PLANS FOR PROPOSED
OLD STATE ROUTE 21 AT EAST / WEST FOUR RIDGE ROAD INTERSECTION
JEFFERSON COUNTY, MO
CONSTRUCTION PLANS
FEDERAL PROJECT NO.: STP-5462(608)

DESIGN DESIGNATION

A.A.D.T. - 2013 = 4,938
A.A.D.T. - 2034 = 8,919
D.H.V. = XX%
T = 2.7%
V = 55 M.P.H.

FUNCTIONAL CLASSIFICATION - MINOR ARTERIAL

NOTES:

1. HORIZONTAL CONTROL STATEMENT: STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUSLY OPERATING REFERENCE STATIONS DURING DECEMBER 2016, AND ARE BASED ON THE MISSOURI COORDINATE SYSTEM OF 1983, EAST ZONE.

2. VERTICAL DATUM IS NAVD 88. ELEVATIONS WERE ESTABLISHED ON CONTROL POINTS 1 THROUGH 5 USING A CELLULAR EQUIPPED SPECTRA PRECISION RANGER, AND BASED ON THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS. FIELD WORK WAS PERFORMED DURING NOVEMBER AND DECEMBER, 2016.

SITE BENCHMARKS:

TBM "A": ELEVATION 915.68

CUT "L" ON THE NORTHWEST CORNER OF THE FRONT CONCRETE STEP OF JEFFERSON HEIGHTS BAPTIST CHURCH AT #5106 HIGHWAY 21 IN THE SOUTHEAST QUADRANT.

TBM "B": ELEVATION 932.35

"H" IN HYDRANT ON THE TOP OF A FIRE HYDRANT ON TEH NORTH SIDE OF WEST FOUR RIDGE: 30' EAST OF THE ENTRANCE TO #5020, GERMAN CULTURAL SOCIETY: 500' WEST OF OLD HIGHWAY 21.

3. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE, TICKET NUMBER: 163332381 (11/30/2016).

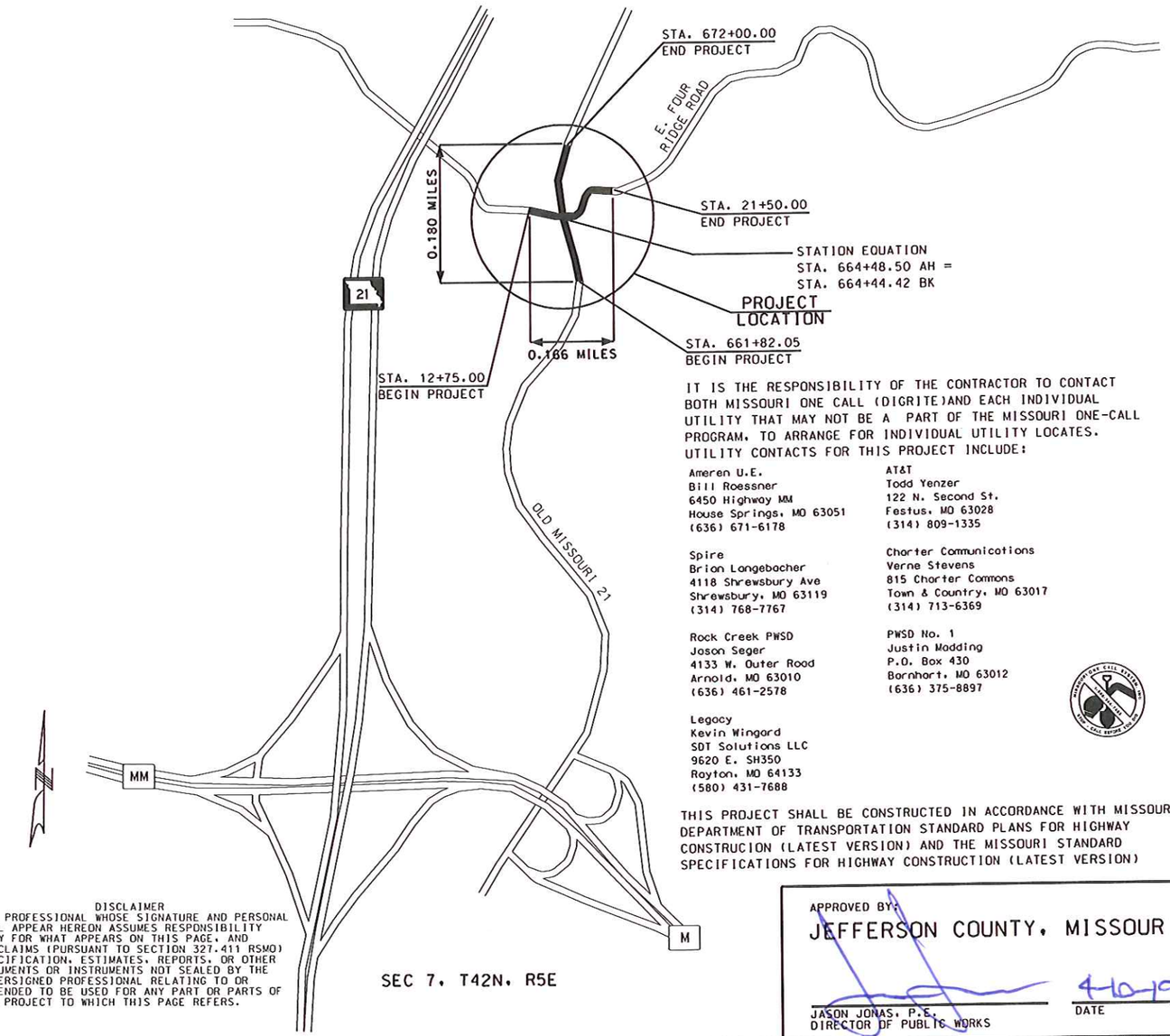
UTILITIES MARKED PER TICKET CHECK INCLUDE ATT TRANSMISSION, AMEREN MISSOURI ELECTRIC, ATT DISTRUIBUTION, CHARTER COMMUNICATIONS, JEFFERSON COUNTY CPWSD C1, ROCK CREEK SEWER DISTRICT, AND LOCATE LATERAL CONNECTIONS.

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

CONVENTIONAL SYMBOLS
(USED IN PLANS)

	EXISTING	NEW
BUILDINGS AND STRUCTURES		
GUARD RAIL		
CONCRETE RIGHT-OF-WAY MARKER		
STEEL RIGHT-OF-WAY MARKER		
LOCATION SURVEY MARKER		
UTILITIES		
FIBER OPTICS	—FO—	—FO—
OVERHEAD TELEPHONE	—O—	—●—
UNDERGROUND TELEPHONE	—T—	—T—
OVERHEAD POWER	—□—	—■—
UNDERGROUND POWER	—P—	—P—
GAS	—G—	—G—
WATER	—W—	—W—
MANHOLE	SAN	
FIRE HYDRANT	HYD	
WATER VALVE	WV	
WATER METER	WM	
DROP INLET	DI	
DITCH BLOCK		
GROUND MOUNTED SIGN	SIGN	
LIGHT POLE		
H-FRAME POWER POLE		
TELEPHONE PEDESTAL	FED	
FENCE		
CHAIN LINK	—V—	
WOVEN WIRE	—X—	
GATE POST		
BENCHMARK	BM	

NOTE: DASHED OR OPEN SYMBOLS INDICATE EXISTING FEATURES



SEC 7, T42N, R5E

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT BOTH MISSOURI ONE CALL (DIGRITE)AND EACH INDIVIDUAL UTILITY THAT MAY NOT BE A PART OF THE MISSOURI ONE-CALL PROGRAM, TO ARRANGE FOR INDIVIDUAL UTILITY LOCATES. UTILITY CONTACTS FOR THIS PROJECT INCLUDE:

Ameren U.E.
Bill Roessner
6450 Highway MM
House Springs, MO 63051
(636) 671-6178

AT&T
Todd Yenzer
122 N. Second St.
Festus, MO 63028
(314) 809-1335

Spire
Brian Longebacher
4118 Shrewsbury Ave
Shrewsbury, MO 63119
(314) 768-7767

Charter Communications
Verne Stevens
815 Charter Commons
Town & Country, MO 63017
(314) 713-6369

Rock Creek PWSD
Jason Seger
4133 W. Outer Road
Arnold, MO 63010
(636) 461-2578

PWSD No. 1
Justin Madding
P.O. Box 430
Barnhart, MO 63012
(636) 375-8897

Legacy
Kevin Wingard
SDT Solutions LLC
9620 E. SH350
Raytown, MO 64133
(580) 431-7688

THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD PLANS FOR HIGHWAY CONSTRUCION (LATEST VERSION) AND THE MISSOURI STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (LATEST VERSION)

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

APPROVED BY:
JEFFERSON COUNTY, MISSOURI

JASON JONAS, P.E.
DIRECTOR OF PUBLIC WORKS

4-10-19
DATE

INDEX OF SHEETS

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LENGTH OF PROJECT

EAST / WEST FOUR RIDGE ROAD

BEGINNING OF PROJECT	STA.	12+75.00	
END OF PROJECT	STA.	21+50.00	
APPARENT LENGTH		875	FEET

OLD STATE ROUTE 21

BEGINNING OF PROJECT	STA.	661+82.05	
END OF PROJECT	STA.	672+00.00	
APPARENT LENGTH		1017.95	FEET

EQUATIONS AND EXCEPTIONS:
STA 664+48.50 AH = STA. 664+44.42 BK

TOTAL CORRECTIONS	-4.08	FEET
NET LENGTH OF PROJECT	1888.87	FEET
STATE LENGTH	0.357	MILES
FEDERAL LENGTH	0.357	MILES

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	1
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DESCRIPTION	DATE

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.

SUMMARY OF QUANTITIES - STP-5462(608)

ITEM NUMBER	ITEM DESCRIPTION	UNIT	QUANTITY
	ROADWAY ITEMS		
201-30.00	CLEARING AND GRUBBING	AC	1.0
202-20.10	REMOVAL OF IMPROVEMENTS	LS	1
203-50.00	UNCLASSIFIED EXCAVATION	CY	39363
203-60.00	COMPACTING EMBANKMENT	CY	320
304-05.04	TYPE 5 AGGREGATE FOR BASE (4 IN. THICK)	SY	8273
310-10.03	GRAVEL (A)	SY	181
401-01.50	TYPE A2 SHOULDER	SY	1410.8
401-12.09	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BP-1)	TONS	1486.2
401-30.00	BITUMINOUS PAVEMENT MIXTURE PG64-22, (BASE)	TONS	2523.0
407-10.05	TACK COAT	GAL	750
502-11.06	CONCRETE PAVEMENT (6 IN. NON-REINF)	SY	21.7
606-10.61	MGS GUARDRAIL, 8 FT. POST, 6 FT.- 3 IN. SPACING	LF	100
606-10.80	MGS END ANCHOR	EA	1
606-30.14	TYPE A CRASHWORTHY END TERMINAL (MASH)	EA	1
607-10.50	CHAIN-LINK FENCE (RETAINING WALLS)	LF	425
607-11.02	MODIFIED CONCRETE GUTTER TYPE B	LF	458
607-99.03	REMOVE AND REPLACE EXISTING FENCE	LF	58
608-30.08	8 IN. CONCRETE MEDIAN STRIP	SY	94.6
608-99.05	8 IN. RED STAMPED CONCRETE MEDIAN	SY	43.1
608-50.07	PAVED APPROACH, 7 IN.	SY	97.7
609-10.41	CONCRETE GUTTER, TYPE A	LF	9
609-10.52	CURB AND GUTTER TYPE B	LF	137
611-30.20	FURNISHING TYPE 2 ROCK BLANKET	CY	106
611-30.40	PLACING TYPE 2 ROCK BLANKET	CY	106
612-30.00A	TRUCK OR TRAILER MOUNTED ATTENUATOR (TMA)	EA	1
613-10.10	FURNISHING AND PLACING CONCRETE MATERIAL FOR PAVEMENT REPAIR	SY	258.1
613-10.12	SUBGRADE COMPACTION (6 IN. DEPTH) (PAVEMENT REPAIR)	SY	271
613-10.13	TYPE 1 OR TYPE 5 AGG. BASE (4 IN. THICK) (PAVEMENT REPAIR)	SY	271
613-10.14	FULL DEPTH PAVEMENT REPAIR SAW CUT (FOR PERIMETER AND INTERNAL SAW CUTS)	LF	920
613-10.15	DOWEL BAR (DRILLING, FURNISHING, AND INSTALLATION) FOR FULL DEPTH PAVEMENT REPAIR	EA	704
613-99.05	REINFORCEMENT CRACK CONTROL GRID	SY	459.8
616-10.05	CONSTRUCTION SIGNS	SF	807
616-10.25	CHANNELIZER (TRIM LINE)	EA	520
616-10.30	TYPE III MOVABLE BARRICADE	EA	13
616-10.98A	CHANGEABLE MESSAGE SIGN WITHOUT COMMUNICATION INTERFACE, CONTRACTOR FURNISHED / RETAINED	EA	4
618-10.00	MOBILIZATION	LS	1
619-10.00	PAVEMENT EDGE TREATMENT	LF	1678
620-80.64A	TEMPORARY RAISED PAVEMENT MARKERS	EA	172
622-99.05	COLDMILLING BITUMINOUS PAVEMENT (3 1/2" IN. THICK)	SY	2829
624-01.03A	PERMANENT EROSION CONTROL GEOTEXTILE	SY	238
627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	LS	1
720-99.04	MECHANICALLY STABILIZED EARTH WALL SYSTEMS (SMALL BLOCK)	SF	251
720-99.04	MECHANICALLY STABILIZED EARTH WALL SYSTEMS (LARGE BLOCK)	SF	5867
	DRAINAGE ITEMS		
206-30.00	CLASS 3 EXCAVATION	CY	399
609-70.00	ROCK LINING	CY	12
726-10.15	15 IN. PIPE GROUP A	LF	236
726-10.18	18 IN. PIPE GROUP A	LF	51
726-10.24	24 IN. PIPE GROUP A	LF	192
731-00.48	PRECAST CONCRETE MANHOLE - 48 IN.	LF	5
732-06.12A	15 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA	7
732-06.18A	18 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA	2
732-06.24A	24 IN. OR ALLOWED SUBSTITUTE GROUP A FLARED END SECTION	EA	1
732-10.13A	15 IN. OR ALLOWED SUBSTITUTE SAFETY SLOPE END SECTION	EA	1
732-10.16A	24 IN. OR ALLOWED SUBSTITUTE SAFETY SLOPE END SECTION	EA	5
	SIGNING/STRIPING/SIGNAL ITEMS		
620-00.09	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 6 IN. WHITE	LF	491
620-00.15	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 24 IN. WHITE	LF	54
620-00.18	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 24 IN. YELLOW	LF	43
620-00.21	PREFORMED THERMOPLASTIC PAVEMENT MARKING, LEFT/RIGHT ARROW	EA	8
620-00.24	PREFORMED THERMOPLASTIC PAVMENT MARKING, STRAIGHT ARROW	EA	2
620-00.42	PREFORMED THERMOPLASTIC PAVEMENT MARKING, 12 IN WHITE, YIELD LINE TRIANGLES	EA	16
620-60.00C	4 IN. WHITE STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	LF	8962
620-60.01C	4 IN. YELLOW STANDARD WATERBORNE PAVEMENT MARKING PAINT, TYPE P BEADS	LF	7803
626-10.00A	BITUMINOUS SHOULDER RUMBLE STRIP	STA	8.7
903-12.42	36 IN. SURFACE-MOUNT DELINEATOR POST	EA	12
	ROADSIDE ITEMS		
803-10.00A	SODDING	SY	1794
804-10.00	TOPSOIL	CY	482
805-10.00A	SEEDING-COOL SEASON MIXTURES	AC	1.2
805-99.19	CROWN VETCH SEEDING	AC	1.1
806-10.05	ROCK DITCH CHECK	LF	281
806-10.16	SEDIMENT REMOVAL	CY	39
806-10.19	SILT FENCE	LF	649
806-41.28	TYPE 1 TURF REINFORCMENT MAT	SY	3751
	ADDITIONAL FILL AT GCS		
201-30.00	CLEARING AND GRUBBING	AC	1.5
203-50.00	UNCLASSIFIED EXCAVATION	CY	350
203-60.00	COMPACTING EMBANKMENT	CY	33218
804-10.00	TOPSOIL	CY	448
805-10.00A	SEEDING-COOL SEASON MIXTURES	AC	1.1
805-99.19	CROWN VETCH SEEDING	AC	1.1
806-10.03	SEDIMENT TRAP ROCK	CY	8.0
806-10.04	ROCK DITCH CHECK	LF	180
806-10.16	SEDIMENT REMOVAL	CY	24
806-10.19	SILT FENCE	LF	2486
901-99.03	CONDUIT 2 1/2"	LF	300

SUMMARY OF QUANTITIES
SHEET 1 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 2
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
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HRGreen

REV.

202-20.10	REMOVAL OF IMPROVEMENTS	1 LUMP SUM
618-10.00	MOBILIZATION	1 LUMP SUM
627-40.00	CONTRACTOR FURNISHED SURVEYING AND STAKING	1 LUMP SUM

EARTHWORK

SHEET	STATION	STATION	ROUTE	LOCATION	UNCLASSIFIED EXCAVATION	UNCLASSIFIED EXCAVATION (ADDITIONAL FILL AT GCS)	COMPACTING EMBANKMENT	COMPACTING EMBANKMENT (ADDITIONAL FILL AT GCS)	REMARKS
4-5	662+50	667+50	OLD STATE	RT/LT	3733		227		
5	668+50	672+00	OLD STATE	LT/RT	10308		4		
5-6	12+75	21+50	FOUR RIDGE	RT/LT	25322		89		
21	670+28	673+45	OLD STATE	LT		350		33218	
				PAY TOTAL	39363	350	320	33218	

ROADWAY PAVEMENT ITEMS

SHEET	STATION	STATION	ROUTE	LOCATION	4 IN. TYPE 5 AGGREGATE BASE SY	TYPE A2 SHOULDER SY	2 IN. TO 3-1/2 IN. BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1) TON	6-1/2 IN. TO 8 IN. BITUMINOUS PAVEMENT TON	TACK COAT GAL	COLDMILLING BITUMINOUS PAVEMENT SY	REMARKS
4	662+50	666+50	OLD STATE	RT	702	353.6	67.8	125.9	34.9		
4	662+50	666+50	OLD STATE	LT	668	157.5	99.2	184.2	51.0		
4	662+50	666+50	OLD STATE	RT/LT			236.3		121.5	1215	
5	666+50	672+00	OLD STATE	RT	1327		149.4	277.4	76.8		
5	666+50	672+00	OLD STATE	LT	1458		193.1	358.5	99.3		
5	666+50	668+05	OLD STATE	RT		154.8					
5	666+75	667+75	OLD STATE	LT		104.5					
5	668+33	672+00	OLD STATE	RT		348.3					
5-6	668+00	672+00	OLD STATE	LT		292.1					
5	666+50	672+00	OLD STATE	RT/LT			313.8		161.4	1614	
5-6	12+75	16+48	E. FOUR RIDGE	RT/LT	1364		154.0	616.1	69.3		
5-6	16+79	21+50	W. FOUR RIDE	RT/LT	1779		197.0	788.1	88.7		
				PAY TOTAL	7298	1410.8	1410.6	2350.2	710	2829	

ENTRANCE PAVEMENT ITEMS

SHEET	STATION	ROUTE	LOCATION	4 IN. TYPE 5 AGGREGATE BASE SY	6 IN. GRAVEL (A) SY	1.75 IN. BITUMINOUS PAVEMENT MIXTURE PG64-22 (BP-1) TON	4 IN. BITUMINOUS PAVEMENT BASE PG64-22 TON	TACK COAT GAL	CONCRETE PAVEMENT (6 IN. NON-REINF) SY	PAVED APPROACH SY	REMARKS
4	662+14	OLD STATE	RT	9.1		0.8	1.8	0.4			
4	663+36	OLD STATE	RT	55.5		2.2	5.0	1.1		27.2	
4-5	665+43	OLD STATE	LT	361.5		32.5	74.3	16.7	21.7		BUISNESS ENTRANCE/PARKING LOT
5-6	15+07	WEST FOUR	RT	74.9		5.3	12.0	2.7		5.7	
6	19+00	EAST FOUR	RT	228.5		17.3	39.6	8.9		32.1	
6	19+12	EAST FOUR	RT	135.6	135.6	10.5	24.0	5.4		6.5	OFF E. FOUR RIDGE. NEW DRIVE
6	19+78	EAST FOUR	LT	78.0		5.4	12.4	2.8		14.6	
6	21+25	EAST FOUR	LT	31.5		1.6	3.7	0.8		11.6	
6	21+50	EAST FOUR	RT		44.6						
			PAY TOTAL	975	181	75.6	172.8	40	21.7	97.7	

GUARDRAIL

SHEET	STATION	STATION	ROUTE	LOCATION	MGS GUARDRAIL, 8 FT. POST, 6 FT.-3 IN. SPACING LF	MGS END ANCHOR EA	TYPE A CRASHWORTHY END TERMINAL (MASH) EA	REMARKS
4	663+50	665+13	OLD STATE	LT	100	1	1	
				PAY TOTAL	100	1	1	

SUMMARY OF QUANTITIES
SHEET 2 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	2

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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DEPARTMENT OF PUBLIC WORKS
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PHONE: (636) 797-5340

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16020 SWINGLEY RIDGE ROAD
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ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
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FENCING

SHEET	STATION	STATION	ROUTE	LOCATION	REMOVE AND REPLACE EXISTING FENCE LF	CHAIN-LINK FENCE (RETAINING WALLS) LF	REMARKS
5	0+14	4+41	OLD STATE	WALL A		425	
5	668+37	668+70	OLD STATE	LT	38		
5	15+32	15+53	EAST FOUR	LT	20		
				PAY TOTAL	58	425	

EMBANKMENT PROTECTION

SHEET	STATION	STATION	ROUTE	LOCATION	FURNISHING TYPE 2 ROCK BLANKET CY	PLACING TYPE 2 ROCK BLANKET CY	PERMANENT EROSION CONTROL GEOTEXTILE SY	REMARKS
4	663+50	665+13	OLD STATE ROUTE 21	LT	106	106	238	
				PAY TOTAL	106	106	238	

CONCRETE MEDIAN STRIP

SHEET	STATION	STATION	ROUTE	LOCATION	8 IN. CONCRETE MEDIAN STRIP SY	8 IN. RED STAMPED CONCRETE MEDIAN	REMARKS
4	665+64	666+41	OLD STATE ROUTE	LT		43.1	
5	667+56	667+84	OLD STATE ROUTE	RT	32.5		SOUTHEAST ISLAND
5	667+58	667+78	OLD STATE ROUTE	LT	24.6		SOUTHWEST ISLAND
5	668+08	668+25	OLD STATE ROUTE	LT	18.1		NORTHWEST ISLAND
5	668+13	668+32	OLD STATE ROUTE	RT	19.4		NORTHEAST ISLAND
				PAY TOTAL	94.6	43.1	

CONCRETE CURB AND GUTTER

SHEET	STATION	STATION	ROUTE	LOCATION	TYPE B CURB AND GUTTER LF	CONCRETE GUTTER TYPE A LF	MODIFIED TYPE B GUTTER LF	REMARKS
6	19+82	19+91	EAST FOUR RIDGE	RT		9		
6	19+91	21+34	EAST FOUR RIDGE	RT	137			
11	0+00	4+60	WALL A				458	
				PAY TOTAL	137	9	458	

PAVEMENT REPAIR QUANTITIES

SHEET	STATION	ROUTE	LOCATION	FURNISHING AND PLACING CONCRETE MATERIAL FOR PAVEMENT REPAIR SY	SUBGRADE COMPACTION (6 IN. DEPTH) (PAVEMENT REPAIR) SY	TYPE 1 OR TYPE 5 AGG. BASE (4 IN. THICK) (PAVEMENT REPAIR) SY	FULL DEPTH PAVEMENT REPAIR SAWCUT LF	DOWEL BAR (DRILLING, FURNISHING, AND INSTALLATION) FOR FULL DEPTH PAVEMENT EA	ASPHALT REINFORCEMENT CRACK CONTROL GRID SY	REMARKS
4	662+74	OLD STATE ROUTE 21	LT/RT	14.7	15	15	44	40	22.0	
4	663+55	OLD STATE ROUTE 21	LT/RT						22.0	
4	665+19	OLD STATE ROUTE 21	LT/RT	14.7	15	15	56	40	22.0	
4	665+82	OLD STATE ROUTE 21	LT	7.3	8	8	28	20	11.0	
4	666+00	OLD STATE ROUTE 21	RT	7.3	8	8	28	20	11.0	
4	666+10	OLD STATE ROUTE 21	LT						11.0	
4-5	666+50	OLD STATE ROUTE 21	LT/RT	14.7	15	15	50	40	22.0	
5	666+88	OLD STATE ROUTE 21	LT	7.3	8	8	28	20	11.0	
5	667+47	OLD STATE ROUTE 21	LT/RT	14.7	15	15	50	40	22.0	
5	668+94	OLD STATE ROUTE 21	LT/RT	14.7	15	15	50	40	22.0	
5	669+58	OLD STATE ROUTE 21	RT	7.3	8	8	28	20	11.0	
5	670+37	OLD STATE ROUTE 21	RT	7.3	8	8	28	20	11.0	
5	670+93	OLD STATE ROUTE 21	RT	7.3	8	8	28	20	11.0	
			SUBTOTAL	117.3	123	123	418	320	209.0	
		20%	CONTINGENCY	140.8	148	148	502	384	250.8	
			PAY TOTAL	258.1	271	271	920	704	459.8	

SUMMARY OF QUANTITIES
SHEET 3 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	2

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

DATE	DESCRIPTION
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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

DRAINAGE STRUCTURES

SHEET	STR. NUM.	FLOWS TO STR. NUM.	STATION	OFFSET	ALIGNMENT	TOP ELEV. FT	WELL ELEV. FT	PRECAST (48" DIA) FT	ROCK LINING CY	CLASS 3 EXC. CY	FLARED END SECTION 15 IN GROUP A EA	FLARED END SECTION 18 IN GROUP A EA	FLARED END SECTION 24 IN GROUP A EA	SAFETY SLOPE END SECTION 15 IN EA	SAFETY SLOPE END SECTION 24 IN EA	PIPE CULVERT GROUP A 15 IN LF	PIPE CULVERT GROUP A 18 IN LF	PIPE CULVERT GROUP A 24 IN LF
6	8-2	8-1	21+44.13	16.9' LT	FOUR RIDGE					18	1					24		
6	8-1		21+08.13	19.9' LT	FOUR RIDGE				2		1							
6	7-2	7-1	20+00.00	22.4' LT	FOUR RIDGE				2	37		1					51	
6	7-1		20+00.00	40' RT	FOUR RIDGE				2			1						
6	5-2	5-1	14+95.34	19.6' RT	FOUR RIDGE					7	1					16		
6	5-1		15+22.06	21.8' RT	FOUR RIDGE						1							
4	4-3	4-2	663+55.00	29.7' RT	OLD STATE ROUTE 21					127				1		158		
4	4-2	4-1	665+18.63	40.8' LT	OLD STATE ROUTE 21	911.97	907.16	5								6		
4	4-1		665+06.99	47.1' LT	OLD STATE ROUTE 21						1							
6	6-2	6-1	19+21.28	20.6' RT	FOUR RIDGE					12	1					32		
6	6-1		18+76.86	18.4' RT	FOUR RIDGE						1							
4	3-2	3-1	666+50.00	46.0' RT	OLD STATE ROUTE 21					146			1					136
4	3-1		665+00.00	38.3' RT	OLD STATE ROUTE 21										1			
5	2-2	2-1	663+54.00	29.7' RT	OLD STATE ROUTE 21					30					1			32
5	2-1		663+13.00	31.8' RT	OLD STATE ROUTE 21				3						1			
5	1-2	1-1	662+28.00	36.1' RT	OLD STATE ROUTE 21					22					1			24
5	1-1		661+96.00	36.4' RT	OLD STATE ROUTE 21				3						1			
							PAY TOTAL	5	12	399	7	2	1	1	5	236	51	192

PERMANENT PAVEMENT MARKINGS

SHEET	STATION	STATION	ROUTE	LOCATION	WATERBORNE PAVEMENT MARKING PAINT 4" WHITE (LF)	WATERBORNE PAVEMENT MARKING PAINT 4" YELLOW (LF)	PREFORMED THERMOPLASTIC PAVEMENT MARKING 6" WHITE (LF)	24" WHITE (LF)	24" YELLOW (LF)	LEFT ARROW (EA)	RIGHT ARROW (EA)	STRAIGHT ARROW (EA)	YIELD TRIANGLES (EA)	REMARKS
20	662+50	667+82	OLD STATE ROUTE 21	LT/RT		1341								
20	662+50	668+12	OLD STATE ROUTE 21	RT	593									EDGE LINE
20	662+50	667+76	OLD STATE ROUTE 21	LT	573									EDGE LINE
20	662+50	664+44	OLD STATE ROUTE 21	LT	48									DOTTED WHITE
20	663+70	665+50	OLD STATE ROUTE 21	RT	44									DOTTED WHITE
20	664+44	667+43	OLD STATE ROUTE 21	LT	298									
20	664+44	665+50	OLD STATE ROUTE 21	RT	102									
20	665+20		OLD STATE ROUTE 21	LT						1				
20	665+50	667+35	OLD STATE ROUTE 21	RT	183									
20	665+60		OLD STATE ROUTE 21	RT							1			
20	666+00	667+84	OLD STATE ROUTE 21	RT	183									
20	666+40		OLD STATE ROUTE 21	LT/RT						1	1	1		
20	667+25		OLD STATE ROUTE 21	LT						1				
20	667+35	667+87	OLD STATE ROUTE 21	RT			147							AROUND SE ISLAND
20	667+43	667+81	OLD STATE ROUTE 21	LT			116							AROUND SW ISLAND
20	667+98	672+00	OLD STATE ROUTE 21	LT	468									EDGE LINE
20	668+05	668+41	OLD STATE ROUTE 21	LT			118							AROUND NW ISLAND
20	668+07	669+50	OLD STATE ROUTE 21	LT	144									
20	668+09	672+00	OLD STATE ROUTE 21	LT/RT		1277			43					
20	668+10	668+47	OLD STATE ROUTE 21	RT			110							AROUND NE ISLAND
20	668+37	672+00	OLD STATE ROUTE 21	RT	414									EDGE LINE
20	668+41	670+25	OLD STATE ROUTE 21	LT	188									
20	668+47	670+00	OLD STATE ROUTE 21	RT	150									
20	668+90		OLD STATE ROUTE 21	LT/RT						1	1	1		
20	669+70		OLD STATE ROUTE 21	LT							1			
20	670+00	672+00	OLD STATE ROUTE 21	RT	50									DOTTED WHITE
20	670+25	672+00	OLD STATE ROUTE 21	LT	45									DOTTED WHITE
20	12+75	15+42	W. FOUR RIDGE	LT	265									
20	12+75	16+38	W. FOUR RIDGE	CNTR		726								
20	12+75	15+56	W. FOUR RIDGE	RT	283									EDGE LINE
20	16+18		W. FOUR RIDGE	LT									8	
20	16+38		W. FOUR RIDGE	RT				27						
20	16+88		E. FOUR RIDGE	LT				27						
20	16+88	21+50	E. FOUR RIDGE	CNTR		923								
20	17+05		E. FOUR RIDGE	RT									8	
20	17+84	21+50	E. FOUR RIDGE	LT	373									EDGE LINE
20	17+86	21+50	E. FOUR RIDGE	RT	356									EDGE LINE
				PAY TOTAL	4760	4267	491	54	43	4	4	2	16	

SUMMARY OF QUANTITIES
SHEET 4 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	2
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
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16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

36-INCH SURFACE-MOUNT DELINEATOR POST

SHEET	STATION	LOCATION	ROUTE	36 IN. SURFACE-MOUNT DELINEATOR POST	REMARKS
				EACH	EACH
5	667+60	LT	OLD STATE ROUTE 21	1	SW ISLAND
5	667+74	LT	OLD STATE ROUTE 21	1	SW ISLAND
5	667+76	LT	OLD STATE ROUTE 21	1	SW ISLAND
5	667+58	RT	OLD STATE ROUTE 21	1	SE ISLAND
5	667+79	RT	OLD STATE ROUTE 21	1	SE ISLAND
5	667+82	RT	OLD STATE ROUTE 21	1	SE ISLAND
5	668+09	LT	OLD STATE ROUTE 21	1	NW ISLAND
5	668+10	LT	OLD STATE ROUTE 21	1	NW ISLAND
5	668+22	LT	OLD STATE ROUTE 21	1	NW ISLAND
5	668+16	RT	OLD STATE ROUTE 21	1	NE ISLAND
5	668+18	RT	OLD STATE ROUTE 21	1	NE ISLAND
5	668+29	RT	OLD STATE ROUTE 21	1	NE ISLAND
		RT			
PAY TOTAL				12	

SEEDING & SODDING

SHEET	STATION	STATION	ROUTE	LOCATION	SEEDING	SEEDING (ADDITIONAL FILL AT GCS)	CROWN VETCH SEEDING	CROWN VETCH SEEDING (ADDITIONAL FILL AT GCS)	SOD	REMARKS
					AC	AC	AC	AC	SY	
5	668+12	671+70	OLD STATE ROUTE 21	LT					1794	BEHIND WALL A
6	12+75	1480.00	W. FOUR RIDGE	LT	0.1					
5-6	13+55	16+10	W. FOUR RIDGE	RT	0.2					INCLUDES SW QUAD
6	19+17	20+23	E. FOUR RIDGE	RT	0.1					
4	661+81	666+50	OLD STATE ROUTE 21	RT	0.6					INCLUDES SE QUAD
5	668+10	672+00	OLD STATE ROUTE 21	LT	0.2					
5-6	668+43	672+00	OLD STATE ROUTE 21	RT			1.0			INCLUDES NE QUAD
6	19+88	21+20	E. FOUR RIDGE	LT			0.1			
	670+28	671+50	OLD STATE ROUTE 21	LT		1.1				EXTENDED FIELD
	671+50	673+47	OLD STATE ROUTE 21	LT				1.1		3:1 EMBANKMENT
PAY TOTAL					1.2	1.1	1.1	1.1	1794	

PAVEMENT EDGE TREATMENT

SHEET	STATION	STATION	ROUTE	LOCATION	PAVEMENT EDGE TREATMENT (LF)
24	662+50	664+50	OLD STATE ROUTE	LT	194
24	669+10	672+00	OLD STATE ROUTE	LT	296
24	13+76	14+88	WEST FOUR RIDGE	LT	112
25	662+50	665+73	OLD STATE ROUTE	RT	323
25	667+02	672+00	OLD STATE ROUTE	RT	498
27	665+73	667+03	OLD STATE ROUTE	RT	130
28	12+75	14+00	WEST FOUR RIDGE	CNTR	125
PAY TOTAL					1678

BITUMINOUS RUMBLE STRIPS

SHEET	STATION	ROUTE	STATION	SIDE	SHOULDER	REMARKS
					STA	
5	670+00	OLD STATE ROUTE 21	672+00	RT	2.0	
4	662+50	OLD STATE ROUTE 21	665+50	RT	3.0	
4	662+50	OLD STATE ROUTE 21	664+44	LT	1.9	
5	670+25	OLD STATE ROUTE 21	672+00	LT	1.8	
				PAY TOTAL	8.7	

TEMPORARY PAVEMENT MARKINGS

SHEET	STATION	STATION	ROUTE	LOCATION	WATERBORNE PAVEMENT MARKING PAINT		TEMPORARY RAISED PAVEMENT MARKER		REMARKS
					4" WHITE LF	4" YELLOW LF	WHITE EA	YELLOW EA	
24	662+50	666+98	OLD STATE ROUTE 21	LT	477				
24	662+50	666+35	OLD STATE ROUTE 21	RT	408				
24	662+50	666+46	OLD STATE ROUTE 21	LT/RT		782			
24	667+35	672+00	OLD STATE ROUTE 21	LT/RT		930			
24	667+21	672+00	OLD STATE ROUTE 21	LT	523				
24	666+70	672+00	OLD STATE ROUTE 21	RT	569				
24	13+76	14+88	OLD STATE ROUTE 21	LT	120				
27	666+45	667+35	OLD STATE ROUTE 21	LT/RT		180			
27	666+45	667+48	OLD STATE ROUTE 21	LT	103				
27	665+73	667+02	OLD STATE ROUTE 21	RT	129				
27	16+90	21+50	EAST FOUR RIDGE	LT/RT		920			
27	17+05	21+50	EAST FOUR RIDGE	LT	508				
27	16+69	21+50	EAST FOUR RIDGE	RT	535				
27	12+75	16+38	WEST FOUR RIDGE	LT/RT		724			
27	12+75	16+80	WEST FOUR RIDGE	LT	435				
27	12+75	16+50	WEST FOUR RIDGE	RT	395				
	662+50	672+00	OLD STATE ROUTE 21	LT/RT			51	31	
	12+75	16+40	WEST FOUR RIDGE	LT/RT			27	13	
	16+90	21+50	EAST FOUR RIDGE	LT/RT			34	16	
PAY TOTAL					4202	3536	112	60	

TOPSOIL

SHEET	STATION	STATION	ROUTE	TOPSOIL	TOPSOIL (NON-PARTICIPATING)	REMARKS
				CY	CY	
5	668+12	671+50	OLD STATE ROUTE 21	297		BEHIND WALL A
5-6	13+15	17+50	E. AND W. FOUR RIDGE	185		EXISTING ROADBED
	670+22	671+55	OLD STATE ROUTE 21		448	EXTENDED FIELD
PAY TOTAL				482	448	

SUMMARY OF QUANTITIES
SHEET 5 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED 4/5/2019
ROUTE 21 | STATE MO
DISTRICT SL | SHEET NO. 2
COUNTY JEFFERSON
JOB NO. STP-5462(608)
CONTRACT ID.
PROJECT NO. 75160015
BRIDGE NO.

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

EROSION CONTROL

SHEET	STATION	STATION	ROUTE	LOCATION	SILT FENCE LF	SILT FENCE (ADDITIONAL FILL AT GCS) LF	TYPE 1 TURF REINFORCEMENT MAT SY	ROCK DITCH CHECK LF	ROCK DITCH CHECK (ADDITIONAL FILL AT GCS) LF	SEDIMENT TRAP ROCK (ADDITIONAL FILL AT GCS) CY	SEDIMENT REMOVAL CY	SEDIMENT REMOVAL (ADDITIONAL FILL AT GCS) CY	REMARKS
22	12+75	15+00	E. FOUR RIDGE	LT			209						
22	12+78	15+14	W. FOUR RIDGE	RT	180						1		
22	13+35		W. FOUR RIDGE	LT				5			1		
22	13+50	15+04	E. FOUR RIDGE	RT			125						
22	13+95		W. FOUR RIDGE	LT				5			1		
22	14+50		W. FOUR RIDGE	RT				5			1		
22	14+61		W. FOUR RIDGE	LT				5			1		
22	14+83		W. FOUR RIDGE	RT				5			1		
22	15+11	16+20	E. FOUR RIDGE	RT			299						
22	15+22		W. FOUR RIDGE	LT				9			1		
22	15+50		W. FOUR RIDGE	RT				5			1		
22	15+64		W. FOUR RIDGE	RT				5			1		
22	15+74		W. FOUR RIDGE	LT				9			1		
22	15+77		W. FOUR RIDGE	RT				9			1		
22	15+89		W. FOUR RIDGE	RT				9			1		
22	15+95		W. FOUR RIDGE	LT				9			1		
22	17+83		E. FOUR RIDGE	LT				10			1		
22	18+18		E. FOUR RIDGE	RT				10			1		
22	18+50		E. FOUR RIDGE	LT				10			1		
22	18+50	21+17	E. FOUR RIDGE	LT			531						
22	18+79		E. FOUR RIDGE	LT				10			1		
22	18+86	20+22	E. FOUR RIDGE	RT	135								
22	19+09		E. FOUR RIDGE	LT				10			1		
22	19+12	19+90	E. FOUR RIDGE	RT			88						
22	19+34		E. FOUR RIDGE	LT				10			1		
22	19+39		E. FOUR RIDGE	RT				5			1		
22	19+60		E. FOUR RIDGE	RT				5			1		
22	20+16		E. FOUR RIDGE	LT				9			1		
22	20+47		E. FOUR RIDGE	LT				9			1		
22	20+77		E. FOUR RIDGE	LT				9			1		
22	20+94	21+40	E. FOUR RIDGE	RT	46.7								
22	21+00	21+08	E. FOUR RIDGE	LT									
22	661+82	662+08	OLD STATE ROUTE 21	RT			60						
22	661+87	661+96	OLD STATE ROUTE 21	RT									
22	662+20	663+26	OLD STATE ROUTE 21	RT			243						
22	662+50	665+34	OLD STATE ROUTE 21	LT	287								
22	662+84		OLD STATE ROUTE 21	RT				12			1		
22	663+06	663+13	OLD STATE ROUTE 21	RT									
22	663+45	668+45	OLD STATE ROUTE 21	RT			920						
22	664+06		OLD STATE ROUTE 21	RT				5			1		
22	665+50		OLD STATE ROUTE 21	RT				5			1		
22	667+12		OLD STATE ROUTE 21	RT				16			1		
22	667+14		OLD STATE ROUTE 21	LT				9			1		
22	668+00	672+00	OLD STATE ROUTE 21	LT			589						
22	668+00	672+00	OLD STATE ROUTE 21	RT			687						
22	668+41		OLD STATE ROUTE 21	LT				5			1		
22	669+10		OLD STATE ROUTE 21	LT				5			1		
22	669+57		OLD STATE ROUTE 21	RT				5			1		
22	670+00		OLD STATE ROUTE 21	LT				5			1		
22	670+24		OLD STATE ROUTE 21	RT				5			1		
22	670+72		OLD STATE ROUTE 21	LT				5			1		
22	670+91		OLD STATE ROUTE 21	RT				5			1		
22	671+50		OLD STATE ROUTE 21	LT				5			1		
22	671+60		OLD STATE ROUTE 21	RT				5			1		
22	662+54		OLD STATE ROUTE 21	RT				12			1		
22	670+22	673+50	OLD STATE ROUTE 21	LT		2486			180	8		24	GERMAN CULTURAL SOCIETY
				PAY TOTAL	649	2486	3751	281	180	8	39	24	

CONDUIT 2 1/2"

SHEET	STATION	STATION	ROUTE	CONDUIT 2 1/2" (ADDITIONAL FILL AT GCS) LF	REMARKS
5-6	12+72	15+64	W. FOUR RIDGE ROAD	300	
			PAY TOTAL	300	

SUMMARY OF QUANTITIES
SHEET 6 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
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ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	2

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

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75160015

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TRAFFIC CONTROL SIGNAGE BY STAGE

SIGN NUMBER (MUTCD)	SIZE IN.	SIGN AREA S.F.	STAGE 1A	STAGE 1B	STAGE 1C	STAGE 2	GENERAL DETAILS	TOTAL NUMBER REQUIRED FOR PROJECT (ASSUME RE-USE)	CONSTRUCTION SIGNS S.F.	REMARKS
WO20-1	36X36	9.00	4	4	4	5	2	7	63	
GO20-2	36X18	4.50	4	4	4	4		4	18	
WO21-5	36X36	9.00	2	2	2	2		2	18	
R11-2	48X30	10.00				1		1	10	
WO20-7A	36X36	9.00				2	2	4	36	
W5-1	36X36	9.00	2	2	2	2		2	18	
G20-5aP	24X18	3.00	2	2	2	2		2	6	
R2-1	24X30	5.00	2	2	2	2		2	10	
WO8-17	36X36	9.00	4	3	3	3	2	6	54	
WO8-17P	24X18	3.00	4	3	3	3	2	6	18	
R1-1	30X30	6.25				2		2	13	
WO20-4	36X36	9.00				2	2	4	36	
R11-4	60X30	12.50			1	2		2	25	
SP-1	60X24	10.00				2		2	20	
WO8-1	36X36	9.00					4	4	36	
W8-11	36X36	9.00					2	2	18	
W8-12	36X36	9.00					2	2	18	
W8-6C	36x36	9.00					4	4	36	
								PAY TOTAL	453	

TRAFFIC CONTROL SIGNAGE - DETOUR ROUTE

SIGN NUMBER (MUTCD)	SIZE IN.	SIGN AREA S.F.	DETOUR SIGNS	CONSTRUCTION SIGNS S.F.	REMARKS
W20-2	36X36	9.00	4	36	
M4-9R	30X24	5.00	2	10	
MR-9L	30X24	5.00	3	15	
M4-9T	30X24	5.00	4	20	
M5-1R	21X15	2.19	2	4	
M5-1L	21X15	2.19	3	7	
M4-8a	24X12	2.00	1	2	
WO20-3	36X36	9.00	1	9	
R11-4	60X30	12.50	1	13	
WO20-3	36X36	9.00	1	9	
SP-2	96X48	32.00	4	128	
R11-3a	60X30	12.50	1	13	
M4-10R	48X18	6.00	1	6	
R11-4	60X30	12.50	1	13	
M4-10L	48X18	6.00	1	6	
SP-1	30X18	3.75	14	53	
M4-8	24X12	2.00	5	10	
		PAY TOTAL		354	

TRAFFIC CONTROL ITEMS

STAGE	SHEET	TYPE III MOVEABLE BARRICADE (EA) EA	CHANGEABLE MESSAGE SIGN (EA) EA	CHANNELIZERS [1] (EA) EA	TRUCK MOUNTED ATTENUATOR EA	REMARKS
1A	24	6	4	520		
1B	25	6	4	511		
1C	26	13	4	313		
2	27	5	4	333		
GENERAL DETAILS	28-31			150	1	
DETOUR ROUTE	29	5	4			
MAX OVERALL		13	4	520	1	

NOTE 1: CHANNELIZER AMOUNT IS ESTIMATED AND TO BE USED AT THE DISCRETION OF THE ENGINEER ON SITE FOR SPECIFIC TRAFFIC CONTROL SITUATIONS AS NEEDED.

SUMMARY OF QUANTITIES
SHEET 7 OF 7

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	2

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

DATE	DESCRIPTION
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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

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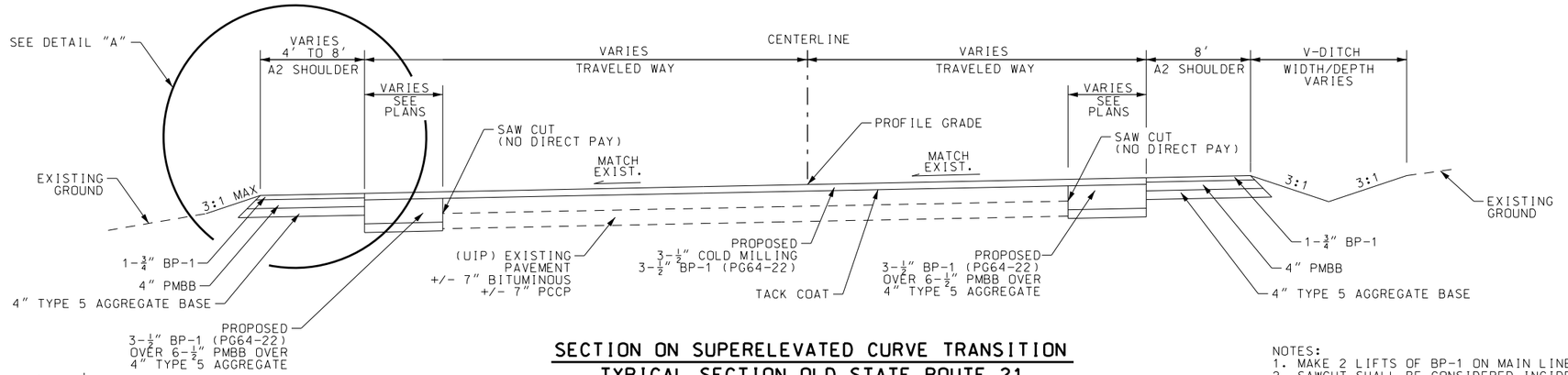
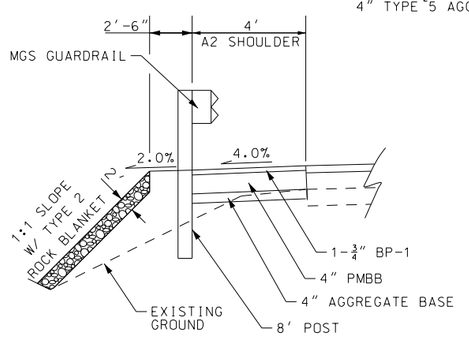


SECTION ON SUPERELEVATED CURVE TRANSITION
TYPICAL SECTION OLD STATE ROUTE 21

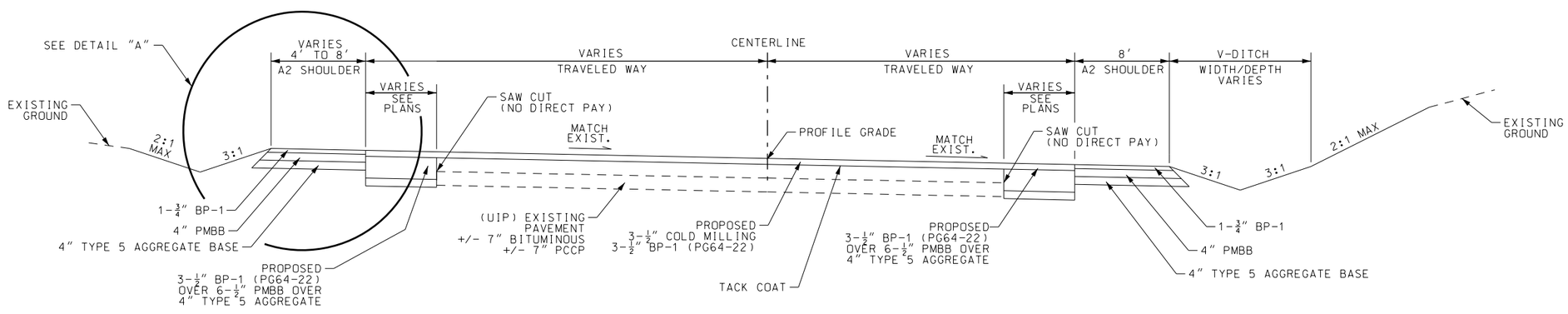
STA. 662+50.00 R1 TO STA. 665+00.00 R2

NOTES:
1. MAKE 2 LIFTS OF BP-1 ON MAIN LINE AT 1-¾" EACH
2. SAWCUT SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.



DETAIL "A"

STA. 663+50.00 R1 TO STA. 665+28.61 R2 (LEFT)



SECTION ON SUPERELEVATED CURVE TRANSITION
TYPICAL SECTION OLD STATE ROUTE 21

STA. 665+00.00 R2 TO STA. 667+95.45 R2
STA. 671+50.00 R2 TO STA. 672+00.00 R2

TYPICAL SECTION
SHEET 1 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
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PE-2004017159
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04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
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DISTRICT	SL
SHEET NO.	3
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
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REV.

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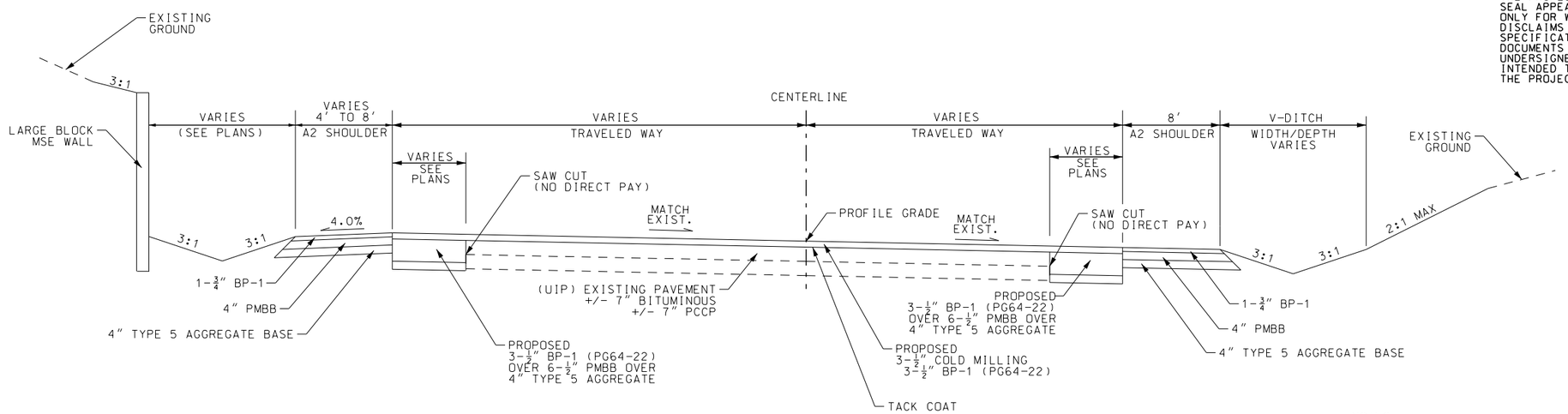
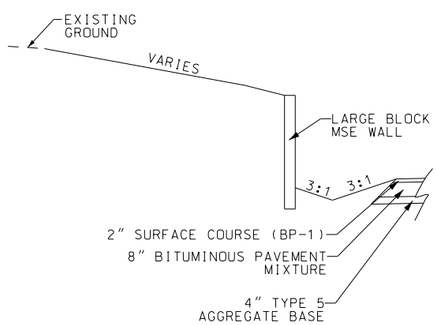
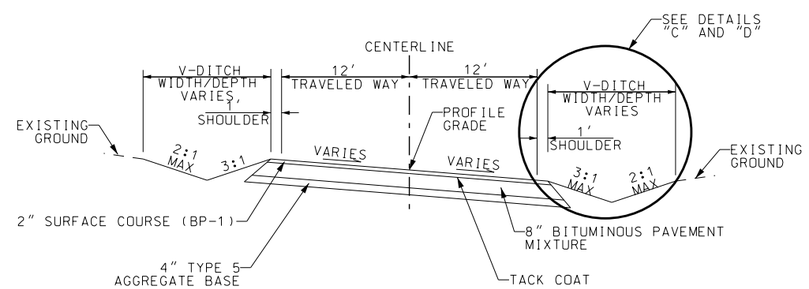


SECTION ON SUPERELEVATED CURVE
TYPICAL SECTION OLD STATE ROUTE 21
STA. 667+95.45 R2 TO STA. 671+50.00 R2

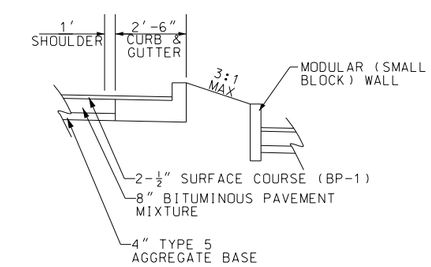
NOTES:
1. MAKE 2 LIFTS OF BP-1 ON MAIN LINE AT 1-¾" EACH
2. SAWCUT SHALL BE CONSIDERED INCIDENTAL. NO DIRECT PAY.



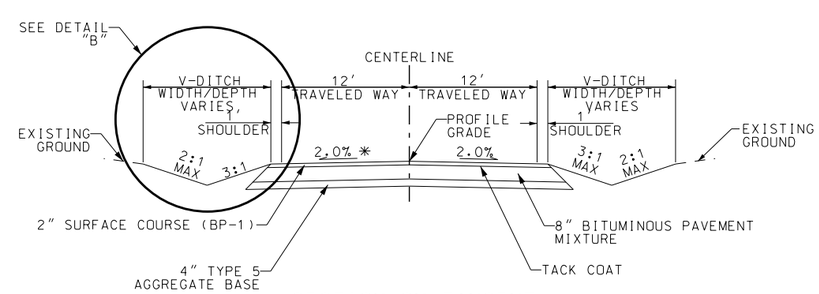
DETAIL "B"
STA. 14+75.00 TO STA. 16+13.28 (LEFT)
*STA. 15+47.22 TO STA. 16+13.28 A2 SHOULDER



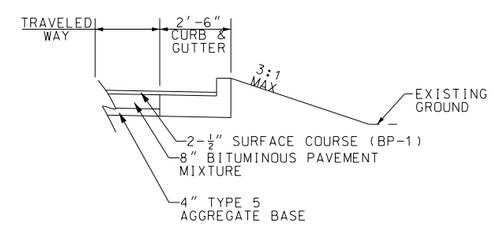
SECTION ON SUPERELEVATED CURVE TRANSITION
TYPICAL SECTION EAST/WEST FOUR RIDGE ROADS
STA. 17+50.00 TO STA. 21+50.00



DETAIL "C"
STA. 20+26.86 TO STA. 20+90.00 (RIGHT)



SECTION ON TANGENT
TYPICAL SECTION EAST/WEST FOUR RIDGE ROADS
STA. 12+75.00 TO STA. 15+50.00
STA. 15+50.00 TO STA. 17+50.00 - SEE WARPING SHEET AND CROSS SECTIONS
* TRANSITION TO MATCH OLD STATE ROUTE 21 AT STA. 16+00.00



DETAIL "D"
STA. 20+00.00 TO STA. 20+26.86 (RIGHT)
STA. 20+90.00 TO STA. 21+34.06 (RIGHT)

TYPICAL SECTION
SHEET 2 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	3
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

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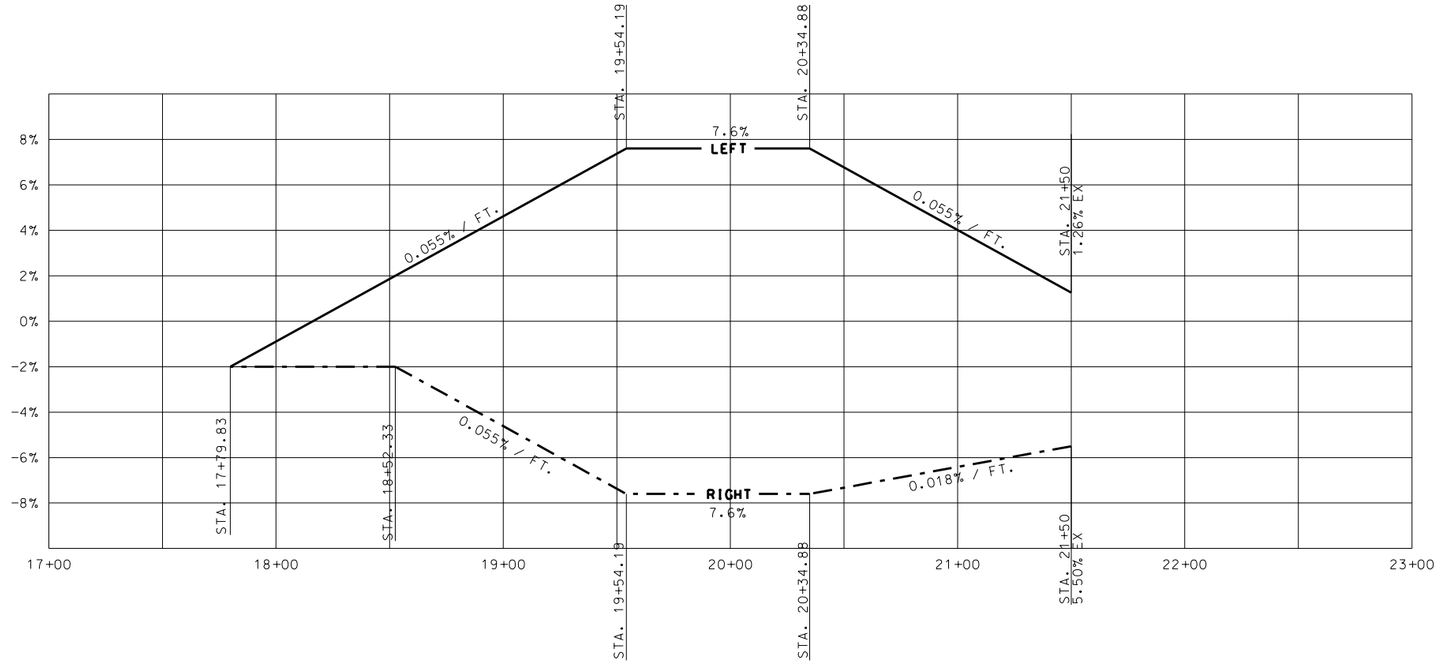
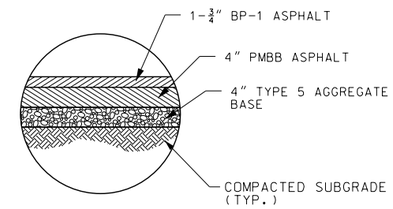
REV.



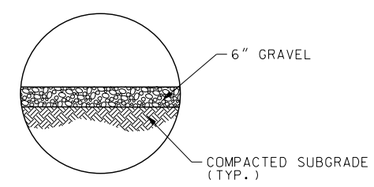
SUPERELEVATION TRANSITION - FOUR RIDGE

(NOT TO SCALE)



ASPHALT DRIVEWAY SECTION

NOTES:
1. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING ASPHALT DRIVEWAYS AS SHOWN ON PLANS. IF ANY PART OF THE EXISTING DRIVEWAY NOT TO BE REMOVED IS DAMAGED DURING EXCAVATION, A FULL DEPTH SAWCUT WILL BE REQUIRED AT THE NEAREST, SUITABLE LOCATION BEHIND THE DAMAGED SECTION, AT NO ADDITIONAL COST TO THE COUNTY.



GRAVEL DRIVEWAY SECTION

NOTES:
1. CONTRACTOR SHALL PLACE GRAVEL DRIVEWAYS AS SHOWN ON PLANS. IF ANY PART OF THE EXISTING GRAVEL DRIVE, OUTSIDE OF THE CONSTRUCTION LIMITS, IS DAMAGED DURING CONSTRUCTION,THE DAMAGE SHALL BE REPAIRED BY THE CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER, AT NO ADDITIONAL COST TO THE COUNTY.
2. ABOVE DETAIL TO BE USED FOR ALL GRAVEL DRIVEWAYS WITHIN THE PROJECT LIMITS, UNLESS OTHERWISE NOTED ON THE PLANS.

PAVEMENT CORING AND ROADSIDE BORING DATA

PLAN SHEET	BORING/CORE NUMBER	LOCATION (ROUTE, STA., OFFSET)	MATERIAL
1	C-1	OLD STATE ROUTE 21, 665+71.85, 18.09' RT	8¾" ASPHALT ON 7" PCC
1	C-2	OLD STATE ROUTE 21, 665+71.08, 08.64' RT	8¾" ASPHALT ON 7" PCC
1	C-3	OLD STATE ROUTE 21, 666+34.79, 15.12' LT	15¼" ASPHALT
1	C-3B	OLD STATE ROUTE 21, 666+34.38, 05.47' LT	7" ASPHALT ON 7" PCC
2	C-4	OLD STATE ROUTE 21, 667+16.17, 26.35' LT	10 " ASPHALT
2	C-5	OLD STATE ROUTE 21, 667+42.44, 04.48' LT	7¾" ASPHALT ON 7¼" PCC
2	C-6	OLD STATE ROUTE 21, 668+91.05, 13.72' LT	14¾" ASPHALT

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STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	3

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

DATE	DESCRIPTION

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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

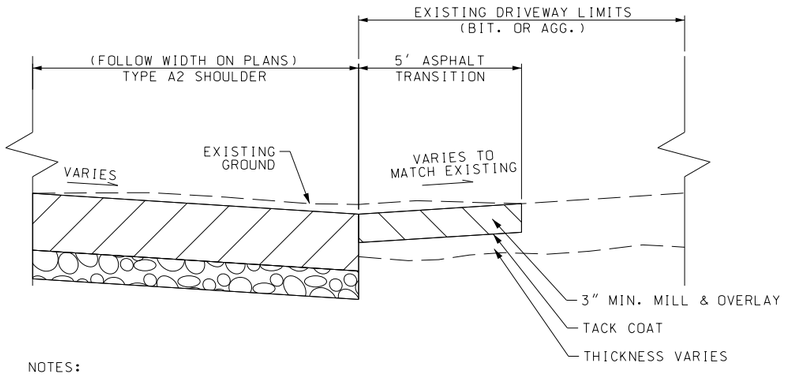
TYPICAL SECTION
SHEET 3 OF 4

REV.

NOTES:

1. ALL WORK SHALL CONFORM TO MISSOURI DEPARTMENT OF TRANSPORTATION'S STANDARD PLANS AND STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

2. CONTRACTOR SHALL FIELD VERIFY LOCATIONS OF EXISTING PAVEMENT STRUCTURE PRIOR TO SAW CUT.



NOTES:

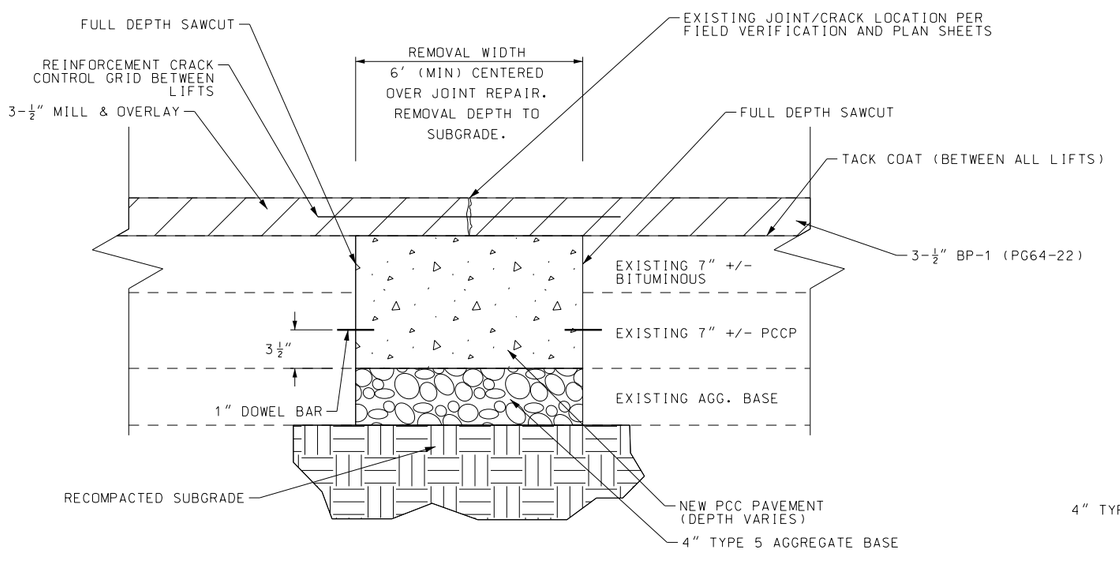
1. THE CONSTRUCTION OF THE ASPHALT TRANSITION WILL REQUIRE REMOVAL OF SUFFICIENT MATERIAL TO CONSTRUCT A MINIMUM THREE (3") INCH THICK ASPHALT LAYER.

2. REMOVAL OF SUFFICIENT MATERIAL MAY EXCEED OR MAY BE LESS THAN THREE (3") INCHES IN THICKNESS DEPENDING ON GRADE OF EXISITING DRIVEWAY AND CONSTRUCTION OF NEW TYPE A2 SHOULDER.

3. ASPHALT TRANSITION SHALL BE CONSTRUCTED USING PLANT MIX BITUMINOUS BASE.

ASPHALT TRANSITION DETAIL

NO SCALE



NOTES:

1. SEE MISSOURI DEPARTMENT OF TRANSPORTATION'S STANDARD PLAN 613.00 FOR ADDITIONAL INFORMATION.

2. SEE PLANS FOR LOCATIONS OF FULL DEPTH JOINT REPAIR.

FULL DEPTH JOINT REPAIR DETAIL

NO SCALE

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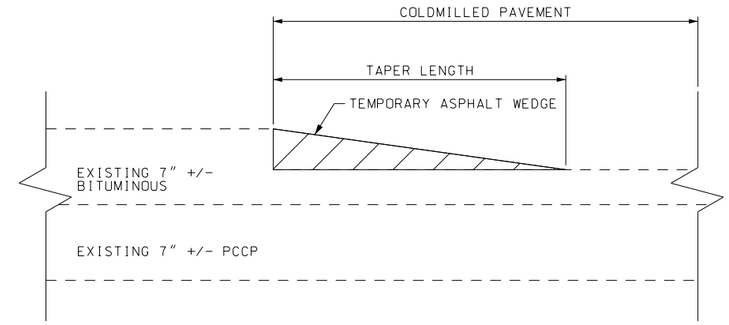


NOTES:

1. THE TAPER LENGTH SHALL BE 3 FT. IN LENGTH FOR EVERY 1 INCH OF THICKNESS FOR SHORT TERM OPERATION (LESS THAN 7 CALENDAR DAYS).

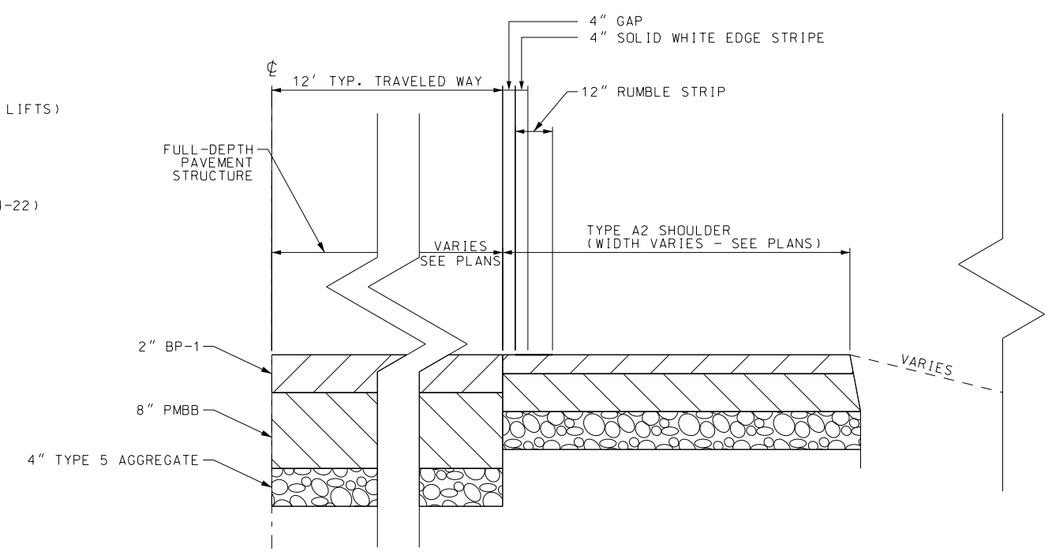
2. THE TAPER LENGTH SHALL BE 5 FT. IN LENGTH FOR EVERY 1 INCH OF THICKNESS FOR TEMPORARY OPERATION (IN PLACE OVER 7 CALENDAR DAYS).

3. THE COST TO PROVIDE AND PLACE TEMPORARY ASPHALT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN OTHER ITEMS.

4. THE CONTRACTOR SHALL ERECT BUMP (W08-1) SIGNS FACING EACH DIRECTION OF TRAFFIC AT ALL LOCATIONS WHERE THE TEMPORARY TRANSVERSE ASPHALT TAPERS ARE USED.

TEMPORARY TRANSVERSE ASPHALT TAPER

NO SCALE



PAVEMENT EDGE DETAIL

NO SCALE

TYPICAL SECTION
SHEET 4 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
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DISTRICT	SHEET NO.
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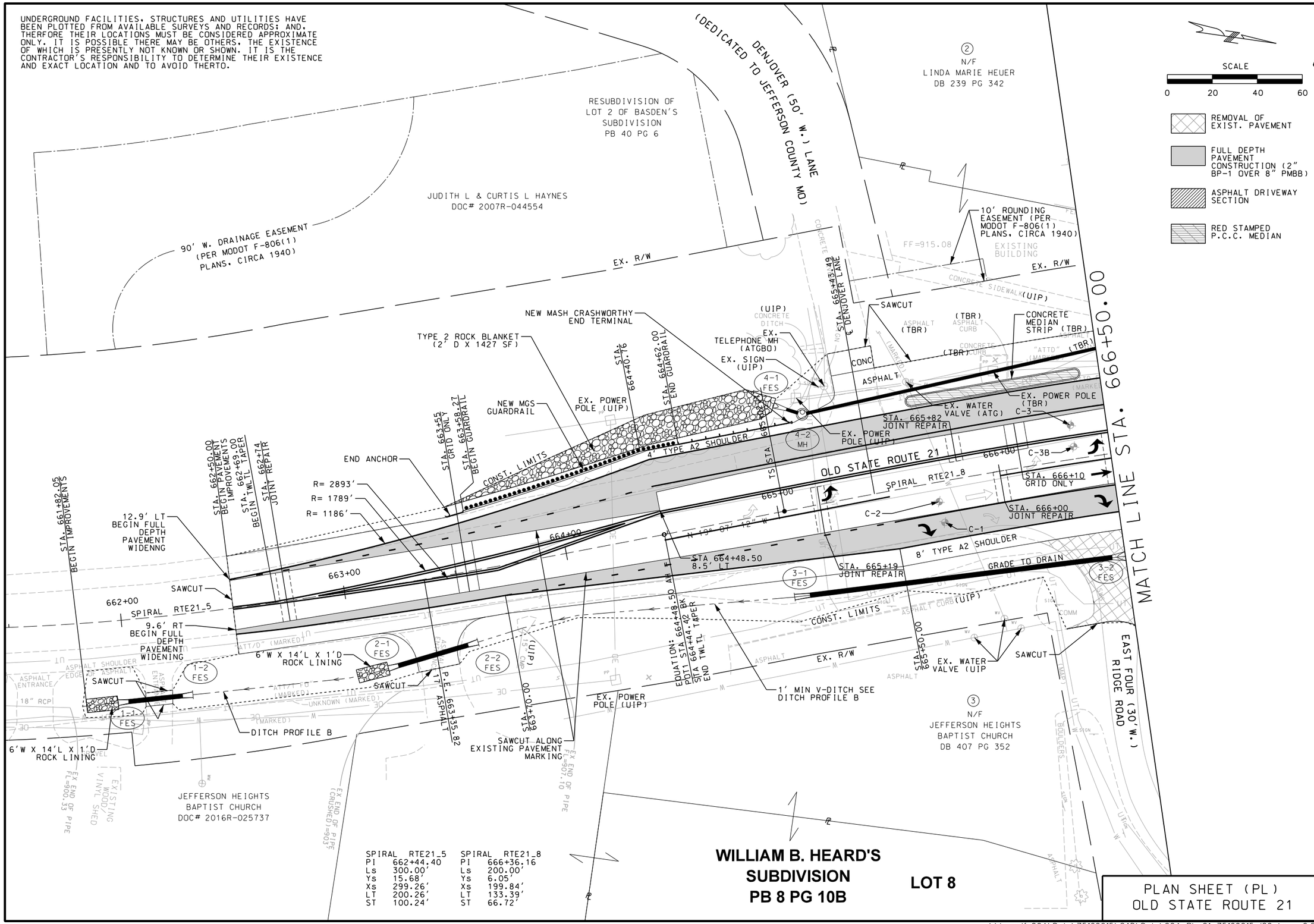
REV.

UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS; AND, THERFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS. THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID THERTO.



SPIRAL RTE21_5		SPIRAL RTE21_8	
PI	662+44.40	PI	666+36.16
Ls	300.00'	Ls	200.00'
Ys	15.68'	Ys	6.05'
Xs	299.26'	Xs	199.84'
LT	200.26'	LT	133.39'
ST	100.24'	ST	66.72'

PLAN SHEET (PL)
OLD STATE ROUTE 21

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
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PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
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SCALE
0 20 40 60

REMOVAL OF EXIST. PAVEMENT
FULL DEPTH PAVEMENT CONSTRUCTION (2" BP-1 OVER 8" PMBB)
GRAVEL DRIVEWAY SECTION
ASPHALT DRIVEWAY SECTION

MATCH LINE STA. 15+00.00

SE1/4 NE1/4
SECTION 7, T.42 N., R 5 E.

NE1/4 NE1/4
SECTION 7, T.42 N., R 5 E.

② N/F
LINDA MARIE HEUR
DB 239 PG 342

① N/F
GERMAN CULTURAL SOCIETY
DB 648 PG 172

④ N/F
JVK PROPERTIES, LLC
DOCUMENT # 2009R-012937

SAWCUT
P.E. 15+07.00
8" ASPHALT
SAWCUT AND REMOVE EXCESS ASPHALT
EX. POWER POLE (TBR&RBO)
1' MIN. D V-DITCH SEE DITCH PROFILE A (TBR)
EX. SIGN (TBR)
EX. POWER POLE (UIP)
STA. 15+68.93 END A2 SHLDR
EX. WATER VALVE (ATG)
EX. WATER VALVE (ATG)
EX. R/W
EX. WATER METER (UIP)
EX. SIGN (TBR&R)
EX. SIGN (TBR)
EX. SIGN (TBR)
WEST FOUR (30' W.) RIDGE ROAD
8' TYPE A2 SHOULDER
EX. WATER VALVE (ATG)
EX. FIBER OPTIC SIGN (TBR&RBO)
EX. POWER POLE (TBR&RBO)
DELINEATOR POST (TYP.)
STA. 666+88 JOINT REPAIR
STA. 667+02.77
STA. 666+71.63 END A2 SHOULDER
C-4
℄ FOUR RIDGE ROAD
EX. TELEPHONE MH (ATGBO)
C-5
SPIRAL RTE21_8
STA. 667+95.45 OLD STATE ROUTE 21 = STA. 16+67.03 WEST/EAST FOUR RIDGE ROAD
STA. 667+47 JOINT REPAIR
STA. 666+50 JOINT REPAIR
EX. SIGN (TBR&R)
EX. FIBER OPTIC SIGN (TBR&RBO)
EX. POWER POLE (TBR&RBO)
EX. SIGN (TBR&R)
EX. WATER VALVE (TBR&R)
EX. HYDRANT (TBR&R)
CONST. LIMITS
1' MIN. D V-DITCH SEE DITCH PROFILE B
STA. 17+69.38 END A2 SHLDR
NEW R/W
EAST FOUR RIDGE ROAD (30' W.)
MATCH LINE STA. 666+50.00
MATCH LINE STA. 18+50.00
CURVE FOUR_RIDGE_3
16+00
17+00
18+00
2 1/2" CONDUIT
TCE
STA. 668+44.18 134.3' LT
EX. FENCE (TBR&R IN CONST. LIMITS)
STA. 15+47.67 BEGIN A2 SHLDR
STA. 668+42.21 114.5' LT
STA. 15+64 END CONDUIT
EX. FENCE (TBR&R IN CONST. LIMITS)
SOCCER FIELD
SOCCER GOAL
STA. 668+37.19 91.1' LT
STA. 668+72.36 88.4' LT
STA. 668+82.41
CLEARING & GRUBBING LIMITS
CONST. LIMITS
1' MIN. D V-DITCH SEE DITCH PROFILE E
RETAINING WALL A (SEE RETAINING WALL SHEETS)
EX. POWER POLE (TBR&RBO)
4' TYPE A2 SHOULDER
TAPER SHOULDER LT. FROM 4' TO EXISTING WIDTH AT STA. 672+00
STA. 670+25.00
STA. 671+00.00 8.7' LT
R= 1019'
R= 1103'
R= 1099'
STA. 671+31.88 39.1' LT END FENCE
STA. 671+50.00 36.1' LT END WALL
OLD STATE ROUTE 21
668+00
669+00
670+00
671+00
672+00
SAWCUT ALONG EXISTING PAVEMENT MARKINGS
EXISTING OLD STATE ROUTE 21 ℄
CURVE RTE21_9
STA. 670+37 JOINT REPAIR
STA. 672+00 END IMPROVEMENTS
STA. 668+94 JOINT REPAIR
STA. 669+10.00 8.0' LT (AT EX. STRIPING)
STA. 669+50.00 669+58 JOINT REPAIR
CLEARING & GRUBBING LIMITS
EX. R/W
10' ROUNDING ESMT (PER MODOT F-806(1) PLANS, CIRCA 1940)
STA. 17+66.45 BEGIN A2 SHLDR
PT STA 18+40.66
1/4 1/4 SECTION LINE
1' MIN. D V-DITCH SEE DITCH PROFILE D
STA. 670+93 JOINT REPAIR
SAWCUT
CONST. LIMITS
B-1
B-2
B-3
B-4
CEB B-2 BORING/TEST HOLE
REMNANTS OF GRAVEL DRIVE

CURVE FOUR_RIDGE_3
PI 16+38.85
PC 14+27.61
PT 18+40.66
Δ 29° 34' 56.4" (LT)
D 7° 09' 43.1"
L 413.05'
T 211.24'
R 800.00'

SPIRAL RTE21_8
PI 666+36.16
Ls 200.00'
Ys 6.05'
Xs 199.84'
LT 133.39'
ST 66.72'

CURVE RTE21_9
TOTAL PI 670+64.85
SC 667+02.77
CS 673+76.81
TOTAL Δ 45° 27' 00.0" (RT)
D 5° 12' 00.0"
Lc 674.04'
Ls 200.00'
Ts 562.08'
R 1,101.84'
θs 5° 12' 00.0"
Xs 199.84'
Ys 6.05'

PLAN SHEET (PL)
OLD STATE ROUTE 21

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 5
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DESCRIPTION
DATE

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

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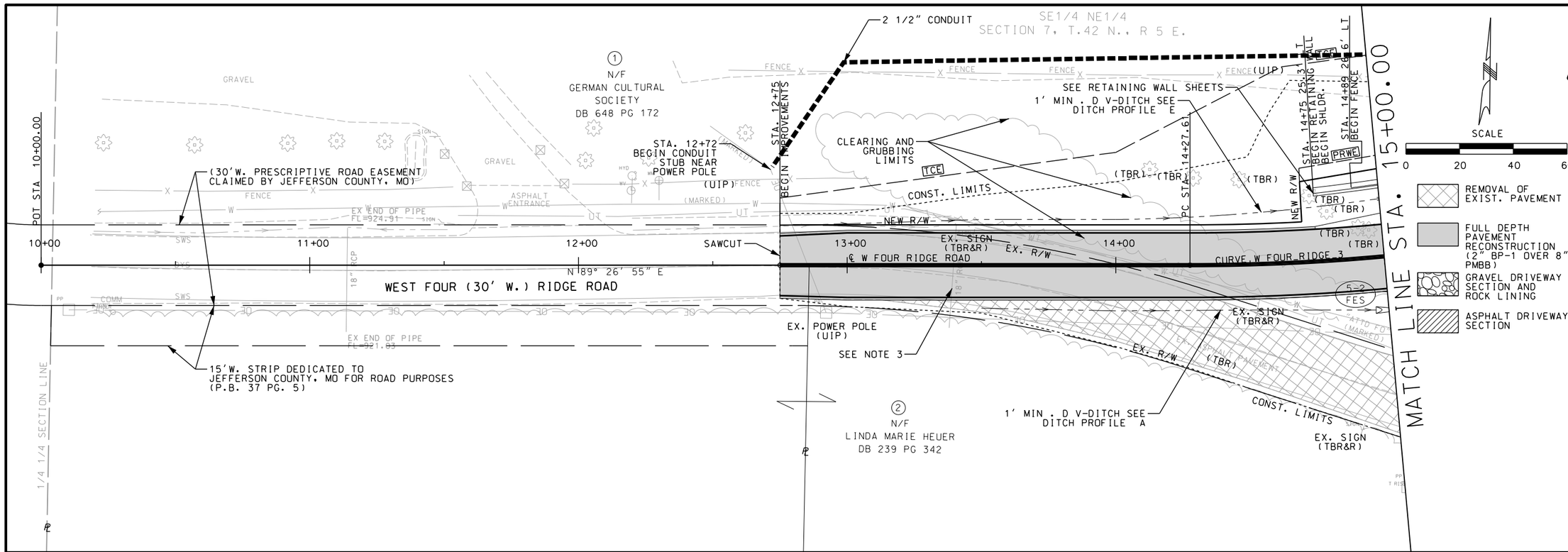

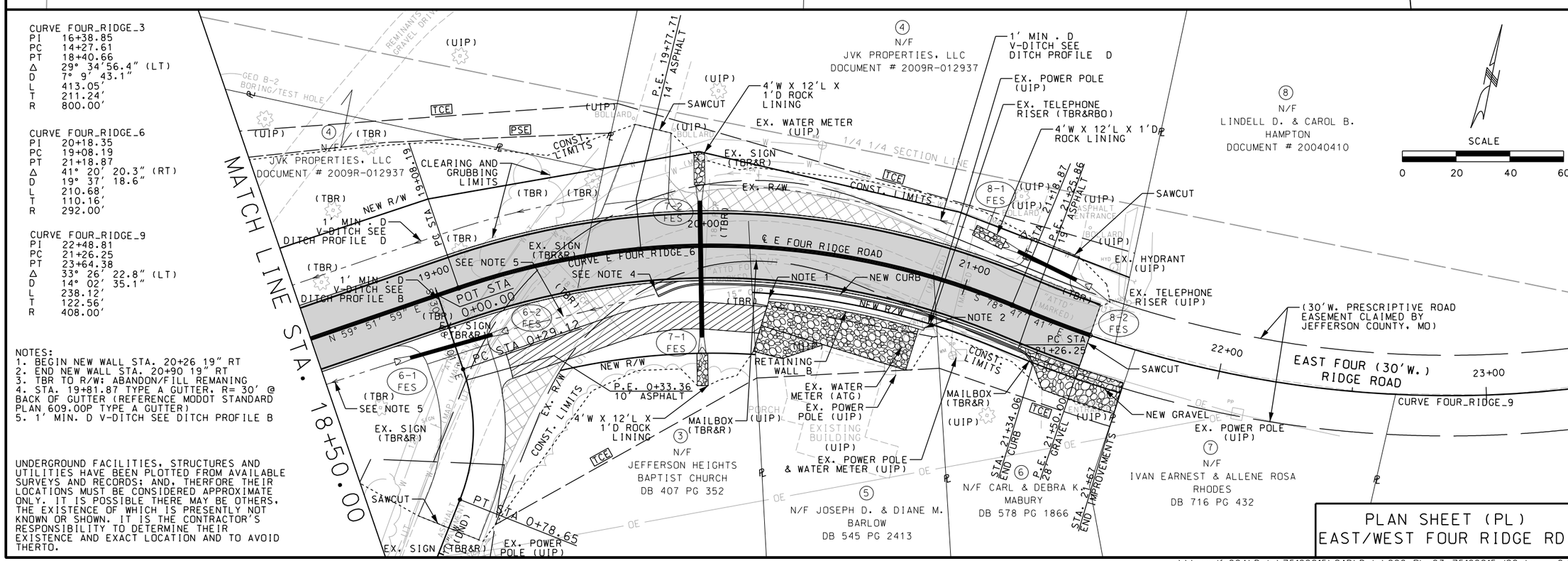

PLAN SHEET (PL)
EAST/WEST FOUR RIDGE RD.

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	6
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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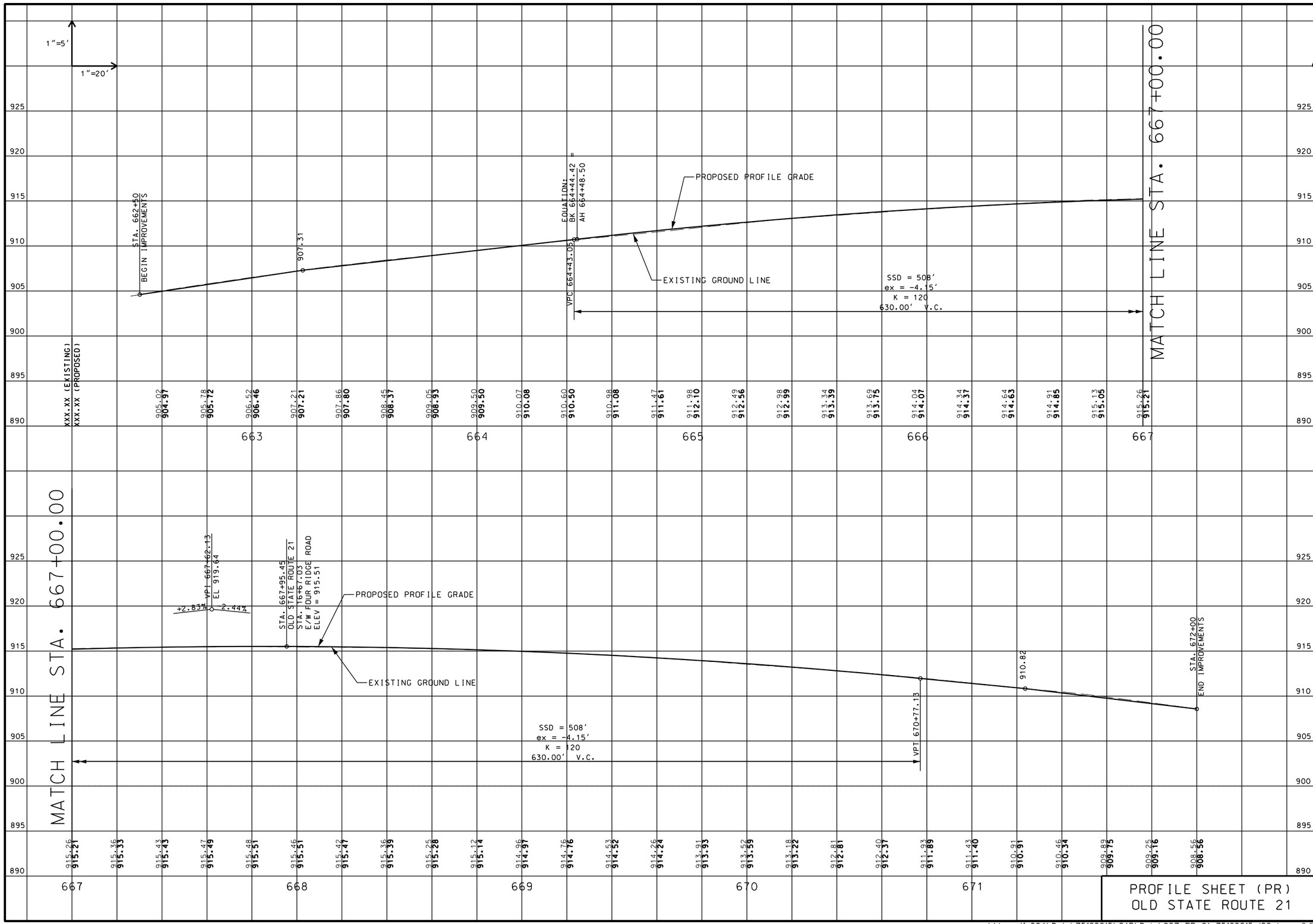

PROFILE SHEET (PR)
OLD STATE ROUTE 21

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	7
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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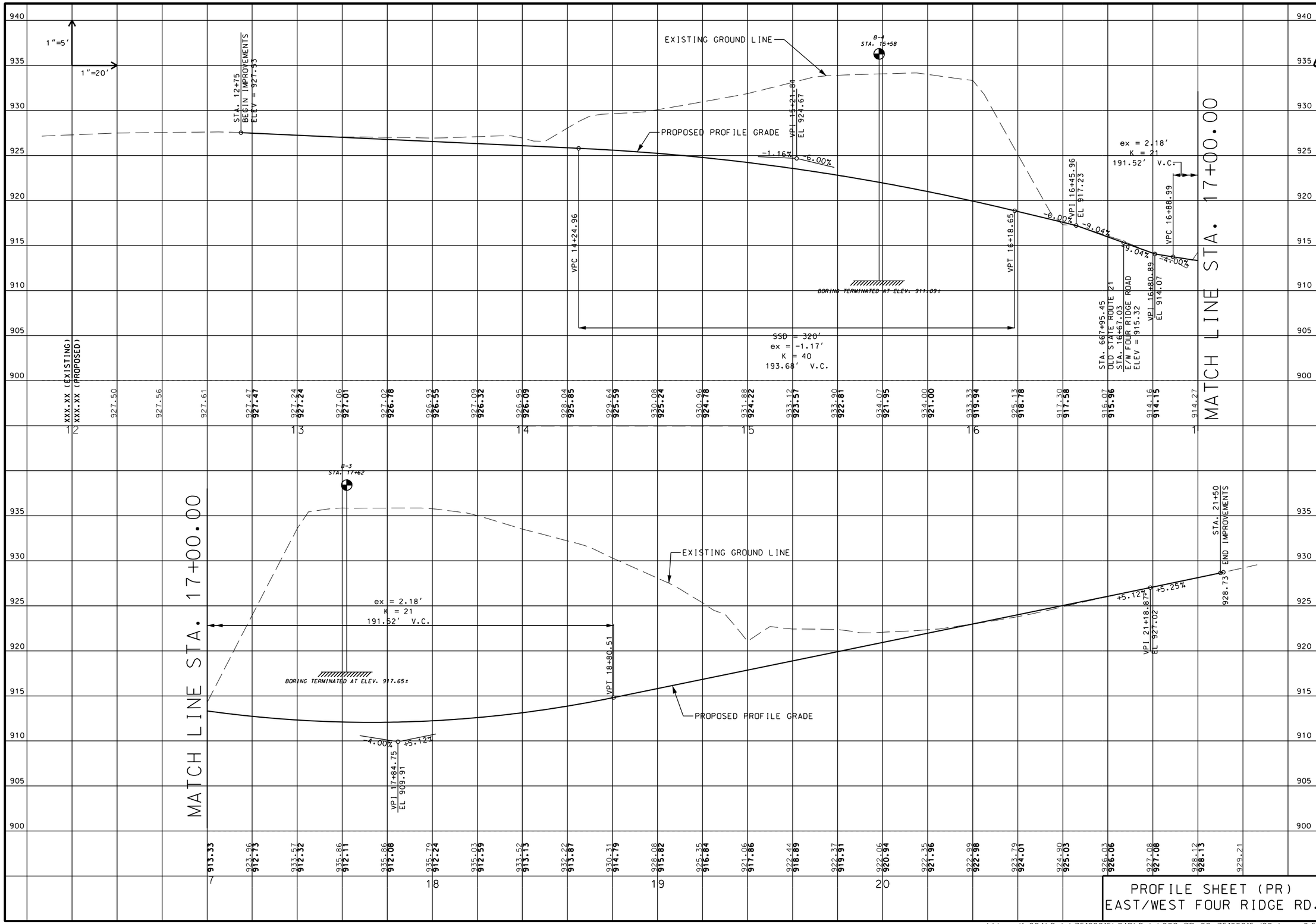

PROFILE SHEET (PR)
EAST/WEST FOUR RIDGE RD.

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	8
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

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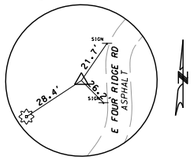
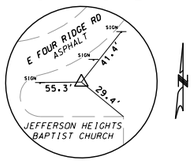
C.P. NO. 1



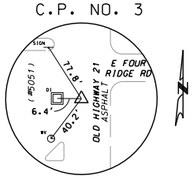
5/8" IRON ROD
N: 932155.6710
E: 821215.9710
EL: 926.71

C.P. NO. 2



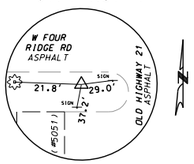
5/8" IRON ROD
N: 931960.8760
E: 821210.3510
EL: 924.45

C.P. NO. 3



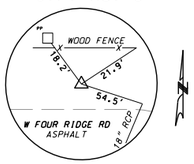
SPINDLE
N: 931881.1610
E: 821010.6300
EL: 912.79

C.P. NO. 4



5/8" IRON ROD
N: 931957.4250
E: 820931.2120
EL: 924.20

C.P. NO. 5



5/8" IRON ROD
N: 932062.2380
E: 820624.5260
EL: 928.34

DISCLAIMER

THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.

SURVEY NOTES:

1. HORIZONTAL CONTROL STATEMENT: STATE PLANE COORDINATES ON THIS PROJECT WERE ESTABLISHED UTILIZING THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUSLY OPERATING REFERENCE STATIONS DURING DECEMBER 2016, AND ARE BASED ON THE MISSOURI COORDINATE SYSTEM OF 1983, EAST ZONE.

2. VERTICAL DATUM IS NAVD 88. ELEVATIONS WERE ESTABLISHED ON CONTROL POINTS 1 THROUGH 5 USING A CELLULAR EQUIPPED SPECTRA PRECISION RANGER, AND BASED ON THE MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION_GLOBAL NAVIGATION SATELLITE REAL TIME NETWORK FOR CONTINUOUS OPERATING REFERENCE STATIONS. FIELD WORK WAS PERFORMED DURING NOVEMBER AND DECEMBER, 2016.

SITE BENCHMARKS:

TBM "A": ELEVATION 915.68

CUT "L" ON THE NORTHWEST CORNER OF THE FRONT CONCRETE STEP OF JEFFERSON HEIGHTS BAPTIST CHURCH AT #5106 HIGHWAY 21 IN THE SOUTHEAST QUADRANT.

TBM "B": ELEVATION 932.35

"H" IN HYDRANT ON THE TOP OF A FIRE HYDRANT ON THE NORTH SIDE OF WEST FOUR RIDGE; 30' EAST OF THE ENTRANCE TO #5020, GERMAN CULTURAL SOCIETY; 500' WEST OF OLD HIGHWAY 21.

3. THE UNDERGROUND UTILITIES SHOWN HEREON ARE TAKEN FROM UTILITY LOCATIONS AS MARKED IN THE FIELD BY DIGRITE, TICKET NUMBER: 163332381 (11/30/2016)

ATT TRANSMISSION: "MARKED" PER TICKET CHECK.
AMEREN MISSOURI ELECTRIC: "MARKED" PER TICKET CHECK.
ATT-DISTRUIBUTION: "MARKED" PER TICKET CHECK.
CHARTER COMMUNICATIONS: "MARKED" PER TICKET CHECK.
JEFFERSON COUNTY CPWSD C1:"MARKED" PER TICKET CHECK.
ROCK CREEK SEWER DISTRICT: "CLEAR/NO CONFICT. UNABLE TO LOCATE LATERAL CONNECTIONS IN RIGHT OF WAY" PER TICKET CHECK.

THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION OF ALL UNDERGROUND UTILITIES, SHOWN OR NOT SHOWN, AND SHALL BE LOCATED IN THE FIELD PRIOR TO ANY GRADING, EXCAVATION, OR CONSTRUCTION OF IMPROVEMENTS. THESE PROVISIONS SHALL IN NO WAY ABSOLVE ANY PARTY FROM COMPLYING WITH THE UNDERGROUND FACILITY SAFETY AND DAMAGE PREVENTION ACT, CHAPTER 319, RSMO.

ALIGNMENT INFORMATION

ALIGNMENT NAME: RTE21

ELEMENT	POINT	STATION	COORDINATES NORTHING	COORDINATES EASTING	CURVE DATA RADIUS	LENGTH	DELTA/THETA	ROTATION DIRECTION	K	P
Tangent	POB	650+51.93 R1	930479.9121	820804.1674						
Tangent	TS	651+33.05 R1	930540.6235	820857.9687						
Clothoid	TS	651+33.05 R1	930540.6235	820857.9687						
Clothoid	SPI	653+33.31 R1	930690.5003	820990.7867		300	9°00'00"	Left	149.8767	3.9235
Clothoid	SC	654+33.05 R1	930774.9942	821044.7122						
Arc	SC	654+33.05 R1	930774.9942	821044.7122						
Arc	PI	658+06.00 R1	931089.3749	821245.3558	954.93	711.1115	42°40'00"	Left		
Arc	CC		931288.7348	820239.7515						
Arc	CS	661+44.16 R1	931456.5245	821179.8248						
Clothoid	CS	661+44.16 R1	931456.5245	821179.8248						
Clothoid	SPI	662+44.40 R1	931555.2006	821162.2126		300	9°00'00"	Left	149.8767	3.9235
Clothoid	ST	664+44.16 R1	931744.4125	821096.6185						
Tangent	ST	664+44.16 R1	931744.4125	821096.6185						
Back Station		664+44.42 R1	931744.6543	821096.5346						
Ahead Station		664+48.50 R2								
Tangent	TS	665+02.77 R2	931795.9305	821078.7587						
Clothoid	TS	665+02.77 R2	931795.9305	821078.7587						
Clothoid	SPI	666+36.16 R2	931921.9629	821035.0670		200	5°12'00"	Right	99.9726	1.5122
Clothoid	SC	667+02.77 R2	931986.7226	821019.0167						
Arc	SC	667+02.77 R2	931986.7226	821019.0167						
Arc	PI	670+50.71 R2	932324.4420	820935.3152	1101.84	674.0369	35°03'00"	Right		
Arc	CC		932251.7869	822088.4990						
Arc	CS	673+76.81 R2	932648.9855	821060.7419						
Clothoid	CS	673+76.81 R2	932648.9855	821060.7419						
Clothoid	SPI	674+43.53 R2	932711.2186	821084.7932		200	5°12'00"	Right	99.9726	1.5122
Back Station		675+76.81 R2	932830.7707	821143.9577						
Ahead Station		675+77.96 R3								
Clothoid	ST	675+77.96 R3	932830.7707	821143.9577						
Tangent	ST	675+77.96 R3	932830.7707	821143.9577						
Tangent	POE	681+40.34 R3	933334.8053	821393.3966						

ALIGNMENT NAME: FOUR_RIDGE

ELEMENT	POINT	STATION	COORDINATES NORTHING	COORDINATES EASTING	CURVE DATA RADIUS	LENGTH	DELTA / THETA	ROTATION DIRECTION	K	P
Tangent	POB	10+00.00 R1	932035.5702	820337.4306						
Tangent	PC	14+27.61 R1	932039.6848	820765.0243						
Arc	PC	14+27.61 R1	932039.6848	820765.0243						
Arc	PI	16+38.85 R1	932041.7174	820976.2517	800	413.0474	29°34'56"	Left		
Arc	CC		932839.6478	820757.3265						
Arc	PT	18+40.66 R1	932147.7625	821158.9416						
Tangent	PT	18+40.66 R1	932147.7625	821158.9416						
Tangent	PC	19+08.19 R1	932181.6642	821217.3459						
Arc	PC	19+08.19 R1	932181.6642	821217.3459						
Arc	PI	20+18.35 R1	932236.9665	821312.6185	292	210.6783	41°20'20"	Right		
Arc	CC		931929.1260	821363.9355						
Arc	PT	21+18.87 R1	932215.5597	821420.6784						
Tangent	PT	21+18.87 R1	932215.5597	821420.6784						
Tangent	PC	21+26.25 R1	932214.1246	821427.9228						
Arc	PC	21+26.25 R1	932214.1246	821427.9228						
Arc	PI	22+48.81 R1	932190.3081	821548.1462	408	238.122	33°26'23"	Left		
Arc	CC		932614.3469	821507.2075						
Arc	PT	23+64.38 R1	932236.6842	821661.5930						
ALIGNMENT NAME: WALL_A										
Arc	PC	0+00.00 R1	932065.8311	820810.6925						
Arc	PI	0+32.32 R1	932069.7587	820842.7764	748.5345	64.6068	4°56'43"	Left		
Arc	CC		932808.8191	820719.7386						
Arc	PCC	0+64.61 R1	932076.4374	820874.4024						
Arc	PCC	0+64.61 R1	932076.4374	820874.4024						
Arc	PI	1+37.33 R1	932091.4634	820945.5553	83	119.4358	82°26'52"	Left		
Arc	CC		932157.6464	820857.2527						
Arc	PRC	1+84.04 R1	932163.974	820940.0112						
Arc	PRC	1+84.04 R1	932163.974	820940.0112						
Arc	PI	2+48.27 R1	932228.014	820935.1147	1151.84	128.3208	6°22'59"	Right		
Arc	CC		932251.7869	822088.499						
Arc	PCC	3+12.36 R1	932292.2013	820937.3682						
Arc	PCC	3+12.36 R1	932292.2013	820937.3682						
Arc	PI	3+38.43 R1	932318.2468	820938.2826	258.6558	51.9479	11°30'26"	Right		
Arc	CC		932283.1259	821195.8648						
Arc	PT	3+64.31 R1	932343.5864	820944.3745						
Tangent	PT	3+64.31 R1	932343.5864	820944.3745						
Tangent	POE	4+59.59 R1	932436.2234	820966.6453						

REFERENCE POINTS & COORDINATE POINTS
SHEET 1 OF 1

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
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04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	9

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

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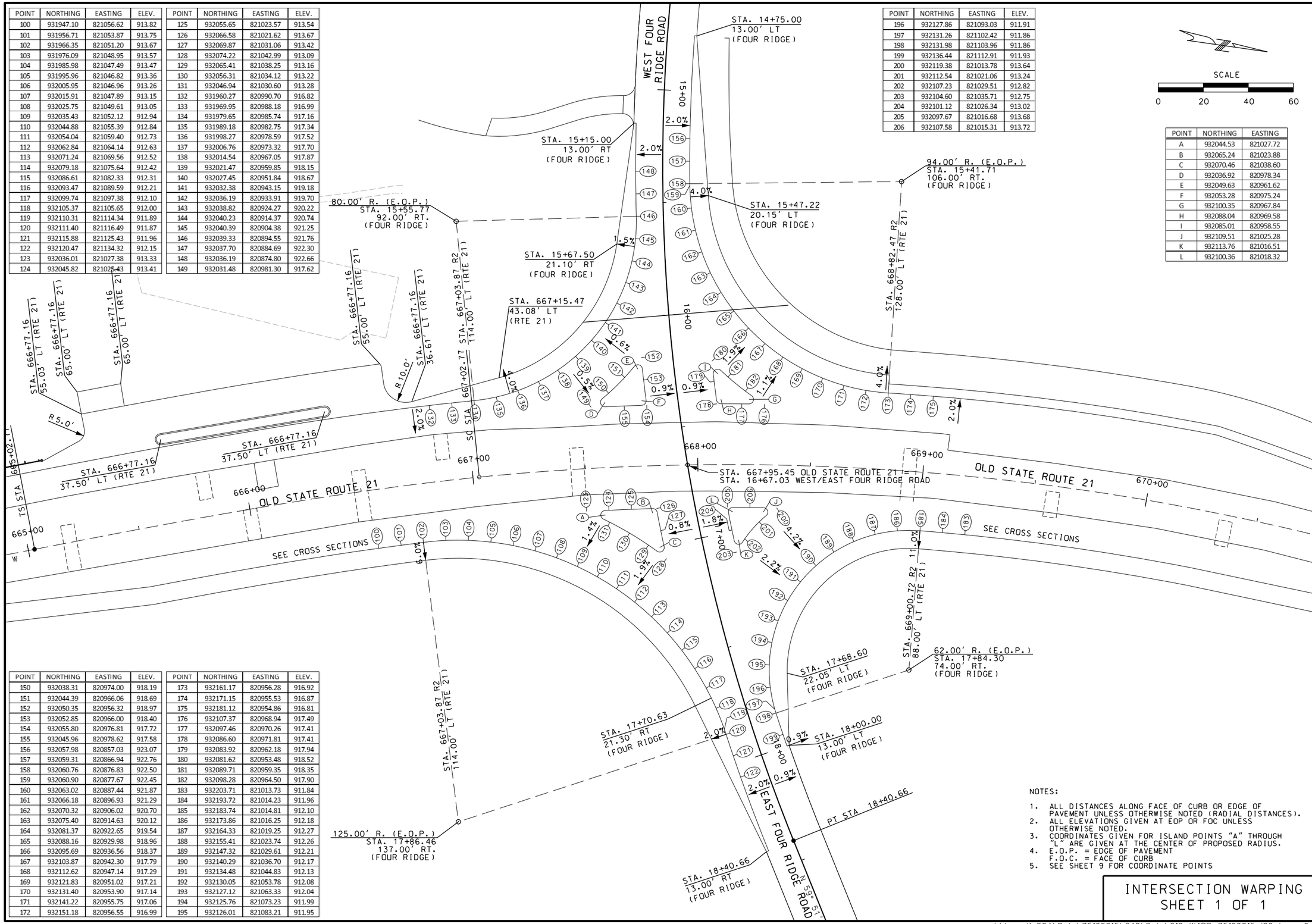
HRGreen

REV.

POINT	NORTHING	EASTING	ELEV.
100	931947.10	821056.62	913.82
101	931956.71	821053.87	913.75
102	931966.35	821051.20	913.67
103	931976.09	821048.95	913.57
104	931985.98	821047.49	913.47
105	931995.96	821046.82	913.36
106	932005.95	821046.96	913.26
107	932015.91	821047.89	913.15
108	932025.75	821049.61	913.05
109	932035.43	821052.12	912.94
110	932044.88	821055.39	912.84
111	932054.04	821059.40	912.73
112	932062.84	821064.14	912.63
113	932071.24	821069.56	912.52
114	932079.18	821075.64	912.42
115	932086.61	821082.33	912.31
116	932093.47	821089.59	912.21
117	932099.74	821097.38	912.10
118	932105.37	821105.65	912.00
119	932110.31	821114.34	911.89
120	932111.40	821116.49	911.87
121	932115.88	821125.43	911.96
122	932120.47	821134.32	912.15
123	932036.01	821027.38	913.33
124	932045.82	821025.43	913.41

POINT	NORTHING	EASTING	ELEV.
125	932055.65	821023.57	913.54
126	932066.58	821021.62	913.67
127	932069.87	821031.06	913.42
128	932074.22	821042.99	913.09
129	932065.41	821038.25	913.16
130	932056.31	821034.12	913.22
131	932046.94	821030.60	913.28
132	931960.27	820990.70	916.82
133	931969.95	820988.18	916.99
134	931979.65	820985.74	917.16
135	931989.18	820982.75	917.34
136	931998.27	820978.59	917.52
137	932006.76	820973.32	917.70
138	932014.54	820967.05	917.87
139	932021.47	820959.85	918.15
140	932027.45	820951.84	918.67
141	932032.38	820943.15	919.18
142	932036.19	820933.91	919.70
143	932038.82	820924.27	920.22
144	932040.23	820914.37	920.74
145	932040.39	820904.38	921.25
146	932039.33	820894.55	921.76
147	932037.70	820884.69	922.30
148	932036.19	820874.80	922.66
149	932031.48	820981.30	917.62

POINT	NORTHING	EASTING	ELEV.
196	932127.86	821093.03	911.91
197	932131.26	821102.42	911.86
198	932131.98	821103.96	911.86
199	932136.44	821112.91	911.93
200	932119.38	821013.78	913.64
201	932112.54	821021.06	913.24
202	932107.23	821029.51	912.82
203	932104.60	821035.71	912.75
204	932101.12	821026.34	913.02
205	932097.67	821016.68	913.68
206	932107.58	821015.31	913.72



POINT	NORTHING	EASTING
A	932044.53	821027.72
B	932065.24	821023.88
C	932070.46	821038.60
D	932036.92	820978.34
E	932049.63	820961.62
F	932053.28	820975.24
G	932100.35	820967.84
H	932088.04	820969.58
I	932085.01	820958.55
J	932109.51	821025.28
K	932113.76	821016.51
L	932100.36	821018.32

POINT	NORTHING	EASTING	ELEV.
150	932038.31	820974.00	918.19
151	932044.39	820966.06	918.69
152	932050.35	820956.32	918.97
153	932052.85	820966.00	918.40
154	932055.80	820976.81	917.72
155	932045.96	820978.62	917.58
156	932057.98	820857.03	923.07
157	932059.31	820866.94	922.76
158	932060.76	820876.83	922.50
159	932060.90	820877.67	922.45
160	932063.02	820887.44	921.87
161	932066.18	820896.93	921.29
162	932070.32	820906.02	920.70
163	932075.40	820914.63	920.12
164	932081.37	820922.65	919.54
165	932088.16	820929.98	918.96
166	932095.69	820936.56	918.37
167	932103.87	820942.30	917.79
168	932112.62	820947.14	917.29
169	932121.83	820951.02	917.21
170	932131.40	820953.90	917.14
171	932141.22	820955.75	917.06
172	932151.18	820956.55	916.99

POINT	NORTHING	EASTING	ELEV.
173	932161.17	820956.28	916.92
174	932171.15	820955.53	916.87
175	932181.12	820954.86	916.81
176	932107.37	820968.94	917.49
177	932097.46	820970.26	917.41
178	932086.60	820971.81	917.41
179	932083.92	820962.18	917.94
180	932081.62	820953.48	918.52
181	932089.71	820959.35	918.35
182	932098.28	820964.50	917.90
183	932203.71	821013.73	911.84
184	932193.72	821014.23	911.96
185	932183.74	821014.81	912.10
186	932173.86	821016.25	912.18
187	932164.33	821019.25	912.27
188	932155.41	821023.74	912.26
189	932147.32	821029.61	912.21
190	932140.29	821036.70	912.17
191	932134.48	821044.83	912.13
192	932130.05	821053.78	912.08
193	932127.12	821063.33	912.04
194	932125.76	821073.23	911.99
195	932126.01	821083.21	911.95

NOTES:

1. ALL DISTANCES ALONG FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED (RADIAL DISTANCES).
2. ALL ELEVATIONS GIVEN AT EOP OR FOC UNLESS OTHERWISE NOTED.
3. COORDINATES GIVEN FOR ISLAND POINTS "A" THROUGH "L" ARE GIVEN AT THE CENTER OF PROPOSED RADIUS.
4. E.O.P. = EDGE OF PAVEMENT
   F.O.C. = FACE OF CURB
5. SEE SHEET 9 FOR COORDINATE POINTS

INTERSECTION WARPING
SHEET 1 OF 1

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED
4/5/2019

ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	10

COUNTY
JEFFERSON

JOB NO.
STP-5462(608)

CONTRACT ID.

PROJECT NO.
75160015

BRIDGE NO.

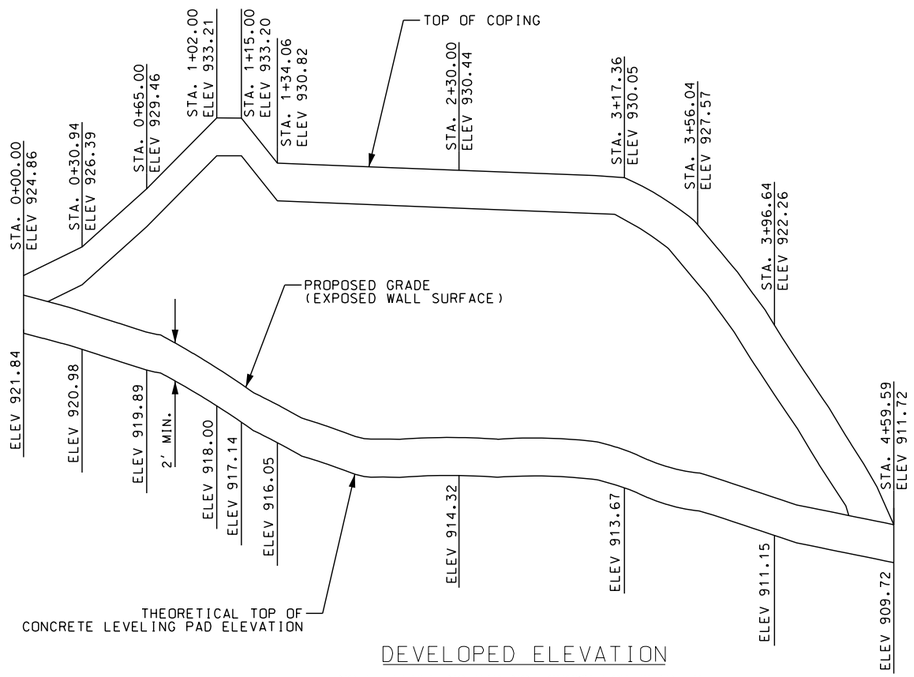
DATE	DESCRIPTION

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.



DEVELOPED ELEVATION

NOTE: LEVELING PAD NOT SHOWN FOR CLARITY.

GENERAL NOTES:

DESIGN SPECIFICATIONS:

2002 AASHTO LFD (17TH ED.) STANDARD SPECIFICATIONS (SECTION 5, ASD DESIGN)

DESIGN LOADING:

ϕ_b = 23° AND UNIT WEIGHT, γ_b = 100 PCF FOR FAT CLAY (CH) RETAINED BACKFILL MATERIAL TO BE RETAINED BY THE MECHANICALLY STABILIZED EARTH WALL SYSTEM.

ϕ_b = 32° AND UNIT WEIGHT, γ_b = 120 PCF FOR WEATHERED ROCK AND CLAY (GC) RETAINED BACKFILL MATERIAL TO BE RETAINED BY THE MECHANICALLY STABILIZED EARTH WALL SYSTEM.

ACTUAL ϕ_r ≥ 34°FOR THE SELECT GRANULAR BACKFILL (REINFORCED BACKFILL AND WEDGE AREA BACKFILL) FOR STRUCTURAL SYSTEMS.

DESIGN ϕ_r = 34°FOR THE SELECT GRANULAR BACKFILL (REINFORCED BACKFILL) ONLY FOR STRUCTURAL SYSTEMS.

THE ALLOWABLE BEARING PRESSURE FOR UNIMPROVED FOUNDATION GROUND CONSISTING OF FRIM, NATURAL SOIL (CH OR GC) IS 5.0 KSF AND THAT OF WEATHERED ROCK IS 10.0 KSF.

FACTOR OF SAFETY SHALL BE 2.0 FOR OVERTURNING AND 1.5 FOR SLIDING.

FOR SEISMIC DESIGN THE FACTOR OF SAFETY SHALL BE 1.5 FOR OVERTURNING AND 1.1 FOR SLIDING.

DESIGN UNIT STRESSES:

ALL CONCRETE FOR LEVELING PAD AND COPING SHALL BE CLASS B OR B-1 WITH F'C = 4000 PSI.

MISCELLANEOUS:

THE MSE WALL SYSTEM SHALL BE BUILT VERTICAL.

THE MSE WALL SYSTEM SHALL BE BUILT IN ACCORDANCE WITH SEC 720.

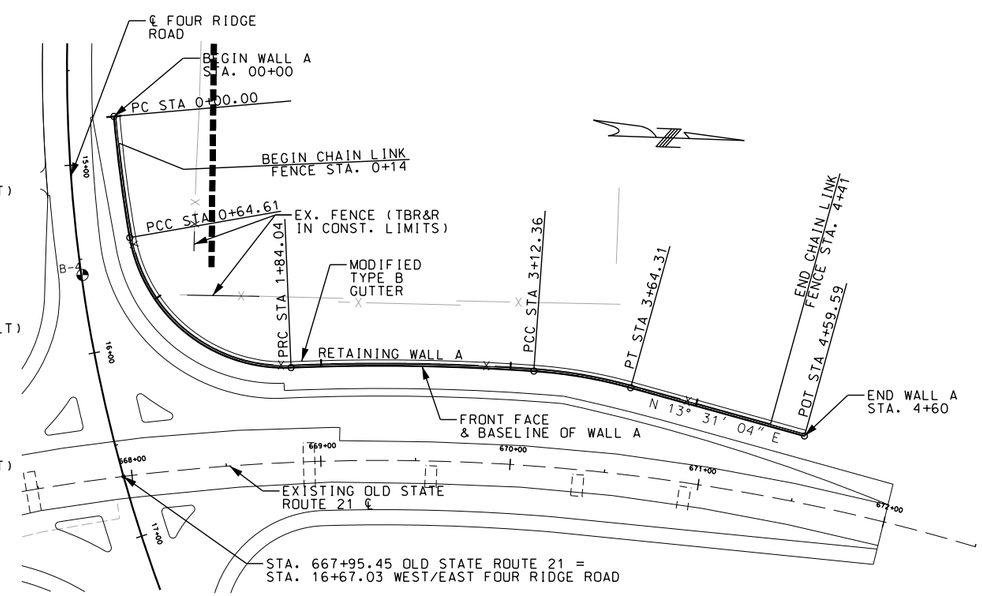
THE MSE WALL SYSTEM SHALL BE A LARGE BLOCK WALL SYSTEM.

PANEL AND COPING (OR CAPSTONE) REINFORCEMENT SHALL BE EPOXY COATED.

A FILTER CLOTH MEETING THE REQUIREMENTS FOR A SEPARATION GEOTEXTILE MATERIAL SHALL BE PLACED BETWEEN THE SELECT GRANULAR BACKFILL FOR STRUCTURAL SYSTEMS AND THE BACKFILL BEING RETAINED BY THE MECHANICALLY STABILIZED EARTH WALL SYSTEM.

COPING SHALL BE REQUIRED ON THIS STRUCTURE. BOND BREAKER (ROOFING FELT OR OTHER APPROVED ALTERNATE) BETWEEN WALL PANEL AND COPING REQUIRED IF COPING IS CAST IN PLACE.

GRANULAR BACKFILL AND CONCRETE LEVELING PAD QUANTITY AND COST IS INCLUDED WITHIN THE MSE WALL PAY ITEM.



CURVE WALL_A_1
PI 0+32.32
PC 0+00.00
PCC 0+64.61
Δ 4° 56' 42.9" (LT)
D 7° 39' 15.8"
L 64.61'
T 32.32'
R 748.53'

CURVE WALL_A_2
PI 1+37.33
PCC 0+64.61
PRC 1+84.04
Δ 82° 26' 52.2" (LT)
D 69° 01' 51.8"
L 119.44'
T 72.72'
R 83.00'

CURVE WALL_A_3
PI 2+48.27
PRC 1+84.04
PCC 3+12.36
Δ 6° 22' 58.9" (RT)
D 4° 58' 27.4"
L 128.32'
T 64.23'
R 1,151.84'

CURVE WALL_A_4
PI 3+38.43
PCC 3+12.36
PT 3+64.31
Δ 11° 30' 25.8" (RT)
D 22° 09' 04.9"
L 51.95'
T 26.06'
R 258.66'

PLAN

⊕ INDICATES LOCATION OF BORINGS.

NOTICE AND DISCLAIMER REGARDING BORING LOG DATA

THE LOCATIONS OF ALL SUBSURFACE BORINGS FOR THIS STRUCTURE ARE SHOWN ON THE PLAN SHEET FOR THIS STRUCTURE. THE BORING DATA FOR ALL LOCATIONS INDICATED ARE SHOWN ON SHEET NO. 13 OR WILL BE AVAILABLE FROM THE PROJECT CONTACT UPON WRITTEN REQUEST. NO GREATER SIGNIFICANCE OR WEIGHT SHOULD BE GIVEN TO THE BORING DATA DEPICTED ON THE PLAN SHEETS THAN IS GIVEN TO THE SUBSURFACE DATA AVAILABLE FROM THE DISTRICT OR ELSEWHERE.

THE COMMISSION DOES NOT REPRESENT OR WARRANT THAT ANY SUCH BORING DATA ACCURATELY DEPICTS THE CONDITIONS TO BE ENCOUNTERED IN CONSTRUCTING THIS PROJECT. A CONTRACTOR ASSUMES ALL RISKS IT MAY ENCOUNTER IN BASING ITS BID PRICES, TIME OR SCHEDULE OF PERFORMANCE ON THE BORING DATA DEPICTED HERE OR ON ANY OTHER DOCUMENTATION NOT EXPRESSLY WARRANTED, WHICH THE CONTRACTOR MAY OBTAIN FROM THE COMMISSION.

✳ WALL CONTRACTOR SHALL SHOW THE FOLLOWING ITEMS ON THE DESIGN DRAWINGS AND/OR ON THE FABRICATOR SHOP DRAWINGS.

1. LEVELING PAD HORIZONTAL.
2. LEVELING PAD LENGTH AND STEP ELEVATIONS SHALL BE BASED ON WALL MANUFACTURER'S RECOMMENDATION. TOP OF LEVELING PAD ELEVATIONS SHALL NOT BE HIGHER THAN THEORETICAL TOP OF LEVELING PAD ELEVATIONS SHOWN ON THESE PLANS.

ESTIMATED QUANTITIES

ITEM	TOTAL
MECHANICALLY STABILIZED EARTH WALL SYSTEMS (LARGE BLOCK) SQ. FOOT	5867

WALL A SHEET
SHEET 1 OF 3

STATE OF MISSOURI
KEVIN JOEL BREHM
NUMBER
PE-2010024490
PROFESSIONAL ENGINEER
04/05/19
KEVIN JOEL BREHM
PROFESSIONAL ENGINEER
LICENSE NO, 2010024490

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 11
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

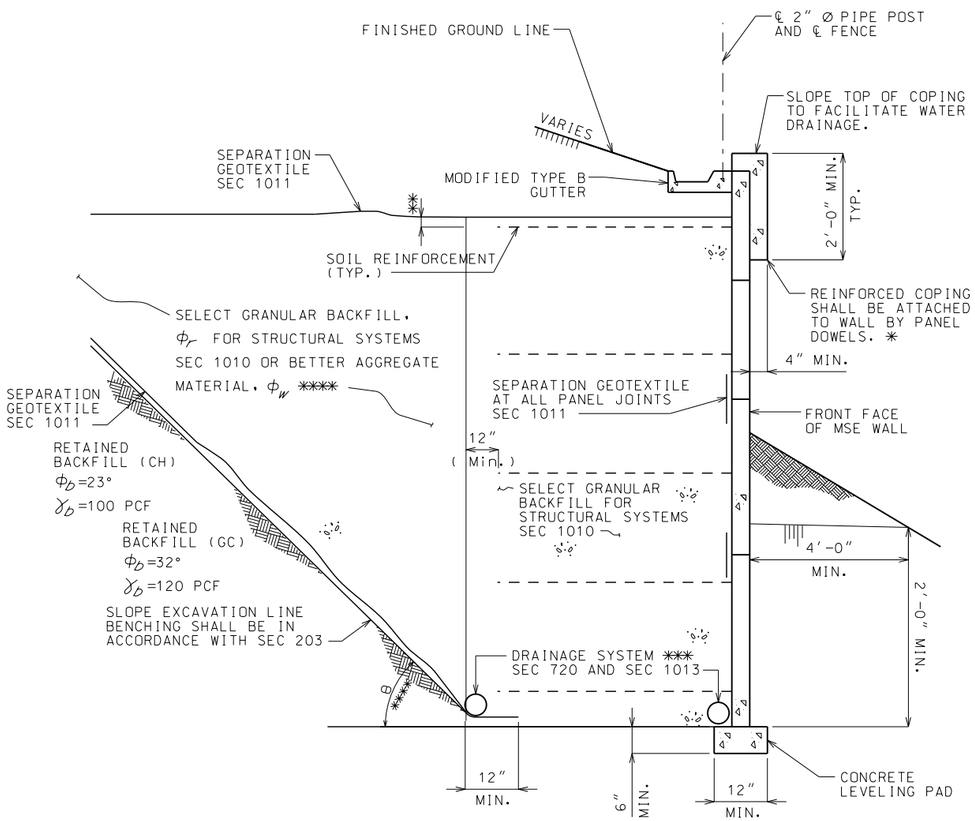
DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.



TYPICAL SECTION THRU
MSE WALL SHOWING FILTER CLOTH

EXCAVATION QUANTITIES AND PAY ITEMS ARE GIVEN ON THE ROADWAY PLANS. EXCAVATION QUANTITIES ARE BASED ON A SOIL REINFORCEMENT LENGTH OF 0.8H FT. THE SOIL REINFORCEMENT LENGTH MAY VARY BASED UPON THE WALL DESIGN SELECTED BY THE CONTRACTOR. PLAN EXCAVATION QUANTITIES WILL BE PAID REGARDLESS OF ANY ACTUAL QUANTITIES REMOVED BASED ON THE SOIL REINFORCEMENT LENGTH AND DESIGN SELECTED.

NOTE:

THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

ALL REFERENCES TO SECTIONS ARE INTENDED TO READ SECTION XXX OF THE MODOT STANDARD SPECIFICATIONS FOR HIGHWAY DESIGN, CURRENT EDITION.

PRWE STANDS FOR PERMANENT RETAINING WALL EASEMENT.

FOR MODIFIED TYPE B GUTTER AND FENCE POST CONNECTION DETAIL, SEE MISSOURI STANDARD PLANS NO. 607.11

✳ INVERTED U-SHAPE REINFORCED CAPSTONE MAY BE USED IN LIEU OF COPING. PANEL DOWELS FOR CAPSTONE SHALL BE REQUIRED AND AS PROVIDED BY MANUFACTURER.

✳✳ TOPMOST LAYER OF REINFORCEMENT SHALL BE FULLY COVERED WITH SELECT GRANULAR BACKFILL FOR STRUCTURAL SYSTEMS, AS APPROVED BY THE WALL MANUFACTURER, BEFORE PLACEMENT OF THE SEPARATION GEOTEXTILE.

✳✳✳ MINIMUM 6" DIAMETER PERFORATED PVC OR PE PIPE, UNLESS LARGER SIZE PIPES ARE REQUIRED BY DESIGN BY WALL MANUFACTURER.

MANUFACTURER SHALL SHOW DRAIN DETAILS ON DESIGN PLANS TO BE SUBMITTED AS SHOWN ON MoDOT MSE WALL PLANS AND/OR ROADWAY PLANS.

CONTRACTOR SHALL MODIFY THE DRAIN DETAILS AS SHOWN IF IT WILL IMPROVE FLOW AS MAY BE THE CASE FOR STEPPED LEVELING PAD, AND FOR AN UNEVEN GROUND LINE (APPROVAL OFTHE ENGINEER REQUIRED).

✳✳✳✳ SELECT GRANULAR BACKFILL SHALL EXTEND A MINIMUM OF 12" BEYOND THE END OF ALL SOIL REINFORCEMENT. WHERE THE ANGLE, θ, BETWEEN THE RETAINED BACKFILL EXCAVATION/FILL LINE AND THE HORIZONTAL IS LESS THAN 90°, THE WEDGE AREA BACKFILL BETWEEN θ AND 90° SHALL BE FILLED WITH SELECT GRANULAR BACKFILL FOR STRUCTURAL SYSTEMS MEETING THE REQUIREMENTS OF SECTION 1010.

- FOR $(45° + \phi_B/2) < \theta \leq 90°$, PROPERTIES FOR RETAINED BACKFILL SHALL BE USED FOR ACTIVE FORCE COMPUTATIONS.

- FOR $\theta \leq (45° + \phi_B/2)$, CONTRACTOR SHALL HAVE THE OPTION TO USE SELECT GRANULAR BACKFILL, ϕ_R, OR BETTER AGGREGATE MATERIAL, ϕ_W FOR ACTIVE FORCE COMPUTATIONS IN THE WEDGE AREA BACKFILL. FOR ACTIVE FORCE COMPUTATIONS, THE ANGLE OF INTERNAL FRICTION FOR WEDGE AREA BACKFILL MATERIAL, ϕ_R OR ϕ_W, SHALL BE LIMITED TO 34° UNLESS DETERMINED OTHERWISE IN ACCORDANCE WITH SECTION 1010. IF ϕ_R OR ϕ_W > 34° IS DESIRED FOR WEDGE AREA BACKFILL THEN TEST REPORT SHALL BE SUBMITTED WITH MANUFACTURER'S DESIGN PLANS. ϕ_R OR ϕ_W SHALL NOT BE GREATER THAN 40° FOR COMPUTATIONS. FINAL CONFIGURATION OF THIS OPTION SHALL BE SENT TO GEOTECHNICAL SECTION FOR A NEW OVERALL GLOBAL STABILITY ANALYSIS. DESIGN ϕ_W SHALL BE SHOWN ON MANUFACTURER'S PLANS IF USED.

THE SLOPE EXCAVATION LINE SHALL BE BENCHED AND SEPARATION GEOTEXTILE SHALL BE PLACED BETWEEN THE RETAINED BACKFILL AND EITHER SELECT GRANULAR BACKFILL OR BETTER AGGREGATE MATERIAL, AND BETWEEN THE SELECT GRANULAR BACKFILL AND BETTER AGGREGATE MATERIAL.

SHOW RANGE OF ACCEPTABLE THETA (θ) ANGLE ON SHOP DRAWINGS WHICH MUST BE CONSISTENT WITH DESIGN COMPUTATIONS AND PROPOSED CONSTRUCTION OF WALL. COORDINATION BETWEEN WALL DESIGNER (MANUFACTURER) AND CONTRACTOR IS REQUIRED BEFORE SHOP DRAWING SUBMITTAL.

WALL A SHEET
SHEET 2 OF 3

STATE OF MISSOURI
KEVIN JOEL BREHM
NUMBER
PE-2010024490
REGISTERED PROFESSIONAL ENGINEER
04/05/19
KEVIN JOEL BREHM
PROFESSIONAL ENGINEER
LICENSE NO, 2010024490

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	12
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

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REV.

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Surface Elevation: 934.09 | Completion Date: 2/1/2017

Datum: NAVD88

SHEAR STRENGTH, tsf: Δ - UU/2 ○ - QU/2 □ - SV (0.5, 1.0, 1.5, 2.0, 2.5)

STANDARD PENETRATION RESISTANCE: ▲ N-VALUE (BLOWS PER FOOT) (ASTM D 1586)

WATER CONTENT, %: PL 10 20 30 40 50 LL

DEPTH IN FEET	DESCRIPTION OF MATERIAL	DRY UNIT WEIGHT (pcf) / SPT BLOWCOUNTS / CORE RECOVERY/RQD	SAMPLES
	Topsoil - 6 inches		
	Very stiff, brown, FAT CLAY - (CH)	101	ST1
	Hard, brown, LEAN CLAY, little weathered rock - CL	4-8-23	SS2
5			
	Hard, reddish-brown, FAT CLAY and weathered rock - CH	7-11-20	SS3
		50/4"	SS4
10			
	Hard, gray and reddish-brown, weathered rock and clay - GC	18-28 -50/3"	SS5
		50/2"	SS6
15			
		50/4"	SS7
		50/3"	SS8
20			
		50/3"	SS9
	Highly to severely weathered LIMESTONE, some chert	50/4"	SS10
25			
		50/3"	SS11
		50/3"	SS12
30			
		50/1"	SS13
		50/3"	SS14
35	Boring terminated at 35 feet.		

GROUNDWATER DATA

X FREE WATER NOT ENCOUNTERED DURING DRILLING

DRILLING DATA

___ AUGER 3 3/4" HOLLOW STEM
WASHBORING FROM ___ FEET
BLS DRILLER DWJ LOGGER
CME 55TRK DRILL RIG
HAMMER TYPE Auto
HAMMER EFFICIENCY 88 %

REMARKS:

Drawn by: AGB	Checked by: SHN	App'vd. by: CKK
Date: 2/16/2017	Date: 2/24/17	Date: 3/22/17

GEOTECHNOLOGY INC FROM THE GROUND UP

Intersection Improvements
Old State Route 21 at Four Ridge Road
Jefferson County, Missouri

LOG OF BORING: B-4

Project No. J027907.01

NOTE: STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARIES BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL. GRAPHIC LOG FOR ILLUSTRATION PURPOSES ONLY.

LOG OF BORING 2002 WL J027907.01 - OLD ROUTE 21.GPJ 00 CLONE ME.GPJ 2/24/17

WALL A SHEET
SHEET 3 OF 3

STATE OF MISSOURI — KEVIN JOEL BREHM — NUMBER PE-2010024490 — REGISTERED PROFESSIONAL ENGINEER — 04/05/19

KEVIN JOEL BREHM
PROFESSIONAL ENGINEER
LICENSE NO. 2010024490

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 13
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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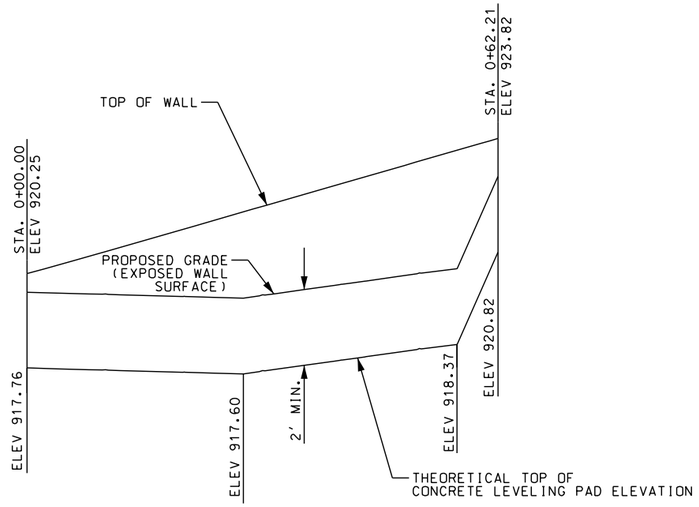


DEVELOPED ELEVATION

NOTE: LEVELING PAD NOT SHOWN FOR CLARITY.

ESTIMATED QUANTITIES FOR MSE WALL	
ITEM	TOTAL
MECHANICALLY STABILIZED EARTH WALL SYSTEMS (SMALL BLOCK) SQ. FOOT	251

GENERAL NOTES:
DESIGN SPECIFICATIONS:
2002 AASHTO LFD (17TH ED.)
STANDARD SPECIFICATIONS (SECTION 5, ASD DESIGN)

ALL CONCRETE FOR LEVELING PAD SHALL BE CLASS B OR B-1 WITH f'c = 4,000 PSI.

THE MSE WALL SYSTEM SHALL BE BUILT IN ACCORDANCE WITH SEC. 720.

THE MSE WALL SYSTEM SHALL BE A SMALL BLOCK WALL SYSTEM.

FACTOR OF SAFETY SHALL BE 2.0 FOR OVERTURNING, 1.5 FOR SLIDING.

THE SUBGRADE FOR THE RETAINING WALL AND REINFORCEMENT ZONE SHALL BE THOROUGHLY COMPACTED USING A VIBRATING PLATE MOUNTED ON A BACKHOE. PRIOR TO PLACING STRUCTURAL ELEMENTS, THE SUBGRADE SHALL BE SCARIFIED TO A DEPTH OF 6 INCHES, THE MOISTURE CONTENT ADJUSTED TO NEAR ITS OPTIMUM MOISTURE CONTENT, AND THE SUBGRADE RECOMPACTED.

THE ALLOWABLE BEARING PRESSURE FOR UNIMPROVED GROUND 2.0 KSF.

ACTUAL $\Phi_r \geq 34°$ FOR THE SELECT GRANULAR BACKFILL (REINFORCED BACKILL AND WEDGE AREA BACKFILL) FOR STRUCTURAL SYSTEMS.

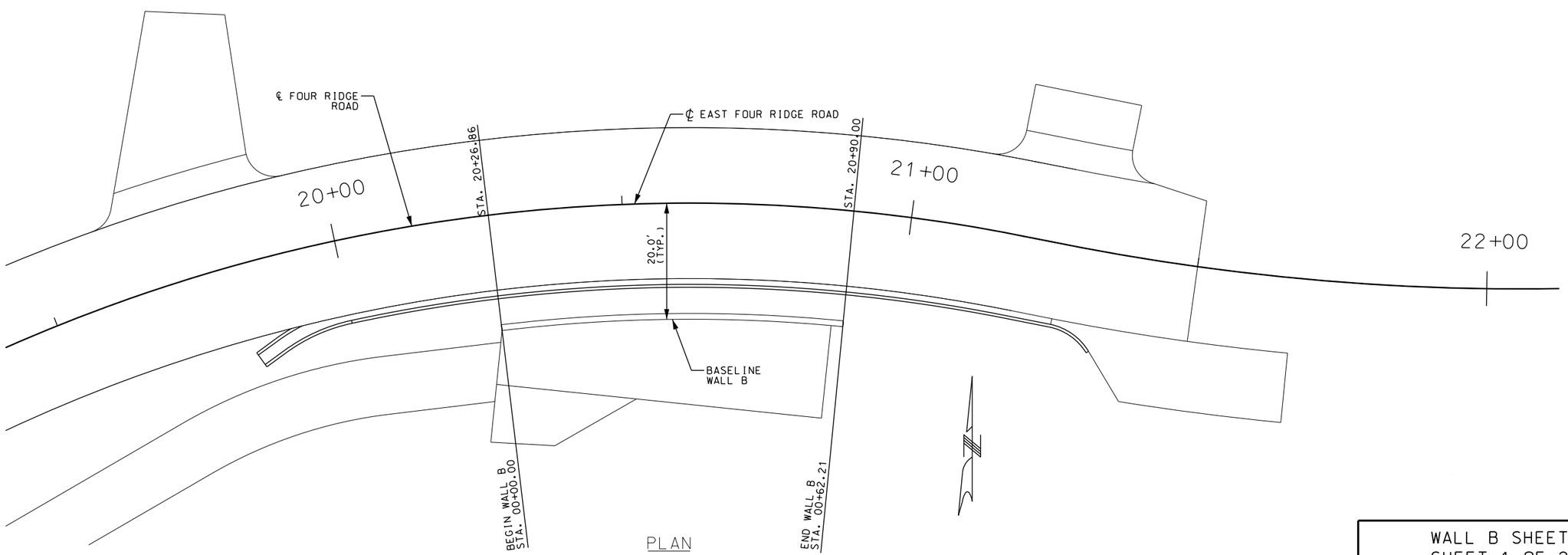
DESIGN $\Phi_r = 34°$ FOR THE SELECT GRANULAR BACKFILL (REINFORCED BACKFILL) ONLY FOR STRUCTURAL SYSTEMS.

A FILTER CLOTH MEETING THE REQUIREMENTS FOR A SEPARATION GEOTEXTILE MATERIAL SHALL BE PLACED BETWEEN THE SELECT GRANULAR BACKFILL FOR STRUCTURAL SYSTEMS AND THE BACKFILL BEING RETAINED BY THE MECHANICALLY STABILIZED EARTH WALL SYSTEM.

BASELINE IS AT FRONT FACE OF WALL AT THE BOTTOM. THE TOP AND BOTTOM ELEVATIONS ARE GIVEN FOR A VERTICAL WALL. IF A BATTERED SMALL BLOCK WALL SYSTEM IS USED, THE HEIGHT OF THE WALL SHALL BE ADJUSTED AS NECESSARY TO FIT THE GROUND SLOPE AND THE CONCRETE LEVELING PAD SHALL BE ADJUSTED AS NECESSARY TO ACCOUNT FOR THE WALL BATTER.

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO COORDINATE CONSTRUCTION OF THE WALL WITH ROADWAY AND ENSURE THAT THE ROADWAY CONSTRUCTION, RESULTING OR EXISTING OBSTRUCTIONS, SHALL NOT IMPACT THE CONSTRUCTION OR PERFORMANCE OF THE WALL.

ALL RETAINING WALL MATERIALS SHALL BE FROM MODOT'S PREQUALIFIED LIST.



PLAN

WALL B SHEET
SHEET 1 OF 2

STATE OF MISSOURI
KEVIN JOEL BREHM
NUMBER
PE-2010024490
REGISTERED PROFESSIONAL ENGINEER
04/05/19
KEVIN JOEL BREHM
PROFESSIONAL ENGINEER
LICENSE NO, 2010024490

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 14
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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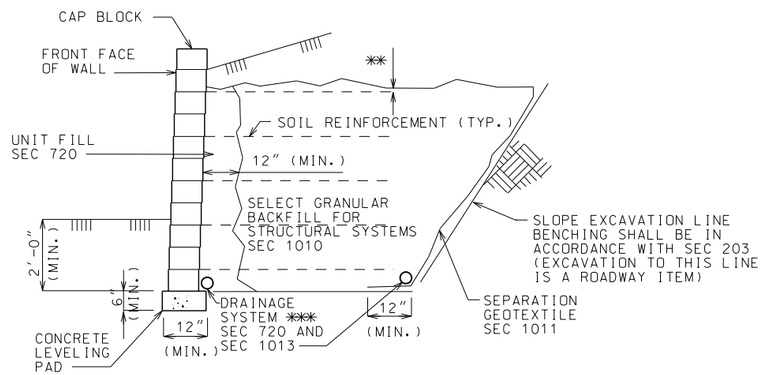
.	.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

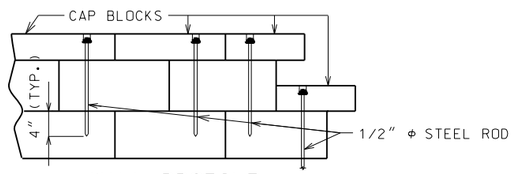
JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

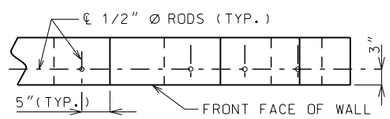
REV.



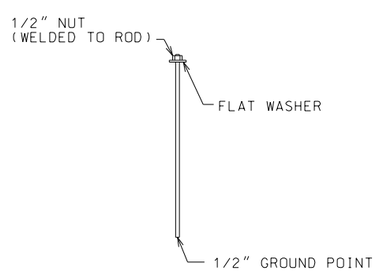
TYPICAL SECTION THRU SMALL BLOCK WALL



WALL PROFILE



WALL PLAN



DETAILS OF 1/2" THREADED ROD OR REINFORCING ROD

NOTES:

THIS DRAWING IS NOT TO SCALE. FOLLOW DIMENSIONS.

HOLES SHALL BE 5/8" ROUND AND EXTENDED 4" INTO THE THIRD LAYER OF BLOCKS, RECESSED 2" DEEP BY 1 1/2" ROUND.

RODS OR REINFORCING BARS SHALL BE SECURED BY AN APPROVED RESIN ANCHOR SYSTEM IN ACCORDANCE WITH SEC 1039.

RECESS HOLE SHALL BE BACKFILLED WITH NON-SHRINK CEMENT GROUT.

✱ TOPMOST LAYER OF REINFORCEMENT SHALL BE FULLY COVERED WITH SELECT GRANULAR BACKFILL FOR STRUCTURAL SYSTEMS, AS APPROVED BY THE WALL MANUFACTURER, BEFORE PLACEMENT OF THE SEPARATION GEOTEXTILE.

✱✱ MINIMUM 6" DIAMETER PERFORATED PVC OR PE PIPE, UNLESS LARGER SIZE PIPES ARE REQUIRED BY DESIGN BY WALL MANUFACTURER.

MANUFACTURER SHALL SHOW DRAIN DETAILS ON DESIGN PLANS TO BE SUBMITTED AS SHOWN ON MoDOT MSE WALL PLANS AND/OR ROADWAY PLANS.

CONTRACTOR SHALL MODIFY THE DRAIN DETAILS AS SHOWN IF IT WILL IMPROVE FLOW AS MAY BE THE CASE FOR STEPPED LEVELING PAD, AND FOR AN UNEVEN GROUND LINE (APPROVAL OF THE ENGINEER REQUIRED).

WALL B SHEET
SHEET 2 OF 2

STATE OF MISSOURI
KEVIN JOEL BREHM
NUMBER
PE-2010024490
REGISTERED PROFESSIONAL ENGINEER
04/05/19
KEVIN JOEL BREHM
PROFESSIONAL ENGINEER
LICENSE NO, 2010024490

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	15
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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.	.
.	.
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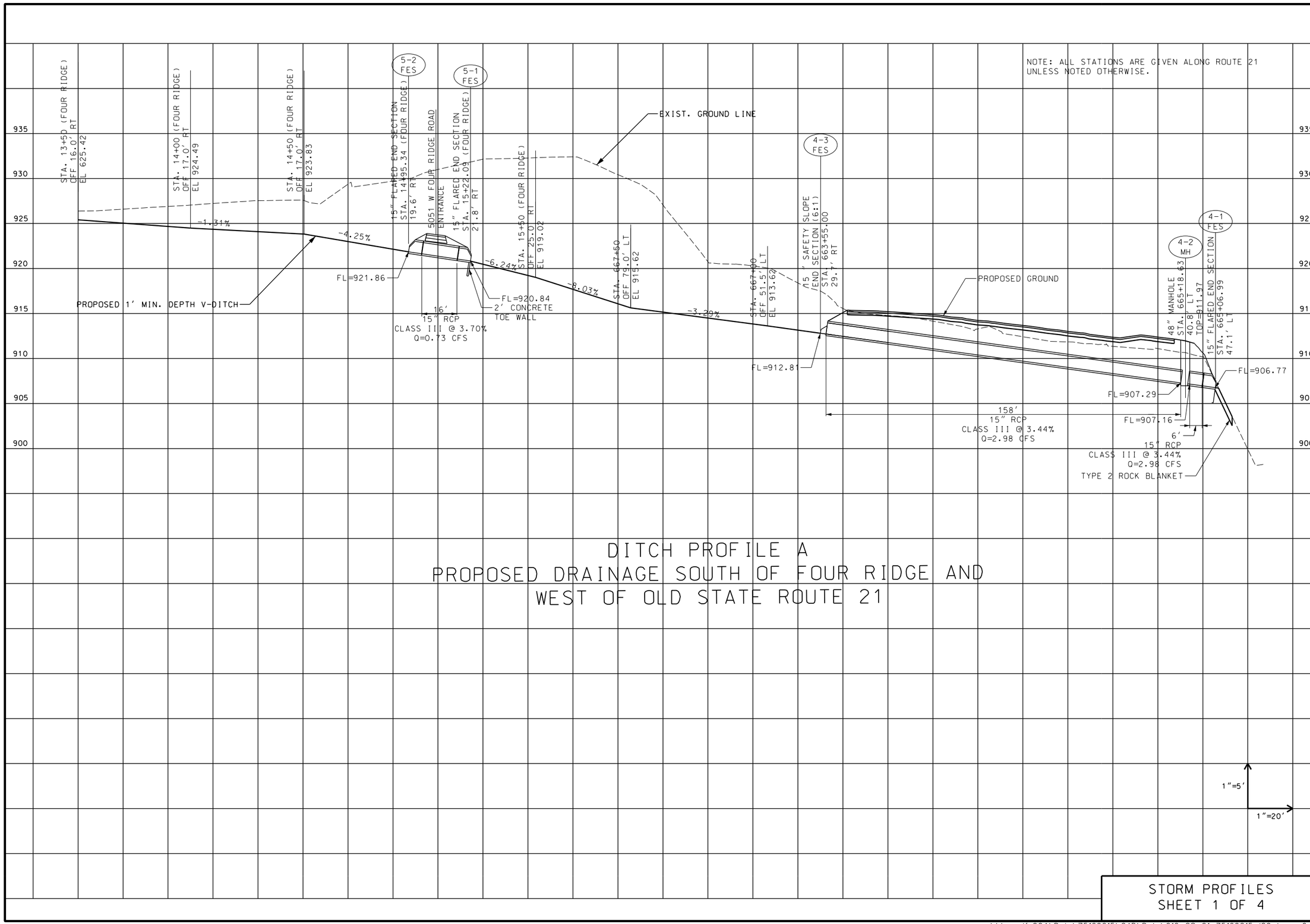
.	.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

REV.



DITCH PROFILE A
PROPOSED DRAINAGE SOUTH OF FOUR RIDGE AND WEST OF OLD STATE ROUTE 21

STORM PROFILES
SHEET 1 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	16
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

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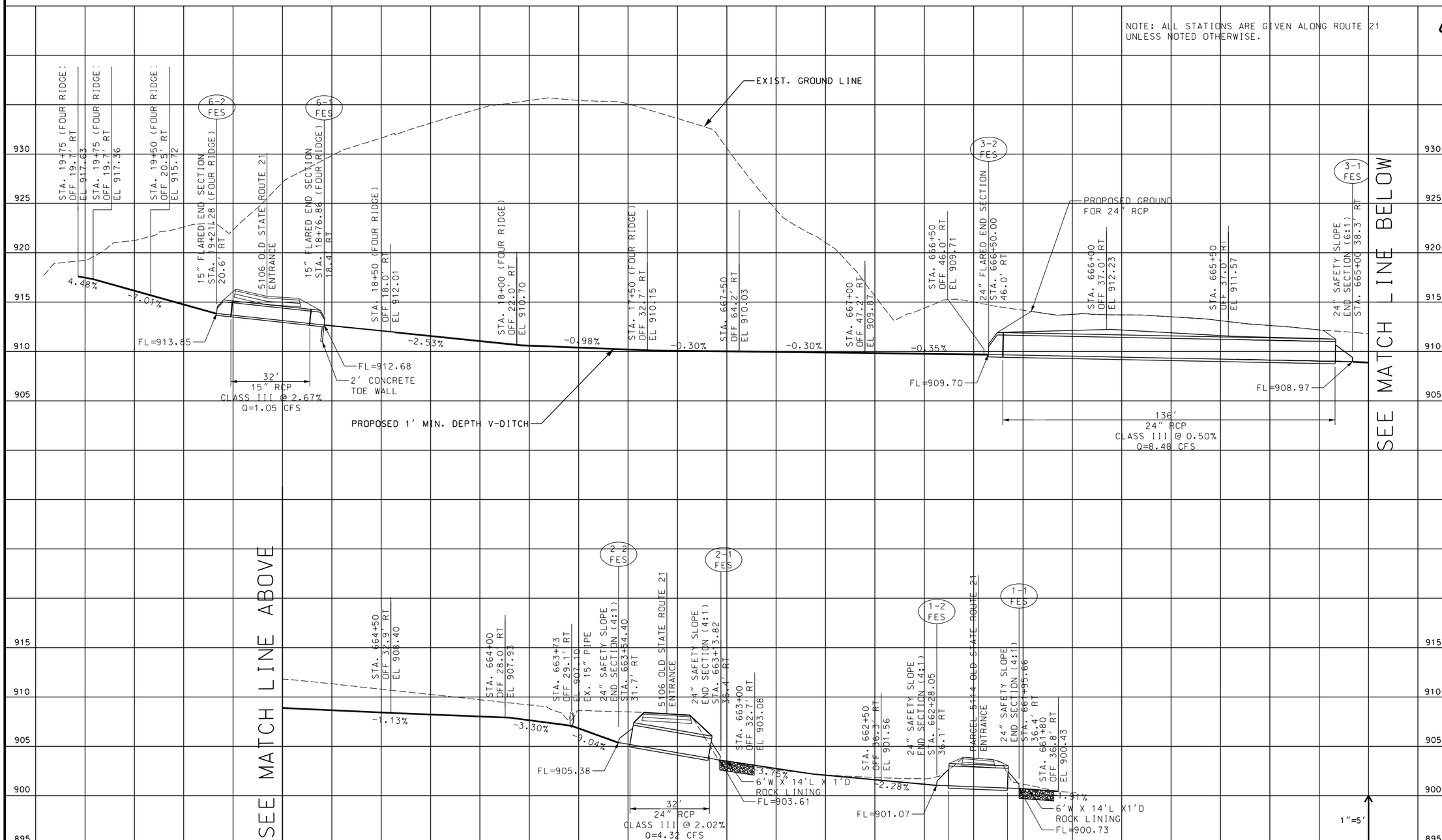
HRGreen

REV.

NOTE: ALL STATIONS ARE GIVEN ALONG ROUTE 21 UNLESS NOTED OTHERWISE.



DITCH PROFILE B
PROPOSED DRAINAGE SOUTH OF FOUR RIDGE AND EAST OF OLD STATE ROUTE 21

STORM PROFILES
SHEET 2 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	17
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
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HRGreen

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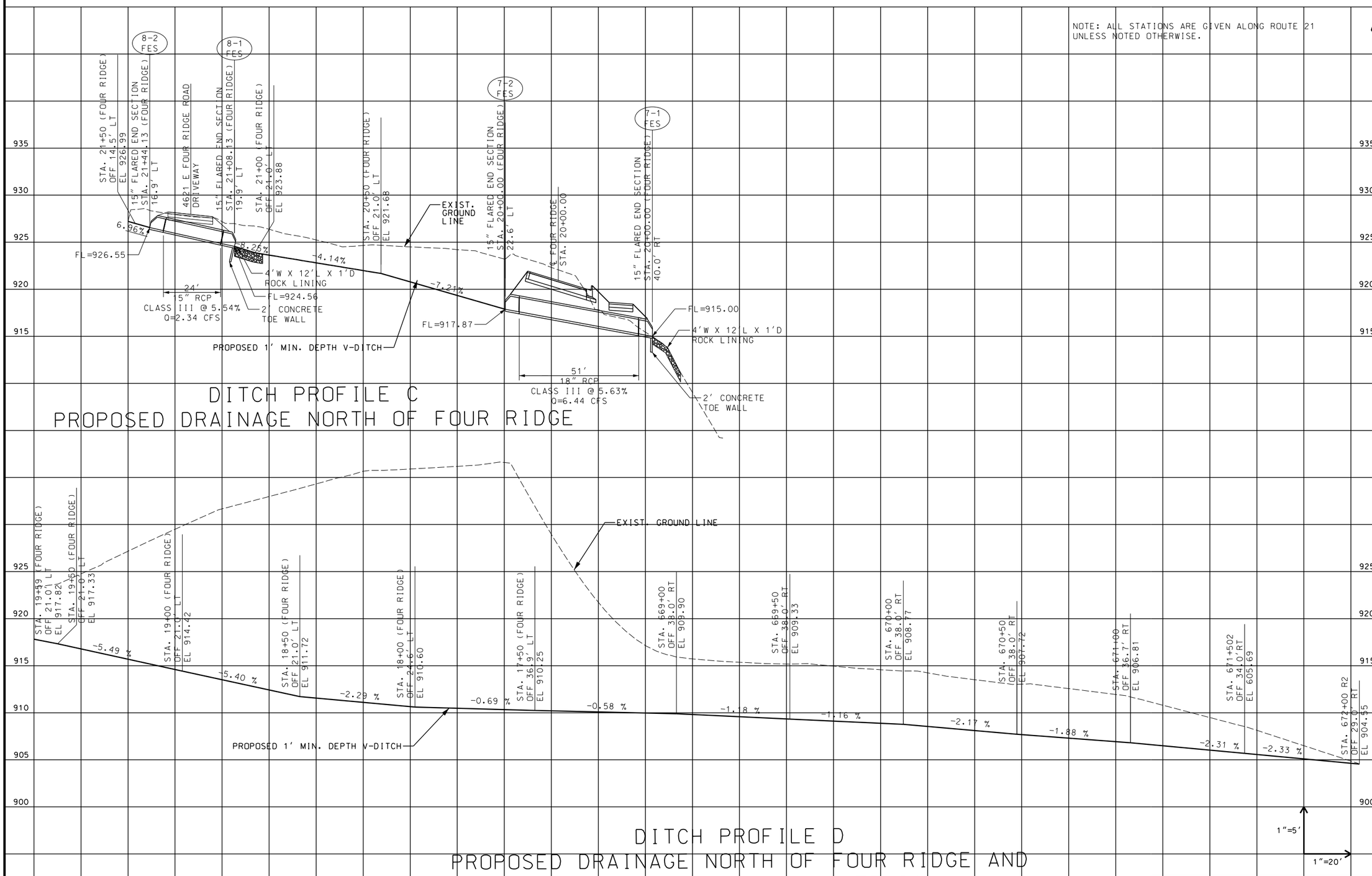

DITCH PROFILE C
PROPOSED DRAINAGE NORTH OF FOUR RIDGE

DITCH PROFILE D
PROPOSED DRAINAGE NORTH OF FOUR RIDGE AND
EAST OF OLD STATE ROUTE 21

STORM PROFILES
SHEET 3 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	18
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
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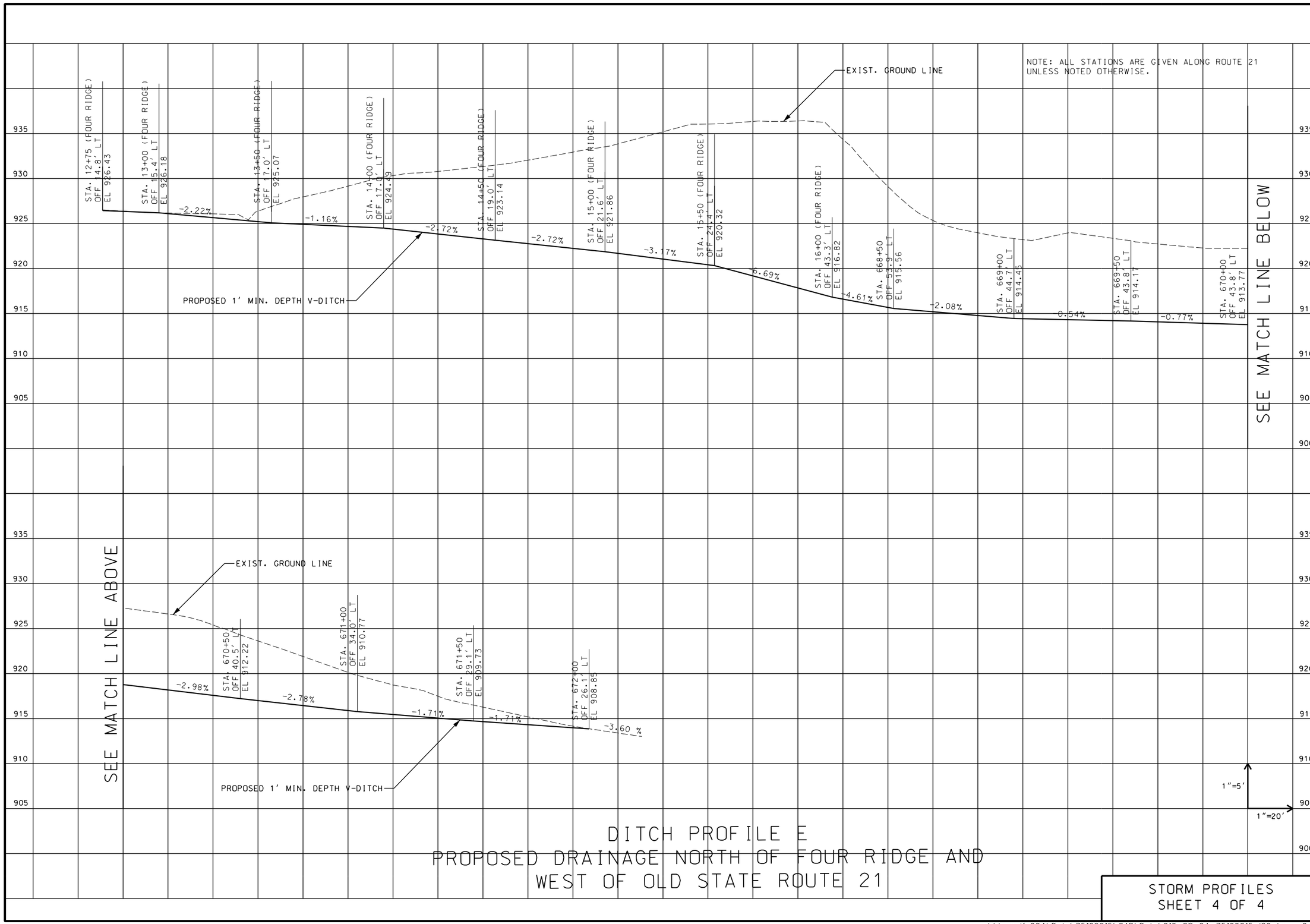
REV.



DITCH PROFILE E
PROPOSED DRAINAGE NORTH OF FOUR RIDGE AND WEST OF OLD STATE ROUTE 21

STORM PROFILES
SHEET 4 OF 4

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	19
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
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PHYSICAL ADDRESS:
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SUITE 205
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HRGreen

REV.

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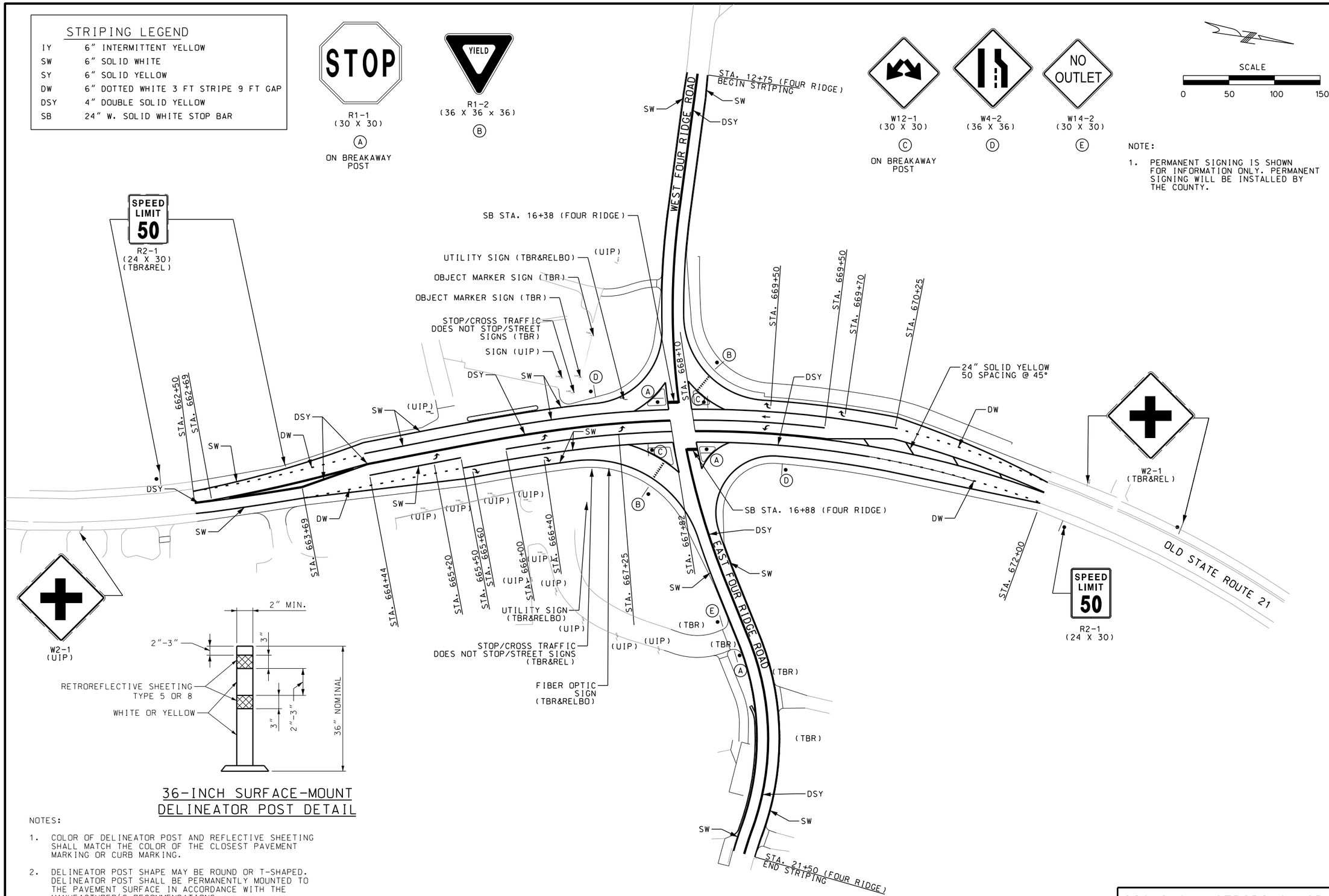
STRIPING LEGEND

IY	6" INTERMITTENT YELLOW
SW	6" SOLID WHITE
SY	6" SOLID YELLOW
DW	6" DOTTED WHITE 3 FT STRIPE 9 FT GAP
DSY	4" DOUBLE SOLID YELLOW
SB	24" W. SOLID WHITE STOP BAR



36-INCH SURFACE-MOUNT DELINEATOR POST DETAIL

NOTES:

1. COLOR OF DELINEATOR POST AND REFLECTIVE SHEETING SHALL MATCH THE COLOR OF THE CLOSEST PAVEMENT MARKING OR CURB MARKING.
2. DELINEATOR POST SHAPE MAY BE ROUND OR T-SHAPED. DELINEATOR POST SHALL BE PERMANENTLY MOUNTED TO THE PAVEMENT SURFACE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
3. SEE PLAN SHEETS FOR DELINEATOR LOCATIONS.

NOTE:

1. PERMANENT SIGNING IS SHOWN FOR INFORMATION ONLY. PERMANENT SIGNING WILL BE INSTALLED BY THE COUNTY.

SIGNING & STRIPING (SP)
SHEET 1 OF 1

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	20
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

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DEPARTMENT OF PUBLIC WORKS
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PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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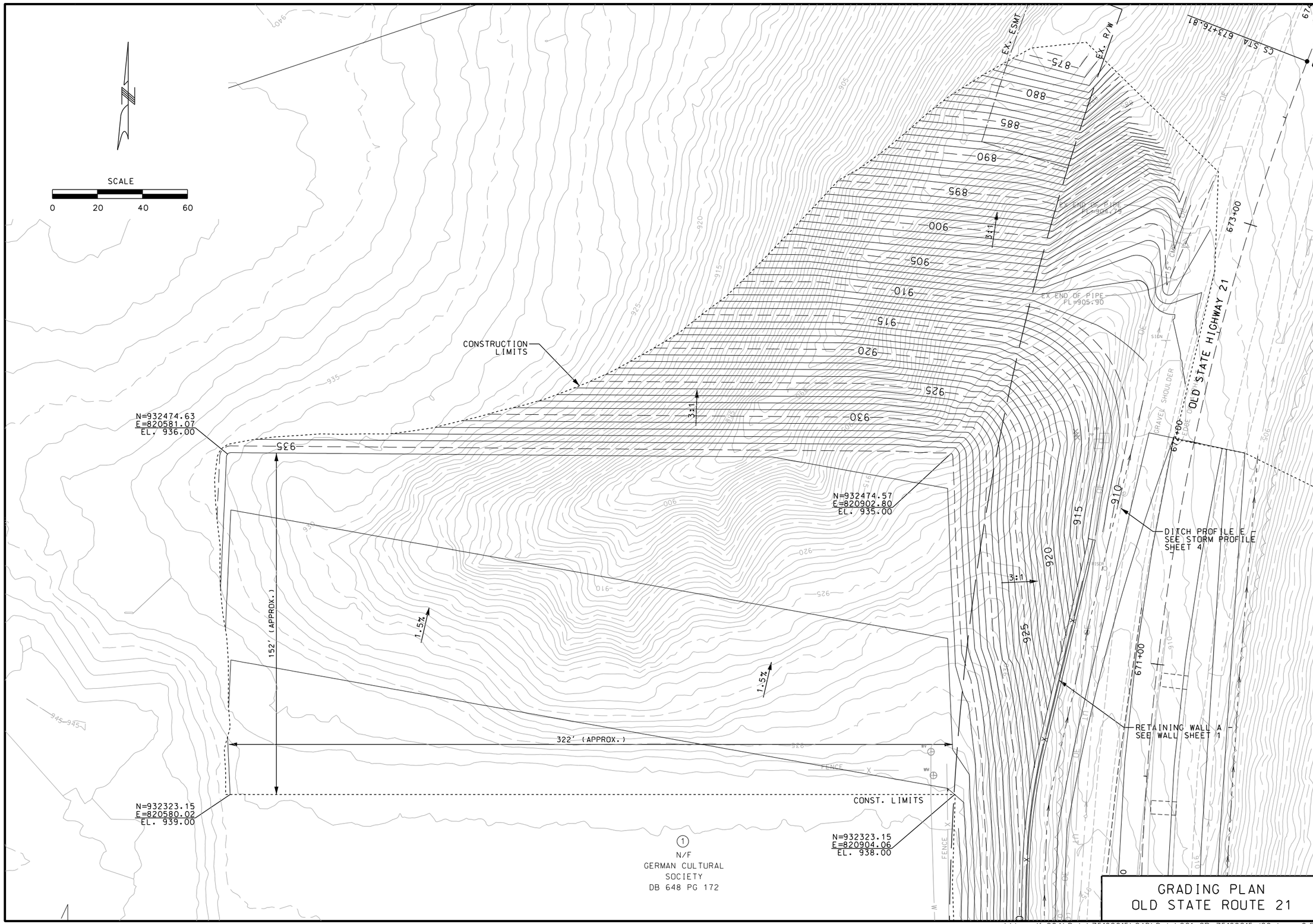
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.



GRADING PLAN
OLD STATE ROUTE 21

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	21
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

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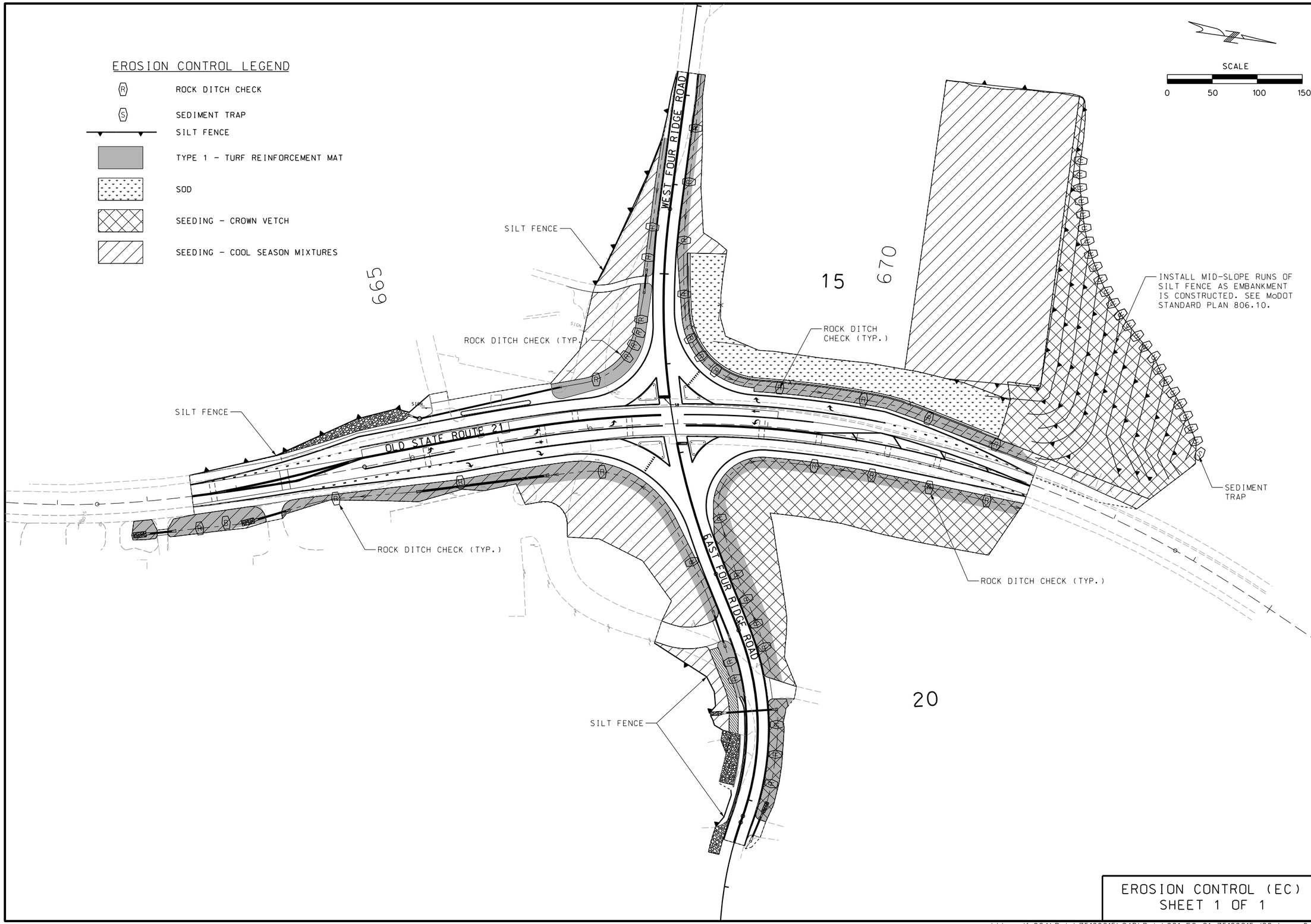
CORPORATE LICENSE #2002006608
HRGreen

REV.

EROSION CONTROL LEGEND

- ROCK DITCH CHECK
- SEDIMENT TRAP
- SILT FENCE
- TYPE 1 - TURF REINFORCEMENT MAT
- SOD
- SEEDING - CROWN VETCH
- SEEDING - COOL SEASON MIXTURES



EROSION CONTROL (EC)
SHEET 1 OF 1

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	22
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
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PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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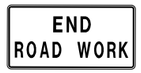
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

TRAFFIC CONTROL SIGN LEGEND

W020-1
(36 X 36)
1



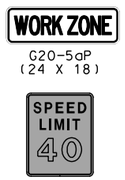
G020-2
(36 X 18)
2

W021-5
(36 X 36)
3

R11-2
(48 X 30)
4

W020-7A
(36 X 36)
5

W5-1
(36 X 36)
6



G20-5aP
(24 X 18)

R2-1
(24 X 30)
7

W08-17
(36 X 36)

W08-17P
(24 X 18)
8

R1-1
(30 X 30)
9

W020-4
(36 X 36)
10

NOTE: TEMPORARY SPEED LIMIT SIGNS SHALL BE ORANGE WITH BLACK LETTERS

R11-4
(60 X 30)
11

SP-1
(60 X 24)
12

W08-6C
15

W08-12
36

W08-11
35

TRAFFIC CONTROL LEGEND

- SIGN - (SINGLE SIDED)
- SIGN - (DOUBLE SIDED)
- FLAGGER
- CHANNELIZER
- TEMPORARY TRAFFIC BARRIER (TTB)
- MOVABLE BARRICADE (TYPE 3)
- CHANGEABLE MESSAGE SIGN (CMS)
- AUTOMATED FLAGGER ASSIST. DEVICE (AFAD) WITH TWO SECTION SIGNAL FACE
- TEMPORARY LANE USAGE (ACTIVE WORK)
- PERMANENT LANE USAGE (NON-ACTIVE WORK)
- DIRECTIONAL INDICATOR BARRICADE (DIB)
- FLASHING ARROW PANEL
- ATTENUATOR

DSY = 4 IN. DOUBLE SOLID YELLOW PAINT

SY = 4 IN. SOLID YELLOW PAINT

SW = 4 IN. SOLID WHITE PAINT

BY = 4 IN. BROKEN YELLOW PAINT

SB = 24 IN. WHITE REMOVABLE MARKING TAPE (STOP BAR)

DSYT = 4 IN. DOUBLE SOLID YELLOW TAPE

SYT = 4 IN. SOLID YELLOW TAPE

SWT = 4 IN. SOLID WHITE TAPE

RECOMMENDED ADVANCE WARNING SIGN MINIMUM SPACING		
POSTED SPEED LIMIT (MPH)	SIGN SPACING (FT)	
	UNDIVIDED HIGHWAY	DIVIDED HIGHWAY
40 TO 45	350	500
50 TO 55	500	1000
SIGN SPACING MAY BE ADJUSTED, NORMALLY BY INCREASING IT, TO ACCOMMODATE FIELD CONDITIONS AND VISIBILITY.		

RECOMMENDED LENGTH OF LONGITUDINAL BUFFER SPACES	
POSTED SPEED PRIOR TO CONSTRUCTION (MPH)	LENGTH (FT)
40 TO 45	400
50 TO 55	560

RECOMMENDED TAPER LENGTH AND SPACING				
POSTED SPEED LIMIT[1] (MPH)	TAPER LENGTH (FT)[2]		CHANNELIZING SPACING (FT)[3]	
	SHOULDER[4]	LANE[5]	TAPERS	BUFFER/WORK AREAS
40 TO 45	150	540	40[6]	80[6]
50 TO 55	185	660	50[7]	80[7]

[1]SPEED LIMIT IS BASED ON POSTED SPEED LIMIT.
[2]TAPER LENGTHS MAY BE ADJUSTED TO ACCOMMODATE CROSSROADS, CURVES, INTERSECTIONS, RAMPS, OR OTHER GEOMETRIC FEATURES.
[3]CHANNELIZER SPACING MAY BE REDUCED TO DISCOURAGE TRAFFIC ENCROACHMENT.
[4]BASED ON 10 FOOT SHOULDER WIDTH.
[5]BASED ON 12 FOOT LANE WIDTH.
[6]SPACING REDUCED TO $\frac{1}{2}$ AT INTERSECTIONS.
[7]SPACING MAY BE REDUCED BY $\frac{1}{2}$ AT INTERSECTIONS.

TAPER LENGTH (L)

$L = W \times S$ FOR 40 MPH OR MORE

L = TAPER LENGTH IN FEET
W = LATERAL SHIFT IN FEET
S = POSTED SPEED PRIOR TO ROAD WORK IN MPH

NOTES:

1. FLAGGING OPERATIONS WILL BE ALLOWED DURING DAYLIGHT HOURS ONLY.
2. NO DIRECT PAYMENT WILL BE MADE FOR RELOCATING SIGNS.
3. NO DIRECT PAYMENT WILL BE MADE FOR COVERING SIGNS.
4. COMPLETELY COVER OR REMOVE ALL EXISTING SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL SIGNING.
5. COVER OR REMOVE ALL SIGNS WHEN NOT IN USE.
6. USE IN PLACE ALL EXISTING SIGNS WHICH DO NOT CONFLICT WITH THIS PLAN.
7. NO DIRECT PAYMENT WILL BE MADE FOR ANY TEMPORARY PIPE PLUGS, TEMPORARY PIPES, TEMPORARY INLET COVERS, TEMPORARY DITCHING, OR RELOCATION OF EXISTING DRIVEWAY/ENTRANCE CULVERTS, DETERMINED TO BE REQUIRED IN ORDER TO CONSTRUCT THE PROJECT.
8. ACCESS TO PRIVATE ENTRANCES AND COMMERCIAL ENTRANCES SHALL BE MAINTAINED AT ALL TIMES, UNLESS OTHERWISE SHOWN ON THESE PLANS.
9. SPACINGS SHOWN MAY BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS
10. NO DIRECT PAYMENT WILL BE MADE FOR TEMPORARY TRAFFIC BARRIER HEIGHT TRANSITIONS.
11. THE TOP LIFT BP-1 SHALL BE INSTALLED ONCE ALL THE BASE LIFTS ARE INSTALLED FOR ALL PHASES.
12. ALL SIGNS SHOWN ON THESE PLANS SHALL BE SPACED AT 500-FEET APART UNLESS OTHERWISE SHOWN ON PLANS. THERE ARE SOME INSTANCES WHERE SIGNS MAY APPEAR TO BE PLACED CLOSER THAN SUCH, BUT THIS IS DUE ONLY TO AVAILABLE ROOM ON THE PLANS.
13. FOR ALL INSTANCES DURING CONSTRUCTION, CONTRACTOR IS REQUIRED TO FOLLOW THE PAVEMENT EDGE TREATMENT DETAILS LOCATED IN THE MoDOT STANDARD PLANS FOR HIGHWAY CONSTRUCTION, SHEETS 619-10, WHICH CAN BE FOUND ON MoDOT'S WEB SITE.
14. PLACE W08-6C (SIGN NO. 15) APPROXIMATELY 320 FEET IN ADVANCE OF CONSTRUCTION ENTRANCE FOR OLD STATE ROUTE 21 AND APPROXIMATELY 170 FEET IN ADVANCE OF CONSTRUCTION ENTRANCE OFF FOUR RIDGE ROAD.

TRAFFIC CONTROL PLAN
GENERAL DETAILS (TC)
SHEET 1 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED 4/5/2019
ROUTE 21 | STATE MO
DISTRICT SL | SHEET NO. 23
COUNTY JEFFERSON
JOB NO. STP-5462(608)
CONTRACT ID.
PROJECT NO. 75160015
BRIDGE NO.

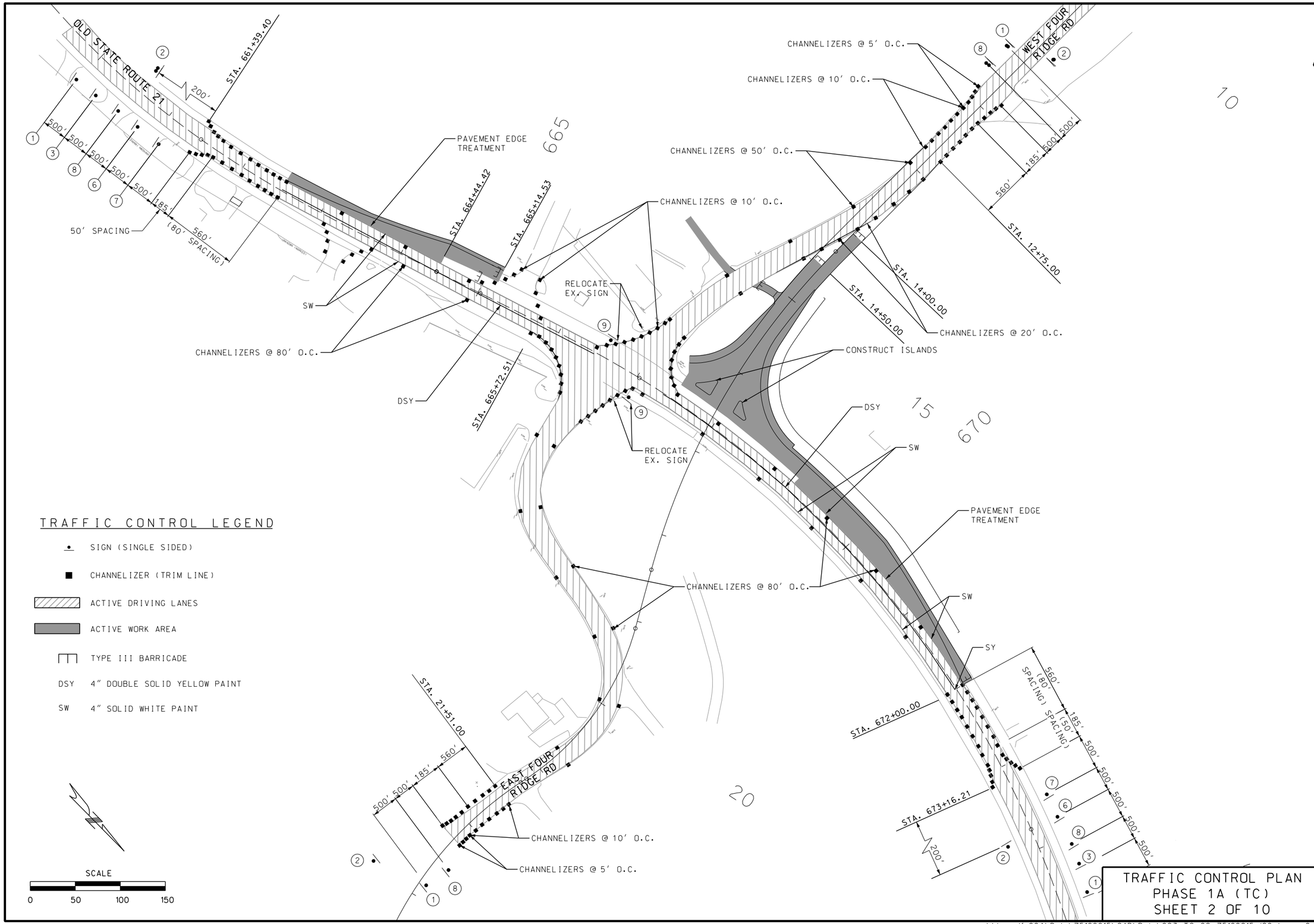
DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER (TRIM LINE)
- ACTIVE DRIVING LANES
- ACTIVE WORK AREA
- TYPE III BARRICADE
- DSY 4" DOUBLE SOLID YELLOW PAINT
- SW 4" SOLID WHITE PAINT

TRAFFIC CONTROL PLAN
PHASE 1A (TC)
SHEET 2 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	24
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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.	.
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.	.

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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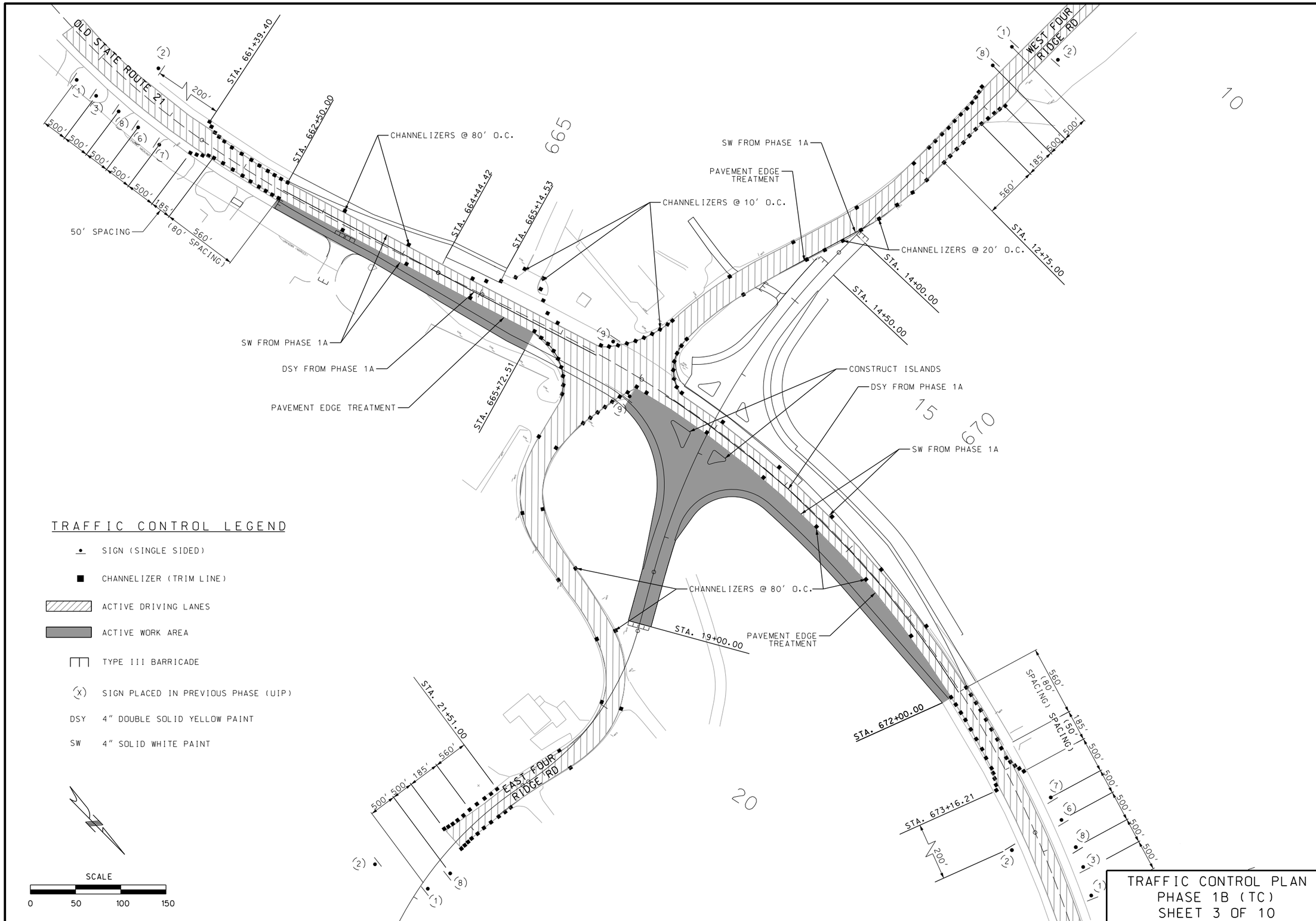
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER (TRIM LINE)
- ACTIVE DRIVING LANES
- ACTIVE WORK AREA
- TYPE III BARRICADE
- (X) SIGN PLACED IN PREVIOUS PHASE (UIP)
- DSY 4" DOUBLE SOLID YELLOW PAINT
- SW 4" SOLID WHITE PAINT

SCALE

0 50 100 150

TRAFFIC CONTROL PLAN
PHASE 1B (TC)
SHEET 3 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 25
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

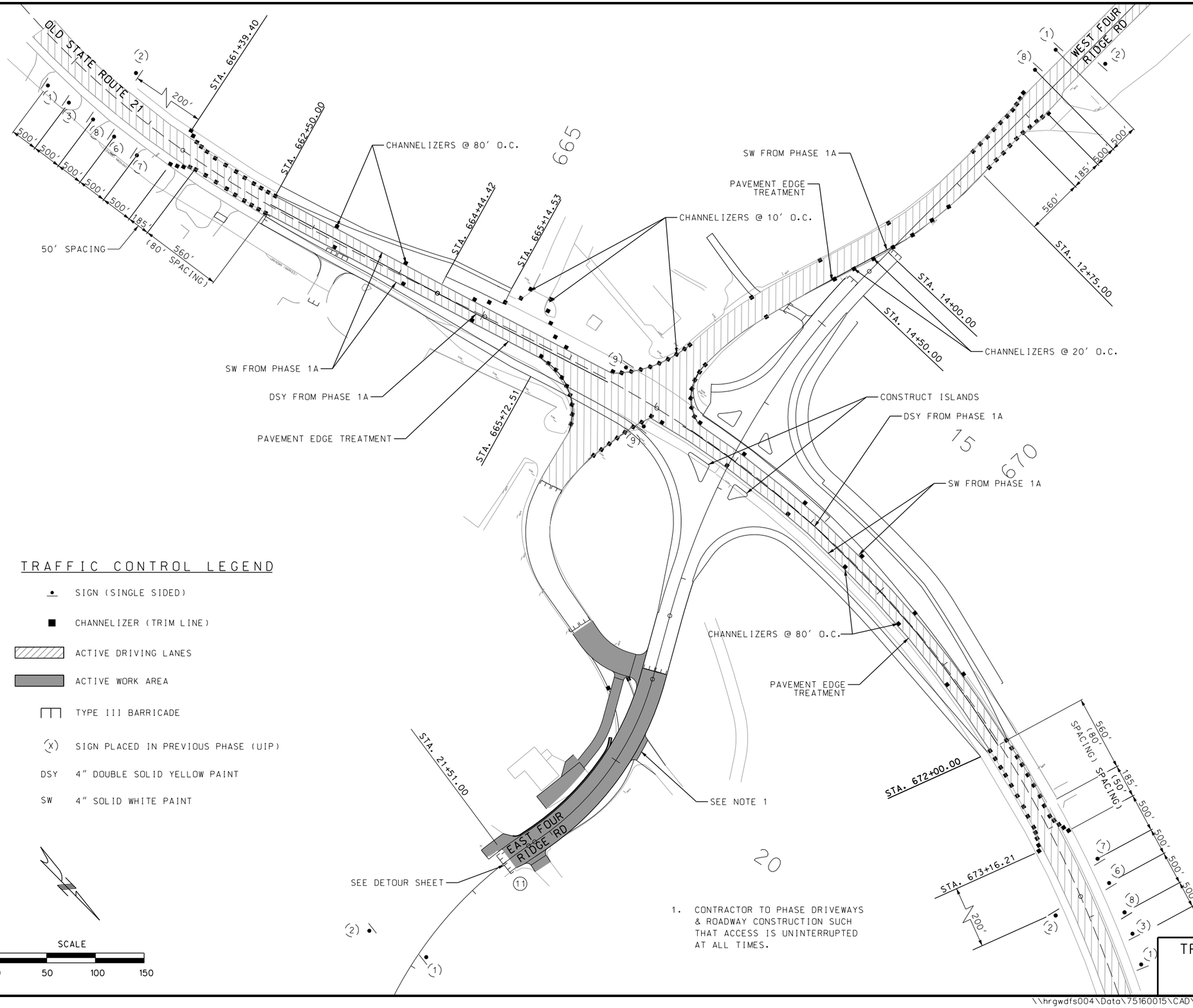
DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.



TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER (TRIM LINE)
- ACTIVE DRIVING LANES
- ACTIVE WORK AREA
- TYPE III BARRICADE
- (X) SIGN PLACED IN PREVIOUS PHASE (UIP)
- DSY 4" DOUBLE SOLID YELLOW PAINT
- SW 4" SOLID WHITE PAINT

SCALE

0 50 100 150

1. CONTRACTOR TO PHASE DRIVEWAYS & ROADWAY CONSTRUCTION SUCH THAT ACCESS IS UNINTERRUPTED AT ALL TIMES.

TRAFFIC CONTROL PLAN
PHASE 1C (TC)
SHEET 4 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	26
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
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PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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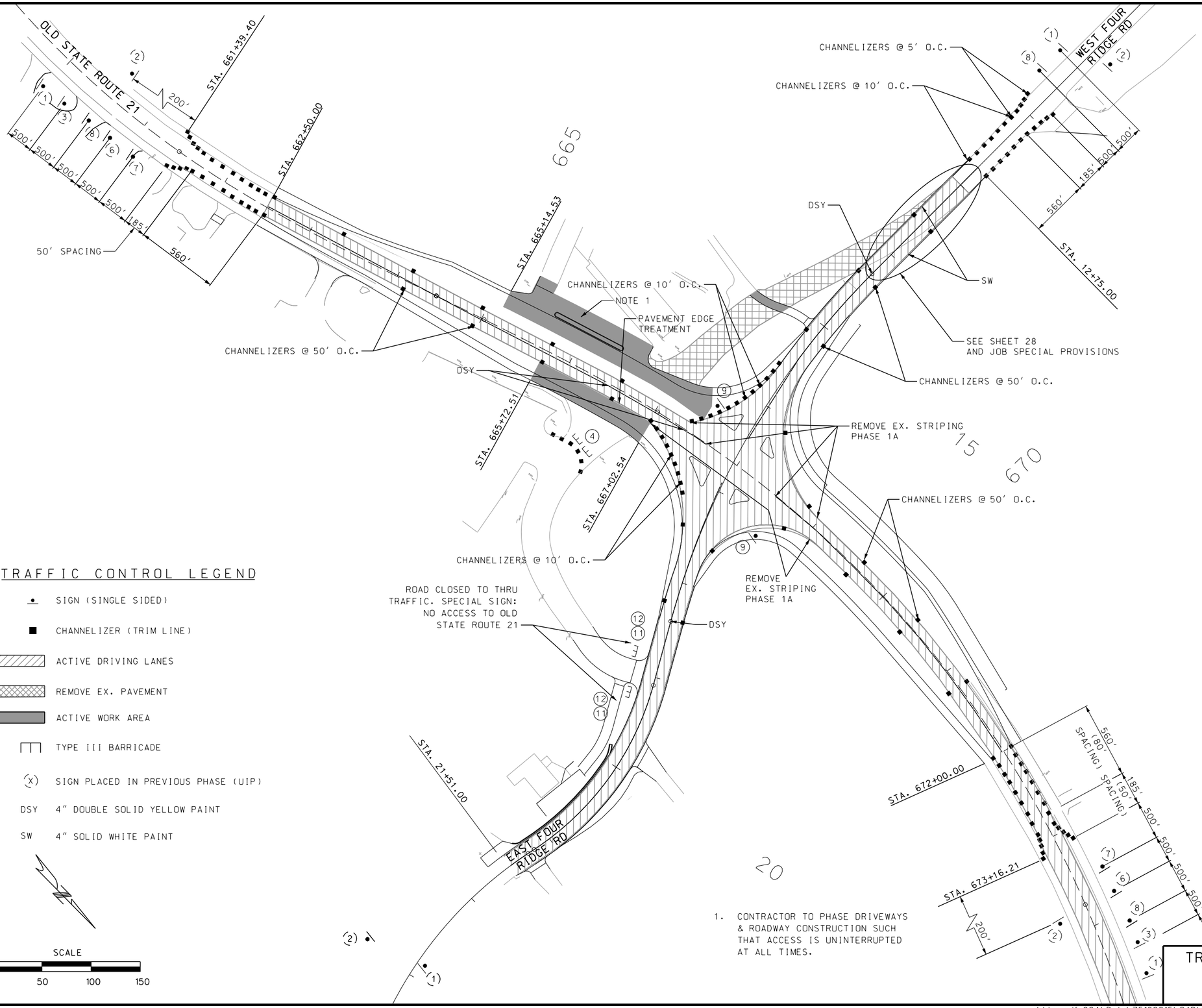

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- CHANNELIZER (TRIM LINE)
- ACTIVE DRIVING LANES
- REMOVE EX. PAVEMENT
- ACTIVE WORK AREA
- TYPE III BARRICADE
- (X) SIGN PLACED IN PREVIOUS PHASE (UIP)
- DSY 4" DOUBLE SOLID YELLOW PAINT
- SW 4" SOLID WHITE PAINT

SCALE

0 50 100 150

1. CONTRACTOR TO PHASE DRIVEWAYS & ROADWAY CONSTRUCTION SUCH THAT ACCESS IS UNINTERRUPTED AT ALL TIMES.

TRAFFIC CONTROL PLAN
PHASE 2 (TC)
SHEET 5 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	27
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
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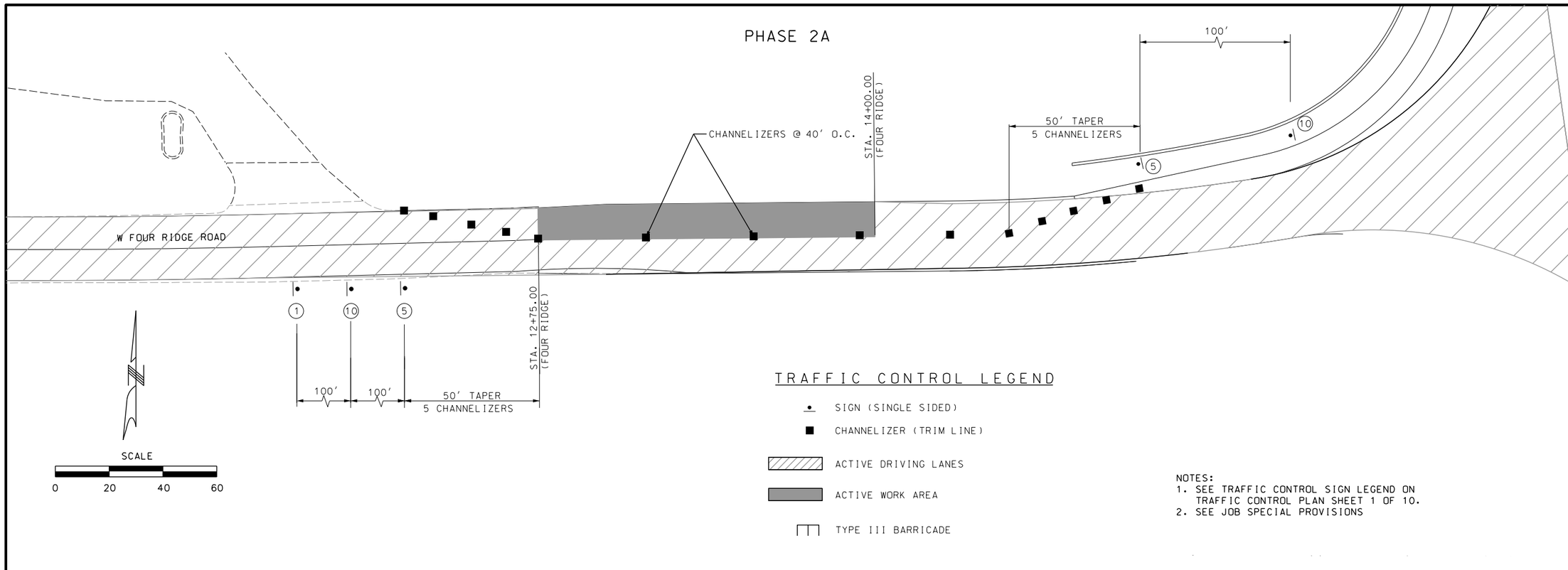
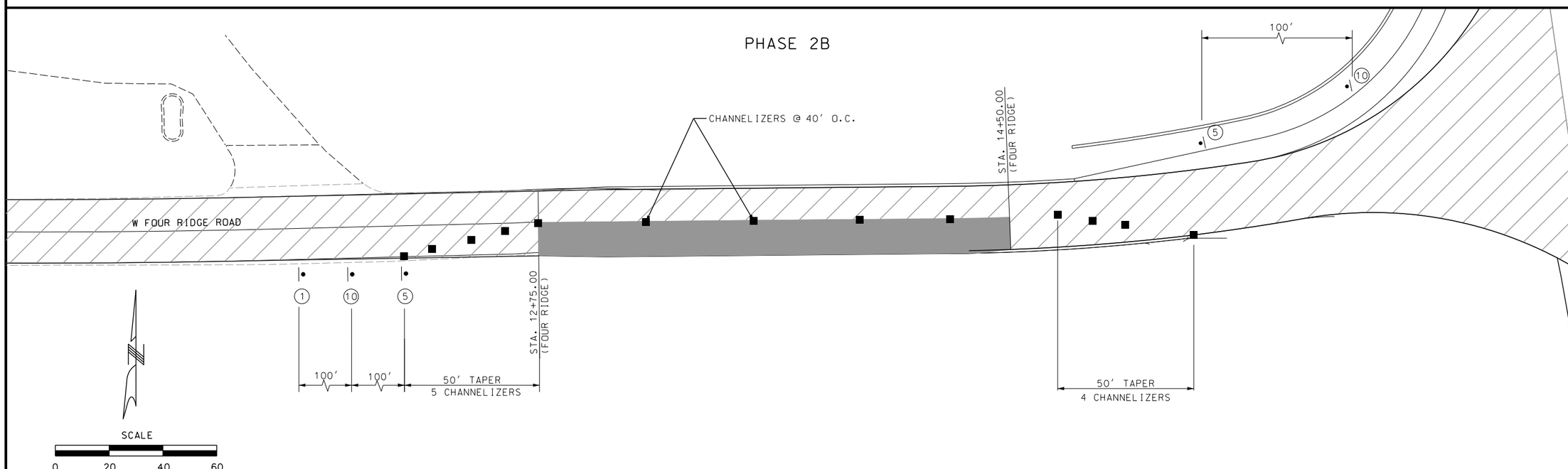


NOTES:
1. SEE TRAFFIC CONTROL SIGN LEGEND ON TRAFFIC CONTROL PLAN SHEET 1 OF 10.
2. SEE JOB SPECIAL PROVISIONS



TRAFFIC CONTROL PLAN
PHASE 2A/B
SHEET 6 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 28
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
. . . . .	. . . . .

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
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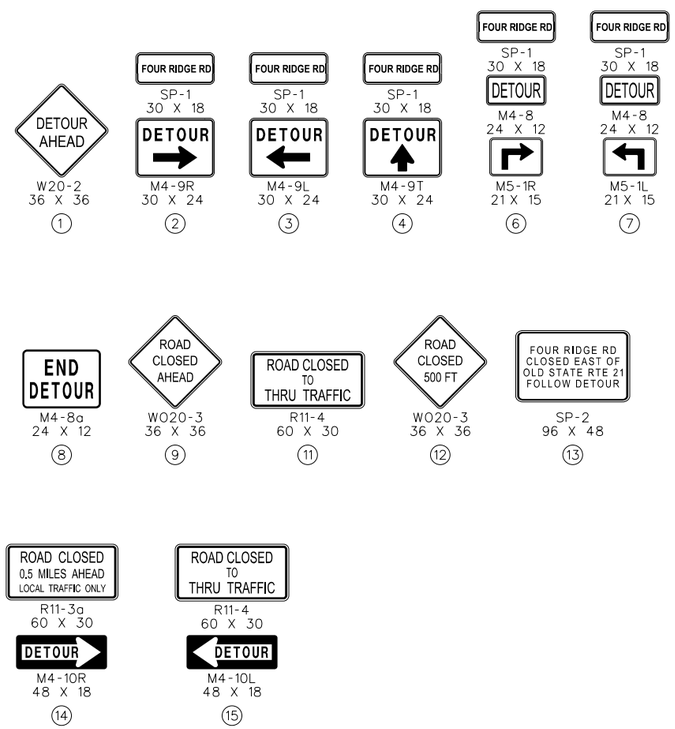
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- MOVEABLE BARRICADE (MB)
- UNDER CONSTRUCTION

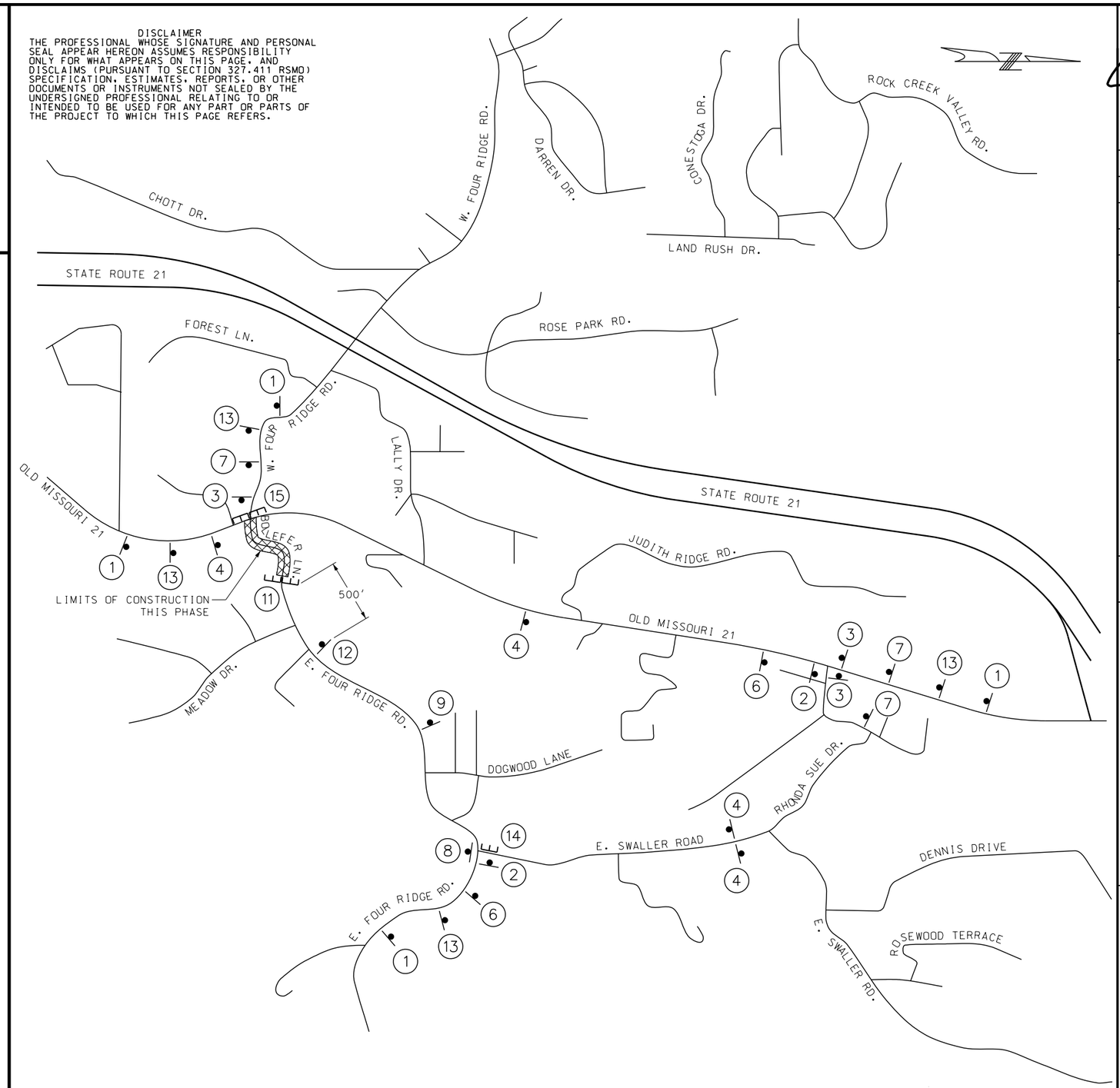
DETOUR SIGN LEGEND



TRAFFIC CONTROL DETOUR NOTES

1. DETOUR SIGNAGE MUST BE COORDINATED WITH GENERAL SIGNANGE OF THE PHASE.
2. NO DIRECT PAYMENT WILL BE MADE FOR COVERING SIGNS IN CONFLICT WITH THIS PLAN.
3. COVER OR REMOVE ALL TEMPORARY TRAFFIC CONTROL SIGNS WHEN NOT IN USE.
4. USE IN PLACE ALL EXISTING SIGNS WHICH DO NOT CONFLICT WITH THIS PLAN.
5. ALL TEMPORARY TRAFFIC CONTROL DEVICES THAT ARE FURNISHED AND PLACED BY THE CONTRACTOR SHALL BE IN ACCORDANCE WITH THE CURRENT EDITION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
6. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN ACCESS TO ALL DRIVEWAYS WITHIN THE WORK ZONE, ESPECIALLY WITHIN THE AREA WHERE EAST FOUR RIDGE IS COMPLETELY CLOSED. AT THE END OF EACH DAY'S WORK, THE CONTRACTOR SHALL PROVIDE ROCKED ACCESS TO EACH RESIDENTIAL DRIVEWAY, AND AT ALL TIMES MUST HAVE A REASONABLE PATH FOR POLICE AND FIRE TO TRAVERSE THROUGH THE WORK ZONE. EMERGENCY ACCESS IS A REQUIREMENT OF THIS PHASING AND NO ADDITIONAL PAYMENT WILL BE MADE FOR COMPLYING WITH THESE REQUIREMENTS.

DISCLAIMER
THE PROFESSIONAL WHOSE SIGNATURE AND PERSONAL SEAL APPEAR HEREON ASSUMES RESPONSIBILITY ONLY FOR WHAT APPEARS ON THIS PAGE, AND DISCLAIMS (PURSUANT TO SECTION 327.411 RSMO) SPECIFICATION, ESTIMATES, REPORTS, OR OTHER DOCUMENTS OR INSTRUMENTS NOT SEALED BY THE UNDERSIGNED PROFESSIONAL RELATING TO OR INTENDED TO BE USED FOR ANY PART OR PARTS OF THE PROJECT TO WHICH THIS PAGE REFERS.



TRAFFIC CONTROL PLAN
DETOUR ROUTE
SHEET 7 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	29
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

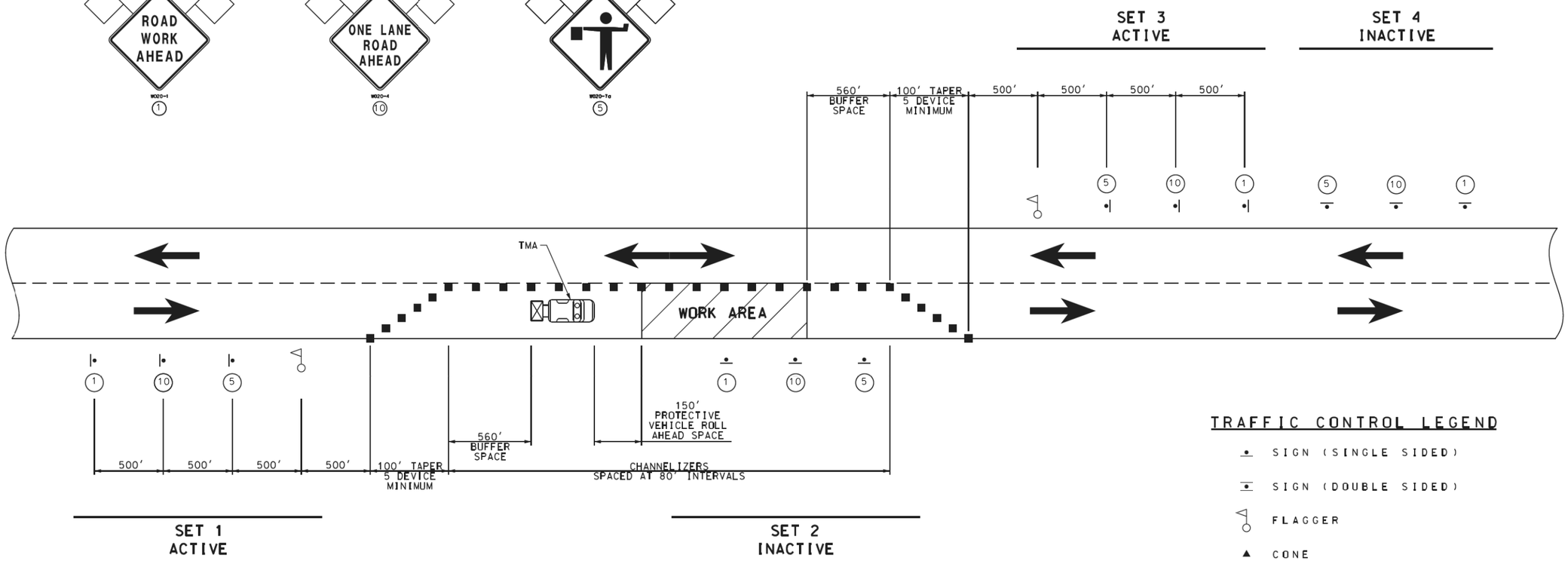
JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

NOTES:

1. ALL TRAFFIC CONTROL SIGNS AND DEVICES SHALL CONFORM TO CURRENT MISSOURI DEPARTMENT OF TRANSPORTATION STANDARD PLANS AND STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
2. THE CONTRACTOR SHALL CONTACT JEFFERSON COUNTY PUBLIC WORKS DEPARTMENT AT LEAST ONE WEEK PRIOR TO CLOSING A LANE OR SHOULDER.
3. SIGN SETS 1 AND 3 ARE ACTIVE AND FACING ONCOMING TRAFFIC.
4. SIGN SETS 2 AND 4 ARE INACTIVE AND NOT FACING EITHER DIRECTION OF TRAFFIC WHEN THE RESURFACING OPERATION IS LOCATED BETWEEN SIGN SETS 1 AND 3.
5. WHEN SIGN SETS 2 AND 4 ARE ACTIVE, SIGN SETS 1 AND 3 BECOME INACTIVE AND ARE ADVANCED TO BECOME SETS 2 AND 4 WITH SIGN LEGENDS TURNED AWAY FROM BOTH DIRECTIONS OF TRAFFIC. WHEN THE RESURFACING OPERATION ADVANCES TO BETWEEN SIGN SETS 2 AND 4, SIGN SETS 2 AND 4 BECOME ACTIVE (I.E. NEW SIGN SETS 1 AND 3) AND SIGN SETS 1 AND 3 ADVANCED IN THE DIRECTION OF THE OPERATION (I.E. NEW SIGN SETS 2 AND 4).



FLAGGER CONTROL FOR MOVING OPERATION
ONE-LANE TWO-WAY OPERATION
N.T.S.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- TRUCK MOUNTED ATTENUATOR (TMA)

TRAFFIC CONTROL PLAN
GENERAL DETAILS (TC)
SHEET 8 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 30
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

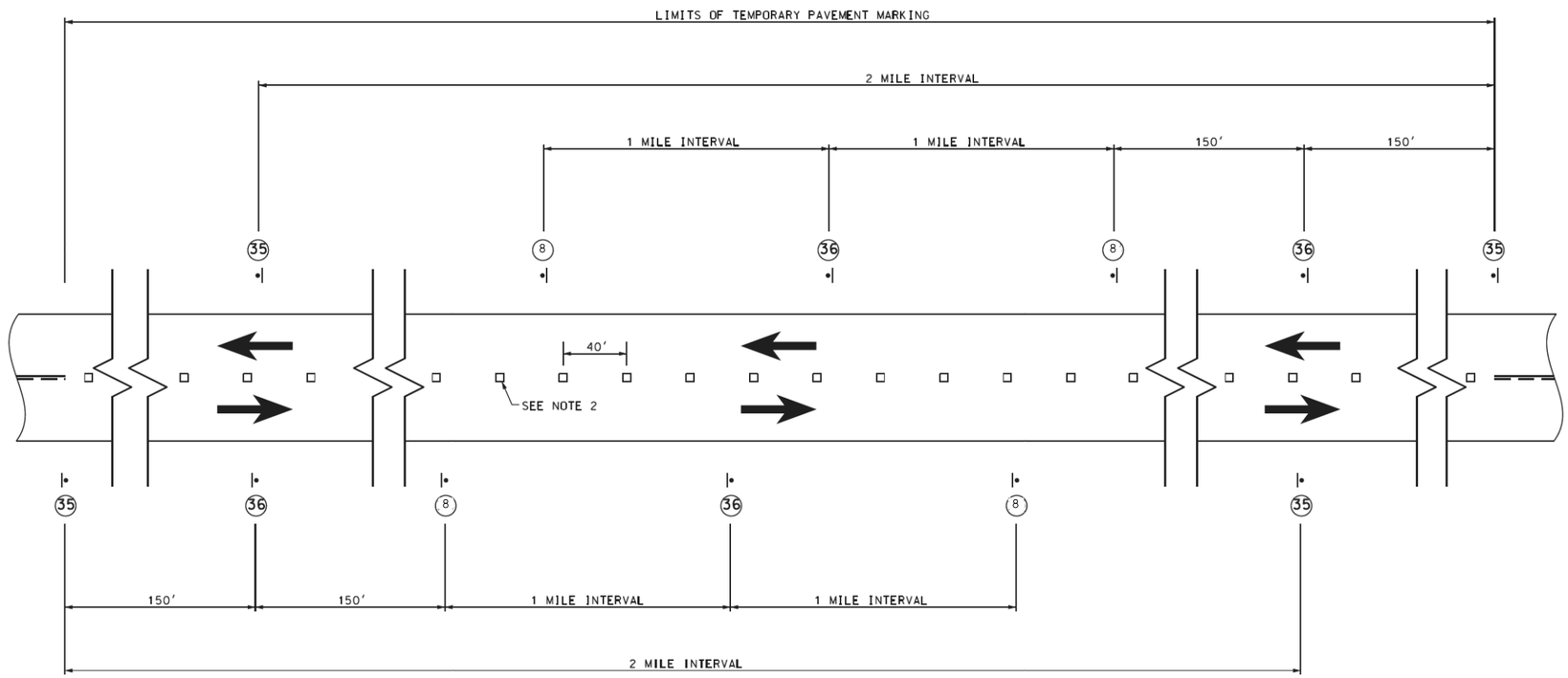
JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

NOTES:

1. ALL TRAFFIC CONTROL SIGNS AND DEVICES SHALL CONFORM TO CURRENT MISSOURI DEPARTMENT OF TRANSPORTATION'S STANDARD PLANS AND STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
2. THE CONTRACTOR SHALL UTILIZE WATERBORNE PAINT. TYPE P BEADS FOR TEMPORARY MARKINGS ON MILLED SURFACES AND TYPE 2 TEMPORARY RAISED PAVEMENT MARKERS AFTER THE FIRST LIFT OF BP-1.
3. SIGN 23 (W08-17) TO REMAIN VISIBLE UNTIL SHOULDER SHAPING IS COMPLETE.
4. WHEN SIGN 23 (W08-17) SHOULDER DROP-OFF SIGNS ARE IN PLACE FOR GREATER THAN THREE (3) DAYS. THE SHOULDER DROP-OFF PLAQUE (W08-17P) SHOULD BE USED IN ADDITION WITH THE SHOULDER DROP-OFF SIGN (W08-17).



SIGN SPACING FOR MAINLINE
N.T.S.

TRAFFIC CONTROL LEGEND

- SIGN (SINGLE SIDED)
- SIGN (DOUBLE SIDED)
- FLAGGER
- CONE
- CHANNELIZER
- BARRICADE
- CHANGEABLE MESSAGE BOARD
- TRUCK MOUNTED ATTENTUATOR (TMA)

TRAFFIC CONTROL PLAN
GENERAL DETAILS (TC)
SHEET 9 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	31
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

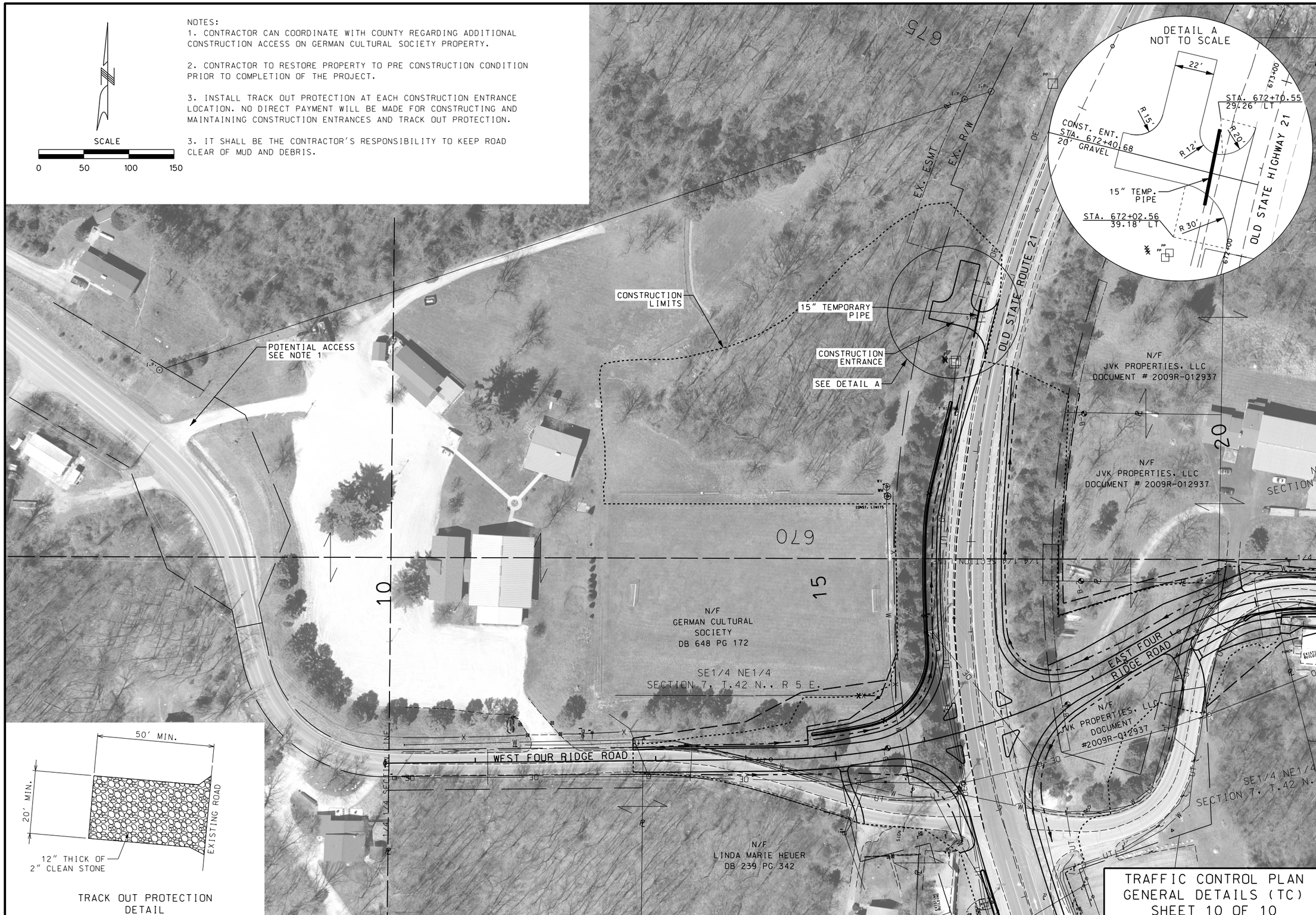
NOTES:
1. CONTRACTOR CAN COORDINATE WITH COUNTY REGARDING ADDITIONAL CONSTRUCTION ACCESS ON GERMAN CULTURAL SOCIETY PROPERTY.

2. CONTRACTOR TO RESTORE PROPERTY TO PRE CONSTRUCTION CONDITION PRIOR TO COMPLETION OF THE PROJECT.

3. INSTALL TRACK OUT PROTECTION AT EACH CONSTRUCTION ENTRANCE LOCATION. NO DIRECT PAYMENT WILL BE MADE FOR CONSTRUCTING AND MAINTAINING CONSTRUCTION ENTRANCES AND TRACK OUT PROTECTION.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO KEEP ROAD CLEAR OF MUD AND DEBRIS.

SCALE
0 50 100 150



TRACK OUT PROTECTION DETAIL

TRAFFIC CONTROL PLAN
GENERAL DETAILS (TC)
SHEET 10 OF 10

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19
JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 32
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

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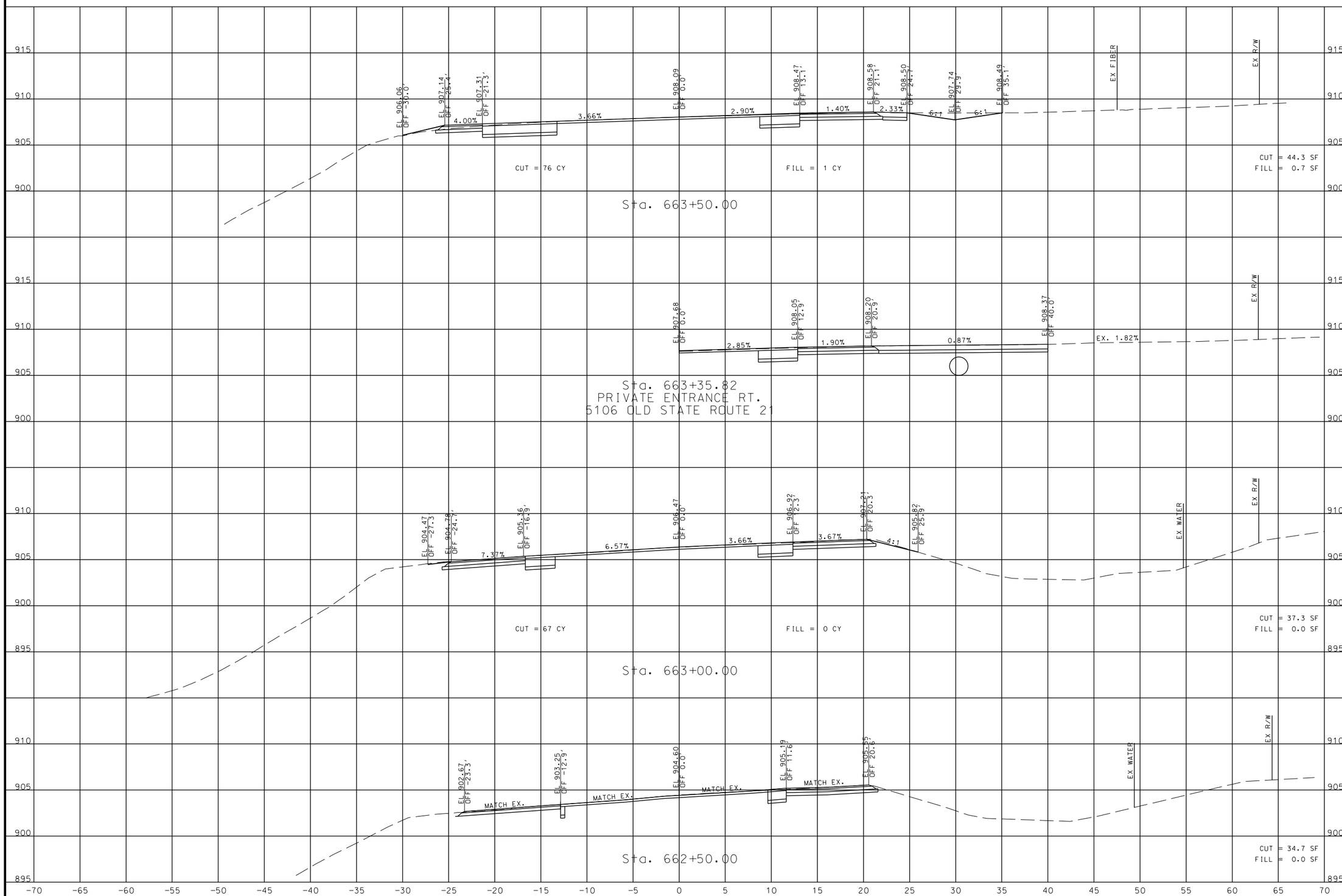
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	33
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

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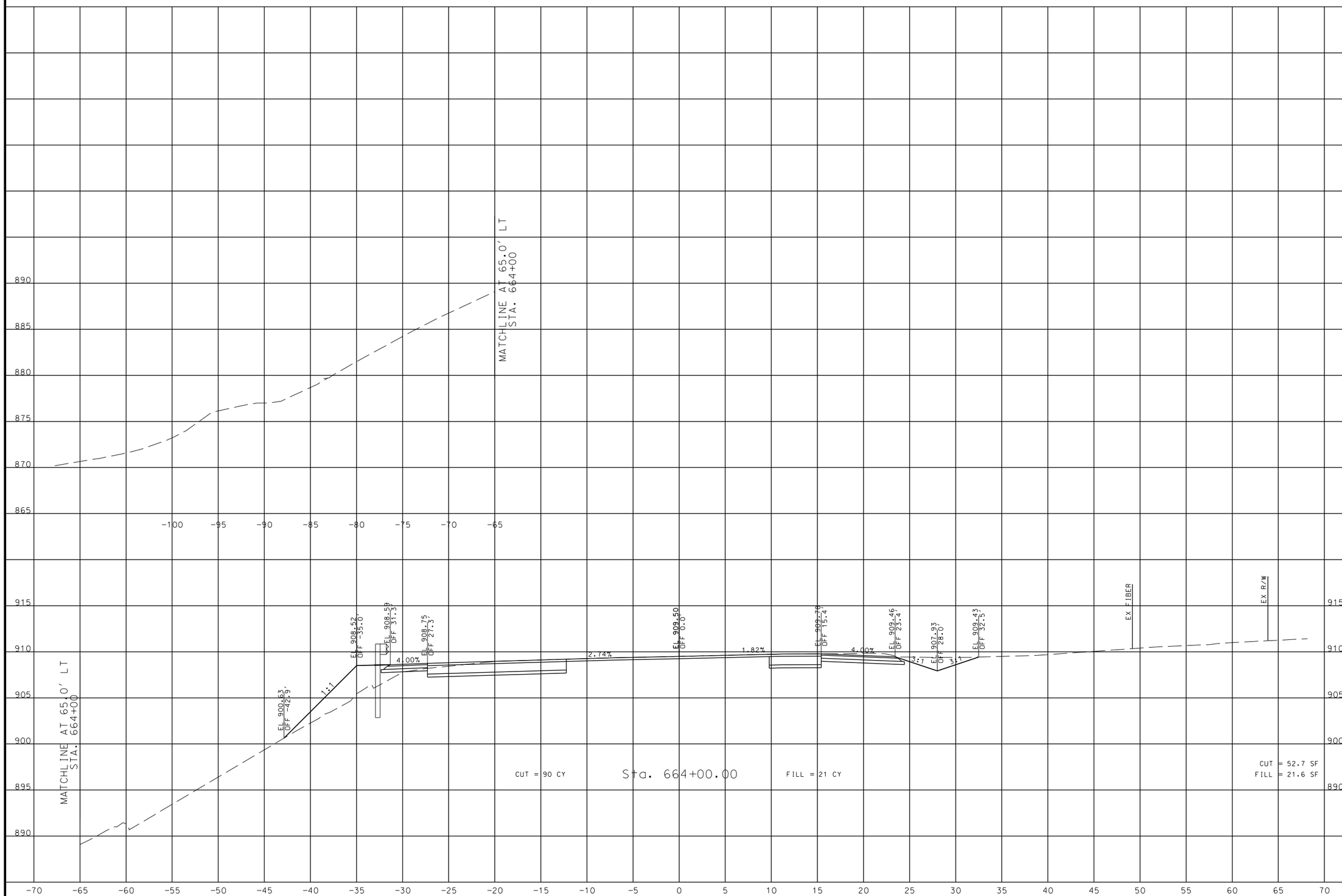
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	34
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

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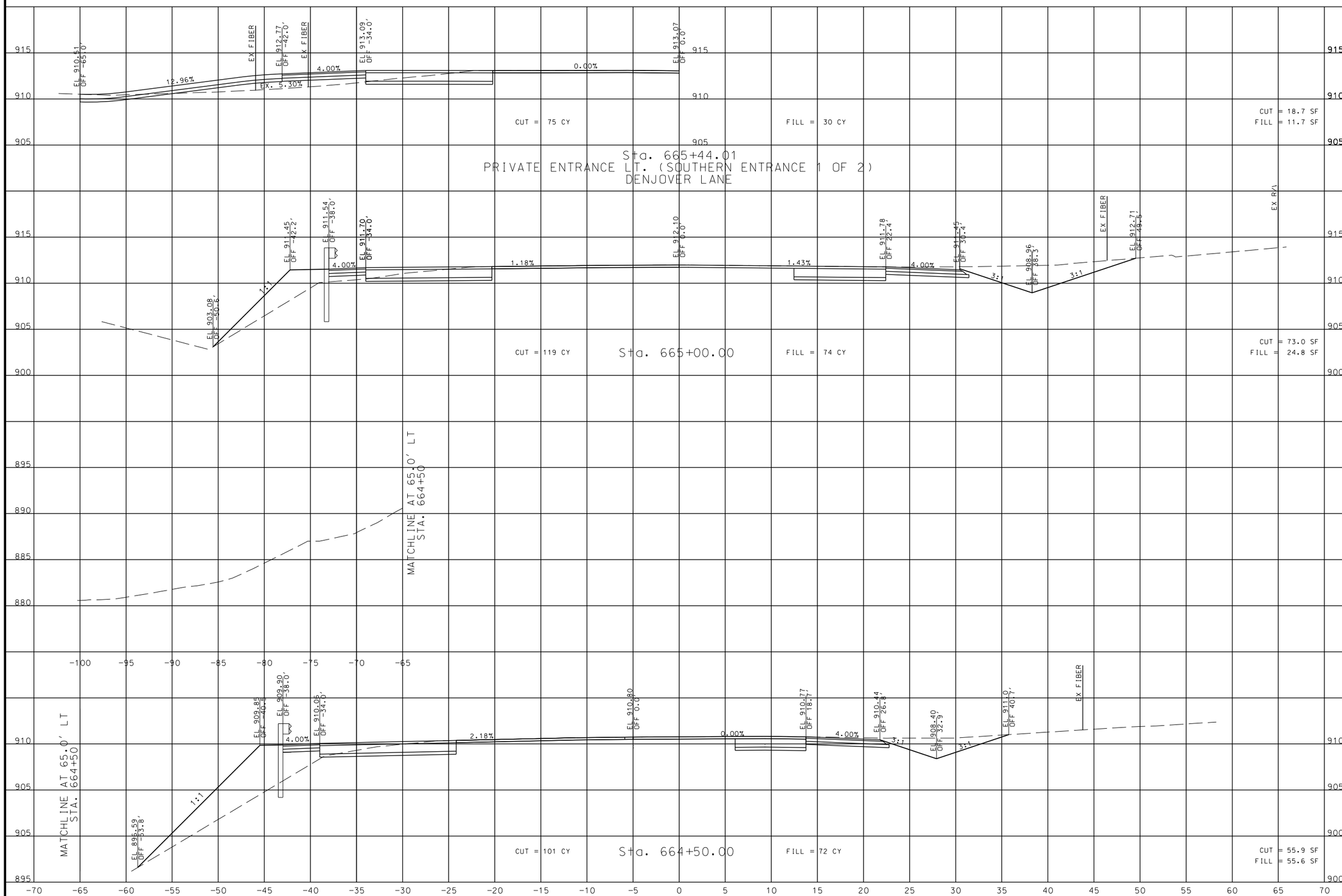
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	35
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

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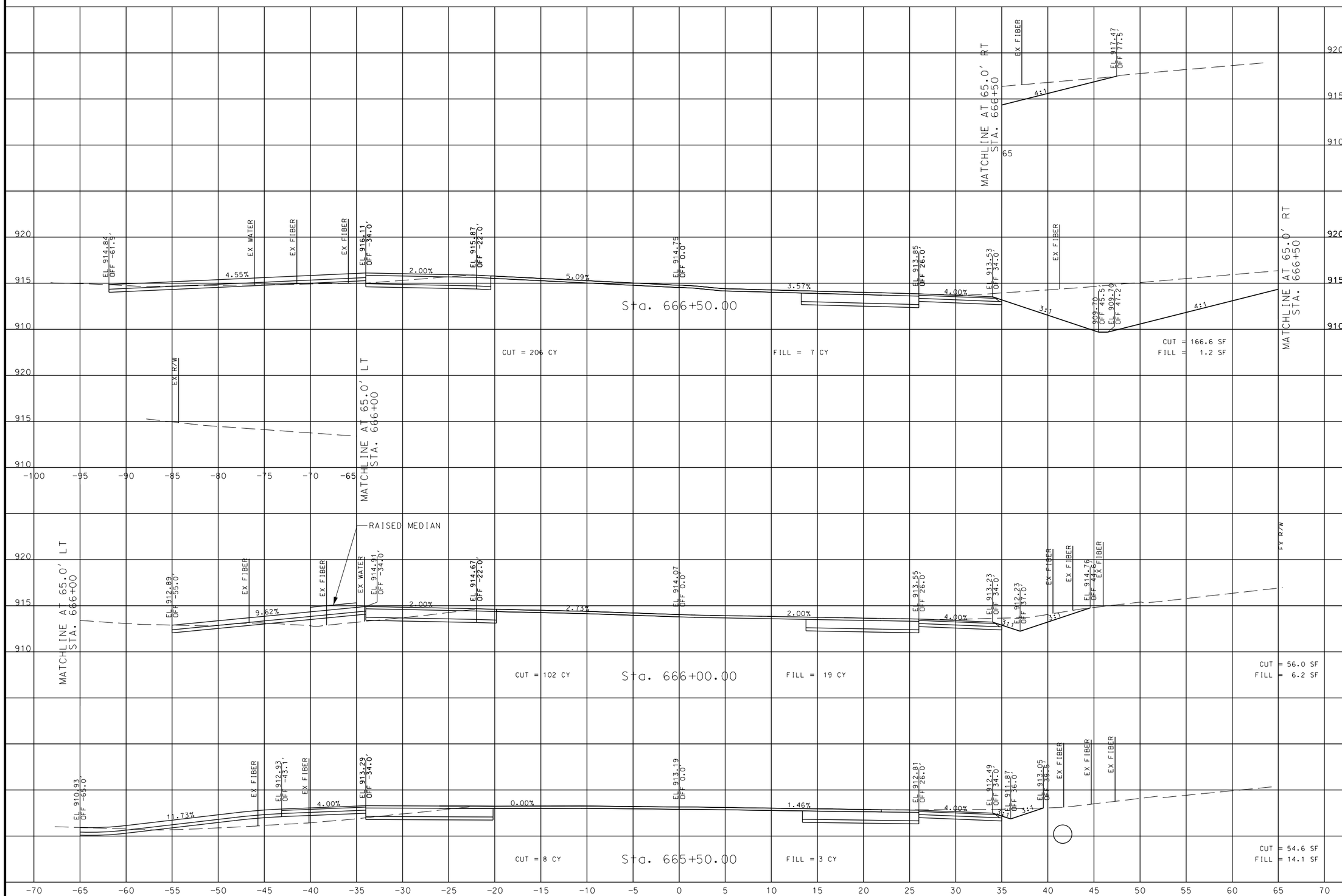
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	36
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
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HRGreen

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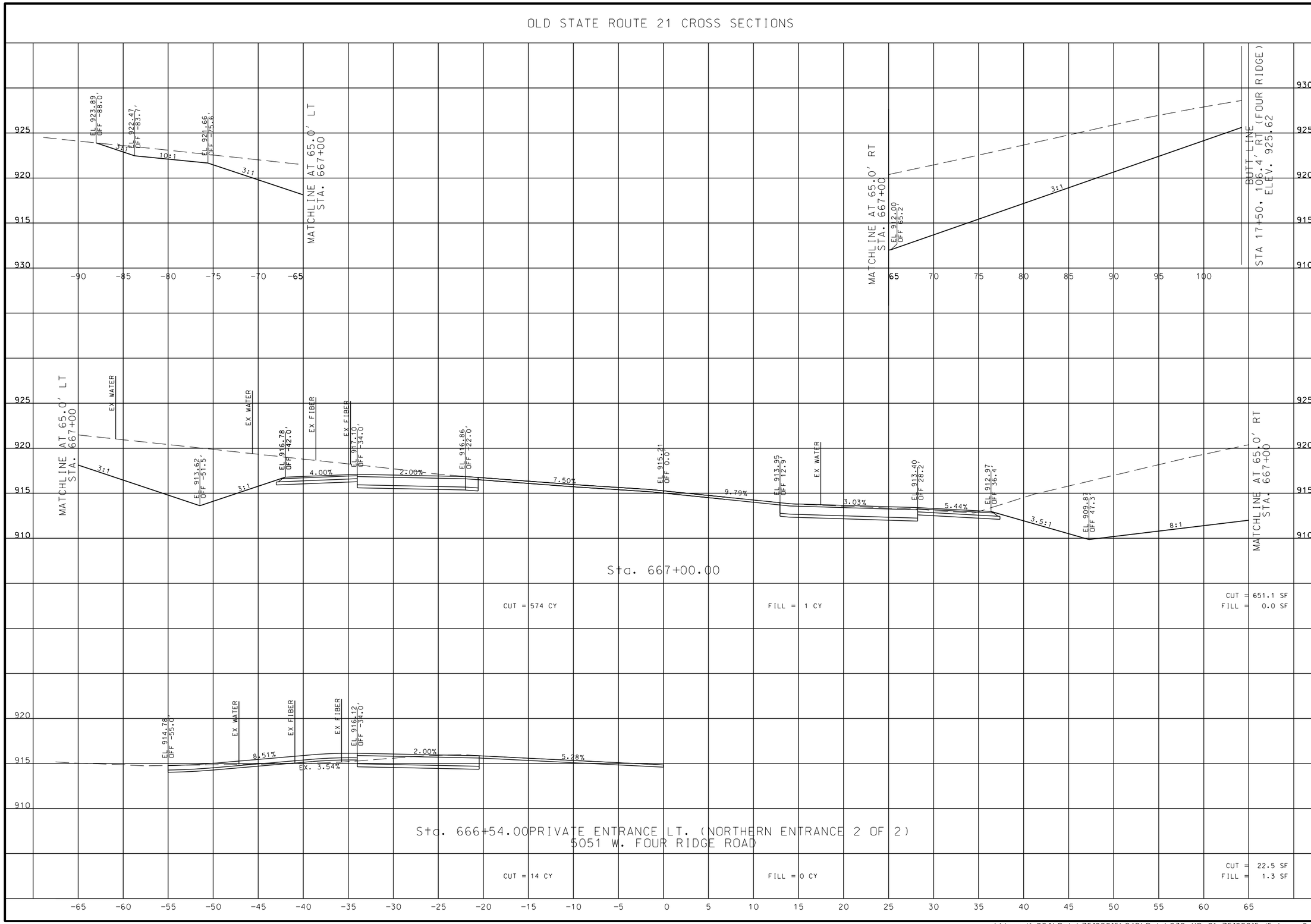
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 37
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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DEPARTMENT OF PUBLIC WORKS
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SUITE 205
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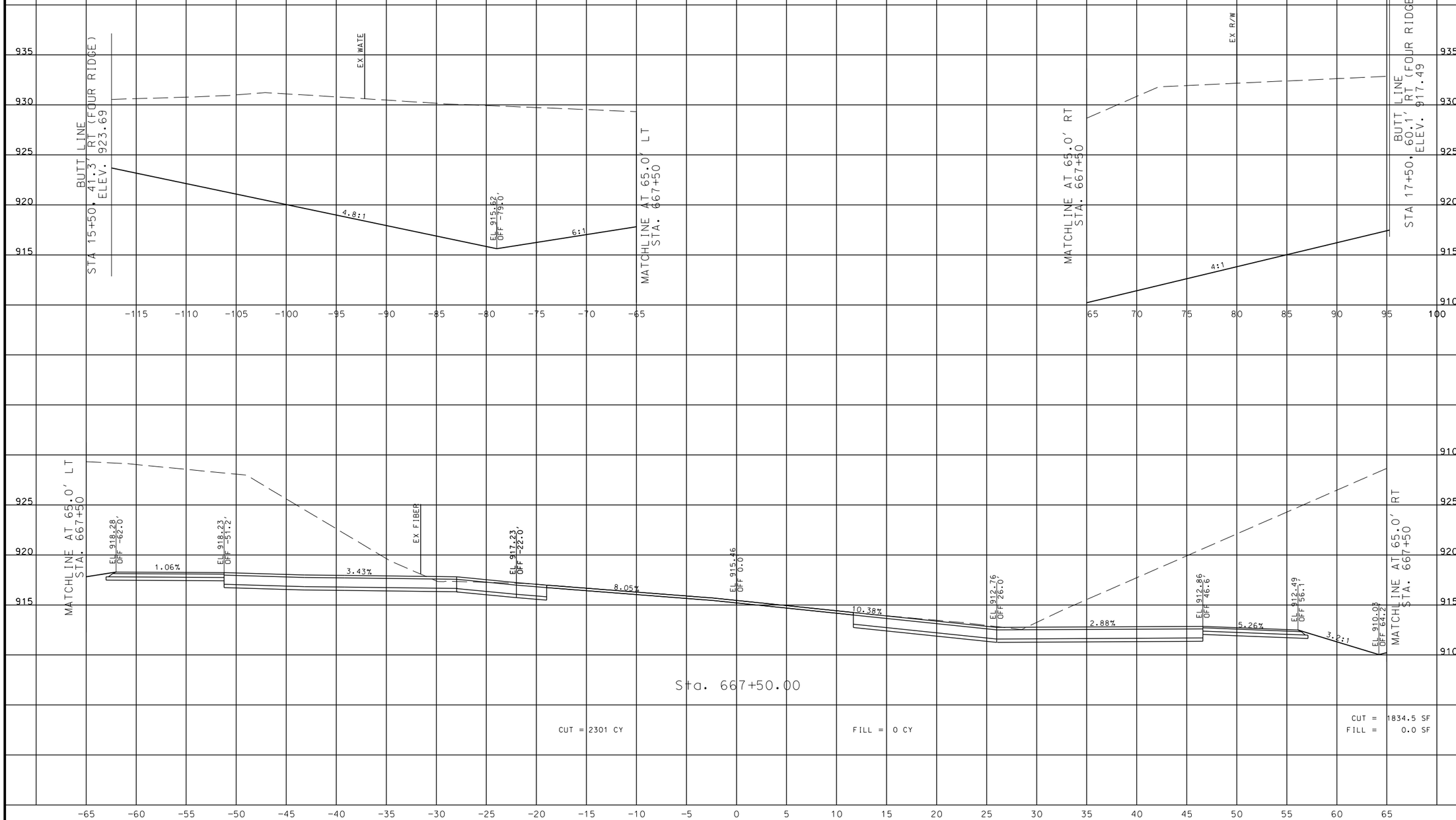
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

OLD STATE ROUTE 21 CROSS SECTIONS

SEE FOUR RIDGE CROSS SECTIONS FOR
WORK BETWEEN STA. 667+50 AND 668+50



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	38
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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SHT 6 OF 23

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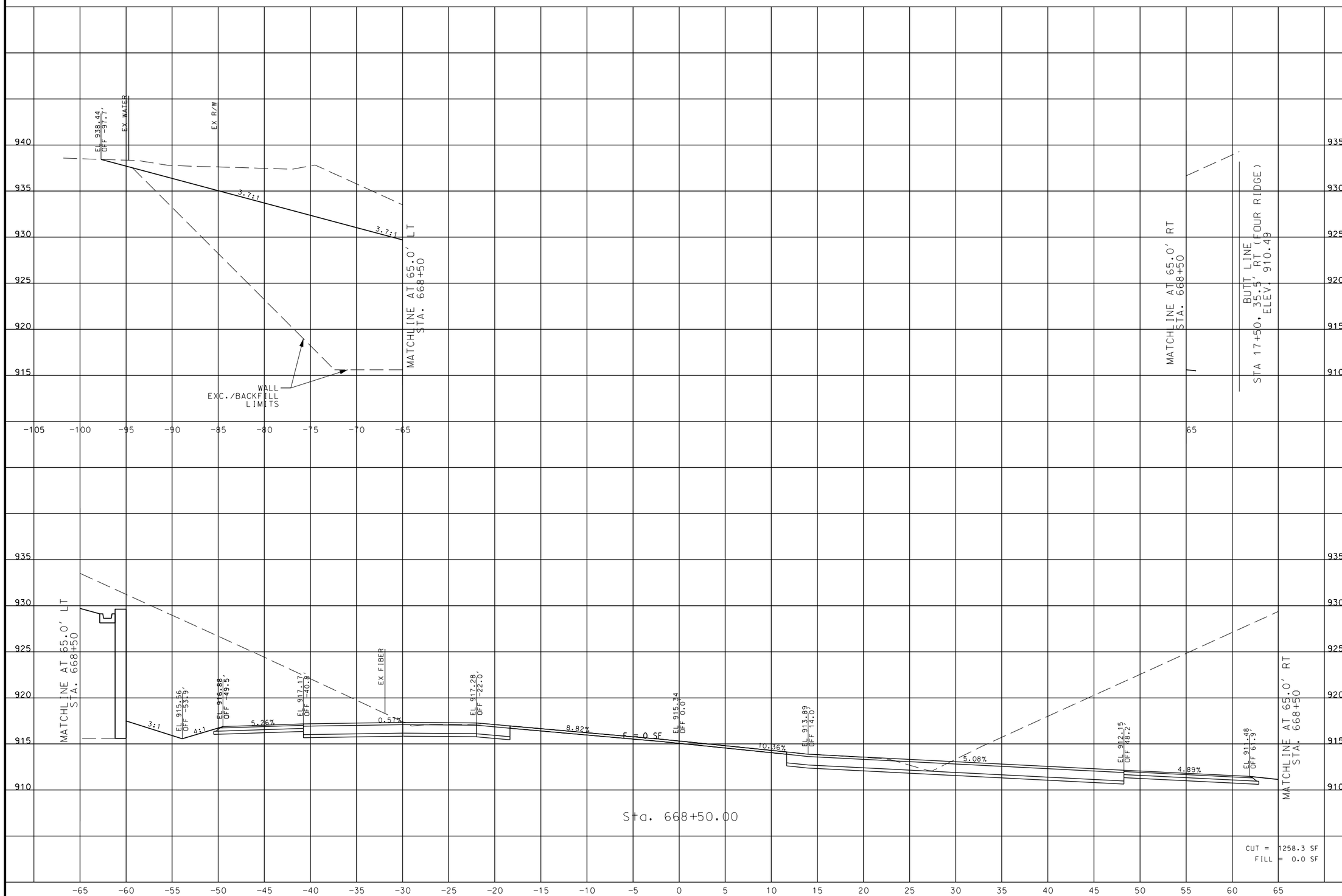
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	39
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION
. . .	. . . . .

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
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PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
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PHONE: (636) 519.0990
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HRGreen

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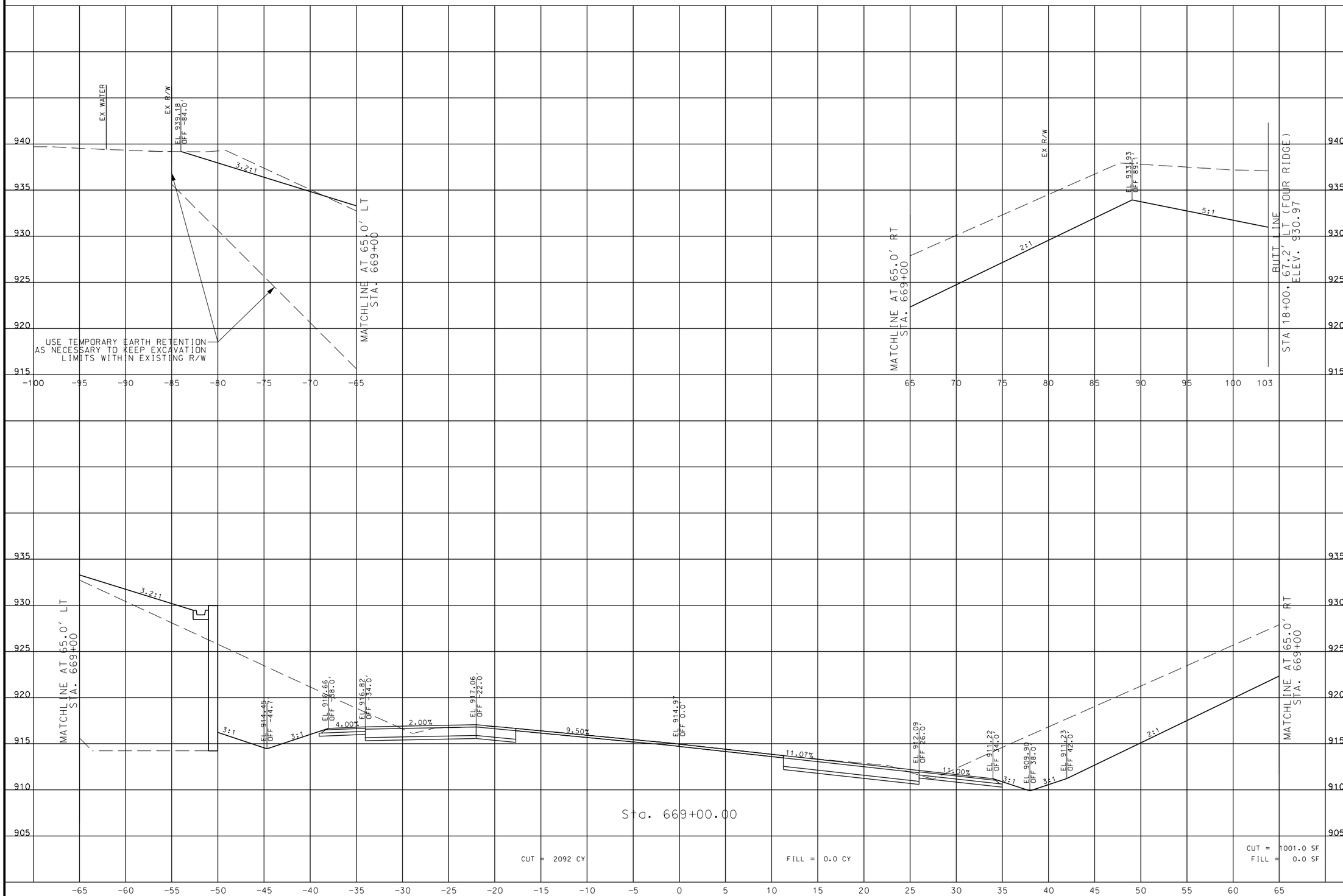
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	40
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

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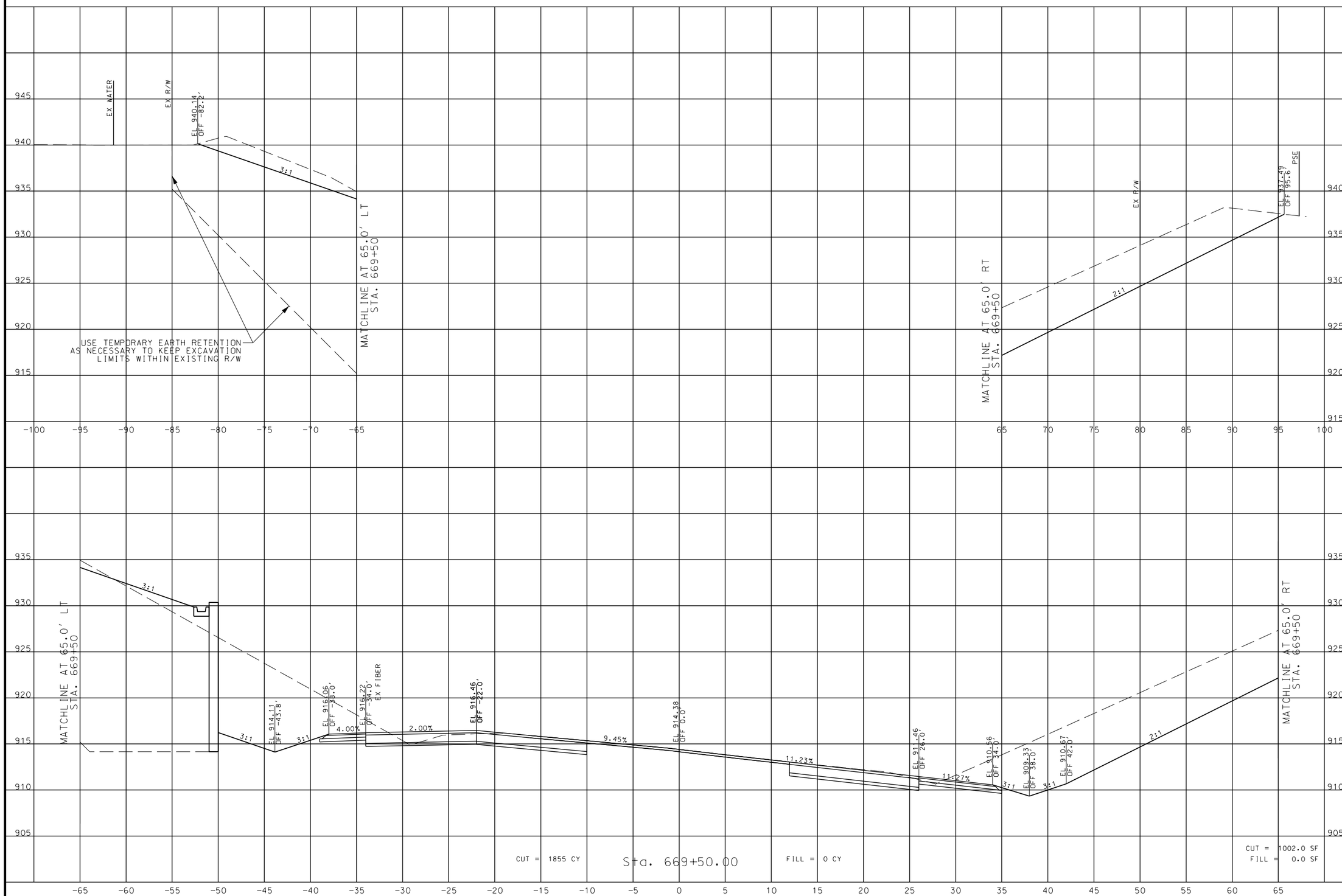
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	41
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

REV.

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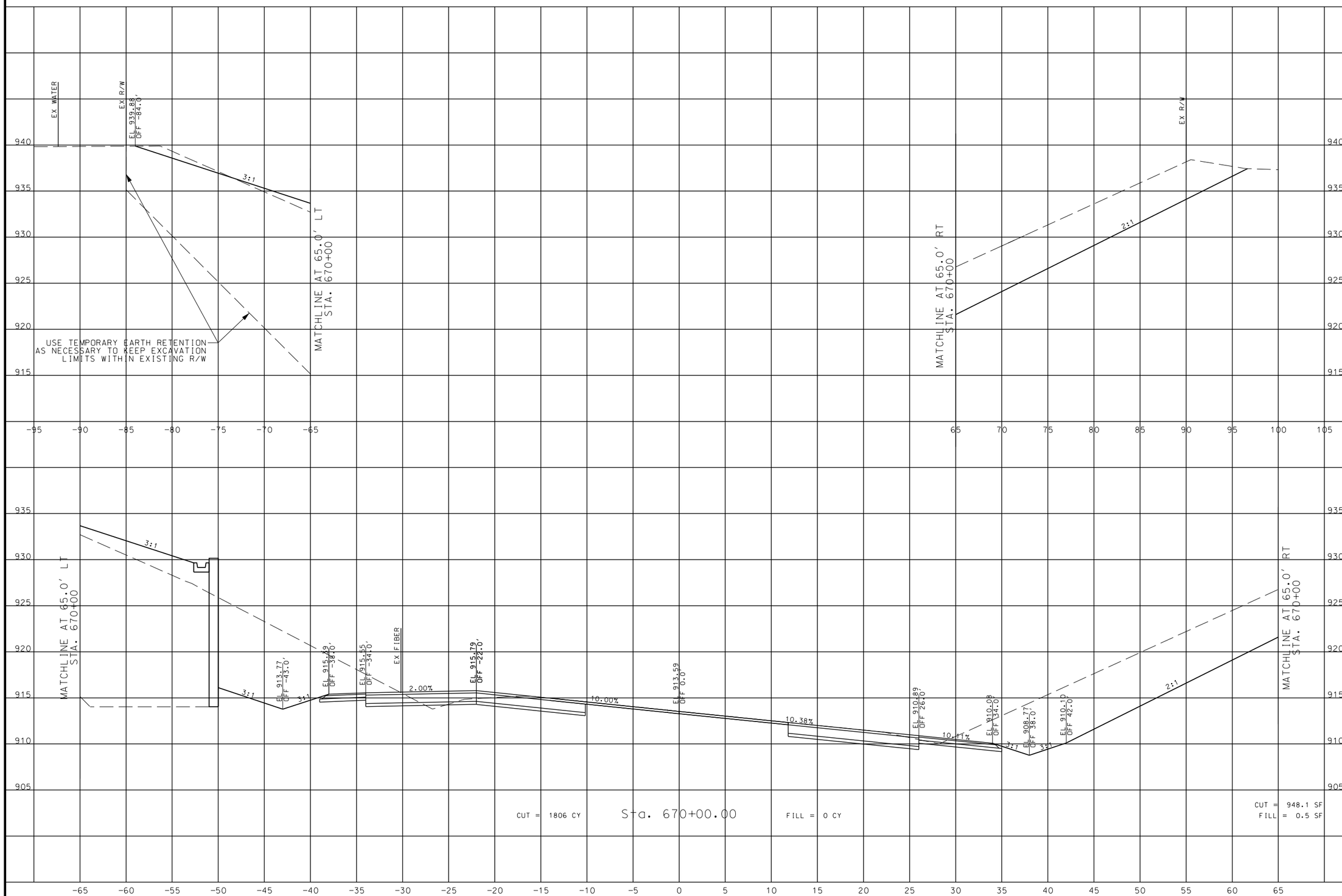
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	42
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

SHT 10 OF 23

REV.

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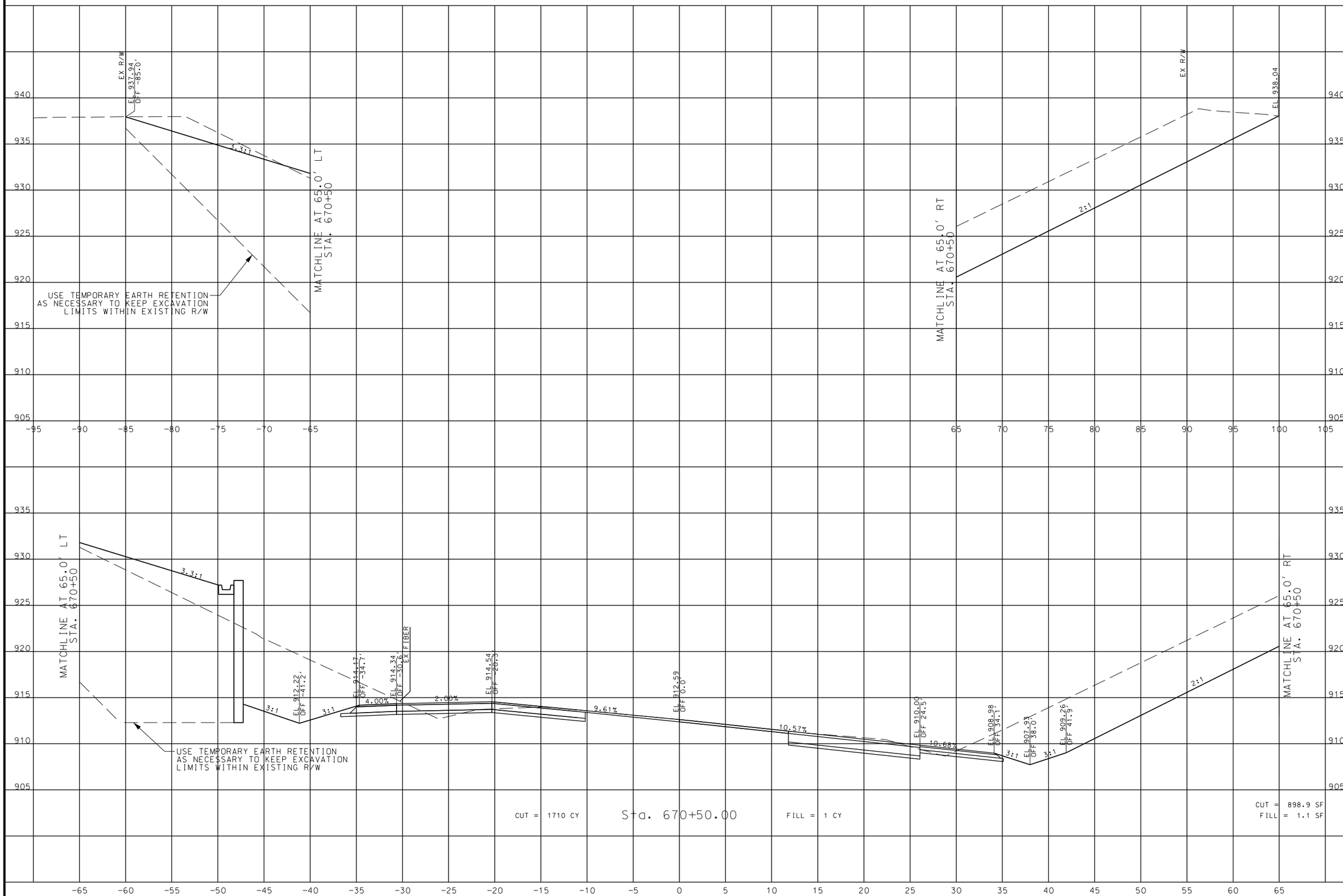
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	43
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

SHT 11 OF 23

REV.

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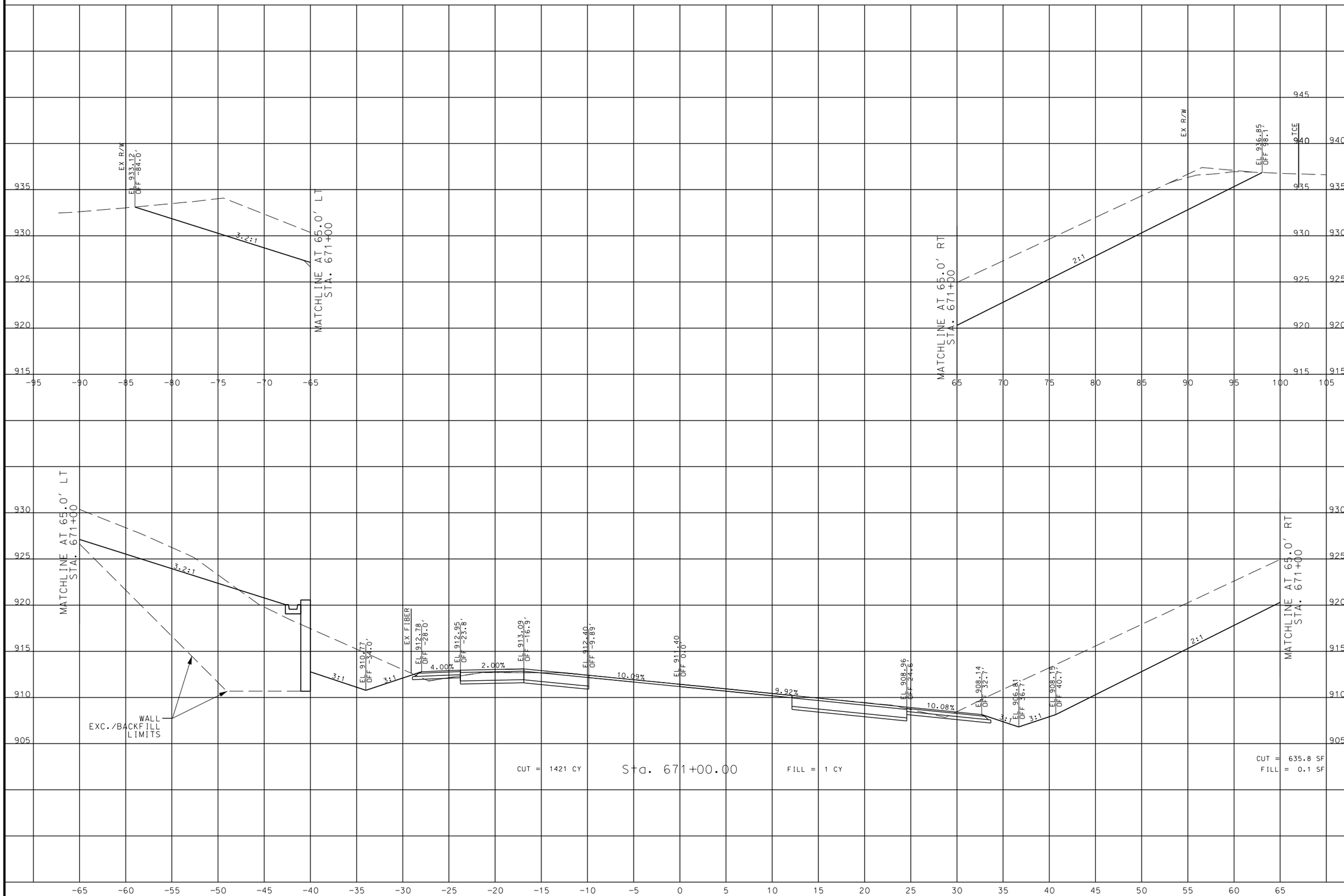
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	44
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
. . . . .	. . . . .

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
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725 MAPLE STREET, ROOM 104
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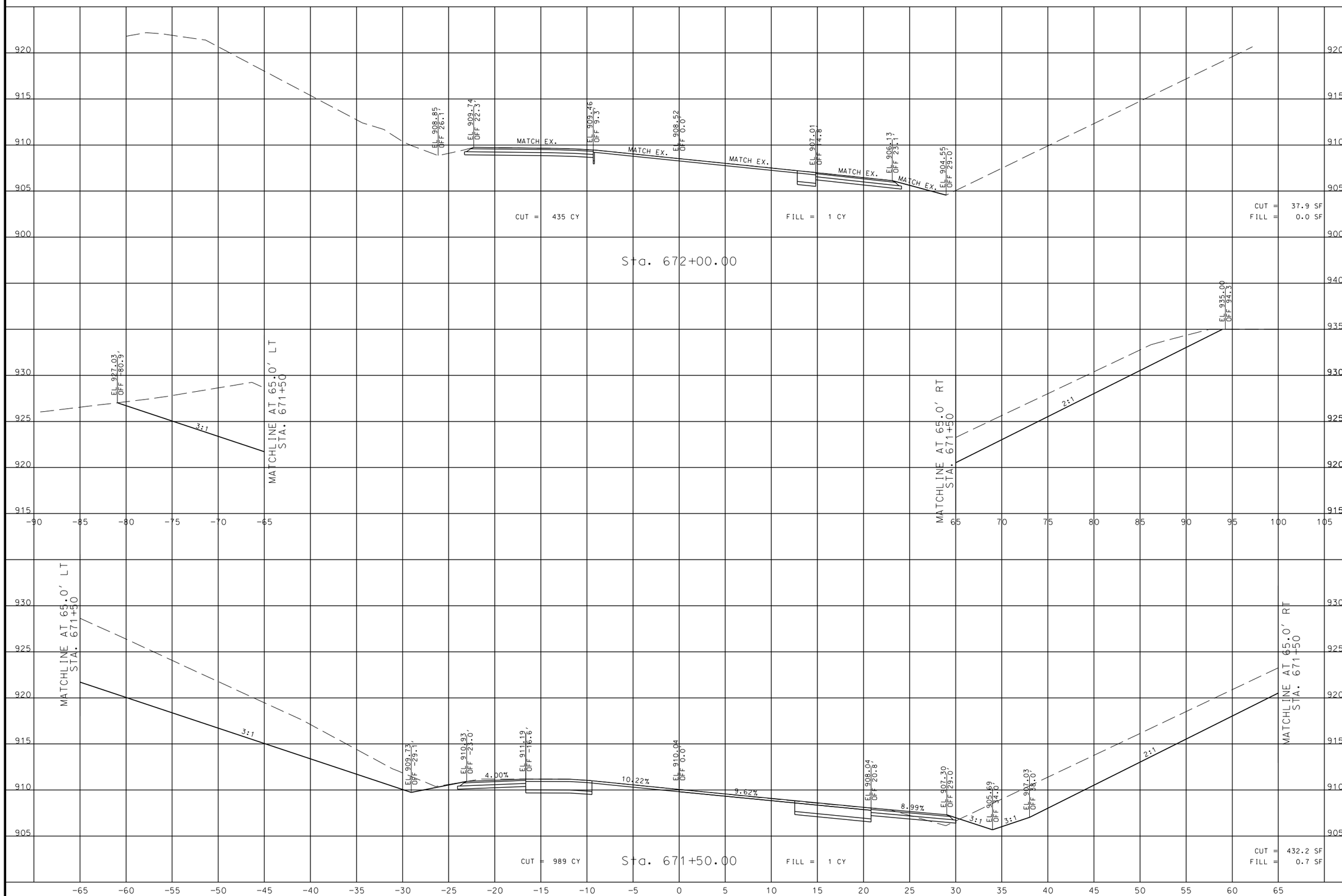
OLD STATE ROUTE 21 CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 45
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
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SHT 13 OF 23

REV.

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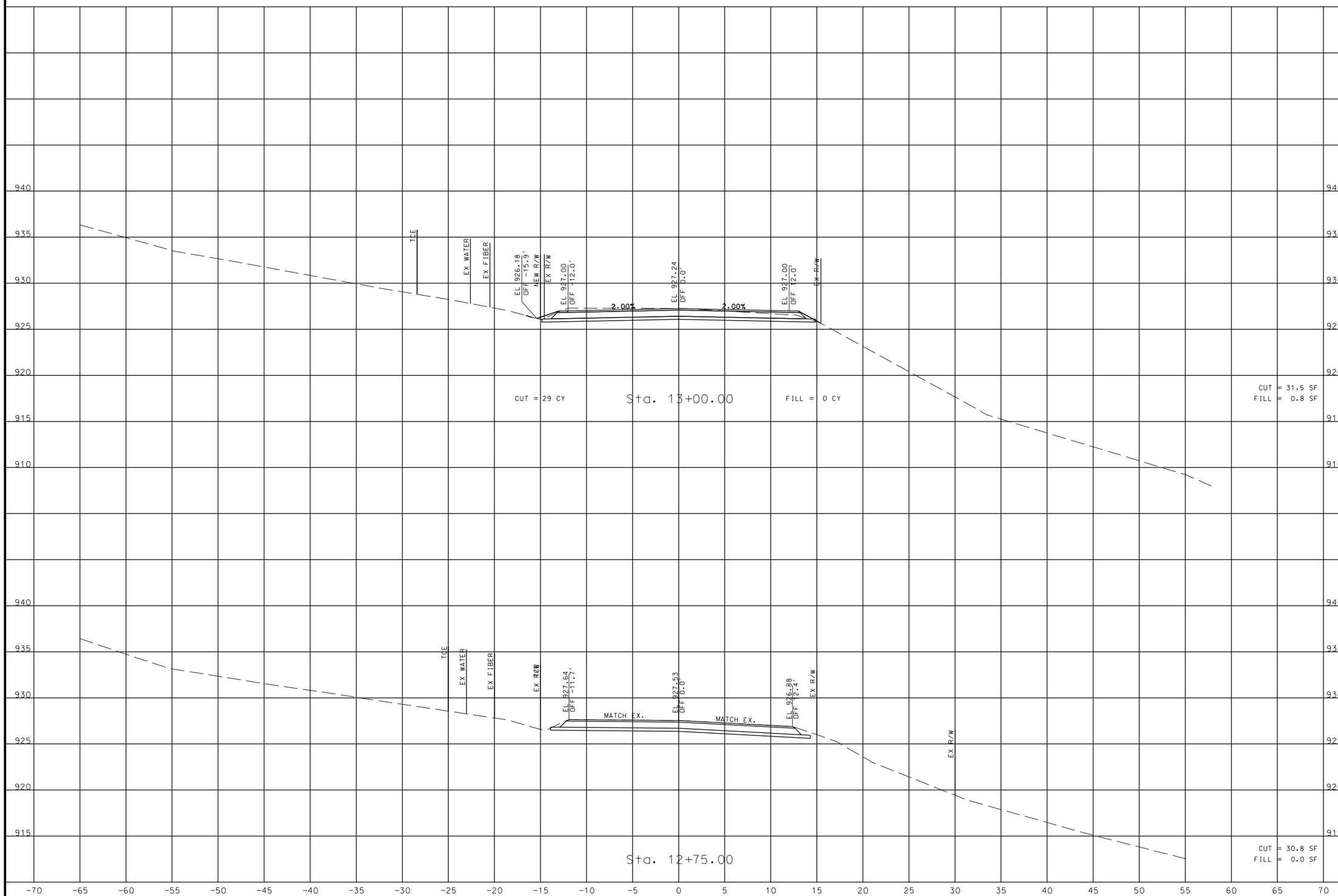
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	46
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
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75160015	
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JEFFERSON COUNTY
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SHT 14 OF 23

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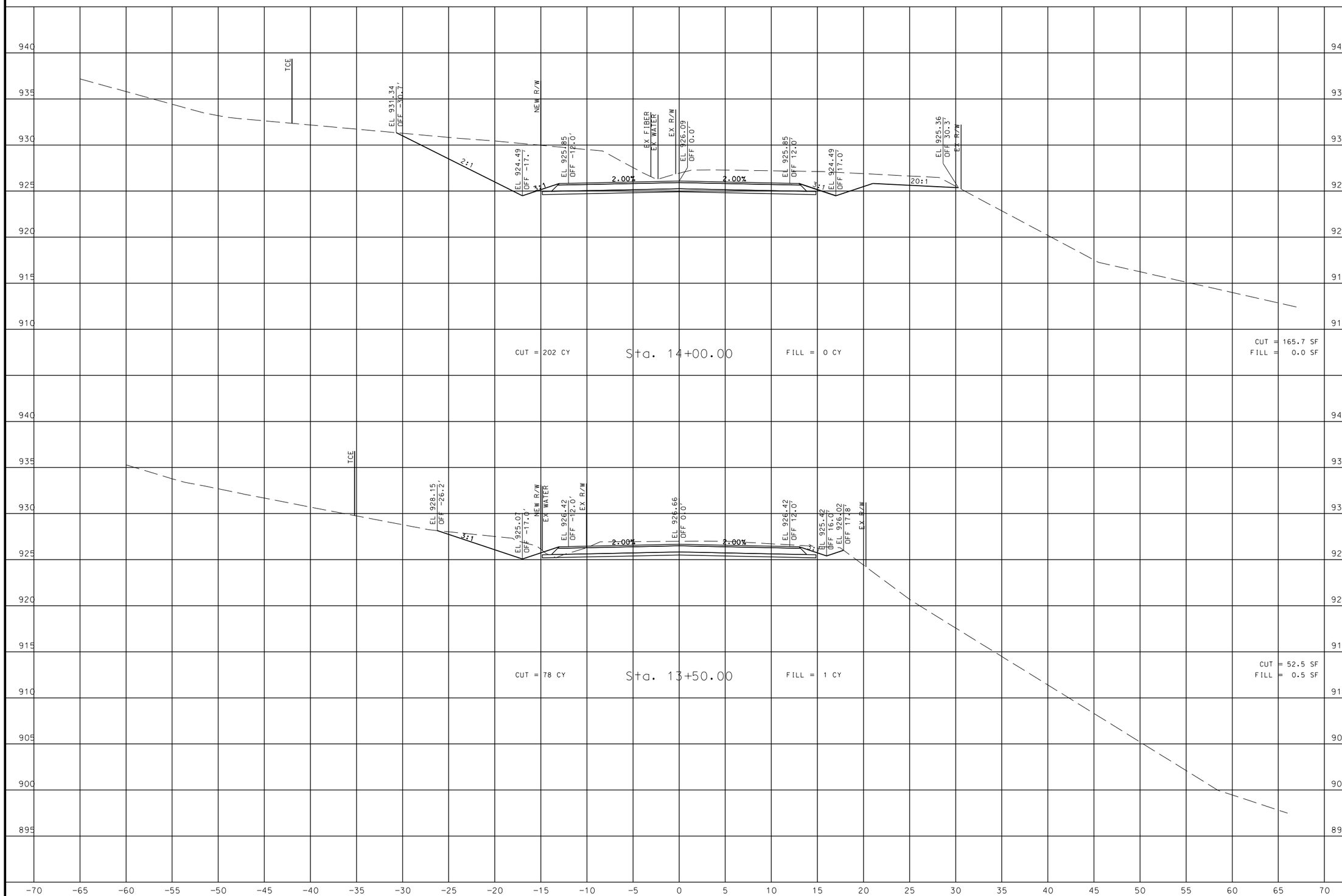
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	47
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
MAPLE STREET ANNEX
725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

HR GREEN, INC.
16020 SWINGLEY RIDGE ROAD
SUITE 205
ST. LOUIS, MISSOURI 63017
PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608

HRGreen

SHT 15 OF 23

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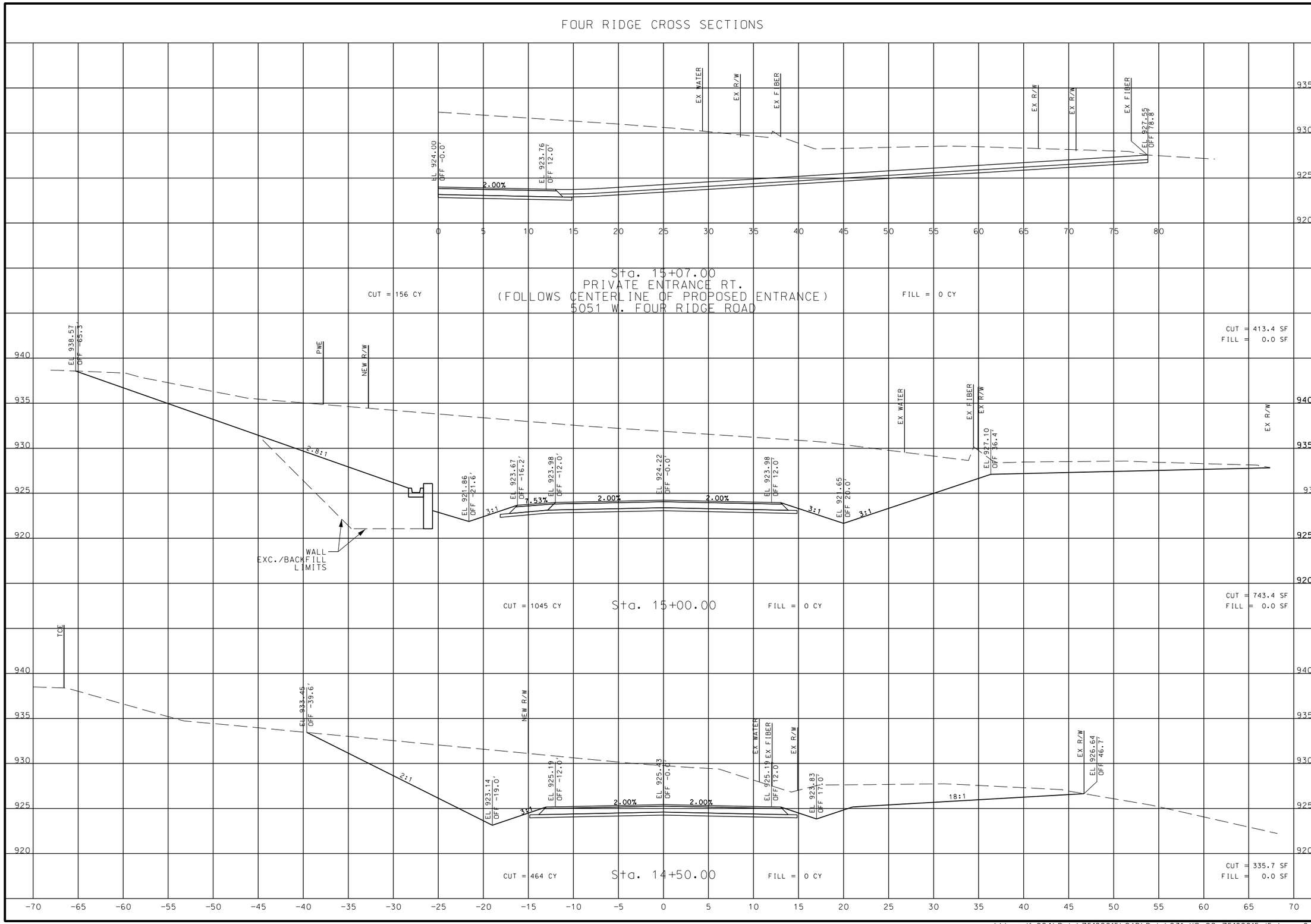
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	48
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
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16020 SWINGLEY RIDGE ROAD
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CORPORATE LICENSE #2002006608

HRGreen

SHT 16 OF 23

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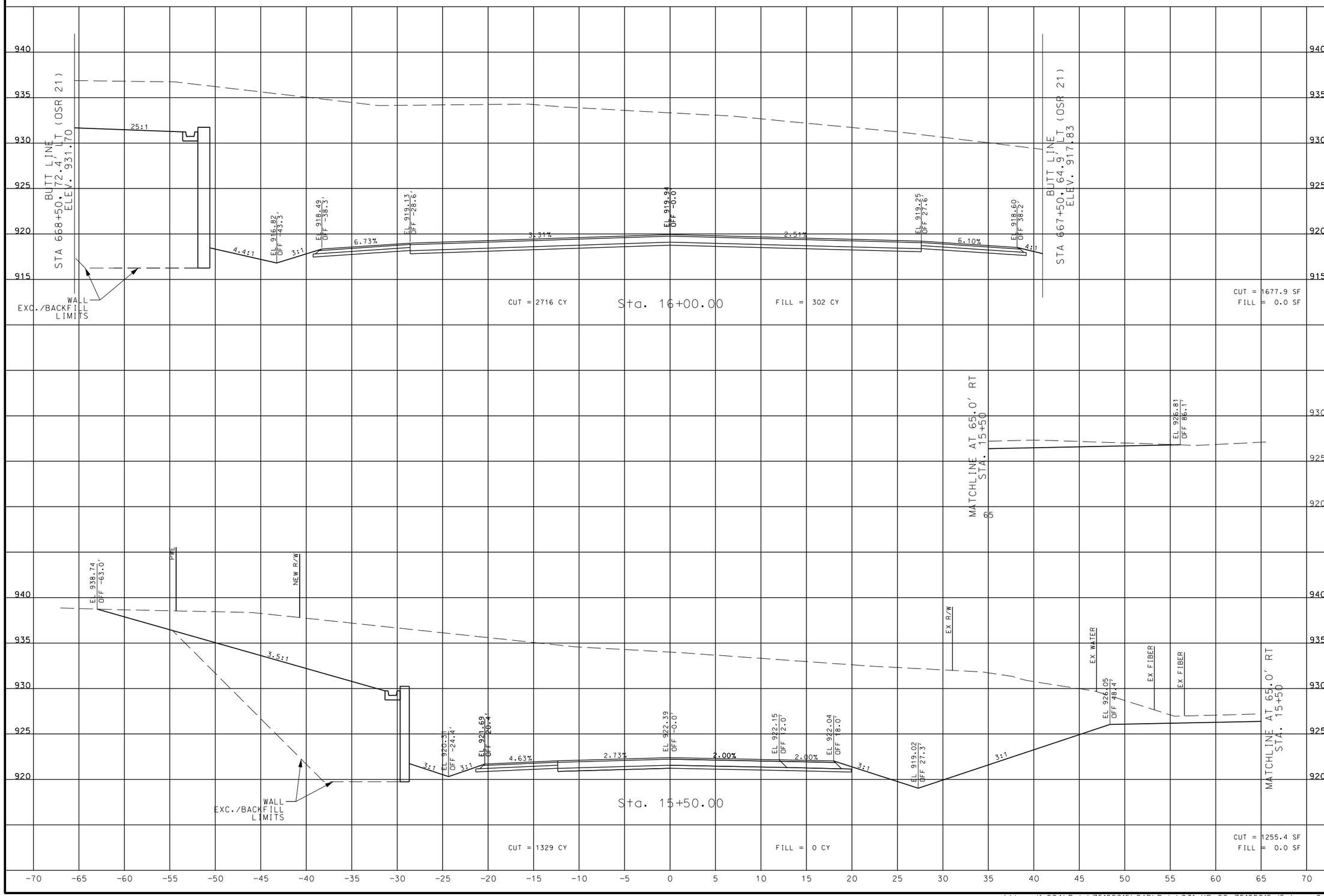
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	49
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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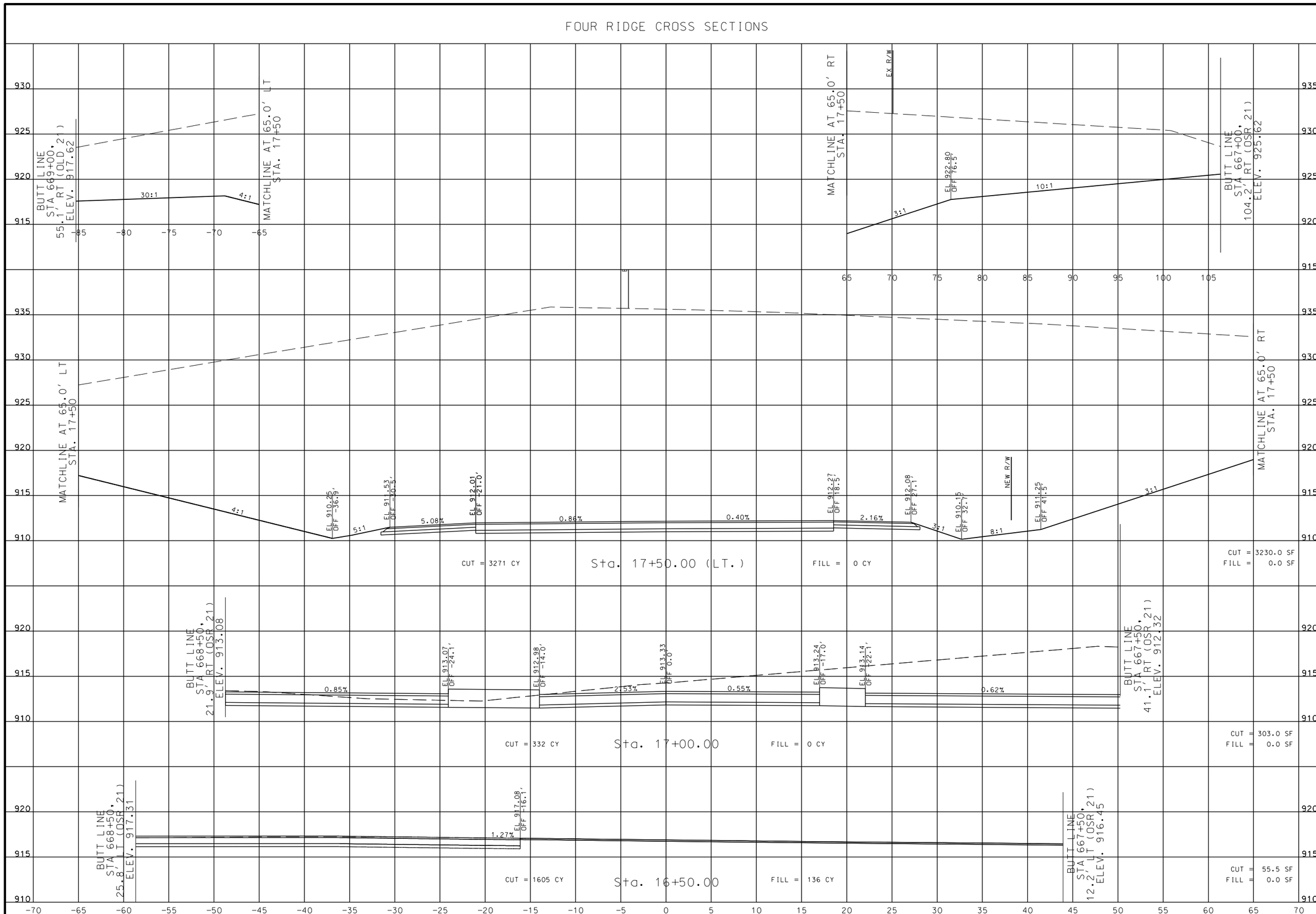

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 50
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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725 MAPLE STREET, ROOM 104
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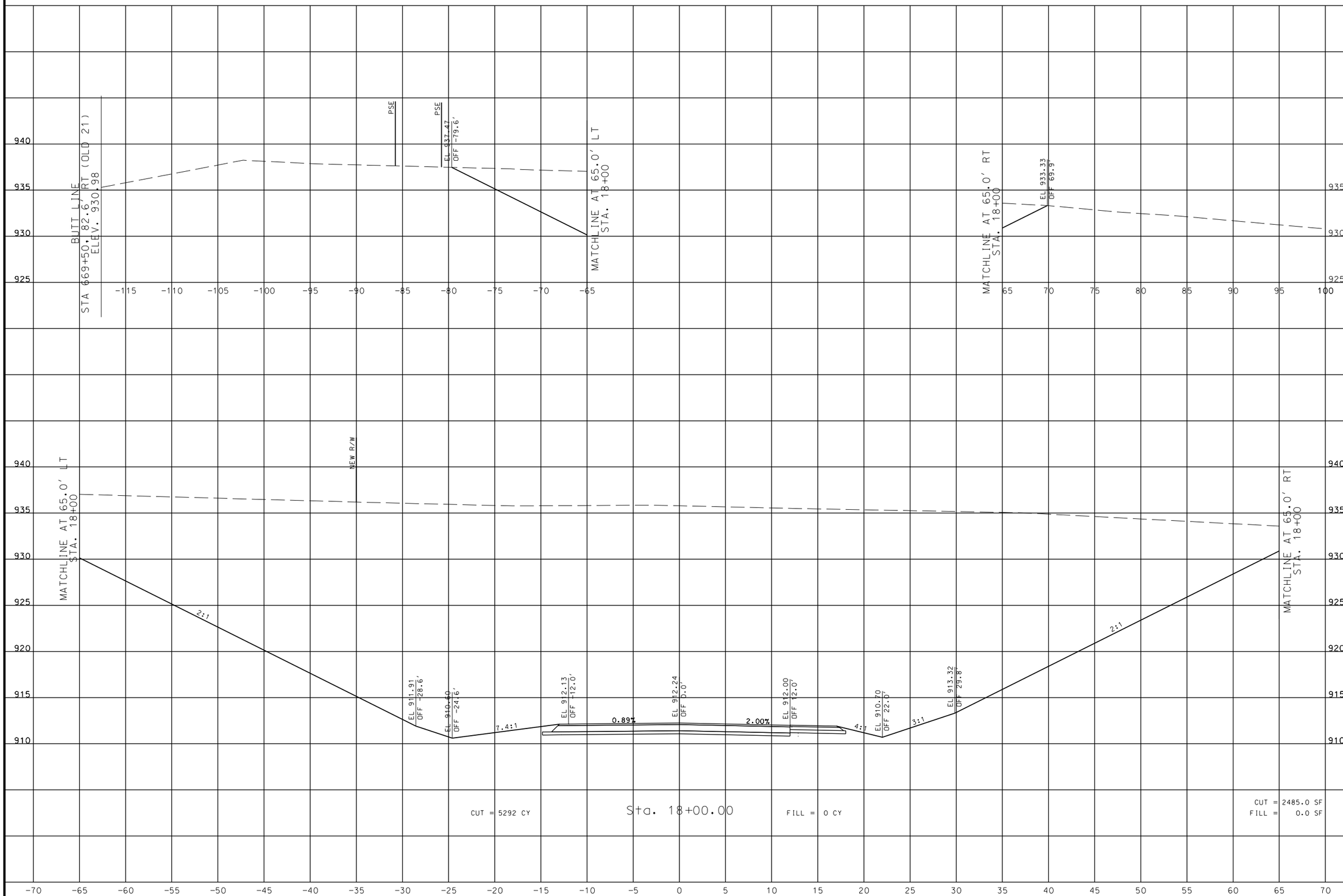
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE 21	STATE MO
DISTRICT SL	SHEET NO. 51
COUNTY JEFFERSON	
JOB NO. STP-5462(608)	
CONTRACT ID.	
PROJECT NO. 75160015	
BRIDGE NO.	

DATE	DESCRIPTION

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

JEFFERSON COUNTY
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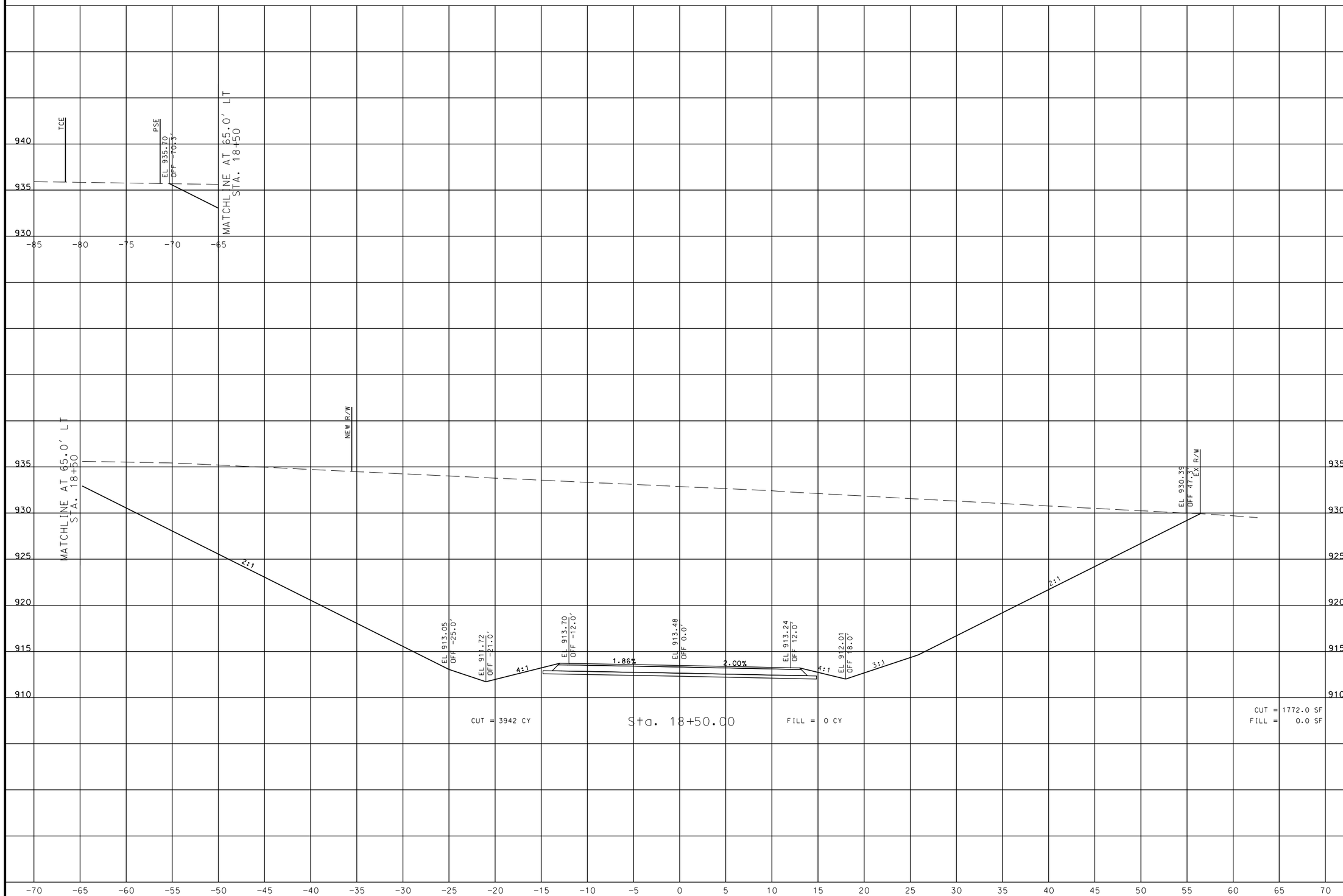

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	52
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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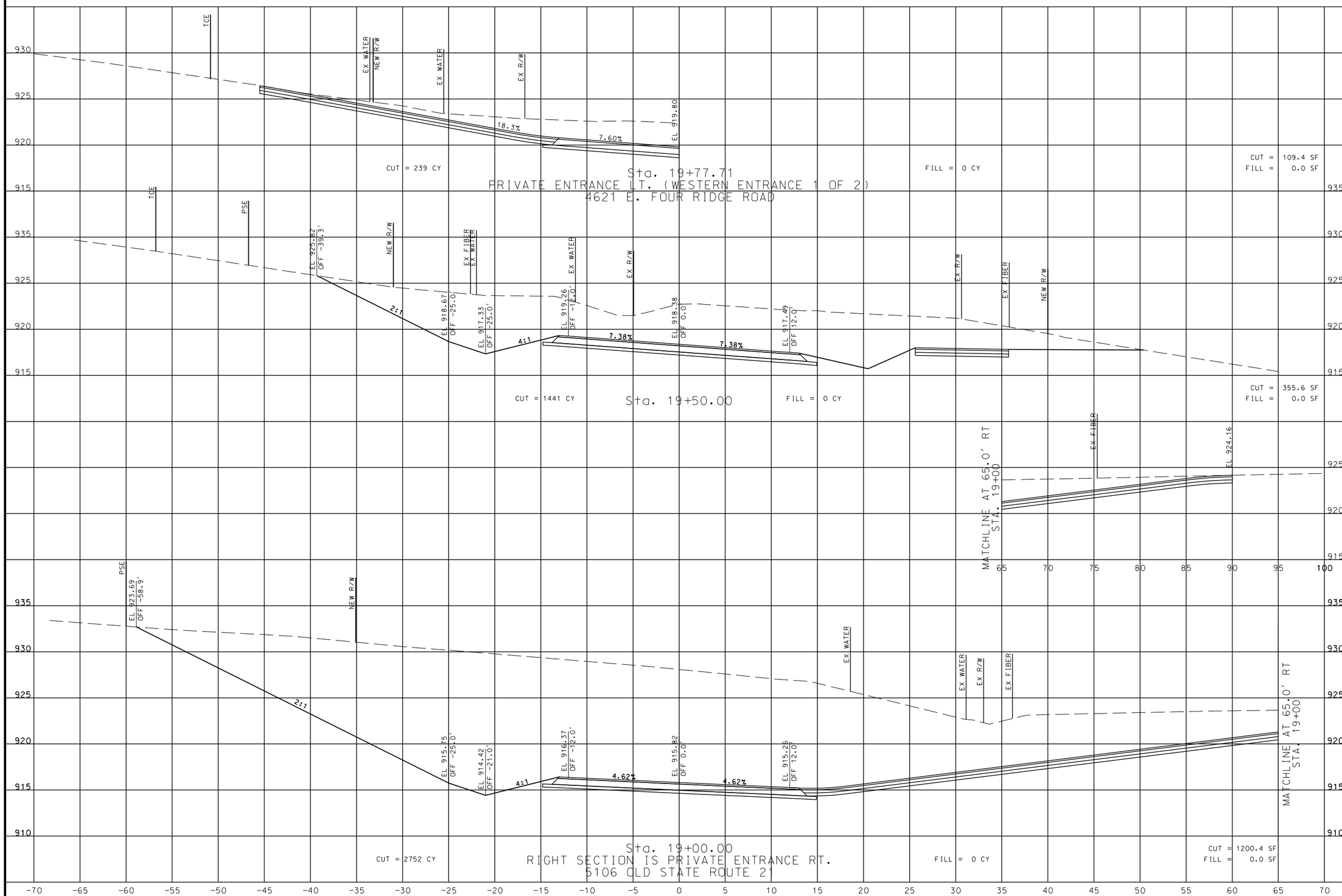

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
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04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	53
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
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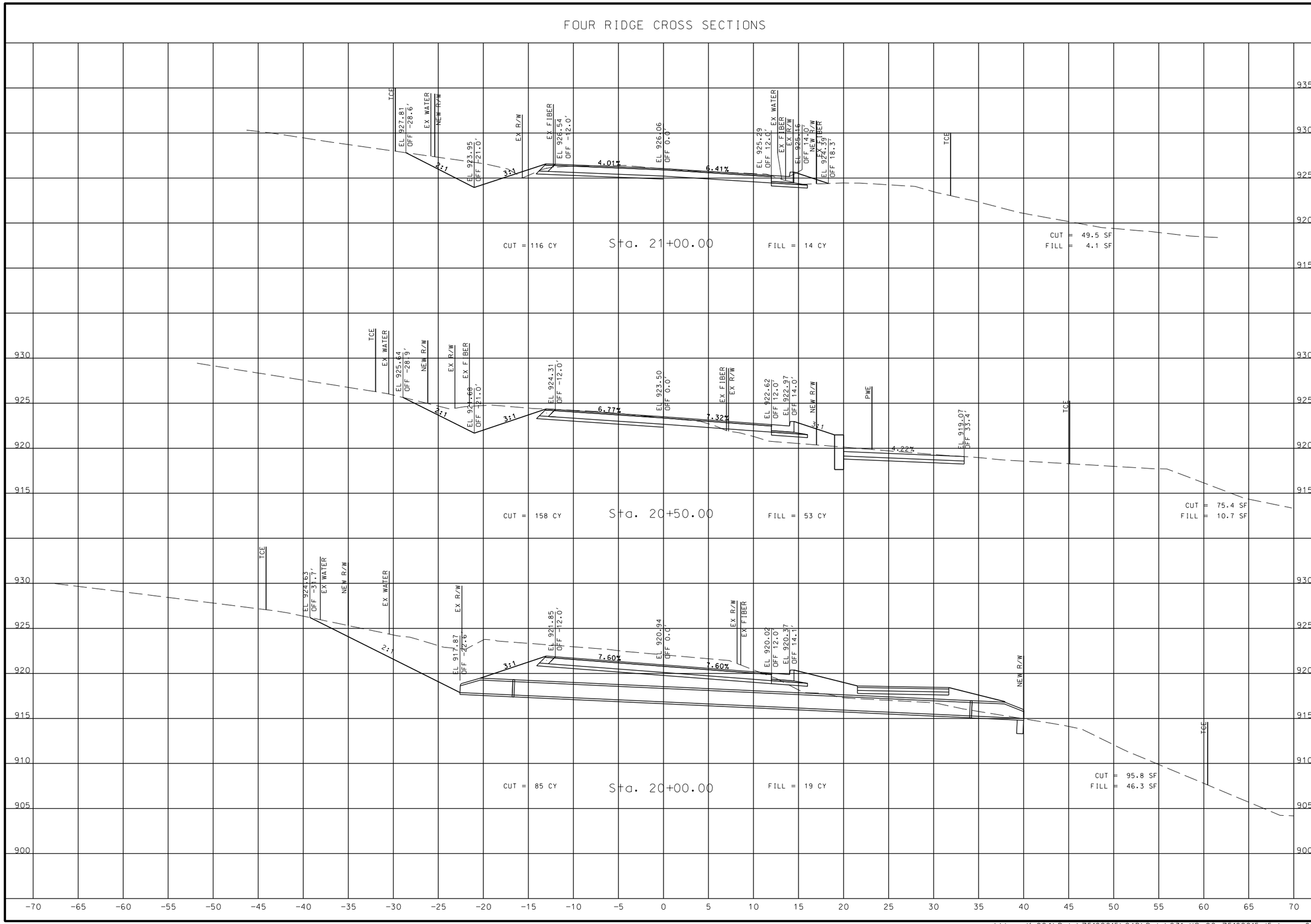

STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	
4/5/2019	
ROUTE	STATE
21	MO
DISTRICT	SHEET NO.
SL	54
COUNTY	
JEFFERSON	
JOB NO.	
STP-5462(608)	
CONTRACT ID.	
PROJECT NO.	
75160015	
BRIDGE NO.	

DATE	DESCRIPTION
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JEFFERSON COUNTY
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16020 SWINGLEY RIDGE ROAD
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PHONE: (636) 519.0990
CORPORATE LICENSE #2002006608
HRGreen

SHT 22 OF 23

IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.

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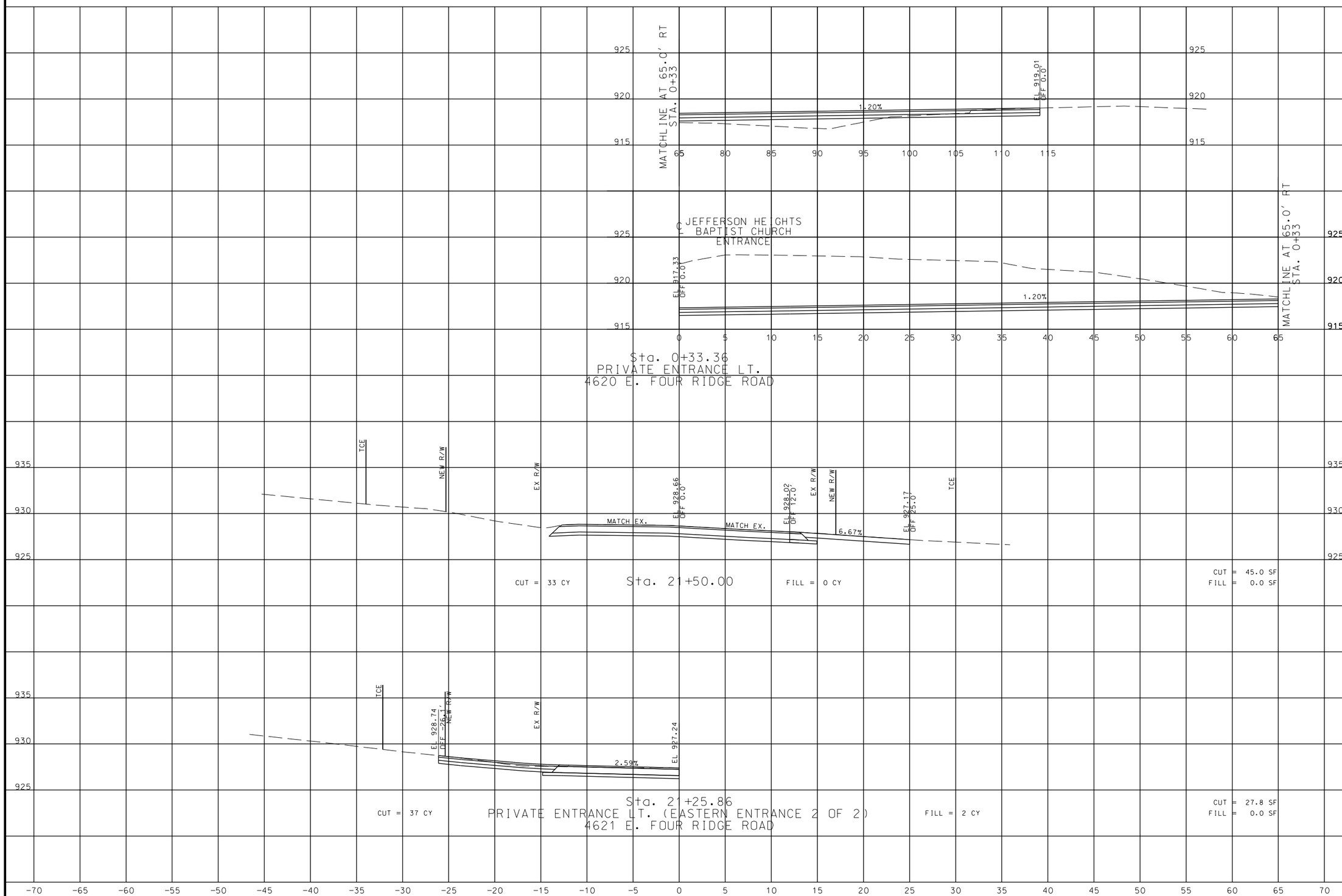
FOUR RIDGE CROSS SECTIONS



STATE OF MISSOURI
JASON S. DOHRMANN
NUMBER
PE-2004017159
PROFESSIONAL ENGINEER
04/05/19

JASON S. DOHRMANN
CIVIL ENGINEER
PE-2004017159

DATE PREPARED	4/5/2019
ROUTE	21
STATE	MO
DISTRICT	SL
SHEET NO.	55
COUNTY	JEFFERSON
JOB NO.	STP-5462(608)
CONTRACT ID.	
PROJECT NO.	75160015
BRIDGE NO.	

DATE	DESCRIPTION

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JEFFERSON COUNTY
DEPARTMENT OF PUBLIC WORKS
MAILING ADDRESS
P.O. BOX 100, HILLSBORO, MO 63050
PHYSICAL ADDRESS:
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725 MAPLE STREET, ROOM 104
HILLSBORO, MO 63050
PHONE: (636) 797-5340

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16020 SWINGLEY RIDGE ROAD
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PHONE: (636) 519.0990
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HRGreen

SHT 23 OF 23

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