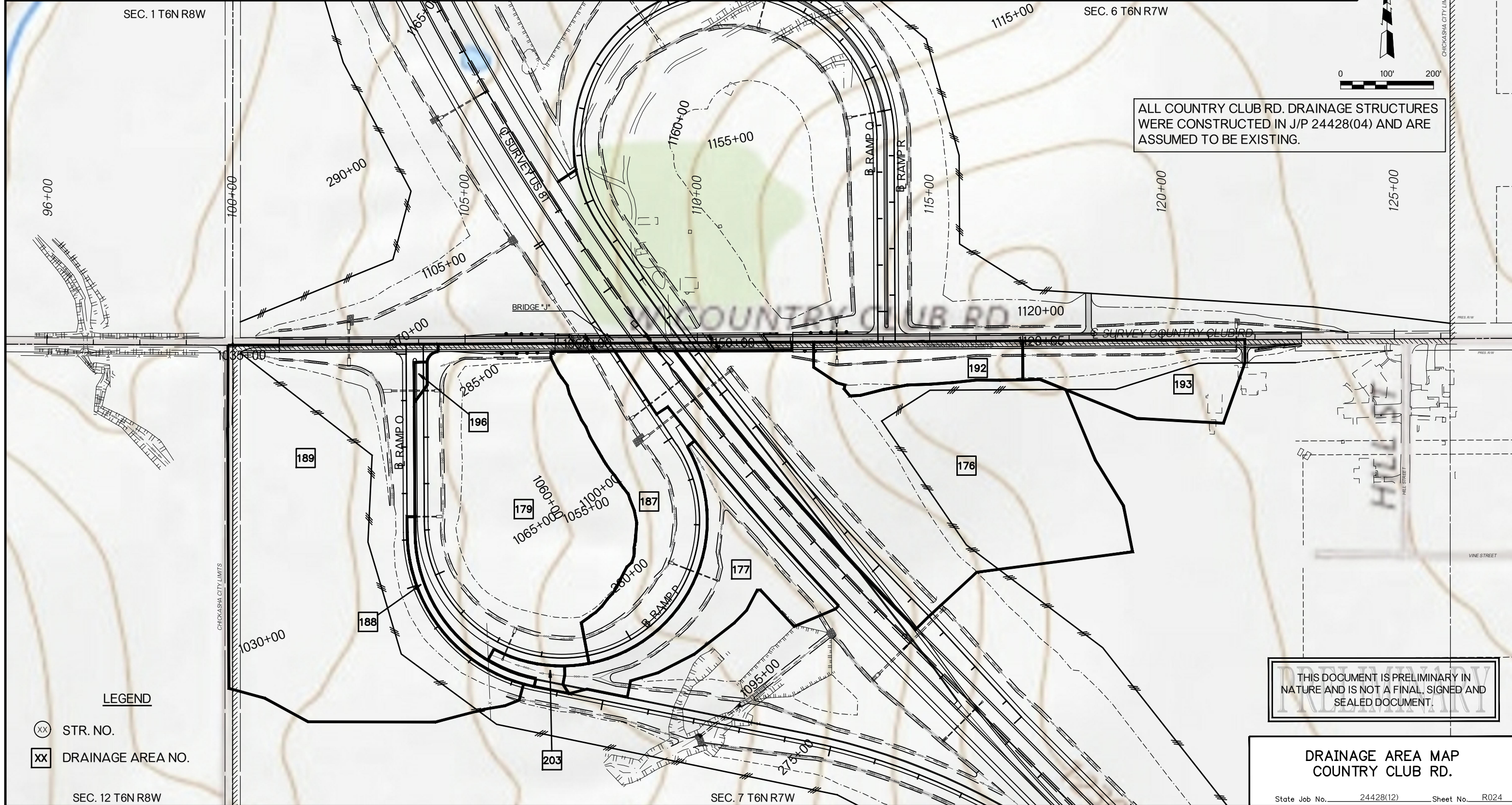
GEOMETRIC LAYOUT

US 81 REALIGNMENT GRADY COUNTY

DRAINAGE RECORD

STR. NO.	ALIGNMENT	LOCATION (STATION)	LOCATION (OFFSET)	LT/RT	D.A. NO.	AREA (AC)	C	T _c (MIN)	I ₁₀ (IN/HR)	I ₅₀ (IN/HR)	TOTAL Q ₁₀ (CFS)	TOTAL Q ₅₀ (CFS)	Q _{IN10} (CFS)	Q _{IN50} (CFS)	INLET TYPE	DESIGN Q (CFS)	ADJ. CA	ADD'N CA	FROM STR. NO.	CUMULATIVE T _c (MIN)	I (IN/HR)	TOTAL Q IN CONDUIT (CFS)	PIPE DIA. (IN)	SLOPE (FT/FT)	VELOCITY (FT/S)	SLOPE LENGTH (FT)	LENGTH (FT)	TIME IN PIPE (MIN)	TOTAL TC (MIN)	TO STR. NO.	FLOWLINE (FT)	D.S. FLOWLINE (FT)
156	Iowa	32+24.00	0.00'	€	156	5.30	0.50	10.00	4.41	7.08	15.74	24.26	15.74	24.26	RCPA	Q10	2.6500	0.00	DA 156	10.00	5.94	15.74	36"x22"	0.0264	10.54	80.97	82	0.13	10.13	DITCH	1139.06	1136.92
217	Grand Ave.	118+00.00	0.00'	€											C.E.T.																1132.40	1132.00
218	Grand Ave.	121+00.00	0.00'	€											C.E.T.																1129.90	1129.50
T1	Grand Ave.	118+00.00	54.23'	RT.	214	2.57	0.58	12.96	3.91	6.39	7.93	12.32	7.93	12.32	CGSPA	Q10	1.4906	0.00	DA 214	12.96	5.32	7.92	2-21"x15"	0.0043	4.96	23.15	24	0.08	13.04	STR 217	1132.49	1132.39
T2	Grand Ave.	121+00.00	54.40'	RT.	215	3.56	0.58	20.24	3.10	5.20	8.84	13.93	8.84	13.93	CGSPA	Q10	2.0648	0.00	DA 215	20.24	4.28	8.83	2-21"x15"	0.0043	5.27	23.19	24	0.07	20.31	STR 218	1129.99	1129.89

FINAL FIELD MEETING
APRIL 2020

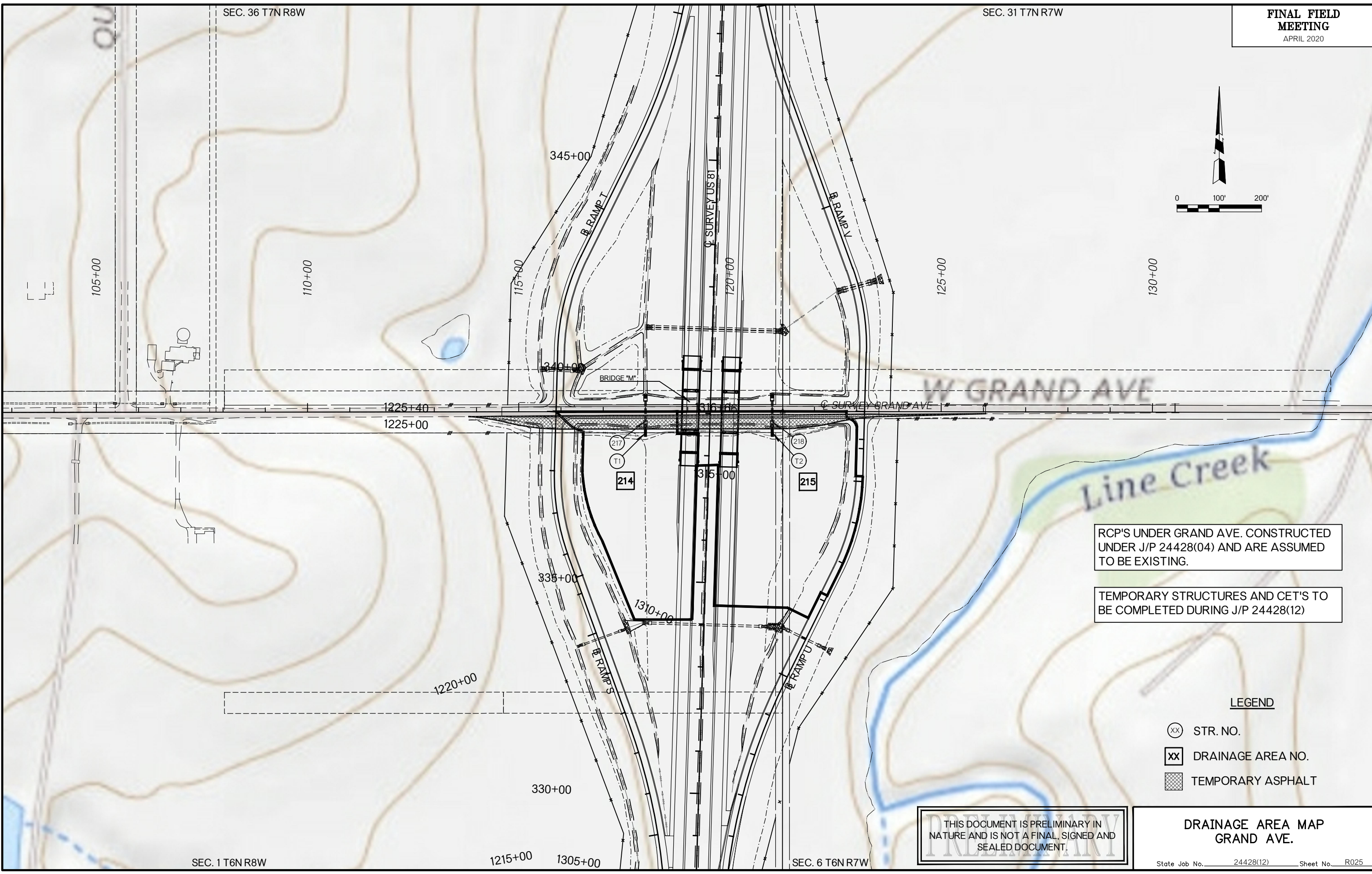
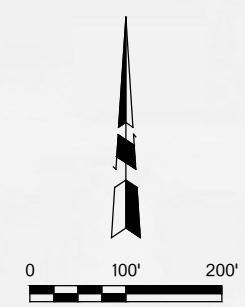


ALL COUNTRY CLUB RD. DRAINAGE STRUCTURES WERE CONSTRUCTED IN J/P 24428(04) AND ARE ASSUMED TO BE EXISTING.

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DRAINAGE AREA MAP
COUNTRY CLUB RD.

GRADY COUNTY US 81 REALIGNMENT



RCP'S UNDER GRAND AVE. CONSTRUCTED UNDER J/P 24428(04) AND ARE ASSUMED TO BE EXISTING.

TEMPORARY STRUCTURES AND CET'S TO BE COMPLETED DURING J/P 24428(12)

LEGEND

- (XX) STR. NO.
- [XX] DRAINAGE AREA NO.
- [Hatched Box] TEMPORARY ASPHALT

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**DRAINAGE AREA MAP
GRAND AVE.**

State Job No. 24428(12) Sheet No. R025

SEC. 36 T7N R8W

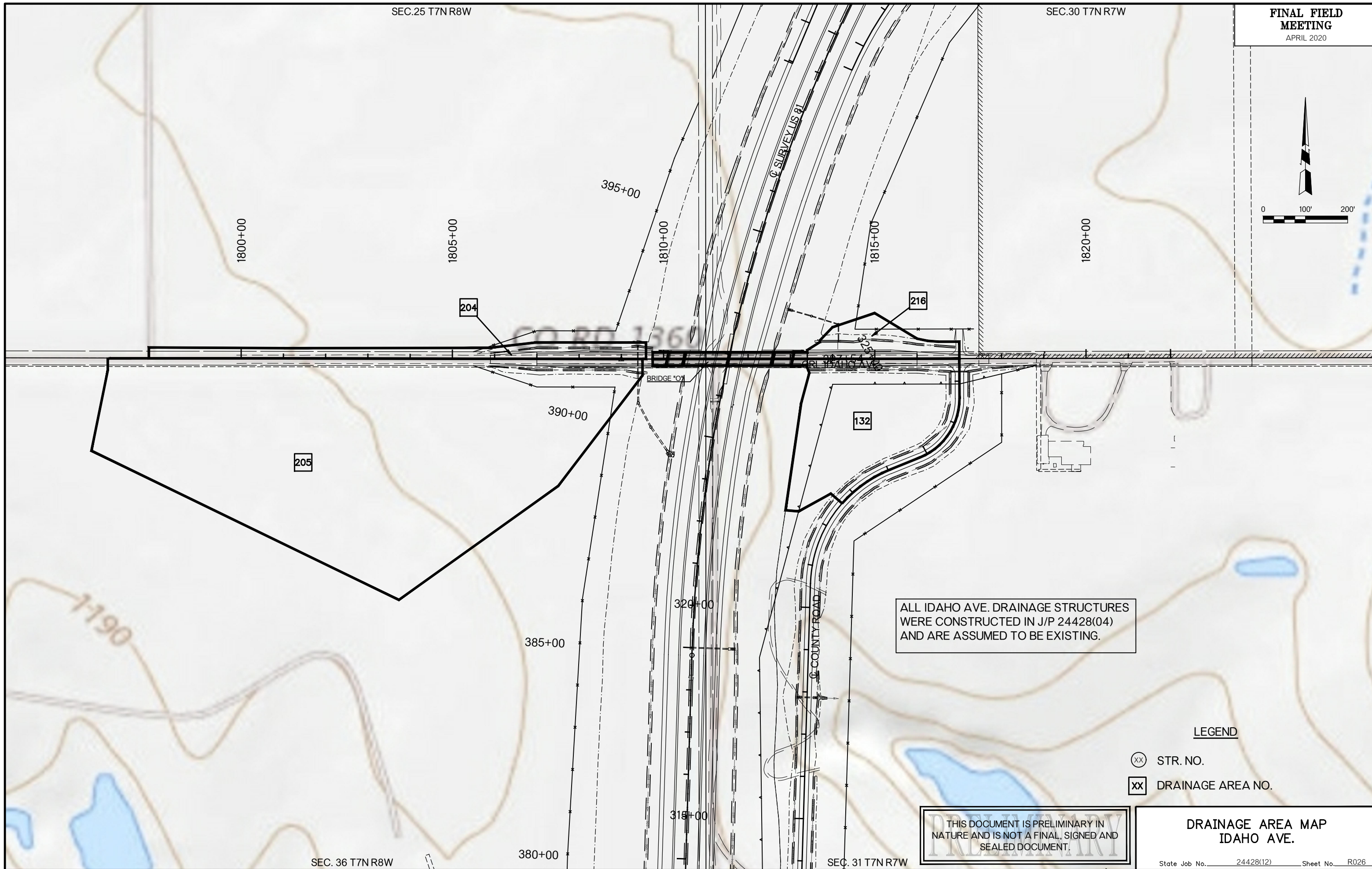
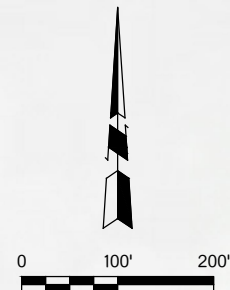
SEC. 31 T7N R7W

SEC. 1 T6N R8W

1215+00 1305+00

SEC. 6 T6N R7W

US 81 REALIGNMENT
GRADY COUNTY



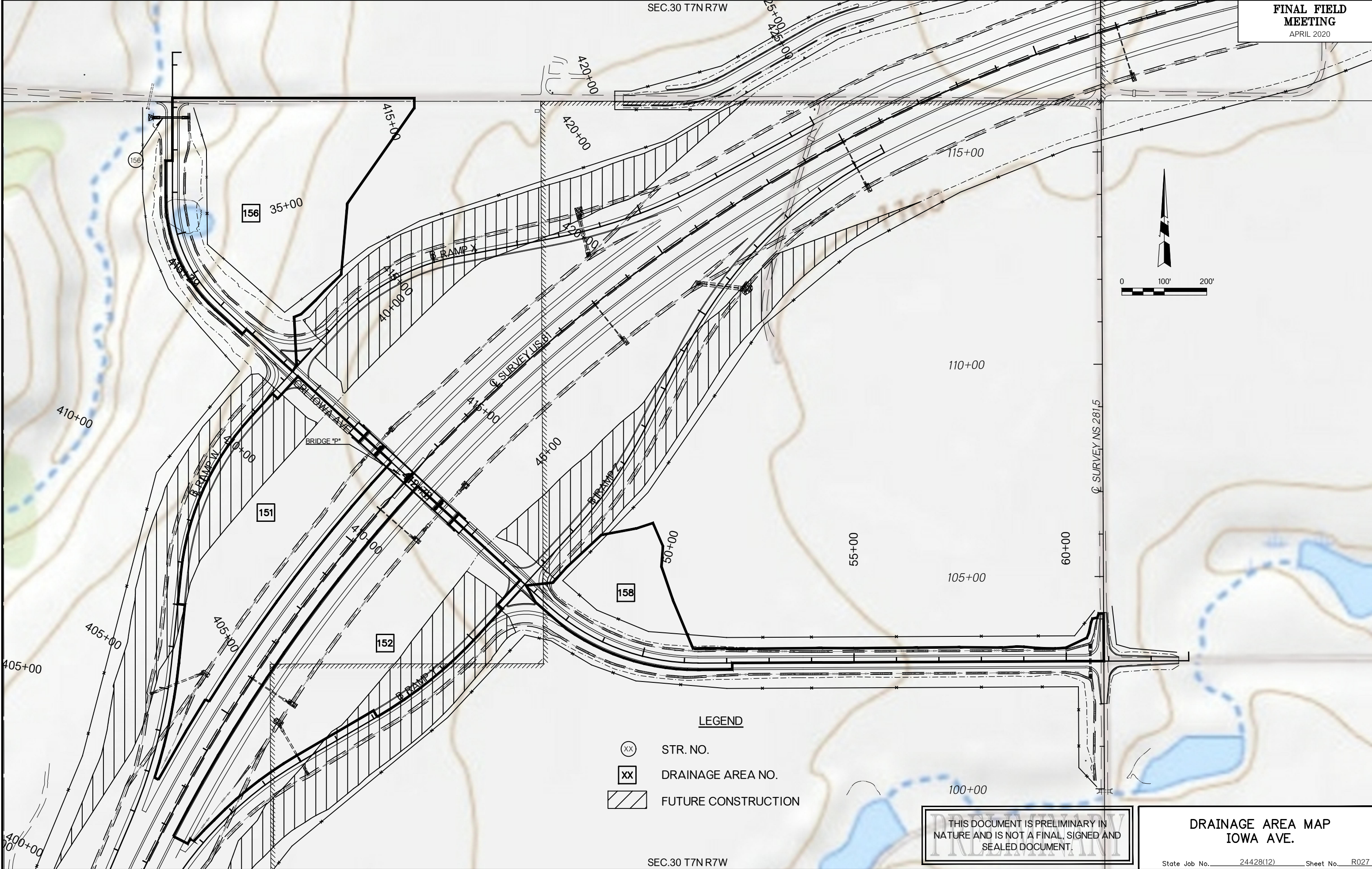
LEGEND

- ⊗ STR. NO.
- ⊠ DRAINAGE AREA NO.

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DRAINAGE AREA MAP
IDAHO AVE.

SEC.30 T7N R7W



- LEGEND**
- ⊗ STR. NO.
 - ⊠ DRAINAGE AREA NO.
 - ▨ FUTURE CONSTRUCTION

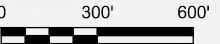
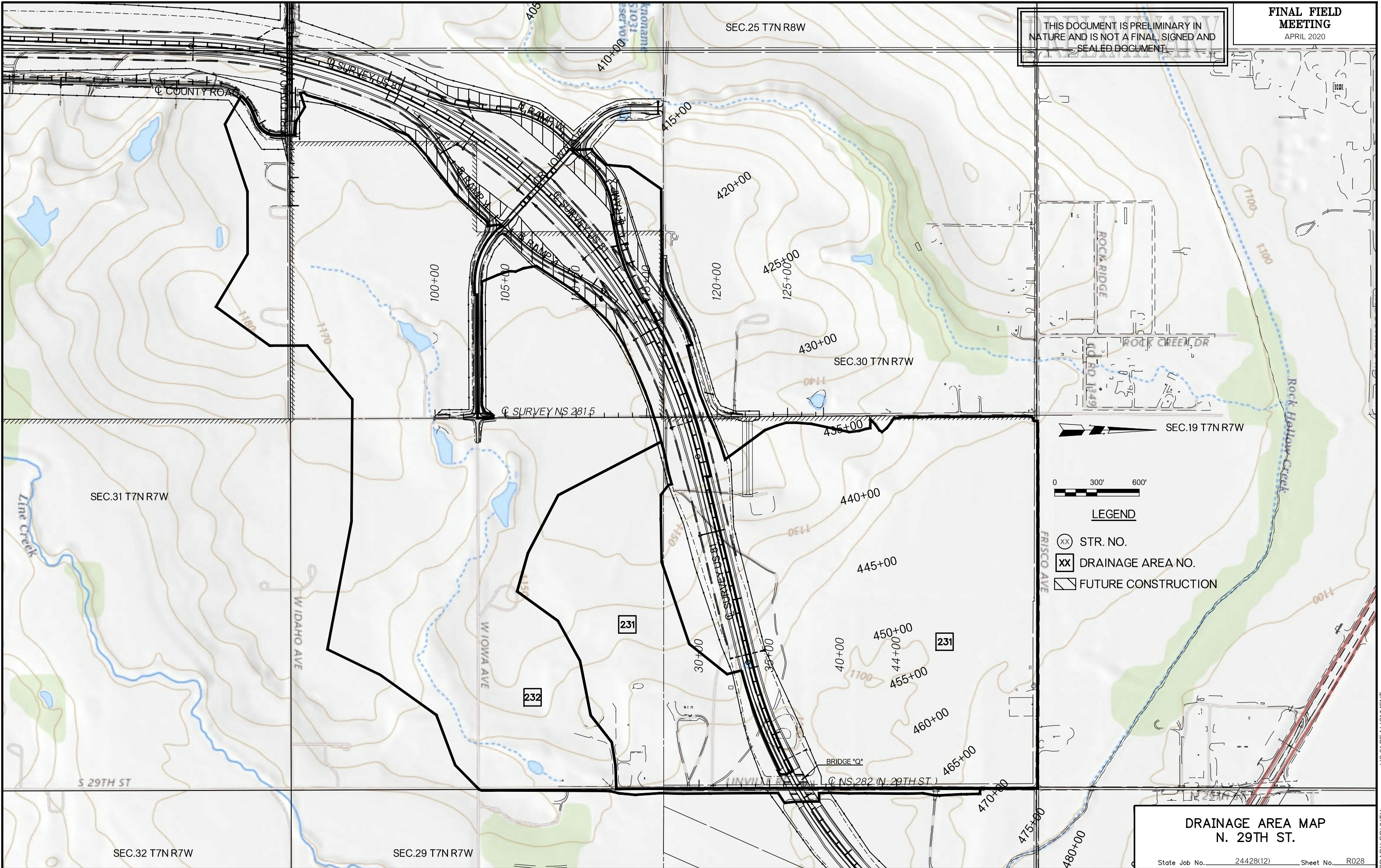
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**DRAINAGE AREA MAP
IOWA AVE.**
State Job No. 24428(12) Sheet No. R027

SEC.30 T7N R7W

US 81 REALIGNMENT
GRADY COUNTY

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- LEGEND**
- (XX) STR. NO.
 - [XX] DRAINAGE AREA NO.
 - [Hatched Box] FUTURE CONSTRUCTION

**DRAINAGE AREA MAP
N. 29TH ST.**
State Job No. 24428(12) Sheet No. R028

US 81 REALIGNMENT
GRADY COUNTY

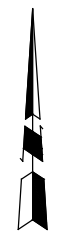
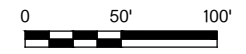
SUMMARY OF DISTURBED DRAINAGE AREAS

ALIGNMENT	DISTURBED AREA NO.	OUTFLOW LOCATION (STATION)	DISTURBED AREA (STATION TO STATION)	DIRECTION TO OUTFALL	DESCRIPTION OF AREA	EROSION CONTROL MEASURES	DISTURBED AREA (AC.)
COUNTRY CLUB RD.	D1	STA. 106+05	STA. 100+16 TO STA. 108+13	N	PROPOSED ROADWAY	SILT DIKE, SILT FENCE & SOLID SLAB SODDING	0.59
COUNTRY CLUB RD.	D2	STA. 109+61	STA. 108+31 TO STA. 109+74	S	US 81 MEDIAN	SEDIMENT FILTER & SOLID SLAB SOD	0.21
COUNTRY CLUB RD.	D3	STA. 113+31	STA. 109+84 TO STA. 114+26	N	PROPOSED ROADWAY	SILT DIKE, SILT FENCE, SEDIMENT FILTER, & SOLID SLAB SODDING	0.39
COUNTRY CLUB RD.	D4	STA. 114+58	STA. 114+26 TO STA. 118+42	N	PROPOSED ROADWAY	SILT DIKE & SOLID SLAB SODDING	0.27
COUNTRY CLUB RD.	D5	STA. 123+00	STA. 117+00 TO STA. 123+00	E	PROPOSED ROADWAY	SILT DIKE & SOLID SLAB SODDING	0.36
COUNTRY CLUB RD.	D6	STA. 123+00	STA. 121+78 TO STA. 123+00	E	PROPOSED ROADWAY	SILT DIKE & SOLID SLAB SODDING	0.05
GRAND AVE.	D7	STA. 115+53	STA. 113+82 TO STA. 115+79	S	RT HALF OF GRAND AVE	SILT DIKE & SOLID SLAB SODDING	0.19
GRAND AVE.	D8	STA. 115+62	STA. 114+60 TO STA. 115+81	N	LT HALF OF GRAND AVE	SOLID SLAB SODDING	0.04
GRAND AVE.	D9	STA. 116+36	STA. 115+54 TO STA. 116+50	S	RT HALF OF GRAND AVE/ RAMP S INTERSECTION	SOLID SLAB SODDING	0.07
GRAND AVE.	D10	STA. 118+00	STA. 115+54 TO STA. 118+75	N	PROPOSED IMPROVEMENTS LT & RT OF CENTERLINE	SILT DIKE, SILT FENCE & SOLID SLAB SODDING	0.64
GRAND AVE.	D11	STA. 122+77	STA. 118+75 TO STA. 123+05	N	PROPOSED IMPROVEMENTS LT & RT OF CENTERLINE	SILT DIKE, SILT FENCE & SOLID SLAB SODDING	0.94
GRAND AVE.	D12	STA. 123+47	STA. 122+80 TO STA. 123+53	N	GRAND AVE/ RAMP V INTERSECTION	SOLID SLAB SODDING	0.06
GRAND AVE.	D13	STA. 126+05	STA. 122+78 TO STA. 126+05	E	GRAND AVE/ RAMP U INTERSECTION	SILT DIKE, SILT FENCE & SOLID SLAB SODDING	0.14
IDAHO AVE.	D14	STA. 1809+39	STA. 1805+69 TO STA. 1809+74	S	LT HALF OF IDAHO AVE	SEDIMENT FILTER, SILT DIKE & SOLID SLAB SODDING	0.33
IDAHO AVE.	D15	STA. 1809+39	STA. 1805+80 TO STA. 1809+50	S	RT HALF OF IDAHO AVE	SEDIMENT FILTER, SILT DIKE & SOLID SLAB SODDING	0.30
IDAHO AVE.	D16	STA. 1810+41	STA. 1809+45 TO STA. 1810+85	S	RT HALF OF IDAHO AVE SLOPE WALL	SILT FENCE & SOLID SLAB SODDING	0.22
IDAHO AVE.	D17	STA. 1810+80	STA. 1809+64 TO STA. 1811+07	N	LT HALF OF IDAHO AVE SLOPE WALL	SILT FENCE & SOLID SLAB SODDING	0.36
IDAHO AVE.	D18	STA. 1811+33	STA. 1810+69 TO STA. 1811+82	S	US 81 MEDIAN	SILT FENCE & SOLID SLAB SODDING	0.21
IDAHO AVE.	D19	STA. 1811+75	STA. 1810+85 TO STA. 1812+04	N	US 81 MEDIAN	SILT FENCE & SOLID SLAB SODDING	0.23
IDAHO AVE.	D20	STA. 1812+26	STA. 1811+61 TO STA. 1813+45	S	RT HALF OF IDAHO AVE SLOPE WALL	SILT FENCE & SOLID SLAB SODDING	0.45
IDAHO AVE.	D21	STA. 1812+78	STA. 1811+82 TO STA. 1813+75	N	LT HALF OF IDAHO AVE SLOPE WALL	SILT FENCE & SOLID SLAB SODDING	0.28
IDAHO AVE.	D22	STA. 1812+92	STA. 1813+40 TO STA. 1817+00	N	LT HALF OF IDAHO AVE	SEDIMENT FILTER, SILT DIKE & SOLID SLAB SODDING	0.42
IDAHO AVE.	D23	STA. 1818+82	STA. 1813+40 TO STA. 1818+82	E	RT HALF OF IDAHO AVE	SILT DIKE & SOLID SLAB SODDING	0.38
IDAHO AVE.	D24	STA. 1818+82	STA. 1817+00 TO STA. 1818+82	E	LT HALF OF IDAHO AVE	SILT DIKE & SOLID SLAB SODDING	0.04
IOWA AVE.	D25	STA. 31+92	STA. 31+87 TO STA. 39+29	N	LT HALF OF PROPOSED IOWA AVE	SILT DIKE & SOLID SLAB SODDING	0.68
IOWA AVE.	D26	STA. 31+92	STA. 31+87 TO STA. 39+46	N	RT HALF OF PROPOSED IOWA AVE	SILT DIKE & SOLID SLAB SODDING	1.22
IOWA AVE.	D27	STA. 38+97	STA. 38+74 TO STA. 39+46	SW	IOWA AVE RAMP W INTERSECTION	SOLID SLAB SODDING	0.06
IOWA AVE.	D28	STA. 41+94	STA. 39+46 TO STA. 42+34	NE	PROPOSED IOWA AVE IMPROVEMENTS	SILT DIKE, SILT FENCE & SOLID SLAB SODDING	0.79
IOWA AVE.	D29	STA. 43+00	STA. 42+72 TO STA. 43+31	NE	US 81 MEDIAN	SEDIMENT FILTER, SILT DIKE & SOLID SLAB SODDING	0.19
IOWA AVE.	D30	STA. 43+08	STA. 42+72 TO STA. 43+32	NE	US 81 MEDIAN	SOLID SLAB SODDING	0.22
IOWA AVE.	D31	STA. 44+09	STA. 43+66 TO STA. 46+54	NE	PROPOSED IOWA AVE IMPROVEMENTS	SILT FENCE & SOLID SLAB SODDING	0.86
IOWA AVE.	D32	STA. 47+04	STA. 46+54 TO STA. 47+16	NE	IOWA AVE RAMP Z INTERSECTION	SOLID SLAB SODDING	0.06
IOWA AVE.	D33	STA. 47+18	STA. 46+54 TO STA. 47+65	SW	IOWA AVE RAMP Y INTERSECTION	SOLID SLAB SODDING	0.15
IOWA AVE.	D34	STA. 53+80	STA. 46+75 TO STA. 53+80	E	LT HALF OF PROPOSED IOWA AVE	SILT DIKE & SOLID SLAB SODDING	0.76
IOWA AVE.	D35	STA. 53+80	STA. 46+75 TO STA. 53+80	E	RT HALF OF PROPOSED IOWA AVE	SILT DIKE & SOLID SLAB SODDING	0.50

NOTES:

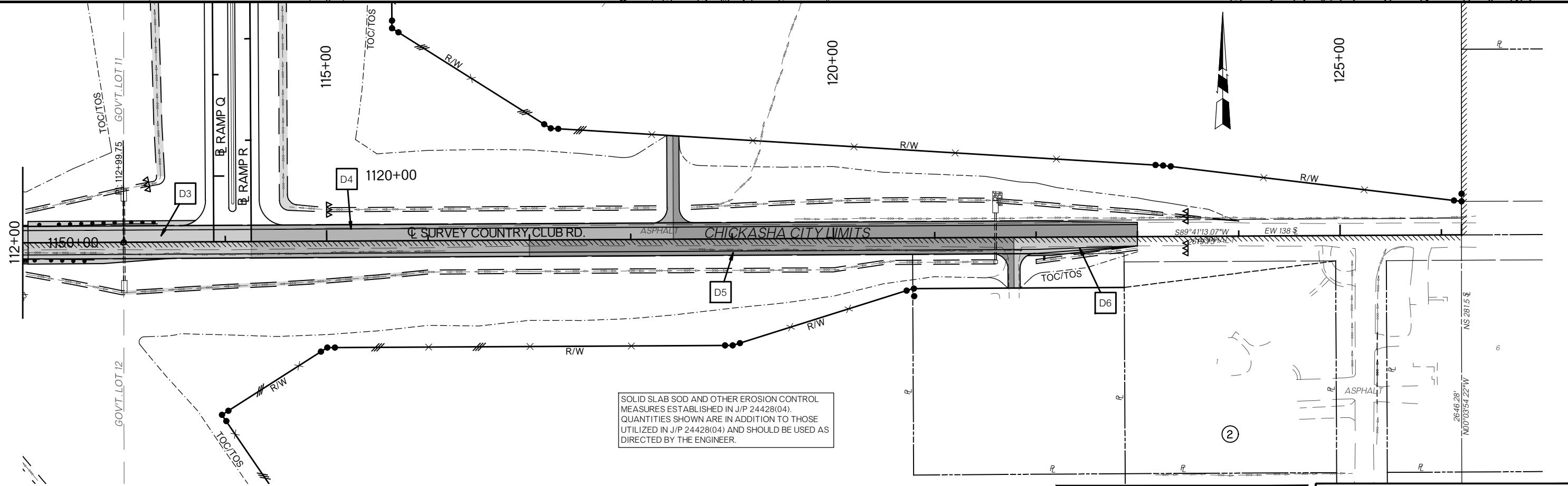
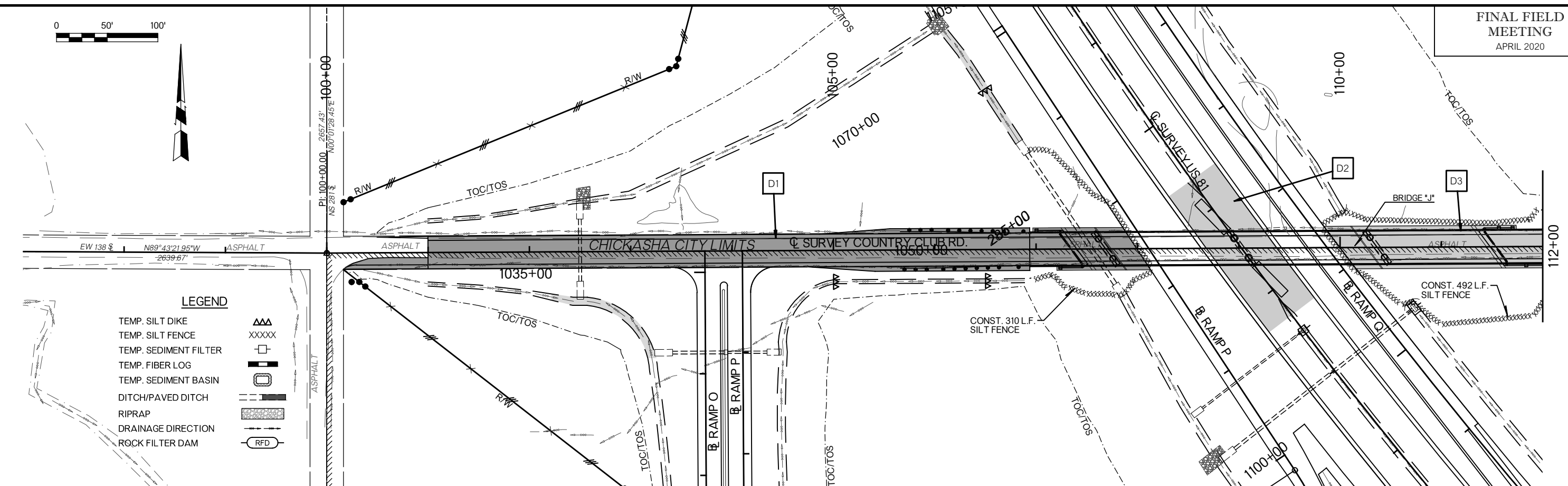
1) PLACE SOLID SLAB SOD IMMEDIATELY UPON COMPLETION OF CONSTRUCTION IN ORDER TO REDUCE THE AMOUNT OF DISTURBED DRAINAGE AREA AT ONE TIME.

SUMMARY OF DISTURBED DRAINAGE AREAS



LEGEND

- TEMP. SILT DIKE
- TEMP. SILT FENCE
- TEMP. SEDIMENT FILTER
- TEMP. FIBER LOG
- TEMP. SEDIMENT BASIN
- DITCH/PAVED DITCH
- RIPRAP
- DRAINAGE DIRECTION
- ROCK FILTER DAM

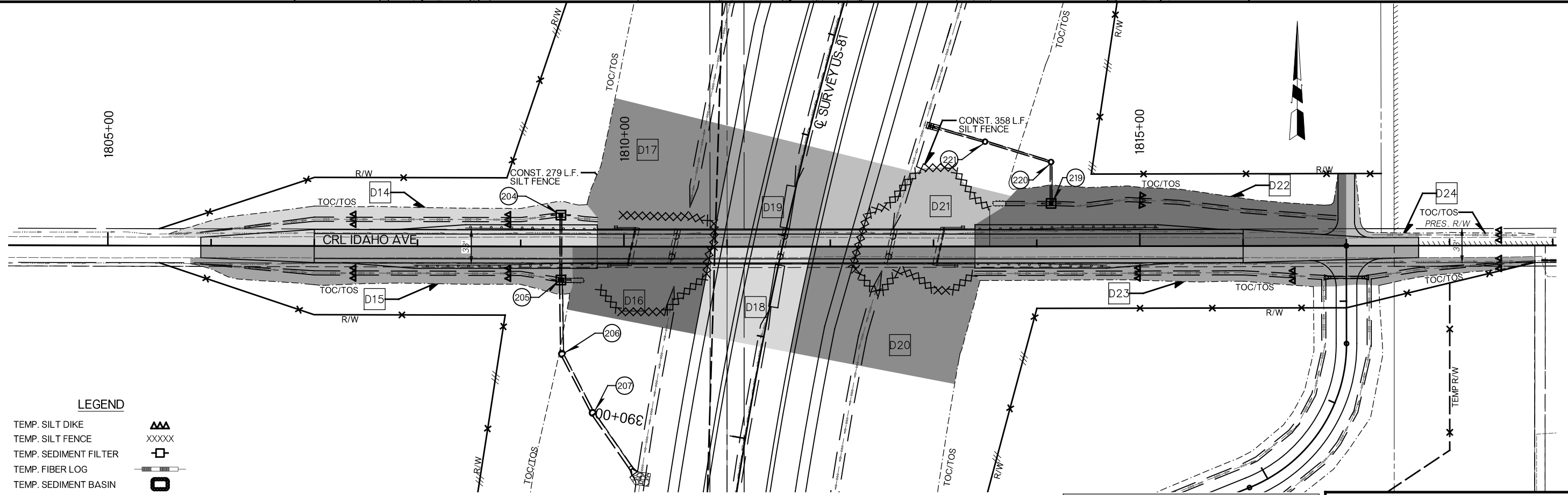
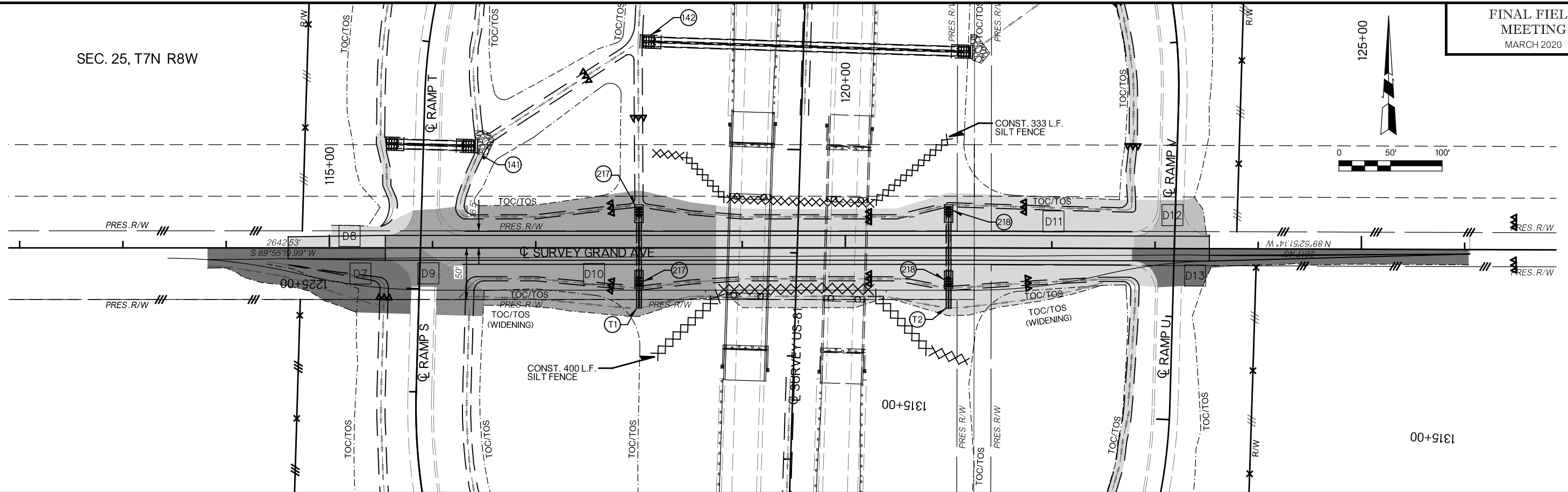
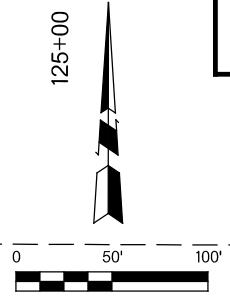


SOLID SLAB SOD AND OTHER EROSION CONTROL MEASURES ESTABLISHED IN J/P 24428(04). QUANTITIES SHOWN ARE IN ADDITION TO THOSE UTILIZED IN J/P 24428(04) AND SHOULD BE USED AS DIRECTED BY THE ENGINEER.

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EROSION CONTROL COUNTRY CLUB RD.

SEC. 25, T7N R8W



SEC. 30, T7N R7W

LEGEND

- TEMP. SILT DIKE
- TEMP. SILT FENCE
- TEMP. SEDIMENT FILTER
- TEMP. FIBER LOG
- TEMP. SEDIMENT BASIN
- DITCH/PAVED DITCH
- RIPRAP
- DRAINAGE DIRECTION
- ROCK FILTER DAM

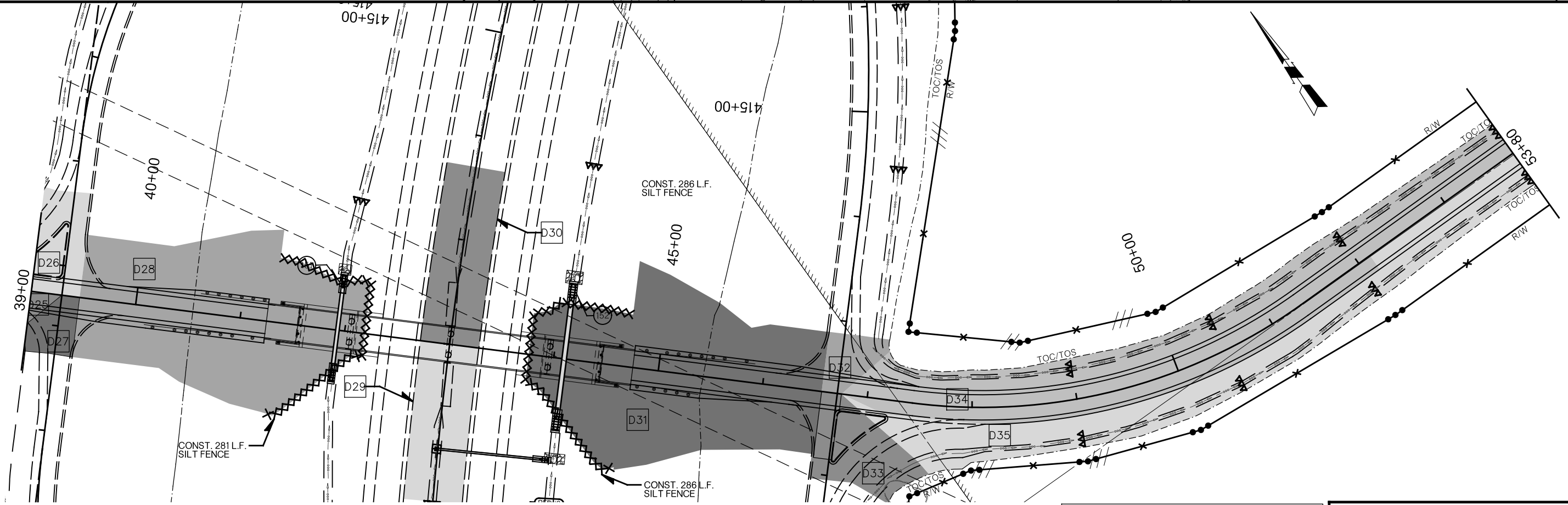
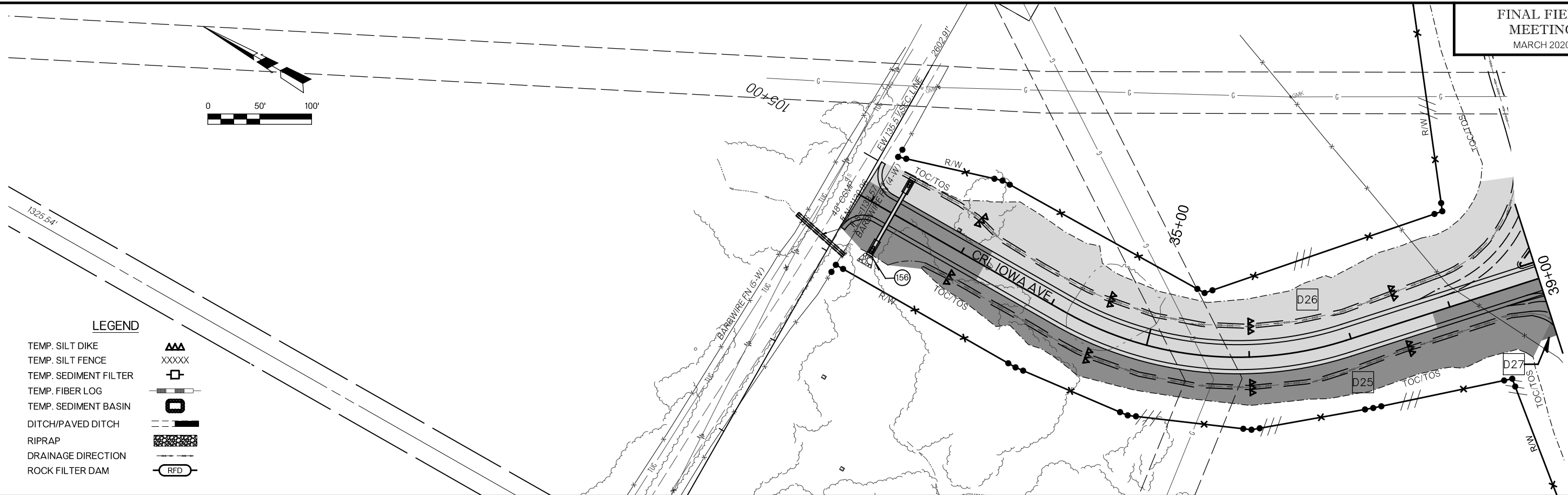
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EROSION CONTROL
GRAND AVE. AND IDAHO AVE.



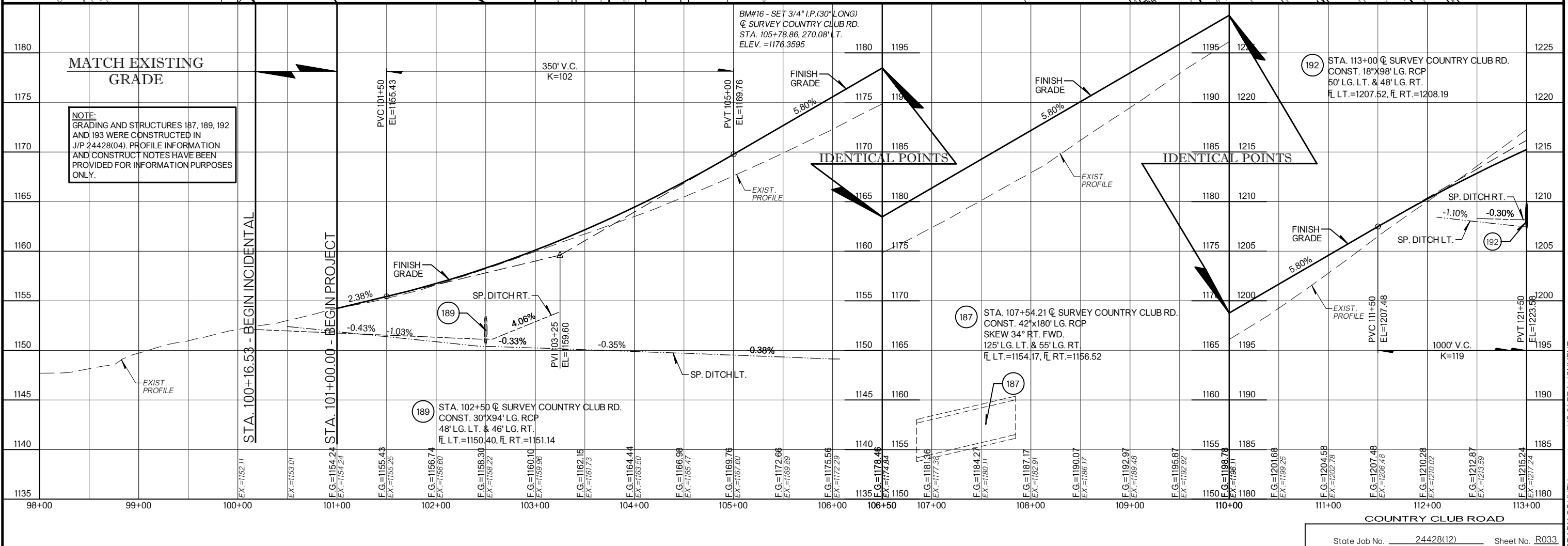
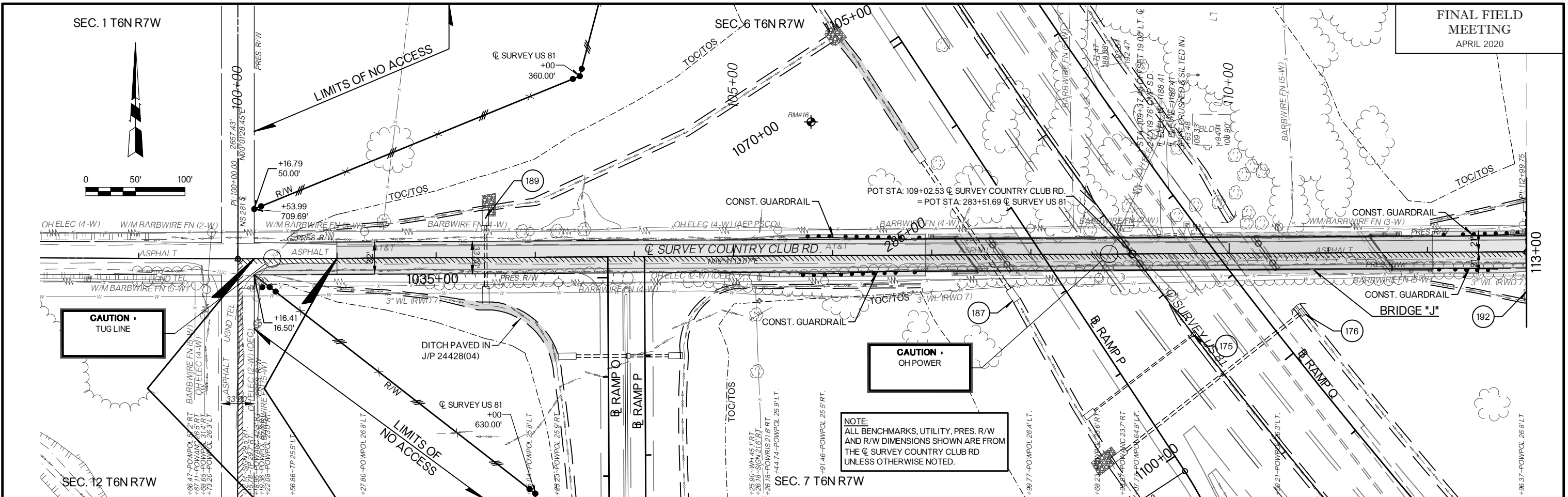
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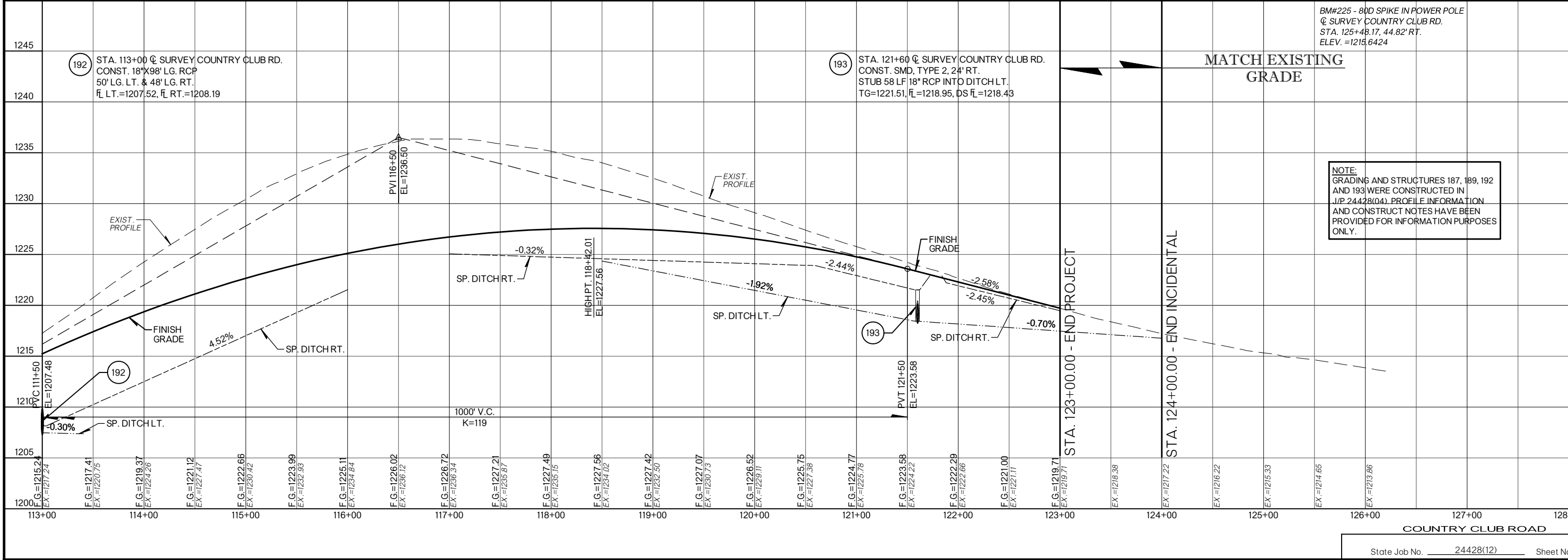
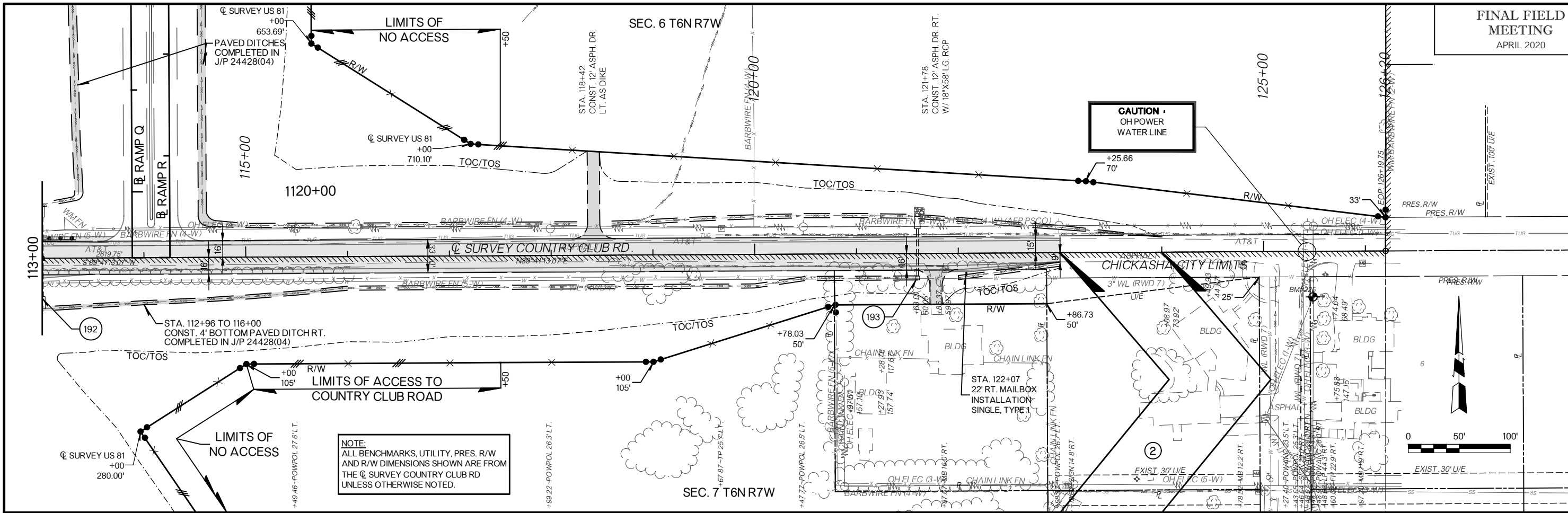
- TEMP. SILT DIKE
- TEMP. SILT FENCE
- TEMP. SEDIMENT FILTER
- TEMP. FIBER LOG
- TEMP. SEDIMENT BASIN
- DITCH/PAVED DITCH
- RIPRAP
- DRAINAGE DIRECTION
- ROCK FILTER DAM



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EROSION CONTROL
IOWA AVE.
State Job No. 24428(12) Sheet No. R032

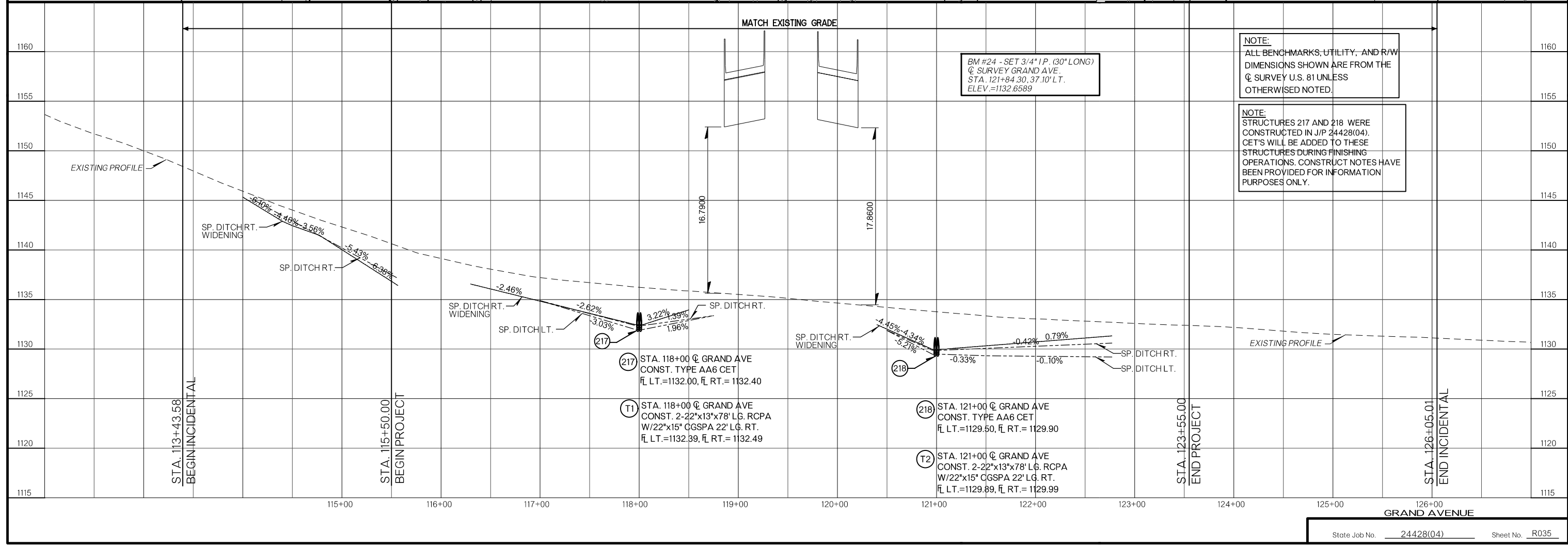
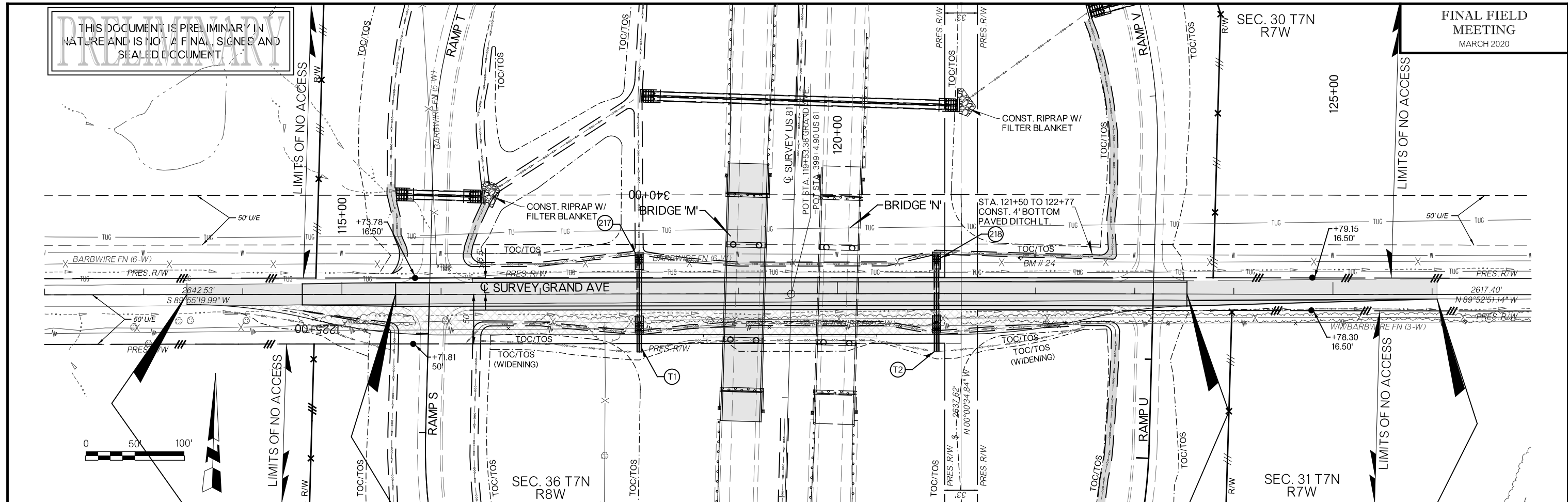




US 81 REALIGNMENT
GRADY COUNTY

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FINAL FIELD MEETING
MARCH 2020



NOTE:
ALL BENCHMARKS, UTILITY, AND R/W DIMENSIONS SHOWN ARE FROM THE Q SURVEY U.S. 81 UNLESS OTHERWISE NOTED.

NOTE:
STRUCTURES 217 AND 218 WERE CONSTRUCTED IN J/P 24428(04). CET'S WILL BE ADDED TO THESE STRUCTURES DURING FINISHING OPERATIONS. CONSTRUCT NOTES HAVE BEEN PROVIDED FOR INFORMATION PURPOSES ONLY.

BM #24 - SET 3/4" I.P. (30" LONG)
Q SURVEY GRAND AVE.
STA. 121+84.30, 37.10' LT.
ELEV. = 1132.6589

STA. 113+43.58
BEGIN INCIDENTAL

STA. 115+50.00
BEGIN PROJECT

STA. 123+55.00
END PROJECT

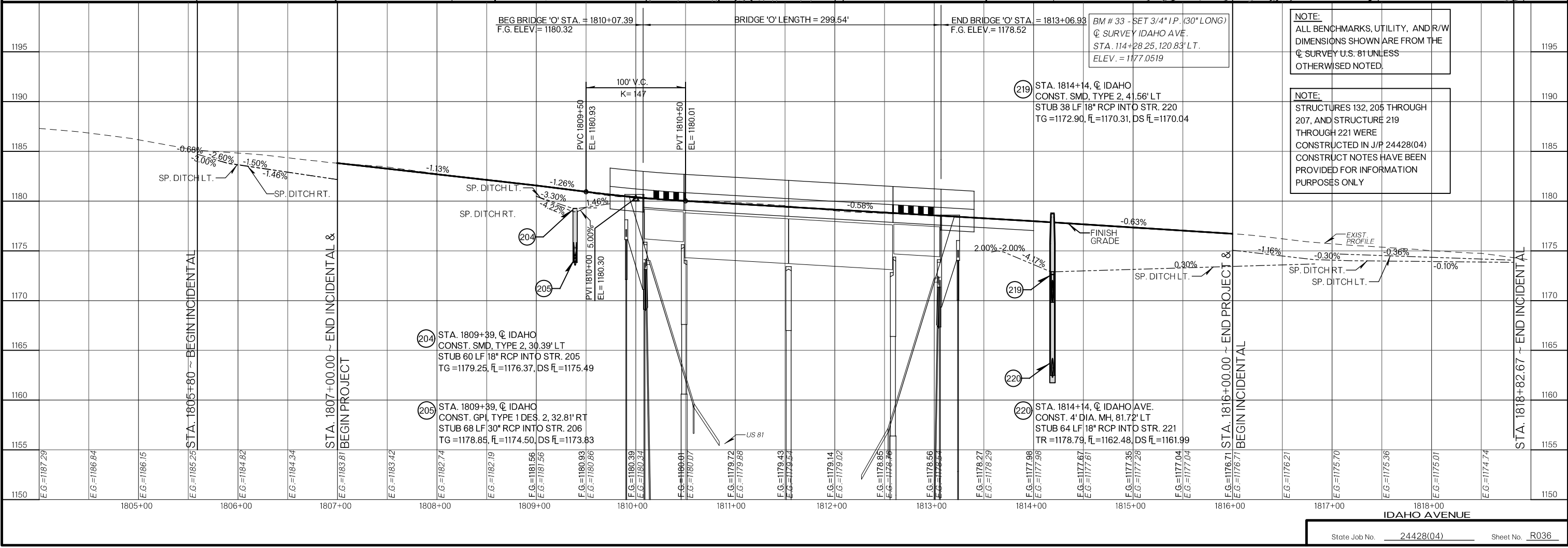
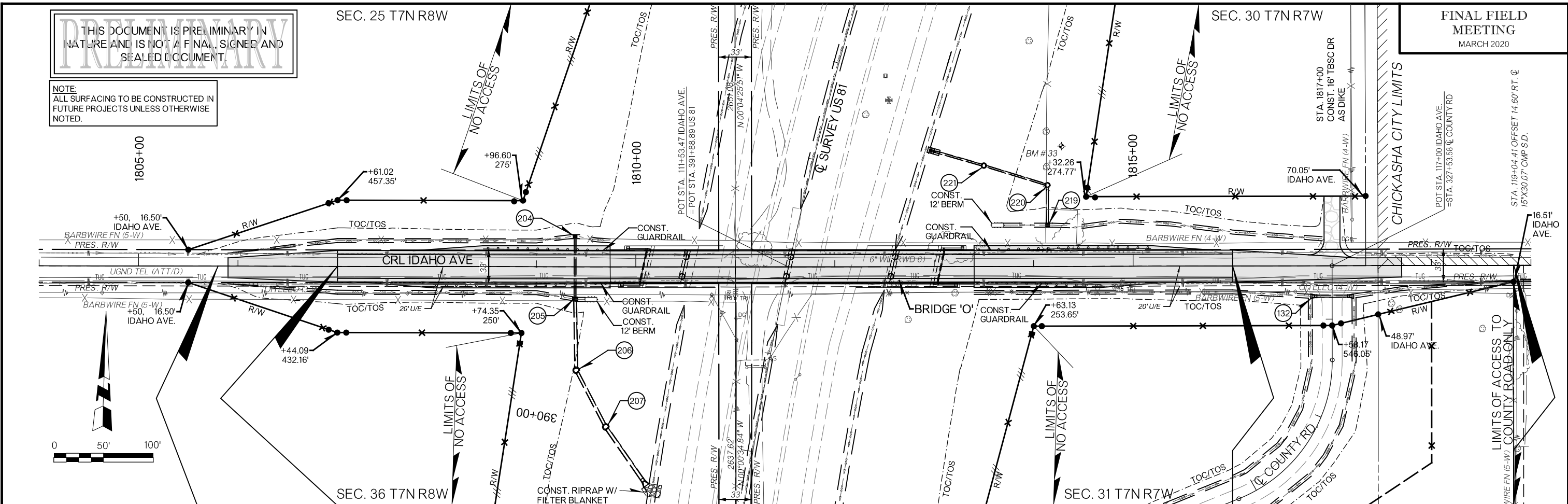
STA. 126+05.01
END INCIDENTAL

US 81 REALIGNMENT
GRADY COUNTY

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NOTE:
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FINAL FIELD MEETING
MARCH 2020



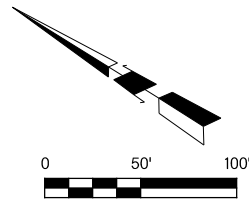
NOTE:
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NOTE:
STRUCTURES 132, 205 THROUGH 207, AND STRUCTURE 219 THROUGH 221 WERE CONSTRUCTED IN J/P 24428(04) CONSTRUCT NOTES HAVE BEEN PROVIDED FOR INFORMATION PURPOSES ONLY

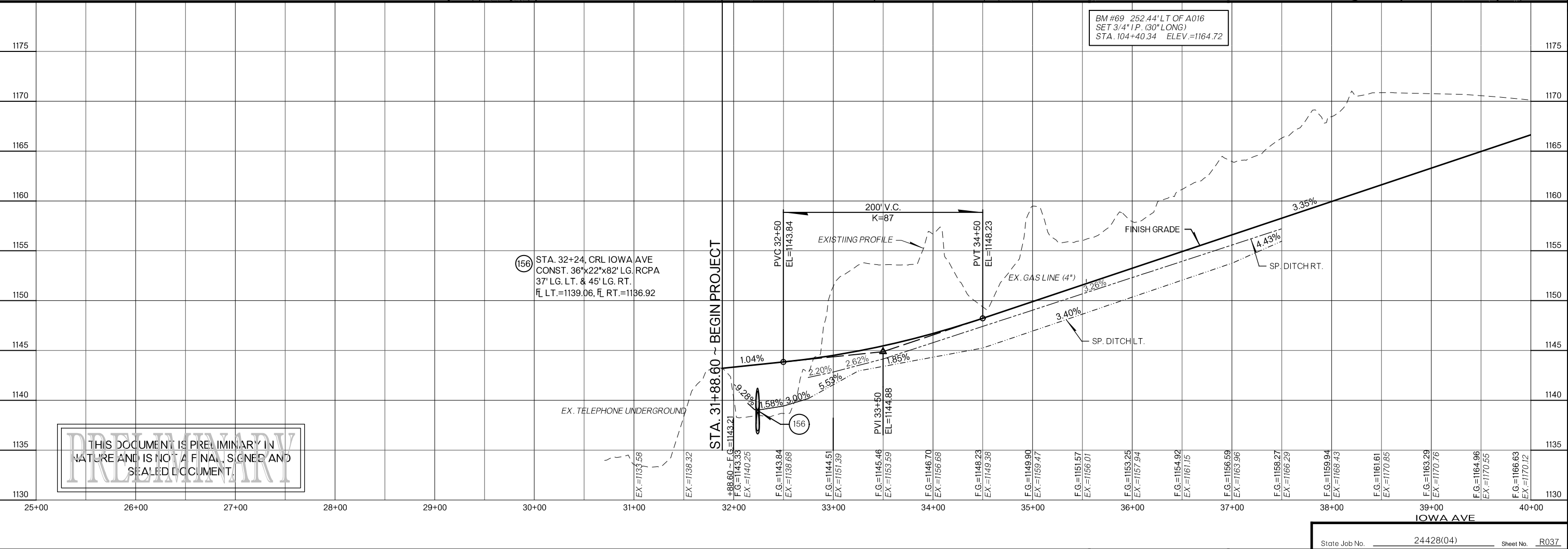
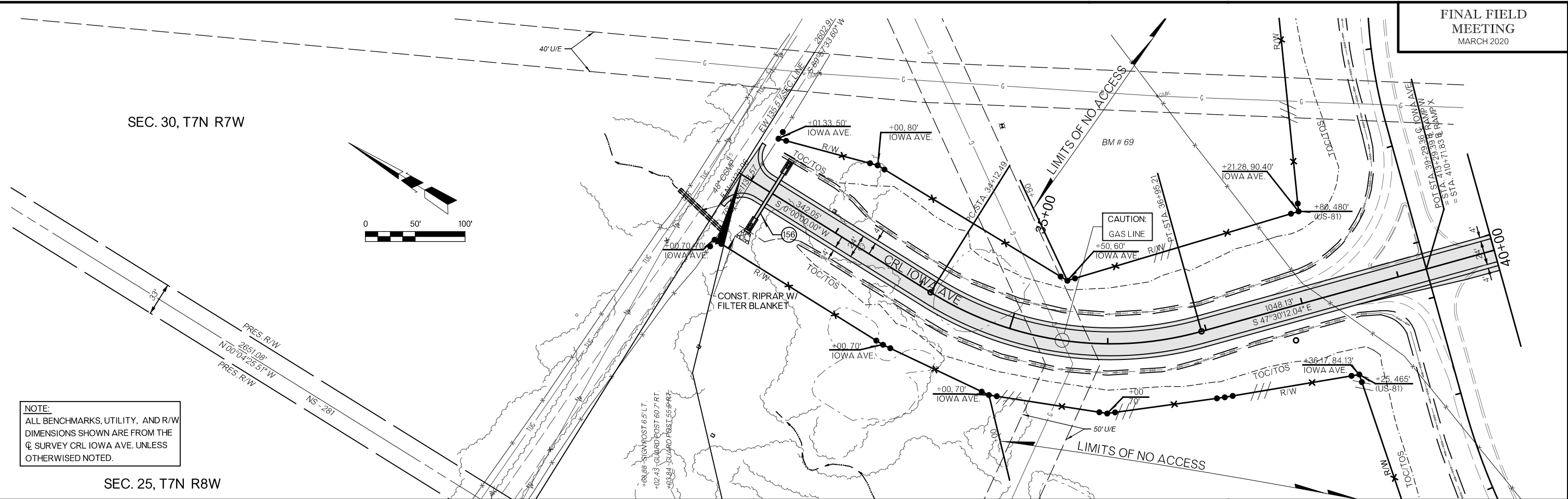
US 81 REALIGNMENT
GRADY COUNTY

SEC. 30, T7N R7W

SEC. 25, T7N R8W



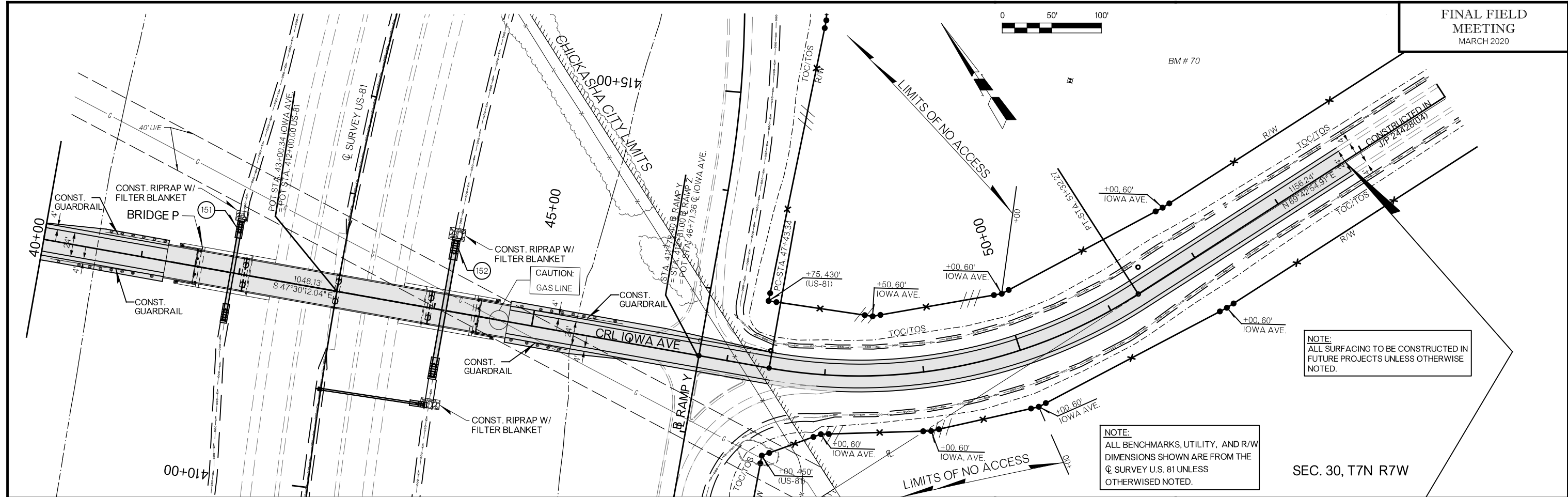
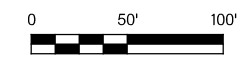
NOTE:
ALL BENCHMARKS, UTILITY, AND R/W DIMENSIONS SHOWN ARE FROM THE SURVEY CRL IOWA AVE. UNLESS OTHERWISE NOTED.



(156) STA. 32+24, CRL IOWA AVE
CONST. 36"x22"x82' LG. RCPA
37' LG. LT. & 45' LG. RT.
FL LT.=1139.06, FL RT.=1136.92

BM #69 252.44' LT OF A016
SET 3/4" I.P. (30" LONG)
STA. 104+40.34 ELEV.=1164.72

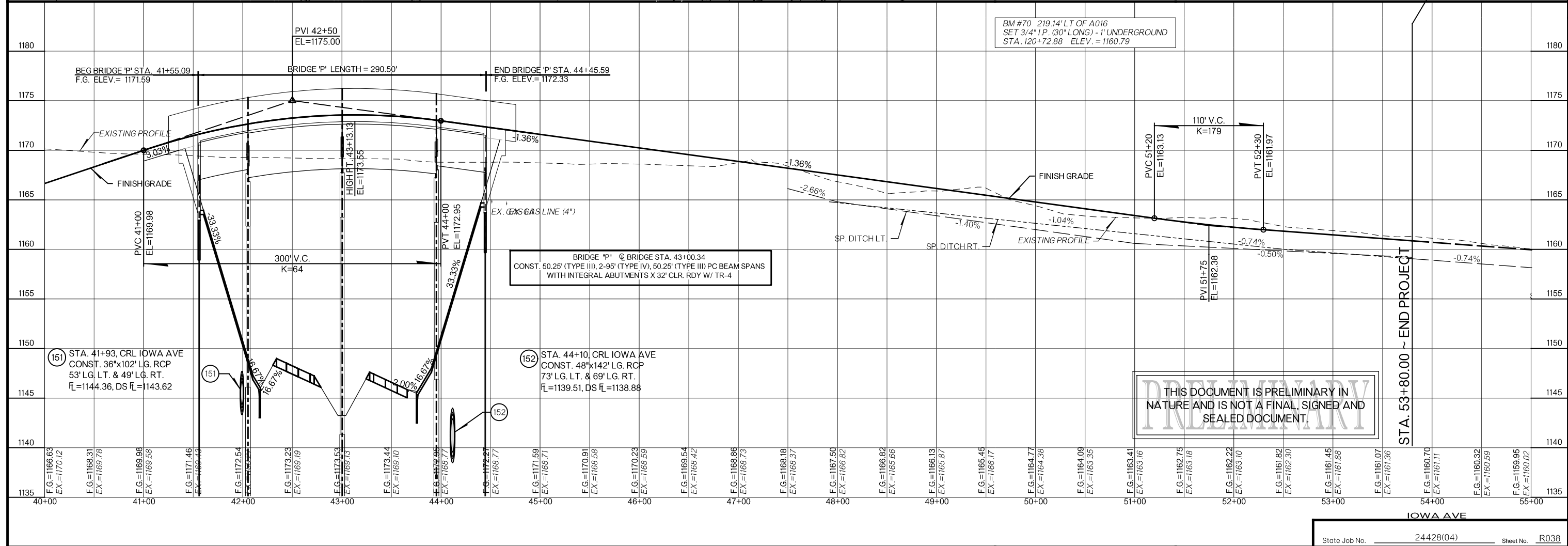
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NOTE:
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SEC. 30, T7N R7W

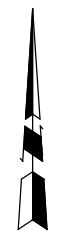
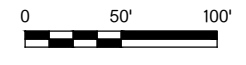


BM #70 219.14' LT OF A016
SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
STA. 120+72.88 ELEV. = 1160.79

BRIDGE "P" @ BRIDGE STA. 43+00.34
CONST. 50.25' (TYPE III), 2-95' (TYPE IV), 50.25' (TYPE III) PC BEAM SPANS
WITH INTEGRAL ABUTMENTS X 32' CLR. RDY W/ TR-4

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STA. 53+80.00 ~ END PROJECT

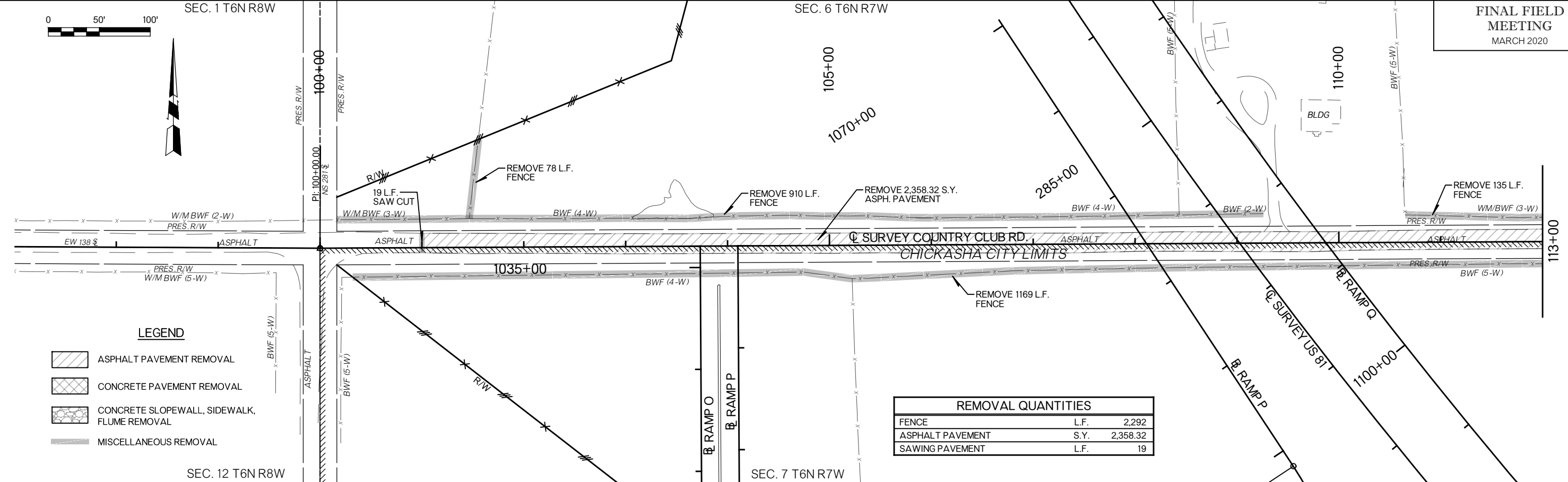


SEC. 1 T6N R8W

SEC. 6 T6N R7W

SEC. 12 T6N R8W

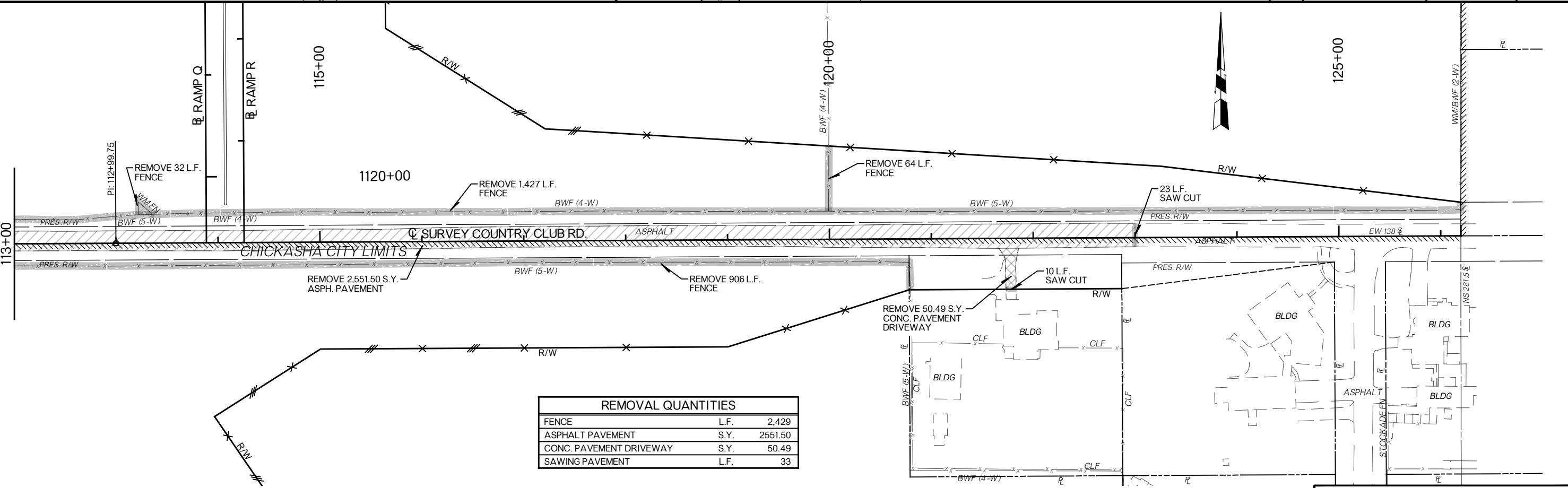
SEC. 7 T6N R7W



LEGEND

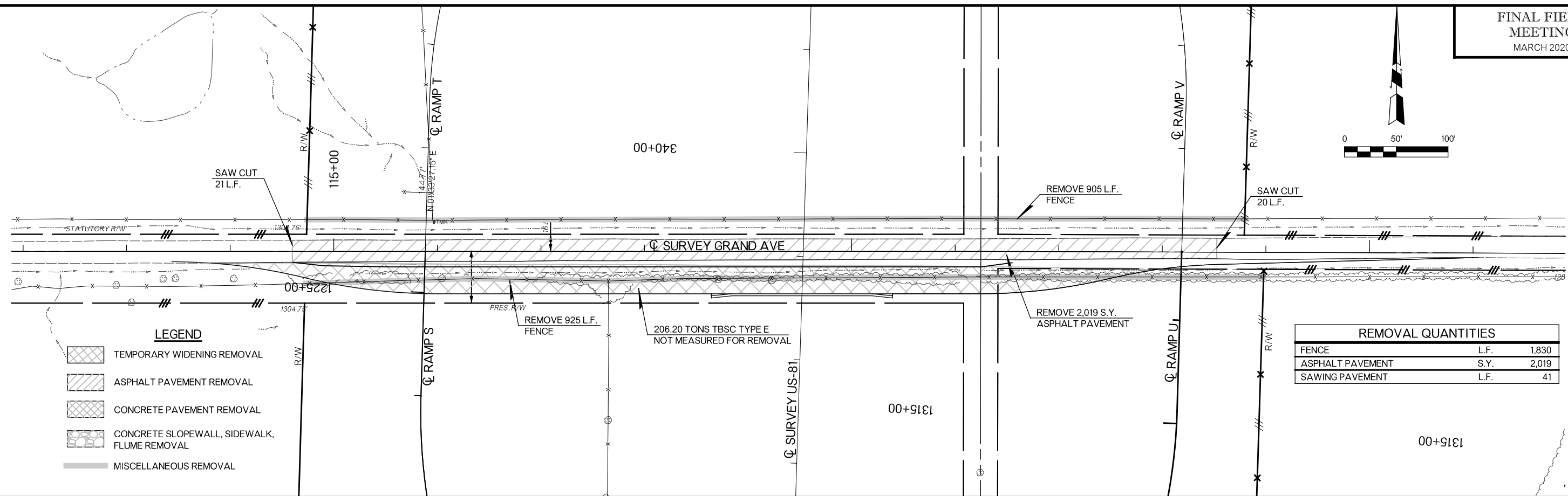
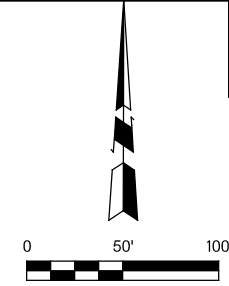
- ASPHALT PAVEMENT REMOVAL
- CONCRETE PAVEMENT REMOVAL
- CONCRETE SLOPEWALL, SIDEWALK, FLUME REMOVAL
- MISCELLANEOUS REMOVAL

REMOVAL QUANTITIES		
FENCE	L.F.	2,292
ASPHALT PAVEMENT	S.Y.	2,358.32
SAWING PAVEMENT	L.F.	19



REMOVAL QUANTITIES		
FENCE	L.F.	2,429
ASPHALT PAVEMENT	S.Y.	2,551.50
CONC. PAVEMENT DRIVEWAY	S.Y.	50.49
SAWING PAVEMENT	L.F.	33

REMOVAL COUNTRY CLUB RD.

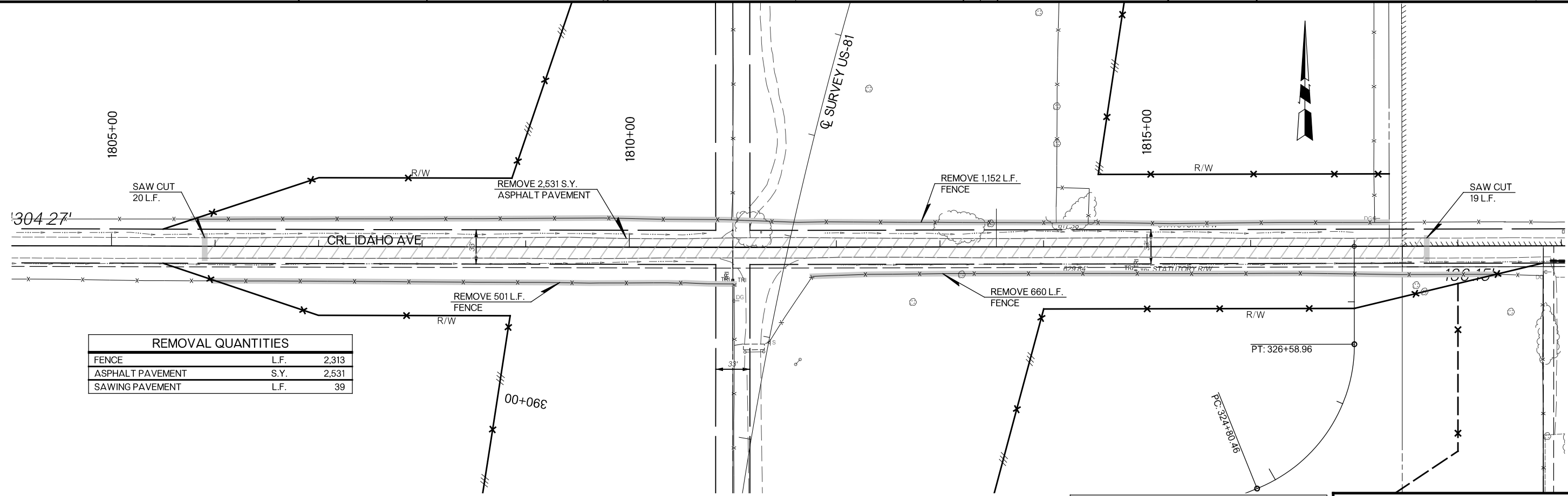


LEGEND

- TEMPORARY WIDENING REMOVAL
- ASPHALT PAVEMENT REMOVAL
- CONCRETE PAVEMENT REMOVAL
- CONCRETE SLOPEWALL, SIDEWALK, FLUME REMOVAL
- MISCELLANEOUS REMOVAL

REMOVAL QUANTITIES

	L.F.	
FENCE	1,830	L.F.
ASPHALT PAVEMENT	2,019	S.Y.
SAWING PAVEMENT	41	L.F.



REMOVAL QUANTITIES

FENCE	L.F.	2,313
ASPHALT PAVEMENT	S.Y.	2,531
SAWING PAVEMENT	L.F.	39

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REMOVAL

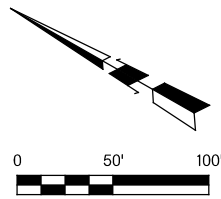
State Job No. 24428(12) Sheet No. R040

US 81 REALIGNMENT
GRADY COUNTY

SEC. 25, T7N R8W

LEGEND

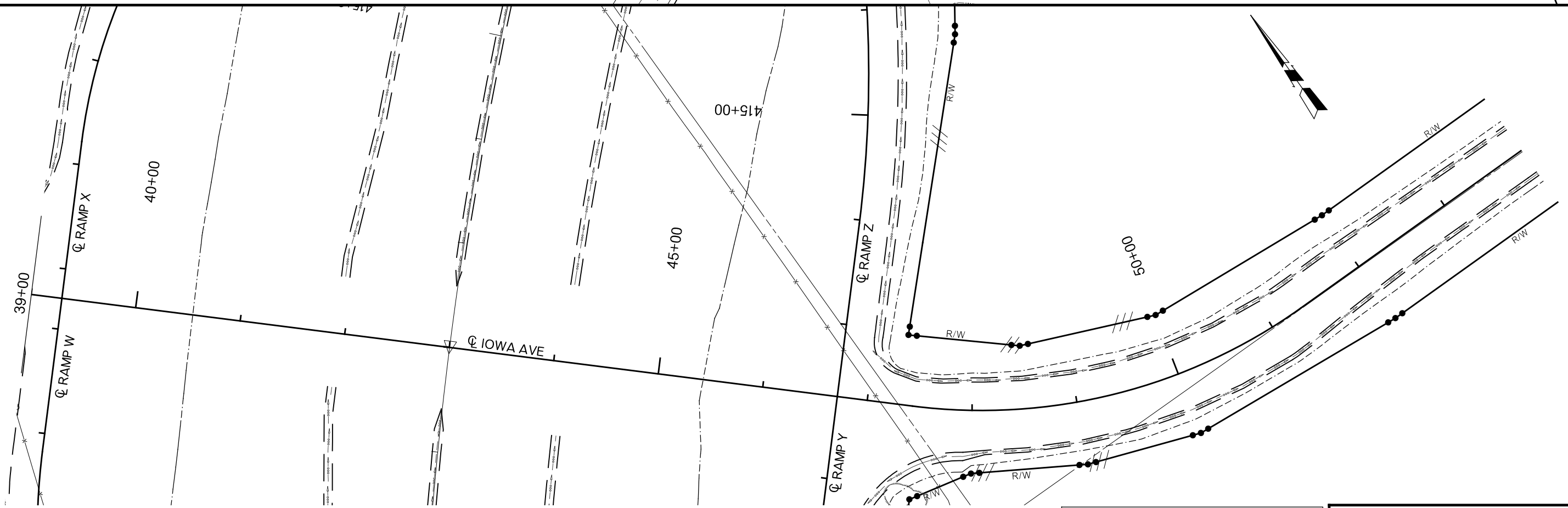
-  ASPHALT PAVEMENT REMOVAL
-  CONCRETE PAVEMENT REMOVAL
-  CONCRETE SLOPEWALL, SIDEWALK, FLUME REMOVAL
-  MISCELLANEOUS REMOVAL



REMOVAL QUANTITIES		
FENCE	L.F.	361

REMOVE 120 L.F. FENCE

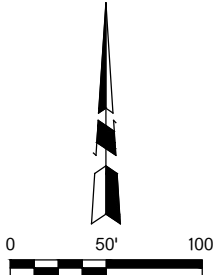
REMOVE 241 L.F. FENCE





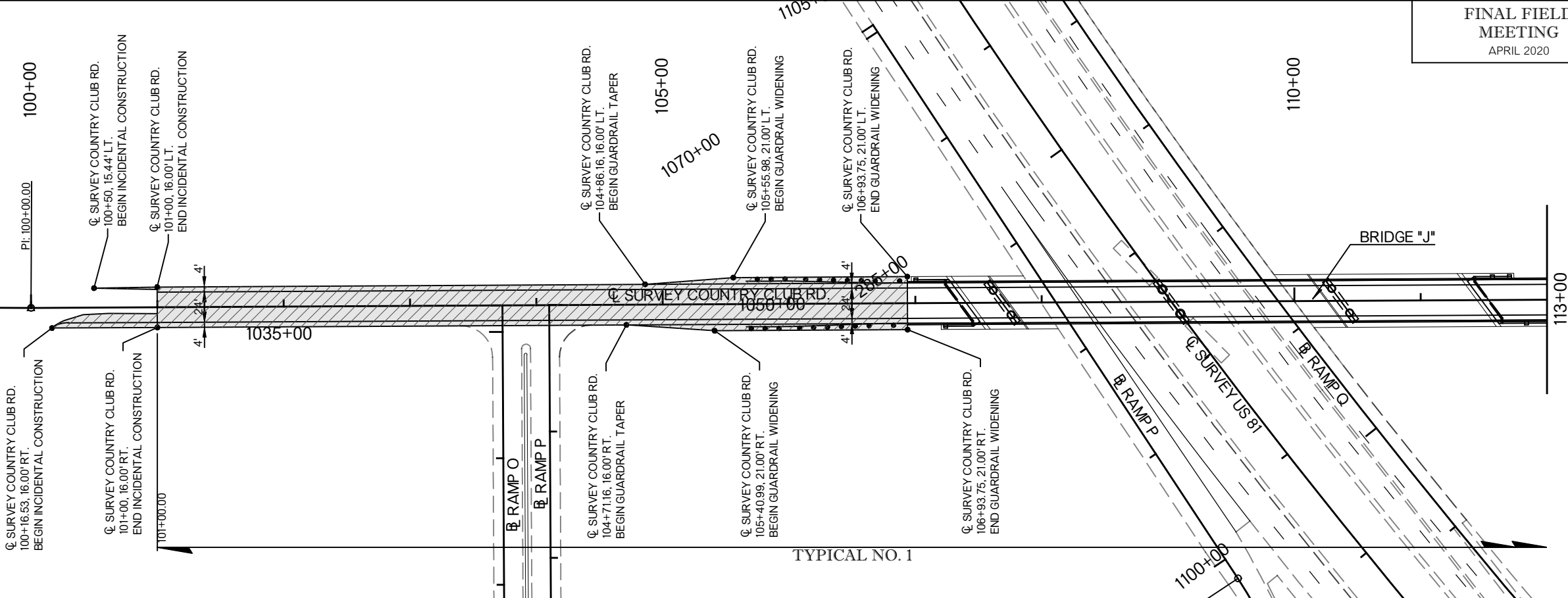
SEC. 30, T7N R7W

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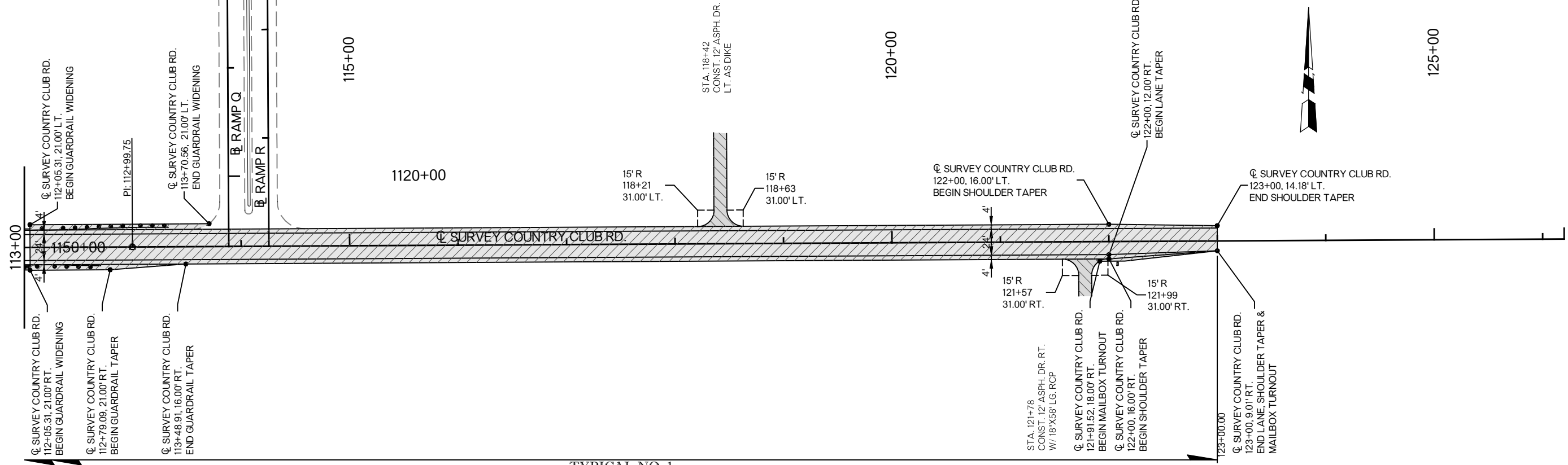
REMOVAL



LEGEND
 ASPHALT PAVING
 ASPHALT DRIVE

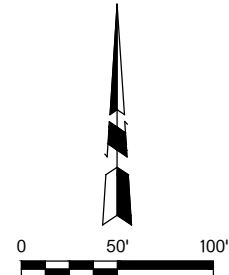
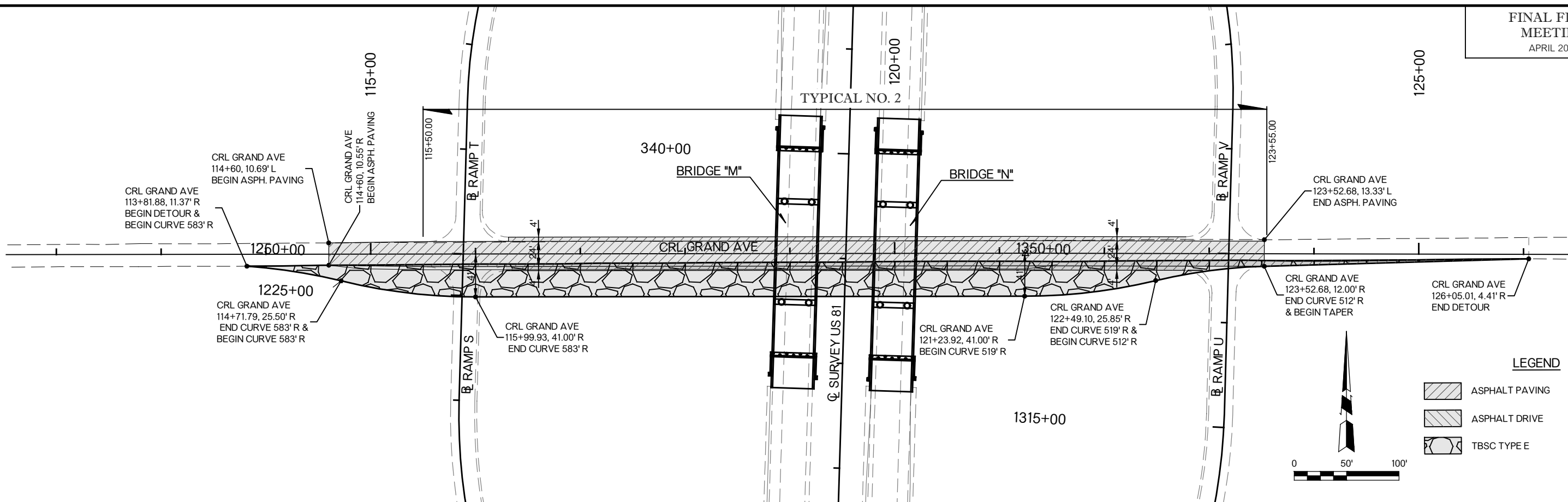


TYPICAL NO. 1



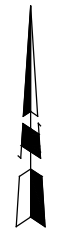
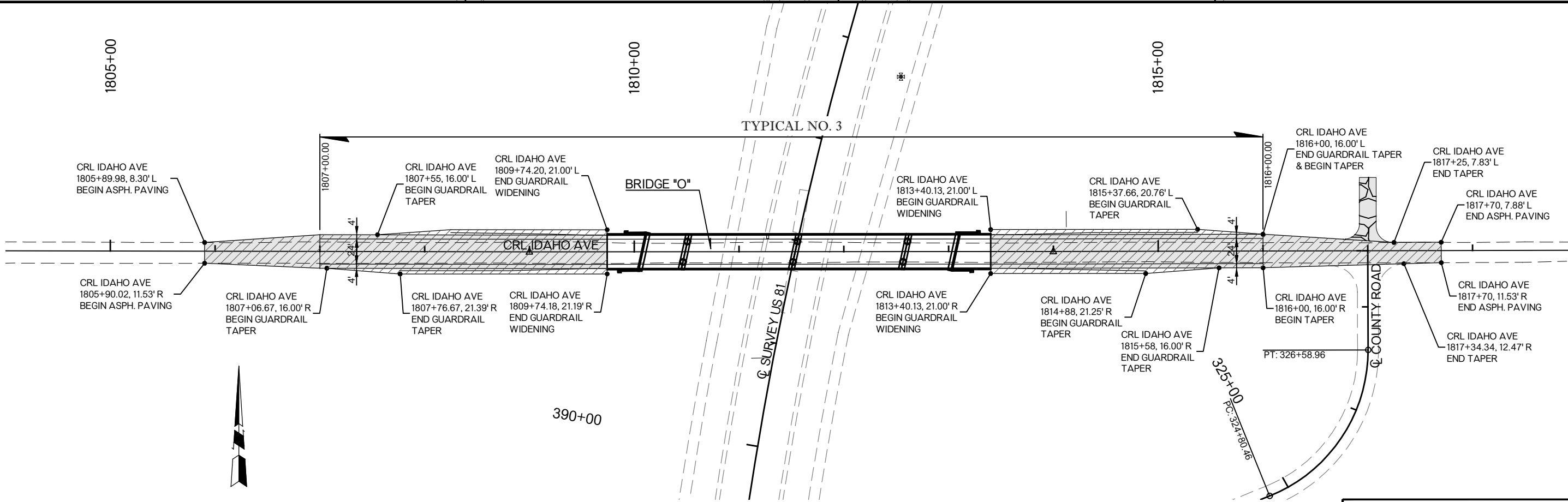
TYPICAL NO. 1

SURFACING CONSTRUCTION DETAILS
 State Job No. 24428(12) Sheet No. R042



LEGEND

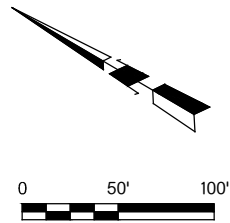
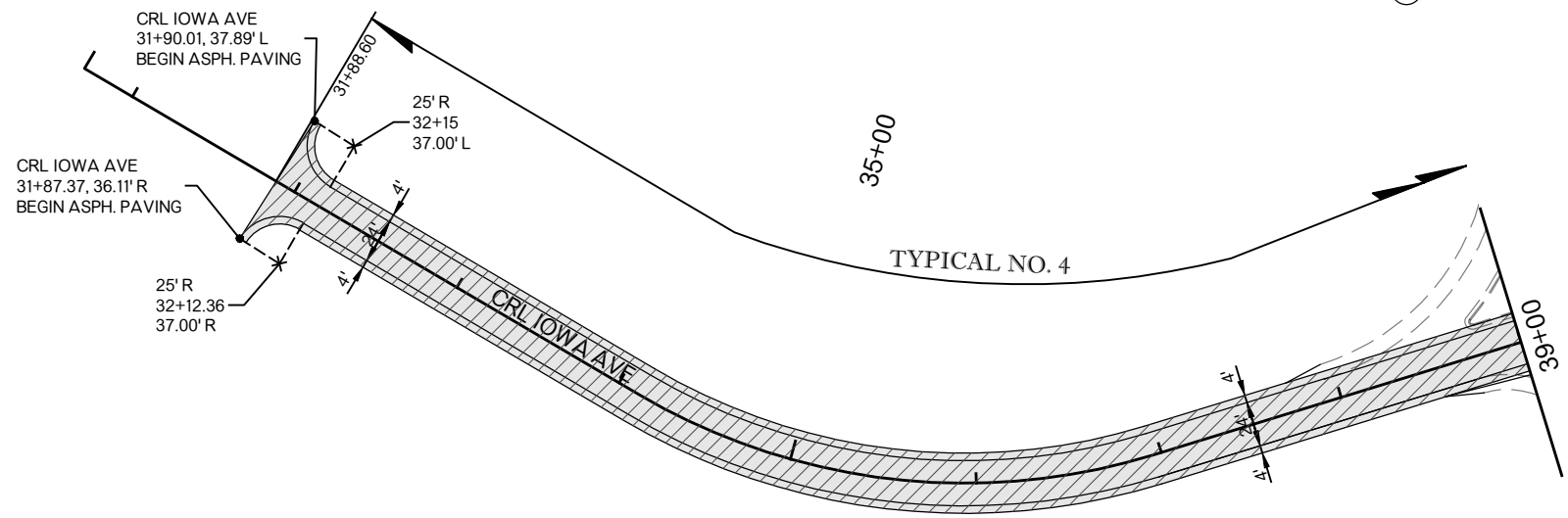
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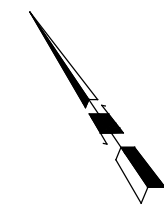
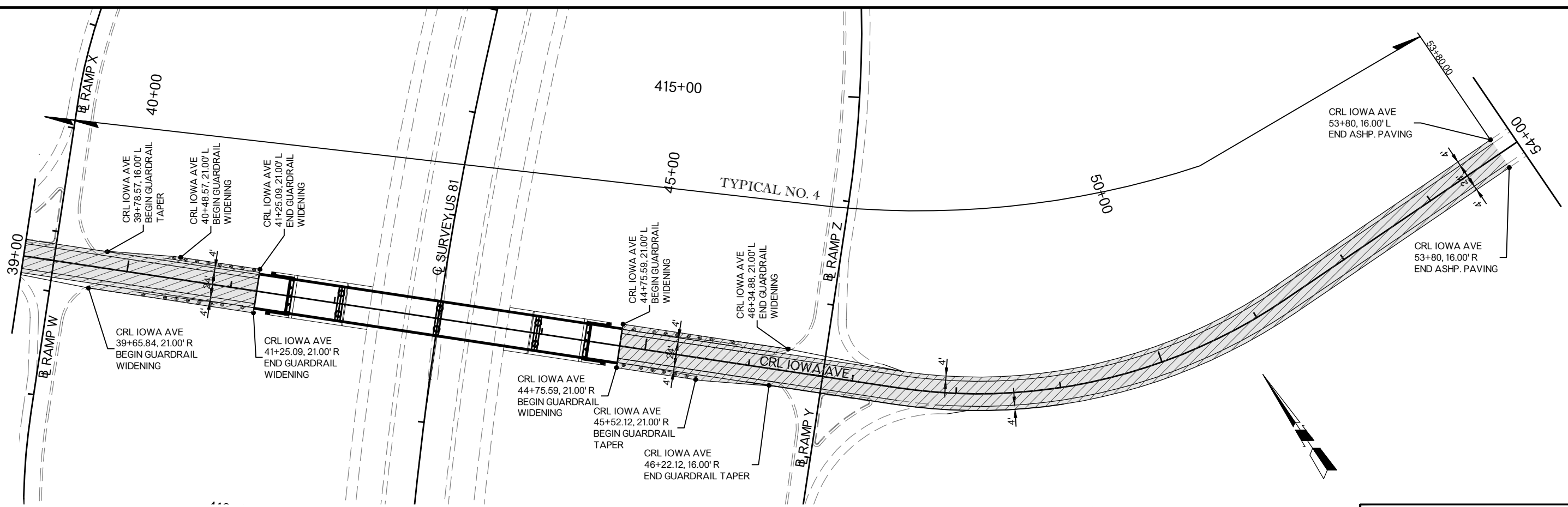
THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SURFACE CONSTRUCTION DETAILS
GRAND AVE & IDAHO AVE
State Job No. 24428(12) Sheet No. R043

US 81 REALIGNMENT
GRADY COUNTY



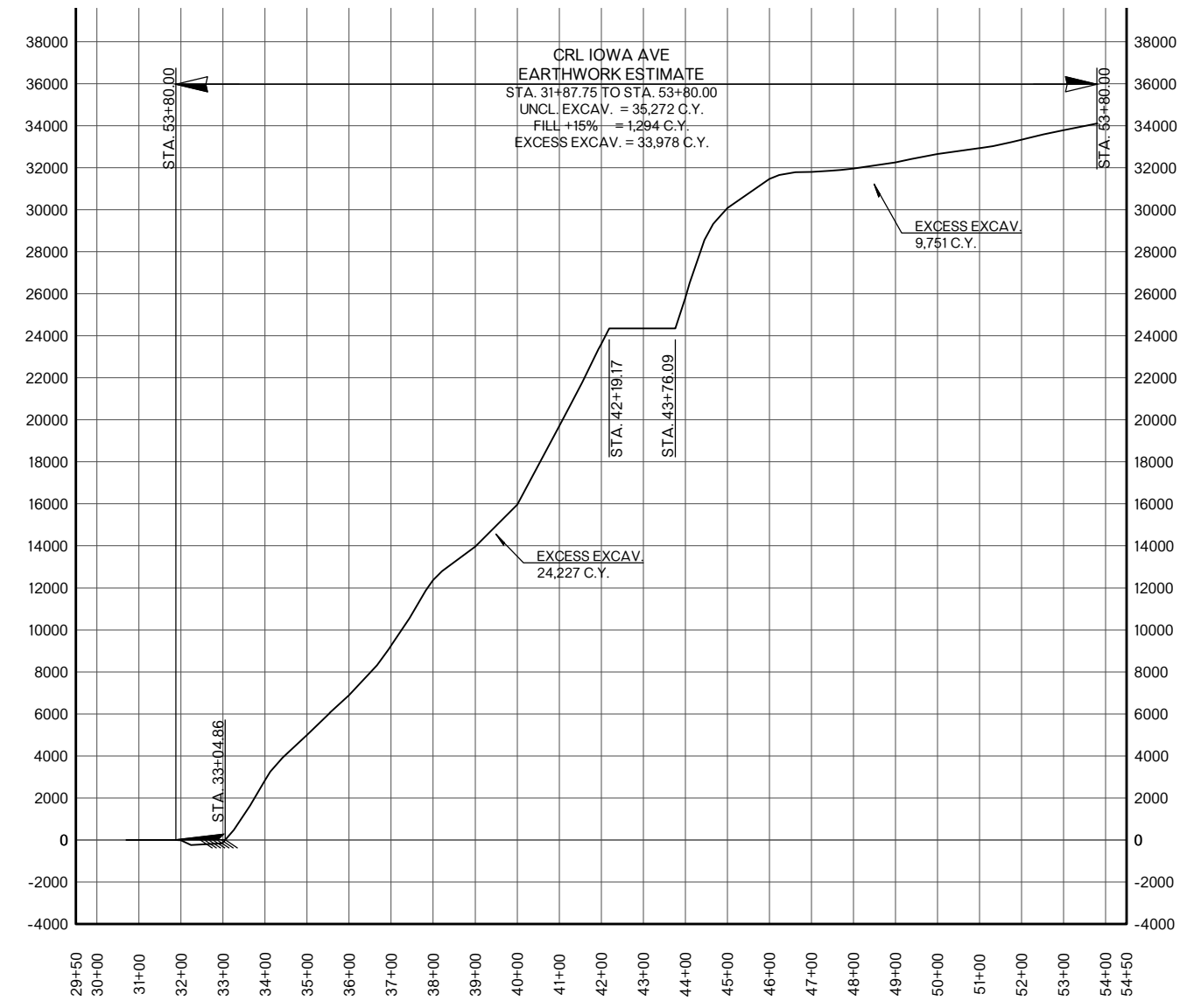
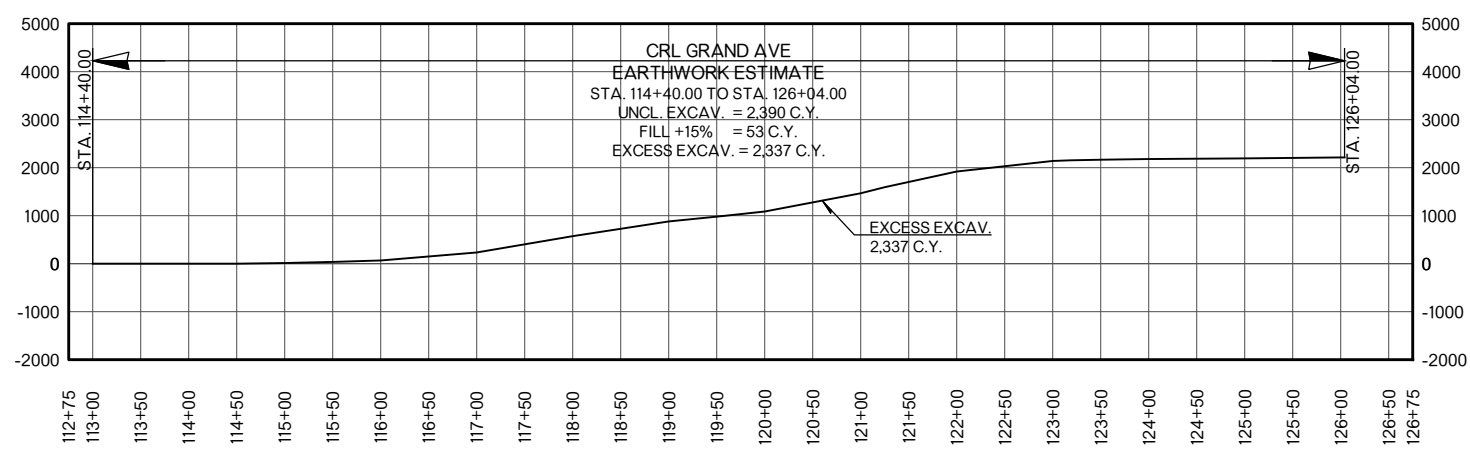
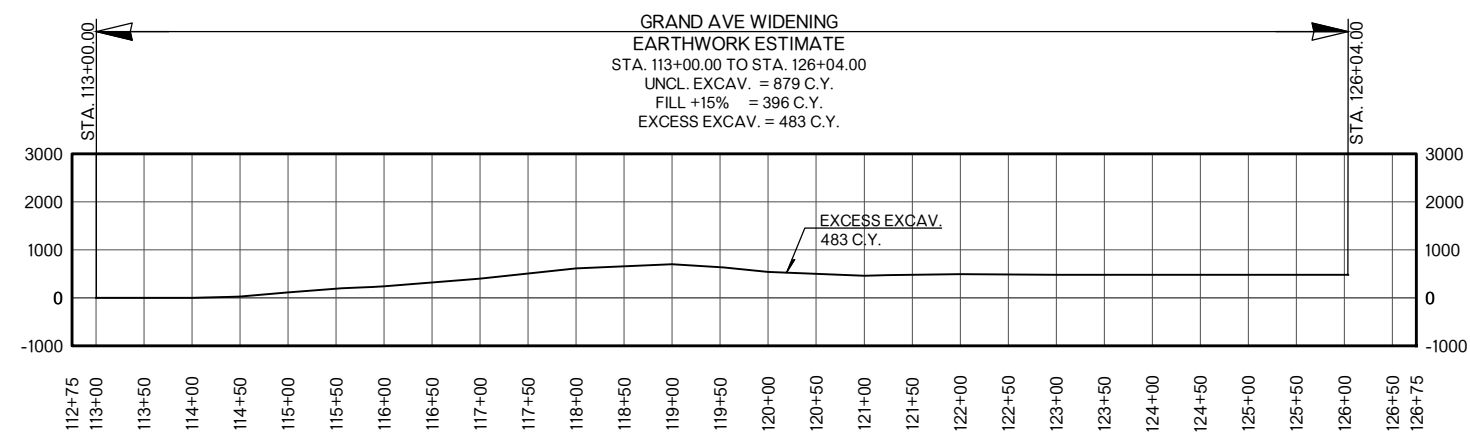
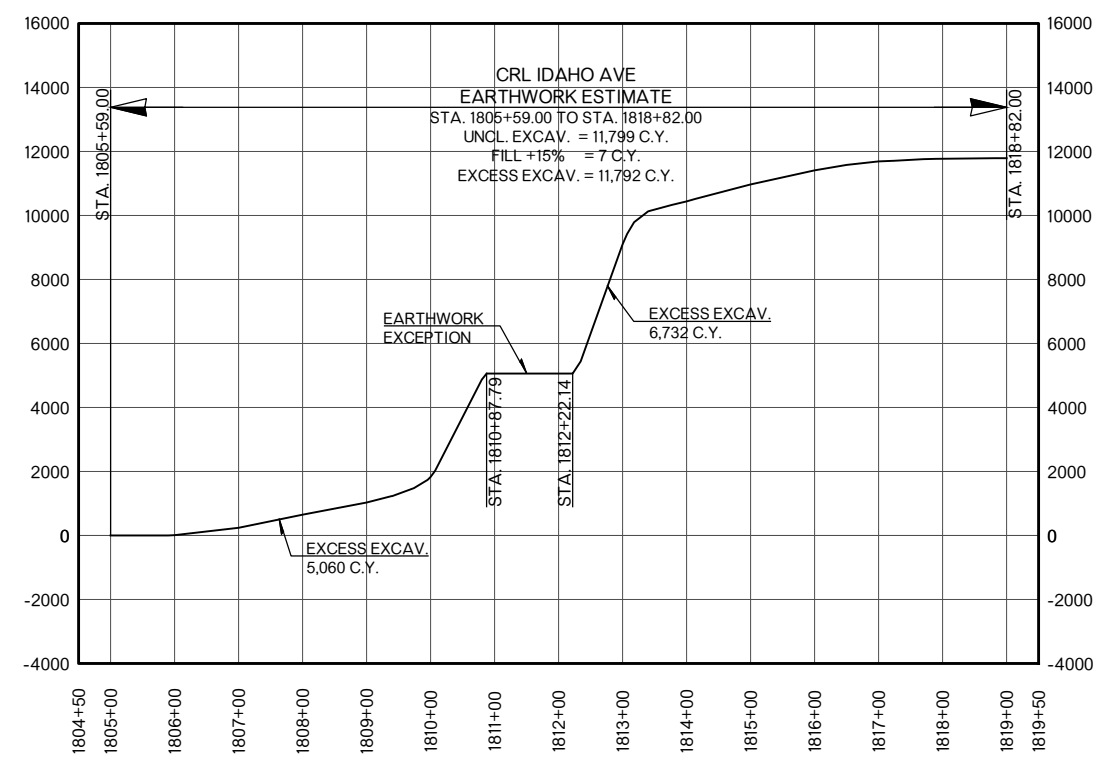
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 ASPHALT PAVING



THIS DOCUMENT IS PRELIMINARY IN NATURE AND IS NOT A FINAL, SIGNED AND SEALED DOCUMENT.

SURFACE CONSTRUCTION
 DETAIL
 IOWA AVE
 State Job No. 24428(12) Sheet No. R044

GRADY COUNTY US 81 REALIGNMENT



MASS DIAGRAMS

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SURVEY OF
U.S. 81, CHICKASHA WEST BYPASS
SWO 4380(1)
J/P NO. 24428(12)
GRADY COUNTY

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS		DATE	

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION

SWO 4380(1) J/P 24428(04) CO. Grady

HORIZONTAL CONTROL:
 Oklahoma Coordinate System of 1927 _____ Zone.
 Oklahoma Coordinate System of 1983 _____ South Zone. (CORS96)
 Oklahoma Dept. of Transportation Plane Coordinate System of 1927 _____ Zone.
 Oklahoma Dept. of Transportation Plane Coordinate System of 1983 _____ Zone.
 Arbitrary Coordinate System _____

HORIZONTAL PLANE DATUM DEFINITION:
 Oklahoma Department of Transportation coordinates were derived by multiplying the Oklahoma Coordinate Systems of 1927 or 1983 by the combined adjustment factor of 1.00010. The ODOT Coordinate System is 2350 feet above sea level.

1. GPS Network adjusted to _____ CORS _____ (1st) Order
 Stations _____ okca, okar, okd, okdw, wmkk
 A) Closure before adjustment X _____ Y _____ Angles _____
 Trav. Length _____ No. Angles _____
 B) _____ is _____ () Order before adjustment.
 C) Method of Distance Measurement:
 Electronic GPS Triangulation Tied
 D) Instrument used for angles _____

2. _____ adjusted to _____ () Order
 Stations _____
 A) Closure before adjustment X _____ Y _____ Angles _____
 B) _____ is _____ () Order. Tied to _____
 C) Method of Distance Measurement:
 Electronic GPS Triangulation Tied
 D) Instrument used for angles _____

VERTICAL CONTROL IS (3rd) order. Level Line taken from _____ BM 7 & BM 8 SWO 4380 (1)
 (3rd) order and tied to _____ BM 35 & BM 37 SWO 4380 (1) (3rd) order. _____
 NGVD 29 datum
 NAVD 88 datum

ACCURACY DEFINITION:
 (1) HORIZONTAL: (3rd Order = Class I = 1 : 10,000')
 (3rd Order = Class II = 1 : 5,000')
 (2) VERTICAL: (1st Order = 0.017 Ft. x sqrt. of Mi.) (2nd Order = 0.035 Ft. x sqrt. of Mi.)
 (3rd Order = 0.050 Ft. x sqrt. of Mi.)

INDEX OF SHEETS

- TITLE SHEET
- KEY PLAN
- HISTORICAL LETTER & WRITTEN REPORT
- LEVEL REPORT
- ALIGNMENT REPORT
- COORDINATE GEOMETRY REPORT
- SURVEY CONTROL NETWORK
- SURVEY DATA SHEETS
- GEOMETRIC DATA SHEETS

SURVEY BEGAN: FEBRUARY 17, 2011
 SURVEY COMPLETED: JUNE 17, 2016

BENHAM DESIGN, LLC

PERSONNEL:
 JOHN T. BIRKHAHN, PROFESSIONAL LAND SURVEYOR
 ANDREW KIS, PARTY CHIEF
 JAMES JACKSON, SURVEY TECHNICIAN
 DANIEL BENNETT, PARTY CHIEF
 CHRIS SHIPMAN, SURVEY TECHNICIAN
 BRANDON HOLLAND, SURVEY TECHNICIAN
 JOHN OKON, SURVEY TECHNICIAN

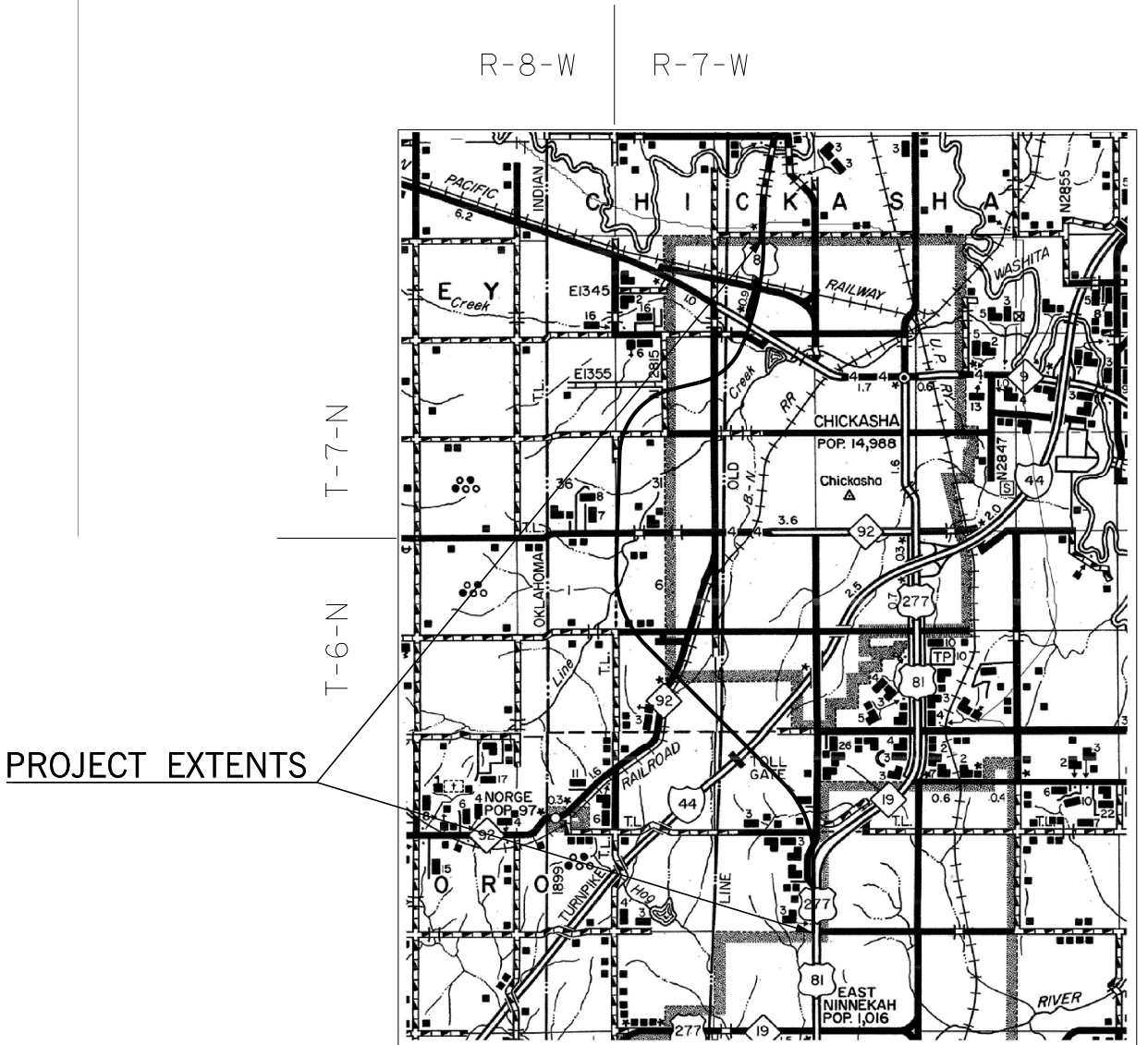
EQUIPMENT:
 TRIMBLE R8 MODEL 3 RECEIVER
 SOKKIA SET3 TOTAL STATION
 TRIMBLE DNI DIGITAL LEVEL

Distribution:
 Copy w/survey reports _____ Bill R. Webb
 Copy in each Alignment _____ Professional Land Surveyor
 and level book _____

(FORM SD #20)
 Rev. 11/03 _____ 12/21/2015 Date

UTILITIES

Company Name	Phone No.
Communication Lines:	
Chickasha Telephone Co.	580-619-5455
Southwestern Bell	800-522-6543
AT&T	800-778-9140
Dobson Technologies	800-778-9140
Intelleg Communications	000-335-4343
Medicine Park Telephone Co.	580-529-2700
Electric Lines:	
AEP Public Service Co. of Oklahoma	888-216-3523
Oklahoma Electric Cooperative	405-321-2024
Water & Sewer Lines:	
City of Chickasha Public Works	405-222-0080
Rural Water District # 6	405-459-6626
Rural Water District # 7	405-779-6224
Natural Gas Lines:	
Centerpoint Energy	866-275-5265
Natural Gas / Petroleum Pipelines:	
Enable Midstream	800-522-8048
Continuum Energy	877-587-0026
DCP Midstream	800-435-1679
Unit Petroleum	918-493-7700
Sunoco Logistics	800-753-5531
Keppo Operating Inc.	855-421-2088



PROJECT EXTENTS

U.S. 81, WEST BYPASS,
 MAIN SURVEY PROJECT LENGTH: 45,577.58 Ft. 8.63 MI.
 BEGINNING STATION : 87+22.42
 ENDING STATION : 543+00.00

Electronic File Transfer Disclaimer:
 These Files, Drawings and/or Notes are provided for information only. The Oklahoma Department of Transportation (ODOT) and the Owner cannot be held responsible for the content or accuracy of these Files, Drawings and/or Notes due to conversions, software translations, or any other manipulation of said Files, Drawings and/or Notes. ODOT expressly disclaims any responsibility arising from any use of these Files, Drawings and/or Notes. To the full extent permitted by applicable law, the recipient of these Files, Drawings and/or Notes hereby agrees to defend, indemnify, and hold harmless ODOT and the Owner from and against any and all claims, suits, actions, damages, loss, liability or costs of every nature or description (including reasonable attorney's fees) arising from, or in any way attributable to or connected with any of these Files, Drawings and/or Notes.

THIS SURVEY MEETS THE OKLAHOMA MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING AS ADOPTED BY THE OKLAHOMA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS, MAY 17, 2010.

SPECIFICATIONS FOR SURVEYS FOR PRIMARY AND SECONDARY HIGHWAYS DATED JAN 1, 2011 GOVERN. WHERE THERE IS A CONFLICT BETWEEN THESE SPECIAL PROVISIONS AND THE SPECIFICATIONS, THE SPECIAL PROVISIONS SHALL TAKE PRECEDENCE.

STATE OF OKLAHOMA
DEPARTMENT OF TRANSPORTATION

SWO 4380(1) Job/Piece 24428(04) Engr. Contract No. 1218

LAND SURVEYOR'S CERTIFICATION

I hereby certify that all land and property sub-division distances, angles, corners, and monumentation made or used in conjunction with this survey and depicted or recorded herein or hereon were recovered, established or re-established in substantial conformity with:

- Applicable instructions contained in the U.S. Government Bureau of Land Management publication "Manual of Survey Instruction".
- Its supplement, "Restoration of Lost or Obliterated Corners and Sub-division of Sections".
- "Oklahoma Minimum Standards for the Practice of Land Surveying" as adopted by the State Board of Licensure for Professional Engineers and Land Surveyors; and
- Sound land surveying practices;

including a thorough search, study, analysis and consideration of all existing records and field evidence.

I further certify that all survey monuments depicted exist and that all land survey work was done by me or under my direct supervision.

Dated this 24th day of June, 2016.

Land Surveyor *John T. Birkhahn* (seal)
 Signature
 John T. Birkhahn
 Printed Name
 Oklahoma Licensed Land Surveyor No. 1738
 Certificate of Authorization No. 3722



OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION	
PLS	JTB
DRAWN	JTB
CHECKED	JTB
APPROVED	JTB
CREW	BENHAM SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S001

SURVEY DATA SHEET
 SDS 1 OF 76

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

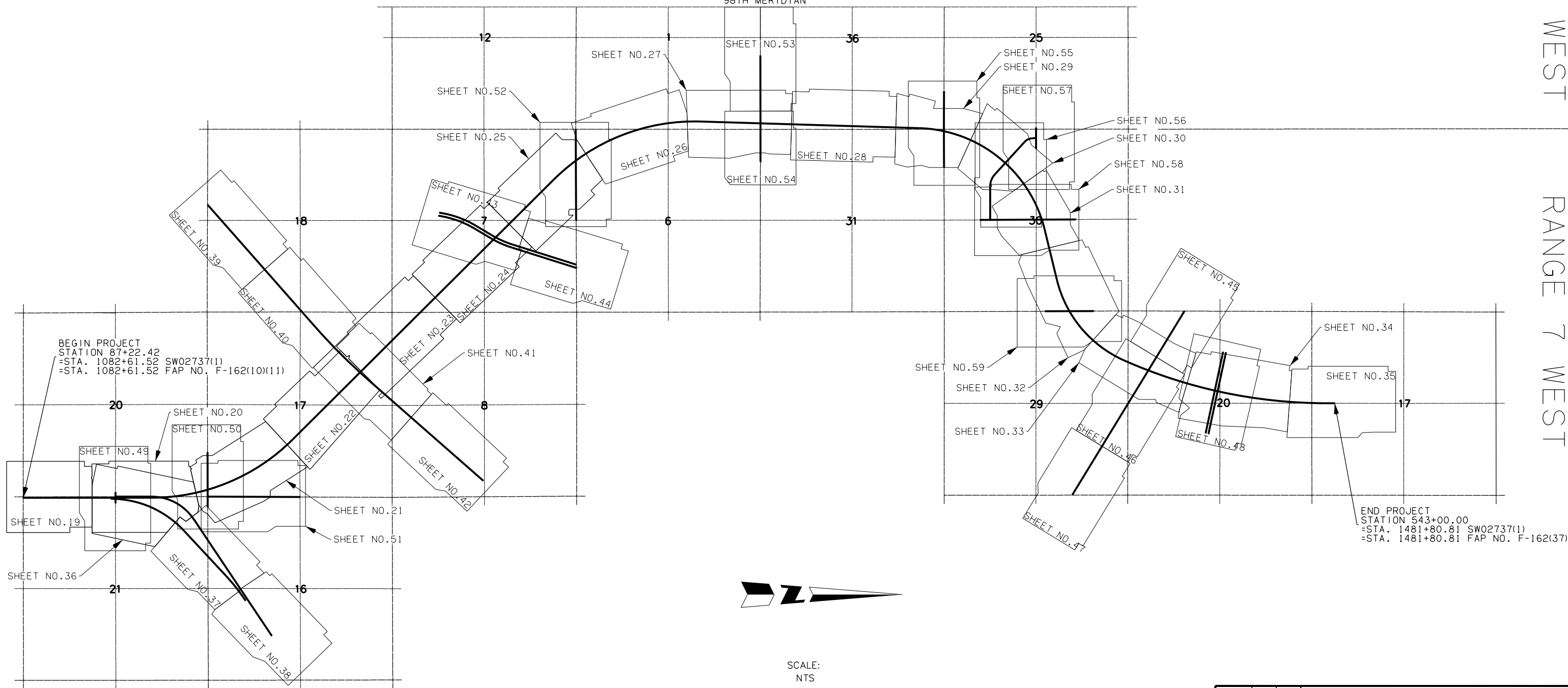
TOWNSHIP 6 NORTH

TOWNSHIP 7 NORTH

RANGE 8 WEST

RANGE 7 WEST

98TH MERIDIAN



BEGIN PROJECT
 STATION 87+22.42
 =STA. 1082+61.52 SW02737(1)
 =STA. 1082+61.52 FAP NO. F-162(10)(11)

END PROJECT
 STATION 543+00.00
 =STA. 1481+80.81 SW02737(1)
 =STA. 1481+80.81 FAP NO. F-162(37)



SCALE:
 NTS

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS <u>2</u> OF <u>76</u>			
PLS	JTB		
DRAWN	APK		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12) SHEET NO. S002

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				

DESCRIPTION	REVISIONS	DATE

OKLAHOMA DEPARTMENT OF TRANSPORTATION
SURVEY DIVISION (405) 521-2621 FAX 405-522-0364

Date: July 6, 2016

To: Mr. William Tackett, Chief of Surveys
From: John Birkhahn, Professional Land Surveyor
Subject: SWO 4380(1) J/P 24428(04) – Grady County U.S. 81 Chickasha West Bypass.

HISTORICAL LETTER & WRITTEN REPORT

1. GENERAL:

- A. Survey began: February 17, 2011.
Survey completion: June 17, 2016.
- B. The measurement unit for this project will be the U.S. Survey Foot.

2. SURVEY ASSIGNMENT:

The above survey was assigned to me by Mr. Larry Reser, Chief of Surveys in September 2010, and then again by Mr. William Tackett, Chief of Surveys, with revised Survey Special Provisions in November 2014.

3. PURPOSE OF SURVEY:

The purpose of this survey is to develop plans to design a highway on a new highway alignment, to include all road crossings, interchanges, bridges, frontage roads, and other facilities required by the design. The survey will also include sufficient data to design the connections to the existing highway at the beginning and end of the project. The survey will include the Alignment, Topographic/Planimetric data, Surface Features/Digital Terrain Model Data, Land and Property Ties, Utilities, Drainage and all other pertinent information needed to aid in the design.

4. SURVEY LIMITS:

West Bypass Main Survey: Beginning at P.O.T. Sta. 1082+61.52 (on EW-141 Section Line) as established under SWO 2737(1) Section One survey and shown on FAP No. F-162(10)(11) plans, and extending northerly along US 81, then northwesterly on a new alignment (one of two similar alternatives selected on October 29, 2014) continuing Northwesterly, Northeasterly, and finally Northerly, tying back to existing US 81, near the present junction of US 81 & US 82, Northwest of Chickasha. From there, the survey continues to and ends at P.T. Sta. 1481+80.81 as established under SWO 2737(1) Section 2 survey and shown on FAP No. F-162(37) plans (approximate centerline length=8.63 miles).

US 81 Northbound Survey: Beginning at P.C. Sta. 1107+80.13 as shown on FAP No. F-162(10)(11) plans, and extending northeasterly along existing US 81 for approximately 4300 feet.

US 81 Southbound Survey: Beginning at P.O.T. Sta. 1109+14.72 as shown on FAP No. F-162(10)(11) plans, and extending northeasterly along existing US 81 for approximately 4500 feet.

H.E. Bailey Turnpike Connection Survey: Beginning approximately 4840 feet Southwest of the centerline of the Main survey and extending Northeast along H.E. Bailey Turnpike approximately 9700 feet

Historical Letter & Written Report
Page 1 of 9

S.H. 92 (Norae Rd.) & BNSF Railroad Connection Survey: Beginning 600 feet Southwest of the centerline of the Main Survey and extending Northeast along S.H. 92 & BNSF Railroad approximately 1200 feet.

U.S. 62 Connection Survey: Beginning at P.O.T. Sta. 385+47.37 (NS-282 Section Line) as established under SWO 2738(1) Section 1 survey & SWO 3609(1) survey and shown on FAP No. STPY-026B(240) plans, and extending Southeasterly along U.S. 62 approximately 6200 feet.

Old U.S. 62 Connection Survey: Beginning 1150 feet Northwest of the centerline of the Main Survey and extending Southeast along Old U.S. 62 approximately 2400 feet.

Union Pacific Railroad Connection Survey: Beginning 1150 feet Northwest of the centerline of the Main Survey and extending Southeast along Old U.S. 62 approximately 2400 feet.

EW-140.5 Section Line Connection Survey: Beginning 300 feet West of the centerline of the Main Survey and extending East 600 feet along Section Line.

EW-140 Section Line Connection Survey: Beginning 1100 feet West of the centerline of the Main Survey and extending East approximately 3400 feet along Section Line.

NS-283 Section Line (16th St.) Connection Survey: Beginning at EW-140 Section Line, extending North approximately 400 feet along Section Line.

EW-138 Section Line (Country Club Rd.) Connection Survey: Beginning at NS-281 Section Line and extending East to NS-281.5 ¼ Section Line, approximately 2620 feet.

EW-137 Section Line (Grand Ave.) Connection Survey: Beginning approximately 1950 feet West of the centerline of the Main Survey and extending East approximately 3050 feet along Section Line.

EW-136 Section Line (Idaho Ave.) Connection Survey: This survey will begin approximately 1150 feet West of the centerline of the Main Survey and will extend East approximately 2200 feet along Section Line.

Iowa Ave. Connection Survey: Beginning at EW-135.5 ¼ Section Line, approximately 250 feet East of NS-281 Section Line, then extending Southeasterly for approximately 3000 feet to the present intersection of Iowa Ave. and C.S. 2815 Rd.

EW-135.5 Section Line (C.R. 1355) Connection Survey: Beginning at NS-281 Section Line and extending East, approximately 600 feet along Section Line.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: Beginning approximately 300 feet South of the centerline of the Main Survey and extending North approximately 1300 feet along Section Line.

NS-282 Section line (29th St.) Connection Survey: Beginning approximately 700 feet South of the centerline of the Main Survey and extending North approximately 1400 feet along Section Line.

Historical Letter & Written Report
Page 2 of 9

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: Parallel flight lines, parallel to U.S. 62, are to be laid out by the Aerial Photo/Mapping sub-consultant to cover the flood plain area approved by DDOT.

5. ALIGNMENTS:

West Bypass Main Survey: This Centerline of Survey is along the proposed alignment submitted to ODOT by Benham Design, LLC (one of two similar alternatives selected on October 29, 2014).

US 81 Northbound Survey: The Centerline of Survey will be along and identical to the Centerline of Survey as shown on FAP No. F-162(10)(11) plans.

US 81 Southbound Survey: The Centerline of Survey will be along and identical to the Centerline of Survey as shown on FAP No. F-162(10)(11) plans.

H.E. Bailey Turnpike Connection Survey: The Centerline of Survey will be along and identical to the Centerline of Survey established under SWO 2737(1) Section One survey and shown in Alignment Book 2.

S.H. 92 (Norae Rd.) & BNSF Railroad Connection Survey: The Centerline of Survey will be along and identical to the centerline of S.H. 92 as established under SWO 1148 survey & SWO 1148(REV.) survey and shown as FAS No. S-219(1) plans. Note: Reference points were found for two P.I.'s at Sta. 146+17.19 and Sta. 182+70.95 from said plans. All curve data and tangent angles were held between these points to determine alignment.

U.S. 62 Connection Survey: The Centerline of Survey will be along and identical to the Centerline of Survey established under SWO 2738(1) Section 1 survey and SWO 3609(1) survey and shown on FAP No. STPY-026B(240) plans.

Old U.S. 62 Connection Survey: The Centerline of Survey will be along and identical to the centerline of Old U.S. 62 as established under SWO 2737(1) Section 2 survey and shown in Alignment Book No. 2.

Union Pacific Railroad Connection Survey: The Centerline of Survey will be along and identical to the centerline of the former C.R.I. & P. Railway as established under SWO 2737(1) Section 2 survey and shown in Alignment Book No. 2.

EW-140.5 Section Line Connection Survey: The Centerline of Survey will be along and identical to EW-140.5 ¼ Section Line.

EW-140 Section Line Connection Survey: The Centerline of Survey will be along and identical to EW-140 Section Line.

NS-283 Section Line (16th St.) Connection Survey: The Centerline of Survey will be along and identical to NS-283 Section Line.

EW-138 Section Line (Country Club Rd.) Connection Survey: The Centerline of Survey will be along and identical to EW-138 Section Line.

EW-137 Section Line (Grand Ave.) Connection Survey: The Centerline of Survey will be along and identical to EW-137 Section Line.

Historical Letter & Written Report
Page 3 of 9

EW-136 Section Line (Idaho Ave.) Connection Survey: The Centerline of Survey will be along and identical to EW-136 Section Line.

Iowa Ave. Connection Survey: This Centerline of Survey is along the proposed alignment submitted to ODOT by Benham Design, LLC (one of two similar alternatives selected on October 29, 2014).

EW-135.5 Section Line (C.R. 1355) Connection Survey: The Centerline of Survey will be along and identical to EW-135.5 ¼ Section Line.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: The Centerline of Survey will be along and identical to NS-281.5 ¼ Section Line.

NS-282 Section line (29th St.) Connection Survey: The Centerline of Survey will be along and identical to NS-282 Section Line.

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: N/A.

6. STATIONING:

West Bypass Main Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.C.T. Sta. 1082+61.52 (at the EW-141 Section Line). Stationing increases Northerly from this point, field measured distance, to the End of Survey without equation, except with previous surveys and plans.

US 81 Northbound Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.C. Sta. 1107+80.13. Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

US 81 Southbound Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey at P.O.T. Sta. 1109+14.72 (at the EW-140.5 ¼ Section Line). Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

H.E. Bailey Turnpike Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section One survey.

S.H. 92 (Norae Rd.): Stationing for this survey is taken from FAS No. S-219(1) plans at P.C. Sta. 162+81.10. Stationing increases Northeasterly from this point to the End of Survey without equation, except with previous surveys and plans.

BNSF Railroad Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases Northeast to the End of Survey without equation, except with other surveys and plans.

U.S. 62 Connection Survey: Stationing for this survey is taken from SWO 2738(1) Section 1 survey.

Old U.S. 62 Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section 2 survey.

Union Pacific Railroad Connection Survey: Stationing for this survey is taken from SWO 2737(1) Section 2 survey.

Historical Letter & Written Report
Page 4 of 9

EW-140.5 Section Line Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-140 Section Line Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

NS-283 Section Line (16th St.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases North to the End of Survey without equation, except with other surveys and plans.

EW-138 Section Line (Country Club Rd.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-137 Section Line (Grand Ave.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

EW-136 Section Line (Idaho Ave.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases East to the End of Survey without equation, except with other surveys and plans.

Iowa Ave. Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases Southeast to the End of Survey without equation, except with other surveys and plans.

EW-135.5 Section Line (C.R. 1355) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey, and stationing increases East to the End of Survey without equation, except with other surveys and plans.

NS-281.5 Section line (C.S. 2815 Rd.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases North to the End of Survey without equation, except with other surveys and plans.

NS-282 Section line (29th St.) Connection Survey: A value of Sta. 100+00.00 is assigned to the Beginning of Survey and stationing increases North to the End of Survey without equation, except with other surveys and plans.

ROCK HOLLOW CREEK FEMA FLOOD PLAIN: N/A.

7. HORIZONTAL CONTROL:

- A. Horizontal control for this survey is NGS Oklahoma State Plane Coordinate System NAD83 (CORS 96) (EPOCH: 2002), Lambert Projection, South Zone (3502). Primary Control points for this survey are the following:

Existing Monuments

- "UNION" (From N.G.S. Data Sheet, NAD 83 (2007), PID-FJ1044)
- "1 TF" (From N.G.S. Data Sheet, NAD 83 (1993), PID-EL1033)
- "CHICK" (From N.G.S. Data Sheet, NAD 83 (1993), PID-FJ1049)
- "D 214" (From N.G.S. Data Sheet, NAD 83, PID-EL0693)
- "POCASSET" (From N.G.S. Data Sheet, NAD 83 (1993), PID-FJ0789)

Historical Letter & Written Report
Page 5 of 9

"K 41 1953" (From N.G.S. Data Sheet, NAD 83, PID-FJ0528)

Set Monuments

ODOT monuments "G-26-865 thru G-26-868" NAD 83 (CORS 96) (by Benham Design, LLC)
ODOT monuments "G-26-1032 thru G-26-1039" (CORS 96) (by Aerial Data Services, Inc.)

ODOT monuments "G-26-865 thru G-26-868" were set 5/8" iron pins with stamped aluminum cap in concrete. They were established using GPS, for three separate static survey data occupations for a minimum of two hours, on three separate days, at different times of day. All data was uploaded to <http://www.ngs.noaa.gov/OPUS/>. The solutions were then averaged to obtain coordinates in NAD 83 (CORS96)(EPOCH: 2002).

ODOT monuments "G-26-1032 thru G-26-1039" were set chiseled "X"s in concrete. They were set using GPS from selected points from OPUS Projects network adjustment shown in SWO4380_1_v2.dgn. Existing N.G.S. monuments listed above were used as a check for primary and secondary control.

A coordinate shift of ΔN=0.002, ΔE=-0.129 was applied to all NAD 83 (CORS 2011) coordinate solutions to conform to NAD 83 (CORS 96) horizontal datum. This was calculated by uploading identical static sessions for ODOT Monuments "G-26-865 thru G-26-868" to <http://www.ngs.noaa.gov/OPUS/>, and subtracting resulting coordinate differences between CORS 96 and CORS 2011 solutions.

- B. Secondary Control for this survey was established using GPS RTK, based off of primary control points.

8. VERTICAL CONTROL:

Level datum for this survey is NAVD 88. Benchmarks for this survey were set by Aerial Data Services Inc. All bench marks were tied to the following ODOT bench marks from SWO 4380(1): BM 7-13, 15-20, 24-28, 30, 32-34, & 37. Bench marks established or used on this survey meet the requirements of the N.G.S. 3rd order standards as a minimum.

9. PHOTO CONTROLS:

A total of 110 Aerial Targets were set and tied on this project. Aerial targets were set and measured by Aerial Data Service, Inc. Aerial targets are shown in SWO4380_1_v2.dgn, Ccogo Points List, and X,Y,Z coordinates were placed in the following file: SWO4380_1_v2_targets.txt

10. TOPOGRAPHY:

The majority of the topography on this survey was obtained from aerial photogrammetry survey data by Aerial Data Service, Inc. The date of flight for the aerial survey was March 11, 2015. GPS RTK and conventional field methods were used to survey the following:

- 1. Drainage structures
- 2. Creek flow lines.
- 3. Ponds

Historical Letter & Written Report
Page 6 of 9

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS <u>3</u> OF <u>76</u>
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S003	

4. Underground utilities
5. Overhead wires and cables
6. Meters, valves, hydrants, etc.
7. Mail boxes
8. Entities that were covered by water, timber, or dense vegetation at the time of the aerial flight.

Topography information was placed in the following file: SWO4380_1_v2_Topo.dgn.

11. DTM:

DTM information was collected from aerial mapping by Aerial Data Service, Inc. Additional flow line information for Rock Hollow Creek, Line Creek, and other tributaries was collected using GPS and conventional field methods at locations where creeks crossed existing and proposed alignments. Flow line measurements were taken 500 feet upstream and downstream at 25 feet intervals at these locations. The bottom surface of ponds, within 300 feet of existing and proposed alignments, was also surveyed with GPS and conventional field methods. This information was combined with the surface from the aerial survey and placed in the following file: SWO4380_1_v2.dtm.

12. LAND TIES:

Complete land tie information was obtained by GPS RTK and conventional field methods for the following sections.

- T-6-N, R-7-W, I.M.; All of Sections 6, 7, 8, 16, 17, 18, 20, & 21
- T-7-N, R-7-W, I.M.; All of Sections 17, 20, 29, 30, & 31
- T-6-N, R-8-W, I.M.; All of Sections 1 & 12 lying East of the 98th Meridian
- T-7-N, R-8-W, I.M.; All of Sections 25 & 36 lying East of the 98th Meridian

Corner records were researched from the Department of Libraries in Oklahoma City, OK. GLO Notes were obtained from the following website: www.gloreords.blm.gov.

Land corners from ODOT Survey 2737(1) were recovered and/or re-established and used on this survey. See a full description of land corner recovery and restoration on the Land Tie survey data sheets for this survey, located in SWO4380_1_v2.dgn.

13. EXISTING RIGHT-OF-WAY AND PROPERTY LINES

Present right-of-way, utility easements, and property line information was obtained from the following sources:

- Two separate title searches for right-of-way, utility easements, and ownership deeds from Cochran Abstract Company.
- ODOT Plans
 - FAP No. F-162 (9),(10),(11),(31),(35),(37)
 - FAP No. STPY-26B (240)
 - FAS No. S-219 (1)
- Oklahoma Turnpike Authority Plans
 - Contract No. 206
- Existing Plats
 - Burchi's Sixth Addition
 - Chickasha Industrial Park

Historical Letter & Written Report
Page 7 of 9

Chickasha Industrial Park Block I Revised
Conrad Heights Addition
Creek Haven Estates
Harden's Acres
Hillsboro Heights Revised Addition
• Supplemental research at Grady County Assessor's website.

Ownership information could not be determined from the above research, for three areas along the south side of U.S. 62. These areas are annotated, along with all other found information, in the survey data sheets located in SWO4380_1_v2.dgn. All property and easement lines are shown mathematically and diagrammatically in survey data sheets. If no right-of-way documentation was found along section lines within the survey limits, statutory right-of-way was annotated. Statutory right-of-way for this survey falls within the Chickasaw Nation boundary, which is 33 feet (16.5 feet each side of section line).

14. UTILITIES

The assistance of "Oklahoma One-Cal System, Inc." was used to locate utilities. Utility locations for this survey were derived from a combination of utility markings, surface evidence, utility easement descriptions, and utility maps provided by the following utility companies:

- AEP Public Service Company of Oklahoma
- City of Chickasha Public Works
- Rural Water District #6
- Rural Water District #7
- Centerpoint Energy
- Enable Midstream
- DCP Midstream
- Continuum Energy
- Sunoco Logistics
- USIC locating services

There are no depths on any lines except for sanitary and storm sewer flow lines. Low-wire elevations were obtained on overhead power lines that crossed the main survey alignment and stub alignments. Outside temperatures were recorded for that process. All utility locations should be verified in the field before construction. All utilities, flow line and low wire elevations, and three-dimensional sanitary sewer entities, are located in SWO4380_1_v2_TOPO.DGN

15. POTENTIAL ENVIROMENTAL CONTAMINATION

During the course of this survey there were no Underground Storage Tanks or Hazardous Waste Sites found.

16. DRAINAGE INFORMATION

Drainage and Hydraulic data are located in SWO4380_1_v2_DRA.DGN. Three-dimensional drainage structures are located in SWO4380_1_v2_TOPO.DGN.

Historical Letter & Written Report
Page 8 of 9

17. SURVEY DATA SHEETS

Survey datasheets were submitted in the form of a Microstation Design File to be archived on the ODOT Mainframe Computer, as per ODOT Survey Division Standards. These will be incorporated into the set of design drawings and will be in substantial conformity with the ODOT Survey Division Standards for Survey Data Sheets, as maintained on the ODOT(s) Intranet.

18. SUBMISSION OF SURVEY DATA

- A. Historical Letter & Written Report
- B. Form SD-1 Transmittal letter
- C. Form SD-7 Public and Privately Owned Utilities List
- D. Form SD-11 Position and Description of Survey Monuments
- E. Form SD-20 Survey Control Data Statement
- F. Form SD-41 Surveyors Certification
- G. Coordinate Geometry List
- H. Bench Marks and Check Levels list
- I. Alignment Reports
- J. 113 copies of Certified Corner Records
- K. Microstation files for Survey Data Sheets, Contours, Drainage, Perimeter, Surface Features, Topography, and Triangles
- L. Inroads files for Geometry and Surface
- M. Full size and Half size PDF's of Survey Data Sheets.

19. PERSONNEL

Benham Design, LLC

John T. Birkhahn, Professional Land Surveyor
Andrew Kis, Party Chief
James Jackson, Survey Technician
Daniel Bennett, Party Chief
Chris Shipman, Survey Technician
Brandon Holland, Survey Technician
John Okon, Survey Technician

Aerial Data Services

Bill Webb, Professional Land Surveyor
Other Technicians (Not listed)

If you have any questions or need further information, please contact John Birkhahn, PLS.

Historical Letter & Written Report
Page 9 of 9

**U.S. 81 CHICKASHA BYPASS
GRADY COUNTY
SWO4380(1) J/P 24428(04)**

BENCHMARK AND CHECK LEVEL LIST

BM NO.	RUN 1	RUN 2	MEAN DIFF.	NAV8 88 DATUM ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
BM #207				1182.3820	1182.382	A001	N/A	N/A	"X" ON CTR. W. HDWL. RCB CROSS DRAIN
TO	2.6361	2.6403	2.6382						
BM #208				1185.0190	1185.019	A001	87+50.10	69.67 L	"TJ" ON S.W. WINGWALL OF CONC. RCB CROSS DRAIN
TO	8.7372	8.7401	8.7387						
BM #209				1193.7700	1193.770	A001	102+78.31	98.50 R	NGS MONUMENT "H-214" ENCASED STEEL ROD W/ METAL LID. THIS MONUMENT IS 5.8 MI. SOUTHERLY ALONG U.S. 81 FROM THE FEDERAL BUILDING IN CHICKASHA, 66.9 FT. EAST OF THE CENTERLINE OF THE NORTH BOUND LANES OF THE HIGHWAY, 18.4 FT. SOUTH OF THE GUY WIRE ANCHOR, AND 5.9 FT. NORTH OF A UTILITY POLE.
TO	2.3674	2.3760	2.3717						
BM #210				1196.1440	1196.144	A001	108+87.70	66.14 L	"X" ON CENTER W. HDWL. RCB CROSS DRAIN
TO	4.5142	4.5121	4.5132						
BM #211				1200.6510	1200.651	A001	114+06.93	68.77 L	"TJ" ON N.E. WINGWALL W. SIDE DRAIN
TO	3.3253	3.3313	3.3283						
BM #212				1203.9780	1203.978	A001	123+39.68	114.46 L	80D SPIKE IN POWER POLE ON EAST EDGE OF 16TH STREET
TO	-6.6022	-6.5997	-6.6010						
BM #213				1197.3790	1197.379	A001	127+52.29	176.47 L	N.W. COR. W. CONC. HDWL. CGMP CROSS DRAIN
TO	-14.0288	-14.0271	-14.0279						
BM #11				1183.3562		A001	134+50.38	58.92 R	100D NAIL SET S.W. FACE 8" ELM
TO	8.4489	8.4508	8.4498						
BM #12				1191.8111		A001	141+72.09	306.34 L	100D NAIL SET W. FACE 18" ELM
TO	-18.4913	-18.4996	-18.4955						
BM #13				1173.3208		A001	151+40.21	517.03 L	100D NAIL IN N. FACE OF 24" COTTONWOOD, NEAR S.E. CORNER OF POND DAM.
TO	13.2228	13.2270	13.2249						
BM #215				1186.5508		A001	155+15.31	300.60 L	80D SPIKE IN FENCE POST
TO	4.2439	4.2435	4.2437						
BM #216				1190.7996		A001	158+03.48	880.07 L	N.E. CORNER CONC. SIDEWALK TO WOOD FRAME RESIDENCE
TO	46.5327	46.5226	46.5277						
BM #217				1237.3323		A001	174+72.74	845.39 L	80 D SPIKE IN R.R. TIE FENCE POST
TO	12.4241	12.4181	12.4211						
BM #218				1249.7585		A001	186+78.95	1501.34 L	80D SPIKE IN GROUND AT BASE OF METAL CORNER POST
TO	2.7674	2.7647	2.7660						
BM #219				1252.5297		A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE - EAST R/W FENCE I-44
TO	2.2406	2.2352	2.2379						
BM #220				1254.7730	1254.773	A004	283+25.13	73.71 R	N.E. CORNER OF TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.
TO	-4.9001	-4.8975	-4.8988						
BM #1				1249.8746		A001	197+99.60	286.18 L	100D NAIL SET IN E. FACE 8" WOOD BRACE POST, N. SIDE OF I-44
TO	-19.3697	-19.3758	-19.3728						
BM #2				1230.5022		A001	206+56.29	312.42 L	100D NAIL SET IN E. FACE OF 12" ELM TREE
TO	-37.8283	-37.8251	-37.8267						
BM #3				1192.6759		A001	213+74.34	247.53 L	100D NAIL SET IN E. FACE 8" ELM TREE
TO	23.8587	23.8676	23.8632						
BM #4				1216.5394		A001	221+88.54	247.39 L	SET 3/4" I.P. (30" LONG)
TO	11.0538	11.0500	11.0519						
BM #5				1227.5917		A001	229+44.85	230.97 L	SET 3/4" I.P. (30" LONG)
TO	-7.4454	-7.4456	-7.4455						
BM #6				1220.1465		A001	237+30.46	270.08 L	SET 3/4" I.P. (30" LONG)
TO	-4.7502	-4.7548	-4.7525						
BM #7				1215.3944		A001	245+09.56	219.21 L	SET 3/4" I.P. (30" LONG)
TO	16.3605	16.3676	16.3641						
BM #8				1231.7588		A005	172+17.70	13.67 L	CHIX. "X" SET (N. END OF CONC. HDWL.)
TO	7.0540	7.0450	7.0495						
BM #9				1238.8087		A001	260+20.24	215.00 R	SET 3/4" I.P. (30" LONG)
TO	-2.8200	-2.8176	-2.8188						
BM #10				1235.9903		A001	268+76.80	217.22 R	SET 3/4" I.P. (30" LONG)
TO	-7.2407	-7.2400	-7.2404						
BM #224				1228.7503		A001	269+87.18	660.24 R	80D SPIKE IN POWER POLE, W. OF CHAIN LINK FENCE
TO	-8.5019	-8.5025	-8.5022						
BM #14				1220.2484		A001	277+08.81	222.72 R	SET 3/4" I.P. (30" LONG)
TO	-72.5185	-72.5050	-72.5118						
BM #15				1147.7371		A001	289+60.35	1024.54 L	CHIS. "X" SET ON TOP CENTER OF SOUTH HEADWALL, 300' +/- WEST OF INT. MOCKINGBIRD & CR 1380.
TO	28.6203	28.6238	28.6220						
BM #16				1176.3595		A013	105+78.86	134.75 L	SET 3/4" I.P. (30" LONG)
TO	-0.8233	-0.8258	-0.8245						
BM #17				1175.5353		A001	291+94.55	161.56 R	SET 3/4" I.P. (30" LONG)
TO	-25.7638	-25.7734	-25.7686						
BM #18				1149.7671		A001	299+82.47	186.53 R	SET 3/4" I.P. (30" LONG)
TO	-11.1276	-11.1295	-11.1286						
BM #19				1138.6389		A001	307+77.96	207.93 R	SET 3/4" I.P. (30" LONG)
TO	-2.7523	-2.7585	-2.7554						
BM #20				1135.8839		A001	315+73.98	173.94 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	7.3685	7.3669	7.3677						
BM #21				1143.2519		A001	323+71.24	162.63 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	-10.7954	-10.7841	-10.7898						
BM #22				1132.4626		A001	339+41.63	1401.09 R	CHIS. "X" SET ON TOP - WEST END OF SOUTH WALL OF BRIDGE OVER LINE CREEK

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				

DESCRIPTION	REVISIONS	DATE

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
BM #228	44.8668	44.8616	44.6642	1177.1270	1177.127	A001	328+31.01	2986.12 R	"X" ON S.E. EDGE OF SANITARY SEWER MANHOLE
TO	-45.0259	-45.0198	-45.0229						
BM #23	0.5628	0.5690	0.5659	1132.0986		A001	331+35.67	232.88 R	SET 3/4" I.P. (30" LONG)
TO	0.5628	0.5690	0.5659						
BM #24	-1.8574	-1.8702	-1.8638	1132.6589		A014	121+84.30	37.10 L	SET 3/4" I.P. (30" LONG)
TO	-1.8574	-1.8702	-1.8638						
BM #25	9.3828	9.3843	9.3836	1130.7895		A001	347+12.25	244.09 R	SET 3/4" I.P. (30" LONG)
TO	9.3828	9.3843	9.3836						
BM #26	7.4180	7.4400	7.4290	1140.1674		A001	354+96.15	244.55 R	SET 3/4" I.P. (30" LONG)
TO	7.4180	7.4400	7.4290						
BM #230	-11.0928	-11.0866	-11.0897	1147.5910	1147.591	A001	359+92.92	3390.76 R	80D SPIKE IN 10" FENCE CORNER POST
TO	-11.0928	-11.0866	-11.0897						
BM #27	11.4861	11.4853	11.4857	1136.5030		A001	357+02.39	391.80 R	CHIS. "X" SET ON N.E. CORNER OF HIGHEST CONC. SLAB, SOUTH OF LINE CREEK
TO	11.4861	11.4853	11.4857						
BM #28	17.1013	17.1026	17.1020	1147.9903		A001	362+57.30	371.62 R	SET 3/4" I.P. (30" LONG)
TO	17.1013	17.1026	17.1020						
BM #29	9.5380	9.5288	9.5334	1165.0940		A001	370+58.95	310.52 R	SET 3/4" I.P. (30" LONG)
TO	9.5380	9.5288	9.5334						
BM #30	-2.2641	-2.2504	-2.2573	1174.6291		A001	378+29.20	336.61 R	SET 3/4" I.P. (30" LONG)
TO	-2.2641	-2.2504	-2.2573						
BM #31	4.2783	4.2873	4.2828	1172.3735		A001	386+19.74	310.53 R	SET 3/4" I.P. (30" LONG)
TO	4.2783	4.2873	4.2828						
BM #32	-16.0683	-16.0684	-16.0683	1176.6579		A001	399+38.08	1873.77 R	CHIS. "X" SET, N.W. COR. CONC. PAD OF WATER VAULT
TO	-16.0683	-16.0684	-16.0683						
BM #232	16.4558	16.4620	16.4589	1160.5913		A001	406+08.72	2379.36 R	80D SPIKE IN POWER POLE ON SOUTH EDGE OF RD. AT INTERSECTION OF CS 2815 AND CR 1360
TO	16.4558	16.4620	16.4589						
BM #33	-2.7761	-2.7706	-2.7734	1177.0519		A015	114+28.25	120.83 L	SET 3/4" I.P. (30" LONG)
TO	-2.7761	-2.7706	-2.7734						
BM #34	-4.2906	-4.2887	-4.2896	1174.2801		A001	401+84.95	255.39 R	SET 3/4" I.P. (30" LONG)
TO	-4.2906	-4.2887	-4.2896						
BM #35	-7.5702	-7.5625	-7.5663	1169.9922		A001	409+18.77	333.74 R	SET 3/4" I.P. (30" LONG)
TO	-7.5702	-7.5625	-7.5663						
BM #36	-3.8914	-3.8937	-3.8926	1162.4276		A001	417+60.46	271.62 R	SET 3/4" I.P. (30" LONG)
TO	-3.8914	-3.8937	-3.8926						
BM #37	2.2423	2.2392	2.2407	1158.5366		A001	425+88.69	267.77 R	SET 3/4" I.P. (30" LONG)
TO	2.2423	2.2392	2.2407						
BM #233	1.4349	1.4402	1.4375	1160.7790		A018	115+89.10	23.91 L	60D SPIKE IN FENCE CORNER POST, S.W. QUADRANT OF INTERSECTION
TO	1.4349	1.4402	1.4375						
BM #39	-22.4610	-22.4665	-22.4638	1162.2182		A001	435+13.73	191.30 R	SET 3/4" I.P. (30" LONG)
TO	-22.4610	-22.4665	-22.4638						
BM #40	2.6942	2.6954	2.6948	1139.7561		A001	442+62.04	214.40 R	SET 3/4" I.P. (30" LONG)
TO	2.6942	2.6954	2.6948						
BM #234	-34.0483	-34.0352	-34.0418	1142.4525		A001	444+05.54	480.86 R	80D SPIKE IN SOUTH BRACE POST OF FENCE CORNER POST
TO	-34.0483	-34.0352	-34.0418						
BM #41	-6.8526	-6.8592	-6.8559	1108.4124		A001	448+29.10	358.03 L	SET 3/4" I.P. (30" LONG)
TO	-6.8526	-6.8592	-6.8559						
BM #42	4.2737	4.2746	4.2741	1101.5582		A019	103+55.35	104.61 L	SET 3/4" I.P. (30" LONG)
TO	4.2737	4.2746	4.2741						
BM #235	-6.8580	-6.8646	-6.8613	1105.8340	1105.834	A001	455+62.40	732.35 R	80D SPIKE IN POWER POLE, SOUTH OF CIRCLE GRAVEL DRIVE, WEST SIDE 29TH ST.
TO	-6.8580	-6.8646	-6.8613						
BM #43	-0.1867	-0.1867	-0.1867	1098.9817		A001	465+43.47	284.38 R	SET 3/4" I.P. (30" LONG)
TO	-0.1867	-0.1867	-0.1867						
BM #44	-5.1050	-5.0889	-5.0970	1098.8040		A001	473+41.96	307.35 R	SET 3/4" I.P. (30" LONG)
TO	-5.1050	-5.0889	-5.0970						
BM #45	9.5741	9.5759	9.5750	1093.7161		A001	480+83.78	283.55 R	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	9.5741	9.5759	9.5750						
BM #237	-2.8455	-2.8426	-2.8440	1103.3000	1103.300	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN CF U.S. 62
TO	-2.8455	-2.8426	-2.8440						
BM #47	-0.8708	-0.8706	-0.8707	1100.4535		A007	409+70.68	75.84 R	CHIS. BOX SET ON TOP CENTER OF HDWL, SOUTH SIDE HWY 62, APPROX. 500' +/- EAST OF HWY 81
TO	-0.8708	-0.8706	-0.8707						
BM #48	-3.7094	-3.7148	-3.7121	1099.5803		A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)
TO	-3.7094	-3.7148	-3.7121						
BM #49	-2.9876	-2.9819	-2.9847	1096.8657		A001	503+82.60	227.46 R	SET 3/4" I.P. (30" LONG)
TO	-2.9876	-2.9819	-2.9847						
BM #50	0.5777	0.5839	0.5808	1092.8784		A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)
TO	0.5777	0.5839	0.5808						
BM #51	-0.1968	-0.1979	-0.1974	1093.4567		A001	519+62.64	230.00 R	SET 3/4" I.P. (30" LONG)
TO	-0.1968	-0.1979	-0.1974						
BM #52	-0.1486	-0.1499	-0.1493	1093.2569		A001	527+58.98	209.80 R	SET 3/4" I.P. (30" LONG)
TO	-0.1486	-0.1499	-0.1493						
BM #53	2.0849	2.0906	2.0878	1093.1051		A001	535+55.51	210.93 R	SET 3/4" I.P. (30" LONG)
TO	2.0849	2.0906	2.0878						
BM #54	16.8700	16.8734	16.8717	1095.1904		A001	542+99.05	221.48 R	SET 3/4" I.P. (30" LONG)
TO	16.8700	16.8734	16.8717						
BM #238				1112.0600	1112.060	A001	N/A	N/A	THIS NATIONAL GEODETIC SURVEY MONUMENT (NGS "W") IS APPROXIMATELY 3/4 MILE NORTH OF THE MOST NORTHERLY BENCHMARK SET FOR THE PROJECT, (ADS BM 54), BEYOND STATIONING LIMITS.

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	PUBLISHED ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
BM #224	-13.1070	-13.1085	-13.1077	1228.7503		A001	289+87.18	660.24 R	80D SPIKE IN POWER POLE, W. OF CHAIN LINK FENCE
TO	-13.1070	-13.1085	-13.1077						
BM #225	-14.0185	-14.0261	-14.0223	1215.6424		A013	125+48.17	44.82 R	80D SPIKE IN POWER POLE IN S.E. QUADRANT INTERSECTION OF COUNTRY CLUB AND HILL RD.
TO	-14.0185	-14.0261	-14.0223						
BM #226	-11.5288	-11.5189	-11.5239	1201.6199		A001	284+47.01	2182.28 R	BENT 80D SPIKE IN GATE POST APPROX. 20' N. OF N/S AND E/W FENCE LINE INTERSECTION
TO	-11.5288	-11.5189	-11.5239						
BM #227	-12.9654	-12.9721	-12.9688	1190.0958		A001	302+90.70	3267.36 R	80D SPIKE IN POWER POLE, S. EDGE GRAVEL DRIVE ON WEST SIDE 29TH STREET
TO	-12.9654	-12.9721	-12.9688						
BM #228				1177.1270	1177.127	A001	328+31.01	2986.12 R	"X" ON S.E. EDGE OF SANITARY SEWER MANHOLE

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION <h3 style="text-align: center;">SURVEY DATA SHEET</h3> SDS <u>5</u> OF <u>76</u>
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S005	

**U.S. 81 CHICKASHA BYPASS
GRADY COUNTY
SWO4380(1) J/P 24428(04)**

BENCHMARK AND CHECK LEVEL LIST NAVD 88 DATUM

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
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GRAND AVE.

BM #24				1132.6589	A014	121+84.30	37.10 L	SET 3/4" I.P. (30" LONG)
TO	17.6650	17.6608	17.6629					
BM #91				1150.3224	A014	111+74.40	213.43 L	SET 3/4" I.P. (30" LONG)
TO	33.2406	33.2414	33.2410					
BM #92				1183.5639	A014	104+11.22	212.64 R	SET 3/4" I.P. (30" LONG)
TO	-51.4608	-51.4709	-51.4659					
BM #23				1132.0986	A001	331+35.67	232.88 R	SET 3/4" I.P. (30" LONG)

S.H. 92

BM #8				1231.7588	A005	172+17.70	13.67 L	CHIX. "X" SET (N. END OF CONC. HDWL.)
TO	-8.3495	-8.3484	-8.3490					
BM #90				1223.4025	A005	188+24.32	61.46 R	SET 3/4" I.P. (30" LONG)
TO	15.4124	15.4145	15.4135					
BM #9				1238.8087	A001	280+20.24	215.00 R	SET 3/4" I.P. (30" LONG)

N.B. U.S. 81

BM #212				1203.9780	A001	123+39.68	114.46 L	80D SPIKE IN POWER POLE ON EAST SIDE OF 16TH STREET
TO	-7.9579	-7.9584	-7.9582					
BM #86				1196.0211	A002	1124+46.43	95.92 R	SET 3/4" I.P. (30" LONG)
TO	-13.3237	-13.3191	-13.3214					
BM #87				1182.7010	A002	1133+42.40	96.38 R	SET 3/4" I.P. (30" LONG)
TO	-3.1818	-3.1770	-3.1794					
BM #88				1179.5229	A002	1140+21.86	95.46 R	SET 3/4" I.P. (30" LONG)
TO	0.8077	0.8102	0.8089					
BM #89				1180.3331	A002	1145+30.53	180.36 L	SET 3/4" I.P. (30" LONG)
TO	17.0502	17.0394	17.0448					
BM #213				1197.3790	A001	127+52.38	176.47 L	N.W. COR. OF W. CONC. HDWL. CGMP CROSS DRAIN

U.S. 62 (N.W.)

BM #237				1103.3000	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN OF U.S. 62
TO	-3.0553	-3.0493	-3.0523					
BM #60				1100.2491	A007	397+63.99	244.47 R	SET 3/4" I.P. (30" LONG)
TO	-0.2098	-0.2101	-0.2099					
BM #61				1100.0406	A007	389+65.23	281.40 L	SET 3/4" I.P. (30" LONG)
TO	1.2618	1.2671	1.2645					
BM #62				1101.3065	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	-0.8952	-0.8952	-0.8952					
BM #63				1100.4127	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	1.5374	1.5377	1.5376					
BM #64				1101.9517	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	-1.9369	-1.9367	-1.9363					
BM #65				1100.0168	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	1.2218	1.2265	1.2242					
BM #66				1101.2424	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	0.3224	0.3283	0.3254					
BM #67				1101.5892	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	1.1359	1.1373	1.1366					
BM #74				1102.7072	A007	N/A	N/A	SET 3/4" I.P. (30" LONG) - BM BEYOND STATIONING LIMITS
TO	1.6896	1.7028	1.6962					
BM #75				1104.4048	A007	N/A	N/A	80D NAIL SET W/ BRACE NAIL IN N.W. FACE OF 15" TREE - BM BEYOND STATIONING LIMITS
TO	-4.8159	-4.8362	-4.8260					
BM #48				1099.5803	A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)

U.S. 62 (S.E.)

BM #237				1103.3000	A001	488+32.41	12.28 L	O.D.O.T. STANDARD BRASS MONUMENT "G-26-399" IN CENTER MEDIAN OF U.S. 62
TO	-8.4625	-8.4688	-8.4656					
BM #55				1094.8369	A007	386+78.63	5138.29 L	CHIS. BOX SET, TOP CURB, N. SIDE OF CURB INLET
TO	4.8364	4.8325	4.8344					
BM #56				1099.6738	A007	421+19.53	278.63 L	CHIS. BOX SET, TOP CURB @ P.C., NW OF AEP BLDG.
TO	-3.7519	-3.7732	-3.7626					
BM #57				1095.9138	A007	429+32.54	227.20 R	CHIS. BOX SET ON N.W. COR. OF AC CONC. PAD
TO	3.0570	3.0524	3.0547					
BM #58				1098.9710	A007	437+83.65	420.30 R	CHIS. BOX SET ON TOP CENTER @ W. END OF A 24" R.C.P., NEXT TO PLAYGROUND EQUIP.
TO	10.3774	10.3772	10.3773					
BM #59				1109.3508	A007	444+44.64	282.84 R	CHIS. BOX SET ON THE S.E.S. CURB RETURN @ HARLY DR. & 17TH ST.
TO	-9.7710	-9.7750	-9.7730					
BM #48				1099.5803	A001	496+14.08	236.05 R	SET 3/4" I.P. (30" LONG)

BM NO.	RUN 1	RUN 2	MEAN DIFF.	ADJ. ELEV.	ALIGNMENT	STATION	OFFSET	DESCRIPTION
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OLD U.S. 62 (N.W.)

BM #49				1095.8657	A001	503+82.80	227.46 R	SET 3/4" I.P. (30" LONG)
TO	4.0860	4.0831	4.0846					
BM #73				1099.9474	A008	103+43.30	168.26 R	CHIS. BOX SET, TOP CURB, WEST SIDE OF ROAD ENTRY TO FACTORY ENTRANCE
TO	-7.0613	-7.0709	-7.0661					
BM #50				1092.8784	A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)

OLD U.S. 62 (S.E.)

BM #49				1095.8657	A001	503+82.80	227.46 R	SET 3/4" I.P. (30" LONG)
TO	-3.0997	-3.0985	-3.0991					
BM #72				1092.7641	A008	119+46.13	146.73 R	SET 3/4" I.P. (30" LONG)
TO	0.1168	0.1170	0.1169					
BM #50				1092.8784	A001	512+02.76	231.34 R	SET 3/4" I.P. (30" LONG)

I-44 H.E. BAILEY TPK. (N.E.)

BM #220				1254.7730	A004	283+25.13	73.71 R	N.E. COR. TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.
TO	-9.6066	-9.6026	-9.6046					
BM #76				1245.1889	A004	298+85.08	158.03 R	SET 3/4" I.P. (30" LONG)
TO	-17.7011	-17.7064	-17.7038					
BM #77				1227.4655	A004	307+00.59	200.57 R	SET 3/4" I.P. (30" LONG)
TO	-12.7253	-12.7281	-12.7267					
BM #78				1214.7393	A004	314+30.67	184.43 R	SET 3/4" I.P. (30" LONG)
TO	-8.3884	-8.3917	-8.3900					
BM #99				1206.3497	A004	320+53.51	168.85 R	CHIX. "X" SET, TOP CENTER HEADWALL
TO	-0.0764	-0.0737	-0.0750					
BM #79				1206.2752	A004	322+38.88	141.94 R	SET 3/4" I.P. (30" LONG)
TO	-8.5709	-8.5783	-8.5746					
BM #80				1197.7010	A004	330+30.42	142.27 R	SET 3/4" I.P. (30" LONG)
TO	-4.0590	-4.0591	-4.0591					
BM #81				1193.6424	A004	N/A	N/A	SET 3/4" I.P. (30" LONG)
TO	58.8690	58.9048	58.8869					
BM #219				1252.5297	A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE, E. R/W FENCE I-44

I-44 H.E. BAILEY TPK. (S.W.)

BM #220				1254.7730	A004	283+25.13	73.71 R	N.E. CORNER OF TOP CONC. STEP ON N. SIDE OF TOLL GATE BLDG.
TO	-10.6684	-10.6757	-10.6721					
BM #82				1244.1017	A004	264+99.64	192.11 R	SET 3/4" I.P. (30" LONG)
TO	-9.8726	-9.8574	-9.8650					
BM #83				1234.2375	A004	257+17.31	121.51 R	SET 3/4" I.P. (30" LONG)
TO	21.2560	21.2687	21.2624					
BM #84				1255.5007	A004	249+19.21	136.16 R	SET 3/4" I.P. (30" LONG)
TO	21.5506	21.5566	21.5536					
BM #85				1277.0551	A004	241+58.38	197.59 R	SET 3/4" I.P. (30" LONG)
TO	-24.5263	-24.5262	-24.5263					
BM #219				1252.5297	A004	273+25.31	199.18 R	80D SPIKE IN POWER POLE, E. R/W FENCE I-44

IOWA AVE.

BM #37				1158.5377	A001	425+88.63	267.77 R	SET 3/4" I.P. (30" LONG)
TO	-3.9362	-3.9283	-3.9323					
BM #71				1154.6045	A016	128+02.43	218.63 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	6.1837	6.1836	6.1837					
BM #70				1160.7873	A016	120+72.88	219.14 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	9.2073	9.2058	9.2066					
BM #35				1169.9931	A001	409+18.77	333.74 R	SET 3/4" I.P. (30" LONG)

IOWA AVE.

BM #37				1158.5377	A001	425+88.63	267.77 R	SET 3/4" I.P. (30" LONG)
TO	6.1841	6.1917	6.1879					
BM #69				1164.7245	A016	104+40.34	252.44 L	SET 3/4" I.P. (30" LONG)
TO	-2.2968	-2.2928	-2.2948					
BM #36				1162.4286	A001	417+60.40	271.62 R	SET 3/4" I.P. (30" LONG)

IDAHO AVE.

BM #33				1177.0526	A015	114+28.25	120.83 L	SET 3/4" I.P. (30" LONG)
TO	9.9920	9.9895	9.9908					
BM #68				1187.0347	A015	103+91.14	217.57 L	SET 3/4" I.P. (30" LONG) - 1' UNDERGROUND
TO	-14.6544	-14.6496	-14.6520					
BM #31				1172.3739	A001	386+19.68	310.53 R	SET 3/4" I.P. (30" LONG)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION				REVISIONS	DATE

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A001 Description: CR1 Prop US81 Bypass Style: proposed 100		
	STATION	EASTING
Element: Linear		
POB (300)	87+22.42	1982754.9150
PC (302)	124+31.69	1982750.4840
Tangent Direction:	N 0°04'06.40" W	599819.8646
Tangent Length:	3709.27	
Element: Circular		
PC (302)	124+31.69	1982750.4840
PI (309)	147+93.78	1982747.6623
CC ()	1977020.9080	599813.0202
PT (311)	169+12.58	1981080.9973
Radius:	5729.58	603855.7622
Delta:	44°48'32.01" Left	
Degree of Curvature(Arc):	1°00'00.00" Left	
Length:	4480.89	
Tangent:	2362.08	
Chord:	4367.57	
Middle Ordinate:	432.49	
External:	467.80	
Tangent Direction:	N 0°04'06.40" W	
Radial Direction:	N 89°55'53.60" E	
Chord Direction:	N 22°28'22.40" W	
Radial Direction:	N 45°07'21.59" E	
Tangent Direction:	N 44°52'38.41" W	
Element: Linear		
PT (311)	169+12.58	1981080.9973
PC (324)	275+17.98	1973597.9198
Tangent Direction:	N 44°52'38.41" W	611370.9495
Tangent Length:	10605.40	
Element: Circular		
PC (324)	275+17.98	1973597.9198
PI (328)	299+85.58	1971856.8057
CC ()	1977658.0089	615413.6913
PT (332)	321+78.07	1971931.0210
Radius:	5729.58	615586.0139
Delta:	46°36'02.96" Right	
Degree of Curvature(Arc):	1°00'00.00" Right	
Length:	4660.08	
Tangent:	2467.60	
Chord:	4532.69	
Middle Ordinate:	467.28	
External:	508.78	
Tangent Direction:	N 44°52'38.41" W	
1		

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Radial Direction: N 45°07'21.59" E Chord Direction: N 21°34'36.93" W Radial Direction: S 88°16'35.45" E Tangent Direction: N 1°43'24.55" E		
Element: Linear		
PT (332)	321+78.07	1971931.0210
PC (335)	384+81.79	1972120.6116
Tangent Direction:	N 1°43'24.55" E	621886.8868
Tangent Length:	6303.72	
Element: Circular		
PC (335)	384+81.79	1972120.6116
PI (340)	413+90.54	1972208.0949
CC ()	1975938.6036	624794.3170
PT (346)	434+53.73	1975034.1157
Radius:	3819.72	625483.0915
Delta:	74°34'44.76" Right	
Degree of Curvature(Arc):	1°30'00.00" Right	
Length:	4971.94	
Tangent:	2908.75	
Chord:	4628.30	
Middle Ordinate:	780.81	
External:	981.43	
Tangent Direction:	N 1°43'24.55" E	
Radial Direction:	S 88°16'35.45" E	
Chord Direction:	N 39°00'46.93" E	
Radial Direction:	S 13°41'50.69" E	
Tangent Direction:	N 76°18'09.31" E	
Element: Linear		
PT (346)	434+53.73	1975034.1157
PC ()	449+55.47	1976493.1401
Tangent Direction:	N 76°18'09.32" E	625838.6935
Tangent Length:	1501.73	
Element: Circular		
PC (347)	449+55.47	1976493.1401
PI (350)	466+28.63	1978118.7183
CC ()	1975686.8730	629146.7828
PCC (352)	480+65.80	1978798.2960
Radius:	3404.93	625838.6935
Delta:	52°20'18.72" Left	
Degree of Curvature(Arc):	1°40'57.84" Left	
Length:	3110.33	
Tangent:	1673.16	
Chord:	3003.31	
Middle Ordinate:	349.02	
External:	388.88	
Tangent Direction:	N 76°18'09.31" E	
Radial Direction:	S 13°41'50.69" E	
Chord Direction:	N 50°07'59.95" E	
Radial Direction:	S 66°02'09.41" E	
2		

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Tangent Direction: N 23°57'50.59" E		
Element: Circular		
PCC (352)	480+65.80	1978798.2960
PI (366)	510+85.30	1980024.7080
CC ()	1965711.8941	633580.4331
PT (368)	540+17.63	1980032.6969
Radius:	14320.85	633542.5435
Delta:	23°48'44.87" Left	
Degree of Curvature(Arc):	0°24'00.31" Left	
Length:	5951.83	
Tangent:	3019.50	
Chord:	5908.09	
Middle Ordinate:	308.09	
External:	314.86	
Tangent Direction:	N 23°57'50.59" E	
Radial Direction:	S 66°02'09.41" E	
Chord Direction:	N 12°03'28.16" E	
Radial Direction:	S 89°50'54.27" E	
Tangent Direction:	N 0°09'05.73" E	
Element: Linear		
PT (368)	540+17.63	1980032.6969
POB (369)	543+00.00	1980033.4440
Tangent Direction:	N 0°09'05.73" E	633542.5435
Tangent Length:	282.37	633824.9174
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A002 Description: Exis NB US 81 Style: Existing 100		
	STATION	EASTING
Element: Circular		
PC (372)	1107+80.13	1982783.9067
PI (375)	1120+29.70	1982782.4140
CC ()	1985648.6937	598628.8989
PT (376)	1131+36.73	1983697.2355
Radius:	2864.79	600729.6592
Delta:	47°07'55.00" Right	
Degree of Curvature(Arc):	2°00'00.00" Right	
Length:	2356.60	
Tangent:	1249.57	
Chord:	2290.71	
Middle Ordinate:	238.92	
External:	260.66	
Tangent Direction:	N 0°04'06.40" W	
Radial Direction:	N 89°55'53.60" E	
3		

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Chord Direction: N 23°29'51.10" E Radial Direction: S 42°56'11.40" E Tangent Direction: N 47°03'48.60" E		
Element: Linear		
PT (376)	1131+36.73	1983697.2355
PC (378)	1149+12.47	1984997.2710
Tangent Direction:	N 47°03'48.61" E	600729.6592
Tangent Length:	1775.74	601939.2709
Element: Circular		
PC (378)	1149+12.47	1984997.2710
PI (379)	1153+72.27	1985333.8969
CC ()	1988900.1885	597744.5930
PT (382)	1158+30.11	1985716.1640
Radius:	5729.58	602508.0030
Delta:	9°10'35.00" Right	
Degree of Curvature(Arc):	1°00'30.00" Right	
Length:	317.64	
Tangent:	459.80	
Chord:	316.66	
Middle Ordinate:	18.36	
External:	19.42	
Tangent Direction:	N 47°03'48.61" E	
Radial Direction:	S 42°56'11.39" E	
Chord Direction:	N 51°39'06.11" E	
Radial Direction:	S 33°45'36.39" E	
Tangent Direction:	N 56°14'23.61" E	
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A003 Description: Exis SB US 81 Style: Existing 100		
	STATION	EASTING
Element: Linear		
POB (383)	1109+14.73	1982719.7460
TS (384)	1117+63.02	1982718.7326
Tangent Direction:	N 0°04'06.40" W	598763.4060
Tangent Length:	348.29	599611.6990
Element: Clothoid		
TS (384)	1117+63.02	1982718.7326
SPI (386)	1120+29.72	1982718.4138
SC (388)	1121+63.02	1982736.8467
Entrance Radius:	0.00	600010.9418
Exit Radius:	1432.39	
4		

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Length: 400.00 Angle: 8°00'00.00" Right Constant: 756.94 Long Tangent: 266.94 Short Tangent: 133.58 Long Chord: 399.65 Xs: 399.22 Ys: 18.59 P: 4.65 K: 199.87 Tangent Direction: N 0°04'06.40" E Radial Direction: N 89°55'53.60" E Chord Direction: N 2°35'52.02" E Radial Direction: S 82°04'06.40" E Tangent Direction: N 7°55'53.60" E		
Element: Circular		
SC (388)	1121+63.02	1982736.8467
PI (389)	1126+88.74	1982809.3905
CC ()	1984155.5383	599813.2856
CS (392)	1131+70.73	1983201.5446
Radius:	1432.39	600881.7658
Delta:	40°18'30.01" Right	
Degree of Curvature(Arc):	4°00'00.00" Right	
Length:	1007.71	
Tangent:	525.72	
Chord:	987.06	
Middle Ordinate:	87.71	
External:	93.43	
Tangent Direction:	N 7°55'53.60" E	
Radial Direction:	S 82°04'06.40" E	
Chord Direction:	N 28°05'08.61" E	
Radial Direction:	S 41°45'36.39" E	
Tangent Direction:	N 48°14'23.61" E	
Element: Clothoid		
CS (392)	1131+70.73	1983201.5446
SPI (393)	1133+04.03	1983301.1883
ST (394)	1135+70.73	1983523.1142
Entrance Radius:	1432.39	601119.0755
Exit Radius:	0.00	
Length:	400.00	
Angle:	8°00'00.00" Right	
Constant:	756.94	
Long Tangent:	266.94	
Short Tangent:	133.58	
Long Chord:	399.65	
Xs:	399.22	
Ys:	18.59	
P:	4.65	
K:	199.87	
Tangent Direction:	N 48°14'23.61" E	
Radial Direction:	S 41°45'36.39" E	
5		

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 7 OF 76
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S007	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION				REVISIONS	DATE

SWO 4380(1)	ALIGNMENT REPORT		J/P 24428(04)																																																																																							
Chord Direction: N 53°34'25.20" E Radial Direction: S 33°45'36.39" E Tangent Direction: N 56°14'23.61" E																																																																																										
Element: Linear	ST (394)	1135+70.73	1983523.1142 601119.0755																																																																																							
	POE (397)	1174+28.12	1986730.0384 603262.6923																																																																																							
Tangent Direction: N 56°14'23.61" E Tangent Length: 3857.39																																																																																										
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A004 Description: I-44 H.E. Bailey Tpk. Style: Existing 100																																																																																										
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Element: Linear	PT (421)	123+07.45	1975551.6754 610151.2912																																	
	POE (422)	142+65.97	1976142.3619 612018.6081																																	
Tangent Direction: N 17°33'13.22" E Tangent Length: 1958.52																																				
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A007 Description: US 62 Style: Existing 100																																				
<table border="1"> <thead> <tr> <th>STATION</th> <th>EASTING</th> <th>NORTHING</th> </tr> </thead> <tbody> <tr> <td>Element: Linear</td> <td></td> <td></td> </tr> <tr> <td>POB (451)</td> <td>385+47.37</td> <td>1977383.1249 629504.0692</td> </tr> <tr> <td>PI (355)</td> <td>405+43.89</td> <td>1979087.9771 628465.0413</td> </tr> <tr> <td colspan="3">Tangent Direction: S 58°38'22.71" E</td> </tr> <tr> <td colspan="3">Tangent Length: 1996.52</td> </tr> <tr> <td>Element: Linear</td> <td></td> <td></td> </tr> <tr> <td>PI (355)</td> <td>405+43.89</td> <td>1979087.9771 628465.0413</td> </tr> <tr> <td>POE (454)</td> <td>447+48.56</td> <td>1982678.3889 626276.8528</td> </tr> <tr> <td colspan="3">Tangent Direction: S 58°38'22.71" E</td> </tr> <tr> <td colspan="3">Tangent Length: 4204.67</td> </tr> </tbody> </table>				STATION	EASTING	NORTHING	Element: Linear			POB (451)	385+47.37	1977383.1249 629504.0692	PI (355)	405+43.89	1979087.9771 628465.0413	Tangent Direction: S 58°38'22.71" E			Tangent Length: 1996.52			Element: Linear			PI (355)	405+43.89	1979087.9771 628465.0413	POE (454)	447+48.56	1982678.3889 626276.8528	Tangent Direction: S 58°38'22.71" E			Tangent Length: 4204.67		
STATION	EASTING	NORTHING																																		
Element: Linear																																				
POB (451)	385+47.37	1977383.1249 629504.0692																																		
PI (355)	405+43.89	1979087.9771 628465.0413																																		
Tangent Direction: S 58°38'22.71" E																																				
Tangent Length: 1996.52																																				
Element: Linear																																				
PI (355)	405+43.89	1979087.9771 628465.0413																																		
POE (454)	447+48.56	1982678.3889 626276.8528																																		
Tangent Direction: S 58°38'22.71" E																																				
Tangent Length: 4204.67																																				
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A008 Description: Old US Hwy 62 Style: Existing 100																																				
<table border="1"> <thead> <tr> <th>STATION</th> <th>EASTING</th> <th>NORTHING</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">9</td> </tr> </tbody> </table>				STATION	EASTING	NORTHING	9																													
STATION	EASTING	NORTHING																																		
9																																				

SWO 4380(1)	ALIGNMENT REPORT		J/P 24428(04)																																	
Element: Linear POB (455) 100+00.00 1978550.0910 630618.0645 POE (458) 124+00.00 1980896.1336 630111.9570 Tangent Direction: S 77°49'39.53" E Tangent Length: 2400.00																																				
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A009 Description: Union Pacific Railroad Style: Existing 100																																				
<table border="1"> <thead> <tr> <th>STATION</th> <th>EASTING</th> <th>NORTHING</th> </tr> </thead> <tbody> <tr> <td>Element: Linear</td> <td></td> <td></td> </tr> <tr> <td>POB (459)</td> <td>100+00.00</td> <td>1978567.5918 630699.1385</td> </tr> <tr> <td>POE (462)</td> <td>124+00.00</td> <td>1980913.6344 630193.0910</td> </tr> <tr> <td colspan="3">Tangent Direction: S 77°49'39.53" E</td> </tr> <tr> <td colspan="3">Tangent Length: 2400.00</td> </tr> </tbody> </table>				STATION	EASTING	NORTHING	Element: Linear			POB (459)	100+00.00	1978567.5918 630699.1385	POE (462)	124+00.00	1980913.6344 630193.0910	Tangent Direction: S 77°49'39.53" E			Tangent Length: 2400.00																	
STATION	EASTING	NORTHING																																		
Element: Linear																																				
POB (459)	100+00.00	1978567.5918 630699.1385																																		
POE (462)	124+00.00	1980913.6344 630193.0910																																		
Tangent Direction: S 77°49'39.53" E																																				
Tangent Length: 2400.00																																				
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A010 Description: CR 1405 Style: Existing 100																																				
<table border="1"> <thead> <tr> <th>STATION</th> <th>EASTING</th> <th>NORTHING</th> </tr> </thead> <tbody> <tr> <td>Element: Linear</td> <td></td> <td></td> </tr> <tr> <td>POB (370)</td> <td>100+00.00</td> <td>1982591.7456 598763.6511</td> </tr> <tr> <td>PI (463)</td> <td>101+31.93</td> <td>1982723.6760 598763.4050</td> </tr> <tr> <td colspan="3">Tangent Direction: S 89°53'35.30" E</td> </tr> <tr> <td colspan="3">Tangent Length: 131.93</td> </tr> <tr> <td>Element: Linear</td> <td></td> <td></td> </tr> <tr> <td>PI (463)</td> <td>101+31.93</td> <td>1982723.6760 598763.4050</td> </tr> <tr> <td>POE (371)</td> <td>103+15.30</td> <td>1982907.0488 598763.6609</td> </tr> <tr> <td colspan="3">Tangent Direction: N 89°55'12.12" E</td> </tr> <tr> <td colspan="3">Tangent Length: 183.37</td> </tr> </tbody> </table>				STATION	EASTING	NORTHING	Element: Linear			POB (370)	100+00.00	1982591.7456 598763.6511	PI (463)	101+31.93	1982723.6760 598763.4050	Tangent Direction: S 89°53'35.30" E			Tangent Length: 131.93			Element: Linear			PI (463)	101+31.93	1982723.6760 598763.4050	POE (371)	103+15.30	1982907.0488 598763.6609	Tangent Direction: N 89°55'12.12" E			Tangent Length: 183.37		
STATION	EASTING	NORTHING																																		
Element: Linear																																				
POB (370)	100+00.00	1982591.7456 598763.6511																																		
PI (463)	101+31.93	1982723.6760 598763.4050																																		
Tangent Direction: S 89°53'35.30" E																																				
Tangent Length: 131.93																																				
Element: Linear																																				
PI (463)	101+31.93	1982723.6760 598763.4050																																		
POE (371)	103+15.30	1982907.0488 598763.6609																																		
Tangent Direction: N 89°55'12.12" E																																				
Tangent Length: 183.37																																				
Project Name: SWO 4380 1 V2 Description: US81 Existing Alignments Horizontal Alignment Name: A011 Description: CR1400 Style: Existing 100																																				
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STATION	EASTING	NORTHING																																		
10																																				

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 8 OF 76
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S008	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION				REVISIONS	DATE

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Element: Linear	POB (398) 100+00.00 1981439.5820 601412.0549 PI (464) 112+81.65 1982721.2230 601415.5070 Tangent Direction: N 89°50'44.43" E Tangent Length: 1281.65	
Element: Linear	POB (399) 115+87.04 1983026.6137 601416.6165 PI (464) 112+81.65 1982721.2230 601415.5070 Tangent Direction: N 89°47'30.67" E Tangent Length: 305.39	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A012 Description: 16thSt Style: Existing 100		
	STATION EASTING NORTHING	
Element: Linear	POB (464) 100+00.00 1982721.2230 601415.5070 POE (465) 126+53.46 1982731.3420 604068.9490 Tangent Direction: N 0°13'06.60" E Tangent Length: 2653.46	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A013 Description: Country Club Rd Style: Existing 100		
	STATION EASTING NORTHING	
Element: Linear	POB (466) 100+00.00 1972152.1270 611997.4360 POE (467) 126+19.75 1974771.8420 612011.7490 Tangent Direction: N 89°41'13.07" E Tangent Length: 2619.75	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A014 Description: Grand Ave Style: Existing 100		
	STATION EASTING NORTHING	
	11	

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Element: Linear	POB (433) 100+00.00 1970029.5777 617309.4145 PI (468) 121+24.83 1972154.4060 617312.2990 Tangent Direction: N 89°55'19.99" E Tangent Length: 2124.83	
Element: Linear	PI (468) 121+24.83 1972154.4060 617312.2990 POE (434) 130+53.40 1973082.9725 617310.3684 Tangent Direction: S 89°52'51.14" E Tangent Length: 928.57	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A015 Description: Idaho Ave Style: Existing 100		
	STATION EASTING NORTHING	
Element: Linear	POB (435) 100+00.00 1971053.5069 622589.7015 PI (469) 111+00.01 1972153.5150 622587.5440 Tangent Direction: S 89°53'15.44" E Tangent Length: 1100.01	
Element: Linear	PI (469) 111+00.01 1972153.5150 622587.5440 POE (436) 122+00.01 1973253.5119 622590.1401 Tangent Direction: N 89°51'53.20" E Tangent Length: 1100.00	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A016 Description: Iowa Ave Style: proposed 100		
	STATION EASTING NORTHING	
Element: Linear	POB (439) 100+00.00 1972401.2398 625238.7968 PI (440) 101+15.64 1972411.4002 625123.6043 Tangent Direction: S 5°02'26.40" E Tangent Length: 115.64	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A017 Description: 29thSt Style: Existing 100		
	STATION EASTING NORTHING	
	12	

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Element: Circular	PC (440) 101+15.64 1972411.4002 625123.6043 PI (441) 102+46.58 1972422.9049 624993.1717 CC () 1972747.1308 625153.2170 PT (442) 103+65.42 1972519.4484 624904.7162 Radius: 337.03 Delta: 42°27'45.65" Left	
Degree of Curvature(Arc):	16°59'59.99"	
Length:	249.78	
Tangent:	130.94	
Chord:	244.10	
Middle Ordinate:	22.88	
External:	24.54	
Tangent Direction:	S 5°02'26.40" E	
Radial Direction:	S 84°57'33.60" W	
Chord Direction:	S 26°16'19.22" E	
Radial Direction:	S 42°29'47.95" W	
Tangent Direction:	S 47°30'12.05" E	
Element: Linear	PT (442) 103+65.42 1972519.4484 624904.7162 PI (341) 111+82.99 1973122.2599 624352.4060 Tangent Direction: S 47°30'12.05" E Tangent Length: 817.57	
Element: Linear	PI (341) 111+82.99 1973122.2599 624352.4060 PC (443) 116+27.03 1973449.6530 624052.4406 Tangent Direction: S 47°30'12.02" E Tangent Length: 444.03	
Element: Circular	PC (443) 116+27.03 1973449.6530 624052.4406 PI (444) 118+30.03 1973599.3274 623915.3053 CC () 1973801.5258 624436.4873 PT (445) 120+14.16 1973802.3261 623915.6172 Radius: 520.87 Delta: 42°35'04.90" Left	
Degree of Curvature(Arc):	11°00'00.00"	
Length:	387.13	
Tangent:	203.00	
Chord:	378.28	
Middle Ordinate:	35.55	
External:	39.16	
Tangent Direction:	S 47°30'12.02" E	
Radial Direction:	S 42°29'47.98" W	
Chord Direction:	S 68°47'44.47" E	
Radial Direction:	S 0°05'16.92" E	
Tangent Direction:	N 89°54'43.08" E	
Element: Linear	PT (445) 120+14.16 1973802.3261 623915.6172 POE (446) 129+71.43 1974759.5890 623917.0880	
	13	

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Tangent Direction:	N 89°54'43.08" E	
Tangent Length:	957.26	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A017 Description: CR 1355 Style: Default		
	STATION EASTING NORTHING	
Element: Linear	POB (437) 100+00.00 1972102.8245 625238.6000 PI (470) 100+47.28 1972150.1025 625238.6185 Tangent Direction: N 89°58'39.45" E Tangent Length: 47.28	
Element: Linear	PI (470) 100+47.28 1972150.1025 625238.6185 POE (438) 105+98.10 1972700.9205 625239.0095 Tangent Direction: N 89°57'33.60" E Tangent Length: 550.82	
Project Name: SWO_4380_1_V2 Description: US81 Existing Alignments		
Horizontal Alignment Name: A018 Description: CS 2315 Rd. Style: Existing 100		
	STATION EASTING NORTHING	
Element: Linear	POB (447) 100+00.00 1974761.0641 623620.2837 PI (471) 116+20.20 1974753.0120 625240.4660 Tangent Direction: N 0°17'05.10" W Tangent Length: 1620.20	
Element: Linear	PI (471) 116+20.20 1974753.0120 625240.4660 POE (448) 127+55.13 1974747.3442 626375.3838 Tangent Direction: N 0°17'10.07" W Tangent Length: 1134.93	
Project Name: SWO_4380_1_V2		
	14	

SWO 4380(1)	ALIGNMENT REPORT	J/P 24428(04)
Description: US81 Existing Alignments		
Horizontal Alignment Name: A019 Description: 29thSt Style: Existing 100		
	STATION EASTING NORTHING	
Element: Linear	POB (449) 100+00.00 1977388.4353 625492.1445 POE (450) 113+99.84 1977382.5628 626891.9712 Tangent Direction: N 0°14'25.31" W Tangent Length: 1399.84	
Project Name: SWO_4380_1_V2		
	15	

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 9 OF 76
DRAWN	JTB		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO_4380_(1) PROJECT NO. 24428(12) SHEET NO. S009	

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS. Includes a REVISIONS table with columns: DESCRIPTION, REVISIONS, DATE.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 24 rows of coordinate data.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 74 rows of coordinate data.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 308 rows of coordinate data, including a Centerline section.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 406 rows of coordinate data.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 703 rows of coordinate data, including an Aerial Targets section.

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING. Contains 7400 rows of coordinate data, including Control Points by Others and Control Points by Crew.

Approval table with columns: PLS, JTB, DRAWN, CHECKED, APPROVED, CREW. Includes a title block for OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET, SDS 10 OF 76, and project information: SWO_4380 (1) PROJECT NO. 24428(12) SHEET NO. S010.

COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)						SWO 4380(1)					
PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING
7622	1975123.1416	601425.5522	7671	1977407.5625	603864.4748	7723	1974548.7836	607118.2321	7773	1970574.4069	617777.5532
7623	1975123.2525	601459.0520	7672	1977407.5207	603897.7665	7724	1974689.5096	608059.4392	7774	1970624.4069	617777.6221
7624	1977394.1282	601418.0348	7673	1977424.0443	603879.0055	7725	1974590.6090	608074.2265	7775	1970624.4382	617380.2221
7625	1977427.1283	601418.0227	7674	1977392.4385	604384.3970	7726	1974511.4885	608086.0563	7776	1970833.1380	617380.5054
7626	1980067.7933	601391.8600	7675	1977425.5998	604413.6327	7727	1975042.3265	609049.2510	7777	1970833.1405	617327.0054
7627	1980067.8557	601424.8603	7676	1977702.6294	604657.8687	7728	1974956.3742	609100.1816	7778	1972137.9032	617328.7766
7628	1981394.5384	601395.4336	7677	1977834.8654	604357.8494	7729	1974887.6124	609141.1497	7779	1972170.9032	617328.7647
7629	1981394.4940	601411.9335	7678	1977967.1551	604357.8251	7730	1975320.2915	609516.6104	7780	1974771.7874	617323.3571
7630	1981394.5708	601428.4338	7679	1978598.3906	604942.7259	7731	1975234.3393	609567.7203	7781	1972137.4605	619949.9265
7631	1981395.0761	601536.9321	7680	1978661.1403	605236.2869	7732	1975165.5775	609608.6081	7782	1972170.4605	619949.8946
7632	1981750.0746	601537.8683	7681	1978426.4004	605334.4703	7733	1975602.4788	610146.1112	7783	1970951.8705	622576.2250
7633	1984570.6434	601405.7256	7682	1979218.2206	605541.1135	7734	1975507.1353	610176.2711	7784	1972137.0178	622571.0763
7634	1985301.0400	601408.5971	7683	1979199.9154	605550.1405	7735	1975430.8606	610200.3991	7785	1972170.0170	622571.0029
7635	1984606.2495	601438.8552	7684	1979388.8547	605727.2448	7736	1977400.7540	609370.7399	7786	1974766.1836	622577.2100
7636	1985361.0242	601441.5972	7685	1979109.4975	606052.1296	7737	1977433.7540	609370.7870	7787	1969511.9657	622609.2251
7637	1985605.3897	601866.0600	7686	1979387.6481	606064.2294	7738	1972135.0600	609360.2095	7788	1972136.9937	622604.0764
7638	1985362.2304	602123.5226	7687	1979556.7719	605915.8308	7739	1972168.0600	609360.2025	7789	1972169.9937	622604.0629
7639	1981865.9992	601651.7825	7688	1979623.7192	605992.1253	7740	1969512.4838	611993.7083	7790	1974766.0840	622610.2099
7639a	1981868.0676	601885.9119	7689	1979604.9279	606080.6143	7741	1969512.4860	612026.7087	7791	1972133.6025	625238.6121
7640	1981620.0739	602739.6886	7690	1974777.8646	606698.9560	7742	1972135.6235	611981.0157	7792	1972166.6025	625238.6302
7640a	1981746.8205	602459.7544	7691	1974777.8373	606731.9560	7743	1972135.6341	612014.0160	7793	1969508.4251	627885.9449
7641	1981862.6842	602740.2456	7692	1977405.1772	606701.6762	7744	1972168.6235	611981.0259	7794	1972130.2113	627873.1477
7641a	1982405.6766	602232.3974	7693	1977405.2402	606734.6763	7745	1972168.6341	612014.0264	7795	1972163.2113	627873.1800
7642	1982673.0909	601905.4178	7694	1977438.1779	606701.7038	7746	1974438.9295	611993.4299	7796	1974739.7790	627871.1520
7642a	1982519.5262	602119.8596	7695	1977438.2402	606734.7039	7747	1974438.9713	611985.0828	7797	1976059.1688	627870.1619
7643	1982673.7385	602075.1165	7696	1979108.6348	606702.7682	7748	1974647.6687	611986.1272	7798	1976059.2079	627861.6619
7644	1982693.7384	602075.1624	7697	1979108.6132	606719.2682	7749	1974697.6681	611986.3775	7799	1973553.4986	627860.8907
7645	1982131.2046	602424.1783	7698	1979763.2404	606719.6853	7750	1974771.8428	612028.2493	7800	1977364.4867	625241.4657
7646	1983765.3543	606656.4483	7699	1979777.7270	606736.1945	7751	1974777.8437	612044.7494	7801	1977405.9867	625241.5445
7649	1982696.2920	602742.1598	7700	1980224.6555	606703.4729	7752	1975997.8757	611992.8847	7802	1977394.9635	627869.1291
7650	1982701.3416	604069.8921	7701	1980229.1432	606719.9822	7753	1976005.7966	612017.9246	7803	1977394.9422	627902.1292
7852a	1977400.1082	629689.3810	7702	1980758.6128	606720.3195	7754	1978089.9368	612018.3452	7804	1977513.1467	625241.1701
7653	1982741.8433	604069.0032	7703	1980758.4455	606736.8194	7755	1978016.2521	612050.9774	7805	1977841.1457	625240.3806
7853a	1977399.0820	629318.6812	7704	1982712.2342	606705.0643	7756	1976194.8870	612018.8710	7806	1977959.0787	626244.3199
7654	1982723.7389	602075.2313	7705	1982712.3024	606721.5644	7757	1976860.9212	614721.2007	7807	1978084.2626	626516.0727
7655	1982740.2388	602075.1684	7706	1982725.6907	606738.0729	7758	1976932.5377	614682.3468	7808	1978582.2283	626907.4644
7656	1982773.7385	602075.0406	7707	1980752.5662	607316.4853	7759	1977027.8812	614652.1868	7809	1978784.9000	627293.2282
7658	1982875.1470	601756.3120	7708	1981450.8711	608112.2872	7760	1972136.7665	614654.8893	7810	1978949.5918	627551.6034
7660	1983157.5252	601609.9464	7710	1981413.2886	608145.2653	7761	1972169.7665	614654.8980	7811	1979201.0968	627880.9552
7661	1984651.8843	602066.0368	7711	1982378.4985	609245.2374	7762	1969511.8832	617258.7117	7812	1978433.3455	627345.8324
7662	1985362.9695	602541.3502	7713	1982489.7849	609374.3319	7763	1972137.8845	617262.2765	7814	1978493.3692	627501.4314
7663	1974773.7854	601609.1308	7714	1982153.0036	609443.1060	7764	1972170.8989	617295.7647	7815	1978560.0330	627866.1141
7664	1974774.6684	602009.8511	7716	1982248.3609	609553.4933	7765	1974771.8061	617290.3570	7816	1978560.3989	627882.6132
7665	1976091.7409	603171.0138	7717	1982707.8446	609374.4502	7766	1969511.8784	617358.7118	7817	1978561.3773	627899.1171
7666	1976091.8676	603405.7976	7718	1973726.7125	605763.2524	7767	1970107.0386	617359.5183	7818	1979188.5216	627884.4877
7667	1976262.7193	603406.0419	7719	1973667.9156	605844.1407	7768	1970107.0073	617776.9183	7819	1979760.5002	627879.5076
7668	1976812.7454	603406.7268	7720	1973620.8781	605908.8514	7769	1970157.0110	617776.9876	7820	1979787.6891	627862.9371
7669	1976850.6052	603406.7764	7721	1974370.7625	607144.8492	7770	1970157.0423	617359.5876	7821	1979997.4512	627735.0970
7670	1977391.0389	603883.2357	7722	1974449.8830	607133.0194	7771	1970574.4382	617360.1532	7822	1979998.4431	625235.0367

COORDINATE POINT LIST
Page 7 of 22

COORDINATE POINT LIST						COORDINATE POINT LIST					
SWO 4380(1)						SWO 4380(1)					
PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING	PT. NO.	EASTING	NORTHING
7723	1974548.7836	607118.2321	7773	1970574.4069	617777.5532	8120	1982652.5381	598100.3139	8169	1981107.1709	601427.6597
7724	1974689.5096	608059.4392	7774	1970624.4069	617777.6221	8121	1982378.4985	609245.2374	8170	1981272.1713	601428.1041
7725	1974590.6090	608074.2265	7775	1970624.4382	617380.2221	8122	1982714.2001	610873.1355	8171	1974441.0251	611308.9859
7726	1974511.4885	608086.0563	7776	1970833.1380	617380.5054	8123	1982664.2001	610873.1132	8172	1975292.6600	611313.2481
7727	1975042.3265	609049.2510	7777	1970833.1405	617327.0054	8124	1982658.1953	610778.1816	8173	1975041.5504	610519.4239
7728	1974956.3742	609100.1816	7778	1972137.9032	617328.7766	8125	1982222.1900	610776.1523	8174	1975486.9016	610377.5588
7729	1974887.6124	609141.1497	7779	1972170.9032	617328.7647	8126	1982111.5321	610471.0179	8175	1984588.4464	610422.2904
7730	1975320.2915	609516.6104	7780	1974771.7874	617323.3571	8127	1982115.5753	610344.7026	8176	1975927.8696	611771.5769
7731	1975234.3393	609567.7203	7781	1972137.4605	619949.9265	8128	1982630.0197	610347.0969	8177	1975939.9336	611809.7143
7732	1975165.5775	609608.6081	7782	1972170.4605	619949.8946	8129	1982607.5683	610003.0204	8178	1975742.0578	611991.6044
7733	1975602.4788	610146.1112	7783	1970951.8705	622576.2250	8130	1982385.6581	609718.7018	8179	1975088.6522	612046.3350
7734	1975507.1353	610176.2711	7784	1972137.0178	622571.0763	8131	1982588.3478	599456.8878	8180	1974771.8437	612044.7494
7735	1975430.8606	610200.3991	7785	1972170.0170	622571.0029	8132	1981591.8993	609309.0073	8181	1974771.8510	612194.7494
7736	1977400.7540	609370.7399	7786	1974766.1836	622577.2100	8133	1981582.7496	610466.2096	8182	1975088.6598	612196.3350
7737	1977433.7540	609370.7870	7787	1969511.9657	622609.2251	8134	1981838.4534	611038.9805	8183	1974771.9093	613335.7300
7738	1972135.0600	609360.2095	7788	1972136.9937	622604.0764	8135	1982033.2371	611369.5074	8184	1973451.8203	613330.9029
7739	1972168.0600	609360.2025	7789	1972169.9937	622604.0629	8136	1982029.7020	611785.4634	8185	1972152.8698	613326.1517
7740	1969512.4838	611993.7083	7790	1974766.0840	622610.2099	8137	1981937.0819	611945.2473	8186	1970832.3075	612003.8223
7741	1969512.4860	612026.7087									

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS

Table with columns: DESCRIPTION, REVISIONS, DATE

Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING

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Table with columns: SWO 4380(1), COORDINATE POINT LIST, J/P 24428(04), PT NO., EASTING, NORTHING

Approval table with columns: PLS, JTB, DRAWN, CHECKED, APPROVED, CREW, BENHAM, and project details: SWO_4380_(1) PROJECT NO. 24428(12) SHEET NO. 5012

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS

Table with columns: DESCRIPTION, REVISIONS, DATE

COORDINATE POINT LIST for SWO 4380(1) and J/P 24428(04). Columns: PT NO., EASTING, NORTHING. Includes page number 19 of 23.

COORDINATE POINT LIST for SWO 4380(1) and J/P 24428(04). Columns: PT NO., EASTING, NORTHING. Includes page number 20 of 23.

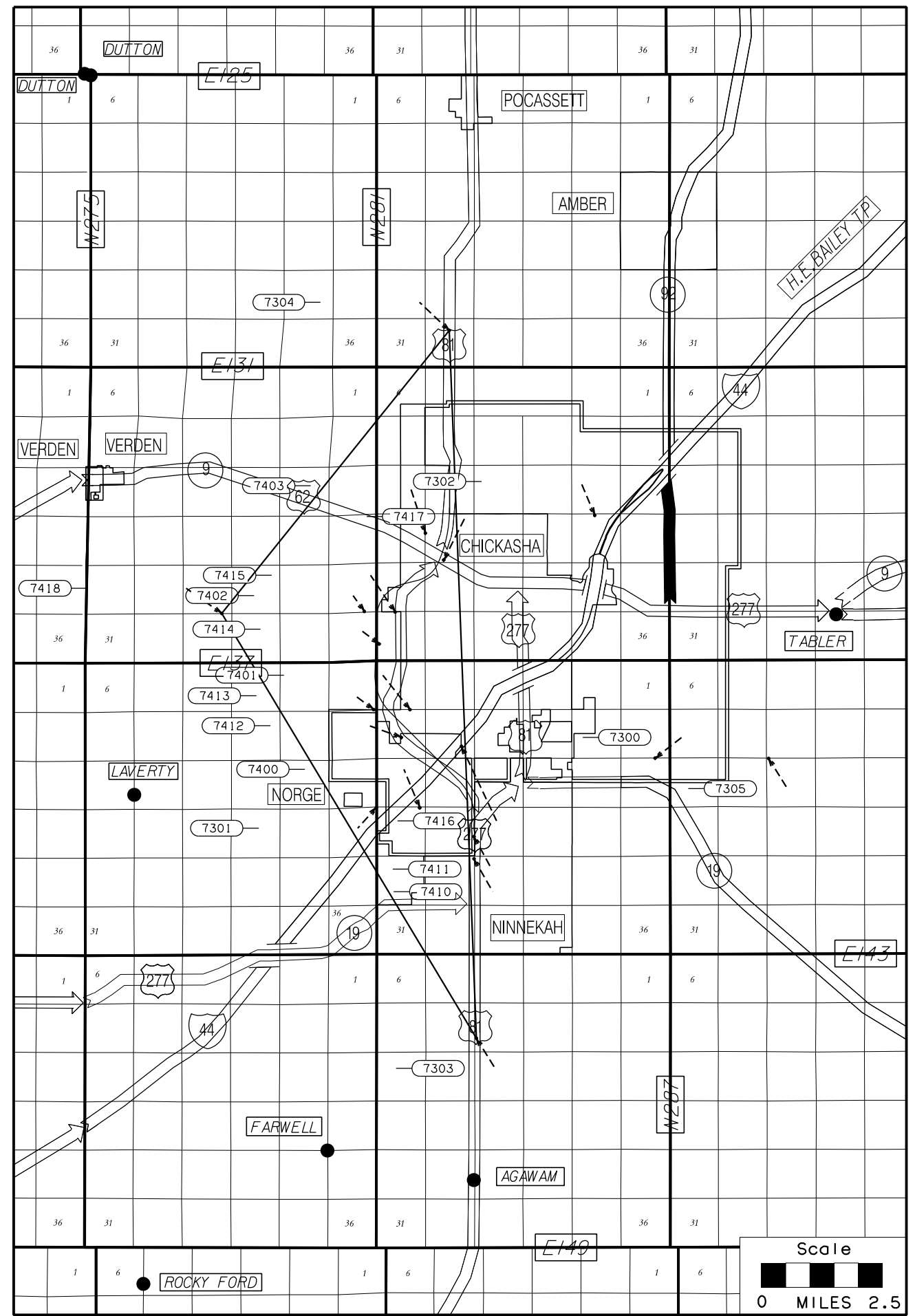
COORDINATE POINT LIST for SWO 4380(1) and J/P 24428(04). Columns: PT NO., EASTING, NORTHING. Includes page number 21 of 23.

COORDINATE POINT LIST for SWO 4380(1) and J/P 24428(04). Columns: PT NO., EASTING, NORTHING. Includes page number 22 of 23.

COORDINATE POINT LIST for SWO 4380(1) and J/P 24428(04). Columns: PT NO., EASTING, NORTHING. Includes page number 23 of 23.

Approval table with columns: PLS, JTB, DRAWN, CHECKED, APPROVED, CREW, BENHAM. Includes project details: SWO_4380_(1)_PROJECT NO. 24428(12)_SHEET NO. S013

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION				REVISIONS	DATE



Network Adjustment for "D 214" (7303)

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT

All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information: geodesy.noaa.gov/OPUS/Using_OPUS-Projects.html#accuracy

These positions were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

SUBMITTED BY: buebb
 SOLUTION FILE NAME: network-D214final.sum
 SOLUTION SOFTWARE: GPSCOM(1210.24)
 SOLUTION DATE: 2015-05-13T10:31:17 UTC
 STANDARD ERROR OF UNIT WEIGHT: 0.677
 TOTAL NUMBER OF OBSERVATIONS: 60076
 TOTAL NUMBER OF MARKS: 9
 NUMBER OF CONSTRAINED MARKS: 8

START TIME: 2015-04-09T17:39:00 GPS
 STOP TIME: 2015-04-09T23:32:00 GPS
 FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
 OBSERVATION INTERVAL: 30 s
 ELEVATION CUTOFF: 15 deg
 TROPIC INTERVAL: 1800 s [STEP-OFFSET PARAMETERIZATION]
 DD CORRELATIONS: ON

INCLUDED SOLUTION	RMS	SOFTWARE	RUN DATE
1) 2015-099 D214	1.2 cm	pages(1404.11)	2015-05-13T10:05 UTC
2) 2015-099 D214b	1.2 cm	pages(1404.11)	2015-05-13T10:15 UTC

BASELINE	LENGTH	RMS	OBS	OMITTED	FIXED IN SOLUTION(S)
7125-5978	13.342 km	1.8 cm	4210	4.7%	100.0% 1, 2
poca-5978	23.356 km	1.0 cm	7976	1.4%	100.0% 1, 2
okag-5978	32.132 km	1.3 cm	8248	1.3%	100.0% 1, 2
oklw-5978	56.750 km	1.2 cm	7298	10.6%	100.0% 1, 2
okdt-5978	75.334 km	1.1 cm	8098	2.2%	100.0% 1, 2
imok-5978	78.382 km	1.0 cm	8256	1.1%	94.4% 1, 2
okar-5978	109.824 km	1.4 cm	8152	2.3%	95.0% 1, 2
okc1-5978	112.090 km	1.1 cm	7938	2.9%	100.0% 1, 2

UNCONSTRAINED MARKS

MARK: 5978 (5978 1)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
 X: -724344.945 m 0.001 m -724345.713 m 0.001 m
 Y: -5185621.433 m 0.004 m -5185620.031 m 0.004 m
 Z: 3630542.442 m 0.004 m 3630542.292 m 0.004 m
 LAT: 34 55 02.21320 0.002 m 34 55 02.23293 0.002 m
 E LON: 262 02 53.46469 0.001 m 262 02 53.42551 0.001 m
 W LON: 97 57 06.53531 0.001 m 97 57 06.57449 0.001 m
 EL HGT: 343.311 m 0.005 m 342.179 m 0.005 m
 ORTHO HGT: 369.539 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 NORTHING (Y) 3864371.293 m 175699.868 m
 EASTING (X) 595746.595 m 604402.901 m
 CONVERGENCE 0.50001340 deg 0.02735040 deg
 POINT SCALE 0.99971298 0.99995279
 COMBINED FACTOR 0.99965911 0.99989891

US NATIONAL GRID DESIGNATOR: 14SN09574664371 (NAD 83)

Network Adjustment for "D 214" (7303)

CONSTRAINED MARKS

MARK: 7125 (7125 1)
 CONSTRN: VER-ONLY NORMAL
 ADJUST X: -0.004m (0.001m) Y: -0.045m (0.004m) Z: 0.042m (0.003m)
 ADJUST N: 0.008m (0.002m) E: 0.002m (0.001m) H: 0.061m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2710)
 X: -714059.069 m 0.001 m -714059.878 m 0.001 m
 Y: -5181677.345 m 0.004 m -5181676.544 m 0.004 m
 Z: 3638070.518 m 0.003 m 3638070.370 m 0.003 m
 LAT: 35 00 01.31683 0.002 m 35 00 01.33667 0.002 m
 E LON: 262 09 13.66416 0.001 m 262 09 13.62501 0.001 m
 W LON: 97 50 46.33584 0.001 m 97 50 46.37499 0.001 m
 EL HGT: 297.023 m 0.005 m 295.892 m 0.005 m
 ORTHO HGT: 323.343 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 NORTHING (Y) 3873691.742 m 184926.481 m
 EASTING (X) 605287.744 m 614039.121 m
 CONVERGENCE 0.66185585 deg 0.08729695 deg
 POINT SCALE 0.99973662 0.99996225
 COMBINED FACTOR 0.99969001 0.99991563

US NATIONAL GRID DESIGNATOR: 14SP0052873691 (NAD 83)

CONSTRAIN: HOR-ONLY NORMAL
 ADJUST X: -0.010m (0.001m) Y: -0.042m (0.004m) Z: 0.027m (0.004m)
 ADJUST N: -0.003m (0.002m) E: -0.004m (0.001m) H: 0.051m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
 X: -749498.285 m 0.001 m -749499.090 m 0.001 m
 Y: -5171812.793 m 0.004 m -5171811.389 m 0.004 m
 Z: 3643002.537 m 0.004 m 3643002.390 m 0.004 m
 LAT: 35 04 35.04542 0.002 m 35 04 35.05227 0.002 m
 E LON: 261 45 14.79978 0.001 m 261 45 14.76038 0.001 m
 W LON: 98 14 45.20022 0.001 m 98 14 45.23962 0.001 m
 EL HGT: 340.497 m 0.005 m 339.370 m 0.005 m
 ORTHO HGT: 367.304 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 NORTHING (Y) 3861775.765 m 193378.324 m
 EASTING (X) 568750.537 m 577574.765 m
 CONVERGENCE 0.4338065 deg -0.13957067 deg
 POINT SCALE 0.99965825 0.99997275
 COMBINED FACTOR 0.99960462 0.99991531

US NATIONAL GRID DESIGNATOR: 14SN06875081775 (NAD 83)

CONSTRAIN: OKAR (OKAR a 2)
 ADJUST X: -0.007m (0.001m) Y: -0.039m (0.004m) Z: 0.027m (0.004m)
 ADJUST N: 0.000m (0.002m) E: -0.002m (0.001m) H: 0.048m (0.005m)

REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2709)
 X: -659318.976 m 0.001 m -659319.782 m 0.001 m
 Y: -5241679.389 m 0.004 m -5241677.972 m 0.004 m
 Z: 3562055.730 m 0.004 m 3562055.575 m 0.004 m
 LAT: 34 10 06.45066 0.002 m 34 10 06.47030 0.002 m
 E LON: 262 49 50.74924 0.001 m 262 49 50.71110 0.001 m
 W LON: 97 10 09.25076 0.001 m 97 10 09.28990 0.001 m
 EL HGT: 236.871 m 0.005 m 235.804 m 0.005 m
 ORTHO HGT: 263.085 m 0.010 m (H = h - N WHERE N = GEOID12A HGT)

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)

PLS	JTB	<p>OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION</p> <p>SURVEY DATA SHEET</p> <p>SOS 14 OF 76</p> <p>SWO_4380_(1)_PROJECT NO. 24428(12)_SHEET NO. S014</p>
DRAWN	JTB	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS. Includes a REVISIONS table with columns: DESCRIPTION, DATE.

Network Adjustment for "D 214" (7303)

Network adjustment report for "D 214" (7303). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Network Adjustment for "Pocasset" (7304)

Network adjustment report for "Pocasset" (7304). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Network Adjustment for "Pocasset" (7304)

Network adjustment report for "Pocasset" (7304). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Network Adjustment for "D 214" (7303)

Network adjustment report for "D 214" (7303). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Network Adjustment for "Pocasset" (7304)

Network adjustment report for "Pocasset" (7304). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Network Adjustment for "Pocasset" (7304)

Network adjustment report for "Pocasset" (7304). Includes NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT, coordinate accuracies, and UTM/STATE PLANE COORDINATES for various points.

Table with columns: PLS, JTB, OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION, SURVEY DATA SHEET, SDS 15 OF 76, CREW, BENHAM, SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S015

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS. Includes a REVISIONS table with columns: DESCRIPTION, REVISIONS, DATE.

Network Adjustment for "CP 115" (7418)

NGS OPUS-PROJECTS NETWORK ADJUSTMENT REPORT
All coordinate accuracies reported here are 1 times the formal uncertainties from the solution. For additional information: geodesy.noaa.gov/OPUS/Using-OPUS-Projects.html#accuracy
SUBMITTED BY: bwebb
SOLUTION FILE NAME: network-115Final.sum
SOLUTION SOFTWARE: GPSOLN(1210.24)
SOLUTION DATE: 2015-05-13T13:49:07 UTC
STANDARD ERROR OF UNIT WEIGHT: 0.687
TOTAL NUMBER OF OBSERVATIONS: 34926
TOTAL NUMBER OF MARKS: 30
NUMBER OF CONSTRAINED MARKS: 9
START TIME: 2015-04-09T21:24:30 GPS
STOP TIME: 2015-04-09T23:55:00 GPS
FREQUENCY: L1-ONLY TO ION-FREE [BY BASELINE LENGTH]
OBSERVATION INTERVAL: 30 s
ELEVATION CUTOFF: 15 deg
TRAPO INTERVAL: 1800 s [STEP-OFFSET PARAMETERIZATION]
DD CORRELATIONS: ON
INCLUDED SOLUTION RMS SOFTWARE RUN DATE
1) 2015-099 115A 1.2 cm page5(1404.11) 2015-05-13T13:28 UTC
2) 2015-099 115B 1.2 cm page5(1404.11) 2015-05-13T13:37 UTC
BASELINE LENGTH RMS OBS OMITTED FIXED IN SOLUTION(S)
poca-0115 11.971 km 1.0 cm 3490 0.8% 100.0% 1 2
5978-0115 16.330 km 1.0 cm 3518 0.9% 100.0% 1 2
7125-0115 18.654 km 1.8 cm 4096 1.0% 100.0% 1 2
okao-0115 18.798 km 1.2 cm 4084 1.7% 100.0% 1 2
ok1w-0115 62.051 km 1.2 cm 3644 8.6% 91.7% 1 2
okdt-0115 69.531 km 1.2 cm 3960 2.2% 100.0% 1 2
wmo-0115 75.406 km 0.9 cm 4082 1.5% 100.0% 1 2
okc1-0115 97.499 km 1.1 cm 3942 2.0% 100.0% 1 2
okar-0115 125.929 km 1.1 cm 4110 0.8% 100.0% 1 2
UNCONSTRAINED MARKS
MARK: 0115 (0115 1)
REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -731540.693 m 0.001 m -731541.502 m 0.001 m
Y: -5176505.319 m 0.004 m -5176503.919 m 0.004 m
Z: 3642021.900 m 0.003 m 3642021.753 m 0.003 m
LAT: 35 02 36.71782 0.002 m 35 02 36.73759 0.002 m
E LON: 261 57 22.53428 0.001 m 261 57 22.49487 0.001 m
W LON: 98 02 37.46582 0.001 m 98 02 37.50513 0.001 m
EL HGT: 348.132 m 0.004 m 347.005 m 0.004 m
ORTHOG HT: 374.685 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)
UTM COORDINATES STATE PLANE COORDINATES
NORTHING (Y) 3873288.625 m 189705.466 m
EASTING (X) 587213.413 m 596009.253 m
CONVERGENCE 0.54911756 deg -0.02482784 deg
POINT SCALE 0.99996799 1.00001821
COMBINED FACTOR 0.99963911 0.99994233
US NATIONAL GRID DESIGNATOR: 14SND8721578268 (NAD 83)

Network Adjustment for "CP 115" (7418)

NORTHING (Y) 3881775.762 m 193378.321 m
EASTING (X) 588750.538 m 577574.766 m
CONVERGENCE 0.43338066 deg -0.13957066 deg
POINT SCALE 0.99958215 0.99992775
COMBINED FACTOR 0.99960483 0.99991911
US NATIONAL GRID DESIGNATOR: 14SND875081775 (NAD 83)
MARK: okar (okar a 3)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.006m (0.001m) Y: -0.024m (0.004m) Z: 0.016m (0.003m)
ADJUST N: -0.000m (0.002m) E: -0.003m (0.001m) H: 0.030m (0.004m)
REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -659318.974 m 0.001 m -659319.780 m 0.001 m
Y: -5241679.374 m 0.004 m -5241677.357 m 0.004 m
Z: 3562055.718 m 0.003 m 3562055.564 m 0.003 m
LAT: 34 10 06.45064 0.002 m 34 10 06.47028 0.002 m
E LON: 262 49 50.74924 0.001 m 262 49 50.71109 0.001 m
W LON: 97 10 09.25076 0.001 m 97 10 09.28891 0.001 m
EL HGT: 236.952 m 0.004 m 235.785 m 0.004 m
ORTHOG HT: 263.066 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)
UTM COORDINATES STATE PLANE COORDINATES
NORTHING (Y) 3782348.989 m 92950.122 m
EASTING (X) 688743.272 m 676594.319 m
CONVERGENCE 1.02845104 deg 0.47155532 deg
POINT SCALE 0.99995101 0.99996210
COMBINED FACTOR 0.99991382 0.99992491
US NATIONAL GRID DESIGNATOR: 14SPC6874382348 (NAD 83)
MARK: okc1 (okc1 a 1)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.001m (0.001m) Y: -0.036m (0.004m) Z: 0.022m (0.003m)
ADJUST N: -0.003m (0.002m) E: 0.005m (0.001m) H: 0.042m (0.004m)
REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -810882.807 m 0.001 m -810882.519 m 0.001 m
Y: -5136265.201 m 0.004 m -5136263.806 m 0.004 m
Z: 3681919.298 m 0.003 m 3681919.155 m 0.003 m
LAT: 31 28 59.34893 0.001 m 31 28 59.36880 0.001 m
E LON: 261 01 42.75370 0.001 m 261 01 42.71327 0.001 m
W LON: 98 58 17.24630 0.001 m 98 58 17.28673 0.001 m
EL HGT: 470.735 m 0.004 m 469.638 m 0.004 m
ORTHOG HT: 497.937 m 0.009 m (H = h - N WHERE N = GEOID12A HGT)
UTM COORDINATES STATE PLANE COORDINATES
NORTHING (Y) 3926625.353 m 54048.586 m
EASTING (X) 518489.146 m 511841.912 m
CONVERGENCE 0.01656799 deg -0.57330269 deg
POINT SCALE 0.99996008 1.00001821
COMBINED FACTOR 0.99952623 0.99994233
US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
ADJUST N: 0.000m (0.002m) E: 0.001m (0.001m) H: 0.021m (0.004m)
REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -679342.225 m 0.001 m -679343.039 m 0.001 m
Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
Z: 3682488.683 m 0.003 m 3682488.728 m 0.003 m
LAT: 35 29 24.45375 0.002 m 35 29 24.47384 0.002 m
E LON: 262 29 32.33364 0.001 m 262 29 32.29434 0.001 m
W LON: 97 30 27.66636 0.001 m 97 30 27.70566 0.001 m
US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
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W LON: 97 30 27.66636 0.001 m 97 30 27.70566 0.001 m
US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
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US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
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US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
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X: -679342.225 m 0.001 m -679343.039 m 0.001 m
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US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
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Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
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US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
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REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -679342.225 m 0.001 m -679343.039 m 0.001 m
Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
Z: 3682488.683 m 0.003 m 3682488.728 m 0.003 m
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REF FRAME: NAD_83(2011) (2010.0000) IGS08 (2015.2711)
X: -679342.225 m 0.001 m -679343.039 m 0.001 m
Y: -5154773.588 m 0.004 m -5154772.185 m 0.004 m
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US NATIONAL GRID DESIGNATOR: 14SNE025892625 (NAD 83)
MARK: okdt (okdt a 4)
CONSTR: HOR-ONLY NORMAL
ADJUST X: -0.002m (0.001m) Y: -0.017m (0.004m) Z: 0.012m (0.003m)
ADJUST N: 0.000m (0.002m) E: 0.001m (0.001m) H: 0.021m (0.004m)
REF FRAME

Table with columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO., TOTAL SHEETS

Table with columns: DESCRIPTION, REVISIONS, DATE

NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 47050680.110 000184978 (Session 1)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 18:57:23 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.360 183399.871

NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 47460741.110 000184911 (Session 2)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 18:10:19 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.356 183399.868

NGS OPUS SOLUTION FOR G-26-865 (7400)

FILE: 48820770.110 000184736 (Session 3)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 16:08:53 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3871950.355 183399.869

NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 48820682.110 000184732 (Session 1)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 16:06:43 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.900 186534.611

NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 47050741.110 000184982 (Session 2)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 18:57:44 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.884 186534.594

NGS OPUS SOLUTION FOR G-26-866 (7401)

FILE: 47050770.110 000184983 (Session 3)
NGS OPUS SOLUTION REPORT
All computed coordinate accuracies are listed as peak-to-peak values.
USER: john.t.birkhahn@saic.com DATE: March 21, 2011
TIME: 18:57:58 UTC

UTM COORDINATES STATE PLANE COORDINATES
UTM (Zone 14) SPC (3502 OK S)
Northing (Y) [meters] 3875180.886 186534.597

Table with columns: PLS, JTB, OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION, SURVEY DATA SHEET, SDS 17 OF 76, CREW BENHAM SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S017

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA					
DESCRIPTION			REVISIONS	DATE		

NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 4820683.110 000184734 (Session 1)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 482068v.110 TIME: 16:07:49 UTC

SOFTWARE: page5 1009.28 master28.p1 121510 START: 2011/03/09 21:06:00
 EPOCH: 2011/03/09 21:06:00
 EPOCH: 2011/03/09 21:06:00
 NAV FILE: brdc0680.11n OBS USED: 5816 / 6129 : 95%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 51 / 55 : 93%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1861)
 X: -726879.951(m) 0.021(m) -726880.692(m) 0.021(m)
 Y: -5177113.536(m) 0.025(m) -5177112.142(m) 0.025(m)
 Z: 3642070.762(m) 0.034(m) 3642070.608(m) 0.034(m)
 LAT: 35 2 38.90696 0.016(m) 35 2 38.92646 0.016(m)
 E LON: 262 0 27.97098 0.022(m) 262 0 27.93488 0.022(m)
 W LON: 97 59 32.02902 0.022(m) 97 59 32.06562 0.022(m)
 EL HGT: 337.032(m) 0.040(m) 335.895(m) 0.040(m)
 ORTHO HGT: 363.528(m) 0.068(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3878402.305 189772.089
 Easting (x) [meters] 591912.871 600708.879
 Convergence [degrees] 0.57870932 0.00441022
 Point Scale 0.99970412 0.99999808
 Combined Factor 0.99965123 0.99991518

US NATIONAL GRID DESIGNATOR: 14SND91278402(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
 DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.2

F30783 R 214 NEAREST NGS PUBLISHED CONTROL POINT N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 47050740.110 000184981 (Session 2)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 47050740.110 TIME: 18:57:07 UTC

SOFTWARE: page5 1009.28 master.p1 121510 START: 2011/03/15 14:07:00
 EPOCH: 2011/03/15 17:20:00
 NAV FILE: brdc0740.11n OBS USED: 7677 / 8241 : 93%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 52 / 57 : 91%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.012(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2018)
 X: -726879.936(m) 0.027(m) -726880.677(m) 0.027(m)
 Y: -5177113.505(m) 0.044(m) -5177112.111(m) 0.044(m)
 Z: 3642070.770(m) 0.052(m) 3642070.608(m) 0.052(m)
 LAT: 35 2 38.90779 0.037(m) 35 2 38.92728 0.037(m)
 E LON: 262 0 27.97140 0.028(m) 262 0 27.93480 0.028(m)
 W LON: 97 59 32.02560 0.028(m) 97 59 32.06520 0.028(m)
 EL HGT: 337.010(m) 0.051(m) 335.871(m) 0.051(m)
 ORTHO HGT: 363.506(m) 0.086(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3878402.305 189772.115
 Easting (x) [meters] 591912.881 600708.894
 Convergence [degrees] 0.57870932 0.00441029
 Point Scale 0.99970412 0.99999808
 Combined Factor 0.99965123 0.99991518

US NATIONAL GRID DESIGNATOR: 14SND91278402(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
 DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.1

F30783 R 214 NEAREST NGS PUBLISHED CONTROL POINT N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

NGS OPUS SOLUTION FOR G-26-867 (7402)

FILE: 47050771.110 000184984 (Session 3)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 47050771.110 TIME: 18:58:23 UTC

SOFTWARE: page5 1009.28 master.p1 121510 START: 2011/03/16 18:07:00
 EPOCH: 2011/03/16 21:14:00
 NAV FILE: brdc0770.11n OBS USED: 7425 / 7957 : 93%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 58 / 63 : 92%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2105)
 X: -726879.932(m) 0.021(m) -726880.673(m) 0.021(m)
 Y: -5177113.503(m) 0.028(m) -5177112.109(m) 0.028(m)
 Z: 3642070.767(m) 0.060(m) 3642070.605(m) 0.060(m)
 LAT: 35 2 38.90775 0.036(m) 35 2 38.92725 0.036(m)
 E LON: 262 0 27.97154 0.021(m) 262 0 27.93494 0.021(m)
 W LON: 97 59 32.02546 0.021(m) 97 59 32.06506 0.021(m)
 EL HGT: 337.006(m) 0.054(m) 335.867(m) 0.054(m)
 ORTHO HGT: 363.502(m) 0.091(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3878402.328 189772.114
 Easting (x) [meters] 591912.881 600708.894
 Convergence [degrees] 0.57870941 0.00441031
 Point Scale 0.99970412 0.99999808
 Combined Factor 0.99965124 0.99991518

US NATIONAL GRID DESIGNATOR: 14SND91278402(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 23415.5
 DG9791 OKDN DUNCAN CORS ARP N342845.501 W0975759.560 62707.7
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 66276.1

F30783 R 214 NEAREST NGS PUBLISHED CONTROL POINT N350330. W0975737. 3312.8

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 47050681.110 000184979 (Session 1)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 47050681.110 TIME: 18:56:52 UTC

SOFTWARE: page5 1009.28 master28.p1 121510 START: 2011/03/09 20:02:00
 EPOCH: 2011/03/09 22:17:00
 NAV FILE: brdc0680.11n OBS USED: 5111 / 5798 : 88%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 49 / 51 : 96%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.1860)
 X: -724677.684(m) 0.038(m) -724678.425(m) 0.038(m)
 Y: -5175901.599(m) 0.027(m) -5175900.206(m) 0.027(m)
 Z: 3644168.015(m) 0.033(m) 3644167.853(m) 0.033(m)
 LAT: 35 4 2.68057 0.045(m) 35 4 2.70007 0.045(m)
 E LON: 262 1 47.39127 0.034(m) 262 1 47.35468 0.034(m)
 W LON: 97 58 12.60873 0.034(m) 97 58 12.64933 0.034(m)
 EL HGT: 308.855(m) 0.015(m) 307.717(m) 0.015(m)
 ORTHO HGT: 335.394(m) 0.026(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3881003.627 192354.046
 Easting (x) [meters] 593898.372 602720.896
 Convergence [degrees] 0.59172202 0.01693252
 Point Scale 0.99970866 0.99997141
 Combined Factor 0.99966020 0.99992194

US NATIONAL GRID DESIGNATOR: 14SND9389881003(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DE0909 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.5
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25169.0
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

F30784 S 214 NEAREST NGS PUBLISHED CONTROL POINT N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 47460740.110 000184910 (Session 2)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 47460740.110 TIME: 18:10:36 UTC

SOFTWARE: page5 1009.28 master40.p1 121510 START: 2011/03/15 14:42:00
 EPOCH: 2011/03/15 17:58:30
 NAV FILE: brdc0740.11n OBS USED: 7964 / 8491 : 94%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 51 / 57 : 89%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.013(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2018)
 X: -724677.699(m) 0.009(m) -724678.440(m) 0.009(m)
 Y: -5175901.597(m) 0.056(m) -5175900.204(m) 0.056(m)
 Z: 3644167.995(m) 0.044(m) 3644167.833(m) 0.044(m)
 LAT: 35 4 2.68003 0.016(m) 35 4 2.69953 0.016(m)
 E LON: 262 1 47.39067 0.016(m) 262 1 47.35408 0.016(m)
 W LON: 97 58 12.60933 0.016(m) 97 58 12.64991 0.016(m)
 EL HGT: 308.848(m) 0.070(m) 307.705(m) 0.070(m)
 ORTHO HGT: 335.382(m) 0.118(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3881003.606 192354.030
 Easting (x) [meters] 593898.357 602720.881
 Convergence [degrees] 0.59172202 0.01693243
 Point Scale 0.99970866 0.99997141
 Combined Factor 0.99966020 0.99992194

US NATIONAL GRID DESIGNATOR: 14SND9389881003(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DE0909 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.5
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25169.0
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

F30784 S 214 NEAREST NGS PUBLISHED CONTROL POINT N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

NGS OPUS SOLUTION FOR G-26-868 (7403)

FILE: 48820771.110 000184737 (Session 3)
 NGS OPUS SOLUTION REPORT

All computed coordinate accuracies are listed as peak-to-peak values.
 For additional information: http://www.ngs.noaa.gov/OPUS/about.html#accuracy

USER: john.t.birkhahn@saic.com DATE: March 21, 2011
 RINEX FILE: 48820771.110 TIME: 16:09:17 UTC

SOFTWARE: page5 1009.28 master10.p1 121510 START: 2011/03/18 18:21:00
 EPOCH: 2011/03/18 21:05:00
 NAV FILE: brdc0770.11n OBS USED: 6401 / 6952 : 92%
 ANT NAME: TRMR8_GNS53 NONE # FIXED AMB: 55 / 60 : 92%
 ARP HEIGHT: 2.25 OVERALL RMS: 0.014(m)

REF FRAME: NAD_83(CORS96) (EPOCH:2002.0000) ITRF00 (EPOCH:2011.2105)
 X: -724677.712(m) 0.018(m) -724678.453(m) 0.018(m)
 Y: -5175901.628(m) 0.041(m) -5175900.235(m) 0.041(m)
 Z: 3644168.016(m) 0.038(m) 3644167.854(m) 0.038(m)
 LAT: 35 4 2.67999 0.009(m) 35 4 2.69949 0.009(m)
 E LON: 262 1 47.39033 0.024(m) 262 1 47.35375 0.024(m)
 W LON: 97 58 12.60967 0.024(m) 97 58 12.64825 0.024(m)
 EL HGT: 308.882(m) 0.053(m) 307.744(m) 0.053(m)
 ORTHO HGT: 335.421(m) 0.090(m) [NAVD88 (Computed using GEOID09)]

UTM COORDINATES STATE PLANE COORDINATES
 UTM (Zone 14) SPC (3502 OK S)
 Northing (y) [meters] 3881003.604 192354.028
 Easting (x) [meters] 593898.349 602720.872
 Convergence [degrees] 0.59172197 0.01693237
 Point Scale 0.99970866 0.99997141
 Combined Factor 0.99966019 0.99992193

US NATIONAL GRID DESIGNATOR: 14SND9389881003(NAD 83)

BASE STATIONS USED
 PID DESIGNATION LATITUDE LONGITUDE DISTANCE(m)
 DE0909 OKLW LANTON CORS ARP N343421.987 W0982435.690 68044.5
 DG9755 OKAD ANADARKO CORS ARP N350435.045 W0981445.200 25169.0
 DE6009 OKDT OKLAHOMA CITY CORS ARP N352924.454 W0973027.666 63009.4

F30784 S 214 NEAREST NGS PUBLISHED CONTROL POINT N350423. W0975739. 1057.5

This position and the above vector components were computed without any knowledge by the National Geodetic Survey regarding the equipment or field operating procedures used.

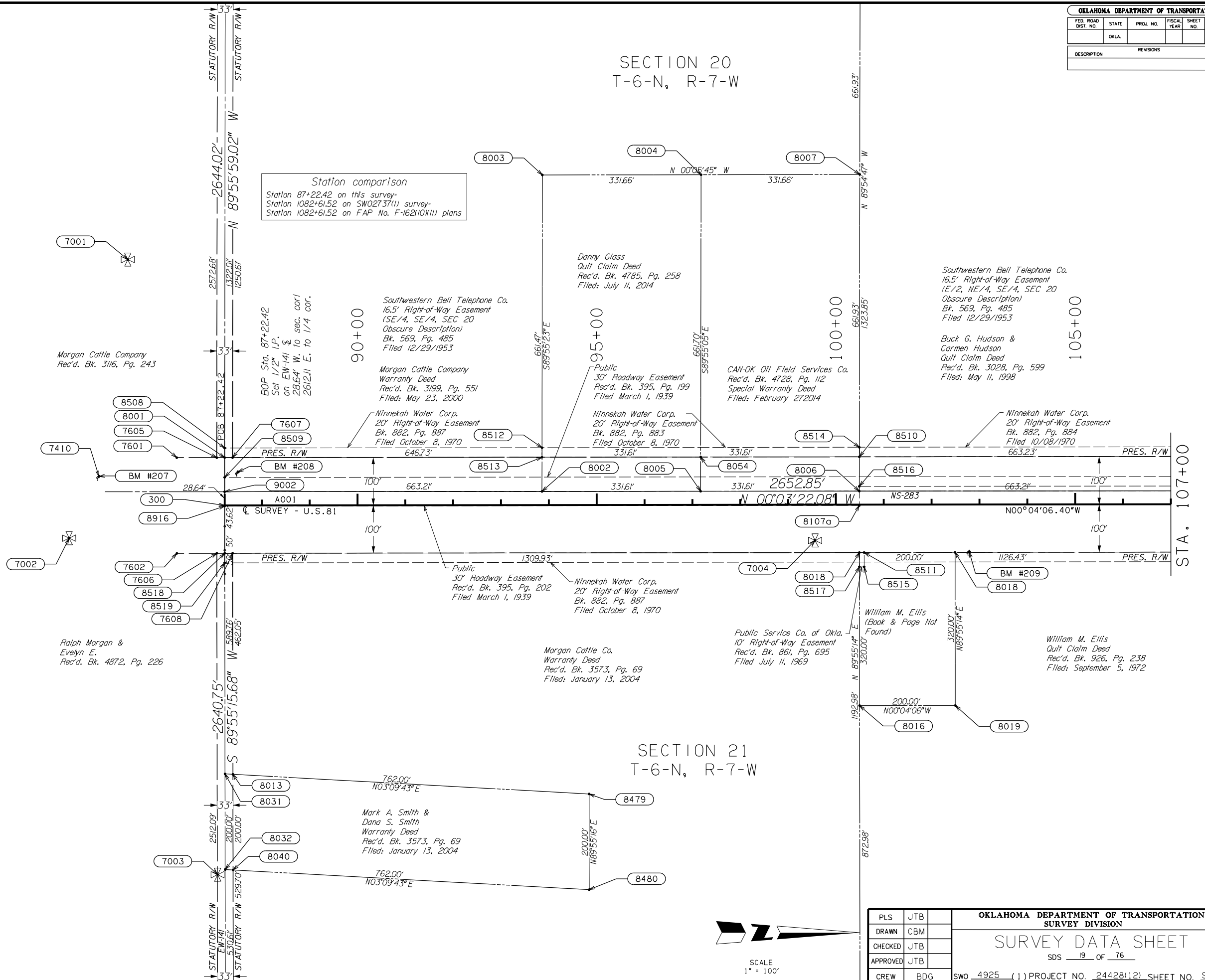
PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 18 OF 76 SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. 5018
DRAWN	JTB	
CHECKED	JTB	
APPROVED	JTB	
CREW	BENHAM	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS	DATE		

SECTION 20
T-6-N, R-7-W

Station comparison
 Station 87+22.42 on this survey
 Station 1082+61.52 on SW02737(1) survey
 Station 1082+61.52 on FAP No. F-1621(10X11) plans



STA. 107+00



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 19 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO 4925 (1)	PROJECT NO. 24428(12) SHEET NO. 5019

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

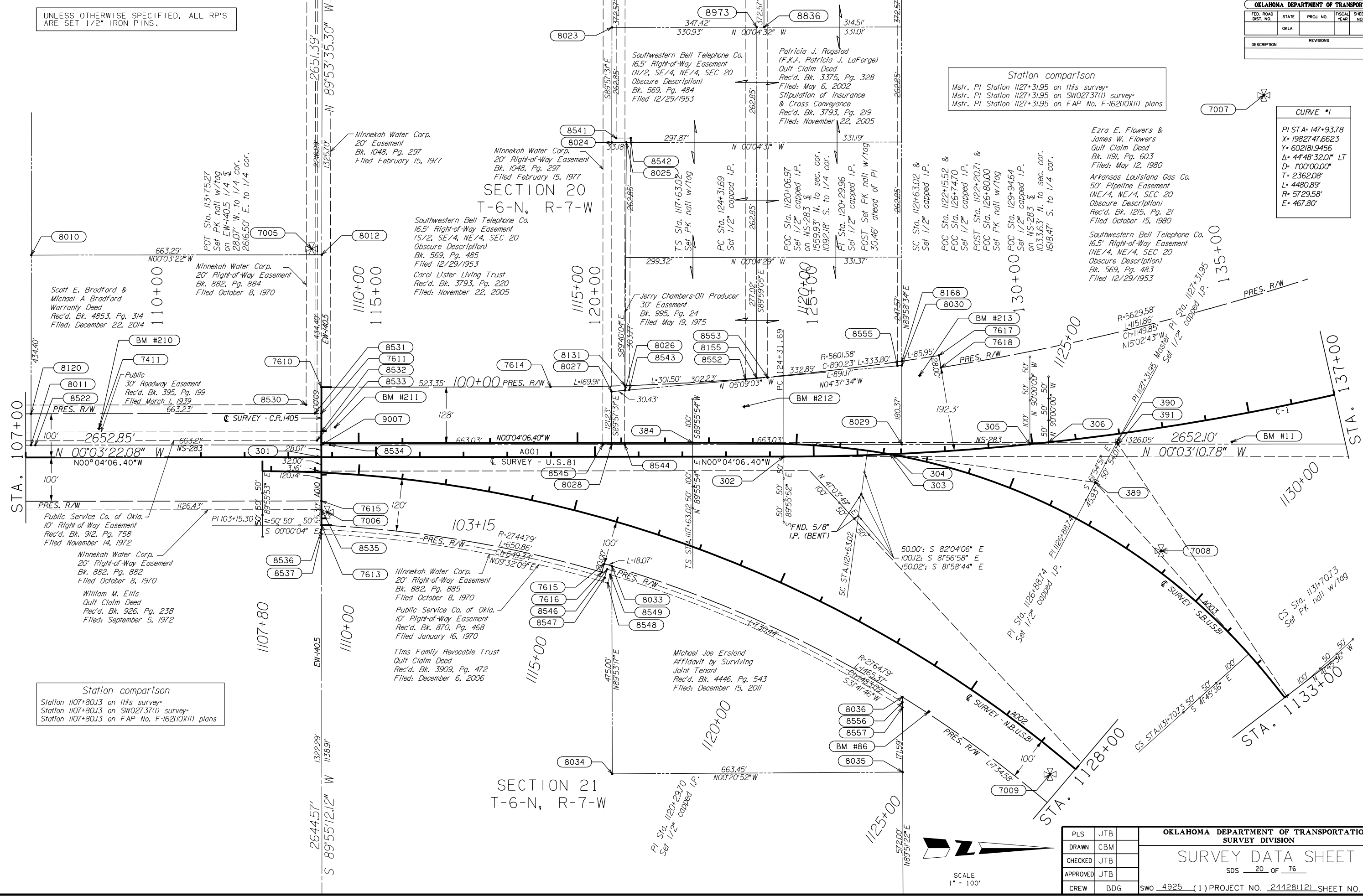
OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	DATE
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

Station comparison
 Mstr. PI Station 1127+31.95 on this survey
 Mstr. PI Station 1127+31.95 on SW02737(1) survey
 Mstr. PI Station 1127+31.95 on FAP No. F-16210(XII) plans

CURVE #1
PI STA+147+93.78
X=1982747.6623
Y=602181.9456
Δ=44°48'32.0" LT
D=100°00.00"
T=2362.08'
L=4480.89'
R=5729.58'
E=467.80'

SECTION 20
T-6-N, R-7-W

SECTION 21
T-6-N, R-7-W

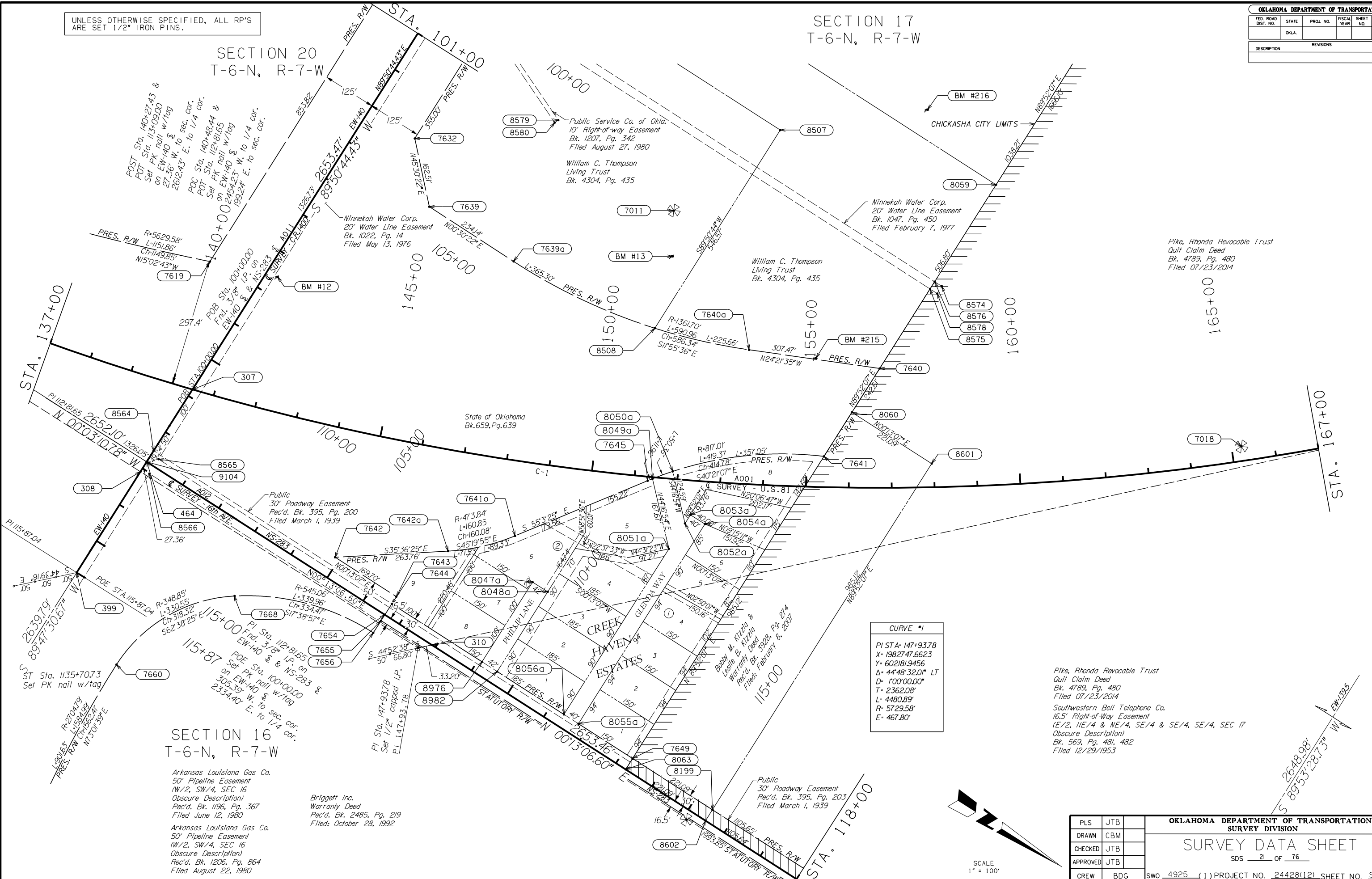


UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20
T-6-N, R-7-W

SECTION 17
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



SECTION 16
T-6-N, R-7-W

Arkansas Louisiana Gas Co.
50' Pipeline Easement
W/2, SW/4, SEC 16
Obscure Description
Rec'd. Bk. 1196, Pg. 367
Filed June 12, 1980

Briggett Inc.
Warranty Deed
Rec'd. Bk. 2485, Pg. 219
Filed: October 28, 1992

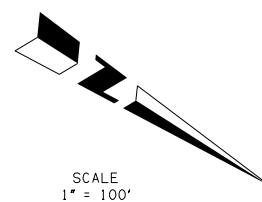
Arkansas Louisiana Gas Co.
50' Pipeline Easement
W/2, SW/4, SEC 16
Obscure Description
Rec'd. Bk. 1206, Pg. 864
Filed August 22, 1980

CURVE #1

PI STA= 147+93.78
X= 1982747.6623
Y= 602181.9456
Δ= 44°48'32.01" LT
D= 100°00.00"
T= 2362.08'
L= 4480.89'
R= 5729.58'
E= 467.80'

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(E/2, NE/4 & NE/4, SE/4 & SE/4, SE/4, SEC 17
Obscure Description)
Bk. 569, Pg. 481, 482
Filed 12/29/1953



SCALE
1" = 100'

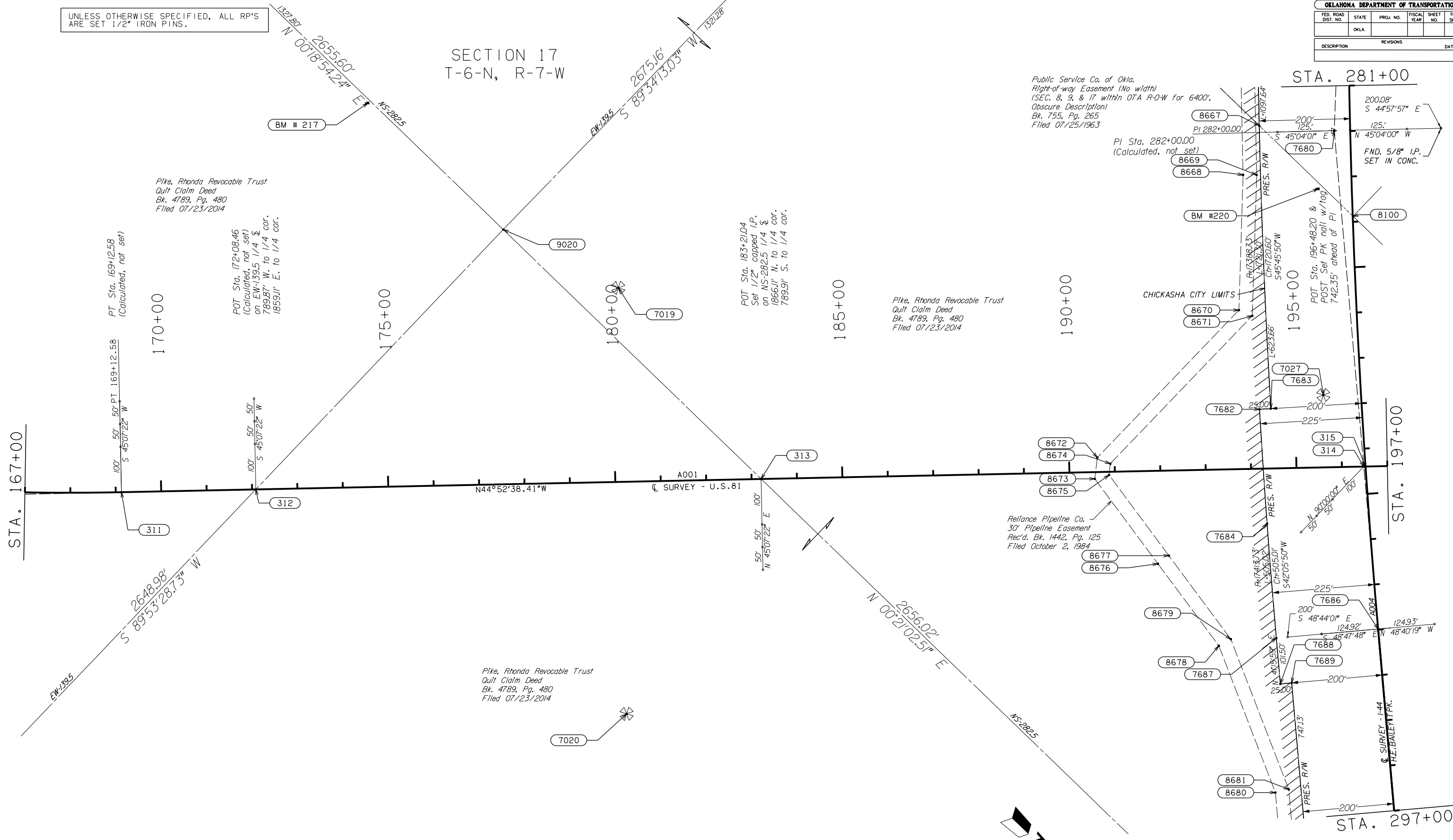
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 21 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO_4925 (1)	PROJECT NO. 24428(12) SHEET NO. S021

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

SECTION 17
T-6-N, R-7-W

SECTION 17
T-6-N, R-7-W



Public Service Co. of Okla.
Right-of-way Easement (No width)
(SEC. 8, 9, & 17 within OTA R-O-W for 6400',
Obscure Description)
Bk. 755, Pg. 265
Filed 07/25/1963

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

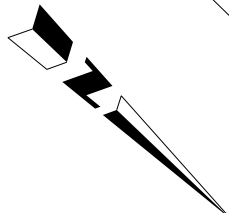
POT Sta. 172+08.46
(Calculated, not set)
on EW-139.5 1/4 &
789.87' W. to 1/4 cor.
1859.11' E. to 1/4 cor.

POT Sta. 183+21.04
Set 1/2" capped I.P.
on NS-282.5 1/4 &
1866.11' N. to 1/4 cor.
789.91' S. to 1/4 cor.

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

Reliance Pipeline Co.
30' Pipeline Easement
Rec'd. Bk. 1442, Pg. 125
Filed October 2, 1984

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 22 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO_4925 (1)	PROJECT NO. 24428(12) SHEET NO. S022

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

SECTION 7
T-6-N, R-7-W

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

CHICKASHA CITY LIMITS

GOV'T.
LOT 5

POC Sta. 283+51.69 &
POT Sta. 109+02.53
Set PK nail w/tag
on EW-138 &
902.53' W. to sec. cor.
1777.22' E. to 1/4 cor.
POST Sta. 284+08.38 &
POT Sta. 108+17.55
Set PK nail w/tag
on EW-138 &
817.55' W. to sec. cor.
1802.20' E. to 1/4 cor.

STA. 103+00

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

2619.75'
S 89°41'13.07" W

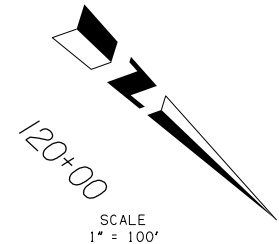
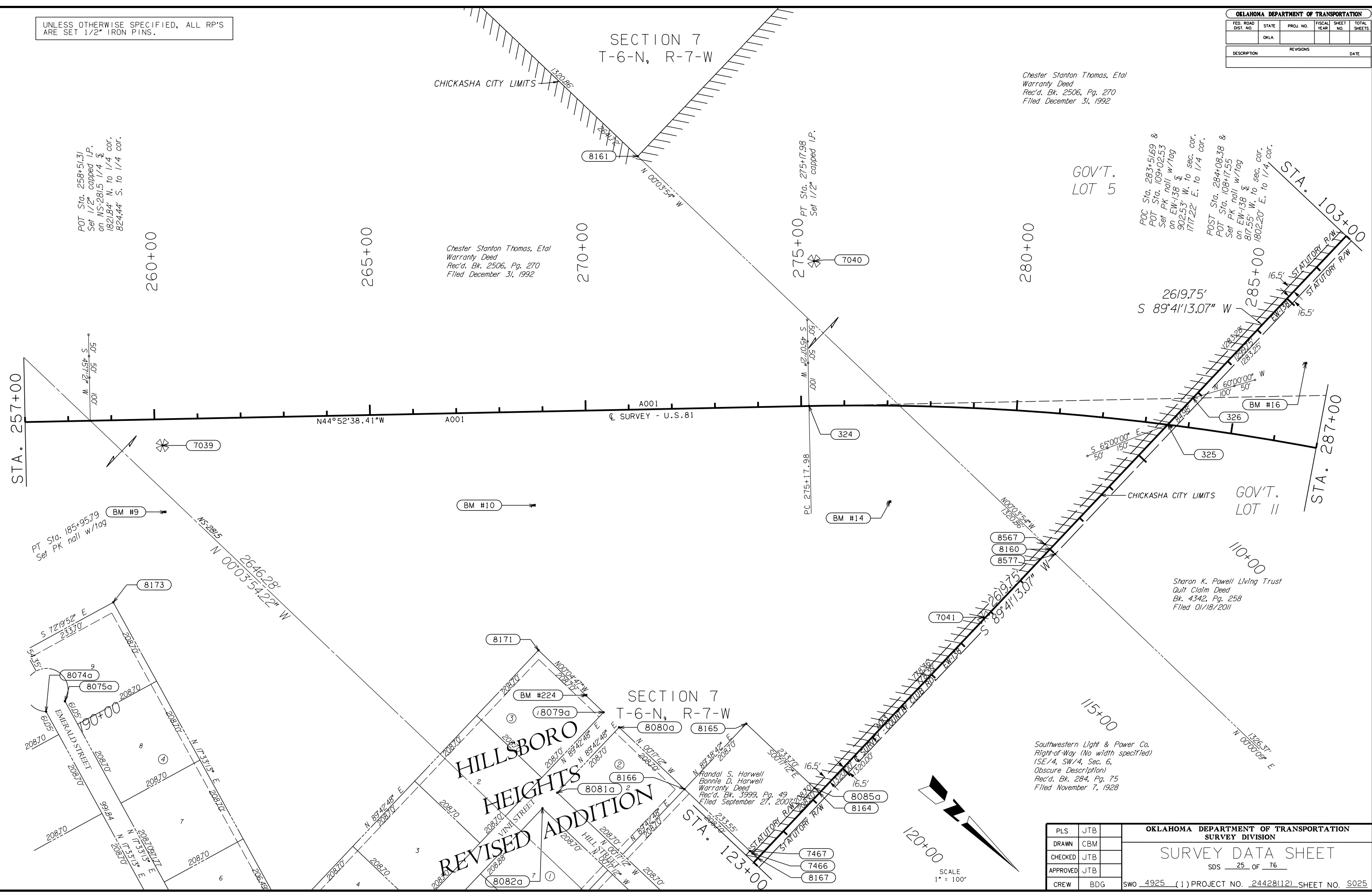
GOV'T.
LOT 11

Sharon K. Powell Living Trust
Quit Claim Deed
Bk. 4342, Pg. 258
Filed 01/18/2011

Southwestern Light & Power Co.
Right-of-Way (No width specified)
1/4, SW/4, Sec. 6,
Obscure Description
Rec'd. Bk. 284, Pg. 75
Filed November 7, 1928

STA. 257+00

STA. 287+00



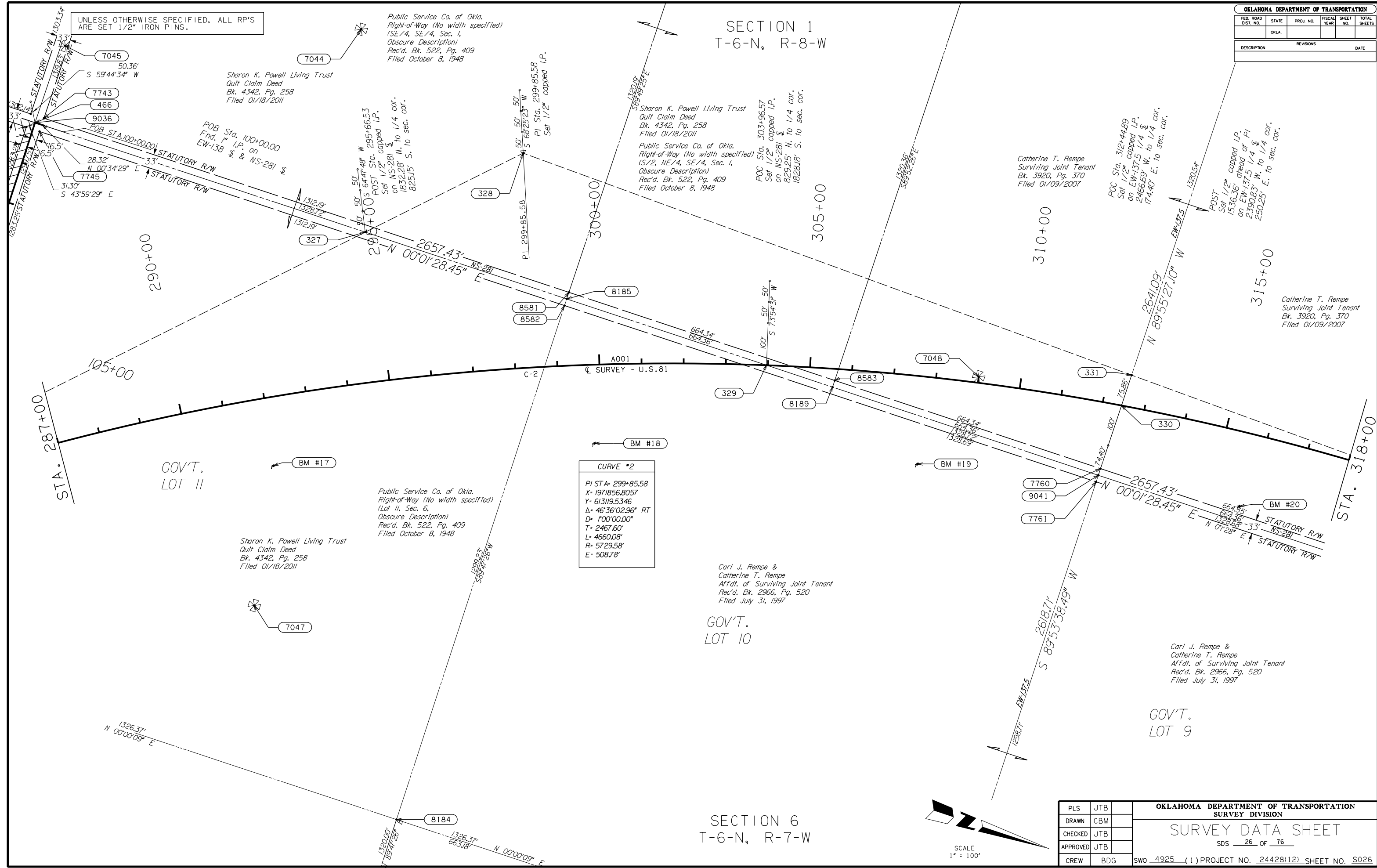
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 25 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO 4925 (1)	PROJECT NO. 24428(12) SHEET NO. S025

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 1
T-6-N, R-8-W

SECTION 6
T-6-N, R-7-W

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.



OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 26 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S026			

SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

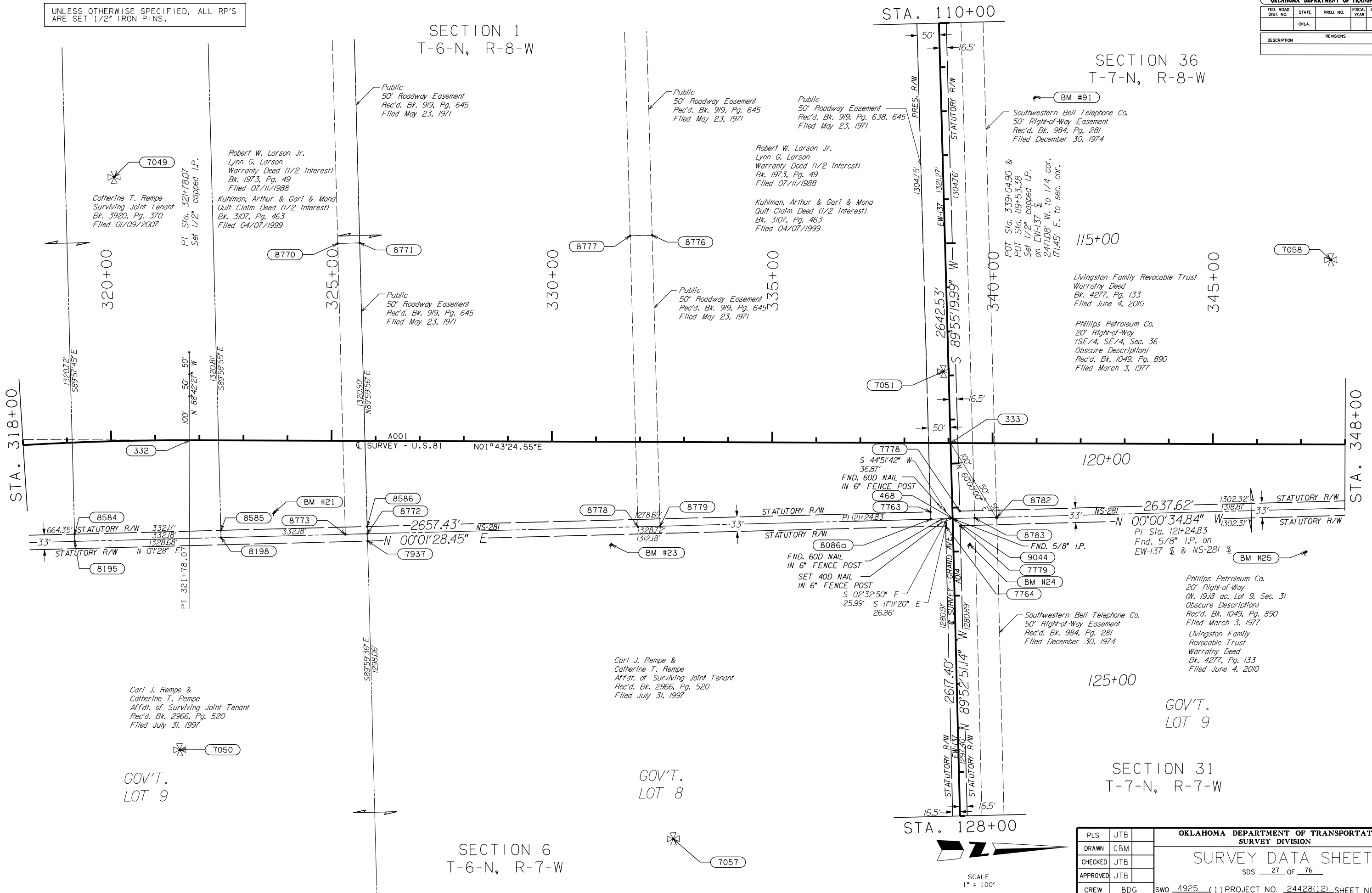
OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

SECTION 1
T-6-N, R-8-W

SECTION 36
T-7-N, R-8-W

SECTION 31
T-7-N, R-7-W

SECTION 6
T-6-N, R-7-W



OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 27 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO 4925 (1)	PROJECT NO. 24428(12) SHEET NO. S027

SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 36
T-7-N, R-8-W

SECTION 31
T-7-N, R-7-W

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

Mid Continent Pipe Line Co.
20' Right-of-Way
(S/2, NE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1032, Pg. 425
Filed September 13, 1976

Mid Continent Pipe Line Co.
20' Right-of-Way
(S/2, NE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1046, Pg. 364
Filed January 27, 1977

Phillips Petroleum Co.
20' Right-of-Way
(S/2, N/2, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

Phillips Petroleum Co.
20' Right-of-Way
(N/2, NE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1054, Pg. 579
Filed April 21, 1977

David L. Perryman &
Gwendolyn Jo Perryman
Trustee's Deed
Rec'd. Bk. 2078, Pg. 284
Filed May 19, 1989

POT Sta. 365+43.98
Set 1/2" capped LP.
on EW-136.5 1/4 &
2550.40' W. to 1/4 cor.
91.63' E. to 1/4 cor.

Public
50' Roadway Easement
Rec'd. Bk. 1353, Pg. 177
Filed April 7, 1983

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996

Phillips Petroleum Co.
Right-of-Way
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1051, Pg. 155
Filed March 16, 1977

Phillips Petroleum Co.
50' Pipeline Right-of-Way
(E/2, NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 2968, Pg. 275
Filed Jun 7, 1994

Public Service Co. of Okla.
10' Right-of-Way Easement
Rec'd. Bk. 2348, Pg. 57
Filed August 19, 1991

Mid Continent Pipe Line Co.
20' Easement
Rec'd. Bk. 1046, Pg. 851
Filed January 31, 1977

Mid Continent Pipe Line Co.
20' Easement
(N. 10 ac. Lot 8, Sec. 31
Obscure Description)
Rec'd. Bk. 1030, Pg. 734
Filed August 25, 1976

David L. Perryman &
Gwendolyn Jo Perryman
Warranty Deed
Rec'd. Bk. 4259, Pg. 13
Filed March 23, 2010

Phillips Petroleum Co.
33' Right-of-Way
(S/2, NW/4, & S/2, N/2, NW/4,
Sec. 31, Obscure Description)
Rec'd. Bk. 1293, Pg. 890
Filed March 22, 1982

COMMISSIONER'S LAND OFFICE
(Book & Page Not Found)

GOV'T.
LOT 7

GOV'T.
LOT 8

GOV'T.
LOT 9

STA. 348+00

STA. 378+00



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 28 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. 5028	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

Raw Crude, L.L.C.
25' Pipeline Easement
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 3451, Pg. 386
Filed Jun 22, 2003

UMC Petroleum Corporation
Pipeline Right-of-Way
(No width specified)
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 2857, Pg. 556
Filed May 3, 1996

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996

Public Service Co. of Okla.
10' Right-of-Way Easement
Rec'd. Bk. 2348, Pg. 57
Filed August 19, 1991

Mid Continent Pipe Line Co.
50' Right-of-Way
(NE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1046, Pg. 366
Filed January 27, 1977

Koch Industries Inc.
Right-of-Way
(No width specified)
(NE/4, Sec. 6,
Obscure Description)
Rec'd. Bk. 896, Pg. 23
Filed May 10, 1971

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
(NE/4, Sec. 36
Obscure Description)
Bk. 1018, Pg. 314
Filed April 1, 1976

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
Bk. 1323, Pg. 545
Filed 09/28/1982

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
Bk. 1323, Pg. 539, 542
Filed 09/28/1982

COMMISSIONER'S LAND OFFICE
(Book & Page Not Found)
Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Easement
(W/2 Lot 6, Sec. 31
Obscure Description)
Bk. 1018, Pg. 279
Filed April 1, 1976

COMMISSIONER'S LAND
OFFICE (Book & Page Not
Found)

COMMISSIONER'S LAND OFFICE
(Book & Page Not Found)

Public Service Co. of Okla.
5' Right-of-Way Easement
Rec'd. Bk. 1743, Pg. 72
Filed Sept 25, 1986

Gary Don Whitaker &
Donna Fay Whitaker
Quit Claim Deed
Rec'd. Bk. 4329, Pg. 590
Filed December 16, 2010

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
Bk. 1323, Pg. 538
Filed 09/28/1982

Johnny Paul Franklin &
Holly F. Franklin
Warranty Deed
Rec'd. Bk. 3171, Pg. 165
Filed January 28, 2000

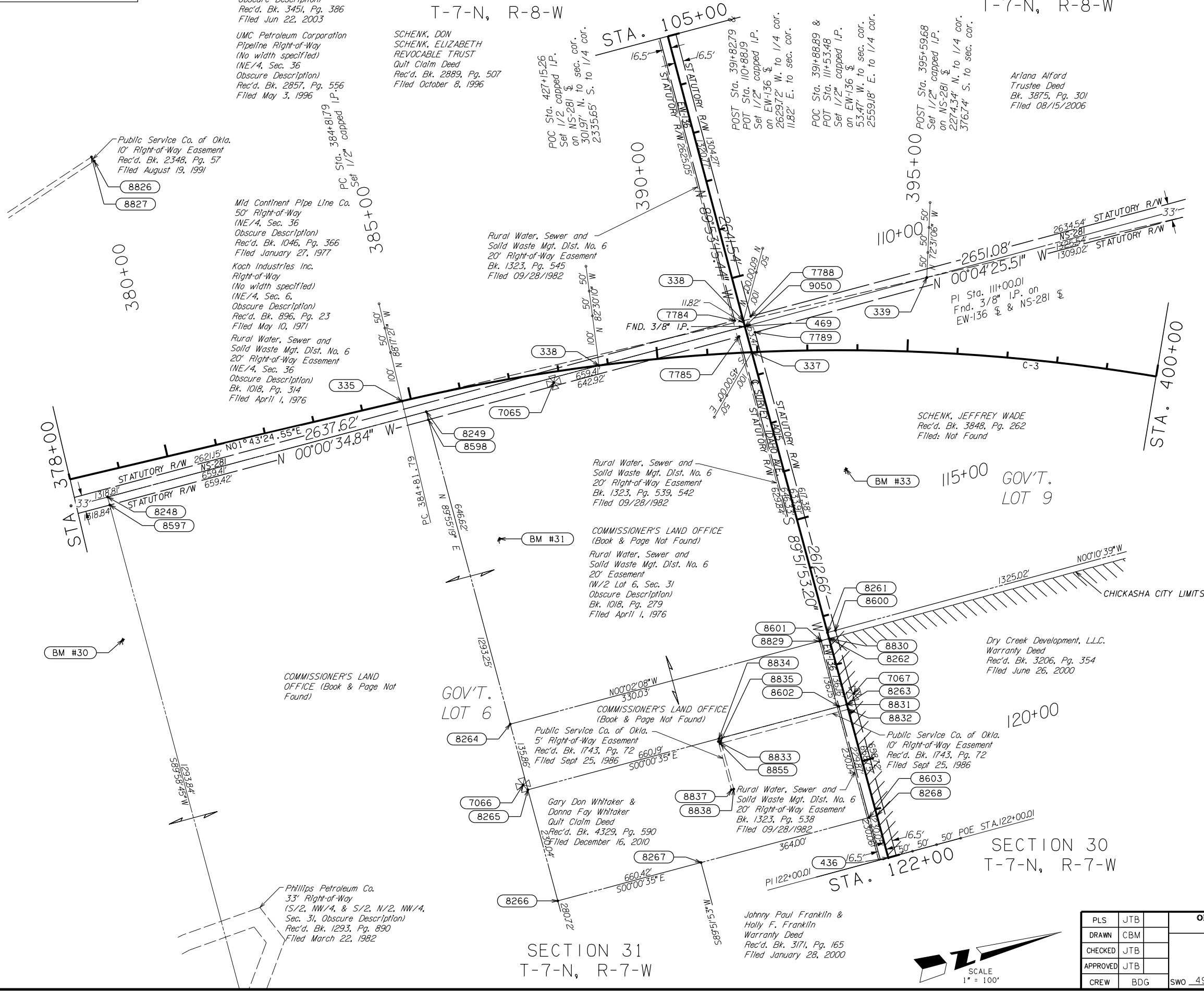
Phillips Petroleum Co.
33' Right-of-Way
(S/2, NW/4, & S/2, N/2, NW/4,
Sec. 31, Obscure Description)
Rec'd. Bk. 1293, Pg. 890
Filed March 22, 1982

SECTION 36
T-7-N, R-8-W

SECTION 25
T-7-N, R-8-W

SECTION 31
T-7-N, R-7-W

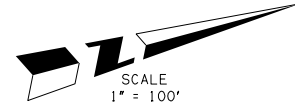
SECTION 30
T-7-N, R-7-W



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION			REVISIONS		DATE

CURVE #3
PI STA: 413+90.54
X= 1972208.0949
Y= 624794.3170
Δ= 74°34'44.76" RT
D= 1°30'00.00"
T= 2908.75'
L= 4971.94'
R= 3819.72'
E= 981.43'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 29 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925_(1)	PROJECT NO. 24428(12)	SHEET NO. 5029	

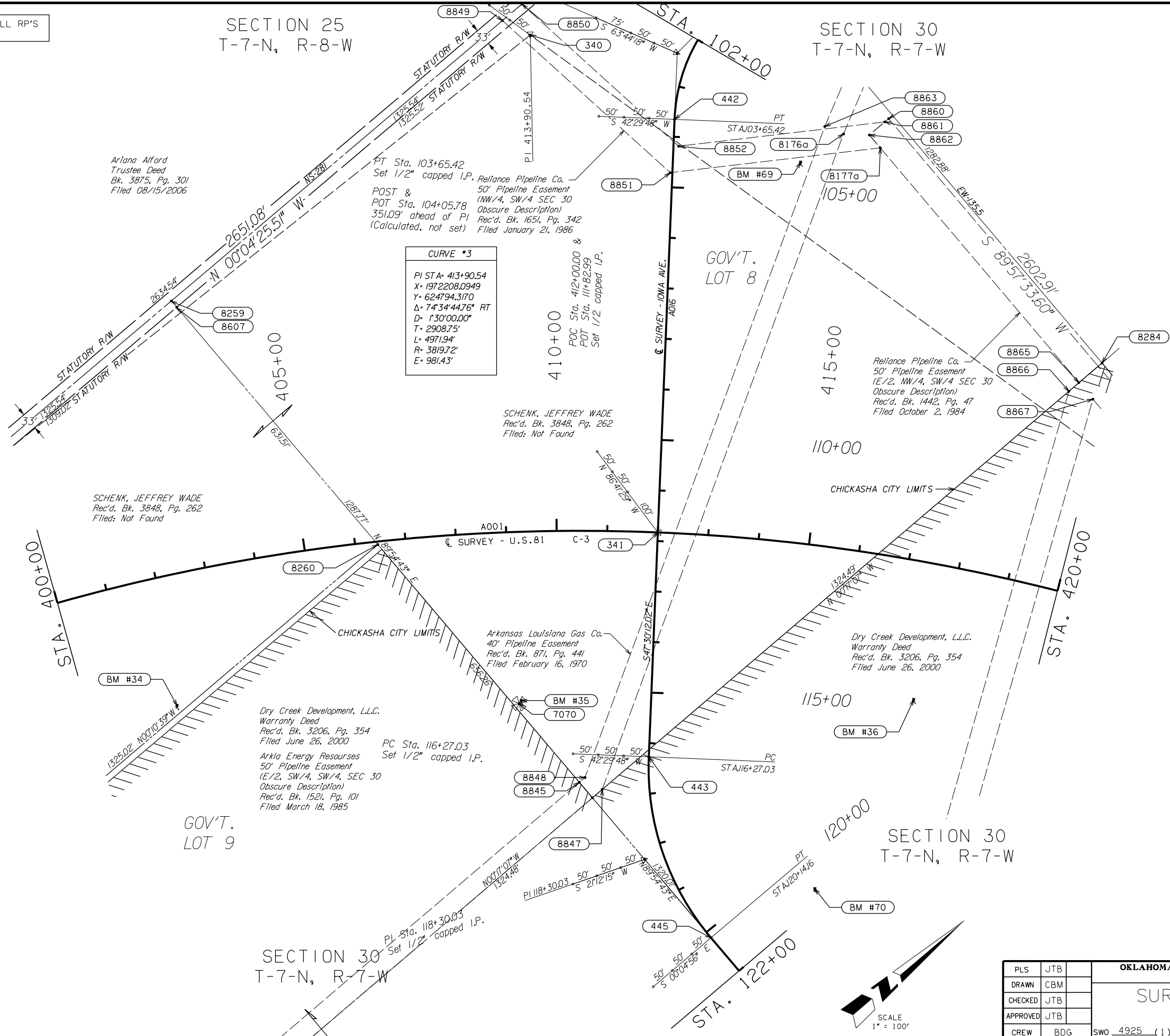


UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

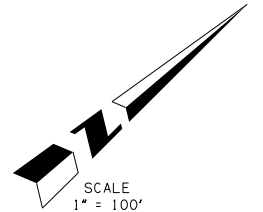
SECTION 25
T-7-N, R-8-W

SECTION 30
T-7-N, R-7-W



CURVE #3	
PI STA.	413+90.54
X	1972208.0949
Y	624794.3170
Δ	74°34'44.76" RT
D	1°30'00.00"
T	2908.75'
L	4971.94'
R	3819.72'
E	981.43'

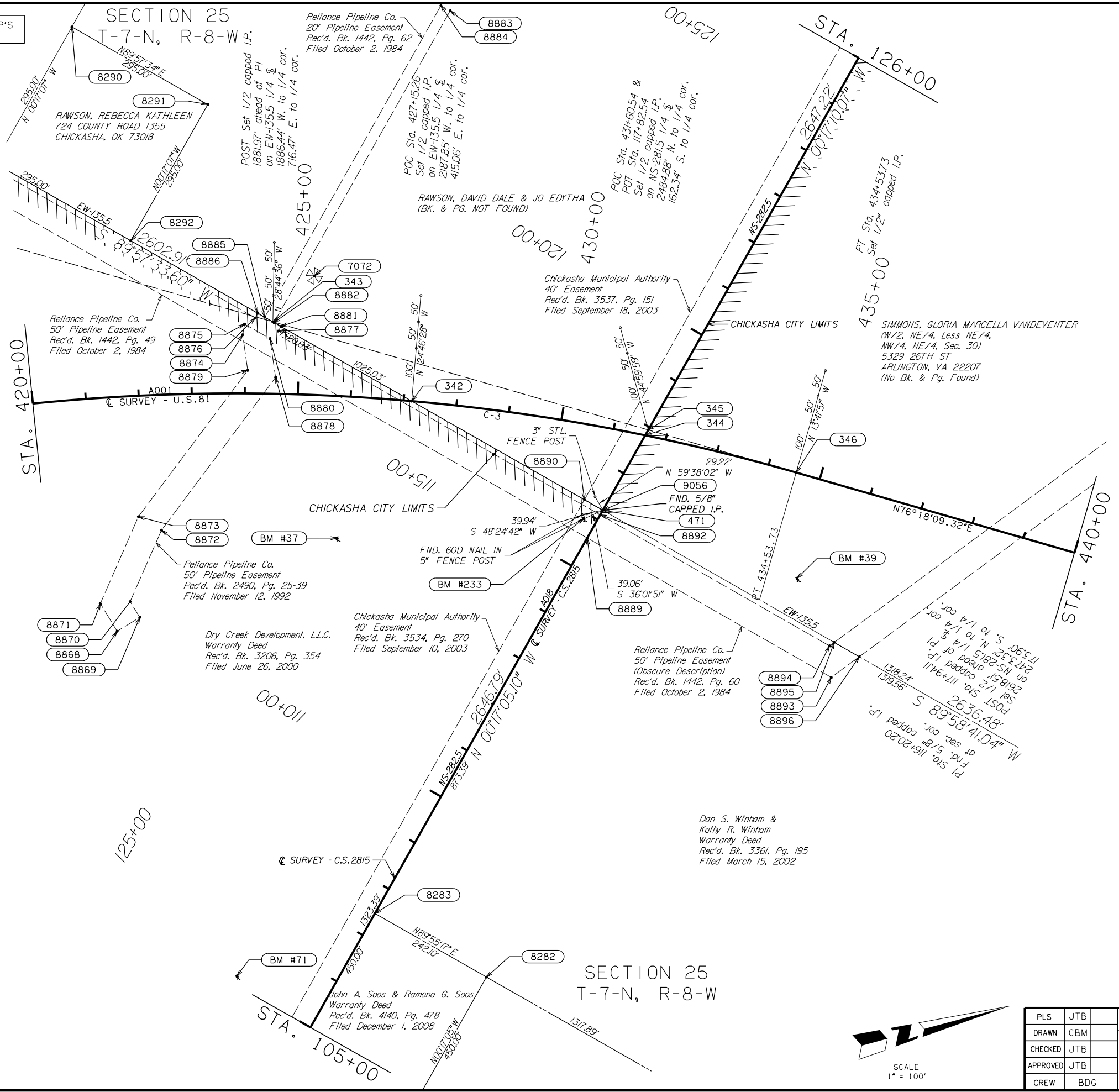
OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 30 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		



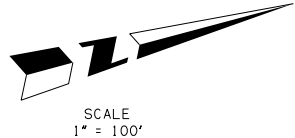
UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

CURVE #3	
PI STA	413+90.54
X	1972208.0949
Y	624794.3170
Δ	74°34'44.76" RT
D	1°30'00.00"
T	2908.75'
L	4971.94'
R	3819.72'
E	981.43'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 31 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S031			



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

SIMMONS, GLORIA MARCELLA VANDEVENTER
1W/2, NE/4, Less NE/4,
NW/4, NE/4, Sec. 30
5329 26TH ST
ARLINGTON, VA 22207
(No Bk. & Pg. Found)

Reliance Pipeline Co.
50' Pipeline Easement
(Obscure Description)
Rec'd. Bk. 1442, Pg. 58
Filed October 2, 1984

STA. 440+00
N76°18'09.32"E

445+00
450+00
455+00
460+00
465+00
470+00
475+00
480+00
485+00
490+00
495+00
500+00

SECTION 25
T-7-N, R-8-W

SECTION 29
T-7-N, R-7-W

CURVE #4
PI STA= 466+28.63
X= 1978118.7183
Y= 626234.8890
Δ= 52°20'18.72" LT
D= 140°57.84"
T= 167.316'
L= 3110.33'
R= 3404.93'
E= 388.88'

GOV'T.
LOT 10

SCHENK, DON
SCHENK, ELIZABETH
REVOCABLE TRUST
Quit Claim Deed
Rec'd. Bk. 2889, Pg. 507
Filed October 8, 1996
Govt. LOTS 6-7-10-II & E/2, NW/4,
LESS 22.93 AC OF ROW

HARDEN'S
ACRES

GOV'T.
LOT 6

GOV'T.
LOT 7

SECTION 29
T-7-N, R-7-W

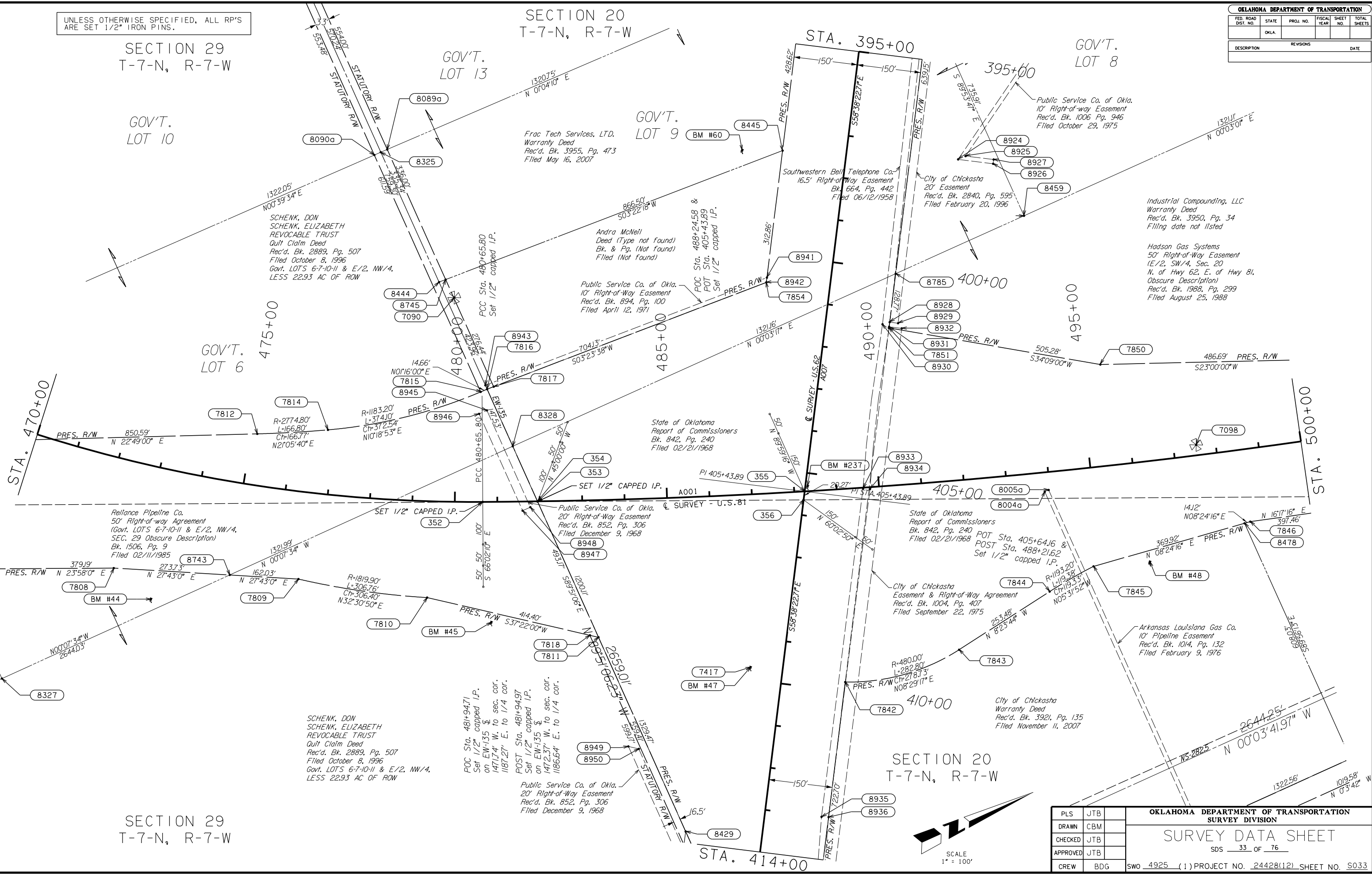
SECTION 25
T-7-N, R-8-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 32 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO_4925 (1)	PROJECT NO. 24428(12) SHEET NO. S032

SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

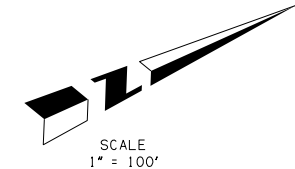


SECTION 29
T-7-N, R-7-W

SECTION 20
T-7-N, R-7-W

SECTION 20
T-7-N, R-7-W

SECTION 29
T-7-N, R-7-W



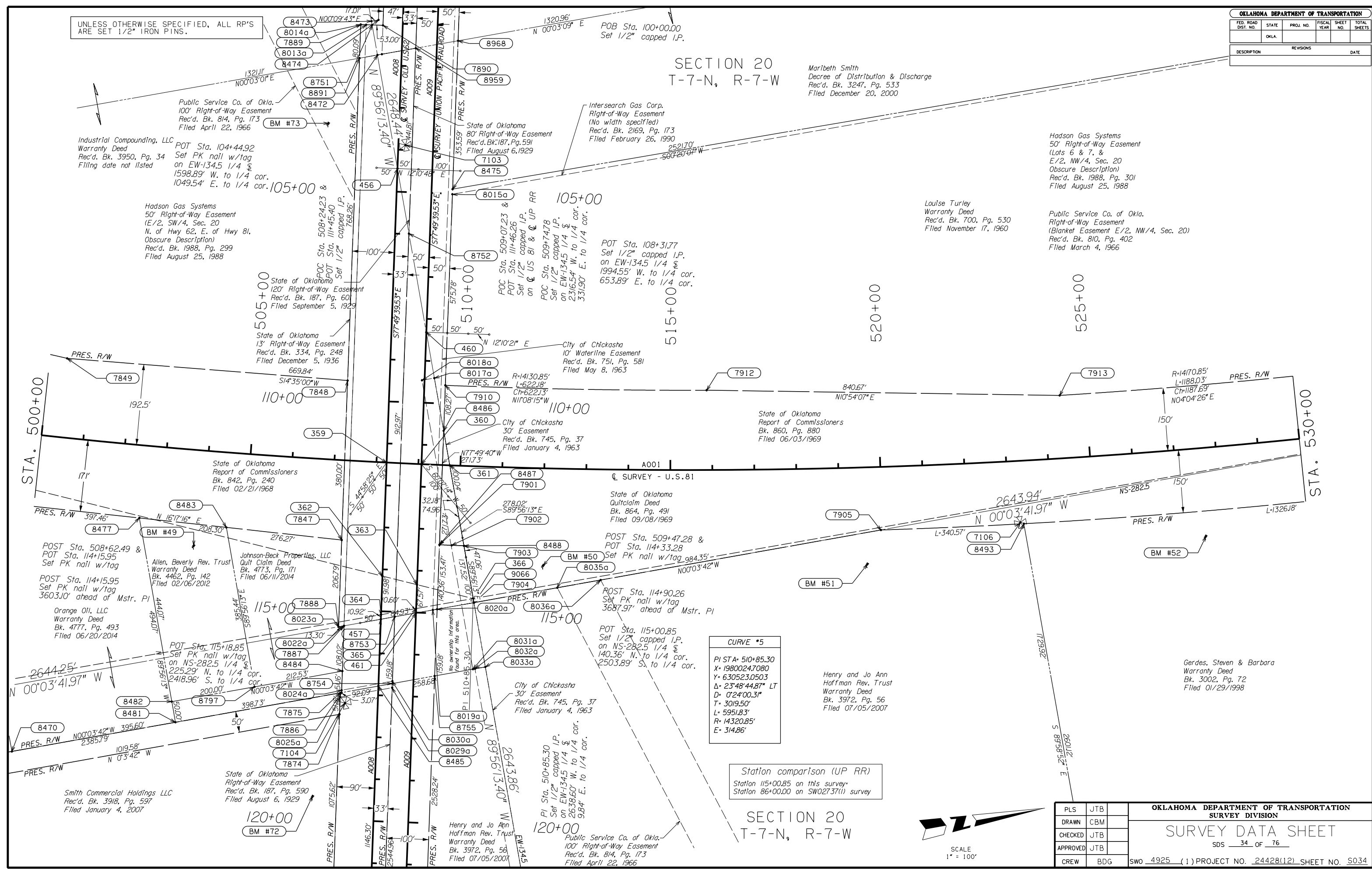
SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 33 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925	(1)	PROJECT NO. 24428(12)	SHEET NO. S033

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20 T-7-N, R-7-W

Maribeth Smith
Decree of Distribution & Discharge
Rec'd. Bk. 3247, Pg. 533
Filed December 20, 2000



Hadson Gas Systems
50' Right-of-Way Easement
(Lots 6 & 7, & E/2, NW/4, Sec. 20
Obscure Description)
Rec'd. Bk. 1988, Pg. 301
Filed August 25, 1988

Louise Turley
Warranty Deed
Rec'd. Bk. 700, Pg. 530
Filed November 17, 1960

Public Service Co. of Okla.
Right-of-Way Easement
(Blanket Easement E/2, NW/4, Sec. 20)
Rec'd. Bk. 810, Pg. 402
Filed March 4, 1966

Hadson Gas Systems
50' Right-of-Way Easement
(E/2, SW/4, Sec. 20
N. of Hwy 62, E. of Hwy 81,
Obscure Description)
Rec'd. Bk. 1988, Pg. 299
Filed August 25, 1988

Industrial Compounding, LLC
Warranty Deed
Rec'd. Bk. 3950, Pg. 34
Filing date not listed

Public Service Co. of Okla.
100' Right-of-Way Easement
Rec'd. Bk. 814, Pg. 173
Filed April 22, 1966

Intersearch Gas Corp.
Right-of-Way Easement
(No width specified)
Rec'd. Bk. 2169, Pg. 173
Filed February 26, 1990

State of Oklahoma
80' Right-of-Way Easement
Rec'd. Bk. 187, Pg. 591
Filed August 6, 1929

State of Oklahoma
120' Right-of-Way Easement
Rec'd. Bk. 187, Pg. 601
Filed September 5, 1929

State of Oklahoma
13' Right-of-Way Easement
Rec'd. Bk. 334, Pg. 248
Filed December 5, 1936

City of Chickasha
10' Waterline Easement
Rec'd. Bk. 751, Pg. 581
Filed May 8, 1963

State of Oklahoma
Report of Commissioners
Bk. 860, Pg. 880
Filed 06/03/1969

State of Oklahoma
Report of Commissioners
Bk. 842, Pg. 240
Filed 02/21/1968

State of Oklahoma
Quitclaim Deed
Bk. 864, Pg. 491
Filed 09/08/1969

POST Sta. 508+62.49 &
POT Sta. 114+15.95
Set PK nail w/tag

Allen, Beverly Rev. Trust
Warranty Deed
Bk. 4462, Pg. 142
Filed 02/06/2012

Johnson-Beck Properties, LLC
Quit Claim Deed
Bk. 4773, Pg. 171
Filed 06/11/2014

Orange Oil, LLC
Warranty Deed
Bk. 4777, Pg. 493
Filed 06/20/2014

POT Sta. 115+18.85
Set PK nail w/tag
on NS-282.5 1/4 S.
225.29' N. to 1/4 cor.
2418.96' S. to 1/4 cor.

POST Sta. 114+90.26
Set PK nail w/tag
3687.97' ahead of Mstr. PI

POT Sta. 115+00.85
Set 1/2" capped I.P.
on NS-282.5 1/4 S.
140.36' N. to 1/4 cor.
2503.89' S. to 1/4 cor.

CURVE #5
PI STA+ 510+85.30
X+ 1980024.7080
Y+ 630523.0503
Δ+ 23°48'44.87" LT
D+ 0°24'00.31"
T+ 3019.50'
L+ 5951.83'
R+ 14320.85'
E+ 314.86'

Henry and Jo Ann
Hoffman Rev. Trust
Warranty Deed
Bk. 3972, Pg. 56
Filed 07/05/2007

Gerdes, Steven & Barbara
Warranty Deed
Bk. 3002, Pg. 72
Filed 01/29/1998

Smith Commercial Holdings LLC
Rec'd. Bk. 3918, Pg. 597
Filed January 4, 2007

State of Oklahoma
Right-of-Way Easement
Rec'd. Bk. 187, Pg. 590
Filed August 6, 1929

Henry and Jo Ann
Hoffman Rev. Trust
Warranty Deed
Bk. 3972, Pg. 56
Filed 07/05/2007

City of Chickasha
30' Easement
Rec'd. Bk. 745, Pg. 37
Filed January 4, 1963

Public Service Co. of Okla.
100' Right-of-Way Easement
Rec'd. Bk. 814, Pg. 173
Filed April 22, 1966

Station comparison (UP RR)
Station 115+00.85 on this survey
Station 86+00.00 on SW02737(1) survey

SECTION 20 T-7-N, R-7-W



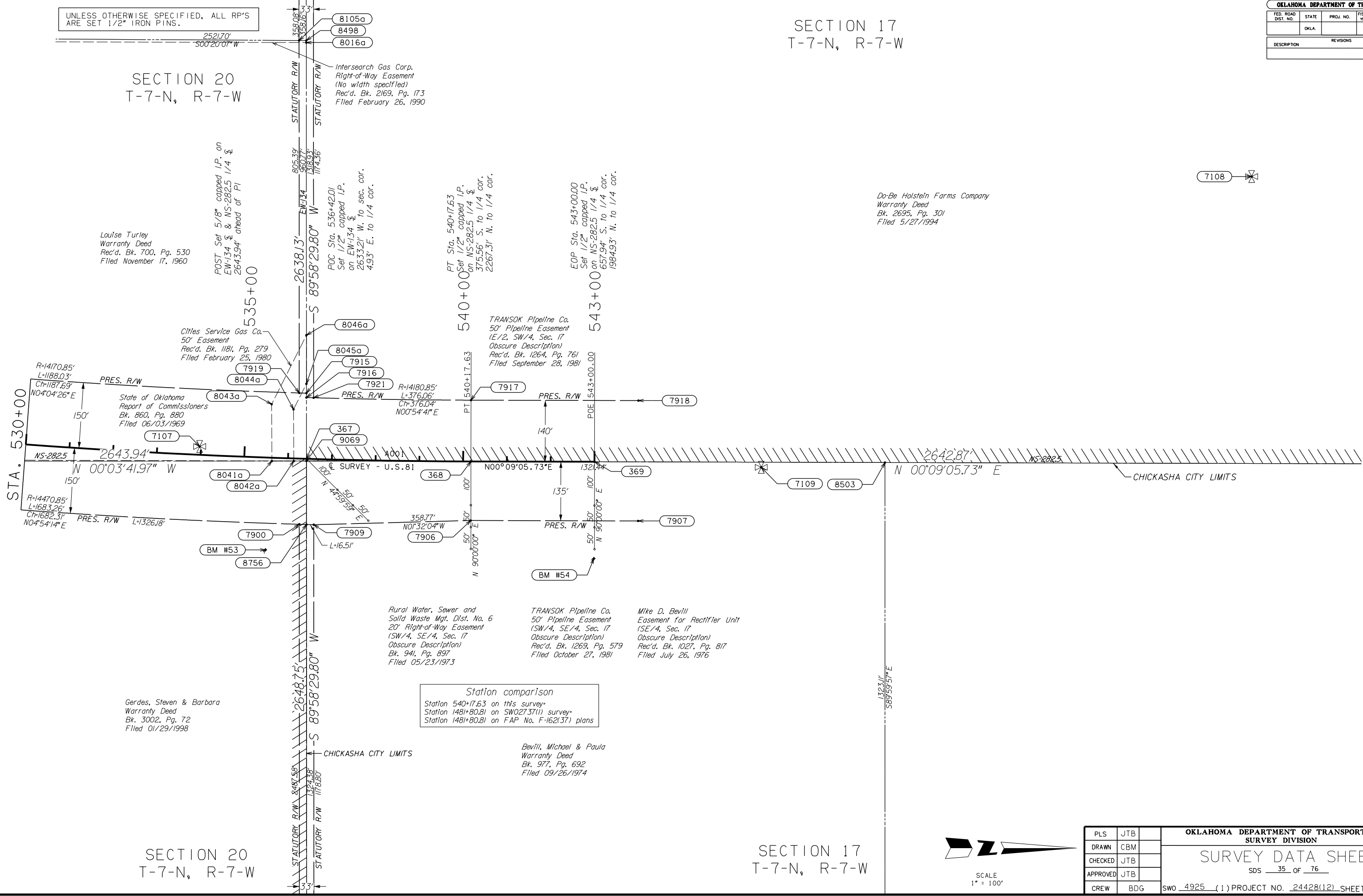
SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 34 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S034			

SECTION 17
T-7-N, R-7-W

SECTION 20
T-7-N, R-7-W

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.



Do-Be Holstein Farms Company
Warranty Deed
Bk. 2695, Pg. 301
Filed 5/27/1994

7108

Louise Turley
Warranty Deed
Rec'd. Bk. 700, Pg. 530
Filed November 17, 1960

Cities Service Gas Co.
50' Easement
Rec'd. Bk. 1181, Pg. 279
Filed February 25, 1980

State of Oklahoma
Report of Commissioners
Bk. 860, Pg. 880
Filed 06/03/1969

TRANSOK Pipeline Co.
50' Pipeline Easement
(E/2, SW/4, Sec. 17)
Obscure Description
Rec'd. Bk. 1264, Pg. 761
Filed September 28, 1981

Rural Water, Sewer and
Solid Waste Mgt. Dist. No. 6
20' Right-of-Way Easement
(SW/4, SE/4, Sec. 17)
Obscure Description
Bk. 941, Pg. 897
Filed 05/23/1973

TRANSOK Pipeline Co.
50' Pipeline Easement
(SW/4, SE/4, Sec. 17)
Obscure Description
Rec'd. Bk. 1269, Pg. 579
Filed October 27, 1981

Mike D. Beville
Easement for Rectifier Unit
(SE/4, Sec. 17)
Obscure Description
Rec'd. Bk. 1027, Pg. 817
Filed July 26, 1976

Station comparison
Station 540+17.63 on this survey
Station 1481+80.81 on SWQ2737(1) survey
Station 1481+80.81 on FAP No. F-162(37) plans

Beville, Michael & Paula
Warranty Deed
Bk. 977, Pg. 692
Filed 09/26/1974

Gerdas, Steven & Barbara
Warranty Deed
Bk. 3002, Pg. 72
Filed 01/29/1998

SECTION 20
T-7-N, R-7-W

SECTION 17
T-7-N, R-7-W



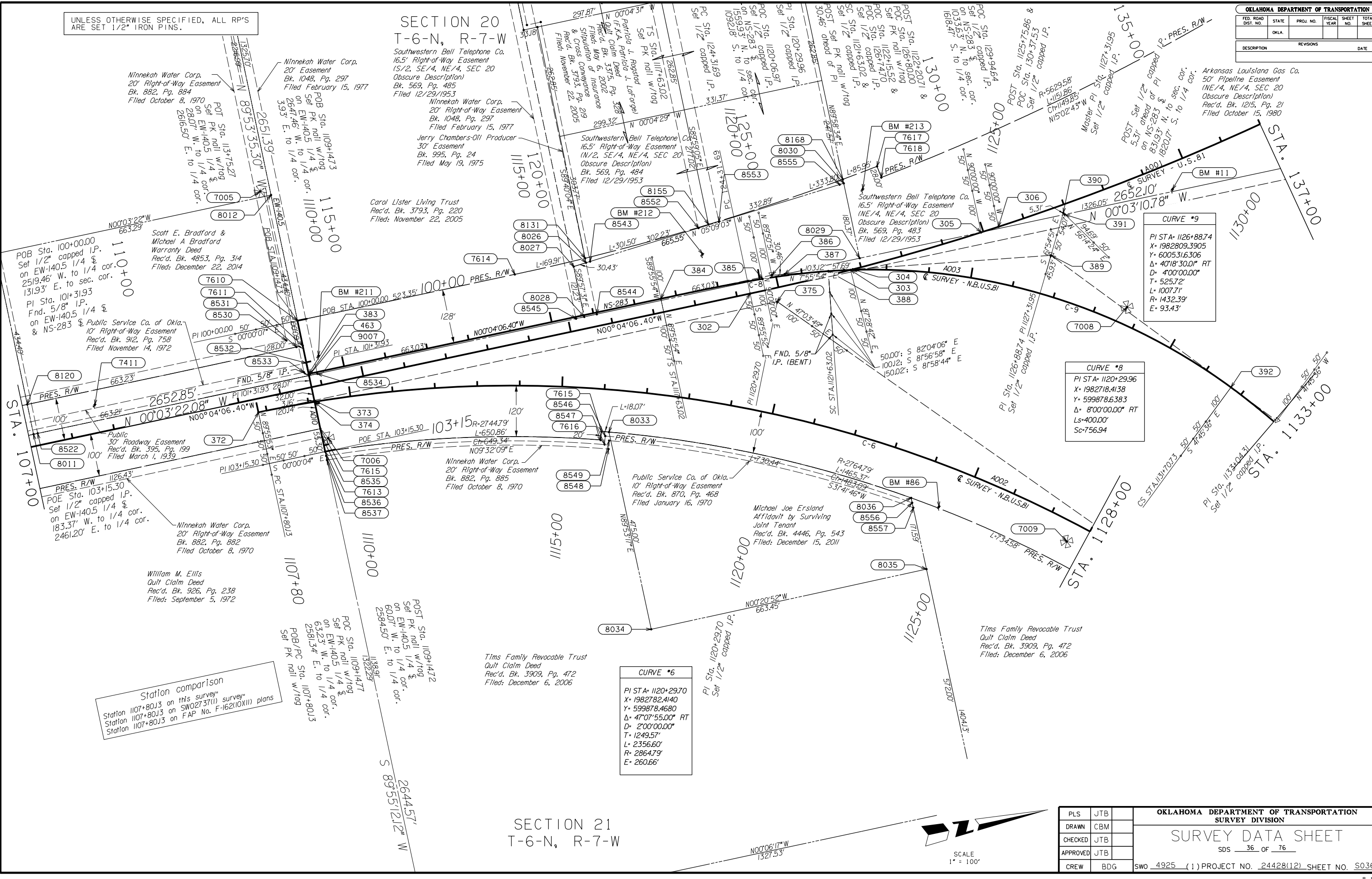
SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 35 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		

SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S035

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20
T-6-N, R-7-W



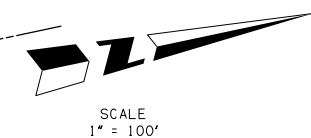
Station comparison
Station 1107+8013 on this survey
Station 1107+8013 on SW02737(1) survey
Station 1107+8013 on FAP No. F-162(10X11) plans

CURVE #6
PI STA= 1120+2970
X= 1982782.4140
Y= 599878.4680
Δ= 47°07'55.00" RT
D= 2'00'00.00"
T= 1249.57'
L= 2356.60'
R= 2864.79'
E= 260.66'

CURVE #8
PI STA= 1120+2996
X= 1982718.4138
Y= 599878.6383
Δ= 8'00'00.00" RT
Ls= 400.00'
Sc= 756.94

CURVE #9
PI STA= 1126+88.74
X= 1982809.3905
Y= 600531.6306
Δ= 40'18'30.00" RT
D= 4'00'00.00"
T= 525.72'
L= 1007.71'
R= 1432.39'
E= 93.43'

SECTION 21
T-6-N, R-7-W

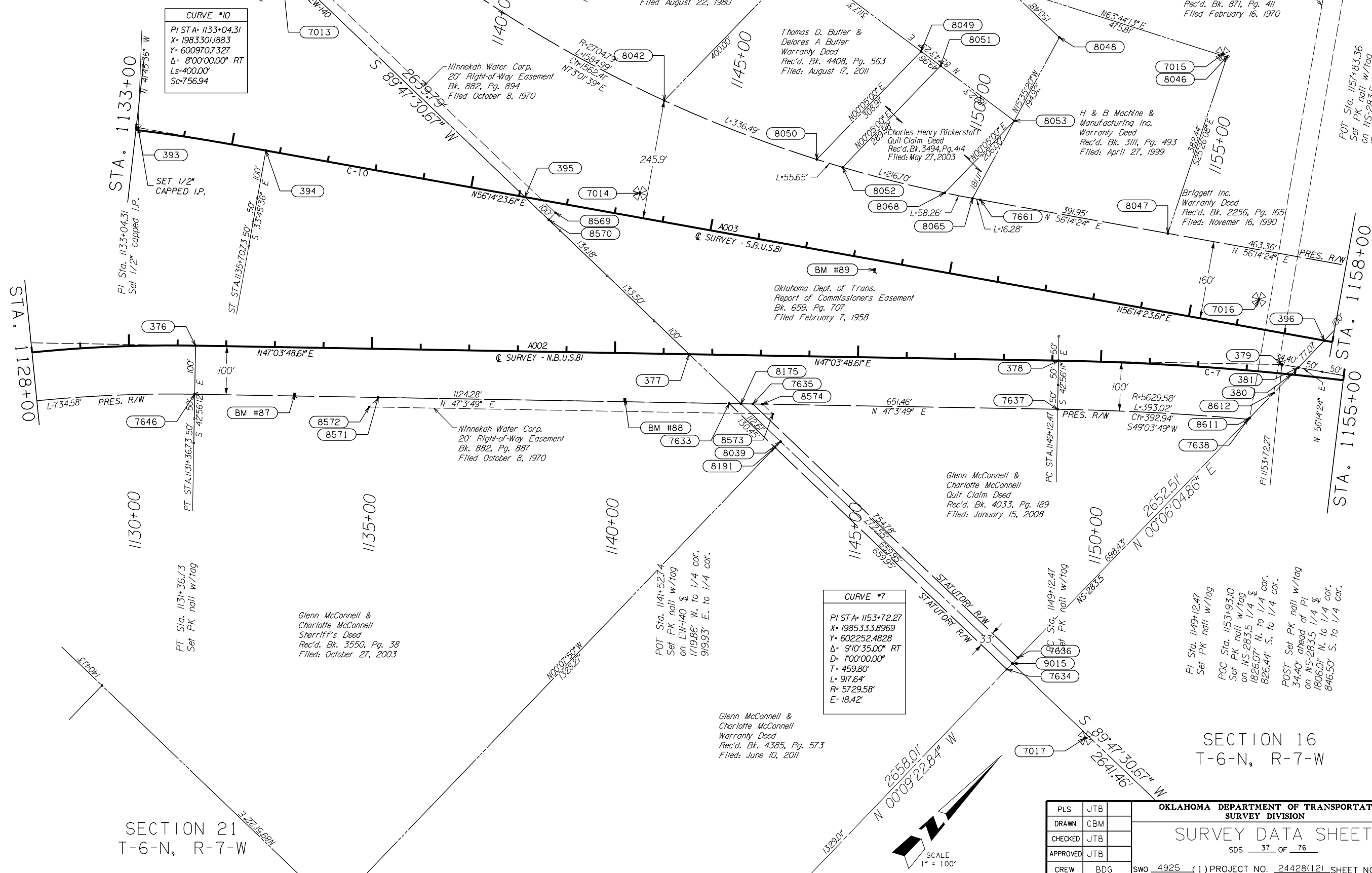


UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 21
T-6-N, R-7-W

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



SECTION 21
T-6-N, R-7-W

SECTION 16
T-6-N, R-7-W

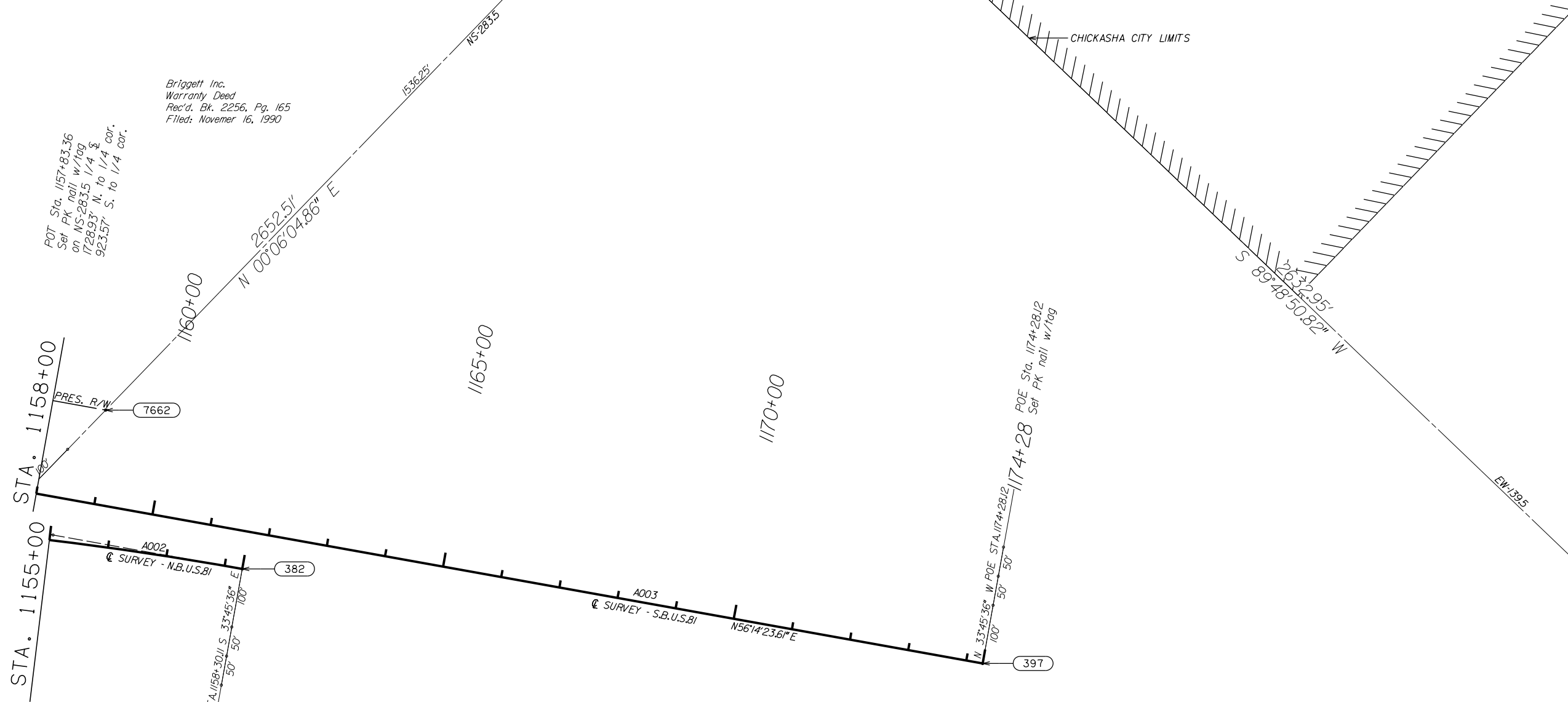
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 37 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925	(1)	PROJECT NO. 24428(12)	SHEET NO. S037

SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

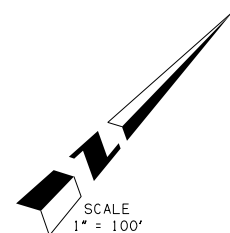


Briggett Inc.
Warranty Deed
Rec'd. Bk. 2256, Pg. 165
Filed: November 16, 1990

POT Sta. 1157+83.36
Set PK nail w/tag
on NS-283.5 1/4 §
1728.93' N. to 1/4 cor.
923.57' S. to 1/4 cor.

POST Set PK nail w/tag
34.40' ahead of PI
on NS-283.5 1/4 §
1806.01' N. to 1/4 cor.
846.50' S. to 1/4 cor.

POE/PT Sta. 1158+30.11
Set PK nail w/tag



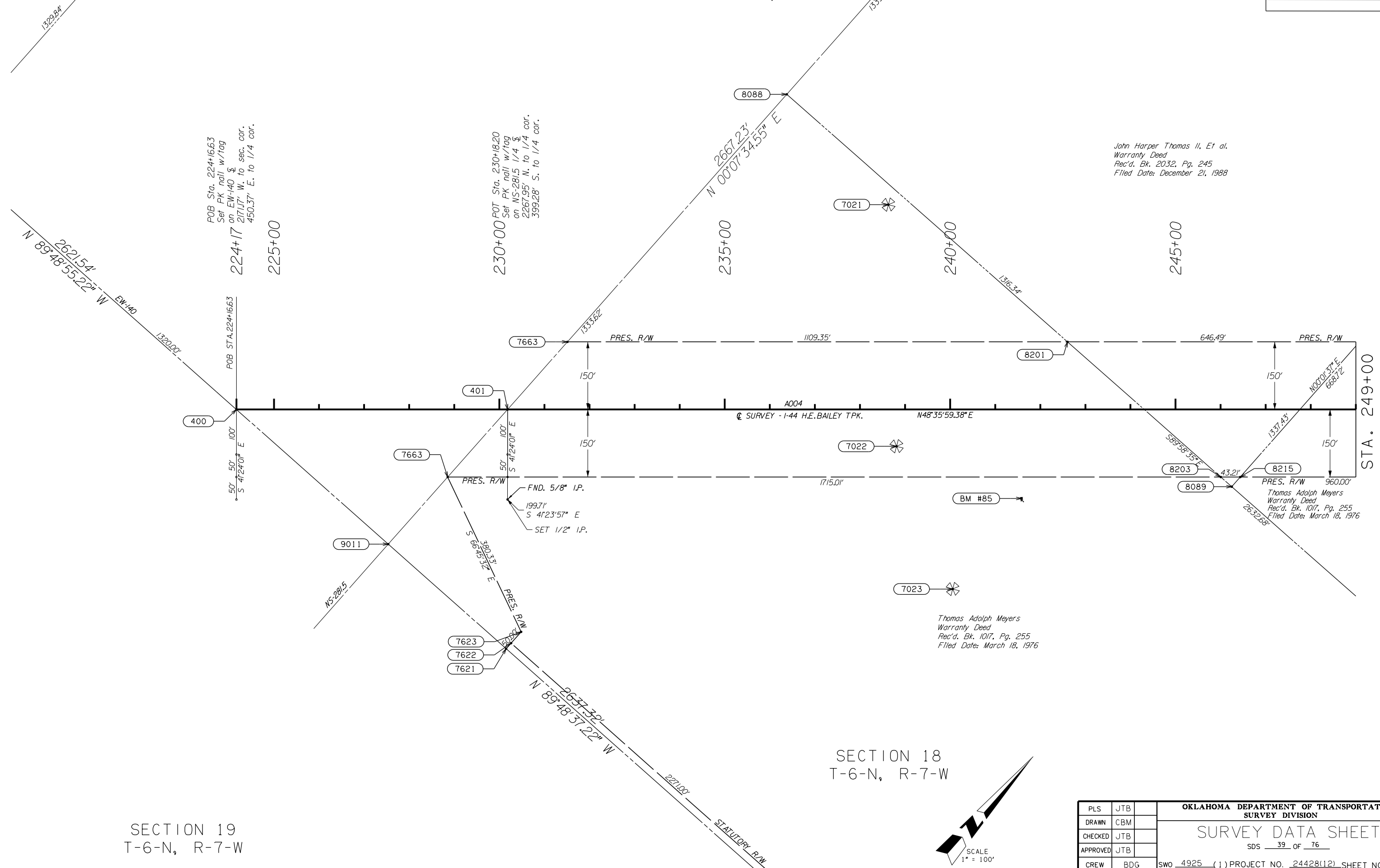
PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
			SURVEY DATA SHEET
			SDS 38 OF 76
			SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. 5038

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

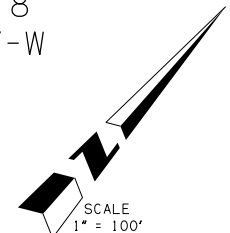
SECTION 18
T-6-N, R-7-W

John Harper Thomas II, Et al.
Warranty Deed
Rec'd. Bk. 2032, Pg. 245
Filed Date: December 21, 1988



SECTION 19
T-6-N, R-7-W

SECTION 18
T-6-N, R-7-W

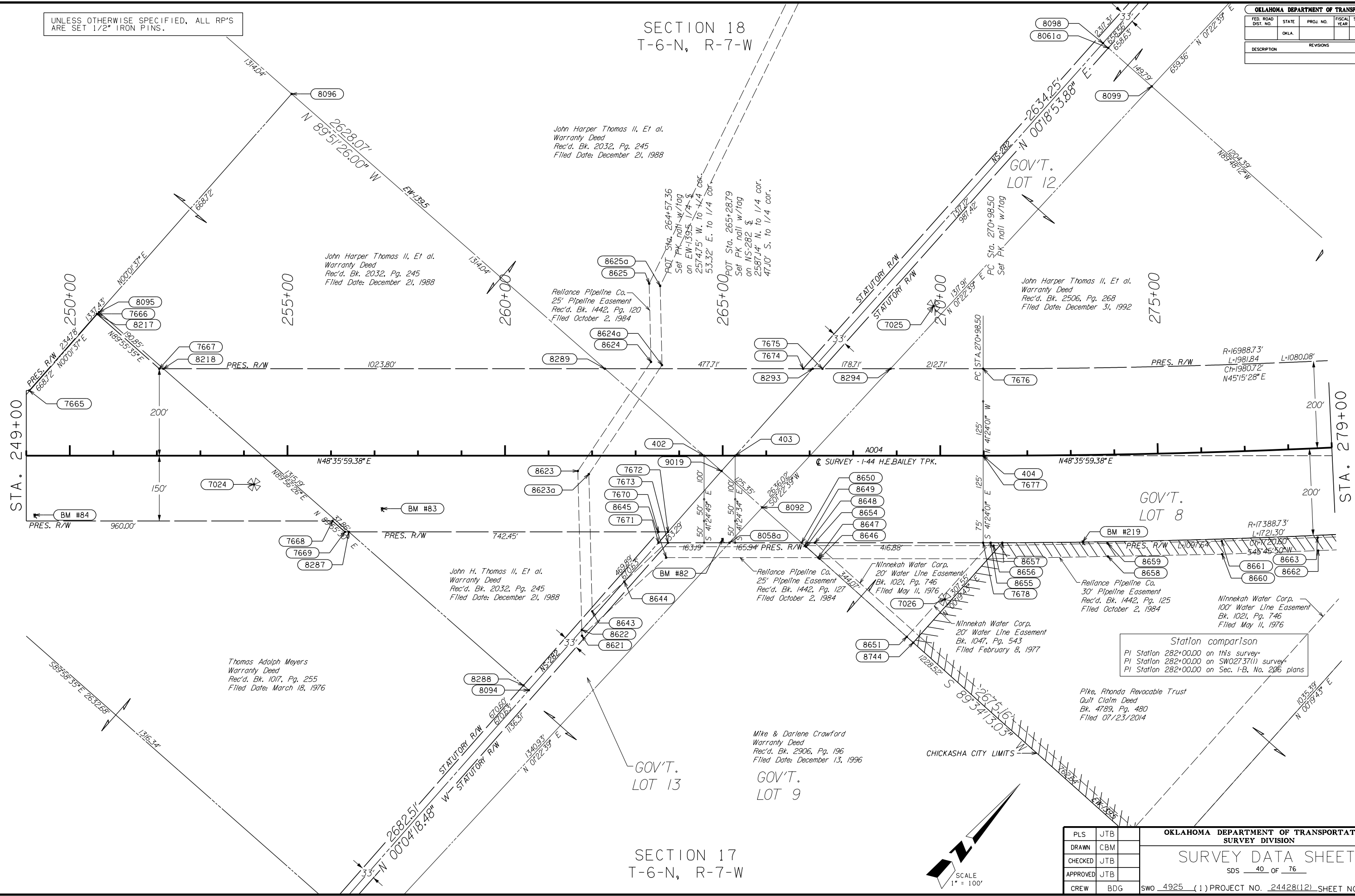


OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 39 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO 4925 (1)	PROJECT NO. 24428(12)	SHEET NO. 5039	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 18
T-6-N, R-7-W

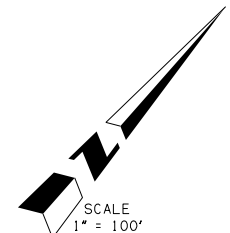
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



SECTION 17
T-6-N, R-7-W

Station comparison
 PI Station 282+00.00 on this survey
 PI Station 282+00.00 on SW02737(1) survey
 PI Station 282+00.00 on Sec. 1-B, No. 206 plans

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 40 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925_(1)	PROJECT NO. 24428(12)	SHEET NO. S040	

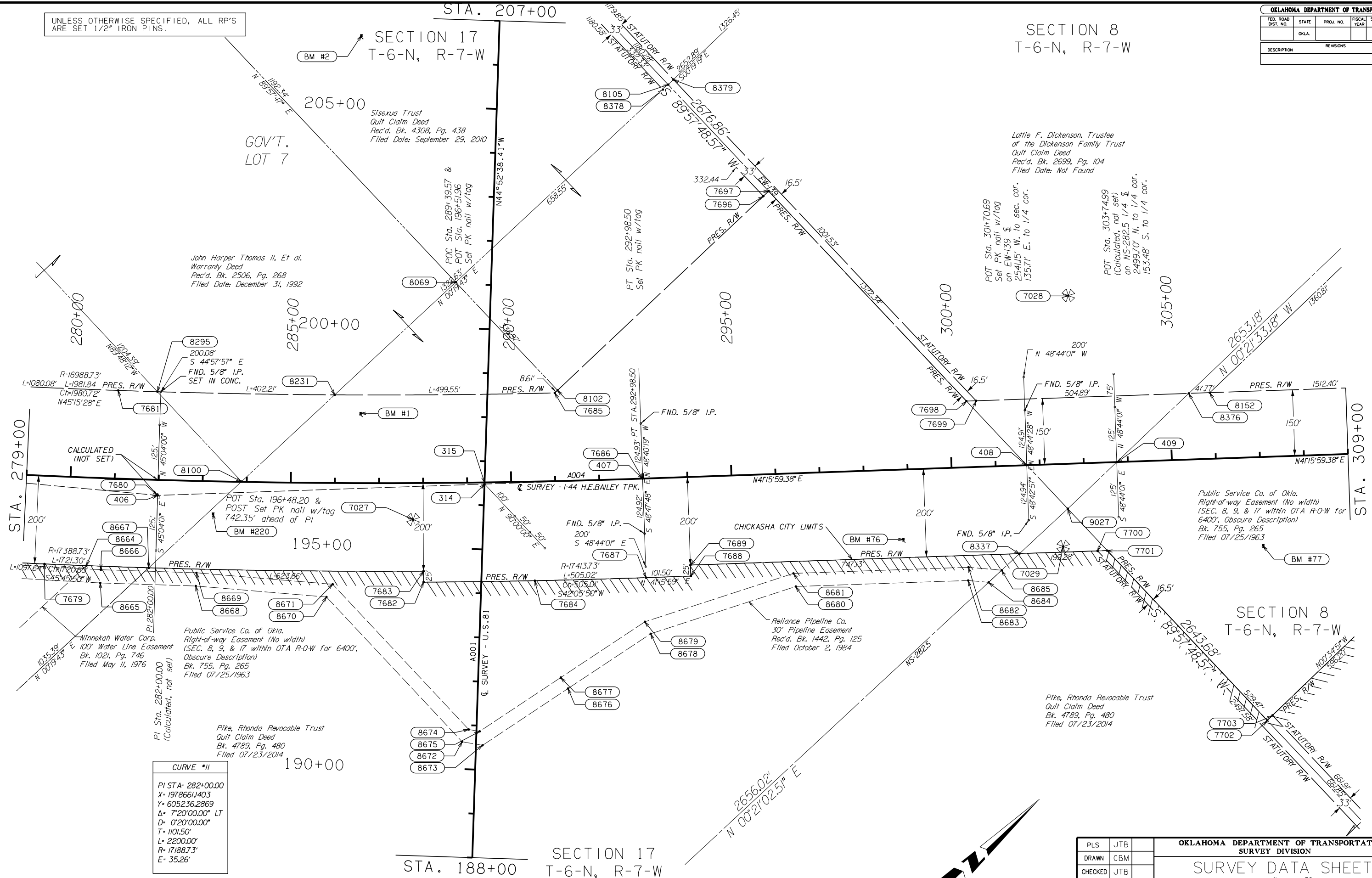


OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

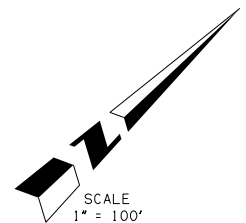
SECTION 8
T-6-N, R-7-W

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 17
T-6-N, R-7-W



CURVE #11	
PI STA	282+00.00
X	1978661.403
Y	605236.2869
Δ	7°20'00.00" LT
D	0°20'00.00"
T	1101.50'
L	2200.00'
R	17188.73'
E	35.26'

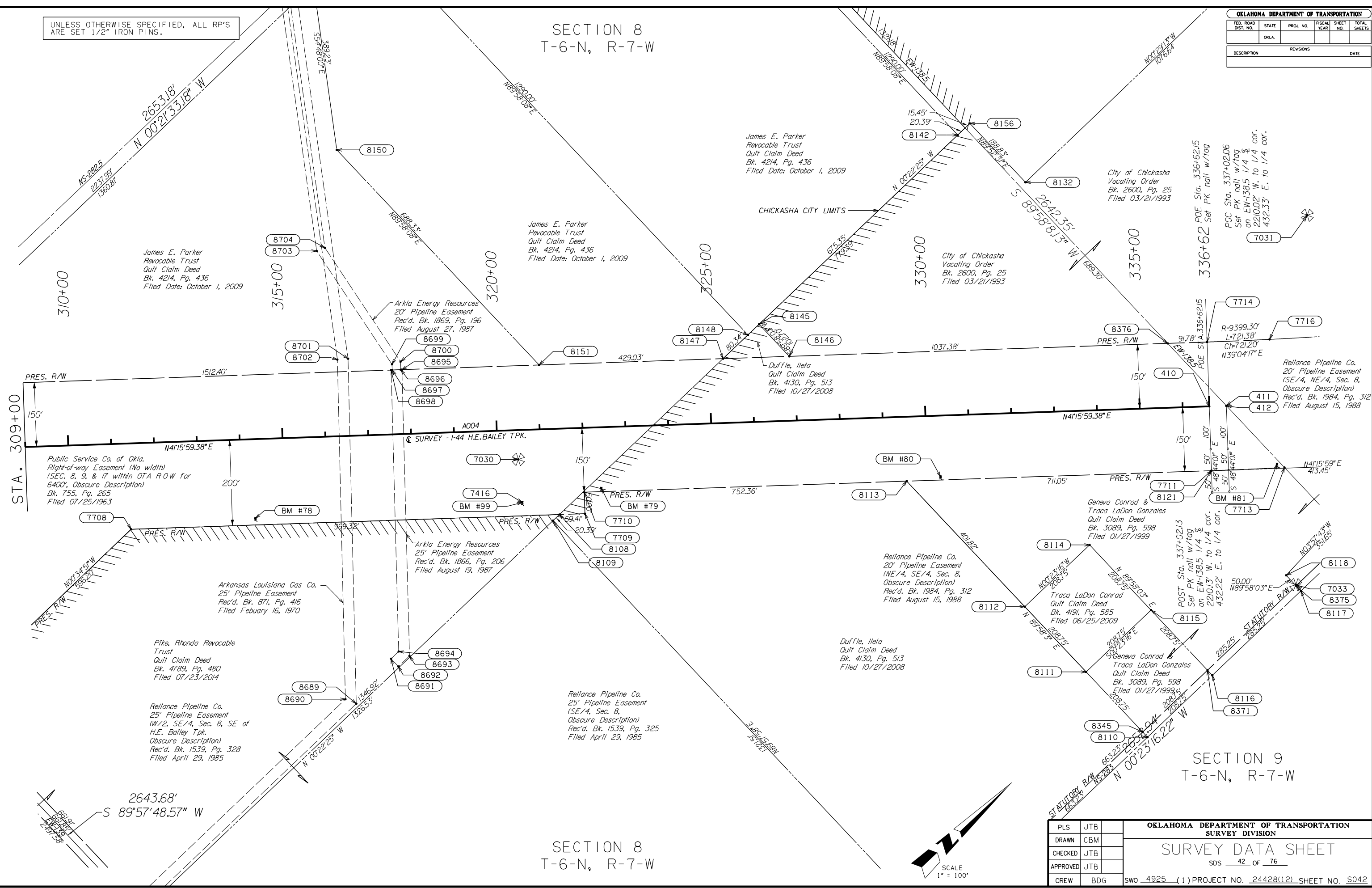


OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 41 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925	(1)	PROJECT NO. 24428(12)	SHEET NO. S041

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 8
T-6-N, R-7-W

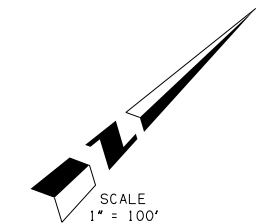
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION					DATE



STA. 309+00

SECTION 8
T-6-N, R-7-W

SECTION 9
T-6-N, R-7-W



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 42 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S042			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION		REVISIONS		DATE		

Station comparison
 Station 162+81.0 on this survey
 Station 162+81.0 on SWQ2737(1) survey
 Station 162+81.0 on FAS No. 219(1) plans

CURVE #14
 PI STA+ 168+44.01
 X= 1974634.2886
 Y= 608636.8678
 Δ= 22°13'59.66" RT
 D= 2'00"00.00"
 T= 562.91'
 L= 1111.66'
 R= 2864.79'
 E= 54.78'

CURVE #15
 PI STA+ 182+67.67
 X= 1975369.1550
 Y= 609872.7050
 Δ= 13°11'00.00" LT
 D= 2'00"00.00"
 T= 331.05'
 L= 659.17'
 R= 2864.79'
 E= 19.06'

CURVE #13
 PI STA+ 119+79.31
 X= 1975451.8275
 Y= 609835.6453
 Δ= 13°11'00.00" LT
 D= 1'59"59.64"
 T= 331.06'
 L= 659.20'
 R= 2864.93'
 E= 19.06'

CURVE #12
 PI STA+ 105+62.94
 X= 1974720.6841
 Y= 608606.0692
 Δ= 22°14'00.00" RT
 D= 1'59"59.64"
 T= 562.94'
 L= 1111.72'
 R= 2864.93'
 E= 54.78'

Bertha B. Thomas
 Warranty Deed
 Rec'd. Bk. 2831, Pg. 482
 Filed January 4, 1996

SECTION 7
 T-6-N, R-7-W

John H. Thomas II, Etal
 Warranty Deed
 Rec'd. Bk. 2266, Pg. 184
 Filed December 26, 1990

Chester Stanton Thomas, Etal
 Warranty Deed
 Rec'd. Bk. 2506, Pg. 270
 Filed December 31, 1992

Reliance Pipeline Co.
 25' Pipeline Easement
 Rec'd. Bk. 1534, Pg. 219
 Filed April 17, 1985

Norge Water and Sewer Co.
 20' Easement
 Bk. 1020, Pg. 429
 Filed April 23, 1976

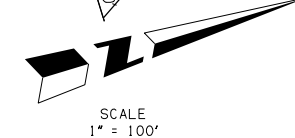
Chester Stanton Thomas, Etal
 Warranty Deed
 Rec'd. Bk. 2506, Pg. 270
 Filed December 31, 1992

Chester Stanton Thomas, Etal
 Warranty Deed
 Rec'd. Bk. 2506, Pg. 270
 Filed December 31, 1992

Public Service Co. of Okla.
 Right-of-Way Easement
 (No width specified)
 (SW/4, NE/4, Sec. 7
 Obscure Description)
 Bk. 818, Pg. 691
 Filed August 8, 1966

Southwestern Light & Power Co.
 Right-of-Way (No width specified)
 Bk. 259, Pg. 76, 86, 90
 Filed March 15, 1927

SECTION 7
 T-9-N, R-7-W



PLS	JTB
DRAWN	CBM
CHECKED	JTB
APPROVED	JTB
CREW	BDG

OKLAHOMA DEPARTMENT OF TRANSPORTATION	
SURVEY DIVISION	
SURVEY DATA SHEET	
SDS 43 OF 76	
SWO 4925 (1)	PROJECT NO. 24428(12) SHEET NO. S043

SECTION 6
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 7
T-6-N, R-7-W

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

Public Service Co. of Okla.
200' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Perdue Housing Ind. Inc.
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Public Service Co. of Okla.
15' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

Public Service Co. of Okla.
15' Utility Easement as per
Warranty Deed
Rec'd. Bk. 930, Pg. 885
Filed November 14, 1972

POE Sta. 205+14.96
Set PK nail w/tag
on EW-138 &
1275.99' W. to 1/4 cor.
1364.94' E. to 1/4 cor.

Norge Water and Sewer Co. Inc.
20' Easement
Bk. 1020, Pg. 429
Filed April 23, 1976

HILLSBORO
HEIGHTS
REVISIED ADDITION

Station comparison
Station 142+65.97 on this survey
Station 7106+52.42 on SW02737(1) survey

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

Southwestern Light & Power Co.
Right-of-Way (No width specified)
Bk. 259, Pg. 76, 86, 90
Filed March 15, 1927

SECTION 7
T-6-N, R-7-W

SECTION 6
T-6-N, R-7-W

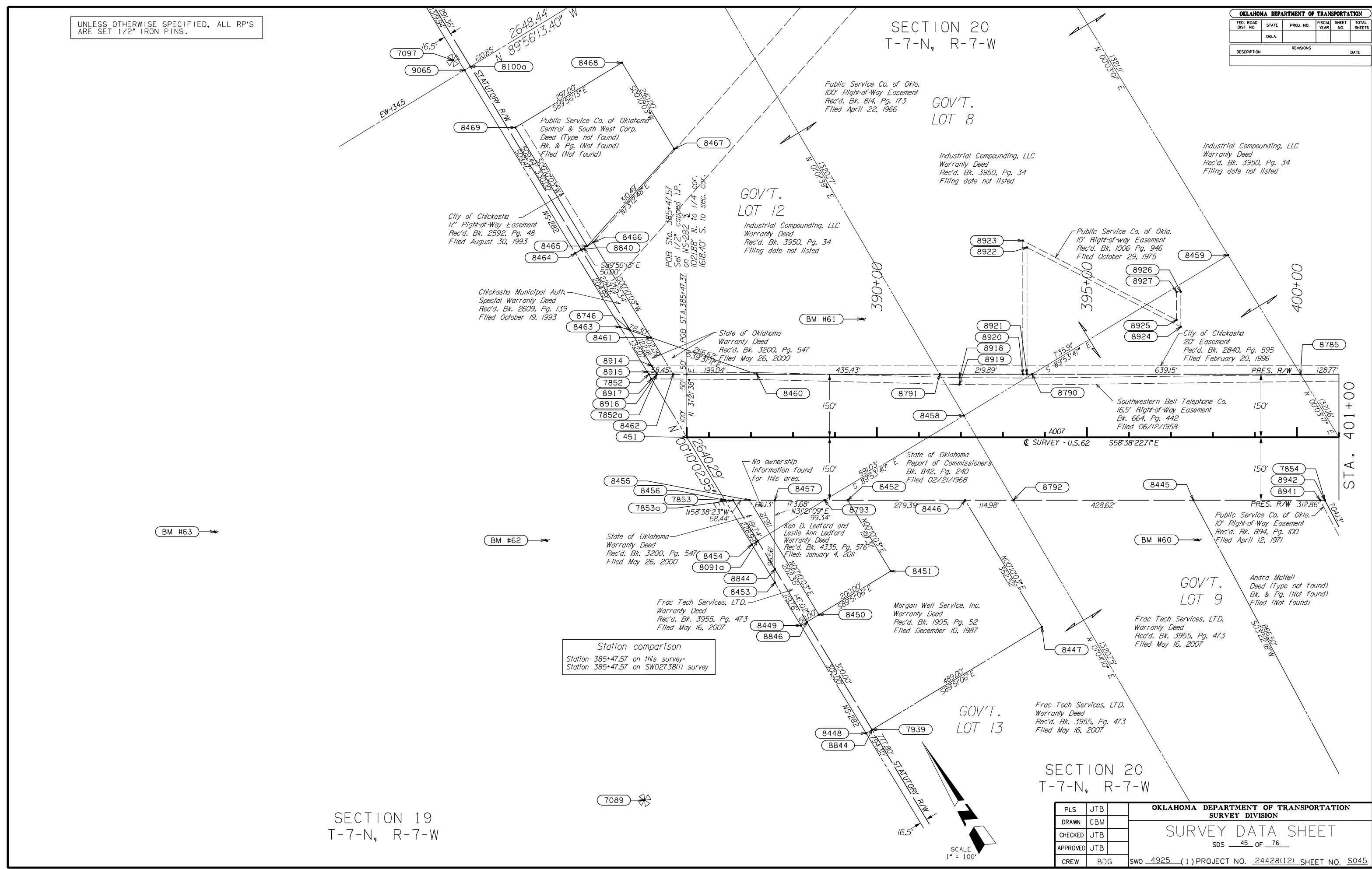


SCALE
1" = 100'

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BDG	
SURVEY DATA SHEET		SDS 44 OF 76
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S044		

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



Station comparison
 Station 385+47.57 on this survey
 Station 385+47.57 on SW02738(1) survey

SECTION 19
 T-7-N, R-7-W

SECTION 20
 T-7-N, R-7-W

SECTION 20
 T-7-N, R-7-W

SCALE
 1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 45 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925_(1)	PROJECT NO. 24428(12)	SHEET NO. S045	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20
T-7-N, R-7-W

Lot 1

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
REVISIONS					
DESCRIPTION	REVISIONS	DATE			

Ride Control, LLC
Warranty Deed
Bk. 4195, Pg. 289
Filed 07/09/2009

Public
25' Roadway Easement
Rec'd. Bk. 739, Pg. 672
Filed September 26, 1962

H & P Construction, Inc.
10' Sewage Easement
Rec'd. Bk. 3325, Pg. 196
Filed October 30, 2001

Public Service Company of Oklahoma
Warranty Deed
Bk. 1308, Pg. 718
Filed 06/21/1982

Public
40' Roadway Easement
Rec'd. Bk. 944, Pg. 627
Filed July 2, 1973

Public Service Co. of Okla.
20' Right-of-Way Easement
Rec'd. Bk. 852, Pg. 306
Filed December 9, 1968

Grady County
40' Roadway Easement
Rec'd. Bk. 1040, Pg. 612
Filed December 9, 1976

Public Service Co. of Okla.
10' Right-of-Way Easement
Rec'd. Bk. 1097, Pg. 846
Filed May 25, 1978

Johnson-Beck Properties
Quit Claim Deed
Rec'd. Bk. 4773, Pg. 171
Filed June 11, 2014

495+00

405+00

410+00

415+00

420+00

425+00

430+00

STA. 401+00

490+00

410+00

415+00

420+00

425+00

430+00

STA. 431+00

GOV'T. LOT 9

GOV'T. LOT 6

SECTION 29
T-7-N, R-7-W

SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 46 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925	(1)	PROJECT NO. 24428(12)	SHEET NO. S046

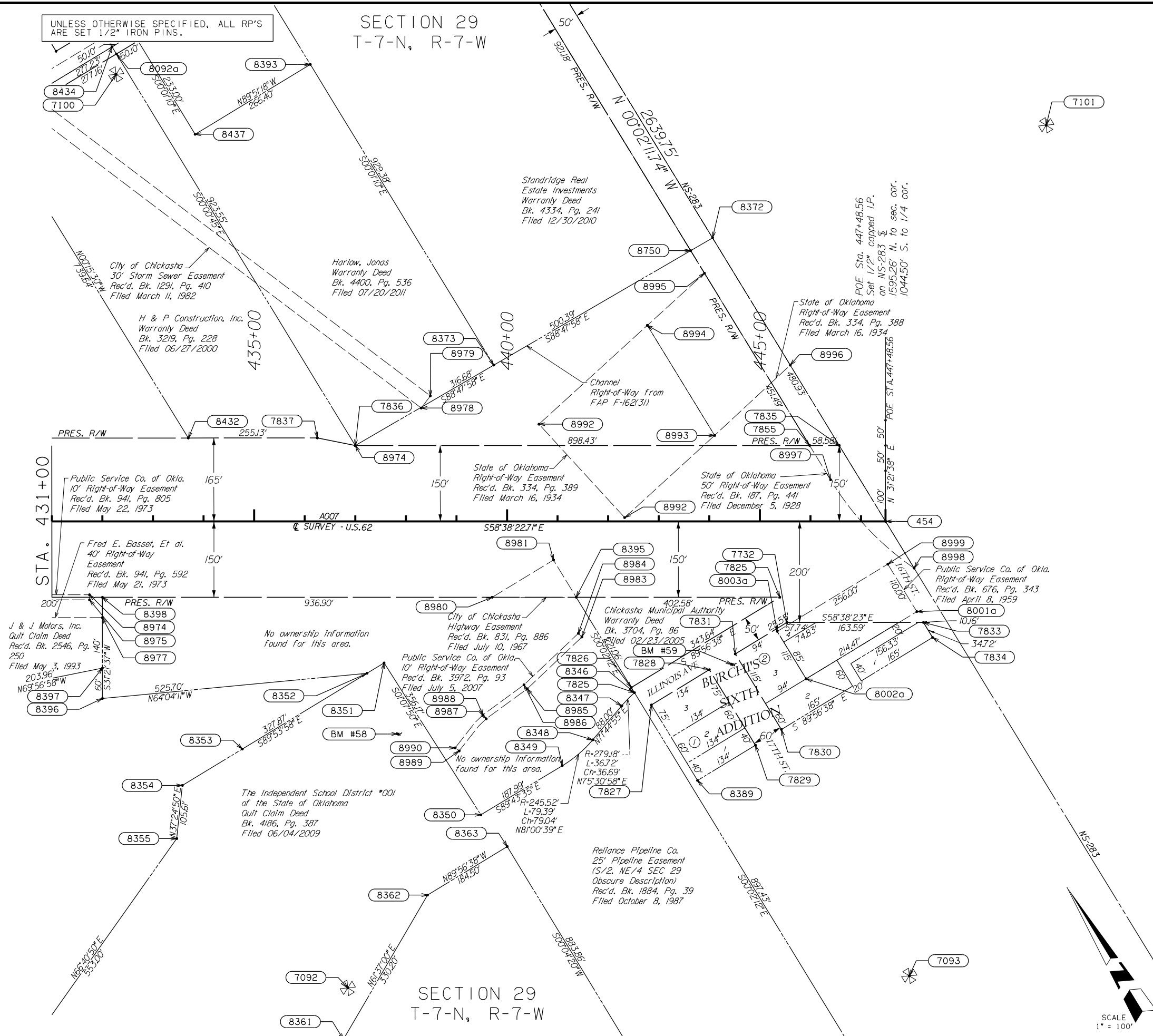
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		DATE

SECTION 29
T-7-N, R-7-W

SECTION 28
T-7-N, R-7-W

SECTION 29
T-7-N, R-7-W

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 47 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG	SWO_4925_(1)	PROJECT NO. 24428(12)	SHEET NO. S047	

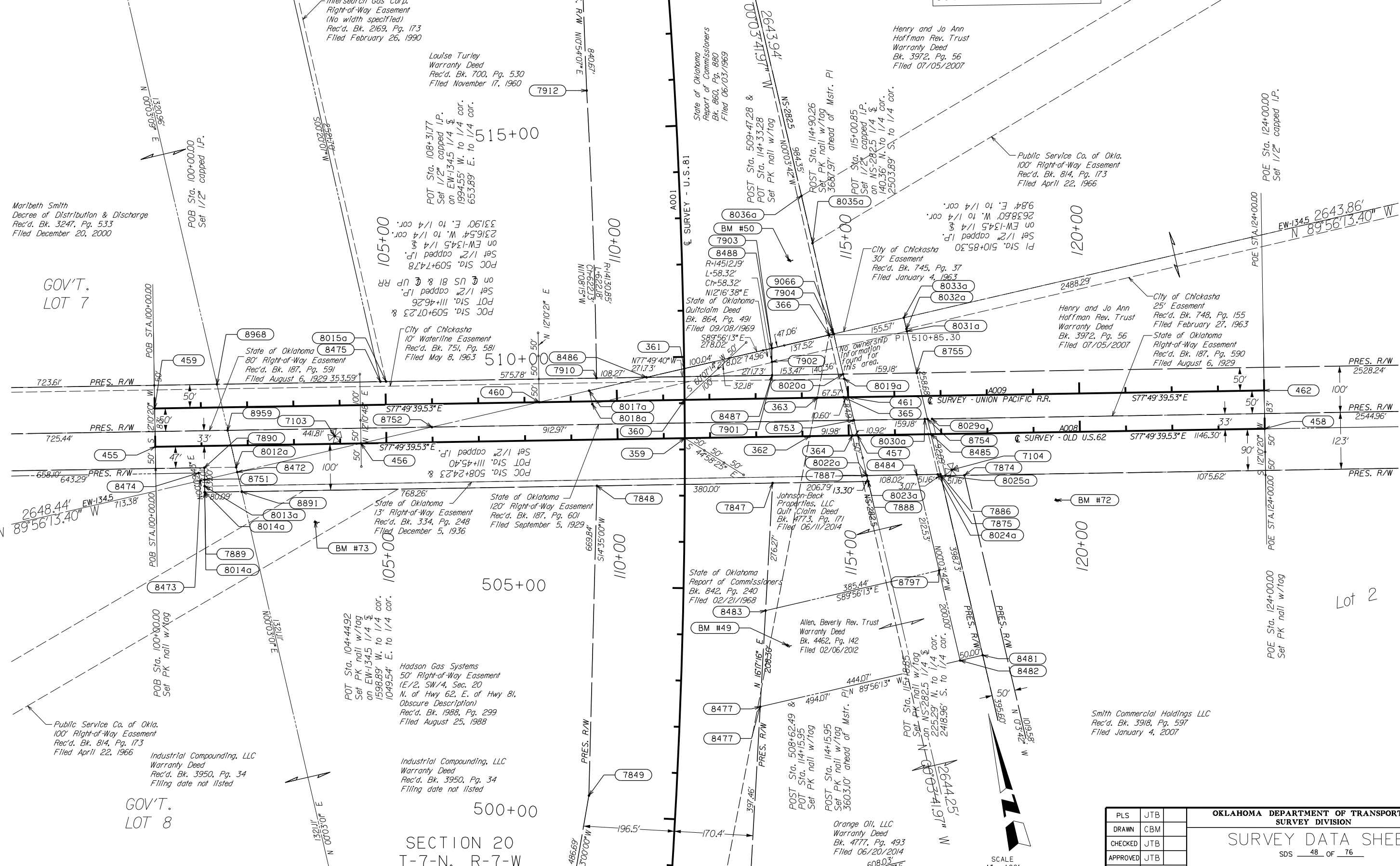
SCALE
1" = 100'

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 20
T-7-N, R-7-W

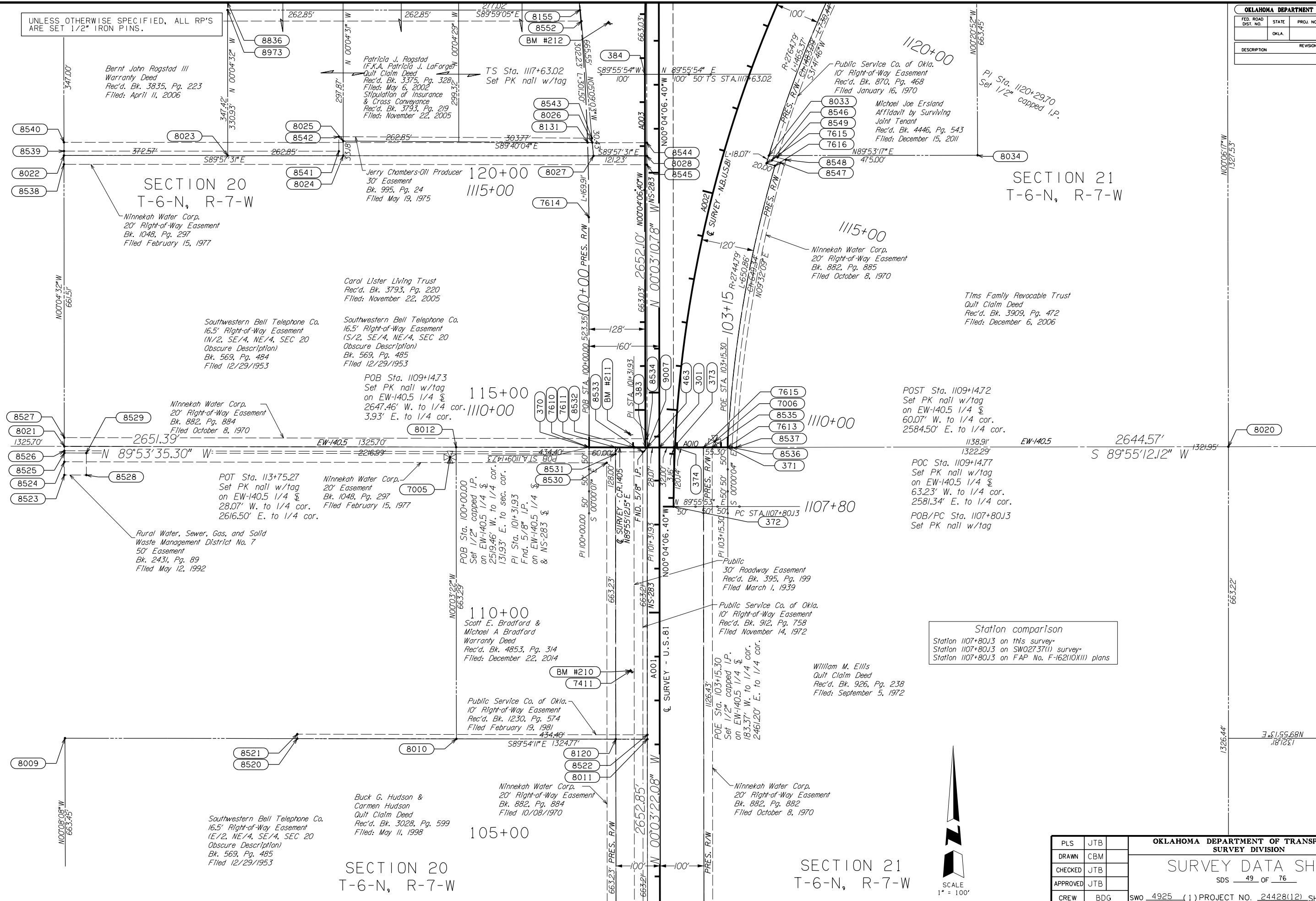
Station comparison (UP RR)
Station 115+00.85 on this survey
Station 86+00.00 on SW02737(1) survey

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
REVISIONS					
DESCRIPTION	REVISIONS	DATE			



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
SURVEY DIVISION					
SURVEY DATA SHEET					
SDS 48 OF 76					
PLS	JTB				
DRAWN	CBM				
CHECKED	JTB				
APPROVED	JTB				
CREW	BDG				
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S048					

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.



Bernt John Rogstad III
 Warranty Deed
 Rec'd. Bk. 3835, Pg. 223
 Filed: April 11, 2006

Patricia J. Rogstad
 (F.K.A. Patricia J. LaForge)
 Quit Claim Deed
 Rec'd. Bk. 3375, Pg. 328
 Filed: May 6, 2002
 Stipulation of Insurance
 & Cross Conveyance
 Rec'd. Bk. 3793, Pg. 219
 Filed: November 22, 2005

SECTION 20
 T-6-N, R-7-W
 Ninnekah Water Corp.
 20' Right-of-Way Easement
 Bk. 1048, Pg. 297
 Filed February 15, 1977

SECTION 21
 T-6-N, R-7-W

Southwestern Bell Telephone Co.
 16.5' Right-of-Way Easement
 (N/2, SE/4, NE/4, SEC 20
 Obscure Description)
 Bk. 569, Pg. 484
 Filed 12/29/1953

Southwestern Bell Telephone Co.
 16.5' Right-of-Way Easement
 (S/2, SE/4, NE/4, SEC 20
 Obscure Description)
 Bk. 569, Pg. 485
 Filed 12/29/1953

Ninnekah Water Corp.
 20' Right-of-Way Easement
 Bk. 882, Pg. 884
 Filed October 8, 1970

Ninnekah Water Corp.
 20' Easement
 Bk. 1048, Pg. 297
 Filed February 15, 1977

Rural Water, Sewer, Gas, and Solid
 Waste Management District No. 7
 50' Easement
 Bk. 2431, Pg. 89
 Filed May 12, 1992

Scott E. Bradford &
 Michael A Bradford
 Warranty Deed
 Rec'd. Bk. 4853, Pg. 314
 Filed: December 22, 2014

Public Service Co. of Okla.
 10' Right-of-Way Easement
 Rec'd. Bk. 1230, Pg. 574
 Filed February 19, 1981

Southwestern Bell Telephone Co.
 16.5' Right-of-Way Easement
 (E/2, NE/4, SE/4, SEC 20
 Obscure Description)
 Bk. 569, Pg. 485
 Filed 12/29/1953

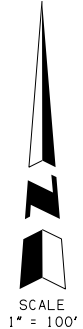
Buck G. Hudson &
 Carmen Hudson
 Quit Claim Deed
 Rec'd. Bk. 3028, Pg. 599
 Filed: May 11, 1998

Ninnekah Water Corp.
 20' Right-of-Way Easement
 Bk. 882, Pg. 884
 Filed 10/08/1970

William M. Ellis
 Quit Claim Deed
 Rec'd. Bk. 926, Pg. 238
 Filed: September 5, 1972

Public Service Co. of Okla.
 10' Right-of-Way Easement
 Rec'd. Bk. 912, Pg. 758
 Filed November 14, 1972

Station comparison
 Station 1107+80.13 on this survey*
 Station 1107+80.13 on SW02737(1) survey*
 Station 1107+80.13 on FAP No. F-162(10X11) plans



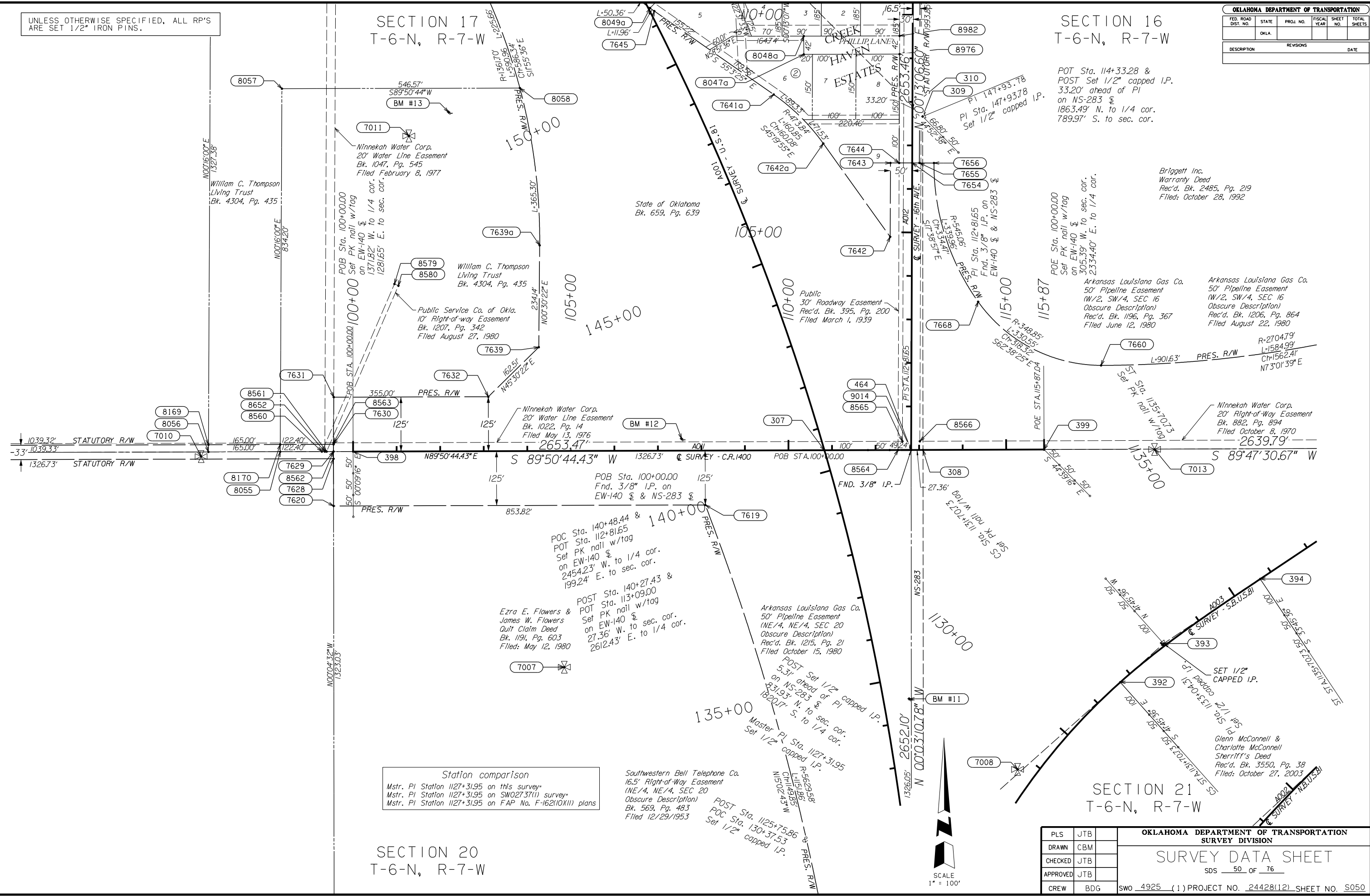
PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 49 OF 76 SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S049
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		

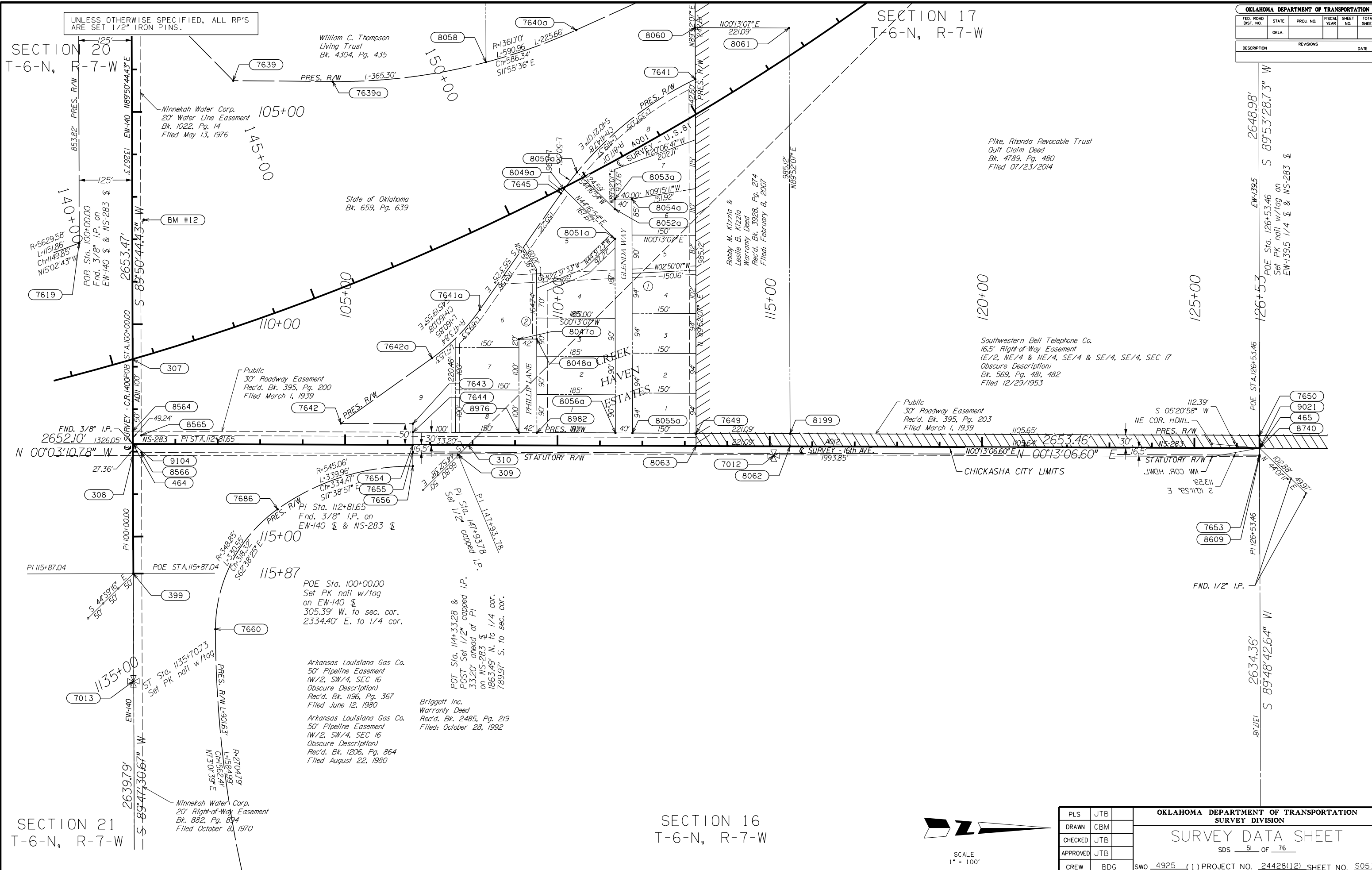
UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 17
T-6-N, R-7-W

SECTION 16
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION				REVISIONS	DATE	





OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	DATE
	OKLA					
DESCRIPTION		REVISIONS		DATE		

Pike, Rhonda Revocable Trust
Quit Claim Deed
Bk. 4789, Pg. 480
Filed 07/23/2014

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(E/2, NE/4 & NE/4, SE/4 & SE/4, SEC 17
Obscure Description)
Bk. 569, Pg. 481, 482
Filed 12/29/1953

Public
30' Roadway Easement
Rec'd. Bk. 395, Pg. 203
Filed March 1, 1939

POE Sta. 100+00.00
Set PK nail w/tag
on EW-140 &
305.39' W. to sec. cor.
2334.40' E. to 1/4 cor.

Arkansas Louisiana Gas Co.
50' Pipeline Easement
(W/2, SW/4, SEC 16
Obscure Description)
Rec'd. Bk. 1196, Pg. 367
Filed June 12, 1980

Arkansas Louisiana Gas Co.
50' Pipeline Easement
(W/2, SW/4, SEC 16
Obscure Description)
Rec'd. Bk. 1206, Pg. 864
Filed August 22, 1980

Briggett Inc.
Warranty Deed
Rec'd. Bk. 2485, Pg. 219
Filed: October 28, 1992

POT Sta. 114+33.28 &
POST. Set 1/2" capped I.P.
33.20' ahead of PI
on NS-283 &
1863.49' N. to 1/4 cor.
789.97' S. to sec. cor.



SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 51 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S051			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 6
T-6-N, R-7-W

SECTION 6
T-6-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
REVISIONS						
DESCRIPTION	REVISIONS	DATE				

Public Service Co. of Okla.
Right-of-Way (No width specified)
(SE 1/4, SE 1/4, Sec. 1,
Obscure Description)
Rec'd. Bk. 522, Pg. 409
Filed October 8, 1948

Public Service Co. of Okla.
Right-of-Way (No width specified)
(Lot II, Sec. 6,
Obscure Description)
Rec'd. Bk. 522, Pg. 409
Filed October 8, 1948

Sharon K. Powell Living Trust
Quit Claim Deed
Bk. 4342, Pg. 258
Filed 01/18/2011

Doris D. Lyons Rotte
Warranty Deed
Rec'd. Bk. 1806, Pg. 184
Filed March 11, 1987

Southwestern Light & Power Co.
Right-of-Way (No width specified)
(SE 1/4, SW 1/4, Sec. 6,
Obscure Description)
Rec'd. Bk. 284, Pg. 75
Filed November 7, 1928

Kevin Lynn Whitener
Warranty Deed
Rec'd. Bk. 2705, Pg. 122
Filed June 24, 1994

POST Sta. 284+08.38 & 285+00
POT PK nail w/tag
on EW-138 & to sec. cor.
817.55' W. to sec. cor.
1802.20' E. to 1/4 cor.

POC Sta. 283+51.69 &
POT PK nail w/tag
on EW-138 & to sec. cor.
902.53' W. to sec. cor.
1717.22' E. to 1/4 cor.

Chester Stanton Thomas, Etal
Warranty Deed
Rec'd. Bk. 2506, Pg. 270
Filed December 31, 1992

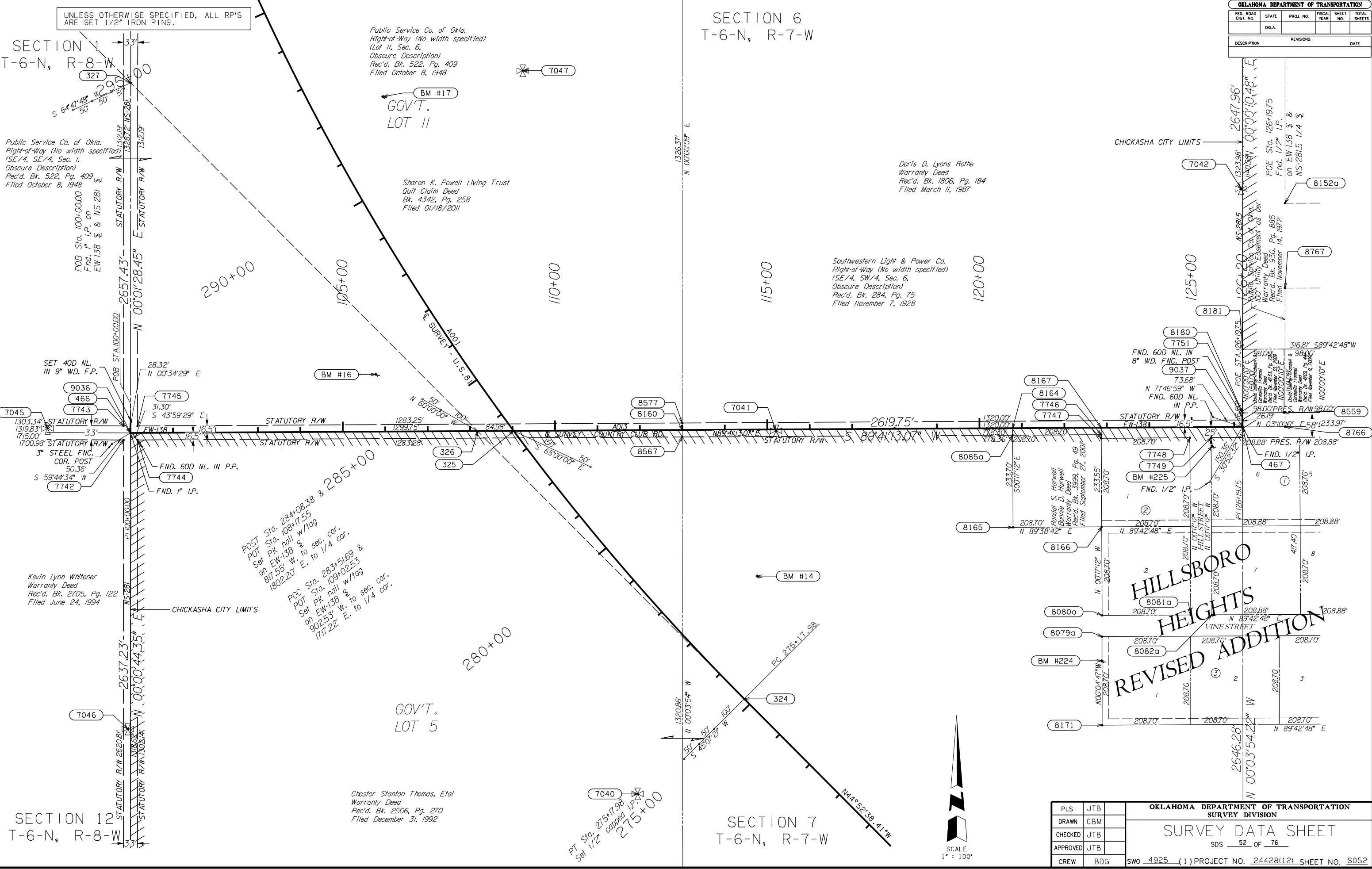
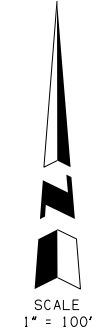
PT Sta. 275+17.98
Set 1/2" capped I.P.
275+00

SECTION 12
T-6-N, R-8-W

SECTION 7
T-6-N, R-7-W

HILLSBORO
HEIGHTS
REVISED ADDITION

OKLAHOMA DEPARTMENT OF TRANSPORTATION				
SURVEY DIVISION				
SURVEY DATA SHEET				
SDS 52 OF 76				
PLS	JTB			
DRAWN	CBM			
CHECKED	JTB			
APPROVED	JTB			
CREW	BDG	SWO_4925 (1)	PROJECT NO. 24428(12)	SHEET NO. S052



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
REVISIONS					
DESCRIPTION	DATE				

7058

SECTION 36
T-7-N, R-8-W

GOV'T.
LOT 4

Phillips Petroleum Co.
20' Right-of-Way
(W/2, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1054, Pg. 579
Filed April 21, 1977

Southwestern Bell Telephone Co.
16.5' Right-of-Way Easement
(SW/4, SE/4, SEC 36
Obscure Description)
Bk. 985, Pg. 32
Filed 1/8/1975

Mid Continent Pipe Line Co.
20' Right-of-Way
(SW/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1032, Pg. 411
Filed September 13, 1976

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

Phillips Petroleum Co.
20' Right-of-Way
(SE/4, SE/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

98TH MERIDIAN

NS-280.5

N 00°00'03.88" E

NS-280.5

N 00°00'23.76" W

9095
9094
9093

878.64'
S 89°55'19.99" W

7766
9096
7762

7766
7762

8212
8210

7053

8213

8214

8567
433

7767
8798
7770

8207
A014

8794
7774
8789

8209

8208

8205

8204
8589

8206

8775
8774

8787

8590

8788

8202

8784
7775
7776

8231

8232

8231

SECTION 1
T-6-N, R-8-W

GOV'T.
LOT 1



OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 53 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S053			

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 36
T-7-N, R-8-W

SECTION 31
T-7-N, R-7-W

Livingston Family Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

Phillips Petroleum Co.
20' Right-of-Way
(W. 19/8 ac. Lot 9, Sec. 31
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

Livingston Family
Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

GOV'T.
LOT 9

Livingston Family
Revocable Trust
Warranty Deed
Bk. 4277, Pg. 133
Filed June 4, 2010

345+00

Phillips Petroleum Co.
20' Right-of-Way
(SE 1/4, SE 1/4, Sec. 36
Obscure Description)
Rec'd. Bk. 1049, Pg. 890
Filed March 3, 1977

120+00

125+00

130+00

STA. 16+00

340+00

1304.76
1321.27

335+00

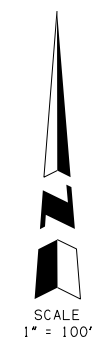
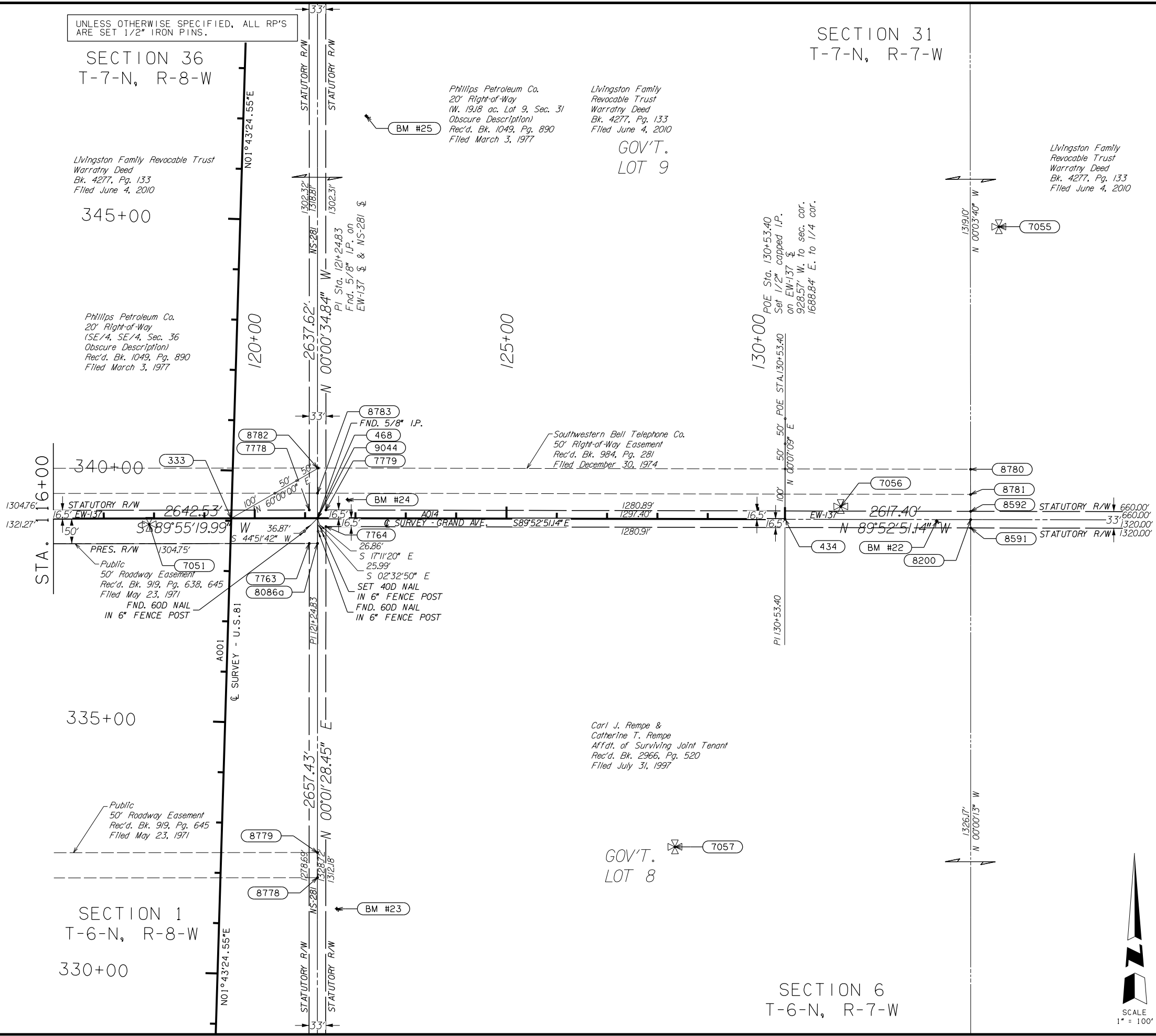
SECTION 1
T-6-N, R-8-W

330+00

Carl J. Rempe &
Catherine T. Rempe
Aff'd. of Surviving Joint Tenant
Rec'd. Bk. 2966, Pg. 520
Filed July 31, 1997

GOV'T.
LOT 8

SECTION 6
T-6-N, R-7-W



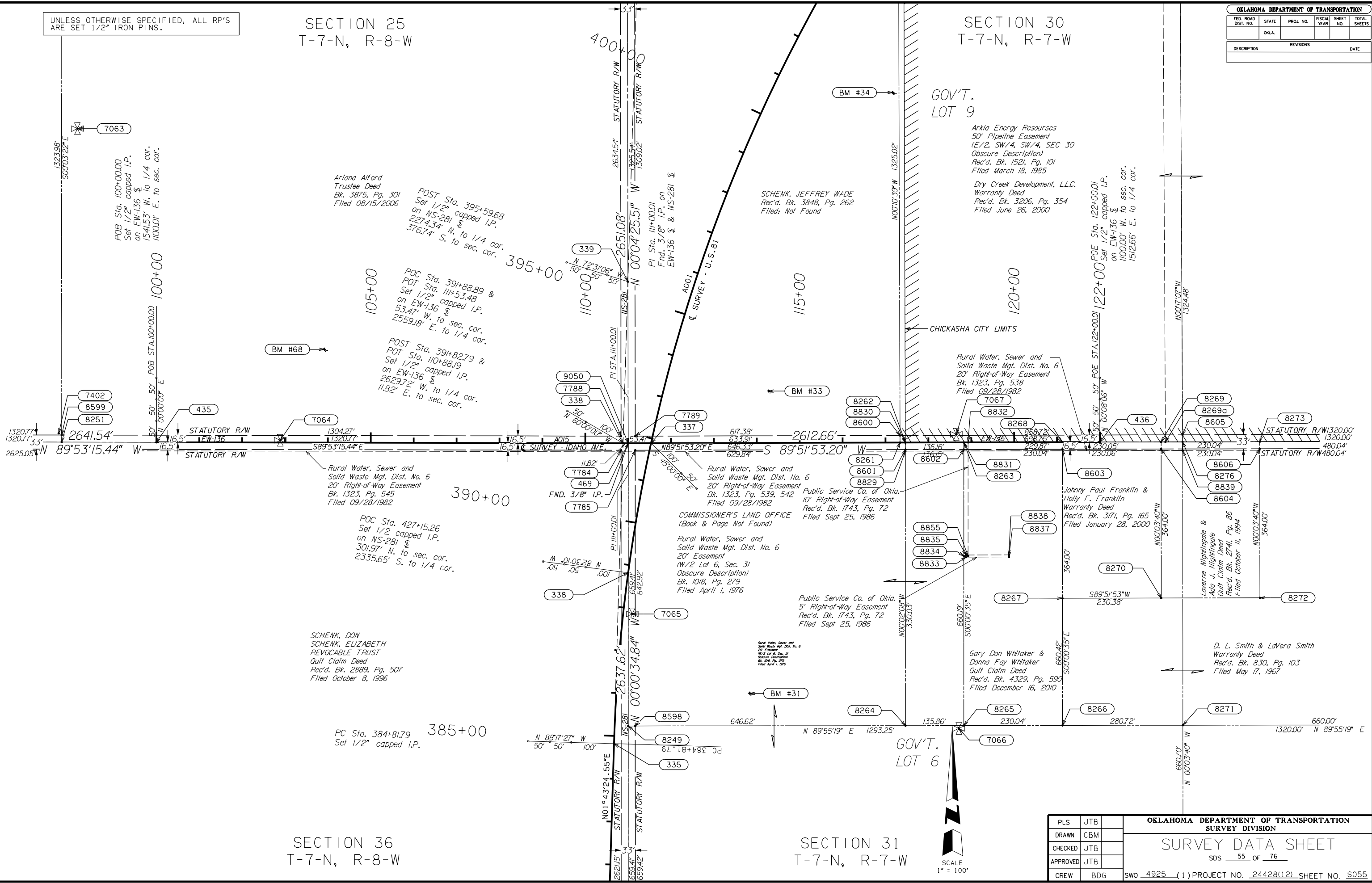
PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 54 OF 76 SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S054
DRAWN	CBM	
CHECKED	JTB	
APPROVED	JTB	
CREW	BDG	

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 25
T-7-N, R-8-W

SECTION 30
T-7-N, R-7-W

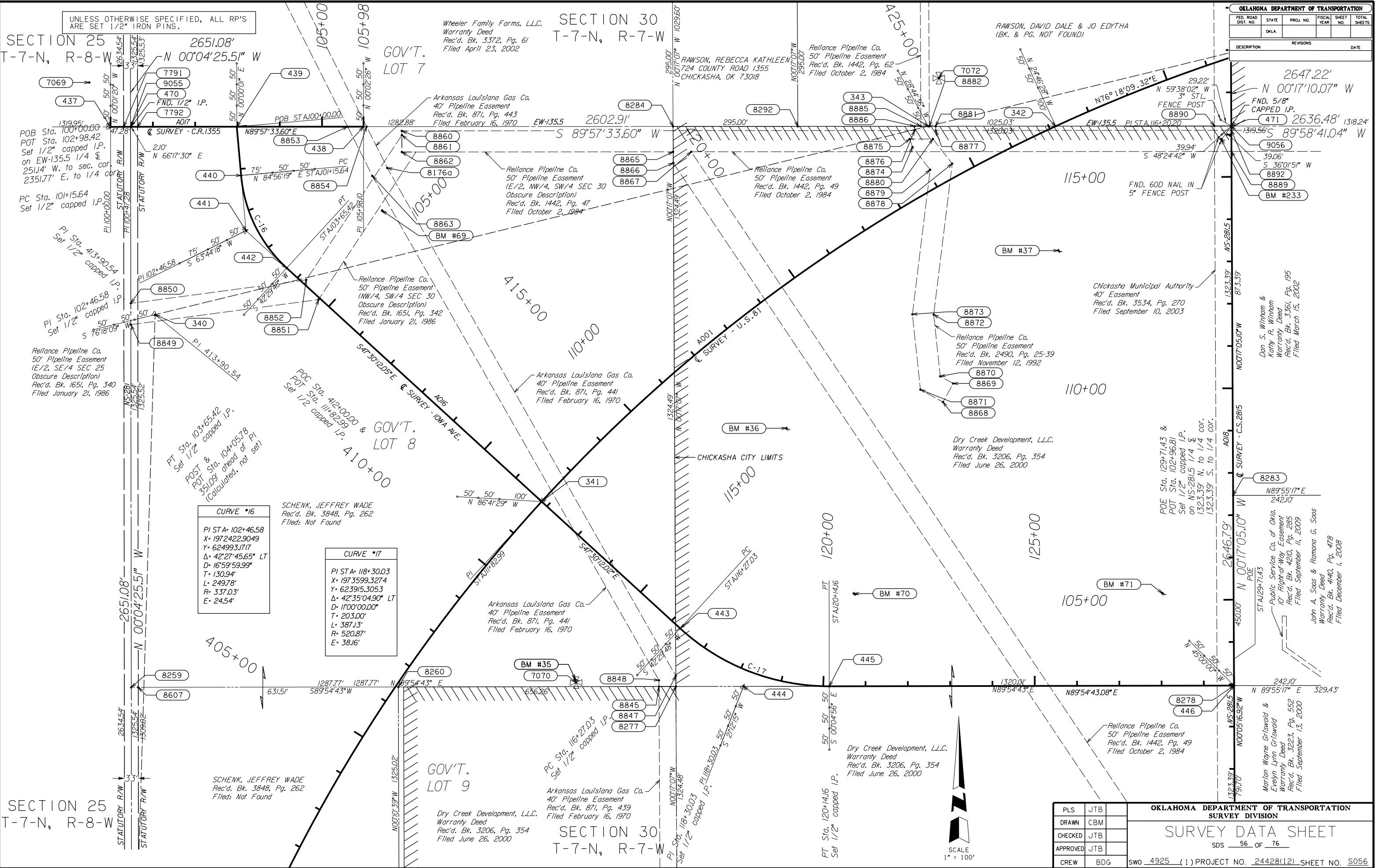
OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	



SECTION 36
T-7-N, R-8-W

SECTION 31
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 55 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG	SWO_4925 (1)	PROJECT NO. 24428(12) SHEET NO. S055



OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				

DESCRIPTION	REVISIONS	DATE

CURVE #16

PI STA+ 102+46.58
X= 1972422.9049
Y= 624993.1717
Δ= 42°27'45.65" LT
D= 16'59"59.99"
T= 130.94'
L= 249.78'
R= 337.03'
E= 24.54'

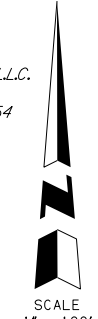
CURVE #17

PI STA+ 118+30.03
X= 1973599.3274
Y= 623915.3053
Δ= 42°35'04.90" LT
D= 11'00"00.00"
T= 203.00'
L= 387.13'
R= 520.87'
E= 38.16'

OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		

SURVEY DATA SHEET
SDS 56 OF 76

SWO_4925 (1) PROJECT NO. 24428(12) SHEET NO. S056



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

SECTION 25
T-7-N, R-8-W

SECTION 30
T-7-N, R-7-W

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION				REVISIONS	DATE	

Wheeler Family Farms, L.L.C.
Warranty Deed
Rec'd. Bk. 3372, Pg. 61
Filed April 23, 2002

CURVE #16
PI STA. 102+46.58
X = 1972422.9049
Y = 624993.1717
Δ = 42°27'45.65" LT
D = 16°59'59.99"
T = 130.94'
L = 249.78'
R = 337.03'
E = 24.54'

2639.90'
S 89°58'39.45" W

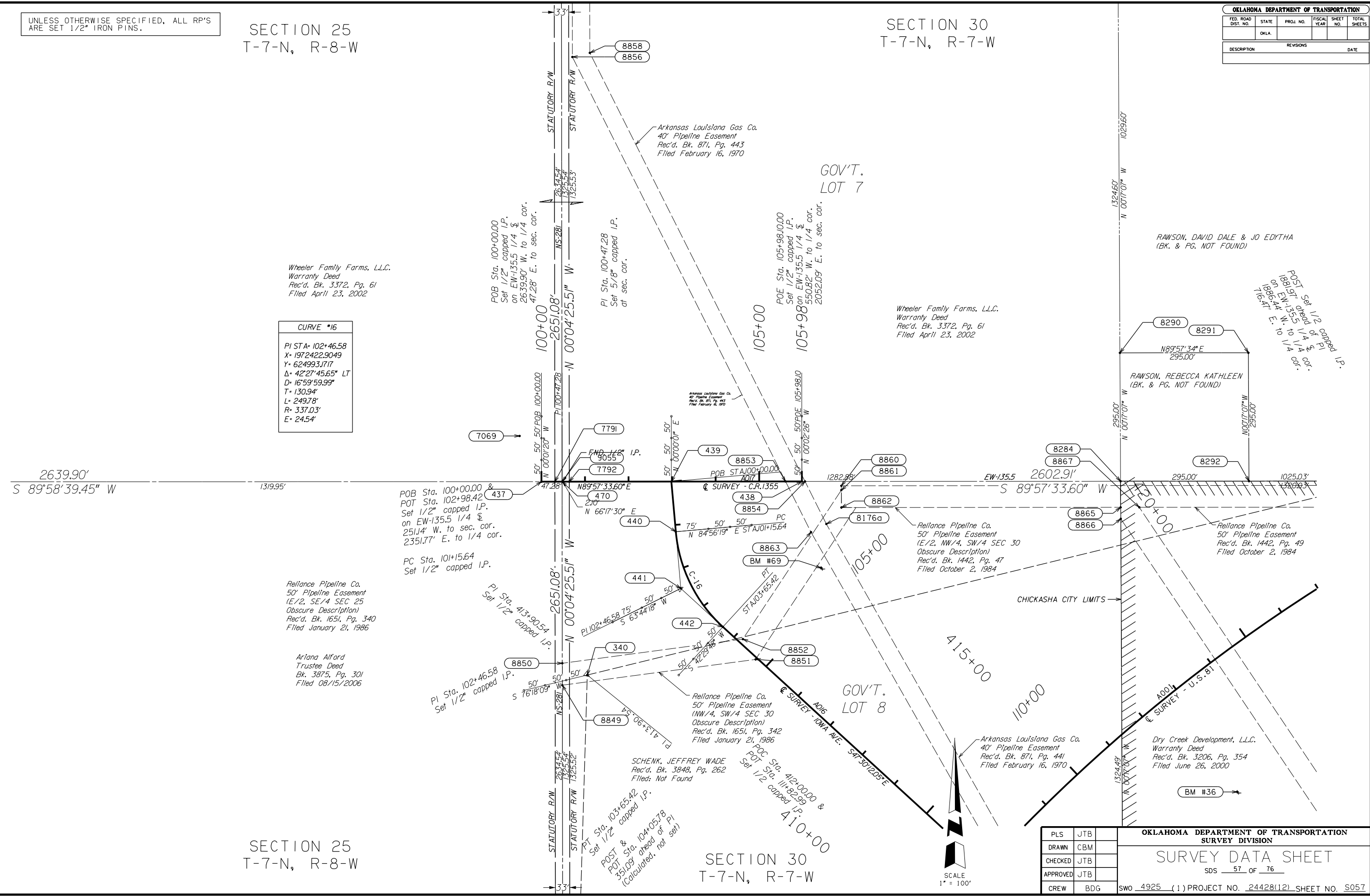
1319.95'

SECTION 25
T-7-N, R-8-W

SECTION 30
T-7-N, R-7-W

SCALE
1" = 100'

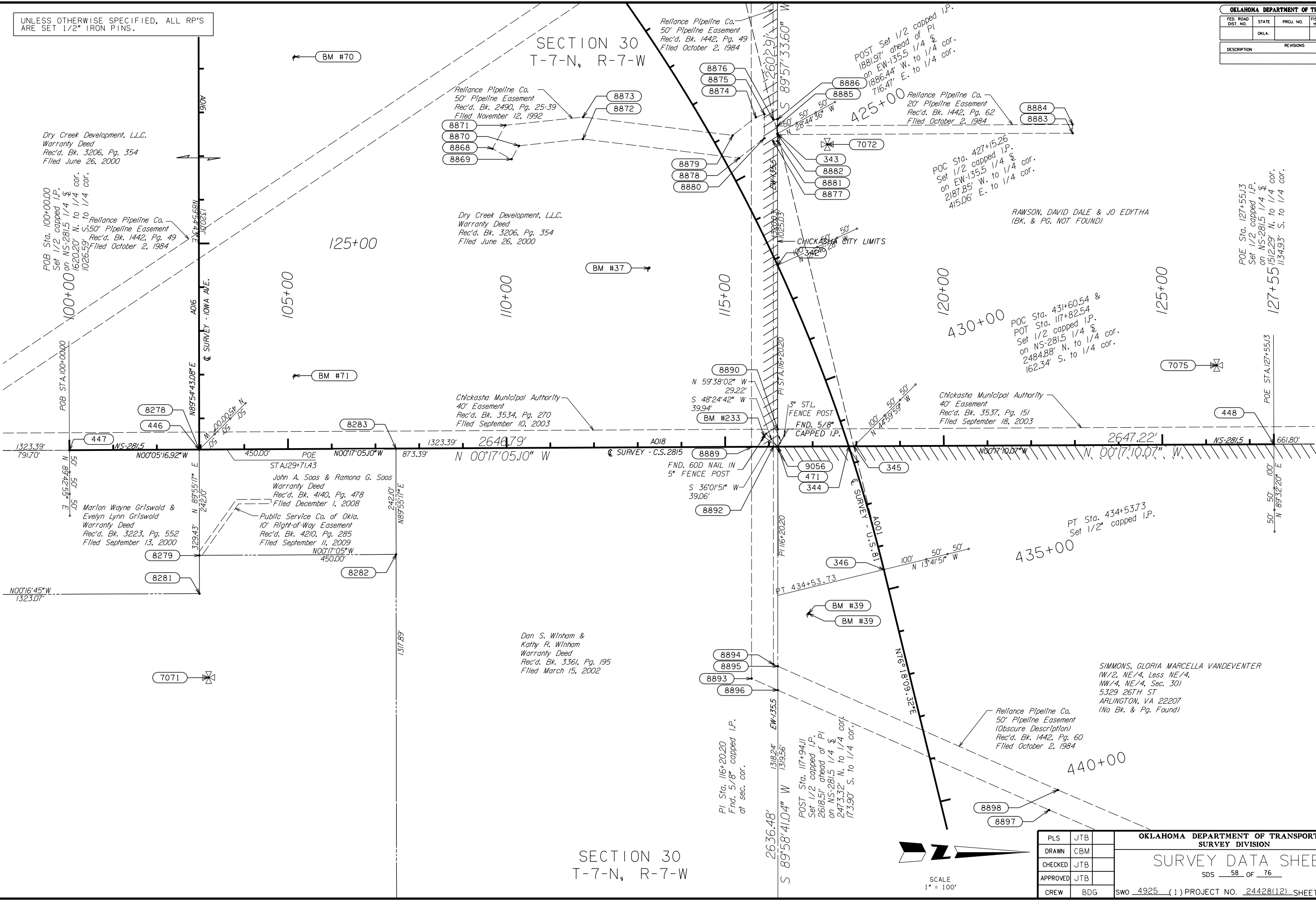
PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION				
DRAWN	CBM	SURVEY DIVISION				
CHECKED	JTB	SURVEY DATA SHEET				
APPROVED	JTB	SDS 57 OF 76				
CREW	BDG	SWO_4925_(1) PROJECT NO. 24428(12) SHEET NO. S057				



UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA				
DESCRIPTION			REVISIONS	DATE	

SECTION 30
T-7-N, R-7-W



SECTION 30
T-7-N, R-7-W

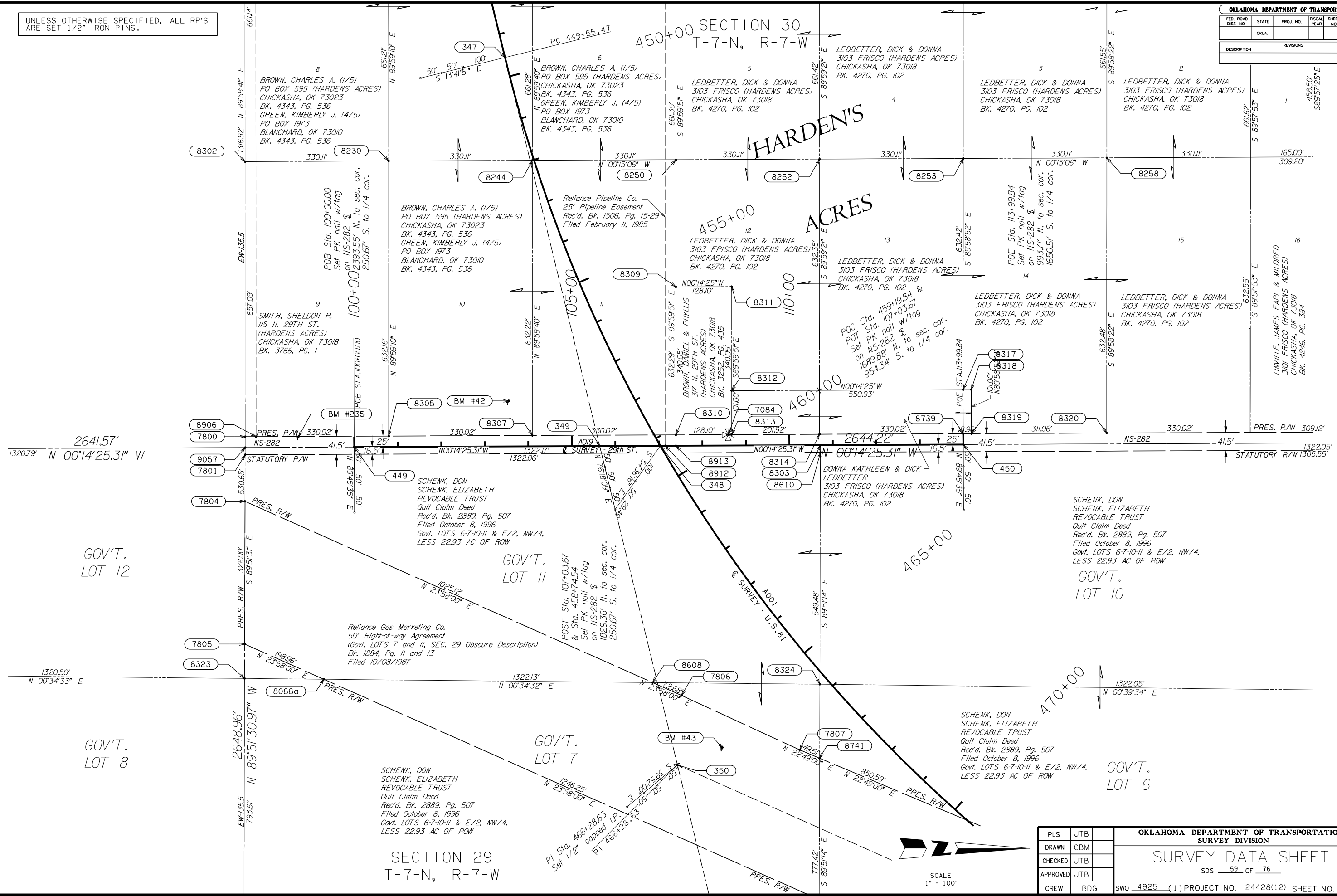


SCALE
1" = 100'

OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 58 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S058			

UNLESS OTHERWISE SPECIFIED, ALL RP'S ARE SET 1/2" IRON PINS.

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION		REVISIONS			
					DATE

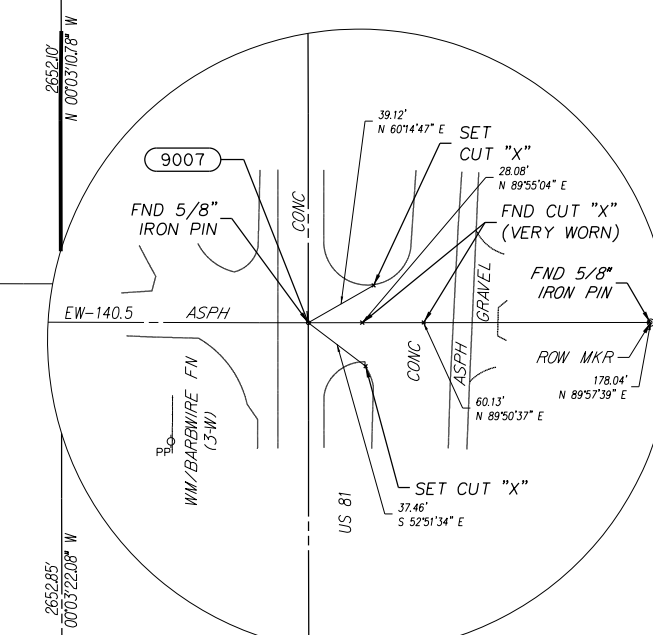
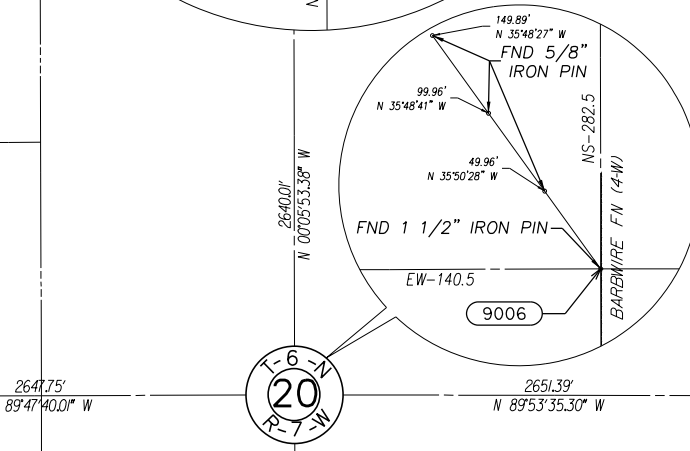
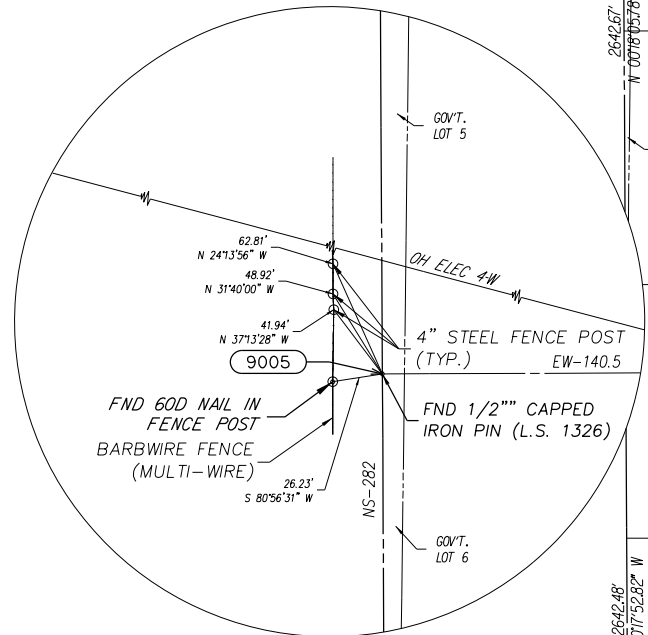
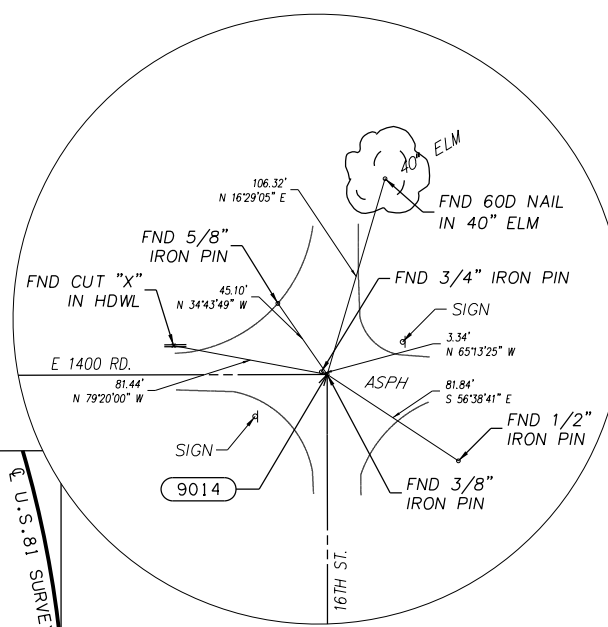
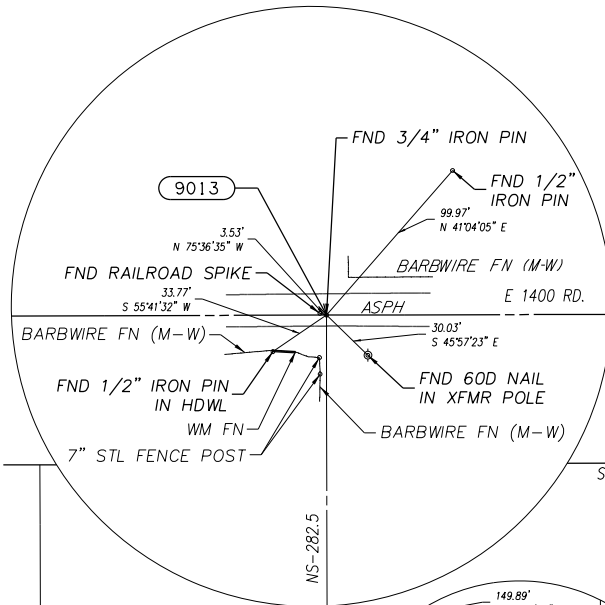
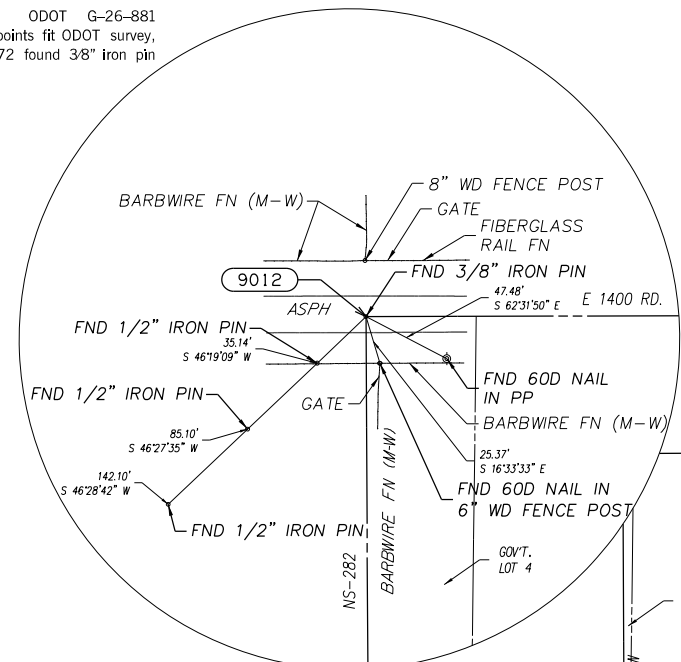


OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 59 OF 76			
PLS	JTB		
DRAWN	CBM		
CHECKED	JTB		
APPROVED	JTB		
CREW	BDG		
SWO 4925 (1) PROJECT NO. 24428(12) SHEET NO. S059			

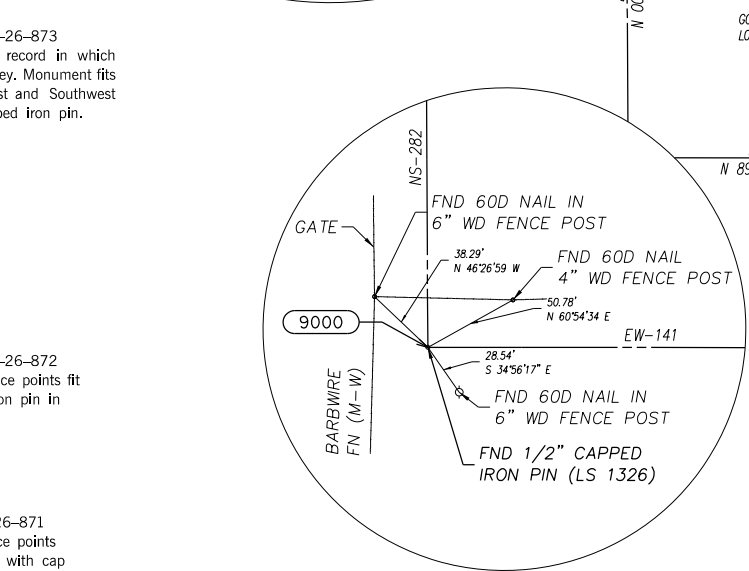
NW Corner of Section 20, T-6N, R-7W ODOT G-26-881
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1272 found 3/8" iron pin in 1998 survey. Nothing set. I used 3/8" iron pin.



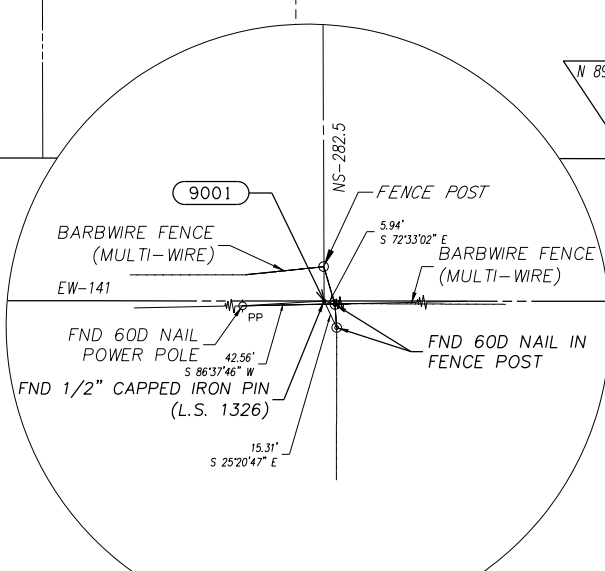
Angle Of Variance
At Sta. 9006 (C/4 Cor.)
X: 1980072.2880
Y: 598768.3500
Lat.: 34°58'43.06084"
Long.: 97°57'40.93182"
θ = 0°01'18.93742"



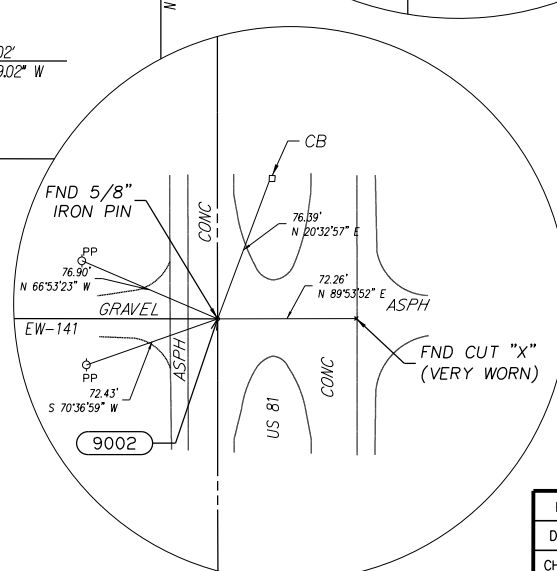
W/4 Corner of Section 20, T-6N, R-7W ODOT G-26-873
I found 1/2" capped iron pin. Monument fits corner record in which L.S. 1326 set 1/2" iron pin with cap in 2012 survey. Monument fits single proportionate method between the Northwest and Southwest corners of Section 20. Nothing set. I used 1/2" capped iron pin.



SW Corner of Section 20, T-6N, R-7W ODOT G-26-872
I found 1/2" capped iron pin. Monument and reference points fit corner record in which L.S. 1326 set 1/2" capped iron pin in 2007 survey. Nothing set. I used 1/2" iron pin.



S/4 Corner of Section 20, T-6N, R-7W ODOT G-26-871
I found 1/2" capped iron pin. Monument and reference points fit corner record in which L.S. 1326 set 1/2" iron pin with cap in 2012 survey. Monument fits single proportionate method between the southwest and southeast corners of Section 20. Nothing set. I used 1/2" capped iron pin.



OKLAHOMA DEPARTMENT OF TRANSPORTATION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS	DATE	

N/4 Corner of Section 20, T-6N, R-7W ODOT G-26-880
I found 3/4" iron pin and railroad spike. 3/4" iron pin and reference points fit ODOT survey, SWO 2737(1). Railroad spike and reference fit corner record in which L.S. 1326 found railroad spike in 2012 survey. The railroad spike had been set using the Southwest corner and one of two monuments at the Southeast corner of Section 17. Railroad spike was set by others for new fence line to the south in 2011. Nothing set. I used 3/4" iron pin.

NE Corner of Section 20, T-6N, R-7W ODOT G-26-879
I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin does not fit ODOT survey, SWO 2737(1), but it does fit the following corner records:

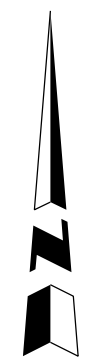
L.S. 1272 found 3/4" iron pin in 1998 survey
L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. Nothing set. I used 3/8" iron pin.

C/4 Corner of Section 20, T-6N, R-7W ODOT G-26-874
I found 1 1/2" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1). Nothing set. I used 1 1/2" iron pin.

E/4 Corner of Section 20, T-6N, R-7W ODOT G-26-163
I found 5/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1). Nothing set. I used 5/8" iron pin and set additional reference points.

SE Corner of Section 20, T-6N, R-7W ODOT G-26-162
I found 5/8" iron pin. Monument and reference point fit ODOT survey, SWO 2737(1). Nothing set. I used 5/8" iron pin.



SCALE: 1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION			
DRAWN	JSO	SURVEY DATA SHEET SDS 60 OF 76			
CHECKED	JTB				
APPROVED	JTB				
CREW	BENHAM				

N/4 Corner of Section 21, T-6N, R-7W ODOT G-26-880
 I found 3/4" iron pin and railroad spike. 3/4" iron pin and reference points fit ODOT survey, SWO 2737(1). Railroad spike and reference fit corner record in which L.S. 1326 found railroad spike in monuments at the Southeast corner of Section 17. Railroad spike was set by others for new fence line to the South in 2011. Nothing set. I used 3/4" iron pin.



Angle Of Variance
 At Sta. 9008 (C/4 Cor.)
 X= 1985368.2480
 Y= 598767.0960
 Lat.= 34°58'43.02381"
 Long.= 97°56'37.28846"
 θ = 0°01'55.06245"

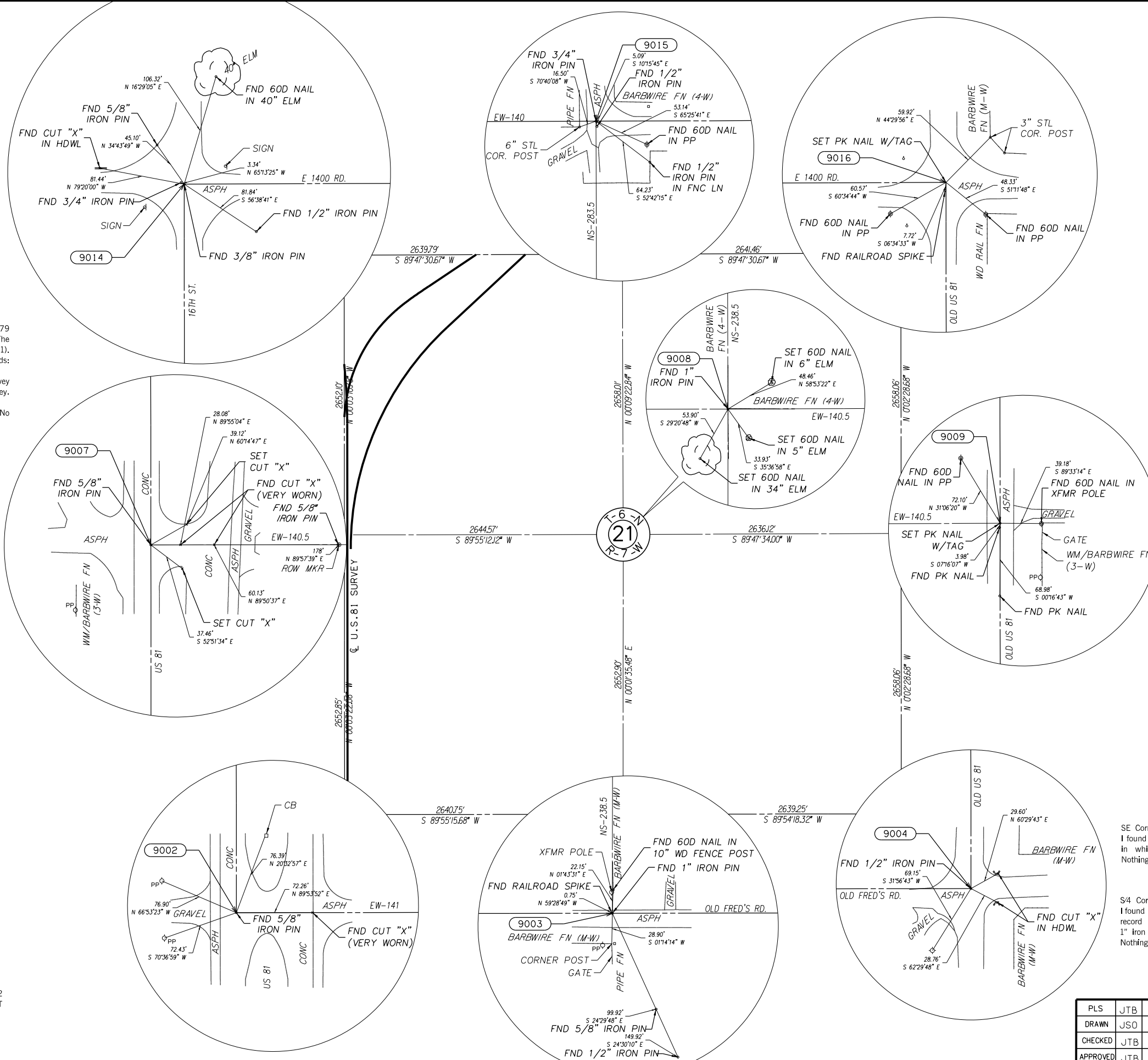
NW Corner of Section 21, T-6N, R-7W ODOT G-26-879
 I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin does not fit ODOT survey, SWO 2737(1). It does fit the following corner records:

L.S. 1272 found 3/4" iron pin in 1998 survey
 L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. No evidence set. I used 3/8" iron pin.

W/4 Corner of Section 21, T-6N, R-7W ODOT G-26-163
 I found 5/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1). Nothing set. I used 5/8" iron pin and set additional reference points.

SW Corner of Section 21, T-6N, R-7W ODOT G-26-162
 I found 5/8" iron pin. Monument and reference point fits ODOT survey, SWO 2737(1). Nothing set. I used 5/8" iron pin.



NE Corner of Section 21, T-6N, R-7W ODOT G-26-877
 I found R.R. Spike. Monument and references do not fit ODOT survey, SWO 2028(1). Monument and references fit the following C.C.R.'s:

L.S. 1071 found PK nail in 1989 survey
 L.S. 1272 found R.R. Spike in 1997 survey
 L.S. 696 found R.R. Spike in 1999 survey.

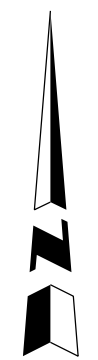
I set PK nail with tag using measurements from said ODOT survey. I did not accept R.R. Spike since it did not fit G.L.O. Notes or ODOT survey.

C/4 Corner of Section 21, T-6N, R-7W ODOT G-26-875
 I found 1" iron pin. Monument fits measurements from ODOT survey, SWO 2737(1). Monument position fits existing fence lines. Nothing set. I used 1" iron pin and set reference points

E/4 Corner of Section 21, T-6N, R-7W ODOT G-26-876
 I found PK nail. Monument and reference points fit corner record in which L.S. 1326 set PK nail in 2001 survey. Monument had been set using single proportionate method using a questionable railroad spike at the Northeast corner of Section 21. Monument does not fit measurements from ODOT survey, SWO 2028(1), or existing fence lines. I set PK nail with tag. I set monument using single proportionate method using the northeast and southeast corners of Section 21. Monument location fits said ODOT survey and existing fence lines.

SE Corner of Section 21, T-6N, R-7W ODOT G-26-869
 I found 1/2" iron pin. Monument and references fit corner record in which L.S. 1272 found 1/2" iron pin in 1997 survey. Nothing set. I used 1/2" iron pin.

S/4 Corner of Section 21, T-6N, R-7W ODOT G-26-870
 I found 1" iron pin and railroad spike. The railroad spike fits corner record in which L.S. 1326 set railroad spike in 2001 survey. The 1" iron pin and reference points fit ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.



SCALE:
 1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
PLS	JTB	SURVEY DIVISION	
DRAWN	JSO	SURVEY DATA SHEET SDS 61 OF 76	
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S061			

NW Corner of Section 18, T-6N, R-7W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the following corner records. L.S. 449 found iron pin in 1982 survey. L.S. 1272 found 3/8" iron pin in 1998 survey. L.S. 1272 found iron pin in 2001 survey. Nothing set. I used 3/4" iron pin.

N4 Corner of Section 18, T-6N, R-7W ODOT G-26-896
I found original stone. No certified corner records found, although monument is referenced on C.C.R.'s filed on the SW and N4 corner of Section 7. No original reference points were found. The stone was marked "14" on the north face and looked undisturbed. Nothing set. I used original stone and set reference points.

Angle of Variance
At Sta. 9018 (C/4 Cor.)
X = 1974779.2248
Y = 604077.4383
Lat. = 34°59'35.58920"
Long. = 97°58'44.52714"
θ = 0°00'42.83966"

NE Corner of Section 18, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barb-wire fence running north & south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1) to set corner. Corner location fits old fence line to the south.

C4 Corner of Section 18, T-6N, R-7W ODOT G-26-885
No corner evidence found. I set 5/8" capped iron pin. I used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument. Position fits old fence line to the north.

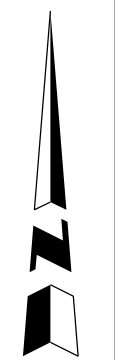
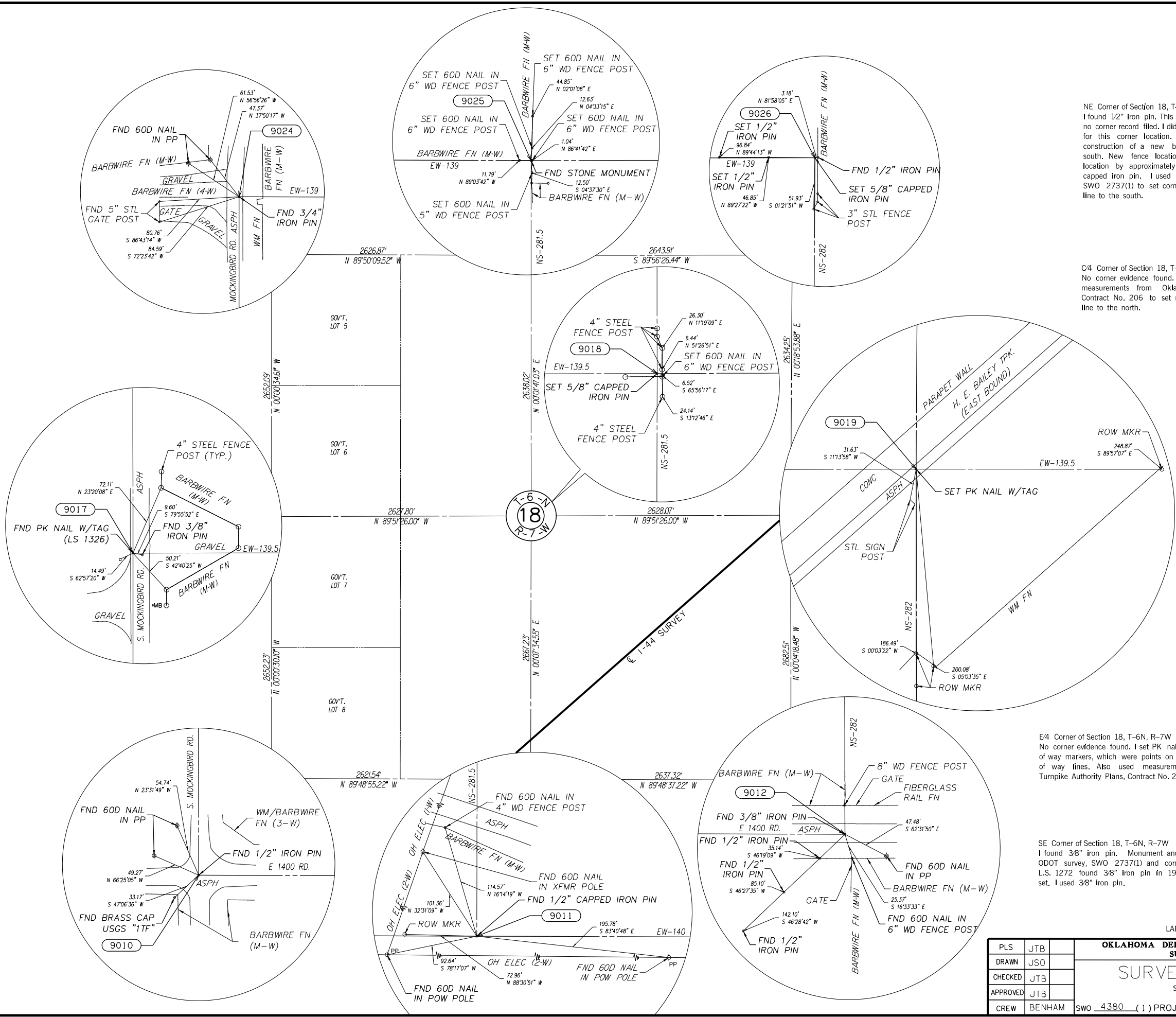
W4 Corner of Section 18, T-6N, R-7W ODOT G-26-884
I found PK nail with tag set by L.S. 1326. Monument and reference points fit corner record in which L.S. 615 found a 1/2" iron pin and set another 1/2" iron pin in 2001 survey. Monument fits single proportionate method measurements to NW and SW corners of Section 18. Nothing set. I used PK nail with tag.

SW Corner of Section 18, T-6N, R-7W ODOT G-26-883
I found 1/2" iron pin. Monument and reference points fit the following corner records. L.S. 449 found iron pin in 1981 survey. L.S. 1082 found iron pin in 1994 survey. L.S. 1272 found 3/8" iron pin in 1998 survey. Monument also fits measurements from Oklahoma Turnpike Authority Plans, Contract 206. No Corner evidence found. I used 1/2" iron pin.

E/4 Corner of Section 18, T-6N, R-7W ODOT G-26-886
No corner evidence found. I set PK nail with tag. I used right of way markers, which were points on section lines and right of way lines. Also used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument.

SE Corner of Section 18, T-6N, R-7W ODOT G-26-881
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1) and corner record in which L.S. 1272 found 3/8" iron pin in 1998 survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 18, T-6N, R-7W ODOT G-26-882
I found 1/2" capped iron pin. Monument and references fit corner record in which L.S. 1326 set 1/2" iron pin with cap in 2012 survey. Monument also fits single proportionate method from G.L.O. Notes. Nothing set. I used 1/2" capped iron pin.



SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 62 OF 76 SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S062
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		

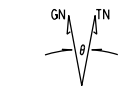
N4 Corner of Section 17, T-6N, R-7W ODOT G-26-892
I found 1/2" iron pin. Monument and references fit the following C.C.R.'s.:

L.S. 1326 found 1/2" iron pin in 2005 survey
L.S. 189 found #3 rebar in 2009 survey.

Nothing set. I used 1/2" iron pin.

NW Corner of Section 17, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barbed-wire fence running north and south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1), to set corner. Corner location fits old fence line to the south

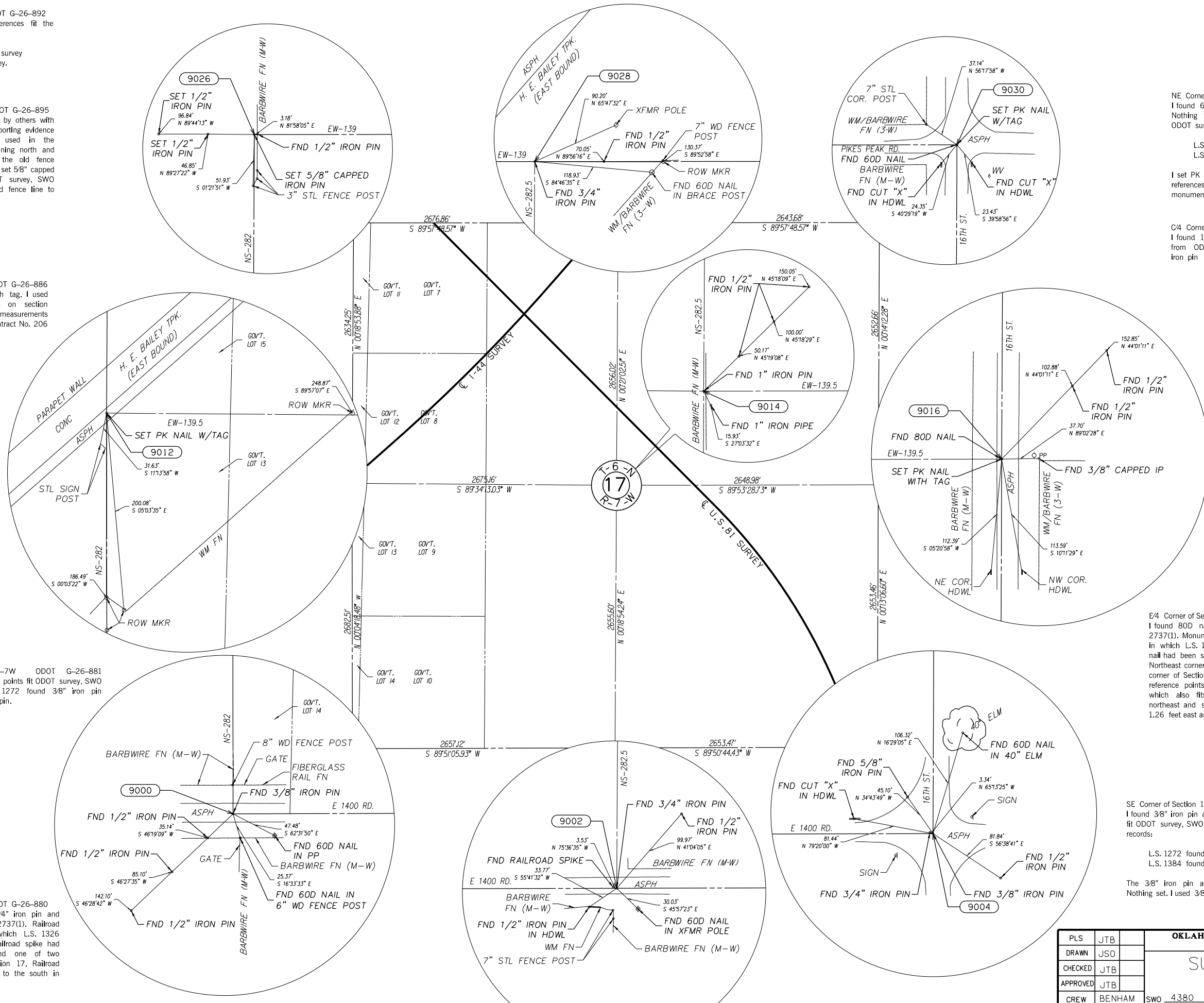
W4 Corner of Section 17, T-6N, R-7W ODOT G-26-886
No corner evidence found. I set PK nail with tag. I used right of way markers, which were points on section lines and right of way lines. Also used measurements from Oklahoma Turnpike Authority Plans, Contract No. 206 to set monument.



Angle Of Variance
At Sta. 9020 (C/4 Cor.)
X = 1980082.3680
Y = 604063.9240
Lat. = 34°59'35.44004"
Long. = 97°57'40.78631"
θ = 0°01'19.02001"

SW Corner of Section 17, T-6N, R-7W ODOT G-26-881
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1) and corner record in which L.S. 1272 found 3/8" iron pin in 1998 survey. Nothing set. I used 3/8" iron pin.

S4 Corner of Section 17, T-6N, R-7W ODOT G-26-880
I found 3/4" iron pin and railroad spike. 3/4" iron pin and reference points fit ODOT survey, SWO 2737(1). Railroad spike and reference fit corner record in which L.S. 1326 found railroad spike in 2012 survey. The railroad spike had been set using the southwest corner and one of two monuments at the southeast corner of Section 17. Railroad spike was set by others for new fence line to the south in 2011. Nothing set. I used 3/4" iron pin.



NE Corner of Section 17, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin. Nothing found below nail. Monument and references fit ODOT survey and the following C.C.R.'s.:

L.S. 1272 found 3/8" iron pin in 1998 survey
L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.

C/4 Corner of Section 17, T-6N, R-7W ODOT G-26-887
I found 1" iron pin. Found monument and reference points from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin

E/4 Corner of Section 17, T-6N, R-7W ODOT G-26-888
I found 80D nail. Monument does not fit ODOT survey, SWO 2737(1). Monument and reference points fit the corner record in which L.S. 1384 set 80D nail in 2008 survey. The 80D nail had been set using single proportionate method using the Northeast corner and one of two monuments at the southeast corner of Section 17. I set PK nail with tag. I used existing reference points from said ODOT survey to set monument, which also fits single proportionate method between the northeast and southeast corners of Section 17. Monument is 1.26 feet east and 0.48 feet south of found 80D nail.

SE Corner of Section 17, T-6N, R-7W ODOT G-26-879
I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin does not fit ODOT survey, SWO 2737(1), but it does fit the following corner records:

L.S. 1272 found 3/4" iron pin in 1998 survey
L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. Nothing set. I used 3/8" iron pin.

SCALE: 1" = 500'
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
PLS	JTB	SURVEY DIVISION	
DRAWN	JSO	SURVEY DATA SHEET SDS 63 OF 76	
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S063			

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

N/4 Corner of Section 16, T-6N, R-7W ODOT G-26-892
I found 1/2" iron pin. Monument and references fit the following C.C.R.'s:

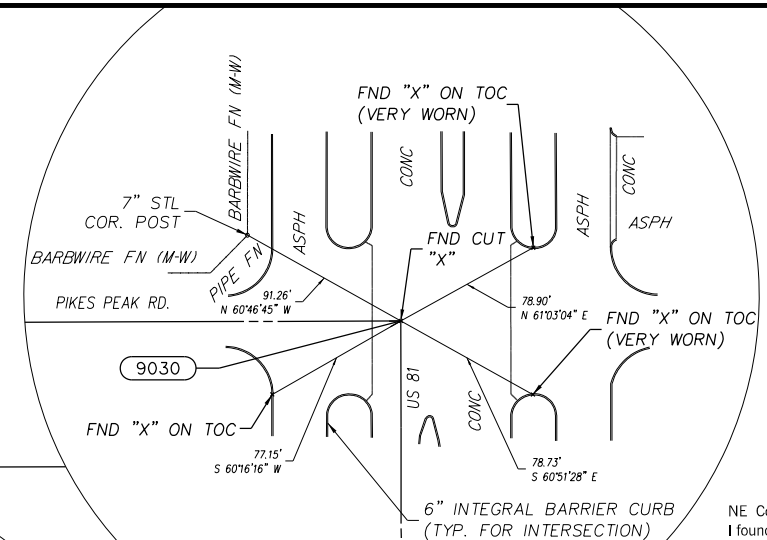
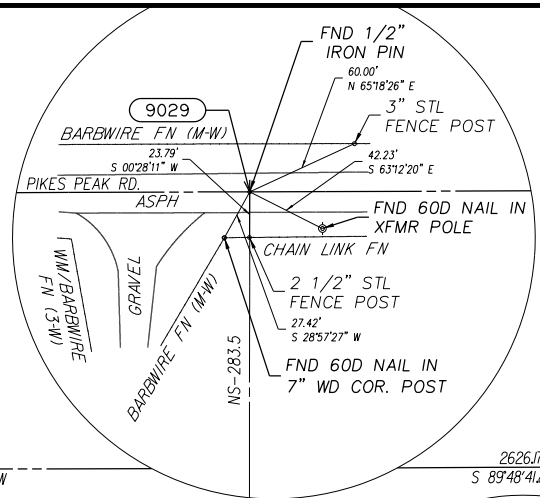
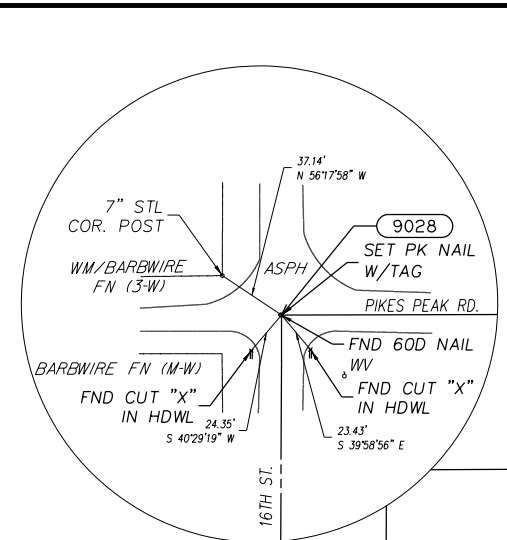
- L.S. 1326 found 1/2" iron pin in 2005 survey
- L.S. 189 found #3 rebar in 2009 survey.

Nothing set. I used 1/2" iron pin.

NW Corner of Section 16, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin. Nothing found below nail. Monument and references fit ODOT survey and the following C.C.R.'s:

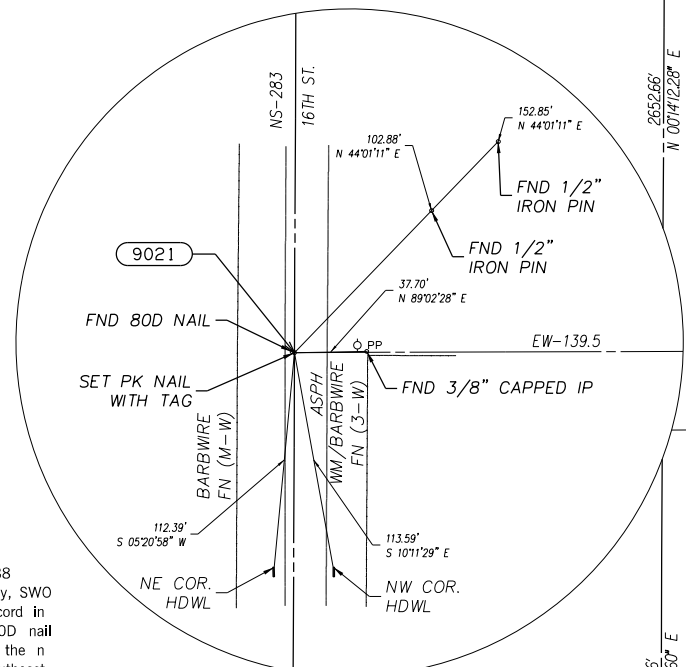
- L.S. 1272 found 3/8" iron pin in 1998 survey
- L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.

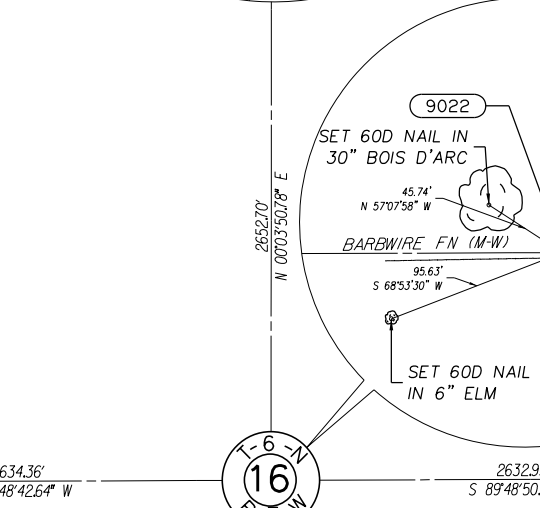


NE Corner of Section 16, T-6N, R-7W ODOT G-26-891
I found cut "X" in concrete. Monument and references fit ODOT survey, SWO 2028(1), and the C.C.R. in which L.S. 696 found cut "X" in 1999 survey. No corner evidence set. I used cut "X".

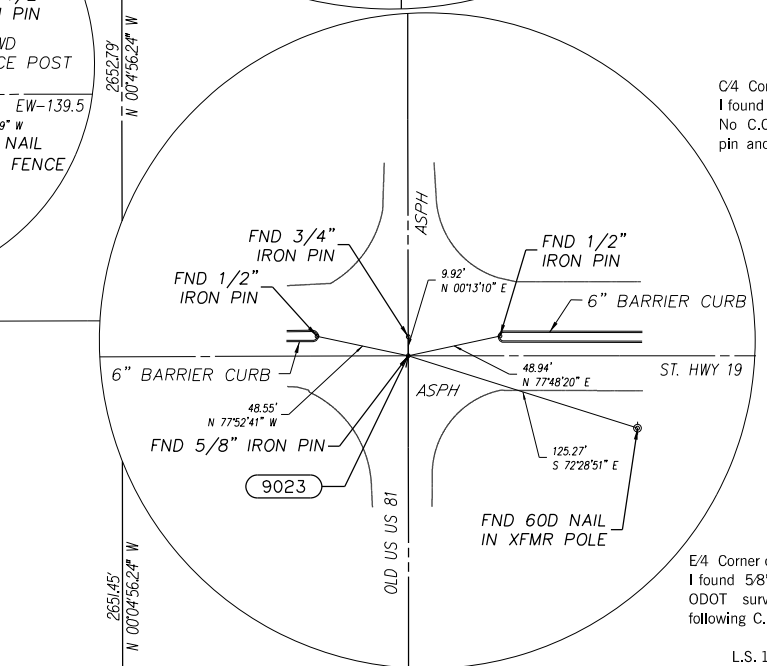
Angle Of Variance
At Sta. 9022 (C/4 Cor.)
X = 1985365.6870
Y = 604077.6000
Lat. = 34°59'35.55072"
Long. = 97°56'37.28364"
θ = 0°01'55.06519"



W/4 Corner of Section 16, T-6N, R-7W ODOT G-26-888
I found 80D nail. Monument does not fit ODOT survey, SWO 2737(1). Monument and reference points fit the corner record in which L.S. 1384 set 80D nail in 2008 survey. The 80D nail had been set using single proportionate method using the northeast corner and one of two monuments at the southeast corner of Section 17. I set PK nail with tag. I used existing reference points from ODOT survey, SWO 2737(1), to set monument, which also fits single proportionate method between the northeast and southeast corners of Section 17. Monument is 1.26 feet east and 0.48 feet south of found 80D nail.

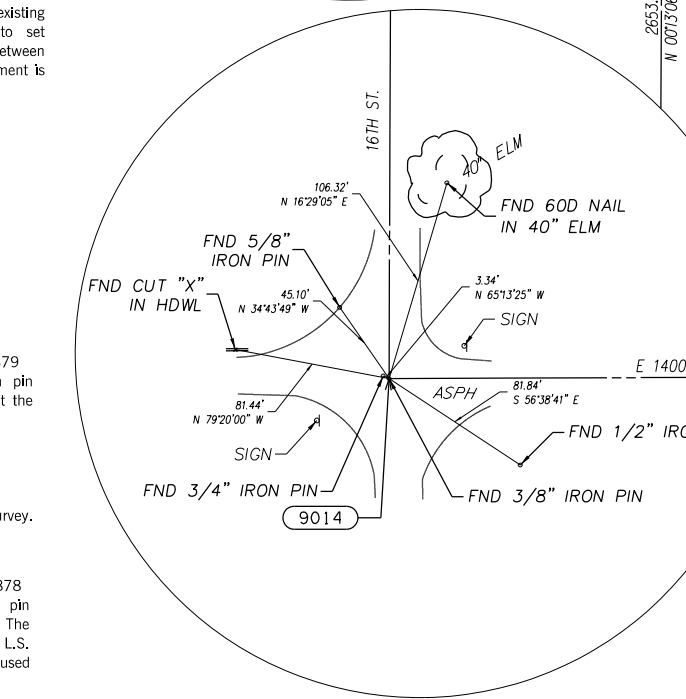


C/4 Corner of Section 16, T-6N, R-7W ODOT G-26-889
I found 1/2" iron pin. Monument fits ODOT survey 2737 (1). No C.C.R.'s found for corner. Nothing set. I used 1/2" iron pin and set references.



E/4 Corner of Section 16, T-6N, R-7W ODOT G-26-890
I found 5/8" iron pin and 3/4" iron pin. The 5/8" iron pin fits ODOT survey, SWO 2028(1). The 3/4" iron pin fits the following C.C.R.'s:

- L.S. 1071 found 5/8" iron pin in 1989 survey
- L.S. 696 found R.R. spike in 1999 survey.
- Nothing set. I used 5/8" iron pin. I did not accept 3/4" iron pin. It does not fit with G.L.O. notes or ODOT survey. It is possibly a centerline control point for S.H. 19.

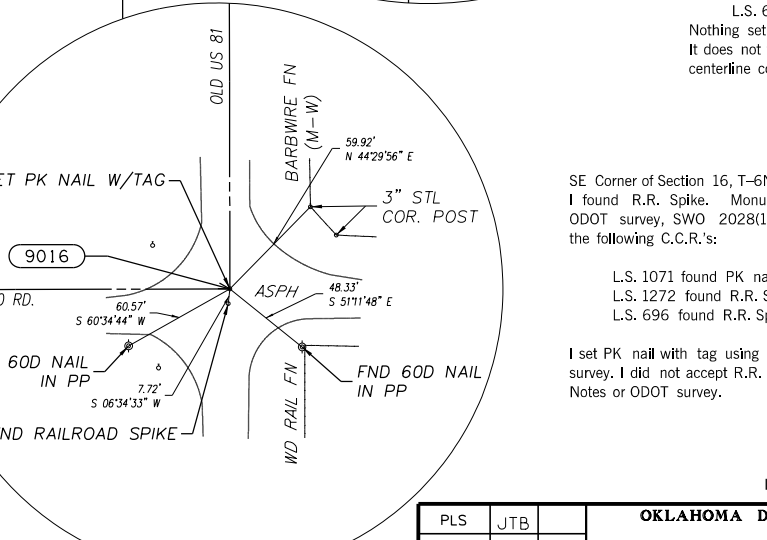
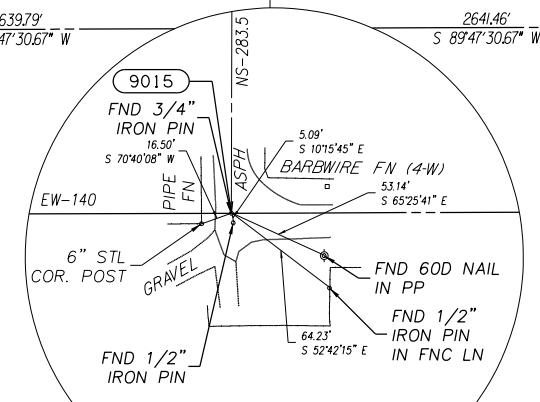


SW Corner of Section 16, T-6N, R-7W ODOT G-26-879
I found 3/8" iron pin and 3/4" iron pin. The 3/4" iron pin does not fit ODOT survey, SWO 2737(1), but it does fit the following corner records:

- L.S. 1272 found 3/4" iron pin in 1998 survey
- L.S. 1384 found #6 rebar in 2008 survey.

The 3/8" iron pin and reference points fit said ODOT survey. Nothing set. I used 3/8" iron pin.

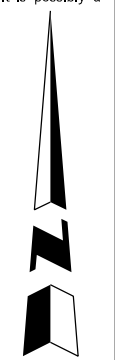
S/4 Corner of Section 16, T-6N, R-7W ODOT G-26-878
I found 3/4" iron pin and 1/2" iron pin. The 3/4" iron pin and reference point fit ODOT survey, SWO 2737(1). The 1/2" iron pin and reference points fit C.C.R. in which L.S. found 3/8" iron pin in 1997 survey. Nothing set. I used 3/4" iron pin.



SE Corner of Section 16, T-6N, R-7W ODOT G-26-877
I found R.R. Spike. Monument and references do not fit ODOT survey, SWO 2028(1). Monument and references fit the following C.C.R.'s:

- L.S. 1071 found PK nail in 1989 survey
- L.S. 1272 found R.R. Spike in 1997 survey
- L.S. 696 found R.R. Spike in 1999 survey.

I set PK nail with tag using measurements from said ODOT survey. I did not accept R.R. Spike, since it did not fit G.L.O. Notes or ODOT survey.



SCALE:
1" = 500'
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 64 OF 76			
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12) SHEET NO. S064

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

NW Corner of Section 7, T-6N, R-7W ODOT G-26-907
I found 1/2" iron pin, railroad spike, and 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey with no supporting evidence listed. No corner record was found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

N/4 Corner of Section 7, T-6N, R-7W ODOT G-26-908
I found 1/2" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey. Nothing set. I used 1" iron pin.

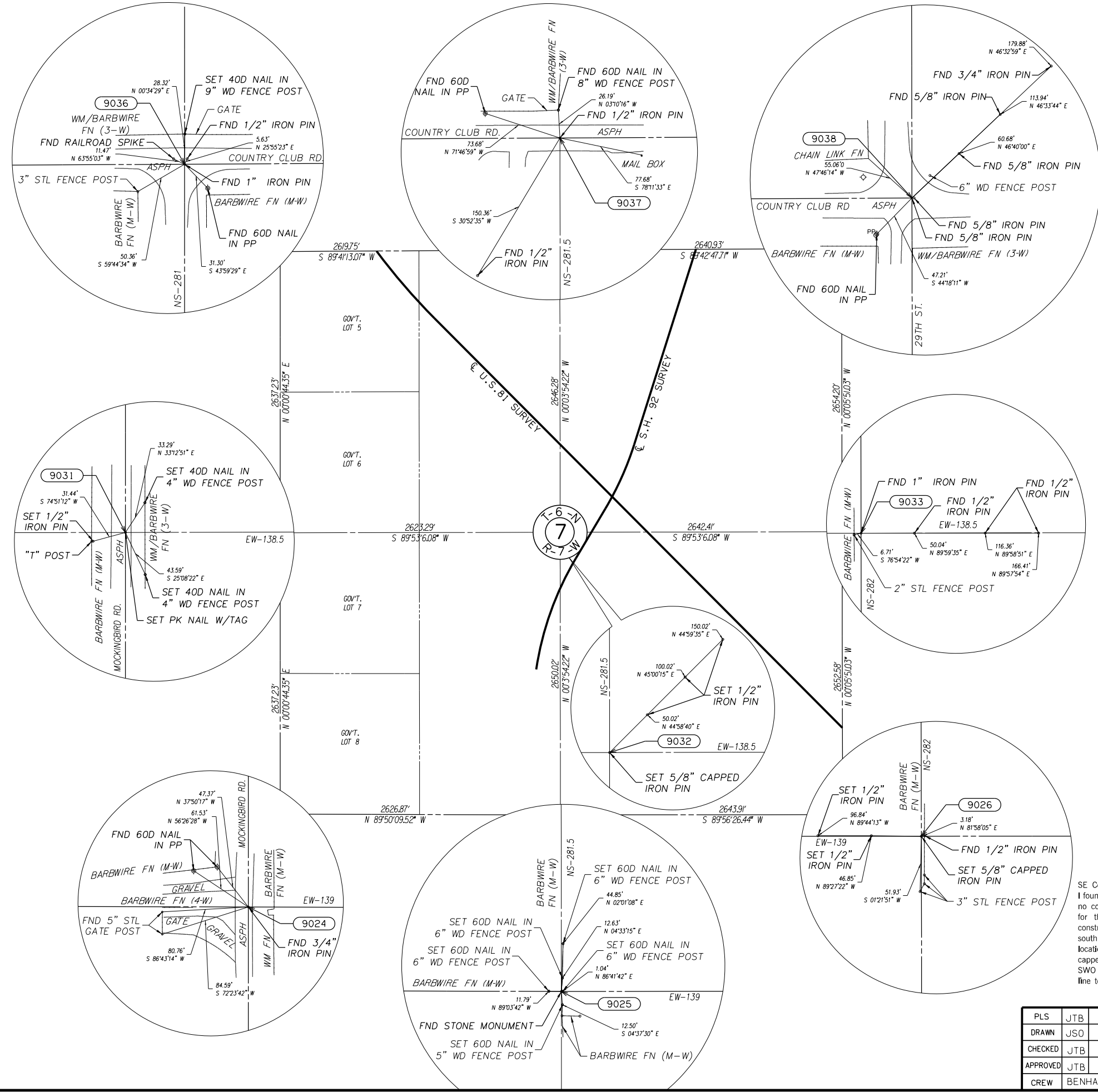
Angle Of Variance
At Sta. 9032 (C/4 Cor.)
X = 1974774.8469
Y = 609365.4703
Lat. = 35°00'27.89363"
Long. = 97°58'44.56656"
θ = 0°00'42.81728"

W/4 Corner of Section 7, T-6N, R-7W ODOT G-26-898
No corner evidence found. I set PK nail with tag. I used single proportion method to set the corner between the northwest and southwest corner of Section 7.

SW Corner of Section 7, T-6N, R-7W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the following corner records:
L.S. 449 found iron pin (CCR filed June 8, 1982)
L.S. 1082 found 3/4" iron pin (CCR filed APR 18, 1994)
L.S. 1272 found 3/8" iron pin (CCR filed Dec 7, 1998)
L.S. 1272 found iron pin (CCR filed Aug 31, 2001).

Nothing set. I used 3/4" iron pin.

S/4 Corner of Section 7, T-6N, R-7W ODOT G-26-896
I found original stone. No certified corner records found, although monument is referenced on C.C.R.'s filed on the southwest and N/4 corner of Section 7. No original reference points were found. Stone was marked, "14" on north face, and looked undisturbed. Nothing set. I used original stone and set reference points.



NE Corner of Section 7, T-6N, R-7W ODOT G-26-905
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1). Also found 5/8" iron pin 2 feet east of corner, which is a P.O.T. point for Country Club Road Alignment from same survey. Corner location and found reference points do not fit the following corner records, in which supporting evidence was not listed:

L.S. 449 found 1/2" iron pin in 1981 survey
L.S. 1272 found R.R. spike in 1998 survey.

C/4 Corner of Section 7, T-6N, R-7W ODOT G-26-899
No corner evidence found. No corner records found. I set 5/8" iron pin. I used the intersection of lines between opposite quarter section corners to set center of section.

E/4 Corner of Section 7, T-6N, R-7W ODOT G-26-900
I found 1" iron pin. Monument and found reference points match ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin

SE Corner of Section 7, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barbed-wire fence running north and south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1), to set corner. Corner location fits old fence line to the south

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 65 OF 76 SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S065
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		



SCALE: 1" = 500'

OKLAHOMA DEPARTMENT OF TRANSPORTATION					
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	OKLA.				
DESCRIPTION			REVISIONS		
			DATE		

NW Corner of Section 8, T-6N, R-7W ODOT G-26-905
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1). Also found 5/8" iron pin 2 feet east of corner which is a P.O.T. point for Country Club Road Alignment from same survey. Corner location and found reference points do not fit the following corner records, in which supporting evidence was not listed:

- L.S. 449 found 1/2" iron pin (CCR filed Apr 23, 1981)
- L.S. 1272 found railroad spike (CCR filed June 26, 1998).

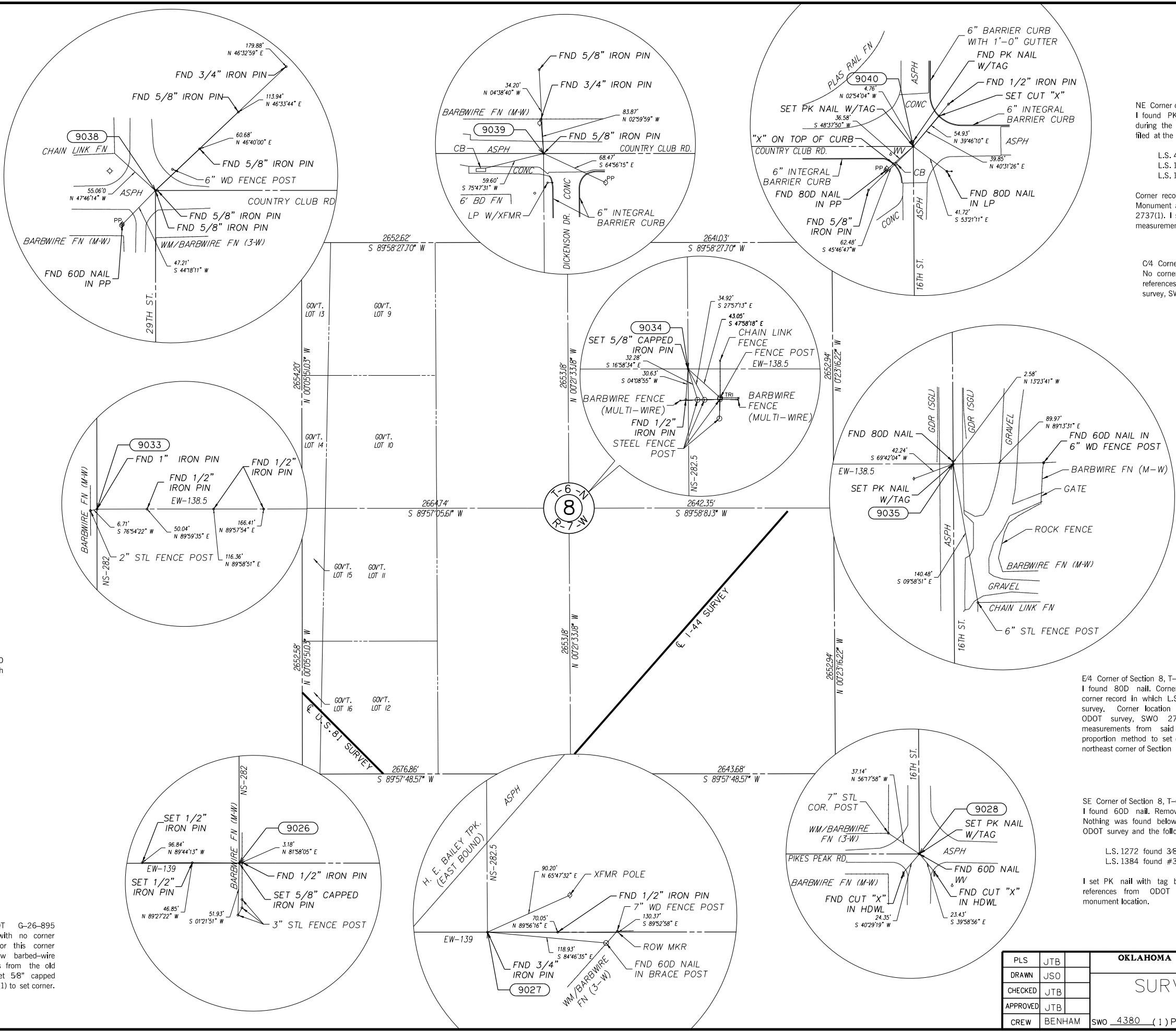
N4 Corner of Section 8, T-6N, R-7W ODOT G-26-904
I found 5/8" iron pin. Corner and found reference points fit ODOT survey, SWO 2737(1). No previous corner records found. Nothing set. I used 5/8" iron pin.

Angle Of Variance
At Sta. 9034 (C/4 Cor.)
X = 1980081.9910
Y = 609373.0260
Lat. = 35°00'27.95285"
Long. = 97°57'40.76639"
θ = 0°01'19.03132"

W4 Corner of Section 8, T-6N, R-7W ODOT G-26-900
I found 1" iron pin. Monument and found reference points match ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

S4 Corner of Section 8, T-6N, R-7W ODOT G-26-894
I found 3/4" iron pin. Corner location and reference points fits ODOT survey, SWO 2737(1), and corner record in which L.S. 1706 found 3/4" iron pin in 2011 survey. Nothing set. I used 3/4" iron pin.

SW Corner of Section 8, T-6N, R-7W ODOT G-26-895
I found 1/2" iron pin. This monument was set by others with no corner record filed. I did not find any supporting evidence for this corner location. This corner was used in the construction of a new barbed-wire fence running north and south. New fence location deviates from the old fence location by approximately 4 feet to the east. I set 5/8" capped iron pin. I used measurements from ODOT survey, SWO 2737(1) to set corner. Corner location fits old fence line to the south



NE Corner of Section 8, T-6N, R-7W ODOT G-26-903
I found PK nail with tag (C.A. 3949). Monument was set during the course of this survey. No corner record had been filed at the time. Monument fit corner records listed below:

- L.S. 449 found iron pin (CCR filed Aug 15, 1984)
- L.S. 1272 found PK nail in 1998 survey
- L.S. 1407 found PK nail in 2002 survey.

Corner records did not have any supporting evidence listed. Monument and corner records did not fit ODOT survey, SWO 2737(1). I set PK nail with tag. I used reference points and measurements from said ODOT survey to set corner.

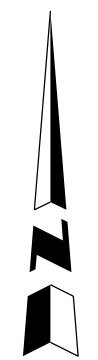
C/4 Corner of Section 8, T-6N, R-7W ODOT G-26-901
No corner evidence found. I set 5/8" capped iron pin and references as shown. I used measurements from ODOT survey, SWO 2737(1), to set center of section.

E/4 Corner of Section 8, T-6N, R-7W ODOT G-26-902
I found 80D nail. Corner and found references matched corner record in which L.S. 1326 found 80D nail in 2005 survey. Corner location does not fit measurements from ODOT survey, SWO 2737(1). I set PK nail. I used measurements from said ODOT survey and used single proportion method to set corner between the southeast and northeast corner of Section 8.

SE Corner of Section 8, T-6N, R-7W ODOT G-26-893
I found 60D nail. Removed 60D nail to look for iron pin. Nothing was found below nail. Monument and references fit ODOT survey and the following CCR's:

- L.S. 1272 found 3/8" iron pin in 1998 survey
- L.S. 1384 found #3 rebar in 2008 survey.

I set PK nail with tag back in place of 60D nail. I used references from ODOT survey, SWO 2028(1), to check monument location.



SCALE: 1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

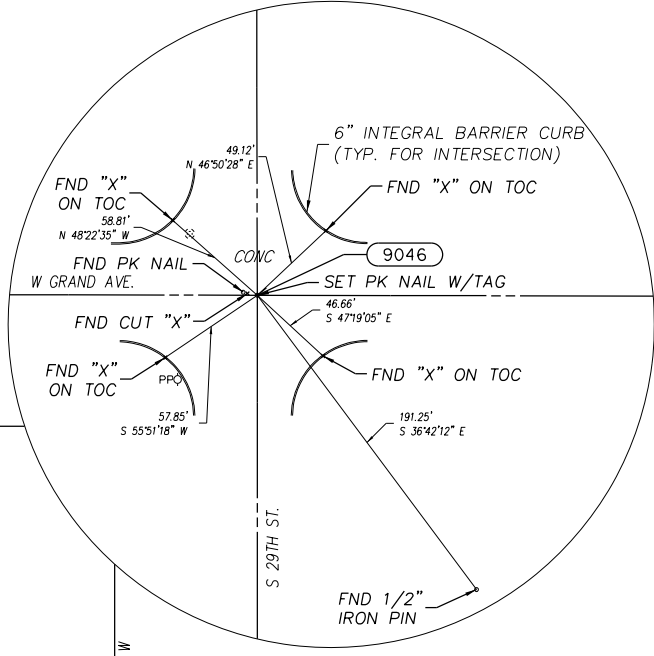
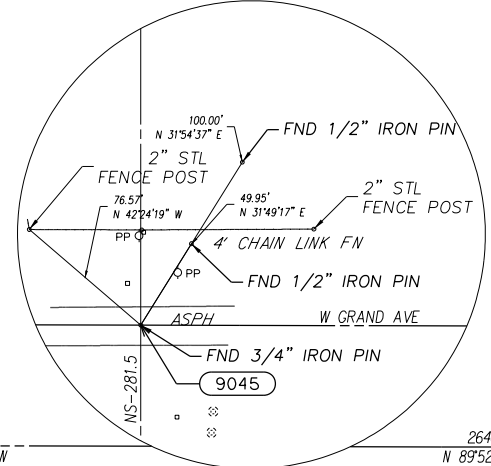
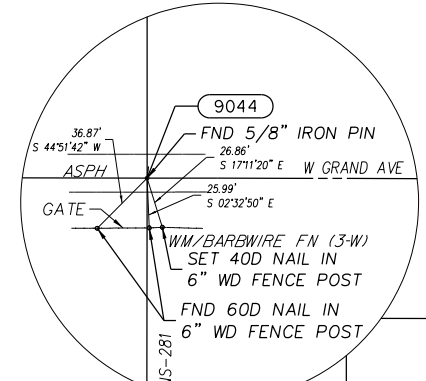
OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 66 OF 76			
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12) SHEET NO. S066

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

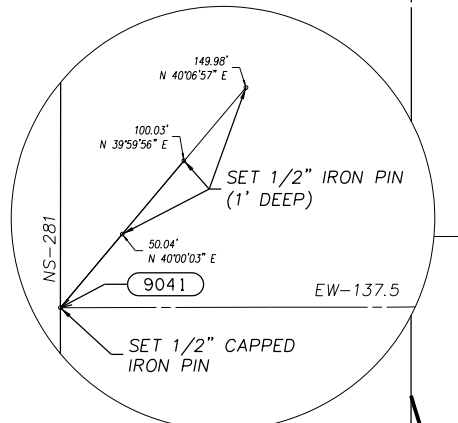
N4 Corner of Section 6, T-6N, R-7W ODOT G-26-912
I found 3/4" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. Nothing set. I used 3/4" iron pin.

NW Corner of Section 6, T-6N, R-7W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

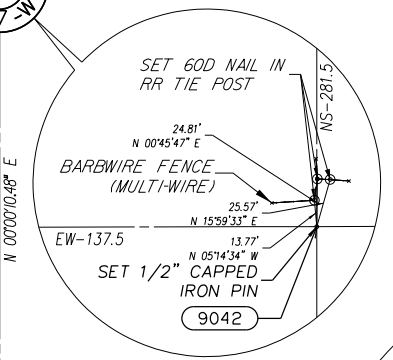
Angle Of Variance
At Sta. 9042 (C/4 Cor.)
X = 1974771.9766
Y = 614659.7111
Lat. = 35°01'20.25923"
Long. = 97°58'44.58786"
θ = 0°00'42.80519"



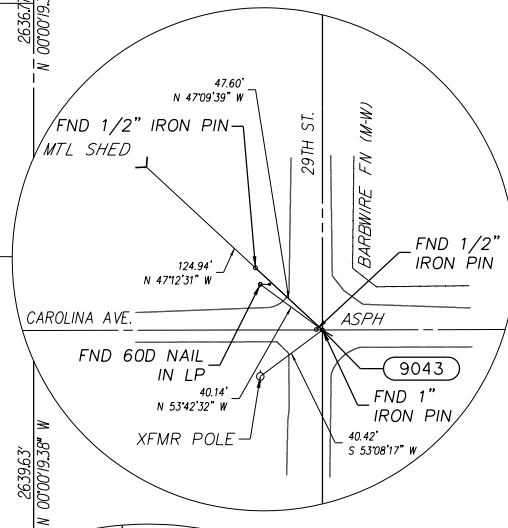
NE Corner of Section 6, T-6N, R-7W ODOT G-26-911
I found a chiseled "X" and nail. Monuments and reference points do not fit ODOT survey, SWO 2737(1), or the following corner records. L.S. 955 found 1" iron pin in 1985 survey. L.S. 1272 found an iron pin in 1988 survey. Monuments and reference points fit the following corner records. L.S. 1272 found a chiseled "X" in 1998 survey, with no supporting evidence listed. L.S. 1200 found a nail at an "X" in intersection in 2012 survey. I set a PK nail with tag. I used found reference points and measurements from said ODOT survey to set monument. I did not find supporting evidence for the chiseled "X", although it was used for subdivision surveys to the Southwest. I did not find supporting evidence for the nail that was found at the intersection of two paving joints, which was placed there by others during the course of this survey.



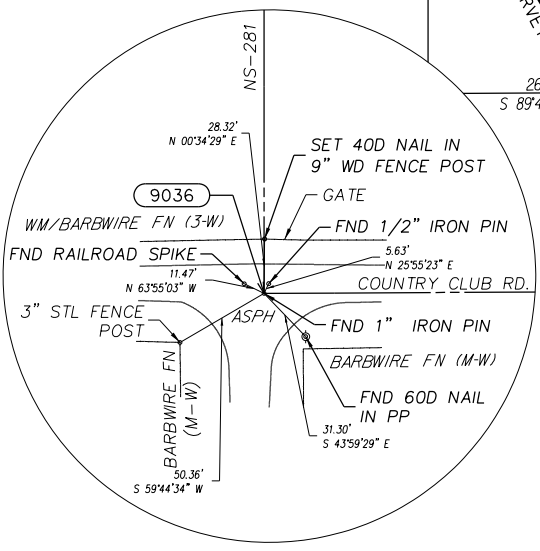
W4 Corner of Section 6, T-6N, R-7W ODOT G-26-908
No corner evidence found. I set 5/8" iron pin and references. I set corner using single proportionate method.



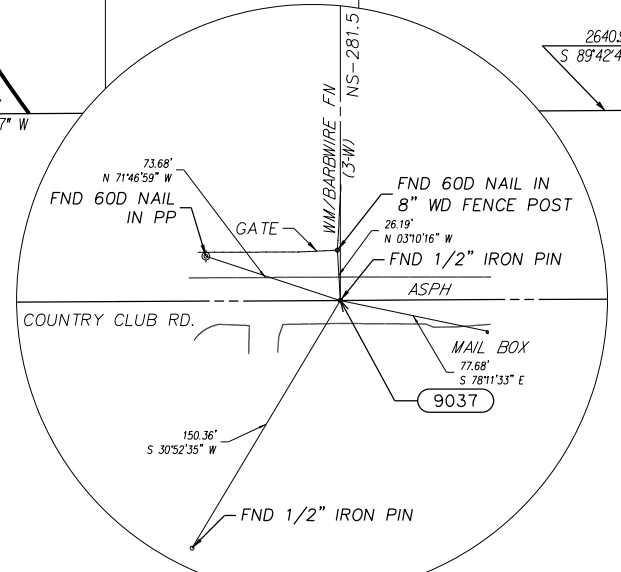
C/4 Corner of Section 6, T-6N, R-7W ODOT G-26-909
No corner evidence found. I set 1/2" capped iron pin and references. I used the intersection of opposite quarter corners, and measurements from ODOT Survey, SWO 2737(1).



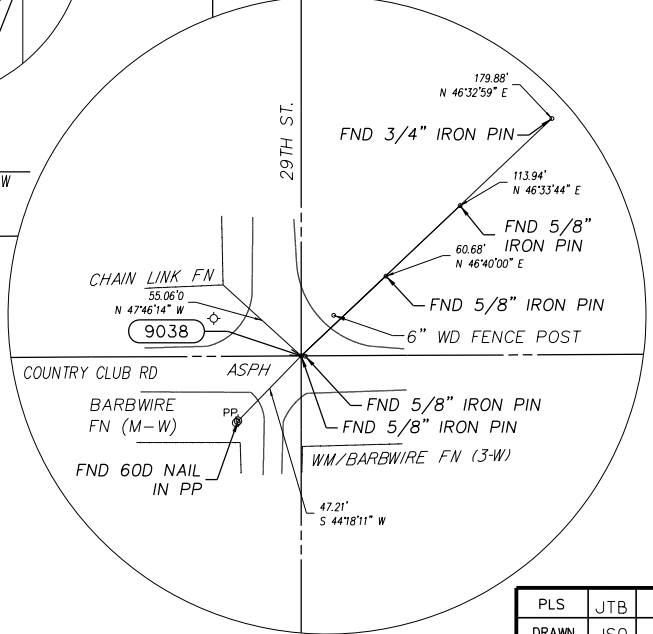
E/4 Corner of Section 6, T-6N, R-7W ODOT G-26-910
I found 1/2" iron pin & 1" iron pin. 1/2" iron pin and found reference points fit the following corner records. L.S. 449 found 1/2" rebar in 1981 survey. L.S. 1272 found iron pin in 1998 survey (C.C.R. filed June 26, 1998). These corner records did not have any supporting evidence listed. 1" iron pin and found reference points fit measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.



SW Corner of Section 6, T-6N, R-7W ODOT G-26-907
I found 1/2" iron pin, railroad spike, and 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.



S4 Corner of Section 6, T-6N, R-7W ODOT G-26-908
I found 1/2" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey. Nothing set. I used 1" iron pin.



SE Corner of Section 6, T-6N, R-7W ODOT G-26-905
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1). Also found 5/8" iron pin 2 feet east of corner which is a P.O.T. point for Country Club Road alignment from same survey. Corner location and found reference points do not fit the following corner records, in which supporting evidence was not listed:
L.S. 449 found 1/2" iron pin (C.C.R. filed Apr 23, 1981)
L.S. 1272 found railroad spike (C.C.R. filed June 26, 1998).



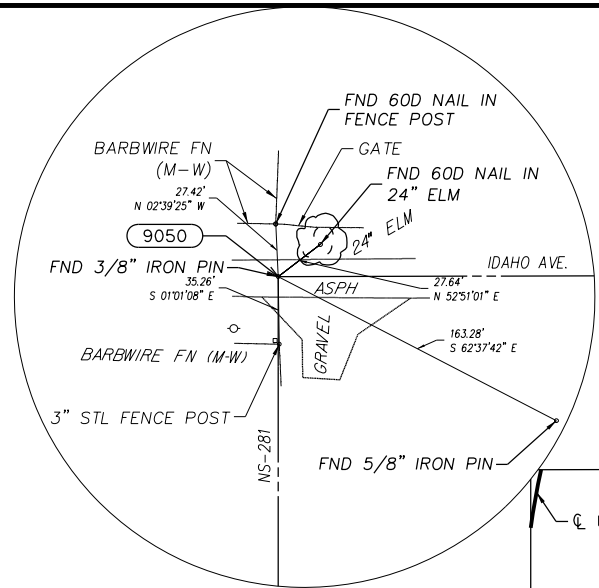
SCALE:
1" = 500'
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 67 OF 76
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		

SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S067

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

N4 Corner of Section 31, T-7N, R-7W ODOT G-26-919
I found 3/4" iron pin. Corner location and found references fit ODOT survey, SWO 2737(1) and the following corner records: L.S. 1281 found 3/4" rebar in 1994 survey and L.S. 1378 found R.R. Spike in 1996 survey. Nothing set. I used 3/4" iron pin.



NW Corner of Section 31, T-7N, R-7W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

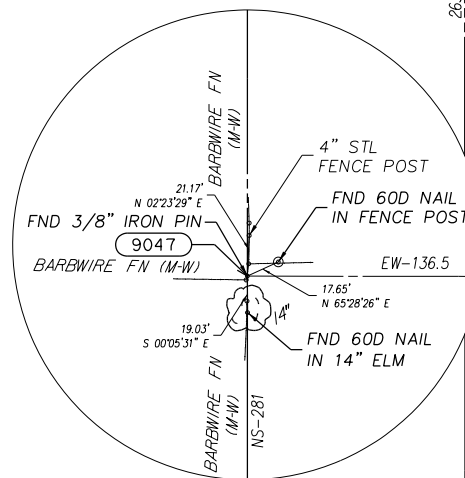
- L.S. 1378 found 1" iron pin in 1996 survey
- L.S. 1272 found iron pin in 1998 survey
- L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin

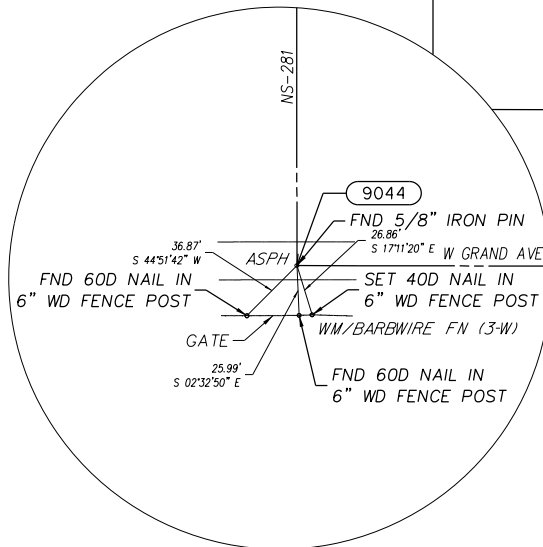


Angle Of Variance
At Sta. 9048 (C/4 Cor.)
X: 1974768.9904
Y: 619945.6544
Lat.: 35°02'12.54254"
Long.: 97°58'44.61058"
θ = 0°00'42.79229"

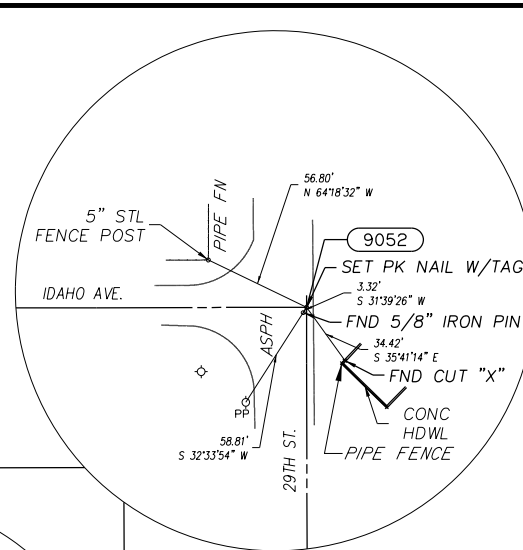
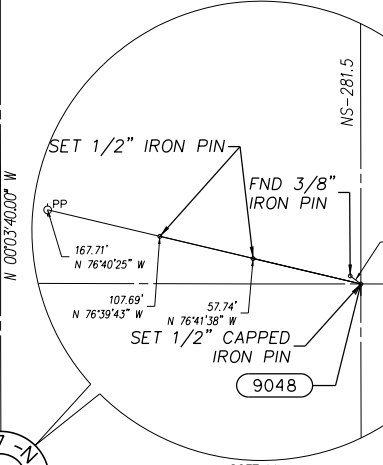
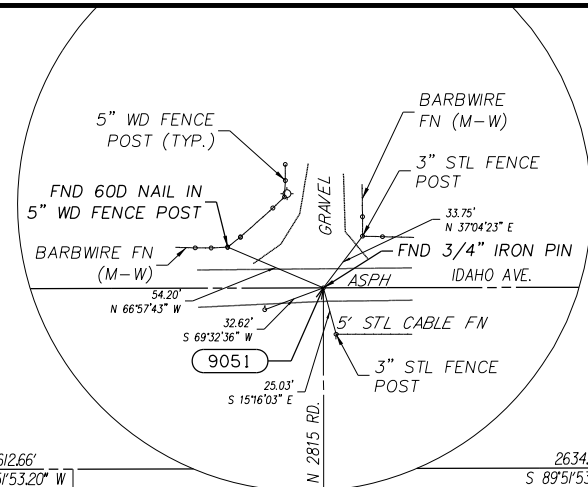
W4 Corner of Section 31, T-7N, R-7W ODOT G-26-914
I found 3/8" iron pin. Monument and references fit corner record in which L.S. 1200 set 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.



S4 Corner of Section 31, T-7N, R-7W ODOT G-26-912
I found 3/4" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. Nothing set. I used 3/4" iron pin.

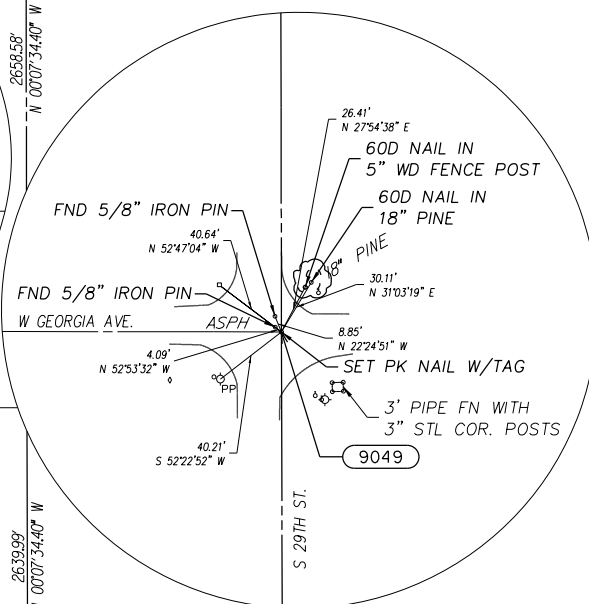


SW Corner of Section 31, T-7N, R-7W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

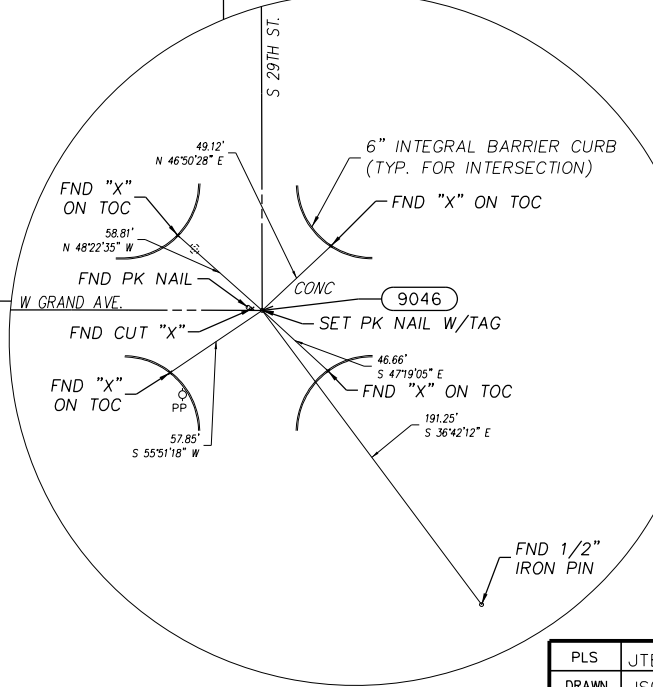


NE Corner of Section 31, T-7N, R-7W ODOT G-26-918
I found 5/8" iron pin. This monument and found references do not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.

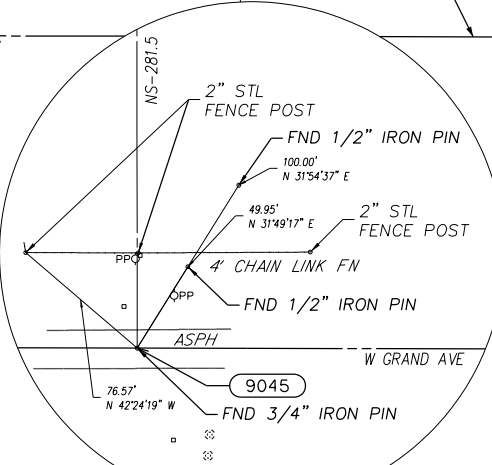
C4 Corner of Section 31, T-7N, R-7W ODOT G-26-915
I found 3/8" iron pin. No corner record or supporting evidence found for this monument. This iron pin appeared to be set from one of the two iron pins found at the E/4 corner of Section 31. Supporting evidence was not found for the iron pins at the said E/4 corner, and their locations did not fit measurements from ODOT survey, SWO 2737(1). I set 1/2" capped iron pin. I used the intersection of opposite 1/4 section corners to set center of section. The E-W 1/4 section line also fits 1/16 corners and P.O.T. iron pins (on Georgia Ave.) found from said ODOT survey.



E4 Corner of Section 31, T-7N, R-7W ODOT G-26-916
I found two 5/8" iron pins. One monument was set by others, and one was found by L.S. 449 in 1984 survey (no supporting evidence listed). These monuments do not fit ODOT survey, SWO 2737(1). I set PK nail with tag. I used measurements from said ODOT survey to set corner.



SE Corner of Section 31, T-7N, R-7W ODOT G-26-911
I found chiseled "X" and nail. Monuments and reference points do not fit ODOT survey, SWO 2737(1), or the following corner records: L.S. 955 found 1" iron pin in 1985 survey. L.S. 1272 found an iron pin in 1988 survey. Monuments and reference points fit the following corner records: L.S. 1272 found chiseled "X" in 1998 survey, with no supporting evidence listed. L.S. 1200 found nail at "X" in intersection in 2012 survey. I set PK nail with tag. I used found reference points and measurements from said ODOT survey to set monument. I did not find supporting evidence for the chiseled "X," although it was used for subdivision surveys to the Southwest. I did not find supporting evidence for the nail that was placed there by others during the course of this survey.



SCALE: 1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION	
PLS	JTB
DRAWN	JSO
CHECKED	JTB
APPROVED	JTB
CREW	BENHAM

SURVEY DATA SHEET
SDS 68 OF 76

SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S068

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS	DATE		

N/4 Corner of Section 30, T-7N, R-7W ODOT G-26-445
 I found PK nail & 1/2" iron pin no corner record was found for PK nail (lines up with property fence to the north). 1/2" iron pin fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1), and reference points from the following corner record. 1/2" iron pin set by L.S. 1155 in 1991 survey. Nothing set. I used 1/2" iron pin.

NW Corner of Section 30, T-7N, R-7W ODOT G-26-444
 I found 1" iron pin, PK nail, & 1/2" iron pin. 1/2 iron pin was found by L.S. 189 in 1984 survey, with no supporting evidence listed. No corner record was filed for PK nail, which I removed to find 1" iron pin two feet below asphalt surface. 1" iron pin and found references fit measurements from ODOT survey, SWO 3609(1), and corner record which L.S. 1155 found 1" iron pin in 1991 survey. Nothing set. I used 1" iron pin.

W/4 Corner of Section 30, T-7N, R-7W ODOT G-26-921
 I found 1/2" capped iron pin set by L.S. 1326 in 2005 survey. I set 5/8" capped iron pin. L.S. 1326 used a 1/2" iron pin, located at the NW corner of Section 30 to determine the W/4 corner. I did not find supporting evidence for that 1/2" iron pin. I used a 1" iron pin found at the NW corner of Section 30, which fits ODOT survey, SWO 3609(1), and the SW corner. I used single proportion method to set point on line and between said corners.

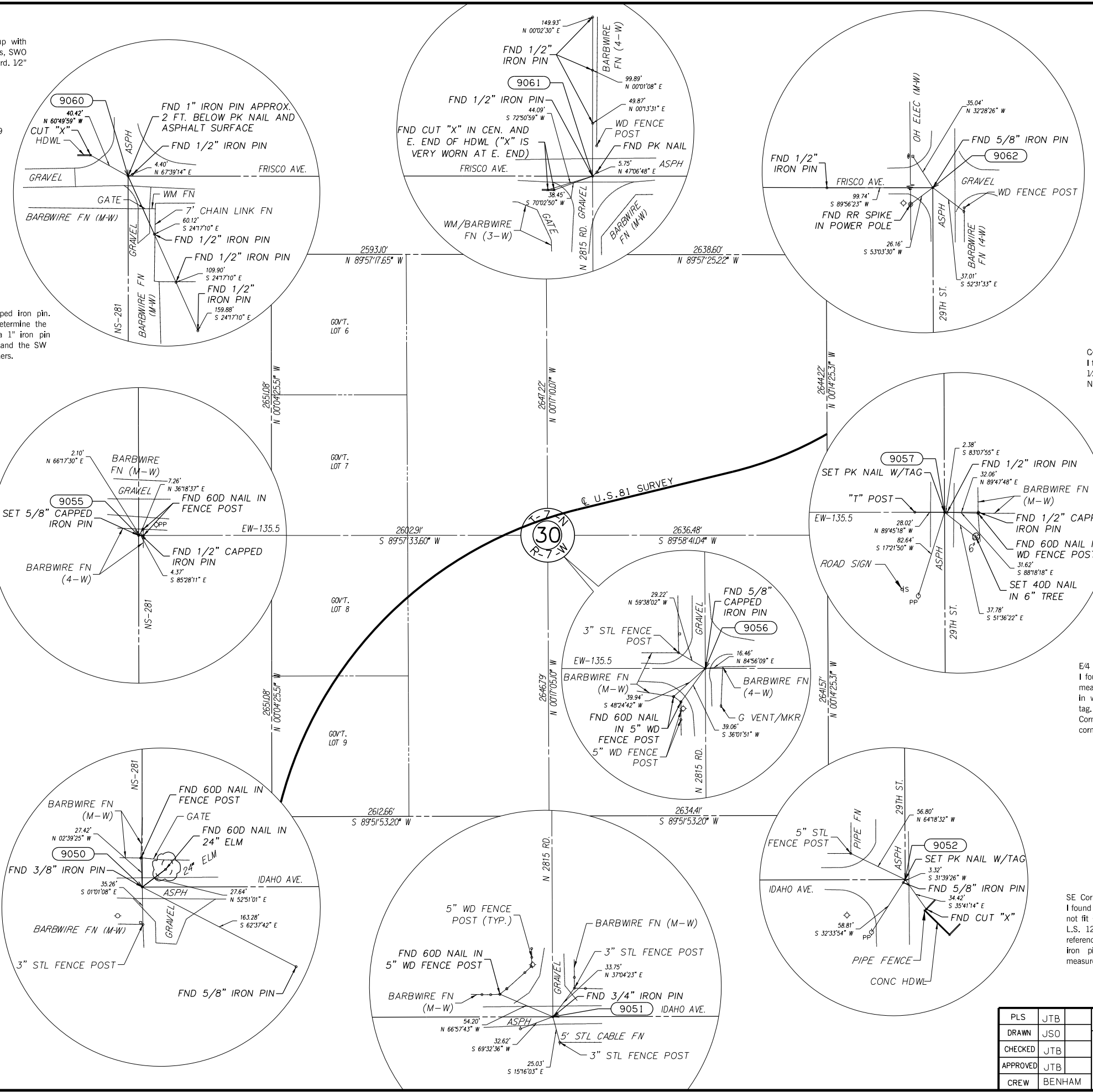
NE Corner of Section 30, T-7N, R-7W ODOT G-26-450
 I found 5/8" iron pin. Monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). It also fits found reference points and measurements from the following corner records: 1/2" iron pin was recovered by L.S. 449 in 1979 survey, 1" iron pin was recovered by L.S. 1155 in 1991 survey, and 1" iron pin was recovered by L.S. 696 in 1997 survey. Nothing set. I used 5/8" iron pin.

C/4 Corner of Section 30, T-7N, R-7W ODOT G-26-922
 I found 5/8" capped iron pin. Corner location and reference points fit 1/2" capped iron pin set by L.S. 1326 in 2000 and 2001 survey. Nothing set. I used 5/8" capped iron pin.

E/4 Corner of Section 30, T-7N, R-7W ODOT G-26-923
 I found 1/2" iron pin. Monument and reference points do not fit measurements from ODOT survey, SWO 2737(1), or corner record in which L.S. 1089 set PK nail in 1994 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner. Corner location fits existing fence lines and reference points from corner record by L.S. 1089.

SE Corner of Section 30, T-7N, R-7W ODOT G-26-918
 I found 5/8" iron pin. This monument and found references does not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.

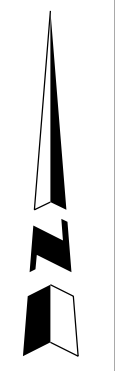
Angle Of Variance
 At Sta. 9056 (C/4 Cor.)
 X = 1974753.0120
 Y = 625240.4660
 Lot. = 35°03'04.91337"
 Long. = 97°58'44.78955"
 θ = 0°00'42.69070"



SW Corner of Section 30, T-7N, R-7W ODOT G-26-920
 I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records. L.S. 1378 found 1" iron pin in 1996 survey. L.S. 1272 found iron pin in 1998 survey. L.S. 1200 found 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.

S/4 Corner of Section 30, T-7N, R-7W ODOT G-26-919
 I found 3/4" iron pin. Corner location and found references fit ODOT survey, SWO 2737(1), and the following corner records. L.S. 1281 found 3/4" rebar in 1994 survey. L.S. 1378 found R.R. Spike in 1996 survey. Nothing set. I used 3/4" iron pin.

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION
DRAWN	JSO	SURVEY DIVISION
CHECKED	JTB	SURVEY DATA SHEET
APPROVED	JTB	SDS 69 OF 76
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. S069



SCALE:
 1" = 500'
 LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

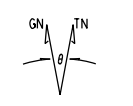
OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

NW Corner of Section 29, T-7N, R-7W ODOT G-26-450
I found 5/8" iron pin. Monument fits measurements from ODOT survey, SWO 2737(1) and SWO 3609(1), and fits found reference points and measurements from the following corner records:

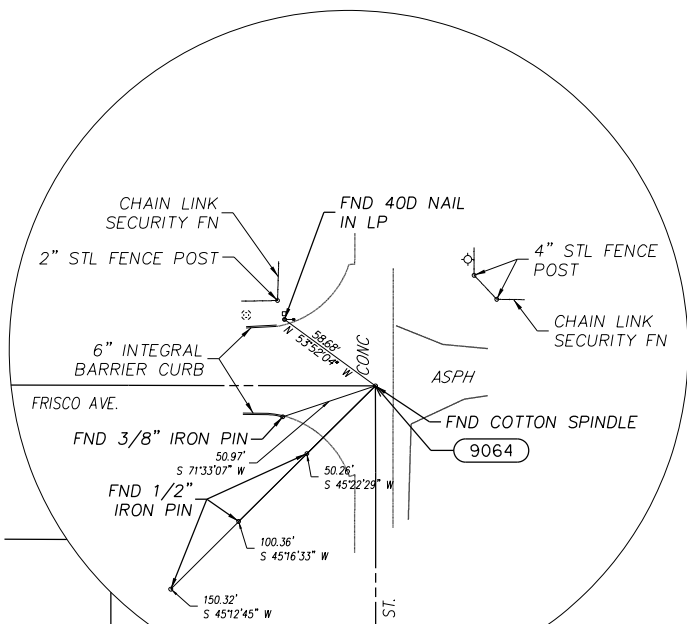
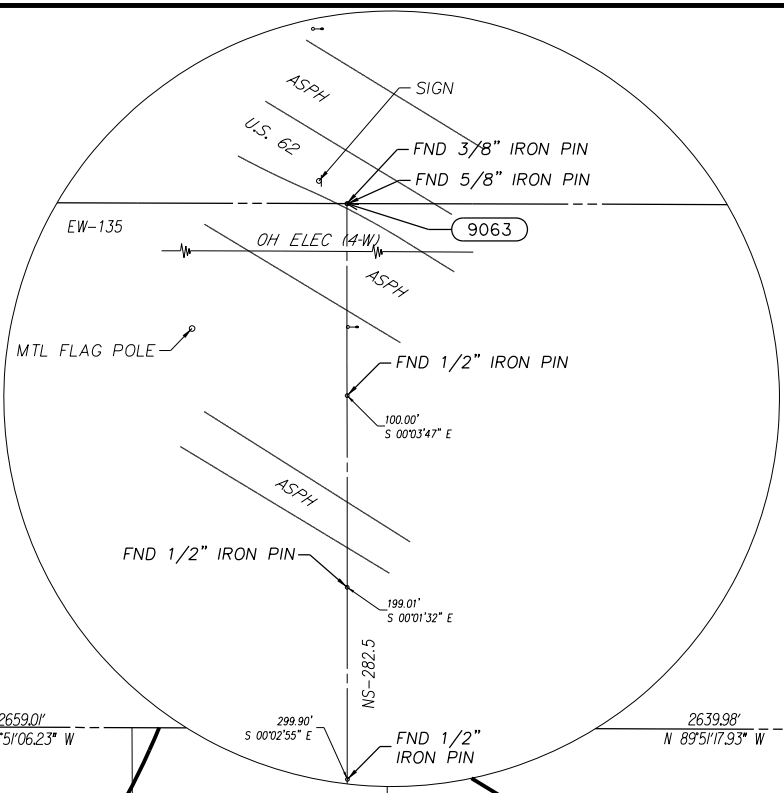
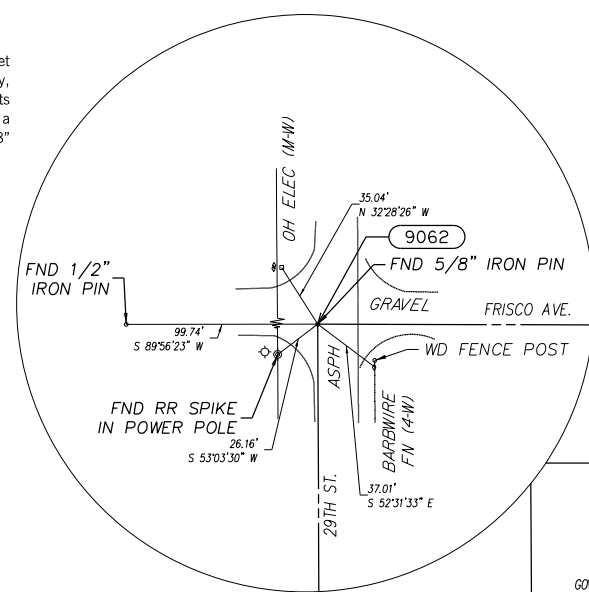
- 12" iron pin was recovered by L.S. 449 in 1979 survey
- 1" iron pin was recovered by L.S. 1155 in 1991 survey
- 1" iron pin was recovered by L.S. 696 in 1997 survey.

Nothing set. I used 5/8" iron pin.

N4 Corner of Section 29, T-7N, R-7W ODOT G-26-451
I found 5/8" iron pin and 3/8" iron pin. Monuments are only 0.2 feet apart. The 3/8" monument fits measurements from ODOT survey, SWO 2737(1) and SWO 3609(1), and fits found reference points and measurements from the following corner record: L.S. 1155 set a 5/8" capped iron pin in 1991 ODOT survey. Nothing set. I used 3/8" iron pin.



Angle Of Variance
At Sta. 9058 (C/4 Cor.)
X = 1980038.4430
Y = 625234.9380
Lat. = 35°03'04.84330"
Long. = 97°57'41.21708"
θ = 0°01'18.77550"

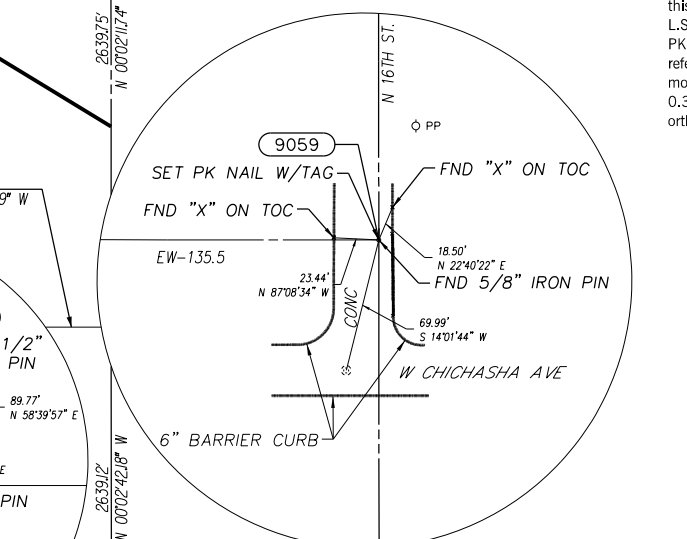
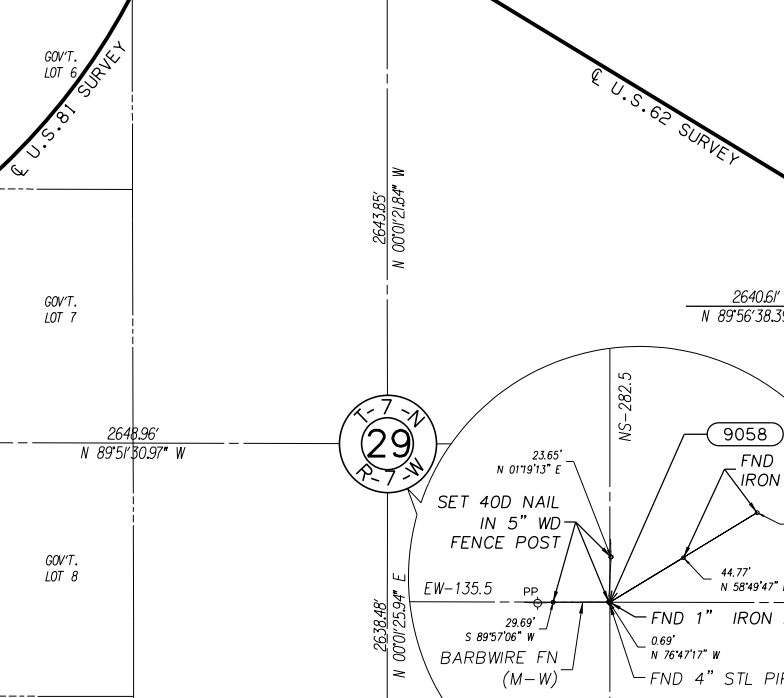
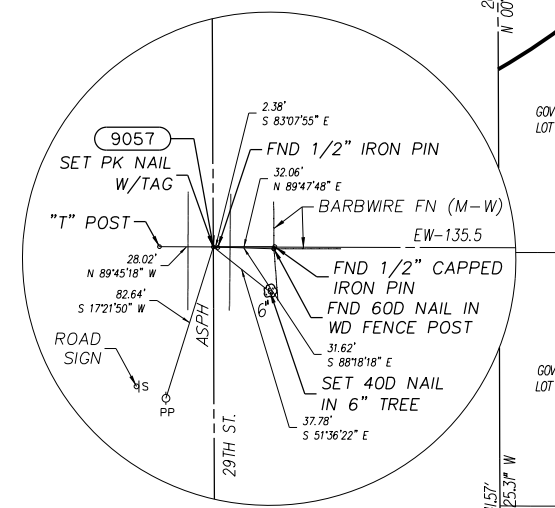


NE Corner of Section 29, T-7N, R-7W ODOT G-26-48
I found cotton spindle. Monument was found inside an impression of concrete made by a brass cap, and it fits found references and measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). ODOT brass cap was recovered by L.S. 1155 in 1991 ODOT survey and by L.S. 1407 in 1997 survey. Nothing set. I used cotton spindle.

C/4 Corner of Section 29, T-7N, R-7W ODOT G-26-924
I found 1" iron pin monument. It fits found reference points and measurements from ODOT survey, SWO 2738(1). No C.C.R.'s found for this corner. Nothing set. I used 1" iron pin.

E/4 Corner of Section 29, T-7N, R-7W ODOT G-26-925
I found 5/8" iron pin. It was later obliterated during the course of this survey. I also found references from corner record in which L.S. 1326 set mag nail in 2012. Survey mag nail not found. I set PK nail with tag. I used previously measured coordinates and reference points to restore the location of the 5/8" iron pin. This monument fits ODOT survey, SWO 2738(1). Monument location is 0.32 feet south and 0.19 feet west of the mid-point between the northeast and southeast corner of Section 29.

W/4 Corner of Section 29, T-7N, R-7W ODOT G-26-923
I found 12" iron pin. Monument and reference points do not fit measurements from ODOT survey, SWO 2737(1), or corner record in which L.S. 1089 set PK nail in 1994 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner. Corner location fits existing fence lines and reference points from corner record by L.S. 1089.

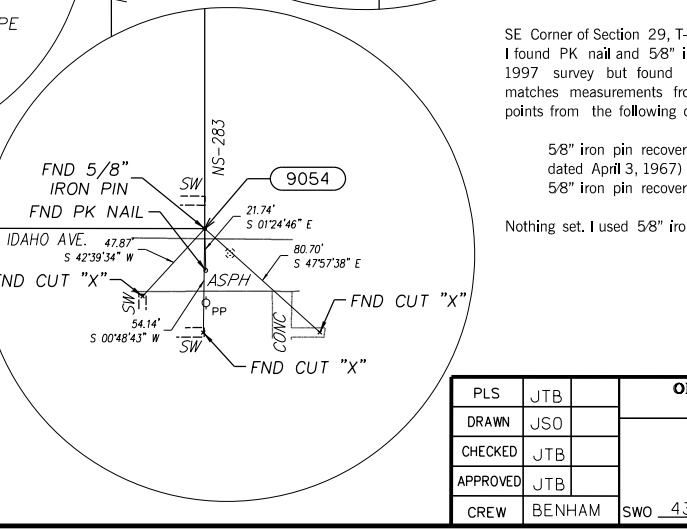
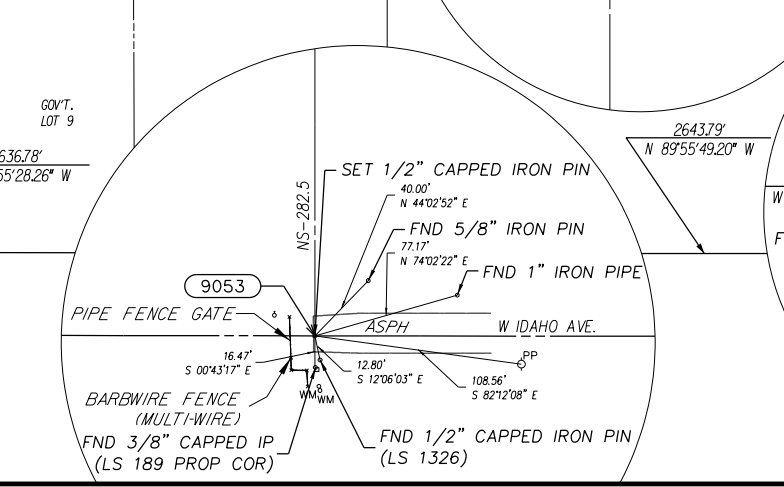
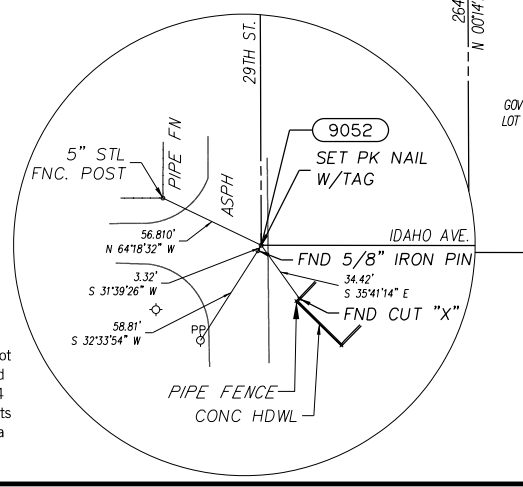


SE Corner of Section 29, T-7N, R-7W ODOT G-26-154
I found PK nail and 5/8" iron pin. PK nail that was found was set by L.S. 1407 in 1997 survey but found none of the supporting evidence listed. 5/8" iron pin matches measurements from ODOT survey, SWO 2737(1) and found reference points from the following corner records:

- 5/8" iron pin recovered by Mr. J. P. Andrews, location engineer (SD 11 form dated April 3, 1967)
- 5/8" iron pin recovered by L.S. 189 in 2006 survey.

Nothing set. I used 5/8" iron pin.

SW Corner of Section 29, T-7N, R-7W ODOT G-26-918
I found 5/8" iron pin. This monument and found references do not fit ODOT survey, SWO 2737(1), or corner record in which L.S. 1272 found iron pin in 1988 survey. Monument and reference points fit corner record in which L.S. 1200 found 5/8" iron pin in 2012 survey. I set PK nail with tag. I used measurements from said ODOT survey to set corner.



SCALE: 1" = 500'
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

S/4 Corner of Section 29, T-7N, R-7W ODOT G-26-917
I found 12" capped iron pin, set by L.S. 1326 in 2004 survey. I could not accept this monument, because the method used to calculate this point, involved using a PK nail at the SE corner of Section 29, which was found to be 21.74 feet south of actual corner. I set PK nail with tag using found reference points from ODOT survey, SWO 2737(1), and a corner record where L.S. 189 found a car axle in 2006 survey.

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION	
DRAWN	JSO	SURVEY DATA SHEET SDS 70 OF 76	
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		

SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. 5070

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

N4 Corner of Section 20, T-7N, R-7W ODOT G-26-453
 I found 3/8" iron pin set by others. No corner record or supporting evidence found for this iron pin. 1/2" iron pin and reference points that was set by L.S. 1155 were not found from 1991 survey. I set 5/8" capped iron pin. I applied single proportionate method between the northwest and northeast corners of Section 20. Monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1).

NW Corner of Section 20, T-7N, R-7W ODOT G-26-448
 I found 1" iron pin that was recovered by L.S. 1155 in 1991 ODOT survey. Reference points were not found. Monument fits measurements to other section corners, from ODOT surveys, SWO 2737(1) and 3609(1). Nothing set. I used 1" iron pin.

Angle Of Variance
 At Sta. 9066 (C/4 Cor.)
 X = 1980034.5485
 Y = 630523.0395
 Lat. = 35°03'57.14750"
 Long. = 97°57'41.23963"
 θ = 0°01'18.76270"

NE Corner of Section 20, T-7N, R-7W ODOT G-26-454
 I found 1/2" iron pin that was set by L.S. 1155 in 1991 survey. Corner location and reference points fit ODOT surveys, SWO 2737(1) and SWO 3609(1). Nothing set. I used 1/2" iron pin.

C/4 Corner of Section 20, T-7N, R-7W ODOT G-26-452
 No corner evidence found. I set 5/8" iron pin using intersecting lines from 1/4 corners and measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). Calculated point fits found reference point and 5/8" iron pin that was set by L.S. 1155 in 1991 ODOT survey. Set reference points.

E/4 Corner of Section 20, T-7N, R-7W ODOT G-26-455
 I found 3/4" iron pin. Current monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). It also fits found reference points and measurements from the following corner records:

OHD brass MON recovered by Mr. J.P. Andrews, location engineer (SD form 11, dated Aug 10, 1966)
 3/4" iron pin was recovered by L.S. 1155 1991 survey.

Nothing set. I used 3/4" iron pin.

SE Corner of Section 20, T-7N, R-7W ODOT G-26-48
 I found cotton spindle. Monument was found inside an impression of concrete made by a brass cap, and fits found references and measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). ODOT brass cap was recovered by L.S. 1155 in 1991 ODOT survey and by L.S. 1407 in 1997 survey. Nothing set. I used cotton spindle.

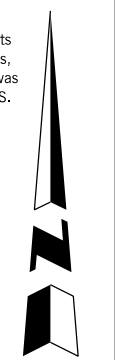
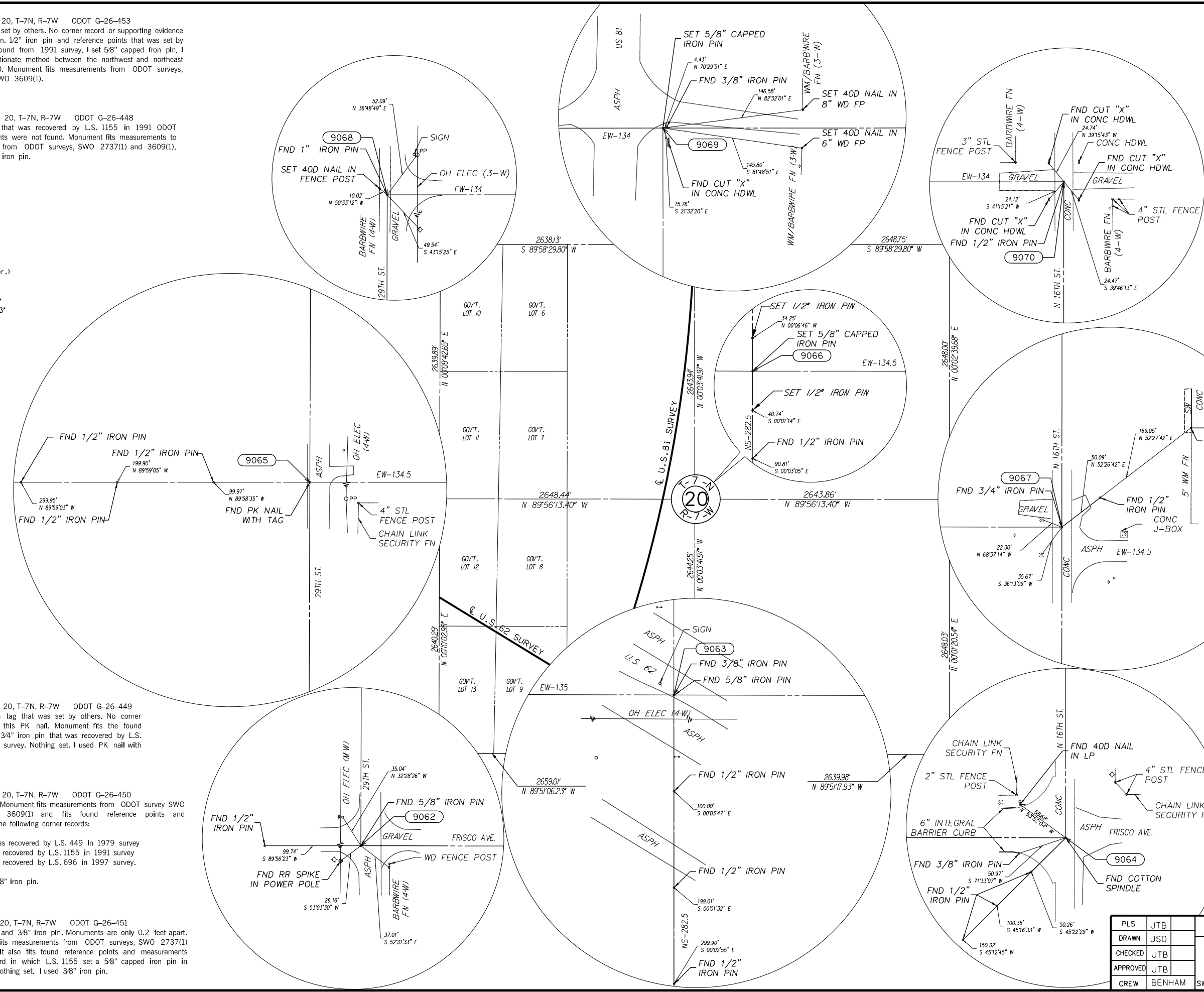
W/4 Corner of Section 20, T-7N, R-7W ODOT G-26-449
 I found PK nail with tag that was set by others. No corner record was filed for this PK nail. Monument fits the found reference points and 3/4" iron pin that was recovered by L.S. 1155 in 1991 ODOT survey. Nothing set. I used PK nail with tag.

SW Corner of Section 20, T-7N, R-7W ODOT G-26-450
 I found 5/8" iron pin. Monument fits measurements from ODOT survey SWO 2737(1) and SWO 3609(1) and fits found reference points and measurements from the following corner records:

1/2" iron pin was recovered by L.S. 449 in 1979 survey
 1" iron pin was recovered by L.S. 1155 in 1991 survey
 1" iron pin was recovered by L.S. 696 in 1997 survey.

Nothing set. I used 5/8" iron pin.

S/4 Corner of Section 20, T-7N, R-7W ODOT G-26-451
 I found 5/8" iron pin and 3/8" iron pin. Monuments are only 0.2 feet apart. The 3/8" monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609(1). It also fits found reference points and measurements from the corner record in which L.S. 1155 set a 5/8" capped iron pin in 1991 ODOT survey. Nothing set. I used 3/8" iron pin.



SCALE: 1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 71 OF 76			
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12) SHEET NO. 5071

NW Corner of Section 17, T-7N, R-7W ODOT G-26-931
I found 1" iron pin. Monument and reference points fit corner record in which L.S. 1407 found a 1" iron pin in 1999 and 2001 surveys. Monument fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

N4 Corner of Section 17, T-7N, R-7W ODOT G-26-930
I set 3/4" iron pin. Monument and reference points fit corner record in which L.S. 1272 found 3/4" iron pin in 2003 survey. Monument and reference points fit measurements from ODOT, SWO survey 2737(1). Nothing set. I used 3/4" iron pin.

W4 Corner of Section 17, T-7N, R-7W ODOT G-26-926
No corner evidence found. I set 5/8" capped iron pin. Monument was set using single proportionate method between the northwest and southwest corners of Section 17.

Angle Of Variance
At Sta. 9072 (C/4 Cor.)
X: 1980038.6957
Y: 635809.8418
Lat.: 35°04'49.43858"
Long.: 97°57'41.16544"
θ = 0°01'18.80481"

SW Corner of Section 17, T-7N, R-7W ODOT G-26-448
I found 1" iron pin that was recovered by L.S. 1155 in 1991 ODOT survey. Reference points were not found. Monument fits measurements to other section corners from ODOT surveys, SWO 2737(1) and 3609(1). Nothing set. I used 1" iron pin.

S4 Corner of Section 17, T-7N, R-7W ODOT G-26-453
I found 3/8" iron pin set by others. No corner record or supporting evidence found for this iron pin. 1/2" iron pin and reference points were not found from 1991 survey, set by L.S. 1155. I set 5/8" capped iron pin. I applied single proportionate method between the northwest and northeast corners of Section 20. Monument fits measurements from ODOT surveys, SWO 2737(1) and SWO 3609 (1).

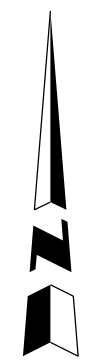
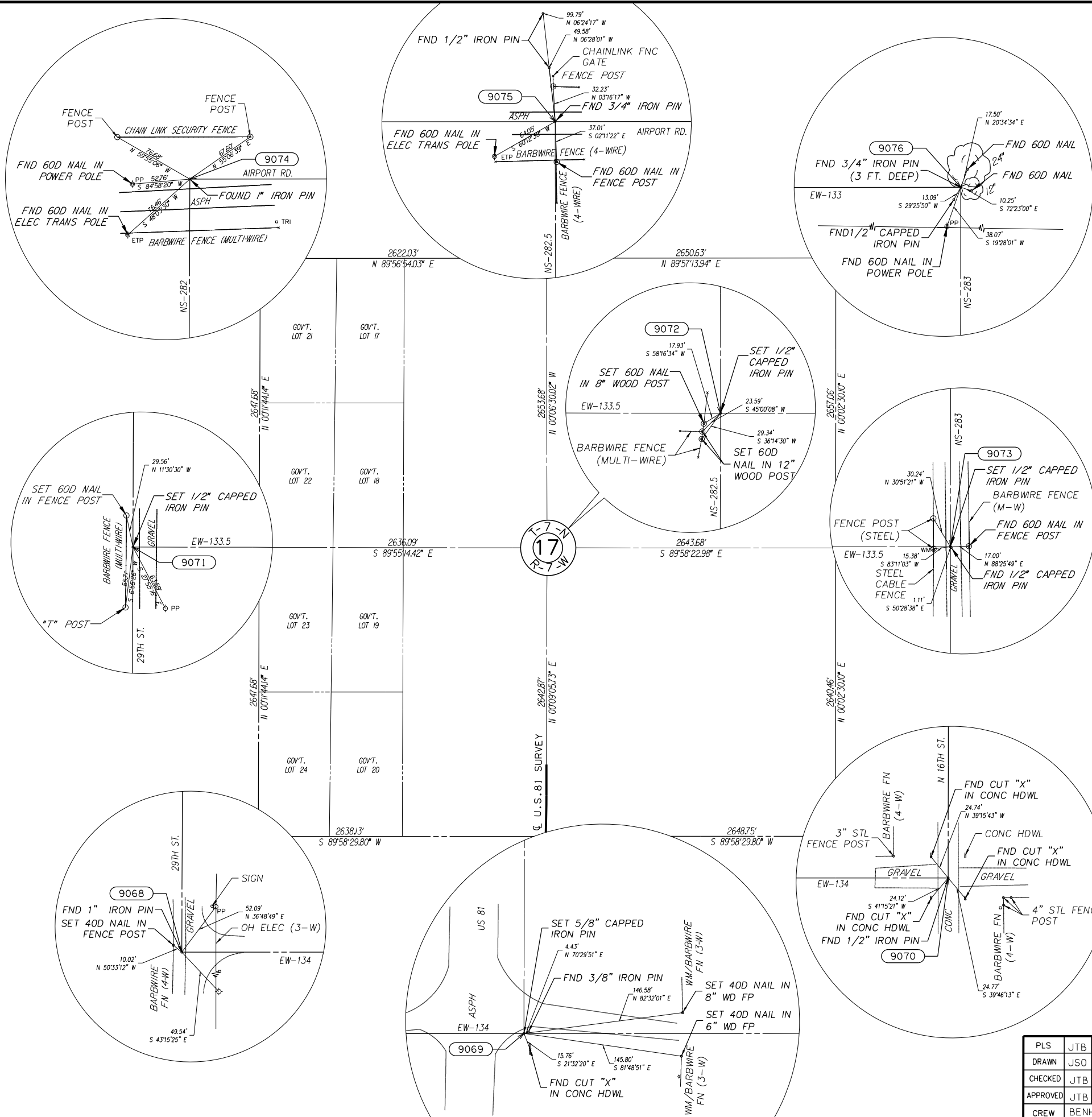
OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

NE Corner of Section 17, T-7N, R-7W ODOT G-26-929
I found 1/2" capped iron pin and 3/4" iron pin. The 1/2" capped iron pin and reference points fit corner record in which L.S. 1326 set 1/2" capped iron pin in 2012 survey using double proportionate method. The 3/4" iron pin was found in place three feet below surface. The measurements fit ODOT survey, SWO 2737(1). Nothing set. I used 3/4" iron pin.

C/4 Corner of Section 17, T-7N, R-7W ODOT G-26-927
No corner evidence found. I set 1/2" capped iron pin. Monument was set using measurements from ODOT survey, SWO 2737(1).

E/4 Corner of Section 17, T-7N, R-7W ODOT G-26-928
I found 1/2" capped iron pin. I did not find supporting evidence for this monument or any corner records. The information on the cap could not be determined. I set 1/2" capped iron pin. Monument was set with single proportionate method between the northeast and southeast corners of Section 17. I used the measurements from ODOT survey, SWO 2737(1).

SE Corner of Section 17, T-7N, R-7W ODOT G-26-454
I found 1/2" iron pin that was set by L.S. 1155 in 1991 survey. Corner location and reference points fit ODOT surveys, SWO 2737(1) and SWO 3609(1). Nothing set. I used 1/2" iron pin.



SCALE:
1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

PLS	JTB	OKLAHOMA DEPARTMENT OF TRANSPORTATION				
DRAWN		SURVEY DIVISION				
	JSO	SURVEY DATA SHEET SDS 72 OF 76				
	JTB					
	JTB					
	JTB					
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. 5072				

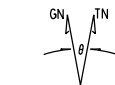
NW Closing Corner of Section 25, T-7N, R-8W ODOT G-26-964
 No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I set 1/2" capped iron pin and reference points as shown. I used found reference points from C.C.R. filed by L.S. 1155 to set monument. However, the distance between the northwest closing corner of Section 25 and milepost 72 should be 2.39 chains, according to the May 22, 1900 G.L.O. Plat, instead of 2.59 chains, which had been used in the 1991 ODOT survey.

Milepost 72 Corner of Section 25, T-7N, R-8W ODOT G-26-436
 I found ODOT brass cap set in concrete L.S. 1155 set monument and filed C.C.R. in 1991 ODOT survey. I used ODOT brass monument and set reference points as shown.

NE Closing Corner of Section 25, T-7N, R-8W ODOT G-26-437
 No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I set 1/2" capped iron pin and reference points as shown.

W Closing Corner of Section 25, T-7N, R-8W ODOT G-26-961
 Nothing set in 1900 or 1901 survey. No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71 1/2.

Milepost 71.5 Corner of Section 25, T-7N, R-8W ODOT G-26-43
 I found 4" iron pipe with brass cap set in concrete marked "MP 71 1/2," and reference points. L.S. 1155 found monument and filed C.C.R. in 1991 ODOT survey. I used brass cap and set reference points as shown.



Angle Of Variance
 At Sta. 9108 (C/4 Cor.)
 X= 1969510.2000
 Y= 625237.5875
 Lat.= 35°03'04.89113"
 Long.= 97°59'47.84944"
 θ = 0°00'06.89666"

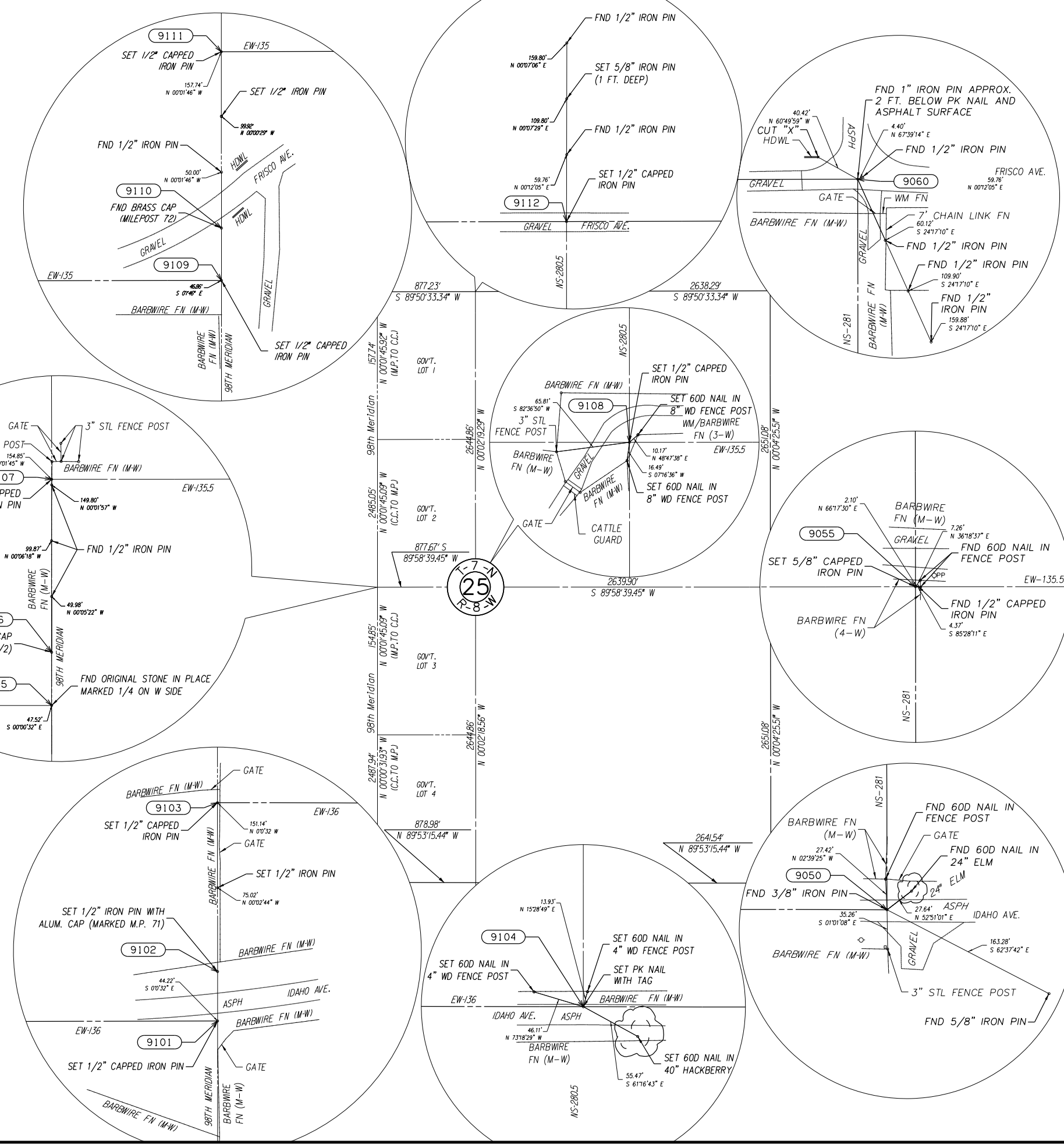
E Closing Corner of Section 25, T-7N, R-8W ODOT G-26-962
 I found original stone in place. Stone was marked with "1/4" on west side of stone. Pits and mound were worn away but still evident. Monument fits distance to milepost 71 1/2 from G.L.O. notes and Plat. I used original stone and set reference points as shown.

SW Closing Corner of Section 25, T-7N, R-8W ODOT G-26-957
 No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71.

Milepost 71 Corner of Section 25, T-7N, R-8W ODOT G-26-958
 No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped, "MP 71" and "G-26-958." I set reference points as shown. I set monument using single proportionate method between found mileposts 70 1/2 and 71 1/2.

SE Closing Corner of Section 25, T-7N, R-8W ODOT G-26-959
 No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 71.

S/4 Corner of Section 25, T-7N, R-8W ODOT G-26-956
 No corner evidence found. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 25 using distances from G.L.O. Notes and Plat.



N/4 Corner of Section 25, T-7N, R-8W ODOT G-26-963
 No monument found. Reference points were found from C.C.R. filed by L.S. 1155 in 1991 ODOT survey. I did not agree with the position of this monument. It was based on an incorrectly placed monument milepost 72 instead of 2.39 chains as shown on May 22, 1900 G.L.O. Plat. This affected the position of the north quarter corner of Section 25. Therefore I did not use reference points to reset the monument. I set 1/2" capped iron pin and reference point as shown. I used single proportionate method between the northwest closing corner and northeast corner of Section 25 using distances from G.L.O. Notes and Plat.

NE Corner of Section 25, T-7N, R-8W ODOT G-26-444
 I found 1" iron pin, PK nail, and 1/2" iron pin. 1/2" iron pin was found by L.S. 189 in 1984 survey with no supporting evidence listed. No corner record was filed for PK nail, which I removed to find 1" iron pin two feet below asphalt surface. 1" iron pin and found references fit measurements from ODOT survey, SWO 3609(1), and corner record which L.S. 1155 found 1" iron pin in 1991 survey. Nothing set. I used 1" iron pin.

C/4 Corner of Section 25, T-7N, R-8W ODOT G-26-960
 No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 25.

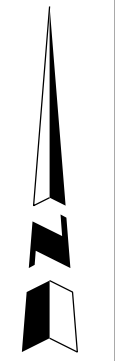
E/4 Corner of Section 25, T-7N, R-8W ODOT G-26-921
 I found 1/2" capped iron pin set by L.S. 1326 in 2005 survey. I set 5/8" capped iron pin. L.S. 1326 used a 1/2" iron pin located at the NW corner of Section 30 to determine the W/4 corner. I did not find supporting evidence for that 1/2" iron pin. I used a 1" iron pin found at the NW corner of section 30 (fits ODOT survey, SWO 3609), and the SW corner, and used single proportion method to set point on line and between said corners.

SE Corner of Section 25, T-7N, R-8W ODOT G-26-920
 I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

L.S. 1378 found 1" iron pin in 1996 survey
 L.S. 1272 found iron pin in 1998 survey
 L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	



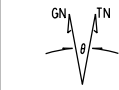
SCALE:
 1" = 50'

LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
SURVEY DIVISION						
SURVEY DATA SHEET						
SDS 73 OF 76						
PLS	JTB					
DRAWN	JSO					
CHECKED	JTB					
APPROVED	JTB					
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12)	SHEET NO. 5073		

NW Closing Corner of Section 36, T-7N, R-8W ODOT G-26-957
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 71.

Milepost 71 Corner of Section 36, T-7N, R-8W ODOT G-26-958
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 71 and G-26-958. I set reference points as shown. I set monument using single proportionate method between found mileposts 70 12 and 71 12.



Angle Of Variance
At Sta. 9100 (C/4 Cor.)
X= 1969511.9271
Y= 619950.7188
Lat.- 35°02'12.59890"
Long.- 97°59'47.83080"
θ = 0°00'06.90744"

NE Closing Corner of Section 36, T-7N, R-8W ODOT G-26-959
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 71.

W Closing Corner of Section 36, T-7N, R-8W ODOT G-26-953
Nothing set in 1900 or 1901 survey. No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70 1/2.

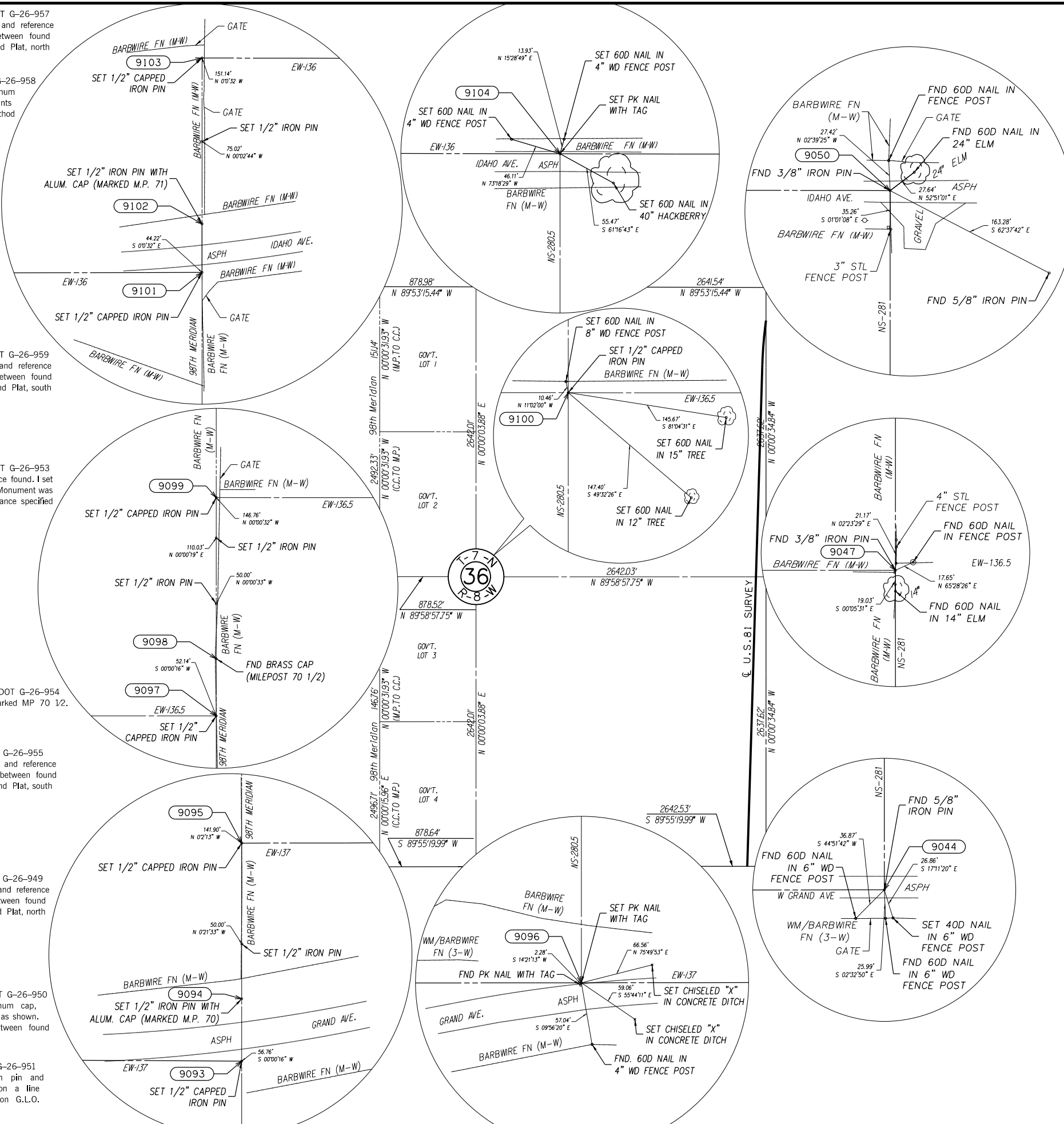
Milepost 70.5 Corner of Section 36, T-7N, R-8W ODOT G-26-954
I found 4" iron pipe with brass cap set in concrete marked MP 70 1/2. I used brass cap and set reference points as shown.

E Closing Corner of Section 36, T-7N, R-8W ODOT G-26-955
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70 1/2.

SW Closing Corner of Section 36, T-7N, R-8W ODOT G-26-949
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70.

Milepost 70 Corner of Section 36, T-7N, R-8W ODOT G-26-950
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 70 and G-26-950. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

SE Closing Corner of Section 36, T-7N, R-8W ODOT G-26-951
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70.



N/4 Corner of Section 36, T-7N, R-8W ODOT G-26-956
No corner evidence found. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 25 using distances from G.L.O. Notes and Plat.

NE Corner of Section 36, T-7N, R-8W ODOT G-26-920
I found 3/8" iron pin. Monument and reference points fit ODOT survey, SWO 2737(1), and the following corner records:

L.S. 1378 found 1" iron pin in 1996 survey
L.S. 1272 found iron pin in 1998 survey
L.S. 1200 found 3/8" iron pin in 2012 survey.

Nothing set. I used 3/8" iron pin

C/4 Corner of Section 36, T-7N, R-8W ODOT G-26-952
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 36.

E/4 Corner of Section 36, T-7N, R-8W ODOT G-26-914
I found 3/8" iron pin. Monument and references fit corner record in which L.S. 1200 set 3/8" iron pin in 2012 survey. Nothing set. I used 3/8" iron pin.

SE Corner of Section 36, T-7N, R-8W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

S/4 Corner of Section 36, T-7N, R-8W ODOT G-26-948
I found PK nail with tag. L.S. 1326 set PK nail and filed C.C.R. in 2003 survey. Monument did not fit proportionate distances between southwest closing corner and southeast corner of Section 36. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 36 using distances from G.L.O. Notes and Plat.

SCALE:
1" = 500'

LAND CORNER DETAILS ARE SHOWN AT 1"=50'

PLS	JTB		OKLAHOMA DEPARTMENT OF TRANSPORTATION SURVEY DIVISION SURVEY DATA SHEET SDS 74 OF 76
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. 5074	

NW Closing Corner of Section 1, T-6N, R-8W ODOT G-26-949
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 70.

Milepost 70 Corner of Section 1, T-6N, R-8W ODOT G-26-950
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 70 and G-26-950. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

NE Closing Corner of Section 1, T-6N, R-8W ODOT G-26-951
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 70.

W Closing Corner of Section 1, T-6N, R-8W ODOT G-26-945
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69 1/2.

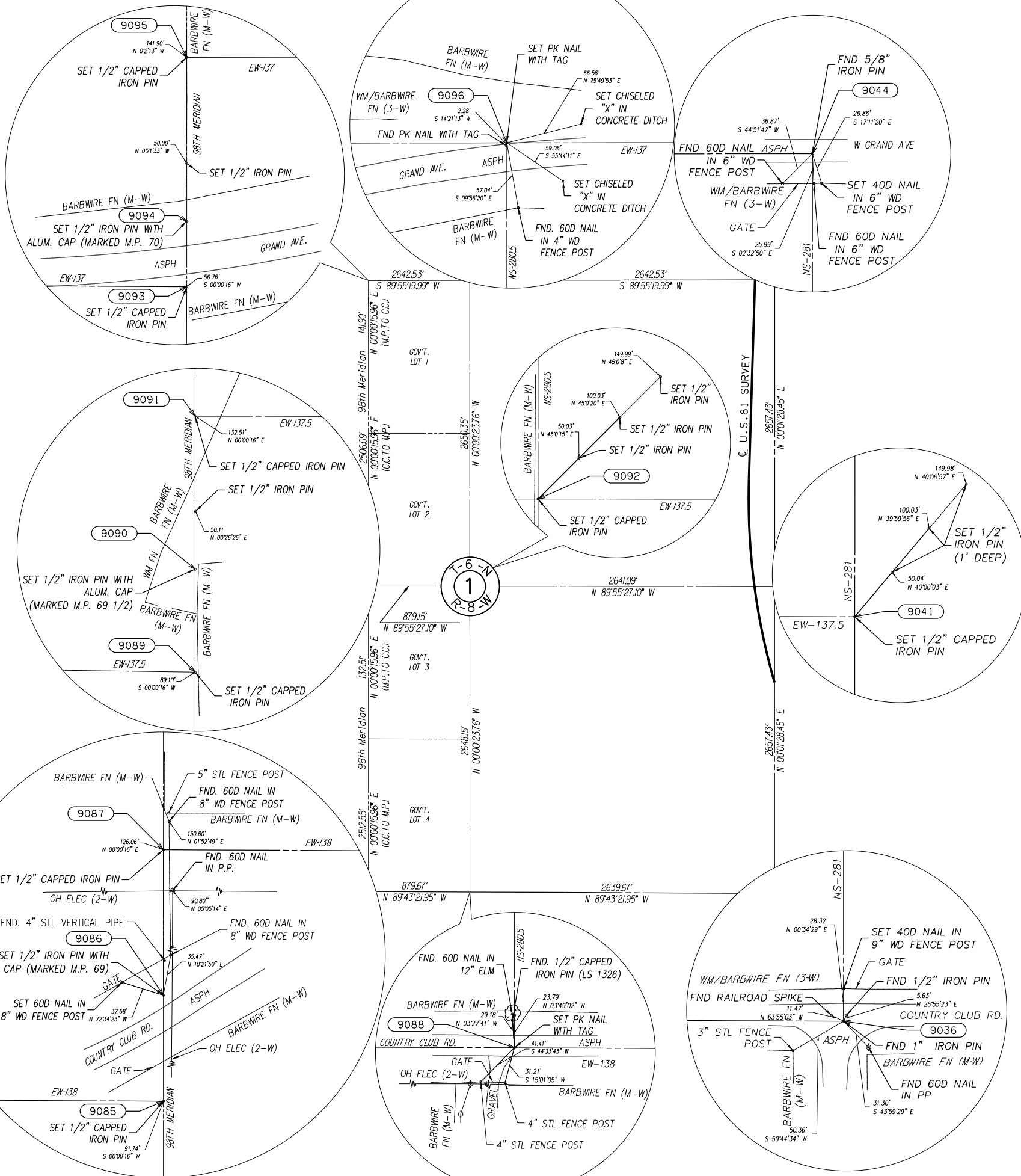
Milepost 69.5 Corner of Section 1, T-6N, R-8W ODOT G-26-946
No Corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 69 1/2 and G-26-946. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

E Closing Corner of Section 1, T-6N, R-8W ODOT G-26-947
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69 1/2.

SW Closing Corner of Section 1, T-6N, R-8W ODOT G-26-941
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69

Milepost 69 Corner of Section 1, T-6N, R-8W ODOT G-26-942
I found 4" steel post with no brass cap that was found by L.S. 1082 in 1994 survey. The C.C.R. by L.S. 1082 did not list any supporting evidence. I found milepost 68 to the south and milepost 70 1/2 to the north and the 4" steel post did not fit the proportionate distance by nearly 30 feet. I determined that the 4" steel post was most likely a fence post that used to be connected to old fence line to the north. I set 1/2" iron pin with aluminum cap, stamped MP 69 and G-26-942. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

SE Closing Corner of Section 1, T-6N, R-8W ODOT G-26-943
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69.



N/4 Corner of Section 1, T-6N, R-8W ODOT G-26-948
I found PK nail with tag. L.S. 1326 set PK nail and filed C.C.R. in 2003 survey. Monument did not fit proportionate distances between southwest closing corner and southeast corner of Section 36. I set PK nail with tag and reference points as shown. I used single proportionate method between the southwest closing corner and southeast corner of Section 36 using distances from G.L.O. Notes and Plat.

NE Corner of Section 1, T-6N, R-8W ODOT G-26-913
I found 5/8" iron pin. Corner location and found reference points fit ODOT survey, SWO 2737(1), and corner record in which L.S. 1378 found 5/8" iron pin in 1995 survey. Nothing set. I used 5/8" iron pin.

C/4 Corner of Section 1, T-6N, R-8W ODOT G-26-944
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section One.

E/4 Corner of Section 1, T-6N, R-8W ODOT G-26-908
No corner evidence found. I set 5/8" iron pin and references. I set corner using single proportionate method.

SE Corner of Section 1, T-6N, R-8W ODOT G-26-907
I found 1/2" iron pin, railroad spike, & 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737(1). Nothing set. I used 1" iron pin.

S/4 Corner of Section 1, T-6N, R-8W ODOT G-26-940
Found 1/2" capped iron pin marked L.S. 1326. This monument is from a C.C.R. in which L.S. 1326 set a 1/2" capped iron pin in a 2014 survey. The monument was set using an incorrectly identified monument at milepost 69 in a C.C.R. by L.S. 1082 in a 1994 survey. This is further evidenced by the monument at the south quarter corner of Section One not fitting the section line road and fences. Set PK nail with tag. I set monument using single proportionate method between the southwest closing corner and southeast corner of Section One using distances from G.L.O. Notes and Plat.

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	



Angle Of Variance
At Sta. 9092 (C/4 Cor.)
X = 1969512.1828
Y = 614658.3618
Lat. = 35°01'20.25216"
Long. = 97°59'47.82985"
θ = 0°00'06.90798"



SCALE:
1" = 500'
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION		SURVEY DIVISION	
PLS	JTB	<p style="text-align: center;">SURVEY DATA SHEET</p> <p style="text-align: center;">SDS 75 OF 76</p>	
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM		
SWO 4380 (1) PROJECT NO. 24428(12) SHEET NO. 5075			

OKLAHOMA DEPARTMENT OF TRANSPORTATION						
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS	
	OKLA.					
DESCRIPTION			REVISIONS		DATE	

NW Closing Corner of Section 12, T-6N, R-8W ODOT G-26-941
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 69

Milepost 69 Corner of Section 12, T-6N, R-8W ODOT G-26-942
I found 4" steel post with no brass cap that was found by L.S. 1082 in 1994 survey. The C.C.R. by L.S. 1082 did not list any supporting evidence. I found milepost 68 to the south and milepost 70 1/2 to the north and the 4" steel post did not fit the proportionate distance by nearly 30 feet. I determined that the 4" steel post was most likely a fence post that used to be connected to old fence line to the north. I set 1/2" iron pin with aluminum cap, stamped MP 69 and G-26-942. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

NE Closing Corner of Section 12, T-6N, R-8W ODOT G-26-943
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 69.

W Closing Corner of Section 12, T-6N, R-8W ODOT G-26-937
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 68 1/2

Milepost 68.5 Corner of Section 12, T-6N, R-8W ODOT G-26-938
No corner evidence found. I set 1/2" iron pin with aluminum cap, stamped MP 68 1/2 and G-26-938. I set reference points as shown. I set monument using single proportionate method between found mileposts 68 and 70 1/2.

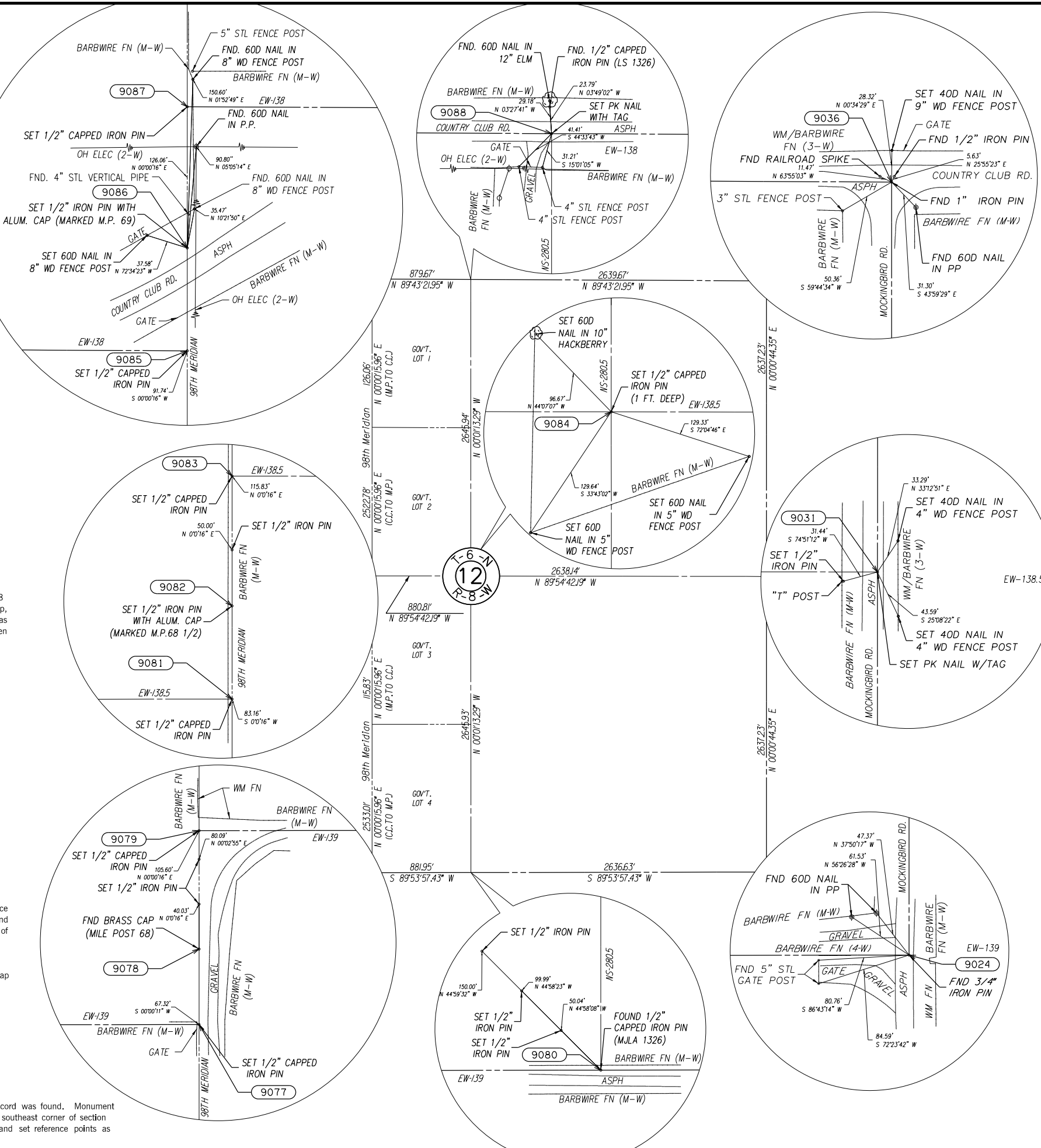
E Closing Corner of Section 12, T-6N, R-8W ODOT G-26-939
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 68 1/2.

SW Closing Corner of Section 12, T-6N, R-8W ODOT G-26-933
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, north of milepost 68

Milepost 68 Corner of Section 12, T-6N, R-8W ODOT G-26-934
Corner evidence found brass cap, marked, "MILE 68." I used brass cap and set reference points as shown.

SE Closing Corner of Section 12, T-6N, R-8W ODOT G-26-935
No evidence found. Set 1/2" capped iron pin and reference points as shown. Monument was placed on a line between found mileposts, at the distance specified on G.L.O. Notes and Plat, south of milepost 68.

S4 Corner of Section 12, T-6N, R-8W ODOT G-26-932
I found 1/2" capped iron pin marked, "MILA 1326". No corner record was found. Monument fits proportionate distances between southwest closing corner and southeast corner of section 12, from G.L.O. notes and Plat. I used 1/2" capped iron pin and set reference points as shown.



N4 Corner of Section 12, T-6N, R-8W ODOT G-26-940
Found 1/2" capped iron pin marked L.S. 1326. This monument is from a C.C.R. in which L.S. 1326 set a 1/2" capped iron pin in a 2014 survey. The monument was set using an incorrectly identified monument at milepost 69 in a C.C.R. by L.S. 1082 in a 1994 survey. This is further evidenced by the monument at the south quarter corner of section one not fitting the section line road and fences. Set PK nail with tag. I set monument using single proportionate method between the southwest closing corner and southeast corner of Section One using distances from G.L.O. Notes and Plat.

NE Corner of Section 12, T-6N, R-8W ODOT G-26-907
I found 1/2" iron pin, railroad spike, & 1" iron pin. 1/2" iron pin and found reference points fit corner record in which L.S. 1272 found 1/2" iron pin in 2001 survey, with no supporting evidence listed. No corner record found for railroad spike. 1" iron pin fits measurements from ODOT survey, SWO 2737 (1). Nothing set. I used 1" iron pin.

C/4 Corner of Section 12, T-6N, R-8W ODOT G-26-936
No corner evidence found. I set 1/2" capped iron pin and reference points as shown. Monument was set on intersecting lines between north and south quarter corners and the west closing corner and east quarter corner of Section 12.

E/4 Corner of Section 12, T-6N, R-8W ODOT G-26-898
No corner evidence found. I set PK nail with tag. I used single proportion method to set the corner between the northwest and southwest corner of Section 7.



Angle of Variance
At Sta. 9084 (C/4 Cor.)
X = 1969513.4280
Y = 609364.2708
Lat. = 35°00'27.88803"
Long. = 97°59'47.81702"
θ = 0°00'06.91526"

SE Corner of Section 12, T-6N, R-8W ODOT G-26-897
I found 3/4" iron pin. Corner location and found reference points match the corner records filed by the following surveyors:

- L.S. 449 found iron pin (C.C.R. filed June 8, 1982)
- L.S. 1082 found 3/4" iron pin (C.C.R. filed APR 18, 1994)
- L.S. 1272 found 3/8" iron pin (C.C.R. filed Dec 7, 1998)
- L.S. 1272 found iron pin (C.C.R. filed Aug 31, 2001).

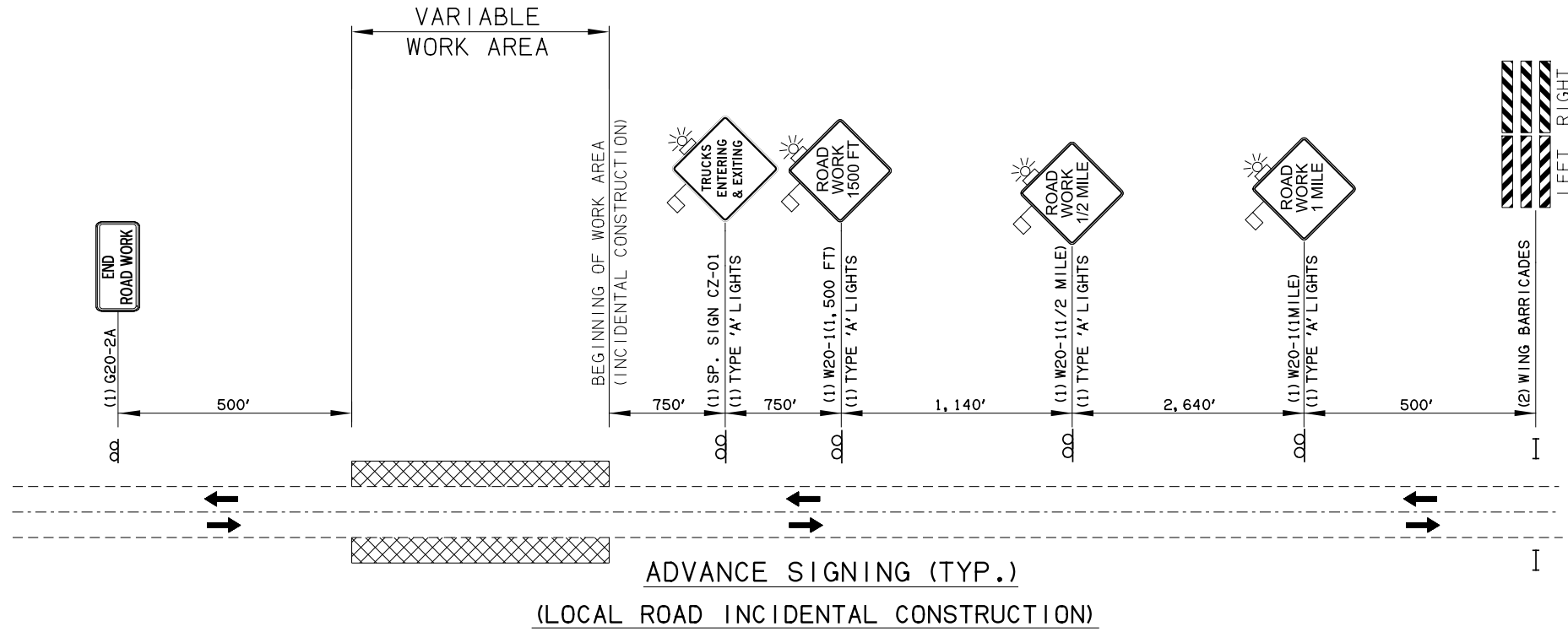
Nothing set. I used 3/4" iron pin.



SCALE:
1" = 50'

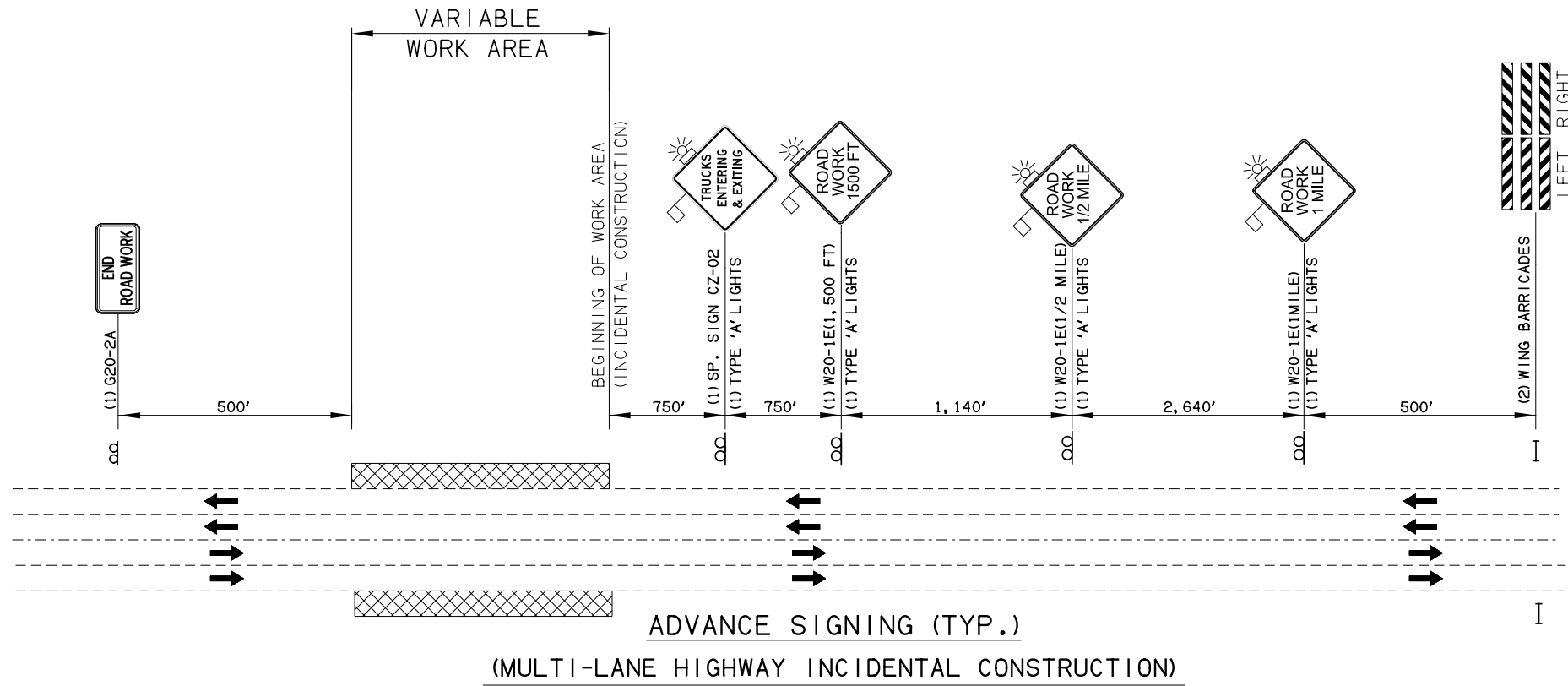
LAND CORNER DETAILS ARE SHOWN AT 1" = 50'

OKLAHOMA DEPARTMENT OF TRANSPORTATION			
SURVEY DIVISION			
SURVEY DATA SHEET			
SDS 76 OF 76			
PLS	JTB		
DRAWN	JSO		
CHECKED	JTB		
APPROVED	JTB		
CREW	BENHAM	SWO 4380 (1)	PROJECT NO. 24428(12) SHEET NO. 5076



ADVANCE SIGNING (LOCAL ROAD INCIDENTAL CONSTRUCTION) WILL APPLY TO BOTH DIRECTIONS OF TRAFFIC FOR THE FOLLOWING ROADS:

- IDAHO AVENUE
- 29TH STREET
- GRAND AVENUE
- COUNTRY CLUB ROAD
- CS 2815
- EW 135.5 ROAD
- IOWA AVENUE



ADVANCE SIGNING (MULTI-LANE HIGHWAY INCIDENTAL CONSTRUCTION) WILL APPLY TO BOTH DIRECTIONS OF TRAFFIC FOR THE FOLLOWING HIGHWAYS:

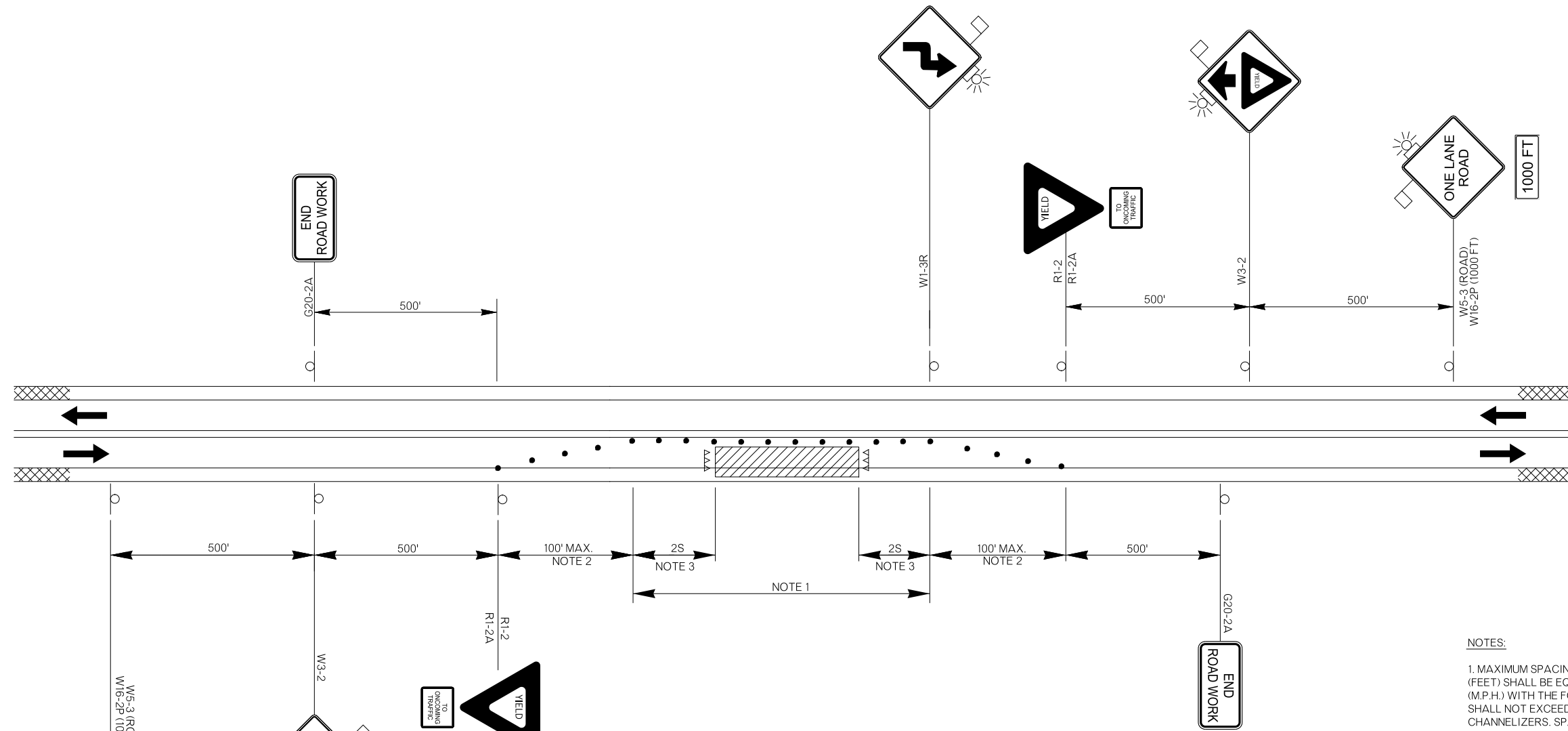
- US-62

ONE CHANGEABLE MESSAGE SIGN SHALL BE PROVIDED IN EACH DIRECTION AT LOCATION(S) PROVIDED BY THE ENGINEER.

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SUGGESTED TRAFFIC CONTROL - ADVANCE SIGNING

State Job No. 24428(12) Sheet No. T001



TRAFFIC CONTROL DETAIL-
TWO-WAY, ONE LANE TRAFFIC WITH YIELD SIGNS

LEGEND

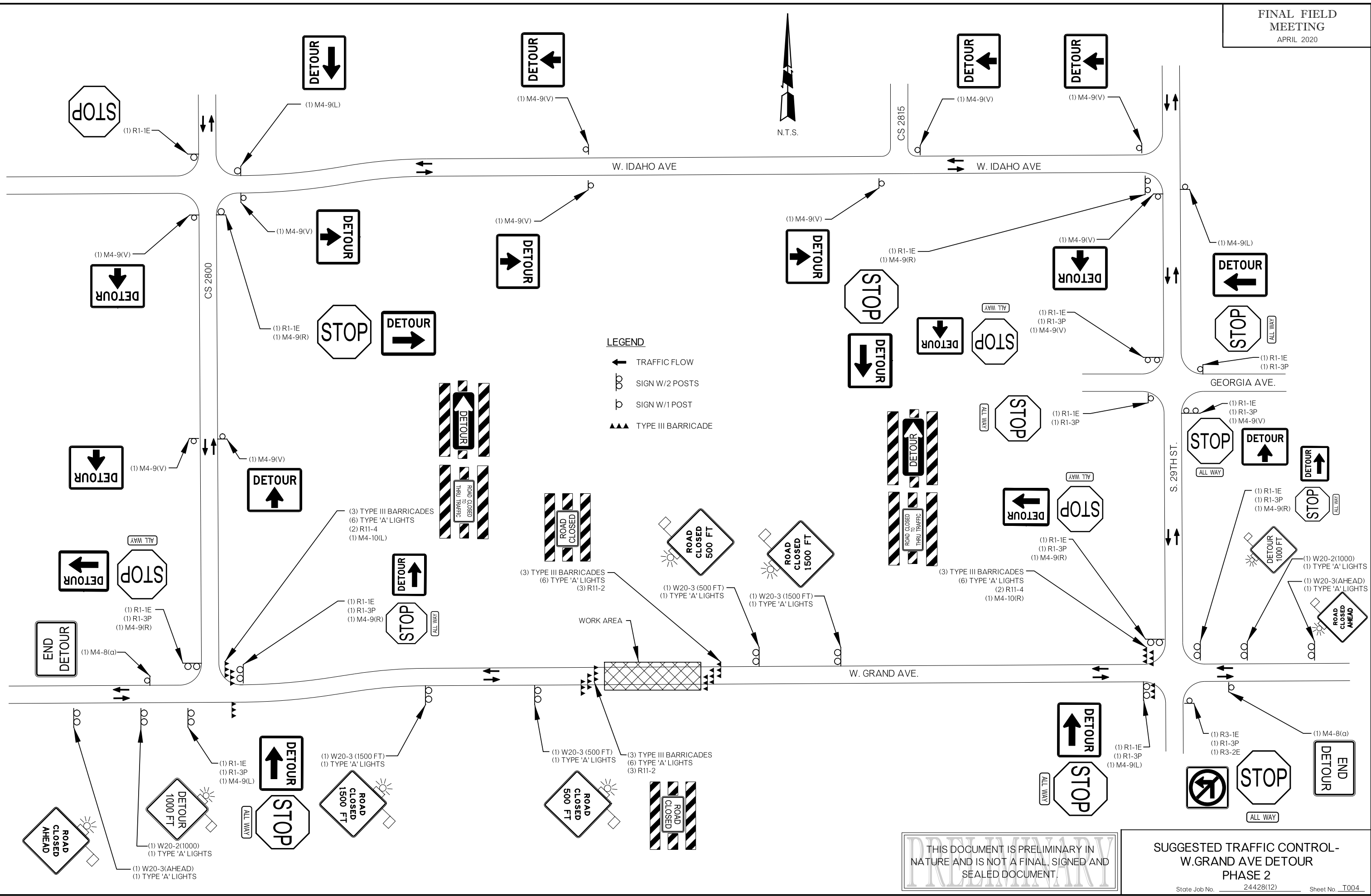
- ← TRAFFIC FLOW
- CHANNELIZING DEVICE
- SIGN
- AAA TYPE III BARRICADE
- ▨ WORK AREA
- S POSTED SPEED LIMIT

NOTES:

1. MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES (FEET) SHALL BE EQUAL TO THE POSTED SPEED LIMIT (M.P.H.) WITH THE FOLLOWING EXCEPTIONS. SPACING SHALL NOT EXCEED 25 FEET FOR CONES OR TUBE CHANNELIZERS. SPACING SHALL NOT EXCEED 50 FEET FOR TYPE II BARRICADES, VERTICAL PANELS OR DRUMS.
2. A MINIMUM OF FIVE (5) CHANNELIZING DEVICES SHALL BE PLACED THRU THIS AREA. ADDITIONAL DRUMS MAY BE USED TO CLOSE THE SHOULDER WITH THE APPROVAL OF THE ENGINEER.
3. DISTANCE 2S IS EQUAL TO TWICE THE POSTED SPEED LIMIT IN FEET.
4. THIS TEMPORARY TRAFFIC CONTROL ZONE APPLICATION MAY BE USED AS AN ALTERNATE TRAFFIC CONTROL PLAN TO A STANDARD LANE CLOSURE WITH FLAGGERS WHEN THE FOLLOWING CONDITIONS EXIST AND WITH APPROVAL OF THE ENGINEER.
 - (A) TRAFFIC VOLUME IS SUCH THAT SUFFICIENT GAPS EXIST FOR TRAFFIC THAT MUST YIELD.
 - (B) DRIVERS FROM BOTH DIRECTIONS MUST BE ABLE TO SEE APPROACHING TRAFFIC THROUGH AND BEYOND THE WORK AREA.

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SUGGESTED TRAFFIC CONTROL-
TWO-WAY, ONE LANE TRAFFIC
WITH YIELD SIGNS

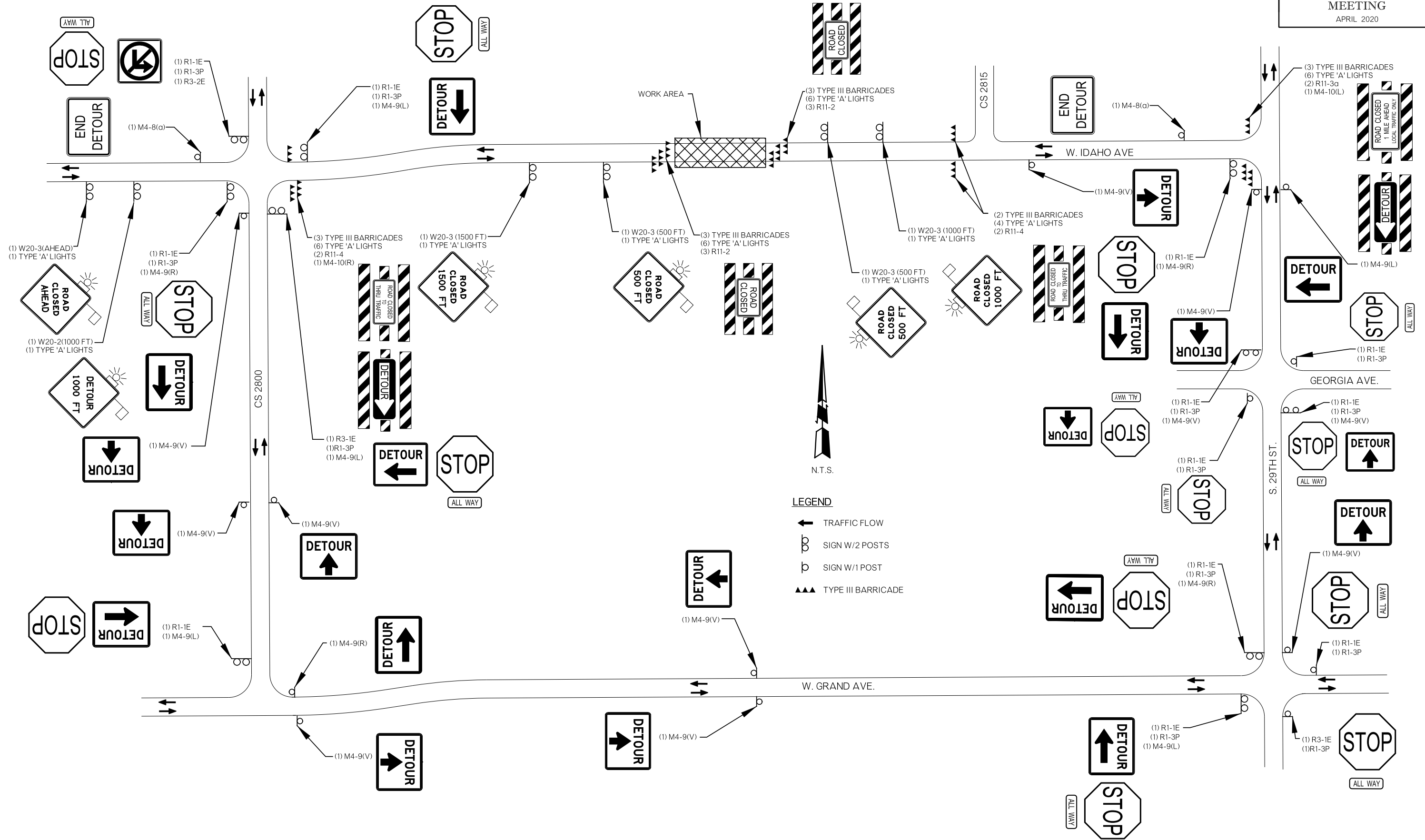


LEGEND

- ← TRAFFIC FLOW
- SIGN W/2 POSTS
- SIGN W/1 POST
- ▲▲ TYPE III BARRICADE

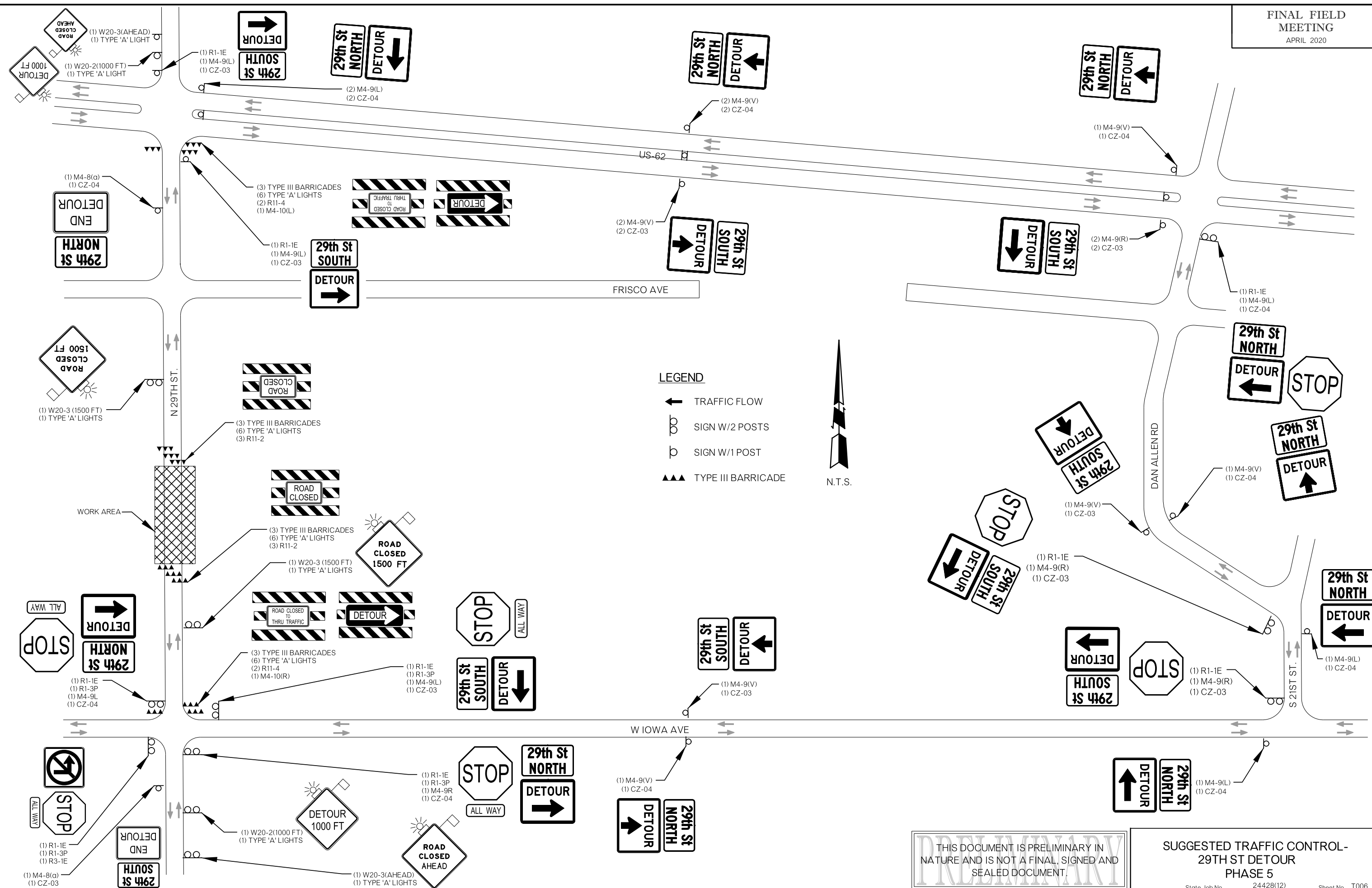
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**SUGGESTED TRAFFIC CONTROL-
W.GRAND AVE DETOUR
PHASE 2**



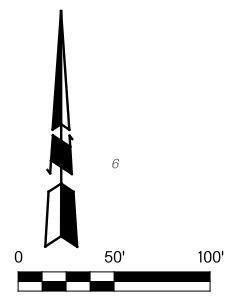
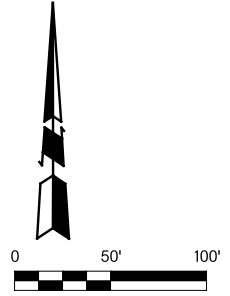
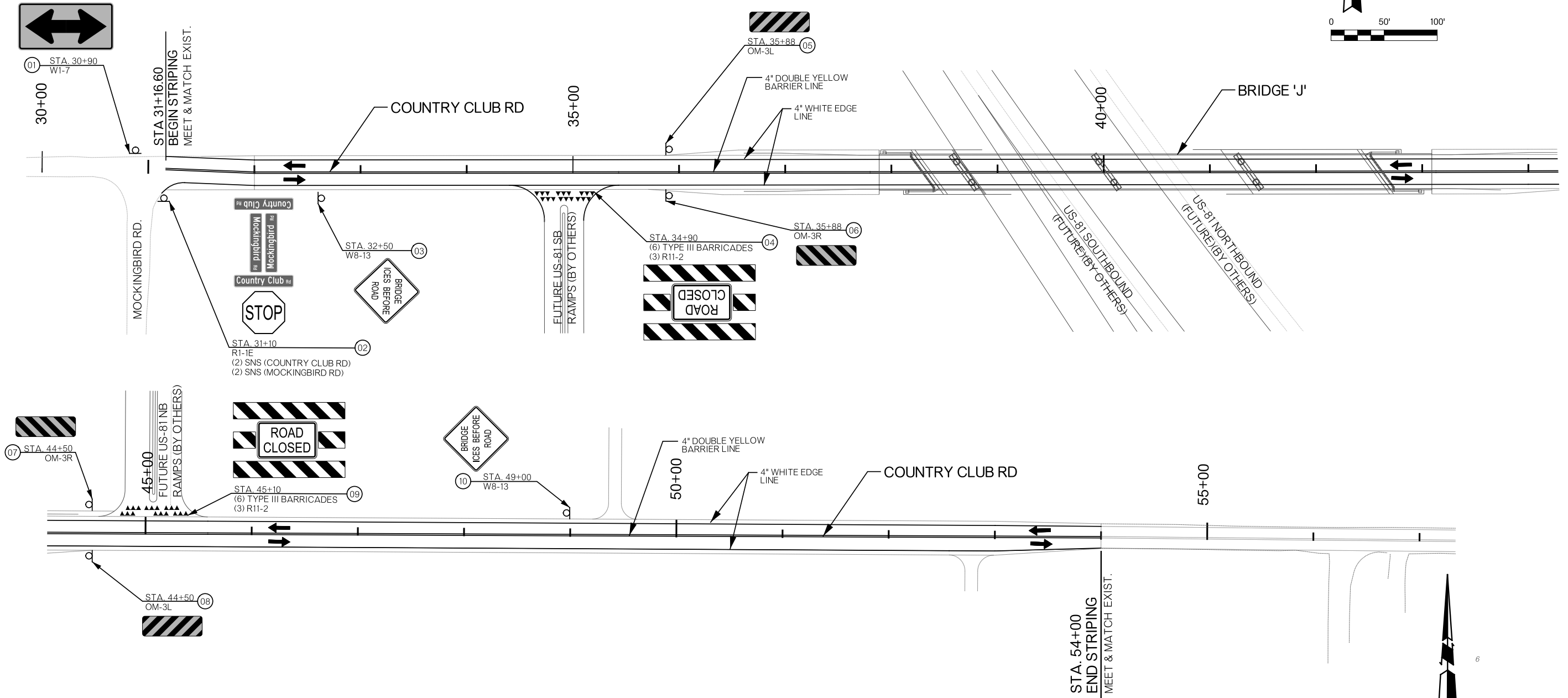
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SUGGESTED TRAFFIC CONTROL-
IDAHO AVE DETOUR
PHASE 3



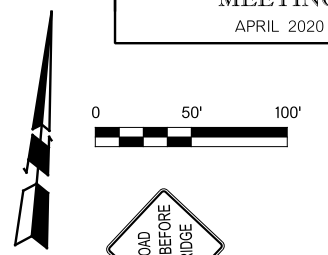
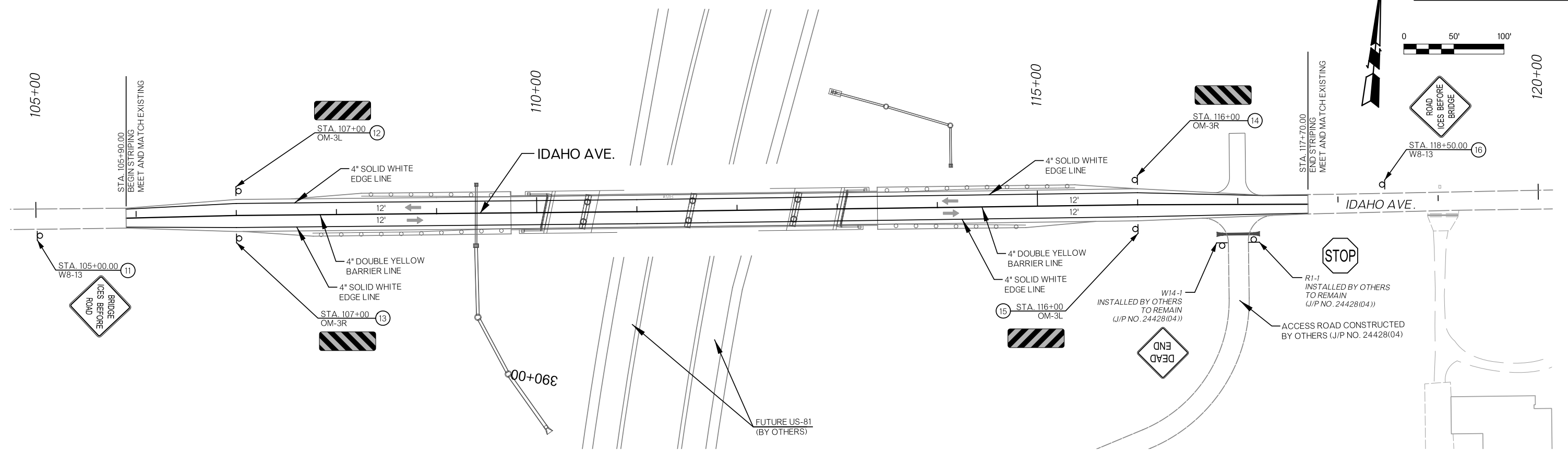
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SUGGESTED TRAFFIC CONTROL-
29TH ST DETOUR
PHASE 5



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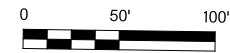
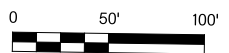
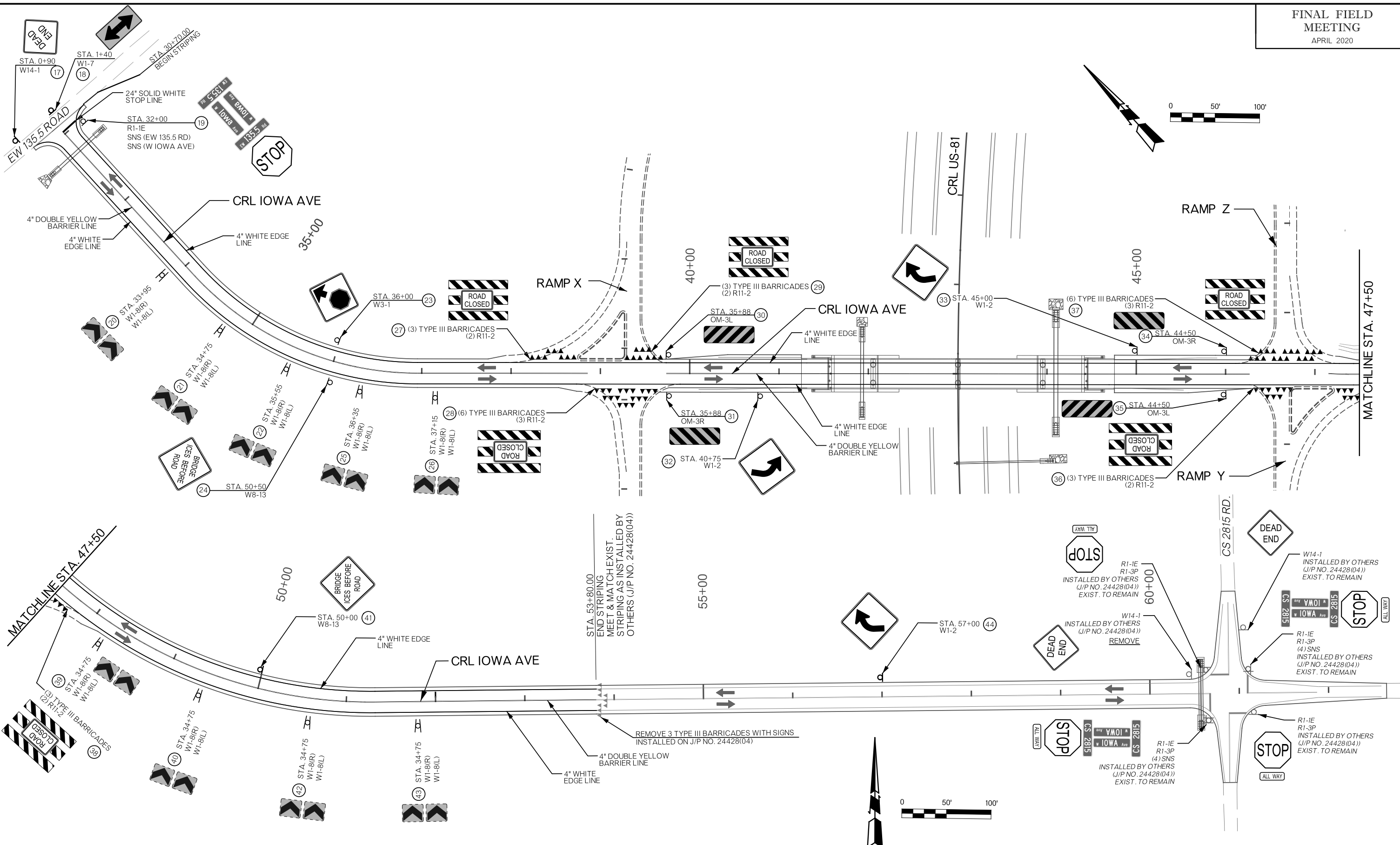
**SIGNING & STRIPING (1)-
COUNTRY CLUB RD**



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**SIGNING & STRIPING (2)-
IDAHO AVE.**

State Job No. 24428(12) Sheet No. T009



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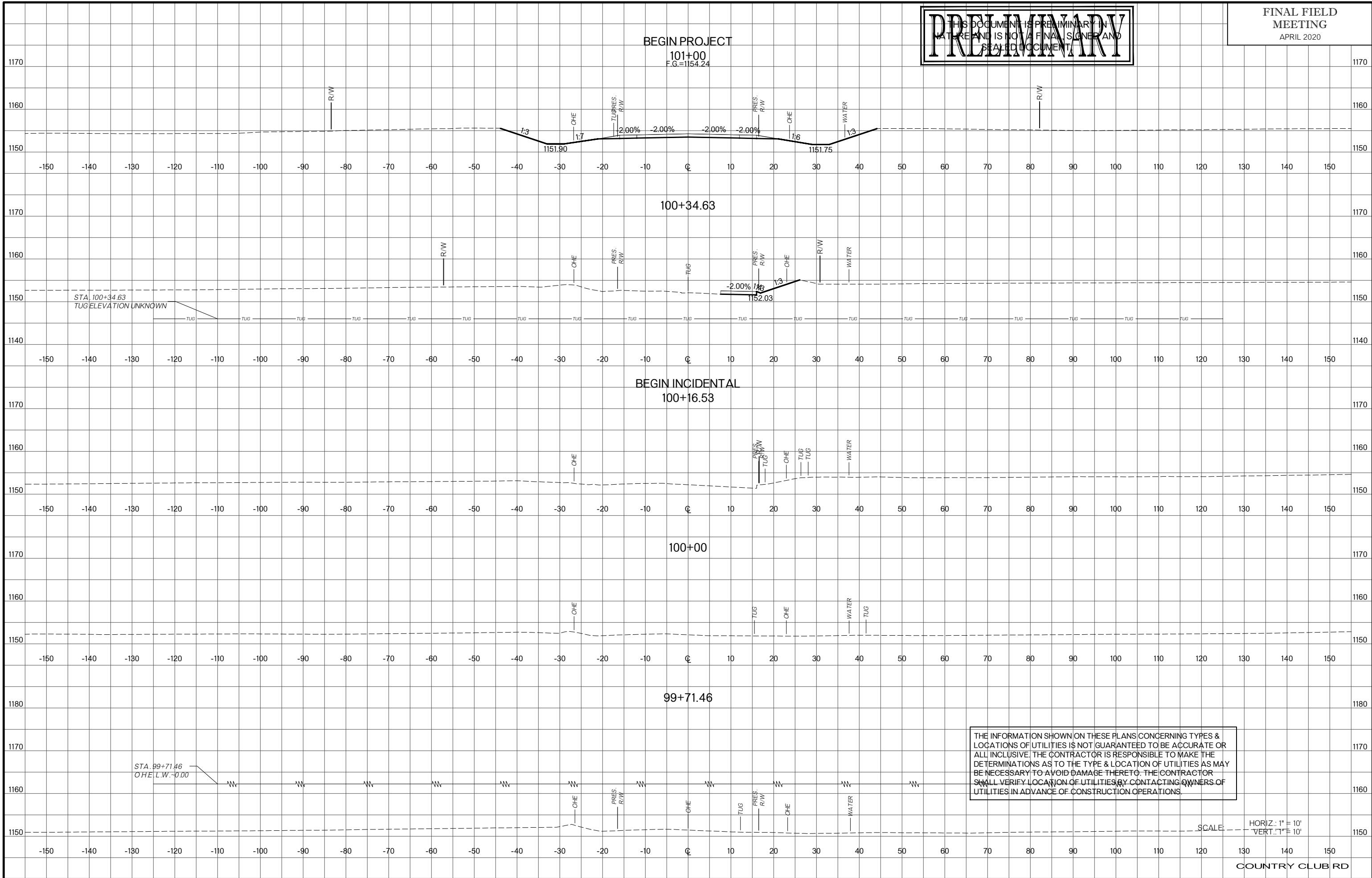
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SIGNING & STRIPING (3) - IOWA AVE.

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APRIL 2020



THE INFORMATION SHOWN ON THESE PLANS CONCERNING TYPES & LOCATIONS OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE TO MAKE THE DETERMINATIONS AS TO THE TYPE & LOCATION OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL VERIFY LOCATION OF UTILITIES BY CONTACTING OWNERS OF UTILITIES IN ADVANCE OF CONSTRUCTION OPERATIONS.

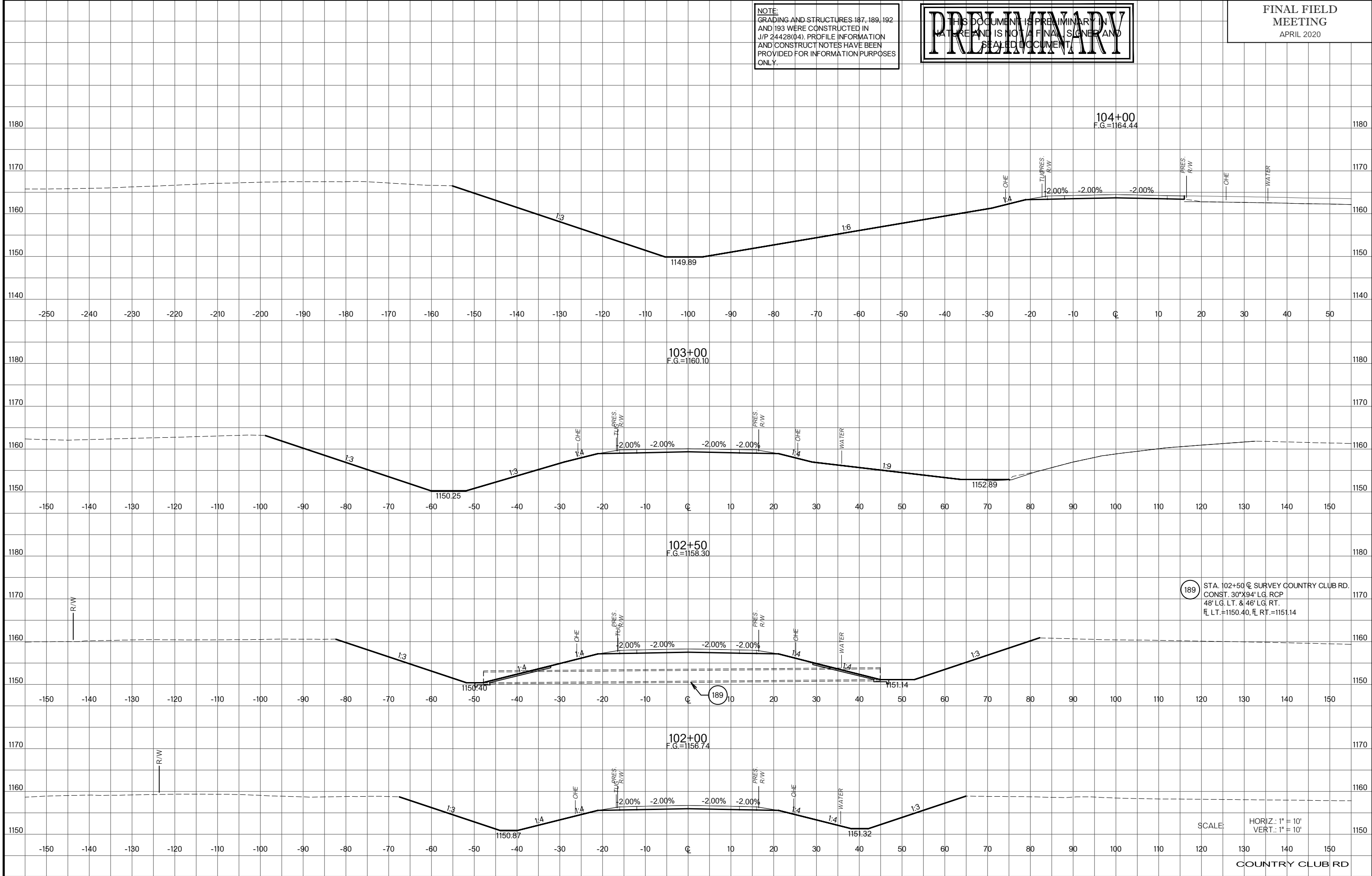
SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

US 81 REALIGNMENT
GRADY COUNTY

NOTE:
 GRADING AND STRUCTURES 187, 189, 192
 AND 193 WERE CONSTRUCTED IN
 J/P 24428(04). PROFILE INFORMATION
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FINAL FIELD
 MEETING
 APRIL 2020



189 STA. 102+50 @ SURVEY COUNTRY CLUB RD.
 CONST. 30"x94' LG. RCP
 48' LG. LT. & 46' LG. RT.
 FL LT.=1150.40, FL RT.=1151.14

SCALE: HORIZ.: 1" = 10'
 VERT.: 1" = 10'

COUNTRY CLUB RD

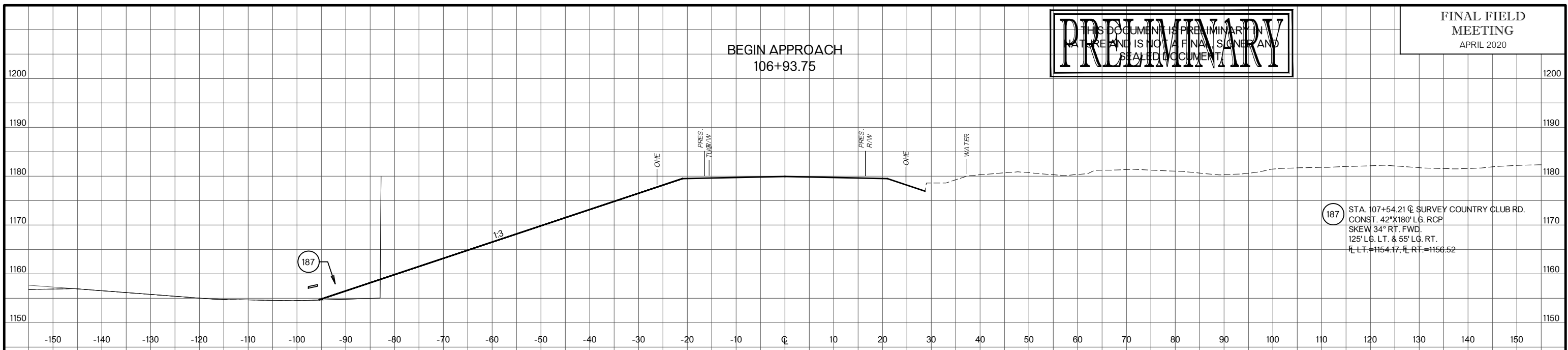
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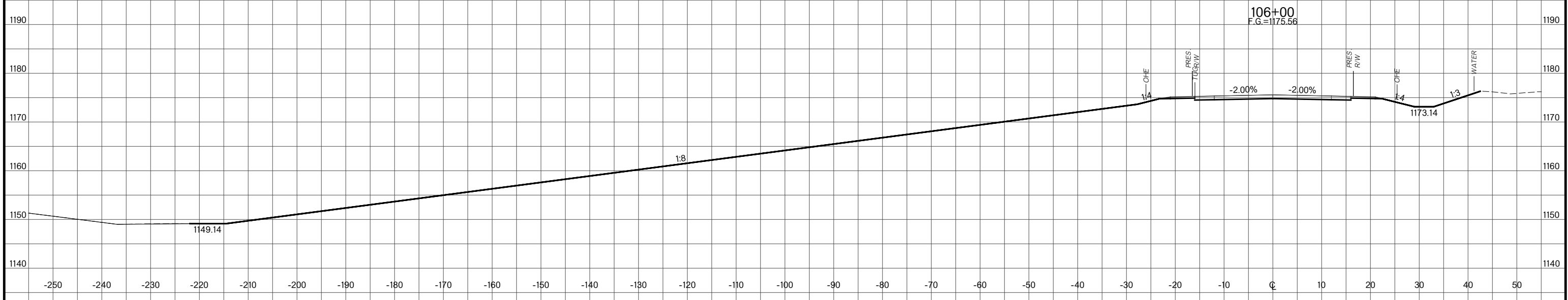
PRELIMINARY

FINAL FIELD MEETING
APRIL 2020

BEGIN APPROACH
106+93.75

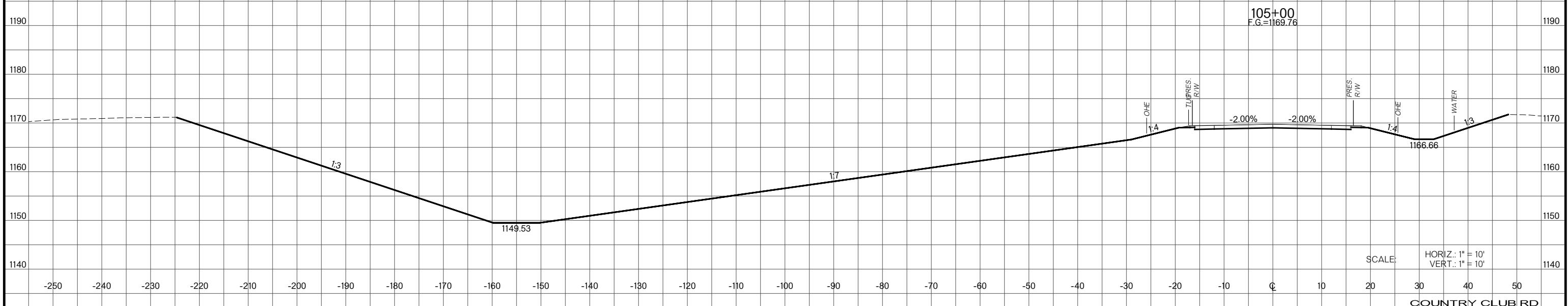


187 STA. 107+54.21 @ SURVEY COUNTRY CLUB RD.
CONST. 42"X180' LG. RCP
SKEW 34° RT. FWD.
125' LG. LT. & 55' LG. RT.
FL LT.=1154.17, FL RT.=1156.52



106+00
F.G.=1175.56

105+00
F.G.=1169.76



SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

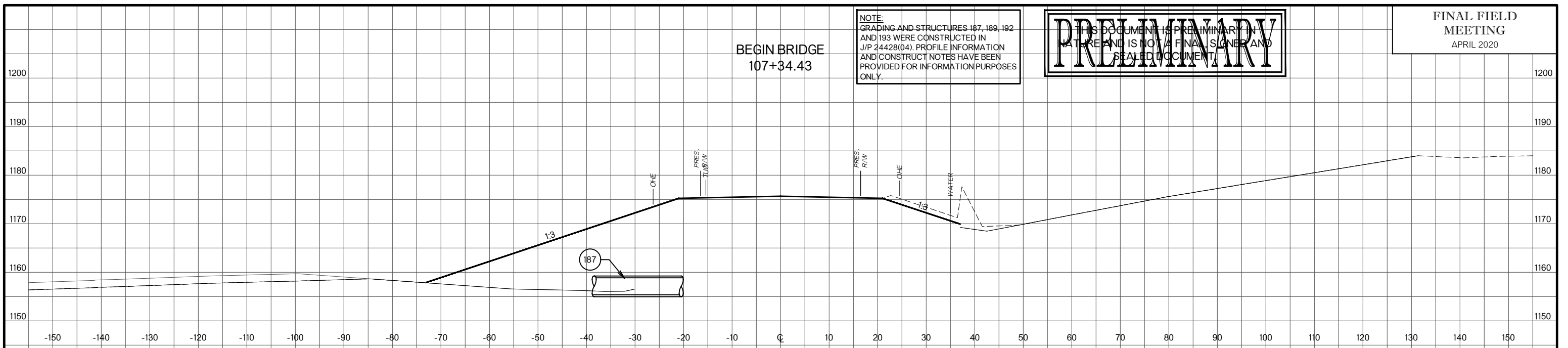
COUNTRY CLUB RD

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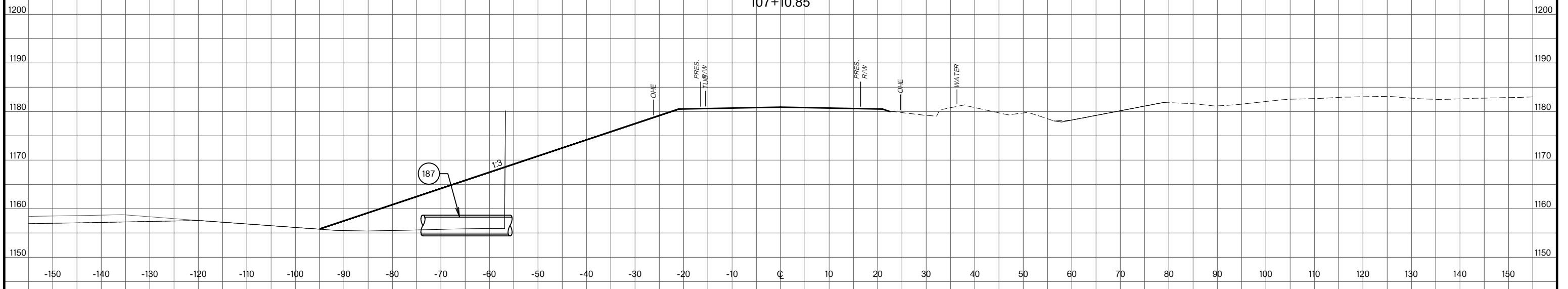
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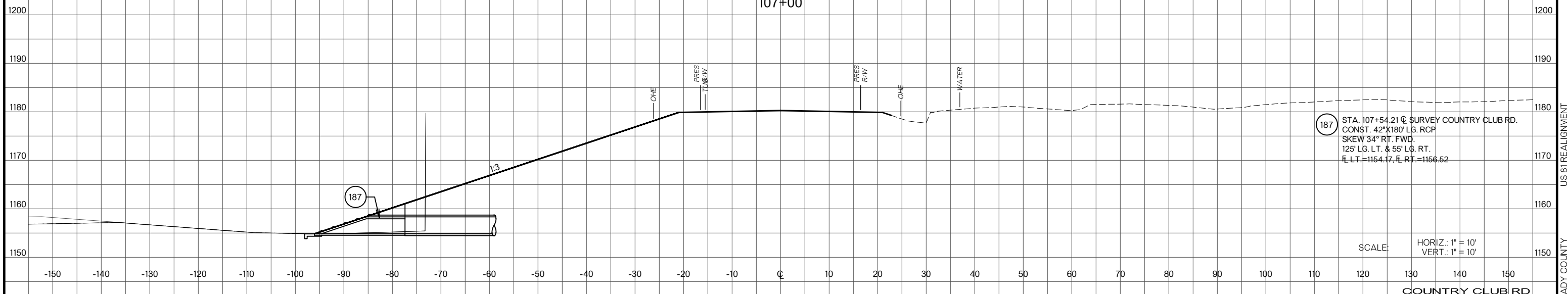
BEGIN BRIDGE
107+34.43



LAST FULL STATION
107+10.85



107+00



187 STA. 107+54.21 @ SURVEY COUNTRY CLUB RD.
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SKEW 34° RT. FWD.
125' LG. LT. & 55' LG. RT.
FL LT.=1154.17, FL RT.=1156.52

SCALE: HORIZ.: 1" = 10'
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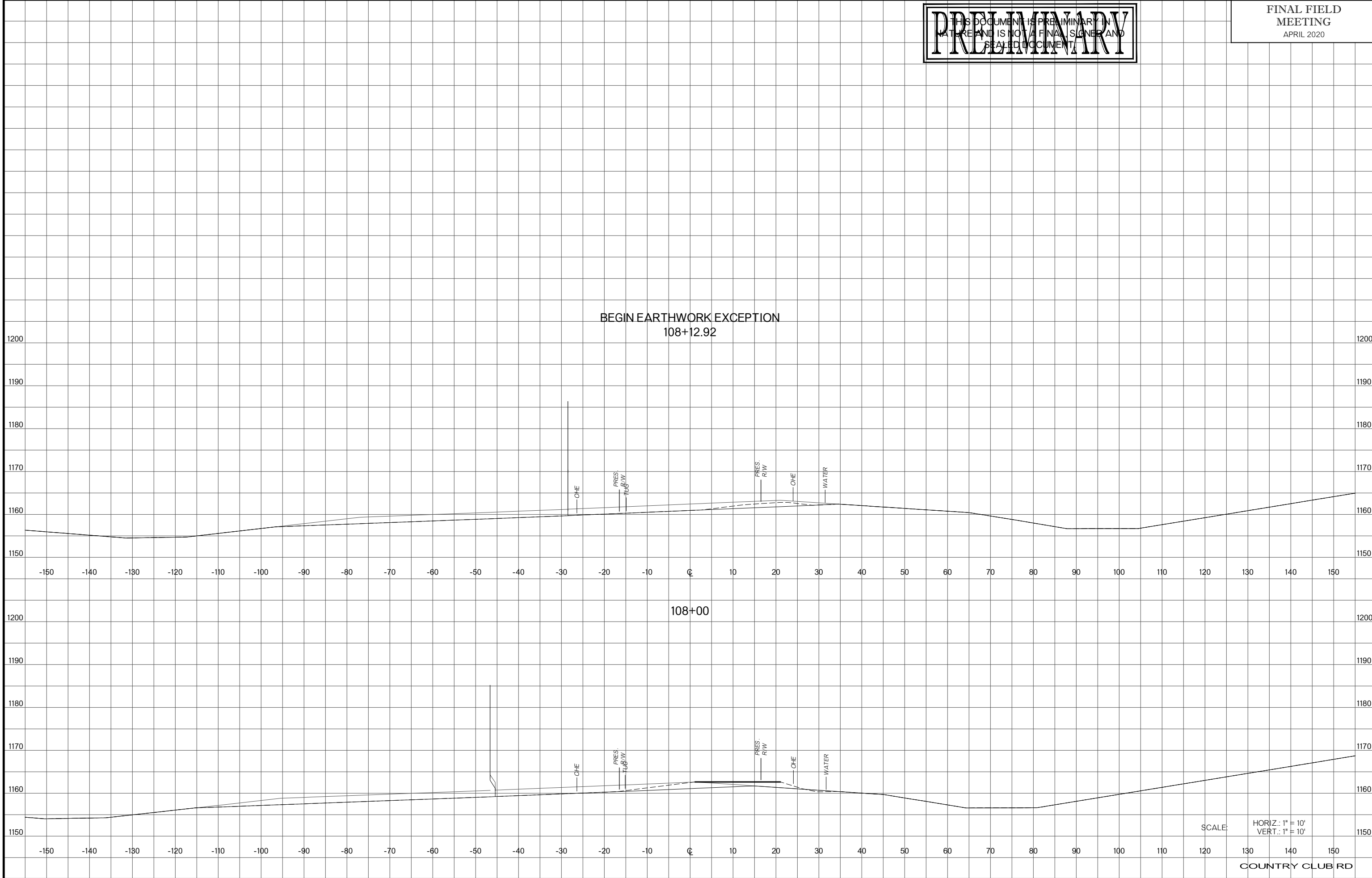
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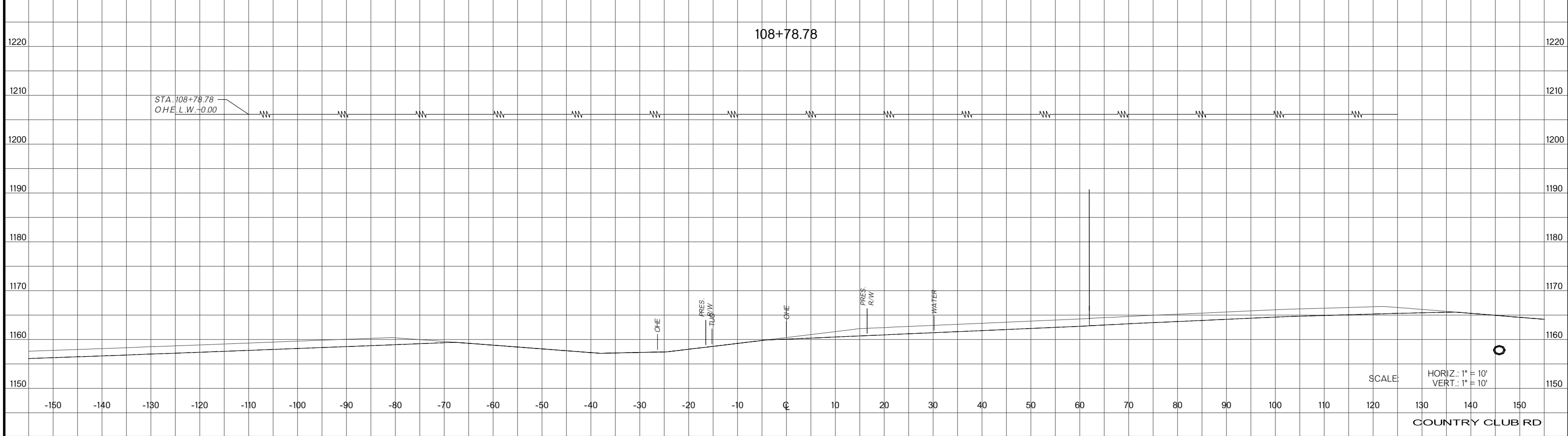
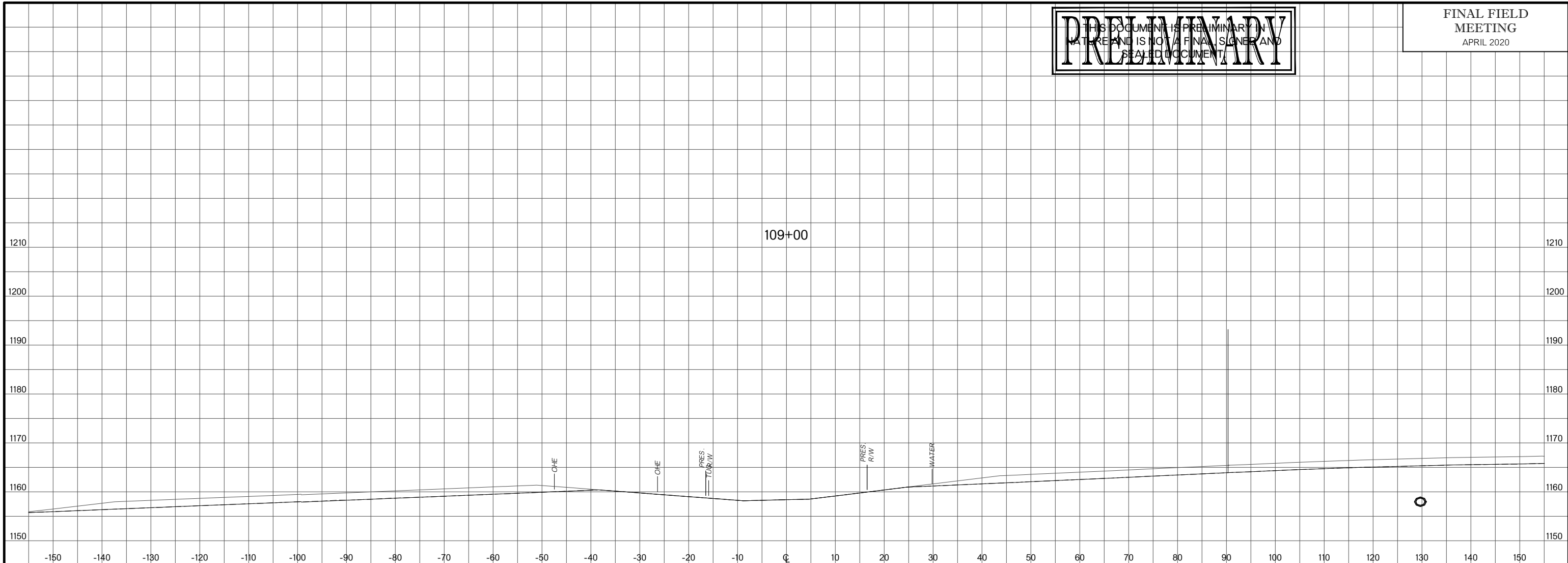
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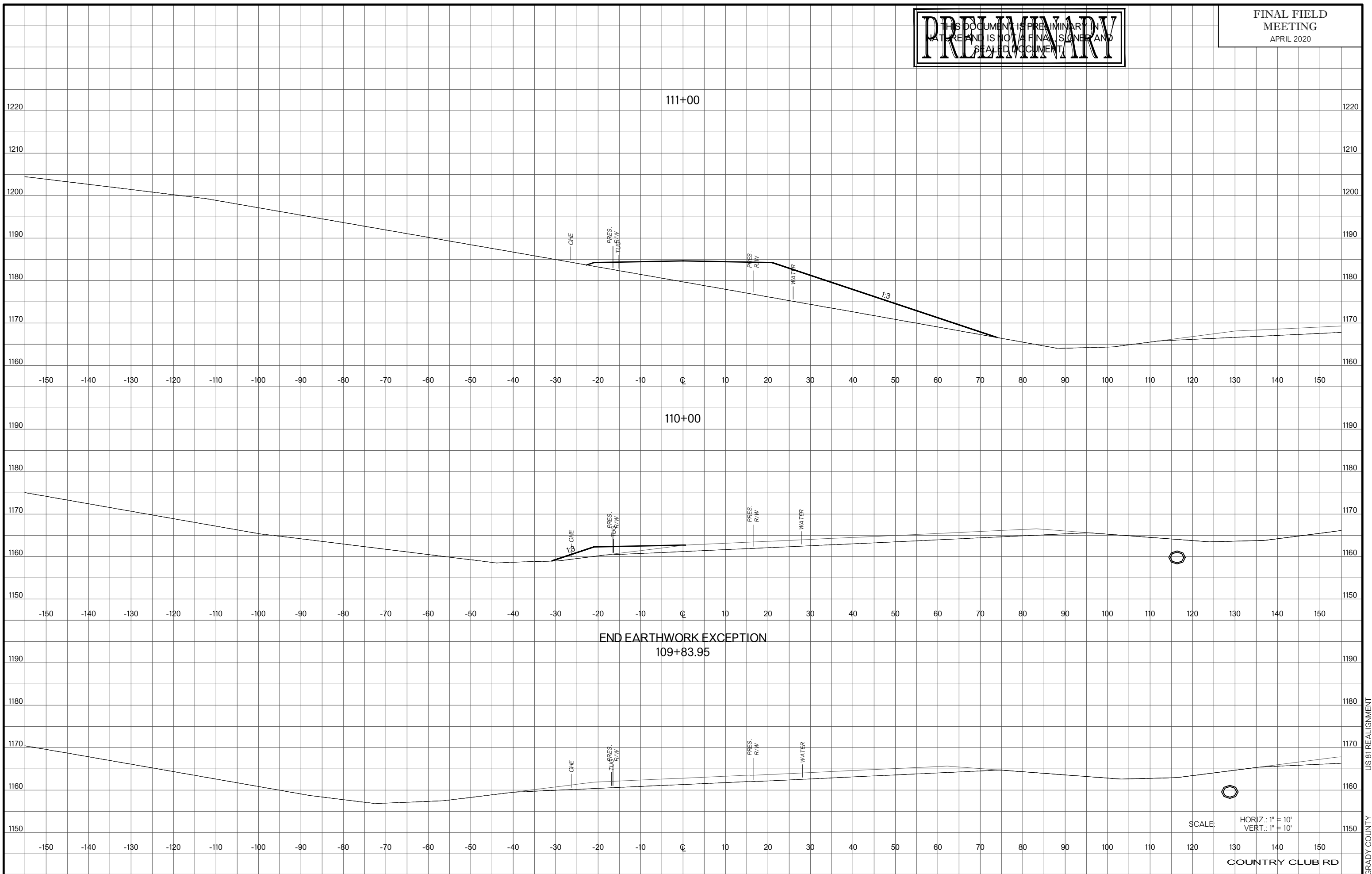
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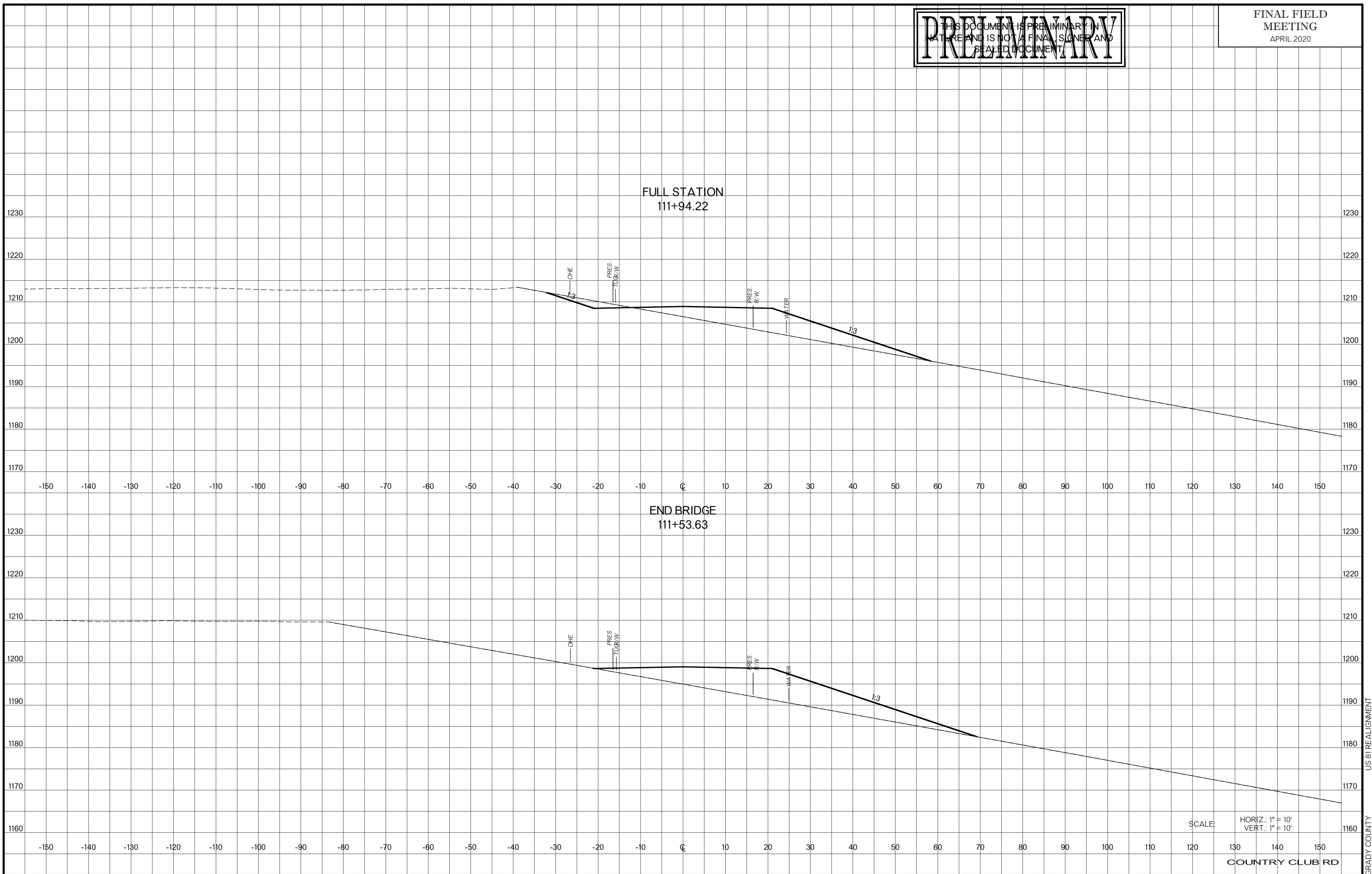


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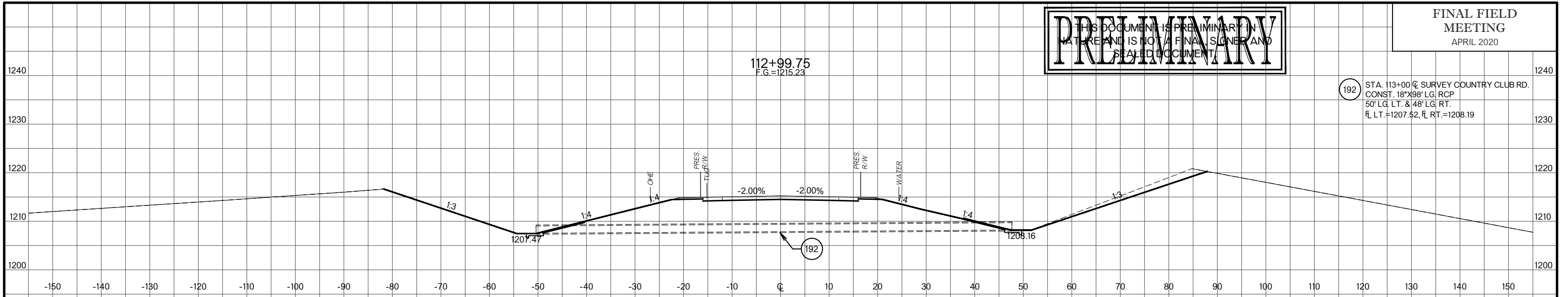


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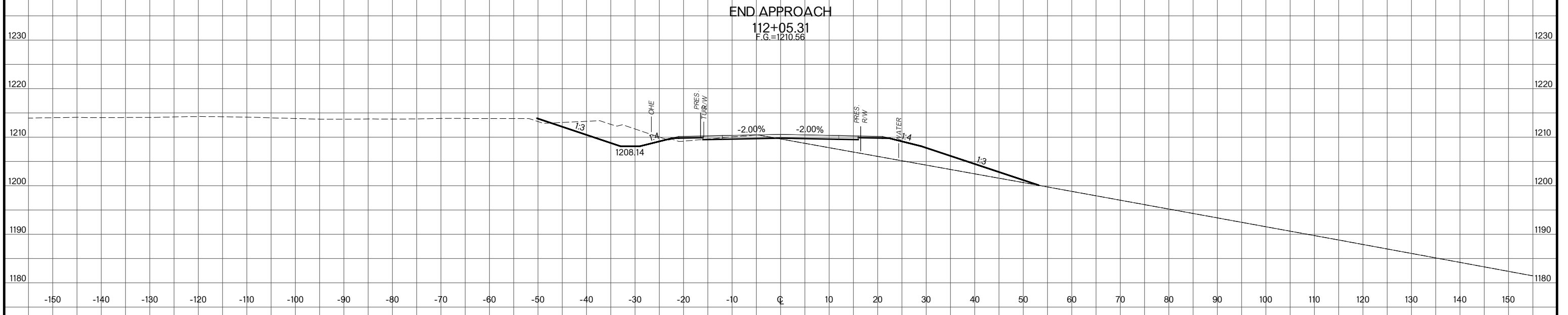
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FINAL FIELD MEETING
APRIL 2020

192 STA. 113+00 @ SURVEY COUNTRY CLUB RD.
CONST. 18"X98" LG. RCP
50' LG. LT. & 48' LG. RT.
FL. LT.=1207.52, FL. RT.=1208.19



END APPROACH
112+05.31
F.G.=1210.56



112+00



SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

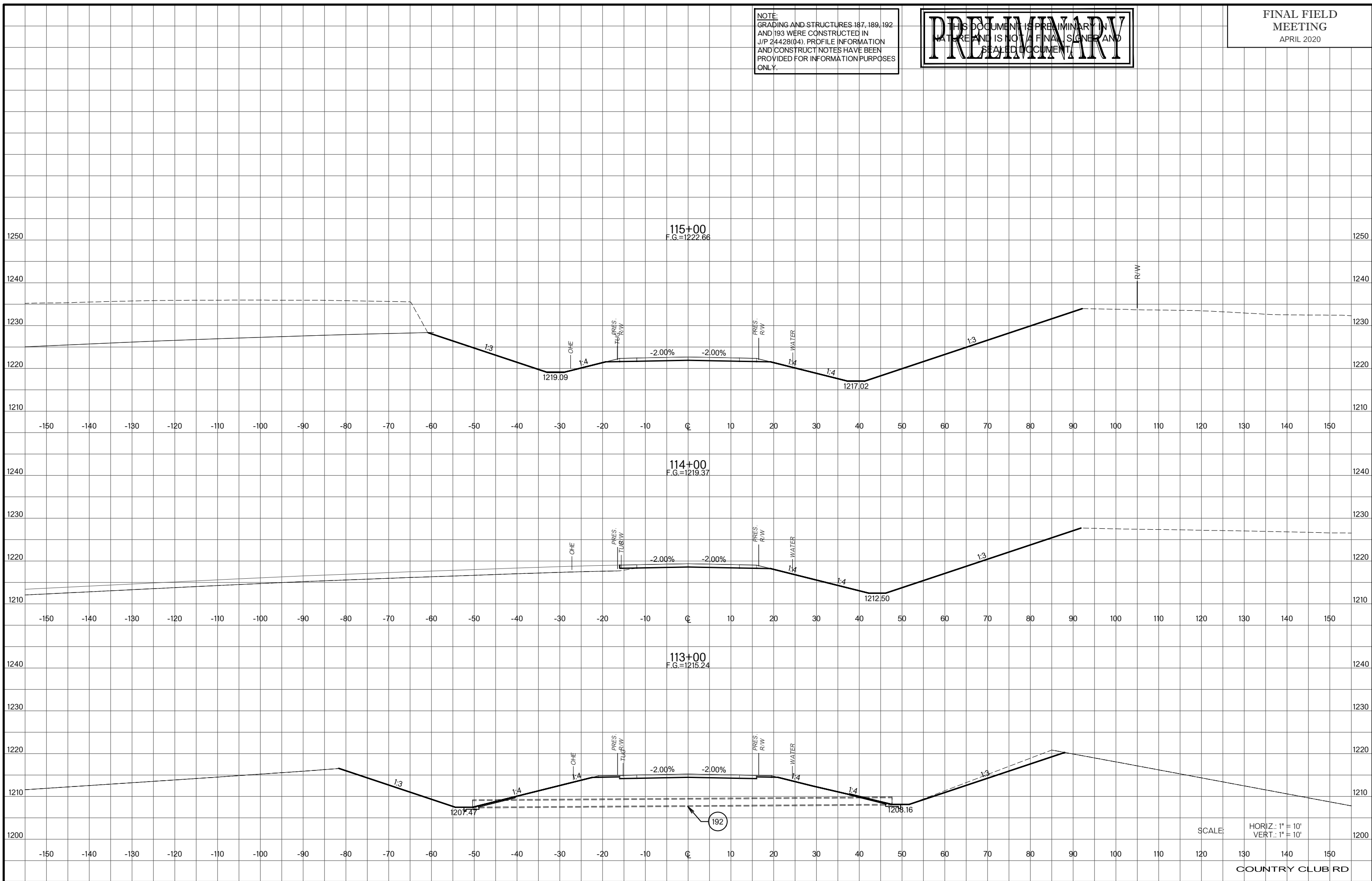
COUNTRY CLUB RD

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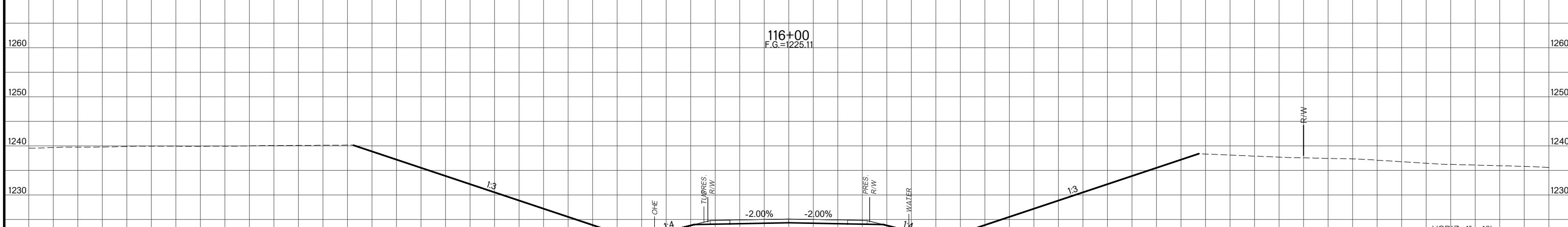
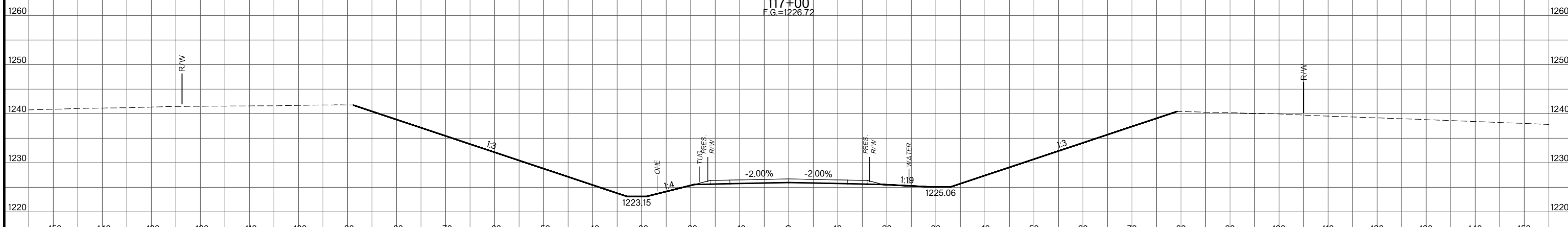
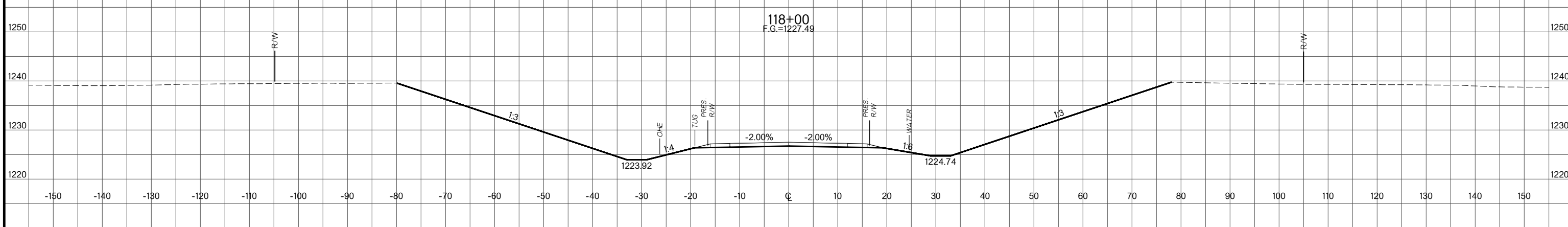
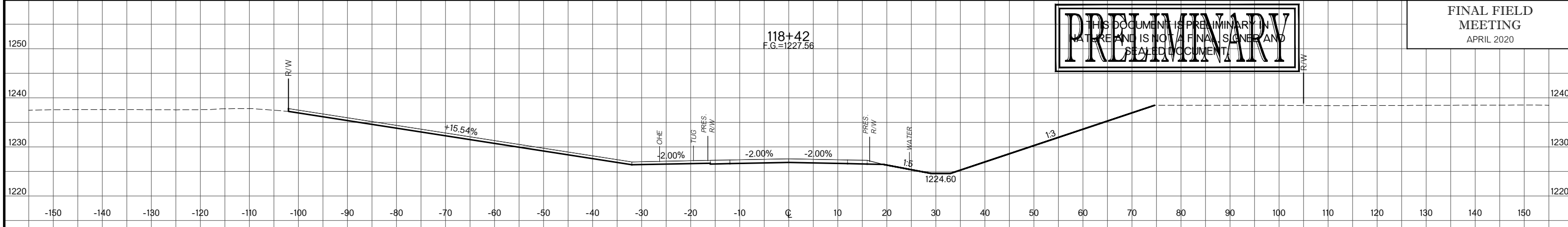


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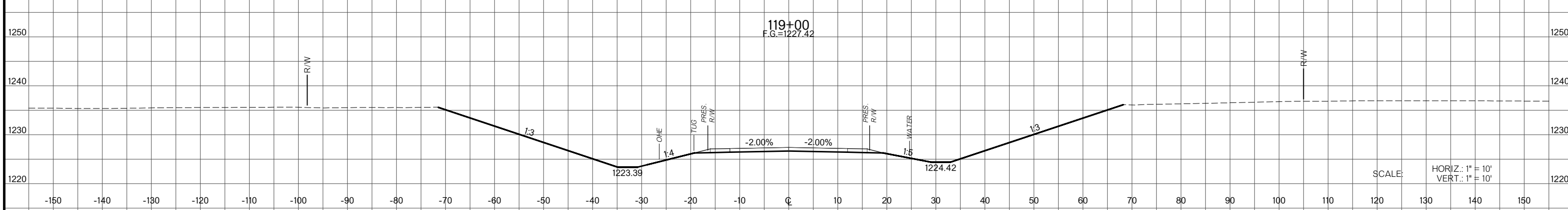
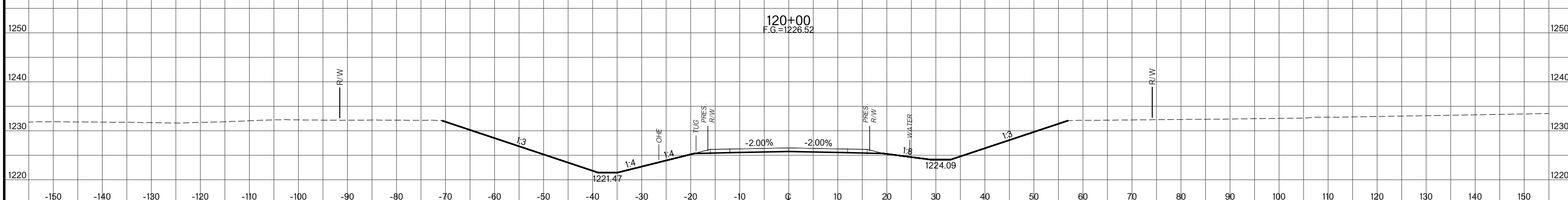
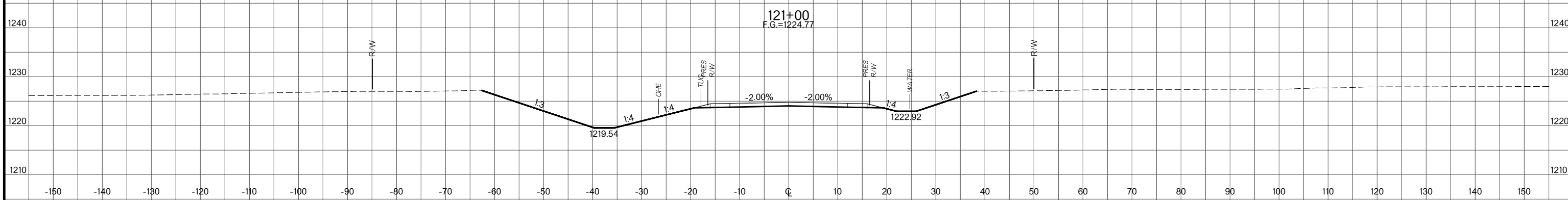
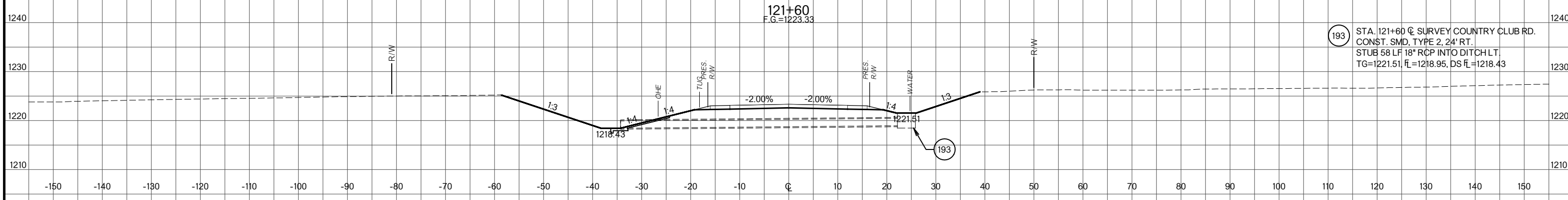
COUNTRY CLUB RD

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FINAL FIELD MEETING
APRIL 2020



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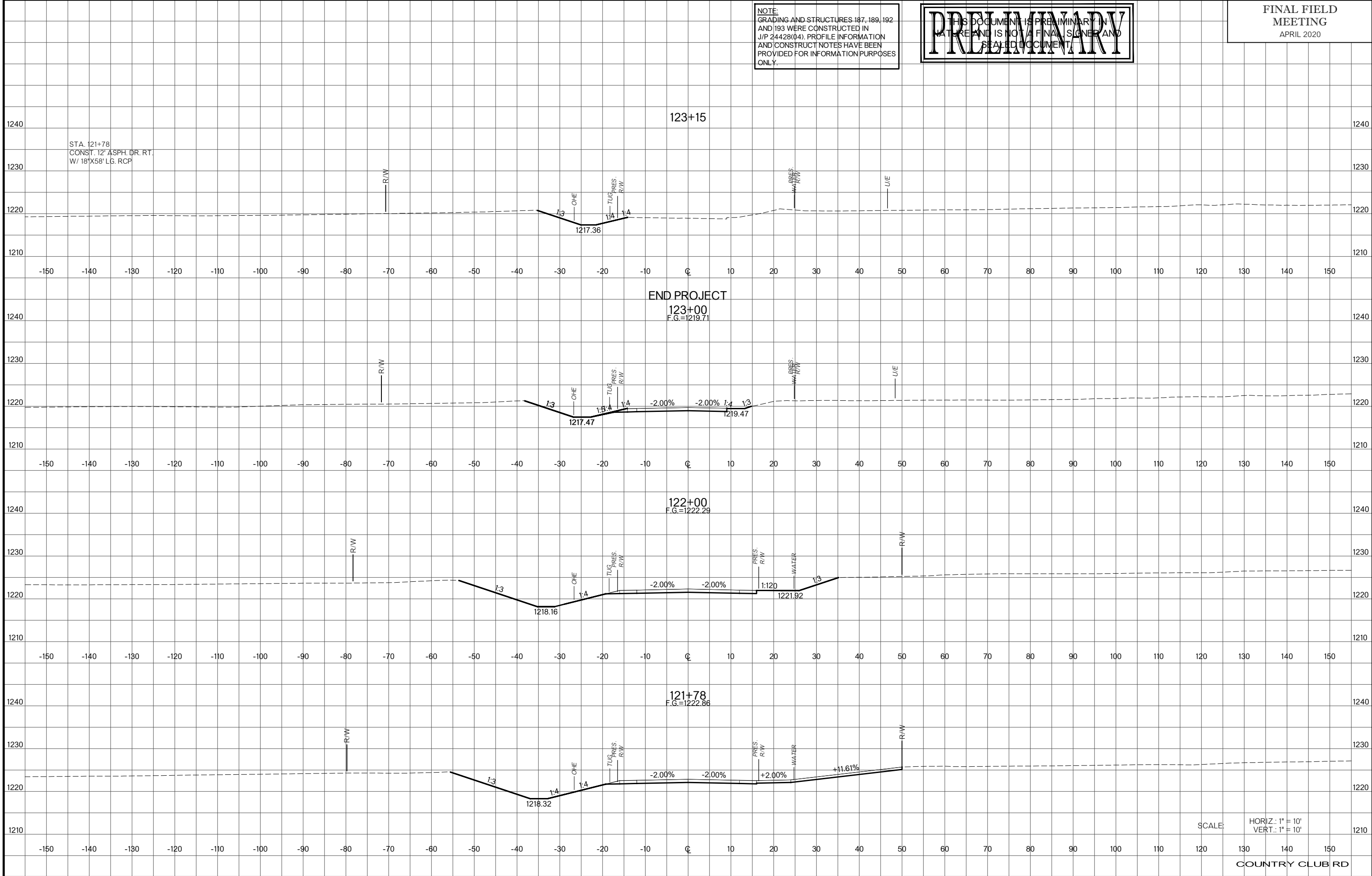
COUNTRY CLUB RD

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 APRIL 2020



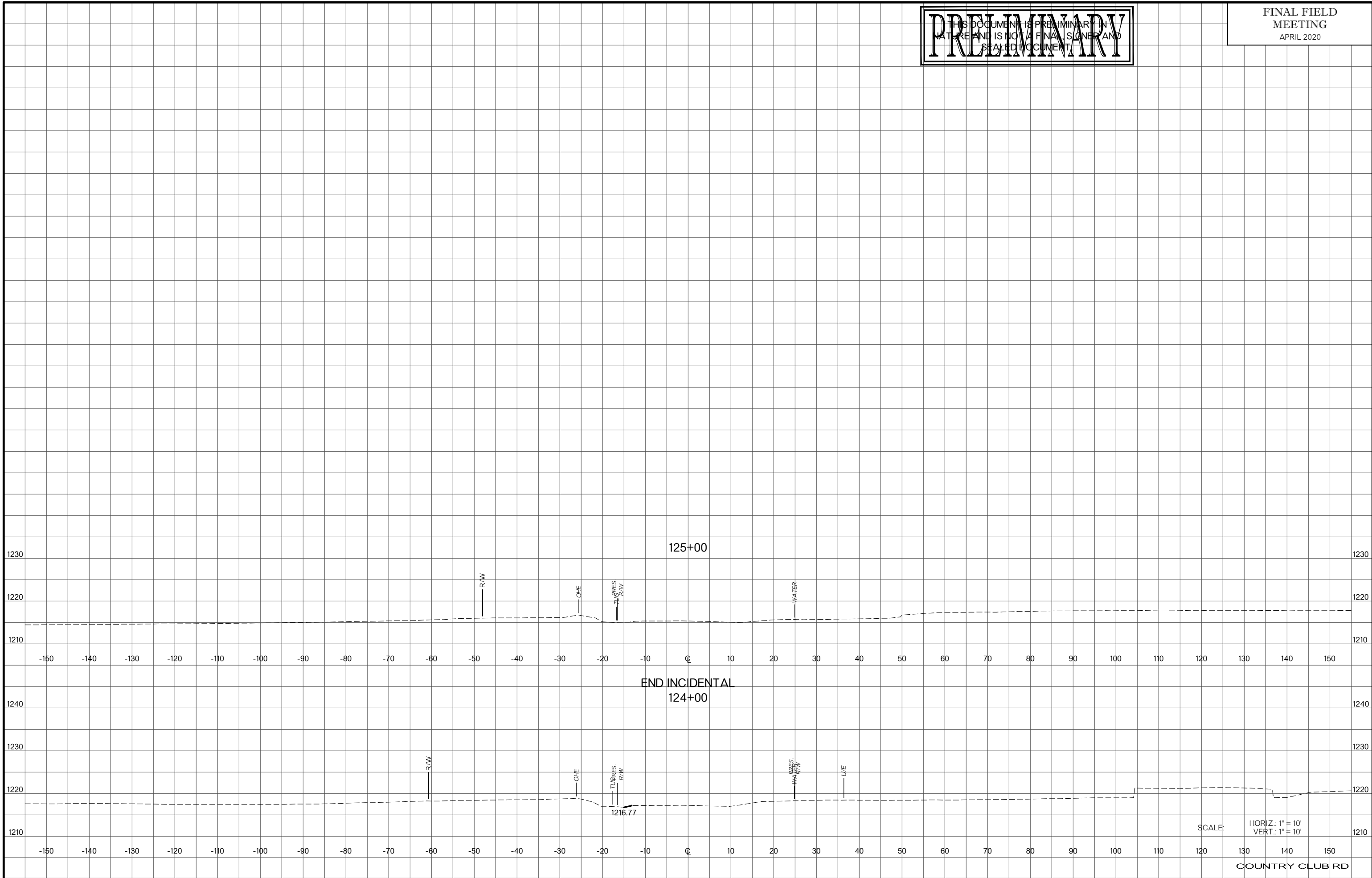
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COUNTRY CLUB RD

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 GRADY COUNTY

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SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

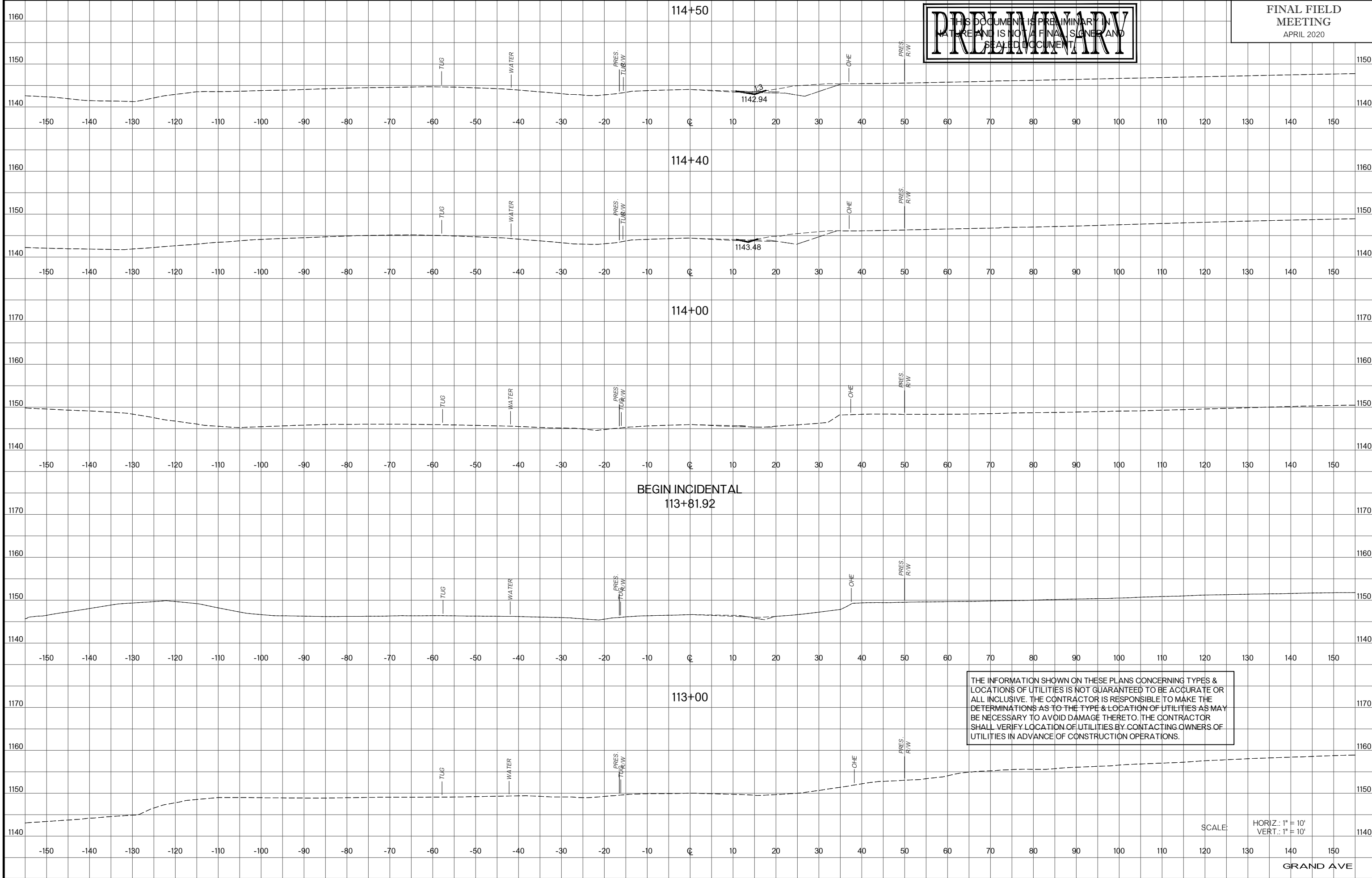
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US 81 REALIGNMENT
GRADY COUNTY

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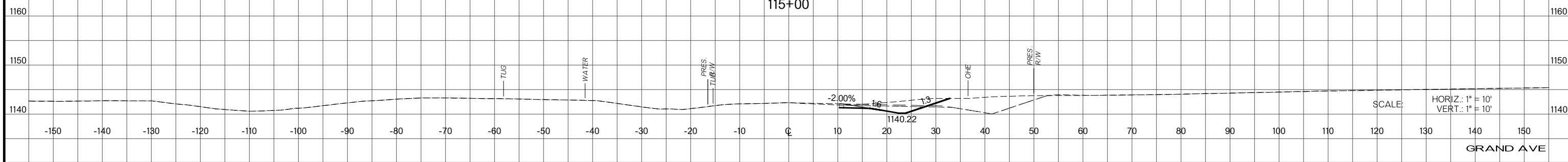
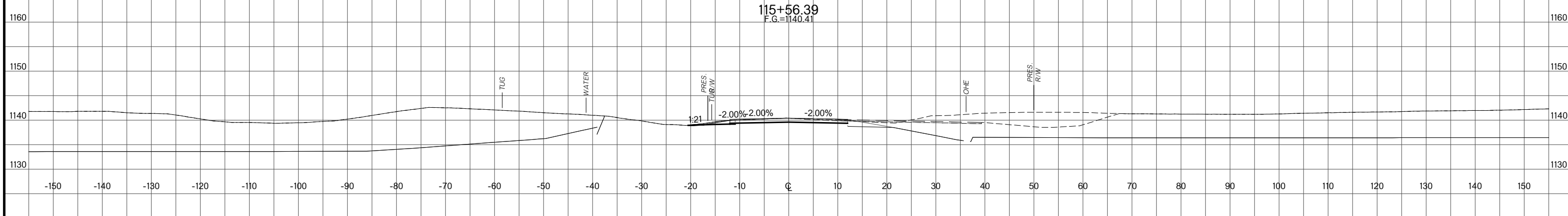
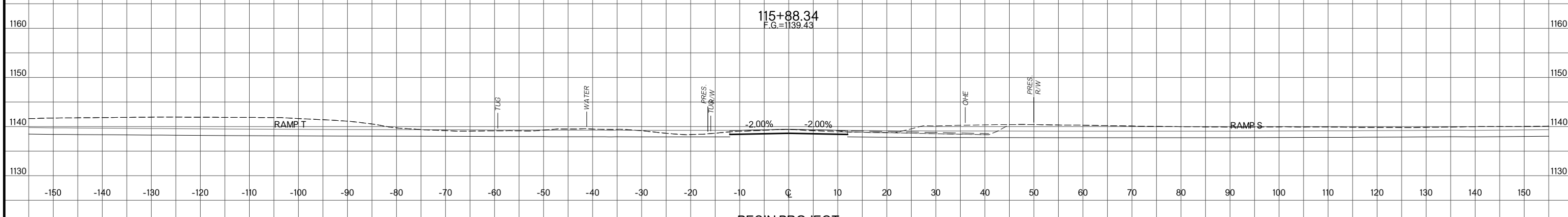
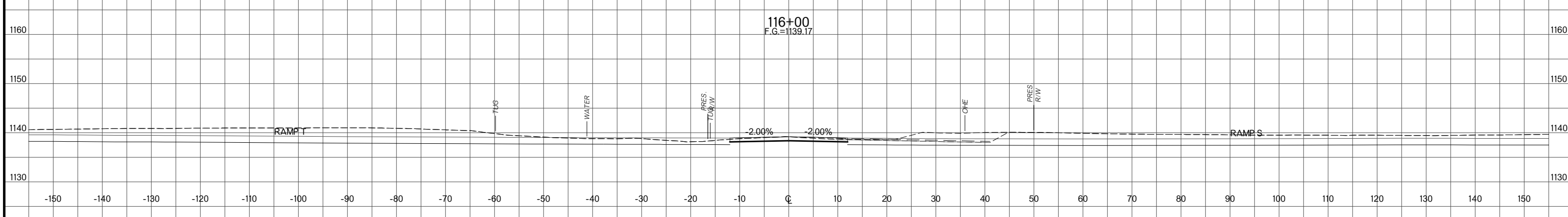
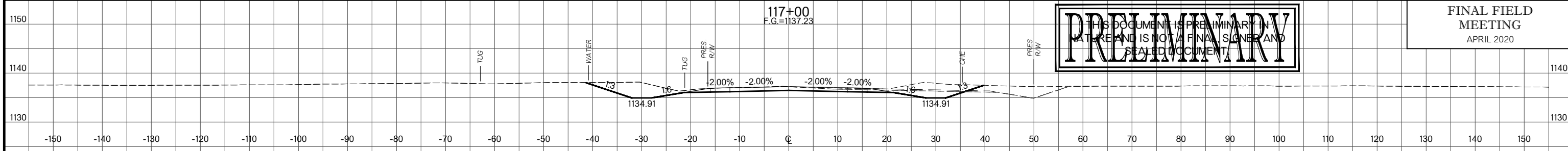
FINAL FIELD MEETING
APRIL 2020



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FINAL FIELD MEETING
APRIL 2020



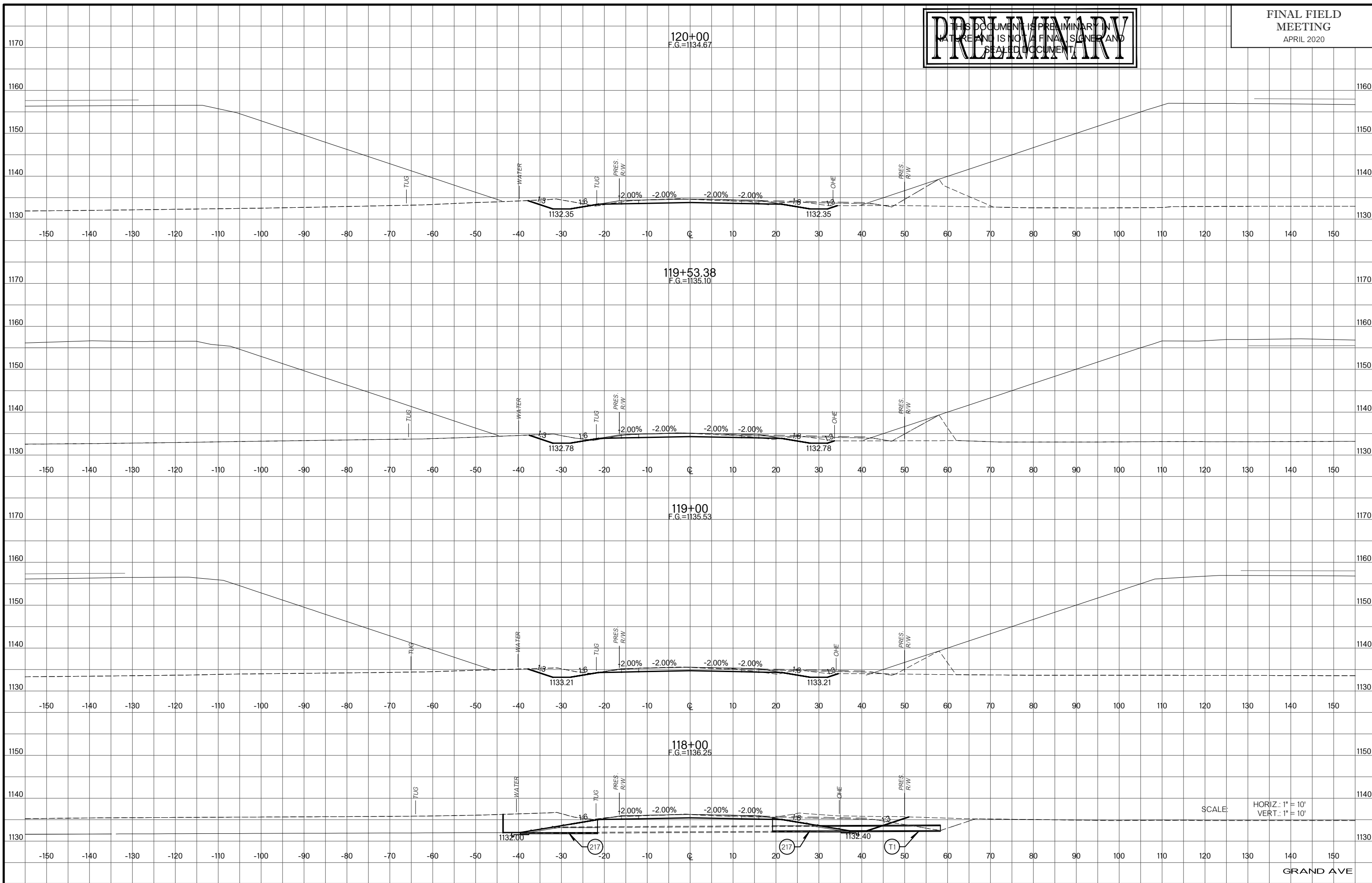
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GRAND AVE

US 81 REALIGNMENT
GRADY COUNTY

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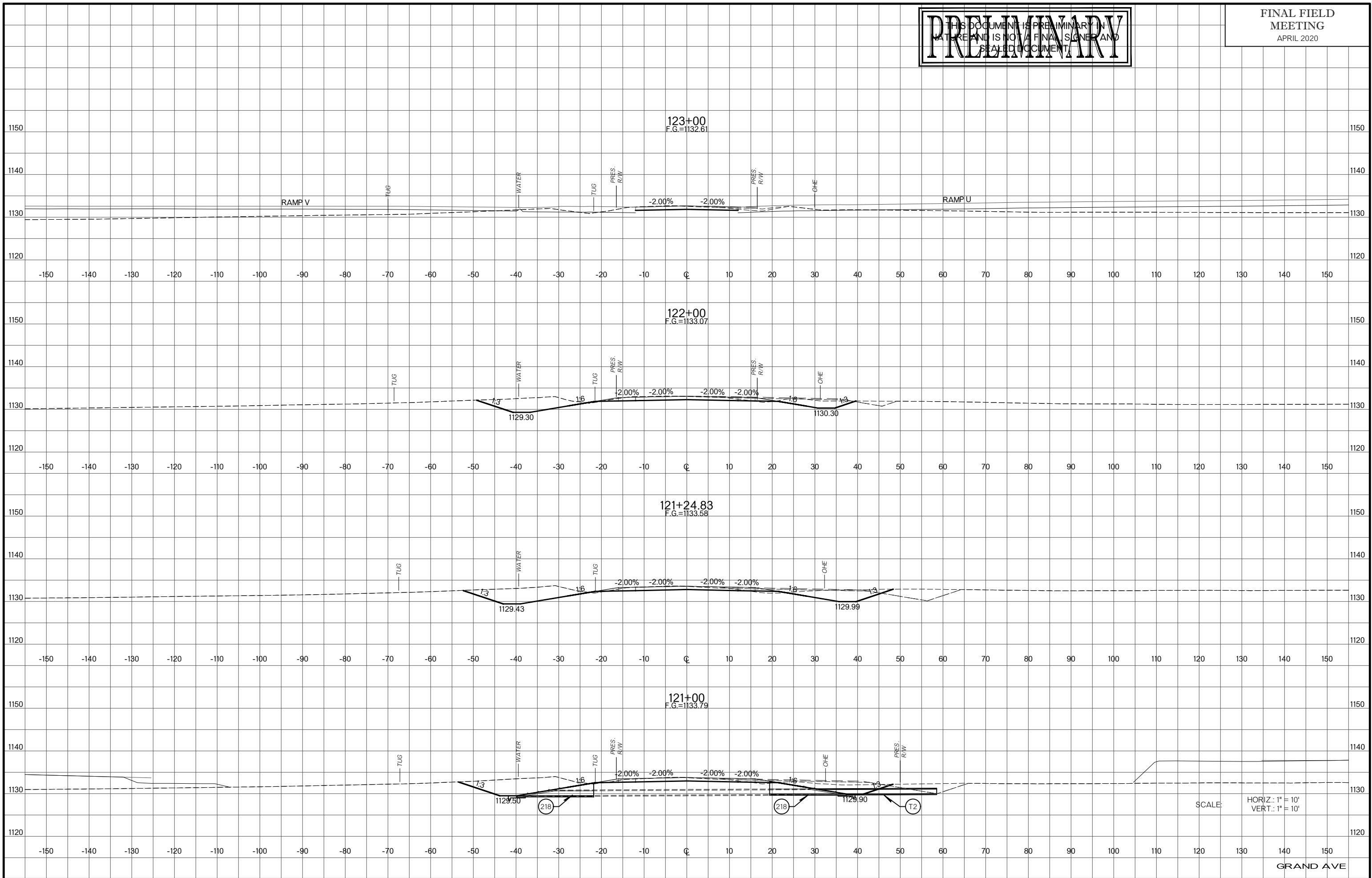
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GRAND AVE

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GRADY COUNTY

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APRIL 2020



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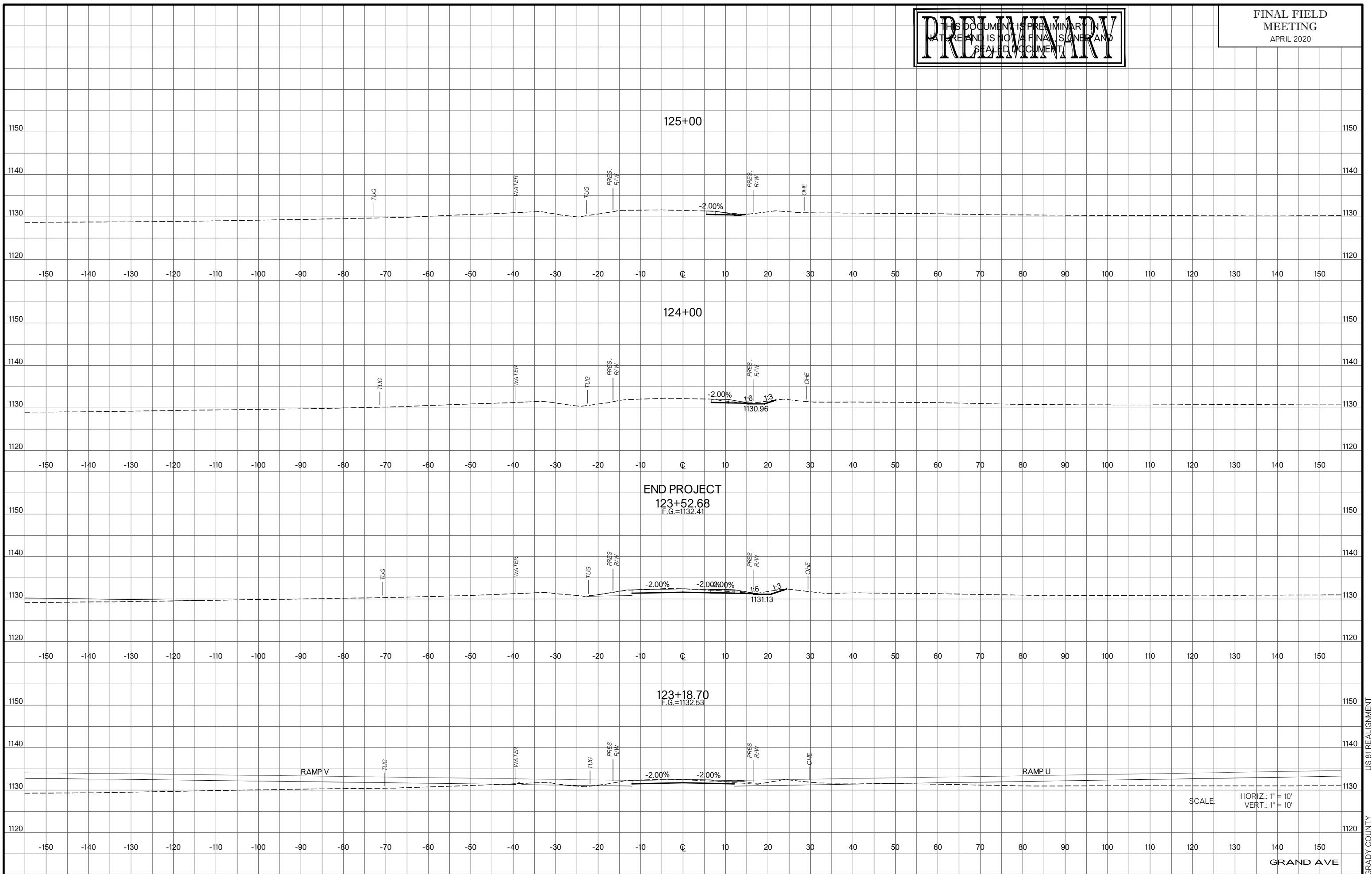
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APRIL 2020



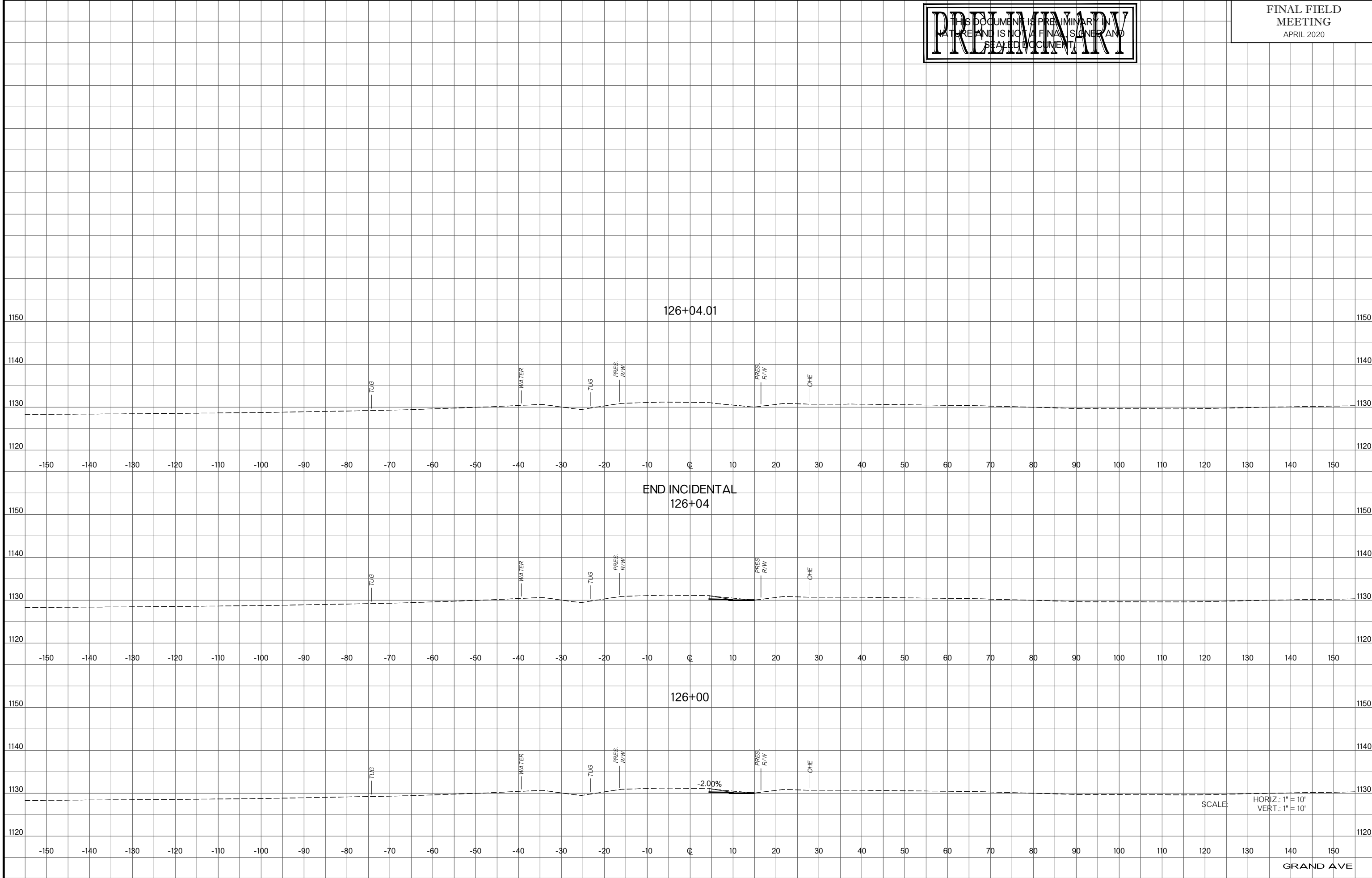
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GRAND AVE

US 81 REALIGNMENT
GRADY COUNTY

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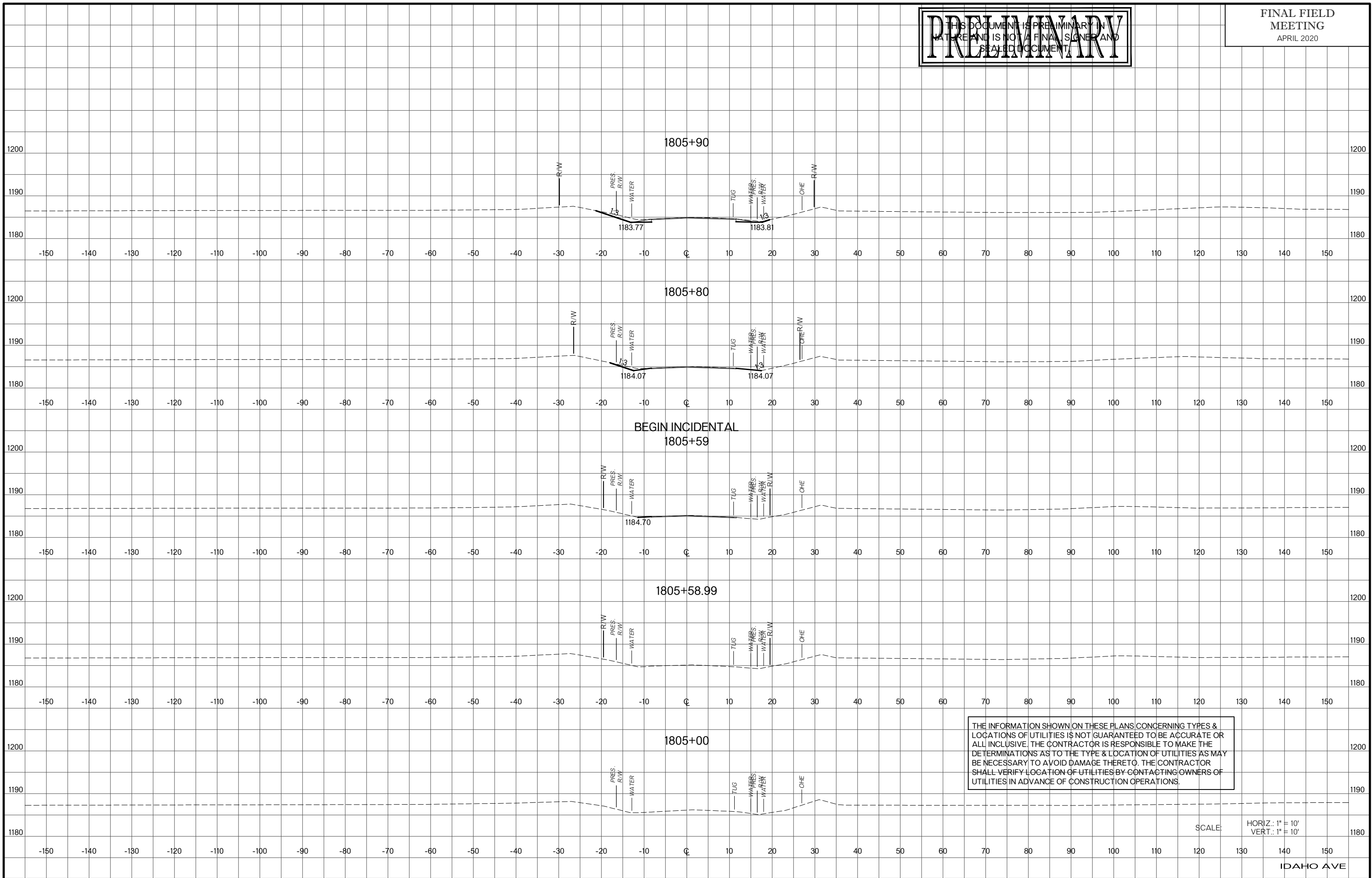
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BEGIN INCIDENTAL
1805+59

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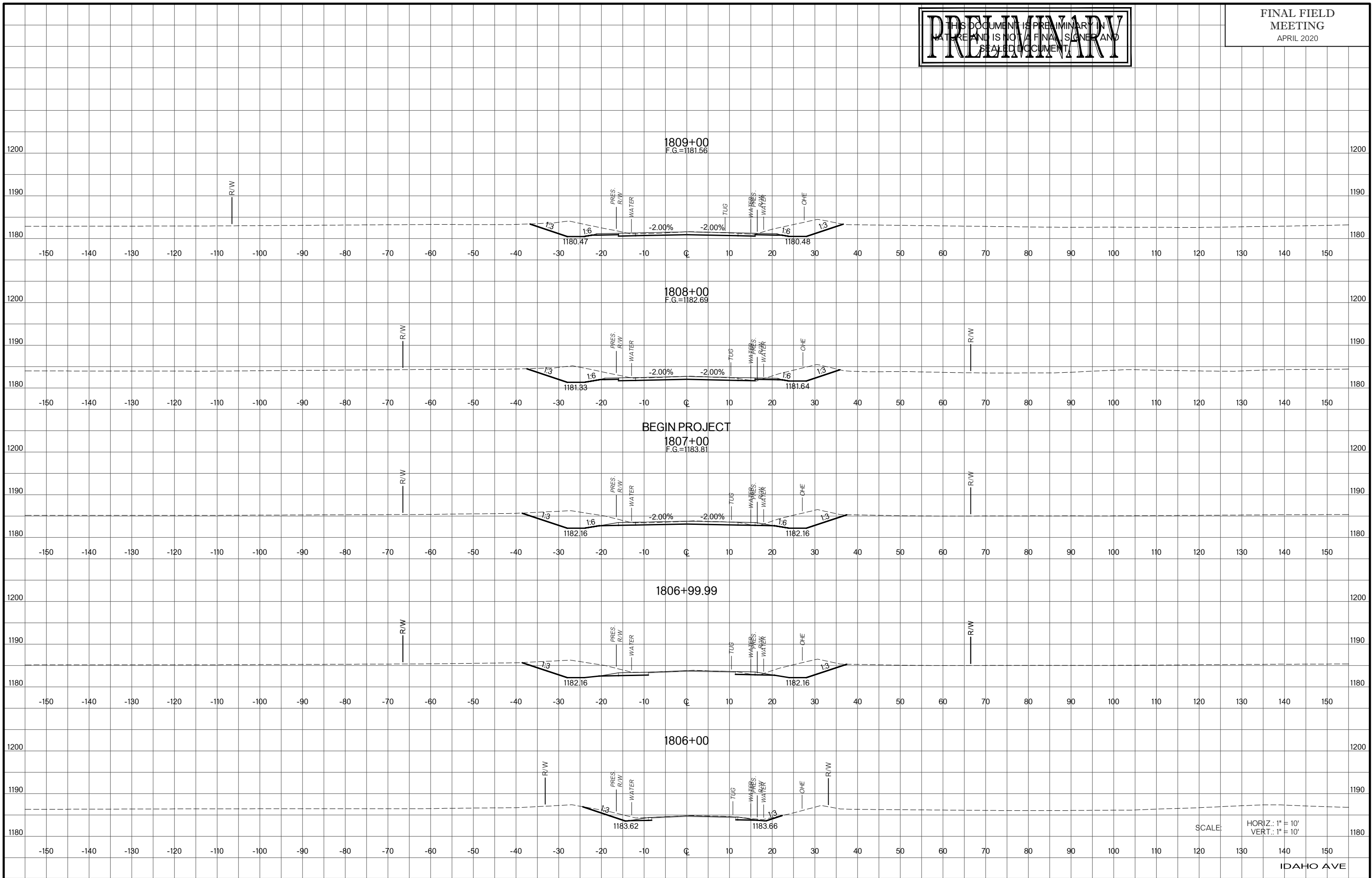
IDAHO AVE

US 81 REALIGNMENT
GRADY COUNTY

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PRELIMINARY

FINAL FIELD MEETING
APRIL 2020



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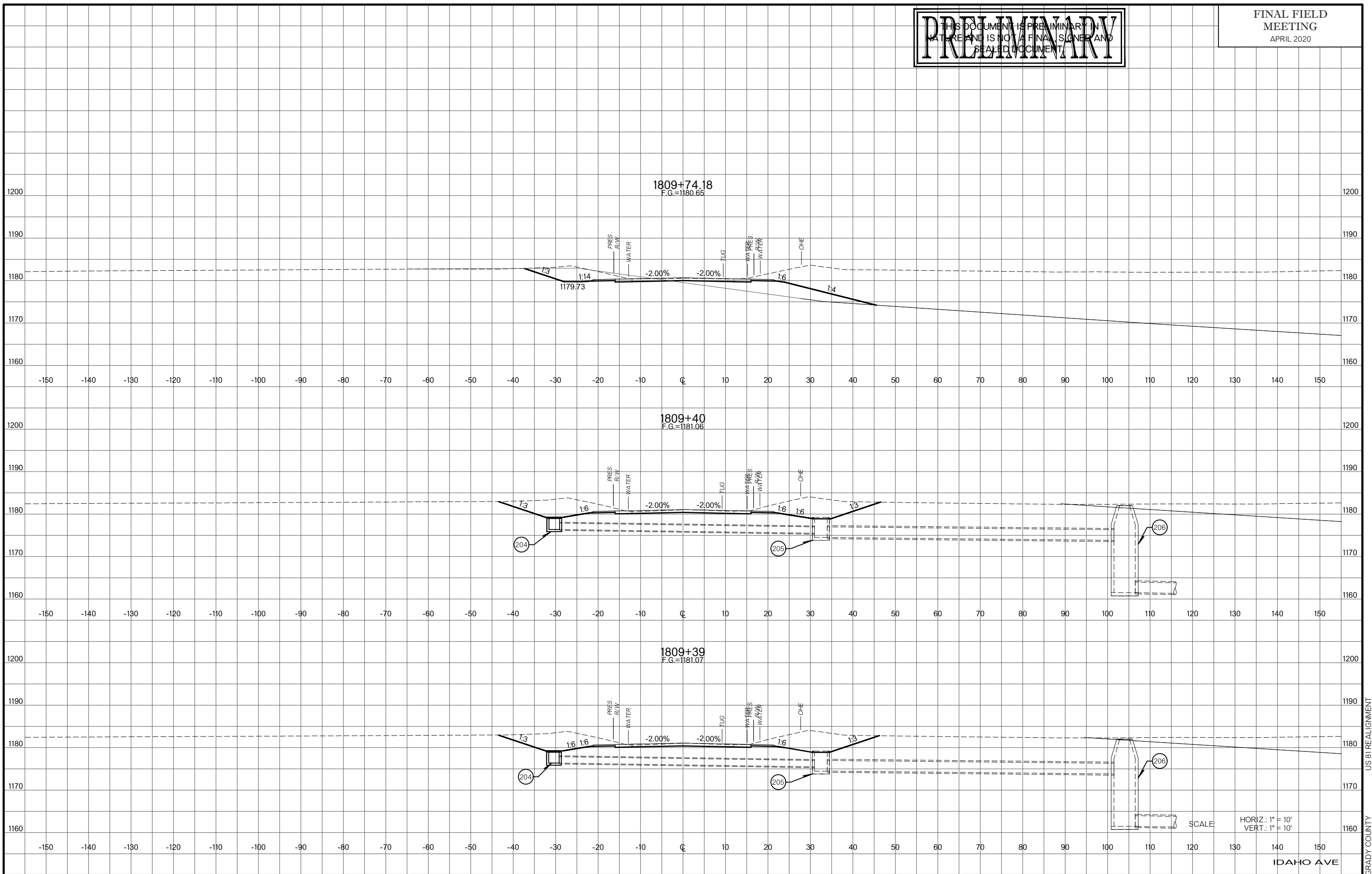
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GRADY COUNTY
US 81 REALIGNMENT

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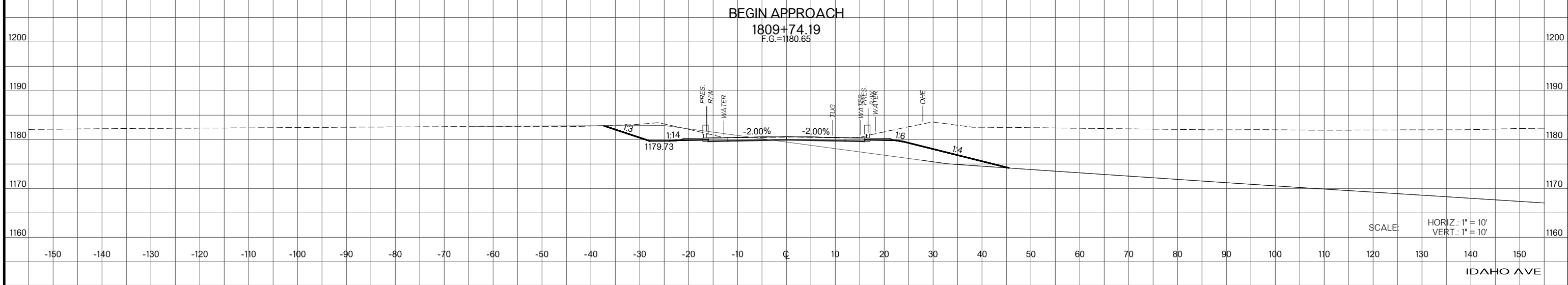
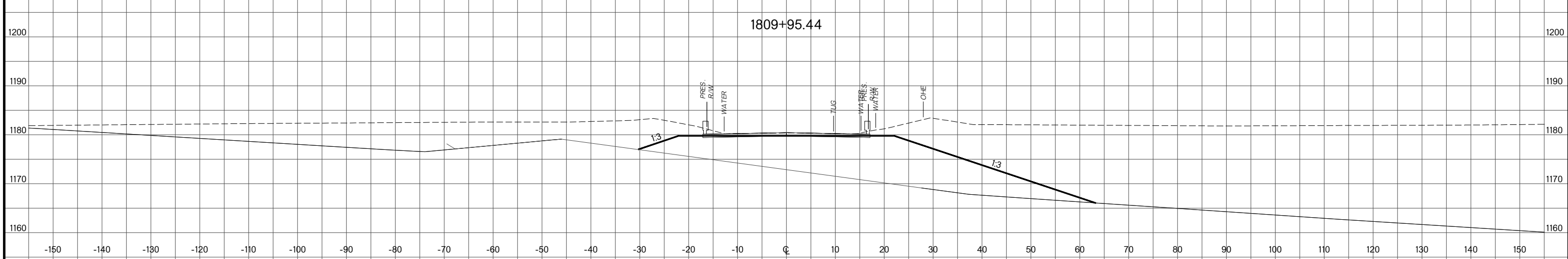
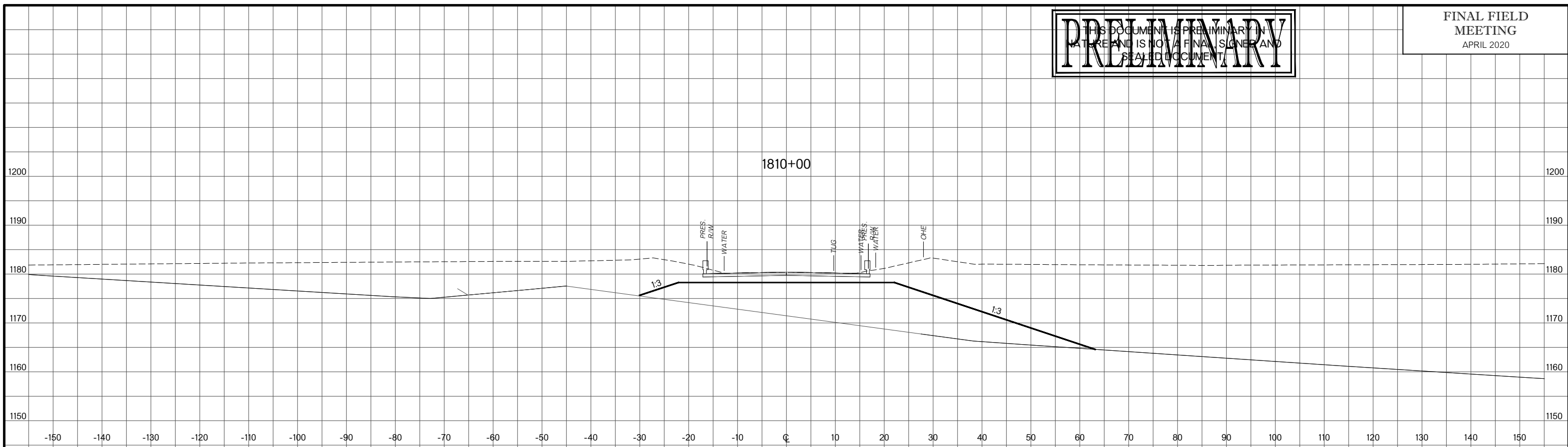
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APRIL 2020



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FINAL FIELD MEETING
APRIL 2020



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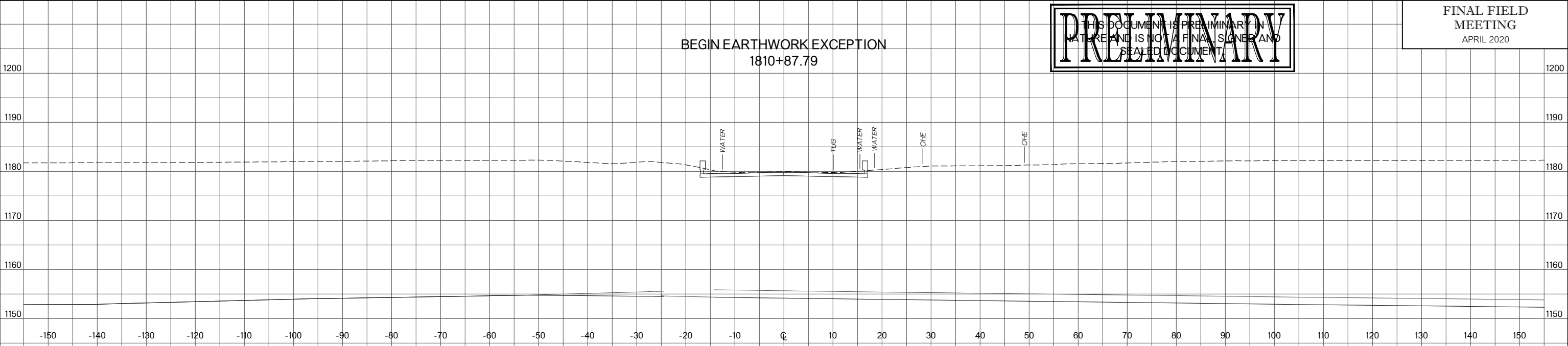
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US 81 REALIGNMENT
GRADY COUNTY

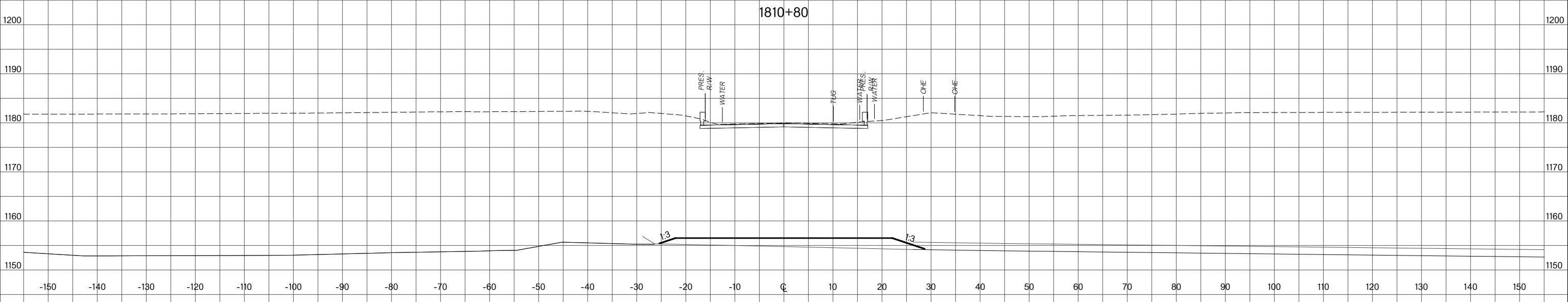
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FINAL FIELD MEETING
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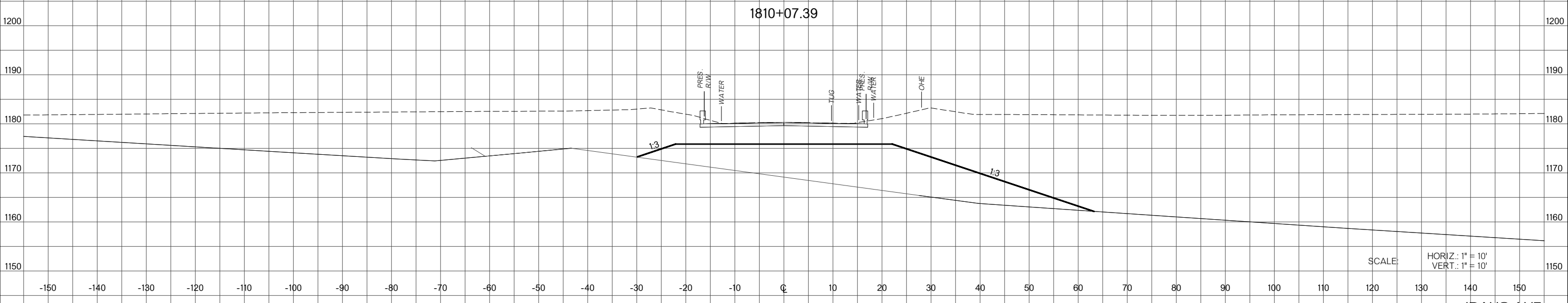
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1810+07.39



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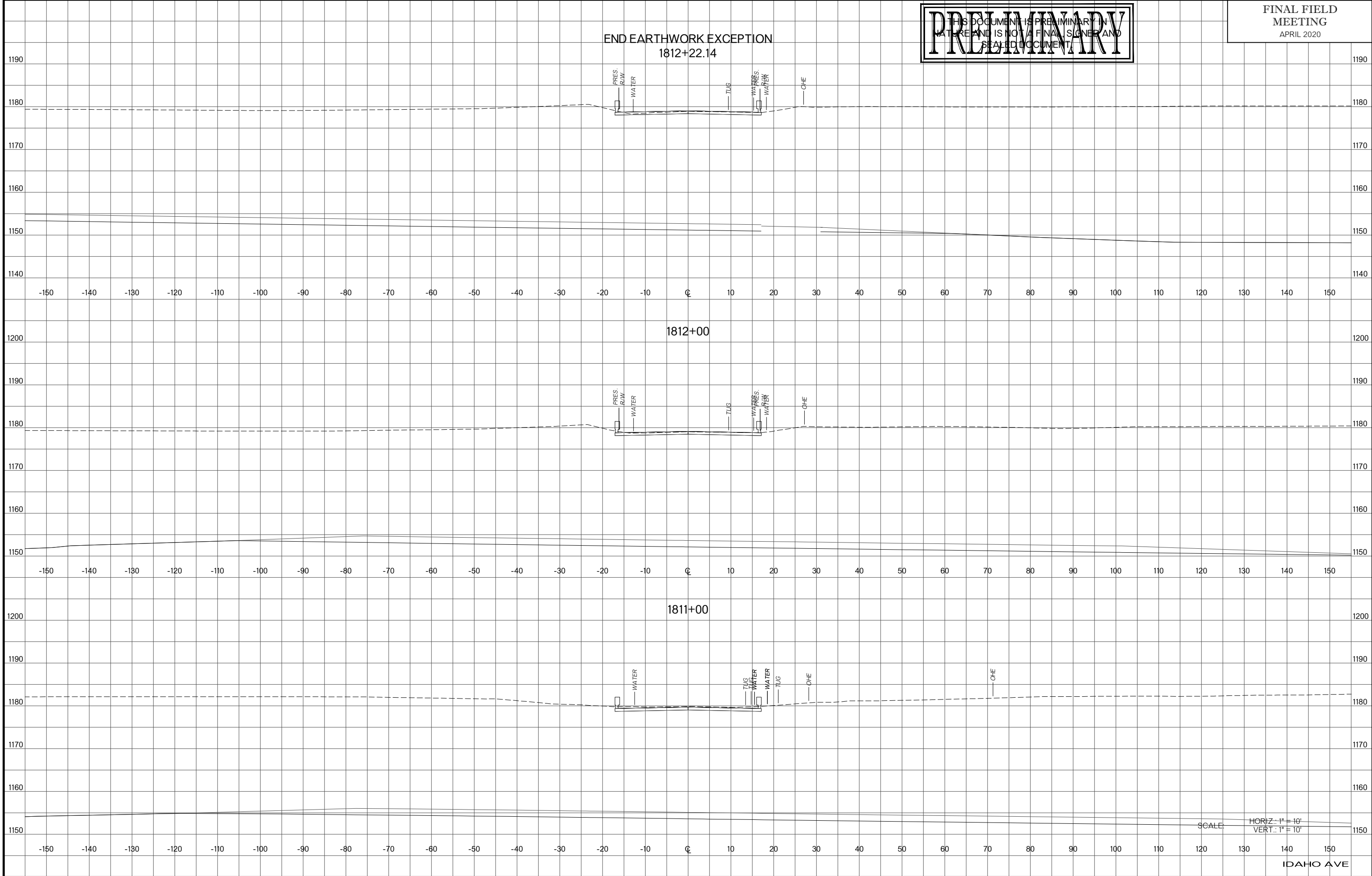
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FINAL FIELD MEETING
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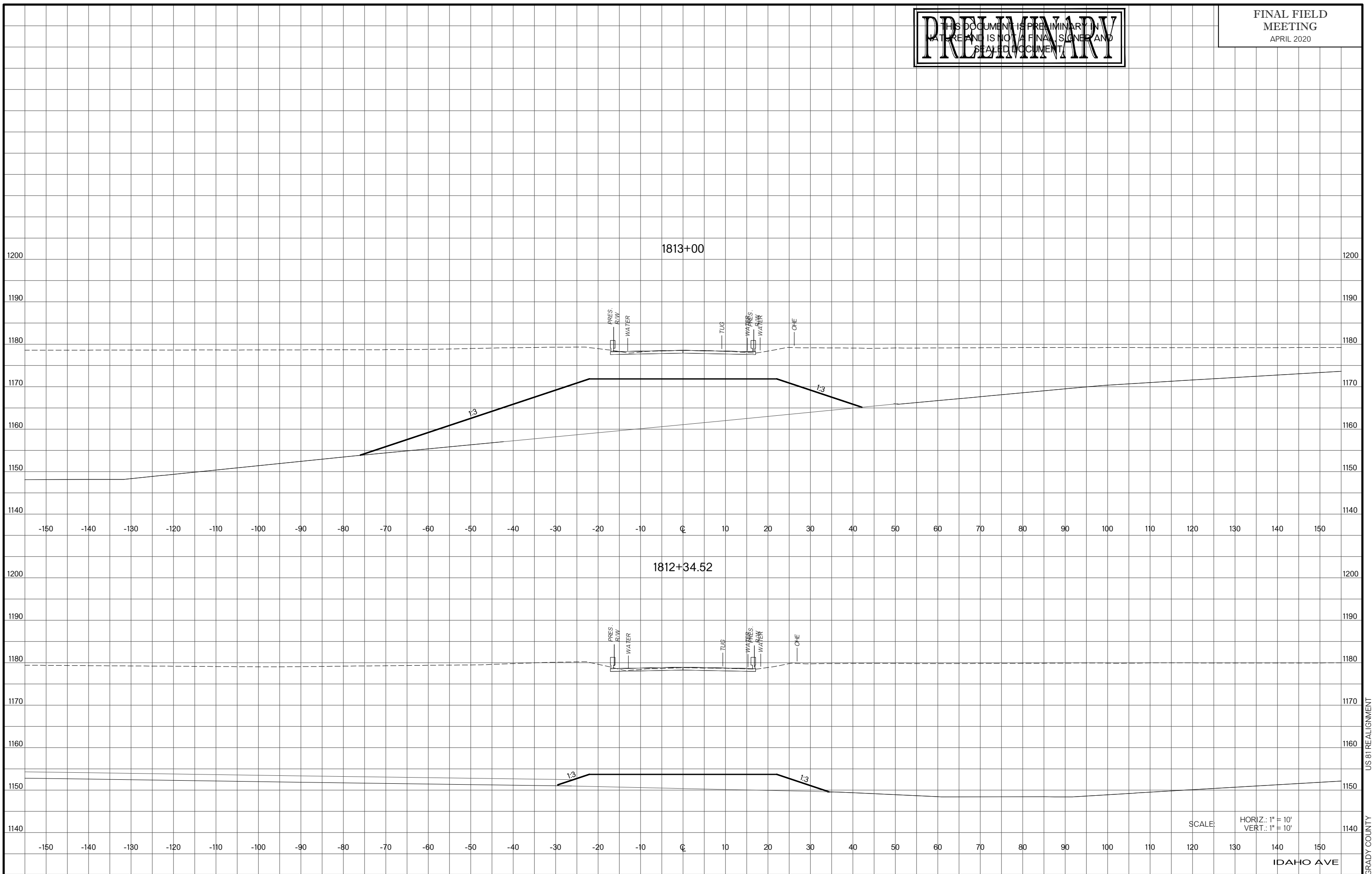
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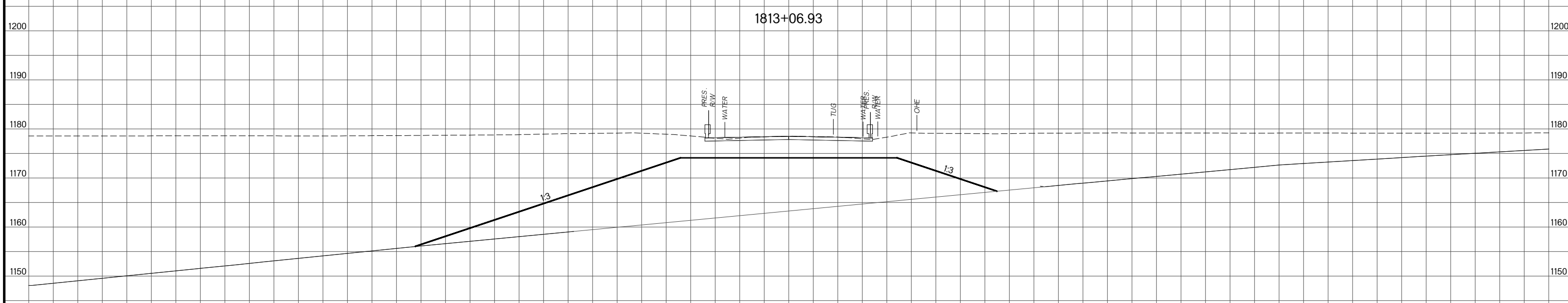
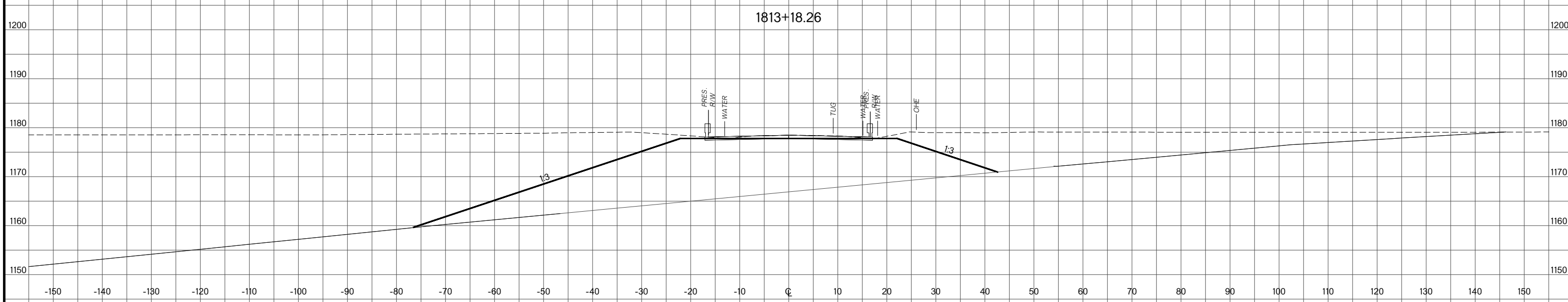
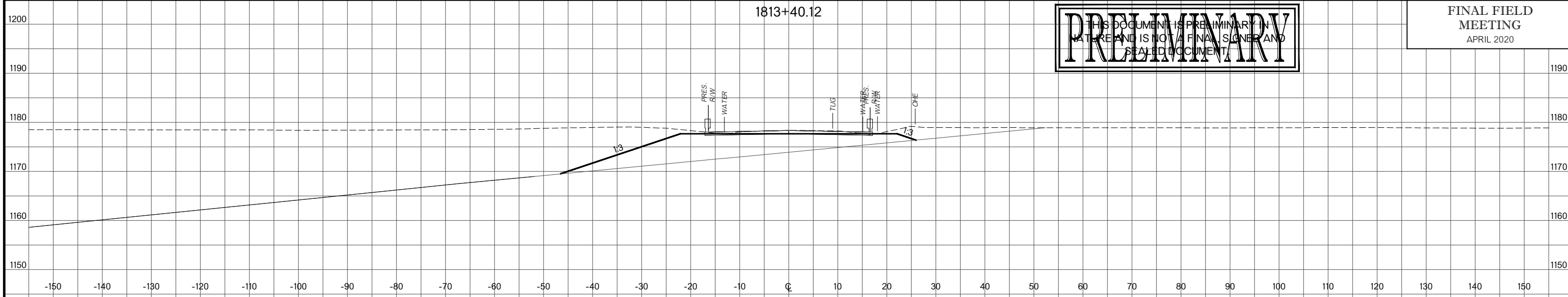
IDAHO AVE

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GRADY COUNTY

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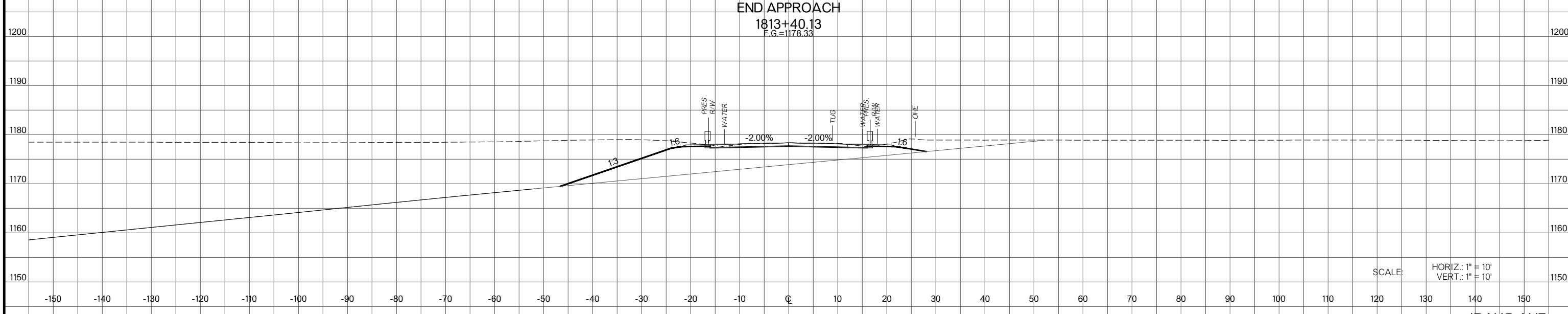
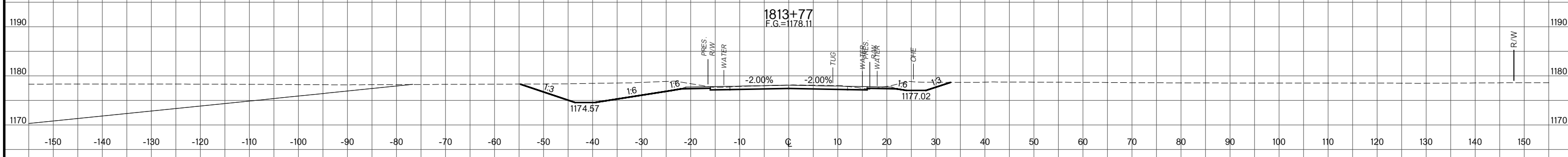
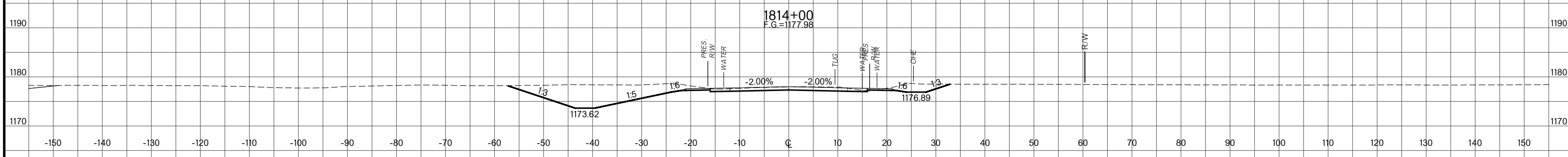
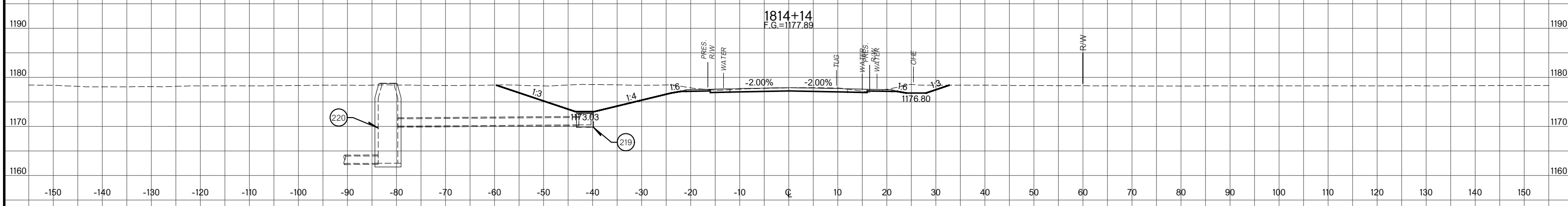
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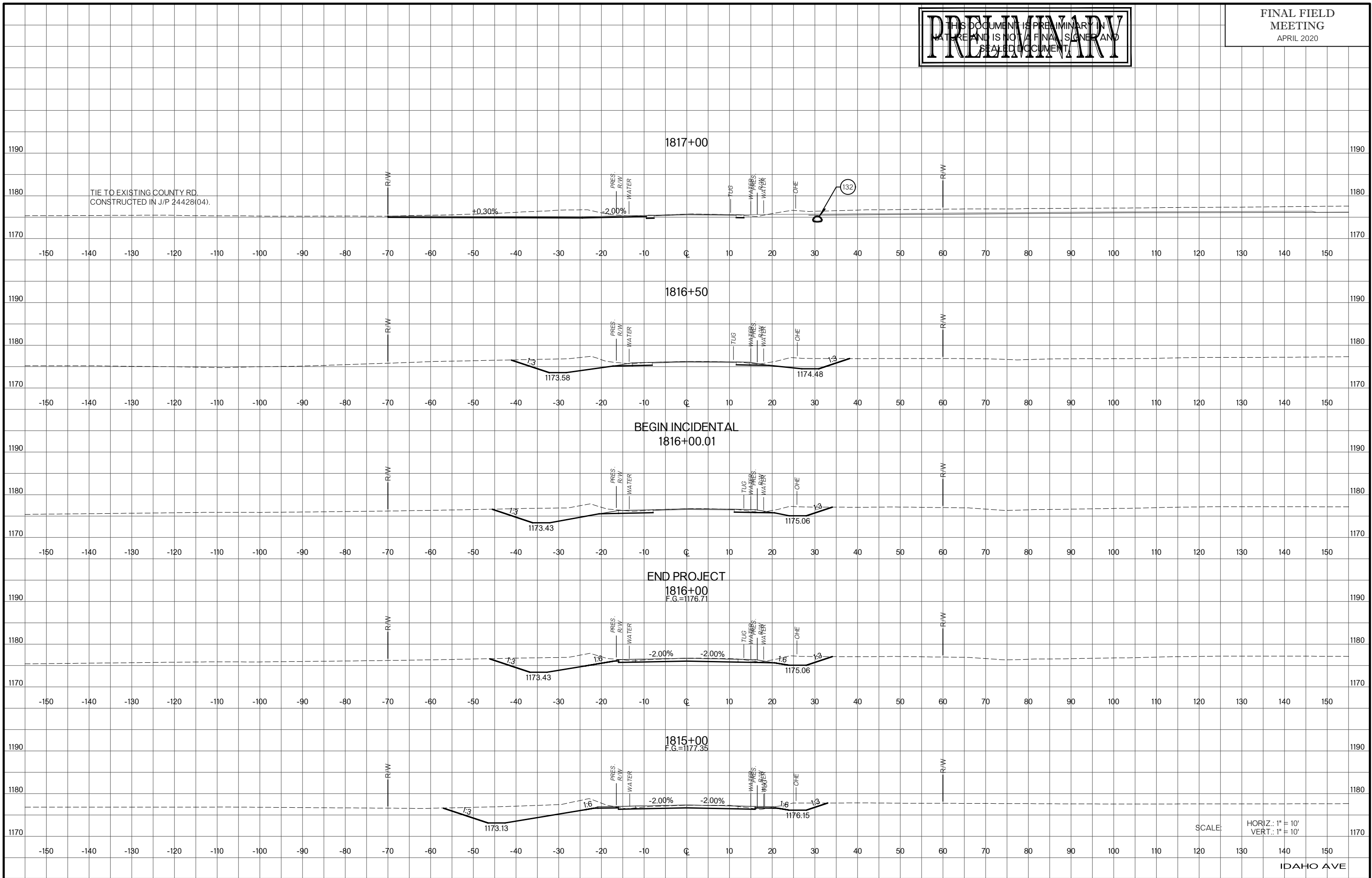
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FINAL FIELD MEETING
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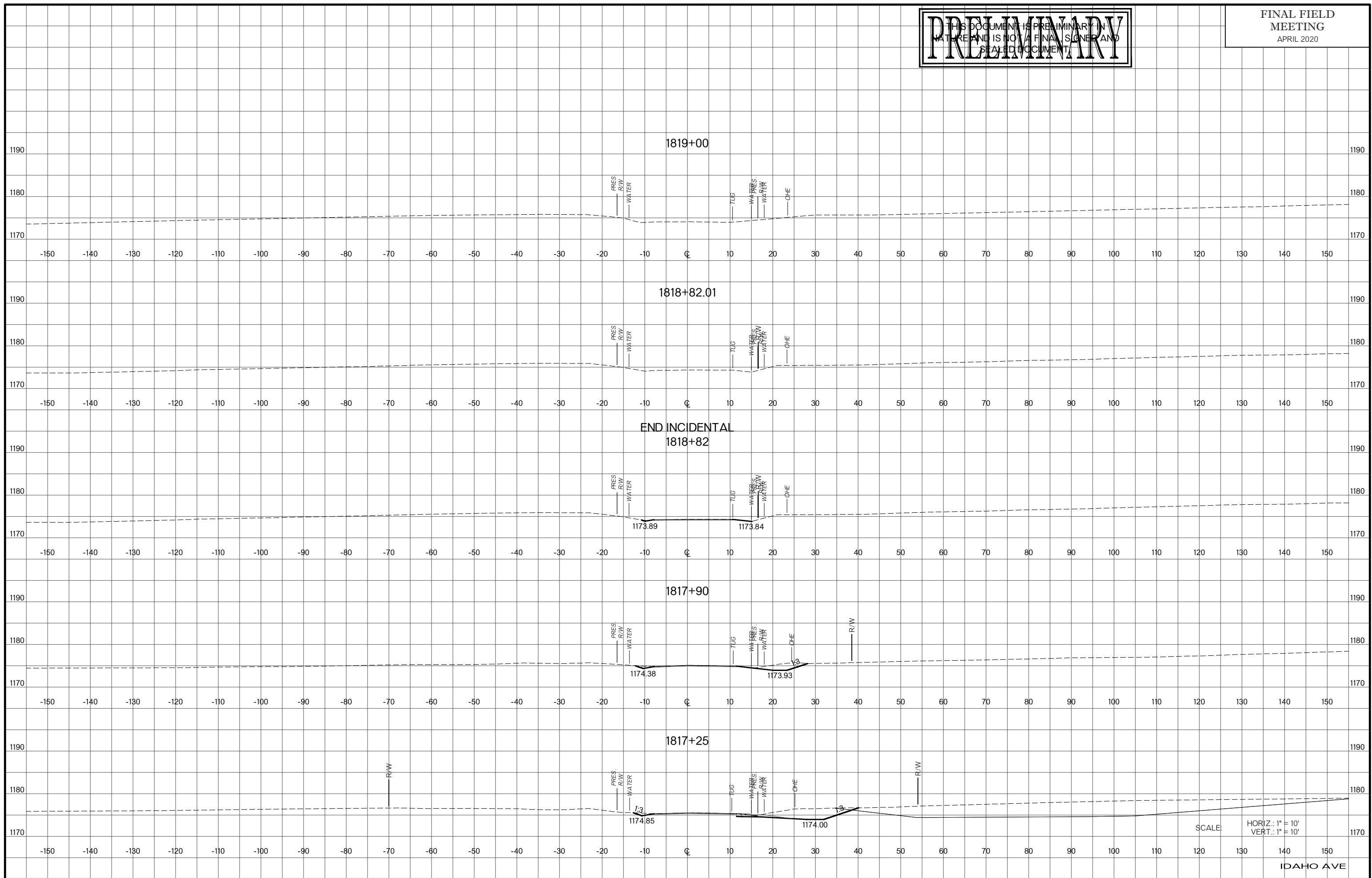
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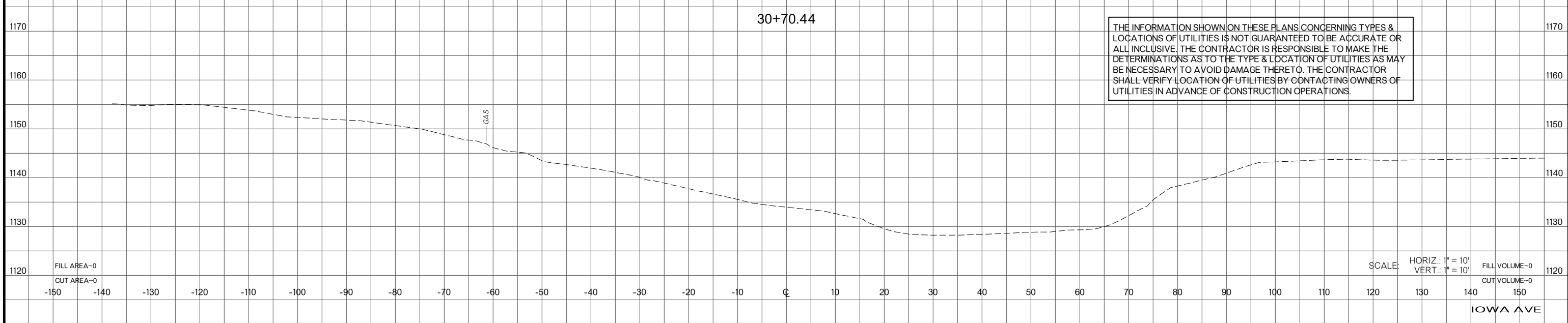
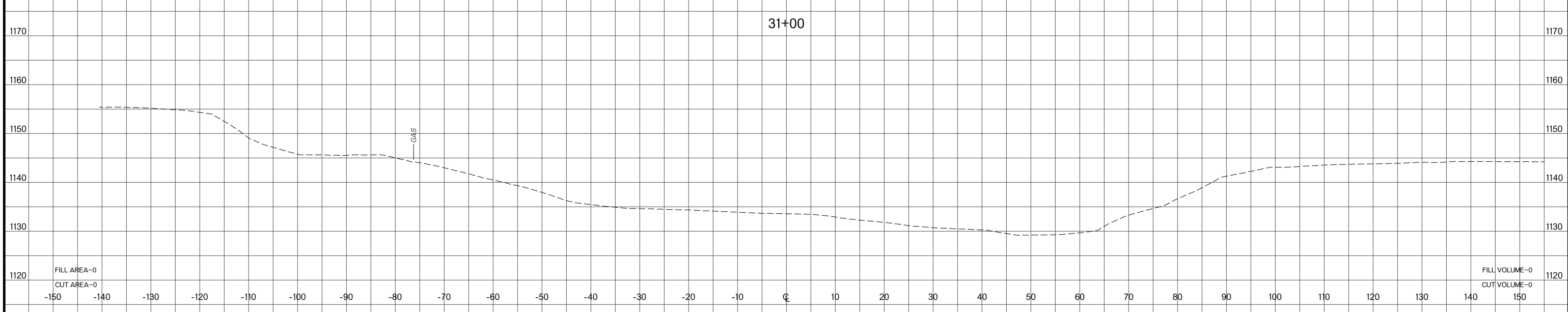
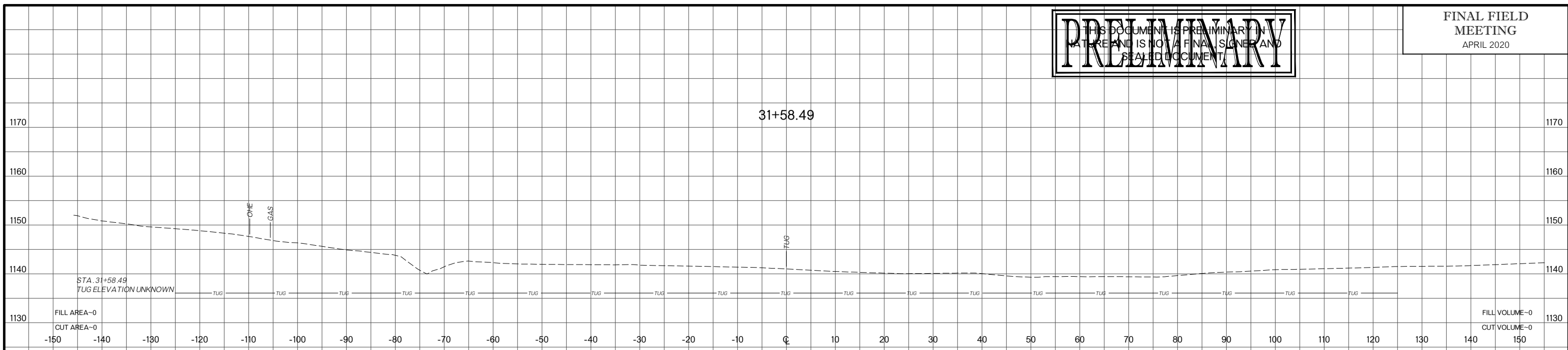
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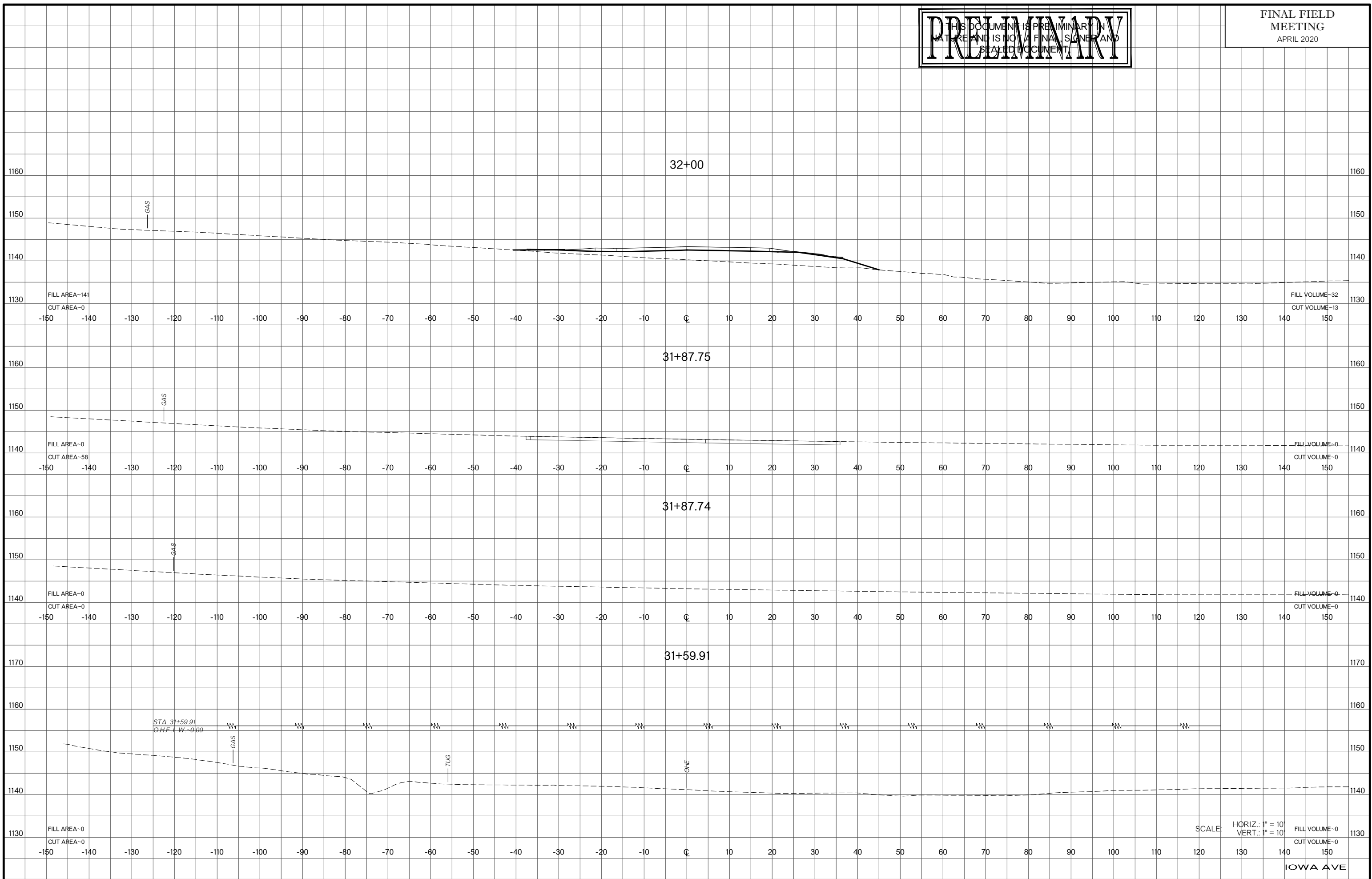
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IOWA AVE

US 81 REALIGNMENT
GRADY COUNTY

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APRIL 2020



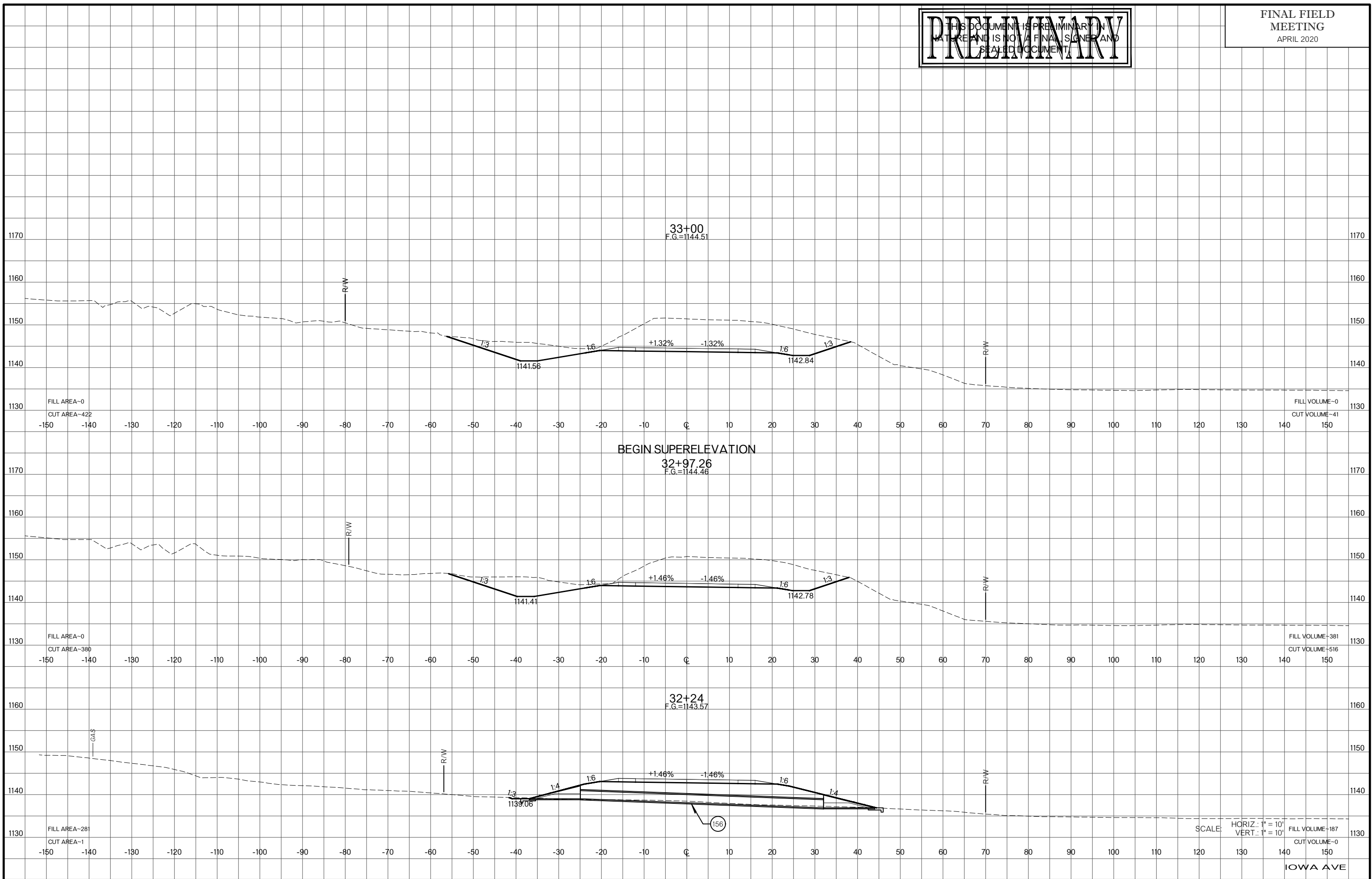
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FINAL FIELD MEETING
APRIL 2020



BEGIN SUPERELEVATION

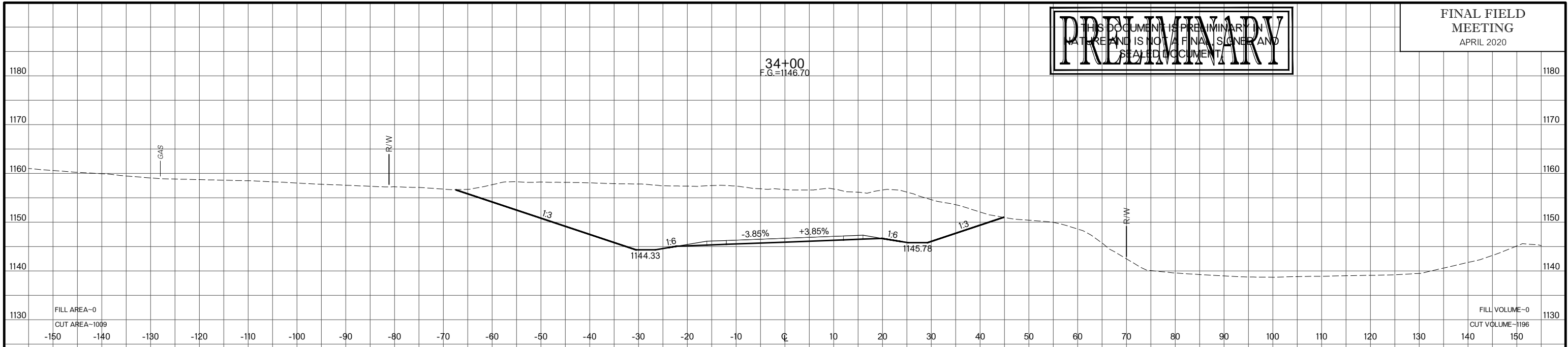
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IOWA AVE

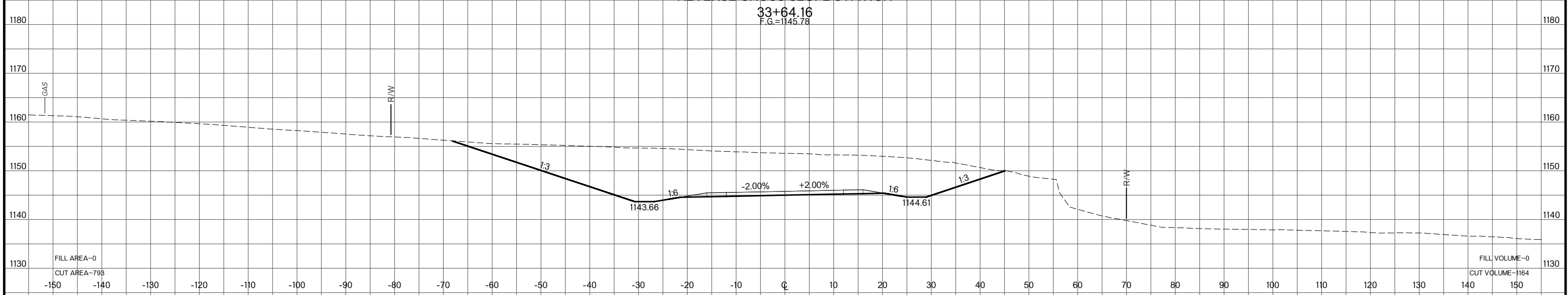
US 81 REALIGNMENT
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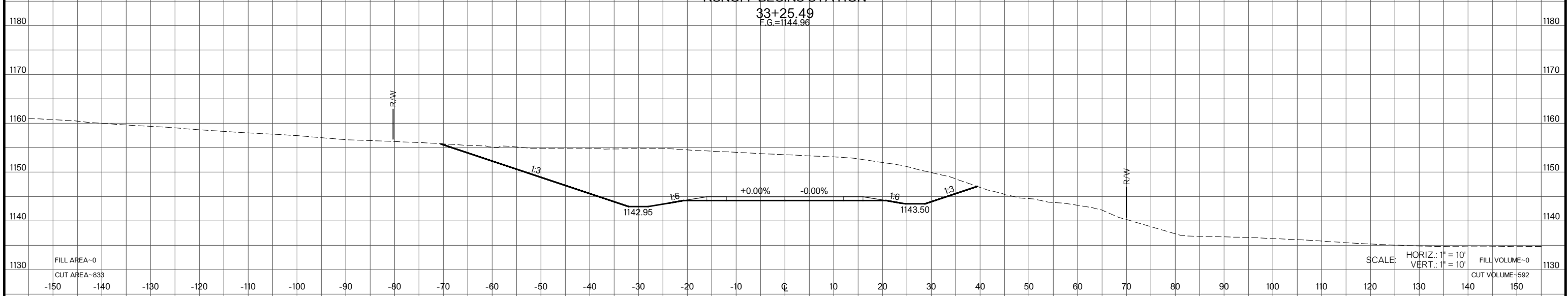
FINAL FIELD MEETING
APRIL 2020



REVERSE CROSS SLOPE STATION



RUNOFF BEGINS STATION



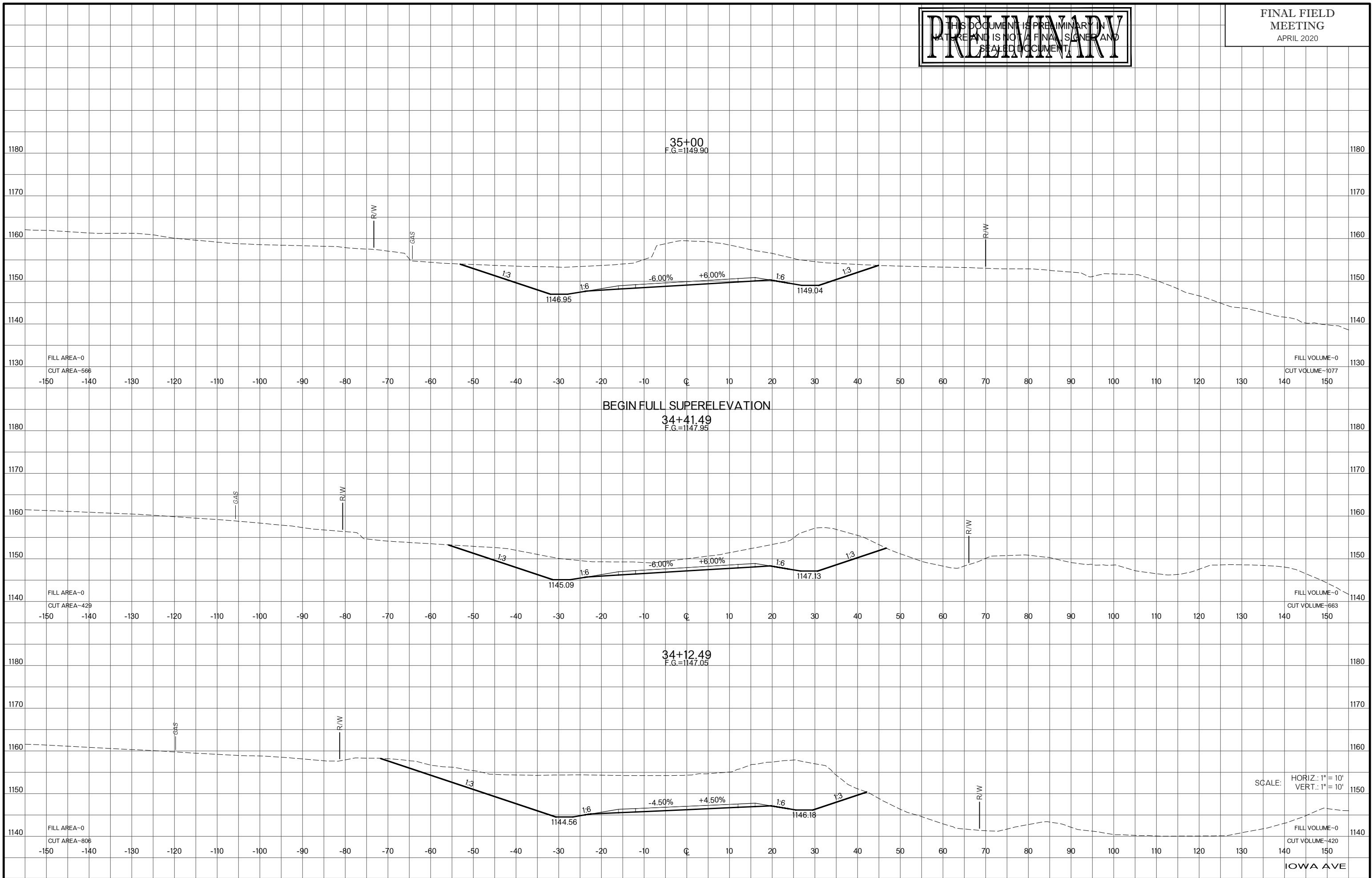
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GRADY COUNTY

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FINAL FIELD MEETING
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IOWA AVE

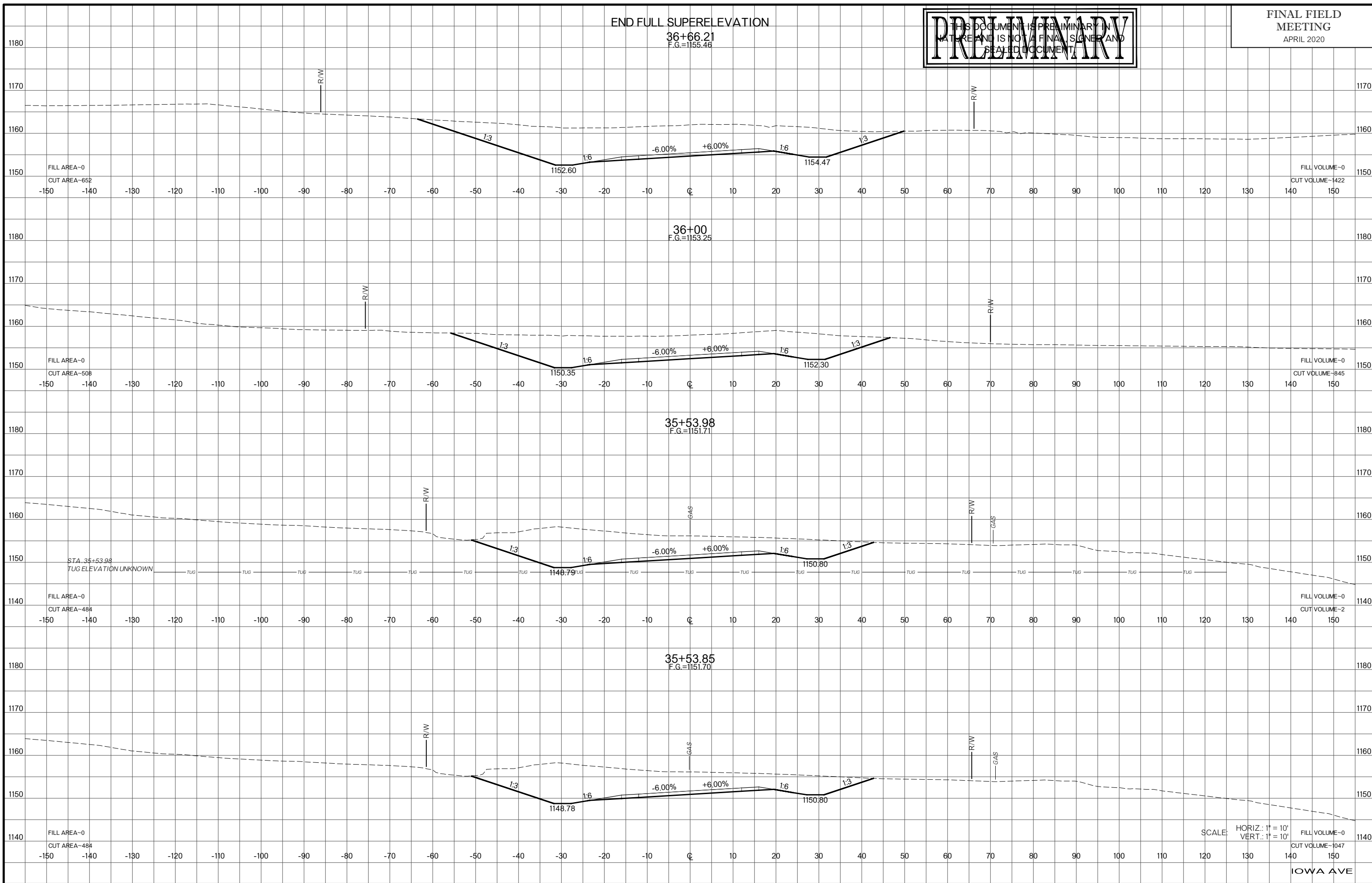
US 81 REALIGNMENT
GRADY COUNTY

END FULL SUPERELEVATION

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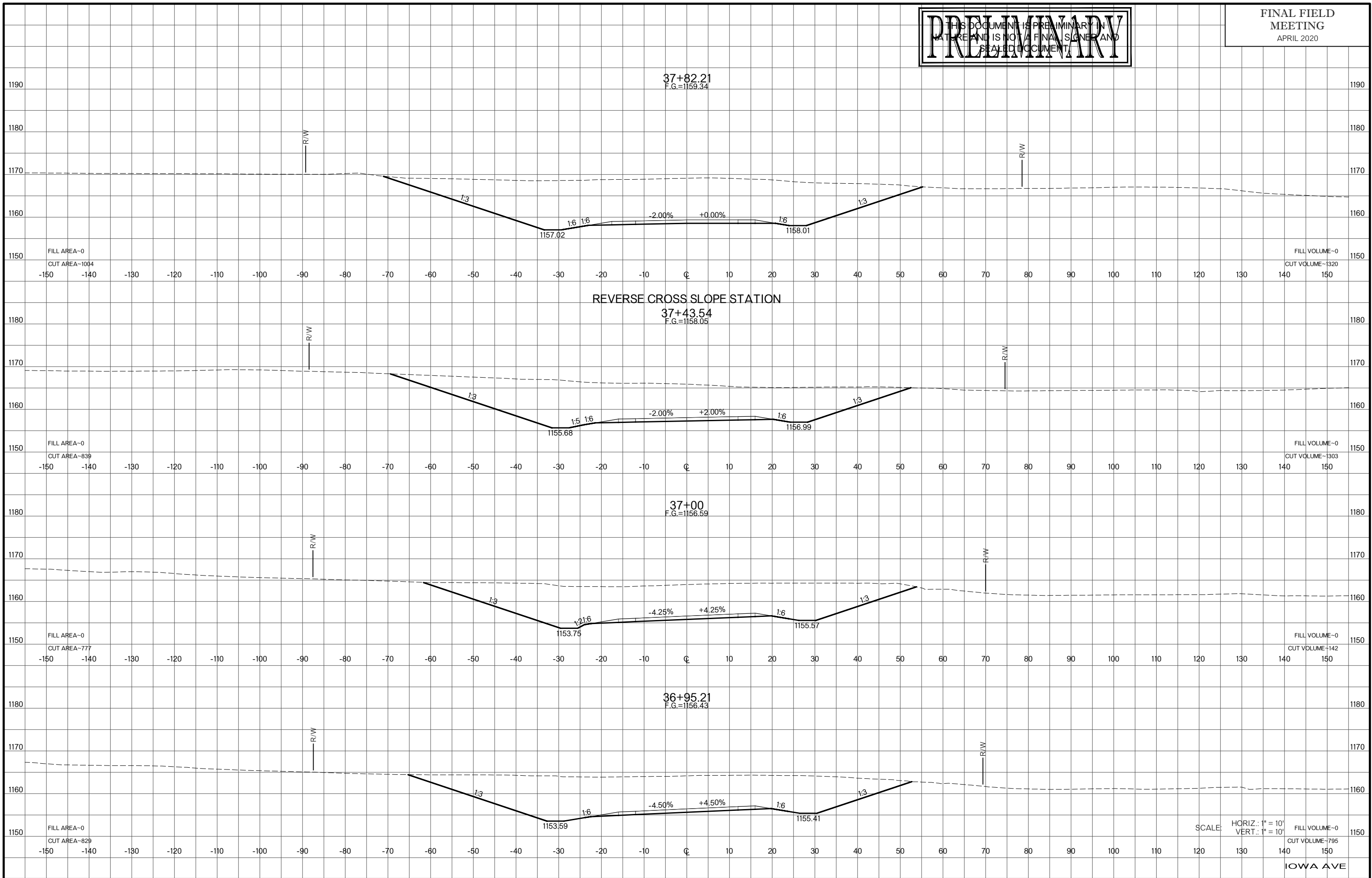
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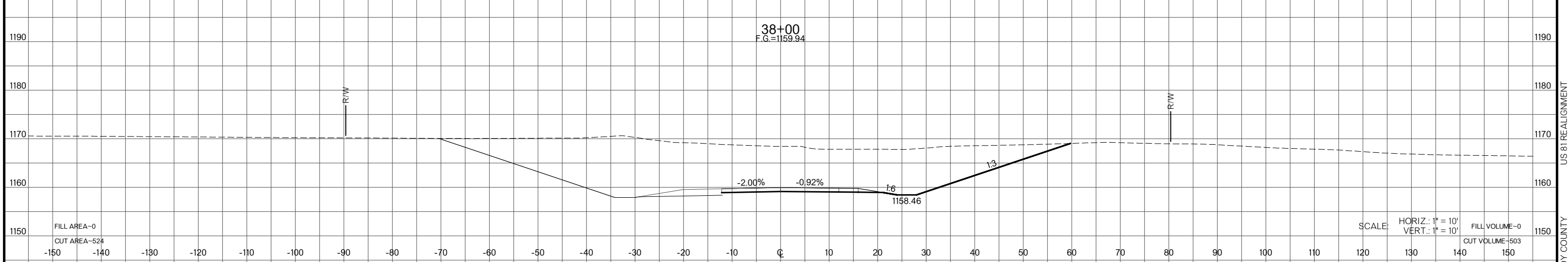
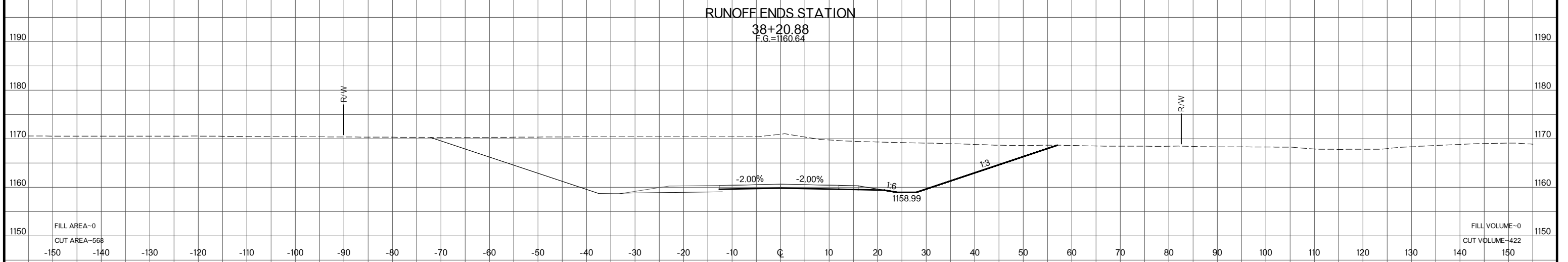
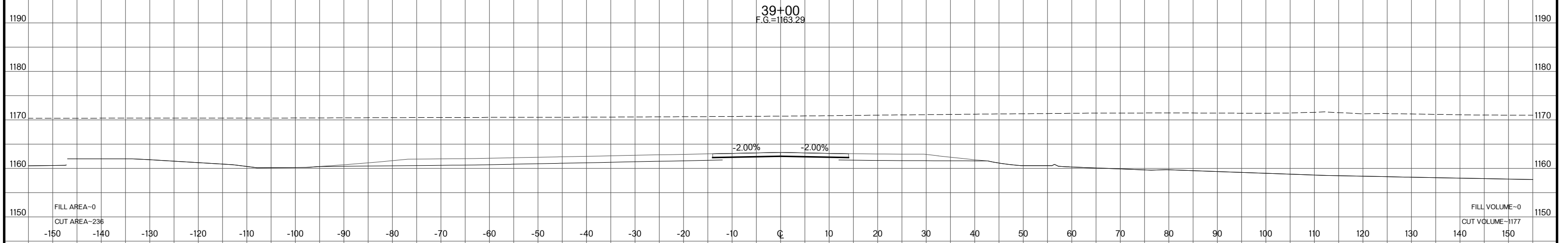
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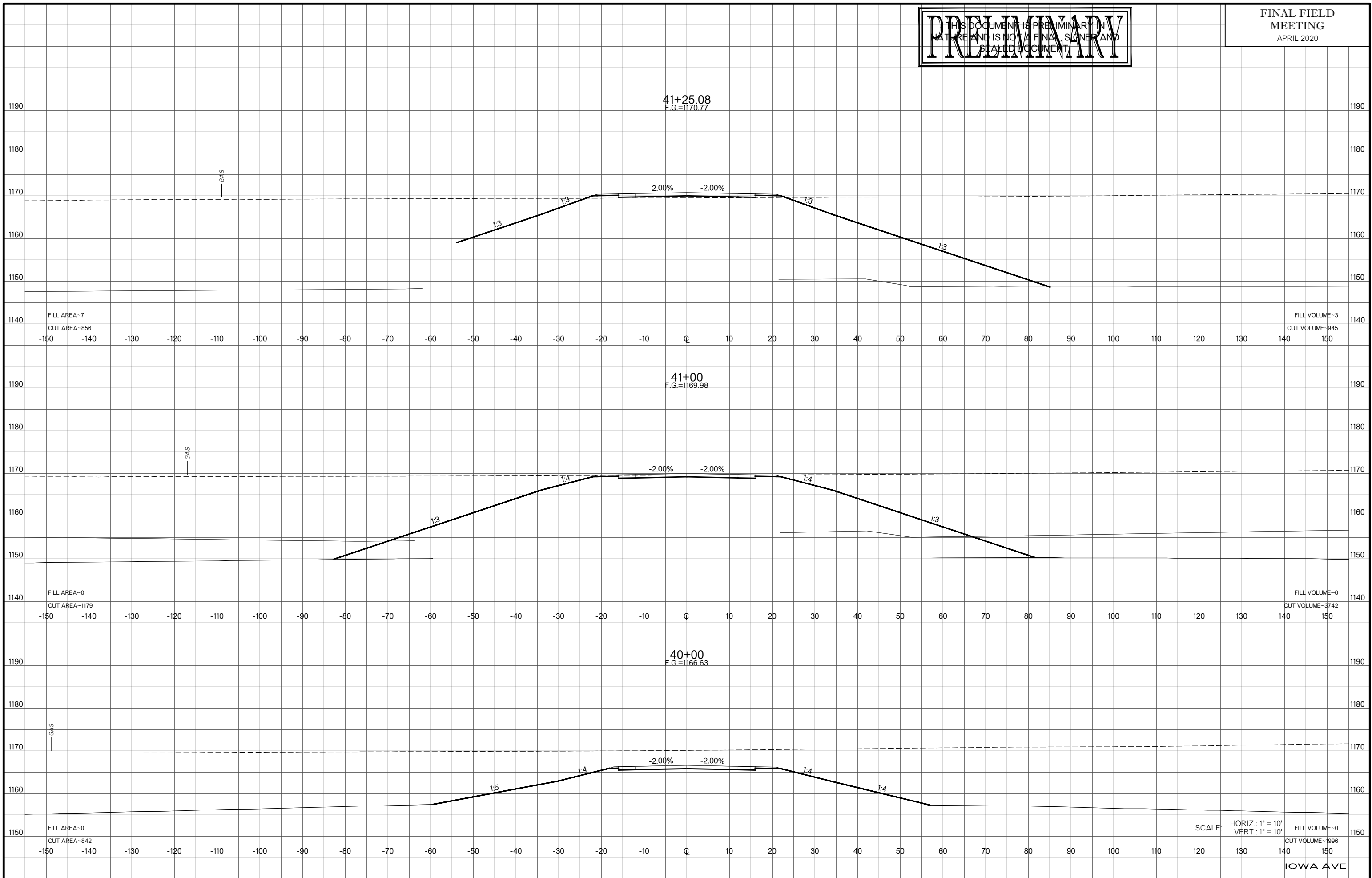
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IOWA AVE

US 81 REALIGNMENT
GRADY COUNTY

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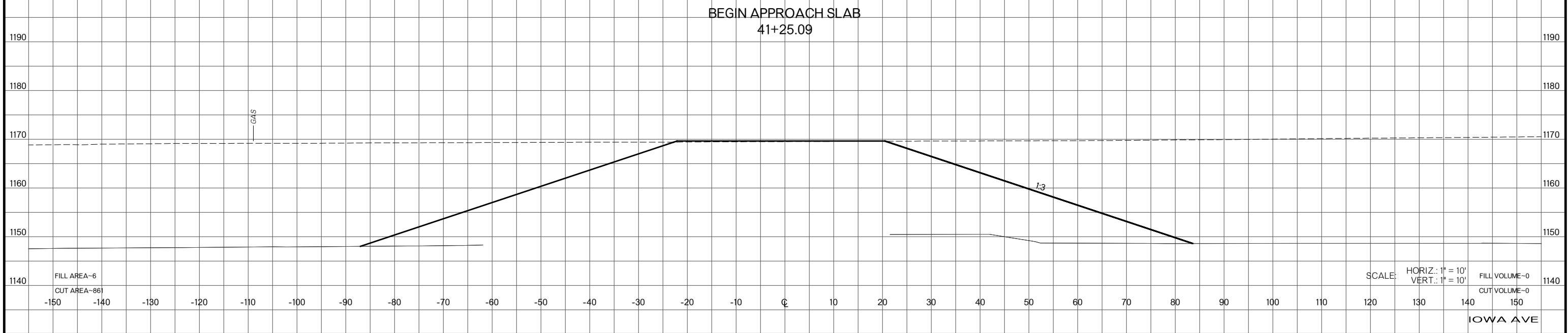
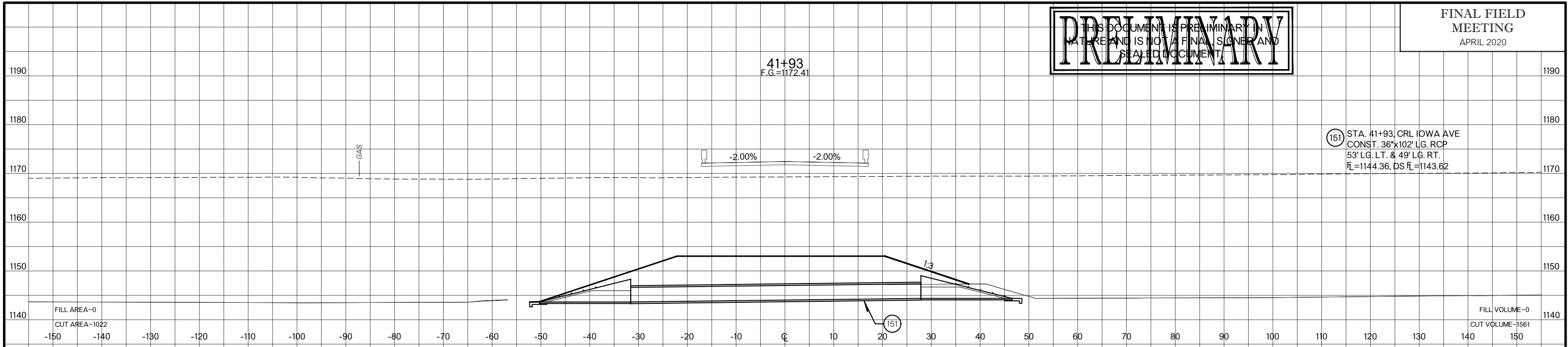
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GRADY COUNTY

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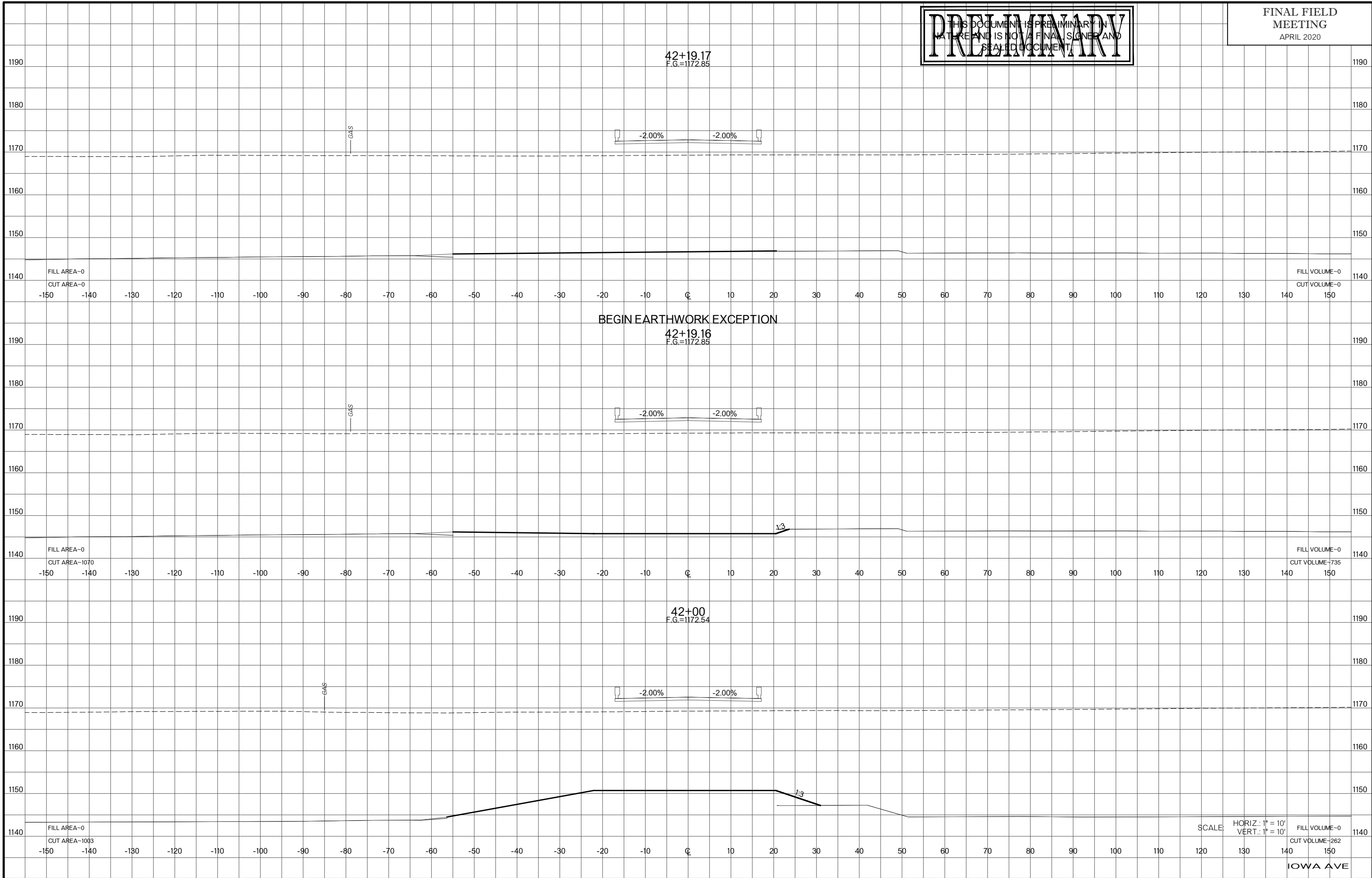
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BEGIN EARTHWORK EXCEPTION

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GRADY COUNTY

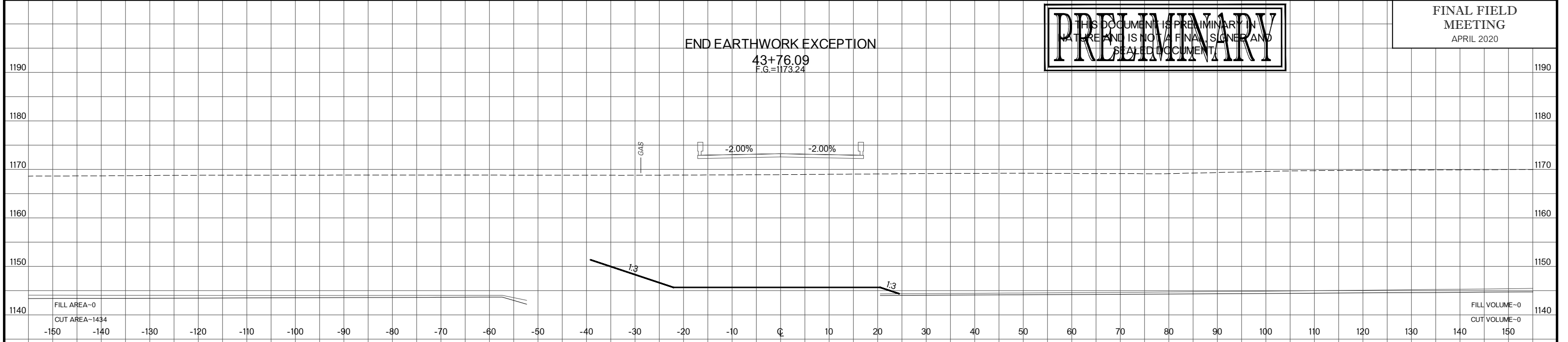
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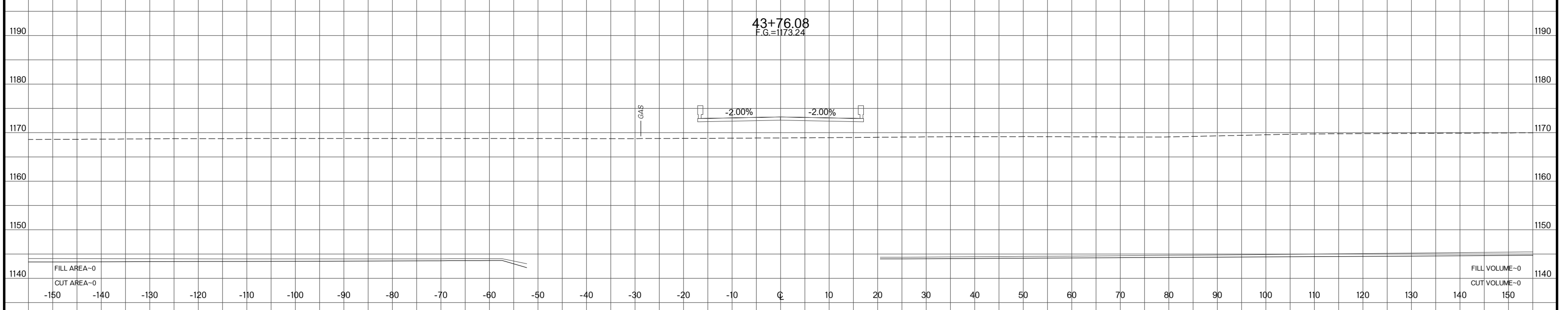
FINAL FIELD MEETING
APRIL 2020

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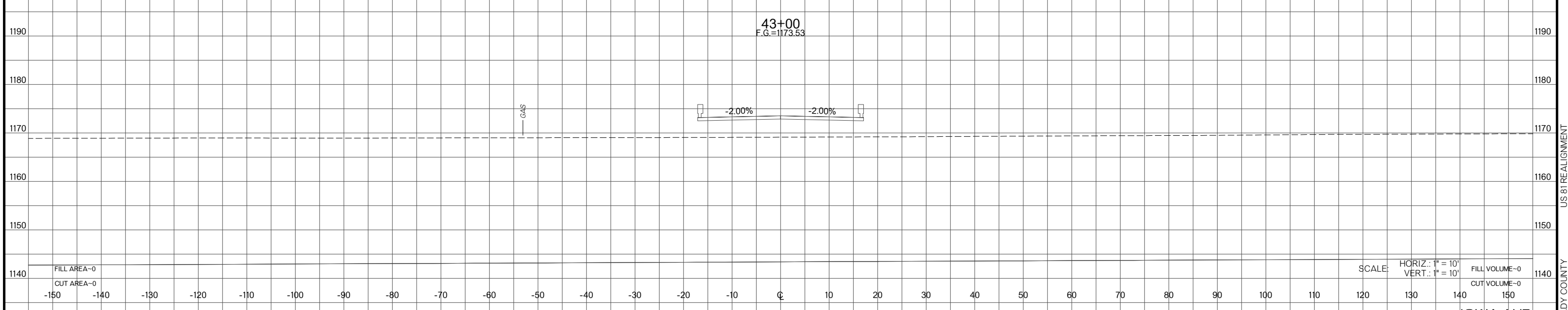
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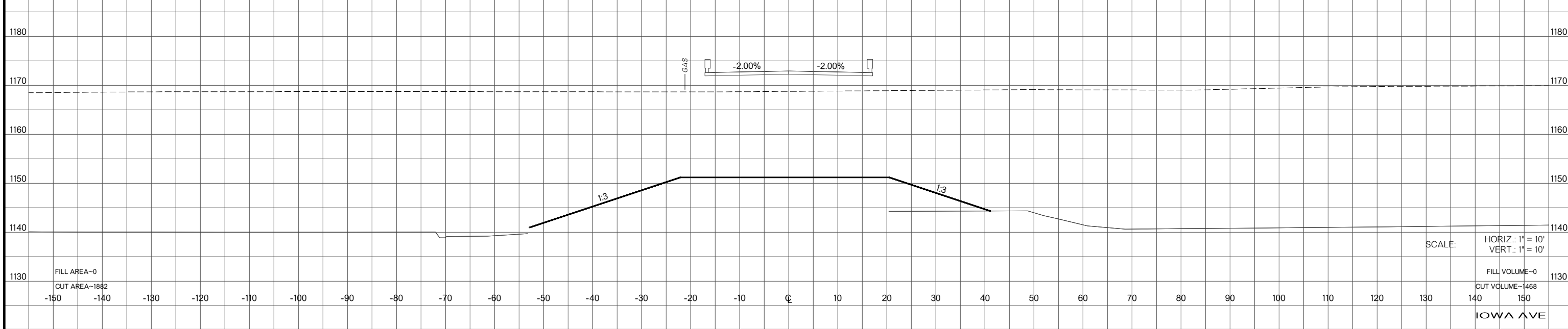
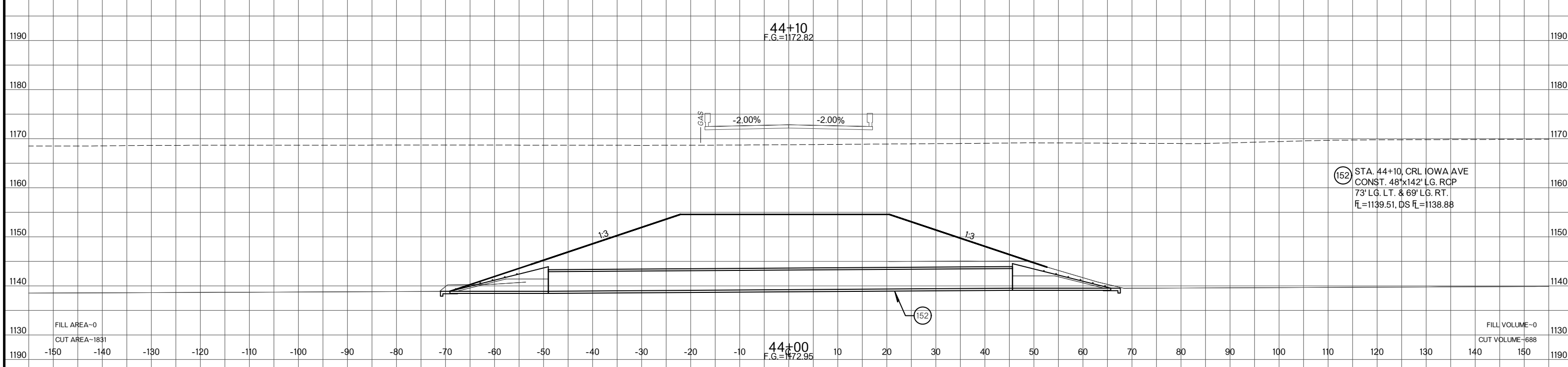
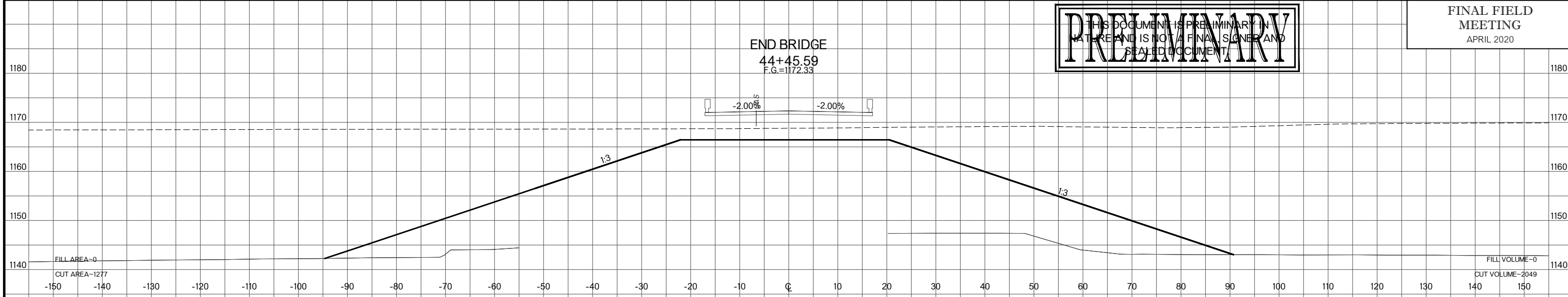


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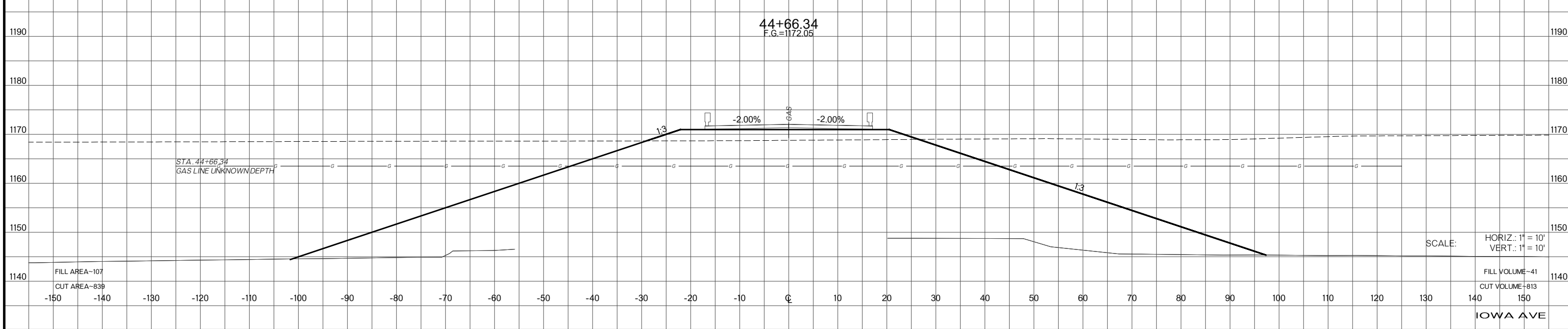
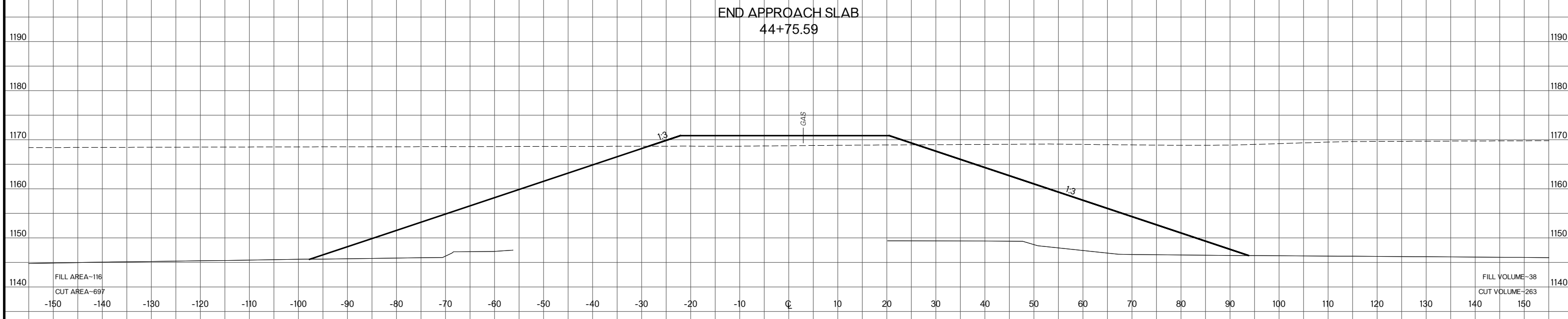
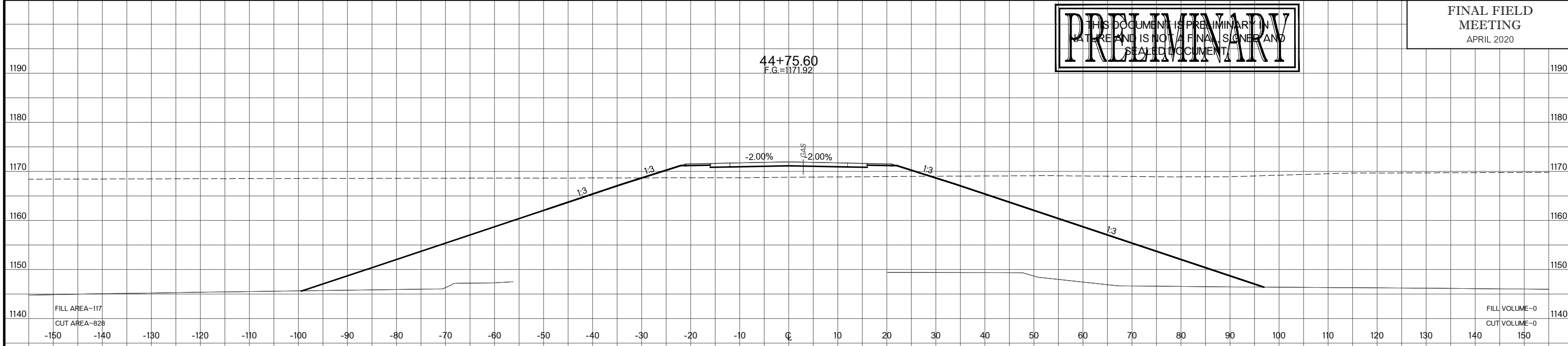
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US 81 REALIGNMENT
GRADY COUNTY

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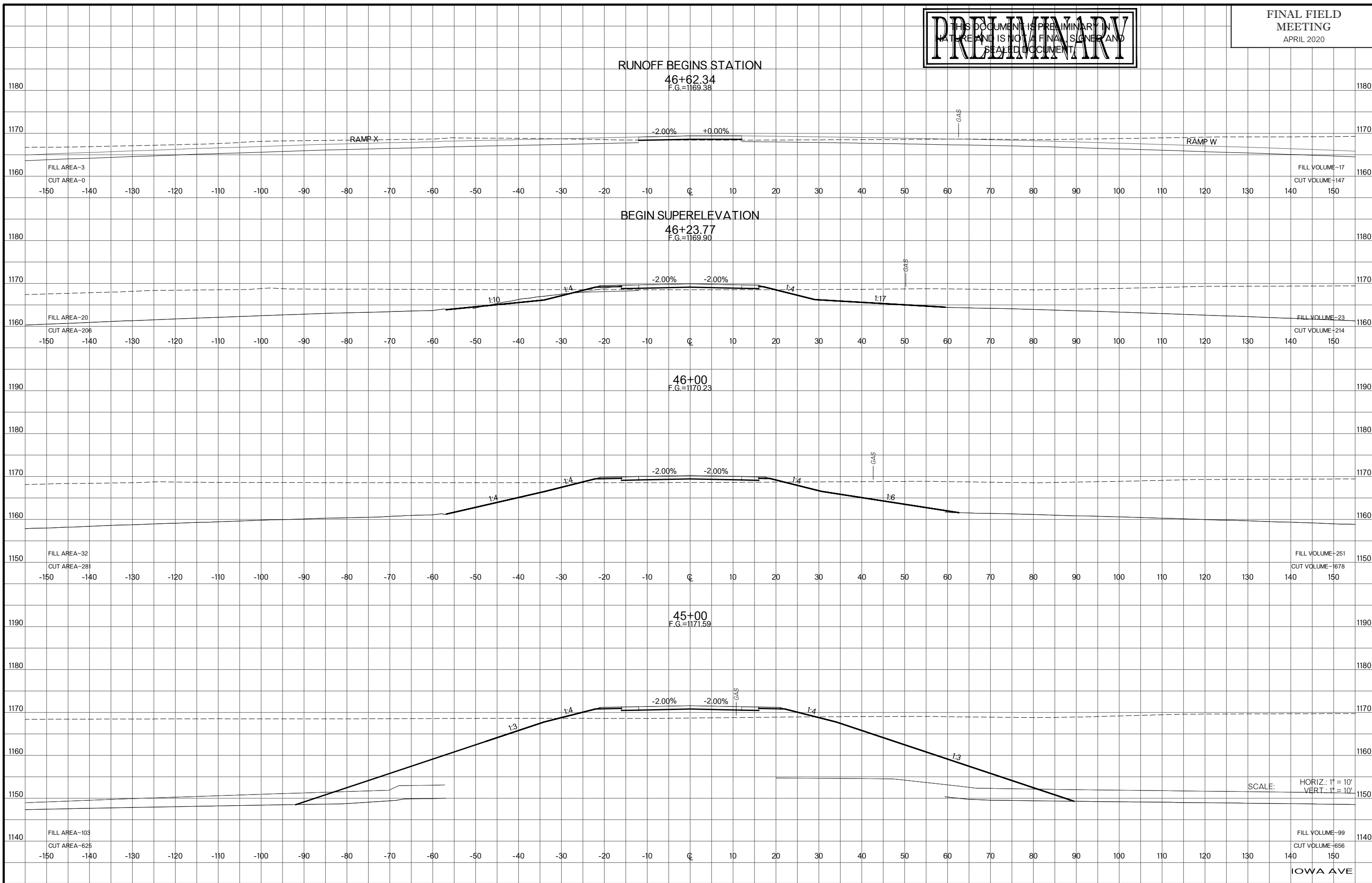
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PRELIMINARY

FINAL FIELD MEETING
APRIL 2020



SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

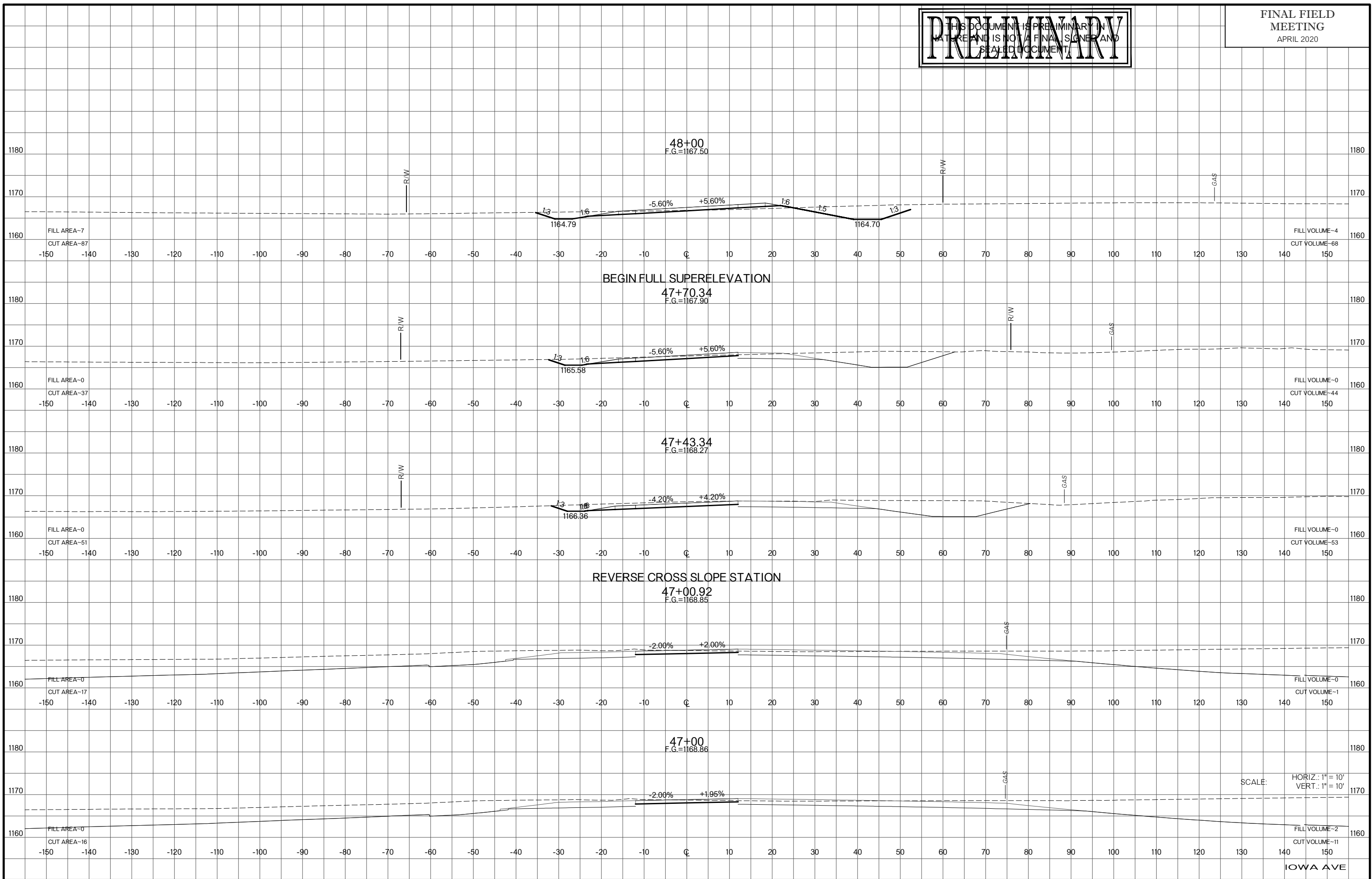
IOWA AVE

US 81 REALIGNMENT
GRADY COUNTY

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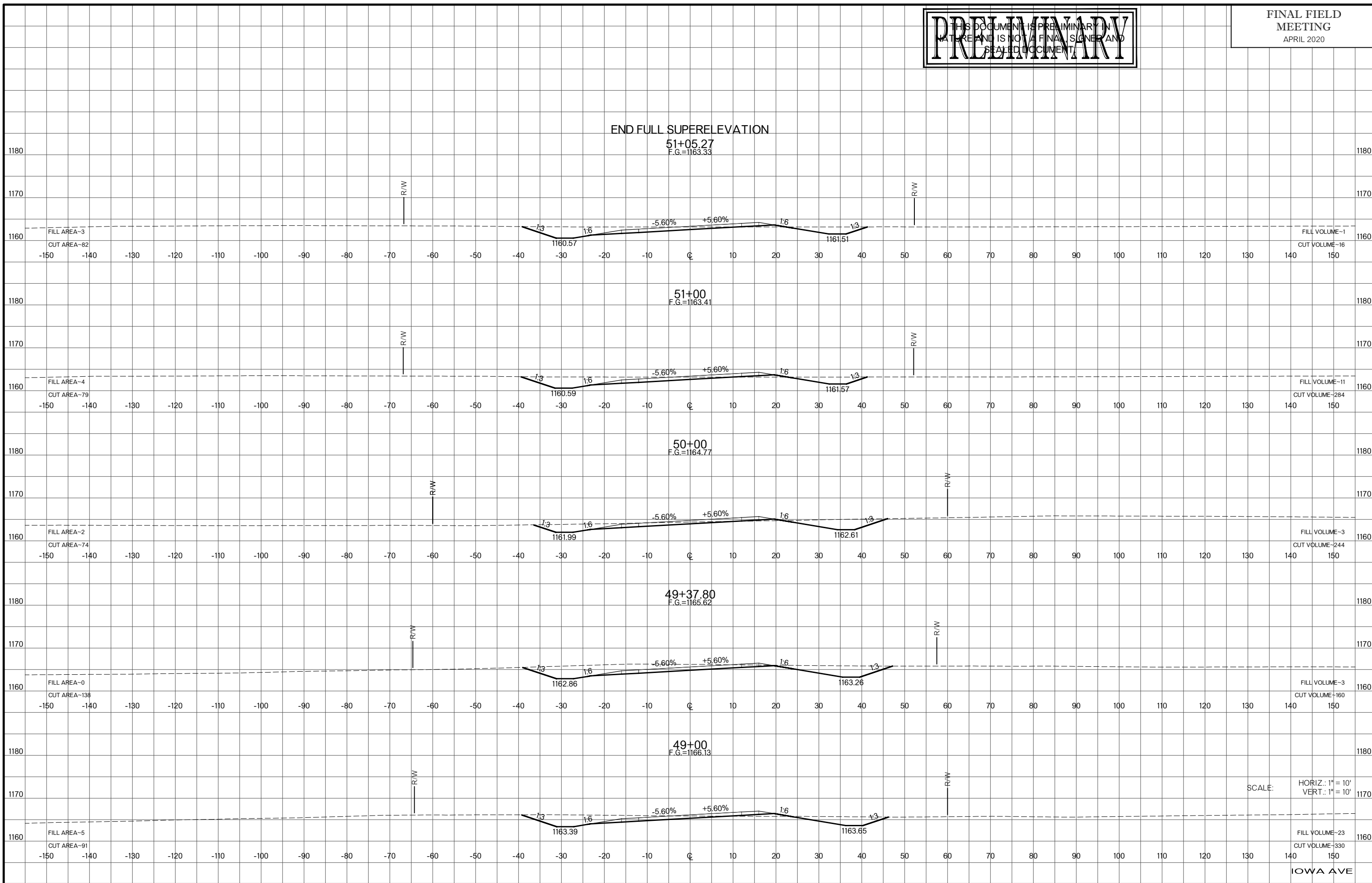
FINAL FIELD MEETING
APRIL 2020



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FINAL FIELD MEETING
APRIL 2020

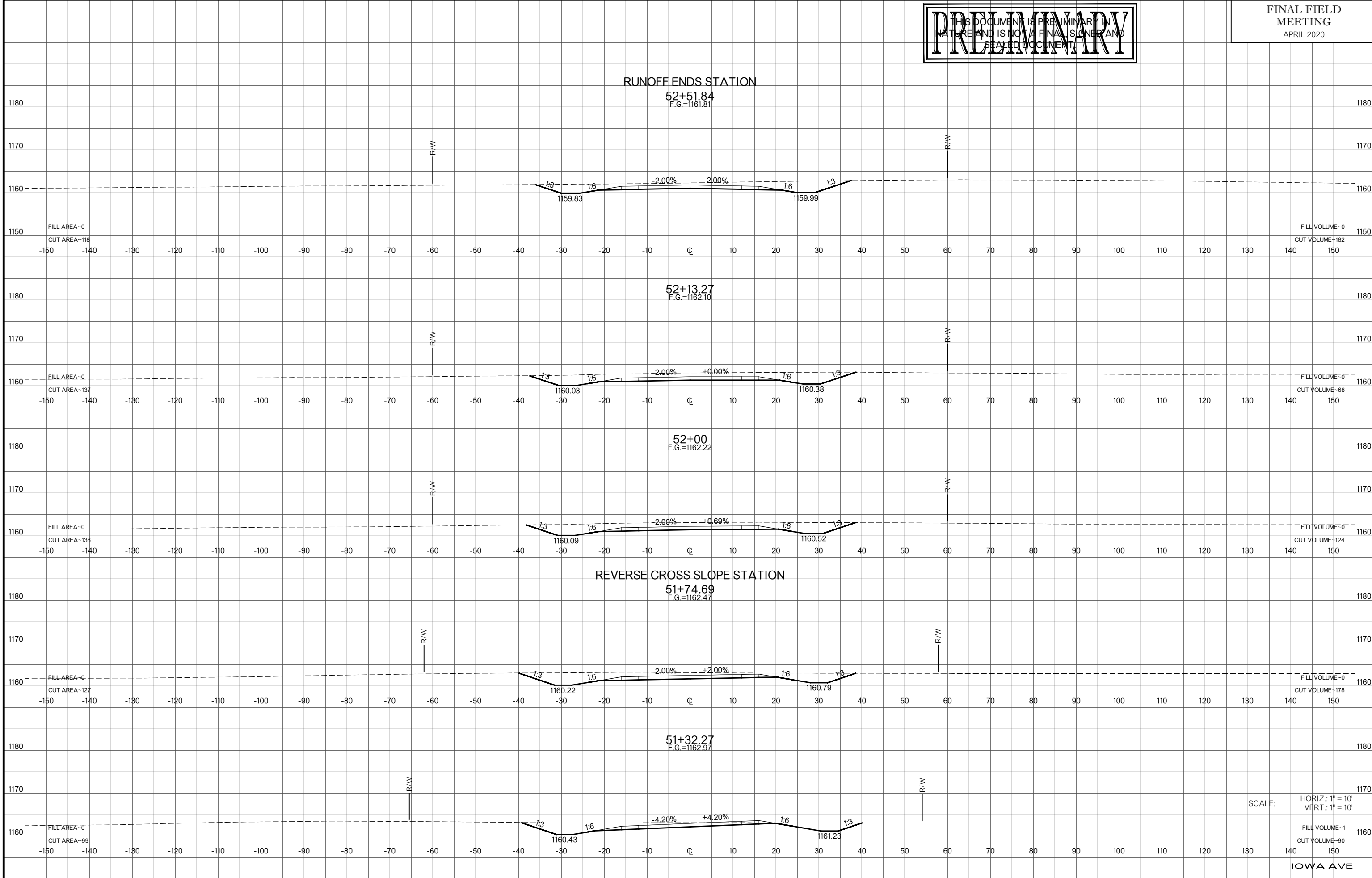


SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

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FINAL FIELD MEETING
APRIL 2020



SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

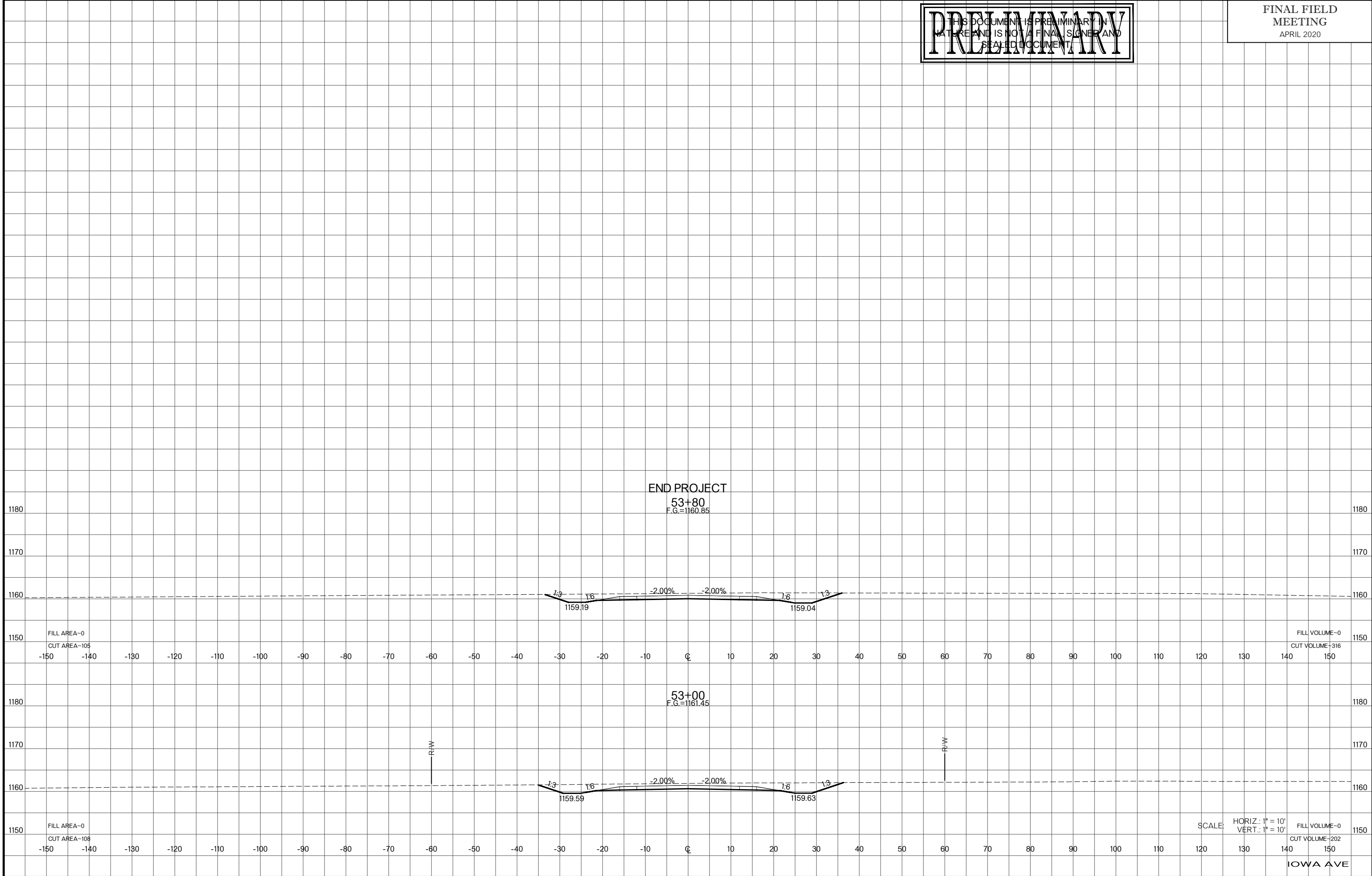
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PRELIMINARY

FINAL FIELD MEETING
APRIL 2020



SCALE: HORIZ.: 1" = 10'
VERT.: 1" = 10'

FILL VOLUME=0
CUT VOLUME=202

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